# CITY OF KEY WEST TRUMBO ROAD FLOATING DOCKS

# **KEY WEST BIGHT MARINA**

PROJECT NO. KB1201 MONROE COUNTY, FLORIDA STANTEC PROJECT NO. 215615432

SECTION: 31 TOWNSHIP: 67 S RANGE: 25 E LATITUDE: 24° 33' 46.1" N LONGITUDE: 81° 47' 55.0" W



LOCATION MAP Scale: 1"=300'



901 Ponce de Leon Blvd. Suite 5 Coral Gables, Florida, 33134 Tel. 305-445-2900 Fax. 305-445-3344 www.stantec.com

## INDEX OF SHEETS

SHEET NO.	SHEET DESCRIPTION
C01	COVER
C02	OVERALL AERIAL PLAN
C03	EXISTING SITE PLAN
C04	GEOMETRY PLAN
C05	UTILITY SERVICE PLAN
C06	UTILITY DOCK DETAILS
C07	PROPOSED DOCK DETAILS
C08	CROSS SECTIONS
E-01 - E-07	ELECTRICAL PLANS
FP-01 - FP-04	FIRE PROTECTION PLANS
P-01 - P-04	PLUMBING PLANS
S01	STRUCTURAL PILE LAYOUT
-	SURVEY

••••••APPROVALS•••••									
AGENCY	SUBMITTAL DATE	APPROVAL DATE	PERMIT NUMBER						



MAYOR & COMMISSION:

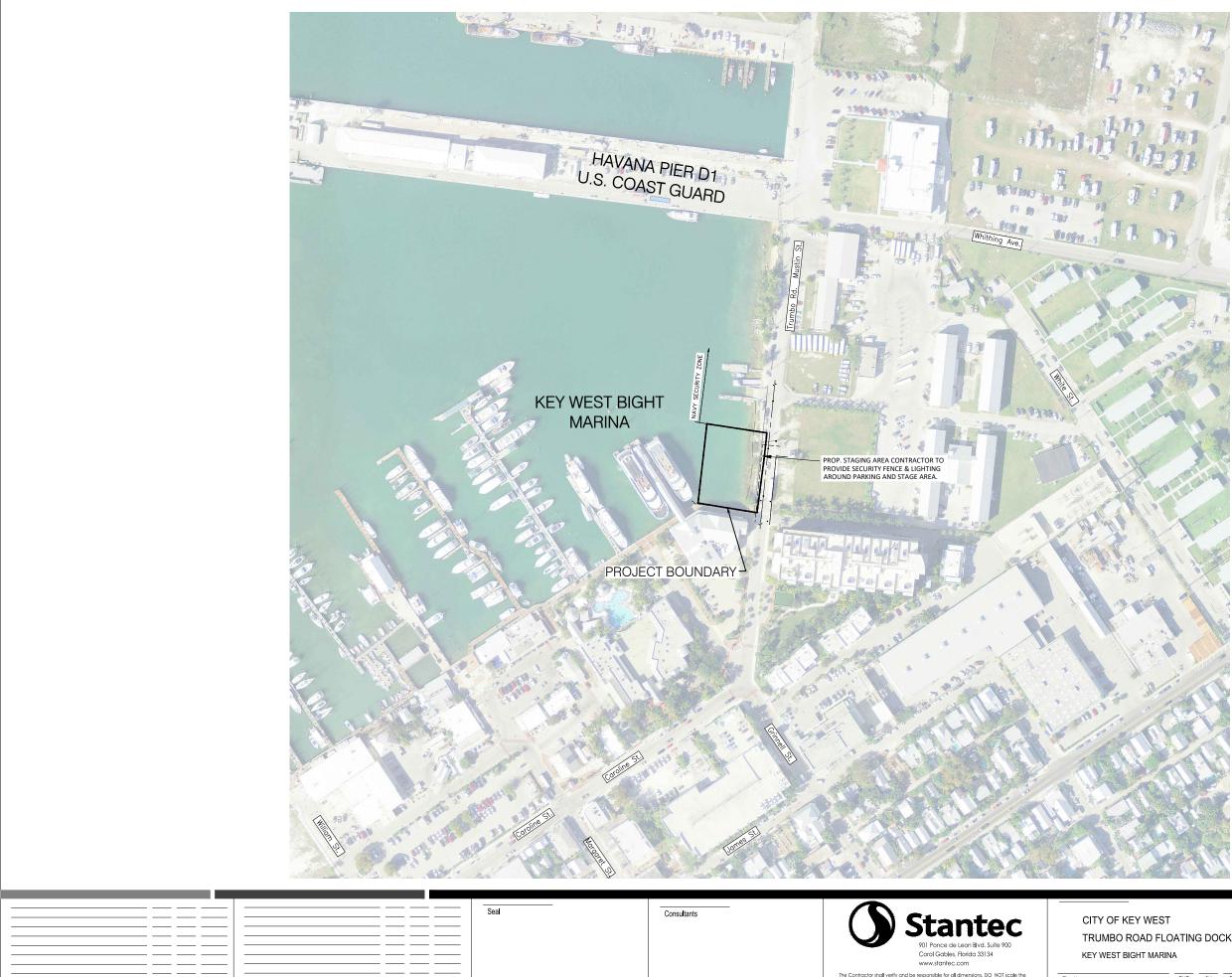
Teri Johnston, Mayor Jimmy Weekley, Commissioner Samuel Kaufman, Commissioner Billy Wardlow, Commissioner Gregory Davila, Commissioner Mary Lou Hoover, Commissioner Clayton Lopez, Commissioner

City Manager: Gregory Veliz

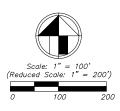
## <u>100% SET</u> May 29, 2020

APPROVED BY

CARLOS M. HERDOCIA REGISTERED ENGINEER NO. 47660 STATE OF FLORIDA



		Seal	Consultants	<b>Stantoc</b>	CITY OF KEY
				<b>Stantec</b> 901 Ponce de Leon Blvd. Suite 900	TRUMBO ROA
				Coral Gables, Florida 33134 www.stantec.com	KEY WEST BIGH
Revision By Appd. YY.MM.DD	Issued By Appd. YY.MM.DD	CARLOS M. HERDOCIA, P.E. REGISTERED ENGINEER NO. 47660 STATE OF FLORIDA		The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is fabiliden.	File Name:



NOTE: WATER ELEVATION DATA WAS OBTAINED FROM THE LAND BOUNDARY INFORMATION SYSTEM WEBSITE (LABINS.ORG) AND IS REFERENCED TO TIED INTERPOLATION POINT #3262. MEAN HIGH WATER EL. =0.94' NGVD29 MEAN LOW WATER EL. =-0.09' NGVD29.

SITE SURVEY INFORMATION FROM: FLORIDA KEYS LAND SURVEYING 19960 OVERSEAS HIGHWAY SUGARLOAF KEY, FL 33042 FIELD WORK DATE: SEPTEMBER 5, 2017 REVISION DATE: SEPTEMBER 27, 2017 SIGNED AND SEALED BY: SIGNED AND SEALED BY: ERIC A. ISAACS PSM# 6783, LB# 7847

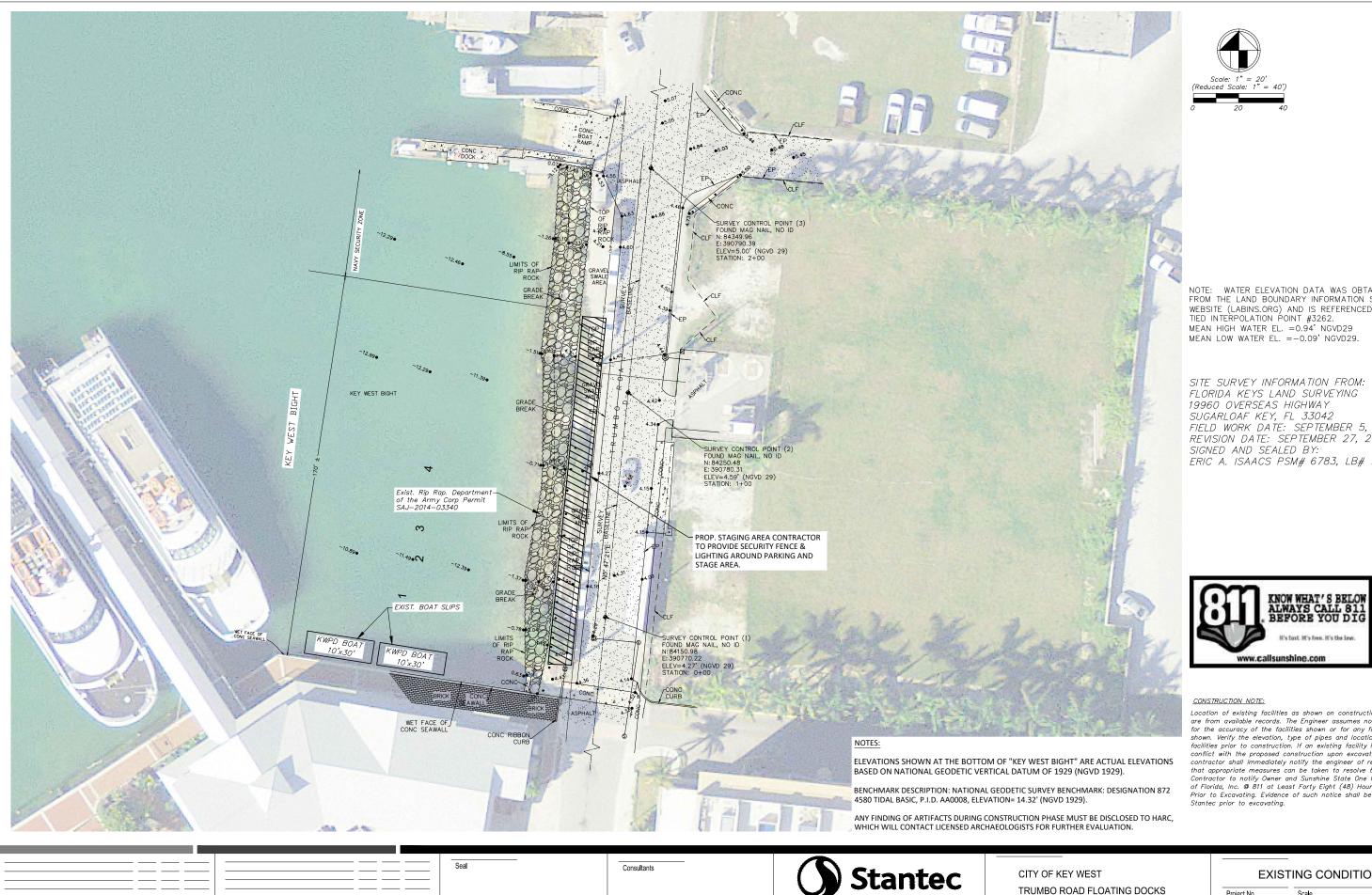
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Drawing No.	Sheet	Revisi
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CARLOS M. HERDOCIA, P.E. REGISTERED ENGINEER NO. 47660 STATE OF FLORIDA

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Revision

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SUGARLOAF KEY, FL 33042 FIELD WORK DATE: SEPTEMBER 5, 2017 REVISION DATE: SEPTEMBER 27, 2017 SIGNED AND SEALED BY: ERIC A. ISAACS PSM# 6783, LB# 7847

Location of existing facilities as shown on construction drawings are from available records. The Engineer assumes no responsibility for the accuracy of the facilities shown or for any facility not shown. Verify the elevation, type of pipes and location of existing facilities prior to construction. If an existing facility is found to conflict with the proposed construction upon excavation the contractor shall immediately notify the engineer of record so that appropriate measures can be taken to resolve the problem. Contractor to notify Owner and Sunshine State One Call of Florida, Inc. @ 811 at Least Forty Eight (48) Hours Prior to Excavating. Evidence of such notice shall be furnished to Stantec prior to excavating.

CITY OF KEY WEST	EXIST	ING C	ONE	DITIO	NS
TRUMBO ROAD FLOATING DOCKS	Project No.	Scale			
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me: RHF CH DS 20.05.29	Drawing No.	Sheet			Revision
me: <u>RHF CH</u> <u>DS</u> 20.03.29 Dwn. Chkd. Dsgn. YY.MM.DD	C03		of	-	



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ANY FINDING OF ARTIFACTS DURING CONSTRUCTION PHASE MUST BE DISCLOSED TO HARC, WHICH WILL CONTACT LICENSED ARCHAEOLOGISTS FOR FURTHER EVALUATION.

#### TOTAL AREA OF DECKING OVER MEAN HIGH WATER= 2,116 sf

TOTAL NUMBER OF PILES= 14

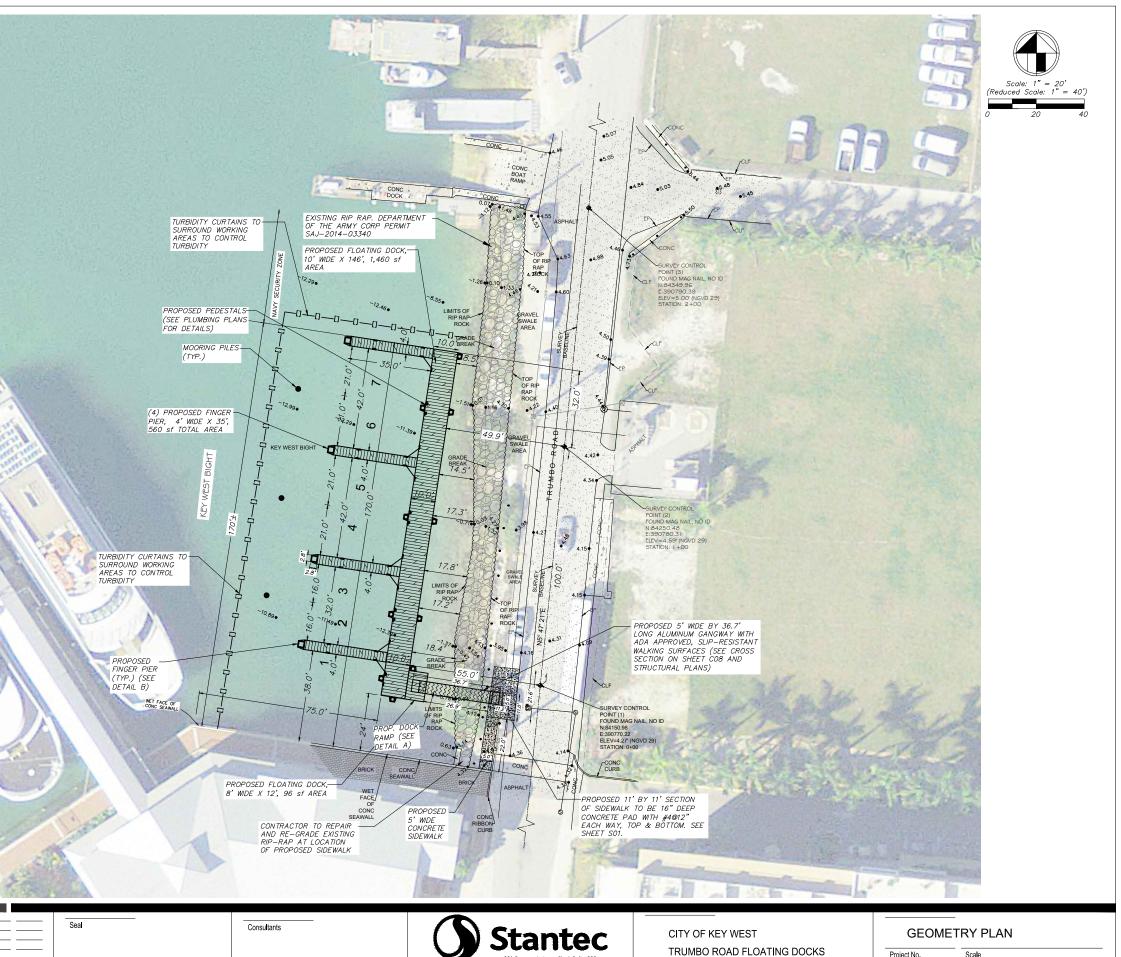
ALL INTERIOR AND END PILES TO BE HSS 20x0.5 WITH COAL TAR EPOXY COATING = 2.18 sf x (14)

TOTAL PILE AREA= 30.52 sf

TOTAL NUMBER OF MOORING PILES= 3

ALL MOORING PILES TO BE HSS 14x0.5 WITH COAL TAR EPOXY COATING = 1.07 sf x (3)

MOORING PILES TOTAL AREA= 3.21 sf



	Seal	Consultants	Stantec	CITY OF KEY V
			901 Ponce de Leon Blvd. Suite 900 Coral Gables, Florida 33134	TRUMBO ROAI
 M.DD Issued By Appd.	CARLOS M. HERDOCIA, P.E. YY.MM.DD REGISTERED ENGINEER NO. 47660 STATE OF FLORIDA		www.stantec.com The Contractor shal verify and besponsible for all dimensions, DO NOT scale the drawing- any errors or omissions shall be reported to 5 stratec. without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose often than that authorized by Stantec is forbidden.	File Name:

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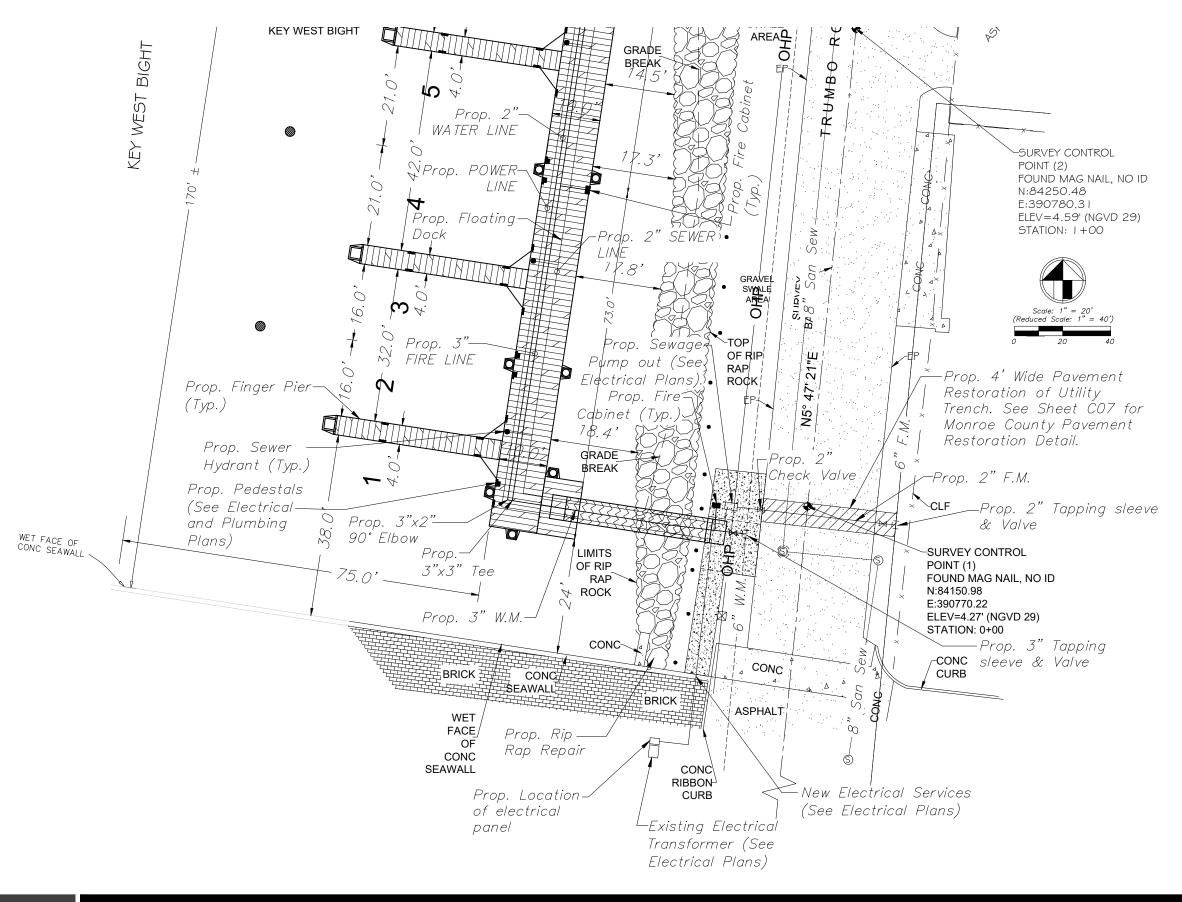
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				oca	Consultants	( <b>)</b> Stantec	CITY OF KE
						901 Ponce de Leon Blvd. Suite 900	TRUMBO RO
						Coral Gables, Florida 33134 www.stantec.com	KEY WEST BIG
Revision	By Appd. YY.MM.DD	Issued By Appd.	YY.MM.DD	CARLOS M. HERDOCIA, P.E. REGISTERED ENGINEER NO. 47660 STATE OF FLORIDA		The Contractor shall verify and be responsible for all dimensions, DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec's tothiciden.	File Name:



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#### CONSTRUCTION NOTE:

UTILITIES NOTE: CONTRACTOR TO COORDINATE THE PROPOSED SEWER CONNECTION TO THE EXISTING FORCE MAIN ON TRUMBO ROAD THROUGH THE CITY OF KEY WEST UTILITIES DEPARTMENT (PH: (305) 809–3752), AND RIGHT-OF-WAY PERMITTING THROUGH THE ENGINEERING DEPARTMENT (PH: (305) 809–7333).



