VERTICAL DATUM: NAVD 1988

PERMIT SUBMITTAL PLANS FOR

KINGFISH BOAT RAMP IMPROVEMENTS

752 MANATEE AVE W.
HOLMES BEACH
COUNTY OF MANATEE, FLORIDA
SECTION 28 - TOWNSHIP 34 SOUTH - RANGE 16 EAST
PARCEL: 21(PART- A)

CONSULTANTS

MANATEE COUNTY
PARKS AND NATURAL RESOURCES
5502 33RD AVENUE DRIVE WEST
BRADENTON, FLORIDA 34209
ATTN: ANGELA HONTS, PMP
(941) 748-4501, EXT. 5844

ENGINEER
CPH, INC.
3277A FRUITVILLE ROAD
SARASOTA, FLORIDA 34237
ATTN: JEFFREY M. SATFIELD, P.E.
(941) 365-4771

SURVEYOR
CPH, INC.
500 WEST FULTON STREET
SANFORD, FLORIDA 32771
ATTN: THOMAS J. GALLOWAY, P.S.M.
(407) 322-6841

COASTAL ENGINEER
HUMISTON & MOORE ENGINEERS
5679 STRAND COURT
NAPLES, FLORIDA 34110
ATTN: MARC DAMON, P.E.
(239) 594-2021

GEOTECHNICAL
ARDAMAN & ASSOCIATES, INC.
78 SARASOTA CENTER BOULEVARD
SARASOTA, FLORIDA 34240
ATTN: JERRY KUEHN, P.E.
(941) 922-3526

NOTICE
THE SIZE OF THESE PLANS MAY HAVE BEEN SLIGHTLY ALTERED BY REPRODUCTION PROCESSES. THIS MUST BE CONSIDERED WHEN SCALING ANY REPRODUCED PLANS FOR THE PURPOSE OF COLLECTING DATA.

UTILITY PROVIDERS

ELECTRIC
FLORDA POWER & LIGHT
WHITFIELD SERVICE CENTER
1253 12TH STREET E
PALMETTO, FLORIDA 34221
ATTN: WILLIAM AUSTIN
(772) 485-0609

TELEPHONE
FRONTIER COMMUNICATIONS
ATTN: TONI CANNON
(813) 875-1014

WATER
MANATEE COUNTY UTILITIES DEPARTMENT
4410 66TH STREET W
BRADENTON, FLORIDA 34210
ATTN:
(941) 792-8811

SEWER
MANATEE COUNTY UTILITIES DEPARTMENT
4410 66TH STREET W
BRADENTON, FLORIDA 34210
ATTN:
(941) 792-8811

GAS
TECO PEOPLES GAS - ST PETERSBURG
1920 9TH AVE N
ST. PETERSBURG, FLORIDA 33713
ATTN: JOAN DOAMING
(813) 275-3783

APPROVAL AGENCIES

CITY OF HOLMES BEACH
DEVELOPMENT SERVICES DIRECTOR
5801 MARINA DRIVE
HOLMES BEACH, FLORIDA 34217
ATTN: ERAN WASSERMAN
(941) 708-5800

MANATEE COUNTY
MANATEE COUNTY UTILITIES
4520 66TH STREET WEST
BRADENTON, FLORIDA 34210
ATTN:
(941) 748-4501

ARMY CORPS OF ENGINEERS
TAMPA PERMITS SECTION
10117 PRINCESS PALM AVENUE, SUITE 120
TAMPA, FLORIDA 33610
ATTN: MELINDA G. HOGAN
(813) 769-7066

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHWEST DISTRICT
13051 N TELECOM PKWY., STE. 101
TEMPLE TERRACE, FLORIDA 33637
ATTN: ANTHONY PIDALA
(813) 470-5700

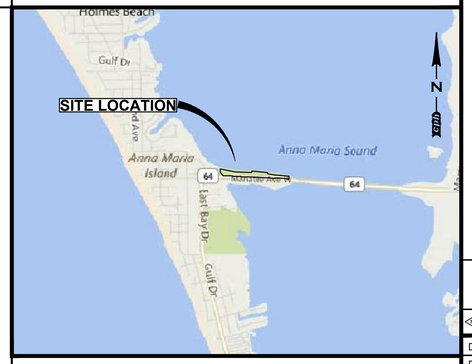
FLORIDA DEPARTMENT OF TRANSPORTATION
MANATEE COUNTY OPERATIONS CENTER
14000 STATE ROAD 64
BRADENTON, FLORIDA 34212
ATTN: ROB BLIVEN JR, PE.
PHONE: (863) 519-2481

Manatee County FLORIDA

INDEX OF SHEETS

	SHEET NUMBER	SHEET TITLE	MANATEE COUNTY	FDEP	FDOT	FDEP WATER / SEWER	MANATEE COUNTY UTILITIES
	C0.1	COVER	●	●	●	●	●
	1-5	BOUNDARY & TOPOGRAPHIC SURVEY	●	●	●	●	●
	C0.2	GENERAL NOTES	●	●	●	●	●
	C0.3	GENERAL NOTES	●	●	●	●	●
	C0.4	SUMMARY OF PAY ITEMS	●				
	D0.1	DEMOLITION PLAN	●	●	●	●	●
	C1.1	STORMWATER POLLUTION PREVENTION PLAN	●	●	●	●	●
	C1.2	STORMWATER POLLUTION PREVENTION PLAN	●	●	●	●	●
	C1.3	SITE DIMENSION PLAN	●	●	●		
	C1.4	GRADING AND STORM DRAINAGE PLAN	●	●	●		
	C1.5	COMPOSITE UTILITY PLAN	●		●	●	●
	C5.0	CROSS SECTIONS	●	●	●		
	C5.1	CROSS SECTIONS	●	●	●		
	C5.2	CONSTRUCTION DETAILS SHEET	●	●	●	●	●
	C5.3	AGENCY DETAILS SHEET	●		●	●	●
	C5.4 - C5.5	LIFT STATION DETAILS	●			●	●
	C6.1	FORCE MAIN LAYOUT	●		●	●	●
	C7.1 - C7.11	FORCE MAIN PLAN AND PROFILE	●		●	●	●
	TR1.1	TREE RETENTION PLAN	●	●	●		
	TR5.1	TREE RETENTION DATA AND DETAILS	●	●	●		
	L1.1	LANDSCAPE PLAN	●	●	●		
	L1.2	LANDSCAPE PLAN	●	●	●		
	L1.3	LANDSCAPE PLAN	●	●	●		
	L1.4	LANDSCAPE PLAN	●	●	●		
	L5.1	LANDSCAPE NOTES AND DETAILS	●	●	●		
	H5.1	HARDSCAPE DETAILS	●	●	●		
	E1	INDEX, SCOPE, GENERAL NOTES AND SYMBOL LEGEND	●				
	E2	ELECTRICAL SPECIFICATIONS AND ABBREVIATIONS	●				
	E3	ELECTRICAL PLAN	●				
	E4	ONE-LINE DIAGRAM AND PANEL SCHEDULE	●				
	E5	PHOTOMETRICS AND LIGHTING DETAILS	●				
	E5a	PHOTOMETRICS AND LIGHTING DETAILS	●				
	E5b	LIGHTING PLAN	●				
	E6	DETAILS AND ELEVATIONS	●				
	E7	OVERALL ELECTRICAL SITE PLAN	●				
	S1.1	SHEET PILES SEA WALL WITH WOOD DOCK COMPOSITE PLAN	●	●			
	S1.2	SHEET PILE SEA WALL WITH WOOD DOCK SECTIONS AND DETAILS	●	●			
	S1.3	CONCRETE RAMP SECTION AND DETAILS	●	●			

MAPS



VICINITY MAP
SCALE: 1" = 2,000'

LOCATION MAP
SCALE: 1" = 500'

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Plans Prepared By:
CPH, Inc.
State of Florida Licenses:
Engineer No. 3215
Surveyor No. LB7143
Architect. No. AA26000926
Landscape No. LC000298

Jeffrey M. Satfield State of Florida, Professional Engineer, License No. 61905. This item has been electronically signed and sealed by Jeffrey M. Satfield on the date indicated here using a SHA authentication code. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

No.	Date	Revision
2	09/27/21	UPDATED INDEX OF SHEETS
1	03/18/21	60% SUBMITTAL

Designed: R. Smith
Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021
© 2021

COVER

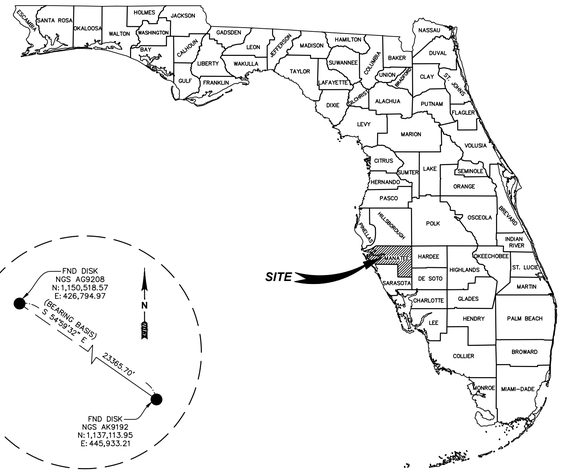
KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

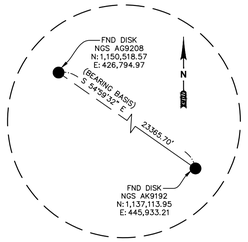
THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
C0.1

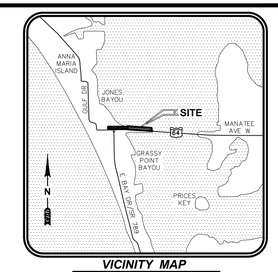
J:\m13112_kingfish_boat_ramp\Civil\DWG_Current_Plan_Set\Working\M13112-C0.1 COVER.dwg, 9/27/2021 3:55:46 PM, Patterson, Krys, _cph - Standard.stb

BOUNDARY & TOPOGRAPHIC SURVEY
FOR
MANATEE COUNTY
KING FISH BOATRAMP
LYING IN
SECTION 28-TOWNSHIP 34 SOUTH-RANGE 16 EAST
CITY OF HOLMES BEACH, MANATEE COUNTY, FLORIDA





State Plane Bearing Basis Detail
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

Legal Description:
(PER ATTACHMENT D, LEASE AGREEMENT AND RESOLUTION NO. R–09–132, DATED 9/8/2009, PROVIDED BY CLIENT)

PARCEL 21 (PART–A)

THAT PORTION OF SECTION 28, TOWNSHIP 34 SOUTH, RANGE 16 EAST, MANATEE COUNTY, FLORIDA.

BEING DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHEAST CORNER OF U.S. GOVERNMENT LOT 2 OF SECTION 28, TOWNSHIP 34 SOUTH, RANGE 16 EAST, MANATEE COUNTY, FLORIDA; THENCE SOUTH 00°40'14" EAST ALONG THE EAST LINE OF SAID LOT 2, A DISTANCE OF 503.47 FEET TO AN INTERSECTION WITH THE CENTERLINE OF STATE ROAD NO. 64 (SECTION 1315–175 & 13150–2524); THENCE ALONG SAID CENTERLINE THE FOLLOWING TWO COURSES: (1) NORTH 89°10'46" EAST A DISTANCE OF 840.90 FEET TO THE POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 17188.73 FEET; (2) EASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 00°22'54 WITH A CHORD BEARING NORTH 89°22'13" EAST A DISTANCE OF 114.50 FEET TO AN INTERSECTION WITH THE GOVERNMENT MEANDER LINE PLOTTED FROM THE TOWNSHIP MAP PREPARED FROM FIELD NOTES OF J. P. APTHORP DATED JANUARY 1876; THENCE ALONG SAID MEANDER LINE THE FOLLOWING TWO COURSES (1) NORTH 36°04'39" WEST A DISTANCE OF 63.58 FEET TO THE POINT OF BEGINNING; (2) CONTINUE NORTH 36°04'39" WEST A DISTANCE OF 133.99 FEET TO AN INTERSECTION WITH THE EAST LINE OF WESTBAY COVE CONDOMINIUM I AS PER PLAT THEREOF RECORDED IN CONDOMINIUM BOOK 3, PAGE 66 OF THE PUBLIC RECORDS OF MANATEE COUNTY, FLORIDA; THENCE NORTH 00°48'58" WEST ALONG SAID EAST LINE A DISTANCE OF 83.72 FEET TO POINT "A"; THENCE SOUTHEASTERLY ALONG THE APPROXIMATE MEAN HIGH WATER LINE OF ANNA MARIA SOUND A DISTANCE OF 433 FEET MORE OR LESS TO POINT "B" WHOSE CLOSING LINE BEARS SOUTH 78°46'58" EAST A DISTANCE OF 432.13 FEET TO SAID POINT "A"; THENCE CONTINUE SOUTHEASTERLY ALONG SAID APPROXIMATE MEAN HIGH WATER LINE A DISTANCE OF 462 FEET MORE OR LESS TO AN INTERSECTION WITH THE FACE OF A SEAWALL AND POINT "C" WHOSE CLOSING LINE BEARS SOUTH 88°04'53" EAST A DISTANCE OF 460.90 FEET TO SAID POINT "B"; THENCE ALONG THE FACE OF SAID SEAWALL THE FOLLOWING THREE COURSES: (1) NORTH 06°05'28" EAST A DISTANCE OF 38.81 FEET; (2) SOUTH 84°25'48" EAST A DISTANCE OF 436.40 FEET; (3) SOUTH 04°45'12" WEST A DISTANCE OF 31.60 FEET TO POINT "D"; THENCE SOUTHEASTERLY ALONG SAID APPROXIMATE MEAN HIGH WATER LINE A DISTANCE OF 170 FEET MORE OR LESS TO POINT "E" WHOSE CLOSING LINE BEARS SOUTH 79°34'42" EAST A DISTANCE OF 154.83 FEET TO SAID POINT "D"; THENCE CONTINUE SOUTHEASTERLY ALONG SAID APPROXIMATE MEAN HIGH WATER LINE A DISTANCE OF 465 FEET MORE OR LESS TO POINT "F" WHOSE CLOSING LINE BEARS SOUTH 84°16'09" EAST A DISTANCE OF 455.45 FEET TO SAID POINT "E"; THENCE SOUTH 04°49'00" WEST A DISTANCE OF 89.77 FEET; THENCE NORTH 65°33'19" WEST A DISTANCE OF 56.45 FEET; THENCE NORTH 85°45'05" WEST A DISTANCE OF 52.12 FEET; THENCE NORTH 85°36'08" WEST A DISTANCE OF 51.91 FEET; THENCE NORTH 85°45'04" WEST A DISTANCE OF 104.22 FEET; THENCE NORTH 88°40'54" WEST A DISTANCE OF 58.61 FEET; THENCE NORTH 86°24'46" WEST A DISTANCE OF 71.54 FEET; THENCE SOUTH 03°43'58" WEST A DISTANCE OF 10.64 FEET; THENCE NORTH 86°32'47" WEST A DISTANCE OF 37.22 FEET; THENCE NORTH 86°07'32" WEST A DISTANCE OF 117.16 FEET; THENCE NORTH 86°25'12" WEST A DISTANCE OF 162.53 FEET; THENCE NORTH 86°49'42" WEST A DISTANCE OF 45.27 FEET; THENCE NORTH 86°18'06" WEST A DISTANCE OF 111.97 FEET; THENCE NORTH 88°11'20" WEST A DISTANCE OF 220.34 FEET; THENCE NORTH 88°38'04" WEST A DISTANCE OF 145.17 FEET; THENCE NORTH 88°28'28" WEST A DISTANCE OF 105.47 FEET TO A POINT ON THE ARC OF A CURVE TO THE RIGHT WHOSE RADIUS POINT BEARS NORTH 38°26'25" EAST AT A DISTANCE OF 50.00 FEET; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 18°14'01" WITH A CHORD BEARING NORTH 42°26'35" WEST A DISTANCE OF 15.91 FEET; THENCE NORTH 90°00'00" WEST A DISTANCE OF 126.92 FEET; THENCE SOUTH 89°29'43" WEST A DISTANCE OF 12.41 FEET; THENCE NORTH 89°14'11" WEST A DISTANCE OF 42.67 FEET; THENCE NORTH 77°37'41" WEST A DISTANCE OF 70.15 FEET; THENCE NORTH 88°41'34" WEST A DISTANCE OF 39.42 FEET; THENCE NORTH 89°56'16" WEST A DISTANCE OF 203.81 FEET TO THE POINT OF BEGINNING. LYING AND BEING IN SECTION 28, TOWNSHIP 34 SOUTH, RANGE 16 EAST, MANATEE COUNTY, FLORIDA.

CONTAINING 5.48 ACRES, MORE OR LESS.

Survey Notes:

1. COPIES OF THIS SURVEY ARE NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
2. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
3. THIS SURVEY IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88)

   THE SITE BENCHMARKS FOR THIS TOPOGRAPHIC SURVEY ARE DISPLAYED ON THE RESPECTIVE SURVEY FILE. THESE BENCHMARKS ARE BASED ON A CLOSED VERTICAL CONTROL LOOP HAVING AN ACTUAL ERROR OF CLOSURE OF 0.016' WHICH MEETS THE ALLOWABLE CLOSURE OF 0.032'. THIS FIELDWORK WAS PERFORMED USING A TOPCON GPS HIPER V AND REFERENCES THE FOLLOWING PUBLISHED BENCHMARKS AS ESTABLISHED BY THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88) AND ALL VERTICAL INFORMATION INCLUDING SPOT ELEVATIONS, NOTATIONS AND THE CONTOUR LINES DERIVED THEREFROM ARE BASED ON AND MATCHED TO VERTICAL CONTROL BENCHMARKS SUPPLIED BY FLORIDA DEPARTMENT OF TRANSPORTATION ON FINANCIAL PROJECT ID# 408185–3, STATE ROAD NO. 64, AS FOLLOWS:

   a) DESIGNATION #FDOT 13–16–02,
      (NAVD '88) ELEVATION = 11.42

   b) DESIGNATION #FDOT BM 1–B
      (NAVD '88) ELEVATION = 2.12

   SITE BENCHMARKS ARE AS SHOWN ON SHEETS 3 THROUGH 5 OF 5.
4. THIS SURVEY IS NOT VALID WITHOUT SHEETS 1 THROUGH 5 OF 5.
5. THE LAST DAY FIELD WORK WAS PERFORMED WAS MAY 6, 2020; ALL BOUNDARY CORNERS WERE RECOVERED OR SET AS NOTED HEREON.
6. THE "LEGAL DESCRIPTION" HEREON IS IN ACCORD WITH THE 'ATTACHMENT D, LEASE AGREEMENT AND RESOLUTION NO. R–09–132', DATED 9/8/2009, (ENDING 9/8/2034 SUBJECT TO AN ADDITIONAL 25 YEAR TERM) AND WAS PROVIDED BY THE CLIENT.
7. BEARINGS SHOWN HEREON ARE RELATIVE TO THE LINE BETWEEN TWO STATE PLANE CONTROL POINTS HAVING A CALCULATED BEARING OF S 54°59'32" E (SEE DETAIL).
8. HAVING CONSULTED THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 125114 02777 E, CITY OF HOLMES BEACH, EFFECTIVE DATE MARCH 17, 2014, THE SUBJECT PROPERTY APPEARS TO LIE IN ZONE AE, WHICH ARE AREAS DETERMINED TO BE SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100 YEAR FLOOD WITH BASE FLOOD ELEVATIONS DEPICTED LYING BETWEEN 8 AND 10 FEET (NAVD '88), THIS DETERMINATION WAS BASED ON A GRAPHIC INTERPOLATION OF SAID MAP AND NOT ON ACTUAL FIELD MEASUREMENTS.
9. THE APPARENT USE OF THE LAND, AS CLASSIFIED BY THE STANDARDS OF PRACTICE SET FORTH IN RULE CHAPTER 5J–17 OF THE FLORIDA ADMINISTRATIVE CODE, PURSUANT TO FS 472.027, ESTABLISHES THAT THE MINIMUM RELATIVE ACCURACY FOR THIS TYPE OF BOUNDARY SURVEY MEET THE HORIZONTAL CONTROL ACCURACY OF 1'/10,000 FEET FOR A HIGH RISK SURVEY. THE MEASUREMENTS AND CALCULATIONS OF THE CLOSED GEOMETRIC FIGURES WERE FOUND TO MEET THIS ACCURACY REQUIREMENT. THE EQUIPMENT USED TO VERIFY THE HORIZONTAL CONTROL ON THE SUBJECT SURVEY WAS A TOPCON GPS HIPER V.
10. HORIZONTAL WELL–IDENTIFIED FEATURES IN THIS SURVEY AND MAP HAVE BEEN MEASURED TO AN ESTIMATED HORIZONTAL POSITIONAL ACCURACY OF 0.05 (FT). THE EQUIPMENT USED TO LOCATE THE FEATURES WAS A LEICA SCANSTATION C10, TOPCON GPS HIPER V.
11. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OR OPINION OF TITLE. NO INSTRUMENTS OF RECORD REFLECTING EASEMENTS, RIGHTS–OF–WAY, AND/OR OWNERSHIP WERE FURNISHED TO THIS SURVEYOR EXCEPT AS NOTED BELOW: MANATEE COUNTY PROPERTY APPRAISER INFORMATION DISPLAYED HEREON AS PARCEL ID# IS PER THE MANATEE COUNTY PROPERTY APPRAISER'S WEBSITE (WWW.MANATEEPAO.COM) AS OF 5/6/2020.
12. NO UNDERGROUND UTILITIES, FOUNDATIONS OR IMPROVEMENTS, IF ANY, HAVE BEEN LOCATED EXCEPT AS SHOWN.
13. FENCES AND WALLS EXISTING ON, OVER OR ADJACENT TO SUBJECT PROPERTY, ARE DISPLAYED HEREON; OWNERSHIP WHETHER SINGULAR OR JOINT WAS NOT DETERMINED BY THIS SURVEY.
14. VERTICAL FEATURE ACCURACY: "ELEVATIONS OF WELL–IDENTIFIED FEATURES CONTAINED IN THIS SURVEY AND MAP HAVE BEEN MEASURED TO AN ESTIMATED VERTICAL POSITIONAL ACCURACY OF 0.05 (FT)."
15. THE UNDERGROUND UTILITIES LABELED UE, UT, UG, AND UFO LINES DISPLAYED ON SHEETS 3 THROUGH 4 ARE A RESULT OF AN ELECTRONIC FILE CREATED BY SOUTHEASTERN SURVEYING & MAPPING CORP. (6500 ALL AMERICAN BOULEVARD, ORLANDO FL 32810, [407] 292–8580) AND MATCHED TO DIAGRAMS AND DETAIL SHEETS PREPARED BY SOUTHEASTERN SURVEYING & MAPPING CORP..
16. STATE PLANE INFORMATION SHOWN HEREON IS BASED ON THE NORTH AMERICAN DATUM OF 1983 (1990) USING CONTROL POINTS FROM THE NGS DATA SHEETS PUBLISHED AT WWW.LABINS.ORG AND ARE AS FOLLOWS:
    FLORIDA WEST ZONE

    A.) DESIGNATION # GIS 103, PID #AG9208 = N 1,150,518.57 FEET, E 426,794.97 FEET

    B.) DESIGNATION # M 087, PID #AG9192 = N 1,1137,113.95 FEET, E 445,933.21 FEET

    THE EQUIPMENT USED TO TRANSFER THE STATE PLANE INFORMATION FROM THE ABOVE REFERENCED CONTROL POINTS TO THE SUBJECT SURVEY WAS A TOPCON GPS HIPER V.
17. THE DISPLAYED LIMITS OF WETLANDS ARE BASED UPON THE FIELD LOCATION OF FLAGS OR STAKES SET BY CPH ENVIRONMENTAL DEPARTMENT AND LOCATED BY THE SURVEYOR ON 5/6/2020.
18. DIMENSIONS ARE SHOWN RELATIVE TO UNITED STATES STANDARD FEET AND DECIMALS THEREOF, UNLESS THE OBJECT SHOWN IS COMMONLY IDENTIFIED IN INCHES, I.E. TREE DIAMETER, PIPE DIAMETER, ETC. TREES DEPICTED ARE COMMON NAMES AND MEASURED AND LABELED AS DIAMETER AT BREAST HEIGHT IN INCHES.
19. CERTAIN INSTRUMENTS OF RECORD REFLECTING EASEMENTS, RIGHTS–OF–WAY, AND/OR OWNERSHIP WERE FURNISHED TO THIS SURVEYOR AS NOTED OR DISPLAYED HEREON.
20. TREE SIZE (DIAMETER AS MEASURED IN INCHES AT BREAST HEIGHT), COMMON NAME, SPECIES, CONDITION, AND NOTATIONS OF THE TREES LISTED HEREON WERE FURNISHED TO THE SURVEYOR BY CPH, INC. ENVIRONMENTAL DEPARTMENT. SEE SHEETS 3 THROUGH 4 FOR TREE LOCATIONS FOR SPECIFIC NUMBERED TREES.

Abbreviation Legend:

(A)	– ACTUAL	MBX	– MAILBOX
A/C	– AIR CONDITIONER	MES	– MITERED END SECTION
ACSM	– AMERICAN CONGRESS ON SURVEYING & MAPPING	MH	– MANHOLE
ADA	– AMERICANS WITH DISABILITIES ACT	MLP	– METAL LIGHT POLE
ALTA	– AMERICAN LAND TITLE ASSOCIATION	MPH	– MILES PER HOUR
APPROX	– APPROXIMATE	MPP	– METAL POWER POLE
ARV	– AIR RELEASE VALVE	N/A	– NOT APPLICABLE
AVE	– AVENUE	NAVD	– NORTH AMERICAN VERTICAL DATUM
AVG	– AVERAGE	NAD	– NORTH AMERICAN DATUM
(BB)	– BEARING BASIS	NG	– NATURAL GROUND
BFP	– BACK FLOW PREVENTER	NGS	– NATIONAL GEODETIC SURVEY
BLK	– BLOCK	NGVD	– NATIONAL GEODETIC VERTICAL DATUM
BLDG	– BUILDING	N & D	– NAIL AND DISK
BLVD	– BOULEVARD	NO.	– NUMBER
BM	– BENCH MARK	NR	– NON–RADIAL
BOC	– BACK OF CURB	NSPS	– NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS
BOW	– BACK OF WALK	NT	– NON–TANGENT
BSL	– BUILDING SETBACK LINE	NTS	– NOT TO SCALE
BWF	– BARBED WIRE FENCE	OD	– OUTSIDE DIAMETER
C–X	– DENOTES SHEET NUMBERING FOR ENGINEERING PLANS	ORB	– OFFICIAL RECORDS BOOK
(C)	– CALCULATED	OR	– OFFICIAL RECORDS
C	– CHORD	OUL	– OVERHEAD UTILITY LINES
CATV	– CABLE TELEVISION RISER	OTL	– OVERHEAD TRAFFIC LINES
CB	– CHORD BEARING	(P)	– PLAT
CBS	– CONCRETE BLOCK STRUCTURE	PB	– PLAT BOOK
C.C.R.	– CERTIFIED CORNER RECORD	PC	– POINT OF CURVATURE
C&G	– CURB & GUTTER	PCC	– POINT OF COMPOUND CURVATURE
CI	– CATCH INLET	PCP	– PERMANENT CONTROL POINT
C/L	– CENTERLINE	PFF	– PROPOSED FINISHED FLOOR
CLF	– CHAIN LINK FENCE	PG	– PAGE
CM	– CONCRETE MONUMENT	PGS	– PAGES
CMP	– CORRUGATED METAL PIPE	PI	– POINT OF INTERSECTION
CO	– CLEANOUT	PIV	– POST INDICATOR VALVE
CONC	– CONCRETE	PK	– PARKER KAYLON
COR	– CORNER	POB	– POINT OF BEGINNING
CRPP	– CORRUGATED PLASTIC PIPE	POC	– POINT OF COMMENCEMENT
CUE	– COUNTY UTILITY EASEMENT	POL	– POINT ON LINE
CVS	– CAN'T VERIFY SIZE	PP	– POWER POLE
CVS&T	– CAN'T VERIFY SIZE & TYPE	PRC	– POINT OF REVERSE CURVATURE
CWS	– CROSSWALK SIGNAL	PRM	– PERMANENT REFERENCE MONUMENT
Δ	– DELTA	PSM	– PROFESSIONAL SURVEYOR & MAPPER
(D)	– DESCRIPTION	PT	– POINT OF TANGENCY
DB	– DEED BOOK	PVC	– POLYVINYL CHLORIDE PIPE
DBH	– DIAMETER AT BREAST HEIGHT IN INCHES	PVMT	– PAVEMENT
DE	– DRAINAGE EASEMENT	R16E	– RANGE 16 EAST
DEPT	– DEPARTMENT	R	– RADIUS
DIP	– DUCTILE IRON PIPE	RAD	– RADIAL
DR	– DRIVE	RCP	– REINFORCED CONCRETE PIPE
D/U	– DRAINAGE AND UTILITY EASEMENT	REC	– RECOVERED
(E)	– ENGINEERING PLAN	REV	– REVISION
EJB	– ELECTRIC JUNCTION BOX	RP	– RADIUS POINT
EL	– UNDERGROUND ELECTRICAL LINES	R/W	– RIGHT–OF–WAY
ELEC	– ELECTRIC	RLS	– REGISTERED LAND SURVEYOR
ELEV	– ELEVATION	RP	– RADIUS POINT
ELLIP	– ELLIPTICAL	RWL	– UNDERGROUND RECLAIM WATER LINE
EOI	– END OF INFORMATION	RWM	– RECLAIMED WATER METER
EOP	– EDGE OF PAVEMENT	SE	– SPECIAL EASEMENT
FB	– FIELD BOOK	SEC 28	– SECTION 28
FDC	– FIRE DEPARTMENT CONNECTION	SMH	– SANITARY SEWER MANHOLE
FDOT	– FLORIDA DEPARTMENT OF TRANSPORTATION	(SP)	– STATE PLANE
FF	– FINISH FLOOR	SQ	– SQUARE
FGI	– FLAT GRATE INLET	SQ FT	– SQUARE FEET
FGLP	– FIBERGLASS LIGHT POLE	ST	– STREET
FHYD	– FIRE HYDRANT	STMH	– STORM DRAINAGE MANHOLE
FM	– FORCE MAIN	S/W	– SIDEWALK
FND	– FOUND	TB	– TANGENT BEARING
FP&L	– FLORIDA POWER AND LIGHT	T34S	– TOWNSHIP 34 SOUTH
FS	– FLORIDA STATUTES	TELE	– TELEPHONE
(G)	– GRID (STATE PLANE)	TL	– OVERHEAD TRAFFIC SIGNAL LINES
GL	– UNDERGROUND GAS LINES	TOB	– TOP OF BANK
GOV'T	– GOVERNMENT	TOE	– TOE OF SLOPE
GPR	– GROUND PENETRATING RADAR	TR	– TELEPHONE RISER
GTMH	– GREASE TRAP MANHOLE	TRANS	– TRANSFORMER
HDPE	– HIGH DENSITY POLYETHYLENE PIPE	TSB	– TRAFFIC SIGNAL BOX
HWF	– HOG WIRE FENCE	TSSP	– TRAFFIC SIGNAL SUPPORT POLE
ID	– IDENTIFICATION	TVL	– UNDERGROUND CABLE TV LINES
ICV	– IRRIGATION CONTROL VALVE	(TYP)	– TYPICAL
INFO	– INFORMATION	UE	– UTILITY EASEMENT
INV	– INVERT	UNK	– UNKNOWN
IP	– IRON PIPE	UTL	– UNDERGROUND TELEPHONE LINES
IP&C	– IRON PIPE & CAP	W/	– WITH
IR	– IRON ROD	WIF	– WROUGHT IRON FENCE
IR&C	– IRON REBAR & CAP	WL	– UNDERGROUND WATER LINE
IRR	– IRRIGATION	WLP	– WOOD LIGHT POLE
L	– ARC LENGTH	WM	– WATER METER
LB#	– LICENSED BUSINESS NUMBER	WP	– WORK PROGRAM
LP	– LIGHT POLE	WPF	– WOOD POST FENCE
(M)	– MEASURED	WPP	– WOOD POWER POLE
MB	– MAP BOOK	WV	– WATER VALVE

Line Legend:
NOT TO SCALE

= 1 FOOT CONTOURS
= 5 FOOT CONTOURS
= ADJOINER PROPERTY LINES
= BARBED WIRE FENCE
= BROKEN LINE
= BURIED CABLE
= BURIED CABLE TELEVISION
= BURIED ELECTRIC
= BURIED FIBER OPTICS
= BURIED GAS
= BURIED RECLAIMED WATER LINE
= BURIED SANITARY LINES
= BURIED SANITARY SEWER FORCE MAIN LINE
= BURIED TRAFFIC CONTROL
= BURIED TELEPHONE LINE
= BURIED WATER LINES
= CENTER LINE R/W
= CHAIN LINK FENCE
= EASEMENT LINES (EXISTING)
= EASEMENT LINES (PROPOSED)
= EDGE OF WATER LINES
= EXISTING DRAINAGE PIPES
= EXISTING DRAINAGE PIPES (TERMINUS & ANGLE UNKNOWN)
= FIRE WATER MAIN LINES
= HOT WATER SUPPLY LINES
= IRRIGATION LINES
= OVERHEAD TRAFFIC LINES
= OVERHEAD UTILITY LINES
= RAILROAD TRACKS
= RIGHT–OF–WAY LINES
= SECTION LINES
= STONE WALL LINES
= TOP OF BANK LINES
= TOE OF SLOPE LINES
= TREE LINES
= TRAVERSE LINES
= UNKNOWN BURIED LINES
= VINYL FENCE
= WOOD FENCE
= WETLAND LINE
= ORANGE PAINT LINE
= GREEN PAINT LINE
= RED PAINT LINE
= WHITE PAINT LINE
= PURPLE PAINT LINE
= BLUE PAINT LINE
= YELLOW PAINT LINE

Symbol Legend:
NOT TO SCALE

– AIR RELEASE VALVE
– BORING HOLE LOCATION
– BRICK PAVERS
– CABLE TV RISER
– CENTRAL ANGLE
– CLEAN OUT
– COMMUNICATION MANHOLE
– CONCRETE
– CONCRETE LIGHT POLE
– CONCRETE LIGHT POLE (DUAL)
– CONCRETE LIGHT POLE (TRIPLE)
– CONCRETE LIGHT POLE (QUAD)
– CONCRETE MITERED END SECTION
– CONCRETE PAVERS
– CONCRETE RIP RAP
– CONCRETE UTILITY POLE
– COUNTY ROAD SYMBOL
– CROSSWALK SIGNAL POLE
– DETECTABLE WARNING AREA
– DUAL SUPPORT SIGN
– ELECTRICAL MANHOLE
– ELECTRIC METER
– ELECTRICAL JUNCTION BOX
– ELECTRIC OUTLET
– ELECTRIC RISER
– FIBER OPTIC MARKER
– FIRE DEPARTMENT CONNECTION
– FIRE HYDRANT
– FLOOD LIGHT
– FOUND CONCRETE MONUMENT (AS NOTED)
– FOUND IRON PIPE (AS NOTED)
– FOUND IRON REBAR (AS NOTED)
– FOUND/SET NAIL (AS NOTED)
– GARBAGE CAN
– GAS MARKER
– GAS VALVE
– GOPHER TORTOISE HOLE
– GRATE INLET
– GRAVEL/DIRT
– GREASE TRAP MANHOLE
– GROUND LIGHT
– GUY ANCHOR
– HANDICAP PARKING SPACE
– INTERSTATE SYMBOL
– IRRIGATION CONTROL VALVE
– LIGHT POLE
– LIGHT POLE (DUAL)
– LIGHT POLE (TRIPLE)
– LIGHT POLE (QUAD)
– MAILBOX
– MONITOR WELLS
– NAIL & DISC (AS NOTED)
– PARKING SPACES (2)
– POST INDICATOR VALVE
– PULL BOX (AS NOTED)
– REVISION NUMBER (3)
– RECLAIMED WATER METER
– RECLAIMED WATER VALVE
– ROOF DRAIN
– SANITARY SEWER MANHOLE
– SANITARY SEWER VALVE
– TITLE OR REPORT ITEM NUMBER
– SECTION CORNER
– 4" X 4" CM LB #7143
– 5/8" IR&C LB #7143
– SIGN
– SITE BENCH MARK
– STORM SEWER MANHOLE
– STRIPING (DIRECTIONAL)
– TELEPHONE CABLE RISER
– TELEPHONE MANHOLE
– TELEPHONE LINE MARKER
– TELEPHONE JUNCTION BOX
– TEST HOLE
– TRAFFIC SIGNAL BOX
– TRAFFIC SIGNAL SUPPORT POLE
– UNKNOWN MANHOLE
– UNKNOWN UTILITY MARKER
– UNKNOWN RISER
– UNKNOWN VALVE
– UTILITY FLAG (AS NOTED)
– VENT (AS NOTED)
– WATER METER
– WATER RISER
– WATER SERVICE
– WATER SPIGOT
– WATER SPRINKLER
– WATER VALVE
– WELL
– WETLAND FLAG
– WOOD UTILITY POLE
– WATER LINE MARKER
– WIRE HEIGHTS (SEE CHART)

Reference Material

1) WESTBAY COVE CONDOMINIUM I AS PER PLAT THEREOF RECORDED IN CONDOMINIUM BOOK 3, PAGE 66 OF THE PUBLIC RECORDS OF MANATEE COUNTY, FLORIDA.

2) FDOT RIGHT–OF–WAY MAP SECTION NO. 13150–2524 STATE ROAD NO. 64, MANATEE AVENUE WEST DATED 4/1/09.

3) FDOT RIGHT–OF–WAY MAP SECTION NO. 1315–175 STATE ROAD NO. 64, MANATEE AVENUE WEST REVISED 3/8/61.

4) ATTACHMENT D, LEASE AGREEMENT AND RESOLUTION NO. R–09–132, DATED 9/8/2009.

Sign Legend:
NOT TO SCALE

(R1) – ROW NUMBER SIGN
(B) – BUS STOP SIGN
(DE) – DEAD END SIGN
(DNE) – DO NOT ENTER SIGN (R5–1)
(HC) – HANDICAP SIGN
(HC) – DUAL HANDICAP SIGN
(FDC) – FIRE DEPARTMENT CONNECTION
(INFO) – INFORMATION SIGN
(KR) – KEEP RIGHT SIGN
(LTO) – LEFT TURN ONLY
(ME) – MEDIAN SIGN
(ND) – NO DUMPING SIGN
(NL) – NO LEFT TURN SIGN (R3–2)
(NLI) – NO LITTERING SIGN
(NO) – NO OUTLET SIGN
(FL) – NO PARKING FIRE LANE SIGN
(NOR) – NO RIGHT TURN SIGN (R3–1)
(NTT) – NO THRU TRAFFIC SIGN
(NOT) – NO TRUCKS (R5–2)
(NP) – NO PARKING SIGN
(1W) – ONE WAY SIGN (R6–2)
(PE) – PEDESTRIAN CROSSING SIGN
(RTO) – RIGHT TURN ONLY
(SL) – SPEED LIMIT SIGN
(ST) – STOP SIGN (R1–1)
(SS) – STREET SIGN
(TZ) – TOW AWAY ZONE SIGN
(TE) – TRUCK ENTRANCE SIGN
(U) – UNKNOWN SIGN
(WL) – WEIGHT LIMIT SIGN
(WW) – WRONG WAY SIGN
(Y) – YIELD SIGN

NOTE:
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Index of Sheets

1 COVER SHEET
2 BOUNDARY SURVEY
3–5 TOPOGRAPHIC SURVEY

Surveyor's Certification:

I hereby certify that the attached "Boundary & Topographic Survey" of the hereon–described property is true and correct to the best of my knowledge, information and belief as surveyed in the field on May 6, 2020. I further certify that this "Boundary & Topographic Survey" meets the standards of practice set forth in Rule Chapter 5J–17 of the Florida Administrative Code, pursuant to FS 472.027.

THE ELECTRONIC SIGNATURE HEREON IS IN COMPLIANCE WITH THE FLORIDA ADMINISTRATIVE CODE (FAC) 5J–17.062(2) AND THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PAUL J. KATREK, PSM, NO. 6233 ON 8/10/2021 PER 5J17–062(2)

For the Firm By: _____
Paul J. Katrek
Professional Surveyor and Mapper
Florida Registration No. 6233

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No.	Date	Revision	By
1	8/5/21	Added Topographic Info, Revise Sheet Numbers	JTF
2	11/25/20	Added Seagrass limits	DMT

Field Crew:	P.H.
Drawn by:	D.T./J.T.F.
Checked by:	R.L.R.
Approved by:	P.J.K.
Scale:	N/A
Date:	5/6/2020
Job No.:	M13112
File:	M13112.dwg

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Survey L.B. No. 7143
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BOUNDARY & TOPOGRAPHIC SURVEY

MANATEE COUNTY
KINGFISH BOATRAMP
SECTION 28-TOWNSHIP 34 SOUTH-RANGE 16 EAST
CITY OF HOLMES BEACH, MANATEE COUNTY, FLORIDA

Sheet No. 1 of 5

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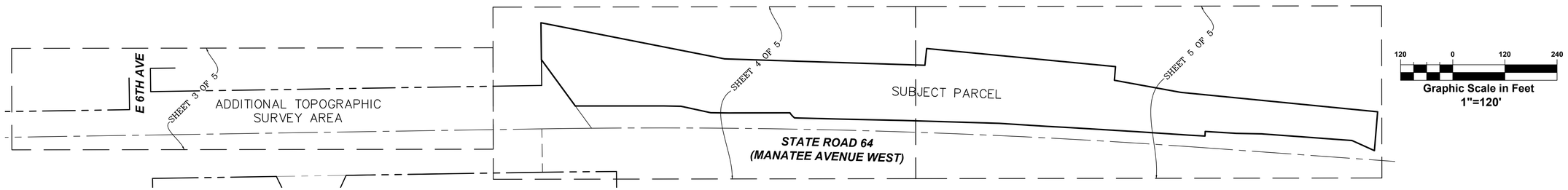
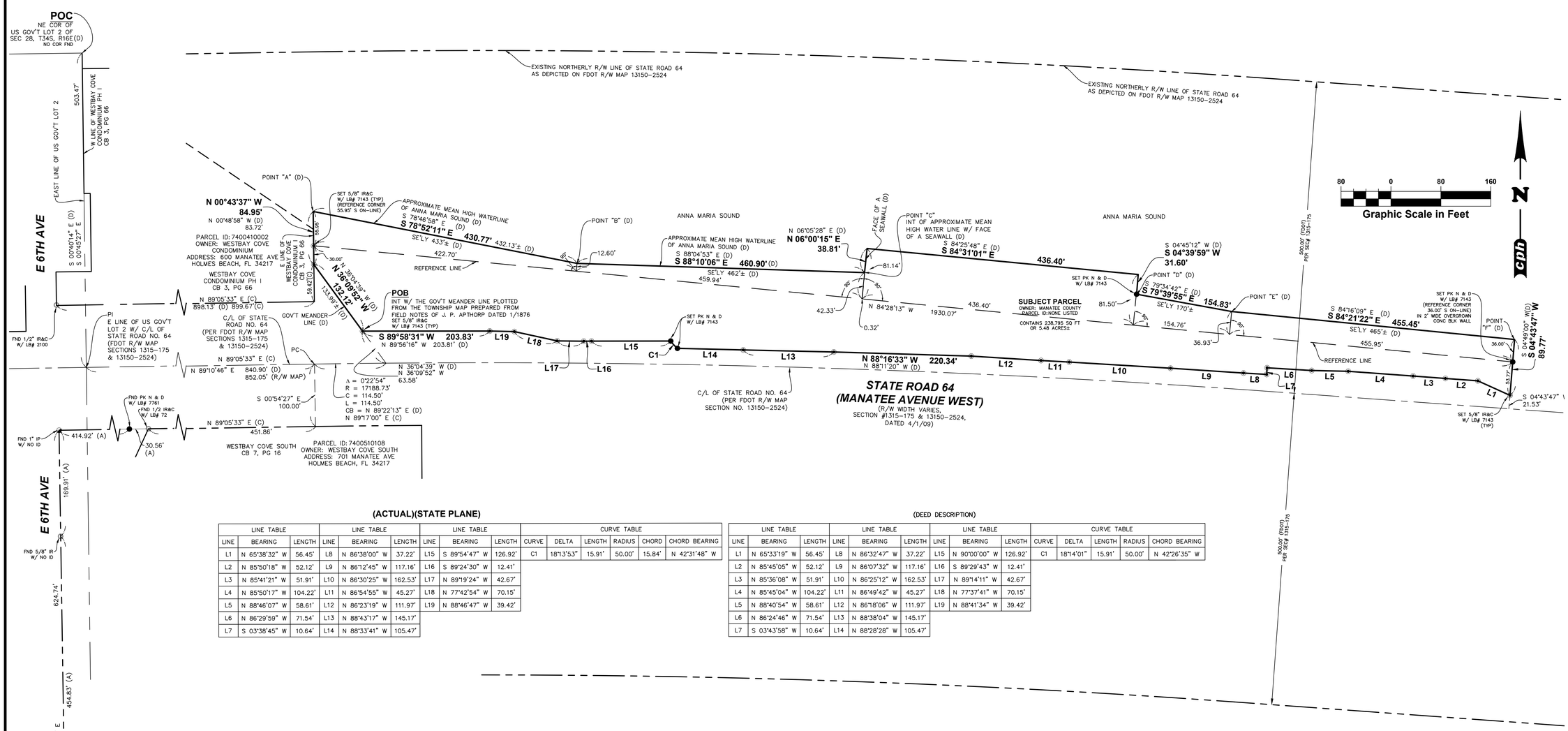
Topographic Survey Key Map





(ACTUAL)(STATE PLANE)

LINE TABLE			LINE TABLE			LINE TABLE			CURVE TABLE					
LINE	BEARING	LENGTH	LINE	BEARING	LENGTH	LINE	BEARING	LENGTH	CURVE	DELTA	LENGTH	RADIUS	CHORD	CHORD BEARING
L1	N 65°38'32" W	56.45'	L8	N 86°38'00" W	37.22'	L15	S 89°54'47" W	126.92'	C1	18°13'53"	15.91'	50.00'	15.84'	N 42°31'48" W
L2	N 85°50'18" W	52.12'	L9	N 86°12'45" W	117.16'	L16	S 89°24'30" W	12.41'						
L3	N 85°41'21" W	51.91'	L10	N 86°30'25" W	162.53'	L17	N 89°19'24" W	42.67'						
L4	N 85°50'17" W	104.22'	L11	N 86°54'55" W	45.27'	L18	N 77°42'54" W	70.15'						
L5	N 88°46'07" W	58.61'	L12	N 86°23'19" W	111.97'	L19	N 88°46'47" W	39.42'						
L6	N 86°29'59" W	71.54'	L13	N 88°43'17" W	145.17'									
L7	S 03°38'45" W	10.64'	L14	N 88°33'41" W	105.47'									

(DEED DESCRIPTION)

LINE TABLE			LINE TABLE			LINE TABLE			CURVE TABLE					
LINE	BEARING	LENGTH	LINE	BEARING	LENGTH	LINE	BEARING	LENGTH	CURVE	DELTA	LENGTH	RADIUS	CHORD	CHORD BEARING
L1	N 65°33'19" W	56.45'	L8	N 86°32'47" W	37.22'	L15	N 90°00'00" W	126.92'	C1	18°14'01"	15.91'	50.00'	N 42°26'35" W	
L2	N 85°45'05" W	52.12'	L9	N 86°07'32" W	117.16'	L16	S 89°29'43" W	12.41'						
L3	N 85°36'08" W	51.91'	L10	N 86°25'12" W	162.53'	L17	N 89°14'11" W	42.67'						
L4	N 85°45'04" W	104.22'	L11	N 86°49'42" W	45.27'	L18	N 77°37'41" W	70.15'						
L5	N 88°40'54" W	58.61'	L12	N 86°18'06" W	111.97'	L19	N 88°41'34" W	39.42'						
L6	N 86°24'46" W	71.54'	L13	N 88°38'04" W	145.17'									
L7	N 03°43'58" W	10.64'	L14	N 88°28'28" W	105.47'									

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1	8/5/21	Added Topographic Info, Revise Sheet Numbers	JTF
2	11/25/20	Added Seagrass limits	DMT

Field Crew:	P.H.
Drawn by:	D.T./J.T.F.
Checked by:	R.L.R.
Approved by:	P.J.K.
Scale:	AS SHOWN
Date:	5/6/2020
Job No.:	M13112
File:	M13112.dwg

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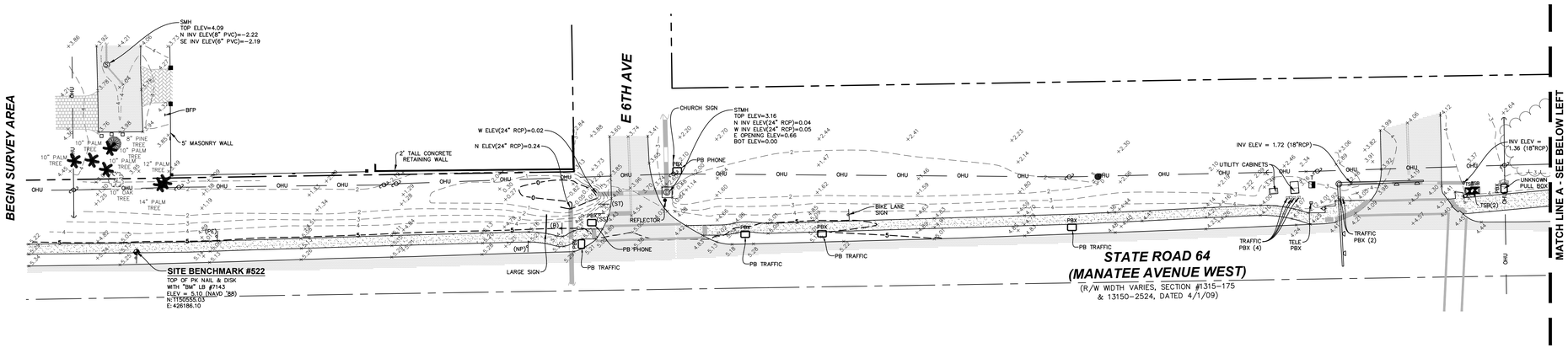
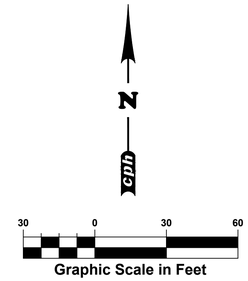
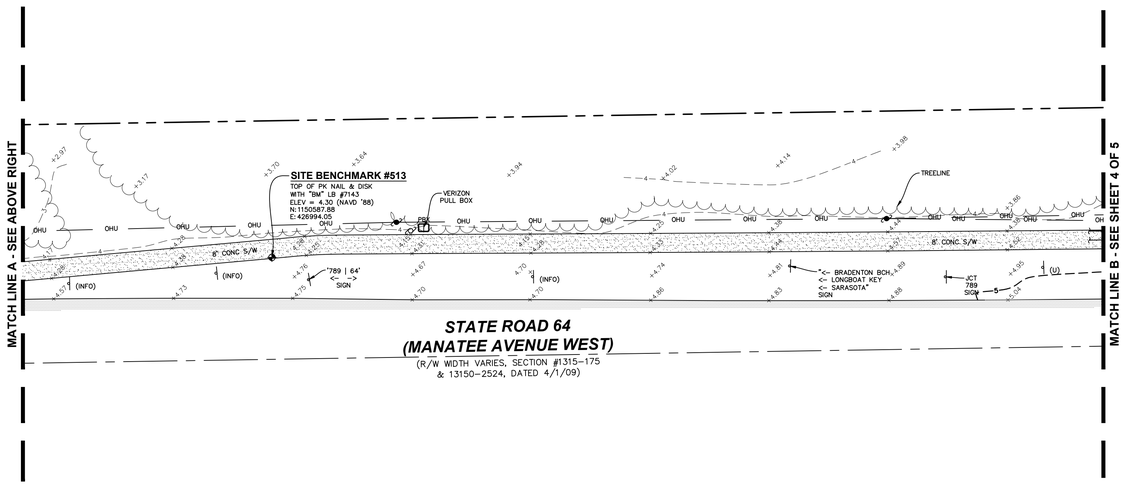
BOUNDARY & TOPOGRAPHIC SURVEY

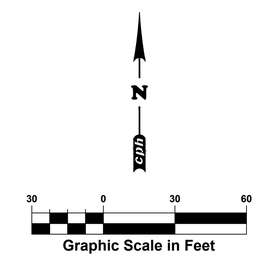
MANATEE COUNTY
KINGFISH BOATRAMP
SECTION 28-TOWNSHIP 34 SOUTH-RANGE 16 EAST
CITY OF HOLMES BEACH, MANATEE COUNTY, FLORIDA

Sheet No. 2 of 5









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SECTION 28-TOWNSHIP 34 SOUTH-RANGE 16 EAST
CITY OF HOLMES BEACH, MANATEE COUNTY, FLORIDA

Sheet No.
3
of 5

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Tree #	DBH (in.)	Common Name	Botanical Name	Condition
1022	8.4	Cabbage Palm	*Sabal palmetto*	2
1023	9.9	Cabbage Palm	*Sabal palmetto*	2
1024	10.3	Cabbage Palm	*Sabal palmetto*	2
1025	9.6	Cabbage Palm	*Sabal palmetto*	3
1026	10	Cabbage Palm	*Sabal palmetto*	2
1027	11	Cabbage Palm	*Sabal palmetto*	3
1028	12.4	Cabbage Palm	*Sabal palmetto*	3
1029	12.2	Cabbage Palm	*Sabal palmetto*	3
1030	12.9	Cabbage Palm	*Sabal palmetto*	6
1031	12	Cabbage Palm	*Sabal palmetto*	2
1032	12.3	Cabbage Palm	*Sabal palmetto*	3
1033	11.3	Cabbage Palm	*Sabal palmetto*	3
1034	12	Cabbage Palm	*Sabal palmetto*	3
1035	5.2	Gumbo Limbo	*Bursera simaruba*	3
1036	6.9	Gumbo Limbo	*Bursera simaruba*	3
1037	8	Gumbo Limbo	*Bursera simaruba*	3
1038	7.4	Jamaica Dogwood	*Piscidia piscipula*	2
1039	13	Cabbage Palm	*Sabal palmetto*	2
1040	5.1	Live Oak	*Quercus virginiana*	3
1041	8.5	Mimosa	*Lysiloma latisiliquum*	2
1042	6	Silver Buttonwood	*Conocarpus erectus*	3
1043	7	Silver Buttonwood	*Conocarpus erectus*	4

Tree #	DBH (in.)	Common Name	Botanical Name	Condition
1044	13.1	Fig	*Ficus sp.*	2
1045	11.5	Cabbage Palm	*Sabal palmetto*	2
1046	8.7	Cabbage Palm	*Sabal palmetto*	2
1047	3.8	Live Oak	*Quercus virginiana*	3
1048	10.3	Cabbage Palm	*Sabal palmetto*	3
1049	9.9	Cabbage Palm	*Sabal palmetto*	3
1050	8	Silver Buttonwood	*Conocarpus erectus*	3
1051	10.4	Jamaica Dogwood	*Piscidia piscipula*	3
1052	6.9	Green Buttonwood	*Conocarpus erectus*	5
1053	10	Cabbage Palm	*Sabal palmetto*	3
1054	9.3	Cabbage Palm	*Sabal palmetto*	3
1055	10.2	Cabbage Palm	*Sabal palmetto*	3
1056	10.9	Cabbage Palm	*Sabal palmetto*	3
1057	12	Cabbage Palm	*Sabal palmetto*	3
1058	10	Cabbage Palm	*Sabal palmetto*	3
1059	12	Cabbage Palm	*Sabal palmetto*	3
1060	10	Cabbage Palm	*Sabal palmetto*	3
1061	14.9	Mimosa	*Lysiloma latisiliquum*	3
1062	8	Jamaica Dogwood	*Piscidia piscipula*	3
1063	4.2	Live Oak	*Quercus virginiana*	3
1064	4.5	Green Buttonwood	*Conocarpus erectus*	3
1065	4.5	Green Buttonwood	*Conocarpus erectus*	4

Tree #	DBH (in.)	Common Name	Botanical Name	Condition
1066	8.7	Mimosa	*Lysiloma latisiliquum*	2
1067	13.6	Mimosa	*Lysiloma latisiliquum*	2
1068	4.2	Gumbo Limbo	*Bursera simaruba*	3
1069	4.2	Green Buttonwood	*Conocarpus erectus*	3
1070	3.2	Live Oak	*Quercus virginiana*	3
1071	8	Green Buttonwood	*Conocarpus erectus*	3
1072	4.1	Live Oak	*Quercus virginiana*	3
1073	10.9	Cabbage Palm	*Sabal palmetto*	3
1074	15	Mexican Fan Palm	*Washingtonia robusta*	3
1075	8.8	Gumbo Limbo	*Bursera simaruba*	3
1076	12	Cabbage Palm	*Sabal palmetto*	3
1077	11	Cabbage Palm	*Sabal palmetto*	3
1078	10.8	Gumbo Limbo	*Bursera simaruba*	3

NOTE: FROM CPH ENVIRONMENTAL DEPT. "TREE CONDITION RATING ARE BASED ON AN EVALUATION OF HEALTH, STRUCTURE, AND FORM AS DESCRIBED IN THE "GUIDE TO PLANT APPRAISAL, 10TH EDITION" (1–EXCELLENT, 2–GOOD, 3–FAIR, 4–POOR, 5–VERY POOR, 6–DEAD)

NOTE: AUSTRALIAN PINES ARE AN INVASIVE SPECIES AND THEREFORE NOT LOCATED BY CPH ENVIRONMENTAL.

WETLAND LINE TABLE		
LINE	BEARING	LENGTH
W1–1	S 00°44'45" E	17.09'
W1–2	N 89°15'15" E	15.52'
W1–3	S 55°15'26" E	22.61'
W1–4	S 77°10'30" E	34.59'
W1–5	S 57°00'04" E	32.35'
W1–6	S 44°58'20" E	15.11'
W1–7	S 67°30'53" E	73.07'
W1–8	S 82°34'01" E	53.37'

WETLAND LINE TABLE		
LINE	BEARING	LENGTH
W1–9	N 72°03'03" E	23.34'
W1–10	S 78°37'06" E	59.51'
W1–11	N 76°46'35" E	51.11'
W1–12	S 85°58'44" E	46.29'
W1–13	S 87°12'57" E	54.20'
W1–14	S 81°17'34" E	42.66'
W1–15	N 66°11'05" E	24.90'
W1–16	S 86°29'24" E	49.10'

WETLAND LINE TABLE		
LINE	BEARING	LENGTH
W1–17	N 89°58'49" E	63.94'
W1–18	S 86°06'10" E	51.45'
W1–19	N 75°19'42" E	37.94'
W1–20	S 85°10'58" E	36.32'
W1–21	N 84°43'55" E	58.64'
W1–22	S 78°22'13" E	34.27'

N

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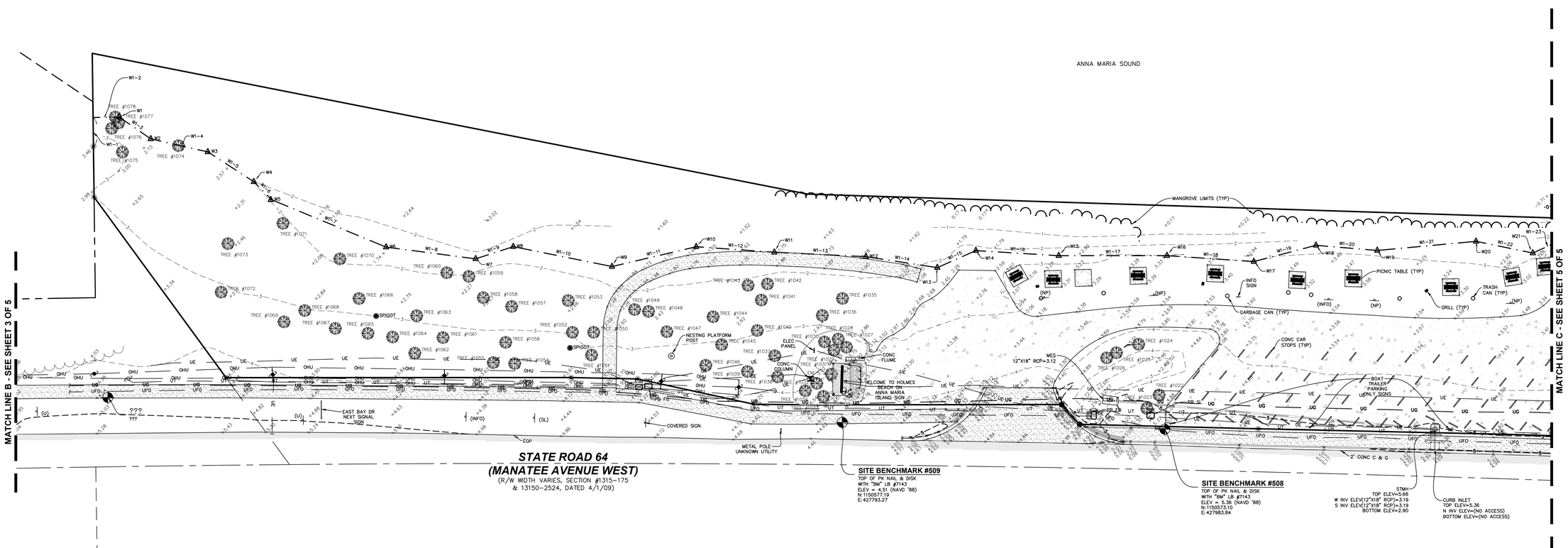
30 0 30 60

Graphic Scale in Feet



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No.	Date	Revision	By
1	8/5/21	Added Topographic Info, Revised Sheet Numbers	JTF
2	11/25/20	Added Seagrass limits	DMT

Field Crew:	P.H.
Drawn by:	D.T./J.T.F.
Checked by:	R.L.R.
Approved by:	P.J.K.
Scale:	1"=30'
Date:	5/6/2020
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TOPOGRAPHIC SURVEY

MANATEE COUNTY
KINGFISH BOATRAMP
SECTION 28-TOWNSHIP 34 SOUTH-RANGE 16 EAST
CITY OF HOLMES BEACH, MANATEE COUNTY, FLORIDA

Sheet No.
4
of 5

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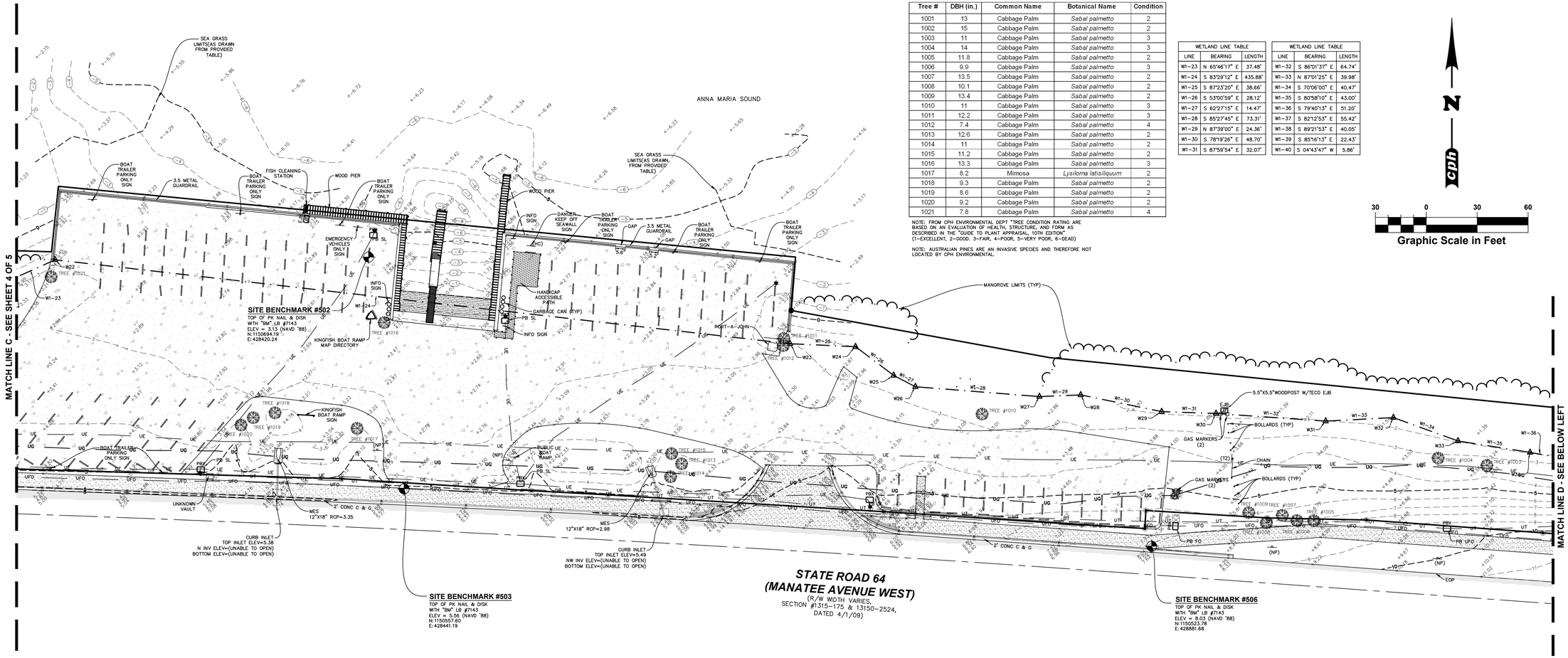
Tree #	DBH (in.)	Common Name	Botanical Name	Condition
1001	13	Cabbage Palm	*Sabal palmetto*	2
1002	15	Cabbage Palm	*Sabal palmetto*	2
1003	11	Cabbage Palm	*Sabal palmetto*	3
1004	14	Cabbage Palm	*Sabal palmetto*	3
1005	11.8	Cabbage Palm	*Sabal palmetto*	2
1006	9.9	Cabbage Palm	*Sabal palmetto*	3
1007	13.5	Cabbage Palm	*Sabal palmetto*	2
1008	10.1	Cabbage Palm	*Sabal palmetto*	2
1009	13.4	Cabbage Palm	*Sabal palmetto*	2
1010	11	Cabbage Palm	*Sabal palmetto*	3
1011	12.2	Cabbage Palm	*Sabal palmetto*	3
1012	7.4	Cabbage Palm	*Sabal palmetto*	4
1013	12.6	Cabbage Palm	*Sabal palmetto*	2
1014	11	Cabbage Palm	*Sabal palmetto*	2
1015	11.2	Cabbage Palm	*Sabal palmetto*	2
1016	13.3	Cabbage Palm	*Sabal palmetto*	3
1017	8.2	Mimosa	*Lysiloma latisiliquum*	2
1018	9.3	Cabbage Palm	*Sabal palmetto*	2
1019	8.6	Cabbage Palm	*Sabal palmetto*	2
1020	9.2	Cabbage Palm	*Sabal palmetto*	2
1021	7.8	Cabbage Palm	*Sabal palmetto*	4

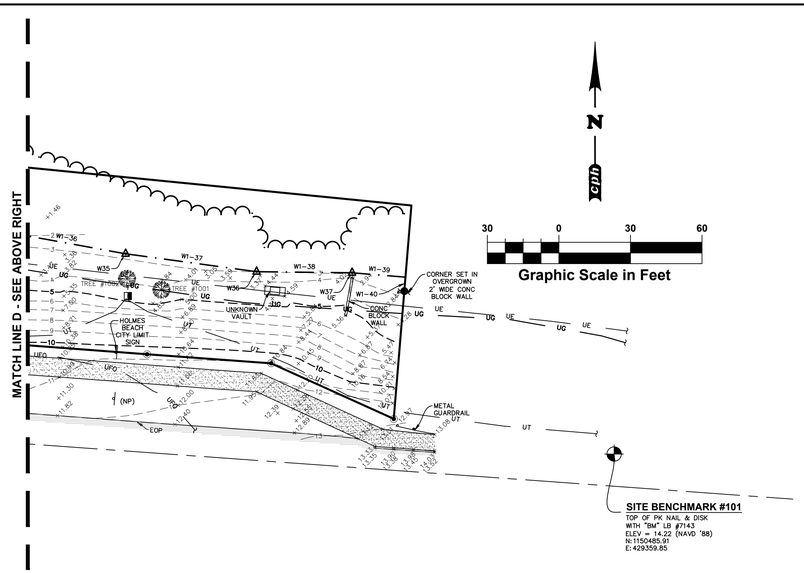
NOTE: FROM CPH ENVIRONMENTAL DEPT "TREE CONDITION RATING ARE BASED ON AN EVALUATION OF HEALTH, STRUCTURE, AND FORM AS DESCRIBED IN THE "GUIDE TO PLANT APPRAISAL, 10TH EDITION" (1=EXCELLENT, 2=GOOD, 3=FAIR, 4=POOR, 5=VERY POOR, 6=DEAD)

NOTE: AUSTRALIAN PINES ARE AN INVASIVE SPECIES AND THEREFORE NOT LOCATED BY CPH ENVIRONMENTAL.

WETLAND LINE TABLE		
LINE	BEARING	LENGTH
W1–23	N 65°46'17" E	37.48'
W1–24	S 83°29'12" E	435.88'
W1–25	S 87°23'20" E	38.66'
W1–26	S 53°00'59" E	28.12'
W1–27	S 62°27'15" E	14.47'
W1–28	S 85°27'45" E	73.31'
W1–29	N 87°39'00" E	24.36'
W1–30	S 78°19'26" E	48.70'
W1–31	S 87°59'54" E	32.07'

WETLAND LINE TABLE		
LINE	BEARING	LENGTH
W1–32	S 86°01'37" E	64.74'
W1–33	N 87°01'25" E	39.98'
W1–34	S 70°06'00" E	40.47'
W1–35	S 80°58'10" E	43.00'
W1–36	S 79°46'13" E	51.20'
W1–37	S 82°12'53" E	55.42'
W1–38	S 89°21'53" E	40.05'
W1–39	S 85°16'13" E	22.43'
W1–40	S 04°43'47" W	5.86'





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BOUNDARY & TOPOGRAPHIC SURVEY

MANATEE COUNTY
KINGFISH BOATRAMP
SECTION 28-TOWNSHIP 34 SOUTH-RANGE 16 EAST
CITY OF HOLMES BEACH, MANATEE COUNTY, FLORIDA

Sheet No.
5
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GENERAL PROVISIONS

1. THE CONTRACTOR SHALL OBTAIN FROM THE OWNER COPIES OF ALL AVAILABLE REGULATORY AGENCY PERMITS AND LOCAL AGENCY PERMITS.

2. CONTRACTOR, AS PART OF THE BASE BID, SHALL FIELD LOCATE ALL UNDERGROUND UTILITIES WITHIN THE PROJECT AREA WITHIN THE 30 DAYS OF PROJECT AWARD. CONTRACTOR SHALL REVIEW THE PLANS AND SHALL NOTE ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.

3. CONTRACTORS, AS PART OF THE BASE BID, SHALL PROVIDE ALL COORDINATION WITH UTILITY PROVIDERS TO PROVIDE FOR THE MATERIALS AND WORK NEEDED TO PROVIDE SERVICES TO THE PROJECT.

4. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE FOR ALL DEMOLITION OF ABOVE GROUND AND UNDERGROUND IMPROVEMENTS IN ORDER TO CONSTRUCT THE PROPOSED IMPROVEMENTS NOTED ON THE PLANS. UNLESS APPROVED IN WRITING FROM THE OWNER, ALL MATERIALS SHALL BE REMOVED FROM THE SITE AS PART OF THE BASE BID.

5. ALL DETAILS AND REFERENCES TO FDOT REFER TO THE LATEST EDITION OF THE FDOT DESIGN STANDARDS.

6. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES, IN SUCH A MANNER AS TO AVOID CONFLICT AND ASSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH UTILITY REQUIREMENTS AS TO LOCATION AND SCHEDULING FOR TIE-INS/ CONNECTIONS PRIOR TO CONNECTING TO EXISTING UTILITIES.

7. CONTRACTOR AND HIS SURVEYOR SHALL NOTE THE PROJECT BENCHMARK INFORMATION PROVIDED IN THE PLANS AND VERIFY PRIOR TO CONSTRUCTION.

8. ALL CONSTRUCTION PROJECTS 1 OR MORE ACRES IN SIZE THAT DISCHARGE TO OFFSITE AREAS ARE REQUIRED TO COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORMWATER DISCHARGE FROM SMALL AND LARGE CONSTRUCTION ACTIVITIES. IN ORDER TO MEET NPDES REQUIREMENTS, THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING, INSPECTING, MAINTAINING, AND REPORTING ON ALL ELEMENTS OF THE SWPPP, COMPLETING AND SUBMITTING THE REQUIRED NOTICE OF INTENT (NOI) AND NOTICE OF TERMINATION (NOT) FORMS AS THE OPERATOR, AND PAYING ALL ASSOCIATED FEES. FOR PROJECTS LESS THAN 1 ACRE IN SIZE THAT ARE NOT REQUIRED TO COMPLY WITH THE NPDES GENERAL PERMIT, THE CONTRACTOR IS STILL RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO AND DURING CONSTRUCTION IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.

9. UNLESS OTHERWISE NOTED ON THE PLANS, THE CONTRACTOR SHALL USE THE GEOMETRY PROVIDED ON THE CONSTRUCTION PLANS. BENCHMARK INFORMATION SHALL BE PROVIDED TO THE CONTRACTOR BY THE OWNER'S SURVEYOR. ANY DISCREPANCIES BETWEEN FIELD MEASUREMENTS AND CONSTRUCTION PLAN INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

10. BASE SURVEY INFORMATION INCLUDING BUT NOT LIMITED TO ELEVATIONS, EASEMENTS, RIGHTS OF WAY, AND OTHER TOPOGRAPHIC INFORMATION HAS BEEN PREPARED BY OTHER PROFESSIONALS. CPH, INC. ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.

11. THIS SET OF PLANS MAY CONTAIN DRAWINGS PREPARED BY OTHER PROFESSIONALS, WHICH CONTAIN THE NAME, ADDRESS, AND LOGO OF THE PROFESSIONAL. CPH, INC. IS NOT RESPONSIBLE FOR DRAWINGS PREPARED BY OTHER PROFESSIONALS.

