

CONSTRUCTION PLANS

FOR

Southeast MLS 677E Rehabilitation

MANATEE COUNTY, FLORIDA

SEPTEMBER 2020

MANATEE COUNTY PROJECT #CIP6022385



PROJECT TEAM:

OWNER:

MANATEE COUNTY
1022 26TH AVE. E.
BRADENTON, FL 34208
CONTACT: ALEX GONZALEZ, P.E.
941-708-7450 EXT. 7338

ENGINEER:

KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N
ST. PETERSBURG, FL 33701
CONTACT: MICHAEL A. SEMAGO, P.E.
727-498-3633

ELECTRICAL:

TRICON ENGINEERING
777 S. HARBOUR ISLAND BLVD. SUITE 870
TAMPA, FL 33602
CONTACT: TIMOTHY THOMAS, P.E.
813-227-9190

UTILITY CONTACTS:

FRONTIER COMMUNICATIONS
TONI CANNON
3712 W WALNUT ST
TAMPA, FL 33607
813-875-10141

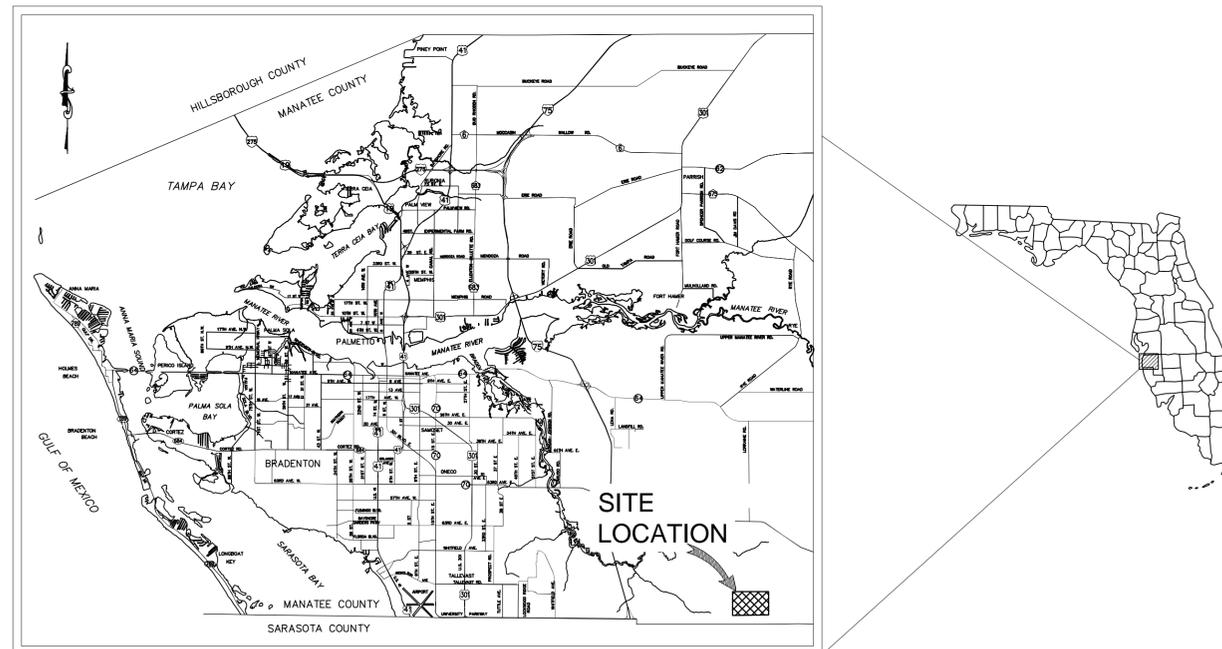
MANATEE COUNTY
KATHY MCMAHON
4520- 66TH STREET W
BRADENTON, FL 34210
941-792-8811 EXT. 5002

CHARTER COMMUNICATIONS
JAMES FLEMING
5413 SR 64 E
BRADENTON, FL 34208
727-329-2000 EXT. 42841

TECO PEOPLES GAS
JOAN DOMING
8416 PALM RIVER ROAD
TAMPA, FL 33619
813-275-3783

BRADEN RIVER UTILITIES, INC.
ED SHUPSKY
14400 COVENANT WAY
LAKEWOOD RANCH, FL 34202
941-757-1576

FLORIDA POWER & LIGHT
JOEL BRAY
386-586-6403



PROJECT VICINITY MAP
N.T.S.

BID SET

PREPARED BY
Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N
ST. PETERSBURG, FL 33701
PHONE (727) 647-3899
WWW.KIMLEY-HORN.COM CA 00000696

THE SITE CONSTRUCTION STAKEOUT SHALL BE PERFORMED UNDER THE DIRECTION OF A FLORIDA REGISTERED SURVEYOR. AUTOCAD FILES WILL BE FURNISHED TO AID IN THE SITE CONSTRUCTION STAKEOUT. ANY DISCREPANCIES FOUND BETWEEN AUTOCAD FILES AND SITE CONSTRUCTION PLANS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR CLARIFICATION PRIOR TO THAT STAKEOUT.

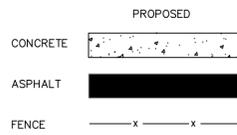
No.	REVISIONS	DATE

THIS DOCUMENT IS PROTECTED BY SECTION 106 OF THE "UNITED STATES COPYRIGHT ACT". REPRODUCTION OR ALTERATION OF THIS DOCUMENT OR THE INFORMATION CONTAINED HEREON BY ANY MEANS WHATSOEVER IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF KIMLEY-HORN AND ASSOCIATES, INC. CONSENT IS HEREBY GRANTED SPECIFICALLY TO GOVERNMENTAL AGENCIES TO REPRODUCE THIS DOCUMENT IN COMPLIANCE WITH F.S. CHAPTER 119.	DATE SEPT. 2020 PROJECT NO. 148400053 SHEET NUMBER G-1
MICHAEL A. SEMAGO, P.E. FLORIDA LICENSE NUMBER: 87501	DATE: BY

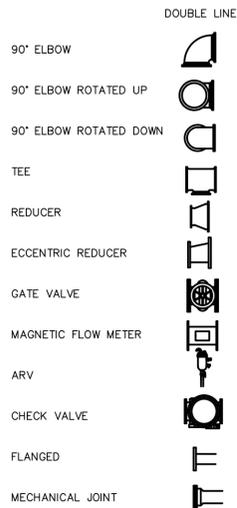
This document, together with the concepts and designs presented herein, is an instrument of service, is intended only for the specific purpose and client for which it was prepared. Release of and improper reliance on this document without written authorization and completion by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

Sheet List Table		
DISCIPLINE	Sheet Number	Sheet Title
GENERAL	G-1	COVER SHEET
	G-2	DRAWING INDEX & GENERAL NOTES
CIVIL	C-1	EXISTING SITE PLAN
	C-2	SITE DEMOLITION PLAN
	C-3	PROPOSED SITE PLAN
	C-4	CIVIL DETAILS
MECHANICAL	M-1	MECHANICAL DEMOLITION PLAN
	M-2	MECHANICAL PLAN
	M-3	MECHANICAL SECTION
	M-4	WET WELL CRANE DETAILS
	M-5	MECHANICAL DETAILS
	M-6	HVAC ABBREVIATIONS AND SCHEDULES
	M-7	HVAC DEMOLITION PLAN
STRUCTURAL	S-1	STRUCTURAL NOTES
	S-2	STRUCTURAL DEMOLITION
	S-3	WET WELL TOP SLAB PLAN
	S-4	WET WELL TOP SLAB SECTION
	S-5	MECHANICAL ASSEMBLY SLAB
ELECTRICAL	E-1	ELECTRICAL LEGEND AND ABBREVIATIONS
	E-2	PROPOSED ELECTRICAL PLAN
	E-3	EXISTING GENERATOR BUILDING FLOOR PLAN
	E-4	WET WELL PUMP PAD ELECTRICAL MODIFICATIONS
	E-5	EXISTING WET WELL EQUIPMENT RACK DETAILS
	E-6	NEW WET WELL ELECTRICAL EQUIPMENT RACK FRONT ELEVATION
	E-7	NEW WET WELL ELECTRICAL EQUIPMENT RACK BACK ELEVATION
	E-8	MAIN DISTRIBUTION PANEL 'MDP' MODIFICATIONS
	E-9	TYPICAL VFD WIRING DIAGRAM
	E-10	CONDUIT CABLE AND SCHEDULE
INSTRUMENTATION	I-1	INSTRUMENTATION LEGEND AND ABBREVIATIONS
	I-2	INSTRUMENTATION DETAILS
	I-3	DFS TCU PANEL DETAILS
	I-4	DFS TCU PANEL WIRING SCHEMATICS
	I-5	DFS TCU PANEL WIRING SCHEMATICS
	I-6	DFS TCU PANEL WIRING SCHEMATICS
	I-7	DFS TCU PANEL WIRING SCHEMATICS
	I-8	DFS TCU PANEL WIRING SCHEMATICS
	I-9	DFS TCU PANEL WIRING SCHEMATICS
	I-10	DFS TCU PANEL WIRING SCHEMATICS
	I-11	DFS TCU PANEL WIRING SCHEMATICS
	I-12	DFS TCU PANEL WIRING SCHEMATICS
	I-13	DFS TCU PANEL WIRING SCHEMATICS
	I-14	DFS TCU PANEL WIRING SCHEMATICS
	I-15	DFS TCU PANEL WIRING SCHEMATICS

SITE LEGEND



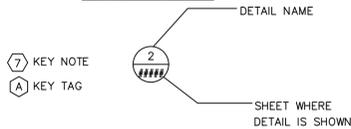
PIPE AND FITTING SYMBOLS



ABBREVIATIONS

ARV	AIR RELEASE VALVE
Q	CENTERLINE
D.I.	DUCTILE IRON
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
ELEC	ELECTRICAL
ELEV	ELEVATION
EX	EXISTING
FL	FLANGED
FM	FORCE MAIN
INV	INVERT
MH	MANHOLE
MJ	MECHANICAL JOINT
PVC	POLYVINYLCHLORIDE
SCH	SCHEDULE
SS	STAINLESS STEEL
TYP.	TYPICAL
VERT.	VERTICAL
W/	WITH

PLAN CALLOUT LEGEND



GENERAL NOTES

- THESE PLANS ARE SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE EXISTING CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF WORK. CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATION NECESSARY TO DETERMINE THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED.
- LOCATION, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) AFFECTING HIS WORK.
- THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEERS CLARIFICATION BEFORE COMMENCING.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, STORM DRAINS, SEWERS, UTILITIES, AND OTHER FACILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR ANY DAMAGES DUE TO HIS CONSTRUCTION.
- WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURERS' MAXIMUM RECOMMENDED DEFLECTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE EXISTING DRAINAGE SYSTEM WITHIN THE LIMITS OF THE PROJECT AREA FOR THE DURATION OF THE PROJECT.
- THE CONTRACTOR SHALL PROVIDE CERTIFIED RECORD DRAWINGS AS OUTLINED IN THE SPECIFICATIONS. RED-LINE DRAWINGS SHALL BE CURRENT WITH EACH PAY APPLICATION SUBMITTED AND WILL BE CHECKED AS PART OF THE PAY APPLICATION REVIEW PROCESS. PAYMENT WILL NOT BE MADE TO CONTRACTOR WITHOUT APPROVED RED-LINE DRAWINGS. THE MOST CURRENT SET OF RED-LINE DRAWINGS SHALL ALSO BE BROUGHT TO EACH MONTHLY PROGRESS MEETING.
- THE CONTRACTOR SHALL REVIEW PHASING PLAN ESTABLISHED AS PART OF THE CONSTRUCTION DOCUMENTS INCLUDED HEREIN. IF THE CONTRACTOR PREFERS TO PHASE THE PROJECT DIFFERENT THAN SHOWN, THEY SHALL SUBMIT AN ALTERNATIVE PRIOR TO CONSTRUCTION FOR REVIEW AND APPROVAL BY THE OWNER AND ENGINEER.
- FIELD CONDITIONS MAY NECESSITATE ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED PIPELINES TO AVOID CONFLICTS. NO ADDITIONAL PAYMENT SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND THE OWNER'S ENGINEER.
- THE CONTRACTOR SHALL INCLUDE IN HIS BID: BY-PASS PUMPING FACILITIES, PUMPS, FITTINGS, LABOR, ETC. AS NECESSARY, BASED ON METHOD AND SEQUENCE OF CONSTRUCTION TO COMPLETE ALL WORK WHILE MAINTAINING THE EXISTING WASTEWATER FLOWS AT ALL TIMES.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY DISPOSE OF ALL WASTEWATER, SLUDGE, AND GRIT WITHIN ALL PIPES TO BE DEMOLISHED, REMOVED, OR CONNECTED TO.
- ALL PROPOSED WORK SHALL BE COORDINATED WITH MANATEE COUNTY PUBLIC WORKS AND MANATEE COUNTY UTILITIES DEPARTMENT AT LEAST TWO WEEKS IN ADVANCE OF PROPOSED CONSTRUCTION.
- THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS PER SPECIFICATION SECTION 01340 TO THE ENGINEER FOR REVIEW OF PIPE CONNECTIONS, TRANSITIONS, SPECIAL APPURTENANCES, WETWELL APPURTENANCES, PREFABRICATED BUILDING, ELECTRICAL COMPONENTS, AND ANY OTHER PROPOSED INSTALLATION PRIOR TO FABRICATION OR DELIVERY TO THE JOB SITE.
- CONNECTIONS TO EXISTING FACILITIES SHALL BE ACCOMPLISHED IN A NEAT WORKMANSHIP LIKE MANNER. WHEN FIELD CONDITIONS INDICATE ANY VARIANCE FROM DETAILED METHODS, THE CONTRACTOR SHALL PROVIDE COMPREHENSIVE AND DETAILED DRAWINGS FOR OWNER REVIEW AND APPROVAL PRIOR TO MAKING THE CONNECTIONS.
- UNLESS OTHERWISE INDICATED OR APPROVED, ALL BELOW GROUND DUCTILE IRON PIPE SHALL HAVE PUSH-ON OR MECHANICAL JOINTS, AND ALL ABOVE GROUND DUCTILE IRON PIPE SHALL HAVE FLANGED JOINTS. ALL JOINTS SHALL BE FULLY RESTRAINED. CONTRACTOR TO FULLY RESTRAIN EXISTING PIPE AT TIE-IN LOCATIONS OF NEW PIPE IN ACCORDANCE WITH JOINT RESTRAINT TABLE.
- ALL PIPELINES SHALL HAVE A MINIMUM COVER OF 36" BELOW EXISTING GRADE UNLESS OTHERWISE NOTED OR DIRECTED.
- SANITARY SEWERS AND FORCEMAINS CROSSING OVER OR UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18" BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER OR FORCE MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN 10' BETWEEN ANY TWO JOINTS. AS AN ALTERNATIVE, THE SEWER OR FORCE MAIN MAY BE PLACED IN A WATERTIGHT CASING PIPE.
- WATER SHALL NOT BE PERMITTED IN BUILDING EXCAVATIONS OR TRENCHES DURING CONSTRUCTION. DEWATERING IS REQUIRED TO A MINIMUM OF 18" BELOW BOTTOM OF EXCAVATION.
- THE CONTRACTOR SHALL NOT ALLOW ANY DISCHARGE OF WASTEWATER TO LANDS AND/OR ADJACENT WATER BODIES OR STORM DRAINS. ANY LEAKAGE MUST BE CONTAINED AND REMOVED BY THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR REPORTING ANY SPILLS TO FDEP.
- ALL PIPE AND FITTINGS EXPOSED TO WASTEWATER SHALL BE COATED ON THE INSIDE WITH A GREEN, FACOTRY APPLIED AMINE CURED NOVALAC CERAMIC EPOXY OR A MODIFIED POLYAMINE CERAMIC EPOXY LINING SUCH AS PERMOX CTF OR TNEMC SERIES 431 PERMA-SHIELD PL AND A STANDARD 1-MIL ASPHALTIC COATING PER AWWA C151 ENAMEL COATING ON THE OUTSIDE. COATING SHALL BE UNDER WARRANTY AT THE TIME OF INSTALLATION. IF OUT OF WARRANTY, CONTRACTOR SHALL COORDINATE WITH COATING APPLIER TO RECOAT AND RECERTIFY THE WARRANTY OF THE PIPE OR FITTING.
- ALL EXPOSED PIPING SHALL BE PAINTED WITH DESIGNATED COLORS ASSOCIATED WITH THEIR USAGE AS PROVIDED IN THE SPECIFICATIONS.
- ALL ABOVEGROUND VALVES' STEMS AND EXTERNAL HARDWARE TO INCLUDE NUTS, BOLTS, AND WASHERS SHALL BE 316 SS. ALL BURIED VALVES' STEMS AND EXTERNAL HARDWARE REFERENCED ABOVE SHALL BE MIN. 304 SS.
- ALL BURIED GATE VALVES EXPOSED TO WASTEWATER SHALL BE INSTALLED VERTICALLY.
- GATE VALVES 16" AND LARGER SHALL BE EQUIPPED WITH MANUFACTURER STANDARD HEAVY DUTY GEAR TYPE ACTUATOR WITH 2" SQ. AWWA OPERATING NUT. THE GEARBOX SHALL BE EXTERNALLY ADJUSTABLE, WATERTIGHT, AND CONFORM TO ISO 9001 STANDARDS.
- ALL ABOVEGROUND PIPE EXPOSED TO WASTEWATER SHALL BE DUCTILE IRON CL 53 250 PSI, UNLESS OTHERWISE SPECIFIED. ALL BURIED PIPE EXPOSED TO WASTEWATER SHALL BE PVC C900-16 DR 18, CL 235, UNLESS OTHERWISE SPECIFIED.
- ALL DUCTILE IRON PIPE, FITTINGS, AND VALVES SHALL HAVE A HOLIDAY-FREE FACTORY CERTIFICATION PER ASTM G62 FOR THE INTERIOR AND EXTERIOR COATING

- ALL NEW PIPELINES SHALL BE FLUSHED, PRESSURE TESTED, AND APPROVED PRIOR TO TIE-INS TO EXISTING FACILITIES. THE CONTRACTOR WILL BE ALLOWED TO USE TEMPORARY PLUGS FOR PRESSURE TESTING.
- CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR ALL SURFACE WATER DRAINAGE STRUCTURES AND DITCHES DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL BE REQUIRED TO INSTALL ALL EROSION, SEDIMENT, AND TURBIDITY CONTROL MEASURES PRIOR TO CONSTRUCTION OF ANY COMPONENTS ASSOCIATED WITH THE PROJECT. SEDIMENT CONTROL INCLUDES SILT DAMS, TRAPS, EROSION PROTECTION, AND ANY OTHER APPURTENANCES NEEDED BUT NOT NECESSARILY SHOWN ON THESE DRAWINGS.
- CONTRACTOR SHALL PROVIDE PROTECTIVE MATTING, FUEL CONTAINMENT AND ALL OTHER MATERIALS, EQUIPMENT AND LABOR TO PROTECT THE STAGING AREA DURING CONSTRUCTION.
- CONTRACTOR SHALL, PRIOR TO BEGINNING CONSTRUCTION, SUBMIT A "FUELING SPILL PREVENTION PLAN" THAT SHALL CLEARLY INDICATE HOW FUEL SPILLS WILL BE PREVENTED WHEN FUELING BOTH WITHIN AND OUTSIDE OF THE STAGING AREA.
- THE CONTRACTOR SHALL COORDINATE THE STAGING AREA WITH THE OWNER. THERE MAY BE MULTIPLE PROJECTS UNDER CONSTRUCTION IN THE AREA AND IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A SECURE AREA FOR THE STORAGE AND STAGING OF EQUIPMENT, INCLUDING BUT NOT LIMITED TO FENCING, GATES, AND ANY ADDITIONAL ITEMS THAT MAY BE NECESSARY TO SECURE THE AREA.

SURVEY NOTES

- THIS SURVEY IS REFERENCED TO A GRID PROJECTION OF THE FLORIDA STATE PLANE COORDINATE SYSTEM (NAD 83/11).
- THE FOLLOWING MANATEE COUNTY VERTICAL POINT WAS RECOVERED AND UTILIZED FOR THE ELEVATIONS SHOWN HEREON: "163-88-01" NAVD 1988 ELEVATION 52.31'
- TITLE WORK WAS NOT SUPPLIED FOR THIS SURVEY.
- THIS SURVEY IS SUBJECT TO PERTINENT EASEMENTS, ADDITIONAL RIGHTS-OF-WAY AND RESTRICTIONS OF RECORD, IF ANY.
- THIS SURVEY DRAWING WAS PREPARED FOR THE EXCLUSIVE USE OF THE PARTY OR PARTIES CERTIFIED TO BELOW FOR THE EXPRESS PURPOSE STATED HEREON AND/OR CONTAINED IN THE CONTRACT BETWEEN HYATT SURVEY SERVICES, INC. AND THE CLIENT FOR THIS PROJECT. COPYING, DISTRIBUTING AND/OR USING THIS DRAWING, IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN ORIGINALLY INTENDED WITHOUT WRITTEN CONSENT FROM HYATT SURVEY SERVICES, INC. IS STRICTLY PROHIBITED AND RENDERS THE SURVEYOR'S CERTIFICATION, SIGNATURE AND SEAL NULL AND VOID. ANY QUESTIONS CONCERNING THE CONTENT OR PURPOSE OF THIS DRAWING SHOULD BE DIRECTED TO HYATT SURVEY SERVICES, INC.

UTILITY NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE FOLLOWING JURISDICTIONAL BODIES AND UTILITY COMPANIES:

CALL 2 BUSINESS DAYS BEFORE YOU DIG IT'S THE LAW! DIAL 811

Know what's below. Call before you dig.

SUNSHINE STATE ONE CALL OF FLORIDA, INC.
- ALL UTILITY CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE LATEST VERSION OF THE MANATEE COUNTY UTILITY STANDARDS, UNLESS OTHERWISE SPECIFIED.
- ALL VALVE BOX COVERS SHALL BE PAINTED TO INDICATE THEIR TYPE OF SERVICE.
- ALL TEST POINT TAPPING SHALL BE CUT LOOSE FROM THE CORPORATION STOP AND COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE. THE CORPORATION STOP SHALL BE CAPPED AND REMAIN IN PLACE.

RESTORATION AND MISCELLANEOUS NOTES

- ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE AN ASPHALT PATCH FOR TRENCH AREAS CONSTRUCTED IN EXISTING ROADWAYS. ADJUST ALL CASTINGS TO MATCH NEW PAVEMENT SURFACE.
- THE CONTRACTOR SHALL REPLACE ALL EXISTING PAVING, STABILIZED EARTH, CURBS, SIDEWALKS, FENCES, LANDSCAPING, AND OTHER IMPROVEMENTS WITH THE SAME OR BETTER TYPE AND QUANTITY OF MATERIAL THAT WAS REMOVED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
- ALL EXISTING FENCES DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED AND REINSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER UNLESS SHOWN TO BE REMOVED ON CONSTRUCTION PLANS.
- CONTRACTOR SHALL RESTORE ALL IRRIGATION SYSTEM COMPONENTS TO PRE-CONSTRUCTION CONDITIONS.
- ALL DISTURBED GRASSED AREAS SHALL BE RESTORED WITH SOD IN LIKE KIND UNLESS OTHERWISE DIRECTED BY OWNER. CONTRACTOR SHALL ROLL ALL SODDED AREAS.
- CONCRETE SIDEWALKS ACROSS DRIVEWAYS SHALL BE RESTORED WITH 6 INCHES OF 3,000 PSI CONCRETE WITH W2.5 X W2.5, 6X6 WIRE MESH. PLACE 1/2 INCH EXPANSION JOINT BETWEEN BACK OF CURB AND NEW CONCRETE. AREA BENEATH RESTORATION SHALL BE MECHANICALLY TAMPED PRIOR TO PLACING CONCRETE.
- CONCRETE SIDEWALKS OUTSIDE OF DRIVEWAYS SHALL BE RESTORED WITH 4 INCHES OF 3,000 PSI CONCRETE PER FDOT DESIGN STANDARDS, SECTIONS 522 & 310.

No.	REVISIONS	DATE	BY



© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/16/2020
SCALE	AS SHOWN
DESIGNED BY	MAS
DRAWN BY	GMB
CHECKED BY	WEW

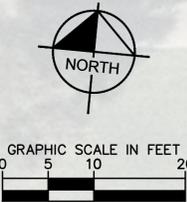


SOUTHEAST MLS 677E

LICENSED PROFESSIONAL
MICHAEL A. SEMAGO, P.E.
FL LICENSE NUMBER
87501
FL DATE:

DRAWING INDEX & GENERAL NOTES

SHEET NUMBER
G-2



No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT
148400053

DATE
9/16/2020

SCALE AS SHOWN

DESIGNED BY MAS

DRAWN BY GMB

CHECKED BY WEW

Manatee County
FLORIDA

SOUTHEAST MLS 677E

MANATEE COUNTY

LICENSED PROFESSIONAL

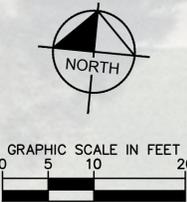
MICHAEL A. SEMAGO, P.E.

FL LICENSE NUMBER
87501

FL DATE:

EXISTING SITE PLAN

SHEET NUMBER
C-1



- NOTES:
1. THE COUNTY HAS FIRST RIGHT OF REFUSAL FOR ANY EQUIPMENT BEING DEMOLISHED.
 2. PRIOR TO DEMOLITION CONTRACTOR SHALL COORDINATE WALKTHROUGH WITH OWNER AND ENGINEER TO DETERMINE SALVAGEABLE MATERIAL.
 3. ALL SALVAGEABLE MATERIAL SHALL BE HANDED OVER TO THE COUNTY PRIOR TO COMMENCING DEMOLITION ACTIVITIES



No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT
148400053
DATE
9/16/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY GMB
CHECKED BY WEW

Manatee County
FLORIDA

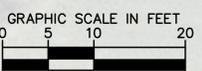
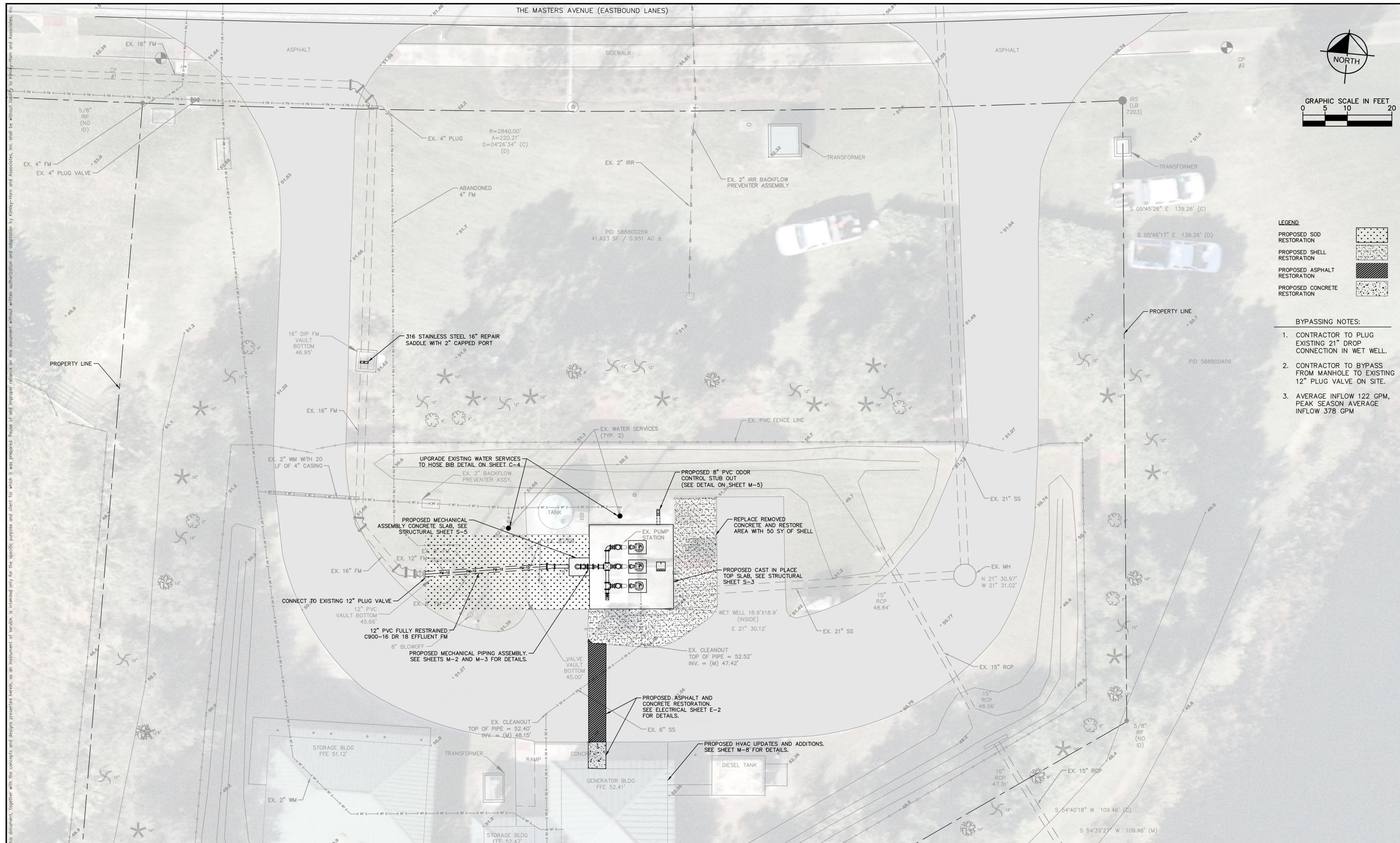
SOUTHEAST MLS 677E

MANATEE COUNTY

LICENSED PROFESSIONAL
MICHAEL A. SEMAGO, P.E.
FL LICENSE NUMBER
87501

SITE DEMOLITION PLAN

SHEET NUMBER
C-2



- LEGEND**
- PROPOSED SOD RESTORATION
 - PROPOSED SHELL RESTORATION
 - PROPOSED ASPHALT RESTORATION
 - PROPOSED CONCRETE RESTORATION

- BYPASSING NOTES:**
1. CONTRACTOR TO PLUG EXISTING 21" DROP CONNECTION IN WET WELL.
 2. CONTRACTOR TO BYPASS FROM MANHOLE TO EXISTING 12" PLUG VALVE ON SITE.
 3. AVERAGE INFLOW 122 GPM, PEAK SEASON AVERAGE INFLOW 378 GPM

No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT
148400053

DATE
9/21/2020

SCALE AS SHOWN

DESIGNED BY MAS

DRAWN BY GMB

CHECKED BY WEW

Manatee County
FLORIDA

SOUTHEAST MLS 677E

MANATEE COUNTY

LICENSED PROFESSIONAL

MICHAEL A. SEMAGO, P.E.

