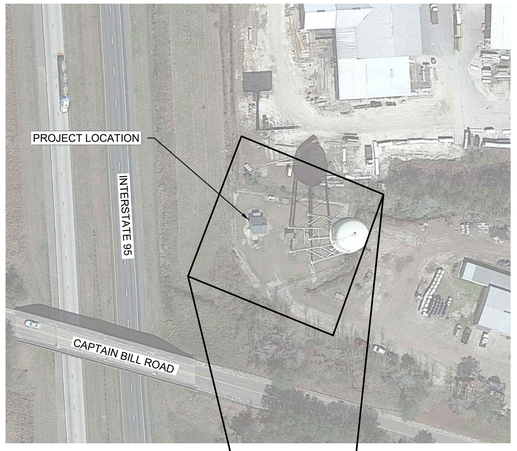
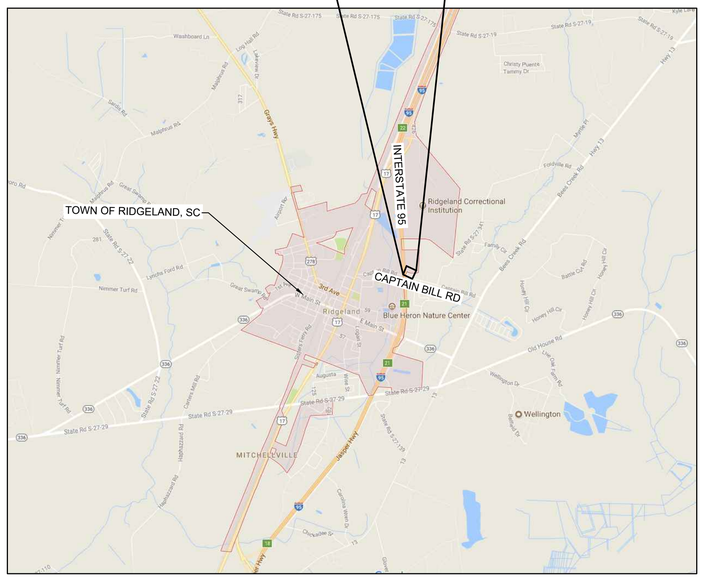
CONSTRUCTION DRAWINGS FOR:

TOWN OF RIDGELAND
WELL SITE #3 IMPROVEMENTS





MAYOR

JOSEPH N. MALPHRUS, JR

MAYOR PRO TEMPORE

TOMMY RHODES

COUNCIL MEMBERS

JOSEPHINE BOYLES
BILL FISHBURNE
LIBBY MALPHRUS

TOWN ADMINISTRATOR

DENNIS E. AVERKIN

PROJECT #: 17-1007:041

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
904-414-2400 C.O.A.# 51661 WWW.4WENG.COM

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 21839 ANGELA B. BRYAN

SOUTH CAROLINA FOUR WATERS ENGINEERING, INC. No. 5166 CERTIFICATE OF AUTHORIZATION

Sheet List Table

1

1

DATE: FEBRUARY 2024

ISSUE: **100% SUBMITTAL**

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1	2/27/24	BRH	ABB	UPDATE NOTES AND PHOTOS THROUGHOUT
2				
3				
4				
5				
6				
7				

UTILITY SEPARATION NOTES

1. UTILITY SEPARATION FROM WATER MAINS SHALL BE IN ACCORDANCE WITH THE TOWN OF RIDGELAND STANDARD SPECIFICATIONS FOR WATER AND SEWER SYSTEMS. ALL DISTANCES NOTED ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.

2. HORIZONTAL SEPARATION BETWEEN WATER MAIN AND SEWER PIPE UNDER THE TOWN OF RIDGELAND STANDARD SPECIFICATIONS FOR WATER AND SEWER SYSTEMS SHALL BE A MINIMUM OF TEN FEET WHERE POSSIBLE. THE MINIMUM OF THE HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND SEWER PIPE SHALL BE REDUCED WHERE THE BOTTOM OF THE WATER MAIN IS AT LEAST 18" INCHES ABOVE THE TOP OF THE SEWER AS APPROVED BY THE ENGINEER.

3. VERTICAL SEPARATION BETWEEN WATER MAIN AND SEWER PIPE SHALL BE 18 INCHES. PREFERENCE IS FOR THE WATER MAIN TO BE ABOVE THE OTHER PIPELINE.

4. FOR UTILITY CROSSINGS WITH WATER MAINS, ONE FULL LENGTH (20 FEET) OF WATER MAIN QUALITY PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THAT THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. WATER PIPE SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE FOR ALL CROSSINGS OF SEWER LINES AND DRAINAGE LINES, REGARDLESS OF CLEARANCE; FOR ALL CROSSINGS OF CREEKS, RIVERS, OR OTHER WATER BODIES; AND FOR WATER MAINS INSTALLED IN CASING. THE CONTRACTOR SHALL VERIFY, RECORD, AND REPORT THE VERTICAL SEPARATION FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE AT THE CROSSING.

5. NO WATER MAIN SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SANITARY SEWER MANHOLE, A STORM SEWER MANHOLE, OR A STORM SEWER INLET STRUCTURE.

GENERAL NOTES

1. REFERENCE INDIVIDUAL EXISTING CONDITIONS DRAWINGS FOR ELEVATION AND COORDINATE SYSTEM INFORMATION FOR EACH SITE

2. IN ACCORDANCE WITH GENERAL CONDITIONS, IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND AVOID ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW THE GROUND SURFACE. ALL DAMAGE RESULTING FROM THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

3. THE CONTRACTOR SHALL MAINTAIN UNINTERRUPTED SERVICE AT ALL SERVICE CONNECTIONS. THE MANNER IN WHICH THIS IS ACCOMPLISHED SHALL BE LEFT TO THE DISCRETION OF THE CONTRACTOR, SUBJECT TO THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS.

4. STATIONING SHOWN ON DRAWINGS REFERS TO CENTERLINE OF ROAD OR RIGHT-OF-WAY LINE.

5. ALL PIPE LENGTHS SHOWN ON PLAN AND PROFILES ARE FROM CENTER TO CENTER OF INLETS OR MANHOLES OR ALONG FORCEMAIN OR WATER MAINS.

6. THE CONTRACTOR SHALL PROVIDE NO LESS THAN A 6 INCH CLEARANCE BETWEEN ALL UTILITIES, OTHER THAN WATER MAINS UNLESS OTHERWISE DIRECTED. NO SPECIAL PAYMENT ALLOWED.

7. MINIMUM PIPE COVER SHALL BE 36 INCHES FOR PIPES LESS THAN 12" IN DIAMETER; 48 INCHES FOR PIPES 14" OR LARGER IN DIAMETER; AND 36 INCHES BELOW ANY SCDOT ROAD ELEVATION.

8. CONTRACTOR SHALL EMPLOY A LAND SURVEYOR, REGISTERED IN THE STATE OF SOUTH CAROLINA, TO REFERENCE AND RESTORE PROPERTY CORNERS AND LANDMARKS WHICH MAY BE DISTURBED BY CONSTRUCTION.

9. EXISTING UTILITIES HAVE BEEN SHOWN FROM THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL NOTIFY THE PROPER UTILITY REPRESENTATIVE AT LEAST 48 HOURS PRIOR TO COMMENCING EXCAVATION NEAR UTILITY. CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL SUCH UTILITIES IN THE PATH OF CONSTRUCTION. THE LOCATION SHALL BE MADE WELL IN ADVANCE OF CONSTRUCTION SO THAT CONFLICTS IN CONSTRUCTION MAY BE RESOLVED.

10. THE DEPARTMENT OF TRANSPORTATION IS TO BE NOTIFIED 48 HOURS IN ADVANCE AND RAILROAD COMPANY 7 DAYS IN ADVANCE OF CONSTRUCTION WITHIN THEIR RESPECTIVE RIGHT OF WAY.

11. UTILITY CONTACTS
    SPECTRUM – (833-267-6094)
    CENTURYLINK – (866-642-0444)
    DOMINION ENERGY SOUTH CAROLINA – CUSTOMER SERVICE MAIN LINE (1-800-251-7234)
    PALMETTO ELECTRIC COOPERATIVE – RIDGELAND OFFICE (843-726-5551)
    TOWN OF RIDGELAND WATER & SEWER DEPARTMENT – TY SHAFFER (843-226-0312)

12. THE LOCATION(S) OF THE UTILITIES SHOWN IN THE PLANS ARE BASED ON LIMITED INVESTIGATION TECHNOLOGIES AND SHOULD BE CONSIDERED APPROXIMATE ONLY.

1 13. CONTACT SOUTH CAROLINA 811 AS REQUIRED BY SC CODE § 58-36-120 (2018).

14. CONTRACTOR TO LOCATE, PROTECT AND SUPPORT ALL WATER, SEWER, GAS, TELECOMMUNICATIONS AND ELECTRIC UTILITIES ENCOUNTERED DURING CONSTRUCTION.

15. IF THE CONTRACTOR ENCOUNTERS GROUNDWATER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR UTILIZING DEWATERING SYSTEM(S) TO REMOVE WATER FROM THE EXCAVATIONS. PRIOR TO BEGINNING ANY DEWATERING, THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS LISTED IN THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL REGULATION 61-113, GROUNDWATER USE AND REPORTING; AND REGULATION 61-9, WATER POLLUTION CONTROL PERMITS, BEFORE ANY DEWATERING CAN BEGIN. CONTRACTOR SHALL SECURE THE SCDHEC GENERAL PERMIT FOR THE DISCHARGE OF GROUND WATER.

16. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS DO NOT STAND BY THEMSELVES. ALSO TO BE INCLUDED ARE THE SPECIFICATIONS AND DETAILS.

17. CONTRACTOR TO FURNISH DETOUR AND CONSTRUCTION SIGNING AND LIGHTING AS REQUIRED IN SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION SUPPLEMENT TO THE MANUAL ON TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, AND OTHER SPECIAL ADVANCED DETOUR SIGNS AS NECESSARY.

18. ALL POTABLE WATER PIPE SHALL BE NSFPW RATED.

19. IF SOLVENT CONTAMINATION IS FOUND IN THE PIPE TRENCH, WORK SHALL BE STOPPED AND THE PROPER AUTHORITIES NOTIFIED. WITH APPROVAL OF THE PERMITTING AGENCY, DUCTILE IRON PIPE, FITTINGS AND SOLVENT RESISTANT GASKET MATERIAL SHALL BE USED IN THE CONTAMINATED AREA. THE DUCTILE IRON PIPE SHALL EXTEND AT LEAST 100 FEET BEYOND ANY SOLVENT NOTED.

20. PIPE JOINT DEFLECTION, WHERE ALLOWED BY EXCEPTION, SHALL MATCH THE MANUFACTURER'S RECOMMENDATION FOR THE SIZE AND TYPE OF JOINT.

1 21. ALL PIPELINES, WATERMAINS, FORCEMAIN, AND SERVICE LATERALS SHALL HAVE A 12 GAUGE SOLID COPPER SINGLE STRAND TRACER WIRE TAPED ALONG THE TOP OF THE PIPE. THE TRACER WIRE SHALL BE BROUGHT TO SURFACE EVERY 500 LF MAX AT EACH LOCATOR POST ON PRESSURE MAINS AND ACCESSIBLE FROM THE SURFACE AT ALL VALVE BOXED AND LOCATOR POSTS. AT LOCATIONS TRACER WIRE SURFACES BETWEEN VALVES, REGULAR VALVE BOX WITH PLAIN LID AND COLLAR SHALL BE INSTALLED BETWEEN A PIPELINE MARKER PAIR.

22. CONTRACTOR SHALL CONTACT EACH PROPERTY OWNER ALONG THE ROUTE OF NEW PIPING AND CONSTRUCTION AND LOCATE ANY EXISTING IRRIGATION/SPRINKLER SYSTEMS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR/REPLACEMENT OF ANY DAMAGED IRRIGATION/SPRINKLER SYSTEMS ON PRIVATE PROPERTY OR TOWN OR SCDOT R.O.W'S DUE TO WORK BEING PERFORMED BY CONTRACTOR AND/OR SUB-CONTRACTORS.

23. THE CONTRACTOR SHALL SUBMIT A SHORING PLAN FOR EXCAVATIONS ADJACENT TO BUILDINGS, ADJACENT TO RIGHT-OF-WAY, OR ANY OTHER EXCAVATIONS DEEPER THAN 7 FEET. THE SHORING PLAN SHALL INCLUDE SHORING SYSTEM DESIGN CALCULATIONS AND DETAILS SIGNED AND SEALED BY A SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.

24. ALL PROTECTED TREES SHALL BE PROTECTED FROM INJURY DURING ANY LAND CLEARING OR CONSTRUCTION. PRIOR TO ANY LAND CLEARING OR CONSTRUCTION OPERATIONS, TEMPORARY BARRIERS SHALL BE INSTALLED AT THE DRIP LINE OF ALL PROTECTED TREES IN ACCORDANCE WITH JASPER COUNTY ZONING ORDINANCE § 13:5 (2).

25. TREE BARRICADE APPROVAL: OBTAIN TOWN APPROVAL OF TREE BARRICADES BEFORE BEGINNING CLEARING OPERATIONS OR ANY CONSTRUCTION.

1 26. SCDOT RIGHTS-OF-WAY ENCROACHMENT PERMITS ARE REQUIRED FOR ANY WORK WITHIN A SCDOT RIGHT-OF-WAY.

27. CONSTRUCTION ACTIVITIES DISTURBING ANY LAND AREA WITHIN JASPER COUNTY SHALL REQUIRE NOTIFICATION TO SCDHEC PRIOR TO CONSTRUCTION. NOTIFICATION REQUIREMENTS AND/OR NPDES PERMIT REQUIREMENTS VARY BASED UPON LAND DISTURBANCE AREA AND PROXIMITY TO A COASTAL RECEIVING WATER BODY. CONTRACTOR SHALL SUBMIT AN NOI TO SCDHEC PRIOR TO CONSTRUCTION IF NOT ACQUIRED DURING DESIGN.

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 21839
ANGELA B. BRYAN

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
FOUR WATERS ENGINEERING, INC.
No. 5166

REV/ NO	DATE	DWN BY	CHK BY	DESCRIPTION
1	04/05/24	BRH	ABB	NOTES UPDATED
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

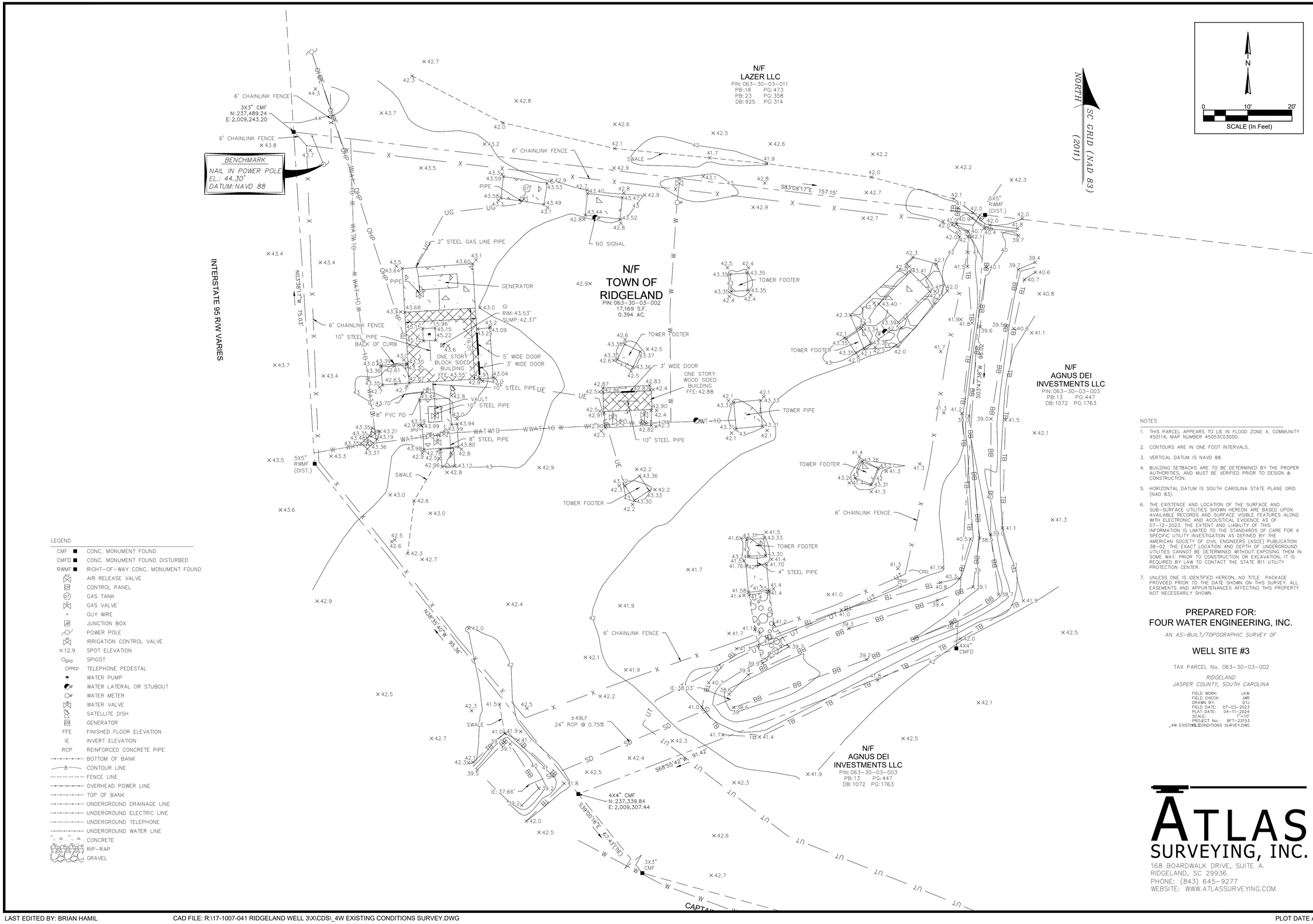
GENERAL NOTES

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	DRAWN	BRH
JOB #	17-1007-41		
ISSUE DATE	FEBRUARY 2024		
ISSUE	100%		

