

# TOWN OF LONGBOAT KEY, FLORIDA POTABLE WATER SYSTEM SUBAQUEOUS CROSSING OF LONGBOAT PASS AND SYSTEM PRESSURE CONTROLS



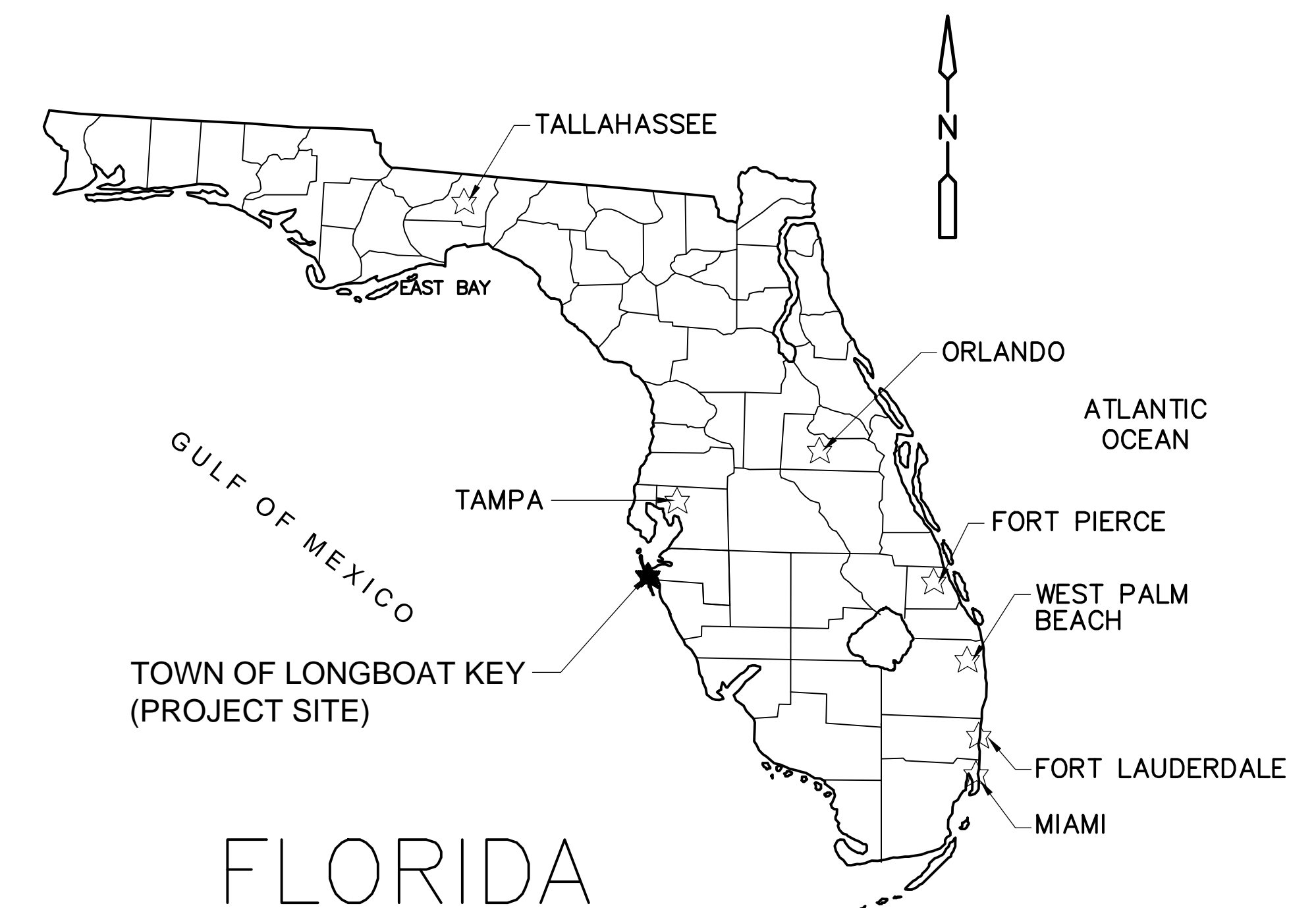
IMAGE OBTAINED FROM GOOGLE EARTH PRO SEPTEMBER 2012

VICINITY MAP



RECORD DRAWING  
SEE SHEET G-1 FOR SHEET INDEX

FEBRUARY 2014



**CDM  
Smith**

1715 NORTH WESTSHORE BOULEVARD, SUITE 875  
TAMPA, FLORIDA 33607  
TEL: 813-281-2900  
FL. CERT. OF AUTHORIZATION NO. EB-0000020

PROJECT NUMBER: 2790-83746

**RECORD DRAWINGS**

- THIS DOCUMENT IS A COMPILED REPRESENTATION OF THE CONSTRUCTED PROJECT.
- THE FOLLOWING SOURCES WERE USED, AND UPON WHICH THE ENGINEER RELIED, IN ITS PREPARATION:  
SPECTRUM UNDERGROUND AND HYATT SURVEY SERVICES, INC.
- THIS DOCUMENT IS BELIEVED TO BE CORRECT TO THE BEST OF THE ENGINEER'S KNOWLEDGE, AND THE ACCURACY OF THE INFORMATION CANNOT BE GUARANTEED.

CDM Smith  
REVIEWED BY: GINA C. CASHON, P.E. Date: JULY 2015  
NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.

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GENERAL NOTES

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF ALL GOVERNING AUTHORITIES.
- PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO CONFIRM THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND BUILDING PERMITS, UTILITY DISCONNECTION AND UTILITY RECONNECTION/NEW SERVICE APPLICATIONS AND FEES.
- ALL ELEVATIONS ARE REFERRED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- TOPOGRAPHIC SURVEY WAS PERFORMED BY:  
GEORGE F. YOUNG, INC.  
299 DR. MARTIN LUTHER KING JR. ST. N.  
ST PETERSBURG, FL. 33701  
PHONE 727-822-4317
- LOCATIONS OF UNDERGROUND UTILITIES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THE CONTRACT DOCUMENTS. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES, NOTIFY INDIVIDUAL UTILITY COMPANIES 7 DAYS PRIOR TO CONSTRUCTION, AND CALL SUNSHINE ONE CALL OF FLORIDA AT 811. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROTECTION OF AND/OR RELOCATION (AS NEEDED) FOR ALL EXISTING UTILITIES AND NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE TO EXISTING UTILITIES.
- THE CONTRACTOR SHALL COORDINATE WITH UTILITY OWNERS FOR ANY UTILITY SERVICE DISCONNECTIONS AND RECONNECTIONS.
- OBSTRUCTIONS WHICH ARE TO REMAIN IN PLACE, SUCH AS SEWERS, DRAINS, WATER OR GAS PIPES, CONDUITS, CABLES, POLES, WALLS, POSTS, ETC. ARE TO BE CAREFULLY PROTECTED. CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO REMOVING ANY OBSTRUCTIONS NOT SPECIFICALLY NOTED ON THE PLANS.
- ALL SITE CLEARING AND CONSTRUCTION DEBRIS AND EXCESS MATERIAL SHALL BE HAULED AWAY AND DISPOSED OF APPROPRIATELY AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR CONTROL OF ALL EROSION AND SEDIMENTATION. THE CONTRACTOR SHALL INSTALL, PRIOR TO THE START OF CONSTRUCTION, AND MAINTAIN DURING CONSTRUCTION ALL SEDIMENT CONTROL MEASURES AS REQUIRED TO RETAIN ALL SEDIMENTS ON THE SITE.
- NO CONSTRUCTION, PARKING, OR STORAGE WILL OCCUR WITHIN THE DRIP LINE OF TREES TO REMAIN. ALL TREE BARRICADES WILL BE IN PLACE PRIOR TO ANY LAND DISTURBANCE.
- CONTRACTOR SHALL VISIT SITE TO FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS AND THE EXTENT OF DEMOLITION, CLEARING & CRUBBING REQUIRED, PRIOR TO BID SUBMISSION.
- ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
- CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR THE LAYOUT OF THE PIPING, SITE IMPROVEMENTS AND WORK INCIDENTAL TO THE PROJECT. ANY DEVIATION FROM THE PRESCRIBED ALIGNMENT NECESSARY TO AVOID CONFLICTS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER OR OWNER.
- CONTRACTOR TO COORDINATE WITH RESPONSIBLE UTILITY FOR PROTECTION/HOLDING OF UTILITY POLES, GUY WIRES, AND GUY ANCHORS IN AREAS OF CONSTRUCTION.
- TO MAINTAIN CONTRACT PLAN CLARITY, ALL SYSTEM AND EQUIPMENT COMPONENTS MAY NOT BE SHOWN. CONTRACTOR IS RESPONSIBLE TO FURNISH AND INSTALL ALL EQUIPMENT, FITTINGS, ADAPTERS, CONNECTORS, PIPING, VALVES, AND OTHER COMPONENTS TO PROVIDE FULLY FUNCTIONAL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
- CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS DURING CONSTRUCTION WHICH SHOW "AS-BUILT" CONDITIONS OF ALL WORK INCLUDING PIPING, STRUCTURES, DIMENSIONS, ELEVATIONS, CRADING, ETC. RECORD DRAWINGS SHALL BE PROVIDED TO THE ENGINEER OF RECORD PRIOR TO REQUESTING FINAL INSPECTION.
- THE CONTRACTOR SHALL NOTIFY FDOT 48 HOURS IN ADVANCE PRIOR TO INITIATING ANY WORK IN THE STATE RIGHTS-OF-WAY.
- NO PROMISE OF BALANCED EARTHWORK IS PROVIDED THROUGH THE PLANS OR THE CONTRACT DOCUMENTS. THE FURNISHING OF REQUIRED SUITABLE MATERIALS OR REMOVAL OF SURPLUS MATERIALS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- GEOTECHNICAL SERVICES PROVIDED BY:  
DRIGGERS ENGINEERING SERVICES  
12220 49TH STREET NORTH  
CLEARWATER, FL 33762  
PHONE: 727-571-1313
- RELOCATION OF OBSTRUCTIONS OWNED BY PRIVATE PROPERTY OWNERS, SUCH AS MAIL BOXES, FENCES, SHEDS, LAWN FURNITURE, ANIMAL SHELTERS AND ENCLOSURES, ETC. SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR WHO MUST COORDINATE WITH THE PROPERTY OWNER.
- THE CONTRACTOR SHALL PLACE AND MAINTAIN ADEQUATE BARRICADES, CONSTRUCTION SIGNS, FLASHING LIGHTS, TORCHES, RED LANTERNS AND GUARDS DURING PROCESS OF CONSTRUCTION WORK IN PUBLIC ROADWAYS, IN ACCORDANCE WITH APPLICABLE FDOT REGULATIONS.
- ALL AREAS, NOT PAVED, DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED BY SODDING UNLESS OTHERWISE INDICATED. SOD SHALL BE PLACED, WATERED AND FERTILIZED IN ACCORDANCE WITH THESE CONSTRUCTION DOCUMENTS.
- A MINIMUM SEPARATION OF 10 FEET HORIZONTALLY AND 18 INCHES VERTICALLY MUST BE MAINTAINED BETWEEN WATER AND SEWER LINES. IF THIS SEPARATION IS NOT POSSIBLE, THE SEWER LINE MUST BE ENCASED IN CONCRETE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR AND COMPLY WITH ANY TESTING REQUIRED BY THE LOCAL GOVERNING AGENCY IN ADDITION TO THE TESTING REQUIREMENTS OUTLINED IN THE SPECIFICATIONS.
- MAINTENANCE OF TRAFFIC (MOT) ALONG STATE ROADS SHALL BE PER FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARDS.
- PRECONSTRUCTION PHOTOS AND/ OR VIDEO SHALL INCLUDE ALL RIGHT-OF-WAY AND PRIVATE PROPERTIES ADJACENT TO ALL WORK.
- CONTRACTOR SHALL LOCATE AND COORDINATE THE CONTRACTOR'S FIELD OFFICE SPACE (WHICH MAY, OR MAY NOT, BE A TRAILER). SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- ALL PIPE AND FITTINGS SHALL BE RESTRAINED.

SURVEYOR'S REPORT

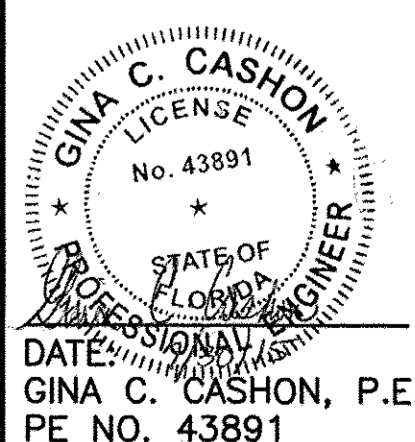
- TYPE OF SURVEY: TOPOGRAPHIC AND HYDROGRAPHIC.
- LIMITS: EAST SIDE OF STATE ROAD 789, FROM EDGE OF PAVEMENT TO APPARENT RIGHT OF WAY, OR TO WATER'S EDGE, WHICHEVER WAS LESS, FROM 150 FEET SOUTH OF NORTH SHORE ROAD TO 1500 FEET NORTH OF LONGBOAT PASS BRIDGE.
- SURVEY DATE: HYDROGRAPHIC SURVEY WAS PERFORMED ON JUNE 5, 2012 AND CAN ONLY INDICATE THE GENERAL CONDITIONS EXISTING ON THIS DAY. TOPOGRAPHIC SURVEY OF UPLANDS WAS COMPLETED ON MAY 30, 2012.
- PREPARED FOR: CDM SMITH AND THE TOWN OF LONGBOAT KEY.
- COORDINATES AND ELEVATIONS ARE RELATIVE HORIZONTALLY TO THE NORTH AMERICAN DATUM OF 1983, 2007 ADJUSTMENT (NAD83/07) AND VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). PRIMARY CONTROL WAS ESTABLISHED USING GLOBAL POSITIONING SYSTEM METHODOLOGY.
- BASELINE DEPICTED IS FOR REFERENCE PURPOSES ONLY AND IS NOT BASED ON A RETRACEMENT OF HISTORIC FDOT ALIGNMENT.
- APPARENT RIGHT OF WAY LINES SHOWN HEREIN ARE NOT BASED ON A BOUNDARY, RIGHT OF WAY, OR BASELINE RETRACEMENT. RIGHT OF WAY LINES SHOWN ARE BASED UPON FOUND FIELD MONUMENTATION FOUND TO BE HARMONIOUS WITH LAST DEEDS OF RECORD, RIGHT-OF-WAY MAP SECTION NO. 1308-176 DATED 1956, AND PLATS OF RECORD.
- THE CONTOURS SHOWN UPON THIS SURVEY WERE CREATED BY INTERPOLATION FROM ELEVATIONS PHYSICALLY MEASURED DURING THE TOPOGRAPHIC FIELD SURVEY. FOR PURPOSES OF CLARITY, THE SPOT SHOTS OBSERVED FOR THIS SURVEY HAVE NOT BEEN SHOWN. THE ELECTRONIC LAND DEVELOPMENT DESKTOP DATABASE AND AUTOCAD DRAWING CONTAINS THE POINT DATA WHICH WAS USED TO DERIVE THE DIGITAL TERRAIN MODEL AND CONTOUR LINES.
- GEORGE F. YOUNG, INC. ACCEPTS NO RESPONSIBILITY FOR THE IDENTIFICATION OF THE TREE SPECIES SHOWN HEREON. EVERY EFFORT HAS BEEN MADE TO PROPERLY IDENTIFY THE TREES SHOWN HEREON, HOWEVER, TREE IDENTIFICATION IS OUTSIDE THE AREA OF EXPERTISE OF A PROFESSIONAL SURVEYOR AND MAPPER. THE TREE TYPES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY AND SHOULD ONLY BE USED AFTER CONFIRMATION BY A CERTIFIED ARBORIST OR OTHER SUCH PROFESSIONAL.
- SUBSURFACE UTILITIES WERE ELECTRONICALLY DESIGNATED AND ARE NOT BASED ON PHYSICAL EXCAVATIONS.
- UTILIZATION OF THE ABOVE EQUIPMENT AND METHODS IS THE INDUSTRY RECOGNIZED PROCEDURE FOR FINDING AND LOCATING UNDERGROUND UTILITIES. ALTHOUGH EFFECTIVE AND RELIABLE, THERE IS THE POSSIBILITY THAT ALL UTILITIES MAY NOT BE DETECTED DUE TO ENVIRONMENTAL CONDITIONS, SOIL CONDITIONS, WATER TABLE, EXCESSIVE DEPTH, AND/OR FEATURE MAKEUP.
- UTILITIES LOCATED WITHIN LONGBOAT PASS WERE PERFORMED BY DIVE TECH AND BOUY LOCATIONS SURVEYED BY GEORGE F. YOUNG, INC. ELEVATIONS OF BOUY LOCATIONS DESCRIBED AS "EXPOSED" ARE EXPOSED ABOVE SURFACE TO VARYING DEGREES PER DIVE TECH, AND AS SUCH, ELEVATIONS LISTED ARE BASED ON THE APPROXIMATE SURFACE ELEVATION. OTHER ELEVATIONS AT BOUY LOCATIONS ARE DERIVED BY SUBTRACTING THE DEPTH OF COVER REPORTED BY DIVE TECH, FROM THE APPROXIMATE SURFACE ELEVATION UNLESS LISTED AS "DIRECT SHOT" WHICH ARE DIRECTLY MEASURED ELEVATIONS.
- THE INTENDED DISPLAY SCALE OF THIS MAP OF SURVEY, IS 1" = 40' OR 1:480.
- ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES ARE PROHIBITED WITHOUT THE WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.

UTILITY CONTACT INFORMATION

DAVID ALVAREZ FLORIDA POWER AND LIGHT 2900 CATHERINE ST. PALATKA, FL. 32177 1-800-868-9554	JOHN MICHAEL LONGBOAT KEY UTILITIES 600 GENERAL HARRIS STREET LONGBOAT KEY, FLORIDA 34228 (941) 316-1988	CONZALO ROJAS COMCAST CABLEVISION OF WEST FLORIDA 174 RICH ST. VENICE, FL. 34292 (941)-342-3578
PATTI REID VERIZON FLORIDA INC. 1701 RINCLING BLVD. SARASOTA, FL. 34236 (941)-906-6711	DANIEL J. SHANAHAN PEOPLES GAS SYSTEM TECO - PEOPLES GAS 8261 VICO CT. SARASOTA, FL. 34240 (941)-342-4006	KATHY McMAHON MANATEE COUNTY UTILITIES 4422-C 66TH STREET WEST BRADENTON, FL. 34210 (941)-792-8811 EXT. 5002

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- REVIEWED BY: GINA C. CASHON, P.E. Date: JULY 2015
- CDM Smith
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DATE: \_\_\_\_\_  
GINA C. CASHON, P.E.  
PE NO. 43891

PROJECT NO. 2790-83746  
FILE NAME: G001SNXG.DWG

SHEET NO.

G-1

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**CDM Smith**  
1715 North Westshore Blvd., Suite 875  
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FL COA No. EB-000020

DESIGNED BY: K. LOWE  
DRAWN BY: D. AUST  
SHEET CHK'D BY: J. HOFFMAN  
CROSS CHK'D BY: K. LOWE  
APPROVED BY: G. CASHON  
DATE: FEBRUARY 2014

REV. NO.	DATE	DRWN	CHKD	REMARKS
6/15	JJM	VCS		RECORD DRAWINGS
6/14	PEA	VCS		CONFORMED DRAWINGS

TOWN OF LONGBOAT KEY, FLORIDA  
POTABLE WATER SYSTEM SUBAQUEOUS  
CROSSING OF LONGBOAT PASS AND  
SYSTEM PRESSURE CONTROLS

INDEX AND GENERAL NOTES

ABBREVIATIONS

GENERAL

ALUMINUM	AL., ALUM.
ANGLE	<
AUST	AUSTRALIAN
BE	BURIED ELECTRIC
BENCH MARK	B.M.
BETWEEN	BTWN.
BFO	BURIED FIBER OPTIC
BFP	BACKFLOW PREVENTOR
BOB	BOTTOM OF BANK
BT	BURIED TELEPHONE
CENTER LINE	CL
CENTER TO CENTER	C.C.
CONC.	CONCRETE
DIAMETER	DIA., DIAM.
DIAGONAL	DIAG.
DIMENSION	DIM.
DISCHARGE	DISC.
DRAWING	DWG.
EACH	EA.
ELEVATION	EL., ELEV.
EFFLUENT	EFF.
EXISTING	EXIST.
FCM	FOUND CONCRETE MONUMENT
FIR	FOUND IRON ROD
FOP	FOUND OPEN PIPE
FINISH	FIN.
FLOOR	FL.
GPS	GLOBAL POSITIONING SYSTEM
HIGH	H.
HIGH POINT	H.P.
INFLUENT	INFL.
LB	LICENSED BUSINESS
LS	LICENSED SURVEYOR
LONG	LG.
LIGHT POLE	L.P.
MATERIAL	MTL.
MANUFACTURE	MFG.
MAXIMUM	MAX.
MECHANICAL	MECH.
METAL	MET.
MINIMUM	MIN.
MOUNTED	MTD.
NOMINAL	NOM.
NOT TO SCALE	N.T.S.
NUMBER	NO.
OHL	OVERHEAD LINE
ON CENTER	O.C.
OPTION	OPT.
OPPOSITE	OPP.
OPENING	OPNG.
OR EQUAL	O/E.
P.B.	PLAT BOOK
PED	PEDESTRIAN
PET	POLYETHYLENE TUBING
PG.	PAGE
PSM	PROFESSIONAL SURVEYOR AND MAPPER
PIECE	PC.
POINT	PT.
POUND	LB.
PLATE	PL.
RADIUS	RAD., R.
REQUIRED	REQ'D
RIGHT OF WAY	R/W
ROOM	RM.
SQUARE	SQ.
STAINLESS STEEL	S.S.
SIDEWALK	SDWK.
SHEET	SH., SHT.

SYMBOLS

GENERAL

SYMMETRICAL
SECTION
STANDARD
STEEL
THICK
TELE
TOE
TOB
TOS
TYP
TYPICAL
TEMPORARY
THREADED
UTILITY EASEMENT
VERTICAL
WATER
WATER MAIN
WEST
WITH
WATER LEVEL
WEATHERPROOF
WATER
XING

VALVES, FITTINGS, ETC.

AIR CUSHION CHECK VALVE
AIR RELIEF VALVE
BALL CHECK VALVE
BALL VALVE
BLIND FLANGE
BURIED GEAR OPERATOR
BUTTERFLY VALVE
CHECK VALVE
ELECTRIC VALVE ACTUATOR
ELEVATED GEAR OPERATOR
EXPANSION JOINT
FIRE HYDRANT
FITTINGS
FLANGED ADAPTER COUPLING
FLEXIBLE COUPLING
FLOOR BOX (BUSHING TYPE)
FLOOR STAND
GATE VALVE
HARNESSED FLANGE ADAPTER COUPLING
HOSE BIBB
HYDRAULIC VALVE ACTUATOR
MECHANICAL JOINT PLUG
PLASTIC BALL VALVE
PLASTIC CHECK VALVE
PLUG VALVE
REDUCER
SILENT CHECK VALVE
TAPPING VALVE AND SLEEVE
UNION
VALVE BOX
VICTAULIC COUPLING (GROOVED ENDS)
VICTAULIC COUPLING (SHOULDERED ENDS)
WALL SLEEVE
WALL PIECE (WITH WATER STOP)

SYMBOLS

SYMM.
SEC.
ST'D
STL.
THK.
TELEPHONE
TEMPORARY CONSTRUCTION EASEMENT
TOP OF BANK
TOE OF SLOPE
TYPICAL
TYP.
TEMP.
THD.
U.E.
VERT.
W
WM
W.
W/
W.L.
WPF.
WTR.
CROSSING

SYMBOLS

ACCV
ARV
BCV
BV
B.F.
BO
BFV
CV
EVA
EO
EXJ
FH
FTG
FAC
FC
FB
FS
GV
HFAC
HB
HVA
MJP
PBV
PCV
PV
RED
SCV
TVS
UN
VB
VC (G)
VC (S)
WS
WP

PIPE

ASBESTOS CEMENT PIPE
BLACK STEEL PIPE
CAST IRON
CAST IRON PIPE
CAST IRON SOIL PIPE
CONCRETE PRESSURE PIPE
COPPER PIPE
DUCTILE IRON PIPE
DUCTILE IRON
FIBERGLASS REINFORCED PIPE
FLANGE
FUSIBLE POLYVINYLCHLORIDE
GALVANIZED STEEL PIPE
HIGH DENSITY POLYETHYLENE
MECHANICAL JOINT
METAL REINFORCED PLASTIC PIPE
POLYETHYLENE PIPE
POLYVINYLCHLORIDE
REINFORCED CONCRETE PIPE
RESTRAINED JOINT
SLIP-ON JOINT
STEEL PIPE
TIED JOINT
VITRIFIED CLAY PIPE

SYMBOLS

ACP
BSP
CI
CIP
CISP
CPP
CU
DIP
DI
FRP
FLG
FPVC
GSP
HDPE
GSP
MRPP
PP
PVC
RCP
RJ
SJ
SP
TJ
VCP

SURVEY

GAS VALVE
INVERT
MAILBOX
OVERHEAD UTILITIES
RIGHT-OF-WAY
SIGN
SANITARY SEWER MANHOLE
TELEPHONE RISER
UTILITY POLE
UNDERGROUND TELEPHONE CABLE
WATER METER
WATER VALVE
GV
INV
MB
OHU
R/W
SN
SSMH
TR
UP
UTC
WM
WV

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 POTABLE WATER SYSTEM SUBAQUEOUS  
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**GINA C. CASHON**  
 LICENSE No. 43891  
 STATE OF FLORIDA  
 PROFESSIONAL ENGINEER

DATE: July 16, 2015  
 GINA C. CASHON, P.E.  
 PE NO. 43891

PROJECT NO. 2790-83746  
 FILE NAME: G002SNXG.DWG

SHEET NO.  
**G-2**

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**PIPING SYMBOLOGY**

DOUBLE LINE SYMBOL	SINGLE LINE SYMBOL	FEATURE
		WELDED JOINT
		FLANGED JOINT SIMPLIFIED REPRESENTATION.
		FLANGED JOINT COMPLEX REPRESENTATION.
		MECHANICAL JOINT SIMPLIFIED REPRESENTATION.
		MECHANICAL JOINT COMPLEX REPRESENTATION.
		MECHANICAL JOINT RESTRAINED
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT SIMPLIFIED REPRESENTATION
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT COMPLEX REPRESENTATION
		PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT RESTRAINED
		BALL JOINT
		DIRECTION OF FLOW
		PLAIN END x PLAIN END PIPE COUPLING
		PLAIN END x PLAIN END PIPE COUPLING RESTRAINED
		FLANGE x PLAIN END PIPE COUPLING
		FLEXIBLE COUPLING OR EXPANSION JOINT (SLEEVE TYPE)
		FLEXIBLE COUPLING OR EXPANSION JOINT (BELLOWS TYPE)
		COUPLING FOR VICIALTIC JOINTS: (G) GROOVED
		(S) SHOULDERED
		FLANGE GUARD
		FLANGE FILLER
		UNION
		QUICK CONNECT COUPLING
		HOSE COUPLING

**PIPE AND FITTING SYMBOL NOTES:**

- SIMPLIFIED JOINT SYMBOL IS USED FOR ALL SINGLE LINE PIPING SHOWN ON THE INTERIOR AND EXTERIOR PIPING DRAWINGS.
- BOTH SIMPLIFIED AND COMPLEX JOINT REPRESENTATIONS MAY BE SHOWN ON THE DRAWINGS.
- UNLESS MODIFIED BY THE GENERAL PROJECT NOTES OR DETAILED ON THE LAYOUT AND SCHEMATIC DRAWINGS PIPE AND FITTING JOINT REQUIREMENTS FOR THE VARIOUS PIPE MATERIALS ARE DEFINED IN THE SPECIFICATIONS.

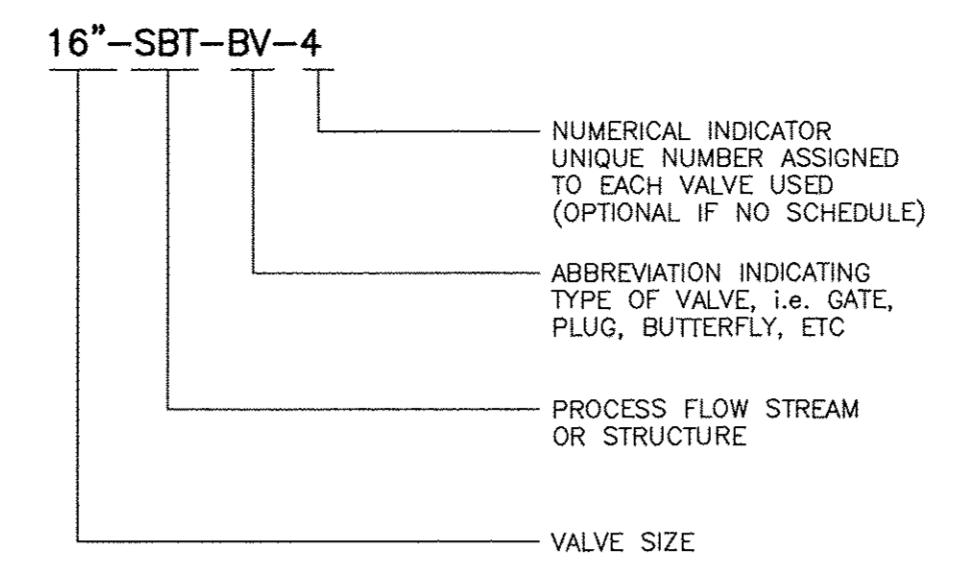
**VALVE SYMBOLOGY**

SYMBOL	FEATURE
	UNCLASSIFIED, TYPE AS SHOWN ON THE DRAWINGS ADJACENT TO SYMBOL
	FLOW METER
	TELESCOPING VALVE
	VALVE WITH HOSE END
	GATE VALVE
	KNIFE GATE VALVE
	GLOBE VALVE
	BALL VALVE
	3-WAY BALL VALVE
	4-WAY BALL VALVE
	CONE VALVE
	NEEDLE VALVE
	PINCH VALVE
	DIAPHRAGM VALVE
	PLUG VALVE
	3-WAY PLUG VALVE
	4-WAY PLUG VALVE
	CHECK VALVE, GENERAL SYMBOL
	BALL CHECK VALVE
	DOUBLE DOOR CHECK VALVE
	ANGLE VALVE
	SOLENOID VALVE
	THREE WAY SOLENOID VALVE
	FOUR WAY SOLENOID VALVE
	MOTOR OPERATED VALVE
	FLAP VALVE
	SHEAR GATE
	MUD VALVE
	FLOOR DRAIN
	OPEN EQUIPMENT DRAIN
	ECCENTRIC REDUCER OR REDUCING BUSHING
	CONCENTRIC REDUCER OR REDUCING BUSHING
	Y-STRAINER
	CALIBRATION CYLINDER
	AIR RELEASE VALVE

**SYMBOL SYMBOLOGY**

	ANTENNA
	BUOY
	SERVICE BOX - CABLE TV
	CONCRETE MONUMENT
	CONCRETE POWER POLE
	WITNESS POST
	FIRE HYDRANT
	GUY ANCHOR
	MAILBOX
	MANHOLE - UNKNOWN UTILITY
	LIGHT POLE
	METER - ELECTRIC
	METER - WATER
	POST
	SHARED UTILITY POLE
	SHRUB
	SINGLE SUPPORT SIGN
	TELEPHONE PEDESTAL/SERVICE
	TRASH CAN
	TREE - CEDAR
	TREE - UNKNOWN OR AS LABELED
	TREE - OAK
	TREE - PALM
	TREE - PINE
	VALVE COVER - RECLAIMED
	VALVE COVER - SANITARY
	VALVE COVER - WATER
	VALVE - WATER
	PULLBOX
	POWER POLE - WOOD

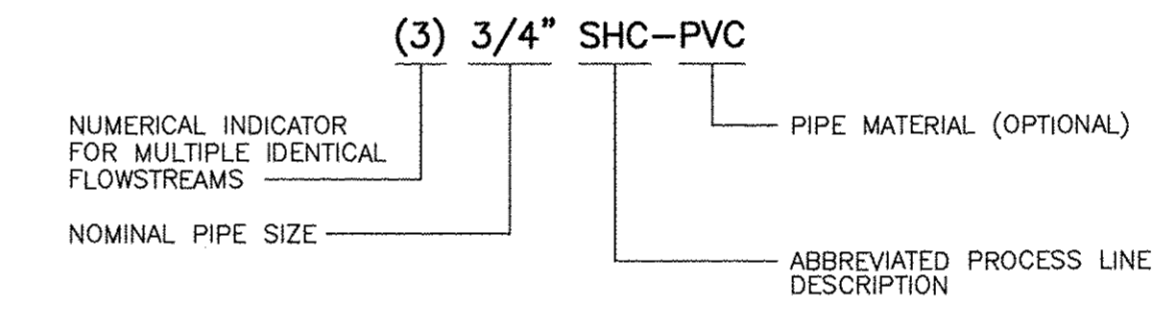
**VALVE TAG (OPTIONAL)**



**PIPELINE APPURTENANCES SYMBOLOGY**

DOUBLE LINE SYMBOL	SINGLE LINE SYMBOL	FEATURE
		FLOW METER, GENERAL SYMBOL
		VENTURI FLOW METER
		FLOOR DRAIN
		OPEN EQUIPMENT DRAIN
		Y-STRAINER
		CALIBRATION CYLINDER

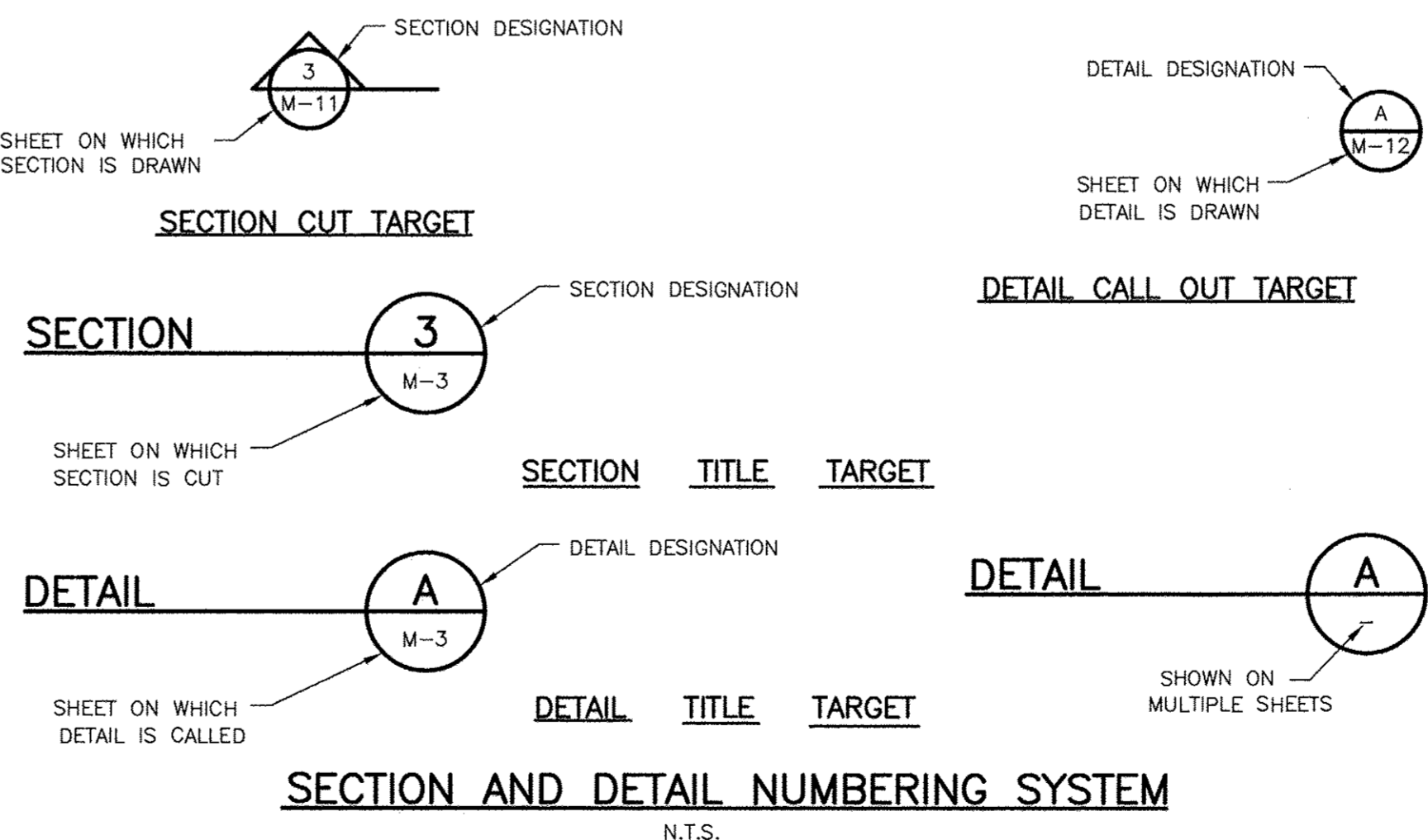
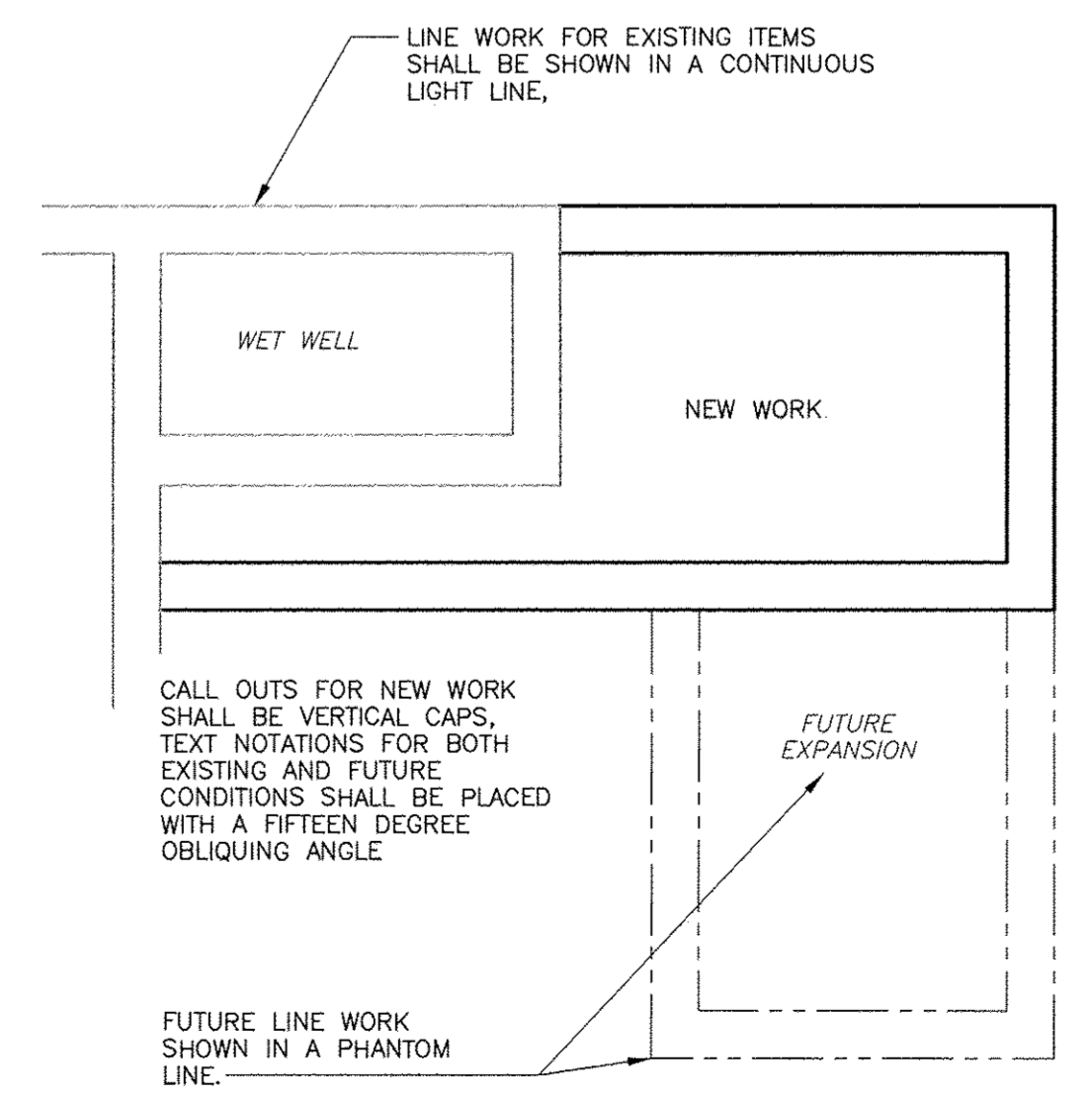
**PIPE TAG**



**LEGEND**

	NEW WATER MAIN THIS PROJECT
	EXISTING WATER MAIN
	EXISTING SANITARY SEWER W/ MANHOLE
	EXISTING FORCE MAIN
	EXISTING LIGHT POLE
	EXISTING GAS MAIN
	EXISTING GAS LINE MARKER
	COMBINATION ARV
	FIRE HYDRANT
	BURIED ELECTRIC
	BURIED FIBER OPTIC
	BURIED TELEPHONE
	APPARENT RIGHT OF WAY
	APPARENT PROPERTY LINES
	OVERHEAD UTILITY LINES
	NEW MAIN TO BE CONST. UNDER EXISTING UTILITY
	NEW MAIN TO BE CONST. OVER EXISTING UTILITY
	WATER BORING
	SOIL BORING
	BENCH MARK
	EXISTING CHAIN LINK FENCE
	NEW/ TEMPORARY CHAIN LINK FENCE
	NEW STRUCTURES
	EXISTING STRUCTURES (TO REMAIN)
	EXISTING STRUCTURES (TO BE REMOVED)
	NEW CONCRETE SLAB OR SIDEWALKS
	FUTURE STRUCTURE
	EXISTING ELEVATION
	EXISTING CATCH BASIN
	EXISTING WATER VALVE
	EXISTING WOOD POST
	TEMPORARY CONSTRUCTION EASEMENT
	SOVEREIGN SUBMERGED LAND EASEMENT

**EXISTING OR FUTURE CONDITION DESIGNATION**



**RECORD DRAWINGS**

- THIS DOCUMENT IS A COMPILED REPRESENTATION OF THE CONSTRUCTED PROJECT.
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- THIS DOCUMENT IS BELIEVED TO BE CORRECT TO THE BEST OF THE ENGINEER'S KNOWLEDGE, AND THE ACCURACY OF THE INFORMATION CANNOT BE GUARANTEED.

