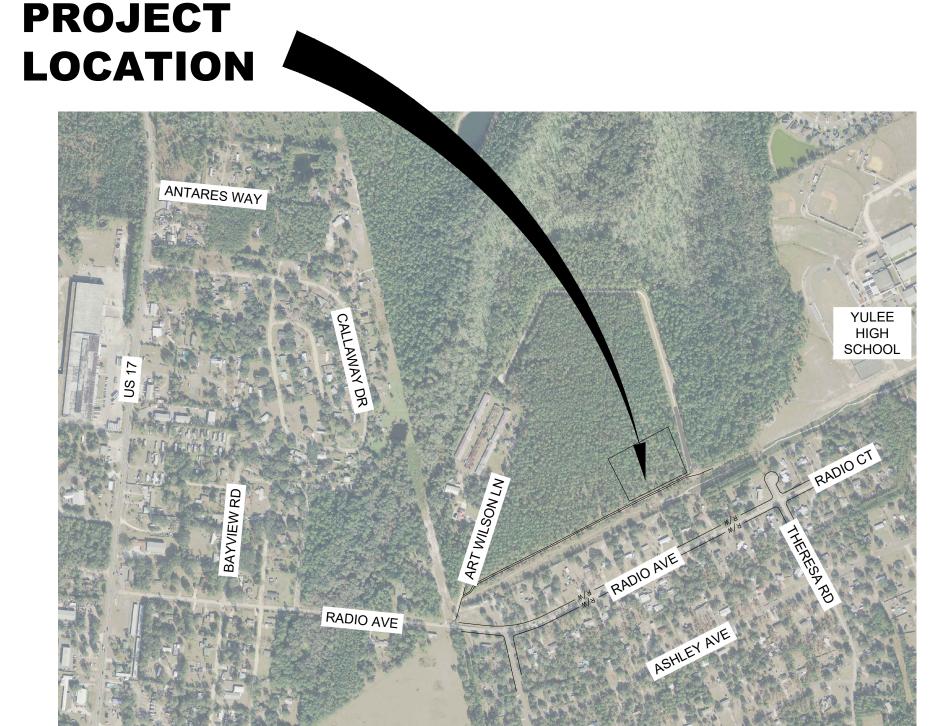
# CONSTRUCTION DRAWINGS FOR

# RADIO AVENUE RECLAIMED WATER GROUND STORAGE TANK & PUMP STATION

JEA PROJECT No. 8004751 **MARCH 2021 BID SET** 







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MICHAEL R. KLINK, P.E. NO. 71840

JEAN PAUL SILVA, P.E. NO. 66522

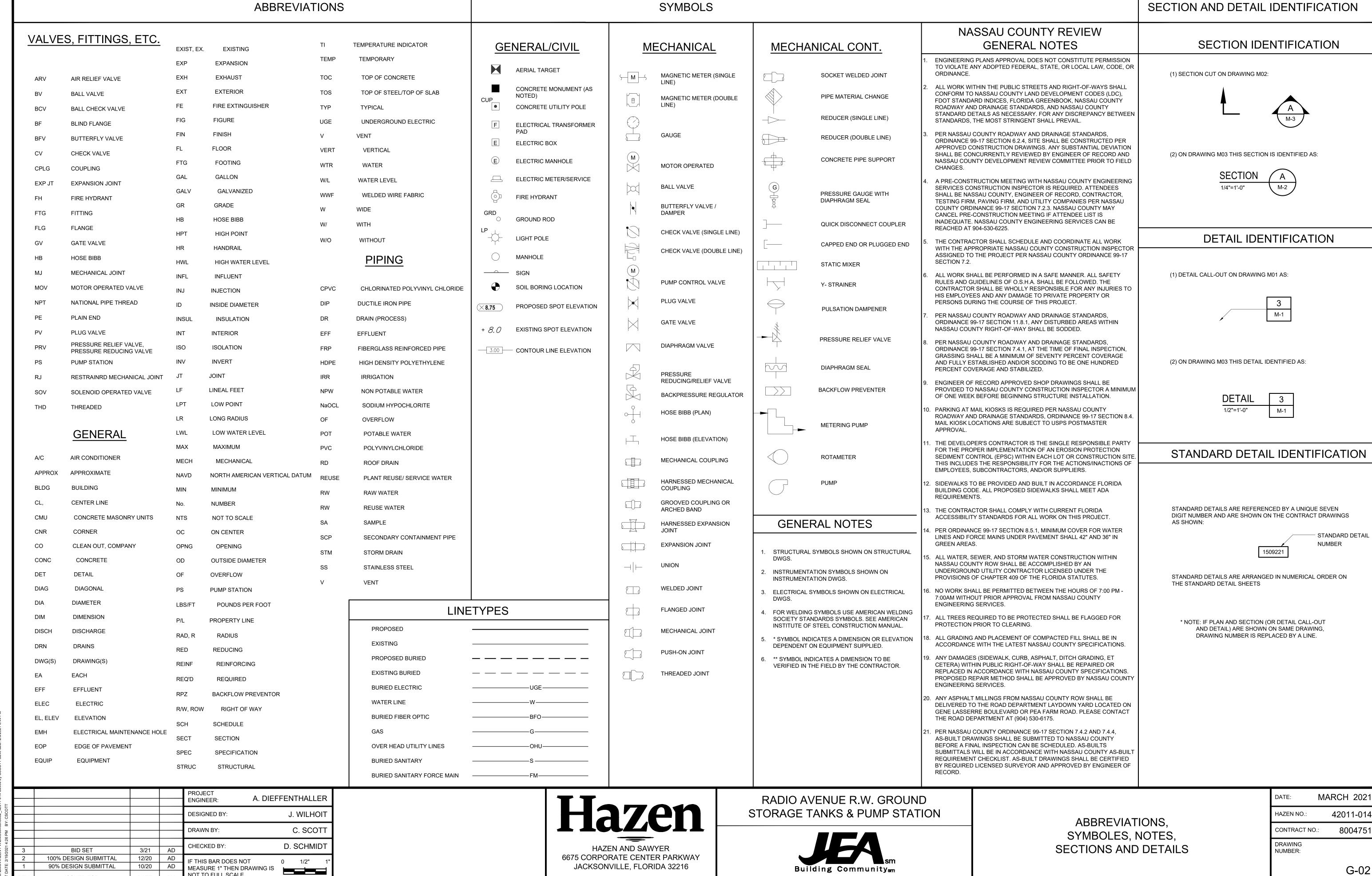
PREPARED BY: Hazen

HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY JACKSONVILLE, FLORIDA 32216 CERTIFICATE OF AUTHORIZATION NO.: 2771

JOHN C. BURKE, P.E. NO. 17301

BERNARD L. STEIGER, P.E. NO. 49908

KEITH R. DINNEN, P.E. NO 78757

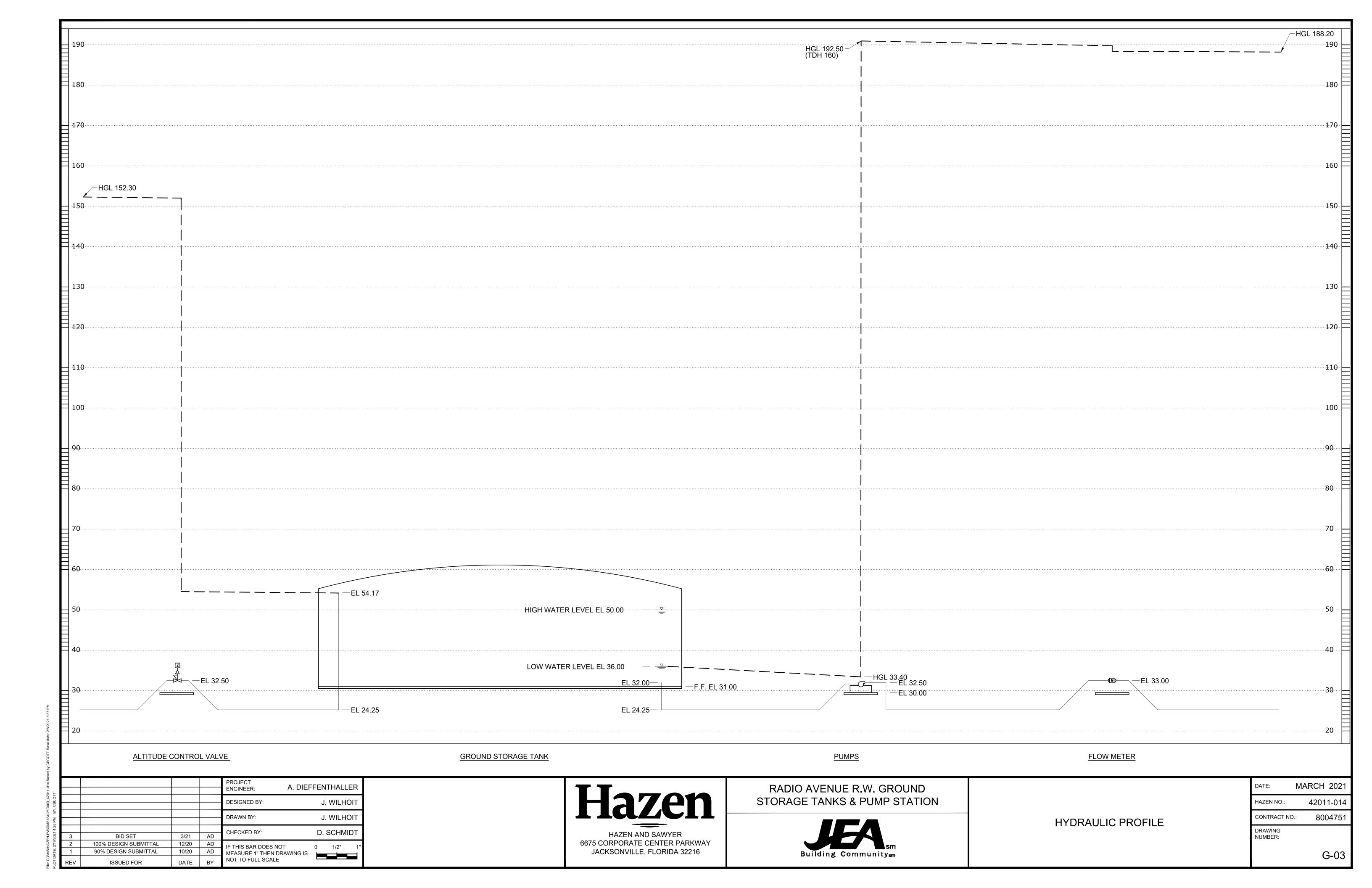


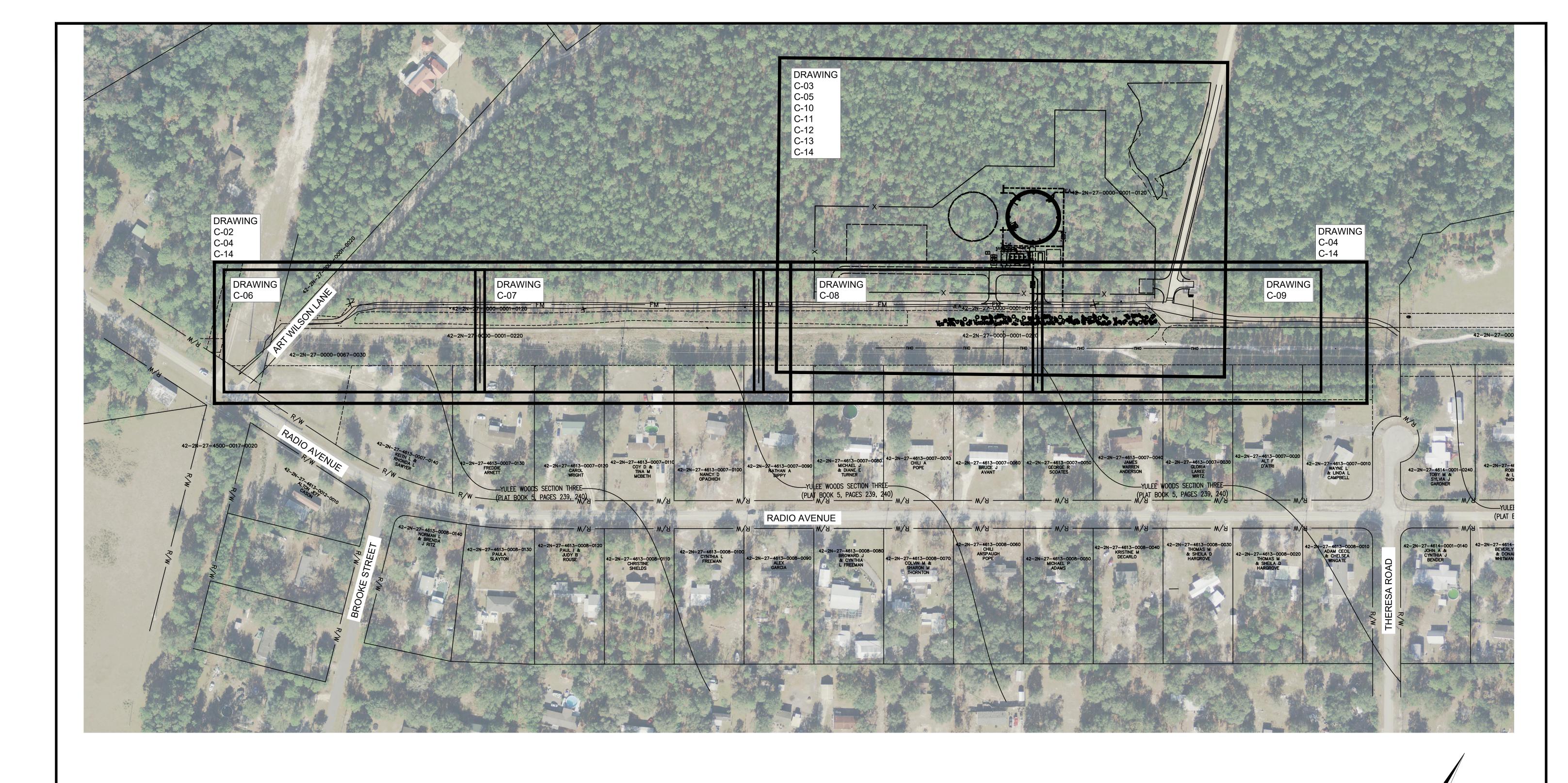
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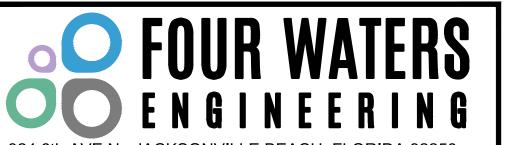
DATE

ISSUED FOR

JACKSONVILLE, FLORIDA 32216







324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250 904-414-2400 C.O.A.# 31101 WWW.4WENG.COM

DUCHAR					PROJECT ENGINEER: A. DIEF	FENTHALLER
STEVE					DESIGNED BY:	M. KLINK
PM BY:					DRAWN BY:	S. DUCHARME
17/2021 4:27	3	BID SET	3/21	AD	CHECKED BY:	G. BROWN
3	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1"
DATE:	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING IS	0 1/2 1
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Hazen HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY JACKSONVILLE, FLORIDA 32216

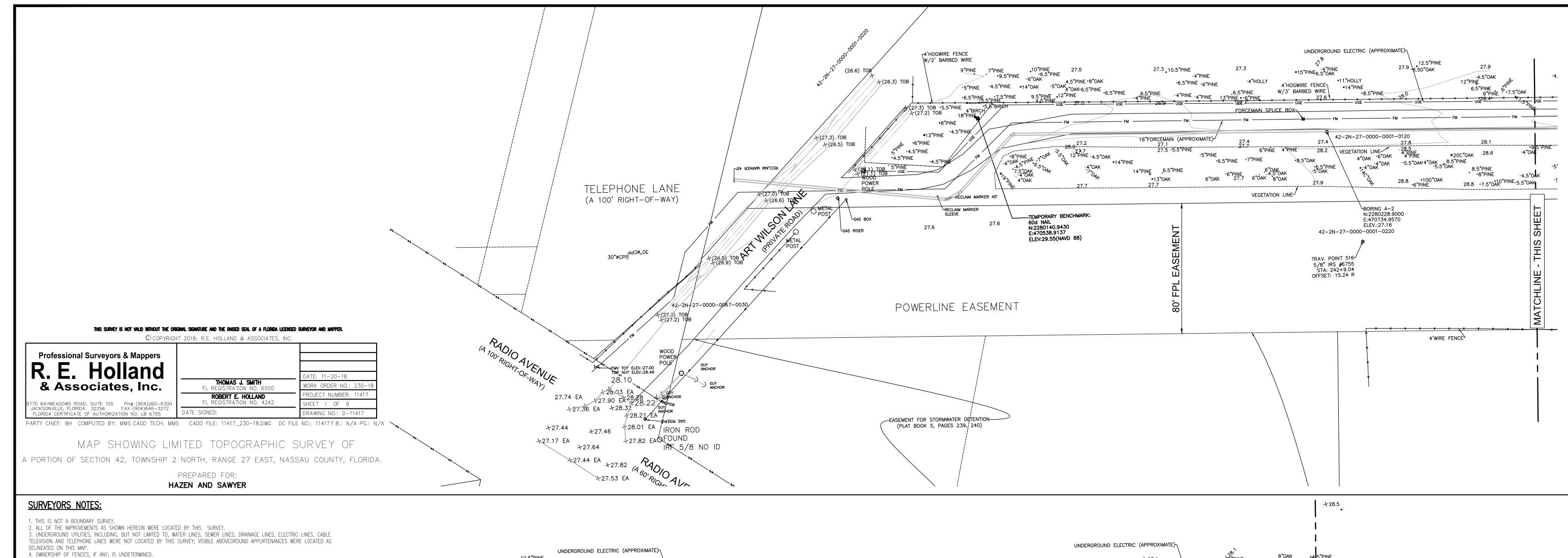
RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



VICINITY PLAN AND KEY MAP

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO.:	8004751
DRAWING NUMBER:	
	C-01

SCALE: 1" = 100'



4.5"PINE13"PINE

4'HOGWIRE FENCE

W/2' BARBED WIRE

13"PINE 4.5 PINE 13"PINE 4.5 PINE 13"PINE 4.5 PINE 13"PINE 4.5 PINE 4.5 PIN

+28.3\_\_\_ 12D"OAK

8"PINE \*13"PINE

\*14D"OAK

16"FORCEMAIN (APPROXIMATE)

+28.6

•6"0AK

+28.1

VEGETATION LINE-

5. THIS IS A COPYRIGHTED DOCUMENT, NO PORTION OF IT MAY BE REPRODUCED, WHOLLY OR IN PART, WITHOUT THE EXPRESSED

WRITTEN PERMISSION OF R.E. HOLLAND & ASSOCIATES, INC. 6. THE FIELD WORK OF THIS SURVEY WAS COMPLETED ON 11/14/2018.

7. THIS SURVEY MAP DOES NOT REFLECT OR DETERMINE OWNERSHIP. 8. THE RELATIVE LINEAR DISTANCE ACCURACY FOR THIS SURVEY EXCEEDS

9. ALL MEASUREMENTS ARE IN U.S. STANDARD FEET AND WERE MADE WITH A THEODOLITE AND ELECTRONIC DISTANCE MEASURING DEVICE AND/OR STEEL TAPE. 10. THIS SURVEY IS CERTIFIED ONLY TO THE NAMED PARTIES HEREON AND MAY NOT BE TRANSFERRED TO ANY THIRD PARTIES OR

SUCCESSORS IN TITLE, AND SAID SURVEY IS FURTHER CERTIFIED AS BEING CORRECT AS OF THE LAST DATE OF FIELD SURVEY. 11. ALL PROPERTY LINES SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY, NO BOUNDARY SURVEYING SERVICES PROVIDED. 12. ANY INFORMATION SHOWN ON THIS SURVEY AS "INFORMATION SUPPLIED BY CLIENT" OR "INFORMATION AS SUPPLIED BY OTHERS" IS NOT WARRANTED BY THE UNDERSIGNING SURVEYOR, AND THE FIRM AND THE UNDERSIGNED SURVEYOR ASSUMES NO LIABILITY. EXPRESSED OR IMPLIED, FOR THE CORRECTNESS OR ACCURACY OF THE SUPPLIED DATA. 13. COORDINATES SHOWN HEREON ARE IN US SURVEY FEET AND ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE

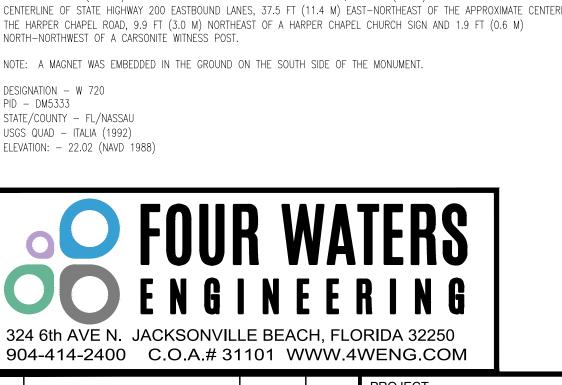
STATION NETWORK. 14. REFERENCE BENCHMARK; DESCRIBED BY FL DEPT OF ENV PRO 2009. THE MARK IS ABOUT 6.8 MI (10.9 KM) SOUTH-SOUTHEAST OF GROSS, 4.6 MI (7.4KM) EAST OF ITALIA, 3.0 MI (4.8 KM) WEST-NORTHWEST OF HEDGES, IN SECTION 44, TOWNSHIP 2 NORTH, RANGE 27 EAST. TO REACH THE MARK FROM THE INTERSECTION OF INTERSTATE 95 (STATE HIGHWAY 9) OVERPASS AND STATE HIGHWAY A1A, 200 (BUCCANEER TRAIL) IN YULEE, GO WESTERLY ON STATE HIGHWAY A1A, 200 (BUCCANEER TRAIL) FOR 0.55 MI (0.9 KM) TO THE JUNCTION OF HARPER CHAPEL ROAD ON THE RIGHT AND THE MARK ON THE RIGHT, SET IN

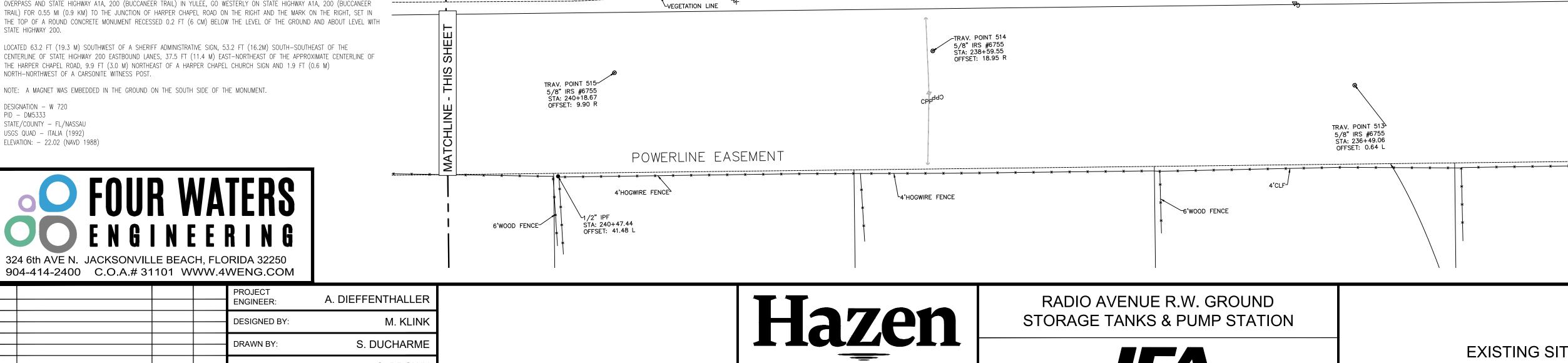
SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT, AS DERIVED FROM THE TRIMBLE VIRTUAL REFERENCE

LOCATED 63.2 FT (19.3 M) SOUTHWEST OF A SHERIFF ADMINISTRATIVE SIGN, 53.2 FT (16.2M) SOUTH-SOUTHEAST OF THE CENTERLINE OF STATE HIGHWAY 200 EASTBOUND LANES, 37.5 FT (11.4 M) EAST-NORTHEAST OF THE APPROXIMATE CENTERLINE OF THE HARPER CHAPEL ROAD, 9.9 FT (3.0 M) NORTHEAST OF A HARPER CHAPEL CHURCH SIGN AND 1.9 FT (0.6 M) NORTH-NORTHWEST OF A CARSONITE WITNESS POST.

NOTE: A MAGNET WAS EMBEDDED IN THE GROUND ON THE SOUTH SIDE OF THE MONUMENT.

PID - DM5333 STATE/COUNTY - FL/NASSAU USGS QUAD - ITALIA (1992) ELEVATION: - 22.02 (NAVD 1988)





\*10.5"PINE

\*14"PINE

Hazen
HAZEN AND SAWYER
HAZEN AND SAWYER



BORING A-3 N:2280438.0469 E:471146.4476

\*16"PINE

VEGETATION LINE

VEGETATION LINE7

**十27.9** 

5.5"PINE

16"FORCEMAIN (APPROXIMATE)

·4"PINE

4.7PINE +28.4 4.5 PINE

·5"PINE

·4"PINE

RECLAIM WATER VALVE 8'25 - COVER ELEV:27.37

\*10.5"PINE \*15"PINE

**EXISTING SITE PLAN I** 

·4.5"PINE

W/2' BARBED WIRE \

\*15T"OAK 5"PINE 11"PINE 5"PINE 6"OAK 28.7 6.5"HOLLY

4'HOGWIRE FENCE-\

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	C-02

15 0

SCALE: 1'' = 30'

DUCHARM					PROJECT A. DIEFFENTHALLER
STEVE					DESIGNED BY: M. KLINK
3 PM BY:					DRAWN BY: S. DUCHARME
17/2021 4:28	3	BID SET	3/21	AD	CHECKED BY: G. BROWN
3	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT 0 1/2" 1"
DATE:	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING IS
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**+28.4** 

·4.5"0AK

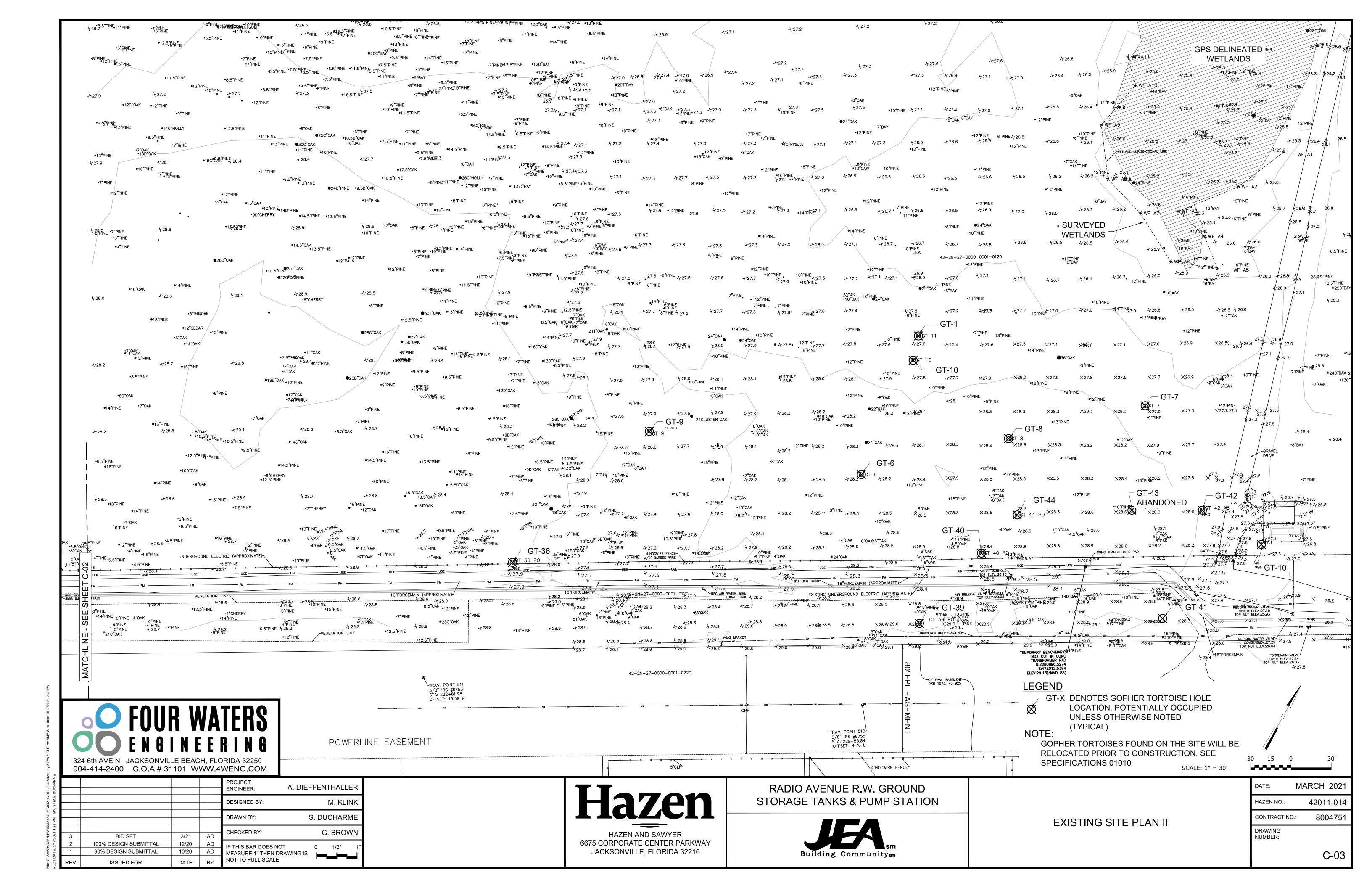
·5"0AK

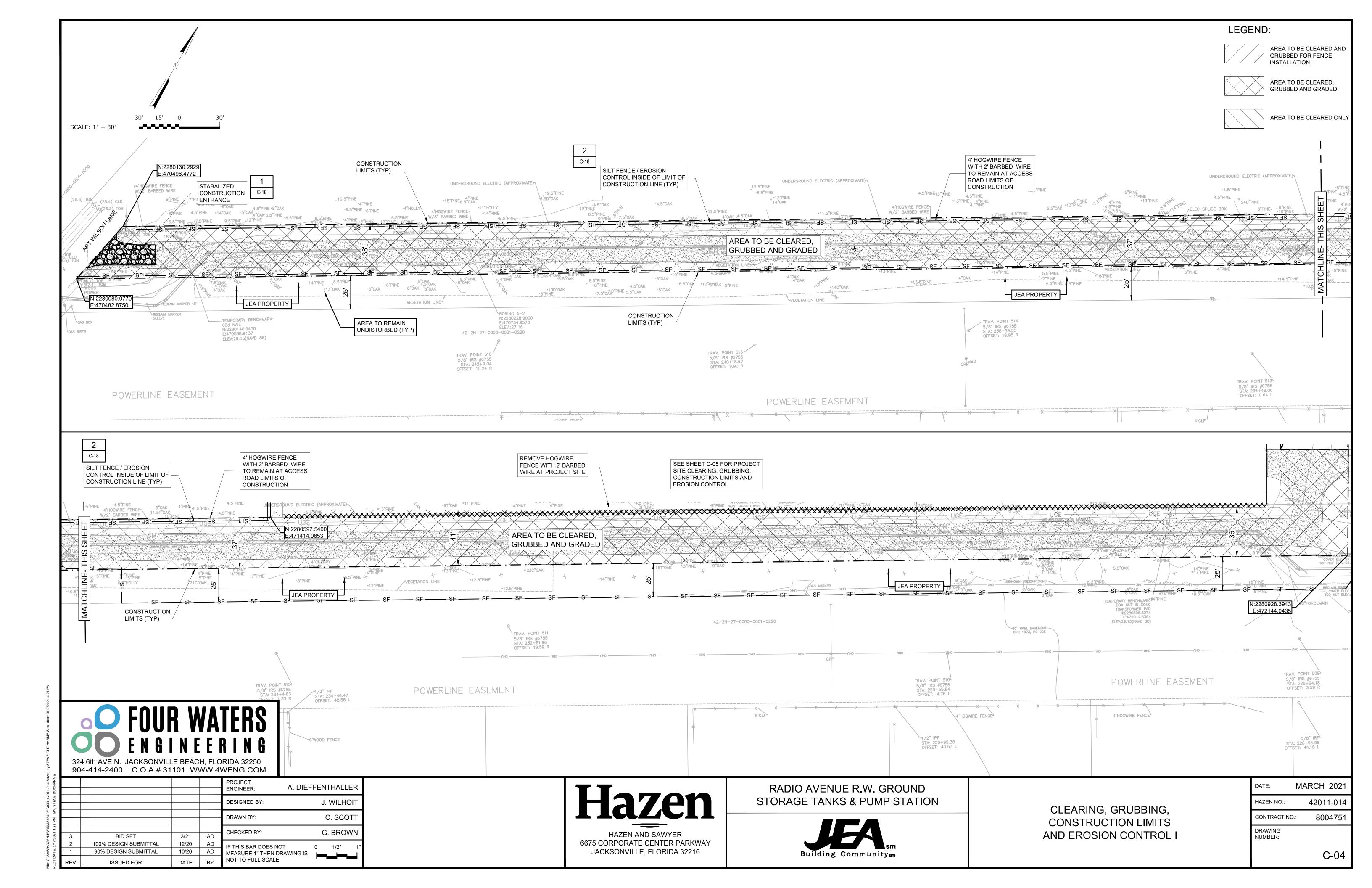
:5"OAK +28.8

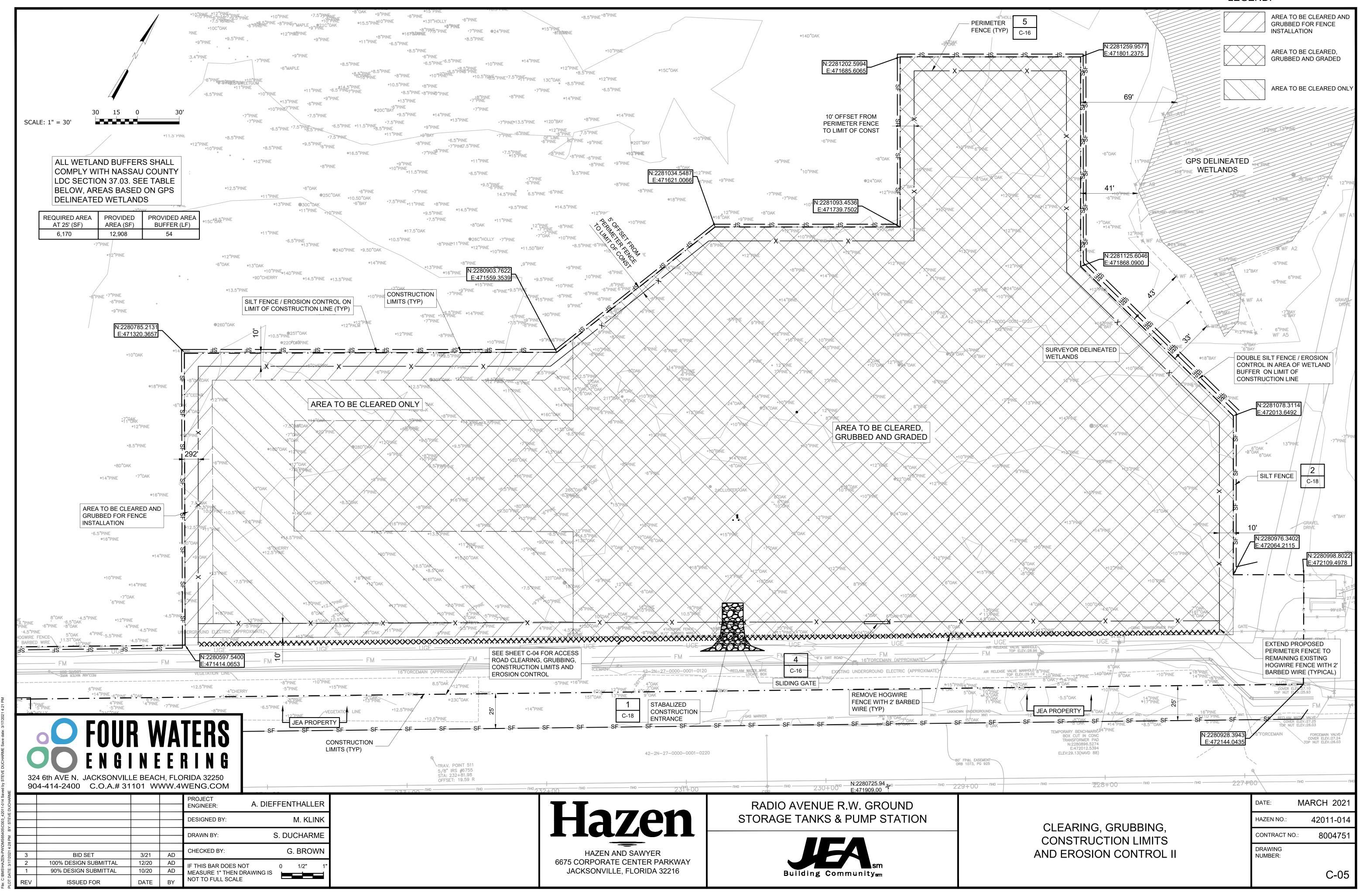
·4.5"0AK

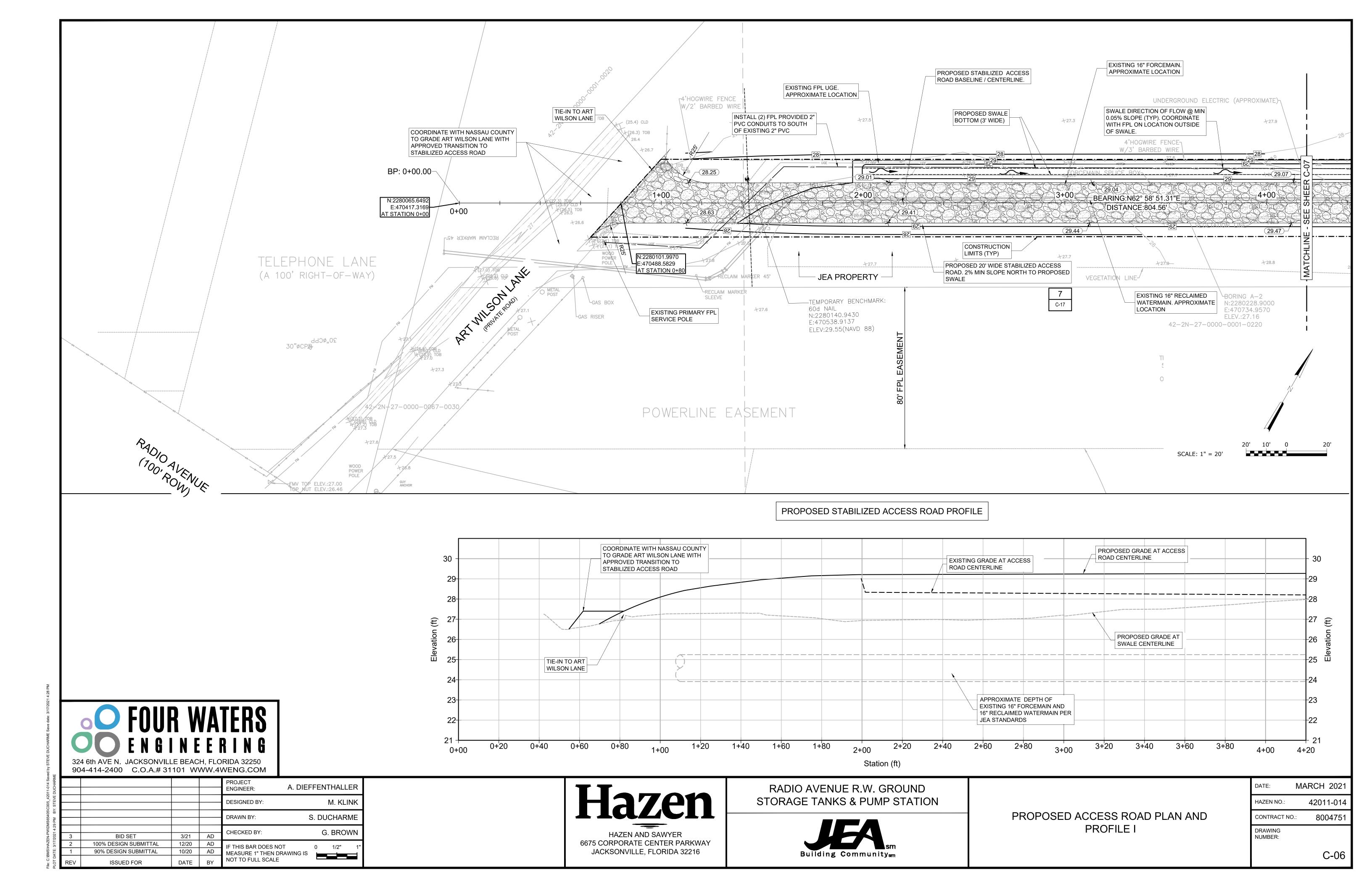
2410"PINE 5.5"0AK

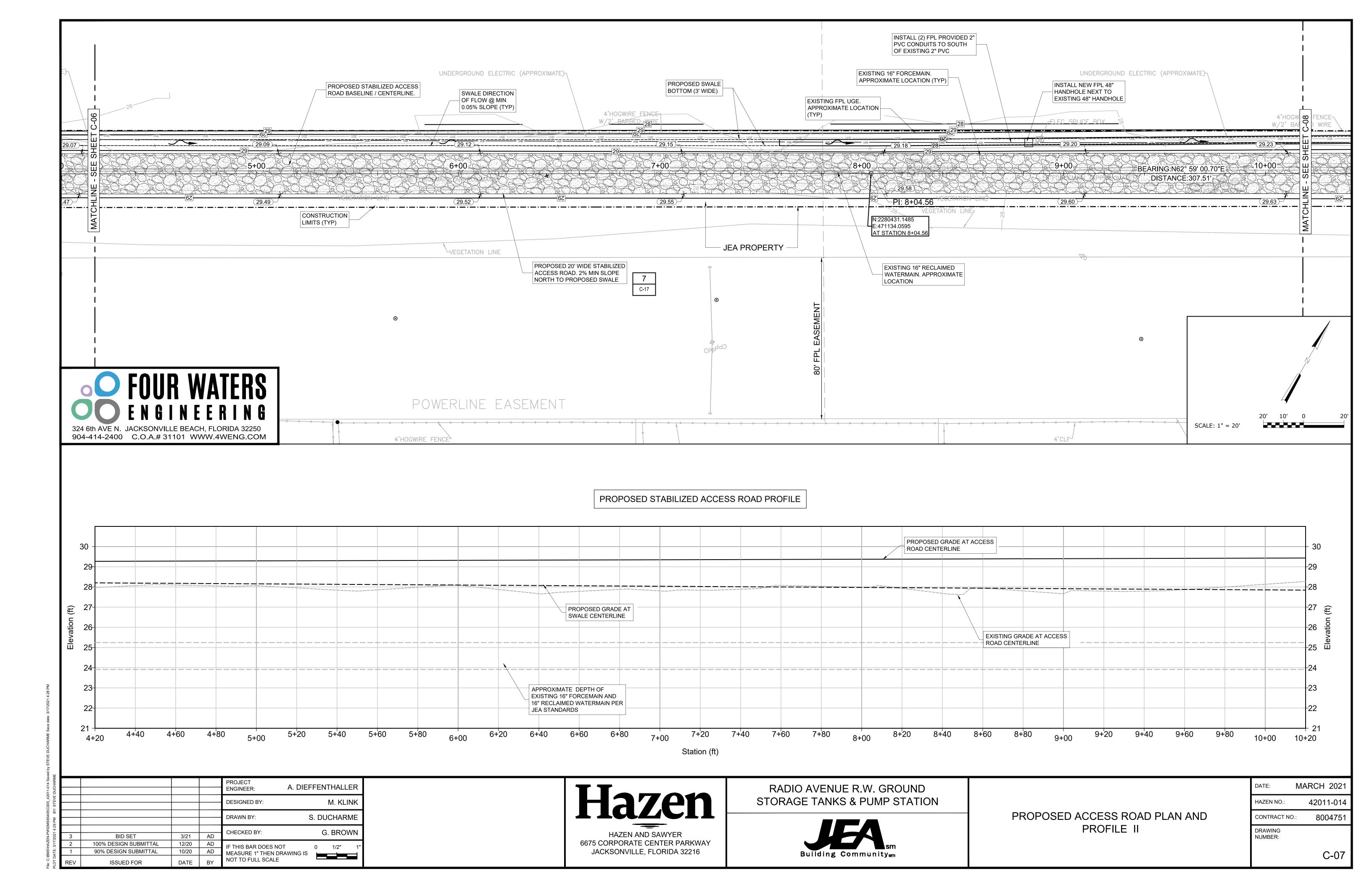
6675 CORPORATE CENTER PARKWAY JACKSONVILLE, FLORIDA 32216

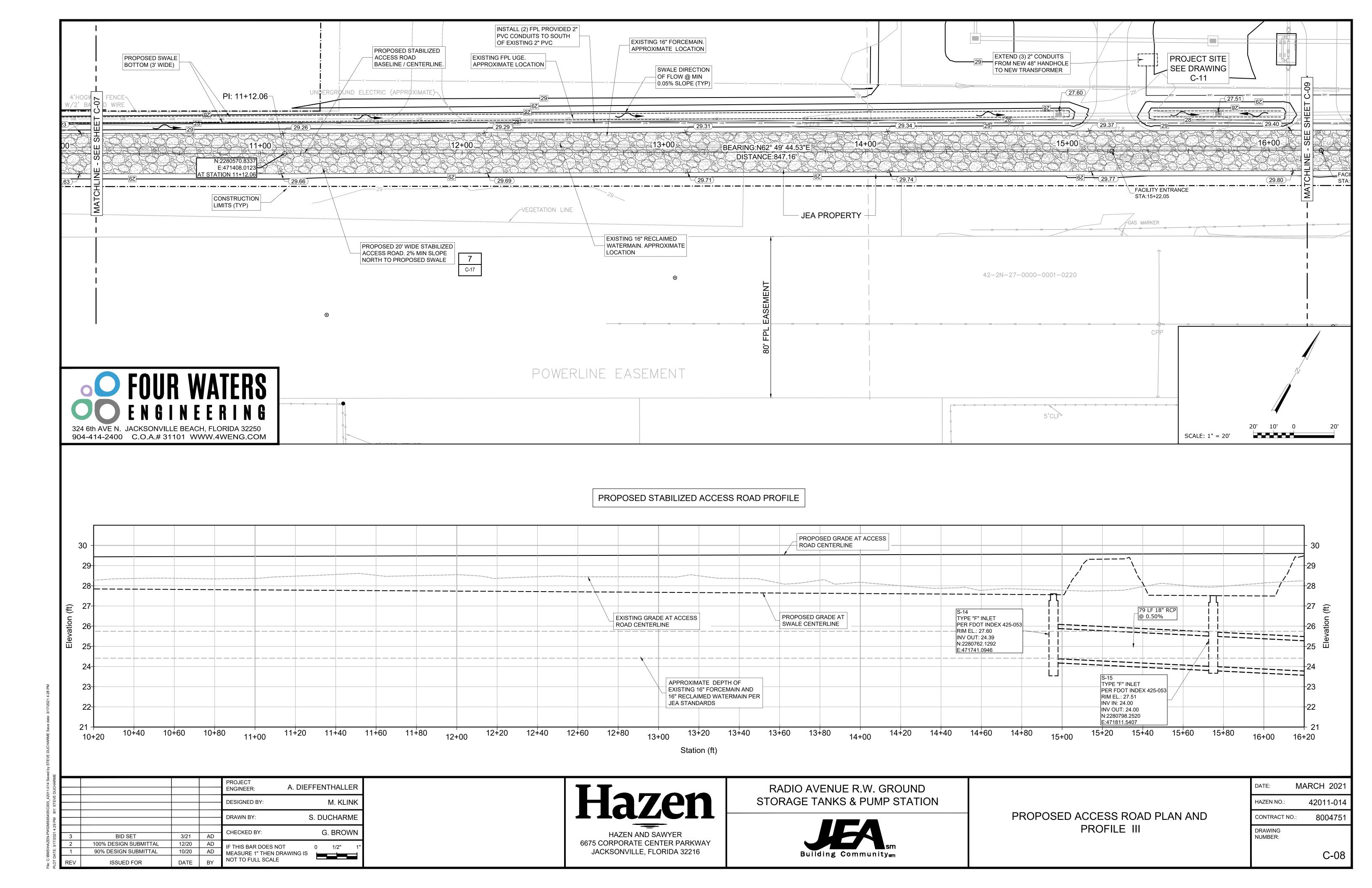


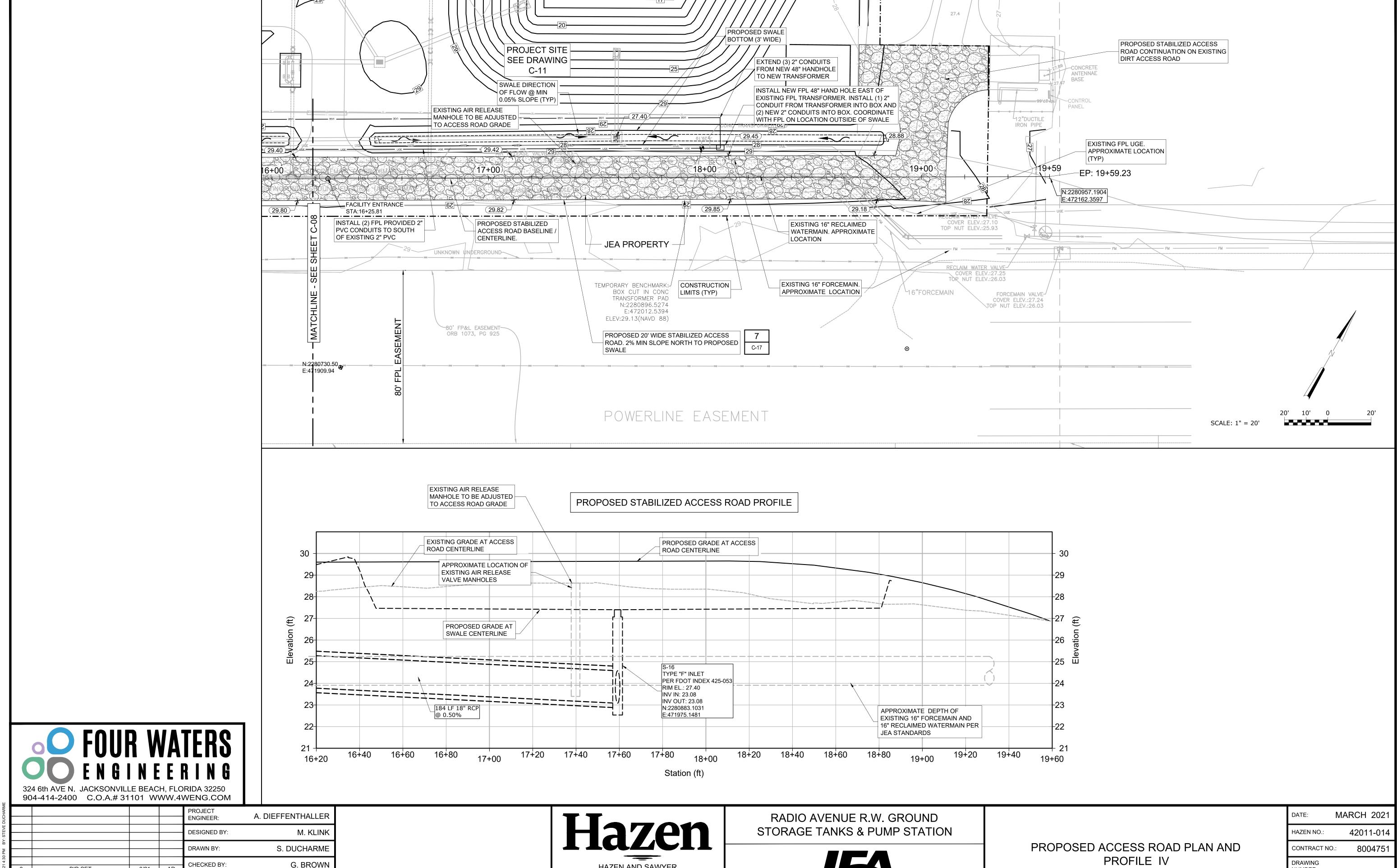












HAZEN AND SAWYER

6675 CORPORATE CENTER PARKWAY

JACKSONVILLE, FLORIDA 32216

NUMBER:

C-09

**BID SET** 

100% DESIGN SUBMITTAL

90% DESIGN SUBMITTAL

ISSUED FOR

3/21

DATE

12/20 AD

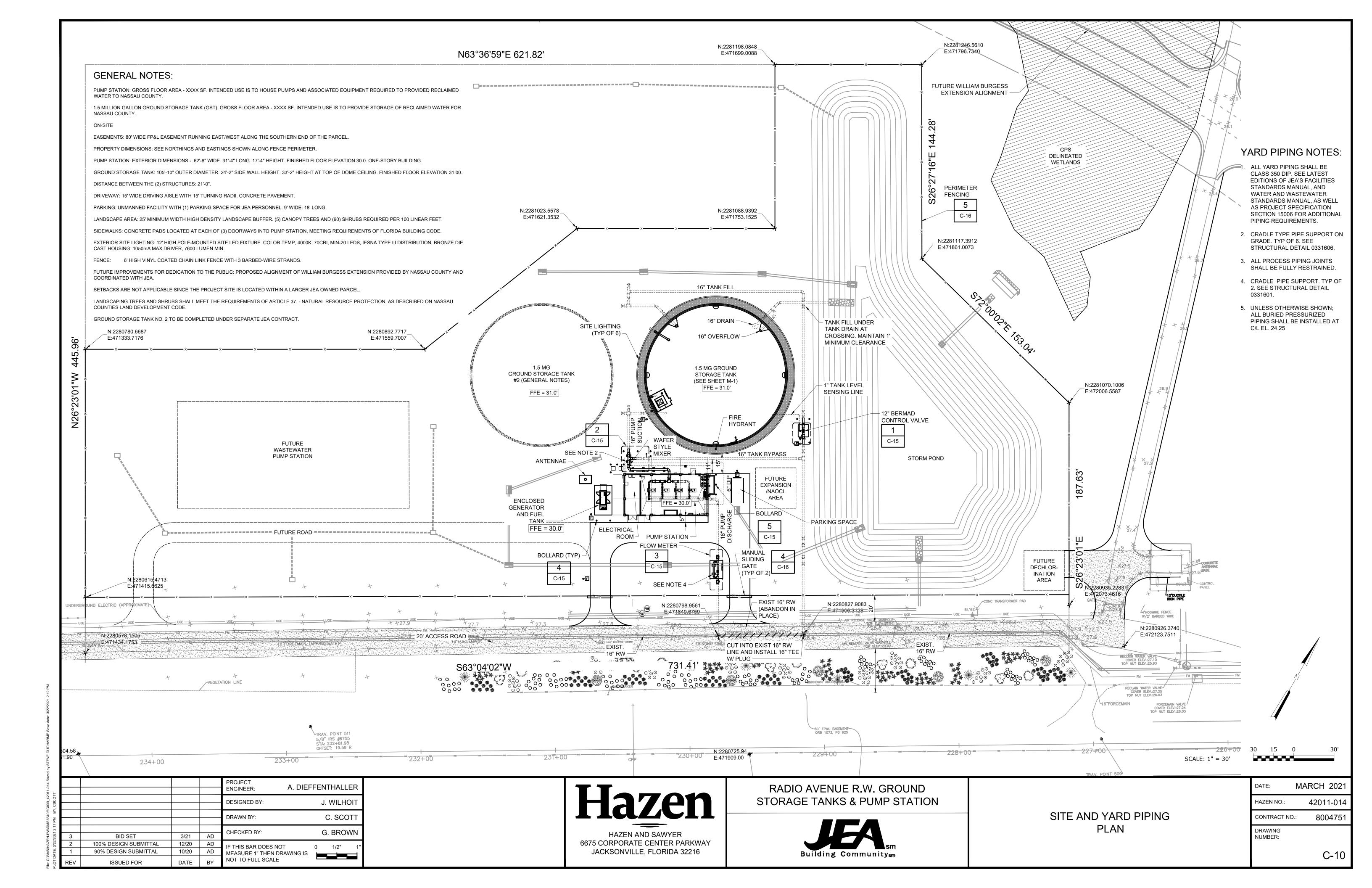
10/20 AD

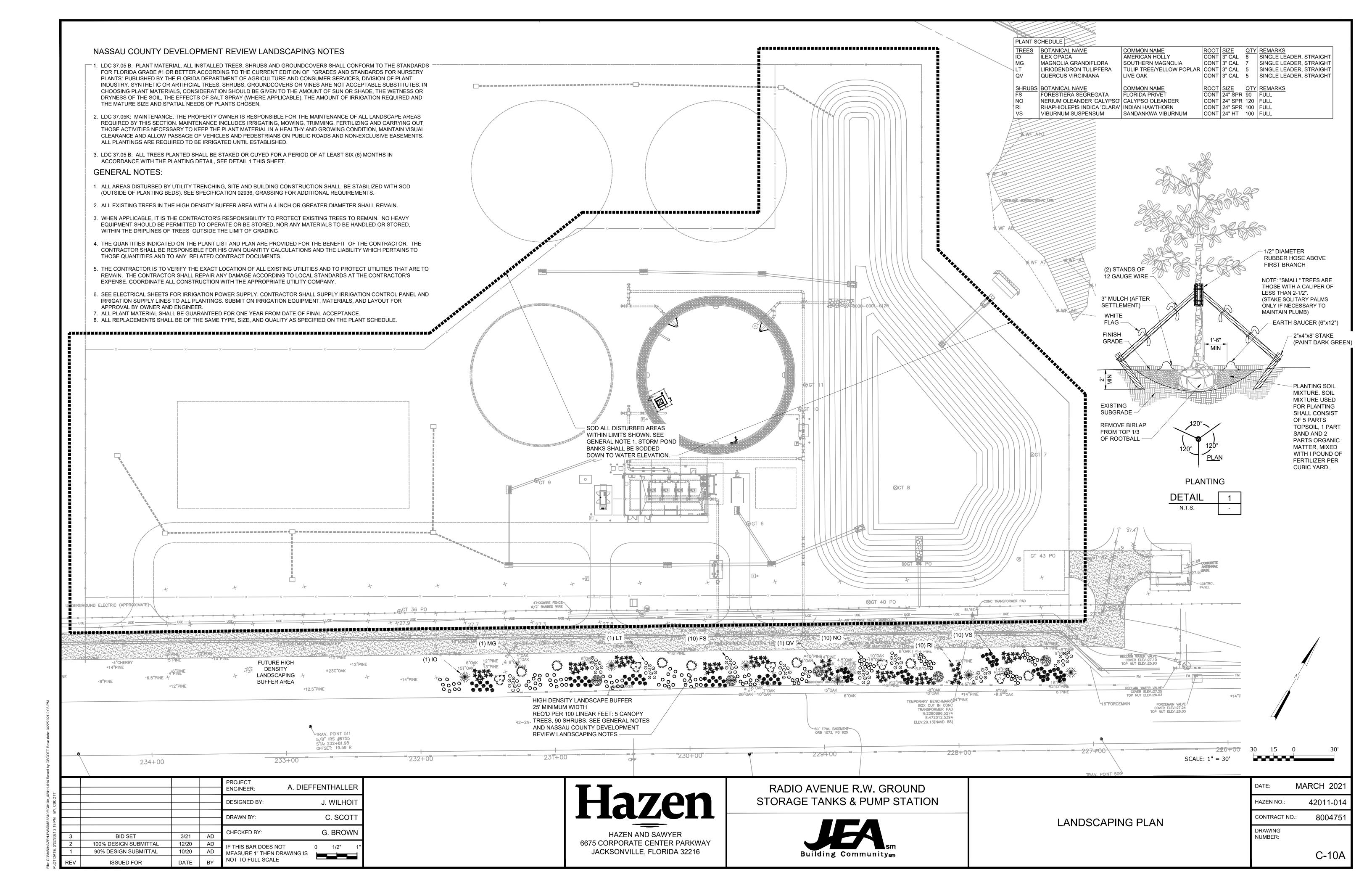
IF THIS BAR DOES NOT

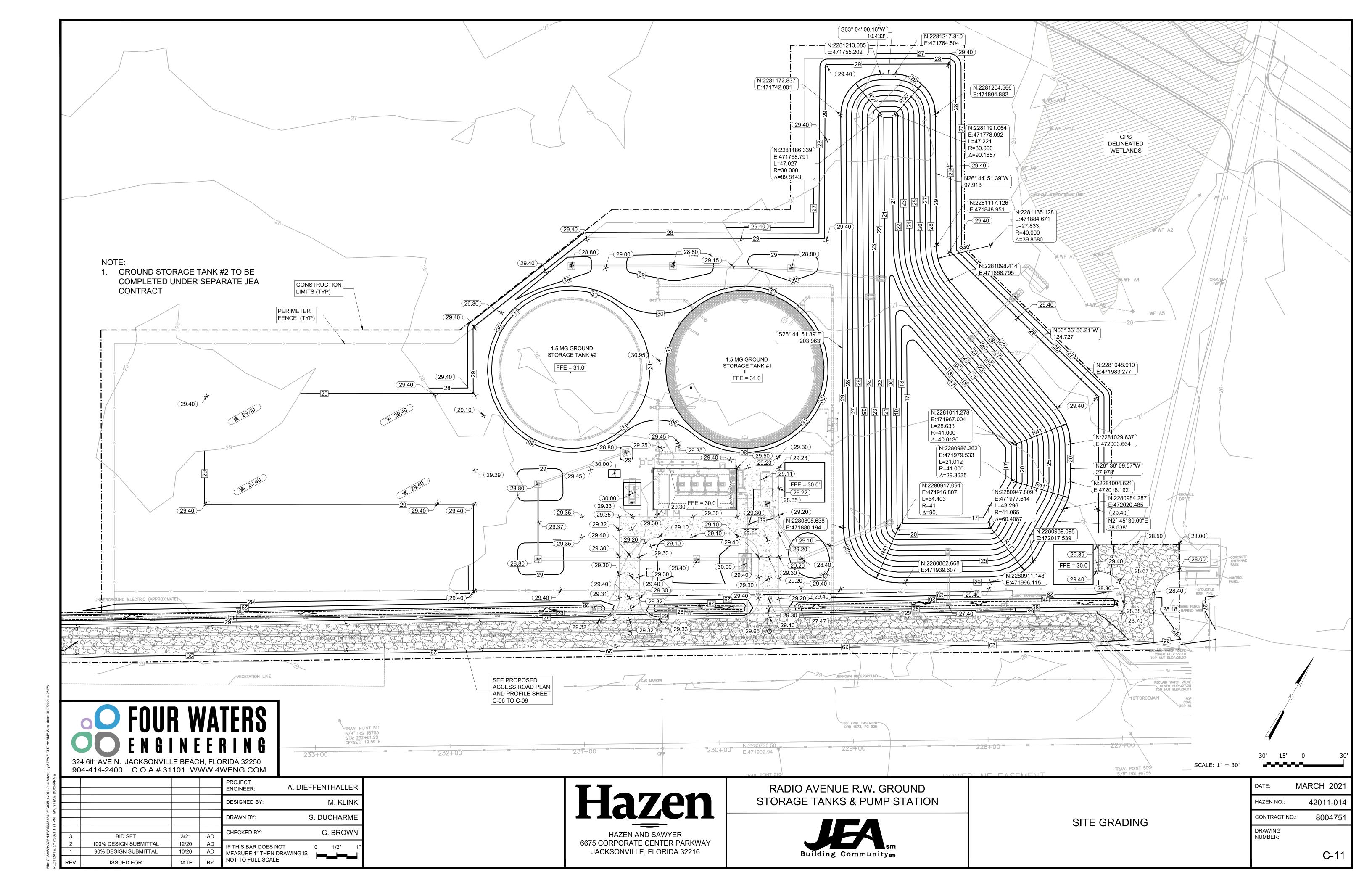
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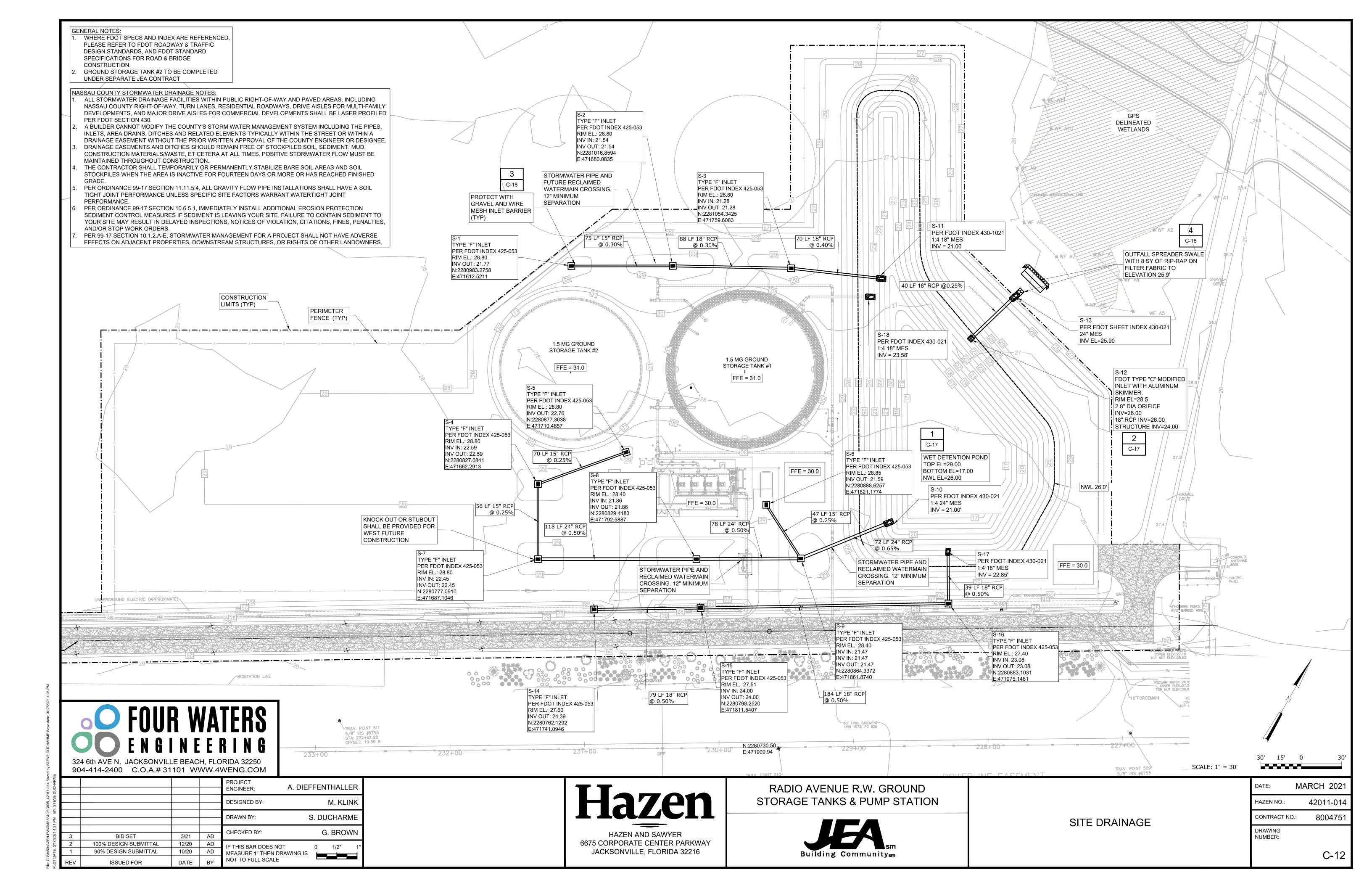
MEASURE 1" THEN DRAWING IS

