CONTRACT DOCUMENTS FOR THE CONSTRUCTION OF

LIFT STATION 9A REHABILITATION AND FORCE MAIN REPLACEMENT



PROJECT TEAM

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PREPARED FOR

MANATEE COUNTY UTILITIES
BRADENTON, FL

VOLUME 2 OF 2 DRAWINGS

UTILITY AGENCY/OWNERS

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MANATEE COUNTY PROJECT No: 6074081

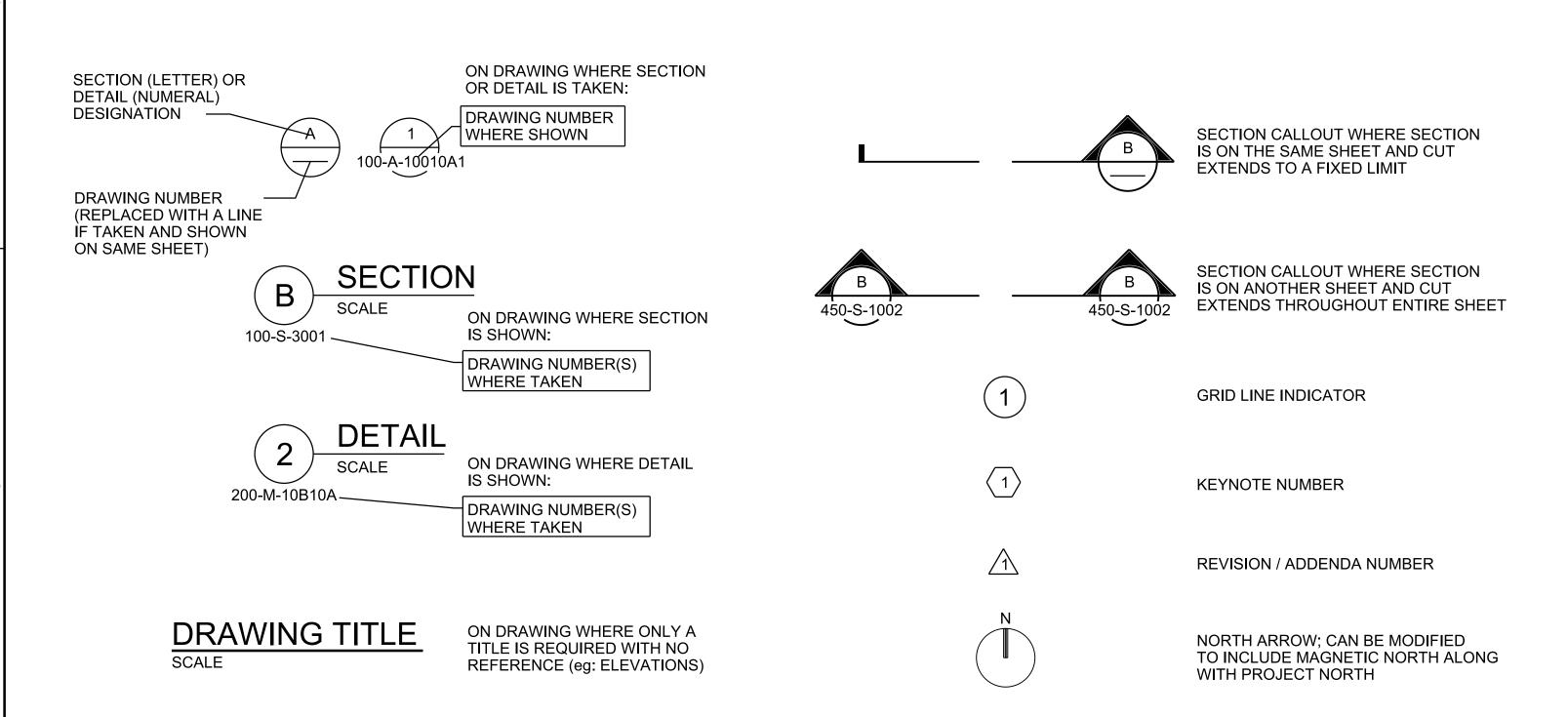
JACOBS PROJECT No: D3480400

AUGUST 2022

BID DOCUMENTS

PROJECT LOCATION MAP

SECTION / DETAIL DESIGNATIONS



INDEX OF DRAWINGS

GENERAL

INDEX OF DRAWINGS, GENERAL LEGEND, AND LOCATION MAP CIVIL GENERAL NOTES AND LEGENDS STRUCTURAL GENERAL NOTES PROCESS MECHANICAL LEGEND **ELECTRICAL LEGEND 1 ELECTRICAL LEGEND 2**

ELECTRICAL LEGEND 3 INSTRUMENTATION AND CONTROL LEGEND SHEET 1 INSTRUMENTATION AND CONTROL LEGEND SHEET 2

CIVIL

OVERALL SITE PLAN LIFT STATION PHASE 1 CONCEPTUAL EXCAVATION AND EROSION CONTROL PLAN C-101 LIFT STATION PHASE 2 CONCEPTUAL TEMPORARY BYPASS PLAN LIFT STATION PHASE 3 DEMOLITION PLAN LIFT STATION PHASE 4 DEMOLITION PLAN C-201 LIFT STATION PHASE 5 SITE PLAN FORCE MAIN PLAN AND PROFILE C-207 FORCE MAIN PLAN AND PROFILE C-208 FORCE MAIN PLAN AND PROFILE MANATEE COUNTY STANDARD DETAILS MANATEE COUNTY STANDARD DETAILS C-503 MANATEE COUNTY STANDARD DETAILS

INSTRUMENTATION AND CONTROL

P&ID PUMP STATION

STRUCTURAL

STANDARD DETAILS

PROCESS MECHANICAL

LIFT STATION UPPER AND LOWER PLAN LIFT STATION SECTION 36 D-301 D-501 STANDARD DETAILS D-502 STANDARD DETAILS 38

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D-503

LIFT STATION SITE DEMOLITION PLAN E-201 LIFT STATION SITE PLAN E-202 RISER DIAGRAM E-501 SINGLE-LINE DIAGRAM E-502 STANDARD DETAILS E-503 STANDARD DETAILS

DESIGN DETAIL DESIGNATION

DESIGN DETAIL — DESIGNATION •(1234-567) (NUMERAL) SHOWN ON DESIGN DETAIL DRAWING(S)

NOTES:

- 1. ALL DESIGN DETAILS ARE TYPICAL AND MUST BE USED IF DESIGN DETAIL DESIGNATION IS NOT SHOWN
- 2. THE TERM STANDARD DETAIL, OR A FORM OF IT, IS SYNOMONOUS WITH DESIGN DETAIL. THE DESIGN DETAILS REPRESENT THE CHARACTER AND NATURE OF THE WORK REQUIRED THROUGHOUT THE PROJECT. ALL ASSOCIATED WORK SHALL BE IN ACCORDANCE WITH THE DESIGN DETAILS SHOWN WHETHER THE DETAILS ARE SPECIFICALLY REFERENCED OR NOT.

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	ON	DATE		REVISION	NO		BY A
28.	DSGN			DR CHK		APVD	
-		R MORRISON	RISON	TLOOSE	M COLLINS	F	R MORRI
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1" = X' **VERIFY SCALE**

BAR IS ONE INCH ON ORIGINAL DRAWING. AUGUST 2022 **PROJ** D3480400 G-001 SHEET 2 of 46

- PROJECT

SITE

- EXISTING TOPOGRAPHY, STRUCTURES, AND SITE FEATURES ARE SHOWN SCREENED AND/OR LIGHT-LINED. NEW FINISH GRADE, STRUCTURES, AND SITE FEATURES ARE SHOWN HEAVY-LINED.
- 3. HORIZONTAL DATUM: FLORIDA STATE PLAN COORDINATE SYSTEM (WEST ZONE NAD 1983 / 1990 ADJUSTMENT).
- VERTICAL DATUM: ELEVATIONS SHOWN HEREON ARE BASED ON N.A.V.D. 1988 DATUM. THE BENCHMARKS THAT THESE ELEVATIONS ARE DERIVED FROM ARE: MANATEE COUNTY BENCHMARK 117-88-13, ELEVATION OF 15.52, NAVD 1988, AS PUBLISHED. MANATEE COUNTY BENCHMARK 117-88-07, ELEVATION OF 23.22, NAVD 1988, AS PUBLISHED.
- MAINTAIN, RELOCATE, OR REPLACE EXISTING SURVEY MONUMENTS, CONTROL POINTS, AND STAKES WHICH ARE DISTURBED OR DESTROYED. PERFORM THE WORK TO PRODUCE THE SAME LEVEL OF ACCURACY AS THE ORIGINAL MONUMENT(S) IN A TIMELY MANNER, AND AT THE CONTRACTOR'S EXPENSE.
- COORDINATES AND DIMENSIONS SHOWN FOR ROADWAY IMPROVEMENTS ARE TO FACE OF CURB OR EDGE OF PAVEMENT.
- IF NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A STAGING AREA FOR EMPLOYEE PARKING, CONTRACTOR'S TRAILERS AND ON-SITE STORAGE OF MATERIALS.
- 8. PROVIDE TEMPORARY FENCING AS NECESSARY TO MAINTAIN SECURITY AT ALL TIMES.
- 9. ELEVATIONS GIVEN ARE TO FINISH GRADE UNLESS OTHERWISE SHOWN.
- 10. SLOPE UNIFORMLY BETWEEN CONTOURS AND SPOT ELEVATIONS SHOWN.
- 11. UNLESS SHOWN OTHERWISE, ALL DISTURBED AREAS NOT RECEIVING A HARD SURFACE SHALL BE COVERED WITH GRASS.
- 12. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING EROSION CONTROL DEVICES DURING CONSTRUCTION. EROSION CONTROL DEVICES SHOWN ARE THE MINIMUM REQUIRED.
- 13. CONTRACTOR SHALL TAKE ALL OTHER MEASURES TO POSITIVELY PRECLUDE EROSION MATERIALS FROM LEAVING THE SITE.
- 14. CONTRACTOR SHALL OBTAIN THE CAD FILE FROM THE ENGINEER FOR CONSTRUCTION LAYOUT.
- 15. THE COUNTY PROJECT MANAGER IS BRETT GOCKA, 941-708-7450 EXT. 7232.
- 16. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING MAINTENANCE OF TRAFFIC DEVICES DURING CONSTRUCTION, AS NEEDED. CONTRACTOR SHALL SUBMIT A FULL MAINTENACE OF TRAFFIC PLAN FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO BEGINNING THE MOT WORK. THE MOT PLAN SHALL CLEARLY SHOW THE AREAS TO BE CLOSED, APPROXIMATE DURATIONS, AND DETOURS NEEDED.
- 17. CONTRACTOR SHALL SURVEY ALL CURBS AND GUTTERS TO BE REPLACED AND MATCH ELEVATIONS WHEN RECONSTRUCTED.
- 18. VERIFY THE EXISTING ASPHALT THICKNESS PRIOR TO CONSTRUCTION AND PROVIDE EXISTING PAVEMENT CORING REPORTS TO THE COUNTY.

GENERAL YARD PIPING AND UTILITIES NOTES:

- EXISTING UNDERGROUND UTILITIES OBTAINED FROM COUNTY GIS, FDOT DATA AND FROM FIELD SURVEY. CONTRACTOR SHALL FIELD VERIFY DEPTH AND LOCATION PRIOR TO EXCAVATION, PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION.
- EXISTING PIPING AND EQUIPMENT ARE SHOWN SCREENED AND/OR LIGHT-LINED. NEW PIPING AND EQUIPMENT ARE SHOWN HEAVY-LINED.
- 3. UNLESS OTHERWISE SHOWN ALL PIPING SHALL HAVE A MINIMUM OF 36" COVER.
- 4. ALL PIPES SHALL HAVE A CONSTANT SLOPE BETWEEN INVERT ELEVATIONS UNLESS A FITTING IS SHOWN.
- 5. FOR TRENCHING AND BACKFILL, SEE MANATEE COUNTY STANDARD DETAILS UG-11 AND UG-12.
- 6. FOR SURFACE RESTORATION OF ASPHALT CONCRETE, SEE MANATEE COUNTY STANDARD DETAIL UG-12, AND FOR GRASS, SEE SPECIFICATION 32 92 00.
- MINIMUM ALLOWABLE CLEARANCE BETWEEN PIPES AT CROSSINGS SHALL BE AS SHOWN ON THE DRAWINGS AND THE MANATEE COUNTY PUBLIC WORKS STANDARDS. PART 1, UTILITY STANDARDS MANUAL.
- 8. ALL EXISTING VALVES, HYDRANTS, ETC. SHALL BE ACCESSIBLE DURING AND AFTER THE PROJECT. EXISTING VALVES, HYDRANTS, METER BOXES, SHALL BE ADJUSTED TO NEW FINISHED GRADE IF CHANGED. ANY EXISTING SERVICES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED.

CIVIL LEGEND

SPOT ELEVATION ⊗ 158.5 **CONTOUR LINE**

DRAINAGEWAY OR DITCH

MANHOLE

POST OR GUARD POST

BRUSH/TREE LINE

TREE

PROPERTY / R/W LINE CENTER LINE, BUILDING, ROAD, ETC.

- STAGING OR WORK AREA LIMITS

——— EXISTING WATER LINE

—— SD — EXISTING STORM SEWER ——— EXISTING SEWER LINE

EXISTING OVERHEAD ELECTRIC

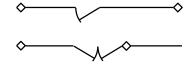
N 1000.00 E 1000.00

STRUCTURE, BUILDING OR FACILITY **LOCATION POINT - COORDINATES**

>>>>>> OR

DEMOLITION

STRUCTURE, BUILDING OR FACILITY



SINGLE SWING GATE

CHAIN LINK FENCE

DOUBLE SWING GATE

GRAVEL SURFACING



CONCRETE



ASPHALT PAVEMENT



HAND CONE PENETRATION TEST



STANDARD PENETRATION TEST



VERIFIED VERTICAL AND HORIZONTAL UTILITY LOCATION

SURVEY LEGEND

- BENCHMARK (AS NOTED) - 4"x4" CONCRETE MONUMENT FOUND (AS NOTED) - IRON MARKER FOUND/SET (AS NOTED) - IRON PIPE FOUND - NAIL & DISK FOUND/SET (AS NOTED) - RIVET & DISK FOUND/SET (AS NOTED) - DRILL HOLE FOUND/SET - RAILROAD SPIKE FOUND X-CUT FOUND - CONCRETE MONUMENT FOUND

- IRON ROD SET (LB 6982) - IRON ROD FOUND (AS NOTED) - IRON PIPE FOUND - NAIL & DISK SET - NAIL & DISK FOUND

- RIVET & DISK FOUND - RIGHT-OF-WAY INVERT - ELEVATION

- IDENTIFICATION - PARCEL IDENTIFICATION (NUMBER) - LICENSED SURVEYOR P.S.M. - PROFESSIONAL SURVEYOR & MAPPER LICENSED BUSINESS

- REINFORCED CONCRETE PIPE - CORRUGATED METAL PIPE - POLYVINYL CHLORIDE PIPE - CORRUGATED PLASTIC PIPE - VITRIFIED CLAY PIPE - CAST IRON PIPE

- JUNCTION BOX - GRATE INLET - CATCH BASIN/JUNCTION BOX/GRATE INLET - MITERED END SECTION

- CATCH BASIN

 GRATE INLET EXISTING MITRED END SECTION - JUNCTION BOX MANHOLE MANHOLE

- SANITARY MANHOLE - SANITARY CLEANOUT - POWER/UTILITY POLE LIGHT POLE - EXISTING GUY ANCHOR

- ELECTRIC METER HAND HOLE - TRAFFIC SIGNAL BOX - UTILITY BOX

- UTILITY MANHOLE WATER VALVE FIRE HYDRANT

 WATER METER - FIBER OPTICS MARKER - TELEPHONE MARKER - GAS MARKER

BOLLARD - MAIL BOX SIGN ANTENNA

---- x ---- - BARBED WIRE FENCE — → — — CHAIN LINK FENCE ——o——o—— - WOOD FENCE __(x) ___ (x) __ - HOG WIRE FENCE _//__ //_ - VINYL FENCE

---- OE ---- OVERHEAD ELECTRIC LINE - SD - STORM WATER PIPE - SS - SANITARY LINE --- W --- - WATER LINE

---- FM ---- - FORCE MAIN - OAK TREE (SIZE) PALM TREE

> - ORNAMENTAL TREE (TYPE) - MAPLE TREE (SIZE)

YARD PIPING LEGEND

EROSION CONTROL LEGEND

EXISTING

COVER PRACTICES

COIR LOG BARRIER (BIOFILTER)

SILT FENCE

THIS CONTRACT NOMINAL PIPE DIAMETER ✓ PIPE MATERIAL ─ 6" PVC PIPING SINGLE LINE

> PIPING DOUBLE LINE _ _ _ _ _ _ _ EXISTING PIPE TO BE ABANDONED ----

EXISTING PIPE TO BE REMOVED

No 67713 STATE OF PORIDA, SONAL ENGINE

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THOMASMON

GEI

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. AUGUST 2022 D3480400

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= SELF WEIGHT

REFER TO THE DRAWINGS FOR ADDITIONAL AND SPECIFIC STRUCTURE LOADINGS AND REQUIREMENTS.

ALL LOADS SHOWN ARE SERVICE LEVEL (UNFACTORED) UNLESS OTHERWISE NOTED.

DEAD LOADS:

FLOOR LIVE LOADS:

= 100 PSF UNLESS OTHERWISE NOTED LIFT STATION TOP SLAB = 300 PSF

SNOW LOAD:

= 0 PSFGROUND SNOW LOAD, Pg

WIND LOADS:

ASCE 7 METHOD = DIRECTIONAL PROCEDURE BASIC WIND SPEED, Vult = 157 MPH NOMINAL WIND SPEED, Vasd = 121 MPH

RISK CATEGORY = ||| **EXPOSURE CATEGORY** = C

GENERAL INFORMATION

FOR ABBREVIATIONS NOT LISTED, SEE ASME Y14.38 "ABBREVIATIONS AND ACRONYMS: PUBLICATION AS DISTRIBUTED BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).

DESIGN DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS OCCURRING THROUGHOUT THE PROJECT, WHETHER OR NOT THEY ARE INDIVIDUALLY CALLED OUT.

VERIFY FINAL OPENING DIMENSIONS IN WALLS, SLABS, AND DECKS WITH OTHER DISCIPLINE DRAWINGS PRIOR TO CONSTRUCTION OF THESE ELEMENTS.

FOR NUMBER, TYPE, SIZE, ARRANGEMENT, AND/OR LOCATION OF EQUIPMENT PADS, SEE OTHER DISCIPLINE DRAWINGS. COORDINATE WITH EQUIPMENT SUPPLIER PRIOR TO PLACING SLABS, WALLS AND FOUNDATIONS. COORDINATE PIPING OPENINGS WITH OTHER DISCIPLINE DRAWINGS

DO NOT CUT OR MODIFY STRUCTURAL MEMBERS FOR PIPES, DUCTS, ETC, UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER

VISITS TO THE JOB SITE BY THE ENGINEER TO OBSERVE THE CONSTRUCTION DO NOT IN ANY WAY MEAN THAT ENGINEER IS GUARANTOR OF CONSTRUCTOR'S WORK, NOR RESPONSIBLE FOR THE COMPREHENSIVE OR SPECIAL INSPECTIONS, COORDINATION, SUPERVISION, OR SAFETY AT THE JOB SITE.

INSPECTION AND TESTING

CONTRACTOR SHALL SCHEDULE INSPECTIONS AND TESTING.

SPECIFIED CONCRETE AND OTHER MATERIAL TESTING RELATED TO INSPECTION DURING CONSTRUCTION WILL BE OWNER FURNISHED.

SPECIFIED LABORATORY TEST MIXES AND SIMILAR TEST RESULTS TO VERIFY MATERIAL QUALITY AND CONFORMANCE TO SPECIFICATIONS, AND SUBMITTED FOR REVIEW PRIOR TO ACCEPTANCE FOR USE ON THE PROJECT, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

INSPECTION AND TESTING SHALL BE PERFORMED IN ACCORDANCE WITH MANATEE COUNTY UTILITY STANDARDS MANUAL SECTION 1.9 AND FBC SECTION 110.

FOUNDATIONS

A PROJECT SPECIFIC GEOTECHNICAL INVESTIGATION WAS PERFORMED BY DRIGGERS ENGINEERING SERVICES, INC. IN OCTOBER 2021. SOIL BORING LOGS, LABORATORY RESULTS AND GEOTECHNICAL DATA FROM THE INVESTIGATION IS PRESENTED IN A GEOTECHNICAL REPORT DATED 10/29/2021

SOIL DESIGN PARAMETERS:

A. ALLOWABLE SOIL BEARING PRESSURES: ALL STRUCTURES UNLESS OTHERWISE NOTED = 2000 PSF

GROUND WATER:

GROUND WATER (GW) ELEVATION = APPROX 3 FT BELOW GROUND SURFACE. 100 YEAR FLOOD ELEVATION =ENTIRE PROJECT IS IN FEMA ZONE X, WHICH IS DEFINED AS AREA OUTSIDE FLOOD

ELEVATION.

EQUIVALENT DRAINED FLUID PRESSURES (ABOVE GW)

= 60 PCF AT REST EQUIVALENT UNDRAINED FLUID PRESSURES (BELOW GW):

AT REST = 100 PCF VERTICAL SURCHARGE

EQUIVALENT TO 2 FT OF SOIL WEIGHT = 240 PSF

EARTH PRESSURE COEFFICIENTS: AT REST, Ko = 0.5

COEFFICIENT OF FRICTION = 0.35

MODULUS OF SUBGRADE REACTION = 120 PCI NATIVE SOIL UNIT WEIGHT

= 105 PCF

SATURATED = 130 PCF MINIUM FACTOR OF SAFETY FOR UPLIFT RESISTANCE (SOIL

FRICTION AND WEDGE FAILURE NOT CONSIDERED): 100 YEAR FLOOD ELEVATION

OVERFLOW CONDITION = 1.10

EXCAVATIONS SHALL BE SHORED TO PREVENT SUBSIDENCE AND DAMAGE TO ADJACENT EXISTING STRUCTURES, ROADS, UTILITIES, ETC.

FOUNDATION SLABS AND SLABS-ON-GRADE SPECIFICALLY NOTED TO BE ON FILL SHALL BEAR ON 12 INCHES OF COMPACTED GRANULAR FILL UNLESS OTHERWISE NOTED.

FOUNDATION BEARING SURFACES SHALL BE OBSERVED BY THE GEOTECHNICAL ENGINEER OR QUALIFIED DESIGNEE PRIOR TO PLACEMENT OF FORMWORK OR REINFORCING STEEL. THE OBSERVATION SHALL VERIFY IF THE ACTUAL EXPOSED SUBGRADE IS AS ANTICIPATED BY THE SITE SPECIFIC BORINGS AND DATA REPORTS AND MEETS THE ALLOWABLE SOIL BEARING PRESSURES NOTED ON THE DRAWINGS.

NO BACKFILL SHALL BE PLACED BEHIND WALLS UNTIL THE WALL'S CONCRETE HAS ATTAINED 100 PERCENT AND TOP SUPPORTING SLAB'S CONCRETE HAS ATTAINED 80 PERCENT OF THEIR SPECIFIED 28 DAY COMPRESSIVE STRENGTH, OR UNTIL TOP-OF-WALL FRAMING SYSTEMS, INCLUDING STEEL OR WOOD DIAPHRAGMS, HAVE BEEN COMPLETED.

FORMWORK, SHORING, AND BRACING

STRUCTURES SHOWN ON THE DRAWINGS HAVE BEEN DESIGNED FOR STABILITY UNDER FINAL CONDITIONS ONLY. DESIGN SHOWN DOES NOT INCLUDE NECESSARY COMPONENTS OR EQUIPMENT FOR STABILITY OF THE STRUCTURES DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR WORK RELATING TO CONSTRUCTION ERECTION METHODS, BRACING, SHORING, RIGGING, GUYS, SCAFFOLDING, FORMWORK, AND OTHER WORK AIDS REQUIRED TO SAFELY PERFORM THE WORK SHOWN.

CONCRETE REINFORCING

REINFORCING STEEL

= SEE SPECIFICATIONS

= 2" UNLESS OTHERWISE NOTED

FABRICATION AND PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CRSI MSP-1 "MANUAL OF STANDARD PRACTICE"AND ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE"

CONCRETE COVER FOR REINFORCING, UNLESS SHOWN OTHERWISE, SHALL BE WHEN PLACED ON GROUND

90 DEGREE BENDS, UNLESS OTHERWISE SHOWN, SHALL BE ACI 318 STANDARD HOOKS.

REINFORCING STEEL FOR FOUNDATION SLABS AND SLABS ON GRADE SHALL BE ADEQUATELY SUPPORTED ON BAR SUPPORTS WITH SPACERS TO KEEP REINFORCING ABOVE THE PREPARED GRADE. LIFTING REINFORCING OFF GRADE DURING CONCRETE PLACEMENT IS NOT PERMITTED.

REFER TO OPENING REINFORCING DETAILS 0330-001.

OTHER CONCRETE SURFACES

REINFORCEMENT BENDS AND LAPS, UNLESS OTHERWISE NOTED, SHALL SATISFY THE FOLLOWING MINIMUM **REQUIREMENTS**

CONCRETE DE	SIGN STRENGTH	= 4,000 F	PSI MIN	AT 28 D	AYS	GRAD	E 60 RE	INFORC	ING STE	EL
BAR SIZE		#3	#4	#5	#6	#7	#8	#9	#10	#11
LAP SPLICE LEI	NGTH									
SPACING < 6"	TOP BAR	1'-4"	1'-8"	2'-1"	3'-0"	5'-2"	6'-8"	8'-6"	10'-10"	13'-4"
	OTHER BAR	1'-4"	1'-4"	1'-8"	2'-4"	4'-0"	5'-2"	6'-7"	8'-4"	10'-3"
SPACING ≥ 6"	TOP BAR	1'-4"	1'-8"	2'-0"	2'-5"	3'-6"	4'-0"	5'-0"	6'-2"	7'-5"
	OTHER BAR	1'-4"	1'-4"	1'-7"	1'-10"	2'-9"	3'-1"	3'-10"	4'-9"	5'-8"
EMBEDMENT LENGTH										
SPACING < 6"	TOP BAR	1'-0"	1'-3"	1'-8"	2'-4"	4'-0"	5'-2"	6'-7"	8'-4"	10'-3"
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-10"	3'-1"	4'-0"	5'-1"	6'-5"	7'-11"
SPACING ≥ 6"	TOP BAR	1'-0"	1'-3"	1'-7"	1'-10"	2'-9"	3'-1"	3'-10"	4'-9"	5'-8"
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-5"	2'-1"	2'-5"	3'-0"	3'-8"	4'-5"

LAP LENGTHS ARE BASED ON MINIMUM CONCRETE COVER OF 2 INCHES. LONGER LENGTHS ARE REQUIRED FOR CONCRETE COVER LESS THAN 2 INCHES.

TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.

CAST IN PLACE CONCRETE

28-DAY COMPRESSIVE STRENGTH MINIMUM = SEE SPECFICATIONS

DESIGN STRENGTH SAME AS 28-DAY COMPRESSIVE STRENGTH.

ROUGHEN AND CLEAN CONSTRUCTION JOINTS AS SPECIFIED PRIOR TO PLACING ADJACENT CONCRETE.

COORDINATE PLACEMENT OF OPENINGS, PIPE PENETRATIONS, CURBS, DOWELS, SLEEVES, CONDUITS, BOLTS AND INSERTS PRIOR TO PLACEMENT OF CONCRETE.

NO ALUMINUM CONDUIT OR PRODUCTS CONTAINING ALUMINUM OR ANY OTHER MATERIAL INJURIOUS TO THE CONCRETE SHALL BE EMBEDDED IN THE CONCRETE.

WELDING

WELDS SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS):

D1.1. STRUCTURAL WELDING CODE STEEL

D1.2, STRUCTURAL WELDING CODE ALUMINUM

D1.3, STRUCTURAL WELDING CODE SHEET STEEL D1.6, STRUCTURAL WELDING CODE STAINLESS STEEL

REPAIR WELDS FOUND DEFFECTIVE IN ACCORDANCE WITH AWS D1.1 SECTIN 5.26.

USE INTERMITTENT WELDS AT FIELD WELDS OF EMBED PLATES AND ANGLES TO AVOID SPALLING OR CRACKING OF THE EXISTING CONCRETE.

4. BUTT JOINT WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP) UNLESS INDICATED OTHERWISE.

STRUCTURAL STEEL AND METAL FABRICATIONS

A36

STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

W-SHAPES

MISCELLANEOUS SHAPES INCLUDING ANGLES, CHANNELS, PLATES, ETC.

HOLLOW STRUCTURAL SECTIONS (HSS) A500, GRADE B STEEL PIPE A53, GRADE B STAINLESS STEEL SHAPES

ALUMINUM SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

STRUCTURAL SHAPES B308 PLATES B209

STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN CONFORMANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION, CURRENT EDITION, AND CURRENT OSHA STANDARDS.

ASTM F959

FASTENERS SHALL BE HIGH STRENGTH BOLTS CONFORMING TO THE FOLLOWING ASTM STANDARDS EXCEPT

WHERE SPECIFICALLY INDICATED OTHERWISE:

UNLESS SHOWN OTHERWISE A325-N SLIP CRITICAL A325-SC

DIRECT TENSION INDICATORS OR LOAD INDICATOR WASHERS

ASTM A325 AND ASTM F1852 TENSION CONTROL (TC) BOLTS ANCHOR BOLTS (AB)

STAINLESS STEEL F593, AISI TYPE 316, CONDITION CW STEEL OR GALVANIZED STEEL F1554, GR 36 / A153

MACHINE BOLTS (MB)

STEEL STAINLESS STEEL F593, AISI TYPE 316, CONDITION CW

ITEMS TO BE EMBEDDED IN CONCRETE SHALL BE CLEAN AND FREE OF OIL, DIRT AND PAINT.