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
G-1



LEGEND

CMF ■	CONC. MONUMENT FOUND
CMFD ■	CONC. MONUMENT FOUND DISTURBED
RWMF ■	RIGHT-OF-WAY CONC. MONUMENT FOUND
ARV	AIR RELEASE VALVE
CP	CONTROL PANEL
GT	GAS TANK
GV	GAS VALVE
×	GUY WIRE
JB	JUNCTION BOX
	POWER POLE
IRR	IRRIGATION CONTROL VALVE
×12.9	SPOT ELEVATION
SPG	SPIGOT
TPED	TELEPHONE PEDESTAL
	WATER PUMP
W	WATER LATERAL OR STUBOUT
W	WATER METER
WV	WATER VALVE
	SATELLITE DISH
GEN	GENERATOR
FFE	FINISHED FLOOR ELEVATION
IE	INVERT ELEVATION
RCP	REINFORCED CONCRETE PIPE
	BOTTOM OF BANK
	CONTOUR LINE
	FENCE LINE
	OVERHEAD POWER LINE
	TOP OF BANK
	UNDERGROUND DRAINAGE LINE
	UNDERGROUND ELECTRIC LINE
	UNDERGROUND TELEPHONE
	UNDERGROUND WATER LINE
	CONCRETE
	RIP-RAP
	GRAVEL

NOTES

1. THIS PARCEL APPEARS TO LIE IN FLOOD ZONE X, COMMUNITY 450114, MAP NUMBER 45053C0305D.
2. CONTOURS ARE IN ONE FOOT INTERVALS.
3. VERTICAL DATUM IS NAVD 88.
4. BUILDING SETBACKS ARE TO BE DETERMINED BY THE PROPER AUTHORITIES, AND MUST BE VERIFIED PRIOR TO DESIGN & CONSTRUCTION.
5. HORIZONTAL DATUM IS SOUTH CAROLINA STATE PLANE GRID (NAD 83).
6. THE EXISTENCE AND LOCATION OF THE SURFACE AND SUB-SURFACE UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE RECORDS AND SURFACE VISIBLE FEATURES ALONG WITH ELECTRONIC AND ACOUSTICAL EVIDENCE AS OF 07-12-2023. THE EXTENT AND LIABILITY OF THIS INFORMATION IS LIMITED TO THE STANDARDS OF CARE FOR A SPECIFIC UTILITY INVESTIGATION AS DEFINED BY THE AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) PUBLICATION 38-02. THE EXACT LOCATION AND DEPTH OF UNDERGROUND UTILITIES CANNOT BE DETERMINED WITHOUT EXPOSING THEM IN SOME WAY. PRIOR TO CONSTRUCTION OR EXCAVATION, IT IS REQUIRED BY LAW TO CONTACT THE STATE 811 UTILITY PROTECTION CENTER.
7. UNLESS ONE IS IDENTIFIED HEREON, NO TITLE PACKAGE PROVIDED PRIOR TO THE DATE SHOWN ON THIS SURVEY. ALL EASEMENTS AND APPURTENANCES AFFECTING THIS PROPERTY NOT NECESSARILY SHOWN.

PREPARED FOR:
FOUR WATER ENGINEERING, INC.

AN AS-BUILT/TOPOGRAPHIC SURVEY OF

WELL SITE #3

TAX PARCEL No. 063-30-03-002

RIDGELAND
JASPER COUNTY, SOUTH CAROLINA

FIELD WORK:	LKW
FIELD CHECK:	JWR
DRAWN BY:	DTJ
FIELD DATE:	07-03-2023
PLAT DATE:	04-11-2024
SCALE:	1"=10'
PROJECT No.:	BFT-2.3153

_4W EXISTING CONDITIONS SURVEY.DWG

ATLAS SURVEYING, INC.
168 BOARDWALK DRIVE, SUITE A.
RIDGELAND, SC 29936.
PHONE: (843) 645-9277
WEBSITE: WWW.ATLASSURVEYING.COM

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 21839
ANGELA B. BRYAN

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
FOUR WATERS ENGINEERING, INC.
No. 5166

REV NO	DATE	DWN BY	CHK BY	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

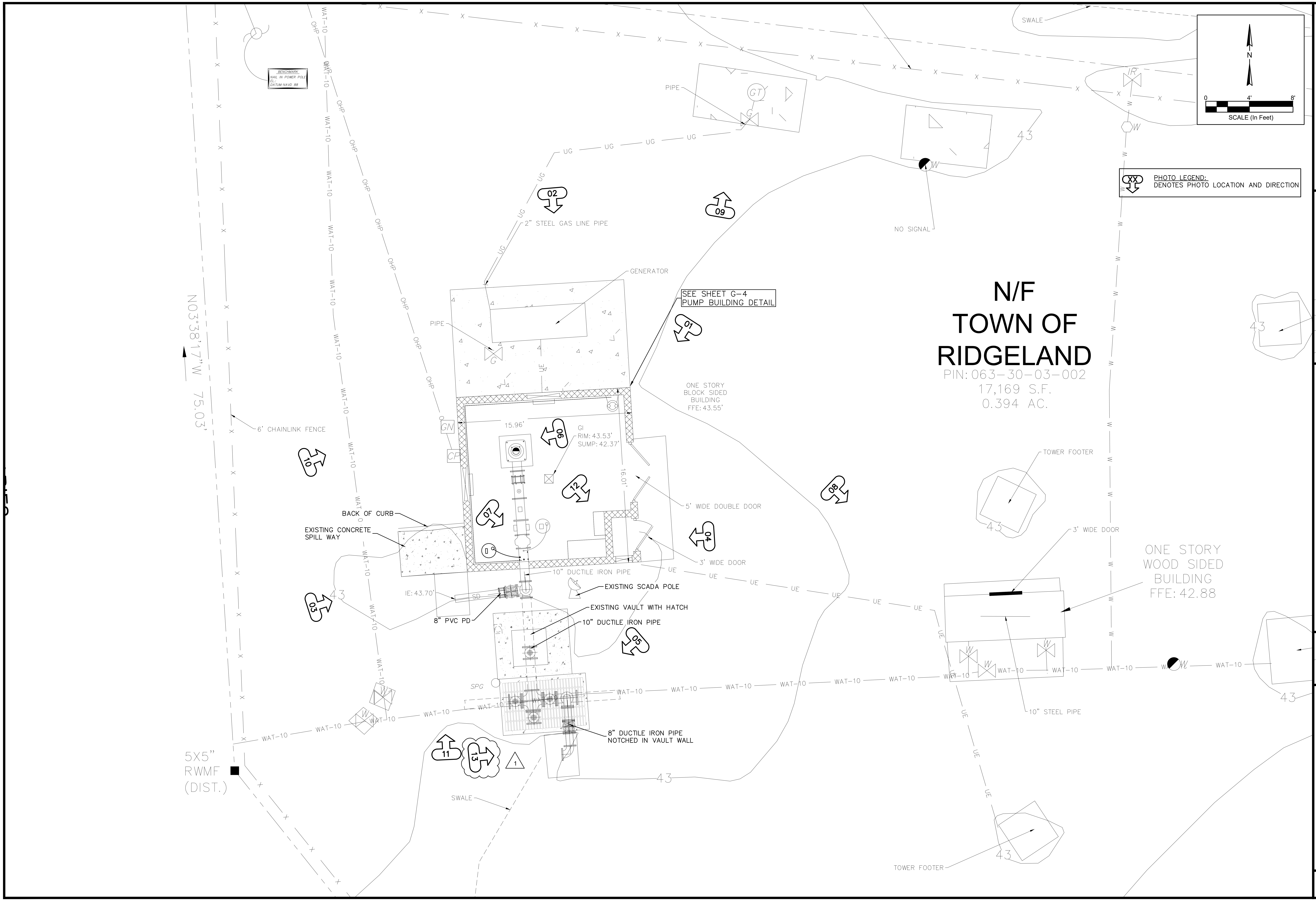
EXISTING CONDITIONS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN BRH	ISSUE DATE FEBRUARY 2024	100%
	JOB # 17-1007.41		ISSUE

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
G-2



No. 21839
ANGELA B. BRYAN

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA
FOUR WATERS ENGINEERING, INC.
No. 5166
CERTIFICATE OF AUTHORIZATION

REV NO	DATE	DWN BY	CHK BY	DESCRIPTION
1	04/05/24	BRH	ABB	PHOTO ADDITION
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

WELL SITE #3 EXISTING CONDITIONS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	BRH
JOB #	17-1007-41
ISSUE DATE	FEBRUARY 2024
ISSUE	100%

FOUR WATERS
ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
G-3

LAST EDITED BY: BRIAN HAMIL
CAD FILE: R:\17-1007-041 RIDGELAND WELL 3\X\CDS_4W EXISTING CONDITIONS.DWG
PLOT DATE AND TIME: 4/11/2024 1:37:51 PM

PHOTO 1: LOOKING SOUTH TOWARD WELL BUILDING

PHOTO 2: LOOKING SOUTH TOWARD GENERATOR

PHOTO 3: LOOKING EAST TOWARD WELL BUILDING

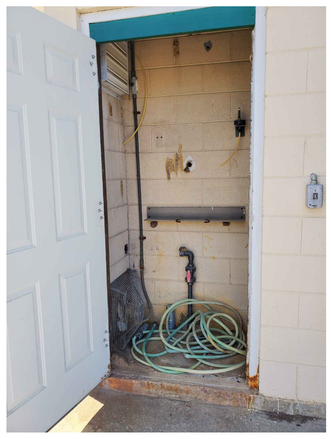


PHOTO 4: LOOKING WEST TOWARD CHLORINE GAS ROOM

PHOTO 5: LOOKING WEST TOWARD DISTRIBUTION VALVE VAULT AND SPILLWAY

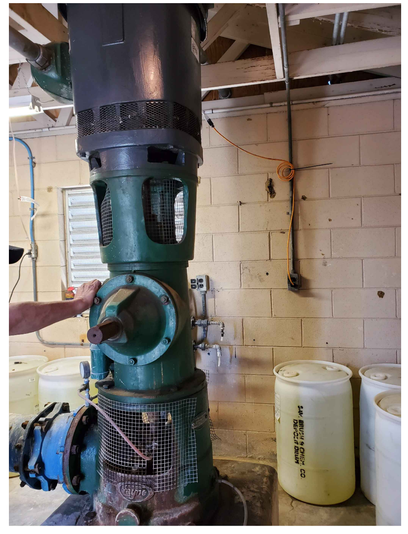


PHOTO 6: LOOKING WEST TOWARD WELL PUMP

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 21839
ANGELA B. BRYAN

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
FOUR WATERS ENGINEERING, INC.
No. 5166

REV NO	DATE	DWN BY	CHK BY	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

WELL SITE #3 - PHOTOS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	DRAWN	BRH
JOB #	17-1007-41		
ISSUE DATE	FEBRUARY 2024		
ISSUE	100%		

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
G-4

PHOTO 7: LOOKING SOUTH TOWARD WELL DISCHARGE

PHOTO 8: LOOKING EAST TOWARD ALTITUDE VALVE BUILDING

PHOTO 9: LOOKING NORTH TOWARD GAS TANK

PHOTO 10: LOOKING EAST TOWARD CONTROL PANEL

PHOTO 11: LOOKING NORTH TOWARD SPILLWAY CONCRETE AND DISCHARGE PIPE

PHOTO 12: LOOKING SOUTHEAST TOWARD ELECTRICAL PANEL

1

PHOTO 13: LOOKING EAST TOWARD VAULT

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 21839
ANGELA B. BRYAN

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
FOUR WATERS ENGINEERING, INC.
No. 5166

REV NO	DATE	DWN BY	CHK BY	DESCRIPTION
1	04/05/24	BRH	ABB	PHOTO ADDITION
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

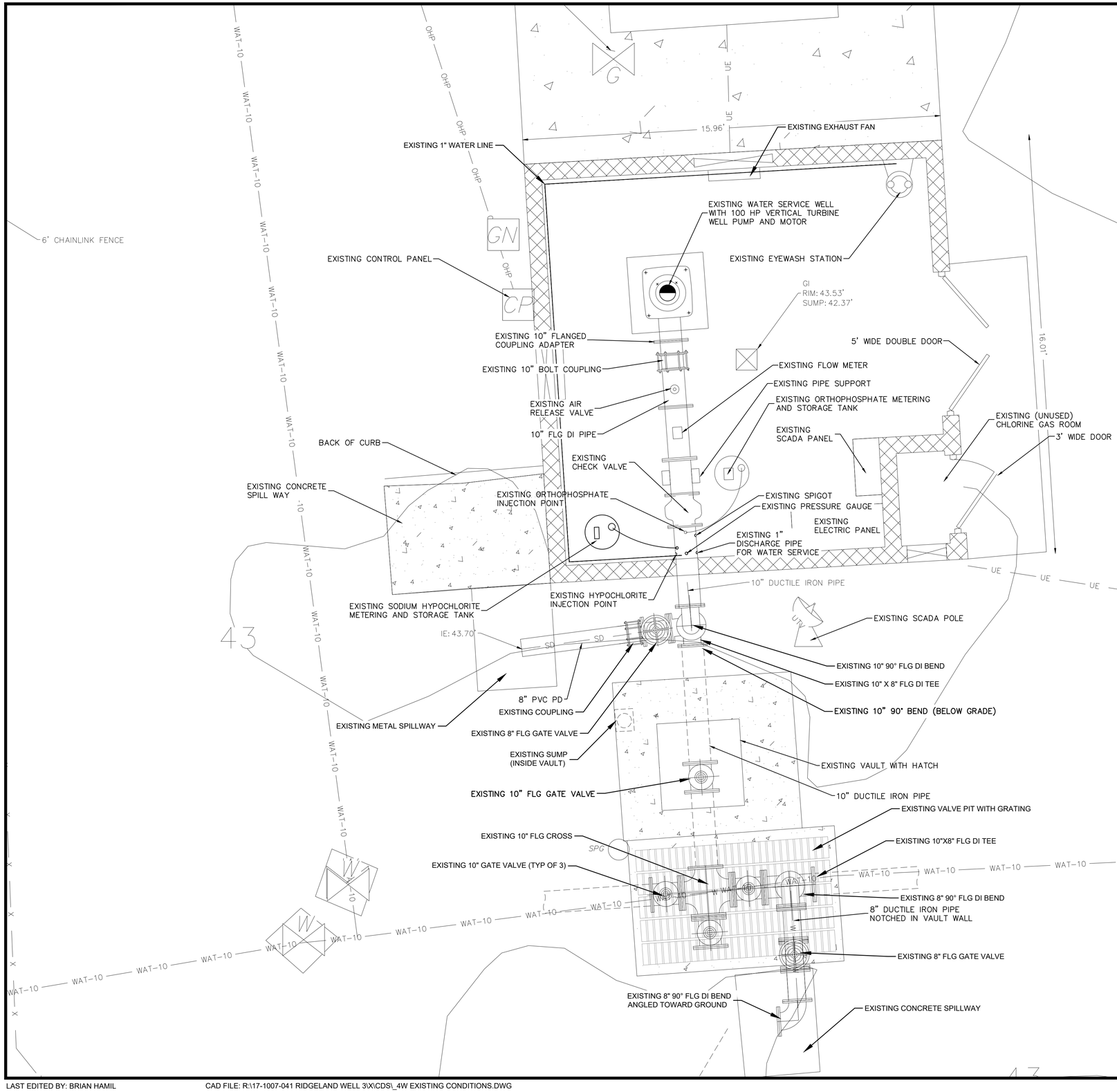
WELL SITE #3 - PHOTOS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN ABB	JOB # 17-1007-41	DRAWN BRH	
ISSUE DATE FEBRUARY 2024		ISSUE 100%	

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
G-5



SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 21839
ANGELA B. BRYAN

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
FOUR WATERS ENGINEERING, INC.
No. 5166

REV NO	DATE	DWN BY	CHK BY	DESCRIPTION
1	04/05/24	BRH	ABB	INFRASTRUCTURE CLARIFICATION
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

WELL SITE #3 PUMP BUILDING DETAIL

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	BRH
JOB #	17-1007-41
ISSUE DATE	FEBRUARY 2024
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

1

DRAWING NUMBER
G-6

EXISTING OVERHEAD SECONDARY CONDUCTORS TO BE RELOCATED TO SECONDARY RISER POLE ON PROPERTY.
COORDINATE WITH DOMINION ENERGY.

