

GOVERNING BOARD

MARK TAYLOR CHAIRPERSON

MICHELLE WILLIAMSON VICE-CHAIRPERSON

JOEL SCHLEICHER
KELLY S. RICE
JACK BISPHAM
ROGER GERMANN
JAMES G. MURPHY
REBECCA SMITH
SETH WEIGHTMAN
BOARD MEMBERS

PROJECT MANAGER

ROBIN BAILEY (352) 796-7211 EXT. 4252 Robin.Bailey@SWFWMD.STATE.FL.US

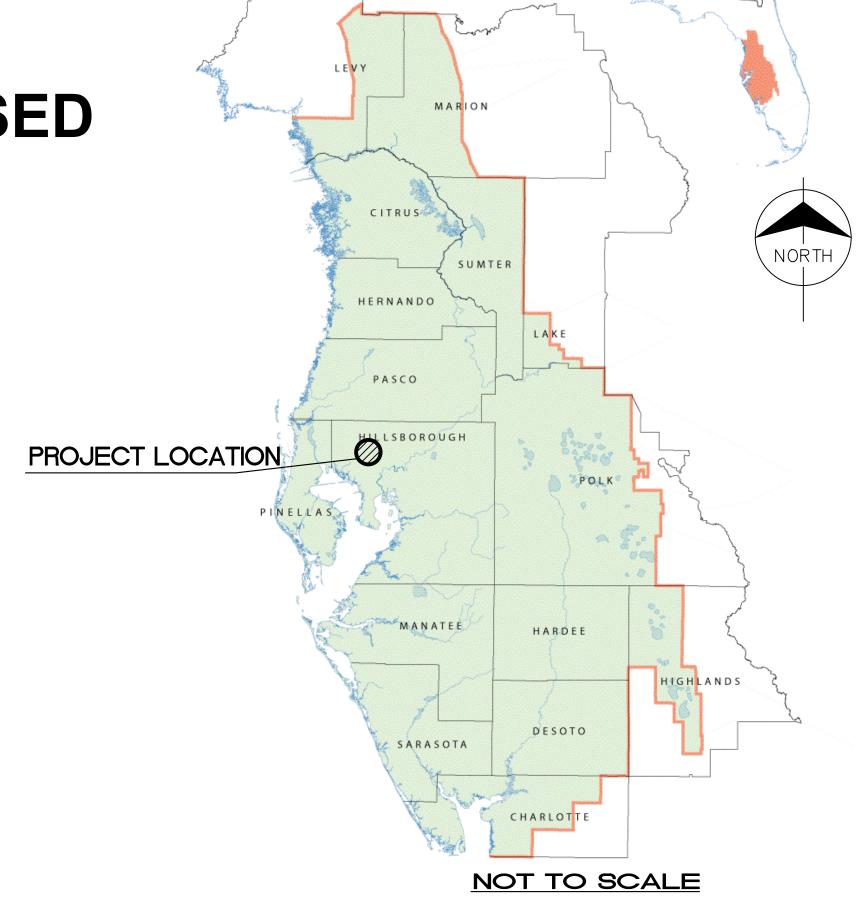
TWA NO. 19TW0002082

CONSTRUCTION PLANS OF PROPOSED LAKE PRETTY STRUCTURE REPLACEMENT (B875) 100% FINAL DESIGN PLANS



LOCATION MAP
HILLSBORUOUGH COUNTY, FLORIDA

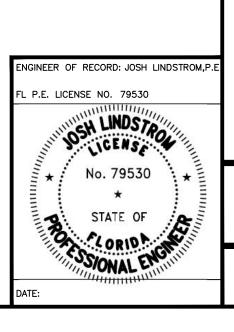
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT



PROJECT LOCATION

INDEX OF SHEETS

DRAWING NUMBER	SHEET NUMBER	SHEET TITLE
G-01	01	COVER SHEET
G-02	02	GENERAL NOTES AND LEGEND
C-01	03	SITE LOCATION/SITE ACCESS
C-02	04	EXISTING SITE CONDITIONS
C-03	05	EXISTING STRUCTURE - PARTIAL DEMOLITION P
C-04	06	PROPOSED SITE PLAN
C-05	07	SEDIMENT AND EROSION CONTROL DETAILS
S-01	08	STRUCTURAL NOTES
S-02	09	STRUCTURAL PLAN VIEW
S-03	10	STRUCTURAL SECTIONS AND DETAILS
S-04	11	PROPOSED GATE SCHEMATIC
S-05	12	PROPOSED GATE
E-01	13	ELECTRICAL LEGEND
E-02	14	ELECTRICAL NOTES
E-03	15	ELECTRICAL SITE PLAN - DEMOLITION
E-04	16	ELECTRICAL SITE PLAN - PROPOSED
E-05	17	ELECTRICAL DETAILS
I-01	18	INSTRUMENTATION LEGEND
I-02	19	COMMUNICATION BLOCK DIAGRAM



STRUCTURE REPLACEMENT
COVER SHEET

PROJECT ID NO.
40-19-311
DRAWING NO.
G-01

SHEET OF **19**

- 1. WORK LIMITS: CONSTRUCTION ACTIVITIES SHALL NOT TAKE PLACE OUTSIDE OF THE DESIGNATED LIMITS OF CONSTRUCTION UNLESS APPROVED BY THE DISTRICT.
- 2. THE CONTRACTOR SHALL PROTECT ALL STRUCTURES, TREES, AND EXISTING IMPROVEMENTS THAT ARE TO REMAIN. IF DAMAGED DURING CONSTRUCTION, THEY SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE DISTRICT AT NO ADDITIONAL COST.
- 3. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND/OR THE FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS.
- 4. ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE BEFORE THE START OF CONSTRUCTION ON AFFECTED ROADWAYS.
- 5. ALL ELEVATIONS SHOWN REFER TO NORTH AMERICAN VERTICAL DATUM (NAVD88) UNLESS OTHERWISE NOTED. CONVERSION TO NGVD 29 = NAVD 88 + 0.83 FT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED FEDERAL, STATE, COUNTY AND/OR LOCAL CONSTRUCTION PERMITS/APPROVALS PRIOR TO
- STARTING ANY CONSTRUCTION ACTIVITIES. (INCLUDING A DEWATERING PERMIT IF NEEDED).
 THE CONTRACTOR SHALL PROVIDE, AT A MINIMUM, THE FOLLOWING SUBMITTALS TO THE DISTRICT AND ENGINEER FOR REVIEW AND APPROVAL:
- SEDIMENT AND EROSION CONTROL PLAN
- DEWATERING PLAN GATE MANUFACTURER'S SHOP DRAWINGS
- STRUCTURAL SHOP DRAWINGS INCLUDING FOR GATE SUPPORT
- STRUCTURAL SHOP DRAWINGS FOR ANCHORING GATE SUPPORT TO EXISTING CONCRETE SILL
- STRUCTURAL SHOP DRAWINGS FOR STAIRS, HANDRAILS, AND GATE SUPPORTS
- ELECTRICAL DRAWINGS
- 8. THE CONTRACTOR SHALL CALL THE SUNSHINE STATE ONE CALL OF FLORIDA, INC. UTILITIES NOTIFICATION CENTER AT 811 OR (800) 432-4770, AT LEAST TWO FULL BUSINESS DAYS PRIOR TO ANY EXCAVATION ACTIVITIES. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION FROM DAMAGE DUE TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY BEFORE THE MODIFICATION OF ANY EXISTING UTILITIES WITHIN THE LIMITS OF CONSTRUCTION.
- 9. NUMBERED STONE (#57) REFERS TO COARSE AGGREGATE THAT MEETS THE REQUIREMENTS FOR EACH TYPE OF STONE RESPECTIVELY, AS SET FORTH IN SECTION 901 OF THE FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".
- 10. ALL REFERENCES MADE TO THE FDOT STANDARD INDEXES AND SPECIFICATIONS REFER TO THE 2020 EDITION UNLESS OTHERWISE NOTED.
- 11. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITHIN THE TEMPORARY CONSTRUCTION EASEMENT (TCE) TO PRE-CONSTRUCTION CONDITION OR BETTER.

<u>SUPPLEMENTAL NOTES - EROSION & SEDIMENT CONTROL:</u>

- 1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PREVENTION, CONTROL, AND ABATEMENT OF EROSION, WATER POLLUTION, AND THE TRANSPORTATION OF ERODED MATERIALS OFF SITE.
- 2. THE CONTRACTOR SHALL UPDATE THE SEDIMENT AND EROSION CONTROL PLAN AND/OR THE DEWATERING PLAN WHENEVER THERE IS A CHANGE IN CONSTRUCTION SEQUENCE OR ACTIVITIES THAT HAS A SIGNIFICANT EFFECT ON THE POTENTIAL FOR THE DISCHARGE OF POLLUTANTS OFF SITE OR INTO ANY RECEIVING WATER AND SHALL SUBMIT THE UPDATED PLAN FOR REVIEW AND APPROVAL BY THE ENGINEER.
- 3. EROSION AND SEDIMENT CONTROLS SHALL BE APPROVED BY THE DISTRICT PRIOR TO COMMENCEMENT OF ANY GROUND DISTURBANCE.
- 4. FIELD CONDITIONS MAY REQUIRE THE USE OF ADDITIONAL TYPES AND QUANTITIES OF SEDIMENT AND EROSION CONTROL DEVICES DURING CONSTRUCTION AS DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
- 5. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROL DEVICES PRIOR TO SUSPENSION OF WORK ACTIVITIES EACH DAY, IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST DAILY DURING PROLONGED RAINFALL TO ENSURE THAT THE DEVICES ARE PROPERLY LOCATED AND MAINTAINED FOR EFFECTIVENESS. ANY REQUIRED REMEDIAL ACTION SHALL BE PERFORMED IMMEDIATELY.
- 6. SEDIMENT TRAPPED BY THE EROSION CONTROL DEVICES IS TO BE REMOVED BY THE CONTRACTOR AFTER EACH RAIN STORM.
- 7. THE AMOUNT OF AREA DISTURBED AT ONE TIME SHALL BE LIMITED TO THE MINIMUM NECESSARY TO ADEQUATELY IMPLEMENT THE WORK. CONSTRUCTION OPERATIONS SHALL BE CONTROLLED TO MINIMIZE UNPROTECTED AREAS EXPOSED TO WEATHER, AND AREAS OUTSIDE THE LIMITS OF CONSTRUCTION SHALL NOT BE DISTURBED.
- 8. EXCAVATED MATERIAL SHALL BE EXPEDITIOUSLY REMOVED FROM THE SITE AND TEMPORARY STOCKPILES MAY NOT BE DEPOSITED IN LOCATIONS WHERE THEY COULD BE WASHED AWAY BY HIGH WATER OR BY STORMWATER RUNOFF. STOCKPILES SHALL BE COVERED OR ENCIRCLED WITH SEDIMENT CONTAINMENT DEVICES.
- 9. STABILIZATION MEASURES SHALL BE INITIATED FOR EROSION AND SEDIMENT CONTROL ON DISTURBED AREAS AS SOON AS PRACTICABLE, BUT IN NO CASE MORE THAN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THOSE PORTIONS OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
- 10. PERMANENT SOIL EROSION CONTROL FOR ALL DISTURBED LAND AREAS SHALL BE COMPLETED IMMEDIATELY AFTER FINAL GRADING. WHEN IT IS NOT POSSIBLE TO PERMANENTLY PROTECT A DISTURBED AREA IMMEDIATELY AFTER GRADING OPERATIONS, TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED. ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT MEASURES ARE IN PLACE AND ESTABLISHED.

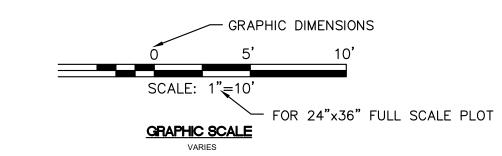
SUPPLEMENTAL NOTES - TREE PROTECTION:

- 1. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THE PROJECT, THE CONTRACTOR SHALL COMPLY WITH ALL REGULATIONS. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF ITS PERSONNEL. LABOR SAFETY REGULATIONS SHALL BE SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF LABOR.
- 2. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.

SYMBOLOGY ' FEET DEGREES EXAMPLE OF SECTION CUT AND DETAIL SECTION LETTER OR DETAIL NUMBER " INCHES w/ WITH # NUMBER x BY DRAWING WHERE DETAIL IS DRAWING NUMBER WHERE SECTION IS LOCATED SHOWN OR SECTION IS CUT % PERCENT CENTERLINE SECTION CUT AND DETAIL BUBBLE & AND Ø DIAMETER AT

DEWATERING NOTES:

- 1. CONSTRUCTION DEWATERING FOR THE PROJECT HAS NOT BEEN APPROVED. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A WATER USE DEWATERING PERMIT FROM THE WATER MANAGEMENT DISTRICT AND/OR COMPLYING WITH CONSTRUCTION DEWATERING NO-NOTICE REQUIREMENTS.
- 2. CONTRACTOR'S DEWATERING PLAN SHALL PROVIDE DETAILS FOR INSTALLING AND MAINTAINING A DRY WORKING AREA, EXPOSING THE EXISTING CONCRETE SILL'S BOTTOM AT APPROXIMATE EL. 36.2 NAVD88.
- 3. DURING CONSTRUCTION, UPSTREAM WATER LEVELS WILL NEED TO BE MAINTAINED BELOW EL. 44.0 NAVD88.
- 4. THE PROPOSED CONSTRUCTION IS INTENDED TO BE PERFORMED IN THE DRY SEASON. THE DEWATERING PLAN SHALL INCLUDE A MEANS OF EITHER BYPASS PUMPING FLOWS FROM LAKE PRETTY, OR ALLOWING THE WORK AREA TO FLOOD IN THE EVENT OF EXCESSIVE RAINFALL AMOUNTS.



TEMPORARY SECURITY FENCE

OVERHEAD POWER LINE HANDRAIL

CENTER LINE

SLOPE (2 HOR TO 1 VERT) SLOPE (2 HOR TO 1 VERT)

WATER SURFACE

LIMEROCK BASE

DITCH LINING RIPRAP

SHORE PROTECTION RIPRAP

STEEL OR STAINLESS STEEL

NATURAL GROUND OR GRADE

SEEPAGE COLLAR

ROUND, DIAMETER

ANGLE

WITHOUT

GENERAL ABBREVIATIONS

AMERICAN SOCIETY OF TESTING AND MATERIALS CIRC CIRCUMFERENCE

CLEARANCE CORRUGATED METAL PIPE CENTERLINE

DEPTH DIST DISTANCE DEPARTMENT OF TRANSPORTATION DOT

DWG DRAWING EASTING EACH EL/ELEV ELEVATION EX/EXIST **EXISTING**

FLASHBOARD RISER FBR FDOT FLORIDA DEPARTMENT OF TRANSPORTATION FT FEET/FOOT

H/HORIZ HORIZONTAL HIGH DENSITY POLYETHYLENE PIPE INCH(ES)

