CONTRACT DOCUMENTS

For the construction of the

PUMP STATIONS REHABILITATION PHASE 2
C, E, AND D MANHOLE

Prepared for the

CITY OF KEY WEST
KEY WEST, FLORIDA

VOLUME 2 OF 2
DRAWINGS

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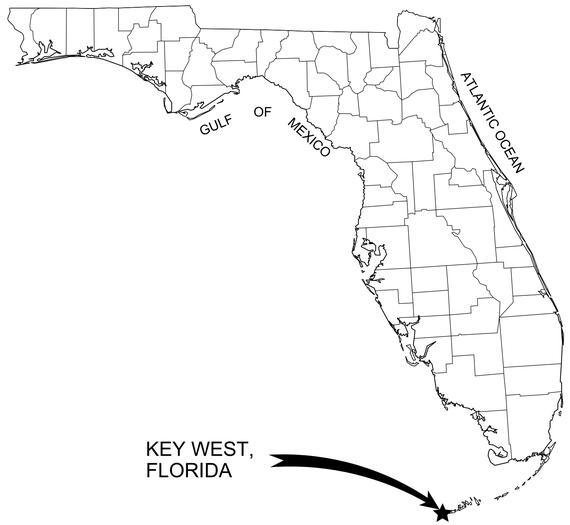
Project No. 707158
KEY WEST BID # 19-022
MAY 2019
KEY WEST PROJ No. SE 1504

BID DOCUMENTS



VICINITY MAP
NTS

N

LOCATION MAP

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NO.	DATE	DSGN	DR	DRN BY	CHK	APVD	REVISION	BY	APVD
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PUMP STATIONS REHABILITATION PHASE 2
C, E, AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

GENERAL
LOCATION AND VICINITY MAPS AND INDEX OF DRAWINGS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
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BID DOCUMENTS

A	AMMETER, AMPERES
AB	ANCHOR BOLT
ABDN	ABANDON
AC	ALTERNATING CURRENT
AC	ASPHALTIC CEMENT
ACI	AMERICAN CONCRETE INSTITUTE
ACST	ACOUSTICAL
ACU	AIR CONDITIONING CONDENSING UNIT
AD	AREA DRAIN
ADD	ADDITIONAL
AFD	ADJUSTABLE FREQUENCY DRIVE
AFF	ABOVE FINISHED FLOOR
AG	ACOUSTICAL GLASS
AGGR	AGGREGATE
AHR	ANCHOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL (ALUM)	ALUMINUM
ALKY	ALKALINITY
ALTN, (ALT)	ALTERNATE
AM	AUTO-MANUAL
ANDZ	ANODIZE
APPROX	APPROXIMATE
APVD	APPROVED
ARCH	ARCHITECTURAL
AR	ANALOG RELAY
ARV	AIR RELEASE VALVE
ASU	AIR SUPPLY UNIT
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AVG	AVERAGE
AVRV	AIR VACUUM RELEASE VALVE
@	AT
B	BELL
(B)	BRONZE TINT
BAL	BALANCE
B.C.R.	BROWARD COUNTY RECORDS
BD	BUTTERFLY DAMPER
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BH	BUD HEIGHT
BL	BASELINE
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BLK	BLOCK
BM	BEAM
BM	BENCHMARK
B.O.S.	BOTTOM OF STRUCTURE
BOT, (BOTT), B/	BOTTOM
BRG	BEARING
BSP	BLACK STEEL PIPE
BV	BALL VALVE
BVC	BEGINNING OF VERTICAL CIRCUIT
C	CONDUIT
°C	DEGREE CELSIUS
C-C	CENTER TO CENTER
CAB	CABINET
CAR	CARPET
CATV	CABLE TELEVISION
CB, C.B.	CATCH BASIN
CB	CIRCUIT BREAKER
CC	CONTROL CABLE
CCP	CENTRAL CONTROL PANEL
CCS	CENTRAL CONTROL SYSTEM
CFM	CUBIC FEET PER MINUTE
CHAN, C	CHANNEL (BEAM)
CHDPE	CORRUGATED HIGH DENSITY POLYETHYLENE PIPE
CHEM	CHEMICAL
CI	CAST IRON
CIP	CAST IRON PIPE
CIPS	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT/CONTROL JOINT
CKT	CIRCUIT
℄, CL	CENTERLINE
CLDI	CEMENT LINED DUCTILE IRON PIPE
C.L.F.	CHAIN LINK FENCE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CL2	CHLORINE
CMP, C.M.P.	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
CONDTN	CONDITIONED
CONN	CONNECTION
CONST	CONSTRUCT
CONT	CONTINUOUS, CONTINUATION
CONTR	CONTRACTOR
COORD	COORDINATE
CP	CENTER PIVOT
CP-X	CONTROL PANEL NO. X
CPLG	COUPLING
CPRSR	COMPRESSOR
CPT	CONTROL POWER TRANFORMER
CPVC	CHLORINATED PVC
CR	CONTROL RELAY
CRS	COLD ROLLED STEEL
CRS	PVC COATED RIGID STEEL
CS	CONSTANT SPEED
CSATC	CERAMIC SUSPENDED ACOUSTICAL TILE CEILING
CT	CERAMIC TILE
CT	CURRENT TRANSFORMER
CTR	CENTER
CTR'D	CENTERED
CTSK	COUNTERSUNK
CU	CUBIC
CU FT	CUBIC FOOT
CU IN	CUBIC INCH
CU YD	CUBIC YARD
CUH	COPPER TUBING, HARD DRAWN
CV	CHECK VALVE
CWR	CABINET DOOR MOUNTED WASTE RECEPTACLE
D	DRAIN
D	PENNY NAIL SIZE
DAS	DATA ACQUISTION SYSTEM
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DC	DIRECT CURRENT
DEG	DEGREE
DET	DETAIL
DF	DOUGLAS FIR
DF	DRINKING FOUNTAIN
DHEC	DEPT OF HEALTH AND ENVIRONMENTAL CONTROL
DI	DROP INLET
DI	DUCTILE IRON
DIA, O	DIAMETER
DIAG	DIAGONAL
DIP, D.I.P.	DUCTILE IRON PIPE
DIR	DIRECTION
DISCH	DISCHARGE
DOL	DIRECT-ON-LINE
DS	DOWNSPOUT
DWG	DRAWING
DWN	DOWN
△	DELTA
E	EAST
E	EMPTY
EA	EACH
EE	EMERGENCY EYEWASH
EF	EACH FACE
EF	EXHAUST FAN
EFF	EFFLUENT
EL, ELEV	ELEVATION
ELB	ELBOW
EIFS	EXTERIOR INSULATION FINISH SYSTEM
ELC	ELECTRICAL LOAD CENTER
ELEC	ELECTRIC, ELECTRICAL
ENGR	ENGINEER
EOG	EDGE OF GUTTER
EOP	EDGE OF PAVEMENT
E.O.W.	EDGE OF WATER
EP	EDGE OF PAVING
EP	EXPLOSION PROOF
EQ	EQUAL
EQ SP	EQUALLY SPACED
EQPT, (EQUIP)	EQUIPMENT
ETM	ELAPSED TIME METER
EVC	END OF VERTICAL CURVE
EW	EACH WAY
EXH	EXHAUST
EXP	EXPANSION
EXP	EXPOSED
EXP AB	EXPANSION ANCHOR BOLT
EXP JT	EXPANSION JOINT
EX, EXST, (EXIST)	EXISTING
EXT	EXTERIOR
^F	DEGREE FAHRENHEIT
F, FU	FUSE
FAI	FRESH AIR INLET
FC	FLEXIBLE CONDUIT
FCA	FLANGED COUPLING ADAPTER
FCL2	FREE CHLORINE RESIDUAL
FCO	FLOOR CLEANOUT
FCTY	FACTORY
FD	FLOOR DRAIN
FDN	FOUNDATION
FDR	FEEDER
FEXT	FIRE EXTINGUISHER
FF	FINISHED FLOOR
FG	FINISH GRADE
FHY	FIRE HYDRANT
FIG	FIGURE
FL	FLOW LINE
FLG	FLANGE
FL (FLR)	FLOOR
FLEX	FLEXIBLE
FLH	FLAT HEAD
FLTR	FILTER
FLUOR	FLUORESCENT
FNSH	FINISH
FP	FIELD PANEL
FPS	FEET PER SECOND
FP-W-X	FIELD PANEL NO. WX
FR	FORWARD REVERSE
FRP	FIBERGLASS REINFORCED PLASTIC
FSHS	FOLDING SHOWER SEAT
FT	FOOT OR FEET
FTG	FOOTING
FU	FIXTURE UNIT
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
FWD	FORWARD
G, GND	GROUND
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRAB BAR
GC	GROOVED COUPLING
GFI	GROUND FAULT INTERRUPTER
GFR	GOUND FAULT RELAY
GL	GLASS
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRTG	GRATING
GR	GRADE
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GVL	GRAVEL
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
H	HORN OR HOWLER
HAS	HEADED ANCHOR STUD
HB	HOSE BIB
HC	HOLLOW CORE
HD	HUB DRAIN
H.D.P.E.	HIGH DENSITY POLY PIPE
HDR	HEADER
HDW	HARDWARE
HESR	HYPALON ELASTIC SHEET ROOFING
HGL	HYDRAULIC GRADE LINE
HGT	HEIGHT
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HK	HOOK
HM	HOLLOW METAL
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HORIZ	HORIZONTAL
HP	HORSEPOWER
H.P.	HIGH POINT
HPS	HIGH PRESSURE SODIUM
HR	HOSE RACK
HRDN	HARDENER
HSS	HOLLOW STRUCTURAL SECTION
HV	HOSE VALVE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HW	HEADWALL
HWL	HIGH WATER LEVEL
IC	INTERRUPTING CAPACITY
ID	INSIDE DIAMETER
IE, I.E.	INVERT ELEVATION
IF	INSIDE FACE
IG	INSULATING GLASS
IN	INCH
INCAND	INCANDESCENT
INJS	INJECTIONS
INST	INSTANTANEOUS
INSTM	INSTRUMENT, INSTRUMENTATION
INSUL	INSULATION
INVT	INVERT
IRRIG	IRRIGATION
ITG	INSULATED TEMPERED GLASS
IU	INTAKE UNIT
IW	IRRIGATION WELL
J, JB	JUNCTION BOX
JAN	JANITOR
JCT	JUNCTION
JT	JOINT
K	KEY INTERLOCK
KIP	THOUSAND POUNDS
KIT	KITCHEN
KSK	KITCHEN SINK
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
KVAR	KILOVOLT AMPERES REACTIVE
KW	KILOWATT
L	ANGLE, LENGTH
L	ARC LENGTH
LA	LIGHTNING ARRESTER
LAB	LABORATORY
LAM	LAMINATE
LAT	LATITUDE
LAV	LAVATORY
LB	LICENSED BUSINESS
LB	POUND
LB/CU FT	POUNDS PER CUBIC FOOT
LC	LIGHTING CONTACTOR
LF	LINEAR FEET
LG	LONG
LH	LEFT HAND
LHR	LEFT HAND REVERSE
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LNTL	LINTEL
LONG	LONGITUDINAL
LOS	LOCK-OUT STOP PUSHBUTTON
LP	LIGHT POLE
L.P.	LOW POINT
LR	LATCHING RELAY
LR	LOCAL-REMOTE
LR	LONG RADIUS
LS	LABORATORY SINK
LTG	LIGHTS OR LIGHTING
LWL	LOW WATER LEVEL
LYRS	LAYERS
M&BH	MOP AND BROOM HOLDER
MA	MANUAL-AUTO
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MC	MASONARY CLEARANCE
MC	MODULATE-CLOSE
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MET	METAL
MFD	MANUFACTURED
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MLO	MAIN LUGS ONLY
MMP	MECHANICAL MOUNTING PANEL
M.O.	MASONRY OPENING
MP	METAL PANEL
MPU	MULTIPURPOSE UNIT
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
MTS	MILL TYPE STEEL PIPE
MV	MERCURY VAPOR
MWS	MAXIMUM WATER SURFACE
N	NORTH
N/A	NOT APPLICABLE
N/C	NORMALLY CLOSED
N/O	NORMALLY OPEN
N, NEUT	NEUTRAL
NA	NON-AUTOMATIC
ND	NAPKIN DISPOSAL
NGS STA	NATIONAL GEODETIC SURVEY STATION
NIC	NOT IN CONTRACT
NO, #	NUMBER
NP	NON-PROTECTED
NPT	NATIONAL PIPE THREADS
NS	NON-SHRINK
NTS	NOT TO SCALE
O TO O	OUT TO OUT
OA	OVERALL
OC	ON CENTER
OC	OPEN-CLOSE
OCA	OPEN-CLOSE-AUTO
OCR	OPEN-CLOSE-REMOTE
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OHW	OVERHEAD WIRE
OL	OVERLOAD RELAY
OO	ON-OFF
OOA	ON-OFF-AUTO
OOR	ON-OFF-REMOTE
OP	OPAQUE PANEL
OPER	OPERATOR
OPNG	OPENING
O.R.B.	OFFICIAL RECORD BOOKS
OSC	OPEN-STOP-CLOSE
OSD	OPEN SITE DRAIN
OZ	OUNCE
P	PILASTER, PIPE
PAV	PAVER TILE
P.B.	PLAT BOOK
PB	PUSHBUTTON SWITCH
PC	PHOTOCELL
PC	POINT OF CURVE
PE	PLAIN END
PED	PEDESTAL
PEP	POLYETHYLENE PIPE
PF	PANEL FRONT
PG.	PAGE
pH	HYDROGEN ION CONCENTRATION
PI	POINT OF INTERSECTION
PJF	PREMOULDED JOINT FILLER
PL	PLATE (STEEL)
PL	PROPERTY LINE or PARCEL LINE
PLAS	PLASTIC
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLC-X	PROGRAMMABLE LOGIC CONTROLLER NO. X
PLYWD	PLYWOOD
PNL	PANEL
PP	POWER POLE
PPL	POLYPROPYLENE LINED
PRCST	PRECAST
PREFAB	PREFABRICATION
PRES	PRESSURE
PRI	PRIMARY
PRM	PERMANENT REFERENCED MARKER
PROJ	PROJECTION
PROP	PROPERTY
PS	POLYCARBONATE SHEET
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
PT	POINT OF TANGENCY
PT	POTENTIAL TRANSFORMER
PT	PRESSURE TREATED
PTAC	PACKAGED TERMINAL AIR CONDITIONING
PTD	PAPER TOWEL DISPENSER
PV	PLUG VALVE
PVC, P.V.C.	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENCY
QT	QUARRY TILE
R (RAD)	RADIUS
RC	REINFORCED CONCRETE
RCP, R.C.P.	REINFORCED CONCRETE PIPE
RCPT	RECEPTACLE
RD	ROAD
RD	ROOF DRAIN
RDCR	REDUCER
RDW	REDWOOD
R.E.	RIM ELEVATION
REF	REFER OR REFERENCE
REF	REFRIGERATOR
REFR	REFRIGERATE, REFRIGERANT
REINF	REINFORCED, REINFORCING, REINFORCE
REQD	REQUIRED
RG	REFLECTIVE
RH	RIGHT HAND
RH	RODHOLE
RHR	RIGHT HAND REVERSE
RL	RAIN LEADER
RL	RAISE LOWER
RLS	RUBBER LINED STEEL
RM	ROOM
ROL	RAISE-OFF-LOWER
RPM	REVOLUTIONS PER MINUTE
RS	RIGID STEEL
RST	REINFORCING STEEL
RTN	RETURN
RRUB	RADIAL RUBBER
R/W	RIGHT OF WAY
RW	RAW WATER
S	I-BEAM
S	SLOPE
S	SOUTH
S	SWITCH
SATC	SUSPENDED ACOUSTICAL TILE CEILING
SC	SLIP CRITICAL
SCBA	SELF CONTAINED BREATHING APPARATUS
SCC	SOLID CORE
SCFM	STANDARD CUBIC FEED PER MINUTE
SCH	SCHEDULE
SCR	SHOWER CURTAIN ROD
SCU	SPEED CONTROL UNIT
SD	SOAP DISPENSER
SDMH, S.D.M.H.	STORM DRAIN MANHOLE
SDWK	SIDEWALK
SEC	SECONDARY
SECT	SECTION
SED	SEDIMENTATION
SEW	SEWAGE
SF	SLOWER-FASTER
SF	SQUARE FEET
SG	LAMINATED SAFETY GLASS
SGWB	SUSPENDED GYPSUM WALL BOARD
SH	SHOWER
SH (SHT)	SHEET
SHA	SURFACE HARDENING AGENT
SHS	SOLIDS HANDLING SYSTEM
SIM	SIMILAR
SMH	STORMWATER MANHOLE
SOLN	SOLUTION
SP	SPACE OR SPACES
SPA.	SPACING
SPEC, SPECS	SPECIFICATIONS
SPEC'D.	SPECIFIED
SPLY	SUPPLY
SQ	SQUARE
SQ FT	SQUARE FOOT, FEET
SQ IN	SQUARE INCH
SR	SHORT RADIUS
SS	START-STOP
SS, SST	STAINLESS STEEL
SSH	SAFETY SHOWER
SSK	SERVICE SINK
S.S.M.H.	SANITARY SEWER MANHOLE
STA	STATUS
STD	STANDARD
STM	STORM WATER
STIF	STIFFENER
STIRR	STIRRUP
STL	STEEL
ST	STRAIGHT
STRL	STRUCTURAL
STRUCT	STRUCTURE
SUSP	SUSPENDED
SV	SOLENOID VALVE
SYMM	SYMMETRICAL
T	THERMOSTAT
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
T/	TOP OF
TAN	TANGENT
TB	TERMINAL BOARD
TB	TOWEL BAR
TBG	TUBING
TC	TIME TO CLOSE/ TENSION CONTROLLED
TCAE	TIME CLOSE AFTER ENERGIZATION
TCL2	TOTAL CHLORINE RESIDUAL
TDH	TOTAL DYNAMIC HEAD
TDR	TIME DELAY RELAY
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPORARY
TF	TOP FACE
TFG	TEMPERED FLOAT GLASS
THD	THREAD
THK	THICKNESS
THRU	THROUGH
TJB	TERMINAL JUNCTION BOX
TL	TEFLON LINE PIPE
TO	TIME TO OPEN
TOAD	
TOAE	TIME OPEN AFTER ENERGIZATION
T.O.P.	TOP OF PIPE
TP	TURNING POINT
TRANS	TRANSFORMER
TRANSV	TRANSVERSE
TDR	TREAD
TS	TUBE STEEL
TTD	TOILET TISSURE DISPENSER
TU-X	TREATMENT UNIT NO. X
TURB	TURBIDITY
TYP	TYPICAL
U ON	UNLESS OTHERWISE NOTED
UBC	UNIFORM BUILDING CODE
UH	UNIT HEATER
UR	URINAL
UVR	UNDER VOLTAGE RELAY
V	VALVE
V	VENT
V	VOLT
V	VOLTMETER, VOLTS
VB	VAPOR BARRIER
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VDR	VERTICLE DRYING RACK
VERT	VERTICAL
VIB	VIBRATION
VP	VENEER PLASTER
VPC	POINT OF VERTICAL CURVATURE
VPI	POINT OF VERTICAL INTERSECTION
VPS	VENEER PLASTER SYSTEM
VPT	POINT OF VERTICAL TANGENT
VT	VINYL TILE
VTR	VENT THRU ROOF
W	WATER
W	WEST
W	WIDE FLANGE (BEAM)
W/	WITH
WC	WATER CLOSET
WD	WOOD
WG	WIRE GLASS
WH	WATER HEATER
WH	WATTHOUR METER
WHD	WATTHOUR DEMAND METER
WP	WATERPROOF
WP	WEATHERPROOF
WR	WASTE RECEPTACLE
WS	WATER SURFACE
WS	WATERSTOP
WS	WELDED STEEL
WTP	WATER TREATMENT PLANT
WTR	WATER
WU	WALL URN
WWTP	WASTEWATER TREATMENT PLANT

NOTES:

1. THIS IS A STANDARD LEGEND SHEET, THEREFORE SOME ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT ON THE DRAWINGS.
2. CONTACT ENGINEER FOR ABBREVIATIONS NOT LISTED.

NO.	DATE	DSGN	REVISION	CHK	APVD
		T LOOSE	DR	T LOOSE	D GARCIA
					BY
					APVD
					D GARCIA

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PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

GENERAL
ABBREVIATIONS

1" = X'
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
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BID DOCUMENTS

GENERAL SITE NOTES:

1. SOURCE OF TOPOGRAPHY SHOWN ON THE PUMP STATIONS C AND D CIVIL PLANS ARE BASE MAPS PROVIDED BY AVIROM & ASSOCIATES, INC., AUGUST 2013 AND CH2M HILL RECORD DRAWINGS DATED MAY 2018. SOURCE OF TOPOGRAPHY SHOWN ON THE PUMP STATION E CIVIL PLANS ARE BASE MAPS PROVIDED BY AVIROM & ASSOCIATES, INC., OCTOBER 2018 AND CH2M HILL DESIGN DRAWINGS DATED SEPTEMBER 1994. EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN ON THESE PLANS. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND ADJUST WORK PLAN ACCORDINGLY PRIOR TO BEGINNING CONSTRUCTION.
2. EXISTING TOPOGRAPHY, STRUCTURES, AND SITE FEATURES ARE SHOWN SCREENED AND/OR LIGHT-LINED. NEW FINISH GRADE, STRUCTURES, AND SITE FEATURES ARE SHOWN HEAVY-LINED.
3. HORIZONTAL DATUM: NAD 83, STATE PLANE - FLORIDA EAST
4. VERTICAL DATUM: PUMP STATIONS C AND D, NGVD 1929. PUMP STATION E, NAVD 1988.
5. ALL UNITS ARE IN US SURVEY FEET.
6. MAINTAIN, RELOCATE, OR REPLACE EXISTING SURVEY MONUMENTS, CONTROL POINTS, AND STAKES WHICH ARE DISTURBED OR DESTROYED. PERFORM THE WORK TO PRODUCE THE SAME LEVEL OF ACCURACY AS THE ORIGINAL MONUMENT(S) IN A TIMELY MANNER, AND AT THE CONTRACTOR'S EXPENSE.
7. COORDINATE STAGING AREA WITH THE CITY. STAGING AREA SHALL BE FOR CONTRACTOR'S EMPLOYEE PARKING, CONTRACTOR'S EQUIPMENT AND ON-SITE STORAGE OF MATERIALS.
8. PROVIDE TEMPORARY FENCING AS NECESSARY TO MAINTAIN SECURITY AT ALL TIMES.
9. ELEVATIONS GIVEN ARE TO FINISH GRADE AND PIPE INVERT UNLESS OTHERWISE SHOWN.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING EROSION CONTROL DEVICES DURING CONSTRUCTION.
11. CONTRACTOR SHALL TAKE ALL OTHER MEASURES TO POSITIVELY PRECLUDE EROSION MATERIALS FROM LEAVING THE SITE.
12. LIMIT CONSTRUCTION OPERATIONS TO WITHIN THE RIGHT-OF-WAY EASEMENTS AND ANY OTHER DESIGNATED WORK AREAS AS INDICATED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY DAMAGES AS A RESULT OF CONSTRUCTION ACTIVITIES OUTSIDE OF RIGHT-OF-WAY. EASEMENTS AND ANY OTHER DESIGNATED WORK AREAS SHOWN ON THE DRAWINGS.
13. CONTRACTOR SHALL REPLACE ALL PAVEMENTS, PAVEMENT MARKINGS, SIGNS, AND REFLECTIVE MARKERS DISTURBED OR REMOVED DURING CONSTRUCTION.
14. TREE AND SHRUB REMOVAL AND/OR TRIMMING MUST BE COMPLETED BY A CITY APPROVED ISA CERTIFIED ARBORIST.
15. ALL DISTURBED AREAS NOT PAVED OR COVERED WITH GRAVEL SHALL BE SODDED.

LEGEND

- ANTENNA
- BACK FLOW PREVENTOR VALVE
- BENCHMARK
- BOLLARD (UNLESS NOTED)
- CATCH BASIN
- CONCRETE UTILITY POLE
- DRAINAGE MANHOLE
- ELECTRIC SERVICE BOX
- EXISTING ELEVATION
- METAL LIGHT POLE
- OVERHEAD WIRES
- PARKING METER
- SANITARY MANHOLE
- SEWER VALVE
- SIGN (UNLESS NOTED)
- SPIGOT
- WATER METER
- WATER VALVE
- WOOD UTILITY POLE
- UNDERGROUND DRAINAGE LINE
- UNDERGROUND SEWER LINE
- APPROXIMATE RIGHT-OF-WAY LINE
- BUTTON WOOD (DIAMETER)
- PALM SPECIES (DIAMETER)
- POINCIANA (DIAMETER)
- UNKNOWN SPECIES (DIAMETER)

ABBREVIATIONS

@	AT	OC	ON CENTER
CLDI	CEMENT LINED DUCTILE IRON	OD	OUTSIDE DIAMETER
CONC	CONCRETE	PL	PROPERTY LINE
DIA	DIAMETER	PP	POWER POLE
DR	DRIVE OR DIMENSION RATIO	PVC	POLYVINYLCHLORIDE
DFM	DRAINAGE FORCE MAIN	RCP	REINFORCED CONCRETE PIPE
E	EAST	RD	ROAD
ECC	ECCENTRIC	REQD	REQUIRED
EL	ELEVATION	RJ	RESTRAINED JOINT
EX OR EXST	EXISTING	RT	RIGHT
EW	EACH WAY	R/W	RIGHT OF WAY
HDPE	HIGH DENSITY POLYETHYLENE	S	SOUTH
HORIZ	HORIZONTAL	SD	STORM DRAIN
INV	INVERT	SDR	STANDARD DIMENSION RATIO
IP	IRON POST	SPECD	SPECIFIED
LT	LEFT	SS	SANITARY SEWER
MAX	MAXIMUM	SST	STAINLESS STEEL
MH	MANHOLE	STA	STATION
MIN	MINIMUM	T, TEL	TELEPHONE
MJ	MECHANICAL JOINT	TYP	TYPICAL
N	NORTH	VERT	VERTICAL
NO	NUMBER	W	WATER, WEST
NTS	NOT TO SCALE	W/	WITH
		WT	WEIGHT

SECTION AND DETAIL IDENTIFICATION

SECTION AND DETAIL DESIGNATORS

SECTION (LETTER) OR DETAIL (NUMBER) DESIGNATION

A
M-2

DRAWING NUMBER WHERE DETAIL CAN BE FOUND

DETAIL DESIGNATED

A

DETAIL NAME
SCALE: AS DESIGNATED

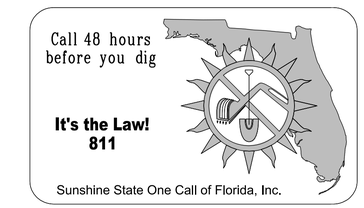
ON DRAWING WHERE DETAIL IS DRAWN:

STANDARD DETAIL DESIGNATION

STANDARD DETAIL

1234-567

AS INDICATED (SEE DETAIL DRAWINGS)



NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
		R MORRISON	R MORRISON	A MALONE	APVD	R MORRISON	

BID DOCUMENTS

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
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PUMP STATIONS REHABILITATION PHASE 2
C, E, AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

GENERAL

GENERAL NOTES, LEGEND AND ABBREVIATIONS

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
DWG	001-G-003
SHEET	03 of 31

DESIGN CRITERIA

1. APPLICABLE CODE: FLORIDA BUILDING CODE SIXTH EDITION (2017)
2. REFER TO THE DRAWINGS FOR ADDITIONAL AND SPECIFIC STRUCTURE LOADINGS AND REQUIREMENTS.
3. ALL LOADS SHOWN ARE SERVICE LEVEL (UNFACTORED) UNLESS SPECIFICALLY NOTED OTHERWISE.
4. DEAD LOADS:
   A. SELF WEIGHT
5. FLOOR LIVE LOADS:
   CORRIDORS, EXITS, STAIRS 100 PSF
   WALKWAYS AND ELEVATED PLATFORMS 100 PSF
6. WIND LOADS:
   ASCE 7 METHOD MWFRS DIRECTIONAL PROCEDURE
   BASIC WIND SPEED (3-SECOND GUST)
   Vult = 200 MPH
   Vasd = 156 MPH
   EXPOSURE CATEGORY = C
   RISK CATEGORY = III

GENERAL INFORMATION

1. FOR ABBREVIATIONS NOT LISTED, SEE ASME Y14.38 "ABBREVIATIONS AND ACRONYMS: PUBLICATION AS DISTRIBUTED BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).
2. DESIGN DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS OCCURRING THROUGHOUT THE PROJECT, WHETHER OR NOT THEY ARE INDIVIDUALLY CALLED OUT.
3. VERIFY FINAL OPENING DIMENSIONS IN WALLS, SLABS, AND DECKS WITH OTHER DISCIPLINE DRAWINGS PRIOR TO CONSTRUCTION OF THESE ELEMENTS.
4. FOR NUMBER, TYPE, SIZE, ARRANGEMENT, AND/OR LOCATION OF EQUIPMENT PADS, SEE OTHER DISCIPLINE DRAWINGS. COORDINATE WITH EQUIPMENT SUPPLIER PRIOR TO PLACING SLABS, WALLS AND FOUNDATIONS. COORDINATE PIPING OPENINGS WITH OTHER DISCIPLINE DRAWINGS.
5. DO NOT CUT OR MODIFY STRUCTURAL MEMBERS FOR PIPES, DUCTS, ETC, UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
6. VISITS TO THE JOB SITE BY THE ENGINEER TO OBSERVE THE CONSTRUCTION DO NOT IN ANY WAY MEAN THAT ENGINEER IS GUARANTOR OF CONSTRUCTOR'S WORK, NOR RESPONSIBLE FOR THE COMPREHENSIVE OR SPECIAL INSPECTIONS, COORDINATION, SUPERVISION, OR SAFETY AT THE JOB SITE.
7. INFORMATION (DETAILING, DIMENSIONS, CONFIGURATIONS, AND ELEVATIONS, ETC.) OF EXISTING CONSTRUCTION SHOWN REFLECTS AVAILABLE EXISTING DESIGN DOCUMENTS, AND DOES NOT NECESSARILY REPRESENT THE AS-CONSTRUCTED CONDITIONS. THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS, ELEVATIONS AND DETAILING OF THE EXISTING STRUCTURES PRIOR TO UNDERTAKING ANY WORK THAT IS AFFECTED BY THE EXISTING STRUCTURE. NOTIFY ENGINEER IF CONDITIONS VARY FROM THAT SHOWN PRIOR TO STARTING WORK

FOUNDATIONS

1. SOIL DESIGN PARAMETERS:
   A. FOUNDATION SUBGRADE SHALL BE OBSERVED BY GETOTECHNICAL ENGINEER TO VERIFY ASSUMED BEARING PRESSURES PRIOR TO PLACMENT OF NEW FOUNDATION CONCRETE
   B. ASSUMED NET ALLOWABLE SOIL BEARING PRESSURES: 2000 PSF
2. 100 YEAR FLOOD ELEVATION:
   PUMP STATION E – ZONE AE (EL 6.655 FT) NAVD88
   PUMP STATION D – ZONE AE (EL 6) NGVD29
   PUMP STATION C – ZONE AE (EL 8) NGVD29
3. FROST DEPTH: 0 IN

FORMWORK, SHORING, AND BRACING

1. STRUCTURES SHOWN ON THE DRAWINGS HAVE BEEN DESIGNED FOR STABILITY UNDER FINAL CONDITIONS ONLY. DESIGN SHOWN DOES NOT INCLUDE NECESSARY COMPONENTS OR EQUIPMENT FOR STABILITY OF THE STRUCTURES DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR WORK RELATING TO CONSTRUCTION ERECTION METHODS, BRACING, SHORING, RIGGING, GUYS, SCAFFOLDING, FORMWORK, AND OTHER WORK AIDS REQUIRED TO SAFELY PERFORM THE WORK SHOWN.
2. TEMPORARY SHORING SHALL REMAIN IN PLACE UNTIL ELEVATED CONCRETE FLOOR OR SLABS HAVE REACHED 80 PERCENT OF THE 28 DAY COMPRESSIVE STRENGTH AS DETERMINED BY FIELD CYLINDER BREAKS.
3. "BURY"BARS OR "CARRIER"BARS ARE NOT ALLOWED FOR THE BOTTOM MATS OF REINFORCING IN ALL ELEVATED SLABS AND ARE NOT ALLOWED FOR THE TOP MATS OF REINFORCING IN ELEVATED SLABS LESS THAN 12 INCHES THICK.