GALVANIZED STEEL A307 / A153 ALUMINUM F468, ALLOY 2024-T4

NO HOLES OTHER THAN THOSE SPECIFICALLY DETAILED SHALL BE ALLOWED THROUGH STRUCTURAL STEEL MEMBERS. NO CUTTING OR BURNING OF STRUCTURAL STEEL IS PERMITTED WITHOUT THE APPROVAL OF THE **ENGINEER**

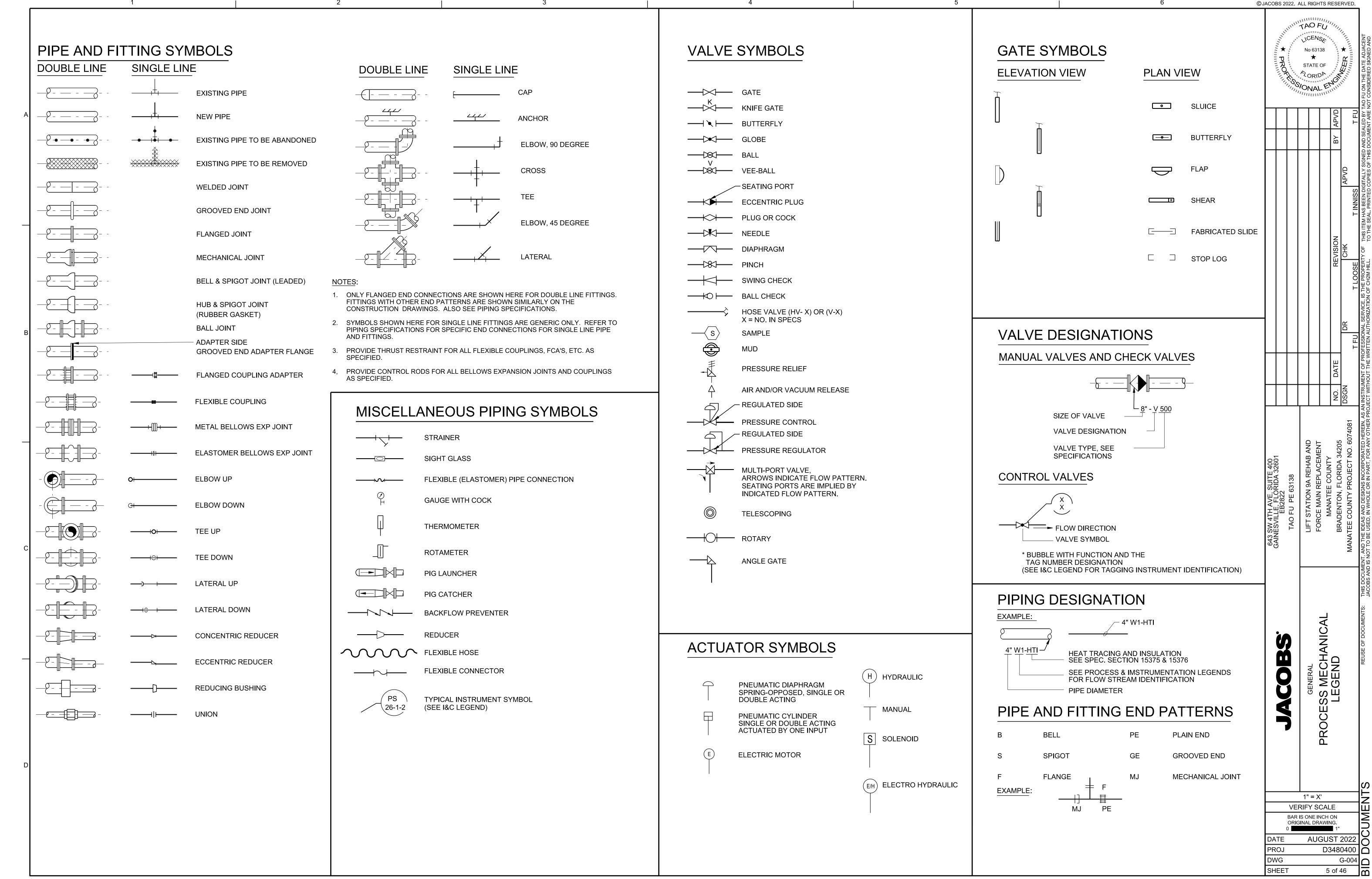
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RIF IS O		AND BELLAB AND								
CAL NCH AWII	STRUCTURAL GENERAL NOTES	MANIATE COLINTA								
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		MANNATEE COLINTY DBO IECT NO 6074084	DSGN		DR	C 子 S		APVD		
00		MAINATEE COONTT PROJECT NO. 6074061		C ANSON	N NARAMORE	MORE	D EVERSON		C ANSO	ISC
O DOCUMENTS	REUSE OF DOCUMENTS:	THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY IN WHOLE OR IN PART FOR ANY OTHER PROJECT WITHOUT THE WRITTEN ALITHORIZATION OF CHAM HILL	NINSTRUME	NT OF PROFES	SIONAL SERVICE, IS THE	PROPERTY OF THE	THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED B	SITALLY SIGNED	D AND SEALEI	ED E

G-003

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SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION		
· ···- · · -	ONE-LINE DIAGRAM-1		ONE-LINE DIAGRAM-2	5 · · · · 5 · ·	CONTROL DIAGRAM-1	- · · · ·	CONTROL DIAGRAM-2		C. NICHOLONG
≪ —──>	DRAWOUT AIR CIRCUIT BREAKER, LOW VOLTAGE	────────────	DRAWOUT POWER CIRCUIT BREAKER, MEDIUM VOLTAGE		PUSH-BUTTON SWITCH, MOMENTARY CONTACT,	— (—	CAPACITOR	→	No 60201 ★
400	CIRCUIT BREAKER, THERMAL MAGNETIC TRIP SHOWN,		NON DRAWOUT FUSED SWITCH, MEDIUM VOLTAGE	<u> </u>	NORMALLY OPEN PUSH-BUTTON SWITCH, MOMENTARY CONTACT,	-+ -	BATTERY	ÄÖ,	STATE OF
	3 POLE, UNO CIRCUIT BREAKER, STATIC TRIP UNIT, SENSOR AMP	(~~~□⊢ ->»	DRAWOUT FUSED SWITCH AND CONTACTOR, MEDIUM		NORMALLY CLOSED PUSH BUTTON SWITCH, MAINTAINED CONTACTS WITH		LIMIT SWITCH, NORMALLY OPEN, CLOSES AT END		PONAL ET
AS or AT AF	TRIP AND FRAME RATINGS SHOWN, 3 POLE, UNO	(⊢ \()	VOLTAGE DRAWOUT FUSED SWITCH AND VACUUM CONTACTOR,		MECHANICAL INTERLOCK	o <u>√o</u>	OF TRAVEL LIMIT SWITCH, NORMALLY CLOSED, OPENS AT END		- I I I I I I I I I I I I I I I I I I I
100/M	CIRCUIT BREAKER, MAGNETIC TRIP ONLY, TRIP RATING SHOWN, 3 POLE, UNO	((1) →	MEDIUM VOLTAGE DRAWOUT VACUUM CONTACTOR, MEDIUM VOLTAGE		3 POSITION SELECTOR SWITCH MAINTAINED CONTACT	070	OF TRAVEL TEMPERATURE SWITCH, OPENS ON TEMPERATURE RISE		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	CIRCUIT BREAKER WITH CURRENT LIMITING FUSES,	→	MEDIUM VOLTAGE CABLE STRESS CONE TYPE	o		۰ ک	TEMPERATURE SWITCH, CLOSES ON TEMPERATURE RISE		+++-
400 400	TRIP AND FUSE RATING INDICATED, 3 POLE, UNO	I	TERMINATION, OPEN TERMINATOR OR ELBOW	HAND OFF REMOTE	SELECTOR SWITCH - MAINTAINED CONTACT - CHART IDENTIFIES OPERATION WHEN NEEDED FOR CLARITY:	0 <u>↓</u> 0	FLOAT SWITCH, NORMALLY OPEN, CLOSES ON		
400 225	FUSED SWITCH, SWITCH AND FUSE CURRENT RATING INDICATED, 3 POLE, UNO		SWITCH - LOAD BREAK, GROUP OPERATED, MEDIUM VOLTAGE	*•	POSITION CKT HAND OFF REMOTE X - CLOSED CONTACT	6	DESCENDING LEVEL		
100	SWITCH, CURRENT RATING INDICATED, 3 POLE, UNO	X	DISCONNECTING FUSE - SOLID MATERIAL,	o *	1 X O O O O O O O O O O O O O O O O O O		FLOAT SWITCH, NORMALLY OPEN, CLOSES ON RISING LEVEL		
60 (3)	FUSE, CURRENT RATING AND QUANTITY INDICATED		MEDIUM VOLTAGE		TOGGLE SWITCH, ON-OFF TYPE	0.10	PRESSURE SWITCH, NORMALLY CLOSED, OPENS ON		
¹ ⊢∞−	MAGNETIC STARTER WITH OVERLOAD,		TERMINAL BLOCK LUG	ON OFF		4	PRESSURE SWITCH, NORMALLY OPEN, CLOSES ON		REVISI
11 🔍	NEMA SIZE INDICATED, FVNR UNO	Δ	DELTA CONNECTION	*0 0	SELECTOR SWITCH, ON-OFF TYPE		RISING PRESSURE FLOW SWITCH, CLOSES ON INCREASED FLOW		
AFD	ELECTRONIC STARTER/SPEED CONTROL RVSS = REDUCED VOLTAGE SOFT STARTER	Y	WYE GROUNDED CONNECTION, SOLID GROUND			0 10	FLOW SWITCH, OPENS ON INCREASED FLOW		
	RVSS = REDUCED VOLTAGE SOFT STARTER AFD = AC ADJUSTABLE FREQUENCY DRIVE DC = DC ADJUSTABLE SPEED DRIVE RVAT = REDUCED VOLTAGE AUTO TRANSFORMER TYPE	R or Z	WYE NEUTRAL GROUND RESISTOR OR IMPEDANCE CONNECTION		MUSHROOM HEAD PUSHBUTTON SWITCH	NGR			
	RVRT = REDUCED VOLTAGE REACTOR TYPE	<u></u>		`		RES	NEUTRAL GROUND CURRENT LIMITING RESISTOR		
•	CABLE OR BUS CONNECTION POINT	(86)	RELAY OR DEVICE, FUNCTION NUMBER AS INDICATED	-0,(A),0	INDICATING LIGHT, PUSH-TO-TEST, LETTER INDICATES COLOR		CALIBRATING RESISTOR		++++
К	KEY INTERLOCK	50:5	CURRENT TRANSFORMER, ZERO SEQUENCE, RATIO	A	INDICATING LIGHT - LETTER INDICATES COLOR A - AMBER G - GREEN S - STROBE	TGEN	TACHOMETER GENERATOR		DA
• •——	SURGE ARRESTER (GAP TYPE)	(1)	AND QUANTITY INDICATED		B - BLUE R - RED C - CLEAR W - WHITE	GFS	GROUND FAULT SENSOR		
(10	CAPACITOR - KVAR INDICATED, 3 PHASE	800/1200:5	BUSHING CURRENT TRANSFORMER, MULTI-RATIO AND QUANTITY INDICATED	ETM	ELAPSED TIME METER	T			
		(3) MO	MOTOR OPERATOR, BREAKER OR SWITCH	O(M)O	MOTOR STARTER CONTACTOR COIL		FLASHER		ON F
$\sqrt{3}$	AC MOTOR, SQUIRREL CAGE INDUCTION - HORSEPOWER INDICATED	EUM	ENERGY MONITORING UNIT	OCRX)O	CONTROL RELAY, X INDICATES NUMERICAL ORDER		SEALED CONTACT	400 2601 60201	HAB A CEME NTY
G	GENERATOR, KW/KVA RATING SHOWN	MRP	MOTOR PROTECTION RELAY	O(DR)O	IN CIRCUIT TIME DELAY RELAY, X INDICATES NUMERICAL ORDER		BUZZER	SUITE RIDA 3 N PE	9A RE REPLA E COU
500/625 VS			MOTORTROTEOTION NELLA	(SV)	IN CIRCUIT SOLENOID VALVE, X INDICATES NUMERICAL ORDER	- \\\\\-	POTENTIOMETER	I AVE, SE2822 B2822 HOLSC	ATION
0-600V	ANALOG METER WITH SWITCH - SCALE RANGE SHOWN V = VOLTAGE KW = KILOWATTS				IN CIRCUIT CONTACT - NORMALLY OPEN	- \\\\-	RESISTOR	W 4TH ESVILLE EL C. NICH	LIFT ST FORCE MA
0 000 (A = AMPERAGE KVAR = KILOVARS PF = POWER FACTOR			 	CONTACT - NORMALLY CLOSED			643 S GAINE DAVID (<u> </u>
DPM	TT TOWERTHOUSE			 0 0-	REMOTE DEVICE		BLOWN FUSE INDICATOR		
	DIGITAL POWER METER (MULTIFUNCTION)			0.0	TIME DELAY RELAY CONTACT, NORMALLY OPEN,		COAXIAL CABLE		
0	UTILITY REVENUE METER			0.70	CLOSES WHEN ENERGIZED AND TIMED OUT TIME DELAY RELAY CONTACT, NORMALLY CLOSED,	Ţ			
<u>_</u>	GROUND				OPENS WHEN ENERGIZED AND TIMED OUT TIME DELAY RELAY CONTACT, CLOSES WHEN ENERGIZED,		MULTICONDUCTOR SHIELDED CABLE		
15 KVA	240)/			0 10	OPENS WHEN DE-ENERGIZED AND TIMED OUT TIME DELAY RELAY CONTACT, OPENS WHEN	<u>=</u>	DUPLEX RECEPTACLE	M	بِ ا
480-120/2 1 PH	240V TRANSFORMER, SIZE, VOLTAGE RATINGS, AND PHASE INDICATED				ENERGIZED, CLOSES WHEN DE-ENERGIZED AND TIMED OUT		DOI LEXINEDEL TAULE	M	RAL RICA ND 1
	SHIELDED ISOLATION TRANSFORMER			ollo	MOTOR SPACE HEATER		RELAY, WITH MECHANICAL LATCH		SENE CT GFI
$\overline{\mathcal{M}}$	SHIELDED ISOLATION TRANSFORMER				TERMINAL BLOCK, REMOTE		RELAT, WITH MECHANICAL LATCH		
480-120V	POTENTIAL TRANSFORMER, VOLTAGE RATING AND QUANTITY INDICATED			0	TERMINAL BLOCK, INTERNAL		FULLWAVE DIODE BRIDGE (AC TO DC)	7	
(3)					FUSED TERMINAL BLOCK	Y			
100:5 (3)	CURRENT TRANSFORMER, RATIO(100:5) AND QUANTITY INDICATED (3)	NOTES:			FUSE, RATING INDICATED				
	CONNECTION POINT TO EQUIPMENT SPECIFIED IN OTHER DIVISIONS. RACEWAY, CONDUCTOR AND CONNECTION IN THIS DIVISION	MAY APPEAR ON THI 2. FOR ADDITIONAL AB	RD LEGEND SHEETS. SOME SYMBOLS AND ABBREVIATIONS E LEGEND AND NOT ON THE DRAWINGS. BREVIATIONS OF OTHER DIVISIONS (HVAC, MECHANICAL, AND ITECTURAL) SEE OTHER LEGENDS.	CPT 120V	TRANSFORMER, CONTROL POWER			VEF	NTS RIFY SCALE
SPD	SURGE PROTECTIVE DEVICE	STREET OF VILLAROITI		•	THERMOCOUPLE				IS ONE INCH ON BINAL DRAWING AUGUST D34

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	© JACOBS 2022. ALL RIGHTS RESERVE
	POWER SYSTEM PLAN-1	· · · · · · · · · · · · · · · · · · ·	POWER SYSTEM PLAN-2		ALARM SYSTEM PLAN AND RISER		LINE PROTECTION RELAYING AND	C. NICHOLONG
	CONNECTION POINT TO EQUIPMENT SPECIFIED.	100/40	BREAKER, SEPARATELY MOUNTED, CURRENT	F _P	FIRE ALARM STATION, MANUAL		ELEMENTARY DIAGRAMS-1	No 60201 ★
0	RACEWAY, CONDUCTOR, TERMINATION AND CONNECTION IN THIS DIVISION.		RATING INDICATED (100/40, 100 = FRAME SIZE; 40 = TRIP RATING)	(C)	FIRE ALARM SYSTEM, AUTOMATIC SMOKE DETECTOR	51) or —52	DEVICE FUNCTION NUMBER INDICATED, SEE DEVICE TABLE	STATE OF W
MCC-A	MAJOR ELECTRICAL COMPONENT OR DEVICE - NAME OR IDENTIFYING SYMBOL AS SHOWN.	<u>c</u> ²	CONTACTOR, MAGNETIC, NEMA SIZE INDICATED		FIRE ALARM SYSTEM, AUTOMATIC, HEAT DETECTOR	(CS)	CONTROL SWITCH TRIP	ONAL ETONING
	PANELBOARD - SURFACE MOUNTED	L 30	LIGHTING CONTACTOR, CURRENT RATING INDICATED	(HD) F(C)	FIRE ALARM BELL			
LPXXA		2				CS C	CONTROL SWITCH CLOSE	A A A
	PANELBOARD LETTER OR NUMBERFACILITY NUMBER	xx	STARTER, MAGNETIC NEMA SIZE INDICATED	FQ	FIRE ALARM HORN	43/CS	43-DEVICE FUNCTION NUMBER, SEE DEVICE TABLE	
	— LP - LOW VOLTAGE PANEL DP - DISTRIBUTION PANEL	⊕ 2	CONVENIENCE RECEPTACLE - DUPLEX UNLESS NOTED OTHERWISE WP - WEATHERPROOF C - CLOCK HANGER		FIRE ALARM HORN/STROBE LIGHT	□ vs	VOLTMETER SWITCH	
	PANELBOARD - FLUSH MOUNTED		TL- TWIST LOCK CRE- CORROSION RESISTANT GFCI- GROUND FAULT CIRCUIT INTERRUPTER		FIRE ALARM STROBE LIGHT	☐ AS	AMMETER SWITCH	
	TERMINAL JUNCTION BOX		SUBSCRIPT NUMBER AT RECEPTACLE INDICATES CIRCUIT	==©	AIR DUCT DETECTOR	(A)	INDICATING LAMP-SWITCHBOARD TYPE INDICATING LAMP LENS COLORS	
M	MOTOR, SQUIRREL CAGE INDUCTION		240V RECEPTACLE	FS	FIRE SPRINKLER FLOW SWITCH		INDICATED AS FOLLOWS: A - AMBER R - RED	
			CONVENIENCE RECEPTACLE - QUADRUPLEX	TS	FIRE SPRINKLER TAMPER SWITCH	_	B - BLUE W - WHITE G - GREEN	
G	GENERATOR, VOLTAGE AND SIZE AS INDICATED.	φ φ φ	MULTI OUTLET ASSEMBLY	D	DOOR HOLDER	V	VOLTMETER	
→ LPXXA	HOME RUN - DESTINATION SHOWN		DUPLEX CONVENIENCE RECEPTACLE - FLUSH IN FLOOR	TELE	EPHONE SYSTEM PLAN AND RISER	A	AMMETER	
—— or —//// _G	EXPOSED CONDUIT AND CONDUCTORS*	₽	CONVENIENCE RECEPTACLE, PEDESTAL, DUPLEX SINGLE FACE UNLESS INDICATED OTHERWISE	TTC	TELEPHONE TERMINAL CABINET	W	WATTMETER	
or -/#/ <u>-</u>	CONCEALED CONDUIT AND CONDUCTORS*	L20R 20 (TELEPHONE RECEPTACLE FLOOR BOX	F	FREQUENCY METER	<u>DR</u>
NOTE: ALL UNMARKED CON	NDUIT RUNS CONSIST OF TWO NO. 12, ONE NO. 12 GROUND " CONDUIT. RUNS MARKED WITH CROSSHATCHES INDICATE		RECEPTACLE, SPECIAL PURPOSE-NEMA CONFIGURATION AND AMPERAGE INDICATED	◄	TELEPHONE RECEPTACLE	PF	POWER FACTOR METER	
NUMBER OF NO. 12 O GREEN GROUND WIF	CONDUCTORS. CROSSHATCH WITH SUBSCRIPT "G" INDICATES	(T)	THERMOSTAT	т	TELEPHONE SYSTEM RACEWAY	(WH)	WATT-HOUR METER	DATE
	CROSSHATCHES WITH BAR INDICATE NO.10 CONDUCTOR.		UTILITY REVENUE METERING FACILITY	COMBIN	IED TELEPHONE/COMPUTER SYSTEM	(ETM)	ELAPSED TIME METER	
S	SIZE CONDUIT ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE.	√	ELECTRIC UNIT HEATER	 	PLAN AND RISER COMBINATION TELEPHONE/DATA RECEPTACLE, WALL	(RPM)	TACHOMETER	
[A1] -	CONDUIT AND CONDUCTOR CALLOUT, SEE LEGEND.	□ _{EUH}		4	MOUNTED, NUMBER OF PORTS INDICATED COMBINATION TELEPHONE/DATA RECEPTACLE, FLOOR BOX,	WXD	WATTS TRANSDUCER	7,4081
	CONDUIT DOWN	↓ AC	ELECTRIC AIR CONDITIONER (SELF CONTAINED UNIT)		NUMBER OF PORTS INDICATED	(PF)	POWER FACTOR TRANSDUCER	1 AND 1ENT 14205
o	CONDUIT UP		UTILITY POLE LIGHTING SYSTEM PLAN	SEC	CURITY SYSTEM PLAN AND RISER	(TD)	TIME DELAY	E 400 E 6020 E 6020 REHAB CLACEN DUNTY
	CONDUIT, STUBBED AND CAPPED	(1) or (1)	LUMINAIRE, SEE SCHEDULE	CR	CARD KEY ACCESS		RELAY COIL, DEVICE FUNCTION NUMBER PER	SON P SON P SON P N 8A F N REP TEE CC Y PRO
	CONDUIT TERMINATION AT CABLE TRAY	(1)	LUMINAIRE, SEE SCHEDULE	cs	CONTROL STATION		ANSI 37.2 - AMERICAN STANDARD MANUAL AND AUTOMATIC STATION CONTROL, SUPERVISORY	4TH AVE 4TH AVE 11LLE, FL EB282 NICHOLS I STATIC RCE MAI MANAT COUNT
EX	EXISTING CONDUIT/ DUCT BANK		LUMINAIRE WITH INTERNAL BATTERY BACKUP,	DS 🔟	DOOR SWITCH	/ /	AND ASSOCIATED TELEMETRY EQUIPMENT	SW 47
			SEE SCHEDULE	<u> </u>	EGRESS PUSHBUTTON	7 8	NORMALLY OPEN CONTACT	643 GAII DAVII
——BD——	BUS DUCT - SEE SPECIFICATIONS		STRIP LUMINAIRE, SEE SCHEDULE		ELECTRONIC LOCK	3 1 4	NORMALLY CLOSED CONTACT	
——CE——	CONCRETE ENCASED CONDUIT	4 or 0-4	LUMINAIRE AND POLE, SEE SCHEDULE LUMINAIRE, 6000 LUMENS LED MOUNTED ON		M = MAGENITIC S = STRIKE	→ —	REMOTE DEVICE	
———DB———	DIRECT BURIED CONDUIT	HA or HA	THE SYSTEM TOWER	•	INTERCOM	NGR	NEUTRAL GROUNDING RESISTOR	
——FO——	FIBER OPTIC CONDUIT	1	FLOOD LIGHTS - AIM IN THE DIRECTION SHOWN		MONITOR	PST	PHASE SHIFTING TRANSFORMER	1 20
XXXX	CONCRETE ENCASED DUCT BANK WHERE XXXX IS THE DUCT BANK NAME. SEE CIRCUIT AND RACEWAY CODING DEFINITION		STANDBY LIGHTING UNIT, SURFACE MOUNTED, SEE SCHEDULE	>>	MOTION SENSOR		THAT OF THE PROPERTY OF THE PR	8 8 8
L×××××× Ž××××××	CONCEALED CONDUIT ROUTING AREA	$xx \overrightarrow{\bigotimes}$ or $\overrightarrow{\underline{\maltese}}$	EXIT LIGHTS - FILLED SECTION INDICATES LIGHTED FACE,		VIDEO CAMERA PTZ = PAN/TILT/ZOOM			ND ND C
	CONDUIT ROUTING AREA	\rightarrow	ARROW INDICATES EGRESS DIRECTIONAL INDICATORS, XX = FIXTURE NUMBER, SEE SCHEDULE		F = FIXED			
	CABLE TRAY	\$ _{a or} \bigcip_2a	SMALL LETTER SUBSCRIPT AT SWITCH AND LUMINAIRE INDICATES SWITCHING. SUBSCRIPT NUMBER		GROUND SYSTEM PLAN			
ΓT	TRANSFORMER	d .	AT LUMINAIRE INDICATES CIRCUIT WALL SWITCH:	•	GROUND ROD			
J or HH	GENERAL CONTROL OR WIRING DEVICE.	₽ 3	2- DOUBLE POLE P- PILOT LIGHT 3- THREE WAY K- KEY OPERATED	O	GROUND ROD IN TEST WELL			
	LETTER SYMBOLS OR ABBREVIATIONS INDICATE TYPE OF DEVICE		4- FOUR WAY D- DIMMER WP- WEATHERPROOF CRE- CORROSION RESISTANT EX- EXPLOSIONPROOF L- MOMENTARY 3-WAY	G	GROUNDING CONDUCTOR, SIZE AS INDICATED			
cs	CONTROL STATION, SEE CONTROL DIAGRAMS FOR CONTROL DEVICE(S) REQUIRED.		M- MOTOR RATED MS- MANUAL STARTER WITH OVERLOADS		PIGTAIL FOR CONNECTION TO EQUIPMENT			NITO
30 🔐	NONFUSED DISCONNECT SWITCH, CURRENT RATING INDICATED, 3 POLE	os	OCCUPANCY SENSOR	G	CABINET OR FRAME EQUIPMENT GROUND BUS			VERIFY SCALE
60/40 🗁	FUSED DISCONNECT SWITCH, CURRENT RATING INDICATED	LC	LIGHTING CONTACTOR	N	EQUIPMENT NEUTRAL BUS			BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
	(60/40, 60=SWITCH RATING / 40=FUSE RATING) 3 POLE	MD	MOTION DETECTOR	.,				DATE AUGUST 202 PROJ D348040
2 🔀	COMBINATION CIRCUIT BREAKER AND MAGNETIC STARTER, NEMA SIZE INDICATED	PC	PHOTOCELL					DWG G-00 SHEET 7 of 46

GENERAL NOTES

- 1. CONDUIT, WIRE AND EQUIPMENT SIZES AND LOCATIONS SHOWN ARE FOR BID BASIS ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL WORK WITH APPROVED SHOP DRAWINGS. WITH THE REQUIREMENTS OF EQUIPMENT PROVIDED FOR INSTALLATION BY CONTRACTOR AND WITH REQUIREMENTS OF OTHER DIVISIONS OF THE CONTRACT AS NECESSARY TO PROVIDE COMPLETE AND WORKING SYSTEMS COMPLYING WITH THE CONTRACT DOCUMENTS. ALL PROPOSED DEVIATIONS FROM CONTRACT DOCUMENTS SHALL BE SUBMITTED AND APPROVED BY ENGINEER BEFORE EXECUTION OF THE AFFECTED WORK.
- 2. THE TERMS RACEWAY AND CONDUIT ARE USED IN THESE DOCUMENTS TO DENOTE NOT ONLY THE RACEWAY OR CONDUIT ITSELF BUT ALSO ALL JUNCTION BOXES, PULL BOXES, CONDULETS, FITTINGS, CLAMPS, SUPPORTS AND ALL OTHER ITEMS NECESSARY FOR A COMPLETE AND WORKING SYSTEM COMPLYING WITH THE CONTRACT DOCUMENTS.
- 3. NOTES INDICATED AS "REF", "REFERENCE" OR "REFER TO" ARE PROVIDED TO ASSIST IN LOCATING RELATED CONTRACTUAL REQUIREMENTS BUT ARE NOT CONTRACTUAL INSTRUCTIONS THEMSELVES. MISSING, INCORRECT OR INCOMPLETE REFERENCES SHALL HAVE NO EFFECT ON THE REQUIREMENTS OF THE CONTRACT.
- 4. ITEMS MARKED MSC (MANUFACTURER SUPPLIED OR SPECIFIED CABLE): CONTRACTOR SHALL DETERMINE REQUIREMENTS FOR, AND PROVIDE, CONDUIT AND CABLE AS REQUIRED BY MANUFACTURER AND IN COMPLIANCE WITH CONTRACT DOCUMENTS.
- 5. EXCEPT AS NOTED BELOW, ALL WIRE AND CABLE, INCLUDING GROUNDED CONDUCTORS ABOVE GRADE AND FIBER OPTIC CABLE SHALL BE INSTALLED IN RACEWAY AND ENCLOSURES. EXCEPTIONS ARE EQUIPMENT CABLES PROVIDED BY EQUIPMENT MANUFACTURERS AND UL LISTED FOR INSTALLATION OUTSIDE OF CONDUIT, INCLUDING FLOAT SWITCH AND SUBMERSIBLE PUMP CABLES.
- 6. SPARE RUNS OF CONDUCTORS SHALL BE INSULATED OR TERMINATED AND LABELED AT BOTH ENDS. SPARE RUNS OF FIBER OPTIC STRANDS SHALL BE LABELED AND TERMINATED AT BOTH ENDS. ALL CONDUCTORS AND FIBERS SHALL BE TESTED AFTER INSTALLATION AND TEST REPORTS SHALL BE SUBMITTED. REPLACE ALL DEFECTIVE MATERIAL; DO NOT SUBMIT TEST REPORTS SHOWING DEFECTS.
- 7. CONDUCTORS SHALL NOT BE SPLICED EXCEPT AS NOTED IN THE SPECIFICATIONS AND SHOWN ON THE DRAWINGS.
- 8. ALL CONDUITS SHALL HAVE AN EQUIPMENT GROUND CONDUCTOR SIZED PER TABLE 250.122 OF THE NEC, UNLESS OTHERWISE NOTED.
- 9. ALL EXISTING INFORMATION SHOWN MUST BE FIELD VERIFIED. ACCURACY OF EXISTING WIRING IS NOT GUARANTEED.
- 10. REFER TO SPECIFICATION SECTION 26 41 00, FOR LIGHTNING PROTECTION SYSTEM REQUIREMENTS.
- 11. REFER TO SPECIFICATION SECTION 26 05 70 FOR SHORT CIRCUIT, PROTECTIVE DEVICE COORDINATION, AND ARC FLASH STUDY REQIREMENTS.
- 12. CONDUCTIVE ENCLOSURES AND OTHER EXTERIOR METAL COMPONENTS OF INSTRUMENTS AND CONTROLS WHICH ARE NOT NORMALLY ENERGIZED SHALL BE CONNECTED TO FACILITY GROUNDING ELECTRODE SYSTEM (GROUND RING) WITH #6 MINIMUM TINNED SOLID COPPER CONDUCTOR
- 13. PROVIDE #10 WIRE INSTEAD OF #12 WIRE FOR ALL 20 AMPERE 120 VOLT OR 208 VOLT CIRCUITS EXCEEDING 150 FEET CONDUIT LENGTH.
- 14. WHERE THE NUMBER OR SIZE OF CONDUCTORS SHOWN TO BE CONNECTED ARE IN EXCESS OF THE CAPACITY OF THE STANDARD TERMINALS OF THE CONNECTED EQUIPMENT, PROVIDE ADDITIONAL TERMINALS, ENCLOSURES, JUNCTION BOXES, PULL SECTIONS, WIRES, CONDUITS AND ALL OTHER MATERIALS AND LABOR AS NECESSARY TO MAKE THE CONNECTIONS SHOWN IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.
- 15. ALL MATERIALS AND EQUIPMENT PROPOSED FOR USE SHALL BE NEW, UN-USE, UNLESS NOTED OTHERWISE, AND BE FULLY RATED AS SPECIFIED AND SCHEDULED IN THE CONTRACT DOCUMENTS AT THE PROJECT ALTITUDE AND MAXIMUM AMBIENT TEMPERATURE.
- 16. PROVIDE ARC FLASH WARNING AND OTHER SIGNS ON ALL SWITCHGEAR PANELBOARDS, MOTOR CONTROL CENTERS, MOTOR CONTROLLERS, CONTROL PANELS, AND OTHER EQUIPMENT PROVIDED OR MODIFIED UNDER THIS CONTRACT AND REQUIRED TO BE LABLED BY NEC INCLUDING BUT NOT LIMTED TO PARAGRAPH 110.16 FLASH PROTECTION.
- 17. COORDINATE SIZE AND INSTALLATION OF ALL EQUIPMENT WITH EXISTING CONDITIONS AND WORK IN OTHER DIVISIONS OF CONTRACT TO ENSURE COMPLIANCE WITH THE NEC, INCLUDING BUT NOT LIMITED TO PARAGRAPH 110.26 SPACES ABOUT ELECTRICAL EQUIPMENT.
- 18. STANDARD DETAILS INCLUDED IN THESE DOCUMENTS SHALL BE USED WHERE APPLICABLE WHETHER SPECIFICALLY CALLED OUT ON THE PLANS OR NOT. PRACTICES CUSTOMARY TO THE TRADE MAY BE USED ONLY WHERE NO APPLICABLE STANDARD DETAIL CAN BE FOUND IN THESE DOCUMENTS AND WHERE THE CUSTOMARY PRACTICE WILL RESULT IN A COMPLETE AND WORKING SYSTEM IN COMPLIANCE WITH THESE DOCUMENTS.

- 19. ALL TERMINATIONS OF RIGID METAL CONDUIT IN WALLS OF **ENCLOSURES WITHOUT CAST-IN-PLACE THREADED CONDUIT** CONNECTIONS, AND WHICH ARE LOCATED OUTDOORS OR IN WET OR DAMP LOCATIONS, SHALL BE MADE USING MYERS HUBS.
- 20. REFER TO DOCUMENTS OF OTHER DIVISIONS OF CONTRACT, INCLUDING BUT NOT LIMITED TO PROCESS MECHANICAL, AND INSTRUMENTATION AND CONTROL FOR LOCATIONS OF PROCESS, INSTRUMENTATION, CONTROL, AND OTHER EQUIPMENT REQUIRING ELECTRICAL, FIBER OPTIC OR RACEWAY-ONLY CONNECTIONS TO BE PROVIDED UNDER THIS DIVISION OF CONTRACT. ALL EQUIPMENT LOCATIONS SHOWN ON DRAWINGS IN THIS DIVISION ARE APPROXIMATE ONLY UNLESS DIMENSIONED.
- 21. COORDINATE EARTH WORK AND INSTALLATION OF ELECTRICAL ITEMS WITH INTERFERENCES SHOWN ON DOCUMENTS OF ALL DIVISIONS OF CONTRACT, INCLUDING CIVIL AND YARD PIPING. REPORT ALL DAMAGE AT ONCE TO OWNER AND ENGINEER AND REPAIR AS DIRECTED AT CONTRACTOR'S SOLE EXPENSE.
- 22. DO NOT INSTALL ANY CONDUITS, DUCT BANKS, PULL BOXES, MANHOLES, HANDHOLES, LIGHT POLES, CONTROL PANELS, ETC., IN AREAS DESIGNATED FOR FUTURE STRUCTURES.
- 23. REFER TO SPECIFICATIONS SECTION 28 31 00 FOR FIRE DETECTION AND ALARM SYSTEM REQUIREMENTS.
- 24. PROVIDE REINFORCED CONCRETE ENCASEMENT OF ALL DIRECT BURIED CONDUITS AND DUCT BANK UNDER ROADWAYS AND 10 FEET BEYOND ON EACH SIDE OF THE ROADWAY.

