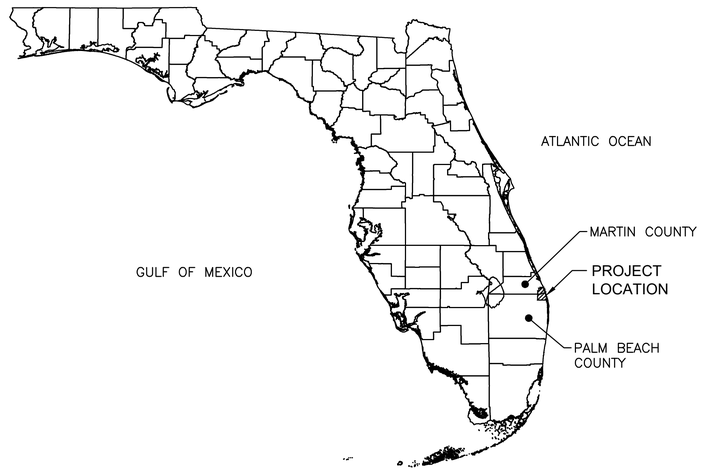
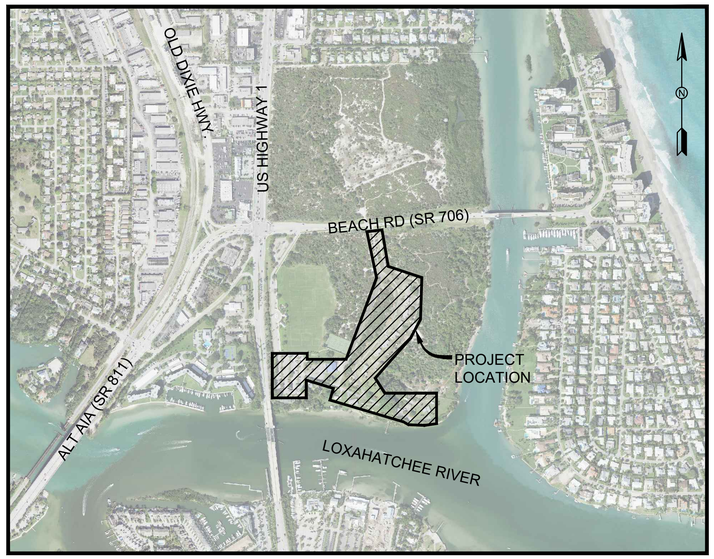
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

PREPARED FOR
LOXAHATCHEE RIVER DISTRICT

PALM BEACH COUNTY, FLORIDA
SECTION 30, TOWNSHIP 40S, RANGE 43E





VICINITY MAP
NTS

SHEET INDEX

LOXAHATCHEE RIVER
DISTRICT GOVERNING BOARD

CHAIRMAN	GORDON M. BOGGIE
VICE CHAIRMAN	JAMES D. SNYDER
TREASURER	DR. MATT H. ROSTOCK
SECRETARY	STEPHEN B. ROCKOFF

NOVEMBER 2021

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

CHRISTINE J. MIRANDA, PE
License No: 60906

G-1

JUPITER INLET LIGHTHOUSE SEPTIC TO SEWER CONVERSION

GENERAL ABBREVIATIONS

ABND	Abandon or Abandoned
ACP	Asbestos Cement Pipe
ADD'L	Additional
AL, Alum	Aluminum
APPROX	Approximate
ARV	Air Release Valve
ASP, Asph	Asphalt
BFP	Backflow Preventer
BFV	Butterfly Valve
B/L	Base Line
BLDG	Building
BM	Benchmark
BO	Blowoff
BOP	Bottom of Pipe
CATV	Cable Television
CB	Catch Basin
CO	Cleanout
CL	Center Line
CLF	Chain Link Fence
CIP	Cast Iron Pipe / Cast in Place
CMP	Corrugated Metal Pipe
CONC	Concrete
CONST	Construct/Construction
DE	Drainage Easement
DI	Ductile Iron
DIP	Ductile Iron Pipe
DIA	Diameter
DR	Dimensional Ratio/Drainage
DWY	Driveway
EL	Elevation
EP	Edge of Pavement
ESMT	Easement
EOW	Edge of Water
EX, EXIST	Existing
FDOT	Florida Department of Transportation
FH	Fire Hydrant
FL	Flanged
FM	Force Main
FND	Found
FNPT	Female Nominal Pipe Thread
FPL	Florida Power and Light
FW	Finished Water
GPS	Global Positioning System
GV	Gate Valve
HB	Hose Bibb
HDD	Horizontal Directional Drill
HDPE	High Density Polyethylene
HYD	Hydrant
ID	Identification/Inside Diameter
INV	Invert/Invert Elevation
IRC	Iron Rod & Cap
IRR	Irrigation
LAE	Limited Access Easement
LF	Linear Feet
LP	Light Pole
LS	Lift Station
LSA	Landscape Area
MAX	Maximum
MB	Mailbox
MECH	Mechanical
MH	Manhole
MIN	Minimum
MISC	Miscellaneous
MJ	Mechanical Joint
N/D	Nail and Disk
No	Number
NTS	Not to Scale
OC,O/C	On Center
OD	Outside Diameter
OHW	Overhead Wire
ORB	Official Records Book
PB	Plat Book
PE	Polyethylene Piping
PGL	Profile Grade Line
PVC	Polyvinyl Chloride/Polyvinyl Chloride Pipe
RC	Reinforced Concrete
RCP	Reinforced Concrete Pipe
RCW	Reclaimed Water
RED	Reducer
REINF	Reinforce/Reinforced
RJ	Restrained Joint
RWM	Raw Water Main
R/W,ROW	Right of Way
S=	Slope (FT/FT)/(Rise/Run)
SAN	Sanitary
SCH/SCHED	Schedule
SEC	Section
SF	Silt Fence
SP	Sample Point
SS	Sanitary Sewer
STA	Station
TBM	Temporary Benchmark
TEMP	Temporary
TOB	Top of Bank
TON	Top of Nut
TOP	Top of Pipe
TOS	Toe of Slope
TYP	Typical
UE	Utility Easement
UEC	Underground Electric Conduit
UGE	Underground Electric
UGT	Underground Telephone
UNK	Unknown
W/	With (Combined Form)
WF	Wood Fence
WM	Water Main or Water Meter
WPB	Wire Pullbox
WTP	Water Treatment Plant
WV	Water Valve
WWTP	Waste Water Treatment Plant

PIPING SYMBOLOGY

- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- UNION
- BALL VALVE (BV)
- GATE VALVE (GV)
- BUTTERFLY VALVE (BFV)/ ODOR CONTROL DAMPENER
- PLUG VALVE (PV)
- CHECK VALVE (CV)
- PLUG/CAP
- CLEAN OUT
- TAPPING VALVE
- LINE STOP
- HOSE BIBB
- EXISTING PIPE
- EXISTING BURIED PIPE
- PROPOSED PIPE
- PROPOSED BURIED PIPE
- MECHANICAL JOINT
- FLANGE JOINT
- FLEXIBLE COUPLING
- FLEXIBLE COUPLING WITH THRUST TIES
- ELBOW UP
- ELBOW DOWN
- 90° ELBOW
- TEE UP
- TEE DOWN
- TEE
- CROSS

LINETYPES

	EXISTING*	PROPOSED*
CABLE TV	CATV	
CENTER LINE		
EASEMENT		
ELECTRIC	E	
FENCE (BARB/FIELD)	X	X
FENCE (CHAINLINK)	O	O
FENCE (WOOD)	WF	WF
FIBER OPTIC	FOC	FOC
FIRE MAIN	FIRE	FIRE
FORCE MAIN	FM	FM
FORCE MAIN (LOW PRESSURE)	LPF	LPF
GAS	GAS	
GUARDRAIL		
IRRIGATION	IRR	
OVERHEAD UTILITIES	OHU	
RAILROAD TRACK		
RIGHT-OF-WAY		
SANITARY SEWER	S	S
SANITARY SEWER SERVICE	SS	SS
SILT FENCE		SF
STORM DRAINAGE	ST	ST
TELEPHONE	T	
TOP OF BANK		
TOE OF SLOPE		
TRAFFIC SIGNAL	TS	TS
TURBIDITY BARRIER		TB
UNKNOWN	UNK	
WATER MAIN	WM	WM
WATER SERVICE	WS	WS

* DEPICTS ABOVE GRADE — TEXT — TEXT — TEXT —

* DEPICTS BELOW GRADE - - - TEXT - - - TEXT - - - TEXT - - - TEXT -

CIVIL SYMBOLOGY

- CONSTRUCTION BASE LINE — 0+00
- DIRECTION OF FLOW
- EXIST. SPOT ELEVATION — × 79.5
- REFERENCE ELEVATION — REF. EL. 20.90
- NEW CONTOUR ELEV. — 79.5
- EXIST. UTILITY POLES — UTILITY, POWER, TELEPHONE, LIGHT
- NEW UTILITY POLES — UTILITY, POWER, TELEPHONE, LIGHT
- PIPING CONFLICT LOCATION — C-1
- SAMPLE POINT — SP1
- WATER SURFACE — PLAN; SECTION — EL 48.00
- FIRE HYDRANT — NEW, EXIST.
- EXIST. MANHOLE, DRAINAGE STRUCTURE
- NEW MANHOLE, DRAINAGE STRUCTURE

SECTION/DETAIL SYMBOL

SECTION — SCALE:

5 / 15 — SECTION LETTER/DETAIL NUMBER; SHEET/DRAWING NO. ON WHICH SECTION/DETAIL IS SHOWN

1 / 101 — SECTION LETTER/DETAIL NUMBER; SHEET/DRAWING NO. ON WHICH SECTION/DETAIL IS SHOWN

SECTION CUT

A — A

SECTION CUT ON DETAILS

PIPE DESIGNATION — 8" DIP FORCE MAIN

- NOMINAL PIPE DIA.(IN.)
- PIPE MATERIAL (IF SHOWN)
- FLOW STREAM IDENTIFICATION (IF SHOWN)

Symbols:

#	Pounds/Number
∢	Angle
Ø	Round/Diameter

SURVEY LEGEND

- ELECTRIC OUTLET
- BFP — BACK FLOW PREVENTER
- WM — WATER METER
- IV — IRRIGATION VALVE
- SV — SEWER VALVE
- WV — WATER VALVE
- SPIGOT
- SIGN
- FIRE HYDRANT
- WOOD POWER POLE
- CPP — CONCRETE POWER POLE
- GROUND LIGHT
- FO — FIBER OPTIC MARKER
- EB — ELECTRIC METER
- ELECTRIC HANDHOLE
- UNKNOWN HANDHOLE
- TELEPHONE HANDHOLE
- FIBER OPTIC HANDHOLE
- CATCH BASIN
- SPRINKLER HEAD
- MAILBOX
- CUP — CONCRETE UTILITY POLE
- WOOD GUIDE POLE
- TRASH CAN
- ELEC PANEL — ELECTRICAL PANEL
- TRAFFIC HANDHOLE
- CATV — CABLE TV RISER BOX
- UNK — UNKNOWN RISER BOX
- FO — FIBER OPTIC RISER BOX
- ATT — AT&T PHONE RISER
- AIR RELEASE VALVE
- BELLSOUTH MANHOLE
- FPL MANHOLE
- UNKNOWN TYPE MANHOLE
- SANITARY MANHOLE
- STORM DRAINAGE MANHOLE
- GUY WIRE ANCHOR
- SITE BENCHMARK
- FOUND NAIL AND DISC
- DECORATIVE LIGHT POST
- CONCRETE LIGHT POST
- CONCRETE LIGHT POLE
- LIGHT POST
- YD — YARD DRAIN
- GAS — GAS LID
- GAS — UNDERGROUND GAS MARKER
- TRAFFIC SIGNAL BOX
- KP — KEY PAD
- LSA — LIMITS OF LANDSCAPING LIMITS OF TREE CANOPY BUSH/HEDGE
- CO — CLEAN OUT
- EB — ELECTRIC BOX
- ICV — IRRIGATION CONTROL VALVE IN CONC. BOX

00" — ACACIA; UNKNOWN; CITRUS; CYPRESS

00" — PALM SPECIES; ROYAL POINCIANA; CACTUS; PAPAYA

00" — BANANA; MAPLE; MANGO; GUMBO-LIMBO

00" — FICUS; MAHOGANY; HEDGE; PINE

00" — SEAGRAPE; OAK; BUSH

└ Indicates trunk diameter

NOTE: VERIFICATION OF TREE SPECIES SHOULD BE CONDUCTED BY A PROFESSIONAL ENGAGED IN THE FIELD OF NATURAL SCIENCE.

SURVEY NOTES

1. THE HORIZONTAL COORDINATES SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM (EAST ZONE), NORTH AMERICAN DATUM 1983/1990 ADJUSTMENT (N.A.D. 83/90). THE COORDINATES FOR EACH CONTROL POINT WERE ESTABLISHED BY UTILIZING GPS OBSERVATIONS.
2. THE ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29). CONVERSION FROM NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) DATUM TO NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29) = (+)1.509.
3. CERTAIN FEATURES ARE REPRESENTED BY THE SYMBOLS REFLECTED IN THIS MAP. THE LEGEND OF FEATURES MAY HAVE BEEN ENLARGED FOR CLARITY AND MAY NOT REPRESENT THE ACTUAL SHAPE OR SIZE OF THE FEATURE. THE SYMBOLS HAVE BEEN PLOTTED AT THE APPROXIMATE CENTER OF THE FEATURE BASED UPON THE FIELD LOCATION.
4. THIS SKETCH IS NOT A BOUNDARY SURVEY.
5. THE HORIZONTAL ACCURACY FOR WELL DEFINED IMPROVEMENTS DEPICTED ON THIS SKETCH IS ONE-TENTH (0.1' ±) OF A FOOT, PLUS OR MINUS. THE VERTICAL (ELEVATIONS) ACCURACY FOR WELL DEFINED IMPROVEMENTS, FEATURES, AND SURFACES DEPICTED ON THIS SURVEY IS TWO-TENTHS (0.2' ±) OF A FOOT, PLUS OR MINUS.
6. TREES, HEDGES, GROUND COVER, AND OTHER LANDSCAPE FEATURES ARE NOT SHOWN HEREON, UNLESS OTHERWISE NOTED.
7. IRRIGATION FEATURES, SUCH AS SPRINKLERS, ARE NOT SHOWN HEREON.
8. FENCES AND WALL DIMENSIONS ARE APPROXIMATE. THE SURVEYOR DID NOT DETERMINE OWNERSHIP OF FENCES AND WALLS.
9. SUBSURFACE FEATURES ARE NOT SHOWN HEREON. THIS SITE COULD HAVE UNDERGROUND INSTALLATIONS THAT ARE NOT SHOWN HEREON. BEFORE DESIGN, CONSTRUCTION, OR EXCAVATION CONTACT 811 AND/OR THE APPROPRIATE UTILITY COMPANIES FOR FIELD VERIFICATION OF UTILITIES.
10. THE EXTERIOR BUILDING DIMENSIONS SHOWN HEREON REPRESENT THE OVERALL SIZE OF THE BUILDING (FOOTPRINT). SUBSURFACE BUILDING FOOTINGS AND SUPPORTS WERE NOT LOCATED. CERTAIN ARCHITECTURAL FEATURES MAY NOT BE SHOWN ON THE SURVEY. ROOF OVERHANGS ARE NOT SHOWN UNLESS OTHERWISE NOTED. BUILDING DIMENSIONS AND BUILDING SETBACKS ARE SHOWN ROUNDED TO THE NEAREST ONE-TENTH (0.1 FEET) OF A FOOT. BEFORE DESIGN OF IMPROVEMENTS CRITICAL DIMENSIONS SHOWN BE CONFIRMED.
11. THE DIMENSIONS SHOWN HEREON ARE BASED UPON U.S. SURVEY FEET AND FRACTIONAL PARTS THEREOF.
12. THE SURVEYOR DID NOT INSPECT THIS PROPERTY FOR ENVIRONMENTAL HAZARDS.
13. RIGHT OF WAY AND PROPERTY LINES OBTAINED FROM PALM BEACH COUNTY GIS DATA.

811 Know what's **below.** **Call** before you dig.

REV	DATE	REVISIONS	BY
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Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

LEGEND AND NOTES

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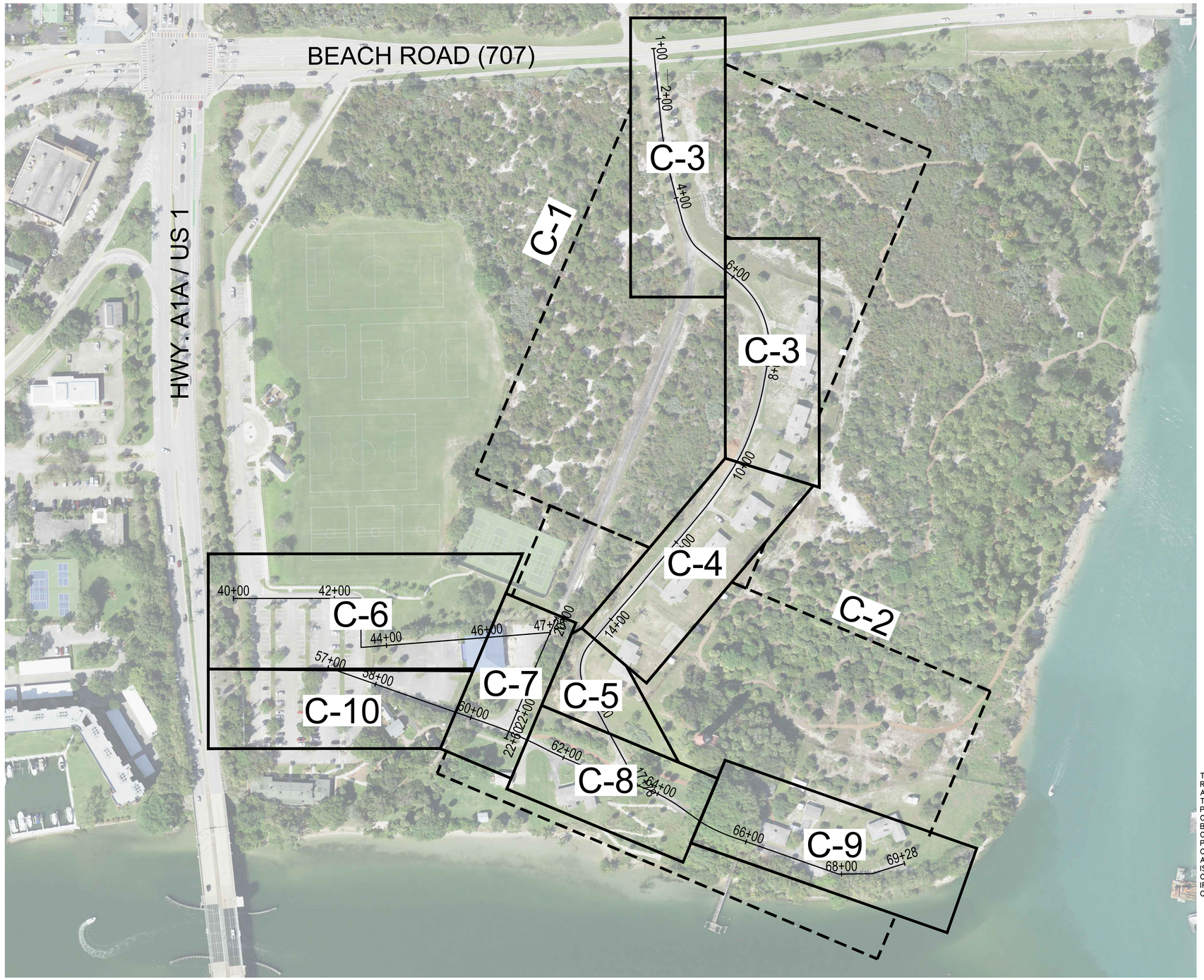
G-2



N

0 100' 200'

SCALE: 1" = 100'

THERE SHALL BE NO IMPACT TO TREE BRANCHES OR ROOT ZONES. DIRECT BORE ONLY, NO TRENCHING. ANY SUBSURFACE WORK THAT ADVERTENTLY AFFECTS TREE ROOTS SHALL REQUIRE ALL ROOTS TO BE PRUNED WITH SANITIZED EQUIPMENT, RESULTING IN CLEAN CUTS AND NOT SHORN, JAGGED EDGES AS MAY BE INADVERTENTLY CAUSED BY TRENCHING, DRILLING, OR DIGGING. ANY AFFECTED BRANCHES MUST BE PRUNED BY AN ISA CERTIFIED ARBORIST IN CONFORMANCE WITH TOWN CODE REQUIREMENTS AND ANSI A300 STANDARDS. A VEGETATION REMOVAL PERMIT IS REQUIRED PRIOR TO THE REMOVAL OF ANY TREES OR LANDSCAPING. ALL SOD, LANDSCAPING AND IRRIGATION SHALL BE RESTORED TO PRE-WORK CONDITIONS.

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LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

KEYSHEET

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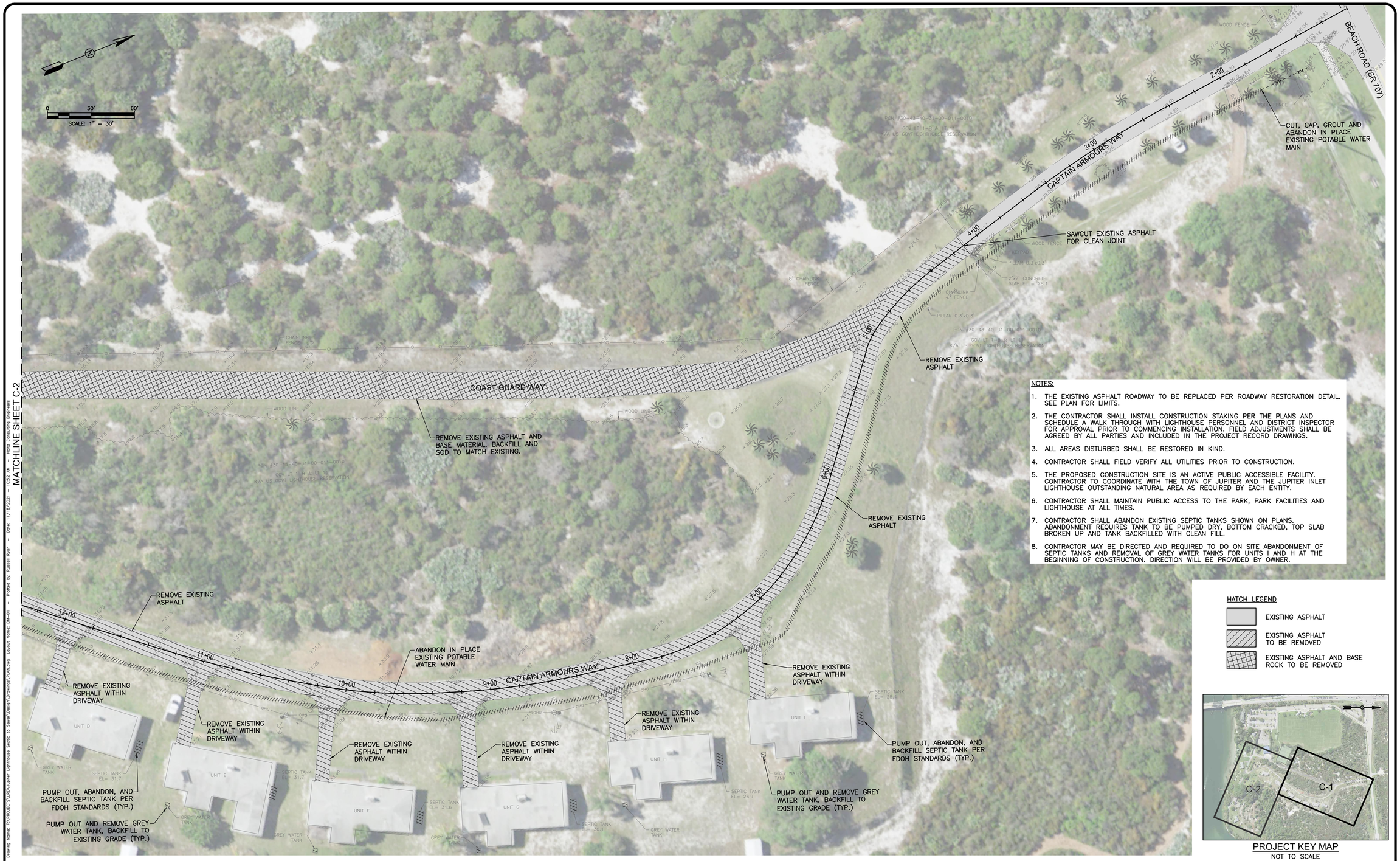
G-3



NOTES:

1. THE EXISTING ASPHALT ROADWAY TO BE REPLACED PER ROADWAY RESTORATION DETAIL. SEE PLAN FOR LIMITS.
2. THE CONTRACTOR SHALL INSTALL CONSTRUCTION STAKING PER THE PLANS AND SCHEDULE A WALK THROUGH WITH LIGHTHOUSE PERSONNEL AND DISTRICT INSPECTOR FOR APPROVAL PRIOR TO COMMENCING INSTALLATION. FIELD ADJUSTMENTS SHALL BE AGREED BY ALL PARTIES AND INCLUDED IN THE PROJECT RECORD DRAWINGS.
3. ALL AREAS DISTURBED SHALL BE RESTORED IN KIND.
4. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.
5. THE PROPOSED CONSTRUCTION SITE IS AN ACTIVE PUBLIC ACCESSIBLE FACILITY. CONTRACTOR TO COORDINATE WITH THE TOWN OF JUPITER AND THE JUPITER INLET LIGHTHOUSE OUTSTANDING NATURAL AREA AS REQUIRED BY EACH ENTITY.
6. CONTRACTOR SHALL MAINTAIN PUBLIC ACCESS TO THE PARK, PARK FACILITIES AND LIGHTHOUSE AT ALL TIMES.
7. CONTRACTOR SHALL ABANDON EXISTING SEPTIC TANKS SHOWN ON PLANS. ABANDONMENT REQUIRES TANK TO BE PUMPED DRY, BOTTOM CRACKED, TOP SLAB BROKEN UP AND TANK BACKFILLED WITH CLEAN FILL.
8. CONTRACTOR MAY BE DIRECTED AND REQUIRED TO DO ON SITE ABANDONMENT OF SEPTIC TANKS AND REMOVAL OF GREY WATER TANKS FOR UNITS I AND H AT THE BEGINNING OF CONSTRUCTION. DIRECTION WILL BE PROVIDED BY OWNER.

HATCH LEGEND

- EXISTING ASPHALT
- EXISTING ASPHALT TO BE REMOVED
- EXISTING ASPHALT AND BASE ROCK TO BE REMOVED

PROJECT KEY MAP
NOT TO SCALE

REV	DATE	REVISIONS	BY
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LOXAHATCHEE RIVER DISTRICT
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DEMOLITION PLAN

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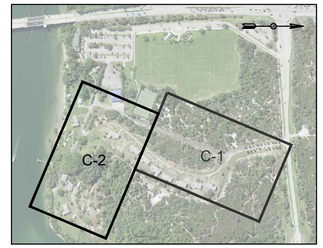
C-1

Drawing Name: F:\PROJECTS\LRD\Jupiter Lighthouse Septic to Sewer\Design\Drawings\PLAN.dwg Layout Name: SM-01 – Plotted by: Russell Ryan – Date: 11/18/2021 – 10:52 AM – Holtz Consulting Engineers

MATCHLINE SHEET C-1

NOTES:

1. THE EXISTING ASPHALT ROADWAY TO BE REPLACED PER ROADWAY RESTORATION DETAIL. SEE PLAN FOR LIMITS.
2. THE CONTRACTOR SHALL INSTALL CONSTRUCTION STAKING PER THE PLANS AND SCHEDULE A WALK THROUGH WITH LIGHTHOUSE PERSONNEL AND DISTRICT INSPECTOR FOR APPROVAL PRIOR TO COMMENCING INSTALLATION. FIELD ADJUSTMENTS SHALL BE AGREED BY ALL PARTIES AND INCLUDED IN THE PROJECT RECORD DRAWINGS.
3. ALL AREAS DISTURBED SHALL BE RESTORED IN KIND.
4. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.
5. THE PROPOSED CONSTRUCTION SITE IS AN ACTIVE PUBLIC ACCESSIBLE FACILITY. CONTRACTOR TO COORDINATE WITH THE TOWN OF JUPITER AND THE JUPITER INLET LIGHTHOUSE OUTSTANDING NATURAL AREA AS REQUIRED BY EACH ENTITY.
6. CONTRACTOR SHALL MAINTAIN PUBLIC ACCESS TO THE PARK, PARK FACILITIES AND LIGHTHOUSE AT ALL TIMES.
7. CONTRACTOR SHALL ABANDON EXISTING SEPTIC TANKS SHOWN ON PLANS. ABANDONMENT REQUIRES TANK TO BE PUMPED DRY, BOTTOM CRACKED, TOP SLAB BROKEN UP AND TANK BACKFILLED WITH CLEAN FILL.