CDM Smith  
 REVIEWED BY: GINA C. CASHON, P.E. Date: JULY 2015  
 NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.

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REV. NO.	DATE	DRWN	CHKD	REMARKS
6/15	JJM	VCS		RECORD DRAWINGS
6/14	PEA	VCS		CONFORMED DRAWINGS

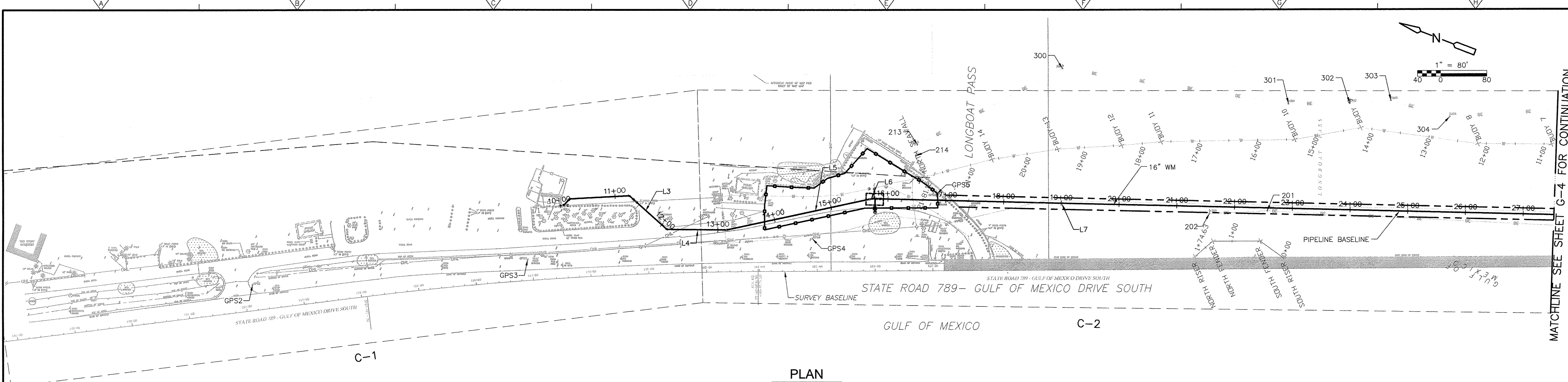
DESIGNED BY:	K. LOWE
DRAWN BY:	D. AUST
SHEET CHK'D BY:	J. HOFFMAN
CROSS CHK'D BY:	K. LOWE
APPROVED BY:	G. CASHON
DATE:	FEBRUARY 2014

TOWN OF LONGBOAT KEY, FLORIDA  
**POTABLE WATER SYSTEM SUBAQUEOUS CROSSING OF LONGBOAT PASS AND SYSTEM PRESSURE CONTROLS**

**SYMBOLS AND LEGEND**

GINA C. CASHON  
 LICENSE No. 43891  
 DATE: JULY 2015  
 GINA C. CASHON, P.E.  
 PE NO. 43891

PROJECT NO. 2790-83746  
 FILE NAME: G003SYMB.DWG  
 SHEET NO. G-3



PLAN

BOUY LOCATIONS: POWER LINES				
POINT#	NORTHING	EASTING	DESCRIPTION	ELEVATION
201	1131266.6	433147.2	EXPOSED 4" ABANDONED POWER	-24'
202	1131358.3	433107.2	EXPOSED 4" ABANDONED POWER	-24'
203	1130558.2	433377.4	EXPOSED 4" ABANDONED POWER	-16'
213	1131873.2	433037.6	EXPOSED 4" ACTIVE POWER	-12'
214	1131868.8	433018.4	EXPOSED 4" ACTIVE POWER	-8'
215	1129901.3	433653.2	4" ACTIVE POWER (DIRECT SHOT)	-3.0'
216	1129917.0	433648.8	4" ACTIVE POWER (DIRECT SHOT)	-4.3'
218	1129942.1	433642.7	4" ACTIVE POWER (DIRECT SHOT)	-4.5'
219	1129970.1	433634.6	4" ACTIVE POWER (DIRECT SHOT)	-6.0'
220	1130013.1	433624.1	4" ACTIVE POWER (DIRECT SHOT)	-4.8'
300	1131685.8	433249.9	4" ACTIVE POWER(TONE ONLY)	UNKNOWN
301	1131298.5	433332.6	4" ACTIVE POWER (4' COVER)	-17'
302	1131199.8	433371.4	4" ACTIVE POWER (3' COVER)	-13'
303	1131134.8	433401.4	4" ACTIVE POWER (3' COVER)	-12'
304	1131029.5	433411.7	EXPOSED 4" ACTIVE POWER	-11'
305	1130675.4	433573.3	EXPOSED 4" ACTIVE POWER	-12'
306	1130540.0	433615.6	EXPOSED 4" ACTIVE POWER	-15'
307	1130377.8	433673.5	4" ACTIVE POWER (2' COVER)	-14'
308	1130284.6	433657.0	4" ACTIVE POWER (2' COVER)	-8'
309	1130225.1	433649.3	4" ACTIVE POWER (2' COVER)	-8'
310	1130170.9	433619.7	4" ACTIVE POWER (2' COVER)	-8'
311	1130110.9	433598.3	4" ACTIVE POWER (2' COVER)	-4'

BOUY LOCATIONS: SUBAQUEOUS 16" DIA. WATER LINE				
LOCATION	WATER DEPTH (MLW)	PIPE ELEVATION	OVER BURDEN	
SOUTH VALVE	N/A	N/A	N/A	
BUOY1	-2.6	-5.6	3.0	
BUOY2	-2.3	-5.3	3.0	
BUOY3	-5.1	-8.1	3.0	
BUOY4	-12.1	-16.1	4.0	
BUOY5	-13.2	-17.2	4.0	
BUOY6	-13.8	-18.3	4.5	
BUOY7	-6.8	-16.3	9.5	
BUOY8	-11.7	-18.7	7.0	
BUOY9	-11.9	-18.4	6.5	
BUOY10	-14.2	-18.2	4.5	
BUOY11	-13.7	-17.7	4.0	
BUOY12	-18.0	-18.2	EXPOSED	
BUOY13	-17.2	-17.7	0.5	
BUOY14	-15.7	-15.4	EXPOSED	
NORTH SEAWALL	-0.8	-0.6	EXPOSED	

NOTES FOR SUBAQUEOUS 16" DIA. WATER LINE:

1. INFORMATION TAKEN FROM THE RECORD SURVEY OF LONGBOAT PASS PIPELINE OCT. 2007 BY GEORGE F. YOUNG.
2. WATER DEPTH, OVERBURDEN, AND ELEVATION OF PIPE INFORMATION FOUND IN THE TABLE SHOWN HEREON WAS PROVIDED BY DIVE TECH INTERNATIONAL.
3. ELEVATIONS REFER TO MEAN LOW WATER (MLW) DETERMINED BY DIVE TECH INTERNATIONAL AND MEASUREMENTS ARE IN DECIMAL FEET.
4. HORIZONTAL COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (N.A.D. 83), STATE PLANE COORDINATE SYSTEM, FLORIDA WEST ZONE IN U.S. SURVEY FEET.
5. HORIZONTAL CONTROL IS BASED ON USCG BEACON AT MACDILL AIR FORCE BASE.
6. A TRIMBLE DGPS SURVEYING SYSTEM WITH SUB-METER REAL-TIME ACCURACY WAS USED TO LOCATE BUOYS.
7. THE INFORMATION DEPICTED HEREON REPRESENTS A SURVEY MADE ON 8/03/07 AND CAN ONLY INDICATE THE GENERAL CONDITIONS EXISTING ON SAID DATE.
8. THIS IS NOT A BOUNDARY SURVEY

PRIMARY CONTROL POINTS				
NAME	NORTHING	EASTING	ELEV	DESCRIPTION
GPS1	1133306.73	432086.20	4.56	1/2" IRON ROD GFY
GPS2	1132861.94	432399.65	5.48	1/2" IRON ROD GFY
GPS3	1132431.32	432611.05	5.68	1/2" IRON ROD GFY
GPS4	1131984.59	432821.19	8.86	1/2" IRON ROD GFY
GPS5	1131811.14	432970.78	3.65	1/2" IRON ROD GFY
GPS6	1129751.79	433607.61	14.07	RIVET AND DISK GFY
GPS7	1129450.80	433744.26	9.72	1/2" IRON ROD GFY
GPS8	1129030.81	433707.69	4.67	1/2" IRON ROD GFY

NOTE FOR PRIMARY CONTROL POINTS:

GPS1 AND GPS8 ARE OUTSIDE OF AREA SHOWN

ALIGNMENT LINE DATA						
LINE #	BEARING	DISTANCE	START STATION	END STATION	START POINT	END POINT
L3	S21° 08' 30.13"W	86.55	11+24.43	12+10.98	N=1132306.66 E=432776.35	N=1132225.93 E=432745.14
L4	S20° 35' 13.06"E	105.65	12+10.98	13+16.63	N=1132225.93 E=432745.14	N=1132127.03 E=432782.29
L5	S33° 11' 15.69"E	251.67	13+16.63	15+68.31	N=1132127.03 E=432782.29	N=1131916.41 E=432920.05
L6	S24° 07' 40.88"E	4.60	15+68.31	15+72.91	N=1131916.41 E=432920.05	N=1131912.21 E=432921.93
L7	S19° 37' 42.83"E	2271.66	15+72.91	38+44.57	N=1131912.21 E=432921.93	N=1129772.55 E=433685.03
L8	S69° 08' 03.44"W	19.16	38+44.57	38+63.73	N=1129772.55 E=433685.03	N=1129765.73 E=433667.12
L9	S20° 31' 31.24"E	0.33	38+63.73	38+64.06	N=1129765.73 E=433667.12	N=1129765.42 E=433667.24
L10	S20° 08' 53.78"E	64.20	20+00.00	20+64.20	N=1129806.71 E=433679.45	N=1129746.44 E=433701.56
L11	S2° 22' 30.18"E	56.04	20+64.20	21+20.24	N=1129746.44 E=433701.56	N=1129690.44 E=433703.88
L12	S19° 36' 37.31"E	43.88	21+20.24	21+64.12	N=1129690.44 E=433703.88	N=1129649.11 E=433718.61
L13	S17° 13' 21.99"E	52.63	21+64.12	22+16.75	N=1129649.11 E=433718.61	N=1129598.84 E=433734.19
L14	S8° 11' 54.62"E	117.79	22+16.75	23+34.54	N=1129598.84 E=433734.19	N=1129482.26 E=433750.99
L15	S9° 23' 16.59"E	38.21	23+76.62	24+14.84	N=1129440.41 E=433755.50	N=1129402.71 E=433761.73
L16	S1° 39' 43.84"W	33.56	24+14.84	24+48.40	N=1129402.71 E=433761.73	N=1129369.16 E=433760.76

**RECORD DRAWINGS**

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REVIEWED BY: GINA C. CASHON, P.E. Date: JULY 2015  
**CDM Smith**  
NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.

GENERAL NOTES:

1. EXACT LOCATION AND ELEVATION INFORMATION IS NOT AVAILABLE FOR THE EXISTING VERIZON UTILITY.
2. WITHIN CONSTRUCTION ACTIVITIES CONTRACTOR TO FIELD LOCATE AND PROTECT ALL EXISTING UTILITIES.

**GINA C. CASHON**  
 LICENSE  
 No. 43891  
 DATE: 7/20/2015  
 GINA C. CASHON, P.E.  
 PE. NO. 43891

XREFS: [CE-SURVEY, C-BASE-PLAN, CDM-2436, CE\_ADD\_SURVEY] Images: []  
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REV. NO.	DATE	DRWN	CHKD	REMARKS
6/15	JJM	VCS		RECORD DRAWINGS
6/14	PEA	VCS		CONFORMED DRAWINGS

DESIGNED BY: K. LOWE  
 DRAWN BY: D. AUST  
 SHEET CHK'D BY: J. HOFFMAN  
 CROSS CHK'D BY: K. LOWE  
 APPROVED BY: G. CASHON  
 DATE: FEBRUARY 2014

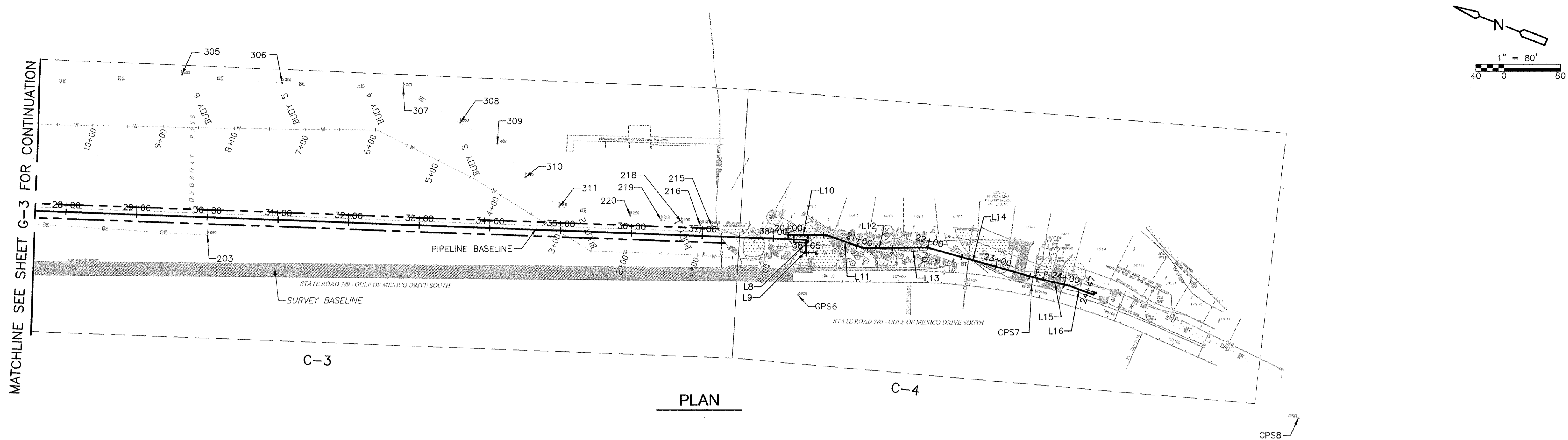
**CDM Smith**  
 1715 North Westshore Blvd., Suite 875  
 Tampa, FL 33607  
 Tel: (813) 281-2900  
 FL COA NO. EB-000020

TOWN OF LONGBOAT KEY, FLORIDA  
 POTABLE WATER SYSTEM SUBAQUEOUS  
 CROSSING OF LONGBOAT PASS AND  
 SYSTEM PRESSURE CONTROLS

HORIZONTAL CONTROL AND  
 KEY SHEET

PROJECT NO. 2790-83746  
 FILE NAME: G004PLPF.DWG  
 SHEET NO.  
**G-4**

XREFs: [CE-SURVEY, C-BASE-PLAN, GMS-2438, CE\_ADD\_SURVEY] Images: [ ]  
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SOUTH VALVE	N/A	N/A	N/A
BUOY1	-2.6	-5.6	3.0
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BUOY4	-12.1	-16.1	4.0
BUOY5	-13.2	-17.2	4.0
BUOY6	-13.8	-18.3	4.5
BUOY7	-6.8	-16.3	9.5
BUOY8	-11.7	-18.7	7.0
BUOY9	-11.9	-18.4	6.5
BUOY10	-14.2	-18.2	4.5
BUOY11	-13.7	-17.7	4.0
BUOY12	-18.0	-18.2	EXPOSED
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**NOTE FOR PRIMARY CONTROL POINTS:**  
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L6	S24° 07' 40.88"E	4.60	15+68.31	15+72.91	N=1131916.41 E=432920.05	N=1131912.21 E=432921.93
L7	S19° 37' 42.83"E	2271.66	15+72.91	38+44.57	N=1131912.21 E=432921.93	N=1129772.55 E=433685.03
L8	S69° 08' 03.44"W	19.16	38+44.57	38+63.73	N=1129772.55 E=433685.03	N=1129765.73 E=433667.12
L9	S20° 31' 31.24"E	0.33	38+63.73	38+64.06	N=1129765.73 E=433667.12	N=1129765.42 E=433667.24
L10	S20° 08' 53.78"E	64.20	20+00.00	20+64.20	N=1129806.71 E=433679.45	N=1129746.44 E=433701.56
L11	S2° 22' 30.18"E	56.04	20+64.20	21+20.24	N=1129746.44 E=433701.56	N=1129690.44 E=433703.88
L12	S19° 36' 37.31"E	43.88	21+20.24	21+64.12	N=1129690.44 E=433703.88	N=1129649.11 E=433718.61
L13	S17° 13' 21.99"E	52.63	21+64.12	22+16.75	N=1129649.11 E=433718.61	N=1129598.84 E=433734.19
L14	S8° 11' 54.62"E	117.79	22+16.75	23+34.54	N=1129598.84 E=433734.19	N=1129482.26 E=433750.99
L15	S9° 23' 16.59"E	38.21	23+76.62	24+14.84	N=1129440.41 E=433755.50	N=1129402.71 E=433761.73
L16	S1° 39' 43.84"W	33.56	24+14.84	24+48.40	N=1129402.71 E=433761.73	N=1129369.16 E=433760.76

**RECORD DRAWINGS**

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SPECTRUM UNDERGROUND AND HYATT SURVEY SERVICES, INC.
- THIS DOCUMENT IS BELIEVED TO BE CORRECT TO THE BEST OF THE ENGINEER'S KNOWLEDGE, AND THE ACCURACY OF THE INFORMATION CANNOT BE GUARANTEED.

CDM Smith  
 REVIEWED BY: GINA C. CASHION, P.E. Date: JULY 2015  
 NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.

**GENERAL NOTES:**

- EXACT LOCATION AND ELEVATION INFORMATION IS NOT AVAILABLE FOR THE EXISTING VERIZON UTILITY.
- WITHIN CONSTRUCTION ACTIVITIES CONTRACTOR TO FIELD LOCATE AND PROTECT ALL EXISTING UTILITIES.

REV. NO.	DATE	DRWN	CHKD	REMARKS
6/15	JJM	VCS		RECORD DRAWINGS
6/14	PEA	VCS		CONFORMED DRAWINGS

DESIGNED BY: K. LOWE  
 DRAWN BY: D. AUST  
 SHEET CHK'D BY: J. HOFFMAN  
 CROSS CHK'D BY: K. LOWE  
 APPROVED BY: G. CASHION  
 DATE: FEBRUARY 2014

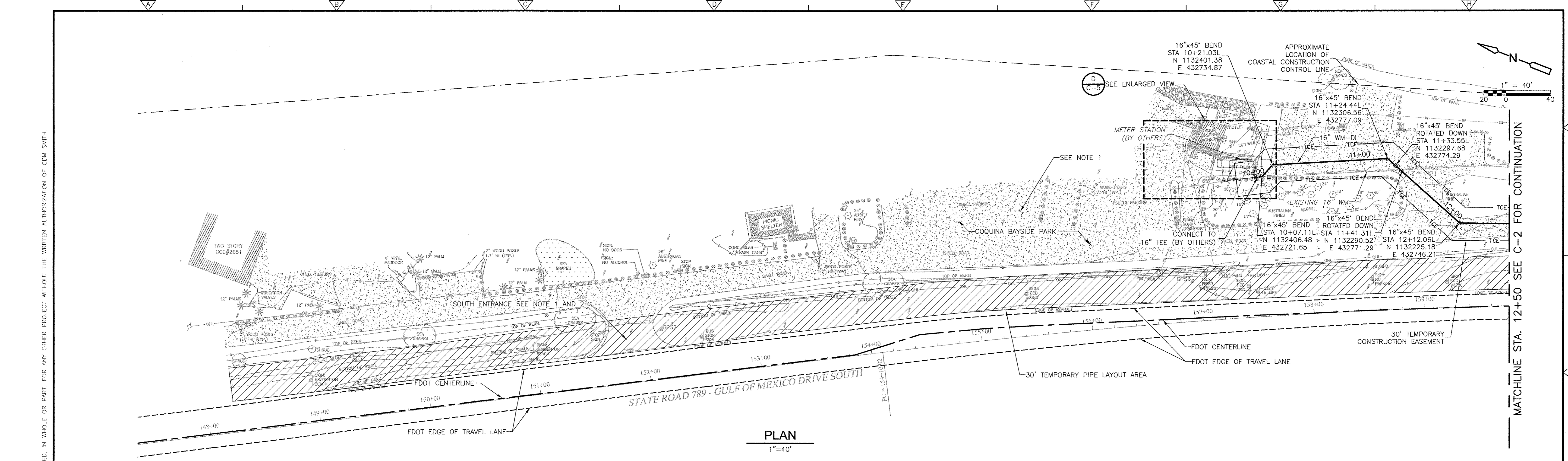
**CDM Smith**  
 1715 North Westshore Blvd., Suite 875  
 Tampa, FL 33607  
 Tel: (813) 281-2900  
 FL COA No. EB-0000020

TOWN OF LONGBOAT KEY, FLORIDA  
**POTABLE WATER SYSTEM SUBAQUEOUS CROSSING OF LONGBOAT PASS AND SYSTEM PRESSURE CONTROLS**

**HORIZONTAL CONTROL AND KEY SHEET**

PROJECT NO. 2790-83746  
 FILE NAME: G005PLPF.DWG  
 SHEET NO. **G-5**

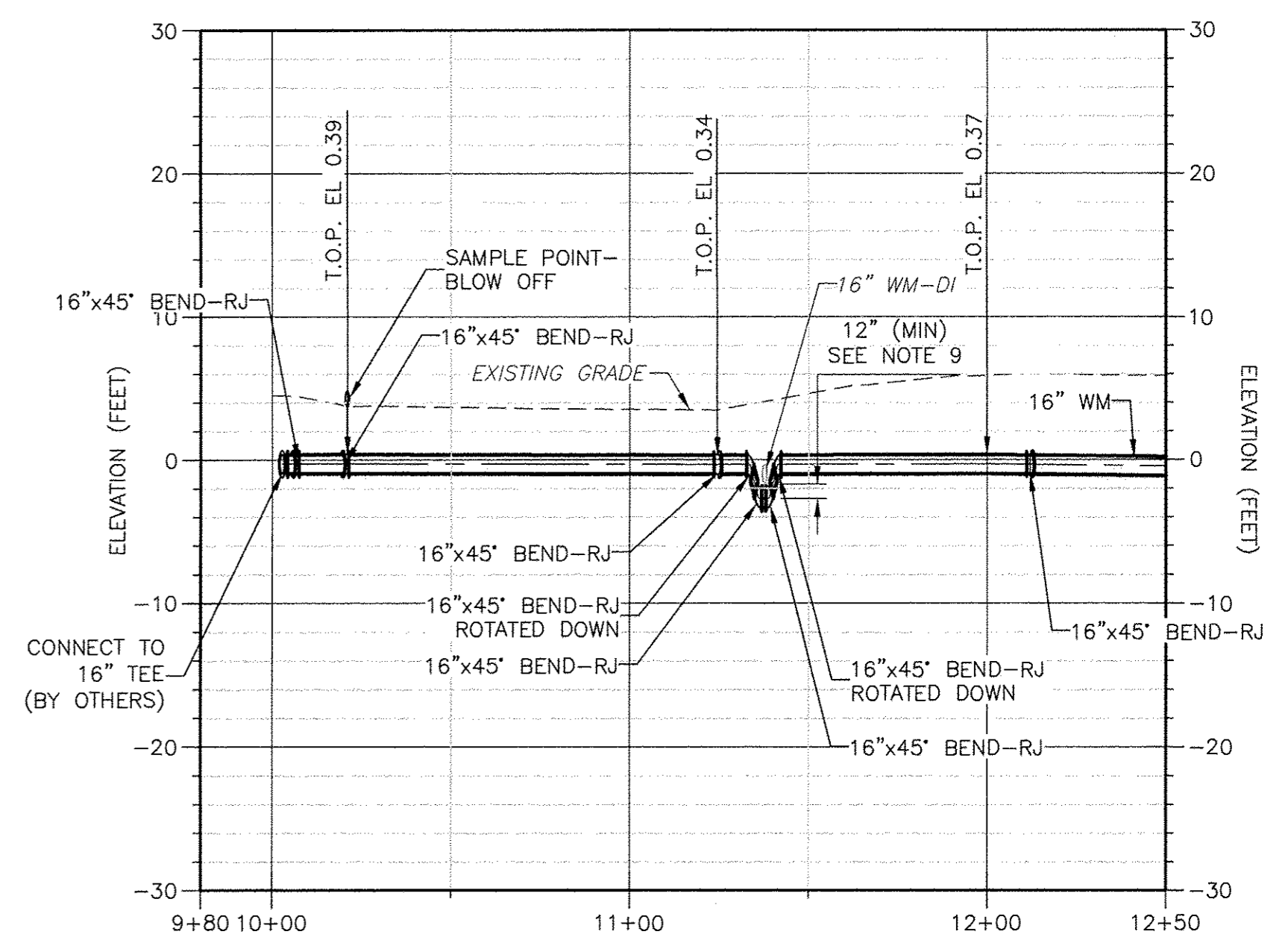
GINA C. CASHION  
 LICENSE No. 43891  
 DATE: 7/1/2015  
 GINA C. CASHION, P.E.  
 PE NO. 43891



**PLAN**  
1"=40'

**NOTES:**

1. COQUINA BAYSIDE PARK AND BOAT RAMP SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES. ACCESS TO THE PARK SHALL BE THROUGH NORTH ENTRANCE, DURING PIPE LAYOUT ACTIVITIES.
2. CONTRACTOR MAY BLOCK SOUTH ENTRANCE TEMPORARILY FOR PIPE LAYOUT. CONTRACTOR SHALL MEET ALL REQUIREMENTS OF MANATEE COUNTY AND FDOT.
3. CONTRACTOR SHALL PRESERVE AND PROTECT ALL TREES DURING CONSTRUCTION ACTIVITIES.
4. CONTRACTOR TO PROTECT SIGNS AND GUARDRAIL WITHIN PIPE LAYOUT AREA DURING ALL CONSTRUCTION ACTIVITIES.
5. CONTRACTOR SHALL PROVIDE REQUIRED MOT PER FDOT STANDARDS AND PROVIDE ALL SUPPLEMENTAL SIGNAGE TO ENSURE PUBLIC SAFETY AND CONSTRUCTION NOTIFICATION.
6. WITHIN THE 30' WIDE TEMPORARY LAYOUT AREA, THE CONTRACTOR SHALL LIMIT CONSTRUCTION AREA AND LIMIT CONSTRUCTION ACTIVITIES TO THE STRINGING, FUSING AND LAYOUT OF PIPE ONLY. SEE ADDITIONAL REQUIREMENTS IN SPECIFICATIONS SECTION 01014.
7. FOR OPEN CUT CONSTRUCTION OF THE 16" WATER MAIN, THE CONTRACTOR SHALL LIMIT CONSTRUCTION AREA TO 15' EACH SIDE OF PIPE CENTERLINE.
8. CONTRACTOR SHALL RESTORE SHELL AND ASPHALT DRIVE TO ORIGINAL CONDITION.
9. CONTRACTOR TO FIELD LOCATE EXISTING 16" WM AND ADJUST DEPTH OF NEW 16" WM ACCORDINGLY TO PROVIDE MINIMUM 12" CLEARANCE.
10. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED EROSION CONTROL AND SEDIMENTATION CONTROL DEVICES INCLUDING BUT NOT LIMITED TO SILT FENCES WHICH SHALL FULLY ENCOMPASS THE WORK AREA AND CONSTRUCTION ACTIVITIES AND WITHIN THE LIMIT OF CONSTRUCTION. EROSION CONTROL AND SEDIMENTATION CONTROL DEVICES SHALL BE IN PLACE PRIOR TO BEGINNING ANY DEMOLITION OR CONSTRUCTION. THEY SHALL BE INSTALLED AS REQUIRED IN THE SPECIFICATIONS AND IN ACCORDANCE WITH ALL REGULATORY REQUIREMENTS. SEE ADDITIONAL REQUIREMENT IN SPECIFICATION SECTION 01014.



**PROFILE**

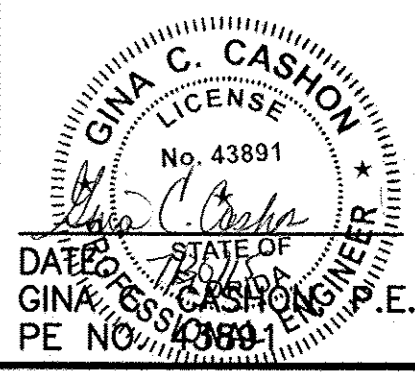
HORIZ. 1"=40'  
VERT. 1"=10'

**RECORD DRAWINGS**

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CDM Smith  
REVIEWED BY: GINA C. CASHON, P.E. Date: JULY 2015

NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.



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REV. NO.	DATE	DRWN	CHKD	REMARKS
6/15	JJM	VCS		RECORD DRAWINGS
6/14	PEA	VCS		CONFORMED DRAWINGS

DESIGNED BY: K. LOWE  
 DRAWN BY: D. AUST  
 SHEET CHK'D BY: J. HOFFMAN  
 CROSS CHK'D BY: K. LOWE  
 APPROVED BY: G. CASHON  
 DATE: FEBRUARY 2014

**CDM Smith**  
 1715 North Westshore Blvd., Suite 875  
 Tampa, FL 33607  
 Tel: (813) 281-2900  
 FL COA No. EB-0000020

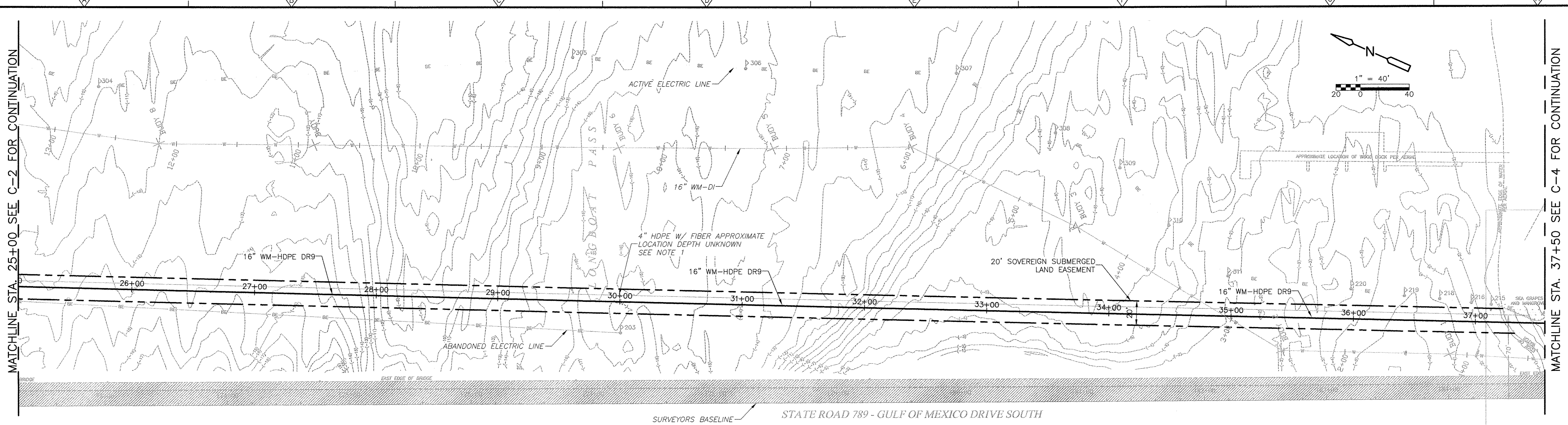
TOWN OF LONGBOAT KEY, FLORIDA  
**POTABLE WATER SYSTEM SUBAQUEOUS  
 CROSSING OF LONGBOAT PASS AND  
 SYSTEM PRESSURE CONTROLS**

**PLAN AND PROFILE  
 STA. 10+00 TO STA. 12+50**

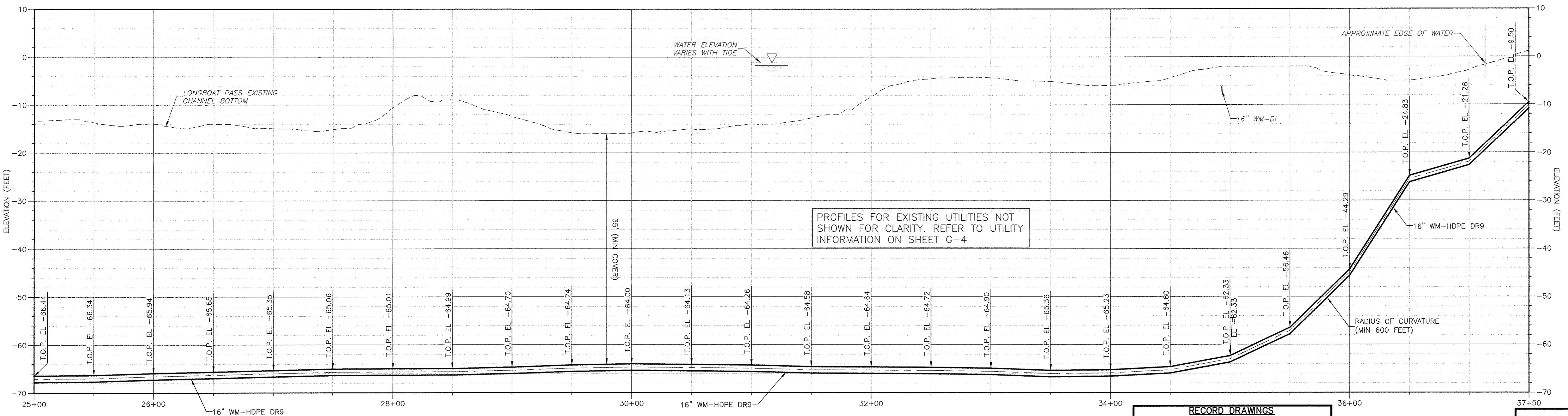
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 FILE NAME: C001PLPF.DWG  
 SHEET NO. **C-1**



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**PLAN**  
1"=40'



**PROFILE**  
HORIZ. 1"=40'  
VERT. 1"=10'

**NOTE:**  
 1. INFORMATION PROVIDED BY VERIZON, LOCATION IS APPROXIMATE AND DEPTH IS NOT KNOWN. CONTRACTOR SHALL FIELD VERIFY LOCATION AND PROTECT DURING ALL CONSTRUCTION ACTIVITIES.

**RECORD DRAWINGS**

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REVIEWED BY: GINA C. CASHON, P.E. Date: JULY 2015  
 CDM Smith  
 NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.

