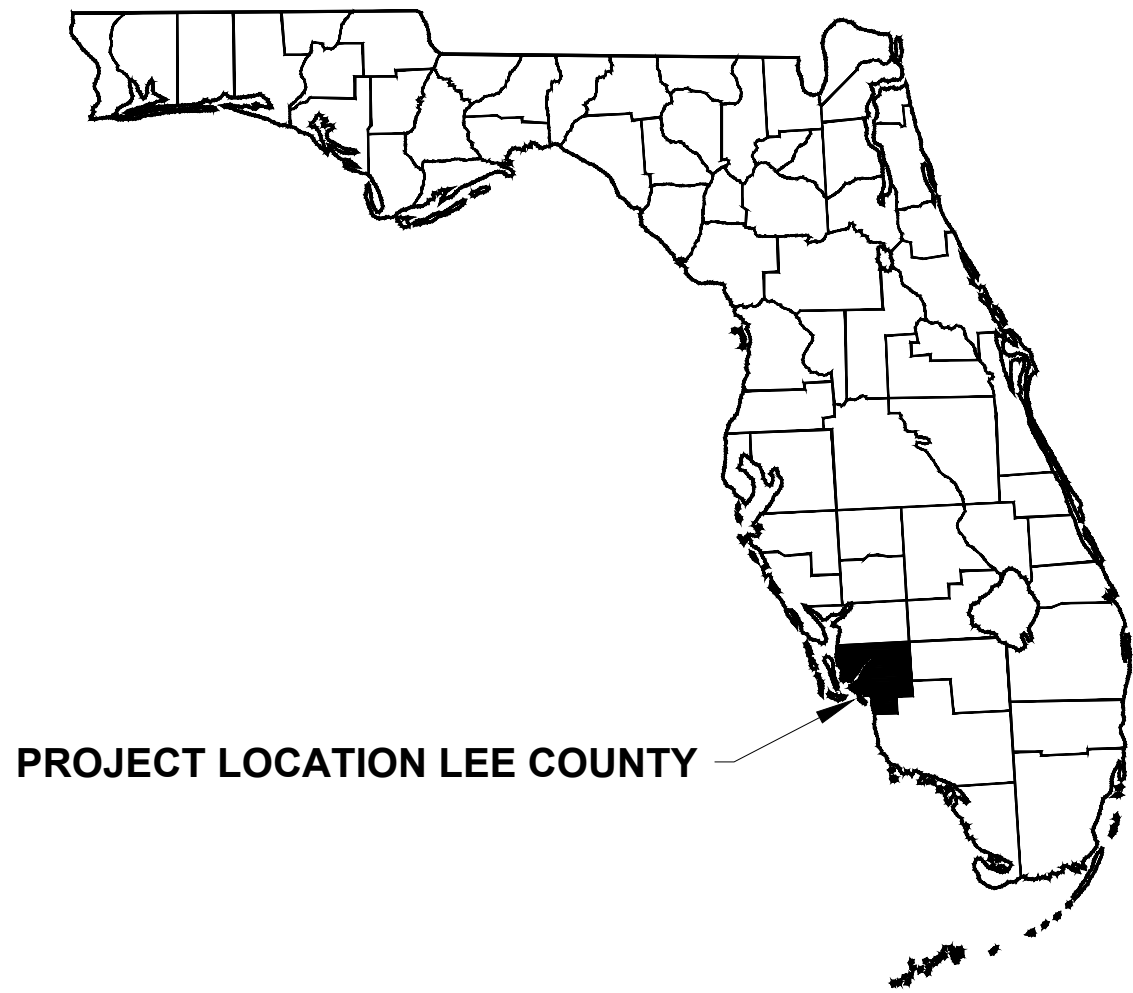


DESIGN CRITERIA PACKAGE FOR LAKES PARK SPLASH PAD

7330 GLADIOLUS DRIVE
FORT MYERS, FL 33908

FOR BIDDING PURPOSES ONLY



PROJECT LOCATION LEE COUNTY

PROJECT TEAM

LANDSCAPE ARCHITECT

KIMLEY HORN AND ASSOCIATES
1800 SECOND STREET, SUITE 900
SARASOTA FLORIDA, 34236
CONTACT: ED DEAN
TEL: (941) 379-7600

AQUATICS ENGINEERING

TANDEM ENGINEERING, LLC.
1800 SECOND STREET, SUITE 900
SARASOTA, FL 34236
CONTACT: RICK TOMMELL, P.E.
TEL: (813) 394-2506

SURVEYOR

BPI SURVEY
724 SHAMROCK BLVD.
VENICE, FL 34293
CONTACT: ERICK BENNETT
TEL: (941) 497-1290

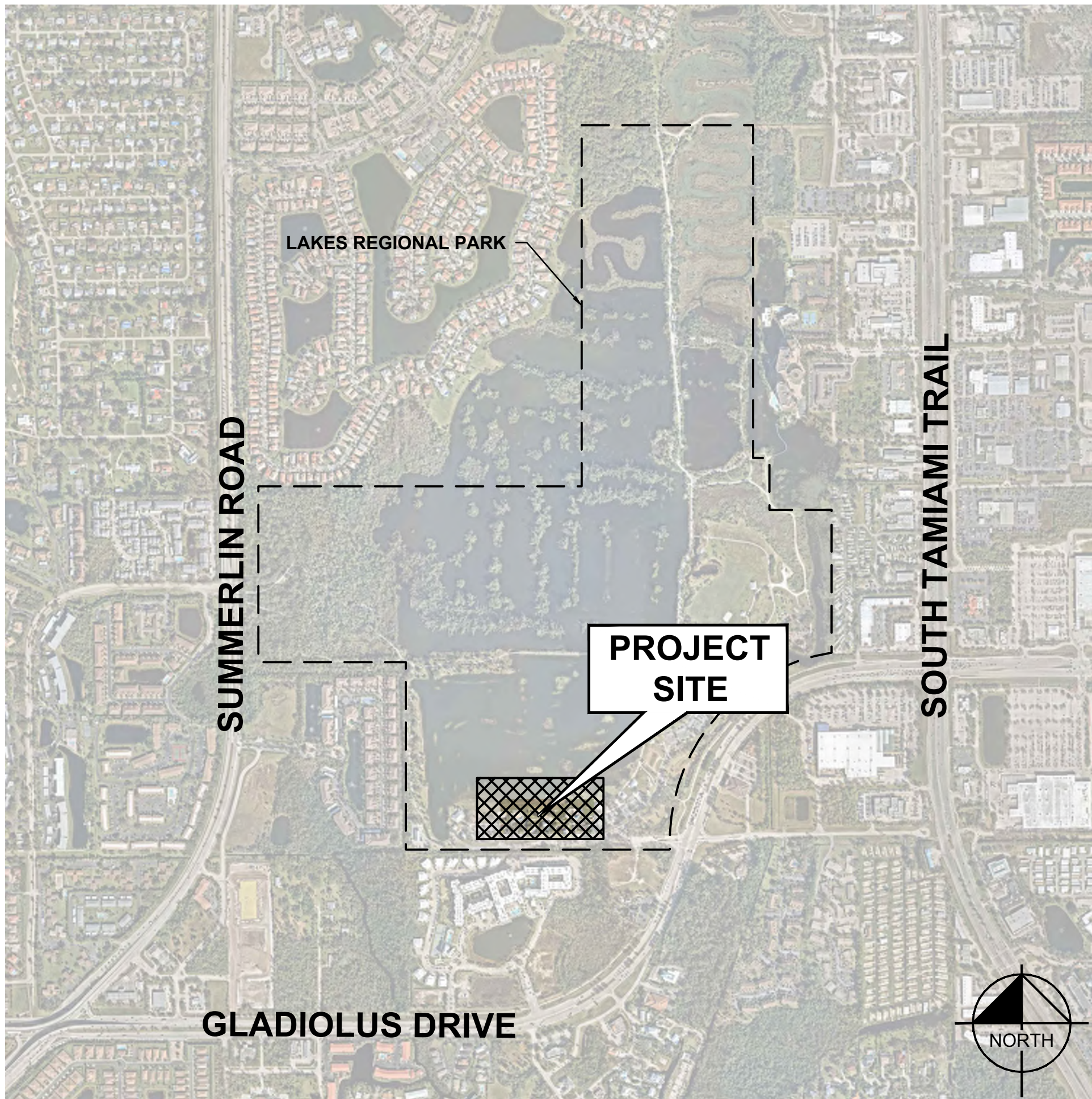
OWNER

LEE COUNTY
3410 PALM BEACH BLVD.,
FORT MYERS, FLORIDA, 33916
CONTACT: BRANDON KACZMAREK
TEL: (239) 910-9559

PROJECT DATA

PARCEL ID #S:

10212224



VICINITY MAP
NTS

JUNE 2024

Kimley»Horn

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1800 SECOND ST, SUITE 900, SARASOTA, FL 34236
PHONE: 941-379-7600
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

THE SITE CONSTRUCTION STAKEOUT SHALL BE PERFORMED UNDER THE DIRECTION OF A FLORIDA REGISTERED SURVEYOR. AUTOCAD FILES WILL BE FURNISHED TO AID IN THE SITE CONSTRUCTION STAKEOUT. ANY DISCREPANCIES FOUND BETWEEN AUTOCAD FILES AND SITE CONSTRUCTION PLANS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR CLARIFICATION PRIOR TO THAT STAKEOUT.

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SUNSHINE STATE ONE CALL OF FLORIDA, INC.

DRAWING INDEX

Sheet Number	Sheet Title
1.0	COVER SHEET
2.0	OVERALL AERIAL SITE PLAN
3.1	IWF WEST EXISTING CONDITIONS PLAN
3.2	IWF EAST EXISTING CONDITIONS PLAN
4.1	IWF WEST DEMOLITION PLAN
4.2	IWF EAST DEMOLITION PLAN
5.1	IWF WEST SITE PLAN
5.2	IWF EAST SITE PLAN
6.0	UTILITY PLAN
7.1	IWF WEST PAVING GRADING AND DRAINAGE PLAN
7.2	IWF EAST PAVING GRADING AND DRAINAGE PLAN
8.1	IWF WEST SHADE STRUCTURES
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INTERACTIVE WATER FEATURE PLANS (IWF) WEST MODIFICATION PLANS

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PE-2.0	GENERAL INFORMATION & NOTES
PE-3.0	IWF WEST SITE PLAN
PE-4.0	IWF WEST PLUMBING PLAN
PE-5.0	IWF WEST LAYOUT PLAN
PE-6.0	IWF WEST DETAILS
PE-7.0	IWF WEST EQUIPMENT
PE-8.0	IWF WEST COLLECTOR TANK & ELECTRICAL DIAGRAM
PE-9.0	IWF WEST BONDING PLAN

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KHA PROJECT 148220028	DATE JUNE 2024	SCALE AS SHOWN	DESIGNED BY -----	DRAWN BY -----	CHECKED BY -----
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DATE: 7/10/2024

COVER SHEET

LAKES PARK SPLASH
PAD
PREPARED FOR
LEE COUNTY

FL

LEE COUNTY

SHEET NUMBER
1.0

DESIGN CRITERIA PACKAGE
NOT FOR CONSTRUCTION

REVISIONS

No.

DATE

BY

Plotted By: Chapman, Abigail - Sheet: Set:Lakes Park Splash Pad - Layout:2.0 OVERALL AERIAL SITE PLAN - July 10, 2024 - 11:49:35am - K:\SAP_URG\148220028 - Lakes park splash pad\CAD\plan sheets\COVER SHEET.dwg
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LAKES PARK SPLASH
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LEE COUNTY

LEE COUNTY

OVERALL AERIAL
SITE PLAN

FL

KHA PROJECT
148220028

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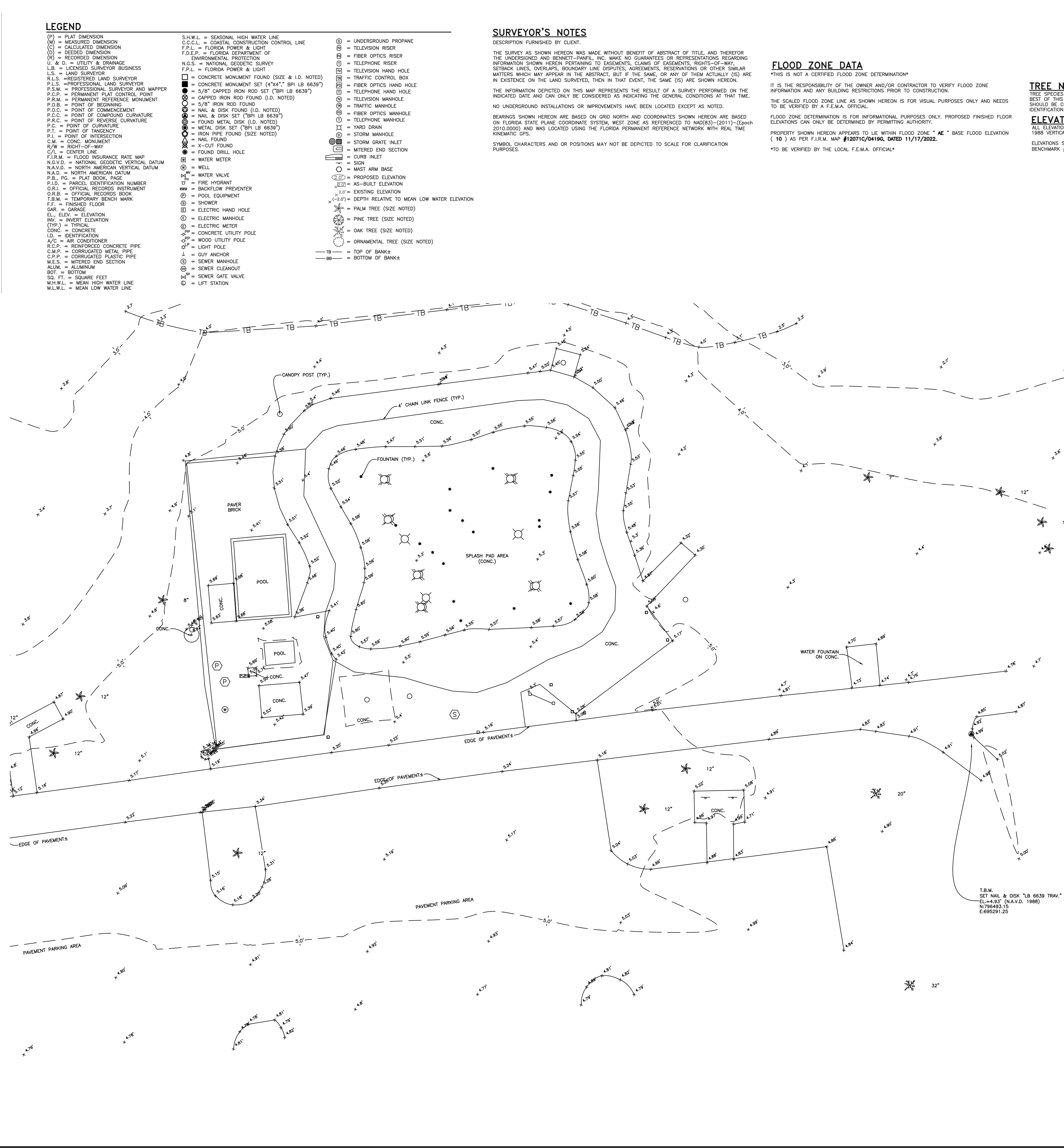
REVISIONS

DATE

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SHEET NUMBER
2.0

Plotted By: Chapman, Abigail - Sheet: Set: Lakes Park Splash Pad - Layout: 3.1 EXISTING CONDITIONS PLAN - WEST SPLASH PAD - July 10, 2024 - 11:49:46am - K:\SAR_URG\148220028 - Lakes Park Splash Pad\CAD\plan sheets\EXISTING CONDITIONS.dwg
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WATER METER
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FIRE HYDRANT
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SHOWER
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OAK TREE (SIZE NOTED)
ORNAMENTAL TREE (SIZE NOTED)
TOP OF BANK±
BOTTOM OF BANK±

SURVEYOR'S NOTES

DESCRIPTION FURNISHED BY CLIENT.

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FLOOD_ZONE_DATA

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TO BE VERIFIED BY THE LOCAL F.E.M.A. OFFICIAL

TREE_NOTE

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NORTH

0

5

10

20

GRAPHIC SCALE IN FEET

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LAKES PARK SPLASH PAD

PREPARED FOR

LEE COUNTY

IWF WEST EXISTING

CONDITIONS PLAN

KHA PROJECT
148220028

DATE
JUNE 2024

SCALE
AS SHOWN

DESIGNED BY

DRAWN BY

CHECKED BY

7/10/2024

DATE

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DESIGN CRITERIA PACKAGE

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DATE

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LEE COUNTY

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Plotted By: Chapman, Abigail - Sheet: Set:Lakes Park Splash Pad - Layout:3.2 EXISTING CONDITIONS PLAN - EAST SPLASH PAD - July 10, 2024 - 11:49:53am - K:\SAR_URG\148220028 - Lakes Park Splash Pad\CAD\plan sheets\EXISTING CONDITIONS.dwg
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● = FOUND DRILL HOLE

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LAKES PARK SPLASH PAD

PREPARED FOR

LEE COUNTY

LEE COUNTY

IWF EAST EXISTING CONDITIONS PLAN

DATE: 7/10/2024

Kimley»Horn

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DRAWN BY

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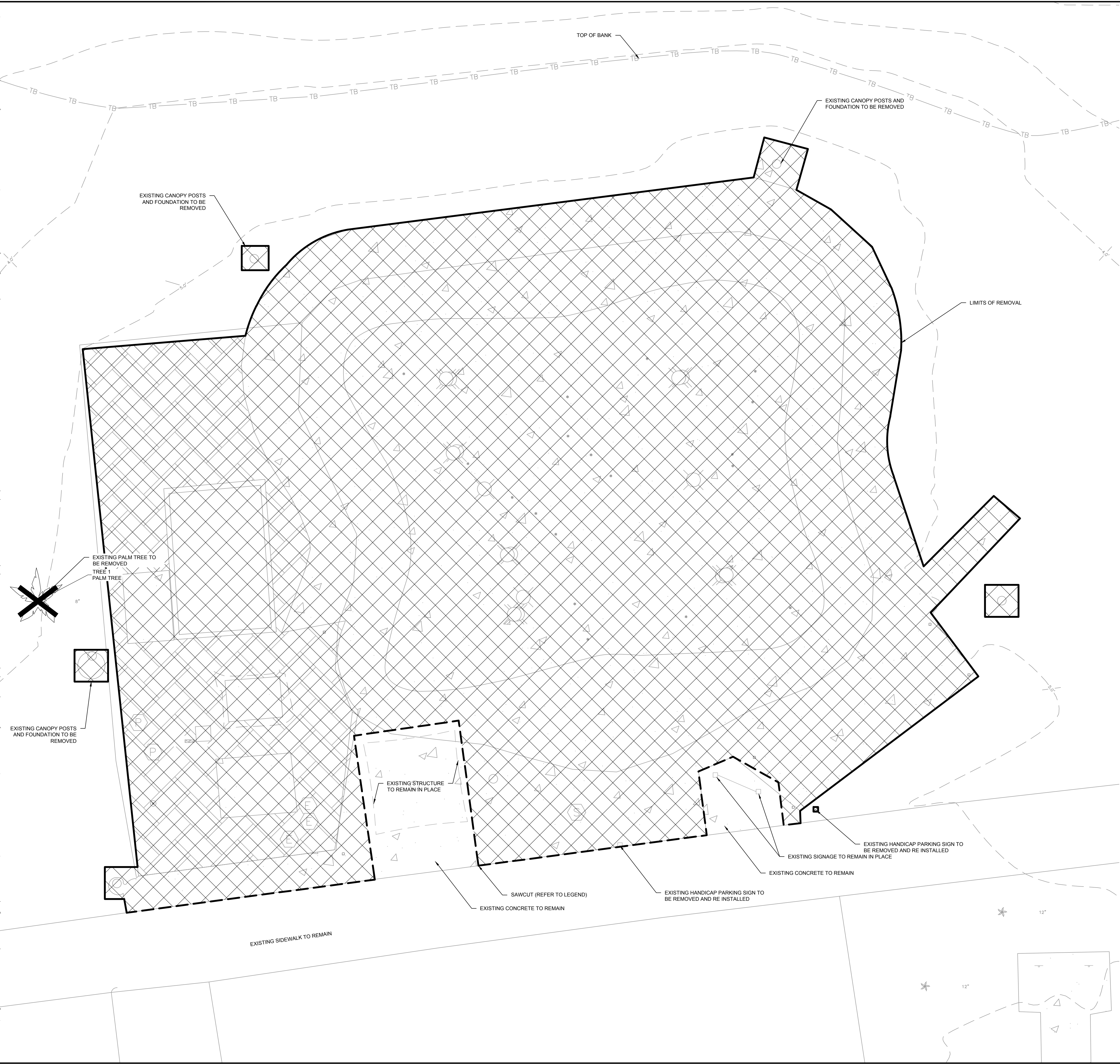
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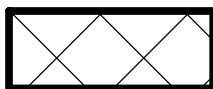
No.

SHEET NUMBER


3.2




LEGEND



LIMITS OF DEMOLITION, ALL FENCING, FOUNDATIONS, PAVEMENT, SPLASH PAD EQUIPMENT, AND PIPING TO BE REMOVED



SAW CUT CONCRETE TO BE REMOVED ADJACENT TO IMPROVEMENTS. PROVIDE SMOOTH, CLEAN, STRAIGHT SAWCUT JOINTS WHEN REMOVING SIDEWALK AND PAVEMENT TO AVOID DAMAGE TO EXISTING INFRASTRUCTURE



EXISTING PALM TREE TO BE REMOVED

DEMOLITION NOTES



1. ALL ITEMS IDENTIFIED FOR DEMOLITION SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR IN A LEGAL MANNER IN ACCORDANCE WITH LOCAL AND STATE CODE.
2. THIS DEMOLITION PLAN IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION AND FOR THE DEMOLITION, REMOVAL, OR RELOCATION OF ITEMS IN CONFLICT WITH THE PROPOSED CONSTRUCTION.
3. CONTRACTOR TO FIELD LOCATE AND COORDINATE CAPPING AND RE-CONNECTION OF UTILITY LINES TO SPLASH PAD. IT IS THE INTENT OF THIS PLAN THAT UTILITY SERVICES SERVING THE EXISTING SPLASH PAD ARE TO BE EXTENDED AND RE-CONNECTED TO NEW EQUIPMENT.
4. CONTRACTOR TO PROTECT EXISTING UTILITIES WHICH ARE TO REMAIN OR WHICH SERVE OTHER FACILITIES LOCATED IN THE VICINITY OF THE CONSTRUCTION ACTIVITIES TO ENSURE THAT THESE FACILITIES ARE NOT DAMAGED BY THE PROPOSED WORK. SHOULD SUCH FACILITIES BE DAMAGED DURING DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL REPAIR AT THEIR EXPENSE THE EXISTING FACILITIES TO THE SATISFACTION OF THE UTILITY PROVIDER AND LEE COUNTY.
5. CONTRACTOR TO PROTECT ANY AND ALL STATE AND LOCAL BENCHMARKS OR MONUMENTS WITHIN THE PROJECT LIMITS THROUGHOUT THE DURATION OF PROJECT CONSTRUCTION. SHOULD A BENCHMARK OR MONUMENT BE DAMAGED OR MOVED, THE CONTRACTOR SHALL RETAIN A PROFESSIONAL LAND SURVEYOR TO RESET SAID BENCHMARK OR MONUMENT IN ACCORDANCE WITH STATE AND LOCAL CRITERIA.
6. ANY REQUIRED BACKFILLING IS TO BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.