PROJECT KEY MAP
NOT TO SCALE

HATCH LEGEND

- EXISTING ASPHALT
- EXISTING ASPHALT TO BE REMOVED
- EXISTING ASPHALT AND BASE ROCK TO BE REMOVED
- EXISTING VEGETATION TO BE REMOVED

SCALE: 1" = 30'

REMOVE EXISTING ASPHALT AND BASE MATERIAL. BACKFILL AND SOD TO MATCH EXISTING.
REMOVE EXISTING ASPHALT
PUMP OUT AND REMOVE GREY WATER TANK, BACKFILL TO EXISTING GRADE (TYP.)
REMOVE EXISTING ASPHALT WITHIN DRIVEWAY
ABANDON IN PLACE EXISTING POTABLE WATER MAIN
PUMP OUT, ABANDON, AND BACKFILL SEPTIC TANK PER FDOH STANDARDS (TYP.)
SAWCUT EXISTING ASPHALT FOR CLEAN JOINT
REMOVE EXISTING ASPHALT WITHIN DRIVEWAY
REMOVE VEGETATION AS NECESSARY FOR PROPOSED SWALE.
TREES TO REMAIN
SAWCUT EXISTING ASPHALT FOR CLEAN JOINT
REMOVE EXISTING ASPHALT
EXISTING CURB TO REMAIN (TYP.)
REMOVE EXISTING ASPHALT AND BASE MATERIAL. BACKFILL AND SOD TO MATCH EXISTING.
REMOVE EXISTING ASPHALT WITHIN DRIVEWAY
PUMP OUT, ABANDON, AND BACKFILL SEPTIC TANK PER FDOH STANDARDS (TYP.)
PUMP OUT AND REMOVE GREY WATER TANK, BACKFILL TO EXISTING GRADE (TYP.)
REMOVE EXISTING ASPHALT WITHIN DRIVEWAY
PUMP OUT, ABANDON, AND BACKFILL SEPTIC TANK PER FDOH STANDARDS (TYP.)
REMOVE EXISTING SIDEWALK
REMOVE EXISTING CONCRETE PAD (EX. WALL TO REMAIN)
EXISTING CURB TO REMAIN (TYP.)
REMOVE EXISTING ASPHALT AND BASE MATERIAL. BACKFILL AND SOD TO MATCH EXISTING.
PLUG EXISTING PIPE, REMOVE GRATE AND BACKFILL INLET TO EXISTING GRADE
CAPTAIN ARMOURS WAY
LOXAHATCHEE RIVER
PCN #30-43-40-31-00-011-0010
GOV LT 1-B & LT 11
K/A US GOVT LIGHTHOUSE RESERVATION

REV	DATE	REVISIONS	BY
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DEMOLITION PLAN

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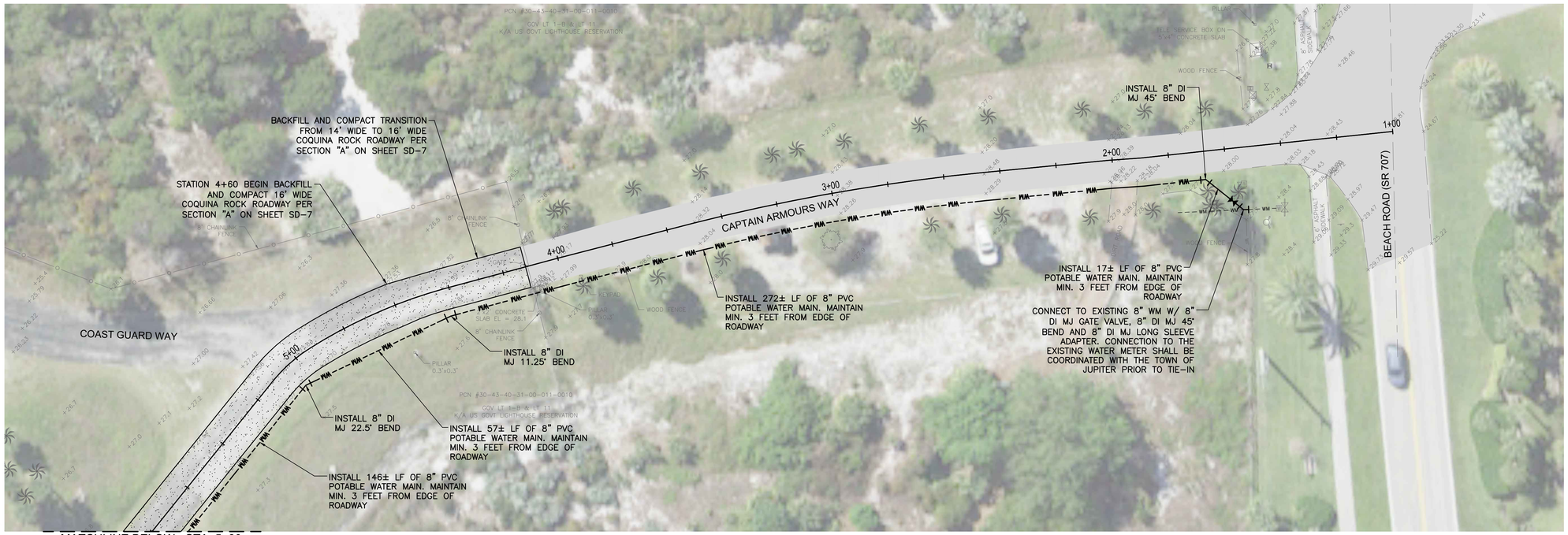

PROJECT KEY MAP
NOT TO SCALE

NOTES:

1. THE CONTRACTOR SHALL INSTALL CONSTRUCTION STAKING PER THE PLANS AND SCHEDULE A WALK THROUGH WITH LIGHTHOUSE PERSONNEL AND DISTRICT INSPECTOR FOR APPROVAL PRIOR TO COMMENCING INSTALLATION. FIELD ADJUSTMENTS SHALL BE AGREED BY ALL PARTIES AND INCLUDED IN THE PROJECT RECORD DRAWINGS.
2. ALL CLEANOUTS SHALL BE INSTALLED PER DETAIL SD-6 OR SD-7.
3. MANHOLE FRAME AND COVERS SHALL BE SET 2" BELOW FINISH GRADE AND SHALL INCLUDE A THICKENED BASE ROCK PAD (MIN. 16') EXTENDING 2' BEYOND MANHOLE FRAME.
4. ALL AREAS DISTURBED SHALL BE RESTORED IN KIND.
5. CONTRACTOR SHALL SUBMIT DIRECTION DRILL PLANS SHOWING PROPOSED HORIZONTAL AND VERTICAL LOCATION OF THE DIRECTIONAL DRILL INSTALLATION. DIRECTIONAL DRILL PLANS SHALL INCLUDE ALL UTILITY CONFLICTS FIELD VERIFIED.
6. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.
7. CONSTRUCTION TO COMPLY WITH STANDARD DETAILS SHOWN ON SD-1 THROUGH SD-4 AND THE DISTRICT'S MANUAL OF MINIMUM CONSTRUCTION STANDARDS AND TECHNICAL SPECIFICATIONS.
8. THE PROPOSED CONSTRUCTION SITE IS AN ACTIVE PUBLIC ACCESSIBLE FACILITY. CONTRACTOR TO COORDINATE WITH THE TOWN OF JUPITER AND THE JUPITER INLET LIGHTHOUSE OUTSTANDING NATURAL AREA AS REQUIRED BY EACH ENTITY. CONSTRUCTION SHALL NOT IMPACT OR IMPEDE THE TOWN'S USE OF THE PARK AND ACTIVE PLAY ON THE FIELDS. ALL TRENCHES, EXCAVATION, ETC. SHALL BE PROTECTED DURING CONSTRUCTION.
9. CONTRACTOR SHALL MAINTAIN PUBLIC ACCESS TO THE PARK, PARK FACILITIES AND LIGHTHOUSE AT ALL TIMES.
10. CONTRACTOR SHALL ABANDON EXISTING SEPTIC TANKS SHOWN ON PLANS. ABANDONMENT REQUIRES TANK TO BE PUMPED DRY, BOTTOM CRACKED, TOP SLAB BROKEN UP AND TANK BACKFILLED WITH CLEAN FILL.
11. WATER AND SEWER SERVICE INSTALLATION SHALL MEET THE REQUIREMENTS OF THE FLORIDA PLUMBING CODE. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL BUILDING & PLUMBING PERMITS FOR SERVICE INSTALLATION.
12. WATER SERVICE CONNECTIONS ARE APPROXIMATE ONLY AND SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION.
13. THERE SHALL BE NO IMPACT TO TREE BRANCHES OR ROOT ZONES. DIRECT BORE ONLY, NO TRENCHING. ANY SUBSURFACE WORK THAT INADVERTENTLY AFFECTS TREE ROOTS SHALL REQUIRE ALL ROOTS TO BE PRUNED WITH SANITIZED EQUIPMENT, RESULTING IN CLEAN CUTS AND NOT SHORN, JAGGED EDGES AS MAY BY INADVERTENTLY CAUSED BY TRENCHING, DRILLING, OR DIGGING. ANY AFFECTED BRANCHES MUST BE PRUNED BY AN ISA CERTIFIED ARBORIST IN CONFORMANCE WITH TOWN CODE REQUIREMENTS AND ANSI A300 STANDARDS. A VEGETATION REMOVAL PERMIT IS REQUIRED PRIOR TO THE REMOVAL OF ANY TREES OR LANDSCAPING. ALL SOD, LANDSCAPING, AND IRRIGATION SHALL BE RESTORED TO PRE-WORK CONDITIONS.

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Drawn By: RR
Check By: #

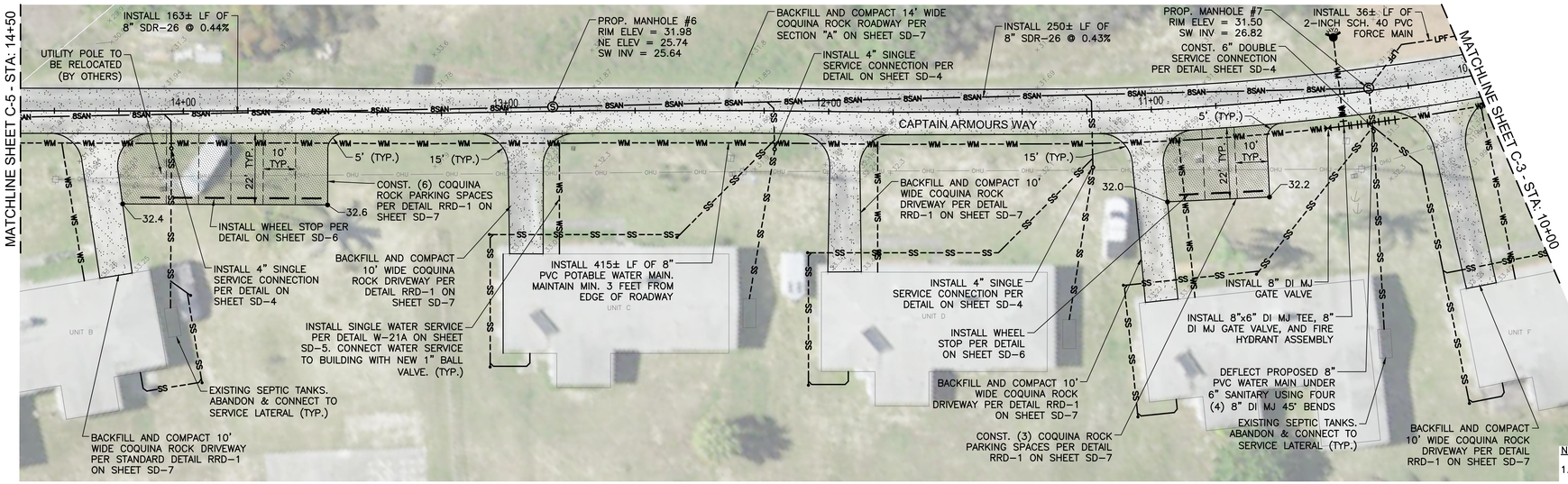
LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

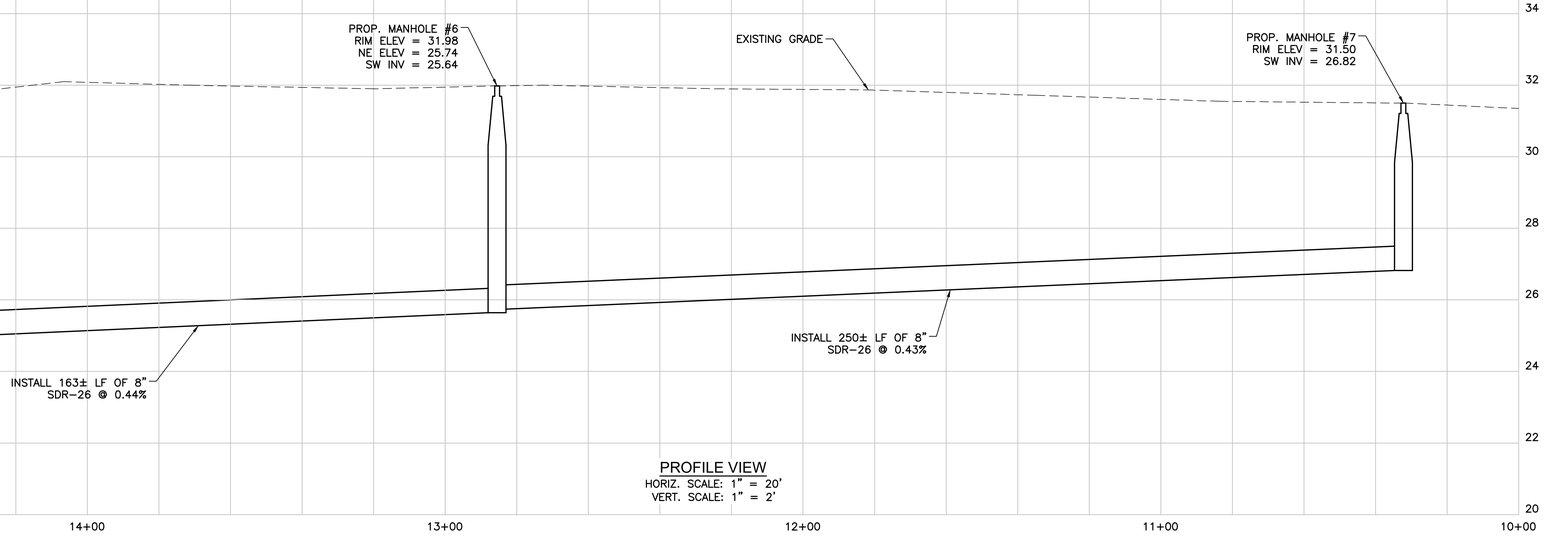
WATER & SEWER PLAN
PLAN STA: 1+00 TO STA: 10+00

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

CHRISTINE J. MIRANDA, PE
License No: 60906

C-3





PROFILE VIEW
HORIZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 2'

HATCH LEGEND

- PROPOSED COQUINA ROCK
- PROPOSED COQUINA ROCK W/ BASE ROCK

NOTES:

1. THE CONTRACTOR SHALL INSTALL CONSTRUCTION STAKING PER THE PLANS AND SCHEDULE A WALK THROUGH WITH LIGHTHOUSE PERSONNEL AND DISTRICT INSPECTOR FOR APPROVAL PRIOR TO COMMENCING INSTALLATION. FIELD ADJUSTMENTS SHALL BE AGREED BY ALL PARTIES AND INCLUDED IN THE PROJECT RECORD DRAWINGS.
2. ALL CLEANOUTS SHALL BE INSTALLED PER DETAIL SD-6 OR SD-7.
3. MANHOLE FRAME AND COVERS SHALL BE SET 2" BELOW FINISH GRADE AND SHALL INCLUDE A THICKENED BASE ROCK PAD (MIN. 16') EXTENDING 2' BEYOND MANHOLE FRAME.
4. ALL AREAS DISTURBED SHALL BE RESTORED IN KIND.
5. CONTRACTOR SHALL SUBMIT DIRECTION DRILL PLANS SHOWING PROPOSED HORIZONTAL AND VERTICAL LOCATION OF THE DIRECTIONAL DRILL INSTALLATION. DIRECTIONAL DRILL PLANS SHALL INCLUDE ALL UTILITY CONFLICTS FIELD VERIFIED.
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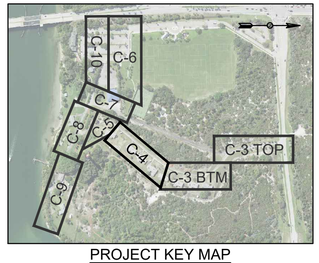

PROJECT KEY MAP
NOT TO SCALE

REV	DATE	REVISIONS	BY
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Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

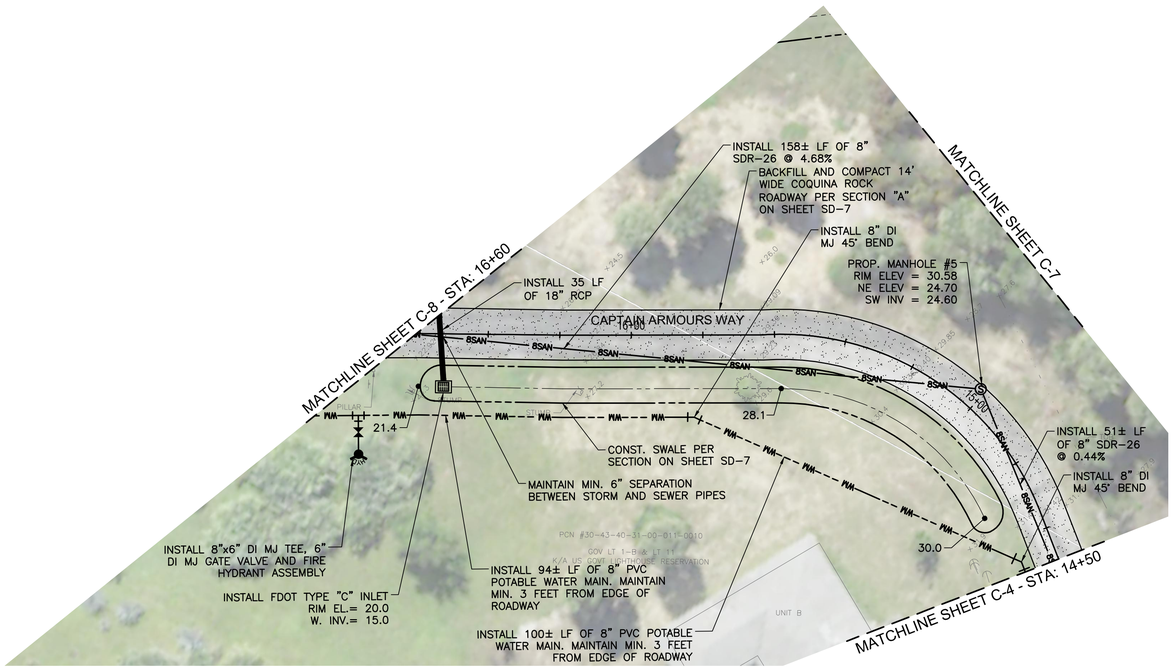
WATER & SEWER PLAN
STA: 10+00 TO STA: 14+50

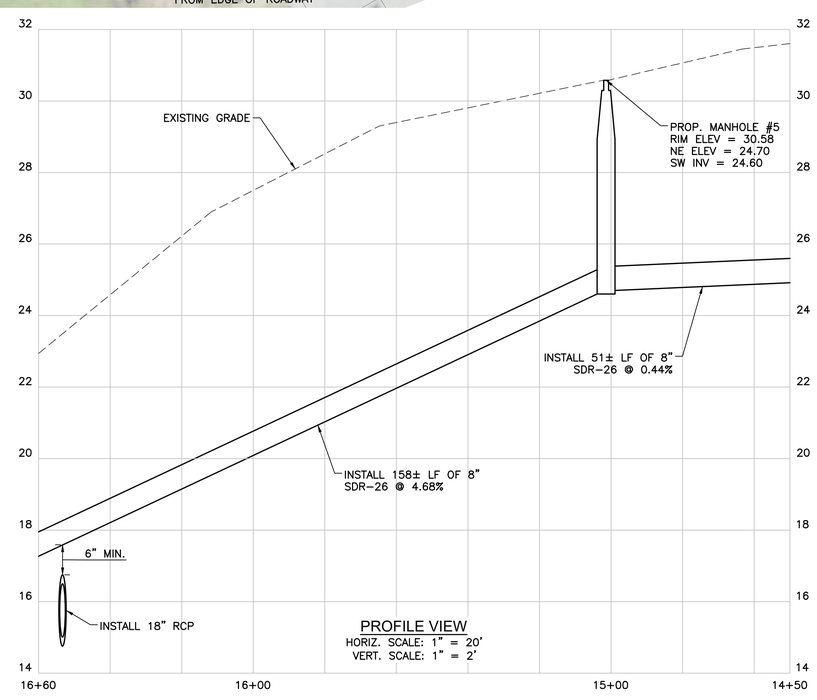
HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

CHRISTINE J. MIRANDA, PE
License No: 60906

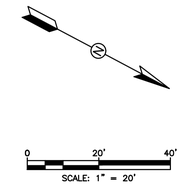
C-4

Drawing Name: F:\PROJECTS\180\Jupiter Lighthouse Septic to Sewer\Design\Drawings\PLAN.dwg Layout Name: C-04 - Plotted by: Russell Ryan - Date: 11/18/2021 - 10:53 AM - Holtz Consulting Engineers





PROFILE VIEW
HORIZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 2'



HATCH LEGEND

PROPOSED COQUINA ROCK

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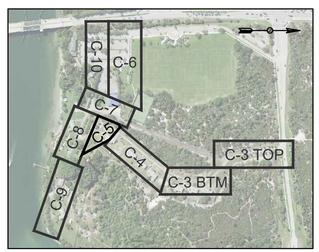

PROJECT KEY MAP
NOT TO SCALE

REV	DATE	REVISIONS	BY
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Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

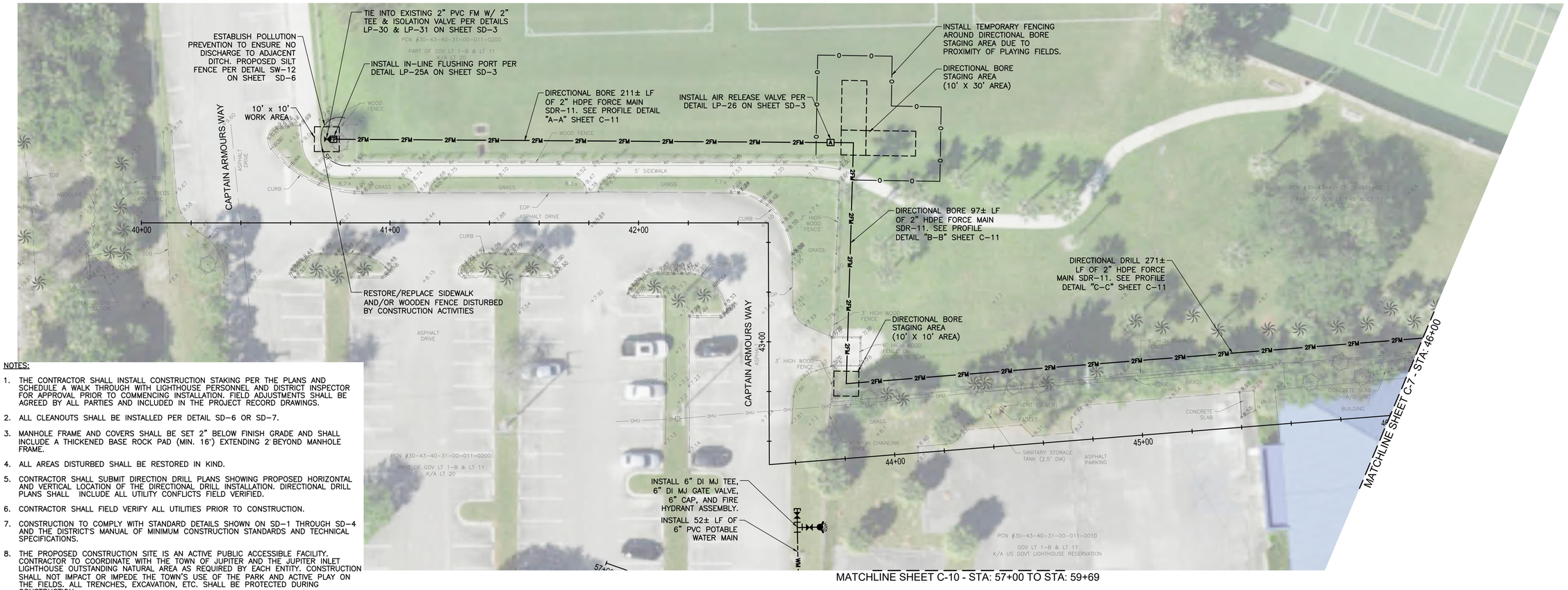
LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

WATER & SEWER PLAN
STA: 14+50 TO STA: 16+60

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

CHRISTINE J. MIRANDA, PE
License No: 60906

C-5



MATCHLINE SHEET C-10 - STA: 57+00 TO STA: 59+69

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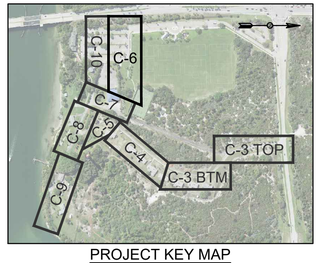

PROJECT KEY MAP
NOT TO SCALE

REV	DATE	REVISIONS	BY
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Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

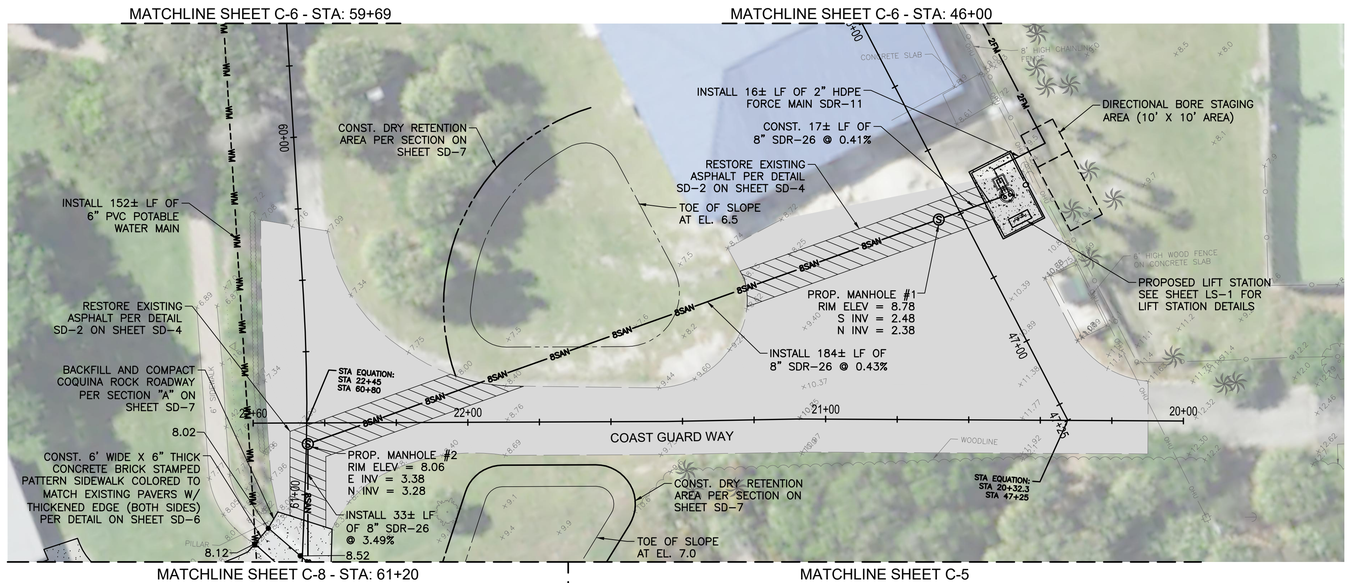
WATER & SEWER PLAN
STA: 40+00 TO STA: 46+00

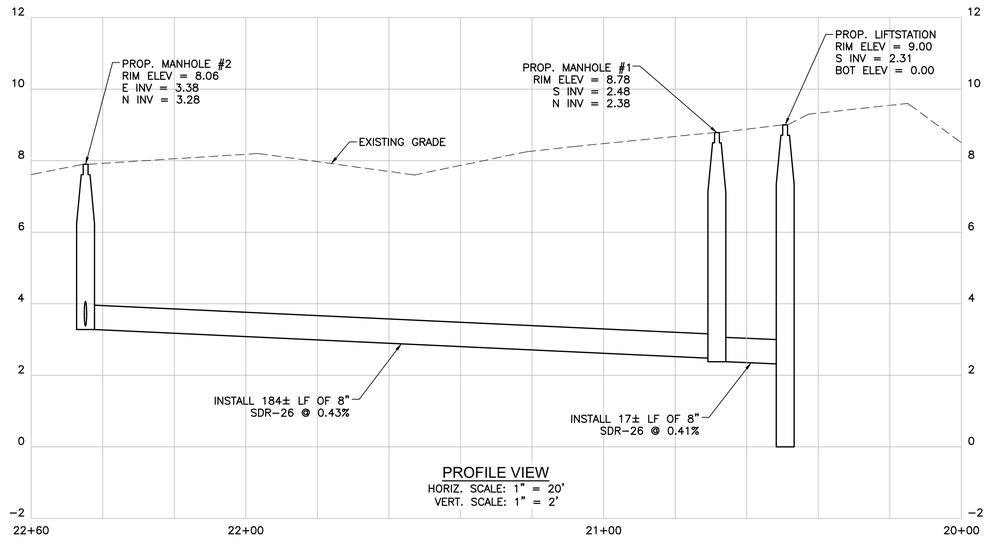
HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

CHRISTINE J. MIRANDA, PE
License No: 60906

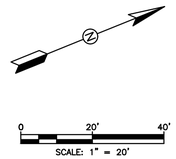
C-6

Drawing Name: F:\PROJECTS\LRD\Jupiter Lighthouse Septic to Sewer\Design\Drawings\PLAN.dwg Layout Name: C-06 - Plotted by: Russell Ryan - Date: 11/18/2021 - 10:54 AM - Holtz Consulting Engineers





PROFILE VIEW
HORIZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 2'



HATCH LEGEND

- EXISTING ASPHALT
- PROPOSED COQUINA ROCK
- EXISTING ASPHALT TO BE REMOVED & REPLACED

NOTES:

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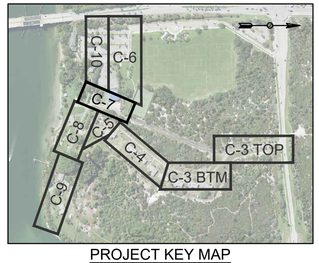

PROJECT KEY MAP
NOT TO SCALE

REV	DATE	REVISIONS	BY
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Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

WATER & SEWER PLAN
STA: 20+00 TO STA: 22+60

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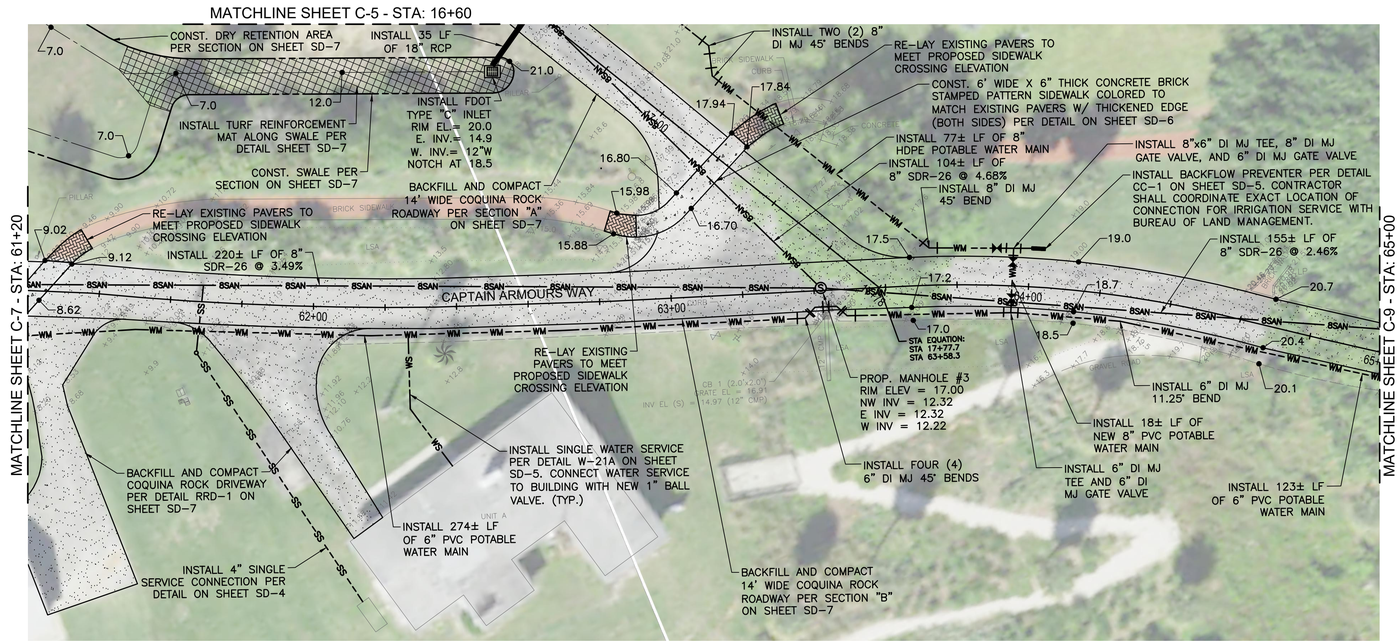
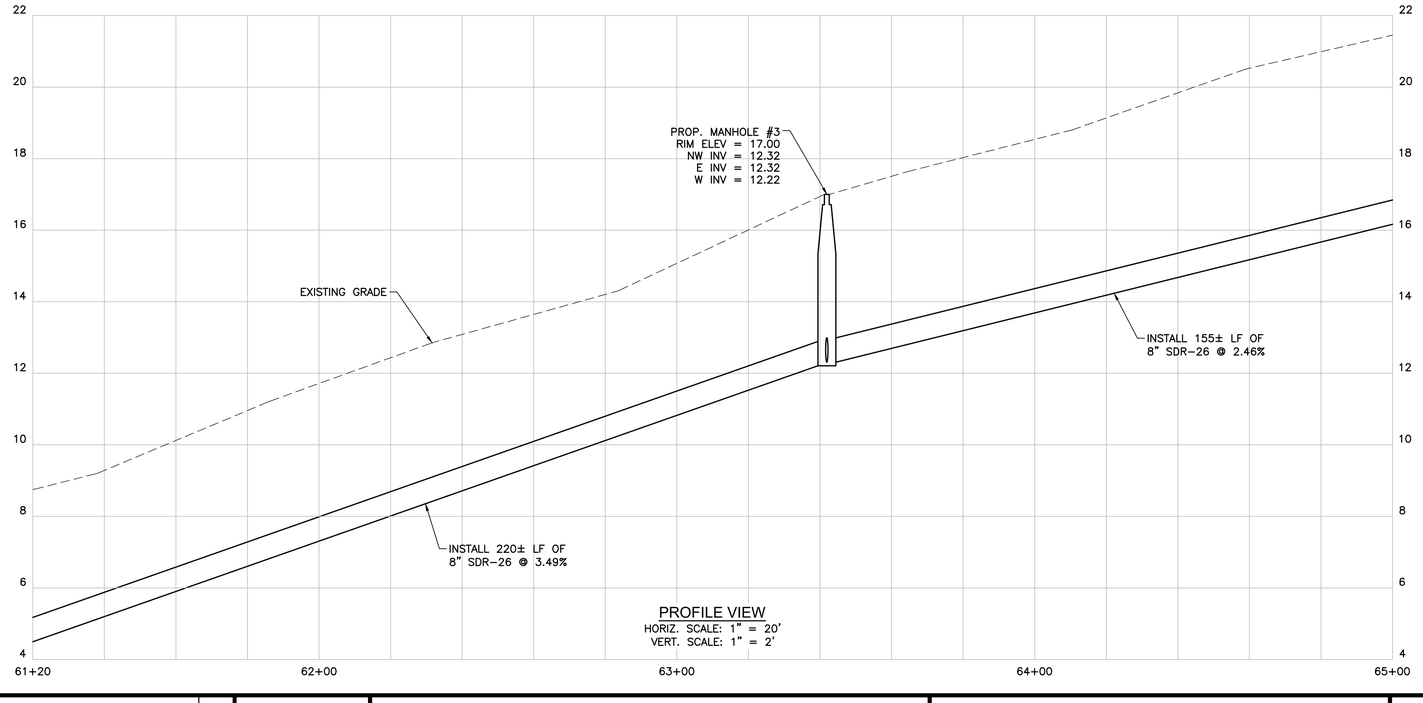
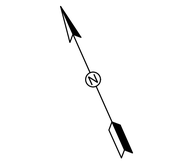
C-7