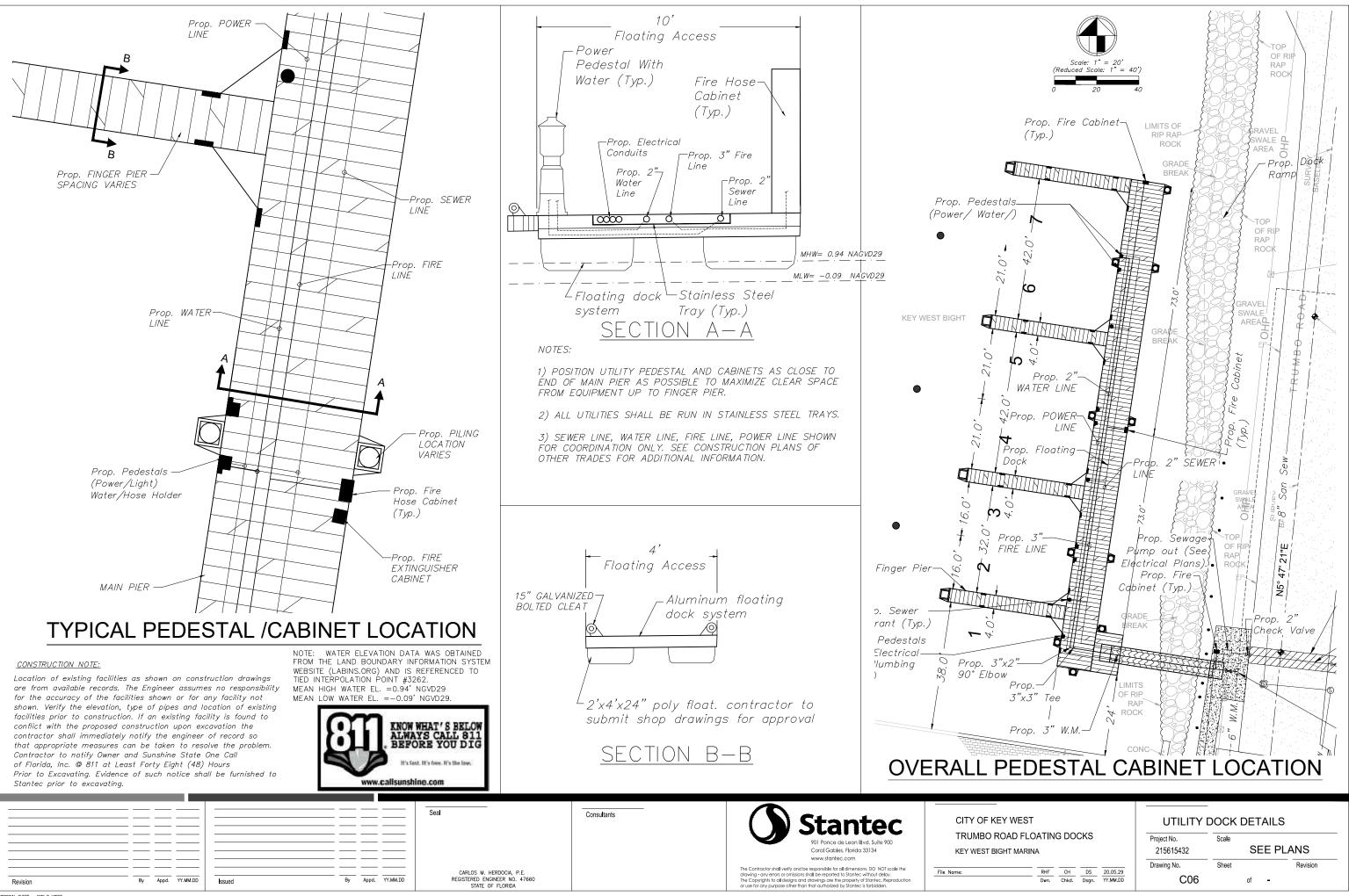
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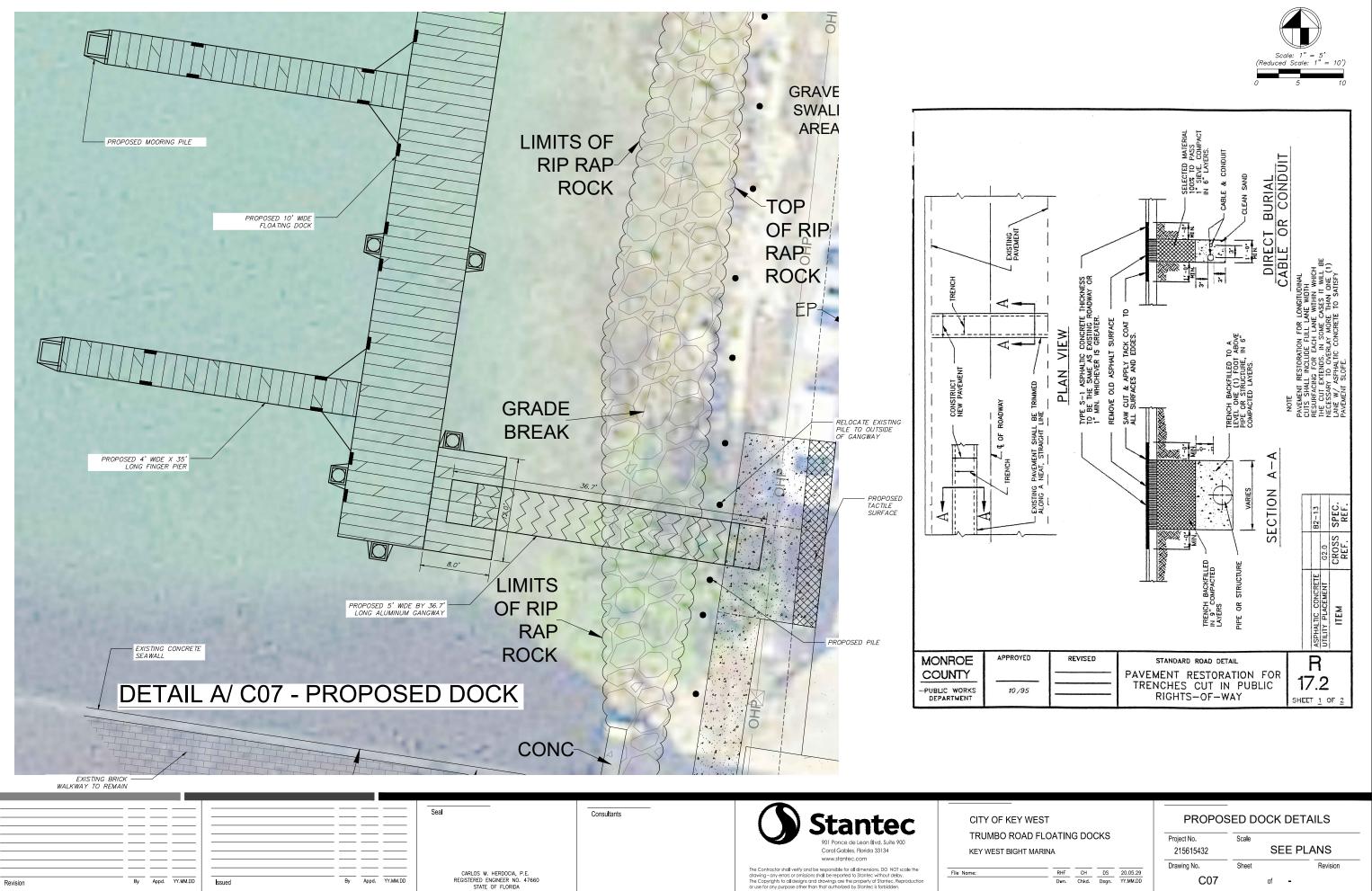
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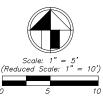
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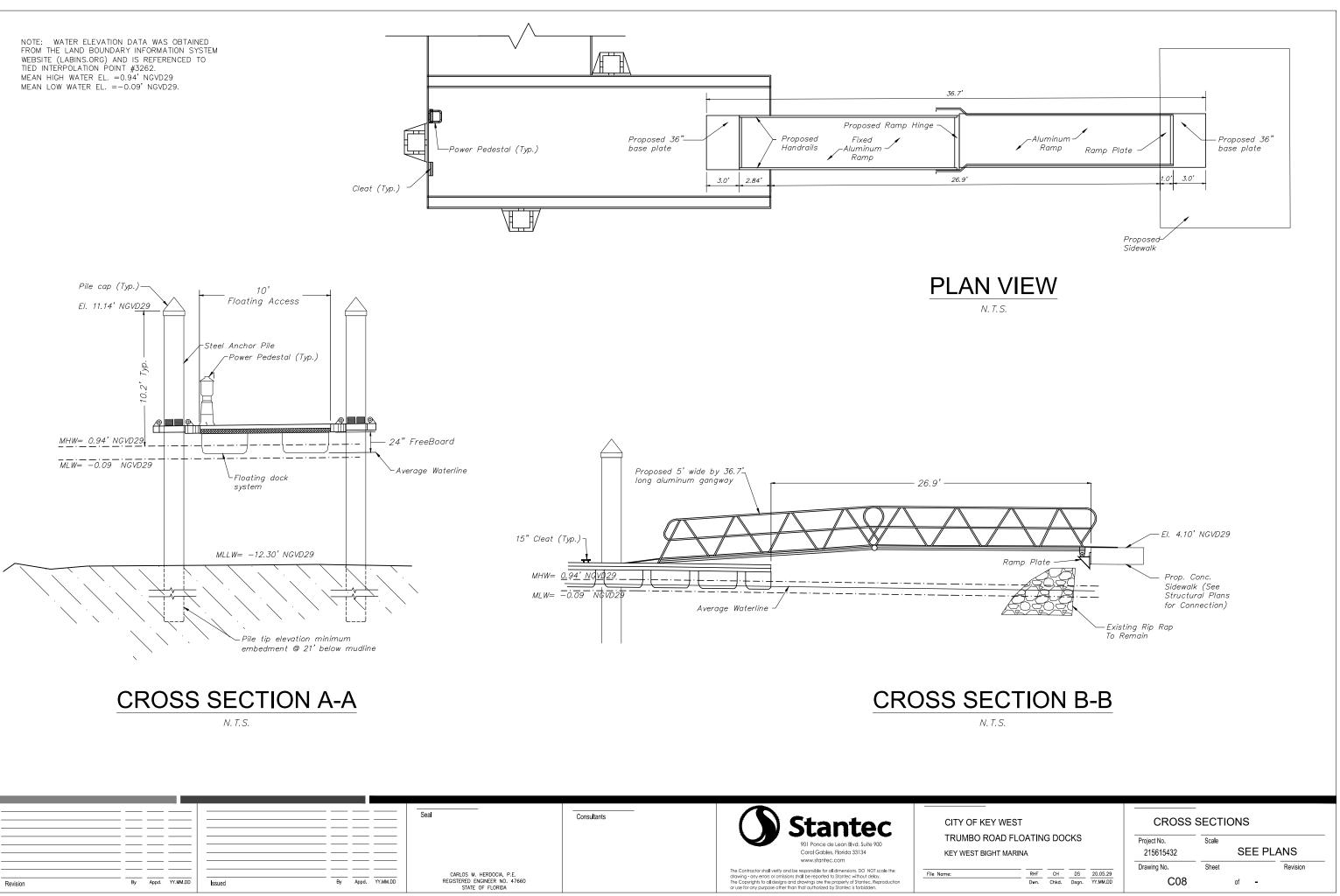
#### UTILITY SERVICE PLAN

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		к \$	KEY OPERATED, MTD 48" AFF UNO
A LUMINA	VIRE TYPE DESIGNATION		NET UPERATED, MILD 48" APP UNU
	CIRCUIT NUMBER	Р \$	PILOT LIGHT, MTD 48" AFF UNO
(7)	3,**	ф	RECEPTACLE 20A SINGLE, MTD 18" AFF UNO
(a)	SWITCH REFERENCE	⊕ ⊕	RECEPTACLE 20A DUPLEX, MTD 18" AFF UNO RECEPTACLE 20A SPLIT FEED, MTD 18" AFF UNO
		⊕	RECEPTACLE 20A FOURPLEX, MTD 18" AFF UNO
	1x4 FLUORESCENT TROFFER, SURFACE MTD	÷	RECEPTACLE 20A DUPLEX, CLG MTD
	2x4 FLUORESCENT TROFFER, SURFACE MTD	Ť	RECEPTACLE 20A FOURPLEX, CLG MTD
		₿	RECEPTACLE 20A DUPLEX, FLR MTD
	2x2 FLUORESCENT TROFFER, SURFACE MTD		RECEPTACLE 20A FOURPLEX, FLR MTD
		₩ ??	RECEPTACLE 20A DUPLEX, MTD 18" AFF UNO
	1x4 FLUORESCENT TROFFER, RECESSED		<ul> <li>- GFCI: GROUND FAULT CIRCUIT INTERRUPTER</li> <li>- IG: ISOLATED GROUND</li> <li>- SH: SHUTTER SAFETY</li> <li>- SP: SURGE PROTECTION</li> <li>- WP:WEATHERPROOF</li> </ul>
	2x4 FLUORESCENT TROFFER, RECESSED	Ø	
		♥ 50A	RECEPTACLE DECONTACTOR, MTD 18" AFF UNO
	2x2 FLUORESCENT TROFFER, RECESSED		RECEPTACLE, SPECIAL USE, RATING NOTED
		Ŕ	RECEPTACLE 208V, MTD 18" AFF UNO
	GENERAL PURPOSE INDUSTRIAL FLUORESCENT, SIZE PER PLANS	₯	RECEPTACLE REEL CORD
		Ø	JUNCTION BOX, SURFACE MTD
	LUMINAIRE w/ EMERGENCY BATTERY PACK	ΗΦ	JUNCTION BOX, WALL MTD
		J	JUNCTION BOX, FLR MTD
	UNSWITCHED LUMINAIRE		PANELBOARD, NORMAL POWER
			PANELBOARD, EMERGENCY POWER
•-Д	HID, POLE MTD w/ SINGLE SQUARE HEAD	Ø 5HP	MOTOR, HORSEPOWER NOTED
д•д	HID, POLE MTD w/ DOUBLE SQUARE HEAD	Ø	DAMPER MOTOR
	TID, FOLL WITD W/ DOUBLE SQUARE TIEAD	⊡- 30A	DISCONNECT SWITCH NON-FUSED, BUSS RATING
•-¤	HID, POLE MTD w/ SINGLE ROUND HEAD		NOTED
	THD, TOLE WITD W/ SINGLE ROOND TIERD	四 <u>30AT</u> 30AF	DISCONNECT SWITCH FUSED, BUSS (AF) AND FUSE (AT) RATING NOTED
¤⊷¤	HID, POLE MTD w/ DOUBLE ROUND HEAD	☑ 1	CONTACTOR, NEMA SIZE NOTED
$\sim$		<b>1</b>	STARTER, NEMA SIZE NOTED
¤	SURFACE MTD	<b>Z</b> - 1	COMBINATION MOTOR STARTER, NEMA SIZE NOTED
Ø	RECESSED		COMDINATION MOTOR STARTER, NEWA SIZE NOTED
.×		T	TRANSFORMER
Η̈́	WALL MTD		PUSHBUTTON HAND HOLE
۲	EXIT, SURFACE MTD	Пнн	- AHH: ANALOG HAND HOLE 4-20mA SIGNAL, ETHERNET FIBER/UPT, T - CHH: CONTROL HAND HOLE IZO/DIGITAL/DISCRETE SIGNAL, 120V
H	EXIT, WALL MTD		POWER - PHH: POWER HAND HOLE
<u> </u>		<b></b>	480V/277V/208V
4_4	EMERGENCY, WALL MTD	e	
4 <b>@</b> }	EMERGENCY w/ EXIT AND EMERGENCY BATTERY	_	CONDUIT DOWN
	PACK, WALL MTD	C	CONDUIT STUB
\$	SINGLE POLE, MTD 48" AFF UNO	<b>~</b>	CONDUIT HOMERUN, EXPOSED
\$	2-GANG, MTD 48" AFF UNO	ı	
\$	3-GANG, MTD 48" AFF UNO	<b>~</b>	CONDUIT HOMERUN, UNDERGROUND OR CONCEALE
ш		<b>⊲</b> 2T	TELEPHONE, MTD 18" AFF UNO
<b>#</b>	4-GANG, MTD 48" AFF UNO		
<b>2</b> 0	TWO POLE, MTD 48" AFF UNO	⊲1D	DATA, MTD 18" AFF UNO
2P \$		от	
3(h)	THREE WAY, MTD 48" AFF UNO, (LOWER CASE LETTER	⊲ <sup>2T</sup> <sub>1D</sub>	TEL/DATA, MTD 18" AFF UNO
3(b) \$	INDICATES SWITCH CONTROL LEG)	<b>@</b> 2V	
		₩2¥	TELEPHONE, CLG MTD
		<b>⊘</b> 1D	DATA, CLG MTD
		<b>▼</b> 2V	TELEPHONE, FLR MTD
		🗹 1D	DATA, FLR MTD
		⊠ 1D	DATA, FLR MTD
		⊠ 1D	DATA, FLR MTD

8				Н				Seal
7				G				
6				F				
5				E				
4				D	 			
3				С				
2				В				
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<u></u>

CAT6 PATCH PANEL, 110 PUNCH

BLOCKS, 19" RACK MTD

SC CONNECTORS, 19" RACK MTD

FIRE ALARM ANNUNCIATOR FAA

FACP FIRE ALARM CONTROL PANEL FIRE ALARM EVACUATION COMBINATION 员 AUDIBLE AND VISIBLE APPLIANCE (HORN/STROBE), WALL MTD w/ LENS 80" MIN & 96" MAX AFF

FIRE ALARM EVACUATION VISIBLE APPLIANCE X (STROBE), CLG MTD

FIRE ALARM EVACUATION VISIBLE APPLIANCE Ř (STROBE), WALL MTD w/ LENS 80" MIN & 96" MAX AFF

Φx FIRE ALARM HEAT DETECTOR

FIRE ALARM MANUAL PULL STATION, WALL MTD Ρ w/ OPERABLE PART 42" MIN & 48" MAX AFF

FIRE ALARM SMOKE DETECTOR, DUCT MTD w/

SAMPLE TUBES FIRE ALARM SMOKE DETECTOR, CLG MTD

Øχ FIRE SPRINKLER RISER FLOW SWITCH,

COORDINATE EXACT REQUIREMENTS PRIOR TO ♦ <sub>FS</sub> ROUGH-IN

 $\boldsymbol{\varphi}^{\mathsf{TS}}$ FIRE SPRINKLER RISER VALVE TAMPER SWITCH, COORDINTE EXACT REQUIREMENTS PROIR TO ROUGH-IN

OCCUPANCY SENSOR, SURFACE MTD

Ю OCCUPANCY SENSOR, WALL MTD

125kHz RFID PROXIMITY READER

D DOOR CONTACT

SECURITY KEYPAD K

EGRESS PIR FOR DOOR SHUNT Ð

6 360° PIR/GLASS BREAK DETECTOR

Ε REQUEST TO EXIT PUSHBUTTON

PANIC/DURESS PUSHBUTTON Р

MA INTRUSION ALARM CONTACT

ELECTRIC DOOR STRIKE ES

EL ELECTRIC LOCK w/ INTERNAL RELAY

S SPEAKER, CONE TYPE (PUBLIC ADDRESS)

S⊲ SPEAKER, HORN TYPE WATTAGE NOTED

 $\Box \forall$ CCTV CAMERA, PTZ: PAN/TILT/ZOOM

## NOT ALL SYMBOLS AND ABBREVIATIONS ARE USED

-----Consultants

	ل م ا	MOLDED-CASE CIRCUIT BREAKER IN
	ل م	MOTOR CIRCUIT PROTECTOR IN
	$\frac{1}{T}$	MOTOR STARTER CONTACTOR
	(	VACUUM CONTACTOR
	for the second s	MOTOR STARTER OVERLOAD RELAY - OL = THERMAL - EOL= ELECTRONIC
		MOTOR PROTECTION RELAY
Д		SOLID STATE REDUCED VOLTAGE STARTER
	10A	FUSE, RATING NOTED
$\Delta$	ulu	TRANSFORMER, DELTA/WYE
Ţ		GROUND
	مرہ	AUTOMATIC TRANSFER SWITCH
	°/	DISCONNECT SWITCH
	35	POTENTIAL TRANSFORMER
	$\Delta$	3 PHASE, 3 WIRE, DELTA
	Y	3 PHASE, 4 WIRE, WYE, GND
100/5	€³	CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS NOTED
10075		CURRENT TRANSFORMER, ZERO SEQUENCE TYPE
-	<u>m_n-</u>	BUSHING TYPE CURRENT TRANSFORMER
	-0 So-	ISOLATING FUSE SWITCH, HIGH VOLTAGE PRIMARY FUSE CUT OUT, DRY
	+× ×	ISOLATING FUSE SWITCH FOR ON-LOAD SWITCHING
•		LIGHTNING ARRESTER
-		CAPACITOR
*		DRAWOUT CIRCUIT BREAKER
_		POWER CIRCUIT BREAKER, FIXED TYPE, LOW OR MEDIUM VOLTAGE
*	<u>–52</u>	POWER CIRCUIT BREAKER, DRAWOUT TYPE, LOW OR MEDIUM VOLTAGE
		LOADBREAK ELBOW
	°` °	DISCONNECT SWITCH, GROUP OPERATED
	° °	DISCONNECT SWITCH, STICK OPERATED
0	ہ م <i>ر</i>	DISCONNECT SWITCH, SELECTOR OR DOUBLE THROW
	9 0	DISCONNECT SWITCH WITH ARCING HORNS, MANUALLY OPERATED

DIAGRAM SYMBOLS

		ABE	BREVIATIONS
FEC	FIRE EXTINGUISHER CABINET, SEE FIRE PROTECTION PLANS.	MECH	MECHANICAL
		MIN	
FHC	FIRE HOSE CABINET, SEE FIRE PROTECTION PLANS.	MFGR MTR	MANUFACTURER MOTOR
		MSS	MOTOR STARTER SWITCH
GFMS		MTD	MOUNTED
SYSTEM	W/AUDIBLE AND VISIBLE ALARM.	MTS	MANUAL TRANSFER SWITCH
PP	EXISTING POWER PEDESTAL POWER	N.C.	NORMALLY CLOSED
	PEDESTALS ARE TO BE REPLACED. CONTRACTOR SHALL INSTALL AND	NF	NON FUSED
	MAKE ALL CONNECTIONS.	NO	
		Ø PB	PHASE PUSH BUTTON
N N	WATER BOX, SEE PLUMING PLANS.	PB	PANEL
	ELECTRICAL PANELBOARD WITH NEMA	PP	POWER PEDESTAL
	3R/SS WITH POWDERCOAT FINISH, SEE	PR	PAIR
	PANEL SCHEDULES FOR ADDITIONAL INFORMATION.	PT	POTENTIAL TRANSFORMER
		PVC	POLYVINYL CHLORIDE
	PAD MOUNTED UTILITY TRANSFORMER COORDINATE WITH LOCAL UTILITY	PWR	POWER
$\square$	COMPANY.	RECEPT	RECEPTACLE
		RM RMC	ROOM RIGID METAL CONDUIT
SPD	SURGE PROTECTION DEVICE - SEE SPECIFICATIONS.	SA	SUB ARRAY
		SHT	SHEET
		SPEC	SPECIFICATION
		SPD	SURGE PROTECTION DEVICE
	BREVIATIONS	SPP	SUB PLANT PANEL
A AB)/	AMPERE	SPR	SUB PLANT RACK
ABV AC	ABOVE ALTERNATING CURRENT	STR	STARTER
ADD	ADDENDUM	ST	
AF	AMPERE FRAME	STP	SHIELDED TWISTED PAIR
AFF	ABOVE FINISHED FLOOR	SW SWBD	SWITCH SWITCHBOARD
AFG AIC	ABOVE FINISHED GRADE ASYMMETRICAL INTERRUPTING CAPACITY	SWBD	SWITCHGEAR
ARCH	ARCHITECT/ARCHITECTURAL	TC	TIME CLOCK
AT	AMPERE TRIP	TDR	TIME DELAY RELAY
ATS	AUTOMATIC TRANSFER SWITCH	TEL	TELEPHONE
AUTO AV	AUTOMATIC AUDIO/VISUAL	TERM	TERMINAL
BFE	BASE FLOOD ELEVATION	UTP	UNSHIELDED TWISTED PAIR
CHG	BATTERY CHARGER	XFMR	TRANSFORMER
С	CONDUIT	TV TYP	TELEVISION TYPICAL
CAB	CABINET	UNO	UNLESS NOTED OTHERWISE
CAT6 CB	CATEGORY 6 CIRCUIT BREAKER, COMBINER BOX	UG	UNDERGROUND
CC	CHARGE CONTROLLER	V	VOLTS
CCTV	CLOSED CIRCUIT TELEVISION	VA	VOLT AMPERE
CLG	CEILING	VFD	VARIABLE FREQUENCY DRIVE
COMB CONN	COMBINATION CONNECTION, OR CONNECT	W	WATTS
CONTR	CONTRACTOR	WP	WEATHERPROOF
COOD	COORDINATE		
CPT	CONTROL POWER TRANSFORMER		
CT DC	CURRENT TRANSFORMER DIRECT CURRENT, CONVERTER		
DET	DETAIL		
DIST	DISTRIBUTION		
DIV	DIVISION DOWN		
DN DS	DISCONNECT SWITCH		
DWG	DRAWING		
EA	EACH		
ELECT			
EMCS SYSTEMS	ENERGY MANAGEMENT AND CONTROL EQUIP EQUIPMENT		
EXPL	EXPLOSION PROOF		
EWC	ELECTRIC WATER COOLER		
F			
FA FD	FIRE ALARM FUSIBLE DISCONNECT		
FIN	FINISHED FL FLOOR		
FUT	FUTURE		
FIXT			
FVNR G	FULL VOLTAGE NON-REVERSING GENERATOR		
GND	GROUND		
GFI	GROUND FAULT INTERRUPTER		
HOA	HAND - OFF - AUTO		
HP HTG	HORSEPOWER HEATING		
HTR	HEATER		
Hz	HERTZ		
IC			
I/C INV	INTERCOM INVERTER		
JB	JUNCTION BOX		
kW	KILOWATTS		
kVA	KILOVOLT AMPERE		
LP			
LTG LTFC	LIGHTING, LIGHT OR LIGHTS LIQUIDTIGHT FLEXIBLE CONDUIT		
MAX	MAXIMUM		
MCB	MOLDED CASE BREAKER		
MCC			
MCP	MOTOR CIRCUIT PROTECTION		