**GINA C. CASHON**  
 LICENSE  
 No. 43891  
 DATE: 7/28/2015  
 GINA C. CASHON, P.E.  
 PE NO. 43891

REV. NO.	DATE	DRWN	CHKD	REMARKS
6/15	JJM	VCS		RECORD DRAWINGS
6/14	PEA	VCS		CONFORMED DRAWINGS

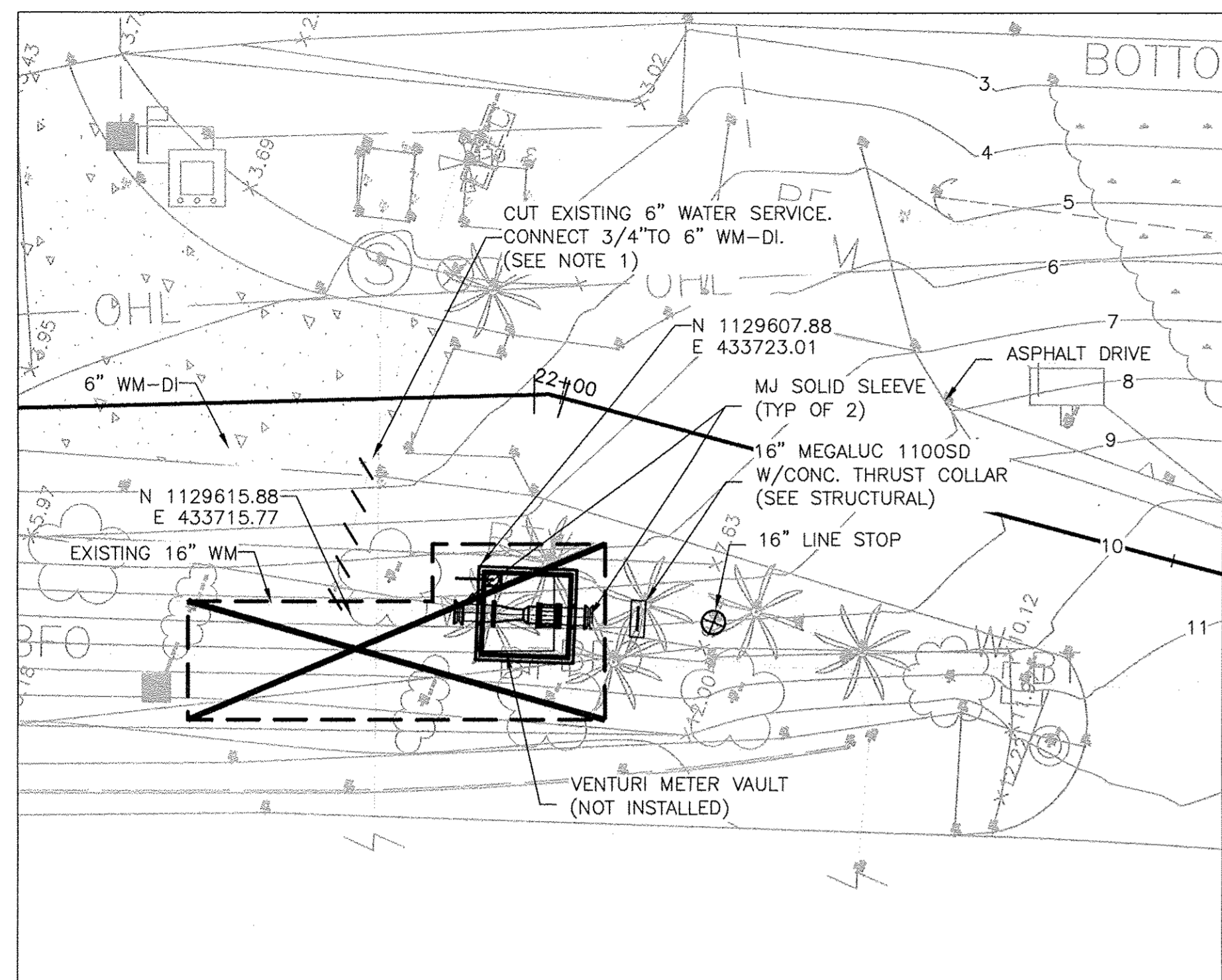
DESIGNED BY: K. LOWE  
 DRAWN BY: D. AUST  
 SHEET CHK'D BY: J. HOFFMAN  
 CROSS CHK'D BY: K. LOWE  
 APPROVED BY: G. CASHON  
 DATE: FEBRUARY 2014

**CDM Smith**  
 1715 North Westshore Blvd., Suite 875  
 Tampa, FL 33607  
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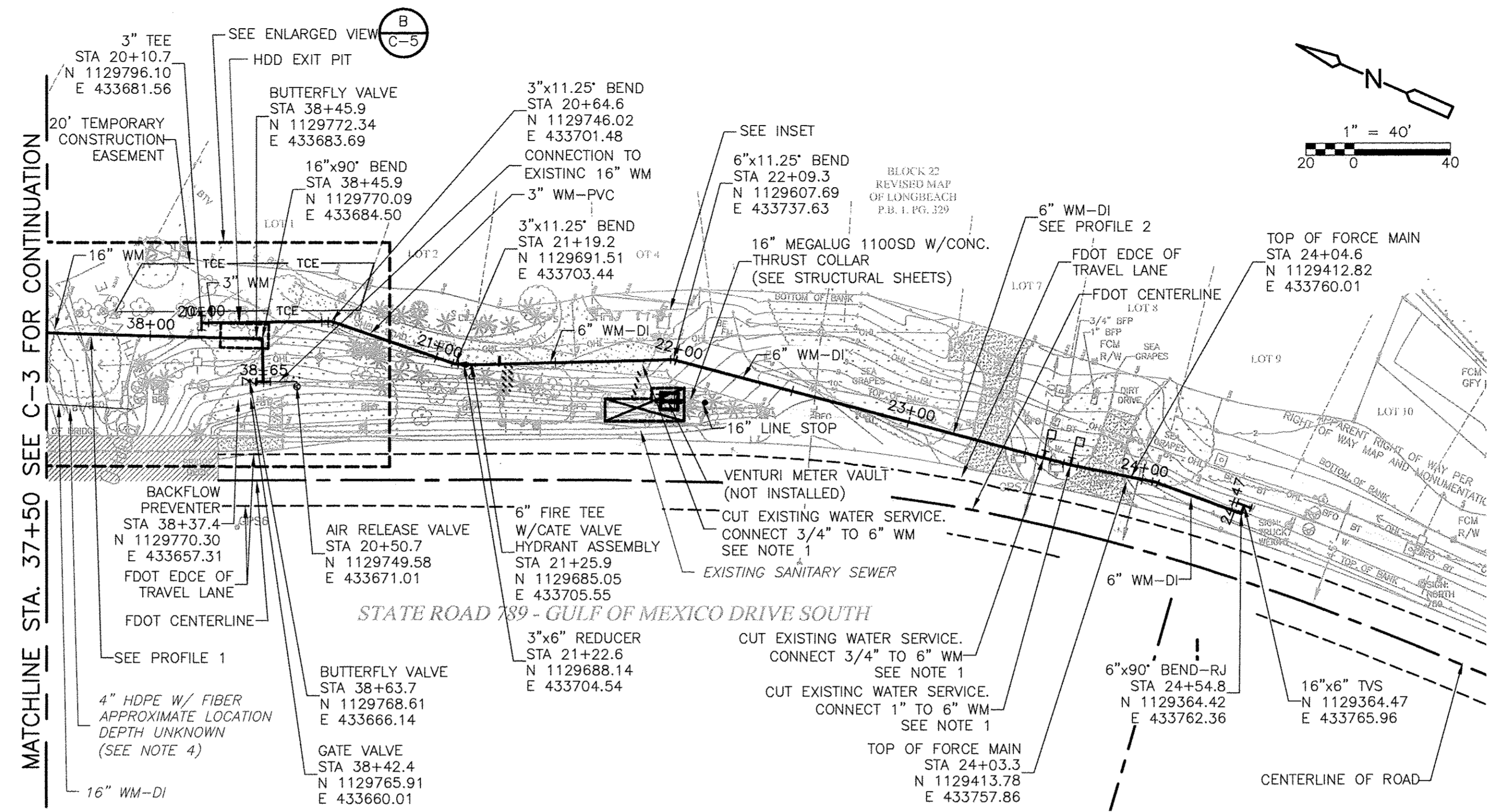
TOWN OF LONGBOAT KEY, FLORIDA  
**POTABLE WATER SYSTEM SUBAQUEOUS CROSSING OF LONGBOAT PASS AND SYSTEM PRESSURE CONTROLS**

**PLAN AND PROFILE**  
 STA. 25+00 TO STA. 37+50

PROJECT NO. 2790-83746  
 FILE NAME: CO03PLPR.DWG  
 SHEET NO.  
**C-3**



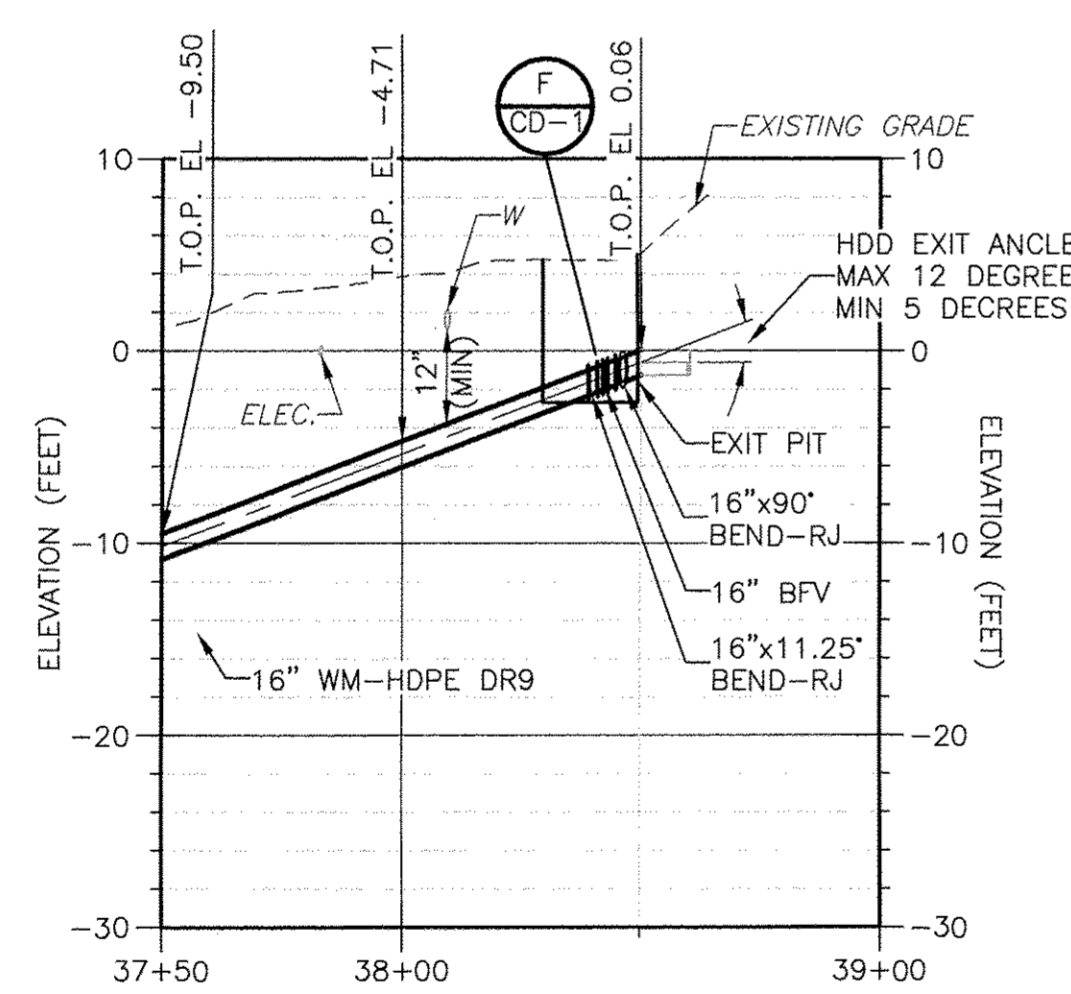
**INSET**  
1"=10'-0"



**PLAN**  
1"=40'

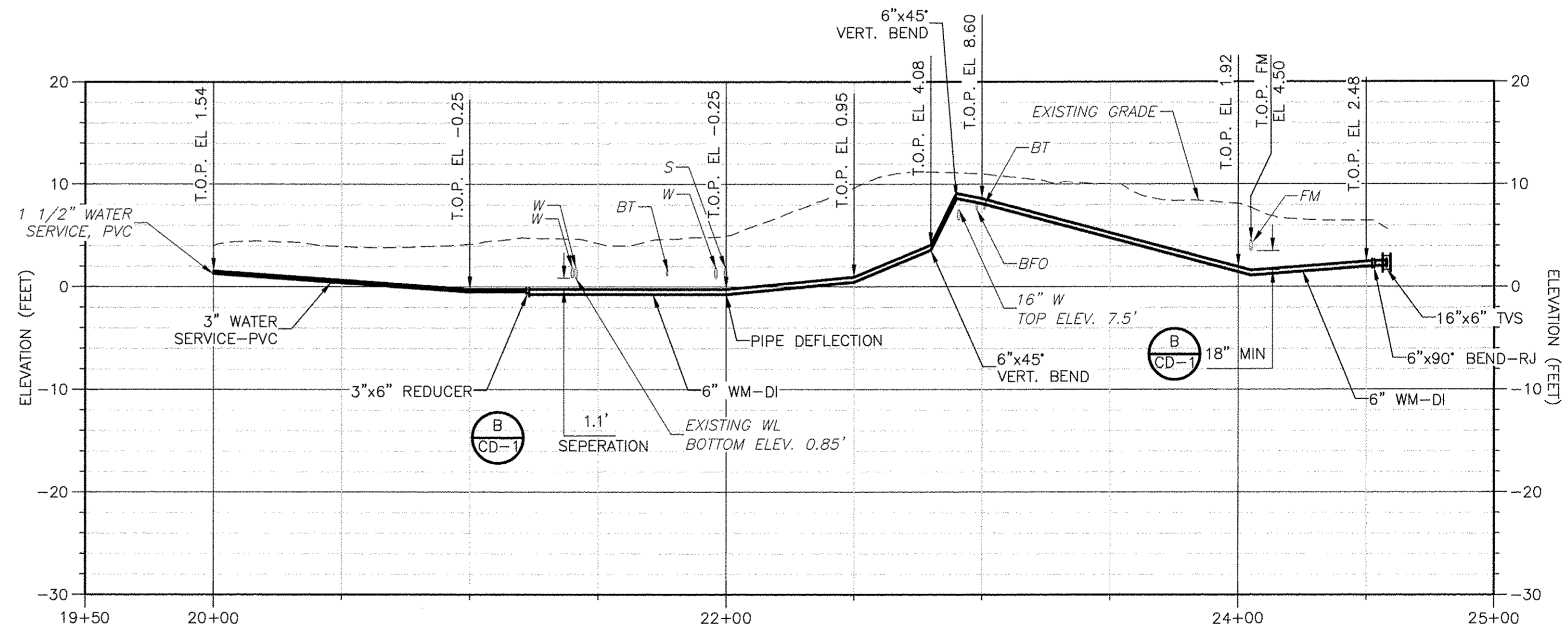
**NOTES:**

- AS EXISTING WATER SERVICE CONNECTIONS ARE MOVED TO THE NEW 6" 3/4" WATER MAIN, ALL PREVIOUS CONNECTIONS TO THE EXISTING 16" WM SHALL BE REMOVED AND PLUGGED AT THE EXISTING 16" WM. PORTIONS OF WATER SERVICE LINES NO LONGER IN SERVICE SHALL BE REMOVED.
- PARKING ON STATE RIGHT OF WAY IS LIMITED TO ONE WORK TRUCK AND REQUIRED CONSTRUCTION EQUIPMENT. STAGING OF IDLE EQUIPMENT WILL NOT BE PERMITTED.
- CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THE RIGHT OF WAY AND TEMPORARY CONSTRUCTION EASEMENT. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED EROSION CONTROL AND SEDIMENTATION CONTROL DEVICES INCLUDING BUT NOT LIMITED TO SILT FENCES WHICH SHALL FULLY ENCOMPASS THE WORK AREA AND CONSTRUCTION ACTIVITIES AND BE WITHIN THE LIMIT OF CONSTRUCTION. EROSION CONTROL AND SEDIMENTATION CONTROL DEVICES SHALL BE IN PLACE PRIOR TO BEGINNING ANY DEMOLITION OR CONSTRUCTION. THEY SHALL BE INSTALLED AS REQUIRED IN THE SPECIFICATIONS AND IN ACCORDANCE WITH ALL REGULATORY REQUIREMENTS. SEE ADDITIONAL REQUIREMENTS IN SPECIFICATIONS SECTION 01014.
- INFORMATION PROVIDED BY VERIZON. LOCATION IS APPROXIMATE AND DEPTH IS NOT KNOWN. CONTRACTOR SHALL FIELD VERIFY LOCATION AND PROTECT DURING ALL CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL RESTORE SHELL AND ASPHALT DRIVE WHERE DISTURBED TO ORIGINAL CONDITION.
- CONTRACTOR SHALL RELOCATE EXISTING UTILITIES AS NEEDED. SEE ELECTRICAL AND STRUCTURAL DRAWINGS FOR EQUIPMENT AND PAD DETAILS.
- CONTRACTOR SHALL RELOCATE EXISTING PALM TREES AS NEEDED FOR METER VAULT CONSTRUCTION. RELOCATION SHALL BE COORDINATED WITH TOWN.
- CONTRACTOR SHALL PROTECT EXISTING TREES DURING ALL CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL USE EXCAVATED SOIL AND LANDSCAPE TIMBERS TO CREATE A 3'x3' FLAT BOXED AREA IMMEDIATELY TO THE EAST OF THE CONTROL PANELS. ELEVATION OF 3'x3' AREA TO MATCH ELEVATION UNDER CONTROL PANELS WITH DOWNHILL SLOPE (MAX 9:1) FOR DRAINAGE. 3'x3' AREA TO BE LINED WITH GEOTEXTILE MIRAFI 140N AND COVERED WITH 4" OF FDOT #57 GRAVEL.



PROFILES FOR EXISTING UTILITIES NOT SHOWN FOR CLARITY. REFER TO UTILITY INFORMATION ON SHEET G-4

**HDD TO EXIT PIT**  
**PROFILE 1**  
HORIZ. 1"=40'  
VERT. 1"=10'



6" WATERMAIN AND WATER SERVICE FROM EXISTING 1 1/2" WATER SERVICE CONNECTION TO 16" WM TIE-IN

**PROFILE 2**  
HORIZ. 1"=40'  
VERT. 1"=10'

**RECORD DRAWINGS**

● THIS DOCUMENT IS A COMPILED REPRESENTATION OF THE CONSTRUCTED PROJECT.  
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SPECTRUM UNDERGROUND AND HYATT SURVEY SERVICES, INC.  
● THIS DOCUMENT IS BELIEVED TO BE CORRECT TO THE BEST OF THE ENGINEER'S KNOWLEDGE, AND THE ACCURACY OF THE INFORMATION CANNOT BE GUARANTEED.  
**CDM Smith** REVIEWED BY: GINA C. CASHON, P.E. Date: JULY 2015  
NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.



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REV. NO.	DATE	DRWN	CHKD	REMARKS
6/15	JJM	VCS		RECORD DRAWINGS
6/14	PEA	VCS		CONFORMED DRAWINGS

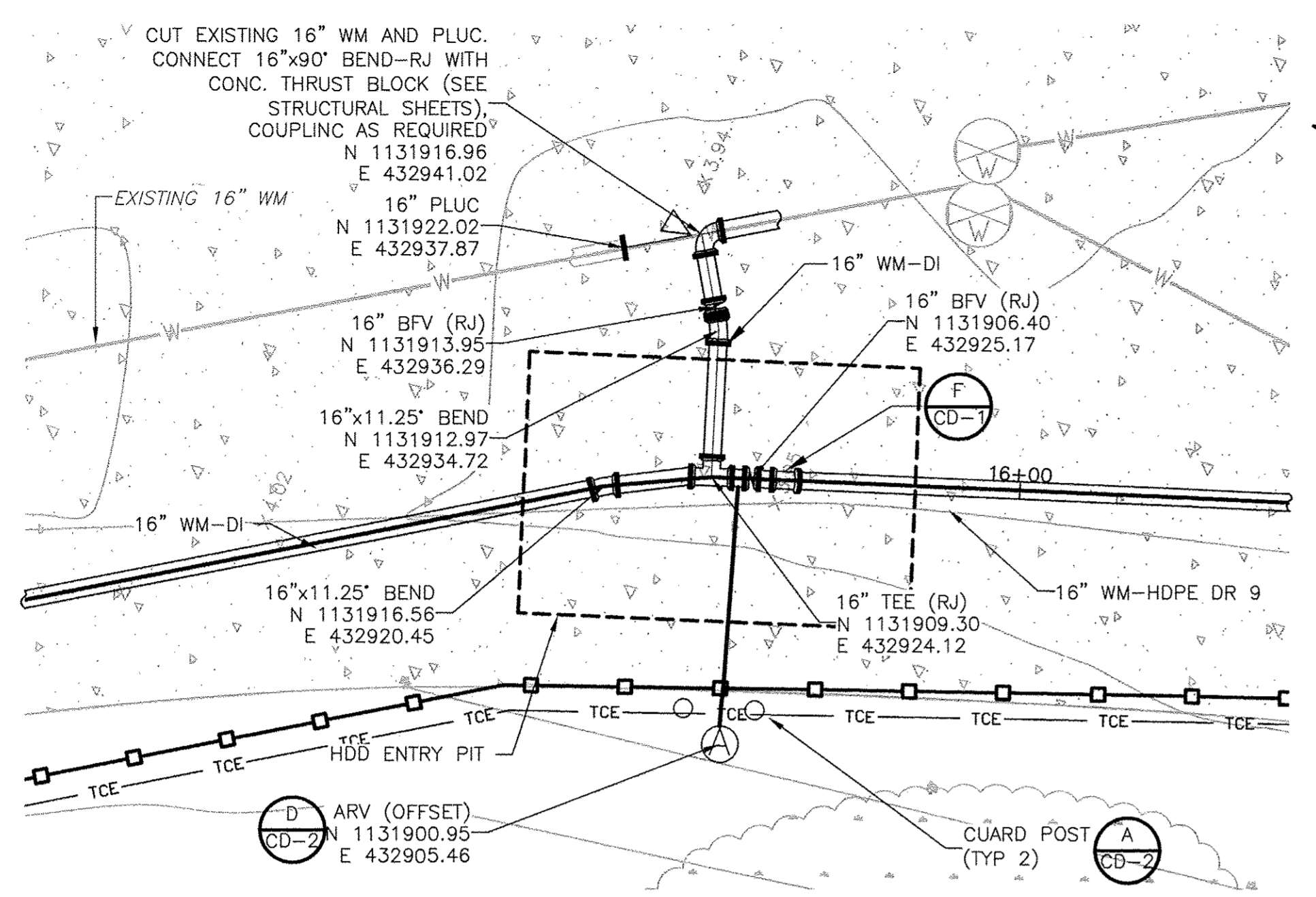
DESIGNED BY: K. LOWE  
 DRAWN BY: D. AUST  
 SHEET CHK'D BY: J. HOFFMAN  
 CROSS CHK'D BY: K. LOWE  
 APPROVED BY: G. CASHON  
 DATE: FEBRUARY 2014



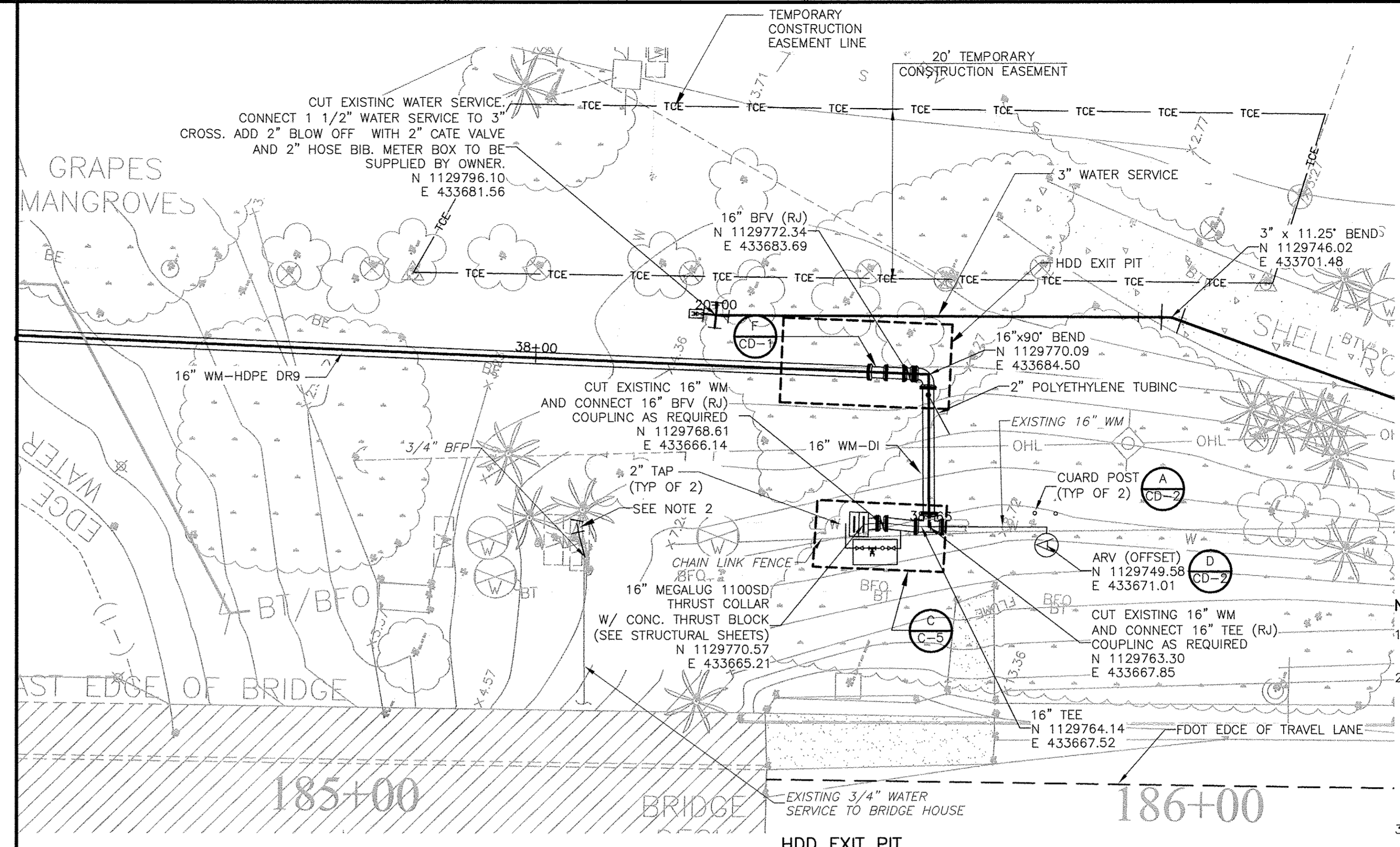
TOWN OF LONGBOAT KEY, FLORIDA  
**POTABLE WATER SYSTEM SUBAQUEOUS CROSSING OF LONGBOAT PASS AND SYSTEM PRESSURE CONTROLS**

**PLAN AND PROFILE SHEET**  
 37+50 TO 39+00 AND 20+00 TO 25+00  
 SHEET NO. C-4

PROJECT NO. 2790-83746  
 FILE NAME: C004PLPR.DWG  
 SHEET NO. C-4  
 RECORD DRAWING - JULY 2015

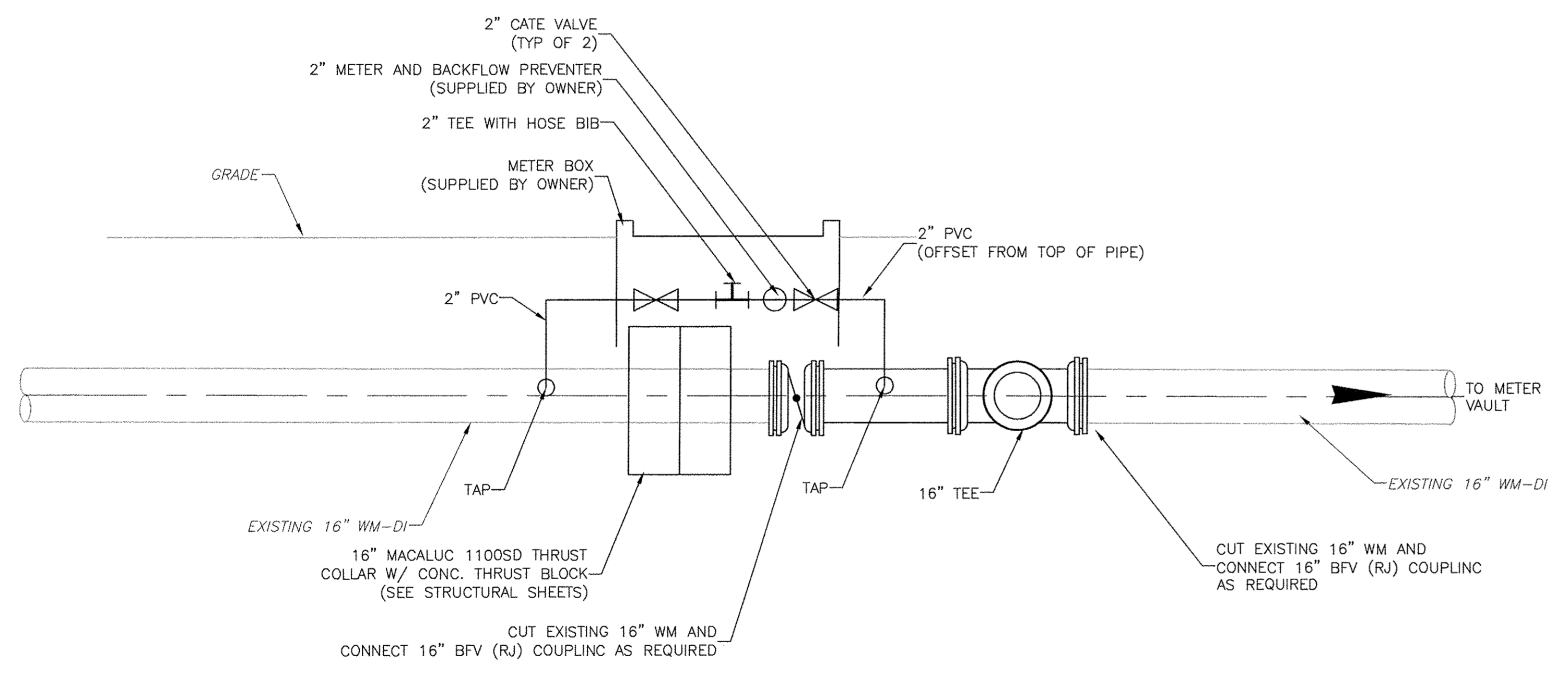


**HDD ENTRY PIT  
DETAIL A**  
1" = 10'

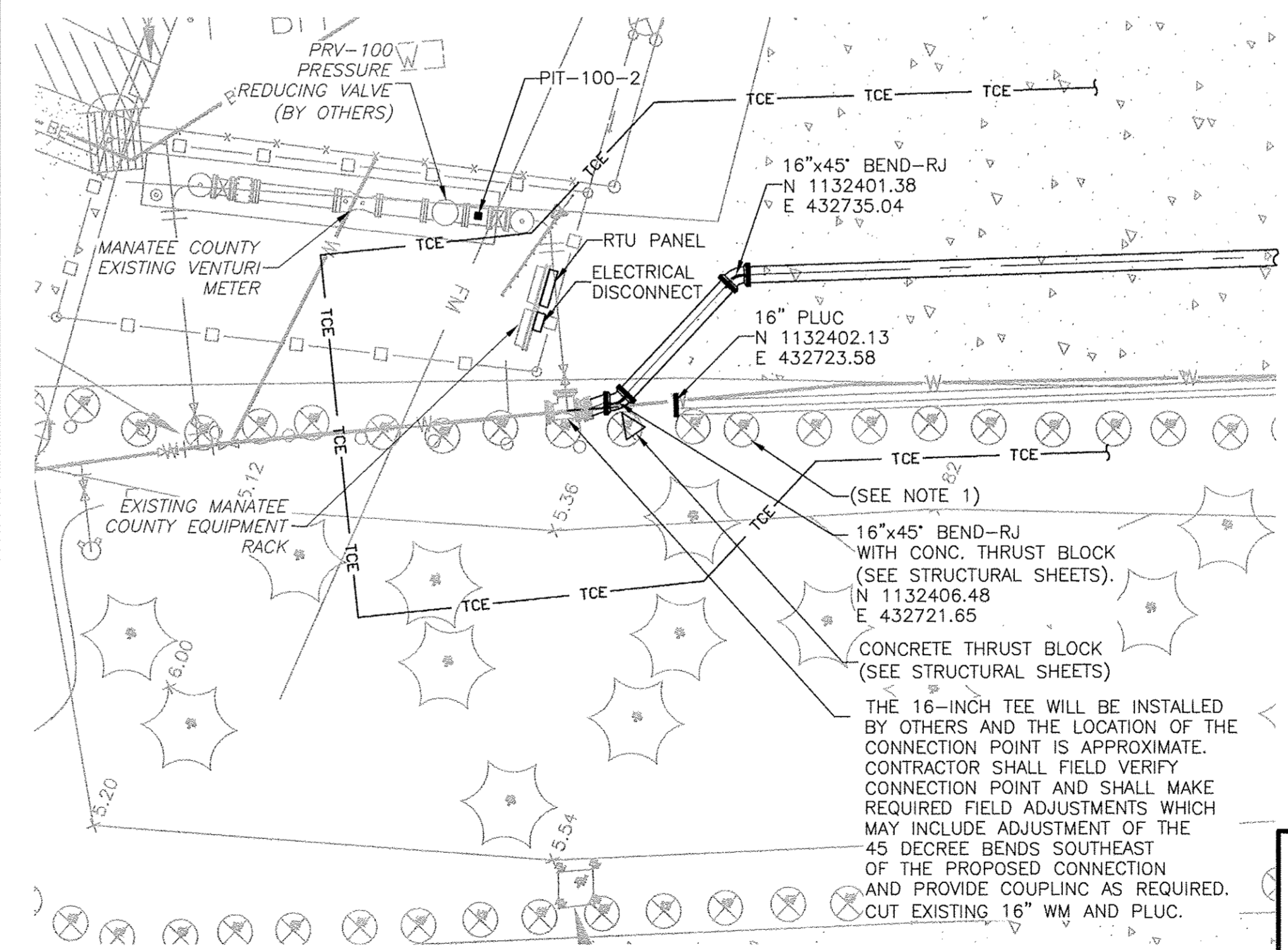


**HDD EXIT PIT  
DETAIL B**  
1" = 10'

- NOTE:**
- ALL EXISTING PALM TREES SHALL BE PROTECTED DURING CONSTRUCTION
  - REMOVE EXISTING 1 1/2" AND 3/4" WATER SERVICE FROM EXISTING 16" WM. CONNECT EXISTING 1 1/2" WATER SERVICE TO EXISTING 3/4" BFP. AT LOCATION WHERE 1 1/2" AND 3/4" WATER SERVICE WAS REMOVED FROM THE EXISTING 16" WM, INSTALL RESTRAINED JOINT PLUGS.
  - ARV TO BE LOCATED OFF OF GRAVEL DRIVE. FINAL LOCATION TO BE COORDINATED WITH THE ENGINEER.



**2" TAP WITH METERED BLOWOFF (PROFILE VIEW)  
DETAIL C**  
NOT TO SCALE C-5



**CONNECTION POINT  
DETAIL D**  
1" = 10' C-1

- NOTES:**
- CONTRACTOR SHALL TEMPORARILY RELOCATE WOODEN POSTS AS NEEDED. RESTORE TO ORIGINAL LOCATION WHEN WORK IS COMPLETED IN THIS AREA.
  - LOCATIONS OF ELECTRICAL EQUIPMENT IS APPROXIMATE. CONTRACTOR TO COORDINATE EXACT LOCATION IN FIELD WITH OWNER. REFER TO SHEET E-2 FOR ADDITIONAL DETAILS.
  - CONTRACTOR SHALL COORDINATE CONNECTION TO EXISTING 16" TEE AND ASSOCIATED SHUT DOWNS WITH TOWN OF LONGBOAT KEY AND MANATEE COUNTY.
  - CONTRACTOR SHALL INSTALL 16" PLUG (RJ) IF TEE AT CONNECTION POINT HAS NOT YET BEEN INSTALLED BY OTHERS.

**RECORD DRAWINGS**

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REVIEWED BY: GINA C. CASHON, P.E. Date: JULY 2015

**CDM Smith**

NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.