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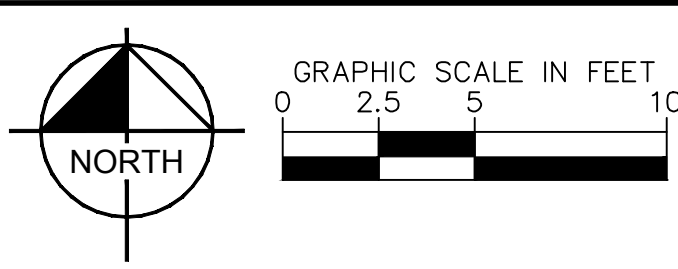
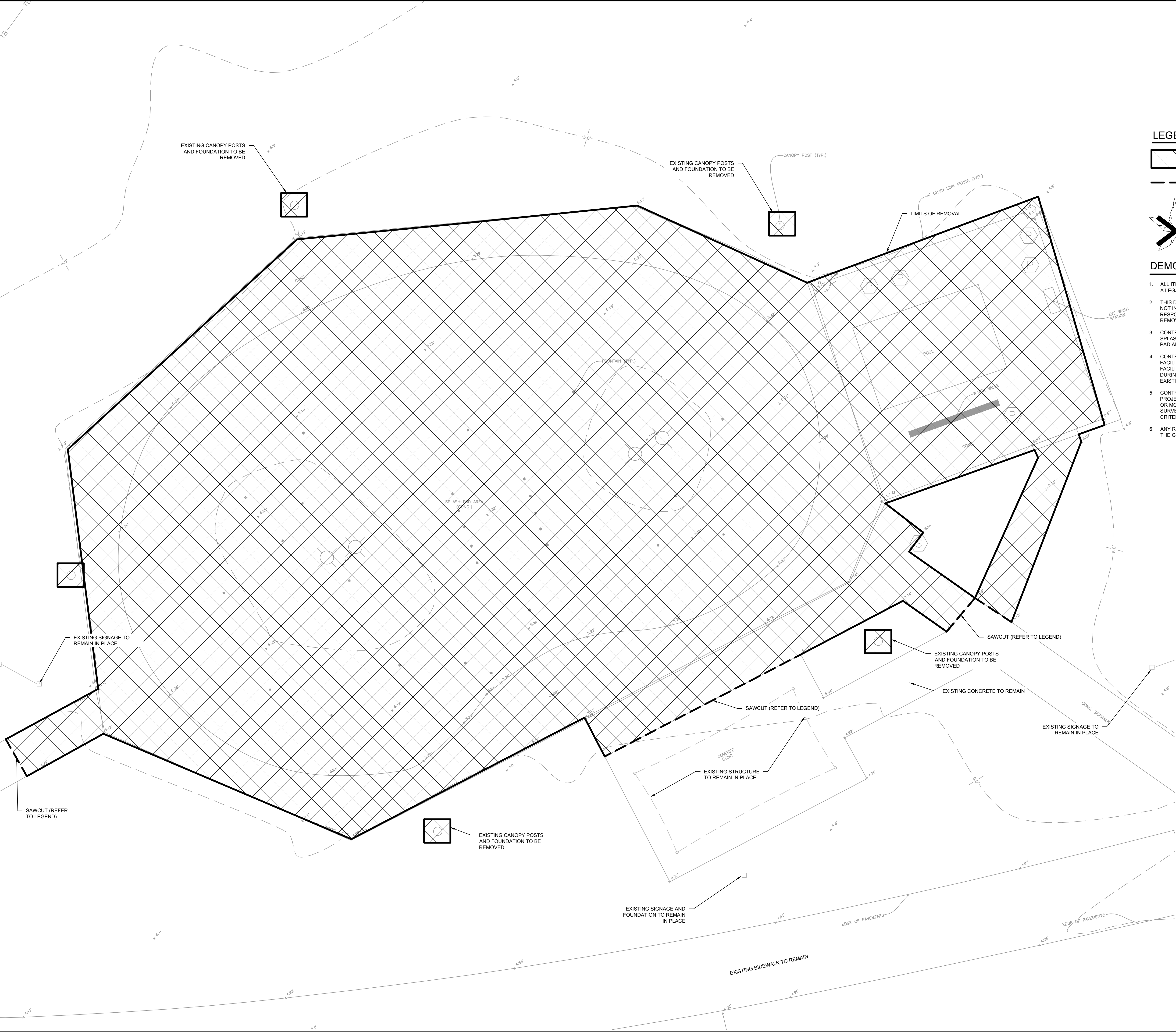
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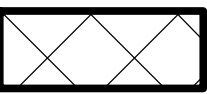


Plotted By: Chapman, Abigail - Sheet: Set: Lakes Park Splash Pad - Layout: 4.2 DEMOLITION PLAN - EAST SPLASH PAD - July 10, 2024 11:50:10am - K:\SAR-URG\148220028 - Lakes Park Splash Pad\AD\Drawings\DEMOLITION PLAN.dwg

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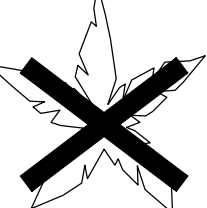
LEGEND



LIMITS OF REMOVAL - ALL FENCING, FOUNDATIONS, PAVEMENT, SPLASH PAD EQUIPMENT, AND PIPING TO BE REMOVED



SAW CUT CONCRETE TO BE REMOVED ADJACENT TO IMPROVEMENTS. PROVIDE SMOOTH, CLEAN, STRAIGHT SAWCUT JOINTS WHEN REMOVING SIDEWALK AND PAVEMENT TO AVOID DAMAGE TO EXISTING INFRASTRUCTURE



EXISTING PALM TREE TO BE REMOVED

DEMOLITION NOTES

- ALL ITEMS IDENTIFIED FOR DEMOLITION SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR IN A LEGAL MANNER IN ACCORDANCE WITH LOCAL AND STATE CODE.
- THIS DEMOLITION PLAN IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION AND FOR THE DEMOLITION, REMOVAL, OR RELOCATION OF ITEMS IN CONFLICT WITH THE PROPOSED CONSTRUCTION.
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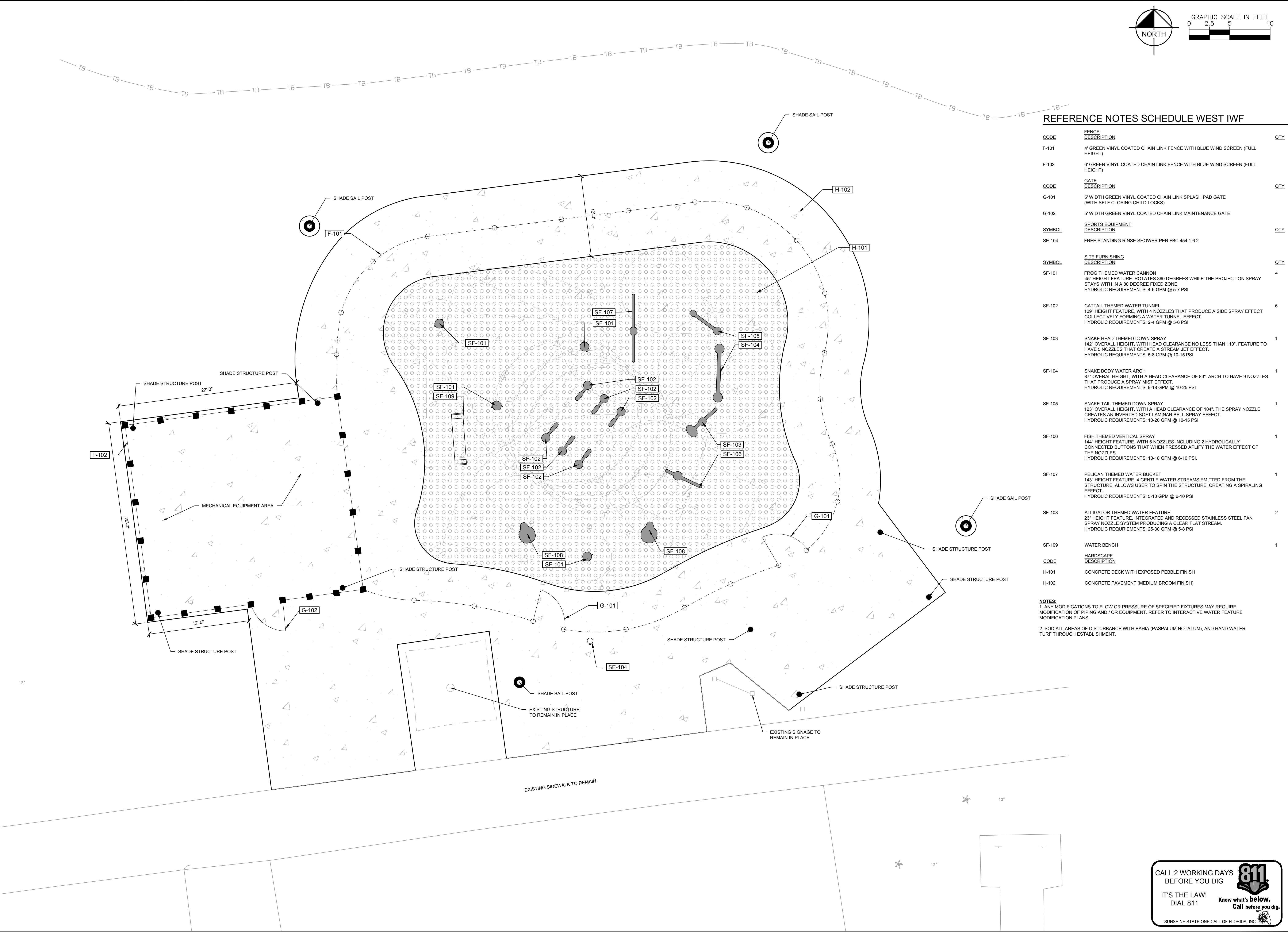
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SUNSHINE STATE ONE CALL OF FLORIDA, INC.

LAKES PARK SPLASH PAD PREPARED FOR LEE COUNTY	IWF EAST DEMOLITION PLAN	KHA PROJECT 148220028 DATE JUNE 2024 SCALE AS SHOWN DESIGNED BY KHA DRAWN BY KHA CHECKED BY EMD DATE 7/10/2024	Kimley»Horn © 2024 KIMLEY-HORN AND ASSOCIATES, INC. 1800 2ND STREET, SUITE 900, SARASOTA, FL 34236 PHONE: 941-379-7600 WWW.KIMLEY-HORN.COM REGISTRY NO. 35106	DESIGN CRITERIA PACKAGE	NOT FOR CONSTRUCTION	No.	REVISIONS	DATE	BY

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REFERENCE NOTES SCHEDULE WEST IWF

CODE	FENCE DESCRIPTION	QTY
F-101	4' GREEN VINYL COATED CHAIN LINK FENCE WITH BLUE WIND SCREEN (FULL HEIGHT)	
F-102	6' GREEN VINYL COATED CHAIN LINK FENCE WITH BLUE WIND SCREEN (FULL HEIGHT)	
CODE	GATE DESCRIPTION	QTY
G-101	5' WIDTH GREEN VINYL COATED CHAIN LINK SPLASH PAD GATE (WITH SELF CLOSING CHILD LOCKS)	
G-102	5' WIDTH GREEN VINYL COATED CHAIN LINK MAINTENANCE GATE	
SYMBOL	SPORTS EQUIPMENT DESCRIPTION	QTY
SE-104	FREE STANDING RINSE SHOWER PER FBC 454.1.6.2	
SYMBOL	SITE FURNISHING DESCRIPTION	QTY
SF-101	FROG THEMED WATER CANNON 45" HEIGHT FEATURE. ROTATES 360 DEGREES WHILE THE PROJECTION SPRAY STAYS WITH IN A 90 DEGREE FIXED ZONE. HYDROLIC REQUIREMENTS: 4-6 GPM @ 5-7 PSI	4
SF-102	CATTAIL THEMED WATER TUNNEL 129" HEIGHT FEATURE, WITH 4 NOZZLES THAT PRODUCE A SIDE SPRAY EFFECT COLLECTIVELY FORMING A WATER TUNNEL EFFECT. HYDROLIC REQUIREMENTS: 2-4 GPM @ 5-6 PSI	6
SF-103	SNAKE HEAD THEMED DOWN SPRAY 142" OVERALL HEIGHT, WITH HEAD CLEARANCE NO LESS THAN 110". FEATURE TO HAVE 5 NOZZLES THAT CREATE A STREAM JET EFFECT. HYDROLIC REQUIREMENTS: 5-8 GPM @ 10-15 PSI	1
SF-104	SNAKE BODY WATER ARCH 87" OVERALL HEIGHT, WITH A HEAD CLEARANCE OF 83". ARCH TO HAVE 9 NOZZLES THAT PRODUCE A SPRAY MIST EFFECT. HYDROLIC REQUIREMENTS: 9-18 GPM @ 10-25 PSI	1
SF-105	SNAKE TAIL THEMED DOWN SPRAY 123" OVERALL HEIGHT, WITH A HEAD CLEARANCE OF 104". THE SPRAY NOZZLE CREATES AN INVERTED SOFT LAMINAR BELL SPRAY EFFECT. HYDROLIC REQUIREMENTS: 10-20 GPM @ 10-15 PSI	1
SF-106	FISH THEMED VERTICAL SPRAY 144" HEIGHT FEATURE, WITH 6 NOZZLES INCLUDING 2 HYDROLICALLY CONNECTED BUTTONS THAT WHEN PRESSED APLIFY THE WATER EFFECT OF THE NOZZLES. HYDROLIC REQUIREMENTS: 10-18 GPM @ 6-10 PSI.	1
SF-107	PELICAN THEMED WATER BUCKET 143" HEIGHT FEATURE. 4 GENTLE WATER STREAMS EMITTED FROM THE STRUCTURE, ALLOWS USER TO SPIN THE STRUCTURE, CREATING A SPIRALING EFFECT. HYDROLIC REQUIREMENTS: 5-10 GPM @ 6-10 PSI	1
SF-108	ALLIGATOR THEMED WATER FEATURE 23" HEIGHT FEATURE, INTEGRATED AND RECESSED STAINLESS STEEL FAN SPRAY NOZZLE SYSTEM PRODUCING A CLEAR FLAT STREAM. HYDROLIC REQUIREMENTS: 25-30 GPM @ 5-8 PSI	2
SF-109	WATER BENCH	1
CODE	HARDSCAPE DESCRIPTION	
H-101	CONCRETE DECK WITH EXPOSED PEBBLE FINISH	
H-102	CONCRETE PAVEMENT (MEDIUM BROOM FINISH)	

NOTES:
1. ANY MODIFICATIONS TO FLOW OR PRESSURE OF SPECIFIED FIXTURES MAY REQUIRE MODIFICATION OF PIPING AND / OR EQUIPMENT. REFER TO INTERACTIVE WATER FEATURE MODIFICATION PLANS.
2. SOD ALL AREAS OF DISTURBANCE WITH BAHIA (PASPALUM NOTATUM), AND HAND WATER TURF THROUGH ESTABLISHMENT.

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1800 2ND STREET, SUITE 900, SARASOTA, FL 34236
PHONE: 941-379-7600
WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

KHA PROJECT
148220028

DATE
JUNE 2024

SCALE
AS SHOWN

DESIGNED BY
DRAWN BY

CHECKED BY

7/10/2024

DATE

LAKES PARK SPLASH
PAD
PREPARED FOR
LEE COUNTY

LEE COUNTY

FL

5.1

SHEET NUMBER

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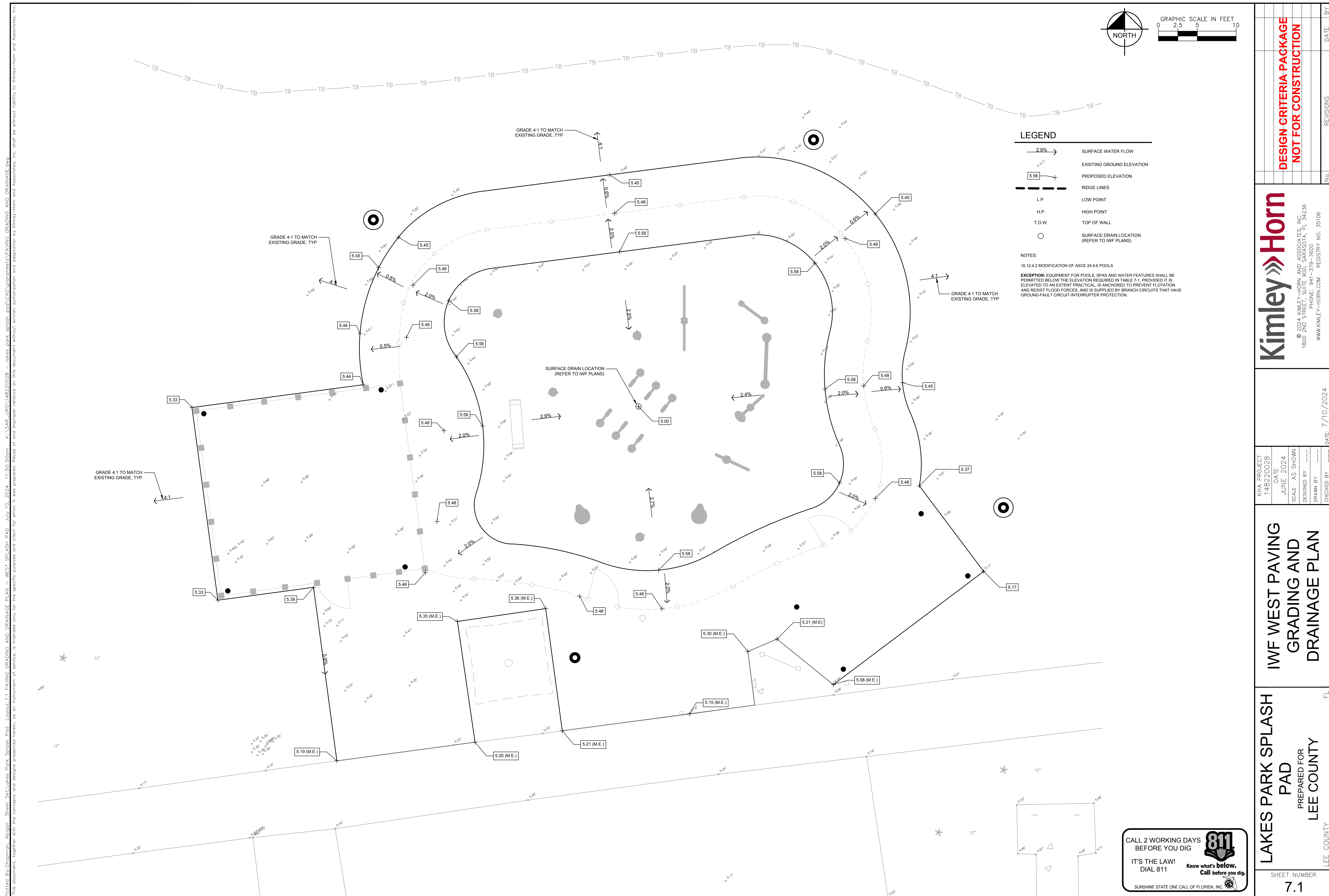
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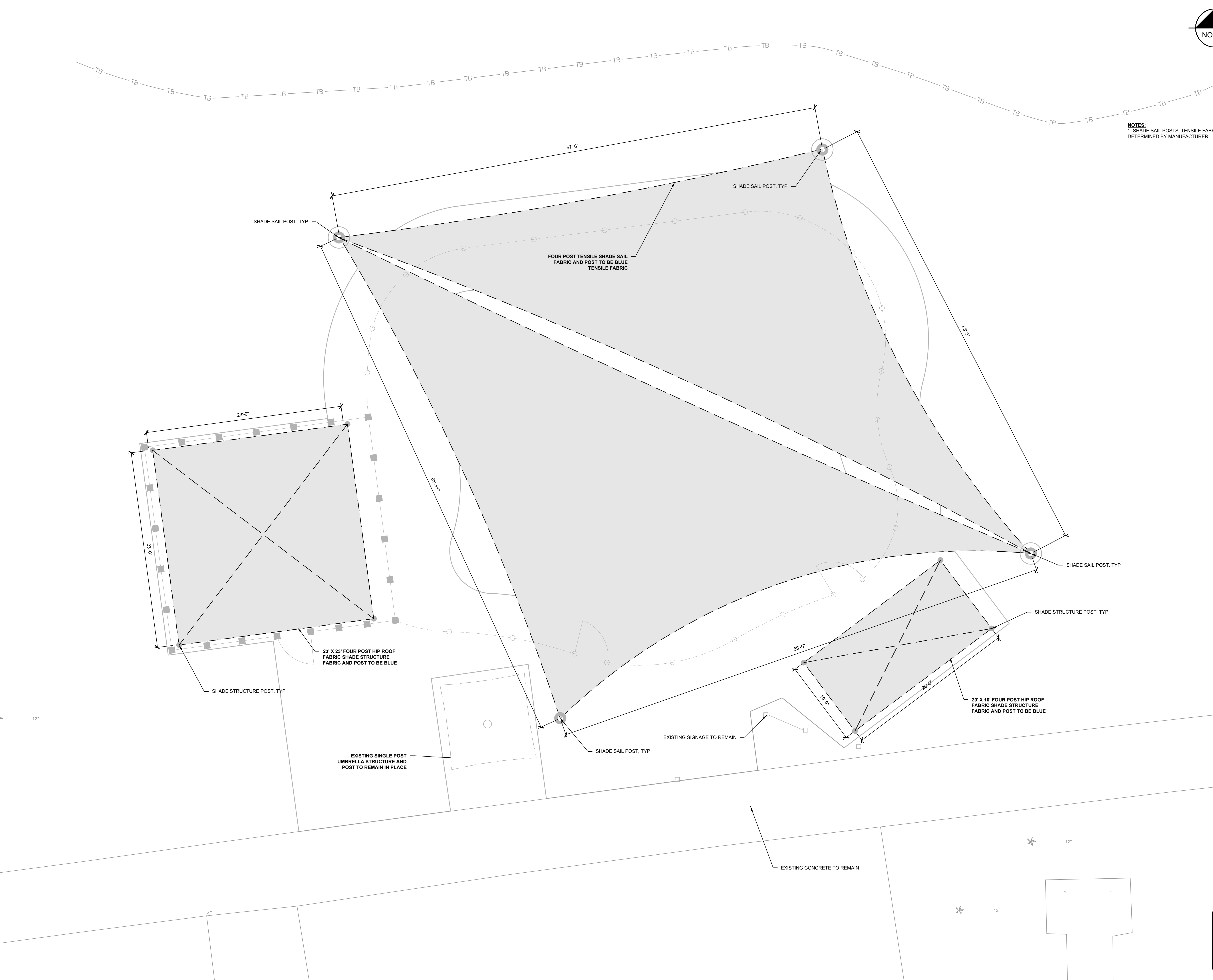
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NOTES:
1. SHADE SAIL POSTS, TENSILE FABRIC SIZES, AND STRUCTURAL FOUNDATIONS TO BE DETERMINED BY MANUFACTURER.

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LAKES PARK SPLASH PAD
PREPARED FOR
LEE COUNTY

IWF WEST SHADE
STRUCTURES

KHA PROJECT
148220028

DATE
JUNE 2024

SCALE AS SHOWN

DESIGNED BY

DRAWN BY

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7/10/2024

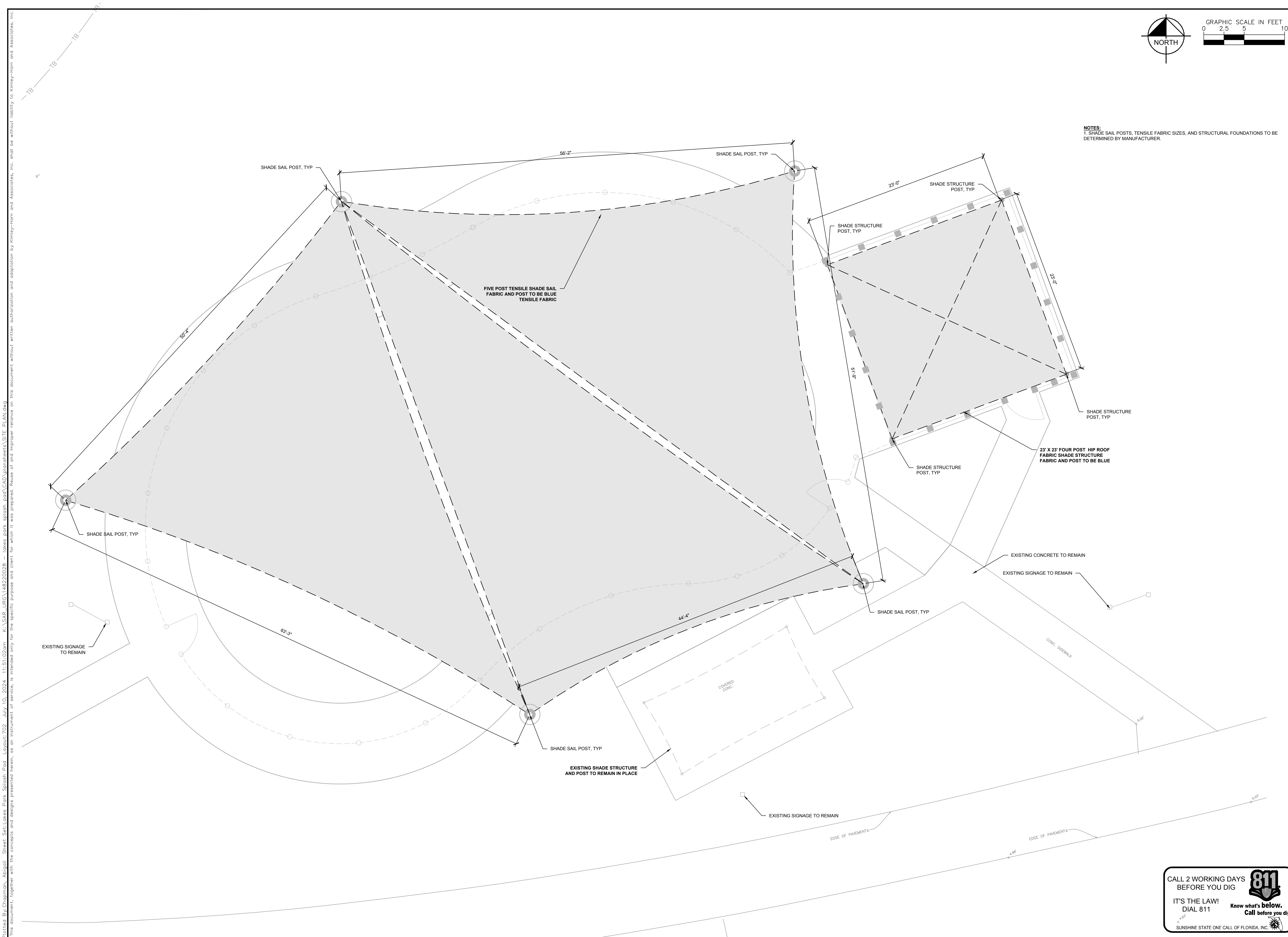
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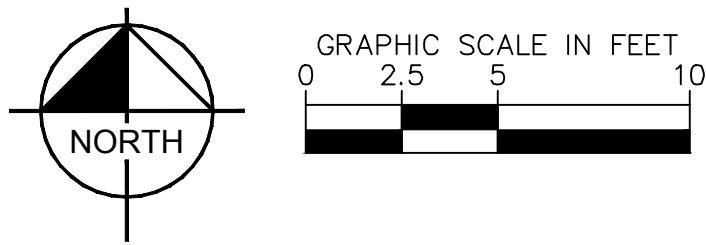
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KHA PROJECT 148220028	DATE JUNE 2024	SCALE AS SHOWN
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DRAWN BY	---	---
CHECKED BY	---	---