INVERT LENGTH LINEAR FEET METER MANUFACTURER

NAVD88 NORTH AMERICAN VERTICAL DATUM OF 1988 NGVD29 NATIONAL GEODETIC VERTICAL DATUM OF 1929

NPDES NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM N.T.S. NOT TO SCALE OD OUTSIDE DIAMETER OFF OFFSET

PSF POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH FLOW RATE

SRWMD SUWANEE RIVER WATER MANAGEMENT DISTRICT SWPPP STORMWATER POLLUTION PREVENTION PLAN

TBD TO BE DETERMINED TYP TYPICAL V/VERT VERTICAL WITH

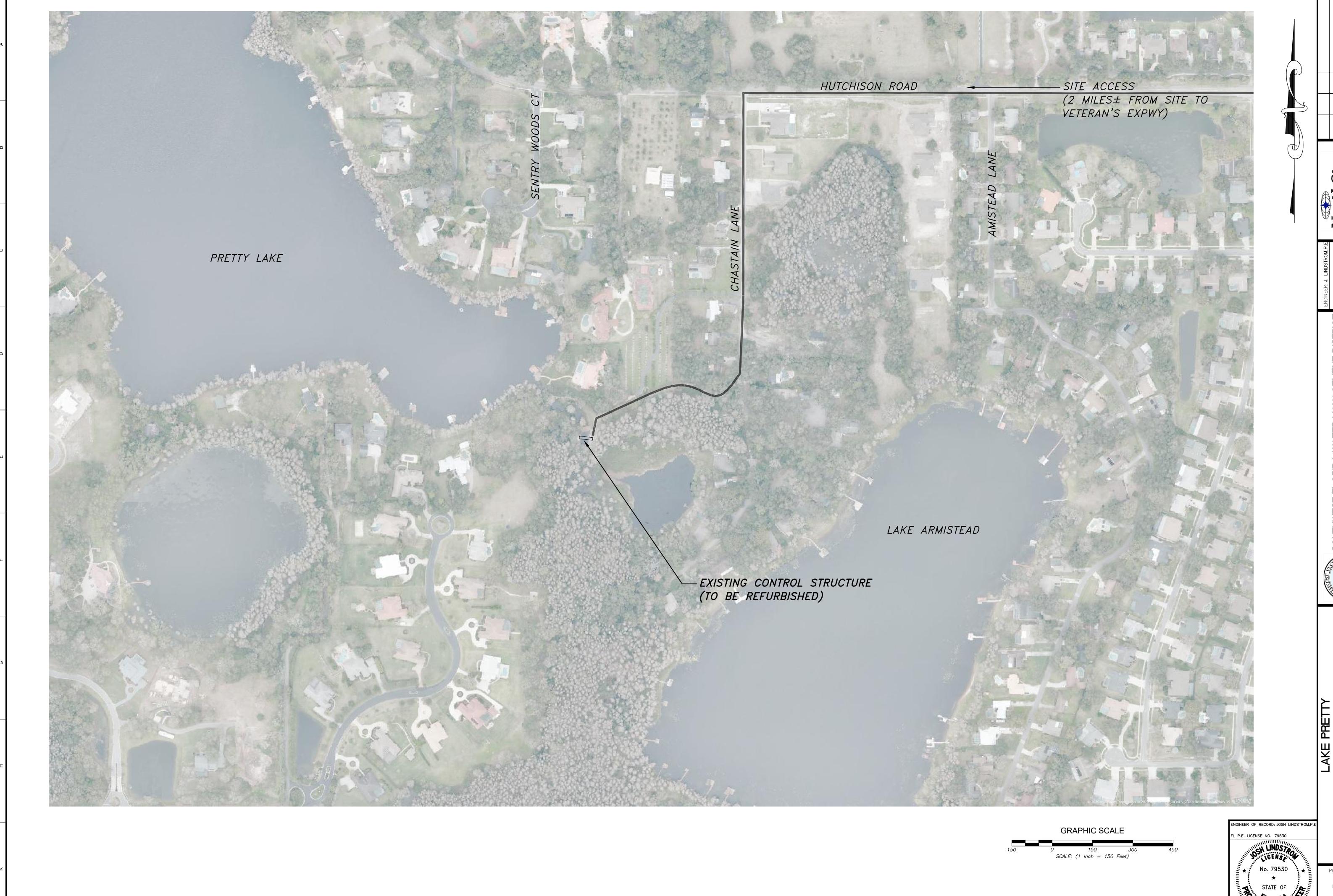
> NGINEER OF RECORD: JOSH LINDSTROM,F L P.E. LICENSE NO. 79530

SH LINDSTRON CENS No. 79530 STATE OF ¿.º℃ORID!

40-19-311 DRAWING NO. G-02

SHEET

2 of 19

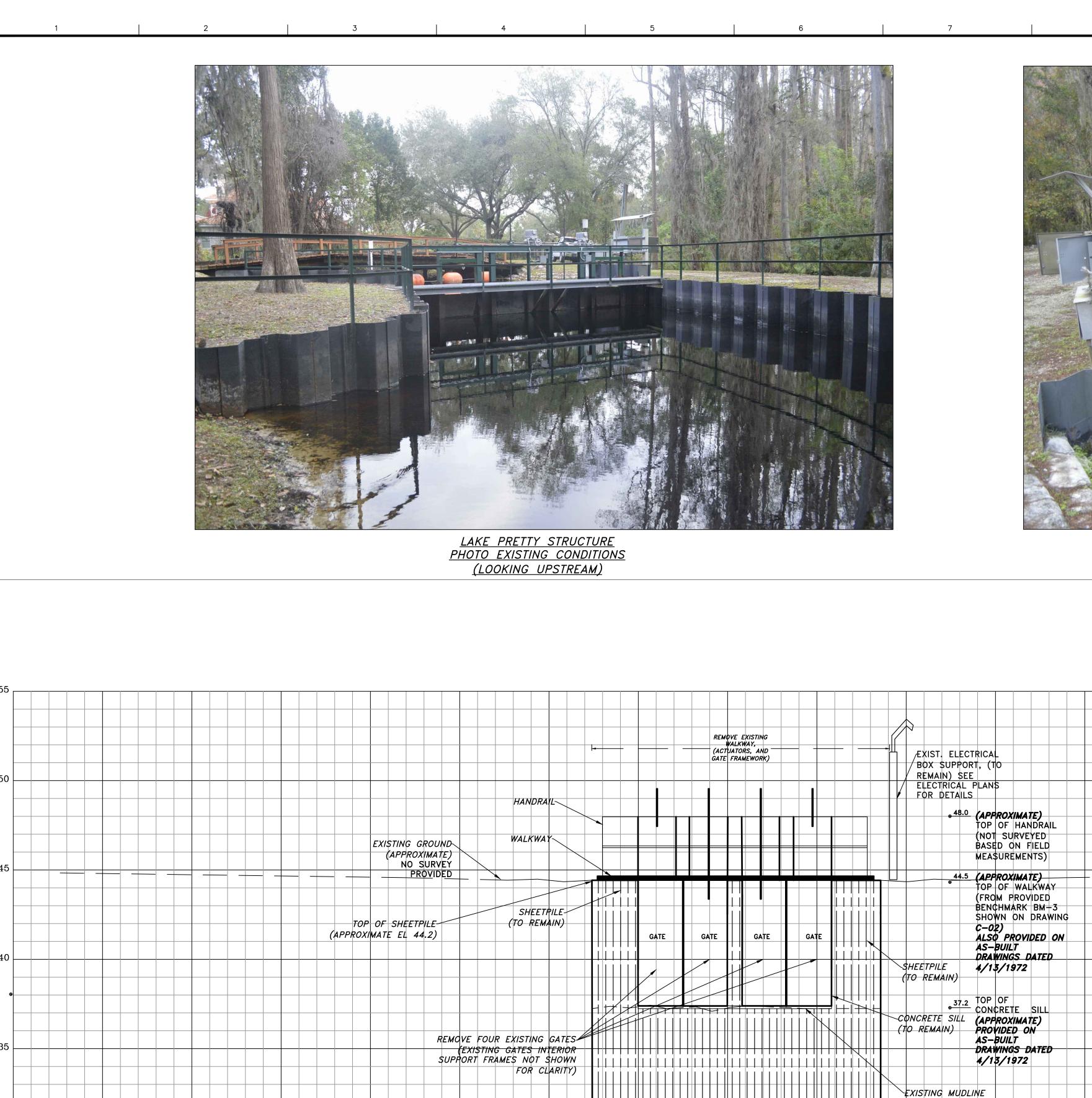




PROJECT ID NO.
40-19-311
DRAWING NO.
C-01

3 OF 19





30

NOTE: STAFF GAUGES, ACTUATORS AND STEMS TO BE RETAINED BY THE DISTRICT.

DISTRICT STAFF WILL PICK UP THESE ITEMS AFTER CONTRACTOR REMOVAL.

SPECIAL CARE SHALL BE TAKEN DURING DEMOLITION TO AVOID DAMAGE SO

THAT THESE ITEMS MAY BE RE-USED IN THE FUTURE.

(APPROXIMATE) RIP RAP NOT SHOWN

SHEETPILING PROVIDED ON

4/13/1972

AS-BUILT DRAWINGS DATED

30

В

C-02 | C-03

FOR CLARITY

20

SECTION

SCALE: 1'=40'

PROFILE VIEW

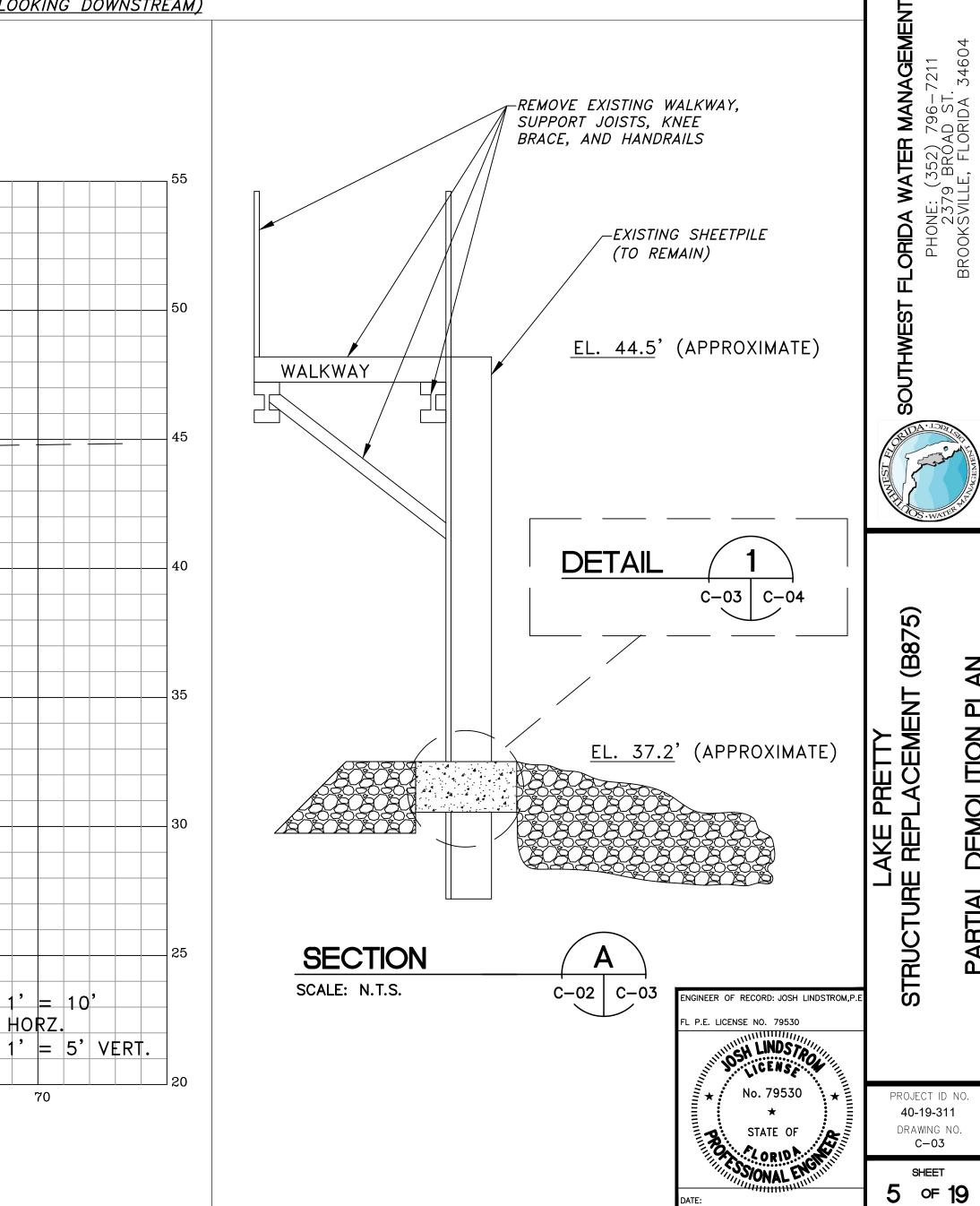
(FACING UPSTREAM)

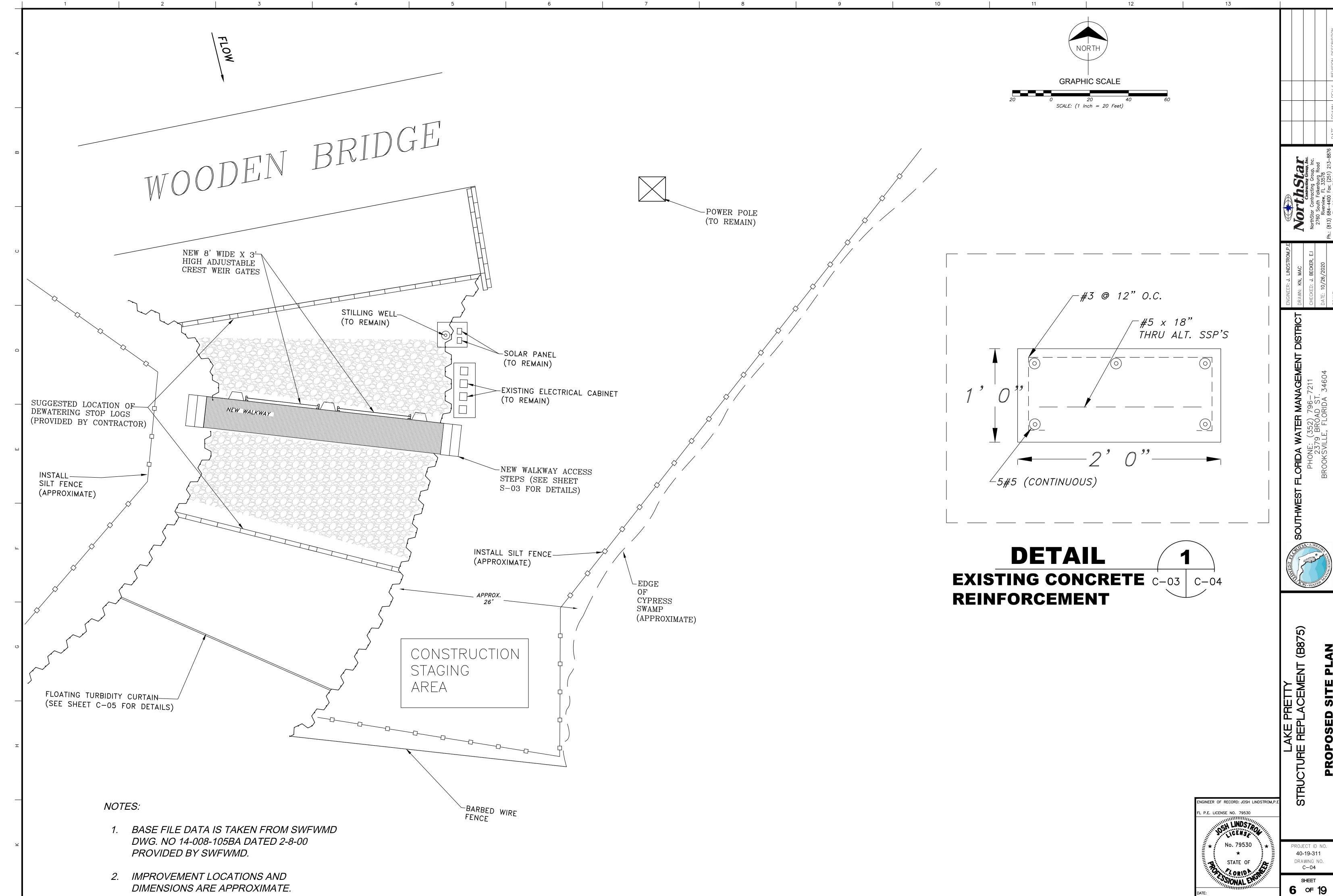


LAKE PRETTY STRUCTURE
PHOTO EXISTING CONDITIONS (LOOKING DOWNSTREAM)

70

50



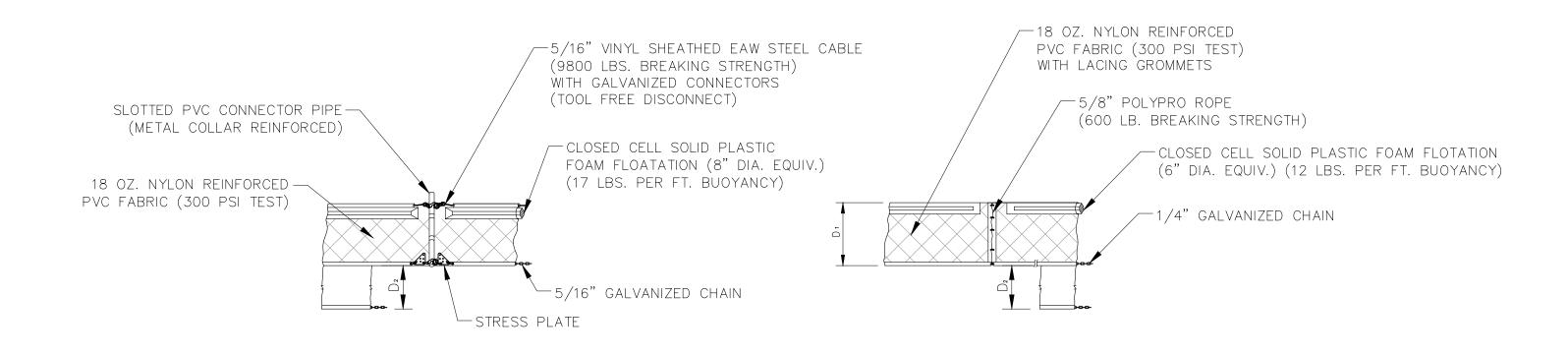


DRAWING NO.