12. THE CONTRACTOR SHALL SUBMIT ONE ELECTRONIC COPY OF SHOP DRAWINGS TO THE ENGINEER TO KEEP FOR HIS RECORDS. THE ENGINEER WILL NOT PROVIDE FOR APPROVAL OF SHOP DRAWINGS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL MATERIALS FOR ACCURACY PRIOR TO ORDERING THE MATERIALS. ANY DISCREPANCIES IDENTIFIED BY THE CONTRACTOR SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

13. PROTECT BENCHMARKS, PROPERTY CORNERS, AND OTHER SURVEY MONUMENTS FROM DAMAGE OR DISPLACEMENT. IF MARKER NEEDS TO BE REMOVED IT SHALL BE REFERENCED BY LICENSED LAND SURVEYOR AND REPLACED, AS NECESSARY, BY SAME.

14. THE CONTRACTOR IS RESPONSIBLE FOR ALL QUALITY CONTROL TESTING. AS A MINIMUM, TESTING SHALL INCLUDE A) PIPING AND STRUCTURAL EXCAVATION, BEDDING AND BACKFILL MATERIALS AND DENSITY TESTS; B) DETERMINATION OF COMPACTIVE EFFORT NEEDED FOR COMPLIANCE WITH THE DENSITY REQUIREMENTS; C) PORTLAND CEMENT CONCRETE AND ASPHALT PAVING QUALITY CONTROL TESTING INCLUDING DESIGN MIX REVIEW, MATERIALS, FIELD SLUMP AND AIR CONTENT, AND FIELD AND LAB CURED STRENGTH SAMPLES AND TESTING.

15. IN ADDITION TO QUALITY CONTROL TESTING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REQUIRED TESTING OR APPROVALS FOR ANY WORK (OR ANY PART THEREOF) IF LAWS OR REGULATIONS OF ANY PUBLIC BODY HAVING JURISDICTION SPECIFICALLY REQUIRE TESTING, INSPECTIONS OR APPROVAL. THE CONTRACTOR SHALL PAY ALL COSTS IN CONNECTION THEREWITH AND SHALL FURNISH THE OWNER AND ENGINEER THE REQUIRED CERTIFICATES OF INSPECTION, TESTING OR APPROVAL.

16. ANY DESIGN OR TESTING LABORATORY UTILIZED BY THE CONTRACTOR SHALL BE AN INDEPENDENT LABORATORY ACCEPTABLE TO THE OWNER AND THE ENGINEER, APPROVED IN WRITING, AND COMPLYING WITH THE LATEST EDITION OF THE "RECOMMENDED REQUIREMENTS FOR INDEPENDENT LABORATORY QUALIFICATION", PUBLISHED BY THE AMERICAN COUNCIL OF INDEPENDENT LABORATORIES.

17. TESTING RESULTS SHALL BE PROVIDED TO THE OWNER/OPERATOR AND THE ENGINEER. ALL TEST RESULTS SHALL BE PROVIDED (PASSING AND FAILING) ON A REGULAR AND IMMEDIATE BASIS.

18. THE ENTIRE PROJECT SITE SHALL BE THOROUGHLY CLEANED AT THE COMPLETION OF THE WORK. CLEAN ALL INSTALLED PIPELINES, STRUCTURES, SIDEWALKS, PAVED AREAS, ACCUMULATED SILT IN PONDS, PLUS ALL ADJACENT AREAS AFFECTED BY CONSTRUCTION, AS DIRECTED BY THE OWNER OR JURISDICTIONAL AGENCY. EQUIPMENT TO CLEAN THESE SURFACES SHALL BE SUBJECT TO APPROVAL BY THE OWNER.

19. ALL DISTURBED AREAS WITHIN RIGHT OF WAYS SHALL BE SODDED.

20. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS TO INCLUDE BUT NOT BE LIMITED, FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE TO COMPLY WITH PERFORMANCE CRITERIA FOR OSHA.

21. THE CONTRACTOR SHALL RECOGNIZE AND ABIDE BY ALL OSHA EXCAVATION SAFETY STANDARDS, INCLUDING THE FLORIDA TRENCH SAFETY ACT (90-96, LAWS OF FLORIDA). ANY MATERIAL, CONSTRUCTION METHODS, OR MATERIAL COST TO COMPLY WITH THESE LAWS SHALL BE INCIDENTAL TO THE CONTRACT.

22. CONTRACTOR MUST STOP OPERATION AND NOTIFY THE OWNER FOR PROPER DIRECTION IF ANY ENVIRONMENTAL OR HEALTH RELATED CONTAMINATE IS ENCOUNTERED DURING EXCAVATION.

UTILITY GENERAL NOTES

1. THE UTILITY DATA SHOWN ON THESE PLANS WAS LOCATED BY THE RESPECTIVE UTILITY, OR IS BASED ON UTILITY DRAWINGS, MAPS, OR FIELD RECONNAISSANCE.

2. THE LOCATION, MATERIAL TYPE, AND SIZE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITIES AND TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATIONS OF THESE UTILITIES WITH THE OWNER OF THE UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THE PLANS OR LOCATED BY THE UTILITY COMPANY. ANY UTILITIES, WHETHER SHOWN ON THESE PLANS OR NOT, THAT INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE CLOSELY COORDINATED WITH THE ENGINEER AND THE RESPECTIVE UTILITY COMPANY FOR RELOCATION OR PROPER INSTRUCTION.

3. A SINGLE POINT UTILITY IDENTIFICATION SERVICE HAS BEEN SET UP FOR EXISTING UTILITIES. THE CONTRACTOR IS TO CONTACT THE SUNSHINE STATE ONE CALL CENTER BY DIALING "811" AT LEAST TWO (2) AND NO MORE THAN FIVE (5) WORKING DAYS PRIOR TO THE SPECIFIC CONSTRUCTION ACTIVITY FOR FIELD LOCATION. NOTE THAT NOT ALL UTILITIES PARTICIPATE IN THIS PROGRAM. THE CONTRACTOR SHOULD CONTACT ALL NON-PARTICIPATING UTILITIES SEPARATELY FOR FIELD LOCATION OF THEIR FACILITIES AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

4. THE UTILITY PROVIDERS NOTED ON THE COVER SHEET HAVE PREVIOUSLY INDICATED THAT THEY MAY HAVE FACILITIES IN THE VICINITY OF THE CONSTRUCTION AREA.

5. THE CONTRACTOR SHALL KEEP LOCATE TICKETS UP TO DATE AT ALL TIMES.

6. THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION WITH EACH UTILITY AND ALL COSTS ASSOCIATED WITH THE PROTECTION OF EXISTING FACILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL ALSO COORDINATE NECESSARY RELOCATIONS OR OTHER CONSTRUCTION RELATED MATTERS WITH EACH UTILITY.

7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN IN SERVICE ALL EXISTING PIPING ENCOUNTERED DURING CONSTRUCTION UNLESS OTHERWISE INDICATED IN THE DRAWINGS. ANY PIPING WHICH CAN BE REMOVED DURING CONSTRUCTION WITHOUT UNDUE INTERRUPTION OF SERVICE MAY BE REMOVED AND REPLACED BY THE CONTRACTOR WITH THE PERMISSION OF THE OWNER AND THE ENGINEER.

8. TYPICAL DETAILS AND PROPOSED CONSTRUCTION AS SHOWN ILLUSTRATE THE ENGINEER'S INTENT AND ARE NOT PRESENTED AS A SOLUTION TO ALL CONSTRUCTION PROBLEMS ENCOUNTERED IN THE FIELD. THE CONTRACTOR MAY ALTER THE PROPOSED CONSTRUCTION TO SUIT FIELD CONDITIONS, PROVIDED IT COMPLIES WITH THE PROJECT SPECIFICATIONS AND APPROVAL IS RECEIVED FROM THE ENGINEER. WHERE SUCH PROPOSED REVISIONS DEVIATE FROM THE FDEP CONSTRUCTION PERMIT, THEN SUCH REVISIONS WILL ALSO REQUIRE APPROVAL FROM FDEP.

9. FOR EACH RESPECTIVE PIPELINE CONSTRUCTION REQUIRED, THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION, DEPTH, SIZE, MATERIAL TYPE, AND ALIGNMENT OF ALL EXISTING PIPES, CABLES, ETC. TO BE CROSSED OR CONNECTED TO. IF THE CONTRACTOR DEEMS NECESSARY (A) A CHANGE IN ALIGNMENT OR DEPTH, OR THE NEED FOR ADDITIONAL FITTINGS, BENDS, OR COUPLINGS, WHICH REPRESENT A DEPARTURE FROM THE CONTRACT DRAWING, OR (B) A NEED FOR RELOCATION OF EXISTING UTILITIES, THEN DETAILS OF SUCH DEPARTURES, RELOCATIONS, OR ADDITIONAL FITTINGS, INCLUDING CHANGES IN RELATED PORTIONS OF THE PROJECT AND THE REASONS THEREFORE, SHALL BE SUBMITTED WITH SHOP DRAWINGS. APPROVED DEPARTURES FOR THE CONTRACTOR'S CONVENIENCE SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.

10. THE CONTRACTOR SHALL PROVIDE AT HIS OWN EXPENSE ALL NECESSARY TEST PUMPING EQUIPMENT, WATER, WATER METERS, PRESSURE GAUGES, AND OTHER EQUIPMENT, MATERIAL AND FACILITIES REQUIRED FOR ALL HYDROSTATIC, LEAKAGE, AND PRESSURE TESTING. THE CONTRACTOR SHALL CONTACT THE ENGINEER AND THE OWNER IN WRITTEN FORM, FORTY-EIGHT (48) HOURS IN ADVANCE OF PROPOSED TESTING. THE CONTRACTOR SHALL PERFORM SATISFACTORY PRETESTING PRIOR TO NOTIFICATION.

AS-BUILT DRAWING REQUIREMENTS

1. AS-BUILT DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER AT LEAST THREE WEEKS PRIOR TO FINAL INSPECTION. ALL AS-BUILT DATA SHALL BE PROVIDED BY A FLORIDA LICENSED SURVEYOR, SIGNED, SEALED AND DATED BY THE RESPONSIBLE PARTY. THE CONTRACTOR SHALL BE RESPONSIBLE TO IDENTIFY ALL AS-BUILT SURVEY REQUIREMENTS BY THE GOVERNING AGENCIES PRIOR TO START OF CONSTRUCTION TO ENSURE THAT AS-BUILT INFORMATION IS PROVIDED FOR.

2. ALL RECORD DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR IN ACAD FORMAT USING CONSTRUCTION PLAN SHEETS PROVIDED BY THE ENGINEER. AS-BUILT INFORMATION SHALL BE FIELD VERIFIED, MEASURED, ADDED TO THE ACAD FILES OF THE CONSTRUCTION PLAN SHEETS PROVIDED BY THE ENGINEER, AND CERTIFIED, SIGNED AND SEALED BY THE CONTRACTOR'S LICENSED SURVEYOR WHO WILL BE RESPONSIBLE FOR THE ACCURACY OF ALL DIMENSIONS AND ELEVATIONS.

3. THE AS-BUILT INFORMATION IS TO INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

A. HORIZONTAL LOCATIONS AND VERTICAL ELEVATIONS FOR ALL UTILITY AND STORM STRUCTURES INCLUDING BUT NOT LIMITED TO MANHOLES, INLETS AND CLEANOUTS, INCLUDING STRUCTURE TOP AND INVERT ELEVATIONS.

B. DISTANCE ALONG PIPELINES BETWEEN STRUCTURES.

C. STORMWATER POND TOP OF BERM AND POND BOTTOM ELEVATIONS AND HORIZONTAL DIMENSIONS MEASURED AT A MINIMUM OF TEN LOCATIONS PER POND, AT LOCATIONS DESIGNATED BY THE ENGINEER. TOP OF POND HORIZONTAL DIMENSIONS ARE ALSO TO BE TIED TO PROPERTY CORNERS, EASEMENTS, AND RIGHTS-OF-WAY.

D. STORMWATER CONTROL STRUCTURE DIMENSIONS AND ELEVATIONS, INCLUDING ALL WEIRS, SLOTS, ORIFICES, GRATES, AND SKIMMERS.

E. STORMWATER CONVEYANCE SYSTEMS INCLUDING DIMENSIONS, ELEVATIONS, CONTOURS, AND CROSS SECTIONS.

F. HORIZONTAL LOCATIONS AND VERTICAL ELEVATIONS OF ALL UTILITY VALVES, FITTINGS, CONNECTION POINTS, ETC.

G. VERTICAL ELEVATIONS OF ALL PIPELINES AT CROSSINGS OF POTABLE WATER MAINS (WHETHER THE WATER MAIN IS EXISTING OR NEW) IN ORDER TO DOCUMENT THAT THE MINIMUM REQUIRED VERTICAL SEPARATION HAS BEEN MET.

H. UTILITY PIPELINE TIED HORIZONTALLY TO EDGE OF PAVEMENT AND RIGHT-OF-WAY LINES, LOCATED EVERY 200-FT PLUS ALL CHANGES IN HORIZONTAL OFFSET.

I. PAVEMENT WIDTH AND ELEVATIONS AT THE CENTERLINE AND EDGE OF PAVEMENT EVERY 200 FEET PLUS AT ALL CHANGES IN LONGITUDINAL SLOPE, CROSS SLOPE, INLET LOCATIONS, AND AT ALL DRIVEWAY AND STREET INTERSECTIONS. FOR PARKING LOTS, RECORD CENTERLINE AND EDGE OF PAVEMENT ELEVATIONS ALONG ALL DRIVE AISLES AND ISLANDS.

J. ALL PARKING AREAS AND SIDEWALK RAMPS DESIGNATED FOR HANDICAP ACCESS SHALL CONTAIN HORIZONTAL AND VERTICAL MEASUREMENTS IN ORDER TO VERIFY REQUIRED WIDTHS AND SLOPES HAVE BEEN MET.

K. HORIZONTAL AND VERTICAL DATA FOR ANY CONSTRUCTION THAT DEVIATES FROM THE APPROVED ENGINEERING DRAWINGS.

L. WHERE THE PLANS CONTAIN SPECIFIC HORIZONTAL LOCATION DATA, SUCH AS STATION AND OFFSET, THE AS-BUILT DRAWINGS ARE TO REFLECT THE ACTUAL HORIZONTAL LOCATION.

M. WHERE THE PLANS CONTAIN SPECIFIC VERTICAL ELEVATION DATA, THE AS-BUILT DRAWINGS ARE TO REFLECT THE ACTUAL MEASURED VERTICAL ELEVATION.

N. ANY ADDITIONAL INFORMATION REQUIRED BY GOVERNING AGENCIES.

4. IN CASES WHERE THE OWNER DETERMINES PARTIAL CLEARANCES FROM PERMITTING AGENCIES ARE BENEFICIAL TO THE OWNER FOR COMPLETED PORTIONS OF THE PROJECT, PROVIDE PRELIMINARY AS-BUILT DRAWINGS (ACAD FORMAT) TO THE ENGINEER FOR ITS USE IN PREPARING THE PARTIAL CLEARANCE APPLICATIONS FOR THE OWNER.

5. COMPLETE AS-BUILT DRAWINGS THAT ARE FOUND TO BE SATISFACTORY AS A RESULT OF THE ENGINEER'S REVIEW WILL BE USED AS THE BASIS FOR THE FINAL PROJECT RECORD DRAWINGS PREPARED BY THE ENGINEER USING THE CONTRACTOR PROVIDED AS-BUILT DRAWINGS PLUS ENGINEER ADDED INFORMATION.

TRAFFIC CONTROL

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A MAINTENANCE OF TRAFFIC (M.O.T.) PLAN PRIOR TO CONSTRUCTION. THE M.O.T. PLAN SHALL SHOW ALL PROPOSED TRAFFIC CONTROL SIGNS, PAVEMENT MARKINGS, AND BARRICADES, AND SHALL DETAIL ALL PROPOSED CONSTRUCTION SEQUENCING. THE M.O.T. PLAN AND INSTALLED TRAFFIC CONTROL MEASURES SHALL BE APPROVED BY THE ENGINEER, OWNER, AND ROADWAY JURISDICTIONAL AGENCY PRIOR TO CONSTRUCTION. IN GENERAL, ROADWAY AND DRIVEWAY LANE CLOSURES ARE PROHIBITED DURING CONSTRUCTION UNLESS SPECIFICALLY DETAILED ON THESE PLANS. IN THE EVENT IT IS DETERMINED THAT ROADWAY AND DRIVEWAY LANE CLOSURES WILL BE ALLOWED, THE CLOSURES SHALL BE RESTRICTED TO THE HOURS BETWEEN 9:00 A.M. AND 4:00 P.M. UNLESS OTHERWISE AUTHORIZED IN THE APPROVED M.O.T.

2. ALL TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH FDOT INDEX NO. 600 AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL TRAFFIC CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED DURING CONSTRUCTION.

3. INSPECT TRAFFIC CONTROL DEVICES ON A DAILY BASIS TO ENSURE PLACEMENT OF BARRICADES AND FUNCTION OF LIGHTS IS MAINTAINED THROUGHOUT CONSTRUCTION.

4. CONTACT PROPERTY OWNERS AFFECTED BY CONSTRUCTION. COORDINATE TEMPORARY DRIVEWAY CLOSURES AND SEQUENCING. MAINTAIN ACCESS FOR ALL PROPERTY OWNERS DURING CONSTRUCTION.

5. WET UNSTABILIZED AREAS AS NECESSARY TO CONTROL DUST.

6. ADJUST TRAFFIC CONTROL DEVICES AS REQUIRED UNDER EMERGENCY CONDITIONS.

7. THE CONTRACTOR IS EXPECTED TO COORDINATE ITS ACTIVITIES WITH OTHER CONTRACTORS WHO MAY BE WORKING IN THE IMMEDIATE VICINITY.

8. WHEN WORK OCCURS WITHIN 15-FT OF ACTIVE ROAD TRAVEL LANES BUT NO CLOSER THAN 2-FT FROM THE EDGE OF PAVEMENT, SIGNAGE AND WARNING DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH FDOT INDEX NO. 600 AND 602.

9. TYPE I OR TYPE II BARRICADES AT 20-FT CENTERS SHALL BE PLACED AND MAINTAINED ALONG THE EDGE OF THE ROAD WHEREVER DROP-OFFS OR OTHER HAZARDS EXIST AND TO BLOCK ENTRANCE INTO COMPLETED OR PARTIALLY COMPLETED PAVEMENTS UNTIL SUCH PAVEMENTS ARE OPEN TO PUBLIC USE.

SITE PREPARATION

1. UNLESS OTHERWISE DIRECTED BY THE OWNER OR ENGINEER, THE CONTRACTOR IS EXPECTED TO CONTAIN ALL CONSTRUCTION ACTIVITIES WITHIN THE PROPERTY, RIGHT-OF-WAY, AND EASEMENTS AS INDICATED ON THE DRAWINGS. AT NO TIME SHALL THE CONTRACTOR DISTURB SURROUNDING PROPERTIES OR TRAVEL ON SURROUNDING PROPERTIES WITHOUT WRITTEN CONSENT FROM THE PROPERTY OWNER. ANY REPAIR OR RECONSTRUCTION OF DAMAGED AREAS IN SURROUNDING PROPERTIES SHALL BE REPAIRED BY THE CONTRACTOR ON AN IMMEDIATE BASIS. ALL COSTS FOR REPAIRS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO EXTRA COMPENSATION SHALL BE PROVIDED.

2. STAKE OUT THE CONSTRUCTION, ESTABLISH LINES AND LEVELS, TEMPORARY BENCH MARKS, BATTER BOARDS, CENTERLINES, BASELINES, AND REFERENCE POINTS FOR THE WORK, AND VERIFY ALL DIMENSIONS RELATING TO INTERCONNECTION WITH EXISTING FEATURES. REPORT ANY INCONSISTENCIES IN THE PROPOSED GRADES, LINES AND LEVELS, DIMENSIONS AND LOCATIONS TO THE ENGINEER BEFORE COMMENCING WORK.

3. PROTECT ALL TREES AND SHRUBS LOCATED OUTSIDE THE RIGHT-OF-WAY, EASEMENTS, AND OWNER SECURED PROPERTY, PARTICULARLY THOSE TREES AND SHRUBS LOCATED ADJACENT TO WORK AREAS.

4. WITHIN THE RIGHT-OF-WAY, EASEMENTS, AND OWNER SECURED PROPERTY, THE INTENT IS TO ALLOW TREES AND SHRUBS TO REMAIN IN ACCORDANCE WITH THE FOLLOWING SCHEDULE: NEW ROADWAY CONSTRUCTION - TREES AND SHRUBS TO REMAIN WHERE LOCATED MORE THAN 15 FEET FROM THE BACK OF CURB, OR OUTSIDE THE LIMITS OF EXCAVATION OR FILL AREAS, WHICHEVER IS FURTHER. UTILITY PIPELINE CONSTRUCTION - TREES AND SHRUBS TO REMAIN OUTSIDE A 15 FOOT WIDE PATH, CENTERED ON THE PIPELINE.

5. TREES TO REMAIN IN THE CONSTRUCTION AREA SHALL BE BOXED, FENCED OR OTHERWISE PROTECTED IN ACCORDANCE WITH DETAILS ON THE DRAWINGS. DO NOT PERMIT HEAVY EQUIPMENT OR STOCKPILES WITHIN BRANCH SPREAD

6. AREAS TO RECEIVE CLEARING AND GRUBBING SHALL INCLUDE ALL AREAS TO BE OCCUPIED BY THE PROPOSED IMPROVEMENTS, AREAS FOR FILL AND SITE GRADING, AND BORROW SITES. REMOVE TREES OUTSIDE OF THESE AREAS ONLY AS INDICATED ON THE DRAWINGS OR AS APPROVED IN WRITING BY THE ENGINEER.

7. CLEARING SHALL CONSIST OF REMOVING TREES AND BRUSH AND DISPOSAL OF OTHER MATERIALS THAT ENCROACH UPON OR OTHERWISE OBSTRUCT THE WORK.

8. EXERCISE EXTREME CARE DURING THE CLEARING AND GRUBBING OPERATIONS. DO NOT DAMAGE EXISTING STRUCTURES, PIPES OR UTILITIES.

9. GRUBBING SHALL CONSIST OF REMOVING AND DISPOSING OF STUMPS, ROOTS LARGER THAN 2" IN DIAMETER, AND MATTED ROOTS. REMOVE TO A DEPTH OF NOT LESS THAN 18" BELOW THE ORIGINAL SURFACE LEVEL OF THE GROUND.

10. ALL COMBUSTIBLE DEBRIS AND REFUSE FROM SITE PREPARATION OPERATIONS SHALL BE REMOVED TO LEGAL OFFSITE DISPOSAL AREAS.

DEWATERING

1. DESIGN AND PROVIDE A DEWATERING SYSTEM USING ACCEPTED AND PROFESSIONAL METHODS CONSISTENT WITH CURRENT INDUSTRY PRACTICE. PROVIDE A DEWATERING SYSTEM OF SUFFICIENT SIZE AND CAPACITY TO CONTROL GROUNDWATER IN A MANNER THAT PRESERVES STRENGTH OF FOUNDATION SOILS, DOES NOT CAUSE INSTABILITY OR RAVELING OF EXCAVATION SLOPES, AND DOES NOT RESULT IN DAMAGE TO EXISTING STRUCTURES. WHERE NECESSARY TO THESE PURPOSES, LOWER WATER LEVEL IN ADVANCE OF EXCAVATION, UTILIZING WELLS, WELLPOINTS, OR SIMILAR POSITIVE METHODS. MAINTAIN THE GROUNDWATER LEVEL TO A MINIMUM OF 2 FEET BELOW EXCAVATIONS. PROVIDE PIEZOMETERS IF DIRECTED BY THE ENGINEER TO DOCUMENT THE GROUNDWATER LEVEL IS BEING MAINTAINED.

2. CONTROL, BY ACCEPTABLE MEANS, ALL WATER REGARDLESS OF SOURCE AND BE FULLY RESPONSIBLE FOR DISPOSAL OF THE WATER. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY SUPPLEMENTAL MEASURES TO CONTROL SEEPAGE, GROUNDWATER, OR ARTESIAN HEAD.

3. DEWATERING DISCHARGE FROM THE SITE SHALL COMPLY WITH ALL NPDES GENERAL PERMIT REQUIREMENTS AND STATE WATER QUALITY STANDARDS. PROVIDE ALL TESTING AND PERMITTING REQUIRED AND COMPLY WITH ALL TREATMENT OR DISPOSAL METHODS REQUIRED TO MEET ALL LOCAL, STATE AND FEDERAL REQUIREMENTS.

4. OPEN PUMPING WITH SUMPS AND DITCHES SHALL BE ALLOWED, PROVIDED IT DOES NOT RESULT IN BOILS, LOSS OF FINES, SOFTENING OF THE GROUND, OR INSTABILITY OF SLOPES. SUMPS SHALL BE LOCATED OUTSIDE OF LOAD BEARING AREAS SO THE BEARING SURFACES WILL NOT BE DISTURBED. WATER CONTAINING SILT IN SUSPENSION SHALL NOT BE PUMPED INTO SEWER LINES OR ADJACENT STREAMS. DURING NORMAL PUMPING, AND UPON DEVELOPMENT OF WELL(S), LEVELS OF FINE SAND OR SILT IN THE DISCHARGE WATER SHALL NOT EXCEED 5 PPM.

5. IF DEWATERING EQUIPMENT NEEDED EXCEEDS ANY OF THE FOLLOWING: 1) 6" PUMP VOLUTE; 2) 100,000 GPD TOTAL 24 HOUR (1 DAY) DEWATERING, AND; 3) 1,000,000 GPD PUMP CAPACITY, THE CONTRACTOR SHALL BE REQUIRED TO PERMIT THE DEWATERING SYSTEM WITH THE WATER MANAGEMENT DISTRICT.

6. CONTINUOUSLY MAINTAIN EXCAVATIONS IN A DRY CONDITION WITH POSITIVE DEWATERING METHODS DURING PREPARATION OF SUBGRADE, INSTALLATION OF PIPE, AND CONSTRUCTION OF STRUCTURES UNTIL THE CRITICAL PERIOD OF CONSTRUCTION AND/OR BACKFILL IS COMPLETED TO PREVENT DAMAGE OF SUBGRADE SUPPORT, PIPING, STRUCTURE, SIDE SLOPES, OR ADJACENT FACILITIES FROM FLOTATION OR OTHER HYDROSTATIC PRESSURE IMBALANCE.

7. WHEN CONSTRUCTION IS COMPLETE, REMOVE ALL DEWATERING EQUIPMENT FROM THE SITE, INCLUDING WELLS AND RELATED TEMPORARY ELECTRICAL SERVICE.

GRADING

1. SMOOTH TRANSITIONS SHALL BE PROVIDED BETWEEN CONTOURS OR SPOT ELEVATIONS AS SHOWN ON THE PLANS TO ACCOMPLISH THE GRADING INTENT. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER FINAL GRADING HAS BEEN COMPLETED. CONTRACTOR SHALL NOTIFY OWNER AND ENGINEER PRIOR TO DEMOBILIZATION OF GRADING EQUIPMENT TO DETERMINE THAT THE GRADING INTENT HAS BEEN ACHIEVED.

2. ALL PROPOSED ELEVATIONS ON THE PLANS WITHIN PAVED AREAS ARE SHOWN AT PAVEMENT, UNLESS OTHERWISE NOTED.

3. ALL PAVING SURFACES IN INTERSECTIONS AND ADJACENT SECTIONS SHALL BE GRADED TO DRAIN POSITIVELY AND TO PROVIDE A SMOOTHLY TRANSITIONED DRIVING SURFACE FOR VEHICLES WITH NO SHARP BREAKS IN GRADE, AND NO UNUSUALLY STEEP OR REVERSE CROSS SLOPES. THE STANDARD CROWN MAY HAVE TO BE CHANGED IN ORDER TO DRAIN POSITIVELY IN THE AREA OF INTERSECTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH THE ABOVE AND THE ENGINEER SHALL BE CONSULTED SO THAT HE MAY MAKE ANY AND ALL REQUIRED INTERPRETATIONS OF THE PLANS OR GIVE SUPPLEMENTARY INSTRUCTIONS TO ACCOMPLISH THE INTENT OF THE PLANS.

4. UNIFORMLY SMOOTH GRADE THE SITE. DEPRESSIONS FROM SETTLEMENT SHALL BE FILLED AND COMPACTED. TOPS OF EMBANKMENTS AND BREAKS IN GRADE SHALL BE ROUNDED. FINISHED SURFACES SHALL BE REASONABLY SMOOTH, COMPACTED, FREE FROM IRREGULAR SURFACE CHANGES AND COMPARABLE TO THE SMOOTHNESS OBTAINED BY BLADE-GRADER OPERATIONS.

5. NEWLY GRADED AREAS SHALL BE PROTECTED FROM TRAFFIC AND EROSION. ALL SETTLEMENT OR WASHING AWAY THAT MAY OCCUR FROM ANY CAUSE PRIOR TO SEEDING OR ACCEPTANCE SHALL BE REPAIRED AND GRADES RE-ESTABLISHED TO THE REQUIRED ELEVATIONS AND SLOPES AT NO ADDITIONAL COST TO THE OWNER.

EXCAVATION, TRENCHING, AND FILL

1. THE CONTRACTOR SHALL RECOGNIZE AND ABIDE BY ALL OSHA EXCAVATION SAFETY STANDARDS, INCLUDING THE FLORIDA TRENCH SAFETY ACT (FS 553.60-553.64). ANY MATERIAL, CONSTRUCTION METHODS, OR MATERIAL COST TO COMPLY WITH THESE LAWS SHALL BE INCIDENTAL TO THE CONTRACT.

2. ROUGH EXCAVATE AND GRADE ANY PROPOSED STORMWATER PONDS AT THE START OF SITE GRADING ACTIVITIES. DIRECT SITE RUNOFF TO THE PONDS TO MINIMIZE RUNOFF TO OFFSITE AREAS.

3. POND CONSTRUCTION SHALL RESULT IN THE FINISHED POND HAVING SIDE SLOPES AND DIMENSIONS THAT ARE IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT THESE REQUIREMENTS HAVE BEEN MET. IF THE CONSTRUCTED SIDE SLOPES ARE STEEPER THAN THE REQUIRED SIDE SLOPES, OR THE POND VOLUME IS NOT WITHIN THREE (3) PERCENT OF THE DESIGN VOLUME, THE CONTRACTOR SHALL BE REQUIRED TO MAKE CORRECTIONS TO THE POND AT NO ADDITIONAL COST TO THE OWNER.

4. FIELD DENSITY TESTING FREQUENCIES: A) ONE TEST FOR EACH 10,000 SQUARE FEET OR FRACTION THEREOF PER LIFT OF GENERAL BACKFILLING, MINIMUM 2 TESTS EACH LAYER; B) ONE TEST FOR EACH 100 SQUARE FEET OR FRACTION THEREOF OF BACKFILL AROUND AND UNDER STRUCTURES; C) ONE TEST FOR EACH 300 LINEAL FEET OR FRACTION THEREOF PER LIFT OF GENERAL BACKFILLING IN THE PIPELINE TRENCH; D) ONE TEST PER LIFT PER EACH CHANGE IN TYPE OF FILL; E) ONE TEST PER 1000 SQUARE FEET OF PAVEMENT SUBGRADE, MINIMUM OF 2 TESTS.

5. IT IS INTENDED THAT PREVIOUSLY EXCAVATED MATERIALS CONFORMING TO THE FOLLOWING REQUIREMENTS BE UTILIZED WHEREVER POSSIBLE.

A. ACCEPTABLE MATERIALS: AASHTO M145 CLASSIFICATION A-1, A-3, A-2-4, A-2-6; ASTM D2487 CLASSIFICATION GW, GP, GM, SM, SW, SP; UNLESS OTHERWISE DISAPPROVED WITHIN THE SOIL AND SUBSURFACE INVESTIGATION REPORTS. NO MORE THAN 12% OF ACCEPTABLE MATERIALS SHALL PASS THE NUMBER 200 SIEVE.

B. UNACCEPTABLE MATERIALS: AASHTO M145 CLASSIFICATION A-2-5, A-2-7, A-4, A-5, A-6, A-7, A-8; ASTM D2487 CLASSIFICATION GC, SC, ML, MH, CL, CH, OL, OH, PT; UNLESS OTHERWISE APPROVED WITHIN THE SOIL AND SUBSURFACE INVESTIGATION REPORTS.

6. PROVIDE BARRIERS, WARNING LIGHTS AND OTHER PROTECTIVE DEVICES AT ALL EXCAVATIONS.

7. SIDEWALKS, ROADS, STREETS, AND PAVEMENTS SHALL NOT BE BLOCKED OR OBSTRUCTED BY EXCAVATED MATERIALS, EXCEPT AS AUTHORIZED BY THE ENGINEER, IN WHICH CASE ADEQUATE TEMPORARY PROVISIONS MUST BE MADE FOR SATISFACTORY TEMPORARY PASSAGE OF PEDESTRIANS, AND VEHICLES. MINIMIZE INCONVENIENCE TO PUBLIC TRAVEL OR TO TENANTS OCCUPYING ADJOINING PROPERTY.

8. FURNISH, INSTALL, AND MAINTAIN, WITHOUT ADDITIONAL COMPENSATION, SHEETING, BRACING, AND SHORING SUPPORT REQUIRED TO KEEP EXCAVATIONS WITHIN THE PROPERTY OR EASEMENTS PROVIDED, TO SUPPORT THE SIDES OF THE EXCAVATION, AND TO PREVENT ANY MOVEMENT WHICH MAY DAMAGE ADJACENT PAVEMENTS OR STRUCTURES, DAMAGE OR DELAY THE WORK, OR ENDANGER LIFE AND HEALTH. VOIDS OUTSIDE THE SUPPORTS SHALL BE IMMEDIATELY FILLED AND COMPACTED.

9. SHEETING, SHORING, AND BRACING USED FOR THE SUPPORT OF EXCAVATIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED BY THE STATE OF FLORIDA.

10. ALL EXCAVATIONS SHALL BE MADE BY OPEN CUT UNLESS OTHERWISE INDICATED. SLOPE SIDES OF TRENCHES IN ACCORDANCE WITH OSHA REQUIREMENTS AND THE RECOMMENDATIONS CONTAINED WITHIN THE PROJECT GEOTECHNICAL REPORT.

11. EXCAVATE TRENCHES TO DEPTH INDICATED OR REQUIRED FOR INDICATED FLOW LINES AND INVERT ELEVATIONS. OVER EXCAVATE TRENCHES A MINIMUM OF 2 FEET WHERE EXCAVATIONS OCCUR WITHIN UNSUITABLE SOILS, AND REPLACE OVER EXCAVATED MATERIAL WITH SUITABLE SOILS.

12. TRENCH BOTTOMS AND THE BOTTOMS OF ALL STRUCTURES SHALL BE KEPT DRY, COMPACTED, AND STABLE TO A DEPTH TWO FEET BELOW THE BOTTOM OF THE TRENCH OR STRUCTURE.

13. ALL BEDDING, FILL, AND BACKFILL MATERIAL SHALL BE SUITABLE SOILS OR FLOWABLE FILL. WHERE TRENCH OR EXCAVATION IS WITHIN THE INFLUENCE AREA OF ROADWAYS, STRUCTURES, FOUNDATIONS, OR SLABS, PLACE BACKFILL IN LAYERS OF 8 INCH LOOSE DEPTH. IN ALL OTHER AREAS, PLACE FILL AND BACKFILL IN LAYERS OF 12 INCH LOOSE DEPTH.

14. MINIMUM DENSITY REQUIREMENT (ASTM D1557 OR AASHTO T180): BACKFILL AND FILL UNDER AND WITHIN THE INFLUENCE AREA OF ROADWAYS, STRUCTURES, SLABS, FOUNDATIONS = 98 PERCENT; BACKFILL AND FILL PLACED WITHIN PUBLIC ROAD RIGHT-OF-WAY AND UTILITY EASEMENTS = 95 PERCENT; BACKFILL AND FILL PLACED WITHIN POND AND ROAD EMBANKMENT = 95 PERCENT; BACKFILL AND FILL PLACED IN ALL OTHER AREAS = 90 PERCENT.

RIPRAP

1. ALL RIPRAP CONSTRUCTION SHALL MEET THE REQUIREMENTS OF SECTION 530 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

UTILITY SEPARATION REQUIREMENTS

1. THE HORIZONTAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWER, STORM SEWER, WASTEWATER FORCE MAINS, STORMWATER FORCE MAINS, RECLAIMED WATER MAINS AND ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

A. THE OUTSIDE OF WATER MAINS SHALL BE A MINIMUM OF FIVE FEET FROM THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, VACUUM TYPE SANITARY SEWER AND RECLAIMED WATER MAIN.

B. THE OUTSIDE OF WATER MAINS SHALL BE A MINIMUM OF TEN FEET FROM THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY SANITARY SEWER AND WASTEWATER FORCE MAIN. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN THE OUTSIDE OF WATER MAINS AND THE OUTSIDE OF GRAVITY SANITARY SEWERS CAN BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS AT LEAST EIGHTEEN INCHES ABOVE THE TOP OF THE SEWER.

C. THE OUTSIDE OF WATER MAINS SHALL BE A MINIMUM OF TEN FEET FROM ALL PARTS OF ANY EXISTING OR PROPOSED ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM SUCH AS SEPTIC TANKS, DRAINFIELDS, AND GREASE TRAPS. ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS DO NOT INCLUDE PACKAGE SEWAGE TREATMENT FACILITIES AND PUBLIC WASTEWATER TREATMENT FACILITIES.

2. THE VERTICAL SEPARATION BETWEEN WATER MAINS AND SANITARY AND STORM SEWER, WASTEWATER OR STORMWATER FORCE MAINS, AND RECLAIMED WATER MAINS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

A. WHEREVER POSSIBLE, WATER MAINS SHALL CROSS OVER EXISTING OR PROPOSED GRAVITY SANITARY SEWER, VACUUM TYPE SANITARY SEWER, AND STORM SEWER, SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE OUTSIDE OF THE SEWER. WHERE IT IS NOT POSSIBLE FOR THE WATER MAIN TO CROSS OVER EXISTING OR PROPOSED GRAVITY SANITARY SEWER, VACUUM TYPE SANITARY SEWER, AND STORM SEWER, THEN THE WATER MAIN CAN CROSS UNDER THESE TYPES OF PIPELINE SYSTEMS PROVIDED THE OUTSIDE OF THE WATER MAIN IS AT LEAST 18 INCHES BELOW THE OUTSIDE OF THE PIPELINE. AT THE CROSSING, THE PROPOSED PIPE JOINTS SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST FIVE FEET FROM VACUUM TYPE SANITARY SEWER OR STORM SEWER JOINTS, AND AT LEAST TEN FEET FROM GRAVITY SANITARY SEWER JOINTS.

B. WHEREVER POSSIBLE, WATER MAINS SHALL CROSS OVER EXISTING OR PROPOSED RECLAIMED WATER MAINS, WASTEWATER FORCE MAINS AND STORMWATER FORCE MAINS. WHETHER THE WATER MAIN CROSSES OVER OR UNDER THESE TYPES OF PIPELINE SYSTEMS, THE OUTSIDE OF THE WATER MAIN SHALL BE AT LEAST 18 INCHES FROM THE OUTSIDE OF THE EXISTING OR PROPOSED RECLAIMED WATER MAIN, WASTEWATER FORCE MAIN AND STORMWATER FORCE MAIN. AT THE CROSSING, THE PROPOSED PIPE JOINTS SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST FIVE FEET FROM RECLAIMED WATER MAIN JOINTS AND STORMWATER FORCE MAIN JOINTS, AND AT LEAST TEN FEET FROM THE JOINTS OF WASTEWATER FORCE MAINS.

3. NO WATER MAIN SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SANITARY SEWER MANHOLE.

4. NEW OR RELOCATED FIRE HYDRANTS SHALL BE LOCATED SUCH THAT THE UNDERGROUND DRAIN (WEEP HOLE) IS AT LEAST:

A. FIVE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER MAIN, OR VACUUM TYPE SANITARY SEWER.

B. TEN FEET FROM ANY EXISTING OR PROPOSED GRAVITY SANITARY SEWER AND WASTEWATER FORCE MAIN.

C. TEN FEET FROM ANY ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM SUCH AS SEPTIC TANKS, DRAINFIELDS, AND GREASE TRAPS. ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS DO NOT INCLUDE PACKAGE SEWAGE TREATMENT FACILITIES AND PUBLIC WASTEWATER TREATMENT FACILITIES.

WATER AND RECLAIMED WATER DISTRIBUTION SYSTEMS

1. THE ENTITY THAT WILL OPERATE AND MAINTAIN THE WATER AND RECLAIMED WATER SYSTEMS SHOWN ON THESE PLANS IS MANATEE COUNTY. THE CONTRACTOR SHALL MEET ALL THE REQUIREMENTS OF MANATEE COUNTY.

2. INSTALL ALL WATER AND RECLAIMED MAINS AT A MINIMUM 36 INCHES OF COVER.

3. BURIED DUCTILE IRON PIPE SHALL COMPLY WITH THE FOLLOWING PRESSURE CLASS (PC) DESIGNATIONS UNLESS OTHERWISE INDICATED ON THE DRAWINGS: A) 12" DIAMETER AND SMALLER = PC 350; B) 14" THROUGH 24" DIAMETER = PC 250; C) 30" THROUGH 64" DIAMETER = PC 200.

4. DUCTILE IRON PIPE AND FITTINGS WITHIN 10 FEET OF GAS MAINS SHALL HAVE AN 8-MIL POLYETHYLENE WRAP IN ACCORDANCE WITH ANSI/AWWA C105/A21.5.

5. PVC PIPE SHALL BE NATIONAL SANITATION FEDERATION (NSF) APPROVED. PIPE SHALL HAVE MARKINGS ON EACH SECTION SHOWING CONFORMANCE TO THE ABOVE SPECIFICATIONS. JOINTS SHALL BE RUBBER GASKETED CONFORMING TO AWWA C900 OR C905 THE BELL SHALL BE INTEGRAL WITH THE PIPE AND OF EQUAL OR GREATER PRESSURE RATING. THE BELL OF PIPE AND FITTINGS USING PUSH-ON JOINTS SHALL HAVE AN INTEGRAL GROOVE TO RETAIN THE GASKET IN PLACE.

6. ALL FITTINGS SHALL BE MANUFACTURED OF DUCTILE IRON, CONFORMING TO ANSI/AWWA C110/A21.10 OR ANSI/AWWA C153/A21.53. ALL FULL BODY (C110/A21.10) FITTINGS SHALL BE PRESSURE RATED TO 250 PSI, MINIMUM. ALL COMPACT FITTINGS (C153/A21.53) SHALL BE PRESSURE RATED TO 350 PSI, MINIMUM.

7. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE LINED AND COATED. INTERIOR LINING SHALL BE STANDARD THICKNESS CEMENT MORTAR LINING PER ANSI/AWWA C104/A21.4. EXTERIOR COATING FOR BURIED PIPE AND FITTINGS SHALL BE A PETROLEUM ASPHALTIC COATING IN ACCORDANCE WITH ANSI/AWWA C110/A21.10. EXTERIOR COATING OF EXPOSED PIPE AND FITTINGS SHALL BE FACTORY APPLIED RUST INHIBITING EPOXY PRIMER, MINIMUM 3 MILS DRY FILM THICKNESS. AFTER INSTALLATION, EXTERIOR SURFACES SHALL BE PAINTED WITH A TWO COAT SYSTEM. THE FIRST COAT (INTERMEDIATE COAT) SHALL BE 4.0-10.0 MIL DFT TNEMEC COLOR HI-BUILD EPOXOLINE II SERIES N69 OR APPROVED EQUAL, AND THE FINAL COAT SHALL BE 2.0-3.0 MIL DFT TNEMEC ENDURASHIELD SERIES 73 OR APPROVED EQUAL. THE FINAL COAT PAINT COLOR SHALL BE AS SELECTED BY THE LOCAL UTILITY.

8. MECHANICAL AND PUSH ON JOINTS FOR DUCTILE IRON PIPE AND FITTINGS SHALL BE RUBBER GASKETED, CONFORMING TO ANSI/AWWA C111/A21.11. LUBRICANTS OTHER THAN THAT FURNISHED BY THE PIPE MANUFACTURER WITH THE PIPE SHALL NOT BE USED.

9. RESTRAINED JOINTS FOR DUCTILE IRON PIPE BELL JOINTS SHALL BE AMERICAN FAST GRIP GASKET, MCWANE SURE GRIP 350 GASKET, U.S. PIPE FIELD LOK 350 GASKET, OR EBAA IRON MEGA LUG SERIES 1100HD. RESTRAINED JOINTS FOR DUCTILE IRON PIPE AND FITTING MECHANICAL JOINTS SHALL BE EBAA IRON MEGA LUG SERIES 1100, STAR GRIP SERIES 3000, OR TYLER UNION TUF-GRIP SERIES TLD. LOCKING BELL JOINT RESTRAINT SHALL BE AMERICAN FLEX RING JOINT, AMERICAN LOK-RING JOINT, OR U.S. PIPE TR-FLEX. RESTRAINED JOINTS FOR PVC PIPE MECHANICAL JOINTS SHALL BE TYLER UNION SERIES 2000 TUF GRIP TLP, JCM SUR-GRIP BELL RESTRAINER, FORD UNI-FLANGE SERIES 1500 CIRCLE LOCK, OR EBAA IRON MEGA LUG SERIES 2000PV. RESTRAINED JOINTS FOR PVC PIPE PUSH ON JOINTS SHALL BE EBAA IRON MEGA LUG SERIES 1500 OR SERIES 1600 (C900 PVC), SERIES 2800 (C905 PVC), FORD UNI-FLANGE SERIES 1390, OR SMITH-BLAIR BELL-LOK SERIES 165. PIPE JOINTS SHALL BE RESTRAINED UPSTREAM AND DOWNSTREAM OF FITTINGS IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS OR THE TABLE SHOWN IN THE DRAWINGS, WHICHEVER IS GREATER.

10. POLYETHYLENE PIPE AND TUBING SHALL BE COLOR CODED BLUE (POTABLE WATER) OR PURPLE (RECLAIMED WATER). PIPE AND FITTINGS SHALL BE NSF APPROVED FOR THE USAGE TO WHICH THEY ARE TO BE APPLIED. JOINTS IN SDR-PR PE PIPE SHALL BE BUTT HEAT FUSION OR SOCKET HEAT FUSION TYPE. FITTINGS SHALL BE MANUFACTURED OF THE SAME MATERIAL AS THE PIPE AND SHALL BE OF THE SAME SDR OR LESS. PROVIDE ADAPTERS AS REQUIRED TO JOIN PE PIPE TO PIPE, FITTINGS AND EQUIPMENT OF OTHER MATERIALS.

11. SERVICE SADDLES SHALL MEET THE REQUIREMENTS OF AWWA C800 AND SHALL CONSIST OF EPOXY COATED DUCTILE IRON BODIES IN ACCORDANCE WITH ASTM A536, WITH DOUBLE STAINLESS STEEL STRAPS, BOLTS, WASHERS AND NUTS. STAINLESS STEEL SHALL BE TYPE 304, AND NUTS ARE TO BE TEFLON COATED. THE DUCTILE IRON BODY IS TO BE FUSION BONDED NYLON COATED, MINIMUM THICKNESS 12 MILS, OUTLET OF SADDLE IS TO HAVE NPT THREADS. SERVICE SADDLES SHALL BE MANUFACTURED BY FORD, MUELLER, OR SMITH-BLAIR.

12. ALL SERVICES SHALL INCLUDE THE FOLLOWING: CURB STOPS, UNIONS AS REQUIRED, CORPORATION STOPS. CONFORMANCE WITH AWWA C800 AND C901 IS REQUIRED. THE CONTRACTOR SHALL CUT "W" IN THE TOP CURB OF EACH WATER SERVICE AND A "V" AT ALL VALVE LOCATIONS. CUT W'S AND V'S SHALL BE HIGHLIGHTED WITH BLUE PAINT.

13. UNLESS OTHERWISE NOTED IN THE PLANS, THE UTILITY COMPANY SHALL PROVIDE AND INSTALL WATER METERS AND RECLAIMED WATER METERS. CONTRACTOR SHALL CONSTRUCT WATER SERVICE AND RECLAIMED WATER SERVICE TO THE CORPORATION STOP.

14. UNLESS OTHERWISE INDICATED OR SPECIFIED, ALL VALVES TWO INCHES AND SMALLER SHALL BE ALL BRASS OR BRONZE; VALVES OVER TWO INCHES SHALL BE IRON BODY, FULLY BRONZE OR BRONZE MOUNTED.

15. VALVES 4 INCHES AND LARGER SHALL BE LINED AND COATED. BURIED AND EXPOSED VALVES SHALL BE COATED INSIDE AND OUT WITH A RUST INHIBITING EPOXY PRIMER, FOLLOWED BY AN EPOXY COATING MEETING THE REQUIREMENTS OF AWWA C550, APPLIED AT THE FACTORY. THE INTERIOR OF VALVES WITH A CAST IRON OR DUCTILE IRON BODY SHALL BE COATED WITH AN EPOXY PROTECTIVE COATING MEETING NSF INTERNATIONAL STANDARD 61 AND AWWA C550. AFTER INSTALLATION, EXTERIOR SURFACES SHALL BE PAINTED WITH A TWO COAT SYSTEM. THE FIRST COAT (INTERMEDIATE COAT) SHALL BE 4.0-10.0 MIL DFT TNEMEC COLOR HI-BUILD EPOXOLINE II SERIES N69 OR APPROVED EQUAL, AND THE FINAL COAT SHALL BE 2.0-3.0 MIL DFT TNEMEC ENDURASHIELD SERIES 73 OR APPROVED EQUAL. THE FINAL COAT PAINT COLOR SHALL BE AS SELECTED BY THE LOCAL UTILITY.

16. ALL VALVES 12" AND SMALLER SHALL BE GATE VALVES UNLESS OTHERWISE INDICATED ON THE DRAWINGS. GATE VALVES 3 INCHES TO 12 INCHES SHALL CONFORM TO AWWA C509 OR AWWA C515. THE VALVES SHALL BE IRON BODY, CAST IRON FULLY ENCAPSULATED MOLDED RUBBER WEDGE COMPLYING WITH ASTM D2000, NON-RISING STEM WITH O-RING SEALS. VALVES SHALL OPEN COUNTERCLOCKWISE.

17. TAPPING SLEEVES ARE TO BE 18-8 TYPE 304 STAINLESS STEEL AND STAINLESS STEEL OUTLET, AS MANUFACTURED BY JCM OR APPROVED EQUAL. TAPPING VALVES SHALL BE RESILIENT SEATED GATE VALVES AND SHALL CONFORM TO THE REQUIREMENTS OF AWWA C509. TAPPING VALVES SHALL BE AMERICAN FLOW CONTROL SERIES 2500, CLOW SERIES F-6100, OR MUELLER SERIES A2361.

18. VALVES 14" AND LARGER SHALL BE BUTTERFLY VALVES. BUTTERFLY VALVES SHALL MEET OR EXCEED THE DESIGN STRENGTH, TESTING AND PERFORMANCE REQUIREMENTS OF AWWA C504, CLASS 150. VALVE BODY SHALL BE MECHANICAL JOINT END TYPE VALVE CONSTRUCTED OF CAST IRON OR DUCTILE IRON. DISC SHALL BE ONE PIECE CAST DESIGN WITH NO EXTERNAL RIBS TRANSVERSE TO FLOW. DISC SHALL BE CAST IRON OR DUCTILE IRON. THE RESILIENT SEAT SHALL MATE WITH A 304 OR 316 STAINLESS STEEL SURFACE.

19. VALVE SEATS SHALL BE MECHANICALLY RETAINED, AND MAY BE INSTALLED ON EITHER THE BODY OR DISC. O-RING SEATS ON VALVE DISCS ARE UNACCEPTABLE. SEATS FOR VALVES 14" DIAMETER AND LARGER SHALL BE FULLY FIELD REPLACEABLE WITHOUT THE USE OF SPECIAL TOOLS. OPERATORS OF THE ENCLOSED TRAVELING-NUT TYPE SHALL BE PROVIDED UNLESS OTHERWISE INDICATED.

20. ALL BURIED VALVES SHALL BE PROVIDED WITH ADJUSTABLE VALVE BOXES APPROXIMATELY 5 INCHES IN DIAMETER WITH A MINIMUM THICKNESS OF 3/16 INCH CAST IRON. BOXES SHALL BE OF SUFFICIENT LENGTH TO OPERATE ALL VALVES BURIED IN THE GROUND, CONSISTING OF BASE, CENTER SECTION, AND TOP SECTION WITH COVER. VALVE BOXES LOCATED IN UNPAVED AREAS SHALL BE SLIP TYPE DESIGN TO PERMIT MOVEMENT OF THE TOP SECTION WITHOUT TRANSMITTING FORCES ONTO THE VALVE BODY. VALVE BOXES CAST INTO CONCRETE OR ASPHALT SURFACING SHALL HAVE BRASS COVERS. ALL VALVE BOX COVERS SHALL BE INTERNALLY CHAINED TO VALVE BOXES WITH AN APPROXIMATELY 18 INCH GALVANIZED CHAIN. VALVE BOX COVERS SHALL BE CAST WITH THE INSCRIPTION "WATER" OR "RECLAIMED WATER".

21. PVC PIPES SHALL BE COLOR CODED BLUE (WATER MAINS) OR PURPLE (RECLAIMED WATER MAINS) AND STENCILED (0.75-INCH LETTERING ON THE PIPE IN AT LEAST THREE AREAS PER PIPE SECTION) "POTABLE WATER MAIN" OR "RECALIMED WATER MAIN" AS APPLICABLE.

22. INSTALL IDENTIFICATION TAPE ALONG ALL DUCTILE IRON PIPE AND PVC PIPE, MINIMUM THICKNESS 4 MILS, WIDTH 6 INCHES, LETTER SIZE 1 INCH. APPLY TAPE TO SURFACE OF PIPE, CONTINUOUSLY EXTENDING FROM JOINT TO JOINT. TAPE COLOR AND LETTERING SHALL BE BLACK PRINTING ON BLUE BACKGROUND (WATER MAINS), BLACK PRINTING ON PURPLE BACKGROUND (RECLAIMED WATER MAINS). PLACE TAPE AS FOLLOWS: 2" - 8" PIPE - CENTER ALONG TOP HALF OF PIPE; 10" - 18" PIPE - PLACE ALONG BOTH SIDES OF THE TOP HALF OF PIPE; 20" PIPE AND LARGER - PLACE ON BOTH SIDES OF TOP HALF OF PIPE WITH A THIRD STRIP CENTERED ALONG TOP HALF OF PIPE.

23. INSTALL WARNING TAPE ALONG ALL PIPELINES, PLACED 2 FEET ABOVE PIPE. TAPE SHALL BE 6-INCH WIDE VINYL CONTINUOUS TAPE. TAPE SHALL BE COLORED BLUE (WATER MAINS) OR PURPLE (RECLAIMED WATER MAINS) WITH BLACK LETTERING, CODED AND WORDED "CAUTION: WATER MAIN BURIED BELOW", OR "CAUTION: RECLAIMED WATER MAIN BURIED BELOW", AS APPLICABLE.

24. INSTALL LOCATING WIRE ALONG ALL PVC PIPELINES. WIRE SHALL BE COLOR-CODED 10 GAUGE CONTINUOUS INSULATED WIRE. COLOR CODING SHALL BE SIMILAR TO WARNING TAPE COLORS. INSTALL LOCATOR WIRE ALONG ALL PRESSURIZED PIPELINES 2" AND LARGER. LOOP WIRE INTO ALL VALVE BOXES. LOOPING TO OCCUR EVERY 500 FEET MINIMUM. WHERE THERE ARE NO VALVE BOXES TO ALLOW LOOPING, PROVIDE ACCESS BOXES PER CITY REQUIREMENTS. CHECK WIRE FOR ELECTRICAL CONTINUITY.

25. ALL CHANGES IN DIRECTION SHALL BE MADE WITH FITTINGS OR APPROVED JOINT DEFLECTION. BENDING OF PIPE, EXCEPT COPPER AND POLYETHYLENE, IS PROHIBITED. JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURER'S RECOMMENDED MAXIMUM DEFLECTION.

26. TEST PROCEDURES SHALL BE APPROVED BY THE ENGINEER. ALL TESTS SHALL BE MADE IN THE PRESENCE OF THE ENGINEER AND UTILITY. NOTIFY THE ENGINEER AND THE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY WORK IS TO BE INSPECTED OR TESTED.

27. PROVIDE ALL EQUIPMENT FOR TESTING. INCREMENTS ON GAGES USED FOR LOW PRESSURE AIR TESTING SHALL BE OF SCALED TO THE NEAREST 0.1 PSI. GAGES, PUMPS, AND HOSES SHALL BE IN GOOD WORKING ORDER WITH NO NOTICEABLE LEAKS.

28. ALL SERVICE LINES SHALL BE COMPLETED PRIOR TO TESTING, AND ARE SUBJECT TO THE SAME TESTING REQUIREMENTS AS THE MAIN LINE.

29. THE SEQUENCE OF TESTING AND DISINFECTION SHALL BE AS FOLLOWS: 1) CONDUCT PRESSURE AND LEAKAGE TESTING; 2) PERFORM FLUSHING PER UTILITY REQUIREMENTS AND AWWA C651; 3) DISINFECT THE WATER MAIN, INCLUDING VALVES AND FITTINGS; AND 4) DECHLORINATE AND FLUSH AFTER DISINFECTION.

30. APPLY HYDROSTATIC TEST PRESSURE OF 150 PSI (WATER MAINS), 200 PSI (FIRE MAINS), OR 150 PSI (RECLAIMED WATER MAINS) FOR 10 MINUTES AND FOR SUCH ADDITIONAL PERIOD NECESSARY FOR THE ENGINEER TO COMPLETE THE INSPECTION OF THE LINE UNDER TEST. DO NOT EXCEED PIPE MANUFACTURER'S SUGGESTED TIME DURATION AT THE TEST PRESSURE. IF DEFECTS ARE NOTED, REPAIRS SHALL BE MADE AND THE TEST REPEATED UNTIL ALL PARTS OF THE LINE WITHSTAND THE TEST PRESSURE.

31. APPLY LEAKAGE TEST PRESSURE OF 150 PSI (WATER MAINS), 200 PSI (FIRE MAINS) OR 150 PSI (RECLAIMED WATER MAINS). MAINTAIN PRESSURE AT A MAXIMUM VARIATION OF 5% DURING THE ENTIRE LEAKAGE TEST. THE DURATION OF THE LEAKAGE TEST SHALL BE TWO HOURS MINIMUM, AND FOR SUCH ADDITIONAL TIME NECESSARY FOR THE ENGINEER TO COMPLETE INSPECTION OF THE SECTION OF LINE UNDER TEST. LEAKAGE MEASUREMENTS SHALL NOT BE STARTED UNTIL A CONSTANT TEST PRESSURE HAS BEEN ESTABLISHED. THE LINE LEAKAGE SHALL BE MEASURED BY MEANS OF A WATER METER INSTALLED ON THE SUPPLY SIDE OF THE PRESSURE PUMP.

32. NO LEAKAGE IS ALLOWED IN EXPOSED PIPING, BURIED PIPING WITH FLANGED, THREADED, OR WELDED JOINTS OR BURIED NON-POTABLE PIPING IN CONFLICT WITH POTABLE WATER LINES.

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No.	Date	Revision
1	03/18/21	60% SUBMITTAL
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Designed: R. Smith
Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021

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GENERAL NOTES

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

J:\M13112_Kingfish_Boat_Ramp\Civil\DWG_Current_Plan_Set\Working\M13112-C0.2-C0.3 GEN NOTES.dwg, 9/27/2021 10:55:36 AM, D'Angelo, Matthew, _cph - Standard.stb

33. TESTED SECTIONS OF BURIED PIPING WITH SLIP-TYPE OR MECHANICAL JOINTS WILL NOT BE ACCEPTED IF IT HAS A LEAKAGE RATE IN EXCESS OF THAT RATE DETERMINED BY THE FORMULA L = SDP/148000 WHERE L = MAXIMUM PERMISSIBLE LEAKAGE RATE, IN GALLONS PER HOUR, THROUGHOUT THE ENTIRE LENGTH OF LINE BEING TESTED; S = LENGTH OF LINE TESTED (IN FEET); D = NOMINAL INTERNAL DIAMETER (IN INCHES) OF THE PIPE; AND P = THE SQUARE ROOT OF THE ACTUAL PRESSURE IN PSIG ON ALL JOINTS IN THE TESTED PORTION OF THE LINE. THIS ACTUAL PRESSURE SHALL BE DETERMINED BY FINDING THE DIFFERENCE BETWEEN THE AVERAGE ELEVATION OF ALL TESTED PIPE JOINTS AND THE ELEVATION OF THE PRESSURE GAUGE AND ADDING THE DIFFERENCE IN ELEVATION HEAD TO THE AUTHORIZED TEST PRESSURE.

34. ALL APPARENT LEAKS DISCOVERED WITHIN ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER SHALL BE LOCATED AND REPAIRED BY CONTRACTOR, REGARDLESS OF THE TOTAL LINE LEAKAGE RATE.

35. PRIOR TO DISINFECTION, CONDUCT FULL DIAMETER FLUSHING OF PIPELINE IN SECTIONS IN ORDER TO REMOVE ANY SOLIDS OR CONTAMINATED MATERIAL THAT MAY HAVE BECOME LODGED IN THE PIPE.

36. OBTAIN A MINIMUM FLUSHING VELOCITY OF 2.5 FEET PER SECOND PER AWWA C651.

37. ALL TAPS REQUIRED FOR FLUSHING AND THE TEMPORARY OR PERMANENT RELEASE OF AIR AS NEEDED FOR FLUSHING SHALL BE PROVIDED BY THE CONTRACTOR.

38. DISINFECT ALL POTABLE WATER LINES, FIRE LINES, VALVES, FITTINGS, HYDRANTS. THE WATER MAIN DISINFECTION AND BACTERIOLOGICAL SAMPLING AND METHODS OF DISINFECTION FOR ALL WATER CONTAINMENT DEVICES AND PIPING SYSTEMS SHALL CONFORM TO AWWA C651. THE DISCHARGE LOCATIONS FOR THE CHLORINATED WATER SHALL BE APPROVED BY THE OWNER. NEUTRALIZE THE CHLORINE RESIDUAL BY MEANS OF A REDUCING AGENT IN ACCORDANCE WITH AWWA C651.

39. ALL DISINFECTION WORK SHALL BE ACCEPTABLE TO THE STATE HEALTH AUTHORITY. IF ANY REQUIREMENTS OF THIS SECTION ARE IN CONFLICT WITH REQUIREMENTS OF THE AUTHORITY FOR DISINFECTION, THOSE OF THE AUTHORITY SHALL GOVERN. ALL BACTERIOLOGICAL TESTING SHALL BE PERFORMED BY A STATE CERTIFIED LABORATORY CONTRACTED BY THE CONTRACTOR. PROPER CHAIN OF CUSTODY PROCEDURES MUST BE FOLLOWED AND SAMPLES SHALL ONLY BE COLLECTED BY CERTIFIED LABORATORY PERSONNEL. COPIES OF ALL TESTING RESULTS AND ALL RELATED CORRESPONDENCE FROM THE TESTING LAB SHALL BE SUBMITTED TO THE OWNER, UTILITY, AND ENGINEER.

SANITARY SEWER SYSTEMS

1. THE ENTITY THAT WILL OPERATE AND MAINTAIN THE SEWER SYSTEM SHOWN ON THESE PLANS IS MANATEE COUNTY. THE CONTRACTOR SHALL MEET ALL THE REQUIREMENTS OF MANATEE COUNTY.

2. INSTALL ALL SEWER MAINS AT A MINIMUM 36 INCHES OF COVER.

3. JOINTS SHALL MEET THE REQUIREMENTS OF ASTM D3212 USING RUBBER GASKETS CONFORMING TO ASTM F477.

4. FITTINGS SHALL CONFORM TO THE SAME REQUIREMENTS AS THE PIPE. PROVIDE ADAPTERS AS REQUIRED TO JOIN PVC PIPE TO PIPE, FITTINGS AND EQUIPMENT OF OTHER MATERIALS. SOLVENT CEMENT SHALL BE AS RECOMMENDED BY THE PIPE MANUFACTURER.

5. SEWER PIPE SHALL BE COLOR CODED GREEN, STENCILED "SEWER LINE" (2" LETTERING ON TWO SIDES OF THE PIPE IN AT LEAST THREE AREAS PER PIPE SECTION).

6. INSTALL ADHESIVE IDENTIFICATION TAPE ALONG PIPELINE. TAPE SHALL BE MINIMUM THICKNESS 4 MILS, WIDTH 6 INCHES, LETTER SIZE 1 INCH. TAPE COLOR AND LETTERING SHALL BE "SEWER LINE", BLACK PRINTING ON GREEN BACKGROUND. PLACE TAPE AS FOLLOWS: 2" - 8" PIPE - CENTER ALONG TOP HALF OF PIPE; 10" - 18" PIPE - PLACE ALONG BOTH SIDES OF THE TOP HALF OF PIPE; 20" PIPE AND LARGER - PLACE ON BOTH SIDES OF TOP HALF OF PIPE WITH A THIRD STRIP CENTERED ALONG TOP HALF OF PIPE.

7. INSTALL WARNING TAPE ALONG ALL SEWER PIPELINES. TAPE SHALL BE 6-INCH WIDE VINYL CONTINUOUS TAPE, COLORED GREEN WITH BLACK LETTERING CODED AND WORDED "CAUTION: SEWER BURIED BELOW". INSTALL ALONG PIPELINE, 2 FEET ABOVE PIPE, MINIMUM OF 1 FOOT BELOW GRADE.

8. CONNECTIONS TO EXISTING SEWER SHALL BE CONDUCTED IN SUCH A MANNER THAT THE EXISTING SEWER REMAINS IN OPERATION. PROVIDE BY PASS PUMPING OF EXISTING FLOWS OR COLLECT AND LEGALLY DISPOSE OF EXISTING SEWER FLOW AS NEEDED TO ACCOMMODATE CONSTRUCTION WHILE KEEPING EXISTING SEWER IN SERVICE.

9. PRIOR TO INSPECTIONS AND TESTING, CLEAN ALL INSTALLED LINES AND MANHOLES. TEST PROCEDURES SHALL BE APPROVED BY THE ENGINEER. ALL TESTS SHALL BE MADE IN THE PRESENCE OF THE ENGINEER AND UTILITY. NOTIFY THE ENGINEER AND THE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY WORK IS TO BE INSPECTED OR TESTED.

10. PROVIDE ALL EQUIPMENT FOR TESTING. INCREMENTS ON GAGES USED FOR LOW PRESSURE AIR TESTING SHALL BE OF SCALED TO THE NEAREST 0.1 PSI. GAGES, PUMPS, AND HOSES SHALL BE IN GOOD WORKING ORDER WITH NO NOTICEABLE LEAKS.

11. ALL SERVICE LATERALS SHALL BE COMPLETED PRIOR TO TESTING, AND ARE SUBJECT TO THE SAME TESTING REQUIREMENTS AS THE MAIN LINE.

12. PROVIDE LIGHT SOURCE AND MIRRORS FOR LAMPING OF SEWER. ANY SEWER IN WHICH THE DIRECT LIGHT OF A LAMP CANNOT BE VIEWED IN EITHER DIRECTION, FULL CIRCLE, BETWEEN ADJACENT MANHOLES SHALL BE CONSIDERED UNSATISFACTORY, UNLESS THE LINE IS DESIGNED WITH HORIZONTAL DEFLECTIONS, AND SHALL BE REPAIRED BY THE CONTRACTOR WITHOUT ADDITIONAL COMPENSATION.

13. CONDUCT LOW PRESSURE AIR TESTING (4.0 PSI INITIAL PRESSURE) OF INSTALLED SEWER PIPING IN ACCORDANCE WITH ASTM F1417. MAXIMUM ALLOWABLE LEAKAGE IS 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SURFACE AREA BEING TESTED. ALLOWABLE AIR PRESSURE DROP DURING THE TEST IS 0.5 PSIG. MINIMUM REQUIRED TEST TIME (DURATION) IS: A) 4" PIPE = 1 MIN 53 SEC; B) 6" PIPE = 2 MIN 50 SEC, OR 0.427 X LENGTH OF PIPE TESTED, WHICHEVER IS GREATER; C) 8" PIPE = 3 MIN 47 SEC, OR 0.760 X LENGTH OF PIPE TESTED, WHICHEVER IS GREATER; D) 10" PIPE = 4 MIN 43 SEC, OR 1.187 X LENGTH OF PIPE TESTED, WHICHEVER IS GREATER; E) 12" PIPE = 5 MIN 40 SEC, OR 1.709 X LENGTH OF PIPE TESTED, WHICHEVER IS GREATER.

14. CONDUCT DEFLECTION TESTING OF PIPELINE AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. MAXIMUM ALLOWABLE PIPE DEFLECTION IS 5%. MEASURE DEFLECTION BY MANUALLY PULLING A MANDREL THROUGH THE PIPE. THE MINIMUM MANDREL OUTER DIAMETER SHALL BE IN ACCORDANCE WITH THE FOLLOWING: 6" SEWER = 5.45" MANDREL; 8" SEWER = 7.28" MANDREL; 10" SEWER = 9.08" MANDREL; 12" SEWER = 10.79" MANDREL; 15" SEWER = 13.20" MANDREL; 18" SEWER = 16.13" MANDREL; 21" SEWER = 19.00" MANDREL; 24" SEWER = 21.36" MANDREL; 27" SEWER = 24.06" MANDREL.

15. DEFLECTION TESTING IS CONSIDERED SATISFACTORY IF THE MANDREL CAN BE PULLED BY HAND THROUGH THE PIPE BEING TESTED. IF THE MANDREL CANNOT BE PULLED THROUGH THE PIPE, REPLACE OR CORRECT THE PIPE AND RETEST UNTIL TESTING IS SATISFACTORY. ANY PIPE REMOVED OR CONNECTED DUE TO FAILING DEFLECTION TESTING SHALL ALL BE RE-TESTED FOR LEAKAGE.

PAVING, SIDEWALKS, AND CURBING

1. MATERIALS AND CONSTRUCTION METHODS FOR THE ROADWAY AND PAVING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

2. ROADWAY PAVING, BASE, AND SUBGRADE THICKNESSES SHALL BE IN ACCORDANCE WITH DETAILS ON THESE DRAWINGS.

3. SIDEWALKS ARE TO BE CONSTRUCTED IN THE AREAS AS SHOWN ON THE CONSTRUCTION PLANS. HANDICAPPED RAMPS SHALL BE PROVIDED AT ALL INTERSECTIONS AND SHALL BE IN ACCORDANCE WITH THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION, LATEST EDITION.

4. CURBING SHALL BE CONSTRUCTED WHERE NOTED ON THE CONSTRUCTION PLANS. ALL CURBS SHALL HAVE SAW CUT CONTRACTION JOINTS AND SHALL BE CONSTRUCTED AT INTERVALS NOT TO EXCEED 10'-0" ON CENTER. CONSTRUCTION OF CURBS SHALL BE IN CONFORMANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION) SECTION 520 AND DETAILS PROVIDED ON THE CONSTRUCTION PLANS.

5. FIELD COMPACTION DENSITY, STABILITY, AND THICKNESS TESTING FREQUENCIES OF SUB-BASE, BASE, AND ASPHALT SHALL BE TESTED ONCE EVERY 300 LINEAR FEET OF PAVING PER 24-FT WIDE STRIP, STAGGERED LEFT, CENTER AND RIGHT OF CENTERLINE. WHERE LESS THAN 300 LINEAR FEET OF SUB-BASE, BASE, AND ASPHALT IS PLACED IN ONE DAY, PROVIDE MIN. OF ONE TEST FOR EACH PER DAY'S CONSTRUCTION AT A LOCATION DESIGNATED BY THE ENGINEER. ASPHALT EXTRACTION GRADATION SHALL BE TESTED FROM GRAB SAMPLES COLLECTED ONCE EVERY 1800 SQUARE YARDS OF ASPHALT DELIVERED TO THE SITE (OR A MINIMUM OF ONCE PER DAY).

PRECAST STRUCTURES AND APPURTENANCES

1. ALL MANHOLES SHALL BE PRECAST CONSTRUCTION. THE MINIMUM SIZE DIAMETER OF MANHOLES SHALL BE 48" FOR SEWER LINES 21" IN DIAMETER OR LESS. INTEGRALLY CAST STEPS WITHIN PRECAST STRUCTURES ARE NOT ALLOWED.

2. BASES SHALL BE ONE-PIECE PRECAST BASE SECTIONS CONSISTING OF INTEGRALLY CAST SLAB, BOTTOM RING SECTION AND CONCRETE FLOW CHANNELS. BASE SECTIONS SHALL HAVE INTEGRAL INVERTS WITH GASKETS TO MATCH THE PIPE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALL INVERT ANGLES. PROVIDE OUTLET STUBS WITH JOINTS TO MATCH THE PIPE.

3. RISERS SHALL BE PRECAST REINFORCED CONCRETE PER ASTM C478, MANUFACTURED USING SULFATE RESISTANT CEMENT (ASTM C150, TYPE II). RISERS SHALL BE 48-INCH DIAMETER UNLESS OTHERWISE INDICATED AND SHALL HAVE A MINIMUM WALL THICKNESS OF 5 INCHES.

4. GASKETS FOR SEATING PRECAST SECTIONS SHALL BE COLD ADHESIVE PREFORMED PLASTIC GASKETS CONFORMING TO FDOT SPECIFICATION 942-2, UNLESS OTHERWISE INDICATED.

5. UNLESS OTHERWISE INDICATED, CONE TOP SECTIONS SHALL BE PRECAST, ECCENTRIC TYPE WITH 24-INCH DIAMETER TOP OPENING CONFORMING TO ASTM C478. PROVIDE 8-INCH MINIMUM THICKNESS FLAT SLAB TOPS WITH ECCENTRIC 24 INCH DIAMETER OPENING, UNLESS OTHERWISE INDICATED.

6. PROVIDE A FLEXIBLE WATERTIGHT SEAL OF THE PIPE TO THE MANHOLE. CONNECTION OF CONCRETE PIPE TO THE MANHOLE SHALL BE MADE WITH NON-SHRINK METALLIC GROUT. CONNECTION OF DUCTILE IRON OR PVC PIPE TO THE MANHOLE SHALL PROVIDE A WATERTIGHT CONNECTION PER ASTM C923. WHERE CONNECTORS ARE USED, THEY SHALL BE INSTALLED IN THE MANHOLE WALL BY ACTIVATING THE EXPANDING MECHANISM IN STRICT ACCORDANCE WITH THE RECOMMENDATION OF THE CONNECTOR MANUFACTURER. THE USE OF ADHESIVES OR LUBRICANTS FOR INSTALLATION OF RUBBER CONNECTORS IS PROHIBITED.