CONCRETE REINFORCING

1. REINFORCING STEEL:
   TYPICAL: ASTM A615, GRADE 60
2. FABRICATION AND PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CRSI MSP-1 "MANUAL OF STANDARD PRACTICE"AND ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE".
3. FOR REINFORCED CONCRETE FRAME MEMBERS AND DESIGNATED BOUNDARY ELEMENTS OF CONCRETE SHEAR WALL STRUCTURES, REINFORCING STEEL SHALL MEET THE FOLLOWING REQUIREMENTS:
   A. ACTUAL YIELD STRENGTH BASED ON MILL TESTS SHALL NOT EXCEED SPECIFIED YIELD STRENGTH BY MORE THAN 18,000 PSI. (RETESTS SHALL NOT EXCEED THIS VALUE BY MORE THAN AN ADDITIONAL 3000 PSI.)
   B. RATIO OF THE ACTUAL ULTIMATE TENSILE STRESS TO ACTUAL TENSILE YIELD STRENGTH SHALL NOT BE LESS THAN 1.25.
4. MINIMUM REINFORCING FOR CONCRETE WALLS AND SLABS SHALL BE AS FOLLOWS:

THICKNESS	REINF EACH WAY	LOCATION
6"	#4@12"	CENTERED
8"	#5@12"	CENTERED
10"	#4@12"	EACH FACE
12"	#5@12"	EACH FACE

   PROVIDE LARGER SIZES AND MORE REINFORCING IN SECTIONS OF CONCRETE WHERE REQUIRED BY THE DETAILS ON THE DRAWINGS OR BY THE SPECIFICATIONS.
5. CONCRETE COVER FOR REINFORCING, UNLESS SHOWN OTHERWISE, SHALL BE:
   WHEN CAST AGAINST EARTH: 3"
   ALL OTHER CONCRETE SURFACES: 2"
6. REFER TO WALL CORNER AND WALL INTERSECTION REINFORCING DETAIL 0330-003. WALL CORNER REINFORCING SIZES AND SPACINGS SHALL BE AS SHOWN ON THE DRAWINGS AND REFERENCED TO THIS DETAIL. TYPICAL HORIZONTAL WALL REINFORCING SHALL LAP WITH THE CORNER HORIZONTAL REINFORCING.
7. 90 DEGREE BENDS, UNLESS OTHERWISE SHOWN, SHALL BE ACI 318 STANDARD HOOKS.
8. REINFORCING STEEL FOR FOOTINGS AND SLABS ON GRADE SHALL BE ADEQUATELY SUPPORTED ON BAR SUPPORTS WITH SPACERS TO KEEP REINFORCING ABOVE THE PREPARED GRADE. LIFTING REINFORCING OFF GRADE DURING CONCRETE PLACEMENT IS NOT PERMITTED.
9. REINFORCEMENT BENDS AND LAPS, UNLESS OTHERWISE NOTED, SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENTS:

CONCRETE DESIGN STRENGTH = 4,000 PSI MIN AT 28 DAYS[3] GRADE 60 REINFORCING STEEL										
BAR SIZE		#3	#4	#5	#6	#7	#8	#9	#10	#11
LAP SPLICE LENGTH										
SPACING = 3"	TOP BAR [2]	1'-4"	1'-8"	2'-1"	3'-0"	5'-2"	6'-8"	8'-6"	10'-10"	`13'-4"
	OTHER BAR	1'-4"	1'-4"	1'-8"	2'-4"	4'-0"	5'-2"	6'-7"	8'-4"	10'-3"
SPACING = 4"	TOP BAR [2]	1'-4"	1'-8"	2'-0"	2'-5"	3'-10"	5'-0"	6'-5"	8'-1"	10'-0"
	OTHER BAR	1'-4"	1'-4"	1'-7"	1'-10"	3'-0"	3'-11"	4'-11"	6'-3"	7'-8"
SPACING ≥ 6"	TOP BAR [2]	1'-4"	1'-8"	2'-0"	2'-5"	3'-6"	4'-0"	5'-0"	6'-2"	7'-5"
	OTHER BAR	1'-4"	1'-4"	1'-7"	1'-10"	2'-9"	3'-1"	3'-10"	4'-9"	5'-8"
EMBEDMENT LENGTH										
SPACING = 3"	TOP BAR [2]	1'-0"	1'-3"	1'-8"	2'-4"	4'-0"	5'-2"	6'-7"	8'-4"	10'-3"
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-10"	3'-1"	4'-0"	5'-1"	6'-5"	7'-11"
SPACING = 4"	TOP BAR [2]	1'-0"	1'-3"	1'-7"	1'-10"	3'-0"	3'-11"	4'-11"	6'-3"	7'-8"
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-5"	2'-4"	3'-0"	3'-10"	4'-10"	5'-11"
SPACING ≥ 6"	TOP BAR [2]	1'-0"	1'-3"	1'-7"	1'-10"	2'-9"	3'-1"	3'-10"	4'-9"	5'-8"
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-5"	2'-1"	2'-5"	3'-0"	3'-8"	4'-5"

1. LAP LENGTHS ARE BASED ON MINIMUM CONCRETE COVER OF 2". LONGER LENGTHS ARE REQUIRED FOR CONCRETE COVER LESS THAN 2".
2. TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.
3. WHERE 3000 PSI CONCRETE IS USED, INCREASE ABOVE LENGTHS BY 16 PERCENT. WHERE 3500 PSI CONCRETE IS USED, INCREASE ABOVE LENGTHS BY 7 PERCENT.

CAST IN PLACE CONCRETE

1. 28-DAY COMPRESSIVE STRENGTHS (TO MEET STRUCTURAL STRENGTH REQUIREMENTS):
   ALL CONCRETE: 4000 PSI
2. DESIGN STRENGTHS ARE SAME AS 28-DAY COMPRESSIVE STRENGTHS.
3. ROUGHEN AND CLEAN CONSTRUCTION JOINTS IN WALLS AND SLABS AS SPECIFIED PRIOR TO PLACING ADJACENT CONCRETE.
4. COORDINATE PLACEMENT OF OPENINGS, PIPE PENETRATIONS, CURBS, DOWELS, SLEEVES, CONDUITS, BOLTS AND INSERTS PRIOR TO PLACEMENT OF CONCRETE.
5. NO ALUMINUM CONDUIT OR PRODUCTS CONTAINING ALUMINUM OR ANY OTHER MATERIAL INJURIOUS TO THE CONCRETE SHALL BE EMBEDDED IN THE CONCRETE.

WELDING

1. WELDS SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS):
   D1.1, STRUCTURAL WELDING CODE STEEL
   D1.2, STRUCTURAL WELDING CODE ALUMINUM
   D1.3, STRUCTURAL WELDING CODE SHEET STEEL
   D1.4, STRUCTURAL WELDING CODE REINFORCING STEEL
   D1.6, STRUCTURAL WELDING CODE STAINLESS STEEL
2. REPAIR WELDS FOUND DEFECTIVE IN ACCORDANCE WITH AWS D1.1 SECTION 5.26.
3. USE INTERMITTENT WELDS AT FIELD WELDS OF EMBED PLATES AND ANGLES TO AVOID SPALLING OR CRACKING OF THE EXISTING CONCRETE.
4. BUTT JOINT WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP) UNLESS INDICATED OTHERWISE.

STRUCTURAL STEEL AND METAL FABRICATIONS

1. ALUMINUM SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:
   STRUCTURAL SHAPES B308
   PLATES B209
2. FASTENERS SHALL BE HIGH STRENGTH BOLTS CONFORMING TO THE FOLLOWING ASTM STANDARDS EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE:
   ANCHOR BOLTS (AB)
   STAINLESS STEEL F593, AISI TYPE 316, CONDITION CW
   MACHINE BOLTS (MB)
   STAINLESS STEEL F593, AISI TYPE 316, CONDITION CW
   ALUMINUM F468, ALLOY 2024-T4
3. ITEMS TO BE EMBEDDED IN CONCRETE SHALL BE CLEAN AND FREE OF OIL, DIRT AND PAINT.
6. NO HOLES OTHER THAN THOSE SPECIFICALLY DETAILED SHALL BE ALLOWED THROUGH STRUCTURAL MEMBERS. NO CUTTING OR BURNING OF STRUCTURAL MEMBERS IS PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.

DEFERRED SUBMITTALS

1. DEFERRED SUBMITTALS ARE THOSE PORTIONS OF THE DESIGN WHICH ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND WHICH ARE TO BE SUBMITTED TO THE PERMITTING AGENCY FOR ACCEPTANCE PRIOR TO INSTALLATION OF THAT PORTION OF THE WORK OR ARE REQUIRED TO BE SUBMITTED FOR REVIEW ONLY BY THE ENGINEER.
2. WHERE DEFERRED SUBMITTALS INCLUDE ADDITIONAL MATERIALS, INSTALLATION, ANCHORAGE, OR CERTIFICATION OF COMPONENTS THAT REQUIRE SPECIAL INSPECTION AND/OR STRUCTURAL OBSERVATION TO MEET CODE REQUIREMENTS, THE DEFERRED SUBMITTAL SHALL INCLUDE SPECIFIC LINE ITEMS TO BE ADDED TO THE APPROPRIATE TABLES IN THE PROJECT'S STATEMENT OF SPECIAL INSPECTIONS PLAN IF THEY ARE NOT ALREADY IDENTIFIED.
3. THE FOLLOWING IS A LIST OF DEFERRED SUBMITTALS PER FBC SECTION 107.3.4.1 OF 2017 FBC THAT ARE EXPECTED TO CONTAIN STRUCTURAL CALCULATIONS OR SAFETY RELATED SYSTEM INFORMATION FOR REVIEW TO MEET BUILDING PERMITTING REQUIREMENTS FOR DESIGNED SYSTEMS. PRIOR TO INSTALLATION OF THE INDICATED STRUCTURAL ELEMENT, EQUIPMENT, DISTRIBUTION SYSTEM, OR COMPONENT OR ITS ANCHORAGE, THE CONTRACTOR SHALL SUBMIT THE REQUIRED CALCULATIONS AND SUPPORTING DATA AND DRAWINGS FOR REVIEW AND ACCEPTANCE BY THE ENGINEER. ADDITIONALLY, ACCEPTANCE INDICATED ON THE ENGINEER'S COMMENT FORM, ALONG WITH THE COMPLETED, FINAL SUBMITTAL SHALL THEN BE SUBMITTED BY THE CONTRACTOR TO THE PERMITTING AGENCY AND APPROVED PRIOR TO INSTALLATION OF THESE ITEMS.

SPECIFICATION SECTION	CODE REQUIRED DEFERRED SUBMITTALS FOR REVIEW BY PERMITTING AGENCY
01 88 15	ANCHORAGE AND BRACING
05 52 16	ALUMINUM RAILINGS
05 50 00	ALUMINUM PLATFORMS

NO.	DATE	DSGN	DR	CHK	BY	APVD
	D EVERSON	J THORNTON	D GARCIA		D EVERSON	

REVISION

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
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PUMP STATIONS REHABILITATION PHASE 2
C, E, AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

GENERAL
GENERAL NOTES

NTS
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE	MAY 2019
PROJ	707158
DWG	001-G-004
SHEET	04 of 31

BID DOCUMENTS

ONE LINE DIAGRAMS-1

SYMBOL	DESCRIPTION
	DRAWOUT AIR CIRCUIT BREAKER, LOW VOLTAGE
400	CIRCUIT BREAKER, THERMAL MAGNETIC TRIP SHOWN, 3 POLE, UNO
AS/AF or AT/AF	CIRCUIT BREAKER, STATIC TRIP UNIT, SENSOR AMP TRIP AND FRAME RATINGS SHOWN, 3 POLE, UNO
100/M	CIRCUIT BREAKER, MAGNETIC TRIP ONLY, TRIP RATING SHOWN, 3 POLE, UNO
400 400	CIRCUIT BREAKER WITH CURRENT LIMITING FUSES, TRIP AND FUSE RATING INDICATED, 3 POLE, UNO
400 225	FUSED SWITCH, SWITCH AND FUSE CURRENT RATING INDICATED, 3 POLE, UNO
100	SWITCH, CURRENT RATING INDICATED, 3 POLE, UNO
60 (3)	FUSE, CURRENT RATING AND QUANTITY INDICATED
1	MAGNETIC STARTER WITH OVERLOAD, NEMA SIZE INDICATED, FVNR UNO
AFD	ELECTRONIC STARTER/SPEED CONTROL RVSS = REDUCED VOLTAGE SOFT STARTER AFD = AC ADJUSTABLE FREQUENCY DRIVE DC = DC ADJUSTABLE SPEED DRIVE RVAT = REDUCED VOLTAGE AUTO TRANSFORMER TYPE RVRT = REDUCED VOLTAGE REACTOR TYPE
	CABLE OR BUS CONNECTION POINT
I	MECHANICAL INTERLOCK
	SURGE ARRESTER (GAP TYPE)
10	CAPACITOR - KVAR INDICATED, 3 PHASE
3	MOTOR, SQUIRREL CAGE INDUCTION - HORSEPOWER INDICATED
G 500/625	GENERATOR, KW/KVA RATING SHOWN
	DELTA CONNECTION
	WYE GROUNDED CONNECTION, SOLID GROUND
DPM	DIGITAL POWER METER (MULTIFUNCTION)
O	UTILITY REVENUE METER
	GROUND
15 KVA 480-120/240V 1 PH	TRANSFORMER, SIZE, VOLTAGE RATINGS, AND PHASE INDICATED
	SHIELDED ISOLATION TRANSFORMER
480-120V (3)	POTENTIAL TRANSFORMER, VOLTAGE RATING AND QUANTITY INDICATED
100:5 (3)	CURRENT TRANSFORMER, RATIO(100:5) AND QUANTITY INDICATED (3)
	CONNECTION POINT TO EQUIPMENT SPECIFIED IN OTHER DIVISIONS. RACEWAY, CONDUCTOR AND CONNECTION IN THIS DIVISION
SPD	SURGE SUPPRESSION DEVICE

POWER SYSTEM PLAN-1

SYMBOL	DESCRIPTION
	CONNECTION POINT TO EQUIPMENT SPECIFIED. RACEWAY, CONDUCTOR,TERMINATION AND CONNECTION IN THIS DIVISION.
M	MOTOR, SQUIRREL CAGE INDUCTION
G	GENERATOR, VOLTAGE AND SIZE AS INDICATED.
LPXXA	HOME RUN - DESTINATION SHOWN
or G	EXPOSED CONDUIT AND CONDUCTORS
or G	CONCEALED CONDUIT AND CONDUCTORS
	CONDUIT DOWN
	CONDUIT UP
	CONDUIT, STUBBED AND CAPPED
CE	CONCRETE ENCASED CONDUIT
DB	DIRECT BURIED CONDUIT
FO	FIBER OPTIC CONDUIT
T	TRANSFORMER
J or HH	GENERAL CONTROL OR WIRING DEVICE. LETTER SYMBOLS OR ABBREVIATIONS INDICATE TYPE OF DEVICE
CS	CONTROL STATION, SEE CONTROL DIAGRAMS FOR CONTROL DEVICE(S) REQUIRED.
30 F	NONFUSED DISCONNECT SWITCH, CURRENT RATING INDICATED, 3 POLE
60/40 F	FUSED DISCONNECT SWITCH, CURRENT RATING INDICATED (60/40, 60=SWITCH RATING / 40=FUSE RATING) 3 POLE
2	COMBINATION CIRCUIT BREAKER AND MAGNETIC STARTER, NEMA SIZE INDICATED
	CONVENIENCE RECEPTACLE - DUPLEX UNLESS SPECIFIED OTHERWISE WP- WEATHERPROOF C- CLOCK HANGER TL- TWIST LOCK CRE- CORROSION RESISTANT GFI = GROUND FAULT INTERRUPTION
	EXIT SIGN; FILLED SECTION IDICATES LIGHTED FACE, FULLY GASKETED REINFORCED POLYESTER HOUSING, WITH STAINLESS STEEL HARDWARE, RED LETTERS, INTEGRAL 90 MINUTES MAINTENANCE FREE SEALED NICKLE CADMIUM EMERGENCY BATTERY BACKUP. SELF TEST DIAGNOSTIC WITH INDICATOR LIGHT, UL LISTED NEMA 4X AND NFPA 101 RATED, LED. HALOPHANE DELEON HD SERIES, MODEL; LHD2E-NC-R-NK-SH OR APPROVED EQUAL.
	ALARM HORN
	ALARM LIGHT
$	WALL SWITCH: 2- DOUBLE POLE 3- THREE WAY 4- FOUR WAY WP- WEATHERPROOF
$a	SMALL LETTER SUBSCRIPT AT SWITCH AND LUMINAIRE INDICATES SWITCHING. SUBSCRIPT NUMBER AT LUMINAIRE INDICATES CIRCUIT IN PANELBOARD.
A	TYPE A LUMINAIRE: ENCLOSED FLUORESCENT: (2) F32T8 LAMPS, ALUMINUM HOUSING, ELECTRONIC BALLAST, 120V WITH EMERGENCY LIGHTING BATTERY PACK. COLUMBIA LIGHTING MODEL 47A-4-232-E-U-DR12-EL, OR APPROVED EQUAL. LIGHTS TO BE WIRED SO THAT EMERGENCY BATTERY PACK ILLUMINATES FIXTURE ON POWER FAILURE.
B	TYPE B LUMINAIRE: CLEAR IMPACT RESISTANT GLASS LENS LED WALL PACK, CAST ALUMINUM HOUSING, FULL CUT-OFF DISTRIBUTION, UL LISTED FOR WET LOCATIONS, NOMINAL 3448 LUMENS OUTPUT, 35.4 WATT INPUT, 120V. 90-MINUTE, EMERGENCY BATTERY BACKUP, EXTERNAL TEST SWITCH \ HUBBELL LIGHTING LAREDO SERIES, MODEL; LMC-30LU-5K-3-035-4-BOC, OR APPROVED EQUAL.
	POLE MOUNTED LUMINAIRE

GROUND SYSTEM PLAN

SYMBOL	DESCRIPTION
	GROUND ROD, REQUIRES TEST WELL IF LOCATED IN PAVED AREA
G	GROUNDING CONDUCTOR, SIZE AS INDICATED
TA	CABLE TO CABLE TEE
XA	CABLE TO CABLE CROSS
	PLATE ADAPTER
XJ	CABLE TO REINFORCING STEEL
GT	GROUND ROD TO CABLE
	FLEXIBLE GROUND STRAP
GP	CABLE TO PIPE (BOLTED CONNECTION)
GF	CABLE TO FLAT
WA	CABLE TO STEEL/ALUMINUM SURFACE
GR	CABLE TO TOP OF GROUND ROD
SS	PARALLEL SPLICE
	PIGTAIL FOR CONNECTION TO EQUIPMENT CABINET OR FRAME
G	EQUIPMENT GROUND BUS
N	EQUIPMENT NEUTRAL BUS
LA	CABLE TO LUG

NOTES:

1. THESE ARE STANDARD LEGEND SHEETS. SOME SYMBOLS AND ABBREVIATIONS MAY APPEAR ON THE LEGEND AND NOT ON THE DRAWINGS.
2. FOR ADDITIONAL ABBREVIATIONS OF OTHER DIVISIONS (HVAC, MECHANICAL, AND STRUCTURAL/ARCHITECTURAL) SEE OTHER LEGENDS.

NOTES:

1. FOR CABLE TYPES, SEE SPECIFICATIONS.
2. CONDUIT SIZES ARE BASED ON THE AREA OF THW CONDUCTORS.
3. SIZING OF CONDUCTORS #1AWG AND SMALLER BASED ON AMPACITIES AT 60 DEGREES C, SIZING OF CONDUCTORS #1/0AWG AND LARGER BASED ON AMPACITIES AT 75 DEGREES C.
4. WHERE CIRCUITS ARE UNDERGROUND, DIRECT BURIED OR CONCRETE ENCASED, MINIMUM CONDUIT SIZE SHALL BE 1".
5. FOR METRIC CONDUIT SIZES USE THE FOLLOWING CONVERSION:
   1/2" = 16 mm 1/4" = 35 mm
   3/4" = 21 mm 1 1/2" = 41 mm
   1" = 27 mm 2" = 53 mm

POWER CIRCUIT CALLOUTS

[P1]	[1/2"FLEX, 2#12,#12G]	[P26]	[1"C,3#8,5#14,1#10G]
[P2]	[3/4"C,2#12,1#12G]	[P27]	[1"C,2#6, 1#10G]
[P3]	[3/4"C,3#12,1#12G]	[P28]	[1"C,3#6, 1#8G]
[P4]	[3/4"C,4#12,1#12G]	[P28A]	[1"C,4#6, 1#8G]
[P5]	[3/4"C,5#12,1#12G]	[P29]	[1"C,3#6, 2#14,1#8G]
[P6]	[3/4"C,6#12,1#12G]	[P30]	[1"C,3#6, 3#14,1#8G]
[P7]	[3/4"C,7#12,1#12G]	[P31]	[1"C,3#6, 4#14,1#8G]
[P8]	[3/4"C,8#12,1#12G]	[P32]	[1"C,3#6, 5#14,1#8G]
[P9]	[3/4"C,3#12,2#14,1#12G]	[P33]	[1"C,3#4,1#8G]
[P10]	[3/4"C,3#12,3#14,1#12G]	[P34]	[1 1/4"C,3#4,3#14,1#8G]
[P11]	[3/4"C,3#12,4#14,1#12G]	[P35]	[1 1/4"C,3#4,5#14,1#8G]
[P12]	[3/4"C,3#12,5#14,1#12G]	[P36]	[1 1/4"C,3#3, 1#6G]
[P13]	[3/4"C,3#12,6#14,1#12G]	[P37]	[1 1/4"C,3#3, 3#14,1#6G]
[P14]	[3/4"C,3#12,7#14,1#12G]	[P38]	[1 1/4"C,3#2, 1#6G]
[P15]	[3/4"C,2#10,1#10G]	[P39]	[1 1/4"C,3#1, 1#6G]
[P16]	[3/4"C,3#10,1#10G]	[P39A]	[1 1/2"C,4#1, 1#6G]
[16A]	[3/4"C,4#10,1#10G]	[P40]	[1 1/2"C,3#1, 3#14,1#6G]
[P17]	[3/4"C,3#10,2#14,1#10G]	[P41]	[1 1/2"C,3#2/0, 1#4G]
[P18]	[3/4"C,3#10,3#14,1#10G]	[P42]	[2"C,3#3/0, 1#4G]
[P19]	[3/4"C,3#10,4#14,1#10G]	[P43]	[2"C,3#4/0, 1#3G]
[P20]	[3/4"C,3#10,5#14,1#10G]	[P43A]	[2 1/2"C,4#4/0, 1#4G]
[P21]	[1"C,2#8,1#10G]	[P44]	[2"C,3#3/0, 1#3G]
[P22]	[1"C,3#8,1#10G]	[P45]	[2 1/2"C,4#3/0, 1#3G]
[P22A]	[1"C,4#8,1#8G]	[P46]	[1 1/2"C,3#1/0, 1#6G]
[P23]	[1"C,3#8,2#14,1#10G]	[P47]	[2 1/2"C,4-250 KCMIL, 1#4G]
[P24]	[1"C,3#8,3#14,1#10G]	[P48]	[3"C, 3-500 KCMIL, 1#3G]
[P25]	[1"C,3#8,4#14,1#10G]		

ANALOG CIRCUIT CALLOUTS

[A1]	[3/4"C,1 TYPE 3]
[A2]	[1"C,2 TYPE 3]
[A3]	[1"C,3 TYPE 3]
[A4]	[1"C,4 TYPE 3]
[A5]	[1 1/4"C,5 TYPE 3]
[A6]	[1 1/4"C,6 TYPE 3]
[A7]	[1 1/2"C,7 TYPE 3]
[A8]	[1 1/2"C,8 TYPE 3]
[A9]	[1 1/2"C,9 TYPE 3]
[A10]	[2"C,10 TYPE 3]
[A11]	[2"C,11 TYPE 3]
[A12]	[2"C,12 TYPE 3]
[A13]	[2"C,13 TYPE 3]
[A14]	[2"C,14 TYPE 3]
[A15]	[3/4"C,1 TYPE 4]
[A16]	[3/4"C,2 TYPE 4]
[A17]	[1"C,3 TYPE 4]
[A18]	[1 1/4"C,4 TYPE 4]
[A19]	[1 1/4"C,5 TYPE 4]
[A20]	[1 1/4"C,6 TYPE 4]
[A21]	[1 1/2"C,7 TYPE 4]
[A22]	[1 1/2"C,8 TYPE 4]
[A23]	[2"C,9 TYPE 4]
[A24]	[3/4"C,1-4 pr. TYPE 5]
[A25]	[1"C,2-4 pr. TYPE 5]
[A26]	[3/4"C,1 - TYPE 32]
[A27]	[3/4"C,1 - TYPE 33]
[A28]	[3/4"C,1 - TYPE 34]
[A29]	[3/4"C,1 - TYPE 30]

CONTROL CIRCUIT CALLOUTS

[C1]	[3/4"C,MSC]
[C2]	[3/4"C,2#14,1#14G]
[C3]	[3/4"C,3#14,1#14G]
[C4]	[3/4"C,4#14,1#14G]
[C5]	[3/4"C,5#14,1#14G]
[C6]	[3/4"C,6#14,1#14G]
[C7]	[3/4"C,7#14,1#14G]
[C8]	[3/4"C,8#14,1#14G]
[C9]	[3/4"C,9#14,1#14G]
[C10]	[3/4"C,10#14,1#14G]
[C11]	[3/4"C,11#14,1#14G]
[C12]	[3/4"C,12#14,1#14G]
[C13]	[3/4"C,13#14,1#14G]
[C14]	[3/4"C,14#14,1#14G]
[C15]	[3/4"C,15#14,1#14G]
[C16]	[3/4"C,16#14,1#14G]
[C17]	[3/4"C,17#14,1#14G]
[C18]	[3/4"C,18#14,1#14G]
[C19]	[3/4"C,19#14,1#14G]
[C20]	[1"C,20#14,1#14G]
[C21]	[1"C,21#14,1#14G]
[C22]	[1"C,22#14,1#14G]
[C23]	[1"C,23#14,1#14G]
[C24]	[1"C,24#14,1#14G]
[C25]	[1"C,25#14,1#14G]

MULTICONDUCTOR CONTROL CABLE CIRCUIT CALLOUTS

[CC5]	[3/4"C,1-5C TYPE 1]
[CC7]	[3/4"C,1-7C TYPE 1]
[CC9]	[1"C,1-9C TYPE 1]
[CC12]	[1"C,1-12C TYPE 1]
[CC19]	[1 1/2"C, 1-19C TYPE 1]
[CC25]	[1 1/2"C,1-25C TYPE 1]
[CC37]	[2"C,1-37C TYPE 1]
[CCC1]	[1-7C #12 TYPE 1]
[CX]	[2"C, COAX CABLE]
[MSC]	[MANUFACTURER SUPPLIED CABLE]

LIGHTING FIXTURE SCHEDULE

SYMBOL	MARK	VOLTS	LAMP TYPE	LAMP QTY	FIXTURE WATTS	MOUNT	DESCRIPTION	MAKE/MODEL
	A	120	LED	MFG STD	90	POLE	WALL MOUNTED AREA LUMINARE LUMINAIRE, DIE-CAST ALUMINUM HOUSING, LABELED FOR UL COMPLIANCE AND IP66 . NOMINAL 2000 LUMENS MAX OUTPUT, 4000K, 120V TYPE 4 DISTRIBUTION, FULL CUT-OFF, FWC SHIELDING.	LITHONIA DSXØ LED-20C-530-40K-BLC-LCCO-RCCO-VOLT-SPA-DWHXD
	B	120	LED	MFG STD	35	POLE	LED POLE MOUNTED AREA LUMINARE LUMINAIRE, DIE-CAST ALUMINUM HOUSING, LED, LABELED FOR UL COMPLIANCE AND IP65 , NOMINAL 5000 LUMENS MAX OUTPUT, 4000K, 120V TYPE 4 DISTRIBUTION, 360 DEG FULL CUT-OFF, EPA 0.95 ftsq MOUNTED AT 12' AFF. POLE MOUNTING RATED FOR 200 MPH	LITHONIA DSXØ LED-20C-530-40K-BLC-LCCO-RCCO-VOLT-SPA-DWHXD

NO.	DATE	DSGN	DR	CHK	REVISION	BY	APVD
		E CARRASCO	E CARRASCO	D NICHOLSON	APVD	D NICHOLSON	D NICHOLSON

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
DAVID C. NICHOLSON, PE 60201

PUMP STATIONS REHABILITATION PHASE 2
C, E, AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

GENERAL
ELECTRICAL LEGEND

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
DWG	001-G-006
SHEET	05 of 31

BID DOCUMENTS

ELECTRICAL GENERAL NOTES

1 CONDUIT, WIRE AND EQUIPMENT SIZES AND LOCATIONS SHOWN ARE FOR BID BASIS ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL WORK WITH APPROVED SHOP DRAWINGS, WITH THE REQUIREMENTS OF EQUIPMENT PROVIDED, WITH EQUIPMENT FURNISHED BY OWNER FOR INSTALLATION BY CONTRACTOR AND WITH REQUIREMENTS OF OTHER DIVISIONS OF THE CONTRACT AS NECESSARY TO PROVIDE COMPLETE AND WORKING SYSTEMS COMPLYING WITH THE CONTRACT DOCUMENTS. ALL PROPOSED DEVIATIONS FROM CONTRACT DOCUMENTS SHALL BE SUBMITTED AND APPROVED BEFORE EXECUTION OF THE AFFECTED WORK.

2 THE TERMS RACEWAY AND CONDUIT ARE USED IN THESE DOCUMENTS TO DENOTE NOT ONLY THE RACEWAY OR CONDUIT ITSELF BUT ALSO ALL JUNCTION BOXES, PULL BOXES, CONDUITS, FITTINGS, CLAMPS, SUPPORTS AND ALL OTHER ITEMS NECESSARY FOR A COMPLETE AND WORKING SYSTEM COMPLYING WITH THE CONTRACT DOCUMENTS.

3 NOTES INDICATED AS "REF", "REFERENCE" OR "REFER TO" ARE PROVIDED TO ASSIST IN LOCATING RELATED CONTRACTUAL REQUIREMENTS BUT ARE NOT CONTRACTUAL INSTRUCTIONS THEMSELVES. MISSING, INCORRECT OR INCOMPLETE REFERENCES SHALL HAVE NO EFFECT ON THE REQUIREMENTS OF THE CONTRACT.

4 AT ITEMS MARKED MSC (MANUFACTURER SUPPLIED OR SPECIFIED CABLE) CONTRACTOR SHALL DETERMINE REQUIREMENTS FOR, AND PROVIDE, CONDUIT AND CABLE AS REQUIRED BY MANUFACTURER AND IN COMPLIANCE WITH CONTRACT DOCUMENTS.

5 EXCEPT AS NOTED BELOW, ALL WIRE AND CABLE, INCLUDING FIBER OPTIC, SHALL BE INSTALLED IN RACEWAY. EXCEPTIONS ARE EQUIPMENT CABLES PROVIDED BY EQUIPMENT MANUFACTURERS AND UL LISTED FOR INSTALLATION OUTSIDE OF CONDUIT, INCLUDING FLOAT SWITCH AND SUBMERSIBLE PUMP CABLES.

6 SPARE RUNS OF CONDUCTORS SHALL BE INSULATED/TERMINATED AND LABELED AT BOTH ENDS. SPARE RUNS OF FIBER OPTIC STRANDS SHALL BE LABELED AND TERMINATED AT BOTH ENDS. ALL CONDUCTORS AND FIBERS SHALL BE TESTED AFTER INSTALLATION AND TEST REPORTS SHALL BE SUBMITTED. REPLACE ALL DEFECTIVE MATERIAL; DO NOT SUBMIT TEST REPORTS SHOWING DEFECTS.