MAINTAIN EXISTING POWER POLE FOR REUSE AS THE NEW FACILITY SECONDARY RISER POLE.
COORDINATE WITH DOMINION ENERGY

6' CHAINLINK FENCE

3X3" CMF
N:237,489.24
E:2,009,243.20

BENCHMARK
NAIL IN POWER POLE
EL.: 44.30'
DATUM: NAVD 88

N/F
LAZER LLC
PIN:063-30-03-011
PB:18 PG:473
PB:23 PG:358
DB:925 PG:314

SWALE

S83°09'17"E 157.15'

5X5" RWMF (DIST.)

REFERENCE ELECTRICAL PLAN FOR ELECTRICAL COMPONENT DEMOLITION DETAIL

REMOVE EXISTING EYEWASH STATION

NO SIGNAL

2" STEEL GAS LINE PIPE

GENERATOR

REFERENCE ARCHITECTURAL PLAN FOR DEMOLITION WORK OF BUILDING

N/F
TOWN OF
RIDGELAND
PIN:063-30-03-002
17,169 S.F.
0.394 AC.

INTERSTATE 95 R/W VARIES

N03°38'17"W 75.03'

GI
RIM:43.53'
SUMP:42.37'

REMOVE EXISTING 5' WIDE DOUBLE DOOR

3' WIDE DOOR

ONE STORY WOOD SIDED BUILDING FFE:42.88

REMOVE EXISTING 3' WIDE DOOR

REFERENCE ELECTRICAL PLAN FOR ELECTRICAL COMPONENT DEMOLITION DETAIL

10" STEEL PIPE

IE:43.70

8" PVC PIPE

VAULT

10" STEEL PIPE

8" STEEL PIPE

REMOVE CONCRETE SPILLWAY

REMOVE METAL SPILLWAY PAD

REFERENCE SHEET C-2 FOR PIPING DEMOLITION DETAIL

REMOVE CONCRETE SPILLWAY PAD

INSTALL 500 LF SINGLE ROW SILT FENCE

N08°39'40"W 85.36'

TOWER FOOTER

TOWER PIPE

N/F
AGNUS DEI
INVESTMENTS LLC
PIN:063-30-03-003
PB:13PG:447
DB:1072 PG:1763

S83°47'38"W 98.22'

LIMITS OF CONSTRUCTION AND DISTURBANCE

4" STEEL PIPE

4X4" CMFD

IE:38.03'

ENTRANCE GATE

±49LF
24" RCP @ 0.75%

S68°55'42"W 91.42'

IE:37.66'

4X4" CMF
N:237,339.84
E:2,009,307.44

S39°00'16"E 87.45'(TIE)

3X3" CMF

NORTH
SC CRD (2011)
(NAD 83)

N

0 10' 20'
SCALE (In Feet)

LEGEND

CMF ■	CONC. MONUMENT FOUND
CMFD ■	CONC. MONUMENT FOUND DISTURBED
RWMF ■	RIGHT-OF-WAY CONC. MONUMENT FOUND
	AIR RELEASE VALVE
CP	CONTROL PANEL
GT	GAS TANK
	GAS VALVE
	GUY WIRE
JB	JUNCTION BOX
	POWER POLE
	IRRIGATION CONTROL VALVE
	SPOT ELEVATION
SPIG	SPIGOT
TPED	TELEPHONE PEDESTAL
	WATER PUMP
W	WATER LATERAL OR STUBOUT
W	WATER METER
	WATER VALVE
	SATELLITE DISH
GN	GENERATOR
FFE	FINISHED FLOOR ELEVATION
IE	INVERT ELEVATION
RCP	REINFORCED CONCRETE PIPE
	BOTTOM OF BANK
8	CONTOUR LINE
	FENCE LINE
	OVERHEAD POWER LINE
	TOP OF BANK
	UNDERGROUND DRAINAGE LINE
	UNDERGROUND ELECTRIC LINE
	UNDERGROUND TELEPHONE
	UNDERGROUND WATER LINE
	CONCRETE
	RIP-RAP
	GRAVEL

LEGEND

DENOTES EQUIPMENT & STRUCTURE TO BE REMOVED, RELOCATED AND/OR DEMOLISHED

SF SILT FENCE

DENOTES LIMITS OF DISTURBANCE 0.31 ACRES

1

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 21839
ANGELA B. BRYAN

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA
FOUR WATERS ENGINEERING, INC.
No. 5166
CERTIFICATE OF AUTHORIZATION

REV NO	DATE	DWN BY	CHK BY	DESCRIPTION
1	04/05/24	BRH	ABB	DESIGN CLARIFICATION
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

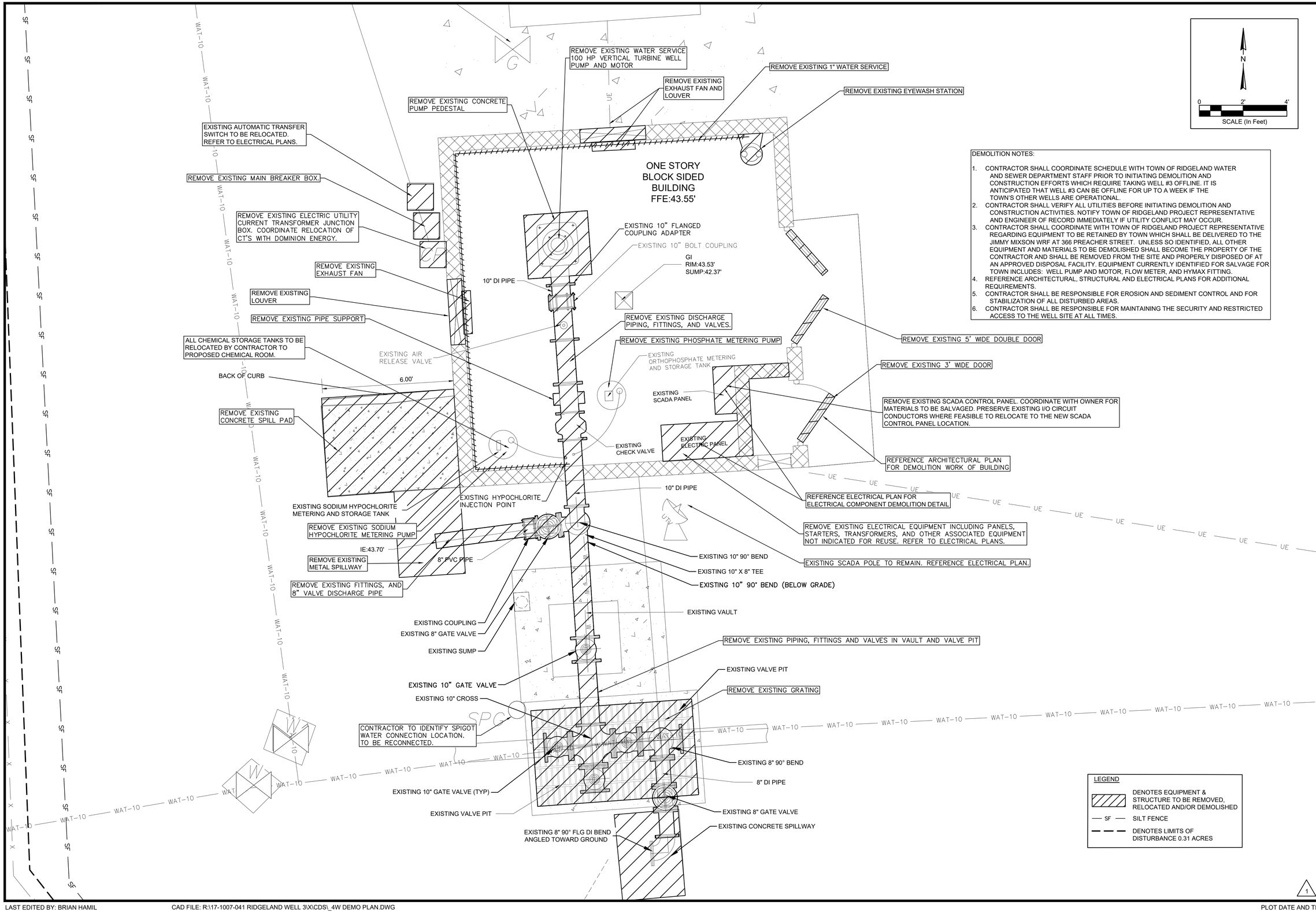
WELL SITE #3 - CONSTRUCTION LIMITS AND DEMOLITION PLAN

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN BRH	JOB # 17-1007-41	ISSUE DATE FEBRUARY 2024	100% ISSUE

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
C-1



N

0 2' 4'

SCALE (In Feet)

DEMOLITION NOTES:

1. CONTRACTOR SHALL COORDINATE SCHEDULE WITH TOWN OF RIDGELAND WATER AND SEWER DEPARTMENT STAFF PRIOR TO INITIATING DEMOLITION AND CONSTRUCTION EFFORTS WHICH REQUIRE TAKING WELL #3 OFFLINE. IT IS ANTICIPATED THAT WELL #3 CAN BE OFFLINE FOR UP TO A WEEK IF THE TOWN'S OTHER WELLS ARE OPERATIONAL.
2. CONTRACTOR SHALL VERIFY ALL UTILITIES BEFORE INITIATING DEMOLITION AND CONSTRUCTION ACTIVITIES. NOTIFY TOWN OF RIDGELAND PROJECT REPRESENTATIVE AND ENGINEER OF RECORD IMMEDIATELY IF UTILITY CONFLICT MAY OCCUR.
3. CONTRACTOR SHALL COORDINATE WITH TOWN OF RIDGELAND PROJECT REPRESENTATIVE REGARDING EQUIPMENT TO BE RETAINED BY TOWN WHICH SHALL BE DELIVERED TO THE JIMMY MIXSON WRF AT 366 PREACHER STREET. UNLESS SO IDENTIFIED, ALL OTHER EQUIPMENT AND MATERIALS TO BE DEMOLISHED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF AT AN APPROVED DISPOSAL FACILITY. EQUIPMENT CURRENTLY IDENTIFIED FOR SALVAGE FOR TOWN INCLUDES: WELL PUMP AND MOTOR, FLOW METER, AND HYMAX FITTING.
4. REFERENCE ARCHITECTURAL, STRUCTURAL AND ELECTRICAL PLANS FOR ADDITIONAL REQUIREMENTS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL AND FOR STABILIZATION OF ALL DISTURBED AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SECURITY AND RESTRICTED ACCESS TO THE WELL SITE AT ALL TIMES.

LEGEND

- DENOTES EQUIPMENT & STRUCTURE TO BE REMOVED, RELOCATED AND/OR DEMOLISHED
- SF — SILT FENCE
- DENOTES LIMITS OF DISTURBANCE 0.31 ACRES

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 21839
ANGELA B. BRYAN

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
FOUR WATERS ENGINEERING, INC. No. 5166

REV NO	DATE	DWN BY	CHK BY	DESCRIPTION
1	04/05/24	BRH	ABB	DEMOLITION CLARIFICATION
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

DEMOLITION PLAN

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	BRH
JOB #	17-1007-41
ISSUE DATE	FEBRUARY 2024
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
C-2

ROOF HATCH OPENING ABOVE PUMP TO REMAIN. REFERENCE ARCHITECTURAL PLANS.

PROPOSED TRANSFER SWITCH (SEE SITE ELECTRICAL PLAN)

PROPOSED MAIN DISCONNECT (SEE SITE ELECTRICAL PLAN)

BUILDING EXPANSION REFERENCE ARCHITECTURAL PLAN FOR DETAIL

CHEMICAL STORAGE AREA

NEW DOUBLE DOOR WITH LOUVER. REFERENCE ARCHITECTURAL PLANS

ELECTRICAL PROVISIONS FOR FUTURE TRICHLOR SYSTEM. SEE ELECTRICAL PLAN E-4

CHEMICAL METERING 3/8" PVC (SCH40) TUBING FOR SUCTION, RETURN OF SUPPLY AND DISCHARGE FEEDER FOR SODIUM HYPOCHLORITE AND ORTHOPHOSPHATE

NEW EYEWASH AND SHOWER STATION

2' X 2' CONCRETE PAD (6" THICK, 3000 PSI)

RELOCATED SODIUM HYPOCHLORITE STORAGE TANK

NEW METERING PUMP FOR SODIUM HYPOCHLORITE INJECTION

1.5" HOSE STATION (SEE DETAIL)

RELOCATED SODIUM HYPOCHLORITE TANK.

2" REDUCED PRESSURE ZONE BACKFLOW PREVENTER

RELOCATED ORTHOPHOSPHATE STORAGE TANK

10"X2" SADDLE AND 2" GATE VALVE WITH BOX AND COVER

CONTRACTOR TO CONFIRM THE SERVICE LINE MATERIAL, SIZE, AND LOCATION TO CONNECT A NEW 2" SERVICE LINE FOR EYEWASH AND SHOWER STATION AND 1.5" HOSE STATION. (SEE DETAIL)

15.5" X 15.5" EXHAUST FAN WITH WALL GRILL (SEE ELECTRICAL PLAN E-4 AND ARCHITECTURAL PLAN A-2 FOR DETAIL)

INSTALL NEW 4'X4' CONCRETE SPILLWAY PAD (SEE DETAIL)

CHEMICAL INJECTION CONDUIT AND TUBING (TYP)

ROUTE CHEMICAL FEEDS FROM VAULT TO INSIDE OF CHEMICAL ROOM USING (2) BURIED 2" PVC (SCH80) CONDUIT PIPING RUNS AND FITTINGS WITH 3/8" PVC (SCH 40) TUBING. TUBING IN THE CHEMICAL ROOM SHALL BE ATTACHED AND SECURED NEATLY TO THE WALL/FLOOR AND CONNECTED TO EACH CHEMICAL PUMP.

ENCLOSE OPENING. REFERENCE ARCHITECTURAL PLAN

NEW METERING PUMP FOR PHOSPHATE INJECTION

18.5"x18.5" EXHAUST FAN WITH WALL GRILL. (SEE ELECTRICAL PLAN E-4 AND ARCHITECTURAL PLAN A-2 FOR DETAIL).

36"x84" LOUVER (SEE ARCHITECTUAL PLAN FOR DETAIL)

POWER PANEL PP-1

35" X 35" CONCRETE EQUIPMENT PAD OR AS RECOMMENDED BY PUMP MANUFACTURER

NEW 125 HP VERTICAL TURBINE WELL PUMP AND MOTOR

INSTALL 1/2" PVC SCH 80 PUMP DRAIN PIPING TO FLOOR DRAIN. ANCHOR PIPING TO DISCHARGE HEAD BASE WITH 316SS PIPE ANCHORS.

35"

35"

10"X 8" FLG DI ECCENTRIC REDUCER

AIR VALVE WITH 2" TAP AND BALL VALVE

GI
RIM:43.53'
SUMP:42.37'

ONE STORY BLOCK SIDED BUILDING FFE:43.55'

10" FLOW METER. REFERENCE ELECTRICAL PLAN E-4

SEE SHEET C-4 FOR WELL DISCHARGE PIPING DETAIL

10" DRESSER COUPLING

10" FLG GLOBE STYLE CHECK VALVE WITH LIMIT SWITCH

10" FLG DI PIPE SPOOL AS NEEDED.