7. FRAMES AND COVERS SHALL BE GREY IRON PER ASTM A48, CLASS 30B AND SHALL BE U.S. FOUNDRY TYPE 227AS, TRAFFIC BEARING (AASHTO H-20 LOADING), UNLESS OTHERWISE NOTED IN THE DRAWINGS. CASTINGS SHALL BE SMOOTH, CLEAN, FREE FROM BLISTERS, BLOWHOLES, AND SHRINKAGE. RAISED LETTERING ON COVERS SHALL BE "STORM", "SEWER", OR AS DETAILED ON THE DRAWINGS.

8. PROVIDE CAST IRON INLETS, FRAMES, AND GRATES IN ACCORDANCE WITH DETAILS ON THE DRAWINGS. ALL FRAMES AND INLET GRATES SHALL BE PRODUCTS OF U.S. FOUNDRY & MANUFACTURING CORPORATION, OR EQUAL.

9. ALL INLET GRATES SHALL BE SECURED BY CHAIN AND EYEBOLT TO THE TOP OF THE STRUCTURE.

10. THE TOP ELEVATION OF MANHOLES CONSTRUCTED IN PAVED AREAS SHALL MATCH FINISHED GRADE. THE TOP ELEVATION OF MANHOLES CONSTRUCTED IN GRASSED AREAS SHALL BE 4" ABOVE FINISHED GRADE (UNLESS NOTED OTHERWISE).

11. ALL MANHOLES AND CLEAN OUTS CONSTRUCTED WITHIN PAVED AREAS SHALL BE INSTALLED WITH TRAFFIC BEARING RINGS AND COVERS.

12. MANHOLE COATINGS AND FINISHES SHALL BE:

A. SANITARY SEWER MANHOLE INTERIOR - BITUMINOUS EPOXY COATING, MINIMUM DRY FILM THICKNESS = 16 MILS.

B. INTERIOR OF MANHOLES WHICH RECEIVE FORCE MAIN DISCHARGE - INTEGRALLY ATTACHED INTERIOR LINER, FULL HEIGHT, FIBERGLASS LINER. LINER THICKNESS TO BE IN ACCORDANCE WITH THE DRAWINGS.

C. EXTERIOR - BITUMINOUS EPOXY COATING, MINIMUM DRY FILM THICKNESS = 16 MILS.

STORM SEWER SYSTEMS

1. REINFORCED CONCRETE PIPE (RCP) JOINTS SHALL COMPLY WITH ASTM C443 AND FDOT SPECIFICATION SECTION 430, AND RUBBER GASKETS SHALL COMPLY WITH FDOT SPECIFICATION SECTION 942. MINIMUM COVER OVER THE PIPE, INCLUDING COVER OVER THE BELL OF THE PIPE WHERE APPLICABLE, SHALL BE 30 INCHES.

2. RCP PIPE SHALL NOT BE SHIPPED FROM MANUFACTURER UNTIL THE COMPRESSIVE STRENGTH OF THE PIPE HAS REACHED 4000 PSI AND A MINIMUM OF 5 DAYS HAVE PASSED SINCE THE MANUFACTURING OR REPAIR OF THE PIPE HAS BEEN COMPLETED.

3. UNDERDRAIN PIPE SHALL BE PERFORATED POLYVINYL CHLORIDE PIPE IN ACCORDANCE WITH ASTM F758. FILTER FABRIC UNDERDRAIN SOCK SHALL BE TYPE D-3 IN ACCORDANCE WITH FDOT INDEX NO. 199.

4. ALL PIPE JOINTS SHALL BE WRAPPED WITH FILTER FABRIC. FILTER FABRIC SHALL BE IN ACCORDANCE WITH FDOT INDEX NO. 199, TYPE D-3, A.O.S. 70-100. INSTALL IN ACCORDANCE WITH FDOT INDEX NO. 280. PROVIDE MINIMUM 12" OVERLAP.

5. INSTALL POLYETHYLENE PIPE IN ACCORDANCE WITH ASTM D2321. BACKFILL AND COMPACT EVENLY ON EACH SIDE TO PREVENT DISPLACEMENT. MINIMUM COVER OVER POLYETHYLENE PIPE SHALL BE AS FOLLOWS: A) PIPE UNDER FLEXIBLE PAVEMENT, RIGID PAVEMENT, OR UNPAVED AREAS WHERE BEDDING IS SUITABLE SOILS AS DEFINED IN THE GENERAL NOTES: MINIMUM COVER SHALL BE 36 INCHES OR ONE PIPE DIAMETER, WHICHEVER IS GREATER; B) PIPE UNDER FLEXIBLE PAVEMENT, RIGID PAVEMENT, OR UNPAVED AREAS WHERE BEDDING IS MANUFACTURED AGGREGATES CLASS 1A OR 1B AS DEFINED IN ASTM D2321: MINIMUM COVER SHALL BE 30 INCHES OR ONE PIPE DIAMETER, WHICHEVER IS GREATER.

6. INSTALL UNDERDRAINS IN ACCORDANCE WITH FDOT SPECIFICATION SECTION 440. INSTALL CLEANOUTS AS SHOWN ON THE DRAWINGS.

7. PRIOR TO INSPECTIONS AND TESTING, CLEAN ALL INSTALLED LINES AND STRUCTURES.

SIGNS AND PAVEMENT MARKINGS

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND THE MANATEE COUNTY PUBLIC WORKS HIGHWAY AND TRAFFIC STANDARDS MANUAL SECTION 3.2.

2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC WITH RAISED PAVEMENT MARKERS (TYPE 911 - 4" x 4"). RAISED PAVEMENT MARKERS ARE TO BE INSTALLED IN ACCORDANCE WITH THESE PLANS AND FDOT INDEX NO. 17352.

3. PARKING STALL PAVEMENT MARKINGS SHALL BE PAINTED. PAINT SHALL MEET THE REQUIREMENTS OF FDOT SPECIFICATION SECTION 971, NON-REFLECTIVE WHITE TRAFFIC PAINT, TWO COATS.

4. ALL ROADWAY TRAFFIC SIGNS SHALL BE MANUFACTURED USING HIGH INTENSITY RETROREFLECTIVE MATERIALS. THE BACK OF ALL FINISHED PANELS SHALL BE STENCILED WITH THE DATE OF FABRICATION, THE FABRICATOR'S INITIALS, AND THE NAME OF THE SHEETING IN THREE-INCH LETTERS.

5. INTERNAL SITE TRAFFIC SIGNS ARE NOT REQUIRED TO BE RETROREFLECTIVE.

6. THE CONTRACTOR SHALL VERIFY THE REQUIRED LENGTH OF THE SIGN COLUMN SUPPORTS IN THE FIELD PRIOR TO FABRICATION.

7. CONTRACTOR SHALL PROVIDE AND INSTALL ALL SIGNS, BASES, ANCHOR BOLTS, CONDUITS, WIRING, ETC.

8. ALL PAVEMENT MARKINGS REQUIRE LAYOUT APPROVAL IN THE FIELD BY THE ENGINEER PRIOR TO INSTALLATION.

9. PRIOR TO FINAL PAVEMENT MARKING INSTALLATION, A TWO WEEK CURE TIME OF THE ASPHALT IS REQUIRED.

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Jeffrey M. Satfield State of Florida, Professional Engineer, License No. 61905. This item has been electronically signed and sealed by Jeffrey M. Satfield on the date indicated here using a SHA authentication code. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

No.	Date	Revision
1	03/18/21	60% SUBMITTAL
2		
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Designed: R. Smith
Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021

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GENERAL NOTES

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
C0.3

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ITEM NO.	DESCRIPTION	QUANTITY	UNITS
2.01	Mobilization & Utility Locates (10%)	1	LS
2.02	Demobilization, Cleanup, Record Drawings, Project Closeout (5%)	1	LS
2.03	Temporary Traffic Control (2%)	1	LS
2.04	Erosion and Sediment Control (2%)	1	LS
2.05	Clearing and Grubbing	5.70	AC
2.06	Regular Excavation (Inc. Pond Excavation)	350	CY
2.07	Borrow Excavation and Finish Grading	8,755	CY
2.08	Remove Existing Pavement (Including Boat Ramp)	10,800	SY
2.09	Abandon Existing Seawall	560	LF
2.10	Remove Existing Dock & Pilings	1,097	SF
2.11	Selective Demolition and Exist. Utility Relocation	1	LS
2.12	Stabilized Subgrade	11,600	SY
2.13	Concrete Pavement	9,800	SY
2.14	FDOT Gravity Wall	51	CY
2.15	Remove Storm Sewer Pipe	40	LF
2.16	Remove Existing MES	3	EA
2.17	Storm Inlets	9	EA
2.18	Storm Sewer Pipe - 18" Storm	691	LF
2.18-1	Storm Sewer Pipe - 12" x 18" ERCP	30	LF
2.19	Mitered End Sections	3	EA
2.20	Concrete Curb and Gutter Type 'F'	1,500	LF
2.21	Concrete Sidewalk	280	SY
2.22	Detectable Warning Mat (Sidewalk Ramps)	85	SF
2.23	Riprap	60	CY
2.24	Pipe Handrail - 42" Guiderail, Aluminum	100.0	LF
2.25	Sodding	16,793	SF
2.26	Tree Protection	1	LS
2.27	Tree Removal	1	LS
2.28	White Mangrove, Laguncularia racemosa; 7 Gal., Field Verify	10	EA
2.28-1	Seagrape, Coccoloba uvifera; 4" Cal., 12' Ht., Std. trunk	4	EA
2.28-2	Cabbage Palm, Sabal palmetto; 12' CT., clean straight trunk, Regen. Head	14	EA
2.28-3	Bushy Seaside Oxeye, Borrichia frutescens; 1 Gal., 10" HT., 8" Sprd., 24" OC	414	EA
2.28-4	Golden Creeper, Ernodea littoralis; 1 Gal., 3" Ht., 8" Sprd., 24" OC	1,388	EA
2.28-5	Railroad Vine, Ipomoea pes-caprae; 1 Gal., 3" Ht., 8" Sprd., 36" OC	144	EA
2.28-6	Muhly Grass, Muhlenbergia capillaris; 3 Gal., 15" Ht., 10" Sprd., 30" OC	1,093	EA
2.28-7	Sand Cordgrass, Spartina bakeri; 3 Gal., 15" Ht., 10" Sprd., 36" OC	437	EA
2.28-8	Sea Oats, Uniola Paniculata; 3 Gal., 15" Ht., 10" Sprd., 36" OC	161	EA
2.28-9	Relocated trees/palms	2	EA
2.28-10	Mulch	596	CY
2.29	Irrigation	1	LS
2.30	Signs (Furnish and Install)	21	EA
2.30-1	Signs - Dock Reflectors (Furnish and Install)	10	EA
2.31	Signs (Relocate Project Sign)	1	LS
2.32	Pavement Markings (Striping, Crosswalk, Gore/Diagonal, Stop Bar)	847	LF
2.33	Pavement Markings (Arrows and Messages)	0.00	EA
2.34	Painted Pavement Markings (4" Yellow at Parking Stalls)	3412.00	LF
2.35	Handicap Parking Stall Striping (Painted)		
	(Aisle Striping and Handicap Symbol) (Furnish and Install)	3.00	EA
2.36	Sanitary Sewer Pipe	10.00	LF
2.37	Water Service Line (PE) (Open Cut)	1325.00	LF
2.38	Steel Sheet Pile Sea Wall	24900.00	SF
2.38-1	Concrete Cap	125.00	CY
2.39	Dock – Composite Deck	5045.00	SF
2.39-1	Dock – Pilings (10" Round Wood w/ Cover)	244.00	EA
2.39-2	Dock – 4 x 12 Wood Beams	1550.00	LF
2.39-3	Dock – 2 x 12 Wood Beams	5450.00	LF
2.40	Shoreline Armor System	750.00	SF
2.41	Concrete Boat Ramp	125.00	CY
2.42	Bench (Furnish/Install by Parks and Natural Resources)	2.00	EA
2.43	Trash Receptacle (Furnish/Install by Parks and Natural Resources)	8.00	EA
2.44	Bike Rack (Furnish/Install by Parks and Natural Resources)	1.00	EA
2.45	Tables (Furnish/Install by Parks and Natural Resources)	6.00	EA

ITEM NO.	DESCRIPTION	QUANTITY	UNITS
2.46	Wheel Stops	68.00	EA
2.47	Pull Box H20, 12" x 6"	10.00	EA
2.47-1	Pull Box H20, 20" x 20"	2.00	EA
2.48	Conduit	1.00	LS
2.49	Electrical, Controls, and Instrumentation	1.00	LS
2.50	Conduit and Conductors	1.00	LS
2.51	Street Light & Fixtures (Concrete Light Poles)	27.00	EA
2.52	Killerdock Fish Cleaning Stations	2.00	EA
2.53	Bollards	52.00	EA
2.54	Weir Skimmer	2.00	LS
2.55	Environmental Services – Bird Relocation	1.00	LS
2.56	Post and Rope (LF & $25/Pole)	130.00	LF
2.57	Polyethylene Force Main (Open Cut)	2072.00	LF
2.58	Polyethylene Force Main (Directional Drill)	362.00	LF
2.59	Lift Station (Furnish and Install)	1.00	LS
2.60	Core and Connect to Existing Sanitary Sewer Manhole	1.00	EA
2.61	Install Series 405 Raven Liner A (or equivalent) at Existing Manhole	2.00	EA
2.62	Plug & Gate Valves (Force Main)	3.00	EA
2.63	Water Service Line (Directional Drill)	115.00	LF
2.64	Service Saddle and Corporation Stop	1.00	EA
2.65	Gate Valve	5.00	EA
2.66	Wall Foundation	15	CY
2.66-1	6" Floor Slab	15	CY
2.66-2	Concrete Platform and Steps at Electrical	1	LS
2.66-3	8" X 8" X 16" Concrete Masonry Units	400	SF
2.66-4	12" X 12" X 16" Concrete Masonry Units	75	SF
2.66-5	Wood Trusses	1	LS
2.66-6	Cement Board Trim	1	LS
2.66-7	Plywood Roof Deck	675	SF
2.66-8	Standing Seam Metal Roof	675	SF
2.66-9	Spray Applied Closed Cell Insulation	675	SF
2.66-10	Roof Underlayment	675	SF
2.66-11	3'-4" X 7'-0" X 13/4" HM Door, Frame and Hardware	3	EA
2.66-12	Solar Tubes / Installation	2	EA
2.66-13	1'-4" X 4'-0" Aluminum Louvers (Impact Rated)	6	EA
2.66-14	Flood Vents	5	EA
2.66-15	Stucco on Concrete Walls	215	SF
2.66-16	Hardi-Plank Lap Siding on CMU Walls	264	SF
2.66-17	Cedar Plank Ceiling	296	SF
2.66-18	1/4" Hardie Soffit Over 1/2" Plywood	210	SF
2.66-19	Exterior Paint	3900	SF
2.66-20	Interior Paint	1375	SF
2.66-21	Paint HM Doors and Frames	3	EA
2.66-22	Floor Braced Toilet Partitions W/ Doors	3	EA
2.66-23	Urinal Screen	1	EA
2.66-24	Hand Dryer	2	EA
2.66-25	Grab Bar 42"	2	EA
2.66-26	Grab Bar 36"	2	EA
2.66-27	Signage	1	LS
2.66-28	Aluminum Dimensional Letters 7"	9	EA
2.66-29	Aluminum Dimensional Letters 14"	2	EA
2.66-30	Back Water Valve	1	EA
2.66-31	Drinking Fountain	1	EA
2.66-32	Floor Cleanout	2	EA
2.66-33	Hose Bibb	2	EA
2.66-34	Lavatory W/ Faucet & Carrier	4	EA
2.66-35	Urinal W/ Flushometer	2	EA
2.66-36	Water Closet W/ Flushometer & Carrier	3	EA
2.66-37	Shock Arrestor	4	EA
2.66-38	Piping (Sanitary / Domestic / Vent)	1	LS
2.66-39	Basic Electrical Materials and Methods	1.00	LS

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Plans Prepared By:
CPH, Inc.
State of Florida Licenses:
Engineer No. 3215
Surveyor No. LB7143
Architect. No. AA26000926
Landscape No. LC000298

JEFFREY MICHAEL SATFIELD LICENSE No. 61905 STATE OF FLORIDA PROFESSIONAL ENGINEER
JEFFREY M. SATFIELD, P.E. FL LIC. No. 61905 09-27-21

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1	03/18/21	60% SUBMITTAL
2		
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5		
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Designed: R. Smith
Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021

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SUMMARY OF PAY ITEMS

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
C0.4

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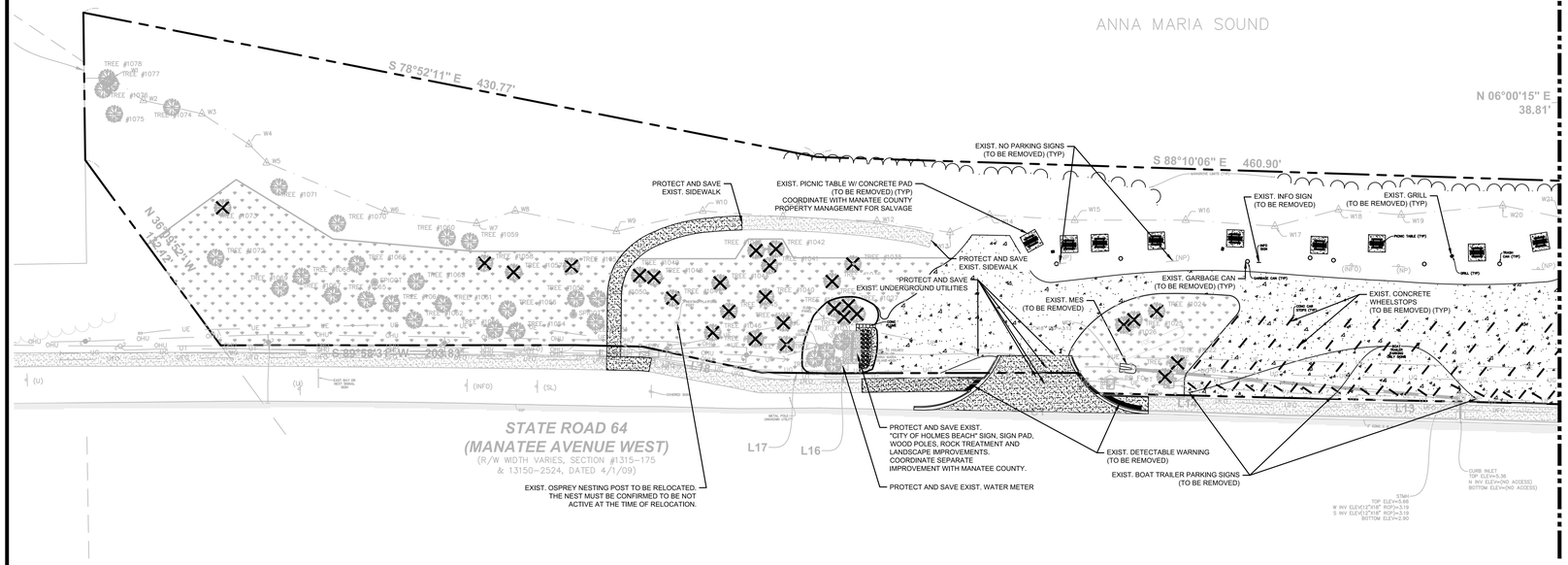

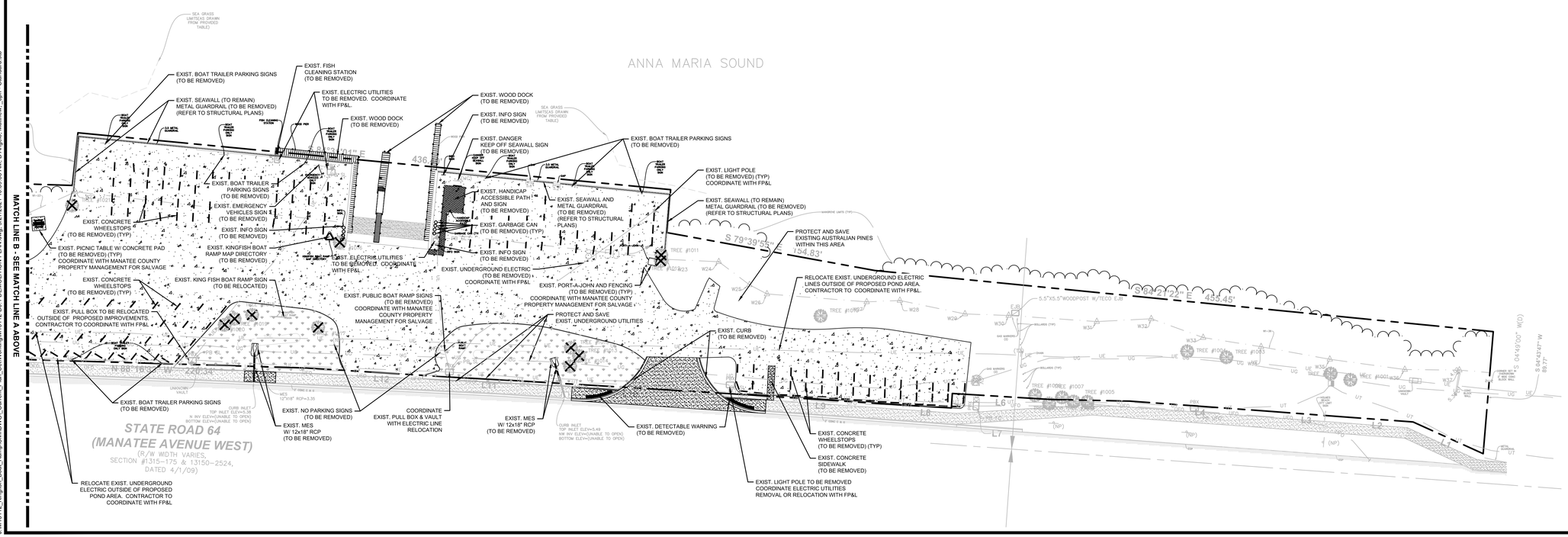

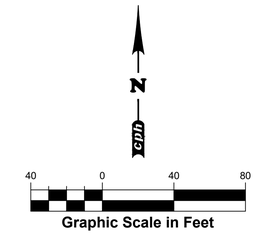

DEMOLITION LEGEND

- LEASE LINE
- WETLAND LINE
- EXISTING FULL SECTION OF CONCRETE PAVEMENT TO BE REMOVED
- EXISTING LANDSCAPE AREA TO BE REMOVED
- EXISTING CONCRETE SIDEWALK TO BE REMOVED
- EXISTING TREE TO BE REMOVED (TYP) (REFER TO TREE PROTECTION AND LANDSCAPE PLANS)

NOTE:

THIS PLAN REPRESENTS THE APPROX. LIMITS OF DEMOLITION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY ALL EXISTING SITE FEATURES TO BE DEMOLISHED IN ORDER TO ACHIEVE DESIGN INTENT. REFER TO LANDSCAPE PLANS FOR TREES TO BE REMOVED. CONTRACTOR TO MODIFY WIRING / CIRCUITING OF EXISTING LIGHT POLES TO ENSURE PROPOSED FIXTURES ARE OPERATIONAL. EXISTING DRAINAGE PIPES SHALL BE REMOVED AS NECESSARY IN ORDER TO OBTAIN DESIGN INTENT.

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State of Florida Licenses:
Engineer No. 3215
Surveyor No. LB7143
Architect. No. AA26000926
Landscape No. LC000298

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Designed: R. Smith
Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021

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DEMOLITION PLAN

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

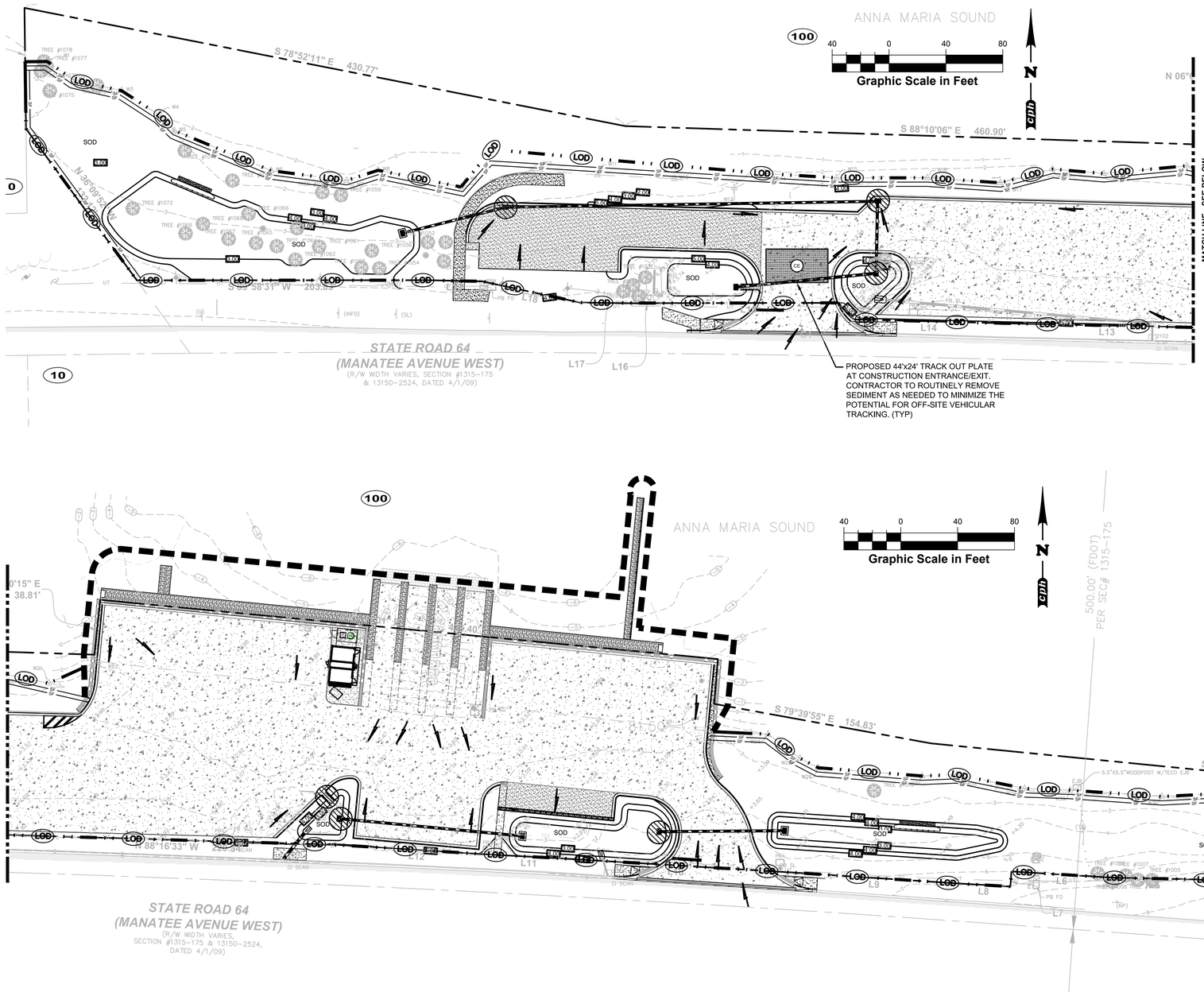
Sheet No.
D0.1

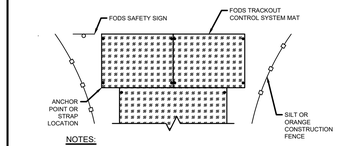
J:\M13112_Kingfish_Boat_Ramp\Civil\DWGs_Current_Plan_Set\Working\M13112-D0.1 DEMOLITION PLAN.dwg, 9/27/2021 10:59:35 AM, D'Angelo, Matthew, _cph - Standard.stb

LEGEND:

- LIMITS OF DISTURBANCE
- SILT FENCE PER STATE OF FLORIDA EROSION AND SEDIMENT CONTROL MANUAL (LATEST EDITION)
- FLOATING TURBIDITY BARRIER
- INLET PROTECTION
- DOUBLE ROW WEIGHTED WATTLES
- CONSTRUCTION ENTRANCE PER STATE OF FLORIDA EROSION AND SEDIMENT CONTROL MANUAL (LATEST EDITION)
- SOIL TYPE: CANAVERAL SAND
- SOIL TYPE: WATERS OF THE GULF OF MEXICO

ACREAGE SUMMARY	
TOTAL SITE AREA	5.48± AC.
TOTAL DISTURBED AREA	3.78± AC.

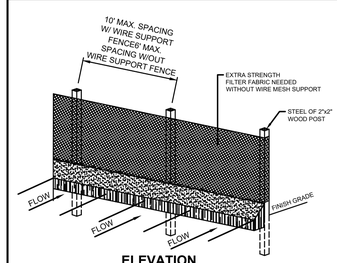




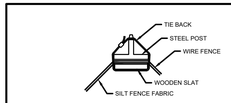
NOTES:

1. SEE MANUFACTURER'S DETAILS FOR SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.
2. SIGNING AND LAYOUT CONFIGURATION TO BE MODIFIED BASED ON ACTUAL LOCATION USED.

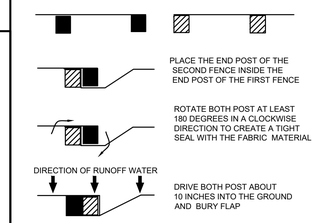
FODS TRACKOUT CONTROL SYSTEM DETAIL
N.T.S.



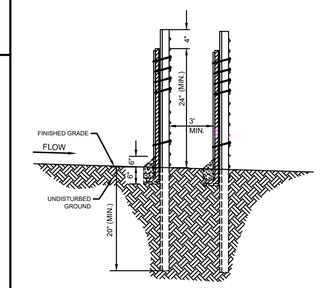
ELEVATION



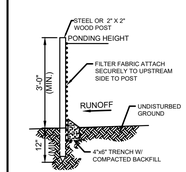
INSIDE CORNER - PLAN VIEW



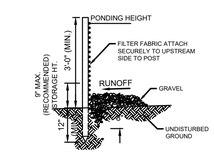
ATTACHING TWO SILT FENCES
N.T.S.



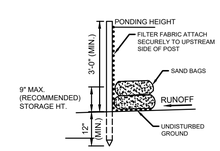
DOUBLE SILT FENCE
N.T.S.



STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL



ALTERNATE DETAIL A
TRENCH WITH GRAVEL



ALTERNATE DETAIL B
N.T.FOR TREE DRIP LINE OR SIDEWALKS

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name (Operator and/or Responsible Authority) Date

Project Name and location information:

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State of Florida Licenses:
Engineer No. 3215
Surveyor No. LB7143
Architect. No. AA26000926
Landscape No. LC000298

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Designed: R. Smith
Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021 © 2021

STORMWATER POLLUTION PREVENTION PLAN

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
C1.1

J:\M13112_Kingfish_Boat_Ramp\Civil\DWGS_Current_Plan_Set\Working\M13112-C1.1-C1.2 SWPPP.dwg, 9/27/2021 11:00:14 AM, D'Angelo, Matthew, , cph - Standard.stb

STORMWATER POLLUTION PREVENTION NOTES

THESE PLANS HAVE BEEN PREPARED TO ASSIST THE CONTRACTOR IN OBTAINING COVERAGE UNDER THE FDEP GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE PERMIT REQUIREMENTS AND MODIFY THESE PLANS AS NEEDED TO BE IN COMPLIANCE WITH THE PERMIT REQUIREMENTS.

SITE DESCRIPTION

A. SITE LOCATION
THE SITE IS LOCATED AT 725 MANATEE AVENUE WEST, IN HOLMES BEACH, MANATEE COUNTY, FLORIDA
SECTION 28, TOWNSHIP 34 SOUTH, RANGE 16 EAST
LATITUDE: 27°29'50.63" N LONGITUDE: 82°42'10.32" W

B. SITE CONDITIONS & ACTIVITIES NARRATIVE:
THE EXISTING CONDITION OF THE SITE IS DEVELOPED PUBLIC BOAT RAMP. THE PROPOSED CONDITION OF THE SITE IS DEVELOPED PUBLIC BOAT RAMP.

WETLANDS/BUFFERS

IMPROVEMENTS WILL TAKE PLACE ON OR OVER WETLANDS. BUFFER BETWEEN WETLAND AND UPLAND IMPROVEMENTS HAVE BEEN PROVIDED ACCORDING TO FDEP STANDARDS.

SWPPP INTENT

THE INTENT OF THIS SWPPP IS TO COMPLY WITH THE INTENT OF THE GENERIC PERMIT AND TO PREVENT THE RELEASE OF SOILS, TRASH, CHEMICALS, TOXINS AND OTHER POLLUTANTS, BY WATER , AIR, VEHICLE TRANSPORT OR OTHER MEANS THAT CAN IMPACT STORM WATER QUALITY. THE CONTRACTOR SHALL OBTAIN A COPY OF THE GENERIC PERMIT AND RETAIN ON-SITE FOR FUTURE REFERENCE. THE CONTRACTOR SHALL READ AND UNDERSTAND THE PERMIT, AND ENSURE THAT THE BMP'S ARE INSTALLED AND THE EXECUTION OF THE WORK IS PERFORMED TO MEET THE INTENT OF THE GENERIC PERMIT AND THE SWPPP.

POTENTIAL SOURCES OF POLLUTION

THE POTENTIAL SOURCES OF POLLUTION THAT MAY REASONABLY BE EXPECTED TO AFFECT THE QUALITY OF STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY INCLUDE: SEDIMENT, PESTICIDES, FERTILIZER, PLASTER, CLEANING SOLVENTS, ASPHALT, CONCRETE, GLUE, ADHESIVES, PAINTS, CURING COMPOUNDS, WOOD PRESERVATIVES, HYDRAULIC OIL FLUIDS, GASOLINE, DIESEL FUEL AND KEROSENE.

SEQUENCE OF CONSTRUCTION

THE SEQUENCE OF CONSTRUCTION HAS BEEN DEVELOPED AS A GUIDE FOR THE CONTRACTOR. THE CONTRACTOR SHALL SEQUENCE THE CONSTRUCTION AS NEEDED BASED ON BEST MEANS AND METHODS IN ORDER TO BE IN COMPLIANCE WITH STATE AND LOCAL REQUIREMENTS. THE INSTALLATION OR REMOVAL OF BMPS, EARTH DISTURBANCE, GRADING, TEMPORARY STABILIZATION AND PERMANENT STABILIZATION SHALL BE IMMEDIATELY NOTED IN THE SWPPP IMPLEMENTATION LOG. ALL TEMPORARY BMPS SHALL BE REPAIRED AND MAINTAINED UNTIL STABILIZATION HAS OCCURRED AND THERE IS NO RISK OF DISCHARGE. TEMPORARILY SEED, IMMEDIATELY AND THROUGHOUT CONSTRUCTION, DENUDED AREAS THAT WILL BE INACTIVE FOR 7 DAYS OR MORE. PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.

1. POST A COPY OF THE NOI OR LETTER FROM FDEP CONFIRMING COVERAGE UNDER THE GENERIC PERMIT, AND THE NAME AND PHONE NUMBER OF THE CONTRACTOR'S REPRESENTATIVE RESPONSIBLE FOR EROSION AND SEDIMENTATION CONTROL INSTALLATION AND MAINTENANCE ON A 24 HOUR BASIS.
2. INSTALL PERIMETER CONTROLS IMMEDIATELY DOWNSTREAM OF THE PLANNED LOCATION OF THE CONSTRUCTION EXIT.
3. INSTALL STABILIZED CONSTRUCTION EXIT.
4. INSTALL PERMITER CONTROLS. THE CONTRACTOR SHALL INSTALL THE REMAINING BMPS AS SHOWN AND AS REQUIRED TO MEET PERMIT REQUIREMENTS. SOME BMP INSTALLATIONS MAY NOT BE POSSIBLE AT THE BEGINNING OF THE PROJECT BUT MUST BE INSTALLED AS SOON AS POSSIBLE TO ENSURE COMPLIANCE.
5. INSTALL TEMPORARY STAGING AND STORAGE AREAS.
6. CONSTRUCT AND STABILIZE THE SEDIMENT BASINS AND SEDIMENT TRAPS WITH APPROPRIATE OUTFALL STRUCTURES, IF REQUIRED.
7. CONSTRUCT AND STABILIZE HYDRAULIC CONTROLS (DITCHES, SWALES, DIKES, CHECK DAMS, ETC.), IF REQUIRED.
8. BEGIN DEMOLITION, CLEARING AND GRUBBING OPERATIONS AS APPLICABLE.
9. BEGIN CONSTRUCTION OF SITE IMPROVEMENTS.
10. PAVE SITE AND STABILIZE PER PLAN.
11. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER SITE HAS ACHIEVED FINAL STABILIZATION.
12. SUBMIT NOTICE OF TERMINATION (NOT) ONCE ALL CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED PER PLAN.

GENERAL NOTES

A. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FILE "NOTICE OF INTENT TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES" (DEP FORM 62-621.300(4)(B) OR LATEST VERSION) TO FDEP TO THE FOLLOWING ADDRESS OR THROUGH THE FDEP ON-LINE SYSTEM AT LEAST TWO (2) DAYS BEFORE COMMENCEMENT OF CONSTRUCTION:

NPDES STORMWATER NOTICES CENTER, MS #2510 FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, 2600 BLAIR STONE ROAD, TALLAHASSEE, FLORIDA 32399-2400

THE CONTRACTOR SHALL SUBMIT A NOTICE OF TERMINATION (NOT) WITHIN 14 CALENDAR DAYS AFTER THE SITE HAS ACHIEVED FINAL STABILIZATION (I.E. ALL DISTURBED SOILS AT THE SITE HAVE BEEN FINAL STABILIZED), TEMPORARY BMPS HAVE BEEN REMOVED, AND STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM THE SITE AUTHORIZED BY THE PERMIT HAVE BEEN ELIMINATED.

AN ENVIRONMENTAL RESOURCE PERMIT IS REQUIRED FOR THE PROJECT. CONTRACTOR SHALL PROVIDE THE PERMIT INFORMATION ON THE NOI APPLICATION.

MS4 OPERATOR NAME: TIDAL WATER BODY

THE CONTRACTOR SHALL PROVIDE A COPY OF THE NOI AND SUBSEQUENT NOT OR THE ACKNOWLEDGEMENT LETTERS FOR THE NOI OR NOT TO THE MS4 WITHIN 7 DAYS OF RECEIPT. THE CONTRACTOR SHALL ALSO COORDINATE WITH THE MS4 TO ENSURE THAT ALL SPECIFIC REQUIREMENTS ARE MET.

B. WHERE PRACTICAL, STORMWATER SHALL BE CONVEYED BY SWALES. SWALES SHALL BE CONSTRUCTED AS SHOWN ON PLANS.

C. EROSION CONTROL MEASURES SHALL BE EMPLOYED TO MINIMIZE TURBIDITY OF SURFACE WATERS LOCATED DOWNSTREAM OF ANY CONSTRUCTION ACTIVITY. WHILE THE VARIOUS MEASURES REQUIRED WILL BE SITE SPECIFIC, THEY SHALL BE EMPLOYED AS NEEDED IN ACCORDANCE WITH THE FOLLOWING:

I. IN GENERAL, EROSION SHALL BE CONTROLLED AT THE FURTHEST PRACTICAL UPSTREAM LOCATION.
II. NEW AND EXISTING STORMWATER INLETS AND OUTFALL STRUCTURES SHALL BE PROTECTED DURING CONSTRUCTION. PROTECTION MEASURES SHALL BE EMPLOYED IMMEDIATELY AS REQUIRED DURING THE VARIOUS STAGES OF CONSTRUCTION.
III. PERIMETER EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL FINAL SITE STABILIZATION HAS BEEN ESTABLISHED

D. CLEARING AND GRUBBING OPERATIONS SHALL BE CONTROLLED SO AS TO MINIMIZE UNPROTECTED ERODIBLE AREAS EXPOSED TO WEATHER. GENERAL EROSION CONTROL BMP'S SHALL BE EMPLOYED TO MINIMIZE SOIL EROSION AND OFF-SITE SEDIMENTATION. WHILE THE VARIOUS TECHNIQUES REQUIRED WILL BE SITE AND PLAN SPECIFIC, THEY SHOULD BE EMPLOYED PRIOR TO ANY CONSTRUCTION ACTIVITY.

E. THE CONTRACTOR SHALL FURNISH, INSTALL PER THE SEQUENCE OF CONSTRUCTION, MAINTAIN AND SUBSEQUENTLY REMOVE, ALL NECESSARY TEMPORARY BMPS. THE CONTRACTOR WILL FURNISH AND INSTALL ALL NECESSARY PERMANENT BMPS.

F. THE CONTRACTOR SHALL ADJUST, ADD OR MODIFY BMPS AS NECESSARY TO COMPLY WITH THE INTENT OF THE GENERIC NPDES PERMIT AND THE SWPPP FOR NO ADDITIONAL COMPENSATION. THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER PRIOR TO ADJUSTING, ADDING OR MODIFYING BMPS THAT AFFECT THE HYDRAULICS OF THE SITE OR BEFORE ADDING BMPS NOT DETAILED IN THE SWPPP.

G. THE CONTRACTOR IS ADVISED THAT THE CONTRACT DRAWINGS ONLY INDICATE EROSION, SEDIMENT, AND TURBIDITY CONTROLS AT LOCATIONS DETERMINED IN THE DESIGN PROCESS. HOWEVER, THE CONTRACTOR IS REQUIRED TO PROVIDE ANY ADDITIONAL CONTROLS NECESSARY TO PREVENT THE POSSIBILITY OF SILTING ANY ADJACENT LOWLAND PARCEL OR RECEIVING WATER.

H. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. THE EROSION CONTROL SYSTEM DESCRIBED WITHIN THE CONSTRUCTION DOCUMENTS SHOULD BE CONSIDERED TO REPRESENT THE MINIMUM ACCEPTABLE STANDARDS FOR THIS PROJECT. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DEPENDENT UPON THE STAGE OF CONSTRUCTION, THE SEVERITY OF THE RAINFALL EVENT AND/OR AS DEEMED NECESSARY AS A RESULT OF ON-SITE INSPECTIONS BY THE OWNER, THEIR REPRESENTATIVES, OR THE APPLICABLE JURISDICTIONAL AUTHORITIES. THESE ADDITIONAL MEASURES (IF NEEDED) SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER. IT SHOULD BE NOTED THAT THE MEASURES IDENTIFIED ON THIS PLAN ARE ONLY SUGGESTED BEST MANAGEMENT PRACTICES (BMPS). THE CONTRACTOR SHALL PROVIDE POLLUTION PREVENTION AND EROSION CONTROL MEASURES AS SPECIFIED IN FDOT INDEXES #100 THROUGH #102 AND AS NECESSARY FOR EACH SPECIFIC APPLICATION. IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO ASSURE THAT THE STORMWATER DISCHARGE FROM THE SITE DOES NOT EXCEED THE TOLERANCES ESTABLISHED BY ANY OF THE APPLICABLE JURISDICTIONAL AUTHORITIES.

I. THE CONTRACTOR SHALL KEEP THE SWPPP CURRENT AT ALL TIMES. THE CONTRACTOR SHALL SIGN AND DATE ANY CHANGES TO THE SWPPP AND KEEP THEM AS ATTACHMENTS TO THE ORIGINAL PLAN. WHENEVER ANY OF THE FOLLOWING EVENTS OCCUR, THE CONTRACTOR SHALL UPDATE THE SWPPP WITHIN 7 DAYS:
I. THERE IS A CHANGE IN DESIGN, CONSTRUCTION OPERATION OR MAINTENANCE THAT HAS A SIGNIFICANT EFFECT ON THE DISCHARGE FROM THE PROJECT
II. THERE IS A NEW DISCHARGE POINT OUR OUTFALL
III. THERE IS A CHANGE IN THE LOCATION OF A DISCHARGE POINT OF OUTFALL
IV. AN INSPECTION REVEALS THAT BMPS ARE INEFFECTIVE AT ELIMINATING OR MINIMIZING POLLUTANTS IN THE STORMWATER DISCHARGED FROM THE SITE.
V. THERE IS A NEW SUBCONTRACTOR IMPLEMENTING ANY PORTION OF THE SWPPP
VI. A RELEASE CONTAINING A HAZARDOUS SUBSTANCE IN AN AMOUNT EQUAL TO OR GREATER THAN A REPORTABLE QUANTITY OCCURS DURING A 24-HOUR PERIOD

J. THE CONTRACTOR SHALL ENSURE THAT THE CONTRACTOR AND ALL SUBCONTRACTORS RESPONSIBLE FOR IMPLEMENTING SWPPP CONTROL MEASURES FILL OUT THE CONTRACTOR / SUBCONTRACTOR CERTIFICATION TABLE INCLUDED IN THIS SWPPP.

K. THE CONTRACTOR SHALL COMPLETE THE CONSTRUCTION SEQUENCE TABLE INCLUDING IN THIS SWPPP PRIOR TO PROCEEDING WITH THE INSTALLATION OF BMPS AND PRIOR TO GROUND DISTURBING ACTIVITIES. THE CONTRACTOR SHALL COMPLETE THE TABLE WITH ANTICIPATED DATES IN WHICH THE BMP WILL BE UTILIZED OR THE ACTIVITY WILL OCCUR.

STABILIZATION

A. STABILIZATION MEASURES SHALL BE INITIATED IMMEDIATELY IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED AND WILL REMAIN UNDISTURBED FOR 7 DAYS OR MORE. STABILIZE BY COVERING WITH ADEQUATE AMOUNTS OF MULCH OVER SEED AND PERIODICALLY WATER TO PROMOTE AND MAINTAIN GROWTH OF THE TEMPORARY GROUNDCOVER, OR BY THE USE OF AN APPROPRIATE ALTERNATIVE BMP.

B. PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES OR ANY DISTURBED LAND AREAS SHALL BE COMPLETED IMMEDIATELY AFTER FINAL GRADING. WHEN IT IS NOT POSSIBLE TO PERMANENTLY PROTECT A DISTURBED AREA IMMEDIATELY AFTER GRADING OPERATIONS, TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED. ALL TEMPORARY PROTECTION SHALL BE MAINTAINED UNTIL PERMANENT MEASURES ARE IN PLACE AND ESTABLISHED.

C. ALL GRASS SLOPES CONSTRUCTED STEEPER THAN 4H:1V SHALL BE SODDED IMMEDIATELY AFTER FINAL GRADE IS ESTABLISHED.

DUST CONTROL

A. BARE EARTH AREAS SHALL BE WATERED DURING CONSTRUCTION AS NECESSARY TO MINIMIZE THE TRANSPORT OF FUGITIVE DUST. IN NO CASE SHALL FUGITIVE DUST BE ALLOWED TO LEAVE THE SITE UNDER CONSTRUCTION.

B. AS REQUIRED AFTER COMPLETION OF CONSTRUCTION, BARE EARTH AREAS SHALL BE VEGETATED.

AT ANY TIME BOTH DURING AND AFTER SITE CONSTRUCTION THAT WATERING AND/OR VEGETATION ARE NOT EFFECTIVE IN CONTROLLING WIND EROSION AND/OR TRANSPORT OF FUGITIVE DUST, OTHER METHODS AS ARE NECESSARY FOR SUCH CONTROL SHALL BE EMPLOYED. THESE METHODS MAY INCLUDE ERECTION OF DUST CONTROL FENCES.

WASTE MANAGEMENT

A. THE CONTRACTOR SHALL ENSURE THAT ALL WASTE AND DEBRIS ARE MANAGED DAILY SUCH THAT THEY WILL NOT IMPACT STORMWATER OR LEAVE THE PERMITTED AREA, AND DISPOSED OF PROPERLY IN ACCORDANCE WITH APPLICABLE STATE, LOCAL AND FEDERAL REGULATIONS.

B. THE CONTRACTOR SHALL ENSURE THAT ALL CHEMICALS, OILS, FUELS, HAZARDOUS WASTE, UNIVERSAL WASTE AND TOXIC SUBSTANCES ARE PROPERLY MANAGED AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE STATE, LOCAL AND FEDERAL REGULATIONS. THE CONTRACTOR SHALL ENSURE THAT WASTE IS NOT DISCHARGED FROM THE SITE, AND DOES NOT IMPACT STORMWATER OR GROUNDWATER.

C. THE CONTRACTOR SHALL PROVIDE APPROPRIATE AND ADEQUATE WASHOUT FACILITIES TO ENSURE THAT CHEMICALS AND WASTE IS NOT DISCHARGED FROM THE SITE, AND DO NOT IMPACT STORMWATER OR GROUNDWATER. (E.G. CONCRETE/MASONRY WASHOUT, PAINT WASHOUT, EIFS, ETC.) THE CONTRACTOR SHALL CLEAN UP SPILLS PROMPTLY AND ENSURE THAT WASHOUT AREAS ARE PROPERLY MAINTAINED TO PROVIDE ADEQUATE VOLUME TO PREVENT OVERFLOW.

D. THE CONTRACTOR SHALL PROVIDE ADEQUATE SANITARY FACILITIES FOR SITE PERSONNEL, MAINTAIN THROUGHOUT CONSTRUCTION, AND PROVIDE FOR PROPER DISPOSAL IN ACCORDANCE WITH APPLICABLE STATE, LOCAL AND FEDERAL REGULATIONS. SANITARY FACILITIES SHALL BE PROPERLY SECURED TO PREVENT TIPPING.

E. A SPILL CONTROL AND CONTAINMENT KIT (CONTAINING FOR EXAMPLE, ABSORBENT MATERIAL SUCH AS KITTY LITTER OR SAWDUST, ACID, BASE, NEUTRALIZING AGENT, BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, PLASTIC AND METAL TRASH CONTAINERS, ETC.) SHALL BE PROVIDED AT THE CONSTRUCTION SITE AND IT'S LOCATION(S) SHALL BE IDENTIFIED WITH LEGIBLE SIGNAGEAND SHOWN ON THE SITE MAPS.
A. THE SPILL CONTROL AND CONTAINMENT KIT SHALL BE OF SUFFICIENT QUANTITIES AND APPROPRIATE CONTENT TO CONTAIN A SPILL FROM THE LARGEST ANTICIPATED PIECE OF EQUIPMENT AND FROM THE LARGEST ANTICIPATED QUANTITIES OF PRODUCTS STORED ON THE SITE AT ANY GIVEN TIME.

F. WHEN A SPILL OF REPORTABLE QUANTITIES IS DISCOVERED ON THE SITE, THE CONTRACTOR SHALL CLEAN UP ALL SPILLED MATERIALS AND DISPOSE OF IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE AUTHORITIES IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS, THE OWNER AND PROJECT ENGINEER. THE CONTRACTOR SHALL RETAIN CLEANUP INFORMATION AS WELL AS DISPOSAL MANIFESTS WITH THEIR SWPPP.

MATERIALS MANAGEMENT, AND EQUIPMENT STAGING AND MAINTENANCE

A. EXCAVATED MATERIAL SHALL NOT BE DEPOSITED IN LOCATIONS WHERE IT COULD BE WASHED AWAY BY HIGH WATER OR STORM WATER RUNOFF. STOCKPILED MATERIAL SHALL BE COVERED OR ENCIRCLED WITH SEDIMENT CONTAINMENT DEVICES.

B. HEAVY CONSTRUCTION EQUIPMENT PARKING AND MAINTENANCE AREAS SHALL BE DESIGNED TO PREVENT OIL, GREASE, AND LUBRICANTS FROM ENTERING SITE DRAINAGE FEATURES INCLUDING STORMWATER COLLECTION AND TREATMENT SYSTEMS. CONTRACTORS SHALL PROVIDE BROAD DIKES OR SILT SCREENS AROUND, AND SEDIMENT SUMPS WITHIN, SUCH AREAS AS REQUIRED TO CONTAIN SPILLS OR OIL, GREASE, LUBRICANTS, OR OTHER CONTAMINANTS. CONTRACTOR SHALL HAVE AVAILABLE, AND SHALL USE, ABSORBENT FILTER PADS TO CLEAN UP SPILLS IMMEDIATELY AFTER ANY OCCURRENCE.

C. THE CONTRACTOR SHALL ENSURE THAT ALL TOXIC / HAZARDOUS SUBSTANCES AND CHEMICALS ARE PROPERLY STORED, OUT OF THE WEATHER, AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL ENSURE THAT THESE PRODUCTS ARE STORED AND USED IN SUCH A MANNER THAT WILL NOT NEGATIVELY IMPACT STORMWATER, GROUNDWATER OR PROTECTED SPECIES.

D. THE CONTRACTOR SHALL ENSURE THAT ALL MATERIALS, EQUIPMENT, DEBRIS, WASTE, TRAILERS, AND OTHER SUPPORT RELATED ITEMS ARE CONTAINED WITHIN THE PERMITTED LIMITS OF DISTURBANCE. THE CONTRACTOR SHALL ENSURE THAT THE STORAGE AND USE OF SUCH ITEMS DOES NOT NEGATIVELY IMPACT STORMWATER OR GROUNDWATER.

OFFSITE VEHICLE TRACKING

A. THE CONTRACTOR SHALL ENSURE THAT THE CONSTRUCTION EXIT IS USED BY ALL VEHICLES AND EQUIPMENT ENTERING OR LEAVING THE JOBSITE. THE CONTRACTOR SHALL MONITOR AND MAINTAIN THE CONSTRUCTION EXIT TO ENSURE THAT NO SOILS ARE TRACKED OFFSITE BY TIRES OR TRACKS, AND THAT NO SOILS ARE SPILLED BY TRUCKS OR EQUIPMENT LEAVING THE SITE. ALL TRACKED OR SPILLED SOILS SHALL BE SHOVELED OR SWEPT FROM THE ROADWAY AND RETURNED TO THE SITE. WATER SHALL NOT BE USED TO CLEAN THE SOILS FROM THE ROADWAY UNLESS THE WATER AND SOILS ARE RECOVERED BY THE USE OF A VACUUM TRUCK OR SIMILAR DEVICE.

FERTILIZERS, HERBICIDES AND PESTICIDES

A. THE CONTRACTOR SHALL ENSURE THAT ALL FERTILIZERS, HERBICIDES, PESTICIDES AND SIMILAR PRODUCTS ARE PROPERLY STORED, OUT OF THE WEATHER, AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL ENSURE THAT THESE PRODUCTS ARE USED IN SUCH A MANNER THAT WILL NOT NEGATIVELY IMPACT STORMWATER, GROUNDWATER OR PROTECTED SPECIES.

B. NUTRIENTS SHALL BE APPLIED ONLY AT RATES NECESSARY TO ESTABLISH AND MAINTAIN VEGETATION.

INSPECTIONS AND MAINTENANCE

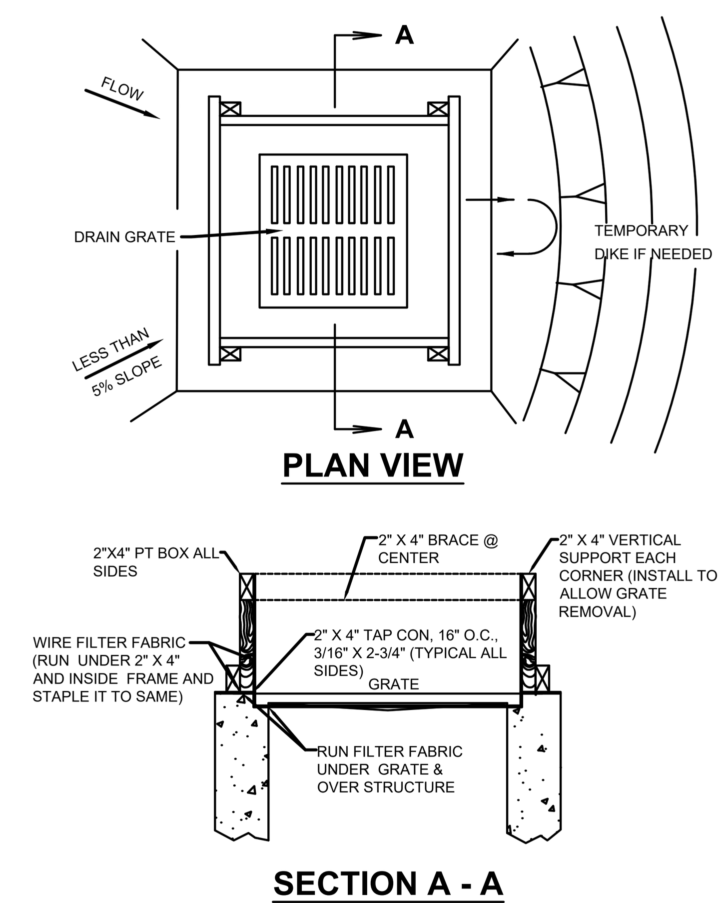
A. THE CONTRACTOR SHALL INSPECT BMPS (I.E. DISCHARGE LOCATIONS, CONSTRUCTION EXIT, PERIMETER CONTROLS, INLET PROTECTION, STABILIZATION, EROSION CONTROL, DOCUMENTATION, WASTE DISPOSAL AREAS, MATERIAL STORAGE AREAS, ETC.) TO ENSURE THAT BMPS ARE NOT CAUSING OR CONTRIBUTION TO VIOLATIONS OF WATER QUALITY STANDARDS OR RESULTING IN OFFSITE SEDIMENTATION; ENSURE THAT BMPS ARE INSTALLED, MAINTAINED AND OPERATING CORRECTLY AND EFFECTIVELY; ENSURE THAT BMPS ASSOCIATED WITH STORAGE AND WASTE DISPOSAL AREAS ARE BEING USED AND MAINTAINED PROPERLY; ENSURE THAT THE CONSTRUCTION EXIT IS FUNCTION PROPERLY TO PREVENT OFFSITE TRACKING OF SEDIMENT; ENSURE THAT EROSION PREVENTION MEASURES ARE MAINTAINED TO PREVENT VISIBLE EROSION OF DISTURBED AREAS AND SEDIMENTATION AT THE DISCHARGE POINTS; AND DETERMINE IF CONSTRUCTION ACTIVITIES HAVE ALTERED THE EFFECTIVENESS OF BMPS. INSPECTIONS MUST BE COMPLETED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS, AND WITHIN 24 HOURS AFTER A RAINSTORM OF 0.50 INCHES OR GREATER EVEN IF IT RAINS ON THE WEEKEND OR A HOLIDAY.

B. THE CONTRACTOR SHALL REPORT ALL INSPECTION FINDINGS AND CORRECTIVE ACTIONS TAKEN AS A RESULT OF THE INSPECTION USING THE STORMWATER POLLUTION PREVENTION PLAN INSPECTION REPORT FORM PROVIDED BY FDEP OR AN EQUIVALENT FORM. INSPECTION REPORTS SHALL BE SIGNED BY THE INSPECTOR AND A RESPONSIBLE AUTHORITY AS DEFINED BY THE PERMIT. INSPECTION REPORTS SHALL BE MAINTAINED WITH THE SWPPP. THE INSPECTOR MUST BE A QUALIFIED EROSION AND SEDIMENT CONTROL INSPECTOR AS DEFINED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION.

C. ANY MAINTENANCE, REPAIR AND NECESSARY REVISIONS TO BMP ITEMS SHALL BE ADDRESSED IN A TIMELY MANNER, BUT IN NO CASE LATER THAN 7 CALENDAR DAYS FOLLOWING THE INSPECTION OR IDENTIFICATION OF THE ISSUE. UNLESS OTHERWISE SPECIFIED, ACCUMULATED SEDIMENTS SHOULD BE REMOVED BEFORE THEY REACH ONE-HALF OF THE CAPACITY OF THE CONTROL DEVICE.

ALLOWABLE NON-STORMWATER DISCHARGES

THE GENERIC PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES PROHIBIT MOST NON-STORMWATER DISCHARGES DURING THE CONSTRUCTION PHASE. CERTAIN DISCHARGES ARE ALLOWED BY THE PERMIT, PROVIDED APPROPRIATE BMP'S ARE UTILIZED AND THE DISCHARGE DOES NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF WATER QUALITY STANDARDS. ALLOWABLE NON-STORMWATER DISCHARGES THAT OCCUR DURING CONSTRUCTION ON THIS PROJECT PER PART 3.2 OF THE GENERIC PERMIT ARE:
DISCHARGES FROM FIRE FIGHTING ACTIVITIES.
FIRE HYDRANT FLUSHINGS.
WATERS WITHOUT DETERGENTS USED TO SPRAY OFF LOOSE SOLIDS FROM VEHICLES.
WATERS USED TO CONTROL DUST.
POTABLE WATER SOURCES SUCH AS WATERLINE FLUSHINGS.
LANDSCAPE IRRIGATION AND DRAINAGE.
ROUTINE EXTERNAL BUILDING WASHDOWN PROVIDED NO DETERGENTS ARE USED.
PAVEMENT WASHWATERS THAT DO NOT CONTAIN DETERGENTS, LEAKS, SPILLS OF TOXIC OR HAZARDOUS MATERIALS.
AIR CONDITIONING CONDENSATE.
SPRING WATER.
FOUNDATION OR FOOTING DRAIN FLOWS THAT ARE NOT CONTAMINATED WITH PROCESS MATERIAL SUCH AS SOLVENTS.
NONCONTAMINATED GROUND WATER ASSOCIATED WITH DEWATERING ACTIVITIES AS DESCRIBED IN PART 3.4 OF THE GENERIC PERMIT.

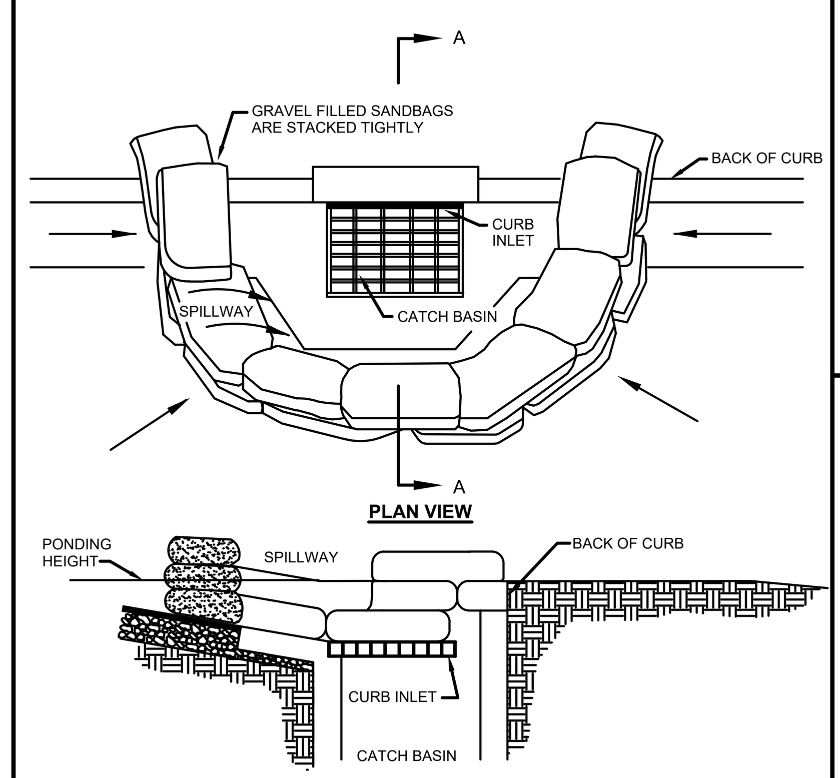


NOTES:
1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%).
2. THE TOP OF THE FRAME (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.
3. FASTEN FRAMING TO STRUCTURE TO ALLOW GRATE REMOVAL.
4. LEAVE EXPOSED EDGE TO ALLOW FOR PAVING TO GRADE

FILTER FABRIC INLET PROTECTION DETAIL

N.T.S.

**NOTE:
AVOID USING IN TRAFFIC AREAS AS THIS CAN CAUSE A HAZARD.**



NOTES:
1. PLACE CURB TYPE SEDIMENT BARRIERS ON GENTLY SLOPING STREET SEGMENTS WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. SANDBAGS OF EITHER BURLAP OR WOVEN GEOTEXTILE FABRIC, ARE FILLED WITH GRAVEL, LAYERED AND PACKED TIGHTLY.
3. LEAVE ONE SANDBAG GAP IN THE TOP ROW TO PROVIDE A SPILLWAY FOR OVERFLOW.
4. INSPECT BARRIERS AND REMOVE SEDIMENT AS NECESSARY. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

CURB INLET PROTECTION DETAIL

N.T.S.

CONTRACTOR / SUBCONTRACTOR CERTIFICATION TABLE

THIS SWPPP MUST CLEARLY IDENTIFY, FOR EACH MEASURE IDENTIFIED WITHIN THE SWPPP, THE CONTRACTOR(S) OR SUBCONTRACTOR(S) WHO WILL IMPLEMENT EACH MEASURE. ALL CONTRACTOR(S) AND SUBCONTRACTOR(S) IDENTIFIED IN THE SWPPP MUST SIGN THE FOLLOWING CERTIFICATION:

"I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, AND SHALL COMPLY WITH, THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN."

Name / Signature	Title	Company Name, Address and Phone Number	Date

NOTE: CONTRACTOR TO ADD SHEETS TO CERTIFICATION TABLE AS NECESSARY.

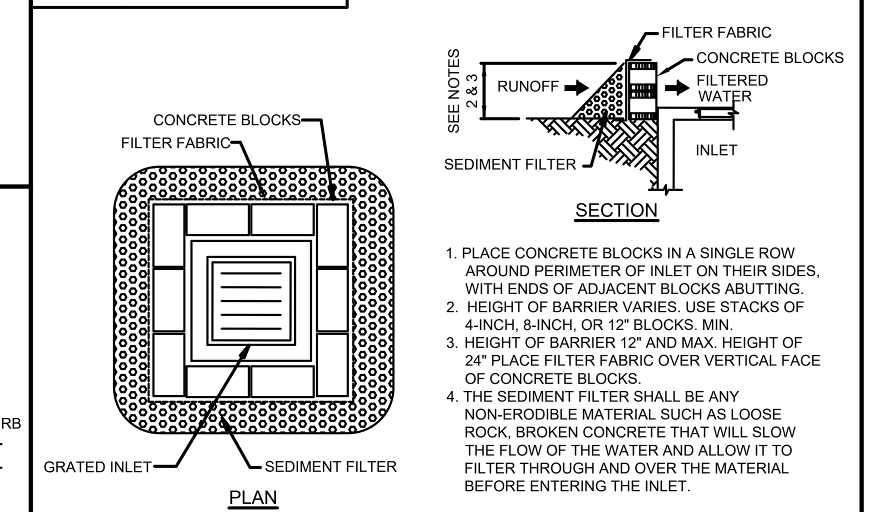
SWPPP IMPLEMENTATION LOG

A RECORD OF DATES WHEN BMPs ARE INSTALLED OR REMOVED, STABILIZATION MEASURES ARE INITIATED, MAJOR GRADING ACTIVITIES OCCUR, AND CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON PORTIONS OF THE SITE. THIS FORM MUST BE UPDATED CONTINUOUSLY THROUGHOUT THE PROJECT UNTIL THE NOTICE OF TERMINATION (NOT) IS FILED.

DESCRIPTION OF ACTIVITY	LOCATION	CONTRACTOR	BEGIN DATE	END DATE

NOTE: CONTRACTOR TO ADD SHEETS TO THE SWPPP IMPLEMENTATION LOG AS NECESSARY.

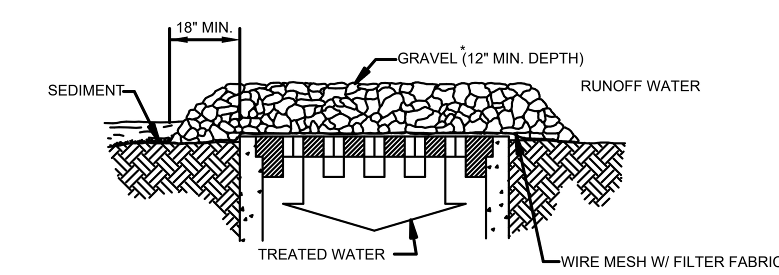
**NOTE:
AVOID USING IN TRAFFIC AREAS AS THIS CAN CAUSE A HAZARD.**



1. PLACE CONCRETE BLOCKS IN A SINGLE ROW AROUND PERIMETER OF INLET ON THEIR SIDES, WITH ENDS OF ADJACENT BLOCKS ABUTTING.
2. HEIGHT OF BARRIER VARIES. USE STACKS OF 4-INCH, 8-INCH, OR 12" BLOCKS. MIN.
3. HEIGHT OF BARRIER 12" AND MAX. HEIGHT OF 24" PLACE FILTER FABRIC OVER VERTICAL FACE OF CONCRETE BLOCKS.
4. THE SEDIMENT FILTER SHALL BE ANY NON-ERODIBLE MATERIAL SUCH AS LOOSE ROCK, BROKEN CONCRETE THAT WILL SLOW THE FLOW OF THE WATER AND ALLOW IT TO FILTER THROUGH AND OVER THE MATERIAL BEFORE ENTERING THE INLET.

BLOCK AND AGGREGATE INLET SEDIMENT FILTER

N.T.S.



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED ACRES.

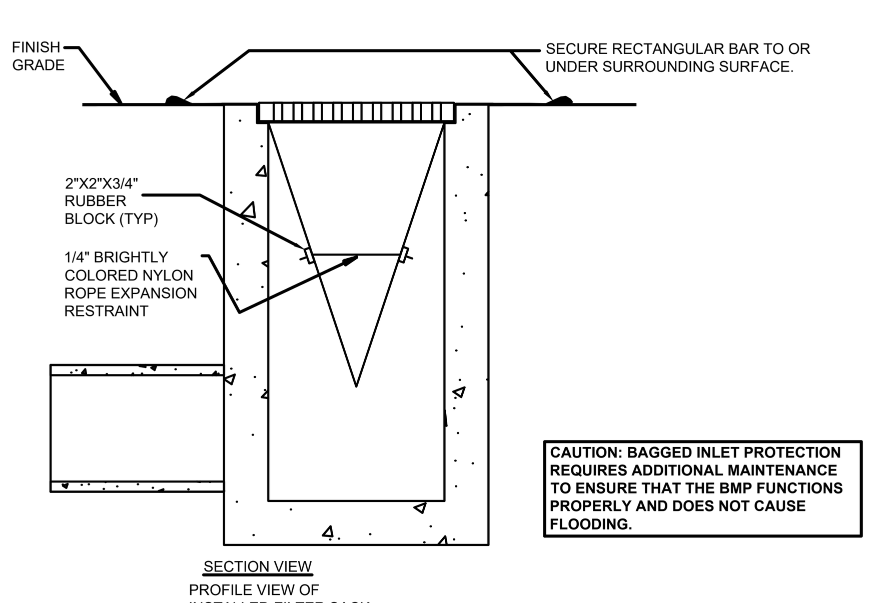
* GRAVEL SHALL BE 2"-3" CLEAN STONE

GRAVEL & WIRE MESH INLET SEDIMENT FILTER

N.T.S.

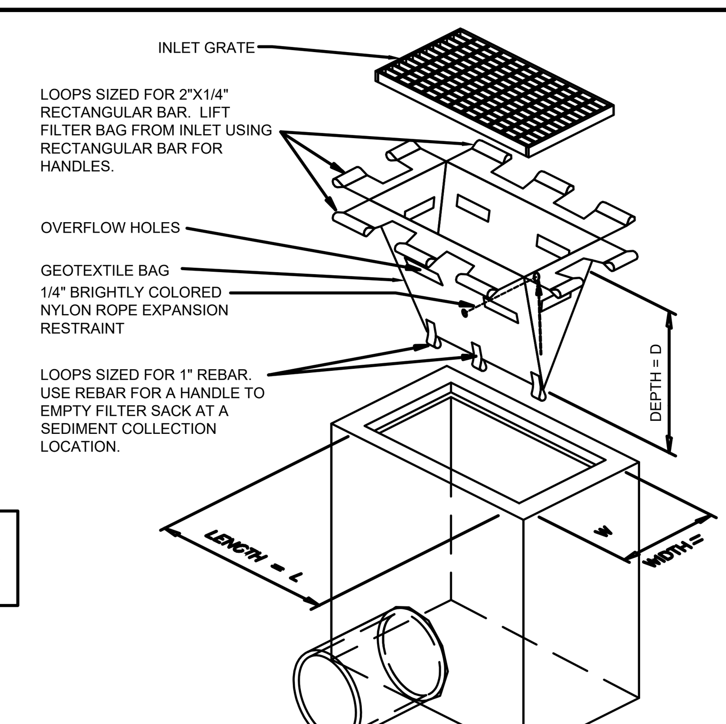
1. REMOVE TRAPPED SEDIMENT WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. GEOTEXTILE SHALL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
3. PLACE AN OIL ADSORBENT PAD OR PILLOW OVER INLET GRATE WHEN OIL SPILLS ARE A CONCERN.
4. INSPECT PER REGULATORY EQUIREMENTS.
5. THE WIDTH, "W", OF THE FILTER SACK SHALL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH, "D", OF THE FILTER SACK SHALL BE BETWEEN 18 INCHES AND 36 INCHES.
7. THE LENGTH, "L", OF THE FILTER SACK SHALL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.
8. EXTRA CARE SHALL BE TAKEN TO ENSURE REGULAR MAINTENANCE OF FILTER SACKS USED IN RIGHT OF WAY TO ENSURE ADEQUATE DRAINAGE CAPACITY.

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1



SECTION VIEW
PROFILE VIEW OF INSTALLED FILTER SACK

CAUTION: BAGGED INLET PROTECTION REQUIRES ADDITIONAL MAINTENANCE TO ENSURE THAT THE BMP FUNCTIONS PROPERLY AND DOES NOT CAUSE FLOODING.

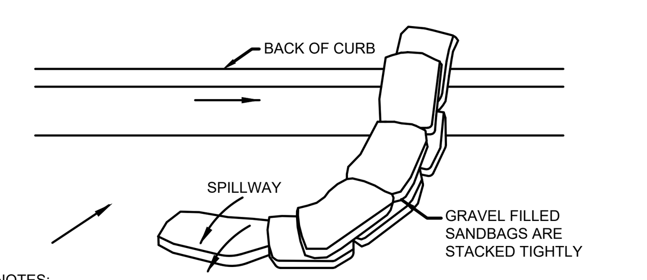


ISOMETRIC VIEW

GEOTEXTILE BAG INLET PROTECTION DETAIL

N.T.S.