7 LOCATIONS AND ELEVATIONS OF ELECTRICAL CONNECTIONS, MOTORS, PANEL BOARDS, SWITCH GEAR, TRANSFORMERS, CONTROL CABINETS AND OTHER ITEMS SHOWN ON DOCUMENTS ARE APPROXIMATE ONLY UNLESS DIMENSIONED. COORDINATE EXACT LOCATIONS AND ELEVATIONS WITH REQUIREMENTS OF OTHER DIVISIONS OF THESE DOCUMENTS. IN AREAS WHERE SPACE AVAILABLE IS LIMITED. P REPARE DIMENSIONED DRAWINGS SHOWING EXACT PROPOSED LOCATIONS OF EQUIPMENT AND VERIFYING THAT EQUIPMENT PROPOSED FOR USE CAN BE INSTALLED AS SHOWN ON PLANS IN COMPLIANCE WITH NEC AND MANUFACTURER'S REQUIREMENTS. BASE THESE DRAWINGS ON DIMENSIONS OF EQUIPMENT TO BE INSTALLED UNDER THIS CONTRACT WHICH ARE KNOWN TO CONTRACTOR TO BE CORRECT AND NOT SUBJECT TO CHANGE. NOTE DEVIATIONS FROM BID BASIS DRAWINGS AND DISCUSS WITH ENGINEER. SUBMIT THESE DRAWINGS AND RECEIVE APPROVAL BEFORE EXECUTING THE WORK. DO NOT SUBMIT SHOP DRAWINGS FOR EQUIPMENT WHICH IS NOT ACCOMPANIED BY DRAWINGS VERIFYING COMPLIANCE WITH CONTRACT REQUIREMENTS.

8 CONTROL (LADDER LOGIC) DIAGRAMS DEPICT FUNCTIONS REQUIRED, MAJOR COMPONENTS AND THEIR INTERCONNECTIONS, BUT ARE NOT INTENDED TO BE COMPLETE WIRING DIAGRAMS. CONTRACTOR SHALL COORDINATE WITH MANUFACTURERS OF EQUIPMENT PROVIDED TO ENSURE THAT ALL MATERIALS AND LABOR ARE PROVIDED WHICH ARE NECESSARY TO SECURE COMPLETE AND WORKING SYSTEMS WITH ALL FUNCTIONS AND COMPONENTS SHOWN ON THE CONTRACT DOCUMENTS, INCLUDING THIS DIVISION CONTRACT AND INSTRUMENTATION AND CONTROL DOCUMENTS.

9 PROVIDE DISCONNECT SWITCHES WHERE SHOWN, WITH THE SAME NUMBER OF POLES AS THEIR SOURCE CIRCUIT BREAKERS, AND WITH VOLTAGE AND CURRENT RATINGS EQUAL TO OR GREATER THAN THAT OF THE SOURCE CIRCUIT BREAKER'S.

10 THE REQUIREMENTS FOR DISCONNECT SWITCHES SHOWN MAY BE MET BY DISCONNECT SWITCHES PROVIDED BY EQUIPMENT MANUFACTURERS, WHERE ALL REQUIREMENTS OF THE NEC AND THESE DOCUMENTS ARE MET BY THOSE SWITCHES.

11 PROVIDE GROUND ROD INSTEAD OF GROUND RING AT ALL POLE MOUNTED LIGHTING FIXTURES. PROVIDE GROUNDING SYSTEMS DESCRIBED ELSEWHERE IN DOCUMENTS FOR MANHOLE AND HANDHOLE INSTEAD OF GROUND RINGS. THE TERM CAD WELD IS USED TO DENOTE EXOTHERMIC WELDS.

12 RAILING, LADDER, STEPS, GRATINGS, FRAMING, ANTENNAS, ENCLOSURES OF ELECTRICAL, PROCESS OR CONTROL EQUIPMENT OPERATING ABOVE 150 VOLTS TO GROUND OR OTHER CONDUCTIVE ITEMS INSTALLED, OUTDOORS, WHICH ARE NORMALLY NOT ENERGIZED SHALL BE BONDED TOGETHER TO THE OUTDOOR FACILITY GROUND RING WITH #2/0 MINIMUM TINNED BARE COPPER CONDUCTOR, USING UL LISTED CLAMPS ABOVE GRADE AND CAD WELDS BELOW GRADE. ITEMS SUCH AS STAIRS OR RAILINGS WHICH ARE INSTALLED AS MULTIPLE SECTIONS SHALL BE BONDED TOGETHER WITH TINNED #2/0 COPPER CONDUCTOR OR EQUIVALENT TINNED BRAIDED COPPER STRAP. ALL ITEMS SHALL HAVE TWO GROUND CONNECTIONS WITH DIFFERENT TERMINATION POINTS TO AVOID ISOLATION FROM A GROUND SYSTEM OF ANY ITEM DUE TO DISCONNECTION OF A SINGLE GROUND CONNECTION. CONDUCTIVE ENCLOSURES AND OTHER EXTERIOR METAL COMPONENTS WHICH ARE NOT NORMALLY ENERGIZED, OF INSTRUMENTS AND CONTROLS OPERATING AT OR BELOW 150 VOLTS TO GROUND, SHALL BE CONNECTED TO GROUNDING SYSTEM WITH TWO #6 AWG OR LARGER TINNED COPPER OR GREEN INSULATED GROUNDING CONDUCTORS.

13 PROVIDE SURGE SUPPRESSORS ON BOTH ENDS OF ALL LOW VOLTAGE (600 VOLTS OR LESS) BRANCH CIRCUITS, FEEDERS, INSTRUMENTATION AND CONTROL CIRCUITS WHICH ARE NOT ENTIRELY WITHIN A BUILDING PROTECTED BY A LIGHTNING PROTECTION SYSTEM OR ENTIRELY UNDER ITS SLAB.

14 PROVIDE #10 WIRE INSTEAD OF #12 WIRE FOR ALL 20 AMPERE 120 VOLT OR 208 VOLT CIRCUITS EXCEEDING 150 FEET CONDUIT LENGTH.

15 WHERE THE NUMBER OR SIZE OF CONDUCTORS SHOWN TO BE CONNECTED ARE IN EXCESS OF THE CAPACITY OF THE STANDARD TERMINALS OF THE CONNECTED EQUIPMENT, PROVIDE ADDITIONAL TERMINALS, ENCLOSURES, JUNCTION BOXES, PULL SECTIONS, WIRES, CONDUITS AND ALL OTHER MATERIALS AND LABOR AS NECESSARY TO MAKE THE CONNECTIONS SHOWN IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.

16 ALL MATERIALS AND EQUIPMENT PROPOSED FOR USE SHALL BE NEW, UNUSED, FREE OF DAMAGE OR DETERIORATION, FULLY RATED AS SPECIFIED AND SCHEDULED IN THE CONTRACT DOCUMENTS AT THE PROJECT ALTITUDE AND MAXIMUM AMBIENT TEMPERATURE.

17 PROVIDE ARC FLASH WARNING AND OTHER SIGNS ON ALL PANELBOARDS, MOTOR CONTROL CENTERS, MOTOR CONTROLLERS, CONTROL PANELS, SWITCHBOARDS AND OTHER EQUIPMENT REQUIRED BY NEC INCLUDING BUT NOT LIMITED TO PARAGRAPH 110.16 FLASH PROTECTION.

18 COORDINATE SIZE AND INSTALLATION OF ALL EQUIPMENT WITH EXISTING CONDITIONS AND WORK IN OTHER DIVISIONS OF CONTRACT TO ENSURE COMPLIANCE WITH THE NEC, INCLUDING BUT NOT LIMITED TO PARAGRAPH 110.26 SPACES ABOUT ELECTRICAL EQUIPMENT.

19 STANDARD DETAILS INCLUDED IN THESE DOCUMENTS SHALL BE USED WHERE APPLICABLE WHETHER SPECIFICALLY CALLED OUT ON THE PLANS OR NOT. PRACTICES CUSTOMARY TO THE TRADE MAY BE USED ONLY WHERE NO APPLICABLE STANDARD DETAIL CAN BE FOUND IN THESE DOCUMENTS AND WHERE THE CUSTOMARY PRACTICE WILL RESULT IN A COMPLETE AND WORKING SYSTEM IN COMPLIANCE WITH THESE DOCUMENTS.

20 ALL TERMINATIONS OF RIGID CONDUIT IN WALLS OF ENCLOSURES WITHOUT CAST-IN-PLACE THREADED CONDUIT BOSSES, AND WHICH ARE LOCATED OUTDOORS OR IN WET OR DAMP LOCATIONS, SHALL BE MADE USING STAINLESS STEEL MYERS HUBS.

21 REFER TO DOCUMENTS OF OTHER DIVISIONS OF CONTRACT, INCLUDING BUT NOT LIMITED TO PROCESS MECHANICAL AND HVAC, FOR LOCATIONS OF PROCESS, INSTRUMENTATION, CONTROL, HVAC AND OTHER EQUIPMENT REQUIRING ELECTRICAL, FIBER OPTIC OR RACEWAY-ONLY CONNECTIONS TO BE PROVIDED UNDER THIS DIVISION OF CONTRACT. ALL EQUIPMENT LOCATIONS SHOWN ON DRAWINGS IN THIS DIVISION ARE APPROXIMATE ONLY UNLESS DIMENSIONED.

22 PROVIDE ADDITIONAL RACEWAY, WIRING AND CONNECTIONS AS NECESSARY FOR MOTOR TEMPERATURE PROTECTIVE DEVICES AND OTHER MOTOR AUXILIARIES WHERE RECOMMENDED BY EQUIPMENT MANUFACTURERS, SHOWN IN CONTROL DIAGRAMS OR ON PLANS OR REQUIRED IN SPECIFICATIONS.

23 ALL SHEET METAL JUNCTION BOXES, TERMINAL JUNCTION BOXES, CONTROL PANELS AND OTHER SHEET METAL ELECTRICAL ENCLOSURES SHALL BE NEMA 4-X STAINLESS STEEL WHERE SHOWN WITH FAST OPERATING CLAMP ASSEMBLIES. PROVIDE HOFFMAN SUFFIX TYPE SSLP WITH AFC412SS CLAMPS OR APPROVED EQUALS. PROVIDE TERMINAL JUNCTION BOXES AND CONTROL PANELS WITH REMOVABLE INTERIOR STEEL PANELS FACTORY PAINTED WHITE.

24 ALL FABRICATED ASSEMBLIES SUPPORTING ELECTRICAL EQUIPMENT PROVIDED UNDER THIS DIVISION OF CONTRACT SHALL BE UL LISTED INDIVIDUALLY, UL LISTED AS PART OF AN ASSEMBLY OR SHALL BE FABRICATED TO A DESIGN PREPARED BY A STRUCTURAL ENGINEER LICENSED TO PRACTICE IN THE STATE OR OTHERWISE PERMITTED TO PRACTICE ENGINEERING IN THE STATE. WHERE DETAILS IN THIS DIVISION OF THE CONTRACT DOCUMENTS CONTAIN SPECIFIC DIMENSIONS, SIZES, WELD INSTRUCTIONS OR SIMILAR INFORMATION RELATED TO THE STRENGTH OF THE ASSEMBLY, THESE SHALL BE INTERPRETED AS BID-BASIS REQUIREMENTS ONLY AND SHALL BE SUPERCEDED BY THE UL OR ENGINEERING DESIGN REQUIREMENTS ABOVE.

25 AT ALL LOCATIONS WHERE CONTRACTOR IS DIRECTED TO CUT OFF CONDUITS THROUGH CONCRETE SLAB AND GROUT CLOSED, CONTRACTOR SHALL FIRST DRILL 1-1/2 INCHES DEEP INTO CONCRETE AND USE NON-SHRINK GROUT TO BACKFILL HOLE FLUSH AND SMOOTH WITH EXISTING CONCRETE SURFACE.

26 COORDINATE EARTH WORK AND INSTALLATION OF ELECTRICAL ITEMS WITH INTERFERENCES SHOWN ON DOCUMENTS OF ALL DIVISIONS OF CONTRACT, INCLUDING CIVIL AND YARD PIPING. REPORT ALL DAMAGE AT ONCE TO OWNER AND ENGINEER AND REPAIR AS DIRECTED AT NO CHANGE IN CONTRACT.

27 ALL CONDUCTORS INSTALLED OUTDOORS OR UNDERGROUND, INCLUDING IN DUCT BANK, CONDUIT OR DIRECT BURIED OR IN HANDHOLES OR MANHOLES SHALL BE TRAY RATED CABLE TYPE TC UL LISTED FOR CONTINUOUS SUBMERSION. CABLE SHALL NOT BE SPLICED OR JOINED AND SHALL BE CONTINUOUS BETWEEN SOURCE AND LOAD TERMINATIONS. CONTRACTOR SHALL PROVIDE LARGER CONDUIT IF NECESSARY TO MEET NEC FILL LIMITS FOR CABLE.

28 PROVIDE FOUR INCH THICK STEEL-REINFORCED CONCRETE HOUSEKEEPING PAD UNDER ALL FLOOR MOUNTED EQUIPMENT PROVIDED OR INSTALLED UNDER THIS CONTRACT. PAD SHALL HAVE SMOOTH FINISH AND 3/4 INCH BEVEL ON ALL EDGES. COMPLY WITH STRUCTURAL AND CIVIL DIVISIONS OF CONTRACT FOR REINFORCEMENT, CONCRETE AND OTHER ITEMS COVERED BY THOSE DIVISIONS.

29 WHERE UL LISTED AND LABELED MATERIAL OR EQUIPMENT IS REQUIRED BUT IS NOT AVAILABLE FROM A MANUFACTURER NAMED IN THE APPLICABLE SPECIFICATION SECTION OR ON THE DRAWINGS, LISTING AND LABELING BY CSA, ETL OR FM WILL BE ACCEPTABLE UNDER THIS CONTRACT IF ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION (AHJ). IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACCEPTANCE BY THE AHJ; MATERIAL AND EQUIPMENT WHICH IS UNACCEPTABLE OR OTHERWISE NOT IN COMPLIANCE WITH THE CONTRACT SHALL BE REPLACED AT NO CHANGE IN CONTRACT.

NO.	DATE	DR	REVISION	CHK	BY	APVD
DSGN	E CARRASCO	E CARRASCO		D NICHOLSON	D NICHOLSON	D NICHOLSON

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
DAVID C. NICHOLSON PE 60201

PUMP STATIONS REHABILITATION PHASE 2
C, E, AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

GENERAL
ELECTRICAL LEGEND

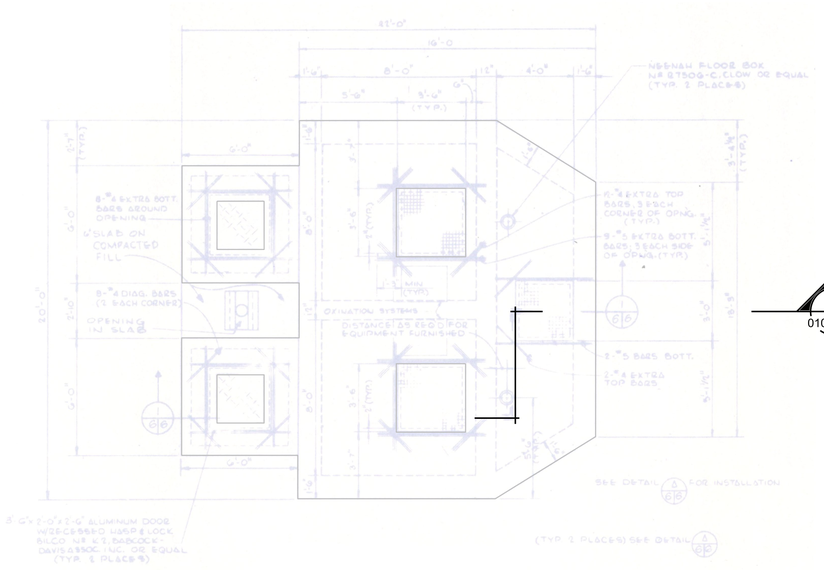
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
DWG	001-G-007
SHEET	06 of 31

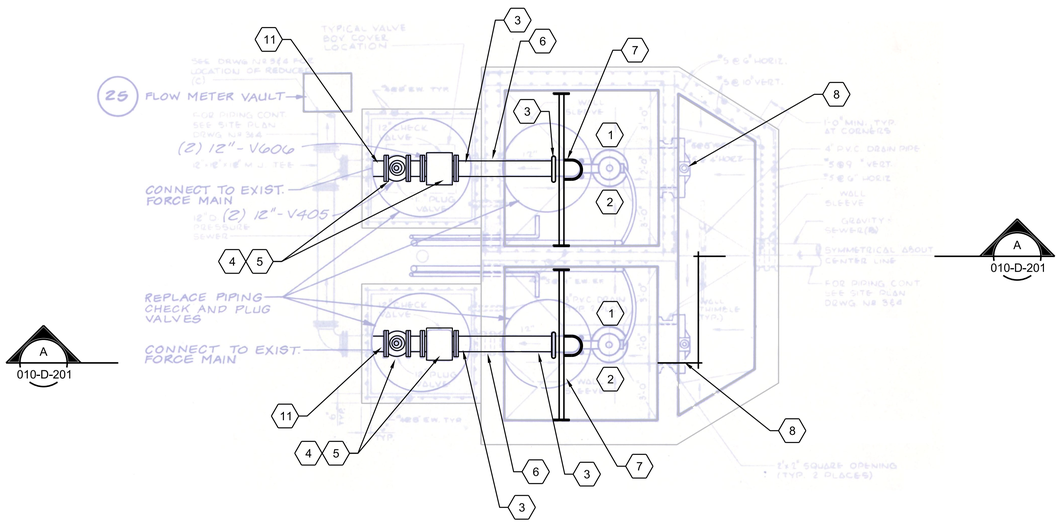
BID DOCUMENTS

SHEET KEYNOTES

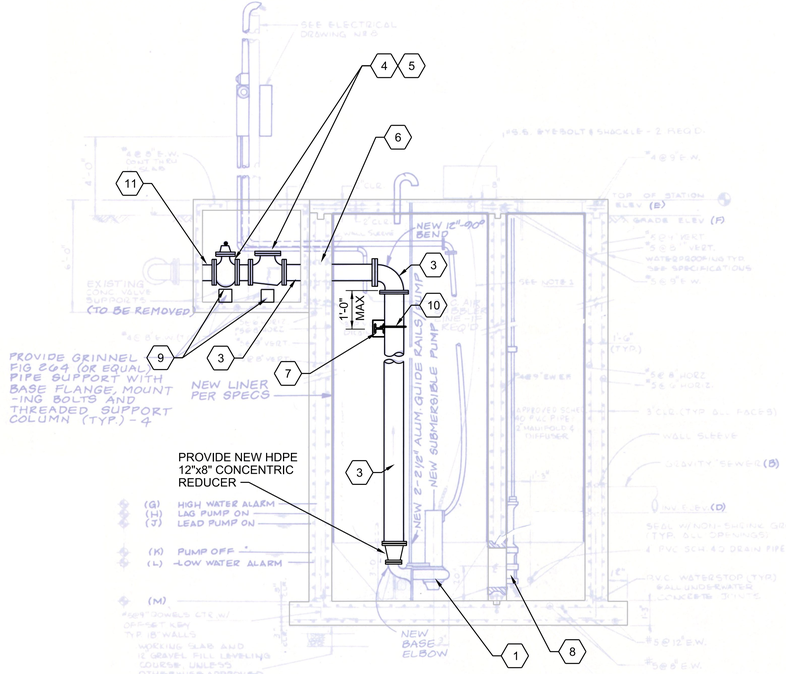
1. EXISTING PUMPS TO REMAIN.
2. NOT USED.
3. REPLACE ALL PIPES AND FITTINGS W/ HDPE.
4. REPLACE ALL PIPES & FITTINGS IN VALVE VAULTS WITH NEW DUCTILE IRON PIPE AND FITTINGS.
5. REPLACE TWO EXISTING CHECK VALVES AND TWO EXISTING PLUG VALVES WITH NEW 12"-V606 AND NEW 12" V-405 VALVES W/O PIPE SPOOL BETWEEN.
6. DEMOLISH ALL PIPE PENETRATIONS. WHERE CONCRETE CORING REQUIRED SEE STD DET 0330-143. INSTALL TYPE 316 SST WALL PIPES AND USE LINKSEAL FOR ALL PENETRATIONS. SEE STD DET 4027-607.
7. ALUMINUM I8X6.18 PIPE SUPPORT MEMBER. SEE DETAIL 0514-056, TYP EA END.
8. EXISTING GATES TO REMAIN IN SERVICE.
9. PROVIDE TYPE 316 SST PIPE SUPPORTS. DEMOLISH EXISTING SUPPORTS. SEE STD DETAIL 4005-500
10. 5/8" DIA 316 SST U-BOLT ANCHORED TO ALUMINUM PIPE SUPPORT MEMBER.
11. PROVIDE DUCTILE IRON PIPE BETWEEN PLUG VALVE AND EXISTING WALL PIPE.



ABOVE GRADE - PLAN
1/4"=1'-0"



BELOW GRADE - PLAN
1/4"=1'-0"



SECTION
A
1/4"=1'-0"
010-D-201

643 SW 4TH AVE. SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
TAO FU PE 63138

PUMP STATIONS REHABILITATION PHASE 2
C, E, AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

PROCESS MECHANICAL

PUMP STATION C REHABILITATION PLANS AND SECTION

NO.	DATE	DR	CHK	APVD	BY	APVD
DSGN		T FU	WL CLOUGH	D GARCIA		T FU

REVISION

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE	MAY 2019
PROJ	707158
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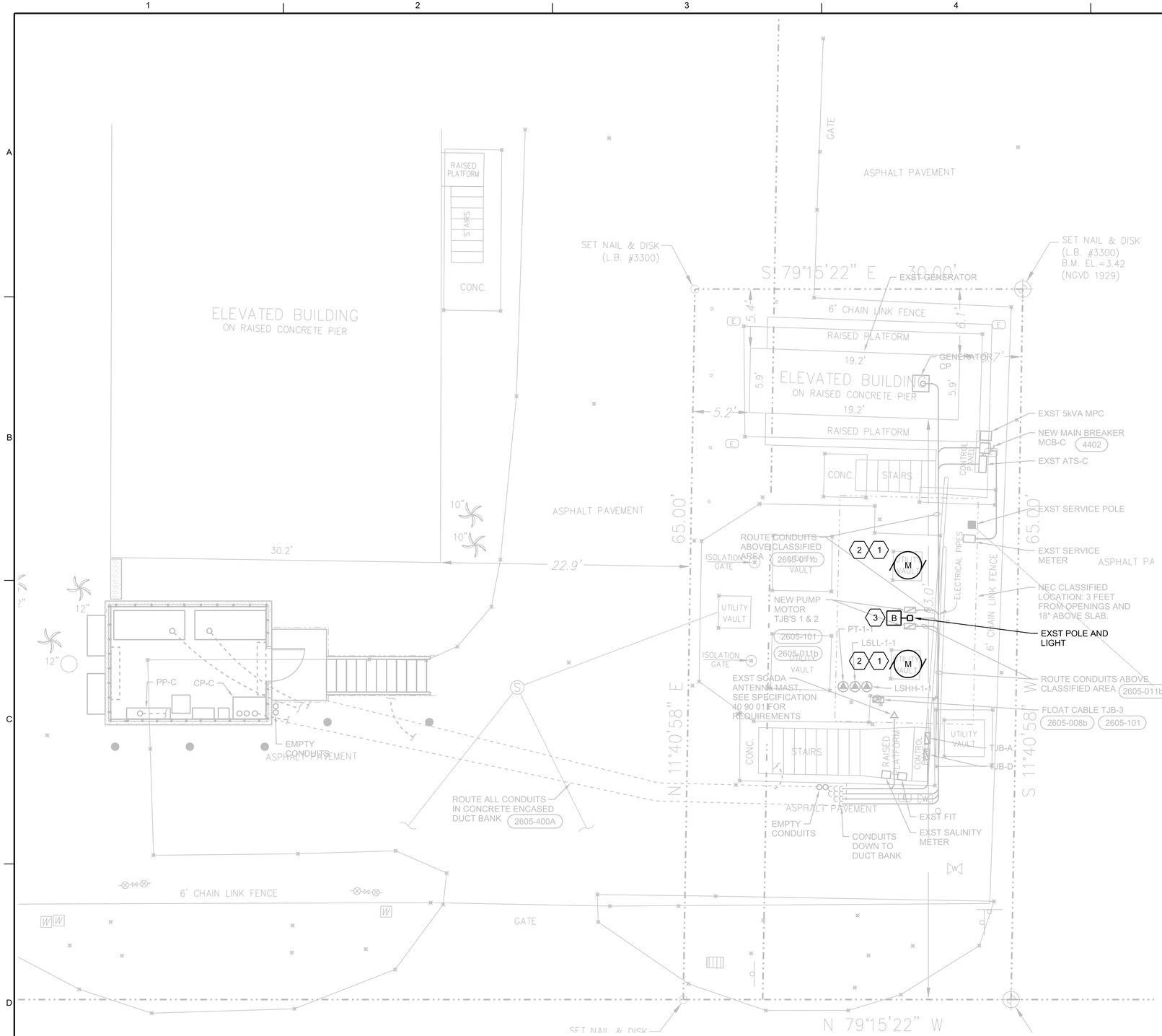
BID DOCUMENTS



GENERAL NOTES

A. DO NOT SCALE ELECTRICAL DRAWING. REFER TO THE CIVIL, ARCHITECTURAL/MECHANICAL, STRUCTURAL DRAWINGS AND APPROVED MANUFACTURER'S SHOP DRAWINGS FOR THE EXACTLY LOCATION OF ALL EQUIPMENT.

B. ALL WORK SHALL COMPLY WITH THE NEC AND LOCAL CODES.

C. CONTRACTOR SHALL FIELD VERIFY EXISTING UNDERGROUND UTILITIES, PIPING, CONDUITS, ETC. AND REROUTE NEWELECTRICAL CONDUITS AS REQUIRED.

D. CONDUCTORS SHALL NOT BE SPLICED EXCEPT AS NOTED IN THE SPECIFICATIONS AND SHOWN ON THE DRAWINGS.

E. PUMP STATION C HAS A VFD THAT IS A 460-V 3Ø, 100 HP, 124 AMP MAX.

HAZARDOUS LOCATION NOTES:

1. PER NFPA 850, TABLE 4.2, ROW 15, LINE a, THE WET WELL IS CLASSIFIED AS A HAZARDOUS LOCATION AS FOLLOWS:

a. THE AREA INSIDE THE WETWELL AND WITHIN A 3'-0" RADIUS AROUND VENT OPENING AS CONSIDERED CLASS I, DIV 1, GROUP C AND D LOCATIONS.

b. THE AREA WITHIN A 5'-0" RADIUS AROUND VENT OPENING AND AN ENVELOPE 18" ABOVE HATCHES AND EXTENDING 3'-0" FROM THE EDGE OF THE HATCHES ARE CONSIDERED CLASS I, DIV 2, GROUP C AND D LOCATIONS.

2. PER NFPA 820, TABLE 4.2, ROW 31, LINE a AND ROW 36, LINE a, THE VALVE AND METER VAULTS ARE CLASSIFIED AS HAZARDOUS LOCATIONS AS FOLLOWS:

a. THE AREA INSIDE THE VAULT IS CONSIDERED CLASS I, DIV 2, GROUP C AND D LOCATIONS.

3. PER NFPA 820, TABLE 4.2, ROW 20, LINE b, THE ODOR-CONTROL SYSTEM IS CLASSIFIED AS A HAZARDOUS LOCATION AS FOLLOWS:

a. THE AREA WITHIN 3'-0" ENVELOPE AROUND THE ODOR-CONTROL SYSTEM IS CONSIDERED A CLASS I, DIV 2, GROUP C AND D LOCATION.

4. PROVIDE SUITABLE WIRING METHODS AND MATERIALS FOR THE HAZARDOUS LOCATIONS PER NFPA 70 (NEC).

SHEET KEYNOTES

1. REMOVE EXISTING SUBMERSIBLE PUMPS AND INSTALL NEW 80.5 HP SUMERSIBLE PUMPS WHERE THE EXISTING ONES WERE LOCATED
2. FURNISH AND INSTALL NEW CONDUIT SEALS
3. REPLACE EXISTING POLE AN LUMINAIRE WITH A NEW POLE AND LUMINAIRE. COMBINATION SHALL BE RATED TO WITHSTAND 200MPH WINDLOADS.
4. BEFORE INTALLING THE AREA LUMINAIRES CONTRACTOR TO VERIFY CONDUCTORS ARE SUITABLE FOR REUSE. PERFORM INSULATION AND RESISTANCE TEST. UTILIZE 1000 VDC MEGOHMETER. TEST EACH CONDUCTOR IWTH RESPECT TO GROUND AND ADJACENT CONDUCTORS FOR 1 MINUTE. IF CONDUCTORS ARE NOT SUITABLE FOR RESUE, REMOVE EXISTING CONDUCTORS AND INTALL NEW CONDUCTORS.

NO.	DATE	REVISION	BY	APVD
DSGN	E CARRASCO	DR	E CARRASCO	CHK	D NICHOLSON	APVD	D NICHOLSON

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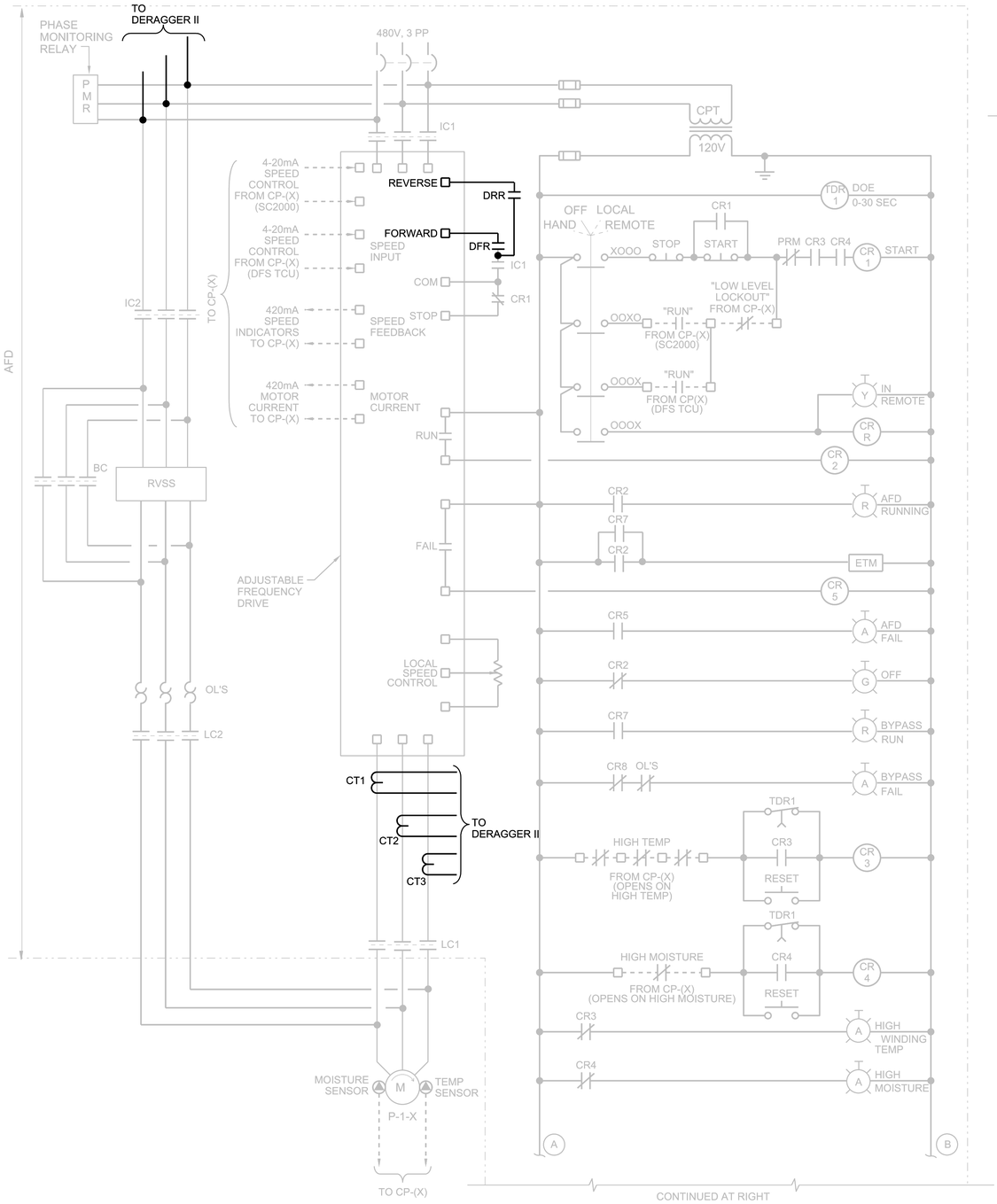
PUMP STATIONS REHABILITATION PHASE 2
C, E, AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

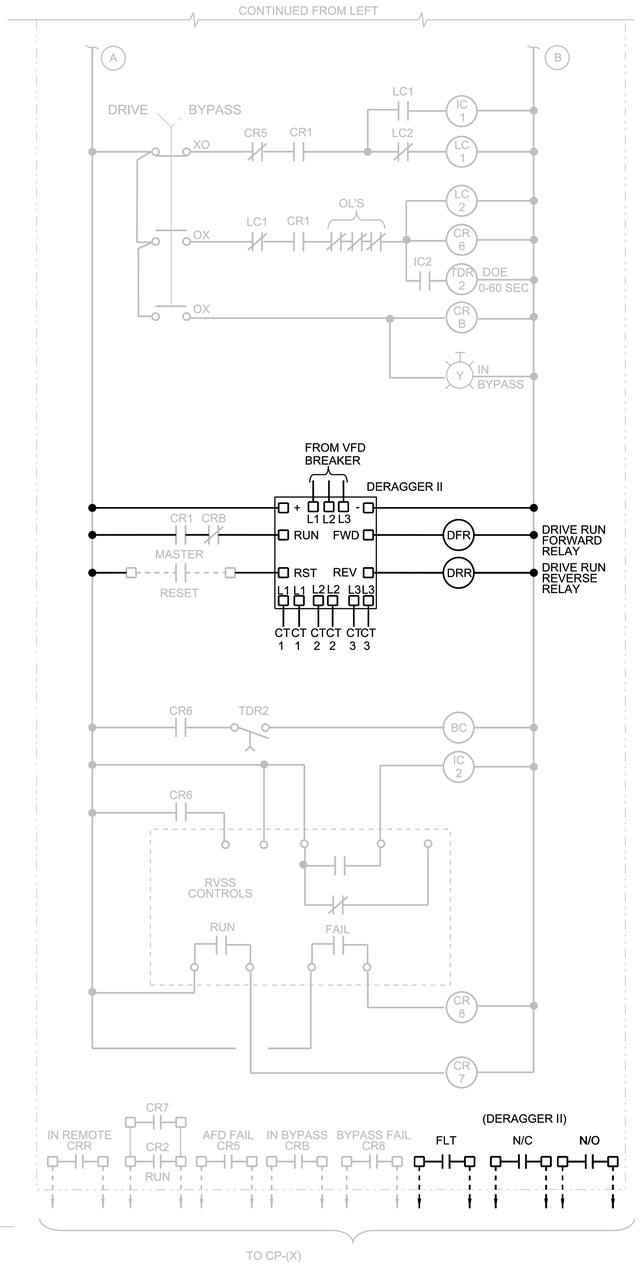
ELECTRICAL
PUMP STATION C
SITE PLAN

1" = X'
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
DWG	010-E-201
SHEET	08 of 31

BID DOCUMENTS





GENERAL NOTES:

CONTRACTOR TO PROVIDE DERAGGER II WITH THE CONTROL FUNCTIONS AS SHOWN.