FL LICENSE NUMBER
87501

FL DATE:

PROPOSED SITE PLAN

SHEET NUMBER

C-3

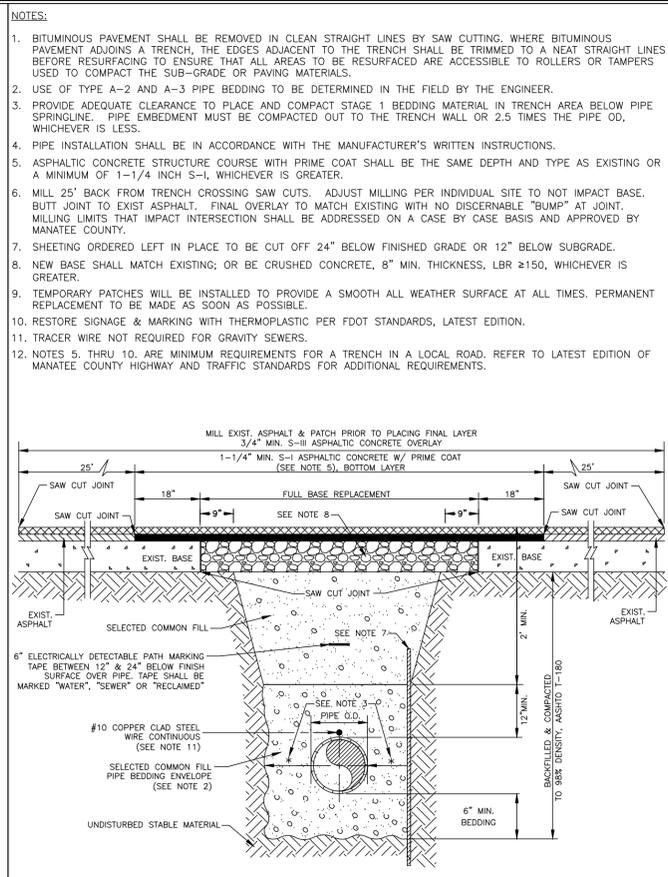
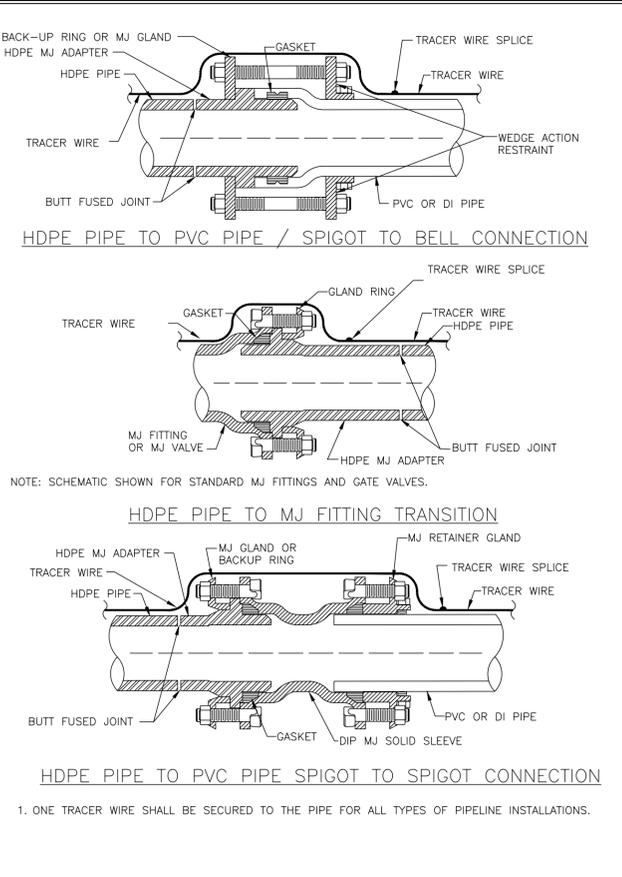
This document, together with the concepts and designs presented herein, is an instrument of service, as an instrument of service is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reference on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

GENERAL NOTES

- All county road construction shall conform to these Manatee County Department Of Transportation Standards.
- Asphaltic Concrete Type S: Shall be per Florida Department Of Transportation 2000 Standard Specifications; Section 331
Asphaltic Concrete Type III: Shall be per Florida Department Of Transportation 2000 Standard Specifications; Section 333.
(A) Superpave mixes equivalent to F.D.O.T. Type S mixes are an accepted alternative upon directors approval.
(B) Surface material will be consistent with existing surface, or better.
- Limerock Base Course: Shall be per Florida Department Of Transportation 2000 Standard Specifications; Section 200.
- Crushed concrete base course is acceptable unless otherwise noted.
- Stabilized Sub-Grade: Shall be per Florida Department Of Transportation 2000 Standard Specifications; Sections 160, and 914.
- Drainage: Shall be per Florida Department Of Transportation 2000 Standard Specifications; Section 941.
Soft, yielding or super-saturated material that will not readily compact shall be considered unacceptable for backfill. This is at the discretion of the field engineer. This type of existing material must be excavated from the road footprint to a depth as set by an approved testing lab.
- Soil Cement: Shall be per Florida Department Of Transportation 2000 Standard Specifications; Section 270, excluding Sub-Section 270-4.3.1 ("Mix in place").
- Concrete Gutters: Shall be per Florida Department Of Transportation 2000 Standard Specifications; Section 520.
- Topsoil: Shall be per Florida Department Of Transportation 2000 Standard Specifications; Section 987.
Sodding: Shall be per Florida Department Of Transportation 2000 Standard Specifications; Section 575.
Grassing: Shall be per Florida Department Of Transportation 2000 Standard Specifications; Section 570.
(A) Entire R/W between road and property line, including median, shall be fertilized (1000 lbs. of slow-release 8-12-6 per acre), and seeded (30 lbs. Bahia and 30 lbs. of Rye per acre) and mulched, or sodded, as directed by the engineer.
(B) Hydromulch: Shall be per Florida Department Of Transportation Specifications Section 571.
- Visibility Triangles: Shall be in accordance with the Manatee County Land Development Code 1994; Section 713, latest revision, and Section 600.7-600.9.
- Handicap Ramps shall meet Florida Accessibilities Standards, and Section 302 series.
- Prime coat shall be applied @ a rate of 0.2 gal/sy. Tack coat of 0.08 gal/sy rate to be applied for overlay of existing roads.

GENERAL NOTES (CONT.)

- All the signage, striping and signals (FDOT) shall conform to the latest revision of the Florida Department Of Transportation Standard Specifications For Road And Bridge Construction, the Manual On Uniform Traffic Control Devices, F.D.O.T. Design Standards and the Manatee County Transportation And Drainage Standards, Traffic Supplemental Specifications.
- Prime coat shall be applied @ a rate of 0.2 gal/sy. Tack coat of 0.08 gal/sy rate to be applied for overlay of existing roads.
- In general, all signing, marking, and traffic control devices shall conform to the Florida Department Of Transportation Roadway And Traffic Standard Specifications For Road And Bridge Construction (latest revision) and the Manual On Uniform Traffic Control Devices For Streets And Highways (latest revision), as well as the Manatee County Traffic Supplemental Specifications.
- Street radii requirement shall be in accordance with page 402.0, however radius should be a minimum of 50' where industrial or bus traffic (of 5% AADT or greater) is anticipated.
- Cement treated aggregate base, see section 403.3.
- Two lifts of asphalt is the preferred method of construction in area where extensive construction equipment will utilize the roads. A performance bond may be required for second lift. The first lift shall be 1-1/4", the second lift shall be 3/4" for residential. The second lift for industrial shall be 1-1/4". Lift thickness shall be specified for each road type.
- Any road widening (including divided roads) will require full width milling.
- All stormwater pipe shall be installed behind the curb or edge of pavement and within the right of way.
- The base, sub-base and asphalt thickness shown for 6-lane, 4-lane, Minor Collector, Rural Industrial and Urban Industrial are minimums. If the engineer can demonstrate a reduction based upon an analysis of equal single axle load, then it may be considered.
- Minimum of two pvc schedule 40 conduits (2.0" min. dia.) shall be installed for all directions at the intersections of all thoroughfare roadways per the direction of the Manatee County's Traffic Engineer. Additional signal inter-connect conduit may be required between intersections at the direction of Manatee County.



MANATEE COUNTY		GENERAL NOTES	400.1
REV. BY	DATE		
	6/12/07		
	DATE OF B.O.C.C. APPROVAL		

MANATEE COUNTY		GENERAL NOTES	400.2
REV. BY	DATE		
	6/12/07		
	DATE OF B.O.C.C. APPROVAL		

MANATEE COUNTY		HDPE TO PVC OR DI PIPE ADAPTER	UG-6
REV. BY	DATE		
	DATE OF APPROVAL		

MANATEE COUNTY		TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING (CROSSING)	UG-12
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

FITTING TYPE	PIPE SIZE											200 PSI	
	4"	6"	8"	10"	12"	16"	18"	20"	24"	30"	36"		
90° HORIZ. BEND	-	-	-	-	-	-	-	-	-	-	-	119	136
45° HORIZ. BEND	-	-	-	-	-	-	-	-	-	-	-	49	56
22.5° HORIZ. BEND	-	-	-	-	-	-	-	-	-	-	-	24	27
11.25° HORIZ. BEND	-	-	-	-	-	-	-	-	-	-	-	12	14
90° VERT. OFFSET	UPPER BEND	38	53	70	84	99	115	140	153	179	285	330	
	LOWER BEND	38	53	70	84	99	115	140	153	179	285	330	
45° VERT. OFFSET	UPPER BEND	16	22	29	35	41	53	58	64	74	118	137	
	LOWER BEND	4	6	7	9	10	13	14	15	18	29	33	
22.5° VERT. OFFSET	UPPER BEND	8	11	14	17	20	26	28	31	36	57	66	
	LOWER BEND	2	3	4	4	5	6	7	8	9	14	16	
11.25° VERT. OFFSET	UPPER BEND	4	6	7	9	10	13	14	16	18	29	33	
	LOWER BEND	1	1	1	2	3	3	4	4	5	7	8	
PLUG/ IN-LINE VALVE	-	-	-	-	-	-	-	-	-	-	285	330	
TEE (BRANCH RESTRAINT)	4" x Ø	-	-	-	-	-	-	-	-	-	-	-	-
	6" x Ø	-	-	-	-	-	-	-	-	-	-	-	-
	8" x Ø	-	-	-	-	-	-	-	-	-	-	-	-
	10" x Ø	-	-	-	-	-	-	-	-	-	-	-	-
	12" x Ø	-	-	-	-	-	-	-	-	-	-	-	-
	16" x Ø	-	-	-	-	-	-	-	-	-	-	-	-
	18" x Ø	1	1	24	47	68	104	120	-	-	-	-	-
	20" x Ø	-	-	-	-	-	-	-	-	-	-	-	-
REDUCER (LARGER PIPE RESTRAINT)	24" x Ø	-	-	-	-	-	-	-	-	-	-	-	-
	30" x Ø	1	1	1	15	42	84	103	120	152	193	-	-
	36" x Ø	1	1	1	1	26	73	93	111	144	187	226	-
	6" x Ø	28	-	-	-	-	-	-	-	-	-	-	-
	8" x Ø	50	30	-	-	-	-	-	-	-	-	-	-
	10" x Ø	68	52	28	-	-	-	-	-	-	-	-	-
	12" x Ø	86	-	-	-	-	-	-	-	-	-	-	-
	18" x Ø	131	122	110	95	76	29	-	-	-	-	-	-
200 PSI	30" x Ø	279	272	262	251	237	201	179	155	100	-	-	-
	36" x Ø	325	320	312	303	291	262	245	225	181	100	-	-

EXTRA REQUIRED LENGTHS OF RESTRAINED JOINT PIPE FOR C900-16 PVC PIPE (DR-18)

(SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 7.1.2)

NOTES:

- CONTRACTOR TO REFER TO MANATEE COUNTY DETAIL UG-8 FOR PVC RESTRAIN LENGTHS. IF FITTING TYPE OR PIPE SIZE IS NOT SHOWN IN DETAIL UG-8, REFER TO THIS DETAIL FOR SECONDARY REFERENCE.
- THE DATA IN THE TABLE ARE BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:
SOIL TYPE-SP TEST PRESSURE-150/200 PSI
TRENCH TYPE-3 SAFETY FACTOR-1.5
MINIMUM PIPE LENGTH ALONG TEE RUN-5'
DEPTH OF BURY-3' VERTICAL OFFSET-3'
- THE RESTRAINED PIPE LENGTHS APPLY TO PVC PIPE.
- ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
- RESTRAINED PIPE LENGTHS APPLY TO PIPE ON BOTH SIDES OF FITTINGS.
- RESTRAINED JOINTS SHALL EXTEND ONE JOINT BEYOND MIN. LENGTH REQUIRED.

*PER DIPRA, AS THE BEND ANGLE APPROACHES 90°, LATERAL MOVEMENT OF THE OUTER LEGS APPROACHES ZERO. FOR THIS CONDITION, RESTRAIN ALL PIPE BETWEEN THE FITTINGS AND RESTRAIN THE OUTER LEGS AS DEAD ENDS.

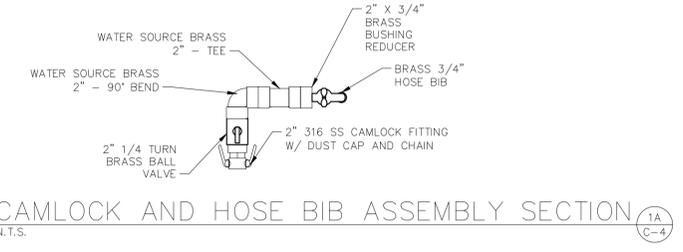
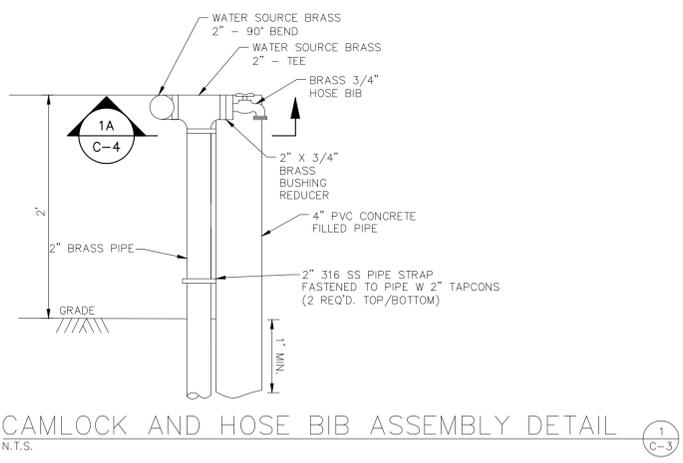
REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR C900-16 PVC PIPE (DR-18)

MAIN PIPE SIZE	HORIZ. BENDS	TEES						REDUCERS			PLUGS & VALVES	
		90°	45°	22.5°	SIZE	LENGTH	SIZE	LENGTH	SIZE	LENGTH		
24	90	38	18	X24	X20	X16	X12	X10	X8	X6	X4	214
20	78	32	16	X20	X16	X12	X10	X8	X6	X4	X3	184
16	66	27	13	X16	X12	X10	X8	X6	X4	X3	X2	151
12	52	22	10	X12	X10	X8	X6	X4	X3	X2	X1	118
10	44	18	9	X10	X8	X6	X4	X3	X2	X1	X0	100
8	37	15	7	X8	X6	X4	X3	X2	X1	X0	X0	83
6	29	12	6	X6	X4	X3	X2	X1	X0	X0	X0	63
4	21	8	4	X4	X3	X2	X1	X0	X0	X0	X0	45

NOTES:

- RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
- ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
- ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
- PIPE SIZES ARE GIVEN IN INCHES.
- RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
- LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
- THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFETY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
- RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL UG-10 RESTRAINED LENGTHS FOR PIPE.
- ALL RESTRAINED JOINT HARDWARE SHALL CONFORM TO 1.11.17 OF THE PUBLIC WORKS UTILITIES STANDARDS MANUAL.
- ALL THREE "LEGS" OF TEES SHALL BE RESTRAINED PER THE STATED LENGTH IN THE TABLE.

MANATEE COUNTY		RESTRAINED LENGTHS FOR PVC PIPE	UG-8
REV. BY	DATE		
	DATE OF APPROVAL		



No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 0000696

KHA PROJECT 148400053	DATE 9/16/2020
SCALE AS SHOWN	DESIGNED BY MAS
DRAWN BY GMB	CHECKED BY WEW
MANATEE COUNTY	

Manatee County

SOUTHEAST MLS 677E

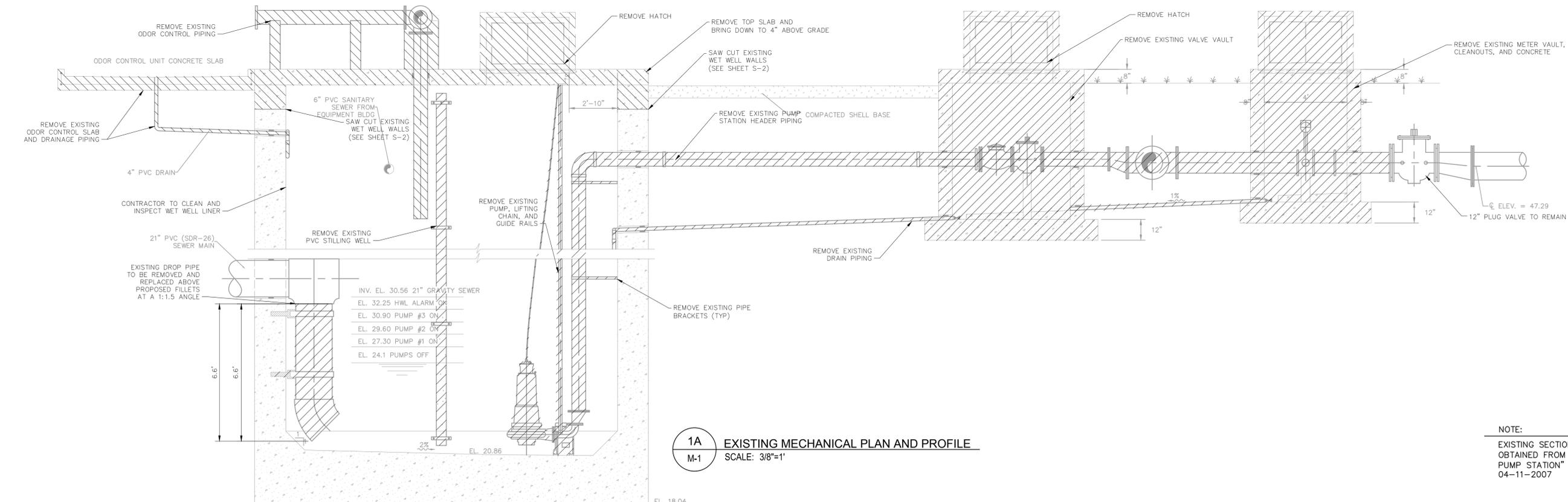
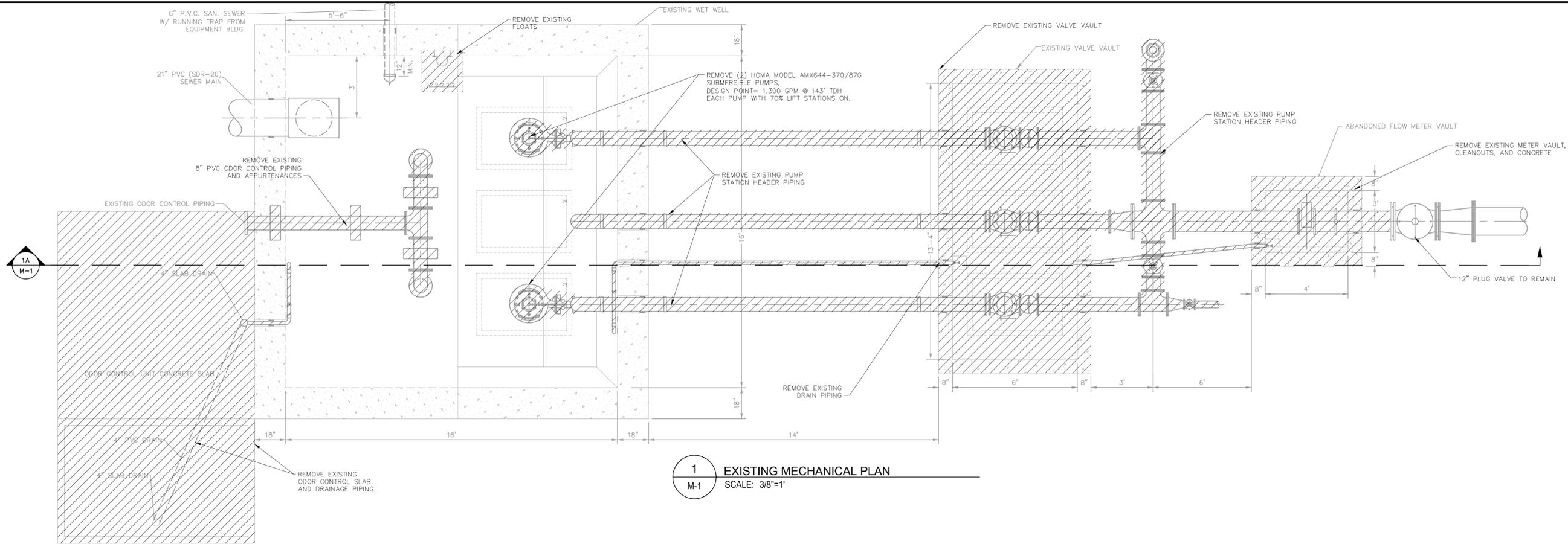
FL DATE:

LICENSED PROFESSIONAL
MICHAEL A. SEMAGO, P.E.
FL LICENSE NUMBER 87501

CIVIL DETAILS

SHEET NUMBER
C-4

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any information or design on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



NOTE:
EXISTING SECTION AND PLAN VIEWS WERE OBTAINED FROM THE "SOUTHEAST SECTOR MASTER PUMP STATION" RECORD DRAWINGS DATED 04-11-2007

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

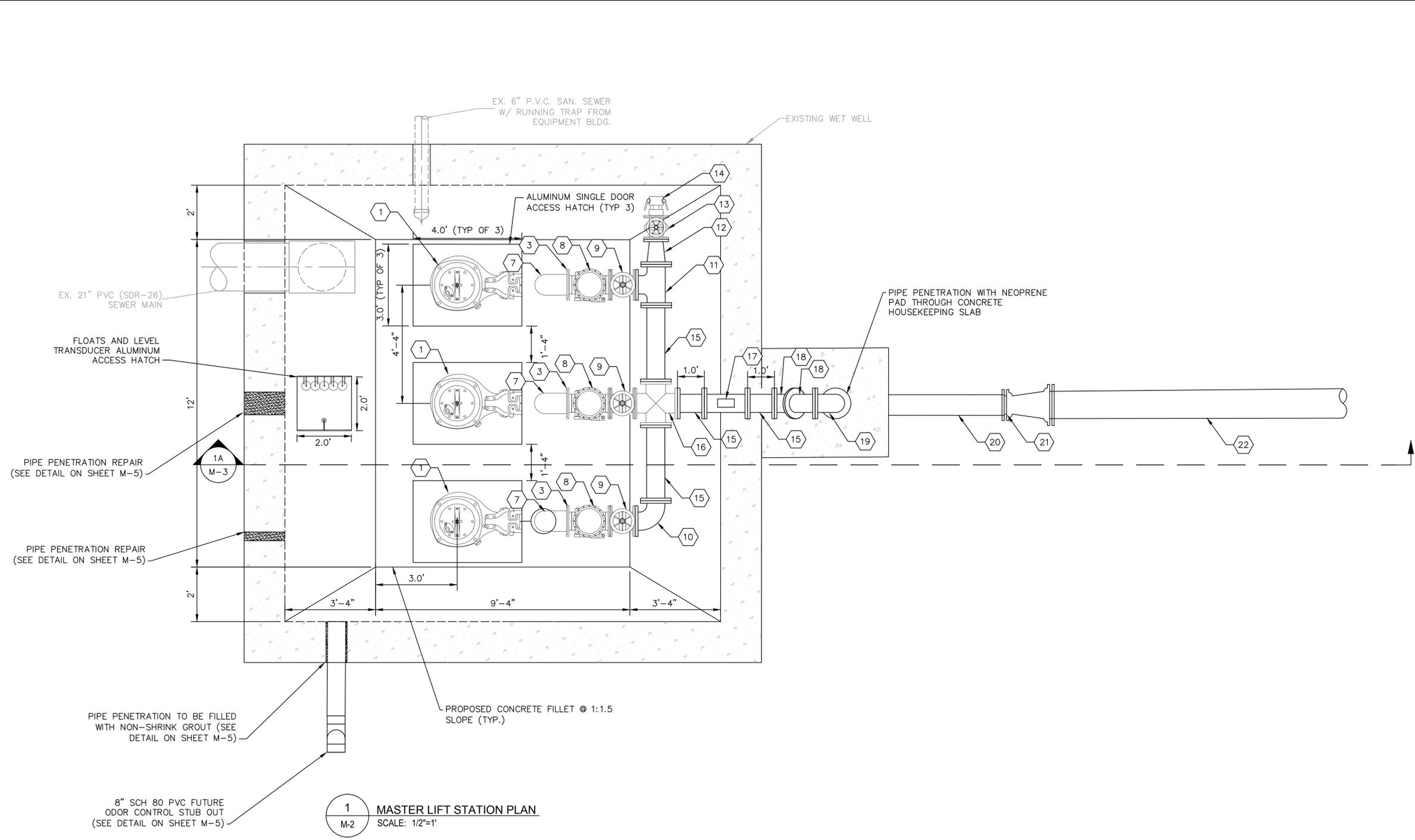
KHA PROJECT 148400053
DATE 9/16/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY GMB
CHECKED BY WEW

Manatee County
SOUTHEAST MLS 677E
MANATEE COUNTY

LICENSED PROFESSIONAL MICHAEL A. SEMAGO, P.E. FL LICENSE NUMBER 87501
--

MECHANICAL DEMOLITION PLAN

SHEET NUMBER M-1



- ITEM AND MATERIAL LEGEND:
- 1 FLYGT SUBMERSIBLE PUMP MODEL NP 3301 HT3-464 DESIGN POINT: 2100 GPM @ 90 TDH (NO STATIONS ON) AND 1300 GPM @ 14.3 TDH (ALL STATIONS ON). PUMP TO BE PROVIDED BY MANATEE COUNTY
 - 2 BPIU 6" BASE ELBOW
 - 3 HDPE FLANGE ADAPTER WITH 316 STAINLESS STEEL BACKUP RING, SHOP FUSED
 - 4 FABRICATED HDPE DR 11 DIPS 8" X 6" ECCENTRIC REDUCER
 - 5 316 STAINLESS STEEL PADDED RUBBER RISER PIPE BRACKETS (SEE DETAIL ON SHEET M-5)
 - 6 8" HDPE DR 11 DIPS SPOOL PIECE
 - 7 8" HDPE DR 11 90° MOLDED BEND, DIPS
 - 8 8" SWING CHECK VALVE, FL
 - 9 8" NRS GATE VALVE, FL
 - 10 8" D.I. 90° BEND, FL
 - 11 8" D.I. TEE, FL
 - 12 8"X6" D.I. REDUCER, FL
 - 13 6" NRS GATE VALVE, FL
 - 14 6" FLG WITH ALUMINUM 6" CAMLOCK FITTING CONNECTION FOR BYPASS (SEE DETAIL ON SHEET M-5)
 - 15 8" D.I. SPOOL PIECE, FL
 - 16 8" D.I. CROSS, FL
 - 17 8" MCCROMETER ULTRA MAG UM08
 - 18 8" D.I. 45° BEND, FL
 - 19 8" D.I. 90° BEND, FL
 - 20 8" D.I. SPOOL PIECE, PE
 - 21 12"X8" D.I. REDUCER, MJ
 - 22 12" PVC C900-16 DR-18, FULLY RESTRAINED

1 MASTER LIFT STATION PLAN
SCALE: 1/2"=1'

This document, together with the concepts and designs presented herein, is an instrument of service intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/21/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY GMB
CHECKED BY WEW


SOUTHEAST MLS 677E

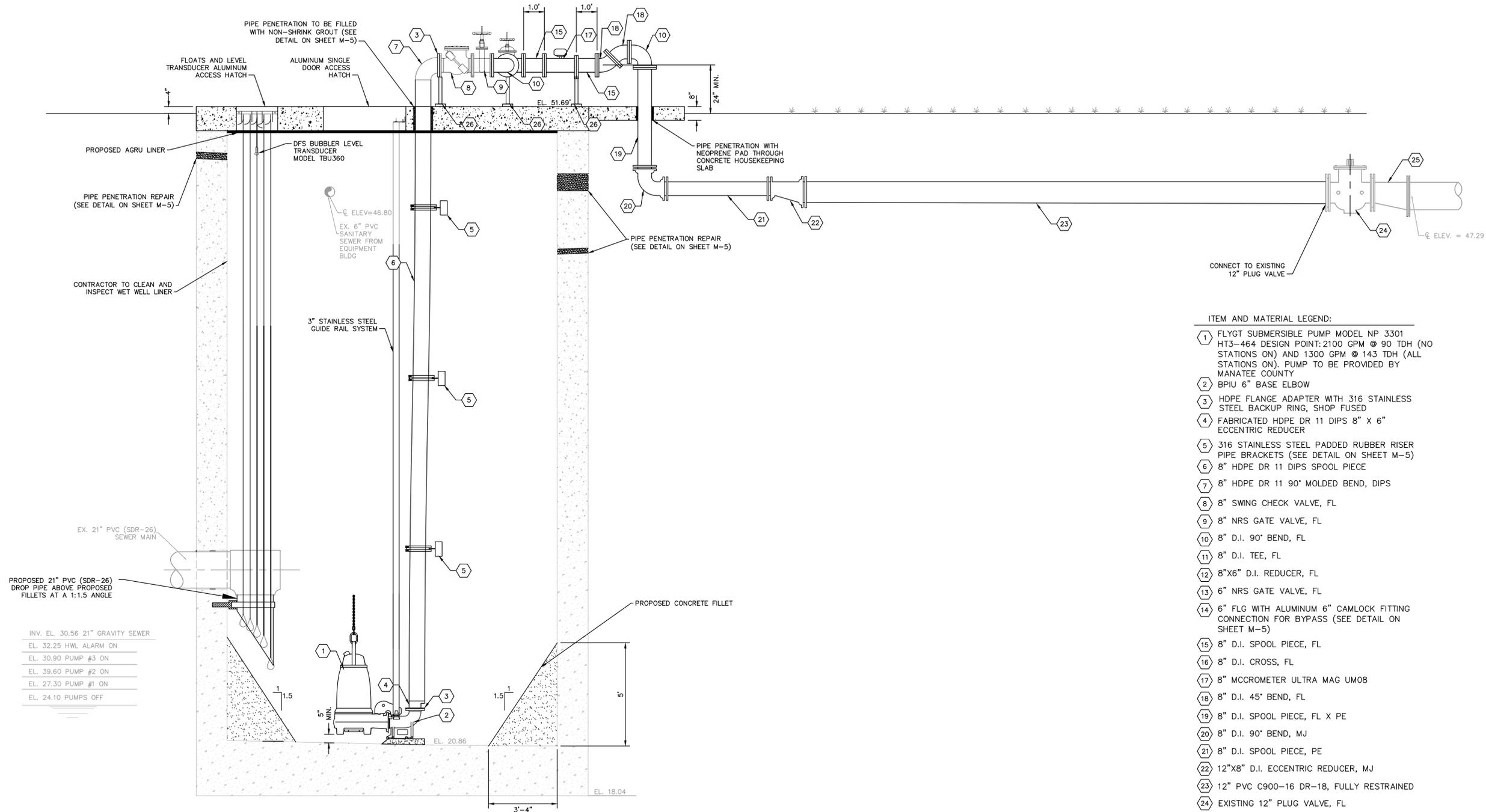
MANATEE COUNTY FL

LICENSED PROFESSIONAL MICHAEL A. SEMAGO, P.E. FL LICENSE NUMBER 87501
--

MECHANICAL PLAN

SHEET NUMBER
M-2

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any information or design on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



INV. EL. 30.56	21" GRAVITY SEWER
EL. 32.25	HWL ALARM ON
EL. 30.90	PUMP #3 ON
EL. 39.60	PUMP #2 ON
EL. 27.30	PUMP #1 ON
EL. 24.10	PUMPS OFF

- ITEM AND MATERIAL LEGEND:
- 1 FLYGT SUBMERSIBLE PUMP MODEL NP 3301 HT3-464 DESIGN POINT: 2100 GPM @ 90 TDH (NO STATIONS ON) AND 1300 GPM @ 143 TDH (ALL STATIONS ON). PUMP TO BE PROVIDED BY MANATEE COUNTY
 - 2 BPIU 6" BASE ELBOW
 - 3 HDPE FLANGE ADAPTER WITH 316 STAINLESS STEEL BACKUP RING, SHOP FUSED
 - 4 FABRICATED HDPE DR 11 DIPS 8" X 6" ECCENTRIC REDUCER
 - 5 316 STAINLESS STEEL PADDED RUBBER RISER PIPE BRACKETS (SEE DETAIL ON SHEET M-5)
 - 6 8" HDPE DR 11 DIPS SPOOL PIECE
 - 7 8" HDPE DR 11 90° MOLDED BEND, DIPS
 - 8 8" SWING CHECK VALVE, FL
 - 9 8" NRS GATE VALVE, FL
 - 10 8" D.I. 90° BEND, FL
 - 11 8" D.I. TEE, FL
 - 12 8"x6" D.I. REDUCER, FL
 - 13 6" NRS GATE VALVE, FL
 - 14 6" FLG WITH ALUMINUM 6" CAMLOCK FITTING CONNECTION FOR BYPASS (SEE DETAIL ON SHEET M-5)
 - 15 8" D.I. SPOOL PIECE, FL
 - 16 8" D.I. CROSS, FL
 - 17 8" MCCROMETER ULTRA MAG UM08
 - 18 8" D.I. 45° BEND, FL
 - 19 8" D.I. SPOOL PIECE, FL X PE
 - 20 8" D.I. 90° BEND, MJ
 - 21 8" D.I. SPOOL PIECE, PE
 - 22 12"x8" D.I. ECCENTRIC REDUCER, MJ
 - 23 12" PVC C900-16 DR-18, FULLY RESTRAINED
 - 24 EXISTING 12" PLUG VALVE, FL
 - 25 EXISTING 16"x12" D.I. ECCENTRIC REDUCER, FL
 - 26 316 STAINLESS STEEL PIPE SUPPORT (SEE DETAIL ON SHEET M-5)

1A MASTER LIFT STATION PROFILE
M-2 SCALE: 3/8"=1'

No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/21/2020
SCALE	AS SHOWN
DESIGNED BY	MAS
DRAWN BY	GMB
CHECKED BY	WEW

Manatee County
FLORIDA

SOUTHEAST MLS 677E

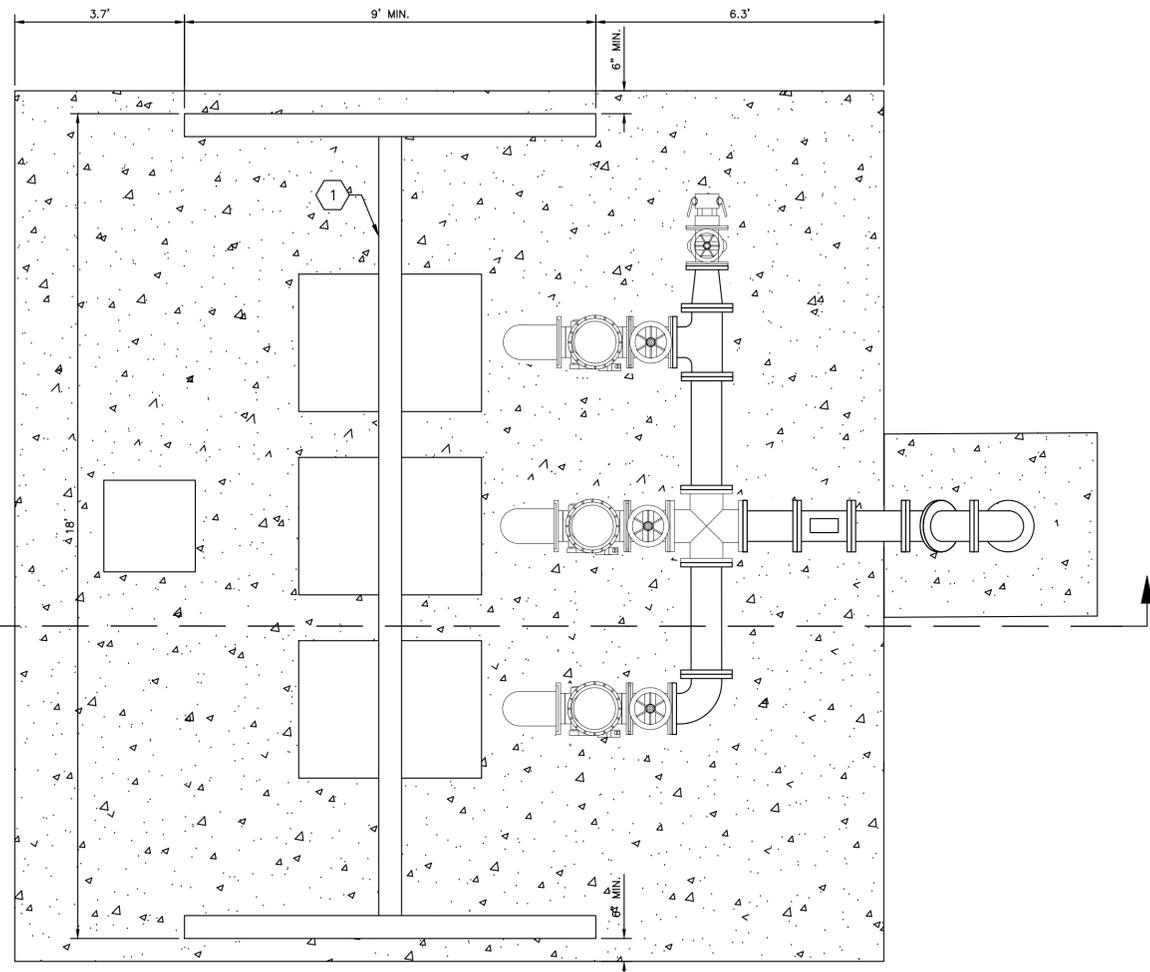
MANATEE COUNTY FL

LICENSED PROFESSIONAL	MICHAEL A. SEMAGO, P.E.
FL LICENSE NUMBER	87501

MECHANICAL SECTION

SHEET NUMBER	M-3
--------------	-----

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reference on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