**NOTE:
AVOID USING IN TRAFFIC AREAS AS THIS CAN CAUSE A HAZARD.**



NOTES:
1. PLACE CURB TYPE SEDIMENT BARRIERS ON GENTLY SLOPING STREET SEGMENTS WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. SANDBAGS OF EITHER BURLAP OR WOVEN GEOTEXTILE FABRIC, ARE FILLED WITH GRAVEL, LAYERED AND PACKED TIGHTLY.
3. TAPER TO ONE SANDBAG TO PROVIDE A SPILLWAY FOR OVERFLOW.
4. INSPECT BARRIERS AND REMOVE SEDIMENT AS NECESSARY. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

CURB LINE PROTECTION DETAIL

N.T.S.

CONSTRUCTION SEQUENCING TABLE

ANTICIPATED CONSTRUCTION SEQUENCE*	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
CONSTRUCTION ENTRANCE												
TEMPORARY CONTROL MEASURES												
STORM FACILITIES												
ROUGH GRADE / SEDIMENT CONTROL												
FOUNDATION / BUILDING CONSTRUCTION												
SITE CONSTRUCTION												
FINISH GRADING												
PERMANENT CONTROL MEASURES												

* THIS IS ONLY A GUIDE, CONTRACTOR IS TO USE HIS JUDGMENT TO MODIFY AS NEEDED.

Stormwater Team

Description	Name	Company
Contractor:		
Contractor's Responsible Authority:		
Qualified Inspector(s):		
Maintenance Personnel:		

The contractor shall complete this table identifying the individuals of the stormwater team and their responsibilities.

cph
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Plans Prepared By:
CPH, Inc.
**State of Florida Licenses:
Engineer No. 3215
Surveyor No. LB7143
Architect. No. AA26000926
Landscape No. LC000298**

Jeffrey M. Satfield State of Florida, Professional Engineer, License No. 61905. This item has been electronically signed and sealed by Jeffrey M. Satfield on the date indicated here using a SHA authentication code. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

No.	Date	Revision
1	03/18/21	60% SUBMITTAL
2		
3		
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Designed: R. Smith
Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021

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STORMWATER POLLUTION PREVENTION PLAN

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
C1.2

J:\M13112_Kingfish_Boat_Ramp\Civil\DWG_Current_Plan_Set\Working\M13112-C1.1-C1.2 SWPPP.dwg, 9/27/2021 11:00:15 AM, D'Angelo, Matthew, _cph - Standard.stb

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NOTE:

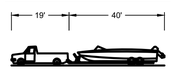
DREDGE VOLUME: 0.00 CY

LEGEND

- PROPERTY LINE
- WETLAND SETBACK LINE
- SEA GRASS LINE
- LANDSCAPE BUFFER
- SHEET PILE SEA WALL
- GRAVITY WALL
- LIGHT DUTY CONCRETE (REFER TO DETAIL SHEET C5.2)
- HEAVY DUTY CONCRETE (REFER TO DETAIL SHEET C5.2)
- PROP WASH PROTECTION (REFER TO DETAIL SHEET C5.2)
- CR-G SIDEWALK RAMP (PER FDOT INDEX NO. 522-002)
- 10 PARKING SPACE COUNT
- (HC) HANDICAP (FTP-25) (PER FDOT INDEX NO. 711-001)
- (ST) STOP SIGN (R1-1)
- P-1 POLL/TROLL SIGN (P-1)
- (BP) BEACH PARKING PROHIBITED SIGN
- WHEEL STOP (PER FDOT INDEX NO. 520-001)

NOTE:
ITEMS SHOWN SCREENED REPRESENT EXISTING CONDITIONS.
ITEMS SHOWN BOLD REPRESENT PROPOSED CONDITIONS.

2 MAXIMUM BOAT DIMENSIONS



F-150 SUPERCREW 4x4 W/ TRAILER	
OVERALL LENGTH	59'
OVERALL WIDTH	12'
MAXIMUM BOAT LENGTH	32'
MAXIMUM BOAT DRAFT	2'
MEAN LOW WATER (MLW) ELEVATION	-1.25
AVERAGE WATER ELEVATION AT RAMP AND MOORING	-4
CLEARANCE BETWEEN DRAFT AND MLW ELEVATION	2.75'

SITE DATA INFORMATION:

FLOOD ZONE INFORMATION:

HAVING CONSULTED THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE
RATE MAP (FIRM) COMMUNITY PANEL NO. 125114 02777 E, CITY OF HOLMES BEACH,
EFFECTIVE DATE MARCH 17, 2014. THE SUBJECT PROPERTY APPEARS TO LIE IN ZONE AE, WHICH ARE AREAS DETERMINED TO BE SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100 YEAR FLOOD WITH BASE FLOOD ELEVATIONS DEPICTED LYING BETWEEN 8 AND 10 FEET (NAVD '88). THIS DETERMINATION WAS BASED ON A GRAPHIC INTERPOLATION OF SAID MAP AND NOT ON ACTUAL FIELD MEASUREMENTS.

LANDSCAPE BUFFERS:

LANDSCAPE BUFFERS:	NORTH	SOUTH	EAST	WEST
REQUIRED:	0'	5'	5'	5'
PROVIDED:	0'	5'	5'	5'

2 **NOTE:**
BARGES AND CONSTRUCTION VESSELS SHALL AVOID SEA GRASS AREAS THROUGHOUT THE DURATION OF CONSTRUCTION. IF SEDIMENTATION AND SILTATION BECOMES PRESENT WITHIN WETLANDS OR SURFACE WATERS, EROSION CONTROL MEASURES AND VESSELS SHALL BE ADJUSTED ACCORDINGLY. REF. SEA GRASS LINE THIS SHEET AND SEA GRASS MEMO.

PARKING INFORMATION:

EXISTING SPACES:	
BOAT TRAILER PARKING	47
CAR PARKING	14
WITHIN RIGHT-OF-WAY	44
TOTAL	105

PHASE I PROPOSED SPACES:	
BOAT TRAILER PARKING	55
CAR PARKING	18
WITHIN RIGHT-OF-WAY	44
TOTAL	117

PHASE II PROPOSED SPACES:	
BOAT TRAILER PARKING	88
CAR PARKING	18
WITHIN RIGHT-OF-WAY	0
TOTAL	106

1 **NOTE:**
TRASH RECEPTACLES, BENCHES, BIKE RACKS, AND TABLES WILL BE FURNISHED AND INSTALLED BY MANATEE COUNTY PARKS AND RECREATION (DEBRA LEAVENWORTH).

KEYNOTE LEGEND

1. 8' COMPOSITE WOOD DOCK (TYP), (REFER TO STRUCTURAL DRAWINGS)
2. 5' COMPOSITE WOOD DOCK (TYP), (REFER TO STRUCTURAL DRAWINGS)
3. ACCESSIBLE PARKING SPACE W/ ACCESSIBLE PARKING SIGN, STRIPING AND SYMBOL (TYP), (PER FDOT INDEX NO. 711-001)
4. PROPOSED PARKING SPACE STRIPING. SINGLE YELLOW SOLID LINE / 4" (TYP) (DOUBLE COAT)
5. 5' CONCRETE SIDEWALK (PER FDOT INDEX NO. 522-001)
6. DETECTABLE WARNING (PER FDOT INDEX NO. 522-002)
7. 8' WIDE CROSSWALK (PER FDOT INDEX NO. 711-001)
8. TYPE "F" CURB (PER FDOT INDEX NO. 520-001)
9. FISH CLEANING STATION (REFER TO DETAIL SHEET C5.2) (MSD FINDING DETAIL)
10. PROPOSED RESTROOM REF. ARCH. PLANS
11. ICE/VENDING MACHINE (BY MANATEE COUNTY PARKS AND RECREATION - DEBRA LEAVENWORTH)
12. INFORMATIONAL KIOSK (BY MANATEE COUNTY PARKS AND RECREATION - DEBRA LEAVENWORTH)
13. GARBAGE CAN (REFER TO LANDSCAPE PLANS)
14. FISH CARCASS DISPOSAL TUBE (REFER TO DETAILS)
15. 18" YELLOW PAVEMENT STRIPING (PER FDOT INDEX NO. 711-001
16. 8' CONCRETE SIDEWALK (PER FDOT INDEX NO. 522-001)
17. CONCRETE FLUME (PER FDOT INDEX NO. 520-010)
18. POST AND ROPE FENCE (SEE SHEET C5.2 FOR DETAILS)
19. REMOVABLE AND LOCKING BOLLARDS, 5' OC (MEETING ASTM F3016 P1, MIN. 20 MPH) (TYP)
20. PROPOSED BOAT TRAILER PARKING SIGN (TYP)
21. PROPOSED "PARKING FOR KINGFISH BOAT RAMP. BEACH ACCESS PARKING PROHIBITED" SIGN (TYP)
22. PROPOSED "POLL AND TROLL ZONE, USE OF COMBUSTION MOTORS PROHIBITED" SIGN (TYP)
23. RELOCATED KING FISH BOAT RAMP SIGN
24. REMOVE AND REPLACE 5' CONCRETE SIDEWALK (PER FDOT INDEX NO. 522-001)
25. PROPOSED FULL ACCESS
26. FOR MEAN HIGH AND MEAN LOW WATER ELEVATIONS (SEE CROSS SECTION "D-D" SHEET C5.1)
27. START SHEET PILE SEA WALL
28. END SHEET PILE SEA WALL
29. GRAVITY WALL W/ GUIDE RAIL (PER FDOT INDEX NO. 400-011)
30. START GRAVITY WALL
31. END GRAVITY WALL
32. PROPOSED RIGHT-IN RIGHT-OUT
33. PROVIDE BOLT-ON DOCK REFLECTORS. CONTRACTOR TO SUBMIT PRODUCT FOR EOR APPROVAL. 2
34. 24" SOLID STOP LINE (PER FDOT INDEX NO. 711-001)
35. BOLLARDS, 5' OC (MEETING ASTM F3016 P1, MIN. 20 MPH) (TYP)

SITE DATA INFORMATION:

SITE PARCEL:

752 MANATEE AVENUE WEST

PARCEL 21 (PART A)	238,709± S.F.	(5.48± AC.)
TOTAL	238,709± S.F.	(5.48± AC.)

SECTION 28/TOWNSHIP 34 S/RANGE 16 E

ON-SITE LAND INFORMATION:

CURRENT LAND USE:	REC OPEN SPACE
PROPOSED LAND USE:	REC OPEN SPACE
CURRENT ZONING:	REC PUBLIC RECREATION
PROPOSED ZONING:	REC PUBLIC RECREATION
DEVELOPMENT TYPE:	PUBLIC BOAT RAMP

ADJACENT LAND INFORMATION:

EXISTING LAND USE:		FUTURE LAND USE :	
NORTH:	ANNA MARIA SOUND	NORTH:	ANNA MARIA SOUND
EAST:	REC OPEN SPACE	EAST:	REC OPEN SPACE
SOUTH:	REC OPEN SAPCE	SOUTH:	REC OPEN SPACE
WEST:	MDR	WEST:	MDR

EXISTING ZONING :		PROPOSED ZONING :	
NORTH:	ANNA MARIA SOUND	NORTH:	ANNA MARIA SOUND
EAST:	REC PUBLIC RECREATION	EAST:	REC PUBLIC RECREATION
SOUTH:	REC PUBLIC RECREATION	SOUTH:	REC PUBLIC RECREATION
WEST:	R-3	WEST:	R-3

PERVIOUS / IMPERVIOUS AREAS:

PRE DEVELOPMENT:			
PERVIOUS AREA	94,482 S.F.	(2.17 AC.)	(39.61%)
IMPERVIOUS AREA	92,172 S.F.	(2.12 AC.)	(38.69%)
SEA WALL	916 S.F.	(0.02 AC.)	(0.36%)
DOCK	744 S.F.	(0.02 AC.)	(0.36%)
REMAINING LEASE AREA	50,481 S.F.	(1.15 AC.)	(20.98%)
TOTAL SITE AREA	238,795 S.F.	(5.48 AC.)	(100.00%)

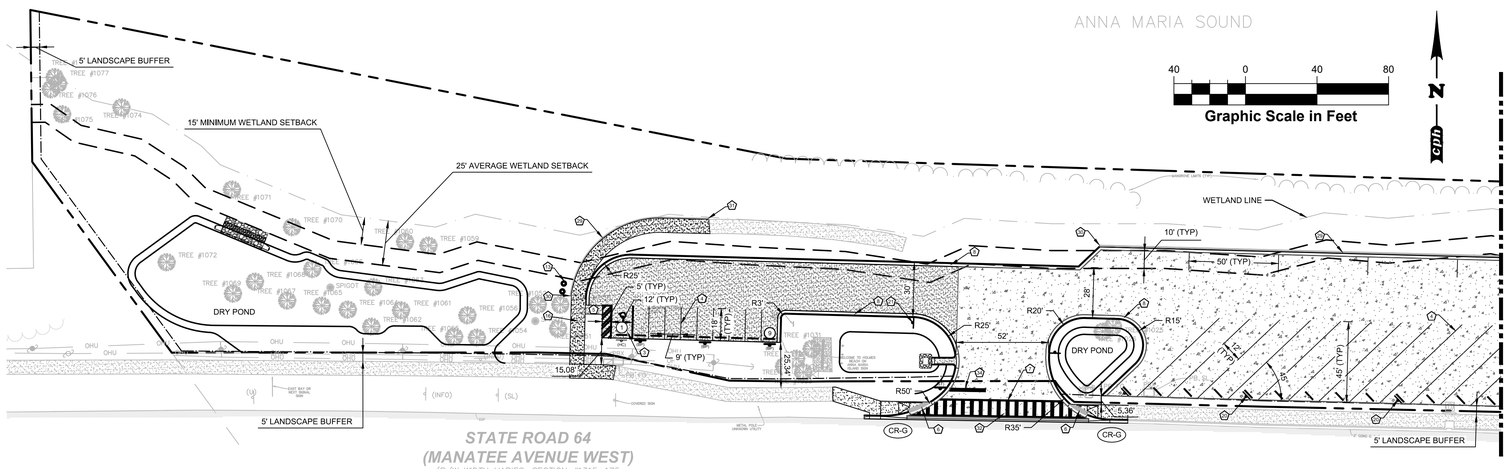
PHASE I POST DEVELOPMENT:			
PERVIOUS AREA	87,680 S.F.	(2.02 AC.)	(36.86%)
IMPERVIOUS AREA	94,303 S.F.	(2.16 AC.)	(39.42%)
SEA WALL	926 S.F.	(0.02 AC.)	(0.36%)
DOCK	5,405 S.F.	(0.12 AC.)	(2.19%)
REMAINING LEASE AREA	50,481 S.F.	(1.16 A.C.)	(21.17%)
TOTAL SITE AREA	238,795 S.F.	(5.48 AC.)	(100.00%)

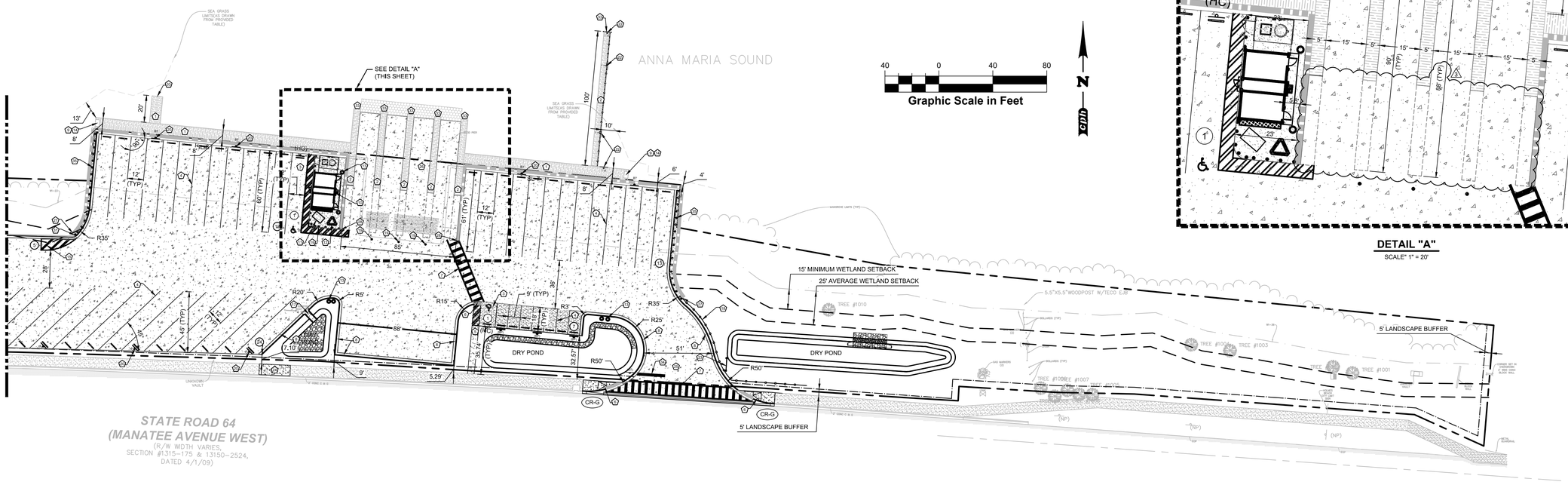
PHASE II POST DEVELOPMENT:			
PERVIOUS AREA	71,826 S.F.	(1.65 AC.)	(28.15%)
IMPERVIOUS AREA	126,831 S.F.	(2.91 AC.)	(49.66%)
SEA WALL	926 S.F.	(0.02 AC.)	(0.34%)
DOCK	5,405 S.F.	(0.12 AC.)	(2.05%)
REMAINING LEASE AREA	50,481 S.F.	(1.16 A.C.)	(19.80%)
TOTAL SITE AREA	255,469 S.F.	(5.86 AC.)	(100.00%)

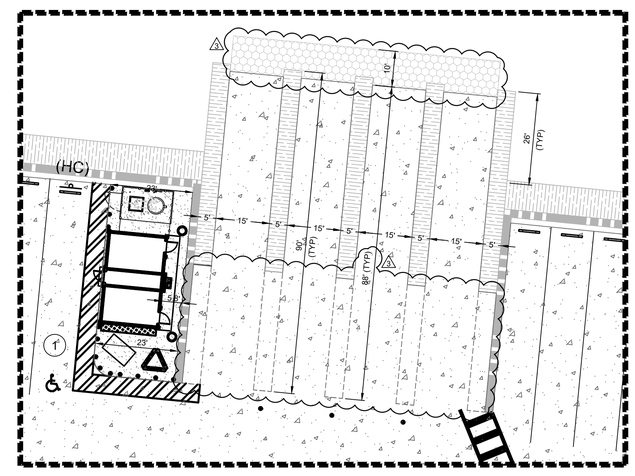
IMPROVEMENTS BELOW MEAN HIGH WATER:

BOAT RAMP 4,401 S.F. (0.10 AC.)

ALLOWABEL DOCK AREA: 18,000 S.F.







DETAIL "A"
SCALE" 1" = 20'

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Architect. No. AA26000926
Landscape No. LC000298

JEFFREY MICHAEL SATFIELD ★ LICENSED PROFESSIONAL ENGINEER ★ No. 61905 ★ STATE OF FLORIDA
09-27-21

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No.	Date	Revision
1	9/23/2021	PER COUNTY COMMENT
2	8/24/2021	PER FDEP COMMENT
3	03/18/21	60% SUBMITTAL

Designed: R. Smith
Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021 © 2021

PHASE I SITE DIMENSION PLAN

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
C1.3

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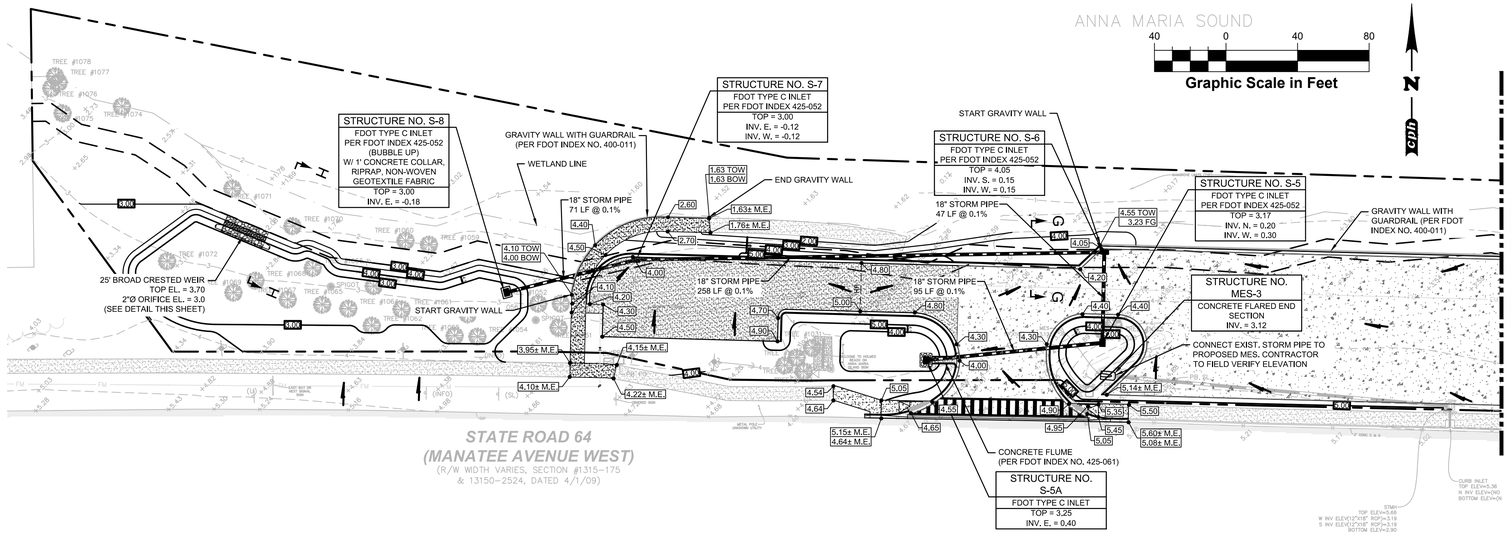

LEGEND

- PROPERTY LINE
- WETLAND SETBACK LINE
- SEA GRASS LINE
- LANDSCAPE BUFFER
- XX — CONTOUR ELEVATION
- SHEET PILE SEA WALL
- GRAVITY WALL
- DRAINAGE FLOW ARROW
- LIGHT DUTY CONCRETE (REFER TO DETAIL SHEET C5.2
- HEAVY DUTY CONCRETE (REFER TO DETAIL SHEET C5.2
- CONTECH ARMORTEC (REFER TO SHEET C5.2)
- RIPRAP W/ NON-WOVEN GEOTEXTILE FABRIC (PER FDOT SPECIFICATION 530)
- XX.XX — TOP OF CURB ELEV.
- XX.XX — PAVEMENT ELEV.
- XX.XX — PAVEMENT ELEV.

PIPE MATERIALS

STORMWATER PIPE
RCP PIPE SHALL COMPLY WITH ASTM C76
ERCP PIPE SHALL COMPLY WITH ASTM C507
HDPE PIPE SHALL COMPLY WITH ASTM D3350
PVC PIPE SHALL COMPLY WITH ASTM D3034, SDR 35
PP PIPE SHALL COMPLY WITH ASTM F2881 AND AASHTO M330

NOTES:

1. ITEMS SHOWN SCREENED REPRESENT EXISTING CONDITIONS. ITEMS SHOWN BOLD REPRESENT PROPOSED CONDITION.
2. CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ADA AREAS ARE CONSTRUCTED IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION. IF THE CONTRACTOR DETERMINES THAT ANY INFORMATION SHOWN ON THIS PLAN MAY NOT BE IN COMPLIANCE THEY SHALL NOTIFY THE ENGINEER PRIOR TO THE WORK BEING COMPLETED.
3. GRADING SHOWN ON THESE PLANS IS PROVIDED TO THE CONTRACTOR TO EXPRESS THE GENERAL GRADING INTENT OF THE PROJECT. THE CONTRACTOR SHALL BE EXPECTED TO GRADE THE ENTIRE SITE TO ENSURE POSITIVE DRAINAGE IN ALL AREAS THROUGHOUT THE SITE. THE FOLLOWING MINIMUM SLOPES SHALL BE PROVIDED BY THE CONTRACTOR:
   a. ASPHALT PAVEMENT: MIN. 1% SLOPE
   b. CONCRETE PAVEMENT: MIN. 1% SLOPE
   c. GUTTERS: MIN 0.

NOTE:
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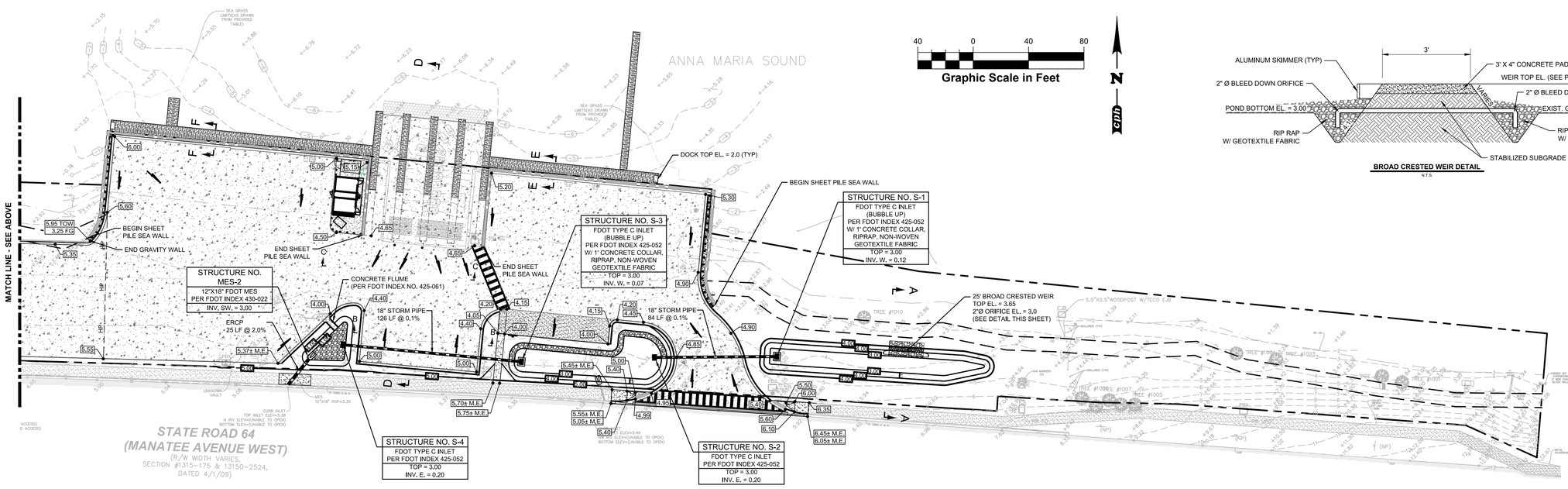

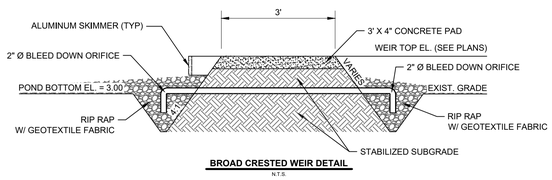

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Designed: R. Smith
Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021

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GRADING AND STORM DRAINAGE PLAN

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

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Sheet No.
C1.4

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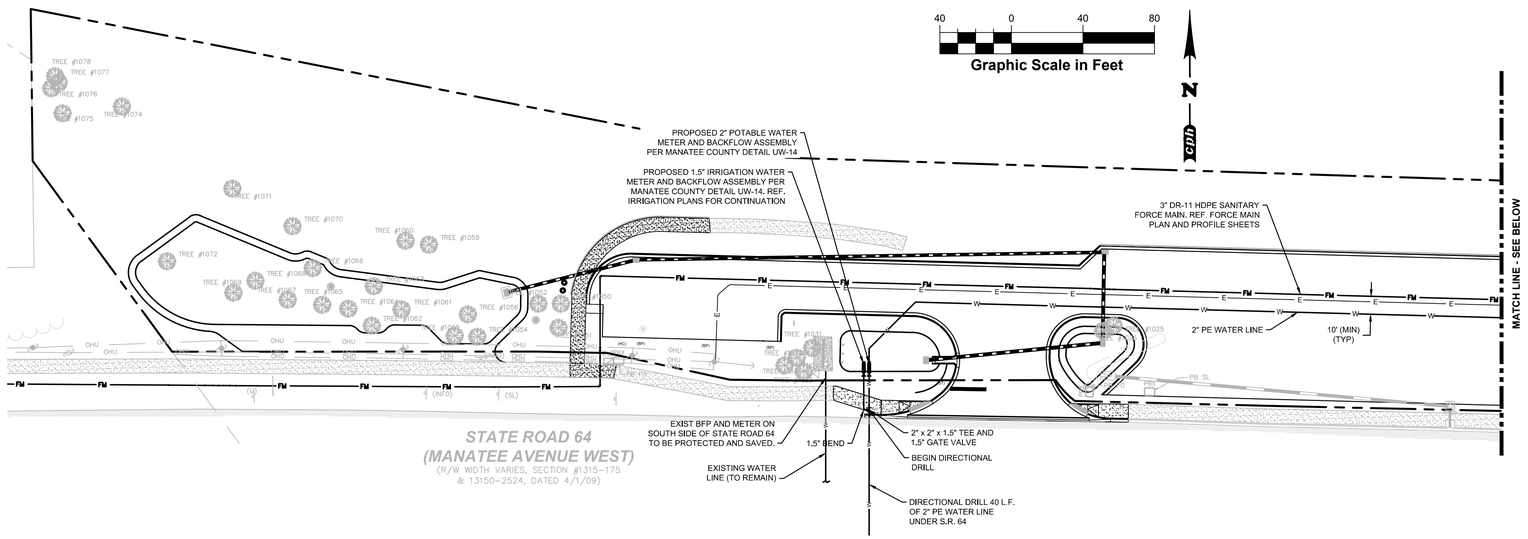
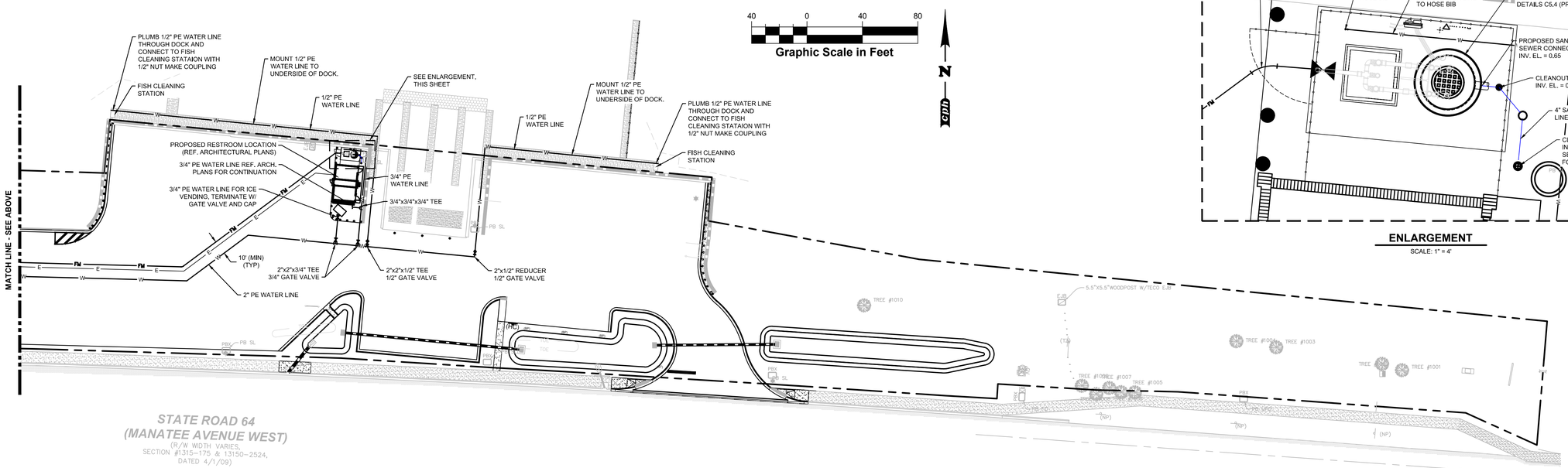




LEGEND

	PROPERTY LINE
W	WATER LINE
S	SANITARY SEWER GRAVITY LINE
E	ELECTRIC SERVICE (REF. ELECTRICAL DRAWINGS)
FM	SANITARY SEWER FORCE MAIN
C.O.	CLEAN OUT
	WATER METER
	BACK FLOW PREVENTER
	GATE VALVE
	REDUCER
	FITTINGS

UTILITY LINE MATERIALS

POTABLE WATER LINE
1/2" POLYETHYLENE SHALL CONFORM TO AWWA C901, ASTM D-3350
3/4" POLYETHYLENE SHALL CONFORM TO AWWA C901, ASTM D-3350
1.5" POLYETHYLENE SHALL CONFORM TO AWWA C901, ASTM D-3350
2" POLYETHYLENE SHALL CONFORM TO AWWA C901, ASTM D-3350

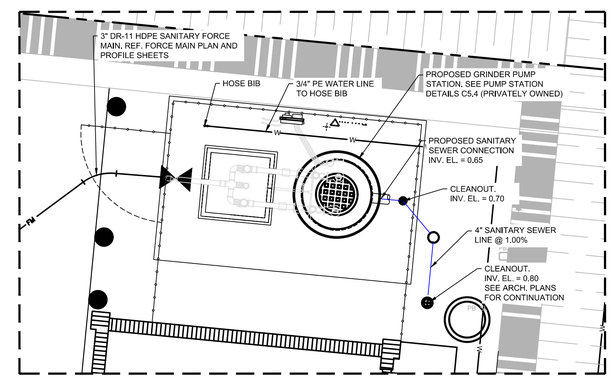
FIRE WATER LINE
4" DIP SHALL CONFORM TO AWWA C150 AND C151, CLASS 350
6" DIP SHALL CONFORM TO AWWA C150 AND C151, CLASS 350

FORCE MAIN
3" HDPE (PE 4710) SHALL CONFORM TO AWWA C906, ASTM D2737, CLASS 200, ASTM D3350 DR11

GRAVITY SEWER LINE
4" PVC SHALL CONFORM TO AWWA C900, CLASS 150 DR 18

NOTES:

1. A TOTAL OF THREE SEPARATE INSPECTIONS BY ERS STAFF ARE REQUIRED: TWO (2) SEPARATE INSPECTIONS BY ERS STAFF ARE REQUIRED PRIOR TO AUTHORIZATION OF CONSTRUCTION AND/OR LAND CLEARING ACTIVITIES AND ONE (1) FINAL SITE INSPECTION FOR REMOVAL OF EROSION AND SEDIMENT CONTROL (ESC) DEVICES.
2. WHEN READY FOR SILT FENCE STAKING AND INSTALLATION INSPECTIONS, PLEASE CONTACT ENVIRONMENTALFIELDINSPECTIONS@MY MANATEE.ORG, 941-748-4501, EXT. 6895.
3. MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS ARE THE MINIMUM ALLOWABLE WATER AND/OR WASTEWATER CONSTRUCTION STANDARDS. WHERE ANY NOTE OR DETAIL ON THESE PLANS CONFLICT WITH THE MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS THE MORE STRINGENT INTERPRETATION, AS DETERMINED BY THE COUNTY INFRASTRUCTURE INSPECTOR, SHALL BE APPLIED.
4. PER NFPA-70, A CUSTOM WARNING LABEL MUST BE PLACED ON ALL ELECTRICAL EQUIPMENT PRIOR TO MANATEE COUNTY INSPECTION.
5. ALL CLEANOUTS LOCATED IN PARKING SPACES AND DRIVE AISLES ARE TO BE TRAFFIC RATED FRAMES AND COVERS.
6. REFER TO ELECTRICAL PLANS FOR ELECTRICAL SERVICE ROUTE.



ENLARGEMENT
SCALE: 1" = 4'

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Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021
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COMPOSITE UTILITY PLAN

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

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Sheet No.
C1.5

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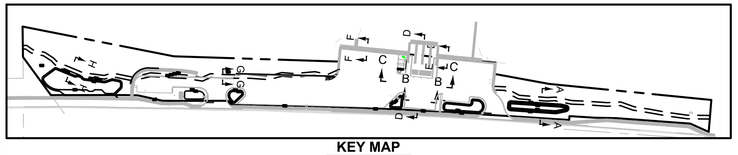
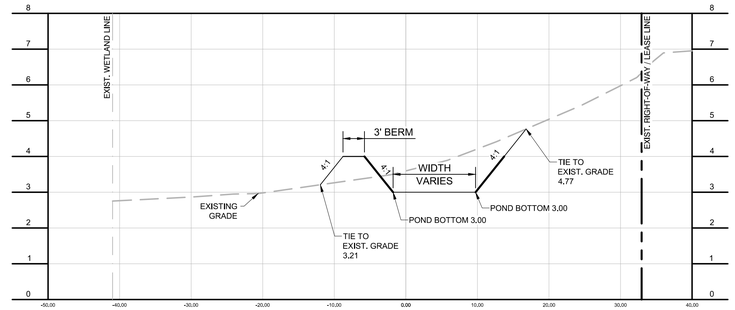


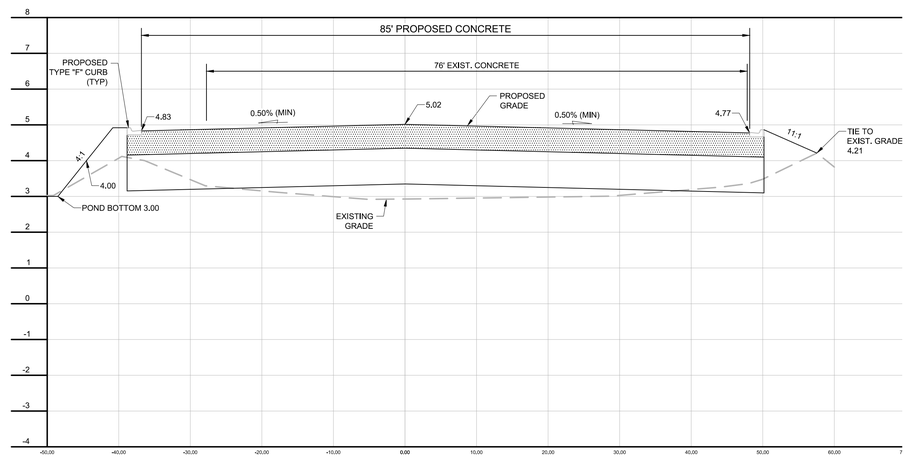
KEY MAP

N.T.S.



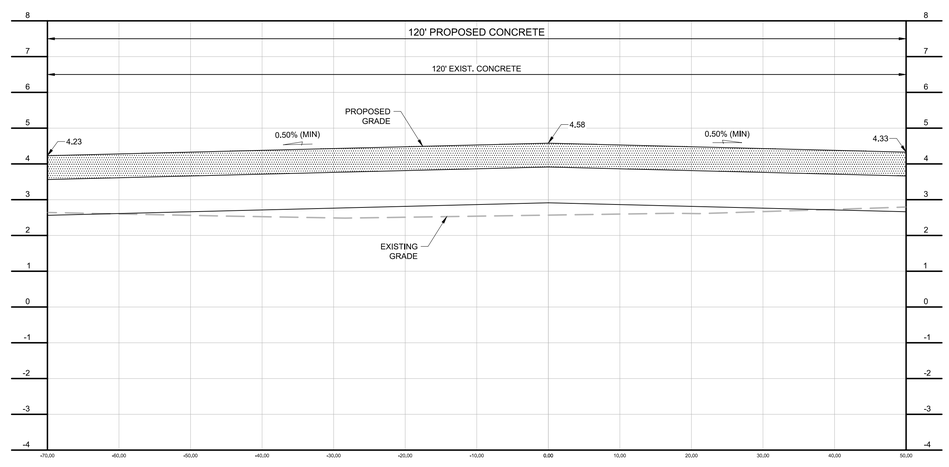
SECTION 'A'-'A'

SCALE: 1"=10' HORIZ
1"=2' VERT (24" X 36")



SECTION 'B'-'B'

SCALE: 1"=10' HORIZ
1"=2' VERT (24" X 36")



SECTION 'C'-'C'

SCALE: 1"=10' HORIZ
1"=2' VERT (24" X 36")

LEGEND

- PROPOSED GRADE
- EXISTING GRADE
- 6" CONCRETE
- 12" OF EITHER EXISTING SURFICIAL SAND OR CLEAN FINE SAND SUBGRADE COMPACTED TO AT LEAST 98% OF THE MODIFIED PROCTOR TEST MAXIMUM DENSITY TO YIELD A MINIMUM LBR = 40
- PROPOSED FILL

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Plans Prepared By:
CPH, Inc.
State of Florida Licenses:
Engineer No. 3215
Surveyor No. LB7143
Architect. No. AA26000926
Landscape No. LC000298

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No.	Date	Revision
1	03/18/21	60% SUBMITTAL
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Designed: R. Smith
Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021

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CROSS SECTIONS

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

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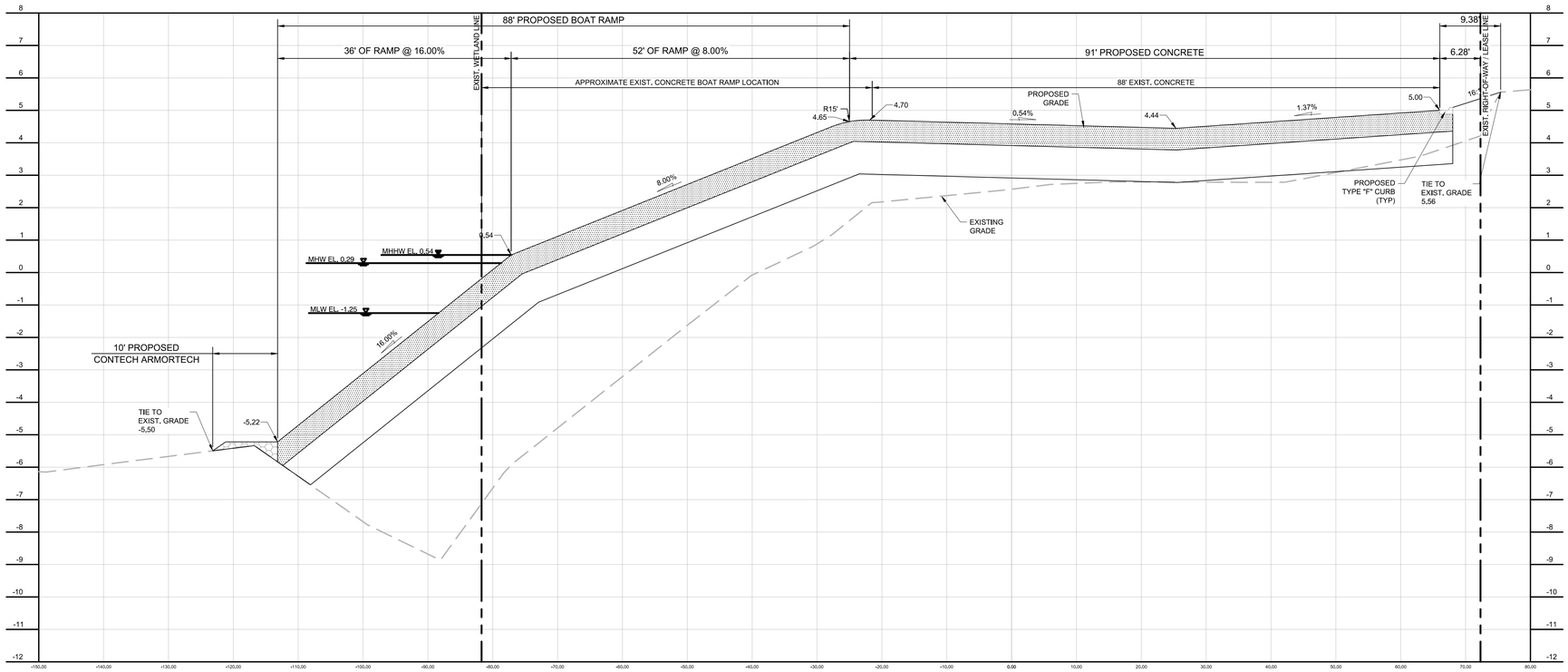
Sheet No.
C5.0

J:\M13112_Kingfish_Boat_Ramp\Civil\DWG_Current_Plan_Set\Working\M13112-C5.0 CROSS SECTIONS.dwg, 9/27/2021 11:02:33 AM, D'Angelo, Matthew, , cph - Standard.stb

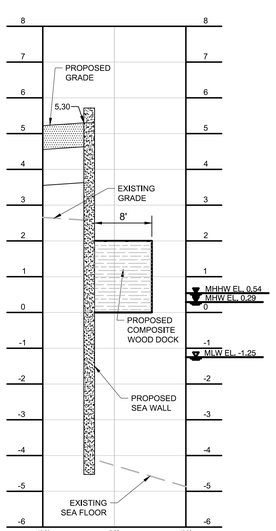


SECTION 'D'-'D'

SCALE: 1"=10' HORIZ
1"=2' VERT (24" X 36")

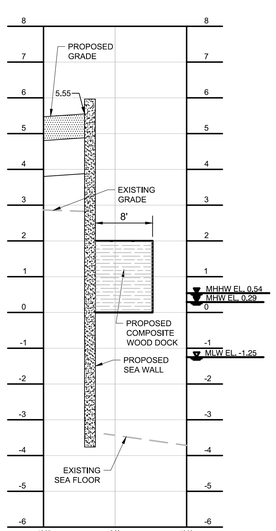
LEGEND

- PROPOSED GRADE
- EXISTING GRADE
- CONCRETE BOAT RAMP (REFER TO STRUCTURAL PLANS)
- 12" OF EITHER EXISTING SURFICIAL SAND OR CLEAN FINE SAND SUBGRADE COMPACTED TO AT LEAST 95% OF THE MODIFIED PROCTOR (ASTM D-1557) MAXIMUM DENSITY TO YIELD A MINIMUM LBR = 40
- PROPOSED FILL



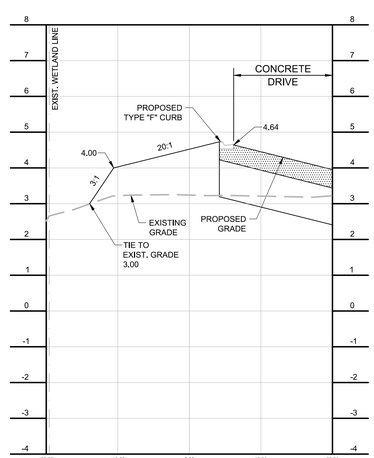
SECTION 'E'-'E'

SCALE: 1"=10' HORIZ
1"=2' VERT (24" X 36")



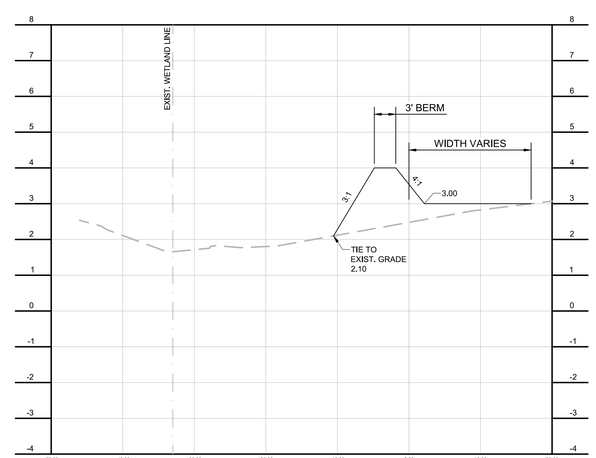
SECTION 'F'-'F'

SCALE: 1"=10' HORIZ
1"=2' VERT (24" X 36")



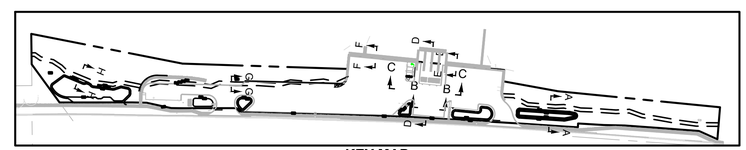
SECTION 'G'-'G'

SCALE: 1"=10' HORIZ
1"=2' VERT (24" X 36")



SECTION 'H'-'H'

SCALE: 1"=10' HORIZ
1"=2' VERT (24" X 36")



KEY MAP

N.T.S.

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Plans Prepared By:
CPH, Inc.
State of Florida Licenses:
Engineer No. 3215
Surveyor No. LB7143
Architect. No. AA26000926
Landscape No. LC000298

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Designed: R. Smith
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CROSS SECTIONS

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

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Sheet No.
C5.1

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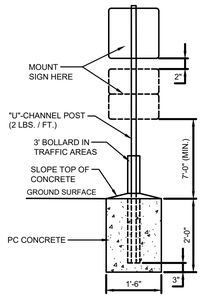
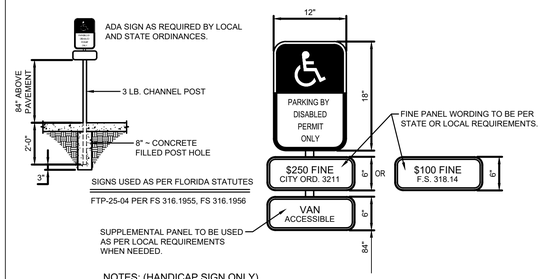


NOTE:

ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

STANDARD SIGN BASE

N.T.S.



NOTES: (HANDICAP SIGN ONLY)

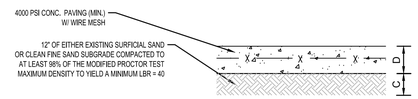
1. THE SIGN'S FACE SHALL BE OF AN ENGINEERING GRADE REFLECTORIZED MATERIAL.
2. ALL LETTERS ARE 1 INCH SERIES "C" PER THE MUTCD.
3. THE TOP PORTION OF THE SIGN SHALL HAVE A BLUE BACKGROUND WITH A WHITE LEGEND AND BORDER.
4. THE BOTTOM PORTION OF THE SIGN SHALL HAVE A WHITE BACKGROUND WITH A BLACK OPAQUE LEGEND AND BORDER.
5. THE FINE NOTIFICATION SIGN SHALL HAVE A WHITE BACKGROUND WITH A BLACK OPAQUE LEGEND AND BORDER.
6. ONE SIGN SHALL BE REQUIRED FOR EACH PARKING SPACE.
7. EACH SIGN SHALL HAVE A CLEARANCE OF 7 FEET FROM THE BOTTOM OF THE SIGN TO FINAL GRADE OR THE TOP OF CURB, WHICHEVER IS GREATER. SIGNS SHALL NOT BE FARTHER THAN 5 FEET FROM THE FRONT OF THE PARKING SPACE.
8. ALL SIGNS SHALL BE MOUNTED ON 3 POUND CHANNEL POSTS. SIGNS MAY BE MOUNTED ON BUILDINGS WITH CITY APPROVAL.

ACCESSIBLE SIGN

N.T.S.

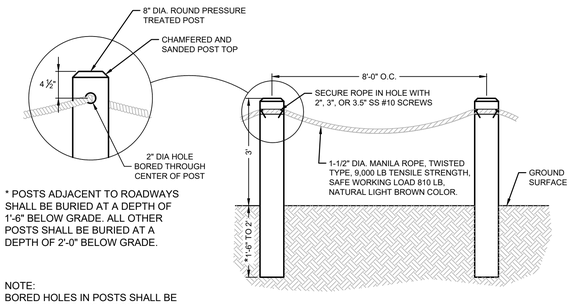
DIMENSION & TYPE

Concrete Section	C	D	
Light Duty	12"	6"	
Heavy Duty	12"	8"	



CONCRETE PAVING SECTION

N.T.S.

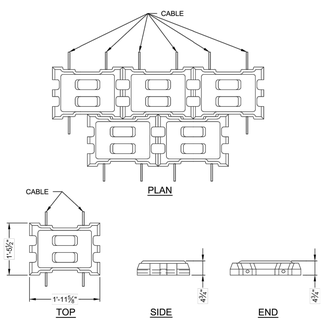


* POSTS ADJACENT TO ROADWAYS SHALL BE BURIED AT A DEPTH OF 1'-6" BELOW GRADE. ALL OTHER POSTS SHALL BE BURIED AT A DEPTH OF 2'-0" BELOW GRADE.

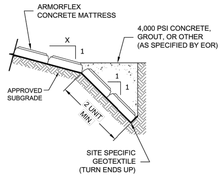
NOTE:
BORED HOLES IN POSTS SHALL BE A MINIMUM OF 1/2" LARGER IN DIAMETER THAN THE ROPE IN ORDER FOR THE ROPE TO HAVE ADEQUATE SPACE TO DRY AFTER A RAIN EVENT AND AVOID PREMATURE ROTTING OF THE ROPE.

POST AND ROPE DETAIL

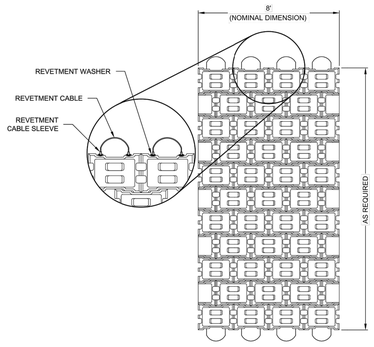
N.T.S.



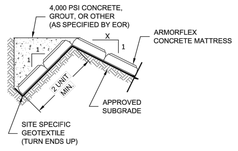
TYP. 40L BLOCK (1)
N.T.S.



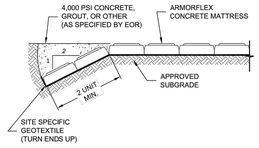
TOE TERMINATION
N.T.S.



TYP. 40L MAT (2)
N.T.S.



TOP TERMINATION
N.T.S.



FLANK TERMINATION
N.T.S.

PRELIMINARY
NOT FOR CONSTRUCTION

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800-338-1122 513-645-7000 513-645-7993 FAX

ARMORTEC
Erosion Control Solutions
CONTECH
PROPOSAL
DRAWING

ARMORFLEX
CLASS 40 LARGE
STANDARD TERMINATION DETAILS

PROJECT No.: *****	SEQ. No.: *****	DATE: 9/20/2016
DESIGNED: *****	DRAWN: MEG	
CHECKED: *****	APPROVED: CBK	
SHEET NO.: CT1 OF CT2		

PILE SLEEVE

Only want to install your pilings once?
PILE SLEEVE is the answer...

Encase your pilings with impenetrable PVC.
Keep worms, insects & rot away from wood.
Comes with a manufacturer's 50 year product warranty.

Shoreline Plastics has developed the ultimate in marine piling protection, the Pile Sleeve. The Pile Sleeve is made from highly-durable, shrinkable PVC that completely encases the wooden piling or timber in a PVC shell that is impervious to the elements. Unlike conventional piling wrap, the Pile Sleeve has no joints or seams to compromise the integrity of the piling protection. The Pile Sleeve will keep CCA chemical contaminants from leaching from the piling into the water, as well as prevent wood boring organisms from attacking your piling. No more "hour-glass" shaped pilings down the road. Protect your pile, protect your environment! Patent Pending.

More Info Call: Duncan Seawall, Dock & Boat Lift, LLC @ 941-351-1553

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Designed: R. Smith
Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021 © 2021

CONSTRUCTION DETAILS SHEET

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

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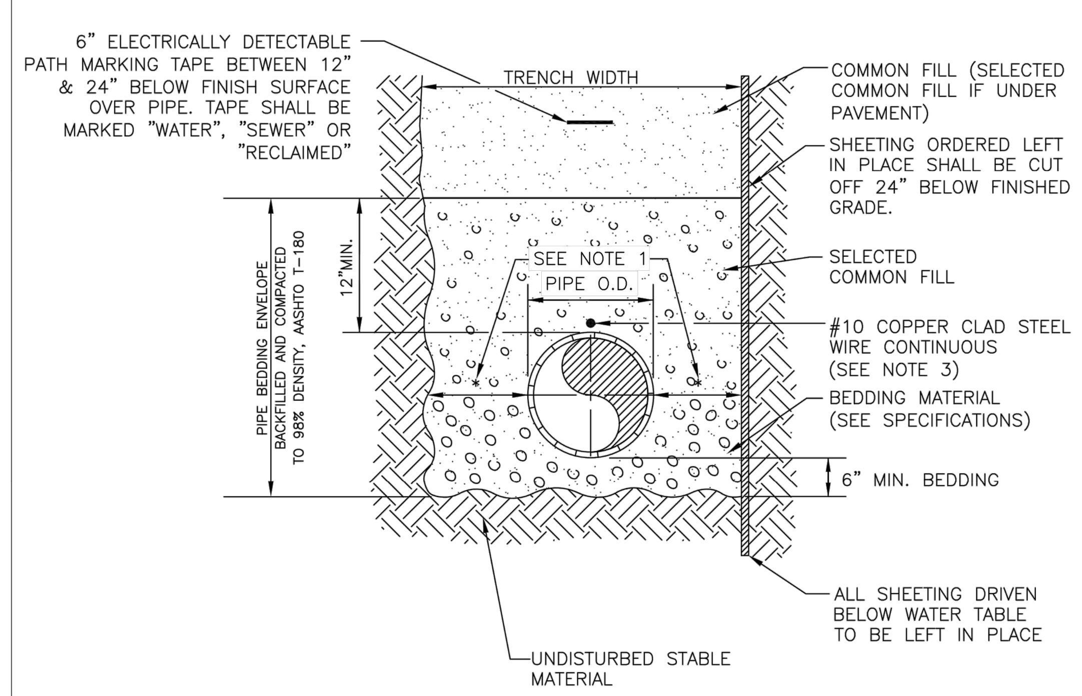
Sheet No.
C5.2

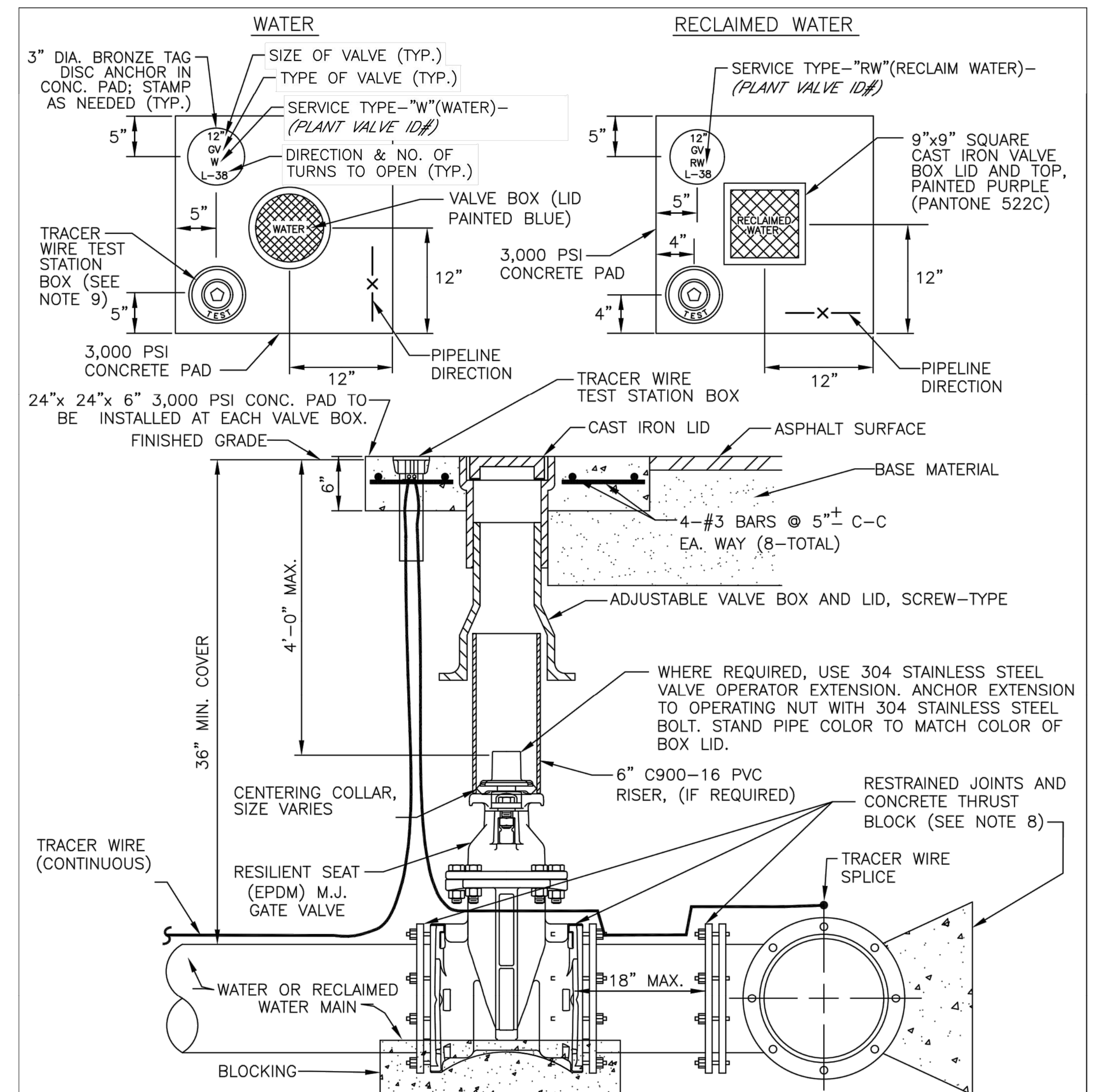
J:\M13112_Kingfish Boat Ramp\Civil\DWG_Current_Plan_Set\Working\M13112-C5.2 DET CONST.dwg, 9/27/2021 11:02:58 AM, D'Angelo, Matthew _cph - Standard.stb

NOTES:

1. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
2. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



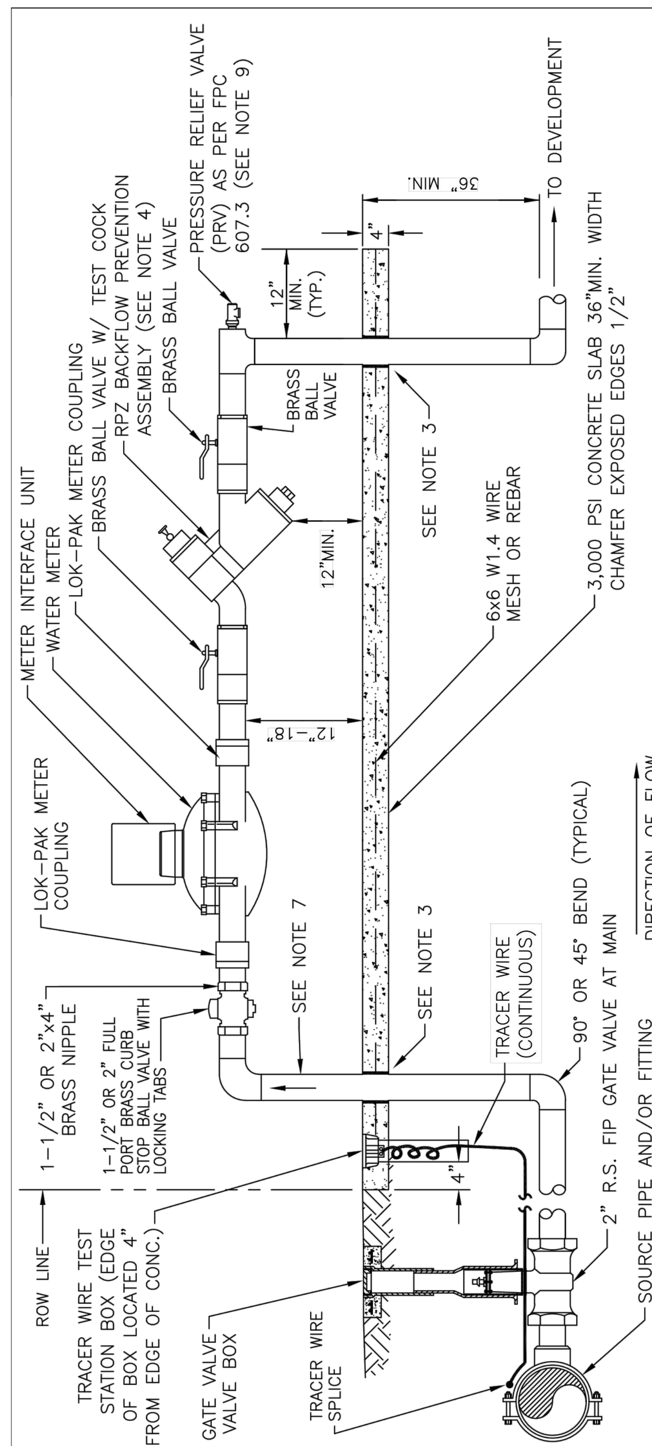
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH TYPE A-2 PIPE BEDDING	UG-15
REV.BY	DATE		
		February 25, 2020 DATE OF APPROVAL	



NOTES:

1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "WV" OR PURPLE DISC WITH "RWV" USING A 1/8" x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
3. VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS, CURBS, OR GUTTERS.
4. PRECAST CONCRETE PADS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. PIPELINE DIRECTION TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
7. TRACER WIRE TEST STATION BOX IS NOT REQUIRED IN VALVE BOX PAD IF THE GATE VALVE IS LOCATED WITHIN 200 FEET OF A WATER SERVICE, BLOW-OFF, BACKFLOW PREVENTER OR FIRE HYDRANT THAT HAS A TRACER WIRE BOX.
8. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES."
9. USE NON-TRAFFIC RATED BOXES FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE TRAFFIC RATED BOXES. WHERE POSSIBLE, LOCATE TRACE WIRE TESTING STATION OUTSIDE OF TRAVEL LANE OR IN MEDIAN, CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.
10. THE BRASS TAG SHALL HAVE A "PLANT VALVE ID# WHEN VALVES ARE INSTALLED WITHIN THE COUNTY TREATMENT PLANT LIMITS. THE PLANT VALVE ID# SHALL BE SHOWN ON THE CONSTRUCTION PLANS AND RECORD DRAWINGS.
11. REFER TO SECTION 1.11 GATE VALVES IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

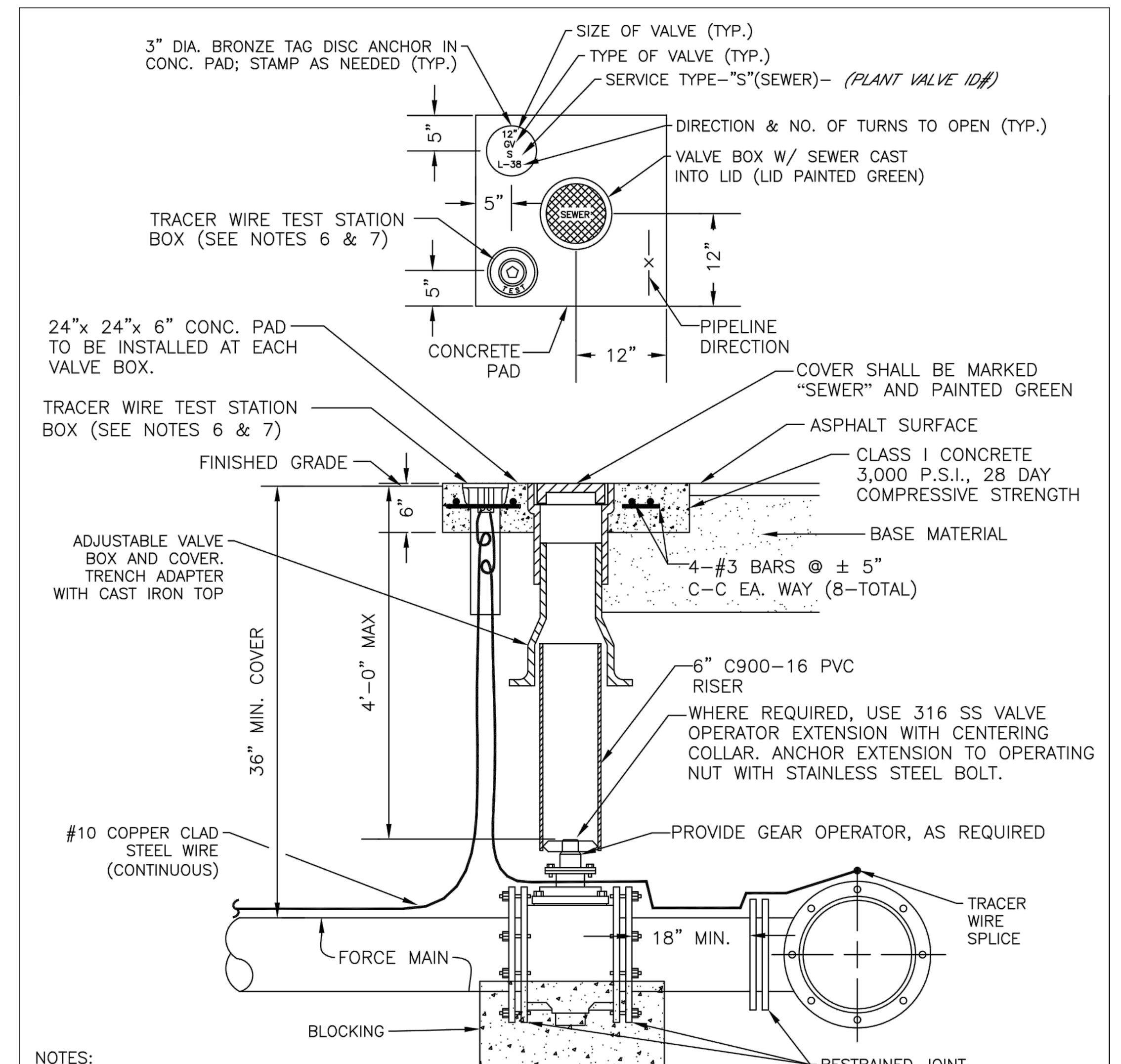
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		GATE VALVE, BOX, LID AND TAG	UW-2
REV.BY	DATE		
		February 25, 2020 DATE OF APPROVAL	



NOTES:

1. BACKFLOW PREVENTION ASSEMBLY MUST BE INSTALLED DOWNSTREAM OF METER, AS CLOSE TO METER AS POSSIBLE.
2. COPPER PIPE TYPE "L" (OR "K") OR BRASS PIPE MINIMUM SCHEDULE 40 SHALL BE USED TO A MINIMUM DEPTH OF 36" BELOW GRADE.
3. PIPES THROUGH SLAB AND ALL BELOW-GROUND D.I. PIPE AND FITTINGS SHALL BE POLYETHYLENE WRAPPED.
4. THE SYSTEM MUST MEET ALL REQUIREMENTS OF THE FLORIDA PLUMBING CODE (LATEST EDITION) AND CHAPTER 2-31, ARTICLE X OF THE MANATEE COUNTY CODE OF ORDINANCES.
5. METER, LOCK PACKS AND BRASS NIPPLES WILL BE PROVIDED BY MANATEE COUNTY. INSERT NIPPLES INTO LOCK PACKS HALF WAY.
6. DO NOT PAINT METER OR LOCK PACKS. ALL ABOVE GROUND PIPING SHALL BE PAINTED SAFETY BLUE BY SCOTT PAINT (POTABLE WATER) OR PANTONE PURPLE 522C (RECLAIMED WATER).
7. PRESSURE REDUCING VALVE IS REQUIRED UPSTREAM OF BACKFLOW PREVENTION ASSEMBLY, IF SYSTEM PRESSURE EXCEEDS 80 PSI.
8. 3' MINIMUM CLEARANCE FROM LANDSCAPING PLANTS AND 10' MIN. CLEARANCE FROM TREES TO EDGE OF CONCRETE SLAB AND CLEAR OPENING FOR ACCESS FROM STREET.
9. IN ADDITION TO THE PRV, THE BUILDING DEPT. MAY REQUIRE AN APPROVED DEVICE FOR THERMAL EXPANSION CONTROL DOWNSTREAM OF THE ASSEMBLY.
10. BACKFLOW PREVENTION ASSEMBLY IS ONLY REQUIRED ON RECLAIMED WATER LINE WHEN IRRIGATION SYSTEM INCLUDES CHEMICAL OR FERTILIZER INJECTION METHODS. WHEN BACKFLOW PREVENTION ASSEMBLY IS NOT REQUIRED, A 12" MINIMUM NIPPLE AND A BALL VALVE SHALL BE INSTALLED.
11. ALL ABOVE-GROUND ANCILLARY BOLTS, NUTS, WASHERS, & FASTENERS SHALL BE 316 STAINLESS STEEL. ALL BURIED SHALL BE MIN. 304 STAINLESS STEEL.
12. FITTINGS AND CONNECTION FOR ABOVE-GROUND INSTALLATIONS SHALL NOT ALLOW ANY MOVEMENT OR ROTATION OF THE BACKFLOW PREVENTION ASSEMBLIES.
13. SEE UW-2 GATE VALVE, BOX, LID AND TAG DETAIL. CENTERING COLLAR NOT REQUIRED ON 2" OR SMALLER VALVES.
14. BACKFLOW PREVENTION ASSEMBLIES USED FOR POTABLE APPLICATIONS SHALL BE LEAD FREE AS DEFINED IN THE REDUCTION OF LEAD IN DRINKING WATER ACT, SECTION 1417 OF THE SAFE DRINKING WATER ACT, 42 U.S.C. 300g-6, AS MAY BE AMENDED, AND IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS.
15. FOR USE WHERE BACKFLOW PREVENTION ASSEMBLY IS REQUIRED WITH METER.
16. WHERE MULTIPLE METER AND BACKFLOW PREVENTION ASSEMBLIES ARE INSTALLED, A BELOW GRADE ISOLATION VALVE SHALL BE PROVIDED FOR EACH ASSEMBLY.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		1½" & 2" METER AND BACKFLOW PREVENTION ASSEMBLY	UW-14
REV.BY	DATE		
		February 25, 2020 DATE OF APPROVAL	



NOTES:

1. "SV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A GREEN DISC WITH "SV" AND A 1/8" x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
3. VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS, CURBS OR GUTTERS.
4. PRECAST CONCRETE PADS AND THRUST BLOCKS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. USE NON-TRAFFIC RATED BOXES FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE TRAFFIC RATED BOXES. WHERE POSSIBLE, LOCATE TRACE WIRE TESTING STATION OUTSIDE OF TRAVEL LANE OR IN MEDIAN, CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.
7. TRACER WIRE BOX SHALL BE LOCATED OUTSIDE THE ROADWAY ON THOROUGHFARES, LOCAL ARTERIAL AND STATE ROADWAYS.
8. THE BRASS TAG SHALL HAVE A "PLANT VALVE ID# WHEN VALVES ARE INSTALLED WITHIN THE COUNTY TREATMENT PLANT LIMITS. THE PLANT VALVE ID# SHALL BE SHOWN ON THE CONSTRUCTION PLANS AND RECORD DRAWINGS.
9. REFER TO SECTION 1.11 IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		VALVE, BOX, COVER AND TAG	US-11
REV.BY	DATE		
		February 25, 2020 DATE OF APPROVAL	

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JEFFREY MICHAEL SATFIELD ★ LICENSE No. 61905 ★ STATE OF FLORIDA ★ PROFESSIONAL ENGINEER
JEFFREY M. SATFIELD, P.E.
FL. P.E. No. 61905
09-27-21

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Job No.: M13112
Date: 08-2021

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AGENCY DETAILS SHEET

KINGFISH BOAT RAMP

PHASE I

MANATEE COUNTY, FLORIDA

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Sheet No.
C5.3

J:\M13112_Kingfish_Boat_Ramp\Civil\DWG_Current_Plan_Set\Working\M13112-C5.3 DET AGENCY.dwg, 9/27/2021 11:03:08 AM, D'Angelo, Matthew, _cph - Standard.stb

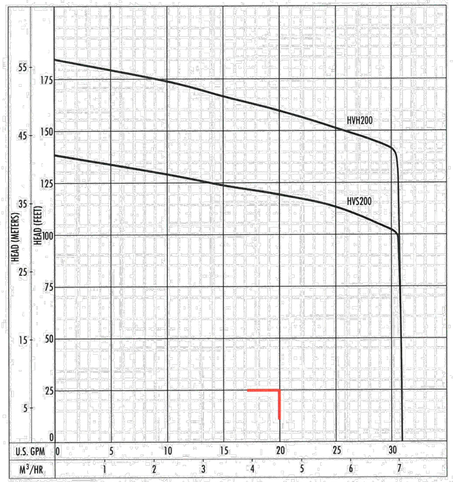
Equipment Summary

Specification:	Duplex Package Sewage Pump Station
Manufacturer:	Hydromatic Pump Company
Model / Size:	HVS200M2-2
Quantity:	2
Design GPM:	20
Design TDH:	25'
Impeller:	5.31"
Discharge Size:	1.25"
Solids Capability:	Grinder Pump
Power:	2 HP
Speed:	3450-RPM
Electrical (V/PH/Hz):	230/1/60
Service Factor:	1.20
Full Load Amps:	13.5
Cord Length:	35'
Seal Protection:	Yes
Thermal Protection:	Yes
Coating:	Manufacturer's standard
Fiberglass Wet Well:	(1) 4' X 4' Fiberglass set with fiberglass fillet, (1) 6" inlet pipe grommet, (2) 2" discharge couplings, (3) 2" electrical couplings, 2" Sch. 80 PVC discharge piping with 316SS pipe bracing, (1) 1" duplex guide rail system with stainless steel guide rails, (2) stainless steel lifting chains (1) 2" emergency pump out connection with camlock coupling, (2) 2" Szuster angle ball check valves, (3) PVC ball valves
Unitron Controls® Panel:	(1) NEMA 4X stainless steel duplex control panel with Sci-Text Monitoring
Unitron J Box	(1) Stainless steel electrical junction box
Floats:	(4) Model: 2900B6S1-30 (Normally Open) floats, 30' each.
Wet Well Cover:	(1) Aluminum wet well cover with hinged access door, locking hasp and 2" elevated vent
Comments:	(1) Start-up service by Barney's Pumps.