PUMP AFD-(X)-(Y)

(X)	PUMP STATION	TYPICAL FOR:
B	PUMP STATION C	AFD-C-1, AFD-C-2

NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
		E CARRASCO	E CARRASCO	D NICHOLSON	D NICHOLSON	D NICHOLSON	APVD

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PUMP STATIONS REHABILITATION PHASE 2
C, E, AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

ELECTRICAL
PUMP STATION C
MOTOR CONTROL DIAGRAM

BID DOCUMENTS

NTS	
VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"	
DATE	MAY 2019
PROJ	707158
DWG	010-E-602
SHEET	10 of 31

NOTES:

1. REPAIR ASPHALT DAMAGED DURING CONSTRUCTION. REPAIR PER 3123-115

0 5 10 15
Scale In Feet

THOMPSON STREET
(50' PUBLIC R/W)

RIM=3.00
INV NW=(-)0.52 (UNK.)
INV SE=(-)1.43 (24" PVC)

SET NAIL & DISK
(AVIROM TRAVERSE PT.)
B.M. EL.=3.03
(NGVD 1929)

RIM=3.07
INV NW=(-)5.31 (15" PVC)
INV S=(-)5.34 (15" PVC)

RIM=3.18
INV SE=(-)6.24 (30" PVC)
INV SW=(-)6.40 (30" PVC)

RIM=3.04
INV NE=5.06 (12" PVC)
INV SE=6.21 (30" PVC)
INV SW=4.33 (12" PVC)
INV NW=6.17 (30" PVC)

RIM=3.36
INV N=(-)5.35 (15" PVC)
INV NE=(-)6.29 (30"PVC)
INV S=(-)5.31 (12" PVC)
INV SW=(-)6.28 (30" D.I.P.)

RIM=2.89
INV NE=(-)1.73 (24"RCP)
INV S=(-)1.25 (12" PVC)
INV W=(-)1.52 (12" PVC)
INV NW=(-)1.60 (24" PVC)

ASPHALT PAVEMENT

11' CONCRETE WALK

E-OVH

SD

SS

CONNECT TO EXISTING
30" DIP WITH 2'±
30"-RS AND 30" SLEEVE

REMOVE EXISTING MANHOLE
FRAME AND COVER AND
REPLACE WITH NEW FRAME
AND COVER
3305-725

RIM=3.92
INV NE=(-)6.40
(30" D.I.P.)

REMOVE EXISTING MANHOLE
AND REPLACE WITH NEW
6' DIAMETER MANHOLE
TOP = 3.92
INV NE = (-) 6.40 (30" DIP)
INV NW = FIELD VERIFY (30" DIP)
3305-711
3305-713
3305-720
3305-725

TEMPORARILY RELOCATE
ODOR CONTROL EQUIPMENT
DURING CONSTRUCTION OF
THE NEW MANHOLE.
PERMANENTLY RELOCATE
THE EQUIPMENT TO THIS
LOCATION AFTER THE NEW
MANHOLE IS IN PLACE.
MAINTAIN ODOR CONTROL
PIPING CONNECTIONS TO
TEMPORARY AND PERMANENT
LOCATIONS.

S 34°05'32" E 100.00' (P&Ms)

N 55°54'57" E 49.50' (Ms) 50.00' (P)

S 55°48'04" W 49.87' (Ms) 50.00' (P)

N 33°52'50" W 100.10' (P&Ms)

16' WIDE DOUBLE SWING GATE

CHAIN LINK FENCE

6' CHAIN LINK FENCE

GATE

FENCE 0.3' NORTHEAST

FENCE 0.1' NORTHWEST

WALL ON-LINE

WALL 0.2' NORTHWEST

SET NAIL & DISK
(L.B. #3300)

VAULT

CONC.

WET WELL
RIM EL.=3.98

CONTROL PANEL

UTILITY BOX
(CAN'T ACCESS)

CONCRETE

VFD BUILDING
FFE = 9.0'

GRAVEL

6' CONCRETE WALL

CONTROL PANEL

PLATFORM

RAISED

STAIRS

CONC.

ELEVATED BUILDING
ON RAISED CONCRETE PIER

ELEC. PIPE T.O.P.=4.5

TRANSFORMER ON CONC.

6' WOOD FENCE

ELEC. SWITCH

LOT 1, BLOCK 1
DIAGRAM OF MONROE INVESTMENT Co.
(P.B. 1, PG. 41, M.C.R.)
RE: 00043800-000000

SET NAIL & DISK
B.M. EL.=3.64
(NGVD 1929)

6' CHAIN LINK FENCE

NORTHWESTERLY R/W LINE
(BEARING BASIS)

SEMINARY STREET
(50' PUBLIC R/W)

4' CONC. WALK

PROPERTY LINE, TYP

5/8"x18" I.R. W/CAP
(L.B. #3300)

NO.	DATE	DSGN	DR	CHK	APVD	BY	APVD
		R MORRISON	C CHILDRESS	A MALONE		R MORRISON	

REVISION

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RICHARD THOMAS MORRISON PE 67713

PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

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ch2m

CIVIL
PUMP STATION D
SITE PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
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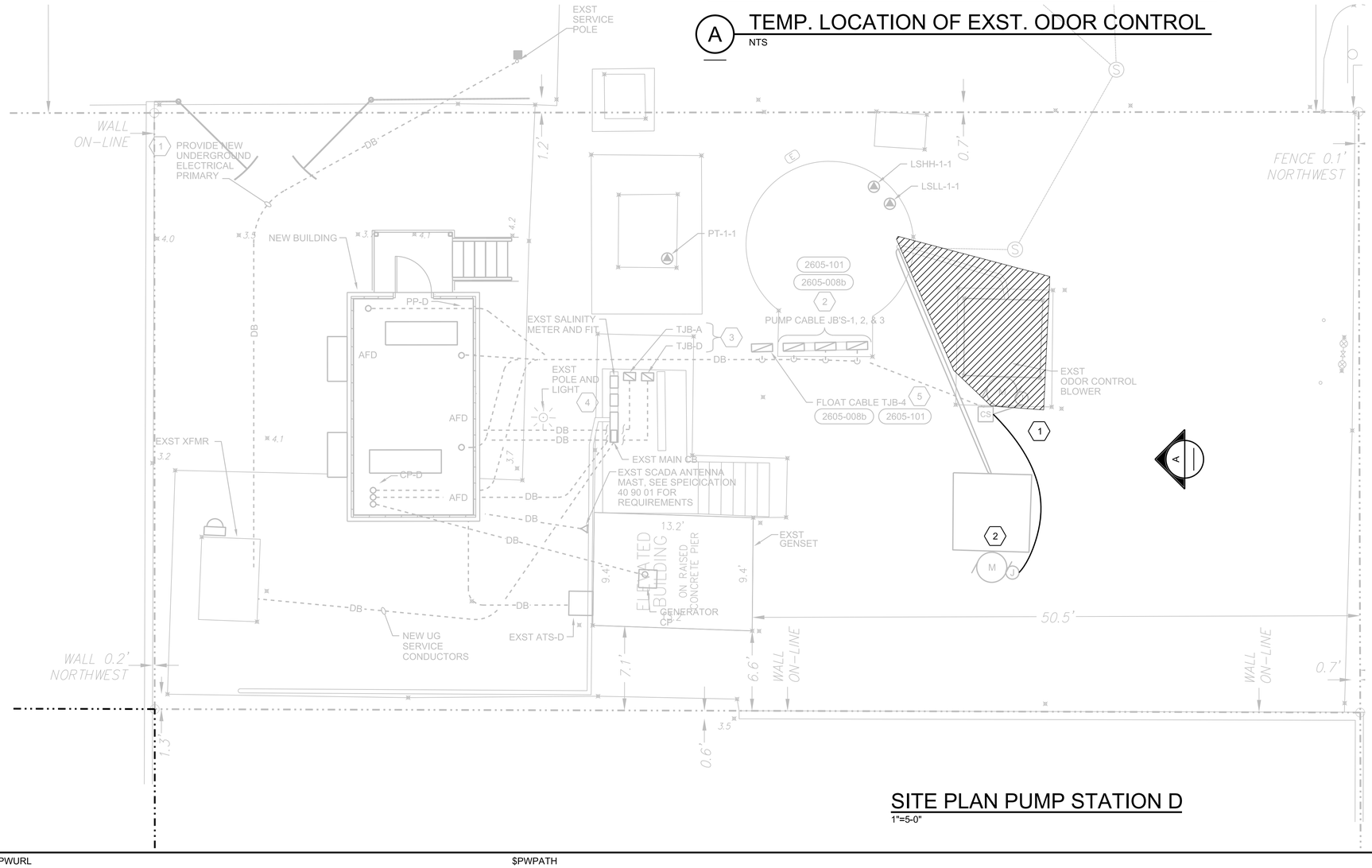
SHEET	11 of 31

BID DOCUMENTS

A TEMP. LOCATION OF EXST. ODOR CONTROL
NTS



SITE PLAN PUMP STATION D
1"=5-0"

0 5 10 15
1"=5'

GENERAL NOTES:

A. DO NOT SCALE ELECTRICAL DRAWING. REFER TO THE CIVIL, ARCHITECTURAL/MECHANICAL, STRUCTURAL DRAWINGS AND APPROVED MANUFACTURER'S SHOP DRAWINGS FOR THE EXACTLY LOCATION OF ALL EQUIPMENT.

B. ALL WORK SHALL COMPLY WITH THE NEC AND LOCAL CODES.

C. CONTRACTOR SHALL FIELD VERIFY EXISTING UNDERGROUND UTILITIES, PIPING, CONDUITS, ETC. AND REROUTE NEW ELECTRICAL CONDUITS AS REQUIRED.

D. CONDUCTORS SHALL NOT BE SPLICED EXCEPT AS NOTED IN THE SPECIFICATIONS AND SHOWN ON THE DRAWINGS.

HAZARDOUS LOCATION NOTES:

1. PER NFPA 850, TABLE 4.2, ROW 15, LINE a, THE WET WELL IS CLASSIFIED AS A HAZARDOUS LOCATION AS FOLLOWS:
   a. THE AREA INSIDE THE WETWELL AND WITHIN A 3'-0" RADIUS AROUND VENT OPENING AS CONSIDERED CLASS I, DIV 1, GROUP C AND D LOCATIONS.
   b. THE AREA WITHIN A 5'-0" RADIUS AROUND VENT OPENING AND AN ENVELOPE 18" ABOVE HATCHES AND EXTENDING 3'-0" FROM THE EDGE OF THE HATCHES ARE CONSIDERED CLASS I, DIV 2, GROUP C AND D LOCATIONS.
2. PER NFPA 820, TABLE 4.2, ROW 31, LINE a AND ROW 36, LINE a, THE VALVE AND METER VAULTS ARE CLASSIFIED AS HAZARDOUS LOCATIONS AS FOLLOWS:
   a. THE AREA INSIDE THE VAULT IS CONSIDERED CLASS I, DIV 2, GROUP C AND D LOCATIONS.
3. PER NFPA 820, TABLE 4.2, ROW 20, LINE b, THE ODOR-CONTROL SYSTEM IS CLASSIFIED AS A HAZARDOUS LOCATION AS FOLLOWS:
   a. THE AREA WITHIN 3'-0" ENVELOPE AROUND THE ODOR-CONTROL SYSTEM IS CONSIDERED A CLASS I, DIV 2, GROUP C AND D LOCATION.
4. PROVIDE SUITABLE WIRING METHODS AND MATERIALS FOR THE HAZARDOUS LOCATIONS PER NFPA 70 (NEC).

- KEYED NOTES:

1. CONTRACTOR TO COORDINATE WITH ALL DISIPLINES THE TEMPORARY RELOCATION OF THE EXISTING ODOR CONTROL. RUN A TEMPORARY FEED [3/4"C, 3#12,1#12G] FROM EXISTING CONTROL SWITCH TO TEMPORARY LOCATION OF EXISTING BLOWER.
2. TEMPORARY LOCATION OF EXISTING ODOR CONTROL. RETURN EXISTING ODOR CONTROL SYSTEM TO ORIGINAL LOCATION AFTER MANHOLE WORK HAS BEEN COMPLETED.

TEMPORARY LOCATION OF EXISTING ODOR CONTROL SYSTEM.

TEMPORARY REMOVAL OF EXISTING ODOR CONTROL SYSTEM.

NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
		E CARRASCO	E CARRASCO	D NICHOLSON	APVD	D NICHOLSON	

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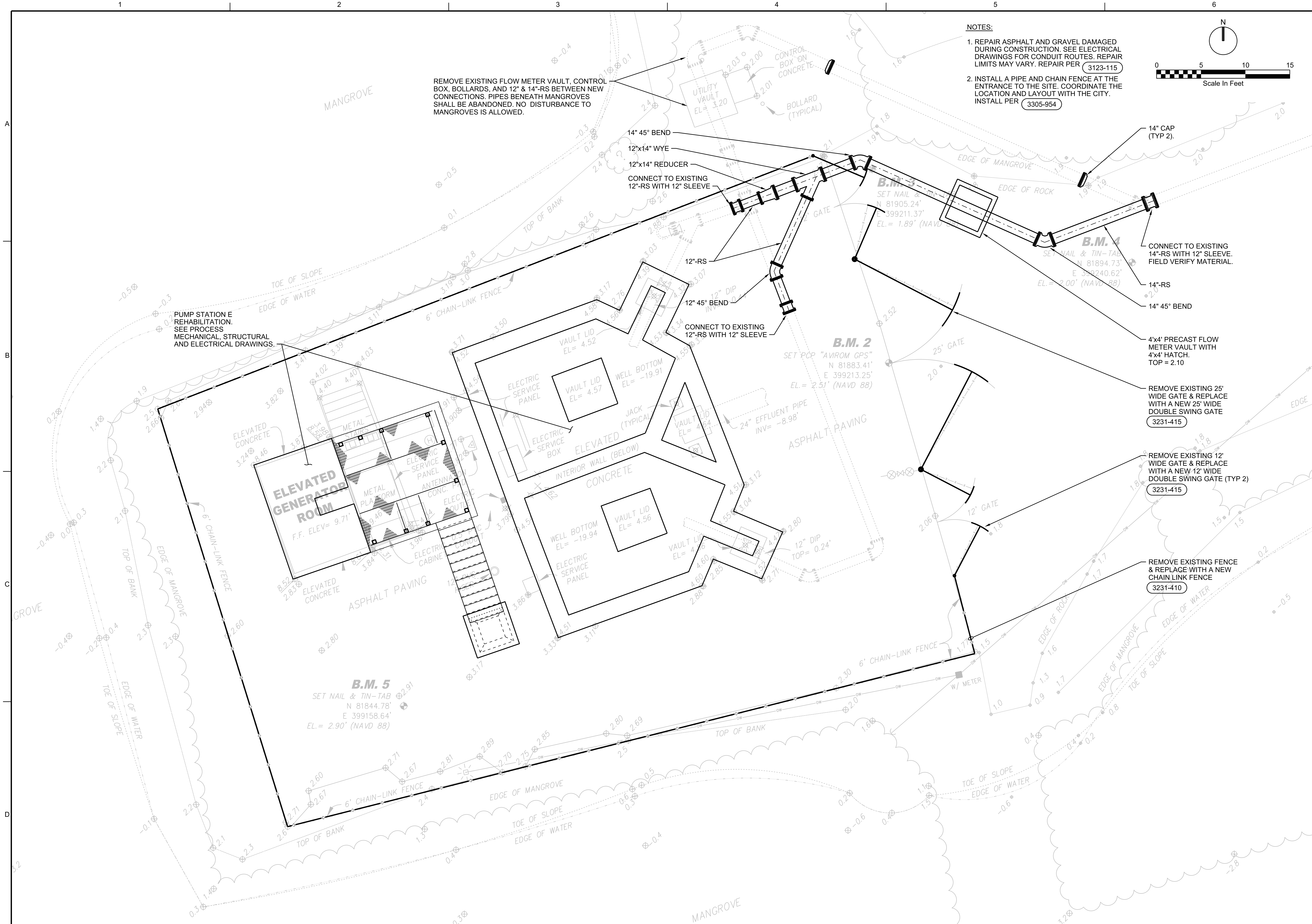
PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

ELECTRICAL
PUMP STATION D
SITE PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING, 0 1"

DATE	MAY 2019
PROJ	707158
DWG	015-E-201
SHEET	12 of 31

BID DOCUMENTS



REMOVE EXISTING FLOW METER VAULT, CONTROL BOX, BOLLARDS, AND 12" & 14"-RS BETWEEN NEW CONNECTIONS. PIPES BENEATH MANGROVES SHALL BE ABANDONED. NO DISTURBANCE TO MANGROVES IS ALLOWED.
14" 45° BEND
12"x14" WYE
12"x14" REDUCER
CONNECT TO EXISTING 12"-RS WITH 12" SLEEVE
12"-RS
12" 45° BEND
CONNECT TO EXISTING 12"-RS WITH 12" SLEEVE
14" CAP (TYP 2).
CONNECT TO EXISTING 14"-RS WITH 12" SLEEVE. FIELD VERIFY MATERIAL.
14"-RS
14" 45° BEND
4'x4' PRECAST FLOW METER VAULT WITH 4'x4' HATCH. TOP = 2.10
REMOVE EXISTING 25' WIDE GATE & REPLACE WITH A NEW 25' WIDE DOUBLE SWING GATE
3231-415
REMOVE EXISTING 12' WIDE GATE & REPLACE WITH A NEW 12' WIDE DOUBLE SWING GATE (TYP 2)
3231-415
REMOVE EXISTING FENCE & REPLACE WITH A NEW CHAIN LINK FENCE
3231-410
PUMP STATION E REHABILITATION. SEE PROCESS MECHANICAL, STRUCTURAL AND ELECTRICAL DRAWINGS.
ELEVATED GENERATOR ROOM
F.F. ELEV= 9.71'
B.M. 2
SET PCP "AVIROM GPS"
N 81883.41'
E 399213.25'
EL.= 2.51' (NAVD 88)
B.M. 4
SET NAIL & TIN-TAB
N 81894.73'
E 399240.62'
EL.= 2.00' (NAVD 88)
B.M. 5
SET NAIL & TIN-TAB
N 81844.78'
E 399158.64'
EL.= 2.90' (NAVD 88)
VAULT LID EL= 4.52
VAULT LID EL= 4.57
WELL BOTTOM EL= -19.91
VAULT LID EL= 4.56
WELL BOTTOM EL= -19.94
24" EFFLUENT PIPE INV= -8.98'
12" DIP TOP= 0.24'
ASPHALT PAVING
MANGROVE
6' CHAIN-LINK FENCE
TOE OF SLOPE
EDGE OF WATER
TOP OF BANK
EDGE OF MANGROVE
N
0 5 10 15
Scale In Feet

NOTES:

1. REPAIR ASPHALT AND GRAVEL DAMAGED DURING CONSTRUCTION. SEE ELECTRICAL DRAWINGS FOR CONDUIT ROUTES. REPAIR LIMITS MAY VARY. REPAIR PER 3123-115
2. INSTALL A PIPE AND CHAIN FENCE AT THE ENTRANCE TO THE SITE. COORDINATE THE LOCATION AND LAYOUT WITH THE CITY. INSTALL PER 3305-954

NO.	DATE	REVISION	BY	APVD

DSGN	DR	CHK	APVD
R MORRISON	C CHILDRESS	A MALONE	R MORRISON

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PUMP STATIONS REHABILITATION PHASE 2
C, E, AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

ch2m:

CIVIL
PUMP STATION E
SITE PLAN

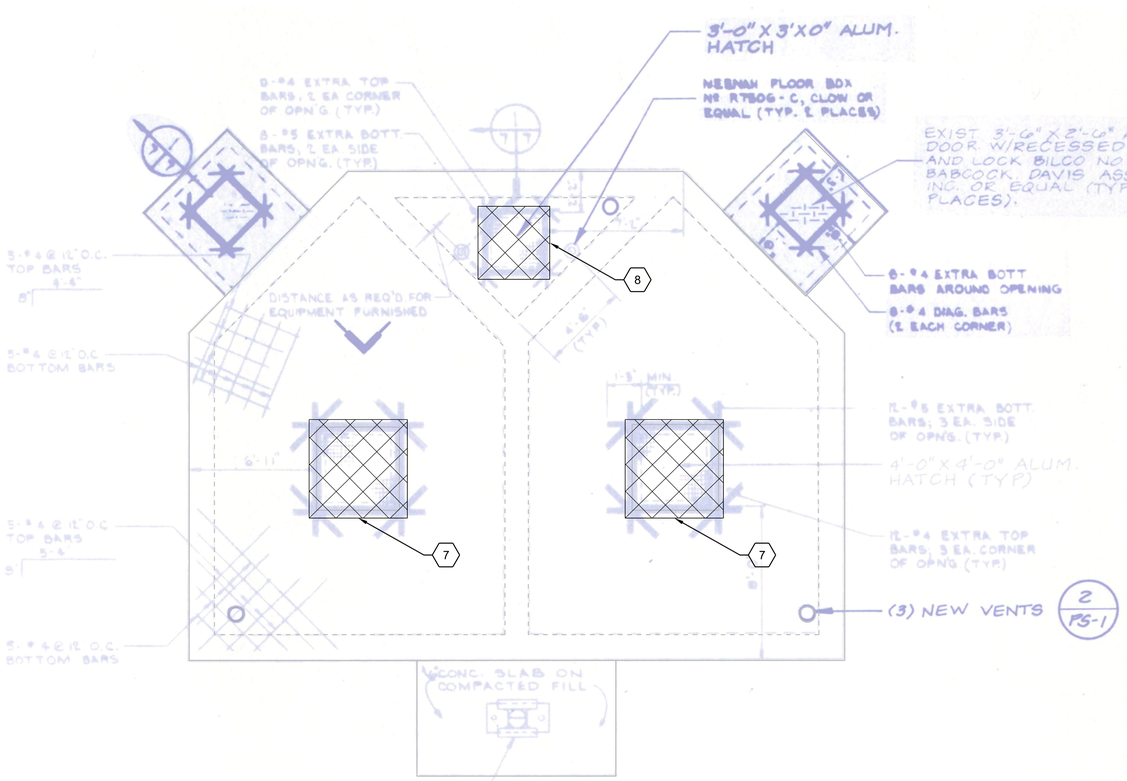
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

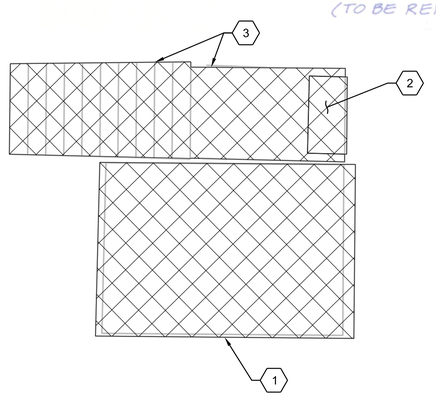
DATE	MAY 2019
PROJ	707158
DWG	020-C-201
SHEET	13 of 31

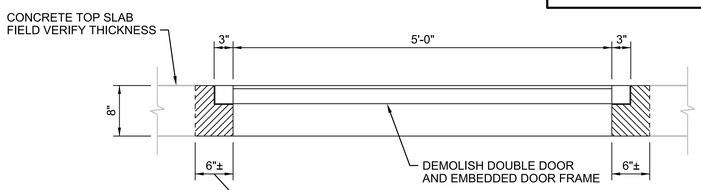
BID DOCUMENTS

SHEET KEYNOTES

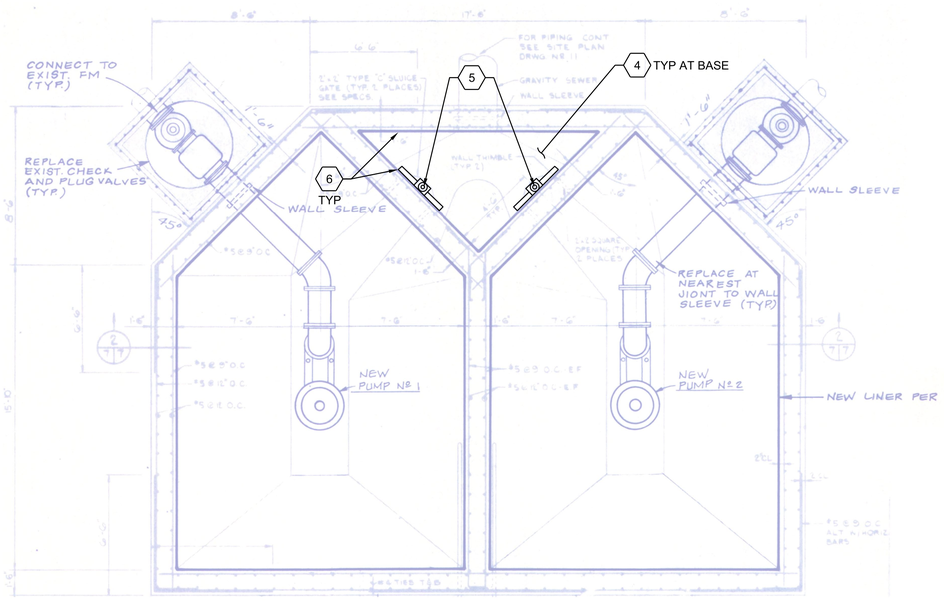
1. DEMOLISH AND REMOVE GENERATOR.
2. DEMOLISH AND REMOVE ELECTRIC CABINET. PROTECT CONDUITS.
3. DEMOLISH AND REMOVE PLATFORM, STAIRS, AND RAILING.
4. DEMOLISH AND REMOVE GROUT.
5. DEMOLISH AND REMOVE EXISTING GATES. WALL THIMBLES TO REMAIN.
6. REMOVE DAMAGED COATING AND CONCRETE REQUIRED FOR CONCRETE SURFACE REPAIR AT WALLS AND SLAB BOTTOM FACE. SEE SHEET 020-S-501 AND SPECIFICATIONS FOR CONCRETE PREPARATION REQUIREMENTS PRIOR TO REPAIRS.
7. DEMOLISH EXISTING 5'-0"x5'-0" HATCH. FIELD VERIFY SIZE. SEE DETAIL 1.
8. DEMOLISH EXISTING 3'-0"x3'-0" HATCH. FIELD VERIFY SIZE. SEE DETAIL 1 SIM.