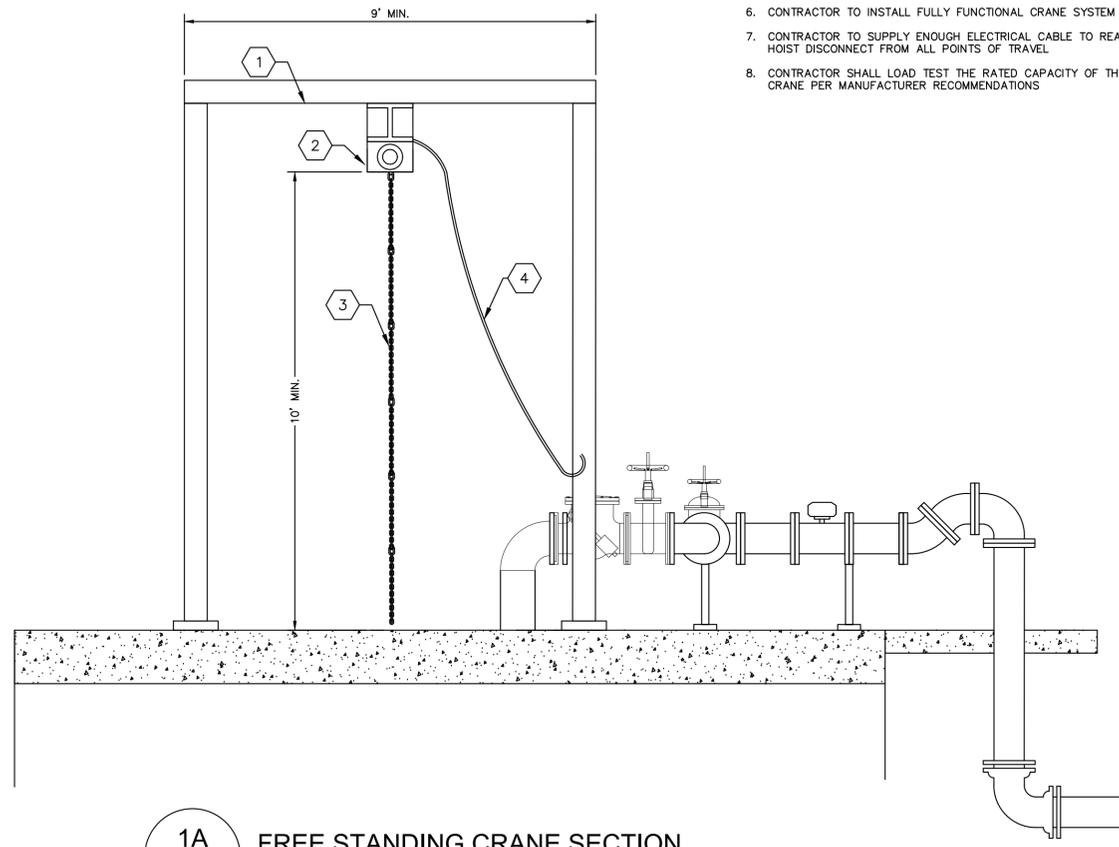


1A
M-4

1
M-4 **FREE STANDING CRANE PLAN**
SCALE: 1/2"=1'

- ITEM AND MATERIAL LEGEND:
- ① MONO RAIL CRANE SYSTEM BY J. HERBERT CORP. OR MATERIAL HANDLING SYSTEMS INC. (MHS)
 - ② LIFTING MOTOR W/ MOTORIZED TROLLEY, MODEL BY HARRINGTON OR APPROVED EQUAL WITH A MINIMUM LIFTING CAPACITY OF 1.5 TONS
 - ③ NICKEL PLATED STEEL GRADE 80, MIN. 50 LF SUPPLIED WITH CANVAS CHAIN CONTAINER
 - ④ PENDANT CORD, MIN. 10 LF
- NOTE:

1. ALL CRANE STRUCTURAL COMPONENTS SHALL BE DESIGNED, SIGNED AND SEALED BY PROFESSIONAL ENGINEER FROM MANUFACTURER
2. ALL CRANE COMPONENTS SHALL HAVE AN OUTDOOR AND HYDROGEN SULFIDE CORROSION RESISTANT ACRYLIC ENAMEL PAINT FINISH
3. ALL ELECTRICAL EQUIPMENT SHALL BE IP55 RATED FOR OUTDOOR ENVIRONMENT USE
4. CONTRACTOR TO INSTALL CRANE AND COMPONENTS PER MANUFACTURER RECOMMENDATION
5. CONTRACTOR TO COORDINATE WITH MANUFACTURER FOR BOLT PATTERN TEMPLATES AND ANCHOR BOLTS
6. CONTRACTOR TO INSTALL FULLY FUNCTIONAL CRANE SYSTEM
7. CONTRACTOR TO SUPPLY ENOUGH ELECTRICAL CABLE TO REACH HOIST DISCONNECT FROM ALL POINTS OF TRAVEL
8. CONTRACTOR SHALL LOAD TEST THE RATED CAPACITY OF THE CRANE PER MANUFACTURER RECOMMENDATIONS



1A
M-4 **FREE STANDING CRANE SECTION**
SCALE: 1/2"= 1'

No.	REVISIONS	DATE	BY

Kimley >> Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/21/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY GMB
CHECKED BY WEW

Manatee County
FLORIDA

SOUTHEAST MLS 677E

MANATEE COUNTY

LICENSED PROFESSIONAL
MICHAEL A. SEMAGO, P.E.
FL LICENSE NUMBER 87501

WET WELL CRANE DETAILS

SHEET NUMBER
M-4

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

MECHANICAL SYMBOL LIST

(NOTE: ALL OF THE SYMBOLS INDICATED BELOW MAY NOT APPEAR ON THIS PROJECT)

	RL	REFRIGERANT LIQUID PIPING	DB	DRY BULB TEMPERATURE
	RS	REFRIGERANT SUCTION PIPING	DL	DOOR LOUVER
	U	UNION	DN	DOWN
	P.D.	PIPING TEE DOWN	(E)	EXISTING
	P.U.	PIPING TEE UP	EAT	ENTERING AIR TEMPERATURE
	P.U.	PIPING ELBOW UP	EDB	ENTERING DRY BULB
	P.D.	PIPING ELBOW DOWN	°F	DEGREES FARENHEIT
		BRANCH - TOP CONNECTION	LAT	LEAVING AIR TEMPERATURE
		BRANCH - BOTTOM CONNECTION	MAX	MAXIMUM
	OR	ARROW INDICATES DIRECTION OF FLOW	MBH	BRITISH THERMAL UNITS PER HOUR (THOUSANDS)
	P.O.C.	POINT OF CONNECTION - NEW ITEMS TO EXISTING ITEMS	MIN	MINIMUM
		MECHANICAL EQUIPMENT INDICATED (SEE SCHEDULE)	(N)	NEW
	T.	THERMOSTAT	S.E.E.R.	SEASONAL ENERGY EFFICIENCY RATIO
	AFF	ABOVE FINISHED FLOOR	T	TEMPERATURE
	AFG	ABOVE FINISHED GRADE	TYP	TYPICAL
	BTUH	BRITISH THERMAL UNITS PER HOUR	WB	WET BULB TEMPERATURE
	CFM	CUBIC FEET PER MINUTE		

SPLIT SYSTEM SCHEDULE

CU	OUTDOOR UNIT										FC	INDOOR UNIT				ELECTRICAL	
	MANUFACTURER	MODEL	AMBIENT DESIGN (°F DB/WB)	OPERATING WEIGHT (LBS)	SEER	HSPF	ELECTRICAL			MANUFACTURER		MODEL	AIRFLOW (CFM)	OPERATING WEIGHT (LBS)	TOTAL CAPACITY (MIN - MAX MBH)		TOTAL CAPACITY (MIN - MAX MBH)
							VOLTS/Hz	MCA	MOC								
1	DAIKIN	FXA24NH7-BS	118/65	151	21.4	12.2	230/1/60	19	26	1	DAIKIN	PKA-A24KA7	775	21	3.0 - 13.8	10 - 24	FED FROM CU-1
2	DAIKIN	TUMYPO481AK43BA	115/59	271	22.6	12	230/1/60	29	44	2	DAIKIN	TPKFYP024KM142A	1942	46	24 - 48	27 - 54	FED FROM CU-2

- | | | |
|---|--|---|
| GENERAL NOTES: | STANDARD FEATURES: | OPTIONS: |
| 1. ALL CAPACITIES LISTED ARE AT 0 FEET ELEVATION | 1. REFRIGERANT SHALL BE R-410A | A. PROVIDE AND INSTALL MANUFACTURER'S PROGRAMMABLE T-STAT |
| 2. PROVIDE AND INSTALL MANUFACTURER'S REFRIGERANT LINESET | 2. INVERTER VARIABLE SPEED COMPRESSOR | B. PROVIDE MANUFACTURER'S SEACOAST COATING |
| 3. SET FAN SPEED TO MEDIUM | 3. MINIMUM LINE LENGTH OF 9.8 FEET, MAX LINE LENGTH OF 49.2 FEET WITH NO ADDITIONAL REFRIGERANT REQUIRED, AND MAX ELEVATION OF 23 FEET | |
| 4. MECHANICAL CONTRACTOR TO INSTALL WIRING FROM CUs TO FCs. | | |

No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/16/2020
SCALE AS SHOWN
DESIGNED BY PMS
DRAWN BY GMB
CHECKED BY WEW



SOUTHEAST MLS 677E

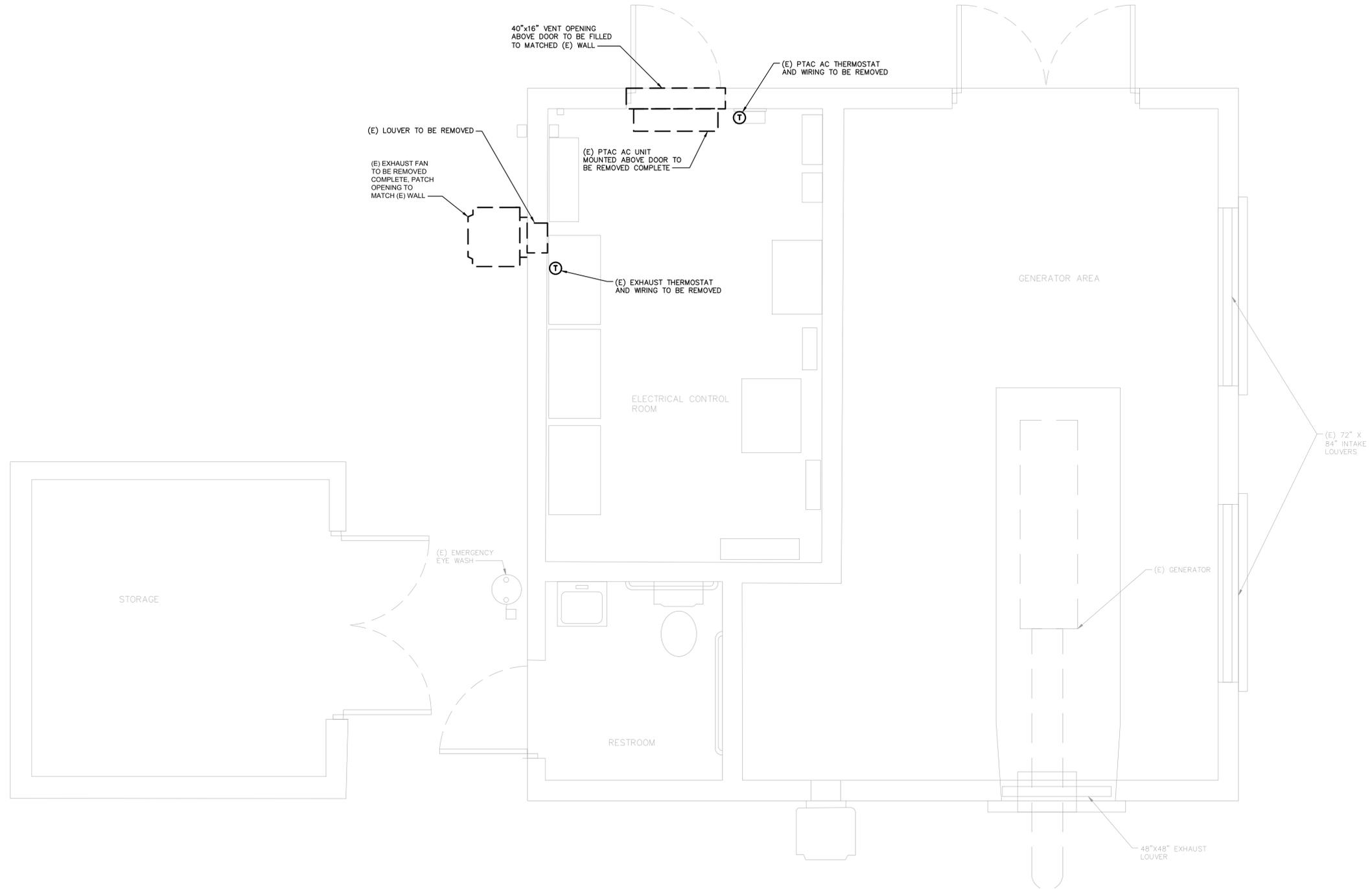
MANATEE COUNTY FL

LICENSED PROFESSIONAL
PETER M. SYNTAX, P.E.
FL LICENSE NUMBER 74259
DATE:

HVAC ABBREVIATIONS AND SCHEDULES

SHEET NUMBER
M-6

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



No.	REVISIONS	DATE	BY

Kimley»Horn
 © 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/16/2020
SCALE AS SHOWN
DESIGNED BY PMS
DRAWN BY GMB
CHECKED BY WEW

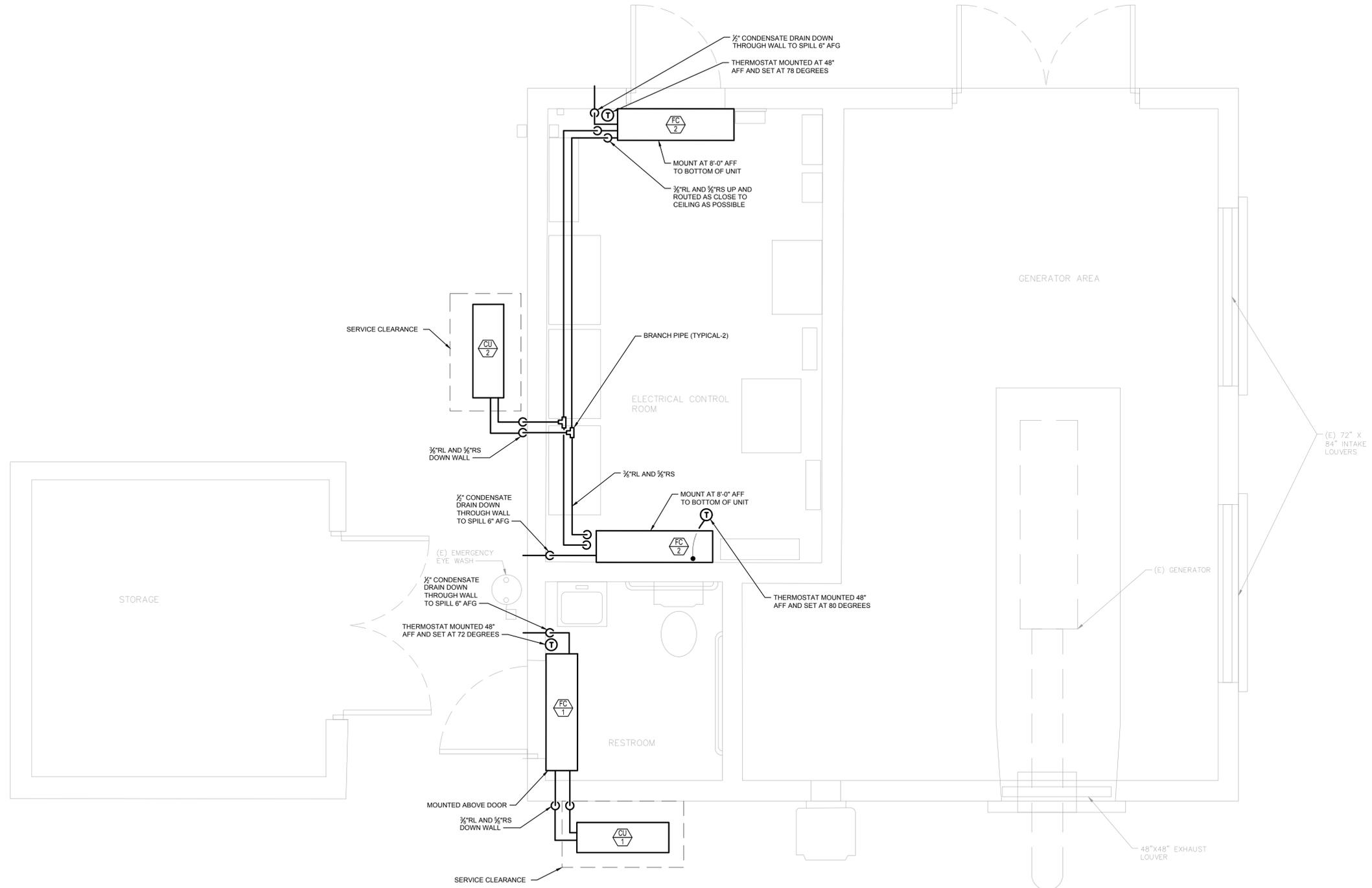

SOUTHEAST MLS 677E
 MANATEE COUNTY FL

LICENSED PROFESSIONAL
PETER M. SYNTAX, P.E.
FL LICENSE NUMBER 74259
DATE:

HVAC DEMOLITION PLAN

SHEET NUMBER
M-7

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/16/2020
SCALE	AS SHOWN
DESIGNED BY	PMS
DRAWN BY	GMB
CHECKED BY	WEW

Manatee County
 FLORIDA

SOUTHEAST MLS 677E

MANATEE COUNTY

LICENSED PROFESSIONAL

PETER M. SYNTAX, P.E.

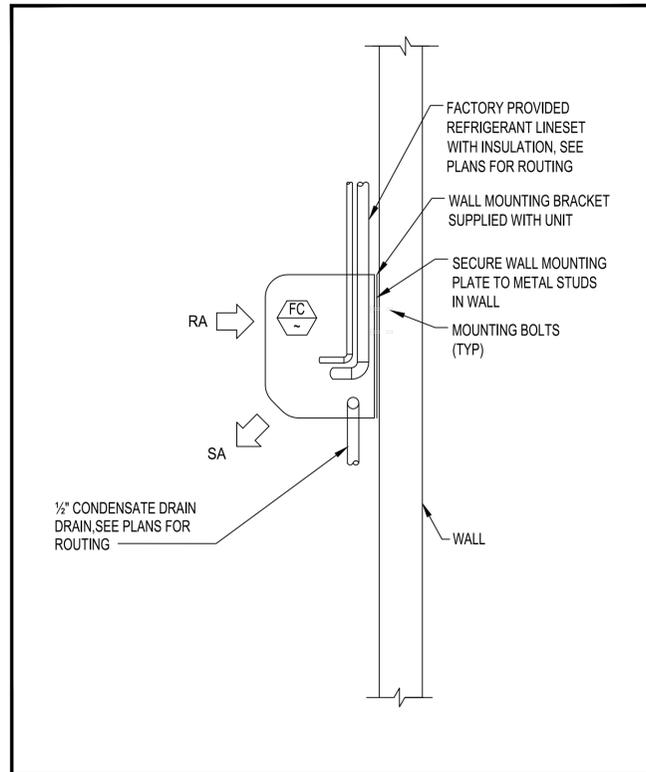
FL LICENSE NUMBER
 74259

HVAC FLOOR PLAN

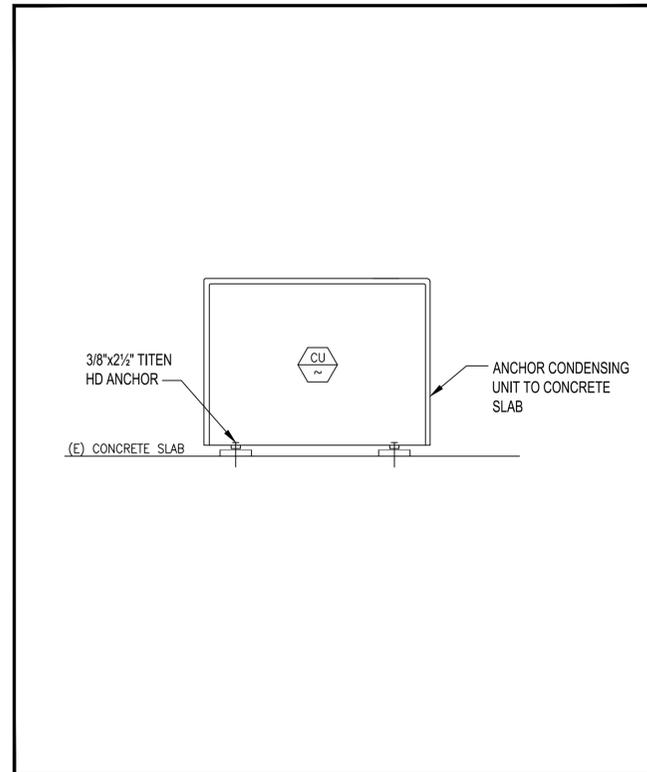
SHEET NUMBER

M-8

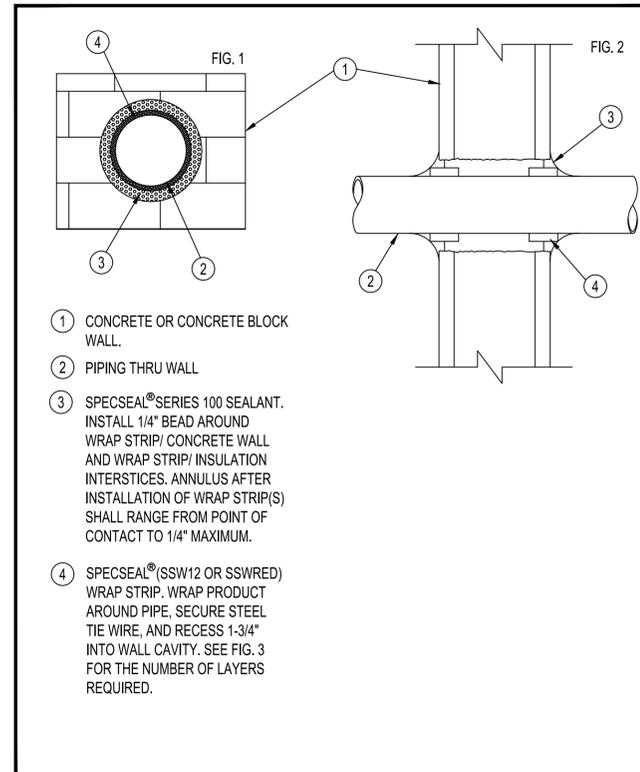
This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



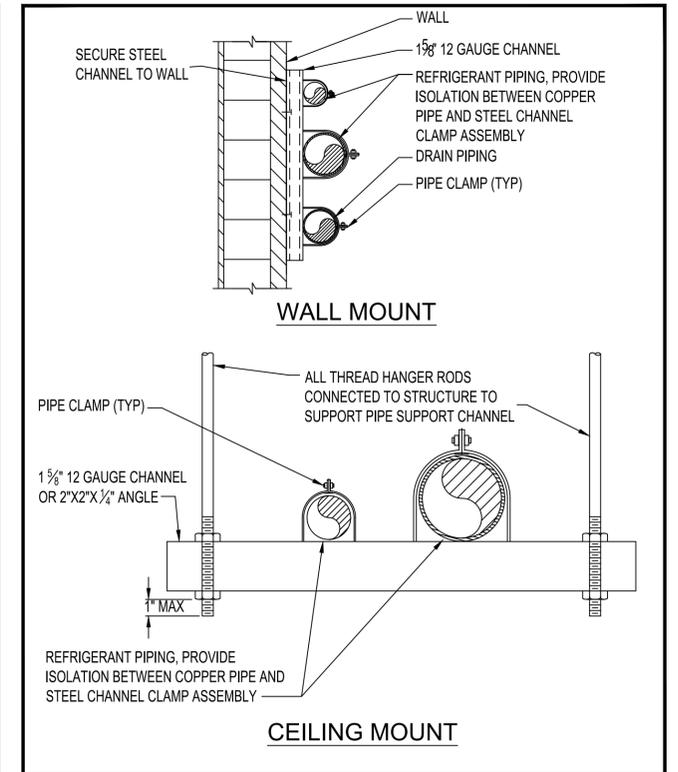
1 INDOOR FAN COIL UNIT MOUNTING DETAIL
M-9 SCALE: NONE



2 CONDENSING UNIT MOUNTING DETAIL
M-9 SCALE: NONE



3 PIPING THRU WALL DETAIL
M-9 SCALE: NONE



4 LINESET SUPPORT DETAIL
M-9 SCALE: NONE

No.	REVISIONS	DATE	BY

Kimley & Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/16/2020
SCALE AS SHOWN
DESIGNED BY PMS
DRAWN BY GMB
CHECKED BY WEW

Manatee County
FLORIDA

SOUTHEAST MLS 677E

MANATEE COUNTY FL

LICENSED PROFESSIONAL
PETER M. SYNTAX, P.E.
FL LICENSE NUMBER 74259
DATE:

HVAC DETAILS

SHEET NUMBER
M-9

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Release of and improper reliance on this document without written authorization and depiction by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

STRUCTURAL NOTES

1. GENERAL:

- (A) PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE. CONTRACTOR SHALL PROTECT THE WORK, ADJACENT PROPERTY, AND THE PUBLIC. CONTRACTOR IS SOLELY RESPONSIBLE FOR DAMAGE OR INJURY DUE TO HIS ACT OR NEGLIGENCE.
- (B) THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY AND CONSTRUCTION PROCEDURES.
- (C) PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS, FIELD VERIFY ALL DIMENSIONS IN THE DRAWINGS AND DETAILS AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
- (D) REFER TO THE ENGINEER FOR INSTRUCTION FOR ANY DIMENSION NOT GIVEN ON DRAWINGS. SCALING OF DRAWINGS SHALL NOT BE USED TO OBTAIN OR VERIFY ANY DIMENSION SHOWN ON THE DRAWINGS.

2. CONCRETE:

- (A) ALL CONCRETE MATERIALS, PLACING AND HANDLING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318 ACI 301.
- (B) ALL STRUCTURAL CONCRETE SHALL HAVE THE FOLLOWING MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI (UNLESS OTHERWISE NOTED).
- (C) PROVIDE 3" CONCRETE COVER OVER REINFORCING BARS EXCEPT AS OTHERWISE NOTED.
- (D) FORM TIES AND REINFORCING BAR SUPPORTS SHALL BE OF NON-CORROSIVE MATERIAL INCLUDING, BUT NOT LIMITED TO, FIBERGLASS, PLASTIC, AND/OR PRECAST CONCRETE MEETING THESE SPECIFICATIONS.
- (E) CONCRETE FINISHES:
 - 1. FORMED SURFACE--SMOOTH FORM FINISH PER ACI 301.
 - 2. BROOM FINISH FOR HORIZONTAL SURFACES SUCH AS SIDEWALKS, SLABS ON GRADE, AND THE TOP SLAB OF THE WET WELL.
- (F) ALL GROUT SHALL BE NON-SHRINK, NON-METALLIC.
- (G) CONCRETE SHALL BE CURED IMMEDIATELY AFTER FINISHING OPERATIONS IN ACCORDANCE WITH ONE OF THE FOLLOWING METHODS:
 - 1. APPLY A LIQUID MEMBRANE CHEMICAL CURIN FCOMPUND IN ACCORDANCE WITH ASTM C-309.
 - 2. WET CURE IN ACCORDANCE WITH ACI 301.
- (H) ALL CONCRETE CONSTRUCTION SHALL BE DONE IN THE DRY.
- (I) PROVIDE 3/4" CHAMFER ON ALL EXPOSED EDGES UNLESS OTHERWISE NOTED.
- (J) CONCRETE SHALL BE IN ACCORDANCE WITH ASTM C94:
 - 1. TYPE II PORTLAND CEMENT - ASTM C150
 - 2. AGGREGATES (3/4" MAX.) - ASTM C33
 - 3. USE OF CALCIUM CHLORIDE IS NOT PERMITTED
 - 4. AIR ENTRAINING (4% MAX.) - ASTM C260
 - 5. WATER REDUCING - ASTM C494
 - 6. WATER - CLEAN AND POTABLE
 - 7. MAXIMUM WATER CEMENT RATIO FOR 4,000 PSI, 28-DAY COMPRESSIVE STRENGTH = 0.45
- (A) REQUIRED SLUMP: 2" TO 4"
- (B) CONTRACTOR IS RESPONSIBLE FOR THE PROPER DESIGN AND CONSTRUCTION OF ALL FORMWORK AND SHORING. DESIGN SHALL BE PERFORMED BY A LICENSED FLORIDA PROFESSIONAL ENGINEER.
- (M) A QUALIFIED TESTING LABORATORY SHALL BE RETAINED TO PERFORM THE FOLLOWING CONCRETE TESTS:
 - 1. CYLINDER STRENGTH TESTS - ASTM C39. ONE SET OF FIVE CYLINDERS FOR EACH 50 CUBIC YARDS OR FRACTION THEREOF PLACED. TEST ONE AT 3 DAYS, ONE AT 7 DAYS, TWO AT 28 DAYS, AND HOLD ONE.
 - 2. SLUMP TESTS - ASTM C143
- (A) ONE COPY OF ALL TEST REPORTS SHALL BE SENT DIRECTLY TO OWNER, ENGINEER, AND CONTRACTOR.
- (O) CONCRETE SHALL BE PLACED WITHIN 90 MINUTES OF BATCH TIME
- (P) ALL CONCRETE SHALL BE CONSOLIDATED IN PLACE USING INTERNAL VIBRATORS
- (Q) SUBMITTALS:
 - 1. SUBMIT PROPOSED CONCRETE MIX DESIGN PRIOR TO CONSTRUCTION
 - 2. SUBMIT DETAILED SHOP DRAWINGS OF REINFORCING BARS SHOWING NUMBER, SIZE, AND LOCATION. INCLUDE BAR LISTS AND BEND DIAGRAMS.

3. REINFORCEMENT:

- (A) REINFORCING STEEL SHALL BE A.S.T.M. A-615 WITH SUPPLEMENT, GRADE 60: MINIMUM WORKING STRESS - 24,000 PSI.
- (B) ALL REINFORCEMENT SHALL BE UNCOATED (BLACK).
- (C) ALL DIMENSIONS PERTAINING TO LOCATION OF REINFORCING BARS ARE TO CENTERLINE OF BARS EXCEPT WHERE THE CLEAR DIMENSION IS SHOWN TO FACE OF CONCRETE.
- (D) ACI STANDARD HOOKS SHALL BE USED UNLESS OTHERWISE NOTED.
- (E) ALL LAP AND SPLICE LENGTHS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318 AND CRSI STANDARD PRACTICES, EXCEPT AS OTHERWISE NOTED.

4. FOUNDATIONS:

- (A) ASSUMED SOIL BEARING PRESSURE = 2,000 PSF. CONTRACTOR'S TESTING LABORATORY SHALL CONFORM SOIL PREPARATION PROCEDURES AND SPECIFY COMPACTION REQUIREMENTS NECESSARY TO OBTAIN THE DESIGN SOIL BEARING PRESSURE.