Drawing Name: F:\PROJECTS\JRD\Jupiter Lighthouse Septic to Sewer\Design\Drawings\PLAN.dwg Layout Name: C-07 – Plotted by: Russell Ryan – Date: 11/18/2021 – 10:54 AM – Holtz Consulting Engineers







HATCH LEGEND

- PROPOSED COQUINA ROCK
- PROPOSED BRICK PAVERS
- PROPOSED TURF REINFORCEMENT MAT

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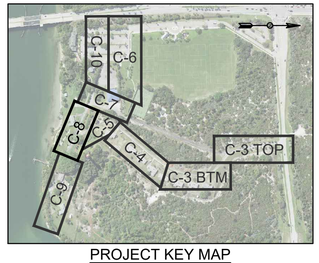

PROJECT KEY MAP
NOT TO SCALE

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Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

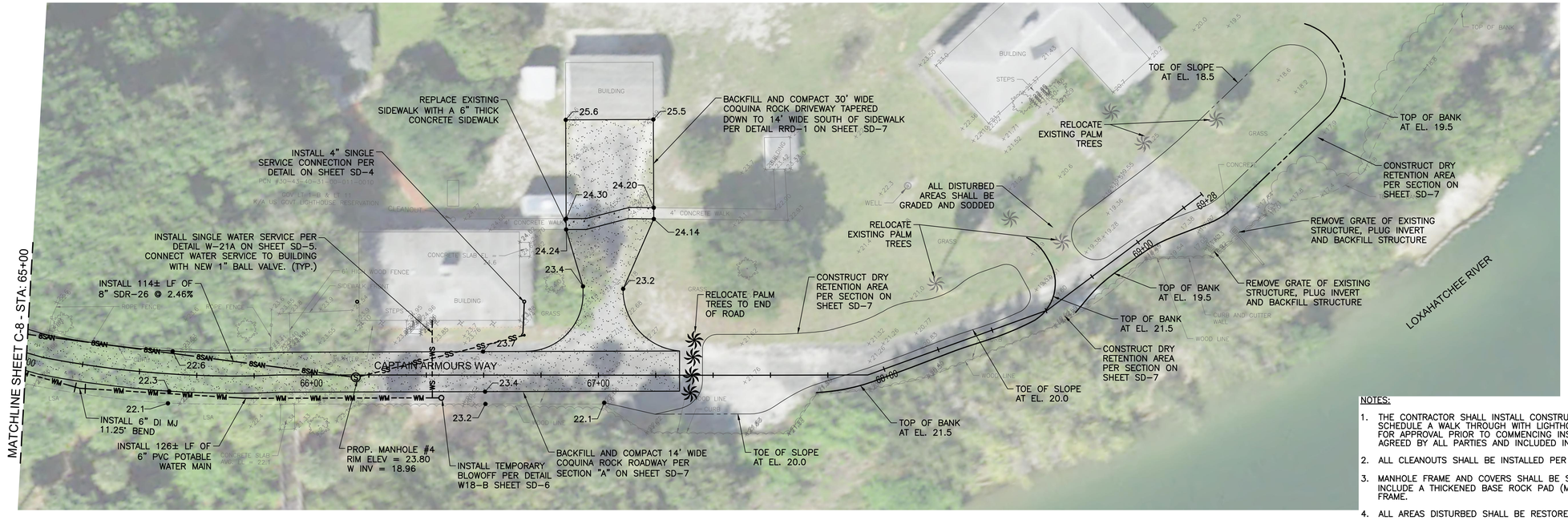
WATER & SEWER PLAN
STA: 61+20 TO STA: 65+00

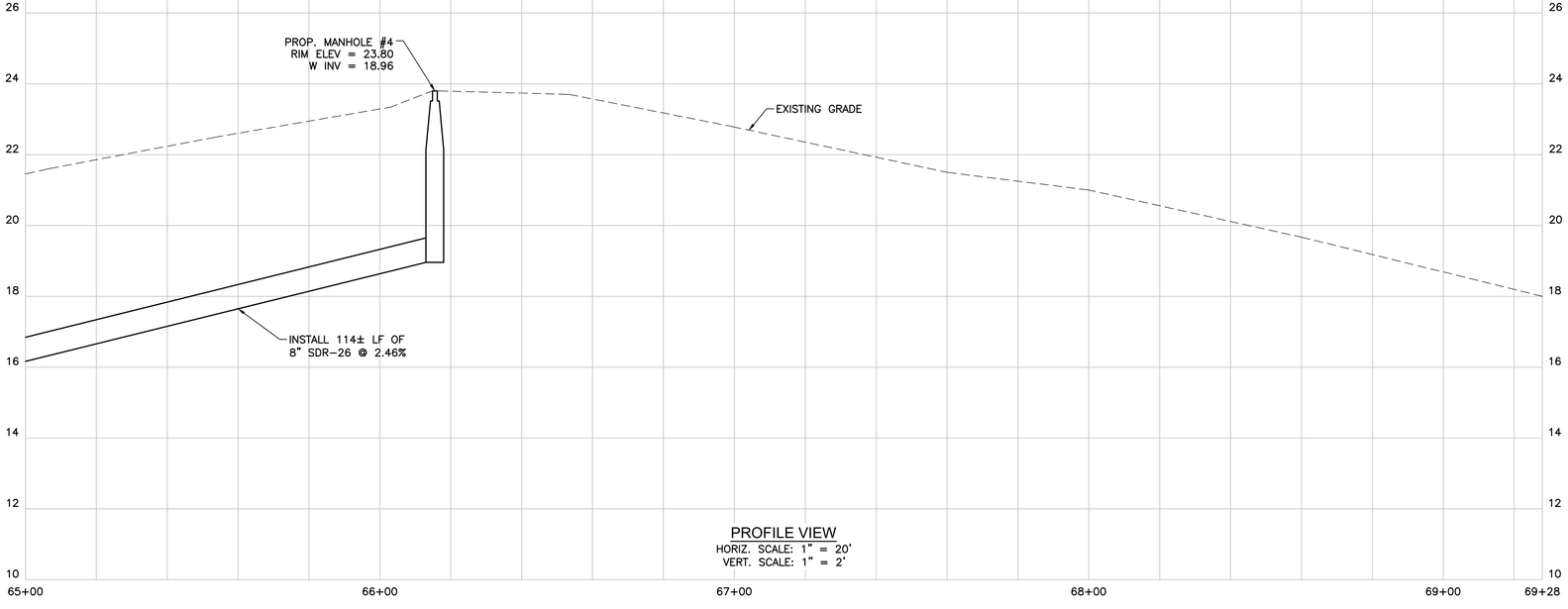
HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

CHRISTINE J. MIRANDA, PE
License No: 60906

C-8

Drawing Name: F:\PROJECTS\180\Jupiter Lighthouse Septic to Sewer\Design\Drawings\PLAN.dwg Layout Name: C-08 - Plotted by: Russell Ryan - Date: 11/18/2021 - 10:54 AM - Holtz Consulting Engineers





NOTES:

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4. ALL AREAS DISTURBED SHALL BE RESTORED IN KIND.
5. CONTRACTOR SHALL SUBMIT DIRECTION DRILL PLANS SHOWING PROPOSED HORIZONTAL AND VERTICAL LOCATION OF THE DIRECTIONAL DRILL INSTALLATION. DIRECTIONAL DRILL PLANS SHALL INCLUDE ALL UTILITY CONFLICTS FIELD VERIFIED.
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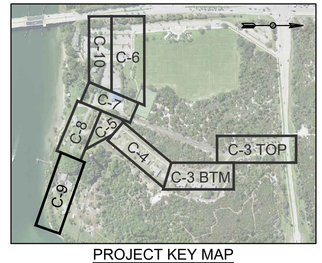

PROJECT KEY MAP
NOT TO SCALE

REV	DATE	REVISIONS	BY
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Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

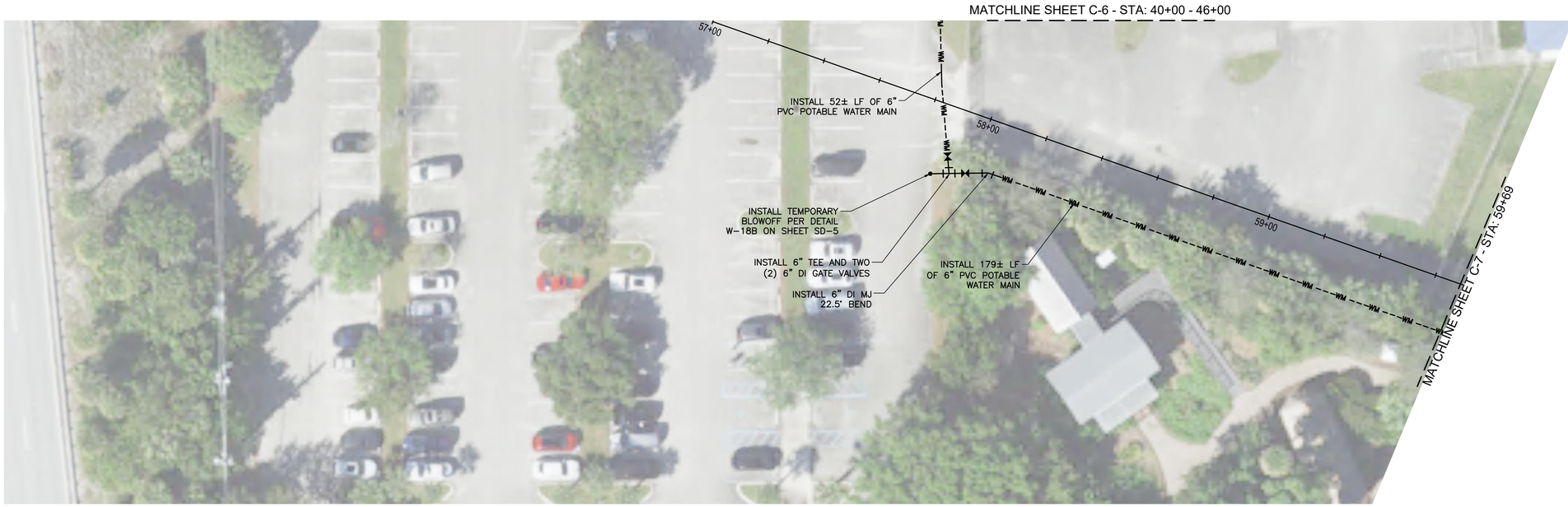
WATER & SEWER PLAN
STA: 65+00 TO STA: 69+28

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

CHRISTINE J. MIRANDA, PE
License No: 60906

C-9

Drawing Name: F:\PROJECTS\JIB\Jupiter Lighthouse Septic to Sewer\Design\Drawings\PLAN.dwg Layout Name: C-09 - Plotted by: Russell Ryan - Date: 11/18/2021 - 10:55 AM - Holtz Consulting Engineers



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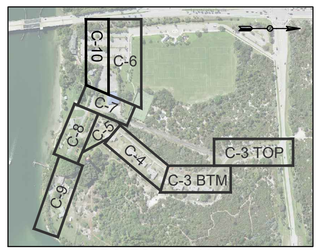

PROJECT KEY MAP
NOT TO SCALE

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Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

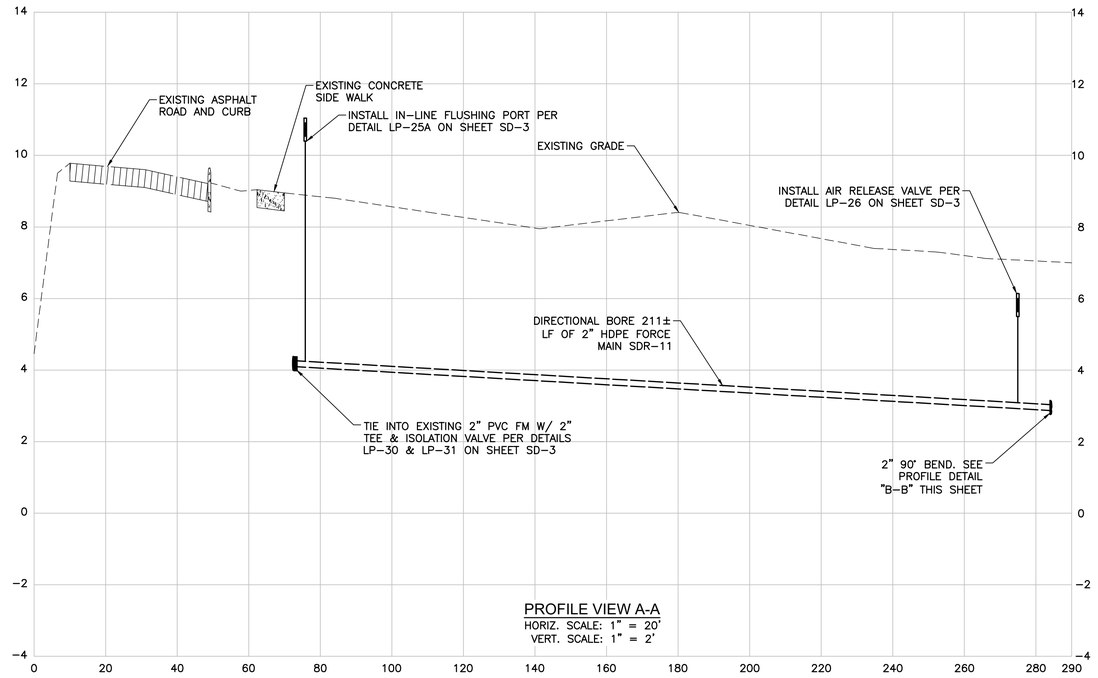
WATER & SEWER PLAN
STA: 57+00 TO STA: 59+69

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

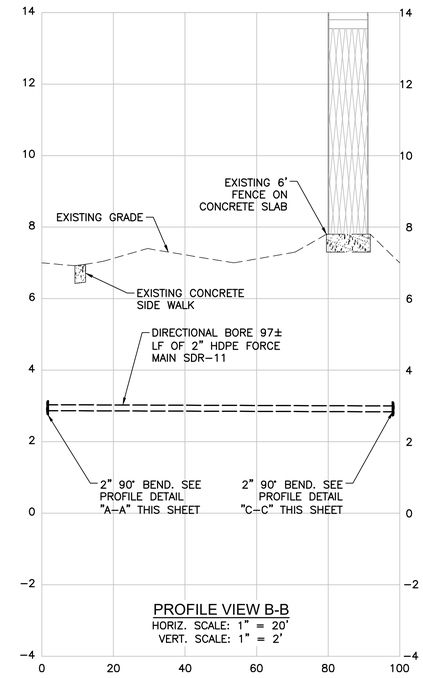
CHRISTINE J. MIRANDA, PE
License No: 60906

C-10

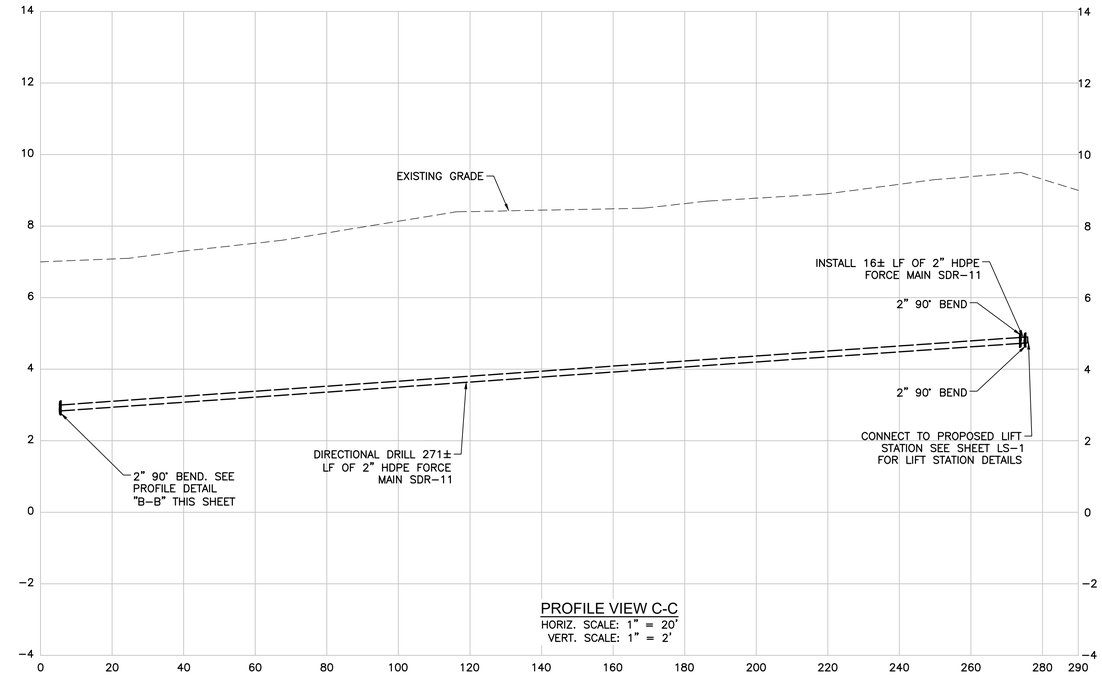
Drawing Name: F:\PROJECTS\LRD\Jupiter Lighthouse Septic to Sewer\Design\Drawings\PLAN.dwg Layout Name: C-10 - Plotted by: Russell Ryan - Date: 11/18/2021 - 10:55 AM - Holtz Consulting Engineers



PROFILE VIEW A-A
HORIZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 2'



PROFILE VIEW B-B
HORIZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 2'



PROFILE VIEW C-C
HORIZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 2'

Drawing Name: I:\PROJECTS\LRD\Jupiter Lighthouse Septic to Sewer\Design\Drawings\PLAN.dwg Layout Name: C-11 — Plotted By: Russell Ryan — Date: 11/18/2021 — 10:55 AM — Holtz Consulting Engineers

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Date: 11/18/2021
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Design By: KW
Drawn By: RR
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LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

PROFILE DETAILS

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
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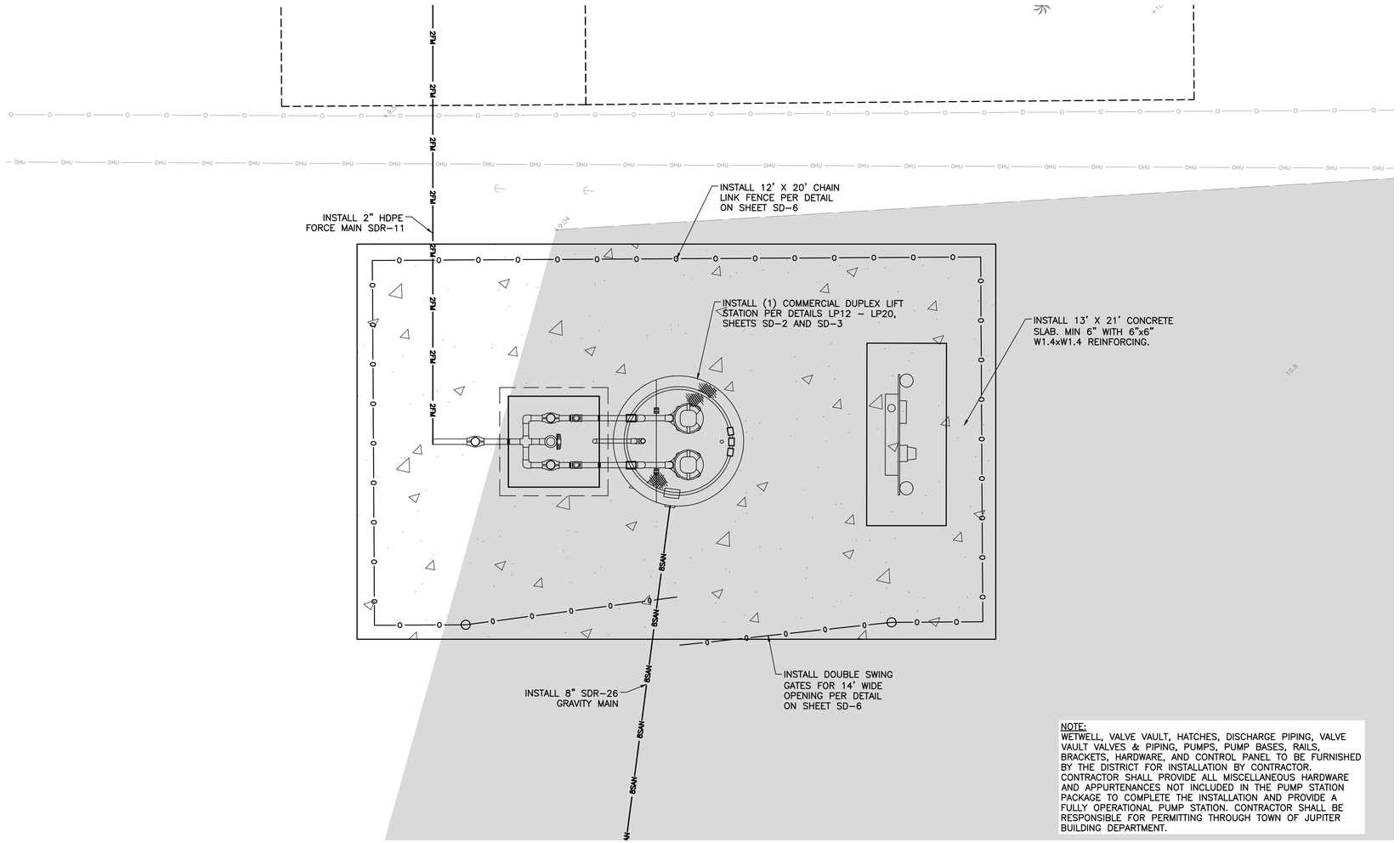
C-11



NOTE:
WETWELL, VALVE VAULT, HATCHES, DISCHARGE PIPING, VALVE VAULT VALVES & PIPING, PUMPS, PUMP BASES, RAILS, BRACKETS, HARDWARE, AND CONTROL PANEL TO BE FURNISHED BY THE DISTRICT FOR INSTALLATION BY CONTRACTOR. CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS HARDWARE AND APPURTENANCES NOT INCLUDED IN THE PUMP STATION PACKAGE TO COMPLETE THE INSTALLATION AND PROVIDE A FULLY OPERATIONAL PUMP STATION. CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITTING THROUGH TOWN OF JUPITER BUILDING DEPARTMENT.

PROPOSED LIFT STATION SITE PLAN

NOTES:

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Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

LIFT STATION SITE PLAN

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
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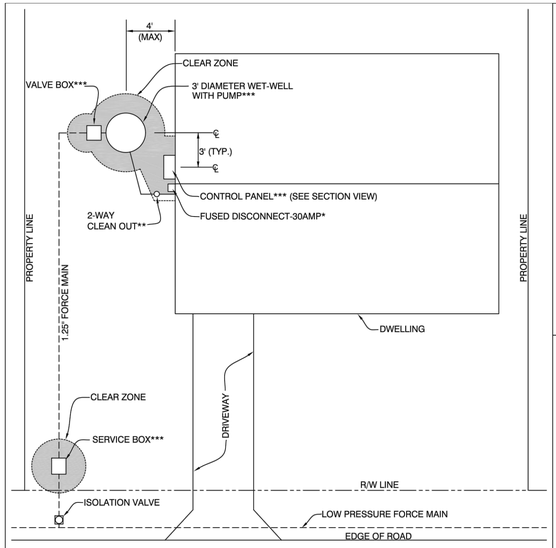
LS-1

Drawing Name: F:\PROJECTS\LRD\Jupiter Lighthouse Septic to Sewer\Design\Drawings\PLAN.dwg Layout Name: LS-1 - Plotted by: Russell Ryan - Date: 11/18/2021 - 10:55 AM



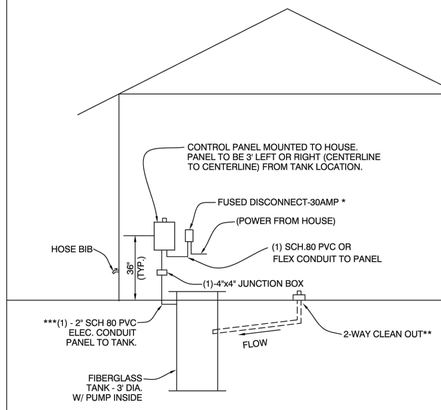
*FOR DUPLEX INSTALLATIONS (5,000 sq ft or more) USE 60 AMP FUSEABLE DISCONNECT.

**REPLACE EXISTING CLEANOUT IF NOT 2-WAY.

*** PROVIDE A 36" CLEAR ZONE FREE FROM FENCING, LANDSCAPING AND OTHER OBSTRUCTIONS THAT MAY LIMIT ACCESS.

LOXAHATCHEE RIVER DISTRICT

N.T.S.	TYPICAL RESIDENTIAL GRINDER SYSTEM LAYOUT (PLAN VIEW)	LP-1
REVISION: JUNE, 2018		



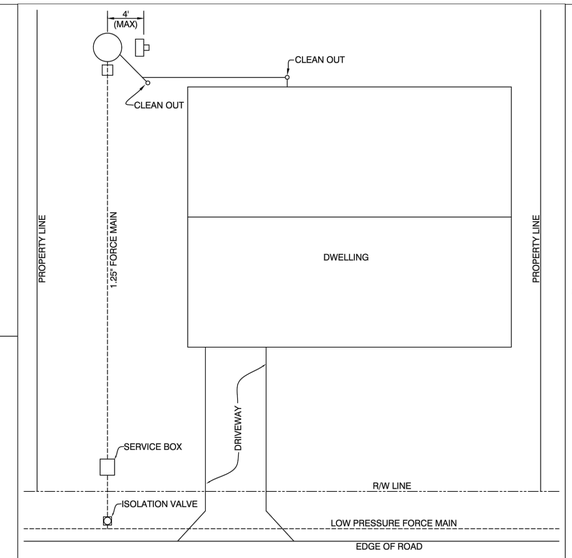
*FOR DUPLEX INSTALLATIONS (5,000 sq ft or more) USE 60 AMP FUSEABLE DISCONNECT.