1 DETAIL
1"=1'-0"



N DEMOLITION UPPER PLAN
1/4"=1'-0"

N DEMOLITION LOWER PLAN
1/4"=1'-0"

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PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

ch2m

STRUCTURAL
PUMP STATION E
DEMOLITION PLAN

NO.	DATE	DR	CHK	APVD
DSGN	D EVERSON	J THORNTON	D GARCIA	D EVERSON

REVISION BY APVD

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE	MAY 2019
PROJ	707158
DWG	020-S-101
SHEET	14 of 31

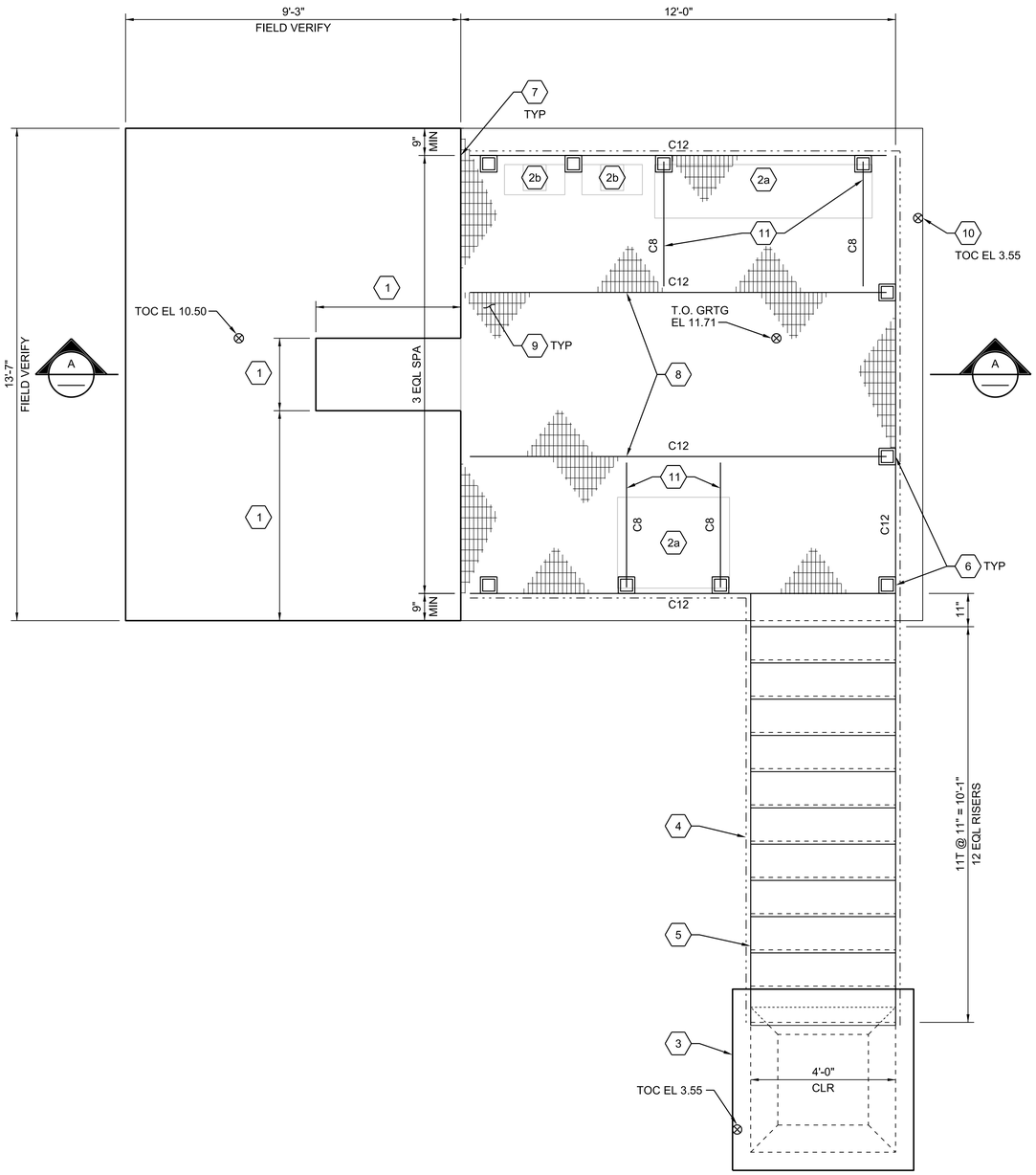
BID DOCUMENTS

GENERAL SHEET NOTES

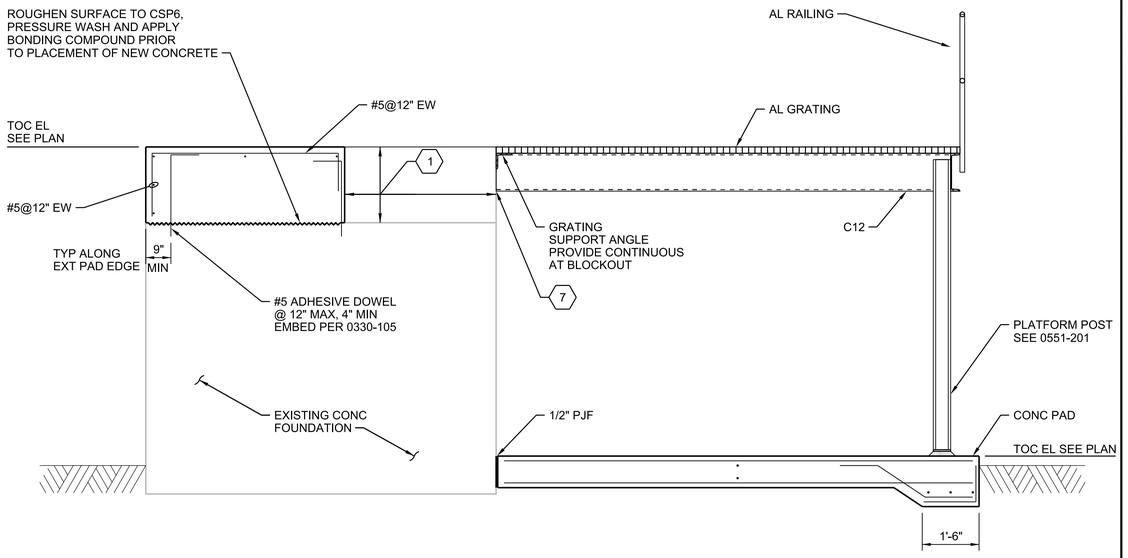
1. BEAM SIZES SHOWN ARE MINIMUM.
2. COORDINATE ROUTING OF CONDUIT RACKING SYSTEM WITH PLATFORM MANUFACTURER. SEE DETAIL 2605-300 SIM.
3. FIELD VERIFY EXISTING ELEVATIONS PRIOR TO FABRICATION OF PLATFORM.

SHEET KEYNOTES

1. COORDINATE BLOCKOUT SIZE AND LOCATION WITH ELECTRICAL EQUIPMENT SUPPLIER AND REINFORCEMENT SUPPLIER. PROVIDE ADDITIONAL REINFORCEMENT AROUND BLOCKOUT PER 0330-001.
2. ALUMINUM PLATFORM SHALL BE DESIGNED FOR SUPPORT OF ELECTRICAL EQUIPMENT. EQUIPMENT SUPPORT TYPE VARIES COORDINATE WITH EQUIPMENT SUPPLIER AND PLATFORM MANUFACTURER.
   a. BASE MOUNTED UNITS ATTACHED DIRECTLY TO PLATFORM HORIZONTAL FRAMING.
   b. RACK MOUNTED EQUIPMENT WHICH WILL REQUIRE ADDITIONAL FRAMING SUPPORT MEMBERS ABOVE PLATFORM GRATING ELEVATION. SEE ELECTRICAL DETAIL 2605-440 FOR GENERIC EXAMPLE OF RACK MOUNT REQUIREMENTS.
3. CONCRETE LANDING, SEE 0330-056 TYPE 'G'
4. ALUMINUM RAILING WITH BASE ANCHORAGE TYPE 'D', 552-001. PROVIDE DISCONTINUOUS RAILING WHERE INTERRUPTED BY ELECTRICAL EQUIPMENT, SEE DETAIL 2605-440 SIM.
5. ALUMINUM STAIR, 0551-001
6. ALUMINUM SUPPORT POST, SEE 0551-201. POST TO BEAR ON CONCRETE FOUNDATION, SEE SECTION. POST QTY AND SPACING SHALL BE DETERMINED BY PLATFORM MANUFACTURER.
7. ALUMINUM BEAM TO CONCRETE CONNECTION, SEE 0514-056
8. ALUMINUM PLATFORM BEAMS, SEE 0551-201
9. ALUMINUM GRATING, SEE 0553-001 W/ BASE ANCHORAGE GS-3 AT CONCRETE AND GS-2 AT ALUMINUM BEAMS.
10. CONCRETE PAD, SEE 0330-056 TYPE 'H'.
11. ADDITIONAL ALUMINUM FRAMING AS REQUIRED FOR SUPPORT OF ELECTRICAL EQUIPMENT.



PLAN
1/2"=1'-0"



A SECTION
1/2"=1'-0"

643 SW 4TH AVE. SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
DAVID R EVERSON PE 80180

PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

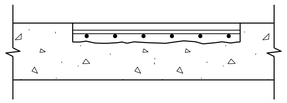
STRUCTURAL
PUMP STATION E
PLAN AND SECTION

NO.	DATE	REVISION	DR	CHK	APVD	BY	APVD
DSGN	D EVERSON		J THORNTON	D GARCIA		D EVERSON	

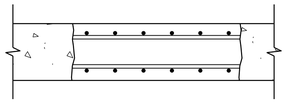
AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
DWG	020-S-201
SHEET	15 of 31

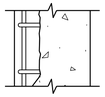
BID DOCUMENTS



SLAB OR WALL
PARTIAL DEPTH
REPAIR.



SLAB OR WALL
FULL DEPTH
REPAIR.



ELEVATION

SECTION

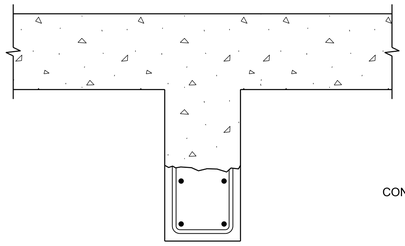
COLUMN

A DETAIL
NTS

SEE CONCRETE REPAIR NOTES 1 THROUGH 3.

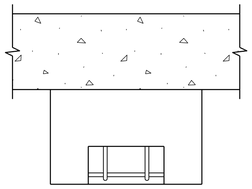
B DETAIL
NTS

SEE CONCRETE REPAIR NOTES 1 THROUGH 3.



SECTION

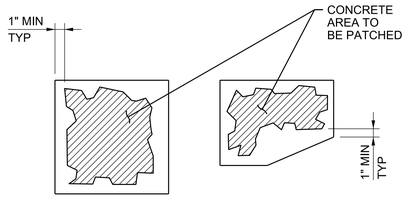
CONCRETE BEAM



ELEVATION

C DETAIL
NTS

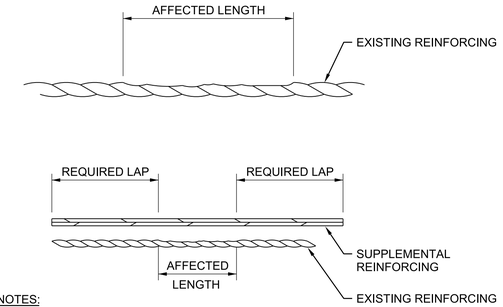
SEE CONCRETE REPAIR NOTES 1 THROUGH 3.



NOTES:

1. CONFIGURE AREA OF REPAIR TO SIMPLIFY AND TO ELIMINATE RE-ENTRANT CORNERS. SQUARE CORNERS REQUIRED. MAKE SAWCUTS IN STRAIGHT LINES.
2. SAWCUT MINIMUM 1/2 INCH DEEP AROUND SPALLED AND/OR DETERIORATED CONCRETE.
3. REMOVE SPALLED AND/OR DETERIORATED CONCRETE TO SOUND CONCRETE SURFACE.
4. REPAIR CONCRETE AS SPECIFIED, SEE CONCRETE REPAIR NOTES.
5. IF REINFORCEMENT IS EXPOSED DURING CONCRETE REMOVAL, SEE DETAIL E

D DETAIL
NTS



NOTES:

1. PRESERVE EXISTING REINFORCING.
2. ABRASIVE BLAST EXPOSED STEEL REINFORCEMENT TO WHITE METAL FINISH.
3. NOTIFY ENGINEER IMMEDIATELY IF EXISTING REINFORCING STEEL IS CUT THROUGH, CRACKED, OR CROSS SECTIONAL AREA IS REDUCED BY MORE THAN 10 PERCENT.
4. IF DETERMINED THAT EXISTING REINFORCING MUST BE REPAIRED ONE OF THE FOLLOWING REPAIR METHODS SHALL BE USED:
   a. COMPLETE BAR REPLACEMENT USING NEW REINFORCING WITH CROSS SECTIONAL AREA EQUAL TO ORIGINAL CROSS SECTION OF EXISTING STEEL REINFORCEMENT.
   b. ADD SUPPLEMENTAL REINFORCING STEEL OVER AFFECTED SECTION. SUPPLEMENTAL REINFORCING TO HAVE CROSS SECTIONAL AREA EQUAL TO ORIGINAL CROSS SECTION OF EXISTING STEEL REINFORCEMENT.

E DETAIL
NTS

CONCRETE REPAIR NOTES

1. SEE DETAIL D/- FOR CONFIGURATION OF REPAIR AREA.
2. SEE DETAIL E/- FOR REPAIR OF DETERIORATED REINFORCING STEEL.
3. FOR CONCRETE REPAIR PROCEDURES, SEE THE FOLLOWING SPECIFICATIONS:
   A) 03 01 32 - REPAIR OF VERTICAL AND OVERHEAD CONCRETE SURFACES.
   B) 03 01 33 - REPAIR OF HORIZONTAL CONCRETE SURFACES
4. WHERE ADDITIONAL COATING SYSTEMS ARE SPECIFIED, SEE SECTION 09 96 35 OF SPECIFICATIONS FOR ADDITIONAL INFORMATION.

NO.	DATE	REVISION	BY	APVD
DSGN	D EVERSON	DR J THORNTON	CHK D GARCIA	APVD D EVERSON

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EB0000072 AAC001992
DAVID R EVERSON PE 80180

PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

STRUCTURAL

PUMP STATION E REPAIR DETAILS

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BID DOCUMENTS

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

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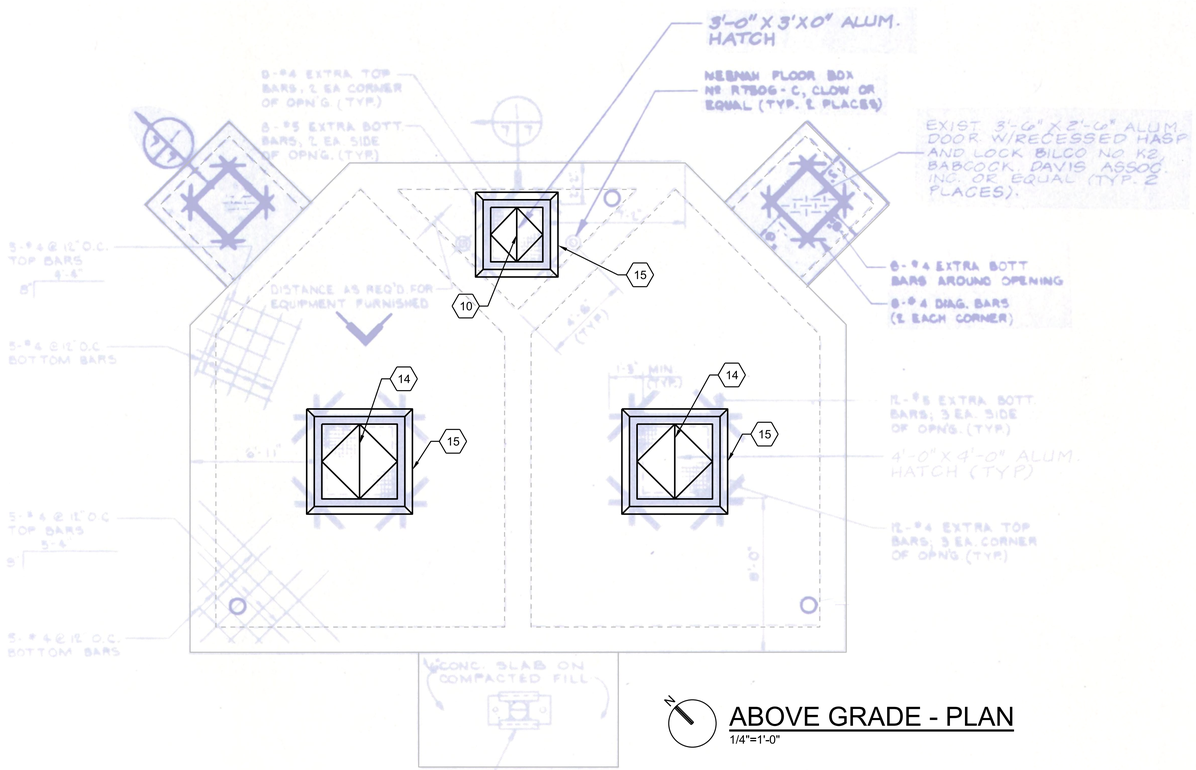
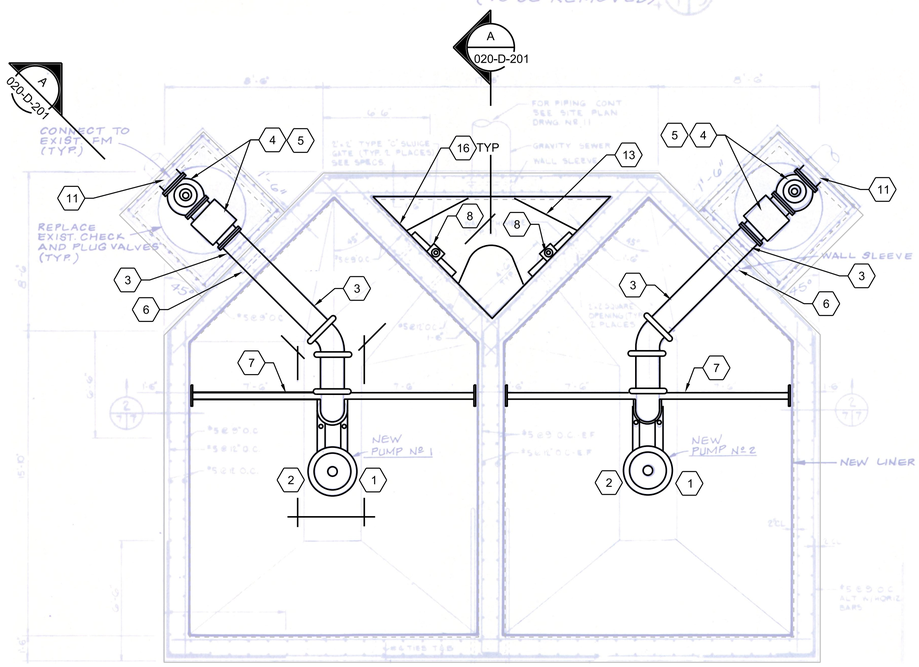
SHEET	16 of 31



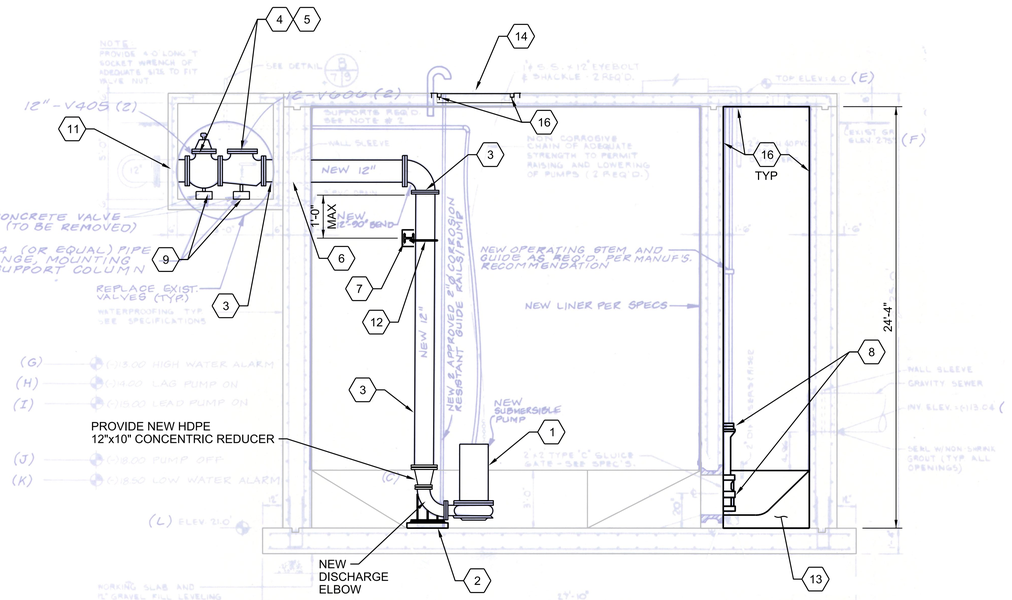
ABOVE GRADE - PLAN

1/4"=1'-0"



BELOW GRADE - PLAN

1/4"=1'-0"



A 020-D-201

SECTION

1/4"=1'-0"

(ILLUSTRATIVE SECTION)

SHEET KEYNOTES

1. REPLACE TWO EXISTING PUMPS W/ TWO NEW PUMPS PROVIDE NEW 316 SST GUIDE RAILS & CHAINS.
2. NEW CONCRETE EQUIPMENT PAD W/ INTEGRAL STAINLESS STEEL MOUNTING PLATE FOR PUMP BASE. SEE DETAIL 0330-056F.
3. REPLACE ALL PIPES AND FITTINGS IN WET WELL W/ HDPE.
4. REPLACE ALL PIPES & FITTINGS IN VALVE VAULTS WITH NEW DUCTILE IRON PIPE AND FITTINGS.
5. REPLACE TWO EXISTING CHECK VALVES AND TWO EXISTING PLUG VALVES WITH NEW 12"-V606 AND NEW 12" V-405 VALVES W/O PIPE SPOOL BETWEEN.
6. DEMOLISH ALL PIPE PENETRATIONS. WHERE CONCRETE CORING REQUIRED, SEE STD DET 0330-143. INSTALL TYPE 316 SST WALL PIPES AND USE LINKSEAL FOR ALL PENETRATIONS. SEE STD DET 4027-607.
7. ALUMINUM I 8x6.18 PIPE SUPPORT MEMBER. SEE DETAIL 0514-056, TYP EA END.
8. DEMOLISH EXISTING GATES. WALL THIMBLES TO REMAIN. PROVIDE TWO NEW 3'x3' TYPE 316 SST WALL SURFACE MOUNTED GATES WITH FRAME AND ACCESSORIES. REFER TO GATE SPECIFICATION.
9. PROVIDE TYPE 316 SST PIPE SUPPORTS. DEMOLISH EXISTING SUPPORTS. SEE STD DETAIL 4005-500.
10. INSTALL 3'-0"x3'-0" J-AL ALUMINUM DOOR BY BILCO TO FIT MODIFIED SLAB OPENING. SEE DETAIL 0555-001.
11. PROVIDE DUCTILE IRON PIPE BETWEEN PLUG VALVE AND EXISTING WALL PIPE.
12. 5/8" DIA 316 SST U-BOLT ANCHORED TO ALUMINUM PIPE SUPPORT MEMBER.
13. REMOVE GROUT FOR INSTALLATION OF NEW GATE REPAIR TO MATCH EXISTING.
14. INSTALL FACTORY MODIFIED 5'-0"x5'-0" JD-AL ALUMINIUM DOOR BY BILCO TO FIT MODIFIED SLAB OPENING. SEE DETAIL 0555-001.
15. FABRICATED SST FRAME FOR HATCH, SEE 0555-001.
16. REPAIR CONCRETE SURFACES AS SHOWN ON DRAWING 020-S-501 AND AS SPECIFIED IN SECTION 03 01 32 - REPAIR OF VERTICAL AND OVERHEAD CONCRETE SURFACES. ASSUME REPAIR QUANTITY AS FOLLOWS:
    - TOP SLAB (BOTTOM FACE)
        - 1" REPAIR DEPTH: 25 SF
        - 2" REPAIR DEPTH: 25 SF
    - VERTICAL WALLS
        - 1" REPAIR DEPTH: 400 SF
        - 2" REPAIR DEPTH: 400 SF

NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
		T FU	WL CLOUGH	D GARCIA	APVD	T FU	

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PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

PROCESS MECHANICAL

PUMP STATION E REHABILITATION PLANS AND SECTION

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

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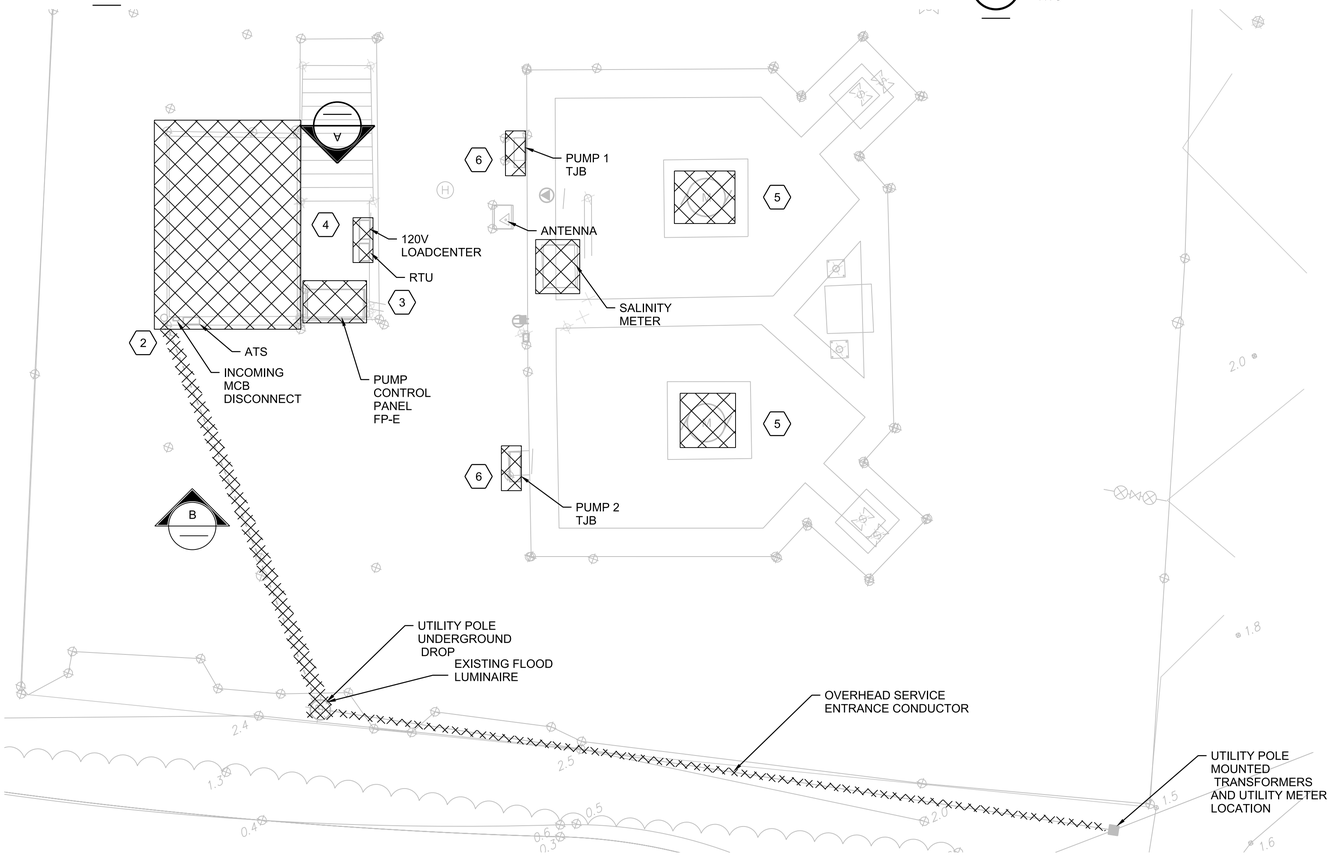
SHEET	17 of 31

BID DOCUMENTS

A PHOTO DETAIL
NTS

B PHOTO DETAIL
NTS



GENERAL NOTES

LEGEND:

TO BE REMOVED

1. WIRING DEMOLITION: REMOVE ENTIRE LENGTH OF CONDUCTORS THAT REQUIRE DEMOLITION. EXISTING UNDERGROUND CONDUIT MARKED FOR DEMO MAY BE ABANDONED IN PLACE.

SHEET KEYNOTES

1. DISCONNECT, REMOVE AND DISPOSE OF SERVICE ENTRANCE CONDUCTORS FROM THE TRANSFORMER POLE TO SERVICE ENTRANCE DISCONNECT.
2. DISCONNECT AND REMOVE GENERATOR ENGINE AND ENCLOSURE, SERVICE ENTRANCE DISCONNECT AND ATS. TURN OVER AND COORDINATE WITH OWNER FINAL LOCATION OF THE REMOVED EQUIPTMENT.
3. DISCONNECT AND REMOVE CONTROL PANEL AND MISCELLENOUS PANELS FROM THE PLATFROM. TURN OVER EQUIPTEMT TO OWNER.
4. REFERENCE DEMO PLANS FOR GENERATOR PLATFORM AND STAIRS ON 20-S-101
5. DISCONNECT AND REMOVE EXISTING PUMPS FROM WETWELL.
6. DISCONNECT AND REMOVE SALINITY METER CABINET AND TJB-1 AND TJB-2

NO.	DATE	DSGN	DR	CHK	APVD
REVISION		E CARRASCO	E CARRASCO	D NICHOLSON	D NICHOLSON
BY	APVD				
D NICHOLSON	D NICHOLSON				

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PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

ELECTRICAL
PUMP STATION E
SITE PLAN

1" = X'
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

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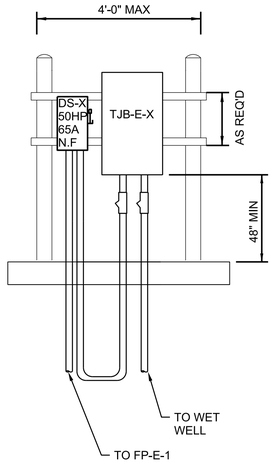
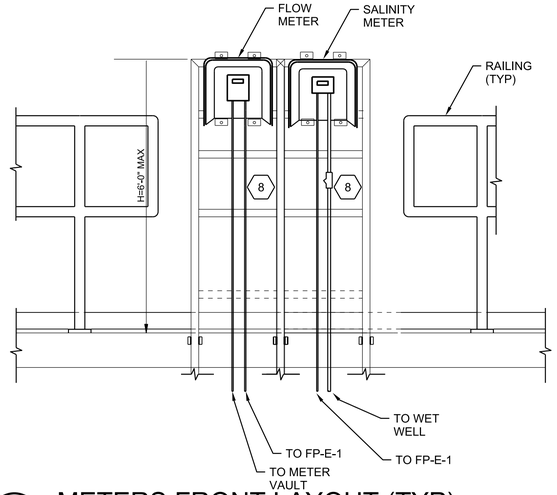
SHEET	18 of 31

BID DOCUMENTS



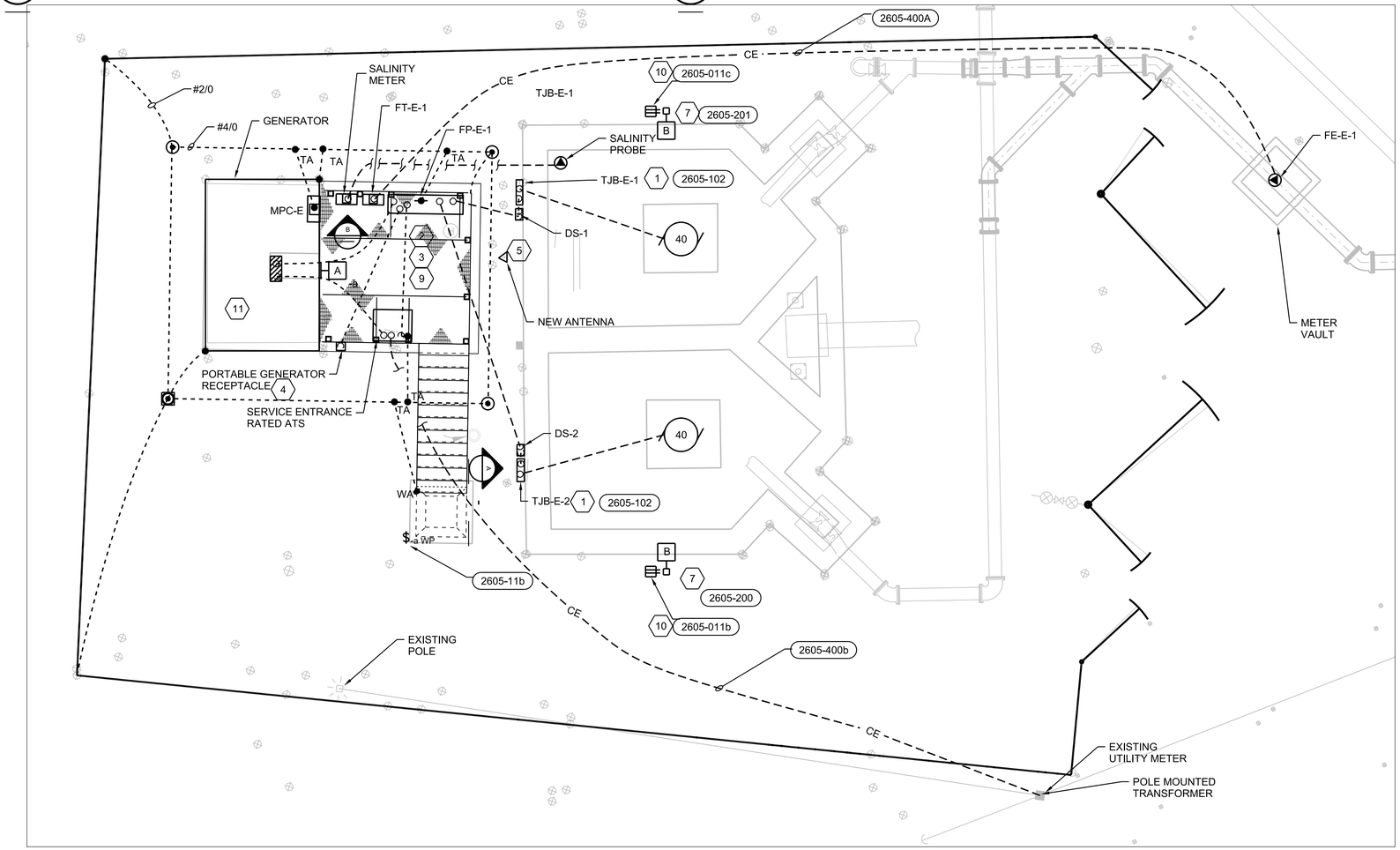


A TERMINAL JUNCTION BOX FRONT LAYOUT (TYP)

X=1,2

B METERS FRONT LAYOUT (TYP)

X=1,2



GENERAL SHEET NOTES

A. DO NOT SCALE ELECTRICAL DRAWING. REFER TO THE CIVIL, ARCHITECTURAL/MECHANICAL, STRUCTURAL DRAWINGS AND APPROVED MANUFACTURER'S SHOP DRAWINGS FOR THE EXACTLY LOCATION OF ALL EQUIPMENT.