DESIGN CRITERIA:

- CODE: 2017 FLORIDA BUILDING CODE WITH SUPPLEMENTS
 LIVE LOADS:
 A. WET WELL TOP SLAB 300 PSF, AASHTO H5 VEHICLE (MAINTENANCE VEHICLE)

No.	REVISIONS	DATE	BY


 © 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 0000696

KHA PROJECT 148400053
DATE 9/16/2020
SCALE AS SHOWN
DESIGNED BY SES
DRAWN BY GMB
CHECKED BY WEW

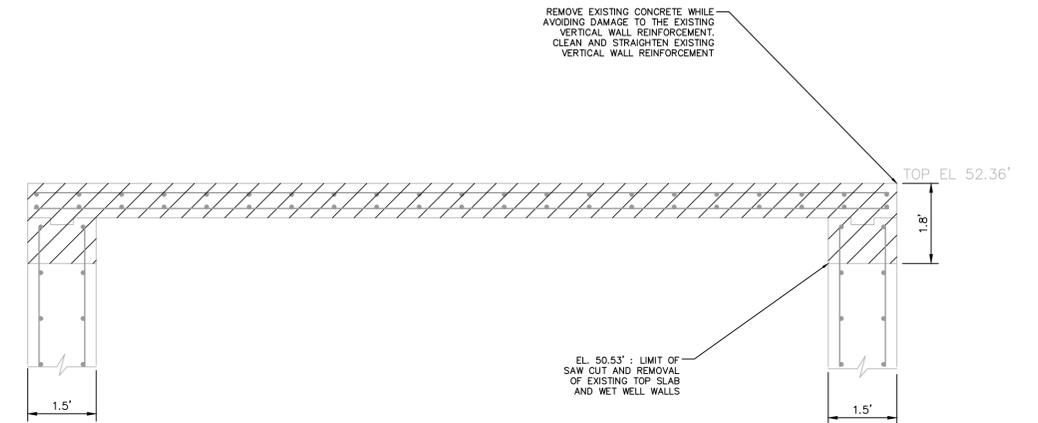
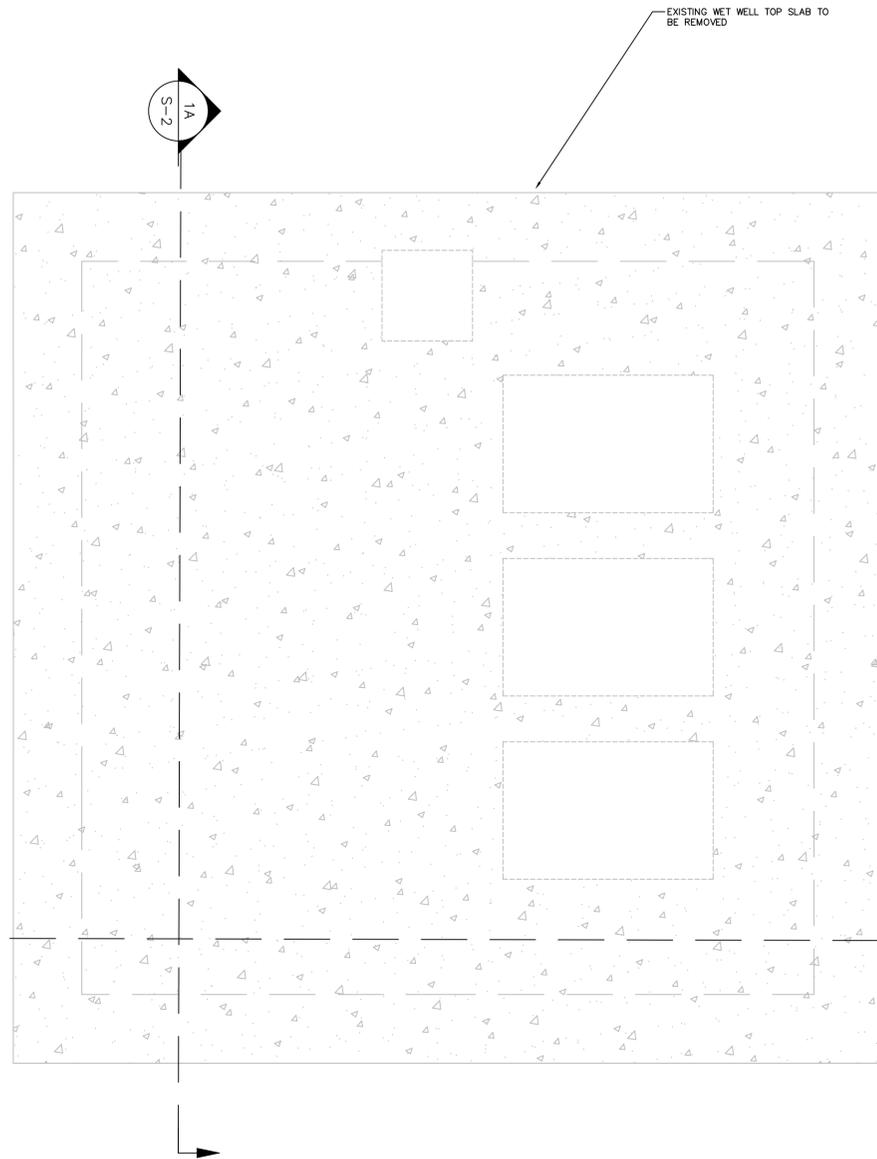

 SOUTHEAST MLS 677E
 MANATEE COUNTY FL

LICENSED PROFESSIONAL
SETH E. SCHMID, P.E.
FL LICENSE NUMBER 54640
DATE:

STRUCTURAL NOTES

SHEET NUMBER
S-1

This document, together with the concepts and designs presented herein, is an instrument of service in intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and disposition by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



1
S-2 EXISTING WET WELL TOP SLAB DEMOLITION PLAN
SCALE: 1/2"=1'

1A
S-2 EXISTING WET WELL TOP SLAB DEMOLITION SECTION
SCALE: 1/2"=1'

No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/16/2020
SCALE	AS SHOWN
DESIGNED BY	SES
DRAWN BY	GMB
CHECKED BY	WEW

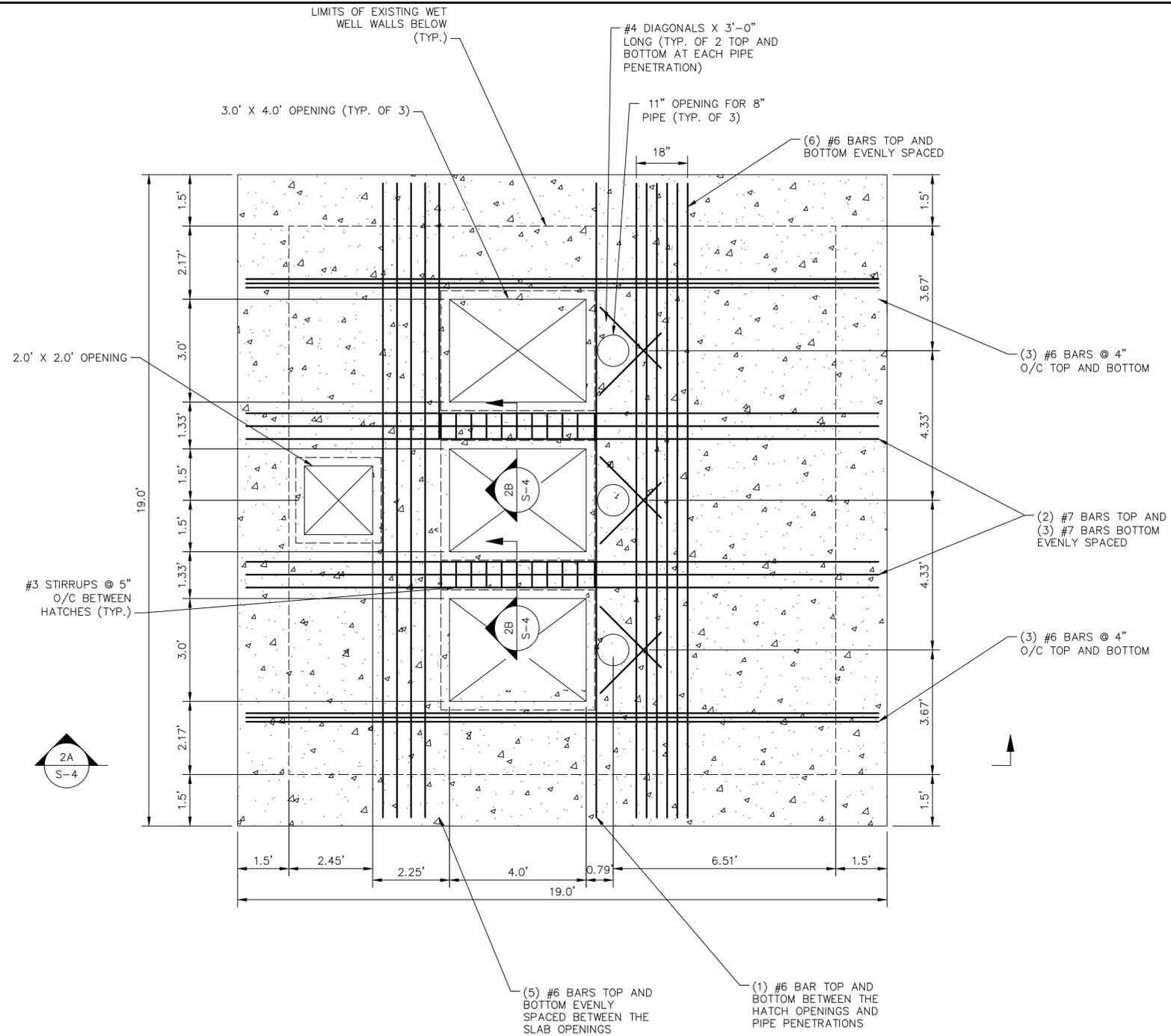

 SOUTHEAST MLS 677E
 MANATEE COUNTY FL

LICENSED PROFESSIONAL
SETH E. SCHMID, P.E.
FL LICENSE NUMBER
54640

STRUCTURAL DEMOLITION

SHEET NUMBER
S-2

This document, together with the concepts and designs presented herein, is an instrument of service in intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and disposition by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



2 WET WELL TOP SLAB PLAN
S-3 SCALE: NTS

NOTE:
MAIN SLAB REINFORCEMENT NOT SHOWN FOR CLARITY. SEE TYPICAL WET WELL TOP SLAB SECTION FOR TYPICAL SLAB REINFORCEMENT (SHEET S-4).

No.	REVISIONS	DATE	BY

Kimley»Horn
 © 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/16/2020
SCALE	AS SHOWN
DESIGNED BY	SES
DRAWN BY	GMB
CHECKED BY	WEW

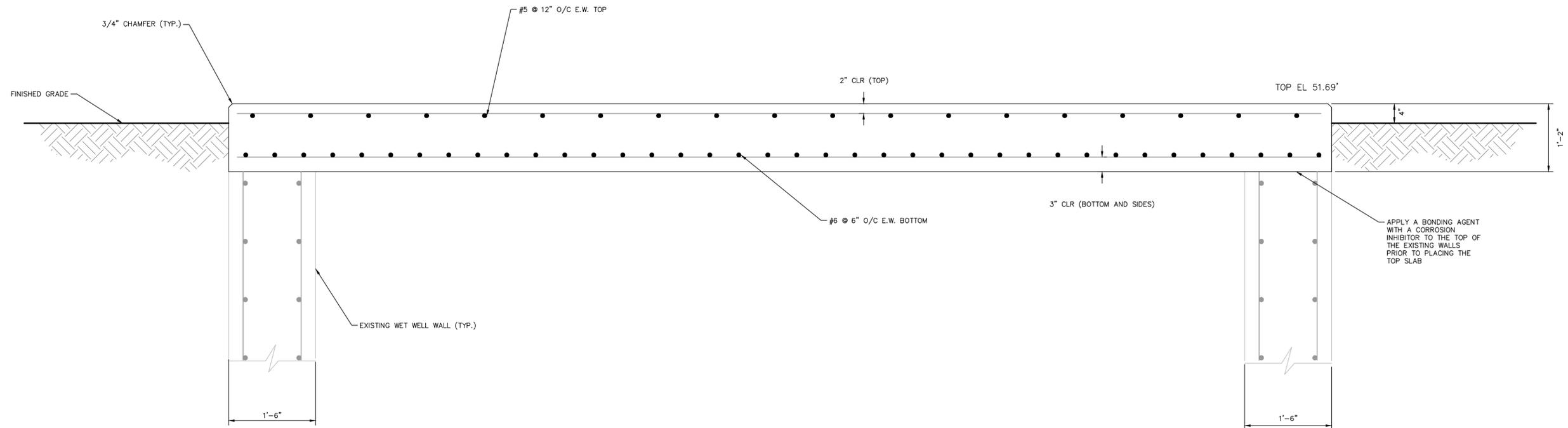
Manatee County
 SOUTHEAST MLS 677E
 FL DATE:

LICENSED PROFESSIONAL
 SETH E. SCHMID, P.E.
 FL LICENSE NUMBER
 54640

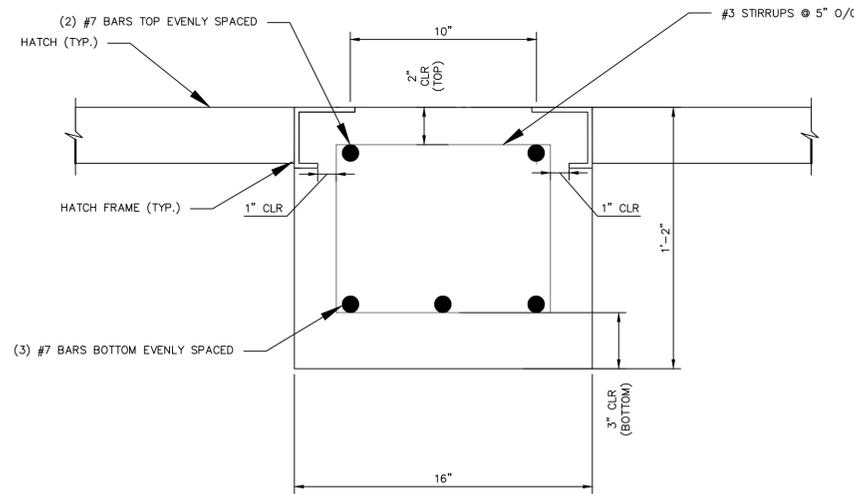
WET WELL TOP SLAB PLAN

SHEET NUMBER
S-3

This document, together with the concepts and designs presented herein, is an instrument of service in intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and depiction by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



2A TYPICAL WET WELL TOP SLAB SECTION
S-3 SCALE: 1/2"=1'



2B WET WELL SECTION BETWEEN HATCH OPENINGS
S-3 SCALE: NTS

No.	REVISIONS	DATE	BY

Kimley»Horn
 © 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 0000696

KHA PROJECT	148400053
DATE	9/16/2020
SCALE	AS SHOWN
DESIGNED BY	SES
DRAWN BY	GMB
CHECKED BY	WEW

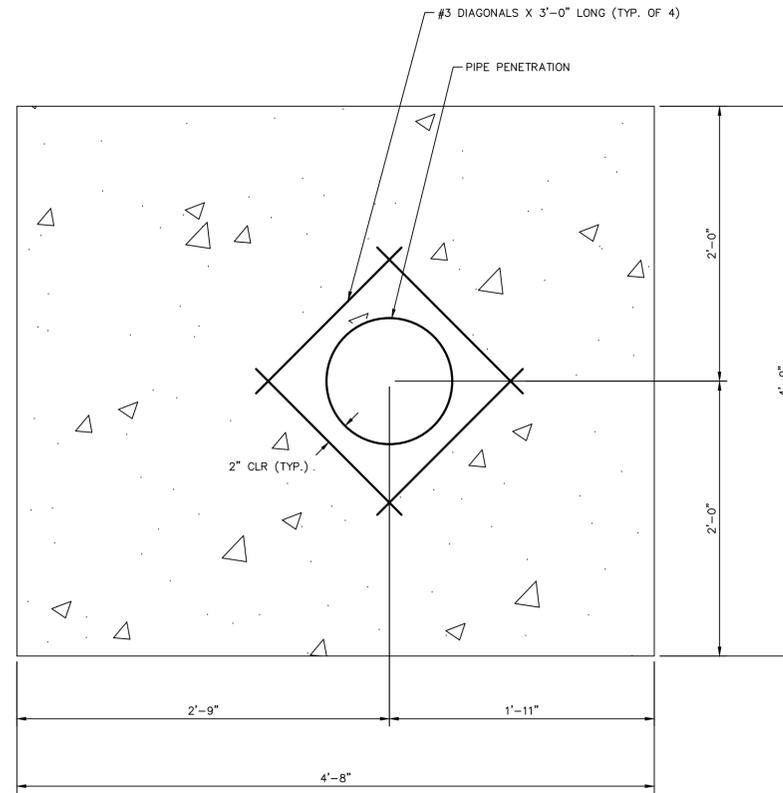
Manatee County
 SOUTHEAST MLS 677E
 MANATEE COUNTY FL

LICENSED PROFESSIONAL	SETH E. SCHMID, P.E.
FL LICENSE NUMBER	54640

WET WELL TOP SLAB SECTION

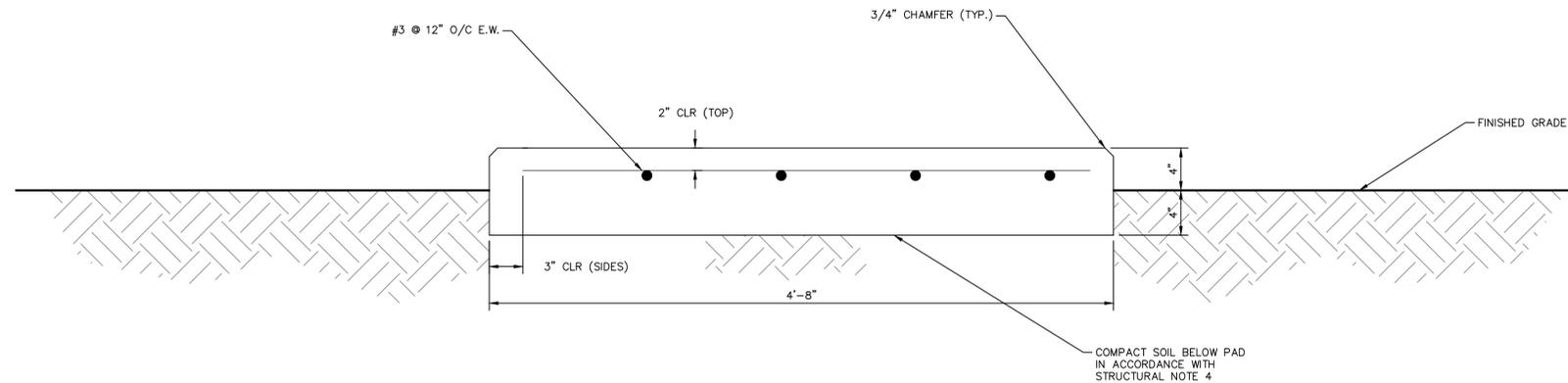
SHEET NUMBER	S-4
--------------	-----

This document, together with the concepts and designs presented herein, is an instrument of service in intended only for the specific purpose and client for which it was prepared. Release of and improper reliance on this document without written authorization and depiction by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



1 MECHANICAL ASSEMBLY SLAB PLAN
S-5 SCALE: NTS

NOTE:
SEE MECHANICAL ASSEMBLY SLAB TYPICAL SECTION FOR SLAB REINFORCEMENT



2 MECHANICAL ASSEMBLY SLAB TYPICAL SECTION
S-5 SCALE: NTS

No.	REVISIONS	DATE	BY

Kimley >> Horn
 © 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 0000696

KHA PROJECT	148400053
DATE	9/21/2020
SCALE	AS SHOWN
DESIGNED BY	SES
DRAWN BY	GMB
CHECKED BY	WEW

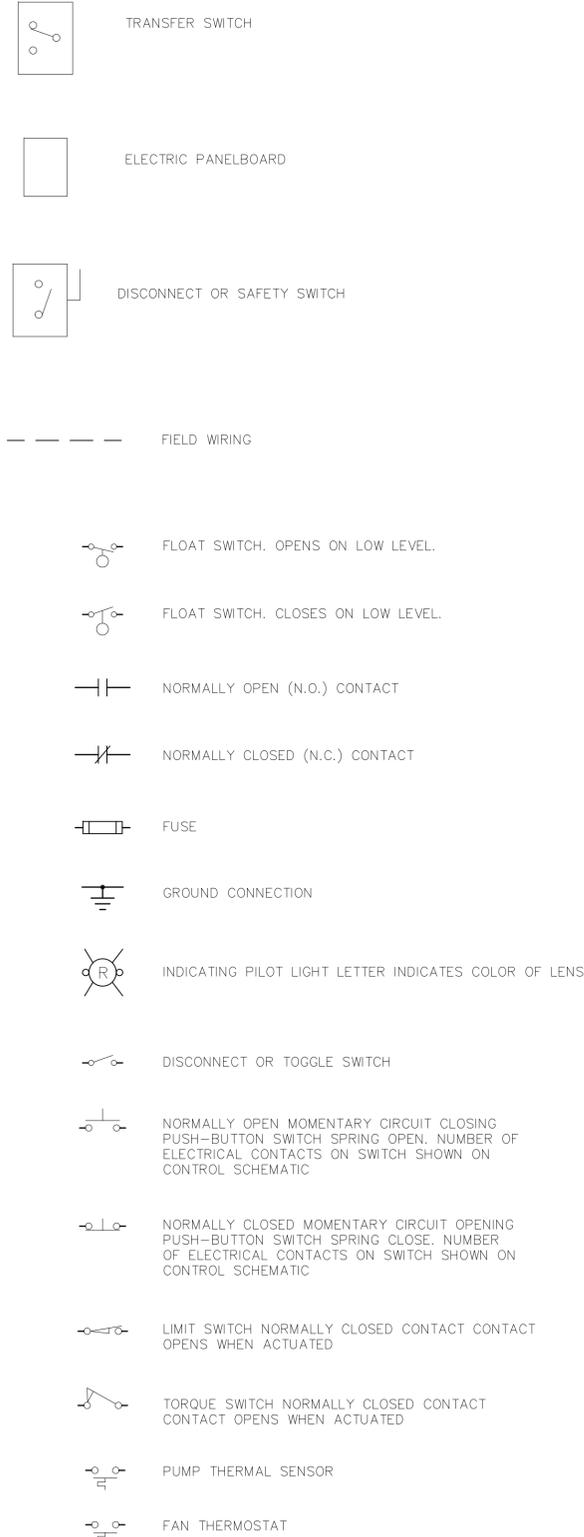
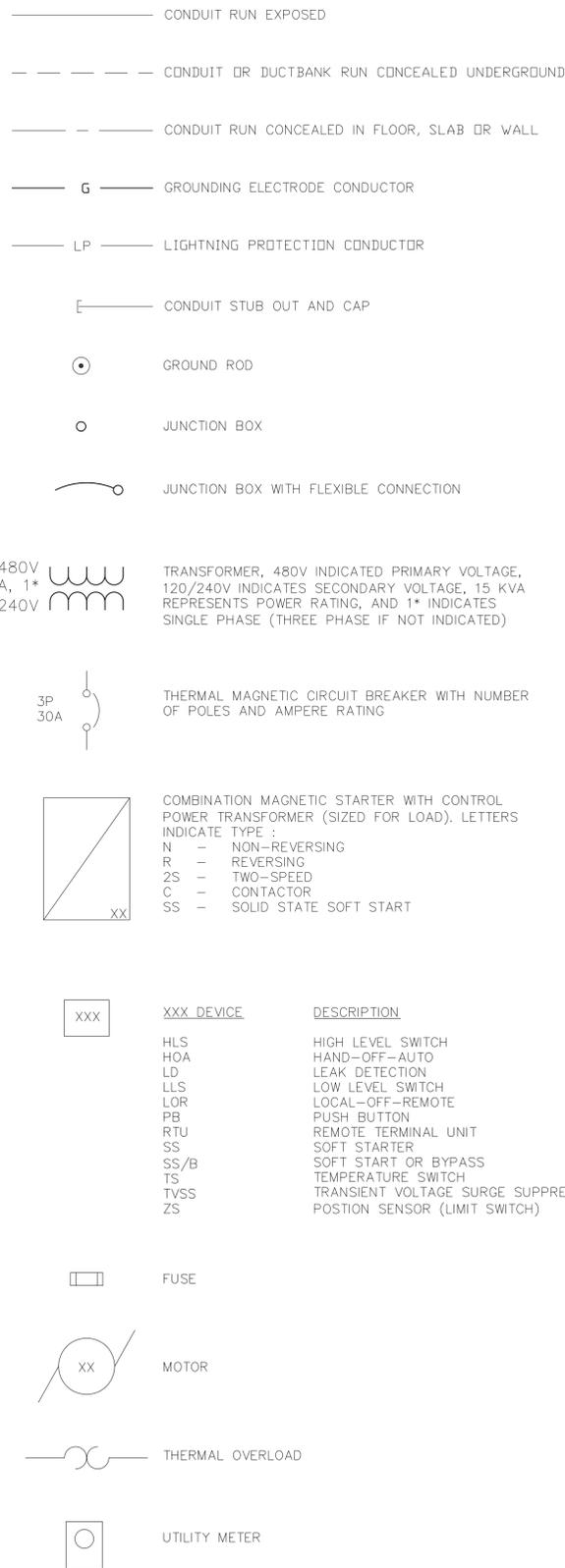
Manatee County
 SOUTHEAST MLS 677E
 MANATEE COUNTY

LICENSED PROFESSIONAL	SETH E. SCHMID, P.E.
FL LICENSE NUMBER	54640
FL DATE:	

MECHANICAL ASSEMBLY SLAB

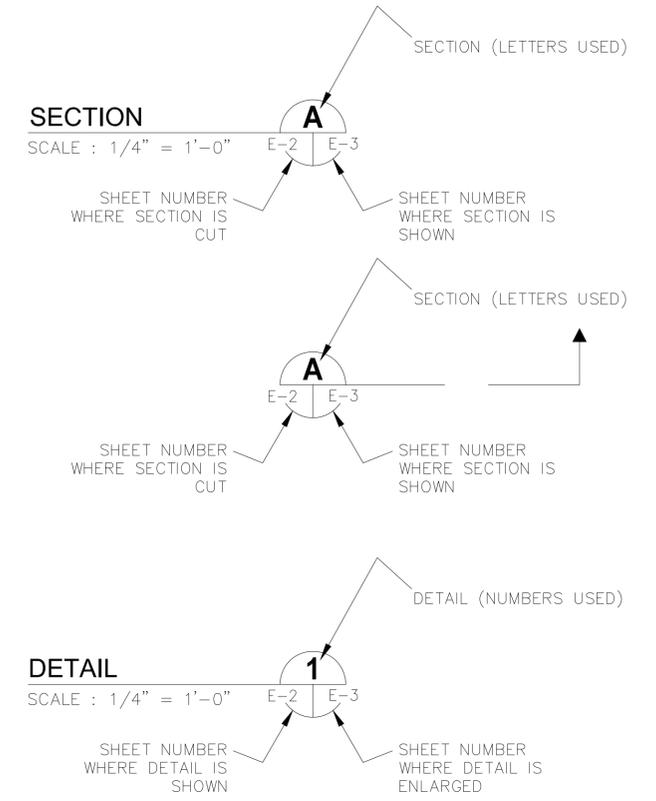
SHEET NUMBER	S-5
--------------	-----

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



ELECTRICAL LEGEND		
SYMBOL	DESCRIPTION	MOUNTING/REMARKS
	8' LED STRIP LIGHTING FIXTURE (1)	CEILING MOUNT
	LED WALLPACK LIGHTING FIXTURE (1)	EXTERIOR WALL
	LED EMERGENCY FLOOD LIGHTING FIXTURE (1)	WALL MOUNTED
	LED EXIT SIGN FIXTURE (1)	SURFACE UNIVERSAL MOUNT
	SWITCH: SINGLE-POLE OR AS NOTED, 20A, 120/277VAC	TOP 48" AFF OR AS NOTED
	SWITCH: THREE-WAY, 20A, 120/277VAC	TOP 48" AFF OR AS NOTED
	SWITCH: 4-WAY, 20A, 120/277VAC	TOP 48" AFF OR AS NOTED
	DUPLEX RECEPTACLE: 20A, 125VAC	TOP 20" AFF OR AS NOTED
	COUNTER-TOP DUPLEX RECEPTACLE: 20A, 125VAC	TOP 44" AFF OR AS NOTED
	QUAD RECEPTACLE: 20A, 125VAC	TOP 20" AFF OR AS NOTED
	TELEPHONE/DATA OUTLET (2)	TOP 20" AFF OR AS NOTED
	ELECTRIC PANEL	REFER TO PANEL SCHEDULE
	FIRE ALARM PANEL	
	EQUIPMENT DISCONNECT SWITCH	
	OUTLET OR JUNCTION BOX	WIRES INDICATED AS FOLLOWS: — TWO WIRES: // THREE WIRES: /// FOUR WIRES, ETC. — NEUTRAL WIRE — ISOLATED GR. WIRE
	CARD READER	
	MAGNETIC DOOR LOCK	
	SMOKE DETECTOR	
	JUNCTION BOX WITH FLEXIBLE CONNECTION	
	CONDUIT RUN CONCEALED IN CEILING SPACE OR WALL	PROVIDE 2#12 THWN CU. IN 1/2" C. UNLESS OTHERWISE NOTED AND EQUIPMENT GROUND WIRE (NOT INDICATED) IN ALL POWER AND LIGHTING RACEWAYS.
	CONDUIT RUN CONCEALED IN FLOOR OR UNDERGROUND	
	CONDUIT RUN EXPOSED	
	HOME RUN TO PANEL/CIRCUIT(S) INDICATED	

EXAMPLE OF SECTION CUT AND DETAIL



ABBREVIATIONS:

A	AMPS
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
C	CONDUIT
DIA	DIAMETER
EX	EXISTING
ELEC	ELECTRICAL
GFI	GROUND FAULT INTERRUPTER
GND	GROUNDING CONDUCTOR
HP	HORSEPOWER
HZ	HERTZ
IG	ISOLATED GROUND
KVA	KILOVOLT AMPERES
KW	KILOWATTS
MAX	MAXIMUM
MIN	MINIMUM
N/A	NOT APPLICABLE
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
RECP	RECEPTACLE
RPM	REVOLUTIONS PER MINUTE
RTU	REMOTE TERMINAL UNIT
SPD	SURGE PROTECTION DEVICE
SS	STAINLESS STEEL
TYP	TYPICAL
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
XFMR	TRANSFORMER



No.	REVISIONS	DATE	BY

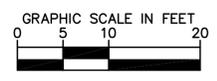
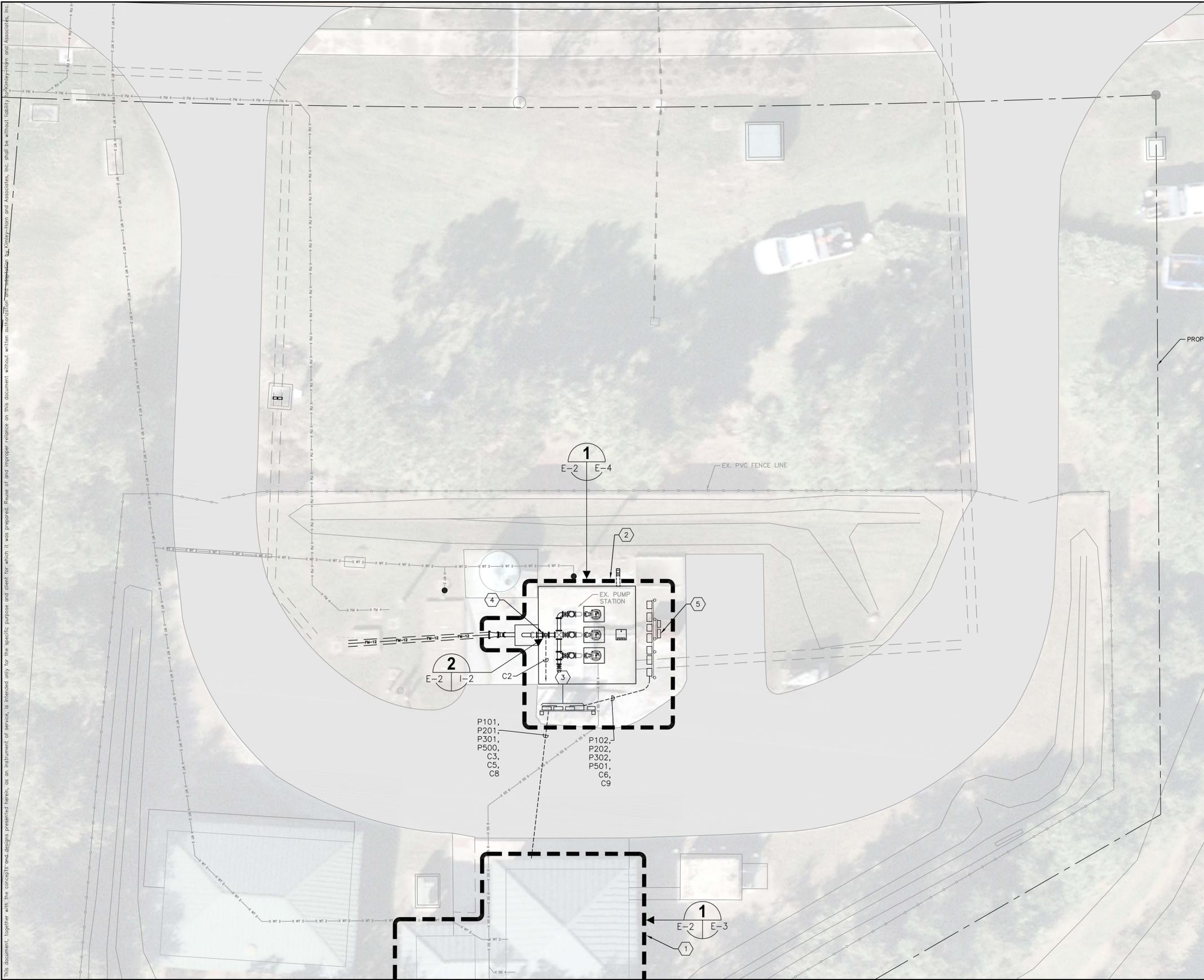
© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

SOUTHEAST MLS 677E
 MANATEE COUNTY

LICENSED PROFESSIONAL
 TIMOTHY THOMAS, P.E.
 FL LICENSE NUMBER
 47079

ELECTRICAL LEGEND AND ABBREVIATIONS

SHEET NUMBER
E-1



- KEYED NOTES:**
- ① EXISTING GENERATOR BUILDING. REFER TO SHEET E-3 FOR REQUIRED MODIFICATIONS.
 - ② PROPOSED WET WELL PAD. REFER TO SHEET E-4 FOR REQUIRED MODIFICATIONS TO INSTALL NEW EQUIPMENT RACK. CONTRACTOR TO PROVIDE AND INSTALL NEW DISCONNECTS FOR NEW PUMP MOTORS, INSTRUMENTATION JUNCTION BOX AND BUBBLER CABINET FOR DFS TBU360.
 - ③ EXISTING WET WELL EQUIPMENT RACK. CONTRACTOR SHALL REMOVE EXISTING PUMP DISCONNECTS AND REWORK CONDUIT AS REQUIRED.
 - ④ PROPOSED FLOW METER ELEMENT. REFER TO MECHANICAL PLANS FOR EXACT LOCATION. PROVIDE AND INSTALL MANUFACTURER SUPPLIED CABLES IN 1" CONDUIT TO FLOW METER CONVERTER (LOCATED IN ELECTRICAL ROOM). REFER ALSO TO DETAIL ON SHEET I-2.
 - ⑤ NEW ELECTRICAL EQUIPMENT RACK. REFER TO DETAILS ON SHEET E-6 AND E-7.