CITY OF KEY WEST Stantec TRUMBO ROAD FLOATING DOCKS 901 Ponce de Leon Blvd. Suite 900 Coral Gables, Florida 33134 KEY WEST BIGHT MARINA

C. BUCHANAN, P.E. RED ENGINEER NO. 86225 STATE OF FLORIDA

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POTHEAD

File Name:

MOTOR CIRCUIT PROTECTION

## ELECTRICAL LEGEND Project No. Scale 215615432 NO SCALE Revision Drawing No. Sheet RHFCHDS20.05.28Dwn.Chkd.Dsgn.YY.MM.DD E-01

of –

#### SECTION 16410 SPECIAL REQUIREMENTS

#### PART 1 - GENERAL

1.01 AUXILIARIES AND ACCESSORIES

- A.INCLUDE ALL AUXILIARIES AND ACCESSORIES FOR COMPLETE AND PROPERLY OPERATING SYSTEMS.
- B. PROVIDE AND INSTALL ALL ELECTRICAL SYSTEMS AND ANY NECESSARY ACCESSORIES AS PER THE NATIONAL ELECTRICAL CODE (NEC) EDITION AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION AND LOCAL CODES WHETHER OR NOT SPECIFIED HEREIN OR SHOWN ON DRAWINGS. THE CONTENT OF THESE SPECIFICATIONS (DIVISION 16) AND CONTRACT DOCUMENTS IN GENERAL ONLY REFERS TO WORK REQUIRED ABOVE AND BEYOND THE REQUIREMENTS OF THE NEC AND APPLICABLE LOCAL CODES.
- 1.02 LAYOUT OF WORK
- A.DRAWINGS ARE DIAGRAMMATIC, CORRELATE FINAL EQUIPMENT LOCATIONS WITH GOVERNING ARCHITECTURAL AND STRUCTURAL DRAWINGS. LAY OUT BEFORE INSTALLATION SO THAT ALL TRADES MAY INSTALL EQUIPMENT IN SPACES AVAILABLE. PROVIDE COORDINATION AS REQUIRED FOR INSTALLATION IN A NEAT AND WORKMANLIKE MANNER.
- 1.03 INVESTIGATION OF SITE
- A.CHECK SITE AND EXISTING CONDITIONS THOROUGHLY BEFORE BIDDING. ADVICE ENGINEER OF DISCREPANCIES OR QUESTIONS NOTED.
- 1.04 SUPERVISION OF THE WORK
- A.PROVIDE FIELD SUPERINTENDENT WHO HAS HAD A MINIMUM OF FOUR (4) YEARS PREVIOUS SUCCESSFUL EXPERIENCE ON PROJECTS OF COMPARABLE SIZE AND COMPLEXITY. SUPERINTENDENT SHALL BE PRESENT AT ALL TIMES THAT WORK UNDER THIS DIVISION IS BEING INSTALLED OR AFFECTED. SUPERINTENDENT SHALL HAVE PASSED A PROCTORED H.H. BLOCK JOURNEYMAN EXAM AND SHALL BE A LICENSED JOURNEYMAN. AT LEAST ONE MEMBER OF THE ELECTRICAL CONTRACTING FIRM SHALL HOLD A STATE MASTER CERTIFICATE OF COMPETENCY.
- 1.05 COORDINATION
- A.PROVIDE ALL REQUIRED COORDINATION AND SUPERVISION WHERE WORK CONNECTS TO OR IS AFFECTED BY WORK OF OTHERS, AND COMPLY WITH ALL REQUIREMENTS AFFECTING THIS DIVISION. WORK REQUIRED UNDER OTHER DIVISIONS. SPECIFICATIONS OR DRAWINGS TO BE PERFORMED BY THIS DIVISION SHALL BE COORDINATED WITH THE CONTRACTOR AND SUCH WORK PERFORMED AT NO ADDITIONAL COST TO OWNER.
- 1.06 BASIS FOR WIRING DESIGN
- A. THE DRAWINGS AND SPECIFICATIONS DESCRIBE SPECIFIC SIZES OF SWITCHES, BREAKERS, CONDUITS, CONDUCTORS, AND OTHER ITEMS OF WIRING EQUIPMENT. THESE SIZES ARE BASED ON SPECIFIC ITEMS OF POWER CONSUMING EQUIPMENT. WHEREVER THE CONTRACTOR PROVIDES POWER CONSUMING EQUIPMENT WHICH DIFFERS FROM DRAWINGS AND SPECIFICATIONS, THE WIRING AND ASSOCIATED CIRCUIT COMPONENTS FOR SUCH EQUIPMENT SHALL BE CHANGED TO MATCH AT NO ADDITIONAL EXPENSE TO THE OWNER.
- 1.07 PROTECTION AND CLEAN UP
- A.SUITABLY PROTECT ALL EQUIPMENT FURNISHED UNDER THIS DIVISION DURING CONSTRUCTION. RESTORE ALL DAMAGED SURFACES AND ITEMS TO "LIKE NEW" CONDITION BEFORE A REQUEST FOR SUBSTANTIAL COMPLETION INSPECTION.
- 1.08 MATERIALS
- A.REFERENCE: "GENERAL CONDITIONS OF THE CONTRACT"
- B. WHERE A MANUFACTURER'S MODEL NUMBER IS LISTED. THIS MODEL SHALL SET THE STANDARD OF QUALITY AND PERFORMANCE REQUIRED. WHERE NO BRAND NAME IS SPECIFIED, THE SOURCE AND QUALITY SHALL BE SUBJECT TO ENGINEER'S REVIEW AND ACCEPTANCE.
- 1.09 SUBSTITUTIONS
- A.EACH BIDDER REPRESENTS THAT HIS BID IS BASED UPON THE EQUIPMENT AND MATERIALS DESCRIBED IN DIVISION 16 OF THE SPECIFICATIONS.
- B. SUBSTITUTION SUBMITTALS SHALL INCLUDE THE NAME OF THE MATERIAL OR EQUIPMENT FOR WHICH IT IS TO BE SUBSTITUTED. DRAWINGS. CUTS. PERFORMANCE AND TEST DATA AND ANY OTHER INFORMATION NECESSARY FOR THE ENGINEER TO DETERMINE THAT THE EQUIPMENT MEETS ALL SPECIFICATIONS AND REQUIREMENTS. PRE-APPROVAL OF PROPOSED SUBSTITUTION IS REQUIRED FOR EQUIPMENT SUPPLIED UNDER THIS DIVISION AND MUST BE SUBMITTED 10 DAYS PRIOR TO BID OPENING.
- C.SUBSTITUTED EQUIPMENT OR OPTIONAL EQUIPMENT WHERE PERMITTED AND APPROVED. MUST CONFORM TO SPACE REQUIREMENTS. ANY SUBSTITUTED EQUIPMENT THAT CANNOT MEET SPACE REQUIREMENTS, WHETHER APPROVED OR NOT, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ANY MODIFICATIONS OF RELATED SYSTEMS AS A RESULT OF SUBSTITUTIONS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
- 1.10 TECHNICAL INFORMATION BROCHURES AND SUBMITTALS
- A. SUBMIT TECHNICAL INFORMATION BROCHURES AT START OF CONSTRUCTION OR WITHIN 30 DAYS AFTER AWARD OF THE CONTRACT. EACH BROCHURE SHALL CONSIST OF AN ADEQUATELY SIZED, HARD-COVER, 3-RING BINDER FOR 8-1/2" X 11" SHEETS. PROVIDE CORRECT DESIGNATION ON OUTSIDE COVER AND ON END OF BROCHURE. WHEN, IN THE JUDGMENT OF THE ENGINEER, ONE BINDER IS NOT ENOUGH TO ADEQUATELY CATALOG ALL DATA, AN ADDITIONAL BINDER WILL BE REQUIRED AND DATA SPLIT AS DIRECTED BY THE ENGINEER.

- B. THE FIRST SHEET IN THE BROCHURE SHALL BE AN INDEX F EQUIPMENT CONTAINED IN THE BROCHURE WHICH PERTAINS THE SECOND SHEET SHALL BE PREPARED BY THE CONTRACT LIST MANUFACTURER'S AUTHORIZED REPRESENTATIVE FOR TH THIRD SHEET SHALL LIST MANUFACTURER'S AUTHORIZED COMPANY ADDRESSES FOR EQUIPMENT ON THIS PROJECT.
- C.PROVIDE REINFORCED SEPARATION SHEETS TABBED WITH TH SPECIFICATION REFERENCE NUMBER AND TYPED INDEX FOR EA
- D. TECHNICAL INFORMATION CONSISTING OF MARKED CATALOG DRAWINGS SHALL BE INSERTED IN THE BROCHURE IN PROPER ITEMS HEREIN SPECIFIED OR SHOWN ON DRAWINGS.
- E. THE GENERAL CONTRACTOR SHALL REVIEW THE BROC SUBMITTING TO THE ENGINEER. NO REQUEST FOR PAY CONSIDERED UNTIL THE BROCHURE HAS BEEN REVIEWED AND CHECKING.
- F. SHOP DRAWINGS
- 1. DRAWINGS SHALL INCLUDE IDENTIFICATION OF PROJECT ARCHITECT, ENGINEER, GENERAL CONTRACTOR, SUBCONT SUPPLIER AS APPLICABLE. DATA SHALL BE NUMBERED SEC INDICATE IN GENERAL.
- a. FABRICATION AND ERECTION DIMENSIONS.
- b. ARRANGEMENTS AND SECTIONAL VIEWS.
- c. NECESSARY DETAILS, INCLUDING COMPLETE INFORMAT CONNECTIONS WITH OTHER WORK.
- d. KINDS OF MATERIAL AND FINISHES.
- e. DESCRIPTIVE NAMES OF EQUIPMENT.
- f. MODIFICATIONS AND OPTIONS TO STANDARD EQUIPME THE CONTRACT.
- g. LEAVE BLANK AREA, SIZE APPROXIMATELY 4 BY 2-1/2 INC BLOCK (FOR ENGINEER'S STAMP IMPRINT).
- h. IN ORDER TO FACILITATE REVIEW OF DRAWINGS PRACTICABLE, THEY SHALL BE NOTED, INDICATING BY CR THE CONTRACT DRAWINGS, NOTE, AND/OR SPECIFICATI NUMBERS WHERE ITEM(S) OCCUR IN THE CONTRACT DOC
- i. SEE SPECIFIC SECTIONS OF SPECIFICATIONS REQUIREMENTS.
- j. PRODUCT DATA
- 2. SUBMIT TECHNICAL DATA VERIFYING THAT THE ITEM SUBM WITH THE REQUIREMENTS OF THE SPECIFICATIONS. TECHN INCLUDE MANUFACTURER'S NAME AND MODEL NUMBE WEIGHTS, ELECTRICAL CHARACTERISTICS, AND CLEARAM INDICATE ALL OPTIONAL EQUIPMENT AND CHANGES FROM ITEM AS CALLED FOR IN THE SPECIFICATIONS. FURNISH DIAGRAMS, DIMENSIONED AND IN CORRECT SCALE, COVER SHOWING ARRANGEMENT OF COMPONENTS AND OVERALL CO
- 3. IN ORDER TO FACILITATE REVIEW OF PRODUCT DAT PRACTICABLE, THEY SHALL BE NOTED, INDICATING BY CROSS CONTRACT DRAWINGS, NOTE, AND/OR SPECIFICATION PARAC WHERE ITEM(S) OCCUR IN THE CONTRACT DOCUMENTS.
- 4. SEE SPECIFIC SECTIONS OF SPECIFICATIONS FOR FURTHER F
- G.PROCESSING SUBMITTALS
- 1. PRODUCT DATA: FOR STANDARD MANUFACTURED MATERIAL, ITEMS SUBMIT COPIES AS REQUIRED UNDER DIVISION 1 SPI SUBMITTAL IS REJECTED. RESUBMIT COPIES OF NEW DATA.
- 2. REFERENCE: "GENERAL CONDITIONS OF THE CONTRACT".
- 3. NOTE THAT THE REVIEW OF SHOP DRAWINGS, OR OTHE SUBMITTED IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED, DOES NOT ASSURE THAT THE ENGINEER, ARC OTHER OWNER'S REPRESENTATIVE, ATTESTS TO TH ACCURACY OR DIMENSIONAL SUITABILITY OF THE MATERIAL INVOLVED. THE ABILITY TO THE MATERIAL OR EQUIPMENT II MECHANICAL/ELECTRICAL PERFORMANCE OF EQUIPMENT. DRAWINGS DOES NOT INVALIDATE THE PLANS AND SPEC CONFLICT, UNLESS A LETTER REQUESTING SUCH CHANGE IS APPROVED ON THE ENGINEER'S LETTERHEAD.

## H.DELAYS

- 1. CONTRACTOR IS RESPONSIBLE FOR ANY DELAYS IN ACCRUING DIRECTLY OR INDIRECTLY FROM LATE SI RESUBMISSIONS OF SHOP DRAWINGS, PRODUCT DATA, OR SA
- 1.11 PROGRESS AND RECORD DRAWINGS
- A.KEEP TWO SETS OF BLACK OR BLUE ON WHITE PRINTS AT THE MARKUP DESIGN DRAWINGS EACH DAY AS COMPONENTS TAKING CARE TO REFLECT ANY VARIATIONS. DIFFERENT CO SHALL BE USED FOR DIFFERENT SYSTEMS. ALL ITEMS ON PRO SHALL BE SHOWN IN ACTUAL LOCATION INSTALLED. CHANGE ANY EQUIPMENT SCHEDULES TO AGREE WITH ITEMS ACTUALLY FURNISHED.

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	B.PRIOR TO REQUEST FOR FINAL PAYMENT FURNISH A SET OF "AS-BUILT" REPRODUCIBLES AND TWO SETS OF PRINTS TO THE ENGINEER, UNLESS	MEETS OR EXCEEDS AVAILABLE STANDARDS.
PAGE LISTING ALL	OTHERWISE SPECIFIED.	1.03 UTILITY COMPANY FEES, CHARGES, COSTS
TO THE PROJECT. CTOR, AND SHALL IIS PROJECT. THE D MAINTENANCE	<ul> <li>1.12 OPERATING INSTRUCTIONS</li> <li>A.SUBMIT FOR CHECKING A SPECIFIC SET OF WRITTEN OPERATING INSTRUCTIONS ON EACH ITEM WHICH REQUIRE INSTRUCTIONS TO OPERATE. AFTER APPROVAL, PROVIDE ONE COPY FOR INSERTION IN EACH TECHNICAL INFORMATION</li> </ul>	A.IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE COMPANY TO DETERMINE IF ANY FEES, CHARGES OR COST UTILITY COMPANY. FEES FOR TEMPORARY POWER SHALL B CONTRACTOR'S BID PRICE. FEES FOR PERMANENT POWER V
	BROCHURE.	OWNER.
ACH SECTION.	1.13 MAINTENANCE INSTRUCTIONS	END OF SECTION
SHEETS OR SHOP R ORDER ON ALL	A.SUBMIT FOR APPROVAL MAINTENANCE INFORMATION CONSISTING OF MANUFACTURER'S PRINTED INSTRUCTIONS AND PARTS LISTS FOR EACH MAJOR ITEM OR EQUIPMENT. AFTER APPROVAL, INSERT INFORMATION IN EACH TECHNICAL INFORMATION BROCHURE.	SECTION 16110 RACEWAYS AND CONDUITS
CHURES BEFORE		PART 1 - GENERAL
SUBMITTED FOR	1.14 SYSTEMS GUARANTEE	1.01 DESCRIPTION
AND NAMES OF TRACTOR AND/OR EQUENTIALLY AND	A. THE WORK REQUIRED UNDER THIS DIVISION SHALL INCLUDE A ONE-YEAR GUARANTEE. THIS GUARANTEE SHALL BE BY THE CONTRACTOR TO THE OWNER FOR ANY DEFECTIVE WORKMANSHIP OR MATERIAL WHICH HAS BEEN FURNISHED UNDER THIS CONTRACT AT NO COST TO THE OWNER FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE SYSTEM. THIS GUARANTEE SHALL NOT INCLUDE LIGHT BULBS IN SERVICE AFTER ONE MONTH FROM DATE OF SUBSTANTIAL COMPLETION OF THE SYSTEM. EXPLAIN THE PROVISIONS OF GUARANTEE TO THE OWNER AT THE "DEMONSTRATION OF COMPLETED SYSTEM". SUBMIT FOR CHECKING A SPECIFIC SET OF WRITTEN OPERATING INSTRUCTIONS ON EACH ITEM WHICH REQUIRE INSTRUCTIONS TO OPERATE. AFTER APPROVAL, PROVIDE ONE COPY FOR INSERTION IN EACH TECHNICAL INFORMATION BROCHURE.	A.DESCRIPTION OF SYSTEM 1. THE ENTIRE INSTALLATION SHALL BE IN PVC PLASTIC SPECIFICALLY NOTED OTHERWISE. ONLY SCHEDULE 40 F FOR ALL RACEWAYS TRAPPED UNDERGROUND OR UNDER EXPOSED CONDUIT SHALL BE SCHEDULE 80 PVC AND LOCATIONS NOT SUBJECT TO DAMAGE. MINIMUM CONDUI UNLESS NOTED OTHERWISE ON DRAWINGS. ALL COND LISTED AND LABELED. CONDUIT SIZES SHOWN ON THE DR THE CONTRACTOR IN BIDDING ONLY. THE CONTRACTOR IS CONDUIT SIZES AS REQUIRED BY NEC FILL TABLES.
	1.15 FINAL INSPECTION	1.02 SUBMITTALS
FION FOR MAKING	A. ALL WORK ON THE PROJECT SHALL BE COMPLETED, AND ALL FORMS AND OTHER	A.PRODUCT DATA
	INFORMATION SHALL BE SUBMITTED FOR APPROVAL ONE WEEK BEFORE THE REQUEST FOR FINAL INSPECTION. 1.16 EQUIPMENT TO BE OF SINGLE MANUFACTURER	1. PRODUCT DATA SHALL BE SUBMITTED ON CONDUIT AND PRODUCT DATA SHALL SHOW COMPLIANCE WITH THIS SPECIFICATIONS, INCLUDING UL LABEL, MANU
NT REQUIRED BY	A.IN GENERAL, ALL LIKE EQUIPMENT SHALL BE SUPPLIED AND MANUFACTURED BY	MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS. PART 2 - PRODUCTS
CHES, NEAR TITLE	SAME MANUFACTURER.	
	1.17 GENERAL	2.01 PVC CONDUIT
S, INSOFAR AS ROSS REFERENCE IONS PARAGRAPH CUMENTS.	A.WHERE THE REQUIREMENTS OF ANOTHER DIVISION, SECTION OR PART OF THESE SPECIFICATIONS EXCEED THE REQUIREMENTS OF THIS DIVISION, THOSE REQUIREMENTS SHALL GOVERN. END OF SECTION	A.PVC CONDUIT SHALL BE COMPOSED OF HIGH IMPACT PVC (PC C-200 COMPOUND) AND SHALL CONFORM TO INDUSTRY STAI LISTED IN ACCORDANCE WITH ARTICLE 352 OF NATIONAL ELE UNDERGROUND AND EXPOSED USE. MATERIALS MUST HAVE OF 55 PSI, AT 70°F, FLEXURAL STRENGTH OF 11,000 STRENGTH OF 8600 PSI. MANUFACTURER SHALL HAVE FIVE
FOR FURTHER	SECTION 16020	PVC EXPERIENCE.
	WORK INCLUDED PART 1 - GENERAL	2.02 EXPANSION FITTINGS
	1.01 DESCRIPTION OF SYSTEM	A.CONDUIT EXPANSION FITTINGS SHALL BE PVC AND SHALL H CHAMBER TO ALLOW APPROXIMATELY TWO-INCH MOVEM
AITTED COMPLIES IICAL DATA SHALL ER, DIMENSIONS, NCES REQUIRED. A THE STANDARD	A.THE WORK REQUIRED UNDER THIS DIVISION SHALL INCLUDE ALL MATERIALS, LABOR AND AUXILIARIES REQUIRED TO INSTALL A COMPLETE AND PROPERLY OPERATING ELECTRICAL SYSTEM. THE ELECTRICAL SYSTEM REQUIRED UNDER	CONDUIT RUN IN EITHER DIRECTION FROM NORMAL. FACTORY-INSTALLED PACKING. EXPANSION FITTINGS SHA RECOMMENDED BY THE MANUFACTURER.
I DRAWINGS, OR RING EQUIPMENT,	THIS DIVISION CONSISTS BASICALLY OF, BUT IS NOT LIMITED TO THE FOLLOWING:	PART 3 - EXECUTION
OORDINATION.	1. COMPLETE DISTRIBUTION SYSTEM FOR MARINE SHORE POWER INCLUDING FEEDERS FROM THE MAIN DISTRIBUTION PANELS TO THE POWER PEDESTALS.	3.01 INSTALLATION
FA, INSOFAR AS SREFERENCE THE GRAPH NUMBERS	2. MODIFICATIONS TO POWER DISTRIBUTION PANELBOARDS.	A.ALL RACEWAYS SHALL BE RUN IN NEAT AND WORKMAN LIKE BE PROPERLY SUPPORTED IN ACCORDANCE WITH LATEST EI
	3. REFURBISHMENT OF EXISTING POWER PEDESTALS	APPROVED STAINLESS STEEL CONDUIT CLAMPS, HA STRUCTURAL FASTENERS.
REQUIREMENTS.	4. GROUND FAULT PROTECTION SYSTEMS. END OF SECTION	B. ALL RACEWAY RUNS, WHETHER TERMINATED IN BOXES CAPPED DURING THE COURSE OF CONSTRUCTION AND PULLED IN, AND COVERS ARE IN PLACE. NO CONDUCTORS INTO RACEWAYS UNTIL CONSTRUCTION WORK WHICH M
., PRODUCTS AND ECIFICATIONS. IF		RACEWAYS HAS BEEN COMPLETED.
	SECTION 16025 CODES, FEES, AND STANDARDS PART 1 - GENERAL	C.ALL RACEWAYS SHALL HAVE AN INSULATED COPPER CONDUCTOR THROUGHOUT THE ENTIRE LENGTH OF CIRCUI CONDUIT IN STRICT ACCORDANCE WITH NEC. GROUNDING
ER INFORMATION	1.01 CODES AND FEES	BE INCLUDED IN TOTAL CONDUIT FILL DETERMINING CO THOUGH NOT INCLUDED OR SHOWN ON DRAWINGS. GROUN
S HEREINBEFORE CHITECT, OR ANY IE DIMENSIONAL L OR EQUIPMENT	A.INSTALL IN ACCORDANCE WITH LATEST EDITION OF THE NATIONAL ELECTRIC CODE AND THE REGULATIONS OF GOVERNING LOCAL, AND OTHER APPLICABLE CODES, INCLUDING THE UTILITY COMPANY, PAY FOR ALL REQUIRED LICENSES,	RUN WITH FEEDERS SHALL BE BONDED TO PORTIONS OF METAL BY APPROVED GROUND BUSHINGS. D.RACEWAYS WHICH DO NOT HAVE CONDUCTORS FURNI
NVOLVED OF THE REVIEW OF SHOP	FEES AND INSPECTIONS.	DIVISION OF THE SPECIFICATIONS SHALL BE LEFT WITH AN PULL CORD IN RACEWAY.
CIFICATIONS IF IN S SUBMITTED AND	B. ALL WORK AND EQUIPMENT UNDER THIS DIVISION SHALL BE IN STRICT COMPLIANCE WITH THE APPLICABLE PROVISIONS OF THE LATEST EDITIONS OF THE FOLLOWING CODES AND STANDARDS IN FORCE AT THE TIME OF CONSTRUCTION.	END OF SECTION
	1. FLORIDA BUILDING CODE	SECTION 16120 WIRES AND CABLES
JOB PROGRESS UBMISSIONS OR	2. NATIONAL ELECTRICAL CODE (NEC)	PART 1 - GENERAL
AMPLES.	3. REQUIREMENTS OF LOCAL POWER COMPANY	1.01 GENERAL PROVISIONS
		A.CONDUCTORS
JOB SITE. NEATLY ARE INSTALLED OLORED PENCILS OGRESS DRAWING	1.02 STANDARDS A. ALL MATERIALS SHALL BE NEW AND FREE OF DEFECTS, AND SHALL BE UL LISTED, GEAR THE UL LABEL OR BE LABELED OR LISTED WITH AN APPROVED, NATIONALLY RECOGNIZED ELECTRICAL TESTING AGENCY. WHERE NO LABELING	1. ALL CONDUCTORS SHALL BE COPPER TYPE THHN/THWN, OR TYPE "DLO" AS INDICATED ON DRAWINGS. NO ALUMINU PERMITTED. ALL WIRE SHALL BE SIZED AS SHOWN ON THE

2. WIRING FROM THE DISTRIBUTION PANEL TO THE POWER PEDESTAL SHALL BE TYPE "G" MULTI-CONDUCTOR CABLE.

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Y C. BUCHANAN, P.E. ED ENGINEER NO. 86225 TATE OF FLORIDA		The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.	File Name:	RHF Dwn.	CH Chkd.	DS Dsgn.