**REPLACE EXISTING CLEANOUT IF NOT 2-WAY.

***FOR DUPLEX STATIONS, USE TWO (2) - 2" SCH. 80 CONDUITS

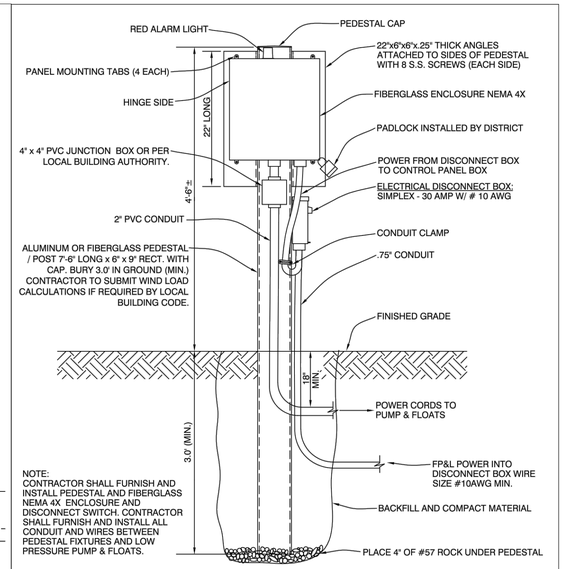
LOXAHATCHEE RIVER DISTRICT

N.T.S.	TYPICAL RESIDENTIAL GRINDER SYSTEM LAYOUT (SECTION VIEW)	LP-2
REVISION: APRIL, 2012		



LOXAHATCHEE RIVER DISTRICT

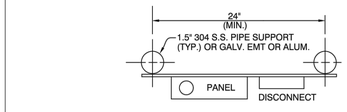
N.T.S.	ALTERNATE RESIDENTIAL GRINDER SYSTEM LAYOUT (PLAN VIEW)	LP-3
REVISION: APRIL, 2012		



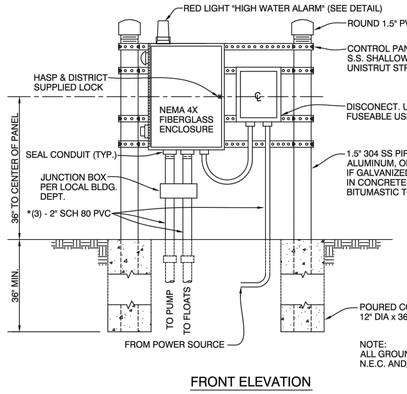
* FOR RESIDENTIAL SIMPLEX STATIONS ONLY

LOXAHATCHEE RIVER DISTRICT

N.T.S.	ALTERNATE RESIDENTIAL GRINDER SYSTEM LAYOUT FREE STANDING (1 OF 2)	LP-4
REVISION: MARCH, 2016		



PLAN VIEW

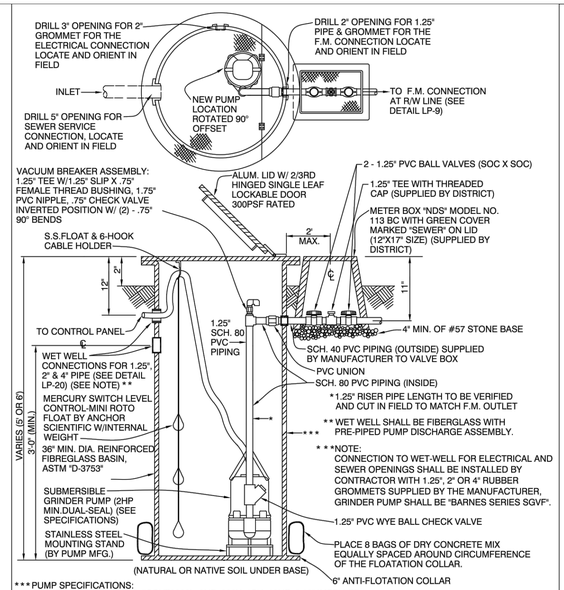


FRONT ELEVATION

* FOR RESIDENTIAL DUPLEX STATIONS ONLY

LOXAHATCHEE RIVER DISTRICT

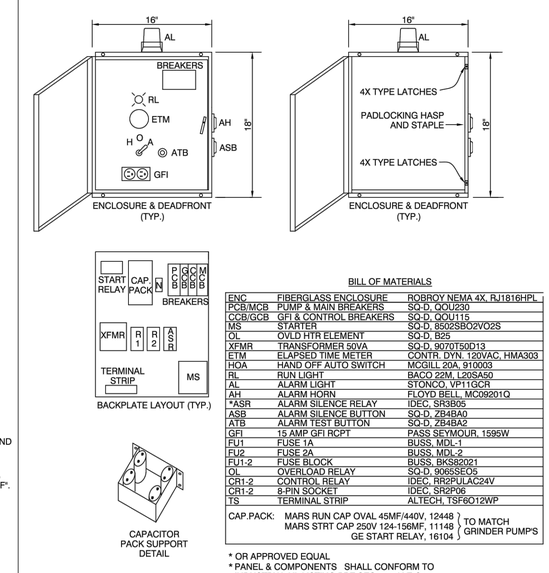
N.T.S.	ALTERNATE RESIDENTIAL GRINDER SYSTEM LAYOUT FREE STANDING (2 OF 2)	LP-5
REVISION: APRIL, 2012		



*** PUMP SPECIFICATIONS:
BARNES-GRINDER PUMP #SGVF2022L, 2HP, 230V, 1PH, 60HZ, 5.13" IMPELLER

LOXAHATCHEE RIVER DISTRICT

N.T.S.	RESIDENTIAL SIMPLEX TYPICAL WET WELL	LP-6
REVISION: JULY, 2019		



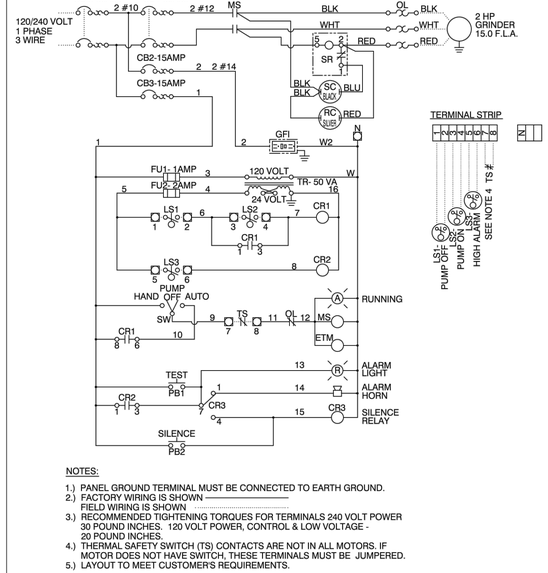
BILL OF MATERIALS

ENC	FIBERGLASS ENCLOSURE	ROBROY NEMA 4X, RJ1816HPL
PCB/MCB	PUMP & MAIN BREAKERS	SQ-D, QOU230
CCB/GCB	GFI & CONTROL BREAKERS	SQ-D, QOU115
MS	STARTER	SQ-D, 8502SBO2VO2S
OL	OVLD HTR ELEMENT	SQ-D, B25
XFMR	TRANSFORMER 50VA	SQ-D, 9070T50D13
ETM	ELAPSED TIME METER	CONTR. DYN, 120VAC, HMA303
HOA	HAND OFF AUTO SWITCH	MC93IL 20A, 910003
RL	RUN LIGHT	BACO 22M, L20SA50
AL	ALARM LIGHT	STONCO, VP11GCR
AH	ALARM HORN	FLOYD BELL, MC09201Q
*ASR	ALARM SILENCE RELAY	IDEC, SR3B05
ASB	ALARM SILENCE BUTTON	SQ-D, ZB4BA0
ATB	ALARM TEST BUTTON	SQ-D, ZB4BA2
GFI	15 AMP GFI RCPT	PASS SEYMOUR, 1595W
FU1	FUSE 1A	BUSS, MDL-1
FU2	FUSE 2A	BUSS, MDL-2
FU1-2	FUSE BLOCK	BUSS, BK/S82021
OL	OVERLOAD RELAY	SQ-D, 9065SEO5
CR1-2	CONTROL RELAY	IDEC, RR2PULAC24V
CR1-2	8-PIN SOCKET	IDEC, SR2P08
TS	TERMINAL STRIP	ALTECH, TSF/6O12WP
CAP.PACK:	MARS RUN CAP OVAL 45MF/440V, 12448 } MARS STRT CAP 250V 124-156MF, 11148 } GE START RELAY, 16104 }	TO MATCH GRINDER PUMP'S

* OR APPROVED EQUAL
* PANEL & COMPONENTS SHALL CONFORM TO INDUSTRIAL UL LISTING PRE SEC. 508 N.E.C.

LOXAHATCHEE RIVER DISTRICT

N.T.S.	RESIDENTIAL SIMPLEX CONTROL PANEL LAYOUT	LP-7
REVISION: APRIL, 2012		



NOTES:

1.) PANEL GROUND TERMINAL MUST BE CONNECTED TO EARTH GROUND.
2.) FACTORY WIRING IS SHOWN ———— FIELD WIRING IS SHOWN - - - - - - - -
3.) RECOMMENDED TIGHTENING TORQUES FOR TERMINALS 240 VOLT POWER 30 POUND INCHES. 120 VOLT POWER, CONTROL & LOW VOLTAGE - 20 POUND INCHES.
4.) THERMAL SAFETY SWITCH (TS) CONTACTS ARE NOT IN ALL MOTORS. IF MOTOR DOES NOT HAVE SWITCH, THESE TERMINALS MUST BE JUMPERED.
5.) LAYOUT TO MEET CUSTOMER'S REQUIREMENTS.

LOXAHATCHEE RIVER DISTRICT

N.T.S.	RESIDENTIAL SIMPLEX ELECTRICAL SCHEMATIC	LP-8
REVISION: APRIL, 2012		

DATE	BY	REVISIONS

Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

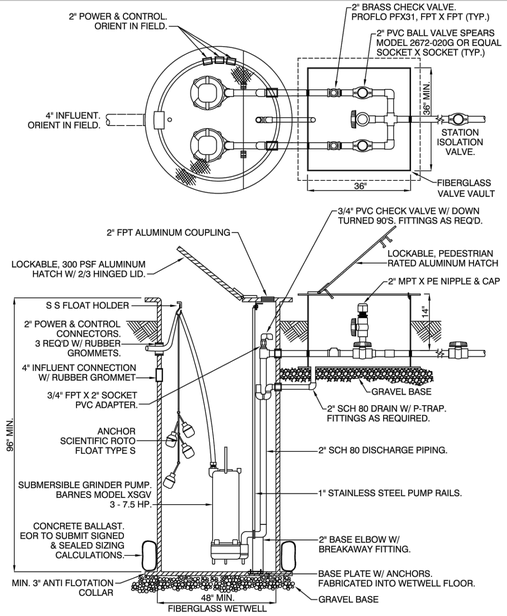
LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

STANDARD DETAILS

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

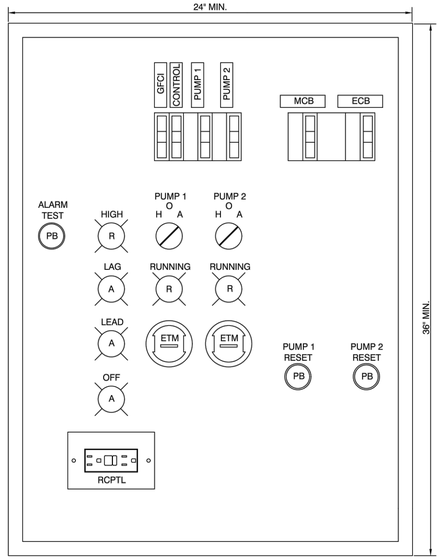
CHRISTINE J. MIRANDA, PE
License No: 60906

SD-1



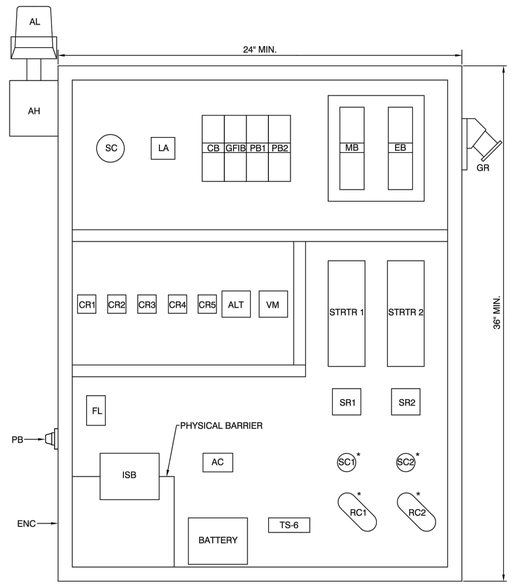
LOXAHATCHEE RIVER DISTRICT

N.T.S.	COMMERCIAL DUPLEX TYPICAL WET WELL	LP-12
REVISION: JUNE, 2015		



LOXAHATCHEE RIVER DISTRICT

N.T.S.	COMMERCIAL DUPLEX CONTROL PANEL DEADFRONT LAYOUT	LP-14
REVISION: JUNE, 2015		



* SINGLE PHASE PANEL ONLY

LOXAHATCHEE RIVER DISTRICT

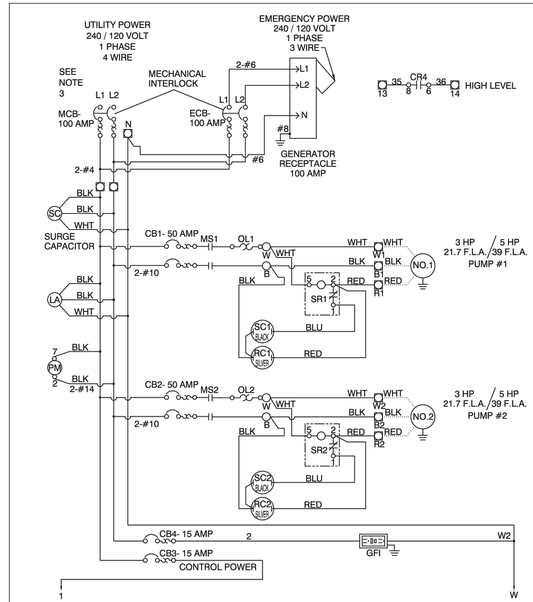
N.T.S.	COMMERCIAL DUPLEX CONTROL PANEL BACKPLATE LAYOUT	LP-15
REVISION: JUNE, 2015		

ITEM	DESCRIPTION	PART NO. SINGLE PHASE	PART NO. THREE PHASE	QTY
AC	ALARM CONTROLLER	MPE MODEL BOAC-001	MPE MODEL BOAC-001	1
AH	ALARM HORN	WHEELOCK AMT-12/24-R	WHEELOCK AMT-12/24-R	1
AL	ALARM LIGHT	CONDOR/GRAINGER 2ERP1	CONDOR/GRAINGER 2ERP1	1
ALT	ALTERNATOR	ATC DIVERSIFIED ELECTRONICS: ARB120AEA	ATC DIVERSIFIED ELECTRONICS: ARB120AEA	1
BAT	BATTERY	WERKER MODEL MWA12-7F	WERKER MODEL MWA12-7F	1
CR*	CONTROL RELAY	IDEC: RR 2 BA - U L AC120V	IDEC: RR 2 BA - U L AC120V	5
ETM	ELAPSED TIME METER	CONTROL DYNAMICS: HMA303	CONTROL DYNAMICS: HMA303	2
ENC*	ENCLOSURE NEMA 4X SS	HOFFMAN: CSD362410SS W/ DRIP SHIELD AND LOCKING HASP	HOFFMAN: CSD362410SS W/ DRIP SHIELD AND LOCKING HASP	1
FL	FLASHER	LIGHTS TO GO: AFDC 1	LIGHTS TO GO: AFDC 1	1
GR	GENERATOR RECEPTACLE	APPLETON: ADR1034RS	APPLETON: ADR1034RS	1
GFIB, CB	GFI & CONTROL BREAKER	SQUARE-D: QOU115	SQUARE-D: QOU115	2
⊘	HAND OFF AUTO SWITCH	SUARE-D: 9001KS46B	SUARE-D: 9001KS46B	2
ISB	INTRINSICALLY SAFE BARRIER	IDEC: EB3C-R05A	IDEC: EB3C-R05A	1
LA	LIGHTNING ARRESTOR	SQUARE-D: SDSA1175	SQUARE-D: SDSA3650	1
MB, EB	MAIN & EMERGENCY BREAKERS	SQUARE-D: QOU2***	SQUARE-D: QOU3***	2
TU	THERMAL UNIT	SQUARE-D: B36.0	SQUARE-D: B36.0	2
◯	PILOT LIGHTS	BACO CONTROLS: NLD22* (COLOR AS INDICATED)	BACO CONTROLS: NLD22* (COLOR AS INDICATED)	6
PB***	PUMP BREAKERS	SQUARE-D: QOU2***	SQUARE-D: QOU3***	2
STRTR***	STARTER	SQUARE-D: 8536SCO2V02S	SQUARE-D: 8536SCO3V02S	2
SC	SURGE CAPACITOR	DELTA: CA302R	DELTA: CA603R	1
PB	TEST/RESET/SILENCE PUSH BUTTONS	SQUARE-D: 9001SKR1U	SQUARE-D: 9001SKR1U	1
VM	VOLTAGE MONITOR	ATC DIVERSIFIED ELECTRONICS: UOA240ALA	ATC DIVERSIFIED ELECTRONICS: SLA-***-***	1
RCPTL	15 AMP GFI RECEPTACLE	PASS AND SEYMOUR: 1595W	PASS AND SEYMOUR: 1595W	1
SC***	START CAPACITOR	***	NOT REQUIRED	2
RC***	RUN CAPACITOR	***	NOT REQUIRED	2

* HOFFMAN: UU1008030 FOR COMMERCIAL DUPLEX LOW FLOW OPTION
*** SIZED PER PUMP MANUFACTURER'S RECOMMENDATION

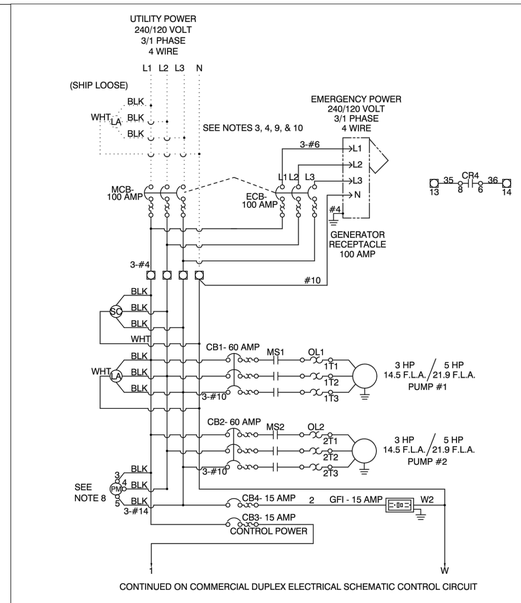
LOXAHATCHEE RIVER DISTRICT

N.T.S.	COMMERCIAL DUPLEX CONTROL PANEL BILL OF MATERIALS	LP-16
REVISION: JUNE, 2015		



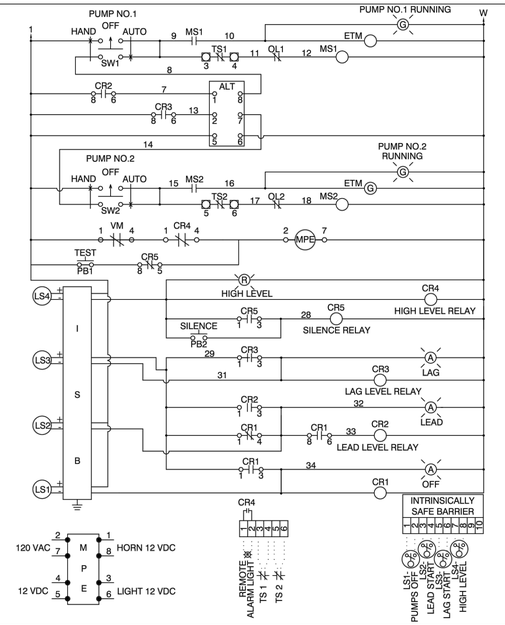
LOXAHATCHEE RIVER DISTRICT

N.T.S.	COMMERCIAL DUPLEX ELECTRICAL SCHEMATIC 1PHASE	LP-17
REVISION: JUNE, 2015		



LOXAHATCHEE RIVER DISTRICT

N.T.S.	COMMERCIAL DUPLEX ELECTRICAL SCHEMATIC 3PHASE	LP-18
REVISION: JUNE, 2015		



LOXAHATCHEE RIVER DISTRICT

N.T.S.	COMMERCIAL DUPLEX ELECTRICAL SCHEMATIC CONTROL CIRCUIT	LP-19
REVISION: JUNE, 2015		

NOTES:

1.) PANEL GROUND TERMINAL MUST BE CONNECTED TO EARTH GROUND.
2.) FACTORY WIRING IS SHOWN _____
FIELD WIRING IS SHOWN . . . . . .
3.) INSTALLER MUST PROVIDE SHORT CIRCUIT PROTECTION FOR THE CONDUCTORS FEEDING TO THIS ELECTRICAL ASSEMBLY.
4.) RECOMMENDED TIGHTENING TORQUES FOR TERMINALS; 240 VOLT POWER - SEE CIRCUIT BREAKER 120 VOLT POWER, CONTROL & LOW VOLTAGE - 20 POUND INCHES
5.) THERMAL SAFETY SWITCH (TS) CONTACTS ARE NOT IN ALL MOTORS. IF MOTOR DOES NOT HAVE SWITCH, THESE TERMINALS MUST BE JUMPERED.
6.) HASP AND STAPLE PROVIDED ON OUTER DOOR OF ENCLOSURE FOR PADLOCK.
7.) WARNING LABEL TO BE YELLOW BACKGROUND WITH BLACK LETTERS. "WARNING - LOCK OUT ELECTRICAL SERVICE TO THIS ENCLOSURE BEFORE OPENING DOOR OR SERVICING EQUIPMENT".
8.) ON START UP, THE POWER MONITOR INDICATOR LIGHT SHOULD TURN "ON" WITHIN ONE (1) SECOND. IF IT DOESN'T, TURN POWER "OFF" TO THE PANEL & SWAP ANY TWO (2) OF THE THREE (3) INPUT WIRES TO THE MONITOR.
9.) MAIN CIRCUIT BREAKER AND EMERGENCY CIRCUIT BREAKER INTERLOCKED TO PREVENT SIMULTANEOUS CLOSURE.
10.) INSTALLER MUST VERIFY THAT PHASE TO NEUTRAL IS 120 VOLTS BEFORE CONNECTING CONTROL & RECEPTACLE CIRCUITS.
11.) WARNING LABEL TO BE RED WITH WHITE LETTERS: DO NOT OVERRIDE INTERLOCK NEVER ENERGIZE BOTH BREAKERS SIMULTANEOUSLY.

LOXAHATCHEE RIVER DISTRICT

N.T.S.	COMMERCIAL DUPLEX ELECTRICAL SCHEMATIC NOTES	LP-20
REVISION: JUNE, 2015		

DATE	BY	REVISIONS

Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

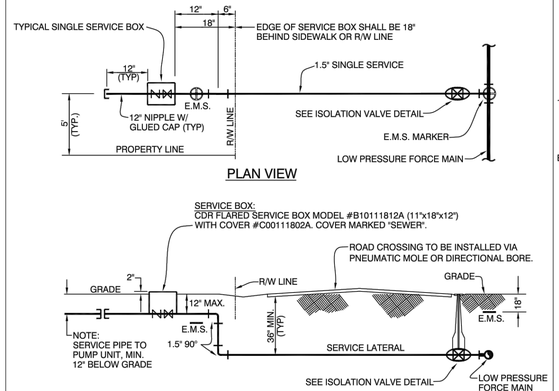
LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

STANDARD DETAILS

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

CHRISTINE J. MIRANDA, PE
License No: 60906

SD-2



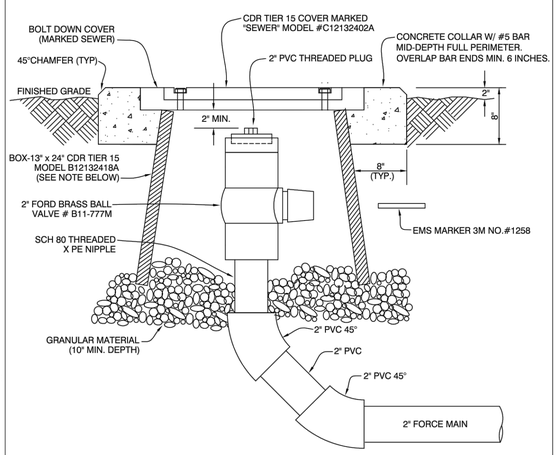
PLAN VIEW

TYPICAL ROAD CROSSING SECTION VIEW

NOTES:

1. SERVICE LOCATIONS ON PLANS ARE APPROXIMATE. INSTALLED LOCATIONS TO BE COORDINATED WITH EXISTING ONSITE PLUMBING OR PROPOSED ONSITE CONSTRUCTION.
2. BALL VALVES SHALL BE FORD MODEL #B11-666M WITH 2" BRASS OPERATING NUT.
3. ALL CHECK VALVES SHALL BE PROFLO MODEL PFX31.
4. ALL PIPING IN AND 6-INCHES BEYOND THE SERVICE BOX SHALL BE SCH 80 PVC.
5. INSTALL MINIMUM 4" OF NO 57 WASHED STONE BENEATH ALL SERVICE BOXES AND VALVE BOXES AND AROUND ALL PIPE PENETRATIONS THROUGH SERVICE BOXES.
6. FOR HDPE TO PVC TRANSITIONS USE FORD PACK JOINT COUPLING PVC X PE W/ 304SS STIFFENER.

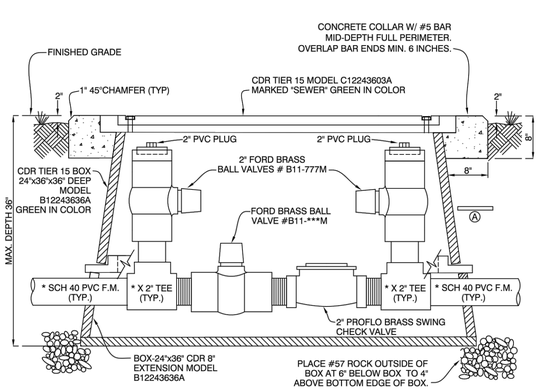
LOXAHATCHEE RIVER DISTRICT			
N.T.S.	TYPICAL SINGLE SERVICE SCHEMATIC	LP-22	
REVISION: MARCH, 2017			



NOTES:

1. IN PAVED AREAS, USE NO. PB16"x24"x24" DEEP x 4" WALLS AND 4" FLOOR, AND NO. PB1624 TRAFFIC COVER DESIGNED FOR HS-20-44 TRAFFIC RATED BY BROOKS PRODUCTS INC.
2. INSTALL MIN. 4' OF NO 57 WASHED STONE BENEATH ALL TERMINAL END FLUSHING PORT BOXES.
3. ALL PIPING IN AND 6 INCHES BEYOND BOX SHALL BE SCH 80 PVC.
4. FOR HDPE TO PVC TRANSITIONS USE FORD PACK JOINT COUPLING PVC x PE W/ 304SS STIFFENER.

LOXAHATCHEE RIVER DISTRICT			
N.T.S.	TERMINAL FLUSHING PORT DETAIL	LP-24	
REVISION: MARCH, 2017			

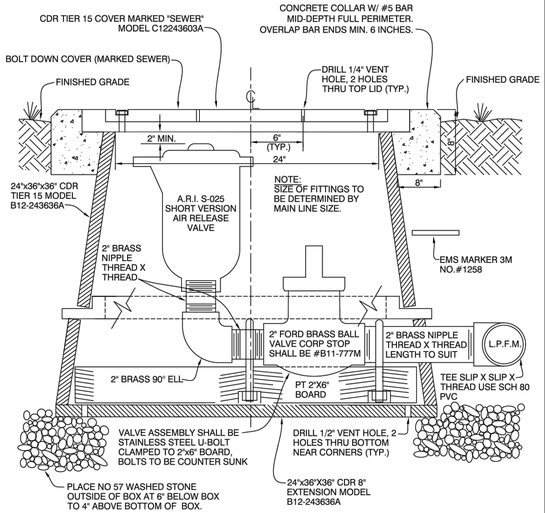


Ⓐ - EMS MARKER NO.#1258 ELECTRONIC MARKER SYSTEM AS MFG. BY 3M TEST AND MEASUREMENT SYSTEM AUSTIN, TEXAS

* SIZED BY ENGINEER
USE VALVE BOX AND FLUSHING PORTS ALONG STRAIGHT RUNS IN FORCE MAIN.

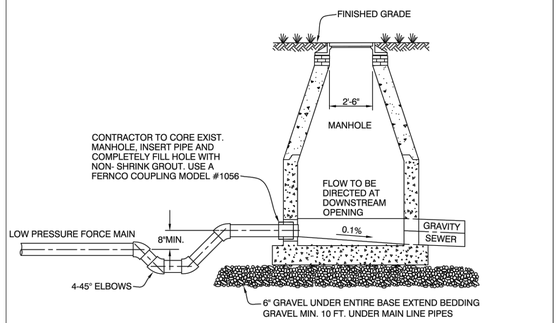
1. NOTES:
PUMP TAP VALVES TO BE 2" FORD BRASS BALL VALVES # B11-666 W/ SCH 80 THREADED x PE NIPPLES AS REQUIRED. INLINE VALVE TO MATCH FORCE MAIN DIAMETER.
2. PROFLO BRASS SWING CHECK VALVE MODEL PROFLO PEx31 TO BE INSTALLED TO PREVENT FLOW INTO LOW PRESSURE MAIN.

LOXAHATCHEE RIVER DISTRICT			
N.T.S.	IN LINE FLUSHING PORT AT FORCE MAIN	LP-25A	
REVISION: JULY, 2019			



NOTE:
IN PAVED AREAS, USE NO. PB24"x36"x36" DEEP x 4" WALLS AND 4" FLOOR, AND NO. PB2436 TRAFFIC COVER DESIGNED FOR HS-20-44 TRAFFIC RATED BY BROOKS PRODUCTS INC.

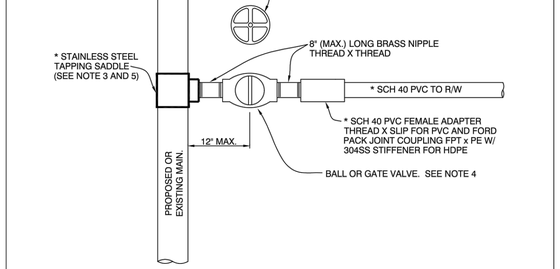
LOXAHATCHEE RIVER DISTRICT			
N.T.S.	AIR / VACUUM VALVE DETAIL	LP-26	
REVISION: JULY, 2019			



NOTES:

1. WHEN ELEVATION OF LOW PRESSURE MAIN (LPM) AT MANHOLE IS HIGHEST POINT OF LPM, TRAP CAN BE ELIMINATED.
2. WHEN LOW PRESSURE FORCE MAIN IS HDPE TRANSITION TO PVC FOR TRAP WITH FORD PACK JOINT COUPLING PVC x PE WITH 304SS STIFFENER.

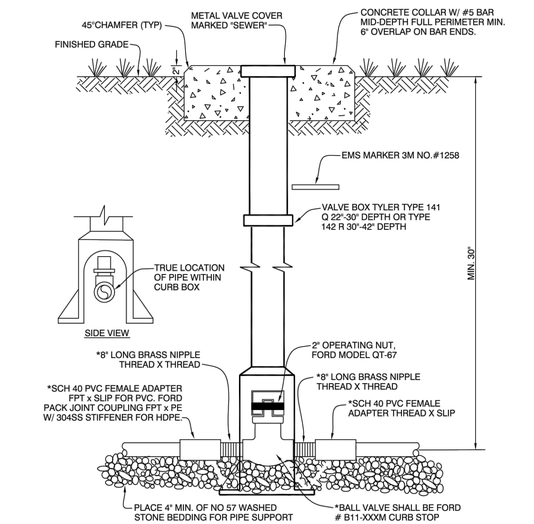
LOXAHATCHEE RIVER DISTRICT			
N.T.S.	LOW PRESSURE MAIN INTO SHALLOW MANHOLE	LP-27	
REVISION: MARCH, 2017			



NOTES:

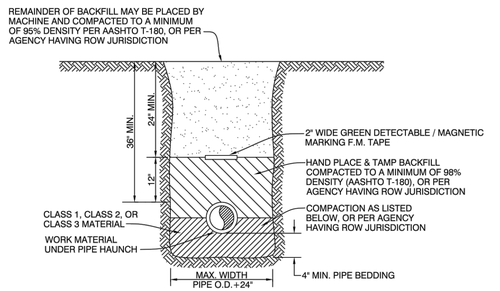
1. EMS SHALL BE INSTALLED ON STREET SIDE OF TEE AND VALVE.
2. PROVIDE VALVE BOX PER LP-31.
3. TAPPING SADDLES FOR TAPS 1-1/2" - 2-1/2" SHALL BE ROMAC MODEL 306 OR 306H. TAPPING SADDLES FOR TAPS LARGER THAN 2-1/2" SHALL COMPLY WITH SD-28
4. VALVES UP TO 2-1/2" SHALL BE FORD #B11-XXXM CURB STOP W/ 2" OPERATING NUT MODEL # QT67. 3" VALVES SHALL COMPLY W/ SECTION 130, PARAGRAPH 130.03.
5. FOR 2-1/2" AND SMALLER PVC MAINS USE SOCKET TEE AND BRASS COMPRESSION COUPLING. FOR 2-1/2" AND SMALLER HDPE MAINS USE FORD PACK JOINT TEE WITH FORD PACK JOINT COUPLING AND PVC SPOOL PIECE.

LOXAHATCHEE RIVER DISTRICT			
N.T.S.	LOW PRESSURE TIE - IN DETAIL	LP-30	
REVISION: MARCH, 2017			



*SIZE BY ENGINEER

LOXAHATCHEE RIVER DISTRICT			
N.T.S.	LOW PRESSURE VALVE DETAIL	LP-31	
REVISION: MARCH, 2017			



NOTES:

CLASS 1 MATERIAL - ANGULAR .25" TO .75" GRADED STONE SUCH AS CORAL, CRUSHED STONE, OR CRUSHED SHELLS OR BEDDING ROCK (100% PASSING 1" SIEVE).