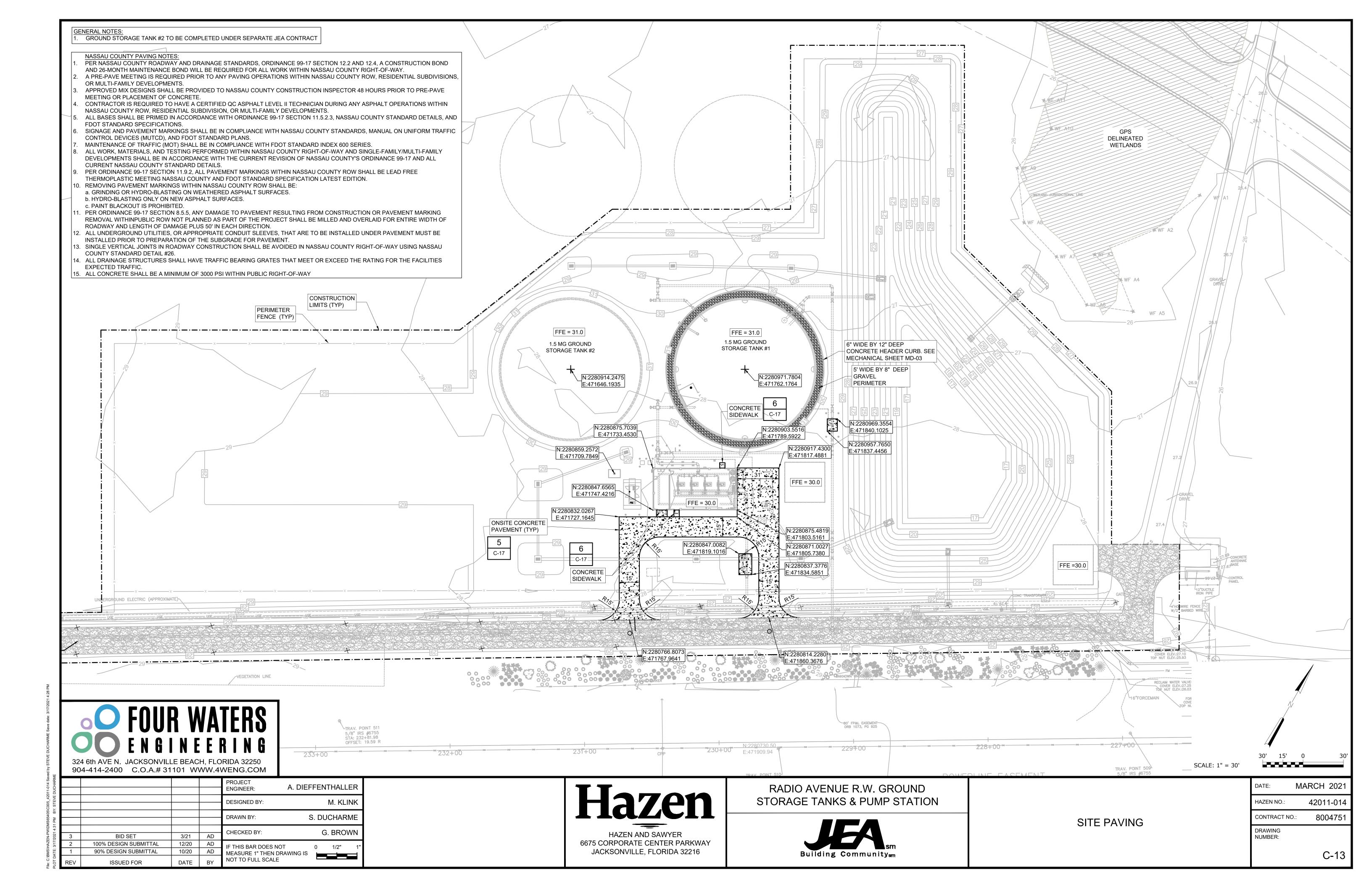
0 1/2"

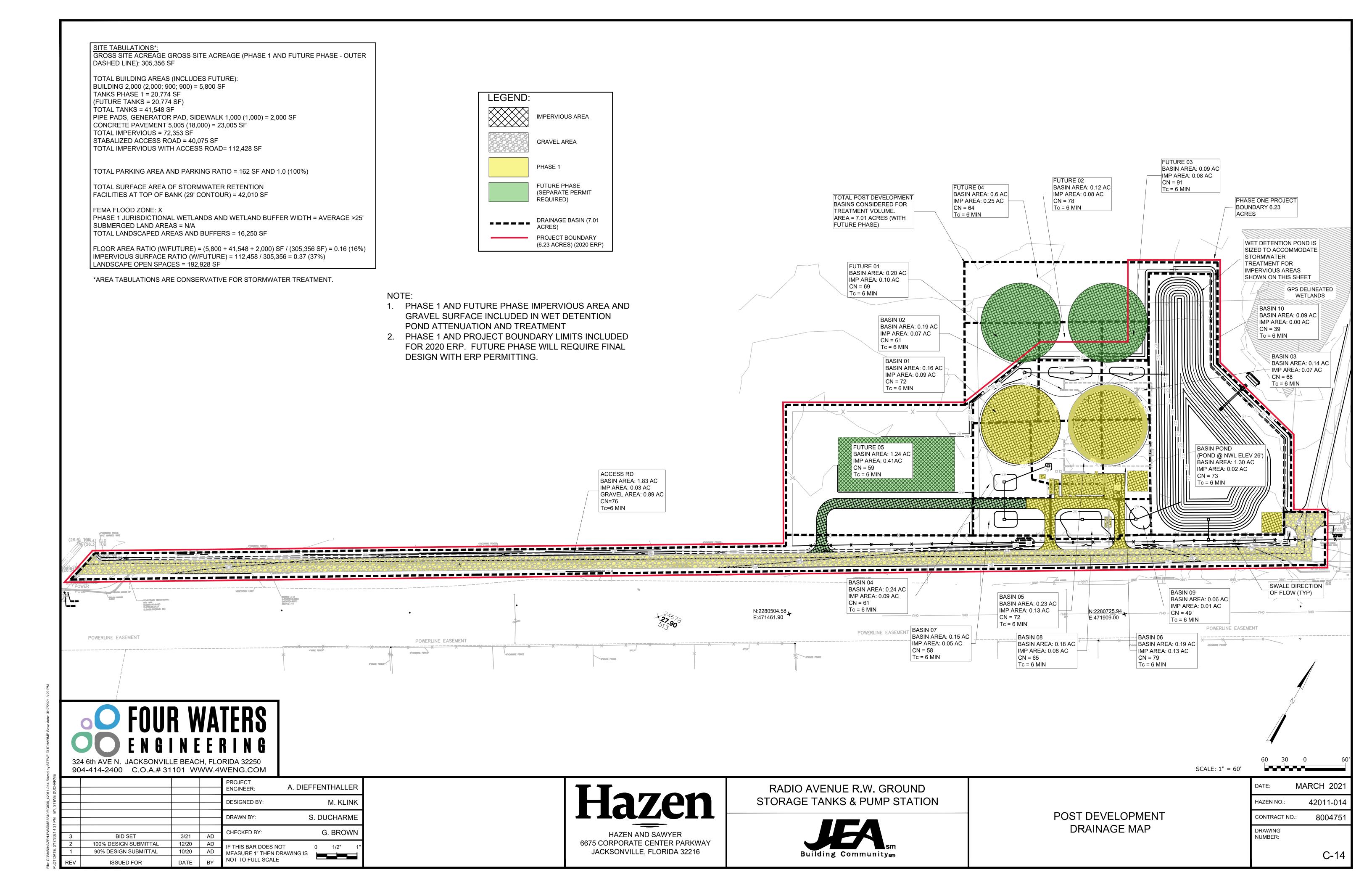


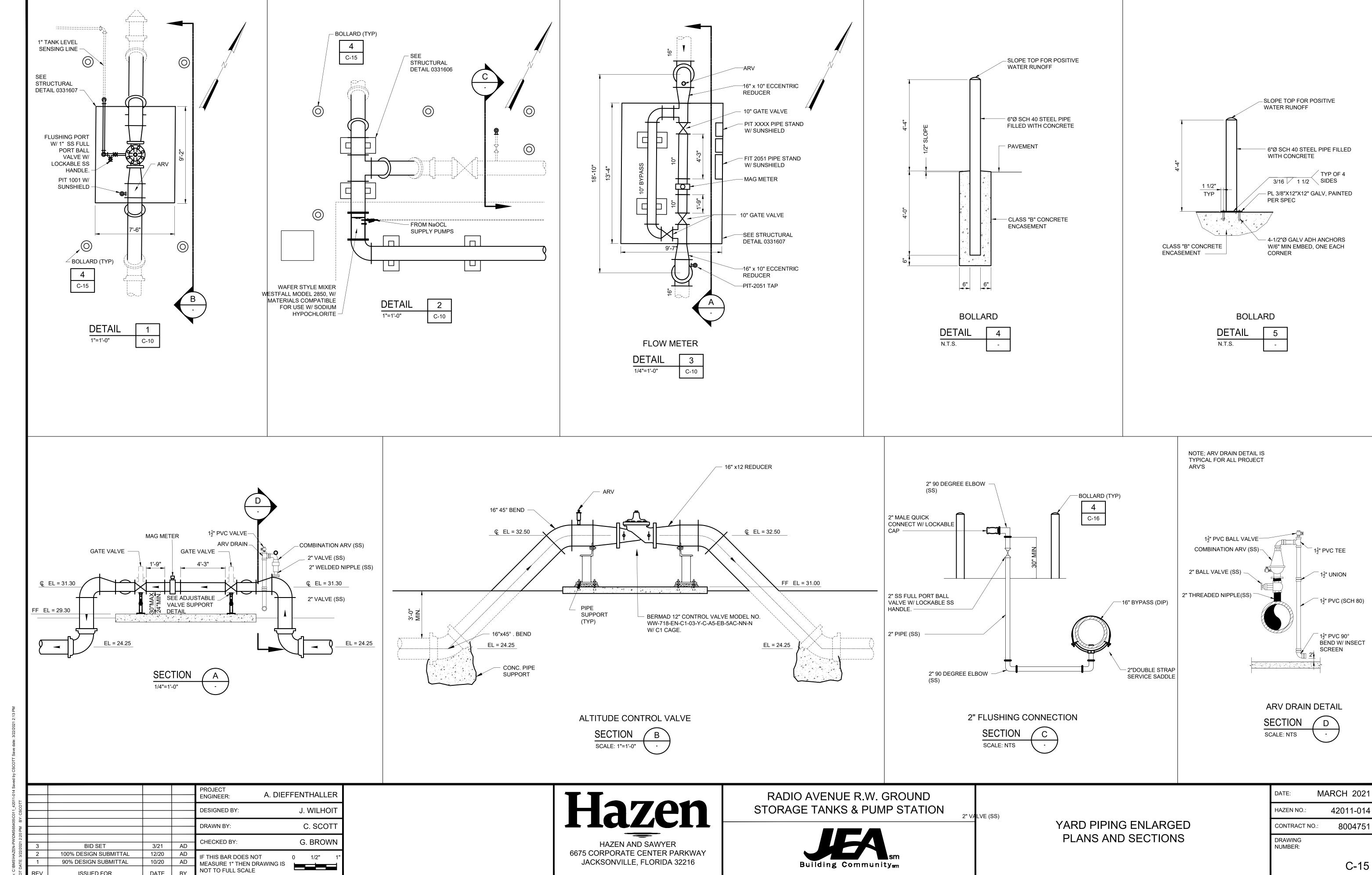




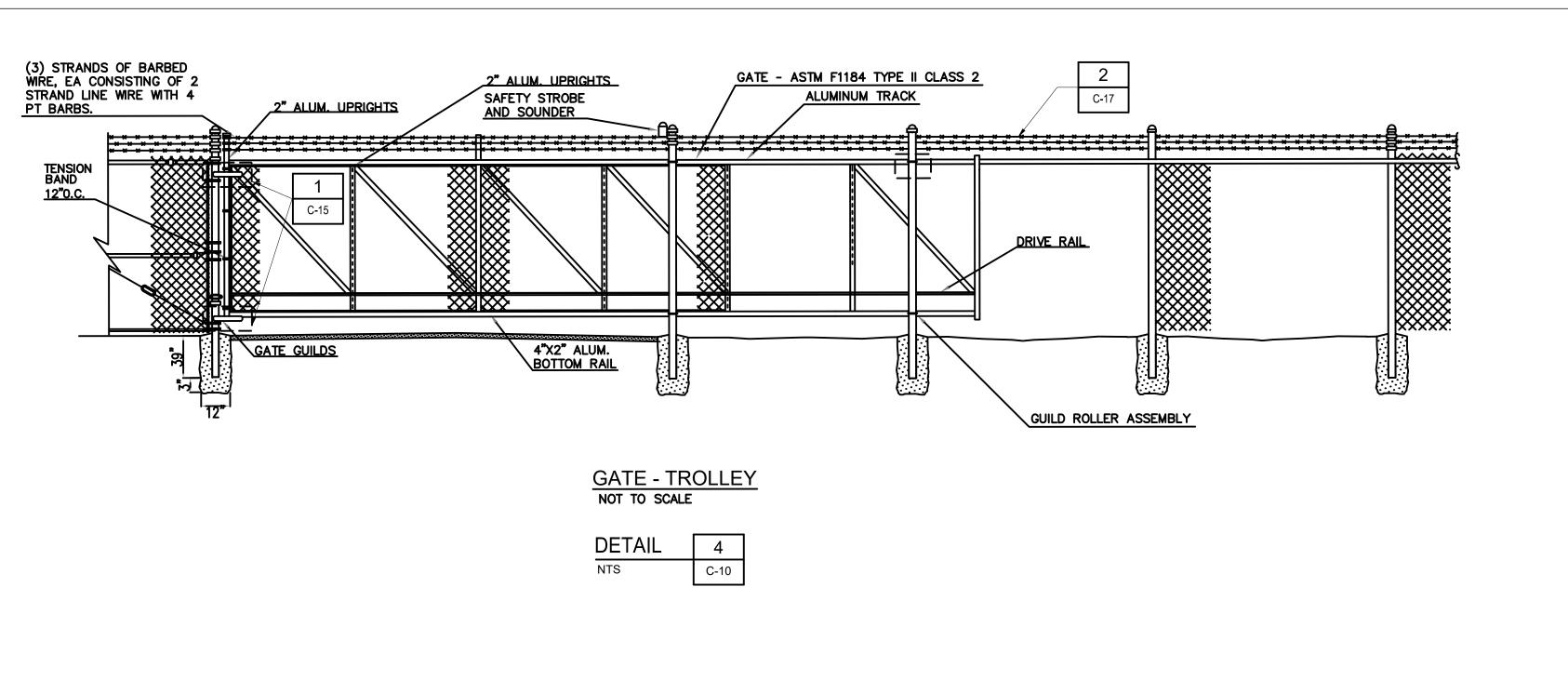


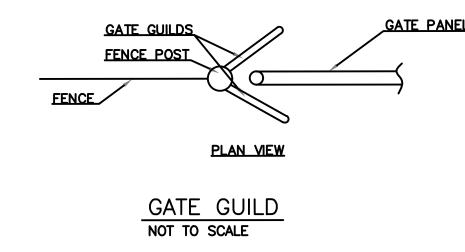






DATE

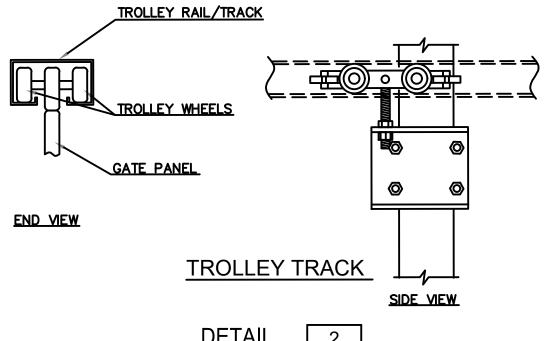




NOT TO SCALE

DETAIL 1

NTS C-17



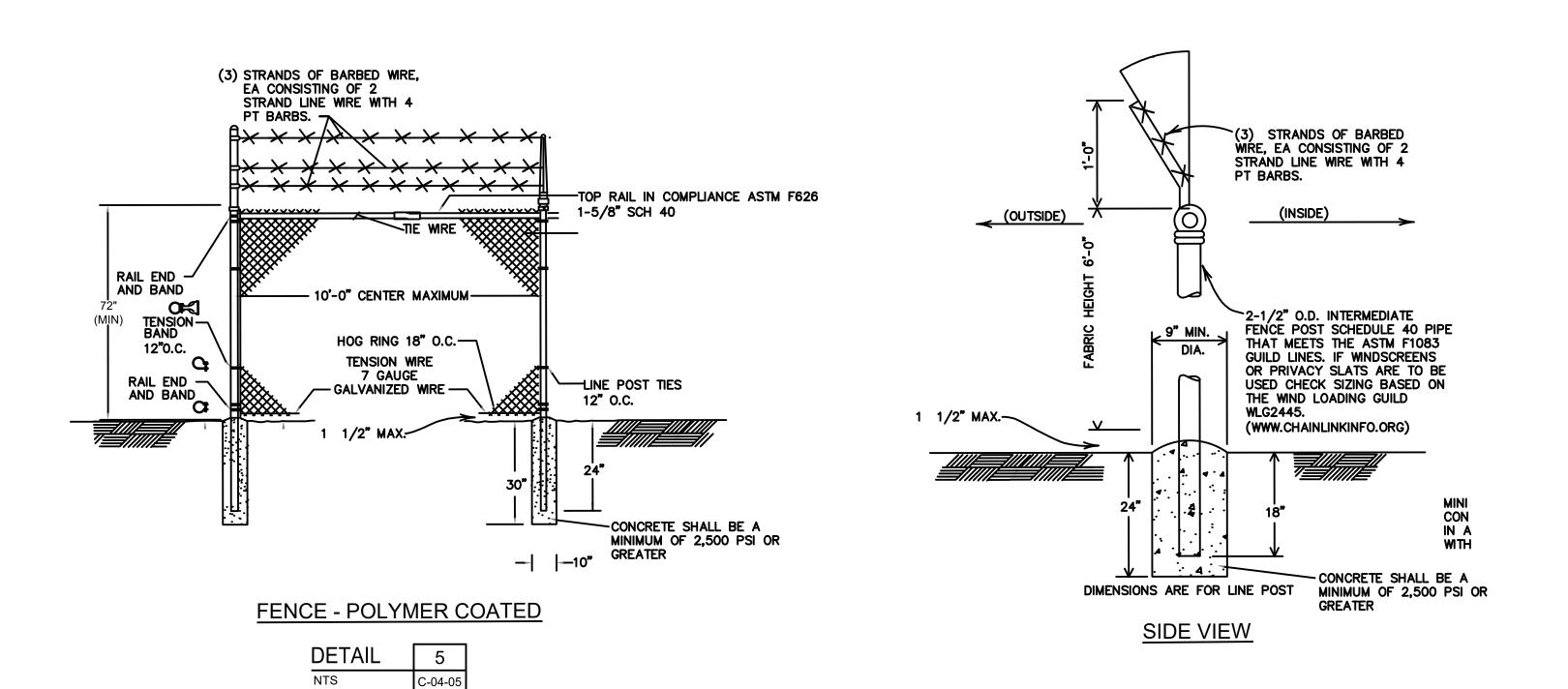
C-XX

#### NOTES:

 VEHICLE GATES SHALL BE OF SIMILAR CONSTRUCTION AS FENCES, BUT REQUIRE ADDITIONAL STRENGTH DUE TO THE WEIGHT OF THE GATE ASSEMBLY, AND TO PREVENT VEHICLE INCURSION, IF DICTATED.

(CLFMI-PM-2445)

- 2. UNLESS OTHERWISE NOTED, ALL MATERIALS AND INSTALLATION PROCESS SHALL CONFORM TO THE CHAINLINK MANUFACTURE INSTITUTE PRODUCT MANUAL
- 3. FENCE FABRIC SHALL BE GALVANIZED CHAIN LINK (ASTM A392) 9 GAUGE WITH 2" MESH UNLESS OTHERWISE NOTED. STANDARD FABRIC SELVAGE FOR 2 IN (50 MM) MESH 72 IN. (1.8 M) HIGH AND OVER IS KNUCKLE FINISH AT ONE END AT ONE END, TWIST AT THE OTHER, K&T. FABRIC LESS THAN 72 IN (1.8 M), KNUCKLE FINISH TOP AND BOTTOM, K&K.
- 4. CONCRETE SHALL BE A MINIMUM OF 2,500 PSI OR GREATER MINIMUM DEPTH OF CONCRETE FOOTINGS IN ACCORDANCE WITH ASTM F567.



FENCE FABRIC SHALL BE
GALVANIZED CHAIN LINK (ASTM
A392) 9 GAUGE WITH 2" MESH
UNLESS OTHERWISE NOTED AND
COATED POLYMER ACCORDING
TO ASTM F668 CLASS 2b.

POLYMER COATING TO BE A
MINIMUM OF 0.006 INCH AND
NO MORE THAN 0.015 INCH

POLYMER COATED GALVANIZED
CHAIN LINK FABRIC: ASTM
F668 CLASS 2b.

I	NC	T	Е	S

- CHAIN LINK FENCING MUST BE A MINIMUM OF 6 FEET PLUS 1 FOOT OF 3 STRAND OF BARBED WIRE AT THE TOP FOR A TOTAL HEIGHT OF 7 FEET.
- ALL FENCE COMPONENTS IN A HARSH AND CORROSIVE ENVIRONMENT MUT BE PROVIDED A 6 GAUGE VINYL COATING. THE PREFERRED COLOR FOR THE COATING IS BLACK.
- PRIVACY SLATS WILL BE INSTALLED WHERE REQUIREMENTS DICTATE SCREENING IS REQUIRED. THESE SLATS WILL BE TOP-LOCKING AND SPAN THE ENTIRE LENGTH THE FENCE FABRIC. THE PREFERRED COLOR FOR THESE SLATS IS BLACK.
- 4. UNLESS OTHERWISE NOTED, ALL MATERIALS AND INSTALLATION PROCESS SHALL CONFORM TO THE CHAINLINK MANUFACTURE INSTITUTE PRODUCT MANUAL (CLFMI-PM-2445)
- IF THE POLYMER COATING IS DAMAGED DURING INSTALLATION, CONTRACTOR SHALL REPLACE OR REPAIR THE MATERIAL AT OWN EXPENSE.
- CHAIN LINK FENCE (CLASS 2B) FOR 15 YEARS AGAINST FAILURE DUE TO RUST OR CORROSION.7. ALL POSTS, BARBWIRE AND ALL FITTINGS SHALL BE VINYL COATED THE SAME AS ON THE FENCING FABRIC.

6. CONTRACTOR SHALL WARRANTY THE POLYMER-COATED GALVANIZED

- SAME AS ON THE FENCING FABRIC.

  8. MINIMUM DEPTH OF CONCRETE FOOTINGS IN ACCORDANCE WITH ASTM
- 9. FENCE FABRIC SHALL BE GALVANIZED CHAIN LINK (ASTM A392) 9
  GAUGE WITH 2" MESH UNLESS OTHERWISE NOTED. STANDARD FABRIC
  SELVAGE FOR 2 IN (50 MM) MESH 72 IN. (1.8 M) HIGH AND OVER IS
  KNUCKLE FINISH AT ONE END AT ONE END, TWIST AT THE OTHER, K&T.
  FABRIC LESS THAN 72 IN (1.8 M), KNUCKLE FINISH TOP AND BOTTOM,
- 10. BARBED WIRE MUST BE MOUNTED AT A 45 DEGREE ANGLE TOWARDS THE UNSECURE SIDE OF FENCE.
- 11. FOR LATEST SECURITY FENCING AND GATES UPDATES, CONTACT SECURITYSERVICE@JEA.COM.

<u></u>							
NACIONA					PROJECT ENGINEER: A	DIEFFENTHALLER	
. 31 EVE					DESIGNED BY:	J. WILHOIT	]
I I I I I					DRAWN BY:	C. SCOTT	]
2021 4.3	3	BID SET	3/21	AD	CHECKED BY:	G. BROWN	1
6	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1	
	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE		
ה ה	REV	ISSUED FOR	DATE	BY			

HAZEN AND SAWYER
6675 CORPORATE CENTER PARKWAY
JACKSONVILLE, FLORIDA 32216

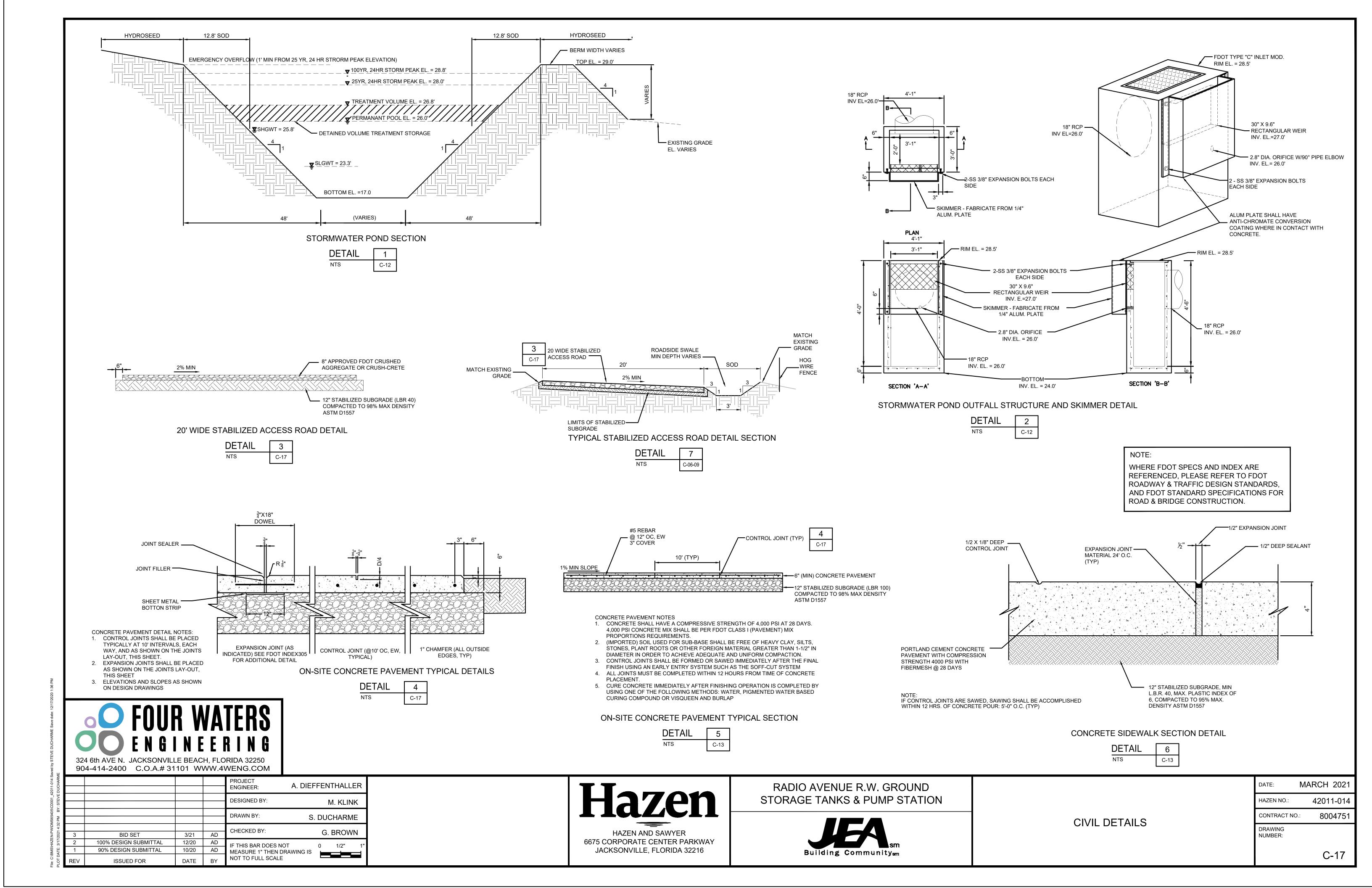
RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



FENCING ENLARGED PLANS AND SECTIONS

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	

C-16



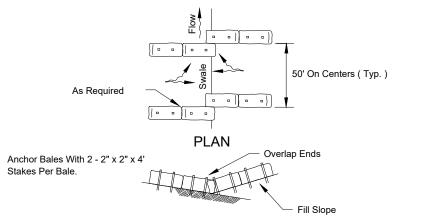
# **EROSION AND SEDIMENT CONTROL NOTES**

- 1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AND SWALES AT COMPLETION OF CONSTRUCTION.
- 2. THE SITE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF
- 3. ADDITIONAL PROTECTION ON-SITE PROTECTION IN ADDITION TO THE ABOVE MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNSEEN CONDITIONS OR ACCIDENTS.

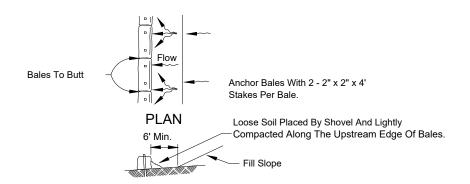
CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED.

- 4. CONTRACTOR SHALL INSURE THAT ALL DRAINAGE STRUCTURES, PIPES, ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF
- 5. WIRE MESH SHALL BE LAID OVER THE DROP INLET SO THAT THE WIRE EXTENDS A MINIMUM OF 1 FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS SHALL BE USED. IF MORE THAN ONE STRIP OF MESH IS NECESSARY, THE STRIPS SHALL BE OVERLAPPED.
- 6. FDOT NO. 1 COARSE AGGREGATE SHALL BE PLACED OVER THE WIRE MESH AS INDICATED IN D-903. THE DEPTH OF STONE SHALL BE AT LEAST 12 INCHES OVER THE ENTIRE INLET OPENING. THE STONE SHALL EXTEND BEYOND THE INLET OPENING AT LEAST 18 INCHES ON
- 7. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONES MUST BE PULLED AWAY FROM THE INLET, CLEANED AND REPLACED.
- 8. BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED WITH THE BINDINGS ORIENTED AROUND THE SIDES RATHER THAN OVER AND UNDER
- 9. BALES SHALL BE PLACED LENGTHWISE IN A SINGLE ROW SURROUNDING THE INLET, WITH THE ENDS OF ADJACENT BALES PRESSED TOGETHER.
- 10. THE FILTER BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 8 INCHES. AFTER THE BALES ARE STAKED. THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE FILTER BARRIER.
- 11. EACH BALE SHALL BE SECURELY ANCHORED AND HELD IN PLACE BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE.
- 12. LOOSE STRAW SHOULD BE WEDGED BETWEEN BALES TO PREVENT WATER FROM ENTERING BETWEEN BALES.
- 13. STRAW BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
- 14. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.
- 15. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY.
- 16. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE STRAW BALE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
- 17. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY
- 18. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
- 19. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-THIRD THE HEIGHT OF THE BARRIER.
- 20. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
- 21. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS
- 22. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
- 23. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS AND ST. JOHNS RIVER WATER MANAGEMENT DISTRICT SPECIFICATIONS AND CRITERIA.
- 24. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO "THE FLORIDA DEVELOPMENT MANUAL - A GUIDE TO SOUND LAND AND WATER MANAGEMENT" FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION (F.D.E.R.) CHAPTER 6.
- 25. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION. SEE DETAIL SHEET FOR TYPICAL
- 26. ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED, MULCHED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED.

- 27. SOD SHALL BE PLACED IN AREAS WHICH MAY REQUIRE IMMEDIATE EROSION PROTECTION TO ENSURE WATER QUALITY STANDARDS ARE
- 28. ANY DISCHARGE FROM DEWATERING ACTIVITY SHALL BE FILTERED AND CONVEYED TO THE OUTFALL IN A MANNER WHICH PREVENTS EROSION AND TRANSPORTATION OF SUSPENDED SOLIDS TO THE RECEIVING OUTFALL.
- 29. DEWATERING PUMPS SHALL NOT EXCEED THE CAPACITY OF THAT WHICH REQUIRES A CONSUMPTIVE USE PERMIT FROM THE ST. JOHNS RIVER
- 30. ALL DISTURBED AREAS TO BE STABILIZED THROUGH COMPACTION, SILT SCREENS, HAY BALES, AND GRASSING. ALL FILL SLOPES 3:1 OR STEEPER TO RECEIVE STAKED SOLID SOD.
- 31. ALL DEWATERING, EROSION, AND SEDIMENT CONTROL TO REMAIN IN PLACE AFTER COMPLETION OF CONSTRUCTION AND REMOVED ONLY WHEN AREAS HAVE STABILIZED.
- 32. THIS PLAN INDICATES THE MINIMUM EROSION AND SEDIMENT MEASURES REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES AND MAY NEED TO INSTALL ADDITIONAL CONTROLS.
- 33. THE CONTRACTOR SHALL BE REQUIRED TO RESPOND TO ALL FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) INQUIRIES, RELATIVE TO COMPLIANCE OF FDEP FOR EROSION AND SEDIMENTATION CONTROL. THE COST OF THIS COMPLIANCE SHALL BE PART OF THE CONTRACT.



**ELEVATION** TO BE USED AT SELECTED SITES WHERE THE NATURAL GROUND SLOPES TOWARD THE TOE OF SLOPE

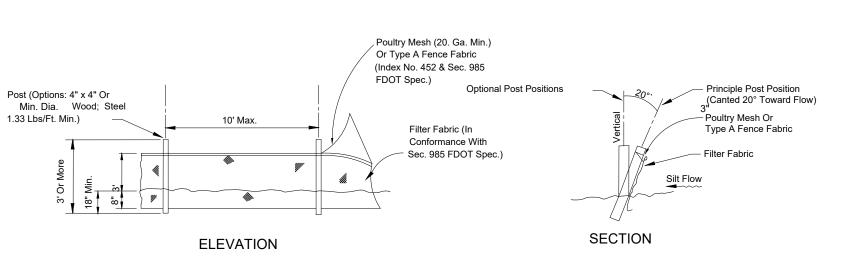


**ELEVATION** TO BE USED AT SELECTED SITES WHERE THE NATURAL GROUND SLOPES AWAY FROM THE TOE OF SLOPE

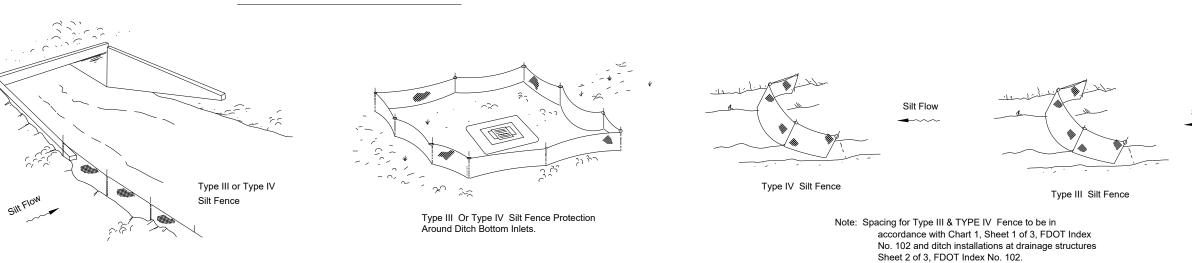
BARRIERS FOR FILL SLOPES

HAY BALE LOCATION

(D-901) N.T.S.



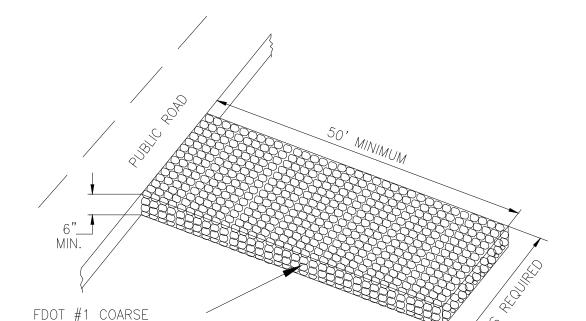
# Note: Silt Fence to be paid for under the contract lump sum price for Erosion and Sediment Control. TYPE IV SILT FENCE



Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

# SILT FENCE APPLICATIONS

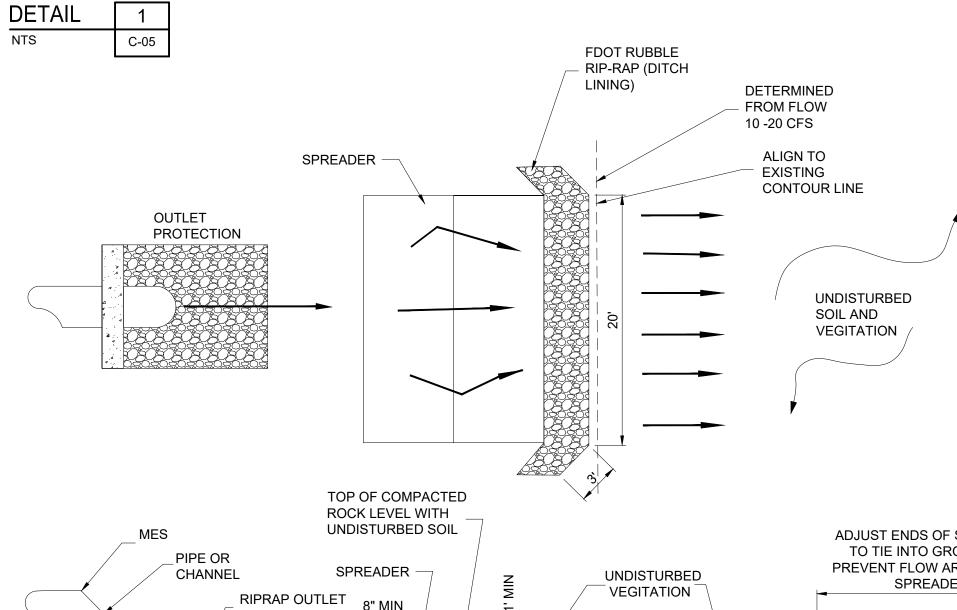
SILT FENCE TYPE III & IV

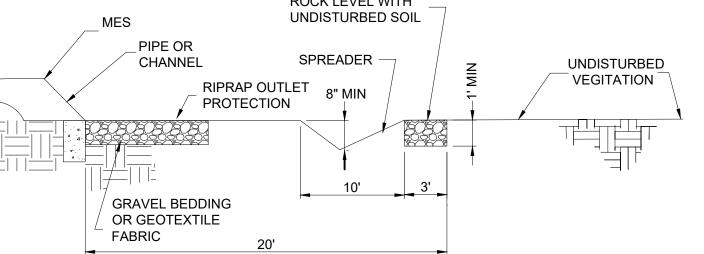


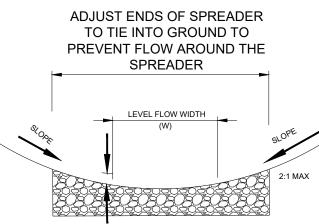
NOTE: WHERE FDOT SPECS AND INDEX ARE REFERENCED, PLEASE REFER TO FDOT ROADWAY & TRAFFIC DESIGN STANDARDS, AND FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION.

# STABILIZED CONSTRUCTION ENTRANCE

AGGREGATE OR EQUIVALENT

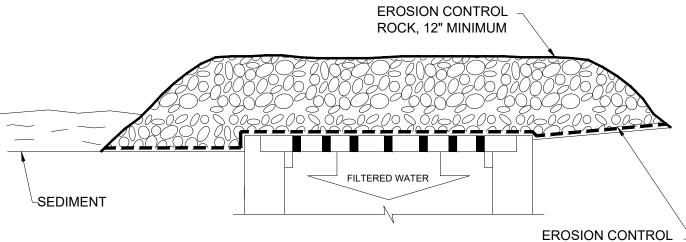






# RIGID LIP SPREADER SWALE





GRAVEL AND WIRE MESH INLET BARRIER ROCK, 12" MINIMUM

DETAIL C-12

ш	90	)4-414-2400 C.O.A.# 31	101 W	WW.4\	WENG.COM	
DUCHARME					PROJECT ENGINEER:	A. DIEFFENTHALLER
: STEVE					DESIGNED BY:	M. KLINK
PM BY:					DRAWN BY:	S. DUCHARME
3/17/2021 4:32	3	BID SET	3/21	AD	CHECKED BY:	G. BROWN
	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES N	OT 0 1/2" 1"
ATE:	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN I	-
LOT DATE:	REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE	

HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY

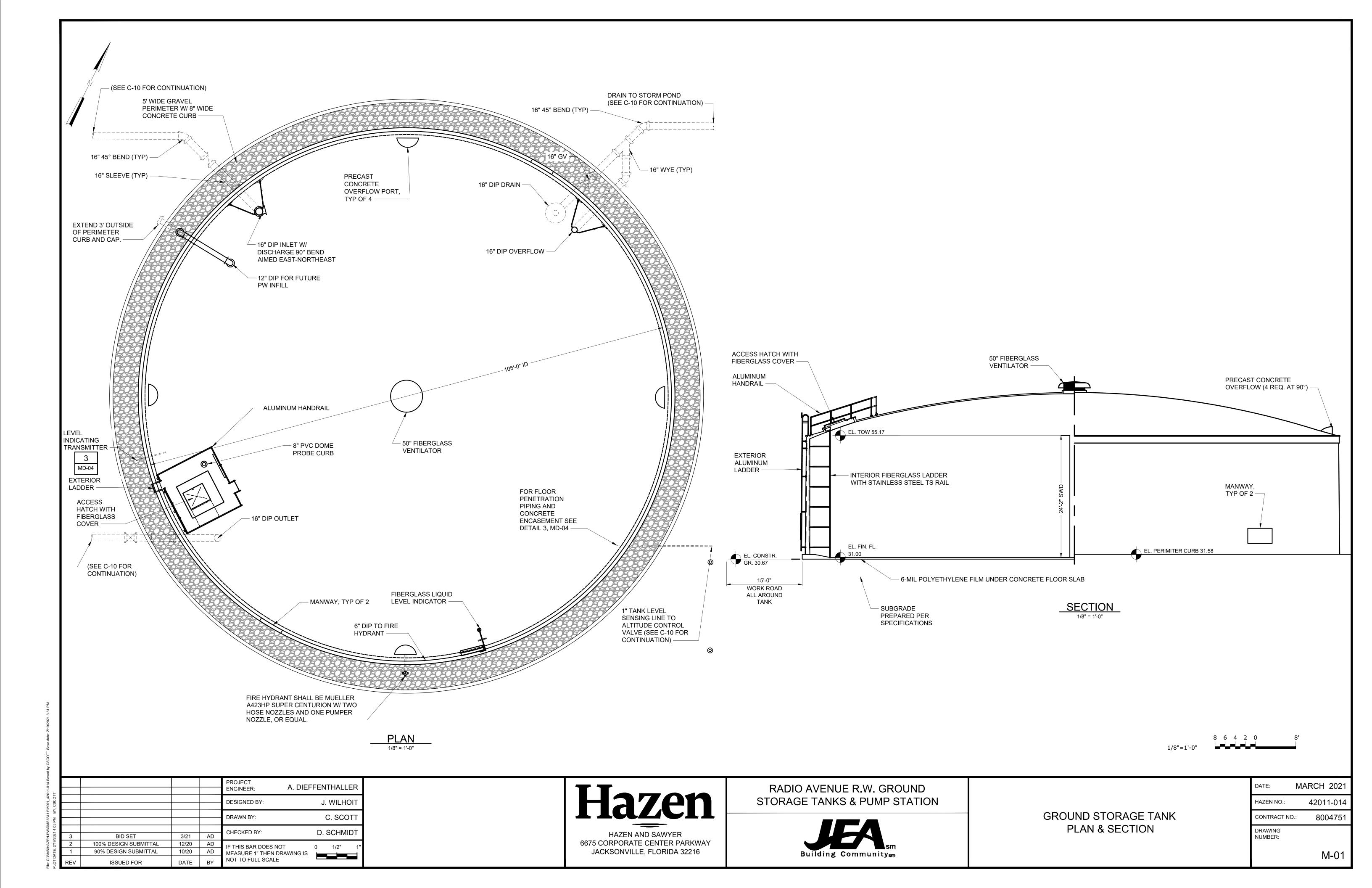
JACKSONVILLE, FLORIDA 32216

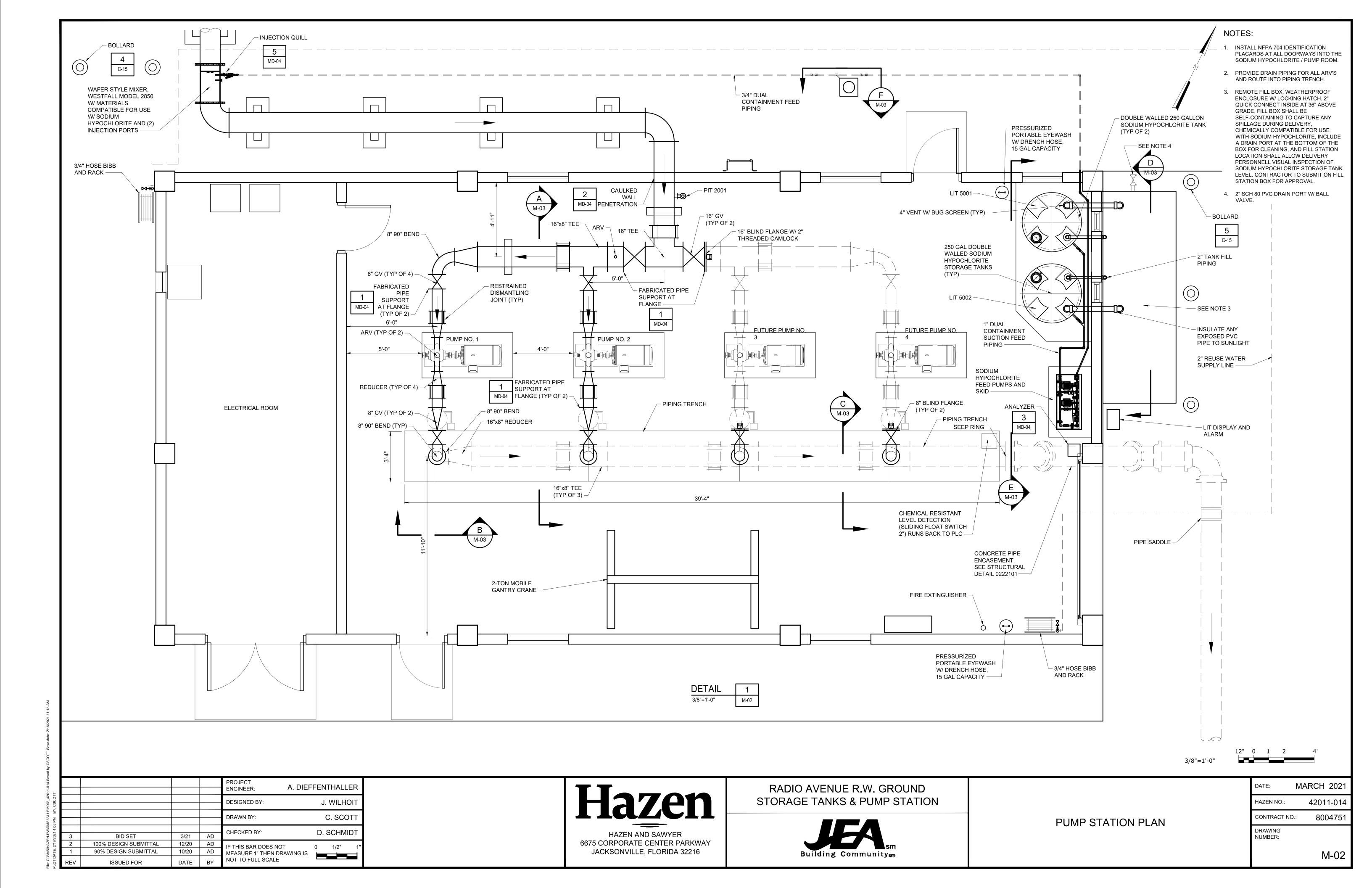
RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION

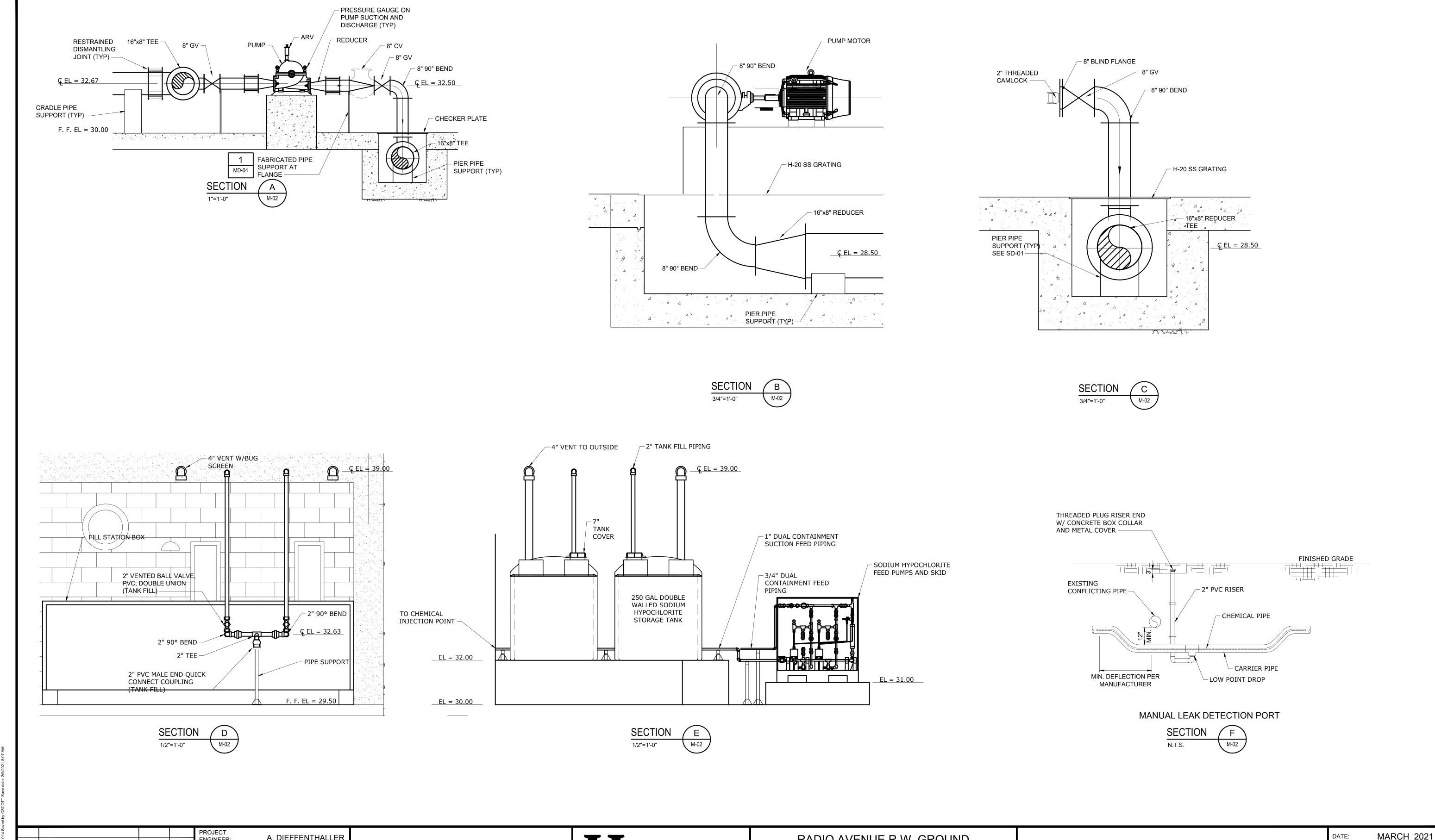


**EROSION CONTROL DETAILS** 

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	C-18







PROJECT ENGINEER: A. DIEFFENTHALLER J. WILHOIT DESIGNED BY: C. SCOTT DRAWN BY: CHECKED BY: D. SCHMIDT **BID SET** 3/21 AD 100% DESIGN SUBMITTAL 12/20 AD IF THIS BAR DOES NOT 0 1/2" 1"
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE 90% DESIGN SUBMITTAL 10/20 AD DATE ISSUED FOR

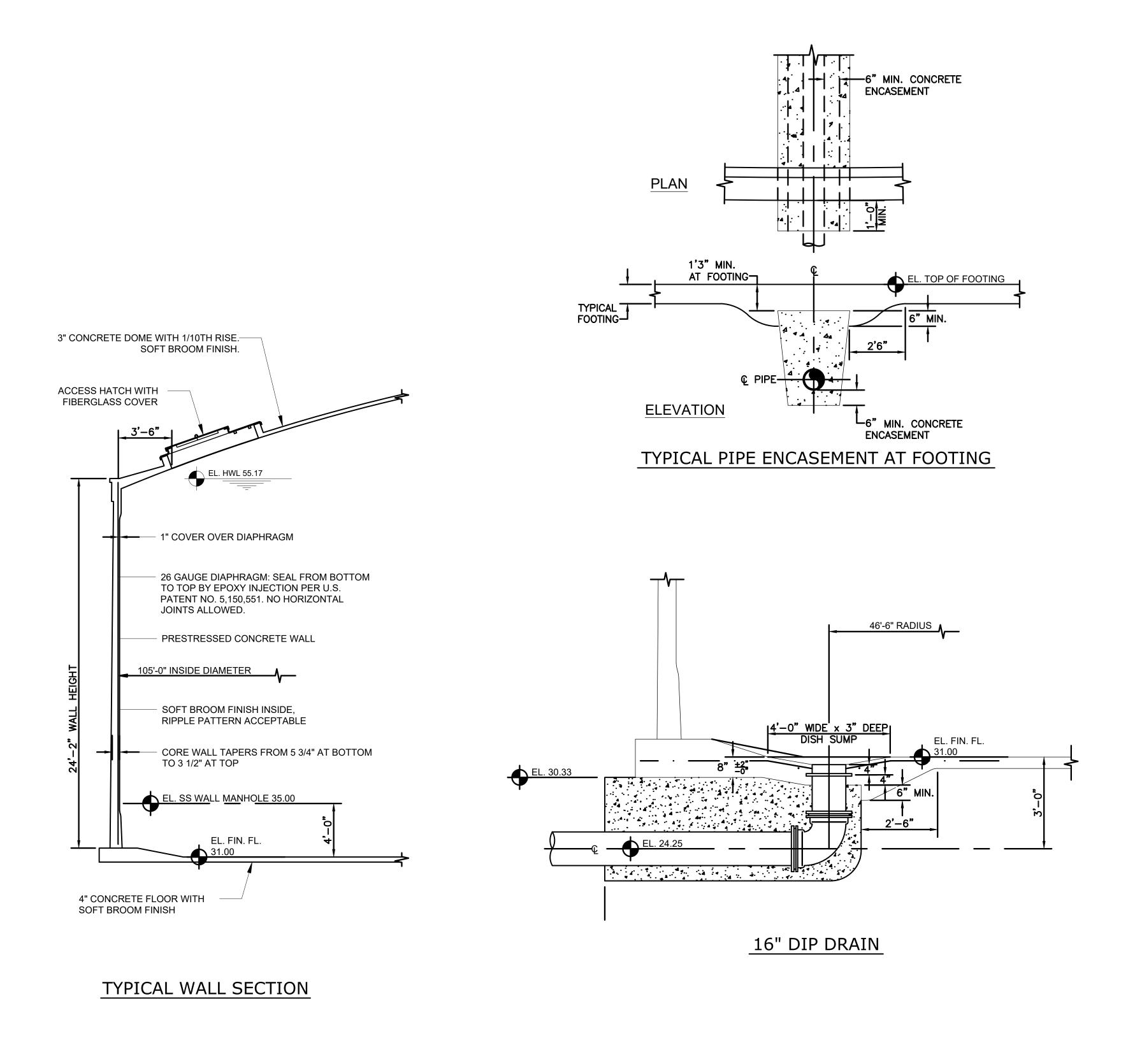
HAZEN AND SAWYER
6675 CORPORATE CENTER PARKWAY
JACKSONVILLE, FLORIDA 32216

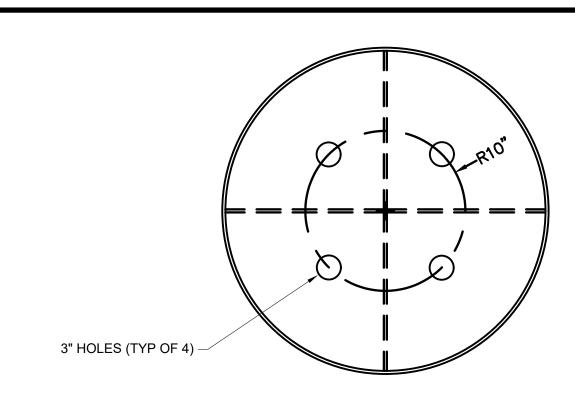
RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



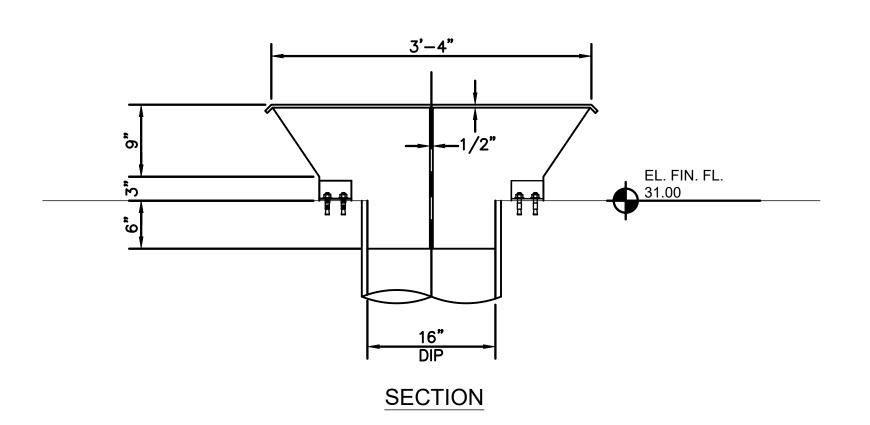
PUMP STATION SECTIONS

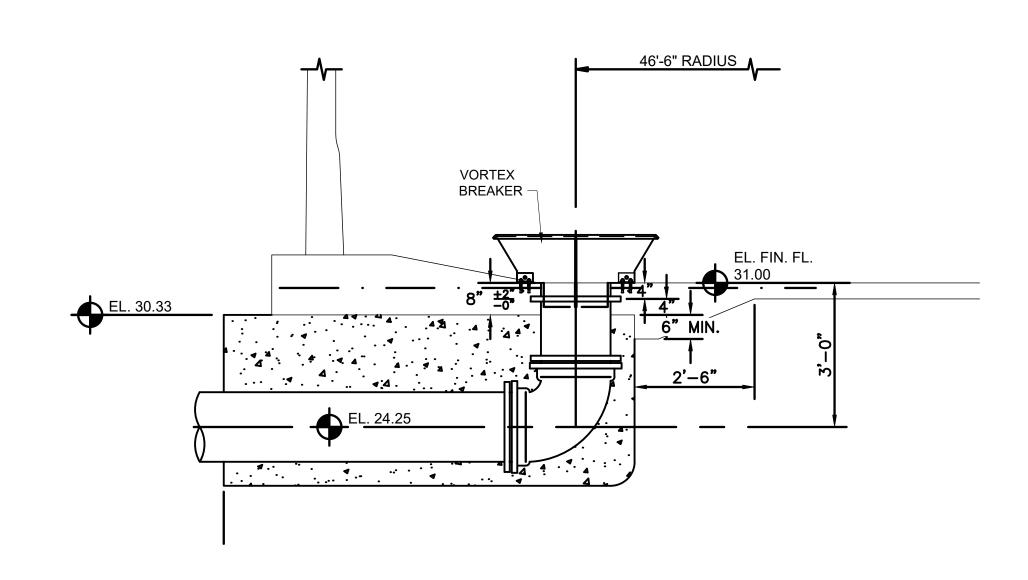
DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	.: 8004751
DRAWING NUMBER:	
	M-03





PLAN





16" DIP OUTLET

42011-014 Sa TT					PROJECT ENGINEER: A. DI	EFFENTHALLER
					LITORITELITY.	
11\MD00 BY: CS0					DESIGNED BY:	J. WILHOIT
S654					DRAWN BY:	C. SCOTT
-PW\DM	3	BID SET	3/21	AD	CHECKED BY:	D. SCHMIDT
-1AZEN-Р 2/19/202	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1"
:\BMS\F	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING	
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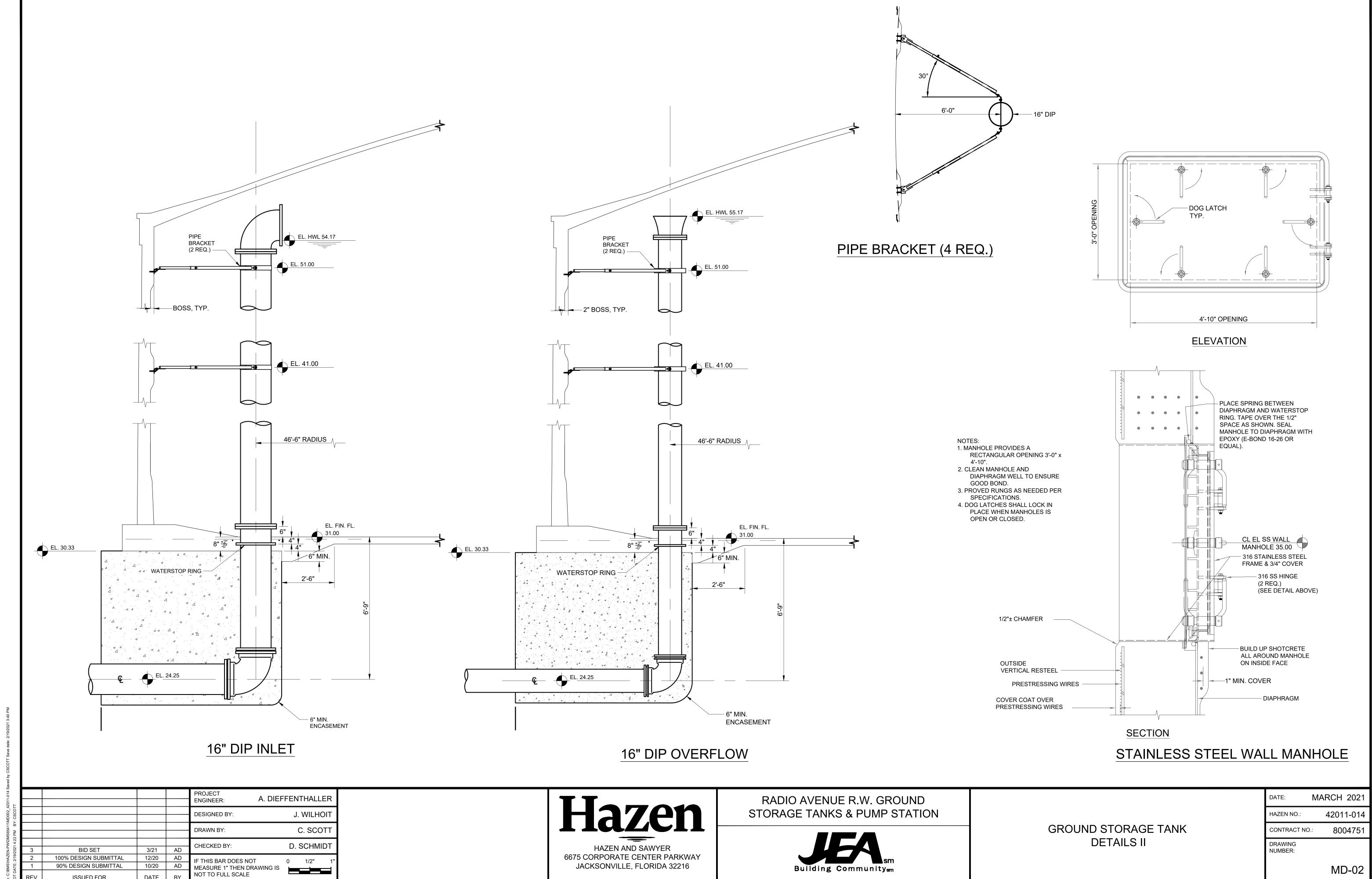
HAZEN AND SAWYER
6675 CORPORATE CENTER PARKWAY
JACKSONVILLE, FLORIDA 32216

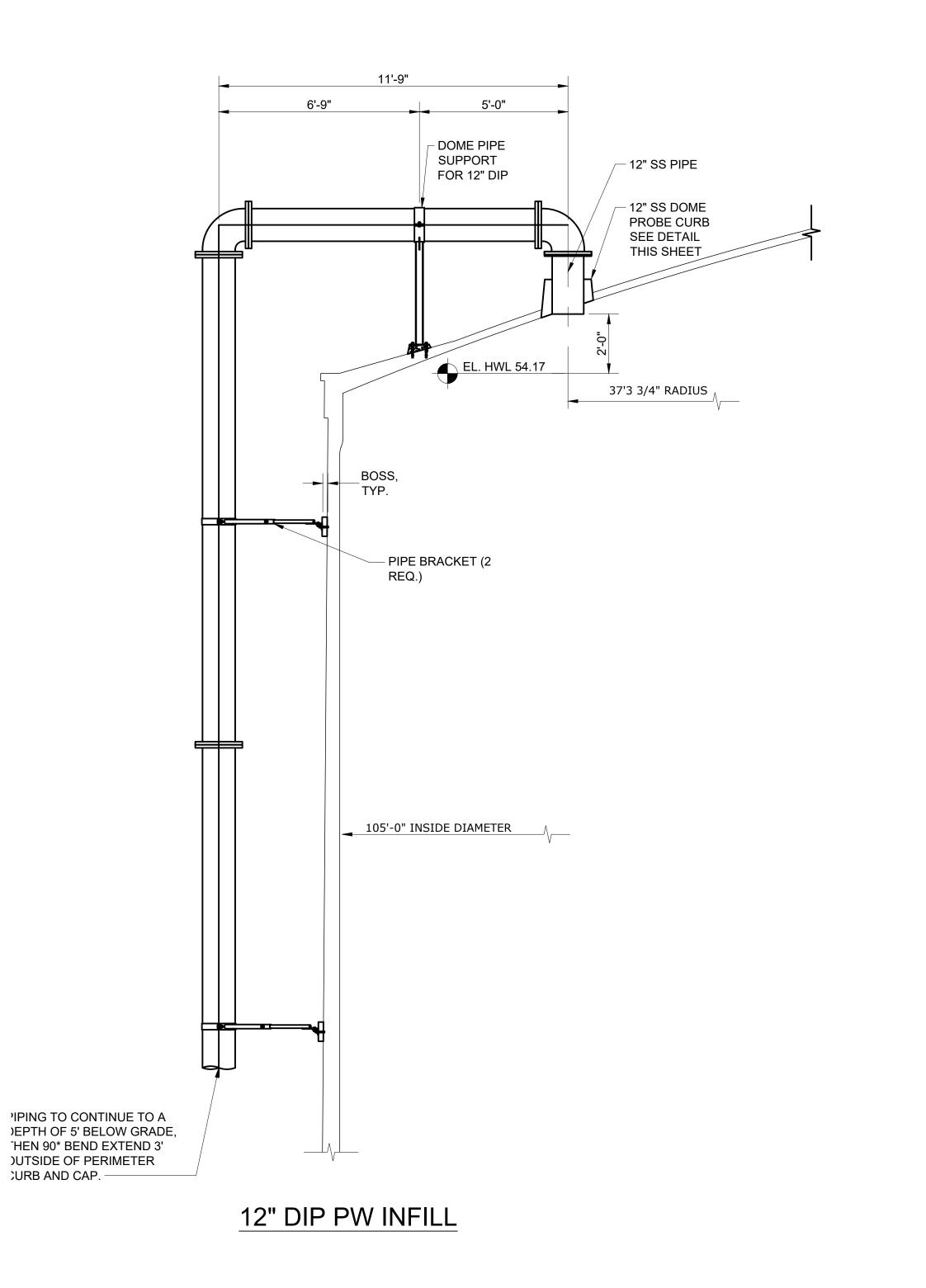
RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



GROUND STORAGE TANK DETAILS I

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	MD-01



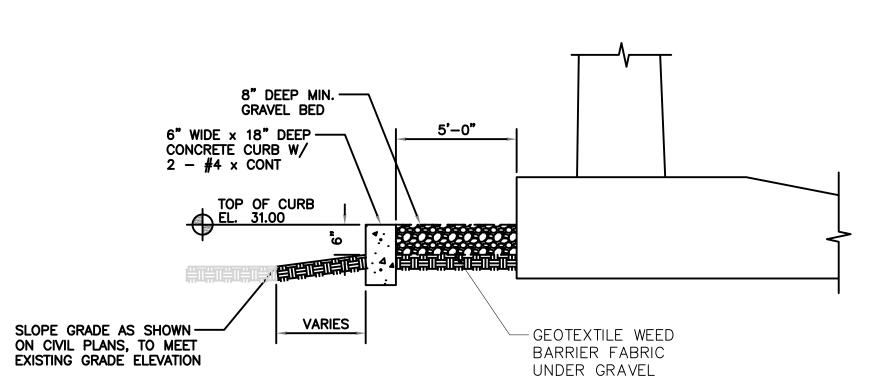


PRECAST CURB

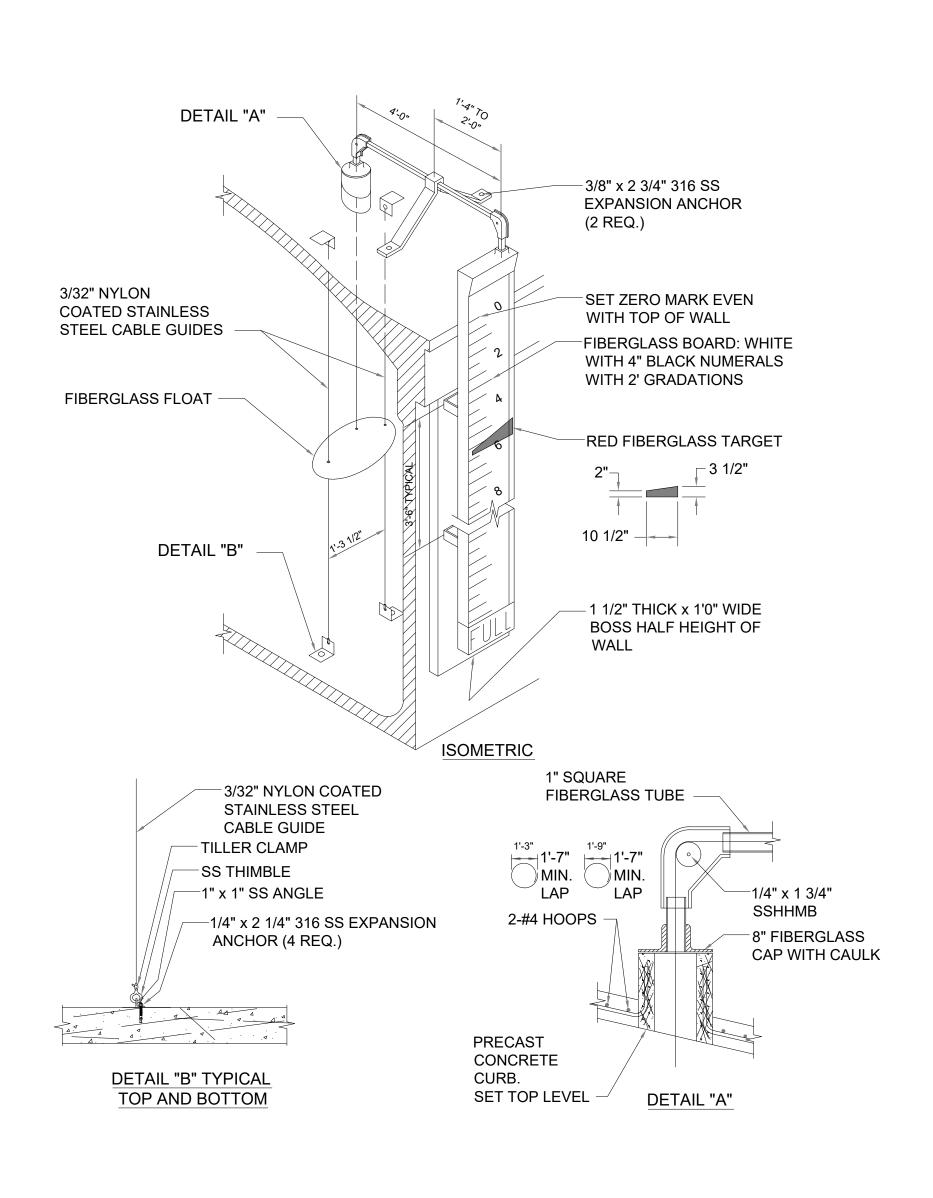
12" SS PIPE x 2'0" LONG, FL-PE, WITH BLIND FLANGE

NOTES: 1. PLACE PIPE PLUMB.