Performance Curve – HVS200

Section **GRINDER** Page **109**

RPM: **3450** DISCHARGE: **1-1/4"**



The curves reflect maximum performance characteristics without exceeding full load (Nameplate) horsepower. All pumps have a service factor of 1.2. Operation is recommended in the bounded area with operational point within the curve limit. Performance curves are based on actual tests with clear water at 70° F and 1280 feet site elevation.

Conditions of Service:
GPM: 20 TDH: 25'

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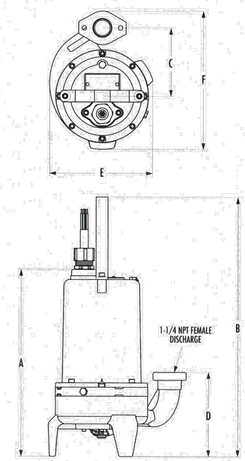
PENTAIR HYDROMATIC

Dimensional Data – HVS200

Section **GRINDER** Page **215**



	A	B	C	D	E	F
HVS200	15.81	21.95	5.77	7.13	8.70	11.69

ALL DIMENSIONS IN INCHES
NOTE: CASTING DIMENSIONS MAY VARY ± 1/8"

March, © 2017 Pentair plc

PENTAIR HYDROMATIC

Electrical Data – HVS200

Section **GRINDER** Page **307**

MODEL: HVS200 — Submersible Grinder Pumps

R.P.M.	3450			
MOTOR TYPE	ENCLOSED, OIL COOLED INDUCTION			
MOTOR DESIGN NEMA TYPE	B (3ø) L (1ø)			
GENERAL INSULATION CLASS	F			
STATOR WINDING CLASS	F			
MAXIMUM STATOR TEMPERATURE	140°C			
MOTOR PROTECTION	BI-METALLIC, TEMPERATURE SENSITIVE DISC, SIZED TO OPEN AT 130–140°C AND AUTOMATICALLY RESET @ 83–101°C DIFFERENTIAL, ONE IN SINGLE PHASE, TWO IN THREE PHASE			
ELECTRICAL RATINGS	HEAT SENSOR	24VDC 5AMPS	115VAC 5AMPS	230VAC 5AMPS
	SEAL FAIL	300VAC 5mA		
VOLTAGE TOLERANCE	±10%			

	HP	VOLTAGE	STAR AMPS	FULL LOAD AMPS	FULL LOAD WATTS	START KVA	FULL LOAD KVA	NEC CODE	SERVICE FACTOR	MODEL	STANDARD CORD 20'	STANDARD CORD 35'
HIGH HEAD	2	230/1/60	49	18.5	4.2	11.27	4.26	G	1	Catalog	HVH200M2-2-20	HVH200M2-2-35
										Eng	528330007	528330047
		200/3/60	53	12.5	3.9	18.3	4.33	L		Catalog	HVH200M6-2-20	HVH200M6-2-35
										Eng	528330017	528330057
		230/3/60	46	12	3.9	18.3	4.77	L		Catalog	HVH200M3-2-20	HVH200M3-2-35
										Eng	528330027	528330067
		460/3/60	23	6	3.9	18.3	4.77	L		Catalog	HVH200M4-2-20	HVH200M4-2-35
										Eng	528330037	528330077
STANDARD	2	200/1/60	66	16	3.2	13.2	3.2	G	1	Catalog	HVS200M7-2-20	HVS200M7-2-35
										Eng	528340217	528340237
		230/1/60	49	13.5	3.2	11.27	3.12	G		Catalog	HVS200M2-2-20	HVS200M2-2-35
										Eng	528340007	528340047
		200/3/60	53	10	3.2	18.3	3.46	L		Catalog	HVS200M6-2-20	HVS200M6-2-35
										Eng	528340017	528340057
		230/3/60	46	9	3.2	18.3	3.58	L		Catalog	HVS200M3-2-20	HVS200M3-2-35
										Eng	528340027	528340067
		460/3/60	23	4.2	3.2	18.3	3.35	L		Catalog	HVS200M4-2-20	HVS200M4-2-35
										Eng	528340037	528340077

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PENTAIR HYDROMATIC

Section **GRINDER** Page **410**

Technical Data – HVS200

MODEL: HVS200 — Submersible Centrifugal Grinder Pump

Physical Data:

DISCHARGE SIZE	1-1/4"
IMPELLER TYPE	SEMI-OPEN 8 VANE
CABLE LENGTH	35'

Liquid Handling:

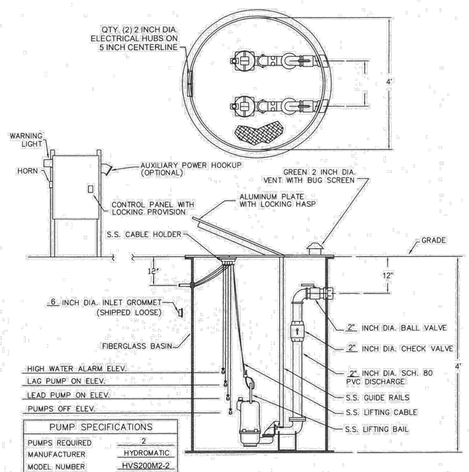
MAXIMUM LIQUID TEMP.	140°F
ACCEPTABLE pH RANGE	6 – 9
SPECIFIC GRAVITY	0.9 – 1.1
VISCOSITY	28 – 35 SSU

Temperature:

MAXIMUM STATOR	284°F
OIL FLASH POINT	390°F
HEAT SENSOR Open:	284°F MAX./266°F MIN.
HEAT SENSOR Closed:	214°F MAX./181°F MIN.

Technical Data:

POWER CORD TYPE		HVH/HVS: SOOW
MATERIALS OF CONSTRUCTION	MOTOR HOUSING	CAST IRON ASTM A-48 CLASS 30
	CASING	CAST IRON ASTM A-48 CLASS 30
	IMPELLER	316 SST / CF8M
	CUTTERS Stationary:	440C STAINLESS STEEL HARDENED TO 55-60 ROCKWELL C
	CUTTERS Rotating:	440C STAINLESS STEEL HARDENED TO 55-60 ROCKWELL C
	MOTOR SHAFT	416 STAINLESS STEEL
	HARDWARE	300 SERIES STAINLESS STEEL
	O-RINGS	NITRILE
MECHANICAL SEALS		UPPER CARBON/CERAMIC/NITRILE, TYPE 21
UPPER BEARING		(RADIAL) SINGLE ROW BALL 6203
LOWER BEARING		DOUBLE ROW ANGULAR CONTACT 3205A
MIN. B-10 BEARING LIFE		50,000 Hrs



PUMP SPECIFICATIONS	
PUMPS REQUIRED	2
MANUFACTURER	HYDROMATIC
MODEL NUMBER	HVS200M2-2
PUMP SIZE	1.25"
CAPACITY EACH (GPM)	20
TOTAL HEAD (FEET)	25
IMPELLER DIAMETER	5.31"
MOTOR HP REQUIRED	2
SPEED (RPM)	3450
ELECTRICAL	230/1/60

TANK	
A (DIA.)	B (HEIGHT)
4'	4'

BARNEY'S PUMPS, INC.
DESCRIPTION: DUPLEX LIFT STATION
DRAWING #: WW2GF1F0
NOT TO SCALE

PENTAIR HYDROMATIC

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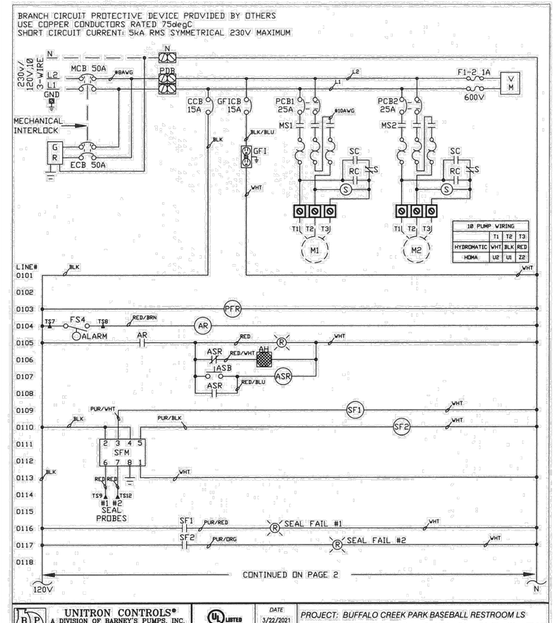
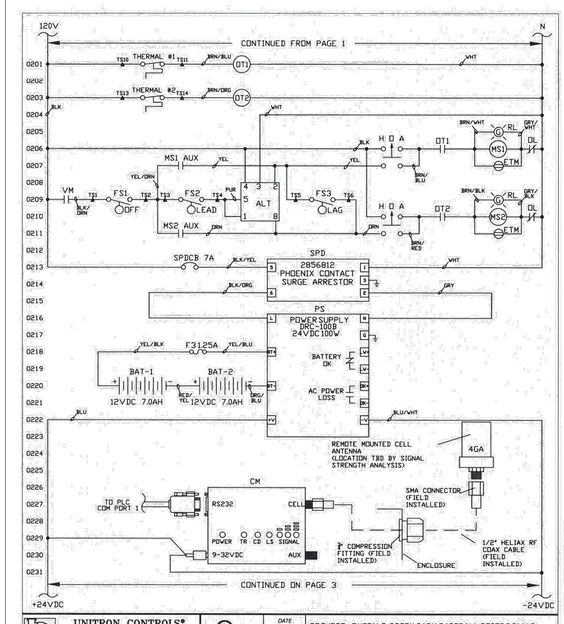


UNITRON CONTROLS® A DIVISION OF BARNEY'S PUMPS, INC. PO BOX 3529, LAKELAND, FL 33802 PHONE: (863) 665-8000 FAX: (863) 666-3858	DATE: 3/22/2021	PROJECT: BUFFALO CREEK PARK BASEBALL RESTROOM LS	
UL TYPE 1 ENCLOSURE	STATUS: SUBMITTAL	CUSTOMER: MANATEE COUNTY	
LARGEST MOTOR RATING: 13.5A	DRAWN BY: JFT/SWB	PUMP: HVS200M2-2	ELECTRICAL: 230V/120V,1Ø/60Hz 2HP/13.5FLA
TOTAL AMPS: 47A	SCALE: NTS	JOB #: S057044	DWG. #: MANCO-BCP PAGE 1 OF 5 REV. 0



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Plans Prepared By:
CPH, Inc.
State of Florida Licenses:
Engineer No. 3215
Surveyor No. LB7143
Architect. No. AA26000926
Landscape No. LC000298

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No.	Date	Revision
1	03/18/21	60% SUBMITTAL

Designed: R. Smith
Drawn: R. Smith
Checked: J. Satfield
Job No.: M13112
Date: 08-2021 © 2021

LIFT STATION DETAILS

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

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Sheet No.
C5.4

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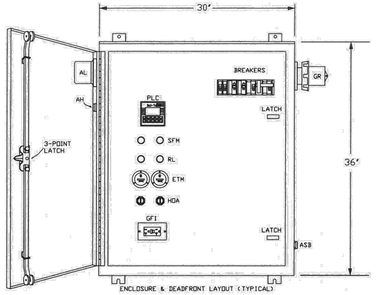
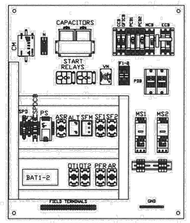


ENCLOSURE & DEADFRONT LAYOUT (TYPICAL)



BASE PLATE LAYOUT (TYPICAL)

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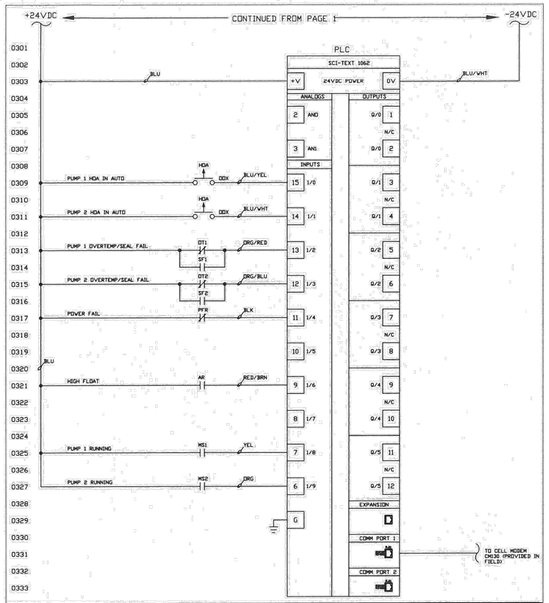
PHONE: (863) 665-8500 FAX: (863) 666-3858

UL LISTED ENCLOSED INDUSTRIAL CONTROL PANEL

UL TYPE 1 ENCLOSURE
LARGEST MOTOR RATING: 12.5A
TOTAL AMPS: 47A

DATE	3/22/2021
STATUS	PROJECT: BUFFALO CREEK PARK BASEBALL RESTROOM LS
SUBMITTAL	CUSTOMER: MANATEE COUNTY
DRAWN BY: JFT/SWB	PUMP: HVS200M2-2
	ELECTRICAL: 230V/120V,1Ø/60Hz 2HP/13.5FLA
SCALE NTS	JOB #: S057044
	DWG. #: MANCO-BCP
	PAGE 5 OF 5
	REV. 0



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UL LISTED ENCLOSED INDUSTRIAL CONTROL PANEL

UL TYPE 1 ENCLOSURE
LARGEST MOTOR RATING: 12.5A
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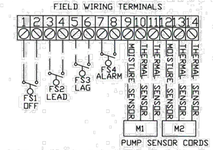
DATE	3/22/2021
STATUS	PROJECT: BUFFALO CREEK PARK BASEBALL RESTROOM LS
SUBMITTAL	CUSTOMER: MANATEE COUNTY
DRAWN BY: JFT/SWB	PUMP: HVS200M2-2
	ELECTRICAL: 230V/120V,1Ø/60Hz 2HP/13.5FLA
SCALE NTS	JOB #: S057044
	DWG. #: MANCO-BCP
	PAGE 3 OF 5
	REV. 0

BILL OF MATERIALS

QTY.	ABBR.	DESCRIPTION	MANUFACTURER, PART#
1	ENC	ENCLOSURE, 304SS, NEMA 3R	HOFFMAN, A-36H30125SLF-177BP
1	MCB	MAIN CIRCUIT BREAKER	SQ.D, QOU250
1	ECB	EMERGENCY CIRCUIT BREAKER	SQ.D, QOU250
2	PCB1,2	PUMP CIRCUIT BREAKER	SQ.D, QOU225
1	CCB	CONTROL CIRCUIT BREAKER	SQ.D, QOU115
1	GFICB	GFI CIRCUIT BREAKER	SQ.D, QOU115
2	MS1,2	MOTOR STARTER	TELEMECANIQUE, LC1D38G7
2	OL	ELECTRONIC THERMAL OVERLOAD	TELEMECANIQUE, LR9D32
2	S	START RELAY	SUPCO, 9068
2	SC	START CAPACITOR	SUPCO, CS130-156X220
2	RC	RUN CAPACITOR	SUPCO, CR30X440R
1	GR	GENERATOR RECEPTACLE	SCAME, SCM560B7V
2	F1-2	FUSE, 1A CERAMIC	FERRAZ, A1GR-1
1	VM	VOLTAGE MONITOR	UNITRON CONTROLS, VM180-300
1	GFI	GFI RECEPTACLE	P&S, 15951
1	AL	ALARM LIGHT	AC/DC EQUIPMENT, R40-XLS-25
1	AH	ALARM HORN	C.D.I., PB-120-A
1	ASB	ALARM SILENCE BUTTON	SQ.D, 9001-SKR1BH5
1	ASR	ALARM SILENCE RELAY	FINDER, 60-12-8-120-0050
1	SFM	SEAL FAIL MODULE	UNITRON CONTROLS, SFMDI00K
2	IL	INDICATING LIGHT, RED	SQ.D, XB5EVG4
1	ALT	ALTERNATOR	UNITRON CONTROLS, ALTSP
2	HOA	HAND OFF AUTO SWITCH	SQ.D, 9001-SKS43BH13
2	RL	RUN LIGHT, GREEN	SQ.D, XB5EVG3
2	ETM	ELAPSED TIME METER	EATON, 6-1-3H-50BRPM-406
1	LA	LIGHTNING ARRESTOR (SHIPPED LOOSE)	SQ.D, 6671-SDSA1175
1	SPDCB	POWER SUPPLY CIRCUIT BREAKER	ALLEN-BRADLEY, 1489-M1C070
1	SPD	SURGE PROTECTOR	PHOENIX, 2907918
1	PS	24V POWER SUPPLY	UNITRON DRC-100B
1	F3	FUSE, 1.25A	BUSSMANN, GDB-1.25A
2	BAT1,2	BATTERY, 12VDC 1.2AH	UNITRON CONTROLS, BATTERY12V-1.2AH
1	MC	MODEM CONNECTOR	UNITRON CONTROLS, MTC-L,NA4-BDI
1	CM	4G MODEM	UNITRON CONTROLS, DB9 MALE TO RJ11-12
1	4GA	4G ANTENNA	UNITRON CONTROLS, G.30.B.108111
1	MPC	MODEM POWER CORD	UNITRON CONTROLS, PC-932-DC
1	PLC	SCI-TEXT 1062 PLC	UNITRON CONTROLS, V120-22-R2C-SN
2	SF1-2	CONTROL RELAY, DPDT, 120V COIL	FINDER, 60-12-8-120-0050
2	OT1-2	CONTROL RELAY, DPDT, 120V COIL	FINDER, 60-12-8-120-0050
2	PFR,AR	CONTROL RELAY, DPDT, 120V COIL	FINDER, 60-12-8-120-0050

FIELD WIRING TERMINALS



PUMP SENSOR CORDS

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PO BOX 3529, LAKELAND, FL 33802
PHONE: (863) 665-8500 FAX: (863) 666-3858

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UL TYPE 1 ENCLOSURE
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TOTAL AMPS: 47A

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SUBMITTAL	CUSTOMER: MANATEE COUNTY
DRAWN BY: JFT/SWB	PUMP: HVS200M2-2
	ELECTRICAL: 230V/120V,1Ø/60Hz 2HP/13.5FLA
SCALE NTS	JOB #: S057044
	DWG. #: MANCO-BCP
	PAGE 4 OF 5
	REV. 0

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Landscape No. LC000298

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Drawn: R. Smith
Checked: J. Satfield
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C5.5

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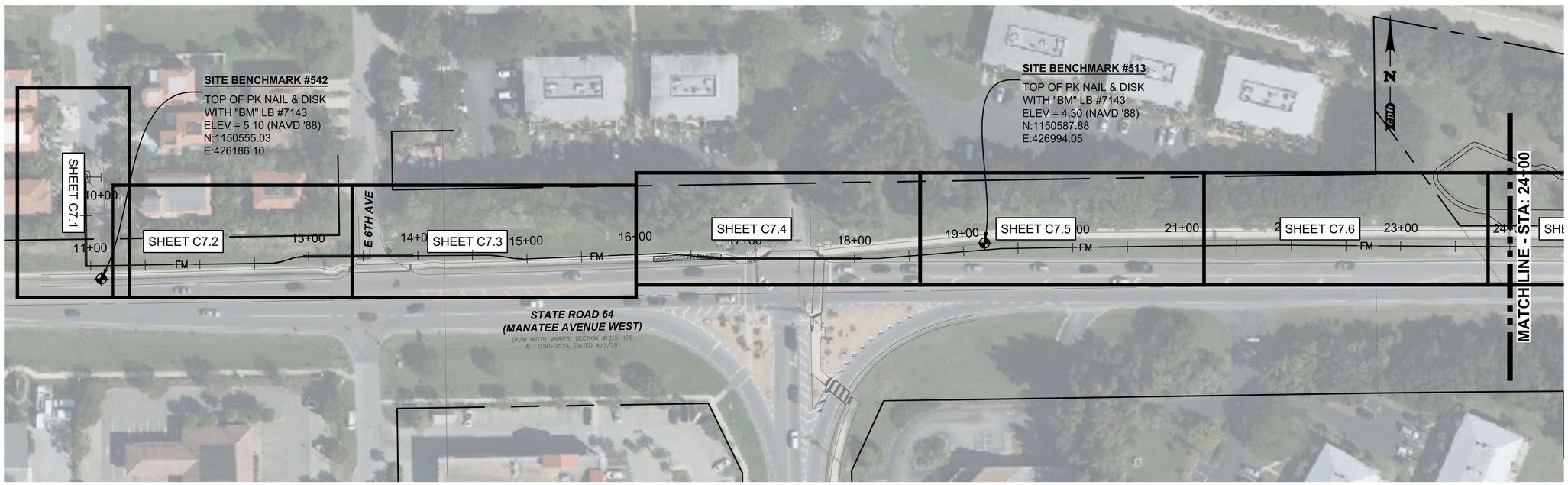

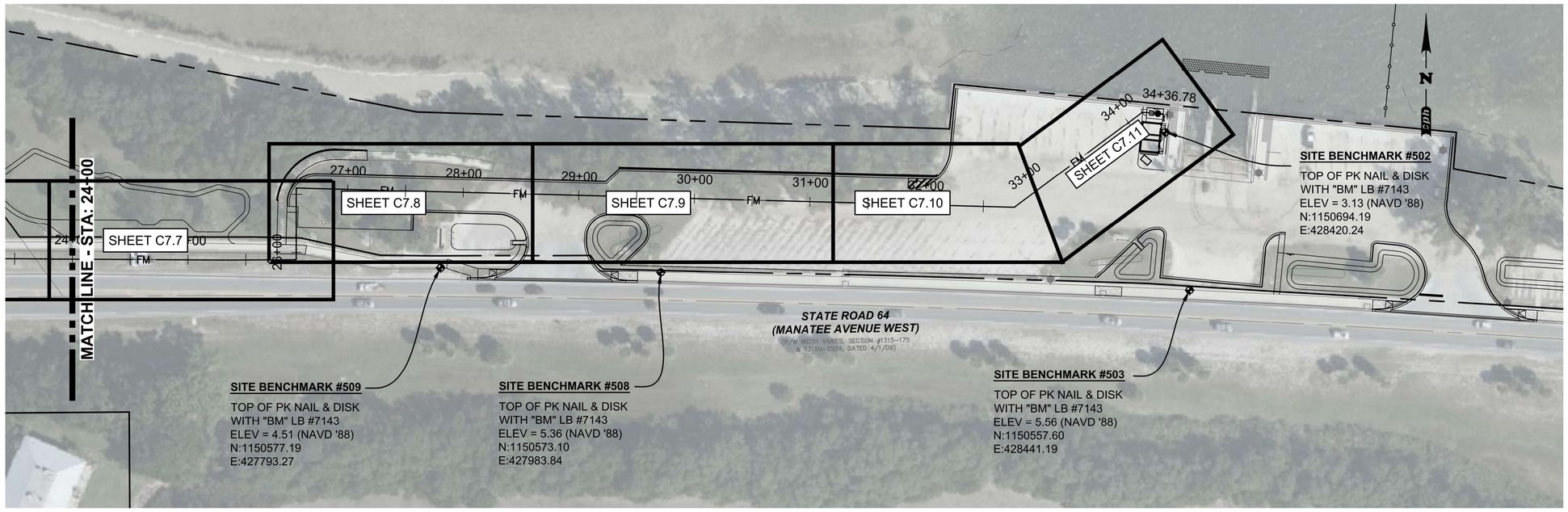

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Plans Prepared By:
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No.	Date	Revision
1		
2		
3		
4		
5		
6		
7		

Designed: M. D'Angelo
Drawn: K. Upp
Checked: M. D'Angelo
Job No.: M13112
Date: 2021-08

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FORCE MAIN LAYOUT

KINGFISH BOAT RAMP

PHASE I

MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS.

Sheet No.
C6.1

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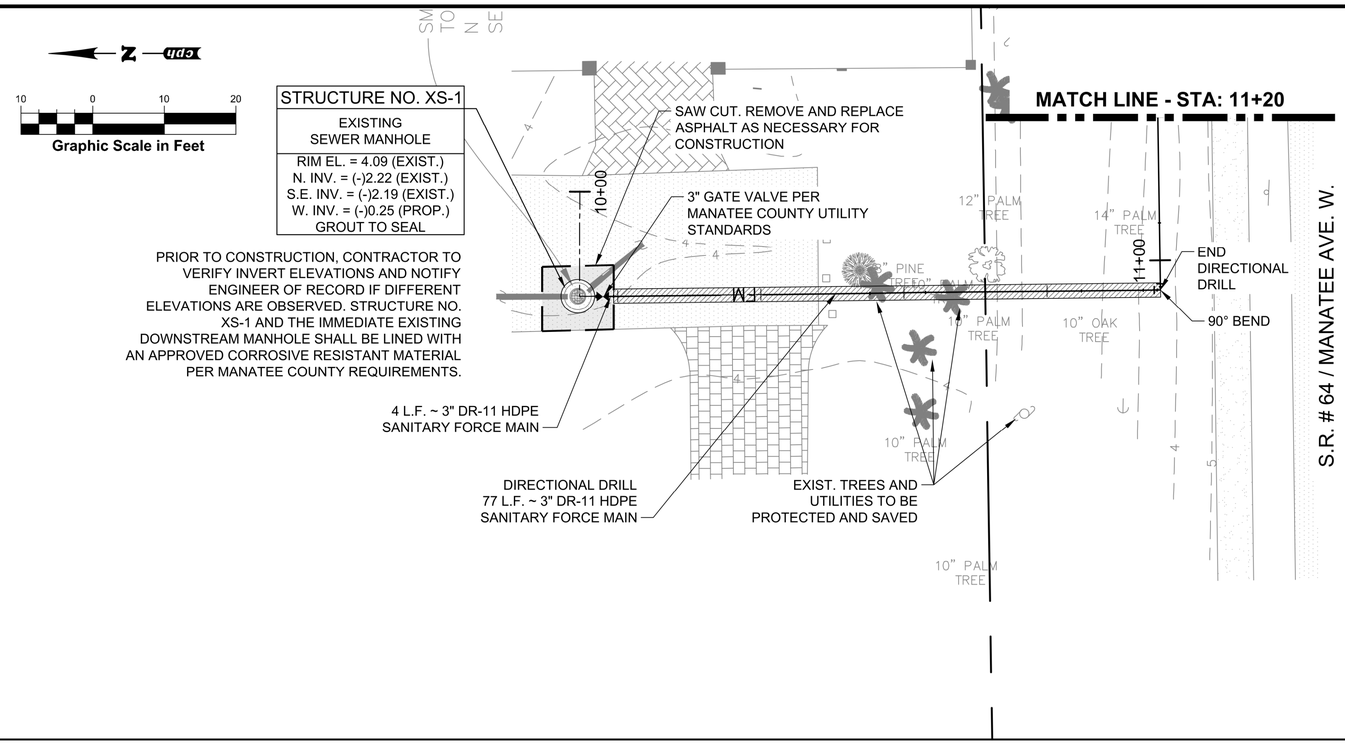

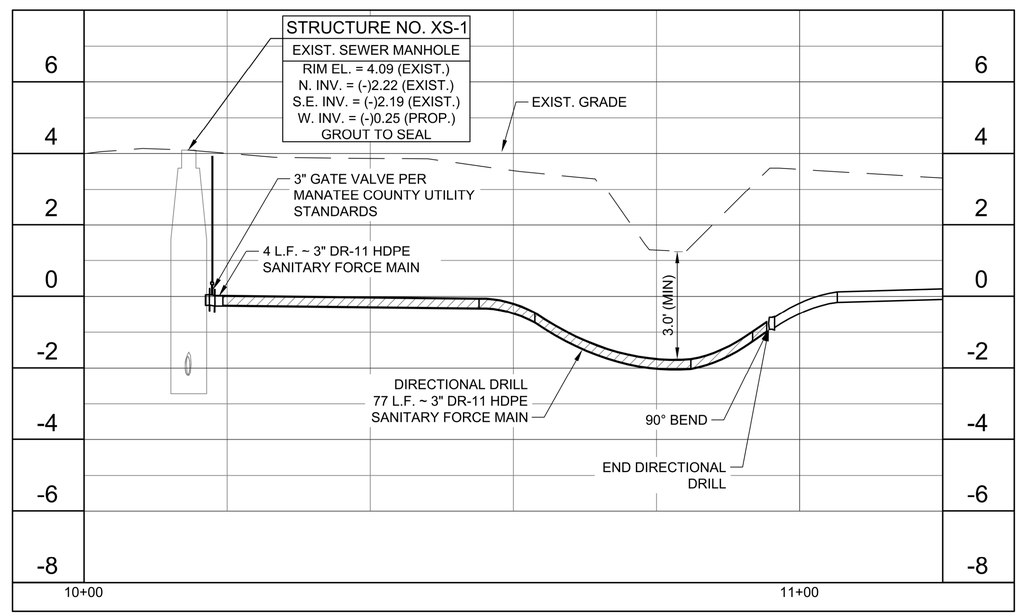

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Ph: 813.288.0233
Plans Prepared By:
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No.	Date	Revision

Designed: M. D'Angelo
Drawn: K. Upp
Checked: M. D'Angelo
Job No.: M13112
Date: 2021-08
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FORCE MAIN PLAN AND PROFILE

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS.

Sheet No.
C7.1

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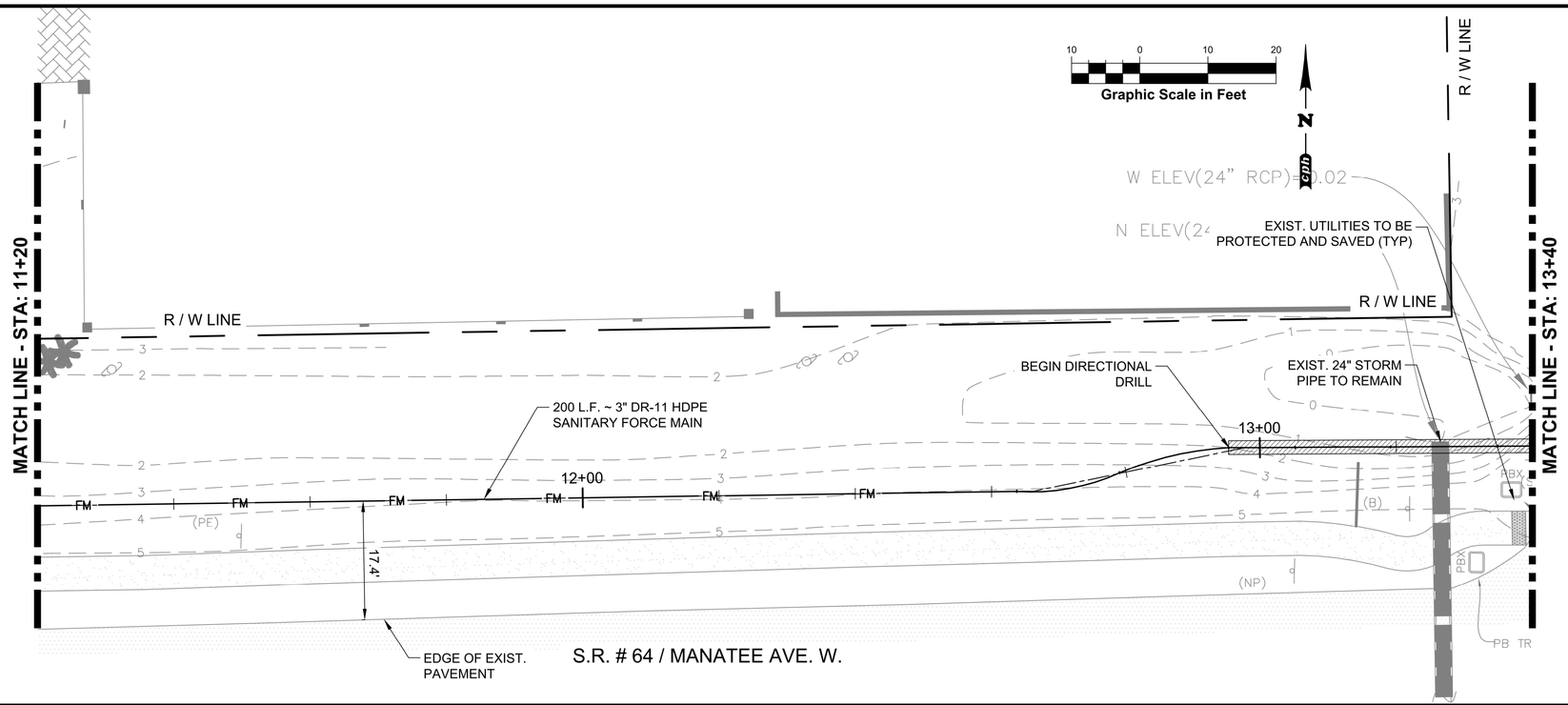

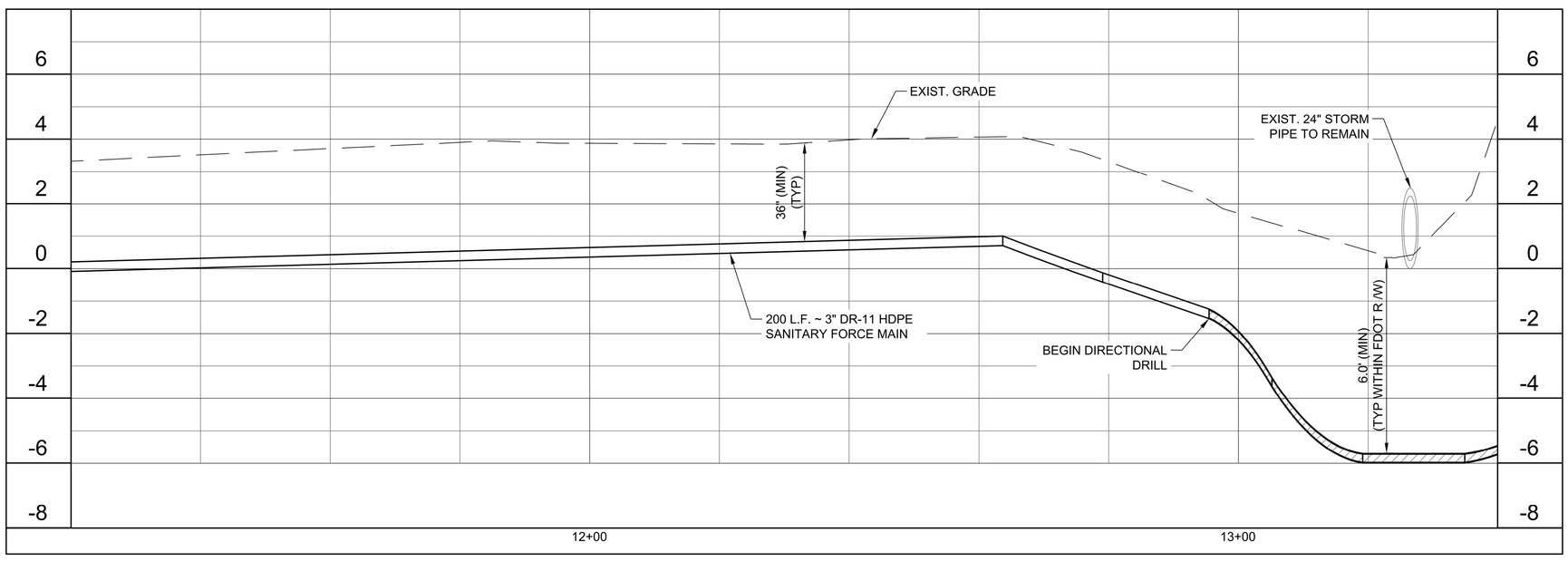

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Checked: M. D'Angelo
Job No.: M13112
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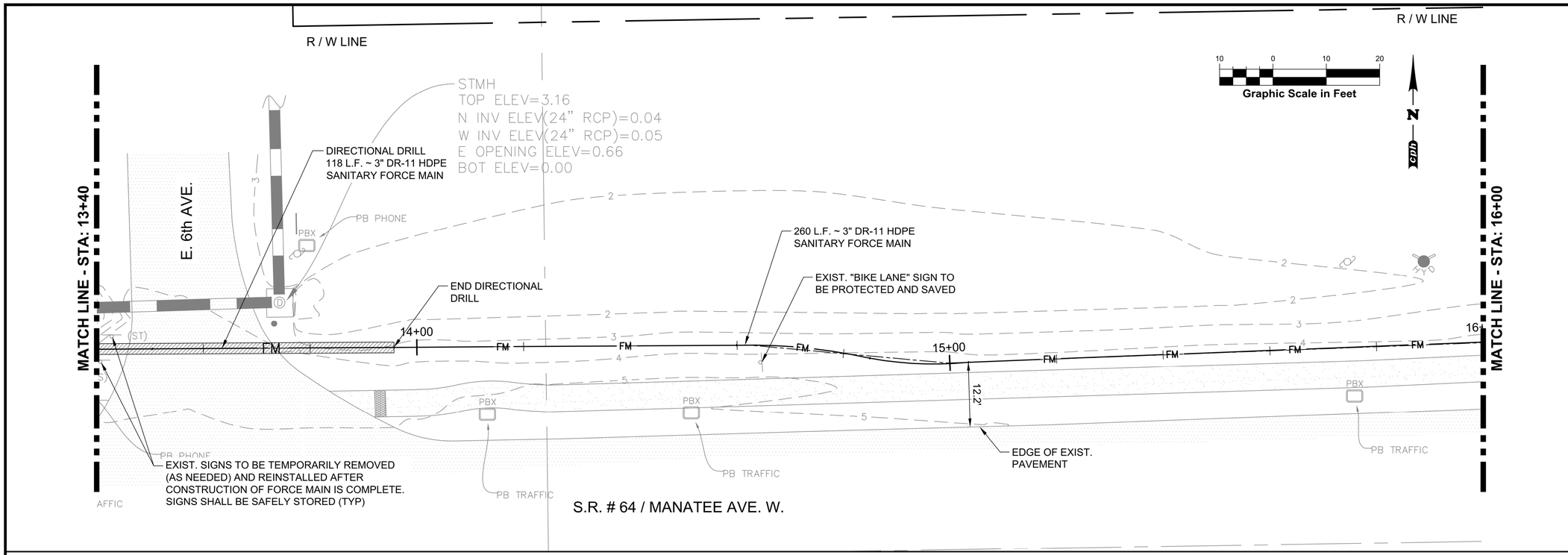

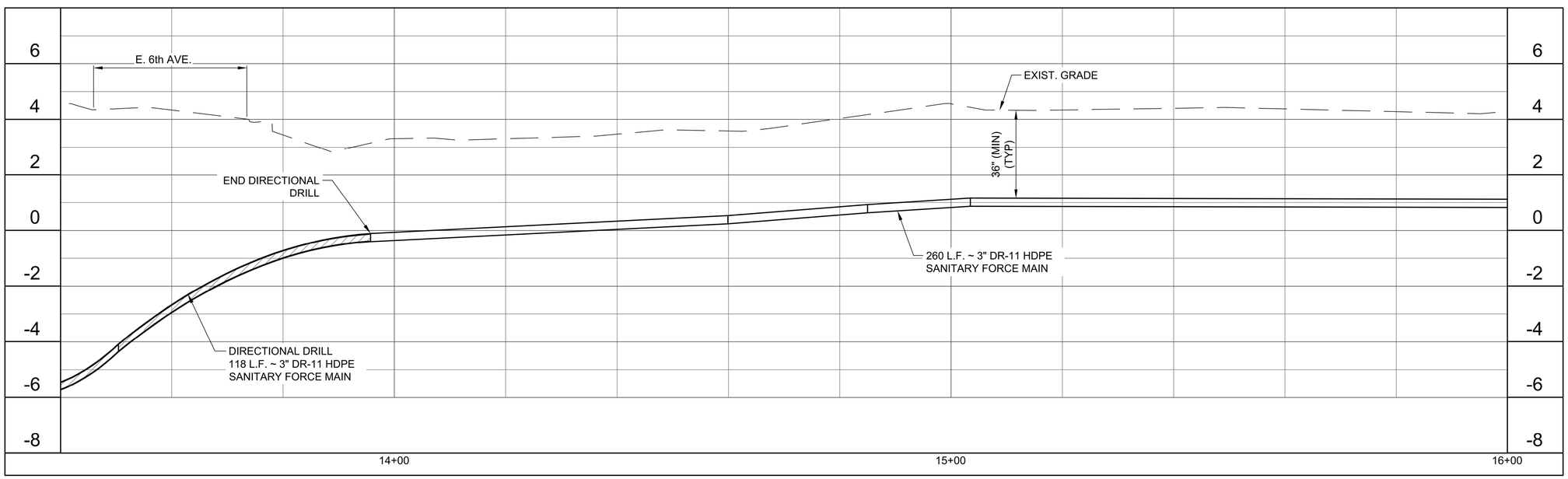

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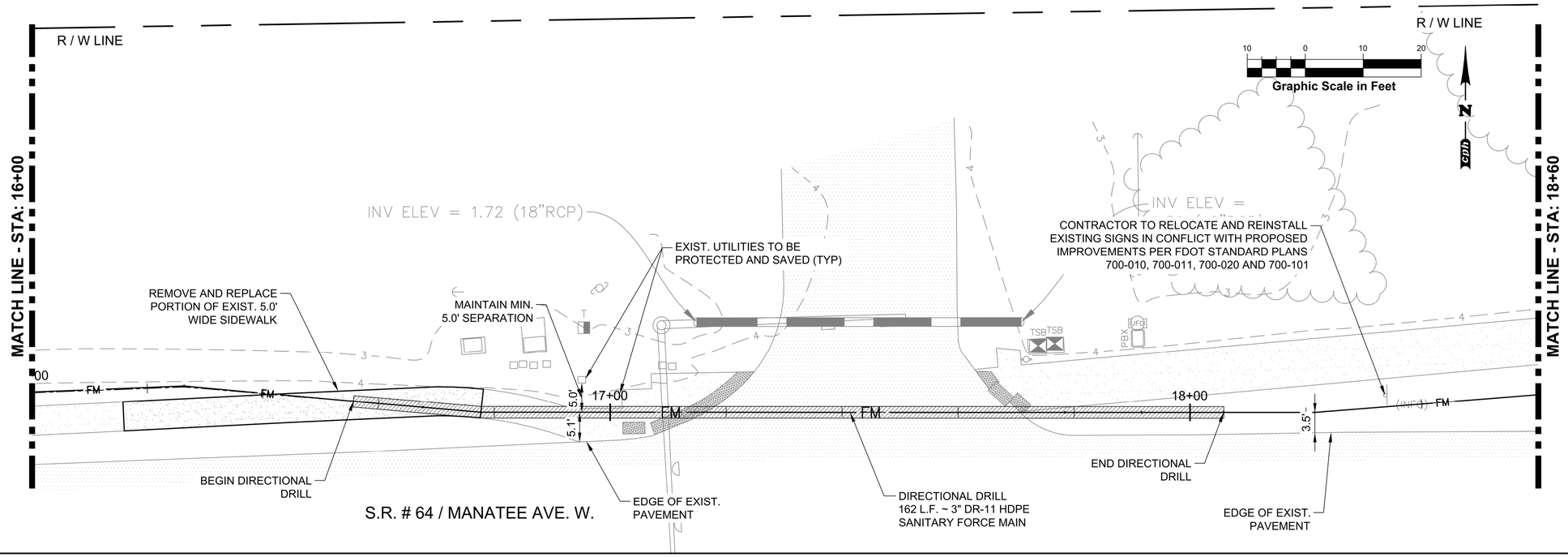

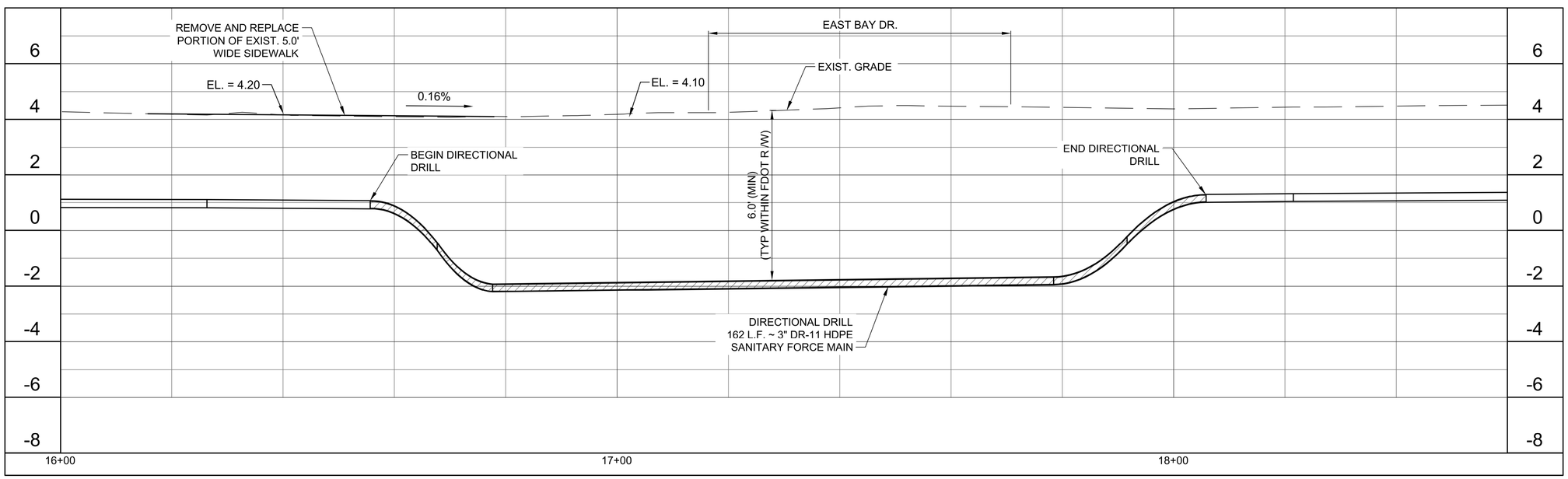

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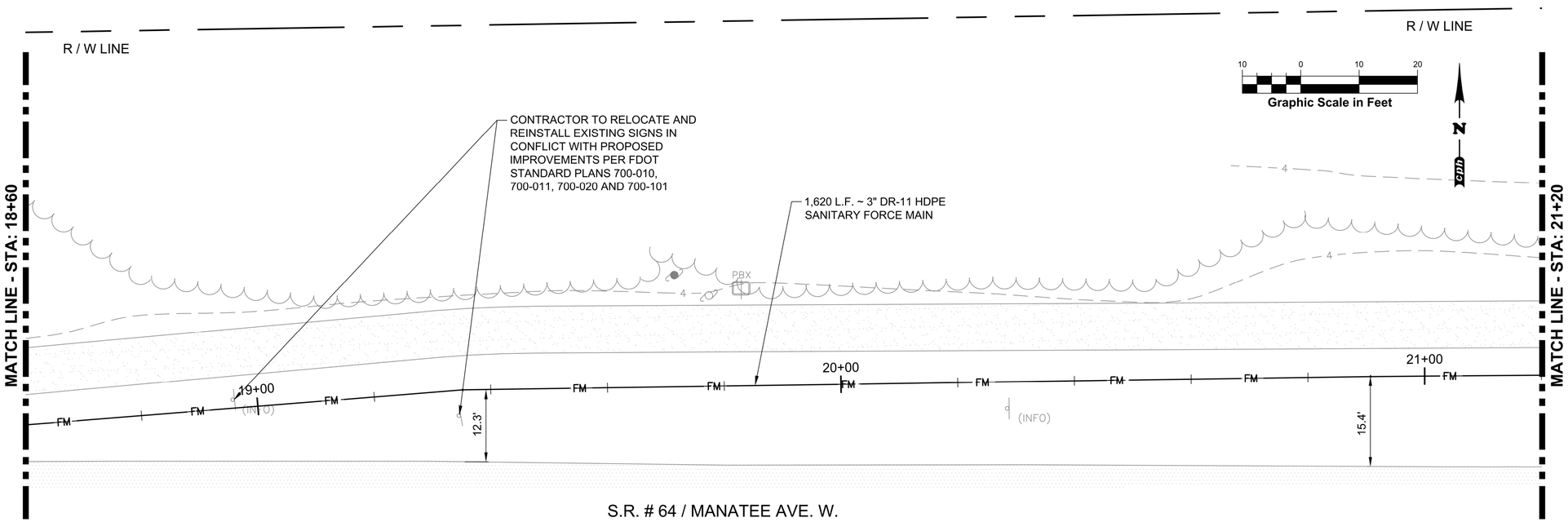

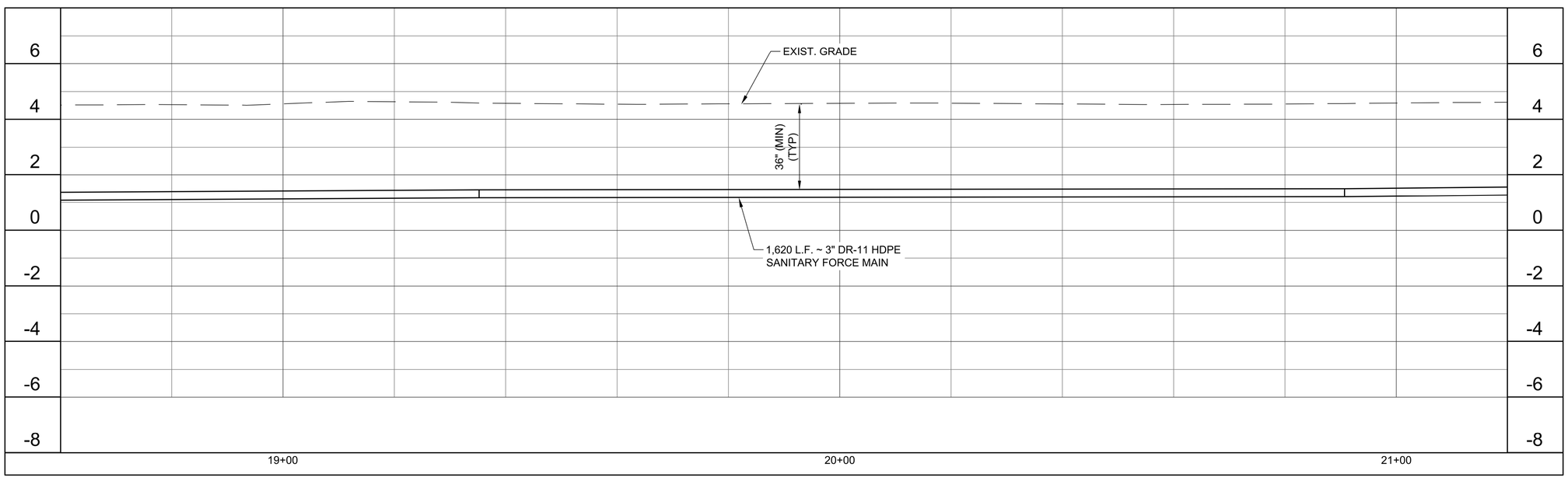

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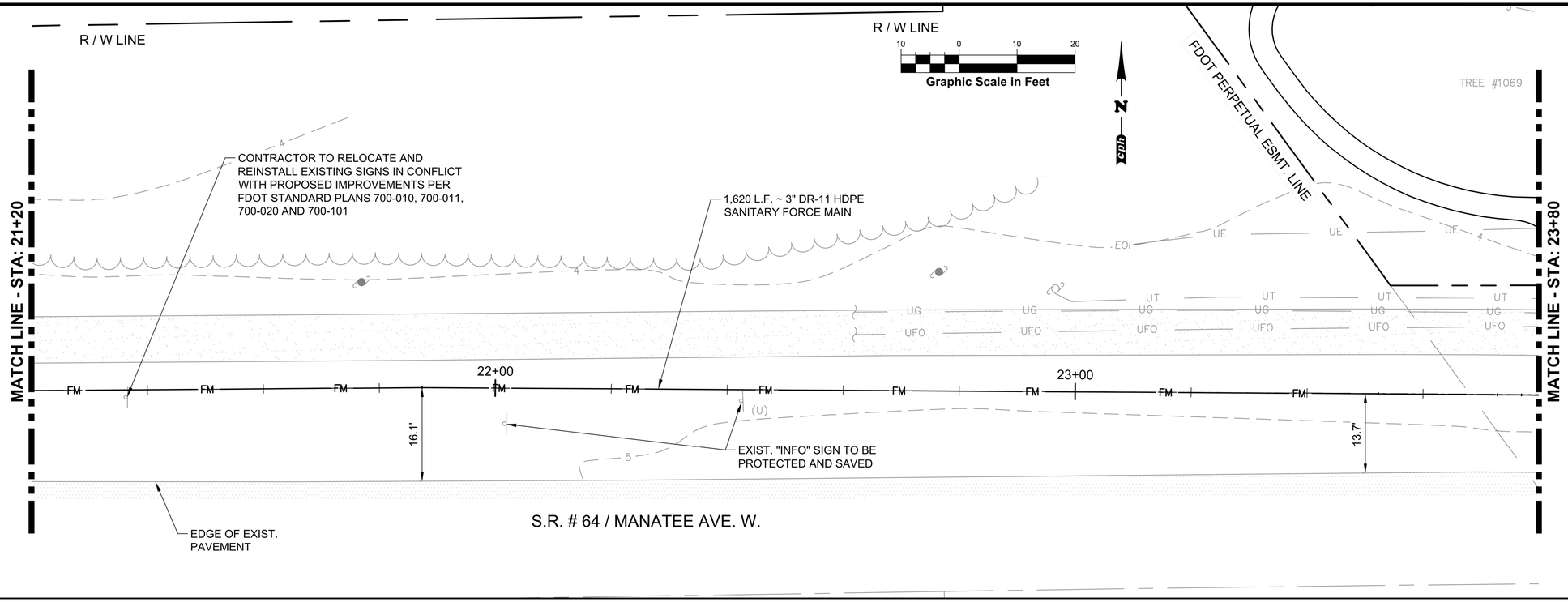

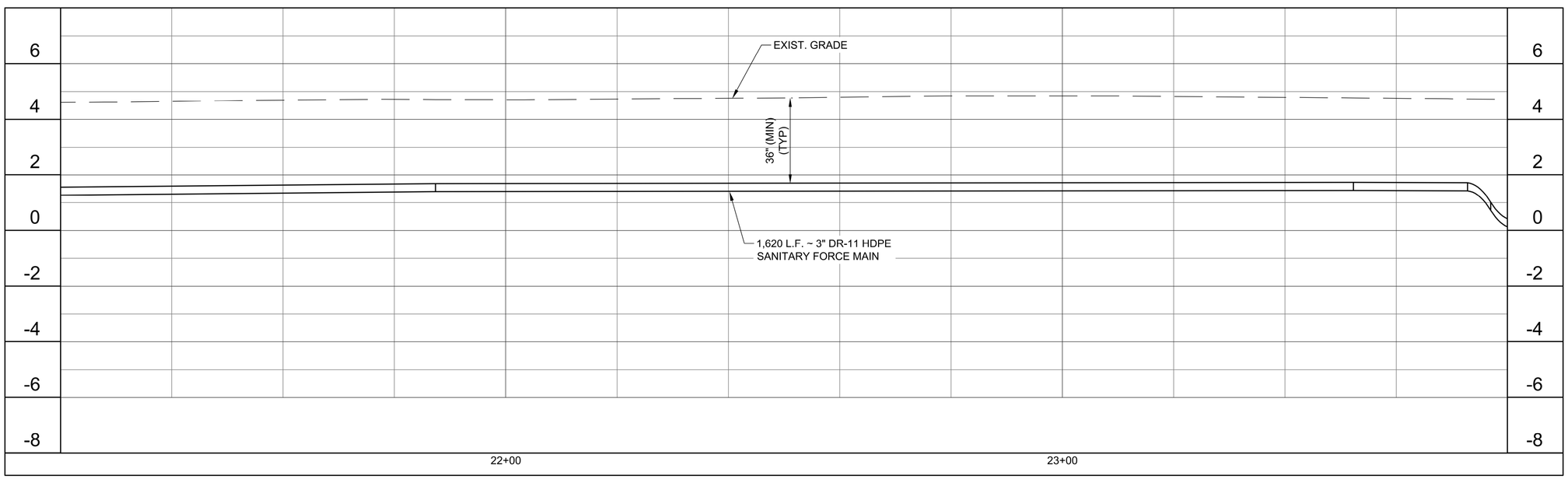

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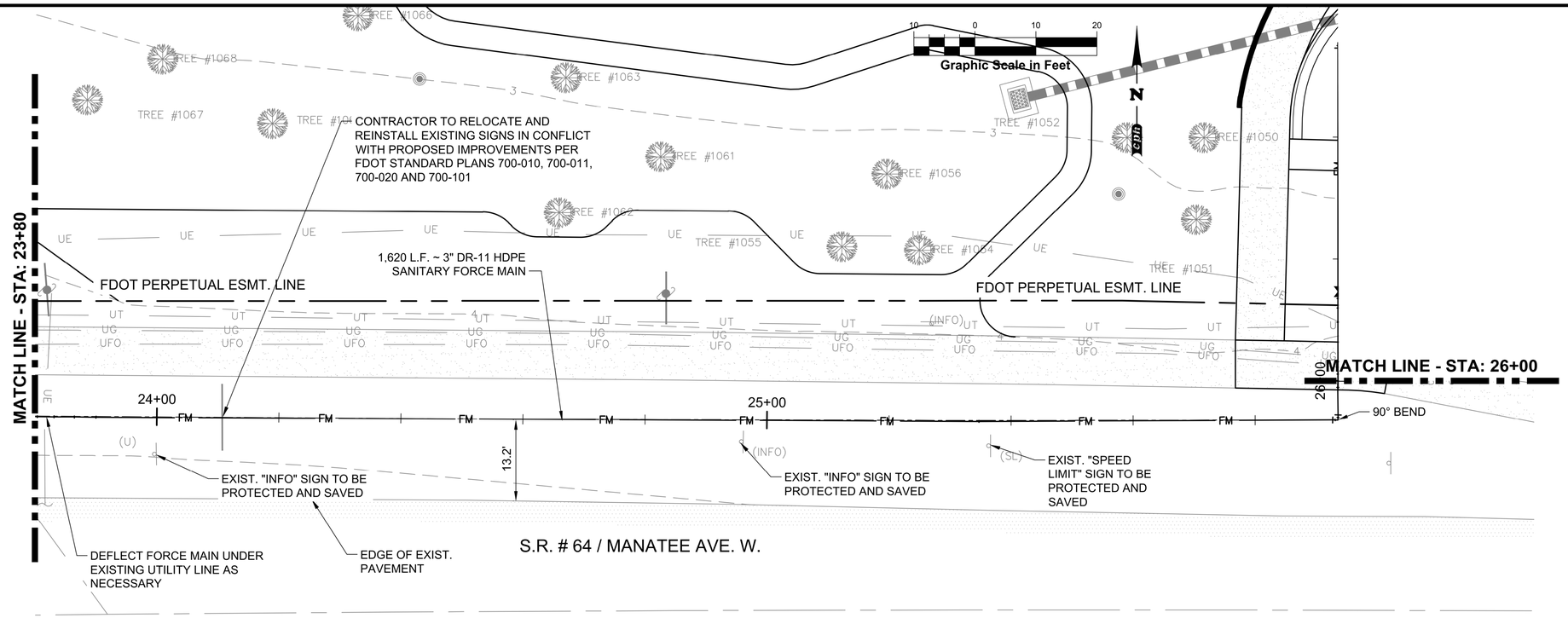

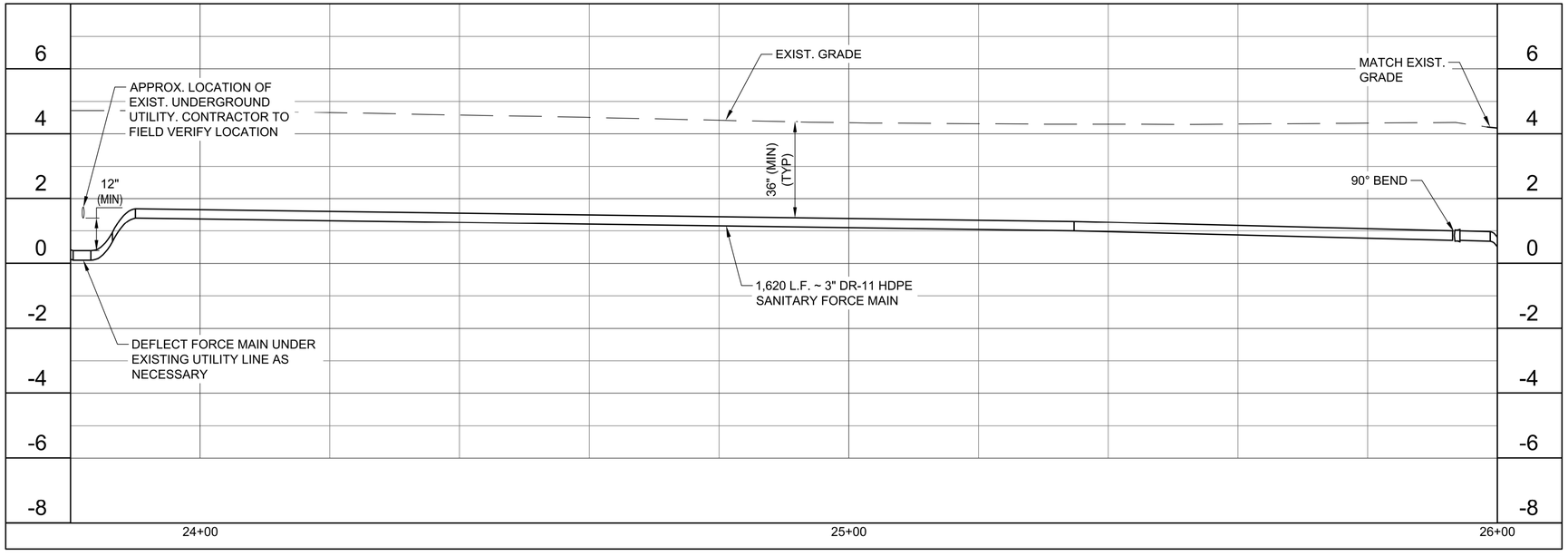

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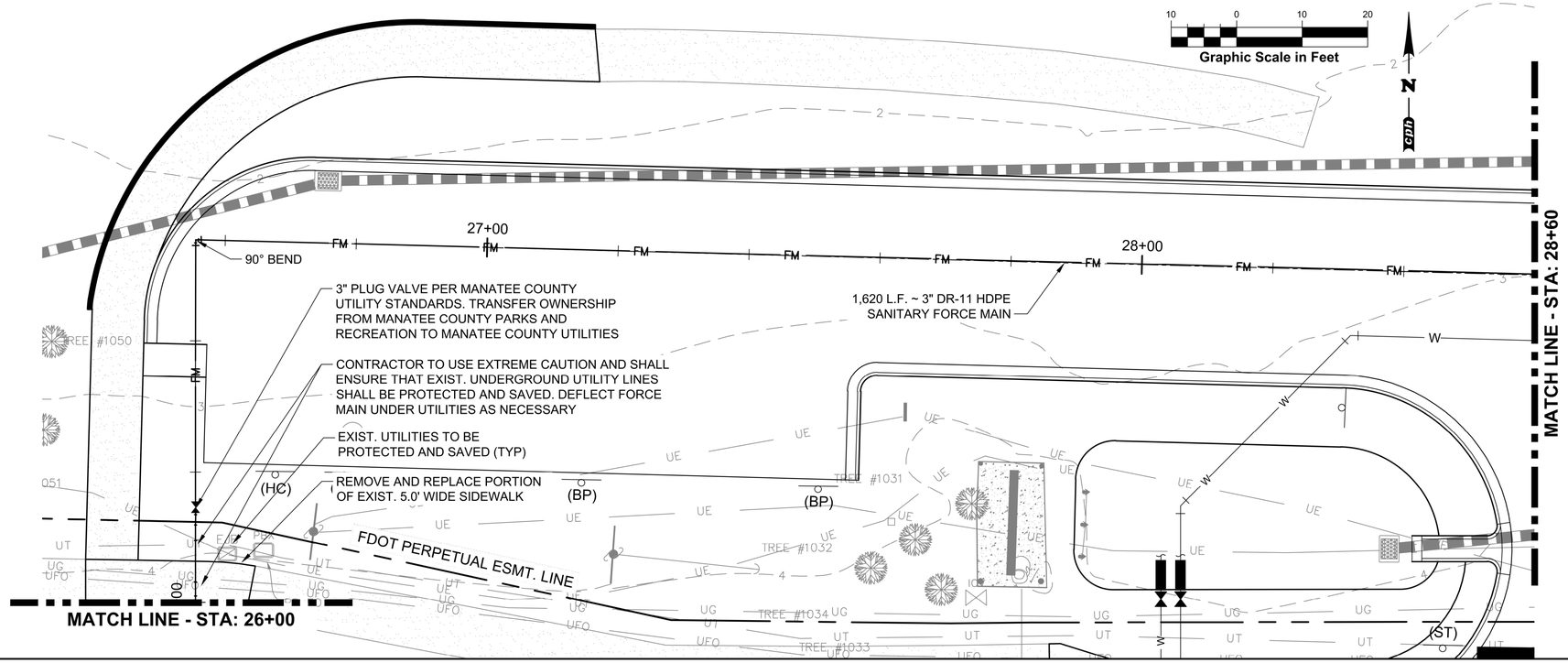

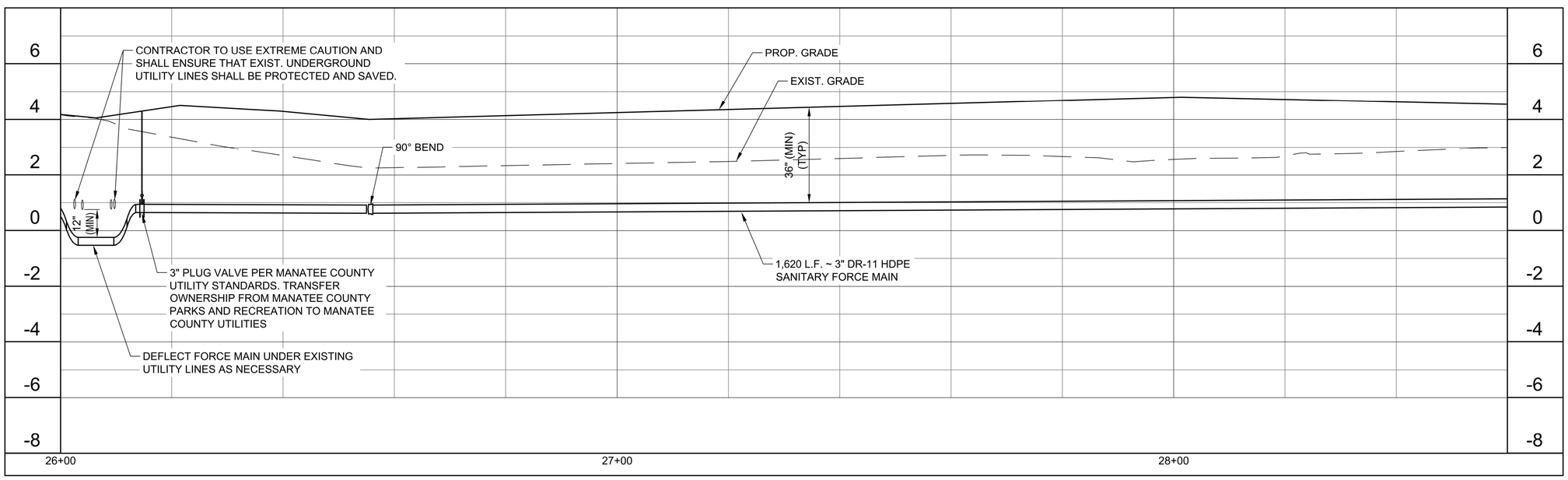

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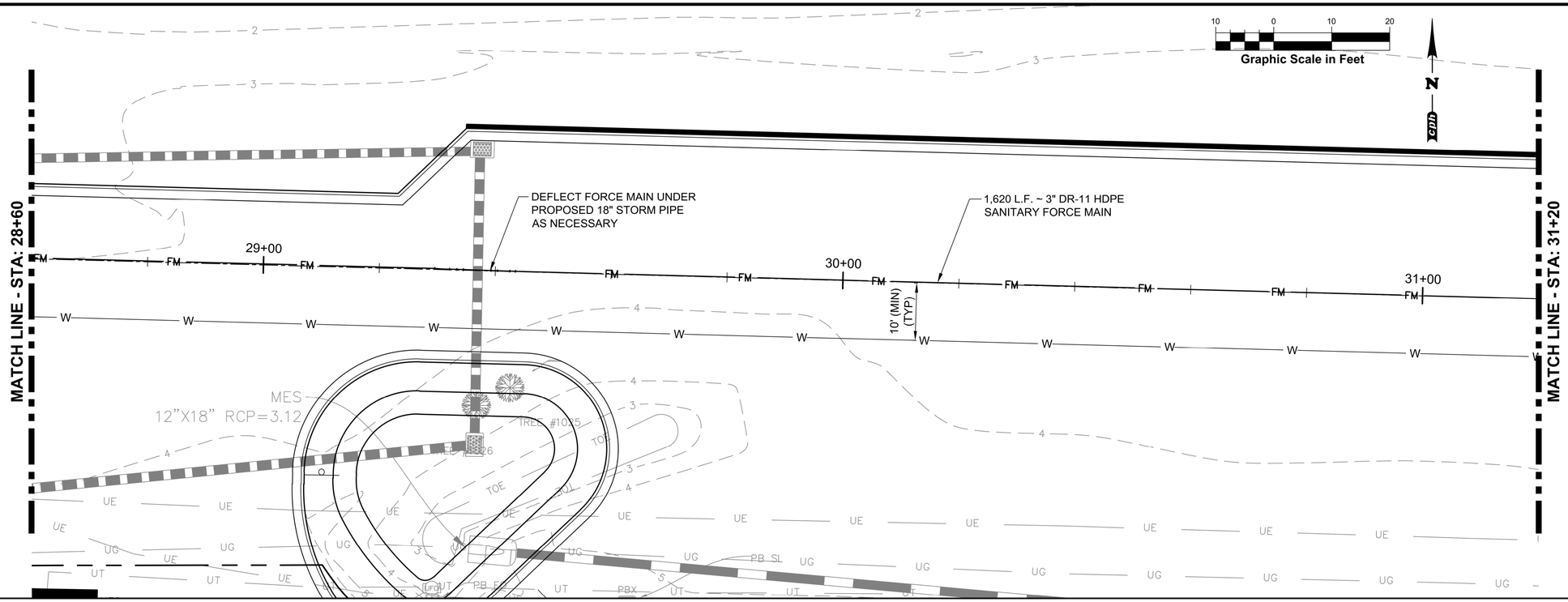