OR LISTING SERVICE IS AVAILABLE FOR CERTAIN TYPES OF EQUIPMENT, TEST

DATA SHALL BE SUBMITTED TO PROVE TO THE ENGINEER THAT EQUIPMENT

TO CONTACT THE REQUIRED UTILITY ARGES OR COSTS WILL BE DUE THE POWER SHALL BE INCLUDED IN THIS IANENT POWER WILL BE PAID BY THE

PVC PLASTIC CONDUIT, UNLESS SCHEDULE 40 PVC SHALL BE USED OUND OR UNDER DOCK STRUCTURE. LE 80 PVC AND BE INSTALLED IN 1INIMUM CONDUIT SIZE SHALL BE 3/4" NGS. ALL CONDUITS SHALL BE UL OWN ON THE DRAWINGS ARE TO AID CONTRACTOR IS RESPONSIBLE FOR

CONDUIT AND CONDUIT FITTINGS. NCE WITH THIS SECTION OF THE LABEL, MANUFACTURER, AND

H IMPACT PVC (POLYVINYL CHLORIDE ) INDUSTRY STANDARDS, AND BE UL OF NATIONAL ELECTRICAL CODE FOR IALS MUST HAVE TENSILE STRENGTH TH OF 11,000 PSI, COMPRESSION HALL HAVE FIVE YEARS' EXTRUDING

VC AND SHALL HAVE AN EXPANSION VO-INCH MOVEMENT PARALLEL TO OM NORMAL. THEY SHALL HAVE IN FITTINGS SHALL BE SPACED AS

WORKMAN LIKE MANNER AND SHALL WITH LATEST EDITION OF NEC WITH CLAMPS, HANGER RODS AND

TED IN BOXES OR NOT, SHALL BE TRUCTION AND UNTIL WIRES ARE O CONDUCTORS SHALL BE PULLED VORK WHICH MIGHT DAMAGE THE

ATED COPPER SYSTEM GROUND NGTH OF CIRCUIT INSTALLED WITHIN . GROUNDING CONDUCTOR SHALL ETERMINING CONDUIT SIZES. EVEN AWINGS. GROUNDING CONDUCTORS ) PORTIONS OF CONDUIT THAT ARE

UCTORS FURNISHED UNDER THIS E LEFT WITH AN APPROVED NYLON

PE THHN/THWN, TYPE "G", TYPE "W" GS. NO ALUMINUM WIRING SHALL BE SHOWN ON THE DRAWINGS.

- 3. WIRING FROM THE DISTRIBUTION PANEL TO THE LIGHTING IN THE POWER PEDESTALS SHALL BE TYPE "SOOW" MULTI-CONDUCTOR CABLE.
- 4. ALL PORTABLE POWER CABLES SHALL BE RATED FOR EXTRA-HARD USAGE NOT LESS THAN 75C, 600V, LISTED FOR BOTH WET LOCATIONS AND SUNLIGHT RESISTANCE, AND HAVING AN OUTER JACKET RATED TO BE RESISTANT TO TEMPERATURE EXTREMES, OIL, GASOLINE, OZONE, ABRASION, ACIDS, AND CHEMICALS IN ACCORDANCE WITH NEC 555.13 (2).

**B. TAPS AND SPLICES** 

1. ALL TAPS AND SPLICES IN MANHOLES OR IN GROUND PULL BOXES SHALL BE SUBMERSIBLE TYPE CONNECTORS. BASIS OF DESIGN: CMC TYPE SSBC-S RUBBER INSULATED SECONDARY CONNECTIONS. INSTALL SLEEVE KITS AS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

C.COLOR CODING

1. ALL POWER FEEDERS SHALL BE WIRED WITH INDUSTRY STANDARD COLOR-CODED WIRE OR SHALL HAVE BLACK INSULATION AND BE SIMILARLY COLOR-CODED WITH TAPE OR PAINT IN ALL JUNCTION BOXES AND PANELS. TAPE OR PAINT SHALL COMPLETELY COVER THE FULL LENGTH OF CONDUCTOR INSULATION WITHIN THE BOX OR PANEL.

1.02 SUBMITTALS

A.SUBMIT MANUFACTURER'S DATA SHEETS ON ALL MAJOR TYPES OF WIRES AND CABLES INCLUDING SPLICING TAPE, AND TERMINATING/SPLICING LUGS OR CONNECTORS AND CABLE SLEEVES.

END OF SECTION

# HT MARINA RHF CH DS 20.05.28

Dwn. Chkd. Dsgn. YY.MM.DD

## ELECTRICAL SPECIFICATIONS

Project No. 215615432	Scale	NO SCALE	
Drawing No.	Sheet		Revision
E-02			

#### SECTION 16450 SECONDARY GROUNDING

PART 1 - GENERAL

1.01 WORK INCLUDED

A.POWER SYSTEM GROUNDING.

B. ELECTRICAL EQUIPMENT AND RACEWAY GROUNDING AND BONDING.

1.02 SYSTEM DESCRIPTION

A.BOND TOGETHER SYSTEM NEUTRALS, SERVICE EQUIPMENT ENCLOSURES, EXPOSED NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT, METAL RACEWAY SYSTEMS, GROUNDING CONDUCTOR IN RACEWAYS AND CABLES, RECEPTACLE GROUND CONNECTORS, AND PLUMBING SYSTEMS.

PART 3 - EXECUTION

3.01 INSTALLATION

- A.PROVIDE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR WITH EACH FEEDER AND BRANCH CIRCUIT. TERMINATE EACH END ON A GROUNDING LUG, BUS, OR BUSHING.
- B. CONNECT GROUNDING ELECTRODE CONDUCTORS TO METAL WATER PIPE USING AN APPROVED GROUND CLAMP. MAKE CONNECTIONS TO FLANGED PIPING AT STREET SIDE OF FLANGE. PROVIDE BONDING JUMPER AROUND WATER METER.
- C.ALL GROUND CONNECTIONS AT GROUND RODS, BUILDING STEEL, AND CONCRETE REINFORCING STEEL SHALL BE EXOTHERMIC WELD TYPE.

3.02 FIELD QUALITY CONTROL

A.INSPECT GROUNDING AND BONDING SYSTEM CONDUCTORS AND CONNECTIONS FOR RIGHTNESS AND PROPER INSTALLATION.

END OF SECTION

SECTION 16470 PANELBOARD

PART 1 - GENERAL

1.01 WORK INCLUDED

A.MODIFICATIONS TO EXISTING POWER DISTRIBUTION PANELS AS SHOWN ON DRAWINGS.

1.02 SUBMITTALS

A. SUBMIT SHOP DRAWINGS FOR EQUIPMENT AND COMPONENT DEVICES.

B.INCLUDE OUTLINE AND SUPPORT POINT DIMENSIONS, VOLTAGE, MAIN BUS AMPACITY, INTEGRATED SHORT CIRCUIT AMPERE RATING, CIRCUIT BREAKER AND FUSIBLE SWITCH ARRANGEMENT AND SIZES.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A.SIEMENS

B. OR EQUAL

- 2.02 PANELBOARDS
- A.ALL BREAKERS AND ACCESSORIES SHALL BE FULLY RATED WITH MINIMUM INTEGRATED SHORT CIRCUIT RATING EQUAL TO THE SHORT CIRCUIT RATING OF THE THE EXISTING PANEL.
- B. MOLDED CASE CIRCUIT BREAKERS SHALL MATCH EXISTING THERMAL/MAGNETIC TRIP CIRCUIT BREAKERS, WITH COMMON TRIP HANDLE FOR ALL POLES. PROVIDE CIRCUIT BREAKERS UL LISTED. BREAKERS SHALL HAVE SHUNT TRIP OPTION FOR CONNECTION TO THE GROUND FAULT MONITOR.

PART 3 - EXECUTION

3.01 INSTALLATION

C.MAXIMUM HEIGHT: 6 FT. TO TOP.

D.PROVIDE FILLER PLATES FOR UNUSED SPACES IN PANELBOARDS.

- E.PROVIDE TYPED CIRCUIT DIRECTORY FOR EACH BRANCH CIRCUIT PANELBOARD. REVISE DIRECTORY TO REFLECT CIRCUITING CHANGES REQUIRED TO BALANCE PHASE LOADS.
- F. PROVIDE ENGRAVED LABELS AS SHOWN ON DRAWINGS. LABELS SHALL BE SECURELY FASTENED TO THE PANEL.

3.02 FIELD QUALITY CONTROL

A.VISUAL AND MECHANICAL INSPECTION: INSPECT FOR PHYSICAL DAMAGE, PROPER ALIGNMENT, ANCHORAGE, AND GROUNDING. CHECK PROPER INSTALLATION AND TIGHTNESS OF CONNECTIONS FOR CIRCUIT BREAKERS

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A.THIS SECTION DESCRIBES THE MATERIALS AND INSTALLATION REQUIREMENTS FOR GROUND MONITORING EQUIPMENT TO MEASURE "LEAKAGE" CURRENT TO GROUND.

SECTION 16620 GROUND MONITORING SYSTEM

1.02 RELATED WORK SPECIFIED ELSEWHERE

A.GENERAL ELECTRICAL REQUIREMENTS

B. RACEWAYS, BOXES, AND FITTINGS.

C. WIRE AND CABLE

D. GROUNDING

1.03 SUBMITTALS

A.SUBMIT SHOP DRAWINGS, PRODUCT DATA AND MANUFACTURER'S INSTALLATION INSTRUCTIONS.

B. THE GROUND MONITOR SUBMITTALS SHALL ALSO INCLUDE:

1. DIMENSIONAL DRAWINGS OF EACH MONITOR TYPE.

2. PANELBOARD MOUNTING DETAIL.

1.04 MANUFACTURERS

A.ALL MONITORS FOR AC DISTRIBUTION AND BRANCH CIRCUIT PROTECTION WITHIN A SINGLE FACILITY SHALL BE PROVIDED BY A SINGLE MANUFACTURER.

PART 2 - PRODUCTS

2.01 MAIN SERVICE MONITORS AT DISTRIBUTION PANELS

A.MONITORS SHALL BE LISTED IN ACCORDANCE WITH U.L. FILE #E173157.

B. THE GROUND FAULT MONITORS SHALL MATCH EXISTING MARINE SYNC REMOTE UTILITY MONITORING AND CONTROL (RUM) OR APPROVED EQUAL. THESE DEVICES SHALL MONITOR THE INSULATION LEVEL OF GROUNDED SINGLE PHASE MARINA POWER SYSTEM BY MEASURING THE GROUND FAULT LEAKAGE CURRENT.

C.MONITORS SHALL BE SUITABLE FOR INSTALLATION INTO STANDARD DISTRIBUTION PANELS.

D. THE MONITORS SHALL INDIVIDUALLY MONITOR EACH FEEDER CIRCUIT LEAVING THE PANEL. THE ALARM RELAY SHALL BE CONNECTED TO SHUNT TRIP OF THE ASSOCIATED CIRCUIT BREAKER.

PART 3 - EXECUTION

3.01 DISTRIBUTION PANEL

A.CONDUCTORS BETWEEN THE MONITOR AND POINT OF ATTACHMENT SHALL BE KEPT SHORT AND STRAIGHT.

END OF SECTION

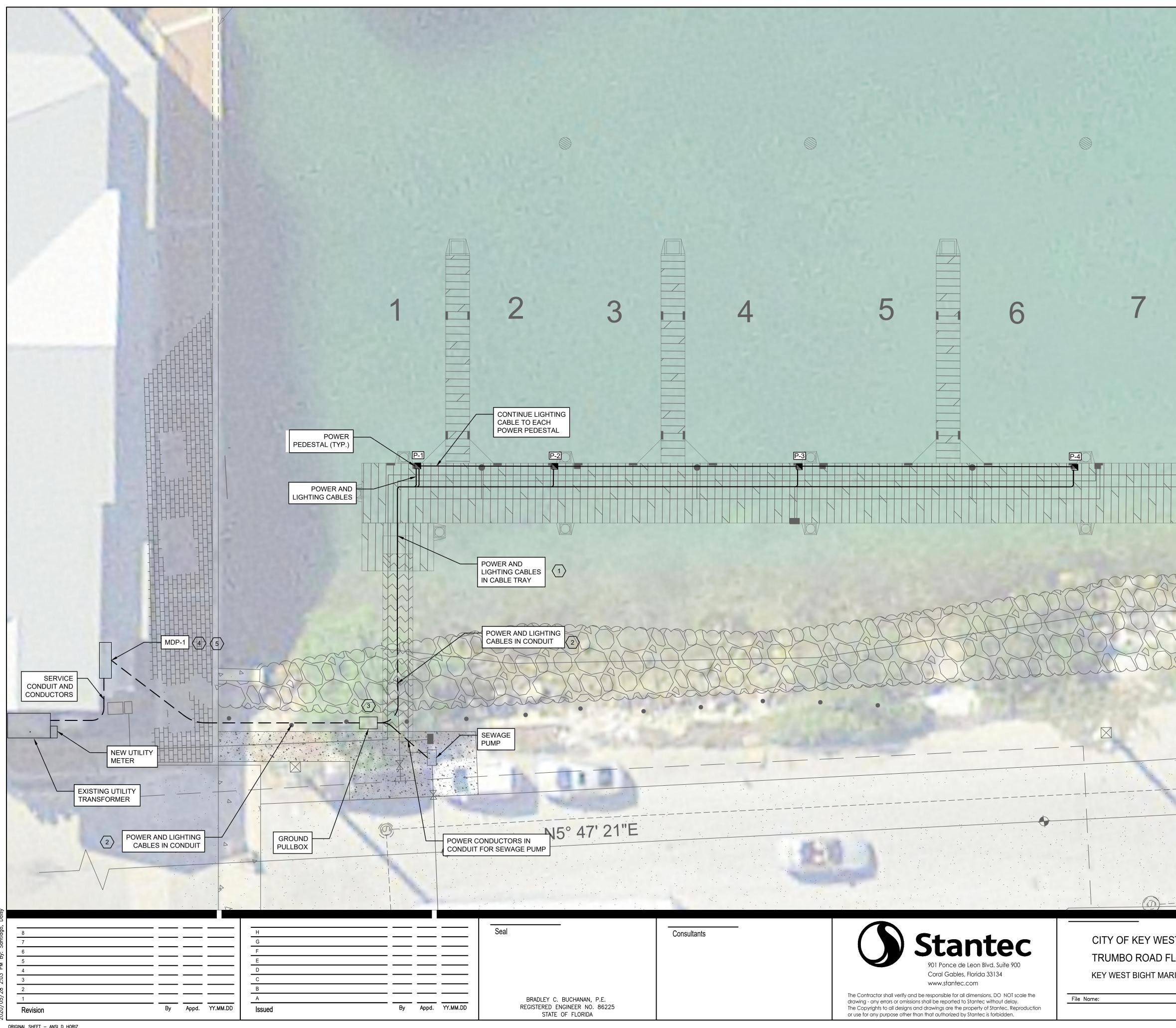
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05/	1				A				BRADLEY C. BUCHANAN, F
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Consultants CITY OF KEY 901 Ponce de Leon Blvd. Suite 900 Coral Gables, Florida 33134 www.stantec.com The Contractor shall verify and be responsible for all dimensions. DO NOT scale the File Name: C. BUCHANAN, P.E. drawing - any errors or omissions shall be reported to Stantec without delay. ED ENGINEER NO. 86225

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**TRUMBO RC KEY WEST BIGH** 

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Y WEST					ELECTRICAL SPECIFICATION					
DAD FLOATING DOCKS			Project No. 215615432	Scale	NO S	CALE		—		
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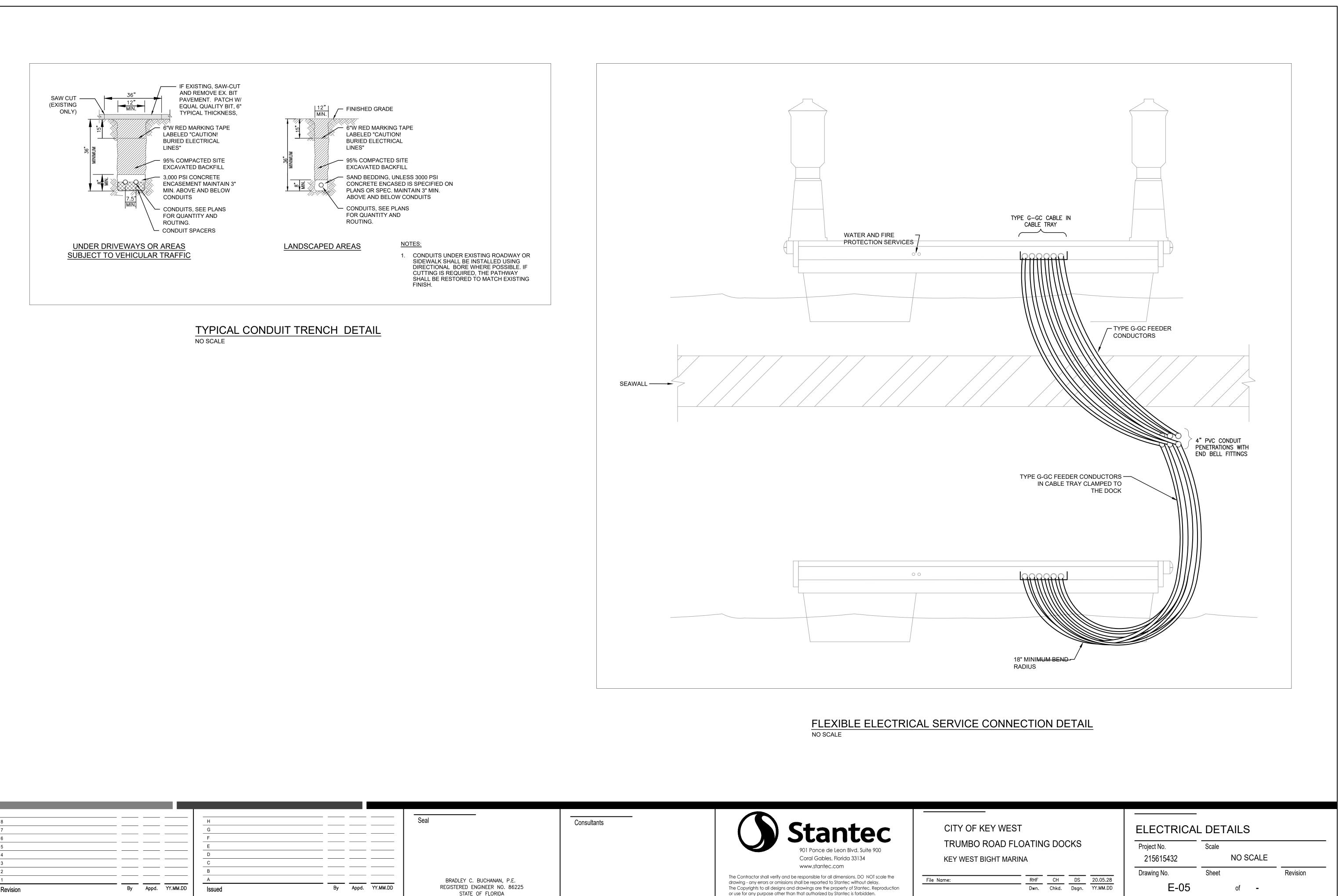
# GENERAL NOTES

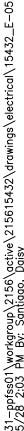
- A. FURNISH AND INSTALL 120/240V POWER DISTRIBUTION SYSTEM AS SHOWN ON ONE-LINE TO SUPPORT POWER PEDESTAL CONFIGURATION, AND SEWER PUMP. THE PANEL SHALL HAVE GFCI PROTECTION FOR ALL BRANCH CIRCUITS PER NEC ARTICLE 555.
- CABLE SHALL BE IN CONDUIT IN GROUND AND IN CABLE TRAY AT В. FLOATING DOCK. ROUTING OF CONDUIT, TRAY AND CONDUCTORS ON THIS DRAWING IS FOR INFORMATION ONLY, IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THE BEST ROUTING TO SUIT LOCAL CONDITIONS.
- C. THE POWER DISTRIBUTION LAYOUT IS DIAGRAMMATIC ONLY AND DOES NOT SHOW EVERY FITTING THAT MAY BE REQUIRED.
- D. COORDINATE THIS LAYOUT WITH OTHER EQUIPMENT AND STRUCTURES BEFORE ROUGHING IN.
- GROUNDING CONTINUITY SHALL BE MAINTAINED THROUGH THE E. ENTIRE RACEWAY SYSTEM.
- SEE PEDESTAL AND MDP SCHEDULES ON DRAWINGS E06 AND E07.
- PROVIDE PULL AND/OR JUNCTION BOXES WHERE REQUIRED BY NEC G. AND LOCAL CODES WHETHER OR NOT SHOWN ON DRAWINGS. ALL CABLES SHALL HOMERUN TO MDP. NO SPLICES ARE PERMITTED IN HANDHOLES.
- H. A SEPARATE CIRCUIT FED FROM MDP WILL SUPPORT LIGHTING. PROVIDE CABLE TYPE "SOOW" FOR THIS PURPOSE.
- FURNISH AND INSTALL PEDESTAL NUMBER LABELS TO MATCH L. ORDER SHOWN ON PLAN.