CONCRETE PIPE SUPPORT (SEE DETAIL)

10" FLG BUTTERFLY VALVE WITH HANDWHEEL

10" FLG COUPLING ADAPTER

SAMPLE TAP

PRESSURE GAUGE

10" FLGXPE DI PIPE

PROPOSED HEATER (SEE ELECTRICAL PLAN E-4 FOR DETAIL)

10" DI FLG 90° BEND

10" X 8" DI FLG TEE

10" DI MJ 90° BEND, 10" FLGXPE DI SPOOL, AND (2) 10" MEGALUG RESTRAINT AS NECESSARY TO ACHIEVE DEPTH OF VAULT

10" FLG PE DI PIPE (TYP)

10" FLANGED COUPLING ADAPTER (TYP OF 2)

ORTHOPHOSPHATE INJECTION POINT (SEE DETAIL SHEET C-4)

SODIUM HYPOCHLORITE INJECTION POINT (SEE DETAIL SHEET C-4)

VAULT

10" FLG PE DI PIPE (TYP)

10" FLG X PE DI PIPE

EXISTING VALVE PIT

10" X 8" DI FLG TEE

10" FLANGED COUPLING ADAPTER AS NECESSARY TO CONNECT TO EXISTING PIPING

8" DI FLG 90° BEND

INSTALL NEW GRATING (MATCH EXISTING)

8" DI FLG PIPE SPOOL (TYP)

10" DI MJ GATE VALVE

8" DI FLG GATE VALVE WITH HANDWHEEL

INSTALL NEW 4'X4' CONCRETE SPILLWAY PAD. (SEE DETAIL)

8" FLG DI 90° BEND WITH SCREEN

EXISTING SWALE

3 LF 8 FLG DI PIPE

8" DI FLG 90° BEND WITH SCREEN (ANGLED)

CONCRETE PIPE SUPPORT (SEE DETAIL)

8" FLG GATE VALVE WITH HANDWHEEL

INSTALL NEW SUMP PUMP ASSEMBLY (INSIDE VAULT). (SEE NOTE 6)

CORE DRILL VAULT WALL FOR CHEMICAL FEED, SUMP PUMP DISCHARGE AND ELECTRICAL CONDUITS AS NECESSARY. SEAL ANNULAR SPACE.

RECONNECT EXISTING SPIGOT TO WATER SERVICE

CORE DRILL 6" Ø OPENING AND BOTTOM OF COMMON WALL OF VAULTS.

10" FLANGED COUPLING ADAPTER AS NECESSARY TO CONNECT TO EXISTING PIPING

10" DI FLG GATE VALVE WITH HANDWHEEL (TYP OF 3)

10" DI FLG CROSS

10" DI FLG BLIND FLANGE

ROUTE SUMP PUMP DISCHARGE PIPE TO THE SWALE USING BURIED 3" PVC SCH-80 PIPE AND FITTINGS

DEEPEN EXISTING SWALE 6" FROM VALVE VAULT TO PROPERTY FENCE TO IMPROVE DRAINAGE.

NEW DOUBLE DOOR WITH LOUVER. SEE ARCHITECTURAL PLAN.

PROPOSED SCADA CONTROL PANEL (SEE ELECTRICAL PLAN E-4 FOR DETAIL)

ENCLOSE OPENING (SEE ARCHITECTUAL PLAN FOR DETAIL)

ENCLOSE OPENING (SEE ARCHITECTUAL PLAN FOR DETAIL)

PROPOSED ELECTRICAL CABINETS (SEE ELECTRICAL PLAN E-4 FOR DETAIL)

16.0'

6.00'

4'

N

0 2' 4'

SCALE (In Feet)

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL COORDINATE SCHEDULE WITH TOWN OF RIDGELAND WATER AND SEWER DEPARTMENT STAFF PRIOR TO INITIATING DEMOLITION AND CONSTRUCTION EFFORTS WHICH REQUIRE TAKING WELL #3 OFFLINE. IT IS ANTICIPATED THAT WELL #3 CAN BE OFFLINE FOR UP TO A WEEK AT A TIME IF THE TOWN'S OTHER WELLS ARE OPERATIONAL.
2. CONTRACTOR SHALL VERIFY ALL UTILITIES BEFORE INITIATING DEMOLITION AND CONSTRUCTION ACTIVITIES. NOTIFY TOWN OF RIDGELAND PROJECT REPRESENTATIVE AND ENGINEER OF RECORD IMMEDIATELY IF UTILITY CONFLICT MAY OCCUR.
3. REFERENCE SPECIFICATIONS SECTION 11220 LINESHAFT VERTICAL TURBINE PUMP FOR WELL PUMP AND MOTOR REQUIREMENTS AND OPERATING CONDITIONS.
4. REFERENCE SPECIFICATIONS SECTION 02662 WATER TREATMENT CHEMICAL SYSTEM FOR SODIUM HYPOCHLORITE AND PHOSPHATE METERING PUMP REQUIREMENTS.
5. ALL TUBING SHALL BE ROUTED ALONG THE WALLS AND ATTACHED SECURELY AND NEATLY TO THE WALL.
6. ALL WATER MAIN AND SOLUTION PIPING STUBBED THROUGH THE FLOOR SHALL BE 2" MINIMUM OFF THE WALL.
7. ALL CONDUITS OR PIPING THROUGH WALLS OR CEILING TO BE SEALED WITH SILICONE CAULK.
8. ALL CHEMICAL PIPING/TUBING SHALL BE COLOR CODED OR TAGGED WITH CHEMICAL USE IN ACCORDANCE WITH SCDHEC REGULATION 61-58 STATE PRIMARY DRINKING WATER REGULATIONS.
9. ALL ABOVEGROUND SMALL DIAMETER EXTERIOR PIPING SHALL BE INSULATED.
10. SUMP PUMP ASSEMBLY FOR VAULTS SHALL INCLUDE (1) SULZER EJ 04W-2 WITH 4.61" VORTEX IMPELLER, 110 V, ¼ HP, 1780 RPM, 2" MIN SOLIDS, WITH PIGGY BACK FLOAT OR APPROVED EQUAL. PUMP ASSEMBLY SHALL BE INSTALLED IN VAULT WITH 2" PVC FULL PORT CHECK VALVE, 2" PVC BALL VALVE, 3"X2" PVC REDUCER, 3" PVC PIPING ALONG VAULT WALL, CORED AND INSTALLED THROUGH VAULT WALL, AND ROUTED WITH FITTINGS AS NECESSARY TO SWALE. PIPING SHALL BE ANCHORED TO VAULT WALL WITH 316 SS PIPE ANCHORS. PIPING SHALL BE PVC SCH 80.
11. EYE WASH AND SHOWER STATION SHALL BE GUARDIAN EQUIPMENT MODEL G1902BC-SSH OR APPROVED EQUAL AND SUITABLE FOR INSTALLATION OUTDOORS MOUNTED TO CONCRETE PAD.
12. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH SCDHEC REGULATION 61-58 STATE PRIMARY DRINKING WATER REGULATIONS. ALL MATERIALS OR PRODUCTS WHICH COME INTO CONTACT WITH DRINKING WATER SHALL BE CERTIFIED AS MEETING THE SPECIFICATIONS OF THE AMERICAN NATIONAL STANDARD INSTITUTE/NATIONAL SANITATION FOUNDATION STANDARD 61, DRINKING WATER SYSTEM COMPONENTS – HEALTH EFFECTS.
13. WELL, PUMP, PIPING AND EQUIPMENT IN CONTACT WITH DRINKING WATER SHALL BE DISINFECTED AND TESTED IN ACCORDANCE WITH SCDHEC REGULATION 61-58.2 AND 61-58.4. ALL NEWLY INSTALLED PIPE SHALL BE PRESSURE TESTED AND LEAKAGE TEST IN ACCORDANCE WITH AMERICAN WATER WORKS ASSOCIATION (AWWA)STANDARD C600.
14. REFERENCE ARCHITECTURAL, STRUCTURAL AND ELECTRICAL PLANS FOR ADDITIONAL REQUIREMENTS.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL AND FOR STABILIZATION OF ALL DISTURBED AREAS.
16. SITE SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITION WITH SEED AND MULCH OR SOLID SOD.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SECURITY AND RESTRICTED ACCESS TO THE WELL SITE AT ALL TIMES.

LEGEND

SF — SILT FENCE

DENOTES LIMITS OF DISTURBANCE 0.31 ACRES

DENOTES NEW CONSTRUCTION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 21839
ANGELA B. BRYAN

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
FOUR WATERS ENGINEERING, INC. No. 5166

REV/ NO	DATE	DWN BY	CHK BY	DESCRIPTION
1	04/05/24	BRH	ABB	CONSTRUCTION CLARIFICATION
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

CONSTRUCTION PLAN

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

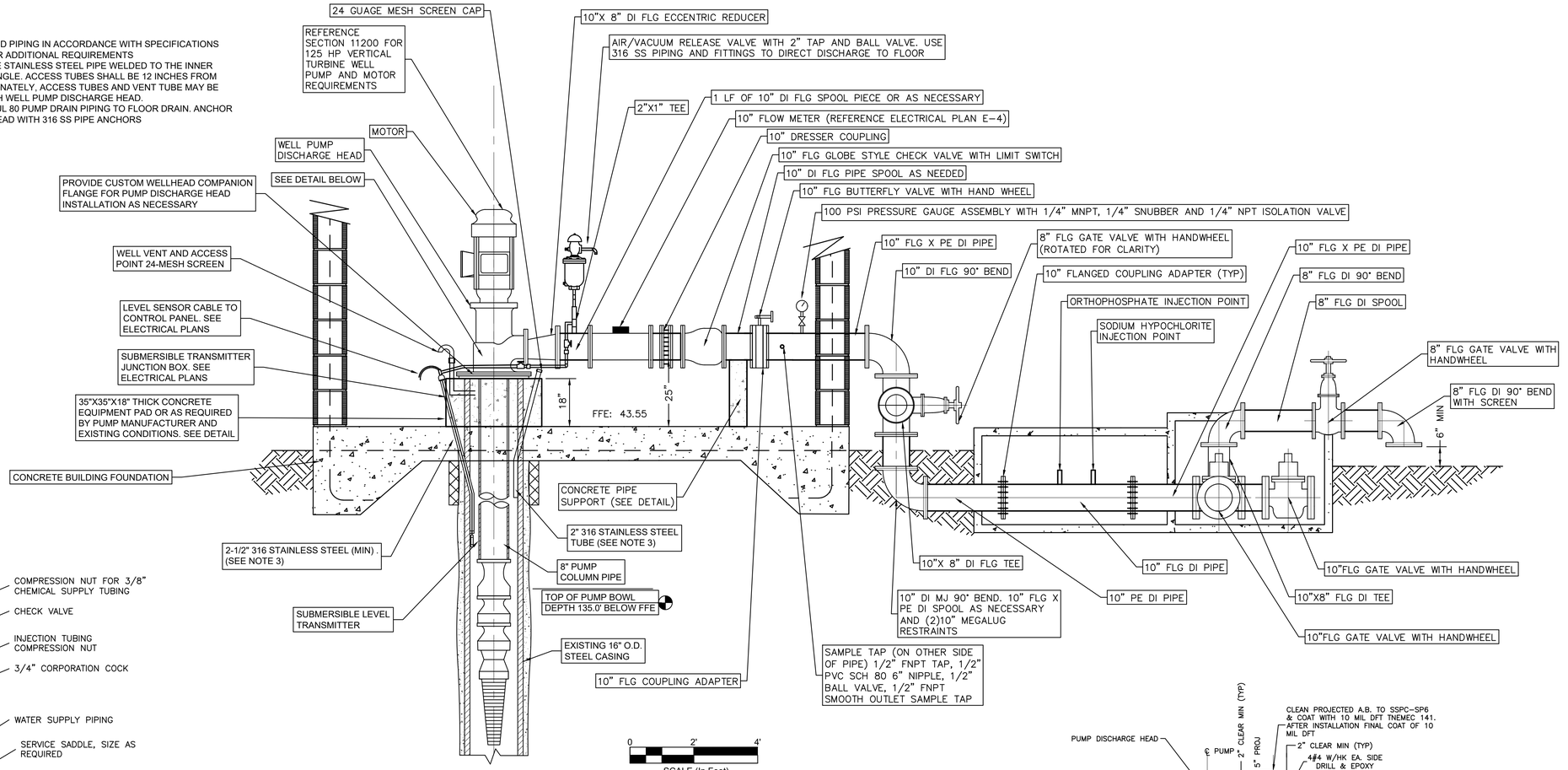
DESIGN	DRAWN	JOB #	ISSUE DATE	
ABB	BRH	17-1007.41	FEBRUARY 2024	100%
				ISSUE

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

1

DRAWING NUMBER
C-3

NOTES:
1. PAINT ALL ABOVE GROUND PIPING IN ACCORDANCE WITH SPECIFICATIONS
2. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS
3. ACCESS TUBES SHALL BE STAINLESS STEEL PIPE WELDED TO THE INNER CASING AT 15 DEGREE ANGLE. ACCESS TUBES SHALL BE 12 INCHES FROM SURFACE CASING. ALTERNATELY, ACCESS TUBES AND VENT TUBE MAY BE CONSTRUCTED THROUGH WELL PUMP DISCHARGE HEAD.
4. INSTALL 1/2" PVC SCHEDUL 80 PUMP DRAIN PIPING TO FLOOR DRAIN. ANCHOR PIPING TO DISCHARGE HEAD WITH 316 SS PIPE ANCHORS

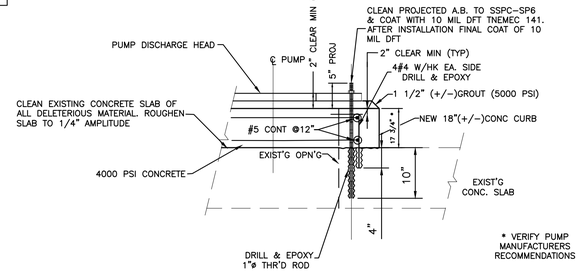


WELL BUILDING SECTION
SCALE: AS SHOWN

CHEMICAL INJECTION DETAIL
NOT TO SCALE

AIR / VACUUM VALVE DETAIL
NOT TO SCALE

PIPE SUPPORT DETAIL
NOT TO SCALE



PUMP FOUNDATION DETAIL
NOT TO SCALE

OUTSIDE BLOWOFF PIPE
NOT TO SCALE

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

REV NO	DATE	DWN BY	CHK BY	DESCRIPTION
1	04/05/24	BRH	ABB	CONSTRUCTION CLARIFICATION
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

WELL BUILDING SECTION AND DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

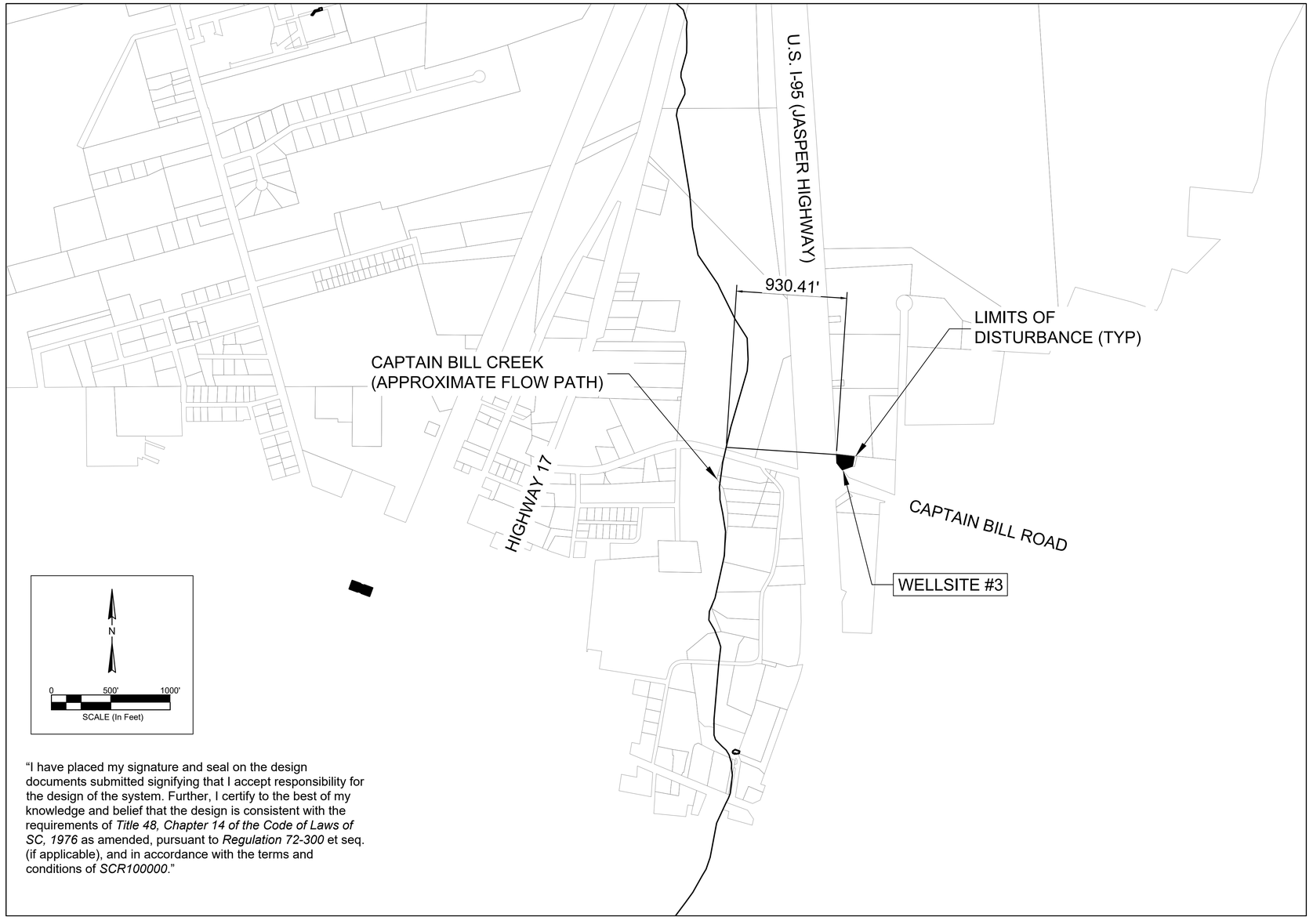
DESIGN ABB	DRAWN BRH	JOB # 17-1007-41	ISSUE DATE FEBRUARY 2024	ISSUE 100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
C-4

PROJECT LIMIT AND LAND DISTURBANCE LIMITS

SCALE 1" = 500'



"I have placed my signature and seal on the design documents submitted signifying that I accept responsibility for the design of the system. Further, I certify to the best of my knowledge and belief that the design is consistent with the requirements of *Title 48, Chapter 14 of the Code of Laws of SC, 1976* as amended, pursuant to *Regulation 72-300* et seq. (if applicable), and in accordance with the terms and conditions of *SCR100000*."