**GINA C. CASHON**  
LICENSE  
No. 43891  
REGISTERED PROFESSIONAL ENGINEER  
DATE OF EXPIRATION: 12/31/2018  
GINA C. CASHON, P.E.  
PE NO. 43891

XREFS: [CDMS\_2436, 110177005U-Topo\_New, C-BASE-PLAN, CE-SURVEY, CDMS\_2234]  
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REV. NO.	DATE	DRWN	CHKD	REMARKS
6/15	JJM	VCS		RECORD DRAWINGS
6/14	PEA	VCS		CONFORMED DRAWINGS

DESIGNED BY: K. LOWE  
 DRAWN BY: D. AJUST  
 SHEET CHK'D BY: J. HOFFMAN  
 CROSS CHK'D BY: K. LOWE  
 APPROVED BY: G. CASHON  
 DATE: FEBRUARY 2014

**CDM Smith**  
 1715 North Westshore Blvd., Suite 875  
 Tampa, FL 33607  
 Tel: (813) 281-2900  
 FL COA No. EB-0000020

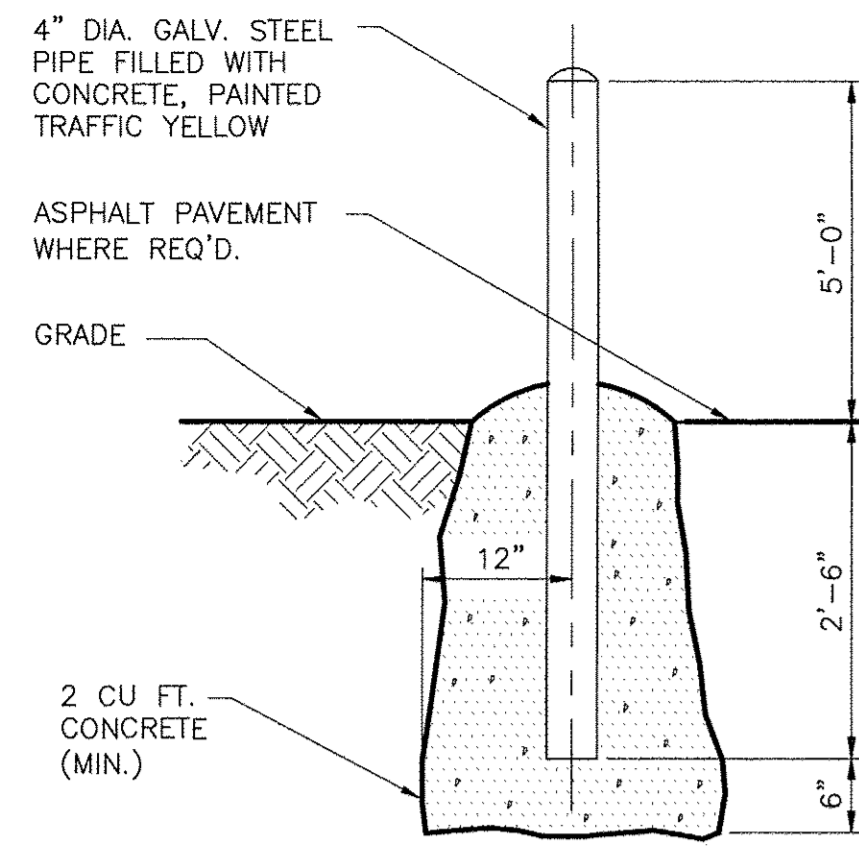
TOWN OF LONGBOAT KEY, FLORIDA  
**POTABLE WATER SYSTEM SUBAQUEOUS  
 CROSSING OF LONGBOAT PASS AND  
 SYSTEM PRESSURE CONTROLS**

**ENLARGED SITE PLANS**

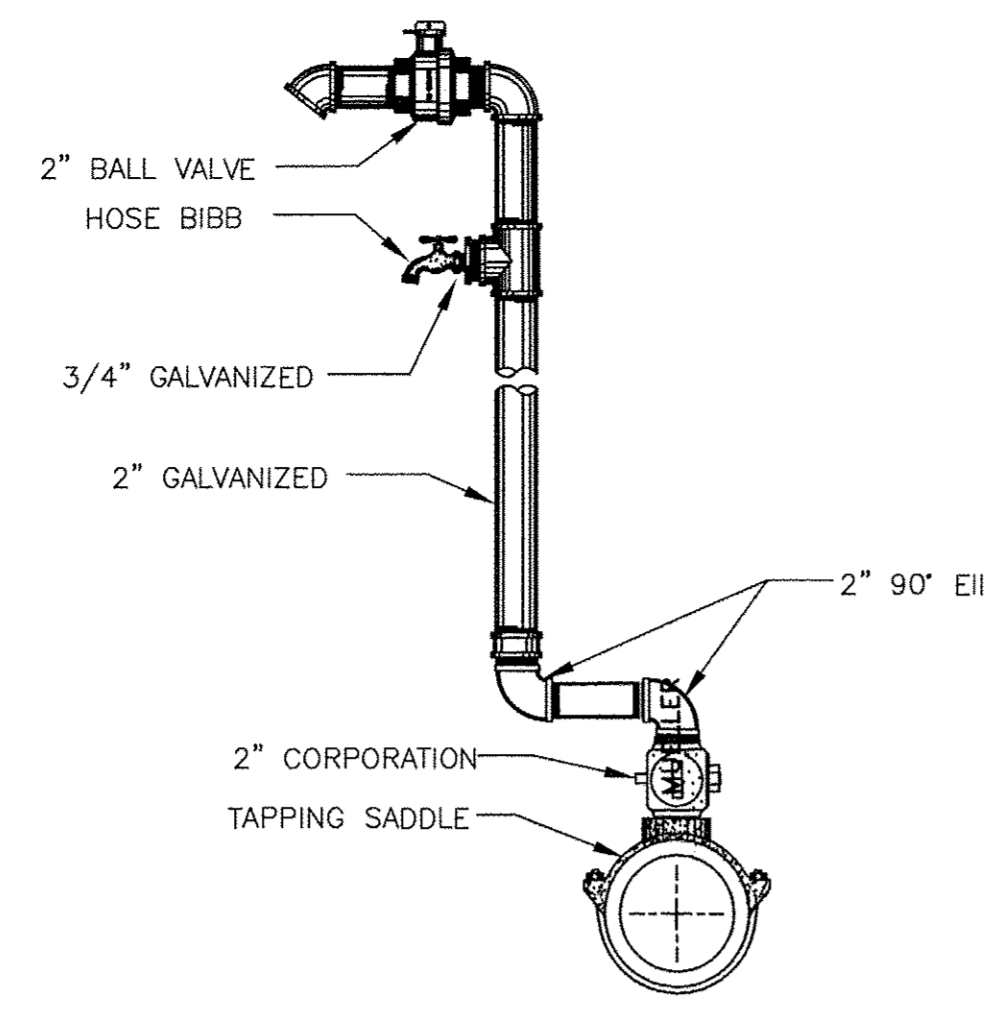
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 SHEET NO.  
**C-5**

RECORD DRAWING - JULY 2015

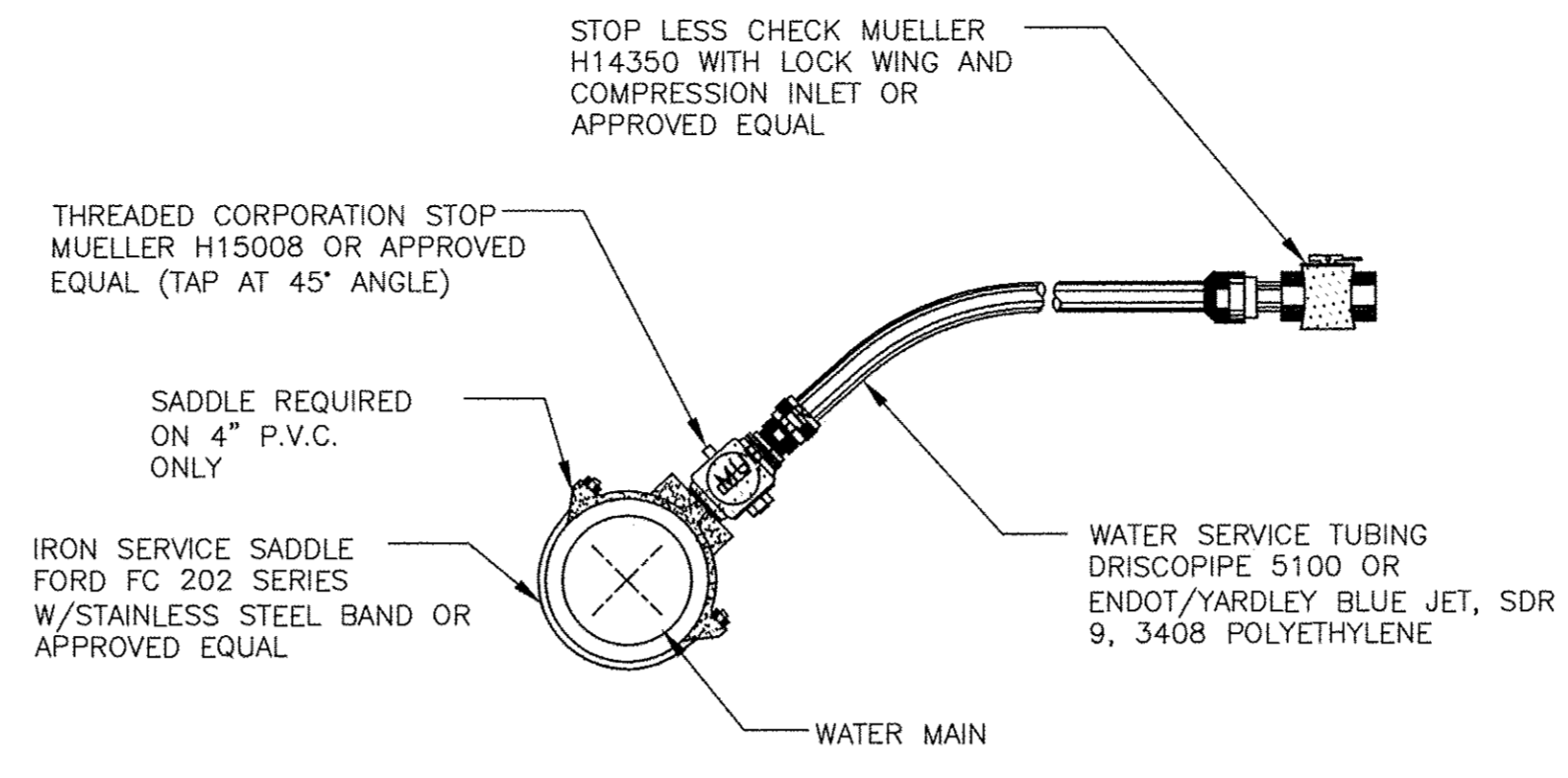




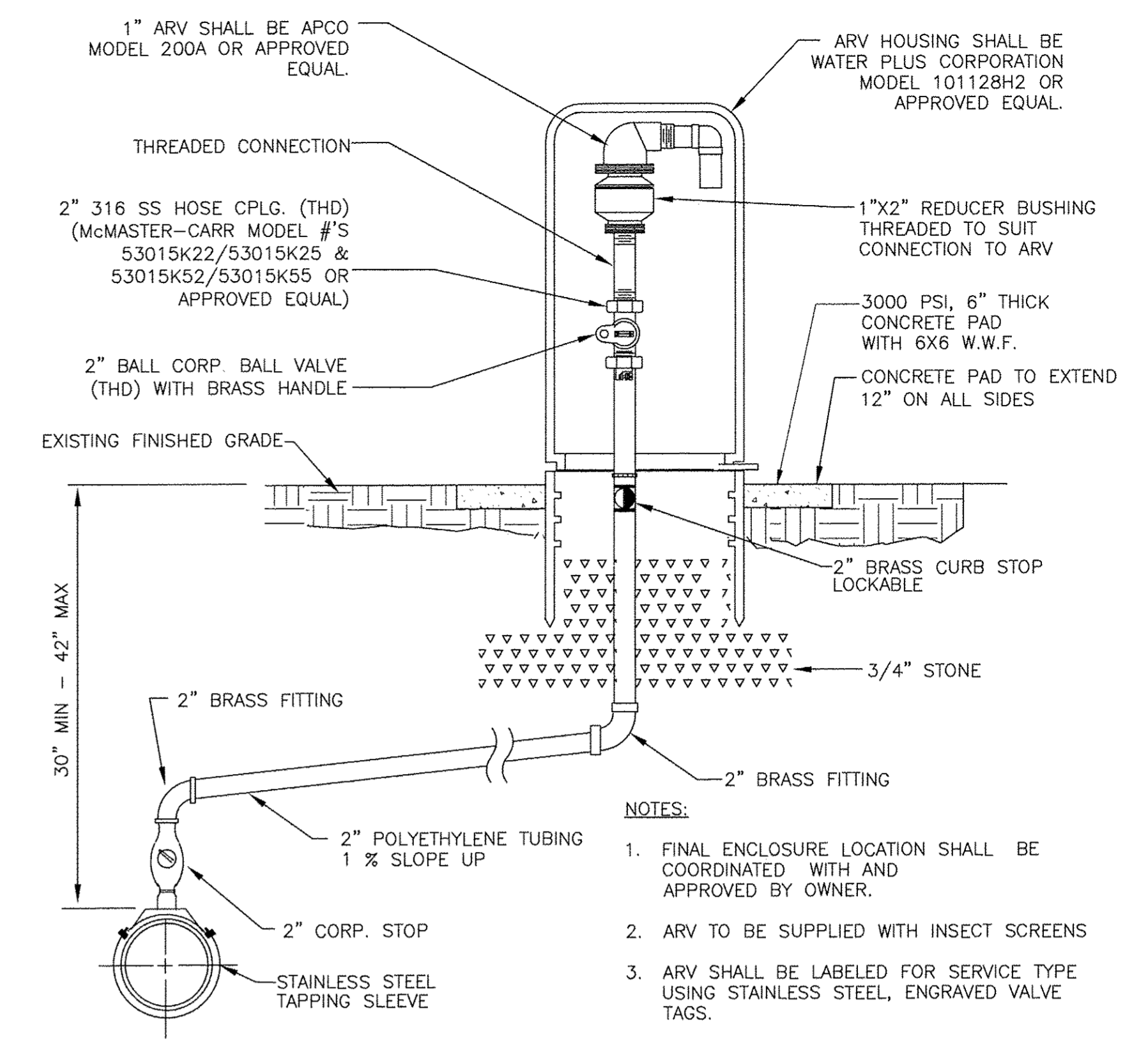
**GUARD POST**  
**DETAIL A**  
 NTS



**BLOWOFF AND SAMPLE TAP**  
**DETAIL B**  
 NTS



**CHLORINATION TAP**  
**DETAIL C**  
 NTS



**ABOVE GROUND AIR RELEASE VALVE**  
**DETAIL D**  
 NTS

- NOTES:**
1. FINAL ENCLOSURE LOCATION SHALL BE COORDINATED WITH AND APPROVED BY OWNER.
  2. ARV TO BE SUPPLIED WITH INSECT SCREENS
  3. ARV SHALL BE LABELED FOR SERVICE TYPE USING STAINLESS STEEL, ENGRAVED VALVE TAGS.

XREFs: [CDMS\_2436] Images: [ ]  
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REV. NO.	DATE	DRWN	CHKD	REMARKS
6/15	JJM	VCS		RECORD DRAWINGS
6/14	PEA	VCS		CONFORMED DRAWINGS

DESIGNED BY: K. LOWE  
 DRAWN BY: D. AUST  
 SHEET CHK'D BY: J. HOFFMAN  
 CROSS CHK'D BY: K. LOWE  
 APPROVED BY: G. CASHON  
 DATE: FEBRUARY 2014

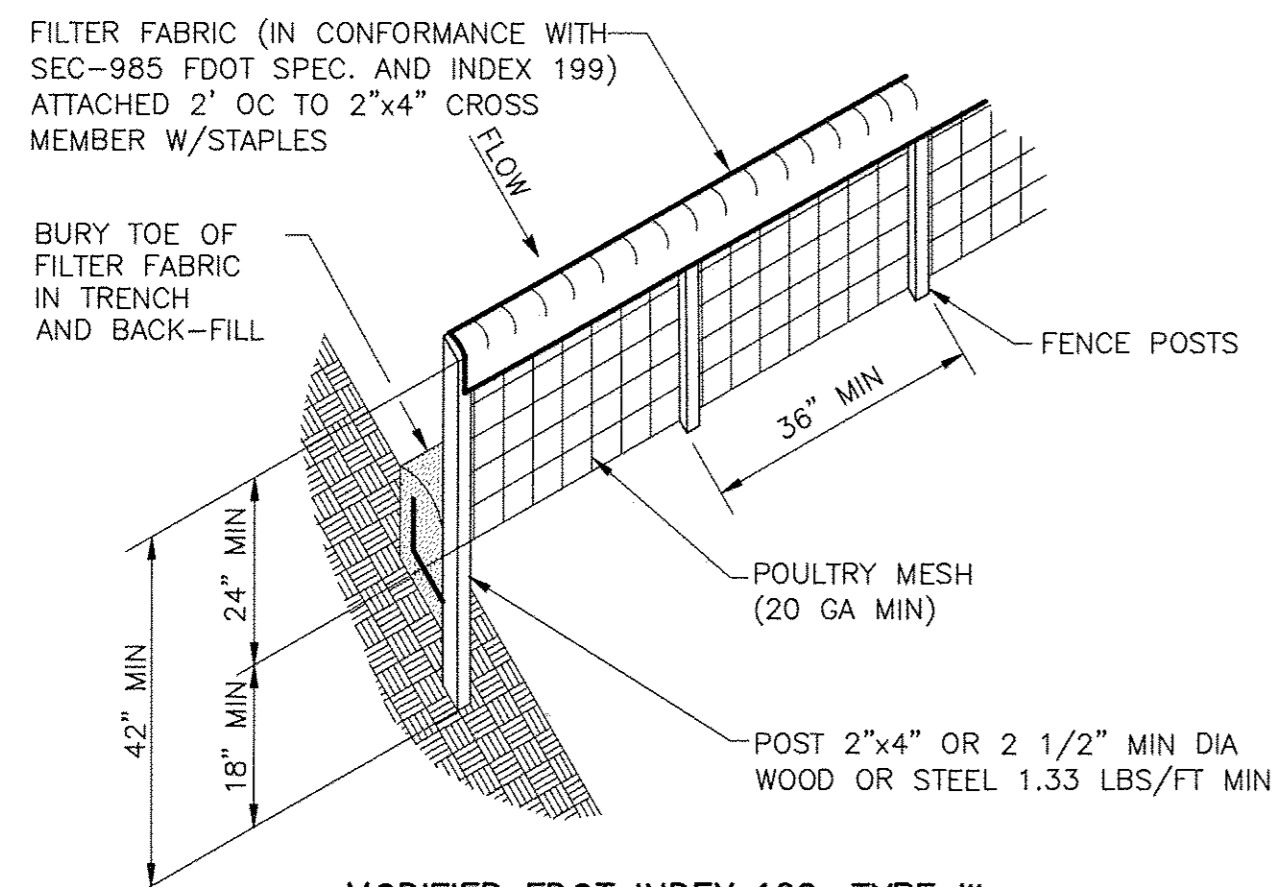
**CDM Smith**  
 1715 North Westshore Blvd., Suite 875  
 Tampa, FL 33607  
 Tel: (813) 281-2900  
 FL COA No. EB-0000020

TOWN OF LONGBOAT KEY, FLORIDA  
**POTABLE WATER SYSTEM SUBAQUEOUS CROSSING OF LONGBOAT PASS AND SYSTEM PRESSURE CONTROLS**

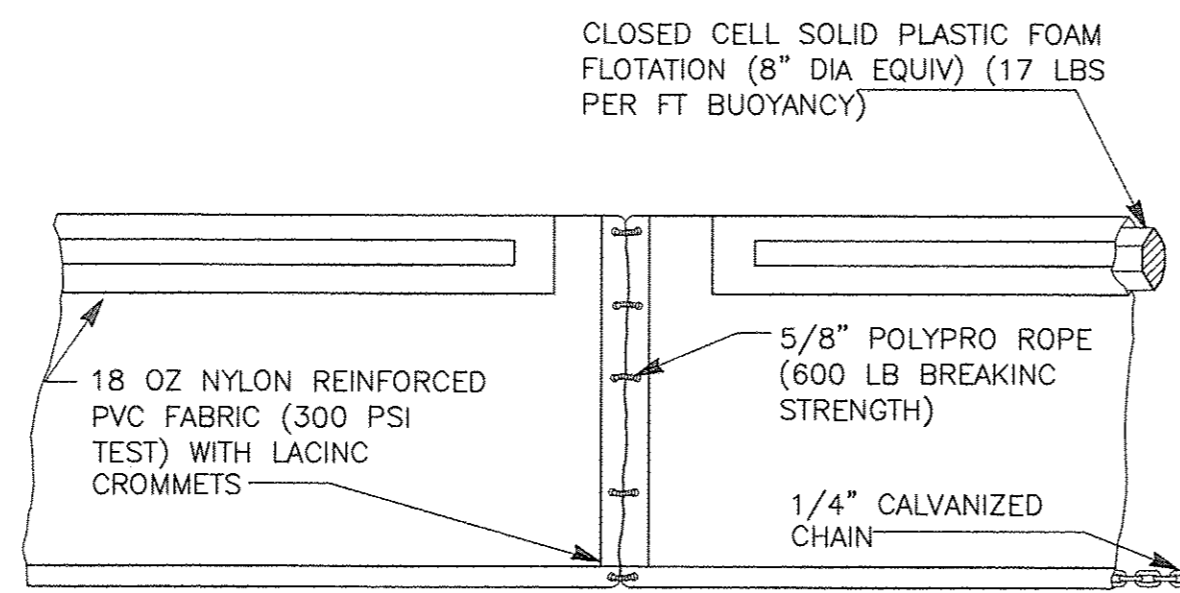
**MISCELLANEOUS CIVIL DETAILS**  
 SHEET NO. **CD-2**

**RECORD DRAWINGS**  
 ● THIS DOCUMENT IS A COMPILED REPRESENTATION OF THE CONSTRUCTED PROJECT.  
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 SPECTRUM UNDERGROUND AND HYATT SURVEY SERVICES, INC.  
 ● THIS DOCUMENT IS BELIEVED TO BE CORRECT TO THE BEST OF THE ENGINEER'S KNOWLEDGE, AND THE ACCURACY OF THE INFORMATION CANNOT BE GUARANTEED.  
 REVIEWED BY: GINA C. CASHON, P.E. Date JULY 2015  
 NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.

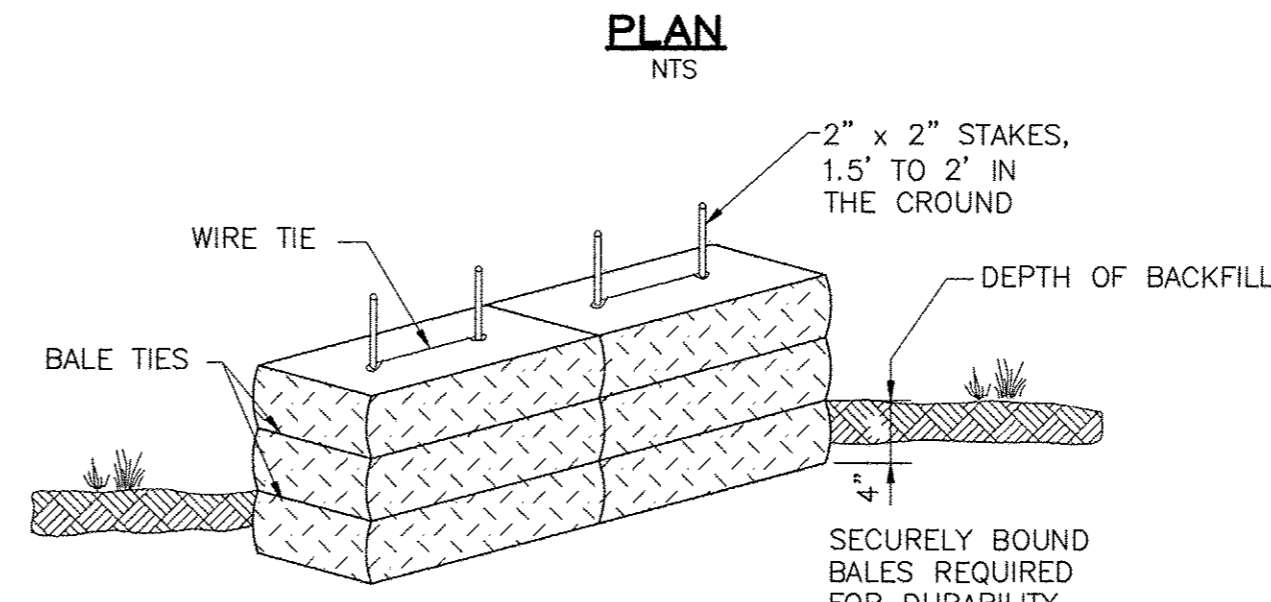
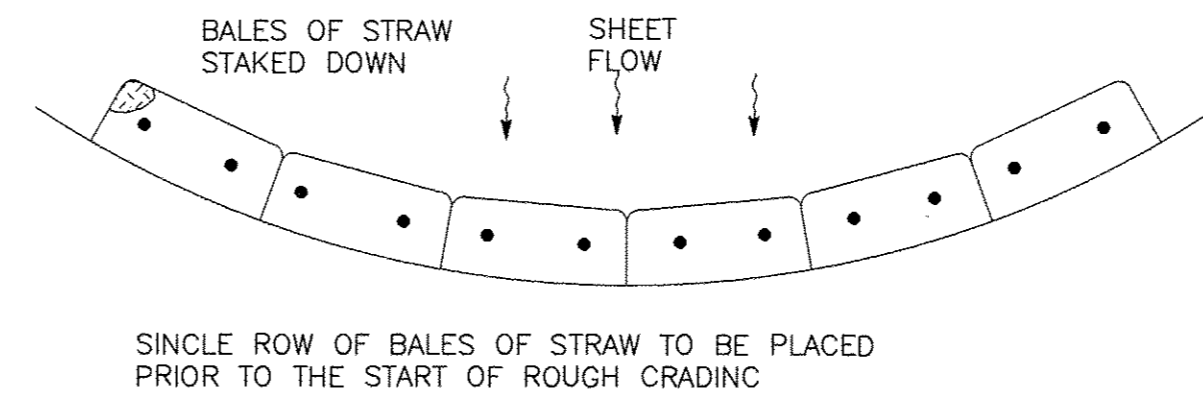
PROJECT NO. 2790-83746  
 FILE NAME: CD02SDDT.DWG  
 SHEET NO. **CD-2**  
 GINA C. CASHON, P.E.  
 LICENSE No. 43891  
 DATE: 7/1/2015



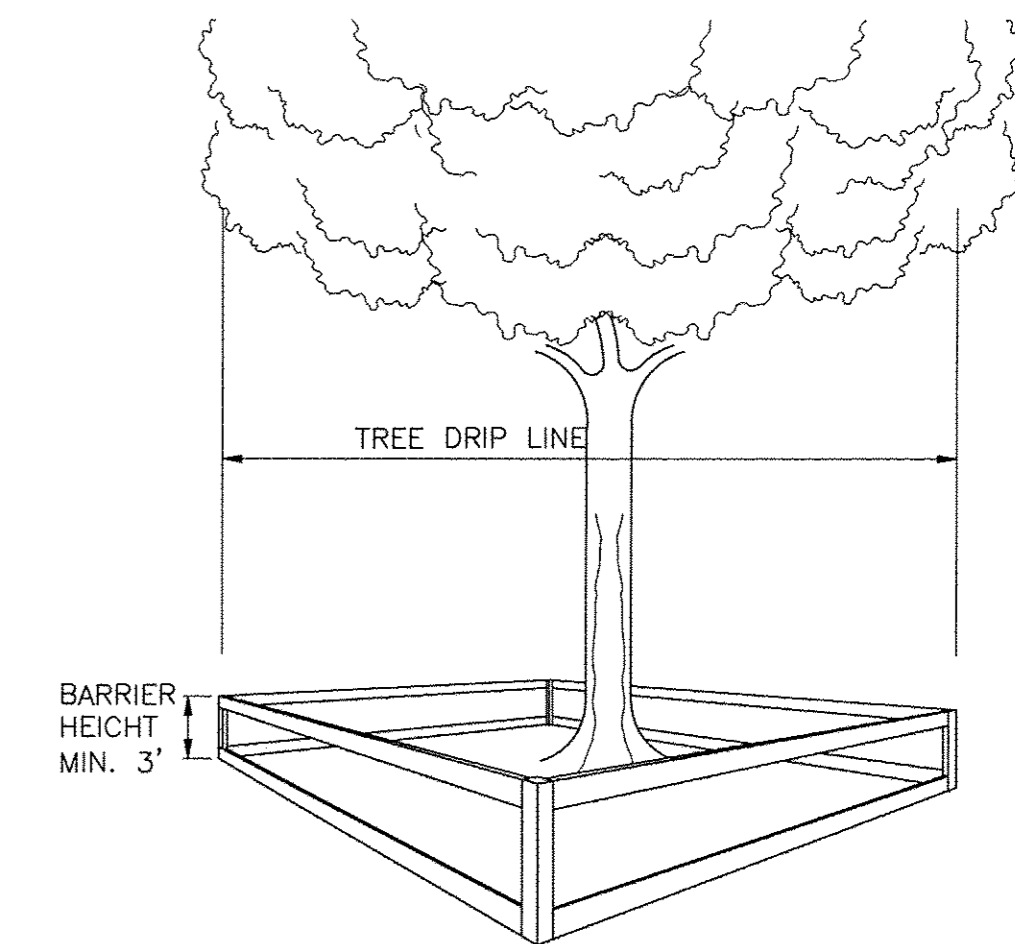
**MODIFIED FDOT INDEX 102, TYPE III  
STAKED SILT FENCE**  
DETAIL A  
NTS



**FDOT INDEX 103 TYPE II  
FLOATING TURBIDITY BARRIER**  
DETAIL B  
NTS



**FDOT INDEX 102, TYPE II  
TEMPORARY STRAW BALE SEDIMENT BARRIER**  
DETAIL C  
NTS



**TREE PROTECTION BARRICADE SPECIFICATIONS:**

- CONTRACTOR TO COMPLY WITH ALL LOCAL TREE ORDINANCES IN ADDITION TO THE SPECIFICATIONS NOTED BELOW.
- FOUR CORNER UPRIGHT STAKES OF NO LESS THAN 2" X 2" LUMBER CONNECTED BY HORIZONTAL MEMBERS OF NO LESS THAN 1" X 4" LUMBER; OR UPRIGHT STAKES SPACED AT 4-5' INTERVALS OF NO LESS THAN 2" X 2" LUMBER CONNECTED BY TWINE FLACCED WITH PLASTIC SURVEYING TAPE AT REGULAR INTERVALS.
- REQUIRED BARRICADES AND FLACCING SHALL BE ERECTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF LAND ALTERATION ACTIVITIES. BARRICADES SHALL REMAIN IN PLACE UNTIL ALTERATION AND CONSTRUCTION ACTIVITIES ARE COMPLETED.
- DURING LAND ALTERATION AND CONSTRUCTION ACTIVITIES, IT SHALL BE UNLAWFUL TO REMOVE VEGETATION BY CRUBBING OR TO PLACE SOIL DEPOSITS, DEBRIS, SOLVENTS, CONSTRUCTION MATERIAL, MACHINERY OR OTHER EQUIPMENT OF ANY KIND WITHIN THE DRIPLINE OF A TREE TO REMAIN ON THE SITE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- LAND ALTERATION ACTIVITIES SHALL NOT UNNECESSARILY REMOVE EXISTING VEGETATION AND ALTER EXISTING TOPOGRAPHY.

**TREE PROTECTION BARRICADE**  
DETAIL D  
NTS

**NOTES:**

**EROSION CONTROL**

IT IS THE CONTRACTORS RESPONSIBILITY TO IMPLEMENT THE EROSION AND TURBIDITY CONTROLS AS SHOWN ON THE EROSION AND TURBIDITY CONTROL PLAN. IT IS ALSO THE CONTRACTORS RESPONSIBILITY TO ENSURE THESE CONTROLS ARE PROPERLY INSTALLED, MAINTAINED AND FUNCTIONING PROPERLY TO PREVENT TURBID OR POLLUTED WATER FROM LEAVING THE PROJECT SITE. THE CONTRACTOR WILL ADJUST THE EROSION AND TURBIDITY CONTROLS SHOWN ON THE EROSION AND TURBIDITY CONTROL PLAN AND ADD ADDITIONAL CONTROL MEASURES, AS REQUIRED, TO ENSURE THE SITE MEETS ALL FEDERAL, STATE AND LOCAL EROSION AND TURBIDITY CONTROL REQUIREMENTS. THE FOLLOWING BEST MANAGEMENT PRACTICES WILL BE IMPLEMENTED BY THE CONTRACTOR AS REQUIRED BY THE EROSION AND TURBIDITY CONTROL PLAN AND AS REQUIRED BY THE REGULATORY AGENCIES.

- SEDIMENT BASINS AND TRAPS, PERIMETER DITCHES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP BEFORE ANY LAND-DISTURBING TAKES PLACE.
- ALL SEDIMENT CONTROL MEASURES ARE TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND BE CONSTRUCTED PRIOR TO ANY CRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON BALANCE OF SITE. PERIMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED TO PREVENT SEDIMENT OR TRASH FROM FLOWING OR FLOATING ON TO ADJACENT PROPERTIES.
- DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTIONS AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- AFTER ANY SIGNIFICANT RAINFALL SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED FOR INTEGRITY. ANY DAMAGED DEVICES SHALL BE REPAIRED IMMEDIATELY.
- CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
- WHENEVER WATER SEEPS FROM A SLOPE FACE ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- SEDIMENT WILL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM DITCH OR CHANNEL. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
- BEFORE TEMPORARY OR NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
- WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENRICHMENT. CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
- STOCKPILING MATERIAL: NO EXCAVATED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER AS TO DIRECT RUNOFF DIRECTLY OFF THE PROJECT SITE INTO ANY ADJACENT WATER BODY OR STORM WATER COLLECTION FACILITY.
- EXPOSED AREA LIMITATION: THE SURFACE AREA OF OPEN, RAW ERODIBLE SOIL EXPOSED BY CLEARING AND GRUBBING OPERATIONS OR EXCAVATION AND FILLING OPERATIONS SHALL NOT EXCEED 5 ACRES. IF THE TOTAL AREA TO BE CLEARED IS EQUAL TO, OR EXCEEDS FIVE (5) ACRES, THEN THE CONTRACTOR WILL BE RESPONSIBLE FOR PREPARING A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH EPA'S NPDES REGULATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR SUBMITTING A NOTICE ON INTENT (NOI) TO EPA FORTH-EIGHT (48) HOURS PRIOR TO COMMENCING CONSTRUCTION.

- TEMPORARY SEEDING: AREAS OPENED BY CONSTRUCTION OPERATIONS AND THAT ARE NOT ANTICIPATED TO BE RE-EXCAVATED OR DRESSED AND RECEIVE FINAL CRASSINC TREATMENT WITHIN 30 DAYS SHALL BE SEEDED WITH A QUICK CROWING CRASS SPECIES WHICH WILL PROVIDE AN EARLY COVER DURING THE SEASON IN WHICH IT IS PLANTED AND WILL NOT LATER COMPETE WITH THE PERMANENT CRASSINC.
- TEMPORARY SEEDING AND MULCHING: SLOPES STEEPER THAN 6:1 THAT FALL WITHIN THE CATEGORY ESTABLISHED IN PARAGRAPH 12 ABOVE LOOSE MEASURE OF MULCH MATERIAL CUT INTO THE SOIL OF THE SEEDED AREA ADEQUATE TO PREVENT MOVEMENT OF SEED AND MULCH.
- TEMPORARY CRASSINC: THE SEEDED OR SEEDED AND MULCHED AREA(S) SHALL BE ROLLED AND WATERED OR HYDROMULCHED OR OTHER SUITABLE METHODS IF REQUIRED TO ASSURE OPTIMUM CROWING CONDITIONS FOR THE ESTABLISHMENT OF A GOOD CRASS COVER. TEMPORARY CRASSINC SHALL BE THE SAME MIX & AMOUNT REQUIRED FOR PERMANENT CRASSINC IN THE CONTRACT SPECIFICATIONS.
- TEMPORARY RECRASSINC: IF, AFTER 14 DAYS FROM SEEDINC, THE TEMPORARY CRASSED AREAS HAVE NOT ATTAINED A MINIMUM OF 75 PERCENT GOOD CRASS COVER, THE AREA WILL BE REWORKED AND ADDITIONAL SEED APPLIED SUFFICIENT TO ESTABLISH THE DESIRED VEGETATIVE COVER.
- MAINTENANCE: ALL FEATURES OF THE PROJECT DESIGNED AND CONSTRUCTED TO PREVENT EROSION AND SEDIMENT SHALL BE MAINTAINED DURING THE LIFE OF THE CONSTRUCTION SO AS TO FUNCTION AS THEY WERE ORIGINALLY DESIGNED AND CONSTRUCTED.
- PERMANENT EROSION CONTROL: THE EROSION CONTROL FACILITIES OF THE PROJECT SHOULD BE DESIGNED TO MINIMIZE THE IMPACT ON THE OFFSITE FACILITIES.
- PERMANENT SEEDINC: ALL AREAS WHICH HAVE BEEN DISTURBED BY CONSTRUCTION WILL, AS A MINIMUM, BE SEEDED. THE SEEDINC MIX MUST PROVIDE BOTH LONG-TERM VEGETATION AND RAPID GROWTH SEASONAL VEGETATION. SLOPES STEEPER THAN 4:1 SHALL BE SEEDED AND MULCHED OR SODDED.
- ALL SLOPES STEEPER THAN 3:1 SHALL BE SODDED.

**RECORD DRAWINGS**

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CDM Smith  
REVIEWED BY: GINA C. CASHON, P.E. Date: JULY 2015.

NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61015-30, FAC FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.

**GINA C. CASHON**  
LICENSE  
No. 43891  
DATE: 7/15/15  
GINA C. CASHON, P.E.  
PE NO. 04285

PROJECT NO.: 2790-83746  
FILE NAME: CD03SDDT.DWG  
SHEET NO.  
**CD-3**

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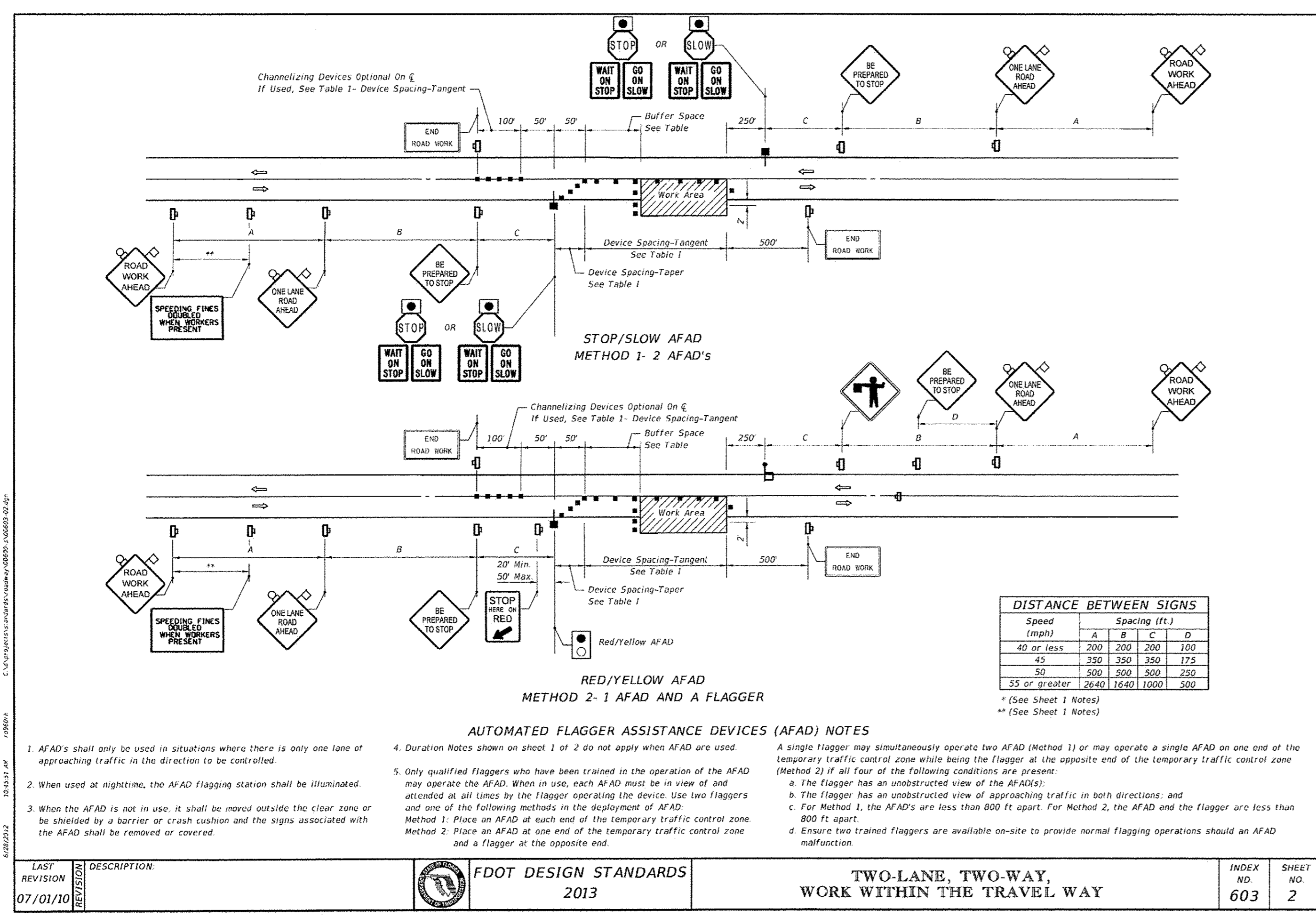
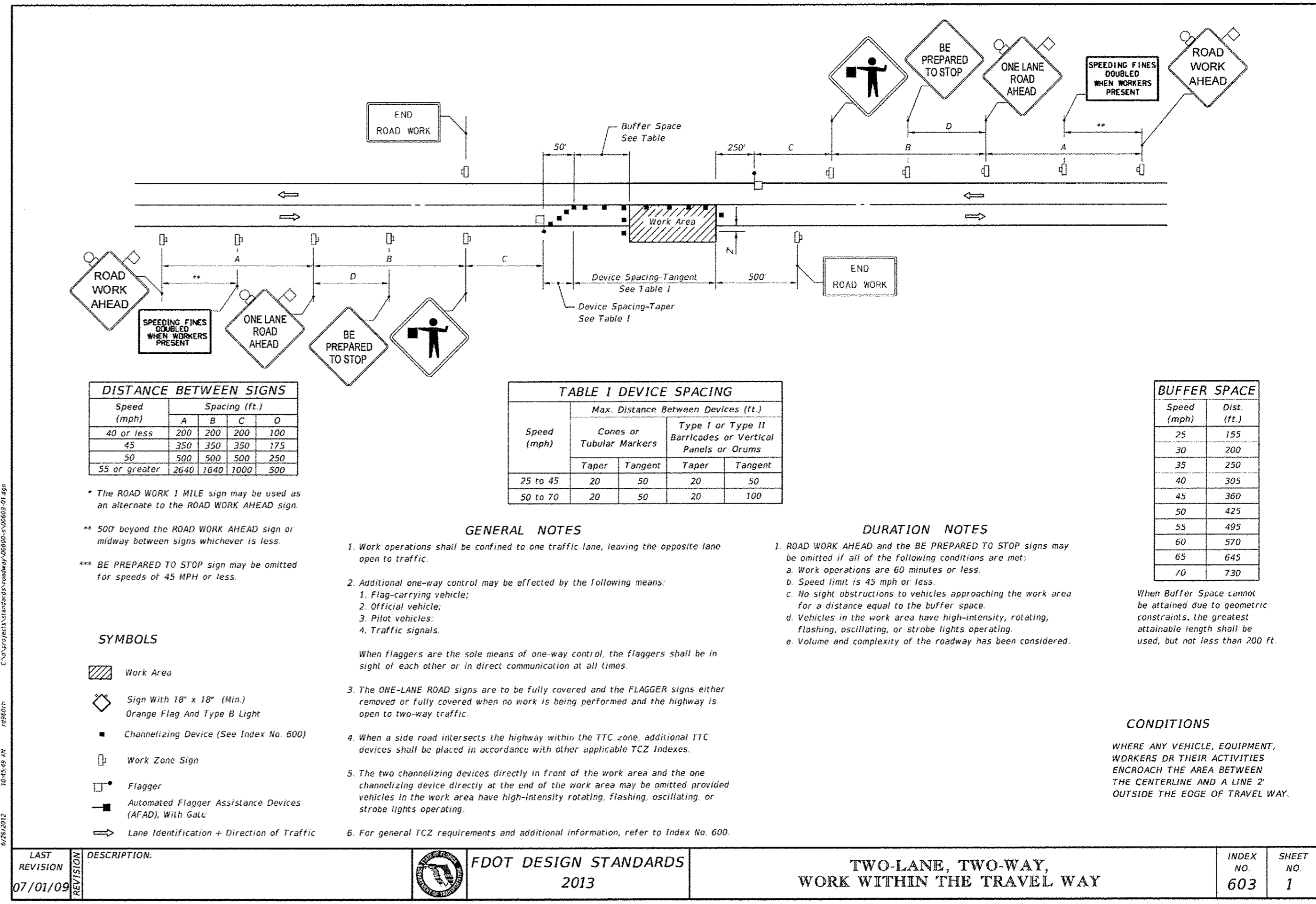
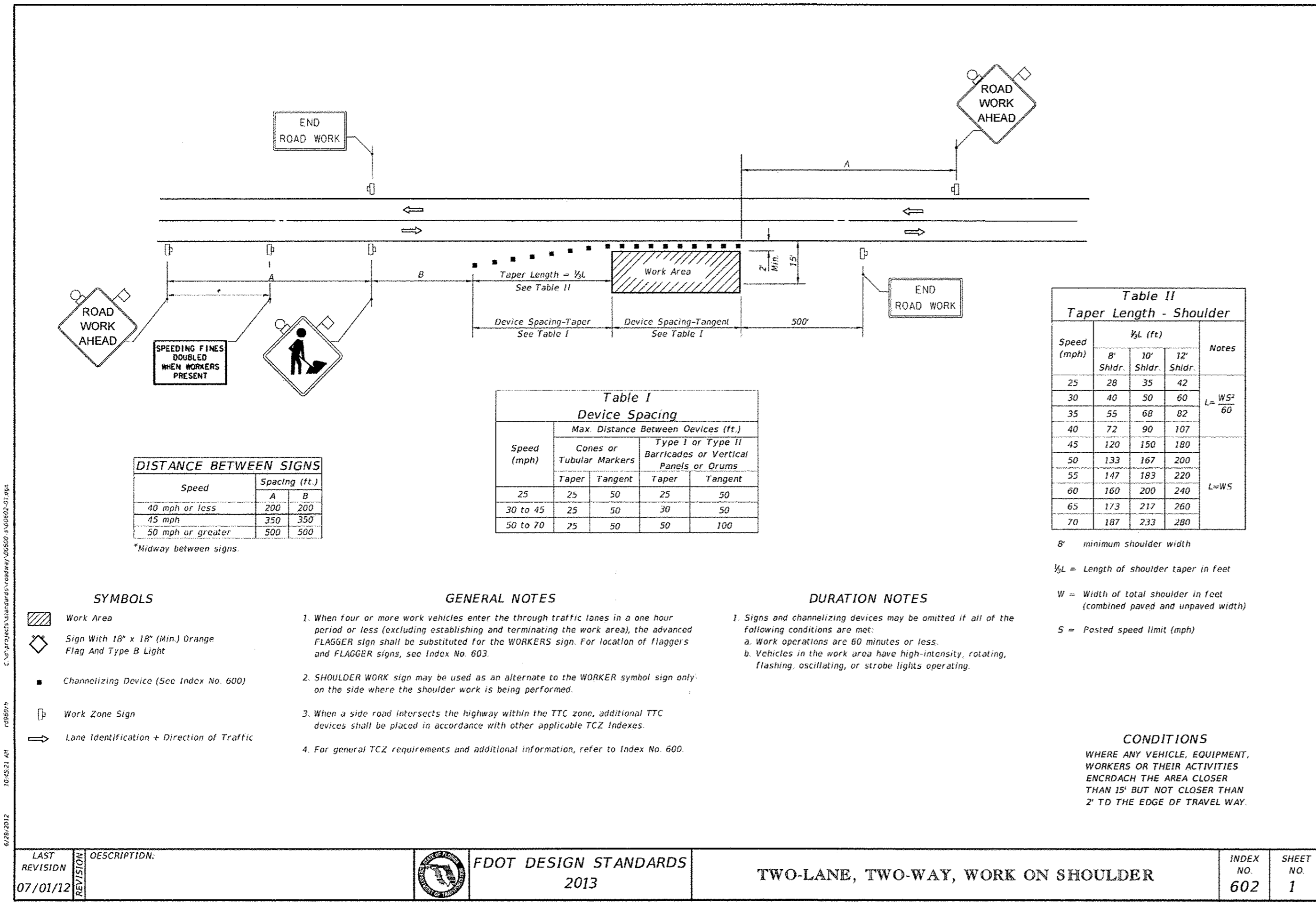
REV. NO.	DATE	DRWN	CHKD	REMARKS
6/15	JJM	VCS		RECORD DRAWINGS
6/14	PEA	VCS		CONFORMED DRAWINGS