IWF EAST SHADE STRUCTURES

**LAKES PARK SPLASH
PAD
PREPARED FOR
LEE COUNTY**

SHEET NUMBER
8.2

LEE COUNTY FL

No.	REVISIONS
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LAKES PARK

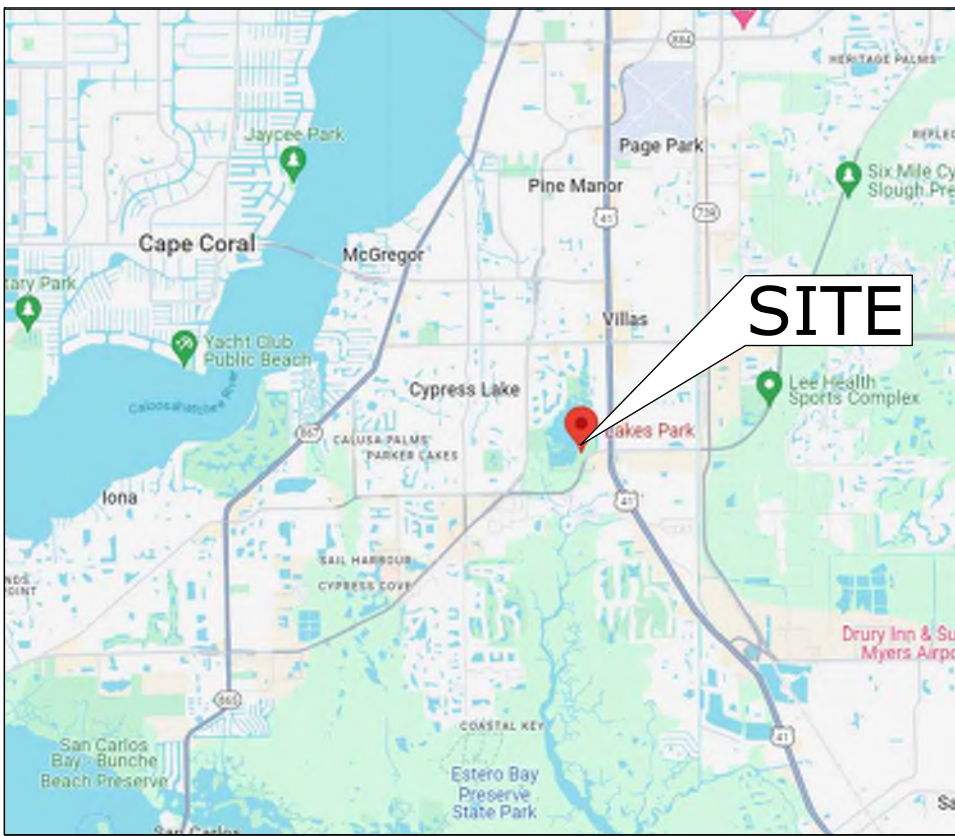
INTERACTIVE WATER FEATURE (IWF) WEST

MODIFICATION PLANS

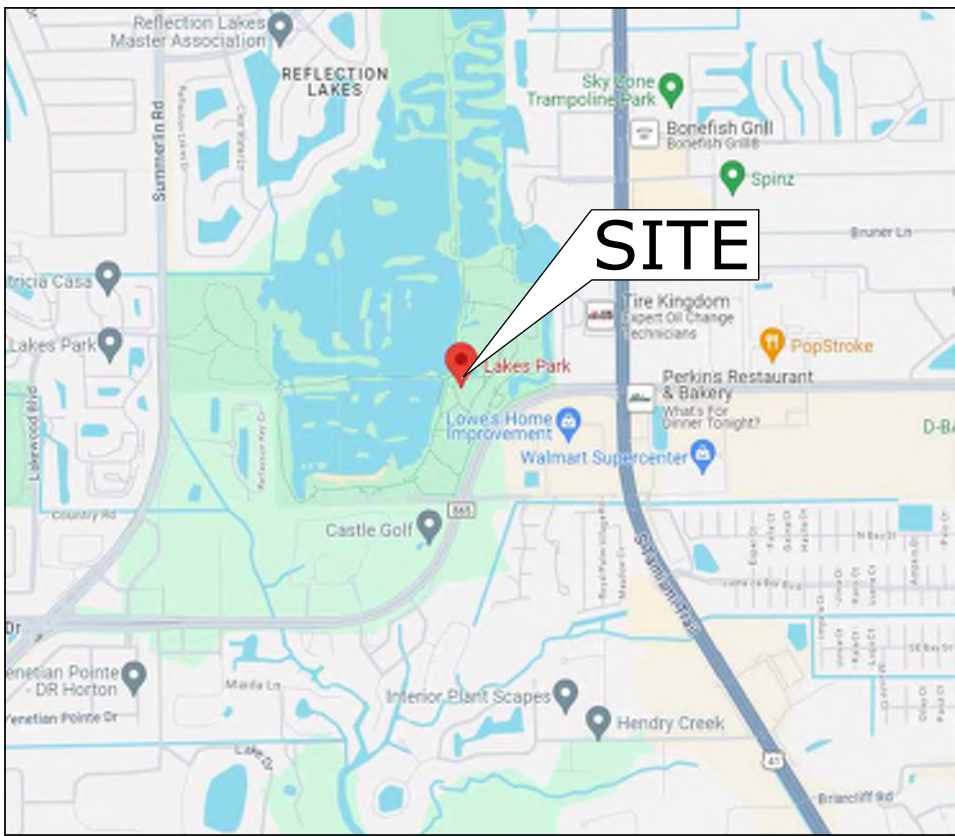
733 GLADIOLUS DR.
FT. MYERS, FL. 33908
LEE COUNTY

SHEET INDEX

PE-1.0	COVER SHEET
PE-2.0	GENERAL INFORMATION & NOTES
PE-3.0	IWF WEST SITE PLAN
PE-4.0	IWF WEST PLUMBING PLAN
PE-5.0	IWF WEST LAYOUT PLAN
PE-6.0	IWF WEST DETAILS
PE-7.0	IWF WEST EQUIPMENT
PE-8.0	IWF WEST COLLECTOR TANK & ELECTRICAL DIAGRAM
PE-9.0	IWF WEST BONDING PLAN



▪ VICINITY MAP

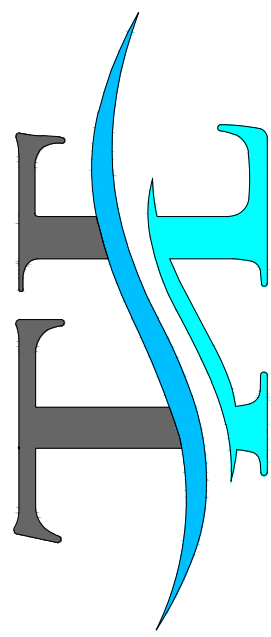


▪ LOCATION MAP

FOR:



No.	REVISIONS	DATE	BY
1	xxx	xxx	xx



TANDEM ENGINEERING, LLC.
CERTIFICATE OF AUTHORIZATION 36329
2509 NEWBORN DRIVE
CLEARWATER, FL 33761
rtommell@gmail.com
(813) 394-2506

RICHARD M. TOMMELL, P.E.

FLORIDA LICENSE NUMBER
#61859

KIMLEY HORN
LAKES PARK
LEE COUNTY, FL.
INTERACTIVE WATER FEATURE (IWF)
WEST MODIFICATION PLANS
COVER SHEET

PROJECT: 2024027	DATE: 07-10-2024	SCALE: AS SHOWN
DESIGNED BY: RT	DRAWN BY: RT	CHECKED BY: RT

SHEET NUMBER
PE-1.0

SPECIFICATIONS FOR CONSTRUCTION

1 GENERAL NOTES

- 1.1 ALL WORK, MATERIALS AND THEIR ASSEMBLIES SHALL CONFORM TO THE STANDARDS, REGULATIONS AND CODES CURRENTLY IN FORCE FOR ALL TRADES, AISC, ACNOR, EN, OR IBC.
- 1.2 THESE DESIGN DOCUMENTS DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. WHEN APPLICABLE, THE CONTRACTORS SHALL SUPERVISE AND DIRECT ALL THE WORKAND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES AND SEQUENCES AS PER STANDARD BEST PRACTICES.
- 1.3 DO NOT SCALE DRAWINGS.
- 1.4 USE ONLY THOSE MARKED "ISSUED FOR CONSTRUCTION".
- 1.5 THE CONTRACTOR SHALL REVIEW THESE DESIGN DOCUMENTS AND REPORT ANY CONFLICTS OR OMISSIONS TO THE VORTEX IMMEDIATELY.
- 1.6 TEMPORARY SUPPORTS, WHICH WILL BE REQUIRED DURING CONSTRUCTION, SUCH AS FORMWORK, BRACING, SHORING, ETC. ARE NOT SHOWN ON THESE DRAWINGS AND ARE THERESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL SAFE CONSTRUCTION PROCEDURES ARE FOLLOWED.
- 1.7 ALL SEEFLOW COMPONENTS TO BE SNUG-TIGHT ONLY. USING POWER TOOLS OR TIGHTEN HARDWARE FULLY-TENSIONED CAN PRODUCE CRACKING ON THE PLASTIC.

2 EXCAVATION

- 2.1 ANY SHORING OR TEMPORARY SHORING NOT SHOWN ON DRAWINGS WILL BE EXECUTED, IN A SAFE MANNER, BY THE GENERAL CONTRACTOR.
- 2.2 IT IS THE RESPONSIBILITY OF OTHERS TO VERIFY THE EXISTENCE OF ANY UNDERGROUND SERVICES ETC.
- 2.3 IF AVAILABLE, REFER TO SOIL REPORT FOR BACKFILL REQUIREMENTS. ALL BACKFILL (FOR SLAB ON GRADE, ETC.) MUST BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF AQUALIFIED PROFESSIONAL. USE ONLY FREE DRAINING, GRANULAR, MINERAL, INERT AND NON- REACTIVE FILL.
- 3 FOUNDATIONS
- 3.1 REFER TO SOIL REPORT FOR RECOMMENDATIONS.
- 3.2 ALL FOOTINGS SHALL REST ON A HOMOGENEOUS LAYER OF UNDISTURBED SOIL OR ENGINEERED BACKFILL WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 100KPA (2000 PSF) AND MAXIMUM DIFFERENTIAL SETTLEMENT OF 0.75" (19mm). ALL ORGANIC MATERIAL SHALL BE REMOVED.
- 3.3 IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE SOIL AT ALL FOOTING LOCATIONS BE VERIFIED BY A QUALIFIED SOILS EXPERT BEFORE POURING FOOTINGS TO ENSUREFOOTINGS REST ON APPROPRIATE STRATA.

4 CONCRETE

- 4.1 ALL CONCRETE MATERIALS, PROCEDURES, TOLERANCES & WORKMANSHIP SHALL CONFORM TO THE LATEST ISSUES OF ACI-318 AND ACI 317 OR ACNOR CAN3-A23.1 & A23.2, DEPENDING ON PROJECT LOCATION.
- 4.2 CONCRETE THAT HAS BEEN IN THE TRUCKS LONGER THAN 2 HOURS SHALL BE REJECTED. DO NOT ADD WATER TO THE CONCRETE IN THE TRUCKS OR ON THE SITE UNDER ANY CIRCUMSTANCES.
- 4.3 USE MAXIMUM 76mm (3") SLUMP, 19 MM (3/4") AGGREGATE, UNLESS OTHERWISE-NOTED. USE 5-7% AIR ENTRAINMENT FOR CONCRETE EXPOSED TO WEATHER ONLY.
- 4.4 ALL GROUT SHALL BE NON-SHRINK TYPE WITH A MINIMUM 28 DAYS STRENGTH OF 5000 PSI (35.0 MPa). USE 1" (25mm) GROUT UNDER ALL STEEL COLUMN BASE PLATES.
- 4.5 CONCRETE STRENGTH @ 28 DAYS TO BE:
- 4.5.1FOUNDATIONS (FOOTINGS): 25.0 MPa (3500 PSI), UNLESS OTHERWISENOTED.
- 4.5.2INTERIOR SLAB ON GRADE: 25.0 MPa (3500 PSI), UNLESS OTHERWISE NOTED.
- 4.5.3 EXTERIOR SLAB ON GRADE: 28.0 MPa (4000 PSI), UNLESS OTHERWISE NOTED.
- 4.6 MINIMAL RE-BAR COVER:
- 4.6.1CONCRETE POURED ON-GRADE = 76mm (3") COVER
- 4.6.2CONCRETE POURED INTO FORMWORK BUT EXPOSED TO SOIL AND WEATHER FOR REBAR 10M (#3) AND UNDER = 50mm (2") COVER

5 REINFORCING STEEL

- 5.1 DEPENDING ON PROJECT LOCATION, ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 (BARS 15m (#4) TO BE GRADE 60 WITH SUPPLEMENTARY REQUIREMENTS ON S1. BARS SMALLER THAN 15M (#4), TO BE GRADE 40); OR TO ACNOR GRADE G30.12 [FY = 400MPa (60,000 PSI), UNLESS OTHERWISE NOTED].
- 5.2 USE CONCRETE, PLASTIC OR STEEL SUPPORT BARS, AS PER ACI (MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES). THE RE-BAR PLACER MUST REMAIN ON-SITE DURING POURS TO VERIFY CORRECT POSITIONING OF RE-BARS. SLANT UPPER REINFORCING STEEL IN LINE WITH THE SLOPE OF THE SLAB, IF APPLICABLE.
- 5.3 BARS SHALL BE SECURELY WIRED PER LATEST EDITION OF CRSI (RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS).
- 5.4 ALL REINFORCING STEEL IS TO BE KEPT CLEAN AND FREE OF MUD, SNOW, ICE, AND ANY CONTAMINANTS.
- 5.5 VERTICAL AND CONTINUOUS REBAR SHALL BE LAPPED TO DEVELOP FULL TENSILE CAPACITY OF THE BAR. FOR 15m (#4) BARS MINIMUM LAP OF 610mm (24").

6 EXTERIOR / INTERIOR SLAB ON GRADE

- 6.1 FOLLOW THE GEOTECHNICAL EXPERT RECOMMENDATIONS FOR PREPARATION OF SOIL BEFORE POURING THE CONCRETE. ALL GRANULAR MATERIAL SHALL BE MOISTENED IMMEDIATELY BEFORE POURING THE CONCRETE. WATER AS NEEDED. DO NOT USE A VAPOR BARRIER.
- 6.2 NO TRUCKS ARE PERMITTED ON THE CONSTRUCTION SITE (OF THE SLAB) AFTER THE FINAL COMPACTION, EITHER BEFORE OR DURING, THE POUR.
- 6.3 SLAB TO BE MINIMUM 6 INCHES THICK, REINFORCED WITH #4 @ 12" C/C REBAR PLACED IN BOTH DIRECTIONS AT MID-HEIGHT OF THE SLAB, UNLESS OTHERWISE NOTED ON PLANS.
- 6.4 REFER TO CONCRETE SECTION FOR MINIMUM COMPRESSIVE STRENGTH AND AIR-ENTRAINMENT REQUIREMENTS.
- 6.5 FINISHING WILL BE MEDIUM BROOM.
- 6.6 CONTROL JOINTS (SAW-CUTS) TO BE LOCATED IN EACH DIRECTION, AT REGULAR INTERVALS, WITH A MAXIMUM DISTANCE OF 3m (10'). SHALL BE MINIMUM 3mm (1/8") WIDE AND SHALL PENETRATE THE SLAB TO A MINIMUM DEPTH OF 1/3 OF THE THICKNESS OF THE SLAB. CONTROL JOINTS SHOULD BE DONE AS SOON AS POSSIBLE WITHOUT DAMAGING THE CONCRETE,BUT NO LATER THAN 18 HOURS AFTER POURING.
- 6.7 WHEN POSSIBLE AND TO AVOID SHRINKAGE CRACKING, HUMIDITY SHALL BE MAINTAINED FOR 7 DAYS DURING THE CURING PERIOD OF THE SLAB. WATER AND USE POLYETHYLENE CLOTH OR BAG. THE CONCRETE MUST DRY UNIFORMLY.

7 CONCRETE WORK IN HOT WEATHER (MINIMUM REQUIREMENTS)

- 7.1 CONCRETE SHALL HAVE A MINIMUM TEMPERATURE OF 20 DEGREES CELSIUS AND A MAXIMUM TEMPERATURE OF 25 DEGREES CELSIUS WHILE POURING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THESE REQUIREMENTS ARE SATISFIED. ANY CONCRETE THAT DOES NOT CONFORM MUST BE REJECTED.
- 7.2 THE SURFACE OF POURED CONCRETE SHALL BE PROTECTED BY MEANS OF SUITABLE COVERINGS AND INSULATION (TO BE DETERMINED BY TEMPERATURE) DURING THE CURING PROCESS.
- 7.3 GENERAL REQUIREMENTS FOR HOT WEATHER CONCRETE WORK SHALL BE AS PER ACI 305R-99; OR AS PER LOCAL CODE REQUIREMENTS.

8 PIPING

- 8.1 ANY REQUIRED BACKFLOW DEVICE, WATER METER OR PRESSURE REGULATOR ON THE CITY WATER MAIN IS NOT PROVIDED
- 8.2 DISTANCE BETWEEN THE WQMS (PUMPS, MANIFOLD, ETC.) AND THE WATER CONTAINMENT SYSTEM (WCS) SHALL NOT EXCEED 40 FEET.
- 8.3 MAKEUP WATER LINE PRESSURE SHOULD NOT EXCEED 50 PSI AND/OR LOCAL CODE.
- 8.4 ALL PIPE LINES TO FEATURES TO HAVE 1% MINIMUM RECOMMENDED SLOPE FOR PROPER WINTERIZATION.
- 8.5 ALL LINE SIZING (FEATURE CONNECTION TABLE) ASSUMES A MAXIMUM DISTANCE OF 100 FEET BETWEEN THE WATER DISTRIBUTION MANIFOLD AND THE FURTHEST PLAY PRODUCT. DISTANCES ABOVE 100 FEET MAY REQUIRE AN INCREASE IN LINE SIZING. PLEASE CONTACT VORTEX.
- 8.6 THE LINE DIAMETER FROM DRAIN SHALL BE 6" BASED ON THE MAXIMUM APPROXIMATE FLOW AT 1% SLOPE. FINAL LOCATION OF DRAIN AND LINE ROUTING ARE TO BE DETERMINED BY OTHERS.
- 8.7 PRESSURE LINES ARE RECOMMENDED TO BE SCHEDULE 80 PVC OR PEX, AND NON-PRESSURE LINES TO BE SCHEDULE 40, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 8.8 DRAINAGE LINES ARE RECOMMENDED TO BE SDR 35, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 8.9 CHEMICAL FEED LINES SHALL NOT EXCEED 30 FEET.

- 8.10PIPING SHOULD BE INSPECTED AFTER TRANSPORTATION FOR CUTS, SCRATCHES, GOUGES OR SPLITS; DAMAGED SECTIONS MUST BE DISCARDED OR CUT OUT.
- 8.11PIPE SHALL BE INSTALLED BELOW THE FROST LEVEL NOT LESS THAN 12" (ASTM F-645) UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 8.12PIPE INSTALLATION MINIMUM COVER SHOULD BE EVALUATED ACCORDING TO ASTM D-2774, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 8.13SPECIAL CONSIDERATIONS SHOULD BE TAKEN FOR THERMAL CONDITIONS, EXPANSION AND CONTRACTIONS DUE TO TEMPERATURE SHOULD BE EVALUATED BEFORE THE INSTALLATION BY THE CONTRACTOR.

9 ELECTRICAL

- 9.1 WIRING FROM THE CONTROLLER TO EACH ACTIVATOR SHALL BE #22 AWG. A TOTAL OF FIVE (5) CONDUCTORS PER ACTIVATOR.
- 9.2 ALL CONNECTIONS TO THE CONTROLLER AND OTHER ELECTRICAL PANEL SHALL BE PERFORMED USING AN APPROVED NEMA 4X CONNECTOR.
- 9.3 WIRE FROM MAIN POWER TO PANEL TO BE DETERMINED BY OTHERS RESPECTING THE LOCAL CODE.
- 9.4 MAINTAIN A MINIMUM CLEARANCE ZONE OF 36" (1m) FRONT OF ELECTRICAL PANEL, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 9.5 USE #6 BARE COPPER BONDING WIRE BETWEEN FEATURES TO A GROUNDING ROD IN THE SOIL, TIED INTO REBAR GRID, OR AS PER LOCAL CODE. BONDING REQUIRED FOR NEW EQUIPMENT. EXISTING BONDING FOR OLDER FEATURES.
- 9.6 AS PER ELECTRICAL CONSTRUCTION AND SAFETY CODES: CONTROLLER AND ANY OTHER ELECTRICAL ENCLOSURES MUST BE HARD-WIRED TO A GROUND FAULT CIRCUIT INTERRUPTER (GFCI) FROM THE INPUT POWER SOURCE.
- 9.7 ALL ELECTRICAL WORK SHOULD BE PERFORMED BY A LICENCE ELECTRICIAN IN ACCORDANCE TO LOCAL ELECTRICAL CONSTRUCTION AND SAFETY CODES.

No.	REVISIONS	DATE	BY
xxx		xxx	xx



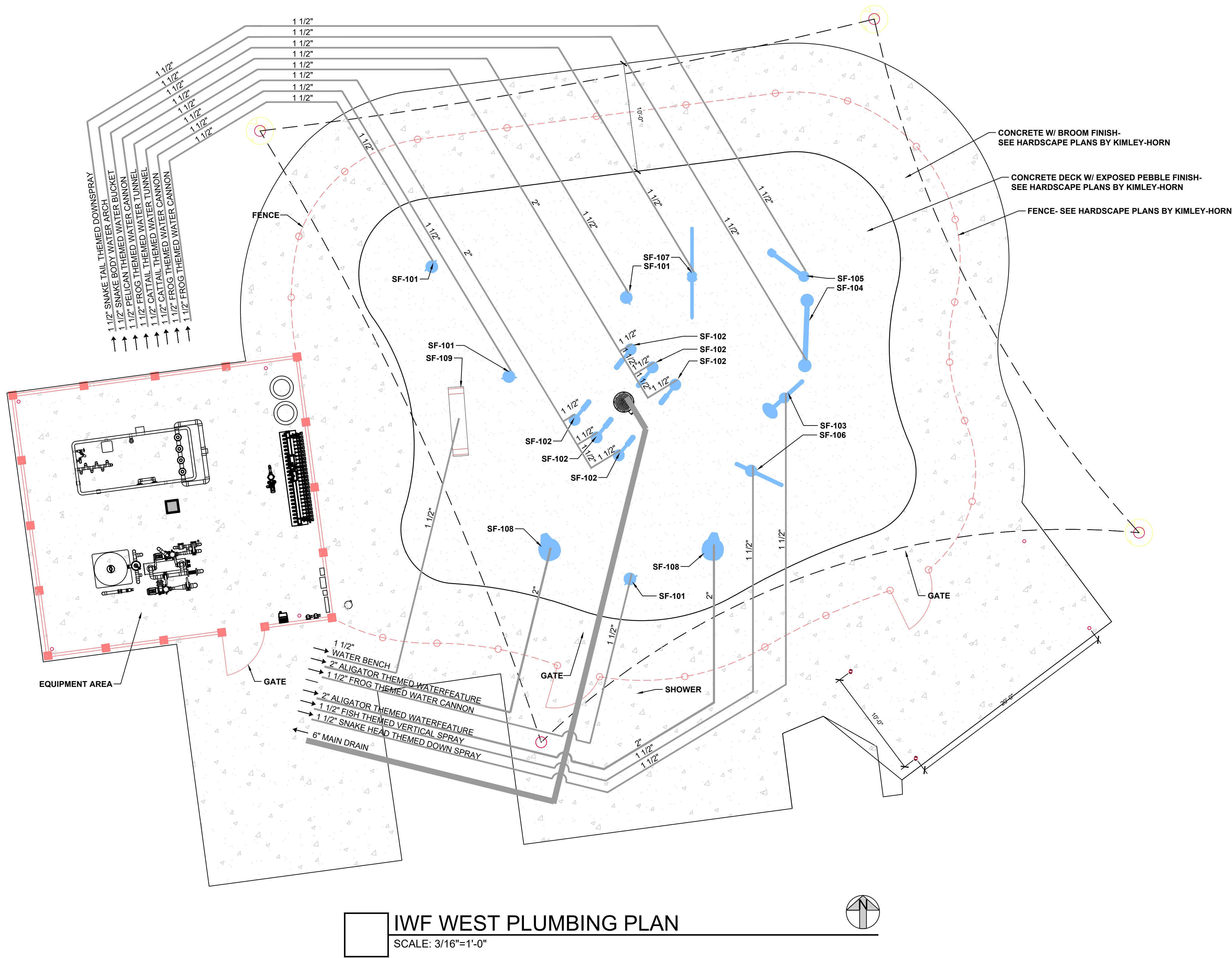
RICHARD M. TOMMELL, P.E.