This document, together with the conceptual and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Review of any improper reliance on this document without written authorization and approval by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT
148400053
 DATE
9/4/2020
 SCALE AS SHOWN
 DESIGNED BY TDT
 DRAWN BY JLH
 CHECKED BY TDT

Manatee County
FLORIDA

SOUTHEAST MLS 677E

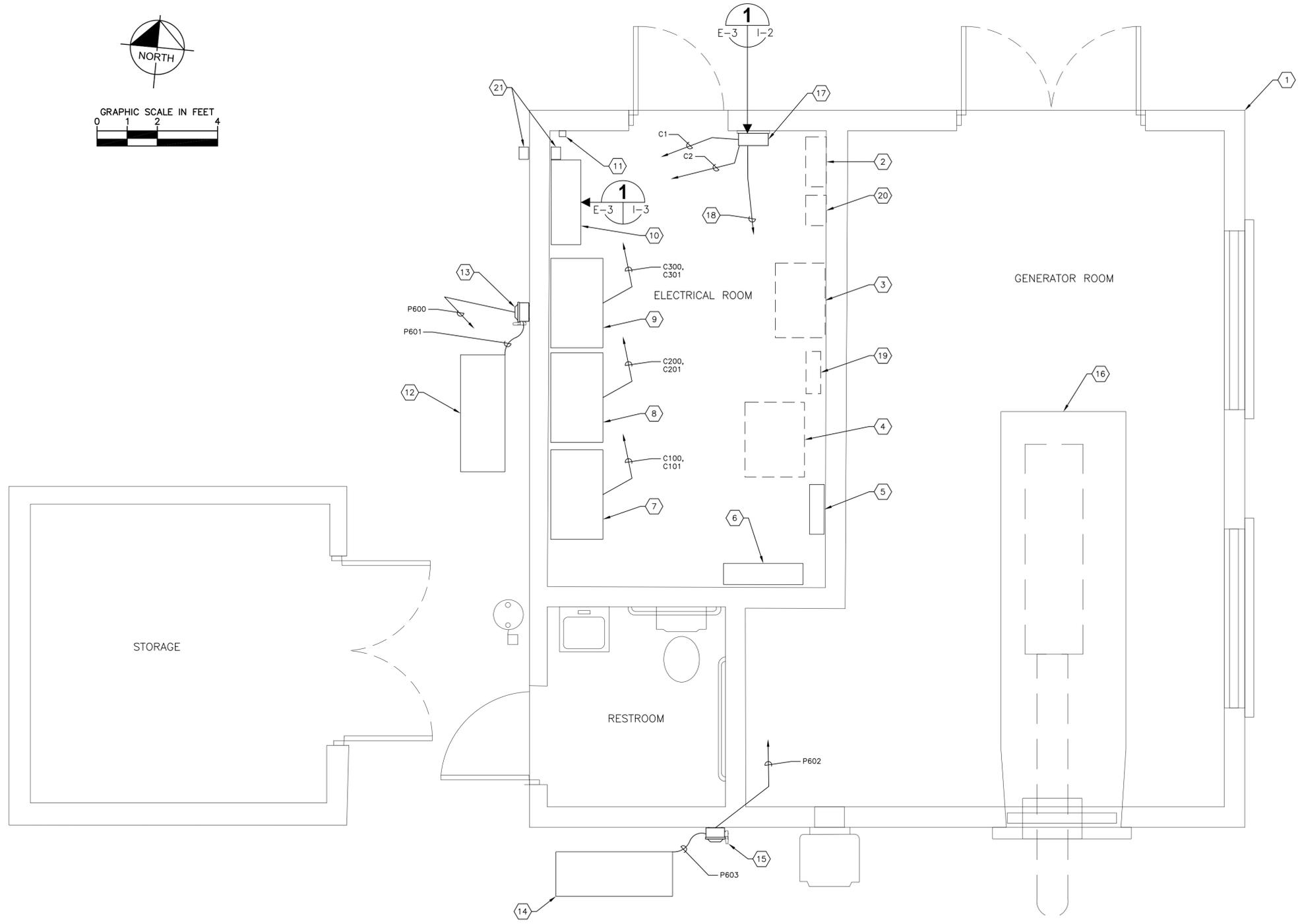
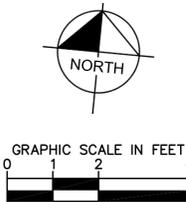
MANATEE COUNTY

LICENSED PROFESSIONAL
 TIMOTHY THOMAS, P.E.
 FL LICENSE NUMBER
47079

PROPOSED ELECTRICAL PLAN

SHEET NUMBER
E-2

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



- KEYED NOTES:**
- ① EXISTING GENERATOR BUILDING.
 - ② EXIST 600V, 800A, MAIN CIRCUIT BREAKER. NO WORK REQUIRED.
 - ③ EXISTING 480V, 800A AUTOMATIC TRANSFER SWITCH (ATS). NO WORK REQUIRED.
 - ④ EXISTING 50 KVA, 480-120/240V, 1Ø, 3-WIRE TRANSFORMER. NO WORK REQUIRED.
 - ⑤ EXISTING 120/240V, 1Ø, 3-WIRE PANELBOARD DESIGNATED 'PL' WITH 200A MAIN CIRCUIT BREAKER. CONTRACTOR TO PROVIDE AND INSTALL 2-POLE 240V, 50A CIRCUIT BREAKER FOR HVAC UNIT 'CU1' AND 2-POLE, 240V, 30A CIRCUIT BREAKER FOR HVAC UNIT 'CU2'.
 - ⑥ EXISTING 480V, 800A, 3Ø, MLO DISTRIBUTION PANELBOARD DESIGNATED 'MDP'. REFER TO SHEET E-5 FOR MODIFICATIONS REQUIRED.
 - ⑦ EXISTING VARIABLE FREQUENCY DRIVE No. 1. EXISTING 87 HP VFD TO BE REMOVED AND REPLACED WITH NEW 480V, 85 HP VFD.
 - ⑧ EXISTING VARIABLE FREQUENCY DRIVE No. 2. EXISTING 87 HP VFD TO BE REMOVED AND REPLACED WITH NEW 480V, 85 HP VFD.
 - ⑨ EXISTING VARIABLE FREQUENCY DRIVE No. 3. EXISTING 87 HP VFD TO BE REMOVED AND REPLACED WITH NEW 480V, 85 HP VFD.
 - ⑩ EXISTING DATA FLOW SYSTEMS (DFS) CONTROL PANEL TO BE REPLACED WITH NEW DFS TCU/VFD CONTROL PANEL. REFER TO SHEET I-3 FOR NEW DFS TCU/VFD CONTROL PANEL ELEVATION.
 - ⑪ EXISTING FAN THERMOSTAT TO BE REMOVED.
 - ⑫ NEW HVAC OUTDOOR UNIT DESIGNATED 'CU2' (REFER TO MECHANICAL PLANS FOR DETAILS).
 - ⑬ PROPOSED 60A, 240V, 2-POLE NON-FUSED DISCONNECT IN NEMA 4X STAINLESS STEEL ENCLOSURE FOR CU2 DISCONNECTING MEANS.
 - ⑭ NEW HVAC OUTDOOR UNIT DESIGNATED 'CU1' (REFER TO MECHANICAL PLANS FOR DETAILS).
 - ⑮ PROPOSED 30A, 240V, 2-POLE NON-FUSED DISCONNECT IN NEMA 4X STAINLESS STEEL ENCLOSURE FOR CU1 DISCONNECTING MEANS.
 - ⑯ EXISTING 300 KW GENERATOR. NO WORK REQUIRED.
 - ⑰ PROPOSED FLOW METER CONVERTER. REFER TO DETAIL ON SHEET I-2. CONTRACTOR TO COORDINATE PROPOSED FLOW METER CONVERTER LOCATION WITH EXISTING LIGHT SWITCH ON WALL.
 - ⑱ PROVIDE AND INSTALL 2-#12 + 1-#12 GND IN 3/4"C. TO PANELBOARD 'PL' FOR FLOW METER CONVERTER 120V AC POWER (P400). PROVIDE AND INSTALL NEW SINGLE-POLE, 120V 15 AMP CIRCUIT BREAKER IN PANELBOARD 'PL' TO ACCOMMODATE THE NEW BRANCH CIRCUIT.
 - ⑲ EXISTING DISCONNECT FOR PORTABLE GENERATOR CONNECTION. NO WORK REQUIRED.
 - ⑳ EXISTING DISCONNECT FOR SURGE PROTECTION DEVICE LOCATED BELOW. NO WORK REQUIRED. EXISTING SURGE PROTECTION DEVICE LOCATED BELOW DISCONNECT. NO WORK REQUIRED.
 - ㉑ EXISTING JUNCTION BOXES CONTAINING EXISTING COAXIAL CABLE FOR DFS ANTENNA. CONTRACTOR SHALL MODIFY EXISTING COAXIAL CABLE AS REQUIRED TO PROVIDE PROPER COMMUNICATIONS.

GENERATOR BUILDING FLOOR PLAN 1
 SCALE: 1/2" = 1'-0" E-2 E-3



No.	REVISIONS	DATE	BY

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/4/2020
SCALE	AS SHOWN
DESIGNED BY	TDT
DRAWN BY	JLH
CHECKED BY	TDT

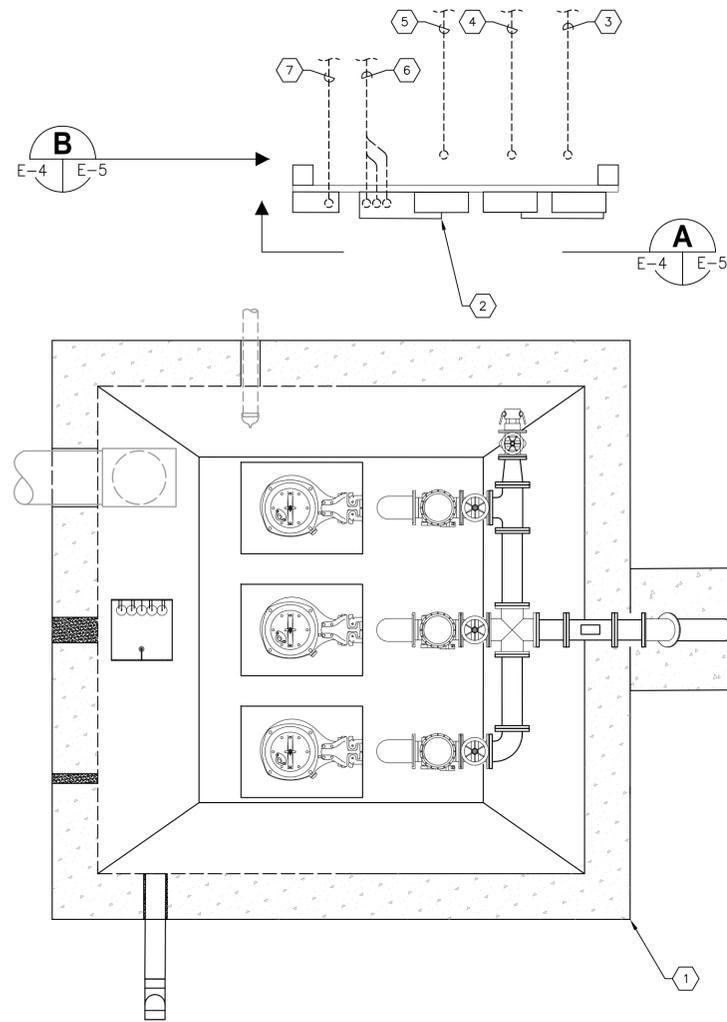
SOUTHEAST MLS 677E
 MANATEE COUNTY FL

LICENSED PROFESSIONAL	TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER	47079

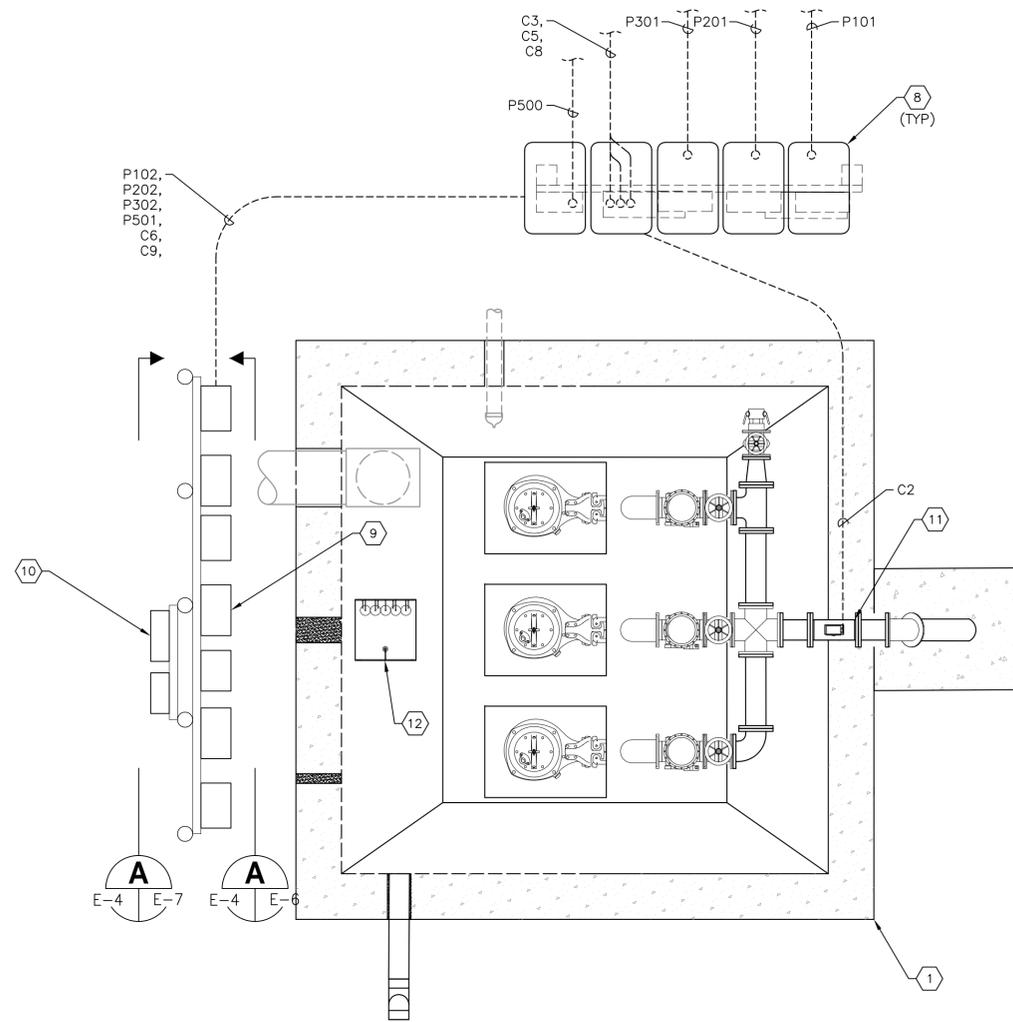
EXISTING GENERATOR BUILDING FLOOR PLAN

SHEET NUMBER	E-3
--------------	------------

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



EXISTING WET WELL PAD PLAN 1
SCALE: NOT TO SCALE
E-2 | E-3



KEYED NOTES:

- ① PROPOSED WET WELL PAD LAYOUT.
- ② EXISTING WET WELL ELECTRICAL EQUIPMENT RACK. ALL COMPONENTS ARE TO BE REMOVED OR REUSED. REFER TO DETAILS ON SHEET E-6.
- ③ EXISTING 3" CONDUIT TO EXISTING VFD #1 TO BE REUSED AFTER CLEANING WITH MANDREL. CONTRACTOR SHALL INTERCEPT EXISTING CONDUIT, CUT CONDUIT AT APPROPRIATE LOCATION AND INSTALL NEW INGROUND PULL BOX. CONTRACTOR TO PROVIDE NEW CONDUCTORS FROM VFD #1 TO PUMP #1 DISCONNECT.
- ④ EXISTING 3" CONDUIT TO EXISTING VFD #2 TO BE REUSED AFTER CLEANING WITH MANDREL. CONTRACTOR SHALL INTERCEPT EXISTING CONDUIT, CUT CONDUIT AT APPROPRIATE LOCATION AND INSTALL NEW INGROUND PULL BOX. CONTRACTOR TO PROVIDE NEW CONDUCTORS FROM VFD #2 TO PUMP #2 DISCONNECT.
- ⑤ EXISTING 3" CONDUIT TO EXISTING VFD #3 TO BE REUSED AFTER CLEANING WITH MANDREL. CONTRACTOR SHALL INTERCEPT EXISTING CONDUIT, CUT CONDUIT AT APPROPRIATE LOCATION AND INSTALL NEW INGROUND PULL BOX. CONTRACTOR TO PROVIDE NEW CONDUCTORS FROM VFD #3 TO PUMP #3 DISCONNECT.
- ⑥ EXISTING 3" CONDUIT (FLOW CABLES); EXISTING 1" CONDUIT (LEVEL TRANSDUCER) AND EXISTING 1" CONDUIT (FLOW CABLE) TO EXISTING DATA FLOW SYSTEMS (DFS) CONTROL PANEL (DFS CONTROL PANEL TO BE REPLACED WITH NEW DFS TCU/VFD PANEL). CONTRACTOR SHALL INTERCEPT EXISTING CONDUIT, CUT CONDUIT AT APPROPRIATE LOCATION AND INSTALL NEW INGROUND PULL BOX. CONTRACTOR TO PROVIDE NEW CONDUCTORS FROM NEW TCU/VFD CONTROL PANEL TO ASSOCIATED EQUIPMENT.

- ⑦ EXISTING 3" CONDUIT TO EXISTING PANELBOARD 'PL' TO BE REUSED AFTER CLEANING WITH MANDREL. CONTRACTOR SHALL INTERCEPT EXISTING CONDUIT, CUT CONDUIT AT APPROPRIATE LOCATION AND INSTALL NEW INGROUND PULL BOX. CONTRACTOR TO PROVIDE NEW CONDUCTORS FROM PANELBOARD 'PL' TO PANELBOARD 'PP'.
- ⑧ CONTRACTOR TO PROVIDE AND INSTALL AASHTO H-20 RATED INGROUND PULL BOX AND AASHTO H-20 RATED LID. TYPICAL OF 3. REFER ALSO TO GENERAL NOTES.
- ⑨ REFER TO SHEET E-6 FOR NEW WET WELL ELECTRICAL EQUIPMENT RACK FRONT ELEVATION AND DETAILS.
- ⑩ REFER TO SHEET E-6 FOR NEW WET WELL ELECTRICAL EQUIPMENT RACK BACK ELEVATION AND DETAILS.
- ⑪ PROPOSED FLOW METER ELEMENT. REFER TO MECHANICAL PLANS FOR EXACT LOCATION. PROVIDE AND INSTALL MANUFACTURER SUPPLIED CABLES IN TWO (2) 1" CONDUITS TO FLOW METER CONVERTER (LOCATED IN ELECTRICAL ROOM). REFER ALSO TO DETAIL ON SHEET I-2.
- ⑫ PROPOSED FLOATS AND BUBBLER TUBE ALUMINUM ACCESS HATCH.

GENERAL NOTES:

1. CONDUIT ROUTING DESIGN BASED ON BEST AVAILABLE RECORD DRAWING INFORMATION AND WHAT COULD BE OBSERVED ABOVE GRADE. THE DRAWINGS DEPICT THE PROPOSED ROUTING, BUT THE CONTRACTOR SHALL FIELD VERIFY/CONFIRM ALL EXISTING CONDUIT RUNS INSTALLED BELOW GRADE (AND ASSOCIATED CONDUCTORS INSTALLED) ACROSS ASPHALT DRIVEWAY.
2. ALL INGROUND PULL BOXES SHALL BE AASHTO H-20 RATED, HOWEVER LOCATION, QUANTITY AND SIZES MAY BE MODIFIED BASED ON THE CONTRACTORS FIELD OBSERVATIONS.
3. THE CONTRACTOR SHALL PROVIDE, AS PART OF THE SHOP DRAWING REVIEW PROCESS, A DRAWING INDICATING THE EXISTING CONDUIT SIZES AND LOCATIONS, THE PROPOSED LOCATION AND SIZE OF THE CONDUITS TO BE INSTALLED AND THE PROPOSED LOCATION, SIZE AND QUANTITY OF THE INGROUND PULL BOXES TO BE INSTALLED.

No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/4/2020
SCALE	AS SHOWN
DESIGNED BY	TDT
DRAWN BY	JLH
CHECKED BY	TDT


SOUTHEAST MLS 677E

MANATEE COUNTY

LICENSED PROFESSIONAL	TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER	47079

**WET WELL PUMP PAD
ELECTRICAL MODIFICATIONS**

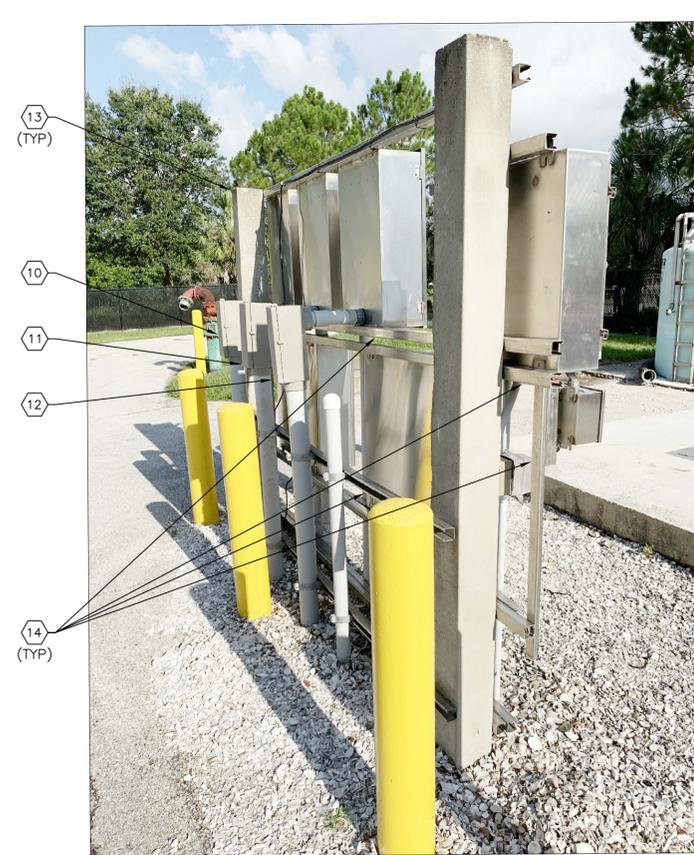
SHEET NUMBER	E-4
--------------	------------

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



**EXISTING WET WELL EQUIPMENT RACK
FRONT ELEVATION**

SCALE: NOT TO SCALE



**EXISTING WET WELL EQUIPMENT RACK
SIDE ELEVATION**

SCALE: NOT TO SCALE



KEYED NOTES:

- 1 EXISTING 600V, 3-POLE, 200A DISCONNECT IN NEMA 4X STAINLESS STEEL ENCLOSURE FOR PUMP 1. DISCONNECT TO BE REMOVED.
- 2 EXISTING 600V, 3-POLE, 200A DISCONNECT IN NEMA 4X STAINLESS STEEL ENCLOSURE FOR PUMP 2. DISCONNECT TO BE REMOVED.
- 3 EXISTING 600V, 3-POLE, 200A DISCONNECT IN NEMA 4X STAINLESS STEEL ENCLOSURE FOR PUMP 3. DISCONNECT TO BE REMOVED.
- 4 EXISTING NEMA 4X STAINLESS STEEL JUNCTION BOX TO BE REMOVED.
- 5 EXISTING RECEPTACLE TO BE REUSED AND RELOCATED REFER TO SHEET E-XX.
- 6 EXISTING SURGE PROTECTION DEVICE (SPD) FOR PANEL 'PP' TO BE REUSED AND RELOCATED REFER TO SHEET E-7.
- 7 EXISTING 100A, 120/240V, 1Ø, 3-WIRE PANEL 'PP' IN NEMA 4X ENCLOSURE TO BE REUSED AND RELOCATED REFER TO SHEET E-7.
- 8 EXISTING CONDUIT TO WET WELL TO BE REMOVED IN ITS ENTIRETY.
- 9 EXISTING 2" CONDUIT CONTAINING 3-#3 + 1-#6 GND (P500) FROM PANEL 'PL' FOR PANEL 'PP' 240V FEEDER. CONTRACTOR TO INTERCEPT EXISTING CONDUIT, CUT BELOW GRADE, REMOVE EXISTING CONDUCTORS, CLEAN CONDUIT WITH MANDREL, EXTEND CONDUIT TO NEW PANEL 'PP' LOCATION (VIA IN GROUND PULL BOX) AND INSTALL NEW CONDUCTORS.
- 10 EXISTING 3" CONDUIT CONTAINING 3-#3/0 + 1-#4 GND (P101) FROM PUMP 1 VFD TO EXISTING PUMP 1 DISCONNECT. CONTRACTOR TO INTERCEPT EXISTING CONDUIT, CUT BELOW GRADE, REMOVE EXISTING CONDUCTORS, CLEAN CONDUIT WITH MANDREL, EXTEND CONDUIT TO NEW DISCONNECT LOCATION (VIA IN GROUND PULL BOX) AND INSTALL NEW CONDUCTORS.
- 11 EXISTING 3" CONDUIT CONTAINING 3-#3/0 + 1-#4 GND (P201) FROM PUMP 2 VFD TO EXISTING PUMP 2 DISCONNECT. CONTRACTOR TO INTERCEPT EXISTING CONDUIT, CUT BELOW GRADE, REMOVE EXISTING CONDUCTORS, CLEAN CONDUIT WITH MANDREL, EXTEND CONDUIT TO NEW DISCONNECT LOCATION (VIA IN GROUND PULL BOX) AND INSTALL NEW CONDUCTORS.
- 12 EXISTING 3" CONDUIT CONTAINING 3-#3/0 + 1-#4 GND (P301) FROM PUMP 3 VFD TO EXISTING PUMP 3 DISCONNECT. CONTRACTOR TO INTERCEPT EXISTING CONDUIT, CUT BELOW GRADE, REMOVE EXISTING CONDUCTORS, CLEAN CONDUIT WITH MANDREL, EXTEND CONDUIT TO NEW DISCONNECT LOCATION (VIA IN GROUND PULL BOX) AND INSTALL NEW CONDUCTORS.
- 13 EXISTING CONCRETE POST TO BE REMOVED.
- 14 EXISTING UNISTRUT TO BE REMOVED.

GENERAL NOTES:

1. REFER TO SHEET E-4 FOR PROPOSED ROUTING OF NEW CONDUIT, INGROUND PULL BOX LOCATIONS AND ASSUMED EXISTING CONDUIT LOCATIONS.
2. CONDUIT ROUTING DESIGN BASED ON BEST AVAILABLE RECORD DRAWING INFORMATION AND WHAT COULD BE OBSERVED ABOVE GRADE. THE DRAWINGS DEPICT THE PROPOSED ROUTING, BUT THE CONTRACTOR SHALL FIELD VERIFY/CONFIRM ALL EXISTING CONDUIT RUNS INSTALLED BELOW GRADE (AND ASSOCIATED CONDUCTORS INSTALLED) ACROSS ASPHALT DRIVEWAY.
3. ALL INGROUND PULL BOXES SHALL BE AASHTO H-20 RATED, HOWEVER LOCATION, QUANTITY AND SIZES MAY BE MODIFIED BASED ON THE CONTRACTORS FIELD OBSERVATIONS.
4. THE CONTRACTOR SHALL PROVIDE, AS PART OF THE SHOP DRAWING REVIEW PROCESS, A DRAWING INDICATING THE EXISTING CONDUIT SIZES AND LOCATIONS, THE PROPOSED LOCATION AND SIZE OF THE CONDUITS TO BE INSTALLED AND THE PROPOSED LOCATION, SIZE AND QUANTITY OF THE INGROUND PULL BOXES TO BE INSTALLED.