DESIGNED BY: K. LOWE  
DRAWN BY: D. AUST  
SHEET CHK'D BY: J. HOFFMAN  
CROSS CHK'D BY: K. LOWE  
APPROVED BY: G. CASHON  
DATE: FEBRUARY 2014

**CDM Smith**  
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FL COA No. EB-000020

TOWN OF LONGBOAT KEY, FLORIDA  
**POTABLE WATER SYSTEM SUBAQUEOUS  
CROSSING OF LONGBOAT PASS AND  
SYSTEM PRESSURE CONTROLS**

**EROSION CONTROL DETAILS**



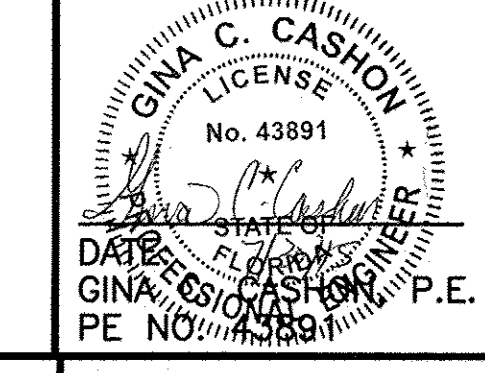
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REVIEWED BY: GINA C. CASHON, P.E. Date: JULY 2015

CDM Smith

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REV. NO.	DATE	DRWN	CHKD	CONFORMED DRAWINGS	REMARKS
6/14	PEA	VCS		CONFORMED DRAWINGS	

DESIGNED BY: K. LOWE  
 DRAWN BY: D. BUCKLAND  
 SHEET CHK'D BY: J. HOFFMAN  
 CROSS CHK'D BY: K. LOWE  
 APPROVED BY: G. CASHON  
 DATE: FEBRUARY 2014

**CDM Smith**  
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 FL COA No. EB-000020

TOWN OF LONGBOAT KEY, FLORIDA  
 POTABLE WATER SYSTEM SUBAQUEOUS  
 CROSSING OF LONGBOAT PASS AND  
 SYSTEM PRESSURE CONTROLS

FDOT MOT DETAILS

PROJECT NO. 2790-83746  
 FILE NAME: CD04SDDT.DWG  
 SHEET NO. CD-4

RECORD DRAWING - JULY 2015

**GENERAL NOTES**

**DESIGN CRITERIA:**

**CODES:**

- FLORIDA BUILDING CODE 2010 WITH 2012 SUPPLEMENT
- OTHER STRUCTURES: ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"

**DESIGN LOADS:**

- LIVE LOADS:**
- ELEVATED SLABS 200 PSF
  - PROCESS SLABS ON GRADE 200 PSF

**SUPERIMPOSED DEAD LOADS:**

- FLOORS AS NOTED

**WIND DESIGN DATA:**

- ULTIMATE DESIGN WIND SPEED,  $V_{ULT}$  (3-SECOND GUST): 160 MPH
- NOMINAL DESIGN WIND SPEED,  $V_{ASD}$ : 124 MPH
- RISK CATEGORY: III/IV
- WIND EXPOSURE CATEGORY: D
- ENCLOSURE CLASSIFICATION: ENCLOSED
- INTERNAL PRESSURE COEFFICIENT:  $\pm 0.18$

**FLOOD DESIGN DATA:**

- 100-YEAR FLOOD ELEVATION: EL. 10.20' NAVD 88
- THERE ARE NO BUILDINGS PART OF THIS CONTRACT.

**CONCRETE 28-DAY STRENGTH:**

- SLABS, COLUMNS, WALLS AND THRUST BLOCKS (ALL STRUCTURAL) 5000 PSI

**REINFORCING STEEL:**

- ALL BARS ASTM A615, GRADE 60
- WELDED WIRE FABRIC ASTM A185

**FOUNDATIONS:**

- ALLOWABLE BEARING PRESSURE FOR SPREAD FOOTINGS OVER SUBSURFACE PREPARED AS PER SPECIFICATIONS: 2000 PSF

**GENERAL CONDITIONS:**

ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE MECHANICAL, CIVIL, ELECTRICAL AND SHOP DRAWINGS AND SPECIFICATIONS.

THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FACILITY. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.

FOR ALL ITEMS EMBEDDED IN OR PASSED THROUGH CONCRETE, THE CONTRACTOR SHALL INITIALLY REFER TO MECHANICAL DRAWINGS FOR TYPE, SIZE, LOCATION AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.

THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATION AND OTHERS.

SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.

ANY EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURES.

ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

STANDARD DETAILS (WHERE SHOWN) APPLY TO ALL SIMILAR SITUATIONS ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

UNLESS OTHERWISE NOTED, ALL PIPES UNDER SOIL SUPPORTED STRUCTURAL SLABS AND FOOTINGS SHALL BE ENCASED IN CONCRETE AS SHOWN ON THE STRUCTURAL DRAWINGS. PIPES SHALL BE PRESSURE TESTED BEFORE ENCASING.

**CONCRETE:**

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS.

ALL CONCRETE SHALL BE AIR-ENTRAINED WITH 5000 PSI COMPRESSIVE STRENGTH AT 28 DAYS UNLESS OTHERWISE NOTED.

WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.

ALL CONCRETE SURFACES EXPOSED TO AIR, UNLESS OTHERWISE NOTED IN SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS CEMENT FINISHING IS COMPLETED OR FORMS ARE REMOVED.

ALL EXPOSED CORNERS OF CONCRETE SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATION OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWING.

**REINFORCING STEEL:**

REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 REQUIREMENTS.

ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI 315 REQUIREMENTS. REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:

- CONCRETE CAST AGAINST EARTH 3"
- FORMED SURFACES IN CONTACT WITH SOIL, SEWAGE, WATER OR EXPOSED TO WEATHER 2"
- FORMED SURFACES NOT EXPOSED TO WEATHER OR IN CONTACT WITH SOIL:

  - SLABS, WALLS AND JOISTS 1"
  - BEAMS AND COLUMNS 1"

LAP SPLICES SHALL BE AS SHOWN ON THE DRAWINGS. FOR LAP SPLICES NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL.

THE CONTRACTOR SHALL PREPARE PLACING DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI 315 REQUIREMENTS.

**GEOTECHNICAL REPORT:**

- "REPORT OF THE GEOTECHNICAL INVESTIGATION LONGBOAT KEY POTABLE WATER INTERCONNECT SUBAQUEOUS CROSSING, LONGBOAT KEY, FLORIDA" GEOTECHNICAL REPORT PREPARED BY DRICGERS ENGINEERING SERVICES, INC., DATED JANUARY 11, 2013.
- "REPORT OF THE SUPPLEMENTAL GEOTECHNICAL INVESTIGATION LONGBOAT KEY POTABLE WATER INTERCONNECT SUBAQUEOUS CROSSING, LONGBOAT KEY, FLORIDA" GEOTECHNICAL REPORT PREPARED BY DRICGERS ENGINEERING SERVICES, INC., DATED MARCH 19, 2013.
- "ADDENDUM TO THE REPORT OF THE SUPPLEMENTAL GEOTECHNICAL INVESTIGATION LONGBOAT KEY POTABLE WATER INTERCONNECT SUBAQUEOUS CROSSING, LONGBOAT KEY, FLORIDA" GEOTECHNICAL REPORT PREPARED BY DRICGERS ENGINEERING SERVICES, INC., DATED DECEMBER 9, 2013.

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REVIEWED BY: DONNA L. FRIS, P.E. Date: JULY 2015

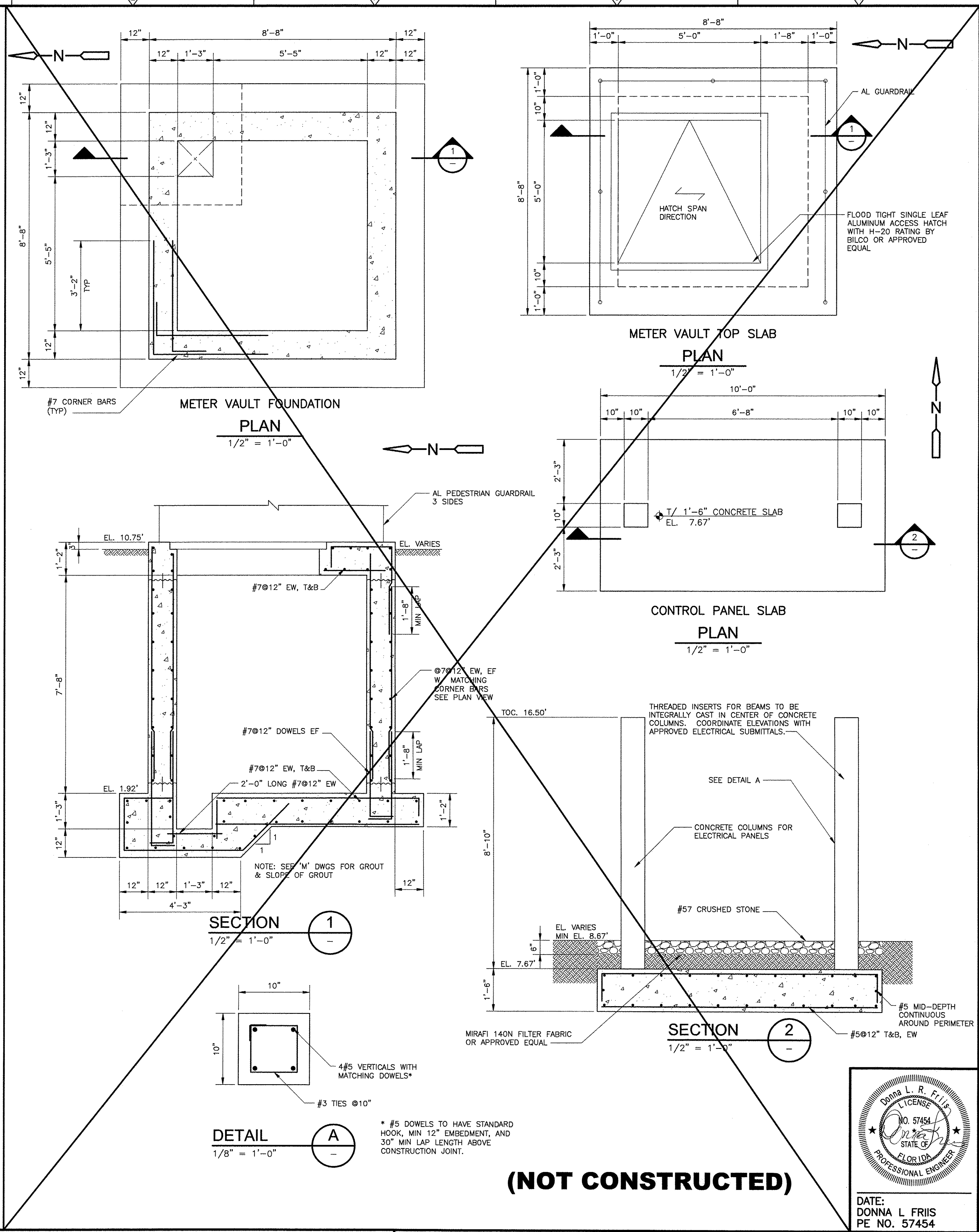
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SEE COVER SHEET FOR SURVEY NOTES

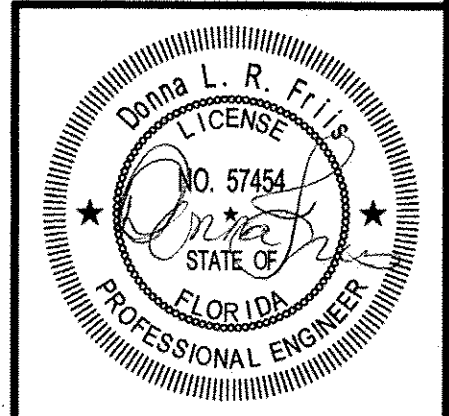
**ABBREVIATIONS:**

AL	ALUMINUM	MIN	MINIMUM
BLDG	BUILDING	MISC	MISCELLANEOUS
BOT	BOTTOM	NF	NEAR FACE
CC	CENTER TO CENTER	NTS	NOT TO SCALE
CJ	CONTROL JOINT	OC	ON CENTER
CMU	CONCRETE MASONRY UNIT	PCJ	PARTIAL CONTRACTION JOINT
CONC	CONCRETE	PL	PLATE
CONST JT	CONSTRUCTION JOINT	PLF	POUNDS PER LINEAR FOOT
CONT	CONTINUOUS	PROJ	PROJECTION
DIA	DIAMETER	PSF	POUNDS PER SQUARE FOOT
DWC	DRAWING	PSI	POUNDS PER SQUARE INCH
EF	EACH FACE	REINF	REINFORCEMENT
EJ	EXPANSION JOINT	SPECS	SPECIFICATIONS
EL	ELEVATION	SS	STAINLESS STEEL
EW	EACH WAY	STD	STANDARD
FF	FAR FACE	T&B	TOP AND BOTTOM
FTC	FOOTING	T/STRUCTURE	TOP OF STRUCTURE
HORIZ	HORIZONTAL	TYP	TYPICAL
HP	HIGH POINT	UON	UNLESS OTHERWISE NOTED
ID	INSIDE DIAMETER	VERT	VERTICAL
LP	LOW POINT	WSTP	WATERSTOP
MAT'L	MATERIAL	WWF	WELDED WIRE FABRIC
MAX	MAXIMUM		

NOTE: THESE ABBREVIATIONS ARE FOR USE ON STRUCTURAL DRAWINGS ONLY.



**(NOT CONSTRUCTED)**



DATE: DONNA L. FRIS  
PE NO. 57454

PROJECT NO. 2790-83746  
FILE NAME: S001STNT.DWG  
SHEET NO.

S-1

TOWN OF LONGBOAT KEY, FLORIDA  
POTABLE WATER SYSTEM SUBAQUEOUS  
CROSSING OF LONGBOAT PASS AND  
SYSTEM PRESSURE CONTROLS

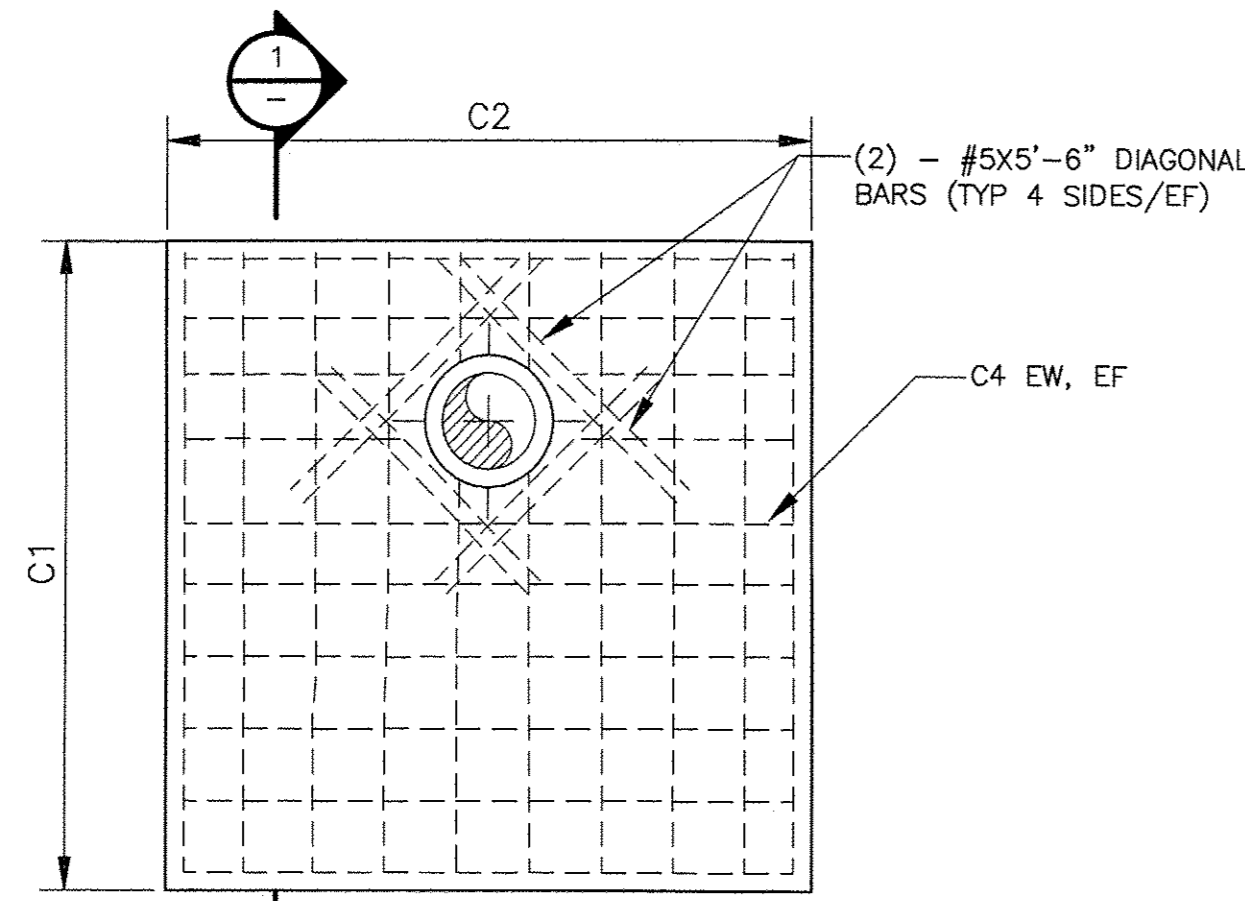
GENERAL NOTES AND  
METER VAULT PLANS AND SECTION -  
ADDITIVE ALTERNATE NO. 1



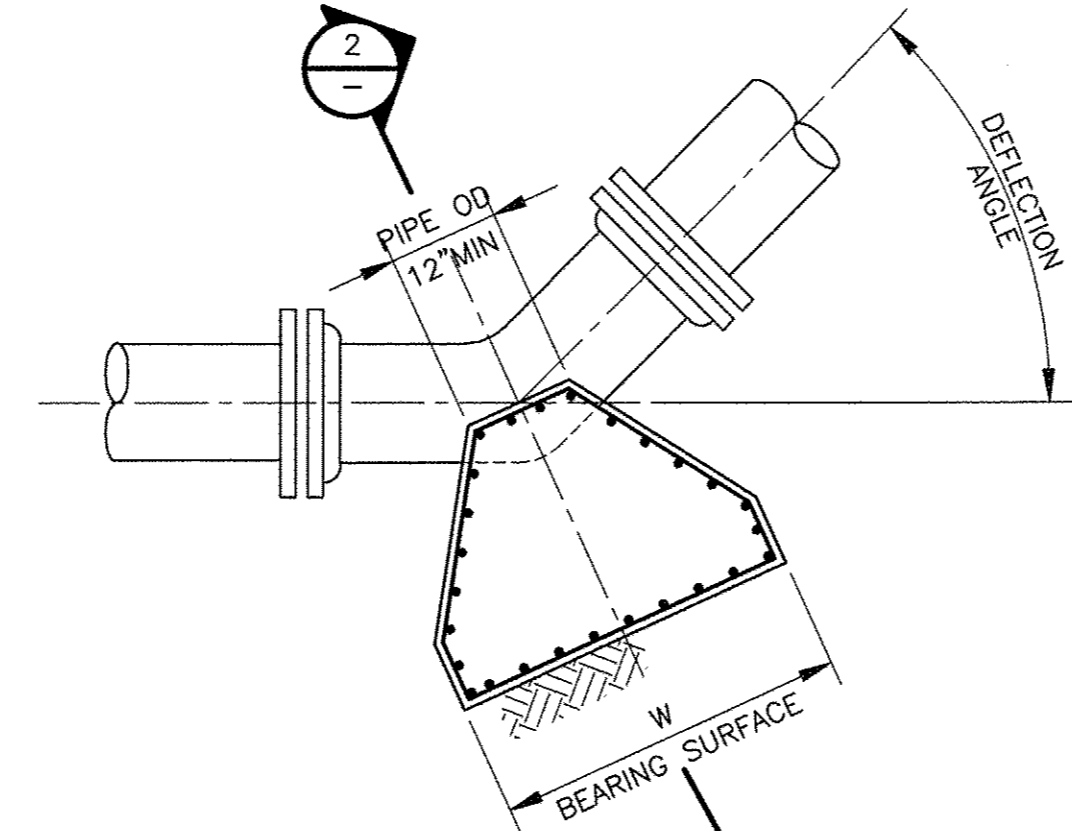
DESIGNED BY: P. SHAH  
DRAWN BY: P. SCHIAVO  
SHEET CHK'D BY: W. MAPLES  
CROSS CHK'D BY: G. CASHON  
APPROVED BY: D. FRIS  
DATE: FEBRUARY 2014

REV. NO.	DATE	DRWN	CHKD	REMARKS
6/15	EAR	DLF		RECORD DRAWINGS
6/14	PCS	DLF		CONFORMED DRAWING

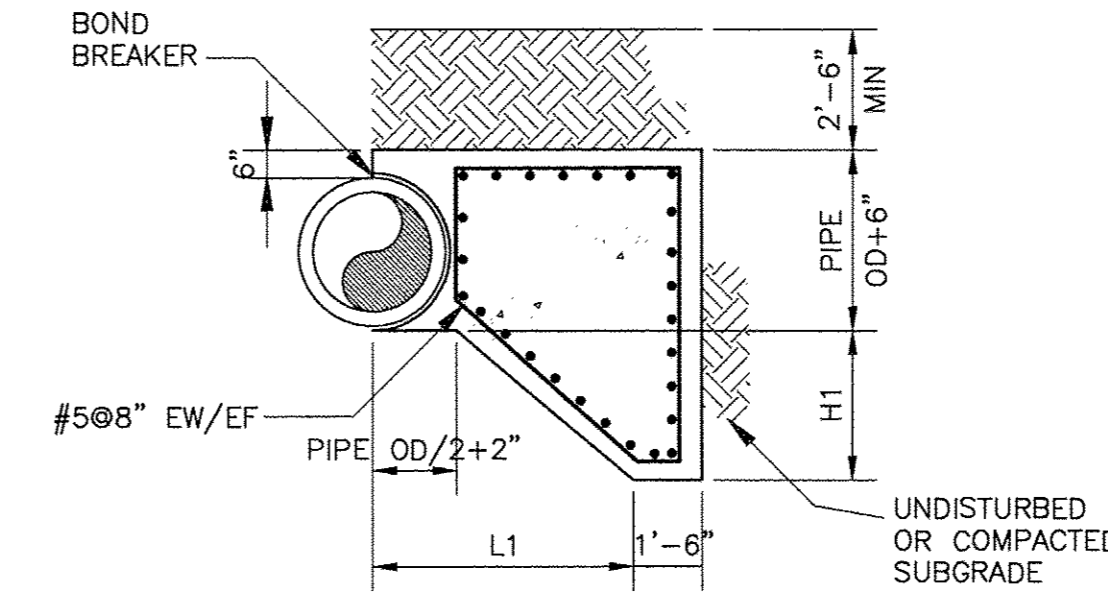
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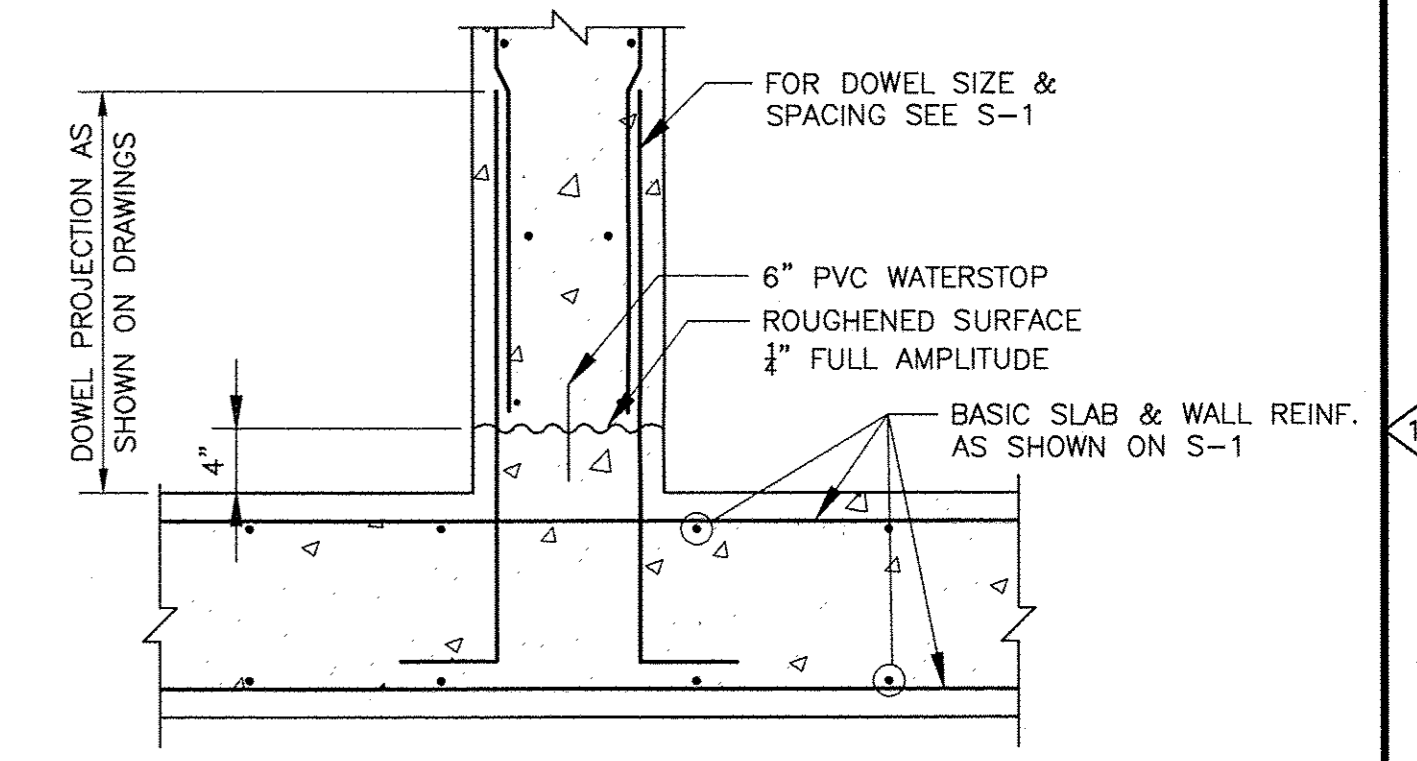
**THRUST COLLAR**  
**DETAIL A**  
NTS



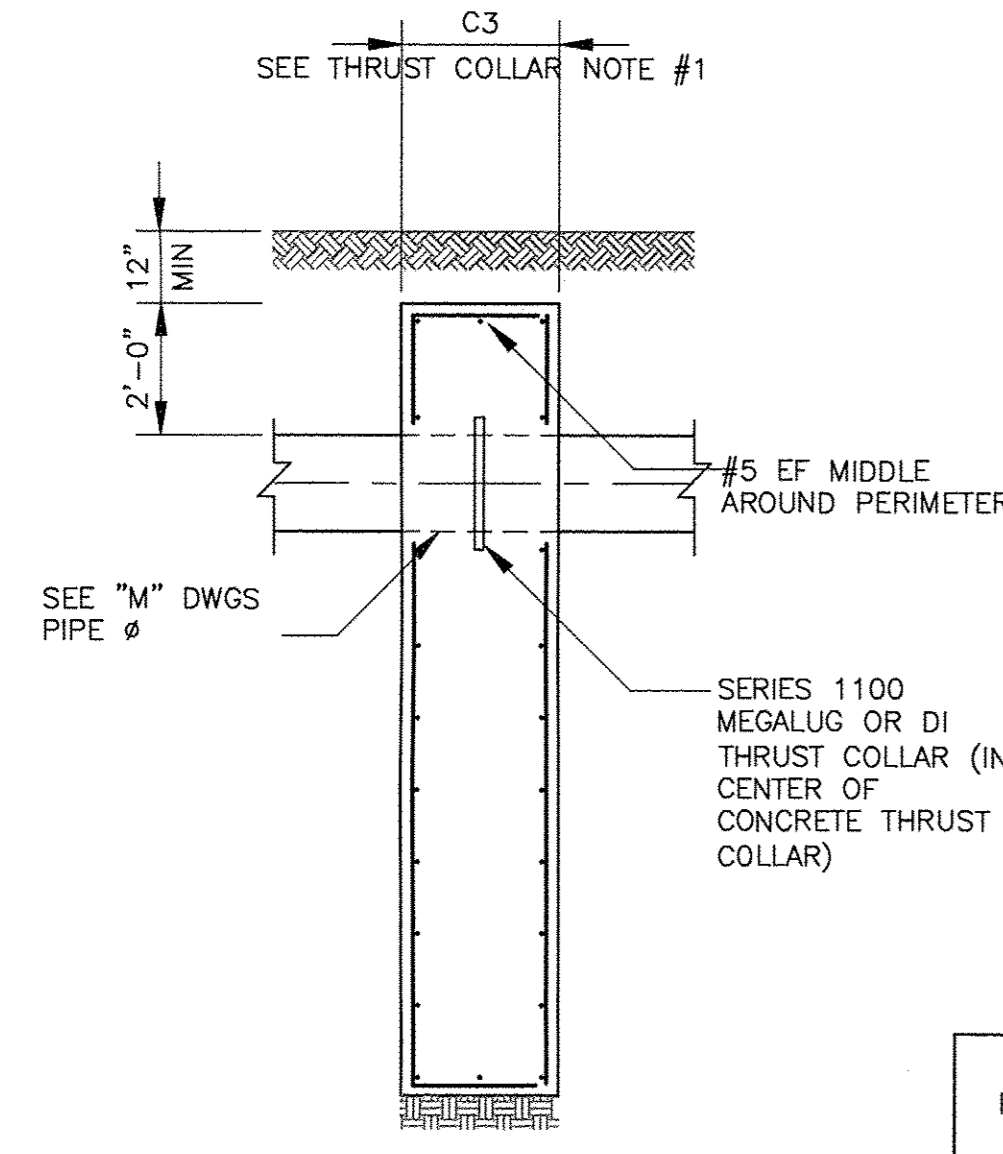
**THRUST BLOCKS FOR HORIZONTAL BENDS**  
**DETAIL B**  
NTS



**SECTION 2**  
NTS



**WALL BASE CONSTRUCTION JOINT**  
**DETAIL C**  
NTS



**SECTION 1**  
3/8" = 1'-0"

- THRUST COLLAR NOTES:**
- THRUST COLLAR THICKNESS ASSUMES THAT THE FACES OF THRUST COLLAR WILL BE FORMED WITH 2 INCHES OF CLEAR COVER. IF THE THRUST COLLAR IS NOT FORMED, 3 INCHES CLEAR COVER WILL BE REQUIRED WITH A THRUST COLLAR THICKNESS OF C3+2".
  - MAXIMUM TEST PRESSURE = 150 PSI
  - IF OPEN-CUT EXCAVATION IS TO BE USED FOR THE CONSTRUCTION OF THE THRUST BLOCK, SELECT COMMON FILL SHALL BE USED AS THE BACKFILL MATERIAL. BACKFILL SHALL BE PER SPECIFICATION 02221.
  - THE SERIES 1100 MEGALUG MUST BE POLYETHYLENE WRAPPED TO PREVENT CONCRETE INTRUSION INTO THE WEDGE POCKETS.
  - CONCRETE FOR THRUST COLLAR SHALL BE CLASS B CONCRETE, AS LISTED IN SPECIFICATION 03301.

NOMINAL PIPE SIZE (INCHES)	MAXIMUM PIPE OD (INCHES)	THRUST COLLAR DIMENSIONS			
		C1	C2	C3	C4
16	17.4	8'-0"	8'-10"	1'-4"	#5@8"

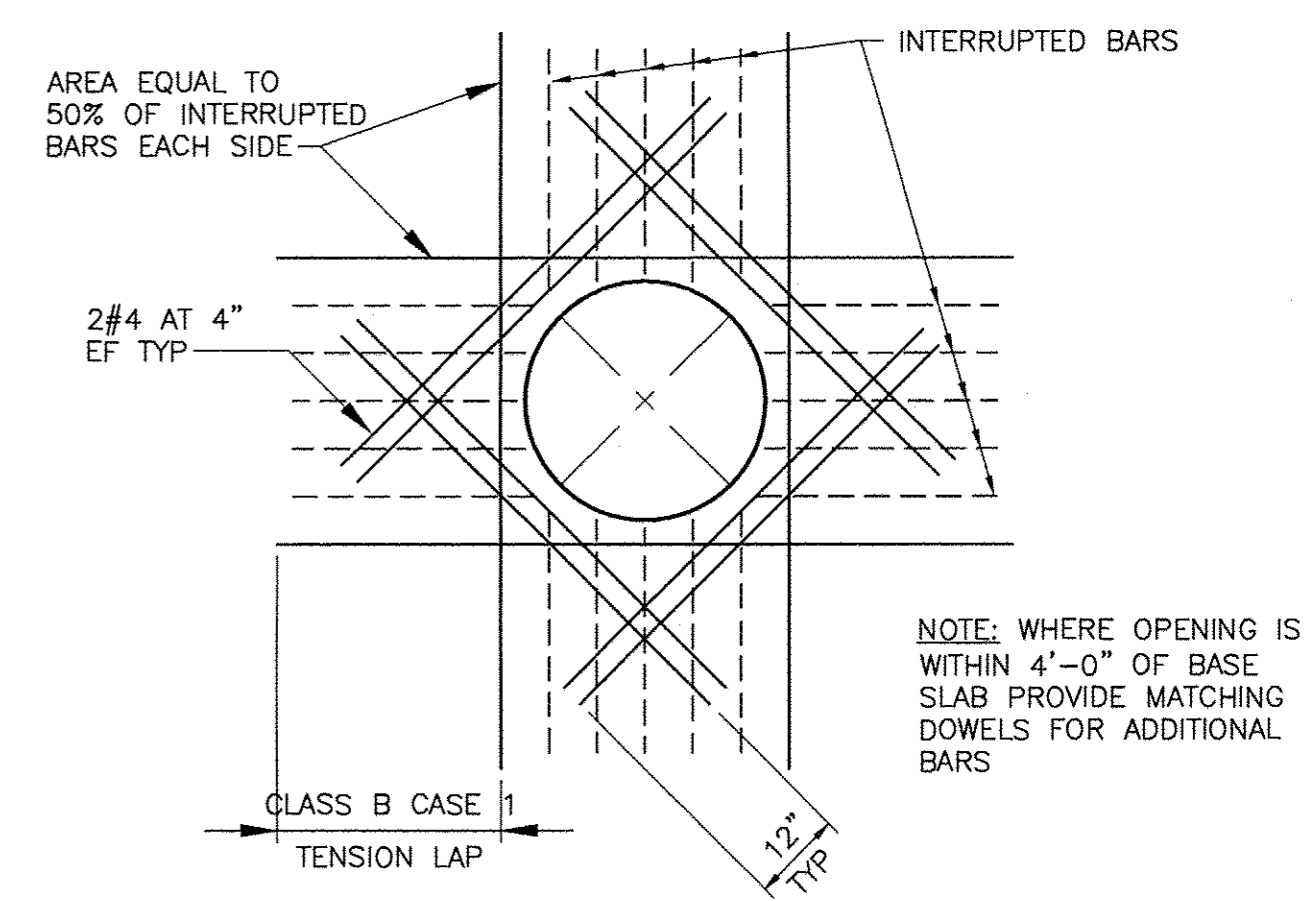
**THRUST BLOCK CONSTRUCTION NOTES:**

- THE CONTRACTOR SHALL SUBMIT HIS PLANNED WORK SCHEDULE AND SEQUENCE FOR THE CONCRETE THRUST BLOCKS TO THE ENGINEER FOR REVIEW PRIOR TO BEGINNING CONSTRUCTION OF THE THRUST BLOCKS.
- THE EXPOSED EXCAVATION AT THE THRUST BLOCK LOCATION SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO THE PLACEMENT OF CONCRETE.
- SOIL AGAINST BEARING SURFACE SHALL BE UNDISTURBED SOIL OR COMPACTED PER SELECT COMMON FILL AS DESCRIBED IN SPECIFICATION 02221.
- PRIOR TO PLACEMENT OF CONCRETE, THE BASE OF THE EXCAVATION AT THE THRUST BLOCK SHALL BE FREE OF LOOSE DEBRIS AND ANY OTHER DELETERIOUS MATERIALS.
- ACCOMPLISH CONCRETE THRUST BLOCK POUR IN ONE CONTINUOUS CONCRETE POUR OPERATION. NO COLD JOINTS WILL BE ALLOWED.
- CONCRETE FOR THRUST BLOCKS SHALL BE CLASS B CONCRETE, AS LISTED IN SPECIFICATION 03301.