FLORIDA LICENSE NUMBER
#61859

KIMLEY HORN
LAKES PARK
LEE COUNTY, FL.
INTERACTIVE WATER FEATURE (WVF)
WEST MODIFICATION PLANS
GENERAL INFORMATION & NOTES

PROJECT: 2024027	DATE: 07-10-2024	SCALE:AS SHOWN
	DESIGNED BY: RT	
	DRAWN BY: RT	
	CHECKED BY: RT	

SHEET NUMBER
PE-2.0



IWF WEST PLUMBING PLAN
SCALE: 3/16"=1'-0"

FEATURE LEGEND

NUMBER	COUNT	NAME	PIPE SIZE	FLOW RATE	TOTAL FLOW RATE
SF-101	4	FROG THEMED WATER CANNON VOR 0209	1 1/2" DIA.	5 GPM	20 GPM
SF-102	6	CATTAIL THEMED WATER TUNNEL VOR 0514	1 1/2" DIA.	5 GPM	30 GPM
SF-103	1	SNAKE HEAD THEMED DOWNSPRAY VOR 7214	1 1/2" DIA.	7 GPM	7 GPM
SF-104	1	SNAKE BODY WATER ARCH VOR 0515	1 1/2" DIA.	14 GPM	14 GPM
SF-105	1	SNAKE TAIL THEMED DOWNSPRAY VOR 7395	1 1/2" DIA.	15 GPM	15 GPM
SF-106	1	FISH THEMED VERTICAL SPRAY VOR 7687	1 1/2" DIA.	18 GPM	18 GPM
SF-107	1	PELICAN THEMED WATER BUCKET VOR 7688	1 1/2" DIA.	8 GPM	8 GPM
SF-108	2	ALIGATOR THEMED WATERFEATURE VOR 1102	2" DIA.	26 GPM	54 GPM
SF-109	1	WATER BENCH TBD	1 1/2" DIA.	TBD	TBD
TOTAL FEATURES: 18			TOTAL GPM 166 GPM		

PIPING MAXIMUM FLOW VELOCITY CHART (GPM)

*Flow Rates Shown Provided By Manufacturer (Confirm)

NOTES:

1. TIE ALL STEEL TOGETHER (WALL & FOOTER).
2. LAP ALL STEEL 27" MIN.
3. ALL CONCRETE TO BE MIN 3,500 PSI.
4. ALL REBAR TO BE GRADE 40.

PIPE DIAMETER	GRAVITY (3.0 FPS)	SUCTION (6.0 FPS)	PRESSURE (10.0 FPS)
1 1/2" DIA.	17	33	55
2" DIA.	29	59	98
2 1/2" DIA.	44	90	147
3" DIA.	66	132	220
4" DIA.	117	235	392
6" DIA.	264	529	881

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rtommell@gmail.com
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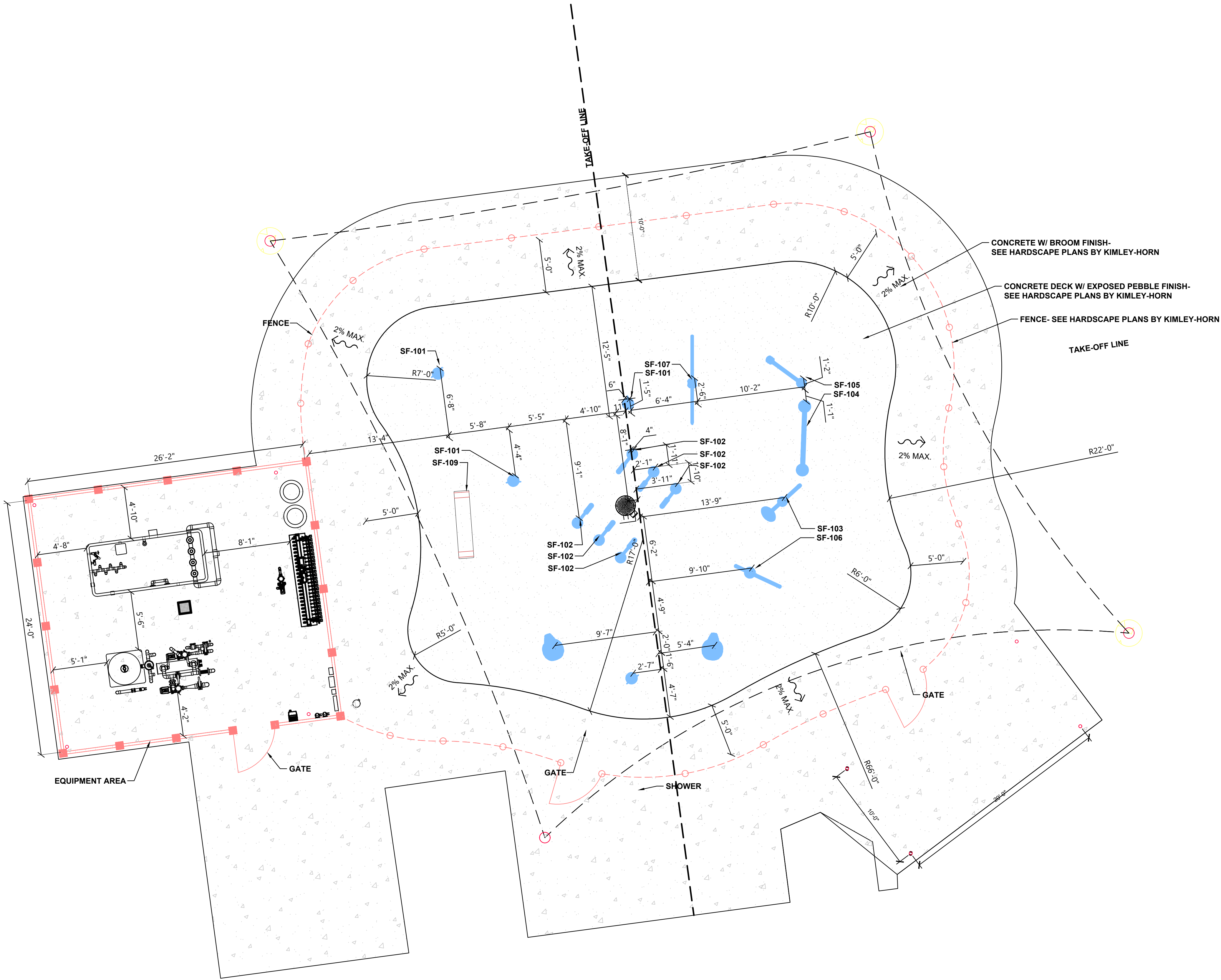
RICHARD M. TOMMELL, P.E.

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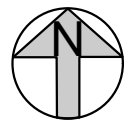
KIMLEY HORN
LAKES PARK
LEE COUNTY, FL.
INTERACTIVE WATER FEATURE (IWF)
WEST MODIFICATION PLANS
IWF WEST PLUMBING PLAN

PROJECT: 2024027
DATE: 07-10-2024
SCALE: AS SHOWN
DESIGNED BY: RT
DRAWN BY: RT
CHECKED BY: RT

SHEET NUMBER
PE-4.0



IWF WEST LAYOUT PLAN
SCALE: 3/8"=1'-0"



IWF WEST INFORMATION

IWF AREA:	1,758 SQUARE FEET
IWF PERIMETER:	160 LINEAR FEET
FEATURE FLOW RATE:	166 GPM
RECIRC. FLOW RATE:	90 GPM
IWF WIDTH:	53'-0"
IWF LENGTH:	41'-6"
IWF WET DECK AREA:	881 SQUARE FEET

No.	Revisions	DATE	BY
1	xxx	xxx	xx
2	xxx		
3			
4			
5			
6			
7			
8			
9			
10			

Tandem Engineering, LLC.
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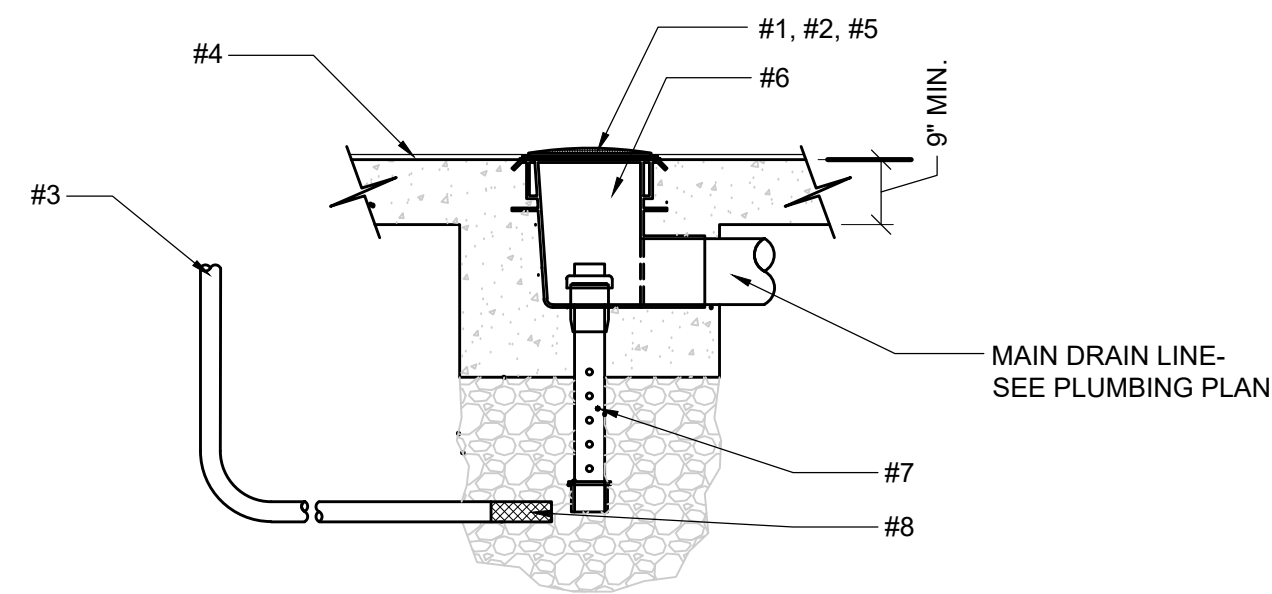
RICHARD M. TOMMELL, P.E.

FLORIDA LICENSE NUMBER
#61659

KIMLEY HORN
LAKES PARK
LEE COUNTY, FL.
INTERACTIVE WATER FEATURE (IWF)
WEST MODIFICATION PLANS
IWF WEST LAYOUT PLAN

PROJECT:	2024027
DATE:	07-10-2024
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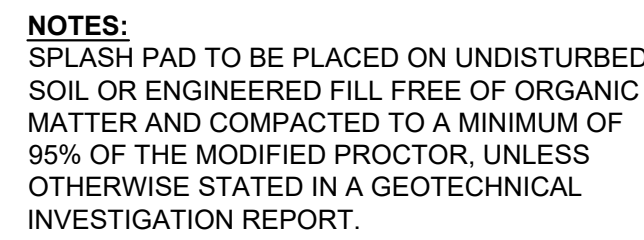
SHEET NUMBER
PE-5.0



NOTES:

1. EACH MAIN DRAIN GRATE SHALL BE VGB COMPLIANT WITH 68 SQ. IN. MINIMUM OPEN AREA. THE MAXIMUM WATER WATER VELOCITY THROUGH EACH GRATE IS 1.5 FPS.
2. EACH MAIN DRAIN GRATE SHALL BE SECURELY FASTENED WITH STAINLESS STEEL SCREWS TO PREVENT UNAUTHORIZED REMOVAL BY BATHERS.
3. EXTEND A DEADLINE DETERATING PIPE FROM ROCK BED BELOW MAIN DRAIN SUMP TO THE SURFACE. LOCATE SURFACE END OF DEADLINE DETERATING PIPE WITHIN A VALVE BOX TO ALLOW FOR THE FUTURE USE OF THIS PIPE.
4. REFER TO THE POOL FINISH SCHEDULE FOR WALL, FLOOR, AND GUTTER SURFACING MATERIALS. THE INTERIOR SURFACE SHALL BE REFLECTIVE AND SLIP-RESISTANT IN NATURE TO ASSIST IN THE VIEWING OF PERSONS.
5. VGB COMPLIANT GRATE
6. MAIN DRAIN
7. COLLECTOR TUBE
8. PERIPHERAL WIRE SCREEN

MAIN DRAIN SECTION		SCALE: N.T.S.
SECTION	TANDEM ENGINEERING	



MAIN DRAIN SECTION		SCALE: N.T.S.
SECTION	TANDEM ENGINEERING	

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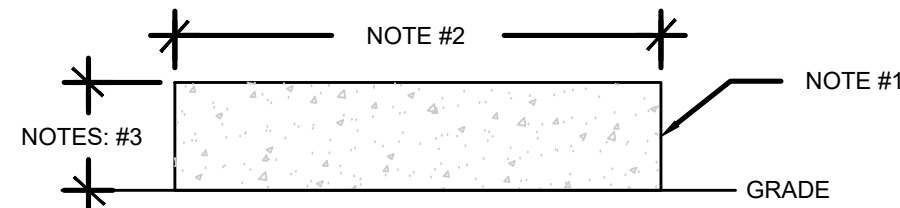
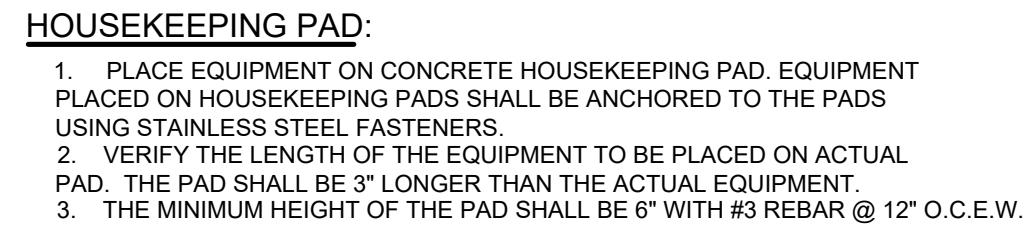
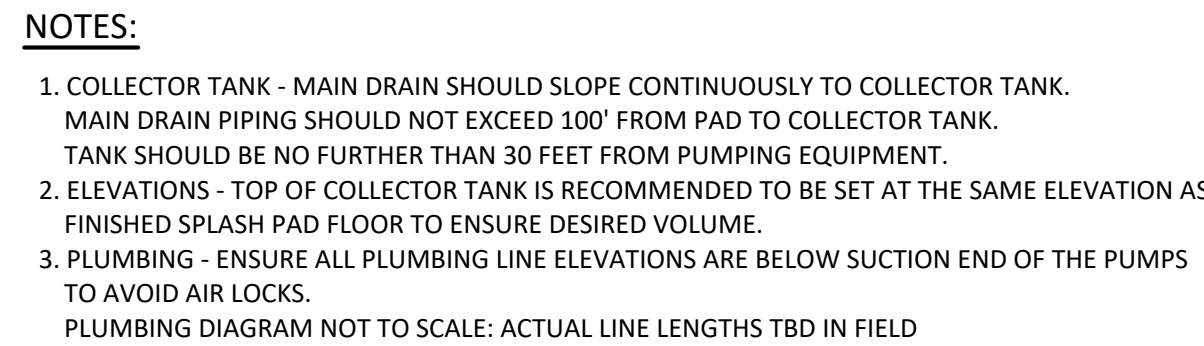
RICHARD M. TOMMELL, P.E.

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KIMLEY HORN
LAKES PARK
LEE COUNTY, FL.
INTERACTIVE WATER FEATURE (IWF)
WEST MODIFICATION PLANS
IWF WEST DETAILS

PROJECT: 2024027
DATE: 07-10-2024
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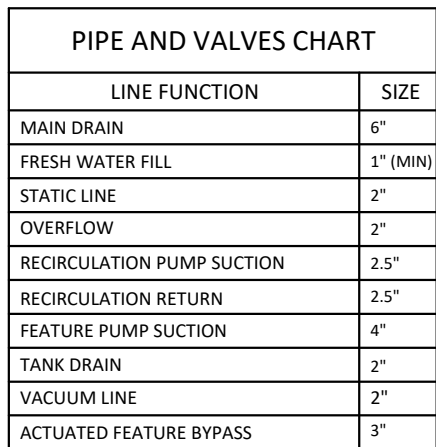
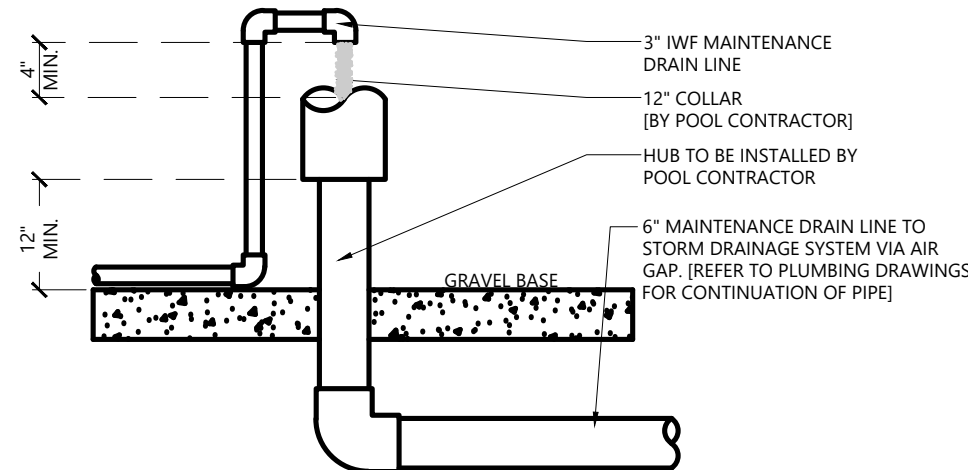
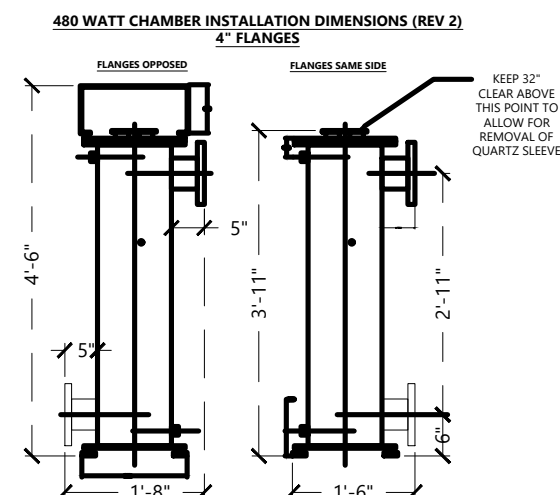
SHEET NUMBER
PE-6.0



LIGHTNING DETECTION DEVICE TO BE PROVIDED AND WIRED TO THE FEATURE PUMP WITH A KILL SWITCH SO THAT THE PUMP IS DISENGAGED IN THE EVENT OF NEARBY LIGHTNING ACTIVITY. CONTRACTOR TO PROVIDE SHOP DRAWING FOR APPROVAL

IWF PIPES & VALVES	
MAIN DRAIN	6"
TANK DRAIN	2"
RECIRCULATION PUMP SUCTION	2.5"
RECIRCULATION PUMP DISCHARGE	2.5"
RECIRC. TO FILTER	2.5"
RECIRC. RETURN	2.5"
SIGHT GLASS TO WASTE	2"
FEATURE PUMP SUCTION	6"
FEATURE DISCHARGE TO MANIFOLD	4"

1. PLUMBING TO BE COORDINATED WITH GC AND UTILITY LAYOUT
2. FEEDERS TO BE WIRED WITH FAILURE PROOF INTERLOCK WITH THE RECIRCULATION PUMP.
3. GC TO PROVIDE ELECTRICAL POWER TO EQUIPMENT AREA.
4. GC TO PROVIDE 1" WATER CONNECTION TO CIRCULATION TANK. POOL CONTRACTOR TO INSTALL AUTOFILL WITH HOSE BIBB WITH VACUUM BREAKER.
5. GC TO PROVIDE 1" WATER CONNECTION TO SHOWER ON DECK.
6. RETURN LINES, MAIN DRAIN LINES, AND SURFACE OVERFLOW SYSTEM LINES SHALL EACH HAVE PROPORTIONING VALVES.
7. ALL PLASTIC PIPE USED IN THE RECIRCULATION SYSTEM SHALL BE IMPRINTED WITH THE MANUFACTURERS NAME AND THE NSF-PW LOGO FOR POTABLE WATER APPLICATIONS.



PLUMBING - ALL PIPE & FITTINGS SHALL BE SCHEDULE 40 PVC PER ASTM D1785 AND N.S.F. APPROVED AND STAMPED FOR POTABLE WATER APPLICATIONS. JOINTS TO BE SOLVENT WELDED TO ASTM D2855. ALL PLUMBING AND MATERIALS TO CONFORM TO THE FOLLOWING:

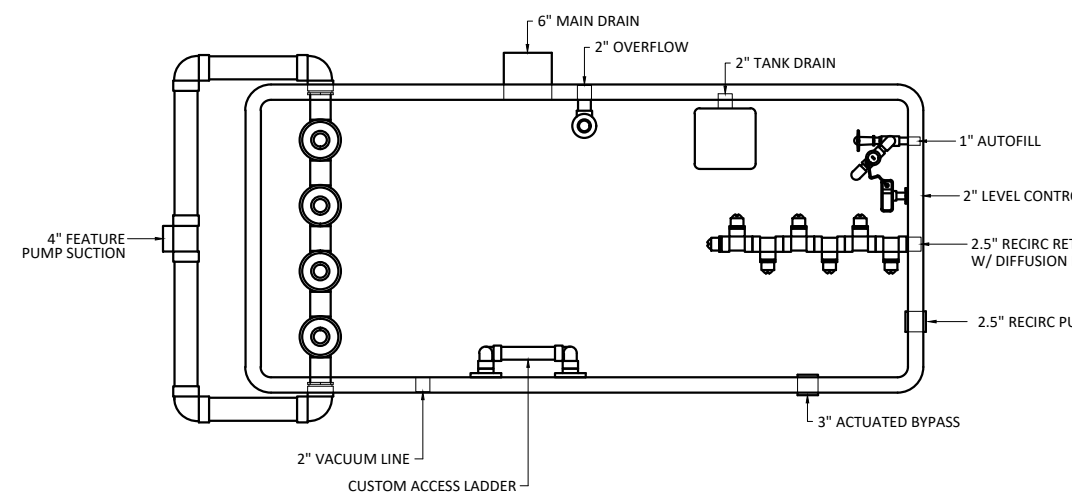
- 1. ELECTRICAL - ALL ELECTRICAL EQUIPMENT WIRING, INSTALLATION AND GROUNDING OF POOL COMPONENTS SHALL CONFORM TO NATIONAL FIRE PROTECTION ASSOC. 70, NATIONAL ELECTRICAL CODE (N.E.C.) LATEST EDITION AND ALL APPLICABLE LOCAL CODES.
- 2. MATERIALS - ALL MATERIALS TO BE USED SHALL BE APPROVED BY THE N.S.F. FOR POTABLE WATER APPLICATIONS.
- 3. EQUIPMENT - ALL PUMPS, RIMS AND CONNECTION EQUIPMENT SHALL BE TESTED AND APPROVED BY THE PERTINENT MANUFACTURER USING THE NSF/ANSI STANDARD 50 AND LISTED AS APPROVED BY THE NSF.
- 4. THE FILTER ROOM FLOOR IS SUSPENDED AND EXPOSED TO FLOOR DRAINAGE.
- 5. PLASTIC FINISHING SUBJECT TO PROLONGED SUNLIGHT EXPOSURE MUST BE ABLE TO PROTECT IT FROM ULTRAVIOLET LIGHT DEGRADATION.

EACH WATER LINE SHALL HAVE A UNIQUE AIR GAP. WASTE LINES FROM DIFFERENT SOURCES (E.G. POOL SPA, OVERFLOW, WET DECK, SHOWER, TUB, SINK, UTILITY, KITCHEN, LAUNDRY, ETC.) SHALL BE COMMON SUMP OR RECEPTACLE.