<u>NOTES</u>

- 1. INSPECT ALL TEMPORARY SILT FENCES IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
- 2. IN ADDITION, MAKE A DAILY REVIEW OF THE LOCATION OF SILT FENCES IN AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CHANGED THE NATURAL CONTOUR AND DRAINAGE RUNOFF TO ENSURE THAT THE SILT FENCES ARE PROPERLY LOCATED FOR EFFECTIVENESS.
- 3. REMOVE SEDIMENT DEPOSITS WHEN THE DEPOSIT REACHES APPROXIMATELY 1/2 OF THE VOLUME CAPACITY OF THE TEMPORARY SILT FENCE OR AS DIRECTED BY THE DISTRICT.
- 4. SILT FENCE SHALL BE PREFABRICATED WITH POSTS.
- 5. SILT FENCE SHALL BE CHECKED WEEKLY AND REPAIRED AS NECESSARY.

SILT FENCE BARRIER (TYPE III) DETAILS



D = 5' STD. (SINGLE PANEL FOR DEPTHS 5' OR LESS). D = 5' STD. (ADDITIONAL PANEL FOR DEPTHS >5'). CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FEET. TWO (2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALL FOR IN THE PLANS OR AS DETERMINED BY THE DISTRICT.

TYPE II

NOTICE:

TYPE I

COMPONENTS OF TYPES I AND 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 DISTRICT.

NOTES:

- 1. NUMBER AND SPACING OF ANCHORS DEPENDENT ON CURRENT VELOCITIES.
- 2. DEPLOYMENT OF BARRIER MAY VARY TO ACCOMMODATE CONSTRUCTION OPERATIONS.
- 3. NAVIGATION MAY REQUIRE SEGMENTING BARRIER DURING CONSTRUCTION OPERATIONS.
- 4. THE CONTRACTOR SHALL USE TYPE II FLOATING TURBIDITY BARRIER ACROSS THE CANAL. THE DEPTH SHALL BE DOWN TO THE BOTTOM OF THE CANAL.
- 5. THE CONTRACTOR SHALL USE TYPE I FLOATING TURBIDITY BARRIER FOR THOSE INSTALLATION PARALLEL TO THE CANAL BANK. THE DEPTH SHALL BE DOWN TO THE BOTTOM OF THE CANAL.

FLOATING TURBIDITY BARRIER DETAILS

EROSION AND SEDIMETATION CONTROL NOTES:

- 1. CONTRACTOR IS RESPONSIBLE FOR THE PROPER INSTALLATION AND PROPER MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES.
- 2. CONTRACTOR TO PROVIDE STORMWATER POLLUTION PREVENTION PLAN INCLUDING ALTERNATIVE DEVICES (IF ANY) AND INSTALLATION METHODS BASED ON THE PROJECT LOCATION.
- 3. FLOATING TURBIDITY BARRIERS TO BE USED ACROSS ALL CANALS AFFECTED BY THE CONSTRUCTION AND SHOWN ON PLANS.
- 4. ALL CLEARED AREAS WILL BE HYDROSEEDED AND MULCHED WITHIN 7 DAYS IF NO CONSTRUCTION ACTIVITIES ARE TAKING PLACE OR PLANNED FOR 7 DAYS OR MORE AND/OR COMPLETION OF A PHASE OF GRADING.
- 5. THE ANGLE FOR GRADED SLOPES AND FILLS SHALL NOT BE GREATER THAN THE ANGLE WHICH CAN BE RETAINED BY VEGETATIVE COVER, OR OTHER ADEQUATE EROSION—CONTROL, DEVICES OR STRUCTURES (GENERALLY 4:1 OR LESS). SLOPES LEFT EXPOSED WILL, WITHIN SEVEN (7) WORKING DAYS OF COMPLETION OF ANY PHASE OF GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.
- 6. VEGETATIVE COVER OR OTHER EROSION CONTROL DEVICES OR STRUCTURES USED TO MEET THESE REQUIREMENTS SHALL BE PROPERLY MAINTAINED DURING AND AFTER CONSTRUCTION.
- 7. SITE INSPECTIONS AND DOCUMENTATION OF COMPLIANCE WITH SWPPP SHALL OCCUR ONCE PER WEEK AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT.
- 8. CONSTRUCTION SITE SHALL BE INSPECTED AND CLEANED ON A WEEKLY BASIS TO CONTROL CONSTRUCTION DEBRIS AND ASSOCIATED
- 9. CONSTRUCTION ENTRANCE TO BE SWEPT CLEAN OF SEDIMENT, ETC. AS NEEDED & CHECKED ON A DAILY BASIS.



40-19-311 DRAWING NO. C05

SHEET 7 of 19

INGINEER OF RECORD: JOSH LINDSTROM,P.

OSH LINDSTROM

: CENS

No. 79530

STATE OF

SONAL EN

- 1.01 THESE DRAWINGS ADDRESS ONLY THE STRUCTURAL DESIGN OF THE STRUCTURE. THE DIMENSIONAL LAYOUT OF THE STRUCTURE HAS BEEN DICTATED TO JOE DEREUIL ASSOCIATES IN ORDER TO PRODUCE STRUCTURAL DESIGN DOCUMENTS. NO REPRESENTATION IS MADE REGARDING CODE CONFORMANCE OF NON-STRUCTURAL ASPECTS OF THE STRUCTURE.
- 1.02 DRAWINGS SHOW TYPICAL AND CERTAIN SPECIFIC CONDITIONS ONLY. FOR DETAILS NOT SPECIFICALLY SHOWN, PROVIDE DETAILS SIMILAR TO THOSE SHOWN.
- 1.03 VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS BEFORE STARTING WORK. NOTIFY STRUCTURAL ENGINEER OF ANY DISCREPANCY.

1.04 THE DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC., ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. TAKE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING STRUCTURE AND ITS FOUNDATION AND TO LIMIT, TO THE EXTENT POSSIBLE, THE EFFECTS OF CONSTRUCTION THAT THE NEW STRUCTURE HAS ON THE EXISTING STRUCTURE.

- 1.05 DESIGN CRITERIA:
 - THE STRUCTURE HAS BEEN DESIGNED UTILIZING THE FOLLOWING REFERENCES:
 - FLORIDA BUILDING CODE, 2017
 - ASCE 7-10, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
 - ACI 318-14, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AISC STEEL CONSTRUCTION MANUAL 14TH EDITION
- 1.06 DESIGN LOADS

 - MECHANICAL, ELECTRICAL, PLUMBING: 5 PSF
 - LIVE LOADS: (MAY BE REDUCED PER CODE) CATWALK: 60 PSF
 - C. HYDROSTATIC LOADS WERE CONSIDERED
- 1.07 SHOP DRAWING SUBMITTALS:
- A. THE REVIEW OF SUBMITTALS AND/OR SHOP DRAWINGS DONE BY THE STRUCTURAL ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO REVIEW AND CHECK SHOP DRAWINGS BEFORE SUBMITTAL TO THE STRUCTURAL ENGINEER. THE REVIEW BY THE STRUCTURAL ENGINEER IS FOR GENERAL CONFORMANCE ONLY. IF SHOP DRAWINGS HAVE NOT BEEN REVIEWED AND APPROVED BEFORE SUBMITTAL TO THE STRUCTURAL ENGINEER THEY SHALL BE RETURNED WITHOUT APPROVAL.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY AND ALL ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF ALL SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, AND DIMENSIONS SPECIFIED IN THE CONSTRUCTION DOCUMENTS.
- CONTRACTOR IS SOLEY RESPONSBILE FOR MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.
- ALL MODIFICATIONS MADE FOR SUBMITTALS THAT ARE RE-SUBMITTED SHALL CLEARLY NOTE
- REPRODUCING THE CONTRACT DOCUMENTS FOR USE AS SHOP DRAWINGS IS NOT ALLOWED, AND SHOP DRAWINGS WILL BE RETURNED WITHOUT APPROVAL.
- GENERAL SHOP DRAWING REQUIREMENTS:
 - SUBMIT SHOP DRAWINGS AND ANY OTHER SPECIAL INFORMATION NECCESSARY FOR PROPER FABRICATION, ERECTION, AND PLACEMENT OF STRUCTURAL FABRICATIONS. INCLUDE PLANS, ELEVATIONS, AND SECTIONS. CLEARLY SHOW ANCHORAGES, CONNECTIONS, AND ACCESSORY ITEMS. THE DETAILER MUST INTERPRET THE CONTRACT DOCUMENTS AND CLEARLY CONVEY THIS INTERPRETATION TO THE FIELD IN THE FORM OF PLACING OR ERECTION DRAWINGS.
 - CONCRETE REINFORCING DETAILER PROVIDE PLACING DRAWINGS FOR FABRICATION AND PLACING OF REINFORCING STEEL. THESE DRAWINGS SHALL INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: BAR LISTS, SCHEDULES, BENDING DETAILS, PLACING DETAILS, PLACING PLANS, AND PLACING ELEVATIONS. CLEARLY SHOW FOUNDATION REINFORCING. INDICATE BAR LENGTHS, LOCATION AND SPLICES OF CONTINUOUS BARS. AND BAR SUPPORTS. CLEARLY SHOW LOCATIONS OF ALL DOWELS ON PLAN.
- 1.08 SHOP DRAWINGS BY SPECIALTY ENGINEER:
- A. THE SPECIALTY ENGINEER OR SUPPLIER SHALL DESIGN AND INSTALL THEIR COMPLETED SYSTEM IN ITS ENTIRETY TO THE PRIMARY STRUCTURE PER THE CRITERIA NOTED ON THESE CONSTRUCTION DOCUMENTS. THE SPECIALTY ENGINEER SHALL ADHERE TO ALL REQUIREMENTS OF THE APPLICABLE BUILDING CODE OR THESE NOTES, WHICHEVER IS MORE STRINGENT.
- SHOP DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT/E.O.R. AND CALCULATIONS SHALL REQUIRE THE SEAL, DATE, AND SIGNATURE OF THE SPECIALTY ENGINEER REGISTERED IN THE PROJECT STATE.
- 2.00 STRUCTURAL STEEL, GRATING
- 2.01 STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED ACCORDING TO AISC 360-10 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS.
- 2.02 SUBMIT SHOP DRAWINGS PREPARED IN ACCORDANCE WITH AISC MANUAL "DETAILING FOR STEEL CONSTRUCTION", LATEST EDITION. STEEL FABRICATOR SHALL SUPPLY ANCHOR BOLT LOCATION DRAWINGS. DO NOT BEGIN FABRICATION UNTIL SHOP DRAWINGS ARE COMPLETED AND REVIEWED.
- 2.03 STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992. STRUCTURAL STEEL SHAPES, PLATES, ANGLES, AND CHANNELS SHALL CONFORM TO ASTM A36 UNLESS NOTED OTHERWISE.
- 2.04 BOLTS SHALL CONFORM TO ASTM A325. 5/8-INCH DIAMETER MINIMUM, UNLESS NOTED OTHERWISE. BOLTS IN BEARING CONNECTIONS SHALL BE DESIGNATED TYPE N, TENSIONED, SNUG-TIGHT AS DEFINED BY
- 2.05 USE PRE-QUALIFIED WELDED JOINTS AS PER AISC, AND AWS D1.1 "STRUCTURAL WELDING CODE." USE ONLY CERTIFIED WELDERS; ALL ELECTRODES SHALL CONFORM TO AWS A5 GRADE E70XX. BARE ELECTRODE AND GRANULAR FLUX SHALL CONFORM TO AWS A5, F70 AWS FLUX CLASSIFICATION. MINIMUM WELD SIZE TO BE 3/16" FILLET WELD, U.N.O.
- 2.06 CUTS, BOLTS, COPING, ETC. REQUIRED FOR WORK OR OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS AND MADE IN THE SHOP. CUTS OR BURNING HOLES IN STRUCTURAL STEEL MEMBERS IN THE FIELD WILL NOT BE PERMITTED.
- 2.07 SHOP CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS MAY BE WELDED OR BOLTED. FIELD CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE BOLTED. WHERE POSSIBLE