12" SS DOME PROBE CURB



PERIMETER GRAVEL AND CURB



FIBERGLASS LIQUID LEVEL INDICATOR

_					PROJECT ENGINEER: A	. DIEFFENTHALLER	1
r: cscott					DESIGNED BY:	J. WILHOIT	-
4:23 PM BY:					DRAWN BY:	C. SCOTT	
2/19/2021 4:2:	3	BID SET	3/21	AD	CHECKED BY:	D. SCHMIDT	-
	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2"	1"
T DATE:	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAW		
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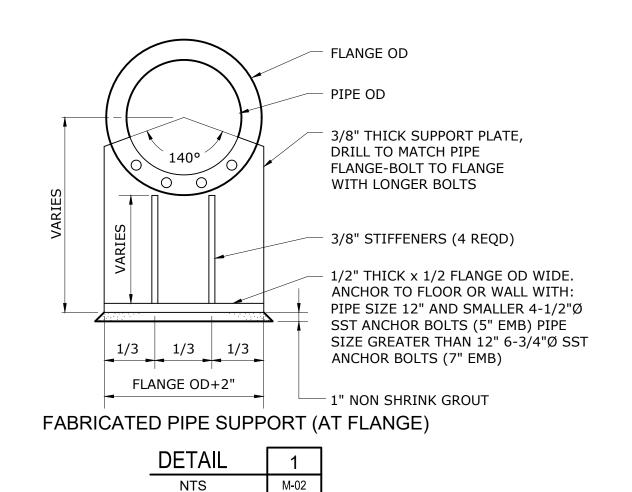
HAZEN AND SAWYER
6675 CORPORATE CENTER PARKWAY
JACKSONVILLE, FLORIDA 32216

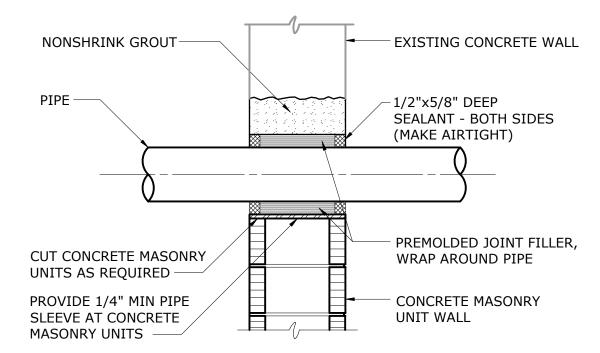
RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



GROUND STORAGE TANK
DETAILS III

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT N	8004751
DRAWING NUMBER:	
	MD-03

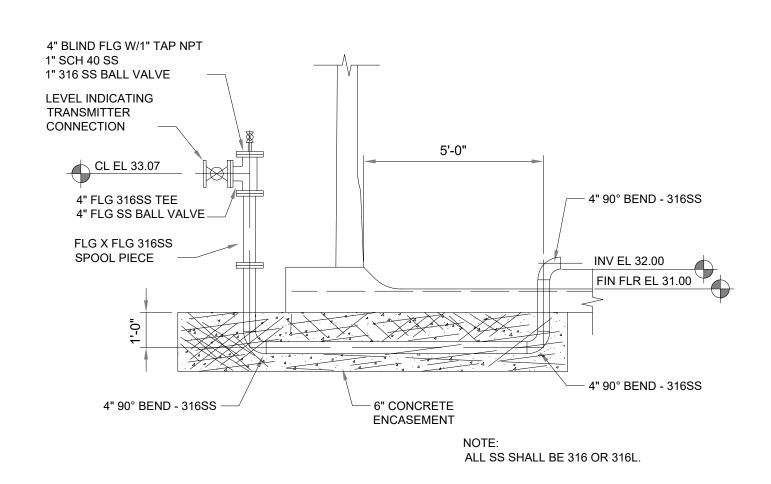




CAULKED WALL PENETRATION

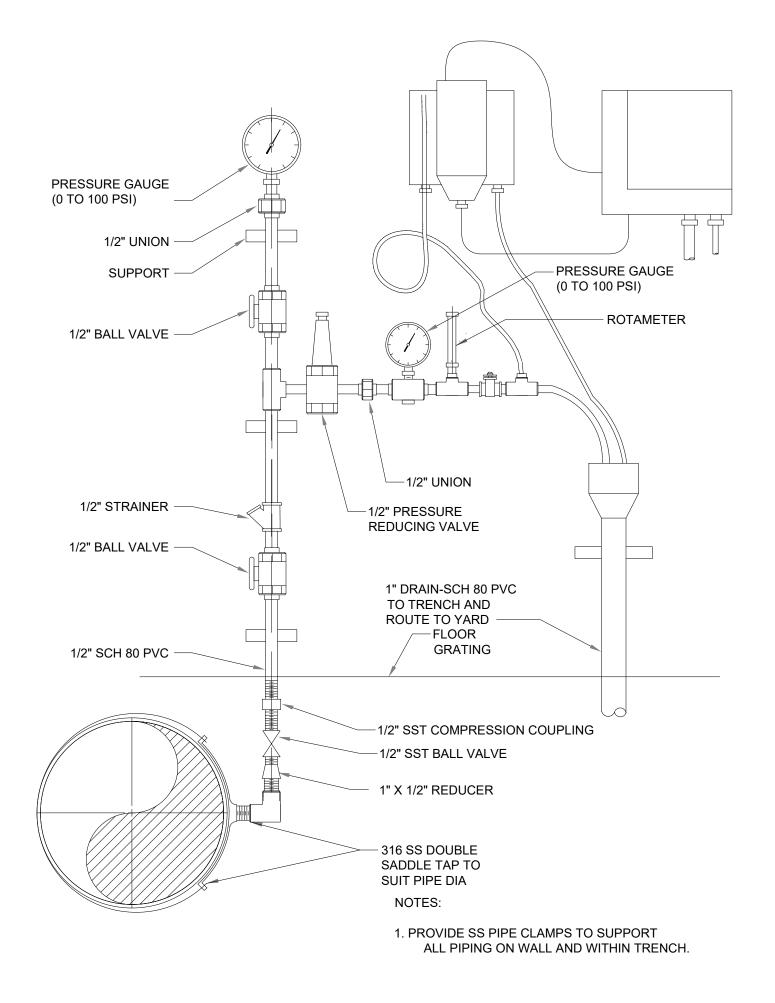
1. SEALANT FOR CAULKED WALL PENETRATIONS SHALL BE MANUFACTURER LEXAL, OR EQUAL.

DETAIL	2
NTS	M-02



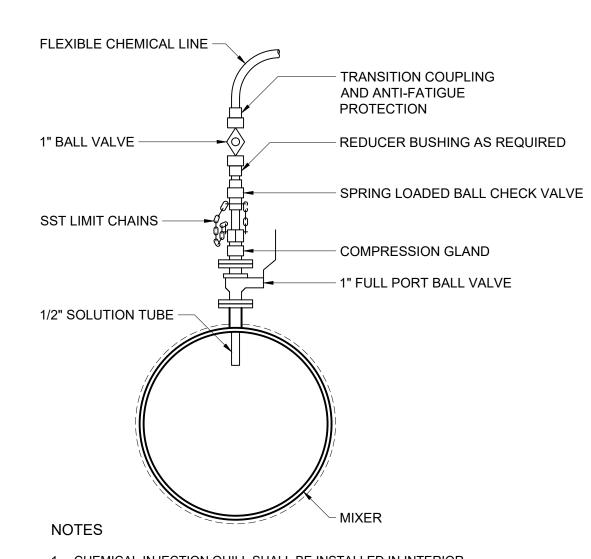
# D GROUND STORAGE TANK LEVEL TAP AND VALVE

DETAIL	3
NTS	M-02



TOTAL RESIDUAL CHLORINE AND PH ANALYZER

DETAIL	4
NTS	M-02



- 1. CHEMICAL INJECTION QUILL SHALL BE INSTALLED IN INTERIOR SPACES OR IN A MANHOLE BUILT AROUND THE PROCESS PIPE. ORIENTATION MAY VARY TO SUIT THE INSTALLATION.
- 2. ALL COMPONENTS OF INJECTION QUILL SHALL BE COMPATIBLE WITH SODIUM HYPOCHLORITE

# CHEMICAL INJECTION QUILL

DETAIL	5
NTS	M-C

				PROJECT A. DIE	FFENTHALLER	
				DESIGNED BY:	J. WILHOIT	
				DRAWN BY:	C. SCOTT	
3	BID SET	3/21	AD	CHECKED BY:	D. SCMIDT	
2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1"	i
1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING IS	*	
REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE		



RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



MECHANICAL DETAILS

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT N	o.: <b>8004751</b>
DRAWING NUMBER:	
	MD-04

#### **GENERAL STRUCTURAL NOTES**

- G-1 THESE NOTES ARE GENERAL AND SUPPLEMENT THE SPECIFICATIONS. THESE NOTES APPLY TO THE ENTIRE PROJECT UNLESS MODIFIED OR NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.
- G-2 STANDARD DETAILS SHALL BE USED WHEN REFERRED TO OR WHEN NO MORE RESTRICTIVE OR DIFFERENT DETAILS ARE SHOWN ON
- G-3 DESIGN IS IN ACCORDANCE WITH AND CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF THE 2020 FLORIDA BUILDING CODE. THE DESIGN LOADS AND OTHER DESIGN VALUES GIVEN IN NOTES G-4 AND G-5 WERE USED FOR DESIGN OF STRUCTURES UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- G-4 LIVE LOADS:

LEVEL STRUCTURE	ROOF	TOP / FIRST FLOOR
PUMP STATION	20 PSF	300 PSF

-ALL STAIRWAYS, LANDINGS AND PLATFORMS ARE DESIGNED FOR A LIVE LOAD = 100 PSF UNLESS NOTED

#### G-5 WIND DESIGN CRITERIA:

ULTIMATE WIND SPEED = 138 MPH RISK CATEGORY = III EXPOSURE CATEGORY = C

PARAMETER	PRESSURE COEFFICIENT GCpi	LATERAL LOAD RESISTING SYSTEM
PUMP STATION	0.18	CONC. FRAME

EQUIPMENT AND PRODUCT VENDORS SHALL COMPLY WITH THE DESIGN PARAMETERS SPECIFIED ABOVE FOR OUTDOOR EQUIPMENT.

- ALL DIMENSIONS INDICATED (\*) SHALL BE VERIFIED EITHER BY FIELD MEASUREMENTS FOR EXISTING STRUCTURES OR BY SHOP DRAWINGS FOR EQUIPMENT FURNISHED. STRUCTURAL DIMENSIONS NOT SHOWN BUT CONTROLLED BY OR RELATED TO EOUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR WITH THE MANUFACTURER PRIOR TO CONSTRUCTION.
- G-7 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING INFORMATION IN THE FIELD AS REQUIRED FOR NEW
- IF A CONFLICT IS FOUND BETWEEN DIFFERENT PORTIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. CONTINUED CONSTRUCTION OF THE AREA IN CONFLICT SHALL BE AT THE CONTRACTOR'S OWN RISK UNTIL THE CONFLICT IS RESOLVED.
- G-9 EQUIPMENT ANCHOR BOLT SIZES, TYPES, EMBEDMENT AND PATTERNS SHALL BE VERIFIED WITH THE MANUFACTURER. ALL BOLT PATTERNS SHALL BE TEMPLATED TO INSURE ACCURACY OF PLACEMENT.
- G-10 STRUCTURAL DRAWINGS SHALL BE USED IN COORDINATION WITH THE DRAWINGS OF ALL OTHER DISCIPLINES AND MANUFACTURER'S SHOP DRAWINGS.
- G-11 STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURE. DURING CONSTRUCTION, THE STRUCTURES SHALL BE PROTECTED BY BRACING AND TEMPORARY SUPPORTS WHEREVER EXCESSIVE CONSTRUCTION LOADS MAY OCCUR. OVERSTRESSING OF ANY STRUCTURAL ELEMENT IS PROHIBITED.
- G-12 NO BACKFILL SHALL BE PLACED AGAINST ANY SUBSTRUCTURE WALLS UNLESS ALL ADJACENT SUPPORTING ELEMENTS HAVE ACHIEVED DESIGN STRENGTH, OR WALLS HAVE BEEN PROPERLY BRACED, AND IN ANY CASE NOT SOONER THAN 28 DAYS AFTER THE PLACING OF CONCRETE UNLESS APPROVED BY THE ENGINEER. SUPPORTING ELEMENTS SHALL INCLUDE ADJACENT WALLS, SLABS, BEAMS AND COLUMNS.

## STRUCTURAL METALS

M-1 DETAIL, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN, LATEST EDITION.

STEEL MATERIAL

BID SET

100% DESIGN SUBMITTAL

90% DESIGN SUBMITTAL

**ISSUED FOR** 

A) STRUCTURAL TUBING: B) STRUCTURAL PIPE:

ASTM A500, GRADE B OR A501 (42 KSI) ASTM A53, TYPE E OR S, GRADE B (35 KSI)

C) PLATES AND ANGLES: D) STRUCTURAL W SHAPES:

ASTM A36 UNO (36 KSI) ASTM A992 (50 KSI) E) STRUCTURAL S, M, C & H SHAPES: ASTM A572 GRADE 50 (50 KSI)

- M-3 PROVIDE MINIMUM 3/4" DIAMETER ASTM A325 HIGH STRENGTH BOLTS WITH SNUG TIGHTENED TYPE N CONNECTIONS FOR STRUCTURAL STEEL UNLESS NOTED OTHERWISE. HOLES FOR BOLTS SHALL BE STANDARD SIZE UNLESS NOTED OTHERWISE.
- M-4 PROVIDE TYPICAL STEEL BEAM CONNECTIONS FOR A CAPACITY OF NOT LESS THAN THE TOTAL UNIFORM LOAD CAPACITY TABULATED IN THE AISC TABLES FOR ALLOWABLE LOADS OF BEAMS UNLESS NOTED OTHERWISE.
- M-5 DO NOT PAINT STEEL SURFACES WHICH ARE TO BE WELDED OR ARE TO BE ENCASED IN CONCRETE.
- M-6 ALL STAINLESS STEEL FABRICATIONS SHALL BE TYPE 316. UNLESS NOTED OTHERWISE.
- M-7 ALUMINUM SHALL BE ALLOY 6061-T6 UNLESS NOTED OTHERWISE.
- M-8 ALL BOLTS, ANCHOR BOLTS, AND CONCRETE ANCHORS CONNECTING ALUMINUM SHALL BE STAINLESS STEEL TYPE 316
- M-9 DETAIL, FABRICATE, AND ERECT ALUMINUM IN ACCORDANCE WITH THE LATEST EDITION OF THE ALUMINUM ASSOCIATION ALUMINUM DESIGN MANUAL.
- M-10 ALUMINUM SHALL BE ISOLATED FROM CONTACT WITH CONCRETE AND DISSIMILAR METALS.
- M-11 ALL GROOVE AND BUTT WELDS SHALL BE FULL PENETRATION.

3/21

DATE

AD

12/20 AD

10/20 AD

- M-12 FILLET WELD SIZES SHALL NOT BE LESS THAN THE MINIMUM SIZE REQUIRED BY AISC CODE FOR PLATE SIZES TO BE CONNECTED AND SHALL BE APPLIED TO THE ENTIRE JOINT CONTACT LENGTH, AND NOT LESS THAN 3/16".
- M-13 BOTTOM SURFACES OF BASE PLATES SHALL BE GROUTED TO ENSURE FULL BEARING CONTACT WITH CONCRETE SLAB.
- M-14 WHENEVER ONE MEMBER IS FASTENED TO ANOTHER WITH FASTENINGS (BOLTS, WELDS, ETC.) SET AT A UNIFORM SPACING, THERE SHALL BE A MINIMUM OF TWO FASTENINGS PER PIECE CONNECTED AND THE FIRST AND LAST FASTENINGS SHALL BE LOCATED NOT TO EXCEED 0.25 OF FASTENER SPACING FROM EACH END.
- M-15 BOLTED CONNECTIONS FOR STRUCTURAL STEEL SHALL BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC (SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS).

PROJECT

ENGINEER

DESIGNED BY

DRAWN BY:

CHECKED BY:

IF THIS BAR DOES NOT

NOT TO FULL SCALE

M-16 STRUCTURAL WELDED JOINTS SHALL CONFORM TO THE PROVISIONS OF AWS D1.1, STRUCTURAL WELDING CODE BY AMERICAN WELDING SOCIETY. PROOF OF WELDER CERTIFICATION SHALL BE AVAILABLE AT THE JOB SITE DURING TIMES OF INSPECTION.

MEASURE 1" THEN DRAWING IS

A. DIEFFENTHALLER

A. VIDAL

J.P. SILVA

C. LOMBANA

0 1/2"

#### **FOUNDATIONS**

- F-1 CONCRETE (CAST-IN-PLACE) NOTES APPLY TO FOUNDATIONS.
- F-2 ALLOWABLE SOIL BEARING PRESSURE 2000 PSF
- F-3 SOFT OR LOOSE SOILS MAY BE ENCOUNTERED DURING EARTHWORK OPERATIONS, REQUIRING ADDITIONAL UNDERCUTTING AND FILL. REFER TO GEOTECHNICAL REPORT FOR DETAILED SOIL STRATIFICATION.

#### CONCRETE (CAST-IN-PLACE)

- C-1 DESIGN OF CONCRETE ELEMENTS INCLUDING WALLS, FORMED SLABS, BEAMS, AND COLUMNS IS IN ACCORDANCE WITH ACI 318 (CODE REQUIREMENTS FOR STRUCTURAL CONCRETE) AND 350 (CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES).
- C-2 FOR CONCRETE MIX DESIGN SEE SPECIFICATION SECTION 03300.
- C-3 CONCRETE STRENGTH CLASSES (28-DAY COMPRESSIVE STRENGTH)
  - A. CLASS A1 CONCRETE (4,500 PSI) NORMAL WEIGHT STRUCTURAL CONCRETE TO BE USED IN ALL STRUCTURES QUALIFYING AS ENVIRONMENTAL CONCRETE STRUCTURES THAT ARE DESIGNED IN ACCORDANCE WITH ACI 350 INCLUDING PUMP STATIONS, TANKS, BASINS, PROCESS STRUCTURES, AND ANY STRUCTURES CONTAINING FLUIDS OR PROCESS CHEMICALS OR OTHER MATERIALS USED IN TREATMENT PROCESS.
  - B. CLASS A2 CONCRETE (4,000 PSI) NORMAL WEIGHT STRUCTURAL CONCRETE IN ALL STRUCTURES OTHER THAN STRUCTURES QUALITYING AS ENVIRONMENTAL CONCRETE STRUCTURES AS DESCRIBED ABOVE, AND FOR ALL SIDEWALKS AND PAVEMENT.
  - C. CLASS A3 CONCRETE (4,000 PSI) NORMAL WEIGHT STRUCTURAL CONCRETE TO BE USED FOR INTERIOR SLABS WHERE A TYPE D STEEL TROWELED FINISH OR TYPE G HARDENED FINISH IN REQUIRED. CLASS A3 CONCRETE SHALL NOT CONTAIN ENTRAINED AIR.
  - D. CLASS A4 CONCRETE (4,000 PSI) NORMAL WEIGHT STRUCTURAL CONCRETE TO BE USED WHERE SPECIFICALLY CALLED FOR ON CONTRACT DRAWINGS OR AREAS WHERE SPECIFICALLY REQUESTED BY CONTRACTOR AND APPROVED BY ENGINEER. CLASS A4 CONCRETE IN IDENTICAL TO CLASS A2 CONCRETE EXCEPT THAT COARSE AGGREGATE SPECIFIED IN ARTICLE 2.05 BELOW SHALL BE SIZE #89 (PEA-ROCK) IN ACCORDANCE WHIT ASTM C33.
  - E. CLASS B CONCRETE (3,000 PSI) NORMAL WEIGHT STRUCTURAL CONCRETE USED FOR DUCT BANK ENCASEMENTS, CATCH BASINS, FENCE AND GUARD POST EMBEDMENT, CONCRETE FILL, AND OTHER AREAS WHERE SPECIFICALLY NOTED ON
- C-4 ALL BAR REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
- C-5 CONCRETE COVER FOR REINFORCING (UNLESS NOTED OTHERWISE ON THE DRAWINGS):

A)	CONCRETE DEPOSITED DIRECTLY AGAINST SOIL:	3"
B)	CONCRETE EXPOSED TO WEATHER (#5 OR SMALLER):	1 1/2"
	CONCRETE EXPOSED TO WEATHER (#6 OR LARGER):	2"
C)	SLABS:	1 1/2"
	AT SURFACES CONTACTING FLUID:	2"
D)	BEAMS AND COLUMNS (TO MAIN REINFORCEMENT):	2"
	BEAMS AND COLUMNS (TO COLUMN TIES OR STIRRUPS):	1 1/2"
E)	WALLS 12" OR MORE:	2"
	WALLS LESS THAN 12" (#5 OR SMALLER):	1 1/2"
	WALLS LESS THAN 12" (#6 OR LARGER):	2"
F)	FOR SURFACES EXPOSED TO FLUID IN BEAMS, COLUMNS AND WALLS:	ADD 1/2" TO ABOVE VALUES

- SPLICES SHALL BE CLASS "B" CONFORMING TO THE PROVISIONS OF ACI 318 UNLESS NOTED OTHERWISE. SPLICE LENGTH FOR TWO DIFFERENT SIZED BARS TO BE LAP SPLICED TOGETHER SHALL BE THE LENGTH OF THE LARGER BAR UNLESS NOTED OTHERWISE.
- C-7 CONSTRUCTION JOINTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS. CONSTRUCTION JOINTS NOT SHOWN SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE APPROVAL OF THE ENGINEER PRIOR TO SUBMITTING REBAR SHOP DRAWINGS. VERTICAL CONSTRUCTION JOINTS IN WALLS AND HORIZONTAL JOINTS IN SLABS SHALL BE PROVIDED AT A SPACING NOT GREATER THAN 45 FEET ON CENTER. FOR EXPOSED WALLS WITH FLUID OR EARTH ON THE OPPOSITE SIDE, THE SPACING BETWEEN VERTICAL AND HORIZONTAL JOINTS SHALL BE A MAXIMUM OF 25 FEET. JOINT SPACING GREATER THAN SPECIFIED HEREIN MAY REQUIRE MODIFICATION TO REINFORCING. SUCH MODIFICATIONS SHALL BE MADE BY THE CONTRACTOR AT NO COST. ALL MODIFICATIONS SHALL BE APPROVED BY THE ENGINEER.
- WHERE HORIZONTAL CONSTRUCTION JOINTS, LOCATED ABOVE THE FOUNDATION SLAB, EXTEND BEYOND WHERE NEEDED, THEY SHALL BE TERMINATED AT A VERTICAL CONSTRUCTION JOINT APPROVED BY THE ENGINEER.
- C-9 ALL JOINTS WHICH ARE IN MEMBERS IN CONTACT WITH LIQUID OR BELOW GRADE SHALL HAVE A WATERSTOP. CONSTRUCTION JOINTS SHALL HAVE A 6" PVC RIBBED WATERSTOP. EXPANSION JOINTS SHALL HAVE A 9" PVC CENTER BULB RIBBED WATERSTOP IN VERTICAL JOINTS, WATERSTOPS SHALL TERMINATE NO LESS THAN 18" ABOVE THE MAXIMUM WATER SURFACE OR 18" ABOVE
- C-10 SLABS WITH SLOPING SURFACES SHALL HAVE THE INDICATED SLAB THICKNESS MAINTAINED AS THE MINIMUM. SLAB BOTTOMS CAN EITHER SLOPE WITH THE TOP SURFACE OR BE LEVEL. REINFORCEMENT IN SLABS WITH SLOPING SURFACES SHALL BE PLACED AT THE REQUIRED CLEARANCE FROM THE SLAB SURFACE.
- C-11 ALL EXPOSED CORNERS SHALL HAVE A 3/4" CHAMFER OR A 1/2" RADIUS TOOLED CORNER.
- C-12 EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DOCUMENTS, SHALL BE PROVIDED FOR PRIOR TO PLACING CONCRETE.
- C-13 REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY METAL PIPE, PIPE FLANGE, METAL CONDUIT, OR OTHER METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM CLEARANCE OF 2" SHALL BE PROVIDED.
- C-14 DOWELS, ANCHOR BOLTS, PIPES, WATERSTOPS AND OTHER EMBEDDED ITEMS SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.
- C-15 CONDUITS AND OTHER SIMILAR ITEMS EMBEDDED IN OR PENETRATING THROUGH CONCRETE SHALL BE SPACED ON CENTER NOT LESS THAN 3 TIMES THEIR OUTSIDE DIMENSION, BUT NOT LESS THAN 2 1/2" CLEAR. WHEN SUCH ITEMS ARE EMBEDDED IN WALLS OR SLABS, THEY SHALL NOT OCCUPY MORE THAN MIDDLE THIRD OF THE MEMBER THICKNESS.
- C-16 AT ALL TYPICAL CURBS, EQUIPMENT PADS, AND PIPE SUPPORT PIERS, REINFORCING DOWELS SHOWN MAY BE REPLACED WITH MATCHING DOWELS SET IN EPOXY IN DRILLED HOLES AS SPECIFIED. DOWELS LOCATED CLOSER THAN 3" FROM ANY EDGE OF CONCRETE SHALL NOT BE REPLACED WITH DRILLED DOWELS.
- C-17 DRILLED ADHESIVE DOWELS AND CONCRETE ANCHORS (WHERE DOWELS ARE SHOWN TO BE PLACED INTO HARDENED CONCRETE):
  - A) THE HOLE DIAMETER SHALL BE NO LARGER THAN 1/8" GREATER THAN THE DIAMETER OF THE REINFORCING BAR AT THE
  - B) THE DEPTH OF EMBEDMENT SHALL BE 12 BAR DIAMETERS, UNLESS NOTED OTHERWISE.
  - C) ADJUST THE DOWEL OR ANCHOR ROD LOCATIONS AS NEEDED TO AVOID DRILLING THROUGH ANY REINFORCING BARS. IF THE LOCATION NEEDS TO BE MODIFIED, CONTACT THE ENGINEER. CONTRACTOR SHALL USE NON-DESTRUCTIVE MEANS TO FIELD LOCATE REINFORCEMENT PRIOR TO DRILLING HOLES FOR DOWELS.
- C-18 CLEAR DISTANCE FROM ANCHOR BOLTS TO ANY CONCRETE EDGE SHALL BE 4" MINIMUM UNLESS NOTED OTHERWISE.
- C-19 CONCRETE COMPRESSIVE STRENGTH TESTS SHALL BE AVAILABLE ON THE JOB SITE FOR REVIEW BY THE ENGINEER.

### **MASONRY**

- M-1 MASONRY MORTAR SHALL BE ASTM C 270 TYPE "M" AND MASONRY GROUT SHALL CONFORM TO REQUIREMENTS OF ASTM C 476.
- M-2 CONCRETE MASONRY UNIT NET AREA COMPRESSIVE STRENGTH SHALL BE 2000 PSI.
- M-3 HORIZONTAL JOINT REINFORCEMENT SHALL CONFORM TO ASTM A 951 AND BAR REINFORCING SHALL CONFORM TO ASTM A 615, GRADE 60.
- M-4 EXTERIOR CONCRETE MASONRY UNIT WALLS SHALL BE REINFORCED WITH #5 VERTICAL BARS AT 32 INCHES ON CENTER CENTERED IN FULLY GROUTED CELLS, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, INTERIOR CONCRETE MASONRY UNIT WALLS SHALL BE REINFORCED WITH #5 VERTICAL BARS AT 48 INCHES ON CENTER, CENTERED IN FULLY GROUTED CELLS, UNLESS SHOWN OTHERWISE ON DRAWINGS.
- M-5 VERTICAL REINFORCEMENT SHALL BE PROVIDED AT WALL ENDS, CORNERS, AND INTERSECTIONS AND IMMEDIATELY ADJACENT TO ALL OPENINGS, CONTROL JOINTS, AND COLUMNS, SEE STANDARD DETAILS FOR MASONRY OPENINGS
- M-6 MASONRY REINFORCEMENT LAP SPLICES SHALL BE CONTACT SPLICES. UNLESS NOTED OTHERWISE, LENGTH OF SPLICE FOR SINGLE BARS IN CENTER OF CELLS OF 8" OR LARGER CMU SHALL BE A MINIMUM OF 25 INCHES FOR #4 BARS AND 32 INCHES FOR #5 BARS. LENGTH OF SPLICE FOR OTHER CONDITIONS SHALL BE AS SHOWN ON THE DRAWINGS.
- M-7 CAST DOWELS SHALL BE EMBEDDED IN CONCRETE A MINIMUM 9" AND SHALL HAVE A STANDARD 90 DEGREE HOOK, IF INSTALLED WITH A DOWEL ADHESIVE SYSTEM DOWELS SHALL BE STRAIGHT BARS EMBEDDED A MINIMUM OF 10" INTO CONCRETE.
- M-8 MASONRY LINTELS SHALL BE EITHER PRECAST CONCRETE "U" SECTIONS OR CONCRETE MASONRY "U" BLOCKS UNLESS SHOWN OTHERWISE.
- M-9 FOR CONCRETE MASONRY "U" BLOCK LINTELS SEE STANDARD DETAILS FOR MASONRY OPENINGS AND THE CMU OPENING REINFORCEMENT SCHEDULE, UNLESS OTHERWISE NOTED ON DRAWINGS.
- M-10 PRECAST CONCRETE "U" SECTIONS SHALL BE REINFORCED WITH 2-#3 TOP AND 2-#5 BOTTOM, FOR SPANS UP TO 4 FEET ADDITIONAL FIELD REINFORCEMENT NOT REQUIRED, FOR SPANS BETWEEN 4 FEET AND LESS THAN 8 FEET AN ADDITIONAL #5 BAR SHALL BE ADDED IN THE TOP AND BOTTOM OF THE LINTEL IN THE FIELD.

#### PRECAST-PRESTRESSED CONCRETE HOLLOW CORE PLANKS:

- P-1 CONCRETE FOR PRECAST-PRESTRESSED HOLLOW CORE PLANKS SHALL BE DESIGNED TO ATTAIN A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF F'c = 5,000 P.S.I.
- P-2 PRESTRESSING STRANDS SHALL BE EQUIVALENT TO LATEST A.S.T.M. A416, OR EQUAL.
- P-3 MANUFACTURER SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER PRIOR TO FABRICATION.
- P-4 ALL SHOP DRAWING FOR PRECAST-PRESTRESSED CONCRETE HOLLOW CORE PLANKS SHALL INCLUDE COMPLETE DESIGN CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.
- P-5 ALL SHOP DRAWING FOR PRECAST-PRESTRESSED CONCRETE HOLLOW CORE PLANKS SHALL SHOW PRECAST-PRESTRESSED ELEMENTS, LAYOUT, SIZES, BEARING DISTANCES, OPENINGS, INSERTS, ETC. AND SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.
- P-6 ALL STRUCTURAL PRECAST UNITS SHALL BE INSPECTED FOR QUALITY CONTROL BY AN ARCHITECT OR PROFESSIONAL ENGINEER QUALIFIED TO PERFORM THESE INSPECTIONS PRIOR TO THE CONCRETE PLACEMENT AT THE CASTING YARD.
- P-7 ALL STRUCTURAL PRECAST UNITS AND THEIR ATTACHMENTS TO THE MAIN STRUCTURE SHALL BE INSPECTED AFTER ERECTION, BUT BEFORE CONCEALMENT. SUCH INSPECTIONS SHALL BE PERFORMED BY A FLORIDA REGISTERED ARCHITECT OR PROFESSIONAL ENGINEER.



RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



**GENERAL STRUCTURAL** 

MARCH 202 HAZEN NO. 42011-014 CONTRACT NO.: 8004751 DRAWING

NUMBER:

S-01

PROJECT ENGINEER: A. DIEFFENTHALLER A. VIDAL DESIGNED BY C. LOMBANA DRAWN BY: J. P.SILVA CHECKED BY: **BID SET** 3/21 AD 100% DESIGN SUBMITTAL 12/20 AD IF THIS BAR DOES NOT 0 1/2" 1"
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE 90% DESIGN SUBMITTAL 10/20 AD DATE ISSUED FOR

0331607



62'-8"

21'-4"

6'-0"

(\*)

14'-0"

– <u>PUMP CON</u>C. PAD

0331600

6'-0"

(\*)

20'-0"

18'-8"

-0331600 (TYP.)

0418000

/— 1/2" ЕЈ (TYP)

6'-8"

6'-0"

4'-0"x5'-0"x8" CONC.

PAD REINF. W/#5@8"

E.W. AT MID DEPTH -

16" 24"

8'-0"x5'-0"x8" CONC.

PAD REINF. W/#5@8"

E.W. AT MID DEPTH. —

PIPE SUPPORT (TYP.) -

0331601

– 8" CMU\REINF. W/#5 @48" TYP. INT. WALLS



20'-0"

24" THK CONC. PAD –

6'-0"

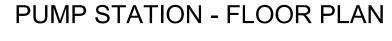
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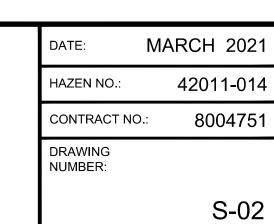
12" THK CONC. PAD

- 4'-0"x4'-0"x8" CONC. PAD REINF. W/#5@8" E.W. AT MID DEPTH

12"x12"x12"







0417001 (TYP.)

4'-0" /		39'-0"	2 1/2" THK HEAVY DUTY STAINLESS STEEL GRATING 0553001			RE, NEGATIVE SUCTION)
		ODE		10'-0"	EFECTIVE WIND AREA (SQ.FT)	ZONE 4 ZONE 5
	10,		ļ		10	+39, -41 +39, -48
/				0554001	20	+36, -39 +36, -44
			<del>\</del> +- <del>-</del> -	<u>[0334001]</u>	50	+33, -36 +33, -38
	<b>⊢</b>			<u>-</u> 4	100	+31, -34 +31, -34
6'-0" CONC. #5@8" EPTH	3'-4" 8" 16" 24" 4'-0" (M.O.)	8" CMU BLOCK REINF W/#5 @32" TYP. EXT. WALLS	6" 8" 4'-0" 14'-0" 16" (M.O.)	6 S-05		LEGEND
	<u>FL</u>	OOR PLAN 1/4"=1'-0"				INDICATES REINFORCED CMU REINFORCEMENT SHALL BE AS INDICATED ON THE PLAN AND PER DETAILS 0420201 AND 0420202
						NOTE: NOT ALL PIPE SUPPORTS SHOWN. SEE MECH. DRAWINGS FOR PIPE SUPPORT TYPES AND LOCATIONS  1 0 1 2 3 7' 1/4"=1'-0"

3'-6"

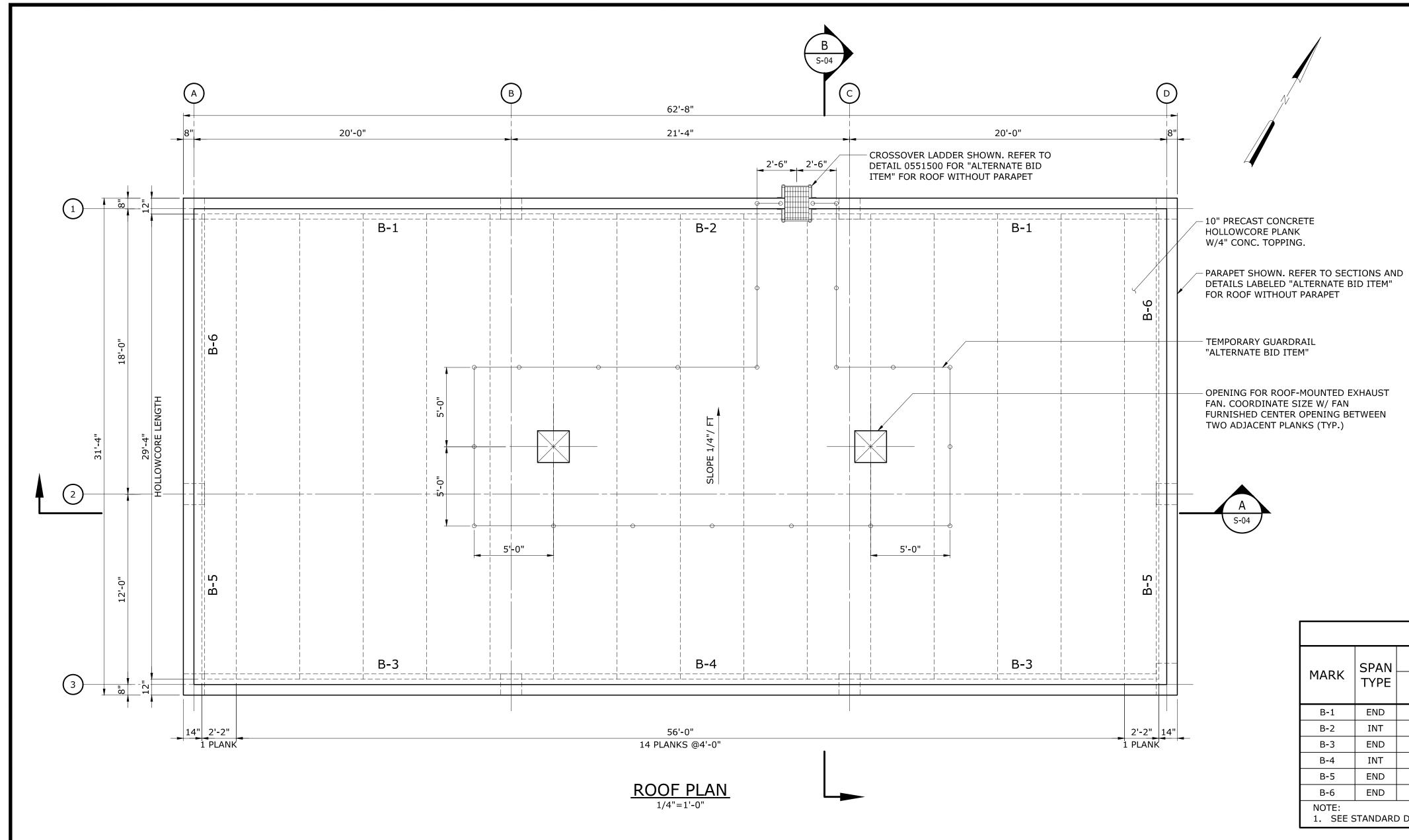
S-04

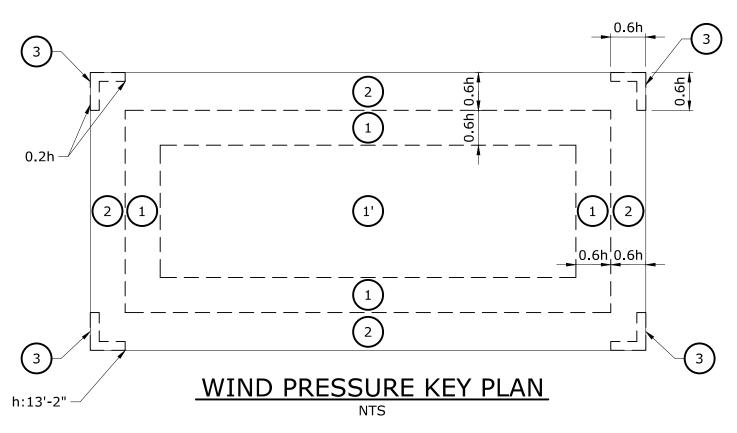
# NOMINAL COMPONENT AND CLADDING WIND PRESSURES, PSF

WALL ZONES
NTS

(POSITIVE PRESSU	RE, NEGATIVE	SUCTION)
EFECTIVE WIND AREA (SQ.FT)	ZONE 4	ZONE 5
10	+39, -41	+39, -48
20	+36, -39	+36, -44
50	+33, -36	+33, -38

(POSITIVE PRESSU	RE, NEGATIVE	SUCTION)
EFECTIVE WIND AREA (SQ.FT)	ZONE 4	ZONE 5
10	+39, -41	+39, -48
20	+36, -39	+36, -44
50	+33, -36	+33, -38
100	+31, -34	+31, -34





EFFECTIVE		ROOF NOMINAL WIND PRESSURES						
AREA (FT <sup>2</sup> )	ZON	NE 1' ZONE 1		ZONE 2		ZONE 3		
10	21	-36.05	21	-55.94	39	-70.86	39	-70.86
20	20	-36.05	20	-52.86	37	-66.90	37	-66.90
50	19	-36.05	19	-48.78	35	-61.66	35	-61.66
100	19	-36.05	19	-45.70	34	-57.69	34	-57.69
NEGATIVE PRES PRESSURES AR				RESSURES	S, MULTIP	LY BY 1.67	7	

EFFECTIVE AREA (FT²)	ROOF NOMINAL WIND PRESSURES ALTERNATE BID ITEM							
/ · · / · · / ·	ZON	IE 1'	ZON	NE 1	ZON	NE 2	ZOI	NE 3
10	21	-36.05	21	-55.94	21	-70.86	21	-93.24
20	20	-36.05	20	-52.86	20	-66.90	20	-85.31
50	19	-36.05	19	-48.78	19	-61.66	19	-74.83
100	19	-36.05	19	-45.70	19	-57.69	19	-66.90
NEGATIVE PRES PRESSURES AR				RESSURES	S, MULTIP	LY BY 1.67	7	

	SPAN	SI	ZE	OT) (	MAIN	MAIN REINF		ADD REINF		S1 STIRRUPS		S2 STIRRUPS		
MARK	TYPE	W"	D"	QTY	ТОР	вот	Α	В	С	SIZE	SPACING	SIZE	SPACING	REMARKS
B-1	END	16	24	2	3 #7	3 #7	-	-	-	#3	10	-	-	
B-2	INT	16	24	1	3 #7	3 #7	-	-	-	#3	10	-	-	
B-3	END	16	32	2	3 #7	3 #7	-	-	-	#3	10	-	-	
B-4	INT	16	32	1	3 #7	3 #7	-	-	-	#3	10	-	-	
B-5	END	16	24 - 32	2	3 #7	3 #7	-	-	-	#3	10	-	-	
B-6	END	16	24 - 32	2	3 #7	3 #7	-	-	-	#3	10	=	-	

# NOTES:

- 1. COORDINATE LOCATION OF ROOF DRAINAGE WITH ARCHITECTURAL DRAWINGS
- 2. ROOF PRECAST PRESTRESSED ELEMENTS SHALL BE DESIGNED FOR THE FOLLOWING LOADS:
  - A SELF WEIGHT OF SYSTEM
  - B CONCRETE TOPPING
  - C OTHER SUPERIMPOSED DEAD LOADS: 40 PSF
  - D LIVE LOAD: 20 PSF
  - E WIND LOAD: SEE SCHEDULE F EQUIPMENT: SEE HVAC DRAWINGS
- 3. SEE ARCHITECTURAL DRAWINGS, FOR ROOF DRAIN LOCATION, ROOFING AND OTHER DETAILS
- 4. SEE MECHANICAL, PLUMBING, ARCHITECTURAL AND HVAC DRAWINGS FOR ROOF PENETRATIONS.
- 5. ROOF SYSTEM DESIGNED TO PREVENT THE ACCUMULATION OF MORE THAN FIVE INCHES OF WATER ON ANY PORTION OF THE ROOF.

1 0 1 2 3 1/4"=1'-0"

PROJECT ENGINEER: A. DIEFFENTHALLER A. VIDAL DESIGNED BY: C. LOMBANA DRAWN BY: J.P. SILVA CHECKED BY: **BID SET** 3/21 AD 12/20 AD IF THIS BAR DOES NOT 100% DESIGN SUBMITTAL 0 1/2" 90% DESIGN SUBMITTAL 10/20 AD MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE DATE

ISSUED FOR



RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



PUMP STATION - ROOF PLAN

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	·· 8004751
DRAWING NUMBER:	
	S-03

PROJECT ENGINEER: A. DIEFFENTHALLER A. VIDAL DESIGNED BY: C. LOMBANA DRAWN BY: J.P. SILVA CHECKED BY: **BID SET** 3/21 AD 12/20 AD 100% DESIGN SUBMITTAL IF THIS BAR DOES NOT 0 1/2" 1'
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE 90% DESIGN SUBMITTAL 10/20 AD DATE ISSUED FOR







PUMP STATION - SECTIONS

MARCH 2021 42011-014 HAZEN NO.: 8004751 CONTRACT NO.: DRAWING NUMBER: S-04





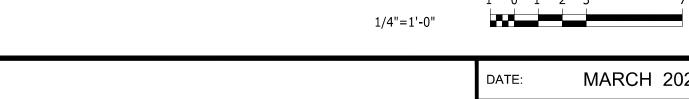
WITHOUT PARAPET AS ALTERNATE BID ITEMS.



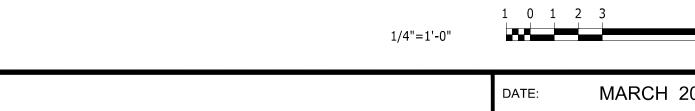
NOT ALL PIPE SUPPORTS SHOWN. SEE MECH. DRAWINGS FOR PIPE SUPPORT TYPES AND LOCATIONS.

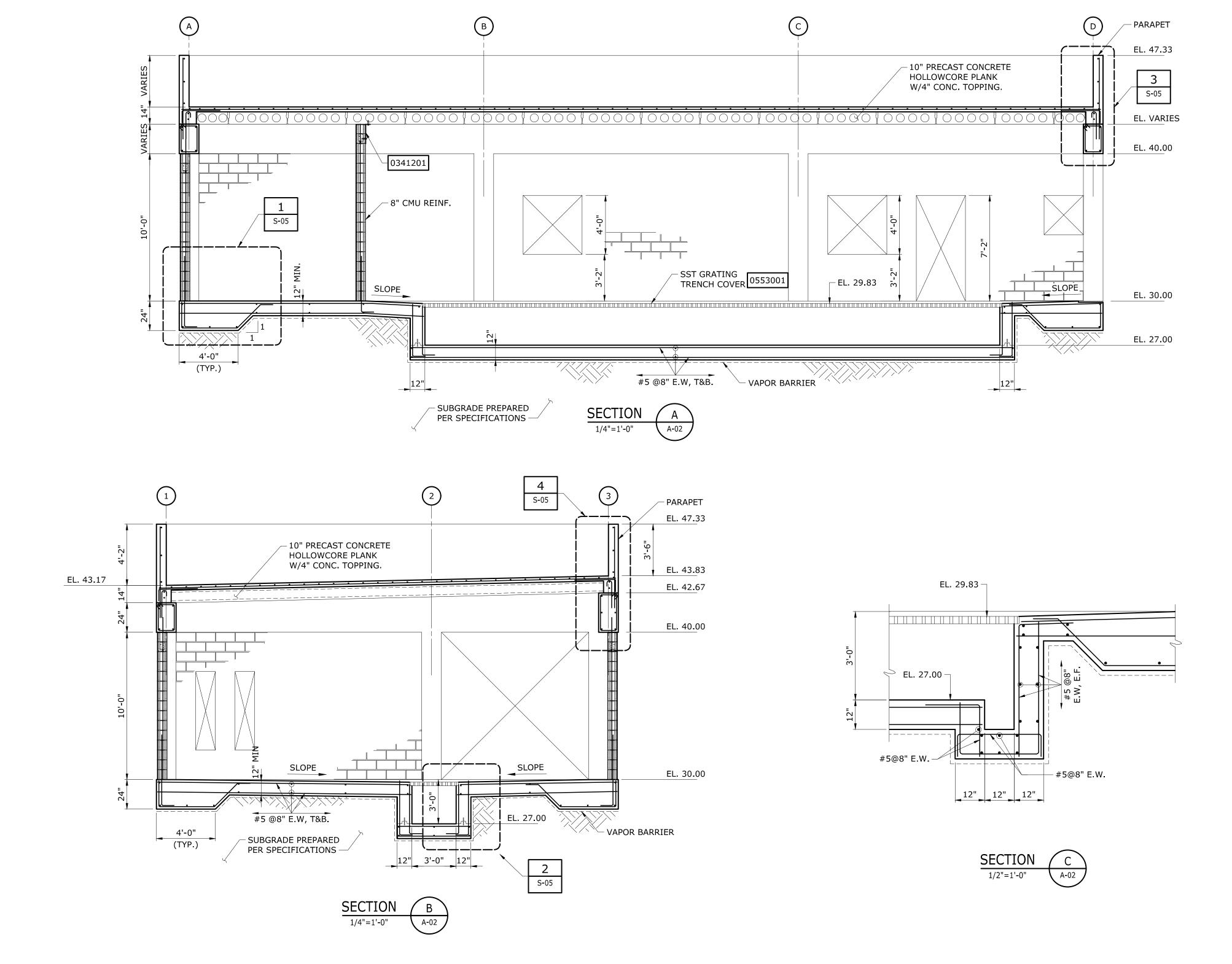
2. STRUCTURE WITH PARAPET SHOWN. REFER TO DETAILS 3 AND 4 FOR STRUCTURE

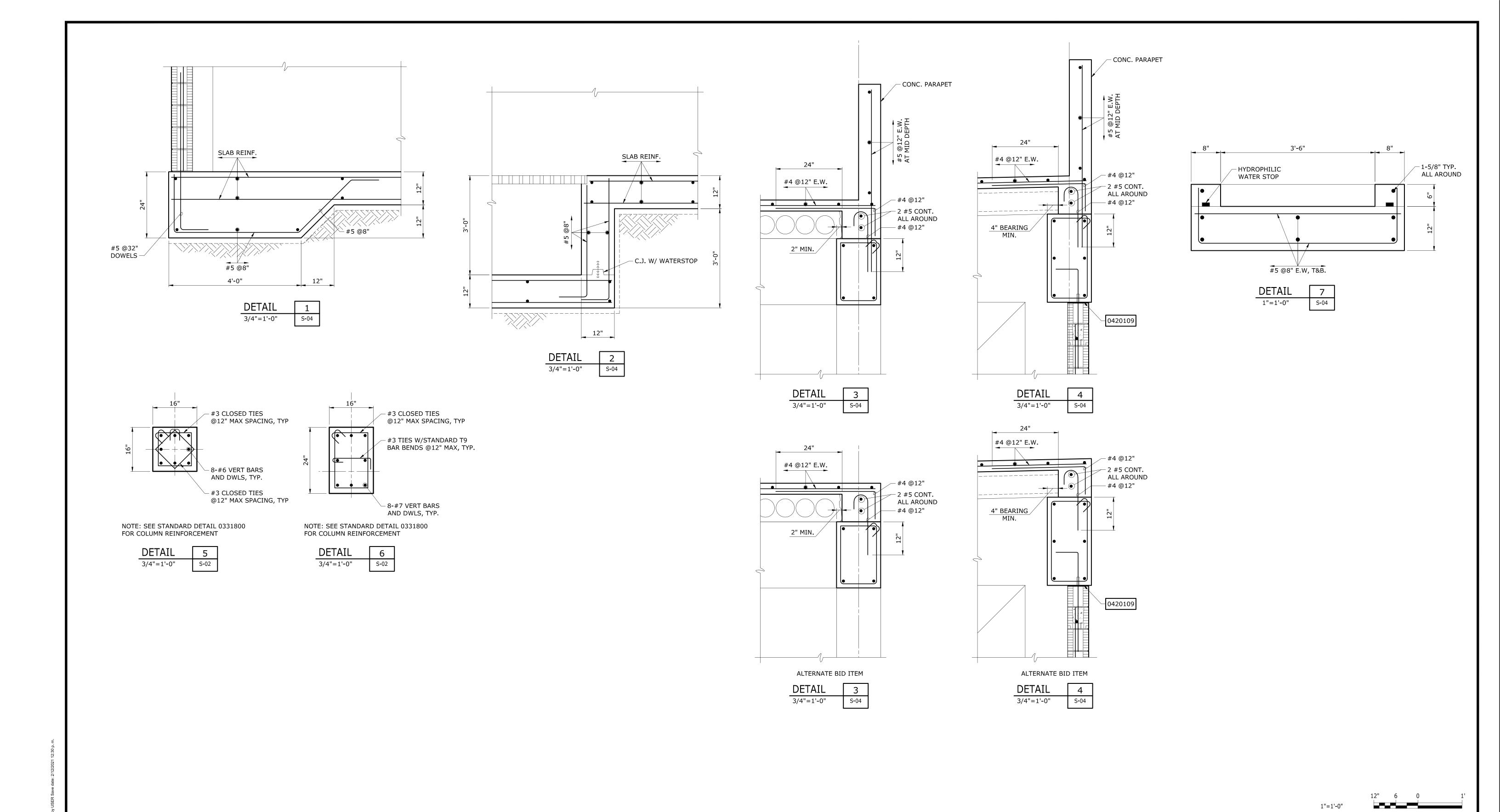




NOTES:







				PROJECT ENGINEER: A. DIEFFENTHALLER	₹
				DESIGNED BY: VALUE	Ξ
				DRAWN BY: C.LOMBANA	abla
3	BID SET	3/21	AD	CHECKED BY: J. P.SILVA	abla
2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT 0 1/2" 1	1"
1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING IS	٠l
REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE	ı

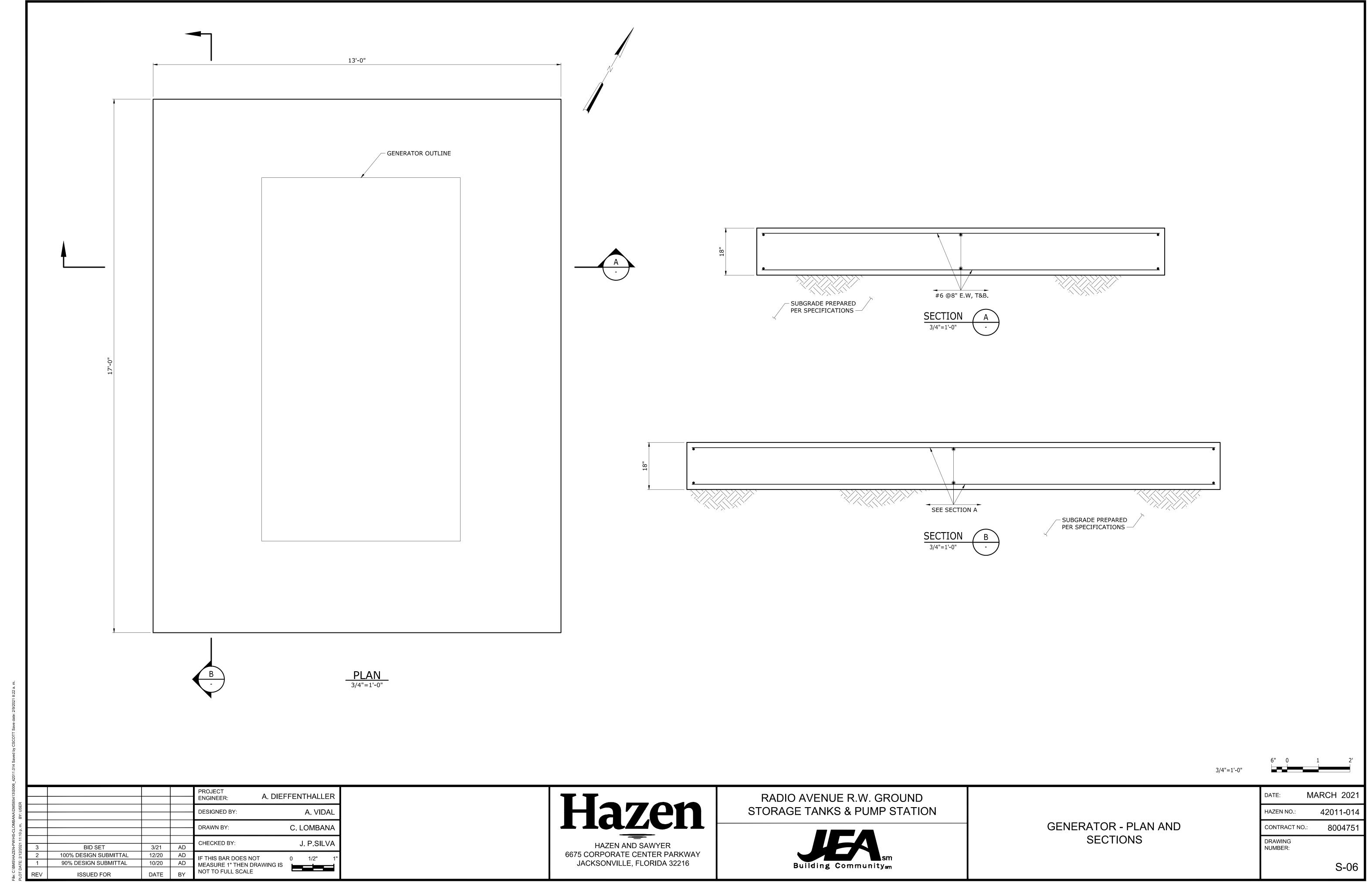


RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



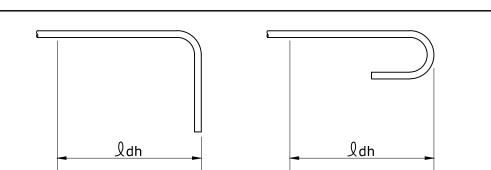
PUMP	STAT	ION -	DET	AILS

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	.: 8004751
DRAWING NUMBER:	
	S-05

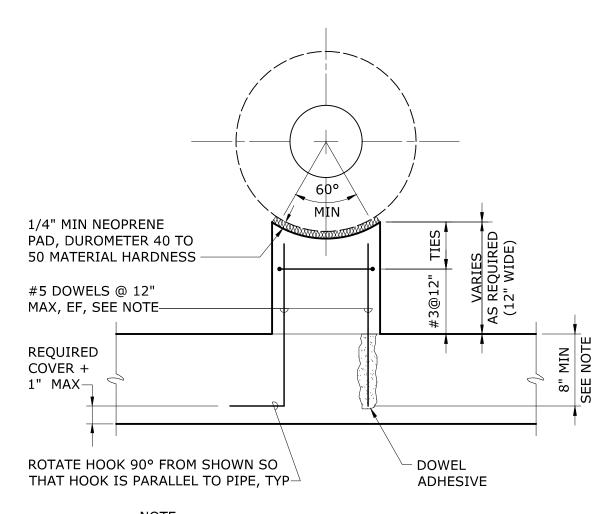


#### DEVELOPMENT LENGTH OF STANDARD HOOKS FOR BARS IN TENSION fy = 60,000 psifc' = 4000 psi OR GREATER DEVELOPMENT LENGTH, & dh SIZE W/ CONC COVER \* #3 6" #4 #5 9" 1'-0" #6 11" 1'-3" #7 1'-5" 1'-0" #8 1'-7" 1'-2" #9 1'-10" 1'-4" #10 2'-1" 1'-6" #112'-3" 1'-7"

SIDE COVER NORMAL TO PLANE OF HOOK AT LEAST 2 1/2"; AND FOR 90° HOOK, END COVER BEYOND OUTSIDE END OF HOOK AT LEAST 2".



0321003



NOTE: 1 DOWELS MAY BE CAST IN WITH 90° HOOK OR ANCHORED WITH DOWEL ADHESIVE AT CONTRACTORS OPTION. WHERE FLOOR IS 8" THICK OR LESS, USE #4 DOWELS EMBEDDED TO WITHIN 2" OF BOTTOM OF FLOOR SLAB.

> PIER PIPE SUPPORT 0331602

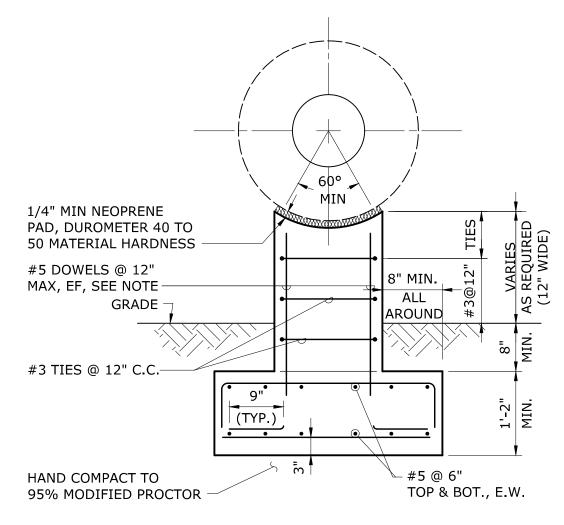
#### BASIC DEVELOPMENT LENGTH AND SPLICE LENGTH FOR BARS IN TENSION

\*\* BASED ON MATERIALS AND CONDITIONS AS FOLLOWS: fy = 60,000 psifc' = 4000 psi OR GREATER UNCOATED BARS NORMAL WEIGHT CONCRETE CLEAR COVER≥1.5 INCHES

BAS:		PMENT LEN	ENT LENGTH C		CLASS B SPLICE LENGTH 1.3 xld			
				BAR				
CLEAR SP	ACING≥3"	CLEAR SP	ACING<3"	SIZE	CLEAR SP	ACING≥3"	CLEAR SP	ACING<3"
BASIC	TOP *	BASIC	TOP *		BASIC	TOP *	BASIC	TOP *
1'-0"	1'-0"	1'-0"	1'-4"	# 3	1'-0"	1'-3"	1'-4"	1'-8"
1'-0"	1'-3"	1'-7"	2'-1"	# 4	1'-3"	1'-8"	2'-1"	2'-9"
1'-3"	1'-7"	2'-4"	3'-0"	# 5	1'-7"	2'-0"	3'-0"	3'-11"
1'-6"	1'-11"	3'-1"	4'-0"	# 6	1'-11"	2'-5"	4'-0"	5'-2"
2'-5"	3'-1"	4'-11"	6'-4"	# 7	3'-1"	4'-0"	6'-4"	8'-3"
3'-0"	3'-11"	6'-0"	7'-9"	# 8	3'-11"	5'-1"	7'-9"	10'-1"
3'-8"	4'-9"	6'-9"	8'-9"	# 9	4'-9"	6'-3"	8'-9"	11'-4"
4'-6"	5'-10"	7'-7"	9'-10"	# 10	5'-10"	7'-7"	9'-10"	12'-9"
5'-5"	7'-0"	8'-5"	10'-11"	# 11	7'-0"	9'-1"	10'-11"	14'-2"

- TOP REINFORCEMENT IS HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCEMENT.
- \* FOR MATERIALS OR CONDITIONS DIFFERENT FROM THOSE STATED, LENGTHS SHOWN IN CHART SHALL BE MODIFIED TO CONFORM TO THE PROVISIONS OF ACI 318, SECTION 12.