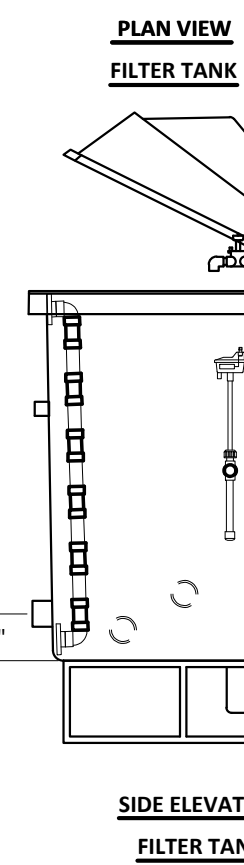
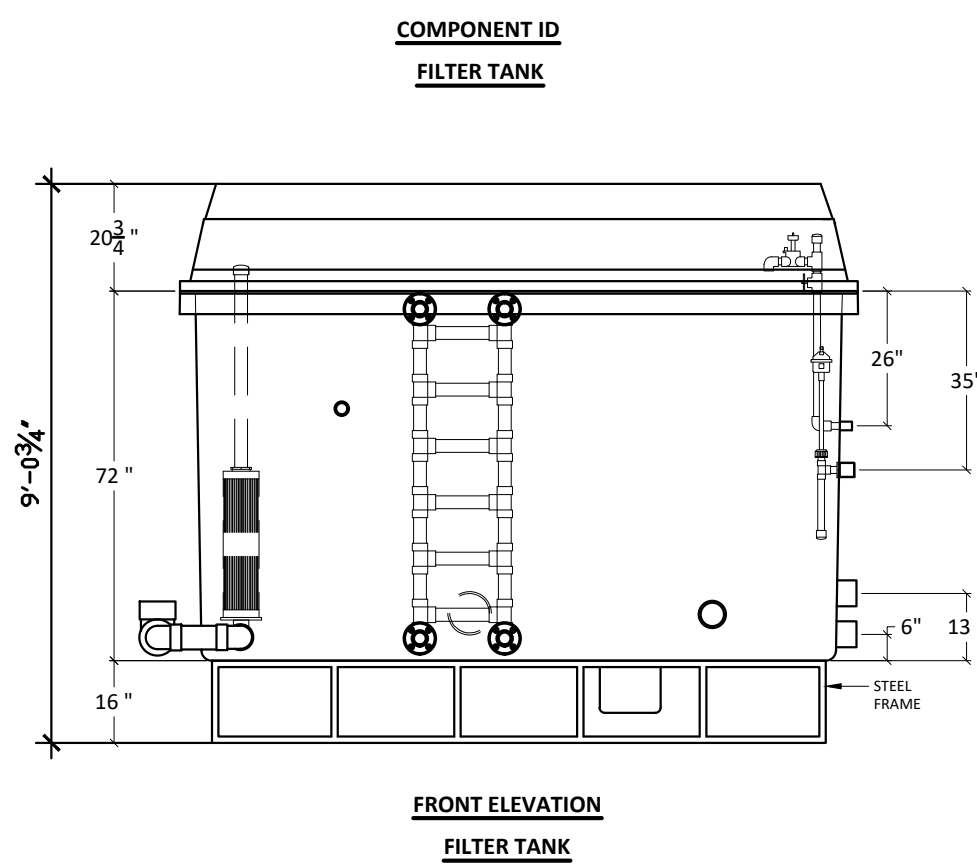
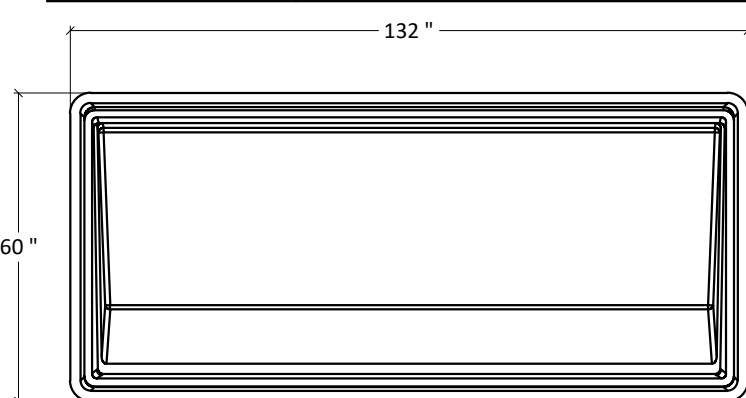
- 7. THE WASTE LINE MUST BE CONNECTED TO AN APPROVED WASTE DISPOSAL SYSTEM ACCORDING TO LOCAL STATE OR CODES.
- 8. ALL COLLECTOR TANKS SHALL HAVE COVERED INTERSECTIONS AND SLOPE TO THE TANK DRAIN.
- 9. THE OVERFLOW LINE SHALL BE CONNECTED TO THE OVERFLOW TANK AND THE WATER LEVEL AT THE TOP OF THE OVERFLOW GUTTER OR AT THE MOUTH OF THE RECESSED AUTOMATIC SKIMMERS MUST DISCHARGE THROUGH AN AIR GAP INTO A FILL PIPE OR COLLECTOR TANK. OVER THE RIM FILL SIPS ARE PROHIBITED.

A RATE OF FLOW INDICATOR, TYPICALLY 60 GPM, SHALL BE INSTALLED ON THE RETURN LINE. THE RATE OF FLOW INDICATOR SHALL BE THE PIPE SIZE FOR THE RATE OF FLOW. THE RATE OF FLOW SHALL BE MEASURABLE FROM ONE HALF TO AT LEAST ONE AND ONE-HALF TIMES THE DESIGN FLOW RATE. THE CLEARANCES UPSTREAM AND DOWNSTREAM FROM THE RATE OF FLOW INDICATOR SHALL COMPLY WITH THE MANUFACTURER'S INSTALLATION SPECIFICATIONS.

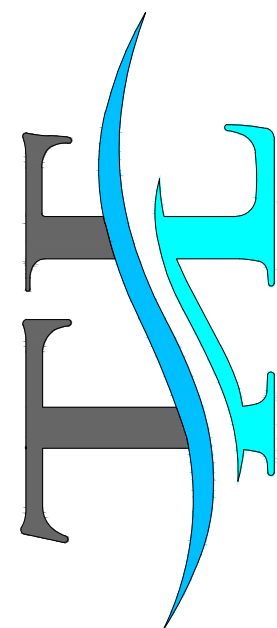
ALL MATERIALS TO BE PREPARED IN COMPLIANCE WITH THE FOLLOWING:



IWF FILTER TANK EQUIPMENT LIST	
COLLECTOR TANK	2500 GALLON CAPACITY
FILTER ELEMENT (FEATURE)	(4) UNICELL C-7697, 155 SQ FT FILTER AREA EACH (232 GPM MAX)
WATER LEVEL CONTROL	HYDRAULIC VALVE W/ MANUAL FILL VALVE, RESERVOIR
ACCESS HATCHWAY	FIBERGLASS LOCKABLE HATCHWAY W/ HYDRAULIC ASSIST



SCALE: 1/2" TO 1

[illegible]

TANDEM ENGINEERING, LLC.
 CERTIFICATE OF AUTHORIZATION 36329
 2509 NEWBORN DRIVE
 CLEARWATER, FL 33761
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FLORIDA LICENSE NUMBER
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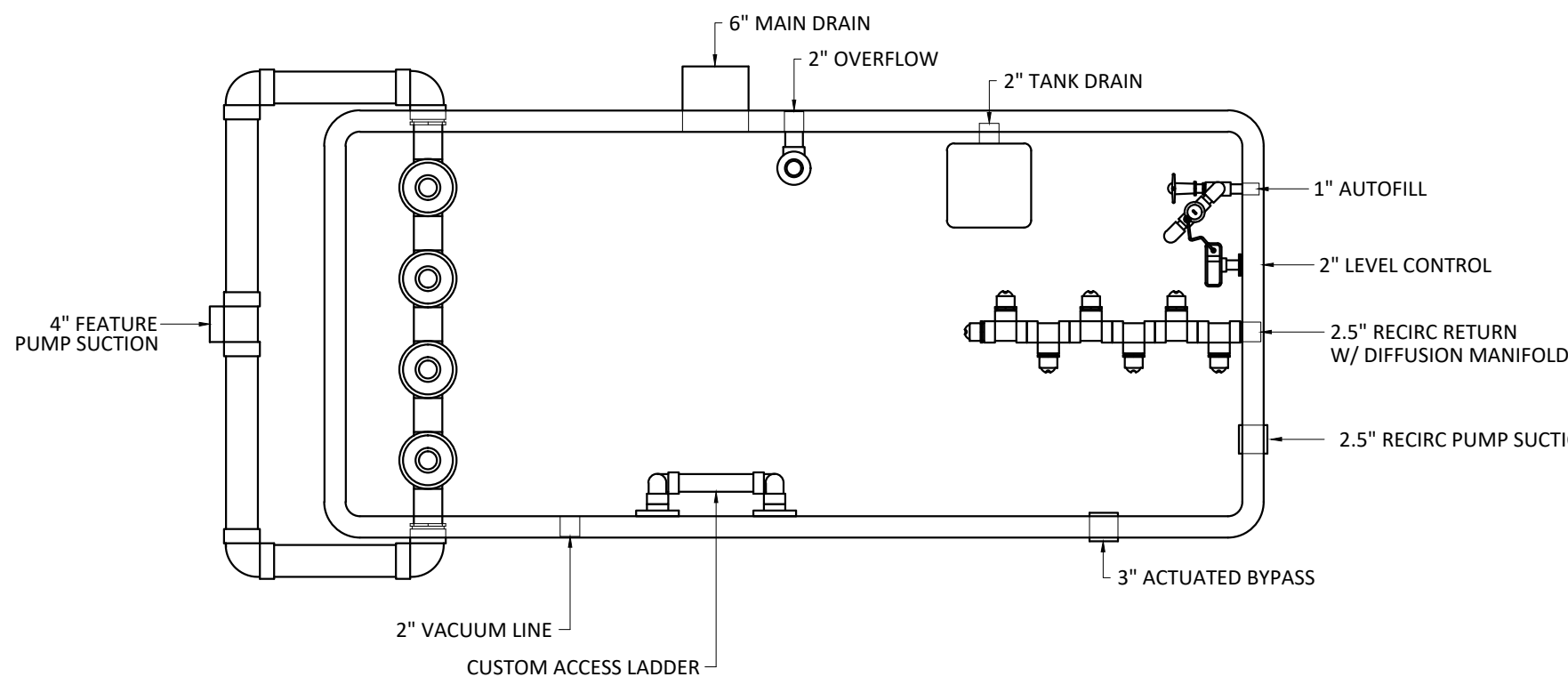
KIMLEY HORN
LAKES PARK
LEE COUNTY, FL.
INTERACTIVE WATER FEATURE (IWF)
WEST MODIFICATION PLANS
IWF WEST EQUIPMENT

PROJECT: 2024027
DATE: 07-10-2024
SCALE:AS SHOWN
DESIGNED BY: RT
DRAWN BY: RT
CHECKED BY: RT

SHEET NUMBER
PE-7.0

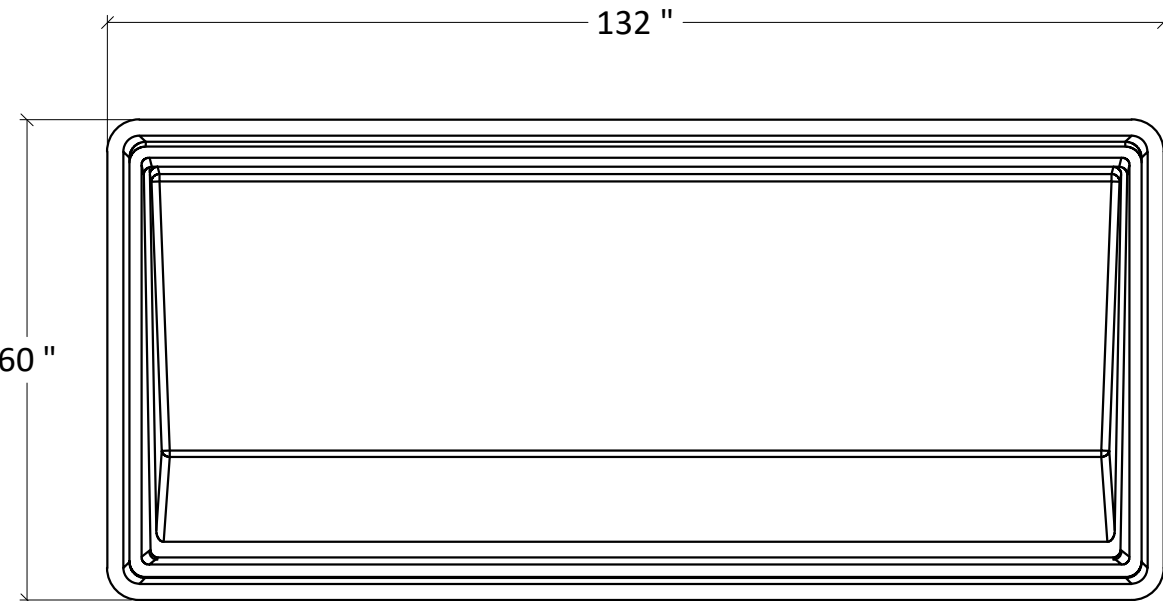
NOTES:

1. PLUMBING - ALL PIPE & FITTINGS SHALL BE SCHEDULE 40 PVC PER ASTM D1785 AND N.S.F. APPROVED AND STAMPED FOR POTABLE WATER APPLICATIONS. JOINTS TO BE SOLVENT WELDED PER ASTM D2855. ALL PLUMBING AND MATERIALS TO CONFORM TO LOCAL BUILDING CODE LATEST EDITION.
2. ELECTRICAL - ALL ELECTRICAL EQUIPMENT WIRING, INSTALLATION AND GROUNDING OF POOL COMPONENTS SHALL CONFORM TO NATIONAL FIRE PROTECTION ASSOC. 70, NATIONAL ELECTRICAL CODE (N.E.C.) LATEST EDITION AND ALL APPLICABLE LOCAL CODES. CHEMICAL FEED PUMPS TO BE INTERLOCKED WITH THE RECIRCULATION PUMP.
3. EQUIPMENT - ALL PUMPS, FILTERS AND DISINFECTION EQUIPMENT SHALL BE TESTED AND APPROVED BY THE PERTINENT MANUFACTURER USING THE NSF/ANSI STANDARD 50 AND LISTED AS APPROVED BY THE NSF.
4. THE FILTER ROOM FLOOR IS SLIP RESISTANT AND SLOPED TO FLOOR DRAINS
5. ALL PLASTIC PIPING SUBJECT TO PROLONGED SUNLIGHT EXPOSURE MUST BE COATED TO PROTECT IT FROM ULTRAVIOLET LIGHT DEGRADATION.
6. EACH WASTE LINE SHALL HAVE A UNIQUE AIR GAP. WASTE LINES FROM DIFFERENT SOURCES (E.G. POOL, SPA, OVERFLOW, SUMP PUMP) SHALL NOT BE TIED TOGETHER BUT MAY DISCHARGE INTO A COMMON SUMP OR RECEPTACLE.
7. THE WASTE LINE MUST BE CONNECTED TO AN APPROVED WASTE DISPOSAL SYSTEM ACCORDING TO LOCAL OR STATE CODES.
8. ALL COLLECTOR TANKS SHALL HAVE COVED INTERSECTIONS AND SLOPE TO THE TANK DRAIN.
9. AN AUTOMATIC AND MANUAL WATER MAKEUP CONTROL MUST BE PROVIDED TO MAINTAIN THE WATER LEVEL AT THE LIP OF THE OVERFLOW GUTTER OR AT THE MOUTH OF THE RECESSED AUTOMATIC SKIMMERS AND MUST DISCHARGE THROUGH AN AIR GAP INTO A FILL PIPE OR COLLECTOR TANK. OVER THE RIM FILL SPOUTS ARE PROHIBITED.
10. A RATE OF FLOW INDICATOR, READING IN GPM, SHALL BE INSTALLED ON THE FILTER RETURN LINE. THE RATE OF FLOW INDICATOR SHALL BE PROPERLY SIZED FOR THE DESIGN FLOW RATE AND SHALL BE CAPABLE OF MEASURING FROM ONE HALF TO AT LEAST ONE-AND-ONE-HALF TIMES THE DESIGN FLOW RATE. THE CLEARANCES UPSTREAM AND DOWNSTREAM FROM THE RATE OF FLOW INDICATOR SHALL COMPLY WITH THE MANUFACTURER'S INSTALLATION SPECIFICATIONS.
11. THESE PLANS HAVE BEEN PREPARED IN COMPLIANCE WITH THE LOCAL BUILDING CODE - LATEST EDITION

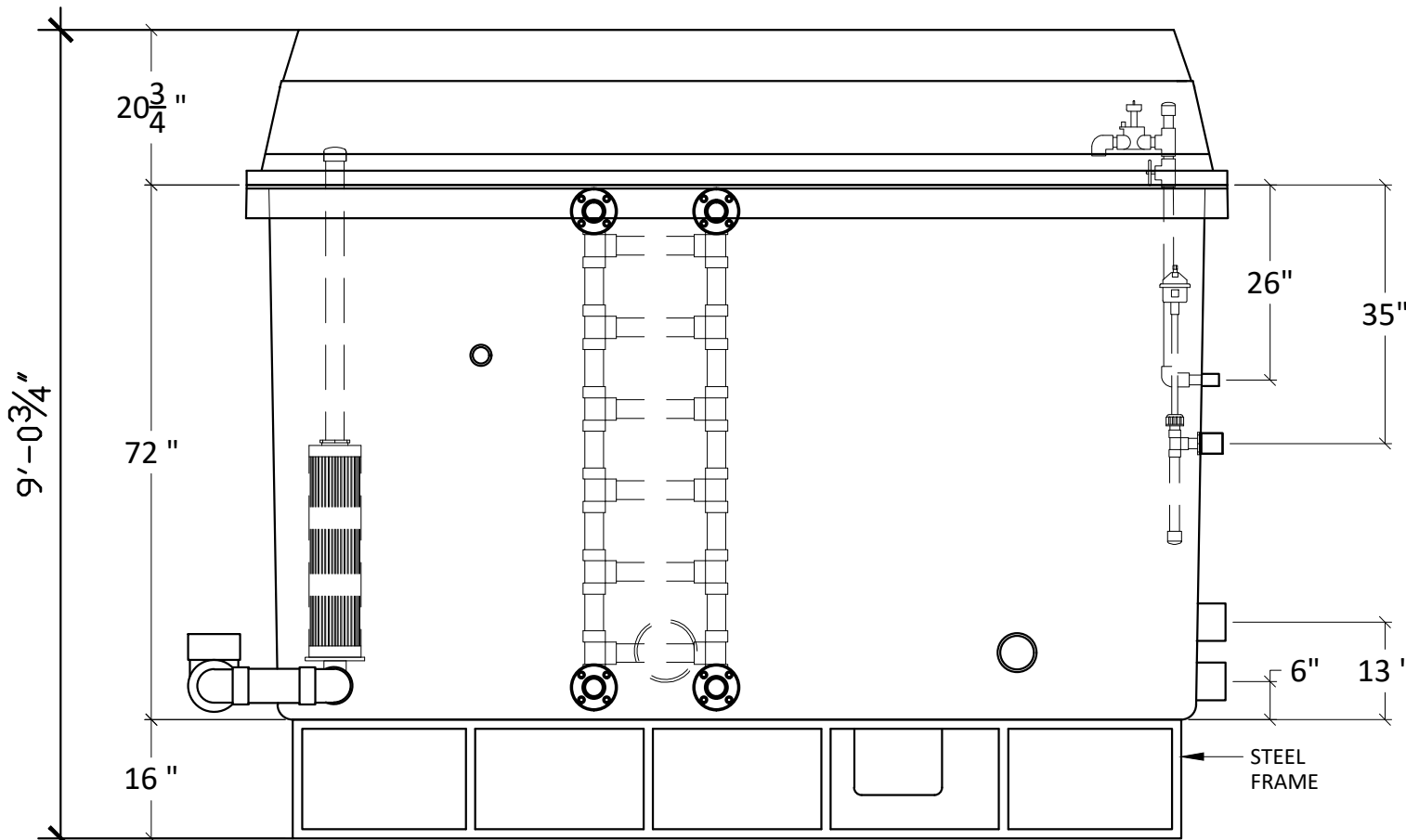


COMPONENT ID
FILTER TANK

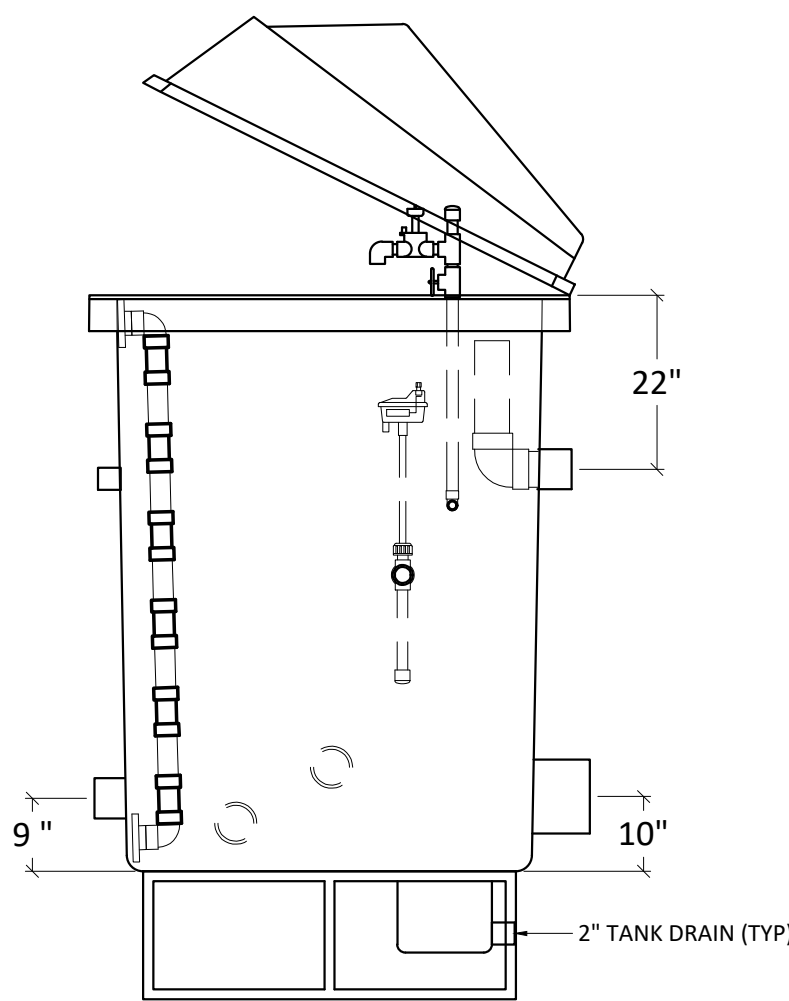
IWF FILTER TANK EQUIPMENT LIST	
COLLECTOR TANK	2500 GALLON CAPACITY
FILTER ELEMENT (FEATURE)	(4) UNICELL C-7697, 155 SQ. FT. FILTER AREA EACH (232 GPM MAX)
WATER LEVEL CONTROL	HYDRAULIC VALVE W/ MANUAL FILL VALVE, RESERVOIR
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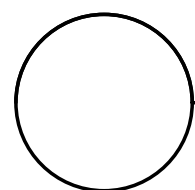
PLAN VIEW
FILTER TANK



FRONT ELEVATION
FILTER TANK



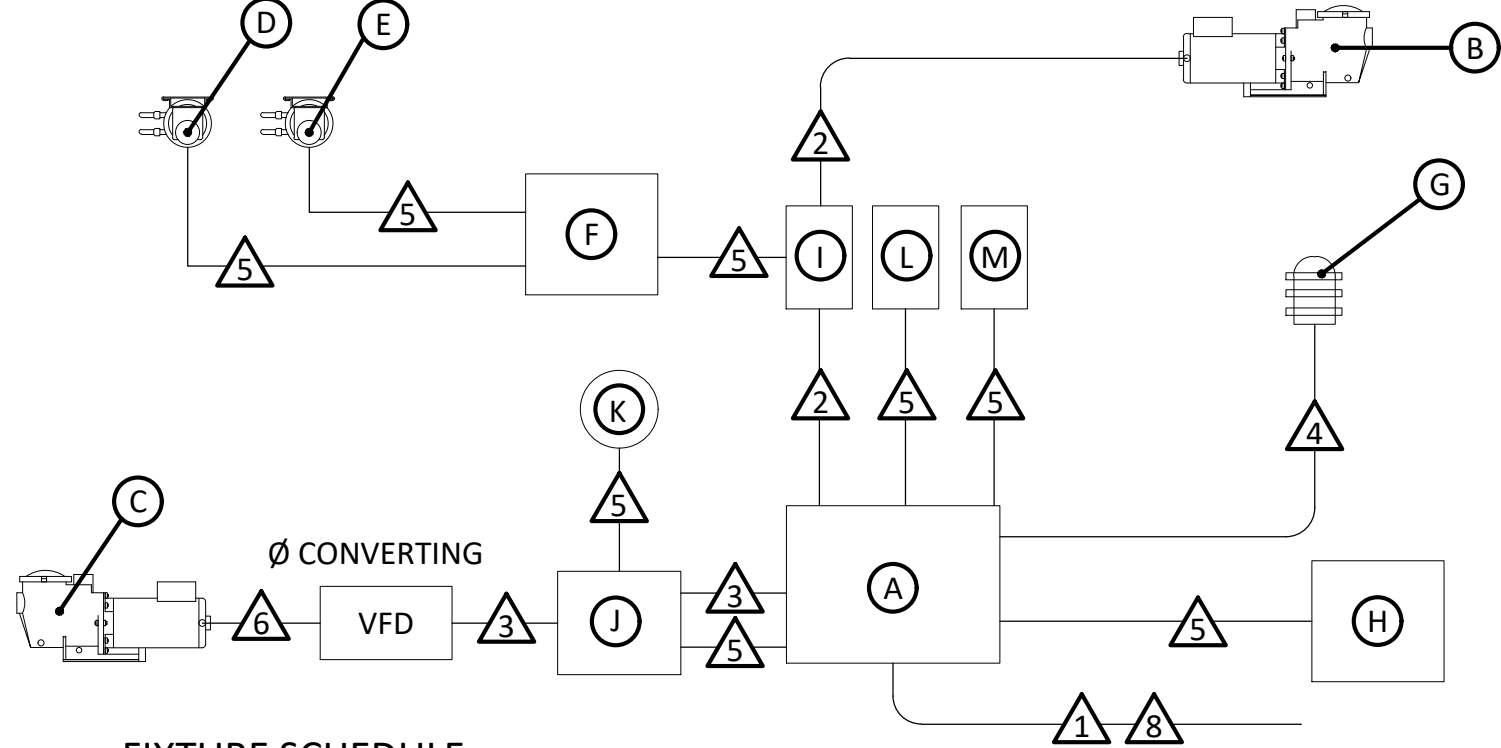
SIDE ELEVATION
FILTER TANK



IWF WEST COLLECTOR TANK RESERVOIR

SCALE: 1/2" TO 1"

PIPE AND VALVES CHART	
LINE FUNCTION	SIZE
MAIN DRAIN	6"
FRESH WATER FILL	1" (MIN)
STATIC LINE	2"
OVERFLOW	2"
RECIRCULATION PUMP SUCTION	2.5"
RECIRCULATION RETURN	2.5"
FEATURE PUMP SUCTION	4"
TANK DRAIN	2"
VACUUM LINE	2"
ACTUATED FEATURE BYPASS	3"



FIXTURE SCHEDULE:

MARK	DESCRIPTION	VOLTAGE	MANUFACTURER & MODEL NO.
A	MAIN LUG BREAKER PANEL (16 CIRCUIT)	208-230V	SIEMENS, PW1624L1125CU
B	RECIRCULATION PUMP	230V	
C	FEATURE PUMP	208-230/460V	
D	CHLORINE FEEDER PUMP	115V	STENNER 45M5
E	ACID FEEDER PUMP	115V	STENNER, 45M2
F	CHEMICAL CONTROLLER	115V	
G	100 WATT SERVICE LIGHT FIXTURE	115V	INTERMATIC, VPXG11GCI 100W
H	GFCI DUPLEX RECEPTACLE	115V	PASS & SEYMOUR
I	ELECTRICAL INTERLOCK	115/208-230V	MCG, 40A DEFINITE PURPOSE CONTACTOR
J	FEATURE CONTROLLER	115V	AQUAWORX 2-PUMP FEATURE CONTROLLER
K	ACTIVATION BOLLARD	24/115V	AQUAWORX FEATURE ACTIVATOR
L	EXHAUST BLOWER	115V	DAYTON, 1TDR3, 273 CFM
M	UV STERILIZER	115V	CHLOR-KING SENTRY SAG 480A-CR

FEEDER & CIRCUIT SCHEDULE:

MARK	CONDUCTORS			CONDUIT	REMARKS
	PHASE	NEUTRAL	GROUND		
Δ					PANEL FEED
Δ	2 - #10		1 - #10	1/2"	UL SEALTITE
Δ	2 - #8		1 - #8	3/4"	UL SEALTITE
Δ	1 - #12	1 - #12	1 - #12	1/2"	SEALTITE TO PANEL
Δ	1 - #12	1 - #12	1 - #12	1/2"	SEALTITE TO PANEL
Δ	3 - #10		1 - #10	3/4"	SEALTITE TO PANEL
Δ	2 - #18	1 - #18	1 - #18	1/2"	SEALTITE TO PANEL
Δ	CONDUCTORS AND CONDUIT INSTALLED BY OTHERS				

PANEL SCHEDULE:

SINGLE-PHASE, 3-WIRE — 208Y/120 VAC OR 240 VAC INSULATED/BONDABLE NEUTRAL CURRENT WITHSTAND RATING MAX. RMS. SYM. 10,000A 12/240V					
CIRCUIT	POLE	TRIP	LOAD	AMPS	
1-2	2	30A GFI	REC. PUMP W/INTERLOCKED CHEMICALS	13.9	
3-4	2	40A GFI	FEATURE PUMP	21.0	
7	1	20A	GFCI	3.0	
8	1	20A	SERVICE LIGHT	1.5	
9	1	20A	FEATURE CONTROLLER	1.1	
10	1	20A	EXHAUST BLOWER	1.1	
11	1	20A	UV STERILIZER	4.8	
12			SPARE	TOTAL MAXIMUM LOAD 46.4	



RICHARD M. TOMMELL, P.E.