**THRUST BLOCK TABLE DESIGN NOTES:**

- MAXIMUM TEST PRESSURE = 150 PSI
- TOP OF PIPE SHALL BE NO LESS THAN 3'-0" FROM FINISHED GRADE.

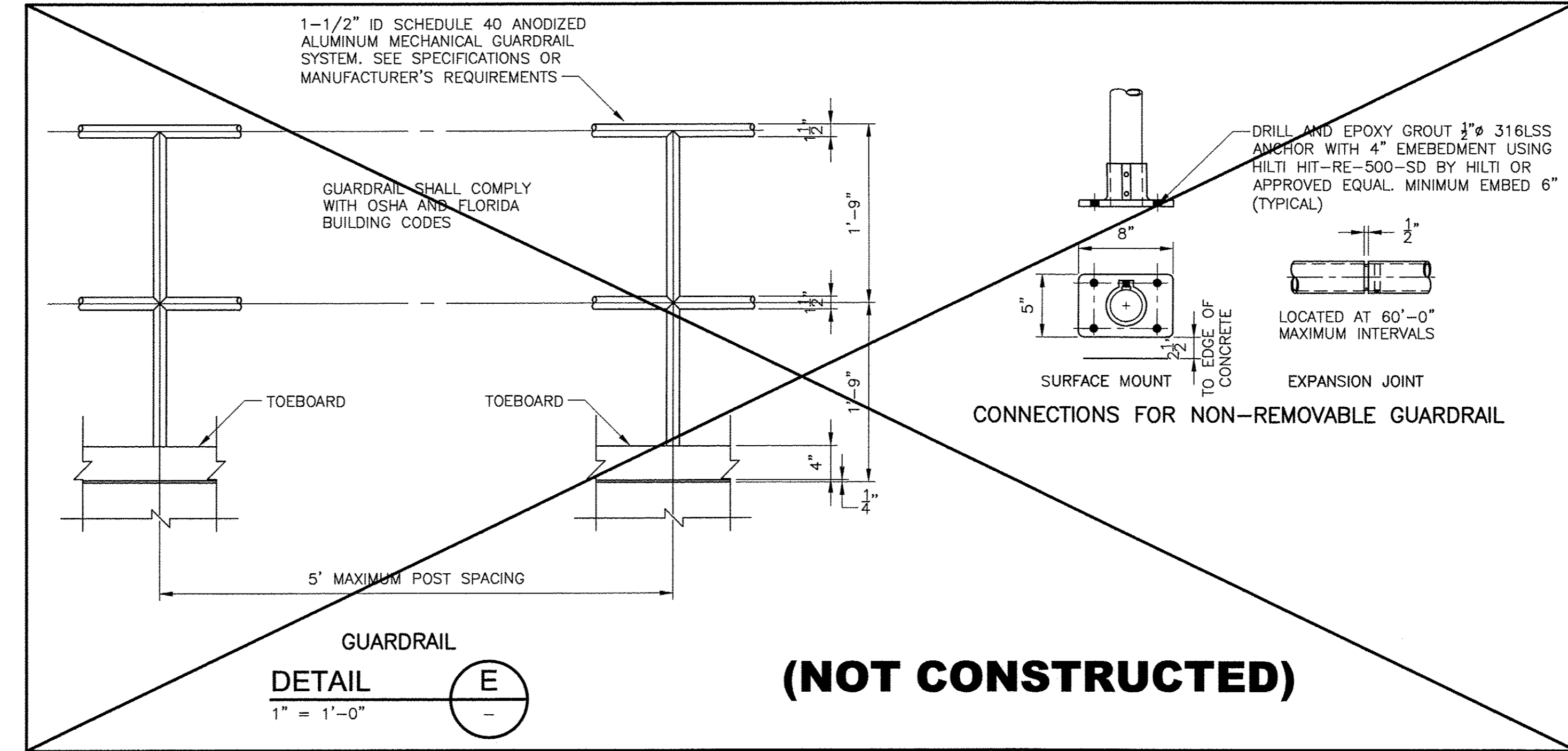
NOMINAL PIPE SIZE (INCHES)	MAXIMUM PIPE OD (INCHES)	THRUST BLOCK DIMENSIONS					
		45 DEG			90 DEG		
		H1	W	L1	H1	W	L1
16	17.4	3'-10"	7'-0"	6'-4"	4'-0"	8'-8"	6'-10"



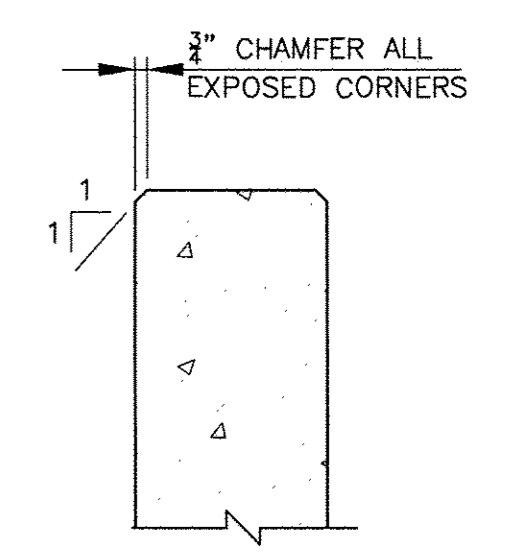
**VALVE VAULT REINFORCEMENT AT CIRCULAR OPENINGS GREATER THAN 12"**  
**DETAIL D**  
NTS

**GUARDRAIL NOTES:**

- ALUMINUM EMBEDDED IN CONCRETE SHALL BE PAINTED WITH ONE SHOP COAT OF HEAVY BITUMASTIC.
- ALUMINUM SHAPES IN CONTACT WITH CONCRETE SHALL BE SEPARATED BY A 1/32" NEOPRENE GASKET OR ANY CASE WHERE TWO DIFFERENT METALS ARE TO BE IN CONTACT. A NEOPRENE GASKET SHALL BE PROVIDED.
- HANDRAILS, GUARDRAILS, POSTS, BRACKETS AND MOUNTINGS SHALL MEET THE FLORIDA BUILDING CODE AND OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) LOADING REQUIREMENTS.
- TOP OF ALL GUARDRAILS SHALL BE 42" HIGH ABOVE THE FINISH FLOOR OR WALKWAY. THE CLEAR DISTANCE BETWEEN THE TOP AND INTERMEDIATE RAILS MEASURED AT RIGHT ANGLES TO THE RAILS SHALL NOT EXCEED 21".
- GUARDRAILS SHALL BE TWO RAIL, 1.5" DIAMETER SYSTEM. THE CENTERLINE OF THE INTERMEDIATE PARALLEL RAIL SHALL BE AT THE POST MID-POINT BETWEEN THE TOP RAIL AND KICKPLATE (AT HORIZONTAL SURFACES) AND BETWEEN TOP RAIL AND STRINGER (AT STAIRS/STEPS). HOWEVER, MAXIMUM CLEAR DISTANCE BETWEEN RAILS MEASURED AT RIGHT ANGLES TO RAILS SHALL BE 21".



**GUARDRAIL**  
**DETAIL E**  
1" = 1'-0"



**CHAMFER**  
**DETAIL F**  
NTS

**RECORD DRAWINGS**

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REVIEWED BY: DONNA L. FRIIS, P.E. Date: JULY 2015

NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.

SEE COVER SHEET FOR SURVEY NOTES

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6/15	EAR	DLF		RECORD DRAWINGS
6/14	PCS	DLF		CONFORMED DRAWING

DESIGNED BY: P. SHAH  
 DRAWN BY: P. SCHIAVO  
 SHEET CHK'D BY: W. MAPLES  
 CROSS CHK'D BY: G. CASHON  
 APPROVED BY: D. FRIIS  
 DATE: FEBRUARY 2014

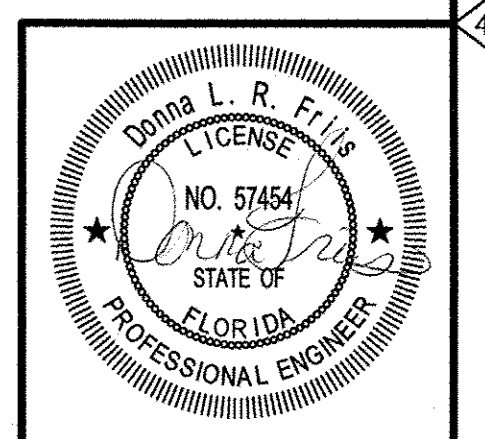
**CDM Smith**  
 1715 North Westshore Blvd., Suite 875  
 Tampa, FL 33607  
 Tel: (813) 281-2900  
 FL COA No. EB-000020

TOWN OF LONGBOAT KEY, FLORIDA  
**POTABLE WATER SYSTEM SUBAQUEOUS CROSSING OF LONGBOAT PASS AND SYSTEM PRESSURE CONTROLS**

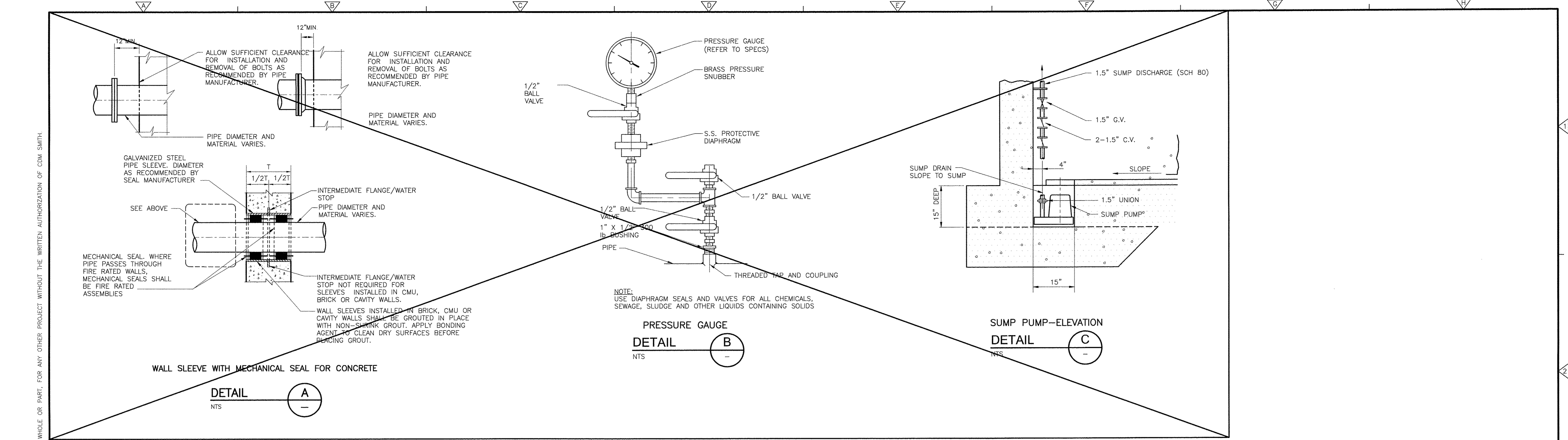
**THRUST COLLARS, THRUST BLOCKS AND STANDARD DETAILS**

DATE: DONNA L. FRIIS  
 PE NO. 57454

PROJECT NO. 2790-83746  
 FILE NAME: S002STD.TDWG  
 SHEET NO. **S-2**







**(NOT CONSTRUCTED)**

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6/15	JMM	VCS		RECORD DRAWINGS
6/14	PEA	VCS		CONFORMED DRAWINGS

DESIGNED BY: K. LOWE  
 DRAWN BY: S. DELAHAYE  
 SHEET CHK'D BY: C. SCOTT  
 CROSS CHK'D BY: K. SCOTT  
 APPROVED BY: G. CASHON  
 DATE: FEBRUARY 2014



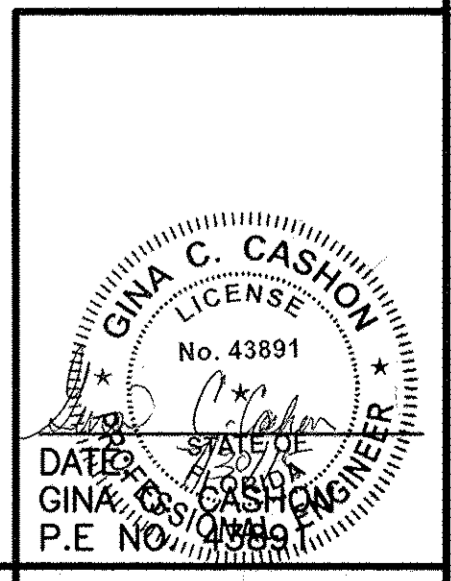
TOWN OF LONGBOAT KEY, FLORIDA  
 POTABLE WATER SYSTEM SUBAQUEOUS  
 CROSSING OF LONGBOAT PASS AND  
 SYSTEM PRESSURE CONTROLS

MISCELLANEOUS MECHANICAL DETAILS  
 SHEET NO.  
 MD-1

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CDM Smith  
 REVIEWED BY: GINA C. CASHON, P.E. Date: JULY 2015  
 NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.



**SYMBOLS**

- CONDUIT CONCEALED IN WALL, IN SLAB ABOVE, OR ABOVE CEILING.
- CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.
- CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.
- DENOTES A QUANTITY OF TWO (2) 3-INCH CONDUITS EACH CONTAINING THREE NO. 3/0 AWG CONDUCTORS AND 1 NO. 2 AWG GROUND CONDUCTOR.
- DENOTES A QUANTITY OF TWO INSTRUMENT CABLES, EACH CABLE TO CONSIST OF TWO NO. 16 AWG CONDUCTORS TWISTED TOGETHER AND COVERED WITH A METALLIC SHIELD AND AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED.
- SAME AS ABOVE EXCEPT CABLE TO CONSIST OF THREE NO. 16 AWG CONDUCTORS TWISTED, SHIELDED AND COVERED WITH AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED.
- THREE 4-INCH CONDUITS
- POWER PANELBOARD (PP-#) OR DISTRIBUTION PANELBOARD (DP-#) SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS
- GROUND SYSTEM GRID OR LOOP, 36" BELOW FINISHED GRADE UNLESS OTHERWISE NOTED.
- EXOTHERMIC WELD CONNECTION
- 3/4" x 10'-0" GROUND ROD. UNLESS SPECIFIED OTHERWISE.
- GROUND ROD TEST WELL STATION (SEE DETAIL SHEET FOR REQUIREMENTS)
- MOTOR OPERATED VALVE OR GATE
- INDICATES LIMITS OF ELECTRICAL EQUIPMENT OR WIRING ENCLOSURE
- ELECTRIC A.C. MOTOR
- CIRCUIT BREAKER
- GROUND
- FIELD INSTRUMENT, TAG NO. AS INDICATED  
\* - INDICATES INSTRUMENT TYPE DEFINED ON LOOP SHEETS OR P&ID  
## - INDICATES LOOP NO.
- DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W  
\* GFCI - GROUND FAULT CIRCUIT INTERRUPTER TYPE  
WP - WEATHERPROOF  
T - TRANSIENT VOLTAGE SURGE SUPPRESSOR  
IC - ISOLATED GROUND  
4 - CIRCUIT NUMBER

**ABBREVIATIONS**

- A AMPERES
- AFF ABOVE FINISHED FLOOR
- AWG AMERICAN WIRE GAUGE
- BKR BREAKER
- BLDG BUILDING
- C CONDUIT
- CB CIRCUIT BREAKER
- ELEC ELECTRICAL
- FIT FLOW INDICATOR TRANSMITTER
- GFCI GROUND FAULT CIRCUIT INTERRUPTER
- G, GND GROUND
- HP HORSEPOWER
- LTG LIGHTING
- MFR MANUFACTURER
- MIN MINIMUM
- MCP MOTOR CIRCUIT PROTECTOR
- NEC NATIONAL ELECTRICAL CODE
- NTS NOT TO SCALE
- P POLE
- PB PULL BOX
- PIT PRESSURE INDICATOR TRANSMITTER
- RTU REMOTE TERMINAL UNIT
- SS STAINLESS STEEL
- SH SHIELDED
- SPD SURGE PROTECTION DEVICE
- TYP TYPICAL
- WP WEATHERPROOF
- V VOLTS

**NOTES:**

1. IN GENERAL CONDUIT ROUTING FOR EQUIPMENT AND DEVICES IS NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ALL CONDUITS WHICH SHALL INCLUDE CONDUITS SHOWN ON SINGLE LINE POWER DIAGRAM, PANEL SCHEDULES, RISER DIAGRAMS, AND HOME-RUNS SHOWN ON PLAN DRAWINGS. REFER TO SPECIFICATIONS FOR MATERIALS AND INSTALLATION REQUIREMENTS.
2. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUITS REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.
2. DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO CIVIL DRAWINGS FOR LOCATIONS OF ELECTRICAL EQUIPMENT AND PANELS. LOCATIONS OF ELECTRICAL EQUIPMENT IS APPROXIMATE. CONTRACTOR TO COORDINATE EXACT LOCATION IN FIELD. MOUNT NEW EQUIPMENT ON EXISTING RACK AS SHOWN ON DRAWINGS AND MODIFY RACK AS REQUIRED.
3. ALL WORK SHALL COMPLY WITH NEC AND LOCAL CODES.
4. CONDUCTORS SHALL NOT BE SPLICED EXCEPT AS NOTED IN THE SPECIFICATIONS AND DRAWINGS.
5. ALL CONDUITS SHALL HAVE A BOND WIRE SIZED PER TABLE 250.122 OF THE NEC (UNLESS OTHERWISE NOTED).
6. CONTRACTOR SHALL FIELD VERIFY EXISTING UNDERGROUND UTILITIES, PIPING, ETC. PRIOR TO BEGINNING OF PROJECT WORK, REROUTE NEW CONDUITS, DUCTBANK, MANHOLES, PULL BOXES, ETC., AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
7. INTERPRETATION OF ELECTRICAL DRAWINGS: EQUIPMENT IDENTIFICATION, CIRCUIT IDENTIFICATION, ROUTING, AND SIZES OF CONDUITS AND WIRES ARE SHOWN ON THE FOLLOWING DRAWINGS:
  - 7.1. SINGLE LINE POWER DIAGRAMS: POWER, CONTROL AND SIGNAL WIRING REQUIREMENTS FOR ELECTRICAL DISTRIBUTION EQUIPMENT AND UTILIZATION EQUIPMENT POWERED FROM SWITCHGEAR, SWITCHBOARDS, MOTOR CONTROL CENTERS AND MAJOR POWER DISTRIBUTION PANELBOARDS ARE TYPICALLY SHOWN ON THE ONE LINE DIAGRAMS. THE PARAMETERS IDENTIFIED ON THE ONE LINE DIAGRAMS ARE: CIRCUIT ORIGIN AND DESTINATION, CONDUIT SIZE, WIRE SIZE AND QUANTITY FOR COMPLETE CIRCUIT LENGTH, AUXILIARY DEVICES ASSOCIATED WITH THE CONTROL/PROTECTION OF THE POWERED EQUIPMENT, AND SIZE OF GROUNDING ELECTRODE CONDUCTORS.
  - 7.2. INSTRUMENTATION AND CONTROL RISER DIAGRAMS: CONTROL, SIGNAL AND DATA HIGHWAY WIRING REQUIREMENTS FOR INSTRUMENTS AND CONTROL DEVICES CONTROLLED/MONITORED FROM INSTRUMENTATION AND CONTROL PANELS SUCH AS PLCs, TERMINAL CABINETS, AND REMOTE I/O PANELS ARE TYPICALLY SHOWN ON THE INSTRUMENTATION AND CONTROL RISER DIAGRAMS. THE PARAMETERS IDENTIFIED ON THE RISER DIAGRAMS ARE: CIRCUIT IDENTIFICATION, CIRCUIT ORIGIN AND DESTINATION, CONDUIT SIZE, WIRE SIZE, QUANTITY AND TYPE FOR COMPLETE CIRCUIT LENGTH, AND AUXILIARY DEVICES ASSOCIATED WITH THE CONTROL/PROTECTION OF THE POWERED EQUIPMENT.

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7/15	MAY	RHC		REVISED FOR RECORD
6/14	RHC	SJP		CONFORMED DRAWINGS

DESIGNED BY: N. KHALDI  
 DRAWN BY: N. KHALDI  
 SHEET CHK'D BY: S. PERRY  
 CROSS CHK'D BY: J. SANCHEZ  
 APPROVED BY: S. PERRY  
 DATE: FEBRUARY 2014



1715 North Westshore Blvd., Suite 875  
 Tampa, FL 33607  
 Tel: (813) 281-2900  
 FL COA No. EB-0000020

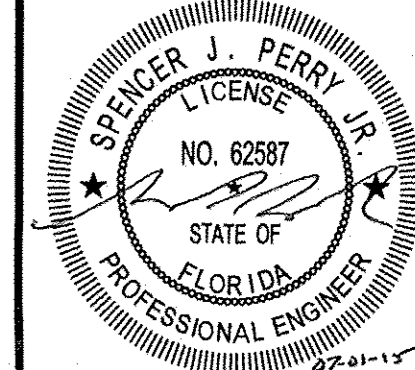
TOWN OF LONGBOAT KEY, FLORIDA  
**POTABLE WATER SYSTEM SUBAQUEOUS  
 CROSSING OF LONGBOAT PASS AND  
 SYSTEM PRESSURE CONTROLS**

**ELECTRICAL SYMBOLS AND ABBREVIATIONS**

**RECORD DRAWINGS**

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REVIEWED BY: SPENCER J. PERRY JR., P.E. Date: JULY 2015  
**CDM Smith**  
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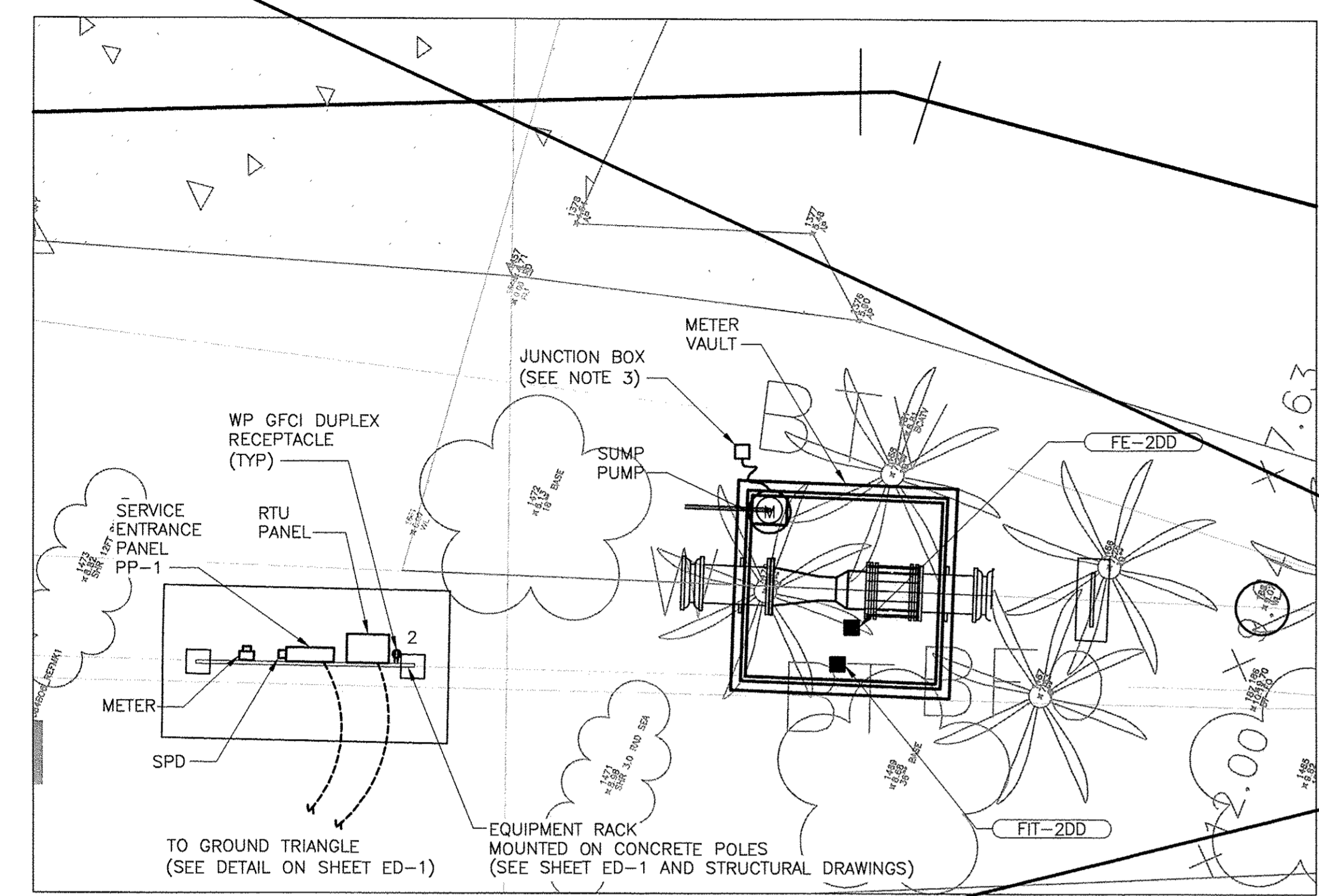
DATE: SPENCER J. PERRY  
 P.E. NO. 62587  
 PROJECT NO. 2790-83746  
 FILE NAME: E001SYMB.DWG  
 SHEET NO. E-1

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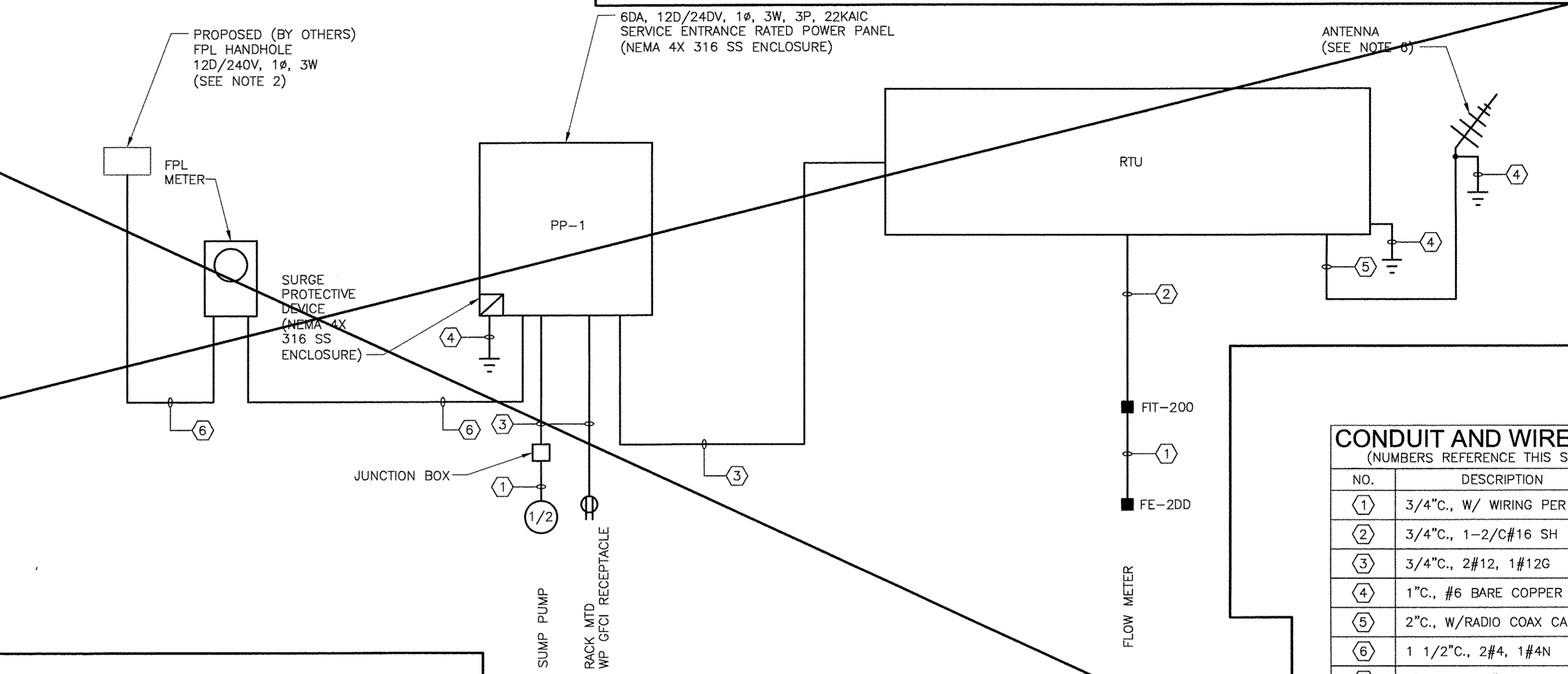
**(NOT CONSTRUCTED)**

**NOTES:**

- REFER TO INSTRUMENTATION DRAWINGS AND DIVISION 13 SPECIFICATIONS FOR RTU/ANTENNA DETAILS AND REQUIREMENTS.
- COORDINATE EXACT LOCATION OF PROPOSED (BY OTHERS) HANDHOLE WITH FPL. REFER TO SPECIFICATION SECTION 1605D FOR ADDITIONAL DETAILS.
- COORDINATE WITH SUMP PUMP MANUFACTURER FOR THE PROVISION OF A CORD THAT CAN BE DIRECTLY SPLICED TO THE FEEDERS (NOT USING A PLUG AND RECEPTACLE CONNECTION).
- POWER PROVIDED BY MANATEE COUNTY. COORDINATE WITH MANATEE COUNTY: KIRK CAMERON, TELEPHONE 941-746-3D20 (X229) OR 941-792-8B11 (X5D28), EMAIL: KIRK.CAMERON@MYMANATEE.ORG.
- REFER TO SHEET C-5 FOR EQUIPMENT LOCATION. COORDINATE EXACT LOCATION OF ALL ELECTRICAL EQUIPMENT WITH MANATEE COUNTY.
- NEW ANTENNA MOUNTED ON EXISTING MAST. COORDINATE WITH OWNER FOR ADDITIONAL REQUIREMENTS.
- PROVIDE A 2DA, 1P CIRCUIT BREAKER IN EXISTING POWER PANEL. MATCH EXISTING MANUFACTURER TYPE AND AIC RATINGS.



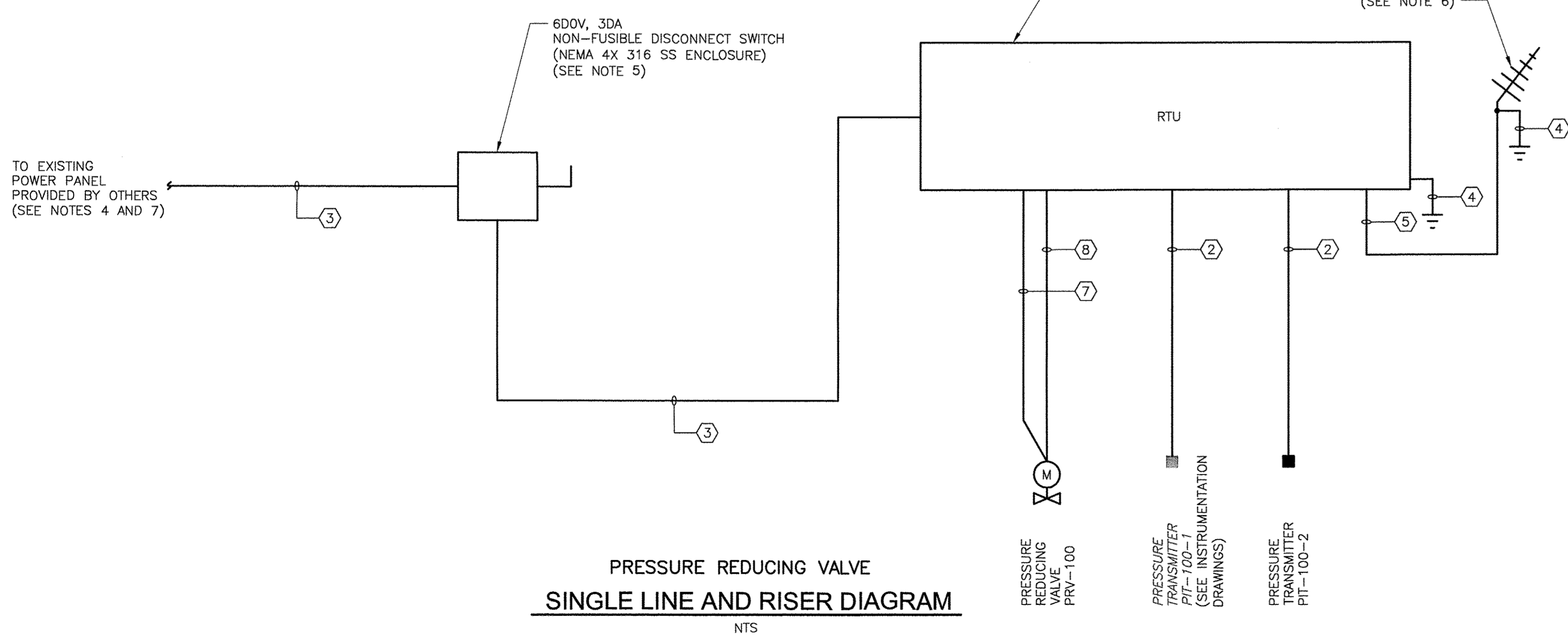
FLOW METERING STATION - ADDITIVE ALTERNATE NO. 1  
**SITE PLAN**  
 1/4"=1'-0"



FLOW METERING STATION - ADDITIVE ALTERNATE NO. 1  
**SINGLE LINE AND RISER DIAGRAM**  
 NTS

**CONDUIT AND WIRE LEGEND**  
 (NUMBERS REFERENCE THIS SHEET ONLY)

NO.	DESCRIPTION
①	3/4" C., W/ WIRING PER MFR
②	3/4" C., 1-2/C#16 SH
③	3/4" C., 2#12, 1#12G
④	1" C., #6 BARE COPPER TO GND TRIANGLE
⑤	2" C., W/RADIO COAX CABLE (DIV. 13)
⑥	1 1/2" C., 2#4, 1#4N
⑦	1" C., 2-2/C#16 SH
⑧	3/4" C., 2#12, 1#12G (24 VDC SUPPLY)



PRESSURE REDUCING VALVE  
**SINGLE LINE AND RISER DIAGRAM**  
 NTS

**(NOT CONSTRUCTED)**

**POWER PANEL PP-1**

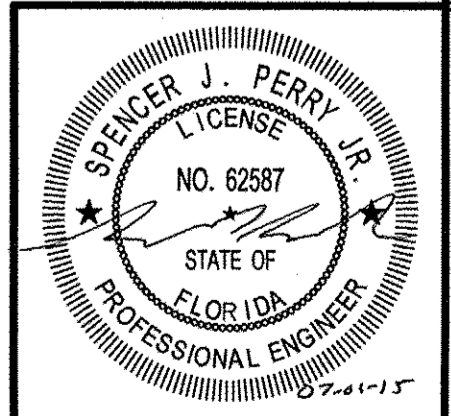
DESCRIPTION		LOAD	C/B AMP/POLES	C/B AMP/POLES	LOAD	DESCRIPTION
		A	B	A	B	
RTU		0.5	2D / 1	1	2D / 1	GFCI RECEPTACLE
SUMP PUMP		1.45	2D / 1	4	2D / 1	D SPARE
SPARE		0	2D / 1	5	2D / 1	D SPARE
SPARE			2D / 1	6	2D / 1	D SPARE
SPACE				7		
SPACE				8		
SPACE				9		
SPACE				10		
SPACE				11		
SPACE				12		
SPACE				13		
SPACE				14		
SPACE				15		
SPACE				16		
SPACE				17		
SPACE				18		

TOTAL CONNECTED KVA: D.68 ØA 1.45 ØB  
 TOTAL CONNECTED AMPS: 5.67 ØA 12.D1 ØB

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CDM Smith REVIEWED BY: SPENCER J. PERRY JR., P.E. Date: JULY 2015  
 NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.