CLASS 2 MATERIAL - COURSE SAND AND GRAVEL'S WITH MAXIMUM PARTICLE SIZE OF .25 INCH WITH SMALL PERCENTAGE OF FINES COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY.

CLASS 3 MATERIAL - FINE SAND AND CLAYEY GRAVEL'S, INCLUDING FINE SANDS, SAND-CLAY MIXTURES AND GRAVEL-CLAY MIXTURES, COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY. INCLUDED IN CLASS 3 ARE EXISTING SOIL TYPES CLASSIFIED AS SELECT BACKFILL.

IF CLASS 1 MATERIAL IS USED FOR BEDDING, IT MUST BE USED FOR THE ENTIRE EMBEDMENT. A DRY TRENCH SHALL BE MAINTAINED WHEN USING CLASS 2 AND CLASS 3 MATERIAL.

DENSITY TESTING IS REQUIRED IN 1 FOOT LIFTS ABOVE PIPELINE AT INTERVALS OF 400' MAXIMUM.

LOXAHATCHEE RIVER DISTRICT			
N.T.S.	TRENCH DETAIL	LP-33	
REVISION: APRIL, 2012			

DATE	BY	REVISIONS

Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

STANDARD DETAILS

HOLTZ CONSULTING ENGINEERS, INC.
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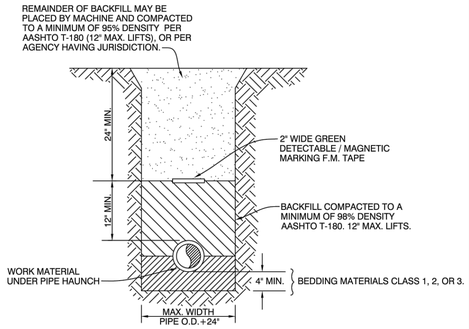
SD-3



NOTES:

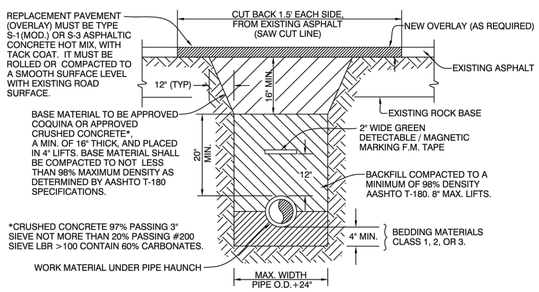
CLASS 1 MATERIAL - ANGULAR .25" TO .75" GRADED STONE SUCH AS CORAL, CRUSHED STONE, OR CRUSHED SHELLS OR BEDDING ROCK (100% PASSING 1" SIEVE).

CLASS 2 MATERIAL - COURSE SAND AND GRAVEL'S WITH MAXIMUM PARTICLE SIZE OF .25 INCH WITH SMALL PERCENTAGE OF FINES. COMPACT TO A MIN. 98% DENSITY PER AASHTO T-180.

CLASS 3 MATERIAL - FINE SAND AND CLAYEY GRAVEL'S, INCLUDING FINE SANDS, SAND-CLAY MIXTURES AND GRAVEL-CLAY MIXTURES. INCLUDED IN CLASS 3 ARE EXISTING SOIL TYPES CLASSIFIED AS SELECT BACKFILL. COMPACT TO A MIN. 98% DENSITY PER AASHTO T-180.

1. IF CLASS 1 MATERIAL IS USED FOR BEDDING, IT MUST BE USED FOR THE ENTIRE EMBEDMENT. A DRY TRENCH SHALL BE MAINTAINED WHEN USING CLASS 2 AND CLASS 3 MATERIAL.
2. DENSITY TESTING IS REQUIRED IN 1 FOOT LIFTS ABOVE PIPELINE AT INTERVALS OF 400' MAXIMUM.
3. UNSUITABLE IN-SITU MATERIAL SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
4. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT / CONTRACT DOCUMENTS.
5. EMS MARKER REQUIRED MINIMUM EVERY 300 FEET OF PRESSURE PIPELINE.

LOXAHATCHEE RIVER DISTRICT		
N.T.S. / REVISION: JULY, 2019	TYPICAL TRENCH DETAIL FOR NON - PAVED AREAS	SD-1



NOTES:

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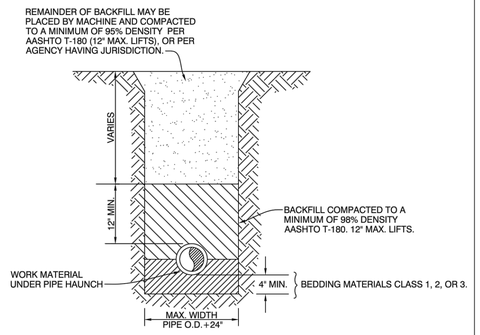
CLASS 2 MATERIAL - COURSE SAND AND GRAVEL'S WITH MAXIMUM PARTICLE SIZE OF .25 INCH WITH SMALL PERCENTAGE OF FINES. COMPACT TO A MIN. 98% DENSITY PER AASHTO T-180.

CLASS 3 MATERIAL - FINE SAND AND CLAYEY GRAVEL'S, INCLUDING FINE SANDS, SAND-CLAY MIXTURES AND GRAVEL-CLAY MIXTURES. INCLUDED IN CLASS 3 ARE EXISTING SOIL TYPES CLASSIFIED AS SELECT BACKFILL. COMPACT TO A MIN. 98% DENSITY PER AASHTO T-180.

1. ALL CUTS WILL REQUIRE COMPACTION TO DENSITY SPECIFICATIONS.
2. SAW CUT ASPHALT BEFORE EXCAVATING.
3. COMPACTION MUST BE DONE BY A MECHANICAL VIBRATORY COMPACTOR. EACH LIFT MUST RECEIVE 5 PASSES OF THE COMPACTOR OVER ENTIRE SURFACE. BEFORE COMPACTING EACH LIFT, WATER MUST BE APPLIED AT THE RATE OF 1 GAL. PER LINEAL FOOT OF THE TRENCH FOR BACKFILL AND 0.5 GAL. PER LINEAL FOOT OF TRENCH FOR COQUINA BASE. WATER TO BE SPRINKLED EVENLY OVER TRENCH WIDTH.
4. UNSUITABLE IN-SITU MATERIAL SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
5. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT / CONTRACT DOCUMENTS.
6. EMS MARKER REQUIRED MINIMUM EVERY 300 FEET OF PRESSURE PIPELINE.

LOXAHATCHEE RIVER DISTRICT		
N.T.S. / REVISION: JULY, 2019	TYPICAL TRENCH & PAVEMENT RESTORATION DETAIL	SD-2



NOTES:

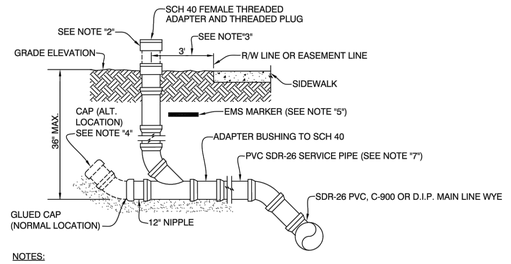
CLASS 1 MATERIAL - ANGULAR .25" TO .75" GRADED STONE SUCH AS CORAL, CRUSHED STONE, OR CRUSHED SHELLS OR BEDDING ROCK (100% PASSING 1" SIEVE).

CLASS 2 MATERIAL - COURSE SAND AND GRAVEL'S WITH MAXIMUM PARTICLE SIZE OF .25 INCH WITH SMALL PERCENTAGE OF FINES. COMPACT TO A MIN. 98% DENSITY PER AASHTO T-180.

CLASS 3 MATERIAL - FINE SAND AND CLAYEY GRAVEL'S, INCLUDING FINE SANDS, SAND-CLAY MIXTURES AND GRAVEL-CLAY MIXTURES. INCLUDED IN CLASS 3 ARE EXISTING SOIL TYPES CLASSIFIED AS SELECT BACKFILL. COMPACT TO A MIN. 98% DENSITY PER AASHTO T-180.

1. IF CLASS 1 MATERIAL IS USED FOR BEDDING, IT MUST BE USED FOR THE ENTIRE EMBEDMENT. A DRY TRENCH SHALL BE MAINTAINED WHEN USING CLASS 2 AND CLASS 3 MATERIAL.
2. DENSITY TESTING IS REQUIRED IN 1 FOOT LIFTS ABOVE PIPELINE.
3. UNSUITABLE IN-SITU MATERIAL SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
4. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT / CONTRACT DOCUMENTS.

LOXAHATCHEE RIVER DISTRICT		
N.T.S. / REVISION: APRIL, 2012	TYPICAL GRAVITY SEWER EMBEDMENT DETAIL	SD-4



NOTES:

1. WHERE SEWER LATERALS MAY BE FORCED TO BE INSTALLED AT A DEPTH GREATER THAN 36" DUE TO CONFLICT WITH OTHER UTILITIES, THE WYE FITTING MAY BE PLACED IN A VERTICAL POSITION ON THE CLEAN-OUT RISER PIPE (MAX.36")

2. LEAVE RISER 18" (MIN.) ABOVE GRADE. WHEN HOUSE RISER CONNECTION IS MADE BY BUILDING PLUMBER, RISER PIPE WILL BE CUT OFF, AND SET 2" ABOVE SOD GRADE (ADAPTER SHALL BE LEFT UNGLUED).

3. IN AREAS WHERE NO SIDEWALK EXISTS OR WHERE NONE ARE PLANNED, THE CLEAN OUT RISER WILL BE SET AT R/W OR EASEMENT LINE.

4. IN AREAS WHERE GROUND WATER TABLE IS LESS THAN 36" FROM FINISHED GRADE, NIPPLE OUT OF WYE WILL BE EXTENDED UP TO A POINT 6" MIN. ABOVE GROUND WATER TABLE.

5. EMS MARKER MODEL NO.1258, SERVICE LINE ELECTRONIC MARKER AS MFG. BY 3M CO., TO REMAIN IN PLACE AFTER CONNECTION OF BUILDING SEWER. BURY IN FRONT OF CLEAN OUT RISER 18" BELOW FINISHED GRADE.

6. 6" SINGLE SERVICES USED ONLY FOR COMMERCIAL OR MULTI-FAMILY RESIDENTIAL UNITS.

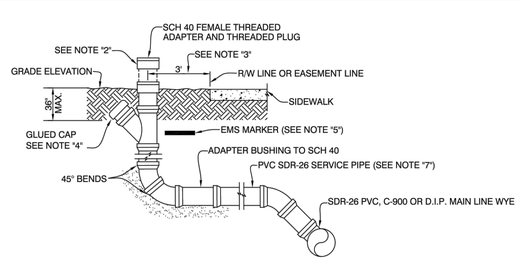
7. WHEN MAIN LINE IS C-900 PVC OR DIP (EPOXY COATED), SERVICE PIPE SHALL BE SAME MATERIAL AS MAIN LINE.

8. WHEN APPROVED BY THE DISTRICT, CLEAN-OUTS MAY BE PLACED IN PAVED AREAS, HOWEVER, PROTECTIVE BOXES AS SHOWN ON DETAIL SD-1 MUST BE INSTALLED.

(PLUMBERS ONLY)

WHERE EXISTING SERVICE LATERAL IS VITRIFIED CLAY PIPE, BELL (HUB) WILL BE REMOVED WITH APPROVED SAW AND A "FERNCO" VCP X PVC COUPLING WILL BE USED TO JOIN THE EXISTING AND NEW PIPE. FERNCO COUPLING WILL BE WRAPPED IN STRANDS OF COPPER WIRE AND COUPLING WILL BE BEDDED IN TYPE "57" ROCK TO UNDISTURBED MATERIAL. WHERE EXISTING SERVICE LATERAL IS DIP OR C-900, A DISTRICT APPROVED PVC TRANSITION COUPLING WILL BE USED.

LOXAHATCHEE RIVER DISTRICT		
N.T.S. / REVISION: APRIL, 2012	4" OR 6" SINGLE SERVICE CONNECTION DETAIL	SD-6



NOTES:

1. WHERE SEWER LATERALS MAY BE FORCED TO BE INSTALLED AT A DEPTH GREATER THAN 36" DUE TO CONFLICT WITH OTHER UTILITIES, THE WYE FITTING MAY BE PLACED IN A VERTICAL POSITION ON THE CLEAN-OUT RISER PIPE (ALTERNATE CONFIGURATION)

2. LEAVE RISER 18" (MIN.) ABOVE GRADE. WHEN HOUSE RISER CONNECTION IS MADE BY BUILDING PLUMBER, RISER PIPE WILL BE CUT OFF, AND SET 2" ABOVE SOD GRADE (ADAPTER SHALL BE LEFT UNGLUED).

3. IN AREAS WHERE NO SIDEWALK EXISTS OR WHERE NONE ARE PLANNED, THE CLEAN OUT RISER WILL BE SET AT R/W OR EASEMENT LINE.

4. IN AREAS WHERE GROUND WATER TABLE IS LESS THAN 36" FROM FINISHED GRADE, NIPPLES OUT OF WYE WILL BE EXTENDED UP TO A POINT 6" MIN. ABOVE GROUND WATER TABLE.

5. EMS MARKER MODEL NO.1258, SERVICE LINE ELECTRONIC MARKER AS MFG. BY 3M CO., TO REMAIN IN PLACE AFTER CONNECTION OF BUILDING SEWER. BURY IN FRONT OF CLEAN OUT RISER 18" BELOW FINISHED GRADE.

6. 6" SINGLE SERVICES USED ONLY FOR COMMERCIAL OR MULTI-FAMILY RESIDENTIAL UNITS. (SEE SD-3 & SD-4)

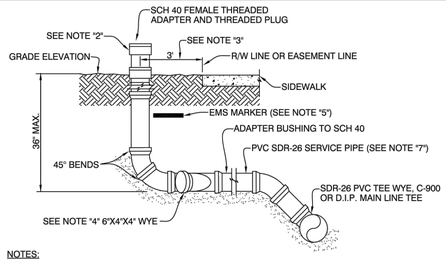
7. WHEN MAIN LINE IS C-900 PVC OR EPOXY COATED DIP, SERVICE PIPE SHALL BE SAME MATERIAL AS MAIN LINE.

8. WHEN APPROVED BY THE DISTRICT, CLEAN-OUTS MAY BE PLACED IN PAVED AREAS, HOWEVER, PROTECTIVE BOXES AS SHOWN ON DETAIL SD-1 MUST BE INSTALLED.

(PLUMBERS ONLY)

WHERE EXISTING SERVICE LATERAL IS VITRIFIED CLAY PIPE, BELL (HUB) WILL BE REMOVED WITH APPROVED SAW AND A "FERNCO" VCP X PVC COUPLING WILL BE USED TO JOIN THE EXISTING AND NEW PIPE. FERNCO COUPLING WILL BE WRAPPED IN STRANDS OF COPPER WIRE AND COUPLING WILL BE BEDDED IN TYPE "57" ROCK. WHERE EXISTING SERVICE LATERAL IS DIP OR C-900, A DISTRICT APPROVED PVC TRANSITION COUPLING WILL BE USED.

LOXAHATCHEE RIVER DISTRICT		
N.T.S. / REVISION: APRIL, 2012	4" OR 6" SINGLE SERVICE CONNECTION ALTERNATE CONFIGURATION DETAIL	SD-7



NOTES:

1. WHERE SEWER LATERALS MAY BE FORCED TO BE INSTALLED AT A DEPTH GREATER THAN 36" DUE TO CONFLICT WITH OTHER UTILITIES, THE WYE FITTING MAY BE PLACED IN A VERTICAL POSITION ON THE CLEAN-OUT RISER PIPE (ALTERNATE CONFIGURATION)

2. LEAVE RISER 18" (MIN.) ABOVE GRADE. WHEN HOUSE RISER CONNECTION IS MADE BY BUILDING PLUMBER, RISER PIPE WILL BE CUT OFF, AND SET 2" ABOVE SOD GRADE (ADAPTER SHALL BE LEFT UNGLUED).

3. IN AREAS WHERE NO SIDEWALK EXISTS OR WHERE NONE ARE PLANNED, THE CLEAN OUT RISER WILL BE SET AT R/W OR EASEMENT LINE.

4. IN AREAS WHERE GROUND WATER TABLE IS LESS THAN 36" FROM FINISHED GRADE, NIPPLES OUT OF WYE WILL BE EXTENDED UP TO A POINT 6" MIN. ABOVE GROUND WATER TABLE.

5. EMS MARKER MODEL NO.1258, SERVICE LINE ELECTRONIC MARKER AS MFG. BY 3M CO., TO REMAIN IN PLACE AFTER CONNECTION OF BUILDING SEWER. BURY IN FRONT OF CLEAN OUT RISER 18" BELOW FINISHED GRADE.

6. 6" SINGLE SERVICES USED ONLY FOR COMMERCIAL OR MULTI-FAMILY RESIDENTIAL UNITS. (SEE SD-3 & SD-4)

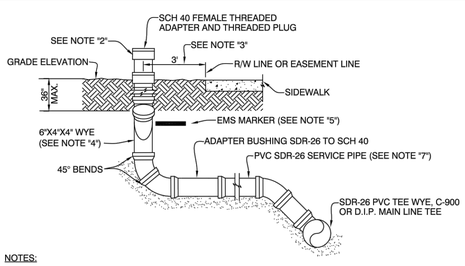
7. WHEN MAIN LINE IS C-900 PVC OR EPOXY COATED DIP, SERVICE PIPE SHALL BE SAME MATERIAL AS MAIN LINE.

8. WHEN APPROVED BY THE DISTRICT, CLEAN-OUTS MAY BE PLACED IN PAVED AREAS, HOWEVER, PROTECTIVE BOXES AS SHOWN ON DETAIL SD-1 MUST BE INSTALLED.

(PLUMBERS ONLY)

WHERE EXISTING SERVICE LATERAL IS VITRIFIED CLAY PIPE, BELL (HUB) WILL BE REMOVED WITH APPROVED SAW AND A "FERNCO" VCP X PVC COUPLING WILL BE USED TO JOIN THE EXISTING AND NEW PIPE. FERNCO COUPLING WILL BE WRAPPED IN STRANDS OF COPPER WIRE AND COUPLING WILL BE BEDDED IN TYPE "57" ROCK. WHERE EXISTING SERVICE LATERAL IS DIP OR C-900, A DISTRICT APPROVED PVC TRANSITION COUPLING WILL BE USED.

LOXAHATCHEE RIVER DISTRICT		
N.T.S. / REVISION: APRIL, 2012	6" DOUBLE SERVICE CONNECTION DETAIL	SD-8



NOTES:

1. WHERE SEWER LATERALS MAY BE FORCED TO BE INSTALLED AT A DEPTH GREATER THAN 36" DUE TO CONFLICT WITH OTHER UTILITIES, THE WYE FITTING MAY BE PLACED IN A VERTICAL POSITION ON THE CLEAN-OUT RISER PIPE (ALTERNATE CONFIGURATION)

2. LEAVE RISER 18" (MIN.) ABOVE GRADE. WHEN HOUSE RISER CONNECTION IS MADE BY BUILDING PLUMBER, RISER PIPE WILL BE CUT OFF, AND SET 2" ABOVE SOD GRADE (ADAPTER SHALL BE LEFT UNGLUED).

3. IN AREAS WHERE NO SIDEWALK EXISTS OR WHERE NONE ARE PLANNED, THE CLEAN OUT RISER WILL BE SET AT R/W OR EASEMENT LINE.

4. IN AREAS WHERE GROUND WATER TABLE IS LESS THAN 36" FROM FINISHED GRADE, NIPPLES OUT OF WYE WILL BE EXTENDED UP TO A POINT 6" MIN. ABOVE GROUND WATER TABLE.

5. EMS MARKER MODEL NO.1258, SERVICE LINE ELECTRONIC MARKER AS MFG. BY 3M CO., TO REMAIN IN PLACE AFTER CONNECTION OF BUILDING SEWER. BURY IN FRONT OF CLEAN OUT RISER 18" BELOW FINISHED GRADE.

6. 6" SINGLE SERVICES USED ONLY FOR COMMERCIAL OR MULTI-FAMILY RESIDENTIAL UNITS. (SEE SD-3 & SD-4)

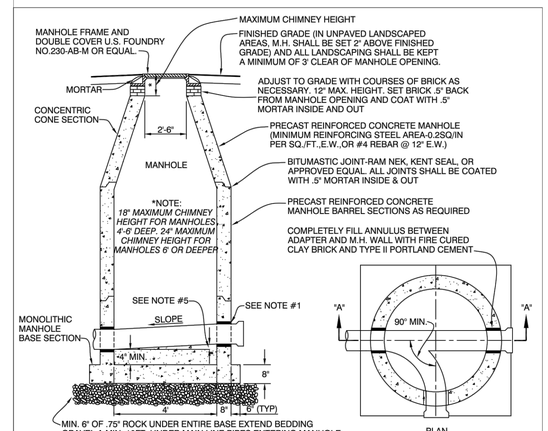
7. WHEN MAIN LINE IS C-900 PVC OR EPOXY COATED DIP, SERVICE PIPE SHALL BE SAME MATERIAL AS MAIN LINE.

8. WHEN APPROVED BY THE DISTRICT, CLEAN-OUTS MAY BE PLACED IN PAVED AREAS, HOWEVER, PROTECTIVE BOXES AS SHOWN ON DETAIL SD-1 MUST BE INSTALLED.

(PLUMBERS ONLY)

WHERE EXISTING SERVICE LATERAL IS VITRIFIED CLAY PIPE, BELL (HUB) WILL BE REMOVED WITH APPROVED SAW AND A "FERNCO" VCP X PVC COUPLING WILL BE USED TO JOIN THE EXISTING AND NEW PIPE. FERNCO COUPLING WILL BE WRAPPED IN STRANDS OF COPPER WIRE AND COUPLING WILL BE BEDDED IN TYPE "57" ROCK. WHERE EXISTING SERVICE LATERAL IS DIP OR C-900, A DISTRICT APPROVED PVC TRANSITION COUPLING WILL BE USED.

LOXAHATCHEE RIVER DISTRICT		
N.T.S. / REVISION: APRIL, 2012	6" DOUBLE SERVICE CONNECTION ALTERNATE CONFIGURATION DETAIL	SD-9



NOTES:

1. WHEN THE MAIN LINE IS PVC, A DISTRICT APPROVED HEAVY AGGREGATE COATED PVC M.H. ADAPTER (HARCO OR EQUAL) OR FERNCO M.H. ADAPTER SHALL BE USED. CAST IN PLACE RUBBER BOOTS WITH STAINLESS STEEL HARDWARE (CAST-A-SEAL 12-08 FOR 8", Z-LOC C-107 FOR ALL OTHER SIZES) MAY BE USED AS AN ALTERNATE.
2. CHANNEL WIDTHS AND INVERT RADII VARY UNIFORMLY FROM END TO END.
3. ALL HOLES FOR PIPES SHALL BE CAST INTO THE MANHOLES. OPENINGS REQUIRED ON ALL EXISTING MANHOLES SHALL BE CORED WITH APPROVED MACHINES.
4. WHEN INVERT DIFFERENTIALS BETWEEN PIPES ENTERING MANHOLES IS 2'. OR LESS, A "SLIDE" TYPE FLOW CHANNEL SHALL BE CONSTRUCTED TO FORM A SMOOTH FLOW TRANSITION. WHEN TWO (2) OR MORE "SLIDES" HAVE AN INVERT DIFFERENTIAL OF GREATER THAN .5' AND LESS THAN 2'. THE MANHOLE SHALL BE 5'-0". ALL INSIDE DROP MANHOLE'S SHALL BE 5' I.D. (SEE DETAIL SD-12).
5. A MINIMUM DIFFERENTIAL OF .1' SHALL BE PROVIDED BETWEEN THE INLET AND OUTLET PIPE INVERTS.
6. ALL MANHOLES 14' OR MORE FROM RIM TO LOWEST INVERT, SHALL RECEIVE A MINIMUM 0.5" THICK COATING OF SEWPERCOAT OR APPROVED EQUAL.
7. ALL MANHOLES IN A WELL FIELD PROTECTION ZONE 1 OR 2, SHALL RECEIVE A MINIMUM 1" THICK COATING OF SEWPERCOAT OR APPROVED EQUAL.

LOXAHATCHEE RIVER DISTRICT		
N.T.S. / REVISION: MARCH, 2017	PRECAST MANHOLE DETAIL	SD-11

DATE	BY	REVISIONS

Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

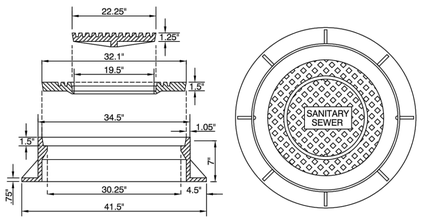
LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

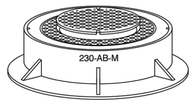
STANDARD DETAILS

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

CHRISTINE J. MIRANDA, PE
License No: 60906

SD-4





NOTES:

1. U.S.F. #230-AB-M MANHOLE RING & DOUBLE COVER, APPROXIMATE TOTAL WEIGHT 605 POUNDS
2. IN CASES WHERE A SHALLOW FRAME IS REQUIRED USF MODEL #655 MAY BE SUBISTUTED FOR MODEL #230-AB-M

LOXAHATCHEE RIVER DISTRICT

N.T.S.	MANHOLE FRAME AND COVER DETAIL	SD-13
REVISION: APRIL, 2012		

THE FOLLOWING SHALL BE USED AS A GUIDE FOR SUBMITTAL OF RECORD DRAWINGS TO THE LOXAHATCHEE RIVER DISTRICT

1. TWO (2) SETS OF PRINTS SHALL BE SUBMITTED TO THE DISTRICT FOR REVIEW 48 HOURS PRIOR TO REQUESTING INSPECTIONS SUCH AS, FINAL INSPECTION, PRESSURE TESTS, SANITARY SEWER LAMPING OR ANY OTHER ELEMENT OF THE SYSTEM WHICH IS DETERMINED BY THE DISTRICT TO REQUIRE CLARIFICATION.
2. THE DRAWINGS WILL BE REVIEWED BY THE DISTRICT FOR DEFICIENCIES. DEFICIENCIES WILL BE INDICATED ON ONE (1) SET OF PRINTS WHICH WILL BE RETURNED TO THE E.O.R. OR CONTRACTOR FOR NECESSARY CORRECTIVE ACTION.
3. UPON CORRECTION, TWO (2) SETS OF PRINTS (SIGNED/SEALED BY A FLORIDA LICENSED SURVEYOR) SHALL BE SUBMITTED.
4. NO DISCLAIMERS ON DRAWINGS WILL BE ACCEPTED.
5. UPON FINAL SUBMITTAL OF RECORD DRAWINGS, AN AUTOCAD VER. 2009 OR LATER AND ADOBE .PDF (24"X36") ELECTRONIC DATA FILE SHALL BE FURNISHED ON A CD-R DISK TO THE DISTRICT. ONLY ONE CAD FILE WITH ALL SHEETS OF RECORD DRAWINGS ALLOWED.
6. ALL SEWER ITEMS SHALL BE CATEGORIZED AND ASSIGNED TO THE DRAWING LAYERS SUCH AS: AB-MANHOLES, AB-FORCEMAIN, AB-VALVE, AB-GRAVITY MAIN, ETC.
7. REDRAW ALL SEWER LINES AND INFRASTRUCTURE ON RECORD DRAWINGS AS CONSTRUCTED HORIZONTALLY & VERTICALLY. USING ORIGINAL DESIGN LINEWORK & ONLY UPDATING THE CORRESPONDING TEXT CALLOUTS WILL NOT BE ACCEPTED AS RECORD DRAWINGS.

REQUIRED INFORMATION ON RECORD DRAWINGS

GENERAL

1. DRAWINGS ON 24" X 36" BOND PAPER THAT WILL REPRODUCE LEGIBLY.
2. LABEL DRAWINGS "RECORD DRAWINGS" WITH DATE. COMPLETE TITLE BLOCK WITH CURRENT FILE NAME.
3. DRAWINGS SHALL BE SIGNED / SEALED BY A FORIDA LICENSED PROFESSIONAL LAND SURVEYOR.
4. CORRECT STREET/ROAD NAMES AND LOT AND BLOCK NUMBERS.
5. SHOW AS-BUILT CONSTRUCTED SEWER FACILITIES HEAVIED UP, BOLD OR BOXED OUT TO STAND OUT FROM REST OF EACH DRAWING.
6. ALL ITEMS LISTED BELOW MUST BE CORRECTLY GEOREFERENCED WITH NORTHINGS/EASTINGS CLEARLY SHOW. THE AS BUILTS SHALL BE GEOREFERENCED TO THE STATE PLANE COORDINATES IN NAD 83, FLORIDA EAST ZONE, WHILE THE VERTICAL DATUM SHALL BE NGVD 29.

GRAVITY SEWER

1. AS-BUILT DISTANCE OF GRAVITY MAIN FROM CENTER LINE OF ROAD OR EASEMENT RIGHT- OF-WAY LINE, BUILDINGS, OR AS DETERMINED BY THE LOXAHATCHEE RIVER DISTRICT. EXTENSIONS OF AN IMAGINARY LINE WILL NOT BE ACCEPTABLE AS REFERENCED POINTS.
2. TYPE OF MATERIALS INSTALLED - MAINS AND SERVICES.
3. SHOW EACH SEWER SERVICE LATERAL INCLUDING THE CONNECTION TO THE MAIN AND PROVIDE THE NORTHING & EASTING POINTS FOR EACH CLEANOUT & INDICATE CLEANOUT DIAMETER.
4. AS-BUILT LOCATIONS OF MANHOLES WITH A NORTHING & EASTING PROVIDED.
5. AS-BUILT ELEVATIONS, RIM ELEVATION, EACH INVERT AND PIPE SLOPE.
6. UPDATE LIFT STATION DETAILS/ELEVATIONS INCLUDING START UP DATA.
7. LIFT STATION AND UTILITY EASEMENTS, INCLUDING LOCATION OF F.P.&L. SERVICE TO CONTROL PANEL.

PRESSURE PIPE

1. AS-BUILT DISTANCE OF MAINS AT 100' INTERVALS FROM CENTER LINE OF ROAD, EASEMENT, RIGHT-OF-WAY LINE, BUILDINGS, SEWER MAINS OR AS DETERMINED BY THE LOXAHATCHEE RIVER DISTRICT. EXTENSIONS OF AN IMAGINARY LINE WILL NOT BE ACCEPTABLE AS REFERENCED POINTS.
2. SHOW ELEVATIONS, NORTHING/EASTING OF EACH VALVE, FITTING, AIR RELEASE VALVE, SERVICE LINE, TAP, ETC., AND RADIAL DIMENSIONS (TIES) FROM A NEARBY PERMANENT OBJECT WHERE POSSIBLE. (SEE NOTE NO. 6 IN GENERAL).
3. TYPE OF MATERIALS INSTALLED - PIPE AND APPURTENANCES. INDICATE ALL LOCATIONS OF CHANGE OF MATERIAL INCLUDING JOINT TYPE (M.J., SLIP, RESTRAINED).
4. VALVE TYPE (BUTTERFLY, GATE, PLUG) INCLUDING THE NORTHING & EASTING POINT.
5. AS-BUILT LENGTH OF ALL JACK AND BORE CASINGS INDICATING DISTANCE FROM CENTER LINE OF PAVING TO EACH END OF CASING. THE AS-BUILT INVERT ELEVATION OF EACH END OF CASING, (INCLUDING NORTHING/EASTING) AND AS-BUILT DISTANCE FROM EACH END OF CASING TO LIMITS OF MECHANICAL JOINT PIPE IS ALSO REQUIRED.
6. AS-BUILT ELEVATIONS AT 100' INTERVALS AS WELL AS ANY MAJOR CHANGES IN DIRECTION AND/OR ELEVATION. ELEVATIONS SHOWN AT THESE INTERVALS AND CHANGES MUST SHOW TOP OF PIPE ELEVATION, NORTHING/EASTING AND FINISHED GRADE ELEVATION AT THAT LOCATION. SHOW LOCATION OF EMS MARKERS.
7. UTILITY EASEMENTS SHALL BE CORRECTLY SHOWN AND DIMENSIONED WITH REFERENCED SEWER FACILITY.