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KIMLEY HORN
LAKES PARK
LEE COUNTY, FL.
INTERACTIVE WATER FEATURE (IWF)
WEST MODIFICATION PLANS
IWF WEST COLLECTOR TANK &
ELECTRICAL DIAGRAM

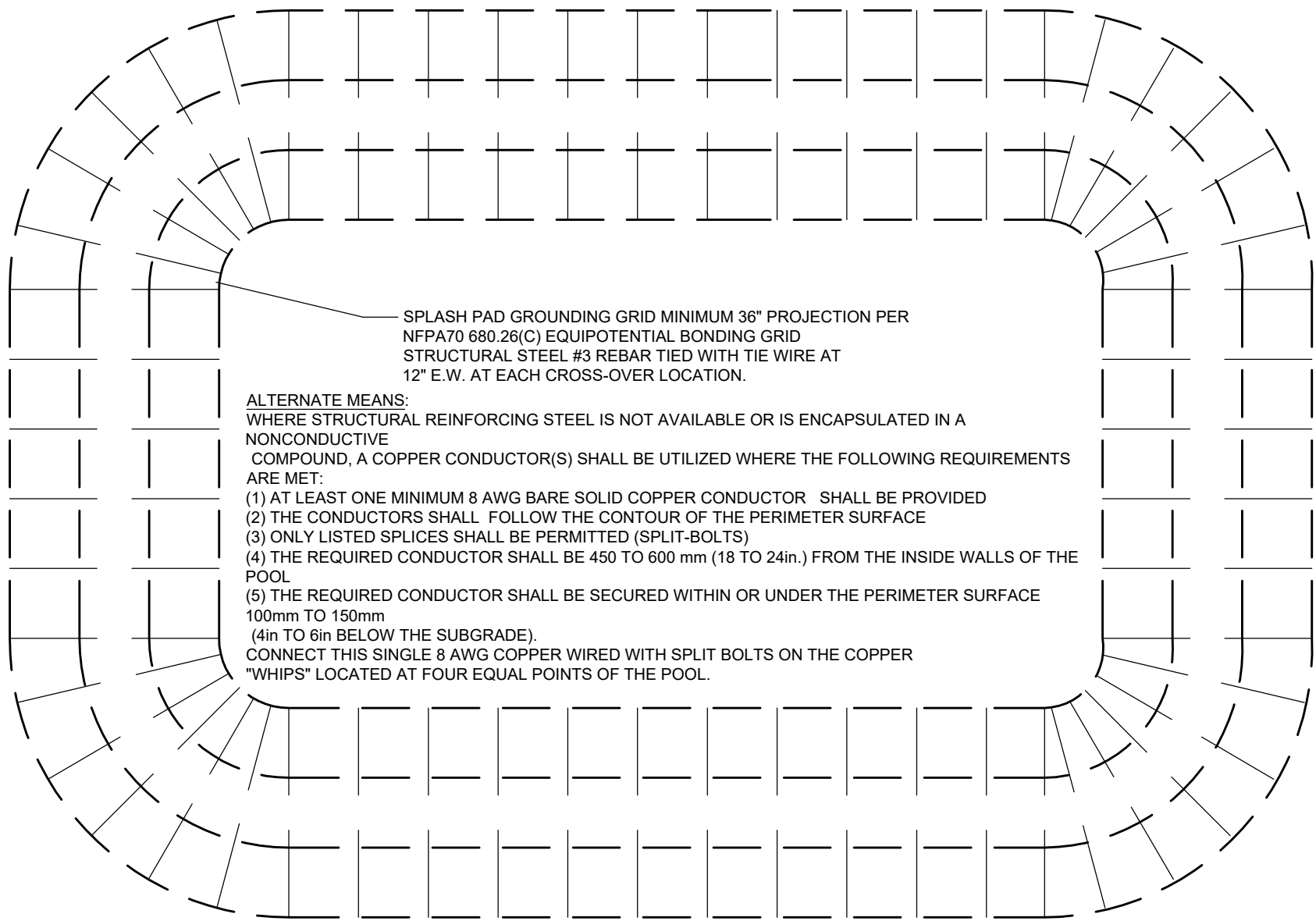
PROJECT: 2024027
DATE: 07-10-2024
SCALE: AS SHOWN
DESIGNED BY: RT
DRAWN BY: RT
CHECKED BY: RT

SHEET NUMBER
PE-8.0



ELECTRICAL RISER

SCALE: 3/4" TO 1"



1 IWF EQUIPOTENTIAL GRID DETAIL

SCALE: N.T.S.

TECHNICAL NOTES

-680.26 Equipotential Bonding* (Summarized)

- (A) **Performance.** Equipotential bonding is intended to reduce voltage gradients in the area around permanently installed pools, outdoor spas, or outdoor hot tubs by the use of a common bonding grid in accordance with 680.26(B) and (C).
- (B) **Bonded Parts.** The parts of a permanently installed pool, outdoor spa, or outdoor hot tub listed in (B)(1) through (B)(7) shall be bonded together with a solid copper conductor not smaller than 8 AWG with listed pressure connectors, terminal bars, exothermic welding, or other listed means [250.8(A)]. Equipotential bonding is not required to extend to or be attached to any panelboard, service equipment, or grounding electrode.
- (1) **Conductive Pool, Outdoor Spa, and Outdoor Hot Tub Shells.**
- (a) Structural Reinforcing Steel. Unencapsulated structural reinforcing steel secured together by steel tie wires is considered bonded.
- (2) **Perimeter Surfaces.** An equipotential bonding grid shall extend 3 ft horizontally beyond the inside walls of a pool, outdoor spa, or outdoor hot tub, including unpaved, paved, and poured concrete surfaces. The bonding grid shall comply with (a) or (b) and be attached to the conductive pool reinforcing steel at a minimum of four points uniformly spaced around the perimeter of the walls of a pool, outdoor spa, or outdoor hot tub.
- (a) Structural Reinforcing Steel. Structural reinforcing steel [680.26(B)(1)(a)]. *Author's Comment:* The 2017 NEC does not provide any guidance on the installation requirements for structural reinforcing steel when used as a perimeter equipotential bonding grid.
- (b) Alternate Means. Equipotential bonding conductor meeting the following:
- (1) 8 AWG bare solid copper bonding conductor.
- (2) The bonding conductor shall follow the contour of the perimeter surface.
- (3) Listed splicing devices.
- (4) Bonding conductor shall be 18 to 24 in. from the inside walls of the pool.
- (5) Bonding conductor shall be secured within or under the perimeter surface 4 to 6 in. below the subgrade.
- (3) **Metallic Components.** Metallic parts of the pool, outdoor spa, or outdoor hot tub structure shall be bonded to the equipotential grid.
- (4) **Underwater Metal Forming Shells.** Metal forming shells and mounting brackets for luminaires and speakers shall be bonded to the equipotential grid.
- (5) **Metal Fittings.** Metal fittings sized 4 in. and larger that penetrate into the pool, outdoor spa, or outdoor hot tub structure, such as ladders and handrails shall be bonded to the equipotential grid.

2 NEC NOTES

SCALE: N.T.S.

PERMITTED BONDING METHODS PER NEC 250.8

- 250.8 CONNECTION OF GROUNDING AND BONDING EQUIPMENT.
- (A) PERMITTED METHODS. EQUIPMENT GROUNDING CONDUCTORS, GROUNDING ELECTRODE CONDUCTORS, AND BONDING JUMPERS SHALL BE CONNECTED BY ONE OR MORE OF THE FOLLOWING MEANS.
- (1) LISTED PRESSURE CONNECTORS
- (2) TERMINAL BARS
- (3) PRESSURE CONNECTORS LISTED AS GROUNDING AND BONDING EQUIPMENT
- (4) EXOTHERMIC WELDING PROCESS
- (5) MACHINE SCREW-TYPE FASTENERS THAT ENGAGE NOT LESS THAN TWO THREADS OR ARE SECURED WITH A NUT
- (6) THREAD-FORMING MACHINE SCREWS THAT ENGAGE NOT LESS THAN TWO THREADS IN THE ENCLOSURE
- (7) CONNECTIONS THAT ARE PART OF A LISTED ASSEMBLY
- (8) OTHER LISTED MEANS
- (B) METHODS NOT PERMITTED. CONNECTION DEVICES OR FITTINGS THAT DEPEND SOLELY ON SOLDER SHALL NOT BE USED.

PROFESSIONAL STATEMENT

TO THE BEST OF MY KNOWLEDGE SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AND THE APPLICABLE MINIMUM FIRE SAFETY STANDARDS AS DETERMINED IN ACCORDANCE WITH CHAPTERS 553 AND 633, LAWS OF THE STATE OF FLORIDA (FBC 107.1 & FBC 110.3.7.4.4).

CODE CRITERIA

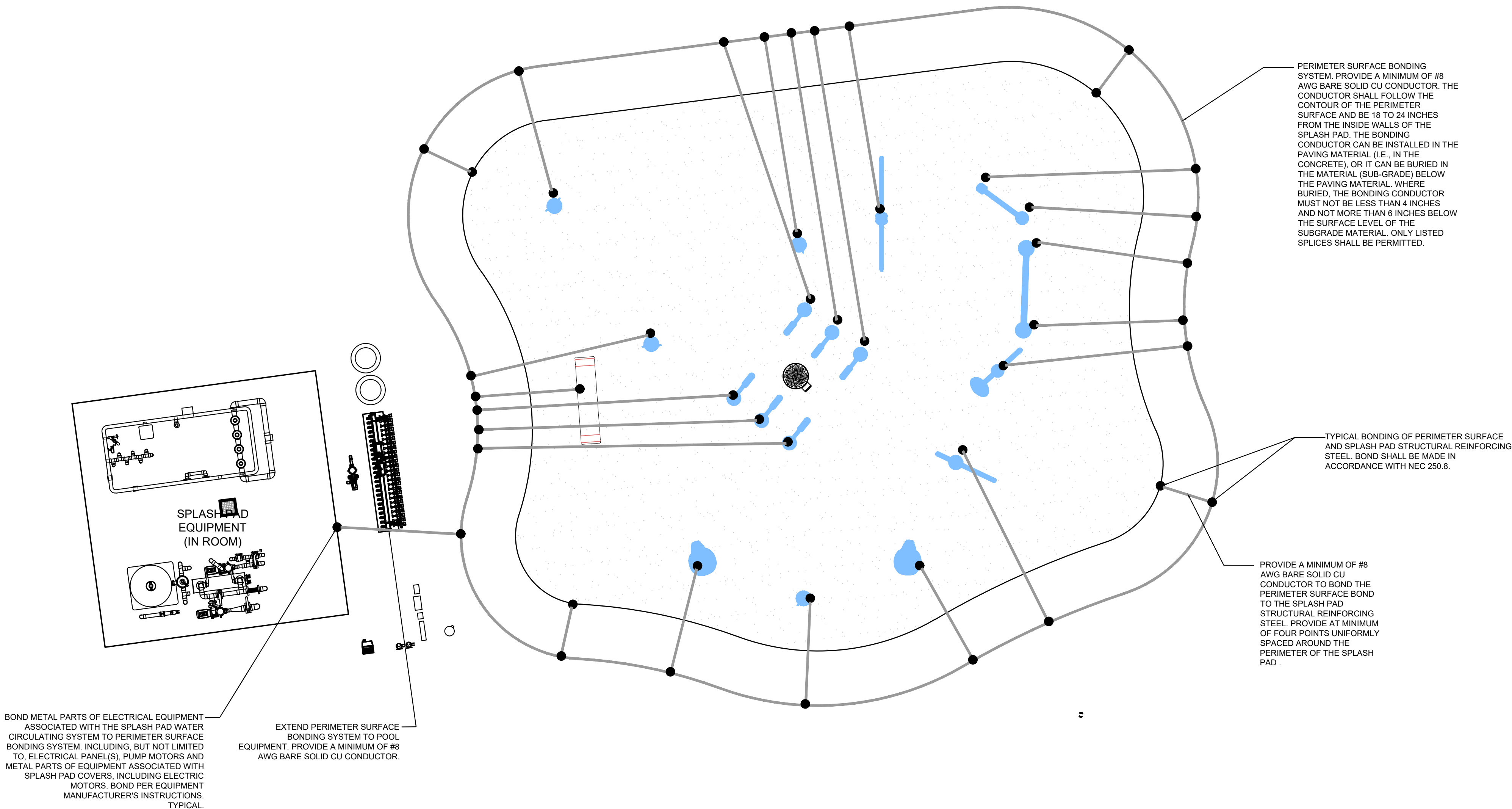
IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS TO RESULT IN A COMPLETE ELECTRICAL INSTALLATION IN ACCORDANCE WITH ALL STATE/LOCAL CODES/ORDINANCES AND THE 2020 NATIONAL ELECTRIC CODE MINIMUM REQUIREMENTS. IN THE EVENT ANY PORTION OF THE INSTALLATION SHOWN OR SPECIFIED FAILS TO MEET THESE REQUIREMENTS, IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO ALTER THE LAYOUT TO MEET THE REQUIREMENTS OF SAID GOVERNING CODES MINIMUM REQUIREMENTS AND TO NOTIFY THE EOR OF SUCH CHANGES IN THESE PORTIONS OF THE PLANS AND SPECIFICATIONS. WHERE INSTALLATION, SHOWN OR DESCRIBED EXCEEDS THE REQUIREMENTS OF THE STATE AND LOCAL CODES, THE SPECIFICATIONS AND PLANS SHALL GOVERN.

ELECTRICAL GENERAL NOTES

1 BOND ALL METALLIC COMPONENTS, UNDERWATER LIGHTING, METAL FITTINGS, ELECTRICAL EQUIPMENT, AND FIXED METAL PARTS AS DEFINED AND REQUIRED IN NEC 680.26, WHETHER OR NOT SHOWN ON THESE PLANS.

ELECTRICAL SPECIFICATIONS

1. BIDDERS ARE TO THOROUGHLY EXAMINE ALL CONTRACT DOCUMENTS, DRAWINGS, AND DETAILS, AND VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK BEFORE SUBMITTING THEIR PROPOSAL BID. THE SUBMISSION OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. ANY DISCREPANCY OR IRREGULARITY THAT A SUCCESSFUL CONTRACTOR MAY HAVE OR FIND SHALL BE CLARIFIED PRIOR TO CONTRACT FINALIZATION. LATER CLAIMS FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION BEEN MADE, WILL NOT BE ALLOWED. THE CONTRACTOR IS EXPECTED TO PERFORM ALL WORK AND PROVIDE ALL MATERIALS AND EQUIPMENT REQUIRED FOR A COMPLETE AND SATISFACTORY INSTALLATION AS INTENDED BY THIS DESIGN AND THE SCOPE OF THIS PROJECT.
2. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS.
3. THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL ELECTRICAL LAYOUTS FOR BIDDING PURPOSES ONLY. THEY SHOULD NOT BE SCALED. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE AND FUNCTIONAL ELECTRICAL BONDING SYSTEM INCLUDING SUPPORTS AND HARDWARE REQUIRED FOR THE SATISFACTORY OPERATION OF THE SYSTEM, WHETHER SPECIFICALLY SHOWN OR NOT ON THE DRAWINGS.
4. THE PLANS ARE INTENDED TO DEPICT THE GENERAL INTENT OF THE WORK IN SCOPE, LAYOUT AND QUALITY OF WORKMANSHIP. THEY ARE NOT INTENDED TO SHOW IN MINUTE DETAIL EVERY AND ALL ACCESSORY INTENDED FOR THE PURPOSE OF EXECUTION OF THE WORK, BUT SHALL BE UNDERSTOOD THAT SUCH DETAILS WILL BE PART OF THIS WORK.
5. THE WORK SUBJECT TO THESE SPECIFICATIONS SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. THE INSTALLATION SHALL ALSO COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS OF LOCAL AND STATE LAWS AND ORDINANCES.
6. ALL ELECTRICAL EQUIPMENT SHALL BE SPECIFICATION GRADE AND SHALL HAVE THE PROPER UL LABEL.



3 IWF WEST BONDING PLAN

SCALE: 3/16" = 1'-0"

No.	REVISIONS	DATE	BY
1	xxx	xxx	xx
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3			
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6			
7			
8			
9			
10			

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RICHARD M. TOMMELL, P.E.

FLORIDA LICENSE NUMBER
#61859

KIMLEY HORN
LAKE PARK
LEE COUNTY, FL.
INTERACTIVE WATER FEATURE (IWF)
WEST MODIFICATION PLANS
IWF WEST BONDING PLAN

PROJECT:	2024027
DATE:	07-10-2024
SCALE: AS SHOWN	DESIGNED BY: RT
DRAWN BY: RT	CHECKED BY: RT

SHEET NUMBER
PE-9.0

LAKES PARK

INTERACTIVE WATER FEATURE (IWF) EAST

MODIFICATION PLANS

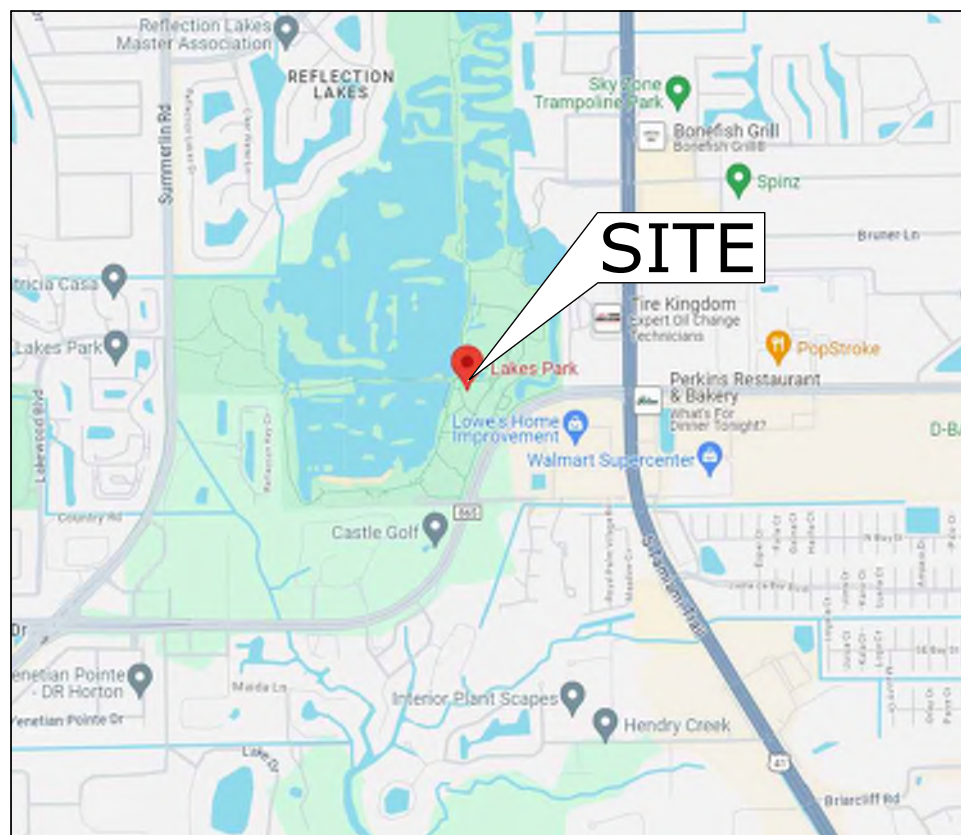
733 GLADIOLUS DR.
FT. MYERS, FL. 33908
LEE COUNTY

SHEET INDEX

PE-1.0	COVER SHEET
PE-2.0	GENERAL INFORMATION & NOTES
PE-3.0	IWF EAST SITE PLAN
PE-4.0	IWF EAST PLUMBING PLAN
PE-5.0	IWF EAST LAYOUT PLAN
PE-6.0	IWF EAST DETAILS
PE-7.0	IWF EAST EQUIPMENT
PE-8.0	IWF EAST COLLECTOR TANK & ELECTRICAL DIAGRAM
PE-9.0	IWF EAST BONDING PLAN



▪ VICINITY MAP

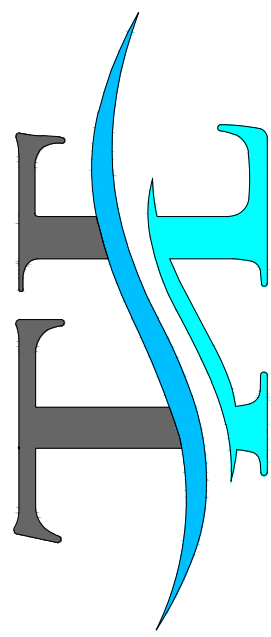


▪ LOCATION MAP

FOR:



No.	REVISIONS	DATE	BY
1	xxx	xxx	xx



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KIMLEY HORN
LAKES PARK
LEE COUNTY, FL.
INTERACTIVE WATER FEATURE (IWF)
EAST MODIFICATION PLANS
COVER SHEET

PROJECT: 2024027	DATE: 07-10-2024	SCALE: AS SHOWN
DESIGNED BY: RT		DRAWN BY: RT
CHECKED BY: RT		

SHEET NUMBER
PE-1.0

SPECIFICATIONS FOR CONSTRUCTION

1 **GENERAL NOTES**

- 1.1 ALL WORK, MATERIALS AND THEIR ASSEMBLIES SHALL CONFORM TO THE STANDARDS, REGULATIONS AND CODES CURRENTLY IN FORCE FOR ALL TRADES, AISC, ACNOR, EN, OR IBC.
- 1.2 THESE DESIGN DOCUMENTS DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. WHEN APPLICABLE, THE CONTRACTORS SHALL SUPERVISE AND DIRECT ALL THE WORKAND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES AND SEQUENCES AS PER STANDARD BEST PRACTICES.
- 1.3 DO NOT SCALE DRAWINGS.
- 1.4 USE ONLY THOSE MARKED "ISSUED FOR CONSTRUCTION".
- 1.5 THE CONTRACTOR SHALL REVIEW THESE DESIGN DOCUMENTS AND REPORT ANY CONFLICTS OR OMISSIONS TO THE VORTEX IMMEDIATELY.
- 1.6 TEMPORARY SUPPORTS, WHICH WILL BE REQUIRED DURING CONSTRUCTION, SUCH AS FORMWORK, BRACING, SHORING, ETC. ARE NOT SHOWN ON THESE DRAWINGS AND ARE THERESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL SAFE CONSTRUCTION PROCEDURES ARE FOLLOWED.
- 1.7 ALL SEEFLOW COMPONENTS TO BE SNUG-TIGHT ONLY. USING POWER TOOLS OR TIGHTEN HARDWARE FULLY-TENSIONED CAN PRODUCE CRACKING ON THE PLASTIC.