DATE:  
 SPENCER J. PERRY JR.  
 P.E. NO. 62587

REV. NO.	DATE	DRWN	CHKD	REMARKS
7/15	MAY	RHC		REVISED FOR RECORD
6/14	RHC	SJP		CONFORMED DRAWINGS

DESIGNED BY: N. KHALDI  
 DRAWN BY: N. KHALDI  
 SHEET CHK'D BY: S. PERRY  
 CROSS CHK'D BY: J. SANCHEZ  
 APPROVED BY: S. PERRY  
 DATE: FEBRUARY 2014

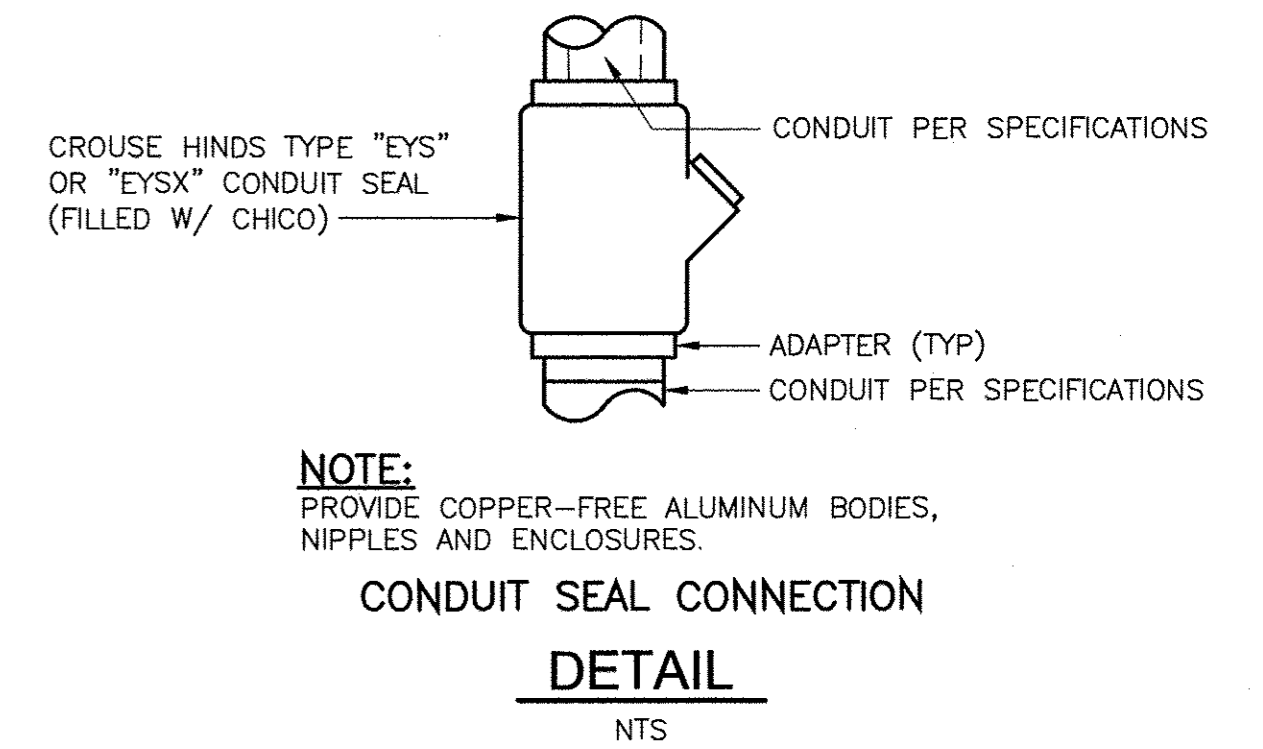
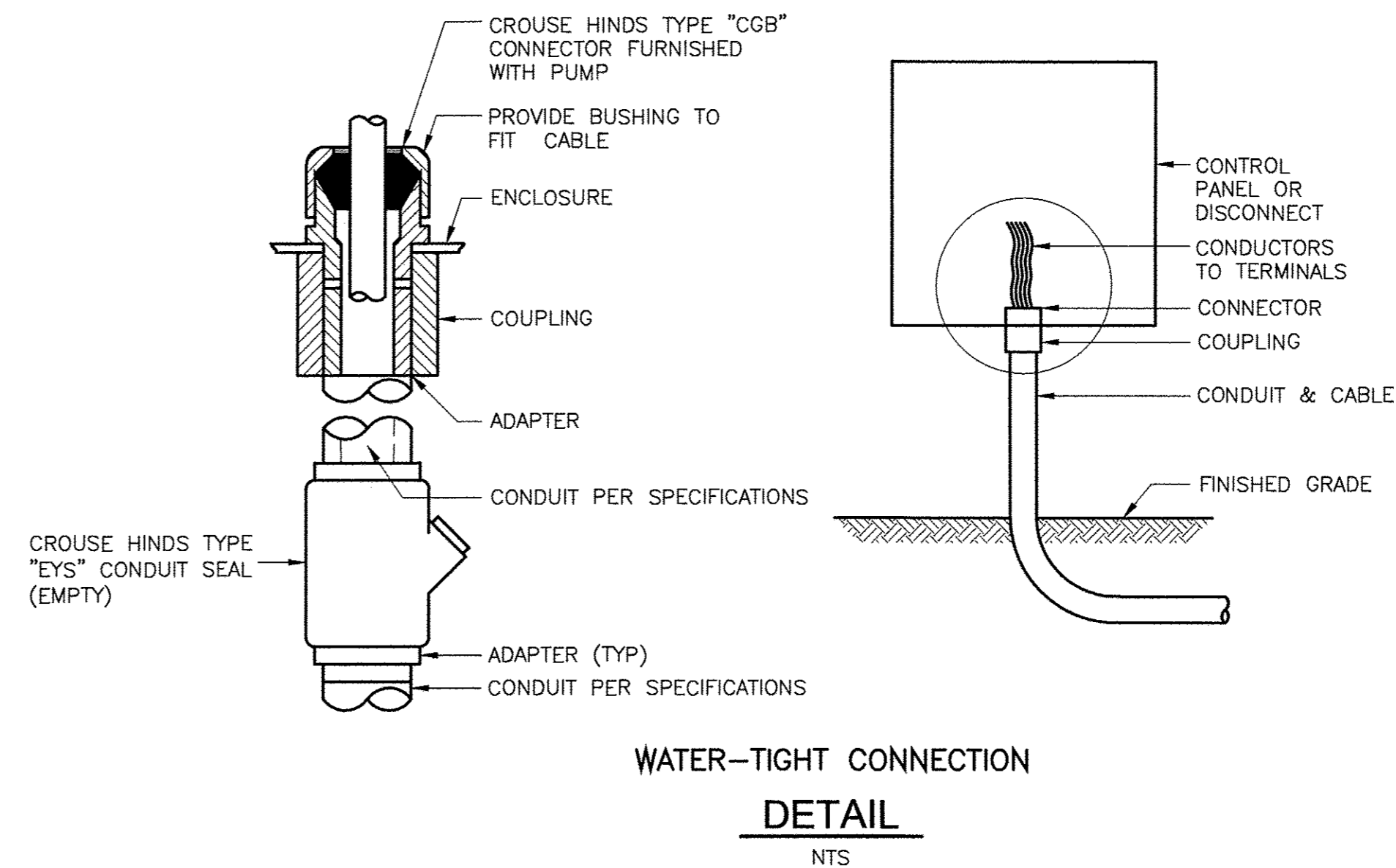
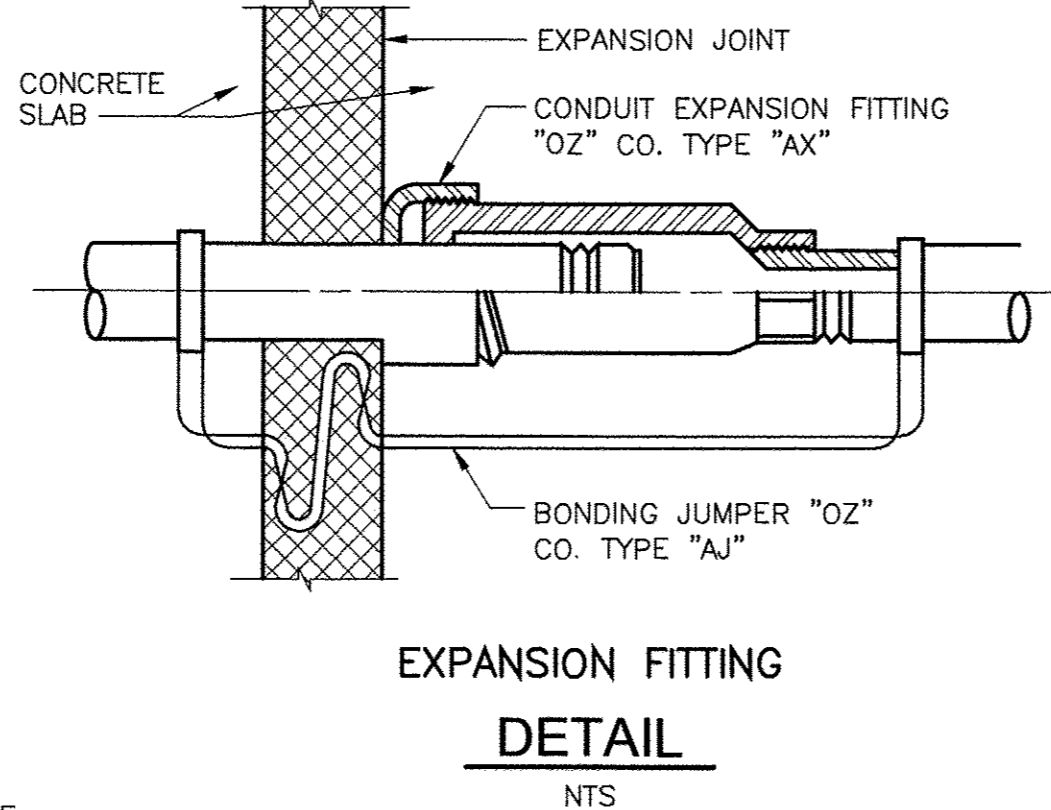
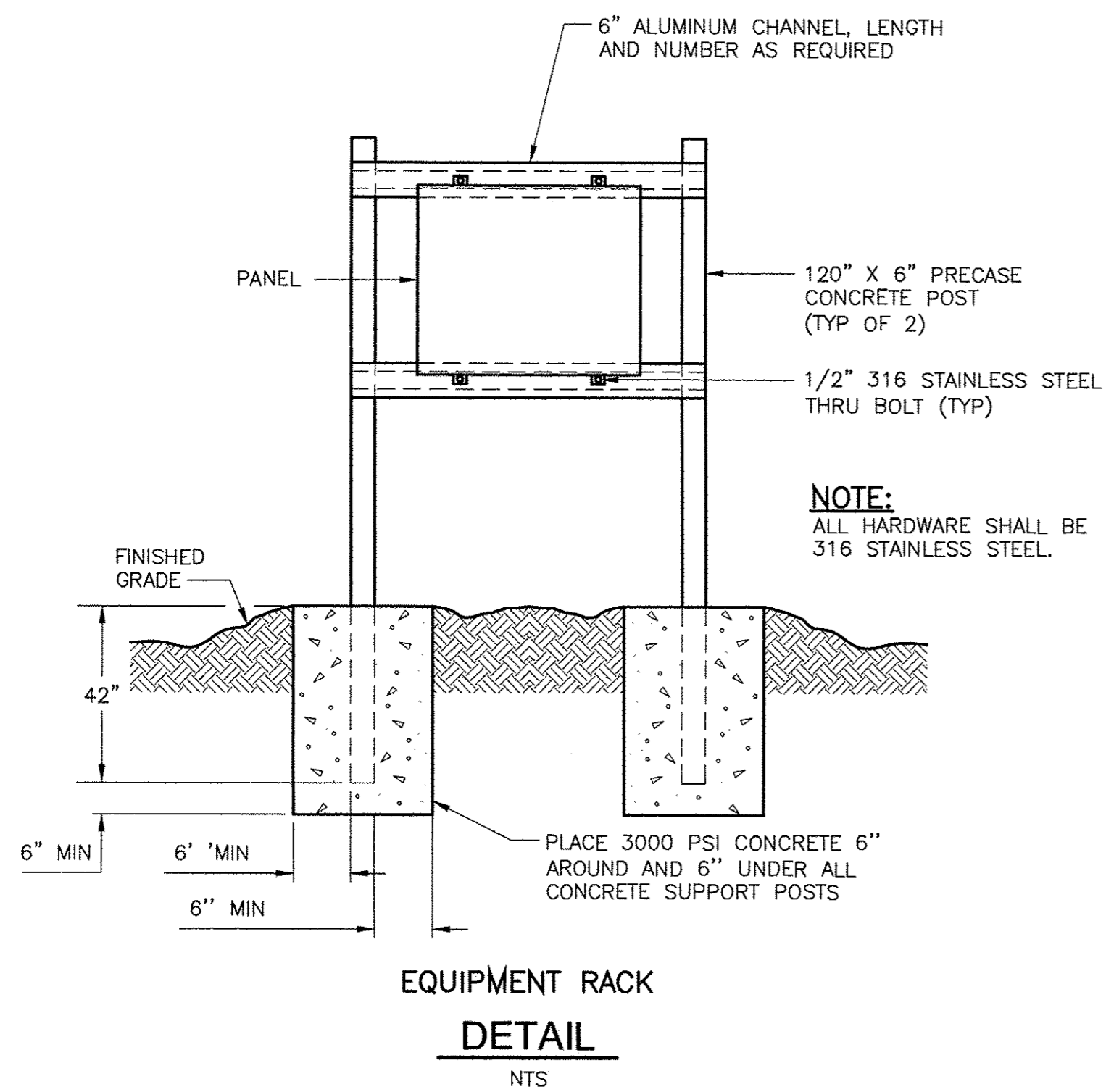
**CDM Smith**  
 1715 North Westshore Blvd., Suite 875  
 Tampa, FL 33607  
 Tel: (813) 281-2900  
 FL COA No. EB-0000020

TOWN OF LONGBOAT KEY, FLORIDA  
**POTABLE WATER SYSTEM SUBAQUEOUS CROSSING OF LONGBOAT PASS AND SYSTEM PRESSURE CONTROLS**

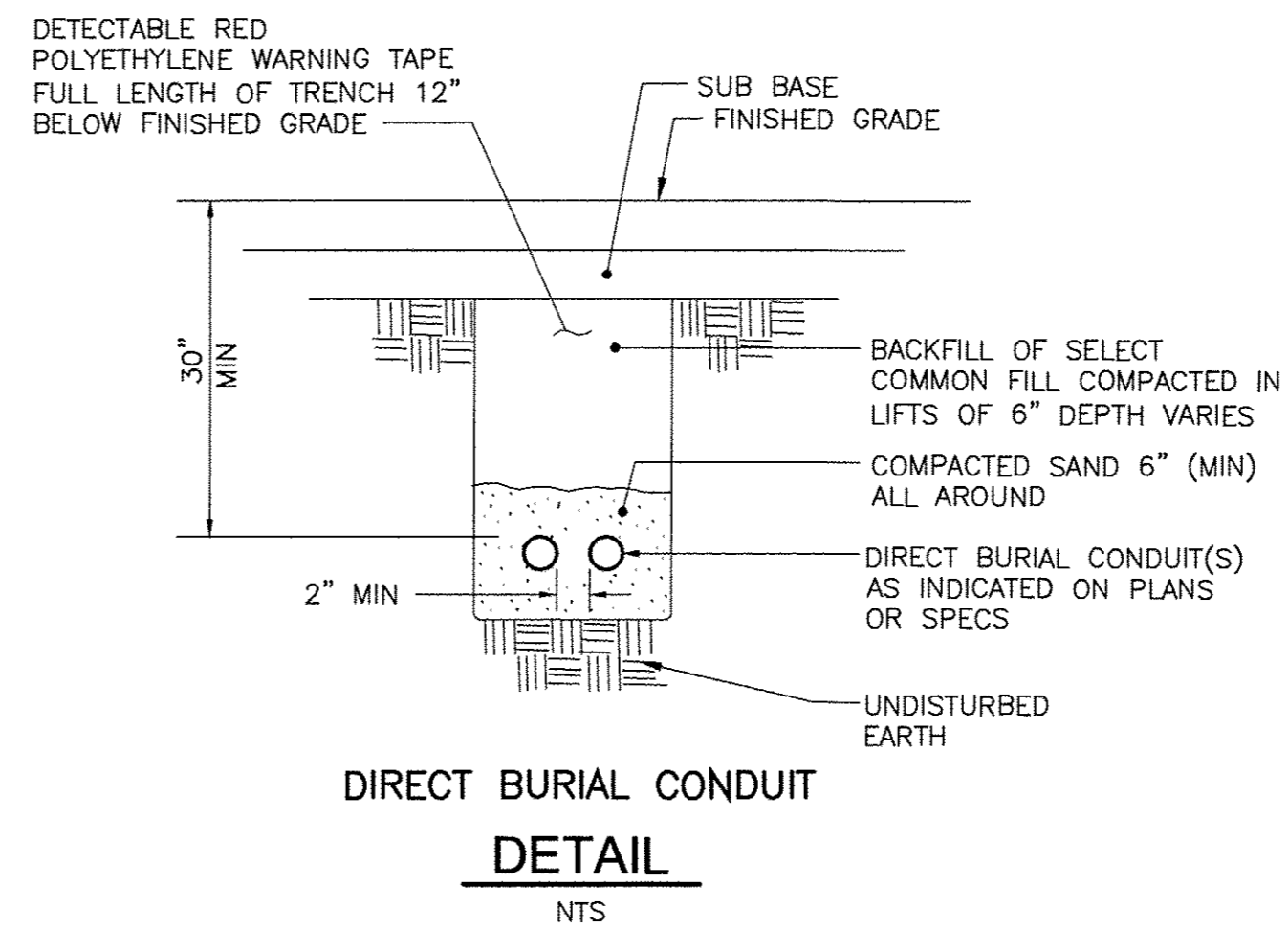
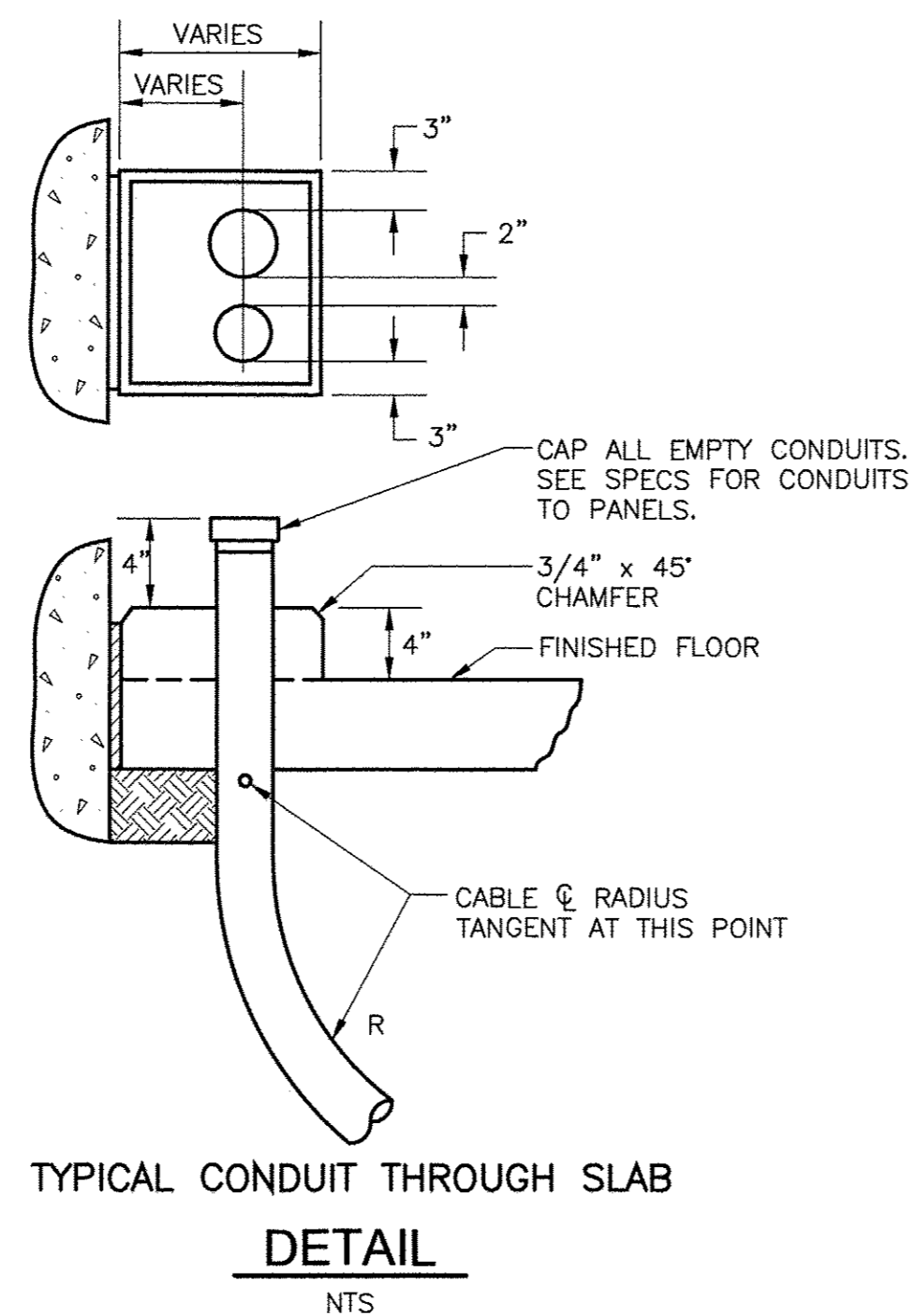
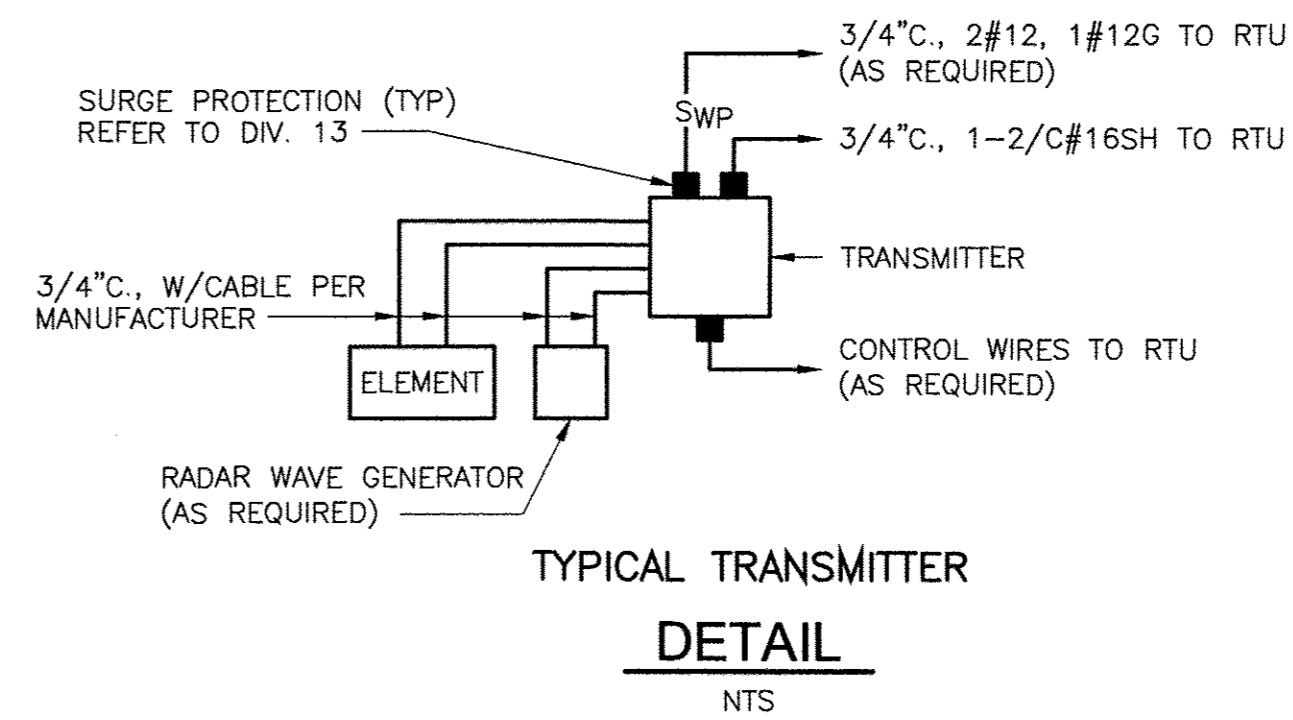
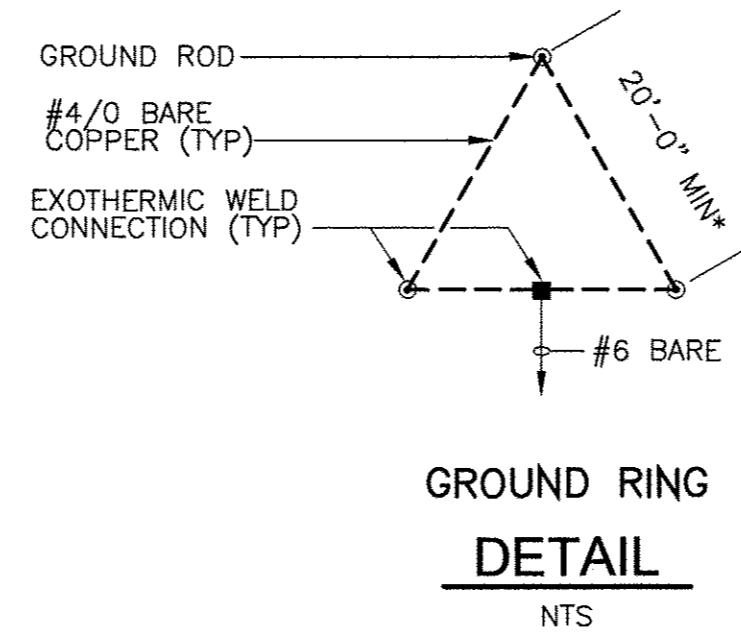
**ELECTRICAL POWER PLAN AND SINGLE LINE POWER DIAGRAM**

PROJECT NO. 2790-83746  
 FILE NAME: E002ELPL.DWG  
 SHEET NO.  
**E-2**

XREFS: [CDMS\_2436] Images: [ ]  
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NOTE:  
 PROVIDE COPPER-FREE ALUMINUM BODIES,  
 NIPPLES AND ENCLOSURES.



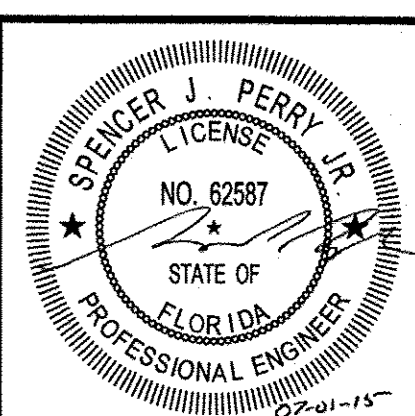
**RECORD DRAWINGS**

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REVIEWED BY: SPENCER J. PERRY JR., P.E. Date: JULY 2015

**CDM Smith**

NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, FAC FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.



DATE:  
 SPENCER J. PERRY  
 P.E. NO. 62587

PROJECT NO. 2790-83746  
 FILE NAME: ED01ELDT.DWG

SHEET NO.  
 ED-1

REV. NO.	DATE	DRWN	CHKD	REMARKS
	7/15	MAY	RHC	REVISED FOR RECORD
	6/14	RHC	SJP	CONFORMED DRAWINGS

DESIGNED BY: N. KHALDI  
 DRAWN BY: N. KHALDI  
 SHEET CHK'D BY: S. PERRY  
 CROSS CHK'D BY: J. SANCHEZ  
 APPROVED BY: S. PERRY  
 DATE: FEBRUARY 2014

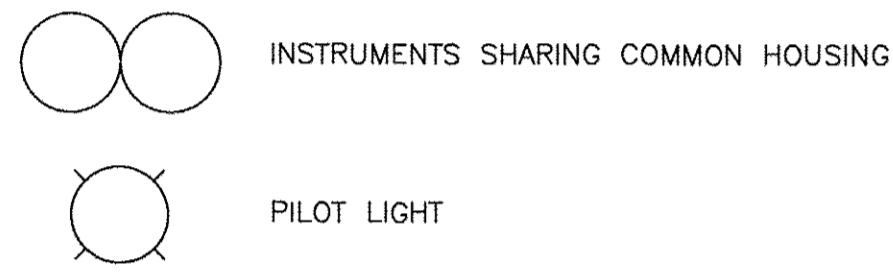


TOWN OF LONGBOAT KEY, FLORIDA  
 POTABLE WATER SYSTEM SUBAQUEOUS  
 CROSSING OF LONGBOAT PASS AND  
 SYSTEM PRESSURE CONTROLS

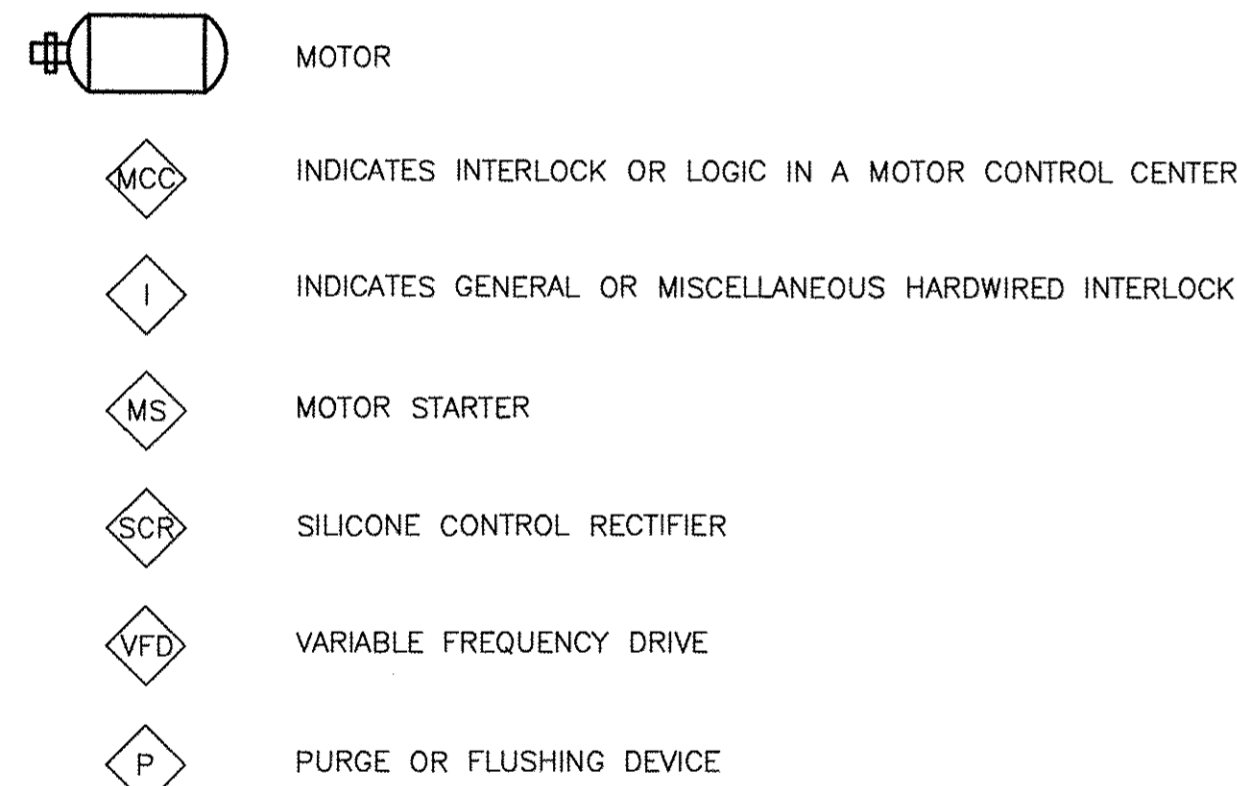
ELECTRICAL DETAILS

**GENERAL INSTRUMENT OR FUNCTION SYMBOLS**

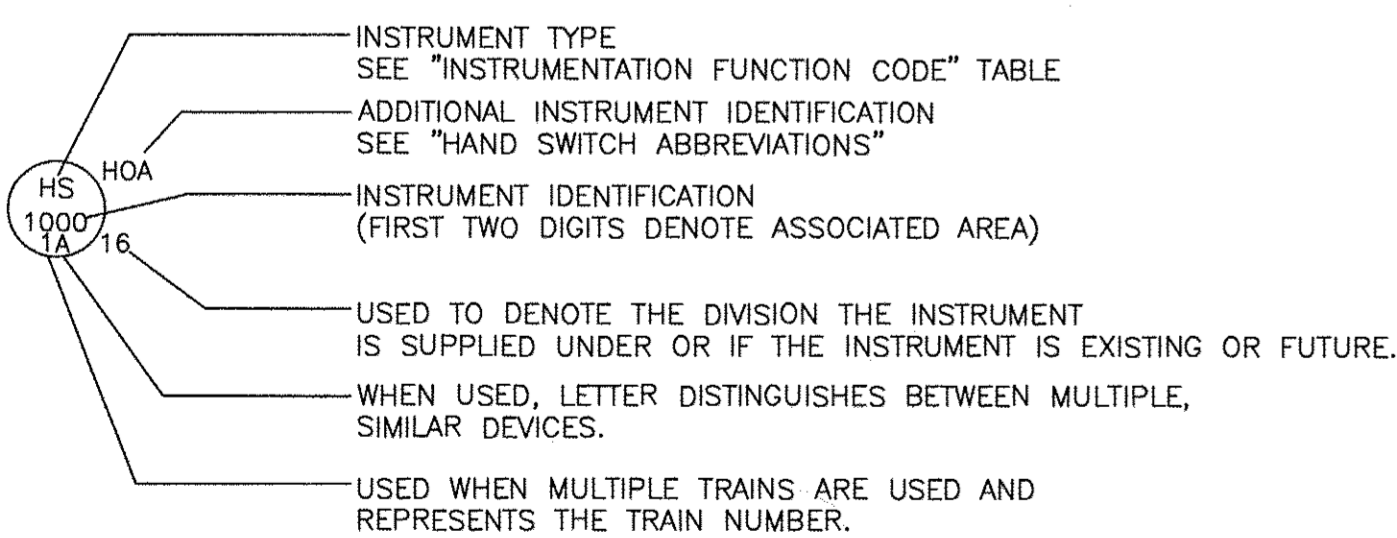
SHARED DISPLAY/SHARED CONTROL				
PRIMARY CHOICE	SECONDARY CHOICE	COMPUTER SOFTWARE	DISCRETE	LOCATION AND ACCESSIBILITY
				FIELD MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
				PRIMARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
				PRIMARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE
				SECONDARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
				SECONDARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE



**MISCELLANEOUS SYMBOLS**



**TYPICAL TAG NUMBERS & DESIGNATION**



**HAND SWITCH ABBREVIATIONS**

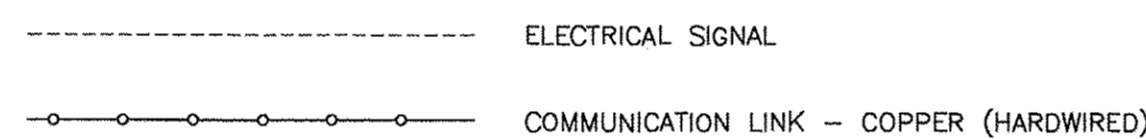
- |                           |                         |
|---------------------------|-------------------------|
| AO = AUTO/OFF             | LOR = LOCAL/OFF/REMOTE  |
| AM = AUTO/MANUAL          | LOS = LOCKOUT/STOP      |
| CM = COMPUTER/MANUAL      | LA = LOCAL/AUTO         |
| CL = COMPUTER/LOCAL       | LR = LOCAL/REMOTE       |
| E-STOP = EMERGENCY STOP   | OC = OPEN/CLOSE         |
| FR = FORWARD/REVERSE      | OHC = OFF/HAND/COMPUTER |
| FOR = FORWARD/OFF/REVERSE | OO = ON/OFF             |
| FS = FAST SLOW            | OQA = ON/OFF/AUTO       |
| FOS = FAST/OFF/SLOW       | OSC = OPEN/STOP/CLOSE   |
| HOA = HAND/OFF/AUTO       | RSL = RAISE/STOP/LOWER  |
| LLS = LEAD/LAG/STANDBY    | SS = START/STOP         |
| LOC = LOCAL/OFF/COMPUTER  | SOR = START/OFF/RESET   |

**INSTRUMENTATION FUNCTION CODE**

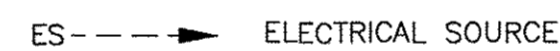
FIRST LETTERS		SUCCEEDING LETTERS		
COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
MEASURED/INITIATING VARIABLE	VARIABLE MODIFIER	READOUT/PASSIVE FUNCTION	OUTPUT/ACTIVE FUNCTION	FUNCTION MODIFIER
A ANALYSIS		ALARM		
B BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C USER'S CHOICE			CONTROL	CLOSED
D USER'S CHOICE	DIFFERENCE, DIFFERENTIAL			DEVIATION
E VOLTAGE		SENSOR, PRIMARY ELEMENT		
F FLOW, FLOW RATE	RATIO			
G USER'S CHOICE		GLASS, GAUGE, VIEWING DEVICE		
H HAND				HIGH
I CURRENT		INDICATE		
J POWER		SCAN		
K TIME, SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L LEVEL		LIGHT		LOW
M MOISTURE				MIDDLE, INTERMEDIATE
N USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P PRESSURE		POINT (TEST CONNECTION)		
Q QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE		
R RADIATION		RECORD		RUN
S SPEED, FREQUENCY	SAFETY		SWITCH	STOP
T TEMPERATURE			TRANSMIT	
U MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	
V VIBRATION, MECHANICAL, ANALYSIS			VALVE, DAMPER, LOUVER	
W WEIGHT, FORCE		WELL, PROBE		
X UNCLASSIFIED (1)	X-AXIS	ACCESSORY DEVICES, UNCLASSIFIED (1)	UNCLASSIFIED (1)	UNCLASSIFIED (1)
Y EVENT, STATE, PRESENCE	Y-AXIS		AUXILIARY DEVICES	
Z POSITION, DIMENSION	Z-AXIS, SAFETY INSTRUMENT SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED, FINAL CONTROL ELEMENT	

TABLE NOTES:  
(1) WHEN USED SYMBOL OR SIGNAL LINE IS ANNOTATED.