LOXAHATCHEE RIVER DISTRICT

N.T.S.	RECORD DRAWING SUBMITTAL GUIDE	SD-29
REVISION: APRIL, 2012		

SEPARATION REQUIREMENTS

62-555.314 F.A.C. AUGUST 28, 2003

1. HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

   A. NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

   B. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.

   C. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

2. VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, AND RECLAIMED WATER PIPELINES.

   A. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

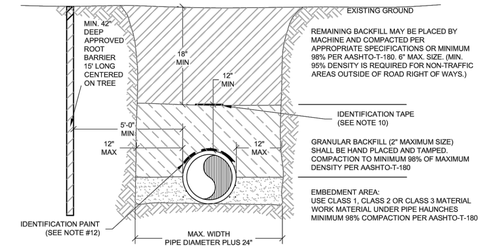
   B. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESURE- TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATERMAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

   C. AT THE UTILITY CROSSING DESCRIBED IN PARAGRAPHS (A) AND (B) ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

*REQUIRED BY: HRS, STATE OF FLORIDA, PALM BEACH COUNTY PUBLIC HEALTH UNIT

LOXAHATCHEE RIVER DISTRICT

N.T.S.	STANDARD WATER AND SEWER SEPARATION STATEMENT	SD-30
REVISION: APRIL, 2012		



NOTES:

CLASS 1 MATERIAL - ANGULAR 1/4" TO 3/4" GRADED STONE SUCH AS CORAL, CRUSHED STONE, CRUSHED SHELLS, OR BEDDING ROCK (100% PASSING 1" SIEVE)

CLASS 2 MATERIAL - COURSE SAND AND GRAVEL WITH A MAXIMUM PARTICLE SIZE OF 3/4" WITH A SMALL PERCENTAGE OF FINES COMPACTED TO A MINIMUM OF 98% DRY DENSITY PER AASHTO T-180

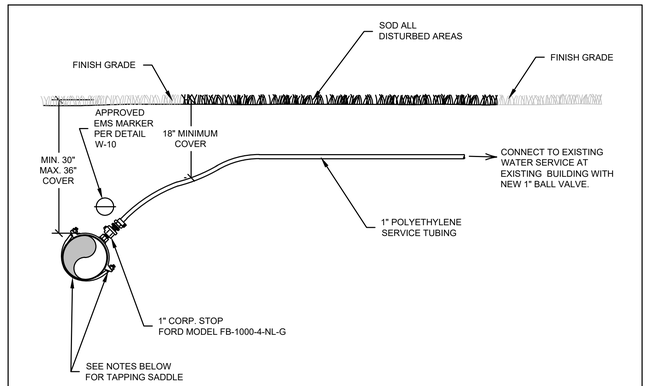
CLASS 3 MATERIAL - FINE SAND AND CLAYEY GRAVEL INCLUDING FINE SANDS, SAND-CLAY MIXTURES, AND GRAVEL-CLAY MIXTURES, COMPACTED TO A MINIMUM OF 98% DRY DENSITY PER AASHTO T-180.

1. BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8"- 7/8" SIZING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
2. IF CLASS 1 MATERIAL IS USED FOR BEDDING, IT SHALL BE USED FOR THE ENTIRE EMBEDMENT AREA.
3. THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
4. THE PIPE SHALL BE PLACED IN A DRY TRENCH.
5. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK AND DEBRIS.
6. DENSITY TESTS ARE REQUIRED IN 1 FOOT LIFTS ABOVE THE PIPE AT INTERVALS OF 400' MAXIMUM OR AS DIRECTED BY THE TOWN.
7. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL TRENCH SAFETY LAWS AND REGULATIONS.
8. SEE SEPARATE DETAIL FOR INSTALLATION UNDER PAVEMENT "TRENCH - PAVEMENT RESTORATION DETAIL."
9. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT/CONTRACT DOCUMENTS.
10. APPROVED MAGNETIC TAPE IS REQUIRED FOR ALL POTABLE WATER MAINS. THE TAPE SHALL BE INSTALLED MAX. 24" BELOW FINISHED GRADE.
11. ROOT BARRIER IS REQUIRED FOR APPROVED TREE INSTALLATIONS CLOSER THAN 10 FEET FROM UTILITY FACILITIES.
12. CONTINUOUS 4" WIDE BLUE PAINT STRIPING IN ACCORDANCE WITH F.A.C. 62-555.320(10) IS REQUIRED FOR DIP WATER MAINS.
13. A TRACER WIRE SYSTEM SHALL BE INSTALLED ON ALL NON-DUCTILE IRON WATER MAIN WITH TEST STATIONS AT ALL WATER MAIN VALVES (NOT HYDRANT VALVES) AND MAGNESIUM ANODES AT ALL PIPE DEAD ENDS AND TIE-IN POINTS. TRACER WIRE MATERIAL SHALL BE COPPERHEAD INDUSTRIES, LLC OR APPROVED EQUAL, INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. TRACER WIRE SHALL BE TIED TO PIPE AT 10' MAX. INTERVALS. SEE DETAIL W-6 FOR ACCEPTABLE MATERIAL.

WATERMAIN EMBEDMENT DETAIL

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 06/2017
DRAWING No. W-5



TYPICAL SAME-SIDE SERVICE TAP
NOT TO SCALE

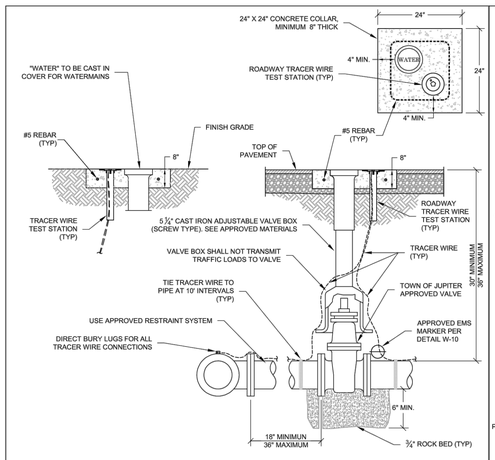
NOTES:

1. SERVICE TUBING SHALL BE 1" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200 PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
2. TAPPING SADDLES:
   FOR D.I.P. USE 1" DOUBLE STRAP TAP SADDLE 202B STYLE WITH CC4 OUTLET THREADS.
   FOR C-900 PVC, USE FORD 1" S-90 SERIES TAP SADDLE WITH AWWA THREADS.
3. ALL BRASS FITTING MATERIAL NOTED ABOVE FOR WATER SERVICES AND METER BOXES SHALL BE "NO LEAD" (-NL).

TYPE "A" SINGLE CONNECTION DETAIL FOR 1" METERS

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 09/2019
DRAWING No. W-21A



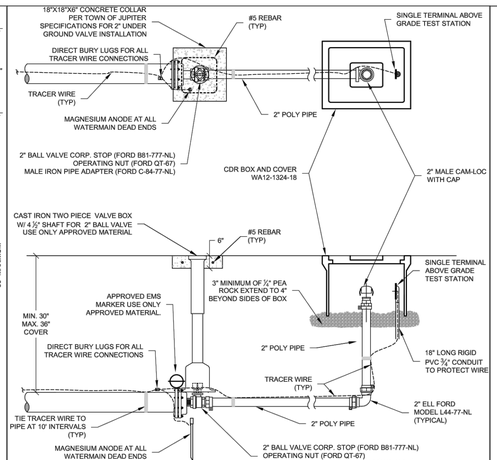
NOTES:

1. CONCRETE COLLAR MAY NOT BE REQUIRED IN PAVED AREAS IF PAVEMENT SURFACE IS FINISHED PRIOR TO CONDITIONAL FINAL INSPECTION AND VALVE BOX LID IS AT FINISHED GRADE.
2. WHEN VALVE IS DEEPER THAN 36" AN EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT TO +/- 24" OF FINISHED GRADE. EXTENSION MUST BE SET SCREW TYPE AND ATTACHED TO OPERATING NUT.
3. TRACER WIRE SHALL BE USED ON NON-DUCTILE PIPE ONLY. TRACER WIRE MATERIAL SHALL BE COPPERHEAD INDUSTRIES, LLC OR APPROVED EQUAL, INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. TRACER WIRE MATERIAL SHALL BE AS FOLLOWS:
   - ROADWAY TRACER WIRE TEST STATION SHALL BE COPPERHEAD PART NUMBER RB14BTP OR APPROVED EQUAL.
   - TRACER WIRE TEST STATION SHALL BE COPPERHEAD PART NUMBER LD14BTP OR APPROVED EQUAL.
   - DIRECT BURY LUGS SHALL BE COPPERHEAD SNAKEBITE DRYCONN DIRECT BURY LUG AQUA OR APPROVED EQUAL.
   - TRACER WIRE SHALL BE COPPERHEAD INDUSTRIES, LLC PART NUMBER 1430-HS OR APPROVED EQUAL.
   - TRACER WIRE SHALL DEAD END WITH COPPERHEAD MAGNESIUM ANODE PART NUMBER ANO-1005 OR APPROVED EQUAL.
   - ABOVE GROUND TEST STATION SHALL BE COPPERHEAD INDUSTRIES, LLC PART NUMBER T1-875 OR APPROVED EQUAL.

TYPICAL UNDERGROUND VALVE INSTALLATION

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 06/2017
DRAWING No. W-6



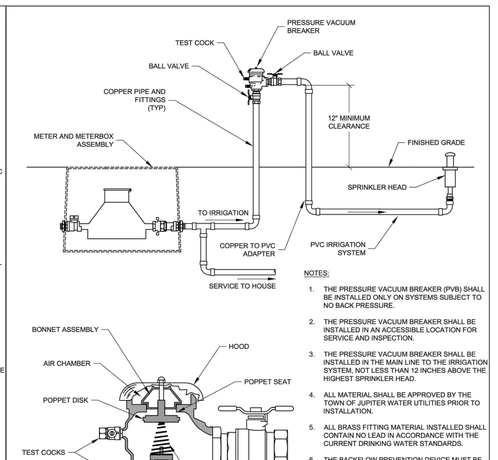
NOTES:

1. POLY PIPE SHALL BE 2" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200 PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
2. TRAFFIC RATED BOXES SHALL BE REQUIRED IN ALL PAVED AREAS AND AREAS TO BE PAVED IN THE FUTURE.
3. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
4. ALL PIPING SHALL BE RESTRAINED PER TOWN OF JUPITER STANDARDS.
5. TRACER WIRE SHALL BE INSTALLED ON ALL NON-DUCTILE IRON WATER MAIN.
6. TRACER WIRE SHALL BE COPPERHEAD INDUSTRIES, LLC PART NUMBER 1430-HS OR APPROVED EQUAL.
7. TRACER WIRE SHALL DEAD END WITH COPPERHEAD MAGNESIUM ANODE PART NUMBER ANO-1005 OR APPROVED EQUAL.
8. ABOVE GROUND TEST STATION SHALL BE COPPERHEAD INDUSTRIES, LLC PART NUMBER T1-875 OR APPROVED EQUAL.

TEMPORARY BLOWOFF

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 06/2017
DRAWING No. W-18B



NOTES:

1. THE PRESSURE VACUUM BREAKER (PVB) SHALL BE INSTALLED ONLY ON SYSTEMS SUBJECT TO NO BACK PRESSURE.
2. THE PRESSURE VACUUM BREAKER SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION FOR SERVICE AND INSPECTION.
3. THE PRESSURE VACUUM BREAKER SHALL BE INSTALLED IN THE MAIN LINE TO THE IRRIGATION SYSTEM, NOT LESS THAN 12 INCHES ABOVE THE HIGHEST SPRINKLER HEAD.
4. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
5. ALL BRASS FITTING MATERIAL INSTALLED SHALL CONTAIN NO LEAD IN ACCORDANCE WITH THE CURRENT DRINKING WATER STANDARDS.
6. THE BACKFLOW PREVENTION DEVICE MUST BE CERTIFIED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA HYDRAULIC RESEARCH.

NOT TO SCALE

PRESSURE TYPE VACUUM BREAKER FOR POTABLE IRRIGATION

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 04/2021
DRAWING No. CC-5

DATE	BY	REVISIONS

Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

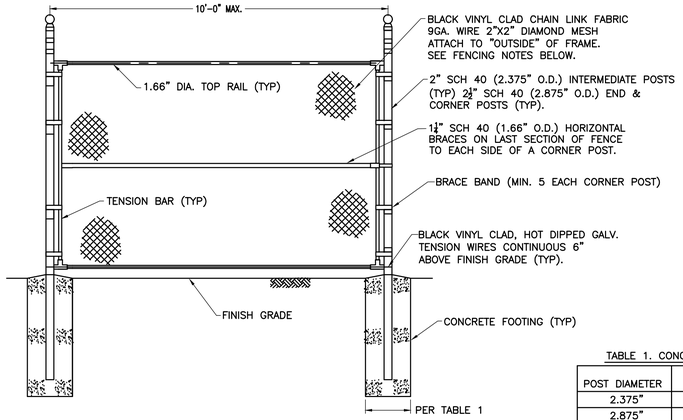
LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

STANDARD DETAILS

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

CHRISTINE J. MIRANDA, PE
License No: 60906

SD-5



NOTES:

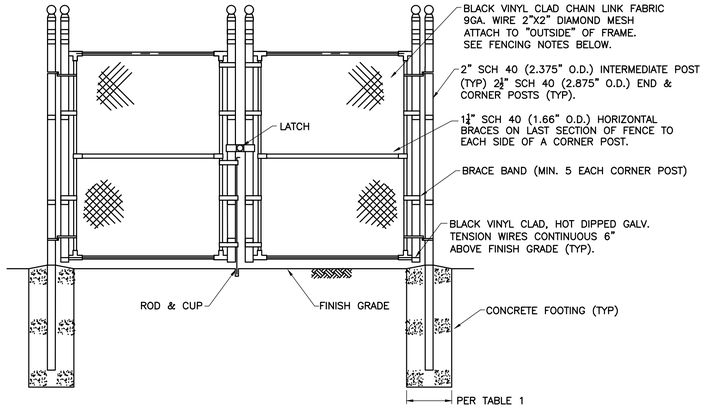
1. ALL CHAIN LINK FENCE WALLS TO BE STRUNG THROUGH STRETCHER BARS AND ATTACHED TO END POST WITH CLIP.
2. ALL CHAIN LINK FENCE ALONG PIPE FRAME TO BE WIRE TIED.
3. ALL WELD POINTS SHALL BE CLEANED AND PAINTED WITH POWDERED ZINC PRIMER.
4. ALL GALVANIZED STEEL PIPE TO BE A.S.A. SCH. 40. PIPE DIAMETERS LISTED ARE MINIMUM OUTSIDE DIAMETERS.
5. USE ONLY HEAVY DUTY LATCHES ON ALL GATES.
6. CONCRETE FOR FOOTING SHALL BE 3000 PSI. MINIMUM.
7. CHAIN LINK FENCE FABRIC TO BE 9GA. GALVANIZED PRIOR TO BLACK VINYL COATING.
8. ALL POSTS, RAILS AND FRAMING SHALL BE HOT DIPPED GALVANIZED AND POLYOLEFIN COATED PER SPECIFICATIONS.

TYPICAL FENCE SECTION

N.T.S.

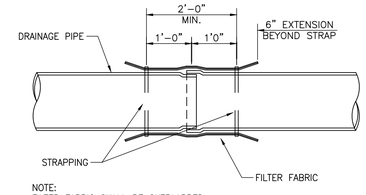
TABLE 1. CONCRETE FOOTING

POST DIAMETER	DIAMETER OF CONCRETE FOOTING
2.375"	10"
2.875"	12"
4.0"	16"



TYPICAL DOUBLE LEAF GATE

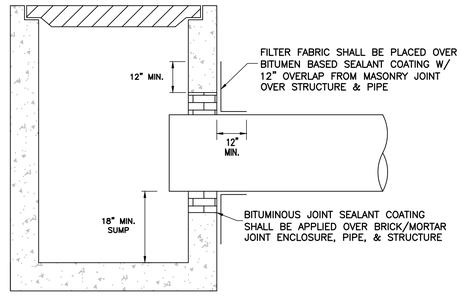
N.T.S.



NOTE:
FILTER FABRIC SHALL BE OVERLAPPED 2'-0" MINIMUM AT ALL PIPE JOINTS.

FILTER FABRIC PIPE JOINT WRAP

N.T.S

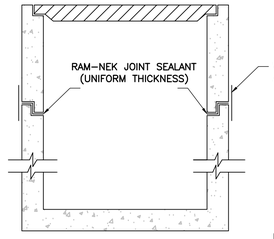


NOTES:

1. ALL INLET MATERIALS AND CONSTRUCTION NOT SHOWN HEREIN SHALL BE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATION 425 AND FDOT STANDARD PLANS INDEX SERIES 425.
2. DRAINAGE STRUCTURE–PIPE CONNECTION MASONRY JOINT SHALL BE FILLED WITH MIXTURE OF APPROVED BRICK AND TYPE I AND/OR II CONCRETE MORTAR.
3. ALL MASONRY JOINT SEAL BRICK OR WALL MATERIAL UNIT SHALL BE SATURATED BEFORE GROUT SEALING.
4. ALL MASONRY JOINT CONCRETE MORTAR SHALL BE TYPE I AND/OR II PREMIXED SILICA SAND–PORTLAND CEMENT (3:1 MAX). NO MIXING OF SAND–CEMENT IS PERMITTED ON SITE UNLESS APPROVED BY THE COUNTY ENGINEER.

PIPE - STRUCTURE CONNECTION DETAIL

N.T.S.



DRAINAGE INLET STRUCTURE

N.T.S.

INLET TYPE	CAST IRON	STEEL*
TYPE C	USF 6212	USF 6611
TYPE D	N/A	USF 6626
TYPE E	USF 6291	USF 6616
TYPE H	USF 6292	USF 6621

DRAINAGE INLET GRATE TYPES

*SEE NOTE #7

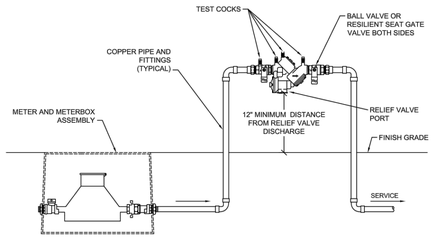
NOTES:

1. ALL INLET MATERIALS AND CONSTRUCTION NOT SHOWN HEREIN SHALL BE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATION 425 AND FDOT STANDARD PLANS INDEX SERIES 425.
2. INLET SHALL BE 1–PIECE MONOLOTHIC. INLETS THAT REQUIRE TWO PIECES AS REQUIRED BY LOAD CONSTRAINTS ARE TO CONTAIN SEALED KEY WAYS WITH RAM–NEK ASPHALTIC SEALANT AND EXTERIOR JOINT SEALANT WITH WRAPIDSEAL OR APPROVED EQUIVALENT. ANY PROPOSED 2–PIECE STRUCTURE SHALL BE APPROVED BY THE ENGINEER.
3. ALL INLETS SHALL HAVE A MINIMUM SUMP OF 18", UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4. DITCH BOTTOM INLETS SHALL NOT HAVE A SEPARATED TOP SLAB UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. ALL INLETS SHALL BE PLACED OVER DRY, FIRM AND UNYIELDING MATERIAL.
6. DITCH BOTTOM INLETS SHALL HAVE ANGLE IRON IN THE GRATE RECESSES TO ACCOMMODATE H–20 LOADING.
7. ALL INLET GRATES SHALL BEAR TRAFFIC LOADS AND SHALL BE CAST IRON IF APPLICABLE, OTHERWISE INLET GRATES SHALL BE HOT–DIPPED GALVANIZED STEEL.

INLET DETAIL

N.T.S.

REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION ASSEMBLY FOR 3/4", 1", 1-1/2" AND 2" INSTALLATIONS

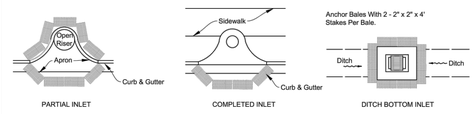


NOTE:
ALL BRASS FITTING MATERIAL INSTALLED SHALL CONTAIN NO LEAD IN ACCORDANCE WITH THE CURRENT DRINKING WATER STANDARDS

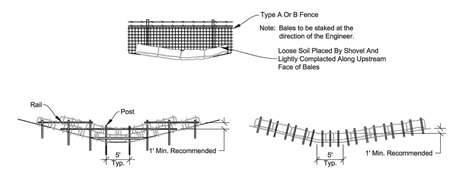
REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION ASSEMBLY

JUPITER UTILITIES
BACKFLOW PREVENTION PROGRAM DETAILS

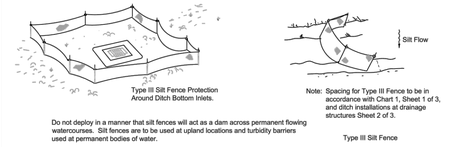
DATE APPROVED: 10/2013
DRAWING No. CC-1



PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



BARRIER FOR UNPAVED DITCHES



SILT FENCE APPLICATIONS

BALED HAY OR STRAW BARRIERS AND SILT FENCES

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008
DRAWING No. SW-12

DATE	BY	REVISIONS

Date: 11/18/2021
Scale: AS NOTED
Design By: KW
Drawn By: RR
Check By: #

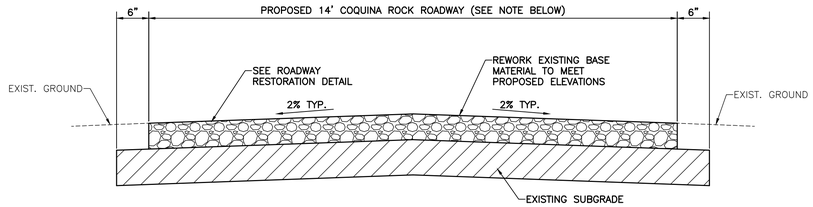
LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

STANDARD DETAILS

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005 Cert. No. 26960

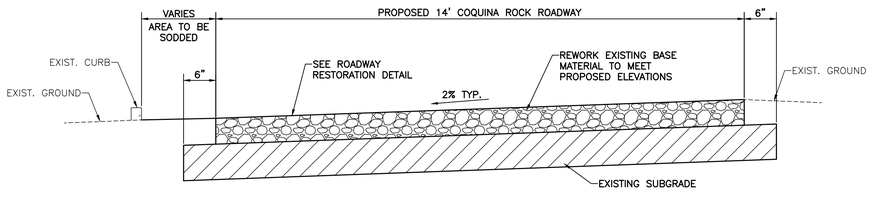
CHRISTINE J. MIRANDA, PE
License No: 60906

SD-6

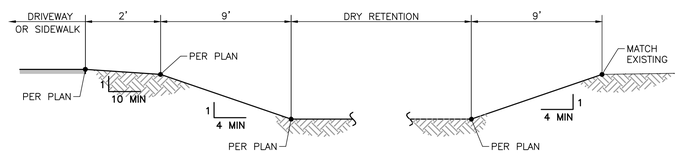


NOTE: ROAD SHALL BE 16' IN WIDTH FROM STA: 4+60 TO STA: 8+80

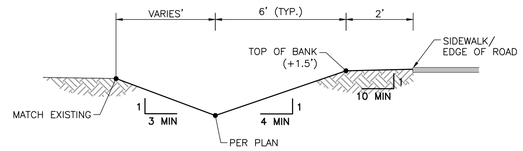
COQUINA ROCK ROAD SECTION "A"
N.T.S.



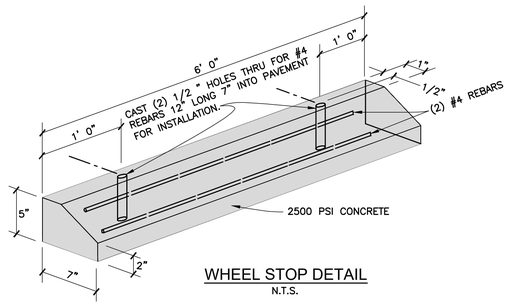
COQUINA ROCK ROAD SECTION "B"
N.T.S.



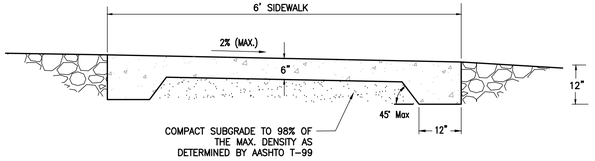
DRY RETENTION SECTION
N.T.S.



SWALE SECTION
N.T.S.

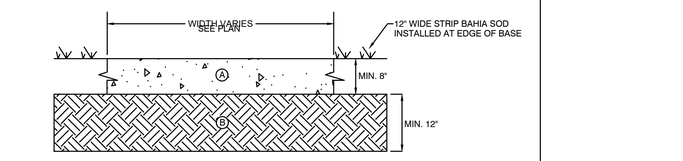


WHEEL STOP DETAIL
N.T.S.



NOTES:
SIDEWALK MATERIALS AND CONSTRUCTION SHOWN HEREIN SHALL BE IN ACCORDANCE WITH APPLICABLE FDOT STANDARD SPECIFICATIONS 522 AND FDOT STANDARD PLANS INDEX 522.
FIBER-REINFORCED CONCRETE FOR CURBS AND SIDEWALKS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS WITH A WATER TO CEMENT RATIO NOT MORE THAN 0.53 (LB/LB).
THICKENED EDGE SHALL CONTAIN APPLICABLE SUBGRADE COMPACTED TO 98% OF MAXIMUM DRY DENSITY (AASHTO T-99)

TYPICAL SIDEWALK SECTION
N.T.S.



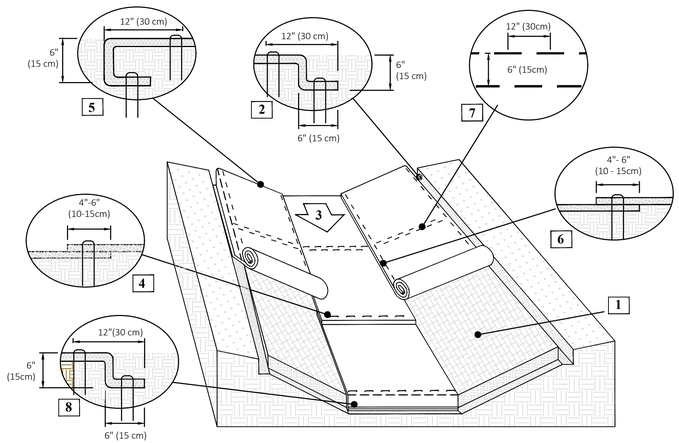
SECTION

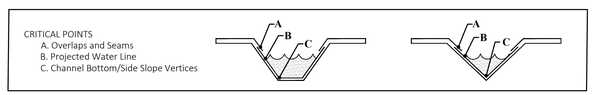
ROADWAY RESTORATION DETAIL

NOTES:
A. BASE: 8" ~~LIME ROCK OR~~ CEMENTED COQUINA, COMPACT TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.

B. SUBGRADE: 12" OF GRANULAR MATERIAL, COMPACTED TO LBR 4 OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. EXTEND 6" BEYOND LIMITS OF LIME ROCK.

LOXAHATCHEE RIVER DISTRICT		
N.T.S. REVISION: JAN, 2020	ROADWAY RESTORATION DETAIL	RRD-1



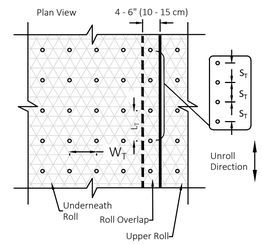


NOTES:
1. HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
2. INSTALL TURF REINFORCEMENT MAT MEETING THE REQUIREMENTS OF E-5, PER FDOT SPECIFICATION 985.

INSTRUCTIONS

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPS), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. GROUND SURFACE MUST BE FREE OF DEBRIS, ROCKS, CLAY CLODS AND RAKED SMOOTH SUFFICIENT TO ALLOW INTIMATE CONTACT OF THE RECP WITH THE SOIL OVER THE ENTIRETY OF THE INSTALLATION.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECPS IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECPS EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. USE SHOREMAX MAT AT THE CHANNEL/CULVERT OUTLET AS SUPPLEMENTAL SCOUR PROTECTION AS NEEDED. ANCHOR THE RECPS WITH A ROW OF STAPLES/STAKES/PINS APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12" (30 CM) PORTION OF RECPS BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPS OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES/PINS SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECPS.
3. ROLL CENTER RECPS IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECPS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES/PINS IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. PLACE CONSECUTIVE RECPS END-OVER-END (SHINGLE STYLE) WITH A 4"- 6" (10 - 15 CM) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE RECPS.
5. FULL LENGTH EDGE OF RECPS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES/PINS SPACED AT S_T APART IN A 6" (15 CM) DEEP X 6"(15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECPS MUST BE OVERLAPPED APPROXIMATELY 4"- 6" (10 - 15 CM) AND SECURED WITH STAPLES/STAKES/PINS AT S_T.
7. IN HIGH FLOW CHANNEL APPLICATIONS A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9 -12M) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 6" (15 CM) APART AND 12" (30 CM) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECPS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES/PINS SPACED AT S_T APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
9. FASTENERS SHOULD PROVIDE A MINIMUM OF TWENTY POUNDS OF PULLOUT RESISTANCE. SIX-INCH (10 CM) X ONE-INCH (2.5 CM) ELEVEN GAUGE STAPLES ARE TYPICALLY ADEQUATE. IN LOOSE SOILS, LONGER STAPLES MAY BE NECESSARY, TWIST PINS CAN PROVIDE THE GREATEST PULLOUT RESISTANCE. IN HARD OR ROCKY SOILS, STRAIGHT PINS MAY BY USED WHERE STAPLES OR TWIST PINS ARE REFUSED, PROVIDED THE MINIMUM PULLOUT REQUIREMENTS ARE MET. BIO-DEGRADABLE FASTENERS SHALL NOT BE USED WITH TRM MATERIALS.

STAPLE PATTERN GUIDE



○ Pin / Staple / Twist Pin, as appropriate for field conditions

	Staple Pattern
Dimension	E
W_T	20" (50 cm)
L_T	20" (50 cm)
S_T	18" (45 cm)
Nominal Frequency	3.8 / SY

TURF REINFORCEMENT MAT INSTALLATION DETAIL
N.T.S.

DATE	BY	REVISIONS

Date: 11/18/2021
Scale: AS NOTED
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LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

STANDARD DETAILS

HOLTZ CONSULTING ENGINEERS, INC.
270 SOUTH CENTRAL BLVD., SUITE 207
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SD-7

ELECTRICAL SPECIFICATIONS

DIVISION 16 - ELECTRICAL

16010 BASIC ELECTRICAL REQUIREMENTS

A. ALL WORK AND EQUIPMENT UNDER THIS DIVISION SHALL BE IN STRICT COMPLIANCE WITH THE CODES, STANDARDS AND PRACTICES LISTED HEREIN, AND THEIR RESPECTIVE DATES ARE FURNISHED AS THE MINIMUM LATEST REQUIREMENTS.