HAZARDOUS LOCATION NOTES:

- PER NFPA 820 (2016), TABLE 4.2.2, ROW 16a, THE AREA OF THE WASTE WATER LIFT STATION IS CLASSIFIED AS A HAZARDOUS LOCATION AS FOLLOWS:
 - a) THE AREA INSIDE THE WET WELL IS CONSIDERED CLASS 1, DIV I LOCATION.
 - b) THE AREA WITHIN A 3FT ENVELOPE AROUND THE VENT IS CONSIDERED CLASS 1, DIV I LOCATION.
- c) THE AREA WITHIN A 5 FT ENVELOPE AROUND THE VENT IS CONSIDERED CLASS 1, DIV 2 LOCATION.
- d) THE AREA WITHIN AN ENVELOPE 18 INCHES ABOVE AND 3FT BEYOND EACH HATCH IS CONSIDERED A CLASS 1, DIV 2 LOCATION.
- e) THE AREA BEYOND THE ENVELOPE IS UNCLASSIFIED
- f) COMBUSTIBLE GAS DETECTION IS NOT REQUIRED BECAUSE THE WET WELL IS NOT MECHANICALLY VENTILATED BASED ON CHANGE PER NFPA 820 (2016).
- THE AREA OF THE ODOR-CONTROL SYSTEM IS CLASSIFIED AS A HAZARDOUS LOCATION AS FOLLOWS:
 - a) THE AREAS WITHIN 3FT OF LEAKAGE SOURCES IS CONSIDERED CLASS 1, DIV 2 LOCATION.
 - b) THE AREA BEYOND THE ENVELOPE IS UNCLASSIFIED
- PROVIDE SUITABLE WIRING METHODS AND MATERIALS FOR HAZARDOUS LOCATIONS PER NFPA 70 (NEC).

GENERAL CIRCUIT CONDUCTOR AND CONDUIT IDENTIFICATION

	POWER CIRC	CUIT CALLC	UTS	POWER CABLE CIRCUIT CALLOUTS
[P1]	[1/2"FLEX, 2#12,#12G]	[P34]	[1"C,3#4,1#8G]	[PC1] [3/4"C,1 (3C#12,1#12G) TYPE 2]
[P2]	[3/4"C,2#12,1#12G]	[P34A]	[1 1/4"C, 4#4, 1#8G]	[PC2] [3/4"C,1 (3C#10,1#12G) TYPE 2]
[P3]	[3/4"C,3#12,1#12G]	[P35]	[1 1/4"C,3#4,3#14,1#8G]	[PC3] [1"C,1 (3C#8,1#10G) TYPE 2]
P4]	[3/4"C,4#12,1#12G]	[P36]	[1 1/4"C,3#4,5#14,1#8G]	[PC4] [1 1/4"C,2 (3C#12,1#12G) TYPE 2]
P4A]	[3/4"C, 4#12, 4#14, 1#12G]	[P37]	[1 1/4"C,3#3, 1#8G]	[PC5] [1 1/2"C,2 (3C#10,1#12G) TYPE 2]
P5]	[3/4"C,5#12,1#12G]	[37A]	[1 1/4"C,2#3,1#8G]	[PC1A] [3/4"C,1 (2C#12,1#12G) TYPE 2]
P6]	[3/4"C,6#12,1#12G]	[P38]	[1 1/4"C,3#3,3#14,1#8G]	[PC2A] [3/4"C,1 (3C#10,1#12G) TYPE 2]
	-		[1 1/4"C,3#2,1#6G]	[5/4 6,1 (36#10,1#126) 111 [2]
[P7]	[3/4"C,7#12,1#12G]	[P39]		
[P8]	[3/4"C,8#12,1#12G]	[P39A]	[1 1/2"C, 4#2, 1#6G]	
[P9]	[3/4"C,9#12,1#12G]	[P40]	[1 1/4"C,3#1,1#6G]	
[P10]	[3/4"C,10#12,1#12G]	[P40A]	[1 1/2"C,4#1,1#6G]	
[P11]	[3/4"C,2#12,4#14,1#12G]	[P41]	[1 1/2"C,3#1,5#14,1#6G]	EMPTY CONDUIT CALLOUT
[P12]	[3/4"C,3#12,5#14,1#12G]	[P42]	[2"C, 3#1/0,1#6G]	[CE-1] [3/4"C,WITH PULL STRING]
[P13]	[3/4"C,3#12,6#14,1#12G]	[P42A]	[1 1/2"C, 2#1/0, 1#6G]	[CE-2] [1"C,WITH PULL STRING]
[P14]	[3/4"C,3#12,7#14,1#12G]	[P43]	[2"C, 4#1/0,1#6G]	[CE-3] [1 1/4"C,WITH PULL STRING]
[P15]	[3/4"C,2#10,1#10G]	[P44]	[1 1/2"C,3#2/0,1#6G]	
[P16]	[3/4"C,3#10,1#10G]	[P44A]	[2"C,4#2/0,1#4G]	[CE-4] [1 1/2"C,WITH PULL STRING]
[P17]	[3/4"C,3#10,2#14,1#10G]	[P45]	[2"C,3#3/0,1#4NEU]	[CE-5] [2"C,WITH PULL STRING]
P18]	[1"C,3#10,6#12,1#10G]	[P45A]	[2"C, 4#3/0, 1#4G]	[CE-6] [3"C,WITH PULL STRING]
P19]	[3/4"C,3#10,4#14,1#10G]	[P46]	[3"C,3#4/0,1#4G]	[CE-7] [4"C,WITH PULL STRING]
[P20]	[1"C,8#10,1#10G]	[P46A]	[3"C, 3#4/0, 1#3G]	[CE-8] [5"C,WITH PULL STRING]
_	[1"C,2#8,1#10G]		[3"C, 3#250KCM,1#4G]	[CE-9] [6"C, WITH PULL STRING]
[P21]	- · · · · · · · · · · · · · · · · · · ·	[P47]	- · ·	
[P22]	[1"C,3#8,1#10G]	[P48]	[3"C, 4#250KCM,1#2G]	
[P23]	[1"C,3#8,2#14,1#10G]	[P49]	[3"C, 3#350KCM,1#1/0G]	
[P24]	[1"C,3#8,3#14,1#10G]	[P49A]	[3"C,4#350KCM,1#4G]	
[P25]	[1"C,3#8,4#14,1#10G]	[P50]	[4"C, 3#600KCM,350KCM NEU]	
[P26]	[1"C,3#8,5#14,1#10G]	[P50A]	[4"C, 4#600KCM, 1#1/0G]	
[P27]	[1"C,2#6, 1#10G]	[P51]	[4"C, 3#600KCM, 1#350KCM NEU,	CONTROL CARLE CIRCUIT CALLOUTS
[P28]	[1"C,3#6, 1#10G]		#350KCMG]	CONTROL CABLE CIRCUIT CALLOUTS
[P29]	[1"C,3#6, 2#14,1#10G]	[P52]	[2 EACH (3"C, 3#250KCM, 1#2G)]	[CC5] [3/4"C,1-5C TYPE 1]
[P30]	[1"C,3#6, 3#14,1#10G]	[P53]	[2 EACH (3"C, 3#350KCM, 1#1G)]	[CC7] [3/4"C,1-7C TYPE 1]
[P31]	[1"C,3#6, 4#14,1#10G]	[P54]	[2 EACH (4"C, 3#500KCM, 1#1/0G)]	[CC9] [1"C,1-9C TYPE 1]
[P32]	[1"C,3#6, 5#14,1#10G]	[P55]	[2 EACH (4"C, 3#600KCM, 1#1/0G)]	[CC12] [1"C,1-12C TYPE 1]
[P33]	[4"C,3#6, 1#10G]	[P56]	[3 EACH (4"C, 3#500KCM, 1#1/0G)]	[CC19] [1 1/2 ", 1-19C TYPE 1]
[1 33]	[+ 0,5#0, 1#100]		7-	[CC25] [1 1/2"C,1-25C TYPE 1]
		[P57]	[3 EACH (4"C, 3#600KCM, 1#3/0G)]	[CC37] [2"C,1-37C TYPE 1]
		[P58]	[4 EACH (4"C, 3#600KCM, 1#1/0G)]	[CCC1] [1-7C #12 TYP 1]
		[P59]	[5 EACH (4"C, 3#600KCM, 1#4/0G)]	
		[P60]	[6 EACH (4"C, 3#600KCM, 1#1/0G)]	
		[P61]	[8 EACH (4"C, 3#600KCM, 1#1/0G)]	
		[P62]	[10 EACH (4"C,3#600KCM, 1#1/0G)]	
	ANALOG CIRCUIT CALLOUT	TS	CONTROL CIRCUIT CALLOUTS	
[A1]	[3/4"C,1 TYPE 3]	10	[1"C,MSC]	
[A2]	[3/4 0,1 111 2 3] [1"C,2 TYPE 3]	-		
	[1"C,3 TYPE 3]		[3/4"C,2#14,1#14G]	[CAT] [1"C, CAT 6 CABLE]
[A3]			[3] [3/4"C,3#14,1#14G]	
[A4]	[1"C,4 TYPE 3]	-	[3/4"C,4#14,1#14G]	[CX] [1"C, COAX]
[A5]	[1 1/4"C,5 TYPE 3]		[3/4"C,5#14,1#14G]	[MSC] [MANUFACTURER SUPPLIED CABL
[A6]	[1 1/4"C,6 TYPE 3]	[C	[3/4"C,6#14,1#14G]	
[A7]	[1 1/2"C,7 TYPE 3]	[C	[3/4"C,7#14,1#14G]	
[A8]	[1 1/2"C,8 TYPE 3]	[C	[3/4"C,8#14,1#14G]	AED DOWED CARLE ALL CLIES
[A9]	[1 1/2"C,9 TYPE 3]	[C	9] [3/4"C,9#14,1#14G]	AFD POWER CABLE ALLOUTS
[A10]	[2"C,10 TYPE 3]		[3/4"C,10#14,1#14G]	[PV1] [1"C,1(3C#12,1#12G) TYPE 8]
[A11]	[2"C,11 TYPE 3]		[3/4"C,11#14,1#14G]	[PV2] [1 1/2"C,1(3C#10,1#10G) TYPE 8]
[A12]	[2"C,12 TYPE 3]		[3/4"C,12#14,1#14G]	[PV3] [1 1/2"C,1(3C#8,1#8G) TYPE 8]
[A13]	[2"C,13 TYPE 3]		[3/4"C,13#14,1#14G]	[PV4] [2"C,1(3C#6,1#6G) TYPE 8]
[A14]	[2"C,14 TYPE 3]		[3/4"C,14#14,1#14G]	[PV5] [4"C,1(3C#6,1#6G) TYPE 8]
[A15]	[3/4"C,1 TYPE 4]	-	-	
[A16]	[3/4"C,2 TYPE 4]		[3/4"C,15#14,1#14G]	[PV6] [2"C,1(3C#4,1#4G) TYPE 8]
, o]	[3/4 C,2 TTPE 4]		[3/4"C,16#14,1#14G]	[PV7] [2 1/2"C,1(3C#2,1#2G) TYPE 8]
[Δ17]			[17] [3/4"C,17#14,1#14G]	[PV8] [2 1/2"C,1(3C#1/0,3#10G) TYPE 9]
	- · ·		[3/4"C,18#14,1#14G]	[PV9] [4"C,1(3C#1/0,3#10G) TYPE 9]
[A18]	[1 1/4"C,4 TYPE 4]	-		[PV10] [2 1/2"C,1(3C#2/0,3#8G) TYPE 9]
[A18] [A19]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4]	[C	[3/4"C,19#14,1#14G]	, , , , , , , , , , , , , , , , , , , ,
[A18] [A19] [A20]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4]	[C	[3/4"C,19#14,1#14G] [20] [1"C,20#14,1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9]
[A18] [A19] [A20] [A21]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4]	[C		, , , , , , , , , , , , , , , , , , , ,
[A18] [A19] [A20] [A21]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4]	[C] [O	[1"C,20#14,1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9]
[A18] [A19] [A20] [A21] [A22]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4]	[C [C] [C]	[1"C,20#14,1#14G] [1"C,21#14,1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9] [PV12] [3"C,1(3C#250,3#8G) TYPE 9]
[A18] [A19] [A20] [A21] [A22] [A23]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4] [1 1/2"C,8 TYPE 4]	[C] [C] [C]	[1"C,20#14,1#14G] [1"C,21#14,1#14G] [22] [1"C,22#14,1#14G] [23] [1"C,23#14,1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9] [PV12] [3"C,1(3C#250,3#8G) TYPE 9] [PV13] [3 1/2"C,1(3C#350,3#8G) TYPE 9] [PV14] [4"C,1(3C#500KCM,3#8G) TYPE 9]
[A17] [A18] [A19] [A20] [A21] [A22] [A23] [A24]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4] [1 1/2"C,8 TYPE 4] [2"C,9 TYPE 4]	[C] [C] [C] [C]	[1"C,20#14,1#14G] [1"C,21#14,1#14G] [22] [1"C,22#14,1#14G] [23] [1"C,23#14,1#14G] [24] [1"C,24#14,1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9] [PV12] [3"C,1(3C#250,3#8G) TYPE 9] [PV13] [3 1/2"C,1(3C#350,3#8G) TYPE 9] [PV14] [4"C,1(3C#500KCM,3#8G) TYPE 9] [PV15] [2 EACH [2"C,1 (3C#4/0, 3#8G) TYPE 9]
[A18] [A19] [A20] [A21] [A22] [A23]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4] [1 1/2"C,8 TYPE 4] [2"C,9 TYPE 4] [3/4"C,1-4 pr. TYPE 5]	[C [C] [C] [C] [C]	[1"C,20#14,1#14G] [21] [1"C,21#14,1#14G] [22] [1"C,22#14,1#14G] [23] [1"C,23#14,1#14G] [24] [1"C,24#14,1#14G] [25] [1"C,25#14,1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9] [PV12] [3"C,1(3C#250,3#8G) TYPE 9] [PV13] [3 1/2"C,1(3C#350,3#8G) TYPE 9] [PV14] [4"C,1(3C#500KCM,3#8G) TYPE 9]
[A18] [A19] [A20] [A21] [A22] [A23] [A24]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4] [1 1/2"C,8 TYPE 4] [2"C,9 TYPE 4] [3/4"C,1-4 pr. TYPE 5]	[C [C] [C] [C] [C] [C]	[1"C,20#14,1#14G] [1"C,21#14,1#14G] [1"C,21#14,1#14G] [22] [1"C,22#14,1#14G] [23] [1"C,23#14,1#14G] [24] [1"C,24#14,1#14G] [25] [1"C,25#14,1#14G] [30] [1 1/4"C, 30#14, 1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9] [PV12] [3"C,1(3C#250,3#8G) TYPE 9] [PV13] [3 1/2"C,1(3C#350,3#8G) TYPE 9] [PV14] [4"C,1(3C#500KCM,3#8G) TYPE 9] [PV15] [2 EACH [2"C,1 (3C#4/0, 3#8G) TYPE 9]
[A18] [A19] [A20] [A21] [A22] [A23] [A24]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4] [1 1/2"C,8 TYPE 4] [2"C,9 TYPE 4] [3/4"C,1-4 pr. TYPE 5]	[C] [C] [C] [C] [C] [C]	[1"C,20#14,1#14G] [21] [1"C,21#14,1#14G] [22] [1"C,22#14,1#14G] [23] [1"C,23#14,1#14G] [24] [1"C,24#14,1#14G] [25] [1"C,25#14,1#14G] [30] [1 1/4"C, 30#14, 1#14G] [31] [1 1/2"C, 34#14, 1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9] [PV12] [3"C,1(3C#250,3#8G) TYPE 9] [PV13] [3 1/2"C,1(3C#350,3#8G) TYPE 9] [PV14] [4"C,1(3C#500KCM,3#8G) TYPE 9] [PV15] [2 EACH [2"C,1 (3C#4/0, 3#8G) TYPE 9]
[A18] [A19] [A20] [A21] [A22] [A23] [A24]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4] [1 1/2"C,8 TYPE 4] [2"C,9 TYPE 4] [3/4"C,1-4 pr. TYPE 5]	[C] [C] [C] [C] [C] [C] [C]	[1"C,20#14,1#14G] [21] [1"C,21#14,1#14G] [22] [1"C,22#14,1#14G] [23] [1"C,23#14,1#14G] [24] [1"C,24#14,1#14G] [25] [1"C,25#14,1#14G] [30] [1 1/4"C, 30#14, 1#14G] [34] [1 1/2"C, 34#14, 1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9] [PV12] [3"C,1(3C#250,3#8G) TYPE 9] [PV13] [3 1/2"C,1(3C#350,3#8G) TYPE 9] [PV14] [4"C,1(3C#500KCM,3#8G) TYPE 9] [PV15] [2 EACH [2"C,1 (3C#4/0, 3#8G) TYPE 9]
[A18] [A19] [A20] [A21] [A22] [A23] [A24]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4] [1 1/2"C,8 TYPE 4] [2"C,9 TYPE 4] [3/4"C,1-4 pr. TYPE 5]	[C] [C] [C] [C] [C] [C] [C] [C]	[1"C,20#14,1#14G] [21] [1"C,21#14,1#14G] [22] [1"C,22#14,1#14G] [23] [1"C,23#14,1#14G] [24] [1"C,24#14,1#14G] [25] [1"C,25#14,1#14G] [30] [1 1/4"C, 30#14, 1#14G] [34] [1 1/2"C, 34#14, 1#14G] [36] [1 1/2"C, 36#14, 1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9] [PV12] [3"C,1(3C#250,3#8G) TYPE 9] [PV13] [3 1/2"C,1(3C#350,3#8G) TYPE 9] [PV14] [4"C,1(3C#500KCM,3#8G) TYPE 9] [PV15] [2 EACH [2"C,1 (3C#4/0, 3#8G) TYPE 9]
[A18] [A19] [A20] [A21] [A22] [A23] [A24]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4] [1 1/2"C,8 TYPE 4] [2"C,9 TYPE 4] [3/4"C,1-4 pr. TYPE 5]	[C] [C] [C] [C] [C] [C] [C] [C]	[1"C,20#14,1#14G] [21] [1"C,21#14,1#14G] [22] [1"C,22#14,1#14G] [23] [1"C,23#14,1#14G] [24] [1"C,24#14,1#14G] [25] [1"C,25#14,1#14G] [30] [1 1/4"C, 30#14, 1#14G] [34] [1 1/2"C, 34#14, 1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9] [PV12] [3"C,1(3C#250,3#8G) TYPE 9] [PV13] [3 1/2"C,1(3C#350,3#8G) TYPE 9] [PV14] [4"C,1(3C#500KCM,3#8G) TYPE 9] [PV15] [2 EACH [2"C,1 (3C#4/0, 3#8G) TYPE 9]
A18] A19] A20] A21] A22] A23]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4] [1 1/2"C,8 TYPE 4] [2"C,9 TYPE 4] [3/4"C,1-4 pr. TYPE 5]	[C] [C] [C] [C] [C] [C] [C] [C]	[1"C,20#14,1#14G] [1"C,21#14,1#14G] [22] [1"C,22#14,1#14G] [23] [1"C,23#14,1#14G] [24] [1"C,24#14,1#14G] [25] [1"C,25#14,1#14G] [30] [1 1/4"C, 30#14, 1#14G] [34] [1 1/2"C, 34#14, 1#14G] [36] [2"C, 60#14,1#14G] [68] [2"C, 68#14, 1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9] [PV12] [3"C,1(3C#250,3#8G) TYPE 9] [PV13] [3 1/2"C,1(3C#350,3#8G) TYPE 9] [PV14] [4"C,1(3C#500KCM,3#8G) TYPE 9] [PV15] [2 EACH [2"C,1 (3C#4/0, 3#8G) TYPE 9]
A18] A19] A20] A21] A22] A23] A24] A25]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4] [1 1/2"C,8 TYPE 4] [2"C,9 TYPE 4] [3/4"C,1-4 pr. TYPE 5] [1"C,2-4 pr. TYPE 5]	[C	[1"C,20#14,1#14G] [1"C,21#14,1#14G] [22] [1"C,22#14,1#14G] [23] [1"C,23#14,1#14G] [24] [1"C,24#14,1#14G] [25] [1"C,25#14,1#14G] [30] [1 1/4"C, 30#14, 1#14G] [34] [1 1/2"C, 34#14, 1#14G] [36] [2"C, 60#14,1#14G] [68] [2"C, 68#14, 1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9] [PV12] [3"C,1(3C#250,3#8G) TYPE 9] [PV13] [3 1/2"C,1(3C#350,3#8G) TYPE 9] [PV14] [4"C,1(3C#500KCM,3#8G) TYPE 9] [PV15] [2 EACH [2"C,1 (3C#4/0, 3#8G) TYPE 9]
A18] A19] A20] A21] A22] A23] A24] A25]	[1 1/4"C,4 TYPE 4] [1 1/4"C,5 TYPE 4] [1 1/4"C,6 TYPE 4] [1 1/2"C,7 TYPE 4] [1 1/2"C,8 TYPE 4] [2"C,9 TYPE 4] [3/4"C,1-4 pr. TYPE 5] [1"C,2-4 pr. TYPE 5]	[C	[1"C,20#14,1#14G] [1"C,21#14,1#14G] [22] [1"C,22#14,1#14G] [23] [1"C,23#14,1#14G] [24] [1"C,24#14,1#14G] [25] [1"C,25#14,1#14G] [30] [1 1/4"C, 30#14, 1#14G] [34] [1 1/2"C, 34#14, 1#14G] [36] [2"C, 60#14,1#14G] [68] [2"C, 68#14, 1#14G]	[PV11] [3"C,1(3C#4/0,3#8G) TYPE 9] [PV12] [3"C,1(3C#250,3#8G) TYPE 9] [PV13] [3 1/2"C,1(3C#350,3#8G) TYPE 9] [PV14] [4"C,1(3C#500KCM,3#8G) TYPE 9] [PV15] [2 EACH [2"C,1 (3C#4/0, 3#8G) TYPE 9]

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G-007

INSTRUMENT IDENTIFICATION LETTERS TABLE

	· CLARIFYING ABBREVIATIONS
ВВ	FIRST LETTER(S)
FIT	SUCCEEDING LETTER(S)
UPLLUUS	
	SET LETTER (USED WHEN
	THERE ARE MULTIPLE DEVICES WITH THE SAME UNIT NUMBER)
	UNIT NUMBER
	LOOP NUMBER
	UNIT PROCESS NUMBER

DIGITAL SYSTEM INTERFACES

ANALOG INPUT

EXAMPLE SYMBOLS

- ANALOG OUTPUT
- DISCRETE INPUT
- DISCRETE OUTPUT

	INOIN		NTIFICATION LET	ILINO IADEL	
	FIRST-LETT	ER		SUCCEEDING-LETTERS	
LETTER	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	READOUT OR PASSIVE FUNCTION	READOUT OR PASSIVE FUNCTION
А	ANALYSIS (+)		ALARM		
В	BURNER, COMBUSTION		USER'S CHOICE (*)	USER'S CHOICE (*)	USER'S CHOICE (*)
С	USER'S CHOICE (*)			CONTROL	
D	DENSITY (S.G.)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT, SENSOR		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE (*)		GLASS, GAUGE VIEWING DEVICE	GATE	
Н	HAND (MANUAL)				HIGH
	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
М	MOTION	MOMENTARY			MIDDLE, INTERMEDIATE
N	TORQUE		USER'S CHOICE (*)	USER'S CHOICE (*)	USER'S CHOICE (*)
0	USER'S CHOICE (*)		ORIFICE, RESTRICTION		
Р	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD OR PRINT		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
Т	TEMPERATURE			TRANSMIT	
U	MULTI VARIABLE		MULTI FUNCTION	MULTI FUNCTION	MULTI FUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
Х	UNCLASSIFIED (*)	X AXIS	UNCLASSIFIED (*)	UNCLASSIFIED (*)	UNCLASSIFIED (*)
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION	Z AXIS		DRIVE, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

TABLE BASED ON THE INTERNATIONAL SOCIETY OF AUTOMATION (ISA) STANDARD.

(+) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL. SEE ABBREVIATIONS AND LETTER SYMBOLS. (*) WHEN USED, DEFINE THE MEANING HERE FOR THE PROJECT.

GENERAL INSTRUMENT OR FUNCTIONAL SYMBOLS

FIELD MOUNTED

(OPERATOR

ACCESSIBLE)

MCC MOUNTED

PLC FUNCTION

SHARED DISPLAY, SHARED CONTROL

COMPUTER FUNCTION

REAR-OF-PANEL MOUNTED (OPERATOR

INACCESSIBLE) PANEL MOUNTED

EXAMPLE FY

TRANSDUCERS

A ANALOG

DIGITAL

VOLTAGE

FREQUENCY

HYDRAULIC

CURRENT TO PNEUMATIC TRANSDUCER (BACK OF PANEL, IN A FLOW LOOP)

P PNEUMATIC

R RESISTANCE

PF PULSE FREQUENCY I

PD PULSE DURATION

ACCESSORY DEVICES SPECIAL CASES CURRENT

EXAMPLE



SWITCH

TRANSMITTER

UNCLASSIFIED

YL \ ON AND OFF EVENT LIGHTS

INDICATOR RECORDER

TRANSMITTER AS AN

ACCESSORY TO A

FLOW ELEMENT

ON-OFF HAND SWITCH. 00 MAINTAINED CONTACT / HS \ SWITCH (CONTROLLED **DEVICE WILL RESTART** ON RETURN OF POWER AFTER POWER FAILURE).

SS

´HS `

STOP-START HAND SWITCH MOMENTARY CONTACT SWITCHES (CONTROLLED DEVICE WILL NOT RESTART ON RETURN OF POWER AFTER POWER FAILURE).

LINE LEGEND

PRIMARY PROCESS (CLOSED CONDUIT PARALLELING LINES DASHED LINE INDICATES ALTERNATE FLOW STREAM) SECONDARY PROCESS **BYPASS PROCESS** PROCESS (OPEN CHANNEL) TOTAL OF 2 SIGNALS ANALOG SIGNAL (4 TO 20 mAdc, ETC.) 3 TYPICAL SETS OF DISCRETE 2 SIGNALS EACH. (ON/OFF, ETC.) TOTAL OF 6 SIGNALS. **CONNECTING LINES** PNEUMATIC SIGNAL FILLED SYSTEM SIGNAL HYDRAULIC SYSTEM SIGNAL DATA LINK BUILDING OR FACILITY BOUNDARY PACKAGE SYSTEM NON-CONNECTING LINES

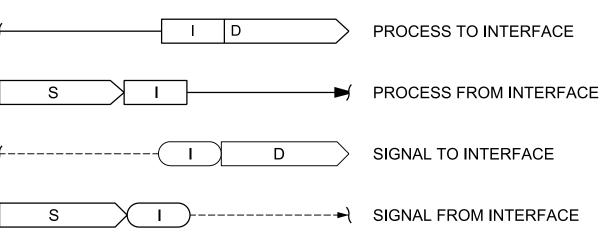
INTERFACE SYMBOLS

MANUFACTURER SUPPLIED

EQUIPMENT

POWER

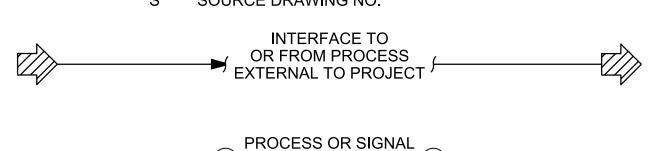
TYPICAL BREAK



INTERFACE IDENTIFIER

DESTINATION DRAWING NO.

SOURCE DRAWING NO.



►(N) LINE CONTINUATION (N)-

N=1,2,3,ETC

SELF CONTAINED VALVE & **EQUIPMENT TAG NUMBERS**

D-WXY

ARV AIR RELEASE VALVE AVRV AIR AND VACUUM RELEASE VALVE E EJECTOR

G GATE M MECHANICAL EQUIPMENT P PUMP

UNIT PROCESS NUMBER

UNIT NUMBER

LOOP NUMBER

T TANK

ABBREVIATIONS & LETTER SYMBOLS

ALTERNATING CURRENT AM **AUTO-MANUAL** CAM **COMPUTER-AUTO-MANUAL** CCS CENTRAL CONTROL SYSTEM CL₂ etc. CHLORINE (TYPICAL: USE STANDARD CHEMICAL ELEMENT ABBREVIATIONS) CM **COMPUTER-MANUAL** COD CHEMICAL OXYGEN DEMAND CP-X CONTROL PANEL NO. X DC DIRECT CURRENT DCS DISTRIBUTED CONTROL SYSTEM DCU DISTRIBUTED CONTROL UNIT DO DISSOLVED OXYGEN FCL₂ FREE CHLORINE RESIDUAL FOS FOSA FAST-OFF-SLOW **FAST-OFF-SLOW-AUTO FOSR FAST-OFF-SLOW-REMOTE** FP-W-X FIELD PANEL NO. WX (W=UNIT PROCESS NUMBER X=PANEL NUMBER) FR FORWARD-REVERSE HOA HAND-OFF-AUTO HOR HAND-OFF-REMOTE ISR INTRINSICALLY SAFE RELAY LEL LOS LOWER EXPLOSIVE LIMIT LOCKOUT STOP LR LOCAL-REMOTE MA MANUAL-AUTO MC MODULATE-CLOSE MOTOR CONTROL CENTER NO. X MCC-X MSC MANUFACTURER SUPPLIED CABLE OC OPEN-CLOSE(D) OCA OPEN-CLOSE-AUTO OCR **OPEN-CLOSE-REMOTE** 00 ON-OFF OOA ON-OFF-AUTO OOR ON-OFF-REMOTE ORP **OXIDATION REDUCTION POTENTIAL** OSC **OPEN-STOP-CLOSE** PCP PUMP CONTROL PANEL pH PLC HYDROGEN ION CONCENTRATION PROGRAMMABLE LOGIC CONTROLLER PPR PUMP PROTECTION RELAY RIO REMOTE I/O UNIT RM-X REMOTE MULTIPLEXING MODULE NO. X RTU-X

REMOTE TELEMETRY UNIT NO. X SLOWER-FASTER START-STOP SUPERVISORY SET POINT CONTROL TCL₂ TOTAL CHLORINE RESIDUAL

TOC **TOTAL ORGANIC CARBON** TOD TOTAL OXYGEN DEMAND TURB TURBIDITY VHC **VOLATILE HYDROCARBONS VIBRATION**

SF SS

SSC

AVG

1:1

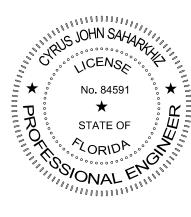
VIB **DIFFERENCE MULTIPLY** DIVIDE CHARACTERIZED RAISED TO THE Nth POWER **SQUARE ROOT**

AVERAGE REPEAT OR BOOST SELECT HIGHEST SIGNAL SELECT LOWEST SIGNAL

GAIN OR ATTENUATE

GENERAL NOTES

- COMPONENTS AND PANELS SHOWN WITH A SINGLE ASTERISK (*) ARE TO BE PROVIDED AS PART OF A PACKAGE SYSTEM.
- COMPONENTS AND PANELS SHOWN WITH A DOUBLE ASTERISK (**) ARE TO BE PROVIDED UNDER DIVISION 26, ELECTRICAL.
- COMPONENTS AND PANELS SHOWN WITH A DIAMOND () ARE TO BE PROVIDED UNDER DIVISION 40, PROCESS INTEGRATION.
- THIS IS A STANDARD LEGEND. THEREFORE, NOT ALL OF THIS INFORMATION MAY BE USED ON THE PROJECT.