# 0321004



PIPE SUPPORT

0331603

#### PLAN DIMENSION AS REQUIRED FOR EQUIPMENT CONFIRM BY ANCHOR **BOLT DESIGN** 2" MIN 0" OR 2" MIN EDGE DISTANCE **EDGE DISTANCE** SEE NOTE 3 SEE NOTE 3 PUMP OR **EQUIP BASE** 1" MIN NON-SHRINK LEVELING CHANNEL, **GROUT SEE** SEE NOTES 2 AND 3 NOTES 2 & 3 CONC PAD -4" MINIMUM, IF OVER 24", CL ANCHOR RODS #4@8" #4@12 EW -REQUIRED 8" MIN, SEE COVER + 1" MAX -CONC FLOOR #5 DOWELS @12" ALL AROUND, SEE NOTE 1 - #5 DOWELS @12" ALL DOWEL ADHESIVE AROUND, SEE NOTE 1 LEVELING CHANNEL ANCHORS, SEE NOTE 2

- 2D (2" MIN)

DOWELS MAY BE CAST IN WITH 90° HOOK OR ANCHORED WITH DOWEL ADHESIVE AT CONTRACTORS OPTION. WHERE FLOOR IS 8" THICK OR LESS, USE #4 DOWELS EMBEDDED TO WITHIN 2" OF BOTTOM OF FLOOR SLAB.

NOTES:

1509300

APPROVED ADHESIVE

ON BOTH CONTACT

SURFACES OF PAD-

1/4" MIN NEOPRENE

#3@ 12", TIES

REQUIRED

COVER +

1" MAX—

PAD, DUROMETER 40 TO

50 MATERIAL HARDNESS-

SLAB, FOOTING, CONC.

PAVING OR CONC. MAT

#5 @ 12" (TYP.)

#5 @ 12" (TYP.)

1. ALL PIPES, CONDUITS AND DUCTS BELOW

EDGE OF THE REINFORCED CONCRETE.

CONCRETE ENCASE.

SLAB, FOOTING, CONC.

PAVING OR CONC. MAT

#4 @ 12" (TYP.)-

OPTIONAL SLOPE

AS REQUIRED -

REINFORCED CONC. ON GRADE, SHALL BE

2. EXTEND THE ENCASEMENT (MIN.) 6" BEYOND THE

-CONC FLOOR-

#5 DOWELS @12" EF

SEE NOTE 1

NOTES: 1 DOWELS MAY BE CAST IN WITH 90° HOOK OR ANCHORED

TO WITHIN 2" OF BOTTOM OF FLOOR SLAB.

PIPE ANCHOR ROD TO EDGE OF CONCRETE.

CRADLE PIPE SUPPORT

0331601

WITH DOWEL ADHESIVE AT CONTRACTORS OPTION. WHERE

FLOOR IS 8" THICK OR LESS, USE #4 DOWELS EMBEDDED

2 COORDINATE SUPPORT WITH PIPE STRAP ANCHORAGE REQUIREMENTS. PROVIDE 6" MINIMUM FROM CENTER OF

HOOK IS PARALLEL TO PIPE, TYP ROTATE

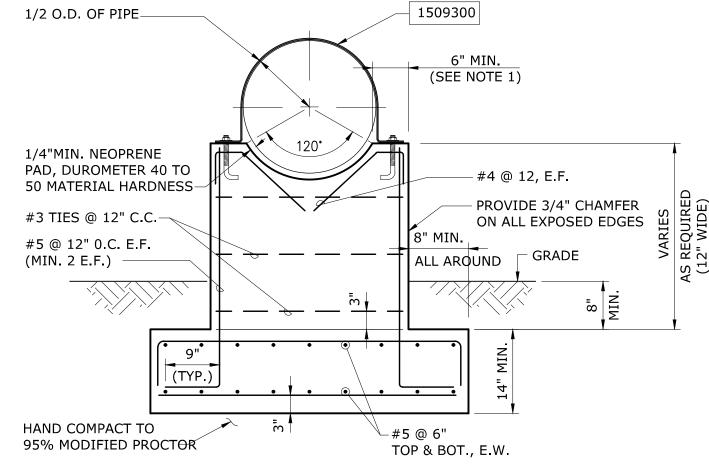
HOOK 90° FROM SHOWN SO THAT

THE CONTRACTOR SHALL PROVIDE LEVELING CHANNELS AND LEVELING CHANNEL ANCHORS FOR SWITCHGEAR, SWITCHBOARDS, MOTOR CONTROL CENTERS, AND SIMILAR EQUIPMENT WHEN REQUIRED TO MEET EQUIPMENT MANUFACTURER'S LEVELING TOLERANCES. THE CONTRACTOR SHALL PROVIDE 1" MINIMUM NON-SHRINK GROUT FOR PUMPS AND SIMILAR EQUIPMENT WHEN REQUIRED TO MEET EQUIPMENT MANUFACTURER'S UNIFORM BEARING AND LEVELING REQUIREMENTS.

- PRIOR TO PLACING CONCRETE PAD, LEVELING CHANNEL SIZE AND MEANS OF INSTALLATION, ANCHORAGE, GROUT, CONCRETE EDGE DISTANCE, AND CONCRETE BLOCKOUTS REQUIREMENTS SHALL BE COORDINATED WITH EQUIPMENT MANUFACTURER.
  - COAT DISSIMILAR MATERIALS PER THE CONTRACT DOCUMENTS.
  - STAGGER CHANNEL ANCHORS AND PAD DOWELS.

TYPICAL EQUIPMENT PAD

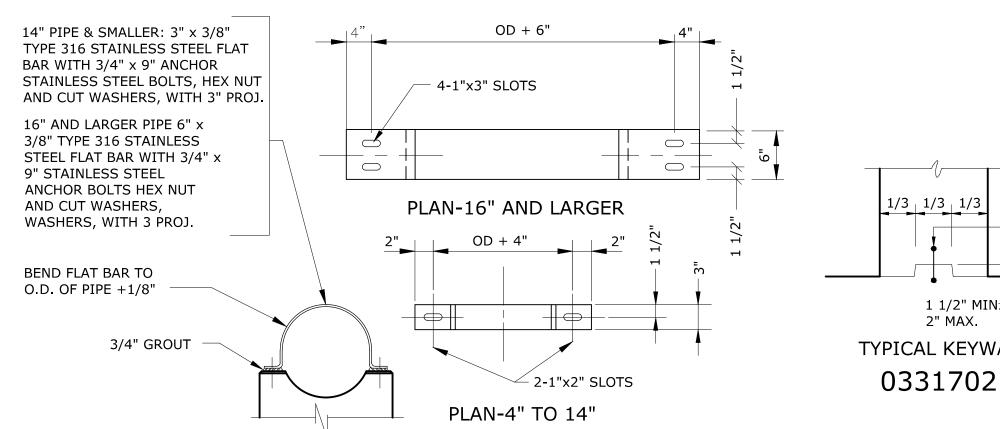
S-03-0504



1. COORDINATE SUPPORT WIDTH WITH PIPE STRAP ANCHORAGE REQUIREMENTS. PROVODE 6" MINIMUM, FROM CENTER OF PIPE STRAP ANCHOR ROD TO EDGE CONCRETE.

CRADLE TYPE PIPE SUPPORT ON GRADE

0331606



PIPE HOLD DOWN STRAP DETAIL

1/3 1/3 1/3 -WATERSTOP 1 1/2" MIN 2" MAX. TYPICAL KEYWAY

1509300

CONCRETE ENCASEMENT

TYPE I

SECTION

0222101

~					PROJECT ENGINEER:	A. DIEFFENTHALLE	ER
BY: USER					DESIGNED BY:	A. VID	AL.
11:10 p. m.					DRAWN BY:	C. LOMBAN	1A
	3	BID SET	3/21	AD	CHECKED BY:	J. P.SIL\	/A
2/12/2021	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2"	1"
	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING IS		_¦ I
LOT DATE:	REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE		-

Hazen HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY

JACKSONVILLE, FLORIDA 32216

REINF BAR -

TOP OF SLAB-

1 D DENOTES PIPE OR CONDUIT OD

AND STEEL AS REQUIRED

2 EMBEDDED ITEMS SHALL NOT OCCUPY MORE THAN

THE MIDDLE THIRD OF THE MEMBER THICKNESS.

CONTRACTOR SHALL ADD ADDITIONAL CONCRETE

PIPE OR CONDUIT EMBEDDED IN SLAB

0331604

RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



STRUCTURAL STANDARD DETAILS SHEET I

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	

SD-01

6" MIN.

(SEE NOTE 2)

DOWEL

A (TYP. ALL 4 SIDES)

12"

-#4 @ 12" (TYP.)

LESS THAN 8"

Ø 8" - 24"

Ø 24" - 60"

PIPE SIZE | DIM "A"

-#4 @ 12" (TYP.)

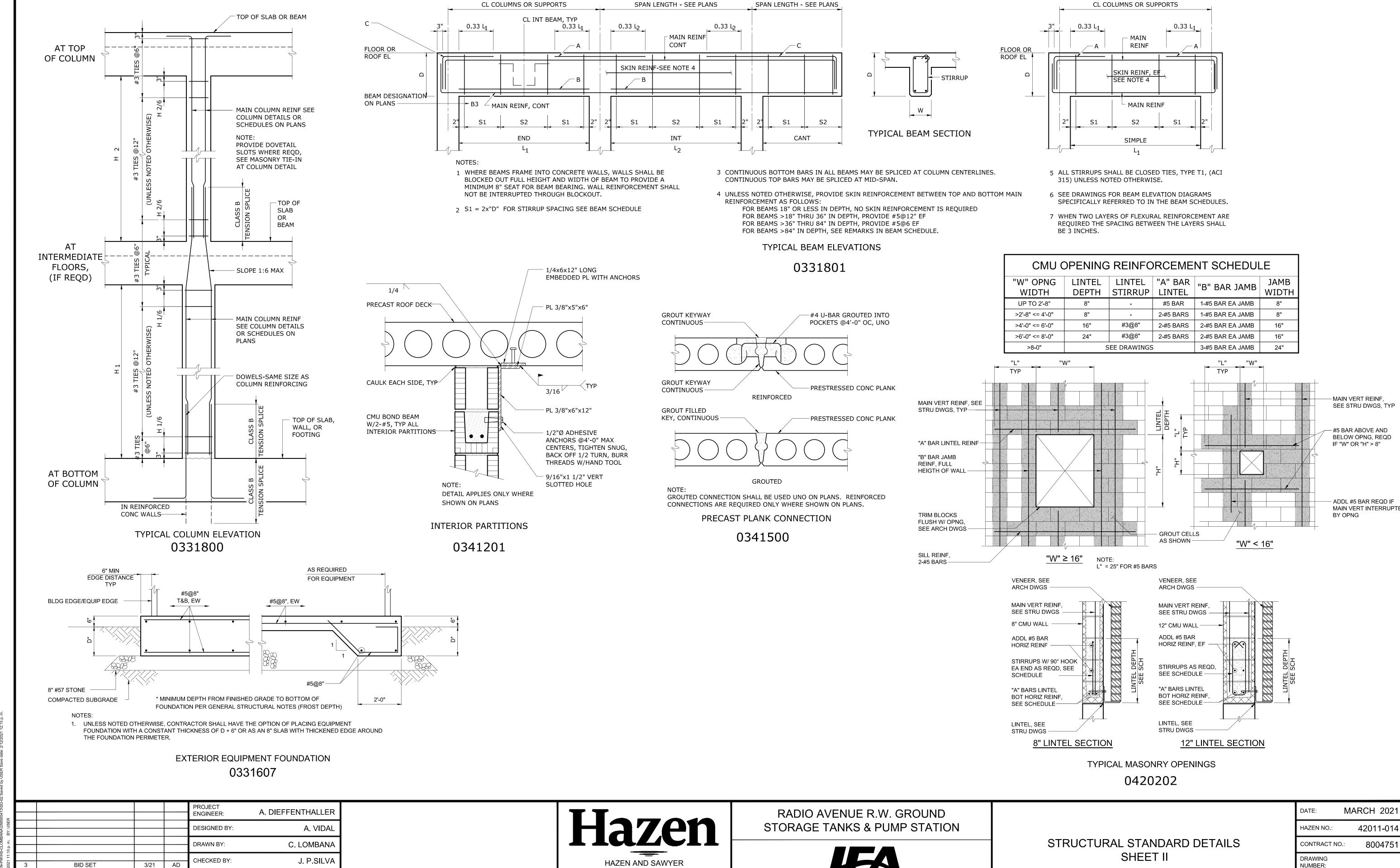
CONC.FLOOR

A" (TYP.)

#5 @ 12" (TYP.)

#5 @ 12" (TYP.)

ADHESIVE



6675 CORPORATE CENTER PARKWAY

JACKSONVILLE, FLORIDA 32216

Building Communitysm

SD-02

12/20

10/20

DATE

AD

AD

F THIS BAR DOES NOT

NOT TO FULL SCALE

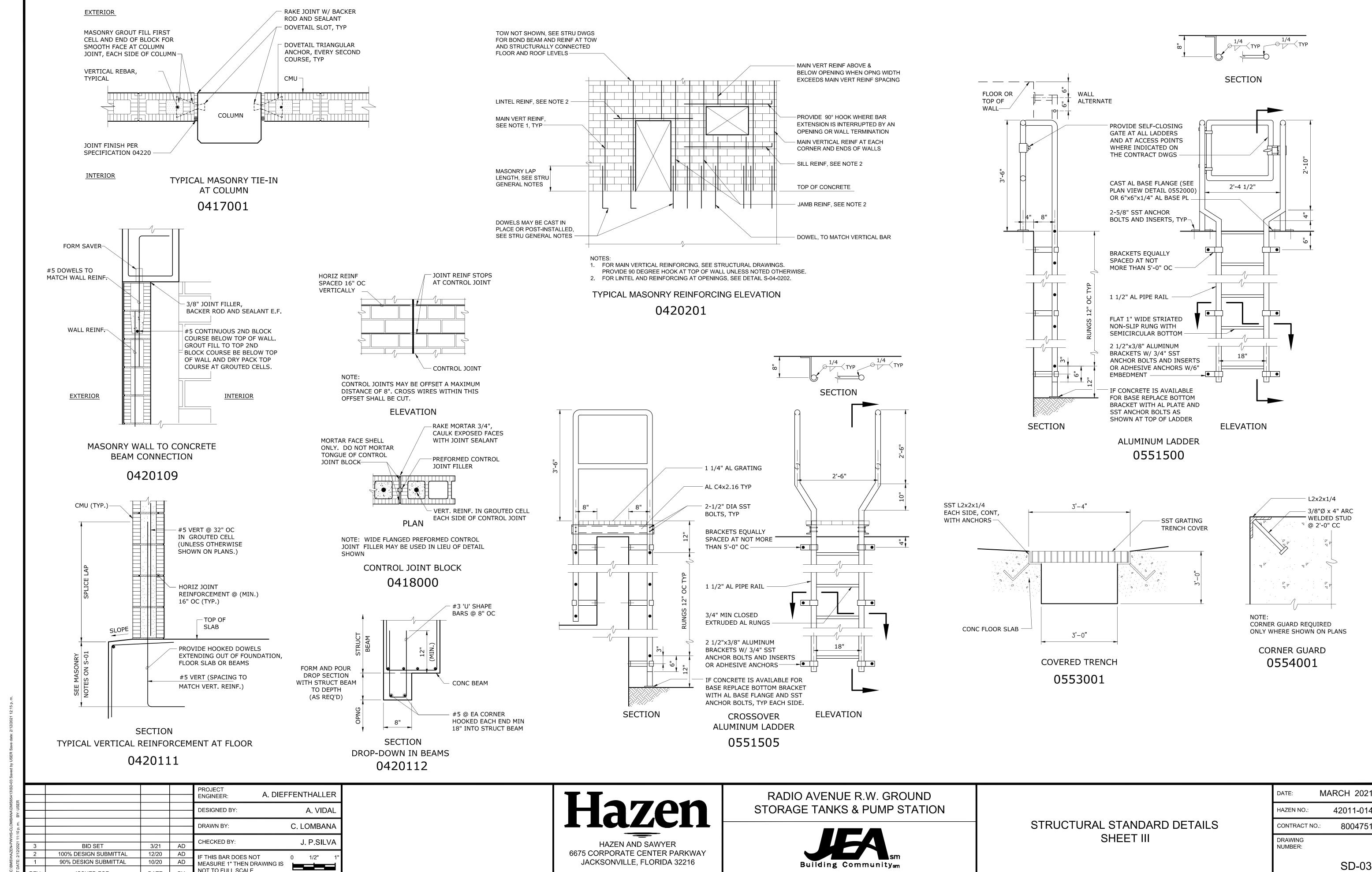
MEASURE 1" THEN DRAWING IS

0 1/2"

100% DESIGN SUBMITTAL

90% DESIGN SUBMITTAL

ISSUED FOR



SD-03

NOT TO FULL SCALE

DATE

ISSUED FOR

# **ENERGY SUMMARY**

### ENERGY REQUIREMENTS

THE FOLLOWING DATA SHALL BE CONSIDERED MINIMUM AND ANY SPECIAL ATTRIBUTE REQUIRED TO MEET THE ENERGY CODE SHALL ALSO BE PROVIDED.

CLIMATE ZONE:  $1A \square 2A \mathbf{X} 3 \square 4 \square 5 \square 6 \square 7 \square$ 

### METHOD OF COMPLIANCE:

▶ PRESCRIPTIVE (ENERGY CODE, FBC TABLE C402.1.3)

PERFORMANCE (ENERGY CODE, FBC C407) ☐ PRESCRIPTIVE (ASHRAE 90.1)

PERFORMANCE (ASHRAE 90.1)

# THERMAL ENVELOPE

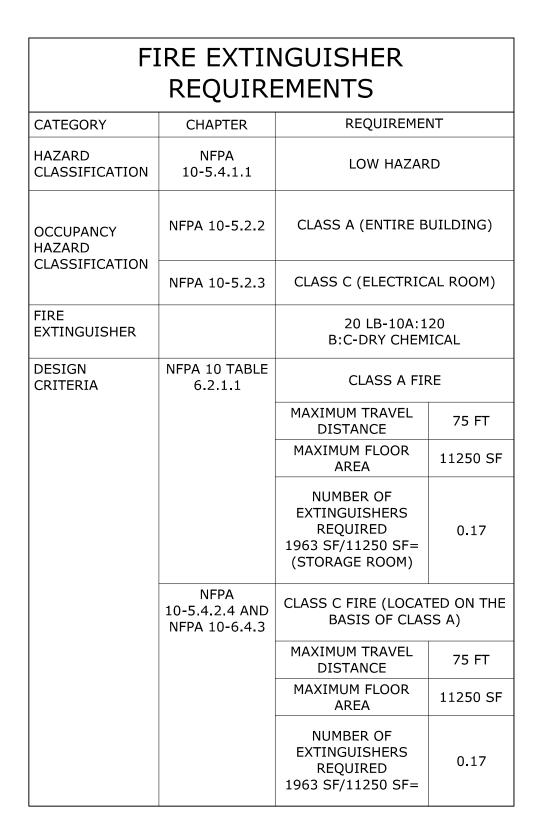
ROOF/CEILING ASSEMBLY										
DESCRIPTION OF ASSEMBLY	R-VALUE OF	SKYLIGHTS IN EACH ASSEMBI								
	INSULATION	U-VALUE	TOTAL SQ FT							
BUILT-UP ROOFING ON RIGID INSULATION ON CONCRETE DECK	25ci	N/A	N/A							

ci: CONTINUOUS INSULATION

EXTERIOR WALLS										
DESCRIPTION OF	D .VALUE 05	OPENI	OPENINGS (WINDOWS OR DOORS WITH GLAZING)							
DESCRIPTION OF ASSEMBLY	R-VALUE OF INSULATION	U-VALUE	SHGC	PROJECTION FACTOR	LOW E REQUIRED, IF APPLICABLE	U-VALUES				
CONCRETE BLOCK WALLS, 8 INCHES, PARTIALLY GROUTED AT 32" O.C. UNGROUTED CELLS FILLED WITH INSULATING FOAM	5.7ci (*)	N/A	N/A	N/A	N/A	0.83				

ci: CONTINUOUS INSULATION

(\*): PER FOOTNOTES ON TABLE C402.1.3, R-5.7ci IS ALLOWED TO BE SUBSTITUTED WITH CONCRETE BLOCK WALLS COMPLYING WITH ASTM C90, PARTIALLY GROUTED AT 32 INCHES ON CENTER VERTICALLY, WITH UNGROUTED CORES FILLED WITH MATERIALS HAVING A MAXIMUM THERMAL CONDUCTIVITY OF 0.44 BTU-in/h-ft2-F



LIFE S	LIFE SAFETY LEGEND									
<b>A</b>	ENTRANCE/EXIT									
<b>&lt;</b>	DIRECTION OF TRAVEL									
•	MOST REMOTE POINT									
	EMERGENCY LIGHT FIXTURE									
	FIRE EXTINGUISHER									
H	EXIT SIGN WALLMOUNT									

		CODE R	EQUIRE	MENIS					
		FBC 2017			FFPC				
CATEGORY	CHAPTER	REQUIREMENT	S	CHAPTER	REQUIREMENTS	5			
OCCUPANCY	306.3	FACTORY INDUSTRIAL LO	OW HAZARD	NFPA 101 40.1.2.1.2	SPECIAL-PURPOSE INDUSTRIAL				
CONSTRUCTION	602.2	TYPE II-B		NFPA 101	TYPE II (000)				
TYPE		MAXIMUM NUMBER OF STORIES	3	TABLE A8.2.1.2					
		ACTUAL NUMBER OF STORIES	1						
	TABLE 504.3	MAXIMUM AREA (PER FLOOR)	23000 SF						
		ACTUAL AREA	1963 SF						
		MAXIMUM BUILDING HEIGHT	55 FT						
		ACTUAL BUILDING HEIGHT	14 FT						
OCUPANT LOAD	TABLE 1004.1.2	300 SF/OCCUPANT 1963/300=	6 OCCUP.	NFPA 101 TABLE 7.3.1.2	NR				
EGRESS CAPACITY	1005.3	0.2 INCHES PER OCCUPANT AT DOORS 7X0.2=	1.4 INCHES	NFPA 101	0.2 INCHES PER OCCUPANT AT COMPONENTS 7X0.2=	1.4 INCHE			
	1003.3	0.3 INCHES PER OCCUPANT AT STAIRS 7X0.3=	2.1 INCHES	TABLE 7.3.3.1	0.3 INCHES PER OCCUPANT AT STAIRS 7X0.3=	2.1 INCHE			
	TABLE 1020.2	MINIMUM CORRIDOR WIDTH	36 INCHES	NFPA 101 7.3.4.1	MINIMUM CORRIDOR WIDTH	36 INCHES			
	1011.2, EXCEPTION 1	MINIMUM STAIR WIDTH	36 INCHES	NFPA 101 7.2.2.2.1.2	MINIMUM STAIR WIDTH	36 INCHES			
	1010.1.1	MINIMUM CLEAR OPENING OF EXIT DOORS	32 INCHES	NFPA 101 7.2.1.2.3.2	MINIMUM DOOR OPENING	32 INCHES			
EXIT ACCESS TRAVEL DISTANCE	TABLE 1017.2	MAXIMUM	300 FT	NFPA 101 TABLE 40.2.6	MAXIMUM	300 FT			
COMMON PATH OF TRAVEL	TABLE 1006.2.1	MAXIMUM	75 FT	NFPA 101 TABLE 40.2.5	MAXIMUM	50 FT			
DEAD END CORRIDORS	1020.4	MAXIMUM	20 FT	NFPA 101 TABLE 40.2.5	MAXIMUM	50 FT			
FIRE		STRUCTURAL FRAME	0 HR		STRUCTURAL FRAME	0 HR			
PROTECTION		BEARING WALLS			BEARING WALLS				
		EXTERIOR	0 HR		EXTERIOR	0 HR			
		INTERIOR	0 HR		INTERIOR	0 HR			
	TABLE 601 AND	NON BEARING WALLS		NFPA 101	NON BEARING WALLS				
	TABLE 601 AND	EXTERIOR FIRE SEPARATION DISTANCE 10FT< X <30 FT	0 HR	A8.2.1.2	EXTERIOR (FIRE SEPARATION DISTANCE >30 FT)	0 HR			
		INTERIOR	0 HR		INTERIOR	0 HR			
		FLOOR CONSTRUCTION 0 HR			FLOOR CONSTRUCTION 0 H				
		ROOF CONSTRUCTION	0 HR		ROOF CONSTRUCTION	0 HR			
	903.2	AUTO FIRE SPRINKLER	NR	NFPA 101 40.3.5	NR				



RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION

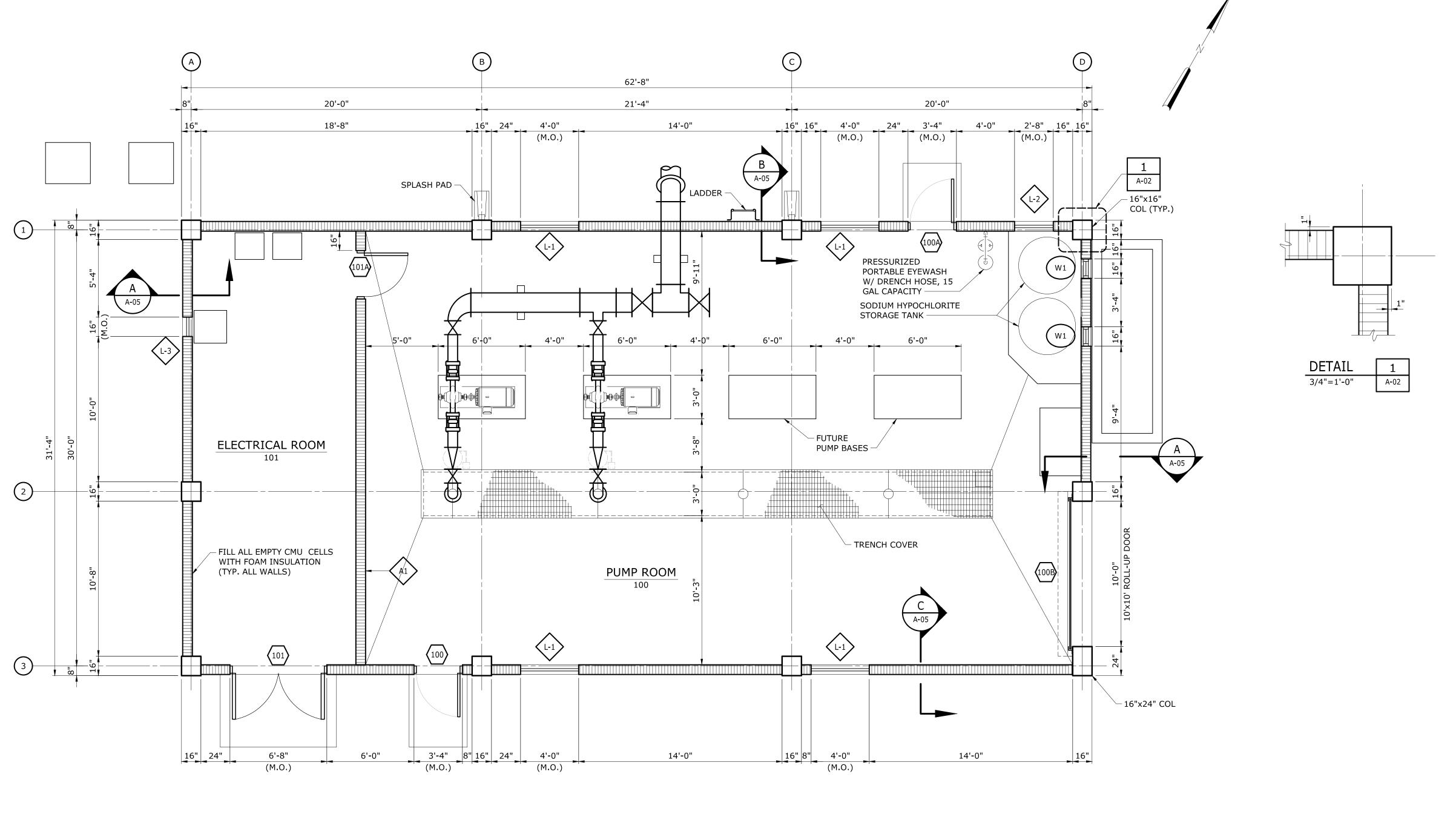


PUMP STATION - LIFE SAFETY PLAN

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	A-01

PROJECT ENGINEER: A. DIEFFENTHALLER DESIGNED BY: A. VIDAL C. LOMBANA DRAWN BY: J.P. SILVA CHECKED BY: BID SET 3/21 AD 12/20 AD IF THIS BAR DOES NOT 100% DESIGN SUBMITTAL 0 1/2" 90% DESIGN SUBMITTAL 10/20 AD MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE ISSUED FOR

Hazen HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY JACKSONVILLE, FLORIDA 32216



FLOOR PLAN
1/4"=1'-0"

1 0 1 2 3 7

					PROJECT ENGINEER: A. I	DIEFFENTHALLER
BY: USER					DESIGNED BY:	A. VIDAL
p. m.					DRAWN BY:	C. LOMBANA
2021 12:11	3	BID SET	3/21	AD	CHECKED BY:	J.P. SILVA
DATE: 2/15/2021	2	100% DESIGN SUBMITTAL 90% DESIGN SUBMITTAL	12/20 10/20	AD AD	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWIN	0 1/2" 1" G IS
ОТ D/	REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE	

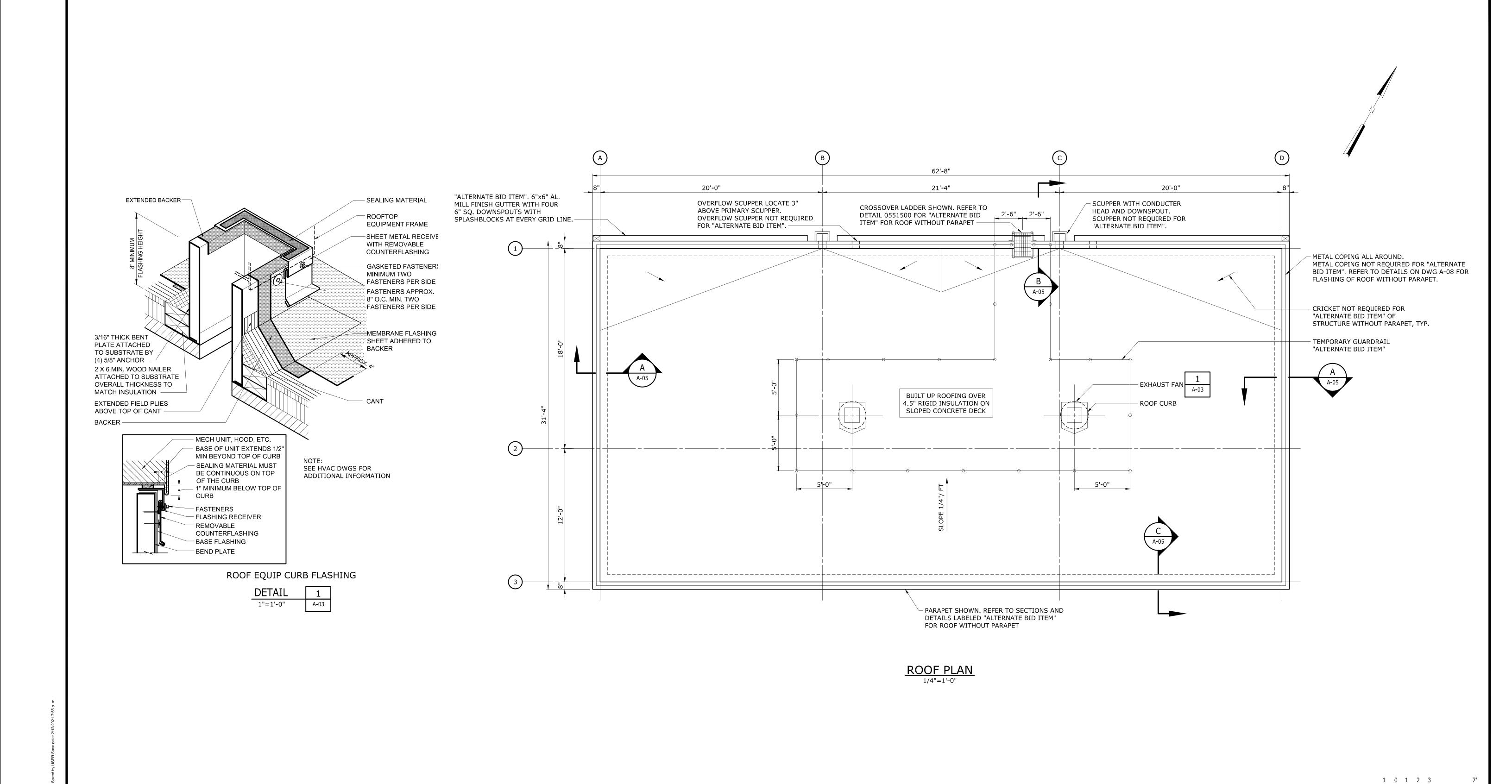
HAZEN AND SAWYER
6675 CORPORATE CENTER PARKWAY
JACKSONVILLE, FLORIDA 32216

RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



PUMP STATION - FLOOR PLAN

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	A-02



Hazen HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY JACKSONVILLE, FLORIDA 32216

RADIO AVENUE R.W. GROUND

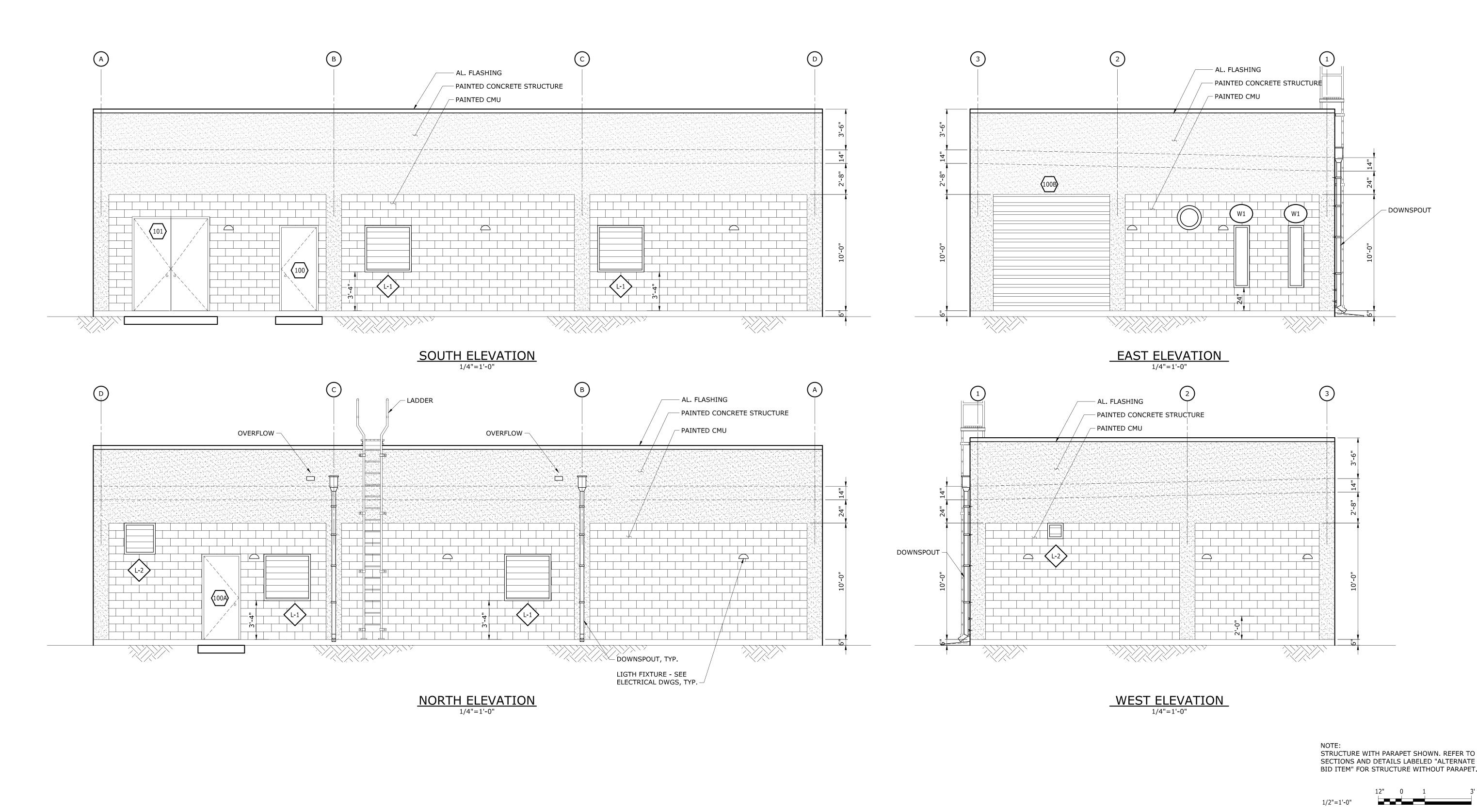


PUMP STATION - ROOF PLAN

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	A-03

					PROJECT A. DIEF	FENTHALLER
					DESIGNED BY:	A. VIDAL
-					DRAWN BY:	C. LOMBANA
	3	BID SET	3/21	AD	CHECKED BY:	J.P. SILVA
	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1"
	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING IS	1/2
	REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE	

STORAGE TANKS & PUMP STATION



PROJECT ENGINEER: A. DIEFFENTHALLER A. VIDAL DESIGNED BY: C. LOMBANA DRAWN BY: J.P. SILVA CHECKED BY: BID SET 3/21 AD 100% DESIGN SUBMITTAL 12/20 AD IF THIS BAR DOES NOT 0 1/2" 1"
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE 10/20 AD 90% DESIGN SUBMITTAL DATE ISSUED FOR



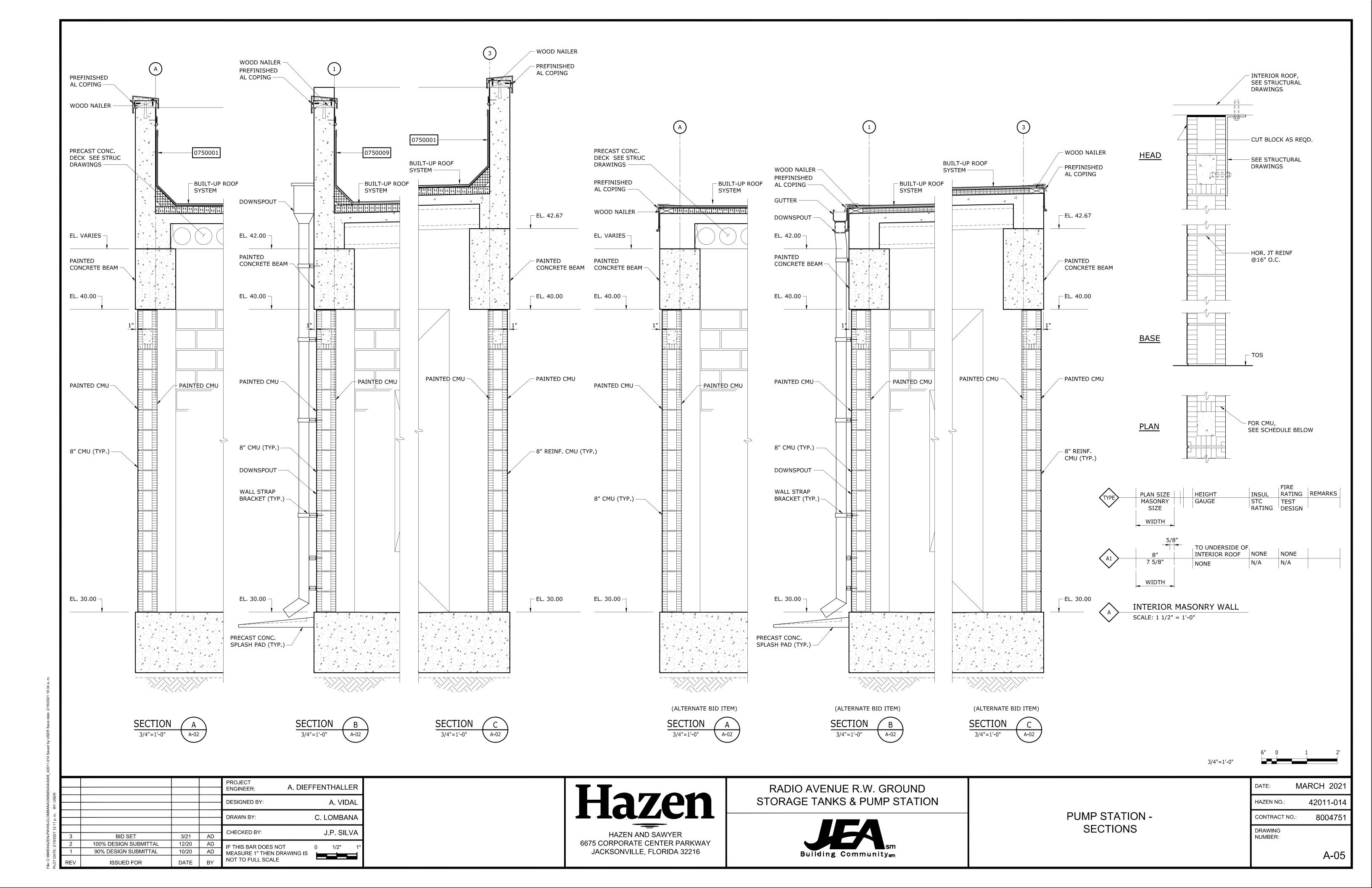
RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION

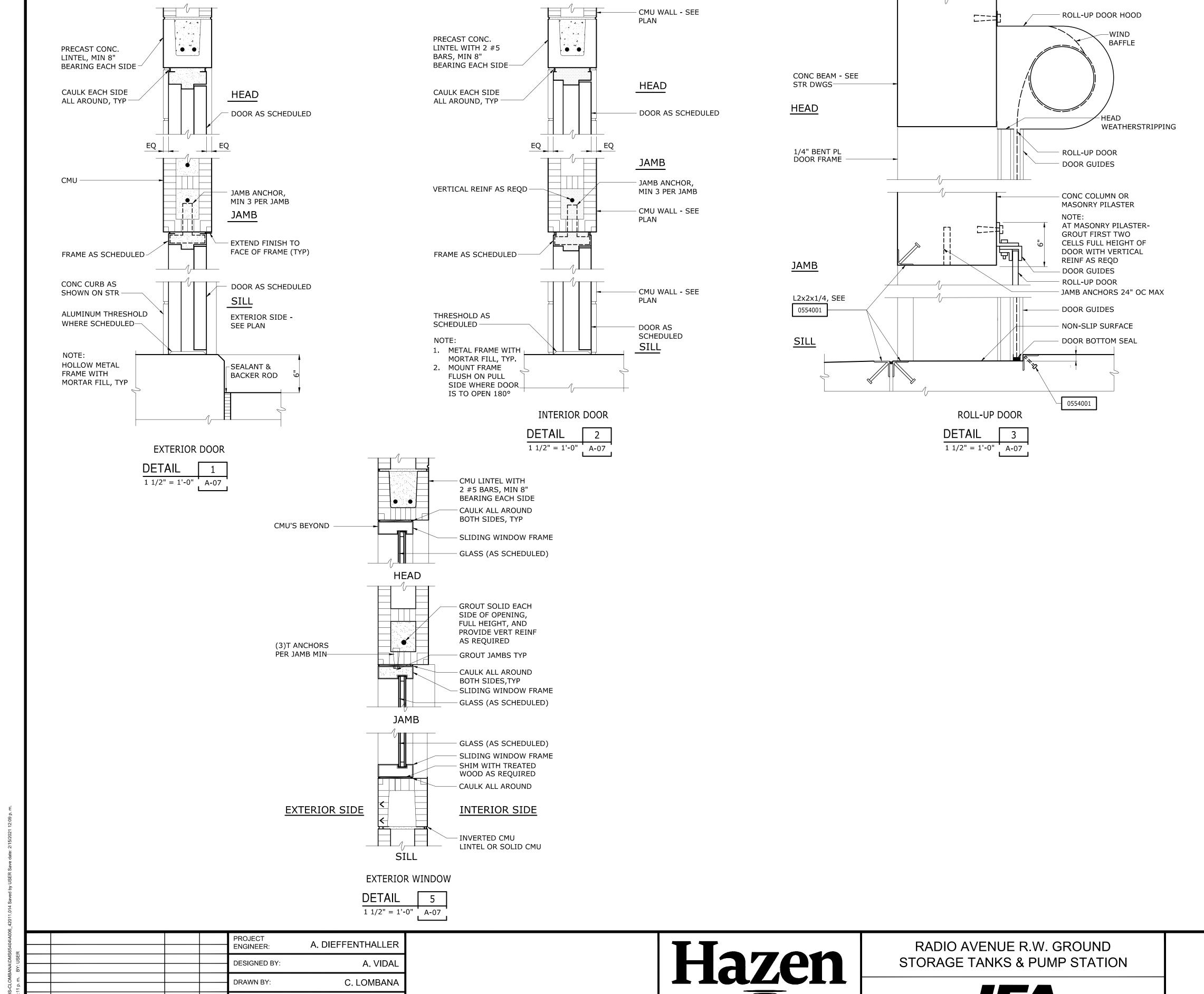


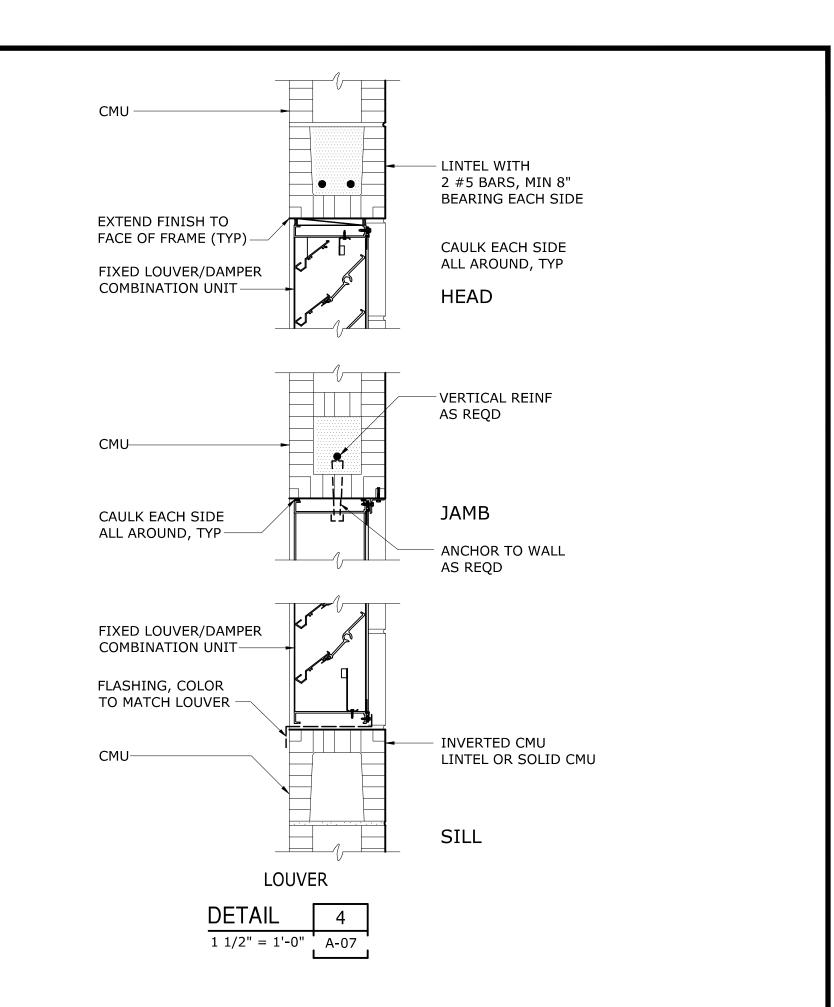
PUMP STATION - ELEVATIONS

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	

A-04







1 1/2"=1'-0"

J.P. SILVA

0 1/2"

CHECKED BY:

IF THIS BAR DOES NOT

NOT TO FULL SCALE

MEASURE 1" THEN DRAWING IS

3/21

DATE

12/20 AD

10/20 AD

HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY JACKSONVILLE, FLORIDA 32216

**PUMP STATION - DETAILS** 

MARCH 2021 42011-014 HAZEN NO.: 8004751 CONTRACT NO.: DRAWING NUMBER: A-06

**BID SET** 

100% DESIGN SUBMITTAL

90% DESIGN SUBMITTAL

ISSUED FOR

MANUFACTURER'S SPECIFIED FINISH ACOUSTICAL CEILING TILE

CONCRETE MASONRY UNIT PAINT CONC CONCRETE RUB RUBBER

ES EXPOSED STRUCTURE VINYL COMPOSITION TILE

	DOOR SCHEDULE																		
NO. FRAME DOOR DETAILS										Ι	GLAZING	GLAZING LOUVER	JVER FIRE	FINISH	HDWR	THRSHLD	WIND PRESSURE		REMARKS
	TYPE	MATL	TYPE	MATL	WIDTH	HEIGHT	THICKNESS	HEAD	JAMB	SILL			LABEL		NO		NEG.	POS.	
PUMP	PUMP STATION - SEE DRAWING A-02																		
100	F-1	FRP	А	FRP	3'-0"	7'-0"	1 3/4"	DETAIL 1/A-06	DETAIL 1/A-06	DETAIL 1/A	-06			MFR	2	AL	24	22	DOOR WITH SECURITY
100A	F-1	FRP	A	FRP	3'-0"	7'-0"	1 3/4"	DETAIL 1/A-06	DETAIL 1/A-06	DETAIL 1/A	-06			MFR	2	AL	24	22	DOOR WITH SECURITY
100B	-	STEEL	С	STEEL	10'-0"	10'-0"	1 3/4"	DETAIL 3/A-06	DETAIL 3/A-06	DETAIL 3/A	-06			MFR			24	19	
101	F-1	FRP	В	FRP	6'-8"	7'-0"	1 3/4"	DETAIL 1/A-06	DETAIL 1/A-06	DETAIL 1/A	-06			MFR	1	AL	22	20	DOOR WITH SECURITY
101A	F-1	FRP	А	FRP	3'-0"	7'-0"	1 3/4"	DETAIL 2/A-06	DETAIL 2/A-06	DETAIL 2/A	-06			MFR	3	AL	24	22	
DOOR	& WINI	OOW LE	GEND							N	OTES								

ALUMINUM LIG LAMINATED INSULATING GLAZING 1. PROVIDE ELECTRIC DOOR OPENER.

HOFFMAN BOX

PROVIDE 1/2"

ELECTRIC LOCK

20606-NAC-PSA-630

SINGLE DOOR SECURITY

W/REX/ML

CONCEALED CONDUIT

PROXIMITY

READER -

**INSTALLED IN WALLS** 

(ASE6x6x4)

**EXISTING** MFR MANUFACTURER FG FIRE GLASS

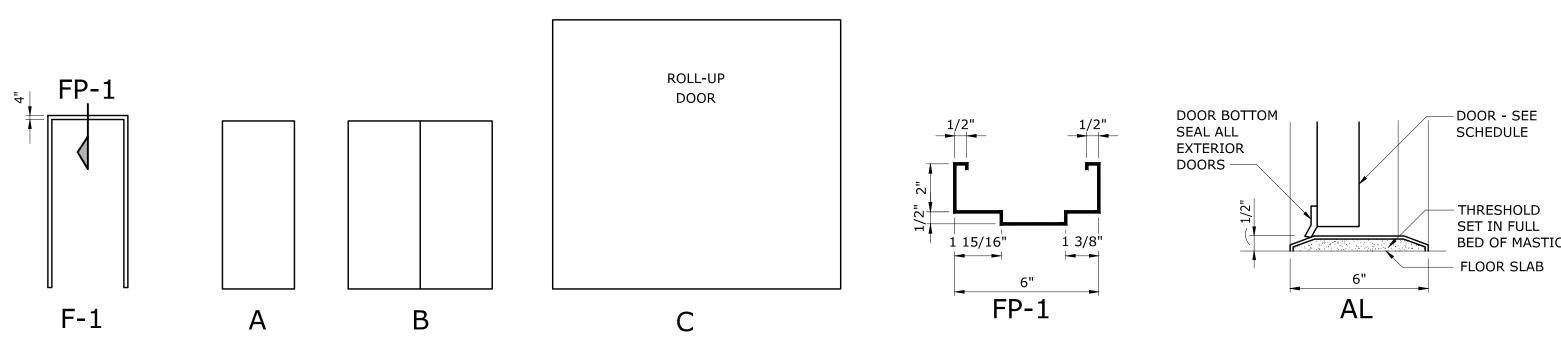
2. WIND PRESSURES ARE BASED ON THE REQUIREMENTS OF PAINT ASCE 7-10 ALLOWABLE STRESS DESIGN.

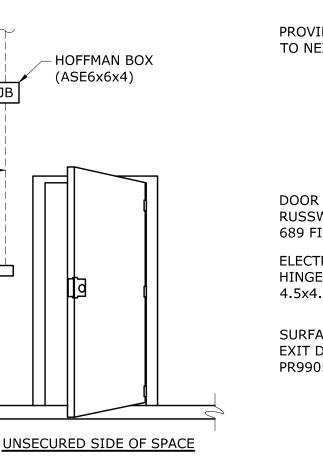
FIBERGLASS REINFORCED PLASTIC STAINLESS STEEL **HOLLOW METAL** TEMPERED GLASS

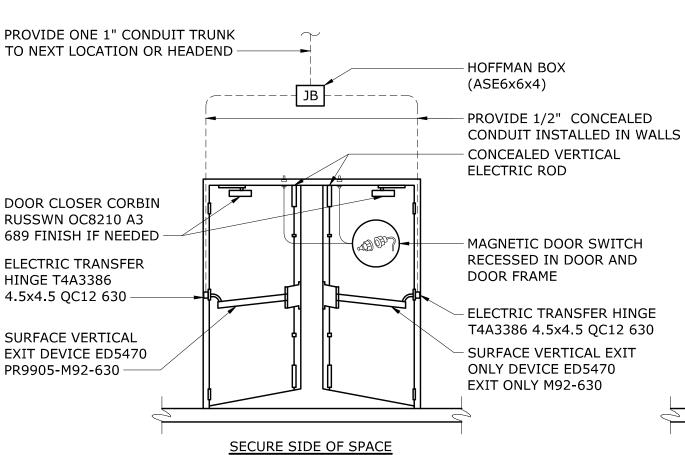
### FRAME TYPES 1/4" = 1'-0" **DOOR TYPES** 1/4" = 1'-0"



THRESHOLD 3" = 1'-0"





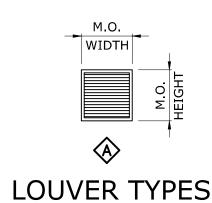


1. MEDECO CYLINDER CORE BY OWNER 2. PROVIDE ELECTRO-LYNX CABLE SYSTEM TO JUNCTION BOX

DOUBLE DOOR SECURITY

	LOUVER SCHEDULE												
MARK QTY	OTY		MATERIAL	FRAME		SCF	SCREEN D		DAMPER		DESIGN WIND PRESSURE (psf)		REMARKS
	WIDTH x HEIGHT			FINISH	DEPTH	BIRD	INSECT	GRAVITY	FIRE	TYPE	NEG.	POS.	
L-1	48' x 48'	Α	ALUMINUM	ANODIZED	5"	YES		Х			24	22	-
L-2	32' x 32'	Α	ALUMINUM	ANODIZED	5"	YES		Х			24	22	
L-3	16' x 16'	Α	ALUMINUM	ANODIZED	5"	YES		Х			24	22	

NOTE: WIND PRESSURES ARE BASED ON THE REQUIREMENTS OF ASCE 7-10 ALLOWABLE STRESS DESIGN.



					WIND	ow s	CHEC	ULE			
TYPE	FRAME	WIDTH	HEIGHT		DETAIL	S	GLAZING	WINDOW		ND SURE	REMARKS
TIFE	MATERIAL	WIDIII	TILIGITI	HEAD	JAMB	SILL	GLAZING	TREATMENT	NEG.	POS.	KLMAKKS
PUMP	STATIO	N									
W300	AL	1'-4"	5'-4"	DET 5/A-06	DET 5/A-06	DET 5/A-06	LIG	BLINDS	-42 PSF	+40 PSF	45 MIN
WIND	WINDOW LEGEND NOTES										

NOTE: WIND PRESSURES ARE BASED ON THE REQUIREMENTS OF ASCE 7-10 ALLOWABLE STRESS DESIGN.

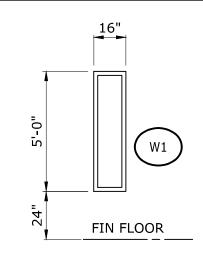
ALUMINUM FIRE GLASS

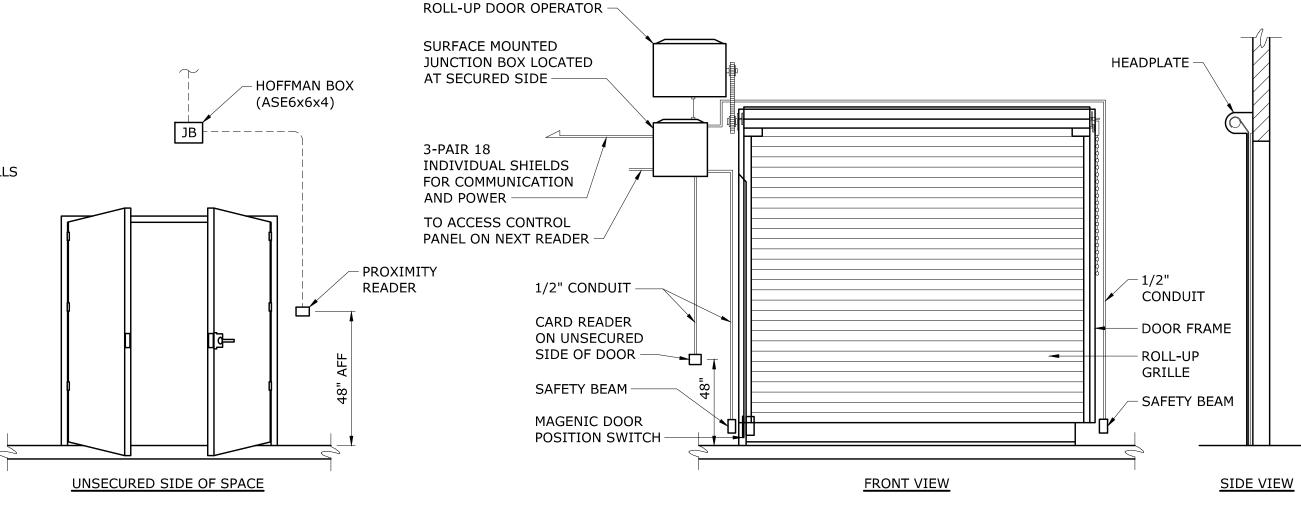
**INSULATED GLASS** 

MANUFACTURER

TEMPERED GLASS

# WINDOW TYPES 1/4" = 1'-0"





## ROLL-UP DOOR SECURITY

Hazen HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY

JACKSONVILLE, FLORIDA 32216

RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



**PUMP STATION -**SCHEDULES

MARCH 2021 42011-014 HAZEN NO .: 800475 CONTRACT NO.: DRAWING NUMBER: A-07

A. DIEFFENTHALLER A. VIDAL DESIGNED BY C. LOMBANA DRAWN BY: J.P. SILVA CHECKED BY: 3/21 BID SET 12/20 AD 100% DESIGN SUBMITTAL IF THIS BAR DOES NOT 0 1/2" MEASURE 1" THEN DRAWING IS 10/20 AD 90% DESIGN SUBMITTAL NOT TO FULL SCALE

DATE

1. MEDECO CYLINDER CORE BY OWNER

2. PROVIDE ELECTRO-LYNX CABLE SYSTEM

SECURE SIDE OF SPACE

TO JUNCTION BOX PROJECT ENGINEER:

PROVIDE ONE 1"

CONDUIT TRUNK TO NEXT

LOCATION OR HEADEND

DOOR CLOSER CORBIN

FINISH IF NEEDED -

DOOR FRAME -

ISSUED FOR

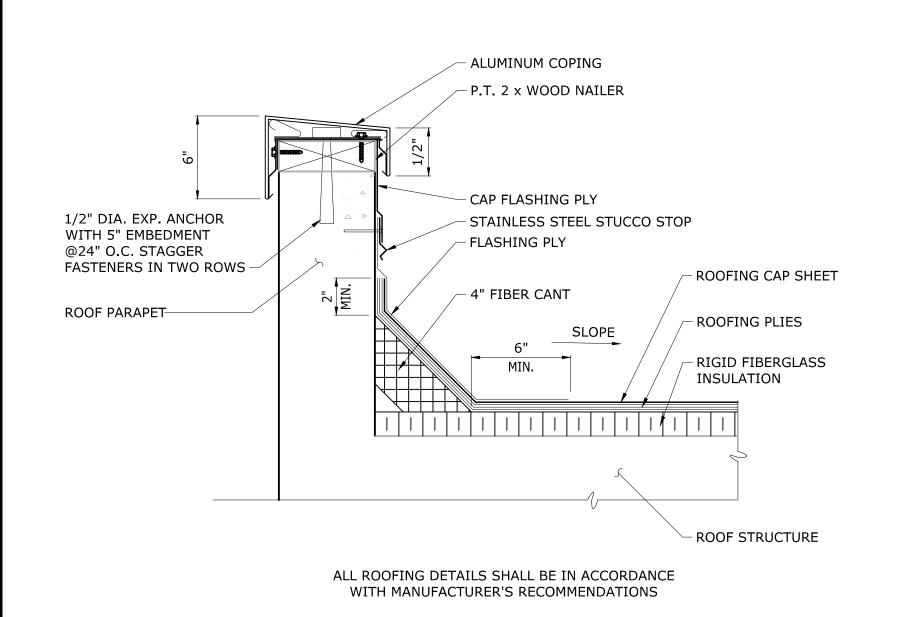
RUSSWN OC8210 A3 689

MAGNETIC DOOR SWITCH

RECESSED IN DOOR AND

T4A3386 4.5x4.5 QC12630 -

ELECTRIC TRANSFER



1/2" DIA. EXP. ANCHOR WITH 5" EMBEDMENT @24" O.C. STAGGER FASTENERS IN TWO ROWS — 2XWIDTH TREATED ALUMINUM COPING NAILER, WIDTH AS REQD -PAINTED CONCRETE FINISH-CAP FLASHING PLY CONDUCTOR HEAD AT ROOF PARAPET PRIMARY SCUPPER ONLY ROOFING CAP SHEET 4"x8" SCUPPER WITH 4" WALL ROOFING PLIES FLANGES SET IN MASTIC-ANCHOR SLOPE TO WALLS AS REQD-- RIGID FIBERGLASS INSULATION GRAVEL GUARD -ROOF STRUCTURE ALL ROOFING DETAILS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

SCUPPER AND OVERFLOW SCUPPER

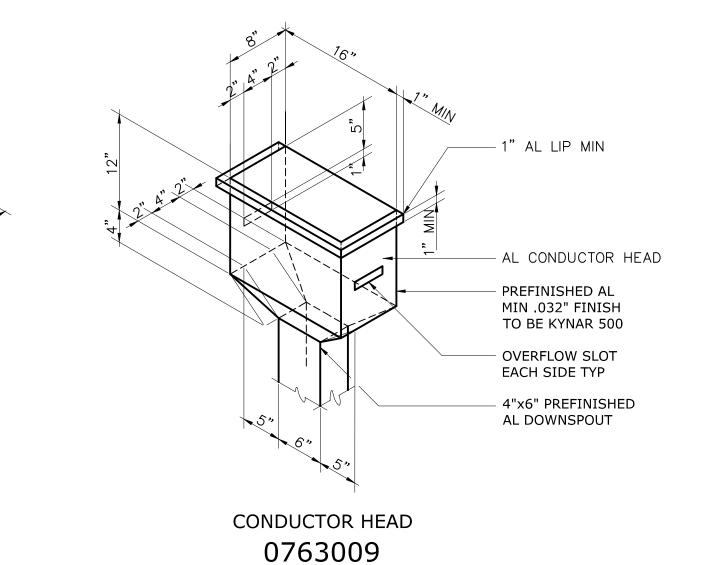
0750009

MAY BE SUBSTITUTED WITH ENGINEERS APPROVAL. SPLASH PAD 0770001

1. REINFORCED W/16 GA.

1 1/2" HEX. WIRE MESH.

2. PRECAST PAD OF SIMILAR DESIGN



PARAPET FLASHING 0750001

FLASHING PLY 9" MIN-- FLASHING PLY 9" MIN BASE FLASHING PLY 6" MIN -BASE FLASHING PLY 6" MIN BULD-UP ROOFING -- RIGID INSULATION -- METAL EDGE SET IN ROOF CEMENT METAL EDGE SET IN ROOF CEMENT -EXTEND MEMBRANE OVER BLOCKING EXTEND MEMBRANE OVER BLOCKING -- CONT. CLEAT FASTENED 6" OC CONT. CLEAT FASTENED 6" OC -— CONCRETE ROOF SLAB -- PREFINISHED METAL SEE STRUCTURAL -CONT PT WOOD BLOCKING -GUTTER W/ DOWSPOUTS 12" DIA. EXP. ANCHOR WITH 5" AMBEDMENT @24" O.C. STAGGER CONT PT WOOD BLOCKING FASTENER IN TWO ROWS -- 12" DIA. EXP. ANCHOR WITH 5" AMBEDMENT @24" O.C. STAGGER FASTENER IN TWO ROWS PRECAST CONC ROOF PLAN — - CONC. BEAM - SEE STRUC DWGS (ALTERNATE BID ITEM) (ALTERNATE BID ITEM) 0750001 0750009

~					PROJECT A. DIE	FFENTHALLER
BY: USER					DESIGNED BY:	A. VIDAL
11 p. m.					DRAWN BY:	C. LOMBANA
2021 12:11	3	BID SET	3/21	AD	CHECKED BY:	J.P. SILVA
2/15/2021	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1"
ATE:	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING IS	1/2
LOT DATE:	REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE	

Hazen HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY JACKSONVILLE, FLORIDA 32216

RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



PUMP STATION - STANDARD ARCHITECTURAL DETAILS

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	A-08

••••	BASIC ELECTRICAL REQUIREMENTS:
1.0	Scope of Work
1.1	THE SCOPE OF WORK SHALL BE AS DESCRIBED IN SPECIFICATION SECTION 16010.
1.2	THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, INSPECTIONS AND APPROVALS AND TO INCLUDE ALL FEES AS PART OF HIS BID IF NOT OTHERWISE
 1.3	NOTED.  THE CONTRACTOR SHALL, BEFORE SUBMITTING HIS BID, VISIT THE SITE OF THE PROJECT AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS. NO ALLOWANCE WILL BE MADE FOR EXISTING CONDITIONS OR FAILURE OF THE CONTRACTOR TO OBSERVE THEM.
1.4	IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH ALL LOCAL UTILITIES, INCLUDING THE POWER AND TELEPHONE UTILITIES TO MEET ALL OF THEIR INSTALLATION REQUIREMENTS. ALL FEES, LABOR, EQUIPMENT OR MATERIALS NECESSARY TO MEET THESE REQUIREMENTS IS TO BE INCLUDED IN THE BID. THE CONTRACTOR SHALL OBTAIN, DELIVER AND INSTALL ALL CONDUITS, PULL-BOXES AND EQUIPMENT AS REQUIRED BY THE UTILITIES TO THEIR SPECIFICATIONS. THE TELEPHONE UTILITY REPRESENTATIVE IS THE CITY'S TELEPHONE CONTRACTOR.
1.5	THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE ENGINEER AND OWNER.
1.6	THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR TO INSTALL THE ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS. ITEMS NOT SHOWN BUT OBVIOUSLY NECESSARY FOR COMPLETION OF THE WORK SHALL BE INCLUDED.
1.7	ALL EQUIPMENT AND MATERIAL SHALL BE NEW, UNUSED AND U.L. LISTED. ALL REFERENCES TO A PARTICULAR MANUFACTURER ARE GIVEN ON AN "APPROVED EQUAL" BASIS.
1.8	THE CONTRACTOR IS RESPONSIBLE TO TEST ALL SYSTEMS INSTALLED OR MODIFIED UNDER THIS PROJECT AND REPAIR OR REPLACE ALL DEFECTIVE WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER.
1.9	ALL EQUIPMENT FURNISHED AND INSTALLED BY THE CONTRACTOR SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE UNLESS OTHERWISE INDICATED IN SPECIFICATIONS.
1.10	SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL ELECTRICAL & CONTROL EQUIPMENT AND MATERIAL.
2.0	Codos and Standards
	Codes and Standards
2.1	THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MINIMUM FOLLOWING STANDARDS AND CODES:
2.2	NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
 2.3	NATIONAL ELECTRICAL CODE (NEC), (NFPA 70 2014 EDITION)
2.4	NATIONAL ELECTRICAL SAFETY CODE, (NFPA 70E 2012 EDITION)
2.5	STANDARD FOR FIRE PROTECTION IN WASTEWATER TREATMENT AND COLLECTION FACILITIES, (NFPA 820 2012 EDITION)
2.6	OTHER NFPA CODES AS APPLICABLE
2.7	FLORIDA BUILDING CODE (FBC 2010 EDITION)
2.8	LOCAL CODES, CITY CODES REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
2.9	AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
2.10	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
2.11	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
2.12	
	INSULATED CABLE ENGINEERS ASSOCIATION (ICEA)
2.13	OCCUPATIONAL SAFETY AHD HEALTH ACT (OSHA)
2.14	AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
2.15	UNDERWRITERS LABORATORIES (UL) LISTING AND LABELING FOR ALL MATERIALS AND EQUIPMENT WHERE APPLICABLE STANDARDS EXIST
3.0	General Items
3.1	ALL CIRCUITS SHALL BE IDENTIFIED IN JUNCTION BOXES, PULL BOXES, CONTROL PANELS, PANELBOARDS, LIGHTING POLES, CONTROLLERS AND SERVICE POINTS. IDENTIFICATION SHALL MATCH PANELBOARD SCHEDULES.
3.2	ALL LOCATIONS OF EQUIPMENT, PANELS ETC. ARE SHOWN FOR ILLUSTRATION PURPOSES. CONTRACTOR SHALL VERIFY AND COORDINATE EXACT LOCATION AND SIZE WITH ALL SUBCONTRACTORS AND EQUIPMENT SUPPLIERS PRIOR TO ANY INSTALLATION AND THEN INSTALL AS SUCH WITH CORRESPONDING CONDUIT STUB-UPS.
3.3	SEE OTHER DISCIPLINE DRAWINGS FOR COORDINATION OF ALL DRAWINGS.  ANY CONFLICTS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION AND MOVEMENT OF CONDUITS OR OTHER ELECTRICAL EQUIPMENT SHALL BE ACCOMPLISHED WITHOUT ANY ADDITIONAL COST FOR THE OWNER.