1. STATE OF FLORIDA BULDING CODE (2017)
2. UNDERWRITERS LABORATORIES, INC. PUBLICATIONS
3. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).
4. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
5. NATIONAL ELECTRICAL CODE - NFPA 70 (2014).
6. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE).
7. NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA).
8. INTERNATIONAL POWER CABLE ENGINEER'S ASSOCIATION (IPCEA).
9. NATIONAL FIRE PROTECTION ASSOCIATION 72 (2013).
10. THE STATE FIRE PREVENTION CODE, (2015).
11. BUILDING CODE: FLORIDA BUILDING CODE (2017).
12. NATIONAL ELECTRICAL SAFETY CODE (NBS HANDBOOK 81)
13. REQUIREMENTS OF LOCAL POWER CORPORATION.
14. AIA GUIDELINES

B. SCOPE OF WORK:
THE WORK PROVIDED UNDER THIS DIVISION SHALL INCLUDE ALL LABOR, MATERIALS, PERMITS, INSPECTIONS AND REINSPECTION FEES, TOOLS, EQUIPMENT, TRANSPORTATION, INSURANCE, TEMPORARY PROTECTION, TEMPORARY LIGHTING, SUPERVISION AND INCIDENTAL ITEMS ESSENTIAL FOR PROPER INSTALLATION AND OPERATION, EVEN THOUGH NOT SPECIFICALLY MENTIONED OR INDICATED BUT WHICH ARE USUALLY PROVIDED OR ARE ESSENTIAL FOR PROPER INSTALLATION AND OPERATION OF ALL ELECTRICAL SYSTEMS AS INDICATED IN CONTRACT DOCUMENTS.

C. NOTICES:
GIVE ALL NOTICES, FILE ALL PLANS, PAY ALL FEES, OBTAIN ALL PERMITS AND APPROVALS FROM AUTHORITIES HAVING JURISDICTION. INCLUDE ALL FEES IN THE BID PRICE.

D. INTERPRETATION OF DRAWINGS:

1. THE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EXACT LOCATIONS OF CONDUIT RUNS, OUTLET BOXES, JUNCTION BOXES, PULL BOXES, ETC. THE LOCATIONS OF EQUIPMENT, APPLIANCES, FIXTURES, CONDUITS, OUTLETS, BOXES AND SIMILAR DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY. EXACT LOCATIONS SHALL BE AS ACCEPTED BY THE ENGINEER DURING CONSTRUCTION. OBTAIN IN THE FIELD ALL INFORMATION RELEVANT TO THE PLACING OF ELECTRICAL WORK AND IN CASE OF INTERFERENCE WITH OTHER WORK, PROCEED AS DIRECTED BY THE ENGINEER AND PROVIDE ALL LABOR AND MATERIALS NECESSARY TO COMPLETE THE WORK IN AN ACCEPTABLE MANNER.

2. DISCREPANCIES:
NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES FOUND DURING CONSTRUCTION OF THE PROJECT AND DO NOT PROCEED WITH THAT PORTION OF THE PROJECT, UNTIL A WRITTEN DEFINITIVE STATEMENT IS RECEIVED PROVIDING CLEAR DIRECTION. IF A CONFLICT EXISTS BETWEEN THE CONTRACT DOCUMENTS AND ANY APPLICABLE CODE OR STANDARD, THE MOST STRINGENT REQUIREMENT SHALL BE INCLUDED FOR THIS PROJECT. THE ENGINEER SHALL MAKE THE DECISION REGARDING QUESTIONABLE AREAS OF CONFLICT.

3. WIRING:
EACH THREE-PHASE CIRCUIT SHALL BE RUN IN A SEPARATE CONDUIT UNLESS OTHERWISE SHOWN ON THE DRAWINGS. UNLESS OTHERWISE ACCEPTED BY THE ENGINEER, CONDUIT SHALL NOT BE INSTALLED EXPOSED UNLESS SPECIFICALLY DIRECTED TO BE CONCEALED. WHERE CIRCUITS ARE SHOWN AS "HOME-RUNS" ALL NECESSARY FITTINGS AND BOXES SHALL BE PROVIDED FOR A COMPLETE RACEWAY INSTALLATION.

E. INVESTIGATION ON SITE:

1. GENERAL: BEFORE COMMENCING THE WORK, VERIFY EXISTING CONDITIONS AT THE PUMP STATION, BUT NOT LIMITED TO, EXISTING STRUCTURAL FRAME, LOCATION AND ALL DIMENSIONS; EXISTING MECHANICAL AND ELECTRICAL WORK, EQUIPMENT TYPE, AND SHALL EXAMINE ALL ADJOINING WORK ON WHICH HIS WORK IF ANYWAY DEPENDENT FOR ITS PERFECT EFFICIENCY ACCORDING TO THE INTENT OF THE CONTRACT DOCUMENTS.

2. POWER OUTAGE:
SPECIAL ATTENTION IS CALLED TO THE FACT THAT WORK INVOLVED IS IN CONNECTION WITH PUMP STATION WHICH REMAIN IN OPERATION WHILE WORK IS BEING PERFORMED. WORK MUST BE DONE IN ACCORDANCE WITH THE PRIORITY SCHEDULE. SCHEDULE WORK FOR A MINIMUM OUTAGE TO OWNER. REQUEST WRITTEN PERMISSION AND RECEIVE WRITTEN ACCEPTANCE FROM THE OWNER NO LATER THAN 48 HOURS IN ADVANCE OF ALL POWER AND COMMUNICATION SHUT-DOWNS. PERFORM WORK REQUIRED AT OTHER THAN STANDARD WORKING HOURS WHERE OUTAGES CANNOT BE ACCEPTED BY OWNER DURING REGULAR WORKING HOURS. PROTECT EXISTING PUMP STATION EQUIPMENT DURING CONSTRUCTION.

3. SPECIAL CONSIDERATIONS:
SPECIAL ATTENTION IS CALLED TO THE FACT THAT THERE WILL BE PIPING, FIXTURES OR OTHER ITEMS IN THE EXISTING PUMP STATION WHICH MUST BE REMOVED OR RELOCATED IN ORDER TO PERFORM THE ALTERATION WORK. BID SHALL INCLUDE ALL REMOVAL AND RELOCATION REQUIRED FOR COMPLETION OF THE ALTERATIONS AND THE NEW CONSTRUCTION.

4. DEMOLITION - GENERAL:
DURING THE EXECUTION OF WORK, ALL REQUIRED RELOCATION, REROUTING, ETC., OF EXISTING EQUIPMENT AND SYSTEMS IN THE EXISTING PUMP STATION WHERE THE WORK IS REQUIRED, SHALL BE PERFORMED BY THE CONTRACTOR, AS INDICATED ON THE DRAWINGS, OR AS REQUIRED BY JOB CONDITIONS AND AS DETERMINED BY THE ARCHITECT IN THE FIELD, TO FACILITATE THE INSTALLATION OF THE NEW SYSTEMS. THE OWNER SHALL REQUIRE CONTINUOUS OPERATION OF THE EXISTING SYSTEMS, WHILE DEMOLITION, RELOCATION WORK OR NEW TIE-INS ARE PERFORMED.

5. OWNER'S SALVAGE: THE OWNER RESERVES THE RIGHT TO INSPECT THE MATERIAL SCHEDULED FOR REMOVAL AND SALVAGE ANY ITEMS HE DEEMS USABLE AS SPARE PARTS.

F. EXISTING CONDITIONS:

1. SUPPORT:
ALL EXISTING CONDUIT AND CABLES WITHIN THE AREA OF RENOVATION SHALL BE PROVIDED WITH PROPER SUPPORTS AS SPECIFIED FOR NEW WORK IN OTHER SECTIONS OF THIS SPECIFICATION.

2. INSTALLATION: ALL EXISTING ELECTRICAL WHICH IS DESIGNATED FOR REWORKING OR REQUIRES RELOCATION, REPAIR OR ADJUSTMENT SHALL CONFORM TO ALL APPLICABLE CODES AND SHALL BE TREATED AS NEW WORK COMPLYING TO ALL SECTIONS OF THIS SPECIFICATION.

3. VIOLATIONS:
WHERE EXISTING CONDITIONS ARE DISCOVERED WHICH ARE NOT IN COMPLIANCE WITH THE CODES AND STANDARDS, THE CONTRACTOR SHALL SUBMIT PROPER DOCUMENTATION TO THE ENGINEER FOR CLARIFICATION AND CORRECTIVE WORK DIRECTION. EXISTING CONDITIONS SHALL NOT REMAIN WHICH WILL CREATE A DISAPPROVAL OF THE RENOVATED AREA.

4. PATCHING:
ALL EXISTING CONDUIT AND CABLE PENETRATIONS SHALL BE PROPERLY FIRE TREATED PER CODE AND SPECIFICATION REQUIREMENTS. THE CONTRACTOR SHALL THOROUGHLY INSPECT ALL EXISTING LOCATIONS AND INCLUDE THE COST OF PATCHING AND REPAIR IN HIS PROPOSED CONSTRUCTION COST.

G. ALL MATERIALS SHALL BE NEW, FREE FROM DEFECTS AND SHALL BE EITHER U.L. LABELED, U.L. LISTED OR BEAR THE SEAL OF A NATIONALLY RECOGNIZED ELECTRICAL TESTING LABORATORY.

H. SHOP DRAWINGS ARE REQUIRED FOR ALL MATERIALS AND EQUIPMENT.

I. ALL EQUIPMENT SHALL BE FIRMLY MOUNTED USING APPROVED HANGERS ATTACHED TO STRUCTURAL PORTIONS OF THE BUILDING. SUPPORTING WITH TIE WIRE IS PROHIBITED.

J. SERVICE AND METERING SHALL MEET THE REQUIREMENTS OF THE LOCAL UTILITY COMPANY AND ALL PROVISIONS OF NAPA 70. TEMPORARY LIGHT AND POWER SHALL BE PROVIDED AS REQUIRED.

K. SYSTEMS GUARANTEE: PROVIDE A ONE-YEAR GUARANTEE. THIS GUARANTEE SHALL BE BY THE CONTRACTOR TO THE OWNER FOR ANY DEFECTIVE WORKMANSHIP OR MATERIAL WHICH HAS BEEN PROVIDED UNDER THIS CONTRACT AT NO COST TO THE OWNER FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE SYSTEM. THE GUARANTEE SHALL INCLUDE ALL LAMPS, FOR NINETY DAYS AFTER DATE OF SUBSTANTIAL COMPLETION OF THE SYSTEM. EXPLAIN THE PROVISIONS OF GUARANTEE TO THE OWNER AT THE "DEMONSTRATION OF COMPLETED SYSTEM".

16020 TEST AND PERFORMANCE VERIFICATION

A. EQUIPMENT AND APPLICATIONS SHALL BE PER NEMA STANDARDS.

B. CABLES, MOTORS, GROUNDS, TRANSFORMERS, AND THE EMERGENCY SYSTEM SHALL BE THOROUGHLY TESTED. CONTRACTOR SHALL PROVIDE A REPORT INDICATING THE RESULTS OF ALL TESTS.

16030 ELECTRICAL IDENTIFICATION

A. LANGUAGE ALL IDENTIFICATION SHALL BE IN ENGLISH.

B. CONDUITS SYSTEM MARKERS SHALL BE ENGRAVED PLASTIC, LAMINATE NAMEPLATES AND SHALL BE ADHESIVE OR PRE-TENSIONED SNAP ON COLOR CODED, SYSTEM MARKING MATERIALS.

C. IDENTIFICATION: IDENTIFY ALL RACEWAYS PROVIDED OR UTILIZED AS PART OF THIS PROJECT AS FOLLOWS;

1. APPLY BANDS 10 FEET ON CENTER ALONG THE RACEWAY SYSTEM AND AT EACH SIDE OF WALLS OR FLOORS, AND AT BRANCHES FROM MAINS.

2. IDENTIFY THE FOLLOWING SERVICES;

SERVICE	LABEL
A. LOW VOLTAGE	120/208 VOLTAGE
B. HIGH VOLTAGE	277/480 VOLTAGE
C. FIRE ALARM	FIRE ALARM
D. TELEPHONE	TELEPHONE
E. EMERGENCY EQUIPMENT BRANCH	EMERGENCY EQUIPMENT BRANCH

3. SPOT PAINTING ON ROUGH-IN;

A. CONDUIT, RACEWAYS, BOXES, BACKBONES, PANELBOARDS, ETC. SHALL BE SPOT PAINTED. CONDUIT SHALL BE IDENTIFIED WITHIN 6 INCHES OF THE BOX OR ENCLOSURE. THE ENTIRE BOX AND COVERPLATE SHALL BE PAINTED.
B. USE FOLLOWING COLORS FOR COLOR BANDS AND FOR COLOR CODING;

SYSTEM	COLOR
1) EQUIPMENT BRANCH	KELLY GREEN
2) NORMAL POWER	WHITE
3) MISCELLANEOUS COMMUNICATIONS	BROWN
4) FIRE ALARM	RED
5) TELEPHONE/COMPUTER	BLACK

C. CABLE AND CONDUCTOR IDENTIFICATION WILL BE AS PER NFPA 70.

D. OPERATIONAL SIGNAGE SHALL BE PROVIDED WHERE REQUIRED.

16110 BASIC MATERIALS AND METHODS

A. RACEWAYS AND FITTINGS:

1. ALL WIRING SHALL BE INSTALLED IN APPROPRIATE RACEWAY SYSTEMS OF SCHEDULE 80 PVC CONDUIT AND LIQUID-TIGHT FLEXIBLE CONDUIT AS CONDITIONS AND CODES DICTATE.

2. ALL CONDUIT SHALL HAVE AN INSULATED COPPER EQUIPMENT GROUNDING CONDUCTOR THROUGHOUT THE ENTIRE LENGTH OF THE CIRCUIT WITHIN THE CONDUIT.

16120 WIRES AND CABLES

A. ALL BRANCH CIRCUITS SHALL BE COPPER WITH THHN/THWN INSULATION. MINIMUM SIZE #12 AWG.

B. FEEDERS AND SUBFEEDERS SIZE #4 AND LARGER SHALL BE XXHW COPPER.

C. COLOR CODING SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE, 2014 EDITION SPECIFICALLY. PHASE CONDUCTORS OF EACH VOLTAGE SYSTEM MUST BE OF A DIFFERENT COLOR. NEUTRALS SHALL BE WHITE FOR 120/208 AND GRAY FOR 277/480. EQUIPMENT GROUNDING CONDUCTORS SHALL BE GREEN INSULATED.

16130 OUTLET BOXES

A. OUTLET BOXES: OUTLET BOXES SHALL BE ONE PIECE OR PROJECTION WELDED, STAINLESS STAMPED STEEL FOR GANG SIZES REQUIRED, SECTIONAL BOXES ARE NOT ACCEPTABLE. BOXES SHALL BE 4" SQUARE AND 1-1/2" DEEP GENERALLY. LARGER BOXES SHALL BE USED AS REQUIRED BY CODE.

16140 WIRING DEVICES

A. ALL RECEPTACLES SHALL BE 20 AMP, 125 VOLT GROUNDING TAMPER PROOF TYPE, (HOSPITAL GRADE) (SPECIFICATION GRADE) AND MOUNTED AT 18" AFF.

B. RECEPTACLES LOCATED WHERE WATER OR WET CONDITIONS EXIST SHALL BE GROUND FAULT CIRCUIT. (GFIC)

C. ALL RECEPTACLES SHALL BE TAMPER PROOF.

D. APPROVED MANUFACTURERS: HUBBEL, PASS & SEYMOR, LEVITON.

16470 PANELBOARDS

ALL NEW PANELBOARD AND DISCONNECTS TO BE STAINLESS STEEL NEMA 4X

A. PANELS SHALL BE FULL SIZE, MINIMUM 20" WIDE X 5-3/4" DEEP USING FULL SIZE, BOLT-ON QUICK-MAKE, QUICK-BREAK CIRCUIT BREAKERS OF THE THERMAL MAGNETIC TYPE. MAINS SHALL BE LUGS ONLY OR MAIN BREAKERS AS REQUIRED. PANELS SURFACE MOUNTED IN CLOSETS. ALL PANELS TO HAVE SEPARATE EQUIPMENT GROUND BAR AND TYPEWRITTEN DIRECTORIES.

B. PANELS SHALL BE RATED FOR USE AS SERVICE ENTRANCE WHERE REQUIRED.

C. APPROVED MANUFACTURERS: SQUARE D, GE, CUTLER HAMMER, SIEMENS.

16480 SAFETY SWITCHES AND MOTOR CONTROLS

A. MOTOR STARTERS SHALL BE ACROSS-THE-LINE MAGNETIC TYPE SIZED FOR MOTOR HORSEPOWER. OVERLOADS SHALL BE PROVIDED IN EACH PHASE. HAND-OFF-AUTO SELECTOR SWITCHES, RUN PILOT LIGHTS AND AUXILIARY CONTACTS SHALL BE INCLUDED. CONTROL SHALL BE 120V.

B. ALL CONTROL, ALARM AND INTERLOCK WIRING SHALL BE IN CONDUIT AND SHALL BE COLOR CODED.

C. DISCONNECT SWITCHES SHALL BE HEAVY DUTY AND SHALL USE A QUICK-MAKE, QUICK-BREAK MECHANISM WITH AN ENCLOSURE OF A NEMA TYPE CONFORMING TO AREA IN WHICH IT IS INSTALLED. DISCONNECTS FOR MOTORS SHALL BE HORSEPOWER RATED.

D. APPROVED MANUFACTURERS: SQUARE D, GE, CUTLER HAMMER, SIEMENS.

16709 SURGE SUPPRESSION , BONDING AND GROUNDING

A. SURGE SUPPRESSION EQUIPMENT SHALL BE UL1449 3RD EDITION LISTED, 22L AIC MIN. RATING AND BE PROVIDED FOR ALL NEW DISTRIBUTION EQUIPMENT. IT SHALL BE INSTALLED ON THE MAIN ELECTRICAL SERVICE, ALL DISTRIBUTION PANELS AND SELECTED SUB-PANELS, POWER SUPPLIES OF SPECIAL SYSTEMS, AND ON CIRCUITS FEEDING SELECTED MAJOR ITEMS THAT HAVE A SENSITIVE ELECTRICAL NATURE. A BONDING AND SINGLE POINT GROUNDING SYSTEM SHALL BE PROVIDED TO INTERCONNECT THE MAIN ELECTRIC SERVICE GROUND AND ALL SPECIAL ELECTRONIC SYSTEM.

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Date: 11/18/2021
Scale: AS NOTED
Design By: ES
Drawn By:
Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

GENERAL ELECTRICAL NOTES

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E-1

SECTION 150

SUBMERSIBLE LIFT STATIONS

150.01 Scope

It is the intent of this standard is to provide component requirements and general design guidelines for submersible wastewater lift stations. This standard shall be used in conjunction with Standard Details SD-31 through 35 and referenced standards for complete submersible wastewater lift station requirements.

This specification typically defines requirements for 20HP and smaller lift stations. Lift stations greater than 20 HP, serving critical infrastructure or performing as a repump station may require alternate design criteria including variable speed, tri-plex configuration, permanent standby emergency power and PLC control. These additional design criteria will be defined by Engineering Services during the design.

150.02 Site

Lift station sites shall be provided with a minimum 40' x 40 lift station easement. Variations on the easement shall be considered on a case by case basis where access, maintenance and bypass operations can be accommodated with alternate configurations acceptable to the District and approved by Engineering Services.

The lift station site and access shall be set at proper elevations and configurations such that access and maintenance to the station will not be impaired by flooding, excessive road grades, swales, walls or landscaping. A lift station site plan indicating all topographical features, rights-of-way, easements and adjoining contiguous areas shall be submitted to the District for approval..

All above or at grade facilities shall be above the 1% Annual Chance Flood (100-year flood) zone, as shown on Flood Insurance Rate Maps (FIRMs). Site and lift station plans shall include the 100-year flood elevation.

150.03 Power

The Contractor shall coordinate with and pay all fees, deposits, and service costs to Florida Power and Light Corp. to provide a three phase, 480V or 240V underground power service to the new lift station site. The transformer for the station shall be located not further than 25 feet from the nearest station easement line.

The power meter for the lift station shall be located on the lift station site, installed on the District's standard control panel rack.

150.04 Lift Station Standard Equipment

A list of standard lift station equipment is given below. This list is not all inclusive and the Contractor shall supply all other equipment necessary for complete working installations. The lift station shall include:

Two (2) explosion proof submersible type sewage pumps with 316 stainless steel guide rails, base plates and all accessories.

Two (2) discharge lines with swing check valves and plug valves and emergency tap connection

Instrumentation/control system, (requirements vary on station size)..

One (1) electrical control panel, NEMA 4X, to house electrical equipment, pump controls, alarms and protection.

One (1) wet well.

One (1) valve vault.

Concrete covers with aluminum access hatches and safety grates

Influent drop assemblies

Permanent standby generator and ATS, (requirements vary on station size).

Radio or Cellular Telemetry System

Coatings

Concrete pads

Landscaping/site screening

The wet well structure shall receive a minimum 1.0-inch thick calcium aluminate corrosion barrier such as Sewper Coat, Strong Seal, Refratta HAC 100 or approved equal, and installed per the manufacturers recommendations.

One (1) influent (collection) manhole structure with piping connecting to the wet well structure. The distance between the collection manhole and the wet well shall be no more than 50 feet.

150.05 Pumps and Motors

The pumps shall be capable of handling grit and raw unscreened sewage. The design shall be such that the pump unit will be automatically and firmly connected to the discharge piping when lowered into place on its mating discharge connection, permanently installed in the wet well. The pump shall be easily removable for inspection or service requiring no bolts, nuts, or other fastenings to be disconnected.

All major parts, such as the stator casing, oil casing, sliding bracket, volute, and impeller shall be of gray iron. All surfaces coming into contact with sewage shall be protected by a coating resistant to sewage. All exposed bolts and nuts shall be of stainless steel.

Pump faces shall be machined to accept a sacrificial plate between the pump face and seat. The sacrificial plate shall be manufactured from ¼" brass plate, bolted to the pump face and removable/replaceable.

A wear ring system shall be installed to provide efficient sealing between the volute and impeller.

The impeller shall be hard alloy gray cast iron of non-clogging design capable of handling solids, fibrous material, heavy sludge, and other matter found in normal sewage applications. The impeller shall be constructed with a long throughout without acute turns. The impeller shall be dynamically balanced. The impeller shall be a slip fit to the shaft and key driven. Non-corroding fasteners shall be used.

Each pump shall be provided with a mechanical rotating shaft seal system running in an oil reservoir having separate, constantly hydro-dynamically lubricated and lapped seal faces.

The lower seal unit between the pump and oil chamber shall contain one stationary and one positively driven rotating tungsten-carbide ring.

The upper seal unit between the oil pump and motor housing shall contain one stationary tungsten-carbide ring and one positively driven rotating carbon ring. Each interface shall be held in contact by its own spring system supplemented by external liquid pressures. The seals shall be easily inspected and replaceable.

The shaft sealing system shall be capable of operating submerged to depths of, or pressure equivalent to, 65 feet. No seal damage shall result from operating the pumping unit out of its liquid environment. The seal system shall not rely upon the pumped media for lubrication.

A sliding guide bracket shall be an integral part of the pump unit. The volute casing shall have a machined discharge flange to automatically and firmly connect with the cast iron discharge connection, which when bolted to the floor of the sump and discharge line, will receive the pump discharge connection flange without the need of adjustment, fasteners, clamps or similar devices.

Installation of the pump unit to the discharge connection shall be the result of a simple linear downward motion of the pump unit guided by no less than two guide bars. No other motion of the pump unit, such as tilting or rotating, shall be acceptable. Sealing of the discharge interface by means of a diaphragm, O-ring, or other device will not be considered acceptable or equal to a metal to metal contact of the pump discharge flange and mating discharge connection specified and required. No portion of the pump unit shall bear directly on the floor of the wet well. There shall be no more than a 90-degree bend allowed between the volute discharge flanges and station piping.

The pump motor shall be housed in an air or oil filled watertight casing and shall have moisture resistant Class "F" 155-degree C insulation. Oil filled casing shall be filled with transformer oil, quality BP Energol JSO_2 or Shell Diala D or DX. The motor shall be a minimum of 5 BHP, rated for operation at 1700 or 1750 rpm, on a 230V, 3-phase, 60 hertz power supply. The cable entry water seal design shall be such that precludes specific torque requirements to insure a watertight and submersible seal. Epoxies, silicones or other secondary sealing systems shall not be required or used. The cable entry junction box and motor shall be separated by a stator lead sealing gland or terminal board which shall isolate the motor interior from foreign materials gaining access through the pump top.

Pump motor cable installed shall be suitable for submersible pump applications and this shall be indicated by a code or legend permanently marked on the cable. Cable sizing shall conform to NEC specifications for pump motors and shall be of adequate size for the motor rating. Pump motor cable shall be ample length to reach the rack mounted panel. Cable length to be determined by the site plans.

The pump cable shall have 90 degree C rated insulated material based on 40 degree ambient and shall have anti-roping and anti-wicking design. All mating surfaces of major parts shall be machined and fitted with nitrile O-rings where watertight sealing is required. Machining and fittings shall be such that sealing is accomplished by automatic compression in two planes and O-ring contact made on four surfaces, without the requirement of specific torque to affect this. Rectangular cross sectioned gaskets requiring specific torque limits to achieve compression shall not be considered adequate.
Tolerances of all parts shall be such that allows replacement of any parts without additional machining required to insure sealing a described above. No secondary sealing compounds, greases, or other devices shall be used.

Each unit shall be provided with an adequately designed cooling system. Thermal radiators integral to the stator housing, cast in on unit, are acceptable. Where water jackets along or in conjunction with radiators are used, separate circulation shall be provided. Cooling media channels and ports shall be no-clogging by virtue of their dimensions. Provisions for external cooling and flushing shall be provided.

Pump and motor assemblies shall meet NEC and NFPA requirements for explosion proof installations in Class 1, Division1, Group D environments.

The pumps and motors shall be manufactured by FLYGT Corporation.

150.06 Control Panel

This section is specific to single speed, duplex lift stations with float control, for variable speed, PLC controlled stations see Section 161.

The Contractor shall furnish and install a heavy duty type District Standard control panel as shown on the plans and specified here, as manufactured by Sta-Con Incorporated, QCI, or approved equal, and in accordance with the detail sheets SD-31 through 35.

The control panel shall contain all the remote electrical equipment necessary to provide for the operation of the pumps. The panel shall start and stop the pumps in the wet well.

The control panel shall start the "lead" pump when the liquid level rises to a preselected elevation "D". If the influent rate exceeds the capacity of the "lead" pump, the lag pump shall be started when the liquid level rises to a preselected elevation "C" (higher than "D"). If the liquid level rises to a preselected elevation "B" (higher than "C"), the high level alarm shall be activated. When the liquid level falls to a persecuted elevation "E" (lower than "D"), both pumps shall be stopped.

The control panel shall be contained in a single enclosure, fabricated of not less than 14-gauge 316 stainless steel, NEMA 4X construction. The door shall be formed with minimum lip of 3/4" and full height hinged. Closure mechanisms shall be No. 3 S.S. fasteners with No. 3 keepers as manufactured by Simmons Fasteners, or approved equal.

The interior door shall be constructed of .080-inch thick 6061-T6 aluminum. The interior and exterior doors shall be provided with a stop mechanism to hold the doors open which working in the panel. A rain shield shall be provided.

The control panel shall include the following items plus any other items shown on the plans or required for a complete, operational installation.

Circuit breakers with combination full voltage motor Starters for each pump.

"Hand-Off-Auto" selector switch for each pump, heavy duty oil tight type (toggle switches will not be acceptable).

Automatic pump alternator with test switch.

Duplex receptacle with 15-amp circuit breaker 115V GFI.

Control power circuit breaker.

Main circuit breaker.

Emergency power minimum 100-amp circuit breaker and 100-amp, 4 wire, 3 pole, reverse service generator receptacle. Emergency power to match main breaker size.

Lightning arrestor, 3-phase.

Surge capacitor.

Phase monitor, to prevent energization of pump motors in the event of phase failure or reversal or low voltage.

Indicating light for each level regulator (float switch).

"Running" indicating light for each pump.

Elapsed time meter for each pump, 2-1/2", 6-digit non-reset.

Emergency/High level alarm light and horn, 12 VDC with battery back-up.
The panel shall include back-up circuitry to permit one pump to operate with a normal drawdown in the event of failure (open circuit) of the "stop" level regulator.

Spare parts to be furnished with the panel include:

2 - 120V Relays
1 - Alternator
1 - Phase Monitor
12 - Lamps
12 - Fuse Links
1 – Intrinsically Safe Barrier
1 – Alarm Controller

A copy of the panel wiring diagram shall be attached to the inside of the outer panel door. An extra copy shall be given to the District.

The basic components and layout of the control panel are shown on Standard Details 31, 32, 33 and 34.

Substitutions of these components will be permitted for approved equal, interchangeable products upon obtaining specific written approval from the District.

150.07 Telemetry

Lift stations shall be provided with a District standard radio telemetry system by Data Flow Systems. Telemetry systems shall provide monitoring and control for the following signals:

1. Digital
   a. Power Fail
   b. Auxiliary Power
   c. High Level
   d. Pump # 1 Fail
   e. Pump # 2 Fail
   f. Pump Run # 1
   g. Pump Run # 2
   h. Pump On # 1
   i. Pump On # 2
   j. Pump Off # 1
   k. Pump Off # 2
   l. Spare
   m. Spare
2. Analog
   a. Wet Well Level
   b. Spare
   c. Spare

An alternative cellular telemetry system may be available. Coordinate with the District's Director of Engineering Services for specifics.

150.08 Access Hatches & Fall Through Safety Prevention Systems

The wetwell and valve vault access hatch shall be single leaf design with a minimum clear opening at 36" x 48", but must also meet the minimum clear opening as required by the pump manufacturer. The frame shall be a minimum: 3" x 3" x 1/4" aluminum angles and the cover shall be 1/4" aluminum angles and the cover shall be 1/4" aluminum diamond patte rn. The hatch shall be completed with anchor straps, automatic hold open arm and cover release, forged brass or stainless steel hinges with stainless steel pins, hasp and staple lock, flush type handles, upper guide holders and sensor cable holder. The cover shall be reinforced to withstand a live load of 300 lbs./sq. ft. unless in areas that may experience traffic. Hatches in traffic areas shall meet H-20 design loading criteria, at a minimum. Hinges shall be of the interior type.

For all stations 6' in diameter or larger, the Contractor shall provide fall through safety prevention systems. All systems will be of the grate type as manufactured by U.S.F. Fabrication, Inc., able to withstand a pedestrian load of 300 lbs/sq. ft.. The safety grate must be constructed of aluminum and/or stainless steel. All hardware must be of 316 stainless steel construction.

The configuration of the hatch and safety grate shall be such that opposing sides of the wetwell opening are protected when the safety grate is in the upright position and safety chains from the safety grate to the hatch shall be provided to protect adjacent sides.

10' diameter and larger wetwells and tri-plex stations will require custom hatch and safety grate designs to be determined in coordination with the District's Director of Engineering Services during design.

150.09 Floats

24V float switches with internal single pole mercury switch shall be installed in the wet well to control the operation of the pumps with variations of liquid level in the wet well. The float switches shall be sealed in a polypropylene casing with a firmly bonded electrical cable protruding. Floats shall be Roto-Float type S as manufactured by Anchor Scientific Inc..

150.10 Valves

See Section 130

150.11 Pipe and Fittings

See Section 114 for HDPE pipe and fittings used in the wetwell. See Section 111 for ductile iron pipe and fittings.