- 2.08 ALTERNATE CONNECTION DETAILS MAY BE USED IF SUCH DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND ACCEPTANCE IS GRANTED. HOWEVER, THE ENGINEER SHALL BE THE SOLE JUDGE OF ACCEPTABILITY AND THE CONTRACTOR'S BID SHALL ANTICIPATE THE USE OF THE SPECIFIC DETAILS SHOWN ON THE DRAWINGS. IN ANY EVENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF SUCH ALTERNATE DETAILS, WHICH HE PROPOSES.
- 2.09 PROVIDE STIFFENER PLATES ON EACH SIDE OF WEB OF BEAM OR GIRDER AT POINTS OF CONCENTRATED LOADS. MINIMUM STIFFENER PLATE THICKNESS SHALL BE 1/2" OR FLANGE THICKNESS OF COLUMNS ABOVE OR BELOW, WHICHEVER IS THICKER.
- 2.10 STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH MECHANICAL DRAWINGS AND DRAWINGS RELATED TO OTHER TRADES. CONTRACTOR SHALL BE RESPONSIBLE TO CHECK AND COORDINATE DIMENSIONS, CLEARANCES, ETC. WITH THE WORK OF OTHER TRADES.
- 2.11 THE STRUCTURAL STEEL CONTRACTOR SHALL PROVIDE WEB REINFORCEMENT AT OPENINGS IN STEEL BEAMS AND GIRDERS FOR MECHANICAL AND ELECTRICAL PENETRATIONS. WEB OPENINGS SHALL BE LOCATED IN THE MIDDLE 1/3 OF BEAM DEPTH. WEB REINFORCEMENT IS NOT REQUIRED FOR WEB OPENINGS LESS THAN 4" DIAMETER OR 3" X 3". A MAXIMUM OF ONE WEB OPENING IS PERMITTED FOR EACH BEAM NOT HAVING WEB REINFORCEMENT.
- 2.12 DO NOT PAINT CONNECTIONS DESIGNATED AS SLIP CRITICAL, OR TO BE WELDED.
- 2.13 HIGH PERFORMANCE PAINT SYSTEM SHALL BE USED FOR ALL EXTERIOR STEEL STRUCTURES. EQUIVALENT SYSTEM BY OTHER MANUFACTURERS MAY BE PROPOSED. HOWEVER, THE ENGINEER SHALL BE THE SOLE JUDGE OF ACCEPTABILITY AND THE CONTRACTOR'S BID SHALL ANTICIPATE THE USE OF THE
- A. HIGH PERFORMANCE ZINC RICH URETHANE PRIMER/ EPOXY INTERMEDIATE/ FLOUROPOLYMER URTETHANE FINISH PAINTSYSTEM:
 - SURFACE PREPARATION REMOVE ALL GREASE AND OTHER SOLUBLE CONTAMINANTS IN ACCORDANCE WITH SSPC-SP1 SOLVENT CLEANING.
 - SHOP SURFACE PREPARATION SHALL BE CLEANED IN ACCORDANCE WITH SSPC-SP10 NEAR WHITE BLAST CLEANING. PRIME ANY BARE STEEL THE SAME DAYAS IT IS CLEANED AND BEFORE ANY RUST BLOOM HAS FORMED. SURFACE PROFILE SHALL BE 1.5-2.5/
 - B. PRIMER: TNEMEC SERIES 90-97 TNEME-ZINC (2.5 3.5 MILS DFT)
 - FIELD TOUCH UP REPAIR SHALL BE CLEANED IN ACCORDANCE WITH SSPC-SP11 POWER TOOL CLEANING TO BARE METAL.
 - FIELD TOUCH UP: TOUCH UP FIELD WELDS AND SCRATCHES WITH 90-97 TNEMEC ZINC PRIMER (2.5- 3.5 MILS DFT)
- C. STRIPE COAT: ALL SHARP EDGES, BOLTED CONNECTIONS, WELDED CONNECTIONS AND OTHER DIFFICULT TO COAT AREAS SHALL RECEIVE ONE COAT, APPLIED BY BRUSH, OF TNEMEC SERIES 66 EPOXOLINE (4.0-6.0 MILS DFT)
 - 1. PREPARATION PRIOR TO APPLICATION OF FINISH COATS: ALL SURFACES TO BE COATED SHALL BE HIGH PRESSURE WATER WASHED USING CHLOR*RID TO REMOVE ALL CHLORIDES, DIRT, DUST, AND OTHER FOREIGN MATTER.
 - 2ND COAT: TNEMEC SERIES 66 EPOXOLINE (4.0-6.0 MILS DFT)
 - 3. 3RD COAT: TNEMEC 1070 FLOURONAR (2.0 3.0 MILS DFT)
- - SUBMIT SHOP DRAWINGS DETAILING FABRICATION AND INSTALLATION OF GRATING. INCLUDE PLANS, SECTIONS, AND DETAILS OF CONNECTIONS. SHOW ANCHORAGE AND ACCESSORY ITEMS. PROVIDE TEMPLATES FOR ANCHORS AND BOLTS IF REQUIRED. BAND ALL EDGES.
 - CHECK ACTUAL LOCATION OF STRUCTURAL SUPPORTS AND OTHER CONSTRUCTION TO WHICH GRATINGS MUST FIT BY ACCURATE FIELD MEASUREMENTS BEFORE FABRICATION; SHOW RECORDED MEASUREMENTS ON FINAL SHOP DRAWINGS.
 - SHEAR AND PUNCH METALS CLEANLY AND ACCURATELY. REMOVE SHARP OR ROUGH AREAS ON EXPOSED TRAFFIC SURFACES. EASE EXPOSED EDGES TO A RADIUS OF APPROXIMATLY 1/32
 - D. PROVIDE STRIATED NON-SLIP SURFACE.
- 3.00 REINFORCED CONCRETE
- 3.01 ALL CONCRETE WORK SHALL CONFORM TO ACI 301-16, SPECIFICATIONS FOR STRUCTURAL CONCRETE. DESIGN IS BASED ON ACI 318-14. BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE. DETAIL CONCRETE REINFORCEMENT AND ACCESSORIES IN ACCORDANCE WITH ACI 315R-18, GUIDE TO PRESENTING REINFORCING STEEL DESIGN DETAILS. DETAIL ALL CONCRETE WALLS AND BEAMS ON THE SHOP DRAWINGS IN ELEVATION UNLESS SPECIFICALLY APPROVED OTHERWISE. SUBMIT SHOP DRAWINGS FOR APPROVAL. SHOWING ALL FABRICATION DIMENSIONS AND LOCATIONS FOR PLACING REINFORCING STEEL AND ACCESSORIES. DO NOT BEGIN FABRICATION UNTIL SHOP DRAWINGS ARE COMPLETED AND REVIEWED.
- 3.03 UNLESS NOTED OTHERWISE, ALL CONCRETE SHALL BE NORMAL WEIGHT AND HAVE THE FOLLOWING MINIMUM 28 DAY COMPRESSIVE STRENGTHS (Fc'), WATER TO CEMENTITIOUS CONTENT (W/CM) AND AIR CONTENT ACCORDING TO EXPOSURE CLASS (EC):
 - <u>Fc' MAX. W/CM AIR CONTENT</u> STAIRS LANDING (EC)-F0, S0, W0, C0) 3500 PSI 0.50 N/A
- CONCRETE MAY CONTAIN A PROPERLY DESIGNED SUPERPLASTICIZER FOR WORKABILITY.
- 3.04 REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 UNLESS NOTED OTHERWISE.
- 3.05 THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE OWNER'S TESTING LABORATORY. RESPONSIBILITY FOR OBTAINING THE REQUIRED DESIGN STRENGTH IS THE CONTRACTOR'S.
- 3.06 USE OF CALCIUM CHLORIDE, CHLORIDE IONS, OR OTHER SALTS IN CONCRETE IS NOT PERMITTED.
- 3.07 CHAMFER OR ROUND ALL EXPOSED CORNERS A MINIMUM OF 3/4".
- 3.08 TIE ALL REINFORCING STEEL AND EMBEDMENTS SECURELY IN PLACE PRIOR TO PLACING CONCRETE. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN THE POSITION OF REINFORCEMENT WITHIN SPECIFIED TOLERANCE DURING ALL CONSTRUCTION ACTIVITIES.

3.09 PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE; SPLICE ONLY AS SHOWN OR APPROVED; STAGGER SPLICE WHERE POSSIBLE; USE FULL TENSION SPLICE (CLASS "B") UNLESS NOTED OTHERWISE. DOWELS SHALL MATCH THE SIZE AND SPACING OF THE SPECIFIED REINFORCEMENT AND SHALL BE LAPPED WITH FULL TENSION SPLICES (CLASS "B") UNLESS NOTED OTHERWISE. TERMINATE BARS WITH

3.10 REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE COVER UNLESS NOTED OTHERWISE (PER ACI 318-14 TABLE 20.6.1.3.1):

- CONCRETE AGAINST EARTH (NOT FORMED): 3"
 - FORMED CONCRETE EXPOSED TO THE EARTH OR WEATHER:
 - #5 BARS AND SMALLER: 1-1/2"

3.11 DO NOT WELD OR TACK WELD REINFORCING STEEL UNLESS APPROVED OR DIRECTED BY THE STRUCTURAL ENGINEER.

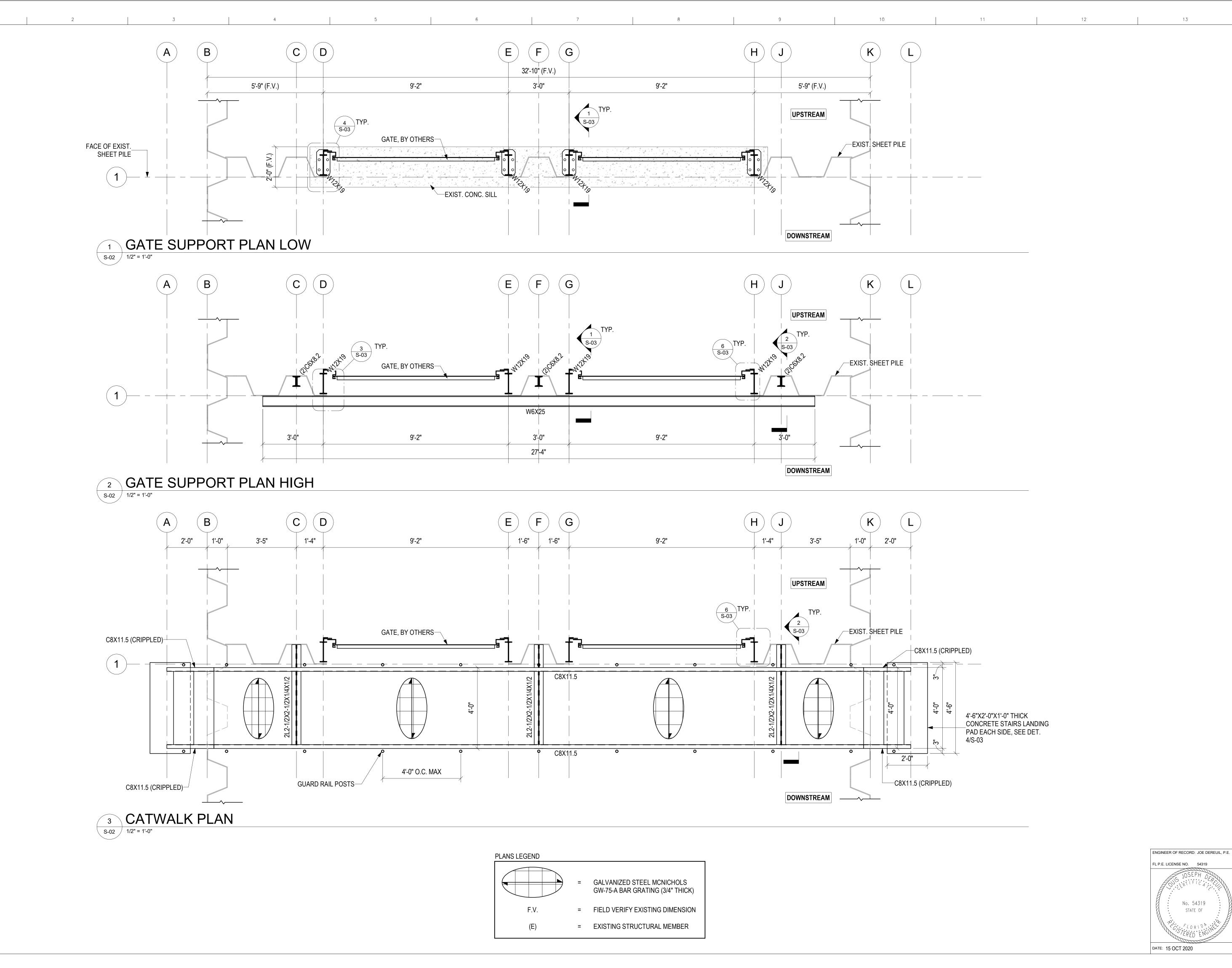
- 3.12 THE DESIGN AND CONSTRUCTION OF FORMS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS: FORMS SHALL CONFORM TO SHAPE. FORM AND LINES ON DRAWINGS.
 - ADEQUATE BRACING SHALL BE USED.
 - FORMS SUPPORTED ON GROUND SHALL HAVE ADEQUATE MUDSILLS.
 - QUALIFIED WORKMEN SHALL CONSTANTLY OBSERVE AND ADJUST, AS REQUIRED, ALL SHORES DURING CONCRETE PLACING.
 - THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ADEQUATE DESIGN AND CONSTRUCTION OF ALL FORMS.
- F. SPECIAL ATTENTION IS DIRECTED TO THE REQUIREMENT THAT THE CONTRACTOR MUST ADJUST THE SHORING, USING SURVEYING INSTRUMENTS, DURING AND IMMEDIATELY AFTER PLACING OF CONCRETE FOR SLABS; THIS ADJUSTMENT MUST NOT BE ATTEMPTED AFTER THE INITIAL SET OF CONCRETE.
- 3.13 THE LICENSED DESIGN PROFESSIONAL. A PERSON UNDER THE SUPERVISION OF A LICENSED DESIGN PROFESSIONAL, OR A QUALIFIED INSPECTOR SHALL VERIFY COMPLIANCE WITH CONSTRUCTION DOCUMENTS. (ACI 318-14 PAR. 26.13.1.3)
- 4.00 <u>POST-INSTALLED ANCHORS</u>

4.01 EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES AS PROVIDED BY HILTI, INC. CONTACT HILTI AT (800) 879-8000 FOR PRODUCT RELATED QUESTIONS.

- ANCHORAGE TO CONCRETE
- MEDIUM DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE: a. HILTI KWIK BOLT-TZ EXPANSION ANCHORS PER ICC ESR-1917
- 4.02 ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY HILTI OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
- 4.03 INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING AND IN STRICT ACCORDANCE WITH THE CURRENT ICC ESR.
- 4.04 THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
- 4.05 ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
- 4.06 EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY HILTI FERROSCAN, GPR. X-RAY. CHIPPING OR OTHER MEANS.
- 4.07 PROVIDE SPECIAL INSPECTION FOR ALL MECHANICAL AND ADHESIVE ANCHORS PER THE APPLICABLE BUILDLING CODE AND PER THE CURRENT ICC-ES REPORT FOR THE ANCHOR.

PROJECT ID NO. 40-19-311 DRAWING NO. S-01 SHEET

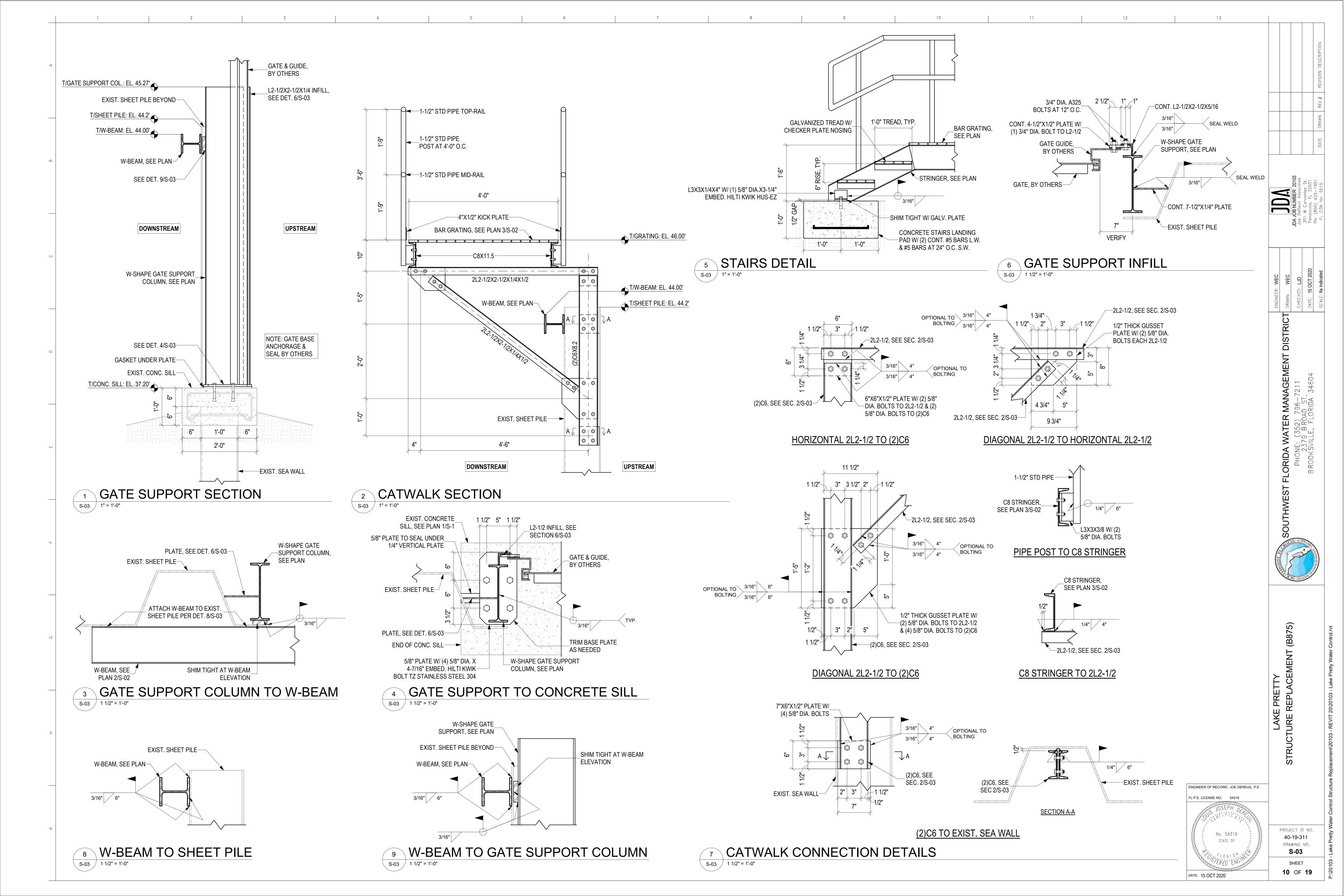
8 OF 19



(B875)

PROJECT ID NO. 40-19-311 DRAWING NO. S-02

SHEET 9 OF **19**



40-19-311

1. PROPOSED GATE SUPPORT FRAMES NOT SHOWN FOR CLARITY (SEE

NOTES:

EL. 46.0 TOP OF PROPOSED GRATING

EL. 43.5 (APPROXIMATE) TOP OF 3' TALL ADJUSTABLE WEIR GATE

EL. 44.2 (APPROXIMATE) TOP OF EXISTING SHEETPILE

EL. 40.5 (APPROXIMATE) TOP OF FIXED PLATE (GATE MANUFACTURER TO FURNISH 3'3" TALL FIXED PLATE

AT BOTTOM OF NEW ADJUSTABLE WEIR GATE)

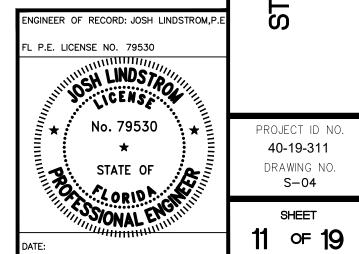
EL. 37.2 (APPROXIMATE) TOP OF CONCRETE SILL