3.4	THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDUIT AND WIRING
J. 1	INSTALLATION FOR ALL VENDOR PROVIDED EQUIPMENT (PACKAGE SYSTEMS).
	IF THE SHOP DRAWINGS DIFFER FROM THE DESIGNED FACILITIES, THE
	CONTRACTOR SHALL REDESIGN THE FACILITIES AND SUBMIT THE REVISED
	DESIGN FOR THE ENGINEER'S APPROVAL ALONG WITH THE SHOP DRAWINGS.
	THERE SHALL BE NO ADDITIONAL COST TO THE OWNER FOR THE REDESIGN
	NOR FOR ANY ADDITIONAL CONDUITS AND WIRING. DURING SUBMITTAL THE CONTRACTOR SHALL VERIFY ALL SUPPLIED BREAKER SIZES FOR ALL PACKAGED
	SYSTEMS SUCH AS HVAC, EXHAUST FANS, MIXERS, CHEMICAL PUMPS ETC. AN
	MODIFY ALL BREAKERS IN MCC'S AND PANELBOARDS ACCORDINGLY WITHOUT
	ANY ADDITIONAL COST TO THE OWNER.
3.5	CONTRACTOR SHALL RESTORE SIDEWALKS, ROADWAYS, SOD AND SPRINKLER
	SYSTEM PIPING TO MATCH EXISTING, AFTER THE COMPLETION OF THE
	CONDUIT AND PULLBOX INSTALLATION.
3.6	ELECTRICAL EQUIPMENT SHALL BE DEFINED AS ANY ELECTRICAL DEVICE USED
	IN CONJUNCTION WITH OTHER EQUIPMENT REQUIRING ELECTRICITY FOR
	OPERATION. THIS INCLUDES BUT IS NOT LIMITED TO: DISCONNECT SWITCHES, JUNCTION BOXES, PANELBOARDS, TRANSFORMERS, LIGHTING FIXTURES,
	MOTOR STARTERS, SWITCHGEAR, MOTOR CONTROL CENTERS, CONTROLS,
	LOCAL CONTROL PANELS.
3.7	ALL REFERENCES TO STAINLESS STEEL (SS) SHALL MEAN TYPE 316 STAINLESS
	STEEL UNLESS OTHERWISE NOTED.
3.8	ALL ELECTRICAL EQUIPMENT OUTDOORS OR IN DESIGNATED CORROSIVE AREA
0.0	SHALL BE NEMA 4X 316 STAINLESS STEEL OR NON-METALLIC (FRP).
3.9	
•••••	OUTDOOR LIGHTING FIXTURES SHALL BE COPPER FREE ALUMINUM.
3.10	CONTRACTOR SHALL PROVIDE AS PART OF THE ELECTRICAL SUBMITTAL, A
	LAYOUT OF THE ELECTRICAL ROOM SHOWING SIZES OF ALL EQUIPMENT INCLUDING LIGHTING, AND HVAC WITH THEIR SPATIAL RELATIONSHIPS.
3.11	CONTRACTOR SHALL PROVIDE AND INSTALL WIRE ID TAGS ON ALL WIRING THAT INTERFACES WITH OTHER EQUIPMENT. INSTRUMENTATION WIRING
	SHALL USE SIGNAL ID TAG FROM I/O LIST UNLESS OTHERWISE NOTED.
••••••	STATE GOLD FOR THE TAX OF THE TAX
4.0	Operation and Maintenance Manuals
4.1	CONTRACTOR SHALL PROVIDE AN OPERATION AND MAINTENANCE MANUAL
4.1	PER SPECIFICATIONS INCLUDING:
	1. SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTION FOR
	EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
	2. OPERATION AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT
	REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS
	SHALL BE CLEARLY IDENTIFIED  3. NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY
 4.2	·······
4.Z 	SEE SPECIFICATIONS FOR ADDITIONAL DETAILS
•••••	
5.0	Project Coseout
 5.1	CONTRACTOR SHALL PROVIDE RECORD DRAWINGS TO THE OWNER AND
J. I	ENGINEER WITHIN 30 DAYS OF PUMP STATION ACCEPTANCE. THESE SHALL
	INCLUDE PER FBC EC C405.7.4.1:
5.2	A LAMINATED AND FRAMED MINIMUM 11X17 INCH SINGLE LINE DIAGRAM OF
	THE SITE ELECTRICAL SYSTEM SHALL BE PROVIDED FOR INSTALLATION
•••••	ADJACENT TO THE MAIN ELECTRICAL GEAR.
5.3	PLAN VIEWS OF COMPLETE PUMP STATION
•••••	
 6 0	Decenies -
6.0	Raceways
6.1	CONDUITS RUN IN PARALLEL: INSTRUMENTATION CONDUITS SHALL HAVE A
	MINIMUM SEPARATION FROM POWER CONDUITS AS INDICATED IN TABLE
	WHETHER CONCRETE ENCASED DUCT BANKS, DIRECT BURIED, SURFACE OR
	RACKS:
	VOLTAGE DISTANCE 4160V 3 FT
	480V 2 FT
	120V 1 FT
6.2	NOT ALL CONDUITS SHOWN ON RISER AND ONE-LINE DIAGRAMS ARE SHOWN
	ON BUILDING LAYOUTS. CONTRACTOR SHALL SUPPLY ALL CONDUITS AND
	CABLES AS SHOWN ON RISERS AND ONE-LINE DIAGRAMS.
6.3	EXPOSED RUNS OF CONDUITS SHALL BE INSTALLED WITH RUNS PARALLEL OR
	PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS OR INTERSECTIONS OF
	VERTICAL PLANES AND CEILINGS, WITH RIGHT ANGLE TURNS CONSISTING OF
	SYMMETRICAL BENDS OR PULL BOXES AS INDICATED ON THE DRAWINGS.
	BENDS AND OFFSETS SHALL BE AVOIDED WHERE POSSIBLE.
······	THE DRAWINGS ARE NOT INTENDED TO SHOW THE EXACT LOCATION OF
6.4	CONDUIT RUNS. THESE ARE TO BE COORDINATED WITH THE OTHER TRADES SO
6.4	• TILAT CONICIONES ARE ALICIDED RRIOR TO 1010-111 (TO 11)
	THAT CONFLICTS ARE AVOIDED PRIOR TO INSTALLATIONS.
6.4	CONTRACTOR SHALL CORE DRILL, WHERE NECESSARY, CONCRETE WALLS,
	CONTRACTOR SHALL CORE DRILL, WHERE NECESSARY, CONCRETE WALLS, FLOORS, MANHOLES, HAND HOLES AND PULL BOXES FOR CONDUIT
	CONTRACTOR SHALL CORE DRILL, WHERE NECESSARY, CONCRETE WALLS,

6.6	ALL CONDUITS PENETRATING RATED FIRE WALLS OR RATED FIRE FLOORS SHALL BE INSTALLED WITH U.L. APPROVED DEVICES AND OR FIRE RATED SEALING COMPOUND TO MAINTAIN THE FIRE RATING OF THE WALL OR FLOOR PENETRATED.
6.7	PROVIDE CONDUIT DUCT SEAL AT ALL CONDUIT ENDS.
6.8	ALL SPARE, ABANDONED, OR EMPTY CONDUITS SHALL BE SEALED WITH A CAP AT BOTH ENDS AND A PULL STRING INSTALLED WITH IDENTIFICATION OF OTHER END LOCATION AT BOTH ENDS.
6.9	FLEXIBLE CONDUITS SHALL BE USED TO TERMINATE ALL MOTORS AND OTHER VIBRATING EQUIPMENT AND SHALL BE BETWEEN 18" AND 36" IN LENGTH.
6.10	ALL METALLIC CONDUITS BELOW GRADE TO A MINIMUM ELEVATION OF 12 INCHES ABOVE GRADE SHALL BE PVC COATED RIGID METAL CONDUIT (RMC).
6.11	ALL METALLIC CONDUITS 12 INCHES AND GREATER ABOVE GRADE SHALL BE RMC.
6.12	ALL REFERENCES TO RMC SHALL MEAN ALUMINUM CONDUIT UNLESS OTHERWISE NOTED.
6.13	ALL REFERENCES TO PVC COATED RMC SHALL MEAN PVC COATED RIGID GALVANIZED STEEL CONDUIT (RGS) OR ALUMINUM UNLESS OTHERWISE NOTED.
6.14	ALUMINUM CONDUIT SHALL NOT BE USED FOR INSTRUMENTATION WIRING.
7.0	Duct Banks & Manholes
7.1	LOCATIONS OF MANHOLES, HANDHOLES AND PULL BOXES ARE APPROXIMATE.  CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH EXISTING AND NEW PIPING OR CONDUIT AND ADJUST ACCORDINGLY.
7.2	COLORED WARNING TAPE 6" WIDE SHALL BE INSTALLED 8" BELOW FINISHED GRADE DIRECTLY ABOVE ALL UNDERGROUND YARD CONDUITS ACCORDING TO THE FOLLOWING SCHEDULE:
7.3	POWER: RED
7.4	ALL OTHER CONDUITS: GREEN
7.5	ALL EXCAVATIONS FOR CONDUITS, HANDHOLES, MANHOLES AND PULLBOXES NEAR EXISTING PIPING, CONDUIT AND EQUIPMENT SHALL BE HAND EXCAVATED AND COORDINATED WITH PLANT ENGINEER AT JEA.
7.6	MINIMUM DEPTH FROM TOP OF DUCT BANKS OR CONDUITS TO FINISHED GRADE SHALL BE 24" UNLESS OTHERWISE NOTED.
7.7	IF CONCRETE ENCASED DUCT BANKS INCLUDE POWER WITH ANY TYPE OF SIGNALS EXCEPT FIBER OPTIC CABLE, ALL CONDUITS SHALL BE METALLIC.
7.8	CONCRETE DUCT BANKS WITH POWER ONLY WIRING MAY BE PVC UNLESS OTHERWISE NOTED ON THE DRAWINGS.
7.9	SLOPE DUCT BANKS A MINIMUM 3 INCHES PER 100 FEET DOWN AWAY FROM BUILDINGS.
7.10	DUCT BANK CONCRETE SHALL BE MINIMUM CLASS C 2500 PSI
8.0	Conductors
8.1	ALUMINUM CONDUCTORS SHALL NOT BE USED FOR THIS PROJECT.
8.2	CONDUCTOR PULLING TENSIONS SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATION. CONTRACTOR SHALL INSTALL PULL BOXES TO MEET MANUFACTURER'S REQUIREMENTS.
8.3	COPPER CONDUCTORS FOR POWER WIRING WITH A VOLTAGE GREATER THAN 240V TO GROUND SHALL BE XHHW-2. OTHER POWER WIRING SHALL BE EITHER
8.4	XHHW OR THWN STRANDED COPPER WIRING.  BRANCH CIRCUITS EXCEEDING 100 FT IN LENGTH SHALL BE WIRED WITH  MINIMUM #10 AWG COPPER WIRES. CONTRACTOR SHALL VERIFY REQUIRED  WIRE SIZE WITH VOLTAGE DROP CALCULATIONS.
9.0	Boxes
9.1	ALL ENCLOSURES, TJB, WIREWAY, PULL BOXES ETC. SHALL CONTAIN A GROUNDING BUS. CONNECT ALL RACEWAY BONDS TO THIS BUS VIA GROUNDING BUSHING AND EXTEND BONDING JUMPER FROM THIS BUS TO THE ENCLOSURE.
9.2	ALL JUNCTIONS BOXES, LOCAL CONTROL PANELS, DISCONNECT SWITCHES AND INSTALLATION HARDWARE INSTALLED OUTDOORS SHALL BE 316 STEEL.
10.0	Panels
10.1	ALL CONTROL PANELS SHALL BE CONSTRUCTED BY A UL 508A APPROVED PANEL VENDOR AND SHALL BEAR A UL 508A LABEL ON THE PANEL.
10.2	TYPEWRITTEN AND LAMINATED PANEL SCHEDULES SHALL BE INSTALLED IN EACH PANELBOARD, AND TYPEWRITTEN TERMINAL BLOCK SCHEDULES IN EACH CONTROL CABINET.
10.3	ALL PANELBOARDS SHALL INCLUDE AN INTEGRAL FACTORY INSTALLED SURGE PROTECTION DEVICES (SPD AKA TVSS).

•••••	PROJECT.
11.0	Grounding
11.1	GROUNDING SHALL BE INSTALLED IN ACCORDANCE WITH NEC, ARTICLE 250. THE GROUNDING SYSTEM TEST SHALL NOT EXCEED A 48 HOUR SPAN DRY RESISTANCE OF 10 OHMS. ADDITIONAL GROUNDING TO MEET THIS REQUIREMENT SHALL BE INSTALLED AT NO EXTRA COST. GROUNDING AND BONDING CONNECTIONS SHALL NOT BE PAINTED. ALL GROUNDING CONNECTIONS SHALL BE EXOTHERMIC UNLESS SPECIFICALLY INDICATED OTHERWISE.
11.2	AN EQUIPMENT GROUND WIRE SIZED PER NEC SHALL BE PULLED IN ALL ELECTRICAL CONDUITS, POWER AND CONTROL, WHETHER OR NOT INDICATED ON THE PLANS.
11.3	ALL ELECTRICAL EQUIPMENT SHALL BE CONNECTED TO GROUNDING COUNTERPOISE.
12.0	Instrumentation
 12.1	INSTRUMENTATION IS LOW VOLTAGE SIGNALS SUCH AS 4-20MA, TELEPHONE COMMUNICATION, FIRE ALARM COMMUNICATION. POWER CONDUITS SHALL ONLY CROSS INSTRUMENTATION CONDUIT PERPENDICULARLY AT RIGHT ANGLES WITH 6" SEPARATION.
12.2	THE POWER AND SIGNAL SIDES OF ALL EXTERIOR INSTALLED INSTRUMENTATION SHALL HAVE SURGE PROTECTION AND SHALL BE GROUNDED TO A SEPARATE GROUND ROD AT THE INSTRUMENT.
12.3	INSTRUMENTATION GROUND SHALL BE A #6 AWG COPPER CONNECTED TO THE GROUND GRID OR CONNECTED TO A DRIVEN GROUND. #6 GROUND WIRE SHALL BE INSTALLED IN CONDUIT WHERE EXPOSED. GROUND RODS SHALL BE 5/8" OR 3/4" BY A MINIMUM OF 20' IN LENGTH, AS INDICATED ON THE DRAWINGS.
12.4	CONTRACTOR SHALL INSTALL A SWITCH TO DISCONNECT POWER AT EACH FOUR WIRE INSTRUMENT.
13.0	Signage
13.1	CONTRACTOR SHALL PROVIDE SIGNAGE PER NEC 110.24 AND NEC 702.7 AT THE SERVICE ENTRANCE EQUIPMENT.
13.2	CONTRACTOR SHALL PROVIDE SIGNAGE PER NFPA 110 FOR THE EMERGENCY SHUT-OFF BUTTON LOCATED ON THE NORTH EAST OUTSIDE CORNER OF THE ELECTRICAL BUILDING.
13.3	CONTRACTOR SHALL PROVIDE SIGNAGE PER NFPA 704 FOR THE FUEL SUPPLY.
13.4	CONTRACTOR SHALL PROVIDE AND INSTALL ARC-FLASH HAZARD WARNING LABELS PER NEC 110.16 AND 110.21. THESE RULES APPLY AS A MINIMUM TO SWITCHBOARDS, SWITCHGEAR, PANELBOARDS, MOTOR CONTROL CENTERS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND ENCLOSED CIRCUIT BREAKERS.
14.0	Electrical Devices (Sw and Recp)
14.1	ALL RECEPTACLES SHALL BE INSTALLED 18" AFF UNLESS OTHERWISE NOTED. LIGHT SWITCHES SHALL BE MOUNTED 48" AFF UNLESS OTHERWISE NOTED.
14.2	ALL RECEPTACLES WITHIN 6' OF A SINK SHALL BE GFI.
14.3	CONTRACTOR SHALL PROVIDE, INSTALL, TERMINATE AND TEST NEW STATION TELEMETRY EQUIPMENT.

CONTRACTOR SHALL BALANCE PANELBOARD LOADS AT THE END OF THE

# NOTE:

REFER TO SPECIFICATION FOR ADDITIONAL REQUIREMENTS FOR ANY CONFLICTS BETWEEN THE DRAWING AND THE SPECIFICATIONS. THE SPECIFICATIONS SHALL PREVAIL.

					PROJECT ENGINEER: A	A. DIEFFENTH <i>F</i>	ALLER
CSCOTT					DESIGNED BY:	J. B	ROAD
PM BY:					DRAWN BY:	J. B	ROAD
16/2021 1:28	3	BID SET	3/21	AD	CHECKED BY:	J. B	URKE
5	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2	)" 1"
DATE:	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAW		
OT D,	REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE		



RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



ELECT	RICAL	NOT	ES

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	.: 8004751
DRAWING NUMBER:	

E-01

ABBR.	ABBREVIATIONS		ABBREVIATIONS
4	DESCRIPTION	ABBR.	DESCRIPTION
4			
	AMMETER, AMPERE	HH	HANDHOLE
ACL	ALTERNATING CURRENT ACROSS THE LINE MOTOR STARTER	HID HOA	HIGH INTENSITY DISCHARGE HAND/OFF/AUTO
ACL AF	CB AMPERE FRAME SIZE	HOR	HAND/OFF/REMOTE
\FD	ADJUSTABLE FREQUENCY DRIVE	HP	HORSEPOWER
\FF	ABOVE FINISHED FLOOR	HPS	HIGH PRESSURE SODIUM
AFG	ABOVE FINISHED GRADE	HTR	HEATER
ΑНJ	AUTHORITY HAVING JURISTICTION	HV	HIGH VOLTAGE
AIC	SYMM. AMPS INTERRUPTING CAP.	HVAC	HEAT, VENTILATION, AIR COND.
4L	ALUMINUM	HZ	HERTZ (FREQUENCY)
ARC	ALUMINUM RIGID CONDUIT		INTERRUPTING CARACITY
AS ACVM	AMMETER SENSOR OR SWITCH	IC	INTERRUPTING CAPACITY INSIDE DIAMETER
ASYM AT	ASYMMETRICAL  CB AMPERE TRIP SETTING	ID IMC	INTERMEDIATE METAL CONDUIT
ATS	AUTOMATIC TRANSFER SWITCH	INST	INSTANTANEOUS
AUX	AUXILIARY	I/O	INPUT / OUTPUT SIGNALS
AWG	AMERICAN WIRE GAUGE	IP	INSTRUMENT PANEL
3C	BARE COPPER	JB	JUNCTION BOX
3CG	BATTERY CHARGER		
BSDG	BUILDING	K	KEY OR KIRK KEY INTERLOCK
	CONDUIT CONTACTOR	kcmil	1000 CIRCULAR MILS
C	CONDUIT, CONTACTOR	kV	KILOVOLT AMPERE
CB CDB	CIRCUIT BREAKER  CONC ENCASED DUCT BANK	kVA kVAR	KILOVOLT-AMPERE KILOVOLT-AMPERE REACTIVE
CKT	CIRCUIT	kW	KILOWATT
CMS	COMBINATION MOTOR STARTER	kWh	KILOWATT-HOUR
CNTL	CONTROL		
C.O.	CONDUIT ONLY	LA	LIGHTING ARRESTER
CONC	CONCRETE	LC	LOAD CENTER
CPT	CONTROL POWER TRANSFORMER	LCP	LOCAL CONTROL PANEL
CR	CONTROL RELAY	LFMC	LIQUID TIGHT FLEX METAL CONDUIT
CT	CURRENT TRANSFORMER	LP-#	LIGHTING PANEL NUMBER #
	DUCT DANK	LR	LOCAL/REMOTE OR LATCHING RELAY
) )C	DUCT BANK	LRA LS	LOCKED ROTOR AMPS LIMIT SWITCH
DEF	DIRECT CURRENT DIESEL EXHAUST FLUID	LTC	LIGHTING CONTACTOR
DPM	DIGITAL POWER MONITOR	LTG	LIGHTING
		LV	LOW VOLTAGE
EC ECDB	EMPTY CONDUIT  EX CONC ENCASED DUCT BANK	М	MOTOR OR MOTOR CONTACTOR
ECP	EQUIPMENT CONTROL PANEL	MAS	MAINTENANCE ACCESS STRUCTURE
EF	EXHAUST FAN	MA	MILLIAMPS
EG	EMERGENCY GENERATOR	MAX	MAXIMUM
EMH	ELECT MANHOLE (SEE MAS)	MBS	MANUAL BYPASS SWITCH
EMT	ELECTRICAL METAL TUBING	MC	METAL CLAD
ENCL	ENCLOSURE	MCA	MAXIMUM CIRCUIT AMPS
EPB	EXISTING PULLBOX	MCB	MAIN CIRCUIT BREAKER
EQUIP	EQUIPMENT  ELECTRICAL RIGID METAL CONDUIT -	MCC	MOTOR CONTROL CENTER
ERMC-A	ALUMINUM	MCP	MASTER CONTROL PANEL
ERMC-S	ELECTRICAL RIGID METAL CONDUIT -	MDP MERC	MAIN DISTRIBUTION PANEL
ETM	STEEL ELAPSED TIME METER	MFG	MERCURY VAPOR MANUFACTURER
ΞX	EXISTING	MFR	MULTI-FUNCTIONAL RELAY
		MGB	MAIN GROUNDING BUS
-DR	FEEDER	MLO	MAIN LUGS ONLY
F,FU	FUSE	МОСР	MAXIMUM OVERCURRENT PROTECTION
=I	FLOW INDICATOR	MOV	MOTOR OPERATED VALVE
FLA	FULL LOAD AMPS	MPZ	MINI-POWER ZONE
FLEX	FLEXIBLE CONDUIT	MSC	MFR SUPPLIED CABLE
FLR	FLOOR	MTS	MANUAL TRANSFER SWITCH
FLUOR FLVC	FLUORESCENT FULL VOLTAGE LIGHTING CONTACTOR	MT MTD	MOUNT MOTOR TEMPERATURE DETECTOR
-LVC -M	FLOW METER	MV	MEDIUM VOLTAGE
F.O.	FAIL OPEN	· · · v	
.o. =oc	FIBER OPTIC CABLE	N	NEUTRAL
-S	FLOW SWITCH	NA	NOT APPLICABLE
-T	FLOW TRANSMITTER	NC	NORMALLY CLOSED
FUT	FUTURE	NEMA	NATIONAL ELEC. MFR. ASSOC.
-VNR	FULL VOLTAGE NON-REVERSING	NF	NON-FUSED
		NIC	NOT IN CONTRACT
<u> </u>	GREEN, GROUND	NO	NORMALLY OPEN
^ A I \ /	GALVANIZED GROUNDING RESISTOR	NP NTS	NAMEPLATE  NOT TO SCALE
	GROUNDING RESISTOR  GROUNDING ELECTRODE CONDUCTOR	INIO	NOT TO SCALL
GDR	GENERATOR	ОС	OCCUPANCY CONTROL
GDR GEC	CEITEIV II OIL	OD	OUTSIDE DIAMETER
GDR GEC GEN	GROUND FAULT CIRCUITINTERRUPTER		
GDR GEC GEN GFCI	GROUND FAULT CIRCUITINTERRUPTER GROUND FAULT RELAY	OL	OVERLOAD
GALV GDR GEC GEN GFCI GFR GND			OVERLOAD OVERHEAD
GDR GEC GEN GFCI GFR	GROUND FAULT RELAY GROUND	OL	
GDR GEC GEN GFCI GFR GND	GROUND FAULT RELAY GROUND	OL OH	OVERHEAD
GDR GEC GEN GFCI GFR GND GRS/RMC	GROUND FAULT RELAY GROUND GALVANIZED RIGID STEEL (CONDUIT)	OL OH	OVERHEAD
GDR GEC GEN GFCI GFR GND GRS/RMC	GROUND FAULT RELAY GROUND GALVANIZED RIGID STEEL (CONDUIT) GENERATOR TIE BREAKER	OL OH	OVERHEAD

	ABBREVIATIONS
ABBR.	DESCRIPTION
P	POLE
PB DC	PULL BOX OR PUSH BUTTON
PC PCP	PHOTOCELL PROCESS CONTROL PANEL
PCP PF	POWER FACTOR
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PMU	POWER MONITOR UNIT
PNL	PANEL
PP	POWER PANEL (480VAC)
PR DC	PAIR
PS PT	PRESSURE SWITCH POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE CONDUIT
PWR	POWER POWER
RCPT	RECEPTACLE
REF	REFERENCE
REQD	REQUIRED
RGS	RIGID GALVANIZED STEEL CONDUIT
RMC	RIGID METAL CONDUIT
RM	ROOM MEAN COULABLE
RMS	ROOT MEAN SQUARE
RS RTD	RIGID STEEL
RTU	RESISTANCE TEMPERATURE DETECTOR REMOTE TELEMETRY UNIT
N I U	NEMOTE TELEMETRY UNIT
SA	SURGE ARRESTER
SC	SURGE CAPACITOR
SEC	SECONDARY
SEL	SELECTOR
SF	SUPPLY FAN
SH	SPACE HEATER
SLC	SITE LIGHTING CONTROLLER
SLD	SINGLE LINE DIAGRAM
SMH	SIGNAL MAINTENANCE HOLE
S/N	SOLID NEUTRAL
SPEC	SPECIFICATIONS
SPD	SURGE PROTECTIVE DEVICE
SSRVS SST	SOLID STATE REDUCED VOLTAGE ST. STAINLESS STEEL
SST SUB	SUBSTATION
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
SYS	SYSTEM
	TUEDAGGE
TD.	THERMOSTAT
TB TD	TERMINAL BLOCK
TD TEL	TIME DELAY RELAY TELEPHONE
TEMP	TEMPERATURE
TJB	TERMINAL JUNCTION BOX
TSH	TEMPERATURE SWITCH - HIGH
TSP	TWISTED SHIELDED PAIR
TVSS	TRANSIENT VOLTAGE SURGE SUPPR.
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC UTILITY
U/G	UNDERGROUND
UPS	UNINTERRUPTIBLE POWER SUPPLY
UVR	UNDERVOLTAGE RELAY
	VOLT OF VOLTS
V	VOLT OR VOLTMETER
VA VAD	VOLTAMPERE PEACTIVE
VAR	VOLTAMPERE REACTIVE  VARIABLE FREQUENCY DRIVE
VFD VS	VOLTMETER SWITCH
٧٥	VOLIMETER SWITCH
W	WATT
WHD	WATTHOUR DEMAND METER
WP	WEATHER PROOF
WW	WIREWAY
XFMR	TRANSFORMER
XMTR	TRANSMITTER
XP	EXPLOSION PROOF

FLUORESCENT LUMINAIRE, SURFACE OR LAY IN TYPE SEE  SCHEPOULE FOR TYPE  WALL MOUNTED LUMINAIRE - SEE SCHEDULE FOR TYPE  WALL MOUNTED LUMINAIRE - SEE SCHEDULE FOR TYPE  GROUND ROD - 5/8" x 20" COPPER CLAD UNLESS OTHERWISE NOTED  SEE SCHEDULE FOR TYPE  EXIT LIGHTS - SOLID SECTION IS DIRECTION OF FACE SEE SCHEDULE FOR TYPE  EMERGENCY LIGHT WITH BATTERY PACK SEE SCHEDULE FOR TYPE  EMERGENCY LIGHT WITH BATTERY PACK SEE SCHEDULE FOR TYPE  LIGHTING FIXTURE POWER AND SWITCHING LEGEND  X = FIXTURE TYPE # CIRCUIT NUMBER  CONDUIT/CONDUCTOR - REFER TO CIRCUIT SCHEDULE  HOME RUN - PANEL AND CIRCUIT NUMBER SHOWN  EXPOSED CONDUIT AND CONDUCTORS*  UNDERGROUND CONDUIT AND CONDUCTORS*  VARD CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/0 CU UNLESS OTHERWISE NOTED  X + CIRCUIT 3- THERE WAY K- KEY OPERATED  NO. 4- FOUR WAY D- DIMMER  WP - WEATHERPROOF CRE- CORROSION RESISTANT  GFCI - GROUND FAULT INTERRUPTER FIC - FULL TIME COVER  1. THIST LOCK GFCI - GROUND FAULT INTERRUPTER FIC - FULL TIME COVER  1. THIST LOCK GFCI - GROUND FAULT INTERRUPTER FIC - FULL TIME COVER  1. THIST LOCK GFCI - GROUND FAULT INTERRUPTER FIC - FULL TIME COVER  1. THIST LOCK GFCI - GROUND FAULT INTERRUPTER FIC - FULL TIME COVER  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  LOCATED ABDOVE COUNTER TOP  1. THIST LOCK GFCI - GROUND FAULT INTERRUPTER FIC - FULL TIME COVER  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  LOCATED ABDOVE COUNTER TOP  1. THIST LOCK GFCI - GROUND FAULT INTERRUPTER FIC - FULL TIME COVER  1. THIST LOCK GFCI - GROUND FAULT INTERRUPTER FIC - FULL TIME COVER  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  WOUNTED FLUSH IN FLOOR.  30 RECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED.  1. THIST LOCK GFCI - GROUND FAULT INTERRUPTER FIC - FULL TIME COVER  1. THIST LOCK GFCI - GROUND FAULT INTERRUPTER FIC - FULL TIME COVER  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  WOUNTED FLUSH IN FLOOR.  30 RECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED.  1. THIST LOCK GFCI - GROUND FAULT STAND  20A DUPLEX RECEPTACLE	SYMBOL	ELECTRICAL PLAN/LAYOUT  DESCRIPTION	
LIGHTING PANELBOARD T(X)*  CEILING MOUNTED DOWNLIGHT LUMINAIRE - SEE SCHEDULE FOR TO SCHEDULE FOR TYPE  CILIMINAIRE AND POLE - SEE SCHEDULE FOR TYPE  WALL MOUNTED LUMINAIRE - SEE SCHEDULE FOR TYPE  WALL MOUNTED LUMINAIRE - SEE SCHEDULE FOR TYPE  GROUND ROD - 5/8" × 20" COPPER CLAD  UNLESS OTHERWISE NOTED  GROUND ROD - 5/8" × 20" COPPER CLAD  UNLESS OTHERWISE NOTED  GROUND ROD - 5/8" × 20" COPPER CLAD  UNLESS OTHERWISE NOTED  GROUND ROD IN TEST WELL - 5/8" × 20" COPPER CLAD  UNLESS OTHERWISE NOTED  EXT LIGHTS - SOLD IS SECTION IS DIRECTION OF FACE  SEE SCHEDULE FOR TYPE  FMERCENCY LIGHT WITH BATTERY PACK  SEE SCHEDULE FOR TYPE  LIGHTING FIXTURE POWER AND SWITCHING LEGEND  X = FATURE TYPE  CONDULT/CONDUCTOR - REFER TO CIRCUIT SCHEDULE  HOME RUN - PANEL AND CIRCUIT NUMBER SHOWN  EXPOSED CONDUIT AND CONDUCTORS*  VARD CONDULT, STUBBED AND CONDUCTORS*  VARD CONDUIT, STUBBED AND CONDUCTORS*  WALL SWITCH: 2- DOUBLE POWER NOTED  CONCRETE ENCASED DUCT BANK  CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/0 CU UNLESS OTHERWISE NOTED  WALL SWITCH: 2- DOUBLE POWER FOR CONDUCTIONS - CONDUCTORS*  VALUE SWITCH: 2- DOUBLE POWER FOR CONDUCTIONS - CONDUCTIONS		TERMINAL JUNCTION BOX	
ELECTRICAL LOCAL CONTROL PANELS  CELLING MOUNTED DOWNLIGHT LUMINAIRE - SEE SCHEDULE FOR TYPE  FUDDINGS CELL LUMINAIRE, SURFACE OR LAY IN TYPE SEE  SCHEDULE FOR TYPE  WALL MOUNTED LUMINAIRE - SEE SCHEDULE FOR TYPE  WALL MOUNTED LUMINAIRE - SEE SCHEDULE FOR TYPE  GROUND ROD - 5/8* × 20' COPPER CLAD  UNLESS OTHERWISE NOTED  FXT LIGHTS - SOLID SECTION IS DIRECTION OF FACE  SEE SCHEDULE FOR TYPE  FEMEROGRY LUGHT WITH BATTERY PACK  SEE SCHEDULE FOR TYPE  * = CIRCUIT NUMBER  LIGHTING FIXTURE POWER AND SWITCHING LEGEND  X = FIXTURE TYPE  * = CIRCUIT NUMBER  CONDUTICONDUCTOR - REFER TO CIRCUIT SCHEDULE  HOME RUN - PANEL AND CIRCUIT NUMBER SHOWN  EXPOSED CONDUIT AND CONDUCTORS*  VARD CONDUIT, REFER TO YARD CONDUIT SCHEDULE  DB — DIRECT BURIED CONDUIT  D — CONCERTE ENCASED DUCT BANK  CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/0 CU UNLESS OTHERWISE NOTED  X # WALL SWITCH: 2 - DOUBLE POLE P - PILOT LIGHT  * CIRCUIT 3 - THREE WAY K KEY OPERATED  NO. WALL SWITCH: 2 - DOUBLE POLE P - DIMMER NO. NO. WP-WEATHERROOF CRF - CORROSION RESISTANT  WP-WEATHERROOF CRF - CORROSION RESISTANT  CFC - GROUND FAULT INTERRUPTER FTC - FILL TIME COVER  10 ADDITOR RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  MOUNTED FLUSH IN FLOOR  1 TELEPHONE/DATA RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  MOUNTED FLUSH IN FLOOR  1 TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED, 19" AFF  WALL MOUNTED, 19" AFF  FIRE ALARM SHOOKE OR HEAT DETECTOR  1 FIRE ALARM STROBE LIGHT  1 FIRE ALARM ANNUNCIATOR PANEL			
CEILING MOUNTED DOWNLIGHT LUMINAIRE - SEE SCHEDULE FOR TYPE  FLUORESCENT LUMINAIRE, SURFACE OR LAY IN TYPE SEE SCHEDULE FOR TYPE  WALL MOUNTED LUMINAIRE - SEE SCHEDULE FOR TYPE  GROUND ROD - 5/8" × 20" COPPER CLAD  UNLESS OTHERWISE NOTED  GROUND ROD IN TEST WELL - 5/8" × 20" COPPER CLAD  UNLESS OTHERWISE NOTED  EXT LIGHTS - SOLD IN TEST WELL - 5/8" × 20" COPPER CLAD  UNLESS OTHERWISE NOTED  EXT LIGHTS - SOLD IN TEST WELL - 5/8" × 20" COPPER CLAD  UNLESS OTHERWISE NOTED  EXERCISED LIGHT WITH BATTERY PACK  SEE SCHEDULE FOR TYPE  EMPRESENCY LIGHT WITH BATTERY PACK  SEE SCHEDULE FOR TYPE  LIGHTING FIXTURE POWER AND SWITCHING LEGEND  X = FIXTURE TYPE  # - CIRCUIT IN MOBER  LIGHTING FIXTURE POWER AND SWITCHING LEGEND  X = FIXTURE TYPE  # - CIRCUIT IN MOBER  EXPOSED CONDUIT AND CONDUIT SCHEDULE  HOME RUN - PANEL AND CIRCUIT NUMBER SHOWN  EXPOSED CONDUIT, STUBBED AND COMPUT SCHEDULE  DIRECT BURIED CONDUIT  CONCASTE FINCASED DUCT BANK  CROUND WIRE, 4/0 CU UNLESS OTHERWISE NOTED  WALL SWITCH: 2 DOUBLE POLE P. PILOT LIGHT  # - CIRCUIT 3 THERE WAY K. KEY OPERATED  NO. W.P. WEATHERPROOF C. CLOCK HANGER  TI TWIST LICK C. CRR - CORROSION RESISTANT  GRCI - GROUND FAULT INTERRUPTER FIC - FULL TIME COVER  10 AUDIEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE  20A DUPLEY RECEPTACLE - UNLESS SPECIFIED OTHERWISE  WP. WEATHERPROOF C. CLOCK HANGER  TI TWIST LICK C. CRR - CORROSION  RESISTANT  WP. WEATHERPROOF C. CLOCK HANGER  TI TWIST LICK C. CRR - CORROSION  RESISTANT  TO STATE THE COVER COVER.  A FOUNT BUT IN FLOOR  WP. WEATHERPROOF C. CLOCK HANGER  TI TWIST LICK C. CRR - CORROSION  RESISTANT  TO STATE THE COVER COVER.  A FOUNT BUT IN FLOOR  WP. WEATHERPROOF C. CLOCK HANGER  TI TWIST LICK C. CRR - CORROSION  RESISTANT  TO STATE THE COVER COVER C. CRR - CORROSION  RESISTANT  TO STATE THE COVER C. CRR - CORROSION  RESISTANT  TO STATE		· · ·	
FILUDRESCENT I LIMINAIRE, SURFACE OR LAY IN TYPE SEE SCHEDULE FOR TYPE  WALL MOUNTED LIMINAIRE - SEE SCHEDULE FOR TYPE  GROUND ROD - 5/8" × 20" COPPER CLAD UNLESS OTHERWISE NOTED  GROUND ROD IN TEST WELL - 5/8" × 20" COPPER CLAD UNLESS OTHERWISE NOTED  WE EXT LIGHTS - SOLID SECTION IS DIRECTION OF FACE SEE SCHEDULE FOR TYPE  LIGHTING FIXTURE POWER AND SWITCHING LEGEND X = FIXTURE TYPE  # = CIRCUIT NUMBER  LIPA-2  CONDUIT/CONDUCTOR - REFER TO CIRCUIT SCHEDULE HOME RUN - PANEL AND CIRCUIT BUMBER SHOWN  EXPOSED CONDUIT AND CONDUCTORS*  VOX YARD CONDUIT, REFER TO YARD CONDUIT SCHEDULE  DB DIRECT BURIED CONDUIT  DD CONCRETE ENCASED DUCT BANK  CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/0 CLU UNLESS OTHERWISE NOTED  WALL SWITCH: 2 TO PAREE WAY K KEY OPERATE WE CIRCUIT 3 FOUR WAY D- DIMMER NO.  WE WEATHERPROOF C. CLOCK HANGER WP WEATHERPROOF C. CLOCK HANGE WE CONDUIT THE	<u> </u>		
LUMINAIRE AND POLE - SEE SCHEDULE FOR TYPE  WALL MOUNTED LUMINAIRE - SEE SCHEDULE FOR TYPE  GROUND ROD IN TEST WELL - 5/8" x 20' COPPER CLAD  UNLESS OTHERWISE NOTED  EXT LIGHTS - SOLID SECTION IS DIRECTION OF FACE  SEE SCHEDULE FOR TYPE  EMERGENCY LIGHT WITH BATTERY PACK  SEE SCHEDULE FOR TYPE  # CIRCUIT MUMBER  CONDUIT/CONDUCTOR - REFER TO CIRCUIT SCHEDULE  LIGHTING FUTURE DOWER AND SWITCHING LEGEND  X = FIXTURE TYPE  # - CIRCUIT MUMBER  CONDUIT/CONDUCTOR - REFER TO CIRCUIT SCHEDULE  HOME RUN - PANEL AND CIRCUIT NUMBER SHOWN  EXPOSED CONDUIT AND CONDUCTORS*  VAX D CONDUIT, REFER TO YARD CONDUIT SCHEDULE  DIRECT BURIED CONDUIT  D CONCRETE FINCASED DUCT BANK  CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/0 CU UNLESS OTHERWISE NOTED  WALL SWITCH: 2 DOUBLE POLE P PLOT LIGHT  # - CIRCUIT 4 FINE WAY K KEY OPERATED  NO. 4 FORM WAY FOR WAY FO		FLUORESCENT LUMINAIRE, SURFACE OR LAY IN TYPE SEE	
WALL MOUNTED LUMINAIRE - SEE SCHEDULE FOR TYPE     STATE			
GROUND ROD - 5/8" x 20" COPPER CLAD UNIESS OTHERWISE NOTED  GROUND ROD IN TEST WELL - 5/8" x 20" COPPER CLAD UNIESS OTHERWISE NOTED  X EXIT LIGHTS - SOLID SECTION IS DIRECTION OF FACE SEE SCHEDULE FOR TYPE  LIGHTING FIXTURE POWER AND SWITCHING LEGEND  X = FIXTURE TYPE  LIGHTING FIXTURE POWER AND SWITCHING LEGEND  X = FIXTURE TYPE  CONDUTT/CONDUCTOR - REFER TO CIRCUIT SCHEDULE  HOME RUN - PANEL AND CIRCUIT NUMBER SHOWN  EXPOSED CONDUIT AND CONDUCTORS*  UNDERGROUND CONDUIT AND CONDUCTORS*  VYCX	X I •	LUMINAIRE AND POLE - SEE SCHEDULE FOR TYPE	
SOUND ROUTE SOURCE SOURCE SPECIFIED OTHERWISE  SERVINGENT SOURCE SOURCE SPECIFIED OTHERWISE  EXIT LIGHTS - SOLID SECTION IS DIRECTION OF FACE  SET SCHEDULE FOR TYPE  EMERGENCY LIGHT WITH BATTERY PACK SET SCHEDULE FOR TYPE  EMERGENCY LIGHT WITH BATTERY PACK SET SCHEDULE FOR TYPE  LIGHTING FIXTURE POWER AND SWITCHING LEGEND  X = EXTURE TYPE # = CIRCUIT NUMBER  CONDUIT/CONDUCTOR - REFER TO CIRCUIT SCHEDULE  HOME RUN - PANEL AND CIRCUIT NUMBER SHOWN  EXPOSED CONDUIT AND CONDUCTORS*  UNDERGROUND CONDUIT AND CONDUCTORS*  VOX YARD CONDUIT, STUBBED AND CAPPED AS SHOWN  CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/O CU UNLESS OTHERWISE NOTED  WALL SWITCH: 2 - DOUBLE POLE P - RECORDISION RESISTANT  NO. 4 - FOUR WAY D - DIMMER WP - WEATHERPROOF C - CLOCK HANCER SHOW - WEATHERPROOF C - CLOCK HANCER WP - WEATHERPR	XH	WALL MOUNTED LUMINAIRE - SEE SCHEDULE FOR TYPE	
UNLESS OTHERWISE NOTED  X SET LIGHTS - SOLID SECTION IS DIRECTION OF FACE SEE SCHEDULE FOR TYPE  EMERGENCY LIGHT WITH BATTERY PACK SEE SCHEDULE FOR TYPE  LIGHTING FIXTURE POWER AND SWITCHING LEGEND X = FIXTURE TYPE # = CIRCUIT NUMBER  LIGHTING FIXTURE POWER AND SWITCHING LEGEND X = FIXTURE TYPE # = CIRCUIT NUMBER  LIGHTING FIXTURE POWER AND SWITCHING LEGEND X = FIXTURE TYPE # = CIRCUIT NUMBER  LIGHTING FIXTURE POWER AND SWITCHING LEGEND X = FIXTURE TYPE # = CIRCUIT NUMBER  LIGHTING FIXTURE POWER AND SWITCHING LEGEND X = FIXTURE TYPE # = CIRCUIT AND CONDUCTORS*  VARD CONDUIT, AND CONDUCTORS*  VARD CONDUIT AND CONDUCTORS*  VARD CONDUIT, REFER TO YARD CONDUIT SCHEDULE  DB DIRECT BURIED CONDUIT  D CONCRETE ENCASED DUCT BANK  CONDUIT, STUBBED AND CAPPED AS SHOWN  CONDUIT, STUBBED AND CAPPED AS SHOWN  CONDUIT, STUBBED AND CAPPED AS SHOWN  WALLSWITCH: 2. DOUBLE POUE P. PILOT LIGHT # - CIRCUIT 4. FOUR WAY D. DIMPROVED  WALLSWITCH: 2. DOUBLE POUE P. PILOT LIGHT # - CIRCUIT 4. FOUR WAY D. DIMPROVED  WP - WEATHERPROOF C- CLOCK HANGER TO - CORROSION RESISTANT  CONDUIT STUBS LOCK GFC1 - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE  WP - WEATHERPROOF C - CLOCK HANGER TO - THIS LOCK GFC1 - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  LICCATED ABOVE COUNTER TOP  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  MOUNTED FLUSH IN FLOOR.  1 JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED.  TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED, 54" AFF  FIRE ALARM FOUL STATION  F FIRE ALARM HORN/STROBE LIGHT  FIRE ALARM STROBE LIGHT  FIRE ALARM SMOKE OR HEAT DETECTOR  FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE  CONDUIT CHASE	$\bowtie$		
SEE SCHEDULE FOR TYPE  EMERGENCY LIGHT WITH BATTERY PACK SEE SCHEDULE FOR TYPE  LIGHTING FIXTURE POWER AND SWITCHING LEGEND  X = FIXTURE TYPE # = CIRCUIT NUMBER  CONDUIT/CONDUCTOR - REFER TO CIRCUIT SCHEDULE HOME RUN - PANEL AND CIRCUIT NUMBER SHOWN  EXPOSED CONDUIT AND CONDUCTORS*  UNDERGROUND CONDUIT AND CONDUCTORS*  VARD CONDUIT, REFER TO YARD CONDUIT SCHEDULE  DB DIRECT BURIED CONDUIT  D CONCRETE ENCASED DUCT BANK  CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/O CU UNLESS OTHERWISE NOTED  X WALL SWITCH: 2- DOUBLE POLE P- PILOT LIGHT # - CIRCUIT 3- THREE WAY K- KEY OPERATED NO. WALL SWITCH: 2- DOUBLE POLE P- DIMMER WP- WEATHERPROOF C- CLOCK HANGER TO- THE WALL SWITCH C- CORNOSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER  20A DUPLEX RECEPTACLE UNLESS SPECIFIED OTHERWISE WP- WEATHERPROOF C- CLOCK HANGER TO- THIST LOCK GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER  20A QUADRAPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE LOCATED ABOVE COUNTER TOP  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE. MOUNTED FLUSH IN FLOOR.  A RECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED.  TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W- WALL MOUNTED, 54" AFF  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR  JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR  JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR  JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR  JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR  JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR  FIRE ALARM HORN/STROBE LIGHT  FIRE ALARM STROBE LIGHT  FIRE ALARM STROB	Ø		
SEE SCHEDULE FOR TYPE  LIGHTING FIXTURE POWER AND SWITCHING LEGEND  X = FIXTURE TYPE # = CIRCUIT NUMBER  CONDUIT/CONDUCTOR - REFER TO CIRCUIT SCHEDULE HOME RUN - PANEL AND CIRCUIT NUMBER SHOWN  EXPOSED CONDUIT AND CONDUCTORS*  UNDERGROUND CONDUIT AND CONDUCTORS*  YARD CONDUIT, REFER TO YARD CONDUIT SCHEDULE  DB DIRECT BURIED CONDUIT  D CONCRETE ENCASED DUCT BANK  CONDUIT, STUBBED AND CAPPED AS SHOWN  CONDUIT, STUBBED AND CAPPED AS SHOWN  CONDUIT, STUBBED AND CAPPED AS SHOWN  WALLSWITCH: 2 DOUBLE POLE P. PILOT LIGHT # CIRCUIT 4 FOUR WAY D. DIMMER NO. RULL SWITCH: 2 DOUBLE POLE CORROSION  WALLSWITCH: 2 DOUBLE POLE P. PILOT LIGHT # CIRCUIT 4 FOUR WAY D. DIMMER NO. RULL SWITCH: 2 COUNTY D. DIMMER WP - WEATHERPROOF CRE- CORROSION RESISTANT  WP - WEATHERPROOF CRE- CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER  20A QUADRAPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE  WP - WEATHERPROOF C - CLOCK HANGER TI - TWIST LOCK GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER  20A QUADRAPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  AND ADDRESS RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  AND ADDRESS RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  ADD	<b>⊗</b> x		
X = FIXTURE TYPE # = CIRCUIT NUMBER    B2	Q <sub>X</sub>		
HOME RUN - PANEL AND CIRCUIT NUMBER SHOWN  EXPOSED CONDUIT AND CONDUCTORS*  UNDERGROUND CONDUIT AND CONDUCTORS*  VARD CONDUIT, REFER TO YARD CONDUIT SCHEDULE  DB DIRECT BURIED CONDUIT  D CONCRETE ENCASED DUCT BANK  CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/O CU UNLESS OTHERWISE NOTED  WALL SWITCH: 2- DOUBLE POLE P- PILOT LIGHT  * CIRCUIT 3- THREE WAY K- KEY OPERATED DIMMER NO. 4- FOUR WAY D- DIMMER NO. 4- FOUR WAY D- DIMMER NO. 4- FOUR WAY D- DIMMER TIL-TWIST LOCK CRE-CORROSION RESISTANT  ZOA DUPLEX RECEPTACLE UNLESS SPECIFIED OTHERWISE WP - WEATHERPROOF C - CLOCK HANGER TIL-TWIST LOCK CRE-CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER NO. 4- FOUR WAY D- DIMMER NO. 6- CIRCUIT STANT OF CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER DEPORTED OTHERWISE. LOCATED ABOVE COUNTER TOP  20A QUADRAPALEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE. MOUNTED FLUSH IN FLOOR.  A RECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED. 1- TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W-WALL MOUNTED, 54" AFF  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR DIMERWISE. 4X = NEMA 4X SS  F FIRE ALARM PULL STATION  FIRE ALARM FROBE LIGHT  FIRE ALARM STROBE LIGHT  FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE  CONDUIT CHASE	<b>X</b> #	X = FIXTURE TYPE	
EXPOSED CONDUIT AND CONDUCTORS*  UNDERGROUND CONDUIT AND CONDUCTORS*  VARD CONDUIT. REFER TO YARD CONDUIT SCHEDULE  DB — DIRECT BURIED CONDUIT  D — CONCRETE ENCASED DUCT BANK  CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/O CU UNLESS OTHERWISE NOTED  WALL SWITCH: 2 DOUBLE POLE P. PLIOT LIGHT  # - CIRCUIT 3 THREE WAY K. KEY OPERATED NO. 4 FOUR WAY D. DIMMER NO. WP. WEATHERPROOF CR. CORROSION RESISTANT  200 A DUPLEX RECEPTACLE UNLESS SPECIFIED OTHERWISE  WP - WEATHERPROOF C - CLOCK HANGER TL - TWIST LOCK CRE - CORROSION RESISTANT  GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER  WO A QUADRAPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE  LOCATED ABOVE COUNTER TOP  200 A UPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  MOUNTED FLUSH IN FLOOR.  PAUL MOUNTED FLUSH IN FLOOR  TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W-WALL MOUNTED, 54" AFF  WALL MOUNTED, 54" AFF  FIRE ALARM PULL STATION  F — FIRE ALARM FROBE LIGHT  FIRE ALARM STROBE LIGHT  FIRE ALARM ANNUNCIATOR PANEL  FIRE ALARM ANNUNCIATOR PANEL  FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE	[B2]	CONDUIT/CONDUCTOR - REFER TO CIRCUIT SCHEDULE	
UNDERGROUND CONDUIT AND CONDUCTORS*  YARD CONDUIT. REFER TO YARD CONDUIT SCHEDULE  DB DIRECT BURIED CONDUIT  CONCRETE ENCASED DUCT BANK  CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/O CU UNLESS OTHERWISE NOTED  WALL SWITCH: 2- DOUBLE POLE P- PLOT LIGHT  KEY OFERATED  NO. 4- FOUR WAY D- DIMMER  NO. 4- FOUR WAY D- DIMMER  NO. 4- FOUR WAY D- CORROSION  RESISTANT  WP- WEATHERPROOF C- CLOCK HANGER  TL - TWIST LOCK  GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE  WO- WEATHERPROOF C- CLOCK HANGER  TL - TWIST LOCK  GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER  20A QUADRAPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  LOCATED ABOVE COUNTER TOP  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  MOUNTED FLUSH IN FLOOR.  RECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED.  TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED, 54" AFF  FILEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED, 54" AFF  FIRE ALARM PULL STATION  F FIRE ALARM PULL STATION  F FIRE ALARM HORN/STROBE LIGHT  FIRE ALARM STROBE LIGHT  FIRE ALARM STROBE LIGHT  FIRE ALARM STROBE LIGHT  FIRE ALARM SMOKE OR HEAT DETECTOR  FIRE ALARM SMOKE OR HEAT DETECTOR  FIRE ALARM ANNUNCIATOR PANEL  FIRE ALARM ANNUNCIATOR PANEL  FIRE ALARM ANNUNCIATOR PANEL  FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE	→ LPA-2	HOME RUN - PANEL AND CIRCUIT NUMBER SHOWN	
TELEPHONE/DATA RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  200 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  201 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  202 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  203 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  204 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  205 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  206 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  207 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  208 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  209 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  200 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  201 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  202 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  203 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  204 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  205 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  206 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  207 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  208 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  209 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  200 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  201 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  202 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  203 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  204 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  205 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  206 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  207 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  208 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  209 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  200 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  201 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  202 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  203 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  204 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  205 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  206 DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  207 DUPLEX RECEPTACLE - UNL		EXPOSED CONDUIT AND CONDUCTORS*	
DB DIRECT BURIED CONDUIT  D CONCRETE ENCASED DUCT BANK  CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/O CU UNLESS OTHERWISE NOTED  WALL SWITCH: 2- DOUBLE POLE P- PILOT LIGHT # - CIRCUIT 3- THREE WAY B- KEY OPERATED NO. 4- FOUR WAY B- DIMMER NO. 6- CORROSION RESISTANT RESISTANT RESISTANT RESISTANT RESISTANT RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER TL. TWIST LOCK CR - CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER DATE OF THE WISE. 1- TWIST LOCK CR - CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER TL. TWIST LOCK CR - CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER TL. TWIST LOCK CR - CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER TL. TWIST LOCK CR - CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER TL. TWIST LOCK CR - CORROSION RESISTANT GFCI - UNLESS SPECIFIED OTHERWISE. 10- CALL TIME COVER GROUNTED TO THERWISE. 10- CALL TIME COVER GROUNTED TO THERWISE. 10- CALL THE COVER GROUNTED TO THERWISE. 10- CALL THE COVER GROUNTED TO THERWISE. 10- CALL THE COVER GROUNTED FILED TO THERWISE. 10- CALL THE COVER GROUNTED TO THERWISE. 10- CALL THE COVER GROUNTED TO THE CRUST GROUNTED TO THE CR		UNDERGROUND CONDUIT AND CONDUCTORS*	
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CONCRETE ENCASED DUCT BANK  CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/O CU UNLESS OTHERWISE NOTED  WALL SWITCH: 2- DOUBLE POLE P. PILOT LIGHT F. CIRCUIT 3- THREE WAY K. KEY OPERATED NO. 4- FOUR WAY D- DIMMER NESISTANT NESISTANT NESISTANT NESISTANT NESISTANT SETS THE WAY F. CIRCUIT STAND NO. 4- FOUR WAY D- DIMMER NESISTANT NESISTANT NESISTANT NESISTANT NESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER TL - TWIST LOCK CRF - CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER CRF - CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER DATE OF THE WISE.  20A QUADRAPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE. LOCATED ABOVE COUNTER TOP  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE. MOUNTED FLUSH IN FLOOR.  PRECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED.  PRECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED.  PRECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED.  PRECEPTACLE SPECI			
CONDUIT, STUBBED AND CAPPED AS SHOWN  GROUND WIRE, 4/O CU UNLESS OTHERWISE NOTED  WALL SWITCH: 2- DOUBLE POLE P- PILOT LIGHT # - CIRCUIT 3- THREE WAY K- KEY OPERATED DOUBLE POLE P- PILOT LIGHT # - CIRCUIT 3- THREE WAY K- KEY OPERATED DOUBLE POLE P- PILOT LIGHT # - CIRCUIT 3- THREE WAY K- KEY OPERATED DOUBLE POLE P- PILOT LIGHT # - CIRCUIT 3- THREE WAY K- KEY OPERATED DOUBLE POLE P- PILOT LIGHT # - CIRCUIT 3- THREE WAY K- KEY OPERATED DOUBLE POLE P- PILOT LIGHT WAS COME RESISTANT RESISTANT GROUND FAULT INTERRUPTER FTC - CORROSION RESISTANT GROUND FAULT INTERRUPTER FTC - FULL TIME COVER CRE - CORROSION RESISTANT GROUND FTC - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER CRE - UNLESS SPECIFIED OTHERWISE.  20A QUADRAPLEX RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED FLUSH IN FLOOR.  30 RECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED.  TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED, 54" AFF  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR  31 JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. 4X = NEMA 4X SS  FIRE ALARM PULL STATION  FIRE ALARM HORN/STROBE LIGHT  50 DD FIRE ALARM STROBE LIGHT  50 DD FIRE ALARM SMOKE OR HEAT DETECTOR  50 DD DUCT SMOKE DETECTOR  FACP FIRE ALARM ANNUNCIATOR PANEL  FAAP FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE			
WALL SWITCH: 2- DOUBLE POLE P- PILOT LIGHT KEY OPERATED NO. 4- FOUR WAY D- DIMMER NO. 4- FOUR WAY WP- WEATHERPROOF CRE- CORROSION RESISTANT  20A DUPLEX RECEPTACLE UNLESS SPECIFIED OTHERWISE WP- WEATHERPROOF C- C- CLOCK HANGER TL - TWIST LOCK CRE - CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER 20A QUADRAPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE LOCATED ABOVE COUNTER TOP  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE. WOUNTED FLUSH IN FLOOR.  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE. WOUNTED FLUSH IN FLOOR.  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE. WOUNTED FLUSH IN FLOOR.  20A DUPLEX RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED, 54" AFF  TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED, 54" AFF  FIRE ALARM PULL STATION  F FIRE ALARM PULL STATION  F FIRE ALARM HORN/STROBE LIGHT  FIRE ALARM STROBE LIGHT  ELEVATOR WARNING LIGHT  SD(D)  FIRE ALARM SMOKE OR HEAT DETECTOR  FIRE ALARM SMOKE OR HEAT DETECTOR  FIRE ALARM CONTROL PANEL  FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE			
# - CIRCUIT 3. THREE WAY K- KEY OPERATED NO. 4- FOUR WAY WP- WEATHERPROOF CRE- CORROSION RESISTANT  20A DUPLEX RECEPTACLE UNLESS SPECIFIED OTHERWISE WP - WEATHERPROOF CRE- CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER TL - TWIST LOCK CRE - CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER 20A QUADRAPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE LOCATED ABOVE COUNTER TOP  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE. MOUNTED FLUSH IN FLOOR.  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE. MOUNTED FLUSH IN FLOOR.  PELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED, 54" AFF  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR  JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. 4X = NEMA 4X SS  F FIRE ALARM PULL STATION  F FIRE ALARM HORN/STROBE LIGHT  FIRE ALARM STROBE LIGHT  ELEVATOR WARNING LIGHT  SD D DUCT SMOKE DETECTOR  FIRE ALARM SMOKE OR HEAT DETECTOR  FIRE ALARM CONTROL PANEL  FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE  CONDUIT CHASE		GROUND WIRE, 4/O CU UNLESS OTHERWISE NOTED	
## WP - WEATHERPROOF TIL - TWIST LOCK CRE - CORROSION RESISTANT GFCI - GROUND FAULT INTERRUPTER FTC - FULL TIME COVER  20A QUADRAPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  10CATED ABOVE COUNTER TOP  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  10CATED ABOVE COUNTER TOP  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  10CATED ABOVE COUNTER TOP  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  10CATED ABOVE COUNTER TOP  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  10CATED ABOVE COUNTER TOP  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE.  20A DUPLEX RECEPTACLE - UNLESS SPECIFIE	X \$#	# - CIRCUIT 3- THREE WAY K- KEY OPERATED NO. 4- FOUR WAY D- DIMMER WP- WEATHERPROOF CRE- CORROSION	
20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE. LOCATED ABOVE COUNTER TOP  20A DUPLEX RECEPTACLE - UNLESS SPECIFIED OTHERWISE. MOUNTED FLUSH IN FLOOR.  RECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED.  TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED, 54" AFF  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR  JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. 4X = NEMA 4X SS  F FIRE ALARM PULL STATION  F FIRE ALARM HORN/STROBE LIGHT  FIRE ALARM STROBE LIGHT  SDHD FIRE ALARM SMOKE OR HEAT DETECTOR  SD D DUCT SMOKE DETECTOR  FACP FIRE ALARM CONTROL PANEL  FAAP  FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE	<b>Х</b> #	WP - WEATHERPROOF C - CLOCK HANGER TL - TWIST LOCK CRE - CORROSION RESISTANT	
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MOUNTED FLUSH IN FLOOR.  RECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED.  TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED, 54" AFF  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR  JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. 4X = NEMA 4X SS  F FIRE ALARM PULL STATION  F FIRE ALARM HORN/STROBE LIGHT  FIRE ALARM STROBE LIGHT  WH ELEVATOR WARNING LIGHT  SDHD FIRE ALARM SMOKE OR HEAT DETECTOR  DUCT SMOKE DETECTOR  FACP FIRE ALARM CONTROL PANEL  FAAP CONDUIT CHASE  CONDUIT CHASE	#		
TELEPHONE/DATA RECEPTACLE (OUTLET BOX, 18" AFF) W - WALL MOUNTED, 54" AFF  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR  JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. 4X = NEMA 4X SS  F FIRE ALARM PULL STATION  FIRE ALARM HORN/STROBE LIGHT  FIRE ALARM STROBE LIGHT  ELEVATOR WARNING LIGHT  SDHD FIRE ALARM SMOKE OR HEAT DETECTOR  SDD DUCT SMOKE DETECTOR  FACP FIRE ALARM CONTROL PANEL  FAAP FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE			
WALL MOUNTED, 54" AFF  TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR  JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. 4X = NEMA 4X SS  F FIRE ALARM PULL STATION  FIRE ALARM HORN/STROBE LIGHT  FIRE ALARM STROBE LIGHT  WH ELEVATOR WARNING LIGHT  SDHD FIRE ALARM SMOKE OR HEAT DETECTOR  SD D DUCT SMOKE DETECTOR  FACE FIRE ALARM CONTROL PANEL  FAAP FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE	△ <sub>30</sub>	RECEPTACLE, SPECIAL PURPOSE - AMPERAGE AS INDICATED.	
JUNCTION BOX NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. 4X = NEMA 4X SS  F FIRE ALARM PULL STATION  F FIRE ALARM HORN/STROBE LIGHT  FIRE ALARM STROBE LIGHT  ELEVATOR WARNING LIGHT  SDHD FIRE ALARM SMOKE OR HEAT DETECTOR  SDD DUCT SMOKE DETECTOR  FACP FIRE ALARM CONTROL PANEL  FAAP CONDUIT CHASE	H		
OTHERWISE. 4X = NEMA 4X SS  F FIRE ALARM PULL STATION  F FIRE ALARM HORN/STROBE LIGHT  FIRE ALARM STROBE LIGHT  ELEVATOR WARNING LIGHT  SDHD FIRE ALARM SMOKE OR HEAT DETECTOR  SD D DUCT SMOKE DETECTOR  FACP FIRE ALARM CONTROL PANEL  FAAP FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE	M	TELEPHONE/DATA RECEPTACLE MOUNTED FLUSH IN FLOOR	
FIRE ALARM HORN/STROBE LIGHT  FIRE ALARM STROBE LIGHT  ELEVATOR WARNING LIGHT  SDHD  FIRE ALARM SMOKE OR HEAT DETECTOR  SDD  DUCT SMOKE DETECTOR  FACP  FIRE ALARM CONTROL PANEL  FAAP  FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE	J		
FIRE ALARM STROBE LIGHT  WH ELEVATOR WARNING LIGHT  SDHD FIRE ALARM SMOKE OR HEAT DETECTOR  DUCT SMOKE DETECTOR  FACP FIRE ALARM CONTROL PANEL  FAAP FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE	F	FIRE ALARM PULL STATION	
ELEVATOR WARNING LIGHT  SDHD  FIRE ALARM SMOKE OR HEAT DETECTOR  DUCT SMOKE DETECTOR  FACP  FIRE ALARM CONTROL PANEL  FAAP  FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE	F	FIRE ALARM HORN/STROBE LIGHT	
SDHD FIRE ALARM SMOKE OR HEAT DETECTOR  SD D DUCT SMOKE DETECTOR  FACP FIRE ALARM CONTROL PANEL  FAAP FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE	EH .	FIRE ALARM STROBE LIGHT	
DUCT SMOKE DETECTOR  FACP FIRE ALARM CONTROL PANEL  FAAP FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE	<b>W</b>	ELEVATOR WARNING LIGHT	
FACP FIRE ALARM CONTROL PANEL  FAAP CONDUIT CHASE		FIRE ALARM SMOKE OR HEAT DETECTOR	
FAAP FIRE ALARM ANNUNCIATOR PANEL  CONDUIT CHASE		DUCT SMOKE DETECTOR	
CONDUIT CHASE	FACP	FIRE ALARM CONTROL PANEL	
	FAAP	FIRE ALARM ANNUNCIATOR PANEL	
WH) WATER HEATER	00	CONDUIT CHASE	
I control of the cont	WH	WATER HEATER	