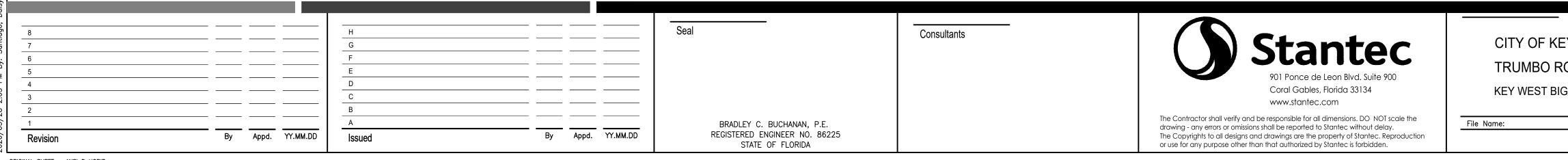
# KEY NOTES (#)

- FURNISH AND INSTALL TYPE G-GC CABLE (3 CONDUCTOR PLUS GROUND) IN CABLE TRAY FOR PEDESTAL ELECTRICAL POWER. FURNISH AND INSTALL CABLE TYPE "SOOW" FOR LIGHTING CIRCUIT. SEWAGE PUMP WIRE SHALL BE XHHW-2. CABLE/WIRE SIZE SHALL BE PER SCHEDULE ON E-07. CONDUIT SIZE SHALL BE PER KEYNOTE 2 ON THIS SHEET.
- EACH PEDESTAL POWER CABLE SHALL BE IN SEPARATE 4" CONDUIT 2. BURIED UNDERGROUND TO SHORELINE TRANSITION. LIGHTING CABLE AND SEWAGE PUMP POWER CONDUCTORS SHALL BE IN 1" CONDUIT.
- ALL CONDUITS SHALL ENTER A MIN 24Wx36Lx24H. MINIMUM PULL BOX DIMENSIONS SHALL BE IN ACCORDANCE WITH NEC CODE DEPENDANT ON THE CONFIGURATION AND SIZE OF CONDUITS ENTERING THE BOX. THE PULLBOX SHALL CONTAIN NO SPLICES UNLESS SPECIFICALLY APPROVED BY THE ENGINEER. PULLBOX SHALL BE POLYMER CONCRETE WITH TIER 22 RATING AND STAINLESS STEEL BOLTS, MANUFACTURED BY HUBBELL OR EQUAL
- SERVICE AND POWER DISTRIBUTION CABINETS SHALL BE INSTALLED ON SIDE OF BUILDING, ABOVE ELEVATED BALCONY. ALL PANELS SHALL HAVE MIN. 3.5 FEET CLEARANCE IN FRONT OF THE PANEL. SECURE PANELS TO BUILDING WITH STAINLESS STEEL HARDWARE
- IN ACCORDANCE WITH NEC ARTICLE 225.37, FURNISH AND INSTALL A PERMANENT PLAQUE AT THE NEW PIER SERVICE DISCONNECT INDICATING THE SERVICE IS FOR THE PIER. IN ADDITION, FURNISH AND INSTALL A PERMANENT PLAQUE AT ALL OTHER EXISTING SERVICES SUPPLYING THE BUILDING (OR PASSING THROUGH THE STRUCTURE) AND THE AREA SERVED BY EACH. ALL PLAQUES SHALL

T S	LSO INCLUDE TEXT OR A DIRECTORY THAT CLEARLY IDENTIFIES HE LOCATIONS OF THE OTHER SERVICE DISCONNECTS. SUBMIT HOP DRAWINGS FOR EACH PLAQUE THAT INCLUDES MATERIAL CUT HEETS AND TEXT.
ST LOATING DOCKS	ELECTRICAL SITE PLAN         Project No.       Scale       0'       4'       8'       12'       16'         215615432       1/8"=1'-0"       1/8"=1'-0"       1/8"
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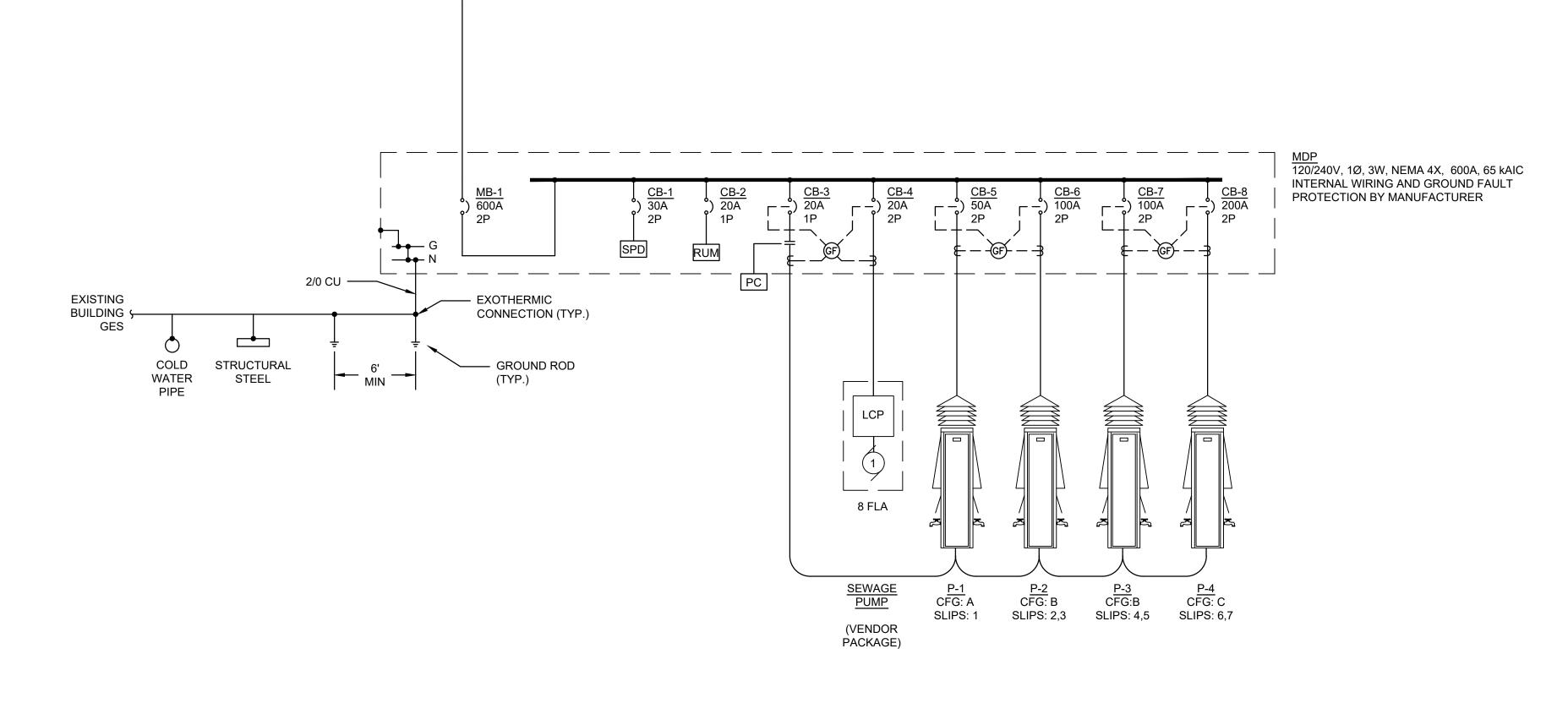






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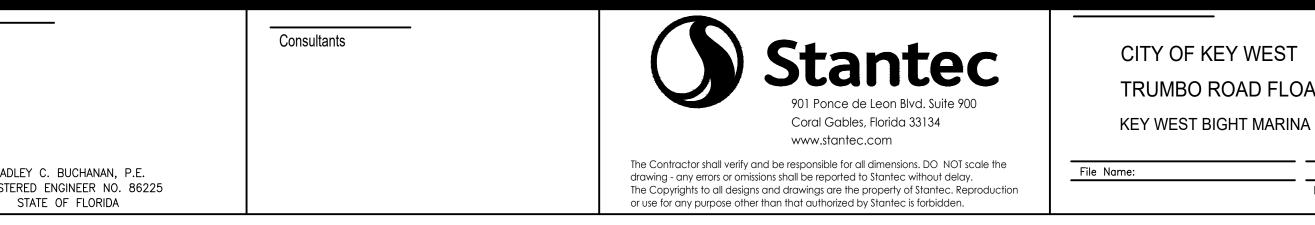
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TX-1

FKEC UTILITY TRANSFORMER TRANSFORMER 120/240V, 1Ø, 3W

FKEC UTILITY

# **ONE-LINE DIAGRAM**



## <u>NOTES</u>

- A. REFER TO DRAWING E-07 FOR PEDESTAL CONFIGURATION (CFG) AND DETAIL.
- B. FURNISH AND INSTALL NEW MAIN DISTRIBUTION PANEL AS SHOWN WITH GROUND FAULT PROTECTION FOR ALL FEEDEERS.
- C. REFER TO THE POWER DISTRIBUTION VOLT DROP SCHEDULE ON E-07 FOR CONDUCTOR QUANTITIES AND SIZES.
- D. ALL CIRCUITS SHALL HAVE ADJUSTABLE GROUND FAULT PROTECTION RELAYS SET AT 100mA IN ACCORDANCE WITH NEC CODE.

# TRUMBO ROAD FLOATING DOCKS

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## ONE-LINE DIAGRAM

Project No. 215615432	Scale	NO SCALE	
Drawing No.	Sheet		Revision
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POWER DISTRIBUTION VOLT DROP SCHEDULE													
					STATION						SECTION	TOTAL VOL	
CIRC. No. OR PANEL	SERVICING	VOLTAGE	PH	POWER FACTOR	DEMAND (VA)	AMBIENT TEMP(°C)	WIRE OP TEMP(°C)	SIZE	*LENGTH IN FT.	QTY. PER PH.	VOLT DROP		DROP IN %
TX-1	MDP	120 / 240	1	0.9	99160	30	75	2[3#350]	50	2	1.06	0.44%	
MDP-1	SEWER PUMP	120 / 240	1	0.9	1920	30	75	2#12 + 1#12G	90	1	2.63	1.54%	
MDP-2	P-1	120 / 240	1	0.9	12000	30	75	3#8 + 1#10G	125	1	9.06	4.22%	
MDP-3	P-2	120 / 240	1	0.9	24000	30	75	3#3 + 1#8G	145	1	7.11	3.40%	
MDP-4	P-3	120 / 240	1	0.9	24000	30	75	3#3 + 1#8G	185	1	9.07	4.22%	
MDP-5	P-4	120 / 240	1	0.9	48000	30	75	3#3/0 + 1#6G	235	1	8.23	3.87%	
MDP-6	LIGHTING CIRCUIT	120	1	0.9	40	30	75	2#12 + 1#12G	235	1	0.29	0.68%	

1. FEEDER LENGTHS HERE IN ARE FOR VOLTAGE DROP CALCULATION ONLY. THE REAL LENGTH SHALL BE MEASURED ON FIELD.

2. THE CONDUCTOR AND GROUND WIRES LISTED HEREIN REPRESENT MINIMUM SIZE REQUIREMENTS.

## PEDESTAL CONFIGURATIONS

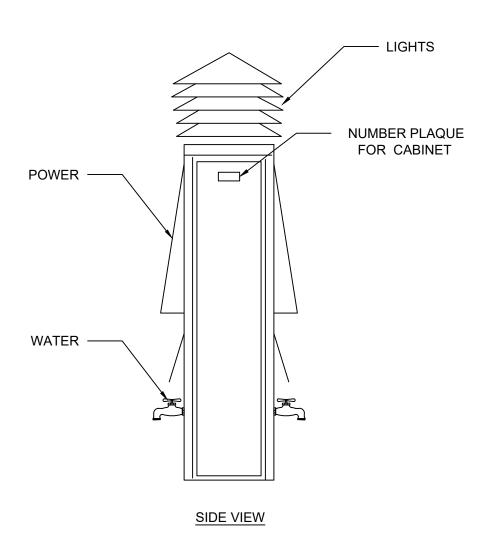
CONFIGURATION A: SIDE 1: 50A, SIDE 2: N/A MODEL: PCMFS-16-D-BLANK-PCL-RLF-W-TPL(LED) TOTAL QUANTITY: 1

CONFIGURATION B: SIDE 1: 50A SIDE 2: 50A MODEL: PCMFS 16-D-D-PCL-RLF-W-TPL(LED) TOTAL QUANTITY: 2

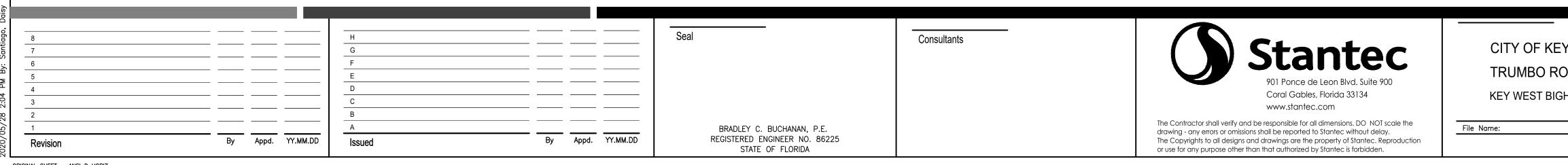
CONFIGURATION C: SIDE 1: 100A SIDE 2: 100A MODEL: PCMFS-16-E-E-PCL-RLF-W-TPL(LED) TOTAL QUANTITY: 1

## NOTES:

- 1. ALL PEDESTALS SHALL INCLUDE A PHOTOCELL, LED LIGHT, AND A WATER FAUCET FOR EACH SLIP.
- 2. ALL PEDESTALS SHALL INCLUDE WATER DEDUCT METERS.
- 3. ALL PEDESTALS SHALL INCLUDE ELECTRICAL DEDUCT METERS.
- 4. MANUFACTURER SHALL BE MARINA POWER COMPANY OR APPROVED EQUAL.



# PEDESTAL DETAIL TYPICAL



# PEDESTAL LOAD CALCULATION

CONFIGURATION A:	
(1x) 50A, 120/240V RECEPTACLES PER NEC 555.12	

12,000VA @240V = 50A

(2x) 50A, 120/240V RECEPTACLES PER NEC 555.12

24,000VA @240V = 100A

CONFIGURATION C: (2x)100A, 120/240V RECEPTACLES PER NEC 555.12

48,000VA @240V = 200A

# LOAD CALCULATION

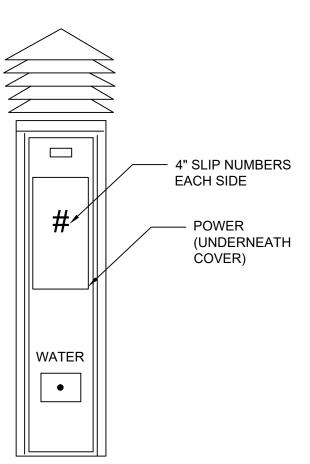
**CONFIGURATION B:** 

SERVICE VOLTAGE 120/240V-1PH-3W+G

CONNECTED LOAD	PED QTY	<b>REC QTY</b>	VA
CONFIGURATION A	1	1	12,000
CONFIGURATION B	2	2	48,000
CONFIGURATION C	1	2	48,000
TOTAL	4	5	108,000

97,200 VA 40 VA 1,920 VA 99,160 VA

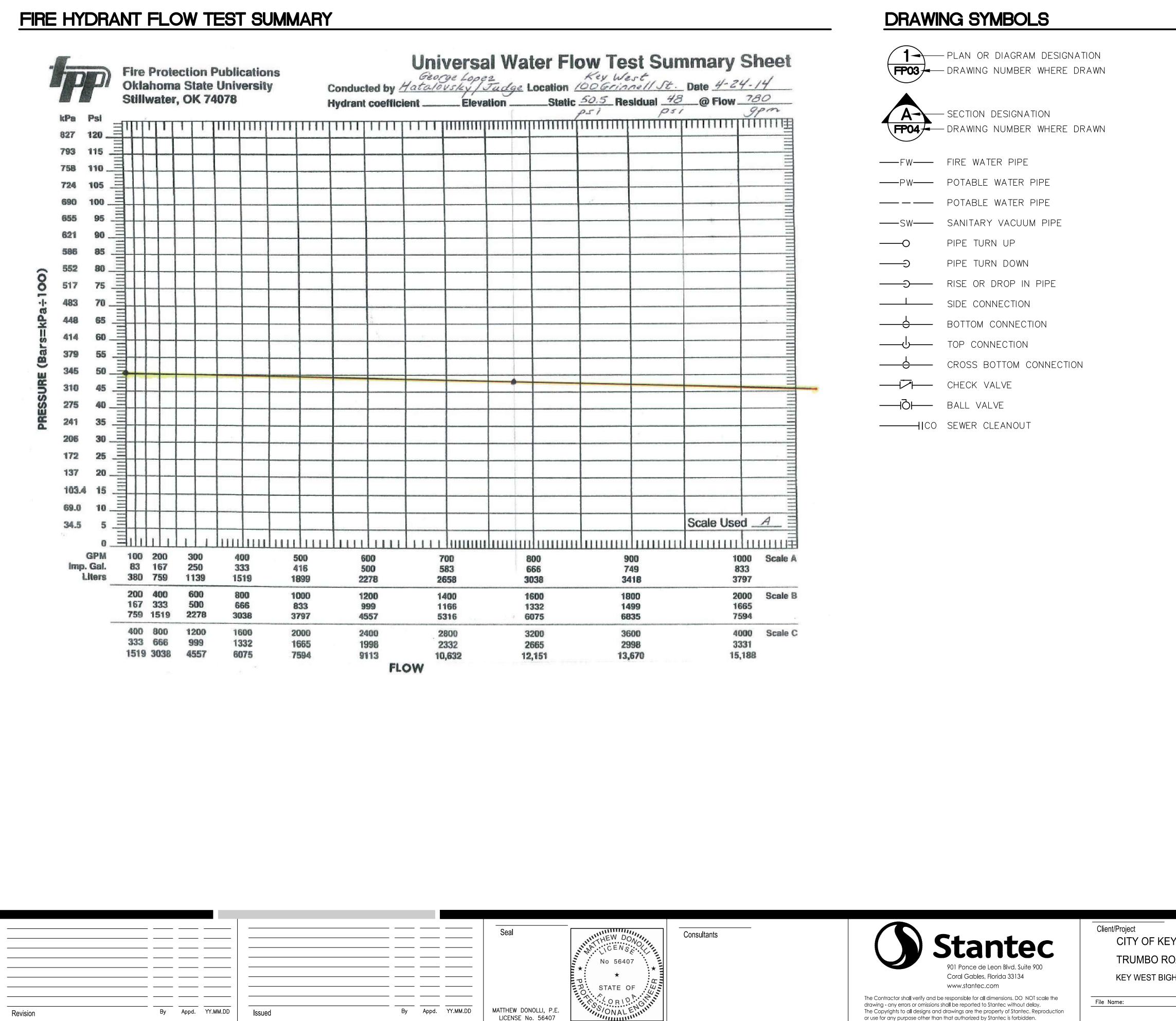
@240VAC = 413A



FACE VIEW

TYPE: MAF	RINA POWER CABINET				ENCLOSURE: FREE STANDING		
VOLTAGE:	120/240V-1PH-3W						
A.I.C.S.: 65	бК			UTION PANEL MDP	FED FROM: UTILITY TRANSFORMER		
MAIN BRE	IAIN BREAKER:						
			N	1DP			
			CIRCUIT BREA	AKER			
CIRC. No.	SERVICING	POLE	TRP	ТҮРЕ	SLIP NUMBER		
1	SPD	2	30				
2	RUM (GFI PANEL)	1	20				
3	LIGHTING CIRCUIT	1	20		- SLIP NUMBER		
4	SEWAGE PUMP	2	20				
5	PEDESTAL P-1	2	50		1		
6	PEDESTAL P-3	2	100		2, 3		
7	PEDESTAL P-2	2	100		4, 5		
8	PEDESTAL P-4	2	200		6, 7		

Y WEST	ELECTRICAL SCHEDULES				
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	- PLAN OR DIAGRAM DESIGNATION - DRAWING NUMBER WHERE DRAWN
	- SECTION DESIGNATION - DRAWING NUMBER WHERE DRAWN
——FW—	FIRE WATER PIPE
——————————————————————————————————————	POTABLE WATER PIPE
	POTABLE WATER PIPE
SW	SANITARY VACUUM PIPE
——0	PIPE TURN UP
—	PIPE TURN DOWN
<del></del>	RISE OR DROP IN PIPE
I	SIDE CONNECTION
<u> </u>	BOTTOM CONNECTION
U	TOP CONNECTION
<u> </u>	CROSS BOTTOM CONNECTION
	CHECK VALVE
—-Ю	BALL VALVE
	SEWER CLEANOUT

N	PLAN NORTH
0′ 5′ 10′ 15′ 20′ 1"=10′	GRAPHIC SCALE
$\langle X \rangle$	KEYED NOTE
$\bigwedge$	REVISION NUMBER
	CONNECT TO EXISTING
W	POTABLE WATER AND SANITARY SEWER DOCK BOX
FEC	FIRE EXTINGUISHER CABINET
FHC	FIRE HOSE CABINET
P	ELECTRICAL POWER PEDESTAL
EDP	ELECTRICAL DISTRIBUTION PANEL
EX	EXISTING
HB	HOSE BIBB

( WEST	Title FIRE PROTECTION LEGEND			
AD FLOATING DOCKS	Project No. 215615432	Scale	NTS	
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#### FIRE EXTINGUISHMENT SYSTEMS SPECIFICATIONS

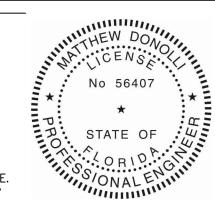
PART 1 - GENERAL REQUIREMENTS

- 1.1 SYSTEM DESCRIPTION
- A. Bight Marina fire extinguishment systems shall consist of a fixed-in-place, automatic, Class I wet statupon an existing fire pump to supply the water demand and shall include Class II hose stations and ABC fire extinguishers.
- B. System calculations shall be based upon a flow rate for the hydraulically most remote hose nozzle of minimum design pressure of 65 PSI. Fire water source is from a public waterworks system.
- 1.2 SUMMARY OF WORK
- A. New construction work shall include but is not limited to providing complete new fire extinguishment and portable fire extinguishers with cabinets as described in these specifications and drawings for the Work shall include preparing minor modifications to the existing fire water supply main at the prop seawall interface.
- B. Bids shall include as a minimum all labor, tools, materials, plant, transportation, taxes, related items for demolishing existing work and furnishing, installing, operating, and testing of the proposed new work
- 1.3 EXAMINATION OF DOCUMENTS
- A. The intent of the drawings and specifications is to establish type and quality of materials and a gen location of the major components that comprise the fire extinguishment systems. They are not intenminute detail every or all accessories intended for the purposes of executing the work, but it is under details are part of the project scope.
- B. Where conflicts exist between drawings and specifications the most stringent requirements shall apply.
- 1.4 CODES AND STANDARDS
- A. Furnish and install fire extinguishment systems to meet all current requirements of national, state codes, rules, regulations, laws, and standards as they are adopted by the governing agency and as the
- NFPA 10 Standard for Portable Fire Extinguishers 2007 Edition
- NFPA 14 Standards for the Installation of Standpipe and Hose Systems 2007 Edition
- NFPA 303 Fire Protection Standards for Marinas and Boatyards 2006 Edition
- Florida Fire Prevention Code 2010 Edition
- Florida Building Code 2010 Edition
- Factory Mutual
- Underwriters Laboratories
- 1.5 PERMITS AND INSPECTIONS
- A. Secure and pay for all permits and licenses before actual work is started and observe all requiren thereon.
- B. Coordinate with and give all necessary notices to the Authority Having Jurisdiction for inspection and fire extinguishment systems required to be witnessed by their agent.
- 1.6 SHOP DRAWING SUBMITTALS AND PRE-INSTALLATION COORDINATION
- A. Prior to ordering materials submit shop drawings including manufacturer's catalog cuts, brochures ar data of pipe and fitting materials, hoses, valves, supports, pipe markers, fire extinguishers, cabin appurtenances as may be required. Unless specified elsewhere, provide a minimum of six copies fo Owner review.
- B. After owner acceptance of shop drawings, submit the approved documents to the Authority Having their approval. Submit in quantities as directed by the Authority Having Jurisdiction.
- C. Coordinate with all trades in submittal of shop drawings and for space requirements. If work is in coordination with other trades which interferes with related work, make all necessary changes to corre at no additional cost to the Owner.
- D. Coordinate with floating dock supplier for pipe support spacing requirements integral with structural fra
- 1.7 PRODUCTS AND WORKMANSHIP
- A. All equipment and materials shall be new and unused as manufactured by companies regularly e fabrication of the type specified except as otherwise noted herein. Use products of a single manufac type equipment. Modified or re-built equipment or materials are not acceptable.