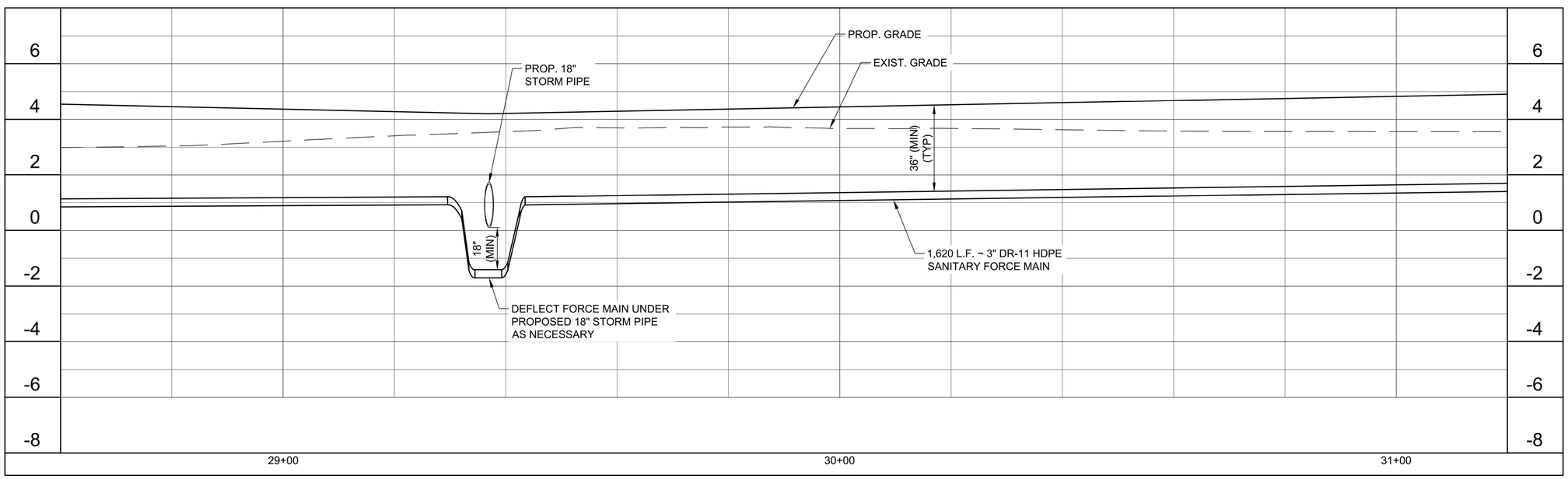

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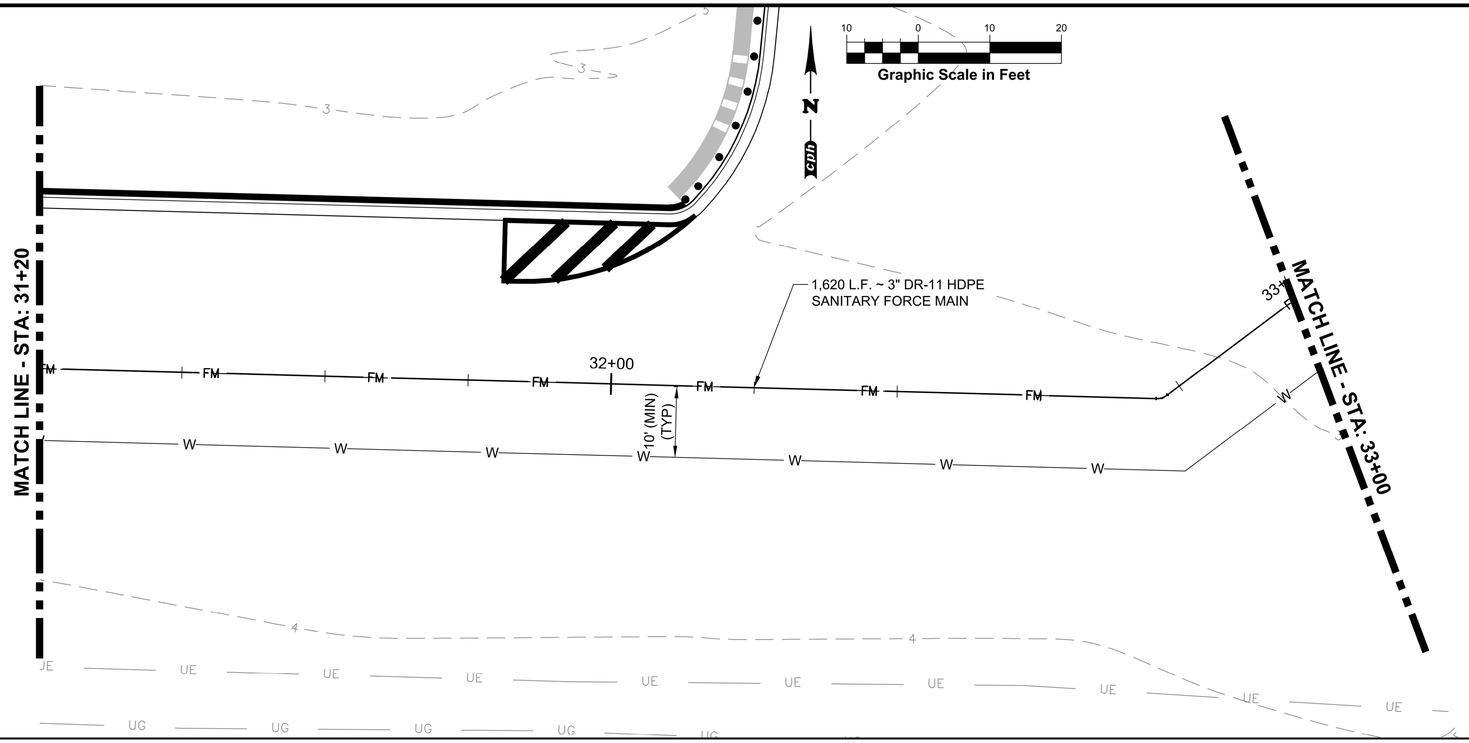

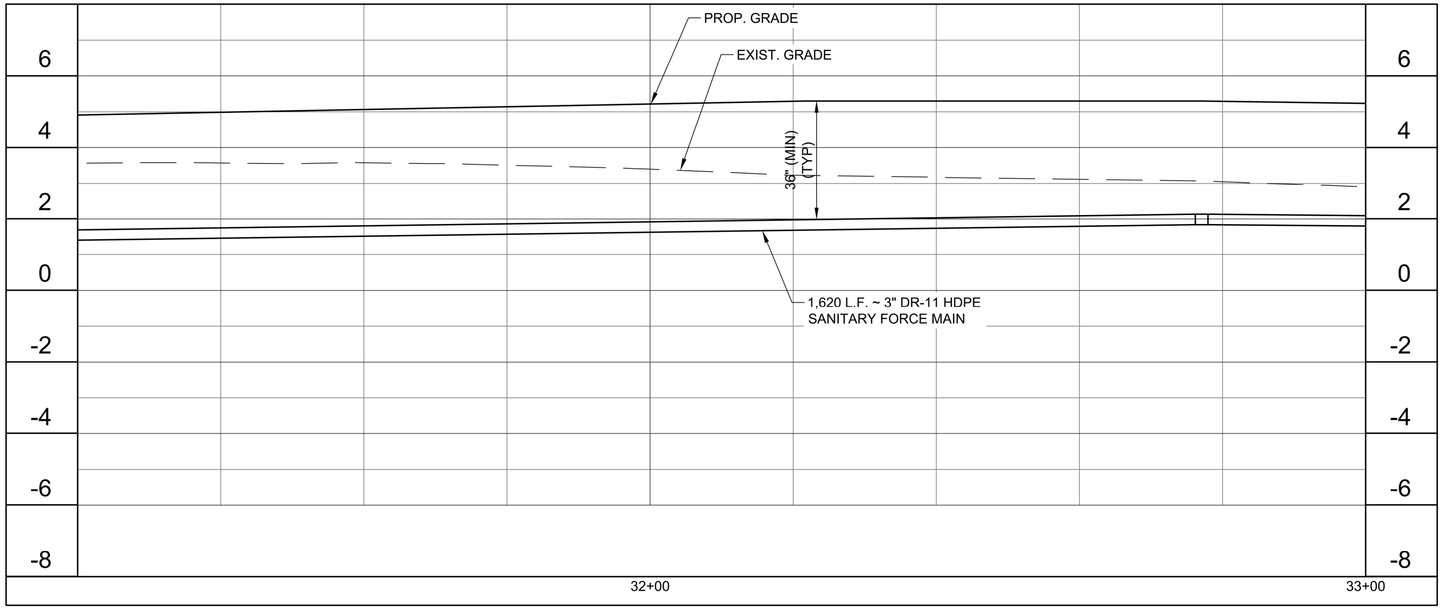

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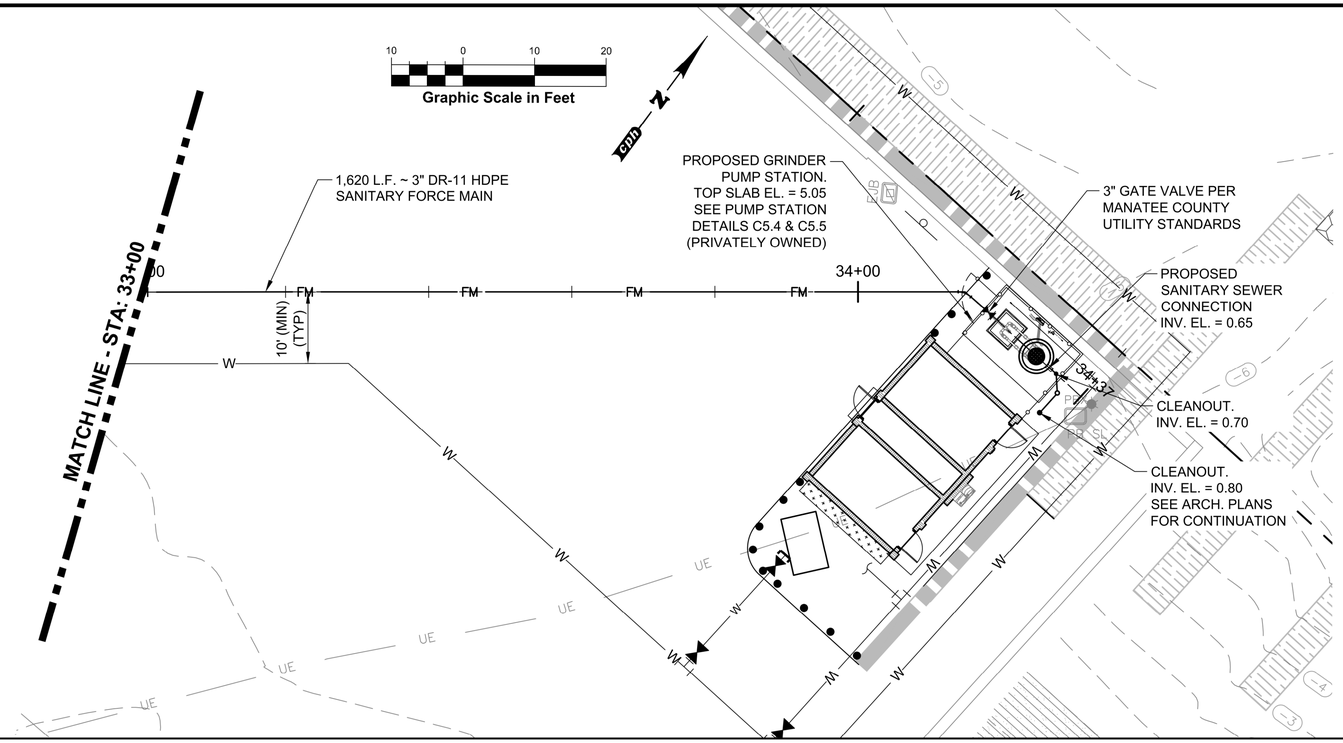

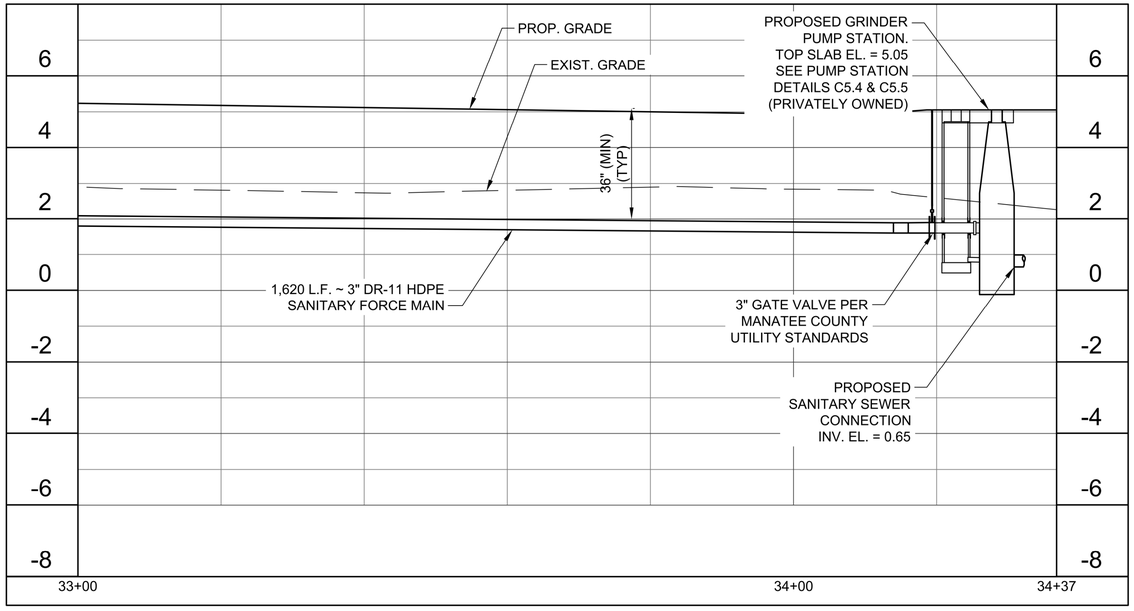

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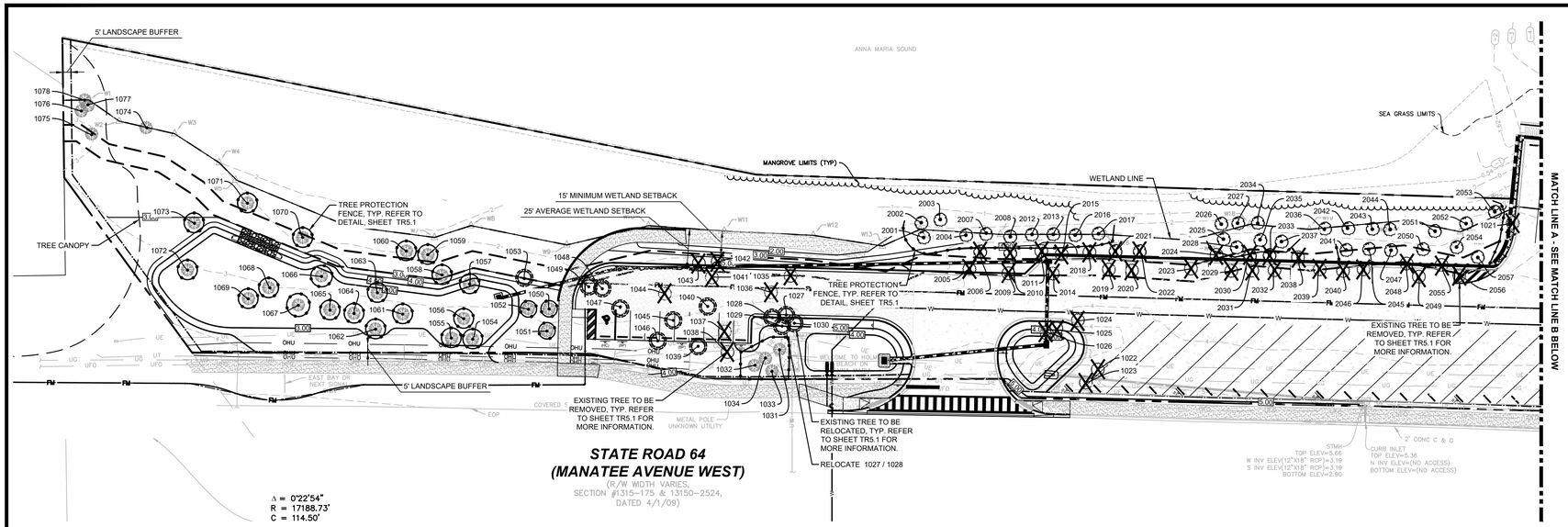

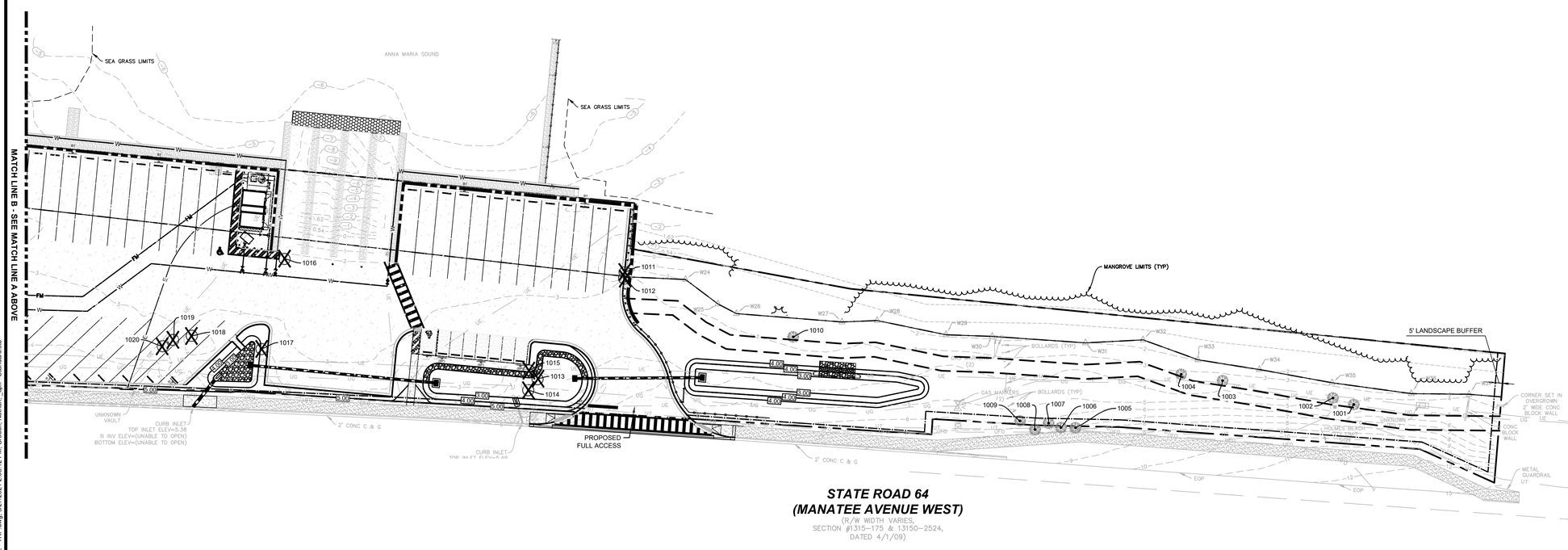

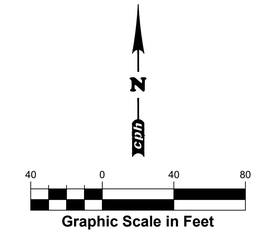

TREE LEGEND

= TREE TO BE REMOVED

= TREE TO BE SAVED

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Drawn: C. Smith
Checked: D. Bryant
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TREE RETENTION PLAN

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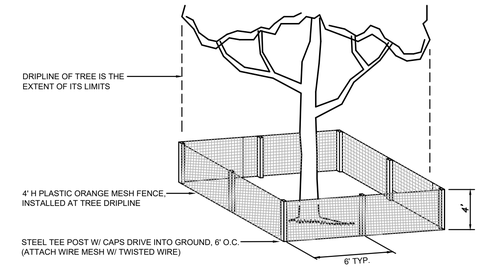
Tree #	DBH (in.)	Common Name	Botanical Name	Disposition
1001	13	Cabbage Palm	*Sabal palmetto*	SAVED
1002	15	Cabbage Palm	*Sabal palmetto*	SAVED
1003	11	Cabbage Palm	*Sabal palmetto*	SAVED
1004	14	Cabbage Palm	*Sabal palmetto*	SAVED
1005	11.8	Cabbage Palm	*Sabal palmetto*	SAVED
1006	9.9	Cabbage Palm	*Sabal palmetto*	SAVED
1007	13.5	Cabbage Palm	*Sabal palmetto*	SAVED
1008	10.1	Cabbage Palm	*Sabal palmetto*	SAVED
1009	13.4	Cabbage Palm	*Sabal palmetto*	SAVED
1010	11	Cabbage Palm	*Sabal palmetto*	SAVED
1011	12.2	Cabbage Palm	*Sabal palmetto*	REMOVE
1012	7.4	Cabbage Palm	*Sabal palmetto*	REMOVE
1013	12.6	Cabbage Palm	*Sabal palmetto*	REMOVE
1014	11	Cabbage Palm	*Sabal palmetto*	REMOVE
1015	11.2	Cabbage Palm	*Sabal palmetto*	REMOVE
1016	13.3	Cabbage Palm	*Sabal palmetto*	REMOVE
1017	8.2	Mimosa	*Lysiloma latisiliquum*	REMOVE
1018	9.3	Cabbage Palm	*Sabal palmetto*	REMOVE
1019	8.6	Cabbage Palm	*Sabal palmetto*	REMOVE
1020	9.2	Cabbage Palm	*Sabal palmetto*	REMOVE
1021	7.8	Cabbage Palm	*Sabal palmetto*	REMOVE
1022	8.4	Cabbage Palm	*Sabal palmetto*	REMOVE
1023	9.9	Cabbage Palm	*Sabal palmetto*	REMOVE
1024	10.3	Cabbage Palm	*Sabal palmetto*	REMOVE
1025	9.6	Cabbage Palm	*Sabal palmetto*	REMOVE
1026	10	Cabbage Palm	*Sabal palmetto*	REMOVE
1027	11	Cabbage Palm	*Sabal palmetto*	RELOCATE
1028	12.4	Cabbage Palm	*Sabal palmetto*	RELOCATE
1029	12.2	Cabbage Palm	*Sabal palmetto*	RELOCATE
1030	12.9	Cabbage Palm	*Sabal palmetto*	RELOCATE
1031	12	Cabbage Palm	*Sabal palmetto*	SAVED
1032	12.3	Cabbage Palm	*Sabal palmetto*	SAVED
1033	11.3	Cabbage Palm	*Sabal palmetto*	SAVED
1034	12	Cabbage Palm	*Sabal palmetto*	SAVED
1035	5.2	Gumbo Limbo	*Bursera simaruba*	REMOVE
1036	6.9	Gumbo Limbo	*Bursera simaruba*	REMOVE
1037	8	Gumbo Limbo	*Bursera simaruba*	REMOVE
1038	7.4	Jamaica Dogwood	*Piscidia piscipula*	REMOVE
1039	13	Cabbage Palm	*Sabal palmetto*	RELOCATE
1040	5.1	Live Oak	*Quercus virginiana*	RELOCATE
1041	8.5	Mimosa	*Lysiloma latisiliquum*	REMOVE
1042	6	Silver Buttonwood	*Conocarpus erectus*	REMOVE
1043	7	Silver Buttonwood	*Conocarpus erectus*	REMOVE
1044	13.1	Fig	*Ficus sp.*	REMOVE
1045	11.5	Cabbage Palm	*Sabal palmetto*	RELOCATE
1046	8.7	Cabbage Palm	*Sabal palmetto*	RELOCATE
1047	3.8	Live Oak	*Quercus virginiana*	RELOCATE
1048	10.3	Cabbage Palm	*Sabal palmetto*	RELOCATE
1049	9.9	Cabbage Palm	*Sabal palmetto*	RELOCATE
1050	8	Silver Buttonwood	*Conocarpus erectus*	SAVED
1051	10.4	Jamaica Dogwood	*Piscidia piscipula*	SAVED
1052	6.9	Green Buttonwood	*Conocarpus erectus*	SAVED
1053	10	Cabbage Palm	*Sabal palmetto*	RELOCATE
1054	9.3	Cabbage Palm	*Sabal palmetto*	SAVED
1055	10.2	Cabbage Palm	*Sabal palmetto*	SAVED
1056	10.9	Cabbage Palm	*Sabal palmetto*	SAVED
1057	12	Cabbage Palm	*Sabal palmetto*	SAVED
1058	10	Cabbage Palm	*Sabal palmetto*	SAVED
1059	12	Cabbage Palm	*Sabal palmetto*	SAVED
1060	10	Cabbage Palm	*Sabal palmetto*	SAVED
1061	14.9	Mimosa	*Lysiloma latisiliquum*	SAVED
1062	8	Jamaica Dogwood	*Piscidia piscipula*	SAVED
1063	4.2	Live Oak	*Quercus virginiana*	SAVED
1064	4.5	Green Buttonwood	*Conocarpus erectus*	SAVED
1065	4.5	Green Buttonwood	*Conocarpus erectus*	SAVED
1066	8.7	Mimosa	*Lysiloma latisiliquum*	SAVED
1067	13.6	Mimosa	*Lysiloma latisiliquum*	SAVED
1068	4.2	Gumbo Limbo	*Bursera simaruba*	SAVED
1069	4.2	Green Buttonwood	*Conocarpus erectus*	SAVED
1070	3.2	Live Oak	*Quercus virginiana*	SAVED
1071	8	Green Buttonwood	*Conocarpus erectus*	SAVED
1072	4.1	Live Oak	*Quercus virginiana*	SAVED
1073	10.9	Cabbage Palm	*Sabal palmetto*	SAVED
1074	15	Mexican Fan Palm	*Washingtonia robusta*	SAVED
1075	8.8	Gumbo Limbo	*Bursera simaruba*	SAVED
1076	12	Cabbage Palm	*Sabal palmetto*	SAVED
1077	11	Cabbage Palm	*Sabal palmetto*	SAVED
1078	10.8	Gumbo Limbo	*Bursera simaruba*	SAVED

Tree #	DBH (in.)	Common Name	Botanical Name	Disposition
2001	18	Australian Pine	*Casuarina equisetifolia*	SAVE
2002	18	Australian Pine	*Casuarina equisetifolia*	SAVE
2003	9	Australian Pine	*Casuarina equisetifolia*	SAVE
2004	9	Australian Pine	*Casuarina equisetifolia*	SAVE
2005	22	Australian Pine	*Casuarina equisetifolia*	REMOVE
2006	15	Australian Pine	*Casuarina equisetifolia*	REMOVE
2007	8	Australian Pine	*Casuarina equisetifolia*	SAVE
2008	10	Australian Pine	*Casuarina equisetifolia*	SAVE
2009	17	Australian Pine	*Casuarina equisetifolia*	REMOVE
2010	17	Australian Pine	*Casuarina equisetifolia*	REMOVE
2011	17	Australian Pine	*Casuarina equisetifolia*	REMOVE
2012	14	Australian Pine	*Casuarina equisetifolia*	SAVE
2013	17	Australian Pine	*Casuarina equisetifolia*	SAVE
2014	17	Australian Pine	*Casuarina equisetifolia*	REMOVE
2015	17	Australian Pine	*Casuarina equisetifolia*	REMOVE
2016	9	Australian Pine	*Casuarina equisetifolia*	SAVE
2017	14	Australian Pine	*Casuarina equisetifolia*	SAVE
2018	17	Australian Pine	*Casuarina equisetifolia*	REMOVE
2019	17	Australian Pine	*Casuarina equisetifolia*	REMOVE
2020	16	Australian Pine	*Casuarina equisetifolia*	REMOVE
2021	19	Australian Pine	*Casuarina equisetifolia*	REMOVE
2022	14	Australian Pine	*Casuarina equisetifolia*	REMOVE
2023	19	Australian Pine	*Casuarina equisetifolia*	REMOVE
2024	10	Australian Pine	*Casuarina equisetifolia*	REMOVE
2025	17	Australian Pine	*Casuarina equisetifolia*	SAVE
2026	14	Australian Pine	*Casuarina equisetifolia*	SAVE
2027	17	Australian Pine	*Casuarina equisetifolia*	SAVE
2028	10	Australian Pine	*Casuarina equisetifolia*	SAVE
2029	15	Australian Pine	*Casuarina equisetifolia*	REMOVE
2030	17	Australian Pine	*Casuarina equisetifolia*	REMOVE
2031	14	Australian Pine	*Casuarina equisetifolia*	REMOVE
2032	15	Australian Pine	*Casuarina equisetifolia*	REMOVE
2033	15	Australian Pine	*Casuarina equisetifolia*	REMOVE
2034	12	Australian Pine	*Casuarina equisetifolia*	SAVE
2035	12	Australian Pine	*Casuarina equisetifolia*	SAVE
2036	16	Australian Pine	*Casuarina equisetifolia*	SAVE
2037	12	Australian Pine	*Casuarina equisetifolia*	SAVE
2038	14	Australian Pine	*Casuarina equisetifolia*	REMOVE
2039	16	Australian Pine	*Casuarina equisetifolia*	REMOVE
2040	14	Australian Pine	*Casuarina equisetifolia*	REMOVE
2041	16	Australian Pine	*Casuarina equisetifolia*	SAVE
2042	16	Australian Pine	*Casuarina equisetifolia*	SAVE
2043	12	Australian Pine	*Casuarina equisetifolia*	SAVE
2044	12	Australian Pine	*Casuarina equisetifolia*	SAVE
2045	12	Australian Pine	*Casuarina equisetifolia*	SAVE
2046	15	Australian Pine	*Casuarina equisetifolia*	REMOVE
2047	15	Australian Pine	*Casuarina equisetifolia*	SAVE
2048	12	Australian Pine	*Casuarina equisetifolia*	REMOVE
2049	12	Australian Pine	*Casuarina equisetifolia*	REMOVE
2050	12	Australian Pine	*Casuarina equisetifolia*	SAVE
2051	12	Australian Pine	*Casuarina equisetifolia*	SAVE
2052	12	Australian Pine	*Casuarina equisetifolia*	SAVE
2053	12	Australian Pine	*Casuarina equisetifolia*	SAVE
2054	15	Australian Pine	*Casuarina equisetifolia*	SAVE
2055	6	Australian Pine	*Casuarina equisetifolia*	REMOVE
2056	15	Australian Pine	*Casuarina equisetifolia*	REMOVE
2057	15	Australian Pine	*Casuarina equisetifolia*	SAVE

NOTE: AUSTRALIAN PINE INFORMATION IS FROM A SURVEY BY ZNS ENGINEERING, DATED 05/24/13.



TREE PROTECTION DETAIL

N.T.S.

TREE BARRICADE APPROVAL
OBTAIN COUNTY APPROVAL OF TREE BARRICADES PRIOR TO BEGINNING CLEARING OPERATIONS OR ANY SITE DEVELOPMENTS

TREE PROTECTION NOTES:

1. Four (4) foot high orange mesh construction fencing shall be installed encompassing the drip line of each tree, or one foot in diameter for each inch of trunk diameter, whichever is greater. When surveyed fencing shall be moved to the edge of the tree protection area (TPA) as indicated on plans and be maintained through completion of construction.
2. Where the TPA occurs within 10 feet of the tree trunk, a trenching device shall be used to sever tree roots. Root raking shall not occur before roots have been cleanly severed.
3. All equipment and/or materials are prohibited within the TPA. Including but not limited to cement wash-out, chemicals, fuel or equipment servicing.
4. Grade changes shall not occur within the TPA. No fill shall be added, removed or stored within the TPA with exception of prescribed potting soil (see item 10).
5. Brush and weeds occuring within the TPA shall be cleared by hand or utilizing only the mower of a light wheeled farm tractor (less than 60 hp). During such activities soil profiles shall not be disturbed.
6. Roto-tilling, disking, root raking or other clearing methods that disturb the soil profile are expressly prohibited.
7. Utility lines and/or irrigation lines shall not occur within the TPA.
8. Saved trees shall be pruned to remove dead and damaged wood, correct structural defects and to provide access and visibility.
9. Pruning shall be completed under direct observation by the Designated Forester of CPH Engineers, Inc. or owner designated ISA certified arborist and be accomplished by an arborist with five years or more experience pruning live oaks to ISA standards. Arborist must obtain approval from the owner prior to commencement of pruning activities. Two week advance notification is required.
10. Landscaping within TPA shall not disturb existing soil profiles. Eight inches of potting soil shall be imported and evenly spread to provide a planting medium within TPA.

NOTES & SPECIFICATIONS FOR TREES TO REMAIN OR BE RELOCATED

TREE PRUNING

1. THE LANDSCAPE CONTRACTOR SHALL PRUNE EXISTING TREES TO REMAIN TO RAISE THE CANOPY FOR VERTICAL CLEARANCE WHERE NECESSARY, CORRECT STRUCTURAL DEFICIENCIES AND REMOVE DEAD LIMBS 2 INCHES OR GREATER IN DIAMETER.
2. NO MORE THAT 25% OF ANY TREE'S CANOPY VOLUME SHALL BE REMOVED.
3. ALL PRUNING SHALL BE IN ACCORDANCE WITH ANSI A(300) STANDARDS FOR TREE CARE, PART 8 (PRUNING) AND SHALL BE COMPLETED UNDER DIRECT SUPERVISION OF AN ISA- OR ASCA- CERTIFIED ARBORIST.
4. THE CONTRACTOR OR SUPERVISING ARBORIST MUST OBTAIN APPROVAL FROM THE OWNER PRIOR TO COMMENCEMENTS OF PRUNING ACTIVITIES. TWO WEEKS ADVANCE NOTIFICATION IS REQUIRED.

TREE RELOCATION

1. BROADLEAF TREES TO BE RELOCATED SHALL BE ROOT PRUNED 4 MONTHS PRIOR TO RELOCATION.
2. ROOT PRUNING SHALL BE PERFORMED IN ACCORDANCE WITH ANSI A(300) PART 8, (ROOT MANAGEMENT) SUBPART 84.5 NON-SELECTIVE ROOT CUTTING AND SHALL BE COMPLETED UNDER DIRECT SUPERVISION OF AN ISA- OR ASCA- CERTIFIED ARBORIST.
3. AT A MINIMUM, ROOTS SHALL BE PRUNED TEN (10) INCHES AWAY FROM THE TRUNK FOR EVERY ONE (1) INCH OF TRUNK DIAMETER.
4. ROOTS ARE TO BE PRUNED USING CLEAN, SHARP ROOT PRUNING TOOLS SUCH AS A POWER GROUND SAW, LOPPERS OR HAND SAW. MAKE CLEAN CUTS, RAKING OR TEARING THE ROOTS IS NOT PERMITTED.
5. AFTER ROOT PRUNING, THE TRENCH SHALL BE LIGHTLY BACKFILLED WITH MULCH.
6. WHEN THE TREE IS DUG FOR RELOCATION, THE OUTER EDGE OF THE ROOT BALL SHALL BE A MINIMUM OF SIX (6) INCHES OUTSIDE OF THE TRENCH WHERE ROOT PRUNING OCCURRED.
7. ROOT BALL SHALL BE A MINIMUM THREE (3) FEET DEEP.
8. ROOT BALL OF PALMS TO BE RELOCATED SHALL BE A MINIMUM OF 4 FEET IN DIAMETER.
9. PALM LEAVES MAY BE REMOVED PRIOR TO RELOCATION.
10. PALMS MAY BE RELOCATED USING A TREE SPADE IF THIS CAN BE ACCOMPLISHED WITHOUT DAMAGING THE OTHER TREES OR PROPERTY.
11. A TREE SHALL NOT BE DUG FOR RELOCATION UNTIL THE PLANTING LOCATION IS PREPARED. DIGGING AND REPLANTING WILL OCCUR ON THE SAME DAY.

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Engineer No. 3215
Surveyor No. LB7143
Architect. No. AA26000926
Landscape No. LC000298

Sep 27, 2021

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No.	Date	Revision

Designed: D. Bryant
Drawn: C. Smith
Checked: D. Bryant
Job No.: M13112
Date: 10-2020

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TREE RETENTION DATA AND DETAILS

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

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Sheet No.
TR5.1

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SYMBOL	ITEM AND SPECIFICATIONS	QTY	INSTALLER
A	**TRASH RECEPTACLE** - ROUND, 32 GAL, 100% RECYCLED PLASTIC **TYPE:** ITEM # 14167901PLA 23.5"W x 25.5"H **COLOR:** CEDAR COLOR **SOURCE:** PRIDE ENTERPRISES **DETAIL:** 1/H5.1 INSTALL PER MANUFACTURERS SPECIFICATIONS	4	PROPERTY MANAGEMENT CONSTRUCTION
B	**RECYCLE RECEPTACLE** - ROUND, 32 GAL, 100% RECYCLED PLASTIC **TYPE:** ITEM # 14167900NA 23.5"W x 25.5"H **COLOR:** GREEN **SOURCE:** PRIDE ENTERPRISES **DETAIL:** 1/H5.1 INSTALL PER MANUFACTURERS SPECIFICATIONS	4	PROPERTY MANAGEMENT CONSTRUCTION
C	**BENCH** - **TYPE:** WOOD CONTOUR BENCH ITEM # 14167704NA 25.5"W x 21.5"H x 6'L FLANGE MOUNT **SOURCE:** PRIDE ENTERPRISES **DETAIL:** 2/H5.1 INSTALL PER MANUFACTURERS SPECIFICATIONS	2	PROPERTY MANAGEMENT CONSTRUCTION
D	**PICNIC TABLE(S)** - **TYPE:** 8' WOOD PICNIC TABLE ITEM # 14167202NA 60"W x 30"H x 8'L **SOURCE:** PRIDE ENTERPRISES **DETAIL:** 3/H5.1 INSTALL PER MANUFACTURERS SPECIFICATIONS	5	PROPERTY MANAGEMENT CONSTRUCTION
E	**BIKE RACK** - **TYPE:** 2-HUMP SERPENTINE BIKE RACK ITEM #41112020201-02BL; BLUE 43"W x 36"H x 6"D, TWO HUMP **SOURCE:** 4/H5.1 **DETAIL:** SURFACE MOUNT PER MANUFACTURERS SPECIFICATIONS	1	PROPERTY MANAGEMENT CONSTRUCTION
E	**PICNIC TABLE** - **TYPE:** 8' ADA WOOD PICNIC TABLE ITEM #14167203NA 60"W x 30" H x 10'L **SOURCE:** PRIDE ENTERPRISES **DETAIL:** 5/H5.1 PER MANUFACTURERS SPECIFICATIONS	1	PROPERTY MANAGEMENT CONSTRUCTION

PLANT LIST

SYM COMMON NAME

TREES

CU SEAGRAPE
LR RED MANGROVE
SP CABBAGE PALM
RQV RELOCATED OAK
RSP RELOCATED CABBAGE PALM
EX EXISTING TREES

SHRUB

FS FLORIDA PRIVET

GROUNDCOVER

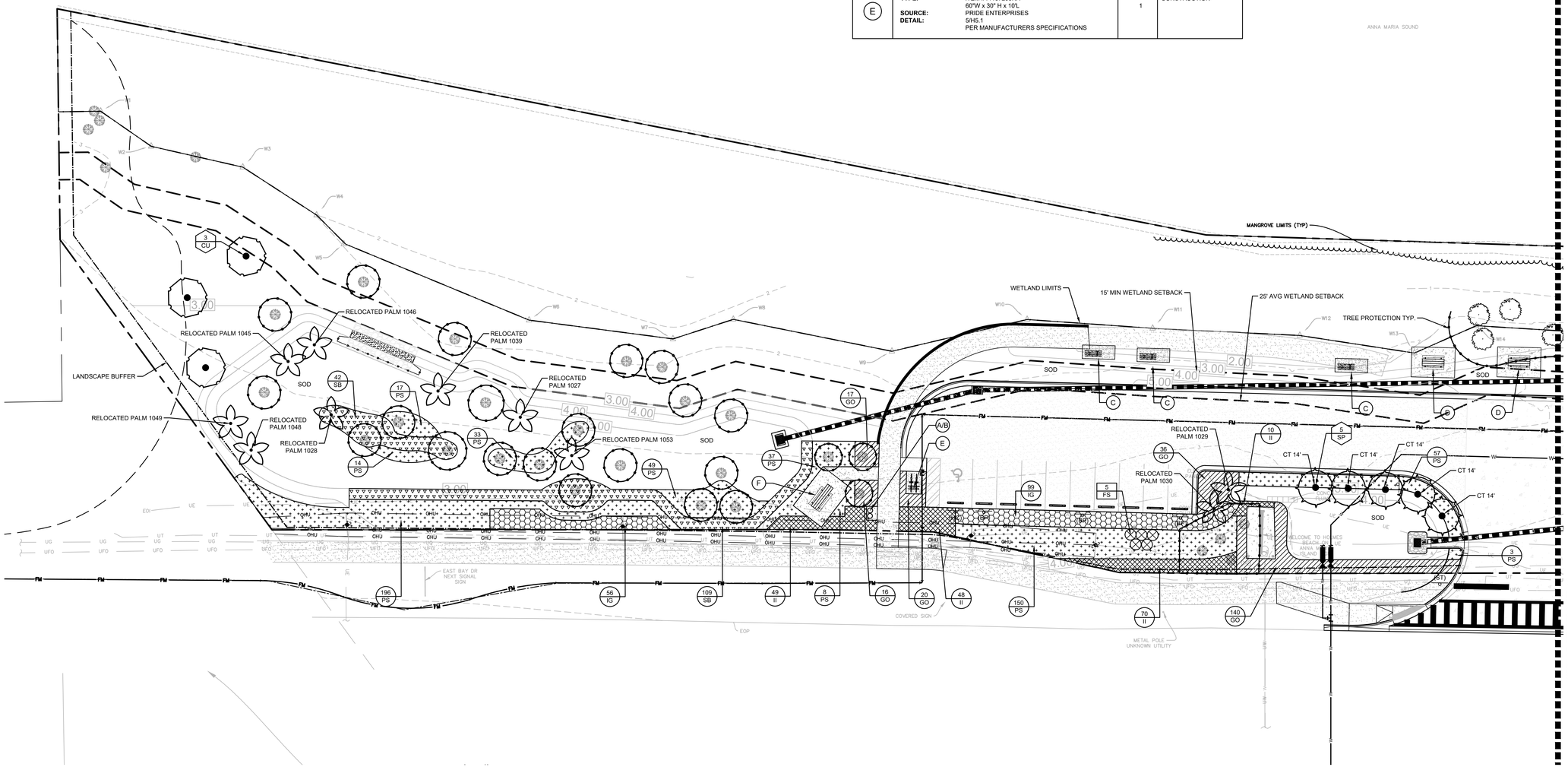
IG GALLBERRY
II SEA COAST MARSHELDER
GO GOPHER APPLE
PS WHITE FOUNTAIN GRASS
SB SAND CORDGRASS

SOD SEASHORE PASPALUM

N

20 0 20 40

Graphic Scale in Feet



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Landscape No. LC000298

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Designed: D. Bryant
Drawn: C. Smith
Checked: D. Bryant
Job No.: M13112
Date: 10-2020

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LANDSCAPE PLAN

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

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Sheet No.
L1.1

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PLANT LIST

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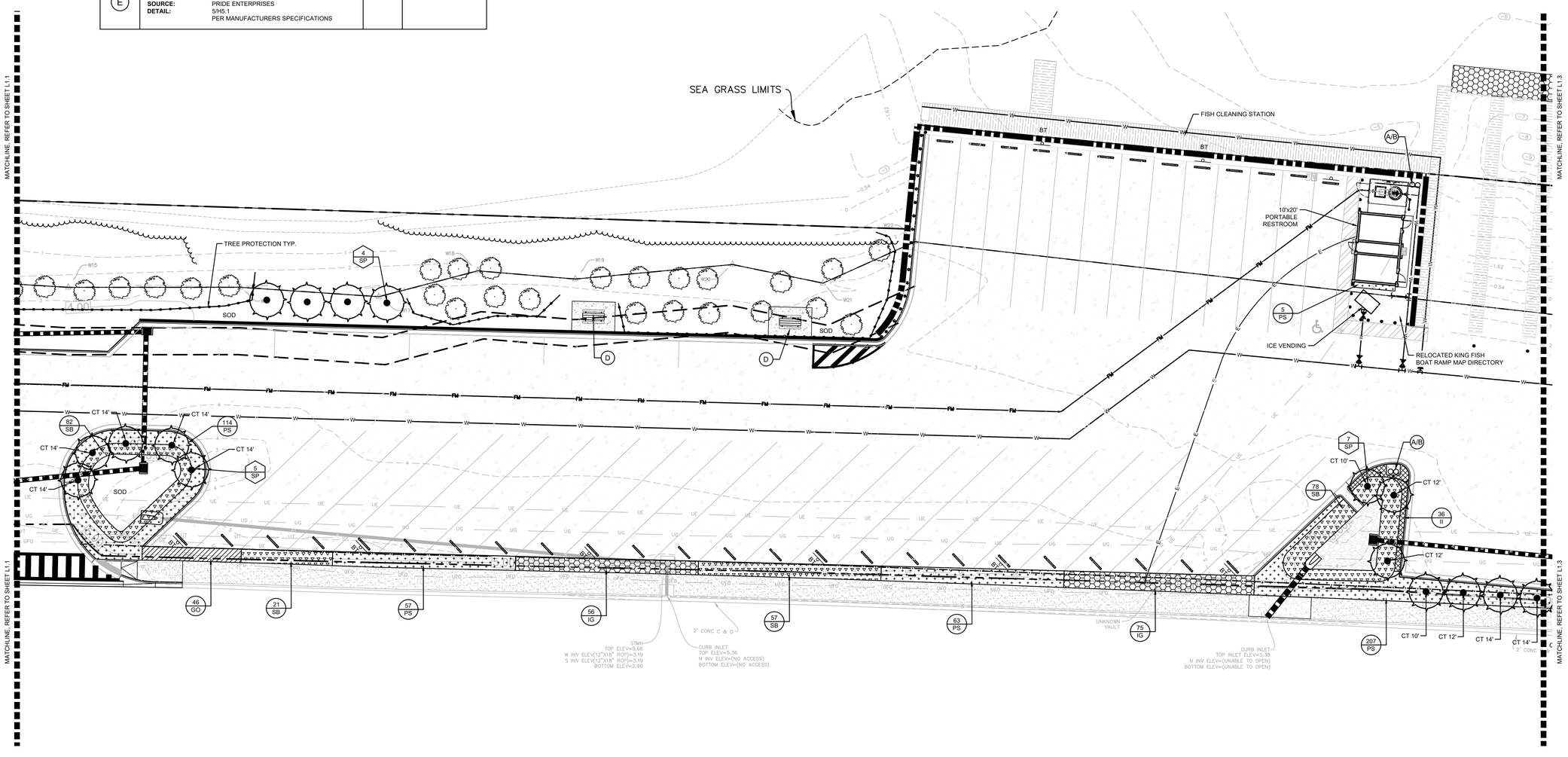
Graphic Scale in Feet



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3		
4		
5		
6		
7		

Designed: D. Bryant
Drawn: C. Smith
Checked: D. Bryant
Job No.: M13112
Date: 10-2020

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Sheet No.
L1.2

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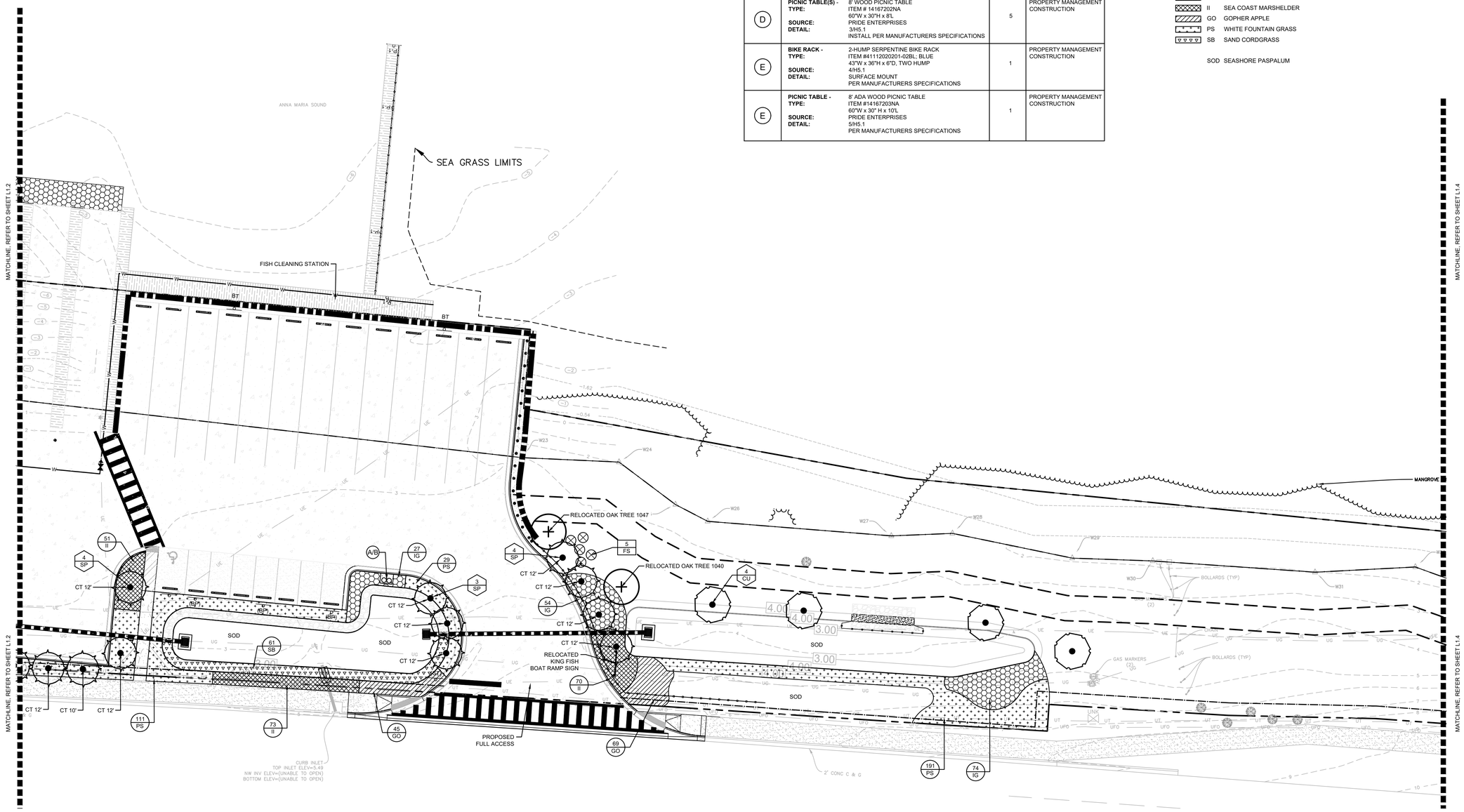

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Landscape No. LC000298

Sep 27, 2021

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No.	Date	Revision

Designed: D. Bryant
Drawn: C. Smith
Checked: D. Bryant
Job No.: M13112
Date: 10-2020

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LANDSCAPE PLAN

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
L1.3

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SYMBOL	ITEM AND SPECIFICATIONS	QTY	INSTALLER
A	**TRASH RECEPTACLE** - ROUND, 32 GAL, 100% RECYCLED PLASTIC **TYPE:** ITEM # 14167901P1LA 23.5"W x 25.5"H **COLOR:** CEDAR COLOR **SOURCE:** PRIDE ENTERPRISES **DETAIL:** 1/H5.1 INSTALL PER MANUFACTURERS SPECIFICATIONS	4	PROPERTY MANAGEMENT CONSTRUCTION
B	**RECYCLE RECEPTACLE** - ROUND, 32 GAL, 100% RECYCLED PLASTIC **TYPE:** ITEM # 14167900NA 23.5"W x 25.5"H **COLOR:** GREEN **SOURCE:** PRIDE ENTERPRISES **DETAIL:** 1/H5.1 INSTALL PER MANUFACTURERS SPECIFICATIONS	4	PROPERTY MANAGEMENT CONSTRUCTION
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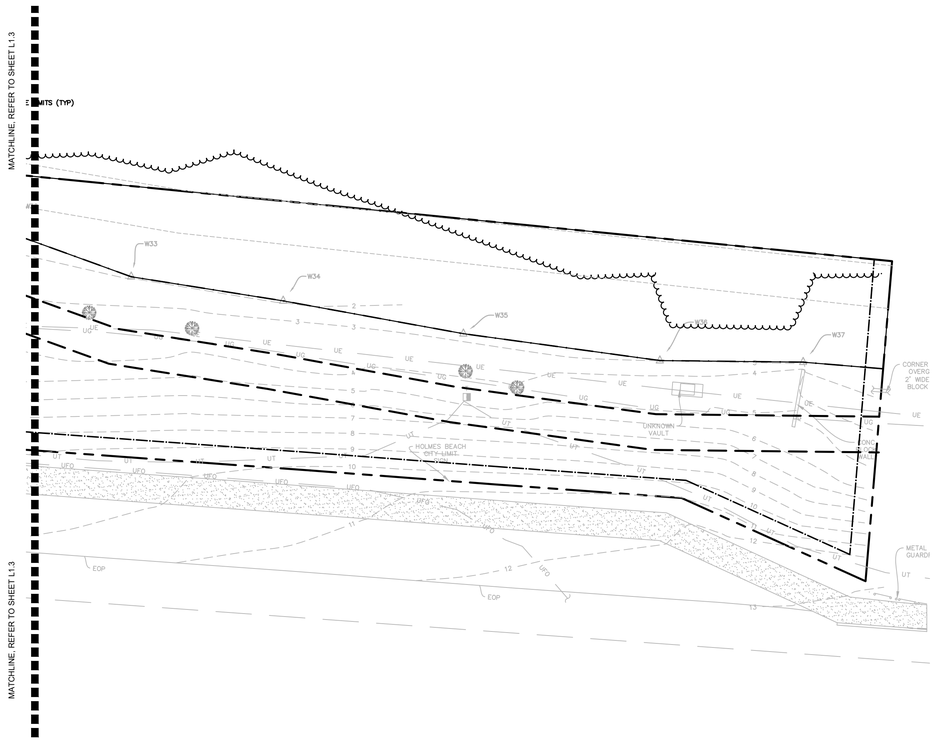
N

cph

20 0 20 40

Graphic Scale in Feet



PLANT LIST

SYM	COMMON NAME	BOTANICAL NAME	DESCRIPTION	QTY.
TREES				
CU	SEAGRAPE	COCCOLOBA UVIFERA	4" CAL, 12' HT, STD. TRUNK	7
LR	RED MANGROVE	RHIZOPHORA MANGLE	7 GAL.	(*)
SP	CABBAGE PALM	SABAL PALMETTO	REFER TO PLAN FOR CT., DEBRIS FREE, BOOTED, CLEAN STRAIGHT TRUNKS, REGEN HEADS	32
RQV	RELOCATED OAK	QUERCUS VIRGINIANA	REFER TO SHEET TR1.1 FOR DETAILS	2
RSP	RELOCATED CABBAGE PALM	SABAL PALMETTO	REFER TO SHEET TR1.1 FOR DETAILS	2
EX	EXISTING TREES	EXISTING TREES	REFER TO SHEET TR1.1 FOR DETAILS	
SHRUB				
FS	FLORIDA PRIVET	FORESTIERA SEGERGATA	3 GAL., 24" HT., 16" SPRD., 48" O.C.	10
GROUNDCOVER				
IG	GALLBERRY	ILEX GLABRA	3 GAL., 18" HT., 12" SPRD., 30" O.C.	441
II	SEA COAST MARSHELDER	IVA IMBRICATA	1 GAL., 5" HT., 6" SPRD., 24" O.C.	407
GO	GOPHER APPLE	GEOBALANUS OBLONGI FOLIUS	1 GAL., 5" H.T., 6" SPRD., 24" O.C.	389
PS	WHITE FOUNTAIN GRASS	PENNISETUM SETACEUM 'ALBA'	3 GAL., 15" MIN. HT., 10" SPRD., 30" O.C.	1,341
SB	SAND CORDGRASS	SPARTINA BAKERI	3 GAL., 15" MIN. HT., 10" SPRD., 36" O.C.	450
SOD	SEASHORE PASPALUM	PASPALUM VAGINATUM	SOLID SOD, CONTRACTOR TO VERIFY QTY.	

NOTE:

1. PLANT DESCRIPTIONS ARE FOR MINIMUM ACCEPTABLE SPECIFICATIONS. ALL CRITERIA LISTED FOR CONTAINER SIZE, CALIPER, HEIGHT, SPREAD, ETC. MUST BE MET FOR PLANT MATERIAL ACCEPTANCE. FOR EXAMPLE, IF A THREE GALLON SHRUB DOES NOT MEET THE HEIGHT OR SPREAD SPECIFICATION, IT WILL NOT BE ACCEPTED.
2. IF SPECIFIED PLANTS ARE UNAVAILABLE AT TIME OF CONSTRUCTION, CONTRACTOR MAY REPLACE SPECIFIED PLANTS WITH PLANTS APPROVED BY LANDSCAPE ARCHITECT AND CITY STAFF.
3. ALL OPEN SPACE AREAS WITHIN THE PROPERTY SHALL BE SODDED UNLESS PAVED, SEEDED AND MULCHED OR PLANTED WITH SHRUBS AND GROUND COVER.
4. ALL LANDSCAPED AREAS WILL BE 100% IRRIGATED WITH A CENTRAL AUTOMATIC IRRIGATION SYSTEM INCLUDING A RAIN SENSOR.
5. CONTRACTOR SHALL REPLACE ANY EXISTING SOD OR OTHER PLANT MATERIALS DAMAGED DURING CONSTRUCTION IN AREAS THAT ARE OUTSIDE PROPOSED LANDSCAPE AS SHOWN ON THE PLAN.
6. CONTRACTOR TO VERIFY THE EXISTING IRRIGATION SYSTEM AND INCLUDE ANY CHANGES IN BID PRICING - NO CHANGE ORDERS WILL BE ACCEPTED.

*NOTE:
WHITE MANGROVES TO BE FIELD LOCATED IN AREAS WHERE KAYAKS ARE CURRENTLY BEING LAUNCHED IN MANGROVES.

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Ph: 407.322.6841
Plans Prepared By:
CPH, Inc.
State of Florida Licenses:
Engineer No. 3215
Surveyor No. LB7143
Architect. No. AA26000926
Landscape No. LC000298

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LANDSCAPE NOTES:

1. The landscape Contractor shall be responsible for all materials and all work as called for on the Landscape Plans and in the Landscape Specifications. In the event of variation between quantities shown on plant list and the plans, the plans shall control. The Landscape Contractor shall verify all quantities and report any discrepancies at the time of bidding.

2. The Landscape Contractor shall review architectural/engineering plans and become thoroughly familiar with surface and subsurface utilities.

3. Prior to construction, the contractor shall be responsible for locating all underground utilities and shall avoid damage to all utilities during the course of the work. Locations of existing buried utility lines shown on the plans are based upon best available information and are considered to be approximate. It shall be the responsibility of the contractor 1) to verify the locations of utility lines within and adjacent to the work area 2) to protect all utility lines during the construction period 3) to repair any and all damage to utilities, structures, site appurtenances, etc. which occurs as a result of the construction 4) To field adjust the location of proposed trees and palms 10' off the center of the utility lines. Notify the Landscape Architect if a 10' offset does not function.

4. The work shall be coordinated with other trades to prevent conflicts. Coordinate the planting with the irrigation work to assure availability and proper location of irrigation items and plants.

5. Contractor shall ensure that there are no visual obstructions to vehicle lines of sight and traffic controls. Contractor shall field adjust tree and/or large shrub locations to avoid any such obstructions.

6. Trees shall be maintained by the owner to avoid future such obstructions by pruning trees and/or shrubs as necessary utilizing horticulturally sound techniques.

7. All planting shall be performed by personnel familiar with planting procedure and under the supervision of a qualified planting foreman.

8. All plant material shall be graded Florida No. 1 or better as outlined under Grades and Standards for Nursery Stock, Part I and II, published by the Florida Department of Agriculture and Consumer Services.

9. The minimum acceptable size of all plants, measured after pruning, with branches in normal positions, shall conform to the measurements specified on the plant list or as indicated on the landscape drawing. Height and spread dimensions refer to main body of the plant and not extreme branch tip to tip. Trunk caliper (trunk diameter) is measured 6 inches from the ground on trees up to and including 4 inches in caliper, and 12 inches from the ground for larger trees. Since trunks are seldom round, the average of the largest diameter and that perpendicular to it is referred to as caliper. When the plant list description calls out DBH or caliper at DBH, it shall govern over the caliper definition in this note.

10. The Landscape Architect or Owner shall have the right, at any stage of the operations, to reject any and all work and materials which, in his opinion, do not meet with the requirements of these specifications.

11. Except as otherwise specified, the Landscape Contractor's work shall conform to accepted horticultural practices as used in the trade.

12. Plants shall be protected upon arrival at the site, by being thoroughly watered and properly maintained until planted.

13. TOPSOIL

    Topsoil shall be natural, friable, fertile, fine loamy soil possessing characteristics of representative topsoil in the vicinity that produces heavy growth. Topsoil shall have a pH range of 5.5 to 7.4, free from subsoil, objectionable weeds, litter, sods, stiff clay, stones larger than 1-inch in diameter, stumps, roots, trash, toxic substances, or any other material which may be harmful to plant growth or hinder planting operations. Top soil shall contain a minimum of three percent organic material. Top Soil shall be placed in planting beds at 12" depth and 6" depth in turf areas.

14. All tree pits shall be excavated to size and depth in accordance with the Florida Grades & Standards for Nursery Stock, unless shown otherwise on the drawings, and backfilled with the specified planting soil. The Landscape Contractor shall test fill all tree pits with water before planting to assure proper drainage percolation is available.

15. The Landscape Contractor shall be responsible for proper watering of all plants. All plants shall be thoroughly watered at time of planting and kept adequately watered for plants to thrive as defined by Florida Grades and Standards for Nursery stock until time of acceptance. It shall be the Landscape Contractor's responsibility to assure that plants are not over watered.

16. It shall be the Landscape Contractor's responsibility to prevent plants from falling or being blown over, to re-straighten and replant all plants which lean or fall and to replace all plants which are damaged due to lack of proper guying or staking. The Landscape Contractor shall be legally liable for any damage caused by instability of any plant material.

17. All Palms to be staked as indicated per Palm staking details. All other trees to be stabilized utilizing 8' lodge poles per tree planting details.

18. Plants blown over by high winds, within the guaranteed period, shall not be cause for additional expense to the Owner, but shall be the responsibility of the Landscape Contractor. Damaged plants shall be replaced by the Landscape Contractor at no additional cost to the Owner.

19. Sod shall be of a species specified on the drawings and originate from a commercial turf grower, whose farm is free of muck soils. Muck grown sod will not be approved. It shall be a dense stand of live turf, reasonably free of weeds, well matted with grass roots in rectangles 12 inch by 24 inch or in 12 inch wide rolls in a length consistent with the equipment and methods used to handle the rolls and place the sod. Any netting contained within the sod shall be certified by the manufacturer to be bio-degradable. The soil and root mat shall be a minimum of 1-1/2 inch thick and must hold together during placement. Sod shall be place adjacent to one another to avoid gaps and overlaps. Joints shall be staggered between the rows. Sod placed on slopes exceeding 3:1 shall be pinned with turf staples. Sod turf, shall have been mowed a minimum of one week prior to cutting and delivery, so that the length of the turf is no longer than 4 inches at time of delivery. Place sod within 48 hours of cutting the sod. The sod shall be kept moist throughout the 48 hour period to maintain the health and viability of the sod. Submit a letter of certification to the Owner's CEI Representative, at time of delivery, as to the source of the sod, the time it was cut, the species and cultivars provided, last mowing date, and that the sod is free of fire ants. Sod which has been cut for longer than 48 hours after being cut shall not be used unless specifically authorized by Owner's CEI Representative.

20. It shall be the Contractor's responsibility to measure and determine the exact quantity of sod required for a complete job at the time of bidding or providing a price quote. The Owner shall not be responsible for additional cost due to the Contractor's under estimating of the quantity of sod for the original bid area.

21. The Landscape Contractor shall insure adequate vertical drainage in all plant beds, planters, and sod areas. Vertical drilling through any compacted fill to native soil shall be accomplished to insure drainage. If well drained fill is necessary to assure positive drainage, this issue shall be brought up by the Landscape Contractor at time of bidding.

22. UNSUITABLE SUBSOILS
    Locations containing unsuitable subsoil shall be treated by one or more of the following:

    A. Where unsuitability is deemed by Owner or Owner's Representative to be due to excessive compaction caused by heavy equipment and where natural subsoil is other than AASHTO classification of A6 or A7, loosen such areas with spikes, discing, or other means to loosen soil to condition acceptable to Owner. Loosen soil to minimum depth of 12 inches with additional loosening as required to obtain adequate drainage. Contractor may introduce peat moss, sand, or organic matter into the subsoil to obtain adequate measures shall be considered as incidental, without additional cost to Owner.

    B. Where unsuitability is deemed by Owner or Owner's Representative to be due to presence of boards, mortar, concrete, graded aggregate base, or other construction materials in sub grade and where natural subsoil is other than AASHTO classification of A6 or A7, remove debris and objectionable material. Such remedial measures shall be considered as incidental, without additional cost to Owner.

    C. Where unsuitability is deemed by Owner to be because natural subsoil falls into AASHTO classification of A6 or A7 and contains moisture in excess of 30 percent, then installation of sub drainage system or other means described elsewhere in Specifications shall be used. Where such conditions have not been known or revealed prior to planting time and they have not been recognized in preparation of The Drawings and Specifications, then Owner shall issue pricing order to install proper remedial measures.

    D. Planting beds where existing subsoil is determined by Owner to be unsuitable for plant growth in accordance paragraph Unsuitable Subsoil herein shall be excavated to a depth of 12 inches or as needed to provide adequate drainage. Replace excavated soil with planting soil.

23. The Landscape Contractor shall insure that his work does not interrupt established or projected drainage patterns.

24. The Landscape Contractor shall prune, shape and remove dead foliage/limbs from existing plant material to remain. Confirm with the Landscape Architect or Owner the extent of work required at time of Bidding.

25. Mulch - All plant beds shall be top dressed with 3" shredded hardwood mulch (or approved equal). Cypress mulch not permitted. a 5' diameter mulch ring is to be placed around trees located in sod areas or outside of planting beds.

26. Transplanted Material - The Landscape Contractor shall be responsible for determining and evaluating which plant materials are suitable for transplanting and shall verify this with the Landscape Architect or Owner. The Landscape Contractor shall take all reasonable, horticulturally acceptable measures to assure the successful transplanting of determined plant materials. The Landscape Contractor shall be responsible for replacing any relocated plant materials which die if such measures are not taken, as determined by the Landscape Architect or Owner. Replacement plants shall be of identical species and size if required.

27. MAINTENANCE PRIOR TO FINAL INSPECTION AND ACCEPTANCE:

    Maintenance shall commence after each plant is planted and the maintenance period shall continue until the job or specific phase of the job is accepted by the Landscape Architect or Owner. Extreme care shall be taken to instruct the Owner or his representatives in general maintenance procedures.

    Plant maintenance shall include watering, pruning, weeding, cultivating, mulching, tightening, and repairing of guys, replacement of sick or dead plants, resetting plants to proper grades or upright positions and restoration of the planting saucer and all other care needed for proper growth of the plants.

    During the maintenance period and up to the date of final acceptance, the Landscape Contractor shall do all seasonal spraying and/or dusting of trees and shrubs. Upon completion of all planting, an inspection for acceptance of work will be held. The Landscape Contractor shall notify the Landscape Architect or Owner for scheduling of the inspection 10 days prior to the anticipated date.

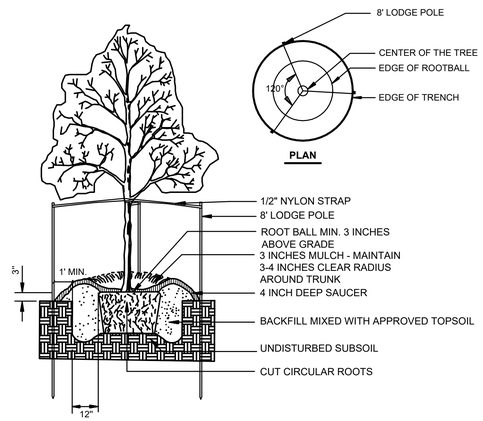
    At the time of the inspection, if all of the materials are acceptable, a written notice will be given by the Landscape Architect or Owner to the Landscape Contractor Stating the date when the Maintenance Period ends.

GUARANTEE AND REPLACEMENT:

All plant materials shall be guaranteed for one (1) year from the time of final inspection and interim acceptance shall be alive and in satisfactory growth for each specific kind of plant at the end of the guaranteed period.

At the end of the guarantee period, any plant required under this contract that is dead or not in satisfactory growth, as determined by the Owner or the Landscape Architect, shall be removed and replaced. Replacement plants shall have an extended guarantee, as noted above, from time of replacement.

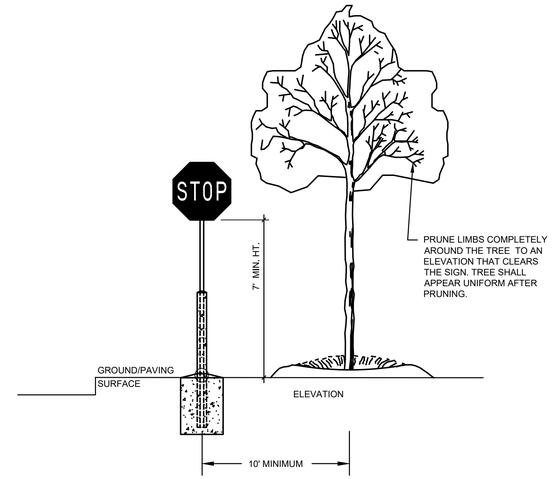
All replacements shall be planted of the same kind and size as specified on the plant list. They shall be the responsibility of the Landscape Contractor.



NOTE: SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.

CONTAINER TREE PLANTING DETAIL

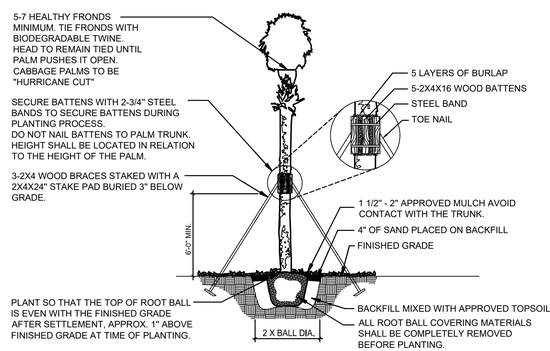
N.T.S.



ALL TREES TO BE PLANTED NO CLOSER THAN 10' IN ALL DIRECTIONS FROM ANY TRAFFIC SIGNS

TREE PLANTING AT TYPICAL SIGN

N.T.S.



PALM STAKING DETAIL

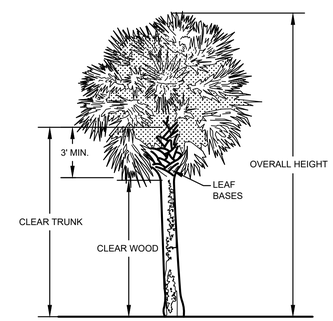
N.T.S.

PALM HEIGHT/TRUNK SPECIFICATIONS

OVERALL HEIGHT(OA):
HIGHEST POINT IN THE CANOPY MEASURED FROM THE SOIL LINE TO THE NATURAL POSITION OF THE LAST FULLY EXPANDED LEAF. UNLESS SPECIFIED DIFFERENTLY, THE TERM HEIGHT, OR HEIGHT MEASUREMENTS SPECIFIED, WILL BE CONSIDERED OVERALL HEIGHT.

CLEAR TRUNK(CT):
A MEASUREMENT FROM THE SOIL LINE TO A POINT IN THE CANOPY WHERE THE TRUNK CALIPER BEGINS TO TAPER ABRUPTLY. ON MANY PALMS, THIS POINT WILL LIE AT THE BASE OF THE PETIOLE OF THE THIRD OR FOURTH YOUNGEST BUT FULLY EXPANDED LEAF.

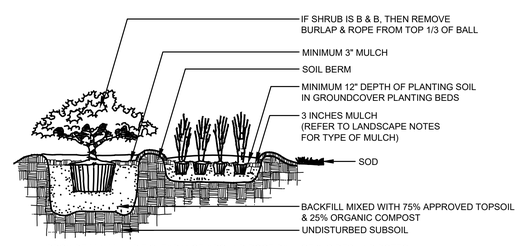
CLEAR WOOD(CW):
A MEASUREMENT FROM THE SOIL LINE TO THE HIGHEST POINT OF THE TRUNK FREE OF PERSISTENT LEAF BASES. ON PALMS WITH A CROWN SHAFT, THE MEASURE WILL BE FROM THE SOIL LINE TO THE BASE OF THE CROWN SHAFT. IT SHOULD BE NOTED THAT PALMS WITH VERY PERSISTENT LEAF BASES MAY NOT HAVE CLEAR WOOD.



* ALL PALMS TO HAVE CLEAR WOOD INDICATED ABOVE UNLESS OTHERWISE SPECIFIED.

SABAL PALM
(NO CROWN SHAFT)

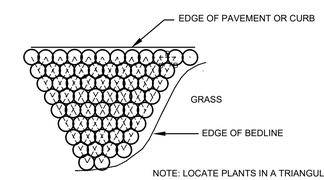
PALM MATRIX B



-PROVIDE MINIMUM PIT CLEARANCE AROUND ROOT BALL OF 6" SIDES AND BOTTOM.
-MAINTAIN 3"-4" MULCH FREE ZONE AROUND BASE OF PLANT.

SHRUB AND GROUNDCOVER PLANTING DETAIL

N.T.S.



NOTE: LOCATE PLANTS IN A TRIANGULAR PATTERN AS SHOWN, SPACED EQUIDISTANT FROM EACH OTHER (AT SPACING SPECIFIED IN THE PLANT LIST).

SHRUB/GROUNDCOVER SPACING PLAN

N.T.S.