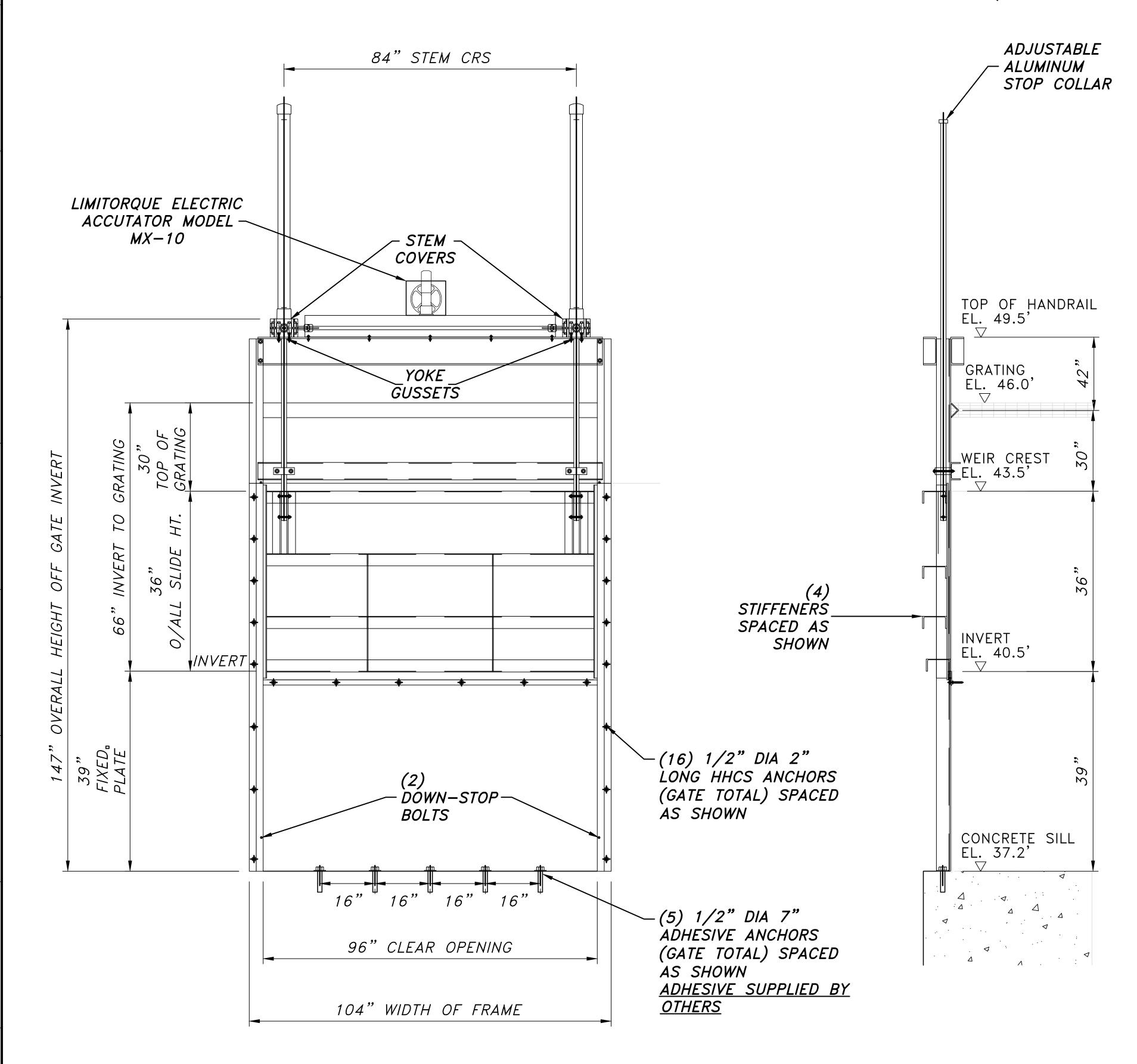
SHEETS S-01, S-02, & S-03)
2. THIS DRAWING IS PROVIDED FOR SCHEMATIC LAYOUT PURPOSES ONLY. (SEE GATE DETAILS ON SHEET S-05)

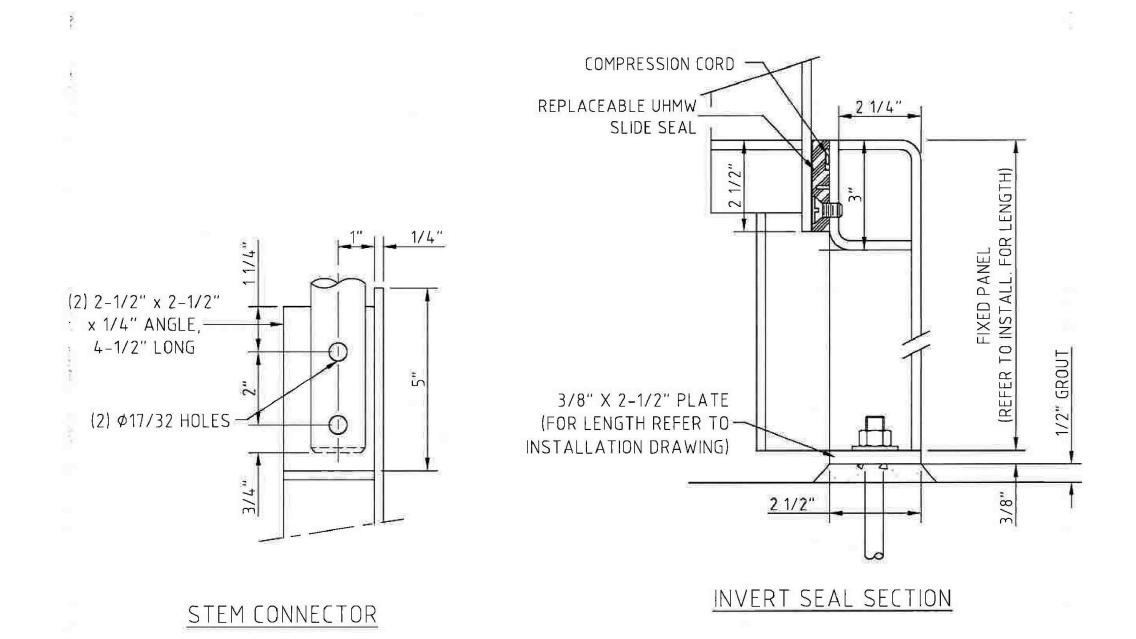
ELEVATION

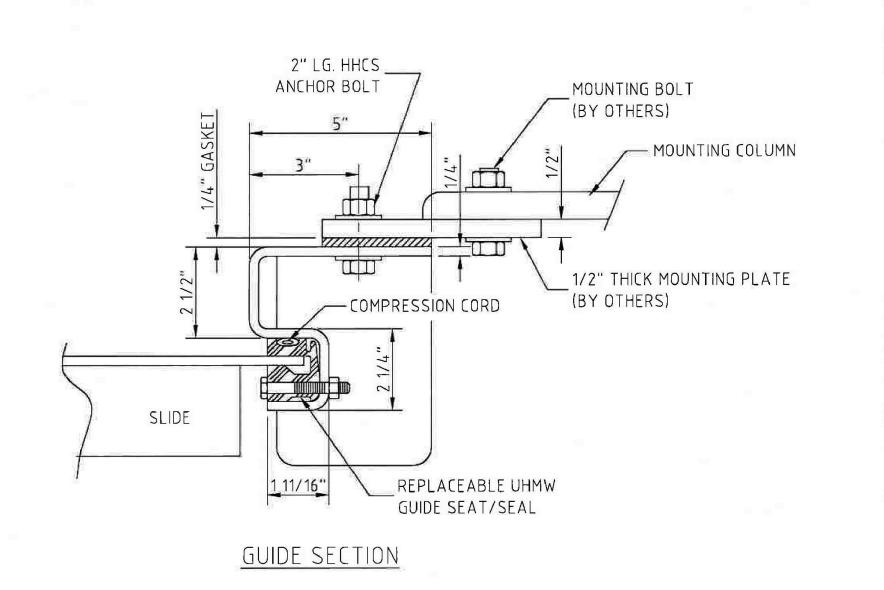
SCALE: 3/8 IN = 1'-0"

CONCEPT DRAWINGS

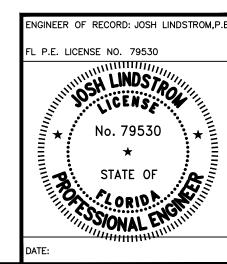








- 1. DIMENSIONS AND LOCATIONS OF STRUCTURAL MEMBERS SHOWN ARE FOR REFERENCE PURPOSES ONLY. CONTRACTOR TO SUBMIT SHOP DRAWINGS.
- 2.SUBMITTED SHOP DRAWINGS SHALL INCLUDE MANUFACTURER'S DETAILS FOR ATTACHING PROPOSED GATE TO EXISTING CONCRETE SILL AND NEW STRUCTURAL STEEL SUPPORT FRAME INSTALLED UNDER THIS CONTRACT.
- 3.PROPOSED GATE SHALL BE SERIES 923 DI TOP DOWN OPENING GATE, OR APPROVED EQUIVALENT.
- 4.PROPOSED GATE SHALL BE A 96"WIDE X 36" TALL TOP DOWN OPENING GATE WITH A 3'-3" FIXED PLATE AT BOTTOM.
- 5.PROPOSED GATE SHALL BE DUAL STEM WITH A SINGLE LIMITORQUE ELECTRIC ACTUATOR, MODEL MX-10, UNLESS OTHERWISE APPROVED BY THE OWNER AND ENGINEER.
- 6.PROPOSED GATE SHALL BE SS304 STAINLESS STEEL. ELEVATIONS PROVIDED ON THIS AND OTHER DRAWINGS FOR PROPOSED GATE ARE APPROXIMATE AND BASED UPON LIMITED HISTORIC SURVEY INFORMATION AND FIELD MEASUREMENTS. ACTUAL DIMENSIONS PROVIDED ON THIS DRAWINGS SHALL TAKE PRECEDENCE TO PROVIDED ELEVATIONS.



40-19-311 DRAWING NO. SHEET

12 of 19

(B875)