* PRO!				
			J۸D	

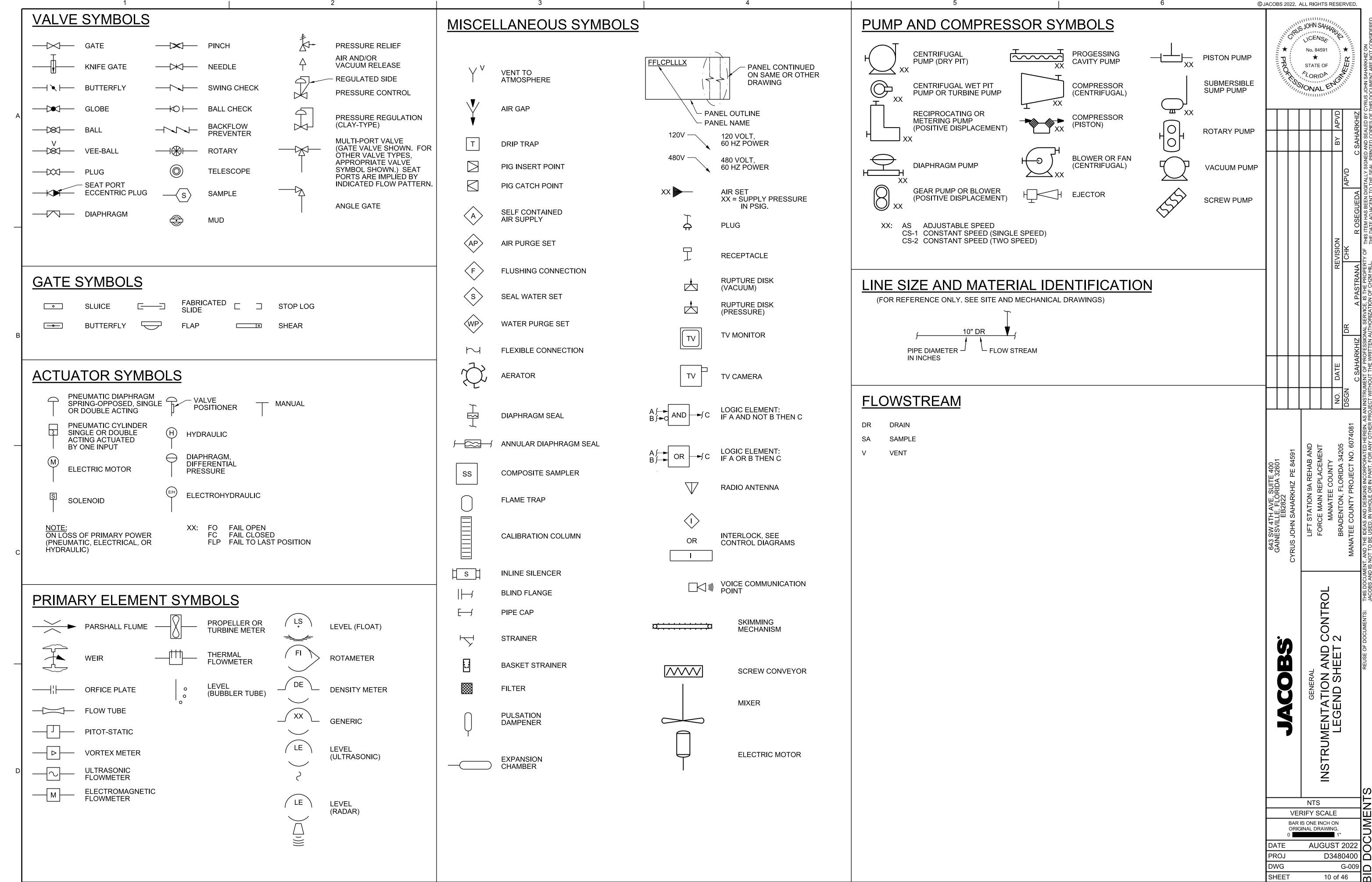
643 SW 4TH AVE, SUITE 400	GAINESVILLE, FLORIDA 3200 I EB2822	CYRUS JOHN SAHARKHIZ PE 84591	HET STATION OA BEHAB AND	EOBCE MAIN BEBI ACEMENT	MANATER COUNTY	BRADENTON ELORIDA 34205 NO. DATE REVISION	MANATEE COLINITY PRO JECT NO 6074081 DSGN DR	C SAHARKHIZ A PASTRANA R OSEGUEDA	REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF THIS ITEM HAS BEEN DIGITALLY SIGNE
643 SW 4TF		CYRUS JOHN S		KAL	NSTRUMENTATION AND CONTROL	SHEET 1	CC HATANAM		REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AI

NTS **VERIFY SCALE** BAR IS ONE INCH ON ORIGINAL DRAWING. AUGUST 2022 D3480400 G-008 9 of 46

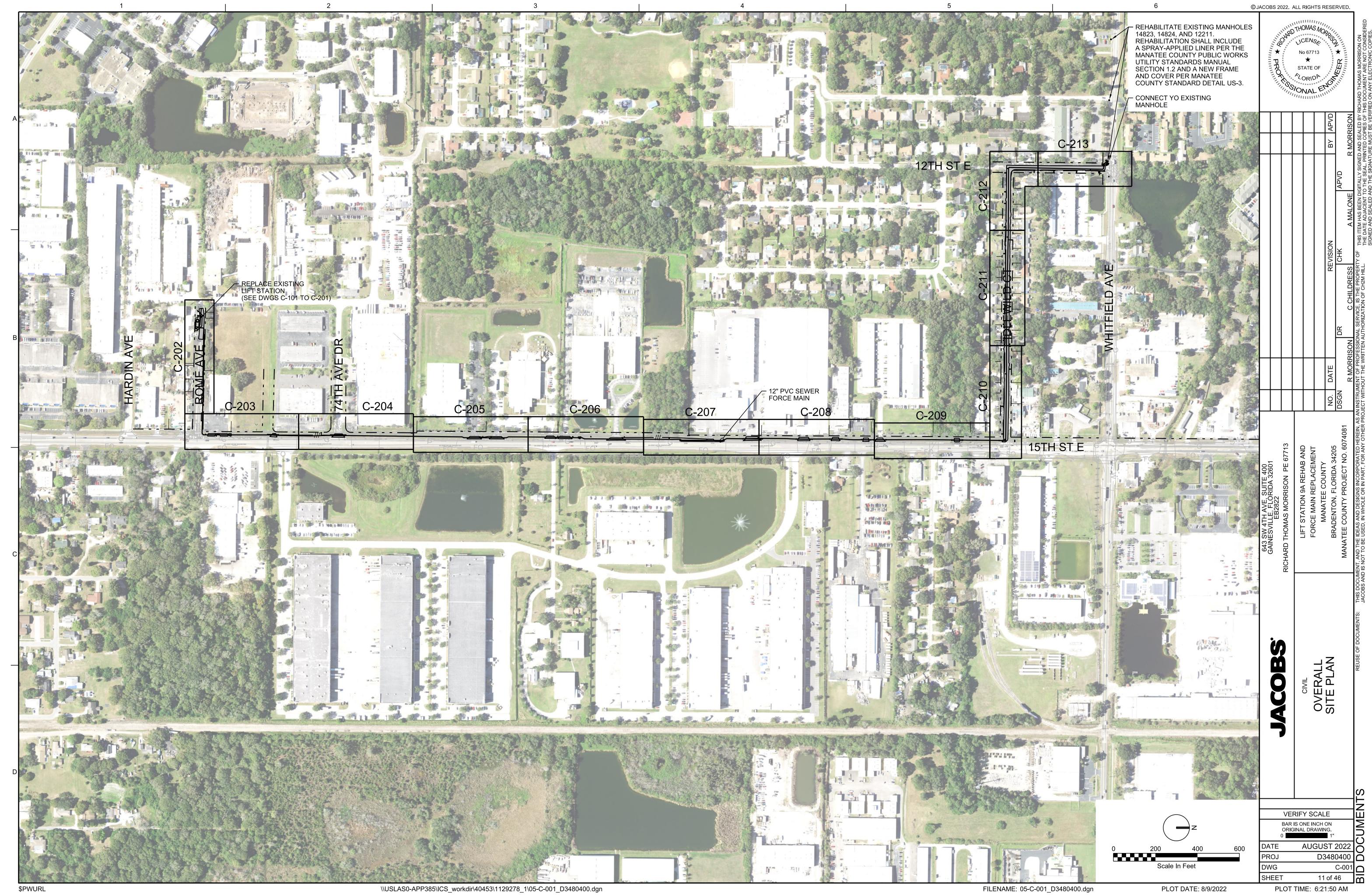
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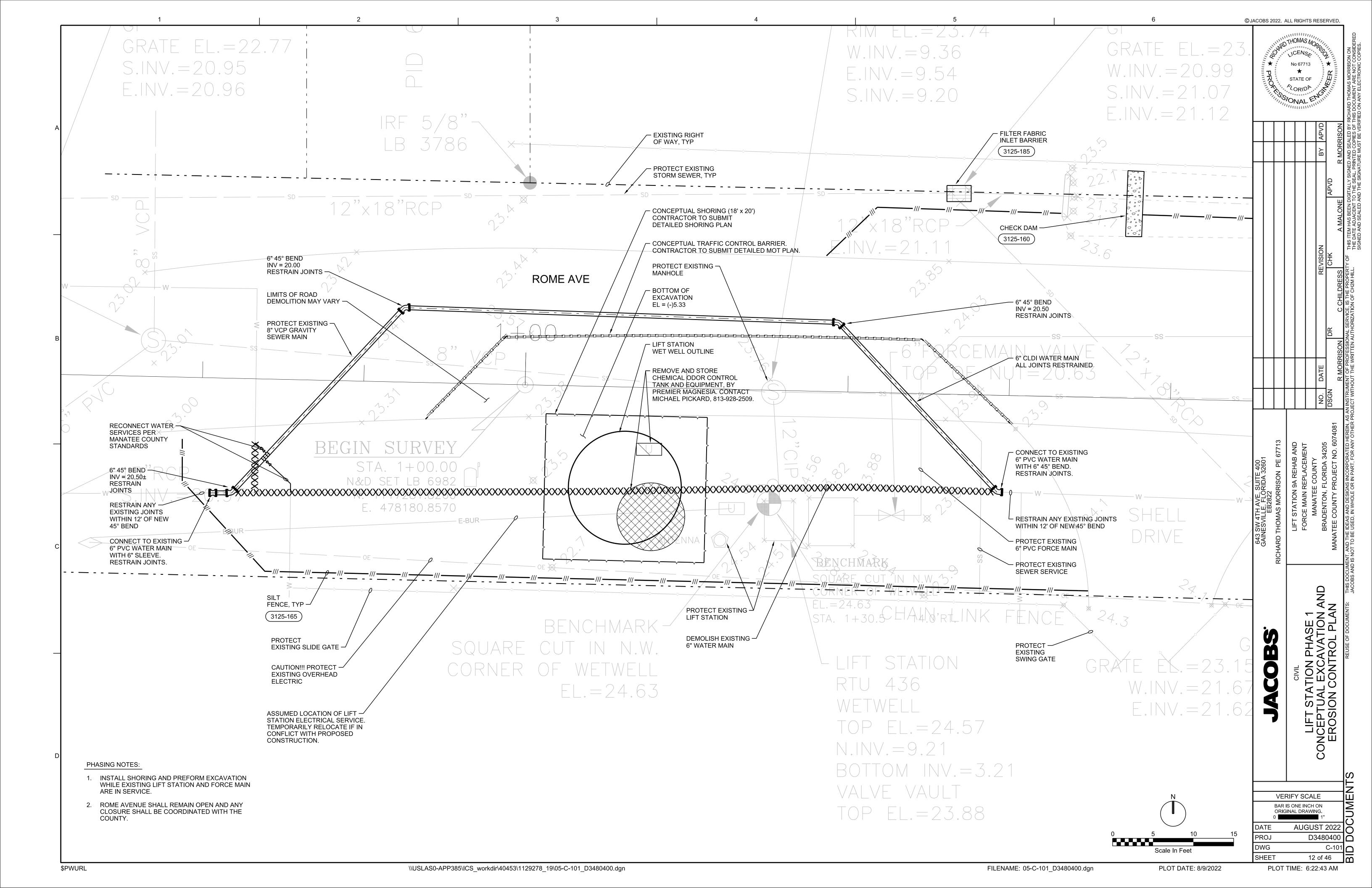
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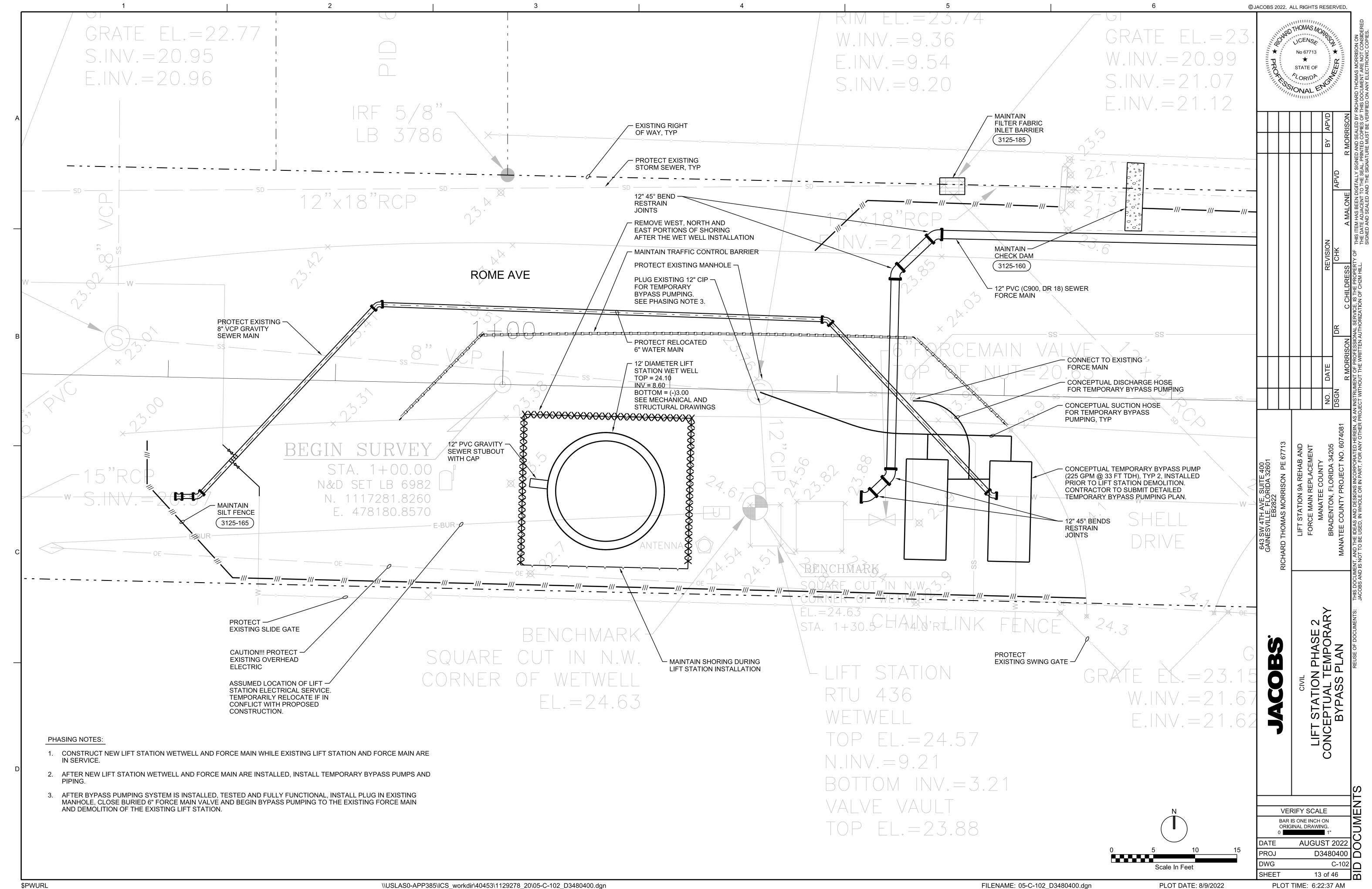
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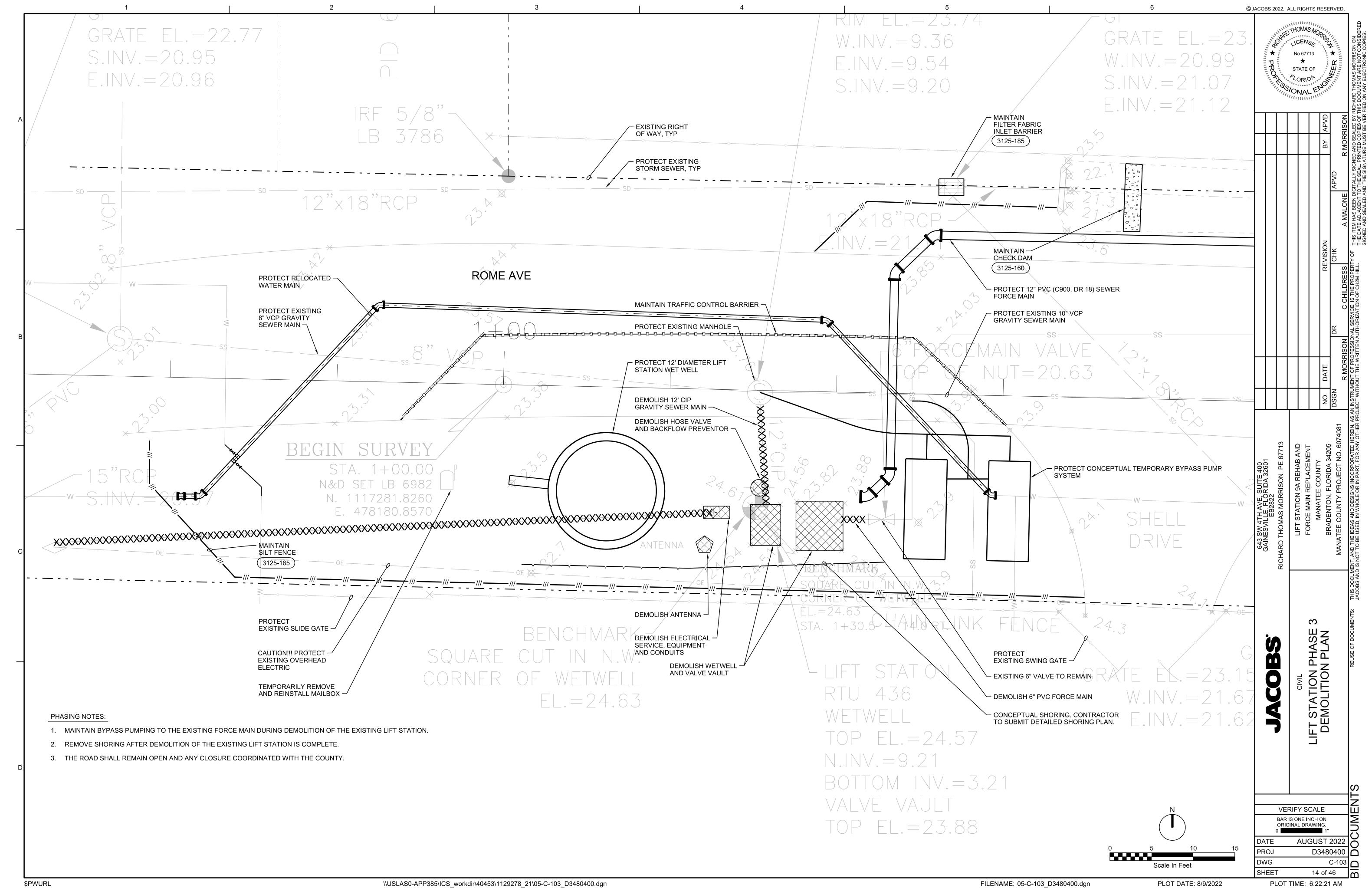


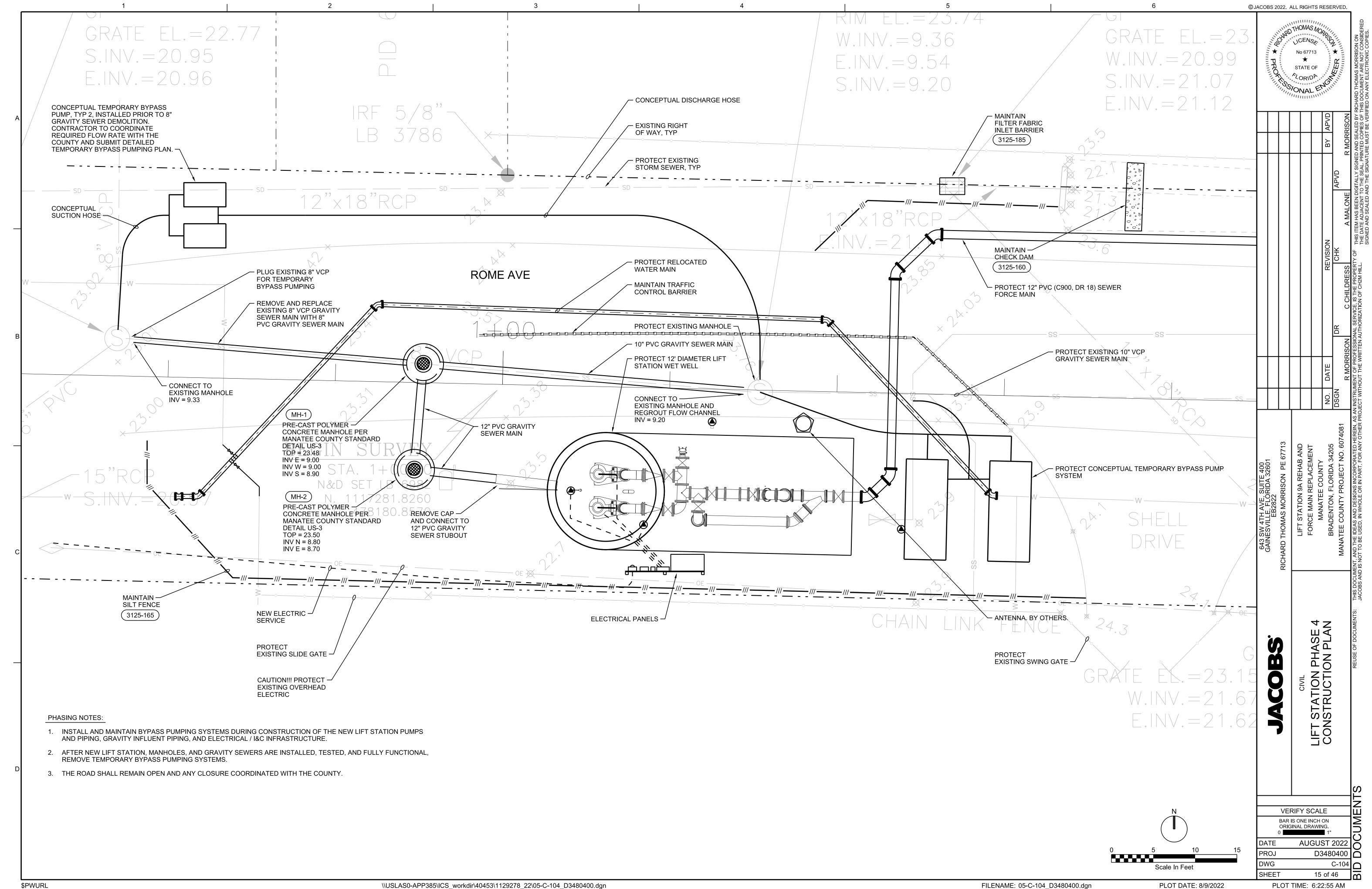
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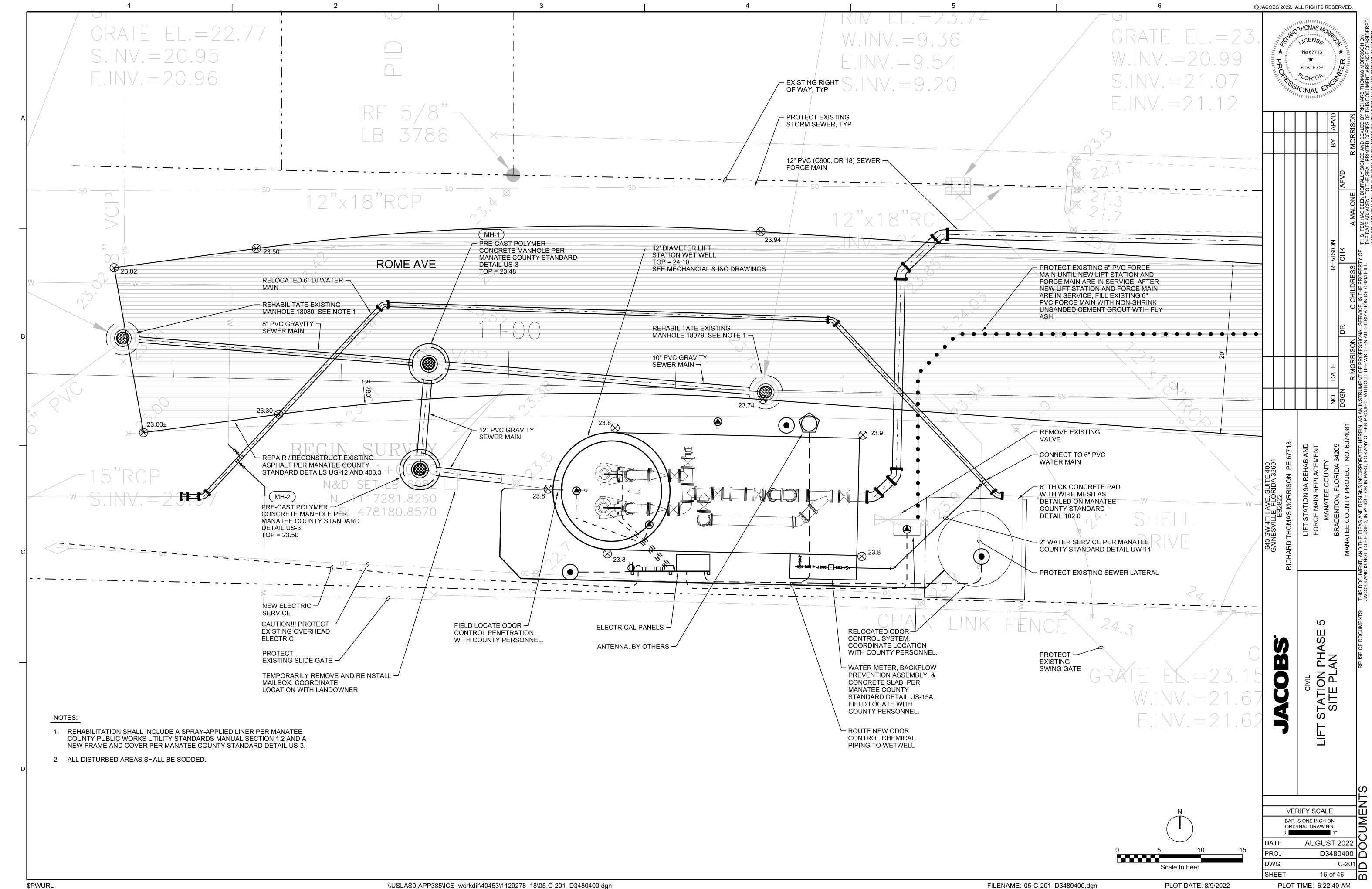