150.12 Wetwell and Valve Vault

See Section 121 and standard details SD-31

150.13 Wet Well via Caisson Construction

Wet wells installed via the caisson method are allowed only with prior approval by the Loxahatchee River District. Final acceptance of the wet well by caisson method will only occur when it is determined that:

- Wet well has no structural damage, deep gouges and and/or cracks.
- Wet well has been installed at the design depths indicated.
- Wet well is plumb. The maximum deviation shall be 1/8" per foot of each precast section.
- Wet well tremie seal is leak free and there are no continually damp areas prior to the installation of the secondary pour.
- Wet well sections show no evidence of separation and that the structure has not settled.
- Wet well walls, specifically at the joints, are flush and without overhang.
- Wet well was installed in proper sequence.

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Date: 11/18/2021
Scale: AS NOTED
Design By: ES
Drawn By:
Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

LRECD SPECIFICATIONS FOR
SUBMERSIBLE LIFT STATIONS

HOLTZ CONSULTING ENGINEERS, INC.
HCE
270 SOUTH CENTRAL BLVD., SUITE 207
JUPITER, FLORIDA 33458
PH. (561) 575-2005
Cert. No. 26960

EDUARDO SAMOUR, PE
License No: 41186

E-1.1

If any of the above items are not met to the satisfaction of the District, the wet well will be rejected and it will be the contractor's responsibility to remedy the problem at his own expense. The contractor shall also provide a warrantee that the wet well will meet the above requirements for a 1-year period from the date of District acceptance.

150.14 Submittals

The following submittals are required for approval prior to construction of the project.

1. Lift Station Calculations to include
   a. Average Daily Flow
   b. Peak Hour Flow
   c. System Head Curves
   d. Wetwell Cycle Time
   e. Anti-Flotation
2. Lift Station Site Plan
3. Pump and Motor
4. Pipe and Fittings
5. Valves
6. Concrete Structures
7. Control Panel – complete detailed design including electrical schematic, panel layout, bill of materials
8. Panel Rack
9. Base Plates
10. Rails, Brackets and Adapters
11. Conduit and Cable
12. Aluminum Hatches and Safety Grates

Detailed wiring diagrams of the entire installation including main power supply, pump motors, control circuits, alarm circuits, and metering circuits shall be submitted. The diagrams shall include schematic and connection wiring diagrams.

Four (4) copies of detailed installation drawings including wiring diagrams, pump curves and maintenance and operating manuals shall be submitted to the District at the time of initial start-up.

150.15 Services to be Furnished by Manufacturer of Equipment

The services of a factory-trained representative shall be furnished for the lift station start-up. The representative shall check all electrical components, wiring, and pump operations.

150.16 Operation and Maintenance

Upon completion and successful startup of the lift station the District will be provided with two copies of the lift station operation and maintenance manual. The manual shall include operation and maintenance detail including service intervals for all equipment provided with the lift station.

Operation and maintenance manuals shall also include AS-BUILT drawings for the lift station, control panel, wiring schematics and appurtenances.

150.17 Warranty

The pump manufacturer shall warrant the pumps for a period of five (5) years from the date of pump manufacturer's start-up. The warranty shall include a minimum 100% coverage of the manufacturer's shop labor and parts for the first eighteen months, then 50% coverage through the third year, and then 25% coverage through the fifth year.

END OF SECTION 150

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Design By: ES
Drawn By:
Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

LRECD SPECIFICATIONS FOR
SUBMERSIBLE LIFT STATIONS

HOLTZ CONSULTING ENGINEERS, INC.
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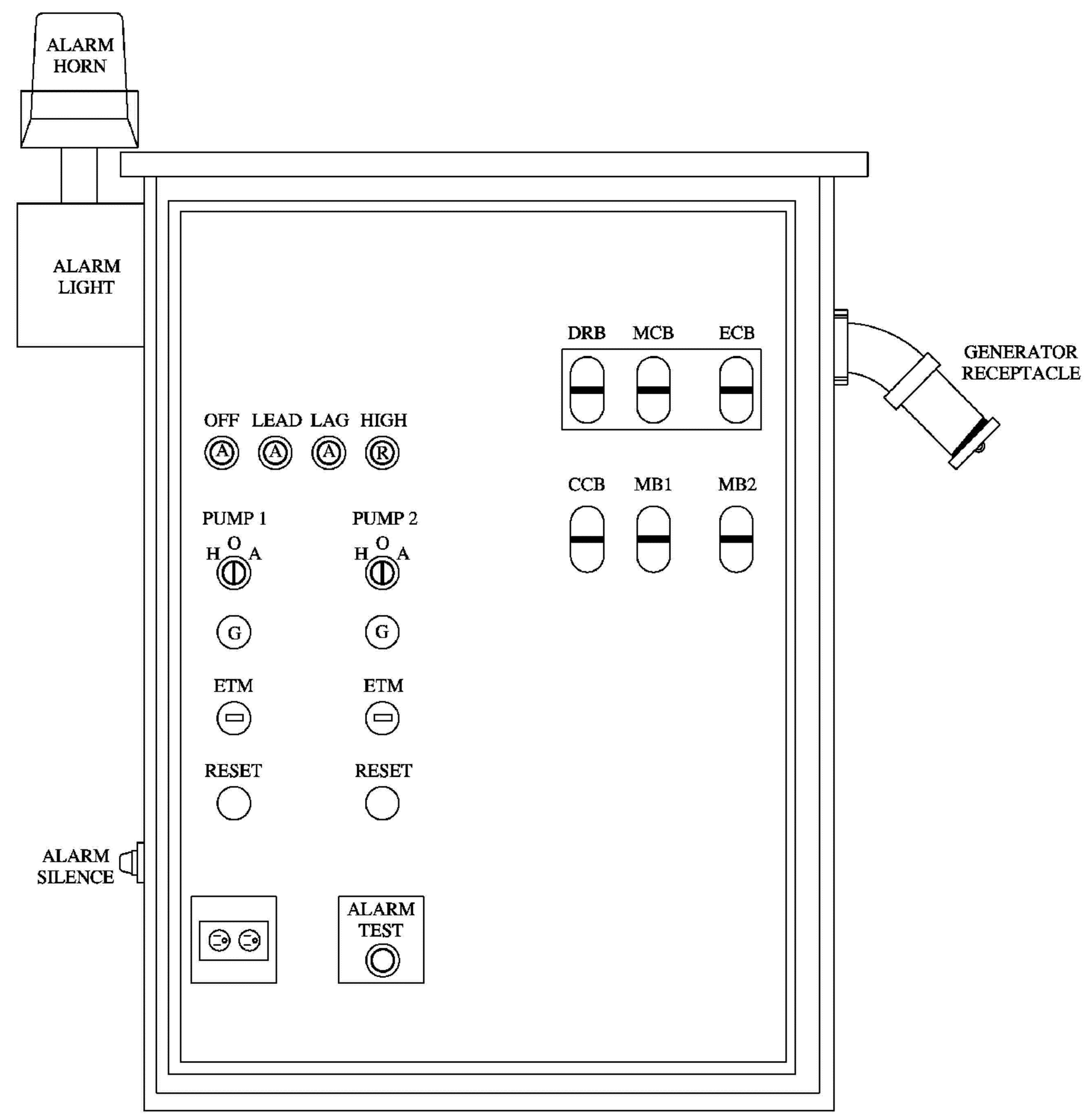
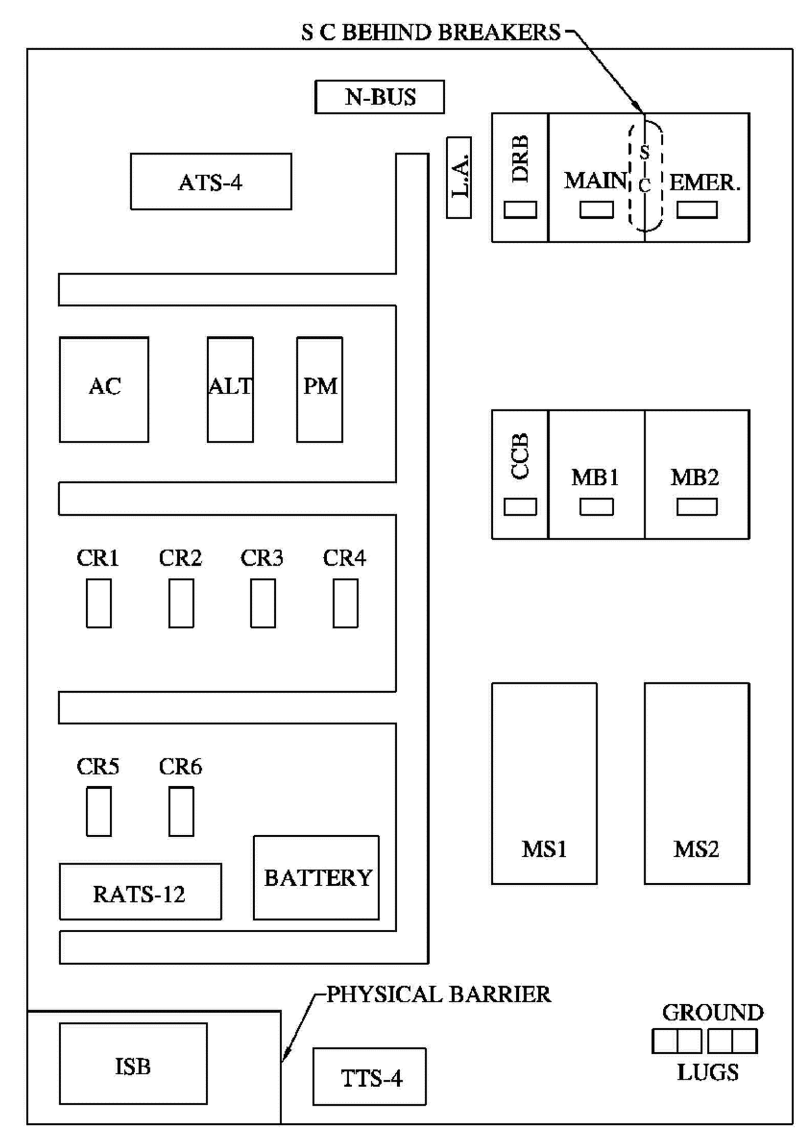
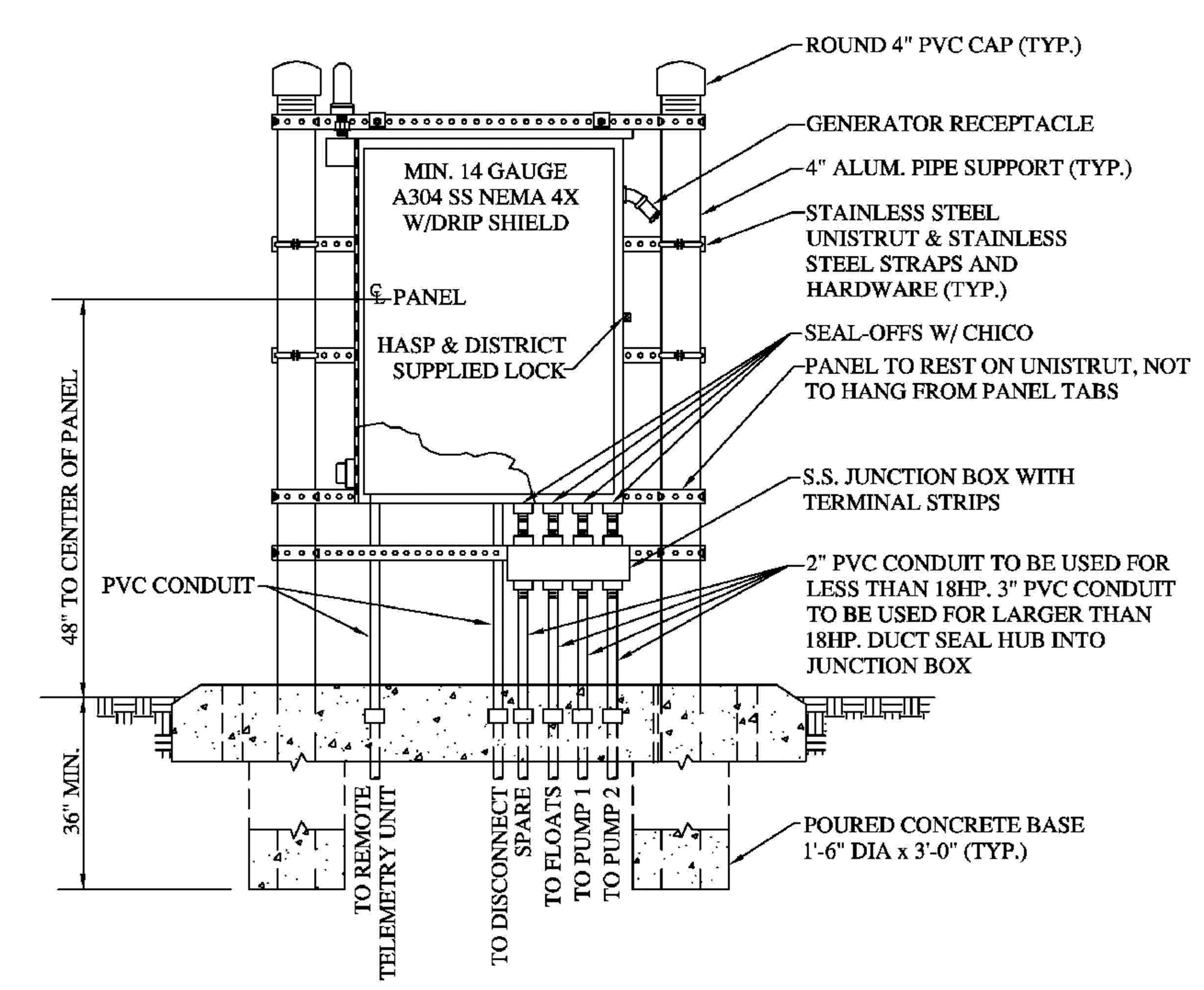
E-1.2



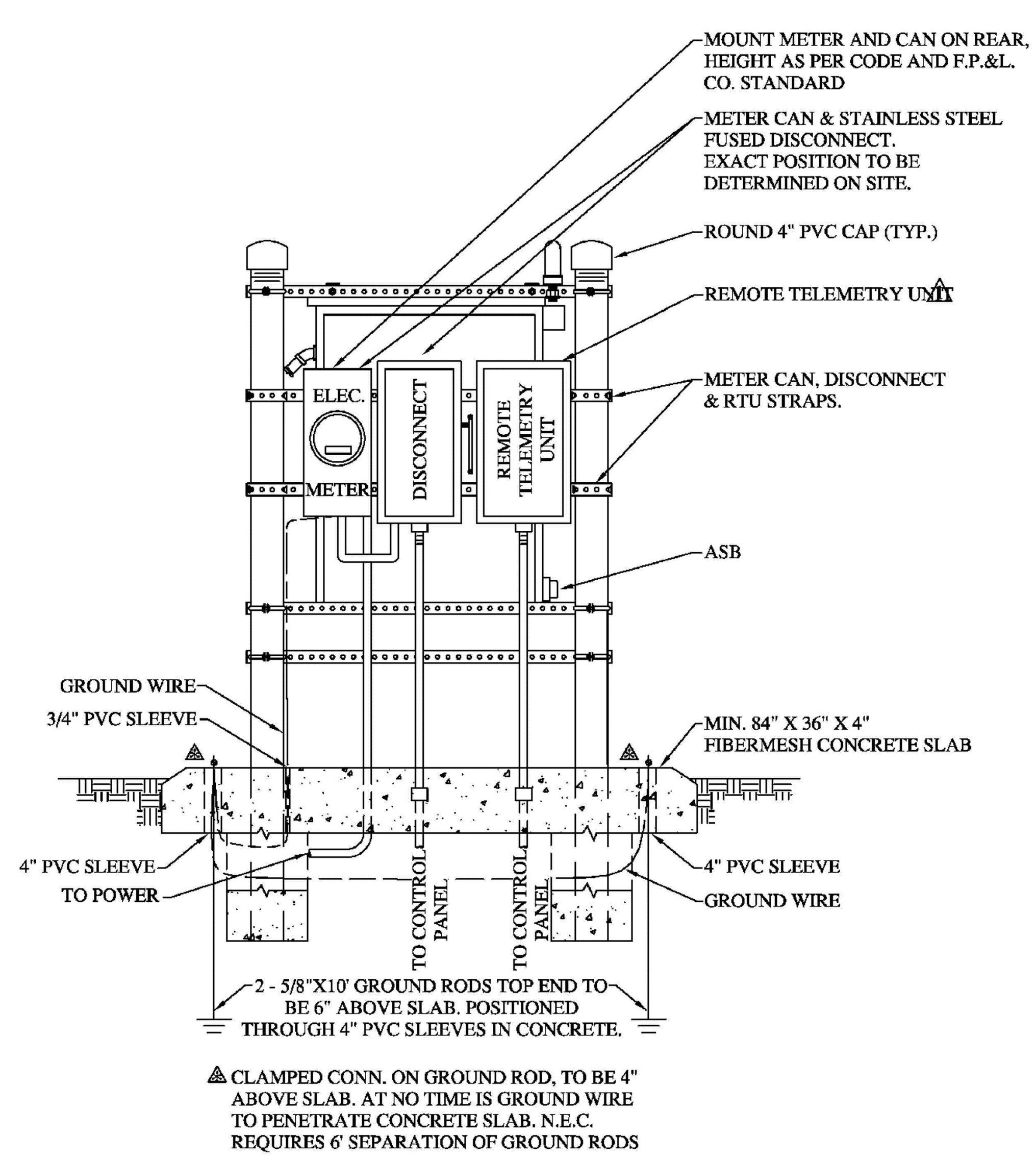
DEAD FRONT LAYOUT



BACKPLATE LAYOUT



FRONT ELEVATION



REAR ELEVATION

Rev.	Description
1	4/22/2001 - Added RTU

LOXAHATCHEE RIVER
ENVIRONMENTAL CONTROL DISTRICT
2500 JUPITER PARK DRIVE
JUPITER, FL 33458-8964
(561) 747-5700 MAIN
(561) 747-9929 FAX
www.loxahatcheeriver.org

LIFT STATION
ELECTRICAL CONTROL PANEL
STANDARD DETAILS

Drawn:	JD
Checked:	KD
Proj. Eng.	KD
Scale:	NTS
Date:	7/9/2021

SD-33

E&C Engineers
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Drawing Name: F:\PROJECTS\LRD\Jupiter Lighthouse Septic to Sewer\Design\Drawings\Electrical\SD-3442 E.dwg Layout Name: E-2 -- Plotted by: Russell Ryan -- Date: 11/18/2021 -- 10:58 AM -- Holtz Consulting Engineers

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Drawn By:
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LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

LRECD DETAIL SD-33
(PANEL AND SERVICE RACK)

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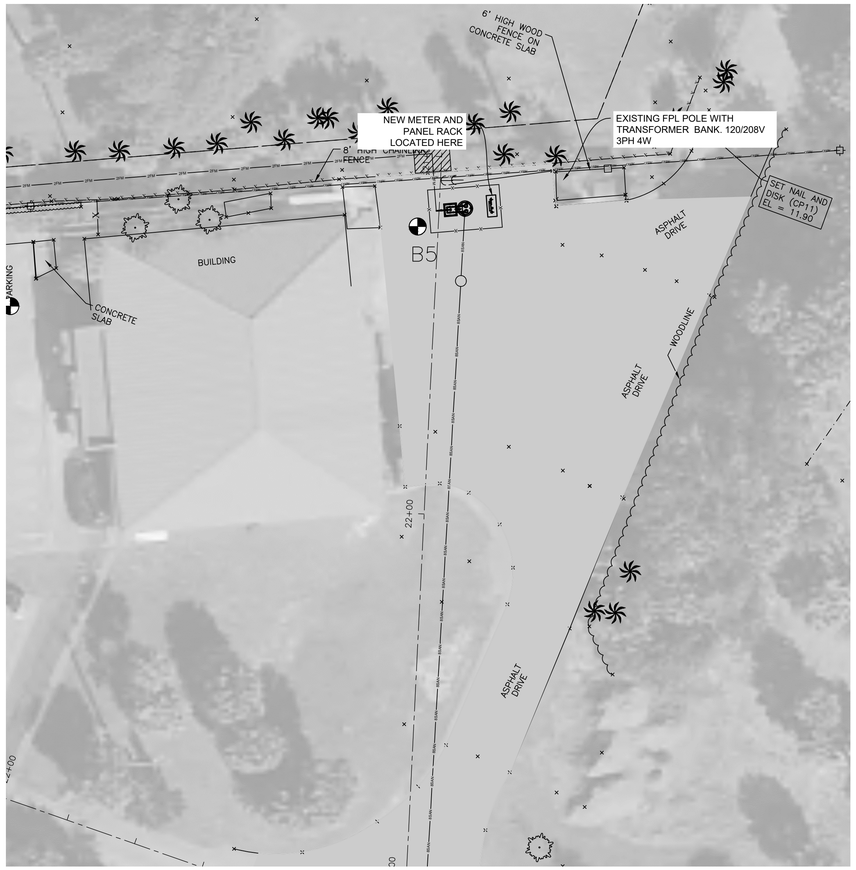
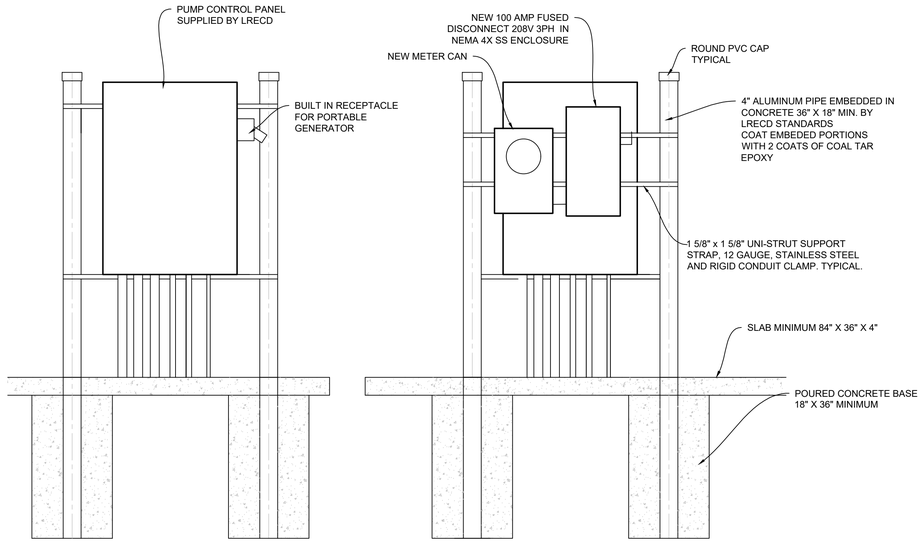
E-2



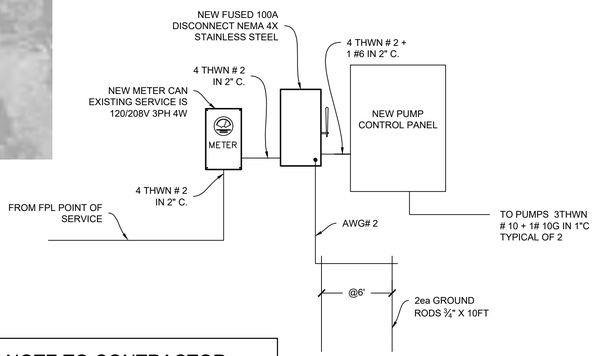
LIFT STATION SITE POWER PLAN

SCALE 1" = 20'-0"



SEE LRECD DETAIL SD-33 FOR REFERENCE

THREE PHASE SHORT CIRCUIT CALCULATIONS		
TRANSFORMER BANK IS	112.5 KVA	
IMPEDANCE (Z%)	1.11%	
MULTIPLIER	100/Trasnfr. Z%	
MULTIPLIER	90.09	
I SHORT CIRCUIT	=If x MULTIPLIER	
TRANSF. FULL LOAD	312 AMPS	
Isc	28,108.1	AVAILABLE AMPS
	FEEDER 1 THWN # 2/ PHASE	R= 0.201 ohms/1000ft
f=	(1.732x LxIsc)/ (CxNxE)	
L=	LENGTH FROM TRANSFORMER TO PANEL	
I=	LOAD IN AMPS	
C=	(1/OHM/FT)	
N=	NUMBER OF CONDUCTORES PER PHASE	
E=	LINE TO LINE VOLTAGE	
L	20	FTS
I	100	MAX
C	4,975.12	
N	1	
E	208	
f=	0.9409	
M=	(1/(1+f))	
M	0.515	
Isc=	If x M	
Isc	14,482.02	AMPS
DISCONNECT TO BE RATED FOR 45KAIC MINIMUM		



PROPOSED RISER DIAGRAM

PANEL ##################

VOLTAGE (L-N):	###	ENCLOSURE TYPE:	##################		
VOLTAGE (L-L):	###	MOUNTING:	#######		
PHASES, WIRES:	# ø # W	AIC RATING (A):	#####		
MINIMUM BUS CAPACITY (A):	######	NOTES:	####		
MAIN O.C. DEVICE (A):	#####				

CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (VA) A		B		C		POLE	TRIP AMPS	DESCRIPTION	CKT NO
#####	######	##	#	####	####					#	##	######	#####
#####	######	##	#			####	####			#	##	######	#####
#####	######	##	#					####	####	#	##	######	#####
#	##############	##	#	###									
				CONNECTED LOAD PHASE TOTALS (VA)									
				####		####		####					

	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)
#######	####	####	####
################	####	####	####
##########################	####	####	####
TOTAL:	####		####
LOAD (AMPS):	####		####

DEMAND LOAD	#### KVA
SPARE CAPACITY	#### KVA
SPARE CAPACITY	#### AMPS
SPARE CAPACITY	## %
PHASE BALANCE	
A TO B	## %
B TO C	### %
C TO A	## %

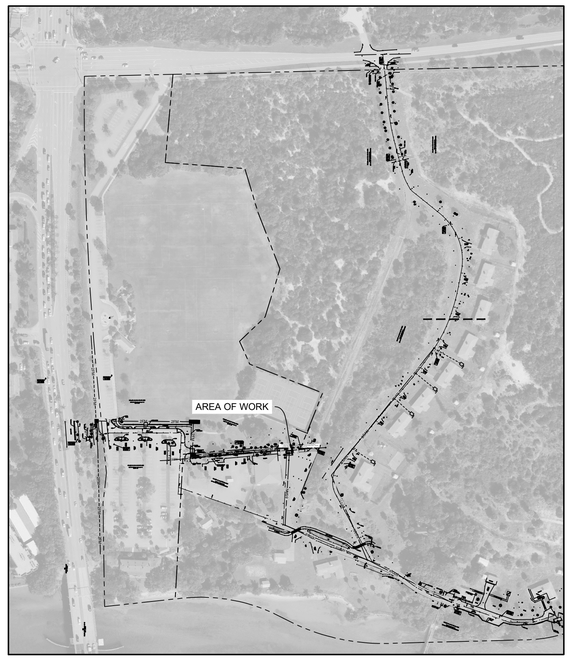
SHOWN FOR LOAD CALCULATION PURPOSES.
PUMP CONTROL PANEL IS PREFABRICATED AND HAS BUILT IN BREAKERS AND CONTROLS.
AS PER LRECD SPECIFICATIONS.

NOTE TO CONTRACTOR:

ALL ELECTRICAL EQUIPMENT MUST BE LABELED TO INDICATE THE POTENTIAL OF ELECTRIC ARC FLASH HAZARDS.
ALL PANELS TO BE SERIES RATED

CODES THAT APPLY TO THIS PROJECT:
2020 FBC 7th ED,.
2017 NFPA-70
2018 NFPA-101
2016NFPA-72
FLORIDA FIRE PREVENTION CODE EH ED.

KEY MAP



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Check By: #

LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

SITE POWER,
RISER DIAGRAM,
PANEL SCHEDULE

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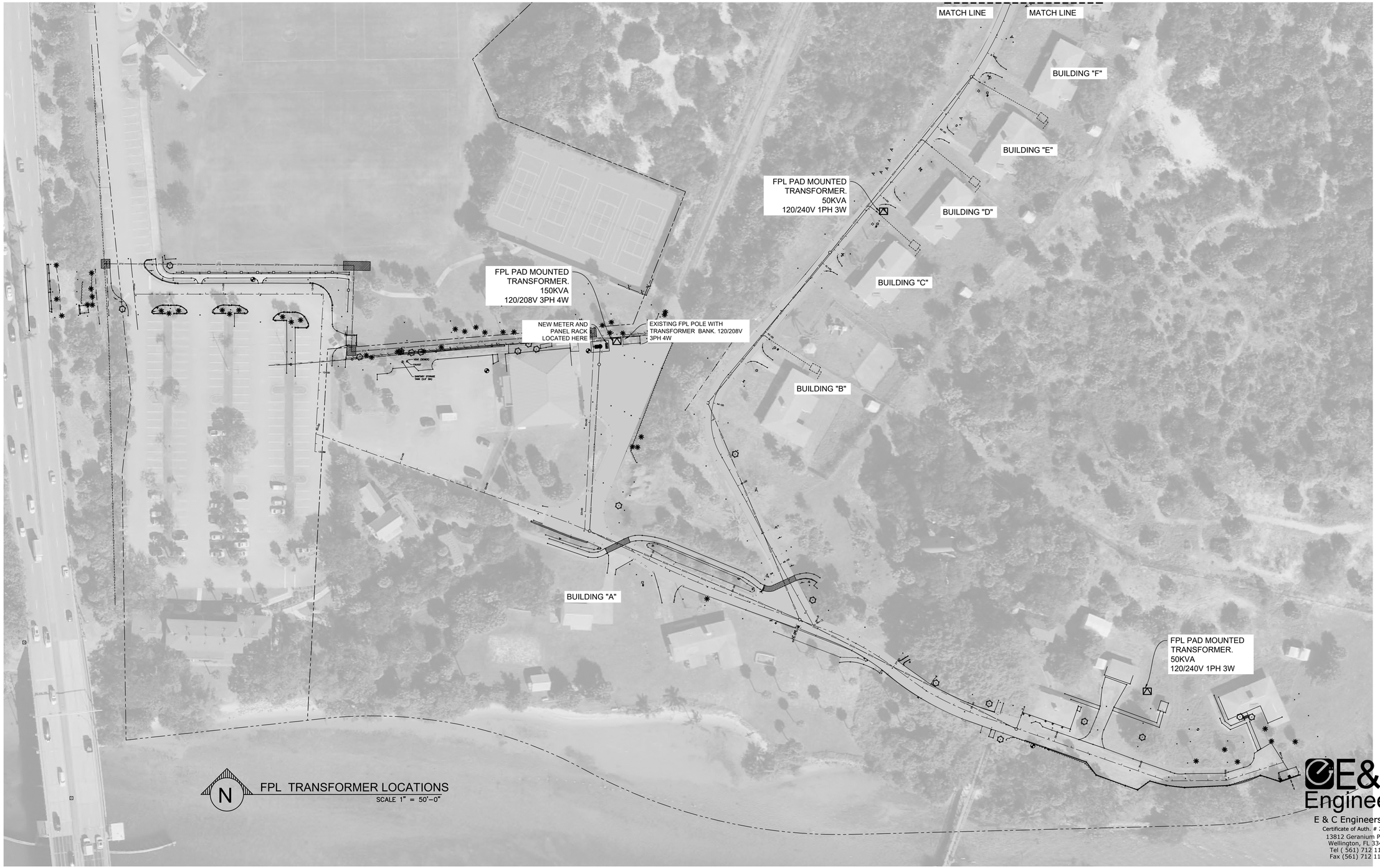
E-3



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LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

FPL TRANSFORMER LOCATION

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E-4

N

FPL TRANSFORMER LOCATIONS

SCALE 1" = 50'-0"

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LOXAHATCHEE RIVER DISTRICT
JUPITER INLET LIGHTHOUSE
SEPTIC TO SEWER CONVERSION

FPL TRANSFORMER LOCATION

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