SCDHEC SEDIMENT AND EROSION CONTROL STANDARD NOTES

1. IF NECESSARY, SLOPES, WHICH EXCEED EIGHT (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS, IN ADDITION TO HYDROSEEDING. IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINS DURING CONSTRUCTION. TEMPORARY BERMS MAY BE NEEDED UNTIL THE SLOPE IS BROUGHT TO GRADE.

2. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN
(14) DAYS AFTER WORK HAS CEASED, EXCEPT AS STATED BELOW.
   - WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.
   - WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH-DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 14 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.

3. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED ONCE EVERY CALENDAR WEEK. IF PERIODIC INSPECTION OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN INAPPROPRIATELY, OR INCORRECTLY, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION.

4. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION. FILL, COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER IS ENCOUNTERED WHILE TRENCHING, THE WATER SHOULD BE FILTERED TO REMOVE SEDIMENT BEFORE BEING PUMPED BACK INTO ANY WATERS OF THE STATE.

5. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.

6. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO PAVED ROADWAY(S) FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.

7. RESIDENTIAL SUBDIVISIONS REQUIRE EROSION CONTROL FEATURES FOR INFRASTRUCTURE AS WELL AS FOR INDIVIDUAL LOT CONSTRUCTION. INDIVIDUAL PROPERTY OWNERS SHALL FOLLOW THESE PLANS DURING CONSTRUCTION OR OBTAIN APPROVAL OF AN INDIVIDUAL PLAN IN ACCORDANCE WITH S.C REG. 72-300 ET SEQ. AND SCR100000.

8. TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT-LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS.

9. ALL WATERS OF THE STATE (WOS), INCLUDING WETLANDS, ARE TO BE FLAGGED OR OTHERWISE CLEARLY MARKED IN THE FIELD. A DOUBLE ROW OF SILT FENCE IS TO BE INSTALLED IN ALL AREAS WHERE A 50-FOOT BUFFER CAN'T BE MAINTAINED BETWEEN THE DISTURBED AREA AND ALL WOS. A 10-FOOT BUFFER SHOULD BE MAINTAINED BETWEEN THE LAST ROW OF SILT FENCE AND ALL WOS.

10. LITTER, CONSTRUCTION DEBRIS, OILS, FUELS, AND BUILDING PRODUCTS WITH SIGNIFICANT POTENTIAL FOR IMPACT (SUCH AS STOCKPILES OF FRESHLY TREATED LUMBER) AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORM WATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE IN STORM WATER DISCHARGES.

11. A COPY OF THE SWPPP, INSPECTIONS RECORDS, AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR A NEARBY LOCATION EASILY ACCESSIBLE DURING NORMAL BUSINESS HOURS, FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO THE DATE THAT FINAL STABILIZATION IS REACHED.

12. INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3H:1V OR GREATER) WHERE LAND-DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 7 CALENDAR DAYS.

13. MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.

14. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN OR ALTERNATIVE CONTROL THAT PROVIDES EQUIVALENT OR BETTER TREATMENT PRIOR TO DISCHARGE;

15. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING OF TRENCHES AND EXCAVATED AREAS. THESE DISCHARGES ARE TO BE ROUTED THROUGH APPROPRIATE BMPS (SEDIMENT BASIN, FILTER BAG, ETC.).

16. THE FOLLOWING DISCHARGES FROM SITES ARE PROHIBITED:

   - WASTEWATER FROM WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL;
   - WASTEWATER FROM WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS;
   - FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE; AND
   - SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING.

17. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS MUST BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE.

18. IF EXISTING BMPS NEED TO BE MODIFIED OR IF ADDITIONAL BMPS ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS OF THIS PERMIT AND/OR SC'S WATER QUALITY STANDARDS, IMPLEMENTATION MUST BE COMPLETED BEFORE THE NEXT STORM EVENT WHENEVER PRACTICABLE. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICABLE, THE SITUATION MUST BE DOCUMENTED IN THE SWPPP AND ALTERNATIVE BMPS MUST BE IMPLEMENTED AS SOON AS REASONABLY POSSIBLE.

19. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD FOR EACH CONSTRUCTION SITE WITH AN APPROVED ON-SITE SWPPP PRIOR TO THE IMPLEMENTATION OF CONSTRUCTION ACTIVITIES. FOR NON-LINEAR PROJECTS THAT DISTURB 10 ACRES OR MORE THIS CONFERENCE MUST BE HELD ON-SITE UNLESS THE DEPARTMENT HAS APPROVED OTHERWISE.

PLANNED SEQUENCE OF OPERATIONS:

1. CLEARING AND GRUBBING OF AREAS NECESSARY FOR INSTALLATION OF SILT FENCE AND INLET PROTECTION PER CONSTRUCTION PLANS.
2. DEMOLISH EXISTING STRUCTURES PER CONSTRUCTION PLANS
3. WELLSITE IMPROVEMENTS PER CONSTRUCTION PLANS.
4. INSTALLATION OF HYDROSEEDING AND/OR SOD FOR PERMANENT STABILIZATION OF DISTURBED AREAS.
5. MAINTAIN GRASS SURFACE.
6. REMOVE TEMPORARY SEDIMENT CONTROL FEATURES ONCE FINAL STABALIZATION IS OBTAINED.

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 21839
ANGELA B. BRYAN

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA
FOUR WATERS ENGINEERING, INC.
No. 5166
CERTIFICATE OF AUTHORIZATION

REV NO	DATE	DWN BY	CHK BY	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

SEDIMENT AND EROSION CONTROL

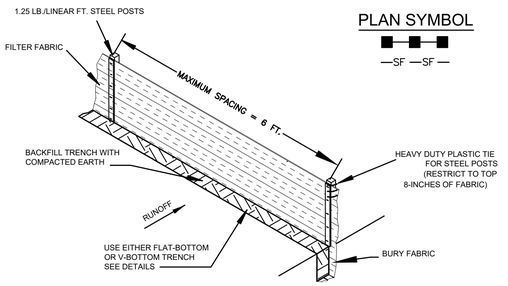
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN ABB	JOB # 17-1007.41	ISSUE DATE FEBRUARY 2024	ISSUE 100%
DRAWN BRH			

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
D-1

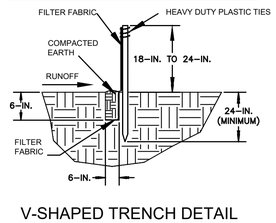
SILT FENCE INSTALLATION



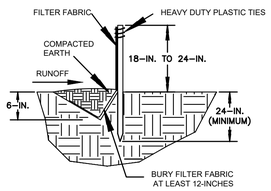
PLAN SYMBOL

—SF —SF —

FLAT-BOTTOM TRENCH DETAIL



V-SHAPED TRENCH DETAIL



SILT FENCE – GENERAL NOTES

1. Do not place silt fence across channels or in other areas subject to concentrated flows. Silt fence should not be used as a velocity control BMP. Concentrated flows are any flows greater than 0.5 cfs.
2. Maximum sheet or overland flow path length to the silt fence shall be 100-feet.
3. Maximum slope steepness (normal [perpendicular] to the fence line) shall be 2:1.
4. Silt fence joints, when necessary, shall be completed by one of the following options:
   - Wrap each fabric together at a support post with both ends fastened to the post, with a 1-foot minimum overlap;
   - Overlap silt fence by installing 3-feet passed the support post to which the new silt fence roll is attached. Attach old roll to new roll with heavy-duty plastic ties; or,
   - Overlap entire width of each silt fence roll from one support post to the next support post.
5. Attach filter fabric to the steel posts using heavy-duty plastic ties that are evenly spaced within the top 8-inches of the fabric.
6. Install the silt fence perpendicular to the direction of the stormwater flow and place the silt fence the proper distance from the toe of steep slopes to provide sediment storage and access for maintenance and cleanout.
7. Install Silt Fence Checks (Tie-Backs) every 50-100 feet, dependent on slope, along silt fence that is installed with slope and where concentrated flows are expected or are documented along the proposed/installed silt fence.

South Carolina Department of Health and Environmental Control

SILT FENCE

STANDARD DRAWING NO. SC–03 Page 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

SILT FENCE – POST REQUIREMENTS

Silt Fence posts must be 48-inch long steel posts that meet, at a minimum, the following physical characteristics.

- Composed of a high strength steel with a minimum yield strength of 50,000 psi.
- Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
- Weigh 1.25 pounds per foot (± 8%)

2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Steel posts may need to have a metal soil stabilization plate welded near the bottom when installed along steep slopes or installed in loose soils. The plate should have a minimum cross section of 17-square inches and be composed of 15 gauge steel, at a minimum. The metal soil stabilization plate should be completely buried.
4. Install posts to a minimum of 24-inches. A minimum height of 1- to 2- inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
5. Post spacing shall be at a maximum of 6-feet on center.

SILT FENCE – FABRIC REQUIREMENTS

1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
   - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
   - Free of any treatment or coating which might adversely alter its physical properties after installation;
   - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
   - Have a minimum width of 36-inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24-inches above the ground.

SILT FENCE – INSPECTION & MAINTENANCE

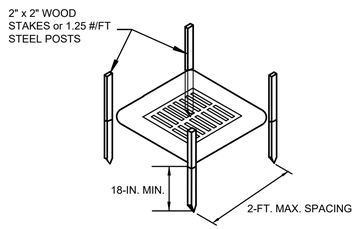
1. The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of silt fence shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations along the silt fence is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the silt fence.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath the silt fence, or where the fence has sagged or collapsed due to runoff overtopping the silt fence. Install checks/tie-backs and/or reinstall silt fence, as necessary.
7. Check for tears within the silt fence, areas where silt fence has begun to decompose, and for any other circumstance that may render the silt fence ineffective. Removed damaged silt fence and reinstall new silt fence immediately.
8. Silt fence should be removed within 30 days after final stabilization is achieved and once it is removed, the resulting disturbed area shall be permanently stabilized.

South Carolina Department of Health and Environmental Control

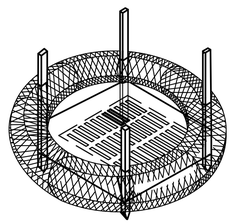
SILT FENCE

STANDARD DRAWING NO. SC–03 PAGE 2 of 2

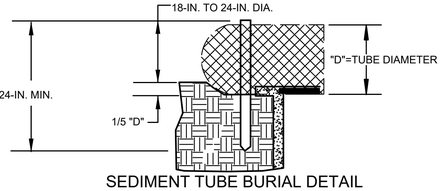
GENERAL NOTES FEBRUARY 2014 DATE



POST INSTALLATION DETAIL



SEDIMENT TUBE INSTALLATION DETAIL



SEDIMENT TUBE BURIAL DETAIL

PLAN SYMBOL

A

South Carolina Department of Health and Environmental Control

Type A

SEDIMENT TUBE INLET PROTECTION

STANDARD DRAWING NO. SC–07A PAGE 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

TYPE A – SEDIMENT TUBE INLET PROTECTION

GENERAL NOTES

1. Sediment tubes are elongated tubes of compacted geotextiles, curled excelsior wood, natural coconut fiber, or hardwood mulch. Straw, pine needle, and leaf mulch-filled sediment tubes are not permitted.
2. The outer netting of the sediment tube should consist of seamless, high-density polyethylene photodegradable materials treated with ultraviolet stabilizers or a seamless, high-density polyethylene non-degradable material.
3. Sediment tube diameters shall range from 18-inches to 24-inches. Sediment tunes with smaller diameters are prohibited when used as inlet protection.
4. Curled excelsior wood, or natural coconut products that are rolled up to create a sediment tube are not allowed.
5. Sediment tubes should be staked using wooden oak stakes (2-inch X 2-inch) or steel posts (standard "U" or "T" sections with a minimum weight of 1.25 pounds per foot) at a minimum of 48-inches in length placed on 2-foot centers.
6. Install all sediment tubes to ensure that no gaps exist between the soil and the bottom of the tube. Manufactuer's recommendations should always be consulted before installation.
7. The ends of adjacent sediment tubes should be overlapped 6-inches to prevent flow and sediment from passing through the field joint.
8. Sediment tubes should not be stacked on top of one another.
9. Each sediment tube should be installed in a trench with a depth equal to 1/5 the diameter of the sediment tube.
10. Install stakes at a diagonal facing incoming runoff.

INSPECTION & MAINTENANCE

1. The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of sediment tube inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations in front of the sediment tube is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the sediment tube. When a sump is installed in front of the inlet protection, sediment shall be removed when if fills approximately 1/3 the depth of the sump.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Large debris, trash, and leaves should be removed from in front of tubes when found.
7. Inlet protection structures should be removed after the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

South Carolina Department of Health and Environmental Control

Type A

SEDIMENT TUBE INLET PROTECTION

STANDARD DRAWING NO. SC–07A PAGE 2 of 2

NOT TO SCALE FEBRUARY 2014 DATE

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 21839 ANGELA B. BRYAN

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION FOUR WATERS ENGINEERING, INC. No. 5166

REV NO	DATE	DWN BY	CHK BY	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

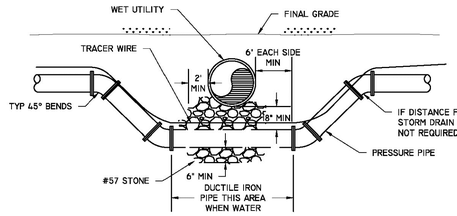
SEDIMENT AND EROSION CONTROL

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN ABB	JOB # 17-1007-41	ISSUE DATE FEBRUARY 2024	ISSUE 100%
DRAWN BRH			

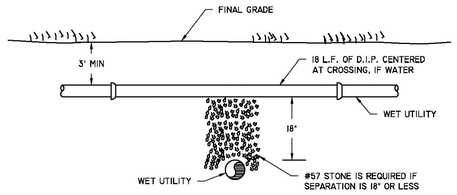
FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
D-2

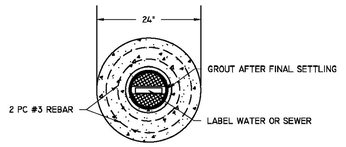


NOTES:
1. WRITTEN AUTHORIZATION FROM BJWSA IS REQUIRED FOR LESS THAN 18" SEPARATION.
2. NORMAL JOINT RESTRAINT IS REQUIRED.

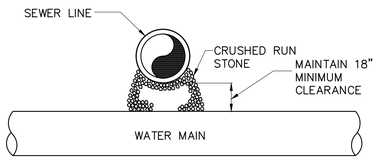
PRESSURE PIPE UNDER WET UTILITY
FOR FINAL DEPTH 5' OR GREATER



WET UTILITY CROSSING
NOT TO SCALE

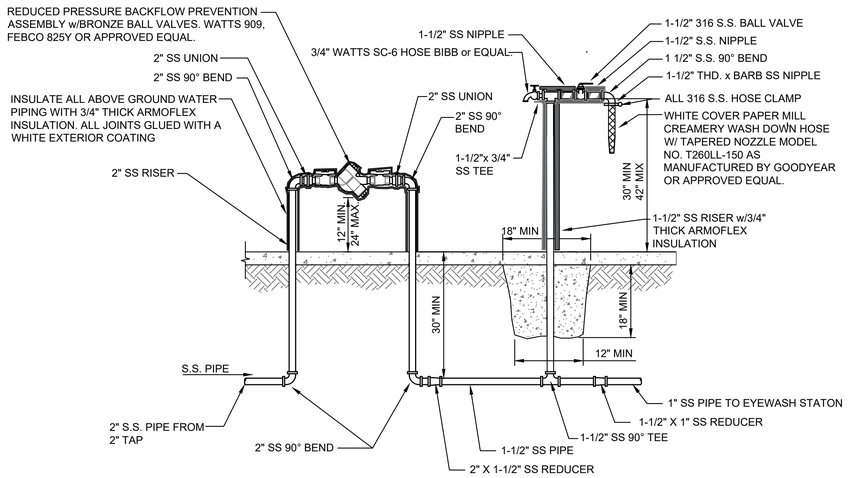


CONCRETE COLLAR
NOT TO SCALE



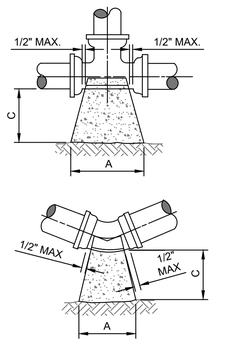
NOTE:
FULL JOINT OF DUCTILE IRON PIPE FOR WATER TO BE CENTERED AT CROSSING.