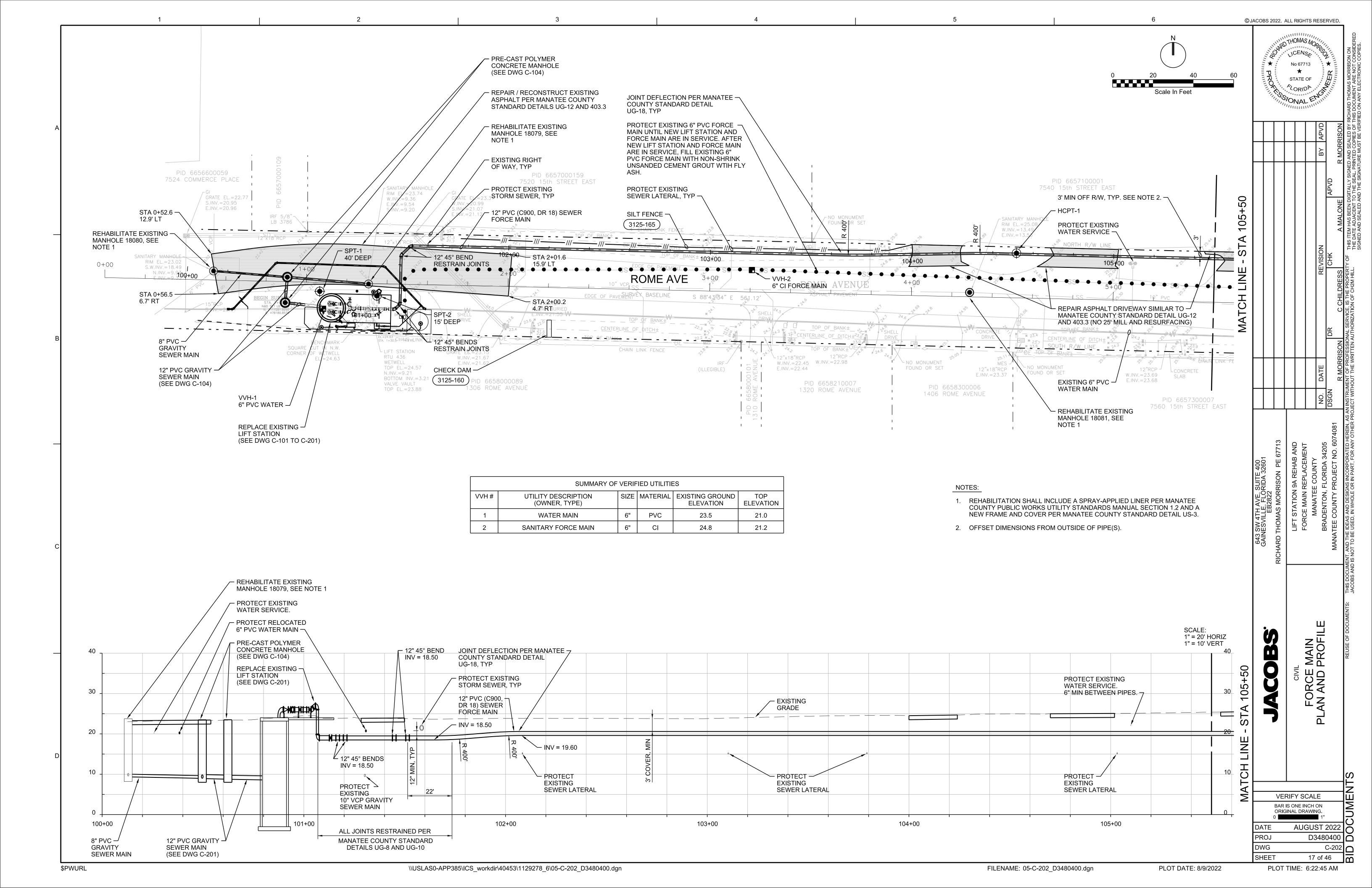


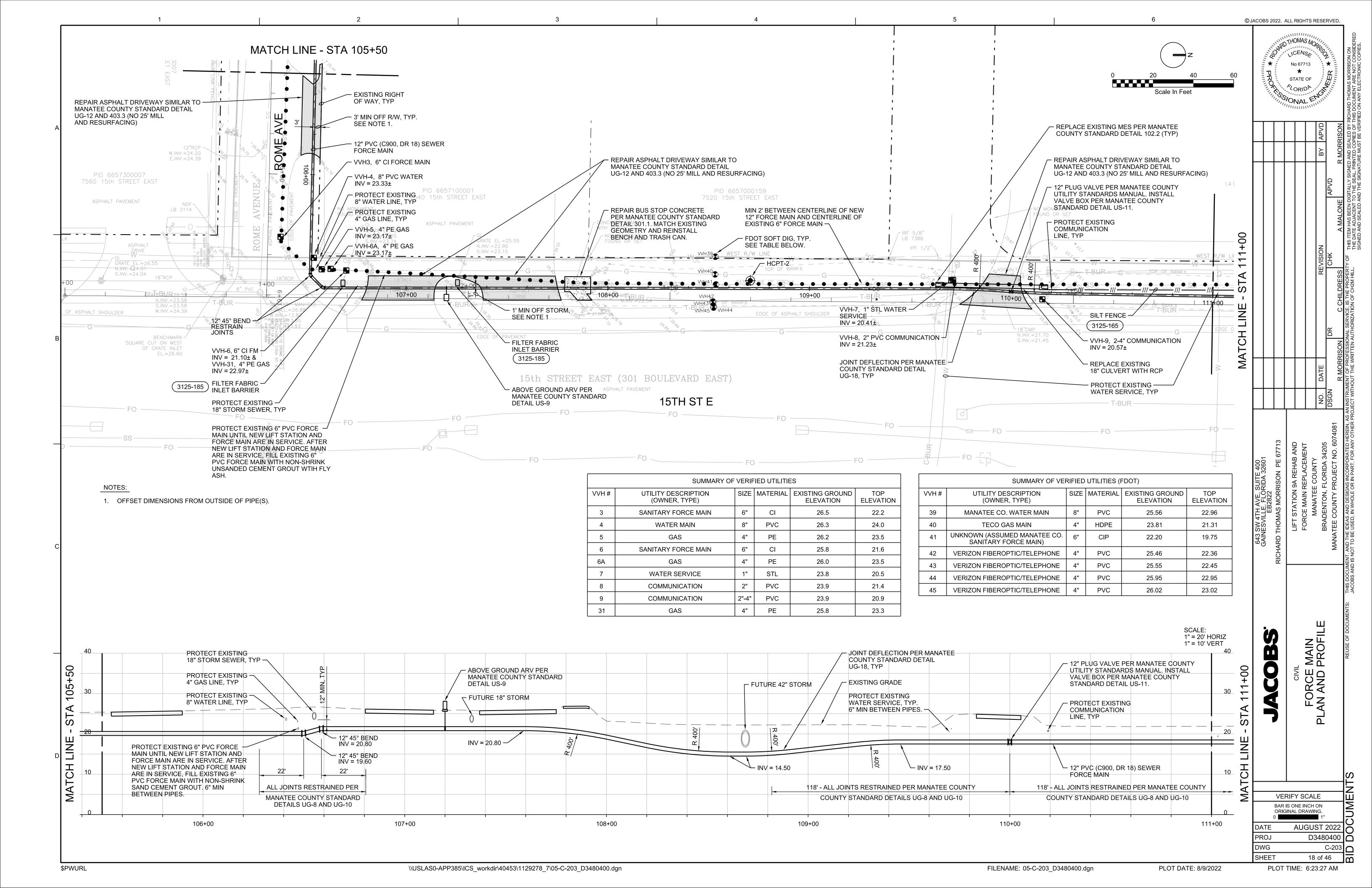


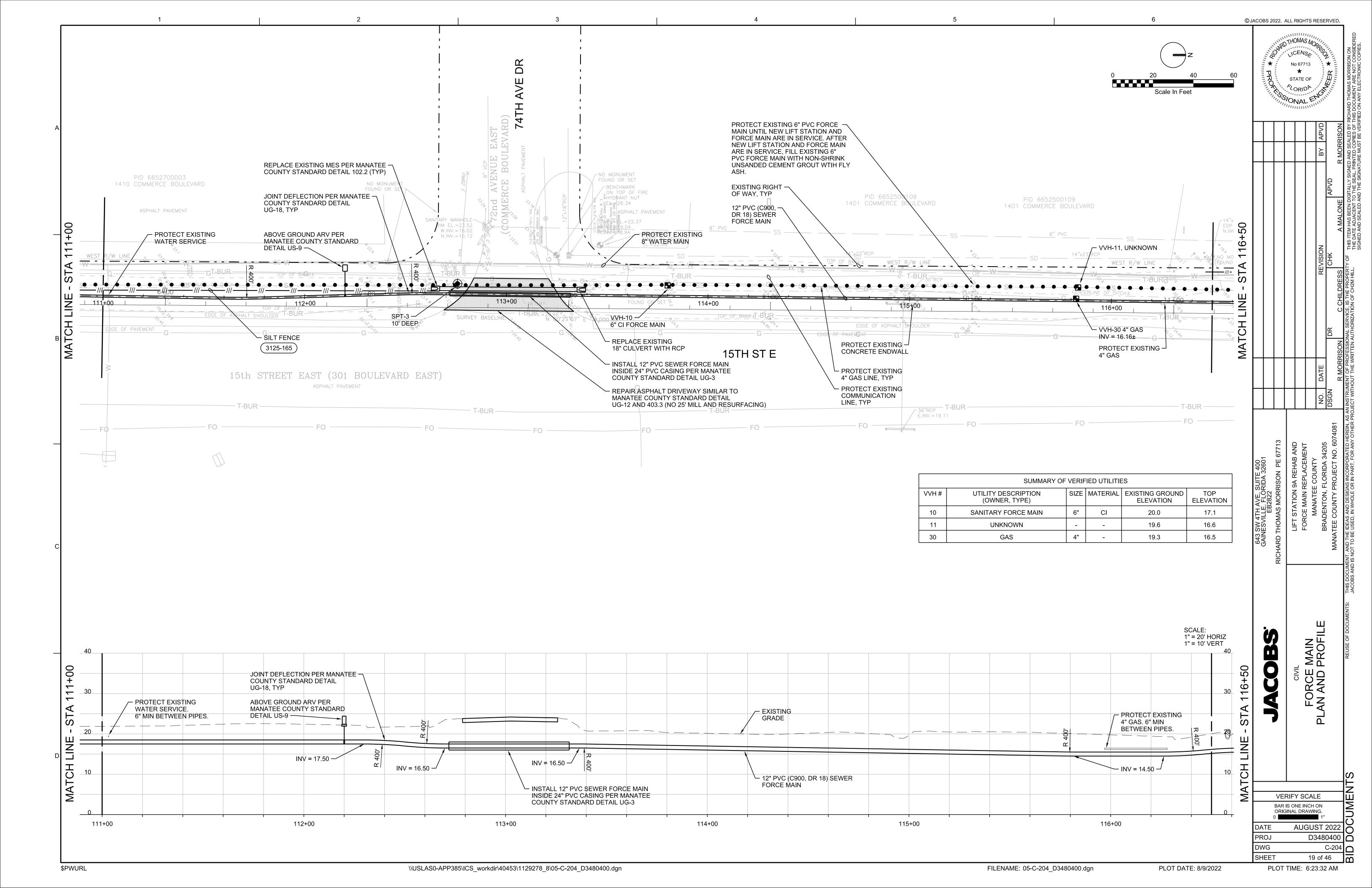


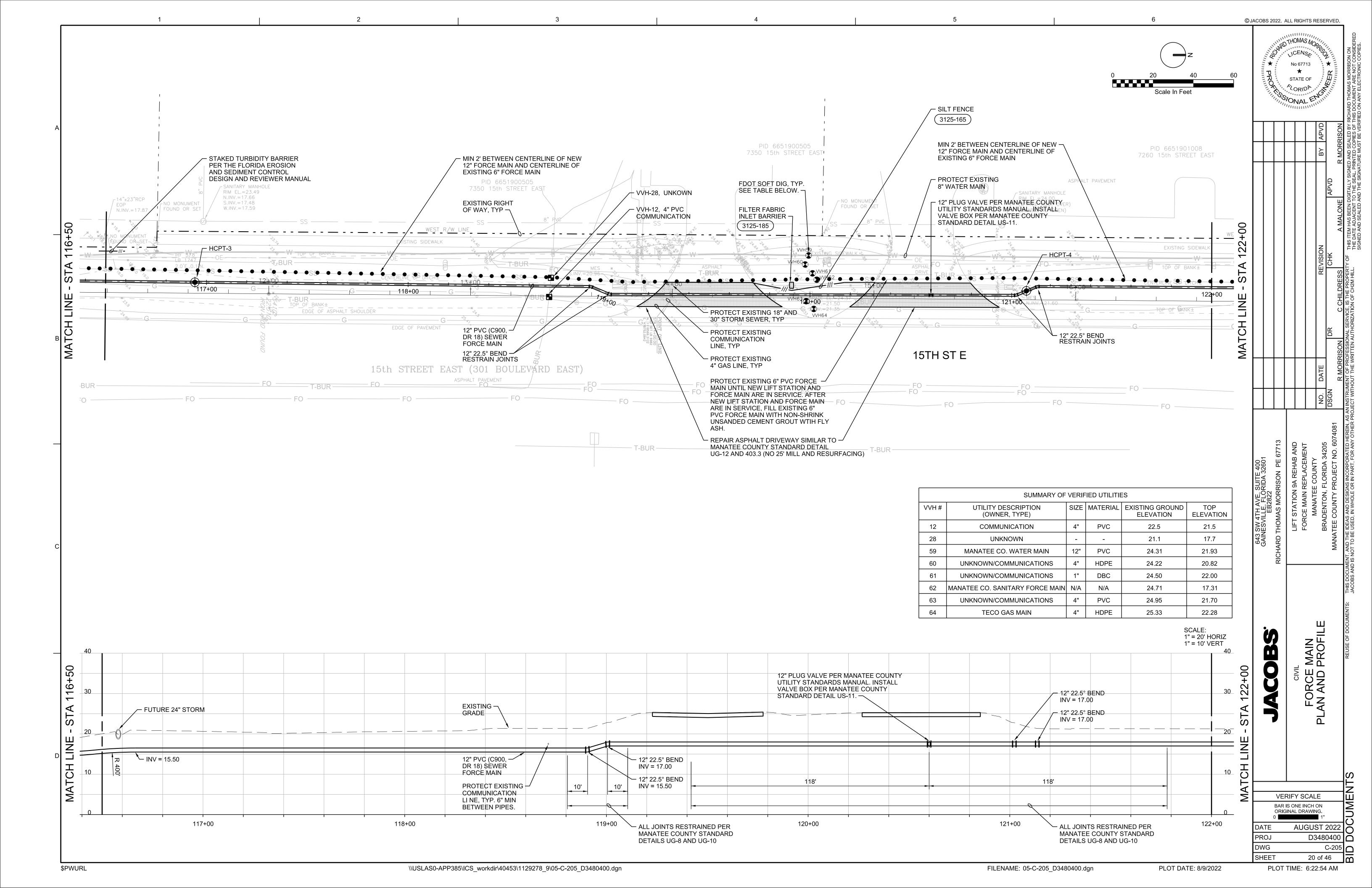


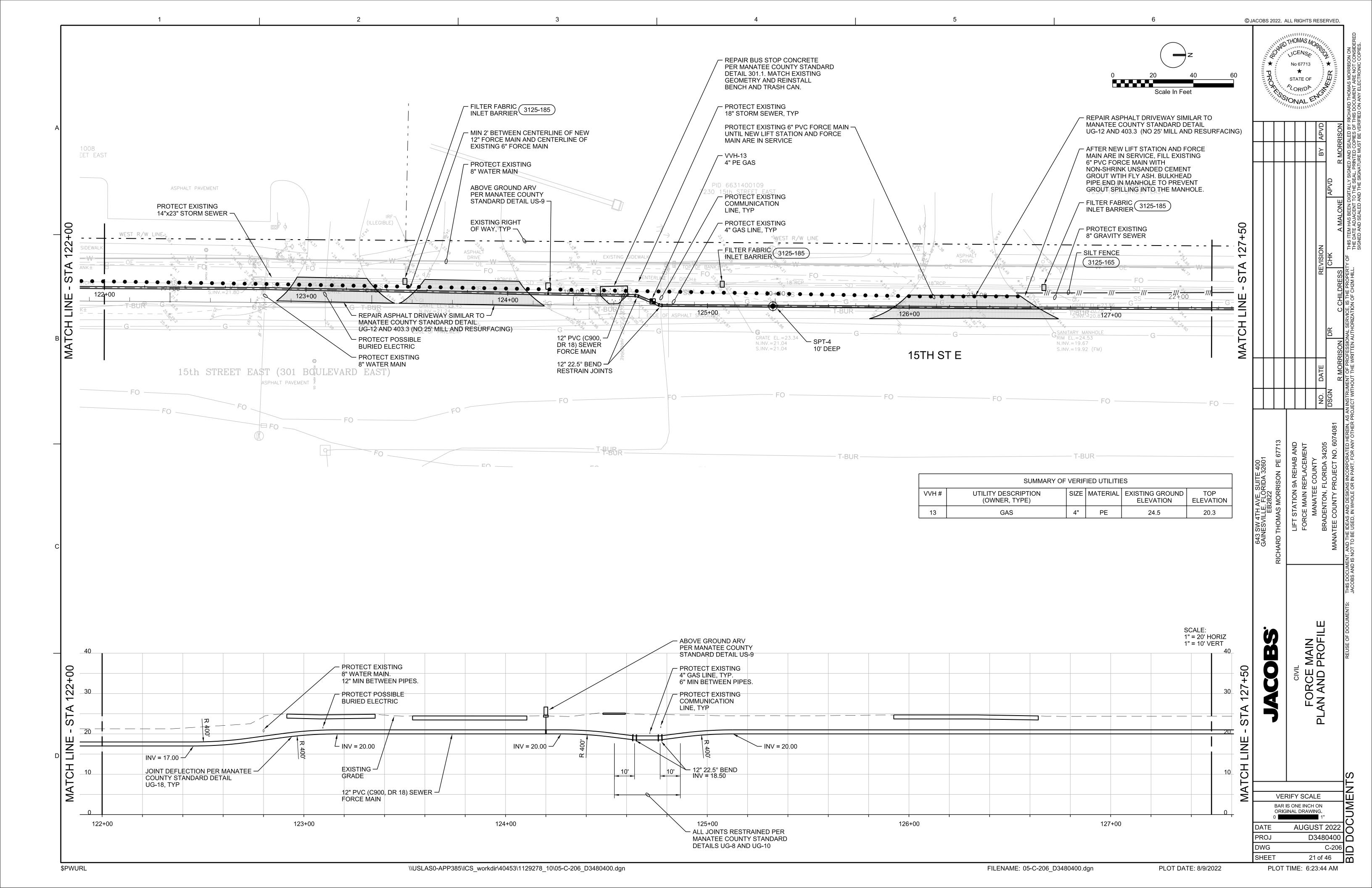


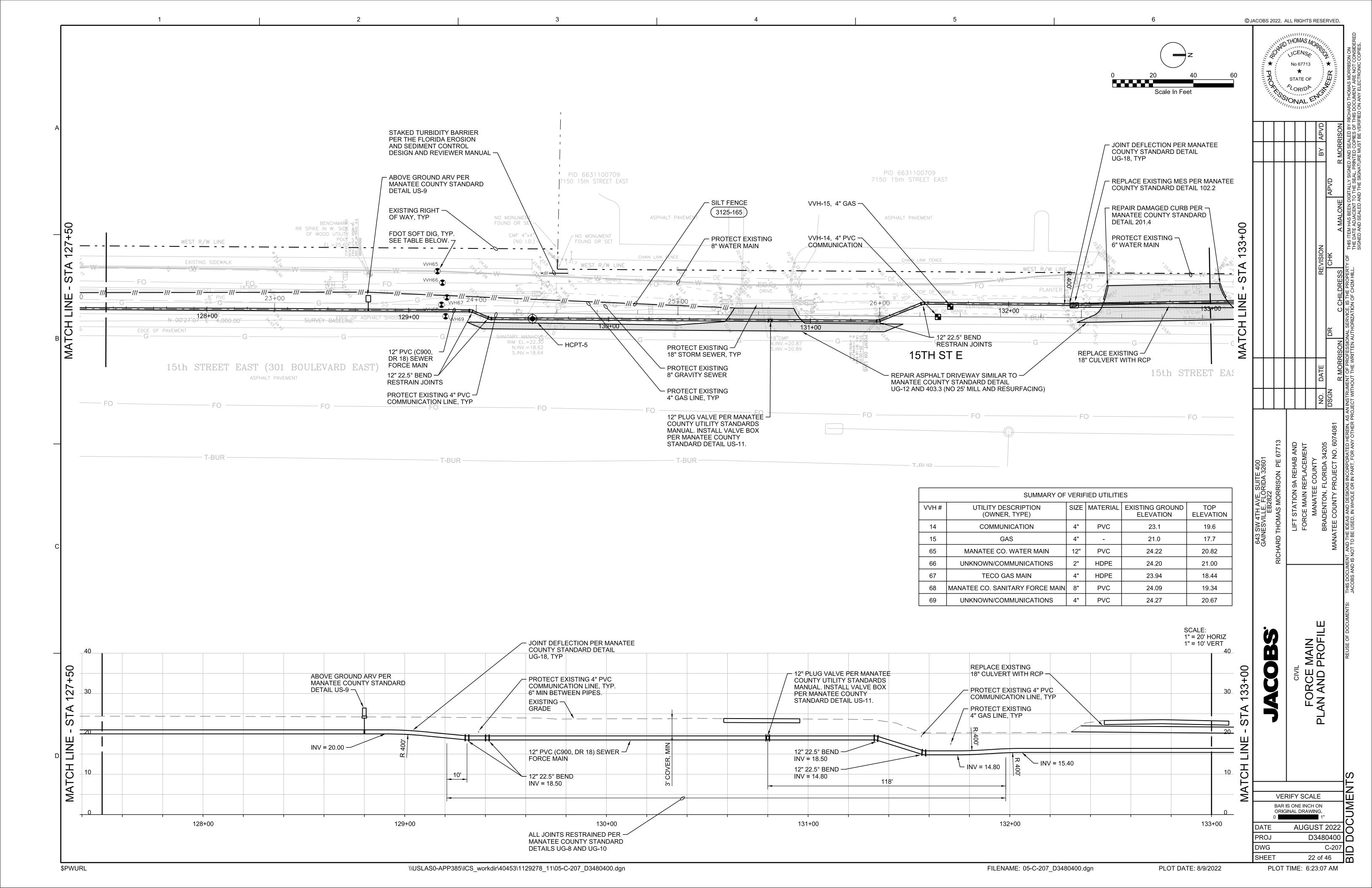


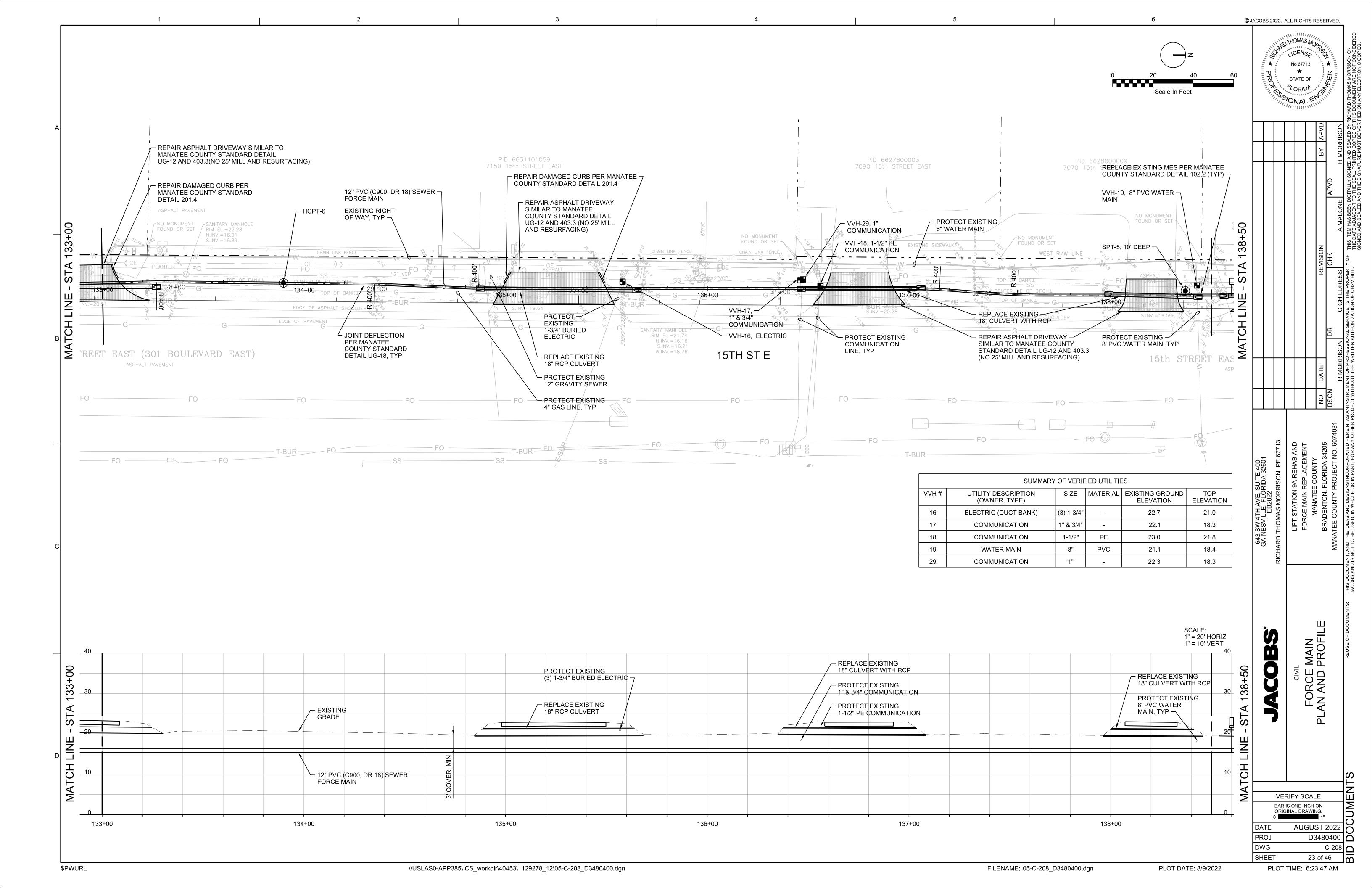


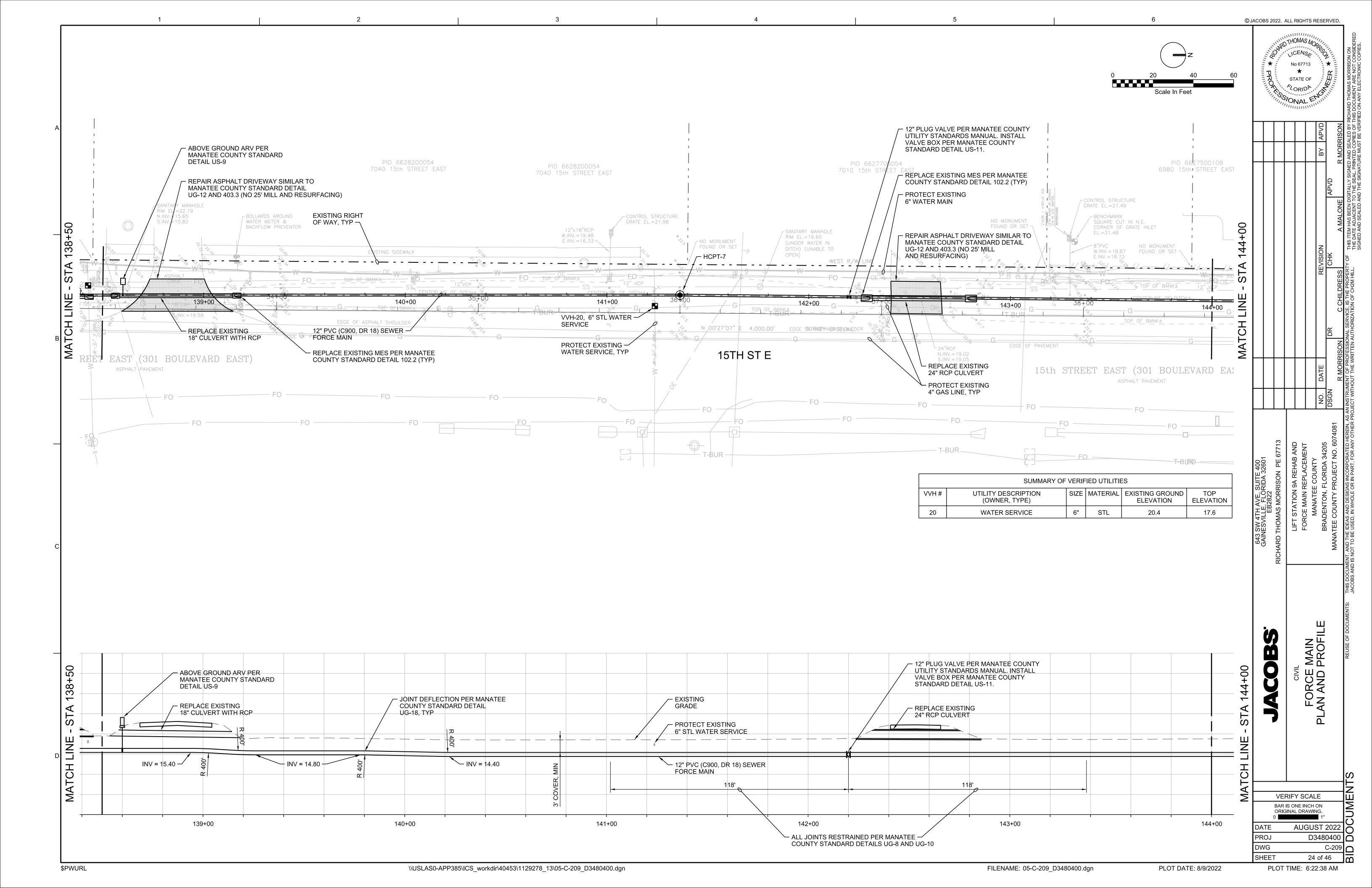


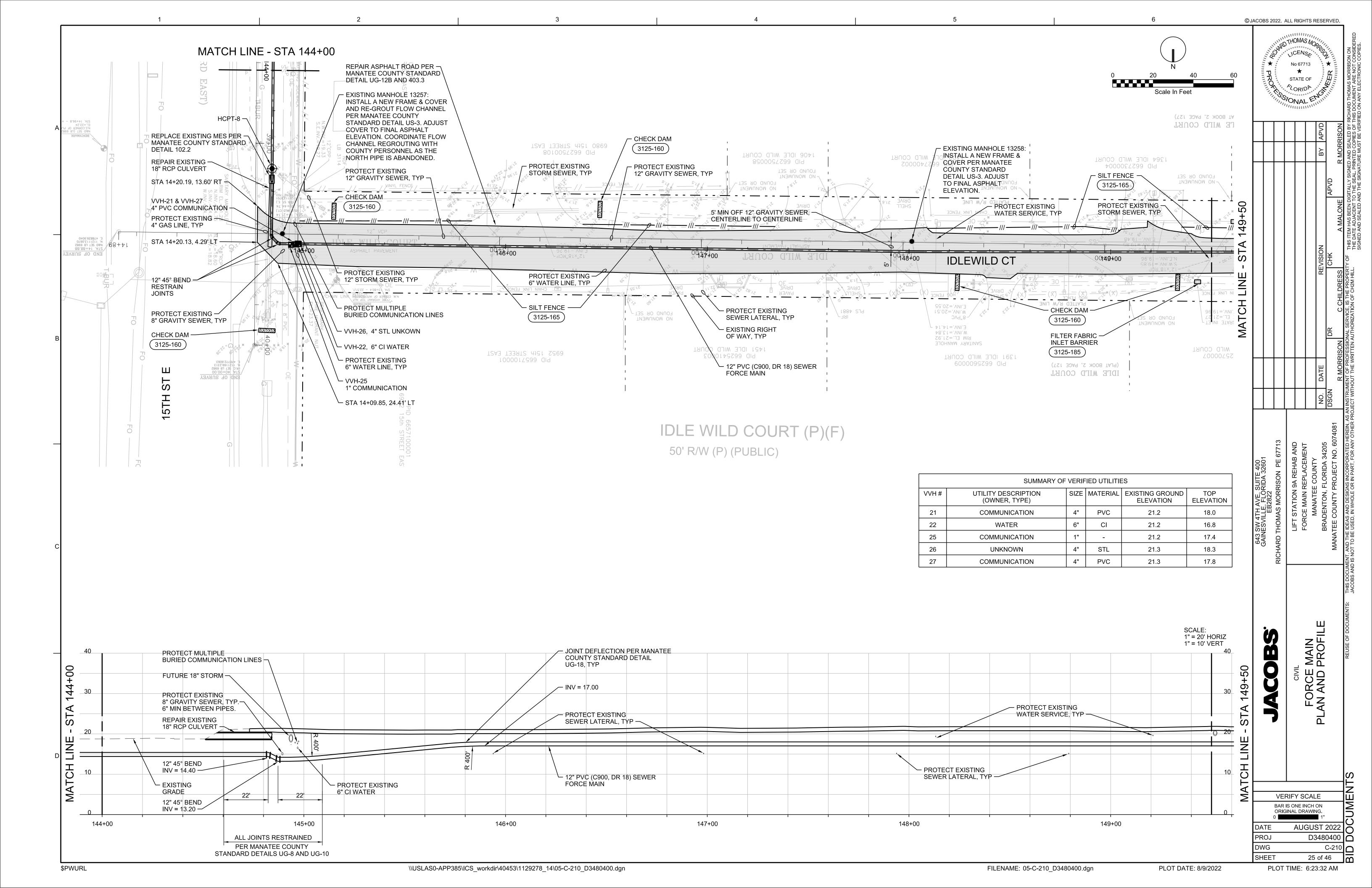


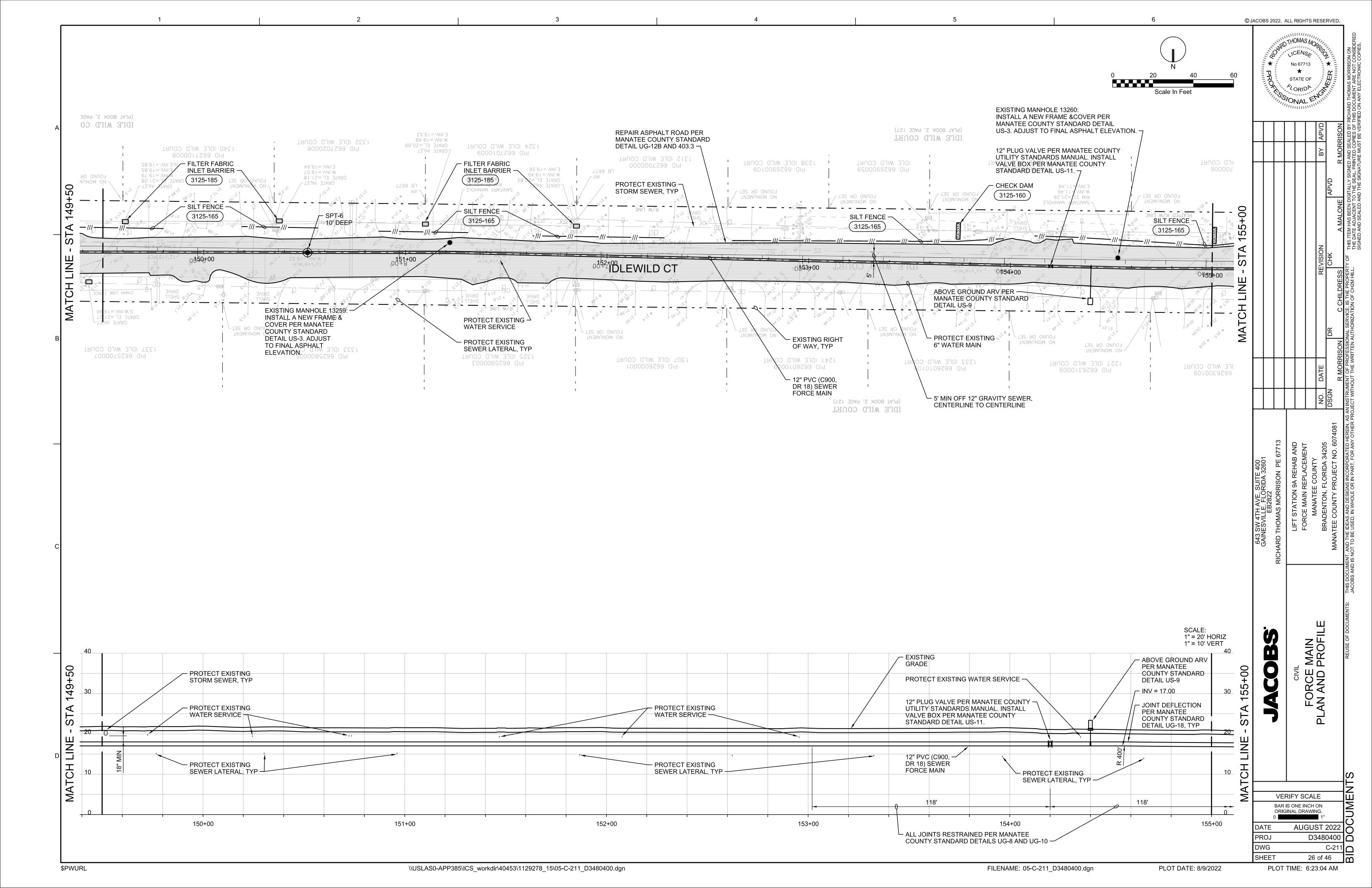


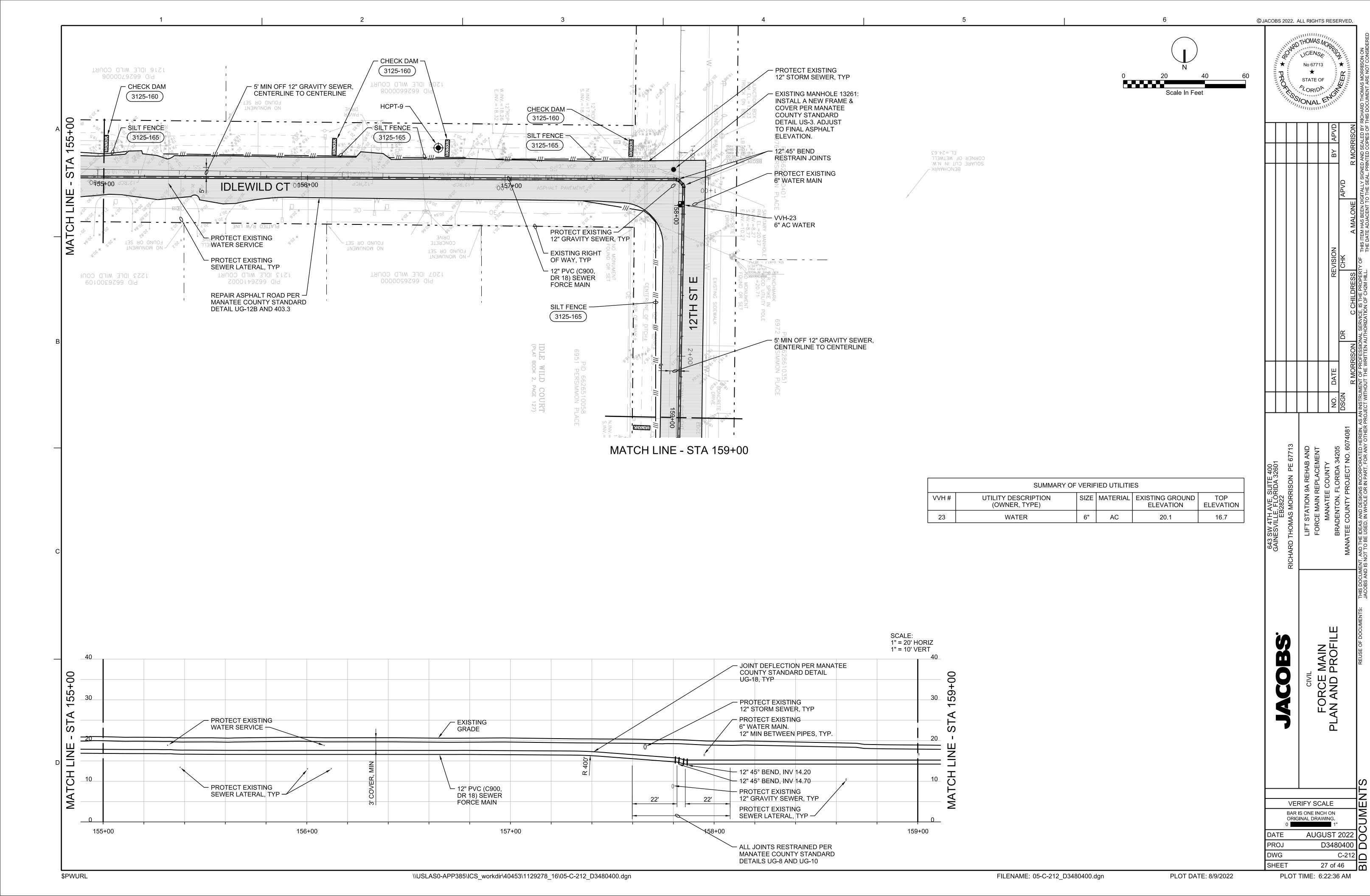


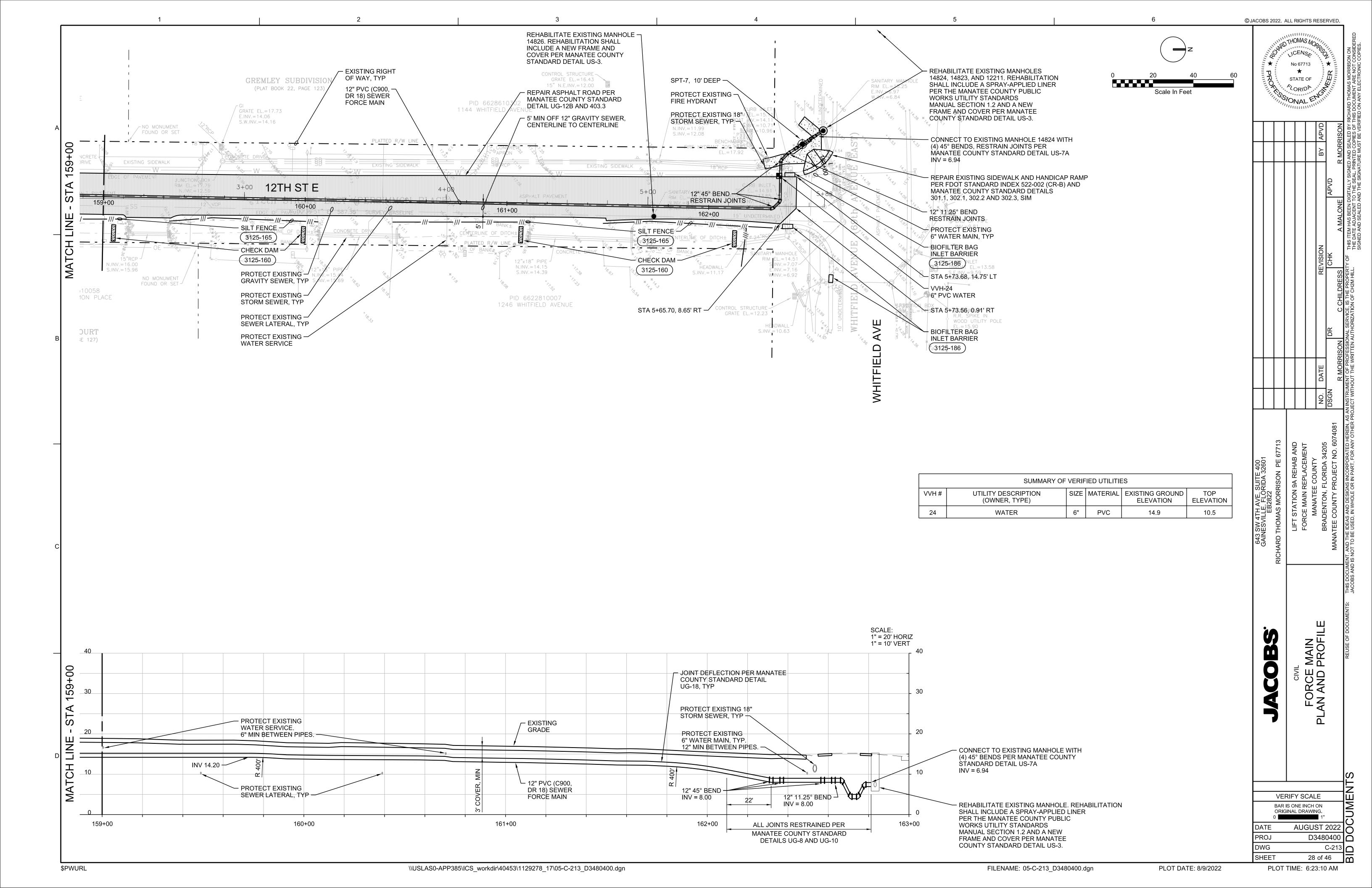


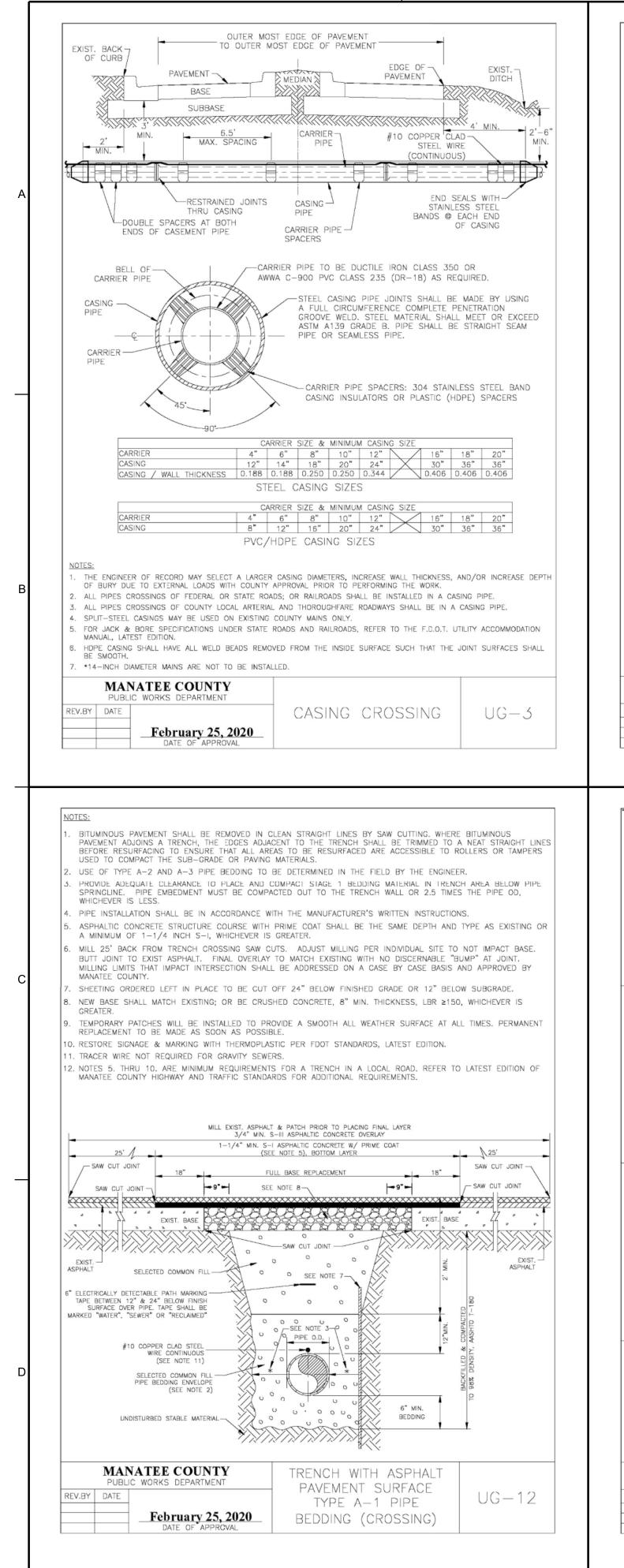