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	B. Provide standpipe components and piping system installation capable of sustaining 175 PSIG minimum working pressure rating.	2.2 FIRE HOSE
	C. Install fire extinguishment systems in a neat and workmanlike manner utilizing personnel licensed and skilled in the trades.	2.3 FIRE EXTII A. Fire exting
standpipe relying and portable type	1.8 WARRANTY	units. Cylir plated bras stainless st
of 100 GPM and a	A. Provide an unconditional warranty from failure and/or defects on all products and workmanship provided for this project for a minimum of one (1) year from date of substantial completion except as noted herein.	B. Fire exting accommod lockable ha sides of the
	B. Provide six (6) year product warranty for fire extinguishers.	2.4 PIPE SUPF
nt piping systems the proposed pier.	C. Warranty for products removed and reinstalled as indicated on the plans shall be provided for installation workmanship and new components as may be provided.	A. Fire extingu structure of products by etc. shall be
proposed pier and	1.9 DELIVERY AND STORAGE	PART 3 - EXECU
		3.1 EXAMINAT
ns, etc., essential vork.	A. Handle, store and protect equipment and materials in accordance with the manufacturer's recommendations. Replace damaged or defective items with new items.	A. Examine ro system per
		B. Identify exa
	1.10 DEMOLITION, CUTTING AND PATCHING	C. Proceed wi
eneral layout and tended to show in derstood that such	A. Protect all existing active services against damage including water, electric, sewer, etc., in areas of proposed construction. If active services are encountered that require relocation, make request to Owner for determination of procedures.	3.2 INSTALLAT
		A. Select HDF
bly.	B. Remove and dispose of properly off-site, all abandoned fire extinguishment piping, valves, pipe supports, equipment, etc., rendered obsolete by work of this project.	B. Select non- C. Install pipin
	C. Provide all necessary cutting and patching required in connection with fire extinguishment work. Coordinate with and obtain written approval from the Marine Contractor for all proposed cutting and patching prior to commencement of	D. Install fitting
ate and municipal they may apply.	work.	E. Install pipin
	1.11 CLEANING	3.3 INSTALLA
	A. Clear away all debris, surplus materials, etc., resulting from fire extinguishment system installation work and operations. Leave the job and equipment provided under contract in a clean and first-class condition.	A. Install supp manufactur schedule: Pipe size
	1.12 TEST AND DEMONSTRATIONS	2-1/2 Inch I
	A. Perform tests of the fire extinguishment systems as specified herein. Repeat as required until proven acceptable to the Engineer, Owner and Authority Having Jurisdiction. Provide all gauges, tools, pumps, gas, air or other required	B. Pipe suppo for each pip
	equipment or materials.	3.4 INSTALLAT
ements stipulated	B. Upon completion of testing, demonstrate maintenance, operation and adjustment procedures to owner for all installed systems and equipment.	A. Install fire h Jurisdiction B. Mount equi
	1.13 RECORD DOCUMENTS	installation 3.5 INSTALLA
and testing of the		
	A. Maintain at the job site one set of prints on which are recorded all field changes and other portions of the fire extinguishment system work that vary from the contract documents. Indicate actual pipe system routing and installed accessories and devices.	A. Install fire of Jurisdiction
		B. Mount cabi installation
and performance	B. Provide as-built record drawings to the Owner at the completion of the project. PART 2 - PRODUCT REQUIREMENTS	3.6 INSTALLAT
binets, and other for Engineer and	2.1 PIPING, FITTINGS, AND JOINING MATERIAL	A. Attach pipe
ng Jurisdiction for	A. High Density Polyethylene (HDPE) pipe shall be ASTM D 3350, SDR 11, Cell Classification of PE 3454344C with butt-used joints. All fittings shall be of compatible HDPE material and shall be butt-fused. Provide IPF, Driscopipe or equivalent.	3.7 FIRE EXTI
	B. Non sanitary pressure hose shall be #2612 rated for minimum 150 PISG working pressure. Hose shall be as supplied by the following:	A. Flush, test Certificate,
s installed prior to rrect the condition	Crouch Supply Co, Inc.; 305 S. Main Street; Fort Worth, Texas 76104 Attn.: Barbara Dale 1-800-825-1110	B. Prepare an replace def
	An equivalent hose product by alternative manufacturers shall be acceptable	
framing.	C. Elbows, flanges and accessories shall be 316 stainless steel construction including plates, bolts, washers, nuts and other components as may be required.	
y engaged in the facturer for similar	D. Piping identification shall be Seton Snap-Around Pipe Markers or equivalent type of labels. Provide red color band with green legend band. White lettering on the legend band shall read "Fire Water".	



Consultants



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File Name:

## TINGUISHERS AND ACCESSORIES

nguishers shall be five pound capacity, 2A:10B:C multi-purpose agent (mono-ammonium phosphate) type cylinders shall be aluminum construction with epoxy powder or baked enamel finish. Valves shall be chrome rass. Handles and levers shall be stainless steel. Extinguisher shall be US Coast Guard Approved. Include s steel mounting bracket.

inguisher cabinets shall be powder-coated aluminum construction, deck mounted type of a size to odate the fire extinguisher specified above. Provide cabinet complete with breakaway glass, stainless steel handle, stainless steel hinges and finish color to match existing fire hose cabinets. Provide signage on both the cabinet indicating in large red letters, "Fire Extinguisher".

## IPPORTS

nguishment system supports shall be in accordance with NFPA 14 and shall be as provided by the frame and e of the floating dock. No pipe hangers are permitted. Securement devices shall be strap anchors or related by Grinnell, Modern Hanger or BLine. All anchors and accessories such as mechanical fasteners, washers, I be 316 Stainless Steel construction.

CUTION REQUIREMENTS

## ATION

rough-ins for piping, equipment and supports and verify actual locations, sizes and other conditions affecting performance, maintenance, and operations prior to equipment installation.

exact locations of existing services to be reused.

with installation only after unsatisfactory conditions have been corrected.

## ATION OF PIPING

DPE pipe with butt fused joints and fittings for all fire water piping except as noted otherwise.

on-sanitary pressure hose #2612 for flexible connection between landside pipe and pier side pipe.

ping at right angles or parallel to seawalls and joists.

## tings for changes in direction and branch connections.

ping and hoses in strict accordance with the manufacturer's installation instructions and recommendations.

## LATION OF PIPE SUPPORTS

upports, anchors and fasteners for fire extinguishment systems in accordance with the NFPA 14 and pipe sturers written installation instructions. Minimum support requirements shall be as indicated in the following e:

e Support Spacing

h Diameter and larger 48 Inches Maximum

oport spacing shall be as listed above except that horizontal runs of piping shall be supported at least once pipe section and at each joint. Provide minimum of one support for each elbow.

ATION OF FIRE HOSE CABINETS AND ACCESSORIES

e hose cabinets and accessories at locations indicated on the plans and as directed by the Authority Having ion.

quipment securely to decking with mechanical fasteners. Install in strict accordance with the manufacturer's on instructions and recommendations.

ATION OF FIRE EXTINGUISHERS AND CABINETS

re extinguishers and cabinets at locations indicated on the plans and as directed by the Authority Having ion.

abinet securely to decking with mechanical fasteners. Install in strict accordance with the manufacturer's on instructions and recommendations.

ATION OF IDENTIFICATION SIGNAGE

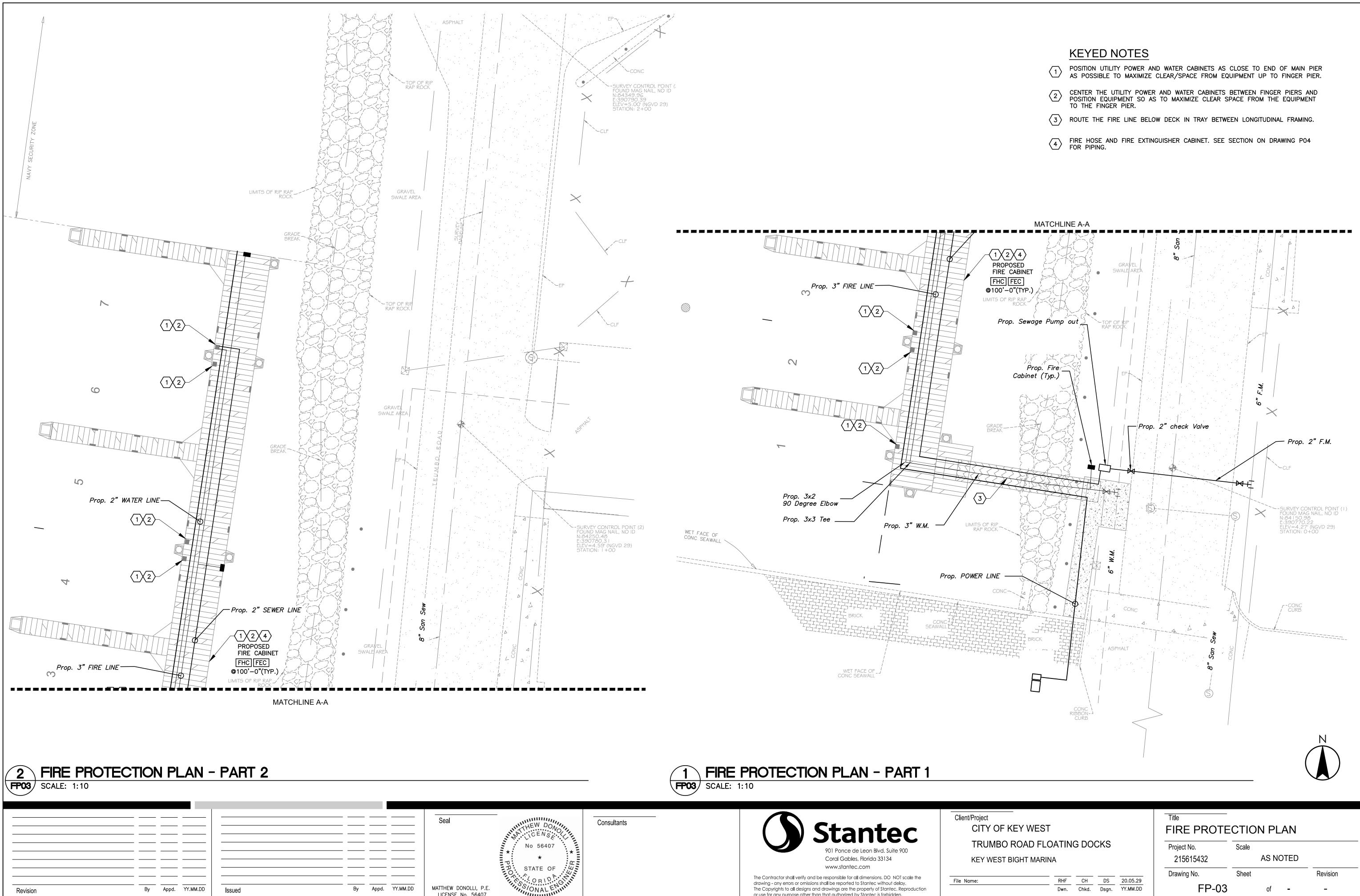
ipe markers on fire extinguishment system piping. Space markers at no greater than 25 feet on center.

TINGUISHMENT SYSTEM ACCEPTANCE TESTING

est and inspect standpipe systems according to NFPA 14. Provide completed Contractor's Material and Test ate, Figure 11.13 (a), for standpipe systems to the Engineer and to the Owner.

and install inspection tags for each extinguisher in accordance with NFPA 10. Inspect all extinguishers and defective or discharged units discovered at final acceptance inspection.

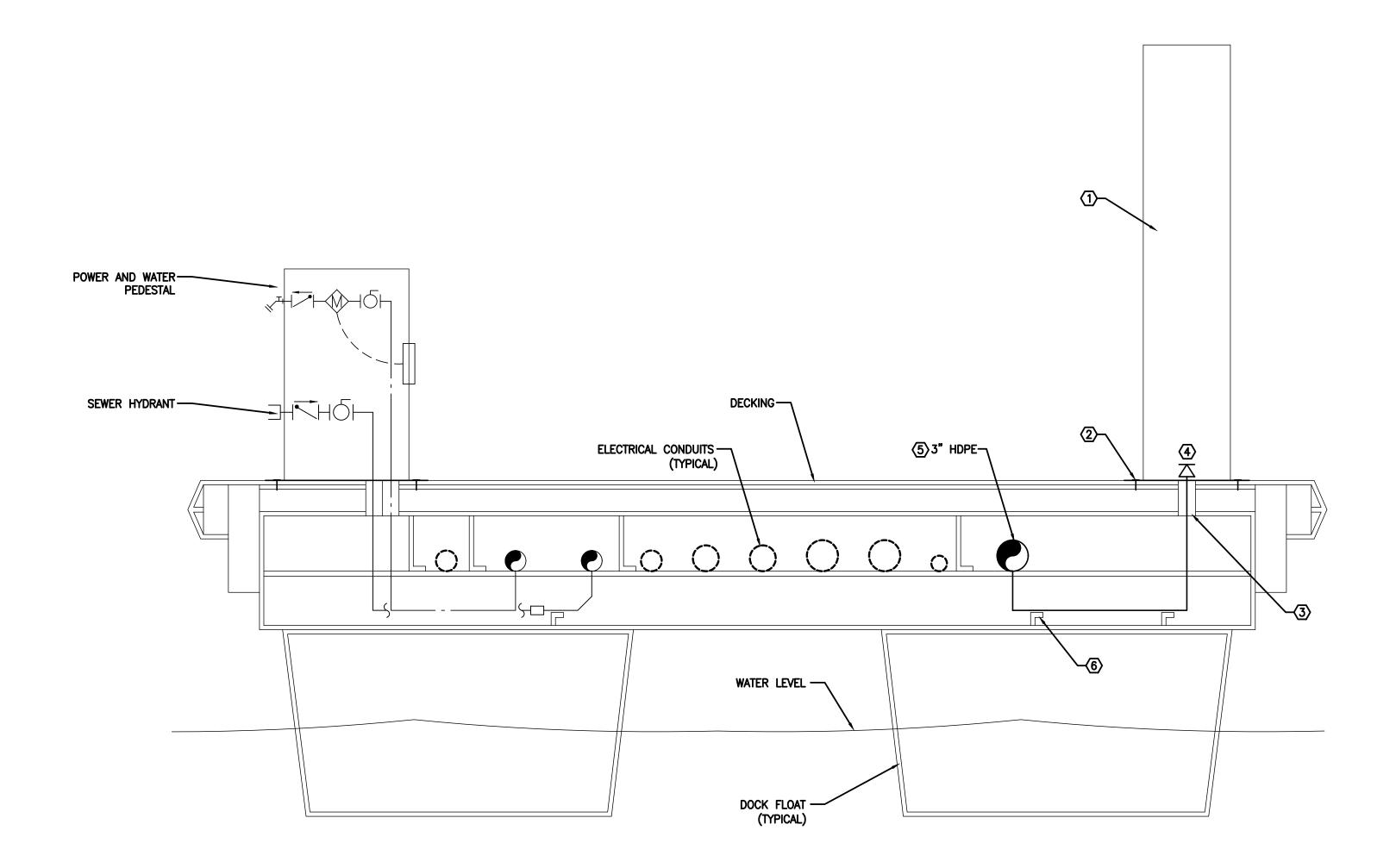
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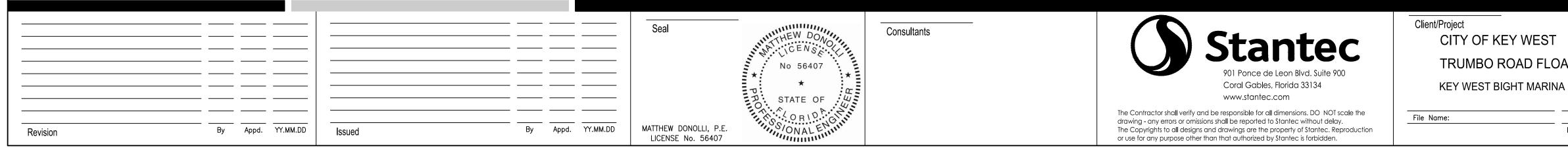


or use for any purpose other than that authorized by Stantec is forbidden

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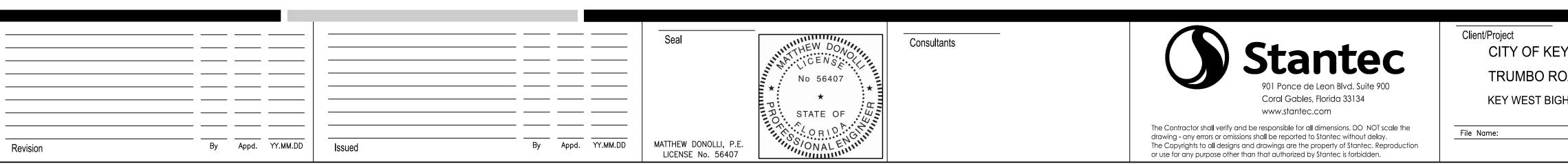
# A FIRE PROTECTION - SECTION THRU MAIN PIER FP04 SCALE: NTS

## KEY NOTES 🛛 🛞

- 1. INSTALL FIRE HOSE CABINET NEAR OUTBOARD EDGE OF PIER SO AS TO OPTIMIZE AVAILABLE SPACE FOR PEDESTRIAN TRAFFIC IN THE CENTER OF THE PIER. ORIENT BOX WITH HOSE ACCESS TO THE INBOARD SIDE. SEE SPECIFICATION FOR ADDITIONAL INFORMATION AND WORK ITEMS.
- 2. SECURE CABINET TO DECK WITH MINIMUM OF EIGHT STAINLESS STEEL FASTENERS OR AS RECOMMENDED BY CABINET MANUFACTURER.
- 3. CORE DRILL DECK FOR FIRE WATER SUPPLY PIPE INSTALLATION. MAKE THE OPENING A MINIMUM OF 1 INCH LARGER THAN OUTSIDE DIAMETER OF PIPE. PROVIDE SHRINK WRAP ON THE PIPE AT THE DECK PENETRATION TO PROTECT AGAINST ABRASION.
- 4. EXTEND FIRE WATER SUPPLY PIPE UP THRU LEG OF CABINET. DRILL OUT LEG FOR PIPE AS MAY BE REQUIRED. PROVIDE REDUCER AS REQUIRED TO CONNECT TO EXISTING HOSE VALVE.
- 5. ROUTE HDPE FIRE WATER MAIN IN TRAY BETWEEN PIER FRAMING MEMBERS. PROVIDE HDPE TEE FITTING AT EACH PROPOSED HOSE CABINET LOCATION. SECURE FITTING TO FRAME WITH CLAMP OR EQUIVALENT STRAPPING METHOD.3
- 6. TYPICAL PIPE SUPPORT STRUT BETWEEN CROSS MEMBERS AT 3-FOOT O.C. SECURE PIPE TO STRUCTURE WITH CLAMP OR EQUIVALENT STRAPPING METHOD.

#### Title FIRE PROTECTION SECTION TRUMBO ROAD FLOATING DOCKS Project No. Scale NO SCALE 215615432 Drawing No. Sheet Revision RHF CH DS 20.05.15 FP-04 of – Dwn. Chkd. Dsgn. YY.MM.DD -

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# DRAWING SYMBOLS

	- PLAN OR DIAGRAM DESIGNATION - DRAWING NUMBER WHERE DRAWN
	- SECTION DESIGNATION - DRAWING NUMBER WHERE DRAWN
——	FIRE WATER PIPE
——	POTABLE WATER PIPE
	POTABLE WATER PIPE
	SANITARY VACUUM PIPE
——O	PIPE TURN UP
—— <del>〕</del>	PIPE TURN DOWN
	RISE OR DROP IN PIPE
I	SIDE CONNECTION
<u> </u>	BOTTOM CONNECTION
ტ	TOP CONNECTION
<u> </u>	CROSS BOTTOM CONNECTION
	CHECK VALVE
—Ю́—	BALL VALVE
<b>I</b> CO	SEWER CLEANOUT

N	PLAN NORTH
0' 5' 10' 15' 20' 1"=10'	GRAPHIC SCALE
$\langle X \rangle$	KEYED NOTE
$\bigwedge$	REVISION NUMBER
	CONNECT TO EXISTING
W	POTABLE WATER AND SANITARY SEWER DOCK BOX
FEC	FIRE EXTINGUISHER CABINET
FHC	FIRE HOSE CABINET
P	ELECTRICAL POWER PEDESTAL
EDP	ELECTRICAL DISTRIBUTION PANEL
EX	EXISTING
НВ	HOSE BIBB

Y WEST	Title PLUMBING	LEGEND	
DAD FLOATING DOCKS	Project No. 215615432	Scale NTS	
RHF CH DS 20.01.21 Dwn. Chkd. Dsgn. YY.MM.DD	Drawing No. P-01	Sheet of -	Revision