ELECTRICAL PLAN/LAYOUT							ONE LINE DIAGRAMS, RISER DIAGRAMS AND SCHEMATICS			
SYMBOL	DESCRIPTION	A DDDEV//A TI	ABBREVIA ONS DESCRIPTION	•		SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
<u> </u>	TELEPHONE TERMINAL CABINET	ABBREVIATI A	AMMETER, AMPERE	ABBREVIA MCC	TIONS DESCRIPTION MOTOR CONTROL CENTER	(5)	MOTOR, SQUIRREL CAGE INDUCTION UNLESS OTHERWISE NOTED — HORSEPOWER INDICATED	S _M	MANUAL MOTOR STARTER SWITCH, NEMA 4X UNLESS OTHERWISE NOTED. NUMBER OF POLES AS REQUIRED	
	TERMINAL JUNCTION BOX	AC ACCP	ALTERNATING CURRENT ACCESS CONTROL PANEL	MD MDC	MOTORIZED DAMPER MOTORIZED DAMPER CONTROLLER		- OVERLOAD RELAY HEATER	59	PUSH-BUTTON STATION, NEMA 12 ENCLOSURE UNLESS	
	ELECTRICAL EQUIPMENT	AF	AMPERE FRAME	MDP MERC	MAIN DISTRIBUTION PANEL MERCURY VAPOR	_	- MAGNETIC STARTER WITH NEMA SIZE INDICATED	PB 4X	INDICATED OTHERWISE. 4X = NEMA 4X 316 STAINLESS STEEL ENCLOSURE. SEE CONTROL DIAGRAMS FOR TYPE	
\boxtimes	CEILING MOUNTED DOWNLIGHT LUMINAIRE — SEE SCHEDULE FOR TYPE	AFD AFF	ADJUSTABLE FREQUENCY DRIVE ABOVE FINISHED FLOOR	MFG MH	MANUFACTURE		- MAGNETIC STARTER WITH NEMA SIZE INDICATED		PUSH BUTTON REQUIRED NONFUSED DISCONNECT SWITCH, SIZE INDICATED,	
Х	FLOURESCENT LUMINAIRE, SURFACE OR LAY IN TYPE SEE SCHEDULE FOR TYPE	AFG AS	ABOVE FINISHED GRADE AMMETER SWITCH.	MLO	MOTOR HEATER, MANHOLE MAIN LUGS ONLY	M	 MOTOR CIRCUIT PROTECTOR, MAGNETIC, 3 POLE UNLESS INDICATED OTHERWISE. 	□ □ J ₃₀ 4x	3 POLE UNLESS INDICATED OTHERWISE, NEMA 12 ENCLOSURE, 4X = NEMA 4X 316 STAINLESS STEEL	
 ○	LUMINAIRE AND POLE - SEE SCHEDULE	ASU	AMPERE SENSOR AIR SUPPLY UNIT	MPZ MS	MINI POWER ZONE MOTOR STARTER		 CIRCUIT BREAKER, THERMAL MAGNETIC TRIP SHOWN, 3 POLE UNLESS INDICATED OTHERWISE. 	,,	FUSED DISCONNECT SWITCH, SIZE INDICATED	
	FOR TYPE WALL MOUNTED LUMINAIRE — SEE SCHEDULE	ATS	AUTOMATIC TRANSFER SWITCH	MSC	MANUFACTURER SUPPLIED CABLE	400	3 POLE UNLESS INDICATED OTHERWISE.	F]40 60	(60 = SWITCH RATING: 40 = FUSE RATING)	
\boxtimes	FOR TYPE	AWG	AMERICAN WIRE GAUGE BYPASS CONTACTOR, BARE COPPER	MT	MOUNT	400 225	 FUSED SWITCH, SWITCH AND FUSE CURRENT RATING INDICATED, 3 POLE UNLESS INDICATED OTHERWISE. 	4X	3 POLE UNLESS INDICATED OTHERWISE, NEMA 12 ENCLOSURE, 4X = NEMA 4X 316 STAINLESS STEEL	
X -	FLOOD LIGHTS — AIM IN THE DIRECTION SHOWN SEE SCHEDULE FOR TYPE	BC BRKR	BREAKER	MTD	MOTOR TEMPERATURE DETECTOR			[- 2370	LIGHTING CONTACTOR, CURRENT RATING INDICATED,	
⊗ x	EXIT LIGHTS - SOLID SECTION IS DIRECTION OF FACE	BTC C	BARE TINNED COPPER CONDUIT, CONTACTOR	MTS N	MANUAL TRANSFER SWITCH NEUTRAL	100	 SWITCH — CURRENT RATING INDICATED, 3 POLE UNLESS INDICATED OTHERWISE. 	[<u>LC</u>]30 4X	NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. SEE CONTROL DIAGRAM FOR NUMBER OF POLES. 4X = NEMA 4X 316 STAINLESS STEEL	
9x	SEE SCHEDULE FOR TYPE EMERGENCY LIGHT WITH BATTERY PACK	CB CKT	CIRCUIT BREAKER CIRCUIT	NC	NORMALLY CLOSED	<u>400</u> 600			MAGNETIC STARTER, NEMA SIZE INDICATED, NEMA 12	
	SEE SCHEDULE FOR TYPE	CMS COMS	COMBINATION MOTOR STARTER COMMUNICATIONS SURFACE MOUNT	NEMA	NATIONAL ELECTRIC MANUFACTURER'S		DRAWOUT CIRCUIT BREAKER, LOW VOLTAGE - 600= FRAME RATING, 400=TRIP SETTING	⊠ ² 4X	ENCLOSURE, UNLESS INDICATED OTHERWISE. SEE CONTROL DIAGRAM. 4X = NEMA 4X 316 STAINLESS STEEL	
× Y (TVD)	<u>LIGHTING FIXTURE POWER AND SWITCHING LEGEND</u> X=FIXTURE TYPE	CPT	CONTROL POWER TRANSFORMER	NO	ASSOCIATION NORMALLY OPEN	400			COMBINATION (FUSE OR CIRCUIT BREAKER AS INDICATED).	
XXZ (TYP)	Y=PANEL-CIRCUIT BRKR Z=SWITCH	CR CT	CONTROL RELAY CURRENT TRANSFORMER	NP NTS	NAMEPLATE NOT TO SCALE	400 600	DRAWOUT CIRCUIT BREAKER, MEDIUM VOLTAGE - 600= FRAME RATING, 400=TRIP SETTING	⊠ ^J 2 4X	MAGNETIC STARTER, NEMA SIZE INDICATED, NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE.	
	IF NO Z INDICATED, CONNECT DIRECTLY TO CIRCUIT	CU DC	COMMUNICATIONS UNDERGROUND DIRECT CURRENT	OL OSP	OVERLOAD RELAY OUTSIDE PLANT CABLE	600	- 000- FRAME RATING, 400-TRI SETTING		SEE CONTROL SCHEMATIC DIAGRAM. 4X = NEMA 4X 316 STAINLESS STEEL	
.P2	BREAKER. CONDUIT/CONDUCTOR — REFER TO CIRCUIT SCHEDULE	DP DWG	DISTRIBUTION PANEL DRAWING	P	POLE	-≪ ↓400	DRAWOUT FUSED SWITCH, LOW OR MEDIUM VOLTAGE 600= FRAME RATING, 400=FUSE RATING	<u> </u>	ELECTRIC RESISTANCE HEATER	
LPA-2	•	EF	EXHAUST FAN	PB	PULL BOX, PUSHBUTTON STATION	7				
	EXPOSED CONDUIT AND CONDUCTORS *	EG EWS	ELECTRICAL GROUND ENTERPRISE WORKSTATION	PC PSCC	PHOTOCELL PUMPING SYSTEM CONTROL	(3)	CURRENT TRANSFORMER, NUMBER OF WINDINGS INDICATED	ETM	ELAPSED TIME METER	
	UNDERGROUND CONDUIT AND CONDUCTORS *	ETM EXST	ELAPSED TIME METER EXISTING	PH	CENTER PHASE	180	120	CRX	CONTACT - NORMALLY OPEN WITH COIL INDICATED	
	NOTE: * ALL UNMARKED CONDUIT RUNS CONSIST OF	FDR F FII	FEEDER FUSE	РМ	PHASE MONITOR, POWER METER	480- /208 15 K	V TRANSFORMER, VOLTAGES, PHASE AND VA, RATING INDICATED AS APPLICABLE	000		
	2#12, 1#12G IN 3/4"C.	FI	FLOW INDICATOR	PNL PP	PANEL POWER PANEL (480VAC)		RATED	CRX	CONTACT - NORMALLY CLOSED WITH COIL INDICATED	
	CONDUIT, STUBBED AND CAPPED AS SHOWN	FLR FLUOR	FLOOR FLUORESCENT	PR	PAIR		L LICHTNING ADDESTED	(CDV)	CONTROL DELAY Y CECHENTIAL NUMBER	
— G —	GROUND WIRE, 2/O BARE TINNED COPPER UNLESS OTHERWISE NOTED	FM FS	FLOW METER FLOAT SWITCH, FLOW SWITCH	PSCC PS	PUMP SYSTEM CONTROL CENTER PRESSURE SWITCH		LIGHTNING ARRESTER	(CRX)	CONTROL RELAY, X=SEQUENTIAL NUMBER	
\odot	GROUND ROD $-$ 3/4" \times 20' COPPER CLAD UNLESS OTHERWISE NOTED	FT FUT	FLOW TRANSMITTER FUTURE	PT PVC	POTENTIAL TRANSFORMER POLYVINYL CHLORIDE CONDUIT		CAPACITOR OR SURGE CAPACITOR	(LRX)(L)	LATCHING RELAY, X=SEQUENTIAL NUMBER	
	GROUND TEST WELL WITH 3/4" x 20' GROUND ROD UNLESS	FVNR	FULL VOLTAGE NON-REVERSING	RCPT	RECEPTACLE	M	UTILITY METER		L — LATCH, U — UNLATCH	
	OTHERWISE NOTED	FVR	STARTER FULL VOLTAGE REVERSING	RMS RS	ROOT MEAN SQUARE RIGID STEEL CONDUIT	G	GENERATOR	NOTC	TIME DELAY RELAY, X=SEQUENTIAL NUMBER NOTC=NORMALLY OPEN TIMED CLOSED	
S	WALL SWITCH: 2- DOUBLE POLE P- PILOT LIGHT 3- THREE WAY K- KEY OPERATED	G GALV	GREEN, GROUND GALVANIZED	RGS	RIGID GALVANIZED STEEL		OLIVER VITOR	Note	NOTO=NORMALLY OPEN TIMED OPEN AFTER CLOSE NCTO=NORMALLY CLOSED TIMED OPEN	
	4— FOUR WAY D— DIMMER WP—WEATHERPROOF CRE— CORROSION RESISTANT	GEN GFI	GENERATOR GROUND FAULT INTERRUPTER	RTU	CONDUIT REMOTE TELEMETRY UNIT	X	METER SCALE RANGE SHOWN IF REQUIRED		NCTC=NORMALLY CLOSED TIMED CLOSED AFTER OPEN	
-	CONVENIENCE RECEPTACLE - 20A DUPLEX UNLESS SPECIFIED OTHERWISE WP-WEATHERPROOF C-CLOCK HANCER	GFR GND	GROUND FAULT RELAY GROUND	SCC SC	STATION CONTROL CENTER SURGE CAPACITOR	0-600	V A — AMPS PM — PHASE MONITOR V — VOLTS P — POWER METER		TEMPERATURE	
	TL-TWIST LOCK CRE- CORROSION RESISTANT	GRS	GALVANIZED RIGID STEEL	SF SH	SUPPLY FAN SPACE HEATER		— FUSE		OPENS ON RISING TEMPERATURE, CLOSES ON FALLING TEMPERATURE	
Н	GFI-GROUND FAULT INTERRUPTER CONVENIENCE RECEPTACLE — 20A QUADROPLEX UNLESS	HH HID	HANDHOLE HIGH INTENSITY DISCHARGE	S/N SPD	SOLID NEUTRAL	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION	~ 0	CLOSES ON RISING TEMPERATURE,	
- \$	SPECIFIED OTHERWISE	HOA HOR	HAND/OFF/AUTO HAND/OFF/REMOTE	SPD SSRVS	SURGE PROTECTIVE DEVICE SOLID STATE REDUCED	1.		- F	OPENS ON FALLING TEMPERATURE	
Ф	CONVENIENCE RECEPTACLE — 20A DUPLEX UNLESS SPECIFIED OTHERWISE. LOCATED ON CEILING	HPS	HIGH PRESSURE SODIUM	SST	VOLTAGE STARTER STAINLESS STEEL	•	GROUND	н о а	SELECTOR SWITCH: MAINTAINED CONTACT WITH	
#	CONVENIENCE RECEPTACLE — 20A DUPLEX UNLESS SPECIFIED OTHERWISE. LOCATED ABOVE COUNTER TOP	HVAC	HEATING, VENTILATING & AIR CONDITIONING	STR SV	STARTER SOLENOID VALVE		CONTROL TRANSFORMER	h xoo	CONTACT POSITION INDICATED, CHART IDENTIFIES OPERATION	
	GFI-GROUND FAULT INTERRUPTER	IC I & C	INTERRUPTING CAPACITY INSTRUMENTATION AND	SW SWBD	SWITCH SWITCHBOARD	1200			POSITION X - CLOSED CONTACT	
30 ፟	RECEPTACLE, SPECIAL PURPOSE — AMPERAGE AS INDICATED. TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF)	INST	CONTROL INSTANTANEOUS	SWGR SYM	SWITCHGEAR SYMMETRICAL	GFR GFR	GROUND FAULT RELAY WITH C.T.		1 X O O O O O O O O O O O O O O O O O O	
	W — WALL MOUNTED, 54" AFF S — SCADA DATA PORT D — WALL MOUNTED ABOVE P — IP PHONE PORT	IP	INSTRUMENT PANEL (PANELBOARD)	TB	THERMOSTAT TERMINAL BOARD				OFNED A I	
	DESK TOP, 36" AFF E - ENTERPRISE DATA PORT	J, J-BOX	,	TDR	TIME DELAY RELAY		- PUSH-BUTTON SWITCH, MOMENTARY CONTACT,	SYMBOL	GENERAL	
	TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR	K KK	KEY INTERLOCK KIRK KEY INTERLOCK	TE TJB	TELECOMMUNICATIONS ENCLOSURE TERMINAL JUNCTION BOX	1	NORMALLY OPEN	STMBOL	DESCRIPTION CONNECTION POINT TO EQUIPMENT SPECIFIED,	
()	JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. 4X = NEMA 4X 316 SS	LA	LIGHTNING ARRESTER	TS TSP	THERMAL SWITCH TWISTED SHIELDED PAIR	010	 PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY CLOSED 		FURNISHED AND INSTALLED UNDER OTHER SECTIONS. RACEWAY, CONDUCTOR AND CONNECTION IN THIS	
		LC LIT	LIGHTING CONTACTOR LEVEL INDICATING TRANSMITTER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION		— PUSH BUTTON SWITCH, MAINTAINED CONTACTS WITH	1"0 2 112 1 1120	SECTION. INDICATES RACEWAY AND CIRCUIT CONDUCTORS. FIRST	
		LP LR	LIGHTING PANEL (PANELBOARD) LOCAL/REMOTE, LATCHING RELAY	TYP UVR	TYPICAL UNDER VOLTAGE RELAY	\dol_{\sigma}^{\sigma}	MECHANICAL INTERLOCK	1"C,2#12,1#12G 1"C,1-25/C TYPE 1	NUMBER IS RACEWAY SIZE. THE FOLLOWING NUMBERS ARE THE CONDUCTOR QUANTITIES, SIZES, AND TYPES.	
		LS LSL	LIMIT SWITCH, LEVEL SWITCH LEVEL SWITCH LOW	V VFD	VOLTMETER, VOLT VARIABLE FREQUENCY DRIVE	——————————————————————————————————————	P- REMOTE DEVICE			
		LT	LEVEL TRANSMITTER	VS W	VOLTMETER SWITCH WATT			1////.	DEMOLITION TO BE REMOVED OR DELETED	
		LT FLEX LTG	LIQUID TIGHT FLEX CONDUIT LIGHTING	WHD WP	WATTHOUR DEMAND METER WEATHERPROOF	A	INDICATING LIGHT — LETTER INDICATES COLOR A — AMBER G — GREEN	LINE WEIG	<u>GHT</u>	
		М	MAGNETIC CONTACTOR COIL OR MOTOR	XFMR	TRANSFORMER		B — BLUE R — RED C — CLEAR W — WHITE		EXISTING FUTURE	
		MA MCB	MILLIAMPS MAIN CIRCUIT BREAKER			J	DUCL TO TEST AND CONNECT INDICATING LIGHT	NOTE:		
		MCP MCP	MOTOR CIRCUIT PROTECTOR			A	PUSH TO TEST AND CONNECT INDICATING LIGHT SCHEMATIC DIAGRAMS ONLY	THIS IS A STANDARD	LEGEND SHEET. SOME ATIONS MAY APPEAR ON	
							A — AMBER G — GREEN B — BLUE R — RED		BE UTILIZED ON PROJECT.	
				1			C — CLEAR W — WHITE			
									ENGII FL P	

LAKE PRETTY
STRUCTURE REPLACEMENT (B)

AWN HILLERS,P.E

PROJECT ID NO.
40-19-311
DRAWING NO.
E-01

SHEET 19

HILLERS ELECTRICAL
ENGINEERING, INC.
23257 STATE ROAD 7, SUITE 100
BOCA RATON, FLORIDA 33428

(561) 451-9165
(561) 451-4886 FAX
LICENSE NO: EB 0006877

ELECTRICAL GENERAL NOTES:

CONDUIT AND ADJUST ACCORDINGLY.

- 1. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR TO INSTALL THE ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS. ITEMS NOT SHOWN BUT OBVIOUSLY NECESSARY FOR COMPLETION OF THE WORK SHALL BE INCLUDED.
- 2. THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE 2014 NATIONAL ELECTRICAL CODE NFPA 70, NFPA 70E ELECTRICAL SAFETY IN THE WORKPLACE, LOCAL CODES, 2017 FLORIDA BUILDING CODE.
- 3. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, INSPECTIONS AND APPROVALS AND TO INCLUDE ALL FEES AS PART OF A BID IF NOT OTHERWISE NOTED.
- 4. THE CONTRACTOR SHALL, BEFORE SUBMITTING A BID, VISIT THE SITE OF THE PROJECT AND BECOME FAMILIAR WITH THE EXISTING STRUCTURES, EXISTING ELECTRICAL SYSTEM AND EXISTING SITE CONDITIONS. NO ALLOWANCE WILL BE MADE FOR EXISTING CONDITIONS OR FAILURE OF THE CONTRACTOR TO OBSERVE THEM.
- 5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE POWER UTILITIES TO MEET ALL OF THEIR INSTALLATION REQUIREMENTS. ALL FEES, LABOR, EQUIPMENT OR MATERIALS NECESSARY TO MEET THESE REQUIREMENTS IS TO BE INCLUDED IN THE BID. THE CONTRACTOR SHALL OBTAIN, DELIVER AND INSTALL ALL CONDUITS, PULL—BOXES AND EQUIPMENT AS REQUIRED BY THE UTILITY TO THEIR SPECIFICATIONS.
- 6. ALL EQUIPMENT AND MATERIAL SHALL BE NEW AND U.L. LISTED.
- 7. THE CONTRACTOR IS RESPONSIBLE TO TEST ALL SYSTEMS INSTALLED OR MODIFIED UNDER THIS PROJECT AND REPAIR OR REPLACE ALL DEFECTIVE WORK TO THE SATISFACTION OF THE DISTRICT.
- 8. ALL CONDUCTORS SHALL BE 600V RATED AND U.L. LISTED. POWER CABLES SHALL BE TYPE THHN/THWN EXCEPT FOR SIZES NO. 6 AND LARGER USE XHHW INSULATION. CONTROL CABLE SHALL BE TYPE THHN/THWN. SIGNAL/INSTRUMENTATION CABLE SHALL BE TYPE B, #16 TWISTED SHIELDED CABLE. ALL CONDUCTING MEDIA SHALL BE COPPER. NO ALUMINUM ALLOWED.
- 9. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL ELECTRICAL AND CONTROL EQUIPMENT AND MATERIAL.
- 10. ALL CONTROL PANELS SHALL BE CONSTRUCTED BY A UL 508A APPROVED PANEL VENDOR AND SHALL BEAR A UL 508A LABEL ON THE PANEL.
- 11. 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 INSTALLATIONS.
- 12. ALL LOCATIONS OF EQUIPMENT, PANELS ETC. ARE SHOWN FOR ILLUSTRATION PURPOSES. CONTRACTOR SHALL VERIFY AND COORDINATE EXACT LOCATION AND SIZE WITH ALL SUBCONTRACTORS AND EQUIPMENT SUPPLIERS PRIOR TO ANY INSTALLATION AND THEN INSTALL AS SUCH WITH CORRESPONDING CONDUIT STUB-UPS.
- 13. SEE OTHER DISCIPLINE DRAWINGS FOR COORDINATION OF ALL DRAWINGS. ANY CONFLICTS SHALL BE BROUGHT TO THE DISTRICT'S ATTENTION AND MOVEMENT OF CONDUITS OR OTHER ELECTRICAL EQUIPMENT SHALL BE ACCOMPLISHED WITHOUT ANY ADDITIONAL COST FOR THE DISTRICT.
- 14. LOCATIONS OF MANHOLES, HANDHOLES AND PULL BOXES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH EXISTING AND NEW PIPING OR
- 15. ALL CIRCUITS SHALL BE IDENTIFIED IN JUNCTION BOXES, PULL BOXES, CONTROL PANELS, PANELBOARDS, LIGHTING POLES, CONTROLLERS AND SERVICE POINTS. IDENTIFICATION SHALL MATCH PANELBOARD SCHEDULES.
- 16. EXPOSED RUNS OF CONDUITS SHALL BE INSTALLED WITH RUNS PARALLEL OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS OR INTERSECTIONS OF VERTICAL PLANES AND CEILINGS, WITH RIGHT ANGLE TURNS CONSISTING OF SYMMETRICAL BENDS OR PULL BOXES AS INDICATED ON THE DRAWINGS. BENDS AND OFFSETS SHALL
- 17. INSTRUMENTATION IS LOW VOLTAGE SIGNALS SUCH AS 4-20MA. POWER CONDUIT SHALL ONLY CROSS INSTRUMENTATION CONDUIT PERPENDICULARLY AT RIGHT ANGLES WITH 6" SEPARATION.
- 18. CONDUCTOR PULLING TENSIONS SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATION. CONTRACTOR SHALL INSTALL PULL BOXES TO MEET MANUFACTURER'S REQUIREMENTS.
- 19. MINIMUM DISTANCE ALLOWED BETWEEN PARALLEL POWER CONDUITS AND INSTRUMENTATION CONDUITS SHALL BE: VOLTAGE DISTANCE
- 20. MINIMUM DEPTH FROM TOP OF DUCTBANKS OR CONDUITS TO FINISHED GRADE SHALL BE 30" UNLESS OTHERWISE NOTED
- 21. AN EQUIPMENT GROUND WIRE SIZED PER NEC SHALL BE PULLED IN ALL ELECTRICAL CONDUITS, POWER AND CONTROL, WHETHER OR NOT INDICATED ON THE DRAWINGS.
- 22. ALL ENCLOSURES, TJB, WIREWAY, PULL BOXES ETC. SHALL CONTAIN A GROUNDING BUS. CONNECT ALL RACEWAY BONDS TO THIS BUS VIA GROUNDING BUSHING AND EXTEND BONDING JUMPER FROM THIS BUS TO THE ENCLOSURE.
- 23. ALL DUCTBANKS SHALL CARRY A MINIMUM #2/O AWG BARE TINNED COPPER GROUND WIRE, OVER THE ENTIRE LENGTH, WHICH SHALL BE CONNECTED TO THE EXISTING SITE GROUNDING GRID AND GROUND RODS LOCATED CONNECTING MANHOLES, HANDHOLES OR PULL BOXES.