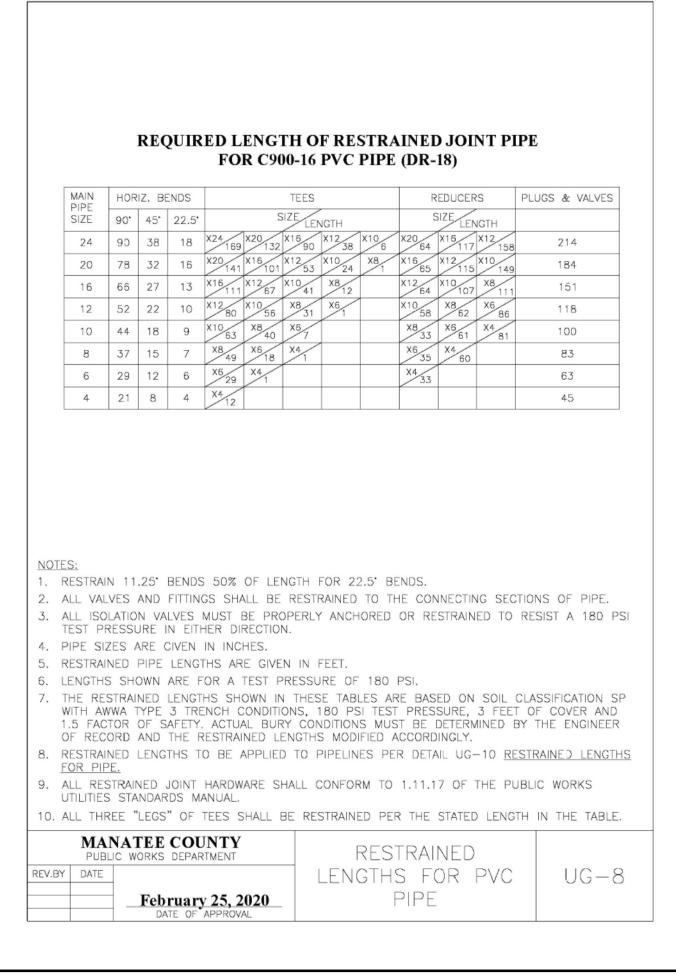


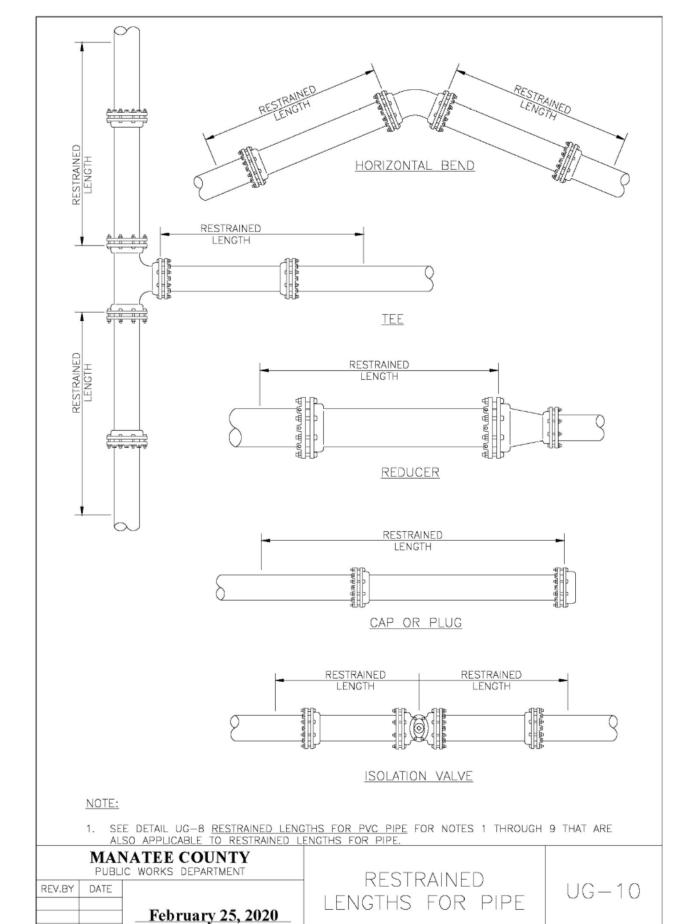


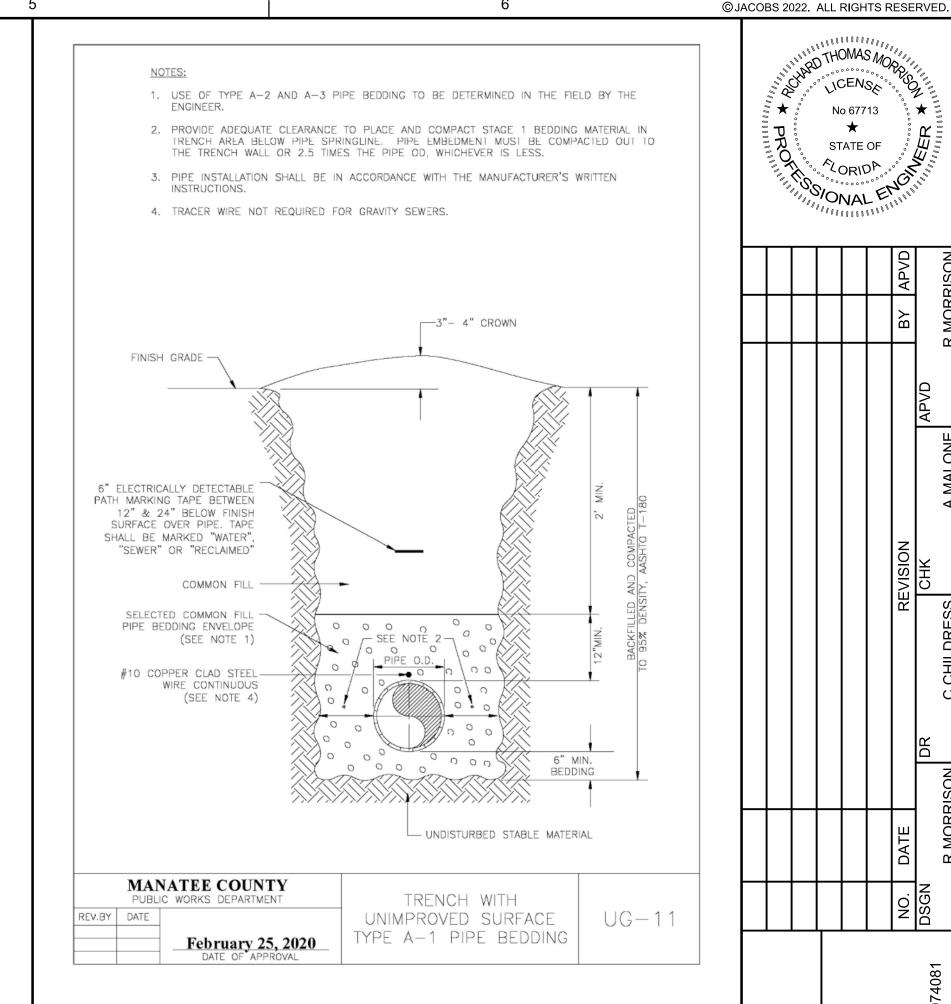


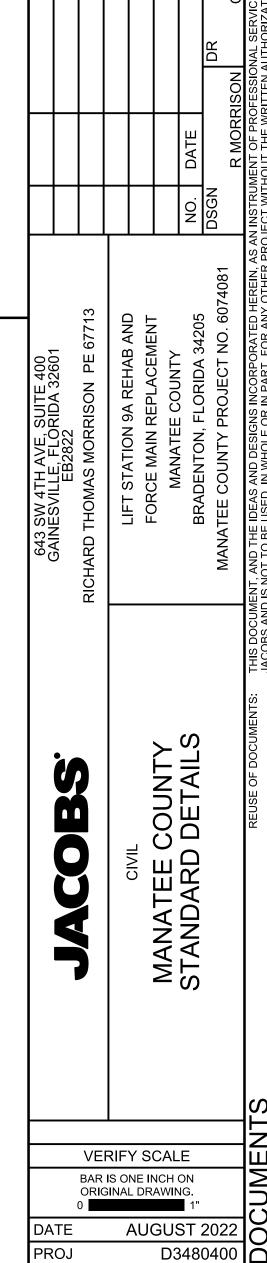


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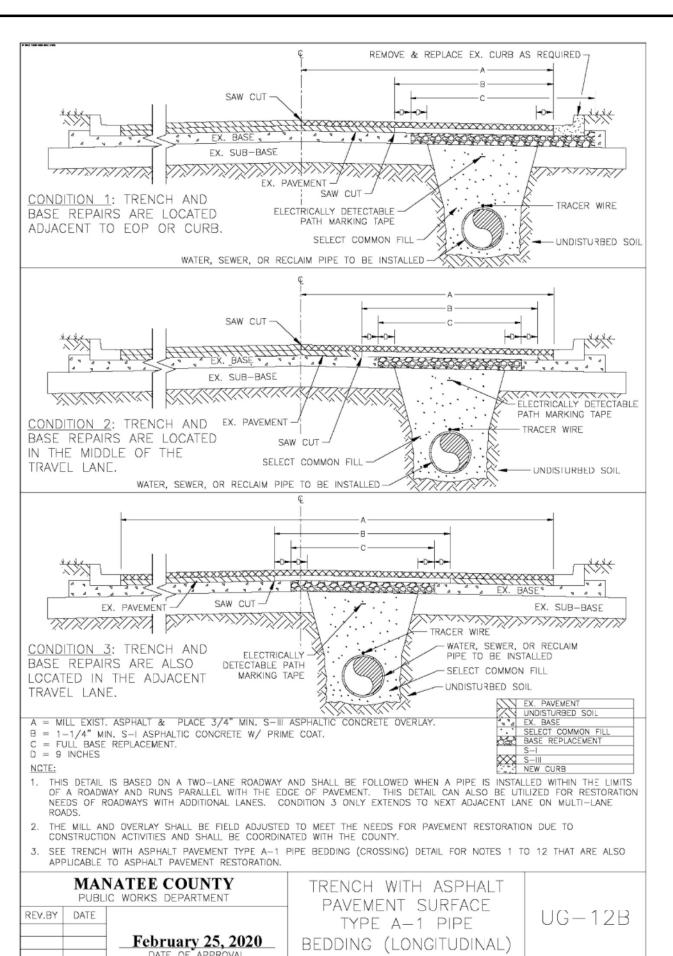
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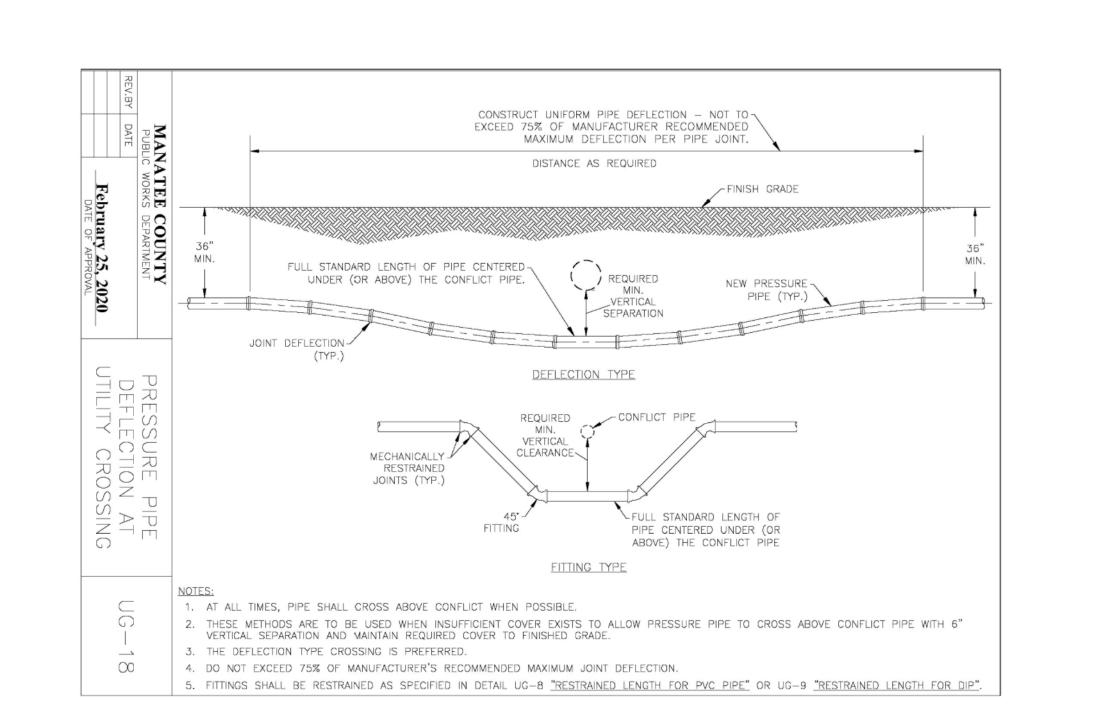
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AZORIDA,

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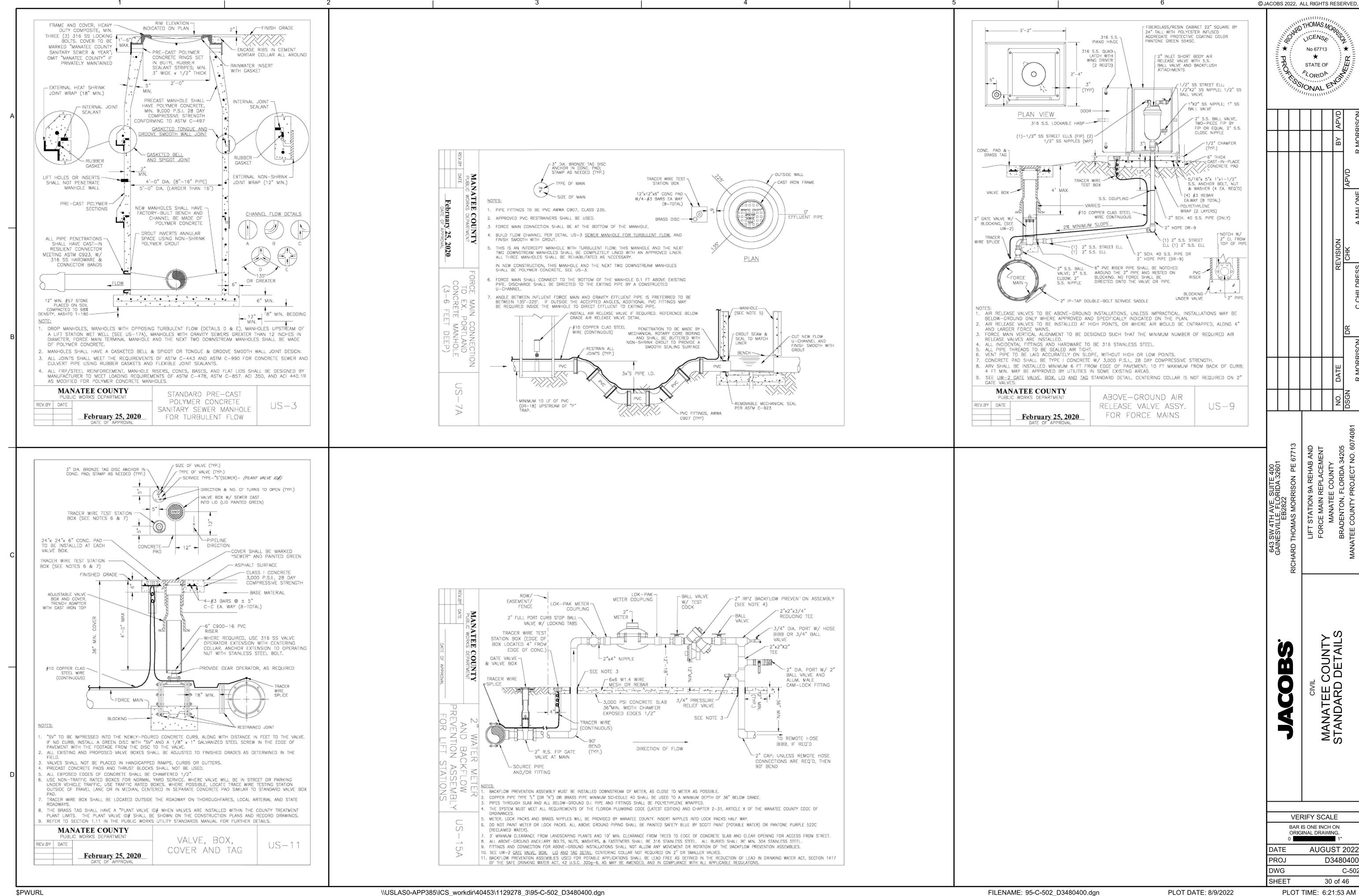