		ONE LINE DIAGRAMS, RISEF	R DIAGRAMS	AND SCHEMATICS
	SYMBOL	DESCRIPTION	SYMBOL	
	E	ELECTRICAL INTERLOCK	60A 60A 7	DISC SWITCH - FUSED, NON-FUSED
PE	400 600	DRAWOUT CIRCUIT BREAKER, LOW VOLTAGE 600= FRAME RATING, 400=TRIP SETTING	G or	GENERATOR
	400 600	DRAWOUT CIRCUIT BREAKER, MEDIUM VOLTAGE 600=	S <sub>M</sub>	MANUAL MOTOR STARTER SWITCH, NUMBER OF POLES AS REQUIRED.
	600 400 W	FRAME RATING, 400=TRIP SETTING  DRAWOUT FUSED SWITCH, LOW OR MEDIUM VOLTAGE	PB 4X	PUSH-BUTTON STATION, NEMA 12 E OTHERWISE. 4X = NEMA 4X STAINL DIAGRAMS FOR TYPE PUSH BUTTON
	₩ \L	600= FRAME RATING, 400=FUSE RATING	□ □ J <sub>30</sub> 4X	NONFUSED DISCONNECT SWITCH, S INDICATED OTHERWISE, NEMA 12 E STEEL
	(3) XFMR DRY	CURRENT TRANSFORMER, NUMBER OF WINDINGS INDICATED	F 40 60	FUSED DISCONNECT SWITCH, SIZE FUSE RATING) 3 POLE UNLESS INDI ENCLOSURE, 4X = NEMA 4X STAINL
	kVA 3P/4W 480-120/208V	TRANSFORMER, VOLTAGES, PHASE AND RATING INDICATED AS APPLICABLE	4X LC 30 4X	LIGHTING CONTACTOR, CURRENT R UNLESS INDICATED OTHERWISE. SI POLES. 4X = NEMA 4X TYPE 316 ST
	<u>-</u>		⊠ <sup>2</sup> 4X	MAGNETIC STARTER, NEMA SIZE IN INDICATED OTHERWISE. SEE CONT STEEL
		LIGHTNING ARRESTER	<u></u>	COMBINATION (FUSE OR CIRCUIT B STARTER, NEMA SIZE INDICATED, N
	<b>⊢</b>	CAPACITOR OR SURGE CAPACITOR	4X	OTHERWISE. SEE CONTROL SCHEMA
	0-600V	METER SCALE RANGE SHOWN IF REQUIRED PM - PHASE MONITOR A - AMPS P - POWER METER V - VOLTS	~	ELECTRIC RESISTANCE HEATER
		FUSE	ETM	ELAPSED TIME METER
	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION	CRx	CONTACT - NORMALLY OPEN WITH (
	•   -	GROUND	CRx ————————————————————————————————————	CONTACT - NORMALLY CLOSED WIT
	CPT #80V 120V	CONTROL TRANSFORMER	CRX) OR (RX) (LRX) (L)	CONTROL RELAY, X = SEQUENTIAL CONTROL RELAY, X=SEQUENTIAL N LATCHING RELAY, X=SEQUENTIAL N
	GFR GFR	GROUND FAULT RELAY WITH C.T.	(L)	TIME DELAY RELAY, X=SEQUENTIAL CLOSED NOTO=NORMALLY OPEN TI
		PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY OPEN	NOTC	NCTO = NORMALLY CLOSED TIMED CLOSED AFTER OPEN
	<u> </u>	PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY CLOSED	2	TEMPERATURE CLOSES ON FALLING TEMPERATURE
		PUSH BUTTON SWITCH, MAINTAINED CONTACTS WITH MECHANICAL INTERLOCK	H O A	SELECTOR SWITCH: MAINTAINED ( INDICATED, CHART IDENTIFIES OF
		REMOTE DEVICE	ooox	CKT. HAND OFF AL 1 X O 2 O O
	A	INDICATING LIGHT - LETTER INDICATES COLOR A - AMBER G - GREEN B - BLUE R - RED C - CLEAR W - WHITE		GENER
_	Ā	PUSH TO TEST AND CONNECT INDICATING LIGHT	SYMBOL	DESCRIPTION
	(A)	SCHEMATIC DIAGRAMS ONLY  A - AMBER G - GREEN B - BLUE R - RED C - CLEAR W - WHITE		CONNECTION POINT TO EQUIPMENT UNDER OTHER SECTIONS. RACEWAY THIS SECTION.
	5	C - CLEAR W - WHITE  MOTOR, SQUIRREL CAGE INDUCTION UNLESS OTHERWISE NOTED - HORSEPOWER INDICATED	1"C, 2#12, 1#12G 1"C, 1-25/C TYPE 1	INDICATES RACEWAY AND CIRCURACEWAY SIZE. THE FOLLOWING QUANTITIES, SIZES, AND TYPES.
4	-x-	OVERLOAD RELAY HEATER	THIS IS A STAND	OARD LEGEND SHEET. SOME SYMBOLS
$\dashv$	-1	MAGNETIC STARTER WITH NEMA SIZE INDICATED	APPEAR ON THIS	SHEET AND NOT BE UTILIZED ON PR
	<u> </u>	MOTOR CIRCUIT PROTECTOR, MAGNETIC, 3 POLE UNLESS INDICATED OTHERWISE.	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	S WIRING TYPE #" CONDUIT IDENTIFICATION
	400	CIRCUIT BREAKER, THERMAL MAGNETIC TRIP SHOWN, 3 POLE UNLESS INDICATED OTHERWISE.	"YYY' (YYY-X###) "X" I	" IS AREA (IF USED) S WIRING TYPE #" CONDUIT IDENTIFICATION
	400 225	FUSED SWITCH, SWITCH AND FUSE CURRENT RATING INDICATED, 3 POLE UNLESS INDICATED OTHERWISE.	*	MCC - ASTERISK INDIVIDUAL MOTOR CONTROLLE
	100	SWITCH - CURRENT RATING INDICATED, 3 POLE UNLESS INDICATED OTHERWISE.	Δ	PANEL (HEXAGON)
OIC	AVENUE R.W.	GROUND		

	ONE LINE DIAGNAMO, MOLI	V DIAGNAMS	AND SCHEWATIOS
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
E	ELECTRICAL INTERLOCK	60A 60A 7	DISC SWITCH - FUSED, NON-FUSED
400 600 <b>────</b>	DRAWOUT CIRCUIT BREAKER, LOW VOLTAGE 600= FRAME RATING, 400=TRIP SETTING	G or	GENERATOR
400 600	DRAWOUT CIRCUIT BREAKER, MEDIUM VOLTAGE 600= FRAME RATING, 400=TRIP SETTING	S <sub>M</sub>	MANUAL MOTOR STARTER SWITCH, NEMA 4X UNLESS OTHERWISE NOTED. NUMBER OF POLES AS REQUIRED.
600 400 — 400	DRAWOUT FUSED SWITCH, LOW OR MEDIUM VOLTAGE 600= FRAME RATING, 400=FUSE RATING	PB 4X	PUSH-BUTTON STATION, NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. 4X = NEMA 4X STAINLESS STEEL ENCLOSURE. SEE CONTROL DIAGRAMS FOR TYPE PUSH BUTTON REQUIRED.
	CURRENT TRANSFORMER, NUMBER OF WINDINGS	□ J <sub>30</sub> 4X	NONFUSED DISCONNECT SWITCH, SIZE INDICATED, 3 POLE UNLESS INDICATED OTHERWISE, NEMA 12 ENCLOSURE, 4X = NEMA 4X STAINLESS STEEL
XFMR DRY kVA 3P/4W	INDICATED	F <sup>J</sup> 40 60 4X	FUSED DISCONNECT SWITCH, SIZE INDICATED (60 = SWITCH RATING: 40 = FUSE RATING) 3 POLE UNLESS INDICATED OTHERWISE, NEMA 12 ENCLOSURE, 4X = NEMA 4X STAINLESS STEEL
480-120/208V	TRANSFORMER, VOLTAGES, PHASE AND RATING INDICATED AS APPLICABLE	LC 30 4X	LIGHTING CONTACTOR, CURRENT RATING INDICATED, NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. SEE CONTROL DIAGRAM FOR NUMBER OF POLES. 4X = NEMA 4X TYPE 316 STAINLESS STEEL
	LICHTAING ADDECTED	⊠ <sup>2</sup> 4X	MAGNETIC STARTER, NEMA SIZE INDICATED, NEMA 12 ENCLOSURE, UNLESS INDICATED OTHERWISE. SEE CONTROL DIAGRAM. 4X = NEMA 4X STAINLESS STEEL
	LIGHTNING ARRESTER	<b>⋈</b> <sup>1</sup> 2	COMBINATION (FUSE OR CIRCUIT BREAKER AS INDICATED). MAGNETIC STARTER, NEMA SIZE INDICATED, NEMA 12 ENCLOSURE UNLESS INDICATED
<b>⊣</b> ←	CAPACITOR OR SURGE CAPACITOR	4X	OTHERWISE. SEE CONTROL SCHEMATIC DIAGRAM. 4X = NEMA 4X STAINLESS STEEL
0-600V	METER SCALE RANGE SHOWN IF REQUIRED PM - PHASE MONITOR A - AMPS P - POWER METER V - VOLTS	~1	ELECTRIC RESISTANCE HEATER
	FUSE	ETM	ELAPSED TIME METER
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION	CRx	CONTACT - NORMALLY OPEN WITH COIL INDICATED
•—  II	GROUND	CR× H	CONTACT - NORMALLY CLOSED WITH COIL INDICATED
PT 480V 120V	CONTROL TRANSFORMER	CRX) OR (RX)	CONTROL RELAY, X = SEQUENTIAL NUMBER  CONTROL RELAY, X=SEQUENTIAL NUMBER  LATCHING RELAY, X=SEQUENTIAL NUMBER L - LATCH, U - UNLATCH
GFR GFR	GROUND FAULT RELAY WITH C.T.	(L)	TIME DELAY RELAY, X=SEQUENTIAL NUMBER NOTC=NORMALLY OPEN TIMED CLOSED NOTO=NORMALLY OPEN TIMED OPEN AFTER CLOSE
	PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY OPEN	NOTC	NCTO = NORMALLY CLOSED TIMED OPEN; NCTC = NORMALLY CLOSED TIMED CLOSED AFTER OPEN
<u> </u>	PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY CLOSED	2,	TEMPERATURE CLOSES ON RISING TEMPERATURE  CLOSES ON RISING TEMPERATURE
	PUSH BUTTON SWITCH, MAINTAINED CONTACTS WITH MECHANICAL INTERLOCK	H O A	SELECTOR SWITCH: MAINTAINED CONTACT WITH CONTACT POSITION INDICATED, CHART IDENTIFIES OPERATION  POSITION
	REMOTE DEVICE		CKT. HAND OFF AUTO  1 X O O X - CLOSED CONTACT
A	INDICATING LIGHT - LETTER INDICATES COLOR A - AMBER G - GREEN B - BLUE R - RED C - CLEAR W - WHITE		GENERAL O - OPEN CONTACT
\I,		SYMBOL	DESCRIPTION
Ā	PUSH TO TEST AND CONNECT INDICATING LIGHT SCHEMATIC DIAGRAMS ONLY  A - AMBER G - GREEN B - BLUE R - RED C - CLEAR W - WHITE		CONNECTION POINT TO EQUIPMENT SPECIFIED, FURNISHED AND INSTALLED UNDER OTHER SECTIONS. RACEWAY, CONDUCTOR AND CONNECTION IN THIS SECTION.
5	MOTOR, SQUIRREL CAGE INDUCTION UNLESS OTHERWISE NOTED - HORSEPOWER INDICATED	1"C, 2#12, 1#12G 1"C, 1-25/C TYPE 1	INDICATES RACEWAY AND CIRCUIT CONDUCTORS. FIRST NUMBER IS RACEWAY SIZE. THE FOLLOWING NUMBERS ARE THE CONDUCTOR QUANTITIES, SIZES, AND TYPES.
_x_	OVERLOAD RELAY HEATER	THIS IS A STAND	OARD LEGEND SHEET. SOME SYMBOLS OR ABBREVIATIONS MAY SHEET AND NOT BE UTILIZED ON PROJECT.
<b>⊣</b>   <u>-</u> -x-	MAGNETIC STARTER WITH NEMA SIZE INDICATED		
M	MOTOR CIRCUIT PROTECTOR, MAGNETIC, 3 POLE UNLESS INDICATED OTHERWISE.	OR "##	S WIRING TYPE  #" CONDUIT IDENTIFICATION  "C" = DISCRETE OR CONTROL WIRING  "D" = DATA HIGHWAY (FOC)  "IS AREA (IF USED)  "A" = ANALOG SIGNAL WIRING  "C" = DISCRETE OR CONTROL WIRING  "L" = POWER CONDUCTORS 120-240V
400	CIRCUIT BREAKER, THERMAL MAGNETIC TRIP SHOWN, 3 POLE UNLESS INDICATED OTHERWISE.	(YYY-X###) "X" I	"IS AREA (IF USED) "L" = POWER CONDUCTORS 120-240V S WIRING TYPE "H" = POWER CONDUCTORS 440-480V #" CONDUIT IDENTIFICATION "U" = UTILITY POWER
_\	FUSED SWITCH, SWITCH AND FUSE CURRENT RATING		MCC ACTEDICIA

				PROJECT ENGINEER:	A. DIEFFENTHALLER
				DESIGNED BY:	J. BURKE
				DRAWN BY:	J. WILHOIT
3	BID SET	3/21	AD	CHECKED BY:	J. RATASKY
2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1"
1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRA	-
REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE	



RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION

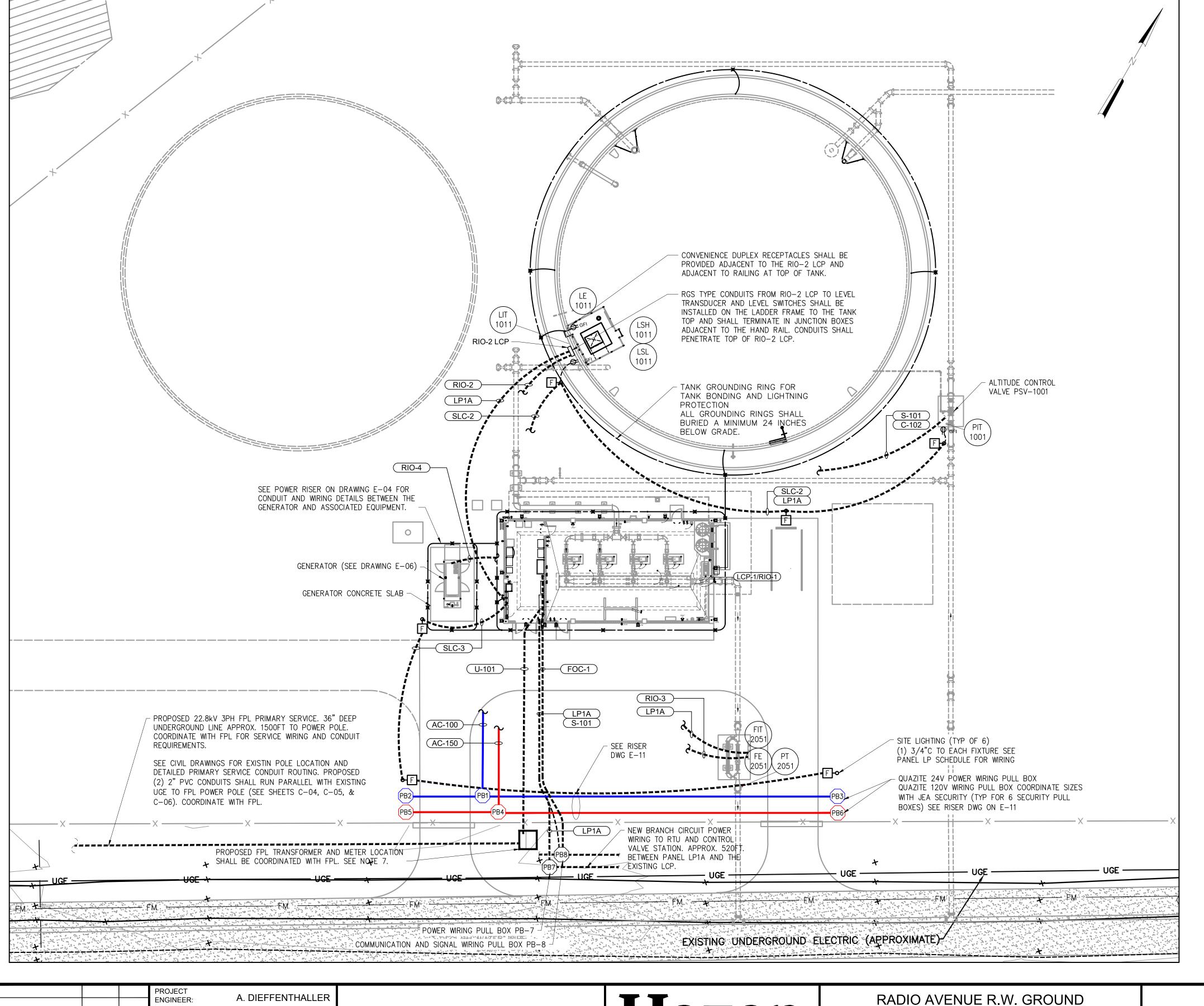


ELECTRICAL LEGEND AND SYMBOLS

MCC - ASTERISK INDIVIDUAL MOTOR CONTROLLER (SQUARE) PANEL (HEXAGON) FIELD (TRIANGLE)

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING	

DRAWING NUMBER: E-02



### SITE ELECTRICAL NOTES:

- 1. FPL WILL PROVIDE A NEW 300 kVA, 480/277V, 3PH, 4W TRANSFORMER TO SERVE THE NEW PUMP STATION FACILITY.
- 2. THE CONTRACTOR SHALL PROVIDE A TRENCH AND INSTALL CONDUIT AND PULL BOX, PROVIDED BY FPL, FOR PRIMARY SERVICE WIRING BETWEEN THE FPL DESIGNATED POLE AND THE NEW TRANSFORMER LOCATION.
- 3. THE CONTRACTOR SHALL PROVIDE AND INSTALL (2) 2" FPL PROVIDED CONDUITS AT A MINIMUM DEPTH OF 36 INCHES BELOW FINISHED GRADE TO THE TOP OF THE UPPERMOST CONDUIT. CONTRACTOR SHALL INSTALL ELECTRIC UTILITY WARNING TAPE CENTERED OVER THE PRIMARY CONDUITS AT 12 INCHES BELOW FINISHED GRADE.
- 4. THE CONTRACTOR SHALL COORDINATE WITH FPL TO INSPECT THE PRIMARY TRENCH AFTER THE CONDUIT IS INSTALLED AND PRIOR TO BACKFILLING TRENCH. CONTACT ROBERT E. HADDOCK WITH FPL AT 904–225–3003 WITH AT LEAST 24 HOURS PRIOR NOTICE.
- 5. FPL WILL PROVIDE AND INSTALL NEW PRIMARY CABLE BETWEEN DESIGNATED POLE AND NEW TRANSFORMER. FPL WILL ALSO TERMINATE PRIMARY WIRING AT EACH END.
- 6. CONTRACTOR CAN PURCHASE A CONCRETE PAD FROM FPL OR APPROVED VENDORS. CONTRACTOR CAN ALSO CHOOSE TO CONSTRUCT A PAD BASED ON FPL SPECIFICATIONS AND REQUIREMENTS.
- 7. CONTRACTOR SHALL PROVIDE PROPER SUB-BASE MATERIAL AND PROVIDE PROPER COMPACTION OF SUB-BASE PRIOR TO INSTALLATION OF REINFORCED CONCRETE TRANSFORMER PAD. COORDINATE PLACEMENT WITH FPL.
- 8. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SECONDARY CONDUITS AND WIRING BETWEEN THE NEW SERVICE TRANSFORMER AND THE NEW PUMP STATION SERVICE ENTRANCE RATED MAIN BREAKER.
- 9. THE CONTRACTOR SHALL PROVIDE CONDUIT AND UTILITY METER—CAN TO MEET FPL SPECIFICATIONS AND REQUIREMENTS. FPL WILL PROVIDE, INSTALL, AND TERMINATE UTILITY METER WIRING.
- 10. PRIMARY AND SECONDARY SERVICE CONDUITS SHALL BE CAPPED AT BOTH ENDS FROM TIME OF INSTALLATION TO THE WIRE INSTALLATION.
- 11. CONTRACTOR SHALL PROVIDE AND INSTALL A 1/8" PULL CORD IN EACH PRIMARY AND SECONDARY CONDUIT.
- 12. ALL PRIMARY AND SECONDARY CONDUIT ELBOWS AT TRANSFORMER AND POLE ENDS SHALL BE RIGID GALVANIZED STEEL AND SHALL BE LARGE SWEEP TYPE.
- 13. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ANY ADDITIONAL FPL REQUIREMENTS NOT LISTED ABOVE AND SHALL OBTAIN THE LATEST REQUIREMENTS AND SPECIFICATIONS FROM FPL REGARDING THE SERVICE CONDUITS, TRANSFORMER SUPPORT CONCRETE PAD INCLUDING METERING EQUIPMENT AND LOCATION OF METER.
- 14. ALL UNDERGROUND SITE CONDUITS SHALL BE CONCRETE ENCASED. SEE DRAWING ED-02 FOR TYPICAL DUCT BANK LAYOUT.
- 15. MOUNTING HARDWARE FOR ALL ELECTRICAL EQUIPMENT SHALL BE STAINLESS STEEL.

## SITE ACCESS CONTROL NOTES:

- 1. ALL SITE ACCESS CONTROL SYSTEM CONDUITS SHALL BE 2" PVC.
- 2. CONTRACTOR SHALL COORDINATE WITH THE SECURITY VENDOR FOR SIZE AND TYPE OF JUNCTION BOXES REQUIRED.
- 3. CONTRACTOR SHALL PROVIDE PULL STRINGS IN ALL EMPTY CONDUITS.

SITE ACCESS CONTROL LEGEND:

ACCESS CONTROL 24V WIRING

ACCESS CONTROL 120V WIRING

SCALE: 1" = 16'

DESIGNED BY: J. BURKE DRAWN BY: J. WILHOIT CHECKED BY: J. RATASKY **BID SET** 3/21 100% DESIGN SUBMITTAL 12/20 AD IF THIS BAR DOES NOT 0 1/2" MEASURE 1" THEN DRAWING IS 10/20 AD 90% DESIGN SUBMITTAL NOT TO FULL SCALE DATE **ISSUED FOR** 

HAZEN AND SAWYER
6675 CORPORATE CENTER PARKWAY

JACKSONVILLE, FLORIDA 32216

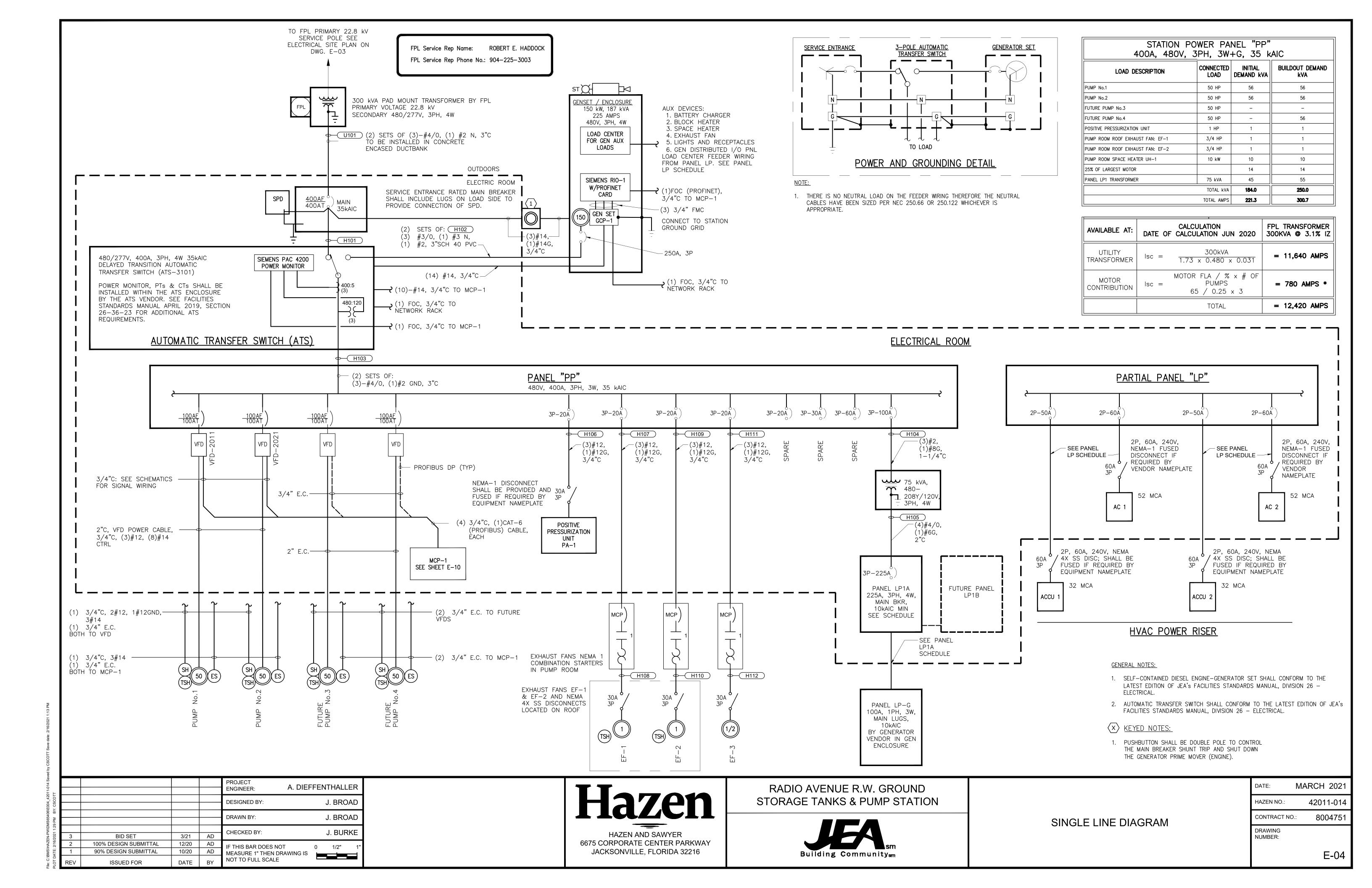
RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION

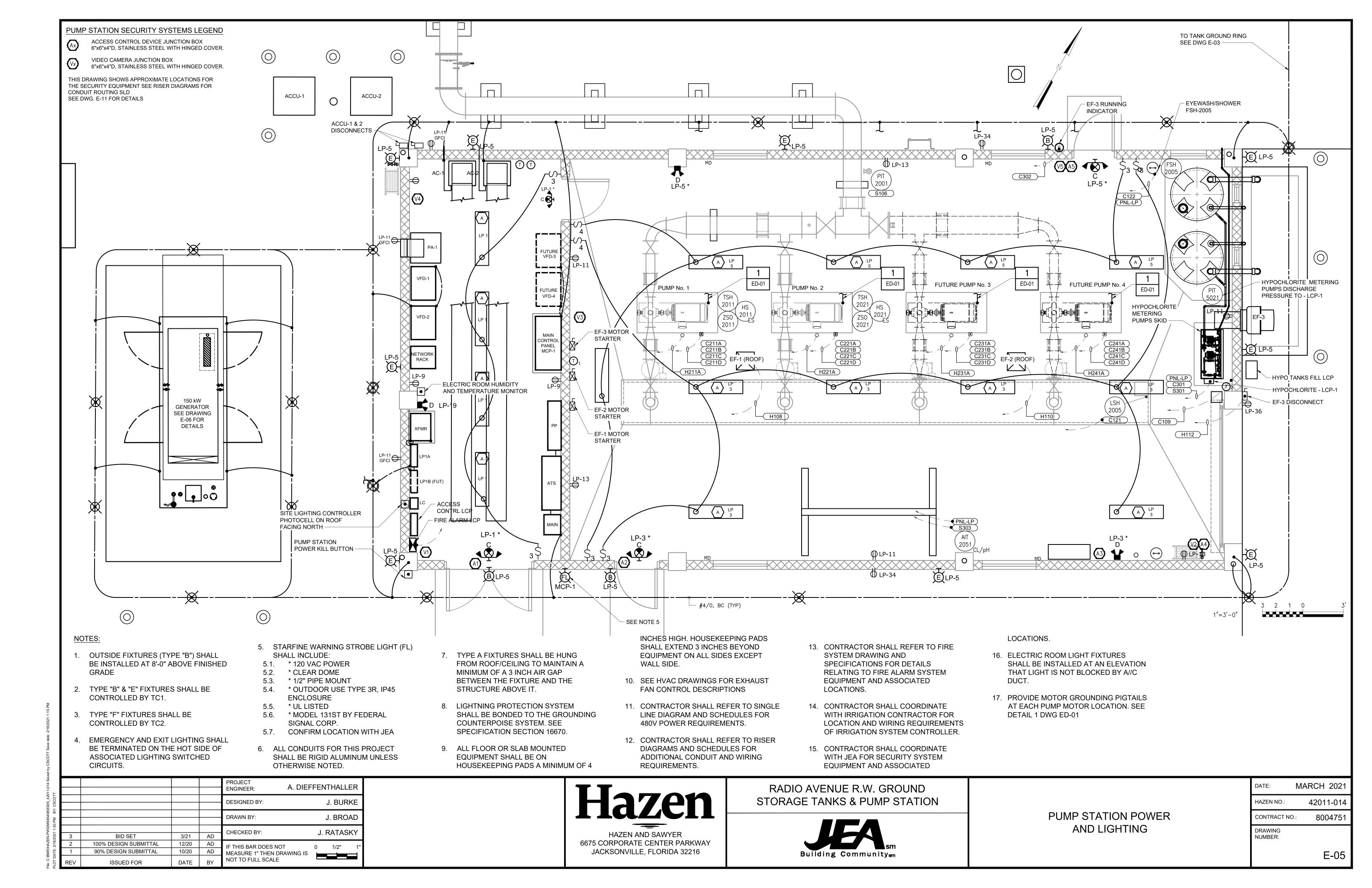


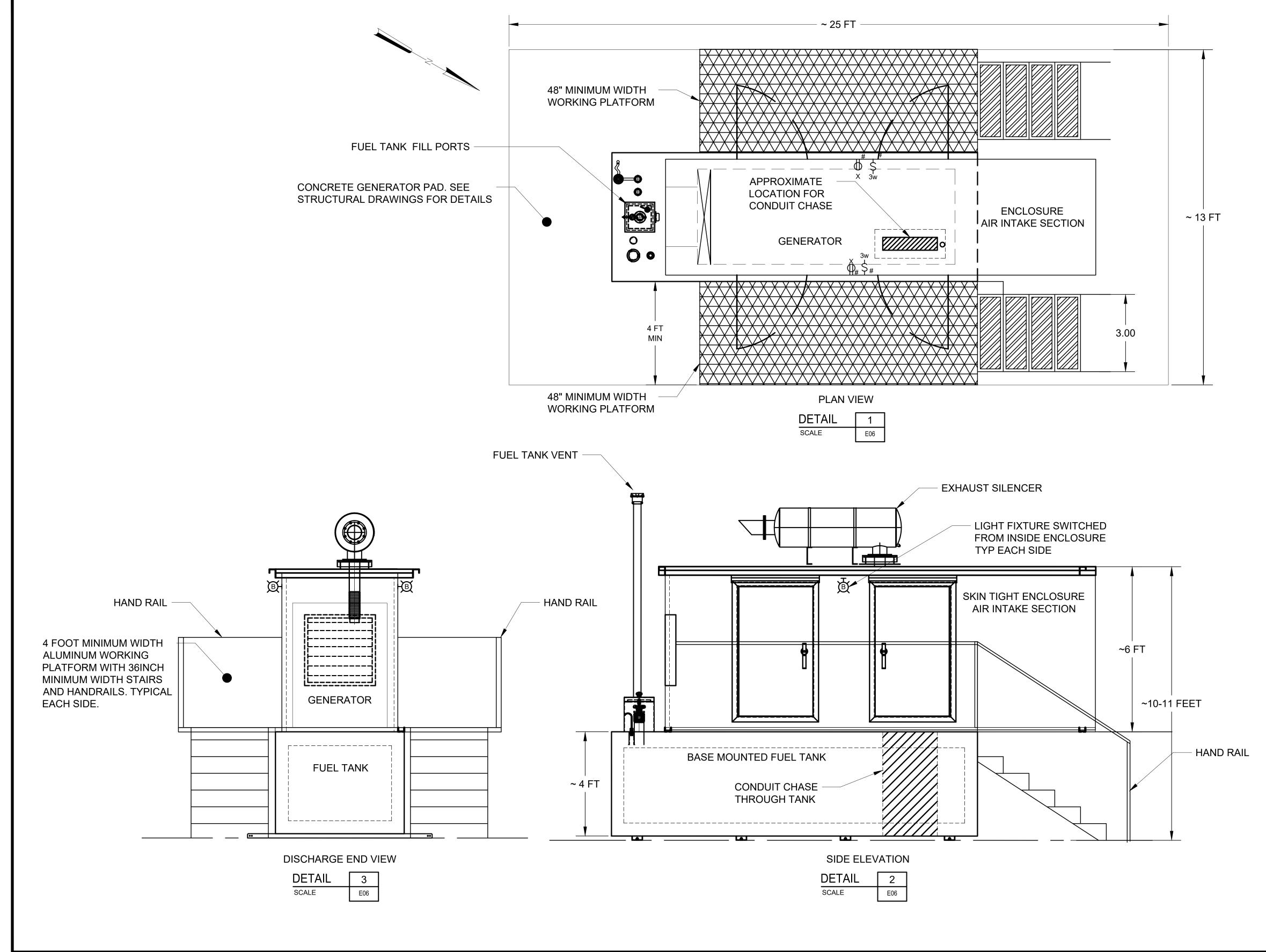
ELECTRICAL SITE PLAN

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	

E-03







### GENERATOR GENERAL NOTES:

- 1. ALL DIMENSIONS FOR THE GENERATOR AND APPURTENANCES ARE APPROXIMATE. CONTRACTOR SHALL VERIFY FINAL DIMENSIONS AND WEIGHT WITH APPROVED VENDOR.
- 2. COORDINATE WITH STRUCTURAL PAD DESIGN
- 3. EXTEND CONCRETE PAD UNDER AIR INTAKE TO LIMIT DUST AND DIRT INTAKE.
- 4. JEA MAINTENANCE AND ENVIRONMENTAL DEPARTMENTS INCLUDING THE JEA PROJECT MANAGER MUST BE NOTIFIED BY SUPPLIER BETWEEN 45 DAYS AND 30 DAYS, AND AGAIN BETWEEN 72 HOURS AND 48 HOURS IN ADVANCE OF ABOVE GROUND FUEL STORAGE TANK SHIPMENTS GREATER THAN 550 GALLONS. DEP'S CHAPTER 62-762 FOR ABOVE GROUND STORAGE TANK SYSTEMS MUST BE FOLLOWED.
- 5. GENERATOR SHALL BE PROVIDED WITH A SIEMENS RIO AND PROFINET COMMUNICATION CARD.
- 6. REFER TO DIVISION 26, ELECTRICAL, IN THE LATEST VERSION OF JEA FACILITIES STANDARDS DOCUMENT FOR ADDITIONAL GENERATOR AND ASSOCIATED EQUIPMENT REQUIREMENTS.

JEA RADIO AVE PS — GENERATO	OR DATA		
PARAMETERS BASED ON CAT C9 UNIT	VALUE		
kW	150		
kVA	187		
AMPS	180		
OVERALL FOOTPRINT LENGTH ~ 19 FT			
OVERALL FOOTPRINT WIDTH	~ 5 FT		
OVERALL SYSTEM HEIGHT	~ 10 FT		
TOTAL GENERATOR WET WEIGHT	~ 20,000 LBS		
FUEL CONSUMPTION @ FULL LOAD	BY GEN VENDOR		
MINIMUM RUN TIME @ FULL LOAD 75 HRS			
ALL DIMENSIONS AND WEIGHTS SHALL BE CONFIRMED WITH GENERATOR VENDOR			

PROJECT ENGINEER: A. DIEFFENTHALLER J. BURKE DESIGNED BY: DRAWN BY: J. WILHOIT CHECKED BY: J. RATASKY BID SET 3/21 AD 100% DESIGN SUBMITTAL 12/20 AD IF THIS BAR DOES NOT 0 1/2" 90% DESIGN SUBMITTAL 10/20 AD MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE DATE ISSUED FOR

HAZEN AND SAWYER
6675 CORPORATE CENTER PARKWAY
JACKSONVILLE, FLORIDA 32216

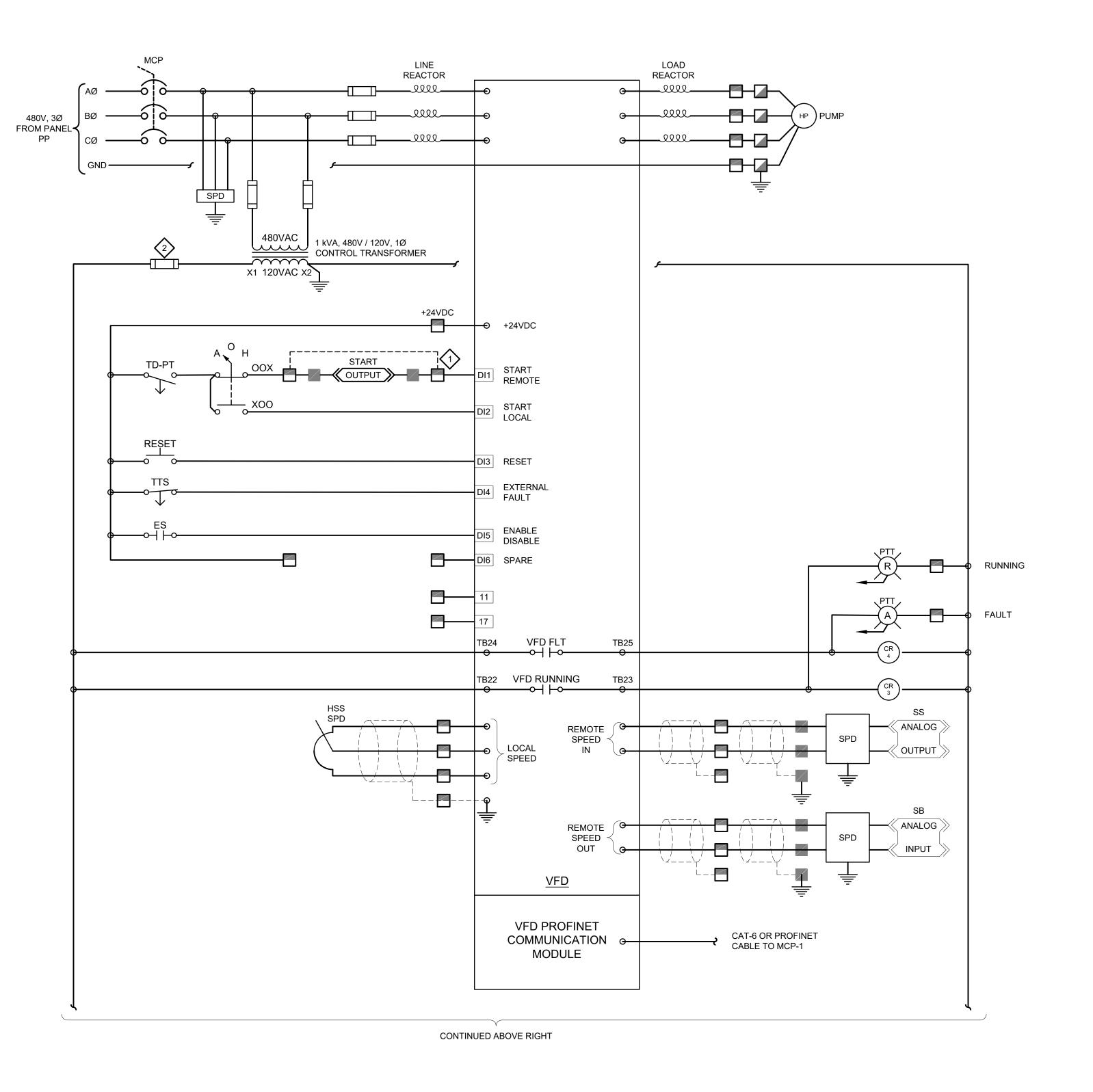
RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION

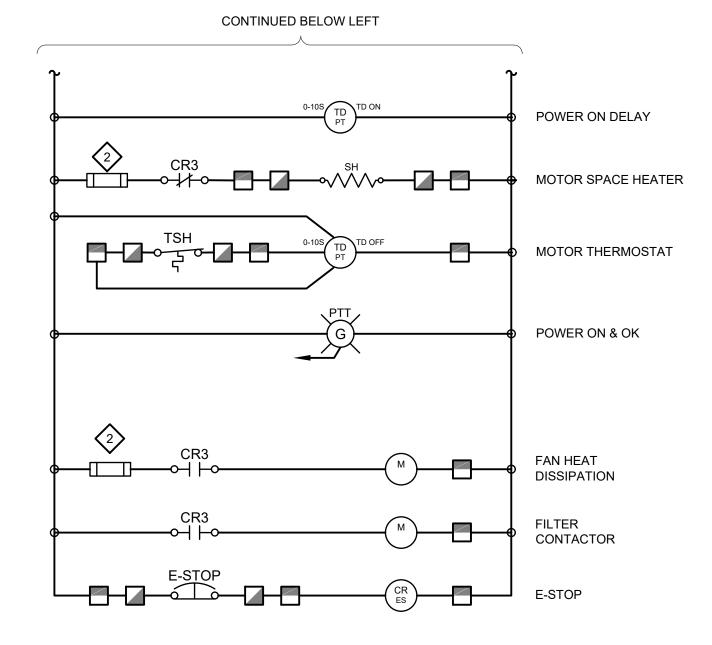
Building Community<sub>sm</sub>

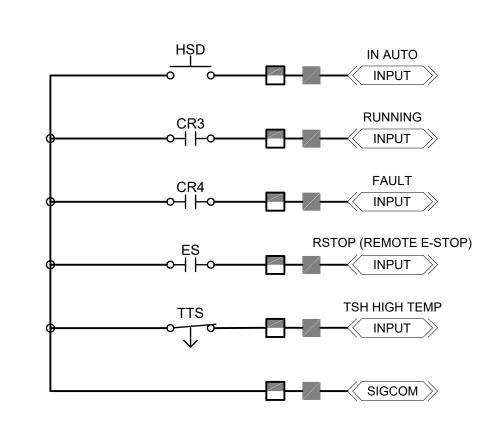
GENERATOR PLAN AND SECTION VIEWS

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	.: 8004751
DRAWING NUMBER:	

E-06







### **GENERAL NOTES:**

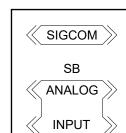
- SCHEMATIC TO BE REVIEWED FOR SPECIFIC PROJECT REQUIREMENTS AND APPROVED BY JEA PRIOR TO FABRICATION OF ANY KIND.
- VFD CIRCUIT BOARDS SHALL HAVE CONFORMAL COATING.

### **KEYED NOTES:**

- JUMPER IS NEEDED IF COMMUNICATION CONTROL IS SELECTED BY USER.
- SIZE BASED ON PROTECTION REQUIREMENT FOR LOADS SERVED.

### TERMINAL BLOCK LEGEND

- MOTOR CONTROL CENTER (MCC)
- FIELD DEVICE
- FIELD PANEL
- LOCAL STARTER CONTROL PANEL / VFD



TERMINATIONS WITHIN MCP-1

PUMP VFD LOCAL CONTROL SCHEMATIC (TYPICAL FOR EACH OF 2 PUMPS)

### OTES:

 VFD SIZING SHALL BE COORDINATED WITH THE ASSOCIATED MOTOR HORSE POWER AND RPM REQUIREMENTS.

×						
ile: C:BMS\HAZEN-PWIDMS65406\E007_42011-014 Save					PROJECT A. DIEFFENTHALLER	2
E007_4201					DESIGNED BY: J. BURKI	
//DMS65406\E 1:30 PM BY:					DRAWN BY: J. WILHOI	Γ
4AZEN-PW\DN 2/16/2021 1:3(	3	BID SET	3/21	AD	CHECKED BY: J. RATASKY	1
-1AZE 2/16/	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT 0 1/2"	1"
:\BMS\ DATE:	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING IS	i I
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HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY JACKSONVILLE, FLORIDA 32216

RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



VFD SCHEMATIC

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	E-07

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	PUMP FACILITY CONDUIT & WIRING SCHEDULE					
ID	CONDUIT/WIRE	FROM	ТО			
U101	SEE SLD	FPL TRANSFORMER	MAIN BREAKER			
H101	SEE SLD	UTILITY MAIN BREAKER	ATS			
H102	SEE SLD	GENERATOR MAIN BREAKER	ATS			
H103	SEE SLD	AUTOMATIC TRANSFER SWITCH (ATS)	PANEL PP			
H104	SEE SLD	PANEL PP	75 kVA XFMR			
H105	SEE SLD	75 kVA XFMR	PANEL LP1A - SEE LP SCHEDULE			
H106	SEE SLD	PANEL PP	POSITIVE PRESSURE UNIT			
H107	SEE SLD	PANEL PP	EF-1 COMBINATION STARTER			
H108	3/4"C, 3#12, 1#12 GND	EF-1 COMBINATION STARTER WITH HOA CONTROL	EF-1 DISC ON ROOF			
H109	SEE SLD	PANEL PP	EF-2 COMBINATION STARTER			
H110	3/4"C, 3#12, 1#12 GND	EF-2 COMBINATION STARTER	EF-2 DISC ON ROOF			
H111	SEE SLD	PANEL PP	EF-3 COMBINATION STARTER			
H112	3/4"C, 3#12, 1#12 GND	EF-3 COMBINATION STARTER	EF-3 DISC ADJACENT TO FAN ON EXTERIOR WALL			
LP1A	1"C, 3#4, 1#10 GND	PANEL LP1A	GENERATOR AUXILIARY EQPT POWER PANEL			
C109	3/4"C, 4#14, 1#14 GND	EF-1 COMBINATION STARTER	THERMOSTAT - T1 ON WEST PUMP ROOM WALL			
C109A	3/4"C, 4#14, 1#14 GND	EF-1 COMBINATION STARTER	LOUVER 1 DAMPER ACTUATOR LA-1			
C109B	3/4"C, 4#14, 1#14 GND	EF-1 COMBINATION STARTER	LOUVER 3 DAMPER ACTUATOR LA-3			
C110	3/4"C, 4#14, 1#14 GND	EF-2 COMBINATION STARTER	THERMOSTAT - T2 ON EAST PUMP ROOM WALL			
C110A	3/4"C, 4#14, 1#14 GND	EF-2 COMBINATION STARTER	LOUVER 2 DAMPER ACTUATOR LA-2			
C110B	3/4"C, 4#14, 1#14 GND	EF-2 COMBINATION STARTER	LOUVER 4 DAMPER ACTUATOR LA-4			
LP1A	SEE PANEL LP SCHEDULE	PANEL LP1A	ROOF RECEPTACLE ADJ TO FANS			
LP1A	SEE PANEL LP SCHEDULE	PANEL LP1A	HYPOCHLORITE METERING PUMPS SKID LCP POWER			
S301	3/4"C, CAT-6	MCP-1	HYPOCHLORITE METERING PUMPS SKID LCP CONTROL & STATUS MONITORING			
C301	3/4" E.C.	MCP-1	HYPOCHLORITE METERING PUMPS SKID LCP SPARE			
S302	3/4"C, 4#14, 1#14 GND	EF-3 MOTOR STARTER RUNNING RELAY	HYPOCHLORITE EXHAUST FAN EF-3 RUNNING DOOR LIGHT			
S303	1"C, 2#16TSP	MCP-1	AIT-2051			
C111	3/4"C, 4#14, 1#14 GND	MCP-1	BERMAD CONTROL VALVE PSV-1001			
NA	1" E.C.	TANK 1011 JBOX -1	FUTURE GROUND STORAGE TANKS No. 3 & 4			
NA	3/4" E.C.	TANK 1011 JBOX -2	FUTURE GROUND STORAGE TANKS No. 3 & 4			
RIO-2	1"C FOC	MCP-1	GROUND STORAGE TANKS: RIO-2 PANEL			
KIO-Z						
	3/4"C, 2#16TSP	GROUND STORAGE TANKS: RIO-2 PANEL	PIT 1001 STORAGE TANK INLET PRESSURE			
S102	1"C, 2#16TSP	GROUND STORAGE TANKS: RIO-2 PANEL	1.5 MG GROUND STORAGE TANK No. 1 LIT-1011			
S104	3/4"C, 4#14, 1#14 GND	GROUND STORAGE TANKS: RIO-2 PANEL	1.5 MG GROUND STORAGE TANK No. 1 LSH-1011, LSLL-1011			
S106	3/4"C, 2#16TSP	MCP-1	PIT 2001 PUMPS SUCTION HEADER PRESSURE			
S107	3/4"C, 2#16TSP	RIO-3	PIT 2051 PUMPS DISCHARGE HEADER PRESSURE			
S108	3/4"C, 2#16TSP	RIO-3	FIT-2051 PUMPS DISCHARGE FLOW			
	, ,					
LP1A	SEE PANEL LP SCHEDULE	PANEL LP1A	ALTITUDE VALVE AREA RECEPTACLE			
LP1A	SEE PANEL LP SCHEDULE	PANEL LP1A	RE-FEED EXISTING VALVE LCP - SE SITE CORNER			
LP1A	SEE PANEL LP SCHEDULE	PANEL LP1A	IRRIGATION LCP			
FOC-1	2", FOC, SEE INSTRUMENT SPECS	MCP-1	FOC TO CLIENT CONNECTION POINT: PB-8			
C101	3/4"C, 4#14, 1#14 GND	MCP-1	PLANT SITE LIGHTING CONTROLLER			
C102	3/4"C, 6#14, 1#14 GND	MCP-1	GROUND STORAGE TANKS ALTITUDE VALVE PSV-1001			
C103	3/4"C, 5#14, 2 #16 TSP	MCP-1	HUMIDITY & TEMPERATURE MONITOR			
C104	3/4"C, CAT-5	MCP-1	FIRE ALARM LCP			
C105	3/4"C, CAT-5	MCP-1	SECURITY SYSTEM			

ID	CONDUIT/WIRE	FROM	TO
FOC-1	2", FOC, SEE INSTRUMENT SPECS FOR FIBER OPTIC CABLES	MCP-1	COMMUNICATION PULL BOX: CPB-1
.CP-1/RIO-1	1" C, CAT-6	MCP-1	HYPOCHLORITE LOCAL CONTROL PANEL
RIO-2	1" C, FOC	MCP-1	GROUND STORAGE TANKS: RIO-2 PANEL
RIO-3	1" C, FOC	MCP-1	DISCHARGE FLOW AND PRESSURE: RIO-3 PANEL
RIO-4	1" C, FOC	MCP-1	GENERATOR DISTRIBUTED I/O: RIO-1 PANEL
AC-xx	SEE ACCESS CONTROL SCHEDULE	ES AND RISERS ON DRAWING E-11	
SLC-1	3/4" C	SITE LIGHTING CONTROLLER	SITE LIGHTING CIRCUITS - SEE DWG E-11
SLC-2	3/4" C	SITE LIGHTING CONTROLLER	SITE LIGHTING CIRCUITS - SEE DWG E-11
SLC-3	3/4" C	SITE LIGHTING CONTROLLER	SITE LIGHTING CIRCUITS - SEE DWG E-11
*H211	2"C, 3#3, 1#8 GND	PANEL PP	VFD-2011
H211A	2"C, VFD CABLE SEE SPECS	VFD-2011	PUMP - BP-2011
C211A	3/4"C, 2#14, 1#14 GND	MCP-1	ZSO-2011
C211B	3/4" E.C.	MCP-1	SPARE
C211C	3/4"C, 6#14, 2#12, 1#12 GND	VFD-2011	TSH-2011, SH-2011, E-STOP-2011
C211D	3/4" E.C.	VFD-2011	SPARE
*PRO211	3/4"C, 1 CAT-6 CABLE	MCP PROFINET	VFD-2011
*H221	2"C, 3#3, 1#8 GND	PANEL PP	VFD-2021
H221A	2"C, VFD CABLE SEE SPECS	VFD-2021	PUMP - BP-2021
C221A	3/4"C, 2#14, 1#14 GND	MCP-1	ZSO-2021
C221B	3/4" E.C.	MCP-1	SPARE
C221C	3/4"C, 6#14, 2#12, 1#12 GND	VFD-2021	TSH-2021, SH-2021, E-STOP-2021
C221D	3/4" E.C.	VFD-2021	SPARE
*PRO221	3/4"C, 1 CAT-6 CABLE	MCP PROFINET	VFD-2021
*H231	2" E.C. W/PULL STRING	PANEL PP	FUTURE VFD-2031
H231A	2" E.C. W/PULL STRING	FUTURE VFD-2031	FUTURE PUMP - BP-2031
C231A	3/4" E.C. W/PULL STRING	MCP-1	FUTURE ZSO-2031
C231B	3/4" E.C. W/PULL STRING	MCP-1	SPARE
C231C	3/4" E.C. W/PULL STRING	FUTURE VFD-2031	FUTURE TSH-2031, SH-2031, E-STOP-2031
C231D	3/4" E.C. W/PULL STRING	FUTURE VFD-2031	SPARE
*PRO231	3/4" E.C. W/PULL STRING	MCP PROFINET	FUTURE VFD-2031
*H241	2" E.C. W/PULL STRING	PANEL PP	FUTURE VFD-2041
H241A	2" E.C. W/PULL STRING	FUTURE VFD-2041	FUTURE PUMP - BP-2041
C241A	3/4" E.C. W/PULL STRING	MCP-1	FUTURE ZSO-2041
C241B	3/4" E.C. W/PULL STRING	MCP-1	SPARE
C241C	3/4" E.C. W/PULL STRING	FUTURE VFD-2041	FUTURE TSH-2041, SH-2041, E-STOP-2041
C241D	3/4" E.C. W/PULL STRING	FUTURE VFD-2041	SPARE
*PRO241	3/4" E.C. W/PULL STRING	MCP PROFINET	FUTURE VFD-2041
C121	3/4", 3#14	MCP-1	TRENCH LSH-2005
C122	3/4", 3#14	MCP-1	EYEWASH SHOWER FSH-2005
*	CONDUIT NOT SHOWN		
-11		S SHALL BE INSTALLED WITH 200 LB PULL LI	NES.

WIRING TYPES									
ID	DESCRIPTION								
Uxxx	UTILITY WIRING								
Hxxx	480V WIRING								
LP1x	208Y/120V								
Cxxx	CONTROL								
Sxxx	SIGNAL								
COMxxx	COMMUNICATIONS								
PROxxx	PROFIBUS OR PROFINET								
ACxxx	ACCESS CONTROL								
VIDxxx	VIDEO CAMERAS								

				PROJECT A.	DIEFFENTHALLER
				DESIGNED BY:	J. BROAD
				DRAWN BY:	J. BROAD
3	BID SET	3/21	AD	CHECKED BY:	J. BURKE
2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1"
1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAW!	* ''= '
DEV	1001155 505	DATE	DV	NOT TO FULL SCALE	



RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



ELECTRICAL SCHEDULES SHEET I

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	E-08

		FIXTU	IRE SCHEDU	LE		
ID	DESCRIPTION	CONTROL	ORIENTATION	VOLTAGE	INST HARDWARE	MFG
A 48" LED 47.3W FIXTURE WITH WATER TIGHT FIBERGLASS ENCLOSURE		WALL SWITCHES	WALL OR CEILING	120V	SURFACE MOUNITING BRACKETS AND ANCHORS SHALL BE STAINLESS STEEL	HUBBELL LIGHTING, LXEM SERIES, MODEL LXEM4-40HL-RFA-EU
B OUTDOOR WALLPACK BUILDING PERIMETER TYPE 3 DISTRIBUTION, LED 42W FIXTURES,		LIGHTING CONTROLLER	WALL MIN 9'-0" AFG 120V		BRACKETS AND ANCHORS SHALL BE STAINLESS STEEL	HUBBELL LNC2 18LU 4K 3
С	BATTERY/AC POWERED LED 6W COMBINATION EMERGENCY LIGHT AND EXIT LIGHT	HOT SIDE OF ASSOCIATED LIGHTING CIRCUIT	WALL OR CEILING	120V	BRACKETS AND ANCHORS SHALL BE STAINLESS STEEL	DUAL LIGHT SERIES, MODEL EVC U R W
D	BATTERY/AC POWERED LED 12W EMERGENCY LIGHT	HOT SIDE OF ASSOCIATED LIGHTING CIRCUIT	WALL OR CEILING	120V	BRACKETS AND ANCHORS SHALL BE STAINLESS STEEL	DUAL LIGHT SERIES, MODEL EVHC 12
Е	OUTDOOR WALL MOUNT SECURITY 16.6W LED FIXTURE	LIGHTING CONTROLLER	WALL MIN 9'-0" AFG	120V	BRACKETS AND ANCHORS SHALL BE STAINLESS STEEL	HUBBELL LIGHTING, NRG 300 SERIES, MODEL 356L-4K-U-PC
F	EXTERIOR POLE MOUNTED SITE LED FIXTURE COLOR TEMP, 4000K, 70CRI, IESNA TYPE III DISTRIBUTION, BRONZE DIE CAST HOUSING. WET LOCATION. 5 YEAR WARRANTY, MINIMUM.	LIGHTING CONTROLLER WITH ADDITIONAL LOCAL ON/OFF SWITCH ON POLE	12' ROUND ALUMINUM POLE SHALL INCLUDE LIGHT ON/OFF LOCAL SWITCH FLUSH MOUNTED ON POLE	120V	INSTALLATION HARDWARE AND ANCHORS SHALL BE STAINLESS STEEL	JEA STREET LIGHT STANDARDS, HUBBELL: VIPER S VPS 60L-136 4K7 3
	ALL SCHEDULED FIXTURES INCLUDE "OR JEA API	PROVED EQUAL" AS LISTED IN	THEIR CURRENT "FACILI"	<del>'</del> ΓΙΕS STANDAR	DS MANUAL " LATEST EDITION	

	PANEL - LP1A				Р	ANE	L LP1	A S	CHE	DULI	Ε				225A, 3P, MAIN BREAKER	
	208Y/120V														SURFACE MOUNT	
	225A, 3PH, 4W, 10kAIC														INCLUDE FEED THRU LU	JGS
			VA LOAD	)		(	C.B.		C.	В.			VA LOAD	)		
NO.	USE	А	В	С	WIRE	TRIP	POLE		POLE	TRIP	WIRE	А	В	С	USE	N
1	ELECTRIC ROOM LIGHTING & LC	400			2#12, 1#12G, 3/4C	20	1		1	20	2#12, 1#12G, 3/4C	360			MCP-1	
3	PUMP ROOM LIGHTING		800		2#12, 1#12G, 3/4C	20	1		1	20	2#12, 1#12G, 3/4C		360		SECURITY ACCESS CONTROL LCP	
5	PUMP ROOM LIGHTING			800	2#12, 1#12G, 3/4C	20	1		1	20	2#12, 1#12G, 3/4C			360	SECURITY VIDEO EQPT RACK	
7	OUTSIDE WALLPACKS (LC)	540			2#12, 1#12G, 3/4C	20	1			2 60	040 44400 440	2600			GENERATOR AUXILIARY EQUIPMENT LOAD CENTER	
9	SITE POLE LIGHTING (LC)		720		2#12, 1#12G, 3/4C	20	1		2		2#6, 1#10G, 1"C		2600		PROVIDED AND INSTALLED BY GEN VENDOR PACKAGE	,
11	SITE POLE LIGHTING (LC)			720	2#12, 1#12G, 3/4C	20	1		1	20				360	SPARE	1
13	PUMP ROOM RECEPTACLES	720			2#12, 1#12G, 3/4C	20	1		1	20	2#12, 1#12G, 3/4C	360			ROOF GFCI FULL TIME WP RECEPTACLE ADJACENT TO FANS	
15	PUMP ROOM RECEPTACLES		540		2#12, 1#12G, 3/4C	20	1			00	3#10, 1#10G, 3/4C		720		HYPOCHLORITE METERING	
17	ELECTRIC ROOM RECEPTACLES			360	2#12, 1#12G, 3/4C	20	1		2	20	3#10, 1#10G, 3/4C			720	PUMPS SKID LCP	
19	EMERGENCY / EXIT LIGHTING	540			2#12, 1#12G, 3/4C	20	1		1	20		720			RESERVED SPACE	:
21	AC-1		5000		0//4 4//400 40	2#4 1#10G 1C 60	60 3		1	20	2#8, 1#10G, 1C		360		EXISTING RTU AND CONTROL VALVE STA	
23				5000	2#4, 1#10G, 1C	60	2		1	20	2#10, 1#10G, 3/4C			360	ALTITUDE VALVE RECP	
25	100114	2800			0110 411400 0140	50			1	20	2#12, 1#12G, 3/4C	750			EXISTING CONTROL VALVE STA	
27	ACCU-1		2800		2#8, 1#10G, 3/4C	50	2		1	20	2#12, 1#12G, 3/4C		360		FLOW METER: FIT-2051	
29	AC-2			-	2#4, 1#10G, 1C	60	2		1	20	2#12, 1#12G, 3/4C			360	FACP	
31	BACKUP UNIT	-			2#4, 1#100, 10	00	2		1	20	2#12, 1#12G, 3/4C	360			IRRIGATION SYSTEM LCP	
33	ACCU-2		-		2#8, 1#10G, 3/4C	50	2		1	20	2#12, 1#12G, 3/4C		360		RIO-1	
35	BACKUP UNIT			-	2110, 111100, 0140				1	20	2#12, 1#12G, 3/4C			360	RIO-2	
37	SPARE	360				20	1		1	20	2#12, 1#12G, 3/4C	360			RIO-3	
39	SPARE		360			20	1		1	20	2#12, 1#12G, 3/4C		360		AIT-2051	
41	SPARE			360		20	1		1	20	2#12, 1#12G, 3/4C			360	EYEWASH/SHOWER	
		5360	10220	7240								5510	5120	2880		
											VA SUB-TOTALS	10870	15340	10120		
											TOTAL kVA		36.330			

WIRING TYPES							
ID	DESCRIPTION						
Uxxx	UTILITY WIRING						
Hxxx	480V WIRING						
Lxxx	208Y/120V						
Cxxx	CONTROL						
Sxxx	SIGNAL						
COMxxx	COMMUNICATIONS						
PROxxx	PROFIBUS OR PROFINET						
ACxxx	ACCESS CONTROL						
VIDxxx	VIDEO CAMERAS						

				PROJECT ENGINEER: A.	. DIEFFENTHALLER	
				DESIGNED BY:	J. BROAD	
				DRAWN BY:	J. BROAD	
3	BID SET	3/21	AD	CHECKED BY:	J. BURKE	
2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1"	
1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWI		
RFV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE		

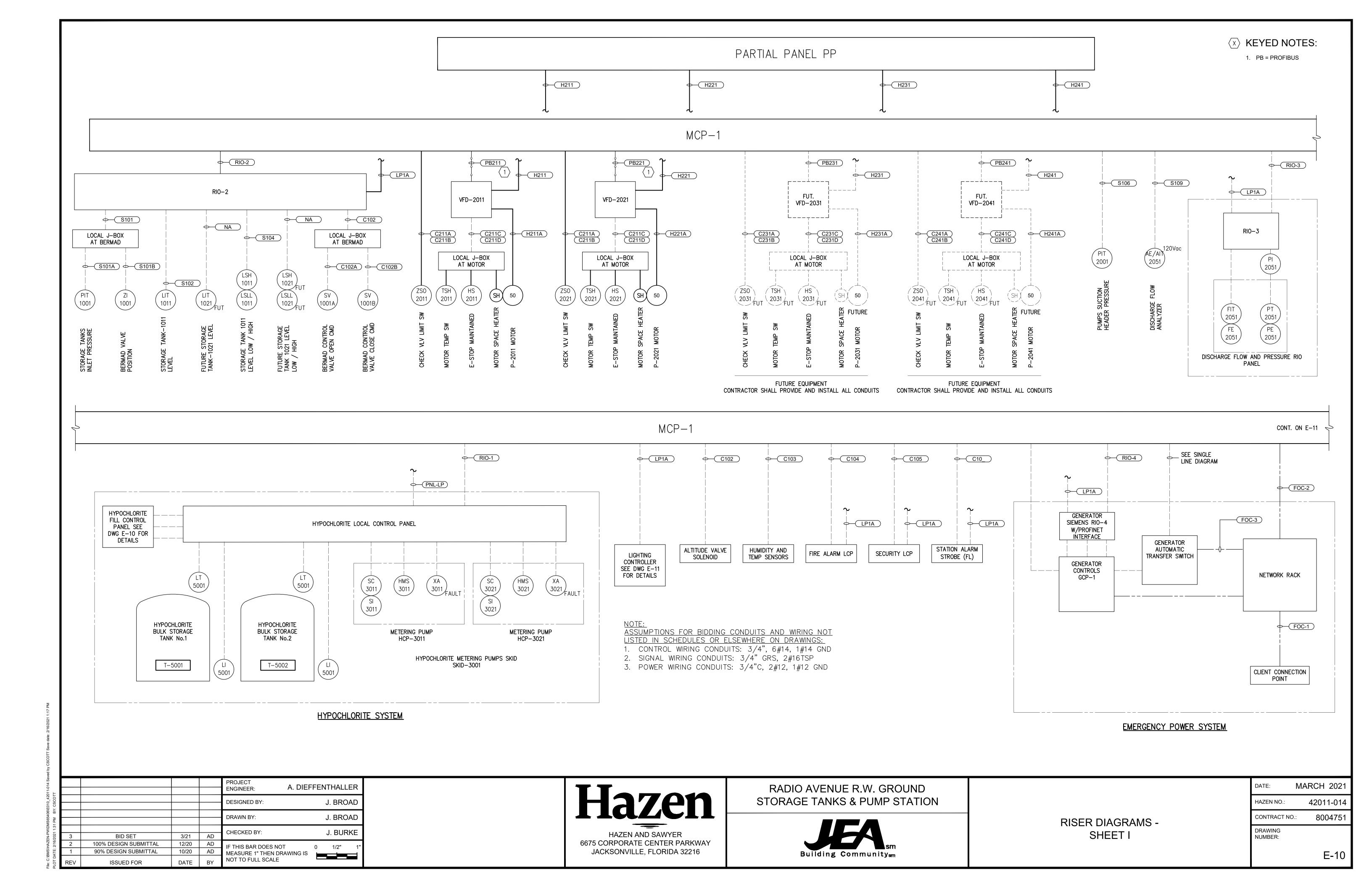
HAZEN AND SAWYER
6675 CORPORATE CENTER PARKWAY
JACKSONVILLE, FLORIDA 32216

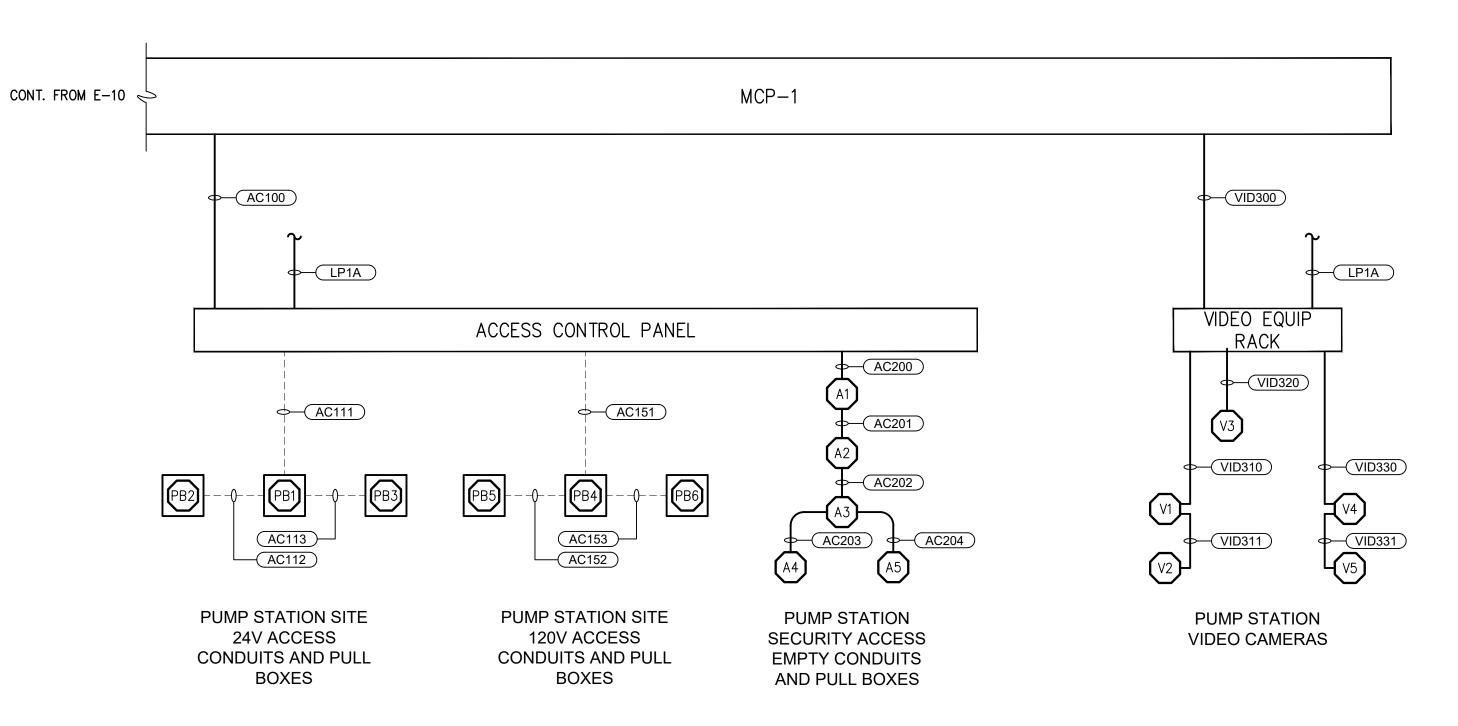
RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