- 24. CONTRACTOR SHALL CORE DRILL CONCRETE WALLS, FLOORS, MANHOLES, HANDHOLES AND PULL BOXES FOR CONDUIT PENETRATIONS. SEAL PENETRATIONS WITH NON-SHRINK GROUT OR APPROPRIATE FIRE RATED DEVICES WHERE APPLICABLE.
- 25. PROVIDE CONDUIT DUCT SEAL AT ALL CONDUIT ENDS.
- 26. ALL SPARE CONDUITS SHALL BE SEALED WITH A CAP AT BOTH ENDS AND A PULL STRING INSTALLED WITH IDENTIFICATION ON BOTH ENDS.
- 27. RECEPTACLES IN THE GENERATOR ROOM, PUMP ROOM AND MAINTENANCE AREA SHALL BE INSTALLED 48" AFF UNLESS OTHERWISE NOTED. LIGHT SWITCHES SHALL BE MOUNTED 48" AFF UNLESS OTHERWISE NOTED. RECEPTACLES IN OFFICE AREAS AND OTHER FINISHED AREAS SHALL BE 18" AFF UNLESS OTHERWISE NOTED.
- 28. FLEXIBLE NON-METALLIC CONDUITS SHALL BE USED TO TERMINATE ALL MOTORS AND OTHER VIBRATING EQUIPMENT AND SHALL BE BETWEEN 18" AND 3' IN LENGTH.
- 29. TYPEWRITTEN PANEL SCHEDULES SHALL BE INSTALLED IN EACH PANELBOARD, AND TYPEWRITTEN TERMINAL BLOCK SCHEDULES IN EACH CONTROL CABINET.
- 30. AS PART OF THE ELECTRICAL SUBMITTAL, CONTRACTOR SHALL PROVIDE A LAYOUT OF THE ELECTRICAL EQUIPMENT IN THE ELECTRIC, GENERATOR, AND PUMP ROOMS SHOWING SIZES OF ALL EQUIPMENT AND THEIR SPATIAL RELATIONSHIPS.
- 31. CONTRACTOR SHALL BALANCE PANELBOARD LOADS AT THE END OF THE PROJECT
- 32. ALL CONDUCTORS INSTALLED IN CABLE TRAYS SHALL BE TRAY RATED CABLES.
- 33. FEEDER AND BRANCH CIRCUIT CONDUCTORS ARE SIZED FOR MAXIMUM VOLTAGE DROP OF 5 PERCENT COMBINED AT DESIGN LOAD PER THE 2017 FLORIDA BUILDING CODE ENERGY CONSERVATION—C405.6.3.
- 34. CONTRACTOR SHALL PROVIDE TO THE DISTRICT RECORD DRAWINGS DEPICTING THE COMPLETED INSTALLATION AS INSTALLED INCLUDING A SINGLE LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION AND FLOOR PLANS INDICATING THE LOCATION AND AREA SERVED BY ALL INSTALLED DISTRIBUTIONS PER THE 2017 FLORIDA BUILDING CODE—ENERGY CONSERVATION—C405.6.4.1
- 35. CONTRACTOR SHALL PROVIDE TO THE DISTRICT OPERATING AND MAINTENANCE MANUALS (0&M MANUALS) FOR ALL EQUIPMENT PER THE 2017 FLORIDA BUILDING CODE-ENERGY CONSERVATION-C405.6.4.2.
 - SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.

 O&M MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED. NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY.
- 36. ALL EXPOSED CONDUIT SHALL BE RIGID ALUMINUM. ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC. APPLY TWO COATS OF BITUMASTIC PAINT TO ALL ALUMINUM CONDUITS WHERE CONTACT WITH CONCRETE.
- 37. SUPPORT AND FRAMING CHANNELS SHALL BE 316 STAINLESS STEEL. ALL MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL.
- 38. FLEXIBLE CONDUIT SHALL BE NONMETALLIC ONLY.

THE MANUALS SHALL INCLUDE:

39. ALL JUNCTION BOX SHALL BE NEMA 4X 316 STAINLESS STEEL AND SIZE PER NEC.

217. Road

213–8876

DATE DRAWN REV.# REVISION

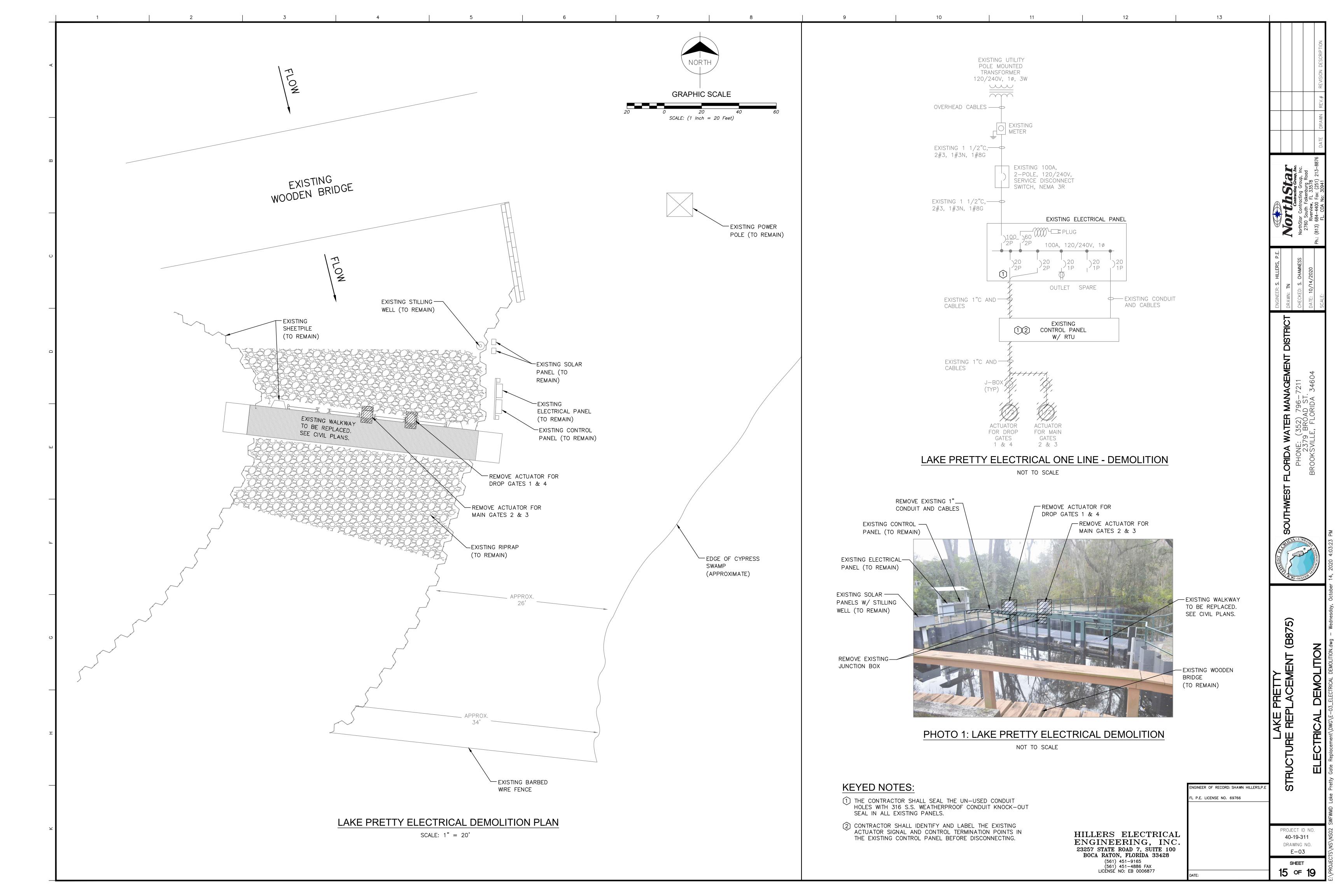
L P.E. LICENSE NO. 69766

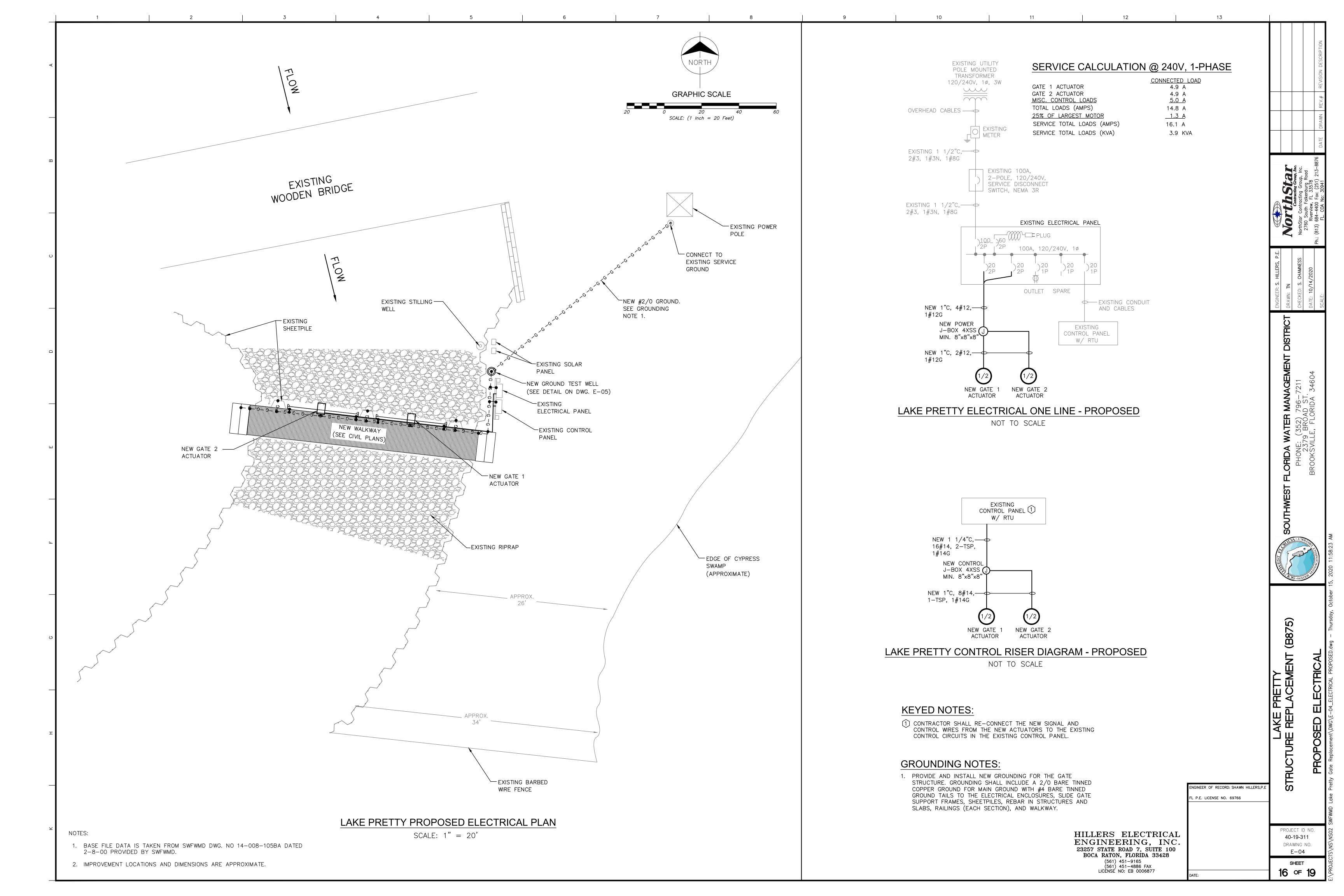
PROJECT ID NO 40-19-311 DRAWING NO. E-02

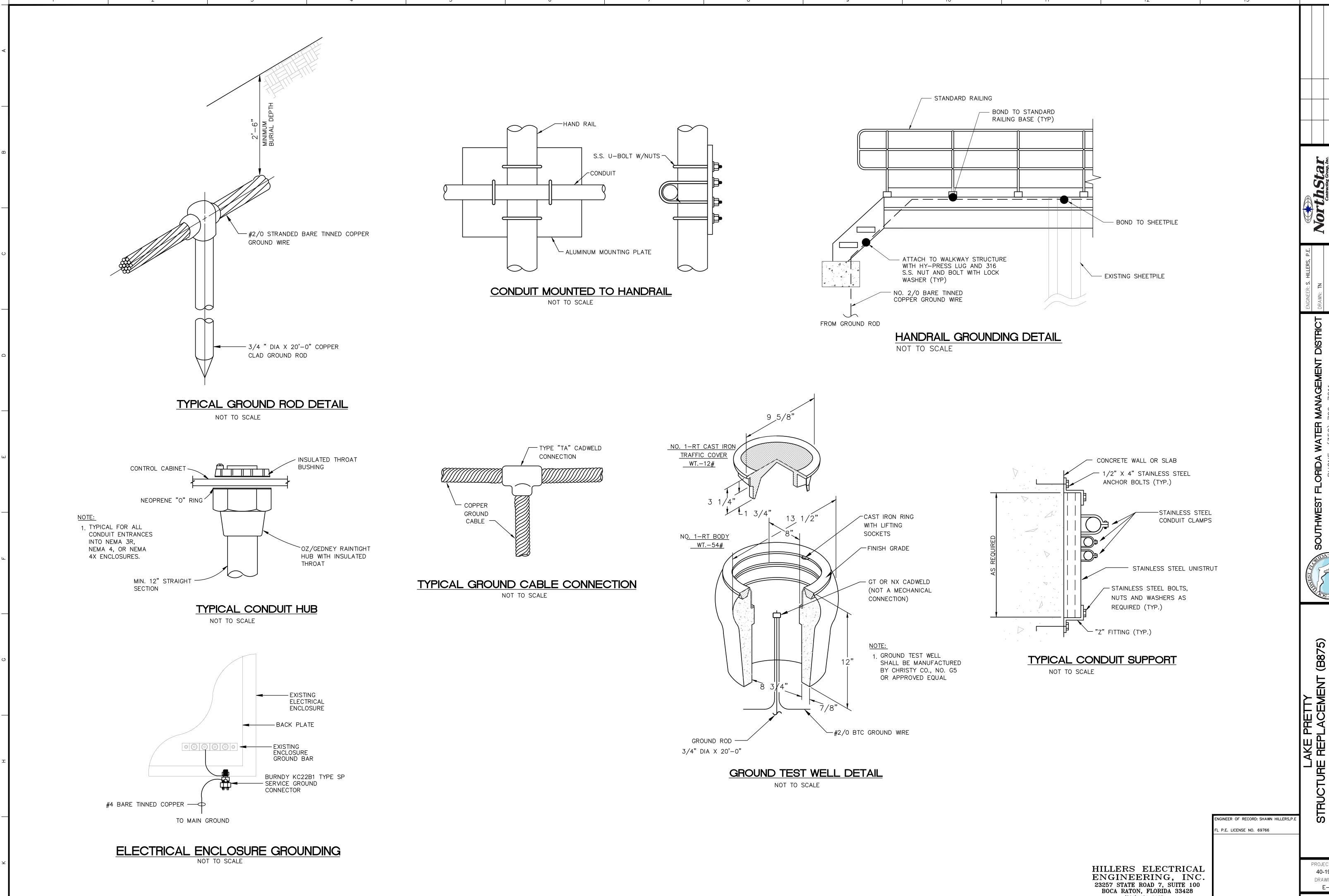
SHEET 14 OF 19

HILLERS ELECTRICAL ENGINEERING, INC. 23257 STATE ROAD 7, SUITE 100 BOCA RATON, FLORIDA 33428

(561) 451-9165
(561) 451-4886 FAX
LICENSE NO: EB 0006877







PROJECT ID NO. 40-19-311 DRAWING NO. E-05

SHEET 17 of 19

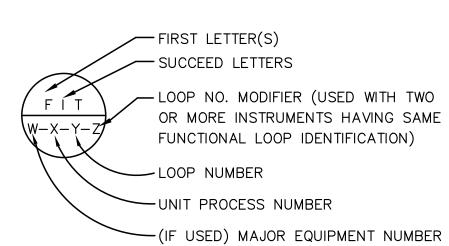
(561) 451-9165 (561) 451-4886 FAX LICENSE NO: EB 0006877