PLOT DATE: 8/9/2022

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C-501

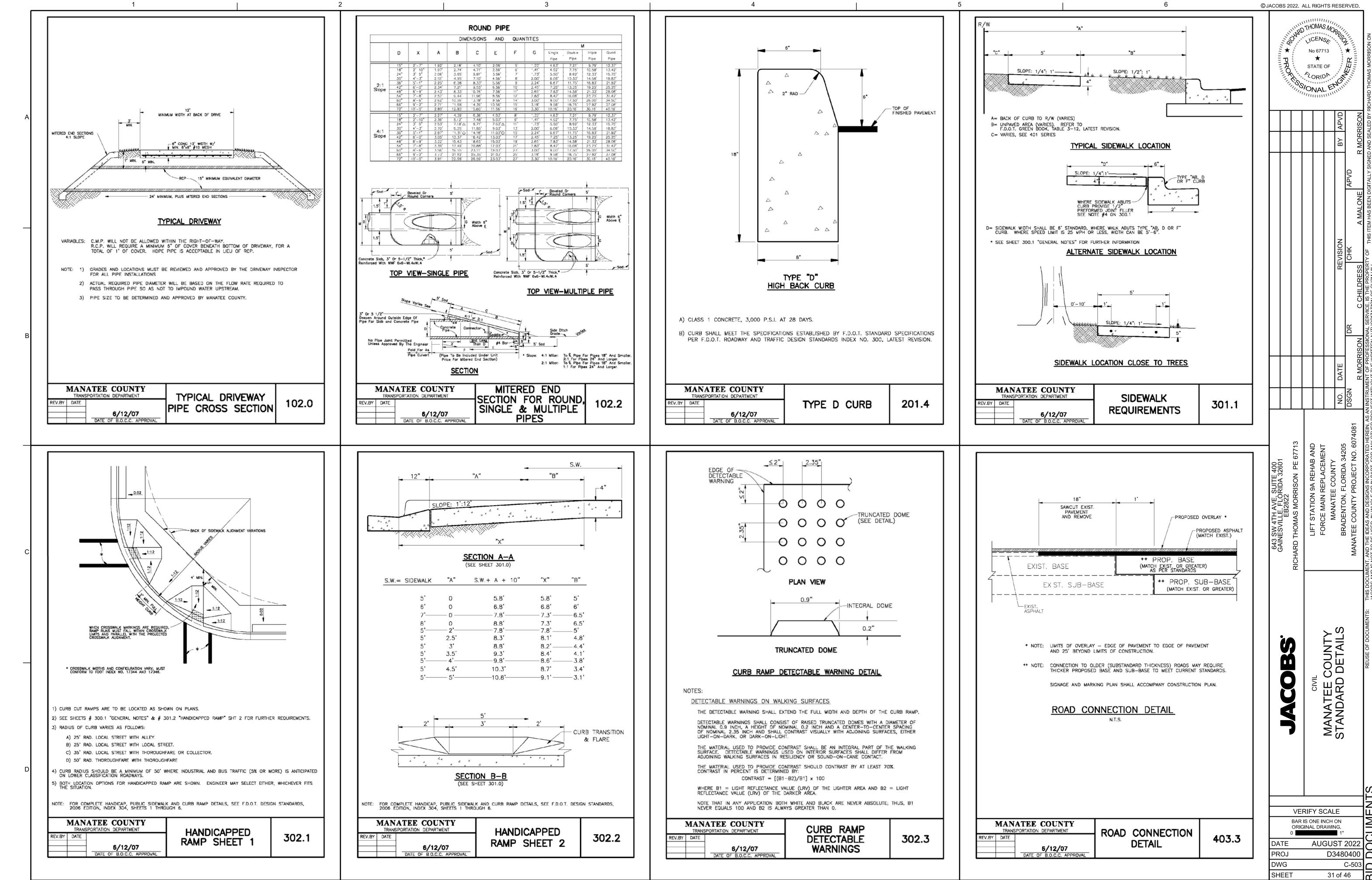


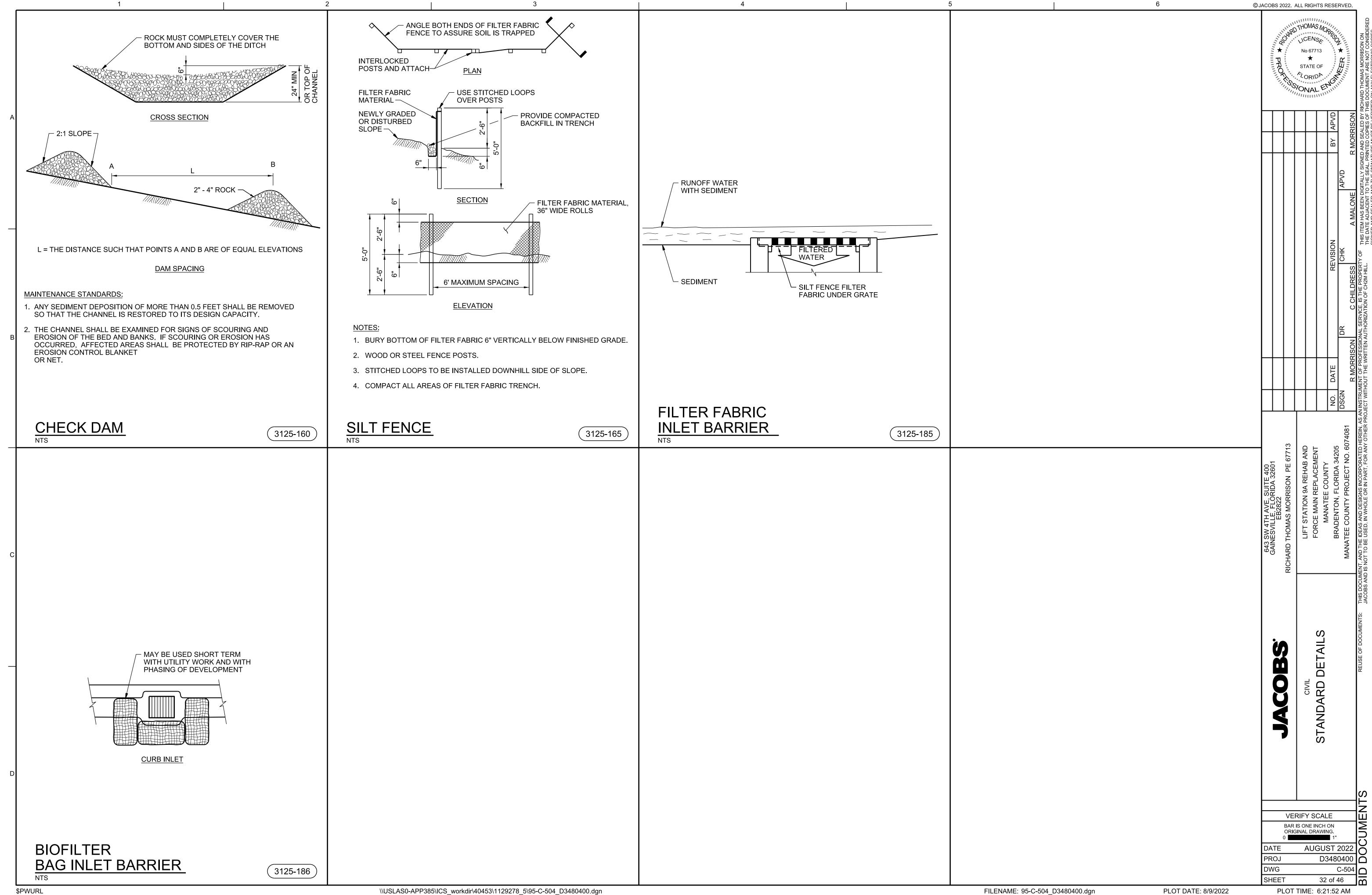
AUGUST 2022

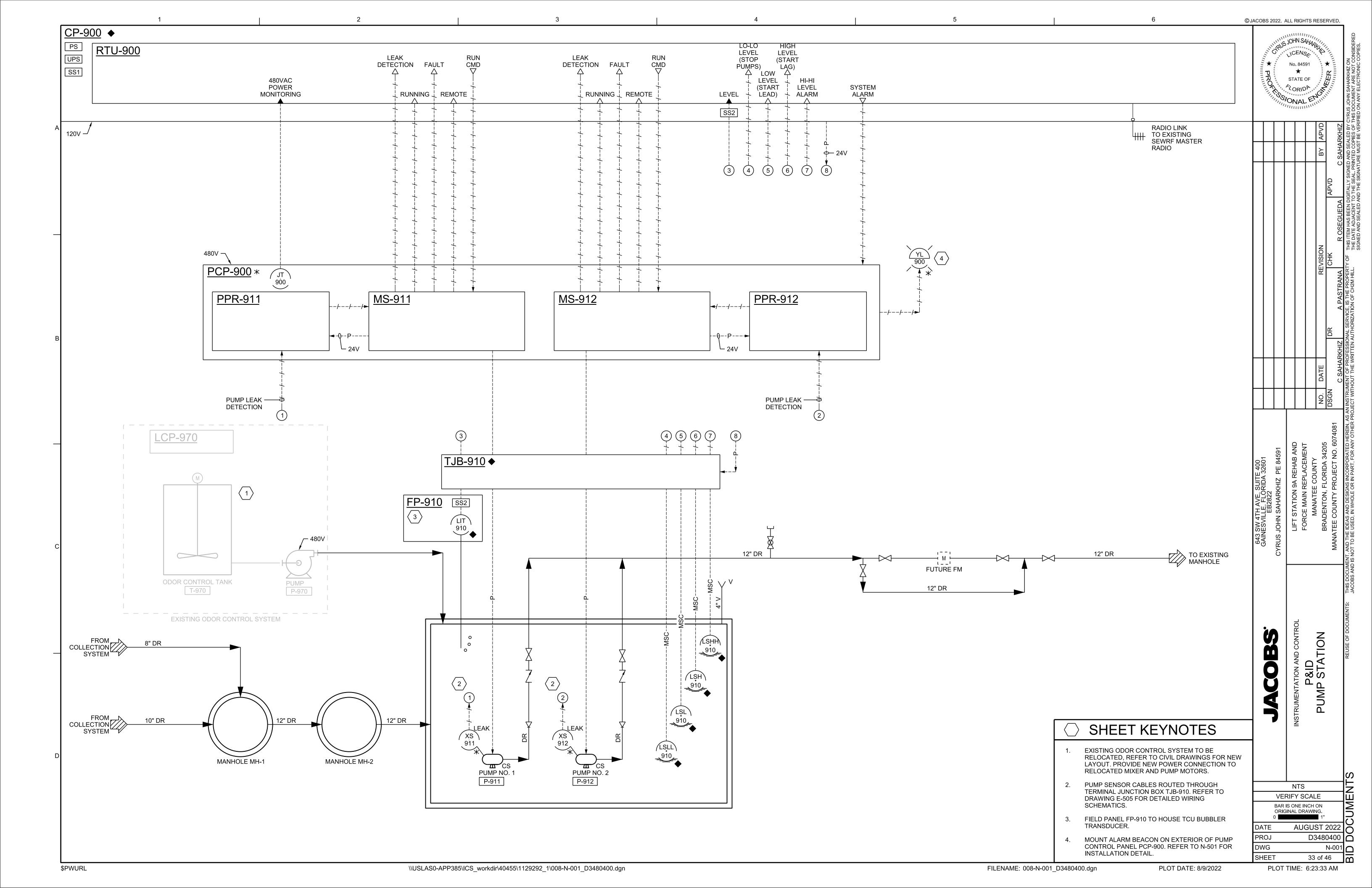
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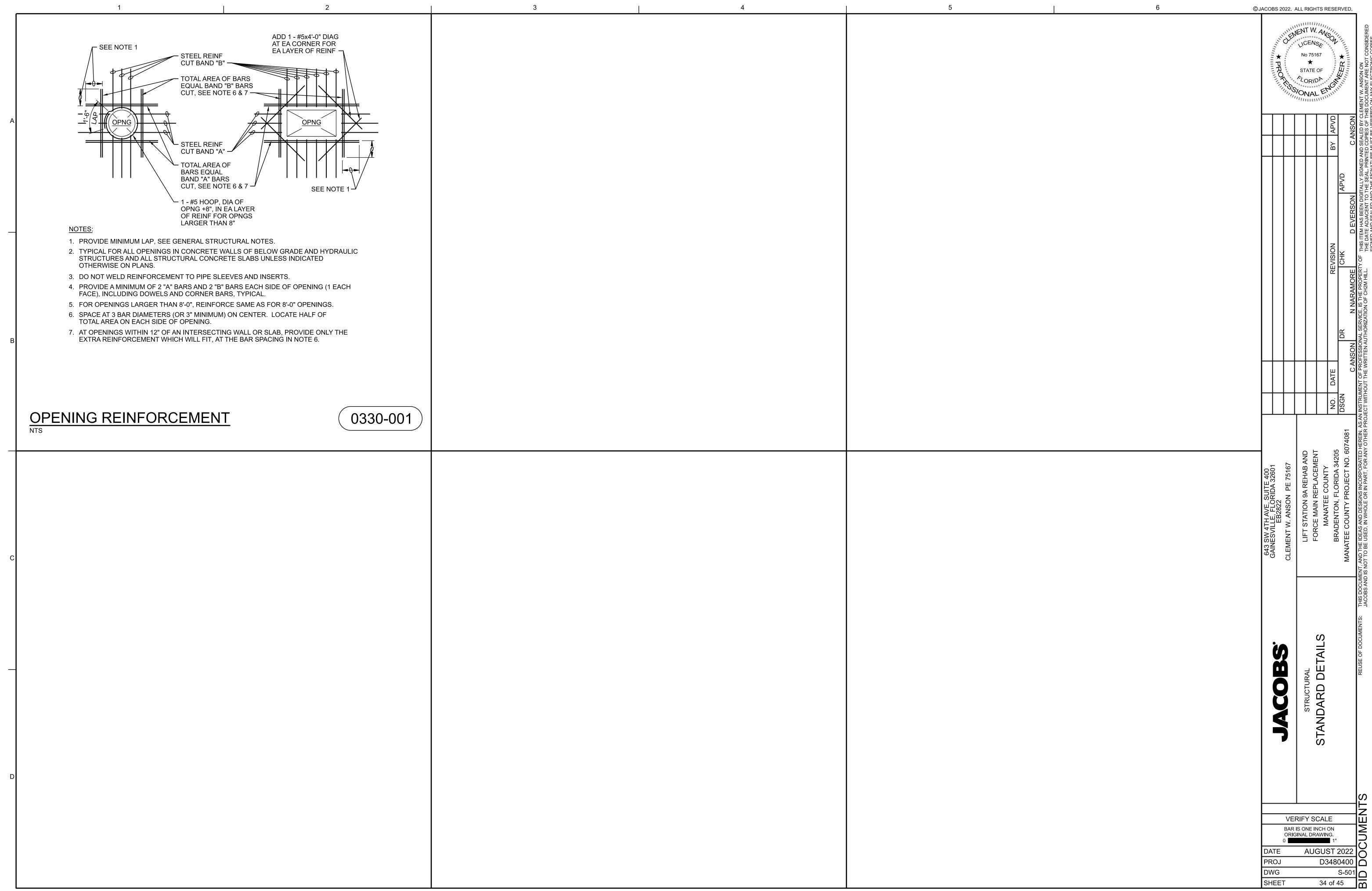
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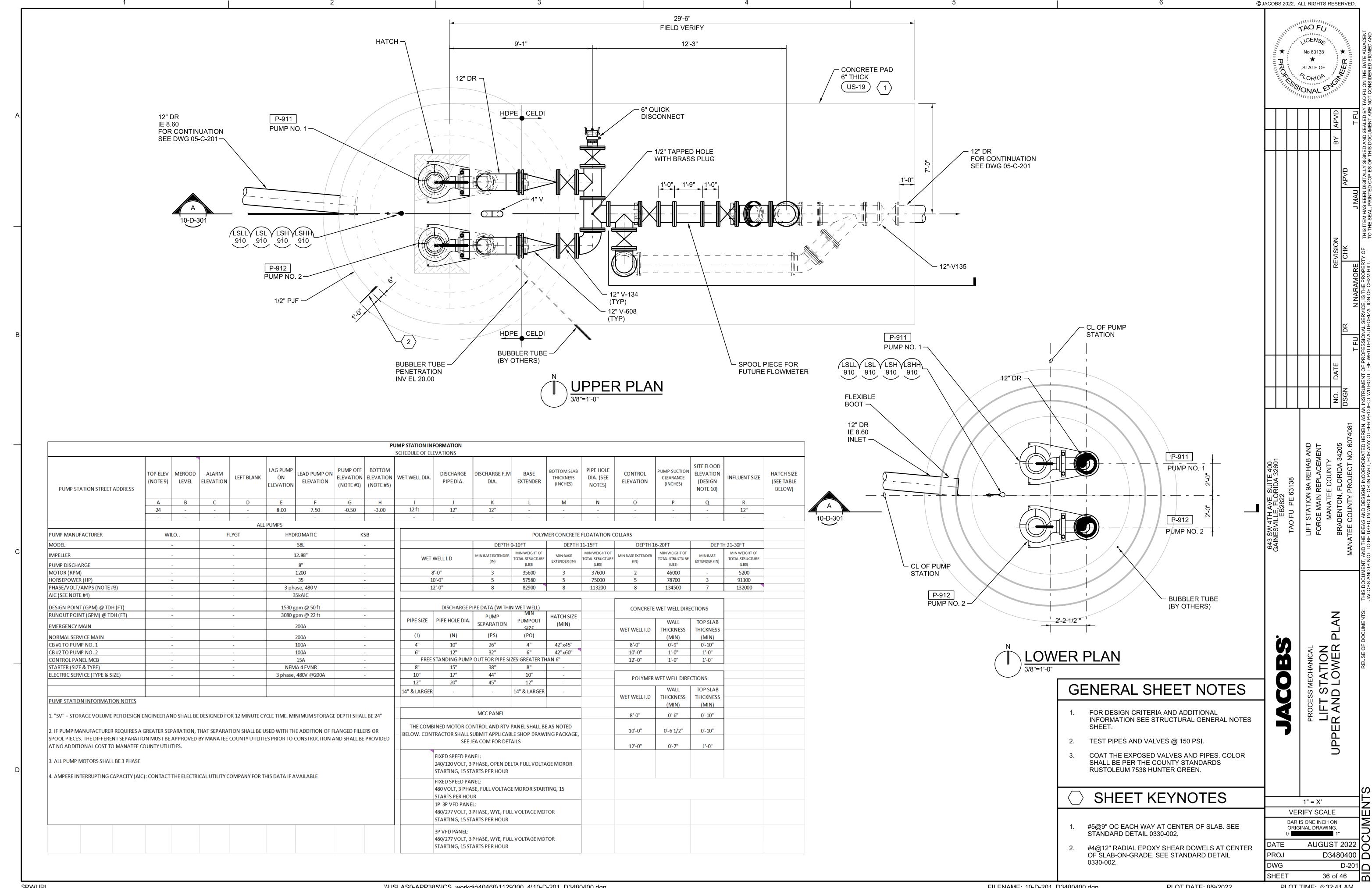
C-502

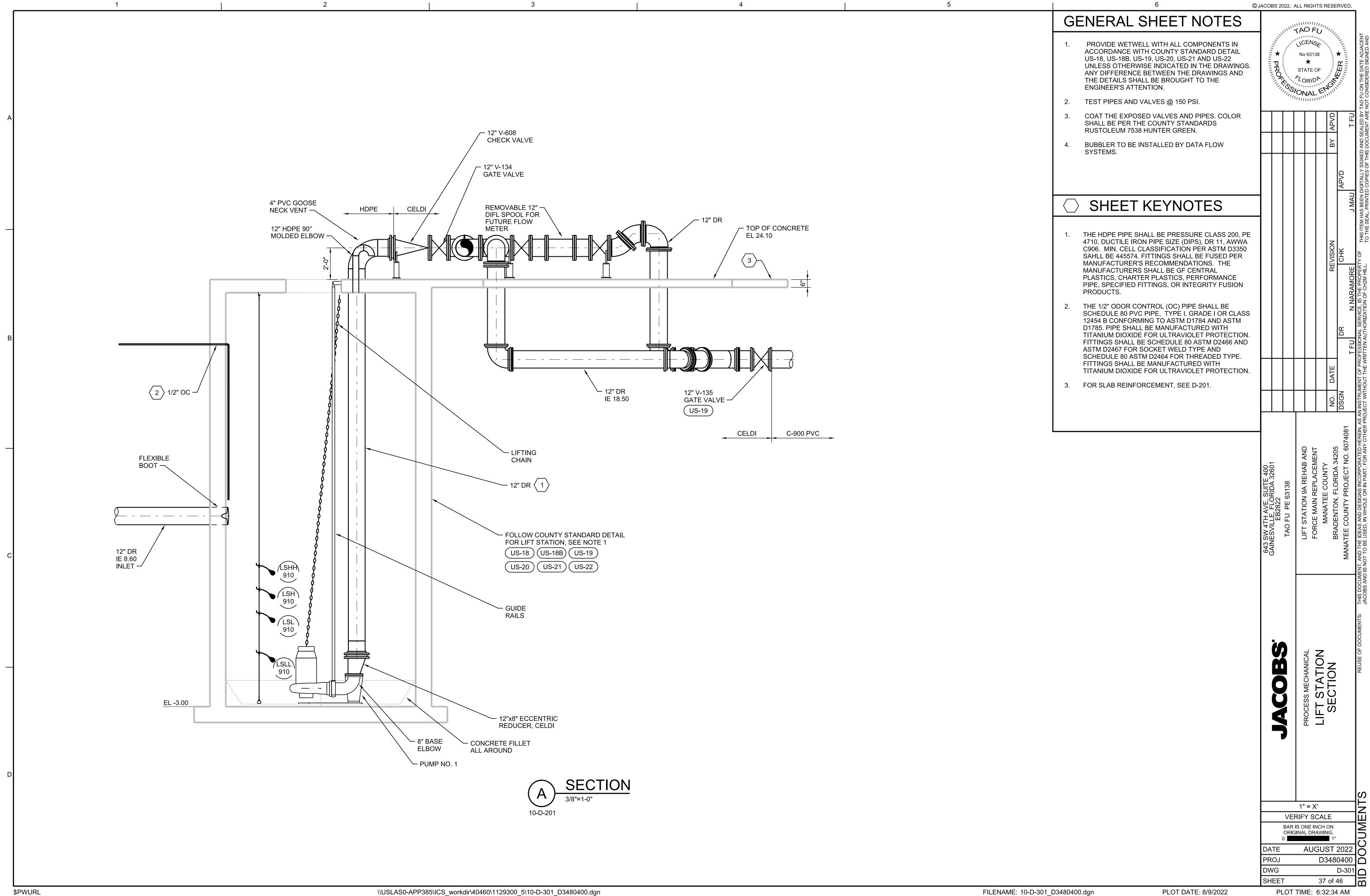


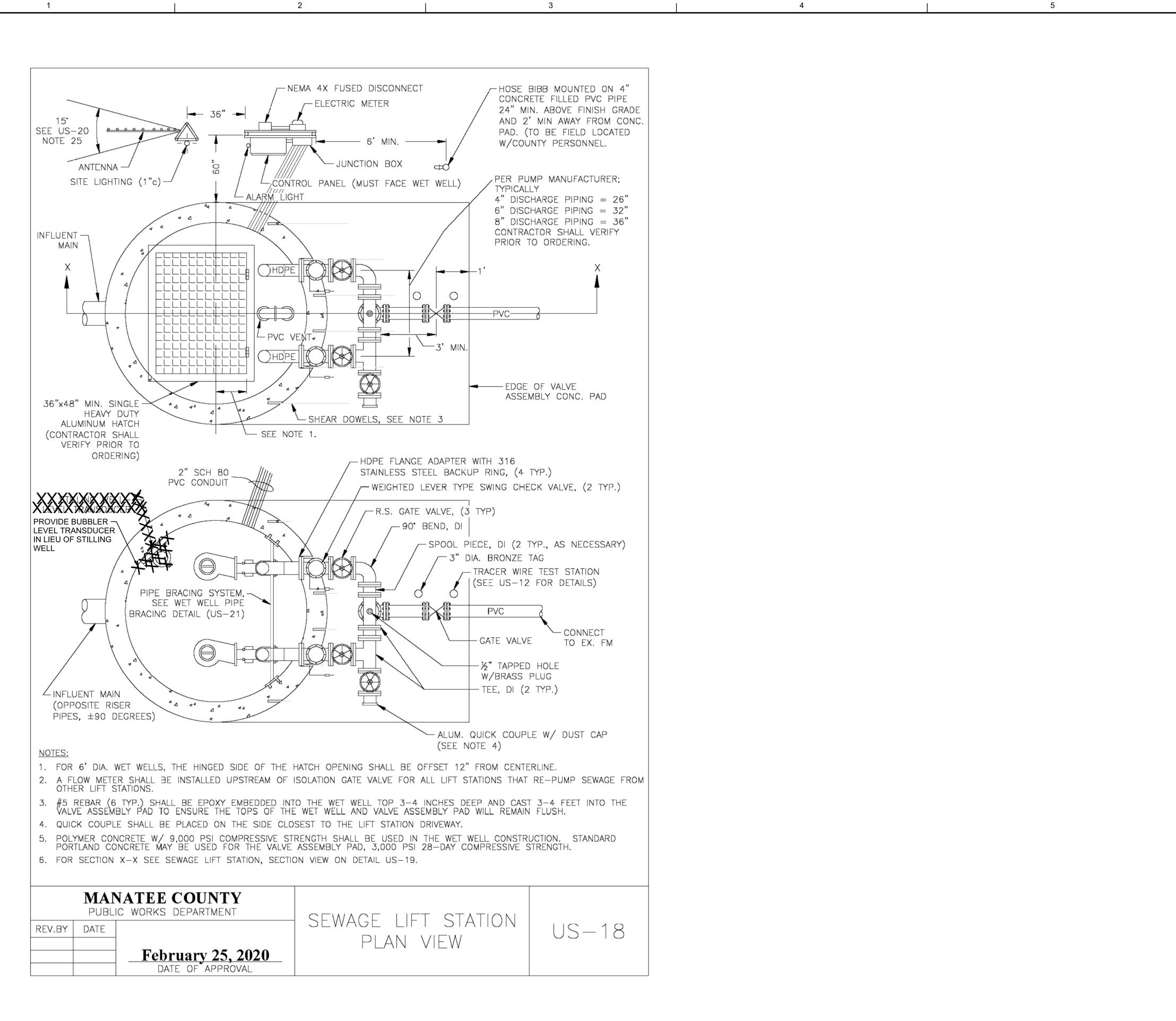












STATE OF **VERIFY SCALE** BAR IS ONE INCH ON ORIGINAL DRAWING. AUGUST 2022 D3480400

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TAO FÜ

*"*JCENSA"

No 63138

SHEET

D-501

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BE PROVIDED AROUND THE STRUCTURES. SITE SHALL INCLUDE A WEED BARRIER FABRIC THAT IS COVERED WITH WASHED SHELL OR ROCK WITHIN LIFT STATION FENCING; SITE SHALL INCLUDE A WEED BARRIER FABRIC THAT IS COVERED WITH SHREDDED WOOD—TYPE MULCH SHALL BE LOCATED UNDER THE TREES FOR A MINIMUM DISTANCE OF 3 FEET FROM THE TREE. SODDING OR SHREDDED WOOD—TYPE MULCH SHALL BE INSTALLED ON THE REMAINDER OF THE SITE TO THE EDGE OF THE EASEMENT.

4. ALL FORCE MAIN PIPING AND FITTINGS FROM THE PUMP BASE ELBOW IN THE WETWELL UP TO THE CHECK VALVE IN THE ABOVE GROUND VALVE ASSEMBLY, SHALL BE DR11 HDPE. THE HDPE FITTINGS SHALL BE MOLDED FITTINGS. ALL CONNECTIONS TO IRON BODIED FLANGE FITTINGS IN THE WETWELL (PUMP BASE ELLS) AND TO THE CHECK VALVES SHALL BE MADE USING

HDPE FLANGE ADAPTERS WITH 316 STAINLESS STEEL BACKUP RINGS. ALL HDPE CONNECTIONS SHALL BE THERMAL FUSED.

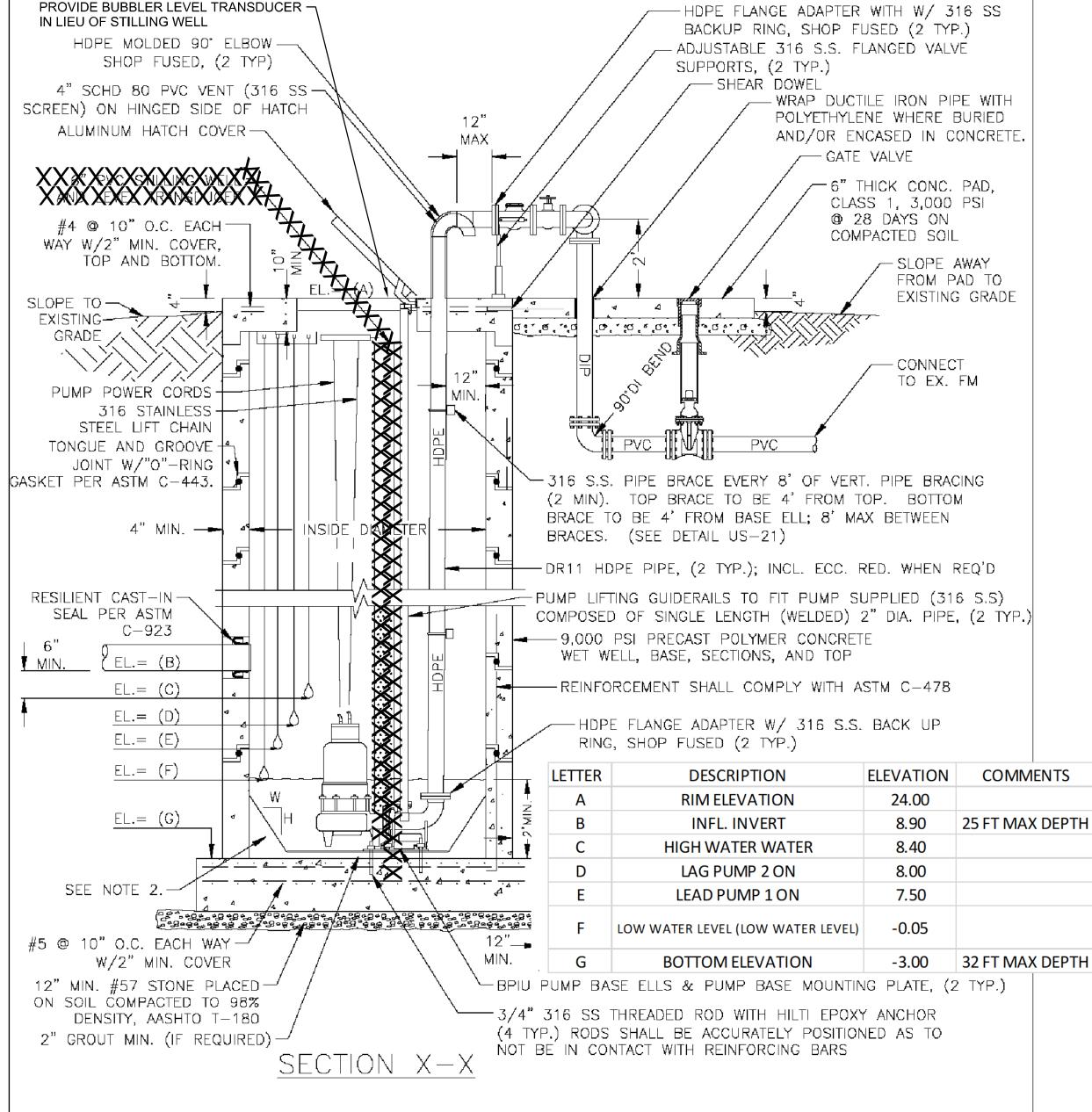
ALL PIPING DOWNSTREAM OF THE VALVE ASSEMBLY TO THE FIRST BURIED FITTING SHALL BE DUCTILE IRON PIPE (CL-53).

- THEN PVC (DR18).

 5. ALL PIPING BELOW GROUND SHALL BE COLOR CODED IN ACCORDANCE WITH THESE STANDARDS. GREEN—RAW SEWAGE;
 PURPLE—RECLAIMED: BLUE—POTABLE WATER.
- 6. ANCHORS & LIFTING DEVICES SHALL NOT PENETRATE THE WALLS OF THE WET WELL
- 7. ALL TOP, SECTIONS, AND BASE SHALL BE PRECAST POLYMER CONCRETE, MIN. 9,000 PSI COMPRESSIVE STRENGTH. SEE PRECAST POLYMER CONCRETE SANITARY SEWER MANHOLE FOR TURBULENT FLOW DETAIL.
- 3. ALL ABOVE—GROUND METAL APPURTENANCES INCLUDING BOLTS, NUTS AND WASHERS SHALL BE 316 STAINLESS STEEL. ALL STAINLESS STEEL BOLTS SHALL BE TREATED WITH NEVER—SEIZE PRIOR TO ASSEMBLY.
- P. VERTICAL HDPE PUMP DISCHARGE PIPE IN THE WET WELL SHALL BE BRACED PER DETAIL US—21. THE PIPE SHALL BE CLAMPED TO A SINGLE LENGTH OF 2" 316 SS TUBING (OR 2" 316 SS ANGLE) INSTALLED HORIZONTALLY. THE TUBE SHALL HAVE 6"X6"X¼" PLATES WELDED TO EACH END AND ATTACH TO THE WALL BY 316 SS ANCHORS. THE PIPE SHALL BE CLAMPED TO THE TUBING WITH CUSHIONED 316 SS U—BOLTS.
- 10. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT FLOTATION.
- 11. TOP OF WET WELL AND VALVE ASSEMBLY SLAB SHALL BE AT THE SAME ELEVATION.
- 12. THE EXTERIOR SURFACES OF THE CONCRETE WET WELL AND VALVE ASSEMBLY PAD EXPOSED ABOVE GRADE SHALL BE COATED WITH A LEAST TWO COATS OF H&C SILICONE ACRYLIC CONCRETE STAIN, PATIO GREEN, MANUFACTURED BY FLR PAINTS, INC. ABOVE GROUND VALVE ASSEMBLY & PIPING SHALL BE PAINTED, RUSTOLEUM 7538 HUNTER GREEN. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID OVER—SPRAY ONTO THE VALVE ASSEMBLY CONCRETE PAD.
- 13. FOR 5/8" WATER METER, PROVIDE POTABLE WATER SERVICE CONNECTION WITH 3/4" BRASS HOSE BIB. PROVIDE AN APPROVED BACKFLOW PREVENTION ASSEMBLY INSTALLED AT THE ROW. ALL WATER SERVICE PIPING FROM WATER METER TO BE TYPE "K" COPPER OR BRASS; 3/4" MIN. DIAMETER FOR 5/8" METER AND 2" MIN. DIAMETER PIPING FOR 2" METER.
- 14. LANDSCAPING SHALL BE IRRIGATED WITH NON-POTABLE WATER. A RAIN SENSOR SHALL BE FURNISHED AND INSTALLED.
- 15. HOSE BIB TO BE A MINIMUM OF 6 FEET FROM THE ELECTRICAL CONTROL PANEL, 24" ABOVE THE SURROUNDING FINISH GRADE, AND ANCHORED TO A 4" PVC CONCRETE FILLED PIPE. EXACT LOCATION TO BE DETERMINED IN THE FIELD W/COUNTY PERSONNEL.
- 16. WATER METER ASSEMBLY TO BE INSTALLED BY CONTRACTOR AS PART OF WATER SERVICE CONNECTION WITH FEES PAID BY THE DEVELOPER.
- 17. BASE AND FIRST WALL SECTION OF WET WELL SHALL BE MONOLITHIC.
- 18. EVERY EFFORT SHALL BE MADE BY THE CONTRACTOR TO CONSTRUCT WATERTIGHT STRUCTURES WITH NO VISIBLE LEAKS.

 COMPLETED STRUCTURES THAT ARE NOT WATERTIGHT AND/OR DO NOT MEET THE REQUIREMENTS OF ASTM C-443 WILL BE REJECTED.
- 19. FLEXIBLE GASKET CONNECTORS SHALL MEET THE REQUIREMENTS OF ASTM C-923 LATEST REVISION.
- 20. ALL GATE VALVES SHALL BE RESILIENT SEAT NON-RISING STEM TYPE IN ACCORDANCE WITH THESE STANDARDS.
- 21. ELECTRICAL SERVICE SHALL BE 3 PHASE MINIMUM, UNLESS THE ELECTRICAL UTILITY PROVIDES CORRESPONDENCE STATING THAT 3 PHASE SERVICE IS UNAVAILABLE.
- 22. ELECTRICAL CONDUIT SHALL BE RUN BY THE SHORTEST ROUTE POSSIBLE FROM THE ELECTRICAL SOURCE TO THE CONTROL PANEL AND FROM THE CONTROL PANEL TO THE LIFT STATION WET WELL.
- 23. A FLOW METER AND EMERGENCY BACKUP PUMP SHALL BE REQUIRED FOR ALL LIFT STATIONS THAT MEET THE CRITERIA LISTED
 IN SECTION 1.14.14 OF THE PUBLIC WORKS UTILITY STANDARDS MANUAL.
- 24. THE CONTROL PANEL, HOSE BIB, EMERGENCY BACKUP PUMP, FUEL STORAGE TANK AND ANTENNA SHALL NOT BE LOCATED BETWEEN THE WET WELL, VALVE ASSEMBLY AND THE DRIVEWAY. THE PUMP SHALL NOT BE LOCATED WITHIN 25 FEET OF THE EDGE OF THE LIFT STATION EASEMENT AT THE ROW LINE.
- 25. THE ANTENNA FOR THE RADIO TELEMETRY UNIT REQUIRES DIRECT LINE—OF—SIGHT SIGNALING CAPABILITY TO THE UTILITIES DEPARTMENT'S OFFICE THAT WILL RECEIVE THE SIGNAL. THERE SHALL BE AN UNOBSTRUCTED HORIZONTAL ANGLE OF FIFTEEN (15) DEGREES FROM THE ANTENNA MAST (7.5 DEGREES ON BOTH SIDES OF THE DIRECT LINE—OF—SIGHT AZIMUTH). NO TREE SHALL BE PLANTED WITHIN THE DESIGNATED UNOBSTRUCTED ANGLE FOR A TWENTY (20) FEET HORIZONTAL DISTANCE MEASURED FROM THE MAST. LANDSCAPE BUFFER PLANTINGS ARE TO BE FIELD ADJUSTED IN COORDINATION WITH THE LOCATION OF THE CONSTRUCTED TELEMETRY ANTENNA. THE ANTENNA TOWER/MAST SHALL BE TO THE LEFT OF THE CONTROL PANEL.

			· -	
MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		LIFT STATION NOTES	US-20
		February 25, 2020 DATE OF APPROVAL		



1. 6" MINIMUM VERTICAL SPACING BETWEEN ALL PUMP AND ALARM CONTROL LEVELS.

2. POLYMER CONCRETE FILLET ALL AROUND WET WELL: 6-FT DIA.=12"H x 6"W; 8-FT DIA. & GREATER=18"H x 12"W.

3. THE VALVE CONCRETE PAD SHALL BE GIVEN A BROOM FINISH. THE SURFACE VARIATIONS SHALL BE NOT MORE THAT 1/4" UNDER A TEN FOOT (10') STRAIGHT EDGE, NOT MORE THAN 1/8" ON A FIVE FOOT (5') TRANSVERSE SECTION. THE EDGE OF THE CONCRETE PAD SHALL BE CAREFULLY FINISHED WITH A EDGING TOOL HAVING A RADIUS OF 1/2".

4. EXPANSION JOINT: EXPANSION JOINTS BETWEEN THE CONC. PAD AND THE WET WELL SHALL BE 1/2" MATERIAL AND SHALL MEET THE REQUIREMENTS OF AASHTO M153 OR AASHTO M213.