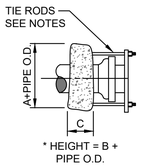
SEWER CROSSING ABOVE WATER LINE DETAIL
NOT TO SCALE

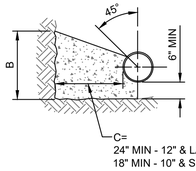


NOTE:
1. ALL PIPING ABOVE AND UNDER CONCRETE SLAB SHALL BE 316 SS SCHEDULE 40.
2. ALL EXTERNAL LONG RUNS OF PIPE SHALL BE SCHEDULE 80 PVC.

1-1/2" HOSE STATION DETAIL
NOT TO SCALE







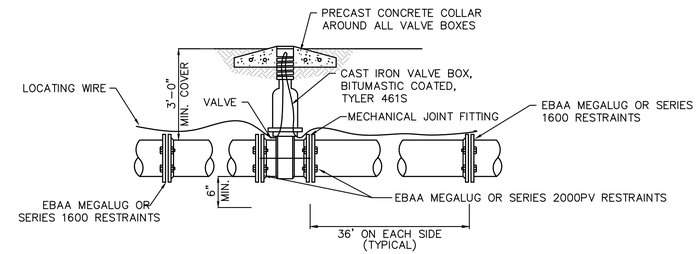
THRUST BLOCK FOR TEES & PLUGS				
	90° BEND			S.F. BEARING SURFACE
SIZE	A	B	C	
4"	16"	16"	18"	1.78
6"	20"	24"	18"	3.33
8"	26"	32"	18"	5.78
10"	32"	40"	18"	8.89
12"	36"	48"	24"	12.00
14"	40"	56"	24"	15.56
16"	48"	60"	24"	20.00
18"	56"	64"	24"	24.89
20"	60"	76"	24"	31.67
24"	72"	90"	24"	45.00
30"	86"	102"	24"	60.67
36"	116"	108"	24"	86.11

THRUST BLOCK FOR BENDS																
	90° BEND			S.F. BEARING SURFACE	45° BEND			S.F. BEARING SURFACE	22-1/2° BEND			S.F. BEARING SURFACE	11-1/4° BEND			S.F. BEARING SURFACE
SIZE	A	B	C		A	B	C		A	B	C		A	B	C	
4"	16"	16"	18"	1.78	14"	16"	18"	1.56	14"	16"	18"	1.56	14"	16"	18"	1.56
6"	22"	32"	18"	4.89	16"	18"	18"	2.00	14"	16"	18"	1.56	14"	16"	18"	1.56
8"	32"	36"	18"	8.00	24"	28"	18"	4.67	16"	18"	18"	2.00	14"	16"	18"	1.56
10"	36"	46"	18"	11.50	26"	36"	18"	6.50	20"	24"	18"	3.33	14"	18"	18"	1.75
12"	44"	56"	24"	17.11	32"	40"	24"	8.89	24"	30"	24"	5.00	16"	20"	24"	2.22
14"	52"	62"	24"	22.39	36"	48"	24"	12.00	26"	36"	24"	6.50	20"	24"	24"	3.33
16"	58"	72"	24"	29.00	40"	54"	24"	15.00	32"	38"	24"	8.44	22"	26"	24"	3.97
18"	64"	80"	24"	35.56	46"	60"	24"	19.17	36"	42"	24"	10.50	24"	32"	24"	5.33
20"	72"	88"	24"	44.00	52"	66"	24"	23.83	38"	48"	24"	12.67	26"	36"	24"	6.50
24"	96"	96"	24"	36.89	64"	78"	24"	34.67	46"	56"	24"	17.89	32"	40"	24"	8.89
30"	122"	102"	24"	86.11	72"	94"	24"	47.00	56"	62"	24"	24.11	36"	48"	24"	12.00
36"	166"	104"	24"	123.33	88"	108"	24"	66.00	64"	78"	24"	34.67	44"	54"	24"	16.50

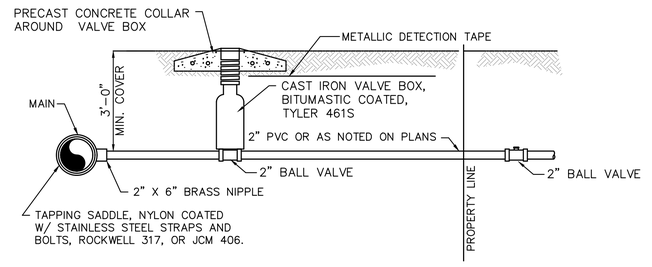
THRUST BLOCK SIZE CHART
NOT TO SCALE

NOTES:

1. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED SOIL.
2. THESE TABLES SHOW MINIMUM SIZES FOR THRUST BLOCKS IN GOOD SOIL (A-1 THRU A-3, CLEAN SANDS AND GRAVELS) WITH MINIMUM BEARING CAPACITY OF 2000 psi.
3. POOR SOILS A-4 THRU A-8, SILTY SOILS, CLAYS, MUCK AND PEAT WILL REQUIRE LARGER THRUST BLOCKING.
4. BOTH CONCRETE THRUST BLOCKS AND TIE RODS MUST BE USED WHEN, IN THE JUDGEMENT OF THE ENGINEER, THE NATURE AND CRITICALITY OF AN INSTALLATION IS SUCH AS TO REQUIRE POSITIVE ASSURANCE OF STABILITY.
5. THE USE OF THRUST BLOCKS SHALL BE LIMITED TO SITUATIONS SUCH AS POINT REPAIR WHERE EXPOSING SEVERAL JOINTS OF PIPE IS NOT FEASIBLE DUE TO EXISTING GROUND CONDITIONS.
6. CONCRETE COLLARS WITH TIE RODS MAY BE USED ON DEAD END LINES AT THE CONTRACTOR'S DISCRETION. NUMBER OF TIE RODS REQUIRED IS AS FOLLOWS:
   - 3" - 8" DIAMETER MAIN - 2 TIE RODS REQUIRED PER JOINT (3/4" ROD)
   - 10" - 12" DIAMETER MAIN - 4 TIE RODS REQUIRED PER JOINT (3/4" ROD)
   - 14" - 16" DIAMETER MAIN - 6 TIE RODS REQUIRED PER JOINT (3/4" ROD)
   - 18" - 20" DIAMETER MAIN - 8 TIE RODS REQUIRED PER JOINT (3/4" ROD)
   - 24" DIAMETER MAIN -12 TIE RODS REQUIRED PER JOINT (3/4" ROD)
   - 30" - 36" DIAMETER MAIN -14 TIE RODS REQUIRED PER JOINT (1" ROD)
   - 42" - 48" DIAMETER MAIN -16 TIE RODS REQUIRED PER JOINT (1 1/4" ROD)
   - 54" DIAMETER MAIN -18 TIE RODS REQUIRED PER JOINT (1 1/4" ROD)
7. MAXIMUM TEST PRESSURE TO BE 150 PSI.



GATE VALVE SETTING DETAIL
NOT TO SCALE



2" SERVICE CONNECTION DETAIL
NOT TO SCALE

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 21839
ANGELA B. BRYAN
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY ANGELA BRYAN, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
FOUR WATERS ENGINEERING, INC. No. 5166

REV NO	DATE	DWN BY	CHK BY	DESCRIPTION
1	04/05/24	BRH	ABB	DETAIL NOTES CLARIFICATION
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

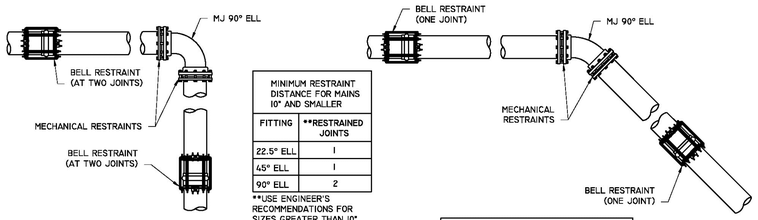
CONSTRUCTION DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JOB #	ISSUE DATE	ISSUE
ABB	BRH	17-1007-41	FEBRUARY 2024	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

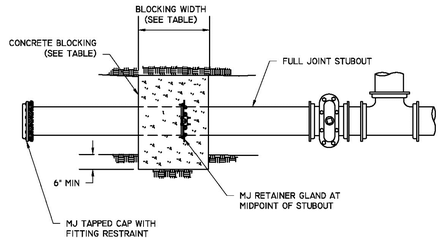
DRAWING NUMBER
D-3



MINIMUM RESTRAINT DISTANCE FOR MAINS 10" AND SMALLER	
FITTING	**RESTRAINED JOINTS
22.5° ELL	1
45° ELL	1
90° ELL	2

**USE ENGINEER'S RECOMMENDATIONS FOR SIZES GREATER THAN 10"

TYPICAL FITTING AND JOINT RESTRAINT



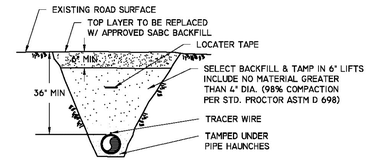
TYPICAL FUTURE STUBOUT

MINIMUM BLOCKING DIMENSIONS		
PIPE SIZE (IN)	BLOCKING BEARING AREA (FT^2)	BLOCKING WIDTH (IN)
4	2	24
6	4	24
8	7	36
10	11	36
12	15	36
OVER 12" BY THE DESIGN ENGINEER		

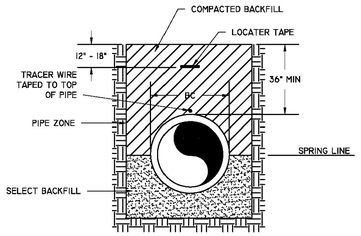
NOTE:
1. THE MINIMUM DIMENSIONS TABLE IS BASED ON AN ASSUMED SOIL BEARING OF 2000 LBS PER SQ. FT. IF BEARING VALUE FOR SOIL IS LESS THAN AREA SHOWN HEREIN SHOULD BE INCREASED ACCORDINGLY.
2. JOINT IS DEFINED TO BE A MINIMUM OF 18" IN LENGTH.

MECHANICAL RESTRAINT

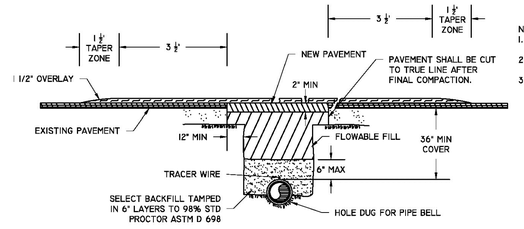
NOT TO SCALE



UNPAVED ROADWAY BEDDING DETAIL



TYPICAL BEDDING DETAIL



PAVED AREA DETAIL

NOTES:
1. PAVEMENT CUT TO EXTEND 12" BEYOND EDGES OF TRENCH AS SHOWN.
2. MATCH EXISTING PAVEMENT TYPE AND THICKNESS. MINIMUM THICKNESS OVER TRENCH IS 2".
3. ALL INSTALLATIONS IN PUBLIC ROADWAYS SHALL COMPLY WITH CONDITIONS OUTLINED ON APPLICABLE ENCROACHMENT PERMIT.

BEDDING PRESSURE PIPE DETAIL

NOT TO SCALE

REV NO	DATE	DWN BY	CHK BY	DESCRIPTION
1	04/05/24	BRH	ABB	DETAIL NOTES CLARIFICATION
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS

CONSTRUCTION DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	BRH
JOB #	17-1007-41
ISSUE DATE	FEBRUARY 2024
ISSUE	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
D-4

1

GENERAL NOTES

1. THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRIC SAFETY CODE, NECA STANDARD OF INSTALLATION (EDITIONS ADOPTED BY THE AHJ), AND ANSI/NEMA STANDARDS SHALL ESTABLISH THE MINIMUM REQUIREMENTS FOR INSTALLATION, BUT IN ADDITION, ALL WORK SHALL ALSO COMPLY WITH OWNER, OSHA, STATE, COUNTY, LOCAL OR MUNICIPAL CODE REQUIREMENTS AND THE RULES OF THE LOCAL ELECTRIC UTILITY. IN CASE OF CONFLICTS, CONFORM TO THE MORE STRINGENT REQUIREMENTS.

2. TO THE BEST OF THE ENGINEER'S KNOWLEDGE, THESE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AS DETERMINED BY THE LOCAL AUTHORITY. IN CASES OF CONFLICTS BETWEEN THESE DESIGN DOCUMENTS AND REQUIREMENTS OF ANY OF THE ABOVE CRITERIA, CONTACT THE ENGINEER BEFORE PROCEEDING.

3. THE CONTRACT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INTEND TO CONVEY ELECTRICAL SCOPE OF WORK ONLY. NOT EVERY ELECTRICAL DETAIL, WIRE, OR CONDUIT IS SHOWN. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO PROCUREMENT AND CONSTRUCTION ACTIVITIES.

4. FIRE PROTECTION, LIFE SAFETY, AND FIRE ALARM GENERAL REQUIREMENTS IF SHOWN ON THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DESIGN IS DELEGATED TO A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA TO PROVIDE FIRE PROTECTION ENGINEERING AND DESIGN IN ACCORDANCE WITH APPLICABLE AND RELEVANT STANDARDS.

5. DEVIATIONS FROM THE INTENT OF THE CONTRACT DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND/OR OWNER PRIOR TO PROCEEDING WITH CONSTRUCTION.

6. TO "PROVIDE" MEANS TO PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, TRANSPORTATION, AND SUPERVISION REQUIRED TO FURNISH AND INSTALL.

7. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY COMPONENTS, EQUIPMENT, AND INCIDENTALS REQUIRED FOR A FULLY FUNCTIONAL AND OPERATIONAL ELECTRICAL SYSTEM AS DESCRIBED BY THE INTENT OF THE CONTRACT DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL APPLY FOR, OBTAIN, AND PAY FOR ALL REQUIRED PERMITS AND INSPECTION CERTIFICATES, AND PAY FOR ALL FEES ASSOCIATED WITH THE PROJECT.

8. EQUIPMENT AND MATERIALS PROVIDED SHALL BEAR LISTING AND LABELING BY A NATIONALLY RECOGNIZED TESTING AGENCY WHERE SUCH STANDARD HAS BEEN ESTABLISHED FOR THAT TYPE OF EQUIPMENT / MATERIAL.

9. ALL SUBMITTALS SHALL BE REVIEWED BY THE PROJECT ENGINEER BEFORE INSTALLATION. SUBMIT SHOP DRAWINGS, CATALOG SHEETS, OR OTHER DESCRIPTIVE DATA WITH SUFFICIENT INFORMATION TO ESTABLISH DESIGN, QUALITY, AND PERFORMANCE.

10. PROVIDE EQUIPMENT NAMEPLATES FOR ALL EQUIPMENT. NAMEPLATES SHALL BE ENGRAVED THREE-LAYER LAMINATED PLASTIC, BLACK LETTERS ON WHITE BACKGROUND. USE MINIMUM 1/8 INCH LETTERS FOR IDENTIFYING INDIVIDUAL EQUIPMENT AND LOADS AND 1/4 INCH LETTERS FOR GROUPED EQUIPMENT AND LOADS. PROVIDE ARC FLASH AND SHOCK HAZARD WARNING LABELS FOR ELECTRICAL EQUIPMENT PER NEC 110.16 AND OTHER ELECTRICAL LABELS AS REQUIRED BY OSHA AND NEC.

11. USE ONLY COPPER BUILDING WIRE WITH TYPE THWN/THHN (DUAL RATED) OR XHHW INSULATION (GROUND WIRES MAY BE TYPE TW FOR CIRCUITS RATED 100A OR LESS OR TYPE THW FOR CIRCUITS OVER 100A). WIRE SHALL BE SIZED AND COLOR CODED PER THE NEC. CONDUCTORS FOR POWER AND LIGHTING CIRCUITS SMALLER THAN #12 AWG ARE NOT PERMITTED.