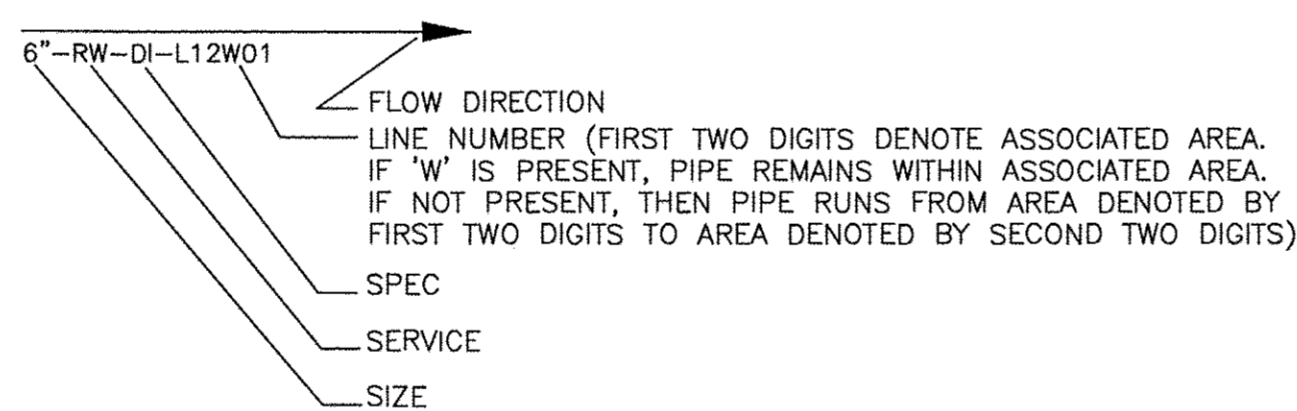
**INSTRUMENT LINE SYMBOLS**



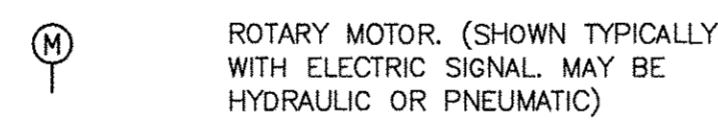
**ELECTRICAL / AIR SOURCES**



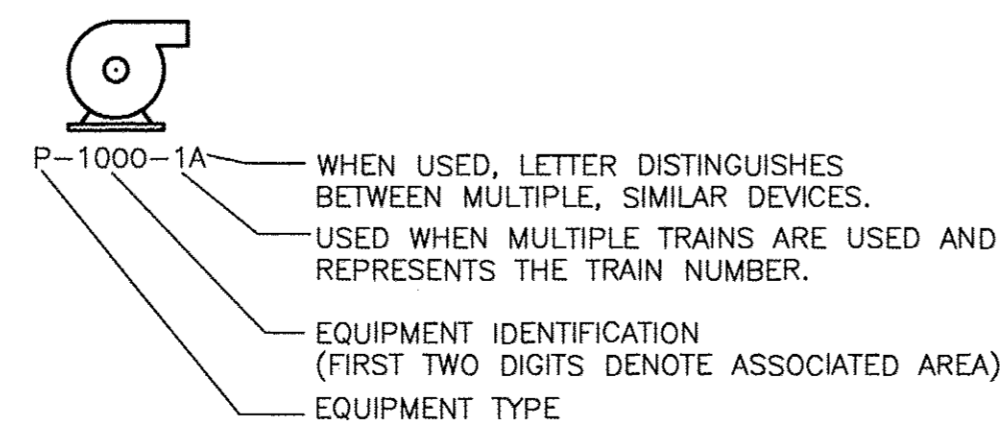
**TYPICAL PIPE TAG NUMBERS & DESIGNATION**



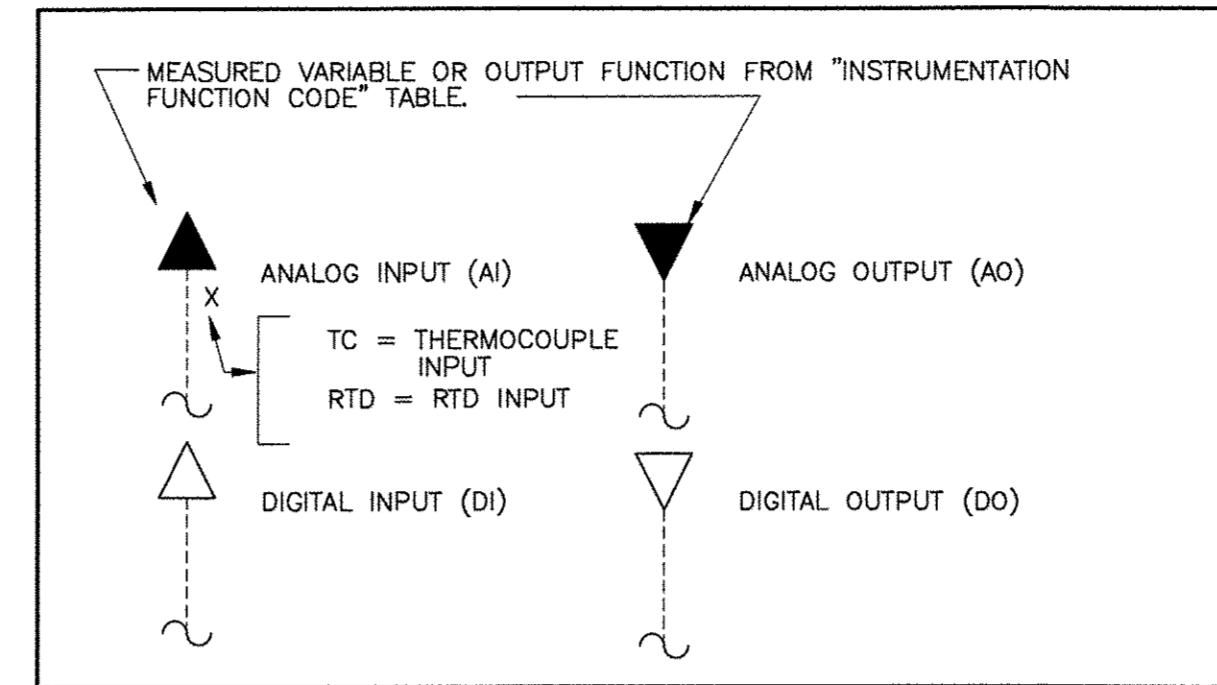
**VALVE ACTUATORS**



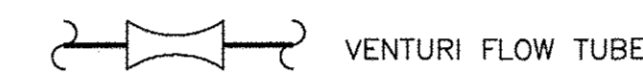
**TYPICAL EQUIPMENT TAG NUMBERS & DESIGNATION**



**I/O SIGNALS**



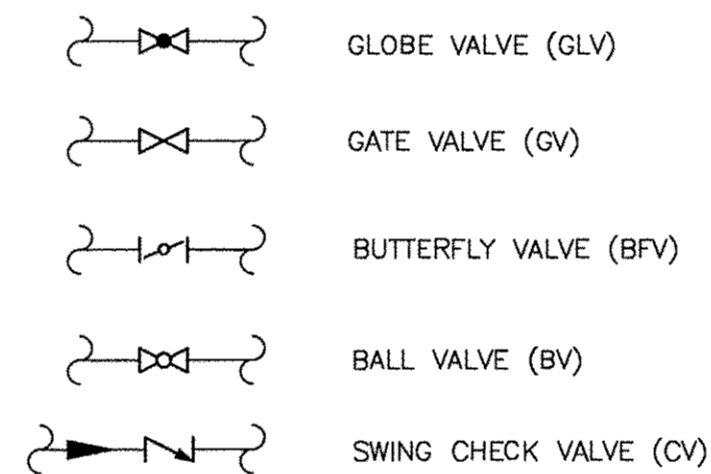
**PRIMARY ELEMENTS**



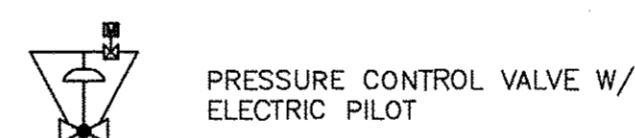
**PRIMARY EQUIPMENT**



**VALVE SYMBOLS**



**CONTROL DEVICES**



**RECORD DRAWINGS**

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REVIEWED BY: MICHAEL J. GRAHAM P.E. Date: JULY 2015

NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.

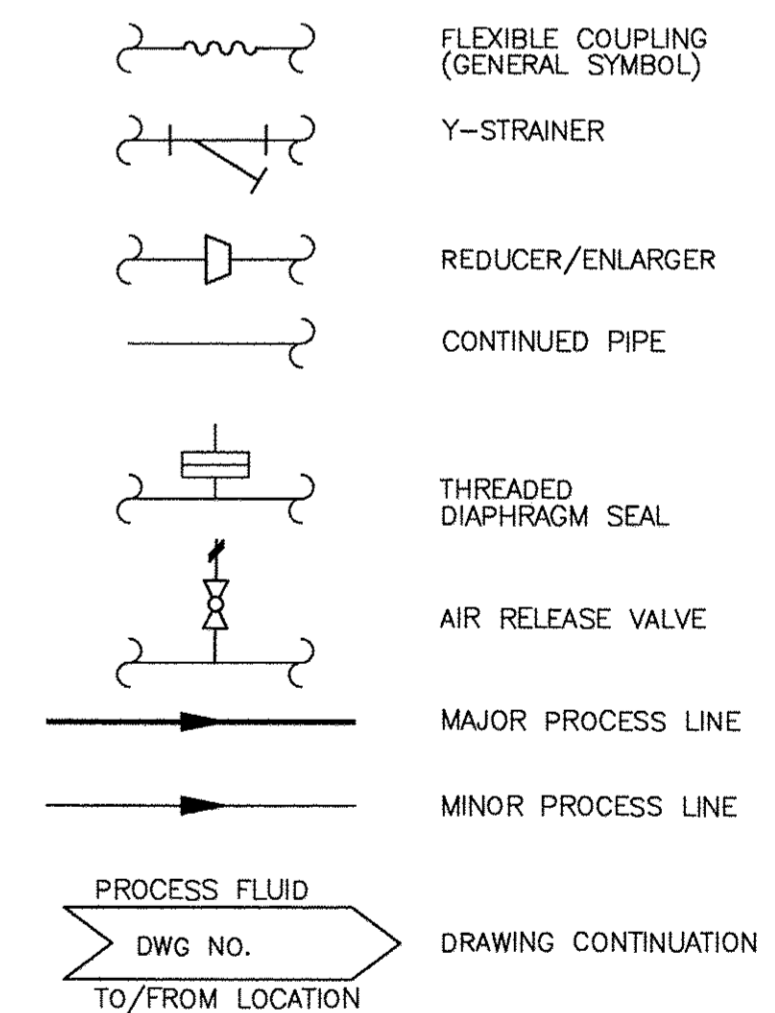
**GENERAL NOTES**

- THIS LEGEND APPLIES TO P&IDS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.
- IN GENERAL THIS LEGEND SHEET AND THE P&IDS ARE BASED ON THE INTERNATIONAL SOCIETY OF AUTOMATION (ISA) STANDARDS FOR PRACTICES FOR INSTRUMENTATION. SOME MODIFICATIONS, ADDITIONS AND ALTERATIONS HAVE BEEN MADE AS REQUIRED TO ACCOMMODATE PROJECT REQUIREMENTS.
- SOME PROCESS ITEMS SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC., WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION FUNCTIONS ARE NOT SHOWN ON THE P&IDS.
- SEE ELECTRICAL AND MECHANICAL SHEETS AND SPECIFICATIONS FOR ADDITIONAL CONTROL AND INTERLOCK REQUIREMENTS.
- LIGHTER WEIGHT LINES, SHOWN AS \_\_\_\_\_, INDICATE EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE EXISTING. WEIGHTED LINES, SHOWN AS \_\_\_\_\_ OR HEAVIER \_\_\_\_\_, INDICATE EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE NEW. DASHED WEIGHTED LINES, SHOWN AS \_\_\_\_\_, INDICATED EQUIPMENT, INSTRUMENTS OR PIPING THAT ARE GROUPED AS A PACKAGE.

**GENERAL ABBREVIATIONS**

- AI ANALOG IN  
AO ANALOG OUT  
CPU CENTRAL PROCESSOR UNIT  
DI DIGITAL OR DISCRETE INPUT  
DO DIGITAL OUTPUT  
FC FAIL CLOSED  
FO FAIL OPEN OR FIBER OPTIC  
HMI HUMAN MACHINE INTERFACE  
MCC MOTOR CONTROL CENTER  
NC NORMALLY CLOSED  
NPW NON-POTABLE WATER  
NO NORMALLY OPEN  
PLC PROGRAMMABLE LOGIC CONTROLLER  
PW PLANT WATER  
RIO REMOTE INPUT/OUTPUT  
UPS UNINTERRUPTIBLE POWER SUPPLY  
VFD VARIABLE FREQUENCY DRIVE

**PIPE LINE SYMBOLS**



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REV. NO.	DATE	DRWN	CHKD	REMARKS
	7/15	STD	MJG	REVISED FOR RECORD
	6/14	STD	MJG	CONFORMED DRAWINGS

DESIGNED BY: S. DAY	<p>1715 North Westshore Blvd., Suite 875 Tampa, FL 33607 Tel: (813) 281-2900 FL COA NO. EB-000020</p>
DRAWN BY: S. DAY	
SHEET CHK'D BY: D.UBERT	
CROSS CHK'D BY: M.GRAHAM	
APPROVED BY: M. GRAHAM	
DATE: FEBRUARY 2014	

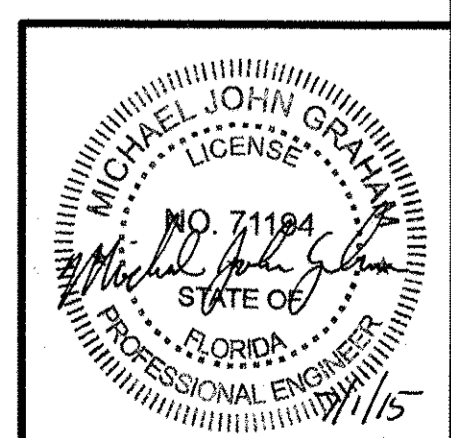
TOWN OF LONGBOAT KEY, FLORIDA  
POTABLE WATER SYSTEM SUBAQUEOUS  
SYSTEM OF LONGBOAT PASS AND  
CROSSING PRESSURE CONTROLS

**INSTRUMENTATION LEGEND**

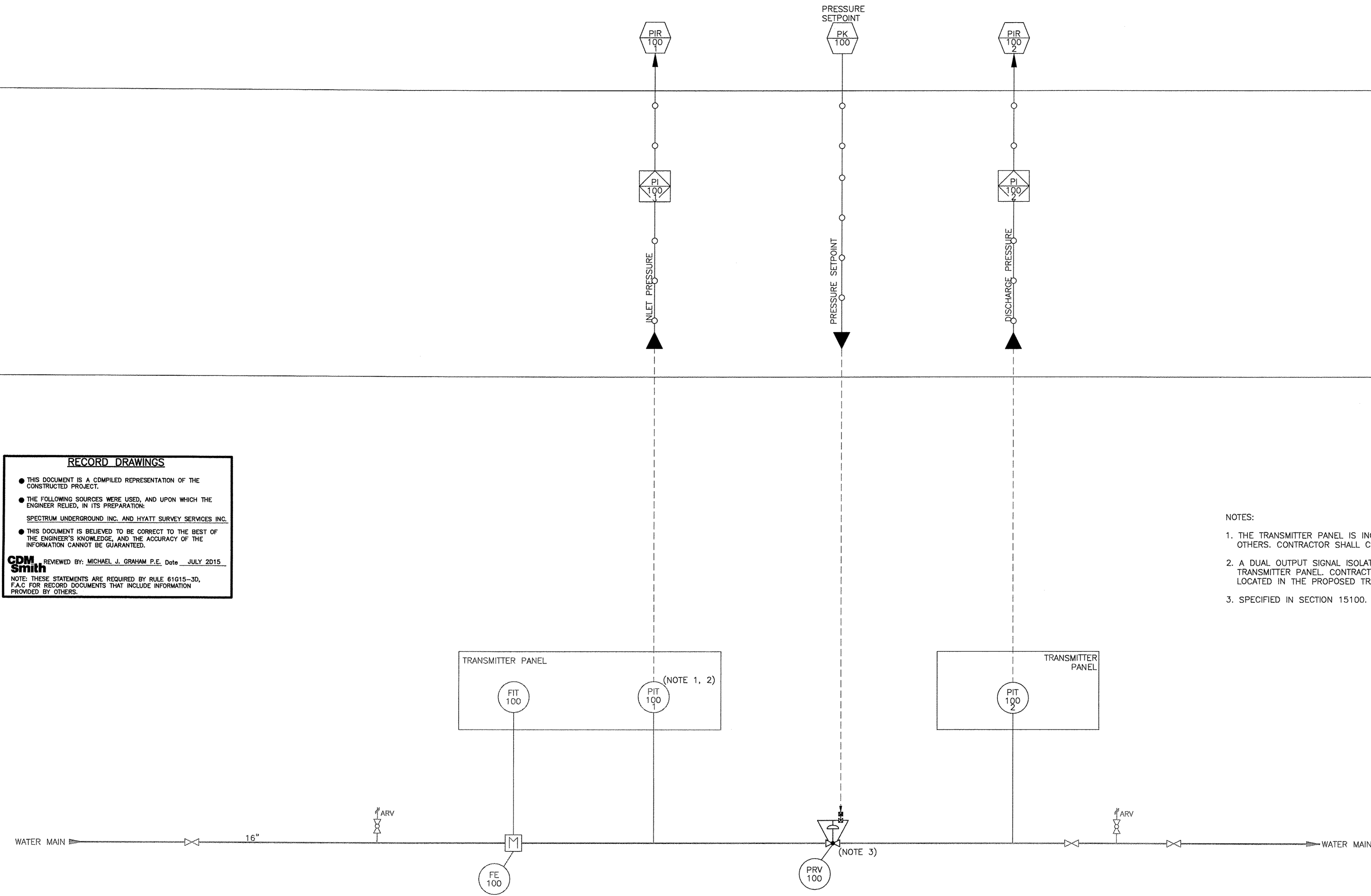
DATE: MICHAEL J. GRAHAM P.E. NO. 71194

PROJECT NO. 2790-83746  
FILE NAME: 1001PID1

SHEET NO. 1-1



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REVIEWED BY: MICHAEL J. GRAHAM P.E. Date: JULY 2015

**CDM Smith**  
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- NOTES:
1. THE TRANSMITTER PANEL IS INCLUDED IN THE PROPOSED WORK BY OTHERS. CONTRACTOR SHALL COORDINATE WITH WORK BY OTHERS.
  2. A DUAL OUTPUT SIGNAL ISOLATOR WILL BE AVAILABLE WITHIN THE TRANSMITTER PANEL. CONTRACTOR TO WIRE FROM SIGNAL ISOLATOR LOCATED IN THE PROPOSED TRANSMITTER PANEL TO RTU.
  3. SPECIFIED IN SECTION 15100.

REV. NO.	DATE	DRWN	CHKD	REMARKS
7/15	STD	MJG		REVISED FOR RECORD
6/14	STD	MJG		CONFORMED DRAWINGS

DESIGNED BY: S. DAY  
 DRAWN BY: S. DAY  
 SHEET CHK'D BY: D. UBERT  
 CROSS CHK'D BY: M. GRAHAM  
 APPROVED BY: M. GRAHAM  
 DATE: FEBRUARY 2014



TOWN OF LONGBOAT KEY, FLORIDA  
 POTABLE WATER SYSTEM SUBAQUEOUS  
 CROSSING OF LONGBOAT PASS AND  
 SYSTEM PRESSURE CONTROLS

PROCESS AND INSTRUMENTATION DIAGRAM  
 PRESSURE REDUCING VALVE

Professional Engineer Seal for Michael J. Graham, License No. 71194, State of Florida. Date: MICHAEL J. GRAHAM P.E. NO. 71194. PROJECT NO. 2790-83746, FILE NAME: 1002PID1, SHEET NO. 1-2.

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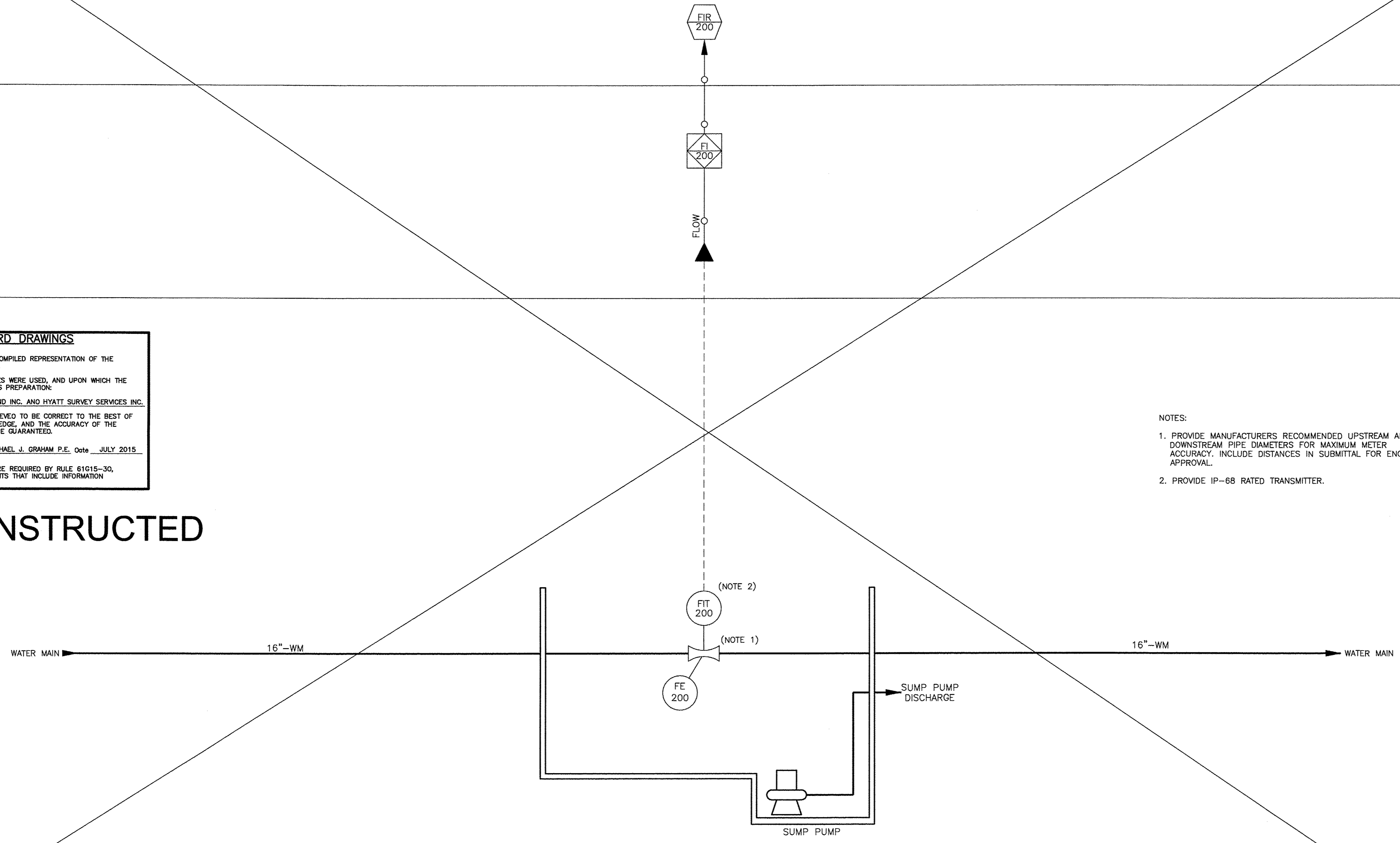
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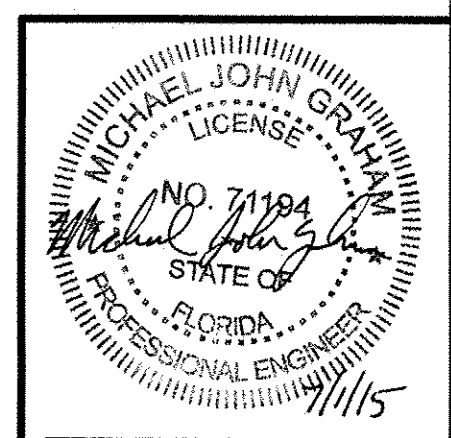
CDM Smith  
REVIEWED BY: MICHAEL J. GRAHAM P.E. Octo JULY 2015

NOTE: THESE STATEMENTS ARE REQUIRED BY RULE 61G15-30, F.A.C. FOR RECORD DOCUMENTS THAT INCLUDE INFORMATION PROVIDED BY OTHERS.

**NOT CONSTRUCTED**



- NOTES:
1. PROVIDE MANUFACTURERS RECOMMENDED UPSTREAM AND DOWNSTREAM PIPE DIAMETERS FOR MAXIMUM METER ACCURACY. INCLUDE DISTANCES IN SUBMITTAL FOR ENGINEER APPROVAL.
  2. PROVIDE IP-68 RATED TRANSMITTER.



DATE:  
MICHAEL J. GRAHAM  
P.E. NO. 71194

REV. NO.	DATE	DRWN	CHKD	REMARKS
7/15	STD	WSW		REVISED FOR RECORD
6/14	STD	MJG		CONFORMED DRAWINGS

DESIGNED BY: S. DAY  
DRAWN BY: S. DAY  
SHEET CHK'D BY: D. UBERTI  
CROSS CHK'D BY: M. GRAHAM  
APPROVED BY: M. GRAHAM  
DATE: FEBRUARY 2014

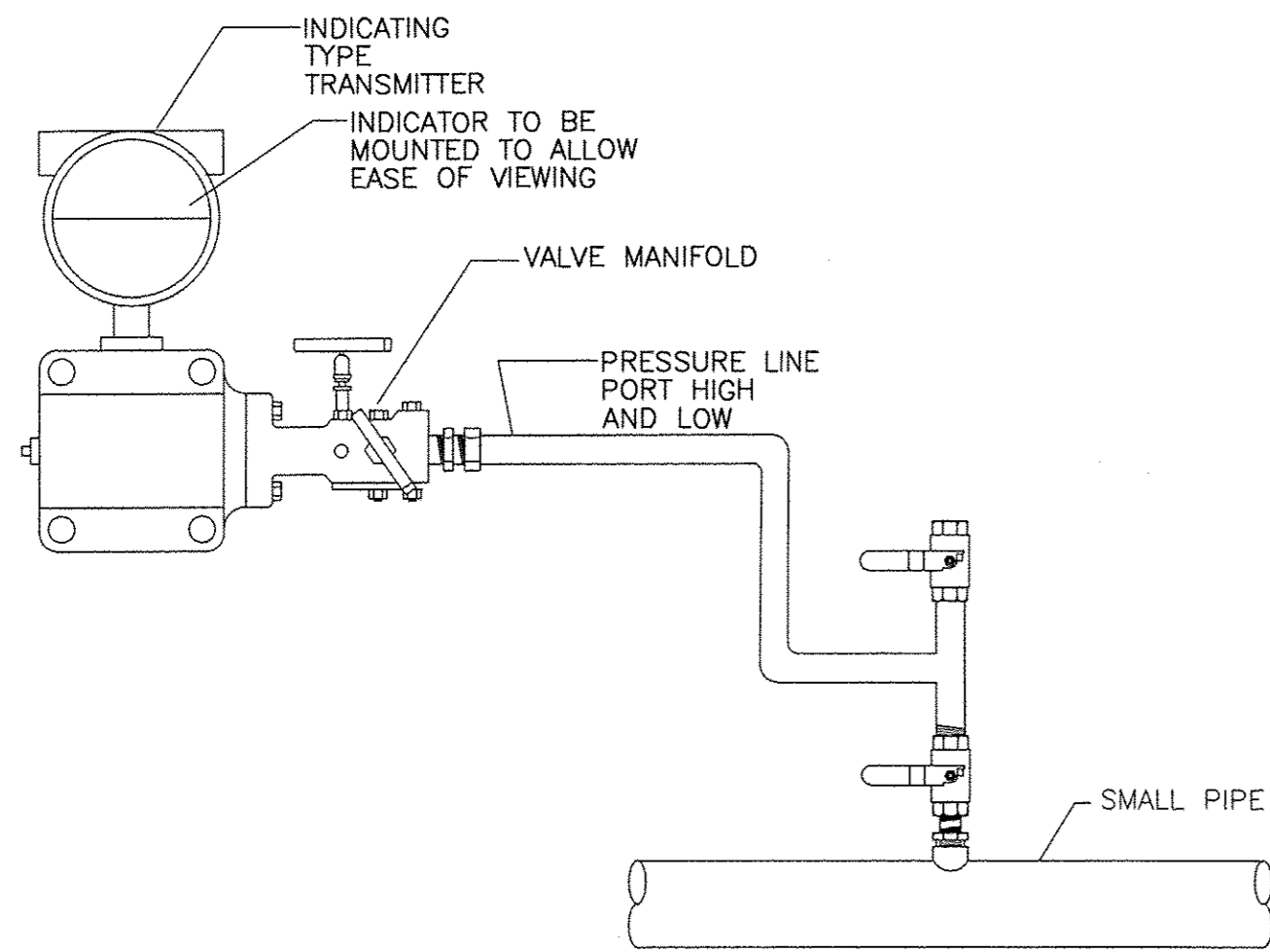


TOWN OF LONGBOAT KEY, FLORIDA  
POTABLE WATER SYSTEM SUBAQUEOUS  
CROSSING OF LONGBOAT PASS AND  
SYSTEM PRESSURE CONTROLS

PROCESS AND INSTRUMENTATION DIAGRAM  
FLOW METERING STATION  
ADDITIVE ALTERNATE NO. 1

PROJECT NO. 2790-83746  
FILE NAME: 1003PID1  
SHEET NO.  
I-3

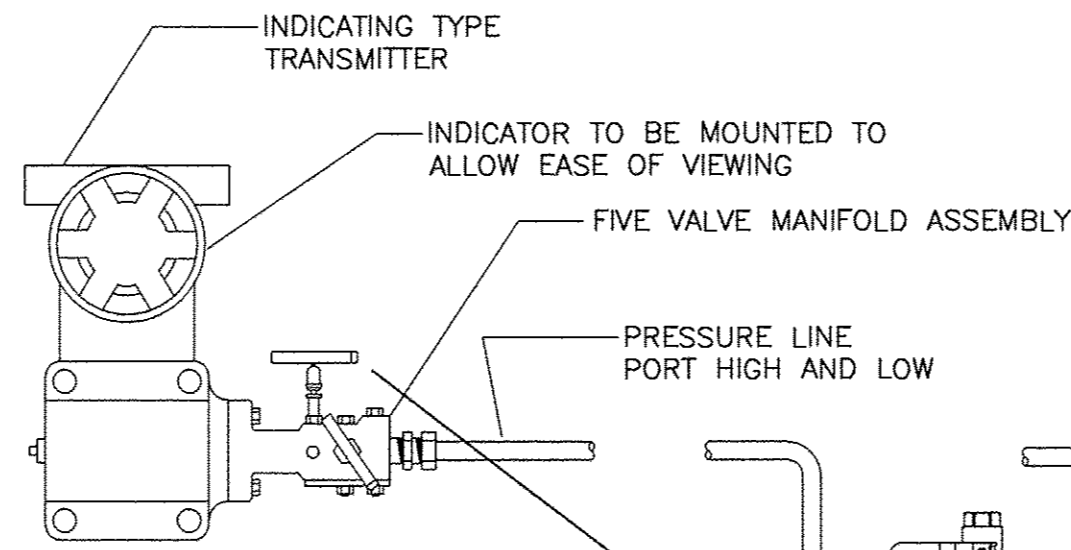
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- 1) MOUNT TRANSMITTER AT OR BELOW CENTERLINE OF PIPING AND SLOPE ALL TUBING AND PIPING DOWNWARDS TO TRANSMITTER.

**PRESSURE TRANSMITTER**

**DETAIL A**  
NTS



- NOTE:  
1) ALL PIPING TO SLOPE CONTINUOUSLY IN ONE DIRECTION 1/2" PER FT MINIMUM. 1/2" PER FT MINIMUM  
2) MOUNT TRANSMITTER AT OR BELOW CENTERLINE OF PIPING AND SLOPE ALL TUBING AND PIPING DOWNWARDS TO TRANSMITTER.

**VENTURI FLOW METER**

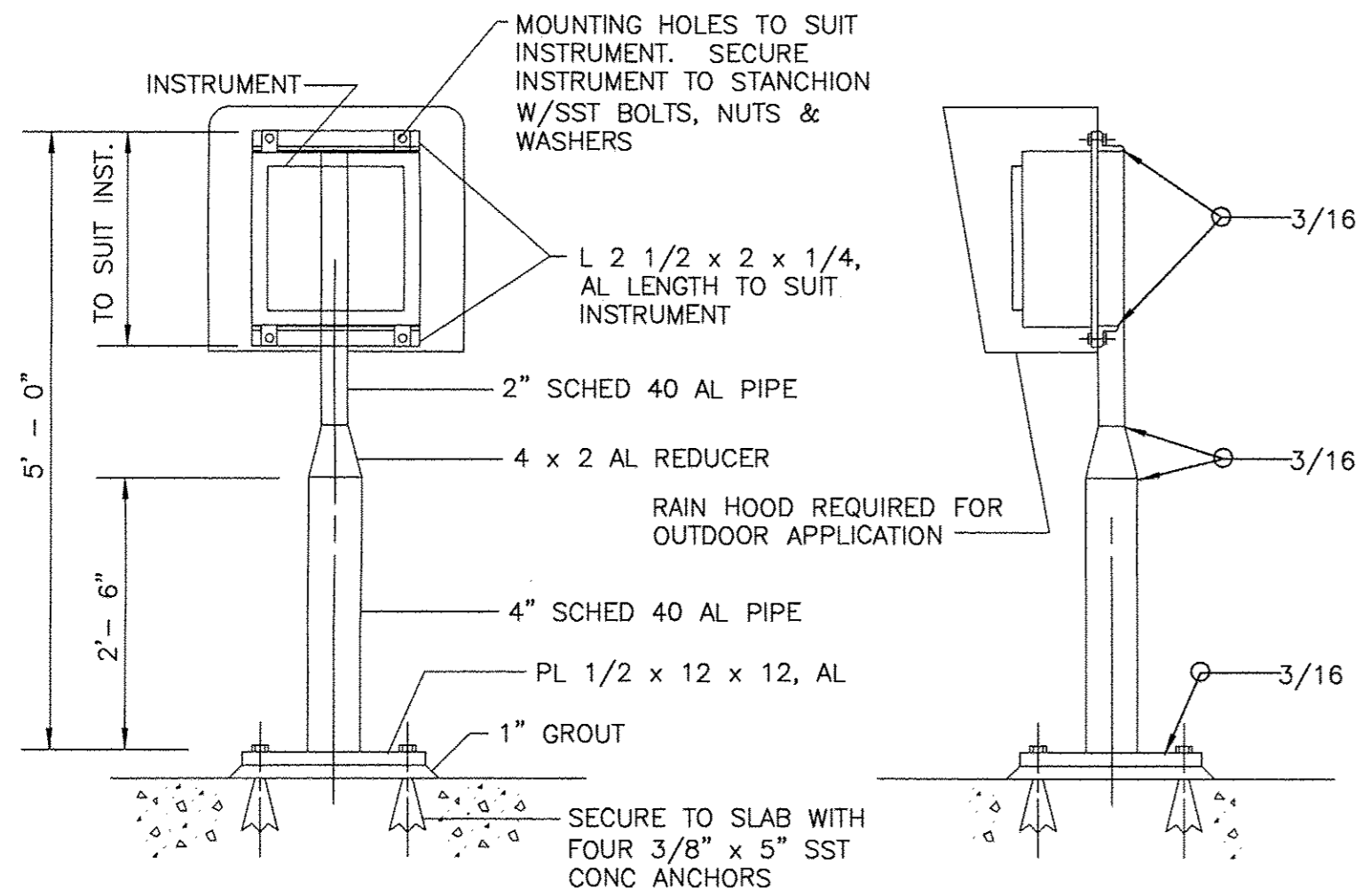
**DETAIL B**  
NTS

**RECORD DRAWINGS**

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CDM Smith  
REVIEWED BY: MICHAEL J. GRAHAM P.E. Date: JULY 2015  
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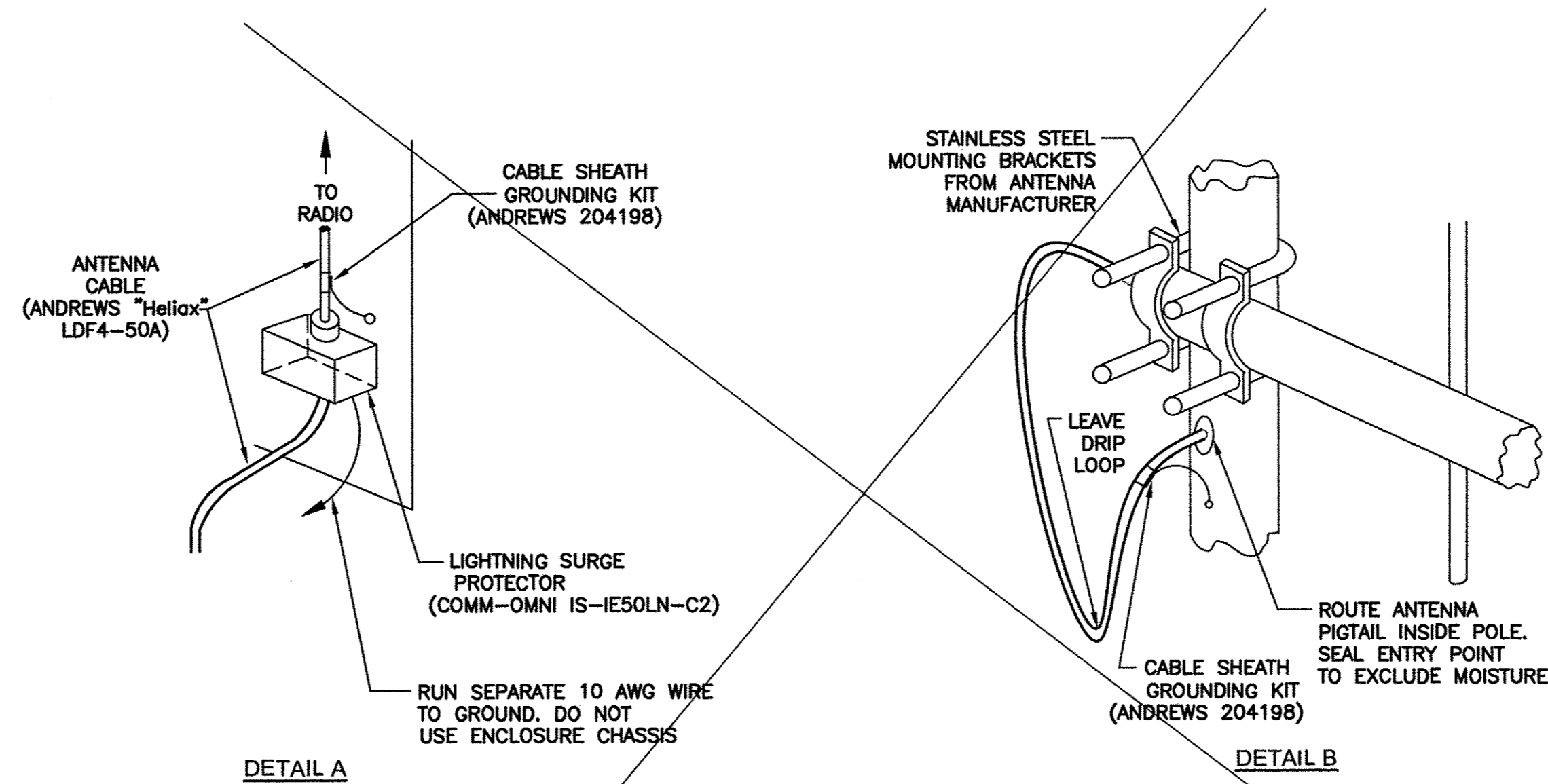
**NOT CONSTRUCTED**



- NOTE:  
1) ROUND OFF ALL EXPOSED EDGES AND CORNERS.  
2) PAINT ALUMINUM IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.

**STANCHION SUPPORT FOR CASE MOUNTED INSTRUMENTS**

**DETAIL C**  
NTS



**ANTENNA DETAIL**

**DETAIL D**  
NTS

**NOT CONSTRUCTED**

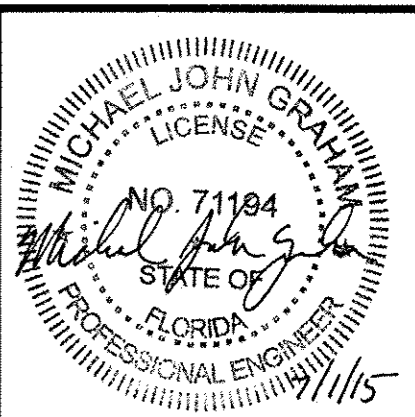
REV. NO.	DATE	DRWN	CHKD	REMARKS
7/15	STD	WSW		REVISED FOR RECORD
6/14	STD	MJG		CONFORMED DRAWINGS

DESIGNED BY:	S.DAY
DRAWN BY:	S.DAY
SHEET CHK'D BY:	D.LUBERT
CROSS CHK'D BY:	M.GRAHAM
APPROVED BY:	M.GRAHAM
DATE:	FEBRUARY 2014

**CDM Smith**  
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TOWN OF LONGBOAT KEY, FLORIDA  
**POTABLE WATER SYSTEM SUBAQUEOUS CROSSING OF LONGBOAT PASS AND SYSTEM PRESSURE CONTROLS**

**INSTRUMENTATION DETAILS**



DATE: MICHAEL J. GRAHAM P.E. NO. 71194  
PROJECT NO. 2790-83746  
FILE NAME: 1004PID1  
SHEET NO. 1-4