B. ALL WORK SHALL COMPLY WITH THE NEC AND LOCAL CODES.

C. CONTRACTOR SHALL FIELD VERIFY EXISTING UNDERGROUND UTILITIES, PIPING, CONDUITS, ETC. AND REROUTE NEW ELECTRICAL CONDUITS AS REQUIRED.

D. CONDUCTORS SHALL NOT BE SPLICED EXCEPT AS NOTED IN THE SPECIFICATIONS AND SHOWN ON THE DRAWINGS.

E. ALL RACEWAYS TO BE PVC-COATED RGS, REFER TO SECTION 26 05 01

HAZARDOUS LOCATION NOTES:

1. PER NFPA 820, TABLE A.4.2, ROW 16, LINE a, THE WET WELL IS CLASSIFIED AS A HAZARDOUS LOCATION AS FOLLOWS:

a. THE AREA INSIDE THE WETWELL AND WITHIN A 3'-0" RADIUS AROUND VENT OPENING AS CONSIDERED CLASS I, DIV 1, GROUP C AND D LOCATIONS.

b. THE AREA WITHIN A 5'-0" RADIUS AROUND VENT OPENING AND AN ENVELOPE 18" ABOVE HATCHES AND EXTENDING 3'-0" FROM THE EDGE OF THE HATCHES ARE CONSIDERED CLASS I, DIV 2, GROUP C AND D LOCATIONS.

2. PER NFPA 820, TABLE 4.2, ROW 31, LINE a AND ROW 36, LINE a, THE VALVE AND METER VAULTS ARE CLASSIFIED AS HAZARDOUS LOCATIONS AS FOLLOWS:

a. THE AREA INSIDE THE VAULT IS CONSIDERED CLASS I, DIV 2, GROUP C AND D LOCATIONS.

3. PROVIDE SUITABLE WIRING METHODS AND MATERIALS FOR THE HAZARDOUS LOCATIONS PER NFPA 70 (NEC).

SHEET KEYNOTES

1. USE EXISTING TERMINAL JUNTION BOXES AND EXISTING WET WELL PENETRATIONS TO FEED THE NEW SUBMERSIBLE PUMPS (2605-101)
2. LOCATE NEW ATS, FIELD CONTROL PANEL, MPC AND SALINITY CABINET ON NEW RAISED PLATFORM. PROVIDE NEW WIRING FROM EXISTING SERVICE POLE UTILITY METER TO NEW SERVICE ENTRANCE ATS. SEE DETAIL (2605-440)
3. CONNECT NEW ENCLOSURES, GROUND BUSES AND EXISTING ANTENNA TO NEW GROUNDING RING SYSTEM WITH A TIN-PLATED COPPER CONDUCTOR 2/0 AWG MINIMUN
4. GENERATOR RECEPTACLE AND ENCLOSURE NEMA 4X 316 SST MOUNT AT 7'-0" AFG USING DETAIL (2605-003b)
5. USE LONG BENDING RADII ELBOW TO FEED COAX CABLE FROM ANTENNA TO PANEL FP-E-1 (2605-440)
6. RECEPTACLE TO BE MOUNTED AT A MINIMUN OF 48" AFF.
7. POLE MOUNTED LIGHT FIXTURE TO BE MOUNTED 12'-0" AFF
8. PROVIDE CONDUIT SUPPORT EVERY 10 FT OF VERTICAL CONDUIT RUNS.
9. USE CONDUIT RACKING SYSTEM TO ROUTE CONDUIT UNDER ALUMINUM GENERATOR PLATFORM. (2605-300)
10. POWER LIGHTS AND RECEPTACLE FROM MPC-E LOCATED IN THE GENERATOR ENCLOSURE.
11. CONTRACTOR TO VERIFY THE SIZE OF THE GENERATOR ENCLOSURE WILL FIT ON THE EXISTING GENERATOR PAD.

NO.	DATE	DESIGNER	DR	DRAWN-BY	CHK	REVISION	BY	APVD
							D NICHOLSON	
				D NICHOLSON		APVD		

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PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

ELECTRICAL
PUMP STATION E
PROPOSED SITE PLAN

1" = X'
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE	MAY 2019
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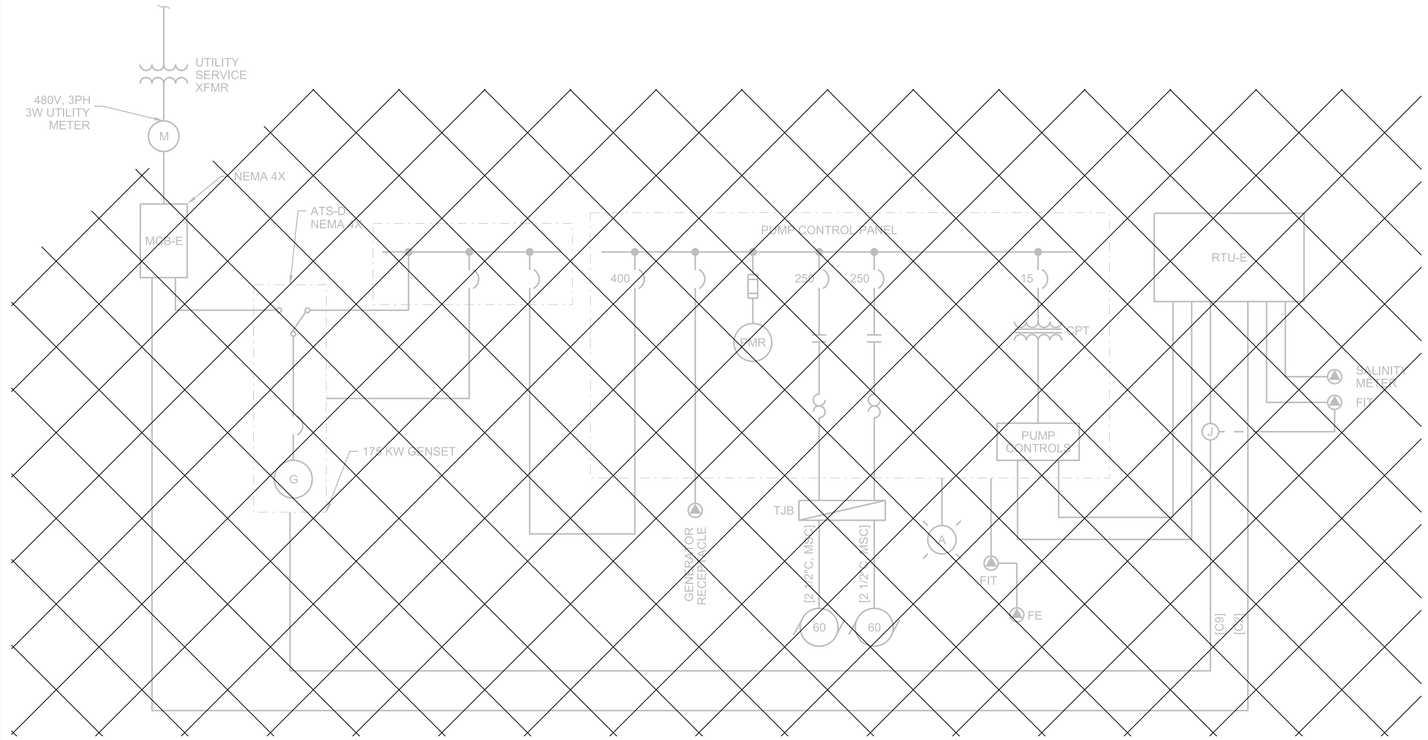
SHEET	19 of 31

BID DOCUMENTS



LEGEND:

- TO BE REMOVED

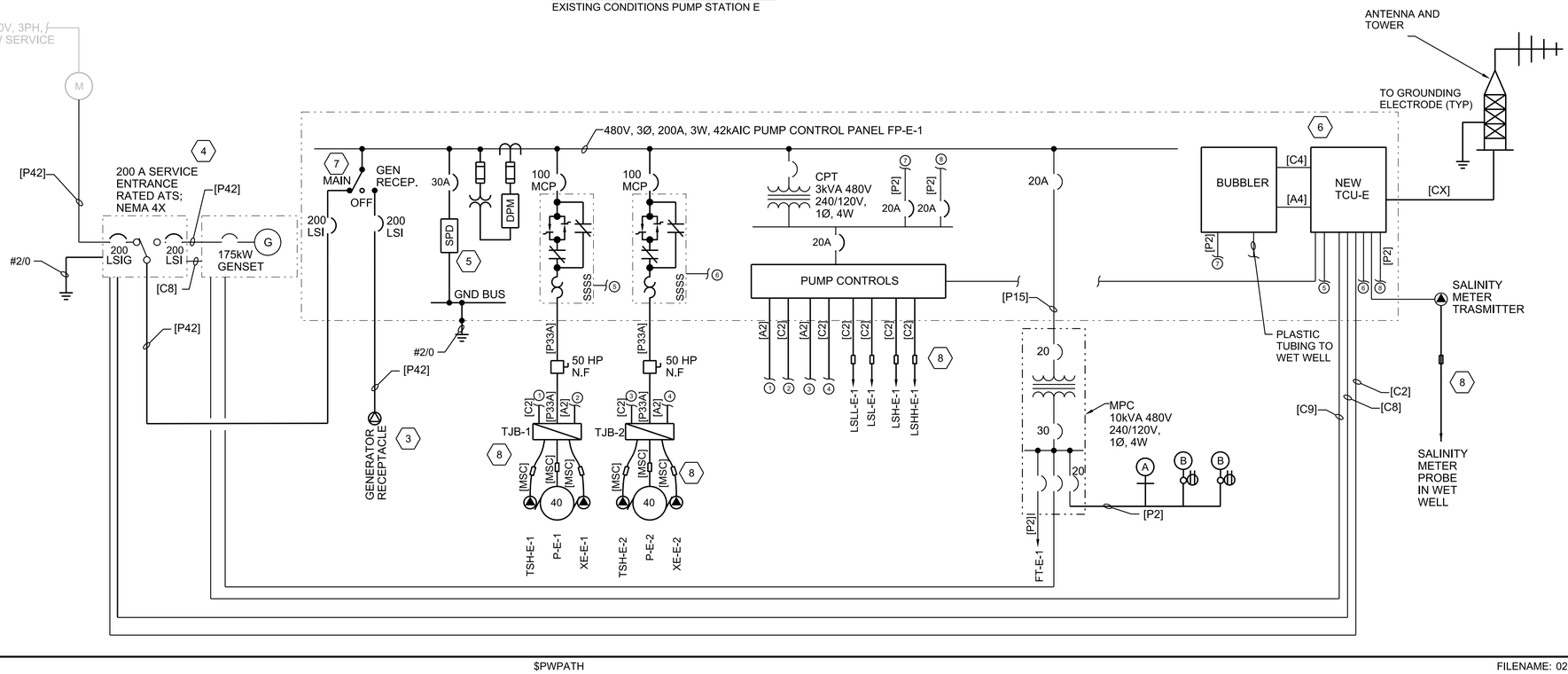
[P33A] = [1.5C", 3#3, 1#8G]

SHEET KEYNOTES

1. ALL RACEWAYS TO BE PVC-COATED RGS. REFER TO SPECIFICATION SECTION 26 05 01
2. PROVIDE NEMA 4X 316 SST TERMINAL JUNCTION BOXES SIZE PER NEC REQUIREMENTS WITH NSI POLARIS BLUE SERIES SUBMERSIBLE POWER DISTRIBUTION BLOCKS.
3. FURNISH AND INSTALL 400A, 600V GENERATOR RECEPTACLE WITH JUNCTION BOX AND ANGLED ADAPTER TO BE REMOTELY LOCATED. RUSSELL STOLL: DS 4404MRA00, NO SUBSTITUTIONS.
4. NEW SERVICE ENTRANCE RATED AUTOMATIC TRANSFER SWITCH DISCONNECT WITH SHUNT TRIP OPTION. UTILITY BREAKER SHALL OPEN UPON RECEIPT OF SHUNT TRIP COMMAND FROM TCU. INCLUDE REMOTE SIGNALS FOR GENERATOR DISABLE AND GENERATOR OVERRIDE.
5. PROVIDE CATEGORY C, 6-MODE, 20kA NOMINAL DISCHARGE CURENT, SPD WITH SINE WAVE TRACKING. INSTALL IN POWER PANEL AS SHOWN AND ON THE NORMAL / UTILITY SIDE OF THE AUTOMATIC TRANSFER SWITCH.
6. PUMP CONTROL PANEL SHALL BEAR A LABEL FROM A NATIONAL RECOGNIZED TESTING LABORATORY INDICATING ITS LISTING / LABELING IN ACCORDANCE WITH UL-698A, INDUSTRIAL CONTROL PANELS.
7. ROTARY DISCONNECT MANUAL TRANSFER SWITCH 400A NON FUSED. MAIN-OFF-GEN RECEP. PROVIDE A 3" CONDUIT WITH A 4#350KCM AND 1#4 GROUND FROM THE GENERATOR CIRCUIT BREAKER TO THE NEW 400 A GENERATOR RECEPTACLE.
8. FURNISH AND INSTALL CONDUIT SEALS SUITABLE FOR CLASS 1, DIV 1, GROUP C AND D LOCATION. CROUSE-HINDS, TYPE EYS OR APPROVED EQUAL.

ONE LINE DIAGRAM

EXISTING CONDITIONS PUMP STATION E



LOAD SUMMARY	
DESCRIPTION	AMPERAGE
PUMP 1	49.5
PUMP 2	49.5
MISCELLANEOUS LOADS	8.9
CONNECTED LOAD	107.4
DESIGN LOAD ∗	120

∗ DESIGN LOAD = CONNECTED LOAD PLUS 25% OF LARGEST MOTOR

NO.	DATE	DESIGNER	DR
DSGN		DRAWN-BY	CHK
		D NICHOLSON	D NICHOLSON

REVISION BY APVD

APVD D NICHOLSON

643 SW 4TH AVE, SUITE 400
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PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

ELECTRICAL

PUMP STATION E
ONE-LINE DIAGRAM

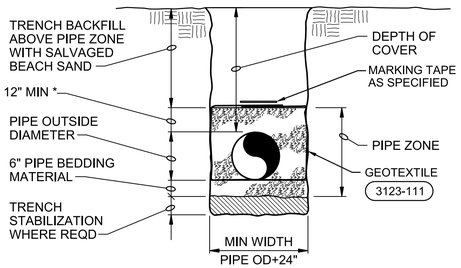
1" = X'

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
DWG	020-E-601
SHEET	20 of 31

BID DOCUMENTS

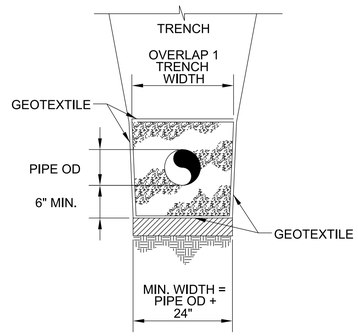


* OR TO ELEVATION +1.2 FEET NAVD88, WHICHEVER IS HIGHER

TYPICAL TRENCH

NTS

3123-110

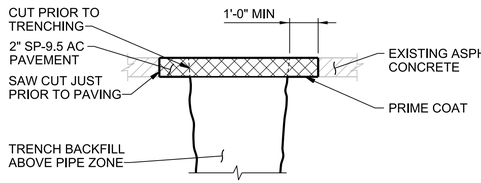


1. GEOTEXTILE MATERIAL AROUND ALL STORMWATER PIPES AND BOTTOM OF STRUCTURES, AND WHEN DIRECTED BY THE ENGINEER.

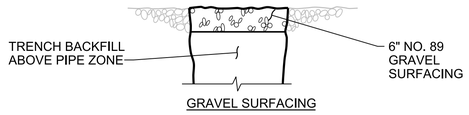
GEOTEXTILE WRAP OF PIPE ZONE

NTS

3123-111



ASPHALT SURFACING

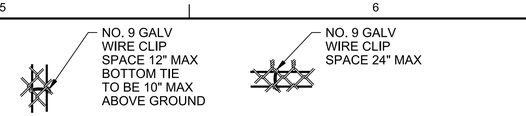


GRAVEL SURFACING

SURFACE RESTORATION

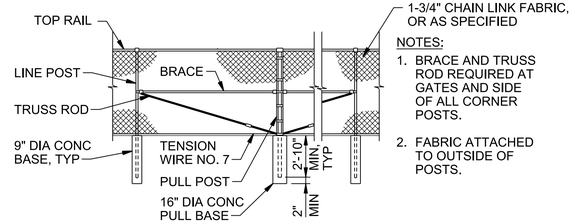
NTS

3123-115



LINE POST CONNECTION

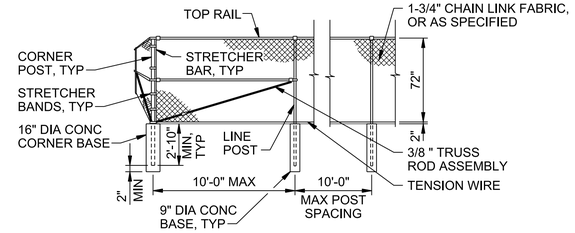
TOP RAIL CONNECTION



NOTES:

1. BRACE AND TRUSS ROD REQUIRED AT GATES AND SIDE OF ALL CORNER POSTS.
2. FABRIC ATTACHED TO OUTSIDE OF POSTS.

TYPICAL PULL POST

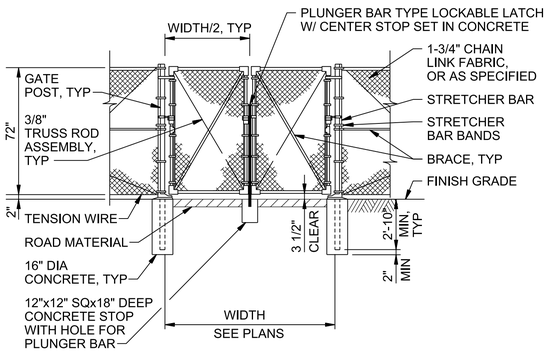


TYPICAL CORNER POST

CHAIN LINK FENCE

NTS

3231-410



DOUBLE SWING GATE

NTS

3231-415

NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
		R MORRISON	R MORRISON	A MALONE	R MORRISON		

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PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

CIVIL
STANDARD DETAILS

BID DOCUMENTS

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
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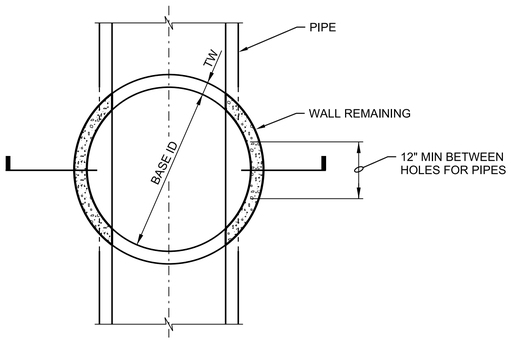
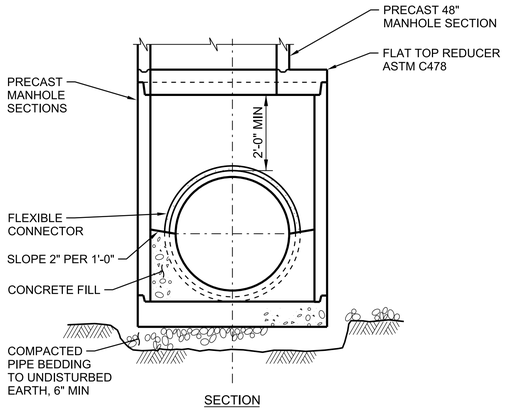
SHEET	21 of 31



PLAN



SECTION

NOTES:

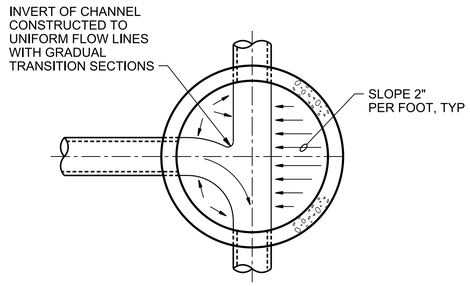
A. MANHOLE AND BASE SHALL BE MANUFACTURED IN ACCORDANCE WITH C478.

B. MINIMUM BASE INSIDE DIAMETER SHALL BE BASED ON THE NUMBER AND SIZE OF THE PIPES ENTERING THE MANHOLE, THE ELEVATION OF THE PIPES, AND THE MINIMUM SPACING BETWEEN THE PIPES.

MANHOLE BASE SECTION

NTS

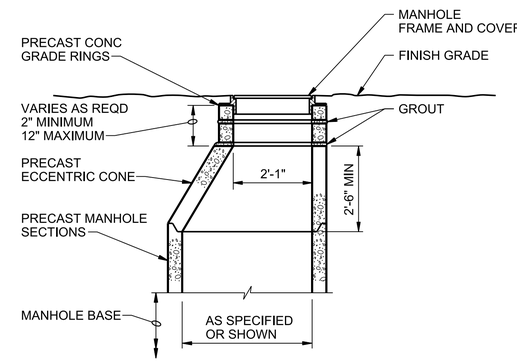
3305-711



MANHOLE CHANNEL INTERSECTION

NTS

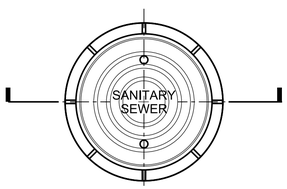
3305-713



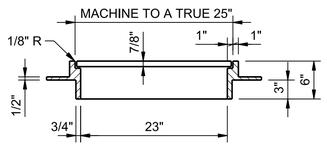
ECCENTRIC MANHOLE TOP SECTION

NTS

3305-720



SOLID COVER

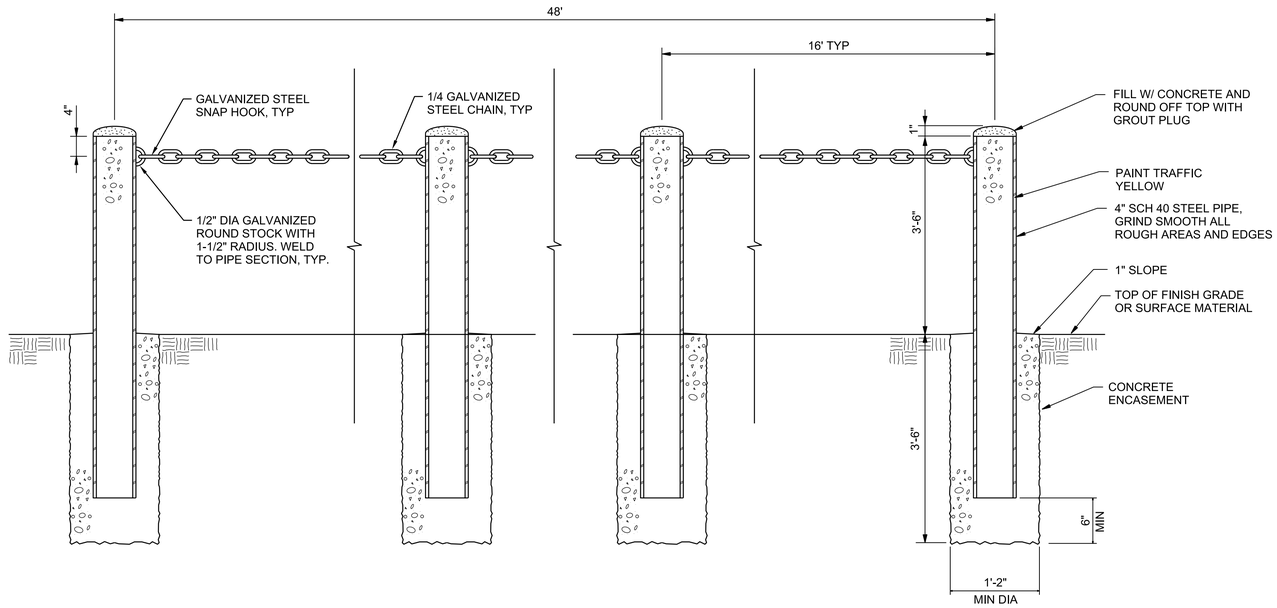


SECTION

MANHOLE FRAME AND COVER

NTS

3305-725



PIPE AND CHAIN FENCE

NTS

3305-725

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
RICHARD THOMAS MORRISON PE 67713

PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

CIVIL
STANDARD DETAILS

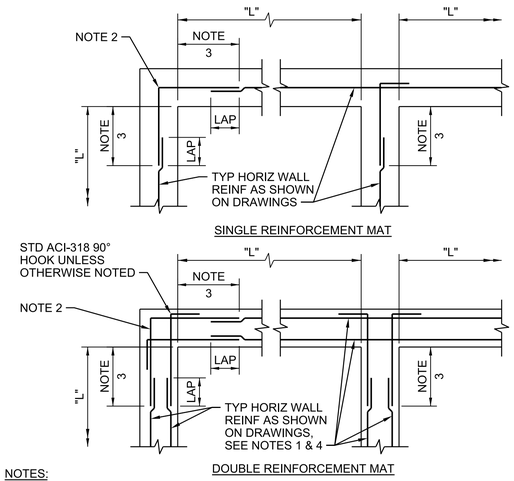
NO.	DATE	REVISION	DR	CHK	APVD	BY
DSGN	R MORRISON		R MORRISON	A MALONE	R MORRISON	

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
DWG	095-C-502
SHEET	22 of 31

BID DOCUMENTS



SINGLE REINFORCEMENT MAT

DOUBLE REINFORCEMENT MAT

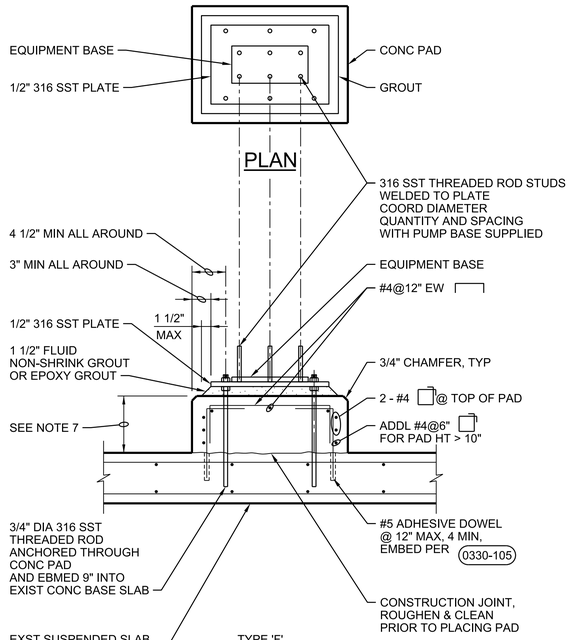
NOTES:

1. WHERE SHOWN ON PLANS, ADDITIONAL HORIZONTAL WALL CORNER AND INTERSECTION REINFORCEMENT SHALL BE ALTERNATED WITH THE TYPICAL HORIZONTAL REINFORCEMENT SHOWN IN THIS DETAIL.
2. CORNER BARS SHALL MATCH SIZE OF TYPICAL HORIZONTAL REINFORCEMENT SHOWN IN SECTIONS.
3. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 3" SHALL BE THE LESSER OF L/4, 10 FEET, OR 1.0 TIMES THE HEIGHT OF THE WALL, EXCEPT THAT IN NO CASE SHALL IT BE LESS THAN 2 FEET.
4. TYPICAL HORIZONTAL REINFORCEMENT SHALL BE LAPPED WHERE SHOWN OR AS INDICATED IN THE GENERAL STRUCTURAL NOTES.
5. WHERE LAPPED BARS ARE DIFFERENT SIZE, USE THE LAP LENGTH REQUIRED FOR THE SMALLER OF THE TWO REINFORCEMENT BARS BEING SPLICED.

TYPICAL WALL CORNER & INTERSECTION REINFORCEMENT

NTS

0330-003



TYPE 'F'

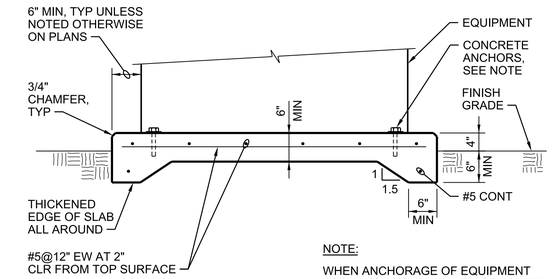
GENERAL NOTE:
FOR GENERAL NOTES SEE DETAIL 4 OF 4.

DETAIL 1 OF 4

CONCRETE EQUIPMENT PAD - TYPE 'F'

NTS

0330-056



NOTE:

WHEN ANCHORAGE OF EQUIPMENT TO PAD IS REQUIRED, USE CONCRETE ANCHORS SPECIFIED.

TYPE 'G'

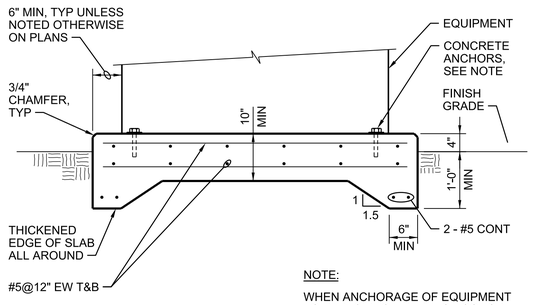
GENERAL NOTE:
FOR GENERAL NOTES SEE DETAIL 4 OF 4.

DETAIL 2 OF 4

CONCRETE EQUIPMENT PAD - TYPE 'G'

NTS

0330-056



NOTE:

WHEN ANCHORAGE OF EQUIPMENT TO PAD IS REQUIRED, USE CONCRETE ANCHORS SPECIFIED.

TYPE 'H'

GENERAL NOTE:
FOR GENERAL NOTES SEE DETAIL 4 OF 4.

DETAIL 3 OF 4

CONCRETE EQUIPMENT PAD - TYPE 'H'

NTS

0330-056

NOTES:

1. PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE PLANS OR AS INDICATED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.
2. THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER AND AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE OR OTHER ACCEPTABLE MEANS, MATCHING THE BASE PLATE, WHILE PAD IS BEING PLACED.
3. ANCHOR BOLT SLEEVES SHALL BE USED TO PROVIDE MINIMUM ANCHOR BOLT MOVEMENT OF 1/2" IN ALL HORIZONTAL DIRECTIONS. THE MINIMUM SLEEVE LENGTH SHALL BE 8 TIMES THE BOLT DIAMETER.
4. ANCHOR BOLT SLEEVES SHALL HAVE A MINIMUM INTERNAL DIAMETER 1" GREATER THAN BOLT DIAMETER AND A MAXIMUM INTERNAL DIAMETER 3" GREATER THAN ANCHOR BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT AFTER BOLTS ARE ALIGNED. SEE 0330-057.
5. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS INDICATED OTHERWISE.
6. WEDGES, SHIMS, OR LEVELING NUTS SHALL BE USED TO SUPPORT THE BASE WHILE THE GROUT IS PLACED. WEDGES OR SHIMS SHALL BE REMOVED AFTER GROUT IS SET AND PACK VOID WITH GROUT.
7. HEIGHT OF PADS SHALL BE MINIMUM REQUIRED FOR ANCHOR BOLT CLEARANCE TO KEEP ANCHOR BOLT ABOVE SUPPORTING SLAB (SEE TABLE BELOW). WHERE EQUIPMENT OR PIPING ELEVATION REQUIRE A PAD HEIGHT LESS THAN THE MINIMUM SHOWN, USE TYPE "B" EQUIPMENT PAD WITH BLOCKOUT.
8. AT CONTRACTOR'S OPTION, CONCRETE ANCHORS MAY BE USED IN LIEU OF CAST-IN-PLACE ANCHOR BOLTS FOR EQUIPMENT ANCHOR BOLTS LESS THAN 3/4" DIAMETER WHEN APPROVED BY THE EQUIPMENT MANUFACTURER AND APPROVED BY THE ENGINEER. ANCHORS SHALL BE INSTALLED WITH 4" MINIMUM EDGE DISTANCE IN EACH DIRECTION.