12. ALL CIRCUITS SHALL BE RUN IN CONDUIT AND SHALL CONTAIN SEPARATE GROUNDING CONDUCTOR SIZED PER NEC TABLE 250.122. ALL CONDUIT SHALL BE SCHEDULE 80 PVC UNLESS OTHERWISE NOTED. FINAL CONNECTIONS (LESS THAN 6 FEET) TO ALL MOTORS AND OTHER VIBRATING EQUIPMENT SHALL BE MADE WITH LIQUID-TIGHT FLEXIBLE METAL CONDUIT (WITH GROUNDING CONDUCTOR). NONMETALLIC FLEX CONDUIT OR TUBING SHALL NOT BE USED. MINIMUM SIZE FOR CONDUIT SHALL BE 3/4". PROVIDE PULLWIRE FOR ALL EMPTY CONDUITS.

13. NO MORE THAN THREE (3) CURRENT CARRYING CONDUCTORS (ON ALTERNATING PHASES) SHALL BE COMBINED IN ONE CONDUIT. PROVIDE A DEDICATED NEUTRAL FOR ALL CIRCUITS REQUIRING A NEUTRAL.

14. CONTRACTOR SHALL CONFORM WITH ALL OSHA AND NFPA 70E, STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE, REQUIREMENTS FOR ELECTRICAL SAFETY, INCLUDING PROPER LOCK-OUT / TAG-OUT PROCEDURES AND WEARING APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE). CONTRACTOR'S EMPLOYEES SHALL HAVE RECEIVED NFPA 70E ARC FLASH TRAINING.

15. CONTRACTOR SHALL PROVIDE SHORT CIRCUIT, PROTECTIVE DEVICE COORDINATION, AND ARC FLASH HAZARD ANALYSIS OF THE PROPOSED ELECTRICAL SYSTEM TO THE ENGINEER FOR REVIEW AND APPROVAL. AFFIX APPROVED ARC FLASH HAZARD LABELS TO ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH OSHA, NFPA 70E, AND IEEE 1584 INCLUDING SUCH INFORMATION AS INCIDENT ENERGY LEVELS, SYSTEM DATA, EQUIPMENT IDENTIFICATION, DATES, APPROACH BOUNDARIES, AND PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS.

ABBREVIATIONS

A OR AMP	AMPERES
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
ARC	ALUMINUM RIGID CONDUIT
AT	AMP TRIP
ATC	AUTOMATIC TRANSFER CONTROLLER
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
/C	CONDUCTOR
CB	CIRCUIT BREAKER
CT	CURRENT TRANSFORMER
CBL	CABLE
DS	DISCONNECT SWITCH
ESTOP	EMERGENCY STOP
EX	EXISTING
EP	EXPLOSION PROOF
EF	EXHAUST FAN
EG	EQUIPMENT GROUND
EGC	EQUIPMENT GROUND CONDUCTOR
F	FUSE
G OR GND	GROUND
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GF	GROUND FAULT
GFCI	GROUND FAULT CIRCUIT INTERRUPT
GFI	GROUND FAULT INTERRUPTING
H-O-A	HAND-OFF-AUTO
HP	HORSEPOWER
JB	JUNCTION BOX
□VA	KILOVOLT - AMPS
□W	KILOWATTS
□WH	KILOWATT-HOUR
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
ME	MOISTURE ELEMENT
MLO	MAIN LUGS ONLY
MSH	MOTOR SPACE HEATER
N	NEUTRAL
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRICAL
PH,	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PM	POWER MONITOR
REC	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
SS	STAINLESS STEEL
SPD	SURGE PROTECTION DEVICE
SWBD	SWITCHBOARD
TE	TEMPERATURE ELEMENT
TSH	TEMPERATURE SWITCH
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITER'S LABORATORIES
V	VOLTS
VA	VOLT AMPS
VAC	VOLTS ALTERNATING CURRENT
VDC	VOLTS DIRECT CURRENT
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
WH	WEATHERHEAD
WP	WEATHER PROOF
XFMR	TRANSFORMER

FIRE ALARM AND HVAC

- FACP — FIRE ALARM CONTROL PANEL
- F — MANUAL PULL STATION WALL MOUNTED AT 46 INCHES
- S — SMOKE DETECTOR CEILING MOUNTED
- SD — DUCT SMOKE DETECTOR
- F — AUDIO/STROBE LIGHT COMBINATION WALL MOUNTED AT 80 INCHES
- H — AUDIO UNIT WALL MOUNTED AT 80 INCHES
- T — THERMOSTAT
- R — FIRE ALARM RELAY
- FE — FIRE EXTINGUISHER
- FS — FLOW SWITCH
- PS — LOW PRESSURE SWITCH
- TS — TAMPER SWITCH

ELECTRICAL LEGEND

- UTILITY CONNECTION (VOLTAGE AND PHASES AS INDICATED)
- M — UTILITY METER
- TWO WINDING TRANSFORMER (VOLTAGE, RATING, IMPEDANCE, CONNECTION CONFIGURATION AS INDICATED) (ANSI STANDARD IMPEDANCE IF NOT SPECIFIED)
- LOW VOLTAGE MOLDED CASE CIRCUIT BREAKER. ("LSIG", "MCP", "GFI", "BLANK" THERMAL MAGNETIC) (AMP RATING AND NUMBER OF POLES AS INDICATED)
- FUSE (FUSE RATING AND CLASSIFICATION AS INDICATED)
- N, E, L — TRANSFER SWITCH ("A" AUTOMATIC, "M" MANUAL) (CURRENT RATING, POLES, BYPASS AS INDICATED)
- EARTH GROUND
- LIMITS OF DEMOLITION
- MISCELLANEOUS ELECTRICAL EQUIPMENT (AS INDICATED ON DRAWINGS)
- SWITCH (AMP RATING AND POLES AS INDICATED)
- INDUCTION MOTOR (HORSEPOWER RATING AS INDICATED)
- G — GENERATOR (RATING AND VOLTAGE AS INDICATED)
- CURRENT TRANSFORMER (CT) (RATIO AND QUANTITY AS INDICATED)
- POTENTIAL TRANSFORMER (PT) (RATIO AND QUANTITY AS INDICATED)
- EXPOSED CONDUIT RUN MINIMUM SIZE 3/4-INCH
- CONCEALED CONDUIT RUN MINIMUM SIZE 1-INCH
- HOMERUN CIRCUIT WITH TERMINATION LOCATION AS DESIGNATED
- FLEXIBLE CONDUIT MINIMUM SIZE 3/4-INCH
- DISCONNECT SWITCH (RATING AND POLES AS INDICATED)
- FUSED DISCONNECT SWITCH (RATING, FUSE SIZE, AND POLES AS INDICATED)
- MOTOR STARTER (RATING AND POLES AS INDICATED)
- HH — "HH" HAND HOLE, "MH" MANHOLE "PB" PULL BOX, "JB" JUNCTION BOX
- P-ATS-1 — CABLE/CONDUIT TAG ("P" POWER, "C" CONTROL, "I" INSTRUMENTATION) ("ATS" EQUIPMENT REFERENCE ("1" SEQUENCE NO.)
- TSH — MOTOR TEMPERATURE SWITCH
- MSH — MOTOR SPACE HEATER
- TE — MOTOR TEMPERATURE ELEMENT
- ME — MOTOR MOISTURE ELEMENT
- ST — SHUNT TRIP
- SPD — SURGE PROTECTIVE DEVICE
- K — KIRK KEY INTERLOCK

GROUNDING & LIGHTNING PROTECTION

- CONNECTION TO GROUND GRID. (MECHANICAL / CADWELD PER SPECIFICATIONS)
- GROUND ROD
- GROUND TEST STATION
- G — GROUNDING GRID OR COUNTERPOISE SYSTEM CONDUCTOR
- LIGHTNING PROTECTION AIR TERMINAL
- LIGHTNING PROTECTION DISSIPATION AIR TERMINAL
- L — LIGHTNING PROTECTION SYSTEM CONDUCTOR
- LIGHTNING PROTECTION SYSTEM DOWN CONDUCTOR

OUTLETS AND RECEPTACLES

- LP1-12 — DUPLEX RECEPTACLE, 20A, 120V, MOUNTED AT 18 INCHES U.N.O. (CIRCUIT AS INDICATED)
- LP1-12 — QUADPLEX RECEPTACLE, 20A, 120V, MOUNTED AT 18 INCHES U.N.O. (CIRCUIT AS INDICATED)
- LP1-12 GFI — DUPLEX RECEPTACLE, GFI, 20A, 120V, MOUNTED AT 18 INCHES U.N.O. (CIRCUIT AS INDICATED)
- LP1-12 — SPECIAL PURPOSE RECEPTACLE MOUNTED AT 18 INCHES U.N.O. (SEE PLANS FOR DETAILS)
- LP1-12 — FLOOR MOUNTED DUPLEX RECEPTACLE, 20A, 120V (CIRCUIT AS INDICATED)
- J — JUNCTION BOX
- DATA OUTLET MOUNTED AT 18 INCHES U.N.O. (SEE PLANS FOR DETAILS)
- TELEPHONE OUTLET MOUNTED AT 18 INCHES U.N.O. (SEE PLANS FOR DETAILS)
- TELEPHONE / DATA COMBINATION OUTLET MOUNTED AT 18 INCHES U.N.O. (SEE PLANS FOR DETAILS)

LIGHTING

- A — CEILING MOUNTED FIXTURE (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — CEILING MOUNTED FIXTURE WITH 90 MIN BATTERY BACKUP (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — CEILING MOUNTED DOWN-LIGHT FIXTURE (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — CEILING MOUNTED DOWN-LIGHT FIXTURE W/ 90 MIN BATTERY BACKUP (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — SURFACE MOUNTED OR SUSPENDED INDUSTRIAL STRIP FIXTURE (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — WALL MOUNTED FIXTURE (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — TWIN HEAD FLOOD FIXTURE WITH BATTERY BACKUP (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — EXIT SIGN FIXTURE, DO NOT SWITCH, PROVIDE ARROWS AS INDICATED, SHADING DENOTES FACE OPERATION (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — POLE MOUNTED LIGHT FIXTURE (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- $ — WALL SWITCH WALL MOUNTED AT 46 INCHES, 20A, 120/277V ("3" THREE WAY, "4" FOUR WAY, "D" DIMMER, "M" MOTOR RATED, "OS" INTEGRAL OCCUPANCY SENSOR)
- OS — LIGHTING CONTROL SENSOR (TYPE AS INDICATED)
- PC — PHOTOCELL

ALL DEVICES/PLATES TO BE IN OWNERS CHOICE OF COLORS.

ELEMENTARY WIRING SCHEMATICS

- PRESSURE SWITCH - NORMALLY OPEN
- PRESSURE SWITCH - NORMALLY CLOSED
- DIFFERENTIAL PRESSURE SWITCH - NORMALLY OPEN
- DIFFERENTIAL PRESSURE SWITCH - NORMALLY CLOSED
- TIME DELAY SWITCH - TIMER ON DELAY (CLOSES AFTER TIMER EXPIRES)
- TIMER DELAY SWITCH - TIMER OFF DELAY (OPENS AFTER TIMER EXPIRES)
- VIBRATION SWITCH - NORMALLY OPEN
- VIBRATION SWITCH - NORMALLY CLOSED
- X — COIL CONTACTS ("C" CONTROL RELAY, "LC" LIGHTING CONTACTOR, "M" MOTOR RELAY, "TD" TIME DELAY)
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- LIMIT SWITCH - NORMALLY OPEN
- LIMIT SWITCH - NORMALLY CLOSED
- LIQUID LEVEL (FLOAT) SWITCH - NORMALLY OPEN
- LIQUID LEVEL (FLOAT) SWITCH - NORMALLY CLOSED
- TEMPERATURE SWITCH - NORMALLY OPEN
- TEMPERATURE SWITCH - NORMALLY CLOSED
- FLOW SWITCH - NORMALLY OPEN
- FLOW SWITCH - NORMALLY CLOSED
- TB# — TERMINAL BLOCK (TERMINAL NO. AND TERMINAL BLOCK AS INDICATED)
- X, TB#, X, TB# — EXTERNALLY MOUNTED DEVICE (DASHED LINE INDICATES WIRING EXTERNAL TO PANEL)
- 00X — SELECTOR SWITCH ("X" INDICATES SWITCH POSITION AND QUANTITY AS INDICATED)
- X00
- MOMENTARY PUSH BUTTON - NORMALLY OPEN
- MOMENTARY PUSH BUTTON - NORMALLY CLOSED
- REMOTE SHUTDOWN/STOP - NORMALLY CLOSED
- SV — SOLENOID VALVE
- RTM — RUN TIME METER
- HORN ELEMENT
- R — EXTERNALLY MOUNTED ALARM LIGHT
- PHOTOCELL
- X — PUSH TO TEST TYPE PANEL MOUNTED INDICATOR LIGHT ("A" AMBER, "G" GREEN, "R" RED, "W" WHITE, "B" BLUE)

SOUTH CAROLINA CERTIFIED PROFESSIONAL ENGINEER No. 41566 FRANK E. WELLS

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY FRANK E WELLS, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION EVANLILY CONTRACTING LLC No. 7159

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS
RIDGELAND, SOUTH CAROLINA

ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES

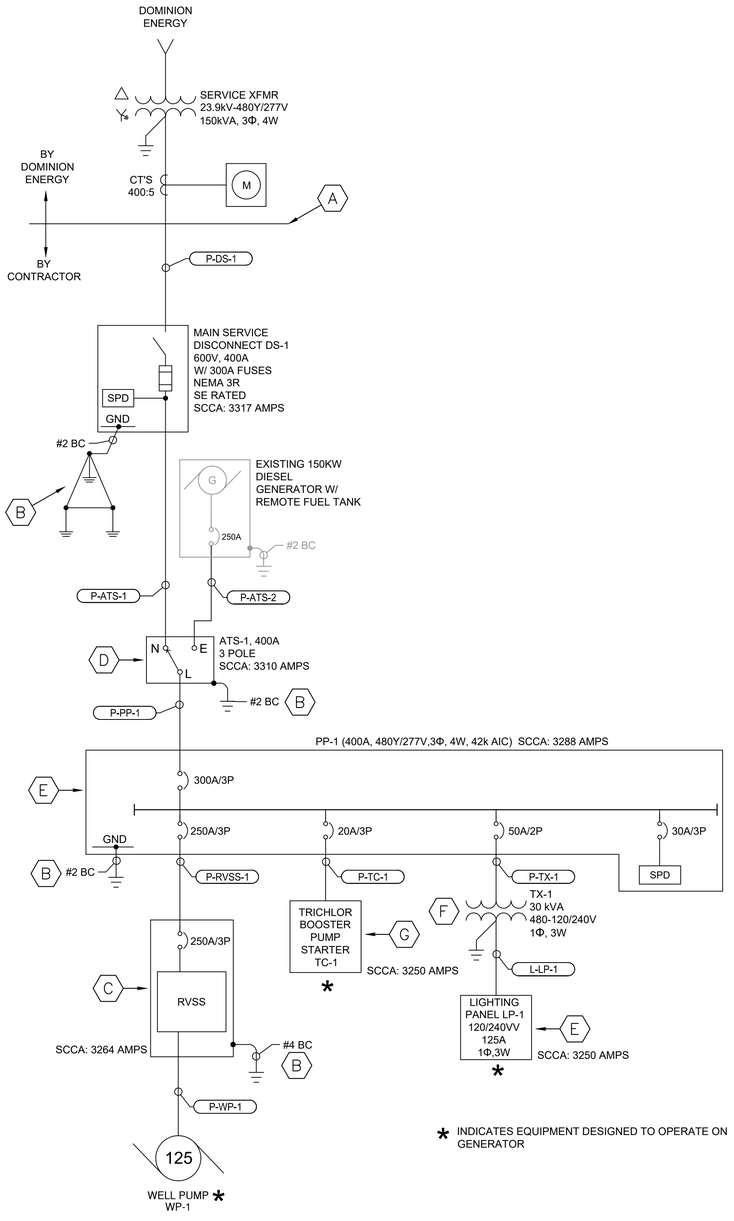
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JOB #	ISSUE DATE	ISSUE
FEW	FEW	17-1007.41	FEBRUARY 2024	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 51661 WWW.4WENG.COM

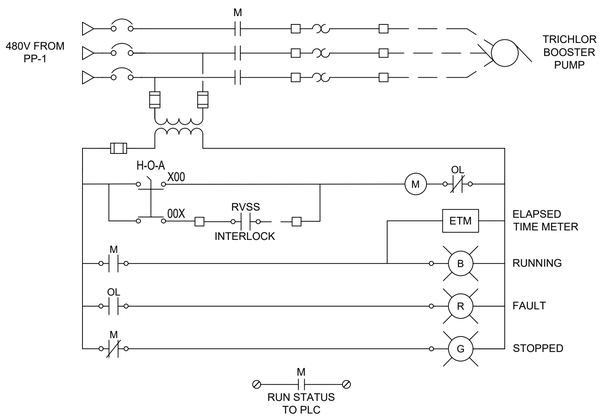
DRAWING NUMBER
E-1

EVANLILY ENGINEERING
Client Focused Electrical Engineering with Quality and Value
FRANK E. WELLS, PE – 904.509.7784 – FRANK.WELLS@EVANLILYENGINEERING.COM