ELECTRICAL SCHEDULES SHEET II

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	E-09



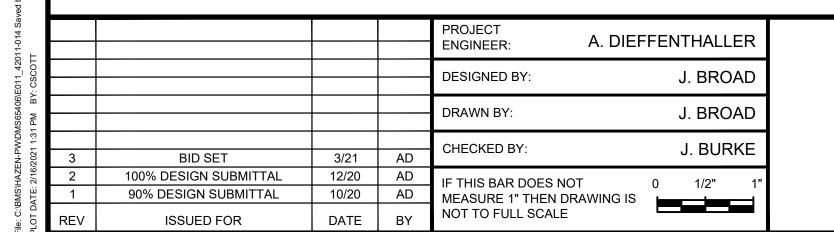


## SITE AND PUMP STATION SECURITY CONDUIT RISER

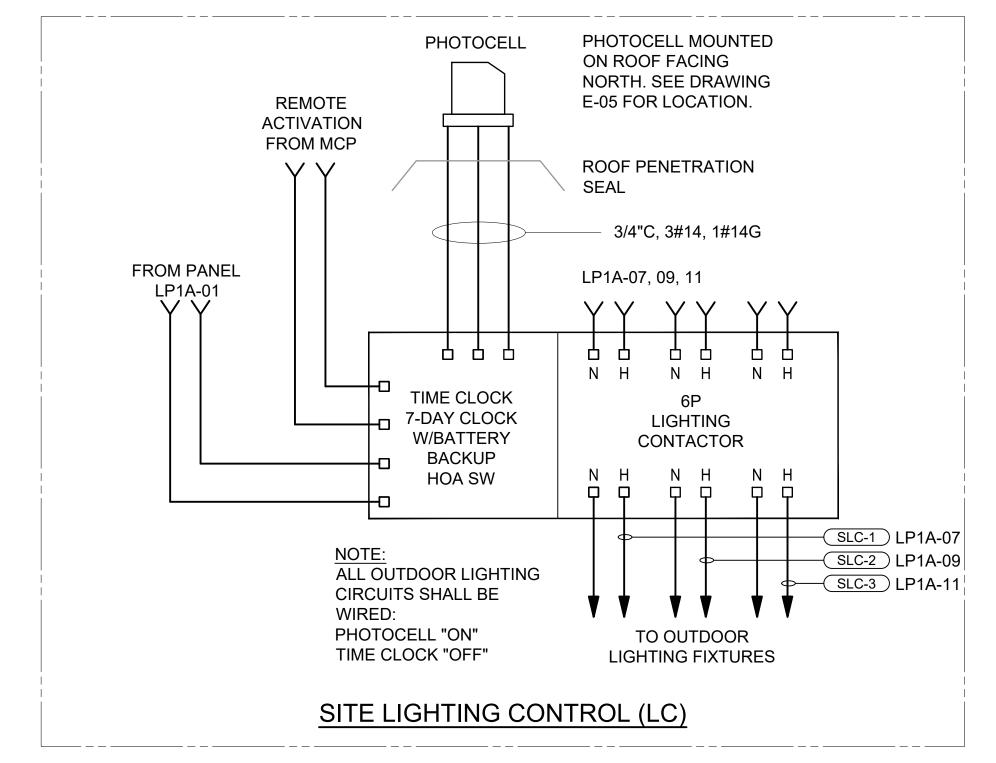
NOTF:

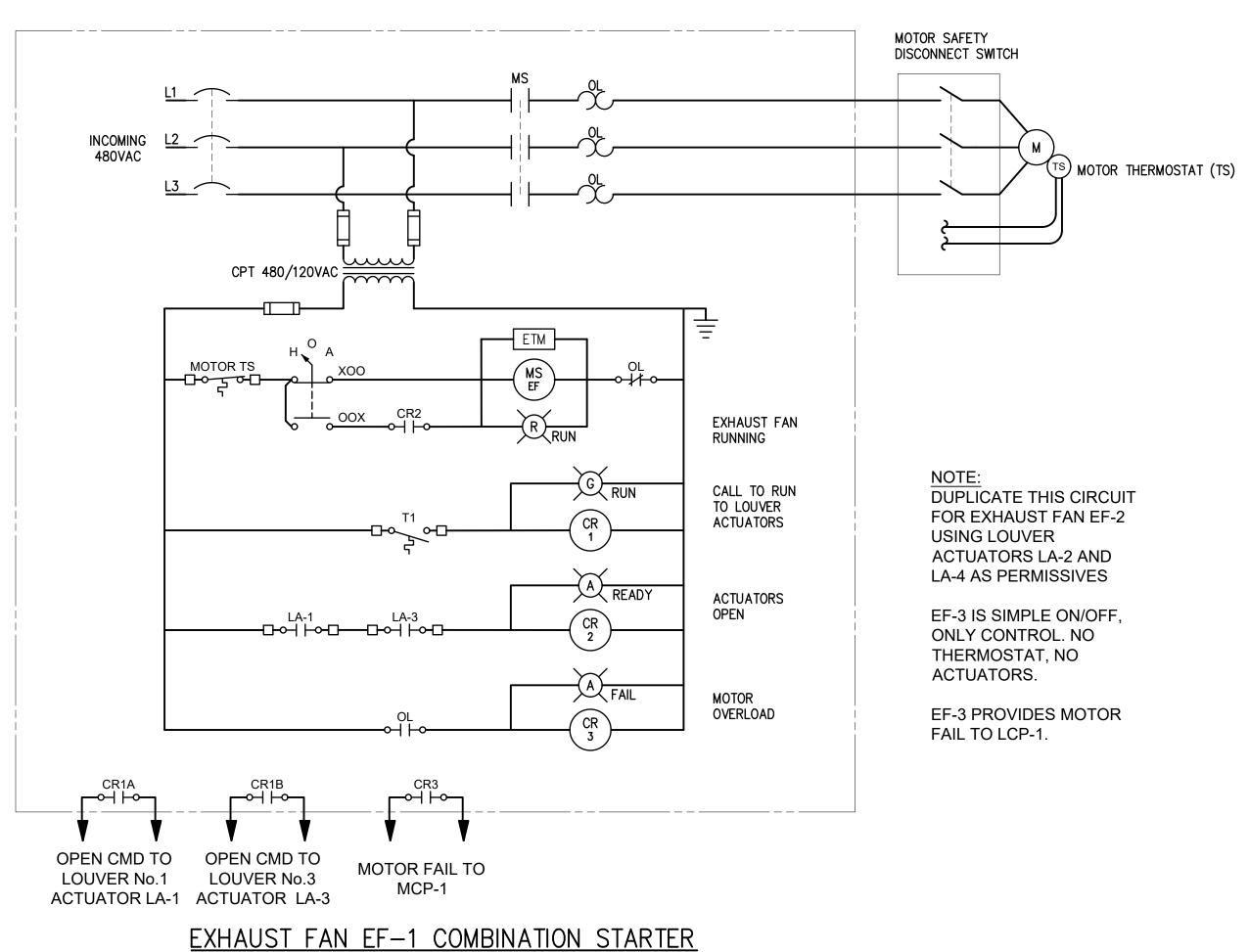
DEVICE LOCATIONS ARE INDICATED ON DRAWING E-05
DEVICE AND WIRING BY JEA; RACEWAY SYSTEM BY CONTRACTOR

CONDUIT & WIRING SCHEDULE								
ID	CONDUIT/WIRE	FROM	ТО					
AC 100	1" E. PVC. W/PULL STRING	ACCESS CONTROL PANEL	MCP-1					
AC 110	2" E. PVC. W/PULL STRING	ACCESS CONTROL PANEL	GATE ACCESS AREA PULL BOX PB1 (24V)					
AC 111	2" E. PVC. W/PULL STRING	GATE ACCESS AREA PULL BOX PB1 (24V)	GATE ACCESS AREA PULL BOX PB2 (24V)					
AC 112	2" E. PVC. W/PULL STRING	GATE ACCESS AREA PULL BOX PB1 (24V)	GATE ACCESS AREA PULL BOX PB3 (24V)					
AC 150	2" E. PVC. W/PULL STRING	ACCESS CONTROL PANEL	GATE ACCESS AREA PULL BOX PB4 (120V)					
AC 151	2" E. PVC. W/PULL STRING	GATE ACCESS AREA PULL BOX PB4 (120V)	GATE ACCESS AREA PULL BOX PB5 (120V)					
AC 152	2" E. PVC. W/PULL STRING	GATE ACCESS AREA PULL BOX PB4 (120V)	GATE ACCESS AREA PULL BOX PB6 (120V)					
AC 200	1" E. PVC. W/PULL STRING	ACCESS CONTROL PANEL	PUMP STATION ACCESS CONTROL JUNCTION BOX A1					
AC 201	1" E. PVC. W/PULL STRING	PUMP STATION ACCESS CONTROL JUNCTION BOX A1	PUMP STATION ACCESS CONTROL JUNCTION BOX A2					
AC 202	1" E. PVC. W/PULL STRING	PUMP STATION ACCESS CONTROL JUNCTION BOX A2	PUMP STATION ACCESS CONTROL JUNCTION BOX A3					
AC 203	1" E. PVC. W/PULL STRING	PUMP STATION ACCESS CONTROL JUNCTION BOX A3	PUMP STATION ACCESS CONTROL JUNCTION BOX A4					
AC 204	1" E. PVC. W/PULL STRING	PUMP STATION ACCESS CONTROL JUNCTION BOX A3	PUMP STATION ACCESS CONTROL JUNCTION BOX A5					
VID 300	1" E. PVC. W/PULL STRING	VIDEO EQUIPMENT RACK	MCP-1					
VID 310	1" E. PVC. W/PULL STRING	VIDEO EQUIPMENT RACK	PUMP STATION VIDEO JUNCTION BOX V1					
VID 311	1" E. PVC. W/PULL STRING	PUMP STATION VIDEO JUNCTION BOX V1	PUMP STATION VIDEO JUNCTION BOX V2					
VID 320	1" E. PVC. W/PULL STRING	VIDEO EQUIPMENT RACK	PUMP STATION VIDEO JUNCTION BOX V3					
VID 330	1" E. PVC. W/PULL STRING	VIDEO EQUIPMENT RACK	PUMP STATION VIDEO JUNCTION BOX V4					
VID 331	1" E. PVC. W/PULL STRING	PUMP STATION VIDEO JUNCTION BOX V4	PUMP STATION VIDEO JUNCTION BOX V5					









RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



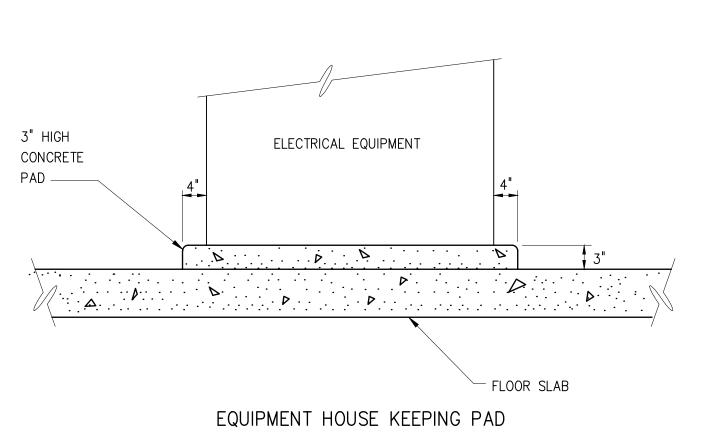
RISER DIAGRAMS -SHEET II DATE: MARCH 2021

HAZEN NO.: 42011-014

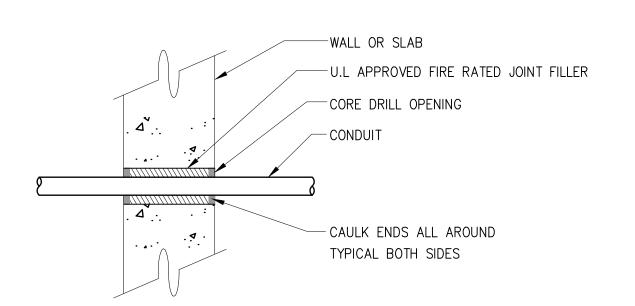
CONTRACT NO.: 8004751

DRAWING NUMBER:

E-11

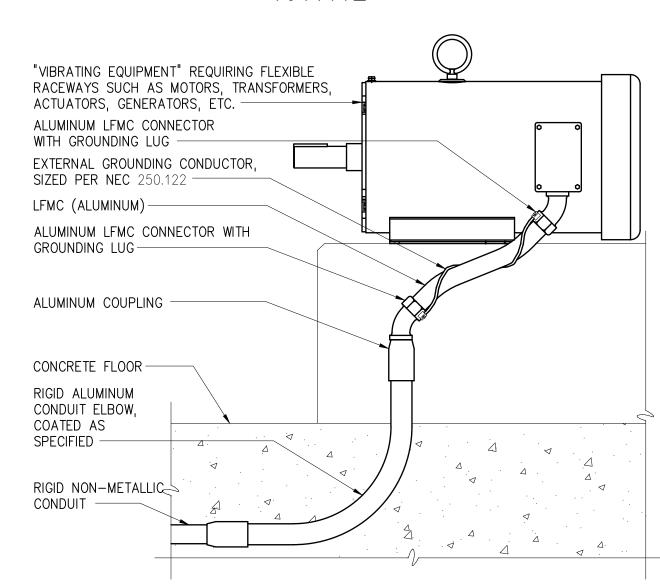


1600010



CONDUIT PENETRATION AT WALL OR SLAB

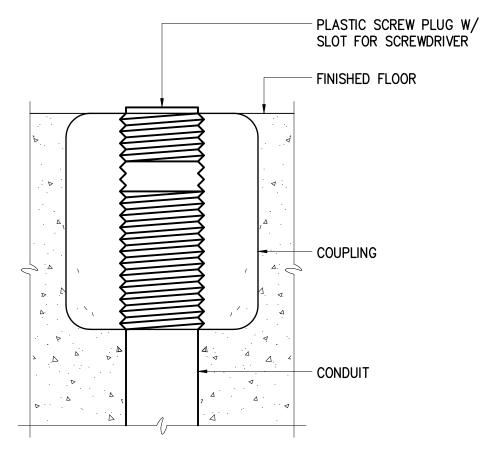
1611112



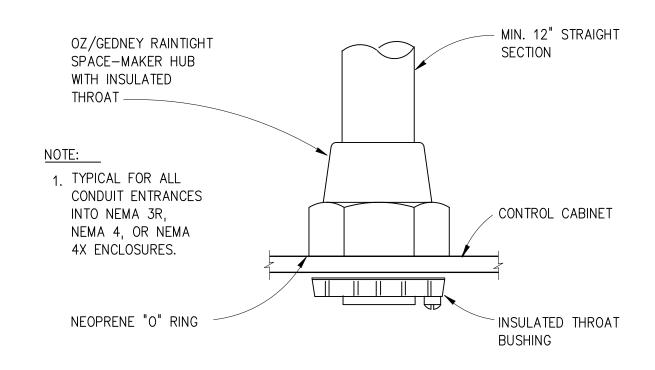
WHERE NON-METALLIC CONDUIT TRANSITIONS TO RIGID METALLIC CONDUIT AND / OR LIQUIDTIGHT METALLIC CONDUIT, (LFMC), TO FEED VIBRATING TYPE LOADS, THE CONTRACTOR SHALL FURNISH AND INSTALL AN EXTERNAL BARE COPPER GROUNDING CONDUCTOR AND APPROVED GROUNDING LFMC CONNECTORS TO ENSURE GROUND CONTINUITY TO THE RIGID METALLIC CONDUIT AS SHOWN. THE GROUNDING CONDUCTOR SHALL BE SIZED ACCORDING TO NEC 250.122 AND BE NEATLY WRAPPED AROUND LFMC AS SHOWN. LFMC INSTALLED IN THIS MANNER CANNOT BE USED FOR A CONTINUOUS GROUND PATH PER NEC 350.60.

LFMC CONDUIT GROUND STRAP DETAIL

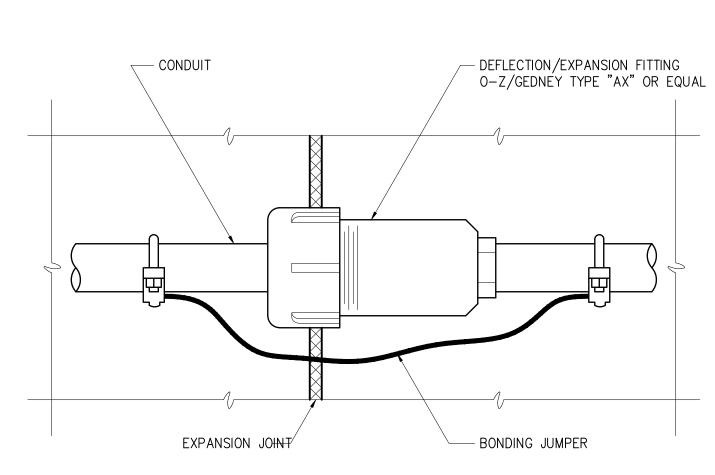
1611106



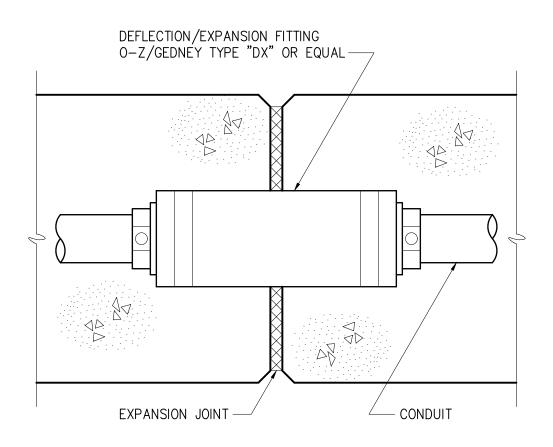
CONDUIT, FLOOR STUB-UP 1611101



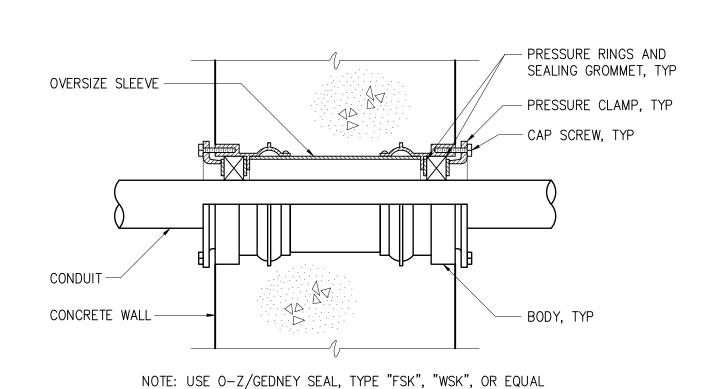
CONDUIT HUB 1611110



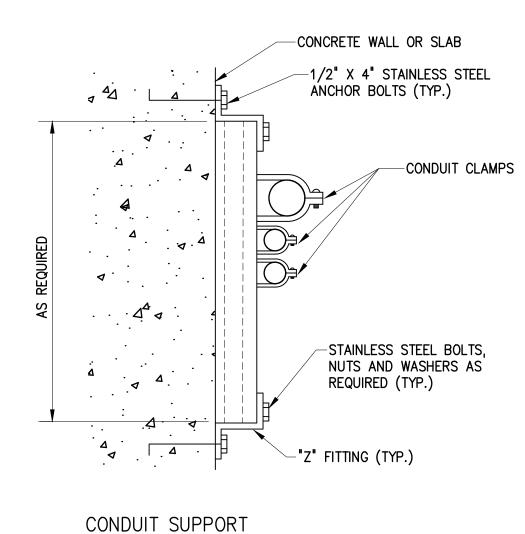
CONDUIT DEFLECTION/EXPANSION FITTING FOR EXPOSÉD CONDUIT 1611105



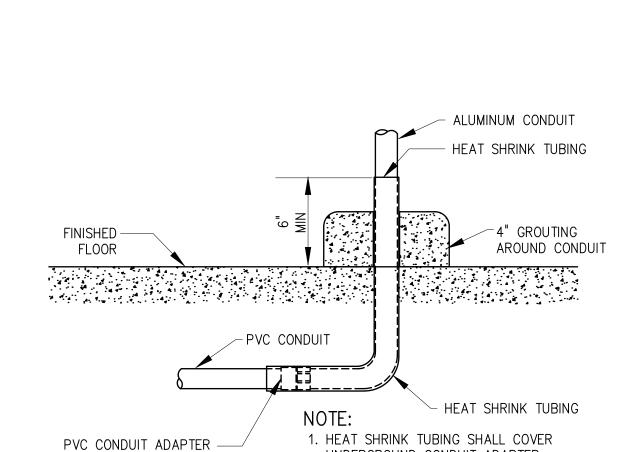
CONDUIT DEFLECTION/EXPANSION FITTING FOR EMBEDDED CONDUIT 1611104



CONDUIT THROUGH WALL SEAL 1611102



1611114



TRAPEZE ASSEMBLY

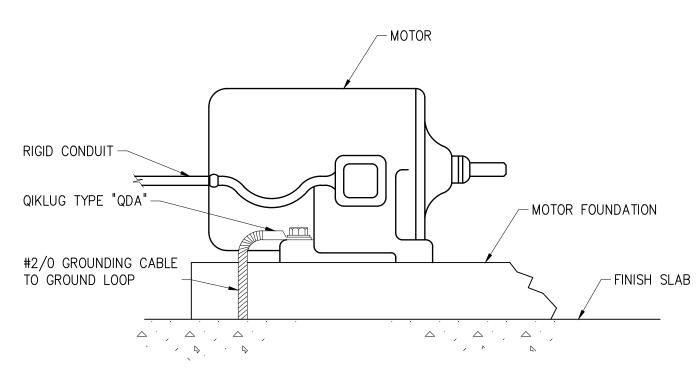
1611107

THREADED ROD SUPPORT

FROM BUILDING STRUCTURE.

CONDUIT FLOOR ENTRANCE GROUT DETAIL 1611113

UNDERGROUND CONDUIT ADAPTER



NOTE:

—1 1/2" X 1 1/2"

— CONDUIT CLAMP

CONDUIT PIPE STRAP MOUNTING DETAILS

GALV. STEEL CHANNEL

THIS GROUND IS IN ADDITION TO THE GROUND FROM THE MAIN ELECTRICAL SERVICE.

## MOTORS AND EQUIPMENT GROUNDING

DETAIL	1
NTS	E-05

⊥					PROJECT A. DIEFFENTHALLER	Ī
2021 1:32 PM BY: CSCOTT					DESIGNED BY: J. BURKE	]
					DRAWN BY: J. WILHOIT	
	3	BID SET	3/21	AD	CHECKED BY: J. RATASKY	
2/16/2021	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT 0 1/2" 1"	1
PLOT DATE: 3	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING IS	
	REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE	

Hazen HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY JACKSONVILLE, FLORIDA 32216

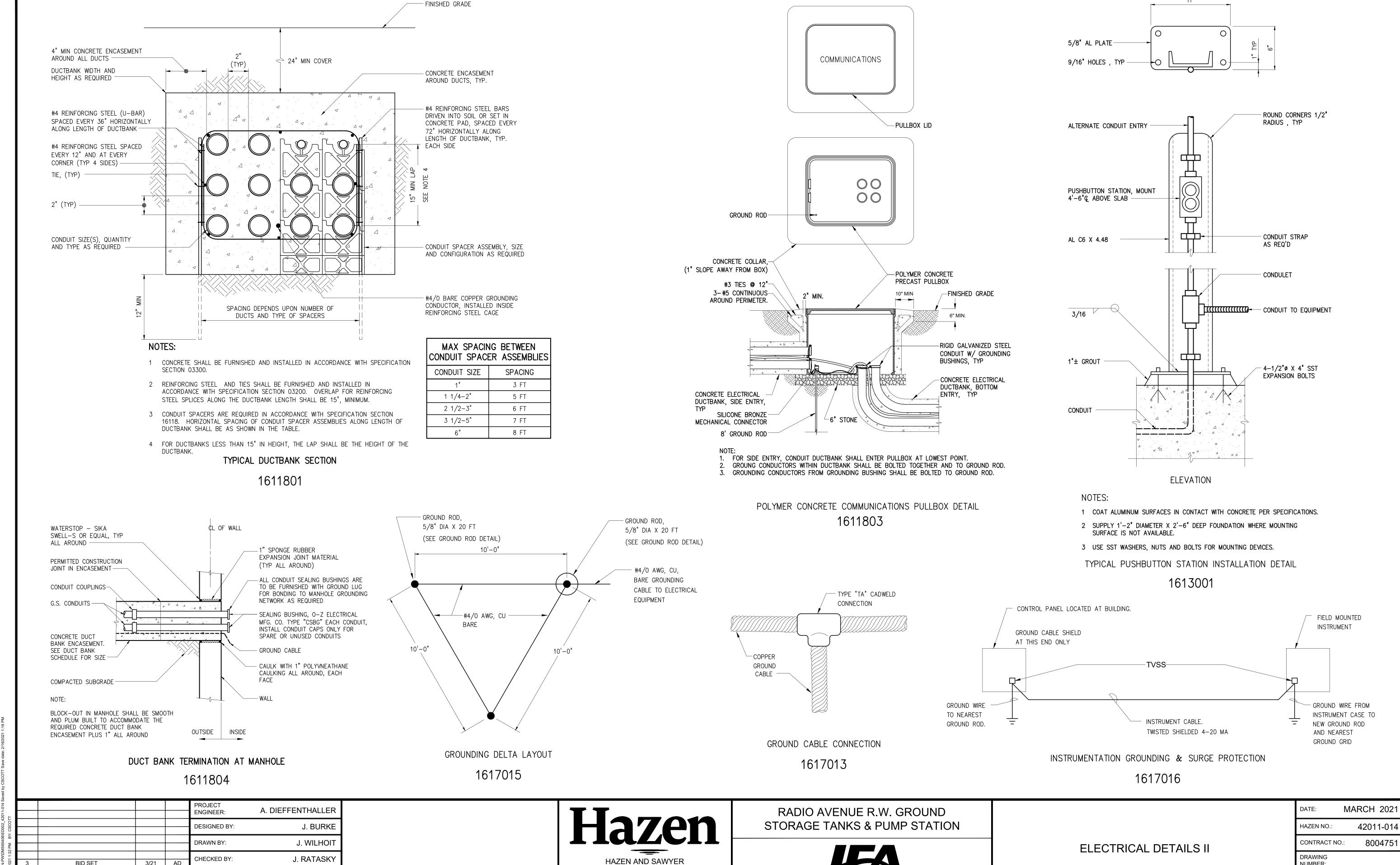
RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



**ELECTRICAL DETAILS I** 

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	ED 01

ED-01



6675 CORPORATE CENTER PARKWAY

JACKSONVILLE, FLORIDA 32216

Building Communitysm

NUMBER:

ED-02

BID SET

100% DESIGN SUBMITTAL

90% DESIGN SUBMITTAL

ISSUED FOR

3/21

DATE

12/20 AD

10/20 AD

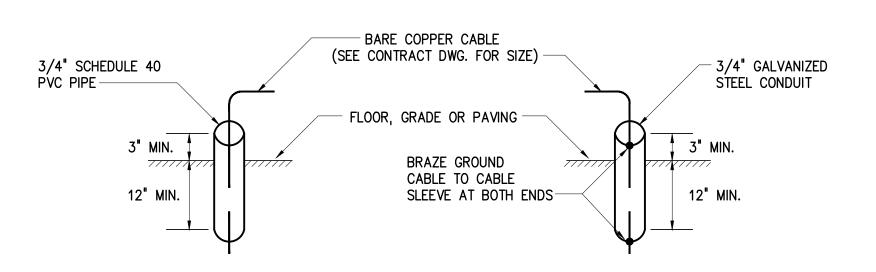
AD

IF THIS BAR DOES NOT

NOT TO FULL SCALE

MEASURE 1" THEN DRAWING IS

0 1/2"

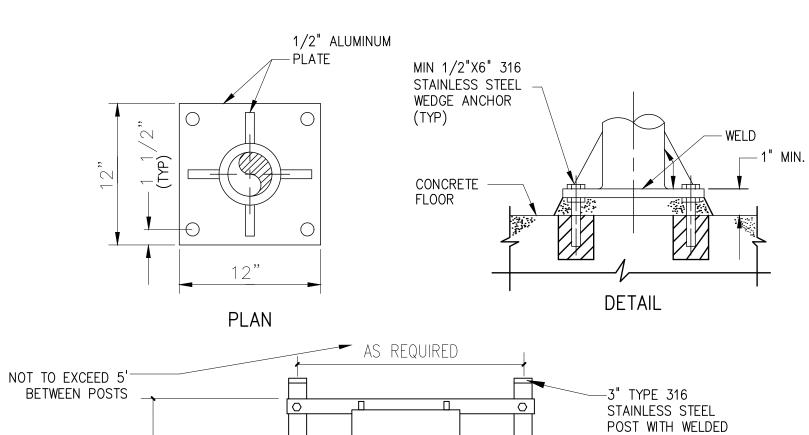


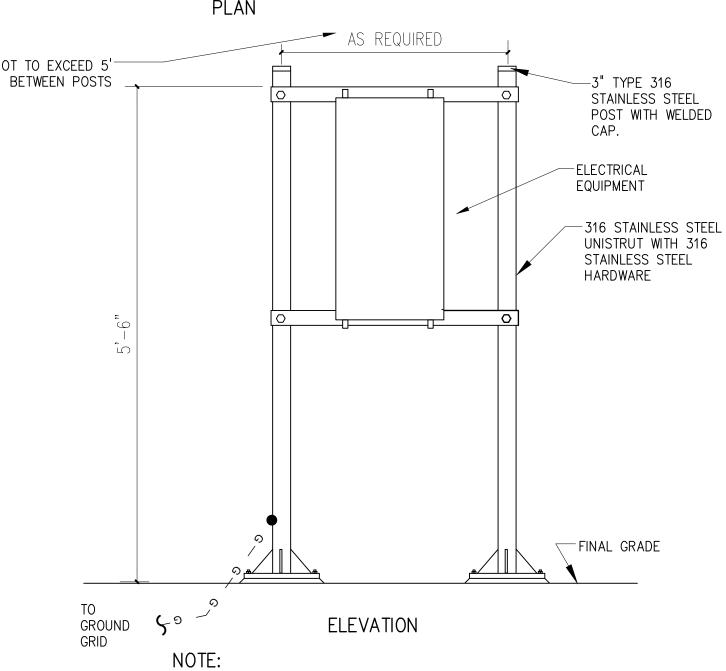
PREFERRED SLEEVE INSTALLATION

ALTERNATIVE SLEEVE INSTALLATION

GROUND CABLE SLEEVE INSTALLATION

1617001

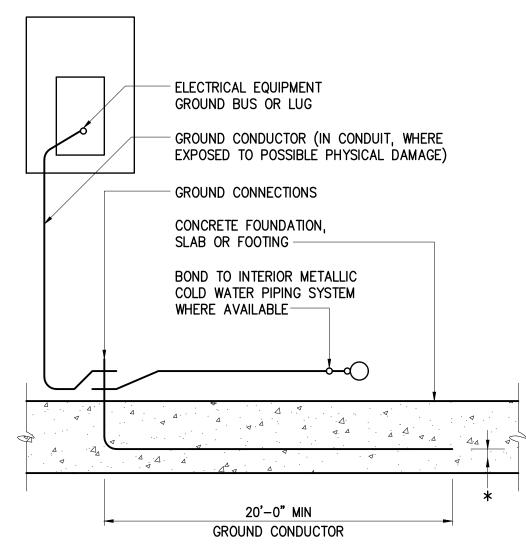




ADJUST THE NUMBER OF SUPPORT POSTS TO ACCOMMODATE THE EQUIPMENT TO BE INSTALLED.

TYPICAL EQUIPMENT RACK ON GRADE

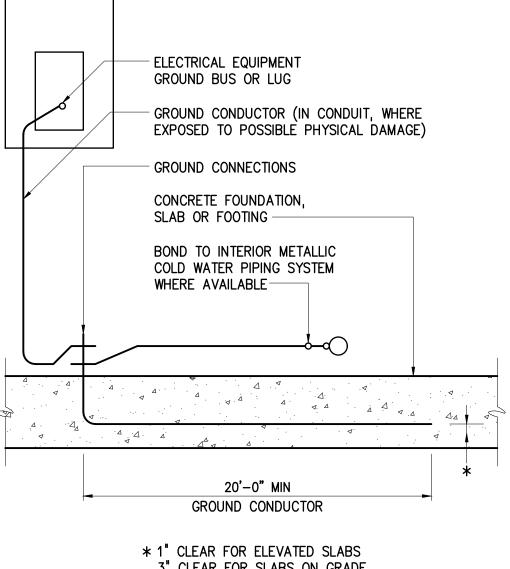
1613010

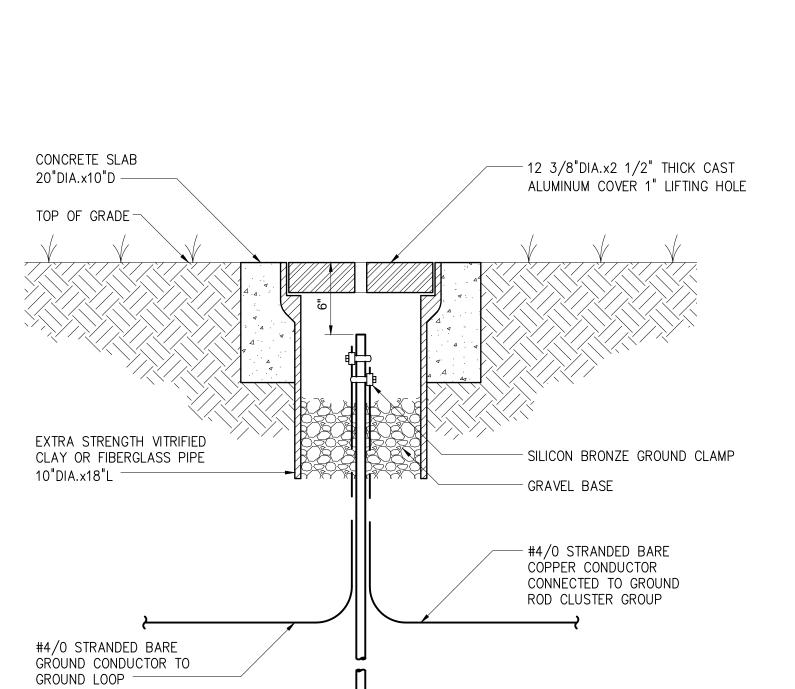


3" CLEAR FOR SLABS ON GRADE OR FOOTING

CONCRETE ENCASED GROUND

1617004





NOTES:

1 REFER TO JOB SPECIFICATION FOR MINIMUM SYSTEM RESISTANCE TO GROUND. IF THIS RESISTANCE CANNOT BE MET WITH SINGLE 10'-0" RODS, ADD ADDITIONAL SECTIONS TO RODS OR ADD NEW RODS AS REQUIRED, SPACED 6'-0" TO 10'-0" FROM EXISTING RODS.

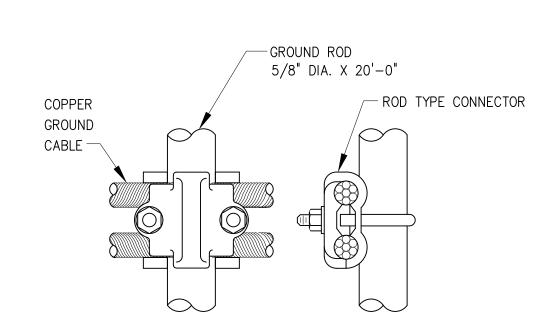
> ELECTRICAL INSTALLATION DETAIL GROUND ROD/GROUND LOOP TEST POINT 1617003

GROUND LUG, (STRAIGHT, 90 , 45 , OR A'S REQ'D'.) FINISH FLOOR -GROUND CONDUCTOR FITTING - GROUND CONDUCTOR

-GROUND WIRE TO EQUIPMENT

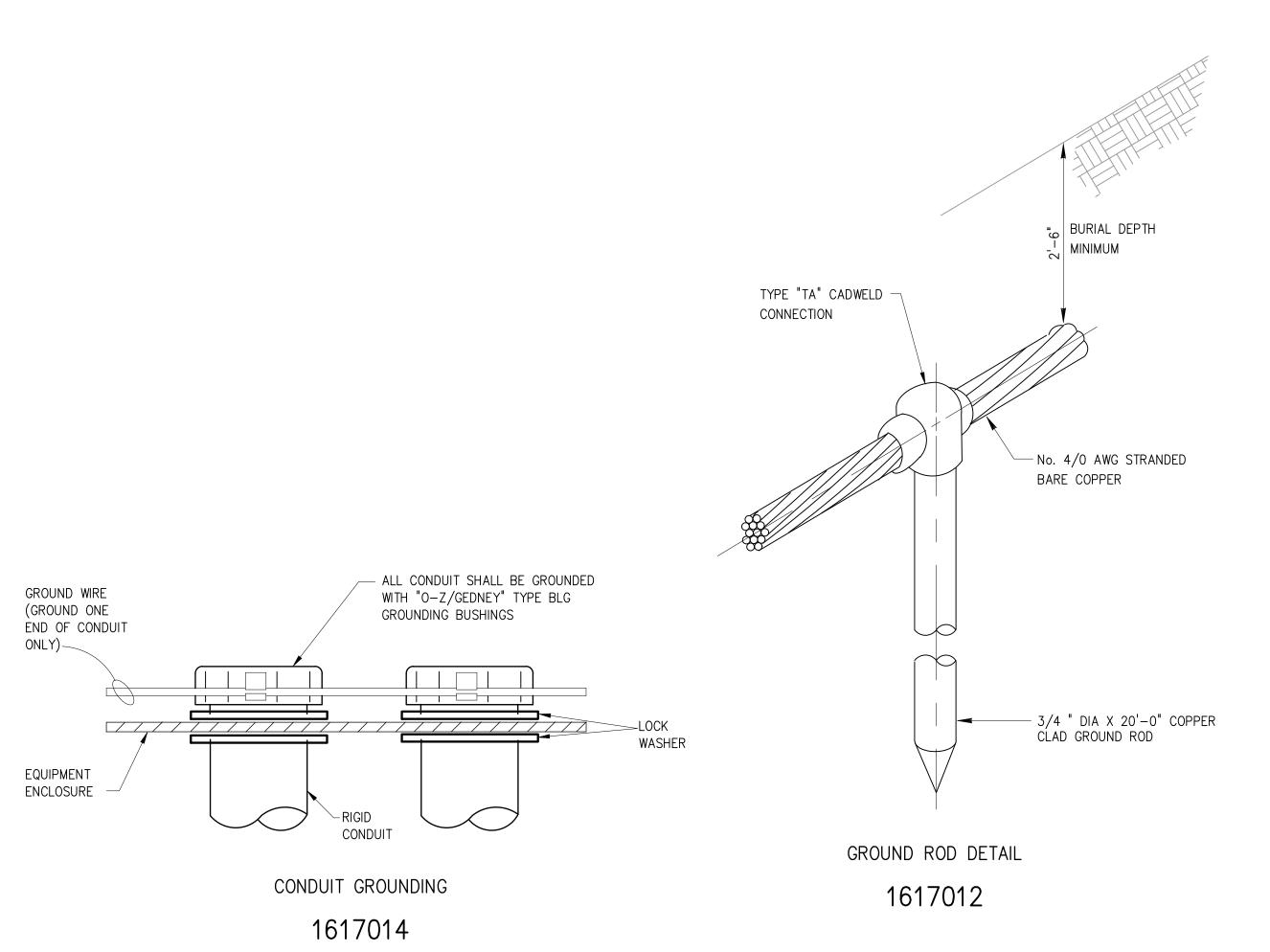
NOTE: BOLTS SHALL BE INSERTED IN BOLT HOLES BEFORE CONNECTOR IS EMBEDDED.

GROUNDING INSERT 1617010



CABLE TO ROD CONNECTION

1617011





RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



ELECTRICAL DETAILS III

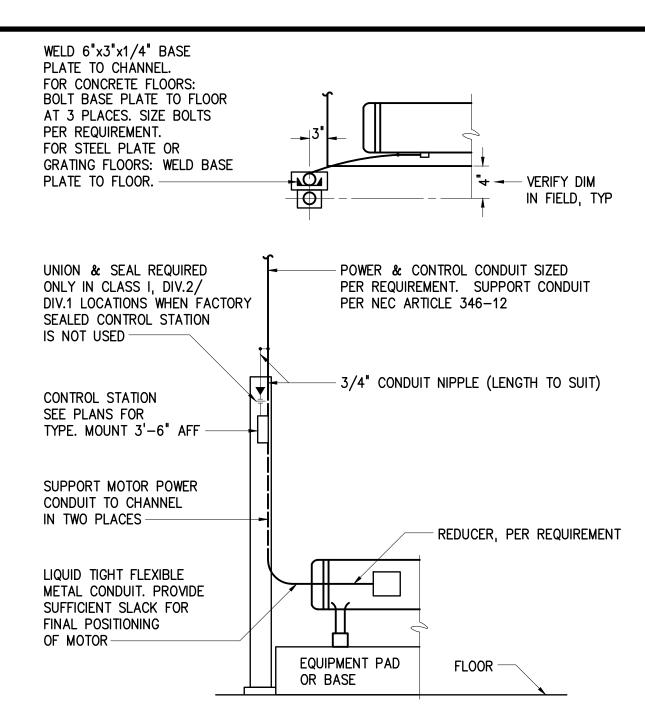
MARCH 2021 HAZEN NO.: 42011-014 CONTRACT NO.: 8004751 DRAWING NUMBER: ED-03

aved b							
42011-014 Saved b TT					PROJECT ENGINEER: A. [	DIEFFENTHALLER	T
					DESIGNED BY:	J. BURKE	
MS65406\E 2 PM BY:					DRAWN BY:	J. WILHOIT	
: C:\BMS\HAZEN-PWDMS65406\ED003_ )T DATE: 2/16/2021 1:32 PM BY: CSCC	3	BID SET	3/21	AD	CHECKED BY:	J. RATASKY	
HAZE 2/16	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1'	,,
:\BMS\F DATE:	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING		
9: C:\E	REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE		

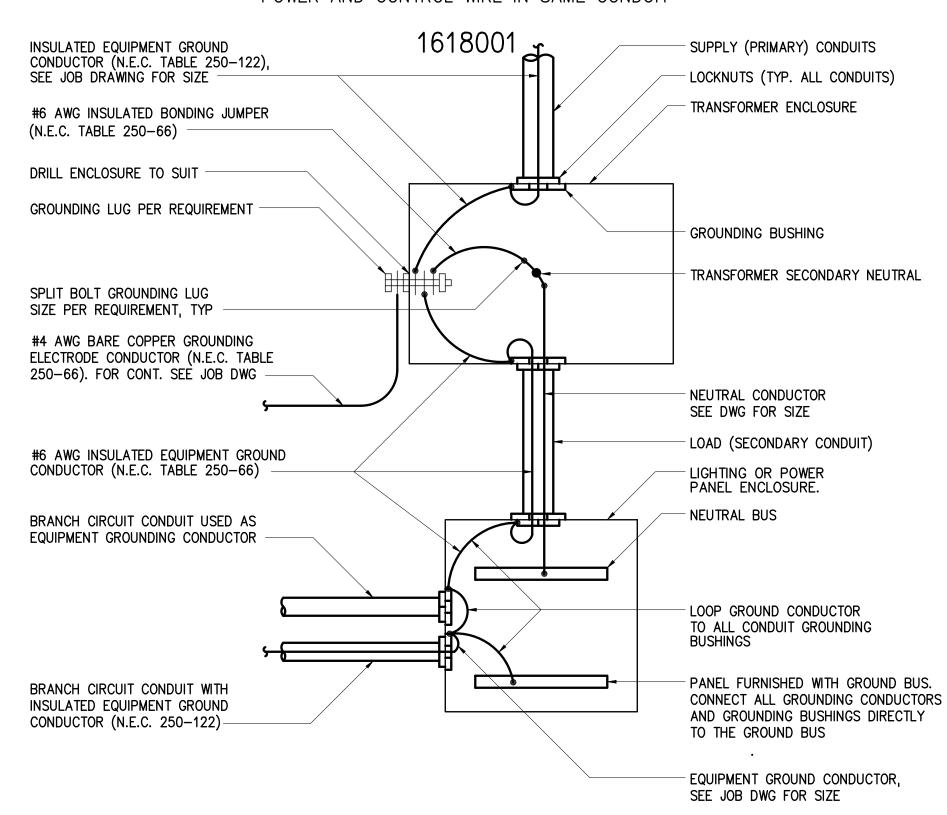
Hazen

JACKSONVILLE, FLORIDA 32216

- 3/4"x10'-0"L BONDED COPPER GROUND ROD



### MOTOR CONDUIT INSTALLATION DETAIL HAZARDOUS AND NONHAZARDOUS LOCATIONS POWER AND CONTROL WIRE IN SAME CONDUIT

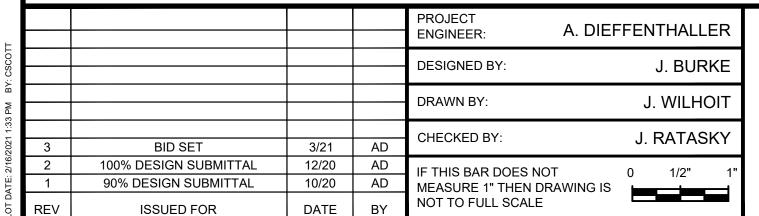


NOTES:

1 GROUNDING CONDUCTORS SHOWN ARE FOR TRANSFORMERS UP TO 45KVA. SEE ELECT. JOB DRAWINGS FOR LARGER TRANSFORMERS OR WHEN VOLTAGE DROP REQUIRES LARGER CONDUCTORS.

LOW VOLTAGE TRANSFORMER GROUNDING INSTALLATION DETAIL

# 1618003



Hazen HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY JACKSONVILLE, FLORIDA 32216

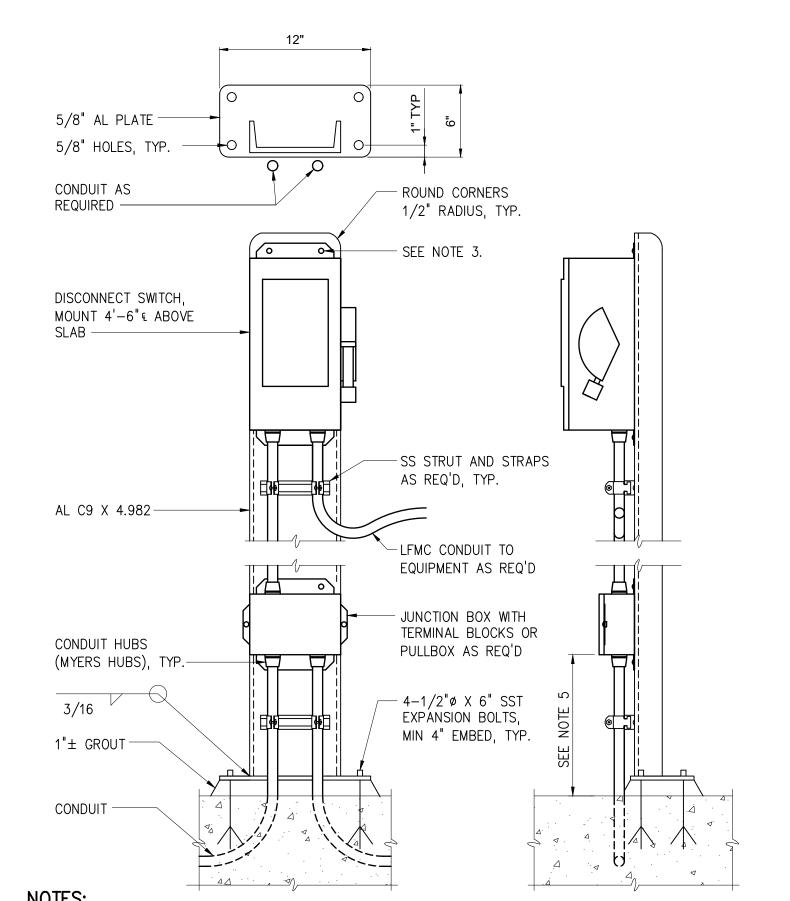
RADIO AVENUE R.W. GROUND



STORAGE TANKS & PUMP STATION

**MARCH 2021** HAZEN NO. 42011-014 800475 CONTRACT NO.: DRAWING NUMBER:

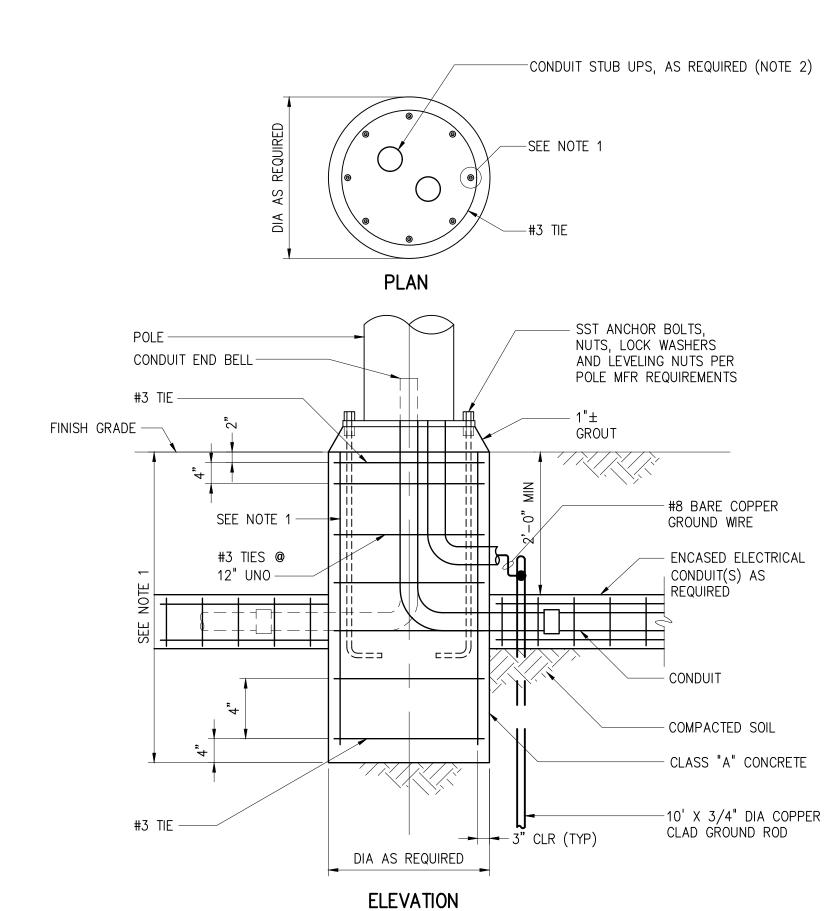
ED-04



1. COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE PER SPECIFICATIONS.

- 2. SUPPLY 1'-2" DIAMETER X 2'-6" DEEP FOUNDATION WHERE MOUNTING SURFACE IS NOT AVAILABLE.
- 3. USE SST WASHERS, LOCKWASHERS, NUTS AND BOLTS FOR MOUNTING EQUIPMENT AND STRUT SUPPORTS TO CHANNEL. DRILL EQUIPMENT MOUNTING TABS AS NECESSARY TO COORDINATE WITH CHANNEL WIDTH.
- 4. REFERENCE STANDARD DETAIL 1611102 WHERE CONDUIT EMERGES FROM CONCRETE.
- 5. COORDINATE MOUNTING HEIGHT ABOVE CONCRETE WITH CLASSIFICATION REQUIREMENTS.

TYPICAL 30/60/100 AMP DISCONNECT SWITCH INSTALLATION DETAIL 1644001

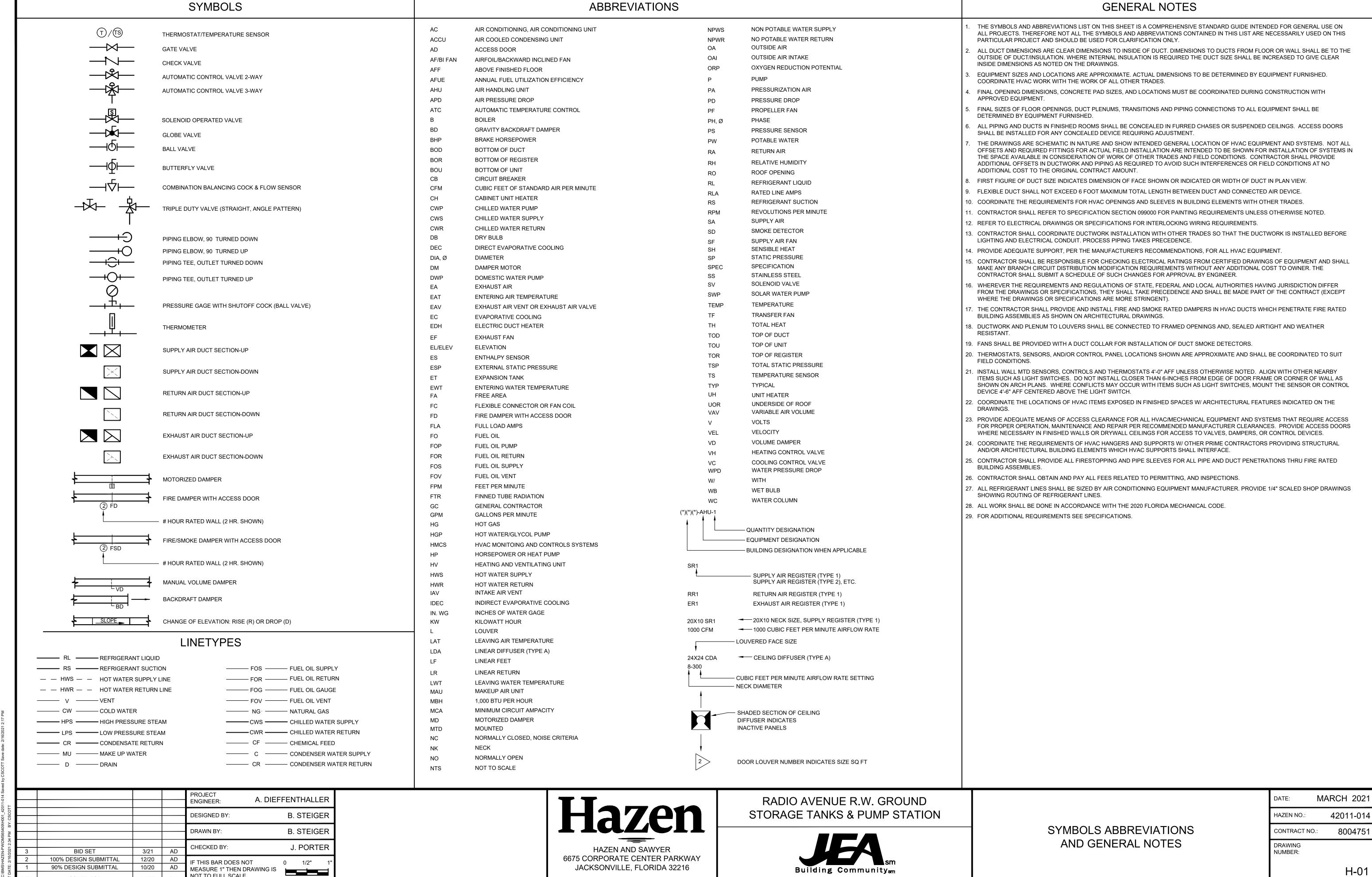


# **NOTES:**

- 1. DEPTH AND REINFORCEMENT SHALL BE DETERMINED BY POLE MANUFACTURER IN ACCORDANCE WITH SECTION 16500. LOADING SHALL BE IN ACCORDANCE WITH SECTION 16500.
- 2. CONTRACTOR SHALL CAREFULLY COORDINATE LOCATION AND QUANTITY OF CONDUITS IN THE BASE SO THAT WHEN POLE IS INSTALLED, IT WILL FIT OVER THE CONDUITS.

CAST-IN-PLACE POLE-MOUNTED AREA LIGHTING FIXTURE BASE (FLUSH BASE) 1650001

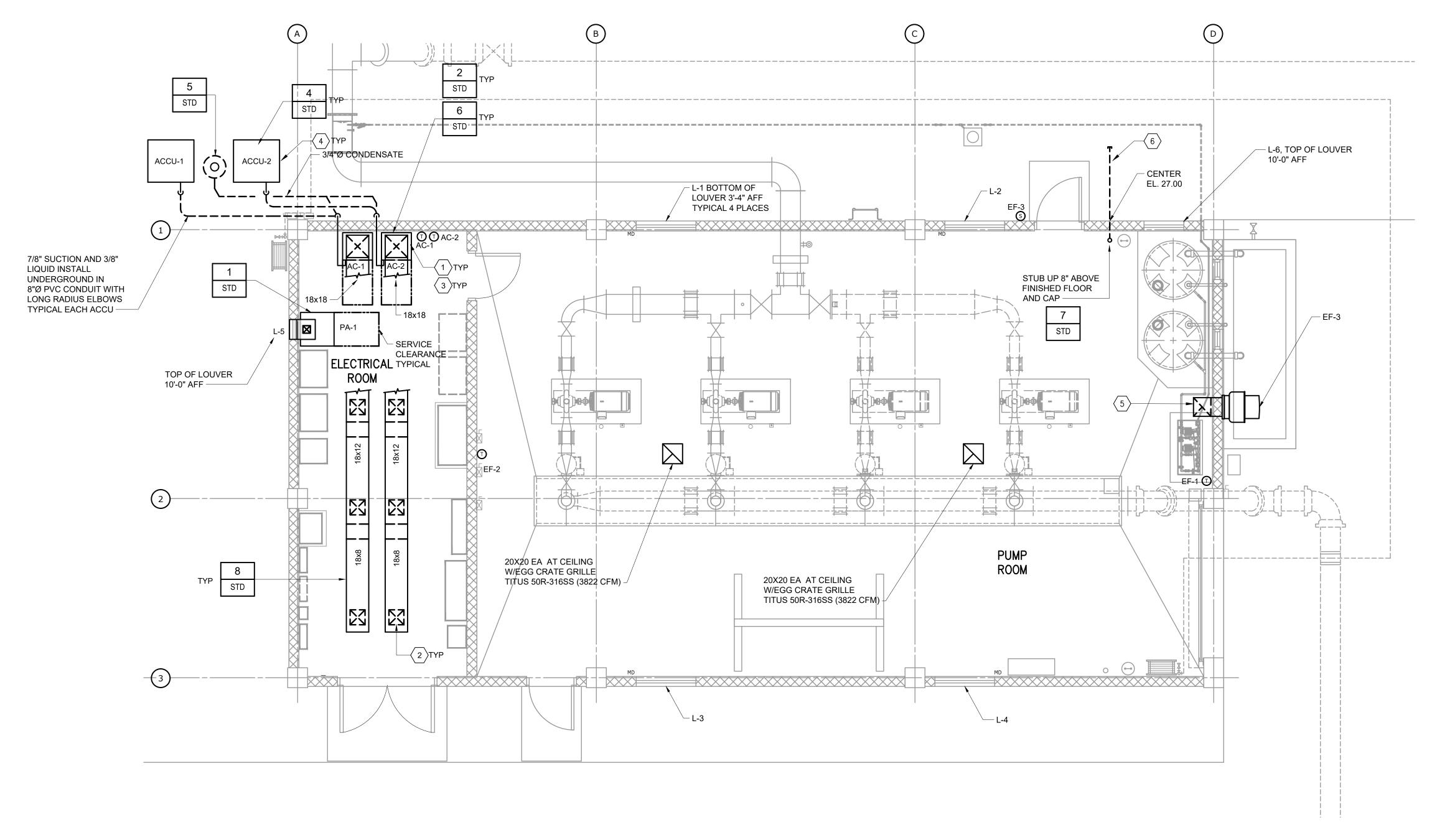
**ELECTRICAL DETAILS IV** 



NOT TO FULL SCALE

DATE

ISSUED FOR





## CODED NOTES:

- $\langle$  1. $\rangle$  SUPPLY AIR PLENUM SIZED FOR AC UNIT OUTLET.
- $\langle$  2. $\rangle$  12X12 SR (562 CFM), TITUS 300-RS-316 SS W/ OPPOSED BLADE DAMPER.
- (3.) 20X24 HINGED RG (1686) WITH 2" FILTER, TITUS 350 RSF-2- 316 SS.
- $\langle$  4. $\rangle$  PROVIDE 30" SERVICE CLEARANCE AROUND ACCU.
- 5. 16X16 DUCT DROP TO 12" ABOVE CHEMICAL STORAGE TANK PAD. PROVIDE FRP DUCT AND 1/2" MESH EPOXY COATED SCREEN ON DUCT INLET. TOP OF DUCT 10'-0" AFF.
- 6. ROUGH-IN 2" Ø CPVC NSF61 POTABLE WATER LINE AND CAP EACH END FOR FUTURE CONNECTION TO SITE POTABLE WATER SUPPLY. DISINFECTION OF POTABLE WATER SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE PROCEDURES IN AWWA C651 OR AWWA C652 OR AS DESCRIBED IN THE FLORIDA PLUMBING CODE SECTION 610 BEFORE THE PIPE IS CAPPED.

# GENERAL NOTE:

 AIR CONDITIONING OF ELECTRICAL EQUIPMENT ROOM IS EXEMPT FROM ENERGY CONSERVATION CODE PER 2017 FLORIDA BUILDING CODE-ENERGY , C101.4.2.4.4.

FLOOR PLAN
1/4" = 1'-0"

F					PROJECT A.	DIEFFENTHALLER	
CSCOTT					DESIGNED BY:	B. STEIGER	
2:28 PM BY:					DRAWN BY:	B. STEIGER	
2/16/2021 2:2	3	BID SET	3/21	AD	CHECKED BY:	J. PORTER	
2/16/	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1"	
4TE:	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWIN	* ''= '	1
ОТ DATE:	RFV	ISSUED FOR	DATE BY		NOT TO FULL SCALE		

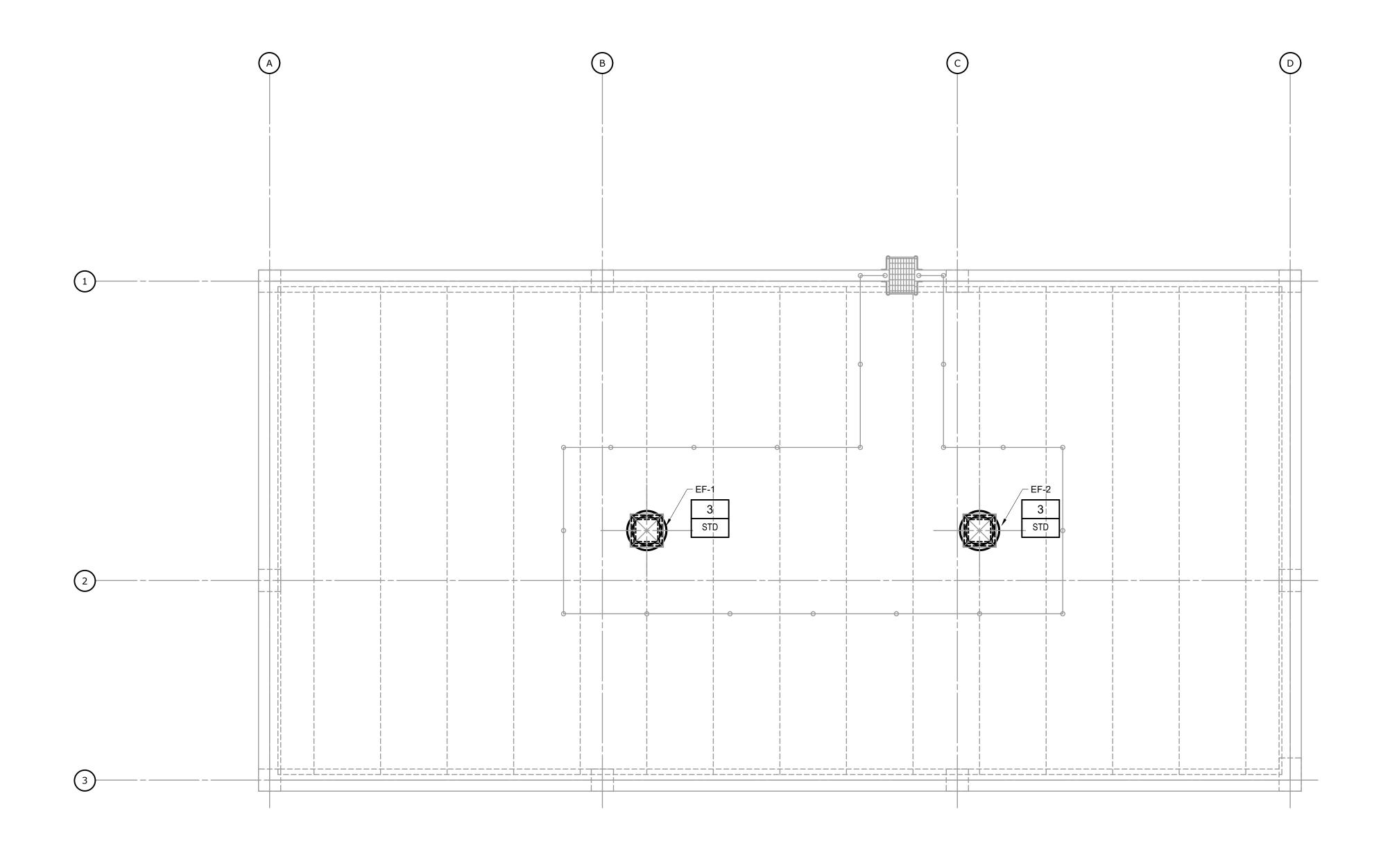


RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



PUMP STATION FLOOR PLAN

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	H-02



ROOF PLAN
1/4" = 1'-0"

PROJECT ENGINEER: A. DIEFFENTHALLER

DESIGNED BY: B. STEIGER

DRAWN BY: B. STEIGER

DRAWN BY: J. PORTER

CHECKED BY: J. PORTER

1 90% DESIGN SUBMITTAL 12/20 AD 15 THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

REV ISSUED FOR DATE BY



RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



PUMP STATION -ROOF PLAN

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	.: 8004751
DRAWING NUMBER:	
	H-03

### AIR HANDLING UNIT SCHEDULE CAPACITY BTU/HR DX-COOLING COIL DATA ELECTRIC HEAT LOCATION AREA SERVED | MANUFACTURER TYPE **ELECTRICAL** UNIT No. FAN DATA NOTES & MODEL No. MCA | HACR CB SENSIBLE CFM | H.P. | E.S.P. | AREA S.F. | ROWS | STAGES | K.W. V/P/HZ RPM F.P.I TOTAL PUMP STATION BUILDING VARIABLE 7.2 208-230 / 1 / 60 1,2,3,4,5,6,7,8 AC-1 ELECTRICAL ROOM TRANE - TEM6A0D60H51SB 60,000 42,000 1686 3/4 0.5 6.47 16 52 60 FLOOR MOUNTED PUMP STATION BUILDING 7.2 52 208-230 / 1 / 60 1,2,3,4,5,6,7,8 VARIABLE 1686 3/4 0.5 6.47 AC-2 ELECTRICAL ROOM TRANE - TEM6A0D60H51SB FLOOR MOUNTED 60,000 42,000

### NOTES:

1. WITH OPERATING AND STANDBY CONTROL. 2. THREE YEAR WARRANTY.

3. WITH RETURN AIR GRILLE. 4. FOR AIR COOLED CONDENSING SEE SEPARATE SCHEDULE.

5. WEIGHT 180 POUNDS. 6. SEE SPECIFICATION 15800. 7. THERMOSTAT HONEYWELL T6 SERIES - NON PROGRAMMABLE.

8. BRONZ-GLOW PLATINUM COIL COATING.

	AIR COOLED CONDENSING UNIT SCHEDULE															
UNIT No.	LOCATION	AREA SERVED	UNIT SERVED	MANUFACTURER	AMBIENT	C	COMPRESS	OR	CO	NDENSER	FAN			ELECT	RICAL	NOTES
				& MODEL No.	TEMP (F)	TYPE	NO.	REFRIG.	DIA IN	HP EA.	CFM	QTY	MCA	HACR	V/P/HZ	
ACCU-1	PUMP STATION BUILDING	ELECTRICAL ROOM	AHU-1	TRANE-4TTV6060A1	95	SCROLL	1	R410A	27.6	1/5	1500	1	32	50	208-230/ 1/ 60	1,2,3,4,5,6,7,8,9,10
ACCU-2	PUMP STATION BUILDING	ELECTRICAL ROOM	AHU-2	TRANE-4TTV6060A1	95	SCROLL	1	R410A	27.6	1/5	1500	1	32	50	208-230/ 1/ 60	1,2,3,4,5,6,7,8,9,10

1. WITH OPERATING AND STANDBY CONTROL. 2. BRONZ-GLOW PLATINUM COATED COIL.

3. SEER 16 PER ARI 210/240 MATCHED WITH AIR HANDLER. 4. SPECIFICATION 15800.

WEIGHT 280 POUNDS. 6. SEACOAST KIT.