5. THIS DETAIL SHALL APPLY TO LIFT STATIONS WITH 4" OR GREATER FORCE MAINS. LIFT STATIONS WITH FORCE MAINS LESS THAN 4" REFER TO DETAIL US-27A.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT				
REV.BY	DATE		SEWAGE LIFT STATION SECTION VIEW	US-19
		February 25, 2020 DATE OF APPROVAL		

TAO FU

CENS

No 63138

*

STATE OF

ONAL

NO NAL

NO

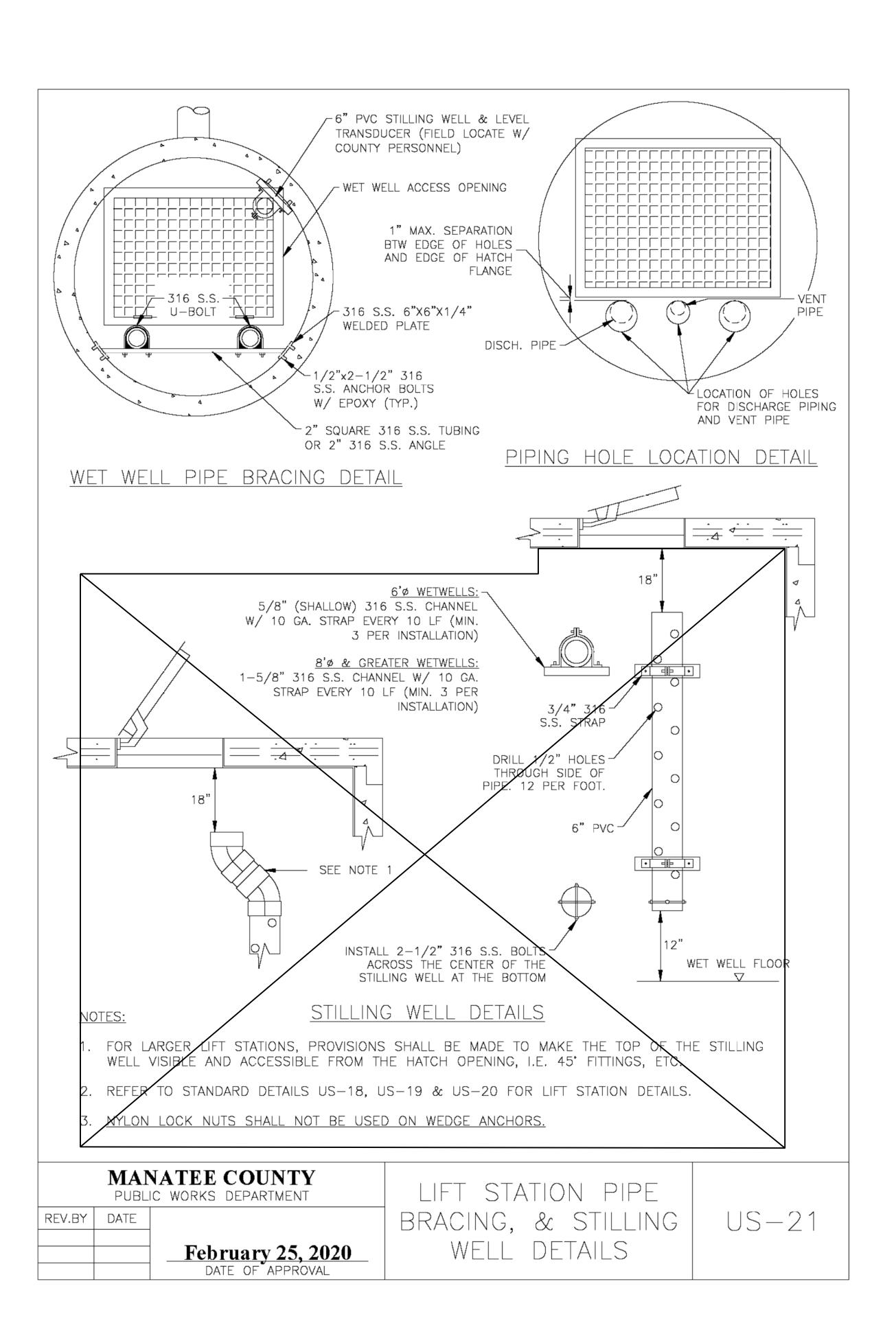
AUGUST 2022

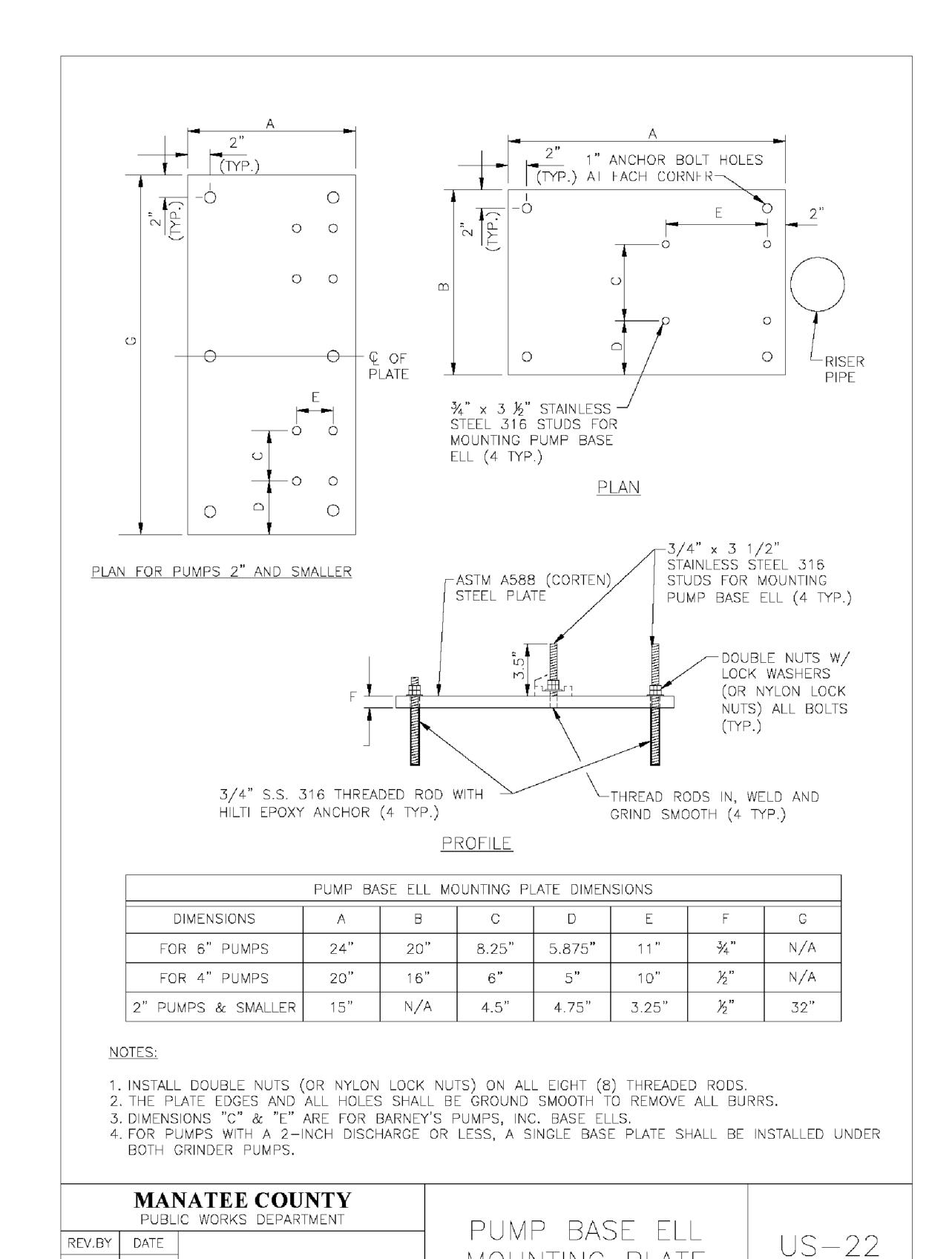
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D3480400 |

D-502

VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.





EB28
TAO FU F
LIFT STAT
FORCE MANA
MANA
BRADENT
AANATEE COUN
TO BE USED, IN WH **VERIFY SCALE** BAR IS ONE INCH ON ORIGINAL DRAWING. **AUGUST 2022** D3480400 D-503 40 of 46

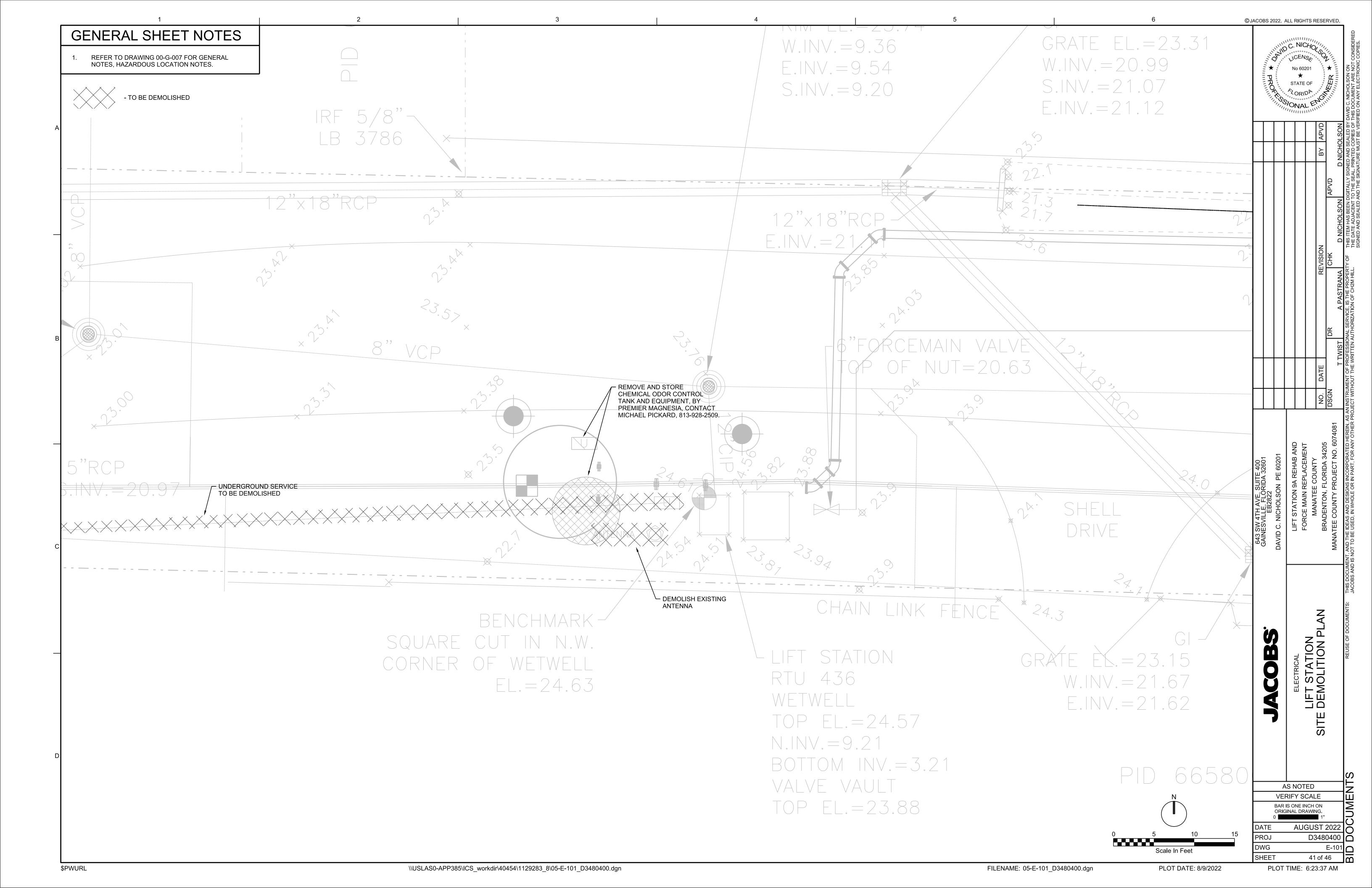
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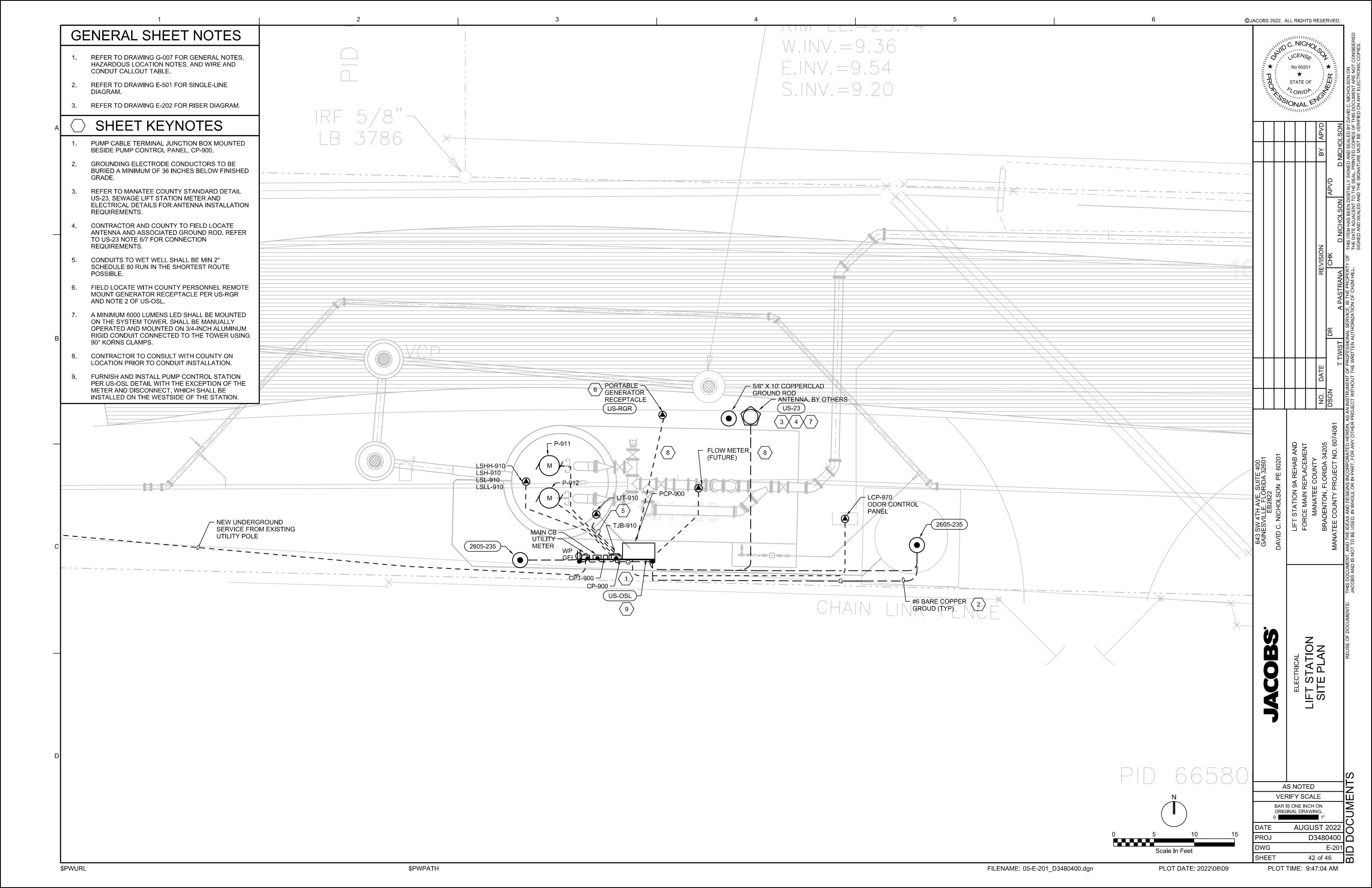
No 63138

STATE OF

MOUNTING PLATE

February 25, 2020
DATE OF APPROVAL

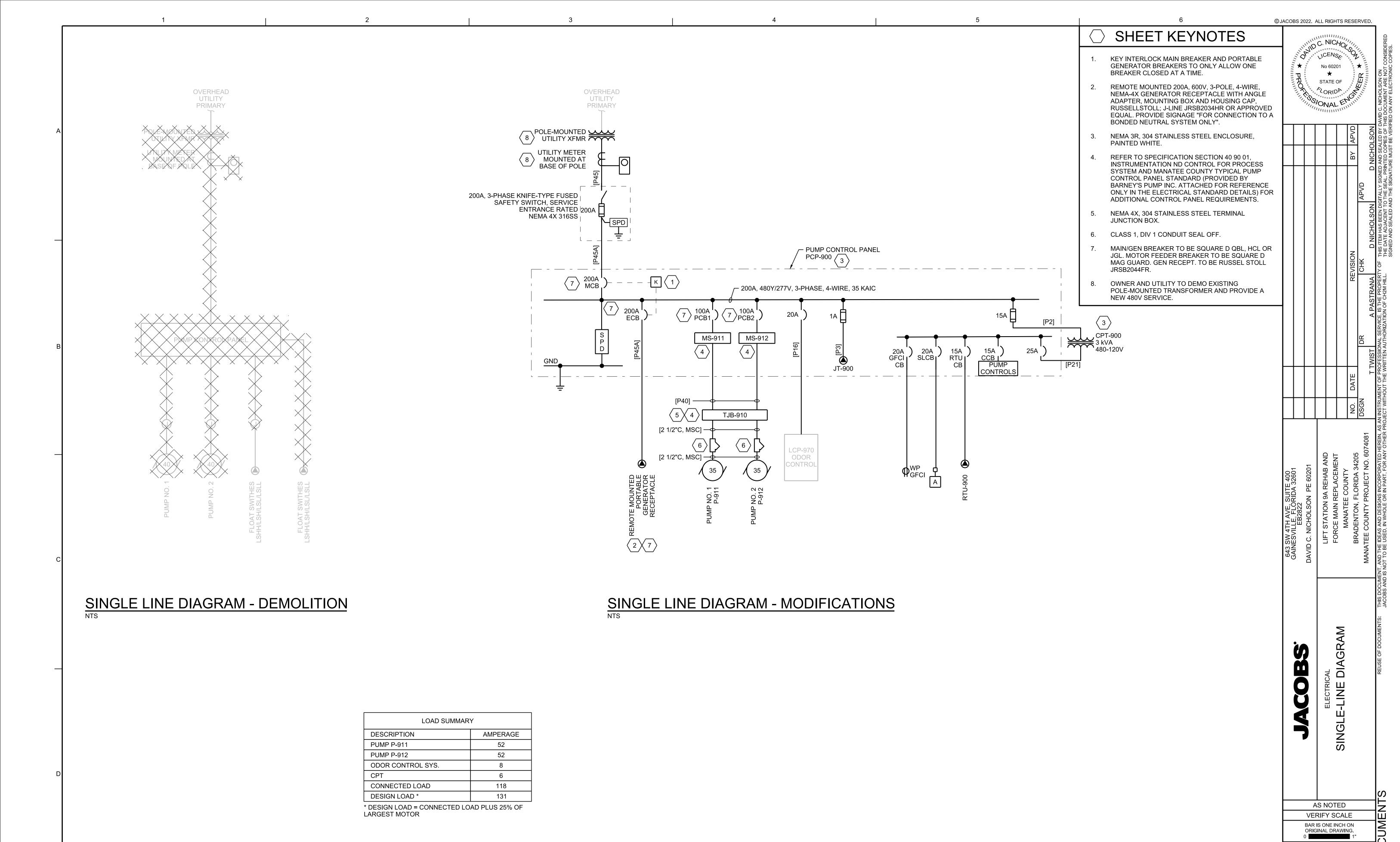




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BAR IS ONE INCH ON ORIGINAL DRAWING. AUGUST 2022 D3480400 E-202 f 46

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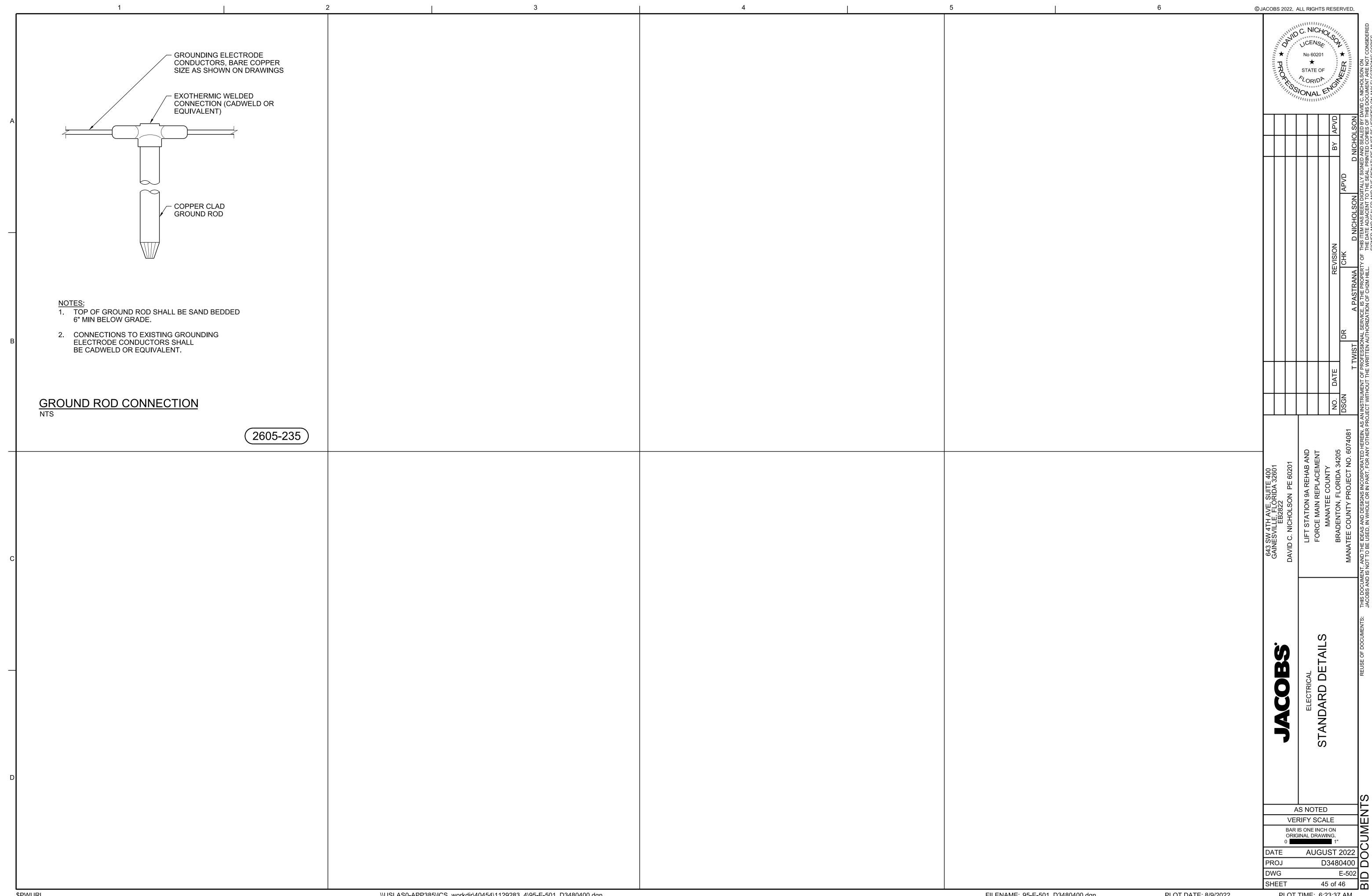
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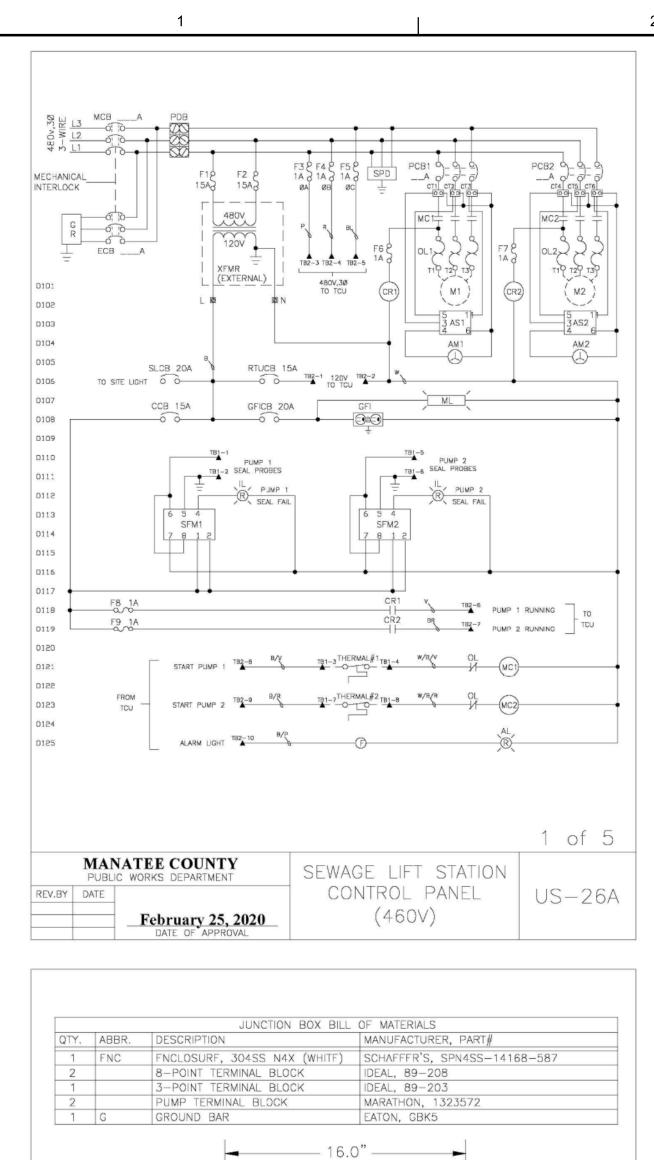
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AUGUST 2022

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D3480400 💍





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JUNCTION BOX (POWDER COATED WHITE)

BASE PLATE

NOTE: J-BOX GROUND

MUST BE BONDED TO

MANATEE COUNTY

February 25, 2020

CONTROL PANEL GROUND

P1 P2

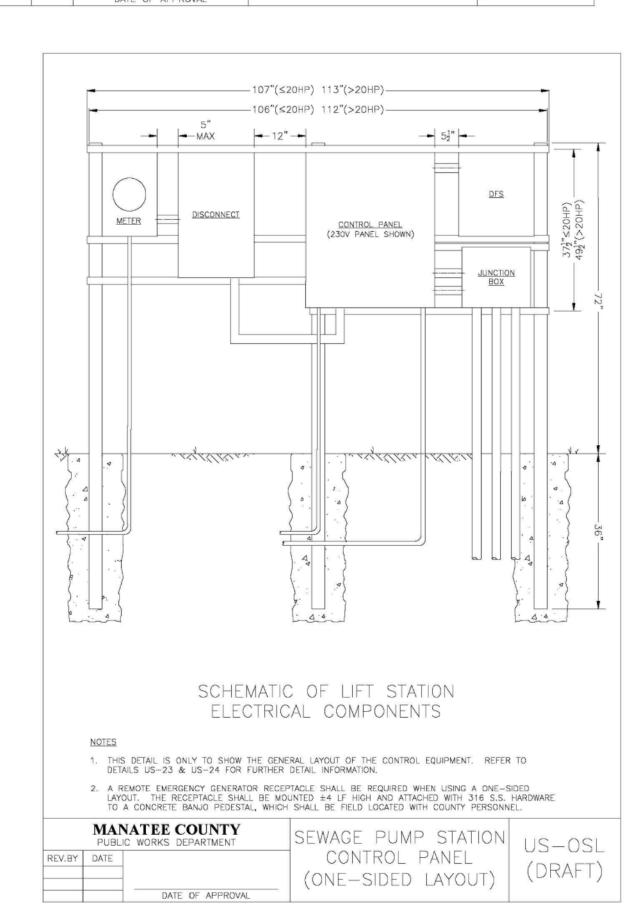
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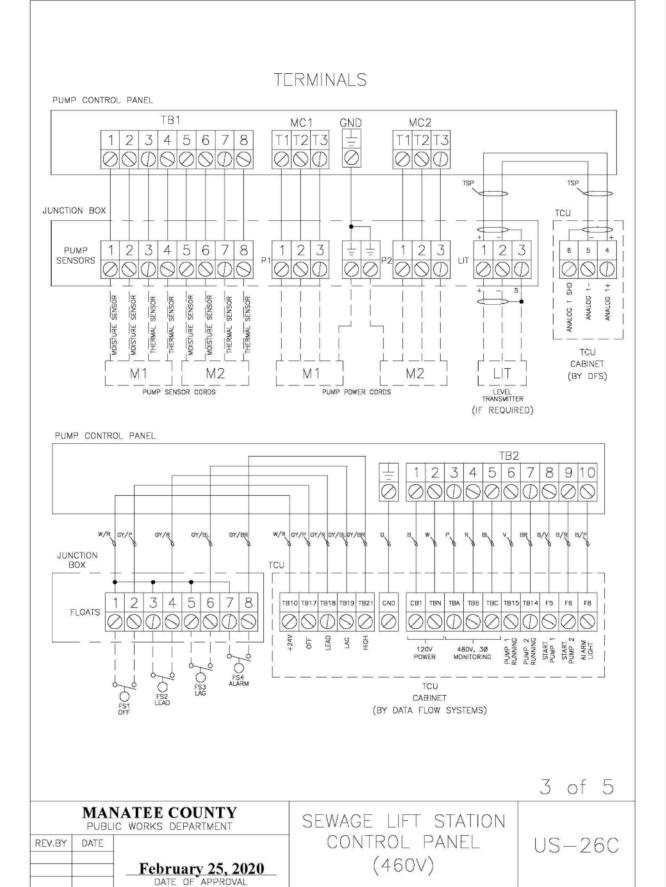
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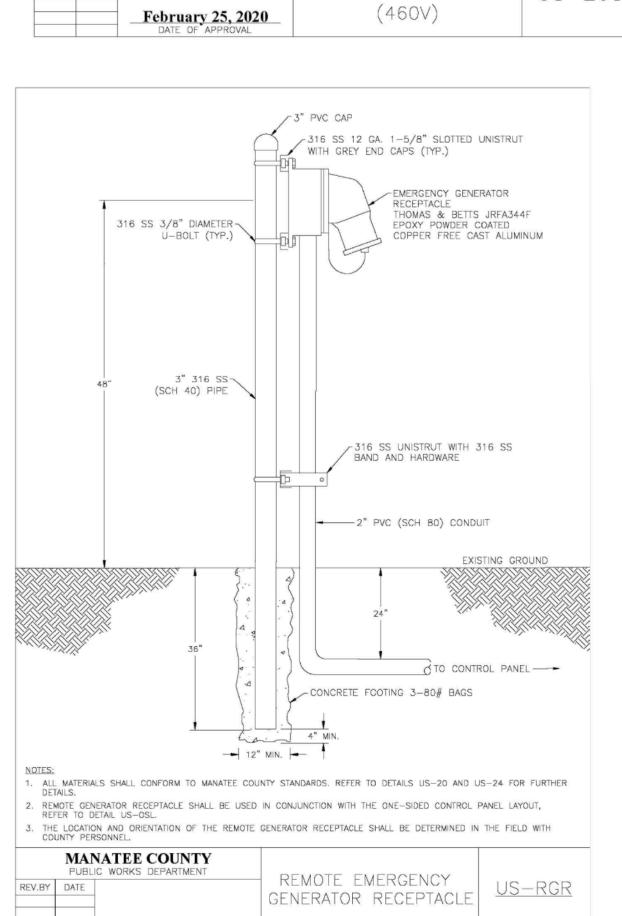
CONTROL PANEL

(460V)

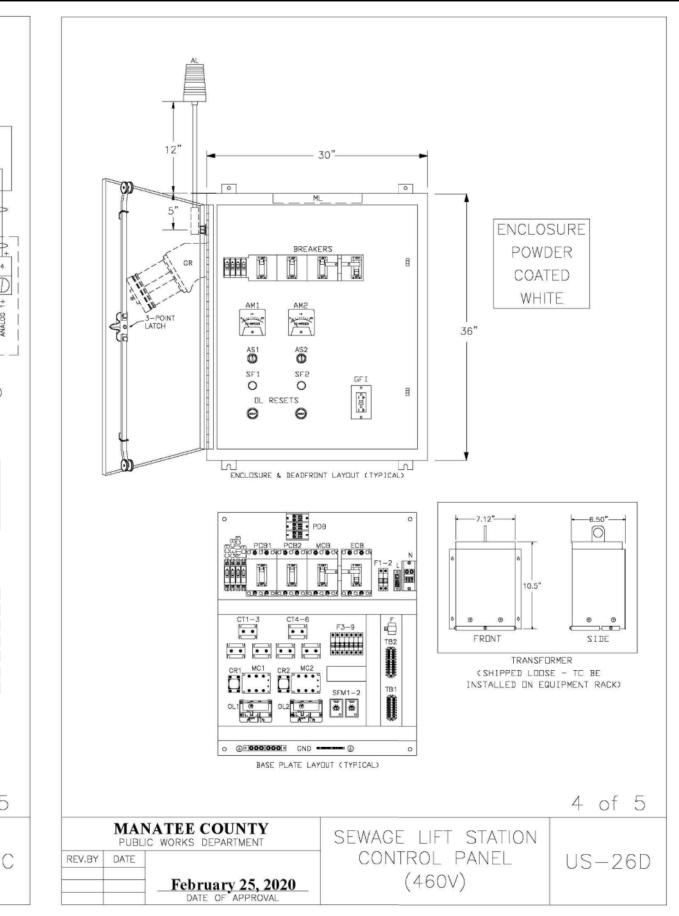


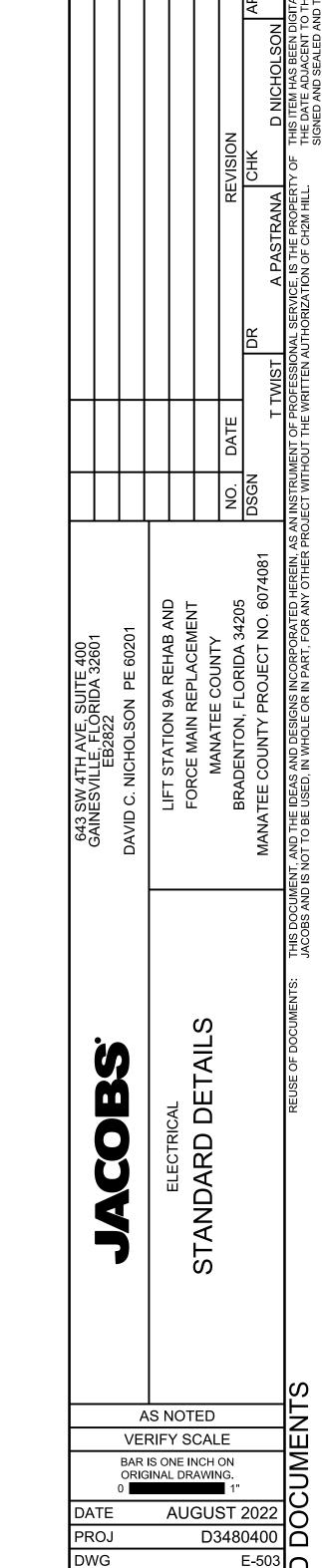






DATE OF APPROVAL





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C. NICHOL

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MANATEE COUNTY TYPICAL PUMP CONTROL PANEL STANDARD DETAIL

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FOR REFERENCE ONLY