INSTRUMENT, SYSTEMS AND AUTOMATION SOCIETY OF AMERICA TABLE

	FIRST LETTER	र	SUCCEEDING LETTERS				
LETTER	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER		
Α	ANALYSIS (*)		ALARM		USERS CHOICE (*)		
B	BURNER FLAME		USERS CHOICE (*)	USERS CHOICE (*)			
С	CONDUCTIVITY			CONTROL	CLOSE		
D	DENSITY (S.G.)	DIFFERENTIAL					
E	VOLTAGE		PRIMARY ELEMENT				
F	FLOW RATE	RATIO					
G	GAUGE		GLASS	GATE			
Н	HAND (MANUAL)				HIGH		
	CURRENT		INDICATE				
J	POWER	SCAN					
K	TIME OR SCHEDULE			CONTROL STATION			
L	LEVEL		LIGHT (PILOT)		LOW		
М	MOTION				MIDDLE		
N	STROKE		USERS CHOICE (*)	USERS CHOICE (*)	NORMAL		
0	LOOP VEH. DETECTOR		OFFICE		OPEN		
Р	PRESSURE OR VACUUM		POINT (TEST				
Q	QUANTITY OR EVENT		ISOTEDERATION)				
R	RUN		RECORD OR PRINT				
S	SPEED OR FREQUENCY	SAFETY		SWITCH			
Т	TEMPERATURE			TRANSMIT			
U	MULTIVARIABLE (*)		MULTIFUNCTION (*)				
V	VIBRATION			VALVE			
W	WEIGHT OR FORCE		WELL				
Х	UNCLASSIFIED (*)		UNCLASSIFIED (*)	UNCLASSIFIED (*)	UNCLASSIFIED (*)		
Υ	PHOTO CELL		LIGHT SOURCE	RELAY OR COMPUTE (*)			
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL			

(*) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL

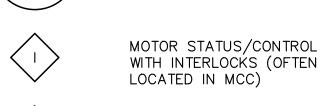
INSTRUMENT IDENTIFICATION

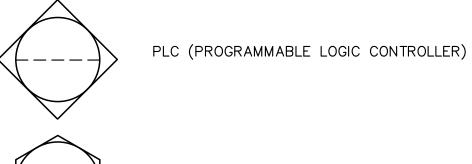


FIELD MOUNTED INSTRUMENT

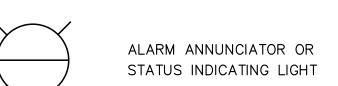
REAR OF PANEL MOUNTED INSTRUMENT

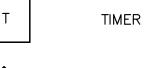
> FRONT OF PANEL MOUNTED INSTRUMENT





TELEMETRY EQUIPMENT





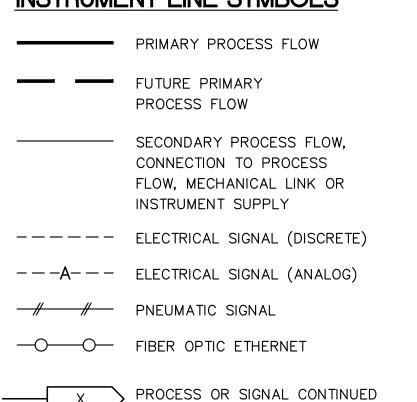
RELAY CONTROL

- NOTES: 1. COMPONENTS AND PANELS SHOWN WITH A DIAMOND (lacktriangle) ARE TO BE PROVIDED UNDER SECTION "INSTRUMENTATION & CONTROLS".
- 2. COMPONENTS AND PANELS SHOWN WITH A DOUBLE ASTERISK (**) ARE FURNISHED UNDER MECHANICAL SPECIFICATION, NOT BY INSTRUMENTATION AND CONTROL.
- 3. COMPONENTS AND PANELS SHOWN WITH A TRIANGLE (lacktriangle) ARE EXISTING.

4. COMPONENTS AND PANELS WHICH HAVE NO SYMBOL ATTACHED TO IT ARE

- 5. INSTRUMENTATION AND CONTROLS COMPONENTS AND PANELS SHOWN WITH A
- SQUARE () ARE FUTURE. 6. DURING SHOP DRAWING PREPARATION, THE CONTRACTOR SHALL FIELD VERIFY ALL THE EXISTING ANALOG AND DISCRETE POINTS FOR DETAILED INTERFACE AND
- INCLUDE IT AS PART OF SUBMITTAL. 7. THE SINGLE INSTRUMENT & CONTROL SUPPLIER SHALL HAVE A U.L. APPROVED
- 8. ALL PROCESS TUBING AND ISOLATION VALVES SHALL BE 1/4"- 316 S.S., UNLESS OTHERWISE NOTED.
- 9. ALL CONTROL PANELS SHALL BE FURNISHED AND INSTALLED WITH A 1P-15A CIRCUIT BREAKER.
- 10. SEE MECHANICAL PLANS AND SPECIFICATIONS FOR EQUIPMENT NUMBERS.

INSTRUMENT LINE SYMBOLS



SOMEWHERE ELSE (X=DRAWING NUMBER)

INSTRUMENT ABBREVIATION

MILLION GALLON

OCA

00

OSC

OSCR

PAFM

PRES

PΗ

RES

REF

RIP

RSP

SSL

ST

STOR

SUS

TURB

MANUAL-OFF-AUTO

OPEN-CLOSE-AUTO

OPEN-STOP-CLOSE

REMOTE I/O PANEL

RAISE LOWER STOP

REMOTE SETPOINT

SURGE ARRESTER

SONIC FLOWMETER

SPEED SWITCH LOW

SUSPENDED SOLIDS

VOLTAGE STARTER

TRANSFER PUMP

TURBIDITY

THERMAL DISPERSION

VARIABLE FREQUENCY DRIVE

SOLID STATE REDUCED

SECONDARY

SLAKER

SETPOINT

STEP

STORAGE

START/STOP

OPEN-CLOSE

ON-OFF

PRESSURE

RESTORE

REFERENCE

MOTOR OPERATED VALVE

OXIDATION REDUCTION POTENTIAL

OPEN-STOP-CLOSE-REMOTE

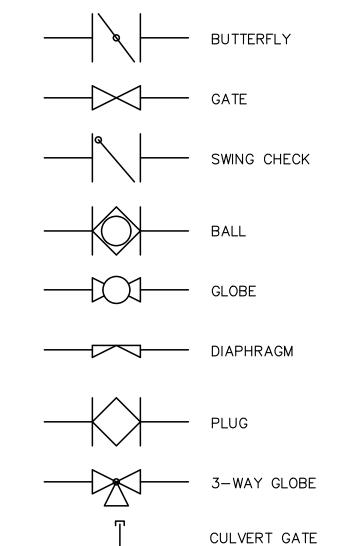
POWER APPLIED FOR MOVEMENT

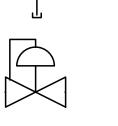
HYDROGEN ION CONCENTRATION

RF (ADMITTANCE) LEVEL MONITOR

ACC AT BFP	ACCELATOR AUTO-TEST BELT FILTER PRESS	PUMPS + COMPRESSORS
CL2 CLW COM	CHLORINE CLEARWELL COMMON CONDUCTIVITY	CENTRIFUGAL PUMP
CP DI, AI DO, AO	CONTROL PANEL DISCRETE INPUT, ANALOG INPUT DISCRETE OUTPUT, ANALOG OUTPUT DISSOLVED OXYGEN	VACUUM PUMP
D.O. DR EFFL EP ES	DISTANCE RELAY EFFLUENT ELECTRICAL PANEL EMERGENCY STOP	COMPRESSOR
ETM FD FIL FIS	ELAPSED TIME METER CHEMICAL FEEDER FILTER FLOW INDICATING SWITCH	METERING PUMP
FOC FRS	FIBER OPTIC CABLE FORWARD-REVERSE-STOP	PROGRESSING CAVITY PUMP
GEN HLO HLOR HOA HOR HOTC H/L HSP IND INFL	GENERATOR HIGH-LOW-OFF HIGH-LOW-OFF-REMOTE HAND-OFF-AUTO HAND-OFF-REMOTE HAND-OFF-TIMER-COMPUTER HIGH/LOW HIGH SERVICE PUMP INDICATION INFLUENT	VERTICAL TURBINE PUN
JP LOR LOS LPU	JOCKEY PUMP LOCAL-OFF-REMOTE LOCK-OUT-STOP	SUMP PUMP
LPO LR MCC MCP ME	LINE PROTECTION UNIT LOCAL—REMOTE MOTOR CONTROL CENTER MAIN CONTROL PANEL MISCELLANEOUS EQUIPMENT	VENTILATION FAN

VALVES + GATES



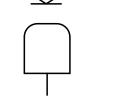


PRESSURE SUSTAINING VALVE



FLAME ARRESTOR

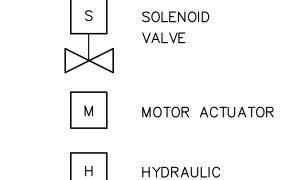
AIR RELEASE VALVE



ANTI-SIPHON

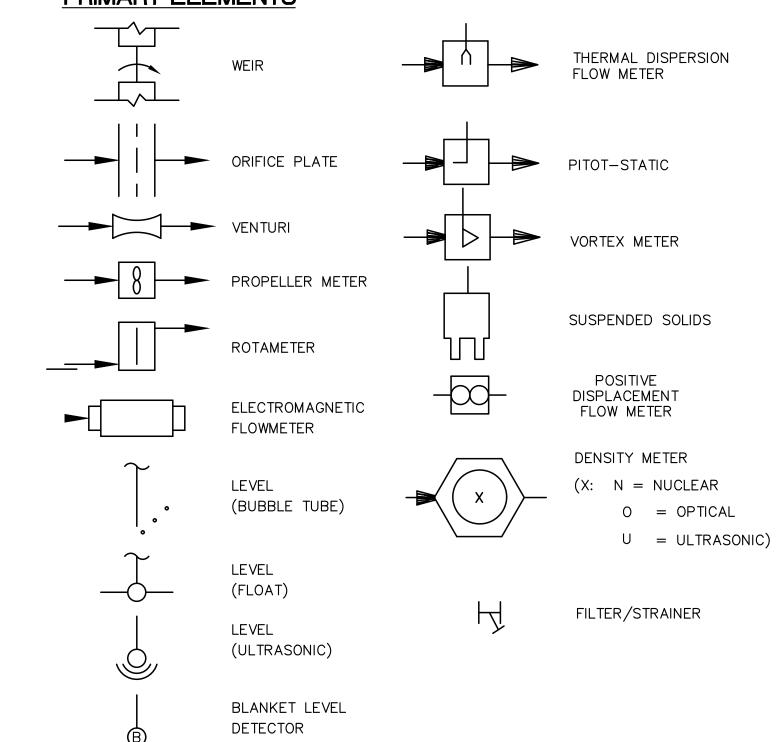


INSTRUMENTATION LEGEND



PNEUMATIC

PRIMARY ELEMENTS



ULTRASONIC

(CLAMP-ON)

ADMITTANCE

HILLERS ELECTRICAL

ENGINEERING, INC.

23257 STATE ROAD 7, SUITE 100

BOCA RATON, FLORIDA 33428

(561) 451-9165 (561) 451-4886 FAX

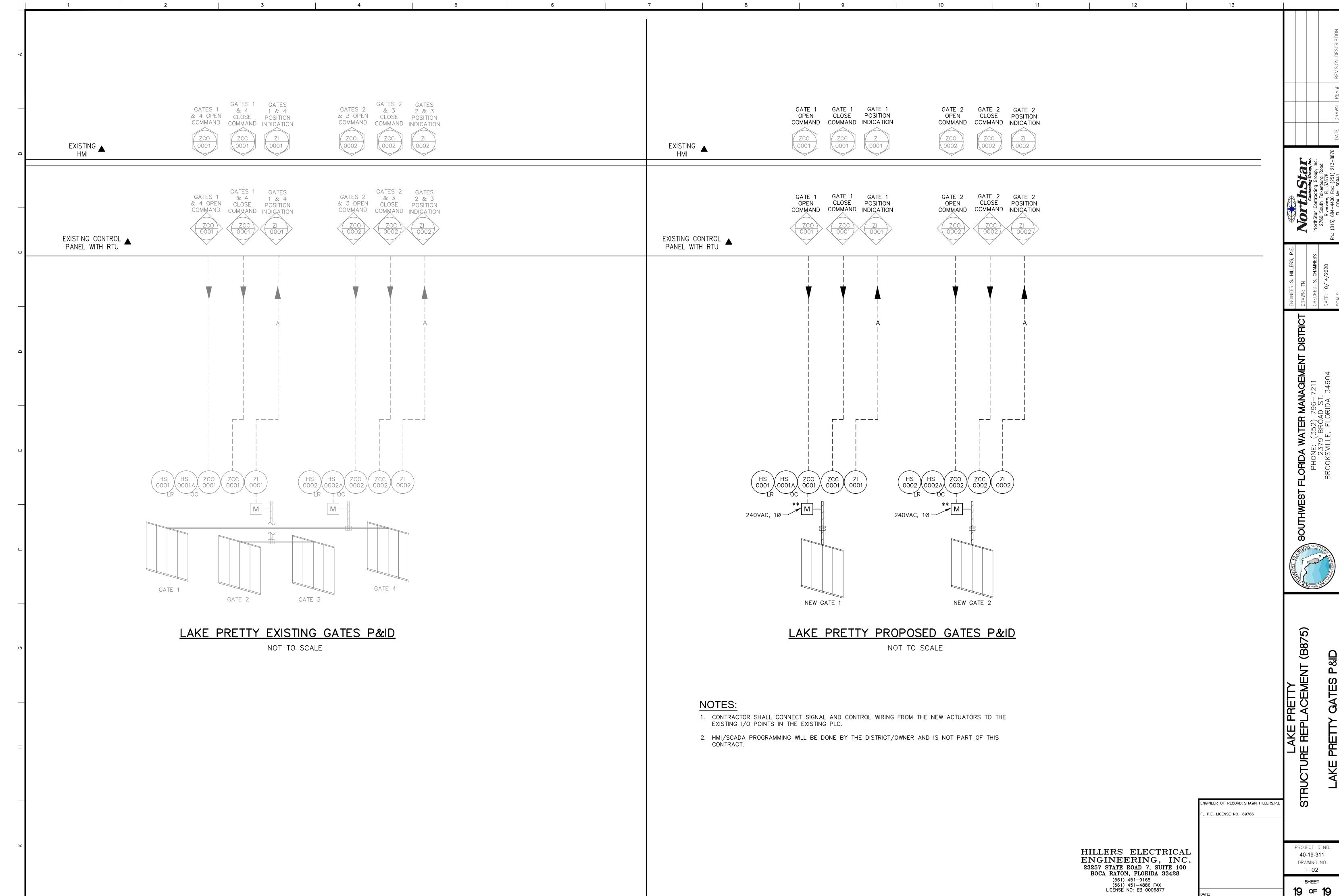
LICÈNSÉ NO: EB 0006877

FLOWMETER

ENGINEER OF RECORD: SHAWN HILLERS,P.E FL P.E. LICENSE NO. 69766

> PROJECT ID NO. 40-19-311 DRAWING NO. I-01

SHEET 18 of 19



19 of 19