2 **EXCAVATION**

- 2.1 ANY SHORING OR TEMPORARY SHORING NOT SHOWN ON DRAWINGS WILL BE EXECUTED, IN A SAFE MANNER, BY THE GENERAL CONTRACTOR.
- 2.2 IT IS THE RESPONSIBILITY OF OTHERS TO VERIFY THE EXISTENCE OF ANY UNDERGROUND SERVICES ETC.
- 2.3 IF AVAILABLE, REFER TO SOIL REPORT FOR BACKFILL REQUIREMENTS. ALL BACKFILL (FOR SLAB ON GRADE, ETC.) MUST BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF AQUALIFIED PROFESSIONAL. USE ONLY FREE DRAINING, GRANULAR, MINERAL, INERT AND NON- REACTIVE FILL.

3 **FOUNDATIONS**

- 3.1 REFER TO SOIL REPORT FOR RECOMMENDATIONS.
- 3.2 ALL FOOTINGS SHALL REST ON A HOMOGENEOUS LAYER OF UNDISTURBED SOIL OR ENGINEERED BACKFILL WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 100KPA (2000 PSF) AND MAXIMUM DIFFERENTIAL SETTLEMENT OF 0.75" (19mm). ALL ORGANIC MATERIAL SHALL BE REMOVED.
- 3.3 IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE SOIL AT ALL FOOTING LOCATIONS BE VERIFIED BY A QUALIFIED SOILS EXPERT BEFORE POURING FOOTINGS TO ENSUREFOOTINGS REST ON APPROPRIATE STRATA.

4 **CONCRETE**

- 4.1 ALL CONCRETE MATERIALS, PROCEDURES, TOLERANCES & WORKMANSHIP SHALL CONFORM TO THE LATEST ISSUES OF ACI-318 AND ACI 317 OR ACNOR CAN3-A23.1 & A23.2, DEPENDING ON PROJECT LOCATION.
- 4.2 CONCRETE THAT HAS BEEN IN THE TRUCKS LONGER THAN 2 HOURS SHALL BE REJECTED. DO NOT ADD WATER TO THE CONCRETE IN THE TRUCKS OR ON THE SITE UNDER ANY CIRCUMSTANCES.
- 4.3 USE MAXIMUM 76mm (3") SLUMP, 19 MM (3/4") AGGREGATE, UNLESS OTHERWISE-NOTED. USE 5-7% AIR ENTRAINMENT FOR CONCRETE EXPOSED TO WEATHER ONLY.
- 4.4 ALL GROUT SHALL BE NON-SHRINK TYPE WITH A MINIMUM 28 DAYS STRENGTH OF 5000 PSI (35.0 MPa). USE 1" (25mm) GROUT UNDER ALL STEEL COLUMN BASE PLATES.
- 4.5 CONCRETE STRENGTH @ 28 DAYS TO BE:
- 4.5.1FOUNDATIONS (FOOTINGS): 25.0 MPa (3500 PSI), UNLESS OTHERWISENOTED.
- 4.5.2INTERIOR SLAB ON GRADE: 25.0 MPa (3500 PSI), UNLESS OTHERWISE NOTED.
- 4.5.3 EXTERIOR SLAB ON GRADE: 28.0 MPa (4000 PSI), UNLESS OTHERWISE NOTED.
- 4.6 MINIMAL RE-BAR COVER:
- 4.6.1CONCRETE POURED ON-GRADE = 76mm (3") COVER
- 4.6.2CONCRETE POURED INTO FORMWORK BUT EXPOSED TO SOIL AND WEATHER FOR REBAR 10M (#3) AND UNDER = 50mm (2") COVER

5 **REINFORCING STEEL**

- 5.1 DEPENDING ON PROJECT LOCATION, ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 (BARS 15m (#4) TO BE GRADE 60 WITH SUPPLEMENTARY REQUIREMENTS ON S1. BARS SMALLER THAN 15M (#4), TO BE GRADE 40); OR TO ACNOR GRADE G30.12 [FY = 400MPa (60,000 PSI), UNLESS OTHERWISE NOTED].
- 5.2 USE CONCRETE, PLASTIC OR STEEL SUPPORT BARS, AS PER ACI (MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES). THE RE-BAR PLACER MUST REMAIN ON-SITE DURING POURS TO VERIFY CORRECT POSITIONING OF RE-BARS. SLANT UPPER REINFORCING STEEL IN LINE WITH THE SLOPE OF THE SLAB, IF APPLICABLE.
- 5.3 BARS SHALL BE SECURELY WIRED PER LATEST EDITION OF CRSI (RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS).
- 5.4 ALL REINFORCING STEEL IS TO BE KEPT CLEAN AND FREE OF MUD, SNOW, ICE, AND ANY CONTAMINANTS.
- 5.5 VERTICAL AND CONTINUOUS REBAR SHALL BE LAPPED TO DEVELOP FULL TENSILE CAPACITY OF THE BAR. FOR 15m (#4) BARS MINIMUM LAP OF 610mm (24").

6 **EXTERIOR / INTERIOR SLAB ON GRADE**

- 6.1 FOLLOW THE GEOTECHNICAL EXPERT RECOMMENDATIONS FOR PREPARATION OF SOIL BEFORE POURING THE CONCRETE. ALL GRANULAR MATERIAL SHALL BE MOISTENED IMMEDIATELY BEFORE POURING THE CONCRETE. WATER AS NEEDED. DO NOT USE A VAPOR BARRIER.
- 6.2 NO TRUCKS ARE PERMITTED ON THE CONSTRUCTION SITE (OF THE SLAB) AFTER THE FINAL COMPACTION, EITHER BEFORE OR DURING, THE POUR.
- 6.3 SLAB TO BE MINIMUM 6 INCHES THICK, REINFORCED WITH #4 @ 12" C/C REBAR PLACED IN BOTH DIRECTIONS AT MID-HEIGHT OF THE SLAB, UNLESS OTHERWISE NOTED ON PLANS.
- 6.4 REFER TO CONCRETE SECTION FOR MINIMUM COMPRESSIVE STRENGTH AND AIR-ENTRAINMENT REQUIREMENTS.
- 6.5 FINISHING WILL BE MEDIUM BROOM.
- 6.6 CONTROL JOINTS (SAW-CUTS) TO BE LOCATED IN EACH DIRECTION, AT REGULAR INTERVALS, WITH A MAXIMUM DISTANCE OF 3m (10'). SHALL BE MINIMUM 3mm (1/8") WIDE AND SHALL PENETRATE THE SLAB TO A MINIMUM DEPTH OF 1/3 OF THE THICKNESS OF THE SLAB. CONTROL JOINTS SHOULD BE DONE AS SOON AS POSSIBLE WITHOUT DAMAGING THE CONCRETE,BUT NO LATER THAN 18 HOURS AFTER POURING.
- 6.7 WHEN POSSIBLE AND TO AVOID SHRINKAGE CRACKING, HUMIDITY SHALL BE MAINTAINED FOR 7 DAYS DURING THE CURING PERIOD OF THE SLAB. WATER AND USE POLYETHYLENE CLOTH OR BAG. THE CONCRETE MUST DRY UNIFORMLY.

7 **CONCRETE WORK IN HOT WEATHER (MINIMUM REQUIREMENTS)**

- 7.1 CONCRETE SHALL HAVE A MINIMUM TEMPERATURE OF 20 DEGREES CELSIUS AND A MAXIMUM TEMPERATURE OF 25 DEGREES CELSIUS WHILE POURING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THESE REQUIREMENTS ARE SATISFIED. ANY CONCRETE THAT DOES NOT CONFORM MUST BE REJECTED.
- 7.2 THE SURFACE OF POURED CONCRETE SHALL BE PROTECTED BY MEANS OF SUITABLE COVERINGS AND INSULATION (TO BE DETERMINED BY TEMPERATURE) DURING THE CURING PROCESS.
- 7.3 GENERAL REQUIREMENTS FOR HOT WEATHER CONCRETE WORK SHALL BE AS PER ACI 305R-99; OR AS PER LOCAL CODE REQUIREMENTS.

8 **PIPING**

- 8.1 ANY REQUIRED BACKFLOW DEVICE, WATER METER OR PRESSURE REGULATOR ON THE CITY WATER MAIN IS NOT PROVIDED
- 8.2 DISTANCE BETWEEN THE WQMS (PUMPS, MANIFOLD, ETC.) AND THE WATER CONTAINMENT SYSTEM (WCS) SHALL NOT EXCEED 40 FEET.
- 8.3 MAKEUP WATER LINE PRESSURE SHOULD NOT EXCEED 50 PSI AND/OR LOCAL CODE.
- 8.4 ALL PIPE LINES TO FEATURES TO HAVE 1% MINIMUM RECOMMENDED SLOPE FOR PROPER WINTERIZATION.
- 8.5 ALL LINE SIZING (FEATURE CONNECTION TABLE) ASSUMES A MAXIMUM DISTANCE OF 100 FEET BETWEEN THE WATER DISTRIBUTION MANIFOLD AND THE FURTHEST PLAY PRODUCT. DISTANCES ABOVE 100 FEET MAY REQUIRE AN INCREASE IN LINE SIZING. PLEASE CONTACT VORTEX.
- 8.6 THE LINE DIAMETER FROM DRAIN SHALL BE 6" BASED ON THE MAXIMUM APPROXIMATE FLOW AT 1% SLOPE. FINAL LOCATION OF DRAIN AND LINE ROUTING ARE TO BE DETERMINED BY OTHERS.
- 8.7 PRESSURE LINES ARE RECOMMENDED TO BE SCHEDULE 80 PVC OR PEX, AND NON-PRESSURE LINES TO BE SCHEDULE 40, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 8.8 DRAINAGE LINES ARE RECOMMENDED TO BE SDR 35, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 8.9 CHEMICAL FEED LINES SHALL NOT EXCEED 30 FEET.

- 8.10PIPING SHOULD BE INSPECTED AFTER TRANSPORTATION FOR CUTS, SCRATCHES, GOUGES OR SPLITS; DAMAGED SECTIONS MUST BE DISCARDED OR CUT OUT.
- 8.11PIPE SHALL BE INSTALLED BELOW THE FROST LEVEL NOT LESS THAN 12" (ASTM F-645) UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 8.12PIPE INSTALLATION MINIMUM COVER SHOULD BE EVALUATED ACCORDING TO ASTM D-2774, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 8.13SPECIAL CONSIDERATIONS SHOULD BE TAKEN FOR THERMAL CONDITIONS, EXPANSION AND CONTRACTIONS DUE TO TEMPERATURE SHOULD BE EVALUATED BEFORE THE INSTALLATION BY THE CONTRACTOR.

9 **ELECTRICAL**

- 9.1 WIRING FROM THE CONTROLLER TO EACH ACTIVATOR SHALL BE #22 AWG. A TOTAL OF FIVE (5) CONDUCTORS PER ACTIVATOR.
- 9.2 ALL CONNECTIONS TO THE CONTROLLER AND OTHER ELECTRICAL PANEL SHALL BE PERFORMED USING AN APPROVED NEMA 4X CONNECTOR.
- 9.3 WIRE FROM MAIN POWER TO PANEL TO BE DETERMINED BY OTHERS RESPECTING THE LOCAL CODE.
- 9.4 MAINTAIN A MINIMUM CLEARANCE ZONE OF 36" (1m) FRONT OF ELECTRICAL PANEL, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 9.5 USE #6 BARE COPPER BONDING WIRE BETWEEN FEATURES TO A GROUNDING ROD IN THE SOIL, TIED INTO REBAR GRID, OR AS PER LOCAL CODE. BONDING REQUIRED FOR NEW EQUIPMENT. EXISTING BONDING FOR OLDER FEATURES.
- 9.6 AS PER ELECTRICAL CONSTRUCTION AND SAFETY CODES: CONTROLLER AND ANY OTHER ELECTRICAL ENCLOSURES MUST BE HARD-WIRED TO A GROUND FAULT CIRCUIT INTERRUPTER (GFCI) FROM THE INPUT POWER SOURCE.
- 9.7 ALL ELECTRICAL WORK SHOULD BE PERFORMED BY A LICENCE ELECTRICIAN IN ACCORDANCE TO LOCAL ELECTRICAL CONSTRUCTION AND SAFETY CODES.

No.	REVISIONS	DATE	BY
	xxx		xx



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LEE COUNTY, FL.

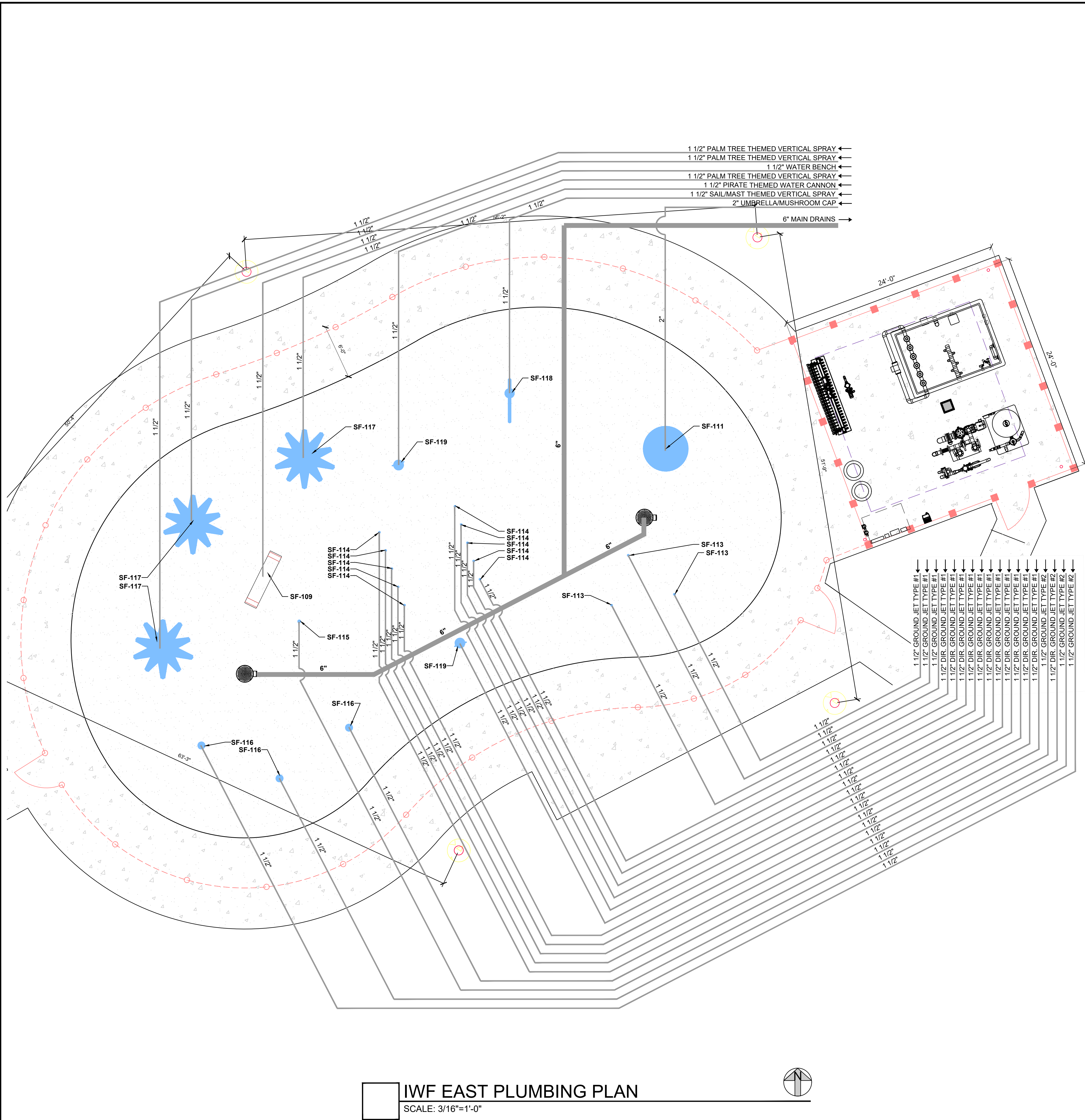
INTERACTIVE WATER FEATURE (IWF)

EAST MODIFICATION PLANS

GENERAL INFORMATION & NOTES

PROJECT: 2024027	DATE: 07-10-2024	SCALE:AS SHOWN
DESIGNED BY: RT		DRAWN BY: RT
CHECKED BY: RT		

SHEET NUMBER
PE-2.0



FEATURE LEGEND

NUMBER	COUNT	NAME	PIPE SIZE	FLOW RATE	TOTAL FLOW RATE
SF-109	1	WATER BENCH TBD	1 1/2" DIA.	TBD	TBD
SF-111	1	UMBRELLA/MUSHROOM CAP VOR 0114	2" DIA.	75 GPM	75 GPM
SF-113	3	GROUND JET TYPE #1 VOR 0301	1 1/2" DIA.	8 GPM	24 GPM
SF-114	10	DIRECTIONAL GROUND JET TYPE #1 VOR 0305	1 1/2" DIA.	2 GPM	20 GPM
SF-115	1	DIRECTIONAL GROUND JET TYPE #2 VOR 0327	1 1/2" DIA.	5 GPM	5 GPM
SF-116	3	GROUND JET TYPE #2 VOR 8084	1 1/2" DIA.	14 GPM	42 GPM
SF-117	3	PALM TREE THEMED VERTICAL SPRAY VOR 0509	1 1/2" DIA.	15 GPM	45 GPM
SF-118	1	SAIL/MAST THEMED VERTICAL SPRAY VOR 7677	1 1/2" DIA.	5 GPM	5 GPM
SF-119	2	PIRATE THEMED WATER CANNON VOR 0201	1 1/2" DIA.	5 GPM	10 GPM
TOTAL FETURES: 25			TOTAL GPM		226 GPM

PIPING MAXIMUM
FLOW VELOCITY CHART (GPM)

PIPE DIAMETER	GRAVITY (3.0 FPS)	SUCTION (6.0 FPS)	PRESSURE (10.0 FPS)
1 1/2" DIA.	17	33	55
2" DIA.	29	59	98
2 1/2" DIA.	44	90	147
3" DIA.	66	132	220
4" DIA.	117	235	392
6" DIA.	264	529	881

*Flow Rates Shown Provided By Manufacturer (Confirm)

- NOTES:
1. TIE ALL STEEL TOGETHER (WALL & FOOTER).
 2. LAP ALL STEEL 27" MIN.
 3. ALL CONCRETE TO BE MIN 3,500 PSI.
 4. ALL REBAR TO BE GRADE 40.

REVISIONS	DATE	BY
	xxx	xx
No.	xxx	

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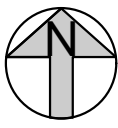
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KIMLEY HORN
LAKES PARK
LEE COUNTY, FL.
INTERACTIVE WATER FEATURE (IWF)
EAST MODIFICATION PLANS
IWF EAST PLUMBING PLAN

PROJECT:	2024027
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CHECKED BY:	RT

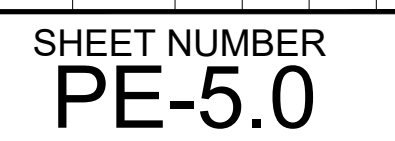
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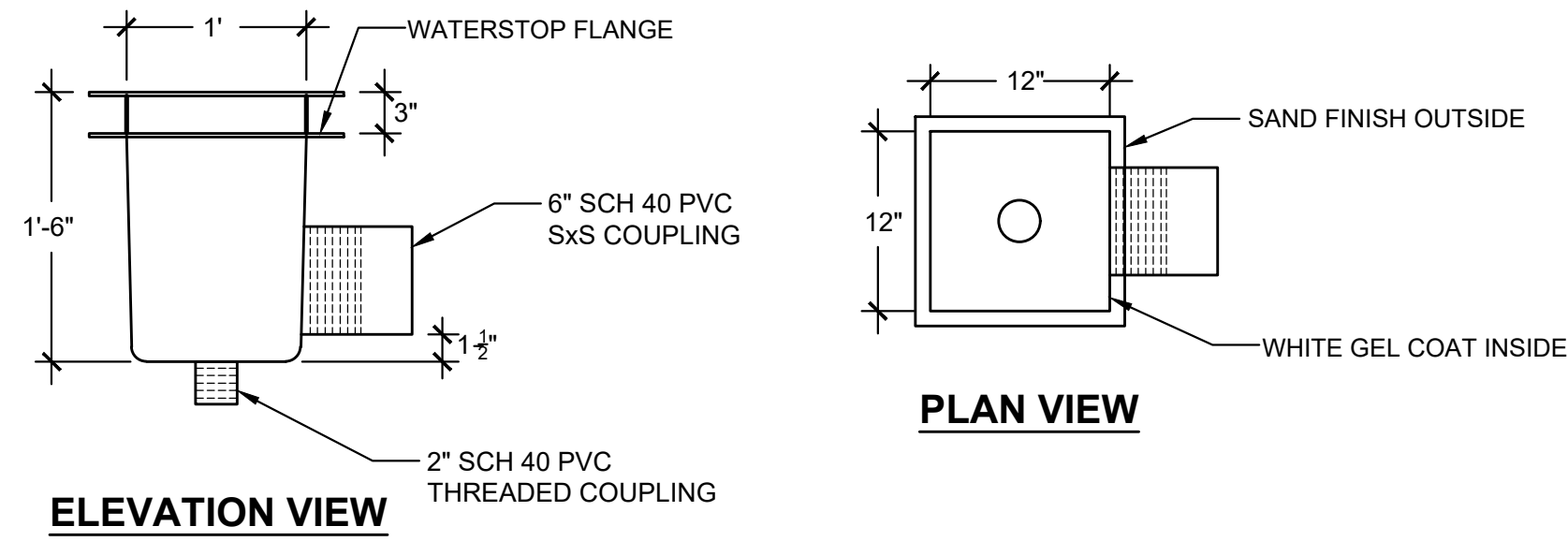
IWF EAST PLUMBING PLAN
SCALE: 3/16"=1'-0"





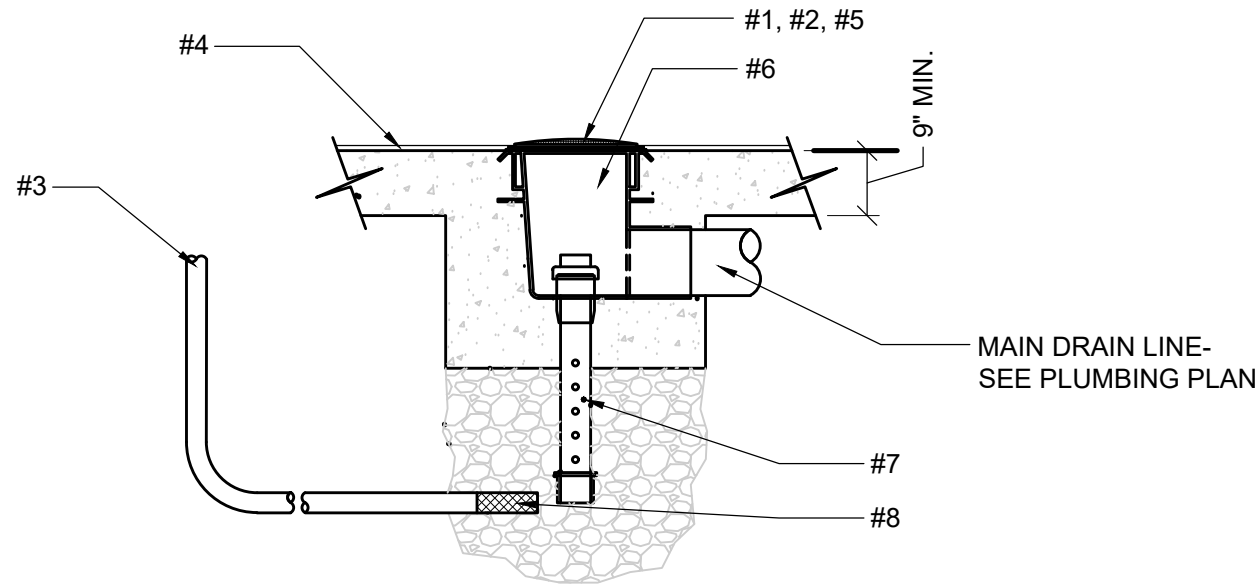
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12"x12"x18" MAIN DRAIN SUMP - VGB COMPLIANT
A.S.A.FBS-50-812-18-6