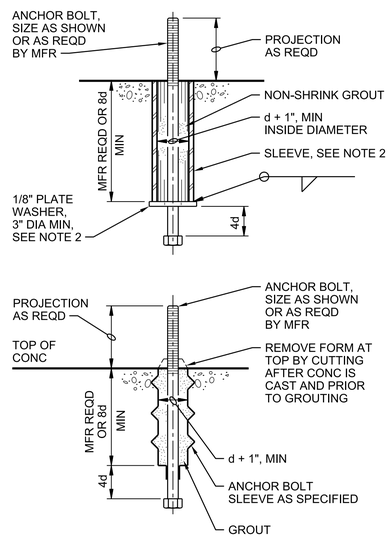
AB DIA (IN.)	1/2	5/8	3/4	7/8	1	1 1/4	1 3/8	1 1/2	1 3/4	2
MIN PAD HT (IN.)	7	8 1/2	10	11	12 1/2	15	16 1/2	18	21	24

DETAIL 4 OF 4

CONCRETE EQUIPMENT PAD - TYPE 'L'

NTS

0330-056



MACHINERY ANCHOR BOLT DETAIL

NOTES:

1. FOR CONCRETE EQUIPMENT PAD DETAILS AND NOTES NOT SHOWN SEE 0330-056
2. MATERIAL TO MATCH BOLT.

DETAIL 1 OF 2

ANCHOR BOLT DETAILS

NTS

0330-057

NO.	DATE	REVISION	BY	APVD
DSGN	D EVERSON	DR J THORNTON	CHK D GARCIA	APVD D EVERSON

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
DAVID R EVERSON PE 80180

PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

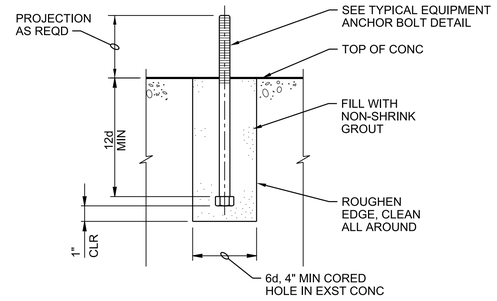
ch2m

STRUCTURAL
STANDARD DETAILS

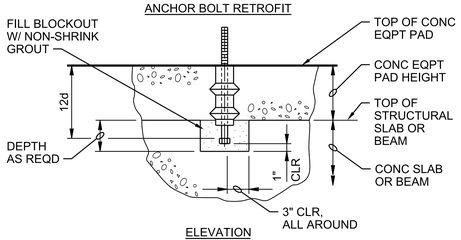
NTS
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
DWG	095-S-501
SHEET	23 of 31

BID DOCUMENTS



ANCHOR BOLT RETROFIT



ELEVATION

ANCHOR BOLT BLOCKOUT

NOTES:

1. FOR CONCRETE EQUIPMENT PAD DETAILS AND NOTES NOT SHOWN SEE (0330-056)
2. MATERIAL TO MATCH BOLT.

DETAIL 2 OF 2

ANCHOR BOLT DETAILS

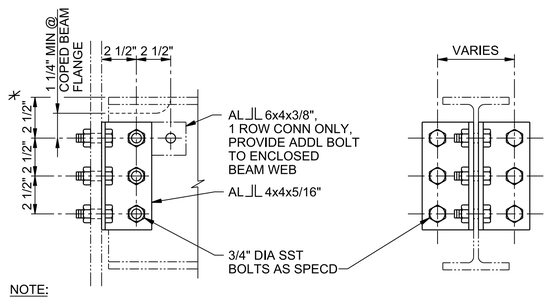
NTS

0330-057

ALUMINUM		
NOMINAL BEAM DEPTH, INCHES	ROWS OF BOLTS	LENGTH OF ANGLE
10	3	7 1/2"
7-8-9	2	5"
5-6	1	3"
4	1	2 3/4"

NOTES:

1. NUMBER OF ROWS IS EQUAL TO NUMBER OF BOLTS TO ENCLOSED WEB.
2. ALL FRAMING CONNECTIONS SHALL CONFORM TO SCHEDULE UNLESS DETAILED OTHERWISE ON FRAMING PLANS.



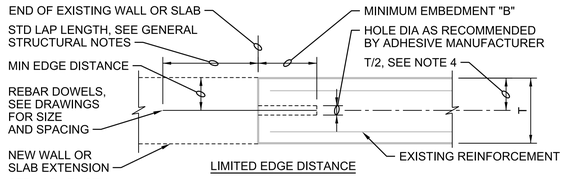
NOTE:

✳ 2 1/2" DIMENSION TYPICAL EXCEPT 2" FOR 4" BEAM.

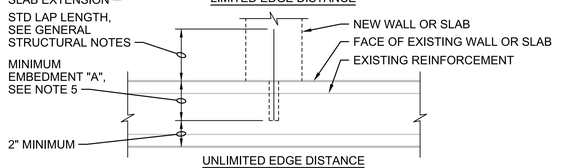
TYPICAL BEAM CONNECTION - ALUMINUM

NTS

0514-020



LIMITED EDGE DISTANCE



UNLIMITED EDGE DISTANCE

DOWEL SIZE	MINIMUM EDGE DISTANCE	MINIMUM EMBEDMENT "A"	MINIMUM EMBEDMENT "B"
#3	2 1/2"	5"	8"
#4	3 1/2"	7"	11"
#5	4"	8"	13"
#6	5"	10 1/2"	16"
#7	6"	12 1/2"	20"
#8	7"	14"	22"
#9	7 1/2"	15"	24"

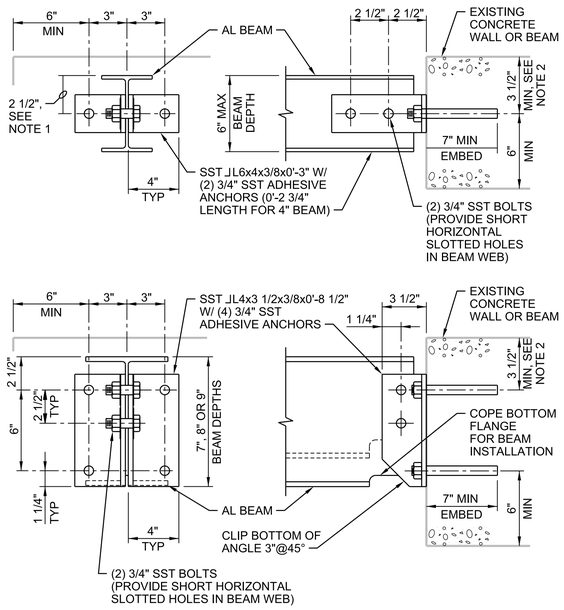
NOTES:

1. CONFORM TO REQUIREMENTS OF SPECIFICATION SECTION 03 63 00, CONCRETE DOWELING.
2. FOLLOW ADHESIVE MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
3. USE MINIMUM EMBEDMENTS SHOWN, EXCEPT USE MANUFACTURER'S MINIMUM RECOMMENDED EMBEDMENT IF GREATER.
4. LOCATE DOWELS CENTERED IN WALL OR SLAB UNLESS OTHERWISE NOTED ON DRAWINGS. WHERE 2 ROWS OF DOWELS INDICATED, STAGGER SPACING & LOCATE ALTERNATING DOWELS AT MINIMUM EDGE DISTANCE FROM OPPOSITE FACES.
5. PROVIDE MINIMUM EMBEDMENT "A" SHOWN IN TABLE UNLESS SHORTER EMBEDMENT DEPTH IS CALLED OUT ON DRAWINGS.

ADHESIVE DOWEL

NTS

0330-105

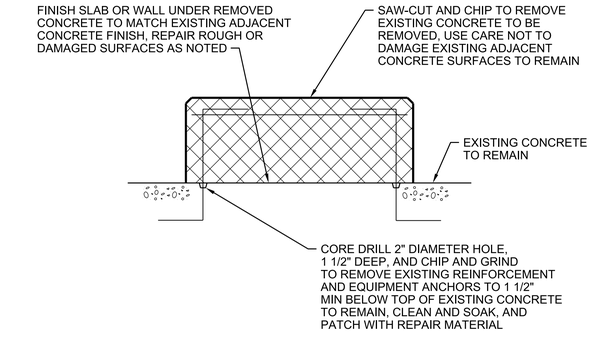


DETAIL 1 OF 2

BEAM / WALL CONNECTION - ALUMINUM

NTS

0514-056



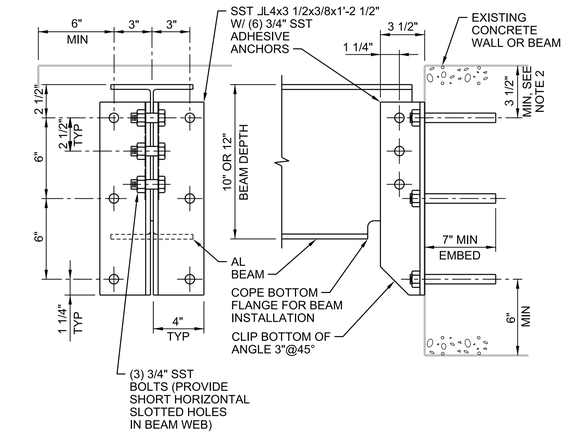
NOTES:

1. REMOVE CONCRETE OUT TO SOUND CONCRETE.
2. IF CHIPPING INTO THE SURFACE OF THE EXISTING SLAB OR WALL TO REMAIN IS REQUIRED, MAKE EDGES PERPENDICULAR TO THE SURFACE. DO NOT FEATHER EDGES.
3. FILL DEFECTIVE AREA WITH AN APPROVED PREPACKAGED REPAIR MATERIAL TO MATCH APPEARANCE OF ADJACENT CONCRETE SURFACES.
4. USE APPROVED BONDING AGENT ON SURFACES TO BE PATCHED PRIOR TO PLACING REPAIR MATERIAL.
5. DEMONSTRATE METHODS FOR REPAIR USING ACTUAL MATERIALS, METHODS, AND CURING PROCEDURES REQUIRED BY MATERIAL MANUFACTURERS. CONSULT WITH BONDING AGENT MANUFACTURER AND REPAIR MATERIAL MANUFACTURER ON TECHNIQUES.

CONCRETE DEMOLITION

NTS

0330-143



NOTES:

1. 2 1/2" DIMENSION TYPICAL EXCEPT 2" FOR 4" BEAMS.
2. DO NOT CUT EXISTING CONCRETE BEAM TOP REINFORCING DURING DRILL-IN ANCHOR INSTALLATION. FIELD LOCATE BEAM REINFORCING PRIOR TO FABRICATION WITH GROUND PENETRATING RADAR OR OTHER ACCEPTABLE MEANS. ADD LENGTH TO CLIP ANGLES AS REQUIRED TO LOWER ANCHORS TO CLEAR REINFORCING WHILE MAINTAINING SPACING AND EDGE DISTANCE AS SHOWN.
3. WHERE BOTH ENDS OF BEAM ARE ATTACHED TO A WALL, PROVIDE LONG HORIZONTALLY SLOTTED HOLES IN BEAM WEB AT ONE END. TIGHTEN NUTS SNUG TIGHT, BACK OFF 1/2 TURN, AND LOCK WITH DOUBLE NUT.
4. PROVIDE PROTECTION FOR DISSIMILAR MATERIALS PER SPECIFICATIONS.

DETAIL 2 OF 2

BEAM / WALL CONNECTION - ALUMINUM

NTS

0514-056

NO.	DATE	DSGN	REVISION	BY	CHK	APVD
		D EVERSON		D EVERSON	J THORNTON	D GARCIA

643 SW 4TH AVE. SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
DAVID R EVERSON PE 80180

PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

ch2m

STRUCTURAL

STANDARD DETAILS

NTS

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
DWG	095-S-502
SHEET	24 of 31

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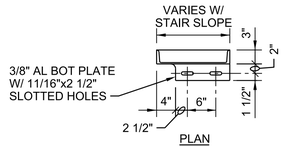
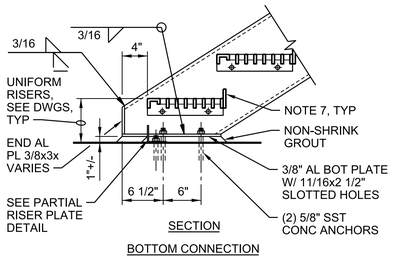
NOTES:

1. PROVIDE PROTECTION FOR DISSIMILAR METALS AND FOR ALUMINUM IN CONTACT WITH CONCRETE PER SPECIFICATIONS.
2. AMERICAN STANDARD C12x7.41 ALUMINUM STRINGERS TYPICAL EXCEPT WHERE OTHERWISE NOTED ON PLANS.
3. STAIR RAILING NOT SHOWN.
4. STAIR MANUFACTURER TO COORDINATE BOLTED TREADS AND RAILING CONNECTIONS.
5. ALL FASTENERS SHALL BE STAINLESS STEEL.
6. FIELD VERIFY DIMENSIONS AND ELEVATIONS PRIOR TO FABRICATION.
7. FOR RISER PLATE SEE PARTIAL RISER PLATE DETAIL UNLESS NOTED OTHERWISE. CLEARANCE BETWEEN TOP OF RISER PLATE AND BOTTOM OF TREAD TO BE 3 3/4" MAXIMUM. FOR STAIRS WITH PICKET RAILING EXTEND RISER PLATE PER FULL RISER PLATE DETAIL.



PLAN



SECTION

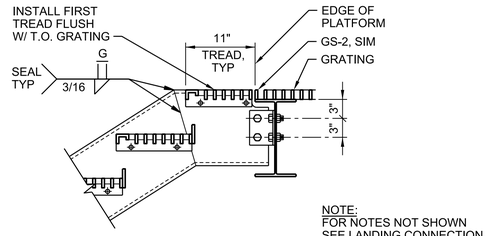
BOTTOM CONNECTION

DETAIL 1 OF 5

STAIR DETAILS - ALUMINUM

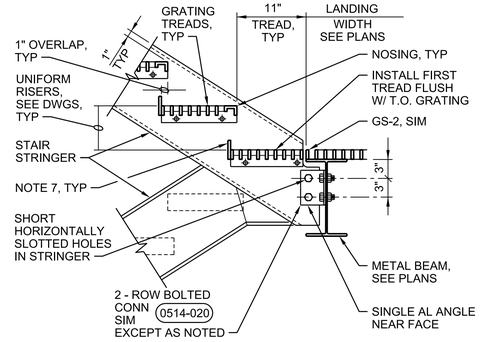
NTS

0551-001



NOTE:
FOR NOTES NOT SHOWN
SEE LANDING CONNECTION.

TOP CONNECTION - ALUMINUM



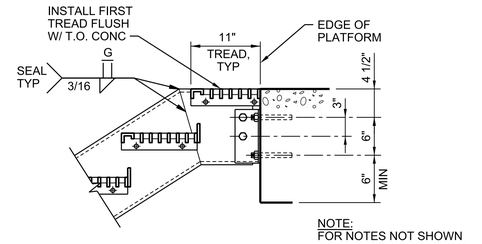
LANDING CONNECTION - ALUMINUM

DETAIL 2 OF 5

STAIR DETAILS - ALUMINUM

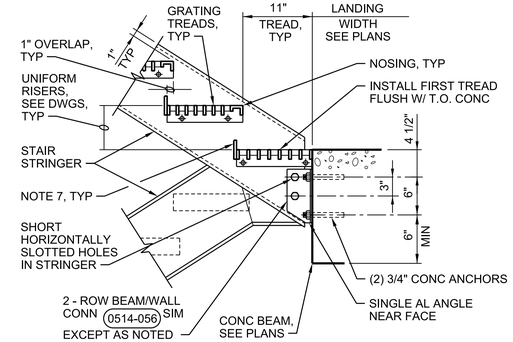
NTS

0551-001



NOTE:
FOR NOTES NOT SHOWN
SEE LANDING CONNECTION.

TOP CONNECTION - CONCRETE



LANDING CONNECTION - CONCRETE

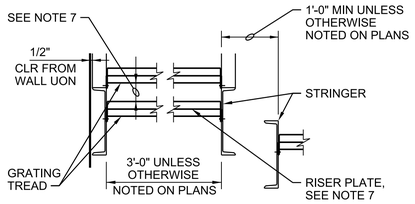
DETAIL 3 OF 5

STAIR DETAILS - ALUMINUM

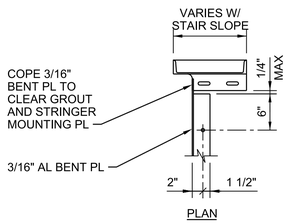
NTS

0551-001

STAIRWAY WIDTH	TREAD BEARING BARS
	ALUMINUM TREAD
2'-3" OR LESS	1" x 3/16"
2'-9" OR LESS	1 1/4" x 3/16"
3'-3" OR LESS	1 1/2" x 3/16"
4'-7" OR LESS	1 3/4" x 3/16"



STAIR TREADS



PLAN

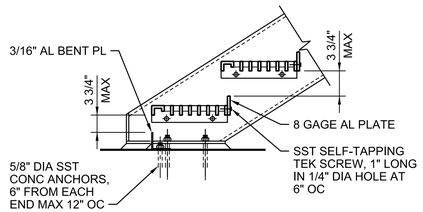
BOTTOM CLOSURE PLATE

DETAIL 4 OF 5

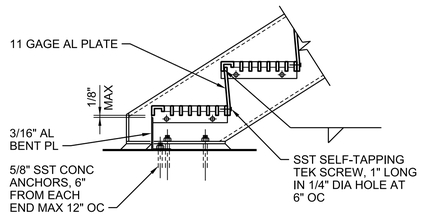
STAIR DETAILS - ALUMINUM

NTS

0551-001



PARTIAL RISER PLATE



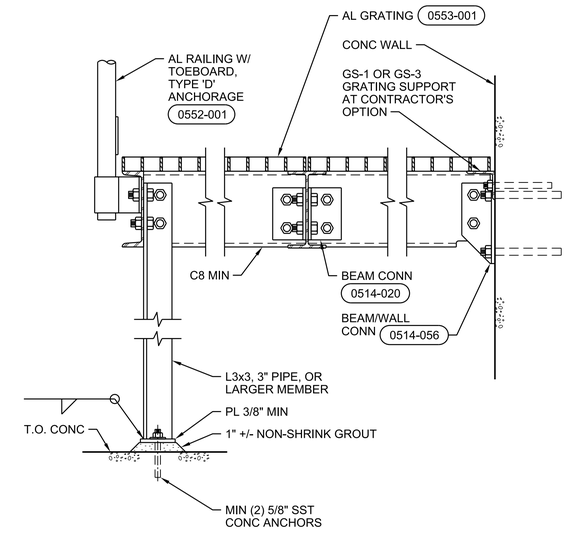
FULL RISER PLATE

DETAIL 5 OF 5

STAIR DETAILS - ALUMINUM

NTS

0551-001



DETAIL 1 OF 2

TYPICAL EQUIPMENT PLATFORM - ALUMINUM

NTS

0551-201

NO.	DATE	DSGN
	REVISION	CHK
		DR
		BY
		APVD

D EVERSON — J THORNTON — D GARCIA — D EVERSON

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GAINESVILLE, FL 32601
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PUMP STATIONS REHABILITATION PHASE 2
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STRUCTURAL
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NTS
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
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DWG	095-S-503
SHEET	25 of 31

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EQUIPMENT PLATFORM NOTES:

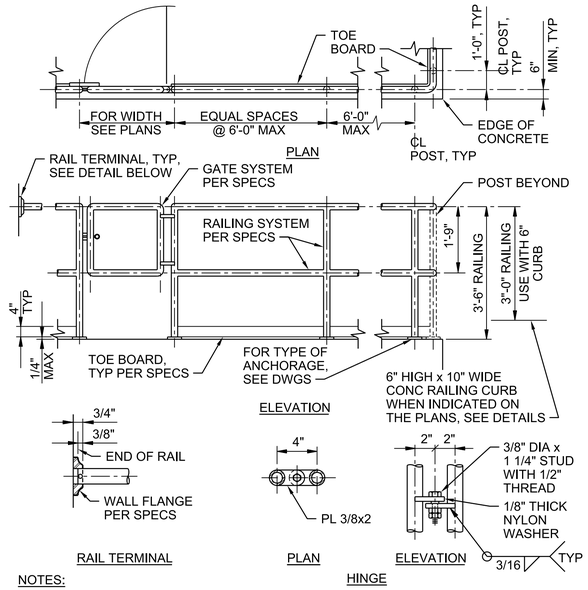
1. DESIGN LOADS:
   A. LIVE LOADS: 100 PSF UNIFORM OR 1000 POUNDS CONCENTRATED ON 2'-6" SQUARE AREA
2. LIMIT LIVE LOAD GRATING DEFLECTION TO 1/4 INCH. LIMIT LIVE LOAD BEAM DEFLECTION TO SPAN LENGTH OVER 480.
3. GRATING, FRAMING MEMBER SIZE AND CONNECTION TYPES IF INDICATED ON DRAWINGS ARE MINIMUM ACCEPTABLE SIZES. CONTRACTOR SHALL SUBMIT CALCULATIONS AND DRAWINGS FOR MEMBERS AND CONNECTIONS FOR BOTH VERTICAL AND LATERAL LOADS BASED ON FINAL EQUIPMENT SIZE AND LOCATION.
4. VERIFY ALL EQUIPMENT DIMENSIONS PRIOR TO FINAL DESIGN AND DETAILING OF PLATFORM SUPPORT SYSTEM. UNLESS REQUIRED OTHERWISE BY THE EQUIPMENT MANUFACTURER, MAINTAIN 1 1/2" CLEAR BETWEEN EDGE OF PLATFORM & EQUIPMENT.
5. PROVIDE DIAGONAL BRACING AS REQUIRED BY LATERAL CALCULATIONS.
6. ALL BOLTED CONNECTIONS SHALL BE 2- BOLT MINIMUM.

DETAIL 2 OF 2

TYPICAL EQUIPMENT PLATFORM - ALUMINUM

0551-201

NTS



NOTES:

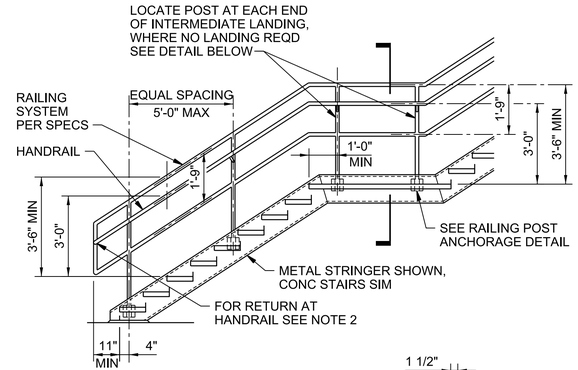
1. FASTEN RAIL TO WALL FLANGE PER MANUFACTURER'S RECOMMENDATIONS.
2. WALL FLANGE TO BE MOUNTED TO WALL WITH (2) 3/8" DIA SST WEDGE ANCHORS.
3. AT CONTRACTOR'S OPTION FABRICATE HINGES OR PROVIDE OTHER HINGES PER SPECIFICATIONS. ANODIZE FINISH AFTER ALL WELDING PER SPECIFICATIONS.

DETAIL 1 OF 3

RAILING - 2 RAIL - ALUMINUM

0552-001

NTS



NOTES:

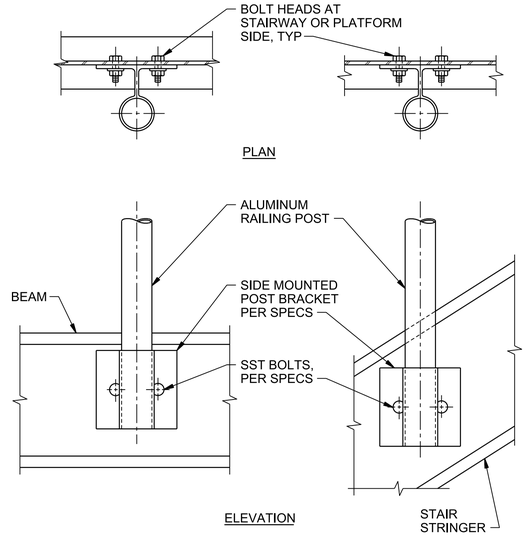
1. PROVIDE TOE BOARD AT LANDING WHERE REQUIRED.
2. RETURN ENDS OF HANDRAIL TO GUARD AT BOTH ENDS.

DETAIL 2 OF 3

RAILING - 2 RAIL - ALUMINUM

0552-001

NTS



NOTE:

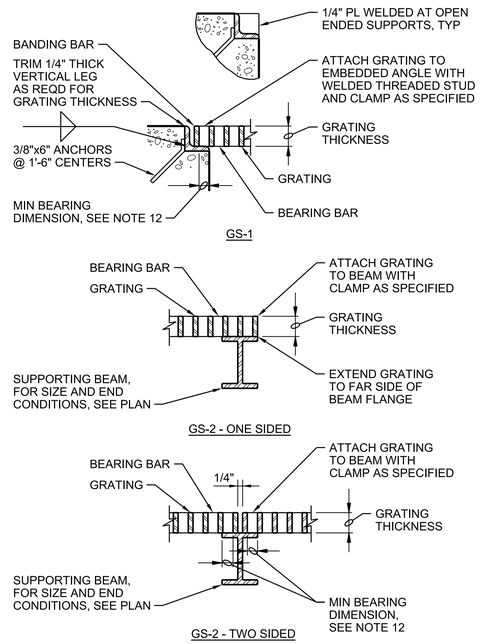
PROVIDE PROTECTION FOR DISSIMILAR METALS PER SPECIFICATIONS.

DETAIL 3 OF 3

RAILING POST ANCHORAGE TYPE 'D' - ALUMINUM

0552-001

NTS

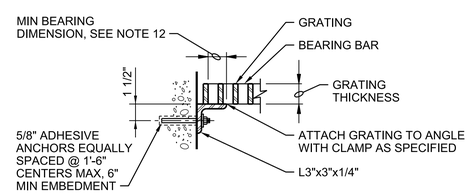


DETAIL 1 OF 4

STANDARD GRATING

0553-001

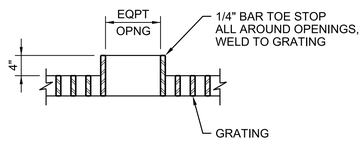
NTS



NOTES:

1. USE GS-3 ONLY FOR LIGHT DUTY GRATING, TYPE 'A'.
2. INSTALL ANCHORS MAXIMUM 4" FROM EACH END.
3. WHEN ANCHOR IS WITHIN 4" OF A CONCRETE EDGE, UTILIZE MANUFACTURER'S LOW-TORQUE INSTALLATION PROCEDURES.

GS-3



EQUIPMENT OPENINGS

DETAIL 2 OF 4

STANDARD GRATING

0553-001

NTS

NO.	DATE	REVISION	DR	CHK	APVD	BY
DSGN	D EVERSON	J THORNTON	D GARCIA			D EVERSON

643 SW 4TH AVE. SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
DAVID R EVERSON PE 80180

PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

STRUCTURAL
STANDARD DETAILS

NTS
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
DWG	095-S-504
SHEET	26 of 31

BID DOCUMENTS

GENERAL NOTES:

1. GRATING SHALL BE LIGHT DUTY GRATING UNLESS OTHERWISE NOTED ON DRAWINGS.
2. GRATING SPAN IS INDICATED BY ⟷, SEE PLAN.
3. INDIVIDUAL GRATING SECTIONS SHALL NOT EXCEED 3'-0" IN WIDTH OR WEIGH MORE THAN 150 POUNDS, UNLESS INDICATED OTHERWISE, FOR TYPES 'A' & 'B' GRATING. TYPE 'C' GRATING SHALL HAVE A MINIMUM WIDTH OF 2'-0" REGARDLESS OF WEIGHT.
4. SHOP DRAWINGS BASED ON FIELD DIMENSIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
5. MATERIAL FOR SUPPORTS OF STEEL AND ALUMINUM GRATING TO BE SAME AS GRATING, EXCEPT METAL SUPPORTS THAT ARE TO BE EMBEDDED IN CONCRETE SHALL BE TYPE 316 STAINLESS STEEL.
6. UNLESS NOTED OTHERWISE ON PLANS, GRATING THICKNESS SHALL BE AS TABULATED IN "GRATING THICKNESS TABLE" FOR APPLICABLE GRATING TYPE.
7. FOR SERRATED BEARING BARS, INCREASE GRATING THICKNESSES SHOWN IN TABLES BY 1/4".
8. BEARING BAR THICKNESS FOR GRATING TO BE 3/16" MINIMUM. SEE SPECIFICATIONS FOR SPACING OF BEARING AND CROSS BARS.
9. BAND ALL EDGES. MATCH DEPTH OF BEARING BAR.
10. TYPE OF MATERIAL USED SHALL BE AS SHOWN ON PLANS OR AS SPECIFIED. THIS STANDARD DETAIL INCLUDES 2 TYPES, ALTHOUGH BOTH MAY NOT BE INCLUDED IN PROJECT.
11. THE HORIZONTAL CLEARANCE BETWEEN THE GRATING AND GRATING SUPPORTS SHALL NOT BE LESS THAN 1/4" NOR GREATER THAN 1/2" AND AS SPECIFIED.
12. MINIMUM BEARING HORIZONTAL DIMENSION = 1" FOR GRATING DEPTH 2 1/4" OR LESS. MINIMUM BEARING HORIZONTAL DIMENSION = 2" FOR GRATING DEPTH GREATER THAN 2 1/4"

DETAIL 3 OF 4

STANDARD GRATING

NTS

0553-001

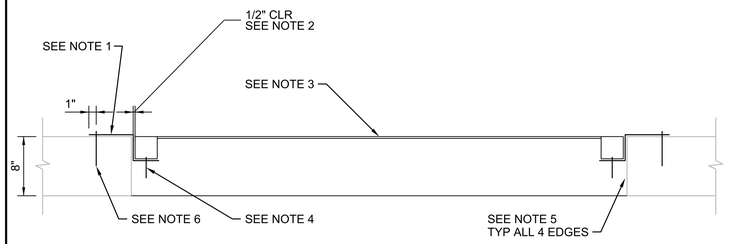
LIGHT DUTY GRATING TYPE 'A' (100 PSF)		
GRATING THICKNESS TABLE		
MAXIMUM SPAN	STEEL	ALUMINUM
3'-6"	1"	1 1/4"
4'-0"	1"	1 1/2"
4'-6"	1"	1 3/4"
5'-0"	1 1/4"	1 3/4"
5'-6"	1 1/4"	2"
6'-0"	1 1/2"	2 1/4"
6'-6"	1 1/2"	2 1/4"
7'-0"	1 3/4"	2 1/2"

DETAIL 4 OF 4

STANDARD GRATING

NTS

0553-001



NOTES:

1. 6" x 3.5" x 3.5" BENT PLATE, 316 SST. PLATE SHALL BE CONTINUOUS AROUND EXISTING OPENING. MITER CORNERS AND BUTT WELD TYP.
2. PROVIDE 1/4" CLEAR BETWEEN BENT PLATE AND HATCH FRAME. FIELD VERIFY FINAL OPENING SIZE PRIOR TO FABRICATION OF ANGLE ASSEMBLY AND ALUMINUM HATCH
3. RETROFIT ALUMINUM HATCH. COORDINATE FINAL HATCH FRAME DEPTH TO ENSURE HATCH DOOR ALIGNS WITH SST SUPPORT ASSEMBLY
4. FASTEN HATCH TO ANGLE ASSEMBLY AT EACH CORNER MINIMUM. COORDINATE WITH HATCH MANUFACTURER FOR ANCHORAGE REQUIREMENTS TO FRAME.
5. REPAIR EXPOSED REINFORCEMENT AT SAW-CUT EDGE, SEE STD DET 0330-143. REPAIR VERTICAL SURFACE AS SPECIFIED IN SECTION 03 01 32 - REPAIR OF VERTICAL AND OVERHEAD CONCRETE SURFACES.
6. 1/2" ADHESIVE ANCHOR, MIN 5" EMBEDMENT, 3 ANCHORS PER SIDE, TYP

RETROFIT HATCH

NTS

0555-001

NO.	DATE	REVISION	DR	CHK	APVD	BY	APVD
DSGN	D EVERSON		J THORNTON	D GARCIA	D EVERSON	D EVERSON	D EVERSON

643 SW 4TH AVE, SUITE 400
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DAVID R EVERSON PE 80180

PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

STRUCTURAL
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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

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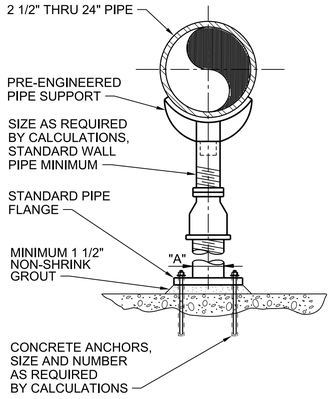


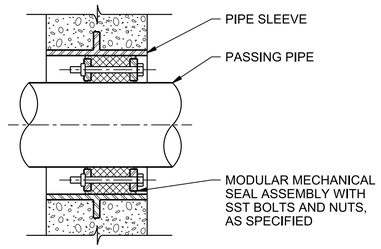
DIMENSION TABLE	
PIPE SIZE	"A" MINIMUM NOMINAL PIPE SIZE
2-1/2"	2-1/2"
3"	2-1/2"
4"	3"
6"	3"
8"	3"
10"	3"
12"	3"
14"	4"
16"	4"
20"	6"
24"	6"

NOTE:
SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED.