777 S. Harbour Island Blvd. STE 100, TAMPA, FL 33602
813.227.9190
Certificate of Authorization No. 00031028

No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/4/2020
SCALE AS SHOWN
DESIGNED BY TDT
DRAWN BY JLH
CHECKED BY TDT

Manatee County
FLORIDA

SOUTHEAST MLS 677E

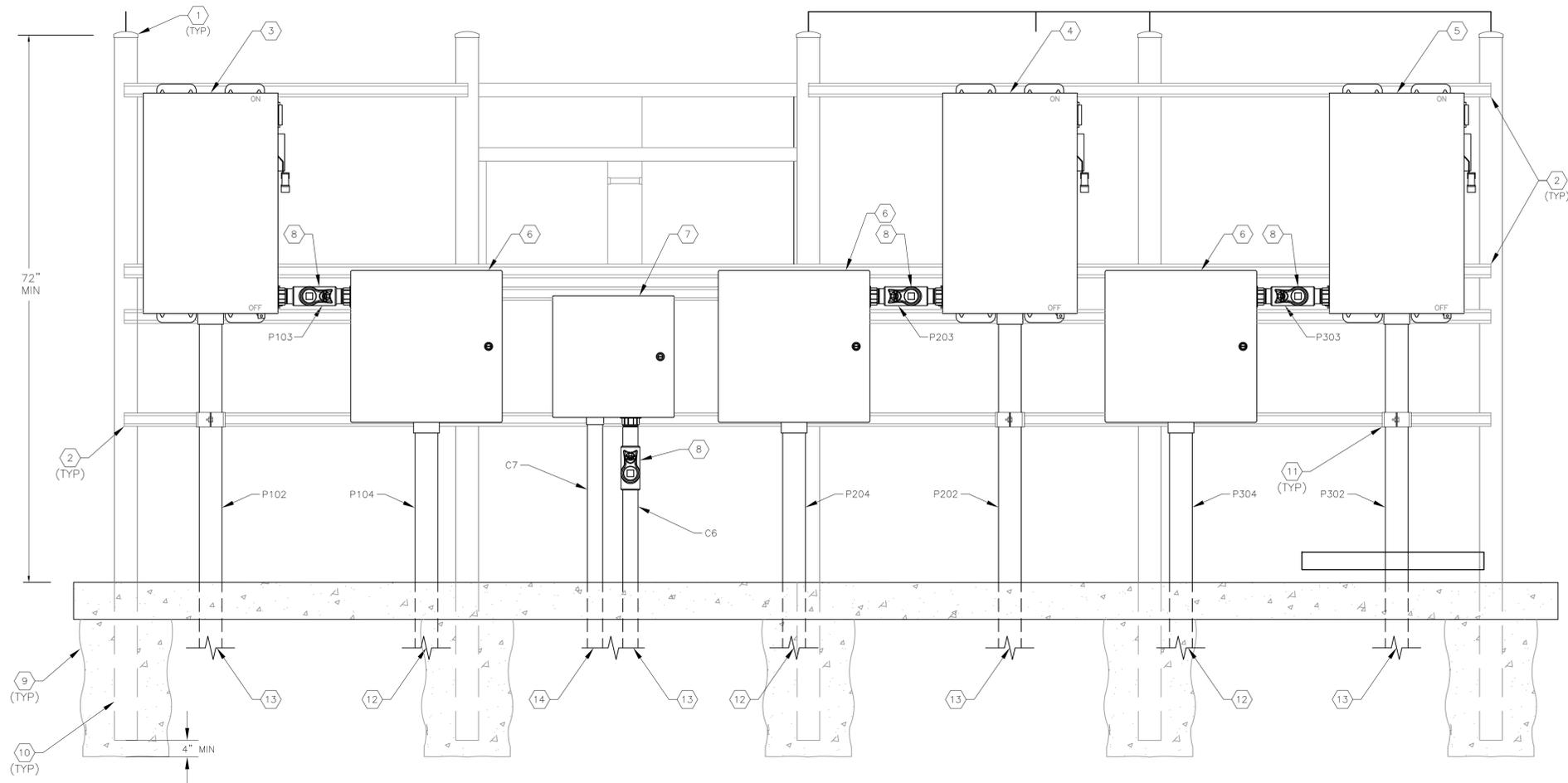
MANATEE COUNTY

LICENSED PROFESSIONAL
TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER 47079

**EXISTING WET WELL
EQUIPMENT RACK DETAILS**

SHEET NUMBER
E-5

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



**NEW WET WELL ELECTRICAL EQUIPMENT RACK
FRONT ELEVATION**
SCALE: NOT TO SCALE

A
E-4 | E-6

KEYED NOTES:

- | | |
|--|--|
| <p>① PROVIDE AND INSTALL FIVE (5), 3 INCH, 316 STAINLESS STEEL SCHEDULE 40 PIPES.</p> <p>② PROVIDE AND INSTALL 1-5/8" SOLID 316 STAINLESS STEEL UNISTRUT WITH GREY END CAPS.</p> <p>③ PROVIDE AND INSTALL NEW MOTOR DISCONNECT FOR PUMP #1. 600V, 200A, 3--POLE, NON-FUSED IN NEMA 4X STAINLESS STEEL ENCLOSURE.</p> <p>④ PROVIDE AND INSTALL NEW MOTOR DISCONNECT FOR PUMP #2. 600V, 200A, 3--POLE, NON-FUSED IN NEMA 4X STAINLESS STEEL ENCLOSURE.</p> <p>⑤ PROVIDE AND INSTALL NEW MOTOR DISCONNECT FOR PUMP #2. 600V, 200A, 3--POLE, NON-FUSED IN NEMA 4X STAINLESS STEEL ENCLOSURE.</p> <p>⑥ PUMP MOTOR CONNECTIONS J.B.--USED AS A DEMARCATION BOX TO PROVIDE ISOLATION BETWEEN THE WET WELL AND PUMP CONTROLS. PROVIDE AND INSTALL A 20"x20"x8" NEMA 4X, STAINLESS STEEL JUNCTION BOX WITH HINGED DOOR, HAMMOND ENSD20208S16. TERMINATIONS SHALL BE MADE USING POWER DISTRIBUTION BLOCKS, COOPER BUSSMAN 16303-3. PROVIDE POWER DISTRIBUTION BLOCK COVER CPDB-3, GROUND LUGS AND DIN-RAIL MOUNTED TERMINAL BLOCKS, PHOENIX CONTACT UK5N FOR SEAL/TEMP SENSOR.</p> | <p>⑦ INSTRUMENTATION AND CONTROLS JUNCTION BOX TO BE USED AS DEMARCATION BOX TO PROVIDE ISOLATION BETWEEN THE WET WELL AND PUMP CONTROLS. PROVIDE AND INSTALL A 16"x16"x6" NEMA 4X, STAINLESS STEEL JUNCTION BOX WITH HINGED DOOR, WIEGMANN #EN4SD16166S16. PROVIDE TWENTY (20) DIN-RAIL MOUNTED TERMINAL BLOCKS, PHOENIX CONTACT UK5N, ALUMINUM DIN-RAIL AND GROUND LUG FOR CONDUCTOR TERMINATIONS.</p> <p>⑧ CONDUIT SEAL FITTING SUITABLE FOR CLASS I DIVISION 2.</p> <p>⑨ PROVIDE CONCRETE FOOTING 3--80# BAGS (TYPICAL).</p> <p>⑩ STAINLESS STEEL SUPPORT POSTS SHALL BE TREATED WITH TWO COATS OF BITUMINOUS EPOXY TO 16 MILS WHERE EMBEDDED IN CONCRETE.</p> <p>⑪ PROVIDE ALUMINUM CONDUIT CLAMP (TYP).</p> <p>⑫ CONTINUES ASSOCIATED PUMP IN WET WELL.</p> <p>⑬ CONTINUES TO ASSOCIATED INGROUND PULL BOX.</p> <p>⑭ CONTINUES TO FLOATS AND BUBBLER TUBE ALUMINUM ACCESS HATCH.</p> |
|--|--|



No.	REVISIONS	DATE	BY

Kimley >>> Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/4/2020
SCALE	AS SHOWN
DESIGNED BY	TDT
DRAWN BY	JLH
CHECKED BY	TDT

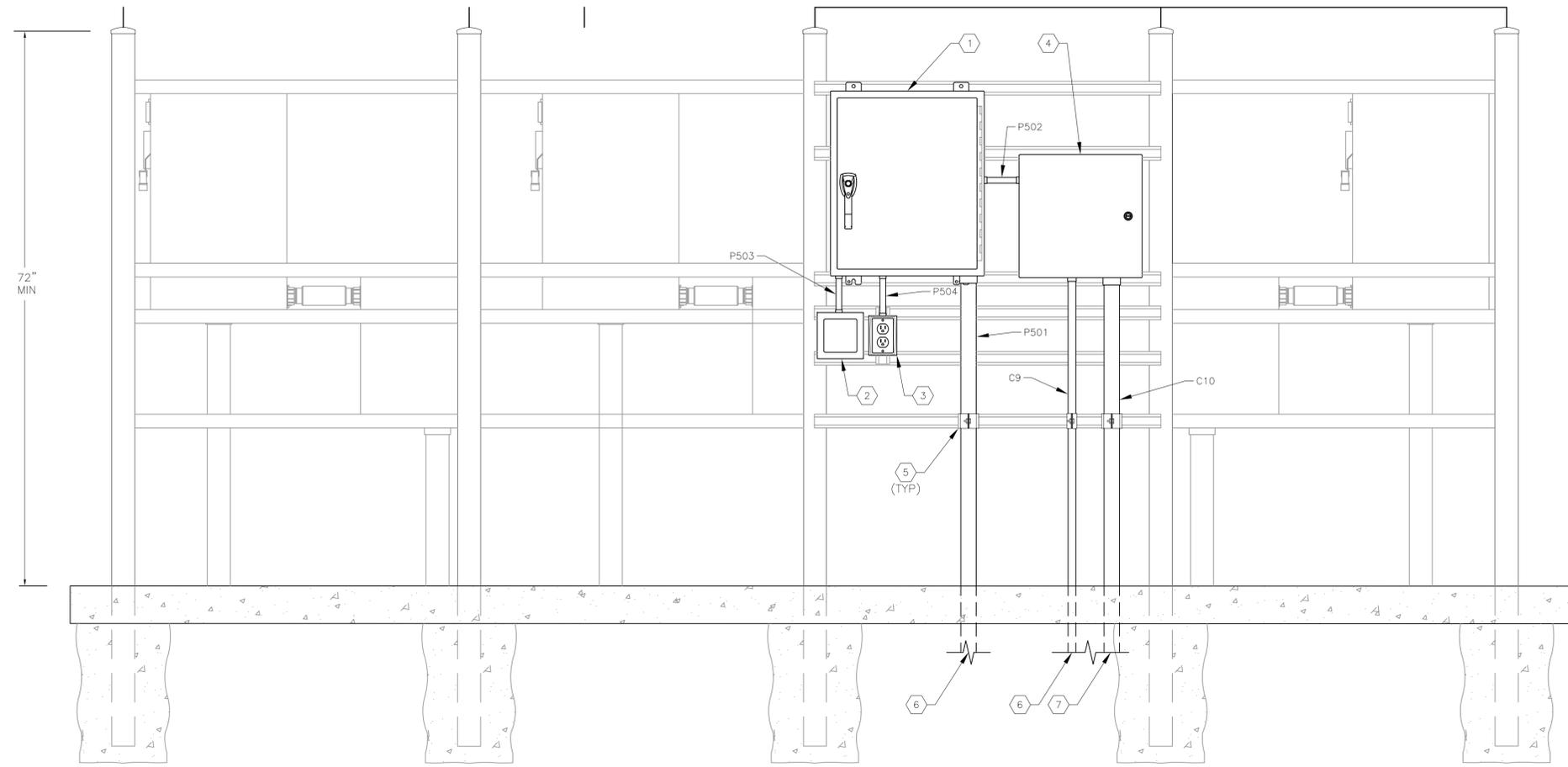

SOUTHEAST MLS 677E
 MANATEE COUNTY

LICENSED PROFESSIONAL	TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER	47079
FL DATE:	

**NEW WET WELL ELECTRICAL
EQUIPMENT RACK
FRONT ELEVATION**

SHEET NUMBER	E-6
--------------	-----

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



**NEW WET WELL ELECTRICAL EQUIPMENT RACK
BACK ELEVATION**
SCALE: NOT TO SCALE

A
E-4 | E-7

KEYED NOTES:

- 1 EXISTING 100A, 120/240V, 1Ø, 3-WIRE PANELBOARD "PP" IN NEMA 4X ENCLOSURE TO BE RELOCATED AND REUSED. REFER ALSO TO SHEET E-5 FOR PREVIOUS LOCATION. PROVIDE NEW SINGLE-POLE, 20A, 120V CIRCUIT BREAKER FOR DFS TCU360 BUBBLER UNIT IN KEYED NOTE #4.
- 2 EXISTING SURGE PROTECTION DEVICE (SPD) FOR PANEL "PP" TO BE RELOCATED AND REUSED. REFER TO SHEET E-5 FOR PREVIOUS LOCATION.
- 3 EXISTING RECEPTACLE TO BE RELOCATED AND REUSED. REFER TO SHEET E-5 FOR PREVIOUS LOCATION.
- 4 CONTRACTOR TO PROVIDE AND INSTALL NEW DATA FLOW SYSTEMS (DFS) BUBBLER SYSTEM. REFER ALSO TO SPECIFICATIONS.
- 5 PROVIDE ALUMINUM CONDUIT CLAMP (TYP).
- 6 CONTINUES TO ASSOCIATED INGROUND PULL BOX.
- 7 CONTINUES TO FLOATS AND BUBBLER TUBE ALUMINUM ACCESS HATCH.

GENERAL NOTES

- 1. SUPPORT DETAILS (SUPPORT POLES, UNISTRUT, CONCRETE FOOTINGS, ETC.) TYPICAL OF ITEMS SHOWN ON E-6.



No.	REVISIONS	DATE	BY

Kimley»Horn
© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/4/2020
SCALE	AS SHOWN
DESIGNED BY	TDT
DRAWN BY	JLH
CHECKED BY	TDT

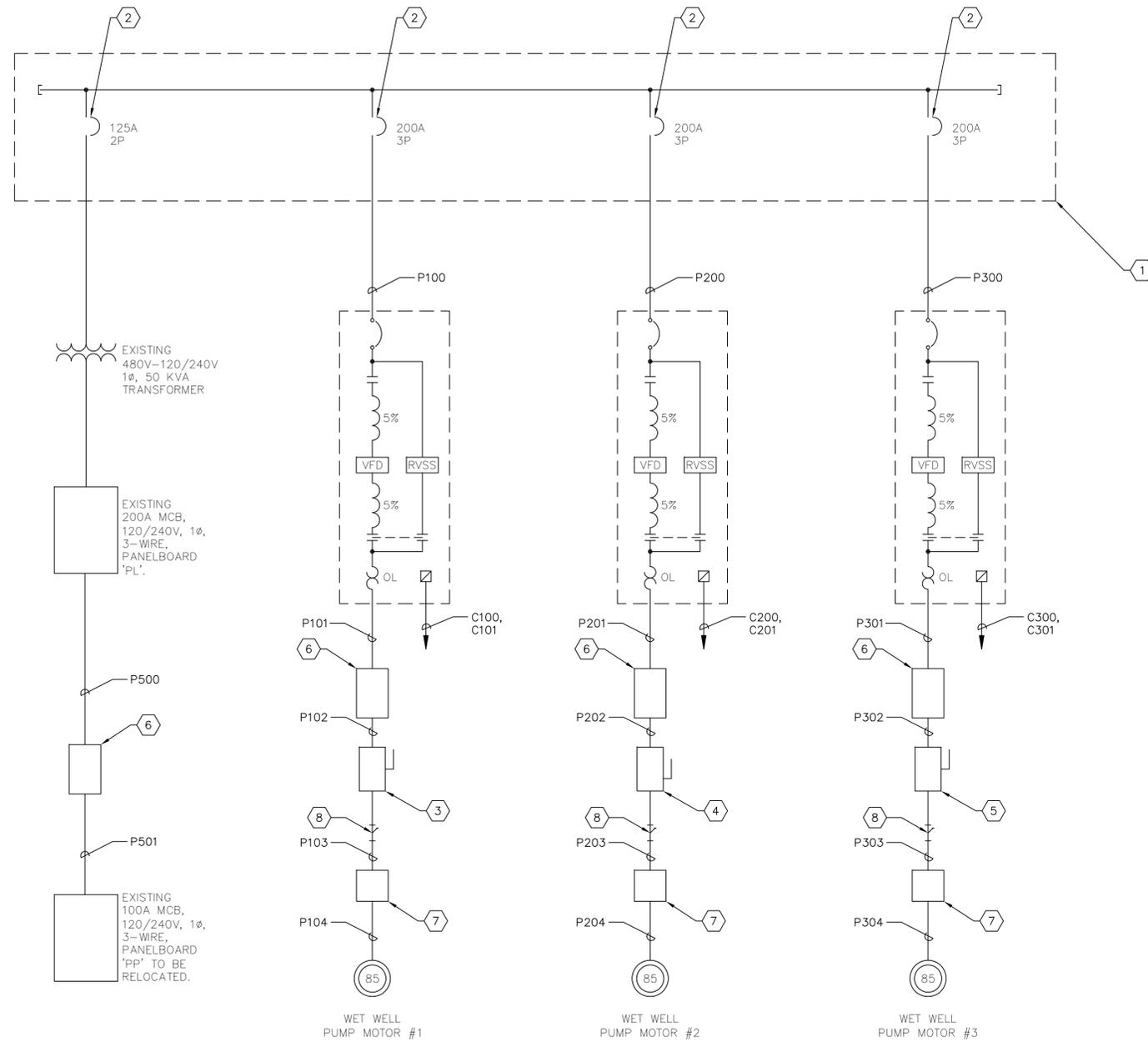
Manatee County
FLORIDA
SOUTHEAST MLS 677E
MANATEE COUNTY

LICENSED PROFESSIONAL	TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER	47079
FL DATE:	

**NEW WET WELL ELECTRICAL
EQUIPMENT RACK
BACK ELEVATION**

SHEET NUMBER	E-7
--------------	-----

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



SOUTHEAST MLS 677E LOAD CALCULATION		
EQUIPMENT	H.P.	DEMAND AMPERES
PANELBOARD 'PL' (VIA TRANSFORMER)		76.0
WET WELL PUMP #1	85	101.0
WET WELL PUMP #2	85	101.0
WET WELL PUMP #3	85	101.0
TOTAL LOAD		379.0
NOTE: EXISTING ELECTRICAL SERVICE RATED FOR 800 AMPERES.		

KEYED NOTES:	
1	EXISTING MAIN DISTRIBUTION PANEL 'MDP'.
2	EXISTING CIRCUIT BREAKER TO REMAIN AND BE REUSED.
3	NEW 600V, 200A MOTOR DISCONNECT FOR PUMP #1.
4	NEW 600V, 200A MOTOR DISCONNECT FOR PUMP #2.
5	NEW 600V, 200A MOTOR DISCONNECT FOR PUMP #3.
6	CONTRACTOR TO PROVIDE AND INSTALL NEW AASHTO H-20 INGROUND PULL BOX. REFER TO SHEET E-4 FOR DETAILS.
7	CONTRACTOR TO PROVIDE AND INSTALL NEW WET WELL JUNCTION BOX. REFER TO SHEET E-6 FOR DETAILS.
8	CONTRACTOR TO PROVIDE AND INSTALL NEW EYS SEAL FITTING. REFER TO SHEET E-6 FOR DETAILS.



No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/4/2020
SCALE	AS SHOWN
DESIGNED BY	TDT
DRAWN BY	JLH
CHECKED BY	TDT

Manatee County FLORIDA

SOUTHEAST MLS 677E

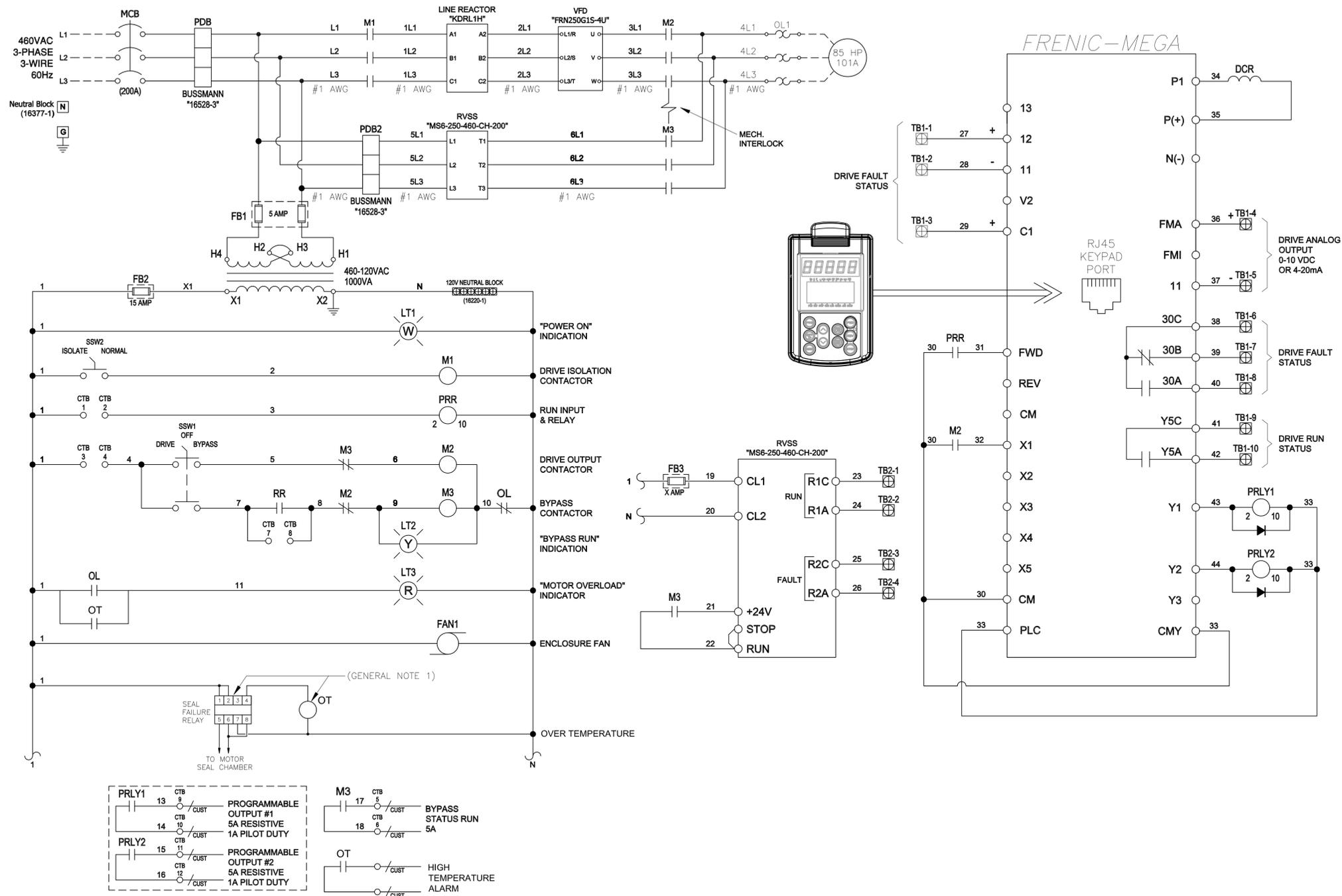
MANATEE COUNTY

LICENSED PROFESSIONAL	TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER	47079

MAIN DISTRIBUTION PANEL 'MDP' MODIFICATIONS

SHEET NUMBER	E-8
--------------	-----

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/4/2020
SCALE	AS SHOWN
DESIGNED BY	TDT
DRAWN BY	JLH
CHECKED BY	TDT

Manatee County
FLORIDA

SOUTHEAST MLS 677E

MANATEE COUNTY

LICENSED PROFESSIONAL	TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER	47079

TYPICAL VFD WIRING DIAGRAM

SHEET NUMBER	E-9
--------------	-----

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and approval by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

CONDUIT AND CABLE SCHEDULE					
CONDUIT No.	QTY/SIZE	NUMBER OF CONDUCTORS/SIZE	FROM	TO	REMARKS
P100	EX 3"	3-#1 + 1-#6 GND	EX MAIN DISTRIBUTION PANEL 'MDP'	NEW PUMP #1 VFD	CONDUIT TO BE REUSED AFTER CLEANING WITH MANDREL. NEW CONDUCTORS TO BE PROVIDED.
P101	EX 3"	3-#1 + 1-#6 GND + 4-#12	NEW PUMP #1 VFD	NEW WET WELL INGROUND PULL BOX	CONDUIT TO BE REUSED AFTER CLEANING WITH MANDREL. NEW CONDUCTORS TO BE PROVIDED. 4-#12 FOR SEAL/TEMPERATURE SENSOR.
P102	2"	3-#1 + 1-#6 GND + 4-#12	NEW WET WELL INGROUND PULL BOX	NEW PUMP #1 VFD DISCONNECT	CONDUCTORS SHALL NOT BE SPLICED IN INGROUND PULL BOX.
P103	2"	3-#1 + 1-#6 GND + 4-#12	NEW PUMP #1 DISCONNECT	NEW WET WELL JUNCTION BOX	PROVIDE 2" EYS SEAL BETWEEN NEW DISCONNECT AND NEW WET WELL JUNCTION BOX.
P104	3"	AS REQUIRED	NEW WET WELL JUNCTION BOX	PUMP #1 MOTOR	CABLE TO BE SUPPLIED INTEGRAL TO THE MOTOR BY MANUFACTURER.
P200	EX 3"	3-#1 + 1-#6 GND	EX MAIN DISTRIBUTION PANEL 'MDP'	NEW PUMP #2 VFD	CONDUIT TO BE REUSED AFTER CLEANING WITH MANDREL. NEW CONDUCTORS TO BE PROVIDED.
P201	EX 3"	3-#1 + 1-#6 GND + 4-#12	NEW PUMP #2 VFD	NEW WET WELL INGROUND PULL BOX	CONDUIT TO BE REUSED AFTER CLEANING WITH MANDREL. NEW CONDUCTORS TO BE PROVIDED. 4-#12 FOR SEAL/TEMPERATURE SENSOR.
P202	2"	3-#1 + 1-#6 GND + 4-#12	NEW WET WELL INGROUND PULL BOX	NEW PUMP #2 VFD DISCONNECT	CONDUCTORS SHALL NOT BE SPLICED IN INGROUND PULL BOX.
P203	2"	3-#1 + 1-#6 GND + 4-#12	NEW PUMP #2 DISCONNECT	NEW WET WELL JUNCTION BOX	PROVIDE 2" EYS SEAL BETWEEN NEW DISCONNECT AND NEW WET WELL JUNCTION BOX.
P204	3"	AS REQUIRED	NEW WET WELL JUNCTION BOX	PUMP #2 MOTOR	CABLE TO BE SUPPLIED INTEGRAL TO THE MOTOR BY MANUFACTURER.
P300	EX 3"	3-#1 + 1-#6 GND	EX MAIN DISTRIBUTION PANEL 'MDP'	NEW PUMP #3 VFD	CONDUIT TO BE REUSED AFTER CLEANING WITH MANDREL. NEW CONDUCTORS TO BE PROVIDED.
P301	EX 3"	3-#1 + 1-#6 GND + 4-#12	NEW PUMP #3 VFD	NEW WET WELL INGROUND PULL BOX	CONDUIT TO BE REUSED AFTER CLEANING WITH MANDREL. NEW CONDUCTORS TO BE PROVIDED. 4-#12 FOR SEAL/TEMPERATURE SENSOR.
P302	2"	3-#1 + 1-#6 GND + 4-#12	NEW WET WELL INGROUND PULL BOX	NEW PUMP #3 VFD DISCONNECT	CONDUCTORS SHALL NOT BE SPLICED IN INGROUND PULL BOX.
P303	2"	3-#1 + 1-#6 GND + 4-#12	NEW PUMP #3 DISCONNECT	NEW WET WELL JUNCTION BOX	PROVIDE 2" EYS SEAL BETWEEN NEW DISCONNECT AND NEW WET WELL JUNCTION BOX.
P304	3"	AS REQUIRED	NEW WET WELL JUNCTION BOX	PUMP #3 MOTOR	CABLE TO BE SUPPLIED INTEGRAL TO THE MOTOR BY MANUFACTURER.
P400	3/4"	2-#12 + 1-#12 GND	EX PANELBOARD 'PL'	NEW FLOW METER CONVERTER	PROVIDE FLEXIBLE SEALTITE CONNECTION TO FLOW METER CONVERTER.
P500	EX 2"	3-#3 + 1-#6 GND	EX PANELBOARD 'PL'	NEW WET WELL INGROUND PULL BOX	CONDUIT TO BE REUSED AFTER CLEANING WITH MANDREL. NEW CONDUCTORS TO BE PROVIDED.
P501	2"	3-#3 + 1-#6 GND	NEW WET WELL INGROUND PULL BOX	RELOCATED PANELBOARD 'PP'	CONDUCTORS SHALL NOT BE SPLICED IN INGROUND PULL BOX.
P502	3/4"	2-#12 + 1-#12 GND	RELOCATED PANELBOARD 'PP'	NEW DFS TBU 360 BUBBLER CABINET	
P503	3/4"	3-#12 + 1-#12 GND	RELOCATED PANELBOARD 'PP'	RELOCATED SURGE PROTECTION DEVICE	
P504	3/4"	2-#12 + 1-#12 GND	RELOCATED PANELBOARD 'PP'	RELOCATED DUPLEX RECEPTACLE	
P600	1"	2-#8 + 1-#10 GND	EX PANELBOARD 'PP'	'CU1' UNIT DISCONNECT	
P601	1"	2-#8 + 1-#10 GND	'CU1' UNIT DISCONNECT	'CU1' UNIT	PROVIDE WEATHERPROOF SEALTITE CONNECTION TO UNIT
P602	3/4"	2-#12 + 1-#12 GND	EX PANELBOARD 'PP'	'CU2' UNIT DISCONNECT	
P603	3/4"	2-#12 + 1-#12 GND	'CU2' UNIT DISCONNECT	'CU2' UNIT	PROVIDE WEATHERPROOF SEALTITE CONNECTION TO UNIT
C1	3/4"	2/C-#16 SHIELDED (BELDEN 8719)	FLOW METER CONVERTER	DFS TCU/VFD CONTROL PANEL	FOR NEW FLOW METER 4-20mA SIGNAL.
C2	1"	CABLES BY MANUFACTURER	FLOW METER SENSOR	NEW WET WELL INGROUND PULL BOX	VERIFY SIG1 AND SIG2 CAN BE COMBINED IN 1 CONDUIT WITH MANUFACTURER. COORDINATE CABLE CONNECTIONS WITH MANUFACTURER. SIG1 & SIG2 ARE NOT TO BE SPLICED.
C3	EX 1"	CABLES BY MANUFACTURER	NEW WET WELL INGROUND PULL BOX	DFS TCU/VFD CONTROL PANEL	CONDUIT TO BE REUSED AFTER CLEANING WITH MANDREL. NEW CONDUCTORS TO BE PROVIDED. VERIFY SIG1 AND SIG2 CAN BE COMBINED IN 1 CONDUIT WITH MANUFACTURER.
C4	1"	CABLES BY MANUFACTURER	DFS TCU/VFD CONTROL PANEL	FLOW METER CONVERTER	VERIFY SIG1 AND SIG2 CAN BE COMBINED IN 1 CONDUIT WITH MANUFACTURER. COORDINATE CABLE CONNECTIONS WITH MANUFACTURER. SIG1 & SIG2 ARE NOT TO BE SPLICED.
C5	EX 3"	14-#14 & 1-#14 GND	DFS TCU/VFD CONTROL PANEL	NEW WET WELL INGROUND PULL BOX	CONDUIT TO BE REUSED AFTER CLEANING WITH MANDREL. NEW CONDUCTORS TO BE PROVIDED. COUNT INCLUDES SPARES.
C6	2"	14-#14 & 1-#14 GND	NEW WET WELL INGROUND PULL BOX	INSTRUMENTATION JB AT WET WELL	CONDUCTORS SHALL NOT BE SPLICED IN INGROUND PULL BOX.
C7	3"	CABLE BY MANUFACTURER	INSTRUMENTATION JB AT WET WELL	FLOATS IN WET WELL	FLOAT SWITCHES TO EACH BE PROVIDED WITH INTEGRAL CABLE.
C8	EX 1"	2/C-#16 SHIELDED (BELDEN 8719)	DFS TCU/VFD CONTROL PANEL	WET WELL INGROUND PULL BOX	CONDUIT TO BE REUSED AFTER CLEANING WITH MANDREL. NEW CABLE TO BE PROVIDED.
C9	1"	2/C-#16 SHIELDED (BELDEN 8719)	WET WELL INGROUND PULL BOX	DFS TBU360 BUBBLER ENCLOSURE	BUBBLER WET WELL LEVEL.
C10	2"	EMPTY CONDUIT	DFS TBU360 BUBBLER ENCLOSURE	WET WELL	CONDUIT FOR BUBBLER TUBE. CONFIRM CONDUIT SIZE WITH DFS.
C100	1-1"	18-#14 + 1-#14 GND	VFD #1	DFS TCU/VFD CONTROL PANEL	PUMP/VFD INPUT/OUTPUTS TO DFS TCU/VFD CONTROL PANEL. COUNT INCLUDES SPARES.
C101	1-1-1/4"	2: 2/C-#16 SHIELDED (BELDEN 8719)	VFD #1	DFS TCU/VFD CONTROL PANEL	VFD 4-20mA SPEED COMMAND AND 4-20mA SPEED REFERENCE SIGNALS.
C200	1-1"	18-#14 + 1-#14 GND	VFD #2	DFS TCU/VFD CONTROL PANEL	PUMP/VFD INPUT/OUTPUTS TO DFS TCU/VFD CONTROL PANEL. COUNT INCLUDES SPARES.
C201	1-1-1/4"	2: 2/C-#16 SHIELDED (BELDEN 8719)	VFD #2	DFS TCU/VFD CONTROL PANEL	VFD 4-20mA SPEED COMMAND AND 4-20mA SPEED REFERENCE SIGNALS.
C300	1-1"	18-#14 + 1-#14 GND	VFD #3	DFS TCU/VFD CONTROL PANEL	PUMP/VFD INPUT/OUTPUTS TO DFS TCU/VFD CONTROL PANEL. COUNT INCLUDES SPARES.
C301	1-1-1/4"	2: 2/C-#16 SHIELDED (BELDEN 8719)	VFD #3	DFS TCU/VFD CONTROL PANEL	VFD 4-20mA SPEED COMMAND AND 4-20mA SPEED REFERENCE SIGNALS.