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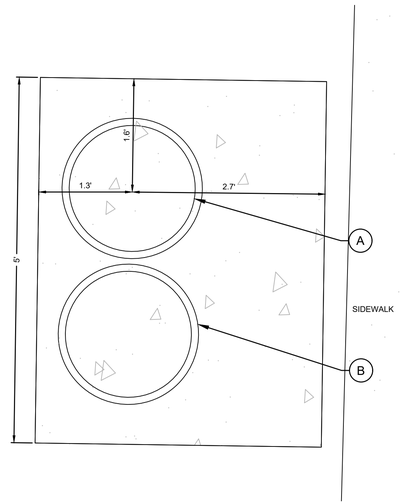
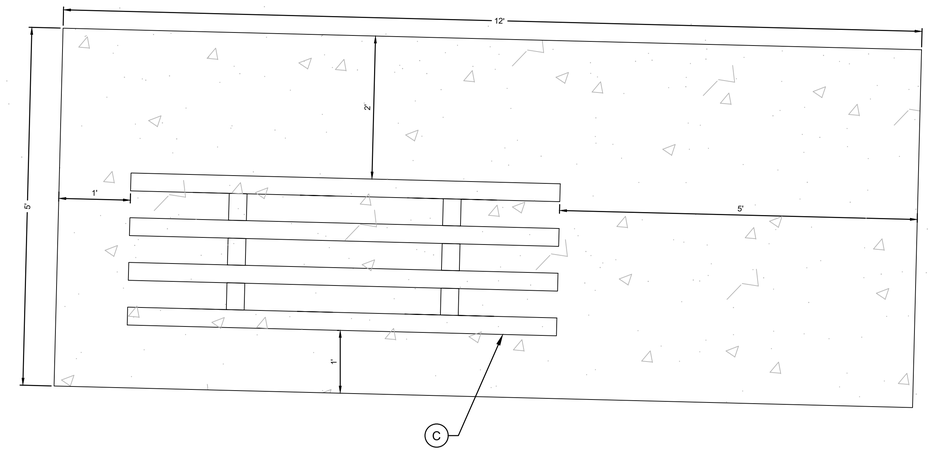
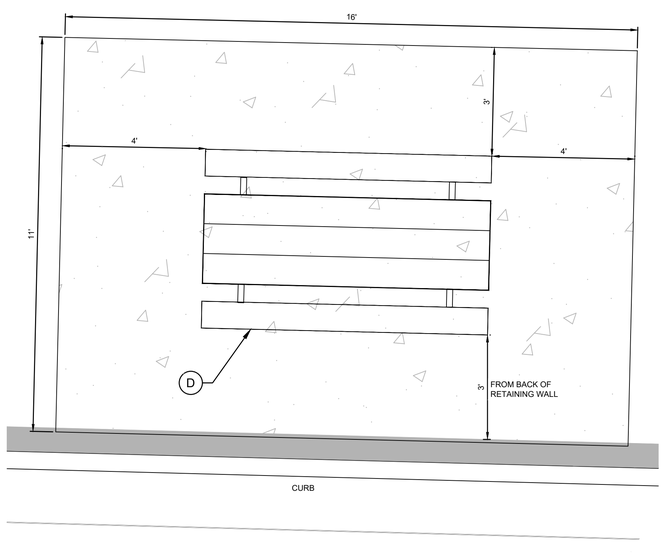


1 / H5.1 **TRASH / RECYCLE RECEPTICLES**
1" = 1'



2 / H5.1 **BENCH ON CONCRETE**
1" = 1'



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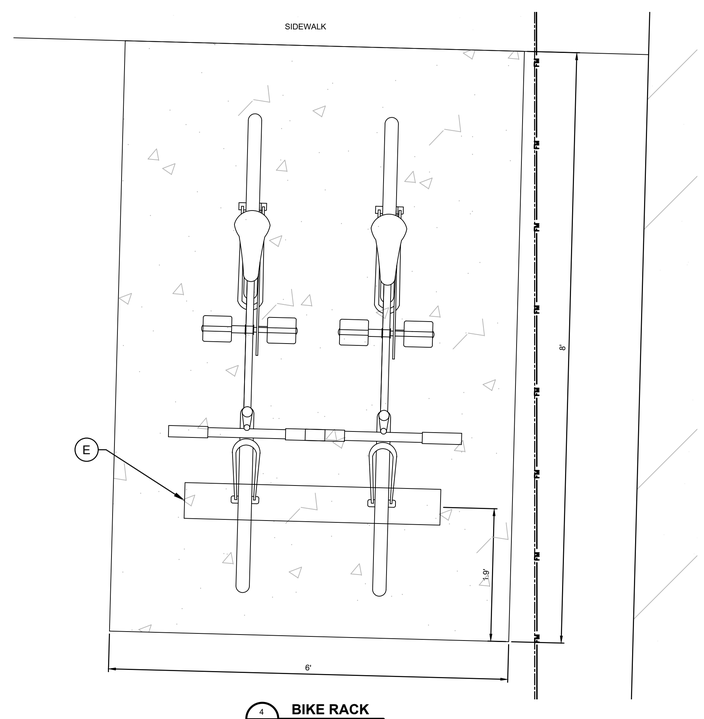
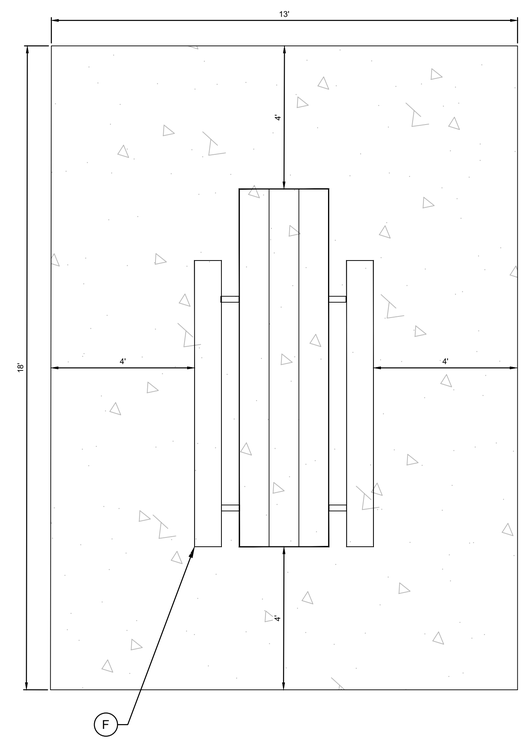


4 / H5.1 **BIKE RACK**
1" = 1'



5 / H5.1 **ADA PICNIC TABLE**
1" = 2'

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Landscape No. LC000298

Sep 27, 2021

This item has been digitally signed and sealed by Dantia R. Bryant on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

No.	Date	Revision

Designed: D. Bryant
Drawn: C. Smith
Checked: D. Bryant
Job No.: M13112
Date: 10-2020

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HARDSCAPE DETAILS

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

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Sheet No.
H5.1

J:\M13112\Landscape\DWG\Preliminary\Design\Plans\M13112 - HSP Details.dwg, 9/27/2021 2:13:58 PM, Crouch, Nathan, , cph - Standard.stb

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
	SINGLE HEAD POLE LED PARKING LOT LIGHT FIXTURE.
	AWNING LED DOWNLIGHT.
	DISCONNECT SWITCH - XX/XX/X = FRAME SIZE / FUSE SIZE / POLES
	ELECTRICAL SERVICE METER
	LIGHTING CONTROL CABINET (L/C)
	SURFACE JUNCTION BOX OR UNDERGROUND PULLBOX.
	SURFACE MOUNTED PANEL.
	CIRCUIT ABOVE GRADE.
	CIRCUIT BELOW GRADE.
	CIRCUIT HOMERUN.
	CONDUIT STUB OUT. CAP AS NOTED.

NOTE:
1. THESE ARE STANDARD SYMBOLS AND MAY NOT ALL APPEAR ON THE PROJECT DRAWINGS.

SCOPE OF WORK

1. INSTALL UNDERGROUND ELECTRICAL FEED FROM UTILITY POLE TO ELECTRICAL PANEL AT BOAT RAMP.
2. INSTALL SANITARY PUMP, FUTURE.
3. INSTALL ELECTRICAL PANEL COMPLETE.
4. FEED ALL SITE LIGHTING.
5. BUILD BATHROOM, FUTURE.
6. INSTALL ICE VENDING MACHINE, FUTURE.

CONTRACTOR NOTES:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL DRAWINGS AND SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO, CIVIL AND ELECTRICAL PRIOR TO SUBMITTING A BID.
2. BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF WORK. THE SUBMISSION OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED, OR FOR ANY DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION BEEN MADE, WILL NOT BE ALLOWED.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNER OR ARCHITECT, OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN EXISTING SITE CONDITIONS PRIOR TO SUBMISSION OF BID.
4. COORDINATE WITH OTHER TRADES FOR LOCATION OF ALL UNDERGROUND CONDUIT.
5. NO EXCEPTIONS TO BASIS OF DESIGN ARE PERMITTED UNLESS APPROVAL IS PROVIDED PRIOR TO CONSTRUCTION START.

GENERAL SHEET NOTES:

1. UTILITY LOCATE: FIELD VERIFY ALL UNDERGROUND UTILITIES PRIOR TO TRENCHING. ALL PROPOSED EXCAVATION IN THE VICINITY OF EXISTING UTILITIES SHALL BE HAND EXCAVATED.
2. RACEWAY: NO UNDERGROUND CONDUITS SHALL BE SMALLER THAN 3/4", UNLESS NOTED OTHERWISE.
3. COORDINATION: COORDINATE ALL SITE CONDUIT ROUTINGS WITH GENERAL CONTRACT, OR REFER TO CIVIL PLANS FOR FINAL LOCATION OF ALL SITE LIGHTING, SIGNAGE, SITE EQUIPMENT, AND UTILITY CONNECTION POINTS.
4. SITE UTILITIES: COORDINATE WITH CIVIL PLANS FOR LOCATIONS AND POWER REQUIREMENTS OF ALL SITE UTILITIES SUCH AS LIFT STATIONS, IRRIGATION PUMPS, ETC.
5. VERIFY ALL LANDSCAPE WITHIN COMPLIANCE AREA (OR LANDSCAPE AFFECTING LIGHT FIXTURES WITHIN THE COMPLIANCE AREA) IS TRIMMED/PRUNED/THINNED OUT PER OWNER'S LANDSCAPE STANDARDS. EXISTING SHALL BE PRUNED TO 10 FT AND THINNED OUT AS NEEDED TO PREVENT SHADOW EFFECTS WITHIN COMPLIANCE AREA ALLOWING OPTIMAL LIGHTING PERFORMANCE. COORDINATE WITH GENERAL CONTRACTOR FOR RESPONSIBILITIES AND SCHEDULING.

1 / E1 SITE PLAN
SCALE: 1" = 50'-0"
NORTH

SHEET INDEX

SHEET NUMBER	SHEET NAME
E1	INDEX, SCOPE, GENERAL NOTES AND SYMBOL LEGEND
E2	ELECTRICAL SPECIFICATIONS AND ABBREVIATIONS
E3	ELECTRICAL PLAN
E4	ONE-LINE DIAGRAM AND PANEL SCHEDULE
E5a	PHOTOMETRICS AND LIGHTING DETAILS
E5b	LIGHTING PLAN
E6	DETAILS AND ELEVATIONS
E7	OVERALL ELECTRICAL SITE PLAN

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ALEXANDER E. ZVONARYOV LICENSE No. 60953 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by ALEXANDER E. ZVONARYOV, P.E. on the date adjacent to the seal using a SHA authentication code. Printed copies of this document are not considered signed and sealed and the SHA authentication code must be verified on any electronic copies.

No.	Date	Revision

Designed: AEZ
Drawn: JA
Checked: AEZ
Job No.: M13112
Date: 03/15/21

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INDEX, SCOPE, GENERAL NOTES AND SYMBOL LEGEND

HOLMES BEACH, FLORIDA
KINGFISH BOAT RAMP PARKING
752 MANATEE AVE, HOLMES BEACH, FL 34217

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Sheet No.
E1

SECTION 16000 - ELECTRICAL GENERAL CONDITIONS

1.01 GENERAL REQUIREMENTS

A. THIS PORTION OF THE WORK IS PART OF TOTAL PROJECT AND ALL PROVISIONS OF THE PROJECT GENERAL REQUIREMENTS, CONDITIONS OF THE CONTRACT, SUPPLEMENTARY CONDITIONS AND ALL OTHER CONTRACT DOCUMENTS SHALL, ALSO APPLY TO THIS SECTION OF THE PROJECT. ALL THE PLANS AND SPECIFICATIONS ARE TO BE A PART OF THE TOTAL PROJECT AND ALL CONTRACTORS ARE HEREBY DIRECTED TO THESE PLANS AND SPECIFICATIONS FOR THE TOTAL SCOPE OF THE WORK. ANY DISCREPANCY OR DIFFERENCES BETWEEN ANY OF THESE PLANS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OR ENGINEER FOR INTERPRETATION.

B. THE ELECTRICAL DRAWINGS SHOW THE SCOPE AND THE GENERAL ARRANGEMENT OF ALL ELECTRICAL, EQUIPMENT, AND WIRING DEVICES AND SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION, SITE CONDITIONS, AND AS THE WORK OF OTHER TRADES PERMITS. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY, AND ARE NOT INTENDED TO INCLUDE ALL THE DETAILS OR DIMENSIONS SHOWN ON THE ARCHITECTURAL, STRUCTURAL, OR MECHANICAL DRAWINGS, AND CONVERSELY THE SAME; HOWEVER, EACH DRAWING IS INTENDED TO SUPPLEMENT THE OTHERS, AND THE INTERPRETATION OF THE DRAWINGS SHALL BE SUCH THAT THE ARCHITECTURAL, STRUCTURAL, MECHANICAL OR ELECTRICAL DETAILS ARE INCLUDED ON ALL THE VARIOUS DRAWINGS. FIGURED DIMENSIONS, WHERE SHOWN, SHALL TAKE PRECEDENCE OVER SCALED DRAWINGS. WHEN NO FIGURES OR DIMENSIONS ARE NOTED, THE DRAWINGS SHALL BE ACCURATELY FOLLOWED. IN THE EVENT CERTAIN DETAILS AND ITEMS NECESSARY FOR THE COMPLETE BUILDING AND TO OBTAIN THE DESIRED RESULTS ARE OMITTED FROM THE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL REQUEST INSTRUCTIONS AND INSTALL SAME. THE ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS SHOWN ON ALL OF THE DRAWINGS. GENERAL AND STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ELECTRICAL DRAWINGS. THE CONTRACTOR SHALL INVESTIGATE THE STRUCTURAL AND FINISH CONDITIONS AFFECTING THE WORK AND SHALL ARRANGE HIS WORK ACCORDINGLY.

C. IN THE EVENT CERTAIN DISCREPANCIES ARE DISCOVERED BETWEEN PLANS AND SPECIFICATIONS AFTER BIDDING HAS TAKEN PLACE, THE INTERPRETATION OF THE INTENDED FUNCTION WILL BE BY THE OWNER. THE CONTRACTOR SHALL BEAR THE COST OF FURNISHING AND INSTALLING THE REQUIRED MATERIAL SO AS TO PROVIDE A COMPLETE AND WORKING SYSTEM.

1.02 SUBSTITUTION CLAUSE

EACH ITEM SPECIFIED HEREIN SHALL REQUIRE PRIOR APPROVAL OF THE ARCHITECT FOR ANY SUBSTITUTIONS. IF ANY CONTRACTOR WISHES TO BID ON ANY EQUIPMENT OTHER THAN THE MANUFACTURERS LISTED, HE SHALL REQUEST IN WRITING APPROVAL OF SAID EQUIPMENT AT LEAST SEVEN (7) CALENDAR DAYS PRIOR TO BID DATE OR AS SET FORTH IN THE ARCHITECTURAL SPECIFICATIONS. (ARCHITECTURAL SPECIFICATIONS TAKE PRECEDENCE). ALL ITEMS SUBMITTED FOR PRIOR APPROVAL SHALL BE BOUND IN A BINDER AND SEPARATED WITH INDEX TABS.

1.03 SCOPE

A. ALL LABOR, MATERIAL, SERVICES AND SKILLED SUPERVISION NECESSARY FOR CONSTRUCTION, ERECTION, INSTALLATION, AND CONNECTION OF ALL CIRCUITS AND ELECTRICAL EQUIPMENT SPECIFIED HEREIN OR SHOWN ON DRAWINGS, IN A WORKMAN LIKE MANNER. DELIVER TO OWNER UPON COMPLETION READY FOR USE IN ALL RESPECTS, THE FOLLOWING COMPLETE ELECTRICAL SYSTEM:

1. COMPLETE SECONDARY SERVICES AND BRANCH CIRCUIT WIRING
2. COMPLETE EQUIPMENT WIRING
3. ALL LIGHTING FIXTURES COMPLETE WITH LAMPS AS SPECIFIED HEREIN
4. TELEPHONE CONDUIT SYSTEM & PULL STRING
5. FIRE ALARM AND WIRING OF DEVICES INDICATED
6. ALL CONTROL WIRING FOR TEMPERATURE CONTROLS
7. ALL TEMPORARY WIRING FOR LIGHTS AND POWER DURING CONSTRUCTION
8. AUTOMATION WIRING FOR ALL EQUIPMENT SPECIFIED UNDER MECHANICAL SECTION
9. ALL EMPTY RACEWAYS AS SHOWN ON PLANS WITH PULL STRING
10. PUBLIC ADDRESS OR MUSIC SYSTEMS
11. RELOCATION OF ANY EXISTING ELECTRICAL EQUIPMENT AS REQUIRED

B. FAILURE TO MENTION ANY SPECIFIC ITEMS NECESSARY FOR A COMPLETE SYSTEM SHALL NOT EXCUSE THE CONTRACTOR FROM FURNISHING AND INSTALLING SAME.

1.04 CODES AND STANDARDS

A. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, INDUSTRY STANDARDS, LATEST EDITION OF THE NEC, AND UTILITY COMPANY REGULATIONS. IN NO CASE WILL WORK OR MATERIALS INFERIOR TO THESE SPECIFICATIONS BE ACCEPTED EVEN IF PERMITTED BY CODE.

B. IN CASES OF DIFFERENCE BETWEEN BUILDING CODES, SPECIFICATIONS, STATE LAWS, LOCAL ORDINANCES, INDUSTRY STANDARDS AND UTILITY COMPANY REGULATIONS AND THE CONTRACT DOCUMENTS, THE MOST STRINGENT WILL GOVERN.

1.05 COORDINATION

A. THE ELECTRICAL WORK SHALL BE COORDINATED WITH THE REQUIREMENTS OF THESE SPECIFICATIONS, AND ALSO WITH THE REQUIREMENTS OF THE OTHER DIVISIONS AND WITH ALL OF THE DRAWINGS FOR THE ENTIRE PROJECT. THE ELECTRICAL WORK SHALL BE ACCOMPLISHED ON SUCH A SCHEDULE AND IN SUCH A MANNER AS NOT TO DELAY NOR INTERFERE WITH OTHER CONSTRUCTION WORK.

B. THE CONTRACTOR SHALL PROMPTLY REPORT TO THE OWNER ANY DELAY OR DIFFICULTIES ENCOUNTERED IN THE INSTALLATION OF HIS WORK WHICH MIGHT PREVENT PROMPT AND PROPER INSTALLATION OF HIS WORK OR MAKE IT UNSUITABLE TO CONNECT OR RECEIVE THE WORK OF OTHERS. HIS FAILURE TO SO REPORT SHALL CONSTITUTE AN ACCEPTANCE OF THE WORK OF THE CONTRACTOR AS BEING FIT AND PROPER FOR THE RECEPTION OF HIS WORK.

C. THE CONTRACTOR SHALL CAREFULLY LAY OUT HIS WORK ON THE PREMISES AND MAKE PROPER PROVISION FOR THE OTHER WORK. OFFSETS SHALL BE MADE WHEREVER IT IS NECESSARY TO CLEAR FINISH ROOMS, STRUCTURAL MEMBERS, OR OTHER OBSTRUCTIONS. THE CONTRACTOR SHALL CAREFULLY PLAN HIS WORK SO AS TO MINIMIZE THE NUMBER OF OFFSETS REQUIRED.

D. THE CONTRACTOR SHALL ALSO CAREFULLY COORDINATE THE LOCATION OF ALL EQUIPMENT CONDUIT RUNS, FLOOR AND WALL PENETRATIONS, ETC., WITH THE INSTALLATION OF WORK IN DIVISION 15000 AND OTHER SECTIONS OF THESE SPECIFICATIONS. ANY WORK INSTALLED BY THE CONTRACTOR WITHOUT CONSIDERING EQUIPMENT, DUCTWORK, PIPING, ETC., OF OTHER TRADES, SHALL BE CHANGED OR RELOCATED AS REQUIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THIS INCLUDES ALL ELECTRICAL DEVICES, SWITCHES, RECEPTACLES, PHONE/COMMUNICATION OUTLETS, ETC. THAT ARE MOUNTED IN WALLS ABOVE OR AROUND CABINETS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY FINAL LOCATION AND MOUNTING HEIGHTS WITH ARCHITECTURAL CASEWORK/INTERIOR ELEVATIONS/DETAILS. WHERE APPLICABLE, THE CONTRACTOR SHALL ALSO VERIFY WITH THE OWNER OR OWNER'S REPRESENTATIVE FOR ANY SPECIFIC CONDITIONS OR REQUIREMENTS FOR ELECTRICAL DEVICES MENTIONED ABOVE.

E. ALL ELECTRICAL SERVICE AND TELEPHONE SERVICE REQUIREMENTS SHALL BE COORDINATED BY THE CONTRACTOR AS SHOWN ON PLANS AND CONFIRMED WITH THE UTILITY COMPANY BY THE CONTRACTOR TO ENSURE THAT UTILITIES ARE ACCEPTED BY THE UTILITY COMPANY IT CONCERNS.

1.06 INSTALLATION AND ARRANGEMENT

THE CONTRACTOR SHALL ARRANGE CONDUITS, RACEWAYS AND ELECTRICAL EQUIPMENT TO PERMIT READY ACCESS TO COMPONENTS AND TO CLEAR THE OPENING TO SWINGING AND OVERHEAD DOORS AND OF ACCESS PANELS. THIS ALSO INCLUDES THE INSTALLATION OF ALL SERVICE DISCONNECTS AT MECHANICAL EQUIPMENT. THE CONTRACTOR SHALL MOUNT SERVICE DISCONNECTS ON AN ADJACENT WALL OR NON-REMOVABLE PANELS TO ALLOW REMOVABLE PANELS TO BE REMOVED FOR FUTURE SERVICING OF EQUIPMENT.

1.07 RECORD DRAWINGS ("AS-BUILTS")

A. RECORD DRAWINGS - THE CONTRACTOR SHALL FURNISH TO THE OWNER AND ARCHITECT RECORD DRAWINGS SHOWING CONDUIT SYSTEMS WHERE APPLICABLE. CONDUIT SIZES, REROUTING, ETC., FOR UNDER FLOOR CONDUITS SHALL BE SHOWN. ALSO PROVIDE A REPRODUCIBLE TRACING OF THE SITE PLAN SHOWING POWER, TELEPHONE, CABLE, TV, SITE LIGHTING, ETC. IN ADDITION TO THESE DRAWINGS, A COMPLETE SET OF DRAWINGS FOR FIRE ALARM AND COMMUNICATION SYSTEM.

B. TYPEWRITTEN OR NEATLY HAND WRITTEN PANEL SCHEDULES SHALL BE PROVIDED FOR PANELBOARDS INDICATING THE LOADS SERVED AND THE CORRECT BRANCH CIRCUIT NUMBER, AS INSTALLED. ALSO LEAVE LEGIBLE CIRCUIT CARD IN POCKET OF BREAKER PANEL DOOR.

1.08 EQUIPMENT AND MATERIALS

A. ALL MATERIALS SHALL BE NEW AND SHALL BEAR THE MANUFACTURER'S NAME, TRADE NAME AND THE UL LABEL IN EVERY CASE WHERE A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR MATERIAL. THE EQUIPMENT TO BE FURNISHED UNDER EACH SECTION OF THE SPECIFICATIONS SHALL BE ESSENTIALLY THE STANDARD PRODUCT OF A UNITED STATES OF AMERICA MANUFACTURER REGULARLY ENGAGED IN THE PRODUCTION OF THE REQUIRED TYPE OF EQUIPMENT AND SHALL BE THE MANUFACTURER'S LATEST AND APPROVED DESIGN.

B. DELIVERY AND STORAGE: EQUIPMENT AND MATERIALS SHALL BE DELIVERED TO THE SITE AND STORED IN ORIGINAL CONTAINERS, SUITABLY SHELTERED FROM THE ELEMENTS, BUT READILY ACCESSIBLE FOR INSPECTION UNTIL INSTALLED. ALL ITEMS SUBJECT TO MOISTURE DAMAGE SHALL BE STORED IN DRY, HEATED SPACES.

C. EQUIPMENT AND MATERIALS OF THE SAME GENERAL TYPE SHALL BE OF THE SAME MAKE THROUGH THE WORK TO PROVIDE UNIFORM APPEARANCE, OPERATION AND MAINTENANCE.

D. PROTECTION OF WORK: THE CONTRACTOR SHALL TAKE PRECAUTIONS AT ALL TIMES TO PROPERLY PROTECT THE ELECTRICAL EQUIPMENT FROM DAMAGE. UNINSTALLED EQUIPMENT SHALL REMAIN CRATED AND COVERED WITH CANVAS OR HEAVY PLASTIC TARPAULINS UNTIL INSTALLED. EQUIPMENT THAT IS BEING INSTALLED, OR HAS BEEN INSTALLED, SHALL BE PROTECTED AGAINST DIRT, WATER, CONSTRUCTION DEBRIS, WEATHER, THEFT, AND CHEMICAL OR MECHANICAL DAMAGE. ALL DAMAGED EQUIPMENT SHALL BE REPAIRED AND/OR REPLACED. AT THE COMPLETION OF THE WORK, ALL FIXTURES, EQUIPMENT, AND MATERIALS SHALL BE THOROUGHLY CLEANED AND POLISHED. THE CONTRACTOR SHALL REPAIR AND CORRECT, AT HIS OWN EXPENSE, ALL DAMAGES AND DEFECTS WHICH DEVELOP BEFORE THE WORK IS ACCEPTED BY THE OWNER.

E. SAFETY WARNING SIGNS SHALL BE FURNISHED AND INSTALLED AT ALL ELECTRICAL EQUIPMENT AND SWITCHGEAR.

F. DIMENSIONS: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. HE SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND SHALL FURNISH AND INSTALL SIZES AND SHAPES OF EQUIPMENT SO THAT THE FINAL INSTALLATION SHALL SUIT THE TRUE INTENT AND MEANING OF THE DRAWINGS AND SPECIFICATIONS.

G. MANUFACTURER'S DIRECTIONS SHALL BE FOLLOWED COMPLETELY IN DELIVERY, STORAGE, PROTECTION AND INSTALLATION OF ALL EQUIPMENT AND MATERIALS. THE CONTRACTOR SHALL PROMPTLY GIVE NOTICE IN WRITING OF ANY CONFLICT BETWEEN ANY REQUIREMENT OF THE CONTRACT DOCUMENTS AND THE MANUFACTURER'S DIRECTIONS AND SHALL OBTAIN THE WRITTEN INSTRUCTION BEFORE PROCEEDING WITH THE WORK. SHOULD THE CONTRACTOR PERFORM ANY WORK THAT DOES NOT COMPLY WITH THE MANUFACTURER'S DIRECTIONS OR SUCH WRITTEN INSTRUCTIONS, HE SHALL BEAR ALL COSTS ARISING IN CORRECTING THE DEFICIENCIES.

1.09 EQUIPMENT ACCESSORIES

A. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT, ACCESSORIES, CONNECTIONS, AND INCIDENTAL ITEMS NECESSARY TO FULLY COMPLETE THE WORK, READY FOR USE, OCCUPANCY AND OPERATION BY THE OWNER.

B. WHERE EQUIPMENT REQUIRING DIFFERENT ARRANGEMENT OF CONNECTIONS FROM THOSE SHOWN OR APPROVED, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL THE EQUIPMENT TO OPERATE PROPERLY AND IN HARMONY WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL MAKE ALL INCIDENTAL CHANGES IN HEATERS, PANELBOARD, CONDUIT, WIRING, ETC. HE SHALL PROVIDE ANY ADDITIONAL MOTORS, CONTROLLERS, AND OTHER ADDITIONAL EQUIPMENT REQUIRED FOR THE PROPER OPERATION OF THE SYSTEM RESULTING FROM THE SELECTION OF EQUIPMENT, INCLUDING ALL REQUIRED CHANGE IN AFFECTED TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER LOCATION OF ROUGHING-IN AND CONNECTIONS. SUCH CHANGES SHALL BE MADE AT NO INCREASE IN THE CONTRACT AMOUNT OR ADDITIONAL COST TO THE OTHER TRADES.

C. ANCHORS, BOLTS, AND SCREWS: SECURELY FASTEN CONDUIT STRAPS, CUTOUT SWITCHES, ETC., TO WALLS, SLABS, ETC., WITH CADMIUM PLATED SCREWS AND ACKERMAN-JOHNSON LEAD CINCH ANCHORS, EXPANSION BOLTS OR APPROVED EQUAL ANCHORS, FITTED IN HOLES DRILLED WITH STAR DRILL, AND FOR MORE SEVERE SERVICES, USE LEAD CINCH ANCHOR BOLTS OR APPROVED MANUFACTURER. FOR EXPOSED WORK, USE CADMIUM PLATED BOLTS. WOOD PLUGS WILL NOT BE ACCEPTED.

1.10 ELECTRICAL WORKMANSHIP

A. WHEREVER EQUIPMENT REQUIRING ELECTRICAL CONNECTION IS SPECIFIED, ALL WORKMANSHIP AND MATERIALS SHALL CONFORM WITH THE REQUIREMENTS OF THE ELECTRICAL SECTION OF THE SPECIFICATIONS. ALL DISCONNECT SWITCHES, STARTERS, PUSH BUTTON STATIONS, AND HAND-OFF AUTO SWITCHES SHALL BE FURNISHED, INSTALLED AND WIRED BY THE CONTRACTOR EXCEPT WHERE LISTED SPECIFICALLY TO BE FURNISHED WITH THE ITEM OF EQUIPMENT IT CONTROLS, IN WHICH CASE THE CONTRACTOR SHALL MOUNT AND WIRE COMPLETELY. ADDITIONAL DISCONNECTS REQUIRED BY THE ELECTRICAL CODE SHALL BE FURNISHED, INSTALLED AND CONNECTED UNDER THE ELECTRICAL SECTION OF THE SPECIFICATIONS.

B. COORDINATION: THE CONTRACTOR SHALL CHECK THE MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS TO ASSURE THE PROPER LOCATION AND ELECTRICAL SERVICE CHARACTERISTICS TO THE INDIVIDUAL OUTLETS SERVING MECHANICAL AND ELECTRICAL EQUIPMENT AND SHALL REQUEST APPROVAL OF ANY REQUIRED MODIFICATION TO SUIT THE ACTUAL EQUIPMENT TO BE FURNISHED.

C. IDENTIFICATION FOR ELECTRICAL EQUIPMENT AND CIRCUITS SHALL BE PROVIDED AND FURNISHED UNDER THIS SECTION, USING ITEM NUMBERS AND NOMENCLATURE AS SHOWN ON THE ELECTRICAL DRAWINGS, OR AS INSTRUCTED BY THE ARCHITECT.

1. ALL SWITCHGEAR, DISTRIBUTION PANELBOARDS, TRANSFORMERS, PANELBOARDS, DISCONNECTS, ASSOCIATED MOTOR STARTERS, CONTACTORS, AND TIME CLOCKS FURNISHED BY THE CONTRACTOR SHALL BE IDENTIFIED, BY NAMEPLATES INDICATING DESIGNATED LEGEND, VOLTAGE AND PHASE AND SHALL BE SECURELY FASTENED TO THE EQUIPMENT.

1.11 SYSTEM OPERATING TESTS

NECESSARY TESTS AND ADJUSTMENTS: ALL NECESSARY TESTS AND ADJUSTMENTS FOR THE PROPER OPERATION OF THE ELECTRICAL SYSTEM SHALL BE PERFORMED BY THE CONTRACTOR WITH INSTRUMENTS FURNISHED BY HIM FOR THIS PURPOSE. THE TEST RESULTS SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT FOR REVIEW AND APPROVAL.

1.12 INSTRUCTIONS TO OWNER

THE CONTRACTOR SHALL INSTRUCT THE OPERATING PERSONNEL OF THE OWNER IN THE PROPER OPERATION AND MAINTENANCE OF ALL ELEMENTS OF THE ELECTRICAL SYSTEMS.

1.13 OPERATING AND MAINTENANCE MANUALS

SPARE PARTS LISTS, OPERATING INSTRUCTIONS, MANUFACTURER'S RECOMMENDED PREVENTATIVE MAINTENANCE INSTRUCTIONS AND SPECIFICATIONS SHEETS FOR EACH ITEM OF THE ELECTRICAL EQUIPMENT SHALL BE SUBMITTED, IN TRIPLICATE, BY THE CONTRACTOR AT THE PAY APPLICATION FOR 75% COMPLETION. ALL PAYMENT REQUEST OVER 75% WILL BE DENIED UNTIL THIS INFORMATION IS RECEIVED.

SECTION 16111 - CONDUITS

1.01 GENERAL

ALL WIRES AND CABLES SHALL BE RUN IN CONDUIT, WHICH SHALL BE STANDARD HEAVY WALL, INTERMEDIATE, OR ELECTRIC METALLIC TUBING (EMT). RIGID PVC CONDUIT MAY BE USED FOR UNDERGROUND WORK IF APPROVED BY LOCAL CODE.

2.01 PRODUCTS

A. RIGID CONDUIT: THICK WALL HOT-DIPPED GALVANIZED, ASA STANDARD SPECIFICATION NO. C80-1, ENAMELED INSIDE AND OUT JOINTS SHALL BE WATERTIGHT THREADED TYPE WITH APPROVED SEALANT APPLIED TO MALE THREADS.

B. ELECTRIC METALLIC TUBING (EMT): ELECTRO-GALVANIZED, ANSI STANDARD SPECIFICATION NO. C80-3, ENAMELED INSIDE AND OUT. FITTINGS SHALL BE ALL STEEL COMPRESSION TYPE AS MFD. BY T & B.

C. RIGID STEEL AND EMT CONDUITS AS MANUFACTURED BY YOUNGSTOWN, TRIANGLE, GENERAL ELECTRIC, NATIONAL, REPUBLIC, OR ALLIED.

D. SCHEDULE 80 PVC CONDUIT, USED FOR UNDERGROUND INSTALLATION, SHALL BE AT LEAST 2 FEET BELOW FINISH GRADE. ALL JOINTS SHALL BE WATERTIGHT. WHERE STUBBED UP THROUGH FLOOR, SLAB OR ABOVE GRADE, A 90° RIGID GALVANIZED ELBOW SHALL BE USED WITH RIGID GALVANIZED STUB UP TO 2 INCHES ABOVE GRADE. A BARE GROUND WIRE TO MEET CODE REQUIREMENTS SHALL BE INSTALLED WITH ALL CIRCUITS PULLED INTO PVC CONDUITS. CONDUIT SHALL BE AS MANUFACTURED BY CARLON. JOINT SEALANT SHALL BE AS PER MANUFACTURER'S RECOMMENDATION FOR SPECIAL PIPE.

E. CONDUIT SUPPORTS: ALL CONDUITS SHALL BE SECURED IN PLACE WITH APPROVED STRAPS, HANGER, OR CLAMPS PER NEC. NO WIRE FOR SUPPORT WILL BE ALLOWED.

F. FLEXIBLE CONDUIT: CONDUIT CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT SHALL BE MADE WITH 18-INCH MAXIMUM OF TYPE U.S. GRAY LIQUID AND TIGHT NEOPRENE JACKETED FLEXIBLE CONDUIT AS MANUFACTURED BY ANACONDA. FITTINGS SHALL BE LIQUID TIGHT INSULATED THROAT TYPE AS MANUFACTURED BY T. & B. BX WILL NOT BE PERMITTED.

3.01 INSTALLATION

A. CONDUITS INSTALLED IN OR UNDER CONCRETE OR BELOW GRADE SHALL BE THICK WALL PVC (SCH. 80) OR RIGID STEEL IF REQUIRED BY LOCAL CODES. SERVICE CONDUITS EXPOSED SHALL BE RIGID STEEL.

B. ALL POWER AND LIGHTING CONDUITS IN BUILDING SHALL BE EMT UNLESS OTHER TYPE IS REQUIRED BY LOCAL CODES.

C. USE FACTORY ELBOWS FOR 1-1/2" CONDUIT AND LARGER.

D. WHERE FLEXIBLE CONDUIT IS USED FROM OUTLET BOXES TO LIGHTING FIXTURES, USE 1/2" INCH FLEXIBLE METAL CONDUIT WITH AN APPROVED GROUNDING CONNECTOR. MC CABLE WITH APPROVED GROUNDING CONDUCTOR IS ALLOWED.

E. REAM AND CLEAN CONDUIT BEFORE INSTALLATION AND PLUG OPENINGS AND BOXES TO KEEP THEM CLEAN DURING CONSTRUCTION.

F. ALL EXPOSED CONDUIT SHALL RUN NEATLY AT RIGHT ANGLES, PLUMB AND PARALLEL TO WALLS. ALIGN CONDUIT TERMINATIONS AT PANELBOARDS, SWITCHBOARDS, JUNCTION BOXES, ETC., AND INSTALL PLUMB. PROVIDE SUPPORTS AS REQUIRED TO HOLD ALIGNMENT.

G. CONDUITS SHALL BE NEATLY GROUPED WHERE SEVERAL LINES FOLLOW A PARALLEL COURSE. THEY SHALL BE WALL SUPPORTED, USING RING OR TRAPEZE-TYPE HANGERS. PERFORATED STRAP HANGERS OR TWISTED WIRE SHALL NOT BE ACCEPTED. HANGERS SHALL BE INSTALLED ON ALL CONDUIT RUNS AND SHALL NOT EXCEED 8'-0" ON CENTER.

SECTION 16120 - WIRES AND CABLES

1.01 GENERAL

ALL WIRES SHALL BE NEW SOFT DRAWN, ANNEALED COPPER HAVING CONDUCTIVITY NOT LESS THAN 98% OF PURE COPPER AND WITH 600V THERMO-PLASTIC INSULATION. WIRE SHALL CONFORM TO THE LATEST REQUIREMENT OF THE NEC, MEET ASME AND ANSI SPECIFICATIONS AND SHALL BE STANDARD AWG SIZE.

2.01 PRODUCTS

A. LIGHTING AND RECEPTACLE, BRANCH MOTOR POWER AND PANEL FEEDERS CIRCUITS SHALL HAVE TYPE THHN/THWN/MTW INSULATION BUILDING WIRE (UNLESS OTHERWISE REQUIRED). ALL CONDUCTORS INSTALLED IN DAMP OR WET LOCATIONS OR UNDER GRADE SHALL HAVE THWN-2 INSULATION. ALL WIRING INSTALLED IN HIGH-TEMPERATURE AREAS SHALL HAVE TYPE AVA INSULATION.

B. ALL STRANDED CONDUCTORS SHALL BE FURNISHED WITH FINISHED FORGED COPPER CONNECTING LUGS, DRILLED OR REAMED THE FULL DIAMETER OF BASE CONDUCTORS.

C. ALL MAINS AND FEEDERS ARE TO RUN THE ENTIRE LENGTH IN CONTINUOUS PIECES WITHOUT JOINTS OR SPLICES. JOINTS IN BRANCH CIRCUITS SHALL OCCUR ONLY AT OUTLETS AND J BOXES WITH NO SPLICES OR TAPS IN CONDUITS.

D. PHASE COLORS PER ELECTRICAL STANDARDS:
208/120V - BLACK, RED, BLUE
480/277V - BROWN, ORANGE, YELLOW

E. AC, MC, BX CABLES PERMITTED AS ALLOWED BY LOCAL CODE. MC CABLE ALLOWED FOR TERMINATING LIGHTING FIXTURES IN SUSPENDED CEILINGS.

SECTION 16130 - OUTLET BOXES

1.01 GENERAL

SIZE ALL BOXES IN ACCORDANCE WITH NEC 314.16.

2.01 PRODUCTS

A. INTERIOR
1. LIGHTING OUTLETS SHALL BE STANDARD 4-INCH OUTLET BOXES PROVIDED WITH 3/8" MALLEABLE IRON FIXTURE STUDS AND BOX HANGERS WHERE REQUIRED.
2. SWITCH AND RECEPTACLE OUTLETS LOCATED IN WALLS SHALL BE STANDARD SINGLE OR GANGED 4-INCH BOXES WITH COVERS AS REQUIRED FOR CONCEALED WORK.

B. EXTERIOR:
1. LIGHTING OUTLETS SHALL BE WEATHERPROOF DIE-CAST ALUMINUM ROUND BOXES.
2. SWITCH AND RECEPTACLE OUTLETS SURFACE-MOUNTED SHALL BE TYPES FS AND FD

C. BOXES SHALL BE MANUFACTURED BY APPLETON ELECTRIC CO., UNIVERSAL, RACO, NATIONAL ELECTRIC PRODUCTS, CROUSE-HINDS OR STEEL CITY.

SECTION 16131 - PULL AND JUNCTION BOXES

1.01 GENERAL

A. SIZE PER NEC 314.16 FOR CONDUCTORS SMALLER THAN #4AWG, OR PER NEC 314.28 FOR CONDUCTORS #4AWG AND LARGER.
B. BOXES SHALL HAVE REMOVABLE SCREW COVERS FOR INSTALLATION AS INDICATED ON THE PLANS.

2.01 PRODUCTS

A. ABOVE-GRADE: GALVANIZED STEEL APPLETON , UNIVERSAL, RACO, NATIONAL ELECTRIC PRODUCTS, OR STEEL CITY.
B. IN-GRADE: CONCRETE OR COMPOSITE POLYMER, OLD CASTLE, CROUSE-HINDS

3.01 INSTALLATION

A. ABOVE-GRADE: BOX SHALL BE SECURELY MOUNTED WITH SUPPORTS INDEPENDENT OF THE CONDUITS ENTERING OR LEAVING THE BOXES.
B. IN-GRADE: SEE PLAN DETAILS

SECTION 16140 - WIRING DEVICES

1.01 GENERAL

PROVIDE EACH SWITCH AND RECEPTACLE OUTLET UNLESS OTHERWISE NOTED OR HEREIN SPECIFIED WITH UNDERWRITER'S APPROVED SPECIFICATION GRADE DEVICES AS LISTED BELOW:

2.01 PRODUCTS

CATALOG NUMBERS ARE HUBBELL WIRING CO., UNLESS NOTED OTHERWISE.

A.	WALL SWITCHES; 120/277V, 20A	PART #
	ROCKER SWITCH	SNAP2121 (SPST); SNAP2123 (3-WAY)
	SLIDING DIMMER SWITCH, 1000W	AS103
B.	RECEPTACLES (5-20R)	PART #
	DUPLEX 125V/20A	HBL5352
	CONTROLLED DUPLEX	BR20C1 OR BR20C2 AS INDICATED IN PLANS
	GFCI DUPLEX 125V/20A	GFR5362G

C. DEVICE PLATES: ALL SWITCHES AND RECEPTACLES SHALL BE EQUIPPED WITH SMOOTH NYLON PLATES. WHERE UNITS ARE GROUPED TOGETHER, THEY SHALL BE UNDER ONE COMMON PLATE. COLOR PER ARCHITECTURAL SPECIFICATIONS. PLATES SHALL BE STAINLESS STEEL IN ALL KITCHEN AREAS OF RESTAURANTS, MECHANICAL ROOMS, AND AREAS SUBJECT TO DAMAGE.

D. THE ABOVE SPECIFIED DEVICES ARE HUBBELL AND CONSTITUTE THE QUALITY AND TYPE OF DEVICES. COMPARABLE DEVICES AS MANUFACTURED BY P & S, WOODHEAD, & ARROW HART WILL BE ACCEPTABLE.

3.01 INSTALLATION

A. MOUNT SWITCHES 48" ABOVE FLOOR TO CENTERLINE OF BOX.

B. COORDINATE SWITCH MOUNTING LOCATION WITH DETAILS.

C. IN GENERAL, MOUNT WALL RECEPTACLES 12" ABOVE FLOOR.

SECTION 16170 - DISCONNECT SAFETY SWITCHES

1.01 GENERAL

PROVIDE AND INSTALL ALL CIRCUIT DISCONNECT SWITCHES AS INDICATED ON PLANS AND SPECIFIED HEREIN.

2.01 PRODUCTS

A. DISCONNECT SWITCHES SHALL BE TYPE H.D. HEAVY DUTY, QUICK-MAKE QUICK-BREAK HORSEPOWER RATED, AND IN NEMA 1 ENCLOSURE. UNITS IN OUTDOOR LOCATIONS SHALL BE NEMA 3R ENCLOSURES.

B. UNITS SHALL HAVE VISIBLE CIRCUIT CONDITION IDENTIFICATION AND SHALL BE COVER INTERLOCKED. PROVISIONS SHALL BE MADE FOR PADLOCKING THE HANDLE IN THE "OFF" OR "ON" POSITION.

C. ALL FUSED UNITS SHALL BE EQUIPPED WITH FUSETRON CARTRIDGE FUSES AS MANUFACTURED BY BUSSMAN MANUFACTURING.

D. ALL SWITCHES THROUGHOUT SHALL BE OF THE SAME MANUFACTURER AND SHALL HAVE U.L. LABEL. UNITS SHALL BE AS MANUFACTURED BY GENERAL ELECTRIC, SQUARE D, EATON OR SIEMENS.

SECTION 16401 - TEMPORARY ELECTRICAL SERVICES

1.01 GENERAL

CONTRACTOR SHALL HAVE RESPONSIBILITY FOR THE BASIC TEMPORARY WIRING, ALONG WITH MAINTENANCE THROUGHOUT THE DURATION OF THE PROJECT. BASIC TEMPORARY WIRING SHALL INCLUDE LIGHTING, POWER AND WIRING REQUIREMENTS FOR TEMPORARY CONSTRUCTION USE. IT IS NOT TO FORESEE ALL THE USAGE FOR TEMPORARY; HENCE, ONLY THE BASIC ITEMS SHOULD BE INVOLVED AND IF ADDITIONAL POWER OR LIGHTING IS REQUIRED, THEN THOSE REQUIRING SAME SHALL MAKE PROVISIONS FOR TEMPORARY LIGHTING AS REQUIRED TO PERFORM THEIR OWN WORK.

2.01 PRODUCTS

A. ALL UTILITY CHARGES FOR ELECTRICAL USE SHALL BE PAID BY OTHERS.

B. THE CHARGES BY THE UTILITY COMPANY FOR PROVIDING SERVICE CONNECTIONS SHALL BE INCORPORATED AS A PART OF THESE SPECIFICATIONS AND SHALL BE PAID BY THE ELECTRICAL CONTRACTOR.

C. THE TEMPORARY SERVICE SHALL BE 1 PHASE, 3 WIRE MINIMUM IN LOCATIONS AS REQUIRED. SIZE PER SECTION 16.100 PARAGRAPH 1.07 HERE IN.THE ELECTRICAL SERVICE AND SERVICING EQUIPMENT SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE REQUIREMENTS OF THE SERVICING UTILITY COMPANY.

D. RECEPTACLES SHALL BE SPACED SO THAT ALL PARTS OF THE WORK AREA MAY BE REACHED BY A 50-FOOT EXTENSION CORD FOR 120 VOLT APPLIANCES, AND 100 FOOT EXTENSION CORD FOR 208 VOLT OR 240 VOLT EQUIPMENT. DISTANCES FOR LENGTH OF EXTENSION CORDS SHALL BE MEASURED HORIZONTALLY ALONG FLOOR LINES. THESE APPLIANCE CIRCUITS SHALL BE LIMITED TO 20 AMPERE.

3.01 INSTALLATION

A. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, MAINTAINING, AND REMOVING THE TEMPORARY LIGHTING AND POWER WIRING AS HEREIN DESCRIBED. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ONLY THIS AMOUNT OF WORK AND IF ADDITIONAL TEMPORARY WIRING IS REQUIRED BY ANY CONTRACTOR, THEN THE COST OF SAME SHALL BE BORNE BY THOSE REQUIRING ADDITIONAL WIRING.

B. ADEQUATE LIGHTING SHALL BE PROVIDED IN PASSAGEWAYS AND STAIRWAYS. ARTIFICIAL ILLUMINATION, WHEN REQUIRED, SHALL BE AS PER O.S.H.A. REQUIREMENTS.

C. PROVIDE GROUND-FAULT CIRCUIT PROTECTION IN ACCORDANCE WITH N.E.C.

SECTION 16450 - GROUNDING

1.01 GENERAL

THE IDENTIFIED (WHITE) NEUTRAL AND THE COMPLETE CONDUIT SYSTEM SHALL BE EFFECTIVELY GROUNDED PER ARTICLE 250 OF NEC. IDENTIFIED NEUTRAL SHALL BE RUN IN CONDUIT WITH OTHER CONDUCTORS AND SHALL BE INSULATED COPPER.

2.01 PRODUCTS

ALL GROUNDING CONDUCTORS SHALL BE GREEN AND MARKED AS REQUIRED WHEN INDICATED ON CONDUIT RUNS. THE GROUND WIRE SHALL BE INSULATED COPPER. GROUNDING CLAMPS SHALL BE OF THE APPROVED TYPE AND GROUND CONNECTIONS SHALL BE SUCH THAT RESISTANCE WILL NOT INCREASE WITH PASSAGE OF TIME. MAXIMUM GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS.

3.01 INSTALLATION

FOLLOWING ARE INCLUDED AS REQUIRED GROUNDED: ELECTRIC SERVICE, ITS EQUIPMENT AND ENCLOSURES, CONDUITS AND OTHER CONDUCTOR ENCLOSURES, NEUTRAL OR IDENTIFIED CONDUCTORS OF WIRING SYSTEM, MAIN SWITCH, POWER AND LIGHTING PANELBOARDS, TRANSFORMERS, NONCURRENT-CARRYING METAL PARTS OF FIXED EQUIPMENT SUCH AS MOTORS, STARTERS, CONTROLLERS AND LIGHTING FIXTURES.

SECTION 16471 - PANELBOARDS

1.01 GENERAL

CONTRACTOR SHALL FURNISH AND INSTALL ALL DISTRIBUTION POWER AND LIGHTING PANELBOARDS AS HEREIN AFTER DESCRIBED AND AS SCHEDULED ON PLANS. ALL PANELBOARDS SHALL BE DEAD-FRONT TYPE, MANUFACTURED IN ACCORDANCE WITH THE LATEST NEMA STANDARDS AND BEAR THE UL LABEL.

2.01 PRODUCTS

A. PANELBOARDS SHALL BE MOUNTED IN CODE GAUGE GALVANIZED SHEET STEEL CABINETS WITH A 4-INCH MINIMUM GUTTER SPACE ON ALL SIDES. CABINETS SHALL BE EQUIPPED WITH ADJUSTABLE MOUNTING STUDS AND TRIM CLAMPS. FRONTS TO INCLUDE PAINTED STEEL FRAME, SEMI-CONCEALED HINGED DOOR WITH FLUSH CHROME-PLATED COMBINATION CYLINDER LOCK AND CATCH, ALL KEYED ALIKE. DOOR SHALL BE EQUIPPED WITH DIRECTORY FRAME AND CARDS COMPLETELY TYPEWRITTEN OUT FOR PROPER BRANCH CIRCUIT IDENTIFICATION AND PLASTIC COVER. PANEL FRONTS SHALL BE FINISHED WITH ONE COAT OF BONDRIZED, ONE COAT OF PRIMER AND SURFACER, AND ONE COAT OF GRAY LACQUER FINISH.

B. PANEL INTERIORS SHALL BE RIGIDLY MOUNTED ON STEEL SUPPORTS WITH SELF-SUPPORTING BUS-BAR STRUCTURE ON INSULATING BASES. ALL INDIVIDUAL BRANCHES SHALL BE REMOVABLE WITHOUT DISTURBING ADJACENT UNITS, BUSSING OR CONNECTORS. BRANCHES SHALL BE CHANGEABLE WITHOUT ALTERING BUSSING. ALL TERMINALS SHALL BE OF THE SOLDERLESS ANTI-TURN TYPE SUITABLE FOR COPPER OR ALUMINUM WIRE. BRANCHES SHALL BE ARRANGED FOR BUSSES TO MAINTAIN SEQUENCE PHASING.

C. BRANCHES: SHALL COMPLY WITH FOLLOWING: MOLDED CASE BREAKERS SHALL BE DEION TYPE, WITH QUICK-MAKE, QUICK-BREAK MECHANISM FOR MANUAL AND AUTOMATIC OPERATION; THE UNITS INVERSE TIME TYPE CHARACTERISTICS SHALL BE BY METALLIC TRIPPING ELEMENT WITH MAGNETIC THREE-POLE UNITS SHALL HAVE COMMON TRIP. ALL UNITS SHALL BE OF THE INDICATING TYPE PROVIDING ON/OFF AND TRIPPED POSITIONS OF THE HANDLE.

D. 120/240 VOLT PANELBOARDS: 1 PHASE, 3 WIRE, SOLID NEUTRAL DESIGN WITH SEQUENCE STYLE BUSSING AND FULL CAPACITY NEUTRAL, COMPOSED OF AN ASSEMBLY OF BOLT-IN-PLACE MOLDED CASE AUTOMATIC AIR CIRCUIT BREAKERS WITH THERMAL AND MAGNETIC TRIP AND TRIP FREE POSITION SEPARATE FROM EITHER "ON" OR "OFF" POSITIONS. PROVIDE COMMON SIMULTANEOUS TRIP FOR 1 AND 2 POLE BREAKERS. PROVIDE INTERRUPTING RATINGS AS REQUIRED BY LOCAL UTILITY.

E. BUS BARS SHALL BE 98% COPPER. PROVIDE ALTERNATE BID FOR ALUMINUM BUS BARS.

F. PANELS SHALL BE MANUFACTURED BY SQUARE D COMPANY, G.E., EATON OR SIEMENS.

3.01 INSTALLATION

A. PANELS SHALL BE SECURELY MOUNTED TO WALLS OR RECESSED CAVITIES.

B. PANEL SPACES SHALL BE EQUIPPED WITH BLANK COVERS.

C. UTILIZATION AND ADEQUATE DISSIPATION OF HEAT.

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH CODES AND STANDARDS LISTED IN THE SPECIFICATIONS.
2. THE DRAWINGS ARE DIAGRAMMATIC AND THE OMISSION OF AN ITEM NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM DOES NOT RELIEVE THE CONTRACTOR FROM FURNISHING AND INSTALLING THAT ITEM.
3. NOTIFY ARCHITECT/ ENGINEER OF ANY CONFLICTS PRIOR TO PURCHASING EQUIPMENT AND PRIOR TO CUTTING OPENING.
4. PRIOR TO BID, COORDINATE ALL ELECTRICAL WORK WITH OTHER TRADES. SEE SPECIFICATIONS FOR REQUIREMENTS.
5. CONTRACTOR SHALL NOT CONCEAL ANY WORK UNTIL INSPECTED BY ELECTRICAL INSPECTOR AND/OR ARCHITECT/ENGINEER. CONTRACTOR SHALL NOTIFY A/E OF A SCHEDULED INSPECTION TIME WITHIN 72 HOURS. CONTRACTORS SHALL NOT CONCEAL WORK UNTIL APPROVED.
6. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ARCHITECT AND GENERAL CONTRACTOR ON REQUIREMENTS FOR STRUCTURAL SUPPORT AND FRAMING FOR ALL ELECTRICAL EQUIPMENT AND SYSTEMS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND VERIFYING STRUCTURAL SUPPORT AND FRAMING.
7. THE SIZE, LOCATION, WEIGHT, AND NEC ARTICLE 110 REQUIRED SERVICE CLEARANCES OF EQUIPMENT INSTALLED UNDER DIVISION 16 ELECTRICAL SHALL BE COORDINATED WITH ALL OTHER TRADES.
8. WHERE CROWDED LOCATIONS EXIST OR WHERE THERE IS A POSSIBILITY OF CONFLICT BETWEEN TRADES, CONTRACTOR SHALL MAKE COMPOSITE DRAWINGS SHOWING THE EXACT LOCATION OF DUCTS, CONDUIT AND EQUIPMENT. DRAWINGS SHALL BE BASED ON FIELD MEASUREMENTS AND, AFTER CONSULTATION AND AGREEMENT BETWEEN THE TRADES, SHALL BE APPROVED BY THE ARCHITECT BEFORE INSTALLATION OF THE WORK.
9. INSTALL SURGE SUPPRESSOR IN EACH PANEL WITH EQUIPMENT SHOWN ON THE PANEL SCHEDULE AS SURGE OR TVSS.
10. ALL SITE EXCAVATION OR TRENCHING SHALL BE DONE BY HAND. ALL CONDUITS SHALL HAVE A MINIMUM BURIAL DEPTH OF 24".
11. ELECTRICAL CONTRACTOR IS TO PROVIDE PULL STRINGS IN ALL EMPTY CONDUIT AND RACEWAYS WITH LABELING TAGS AT EACH END.
12. ALL RACEWAY TERMINATIONS SHALL HAVE BUSHINGS AND BE GROUNDED WHERE RACEWAY IS METAL.
13. ALL WALL OUTLETS AND FLOOR OUTLETS SHALL HAVE A 3/4" MINIMUM CONDUIT CONTINUOUS TO PANEL OF BRANCH CIRCUIT.
14. ALL NEW PANELS SHALL BE BONDED TO THE BUILDING'S GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC ARTICLE 250.58.
15. ALL BARE METAL SURFACES SHALL BE PRIMED AND PAINTED TO PREVENT ANY RUST, INCLUDING BUT NOT LIMITED TO ANGLE FRAMING, EQUIPMENT SUPPORTS, MOUNTING HARDWARE, ETC.
16. NO SPLICES SHALL BE PERMITTED IN UNDERGROUND/FLUSH IN-GRADE PULL BOXES WITHOUT PRIOR WRITTEN APPROVAL BY OWNER
17. ALL RACEWAYS SHALL HAVE A GREEN GROUNDING CONDUCTOR.
24. ELECTRICAL CONTRACTOR SHALL IDENTIFY HIGH-LEG PHASE WITH ORANGE CONDUCTOR OR TAPE AT EACH POINT WHERE A CONNECTION IS MADE WERE NEUTRAL IS PRESENT (NEC 110.15).

CODES IN EFFECT

1. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LATEST ACCEPTED EDITION OF THE NATIONAL ELECTRICAL CODE.
2. WORK AND EQUIPMENT UNDER THIS DIVISION SHALL BE IN STRICT COMPLIANCE WITH THE CODES, STANDARDS, AND PRACTICES LISTED HEREIN. THEIR RESPECTIVE DATES ARE FURNISHED AS THE MINIMUM REQUIREMENTS UNLESS OTHERWISE DETERMINED BY THE LOCAL AUTHORITIES HAVING JURISDICTION.

ABBREVIATIONS

MARK	DESCRIPTION
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
ACL	ACROSS THE LINE
AC	ALTERNATING CURRENT
A	AMPERE
AMP	AMPERE
AIC	AMPERES INTERRUPTING CAPACITY
AL	ALUMINUM
BR	BRANCH
BKR	BREAKER
BGB	BUILDING GROUND BOX
CAB	CABINET
CLG	CEILING
C.B.	CIRCUIT BREAKER
CCT	CIRCUIT
C.U.	COEFFICIENT OF UTILIZATION
C	CONDUIT
CONT	CONTINUOUS
CP	CONTROL PANEL
Cu	COPPER
CUH	CABINET UNIT HEATER
CT	CURRENT TRANSFORMER
Hz	HERTZ (CYCLES/SECOND)
DED	DEDICATED CIRCUIT
DC	DIRECT CURRENT
DS	DISCONNECT SWITCH
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
ELEC	ELECTRIC
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EM	EMERGENCY
EQ	EQUIPMENT
EUH	ELECTRIC UNIT HEATER
EX	EXISTING
FPB	FAN POWERED BOX
FB	FLOORBOX
FVNR	FULL VOLTAGE NON-REVERSING
F	FUSE
FUT	FUTURE
GRD	GROUND
GFI	GROUND FAULT INTERRUPTER
HV	HIGH VOLTAGE
HP	HORSE POWER
IC	INTERRUPTING CAPACITY
IG	ISOLATED GROUND
IMC	INTERMEDIATE GRADE CONDUIT
JB	JUNCTION BOX
kW	KILOWATT
kVA	KILOVOLT-AMPERE
KO	KNOCKOUT
LED	LIGHT EMITTING DIODE
LTG	LIGHTING
LV	LOW VOLTAGE
MFR	MANUFACTURER
MTR	MOTOR
MCP	MOTOR CIRCUIT PROTECTOR
MCC	MOTOR CONTROL CENTER
MTD	MOUNTED
NEC	NATIONAL ELECTRICAL CODE
NL	NIGHT LIGHT (UNSWITCHED CCT.)
NC	NORMALLY CLOSED
NO	NORMALLY OPENED
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OCPD	OVERCURRENT PROTECTION DEVICE
PNL	PANEL
PH	PHASE
PT	POTENTIAL TRANSFORMER
PWR	POWER
PRI	PRIMARY
PA	PUBLIC ADDRESS
PB	PULL BOX
RT	RAINTIGHT
RECEP	RECEPTACLE
RC	REMOTE CONTROL
R	RELOCATED
SEC	SECONDARY
SP	SINGLE POLE
SPD	SURGE PROTECTION DEVICE
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SS	STAINLESS STEEL
UNO	UNLESS NOTED OTHERWISE
VP	VAPORPROOF
VT	VAPORTIGHT
V	VOLT
VA	VOLT-AMPERE
WT	WATERTIGHT
W	WATT
WP	WEATHERPROOF

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No.	Date	Revision
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Designed: AEZ
Drawn: JA
Checked: AEZ
Job No.: M13112
Date: 03/15/21

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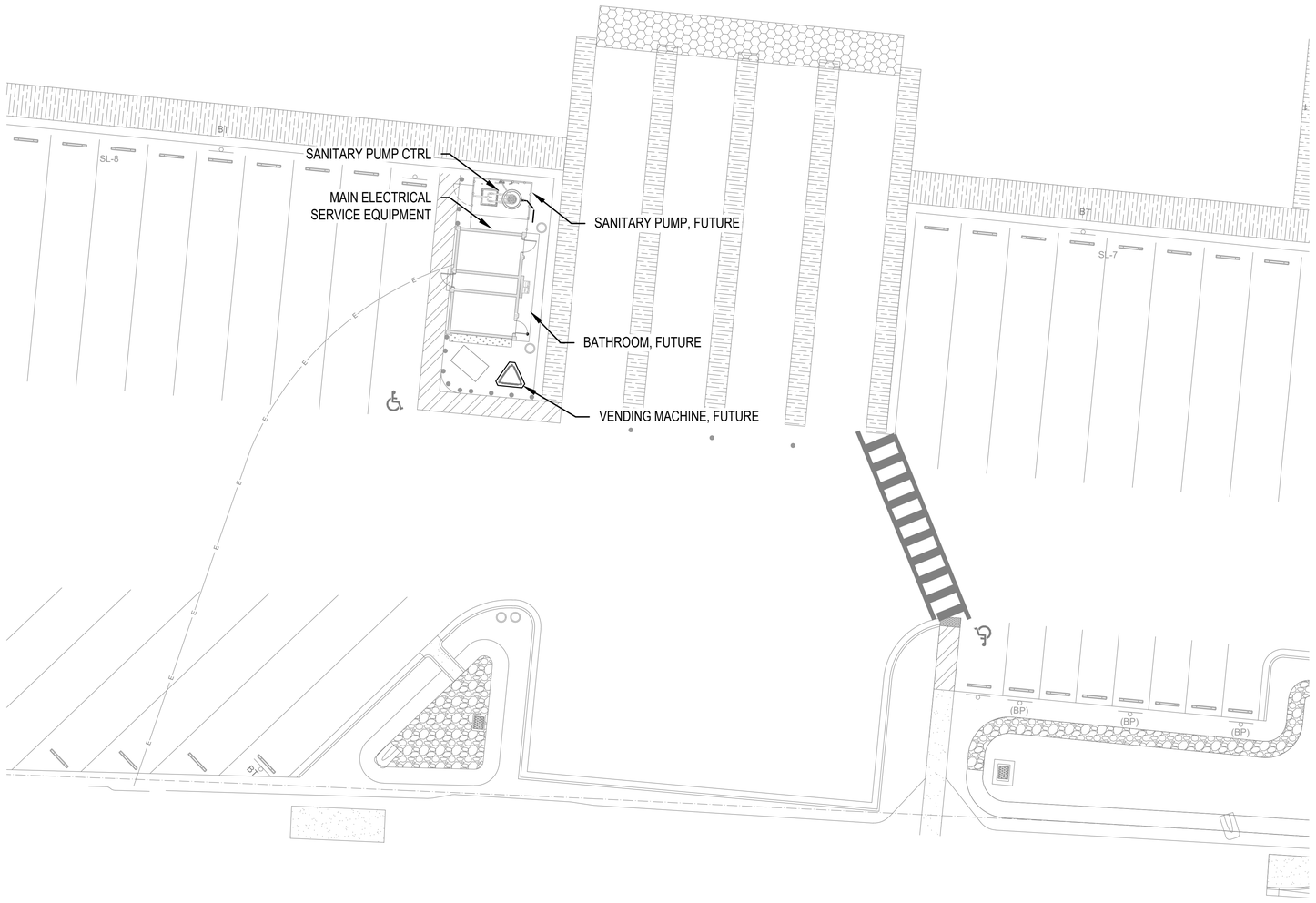
ELECTRICAL SPECIFICATIONS AND ABBREVIATIONS

HOLMES BEACH, FLORIDA
KINGFISH BOAT RAMP PARKING
752 MANATEE AVE, HOLMES BEACH, FL 34217

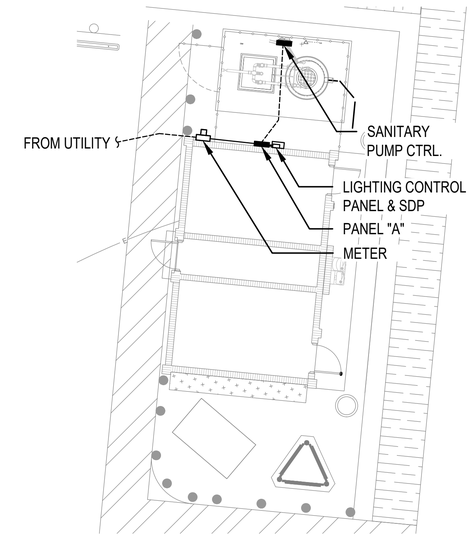
THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
E2



1 / E3 ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

NORTH



2 / E3 ELECTRICAL ENLARGE PWR PLAN
SCALE: 1/8" = 1'-0"

NORTH

GENERAL NOTES

1. CONTRACTOR SHALL WALK DOWN THE SITE TO FAMILIARIZE HIMSELF WITH ALL CONDITIONS.
2. CONTRACTOR SHALL COORDINATE ALL WORK AHEAD OF TIME WITH ALL UTILITY COMPANIES, CLIENT AND WITH THE AHJ.
3. THE UNISTRUT STRUCTURE FOR THE MAIN ELECTRICAL EQUIPMENT SHALL BE OF MATERIAL AND PAINT SUITED FOR THE ENVIRONMENT, SHALL SUSTAIN 170 MPH.
4. FOR ALL FUTURE EQUIPMENT AS SHOWN INSTALL AN UNDERGROUND JUNCTION BOX AND PROVIDE ONLY CONDUIT LINES TO THEM.

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No.	Date	Revision

Designed: AEZ
Drawn: JA
Checked: AEZ
Job No.: M13112
Date: 03/15/21

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ELECTRICAL PLAN

HOLMES BEACH, FLORIDA
KINGFISH BOAT RAMP PARKING
752 MANATEE AVE, HOLMES BEACH, FL 34217

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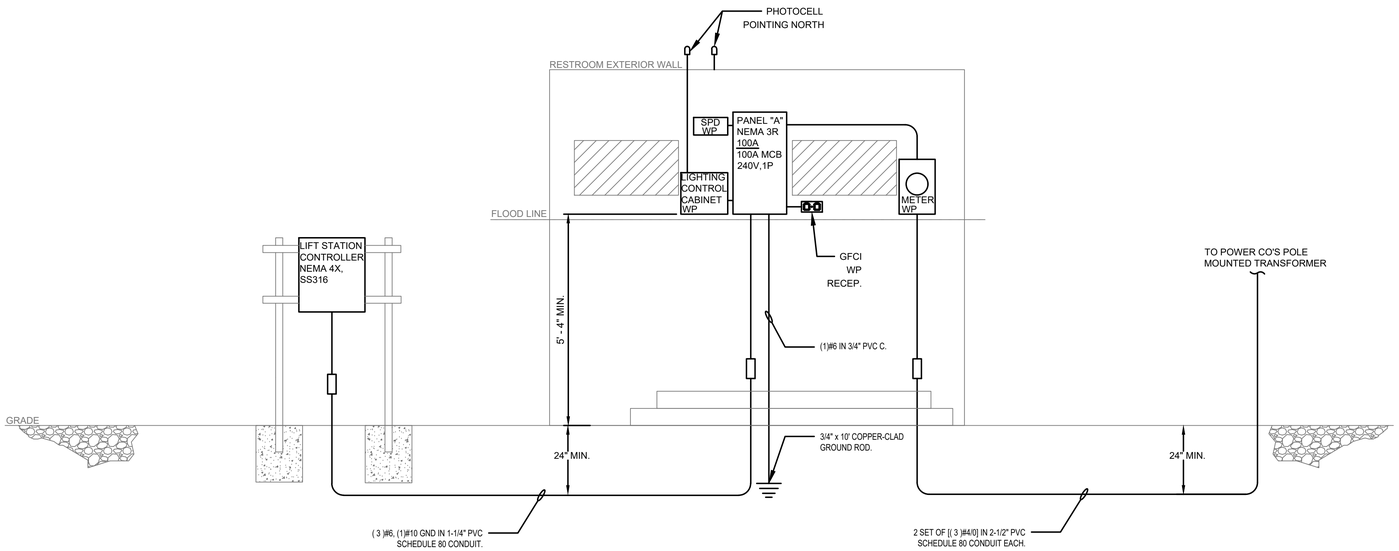
Sheet No.
E3



1
E4

ELECTRICAL RISER DIAGRAM

SCALE: NONE

GENERAL NOTES

1. ELECTRICAL PANEL, LIGHTING CONTROL CABINET, METER & SPD SHALL BE MOUNTED ABOVE THE FLOOD LEVEL.
2. ELECTRICAL CONDUIT UNIONS AND CONNECTIONS SHALL BE AIRTIGHT & WATERTIGHT.

KEY NOTES

1. CONDUIT UNION TRANSITION FROM PVC TO METAL CONDUIT.

SANITARY PUMP SPECIFICATION

PUMP MODEL - PUMP SHALL BE OF THE CENTRIFUGAL TYPE, PENTAIR HYDROMATIC® MODEL HVR200 SERIES, WITH AN INTEGRALLY BUILT-IN GRINDER UNIT AND SUBMERSIBLE TYPE MOTOR. DISCHARGE SHALL BE 1-1/4" NPT.

CONSTRUCTION - EACH PUMP SHALL BE OF THE SEALED SUBMERSIBLE GRINDER TYPE, MODEL HVR200 AS MANUFACTURED BY HYDROMATIC. THE PUMP VOLUTE, MOTOR AND SEAL HOUSING SHALL BE HIGH QUALITY GRAY CAST IRON, ASTM A-48, CLASS 30. ALL EXTERNAL MATING PARTS SHALL BE MACHINED AND NITRILE O-RING SEALED ON A BEVELED EDGE. GASKETS SHALL NOT BE ACCEPTABLE. ALL FASTENERS EXPOSED TO THE PUMPED LIQUID SHALL BE 300 SERIES STAINLESS STEEL.

POWER CORD - POWER CORD SHALL BE SJOOW WATER RESISTANT 300V, UL AND/OR CSA APPROVED. THE CABLE JACKET SHALL BE SEALED AT THE MOTOR ENTRANCE BY MEANS OF A RUBBER COMPRESSION WASHER AND COMPRESSION NUT. A HEAT SHRINK TUBE FILLED WITH EPOXY SHALL SEAL THE OUTER CABLE JACKET AND THE INDIVIDUAL LEADS TO PREVENT WATER FROM ENTERING THE MOTOR HOUSING.

MOTOR - PUMP MOTOR SHALL BE RATED 2 HP AT 3450 RPM. MOTOR SHALL BE FOR 60 HZ, SINGLE-PHASE, 230 VOLTS. MOTOR SHALL BE CAPACITOR START, CAPACITOR RUN-TYPE FOR HIGH STARTING TORQUE. THE STATOR, ROTOR AND BEARINGS SHALL BE MOUNTED IN A SEALED SUBMERSIBLE-TYPE HOUSING. THE STATOR WINDINGS SHALL HAVE CLASS F INSULATION (155°C OR 311°F) AND A DIELECTRIC OIL-FILLED MOTOR, NEMA L DESIGN (SINGLE-PHASE). BECAUSE AIR-FILLED MOTORS DO NOT DISSIPATE HEAT AS EFFICIENTLY AS OIL-FILLED MOTORS, THEY SHALL NOT BE ACCEPTABLE. THE PUMP AND MOTOR SHALL BE SPECIFICALLY DESIGNED SO THAT THEY MAY BE OPERATED PARTIALLY DRY OR COMPLETELY SUBMERGED IN THE LIQUID BEING PUMPED. THE PUMP SHALL NOT REQUIRE COOLING WATER JACKETS. SUPPLEMENTAL COOLING SHALL NOT BE ACCEPTABLE.

THE MOTOR SHALL HAVE A CURRENT OVERLOAD ATTACHED TO THE TOP END OF THE MOTOR WINDINGS TO STOP THE MOTOR IF THE MOTOR WINDING TEMPERATURE REACHES 138°C. THE HIGH TEMPERATURE SHUT-OFF WILL CAUSE THE PUMP TO CEASE OPERATION, SHOULD A CONTROL FAILURE CAUSE THE PUMP TO RUN IN A DRY WET WELL. THE THERMOSTAT SHALL RESET AUTOMATICALLY WHEN THE MOTOR COOLS TO A SAFE OPERATING TEMPERATURE.

BEARINGS AND SHAFT - AN UPPER SINGLE-ROW BALL RADIAL BEARING AND A LOWER SINGLE-ROW BALL THRUST BEARING SHALL BE PROVIDED. BEARINGS SHALL BE PERMANENTLY LUBRICATED BY THE DIELECTRIC OIL THAT FILLS THE MOTOR HOUSING. THE SHAFT SHALL BE MACHINED FROM SOLID 416 SERIES STAINLESS STEEL AND BE DESIGNED WITH LARGE DIAMETERS AND MINIMUM OVERHANG TO REDUCE SHAFT DEFLECTION AND PROLONG BEARING AND SEAL LIFE.

SEALS - THE ROTOR AND STATOR IN THE MOTOR HOUSING SHALL BE SEPARATED AND PROTECTED FROM THE PUMPED LIQUID BY AN OIL-FILLED SEAL HOUSING INCORPORATING A TYPE 21 CARBON CERAMIC MECHANICAL SEAL.

IMPELLER - THE IMPELLER SHALL BE CONSTRUCTED OF 316/CF8M STAINLESS STEEL AND BE DESIGNED FOR ROUGH DUTY SERVICE. IT SHALL BE A TEN-VANE, SEMI-OPEN DESIGN WITH FOUR WASH OUT VANES ON THE REAR SHROUD. THE IMPELLER SHALL BE A NON-OVERLOADING DESIGN.