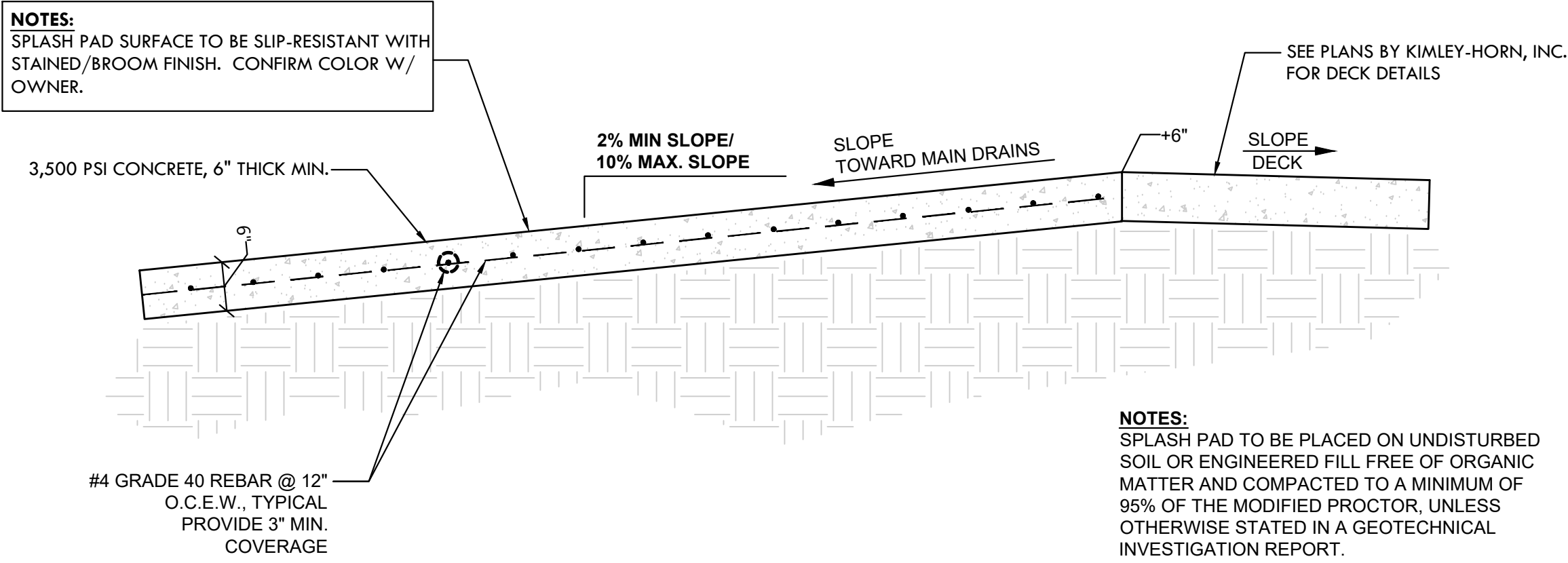
SCALE: N.T.S.
TANDEM ENGINEERING



- NOTES:**
1. EACH MAIN DRAIN GRATE SHALL BE VGB COMPLIANT WITH 68 SQ. IN. MINIMUM OPEN AREA. THE MAXIMUM WATER WATER VELOCITY THROUGH EACH GRATE IS 1.5 FPS.
 2. EACH MAIN DRAIN GRATE SHALL BE SECURELY FASTENED WITH STAINLESS STEEL SCREWS TO PREVENT UNAUTHORIZED REMOVAL BY BATHERS.
 3. EXTEND A DEADLINE DEWATERING PIPE FROM ROCK BED BELOW MAIN DRAIN SUMP TO THE SURFACE. LOCATE SURFACE END OF DEADLINE DEWATERING PIPE WITHIN A VALVE BOX TO ALLOW FOR THE FUTURE USE OF THIS PIPE.
 4. REFER TO THE POOL FINISH SCHEDULE FOR WALL, FLOOR, AND GUTTER SURFACING MATERIALS. THE INTERIOR SURFACE SHALL BE REFLECTIVE AND SLIP-RESISTANT IN NATURE TO ASSIST IN THE VIEWING OF PERSONS.
 5. VGB COMPLIANT GRATE
 6. MAIN DRAIN
 7. COLLECTOR TUBE
 8. PERIPHERAL WIRE SCREEN

MAIN DRAIN SECTION

SCALE: N.T.S.
TANDEM ENGINEERING



- NOTES:**
- SPLASH PAD TO BE PLACED ON UNDISTURBED SOIL OR ENGINEERED FILL FREE OF ORGANIC MATTER AND COMPACTED TO A MINIMUM OF 95% OF THE MODIFIED PROCTOR, UNLESS OTHERWISE STATED IN A GEOTECHNICAL INVESTIGATION REPORT.

IWF FLOOR DETAIL

SCALE: 3/4"=1'-0"
TANDEM ENGINEERING

No.	REVISIONS	DATE	BY
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TANDEM ENGINEERING, LLC.
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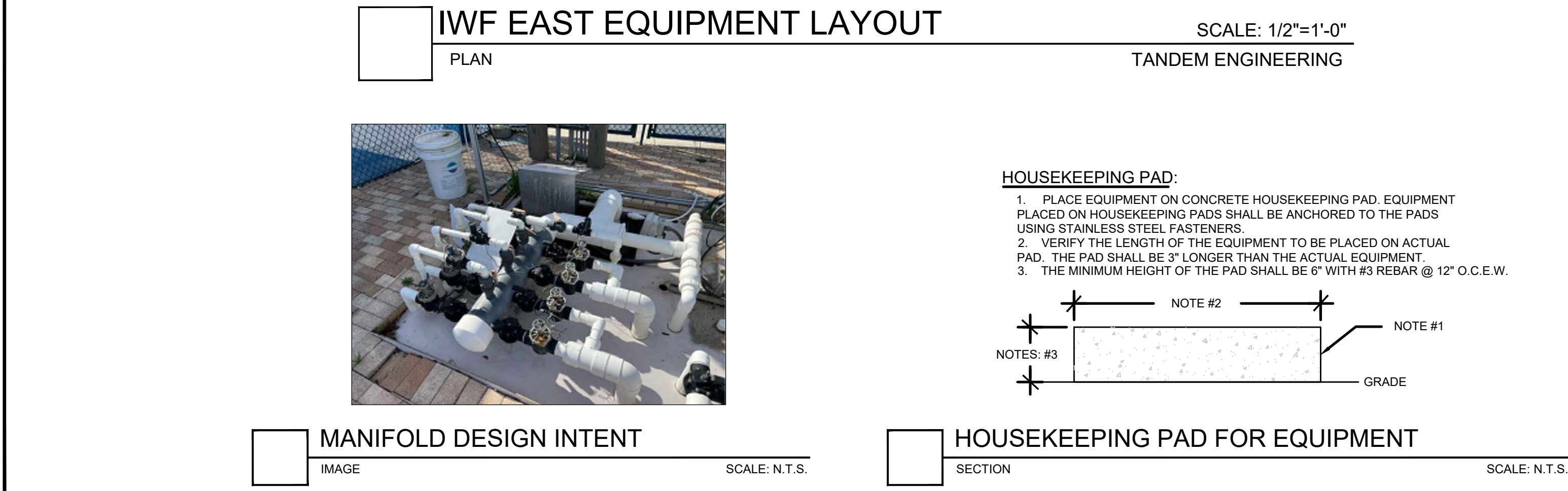
RICHARD M. TOMMELL, P.E.

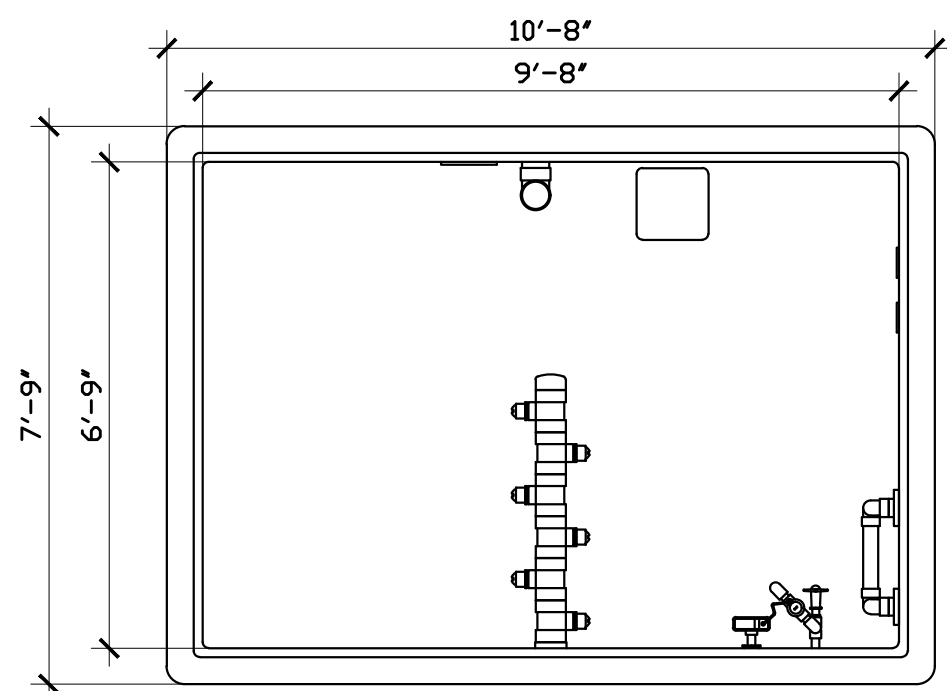
FLORIDA LICENSE NUMBER
#61659

KIMLEY HORN
LAKE PARK
LEE COUNTY, FL.
INTERACTIVE WATER FEATURE (IWF)
EAST MODIFICATION PLANS
IWF EAST DETAILS

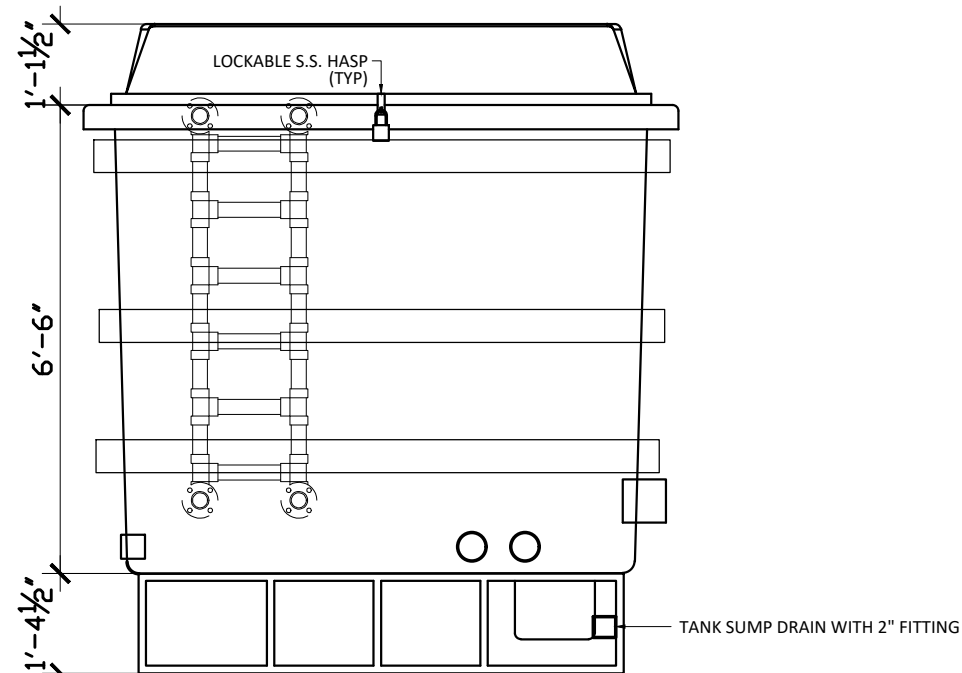
PROJECT:	2024027
DATE:	07-10-2024
SCALE: AS SHOWN	
DESIGNED BY:	RT
DRAWN BY:	RT
CHECKED BY:	RT

SHEET NUMBER
PE-6.0





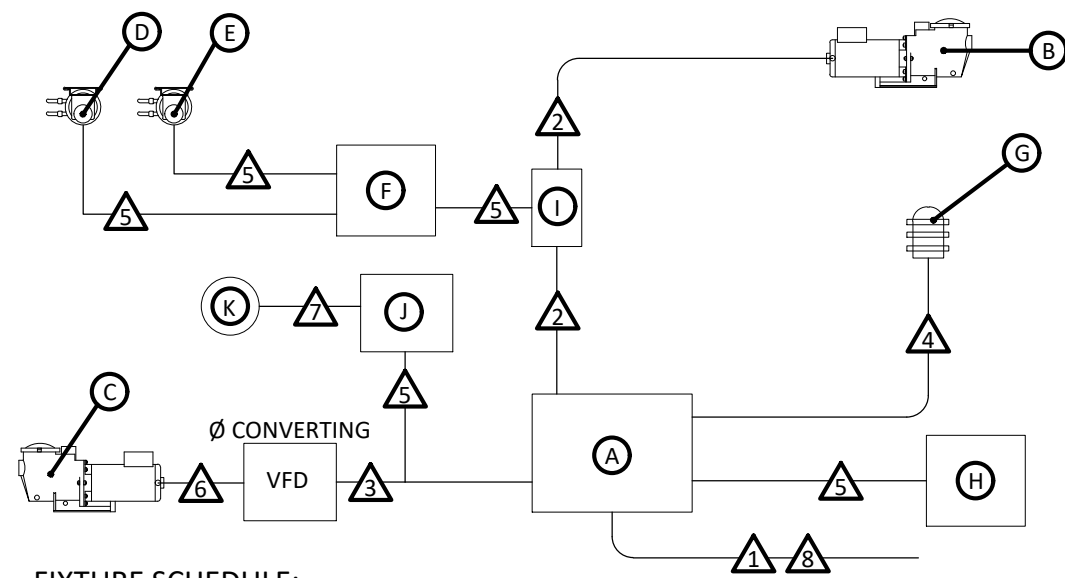
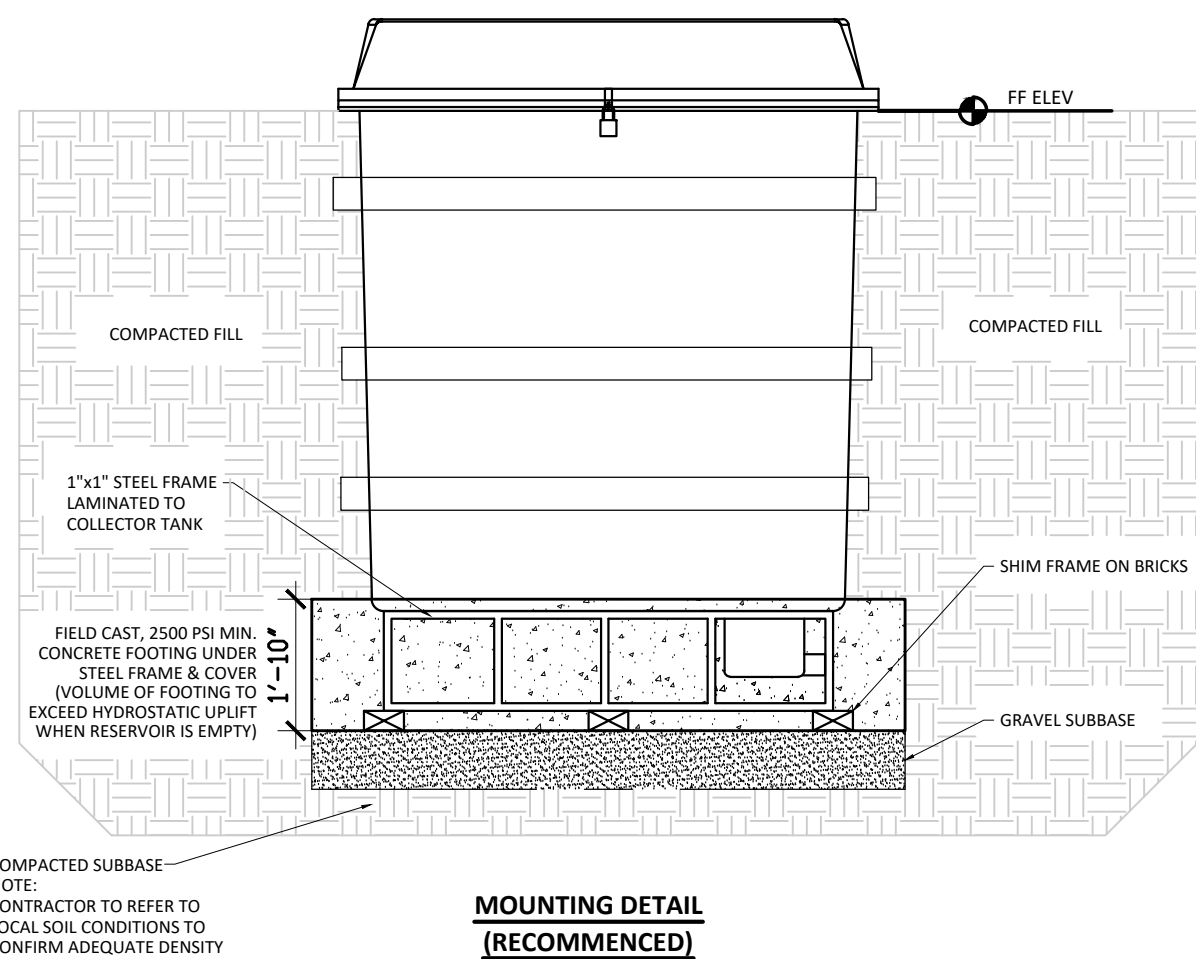
PLAN VIEW
FILTER TANK











SIDE ELEVATION
FILTER TANK

LINE FUNCTION	SIZE
MAIN DRAIN	8"
FRESH WATER FILL	1" (MIN)
STATIC LINE	2"
OVERFLOW	3"
RECIRCULATION PUMP SUCTION	3"
RECIRCULATION RETURN	2.5"
FEATURE PUMP SUCTION	6"
TANK DRAIN	2"
ACTUATED FEATURE BYPASS	4"

IWF FILTER TANK EQUIPMENT LIST	
COLLECTOR TANK	3000 GALLON CAPACITY
FILTER ELEMENT (FEATURE)	(6) UNICELL C-7697, 155 SQ FT FILTER AREA EACH (348 GPM MAX)
WATER LEVEL CONTROL	HYDRAULIC VALVE W/ MANUAL FILL VALVE, RESERVOIR
ACCESS HATCHWAY	DUAL 5'x8' FIBERGLASS LOCKABLE HATCHWAY W/ HYDRAULIC ASSIST



FIXTURE SCHEDULE:			
MARK	DESCRIPTION	VOLTAGE	MANUFACTURER & MODEL NO.
A	MAIN LUG BREAKER PANEL (16 CIRCUIT)	208-230	SIEMENS, PW3624L125CU
B	RECIRCULATION PUMP	230V	
C	FEATURE PUMP	208-230/460V	
D	CHLORINE FEEDER PUMP	115V	STENNER 45M5
E	ACID FEEDER PUMP	115V	STENNER, 45M2
F	CHEMICAL CONTROLLER	115V	
G	100 WATT SERVICE LIGHT FIXTURE	115V	INTERMATIC, VPMX1GC1 100W
H	GFCI DUPLEX RECEPTACLE	115V	PASS & SEYMOUR
I	ELECTRICAL INTERLOCK	115/208-230V	MCQ, 40A DEFINITE PURPOSE CONTACTOR
J	FEATURE CONTROLLER	115/208-230V	AQUAWORX FEATURE CONTROLLER
K	ACTIVATION BOLLARD	12/24/115V	AQUAWORX FEATURE ACTIVATOR
L	UV SANITIZER	115-120V	CHLOR-KING SENTRY SAG 480A-CR UV

FEEDER & CIRCUIT SCHEDULE:				
MARK	CONDUCTORS NEUTRAL	GROUND	CONDUIT	REMARKS
				PANEL FEED
	2- #10	1- #10	1/2"	UL SEALTITE
	2- #6	1- #6	1"	UL SEALTITE
	1- #12 1- #12	1- #12	1/2"	SEALTITE TO PANEL
	1- #12 1- #12	1- #12	1/2"	SEALTITE TO PANEL
	3- #8	1- #8	1"	SEALTITE TO PANEL
	2- #12		1/2"	SEALTITE TO PANEL
	CONDUCTORS AND CONDUIT INSTALLED BY OTHERS			

PANEL SCHEDULE:					
SINGLE PHASE, 3 WIRE - 208Y/120 VAC OR 240 VAC INSULATED/BONDABLE NEUTRAL CURRENT WITHSTAND RATING MAX. RMS. SYM. 10,000A 12/240V					
CIRCUIT	POLE	TRIP	LOAD	AMPS	
1-2	2	30A GFI	REC. PUMP W/INTERLOCKED	13.9	
3-4	2	50A GFI	FEATURE PUMP	30.0	
5	1	20A	GFCI	3.0	
6	1	20A	SERVICE LIGHT	1.5	
7	1	20A	FEATURE CONTROLLER	1.1	
8	1	20A	UV SANITIZER	4.8	
9-16			SPARE		
				TOTAL MAXIMUM LOAD	54.3



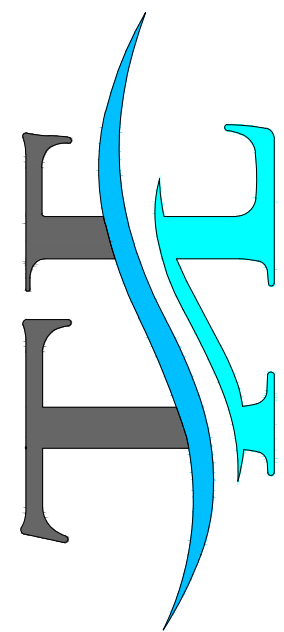
ELECTRICAL RISER

SCALE: 3/4" TO 1



IWF EAST COLLECTOR TANK RESERVOIR

SCALE: 1/2" TO 1'

[illegible]

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#61859

KIMLEY HORN
LAKES PARK
LEE COUNTY, FL.
INTERACTIVE WATER
EAST MODIFICATION
IWF EAST COLLECT
ELECTRICAL DIAGRA

PROJECT: 2024027
DATE: 07-10-2024
SCALE:AS SHOWN
DESIGNED BY: RT
DRAWN BY: RT
CHECKED BY: RT

SHEET NUMBER
PE-8.0



-680.26 Equipotential Bonding* (Summarized)

(A) Performance. Equipotential bonding is intended to reduce voltage gradients in the area around permanently installed pools, outdoor spas, or outdoor hot tubs by the use of a common bonding grid in accordance with 680.26(B) and (C).

(B) Bonded Parts. The parts of a permanently installed pool, outdoor spa, or outdoor hot tub listed in (B)(1) through (B)(7) shall be bonded together with a solid copper conductor not smaller than 8 AWG with listed pressure connectors, terminal bars, exothermic welding, or other listed means [250.8(A)]. Equipotential bonding is not required to extend to or be attached to any panelboard, service equipment, or grounding electrode.

(a) Structural Reinforcing Steel. Unencapsulated structural reinforcing steel secured together

(2) Perimeter Surfaces. An equipotential bonding grid shall extend 3 ft horizontally beyond the inside walls of a pool, outdoor spa, or outdoor hot tub, including unpaved, paved, and poured concrete surfaces. The bonding grid shall comply with (a) or (b) and be attached to the conductive pool reinforcing steel at a minimum of four points uniformly spaced around the perimeter of the walls of a pool, outdoor spa, or outdoor hot tub.

(a) Structural Reinforcing Steel. Structural reinforcing steel [680.26(B)(1)(a)]. *Author's Comment:* The 2017 NEC does not provide any guidance on the installation requirements for structural reinforcing steel when used as a perimeter equipotential bonding grid.

(b) Alternate Means. Equipotential bonding conductor meeting the following:

- (1) 8 AWG bare solid copper bonding conductor.
- (2) The bonding conductor shall follow the contour of the perimeter surface.
- (3) Listed splicing devices.
- (4) Bonding conductor shall be 18 to 24 in. from the inside walls of the pool.
- (5) Bonding conductor shall be secured within or under the perimeter surface 4 to 6 in. below the subgrade.

(3) Metallic Components. Metallic parts of the pool, outdoor spa, or outdoor hot tub structure shall be bonded to the equipotential grid.


(4) Underwater Metal Forming Shells. Metal forming shells and mounting brackets for luminaires and speakers shall be bonded to the equipotential grid.

(5) **Metal Fittings.** Metal fittings sized 4 in. and larger that penetrate into the pool, outdoor spa, or outdoor hot tub structure, such as ladders and handrails shall be bonded to the equipotential grid.

SCALE: N.T.S.

IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS TO RESULT IN A COMPLETE ELECTRICAL INSTALLATION IN ACCORDANCE WITH ALL STATE/LOCAL CODES/ORDINANCES AND THE 2020 NATIONAL ELECTRIC CODE MINIMUM REQUIREMENTS. IN THE EVENT ANY PORTION OF THE INSTALLATION SHOWN OR SPECIFIED FAILS TO MEET THE MINIMUM REQUIREMENTS, IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO ALTER THE LAYOUT TO MEET THE REQUIREMENTS OF SAID GOVERNING CODES MINIMUM REQUIREMENTS AND TO NOTIFY THE EOR OF SUCH CHANGES IN THESE PORTIONS OF THE PLANS AND SPECIFICATIONS. WHERE INSTALLATION, SHOWN OR DESCRIBED EXCEEDS THE REQUIREMENTS OF THE STATE AND LOCAL CODES, THE SPECIFICATIONS AND PLANS SHALL GOVERN.

SCALE: 3/16" = 1'-0"



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KIMLEY HORN
LAKES PARK
LEE COUNTY, FL.
INTERACTIVE WATER FEATURE (IWF)
EAST MODIFICATION PLANS
IWF EAST BONDING PLAN

PROJECT: 2024027
DATE: 07-10-2024
SCALE:AS SHOWN
DESIGNED BY: RT
DRAWN BY: RT
CHECKED BY: RT

SHEET NUMBER
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