PLUMBING SYSTEM SPECIFICATIONS	B. Remove and dispose of properly off-site,
PART 1 - GENERAL REQUIREMENTS 1.1SYSTEM DESCRIPTION	C. Provide all necessary cutting and patchin all proposed cutting and patching prior underground piping. Backfill and compac
A. Bight Marina plumbing systems shall consist of potable water distribution and sanitary vacuum extended from existing landside utilities and shall include potable water and sanitary sewer dock boxes.	1.11 CLEANING
1.2SUMMARY OF WORK	A. Clear away all debris, surplus materials, contract in a clean and first-class conditic
A. New construction work shall include but is not limited to providing complete new potable water distribution systems and sanitary vacuum systems as described in these specifications and drawings for the proposed pier.	1.12 TEST AND DEMONSTRATIONS
B. Bids shall include as a minimum all labor, tools, materials, plant, transportation, taxes, related items, etc., essential for demolishing existing work and furnishing, installing, operating and testing of the proposed new work.	<ul> <li>A. Perform tests of the plumbing systems a Provide all gauges, tools, pumps, gas, air</li> </ul>
1.3EXAMINATION OF DOCUMENTS	1.13 RECORD DOCUMENTS
A. The intent of the drawings and specifications is to establish type and quality of materials and a general layout and location of components that comprise the plumbing systems. They are not intended to show in minute detail every or all accessories intended for the purposes of executing the work, but it is understood that such details are part of the project scope.	A. Maintain at the job site one set of prints documents. Indicate actual pipe system
B. Where conflicts exist between drawings and specifications the most stringent requirements shall apply.	B. Provide as-built record drawings to the O PART 2 - PRODUCT REQUIREMENTS
1.4CODES AND STANDARDS	<ul><li>2.1 PIPING, FITTINGS, AND JOINING MATE</li><li>A. Dock piping shall be High Density Polyel</li><li>All fittings shall be of compatible HDPE m</li></ul>
A. Furnish and install plumbing systems to meet all current requirements of national, state and municipal codes, rules, regulations, laws, and standards as they are adopted by the governing agency and as they may apply.	<ul> <li>B. Poly (Vinyl Chloride) (PVC) Plastic Pipe: .</li> <li>C. Poly (Vinyl Chloride) (PVC) Plastic, Pres 2564 with ASTM F 656 primer. Plastic p</li> </ul>
Florida Building Code, Building 2010 Edition	and nuts shall be Type 316 Stainless Ste 2.2 HOSES
Florida Building Code, Plumbing 2010 Edition Underwriters Laboratories	A. Sanitary hose shall be #2710 as supplied Crouch Supply Co., Inc.; 305 S. Main Stro Attn.: Barbara Dale 1-800-825-1110
1.5PERMITS AND INSPECTIONS	An equivalent hose product by alternative
A. Secure and pay for all permits and licenses before actual work is started and observe all requirements stipulated thereon.	B. Elbows, flanges and accessories shall be
B. Coordinate with and give all necessary notices to the Authority Having Jurisdiction for inspection and testing of the plumbing systems required to be witnessed by their agent.	<ul> <li>2.3 PLUMBING VALVES AND ACCESSORIE</li> <li>A. Manual ball valves shall be CPVC body w.o.g. pressure at maximum working tem</li> </ul>
1.6SHOP DRAWING SUBMITTALS AND PRE-INSTALLATION COORDINATION	<ul> <li>B. Potable water check valves shall be mari modules.</li> </ul>
A. Prior to ordering materials submit shop drawings including manufacturer's catalog cuts, brochures and performance data of pipe and fitting materials, hoses, valves, supports, pipe markers, dock boxes, and other appurtenances as may be required. Unless specified elsewhere, provide a minimum of six copies for review by Engineer and Owner.	<ul><li>C. Hose bibbs shall be marine grade, bronz</li><li>D. Sanitary vacuum hydrant shall be similar hoses. Assembly shall include camlock a</li></ul>
B. Coordinate with all trades in submittal of shop drawings and for space requirements. If work is installed prior to coordination with other trades which interferes with related work, make all necessary changes to correct the condition at no additional cost to the Owner.	2.4 POTABLE WATER AND SANITARY SEV
C. Coordinate with floating dock supplier for pipe support spacing requirements integral with structural framing.	A. Dock box shall be designed and construction with welded joints and pow assemblies and two sanitary vacuum ass the Kingfish Pier and Tarpon Pier and sha
1.7PRODUCTS AND WORKMANSHIP	B. Cabinets shall be complete with a tapere each have aluminum hose hangers. Alur
A. All equipment and materials shall be new and unused as manufactured by companies regularly engaged in the fabrication of the type specified except as otherwise noted herein. Use products of a single manufacturer for similar type equipment. Modified or re-built equipment or materials are not acceptable.	as suitable for mechanically fastening the C. Potable water supply assemblies locate interconnecting piping. The RF transm
B. Provide plumbing components and system installation capable of sustaining the following minimum working pressure ratings:	plumbing contractor. The RF transmitte Utility for space and mounting requirement outboard (slip side) face of the cabinet. two ¾" lines and extend to the water met
Water Distribution Systems: 125 PSIG. Sanitary Systems: 29 Inches of Hg Vacuum.	D. Sanitary sewer vacuum assemblies locat assembly shall be connected to an exter cabinet below the potable water hose bi branch off with a Y or lateral fitting to con
C. Install plumbing systems in a neat and workmanlike manner utilizing personnel licensed and skilled in the trades.	2.5 PIPE SUPPORTS
1.8WARRANTY	A. Plumbing system supports shall be as p
A. Provide an unconditional warranty from failure and/or defects on all products and workmanship provided for this project for a minimum of one (1) year from date of substantial completion.	strap anchors or related products by Grir Stainless Steel construction.
1.9DELIVERY AND STORAGE	<ul> <li>2.6 PIPE IDENTIFICATION</li> <li>A. Piping identification shall be Seton Snapband. White lettering on the legend band lettering on the legend band shall read "S</li> </ul>
A. Handle, store and protect equipment and materials in accordance with the manufacturer's recommendations. Replace damaged or defective items with new items.	PART 3 - EXECUTION 3.1 EXAMINATION
1.10 DEMOLITION, CUTTING AND PATCHING	A. Examine rough-ins for piping, equipment
A. Protect all existing active services against damage including water, electric, sewer, etc., in areas of proposed construction. If active services are encountered that require relocation, make request to Owner for determination of procedures.	operations prior to equipment installation. B. Identify exact locations of existing service
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	No 56407

Revision

By Appd. YY.MM.DD

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MATTHEW DONOLLI, P.E. LICENSE No. 56407

By Appd. YY.MM.DD

emove and dispose of properly off-site, all abandoned plumbing piping, valves, pipe supports, equipment, etc., rendered obsolete by work of this project.

rovide all necessary cutting and patching required in connection with plumbing work. Coordinate with and obtain written approval from the Marine Contractor for I proposed cutting and patching prior to commencement of work. Sawcut existing pavement or concrete and excavate as required for installation of nderground piping. Backfill and compact soil and provide finished surfaces to match adjacent materials and construction.

## CLEANING

lear away all debris, surplus materials, etc., resulting from plumbing system installation work and operations. Leave the job and equipment provided under ontract in a clean and first-class condition.

Perform tests of the plumbing systems as specified herein. Repeat as required until proven acceptable to the Engineer, Owner and Authority Having Jurisdiction. rovide all gauges, tools, pumps, gas, air or other required equipment or materials.

## RECORD DOCUMENTS

laintain at the job site one set of prints on which are recorded all field changes and other portions of the plumbing system work that vary from the contract ocuments. Indicate actual pipe system routing and installed accessories and devices.

rovide as-built record drawings to the Owner at the completion of the project.

PIPING, FITTINGS, AND JOINING MATERIAL

ock piping shall be High Density Polyethylene (HDPE). HDPE pipe shall be ASTM D 3350, SDR 11, Cell Classification of PE 3454344C with butt-used joints. Il fittings shall be of compatible HDPE material and shall be butt-fused. Provide pipe and fittings as manufactured by IPF, Driscopipe or equivalent.

oly (Vinyl Chloride) (PVC) Plastic Pipe: ASTM D 2665, Schedule 40, plain ends, socket type fittings and ASTM D 2564 solvent cement.

oly (Vinyl Chloride) (PVC) Plastic, Pressure Pipe: ASTM D 1785, SDR 21, plain ends, ASTM D 2467 socket type fittings. Solvent cement shall be ASTM D 2564 with ASTM F 656 primer. Plastic pipe-flanges and gaskets shall be of type and material recommended by the piping system manufacturer. Bolts, washers and nuts shall be Type 316 Stainless Steel.

anitary hose shall be #2710 as supplied by the following:

rouch Supply Co., Inc.; 305 S. Main Street; Fort Worth, Texas 76104 Attn.: Barbara Dale 1-800-825-1110

n equivalent hose product by alternative manufacturers shall be acceptable.

Elbows, flanges and accessories shall be 316 Stainless Steel construction including plates, bolts, washers, nuts and other components as may be required.

LUMBING VALVES AND ACCESSORIES

Ianual ball valves shall be CPVC body with Stainless Steel ball, TFE seats and seals, threaded union or flanged ends, lever handle, conventional port, 400 psig o.g. pressure at maximum working temperature of 150 degrees F.

otable water check valves shall be marine grade, bronze body dual check type, complying with ASSE 1024, and complete with two compact replaceable check odules

lose bibbs shall be marine grade, bronze body with integral vacuum breaker, complying with ASSE 1011, and plastic handle.

anitary vacuum hydrant shall be similar to and compatible with existing assemblies of the marina. Inlet connection shall mate with existing slip to houseboat oses. Assembly shall include camlock and closer cap, marine grade bronze lift check valve and manual ball valve.

## POTABLE WATER AND SANITARY SEWER DOCK BOX

ock box shall be designed and constructed specifically for marine applications. Cabinet shall be as minimum Type 5052, 090 gauge, marine grade aluminum onstruction with welded joints and powder coated gloss white finish inside and outside. Cabinet size shall be designed to accommodate two water supply ssemblies and two sanitary vacuum assemblies except where serving a single slip as indicated on the plans. Product shall be similar to existing dock boxes on he Kingfish Pier and Tarpon Pier and shall be as manufactured by Marina Power Company, Miami, Florida or equivalent owner approved product

abinets shall be complete with a tapered aluminum top and shall include Type 316 Stainless Steel hinges and latch. The two side faces of the cabinet shall each have aluminum hose hangers. Aluminum components shall be constructed and finished as described above. Cabinet shall have flanges or mounting plates s suitable for mechanically fastening the unit to the surface of the deck.

otable water supply assemblies located inside the cabinet shall include RF transmitter and water meter, 3/4" brass check value, 3/4" manual ball value and terconnecting piping. The RF transmitter and water meter shall be furnished by the Key West Utility Department and installed within the cabinet by the lumbing contractor. The RF transmitters shall be mounted on the inboard (deck side) face of the cabinet. Dock box manufacturer shall coordinate with the tility for space and mounting requirements. Each assembly shall be connected to an externally mounted brass hose bibb with vacuum breaker mounted on the utboard (slip side) face of the cabinet. A 1" water supply pipe shall feed through the bottom of the cabinet. Within the cabinet the 1" line shall tee off to supply wo ¾" lines and extend to the water meters.

anitary sewer vacuum assemblies located inside the cabinet shall include 1-1/2" brass check valve, 1-1/2" manual ball valve and interconnecting piping. Each ssembly shall be connected to an externally mounted 1-1/2" vacuum sewer 90 degrees camlock and closer cap located on the outboard (slip side) face of the abinet below the potable water hose bibbbs. A 1-1/2" sanitary vacuum pipe shall feed through the bottom of the cabinet. Within the cabinet the pipe shall ranch off with a Y or lateral fitting to connect to the two 1-1/2" vacuum inlets.

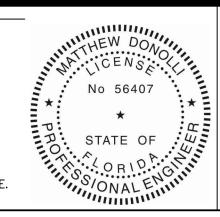
lumbing system supports shall be as provided by the frame and structure of the floating dock. No pipe hangers are permitted. Securement devices shall be trap anchors or related products by Grinnell, Modern Hanger or B-Line. All anchors and accessories such as mechanical fasteners, washers, etc., shall be 316 tainless Steel construction.

Piping identification shall be Seton Snap-Around Pipe Markers or equivalent type of labels. For potable water piping provide blue color band with green legend and. White lettering on the legend band shall read "Potable Water". For sanitary vacuum piping provide yellow color band with black legend band. White ttering on the legend band shall read "Sanitary Sewer".

#### XAMINATION

xamine rough-ins for piping, equipment and supports and verify actual locations, sizes and other conditions affecting system performance, maintenance, and

lentify exact locations of existing services to be reused.



Consultants



Coral Gables, Florida 33134 www.stantec.com

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden

- uniform bearing and support of pipe.

3.3 INSTALLATION OF PIPING

Water Distribution Branches Less than or equal to 1 inch diameter shall be PVC SDR 21

Sanitary Vacuum Mains shall be HDPE

C. Install fittings for changes in direction and branch connections. Use long sweep fittings for sanitary vacuum piping.

D. Install piping and hoses in strict accordance with the manufacturer's installation instructions and recommendations.

3.4 INSTALLATION OF PIPE SUPPORTS

- Pipe size 2 Inch Diameter and smaller
- 2-1/2 Inch Diameter and larger

- recommendations
- 3.6 INSTALLATION OF IDENTIFICATION LABELS
- diagram of portion of system tested.

- 3.8 TESTING OF SANITARY PIPING SYSTEMS
- portion of the system tested.

C. Repair leaks and defects using new materials and retest system or portion thereof until satisfactory results are obtained

D. Prepare reports for tests and required corrective action.

- 3.9 CLEANING

- contamination.

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## 3.2 EXCAVATION, BACKFILL, COMPACTION AND SURFACE FINISHING

A. Excavate pipe trench to depth of existing piping and as required to provide 12" clearance from pipe on sides and 6" on the bottom. Shape trench bottom for

B. Place and compact bedding course on trench bottom to provide continuous support for joints, fittings and pipe barrels.

C. Place and compact fill material in layers using satisfactory soil material in not more than 4" in loose depth. Place fill material evenly on all sides of structures and uniformly along the full length of each structure. Compact each layer at 85 percent.

D. Finish the top surface of the trench with materials to match adjacent construction and as approved by the Owner.

A. Use pipe, fittings and joining methods for piping systems according to the following applications:

Water Distribution Mains Larger than 1 Inch diameter shall be HDPE

Water Distribution Landside to Pier side Flexible Connections shall be Sanitary Hose #2710

Sanitary Vacuum Landside to Pier side Flexible Connections shall be Sanitary Hose #2710 Sanitary Vacuum Branch Lines to Hydrants shall be PVC Schedule 40

#### B. Install piping at right angles or parallel to seawalls and framing members.

A. Install supports, anchors and fasteners for plumbing systems in accordance with the Florida Plumbing Code and pipe manufacturers written installation instructions. See plans for additional requirements. Minimum support requirements shall be as indicated in the following schedule:

#### Support Spacing 36 Inches Maximum 48 Inches Maximum

B. Pipe support spacing shall be as listed above except that horizontal runs of piping shall be supported at least once for each pipe section and at each joint. Provide minimum of one support for each elbow.

## 3.5 INSTALLATION OF DOCK BOXES AND ACCESSORIES

A. Install dock boxes at locations indicated on the plans and as directed by the Engineer and the Owner. B. Mount equipment securely to framing and/or decking with mechanical fasteners. Install in strict accordance with the manufacturer's installation instructions and

C. Install potable water RF meters that are furnished by the water utility company. Coordinate space requirements.

A. Attach pipe markers on plumbing system piping mains. Space markers at no greater than 25 feet on center.

3.7 TESTING OF POTABLE WATER DISTRIBUTION SYSTEMS

A. Test for leaks and defects in new water distribution piping systems. If testing is performed in segments, submit separate report for each test, complete with

B. Cap and subject the piping system to a static water pressure of 125 PSIG or 50 PSIG above the operating pressure without exceeding pressure rating of piping system materials. Isolate test source and allow to stand for 4 hours. Leaks and loss in test pressure constitute defects that must be repaired. C. Repair leaks and defects with new materials and retest system or portion thereof until satisfactory results are obtained.

D. Prepare reports for tests and required corrective action.

A. Test for leaks and defects in sanitary piping systems. If testing is performed in segments, submit a separate report for each test, complete with a diagram of the

B. Cap and subject the piping system to a static vacuum pressure of 12 inches of Hg. Isolate test source and allow to stand for 4 hours. Leaks and loss of test pressure to more than 7 inches of Hg. constitute defects that must be repaired.

#### A. Purge new potable water distribution piping systems prior to use.

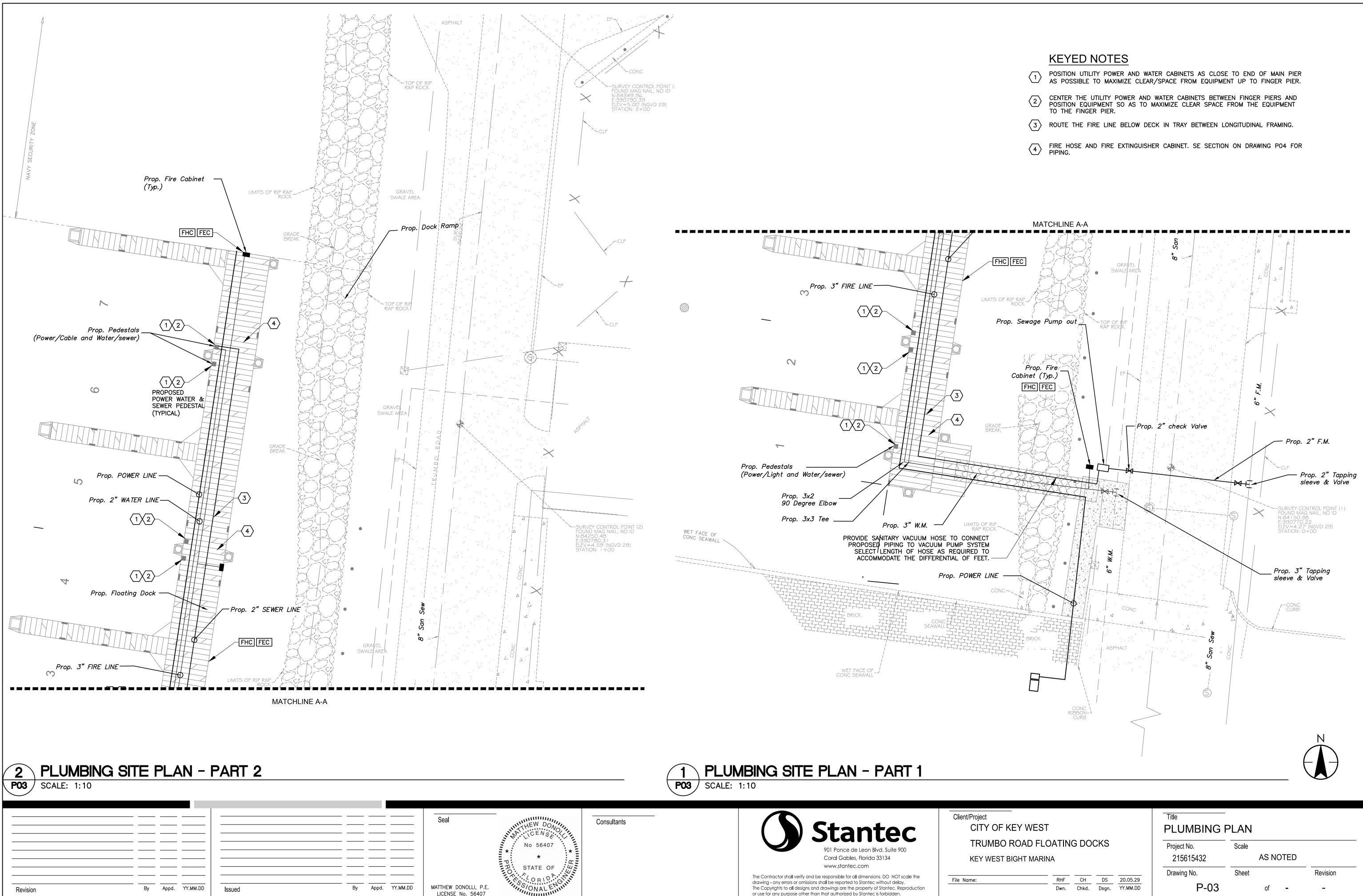
B. Use purging and disinfecting procedure prescribed by authority having jurisdiction or, if a method is not prescribed by that authority, the procedure described in either AWWA C651 or AWWA C652 or as described below:

Flush piping system with clean, potable water until dirty water does not appear at outlets. Fill system or part thereof with water/chlorine solution containing at least 50 parts per million of chlorine. Isolate (valve off) and allow to stand for 24 hours. Provide proper signage to prevent accidental use during disinfection. Drain system or part thereof of previous solution and refill with water/chlorine solution containing at least 200 parts per million of chlorine. Isolate and allow to stand for 3 hours. Flush system with clean, potable water until chlorine does not remain in water coming from system following allowed standing time.

C. Submit water samples in sterile bottles to authority having jurisdiction. Repeat procedure if biological examination made by the authority shows evidence of

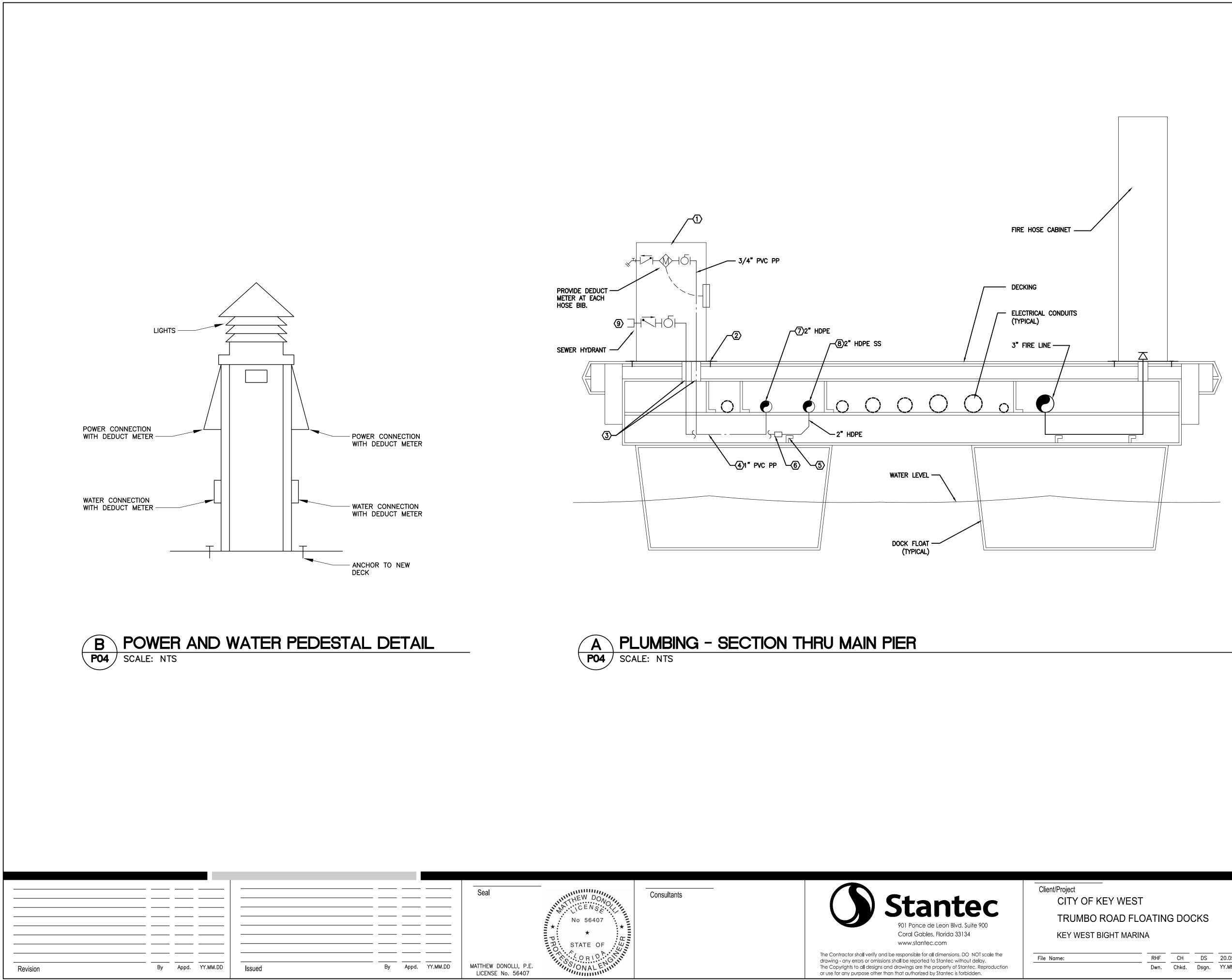
D. Prepare and submit reports for purging and disinfecting activities.