No.	REVISIONS	DATE	BY


 © 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 0000696

KHA PROJECT 148400053
DATE 9/4/2020
SCALE AS SHOWN
DESIGNED BY TDT
DRAWN BY JLH
CHECKED BY TDT


SOUTHEAST MLS 677E
 MANATEE COUNTY

LICENSED PROFESSIONAL
TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER 47079

CONDUIT AND CABLE SCHEDULE

SHEET NUMBER
E-10

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

FUNCTION SYMBOL SCHEDULE

IDENTIFICATION LETTERS					
	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		PROGRAMMER		
C	CONDUCTIVITY			CONTROL	CLOSED
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	GAGING		GLASS VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTOR	MOMENTARY			MIDDLE, INTERMEDIATE
N	VIBRATION		IGNITOR	ISOLATOR	
O	OPERATION	OFFSET	ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY, EVENT	INTEGRATE, TOTALIZE	INTEGRATE		
R	RADIATION		RECORD, PRINT		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE	TREND	MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VISCOSITY	VACUUM		VALVE, DAMPER, LOUVER, GATE	
W	WEIGHT, FORCE, TORQUE		WELL		
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y				RELAY, COMPUTE, CONVERT	
Z	POSITION			FINAL CONTROL ELEMENT	UNCLASSIFIED

LINE DESIGNATIONS

INSTRUMENTATION SIGNAL ——— ———
 ELECTRICAL POWER ——— ———
 DATA LINK —D—D—
 RADIO LINK —R—R—
 FIBER OPTIC DATA —F—F—

MISCELLANEOUS NOTATIONS

S/D = SHUTDOWN
 O/R = OVERRIDE
 MCS = MASTER CONTROL STATION
 VFD = VARIABLE FREQUENCY DRIVE
 PCC = PROCESS CONTROL CABINET
 LCP = LOCAL CONTROL PANEL
 ES = ELECTRICAL SUPPLY (120VAC)

CONTROLLER NOTATION

PV = PROCESS VARIABLE INPUT
 SP = SET POINT INPUT
 C = CONTROL OUTPUT

EQUIPMENT NOTATION

B = BLOWER OR FAN
 E = ENGINE
 G = GENERATOR
 F = FILTER
 GS = GRINDER/SCREEN
 K = COMPRESSOR
 H = HOIST
 ME = MECHANICAL EQUIPMENT
 MX = MIXER
 P = PUMP
 T = TANK OR SUMP

INPUT/OUTPUT NOTATIONS

AI = ANALOG INPUT
 AO = ANALOG OUTPUT
 DI = DISCRETE INPUT
 DO = DISCRETE OUTPUT

HAND SWITCH NOTATION

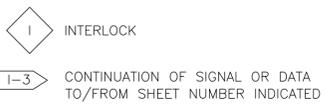
HOA = HAND-OFF-AUTO
 S/S = START/STOP
 SEL = SELECTOR
 O/C = OPEN/CLOSE
 O/O = ON/OFF
 LOS = LOCKOUT-START
 LOR = LOCAL-OFF-REMOTE
 OAC = OPEN-AUTO CLOSE
 CAO = CLOSED-AUTO OPEN

VALVE DESIGNATIONS

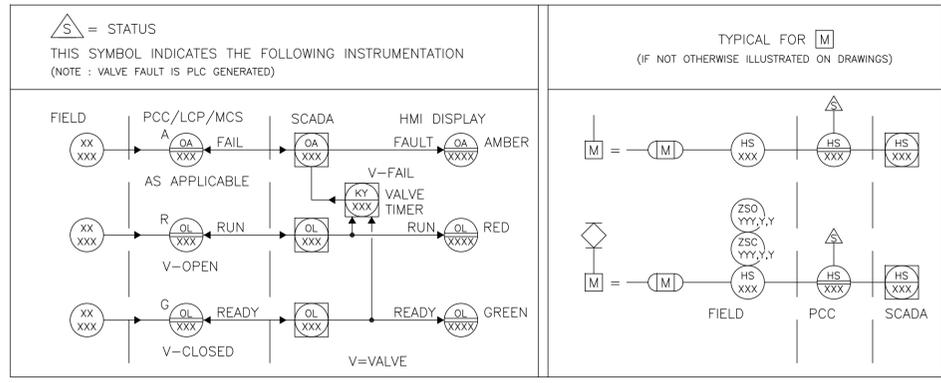
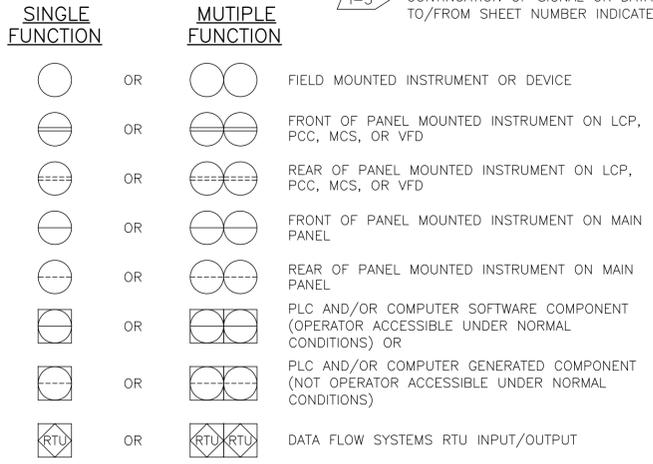
MOV = MOTOR OPERATED VALVE

GENERAL ABBREVIATIONS

SCADA = SUPERVISORY CONTROL AND DATA ACQUISITION.
 PLC = PROGRAMMABLE LOGIC CONTROL
 SA = SURGE SUPPRESSOR DEVICE



BASIC SYMBOLS



No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/4/2020
SCALE	AS SHOWN
DESIGNED BY	TDT
DRAWN BY	JLH
CHECKED BY	TDT

Manatee County
 FLORIDA

SOUTHEAST MLS 677E

MANATEE COUNTY

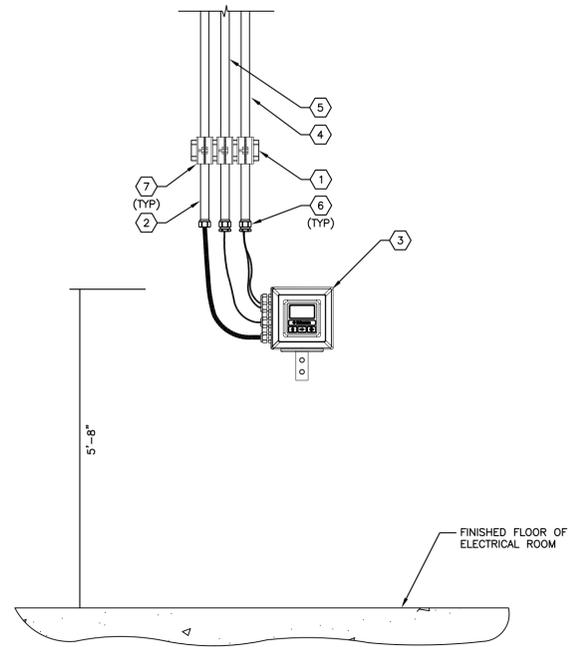
LICENSED PROFESSIONAL	TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER	47079

INSTRUMENTATION LEGEND AND ABBREVIATIONS

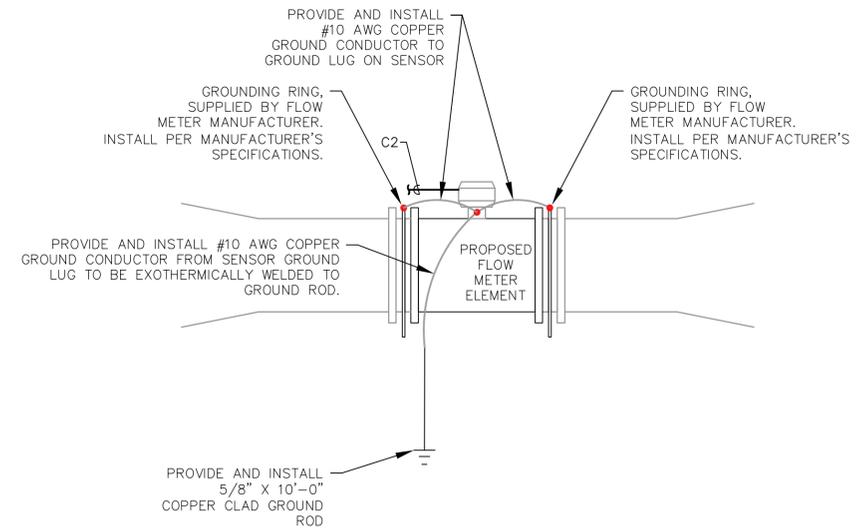
SHEET NUMBER	I-1
--------------	-----



This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



FLOW METER PANEL ELEVATION 1
SCALE: NOT TO SCAL E-3 I-2



FLOW ELEMENT INSTALLATION DETAIL 2
SCALE: NOT TO SCAL E-2 I-2

KEYED NOTES:

- ① PROVIDE AND INSTALL 1-5/8" STAINLESS STEEL UNISTRUT (OR EQUAL) TO FASTEN CONDUITS TO WALL.
- ② PROVIDE AND INSTALL 2-#12 + 1-#12 GND IN 3/4" CONDUIT FROM PANELBOARD 'PL' TO FLOW METER CONVERTER FOR 120V POWER. PROVIDE FLEXIBLE SEALTITE CONNECTION TO FLOW METER CONVERTER. (P400).
- ③ PROVIDE AND INSTALL FLOW METER CONVERTER. MOUNT TO WALL OF ELECTRICAL BUILDING. REFER ALSO TO SPECIFICATIONS.
- ④ PROVIDE AND INSTALL MANUFACTURER SUPPLIED SENSOR CABLES (SIG1 AND SIG2) IN 1" C. TO FIELD SENSOR (C4 - FROM DFS TCU/VFD CONTROL PANEL).
- ⑤ PROVIDE AND INSTALL 2/C-#16 SHIELDED (BELDEN 8719) IN 1" C. (4-20mA FLOW METER SIGNAL) TO DFS TCU/VFD CONTROL PANEL (C1).
- ⑥ PROVIDE AND INSTALL CABLE GLAND ON THE END OF EACH CONDUIT. REFER ALSO TO GENERAL NOTES.
- ⑦ PROVIDE AND INSTALL STAINLESS STEEL CONDUIT CLAMPS.

GENERAL NOTES:

1. THE FLOW METER CONVERTER SPECIFIED ACCEPTS ONLY CABLE TYPE CONNECTIONS. THE CONTRACTOR SHALL PROVIDE AND APPROPRIATE CABLE GLAND ON THE END OF EACH CONDUIT AS REQUIRED.
2. THE CONTRACTOR SHALL PROVIDE ALL GROUNDING AND BONDING AS REQUIRED BY THE FLOW CONVERTER MANUFACTURER. REFER TO THE MANUFACTURER'S SPECIFICATIONS.



No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/4/2020
SCALE AS SHOWN
DESIGNED BY TDT
DRAWN BY JLH
CHECKED BY TDT

SOUTHEAST MLS 677E

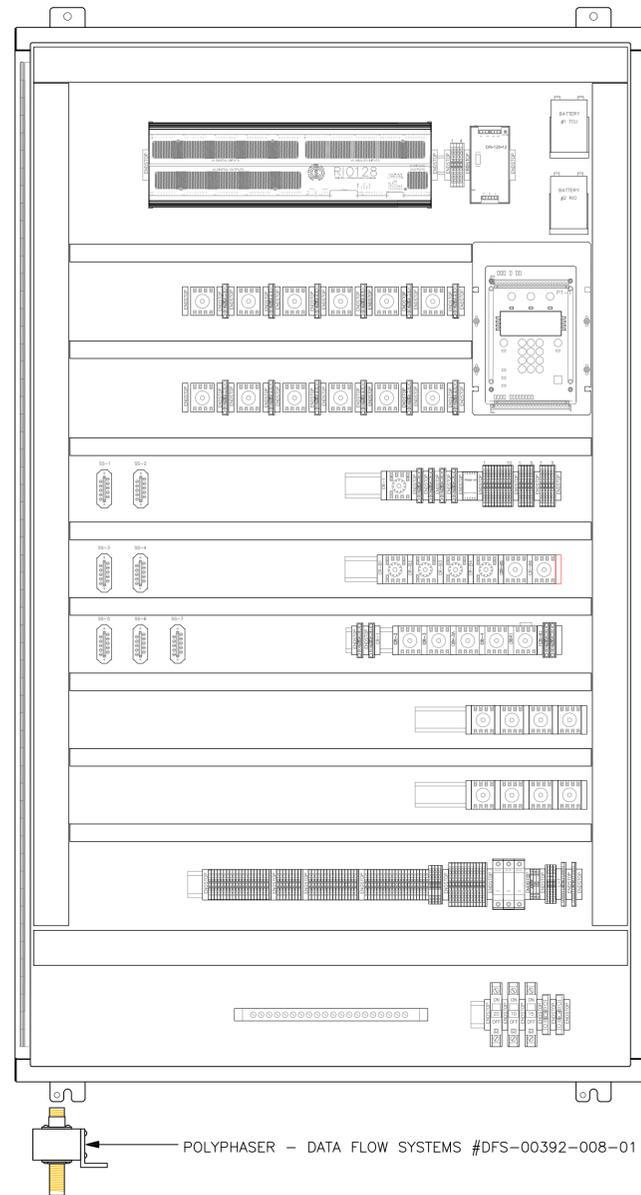
MANATEE COUNTY FL

LICENSED PROFESSIONAL
TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER 47079

INSTRUMENTATION DETAILS

SHEET NUMBER
I-2

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



DFS TCU/VFD CONTROL PANEL ELEVATION

SCALE: NOT TO SCALE



TCU/VFD ENCLOSURE _____
 (OUTER DOOR REMOVED FOR CLARITY)

ENCLOSURE _____
 SPN4SS6-302410 (60"H X 36"W X 12"D) NEMA 4X RATED,
 FABRICATED FROM 14 GA. TYPE 316 STAINLESS STEEL WITH
 3-POINT LATCHING SYSTEM. ENCLOSURE SHALL BE POWDER
 COATED WHITE. HASP AND STAPLE SHALL BE PROVIDED FOR
 PADLOCKING.



No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/4/2020
SCALE	AS SHOWN
DESIGNED BY	TDT
DRAWN BY	JLH
CHECKED BY	TDT

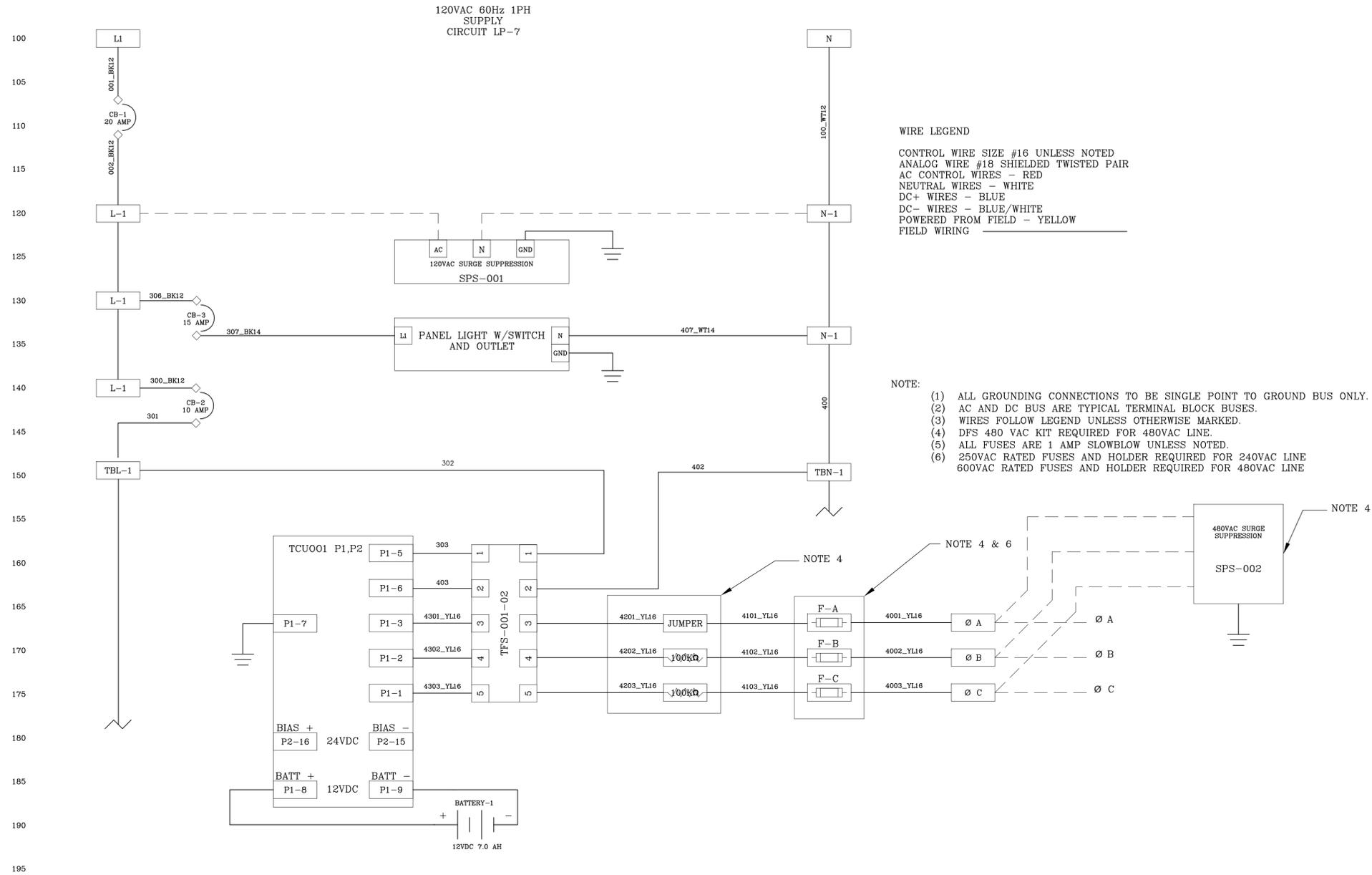

SOUTHEAST MLS 677E
 MANATEE COUNTY

LICENSED PROFESSIONAL	TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER	47079
FL DATE:	

DFS TCU PANEL DETAILS

SHEET NUMBER	I-3
--------------	-----

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/4/2020
SCALE AS SHOWN
DESIGNED BY TDT
DRAWN BY JLH
CHECKED BY TDT

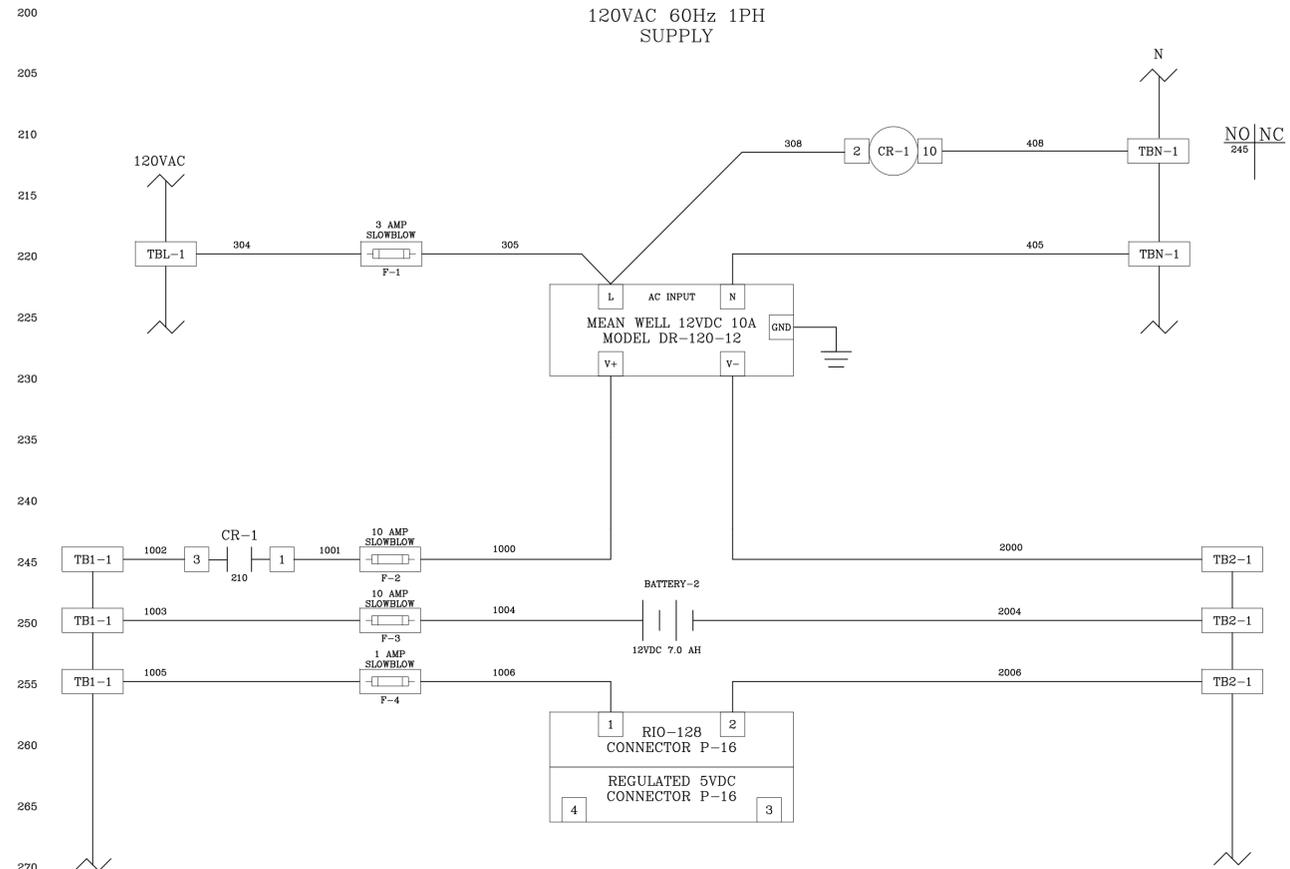
SOUTHEAST MLS 677E
MANATEE COUNTY

LICENSED PROFESSIONAL TIMOTHY THOMAS, P.E. FL LICENSE NUMBER 47079

**DFS TCU PANEL
WIRING SCHEMATICS**

SHEET NUMBER I-4

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



WIRE LEGEND
 CONTROL WIRE SIZE #16 UNLESS NOTED
 ANALOG WIRE #18 SHIELDED TWISTED PAIR
 AC CONTROL WIRES - RED
 NEUTRAL WIRES - WHITE
 DC+ WIRES - BLUE
 DC- WIRES - BLUE/WHITE
 POWERED FROM FIELD - YELLOW
 FIELD WIRING - - - - -

NOTE:
 (1) ALL GROUNDING CONNECTIONS TO BE SINGLE POINT TO GROUND BUS ONLY
 (2) AC AND DC BUS ARE TYPICAL TERMINAL BLOCK BUSES
 (3) WIRES FOLLOW LEGEND UNLESS OTHERWISE MARKED



No.	REVISIONS	DATE	BY

Kimley»Horn
 © 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/4/2020
SCALE AS SHOWN
DESIGNED BY TDT
DRAWN BY JLH
CHECKED BY TDT

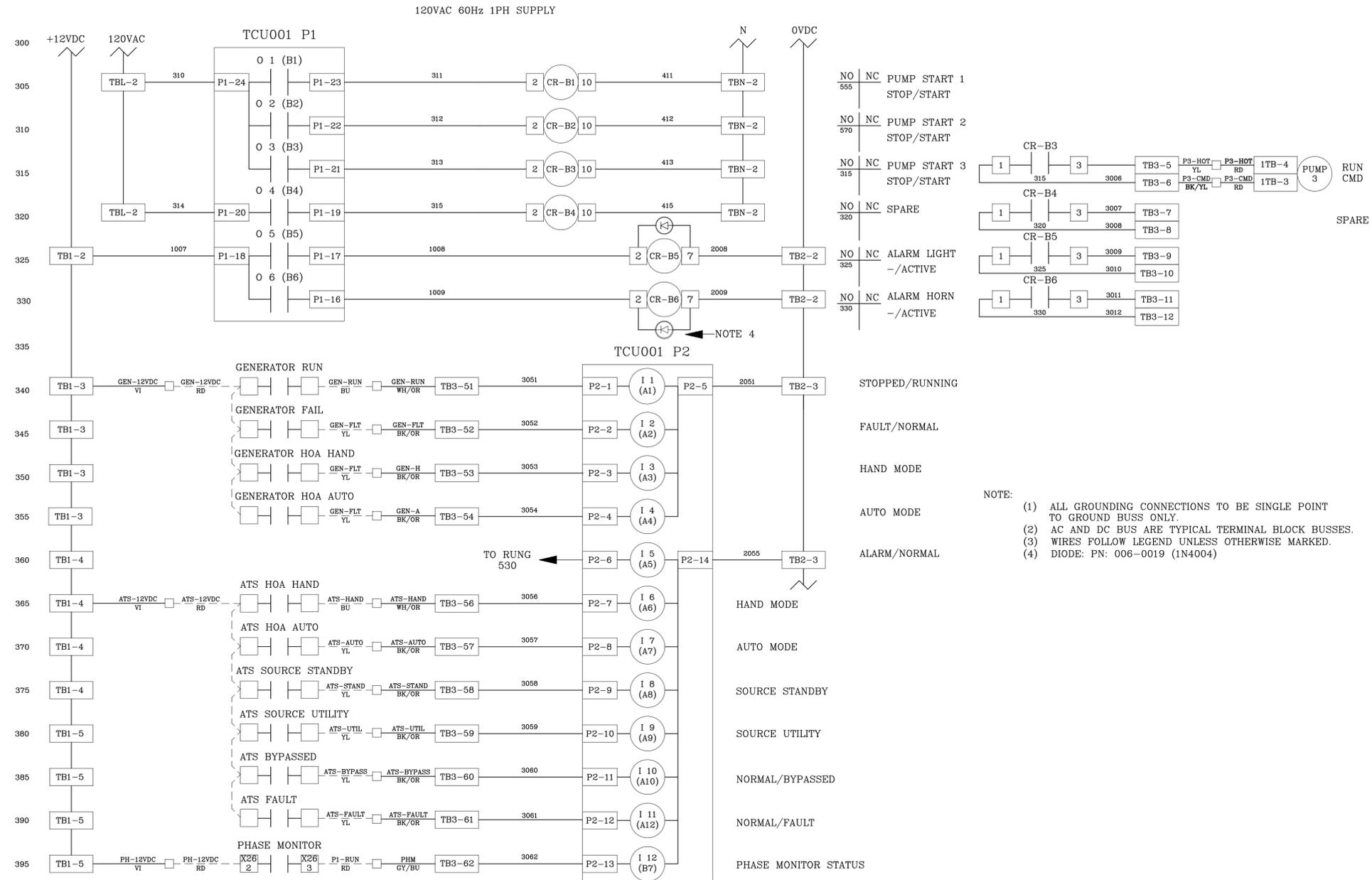
Manatee County
SOUTHEAST MLS 677E
 MANATEE COUNTY

LICENSED PROFESSIONAL TIMOTHY THOMAS, P.E. FL LICENSE NUMBER 47079

**DFS TCU PANEL
 WIRING SCHEMATICS**

SHEET NUMBER 1-5

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



777 S. Harbour Island Blvd. STE 100 TAMPA, FL 33602
813.227.9190
Certificate of Authorization No. 00031028



© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT
148400053
DATE
9/4/2020
SCALE AS SHOWN
DESIGNED BY TDT
DRAWN BY JLH
CHECKED BY TDT



SOUTHEAST MLS 677E

MANATEE COUNTY

LICENSED PROFESSIONAL
TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER
47079

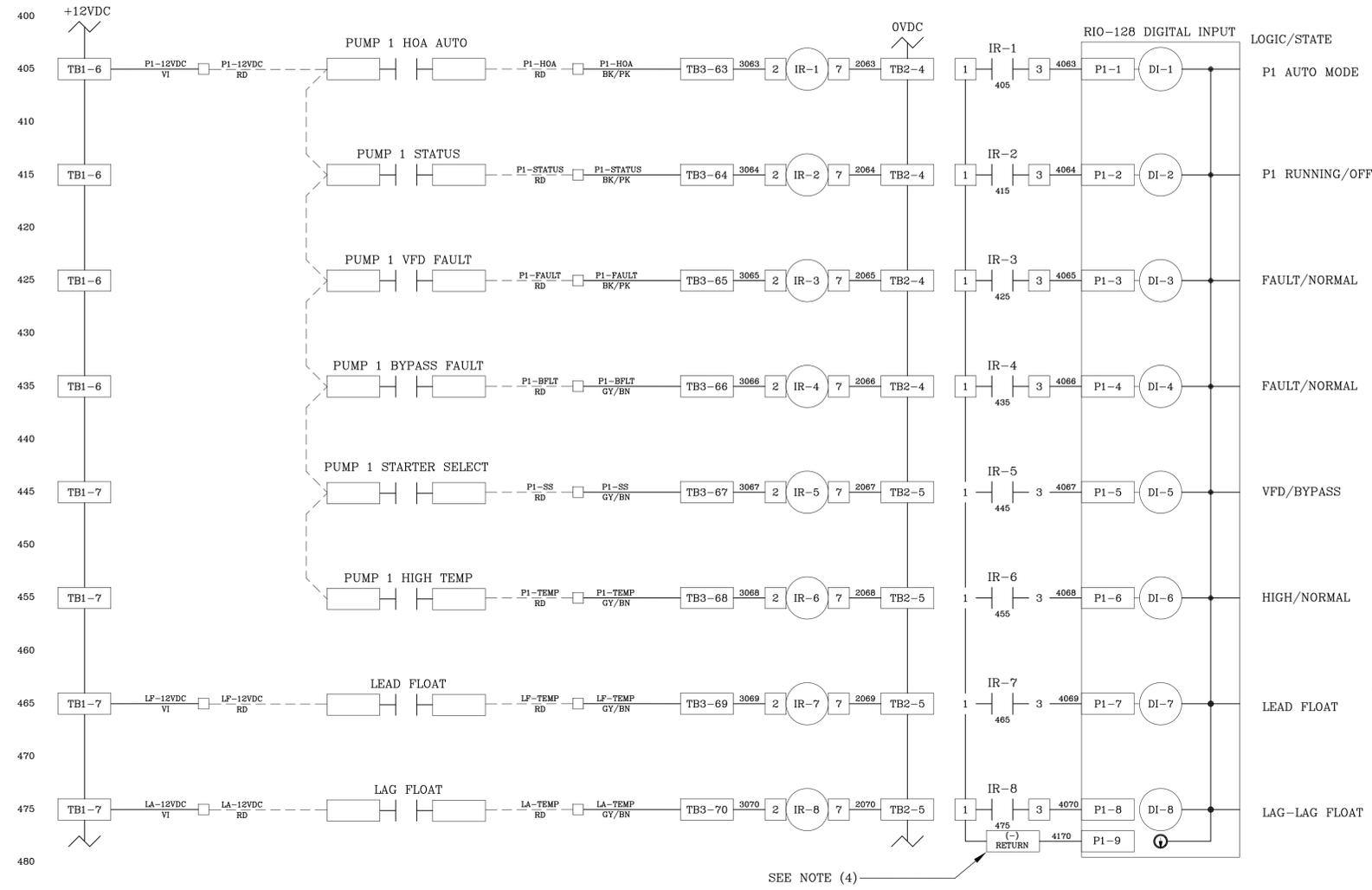
DFS TCU PANEL
WIRING SCHEMATICS

SHEET NUMBER

I-6

No.	REVISIONS	DATE	BY

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



WIRE LEGEND
 CONTROL WIRE SIZE #16 UNLESS NOTED
 ANALOG WIRE #18 SHIELDED TWISTED PAIR
 AC CONTROL WIRES - RED
 NEUTRAL WIRES - WHITE
 DC+ WIRES - BLUE
 DC- WIRES - BLUE/WHITE
 POWERED FROM FIELD - YELLOW
 FIELD WIRING - DASHED LINE

- NOTE:
 (1) ALL GROUNDING CONNECTIONS TO BE SINGLE POINT TO GROUND BUS ONLY.
 (2) AC AND DC BUS ARE TYPICAL TERMINAL BLOCK BUSES.
 (3) WIRES FOLLOW LEGEND UNLESS OTHERWISE MARKED.
 (4) TERMINAL BLOCKS ARE FOR THE DC RETURN (-) BUS FOR THE RIO-128 DIGITAL INPUTS.

SEE NOTE (4)

No.	REVISIONS	DATE	BY

Kimley»Horn
 © 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/4/2020
SCALE AS SHOWN
DESIGNED BY TDT
DRAWN BY JLH
CHECKED BY TDT

Manatee County
 FLORIDA
SOUTHEAST MLS 677E
 MANATEE COUNTY

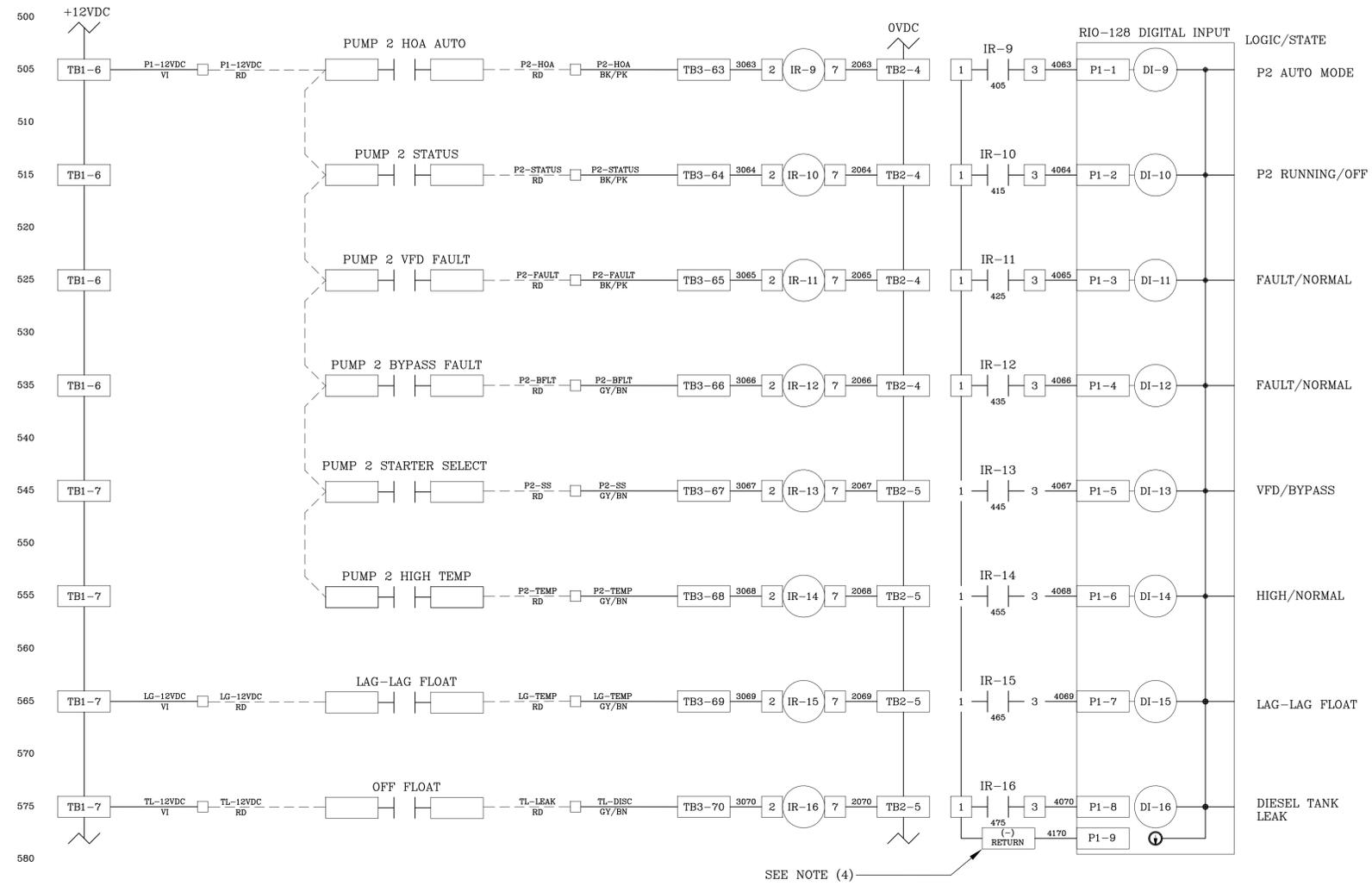
LICENSED PROFESSIONAL
 TIMOTHY THOMAS, P.E.
 FL LICENSE NUMBER
 47079

**DFS TCU PANEL
 WIRING SCHEMATICS**

SHEET NUMBER
I-7



This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



WIRE LEGEND
 CONTROL WIRE SIZE #16 UNLESS NOTED
 ANALOG WIRE #18 SHIELDED TWISTED PAIR
 AC CONTROL WIRES - RED
 NEUTRAL WIRES - WHITE
 DC+ WIRES - BLUE
 DC- WIRES - BLUE/WHITE
 POWERED FROM FIELD - YELLOW
 FIELD WIRING - DASHED

NOTE:
 (1) ALL GROUNDING CONNECTIONS TO BE SINGLE POINT TO GROUND BUS ONLY.
 (2) AC AND DC BUS ARE TYPICAL TERMINAL BLOCK BUSES.
 (3) WIRES FOLLOW LEGEND UNLESS OTHERWISE MARKED.
 (4) TERMINAL BLOCKS ARE FOR THE DC RETURN (-) BUS FOR THE RIO-128 DIGITAL INPUTS.