GRINDER MECHANISM - THE STATIONARY CUTTER SHALL BE CIRCULAR IN DESIGN AND CONTAIN EVENLY SPACED CUTTING SLOTS THAT EXTEND OUTWARDS FROM THE INLET OF THE PUMP. THE SLOTS ARE TAPERED INWARD TOWARD THE INLET TO HELP DIRECT SLURRY THROUGH THE CUTTING SLOTS INTO THE PUMP. THE SLOTS ARE TO BE ANGLED, OR UNDERCUT, TO HELP MAINTAIN A SHARP AXIAL CUTTING EDGE, EVEN AS THE AXIAL FACE WEARS DURING USE. THE STATIONARY CUTTER SHALL BE PRESSED INTO THE SUCTION OPENING OF THE VOLUTE AND HELD IN PLACE BY FOUR 300 SERIES STAINLESS STEEL SCREWS. THE STATIONARY CUTTER SHALL BE PROVIDED WITH TAPPED BACK-OFF HOLES SO THAT SCREWS CAN BE USED TO REMOVE THE CUTTER FROM THE VOLUTE. THE ROTATING CUTTER SHALL CONTAIN THREE AXIAL CUTTING ARMS EXTENDING FROM THE HUB, PERPENDICULAR TO THE PUMP SHAFT, THAT ARE SHAPED TO AID IN THE REJECTION OF SUSPENDED DEBRIS THAT HAS NOT BEEN SUFFICIENTLY REDUCED IN SIZE BY THE AXIAL CUTTING ACTION. THE CURVED, LEADING EDGE OF THE CUTTING ARMS SHALL CREATE A SCISSOR ACTION WITH THE CUTTING SLOTS OF THE STATIONARY CUTTER PLATE TO MINIMIZE THE REQUIRED TORQUE. THIS WILL ALLOW THE CUTTER TO MACERATE TOUGH OBJECTS AND PROLONG CUTTER LIFE. SERRATIONS ON THE HUB OF THE CUTTER ADD ADDITIONAL CUTS THAT PREVENT DEBRIS FROM BECOMING ENTANGLED WITHIN THE ROTATING CUTTER. THE ROTATING CUTTER SHALL THREAD ONTO THE END OF THE PUMP SHAFT AND BE SECURED BY A 300 SERIES STAINLESS STEEL WASHER IN CONJUNCTION WITH A 300 SERIES STAINLESS STEEL FLAT HEAD CAP SCREW THREADED INTO THE END OF THE SHAFT. BOTH STATIONARY AND ROTATING CUTTERS SHALL BE MADE OF 440C STAINLESS STEEL, HARDENED TO ROCKWELL 57-60C AND GROUND CLOSE TO TOLERANCE. THE GRINDER SHALL BE CAPABLE OF GRINDING NORMAL DOMESTIC SEWAGE INTO A FINE SLURRY.

PAINT - THE PUMP SHALL BE PAINTED WITH WATERBORNE HYBRID ACRYLIC/ALKYD PAINT. THIS CUSTOM ENGINEERED, QUICK DRY PAINT SHALL PROVIDE SUPERIOR LEVELS OF CORROSION AND CHEMICAL PROTECTION.

LEVEL CONTROL - AN AUTOMATIC CONTROL IS PROVIDED BY A HEAVY-DUTY UL/CSA LISTED FLOAT SWITCH TETHERED TO THE SIDE OF THE PUMP, HAVING A PIGGYBACK PLUG ON ONE END. THIS PIGGYBACK FLOAT SWITCH OPERATES THE PUMP DIRECTLY WITHOUT NEED OF A CONTROL PANEL.

Name: A

MAIN BREAKER: 100 AMPS
VOLTAGE: 240/120V
PHASE: 1
WIRE: 3

AIC: 22 K AMPS ---
MOUNTING: SURFACE
MANUFACTURER: SQUARE D

Status: NEW
Project Name: kING fISH
Project Number: M13112
Fed From: UTILITY

SECTION: 1

NOTES	CKT #	CIRCUIT DESCRIPTION	CODE	LOAD/PHASE (KVA) A	LOAD/PHASE (KVA) B	CIRCUIT BREAKER TRIP	POLES	POLES	TRIP	LOAD/PHASE (KVA) A	LOAD/PHASE (KVA) B	CODE	CIRCUIT DESCRIPTION	CKT #	NOTES
	1	HAND DRYER	O	1.20		20	1	1	20	1.20		O	HAND DRYER	2	
	3	HAND DRYER	O		1.20	20	1	1	20		1.20	O	HAND DRYER	4	
	5	DOOR LOCK SYSTEM	O	0.18		20	1	1	20	1.00		O	WATER FOUNTAIN	6	
	7	RECEPTACLE	R		0.18	20	1	1	20		0.05	O	TIME CLOCK	8	
	9	LIGHTING - RESTROOM	L	0.15		20	1	1	20	0.05		L	LIGTING - EXTERIOR	10	
	11	LIGHITNG - SERVICE ROOM	L		0.07	20	1	2	30		0.00	O	SPD	12	
	13	SANITARY PUMP	O	3.34		50	2			0.00				14	
	15				3.34			1	20		0.74	L	PARKING LIGHTING #1	16	
	17	VENDING MACHINE	O	1.44		20	1	1	20	0.63		L	PARKING LIGHTING #2	18	
	19	RECEPT.LIFT SATATION & EXT WALL	R		0.36	20	1	1	20		0.42	L	PARKING LIGHTING #3	20	
	21	SPARE				20	1	1	20	0.53		L	PARKING LIGHTING #4	22	
	23	SPARE				20	1	1	20		0.53	L	PARKING LIGHTING #5	24	
	25	SPARE				20	1	1	20				SPARE	26	
	27	SPACE				20	1	1	20				SPACE	28	
				6.3	5.1					3.4	2.9				

	CONN. LOAD (KVA)	ADJUST. FACTOR	DEMAND FACTOR	DEMAND LOAD (KVA)
LIGHTING (L)	3.1	1.00	1.25	3.9
RECEPTACLES (R)	0.5	---	NEC	0.5
LARGEST MOTOR (M)	0.0	1.00	1.25	0.0
ALL OTHER MOTORS (M)	0.0	1.00	1.00	0.0
HEATING (H)	0.0	1.00	1.00	0.0
COOLING (C)	0.0	1.00	1.00	0.0
OTHER (O)	14.1	1.00	1.00	14.1
WATER HEATERS (W)	0.0	1.00	1.25	0.0
DRYERS (D)	0.0	1.00	1.00	0.0
KITCHEN (K)	0.0	1.00	1.00	0.0

PER NEC ARTICLE 220

TOTAL CONNECTED LOAD: 17.8 KVA
TOTAL DEMAND LOAD: 18.6 KVA
DEMAND AMPS: 77.4 AMPS

PERCENT IMBALANCE: 16.8 %

PANEL EQUIPMENT:

cph
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Panama City, FL 32405
Ph: 850.563.1490
Plans Prepared By:
CPH, Inc.
State of Maryland Licenses:
Engineer No. 07-48350
Surveyor No. 21693
Architect No. 17163
Landscape No. 3724

ALEXANDER E. ZVONARYOV LICENSE No. 60953 STATE OF FLORIDA PROFESSIONAL ENGINEER

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No.	Date	Revision

Designed: AEZ
Drawn: JA
Checked: AEZ
Job No.: M13112
Date: 03/15/21

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ONE-LINE DIAGRAM AND PANEL SCHEDULE

HOLMES BEACH, FLORIDA
KINGFISH BOAT RAMP PARKING
752 MANATEE AVE, HOLMES BEACH, FL 34217

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
E4

LIGHTING CRITERIA

SITE LIGHTING IS A NECESSARY PROVISION FOR SAFETY AS THE DAY EXTENDS BEYOND THE DAYLIGHT HOURS OF OPERATION.

FOOT-CANDLE POWER: THE LIGHT INTENSITY IN FOOT-CANDLES MEASURED ON A HORIZONTAL PLANE AT 36" ABOVE GROUND LEVEL.

HOURS OF DARKNESS: THE PERIOD THAT COMMENCES 30 MINUTES AFTER SUNSET AND ENDS 30 MINS BEFORE SUNRISE.

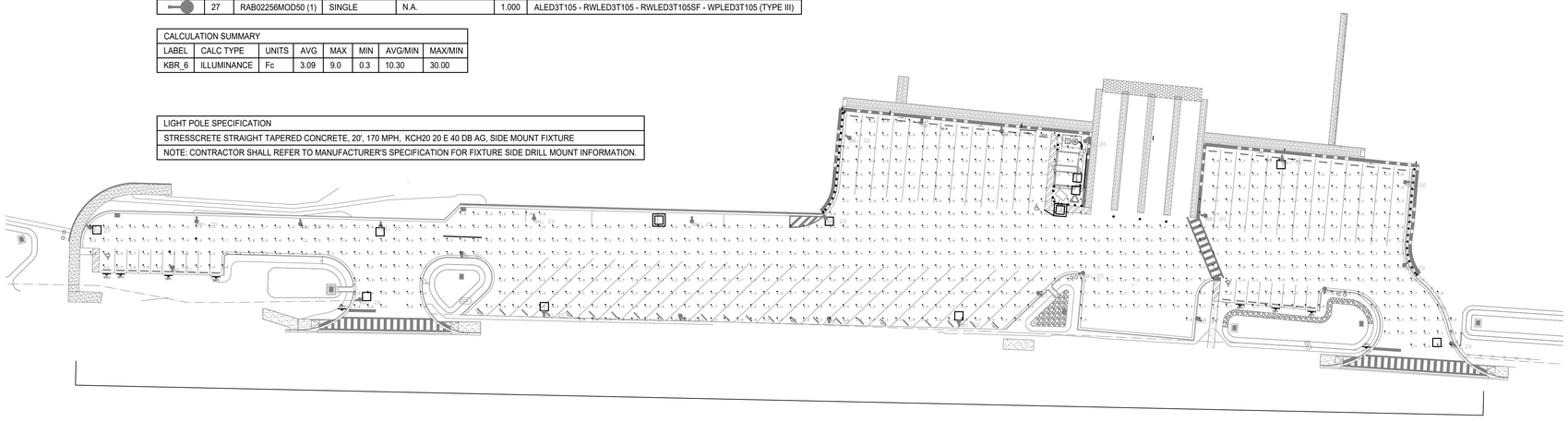
CONTROL WITH RESPECT TO AN ACCESS AREA OR DEFINED PARKING AREA, MEANS TO HAVE THE PRESENT LEGAL AUTHORITY TO DETERMINE HOW, WHEN, AND BY WHOM SUCH AREA IS TO BE USED, AND HOW SUCH AREA IS TO BE MAINTAINED, LIGHTED, AND LANDSCAPED.

- ALL SITE LIGHTING SHOULD BE LED.
- LIGHTS SHOULD ILLUMINATE DARK AND HIDDEN AREAS.
- LIGHTING TEMPERATURE TO BE 3000K.

LUMINAIRE SCHEDULE						
SYMBOL	QTY	LABEL	ARRANGEMENT	TOTAL LAMP LUMENS	LLF	DESCRIPTION
	27	RAB02256MOD50 (1)	SINGLE	N.A.	1.000	ALED3T105 - RWLED3T105 - RWLED3T105SF - WPLED3T105 (TYPE III)

CALCULATION SUMMARY							
LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
KBR_6	ILLUMINANCE	Fc	3.09	9.0	0.3	10.30	30.00

LIGHT POLE SPECIFICATION
STRESSCRETE STRAIGHT TAPERED CONCRETE, 20', 170 MPH, KCH20 20 E 40 DB AG, SIDE MOUNT FIXTURE
NOTE: CONTRACTOR SHALL REFER TO MANUFACTURER'S SPECIFICATION FOR FIXTURE SIDE DRILL MOUNT INFORMATION.

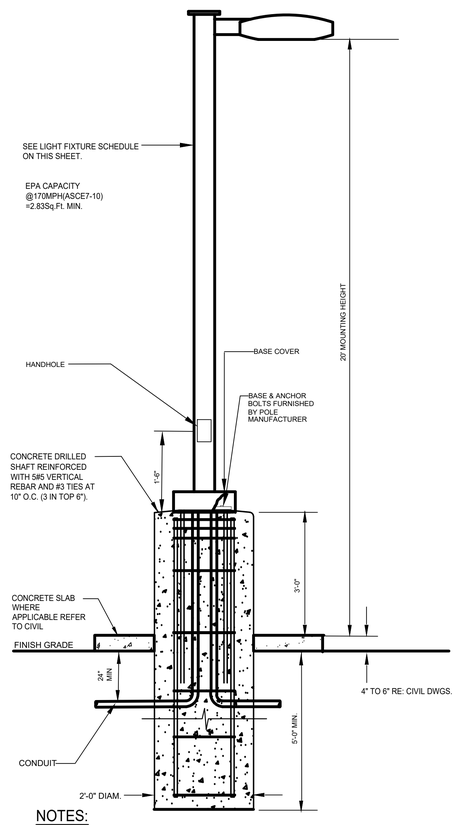


PHOTOMETRIC NOTES:

1. PHOTOMETRIC VALUES ARE INTENDED FOR DESIGN AND EVALUATION PURPOSES ONLY. THE POINT-BY-POINT ILLUMINATION LEVELS SHOWN ON THIS SHEET ARE BASED ON LIGHTING SOFTWARE WITH APPROXIMATED PARAMETERS. PHOTOMETRIC VALUES MAY VARY FROM ACTUAL FIELD READINGS

1 / E5 PHOTOMETRICS SITE PLAN
SCALE: 1" = 50'-0"

NORTH



NOTES:

1. LIGHT FIXTURE AND POLE SHALL SUSTAIN 170 MPH WIND LOAD.

2 / E5 LIGHT POLE DETAIL
SCALE: N.T.S.

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1		
2		
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7		

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Date: 03/15/21
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PHOTOMETRICS AND LIGHTING DETAILS

HOLMES BEACH, FLORIDA
KINGFISH BOAT RAMP PARKING
752 MANATEE AVE, HOLMES BEACH, FL 34217

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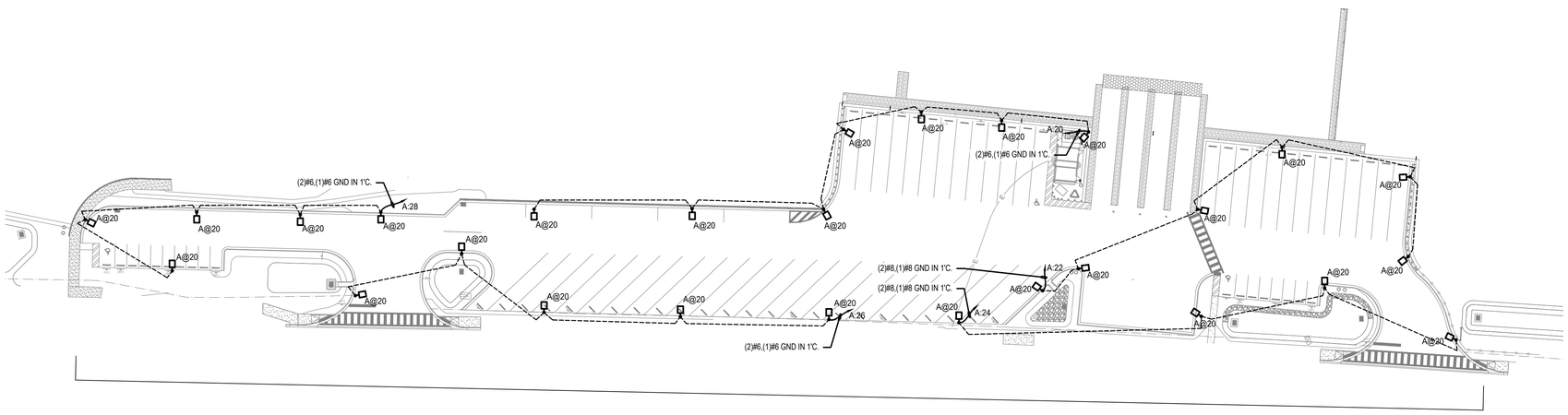
Sheet No.
E5a

GENERAL NOTES

1. ALL WIRING SHALL BE CUPPER.
2. CO-ORDINATE ALL LIGHTING FIXTURE LOCATION WITH CIVIL REFLECTED CEILING LAYOUT.
3. FOR SYMBOLS DESCRIPTION SEE SHEET E000.
4. TIME - CLOCK SHALL COMPLY WITH FBC C405.2.2.1.: 7 DAY CLOCK, 7 DIFFERENT DAY PER WEEK, 10H PROGRAM BACKUP & OVERRIDE SWITCH.
5. CONTRACTOR SHALL COORDINATE TIME-CLOCK PROGRAM (TIME) WITH THE OWNER.
6. CONTRACTOR SHALL ADD PULLBOXES AS NEEDED.



1 / E5 LIGHTING SITE PLAN
SCALE: 1" = 50'-0"

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LIGHTING PLAN

HOLMES BEACH, FLORIDA
KINGFISH BOAT RAMP PARKING
752 MANATEE AVE, HOLMES BEACH, FL 34217

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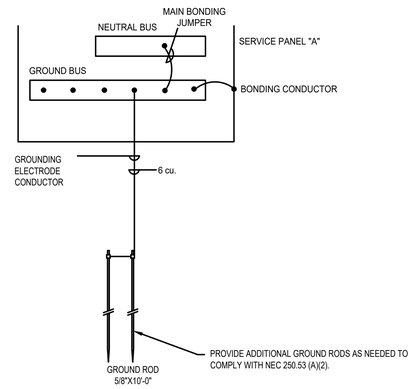
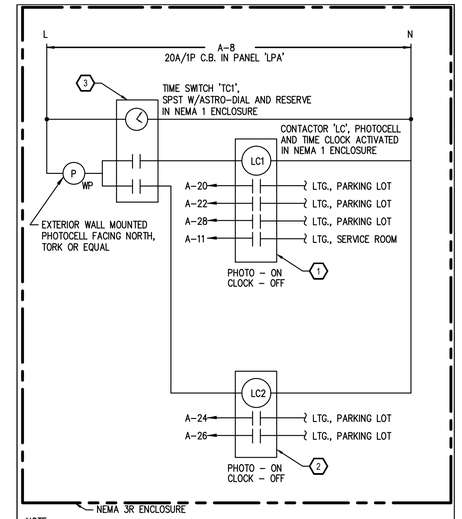
Sheet No.
E5b



3 / E6 GROUNDING DETAIL

SCALE: N.T.S.



NOTE:
PROVIDE BLACK LAMINATE SIGN WITH 1/2" HIGH WHITE LETTERING INDICATING:
"SERVED BY CIRCUIT LPA-9". DISCONNECT POWER PRIOR TO UNIT SERVICE"

PHOTOELECTRIC / TIME CLOCK 'TC'
EXTERIOR LIGHTING CONTROL DIAGRAM

NOT TO SCALE

4 / E6 TIME CLOCK DETAIL

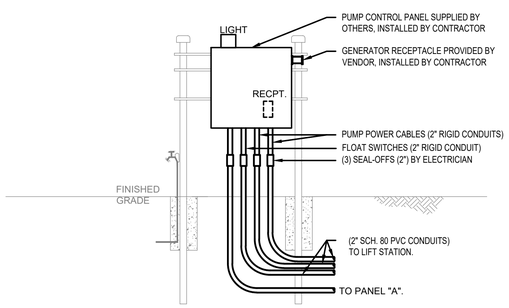
SCALE: N.T.S.

PANEL INSTALLATION NOTES

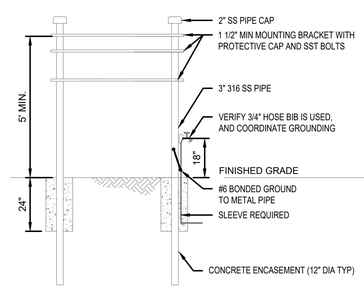
1. PUMP MOTOR CONDUIT SHALL BE SIZED TO ACCOMMODATE 40% CONDUIT FILL. MINIMUM CONDUIT SIZE TO BE 2-IN SCH 80 PVC.
2. POWER SUPPLY SHALL BE UNDERGROUND ON THE LIFT STATION SITE AND SHALL BE 240/120V, 1-PHASE, 3-WIRE, NEUTRAL INCLUDED.
3. AN ELECTRICAL GROUNDING SYSTEM SHALL BE INSTALLED AS PER THE NATIONAL ELECTRICAL CODE, LOCAL CODES AND ORDINANCES. AN UNDERGROUND PERIMETER CABLE GROUNDING SYSTEM SHALL BE INSTALLED WITH CONNECTIONS TO AT LEAST WET WELL COVER, CONTROL PANELS, UTILITY COMPANY TRANSFORMER, AND MANUAL DISCONNECT SWITCH. REFER TO GROUNDING DETAILS.
4. THE STATION NAME, UTILITIES I.D. NUMBER AND ADDRESS SHALL BE AFFIXED TO THE FRONT OF THE METER CABINET.
5. MOUNTING HARDWARE & BRACKETS AND ELECTRICAL ENCLOSURES SHALL BE 316 STAINLESS STEEL.

ELECTRICIAN NOTES

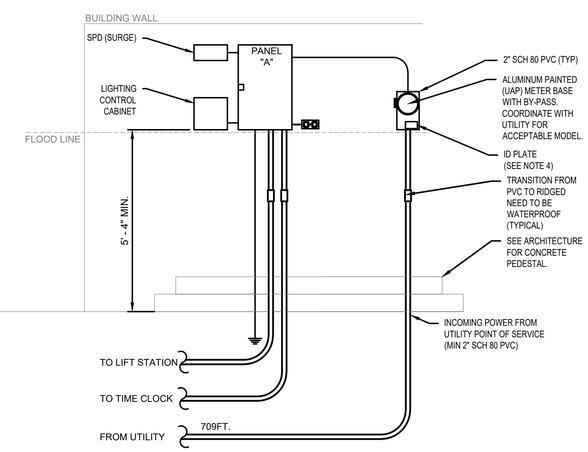
1. DRAWING NOT TO SCALE.
2. ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES.
3. ELECTRICIAN SHALL SEAL OFF CONDUIT RUNS FROM CONTROL PANEL TO WET WELL.
4. ELECTRICIAN TO MOUNT LIGHTNING ARRESTOR AT PANEL.
5. CONTRACTOR SHALL VERIFY POWER SOURCE PRIOR TO ORDERING EQUIPMENT.
6. NEUTRAL TO BE SUPPLIED FOR 240/120V - 1 PHASE POWER.
7. RESISTANCE TO GROUND OF NON-CURRENT CARRYING METAL PARTS IS NOT TO EXCEED 5 OHMS MEASURED AT EQUIPMENT RACK AND OTHER EQUIPMENT. FURTHERMORE, PROVIDE (2) OR MORE 10FT GROUND RODS, AT 10FT SPACING DRIVEN VERTICALLY TO A DEPTH OF 1FT. BELOW GRADE. BOND THE GROUND RODS TOGETHER WITH A SIZE TO MEET APPLICABLE TABLES IN NEC 250.
8. CONDUITS, ELBOWS ENTERING OR LEAVING THE GROUND ARE TO BE RIGID STEEL CONDUIT COATED WITH BITUMINUS PAINT. WHERE PENETRATING THE GRADE, CONDUIT SHALL BE SCHEDULE 80PVC COATED WITH PAINT FOR ALL LIFT STATION RELATED CONDUITS. CONDUITS FOR PAVILION TO BE SCHEDULE 40.



FRONT VIEW



REAR VIEW

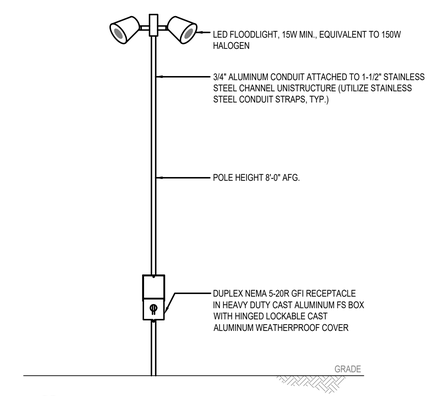


1 / E6 EQUIPMENT ELEVATIONS

SCALE: N.T.S.

KEY NOTES

1. CONTRACTOR SHALL PROVIDE CONTACTOR "EATON C30CNE40A0" OR APPROVED EQUAL.
2. CONTRACTOR SHALL PROVIDE CONTACTOR "EATON C30CNE20A0" OR APPROVED EQUAL.
3. CONTRACTOR SHALL PROVIDE TIME CLOCK " DW200B " OR APPROVED EQUAL.



2 / E6 SERVICE POLE DETAIL

SCALE: N.T.S.

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DETAILS AND ELEVATIONS

HOLMES BEACH, FLORIDA
KINGFISH BOAT RAMP PARKING
752 MANATEE AVE, HOLMES BEACH, FL 34217

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Sheet No.
E6

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
	SINGLE HEAD POLE LED PARKING LOT LIGHT FIXTURE.
	AWNING LED DOWNLIGHT.
	DISCONNECT SWITCH - XX/XX/X = FRAME SIZE / FUSE SIZE / POLES
	ELECTRICAL SERVICE METER
	LIGHTING CONTROL CABINET (L/C)
	SURFACE JUNCTION BOX OR UNDERGROUND PULLBOX.
	SURFACE MOUNTED PANEL.
	CIRCUIT ABOVE GRADE.
	CIRCUIT BELOW GRADE.
	CIRCUIT HOMERUN.
	CONDUIT STUB OUT. CAP AS NOTED.

NOTE:
1. THESE ARE STANDARD SYMBOLS AND MAY NOT ALL APPEAR ON THE PROJECT DRAWINGS.

SCOPE OF WORK

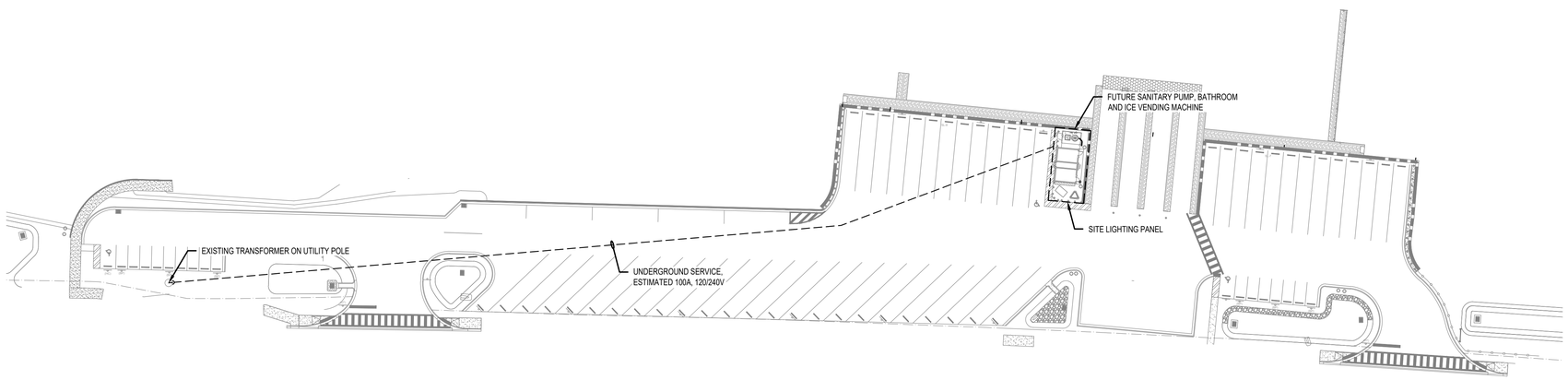
1. INSTALL UNDERGROUND ELECTRICAL FEED FROM UTILITY POLE TO ELECTRICAL PANEL AT BOAT RAMP.
2. INSTALL SANITARY PUMP, FUTURE.
3. INSTALL ELECTRICAL PANEL COMPLETE.
4. FEED ALL SITE LIGHTING.
5. BUILD BATHROOM, FUTURE.
6. INSTALL ICE VENDING MACHINE, FUTURE.

CONTRACTOR NOTES:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL DRAWINGS AND SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO, CIVIL AND ELECTRICAL PRIOR TO SUBMITTING A BID.
2. BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF WORK. THE SUBMISSION OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED, OR FOR ANY DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION BEEN MADE, WILL NOT BE ALLOWED.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNER OR ARCHITECT, OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN EXISTING SITE CONDITIONS PRIOR TO SUBMISSION OF BID.
4. COORDINATE WITH OTHER TRADES FOR LOCATION OF ALL UNDERGROUND CONDUIT.
5. NO EXCEPTIONS TO BASIS OF DESIGN ARE PERMITTED UNLESS APPROVAL IS PROVIDED PRIOR TO CONSTRUCTION START.

GENERAL SHEET NOTES:

1. UTILITY LOCATE: FIELD VERIFY ALL UNDERGROUND UTILITIES PRIOR TO TRENCHING. ALL PROPOSED EXCAVATION IN THE VICINITY OF EXISTING UTILITIES SHALL BE HAND EXCAVATED.
2. RACEWAY: NO UNDERGROUND CONDUITS SHALL BE SMALLER THAN 3/4", UNLESS NOTED OTHERWISE.
3. COORDINATION: COORDINATE ALL SITE CONDUIT ROUTINGS WITH GENERAL CONTRACT, OR REFER TO CIVIL PLANS FOR FINAL LOCATION OF ALL SITE LIGHTING, SIGNAGE, SITE EQUIPMENT, AND UTILITY CONNECTION POINTS.
4. SITE UTILITIES: COORDINATE WITH CIVIL PLANS FOR LOCATIONS AND POWER REQUIREMENTS OF ALL SITE UTILITIES SUCH AS LIFT STATIONS, IRRIGATION PUMPS, ETC.
5. VERIFY ALL LANDSCAPE WITHIN COMPLIANCE AREA (OR LANDSCAPE AFFECTING LIGHT FIXTURES WITHIN THE COMPLIANCE AREA) IS TRIMMED/PRUNED/THINNED OUT PER OWNER'S LANDSCAPE STANDARDS. EXISTING SHALL BE PRUNED TO 10 FT AND THINNED OUT AS NEEDED TO PREVENT SHADOW EFFECTS WITHIN COMPLIANCE AREA ALLOWING OPTIMAL LIGHTING PERFORMANCE. COORDINATE WITH GENERAL CONTRACTOR FOR RESPONSIBILITIES AND SCHEDULING.



1 / E1 OVERALL ELECTRICAL SITE PLAN
SCALE: 1" = 50'-0"

NORTH

SHEET INDEX

SHEET NUMBER	SHEET NAME
E1	INDEX, SCOPE, GENERAL NOTES AND SYMBOL LEGEND
E2	ELECTRICAL SPECIFICATIONS AND ABBREVIATIONS
E3	ELECTRICAL PLAN
E4	ONE-LINE DIAGRAM AND PANEL SCHEDULE
E5	PHOTOMETRICS AND LIGHTING DETAILS
E6	DETAILS AND ELEVATIONS
E7	OVERALL ELECTRICAL SITE PLAN

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CPH, Inc.
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Engineer No. 07-48350
Surveyor No. 21693
Architect No. 17163
Landscape No. 3724

ALEXANDER E. ZVONARYOV LICENSE No. 60953 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by ALEXANDER E. ZVONARYOV, P.E. on the date adjacent to the seal using a SHA authentication code. Printed copies of this document are not considered signed and sealed and the SHA authentication code must be verified on any electronic copies.

No.	Date	Revision

Designed: AEZ
Drawn: JA
Checked: AEZ
Job No.: M13112
Date: 03/15/21

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OVERALL ELECTRICAL SITE PLAN

HOLMES BEACH, FLORIDA
KINGFISH BOAT RAMP PARKING
752 MANATEE AVE, HOLMES BEACH, FL 34217

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
E7

GENERAL NOTES

1. DESIGN SPECIFICATIONS: DESIGN SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
   A. FLORIDA BUILDING CODE 2020 7TH EDITION.
2. FOR SHEET PILE WALL DESIGN REFER TO GEOTHECH REPORT PROVIDED BY ARDAMAN & ASSOCIATESRING, INC. (PROJECT NO.11-7511DATED JUNE 3, 2020).
3. SHOP DRAWINGS FOR STEEL SHEET PILE WALLS SHALL BE SUBMITTED.
4. WALLS ARE DESIGNED USING RESISTANCE REDUCTION FACTOR OF 1.0 APPLIED TO PASSIVE SOIL PRESSURE AND LOAD FACTORS OF 1.0
5. SOIL STRATIGRAPHY ASSUMED FOR THE DESIGN OF SHEET PILE WALLS ARE SHOWN ON WALL BORING SHEET. IF CONDITIONS ENCOUNTERED DURING CONSTRUCTION OPERATIONS SIGNIFICANTLY DIFFER FROM THOSE SHOWN, THE ENGINEER SHALL BE NOTIFIED AND WALL REDESIGN CONSIDERED.
6. TEMPORARY EXCAVATION SLOPES SHALL NOT EXCEED 1.0 VERTICAL TO 2.0 HORIZONTAL.
7. ALL WALL LENGTHS ARE TO THE BACK OF STEEL SHEET PILES UNLESS OTHERWISE NOTED.
8. THE CONTRACTOR MAY PROPOSE ALTERNATIVE EXCAVATION SUPPORT DETAILS OR SYSTEMS. SUCH ALTERNATIVES SHALL REQUIRE SHOP DRAWINGS.
9. THE CONTRACTOR IS ADVISED NOT TO APPLY ANY SUPERIMPOSED LOADS ON OR ADJACENT TO THE EXISTING SEA WALL. CONSTRUCTION LOADS WITHIN 30FT SHALL BE LIMITED TO 200 PSF MAX.
10. THE CONTRACTOR SHALL HAVE SUITABLE EQUIPMENT AND SHALL TAKE APPROPRIATE MEASURES TO ACHIEVE THE REQUIRED TIP ELEVATIONS. THESE MAY INCLUDE PRE-PUNCHING, SPUDDING, PREFORMED PILE HOLES, OR OTHER METHODS, AND ANY ASSOCIATED COST SHALL BE INCIDENTAL TO THE COST OF STEEL SHEET PILING (PERMANENT).
11. MINIMUM THICKNESS OF THE SHEET PILE SHOULD BE CHOSEN TO BE COMPATIBLE WITH THE SOIL ENCOUNTERED/DRIVEN THROUGH AND THE PILE AND DRIVING EQUIPMENT.
12. VERTICAL DATUM USED WAS ASSUMED TO USE 0'-0" AT TOP OF WALL.
13. ~~ALL UNSUITABLE MATERIAL FROM EXCAVATION SHALL BE DISPOSED AS DIRECTED BY THE OWNER~~:

CONCRETE AND REINFORCING

1. ALL CONCRETE SHALL BE IN ACCORDANCE WITH THE "AMERICAN CONCRETE INSTITUTE BUILDING CODE" (ACI 318) AND WITH "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301) LATEST EDITIONS.
2. ALL NORMAL WEIGHT CONCRETE (145 PCF) SHALL OBTAIN A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.
3. ALL CONCRETE SUBJECT TO EXTERIOR EXPOSURE SHALL BE AIR ENTRAINED AS RECOMMENDED BY ACI 318.
4. TEST CYLINDERS SHALL BE MADE AND TESTED AS OUTLINED IN CHAPTER 16 OF ACI-301.
5. REINFORCING BARS SHALL BE DEFORMED BARS OF NEW BILLET STEEL CONFORMING TO ASTM A-615, GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185. ALL REINFORCING AND ACCESSORIES SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI STANDARD 315 AND 315R.
6. PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCEMENT AT POSITIONS SHOWN ON THE PLANS AND DETAILS. PLASTIC COATED ACCESSORIES SHALL BE USED IN ALL EXPOSED CONCRETE WORK.

MISCELLANEOUS

1. ALL EXISTING DIMENSIONS ON STRUCTURAL DRAWINGS TO BE CHECKED ON THE FIELD BY THE GENERAL CONTRACTOR AND ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY.
2. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY, UNRELIEVED BY REVIEW OF SHOP DRAWINGS OR PERIODIC OBSERVATION OF CONSTRUCTION, FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, FOR FABRICATION PROCESSES AND CONSTRUCTION TECHNIQUES, AND FOR SAFE CONDITIONS ON THE JOB SITE.
3. DO NOT SCALE THE DRAWINGS.

ENVIRONMENTAL PROTECTION NOTES

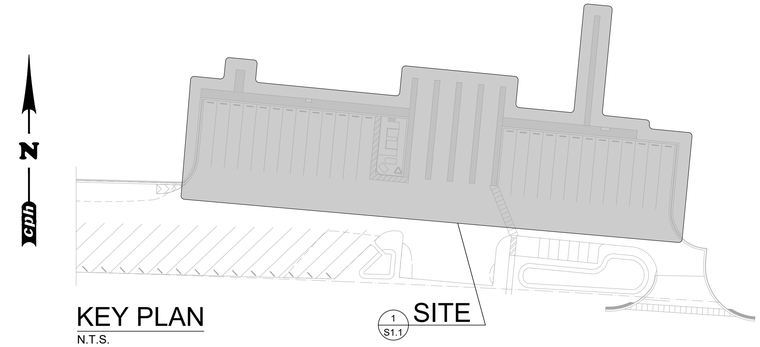
1. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ENVIRONMENTAL PROTECTION DURING THE LIFE OF THE CONTRACT. ENVIRONMENTAL PROTECTION SHALL BE PROVIDED TO CORRECT CONDITIONS THAT DEVELOP DURING THE CONSTRUCTION OF PERMANENT ENVIRONMENTAL PROTECTION FEATURES, OR THAT ARE REQUIRED TO CONTROL POLLUTION THAT DEVELOPS DURING NORMAL CONSTRUCTION PRACTICES BUT ARE NOT ASSOCIATED WITH PERMANENT CONTROL FEATURES INCORPORATED IN THE PROJECT. CONTRACTOR'S OPERATIONS SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WATER, AIR, SOLID WASTE, AND NOISE POLLUTION.
2. THE CONTRACTOR SHALL NOT DISCHARGE OR PERMIT DISCHARGE INTO THE WATERS OF LAKES, RIVERS, CANALS, WATERWAYS AND DITCHES, ANY FUELS, OILS, BITUMEN'S, GARBAGE, SEWAGE, OR OTHER MATERIALS WHICH MAY BE HARMFUL TO FISH, WILDLIFE, OR VEGETATION, OR THAT MAY BE DETRIMENTAL TO OUTDOOR RECREATION. ALL WORK UNDER THIS CONTRACT SHALL BE PERFORMED IN SUCH A MANNER THAT OBJECTIONABLE CONDITIONS WILL NOT BE CREATED IN WATERS THROUGH OR ADJACENT TO THE PROJECT AREAS.
3. THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO MINIMIZE DEGRADATION OF WATER QUALITY AT THE SITE. ALL NECESSARY PROVISIONS SHALL BE TAKEN TO ENSURE COMPLIANCE WITH THE WATER QUALITY STANDARDS OF THE STATE OF FLORIDA. ADEQUATE SILT CONTAINMENT PROCEDURES AND EQUIPMENT SHALL BE USED AS NECESSARY TO CONTROL TURBIDITY WITHIN STATE STANDARDS.
4. DISPOSAL OF ANY MATERIALS, WASTES, EFFLUENTS, TRASH, GARBAGE, OIL, GREASE AND CHEMICALS, IN AREAS ADJACENT TO WATERS SHALL BE PROHIBITED IF ANY WASTE MATERIAL IS DUMPED IN UNAUTHORIZED AREAS, THE CONTRACTOR SHALL REMOVE THE MATERIAL AND RESTORE THE AREA TO THE CONDITION OF THE ADJACENT UNDISTURBED AREA IF NECESSARY, CONTAMINATED GROUND SHALL BE EXCAVATED AND DISPOSED OF AS DIRECTED BY THE OWNER AND REPLACED WITH SUITABLE FILL MATERIALS, COMPACTED AND FINISHED WITH TOPSOIL, ALL AT THE EXPENSE OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL AT ALL TIMES PERFORM ALL WORK AND TAKE SUCH STEPS REQUIRED TO PREVENT ANY INTERFERENCE OR DISTURBANCE TO FISH AND WILDLIFE . THE CONTRACTOR SHALL NOT BE PERMITTED TO ALTER WATER FLOWS OR OTHERWISE SIGNIFICANTLY DISTURB NATIVE HABITAT ADJACENT TO THE PROJECT AREA WHICH ARE CRITICAL TO FISH AND WILDLIFE EXCEPT AS MAY BE INDICATED OR SPECIFIED.
6. EARTHWORK BROUGHT TO FINAL GRADE SHALL IMMEDIATELY BE FINISHED AS INDICATED AND SPECIFIED. ALL EARTHWORK SHALL BE PLANNED AND CONDUCTED IN SUCH A MANNER AS TO MINIMIZE THE DURATION OF EXPOSURE OF UNPROTECTED SOILS.
7. THE RATE OF RUNOFF FROM THE CONSTRUCTION SITE SHALL BE MECHANICALLY RETARDED AND CONTROLLED. THIS INCLUDES CONSTRUCTION OF DIVERSION DITCHES, BENCHES, AND BERMS, TO RETARD AND DIVERT RUNOFF TO PROTECTED DRAINAGE COURSES.
8. THE CONTRACTOR SHALL EMPLOY ADEQUATE SILT CONTAINMENT EQUIPMENT AND/OR PROCEDURES DURING ANY DEMOLITION, PILE JETTING, AND/OR FILLING OR SIMILAR CONSTRUCTION ACTIVITIES TO CONTROL TURBIDITY OF THE ADJACENT WATER BODY TO WITHIN THE LIMITS REQUIRED BY LOCAL, STATE OR FEDERAL LAW AND/OR PERMIT REQUIREMENTS.
9. BORROW AND/OR STOCKPILING WILL NOT BE PERMITTED IN AREAS WHERE SUITABLE ENVIRONMENTAL CONTROLS ARE NOT POSSIBLE.
10. GENERAL WASTES SHALL BE PICKED UP AND PLACED IN CONTAINERS, WHICH ARE EMPTIED ON A REGULAR SCHEDULE. ALL HANDLING AND DISPOSAL SHALL BE SO CONDUCTED AS TO PREVENT CONTAMINATION OF THE SITE AND ANY OTHER AREA S O. N COMPLETION, THE AREAS SHALL BE LEFT CLEAN AND NATURAL LOOKING. ALL SIGNS OF TEMPORARY CONSTRUCTION AND ACTIVITIES INCIDENTAL TO CONSTRUCTION OF THE REQUIRED PERMANENT WORK IN PLACE SHALL BE OBLITERATED.
11. CONTRACTOR SHALL TRANSPORT ALL WASTE OFF OF OWNER'S PROPERTY AND DISPOSE OF IT IN A MANNER THAT COMPLIES WITH FEDERAL, STATE AND LOCAL REQUIREMENTS.

MANATEE PROTECTION NOTES

1. THE CONTRACTOR SHALL INSTRUCT ALL PERSONNEL ASSOCIATED WITH THE PROJECT OF THE POTENTIAL PRESENCE OF MANATEES AND THE NEED TO AVOID COLLISIONS WITH MANATEES.
2. ALL CONSTRUCTION PERSONNEL SHALL BE ADVISED THAT THERE ARE CIVIL AND CRIMINAL PENALTIES FOR HARMING, HARASSINGOR KILLING MANATEES, WHICH ARE PROTECTED UNDER THE ENDANGERED SPECIES ACT OF 1973, THE MARINE MAMMAL PROTECTION ACT OF 1972, AND THE FLORIDA MANATEE SANCTUARY ACT. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY MANATEE HARMED, HARASSED, OR KILLED AS A RESULT OF CONSTRUCTION ACTIVITIES.
3. SILTATION BARRIERS SHALL BE MADE OF MATERIAL IN WHICH MANATEES CANNOT BECOME ENTANGLED, SHALL BE PROPERLY SECURED, AND SHALL BE REGULARLY MONITORED TO AVOID MANATEE ENTRAPMENT. BARRIERS MUST NOT BLOCK MANATEE ENTRY TO OR EXIT FROM ESSENTIAL HABITAT.
4. ALL VESSELS ASSOCIATED WITH THE PROJECT SHALL OPERATE AT "NO WAKE/IDLE" SPEEDS AT ALL TIMES WHILE IN THE WATER.
5. ALL CONSTRUCTION ACTIVITIES IN OPEN WATER SHALL CEASE UPON SIGHTING OF A MANATEE(S) WITHIN 100 YARDS OF THE PROJECT AREA. CONSTRUCTION ACTIVITIES SHALL NOT RESUME UNTIL THE MANATEES HAVE DEPARTED FROM THE PROJECT AREA.
6. THE CONTRACTOR SHALL ENSURE THAT ANY COLLISION WITH AND/OR INJURY TO A MANATEE IS REPORTED TO THE FLORIDA MARINE PATROL (1-800 DIAL-FMP) AND TO THE U.S. FISH AND WILDLIFE SERVICE, JACKSONVILLE OFFICE (904) 791-2580).
7. PRIOR TO COMMENCEMENT OF CONSTRUCTION EACH VESSEL INVOLVED IN THE CONSTRUCTION SHALL DISPLAY IN A PROMINENT LOCATION, VISIBLE TO THE OPERATOR, AN 8-1/2" X 11" TEMPORARY PLACARD READING, "MANATEE HABITAT/IDLE SPEED IN CONSTRUCTION AREA". IN THE ABSENCE OF A VESSEL THE PLACARD WILL BE LOCATED PROMINENTLY ADJACENT TO THE ISSUED CONSTRUCTION PERMIT. A SECOND TEMPORARY 8-1/2" X 11" PLACARD READING "WARNING MANATEE AREA" WILL BE POSTED IN A LOCATION PROMINENTLY VISIBLE TO WATER RELATED CONSTRUCTION CREWS.
8. THE CONTRACTOR SHALL MAINTAIN A LOG DETAILING SIGHTINGS, COLLISIONS, OR INJURIES TO MANATEES SHOULD THEY OCCUR DURING THE CONTRACT PERIOD. FOLLOWING PROJECT COMPLETION, A REPORT SUMMARIZING INCIDENTS AND SIGHTING SHALL BE SUBMITTED TO THE FLORIDA DEPARTMENT OF NATURAL RESOURCES, MARINE RESEARCH INSTITUTE, OFFICE OF PROTECTED SPECIES RESEARCH, 100 EIGHTH AVENUE SOUTHEAST, ST. PETERSBURG, FLORIDA 33701-5095 AND TO THE U.S. FISH AND WILDLIFE SERVICE OFFICE, 3100 UNIVERSITY BOULEVARD, JACKSONVILLE, FLORIDA 32216.
9. MANATEES MAY BE PRESENT AT THE PROJECT SITE. THE CONTRACTOR IS ADVISED TO CONDUCT HIS ACTIVITIES IN ACCORDANCE WITH THE FLORIDA MANATEE ACT (SECTION 370.12 SUBSECTION 2 OF THE FLORIDA STATUTES) WHICH SPELLS OUT PROHIBITED ACTIVITIES AND ASSOCIATED PENALTIES. THERE ARE ALSO CRIMINAL AND CIVIL PENALTIES FOR HARMING, HARASSING OR KILLING MANATEES UNDER THE ENDANGERED SPECIES ACT AND THE MARINE MAMMAL PROTECTION ACT. IF WORK IS TO BE PERFORMED AT NIGHT, LIGHTING WILL BE INSTALLED, TO THE MAXIMUM EXTENT POSSIBLE TO ILLUMINATE WATERWAY WORK AREA IN TIME TAKE NECESSARY ACTION TO PREVENT INJURY OR HARM TO THE MANATEE FROM PROJECT RELATED ACTIVITIES.

IMPORTANT NOTE

1. FOR DESIGN PURPOSES WE ASSUMED NO STRUCTURAL INTEGRITY LOSS, UNDERMINING AND/OR INSTABILITY ON EXISTING SEA WALL THAT WILL BE USED TO CONNECT PROPOSED SEA WALL.
2. THE OWNER AND/OR CONTRACT MUST VERIFY THAT THE EXISTING SEA WALL IS STABLE AND IN SOUND CONDITION PRIOR TO CONSTRUCTION OF NEW SEA WALL.
3. IF UNDERMINING, INSTABILITY OR STRUCTURAL INTEGRITY LOSS IS PRESENT AT THE EXISTING SEA WALL PRIOR TO CONSTRUCTION, THE OWNER AND/OR CONTRACTOR MUST REPAIR, FIXED OR STABILIZE THE EXISTING SEA WALL.



KEY PLAN
N.T.S.

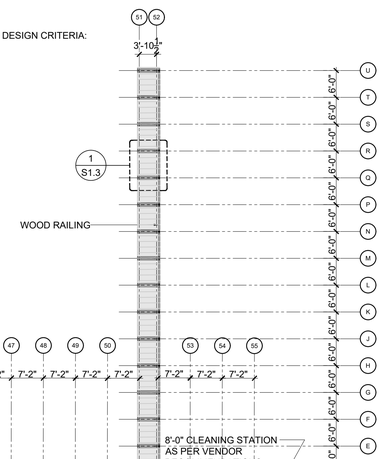
STRUCTURAL NOTES

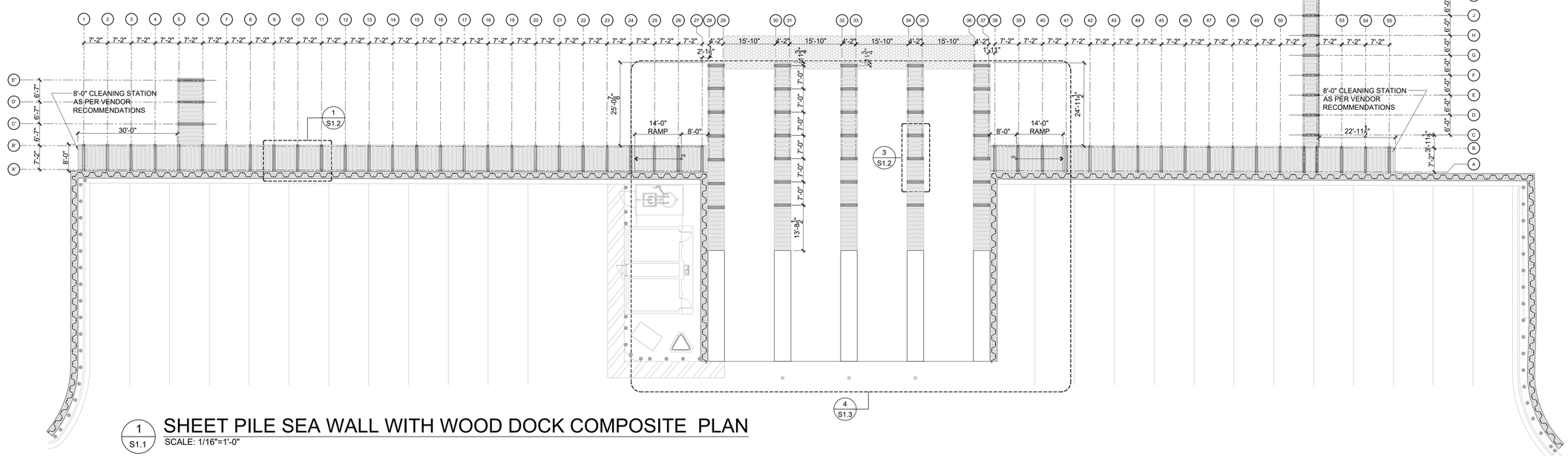
GENERAL

1. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL DRAWINGS BEFORE CONSTRUCTION AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE PROCEEDING WITH THE WORK.
2. COMPLETE SHOP DRAWINGS AS REQUIRED FOR THE STRUCTURAL WORK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS. SUCH REVIEW BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR CORRECT FABRICATION AND CONSTRUCTION OF THE WORK. ALLOW TEN (10) BUSINESS DAYS FOR REVIEW FROM THE TIME SUBMITTALS ARE RECEIVED IN OUR OFFICE.
3. ANY DEVIATION FROM, ADDITION TO, SUBSTITUTION FOR, OR MODIFICATION TO THE STRUCTURE OR ANY PART OF THE STRUCTURE DETAILED ON THESE DRAWINGS SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS THAT ARE SUBMITTED FOR REVIEW DO NOT CONSTITUTE "IN-WRITING" UNLESS IT IS CLEARLY NOTED THAT SPECIFIC CHANGES ARE BEING SUGGESTED.
4. THE STRUCTURAL DRAWINGS ARE NOT TO BE SCALED FOR DETERMINATION OF QUANTITIES, LENGTHS, OR FIT OF MATERIALS.
5. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHODS OF CONSTRUCTION UNLESS SO STATED OR NOTED. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE WORKMEN AND OTHER PERSONS DURING CONSTRUCTION.

DESIGN LOADS

1. THE STRUCTURAL DESIGN OF THIS BUILDING WAS BASED ON THE DESIGN CRITERIA:
   A. BUILDING CODE: FLORIDA BUIILDING CODE 2020 7TH EDITION
   B. FLOOR:
      LIVE LOAD: 100 PSF
   C. ROOF:
      N/A
   D. WIND LOADS:
      BASIC WIND SPEED: 116 MPH (3-SECOND GUST)
      ULTIMATE WIND SPEED: 150 MPH (3 SECOND GUST)
      RISK CATEGORY: II
      WIND EXPOSURE CATEGORY: C
      PRESSURES PER ASCE 7-16





1 / S1.1 SHEET PILE SEA WALL WITH WOOD DOCK COMPOSITE PLAN
SCALE: 1/16"=1'-0"

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Plans Prepared By:
CPH, Inc.
State of Florida Licenses:
Engineer No. 3215
Surveyor No. LB7143
Architect. No. AA26000926
Landscape No. LC000298

No.	Date	Revision

Designed: E.Aviles
Drawn: D.Aran
Checked: E.Aviles
Job No.: M13112
Date: 10-2020

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SHEET PILE SEA WALL WITH WOOD DOCK COMPOSITE PLAN

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
S1.1

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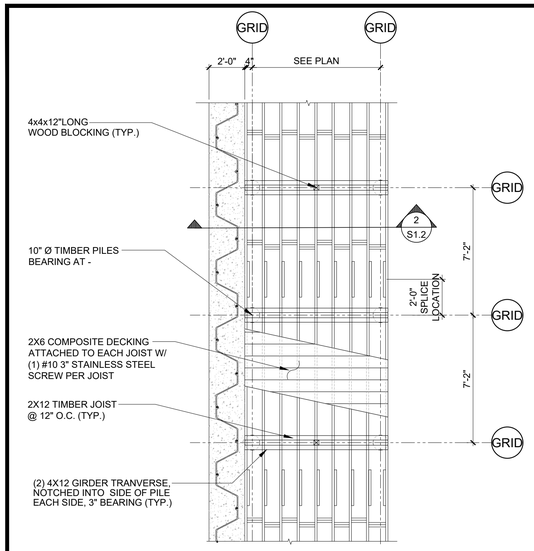
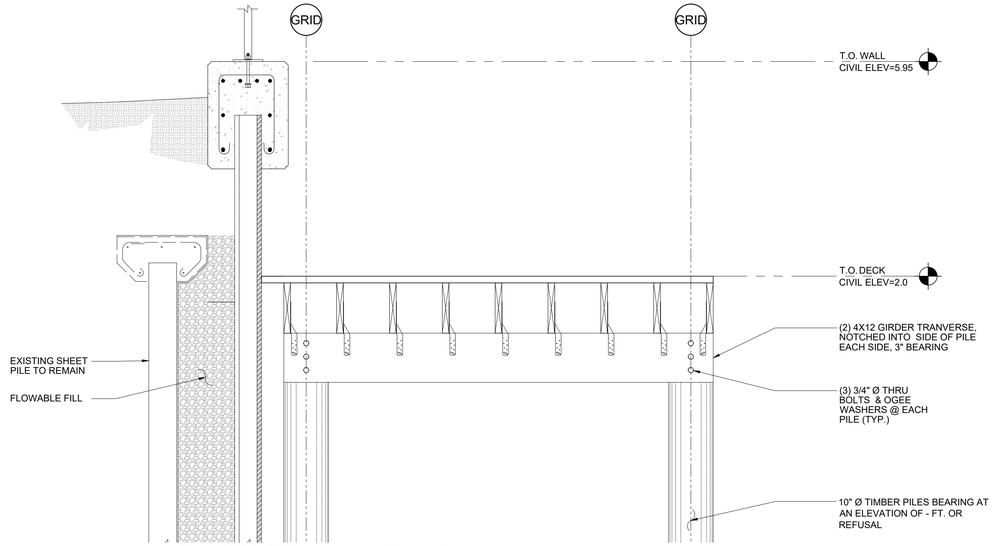
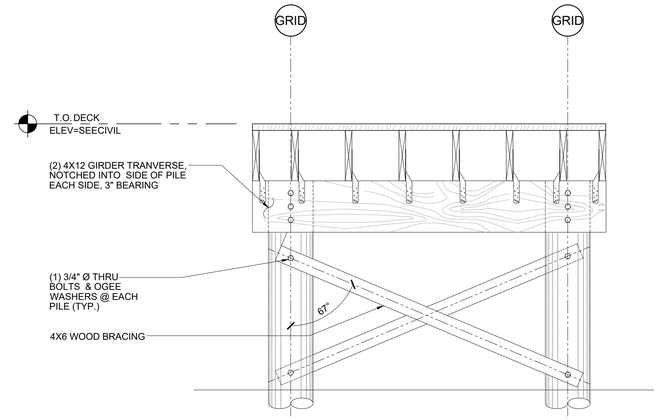


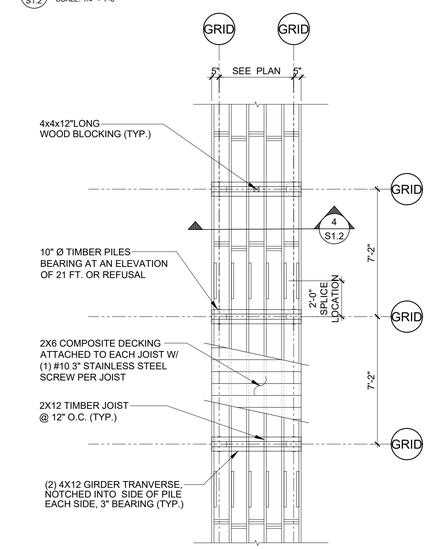
1 S1.2 WOOD DOCK FRAMING PLAN
SCALE: 1/4" = 1'-0"



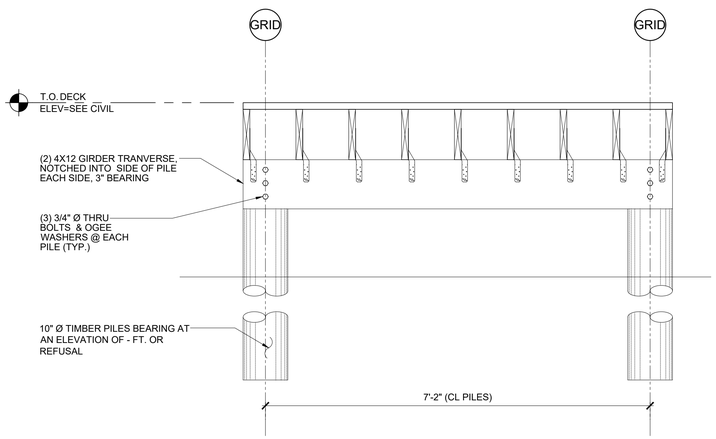
2 S1.2 WOOD DOCK FRAMING SECTION
SCALE: 3/4" = 1'-0"



WOOD BRACING FRAMING ELEVATION
SCALE: 3/4"=1'-0"



3 S1.2 WOOD DOCK FRAMING PLAN (TYP.)
SCALE: 1/4" = 1'-0"



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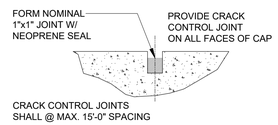
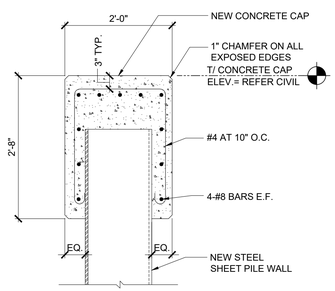


CRACK CONTROL JOINT DETAIL
N.T.S.



D S1.2 SECTION
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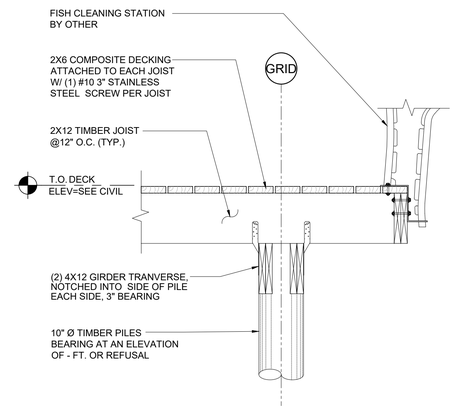
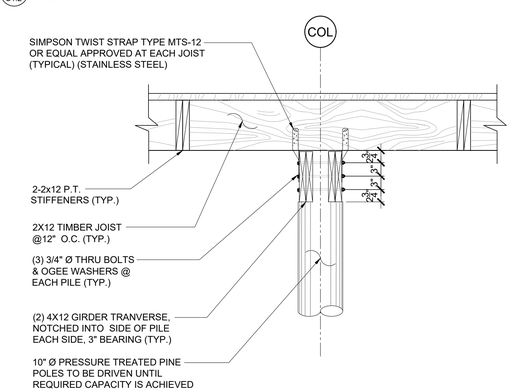


- S1.2 FISH CLEANING STATION FRAMING CONNECTION
SCALE: 3/4" = 1'-0"



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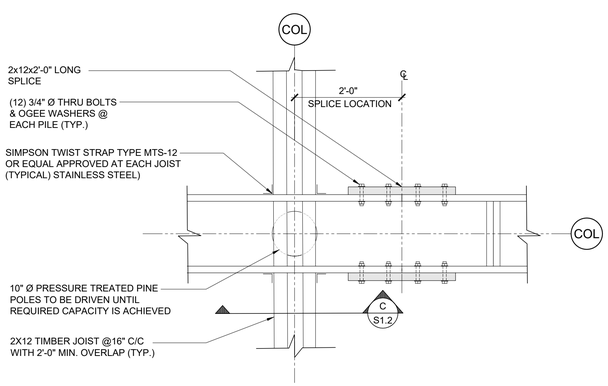
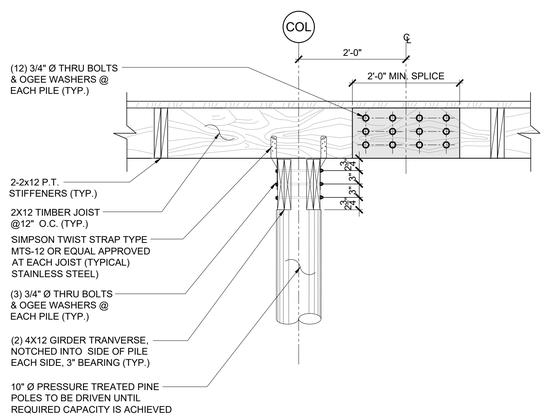
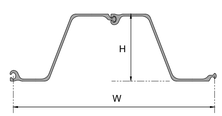


B S1.2 WOOD FRAMING SPLICE DETAIL
SCALE: 3/4" = 1'-0"



C S1.2 WOOD FRAMING SPLICE SECTION
SCALE: 3/4" = 1'-0"

PZ35 SHEET PILE PROFILE



SHEET PILE WALL DESIGN DATA TABLE

MIN. ALLOWABLE MOMENT (M)	90.20 K-FT
MIN. SECTION MODULUS (S)	45.54 IN^3/FT
MOMENT OF INERTIA (I)	BY MANUFACTURER
THICKNESS (T)	BY MANUFACTURER
SECTION DEPTH (H)	15" MAX.
SECTION WIDTH	BY MANUFACTURER
DESIGN MODULUS OF ELASTICITY (E)	29000 KSI
YIELD STRENGTH (FY)	50 KSI
MATERIAL (TYPE)	STEEL
STANDARD COLORS	MILL FINISH
PROFILE / SHAPE	AS SHOWN
MIN. PILE EMBEDMENT	30'-0"

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Plans Prepared By:
CPH, Inc.
State of Florida Licenses:
Engineer No. 3215
Surveyor No. LB7143
Architect. No. AA26000926
Landscape No. LC000298

No.	Date	Revision

Designed: E.Aviles
Drawn: D.Aran
Checked: E.Aviles
Job No.: M13112
Date: 10-2020

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SHEET PILE SEA WALL WITH WOOD DOCK SECTIONS AND DETAILS

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
S1.2

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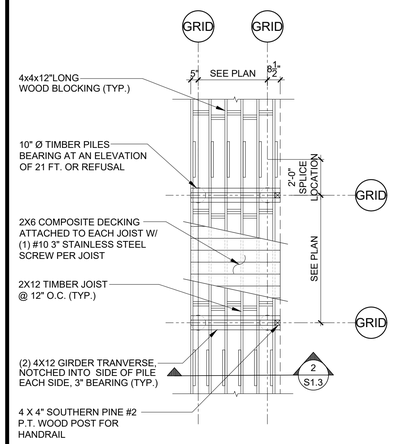
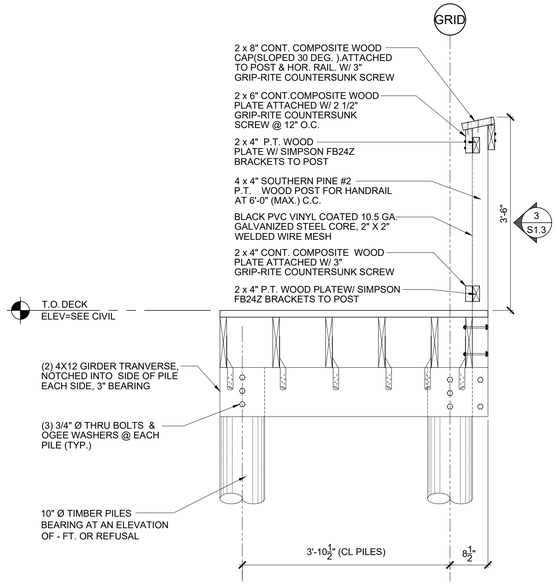
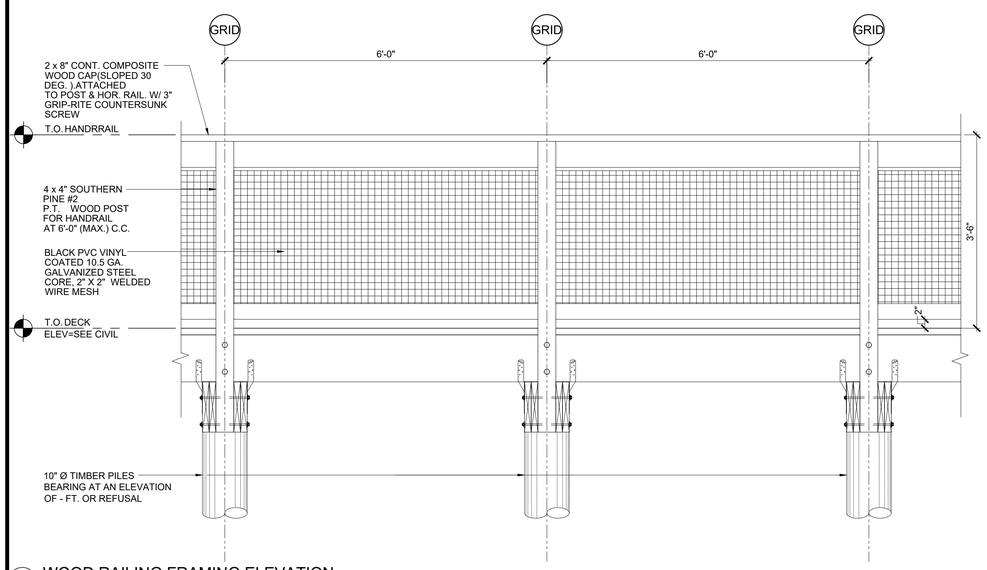


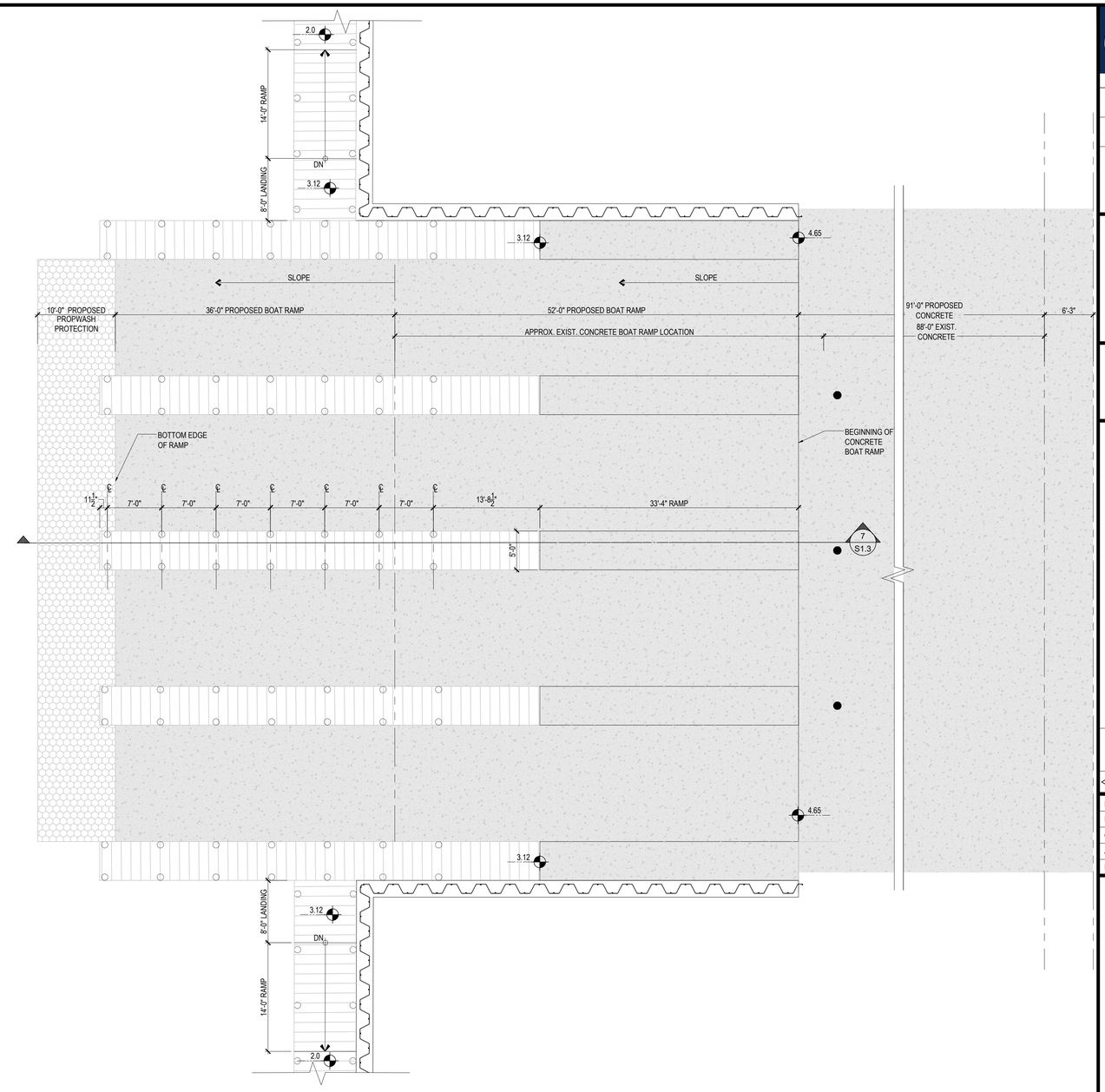
1 S1.3 WOOD DOCK FRAMING PLAN
SCALE: 1/4" = 1'-0"



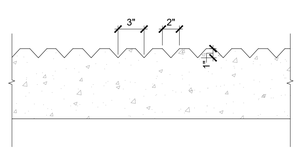
2 S1.3 WOOD DOCK FRAMING SECTION
SCALE: 3/4" = 1'-0"



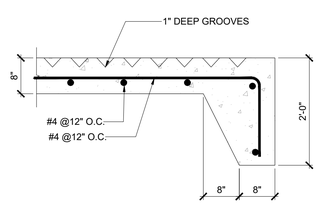
3 S1.3 WOOD RAILING FRAMING ELEVATION
SCALE: 3/4" = 1'-0"



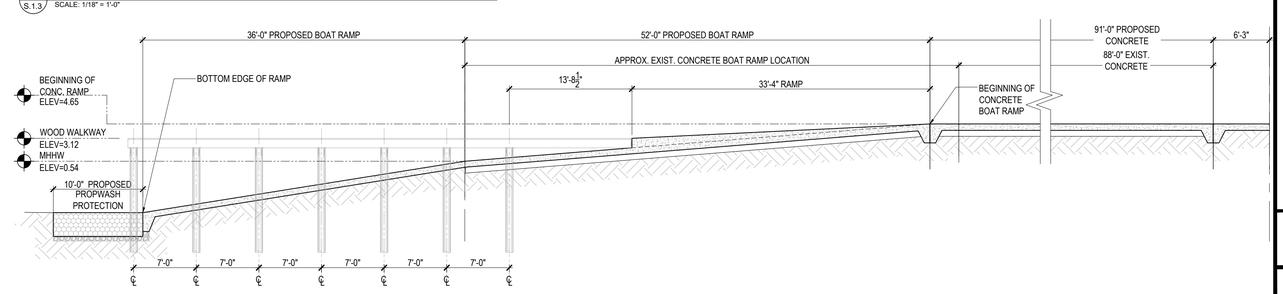
4 S1.3 PARTIAL BOAT RAMP ACCESS PARTIAL ENLARGED PLAN
SCALE: 1/18" = 1'-0"



5 S1.3 ANGLE GROOVE TEXTURING DETAIL
SCALE: 3/4" = 1'-0"



6 S1.3 THICKENED EDGE FOOTING DETAIL
SCALE: 3/4" = 1'-0"



7 S1.3 BOAT RAMP ACCESS SECTION
SCALE: 1/18" = 1'-0"

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Landscape No. LC000298

No.	Date	Revision

Designed: E.Aviles
Drawn: D.Aran
Checked: E.Aviles
Job No.: M13112
Date: 10-2020

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CONCRETE RAMP SECTION AND DETAILS

KINGFISH BOAT RAMP
PHASE I
MANATEE COUNTY, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS. SEE GENERAL NOTES FOR MASTER LEGEND.

Sheet No.
S1.3

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