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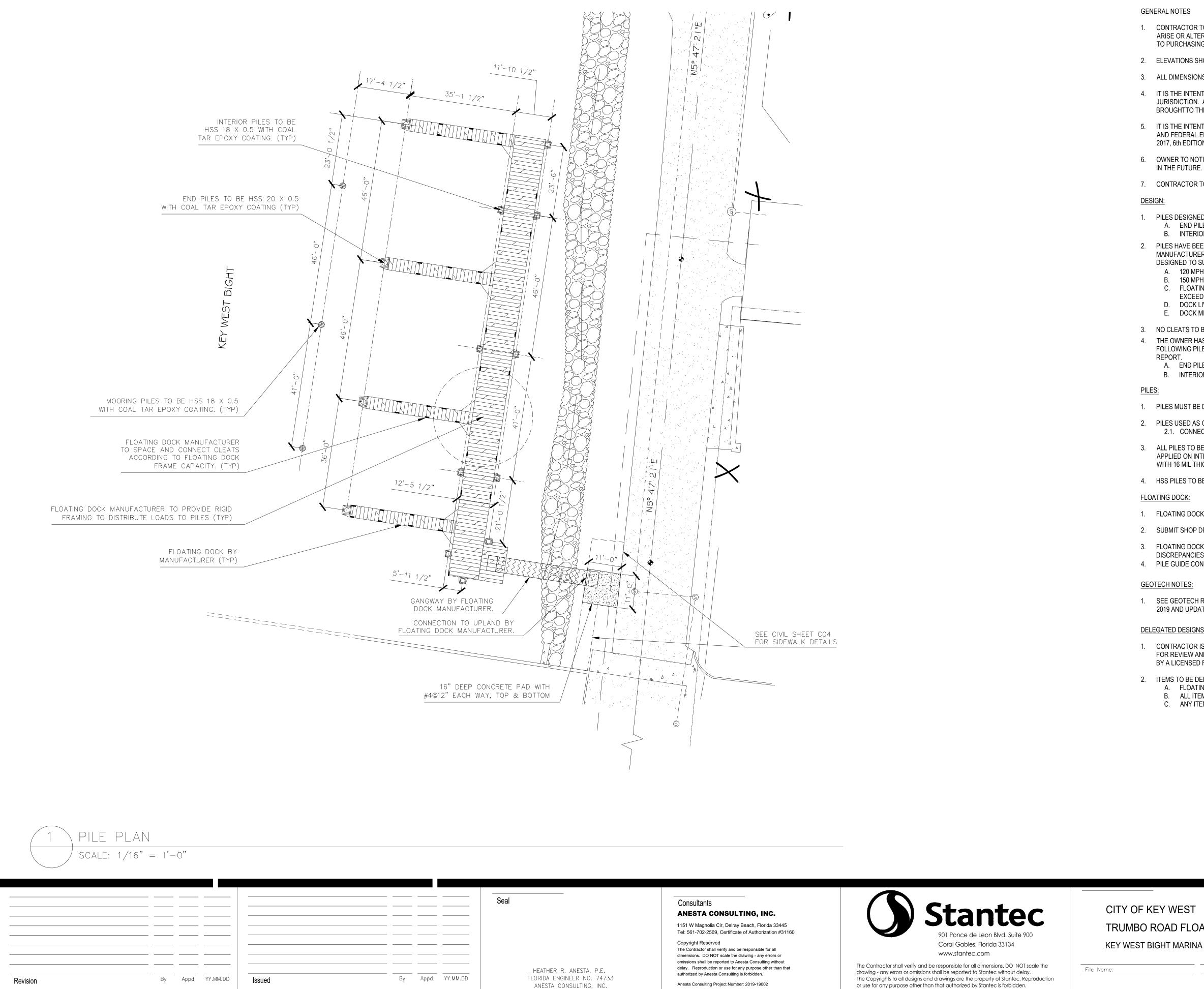
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## KEY NOTES 🛛 🛞

- 1. SINGLE SLIP POTABLE WATER & SANITARY POWER PEDESTAL. INSTALL DOCK BOX NEAR OUTBOARD EDGE OF PIER SO AS TO OPTIMIZE AVAILABLE SPACE FOR PEDESTRIAN TRAFFIC IN THE CENTER OF THE PIER. ORIENT BOX WITH HOSE BIBBS TO THE OUTBOARD SIDE AND RF METER READER DEVICES TO THE INBOARD SIDE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND WORK ITEMS. COORDINATE W/ ELECTRICAL PANEL.
- 2. SECURE CABINET TO DECK WITH MINIMUM OF FOUR STAINLESS STEEL FASTENERS OR AS RECOMMENDED BY CABINET MANUFACTURER.
- 3. CORE DRILL DECK FOR POTABLE WATER AND SANITARY SEWER PIPE INSTALLATION. MAKE THE OPENING A MINIMUM OF 1 INCH LARGER THAN OUTSIDE DIAMETER OF PIPE. PROVIDE SHRINK WRAP ON THE PIPE AT THE DECK PENETRATION TO PROTECT AGAINST ABRASION.
- 4. EXTEND PVC PRESSURE PIPE FOR POTABLE WATER SUPPLY TO DOCK BOX AND TIE INTO SINGLE POINT CONNECTION FOR PW SUPPLY.
- 5. TYPICAL PIPE SUPPORT STRUT BETWEEN CROSS MEMBERS AT 3-FOOT O.C. SECURE PIPE TO STRUCTURE WITH CLAMP OR EQUIVALENT STRAPPING METHOD.
- 6. PROVIDE FERNCO OR EQUIVALENT RUBBER BOOT CONNECTOR WITH 316 STAINLESS STEEL HARDWARE TO CONNECT HDPE BRANCH TEE TO PVC-DWV SANITARY HYDRANT BRANCH PIPE.
- 7. ROUTE HDPE POTABLE WATER SUPPLY MAIN IN TRAY BETWEEN PIER FRAMING MEMBERS. PROVIDE HDPE TEE FITTING AT EACH PAIR OF PROPOSED POTABLE WATER DOCK BOXES. TRANSITION TO PVC PRESSURE PIPE AFTER BRANCH TEE.
- 8. ROUTE HDPE SANITARY VACUUM PIPE MAIN IN TRAY BETWEEN PIER FRAMING MEMBERS. PROVIDE HDPE TEE FITTING AT EACH PIER OF PROPOSED DOCK BOXES. USE LOW SWEEP FITTINGS
- 9. SEWER HYDRANT CONNECTION.

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## GENERAL NOTES

1. CONTRACTOR TO FOLLOW ALL DETAILS, SECTIONS, AND PLANS SHOWN IN THE FOLLOWING SHEETS. IF ANY CONFLICTS ARISE OR ALTERNATIVES ARE DESIRED, THE CONTRACTOR MUST NOTIFY THE EOR AND SUPPLY SHOP DRAWINGS PRIOR TO PURCHASING OR INSTALLING MATERIALS.

2. ELEVATIONS SHOWN REFER TO THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) OF 1929.

3. ALL DIMENSIONS ON PLANS ARE SUBJECT TO VERIFICATION IN THE FIELD.

4. IT IS THE INTENT OF THESE PLANS TO BE IN ACCORDANCE WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. ANY DISCREPANCIES BETWEEN THESE PLANS AND APPLICABLE CODES SHALL BE IMMEDIATELY BROUGHTTO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH WORK.

5. IT IS THE INTENT OF THESE PLANS AND THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH LOCAL, STATE, AND FEDERAL ENVIRONMENTAL PERMITS ISSUED FOR THIS PROJECT. DESIGN COMPLIES WITH FLORIDA BUILDING CODE 2017, 6th EDITION.

OWNER TO NOTIFY THE ENGINEER IF THERE IS A SUBSTANTIAL MODIFICATION TO THE BOTTOM ELEVATION OF THE HARBOR IN THE FUTURE. THIS DESIGN ACCOUNTS FOR A 14' MAX DISTANCE FROM THE MUDLINE TO THE TOP OF DECK.

7. CONTRACTOR TO TAKE PRECAUTIONS TO PREVENT DEBRIS FROM FALLING INTO WATER DURING DEMOLITION.

1. PILES DESIGNED FOR FOLLOWING ASD LOADS, RESULTANT FROM DESIGN CRITERIA IN NOTE 2.

A. END PILE: 15K LOAD AT TIP OF 14' CANTILEVER. [ASD]

B. INTERIOR PILE & MOORING PILE: 7k LOAD AT TIP OF 14' CANTILEVER [ASD]

2. PILES HAVE BEEN DESIGNED FOR THE FOLLOWING LOAD CRITERIA AS A TRANSIENT DOCK. FLOATING DOCK MANUFACTURER TO DESIGN DOCKS TO ADHERE TO THE FOLLOWING CRITERIA AS WELL. THE DOCK HAS NOT BEEN DESIGNED TO SUPPORT VESSELS DURING STORM EVENTS.

A. 120 MPH FASTEST MILE WIND - FULLY OCCUPIED.

- 150 MPH FASTEST MILE NO MORE THAN ONE BOAT BETWEEN EACH FINGER PIER ON EACH SIDE (30% OCCUPIED). C. FLOATING DOCK MANUFACTURER TO NOTIFY EOR IMMEDIATLEY IF THE PILE LOADS IN NOTE 1 ABOVE ARE
- EXCEEDED IN ANY WAY.
- D. DOCK LIVE LOAD = 100PSF E. DOCK MISC DEAD LOAD = 20 PSF

3. NO CLEATS TO BE INSTALLED ON PILES.

4. THE OWNER HAS BEEN MADE AWARE THAT VESSELS CANNOT BE MOORED AT THE PIER DURING STORM EVENTS. THE FOLLOWING PILE LATERAL DEFLECTIONS ARE TO BE EXPECTED DURING LOADS IN NOTE 1 ABOVE, PER GEOTECH REPORT.

Α.	END PILES: HSS 20 X 0.5	1.4"
В.	INTERIOR PILES & MOORING PILES: HSS 18 X 0.5	2.5"

1. PILES MUST BE DRIVEN TO HAVE A MINIMUM OF 14'-0" OF EMBEDMENT DEPTH IN ACCORDANCE WITH GEOTECH REPORT.

2. PILES USED AS GUIDES FOR THE FLOATING DOCK TO BE ATTACHED TO THE DOCKS USING SIDE PILE GUIDE. 2.1. CONNECTION OF GUIDES TO DOCKS TO CONFORM TO REQUIREMENTS OF MANUFACTURER.

3. ALL PILES TO BE COATED WITH COAL TAR EPOXY PER MANUFACTURERS SPECIFICATIONS.COATING SHOULD BE APPLIED ON INTERIOR AND EXTERIOR OF HSS PILE, AND MUST EXTEND A MINIMUM OF 2' INTO THE SOIL GRADE WITH 16 MIL THICKNESS.

4. HSS PILES TO BE ASTM A500 - Gr. B (Fy = 42ksi)

FLOATING DOCK:

1. FLOATING DOCK TO BE DESIGNED TO RIGIDLY DISTRIBUTE LATERAL FORCES TO PILES AS A GROUP.

2. SUBMIT SHOP DRAWINGS TO EOR FOR APPROVAL FOR DESIGN LOADS.

3. FLOATING DOCK SHOP DRAWINGS MUST BE APPROVED BY EOR AND MEET ALL REQUIREMENTS OF THESE PLANS. REPORT DISCREPANCIES IN DIMENSIONS TO EOR IMMEDIATELY. 4. PILE GUIDE CONNECTION TO RESIST ASD LOADS SHOWN IN DESIGN NOTE #1 AND DEFLECTIONS IN DESIGN NOTE #4.

GEOTECH NOTES:

1. SEE GEOTECH REPORT NUMBER 1661.57 ADDENDUM 1, SIGNED AND SEALED BY NUTTING ENGINEERS DATED JUNE 2019 AND UPDATED NOVEMBER 2019.

DELEGATED DESIGNS:

1. CONTRACTOR IS REQUIRED TO SUBMIT ALL DELEGATED DESIGNS TO ENGINEER OF RECORD FOR REVIEW AND APPROVAL THE SIGNED AND SEALED DRAWINGS AND CALCULATIONS BY A LICENSED FLORIDA PROFESSIONAL ENGINEER.

2. ITEMS TO BE DELEGATED

A. FLOATING DOCKS AND CONNECTIONS.

B. ALL ITEMS NOT SHOWN ON PLANS. C. ANY ITEM MODIFIED FROM EOR PLANS.

PERMIT	Set

# TRUMBO ROAD FLOATING DOCKS

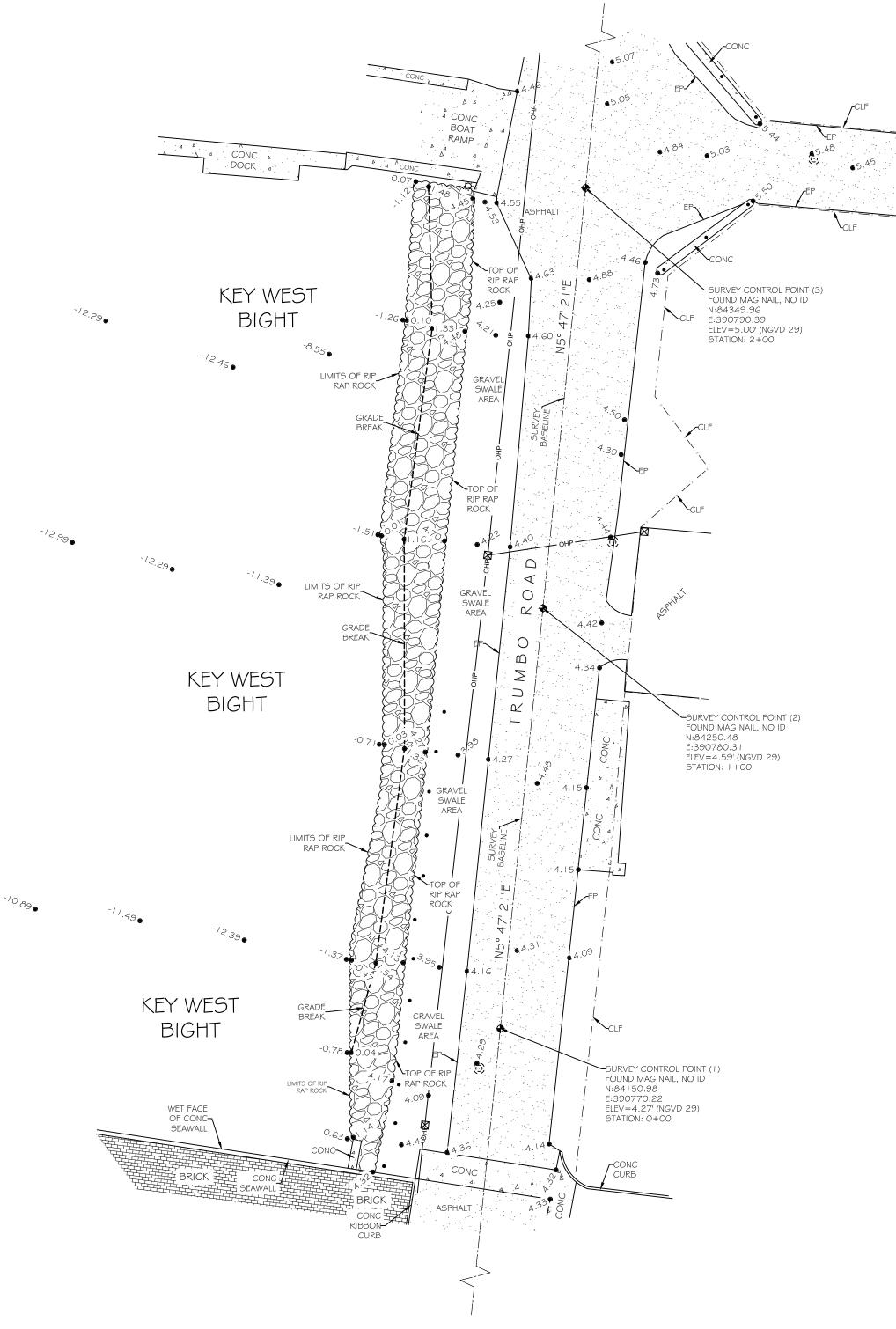
HRA

HRA 20.05.22

Dwn. Chkd. Dsgn. YY.MM.DD

## STRUCTURAL PILE LAYOUT

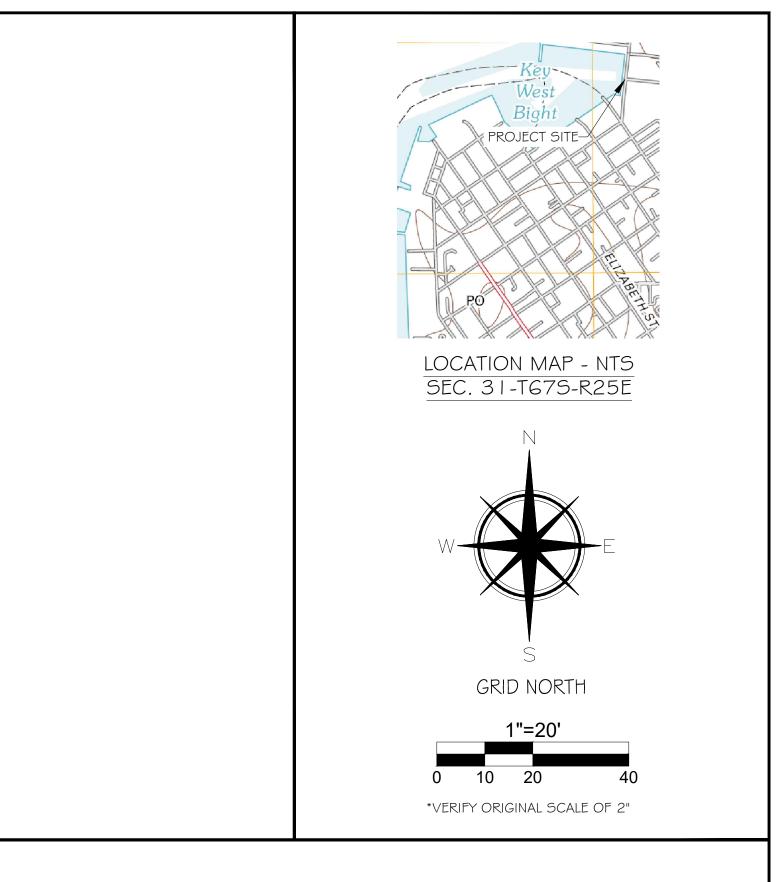
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SURVEYOR NOTES

• THIS IS NOT A BOUNDARY SURVEY, ANY BOUNDARY OR RIGHT OF WAY LINES SHOWN HEREON ARE FOR REFERENCE PURPOSES ONLY, AND ARE A GRAPHICAL REPRESENTATION OF THE BOUNDARY BASED ON THE RECOVERY OF SUFFICIENT BOUNDARY MONUMENTATION TO SPATIALLY DEFINE THE BOUNDARY LINES. NO ATTEMPT WAS MADE TO RESOLVE CONFLICTS BETWEEN THE RECOVERED BOUNDARY INFORMATION AND THE OCCUPATIONAL LINES.

 HORIZONTAL COORDINATES AND BEARINGS SHOWN ARE REFERENCED TO GRID NORTH, BASED ON THE 2011 ADJUSTMENT OF THE NORTH AMERICAN DATUM OF 1983 (NAD 83/2011), OF THE FLORIDA STATE PLANE COORDINATE SYSTEM (TRANSVERSE MERCATOR PROJECTION), EAST ZONE (0901).

• COORDINATES WERE ESTABLISHED BY A REAL-TIME KINEMATIC (RTK) GNSS CONTROL SURVEY WHICH IS CERTIFIED TO A 2 CENTIMETER LOCAL ACCURACY, RELATIVE TO THE NEAREST CONTROL POINT WITHIN THE NATIONAL GEODETIC SURVEY (NGS) GEODETIC CONTROL NETWORK.

METHOD: WIDE AREA CONTINUOUSLY OPERATING GPS REFERENCE STATION NETWORK (TRIMBLE VRS). • ALL UNITS ARE SHOWN IN U.S. SURVEY FEET.

• ELEVATIONS SHOWN HEREON ARE IN FEET AND BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 1929). • ELEVATIONS SHOWN AT THE BOTTOM OF "KEY WEST BIGHT" ARE ACTUAL ELEVATIONS BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 1929).

• ELEVATIONS SHOWN AT THE BOTTOM OF "KEY WEST BIGHT" ARE TOP OF BOTTOM, NOT REFUSAL.

• BENCHMARK DESCRIPTION: NATIONAL GEODETIC SURVEY BENCHMARK: DESIGNATION 872 4580 TIDAL BASIC, P.I.D. AA0008,

ELEVATION= 14.32' (NGVD 1929). ADDITIONS OR DELETIONS TO SURVEY MAP OR REPORT BY OTHERS THAN THE SIGNING PARTY IS PROHIBITED WITHOUT THE WRITTEN

CONSENT OF THE SIGNING PARTY. ANY UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD EVIDENCE. THE SURVEYOR MAKES NO GUARANTIES THAT THE UNDERGROUND UTILITIES SHOWN HEREON ENCOMPASS ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHERMORE THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE EVIDENCE AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

 LEGAL DESCRIPTIONS HAVE BEEN FURNISHED BY THE CLIENT OR HIS/HER REPRESENTATIVE, PUBLIC RECORDS HAVE NOT BEEN RESEARCHED BY THE SURVEYOR TO DETERMINE THE ACCURACY OF THESE DESCRIPTIONS NOR HAVE ADJOINING PROPERTIES BEEN RESEARCHED TO DETERMINE OVERLAPS OR HIATUS. ADDITIONS OR DELETIONS TO SURVEY MAP OR REPORT BY OTHER THAN THE SIGNING PARTY IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY. THE BOLD LINE SHOWN HEREON REPRESENTS THE SURVEYORS OPINION OF THE DEED LINES. THE MEAN HIGH WATER LINE WAS NOT DETERMINED FOR THIS SURVEY, THE APPARENT MEAN HIGH WATER LINE IS SHOWN FOR REFERENCE ONLY. ALL FIELD DATA WAS ACQUIRED ON 09/05/2017.

# SYMBOL LEGEND:

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SPOT ELEVATION (TYPICAL) CATCH BASIN DRAINAGE MANHOLE CONCRETE UTILITY POLE ELECTRIC MANHOLE FIRE HYDRANT GUY WIRE MAILBOX SANITARY CLEANOUT

SANITARY MANHOLE

SIGN

WATER VALVE (ř WATER METER LIGHT POLE WOOD UTILITY POLE Ö TRAFFIC CONTROL BOX TCB 8" WOOD BOLLARD

TELEPHONE MANHOLE

BFP = BACK-FLOW PREVENTER

PLATTED OR DESCRIBED DIMENSIONS UNLESS INDICATED OTHERWISE. THE FOLLOWING IS A LIST OF ABBREVIATIONS THAT MAY BE FOUND ON THIS SHEET. GUY = GUY WIREL = ARC LENGTH LS = LANDSCAPING MEAS = MEASURED MF = METAL FENCE MHWL = MEAN HIGH WATER LINE NGVD = NATIONAL GEODETIC NGVD = NATIONAL GEODETIC VERTICAL DATUM (1929) NTS = NOT TO SCALE OH = ROOF OVERHANG OHW = OVERHAD WIRES PC = POINT OF CURVE EV = DEVENUE ANTER PM = PARKING METER PCC = POINT OF COMPOUND CURVE PCP = PERMANENT CONTROL POINT PK = PARKER KALON NAIL POB = POINT OF BEGINNING PI = POINT OF INTERSECTION

NOTE: FOUNDATIONS BENEATH THE SURFACE ARE NOT SHOWN. MEASURED DIMENSIONS EQUAL POC = POINT OF COMMENCEMENT PRC = POINT OF REVERSE CURVE PRC = POINT OF REVERSE CURVE PRM = PERMANENT REFERENCE MONUMENT PT = POINT OF TANGENT R = RADIUS RW = RIGHT OF WAY LINE SSCO = SANITARY SEWER CLEAN-OUT SW = SIDE WALK TBM = TEMPORARY BENCHMARK TOB = TOP OF BANK TBM = TEMPORARY BENCHMARK TOB = TOP OF BANK TOS = TOE OF SLOPE TS = TRAFFIC SIGN TYP = TYPICAL U/R = UNREADABLE U/E = UTILITY EASEMENT WD = WOOD DECK WF = WOOD LANDING WM = WOOD LANDING WM = WATER METER WPP = WOOD POWER POLE WRACK LINE = LINE OF DEBRIS ON SHORE WV = WATER VALVE

I HEREBY CERTIFY THAT THIS SURVEY WAS MADE UNDER MY RESPONSIBLE CHARGE AND MEETS THE STANDARDS OF PRACTICE AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES AND COMPLIES WITH CHAPTER 177, FLORIDA STATUTES.





SIGNED

19960 OVERSEAS HIGHWAY SUGARLOAF KEY, FL 33042 PHONE: (305) 394-3690 EMAIL: FKLSemail@Gmail.com

## TOPOGRAPHIC & BATHYMETRIC SURVEY OF A PORTION OF TRUMBO ROAD KEY WEST, MONROE COUNTY, STATE OF FLORIDA

DATE: 09/27/2017	SURVEY BY:	EAI	PROJECT:	STANTEC	-TRUMBO
ORDER: 17-317	DRAWN BY:	MPB	H. SCALE:		1"=20'
BOOK:	CHECKED BY:		SHEET	1 OF	1