No.	REVISIONS	DATE	BY

Kimley»Horn
 © 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/4/2020
SCALE	AS SHOWN
DESIGNED BY	TDT
DRAWN BY	JLH
CHECKED BY	TDT

Manatee County
 SOUTHEAST MLS 677E
 MANATEE COUNTY

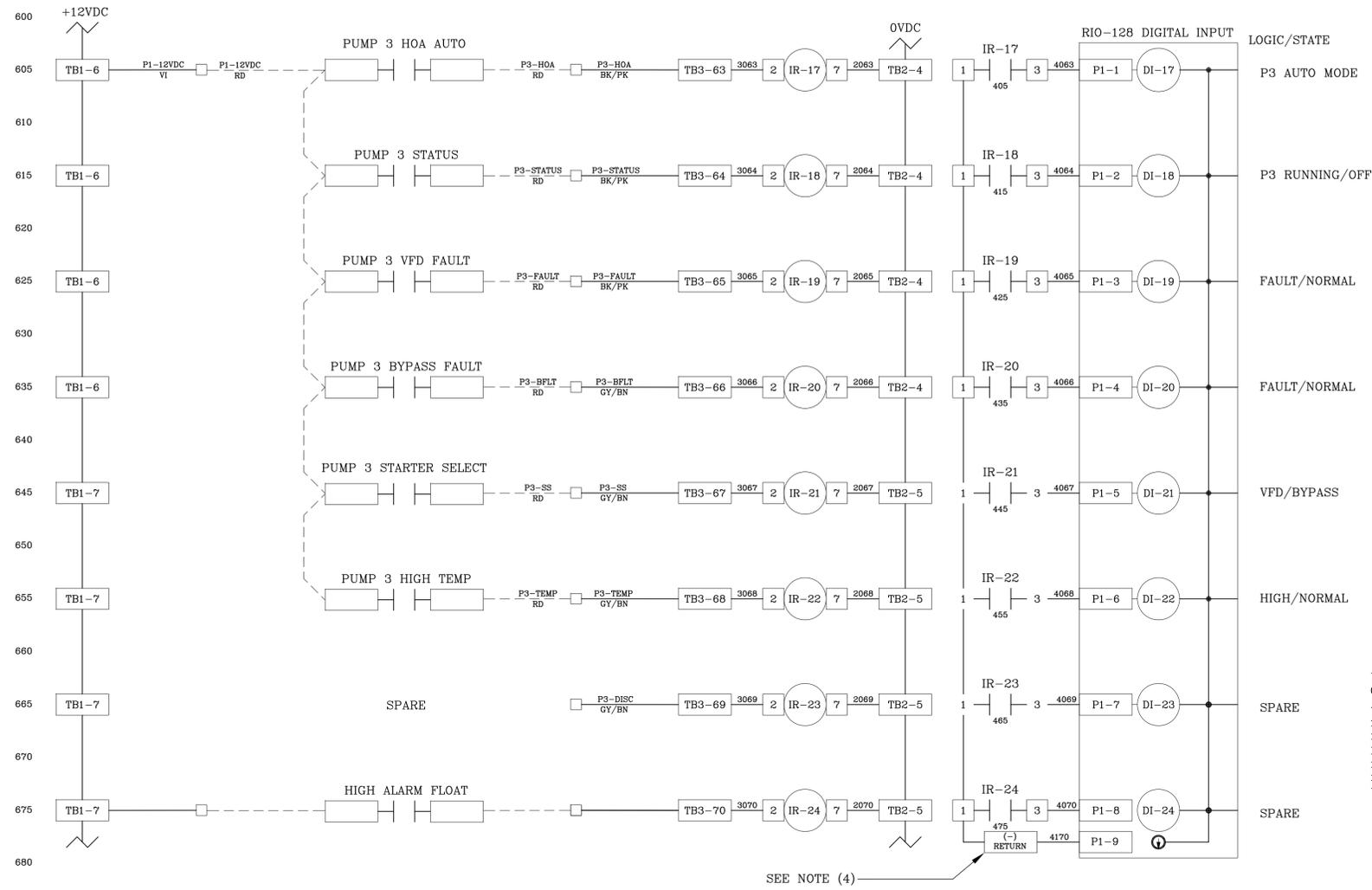
LICENSED PROFESSIONAL
 TIMOTHY THOMAS, P.E.
 FL LICENSE NUMBER
 47079

**DFS TCU PANEL
 WIRING SCHEMATICS**

SHEET NUMBER
I-8



This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



WIRE LEGEND
 CONTROL WIRE SIZE #16 UNLESS NOTED
 ANALOG WIRE #18 SHIELDED TWISTED PAIR
 AC CONTROL WIRES - RED
 NEUTRAL WIRES - WHITE
 DC+ WIRES - BLUE
 DC- WIRES - BLUE/WHITE
 POWERED FROM FIELD - YELLOW
 FIELD WIRING - DASHED

NOTE:
 (1) ALL GROUNDING CONNECTIONS TO BE SINGLE POINT TO GROUND BUS ONLY.
 (2) AC AND DC BUS ARE TYPICAL TERMINAL BLOCK BUSES.
 (3) WIRES FOLLOW LEGEND UNLESS OTHERWISE MARKED.
 (4) TERMINAL BLOCKS ARE FOR THE DC RETURN (-) BUS FOR THE RIO-128 DIGITAL INPUTS.

SEE NOTE (4)



No.	REVISIONS	DATE	BY

Kimley»Horn
 © 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/4/2020
SCALE AS SHOWN
DESIGNED BY TDT
DRAWN BY JLH
CHECKED BY TDT

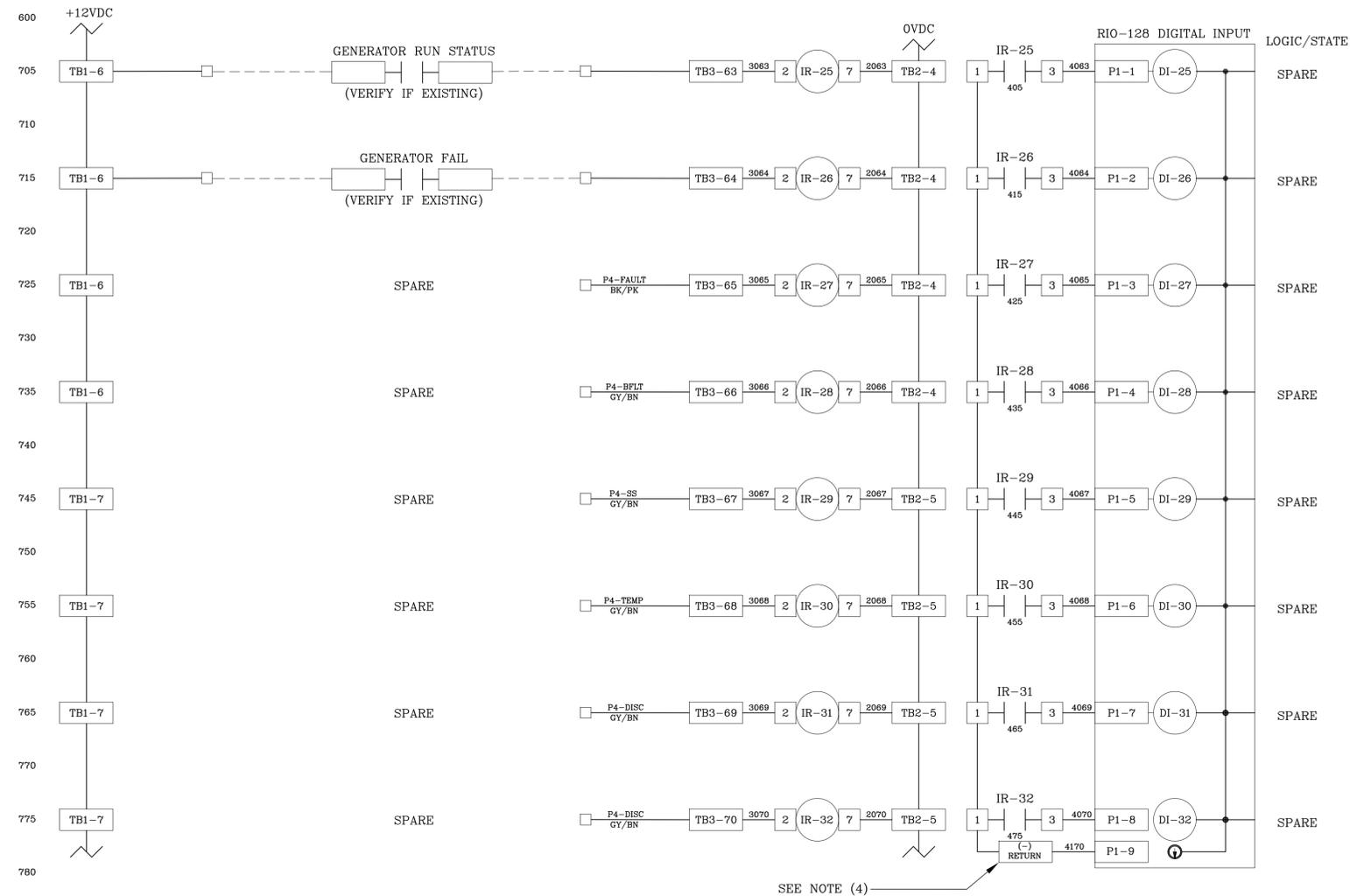
Manatee County
 FLORIDA
SOUTHEAST MLS 677E
 MANATEE COUNTY

LICENSED PROFESSIONAL
 TIMOTHY THOMAS, P.E.
 FL LICENSE NUMBER
 47079

**DFS TCU PANEL
 WIRING SCHEMATICS**

SHEET NUMBER
I-9

This document, together with the concepts and designs presented herein, is an instrument of service, as an instrument of service, intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



WIRE LEGEND
 CONTROL WIRE SIZE #16 UNLESS NOTED
 ANALOG WIRE #18 SHIELDED TWISTED PAIR
 AC CONTROL WIRES - RED
 NEUTRAL WIRES - WHITE
 DC+ WIRES - BLUE
 DC- WIRES - BLUE/WHITE
 POWERED FROM FIELD - YELLOW
 FIELD WIRING - - - - -

NOTE:

- (1) ALL GROUNDING CONNECTIONS TO BE SINGLE POINT TO GROUND BUS ONLY.
- (2) AC AND DC BUS ARE TYPICAL TERMINAL BLOCK BUSES.
- (3) WIRES FOLLOW LEGEND UNLESS OTHERWISE MARKED.
- (4) TERMINAL BLOCKS ARE FOR THE DC RETURN (-) BUS FOR THE RIO-128 DIGITAL INPUTS.

SEE NOTE (4)

No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/4/2020
SCALE AS SHOWN
DESIGNED BY TDT
DRAWN BY JLH
CHECKED BY TDT


SOUTHEAST MLS 677E
 MANATEE COUNTY

LICENSED PROFESSIONAL TIMOTHY THOMAS, P.E. FL LICENSE NUMBER 47079

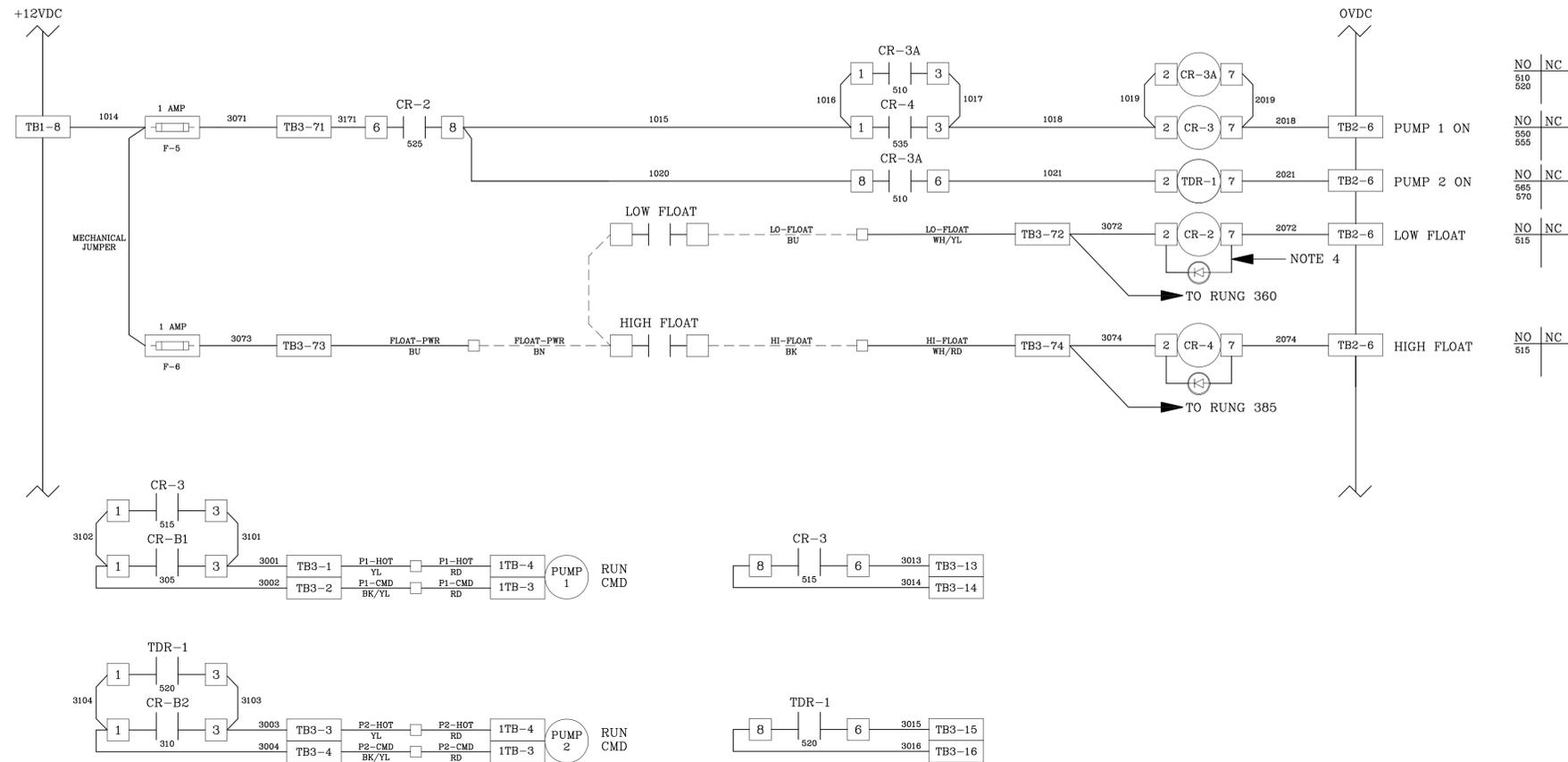
**DFS TCU PANEL
 WIRING SCHEMATICS**

SHEET NUMBER I-10



This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

800
805
810
815
820
825
830
835
840
845
850
855
860
865
870
875
880
885
890
895



- NOTE:
- (1) ALL GROUNDING CONNECTIONS TO BE SINGLE POINT TO GROUND BUS ONLY.
 - (2) AC AND DC BUS ARE TYPICAL TERMINAL BLOCK BUSES.
 - (3) WIRES FOLLOW LEGEND UNLESS OTHERWISE MARKED.
 - (4) DIODE: PN: 006-0019 (1N4004)

No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/4/2020
SCALE AS SHOWN
DESIGNED BY TDT
DRAWN BY JLH
CHECKED BY TDT

SOUTHEAST MLS 677E

MANATEE COUNTY

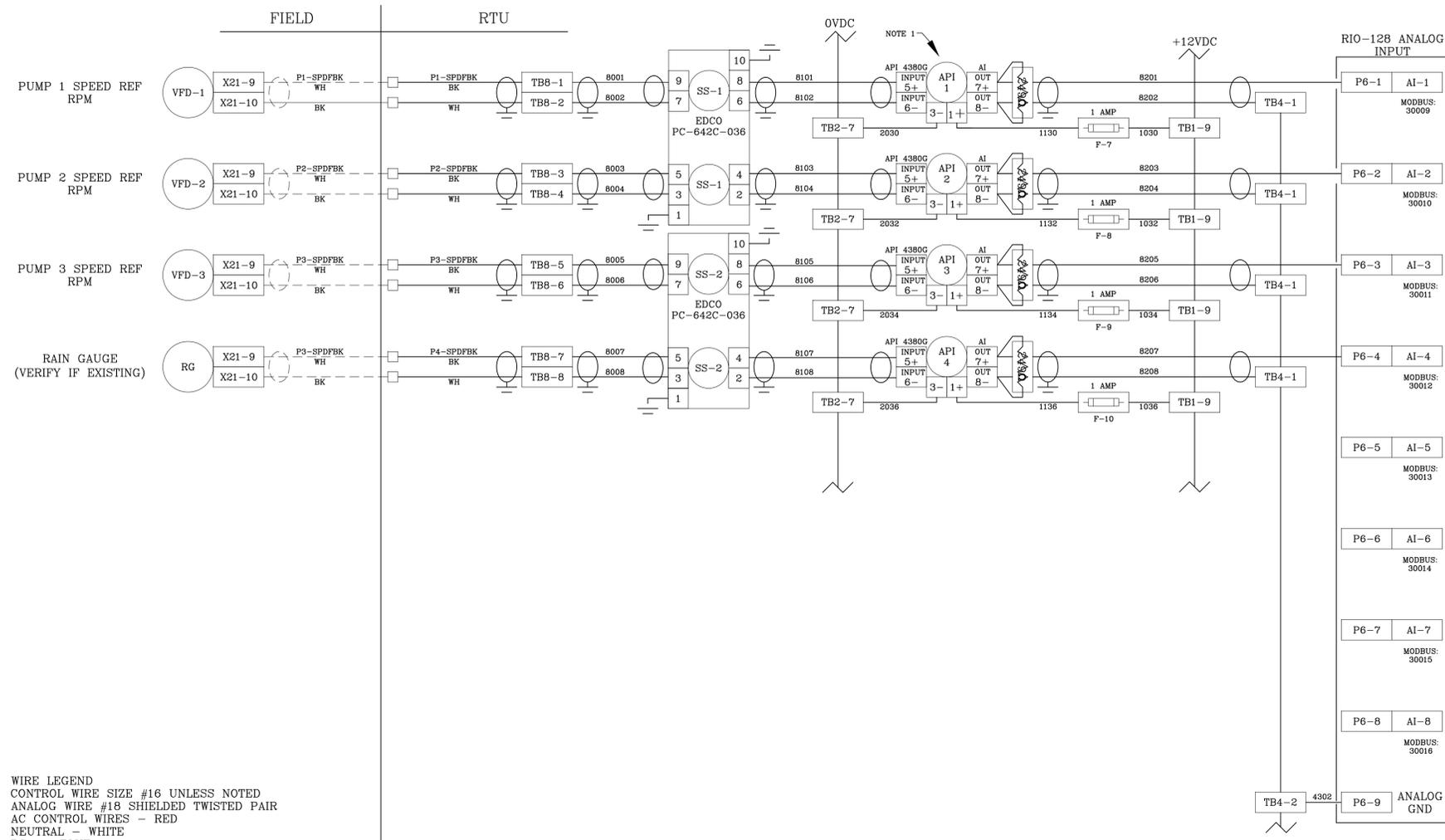
LICENSED PROFESSIONAL
TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER 47079

**DFS TCU PANEL
WIRING SCHEMATICS**

SHEET NUMBER
I-11



This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



WIRE LEGEND
 CONTROL WIRE SIZE #16 UNLESS NOTED
 ANALOG WIRE #18 SHIELDED TWISTED PAIR
 AC CONTROL WIRES - RED
 NEUTRAL - WHITE
 DC+ - BLUE
 DC- - BLUE/WHITE
 POWERED FROM FIELD - YELLOW

NOTE:
 (1) LOOP ISOLATORS ON ANALOG INPUTS MUST BE CORRECTLY CONFIGURED FOR 4-20ma INPUT & 4-20ma OUTPUT BEFORE INSTALLING; FAILURE TO DO SO WILL RESULT IN EQUIPMENT DAMAGE AND VOIDS FACTORY WARRANTY
 (2) DO NOT EXCEED 5.5 VOLTS ON ANALOG INPUTS.
 (3) LOOP ISOLATORS ARE RECOMMENDED FOR CIRCUIT PROTECTION.
 (4) STATIC SENSITIVE DEVICES; OBSERVE PROPER ESD PROCEDURES DURING INSTALLATION.

No.	REVISIONS	DATE	BY

Kimley»Horn
 © 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT 148400053
DATE 9/4/2020
SCALE AS SHOWN
DESIGNED BY TDT
DRAWN BY JLH
CHECKED BY TDT

Manatee County
 FLORIDA
SOUTHEAST MLS 677E
 MANATEE COUNTY
 FL

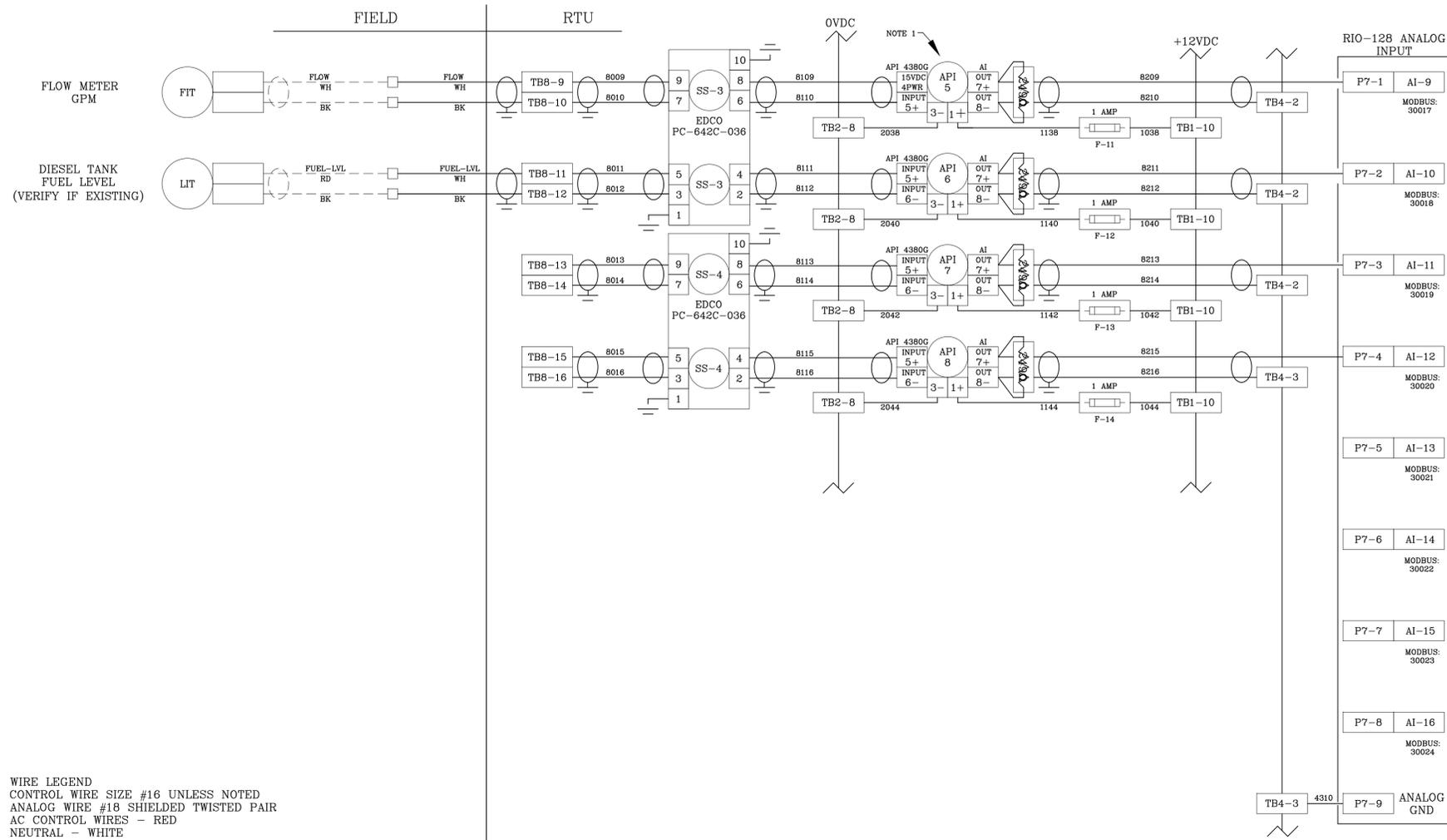
LICENSED PROFESSIONAL
 TIMOTHY THOMAS, P.E.
 FL LICENSE NUMBER
 47079

**DFS TCU PANEL
 WIRING SCHEMATICS**

SHEET NUMBER
I-12



This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT
 148400053
 DATE
 9/4/2020
 SCALE AS SHOWN
 DESIGNED BY TDT
 DRAWN BY JLH
 CHECKED BY TDT



SOUTHEAST MLS 677E

MANATEE COUNTY

LICENSED PROFESSIONAL
 TIMOTHY THOMAS, P.E.
 FL LICENSE NUMBER
 47079

FL DATE:

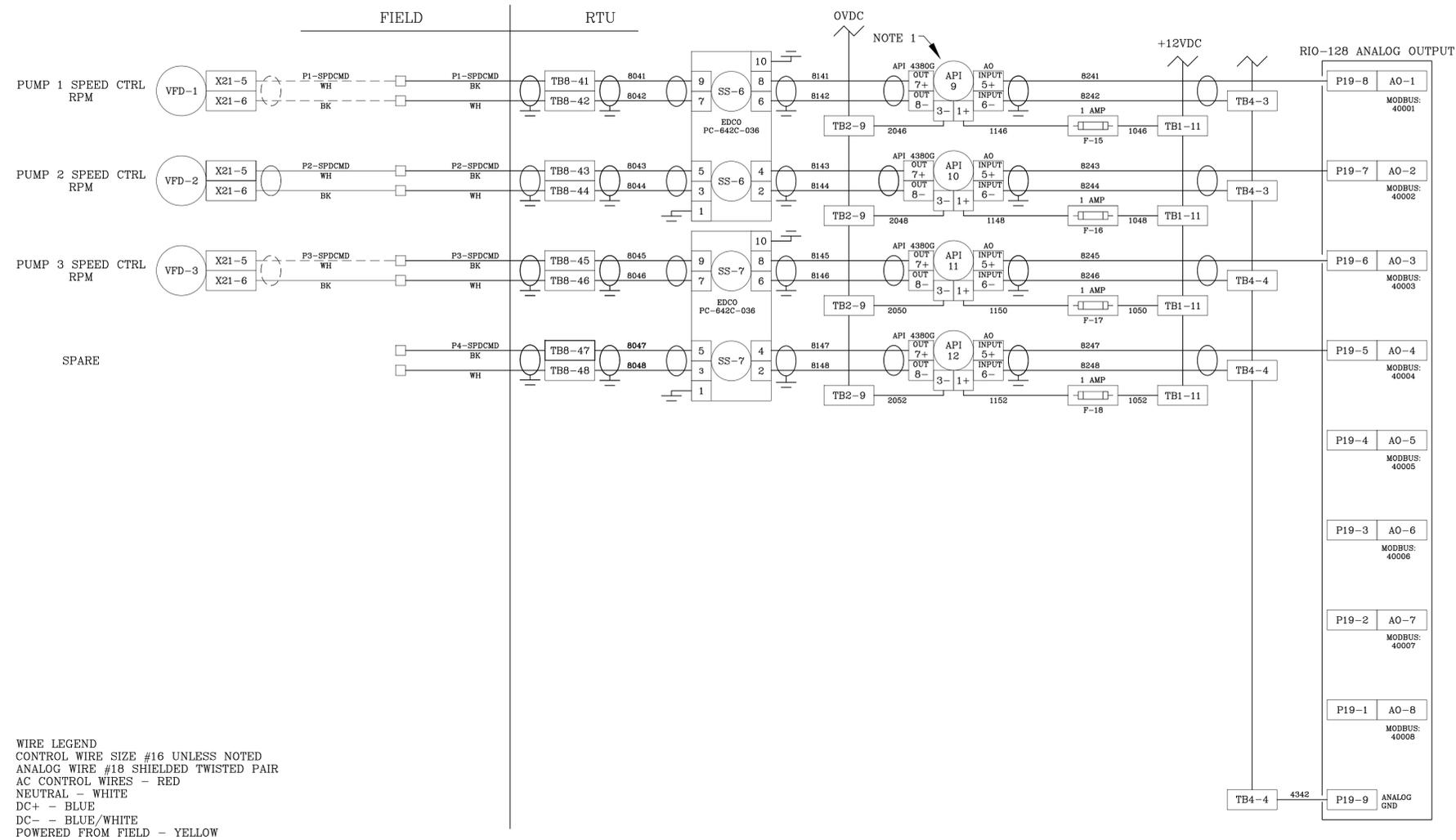
DFS TCU PANEL
 WIRING SCHEMATICS

SHEET NUMBER

I-13

No.	REVISIONS	DATE	BY

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/4/2020
SCALE	AS SHOWN
DESIGNED BY	TDT
DRAWN BY	JLH
CHECKED BY	TDT

Manatee County
 FLORIDA

SOUTHEAST MLS 677E

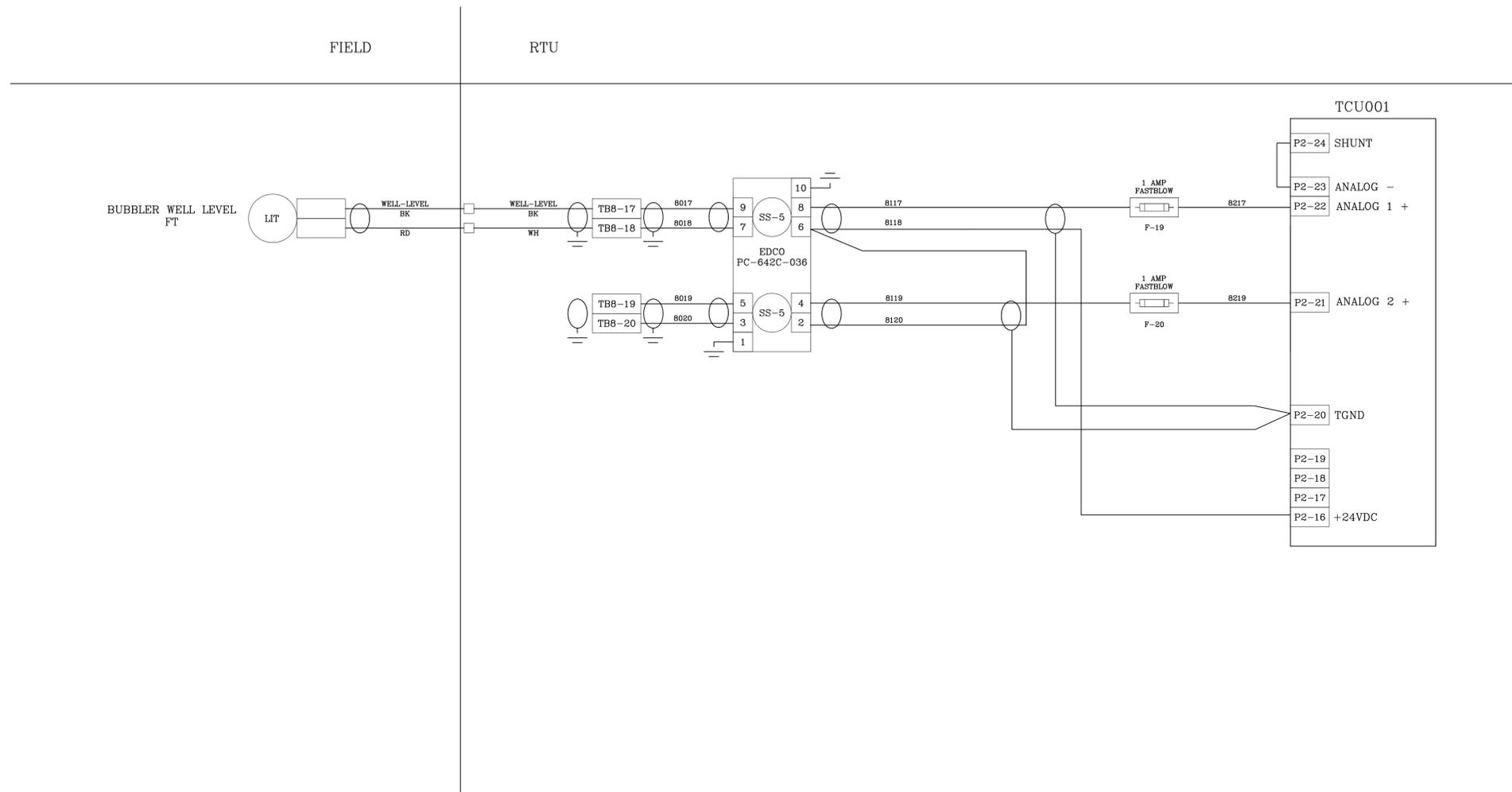
MANATEE COUNTY

LICENSED PROFESSIONAL	TIMOTHY THOMAS, P.E.
FL LICENSE NUMBER	47079

**DFS TCU PANEL
 WIRING SCHEMATICS**

SHEET NUMBER	I-14
--------------	------

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



No.	REVISIONS	DATE	BY

Kimley»Horn

© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 100 2ND AVENUE SOUTH, SUITE 105-N, ST. PETERSBURG, FL 33701
 PHONE: 727-547-3999
 WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400053
DATE	9/4/2020
SCALE	AS SHOWN
DESIGNED BY	TDT
DRAWN BY	JLH
CHECKED BY	TDT

SOUTHEAST MLS 677E
 MANATEE COUNTY FL

LICENSED PROFESSIONAL
 TIMOTHY THOMAS, P.E.
 FL LICENSE NUMBER
 47079

**DFS TCU PANEL
 WIRING SCHEMATICS**

SHEET NUMBER
I-15