7. ANTI-SHORT CYCLE TIMER. 8. EVAPORATOR DEFROST CONTROL. 9. LOW AMBIENT KIT.

10. EXTREME CONDITION MOUNT KIT.

	POSITIVE PRESSURIZATION AIR UNIT SCHEDULE															
MA		LOCATION	AREA SERVED	CFM	OA CFM	MEDIA MODULE 1 DATA	MEDIA MODULE 2 DATA	ESP IN	F	AN	M	ОТОБ	₹	MFG. MODEL	WEIGHT POUNDS	NOTES
								WC	RPM	BHP	HP	VOLTS	PH			
PA	1	PUMP STATION BLDG	ELECTRICAL ROOM	1000	500	PURACARB	PURAFIL SP BLEND	0.2	1750	0.7	1	460	3	PURAFIL 500V	730	1,2,3

### NOTES: 1. VFD.

2. 4"HIGH HOUSEKEEPING PAD.

3. SPECIFICATION 15860.

EXHAUST	FAN SCHEDULE	
_/ \      \  \  \  \  \		

	EXTROST LAN SCHEDOLE																	
FAN NO.	LOCATION	AREA SERVED	MANUFACTURER	TYPE	CFM	ESP	TSP	WHEEL	FAN RPM			MOTOR			FAN INTERLO	CK SCHEDULE	WEIGHT	NOTES
			& MODEL NO.	MOUNT		(IN WG)	(IN WG)	DIA.		HP	MAX. BHP	RPM	ELEC.	DRIVE	CONTROL	WITH		
EF-1 AND EF-2	PUMP STATION BUILDING	PUMP ROOM	GREENHECK 180 CUE	ROOF	3,822	0.5	0.6	18	1,140	1	0.91	1,140	460/3/60	DIRECT	HAND-OFF-AUTO	THERMOSTAT	100	1,2,3,4,5,6,7,8
EF-3	PUMP STATION BUILDING	CHEMICAL AREA	GREENHECK 131 CW	WALL	1,994	0.75	0.8	13	1,725	1/2	0.58	1,725	460/3/60	DIRECT	ON-OFF	NONE	75	1,2,3,4,9

### NOTES:

1. SPECIFICATION 15590. 2. TEFC MOTOR.

- 3. DIRECT DRIVE MOTOR.
- 4. HIGH WIND HURRICANE RATED. 5. 18" HIGH ROOF CURB.
- 6. BACKDRAFT DAMPER.
- 7. HI-PRO POLYESTER COATING SYSTEM FAN AND ROOF CURB AND DAMPER.
- THERMOSTAT TECO TF-115-001.
- 9. EPOXY COATED FAN AND FASTENERS.

- EF-1 AND EF-2 FAN SEQUENCE OF OPERATION:
- 1. FAN SHALL OPERATE THRU A HAND-OFF-AUTO SWITCH. IN THE AUTO POSITION THE FAN SHALL BE INTERLOCKED TO OPERATE WHEN THE ROOM THERMOSTAT MAKES ON ROOM TEMPERATURE RISE. INITIAL SETPOINT SHALL BE 80° F, ADJUSTABLE. MULTIPLE FANS (WHEN SCHEDULED) CONTROLLING THE SAME ROOM SHALL BE STAGED ON IN 5° F INCREMENTS. WHEN FAN IS INDEXED TO RUN, DAMPERS ASSOCIATED WITH THE FAN SHALL OPEN AND LIMIT SWITCHES ON DAMPER MOTORS SHALL START FAN WHEN THE DAMPERS ARE IN OPEN POSITION.
- 2. HAND-OFF-AUTO SWITCH SHALL HAVE RUN INDICATED PILOT LIGHT. REFER TO DIVISION 16, ELECTRICAL.
- 3. ROOM THERMOSTAT: PECO, MODEL TF115-001, NEMA 4X.

## EF-3 FAN SEQUENCE OF OPERATION:

- 1. FAN SHALL OPERATE THRU AN ON-OFF SWITCH AND RUN CONTINUOUSLY.
- 2. ON-OFF SWITCH SHALL HAVE A RUN INDICATED PILOT LIGHT. SWITCH SHALL BE LOCATED ON THE OUTSIDE DOOR ENTRANCE TO THE ROOM. A PLACARD SHALL BE PLACED NEXT TO THE SWITCH THAT READS: "VENTILATION SYSTEM FOR CHEMICAL AREA". REFER TO DIVISION 16, ELECTRICAL.

				LC	UVER SC	HEDULE						
MARK NO.	LOCATION	AREA SERVED	MANUFACTURER	TYPE	WIDTH	HEIGHT	FREE AREA	CFM	PRESSURE DROP	INTERLOC	( SCHEDULE	NOTES
			& MODEL NO.		(IN)	(IN)	SQ. FT.		(IN WG)	CONTROL	WITH	
L-1, 3	PUMP STATION BUILDING	PUMP ROOM	RUSKIN EME520MD	STATIONARY	48	48	7.59	1911	0.01	THERMOSTAT	EF-1	1,2,3,4,5
L- 2, 4	PUMP STATION BUILDING	PUMP ROOM	RUSKIN EME520MD	STATIONARY	48	48	7.59	1911	0.01	THERMOSTAT	EF-2	1,2,3,4,5
L-5	PUMP STATION BUILDING	ELECTRICAL ROOM	RUSKIN EME520MD	STATIONARY	16	16	0.79	500	0.06	NONE	NONE	1,2,3
L-6	PUMP STATION BUILDING	CHEMICAL AREA	RUSKIN EME520MD	STATIONARY	32	32	2.8	1994	0.06	NONE	NONE	1,2,3

1. WITH KYNAR FINISH. 2. PROVIDE EPOXY COATED ALUMINUM BIRD SCREEN

AND FIBERGLASS INSECT SCREEN.

APPROVED AND INSTALLED.

3. LOUVERS SHALL BE WIND DRIVEN RAIN TYPE, HURRICANE RATED AND MIAMI-DADE TESTED, 4. NEMA 4X MOTORIZED DAMPER EPOXY COATED RUSKIN CD51. 5. PECO TF 115-001 THERMOSTAT.

# **DESIGN CONDITIONS** ELECTRICAL ROOM OUTSIDE WINTER: 32° F DB INSIDE WINTER: 72° F DB OUTSIDE SUMMER: 97° F DB / 77° F WB INSIDE SUMMER 78° F DB / 60° F WB PUMP ROOM OUTSIDE WINTER: 32° F DB INSIDE WINTER: 55° F DB

OUTSIDE SUMMER: 97° F DB / 77° F WB INSIDE SUMMER 102° F DB / 77° F WB

AC AND ACCU COATING SYSTEM:

AC SEQUENCE OF OPERATION:

REMOVED AND STORED FOR LATER INSTALLATION.

APPLIED HERESTE ES-600 AIR DRY COATING SYSTEM.

OPERATING UNIT IN SUMMER AND 5° F BELOW IN WINTER.

1. ALL COILS (CONDENSER EVAPORATOR, REHEAT, ETC) SHALL HAVE THE REFRIGERANT

3. COILS SHALL BE CLEANED WITH BRONZ-GLOW CLEANER & HOT TREATED WATER. COILS SHALL BE PRIMED WITH BRONZ-GLOW "HUSKY GOLD PRIMER AND DIP COATED

5. ONCE TREATED, THE COILS SHALL BE REINSTALLED INTO THE UNIT, THE UNIT SHALL BE EVACUATED, RECHARGED WITH REFRIGERANT, INSPECTED AND READIED FOR SHIPMENT.

6. ALL FIELD INSTALLED REFRIGERANT LINE SETS ABOVE GRADE SHALL HAVE A FIELD

1. AC-1 AND AC-2 ARE DESIGNED FOR ONE UNIT RUNNING AND ONE UNIT STANDBY

2. THE SELECTED STANDBY UNIT SHALL HAVE ITS THERMOSTAT SET AT 5° F ABOVE THE

4. ALL BRAZED SOLDERED JOINTS SHALL GET EXTRA CLEANING TO REMOVE ANY PRIMER AND

2. ALL COPPER TUBING SHALL BE CAPPED AND COIL CHARGED WITH 200 POUNDS OF

NITROGEN TO ENSURE NO LEAKS DEVELOP IN THE COATING PROCESS.

(SUBMERGED IN TANK) WITH BRONZ-GLOW HUSKY GOLD PROTECTANT".

PROVIDED WITH DOUBLE THE NORMAL AMOUNT OF PROTECTANT COATING.

				PROJECT ENGINEER: A.	DIEFFENTHALLER	
				DESIGNED BY:	B. STEIGER	
				DRAWN BY:	B. STEIGER	
3	BID SET	3/21	AD	CHECKED BY:	J. PORTER	
2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1"	
1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWIN	*	
REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE		

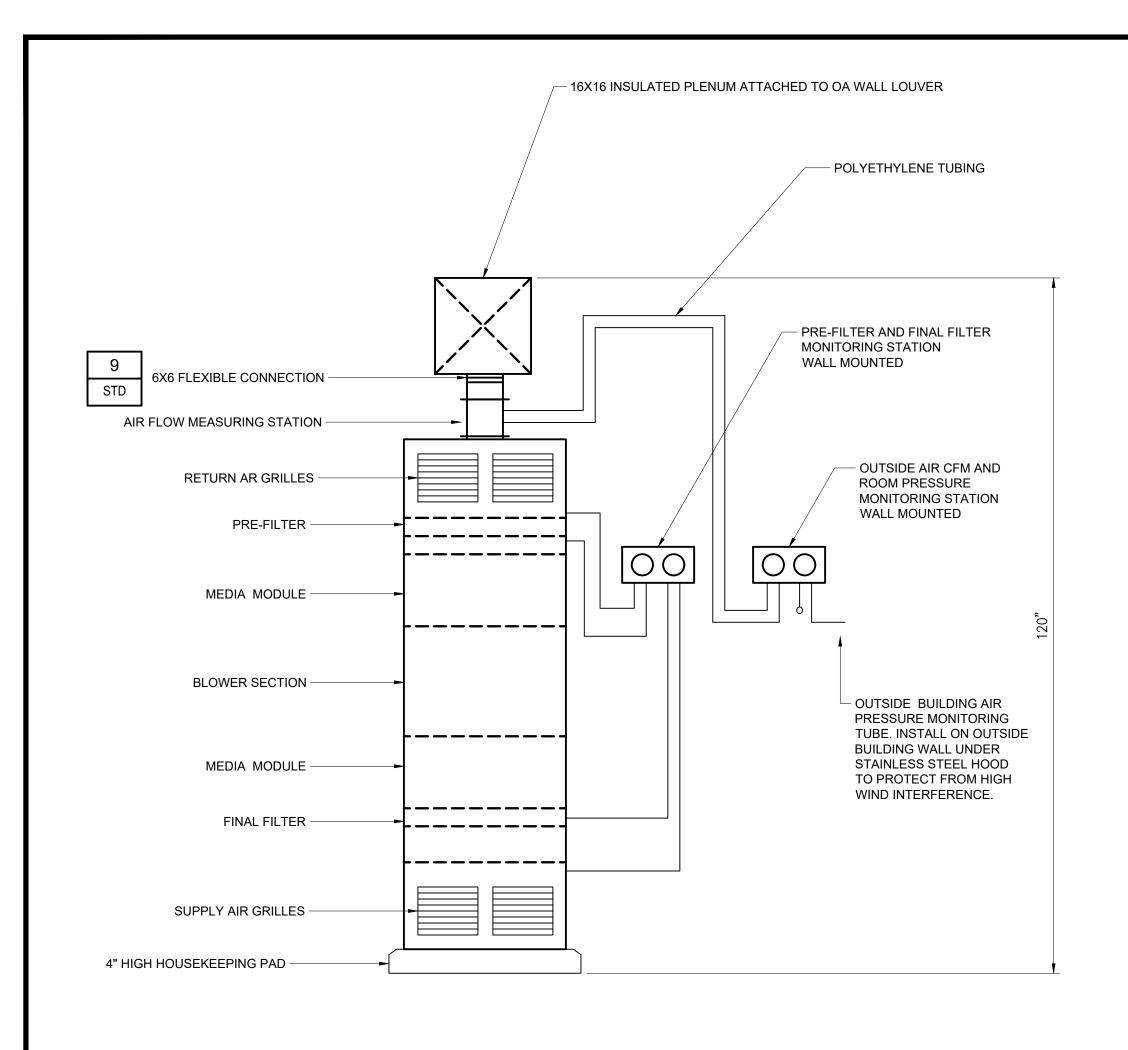


RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



SCHEDULES

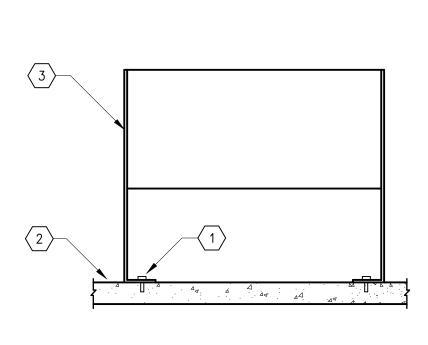
DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	H-04



## AIR PRESSURIZATION UNIT

DETAIL 1

N.T.S. STD



# CODED NOTES:

- (1) 316-SS, 3/8" Ø X 2-3/8" EMBEDMENT THREADED ADHESIVE ANCHORS (HILTI HIT-RE 100) WITH NUTS AND WASHERS EACH LEG.
- 2. 6" THICK CONCRETE PAD. 6" LARGER THAN EQUIPMENT ON EACH SIDE. REINFORCE WITH #4 BARS AT 8 INCH ON-CENTER EACH WAY, TOP AND BOTTOM. PLACE PAD ON COMPACTED SUB-GRADE TOP OF PAD 4 INCHES ABOVE GRADE.
- 3. CONDENSER SHALL BE SELF CERTIFIED TO WITHSTAND WIND LOADING IN ACCORDANCE WITH AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-16. THE CERTIFICATION SHALL ALSO BE IN ACCORDANCE WITH FLORIDA BUILDING CODE (FBC) 6TH ADDITION (2017). SUBMIT SHOP DRAWING SEALED BY FLORIDA PROFESSIONAL ENGINEER WITH SITE SPECIFIC DOCUMENTATION TO AHJ FOR PERMIT APPROVAL.

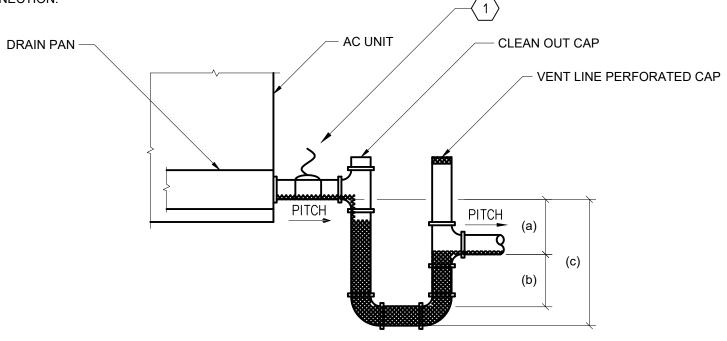
### ACCU MOUNTING

DETAIL 4

N.T.S. STD

### **GENERAL NOTES:**

- 1. ALLOW SUFFICIENT SPACE BELOW DRAIN PAN FOR
- 2. PITCH DRAIN FOR PROPER RUNOFF.
- 3. MANUALLY PRIME FILL TRAP BEFORE START-UP TO FORM INITIAL DRAIN SEAL.
- 4. SUPPORT LENGTHY DRAIN LINES TO PREVENT SAG AND CONDENSATE OVERFLOW.
- 5. DRAIN PIPE SIZE TO MATCH DRAIN PAN OUTLET CONNECTION.



### DRAW THROUGH COIL (NEGATIVE PRESSURE):

- (a) 1 INCH FOR EACH INCH OF NEGATIVE PRESSURE PLUS 1 INCH (NEGATIVE STATIC PRESSURE IN INCHES WG WITH DIRTY FILTERS, COILS, AND MAXIMUM AIR FLOW)
- (b) THIS DIMENSION IN INCHES MUST BE EQUAL TO MIN. 1/2 OF THE (a) ABOVE
- (c) EQUALS (a) + (b) + PIPE DIA. + + INSULATION

### BLOW THROUGH COIL (POSITIVE PRESSURE):

(a) 1 INCH MINIMUM

CODED NOTE:

 $\langle$  1. $\rangle$  FMC 307.2.3 (4) WATER LEVEL DETECTION DEVICE

PREVENTION SWITCH CS-1, OR EQUAL.

CONFORMING TO UL 508 SHALL BE PROVIDED THAT WILL SHUT OFF THE EQUIPMENT SERVED IN THE EVENT THAT THE PRIMARY DRAIN IS BLOCKED. DIVERSITECH FLOOD

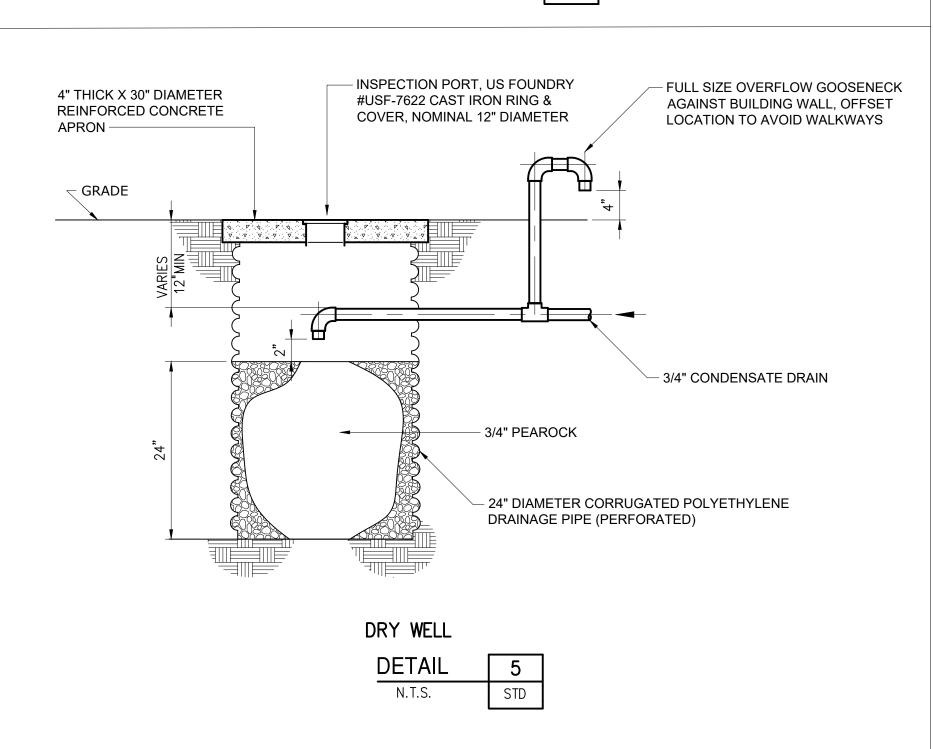
- (b) 1 INCH PLUS THE TOTAL UNIT STATIC PRESSURE (POSITIVE STATIC PRESSURE IN INCHES WG)
- (c) EQUALS (a) + (b) + PIPE DIA. + + INSULATION

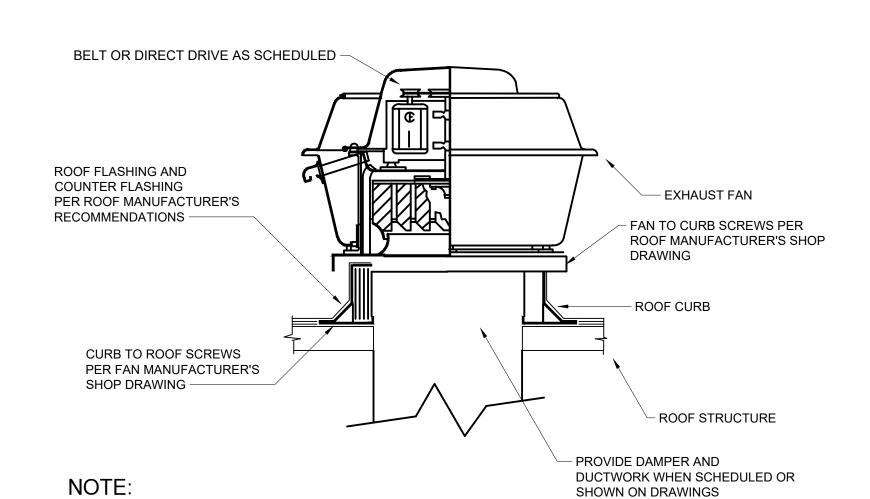
# THIS STANDARD DETAIL MUST BE REVIEWED AND SITE ADAPTED BY CONTRACTOR PRIOR TO USE FOR FINAL EQUIPMENT.

### CONDENSATE TRAP

DETAIL 2

N.T.S. STD



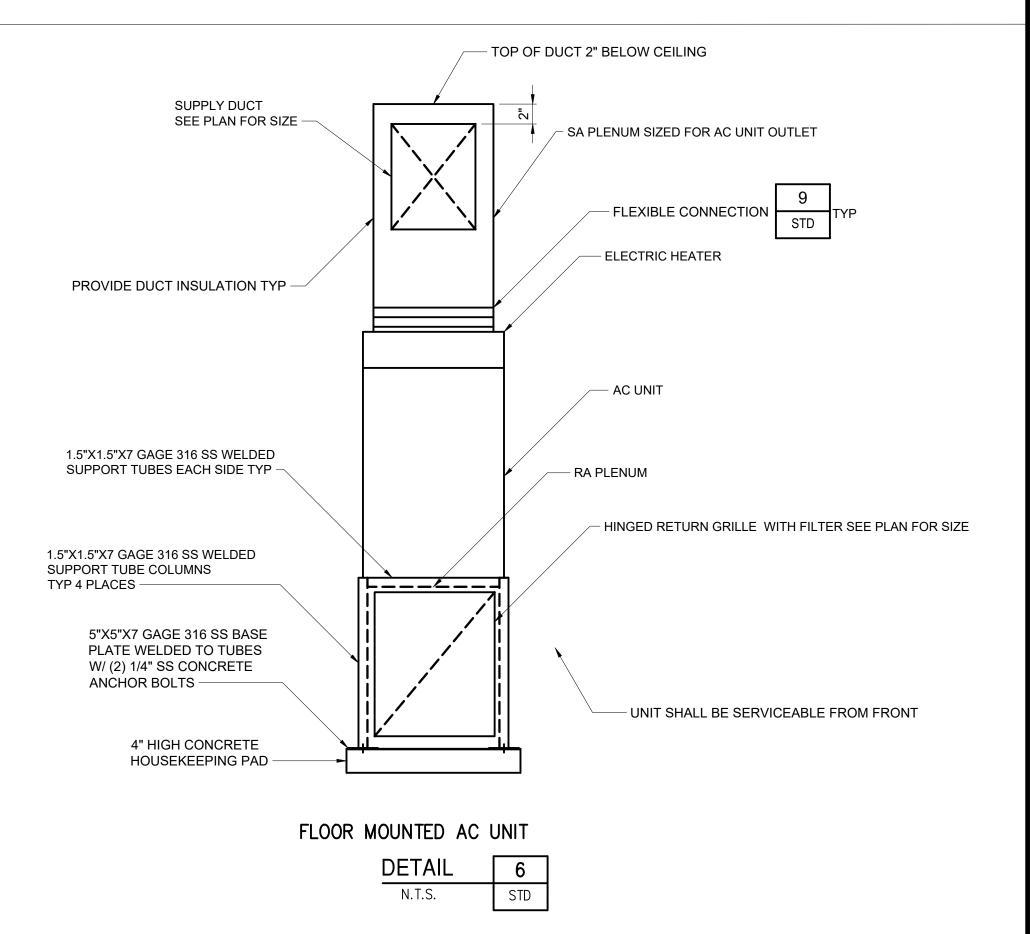


IN ACCORDANCE WITH AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-16. THE CERTIFICATION SHALL ALSO BE IN ACCORDANCE WITH FLORIDA BUILDING CODE (FBC) 6TH ADDITION (2017) AND THE INTERNATIONAL BUILDING CODE (IBC) 2015. SUBMIT SHOP DRAWING SEALED BY FLORIDA PROFESSIONAL ENGINEER WITH SITE SPECIFIC DOCUMENTATION TO AHJ FOR PERMIT APPROVAL.

1. FAN AND ROOF CURB SHALL BE CERTIFIED TO WITHSTAND WIND LOADING

### ROOF MOUNTED EXHAUST FAN

DETAIL	3
N.T.S.	STD



_					PROJECT ENGINEER:	A. DIEFFENTHALLEF	₹
r: cscot					DESIGNED BY:	B. STEIGEF	₹
PM BY					DRAWN BY:	B. STEIGEF	₹
16/2021 2:29	3	BID SET	3/21	AD	CHECKED BY:	J. PORTEF	₹
2/16/	2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2"	1"
γTΕ:	1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAV		¦ I
OT DA	REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE		<sup>1</sup>

HAZEN AND SAWYER
6675 CORPORATE CENTER PARKWAY

JACKSONVILLE, FLORIDA 32216

RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



HVAC DETAILS I

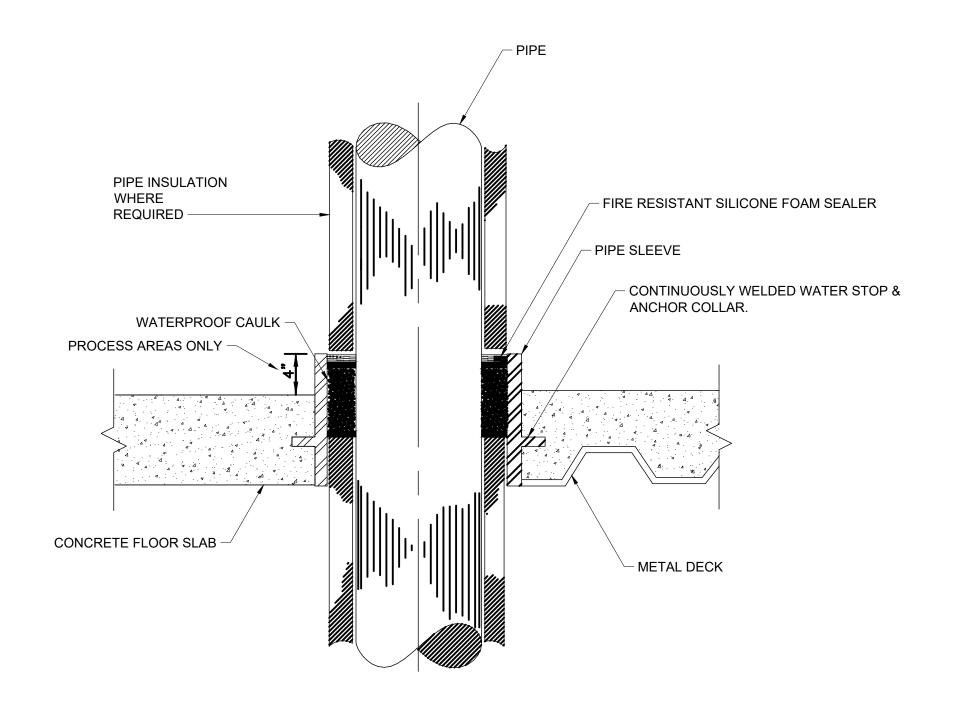
DATE: MARCH 2021

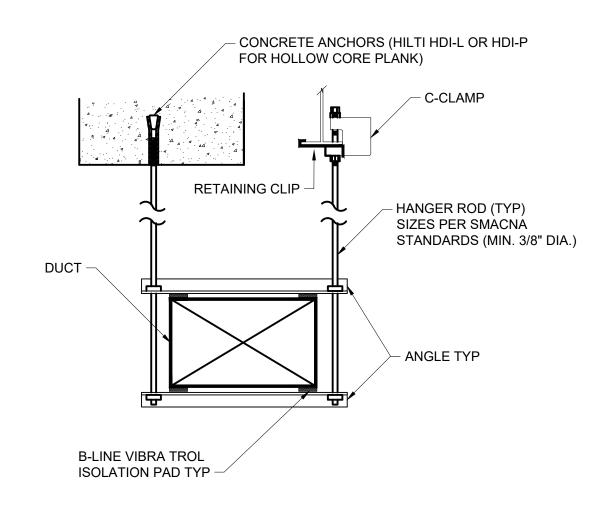
HAZEN NO.: 42011-014

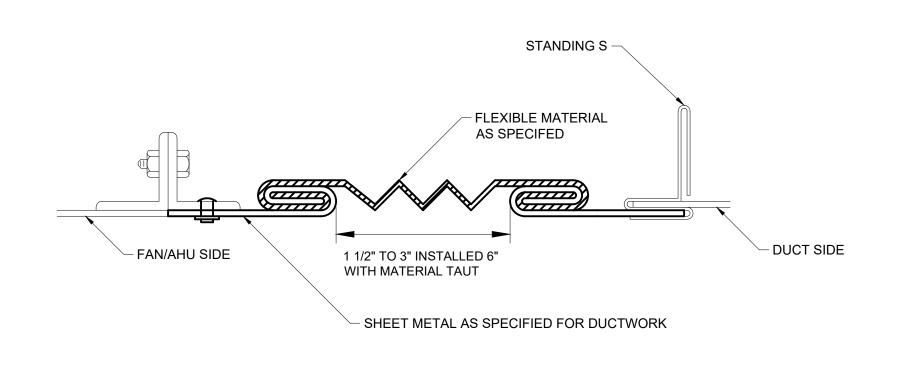
CONTRACT NO.: 8004751

DRAWING NUMBER:

HD-01







PIPE THROUGH FLOOR

DETAIL 7

N.T.S. STD

HANGING DUCT SUPPORT

DETAIL 8

N.T.S. STD

FLEXIBLE DUCT CONNECTION

DETAIL 9

N.T.S. STD

				PROJECT ENGINEER: A. D	IEFFENTHALLER	
				DESIGNED BY:	B. STEIGER	
				DRAWN BY:	B. STEIGER	
3	BID SET	3/21	AD	CHECKED BY:	J. PORTER	
2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1"	
1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING		
	ISSUED FOR	DATE	DV	NOT TO FULL SCALE		



RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



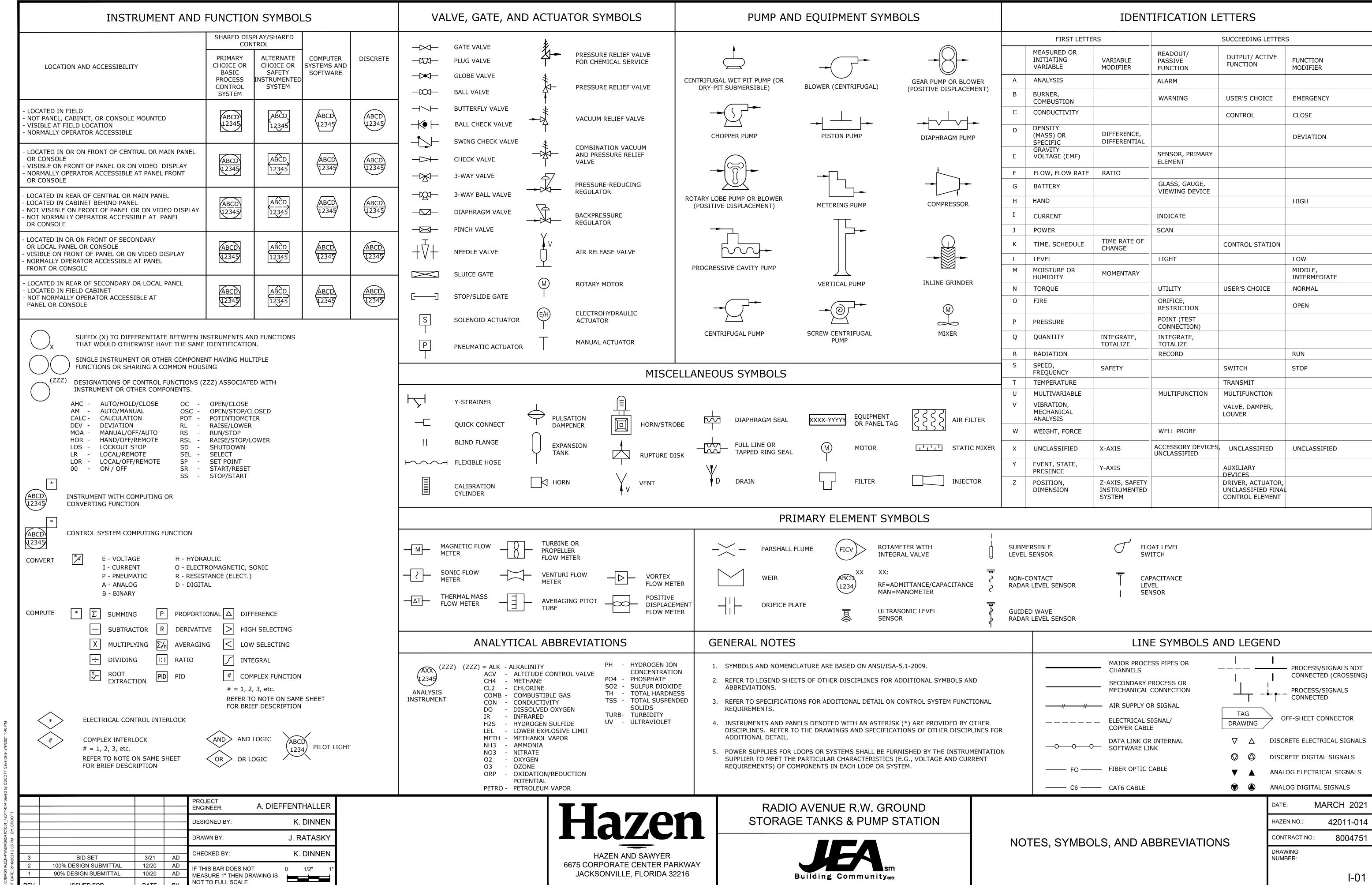
HVAC DETAILS II

DATE: MARCH 2021

HAZEN NO.: 42011-014

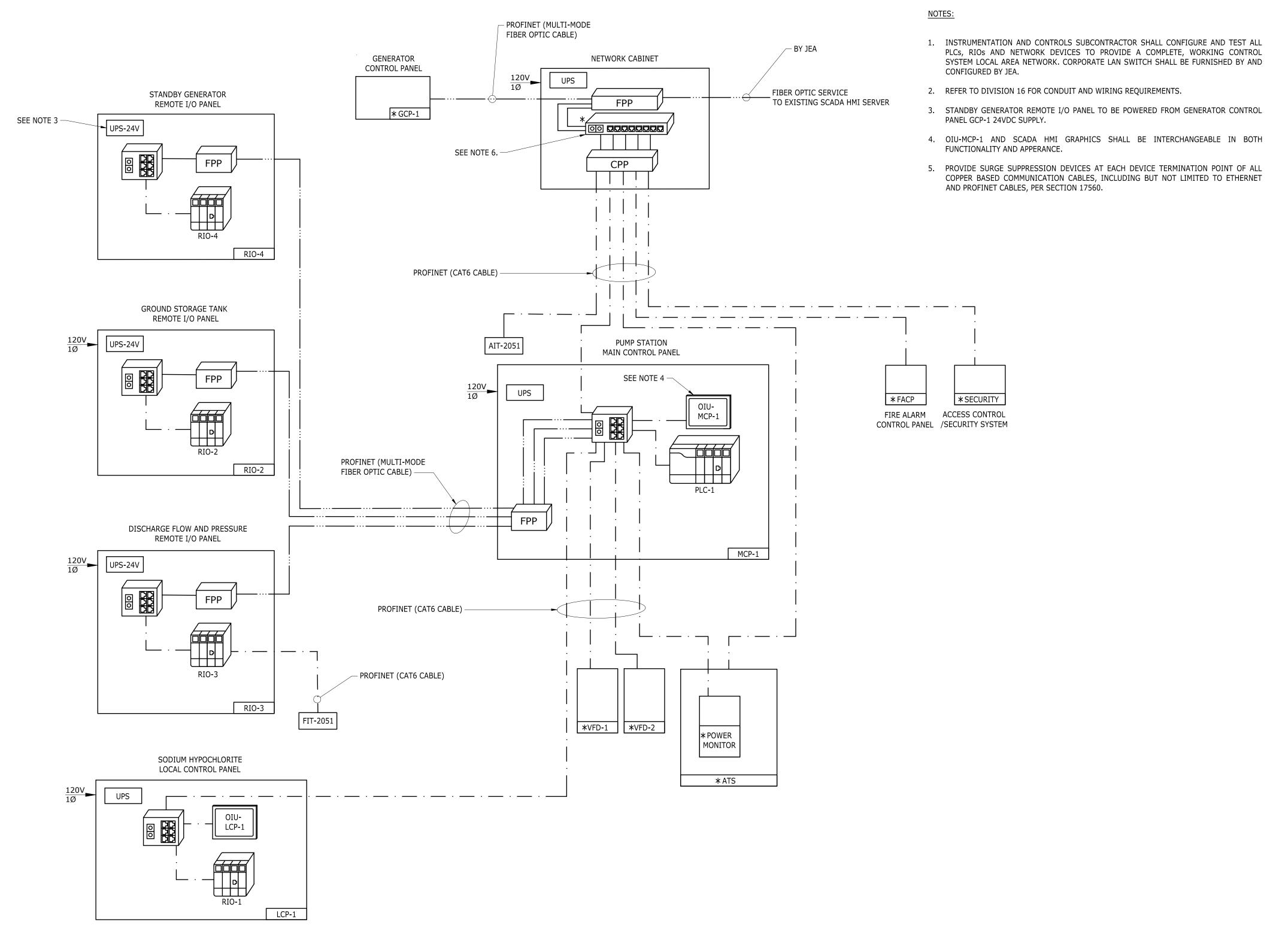
CONTRACT NO.: 8004751

DRAWING NUMBER: HD-02



DATE

**ISSUED FOR** 



<u>LEGEND</u>

6-PAIR (12-STRAND) MULTI-MODE FIBER OPTIC CABLE

— COPPER (CAT6) CABLE

—————— COAXIAL ANTENNA CABLE

PROFIBUS OR MODBUS CABLE

**SYMBOLS** 

SIEMENS S400 PROGRAMMABLE LOGIC CONTROLLER

SIEMENS ET200 REMOTE I/O MODULE

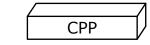
120VAC UNINTERRUPTIBLE POWER SUPPLY UPS

UPS-24V

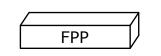
24VDC UNINTERRUPTIBLE POWER SUPPLY



OPERATOR INTERFACE UNIT (TOUCH SCREEN HMI)



19" RACK MOUNTED COPPER PATCH PANEL



19" RACK MOUNTED FIBER OPTIC PATCH PANEL

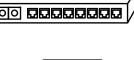


PANEL MOUNTED COMPACT FIBER OPTIC PATCH PANEL





INDUSTRIAL ETHERNET SWITCH



CISCO CORPORATE RACK MOUNT ETHERNET SWITCH WITH INTEGRAL FIBER OPTIC MEDIA CONVERTER (BY JEA)



SIEMENS SCALANCE INDUSTRIAL ETHERNET SWITCH WITH INTEGRAL FIBER OPTIC MEDIA CONVERTER

				PROJECT ENGINEER:	A. DIEFFENTHALLER	
				DESIGNED BY:	K. DINNEN	
				DRAWN BY:	K. DINNEN	
3	BID SET	3/21	AD	CHECKED BY:	E. CURTIS	
2	100% DESIGN SUBMITTAL	12/20	AD	IF THIS BAR DOES NOT	0 1/2" 1"	
1	90% DESIGN SUBMITTAL	10/20	AD	MEASURE 1" THEN DRAWING IS		i
REV	ISSUED FOR	DATE	BY	NOT TO FULL SCALE		

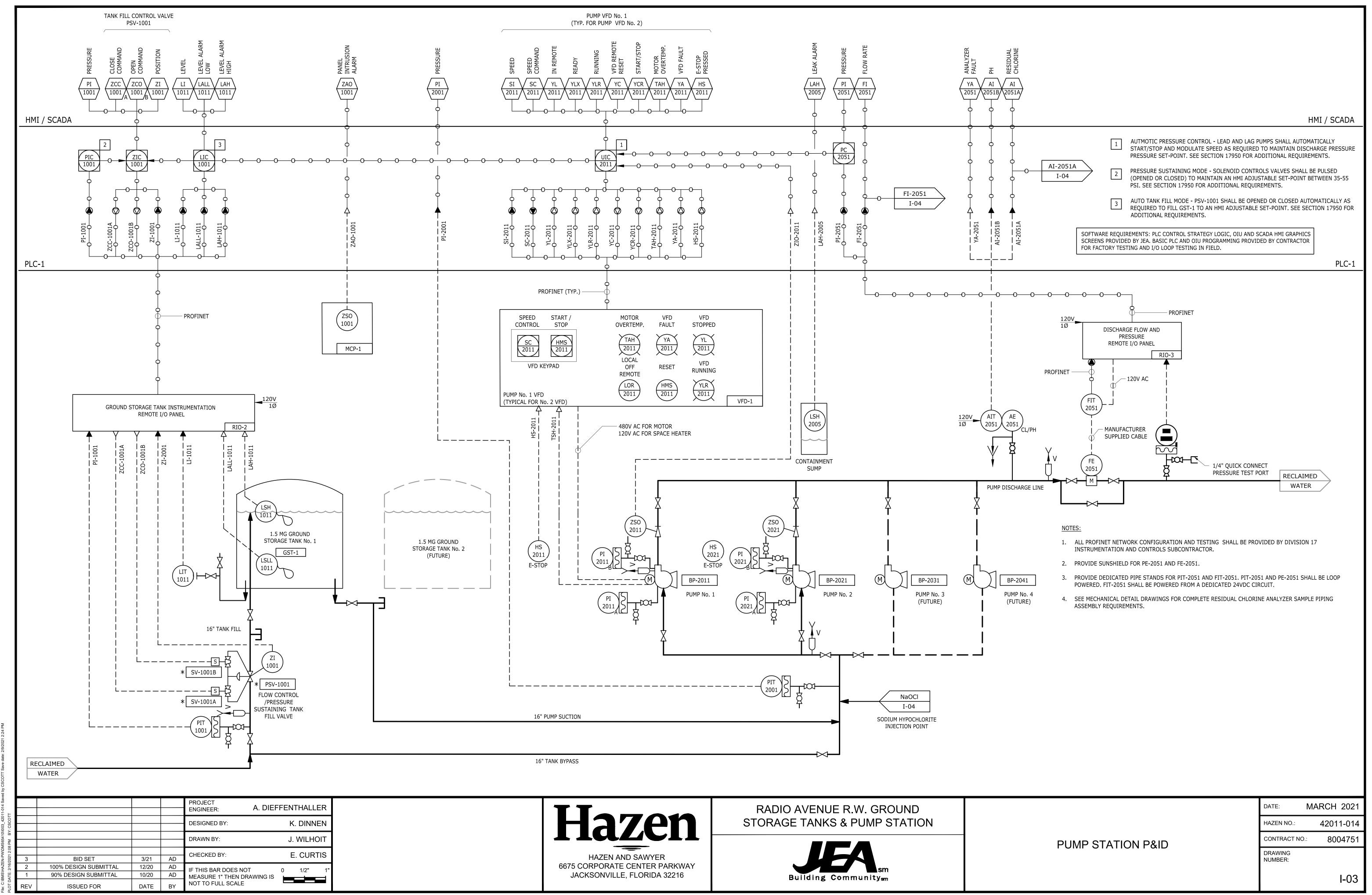
Hazen HAZEN AND SAWYER 6675 CORPORATE CENTER PARKWAY JACKSONVILLE, FLORIDA 32216

RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION

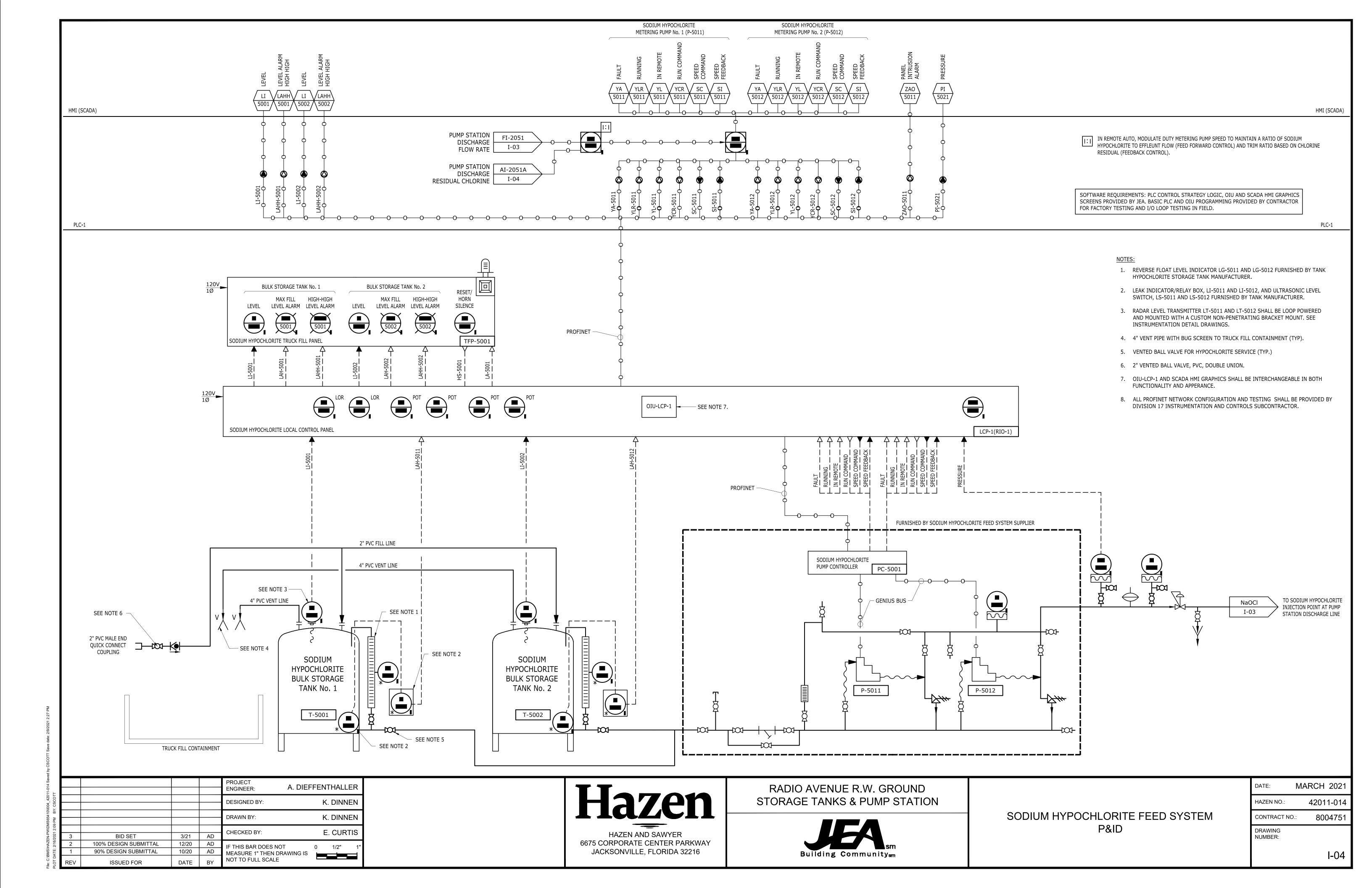


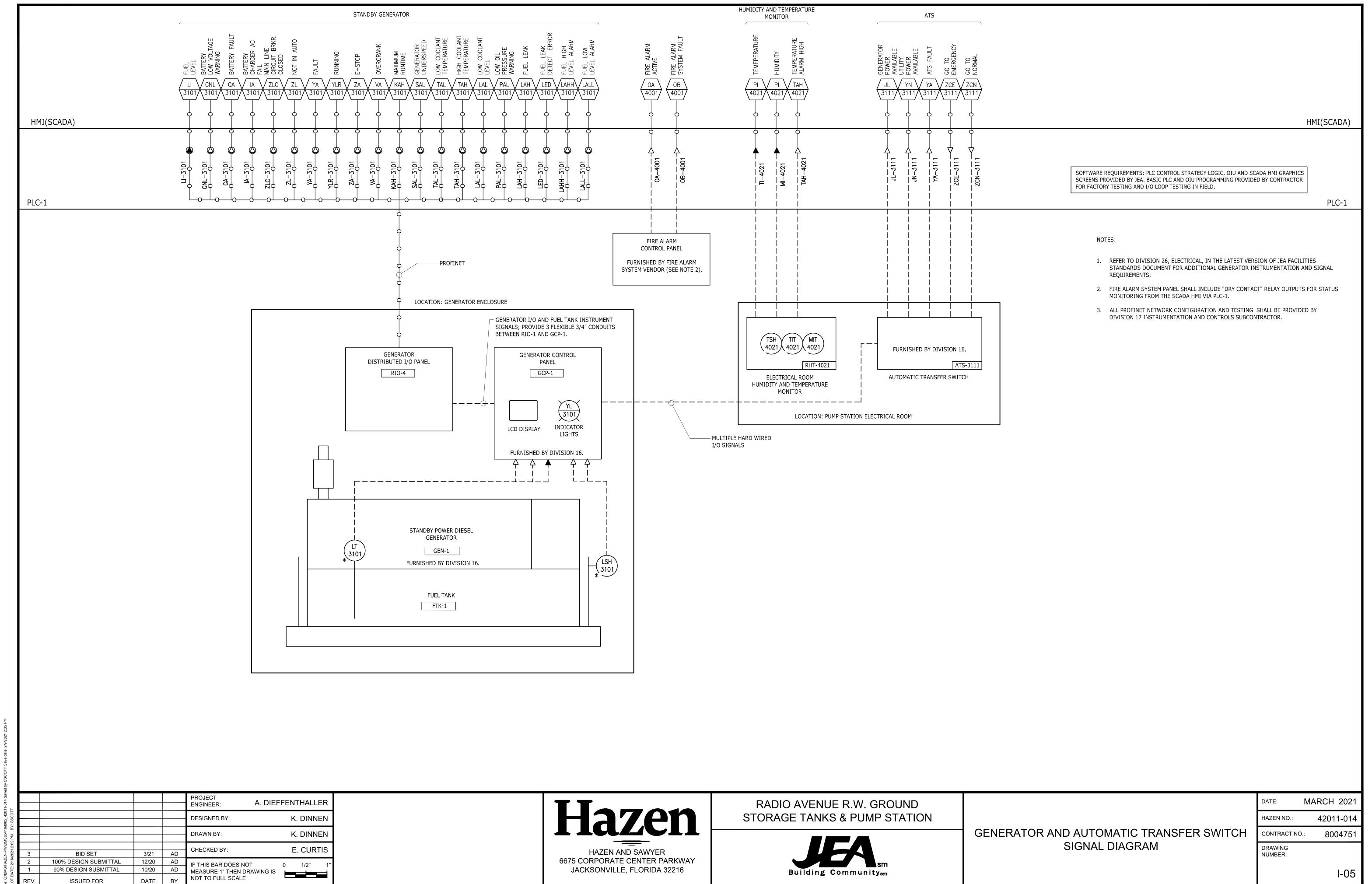
**NETWORK DIAGRAM** 

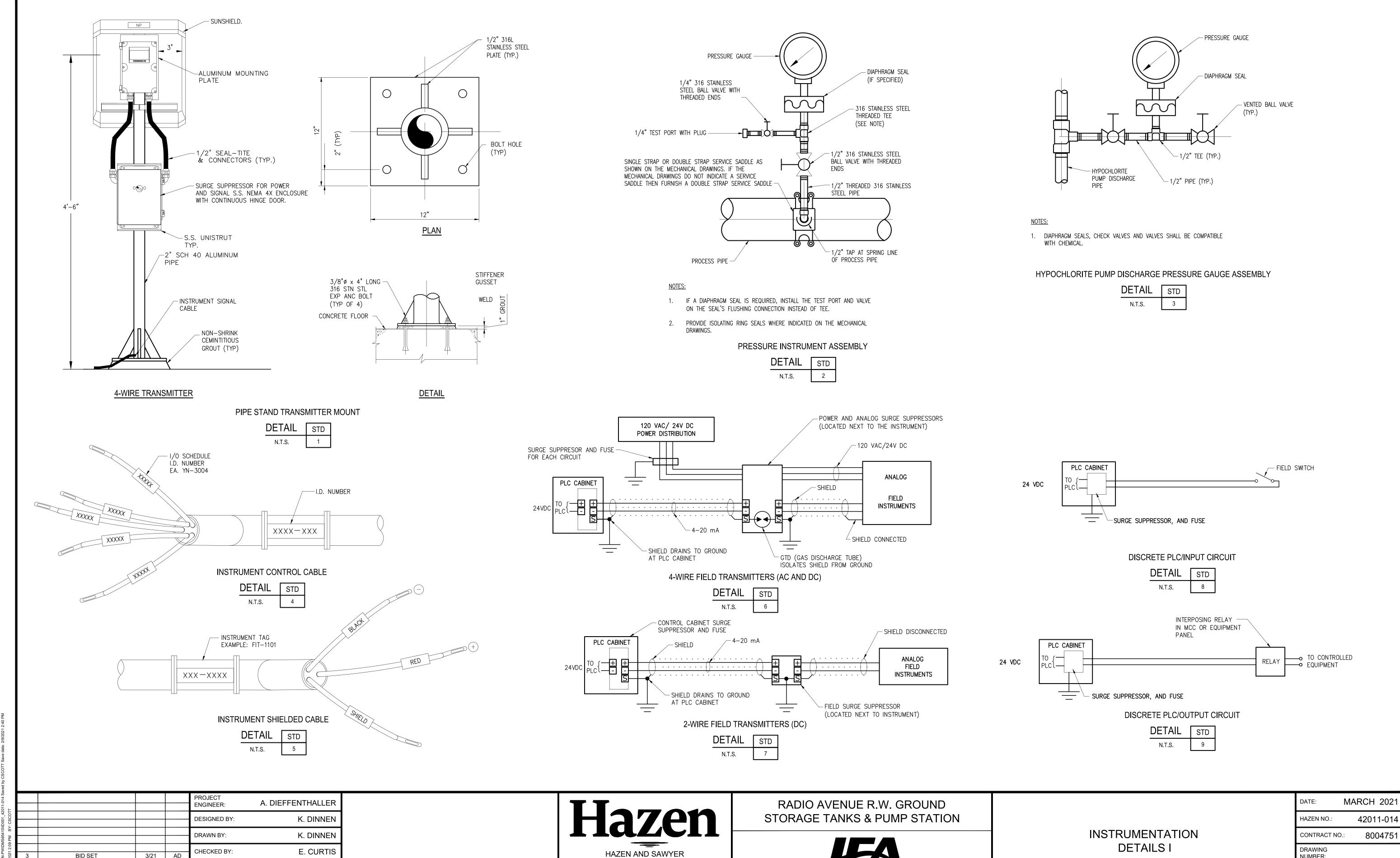
DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	8004751
DRAWING NUMBER:	
	I-02



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6675 CORPORATE CENTER PARKWAY

JACKSONVILLE, FLORIDA 32216

NUMBER:

ID-01

**BID SET** 

100% DESIGN SUBMITTAL

90% DESIGN SUBMITTAL

ISSUED FOR

3/21

DATE

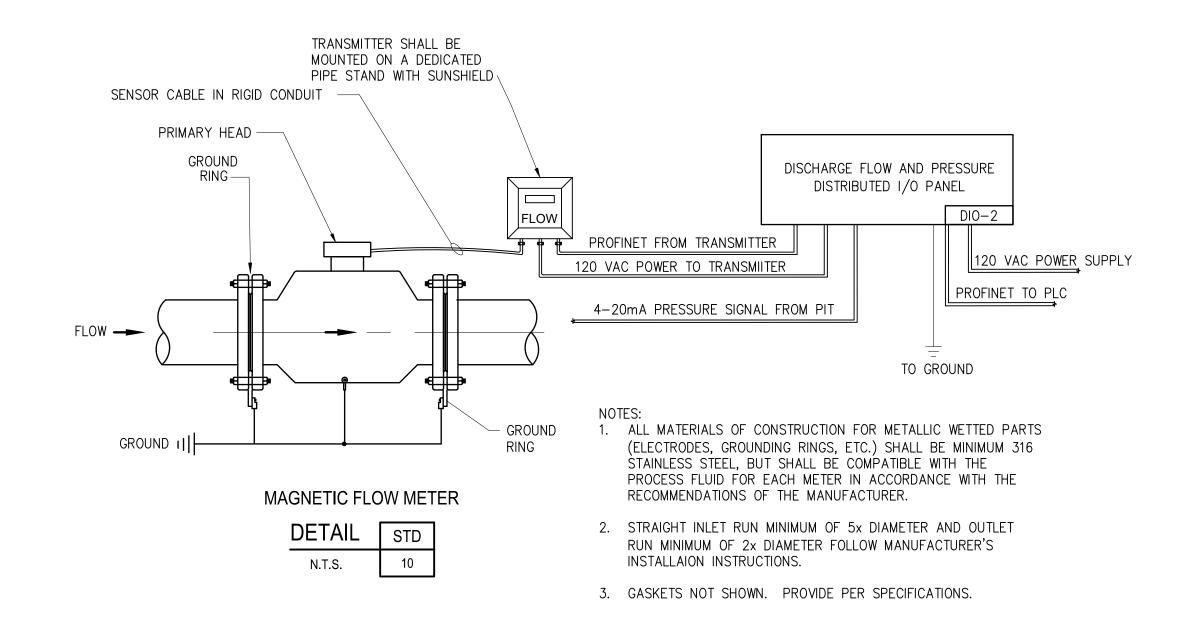
12/20 AD

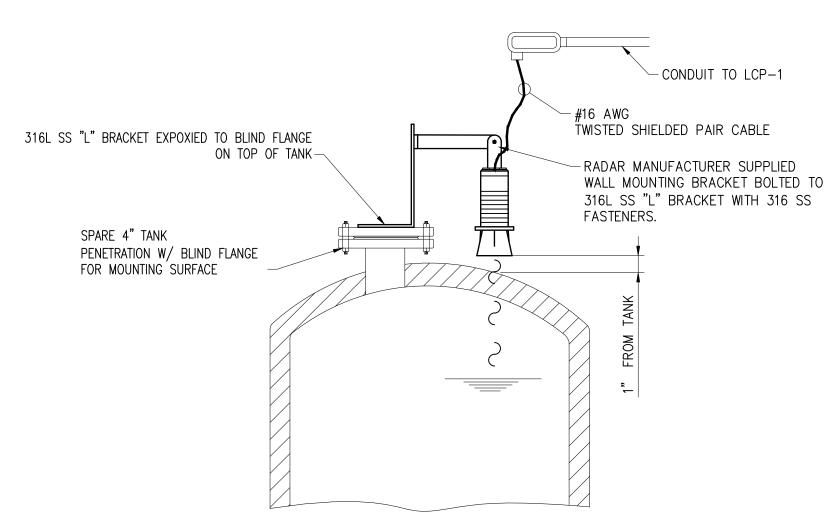
10/20 AD

IF THIS BAR DOES NOT

MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2"

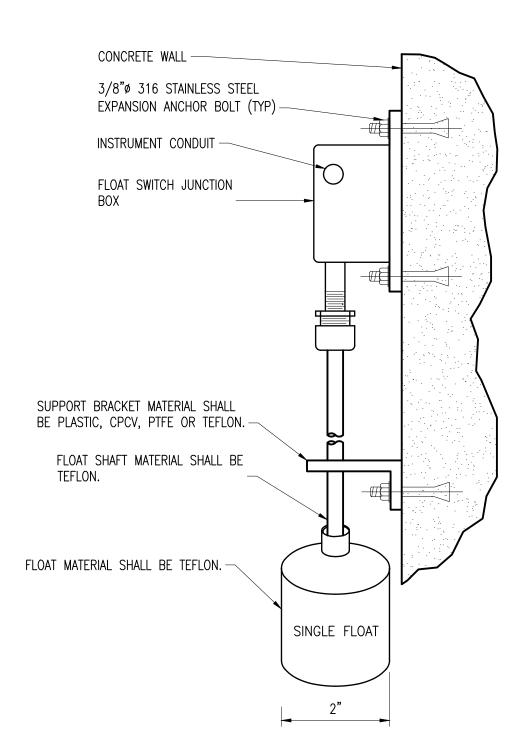




- 1. RADAR TRANSMITTER SHALL BE MOUNTED TO THE TOP OF THE TANK WITH A NON-PENETRATING MOUNTING SYSTEM AS SHOWN.
- 2. MOUNT RADAR TRANSMITTER IN A LOCATION THAT ENSURES A MINIMUM OF 1.0' FEET (12") OF UNOBSTRUCTED RADAR BEAM CLEARANCE, 360 DEGREES AROUND
- 3. MOUNT SENSOR OFF-CENTER OF STORAGE TANK TO MINIMIZE SIGNAL REFLECTIONS.
- 4. RADAR SIGNAL PATH SHALL BE FREE OF OBSTRUCTIONS.
- 5. PROVIDE 4" TANK NOZZLE WITH BLIND FLANGE FOR USE AS MOUNTING SURFACE.

### RADAR LEVEL TRANSMITTER CHEMICAL STORAGE TANK MOUNT

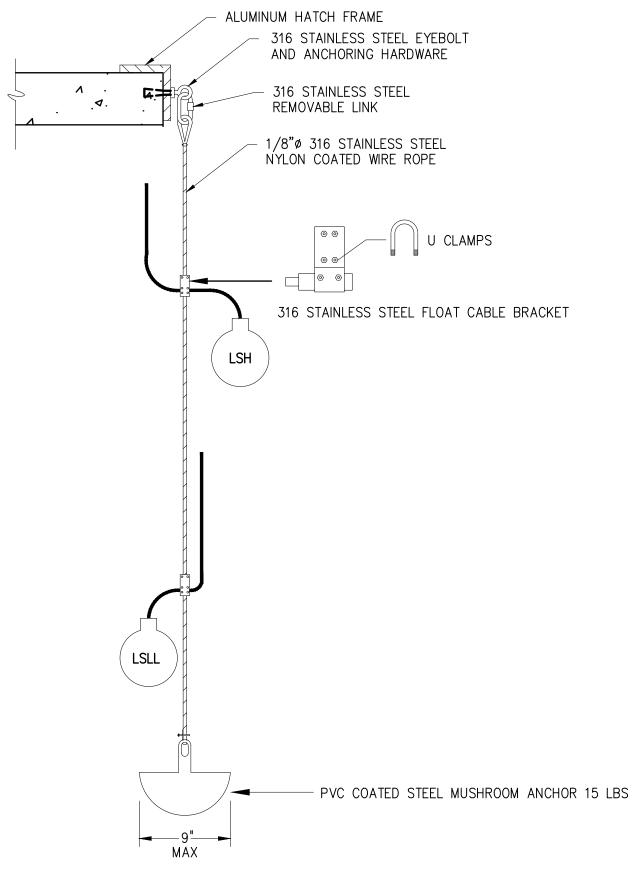
DETAIL	STD
N.T.S.	12



## NOTES:

1. SEE SECTION 17682 FOR ADDITIONAL FLOAT SWITCH REQUIREMENTS.

## CONTAINMENT SUMP SLIDING FLOAT SWITCH



## SUSPENDED FLOAT SWITCH

	14.1.0.	12
A. DIEFFENTHALLER		
	<b>a</b>	

Hazen	
HAZEN AND SAWYER	
6675 CORPORATE CENTER PARKWAY	

JACKSONVILLE, FLORIDA 32216

RADIO AVENUE R.W. GROUND STORAGE TANKS & PUMP STATION



INSTRUMENTATION **DETAILS II** 

DATE:	MARCH 2021
HAZEN NO.:	42011-014
CONTRACT NO	.: 8004751
DRAWING NUMBER:	
	ID-02

PROJECT ENGINEER: K. DINNEN DESIGNED BY: J. RATASKY DRAWN BY: K. DINNEN CHECKED BY: **BID SET** 3/21 AD 12/20 AD IF THIS BAR DOES NOT 100% DESIGN SUBMITTAL 0 1/2" 90% DESIGN SUBMITTAL 10/20 AD MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

DATE