PIPE SUPPORT SADDLE
SUPPORT PEDESTAL TYPE - ADJUSTABLE

4005-500

NTS



WALL PIPE PENETRATIOB SEAL

4027-607

NTS

643 SW 4TH AVE. SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
TAO FU PE 63138

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PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

PROCESS MECHANICAL
STANDARD DETAILS

NO.	DATE	REVISION	BY	APVD
DSGN	T FU	DR WL CLOUGH	CHK D GARCIA	APVD T FU

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
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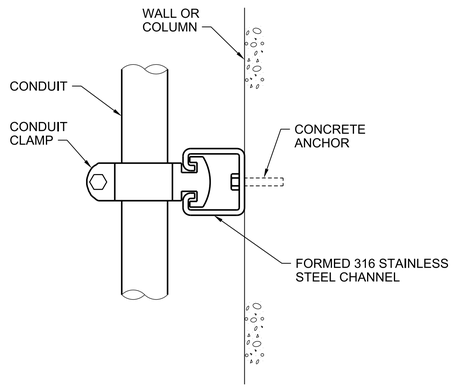
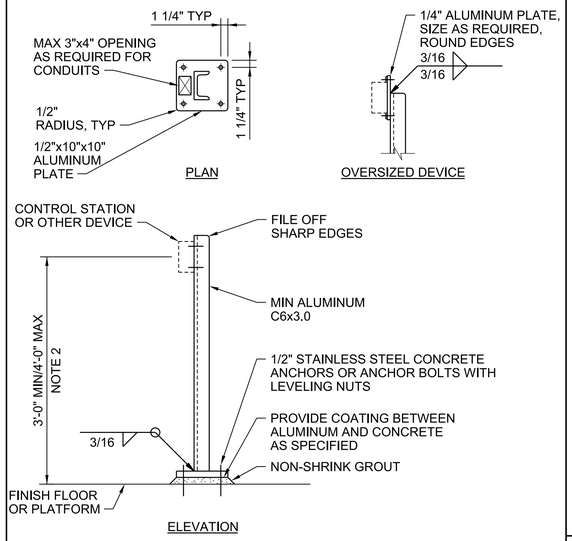
SHEET	28 of 31



NOTES:
1. SUPPORT ALL EXPOSED CONDUITS ON FORMED STEEL CHANNELS.

CONDUIT SUPPORT ON STRUCTURE

2605-017

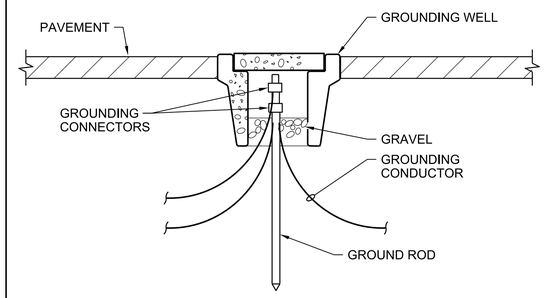


NOTES:
1. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL. USE WASHERS AND SPLIT-LOCK WASHERS UNDER ALL NUTS AND BOLTS.
2. FOR HEIGHTS EXCEEDING 4'-0" OR WEIGHTS OF MOUNTED EQUIPMENT EXCEEDING 200 LBS, SIZE POST AND CONNECTION FOR LATERAL LOADS. EXTEND POSTS TO STRUCTURE ABOVE WHERE REQUIRED BY CALCULATION.

DEVICE MOUNTING, PEDESTAL

NTS

2605-011b

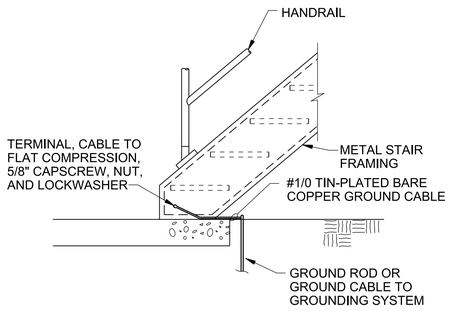


NOTES:
1. ALL GROUND RODS IN PAVED AREAS SHALL BE INSTALLED IN ACCORDANCE WITH THIS DETAIL.

GROUND WELL

NTS

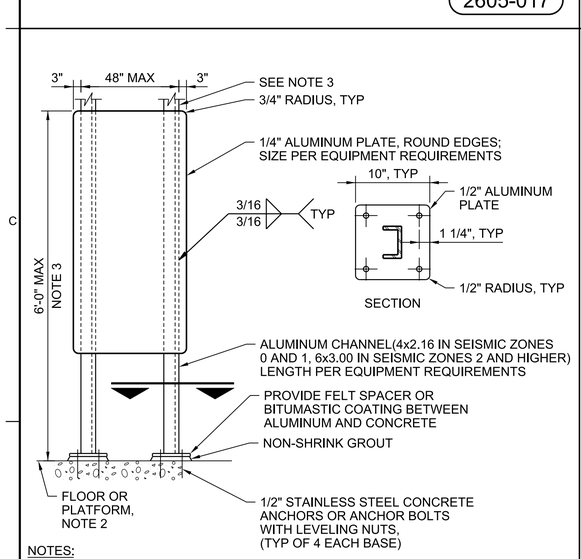
2605-202



GENERAL STAIRWAY GROUNDING

NTS

2605-207

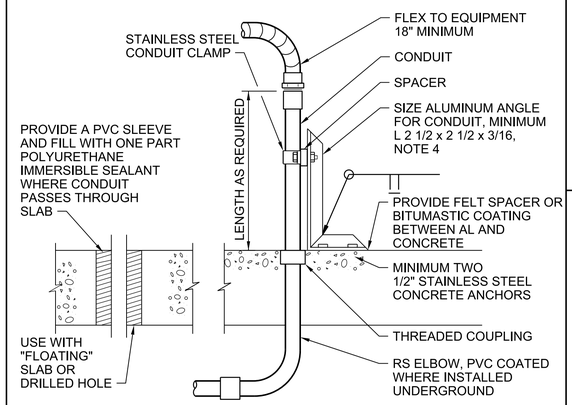


NOTES:
1. USE STAINLESS STEEL MOUNTING HARDWARE. USE WASHER AND SPLIT LOCK WASHER UNDER ALL NUTS.
2. FOR YARD LOCATIONS PROVIDE A 6 INCH THICK CONCRETE PAD AT GRADE WITH #4 BAR @ 12" OC EACH WAY, CENTERED. THE PAD SHALL BE 12 INCHES LONGER THAN THE MOUNTING PLATE BY ONE HALF THE HEIGHT OF THE MOUNTING PLATE ABOVE FINISHED GRADE. MINIMUM WIDTH 24 INCHES.
3. FOR HEIGHTS EXCEEDING 5'-0" OR WEIGHT OF MOUNTED EQUIPMENT EXCEEDING 200 LBS, SIZE POSTS AND CONNECTIONS FOR LATERAL LOADS. EXTEND POSTS TO STRUCTURE ABOVE WHERE REQUIRED BY CALCULATION, SEE GENERAL ELECTRICAL CONSTRUCTION NOTES ON DRAWINGS. PROVIDE ADDITIONAL BRACING AS REQUIRED TO MEET 200 MPH WINDLOADS.

DEVICE MOUNTING, EQUIPMENT PEDESTAL

NTS

2605-008b

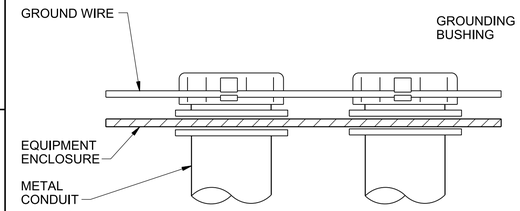


NOTES:
1. PROVIDE SUPPORT FOR ALL METAL CONDUITS WHICH EXTEND MORE THAN 18 INCHES OUT OF THE SLAB WITHIN 3 INCHES OF THE END OF THE CONDUIT.
2. PROVIDE SUPPORT FOR ALL PVC CONDUIT WITHIN 3 INCHES OF THE END OF THE CONDUIT.
3. THIS DETAIL SHALL BE USED FOR SUPPORT OF ALL CONDUITS WHICH ARE NOT OTHERWISE SUPPORTED IN A RIGID MANNER SUCH AS AGAINST AN EQUIPMENT BASE, WALL, COLUMN, ETC, AS REQUIRED ABOVE.
4. FOR ANY ANGLE GREATER THAN 2'-6" TALL, SIZE ANGLE SUPPORT AND ANCHORS FOR SEISMIC LOADS.

CONDUIT TRANSITION AND SUPPORT

NTS

2605-305

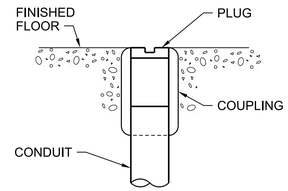


NOTE:
THE ENDS OF ALL CONDUITS REQUIRED TO BE GROUNDED BY THE SPECIFICATIONS SHALL BE GROUNDED IN ACCORDANCE WITH THIS DETAIL.

CONDUIT GROUNDING

NTS

2605-203

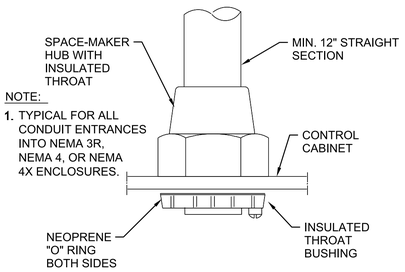


NOTE:
CONDUITS WHICH ARE STUBBED UP IN A CONCRETE SLAB FOR FUTURE EXTENSION SHALL BE INSTALLED IN ACCORDANCE WITH THIS DETAIL.

FLUSH CONDUIT HUB

NTS

2605-309

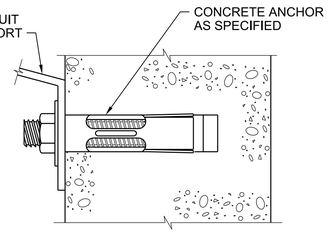


NOTE:
1. TYPICAL FOR ALL CONDUIT ENTRANCES INTO NEMA 3R, NEMA 4, OR NEMA 4X ENCLOSURES.

CONDUIT HUB

NTS

2605-203G



CONCRETE ANCHOR INSTALLATION

NTS

2605-010

NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
		E CARRASCO	E CARRASCO	D NICHOLSON	APVD	D NICHOLSON	

643 SW 4TH AVE. SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
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PUMP STATIONS REHABILITATION PHASE 2
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CITY OF KEY WEST
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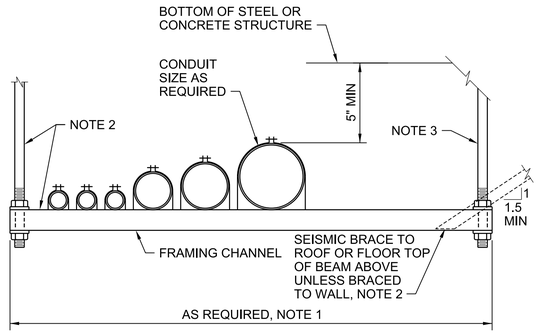
ELECTRICAL
STANDARD DETAILS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ADJUST SCALE ACCORDINGLY
0 1"

DATE	MAY 2019
PROJ	707158
DWG	095-E-501
SHEET	29 of 31

BID DOCUMENTS



SINGLE RACK

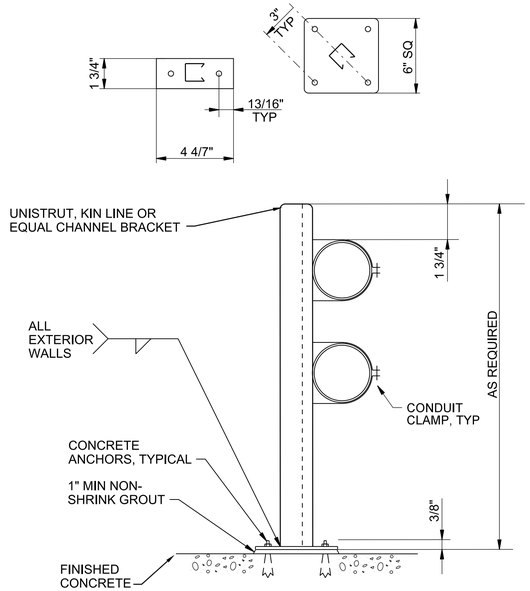
NOTES:

1. LENGTH VARIES WITH NUMBER OF CONDUITS TO BE SUPPORTED AND SPACING BETWEEN CONDUITS.
2. DETERMINE SPAN AND TYPE OF SUPPORTS, LOCATE SUPPORTS, AND SIZE SUPPORT RODS, CONNECTIONS AND BRACES PER MANUFACTURER'S RECOMMENDATIONS AND SEISMIC REQUIREMENTS.
3. AT STEEL STRUCTURE, USE GRINNEL MALLEABLE BEAM CLAMP. AT CONCRETE STRUCTURE, USE UNIVERSAL CONCRETE INSERT, UNISTRUT CHANNEL WITH #4 x 3'-0" BELOW, OR GRINNEL FIGURE 52 ATTACHMENT PLATE, SIMILAR. TYPE AND SIZE AS REQUIRED BY TOTAL LOADS.
4. USE STAINLESS STEEL HARDWARE IN WET AND/OR CORROSIVE AREAS.
5. SPACE CONDUIT SUFFICIENTLY TO ALLOW REMOVAL OF ONE CONDUIT WITHOUT DISTURBING ADJACENT CONDUITS.

CONDUIT RACKING SYSTEM

NTS

2605-300



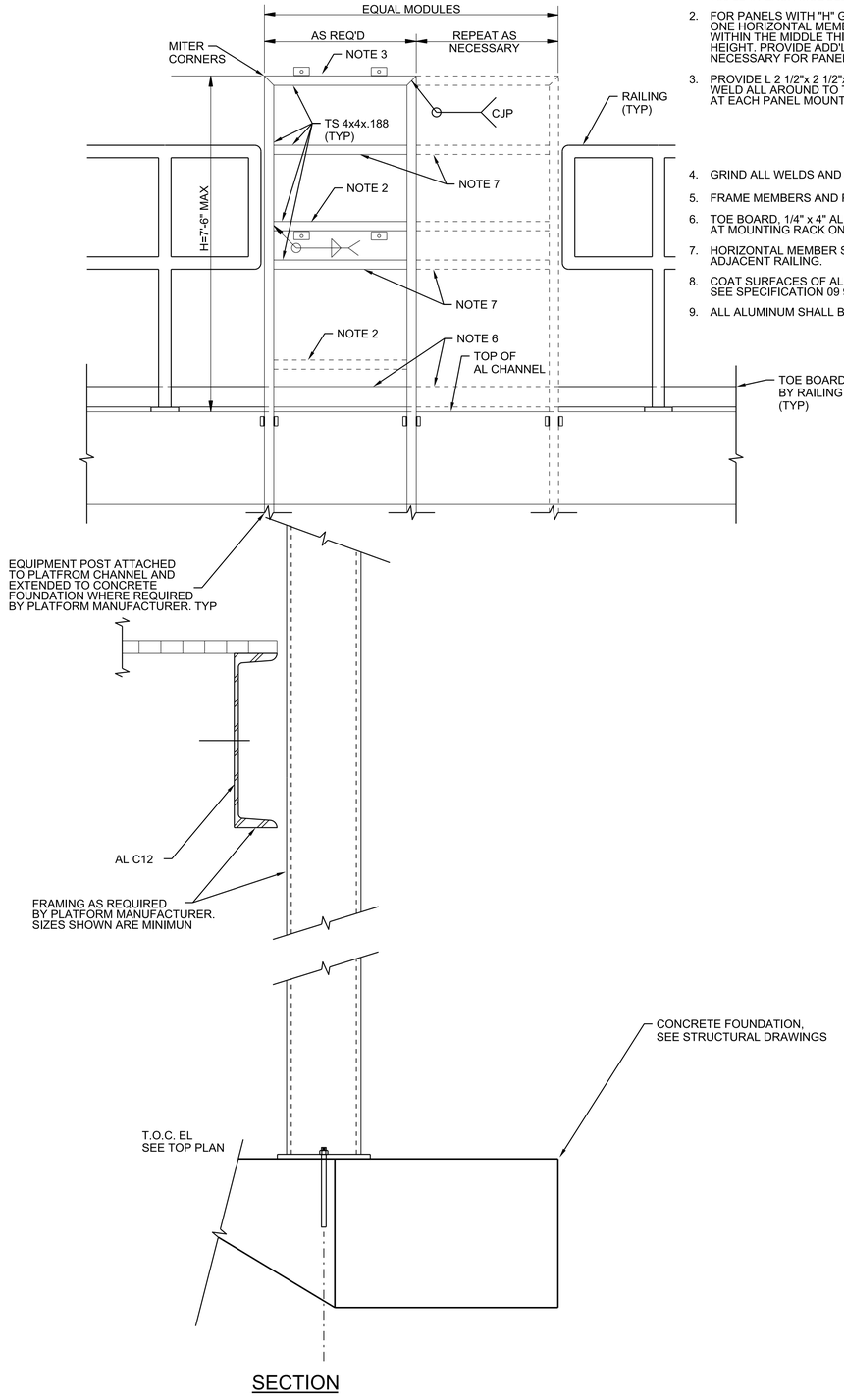
NOTES:

1. MAXIMUM CONDUIT SIZE TO BE SUPPORTED WITH THIS PIPE SUPPORT IS 4".
2. USE 1 5/8" X 3 1/4" CHANNEL MINIMUN FOR TWO OR MORE PIPES

CONDUIT SUPPORT

NTS

2605-320



SECTION

NOTES:

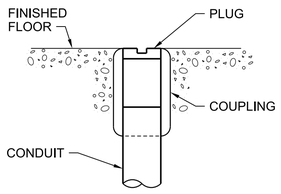
1. TOTAL WEIGHT OF PANEL(S) SHALL NOT EXCEED 750 LB IN EACH MODULE.
2. FOR PANELS WITH "H" GREATER THAN 4'-0", ONE HORIZONTAL MEMBER MUST BE LOCATED WITHIN THE MIDDLE THIRD OF THE FRAME HEIGHT. PROVIDE ADD'L MEMBERS AS NECESSARY FOR PANEL MOUNTING.
3. PROVIDE L 2 1/2"x 2 1/2"x 1/4"x 0'-3" WELD ALL AROUND TO TS: TYP AT EACH PANEL MOUNT.

4. GRIND ALL WELDS AND SHARP CORNERS SMOOTH.
5. FRAME MEMBERS AND PLATES SHALL BE ALUMINUM.
6. TOE BOARD, 1/4" x 4" ALUMINUM PLATE WELDED TO POST AT MOUNTING RACK ONLY.
7. HORIZONTAL MEMBER SHALL MATCH HEIGHT OF ADJACENT RAILING.
8. COAT SURFACES OF ALUMINUM IN CONTACT WITH CONCRETE. SEE SPECIFICATION 09 90 00.
9. ALL ALUMINUM SHALL BE ANODIZED.

PANEL MOUNTING RACK

NTS

2605-440



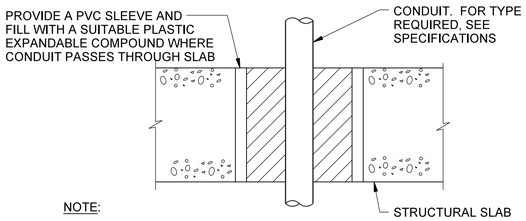
NOTE:

CONDUITS WHICH ARE STUBBED UP IN A CONCRETE SLAB FOR FUTURE EXTENSION SHALL BE INSTALLED IN ACCORDANCE WITH THIS DETAIL.

FLUSH CONDUIT HUB

NTS

2605-309



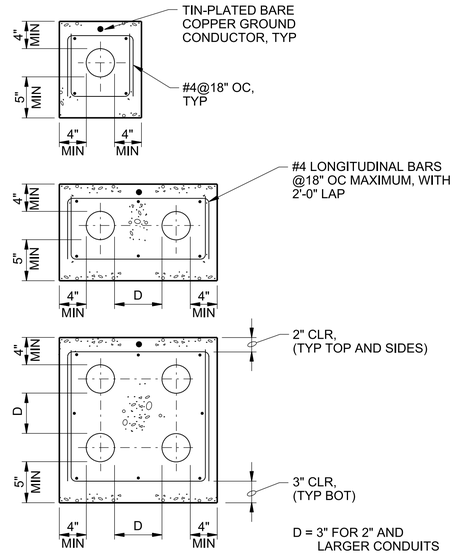
NOTE:

ALL CONDUITS THROUGH CONCRETE FLOOR SLABS AND EQUIPMENT PADS SHALL BE INSTALLED IN ACCORDANCE WITH THIS DETAIL.

SLAB PENETRATION

NTS

2605-310



NOTE:

PROVIDE 6" MINIMUM COMPACTED GRAVEL, 3/4" MINUS, UNDER ALL CONCRETE ENCASED DUCT RUNS.

DUCT BANK

NTS

2605-400A

NO.	DATE	REVISION	DR	CHK	BY	APVD
DSGN	E CARRASCO	E CARRASCO		D NICHOLSON		D NICHOLSON

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FL 32601
EB0000072 AAC001992
DAVID C. NICHOLSON PE 60201

PUMP STATIONS REHABILITATION PHASE 2
C. E. AND D MANHOLES
CITY OF KEY WEST
KEY WEST, FLORIDA

ELECTRICAL

STANDARD DETAILS

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MAY 2019
PROJ	707158
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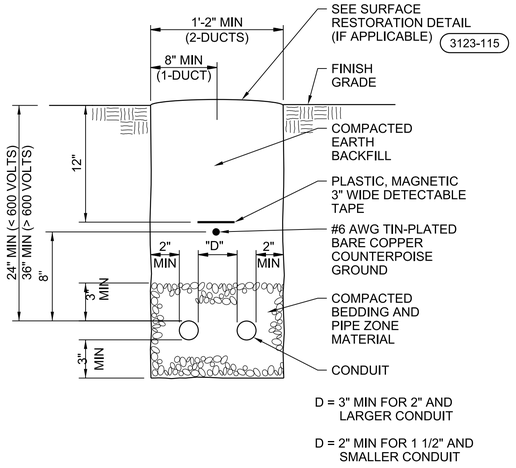
SHEET	30 of 31

BID DOCUMENTS



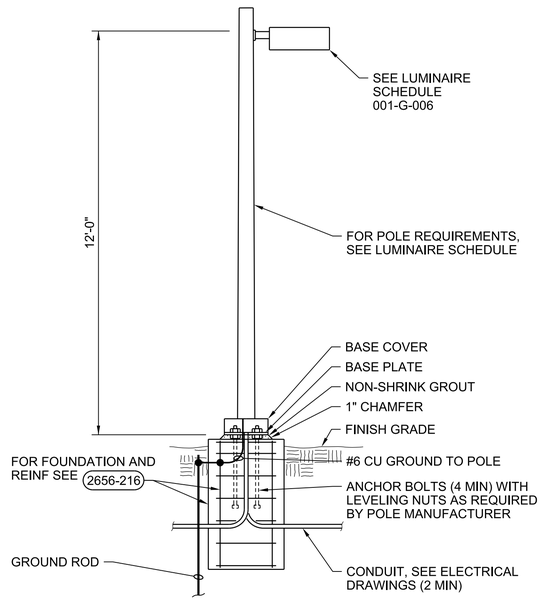
D = 3" MIN FOR 2" AND LARGER CONDUIT

D = 2" MIN FOR 1 1/2" AND SMALLER CONDUIT

TRENCH AND CONDUIT PLACEMENT

NTS

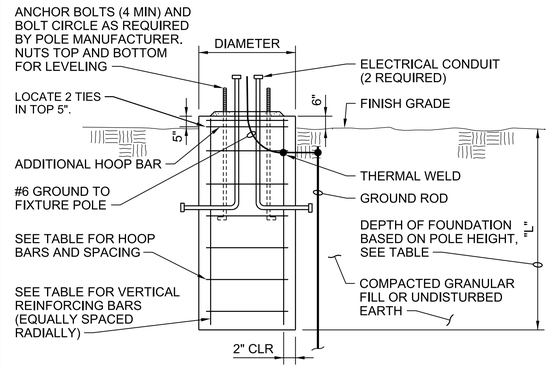
2605-423c



POST LIGHT FOUNDATION

NTS

2656-200



MARK	MAX POLE HEIGHT	DIAMETER	"L"	VERTICAL BARS	HOOP BARS
B	12'-0"	1'-6"	5'-0"	5#7	#4 @ 4" FOR TOP 2', #4 @ 10" SPACING FOLLOWING

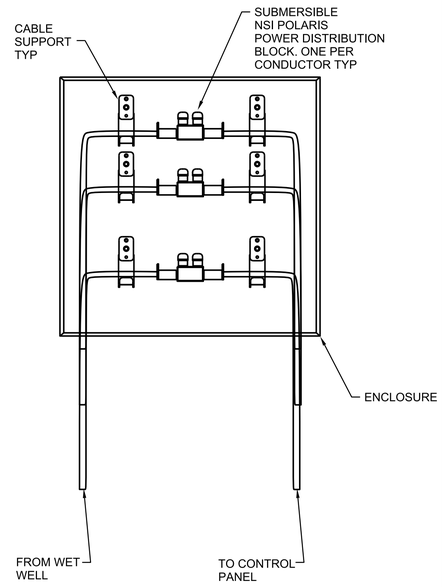
NOTES:

1. USE STAINLESS STEEL NUTS AND LOCKWASHERS.
2. INSTALL TWO CONDUITS (MINIMUM) PER POLE.
3. INSTALL CENTERLINE OF POLE 3'-0" BEHIND THE FACE OF THE CURB.
4. CONDUITS SHALL BE STUBBED UP TO WITHIN SIX INCHES OF THE POLE HANDHOLE.
5. COORDINATE WITH SITE PLANS FOR PROPER ORIENTATION OF POLE.

SITE AREA LIGHT POLE FOOTING

NTS

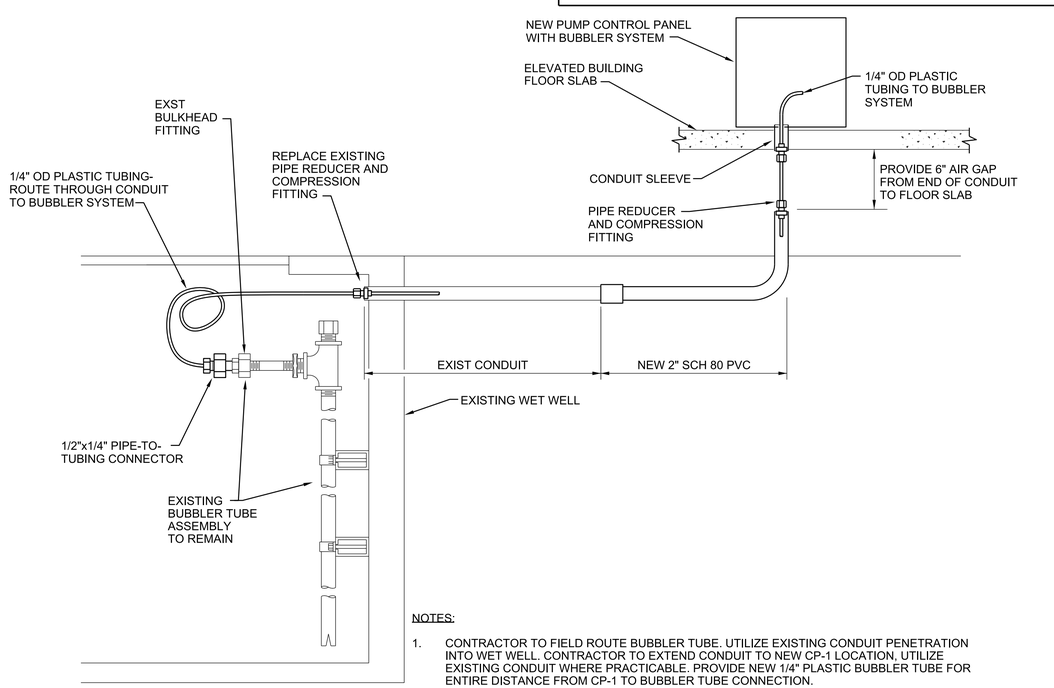
2656-216



TERMINAL JUNCTION BOX (TJB)

NTS

2656-102



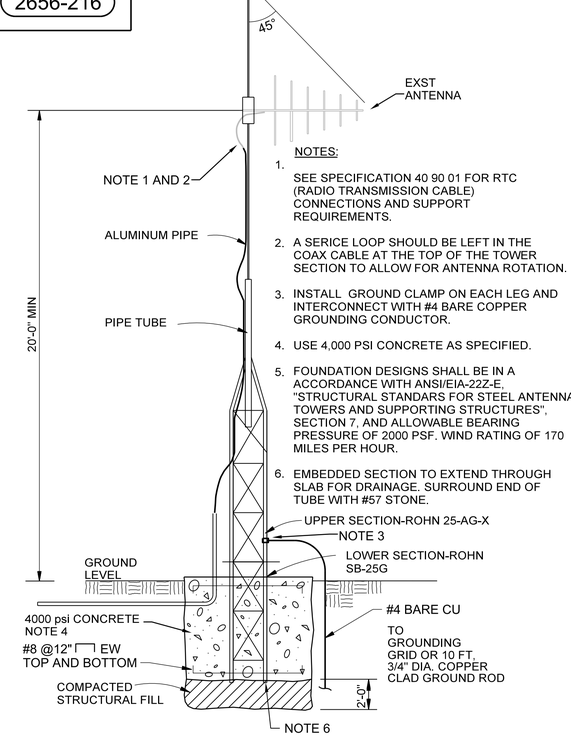
NOTES:

1. CONTRACTOR TO FIELD ROUTE BUBBLER TUBE. UTILIZE EXISTING CONDUIT PENETRATION INTO WET WELL. CONTRACTOR TO EXTEND CONDUIT TO NEW CP-1 LOCATION, UTILIZE EXISTING CONDUIT WHERE PRACTICABLE. PROVIDE NEW 1/4" PLASTIC BUBBLER TUBE FOR ENTIRE DISTANCE FROM CP-1 TO BUBBLER TUBE CONNECTION.

BUBBLER INSTALLATION

NTS

4091-241



NOTES:

1. SEE SPECIFICATION 40 90 01 FOR RTC (RADIO TRANSMISSION CABLE) CONNECTIONS AND SUPPORT REQUIREMENTS.
2. A SERICE LOOP SHOULD BE LEFT IN THE COAX CABLE AT THE TOP OF THE TOWER SECTION TO ALLOW FOR ANTENNA ROTATION.
3. INSTALL GROUND CLAMP ON EACH LEG AND INTERCONNECT WITH #4 BARE COPPER GROUNDING CONDUCTOR.
4. USE 4,000 PSI CONCRETE AS SPECIFIED.
5. FOUNDATION DESIGNS SHALL BE IN A ACCORDANCE WITH ANSI/EIA-222-E, "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES", SECTION 7. AND ALLOWABLE BEARING PRESSURE OF 2000 PSF, WIND RATING OF 170 MILES PER HOUR.
6. EMBEDDED SECTION TO EXTEND THROUGH SLAB FOR DRAINAGE. SURROUND END OF TUBE WITH #57 STONE.

ANTENNA AND MAST

NTS

4091-412

NO.	DATE	DSGN	DR	CHK	APVD	BY	APVD
0	05/09/19	E CARRASCO	E CARRASCO	D NICHOLSON	D NICHOLSON		D NICHOLSON

REVISION

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