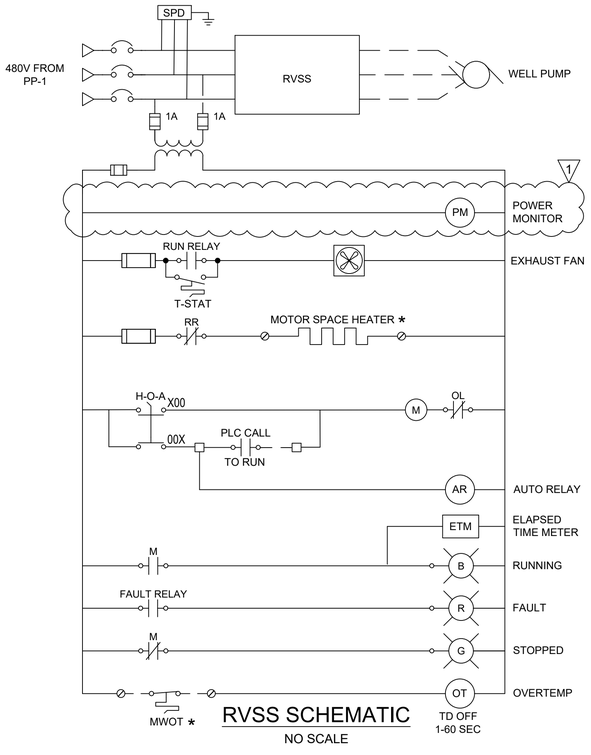
ONE-LINE DIAGRAM

NO SCALE



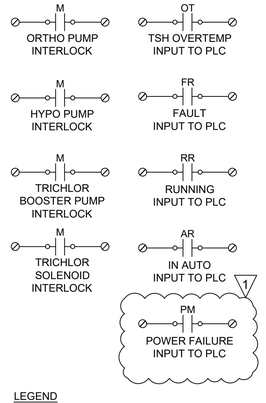
MOTOR STARTER SCHEMATIC

NO SCALE



RVSS SCHEMATIC

NO SCALE



GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE ELECTRIC SERVICE INSTALLATION WITH DOMINION ENERGY. CONTRACTOR WILL FURNISH AND INSTALL ALL RACEWAYS, SERVICE CONDUCTORS, SERVICE EQUIPMENT, WIREWAYS, LOAD CENTERS, AND FEEDERS AS REQUIRED FOR A COMPLETE AND OPERATIONAL INSTALLATION.
2. MAXIMUM AVAILABLE FAULT CURRENT FROM THE UTILITY AT THE SECONDARY SIDE OF THE DOMINION ENERGY SERVICE TRANSFORMER IS ESTIMATED AT 2406 AMPS AND SHALL BE CONFIRMED IN THE FIELD DURING CONSTRUCTION. ALL DOWNSTREAM EQUIPMENT SHALL BE SUFFICIENTLY RATED TO WITHSTAND MAXIMUM AVAILABLE FAULT CURRENTS.
3. CONTRACTOR SHALL PROVIDE ARC FLASH HAZARD ANALYSIS, PROTECTIVE DEVICE COORDINATION, AND SHORT CIRCUIT STUDY OF THE PROPOSED ELECTRICAL SYSTEM, INCLUDING ALL ELECTRICAL EQUIPMENT SUCH AS PANELBOARDS, CONTROL PANELS, DISCONNECT SWITCHES, AND MOTOR STARTERS. EQUIPMENT SHALL BE LABELED WITH SUCH THINGS AS APPROACH BOUNDARIES, INCIDENT ENERGY LEVELS, AND ACCEPTABLE PPE IN ACCORDANCE WITH OSHA 29 CFR, PART 1910, NEC, NFPA 70E, AND IEEE 1584 CURRENT EDITIONS.
4. GROUNDING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH NEC AND AHJ REQUIREMENTS INTERCONNECTING ALL ELECTRICAL EQUIPMENT, EQUIPMENT RACKS, METAL PIPING, AND FOUNDATION REBAR. GROUND LOOP SHALL CONSIST OF 3/4" X 10' COPPER CLAD GROUND RODS WITH #2/0 AWG BARE COPPER GROUND CONDUCTOR AND GREEN INSULATED GEC CONDUCTOR SIZED PER NEC 250.66. GRID SHALL BE TESTED TO A MAXIMUM RESISTANCE OF 10 OHMS. DRIVE ADDITIONAL GROUND RODS AS REQUIRED TO MEET MAXIMUM RESISTANCE REQUIREMENTS.
5. ELEMENTARY SCHEMATIC DIAGRAMS SHOWN ARE DIAGRAMMATIC AND INTEND TO SHOW OVERALL SYSTEM REQUIREMENTS. THEY MAY NOT SHOW OR CALL OUT ALL COMPONENTS NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM AS DESCRIBED BY THESE DRAWINGS AND THE PROJECT SPECIFICATIONS.

KEY NOTES

A. THE CONTRACTOR SHALL EXTEND THE UNDERGROUND SERVICE CONDUITS TO THE SERVICE POINT OF CONNECTION AS DESIGNATED BY DOMINION ENERGY AND TERMINATE IN ACCORDANCE WITH DOMINION ENERGY REQUIREMENTS. SERVICE POINT SHALL BE A DOMINION ENERGY PROVIDED SERVICE HANDHOLE AT THE BASE OF THE RISER POLE.

B. CONTRACTOR SHALL GROUND AND BOND ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NFPA 70, ARTICLE 250 AND LOCAL AUTHORITY HAVING JURISDICTION REQUIREMENTS. BOND GROUND WITH ADJACENT WATER PIPING, STRUCTURAL SUPPORTS AND FOUNDATION REBAR.

C. RVSS SHALL BE AN ENCLOSED EATON S811+T18P3S OR APPROVED EQUAL. PROVIDE H-O-A SWITCH, RUN (BLUE) AND FAIL (RED) PILOT LIGHTS, INTEGRAL 250A HMCP, ETHERNET CARD FOR COMMUNICATIONS FOR SCADA INTERFACE, CONTROL POWER TRANSFORMER, AUXILIARY RELAYS (120V, 10A) FOR CHEMICAL PUMP AND TRICHLOR SYSTEM OPERATION, AND A NEMA 3R ENCLOSURE.

D. EXISTING CUMMINS AUTOMATIC TRANSFER SWITCH TO BE RELOCATED TO NEW LOCATION AS SHOWN. LOCATE, INTERCEPT, AND REROUTE EXISTING POWER AND CONTROL CONDUITS AND CONDUCTORS FROM GENERATOR TO NEW SWITCH LOCATION. SEE DRAWING E-3/E-4 FOR ADDITIONAL INFORMATION.

E. PANELBOARDS SHALL BE PROVIDED WITH RATINGS AS SHOWN IN THE ELECTRICAL SCHEDULES ON DRAWING E-7.

F. TRANSFORMER SHALL BE AN EATON GENERAL PURPOSE VENTILATED FLOOR MOUNT WITH ALUMINUM WINDINGS.

G. EATON FREEDOM SERIES COMBINATION MOTOR STARTER, FVNR SIZE 1, NEMA 3R WITH H-O-A SWITCHES AND INDICATION LAMPS AS INDICATED. INTERLOCK MOTOR STARTER WITH RVSS TO RUN ONLY DURING WELL PUMP OPERATION.

ELECTRICAL LOAD CALCULATIONS		
DESCRIPTION	SIZE	AMPS
WELL PUMP (HP)	125	156
POWER & CONTROLS (kVA)	30	36
CONNECTED LOAD		192
NON COINCIDENT LOAD		0
PEAK DEMAND LOAD		192
.25 X LARGEST MOTOR		39
MIN SERVICE AMPACITY		231
MIN MAIN BREAKER SIZE		289
ELECTRICAL SERVICE REQUIRED:		
300A, 480V, 3PH, 4W		

LOAD CALCULATION

NOT TO SCALE

EVANLILY ENGINEERING
Client Focused Electrical Engineering with Quality and Value
FRANK E. WELLS, PE – 904.509.7784 – FRANK.WELLS@EVANLILYENGINEERING.COM

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 41556
FRANK E. WELLS

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY FRANK E. WELLS, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
EVANLILY CONTRACTING LLC
No. 7159

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1	4-5-24	FEW	FEW	ADDENDUM
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS
RIDGELAND, SOUTH CAROLINA

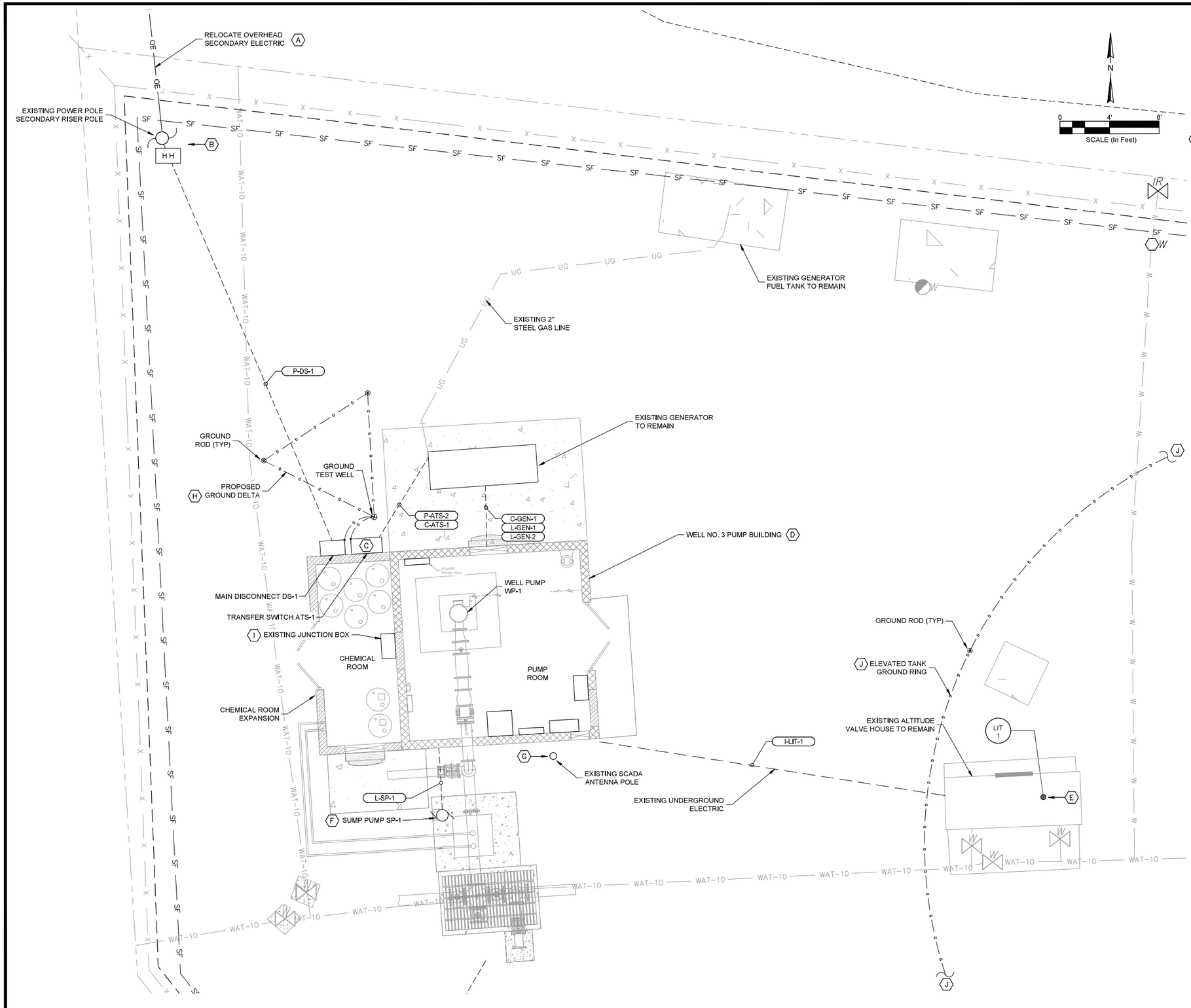
ONE- LINE DIAGRAM, CALCULATIONS AND SCHEDULES

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
FEW	FEW
JOB #	ISSUE DATE
17-1007.41	FEBRUARY 2024
	ISSUE
	100%

FOUR WATERS ENGINEERING
324 6th AVE N JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 51661 WWW.4WENG.COM

DRAWING NUMBER
E-2



GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE ALL RACEWAYS, CONDUCTORS, EQUIPMENT, AND OTHER ASSOCIATED COMPONENTS FOR A COMPLETE AND OPERATIONAL SYSTEM IN ACCORDANCE WITH THESE DRAWINGS AND THE PROVIDERS STANDARDS AND REQUIREMENTS.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE AND COMPLETE ALL WORK IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS REQUIREMENTS AND APPROVED SHOP DRAWINGS.

KEY NOTES

A. THE CONTRACTOR SHALL COORDINATE ALL ELECTRICAL SERVICES WITH DOMINION ENERGY REPRESENTATIVES IN THE FIELD DURING CONSTRUCTION. DOMINION ENERGY TO RELOCATE SECONDARY CONDUCTORS TO SECONDARY RISER POLE WITHIN WELL NO. 3 SITE FENCE LINE.

B. CONTRACTOR SHALL PROVIDE SECONDARY CONDUITS AND SERVICE ENTRANCE CONDUCTORS BETWEEN RISER POLE SERVICE HANDHOLE AND NEW DISCONNECT SWITCH AT PUMP BUILDING IN ACCORDANCE WITH DOMINION ENERGY STANDARDS.

C. EXISTING CUMMINS TRANSFER SWITCH SHALL BE RELOCATED TO THE NEW LOCATION AS SHOWN. EXISTING CONDUITS AND CONDUCTORS BETWEEN GENERATOR AND TRANSFER SWITCH SHALL BE INTERCEPTED, REROUTED, AND TURNED UP TO THE NEW SWITCH LOCATION.

D. REFER TO ENLARGED BUILDING PLAN ON DRAWING E-4 FOR DETAILED INTERIOR BUILDING ELECTRICAL SYSTEMS.

E. EXISTING ALTITUDE VALVE HOUSE TO REMAIN. EXISTING PRESSURE BASED TANK LEVEL TRANSMITTER SHALL BE RECONNECTED WITH THE NEW PLC CONTROL SYSTEM.

F. SUMP PUMP SHALL HAVE AN INTEGRAL FLOAT SWITCH. SET FLOAT ELEVATION IN THE FIELD DURING CONSTRUCTION.

G. EXISTING SCADA ANTENNA POLE, UPGRADES TO ANTENNA POLE, COAX CABLE, RADIO SYSTEMS, AND CONTROL PANEL SHALL BE BY THE SCADA SYSTEM SUPPLIER, LORD AND COMPANY INDUSTRIAL AUTOMATION, 2100 CAROLINA PLACE DRIVE, FORT MILL, SOUTH CAROLINA, 29708, PHONE NUMBER (803) 802.0060, CONTACT FOR PRICING ON SCADA SYSTEM.

H. GROUNDING DELTA CONDUCTOR SHALL BE #2/0 AWG BARE COPPER BURIED 30-INCHES DEEP IN A DELTA CONFIGURATION. BOND ALL SERVICE ENTRANCE EQUIPMENT AS SHOWN IN SINGLE LINE DIAGRAM. REFER TO DETAILS DRAWING E-5.

I. EXISTING JUNCTION BOX ON WEST EXTERIOR WALL SHALL BE INVESTIGATED BY THE CONTRACTOR DURING CONSTRUCTION. FINDINGS SHALL BE RELAYED TO THE ENGINEER AND THE OWNER FOR FURTHER DIRECTION. IF DEEMED NECESSARY FOR CONTINUED OPERATION, THE JUCNTION BOX AND CONTENTS SHALL BE RELOCATED ACCORDINGLY

J. ELEVATED TANK GROUND RING SHALL EXTEND AROUND THE ENTIRE ELEVATED TANK AND SHALL CONSIST OF BARE #2/0 AWG COPPER CONDUCTOR BURIED 30-INCHES BELOW GRADE AND WITHIN 24-INCHES OF THE ELEVATED TANK FOUNDATIONS. GROUND RODS SHALL BE PLACED AT EACH ELEVATED TANK FOUNDATION WITH A #2/0 AWG BONDING JUMPER EXOTHERMICALLY WELDED TO THE ELEVATED TANK STRUCTURAL STEEL. GROUND GRID RESISTANCE SHALL BE TESTED TO A MAXIMUM OF 10 OHMS.

EVANLILY ENGINEERING
Client Focused Electrical Engineering with Quality and Value
FRANK E. WELLS, PE – 904.509.7784 – FRANK.WELLS@EVANLILYENGINEERING.COM

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 41556
FRANK E. WELLS

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY FRANK E. WELLS, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
EVANLILY CONTRACTING LLC
No. 7159

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				

ELECTRICAL SITE PLAN

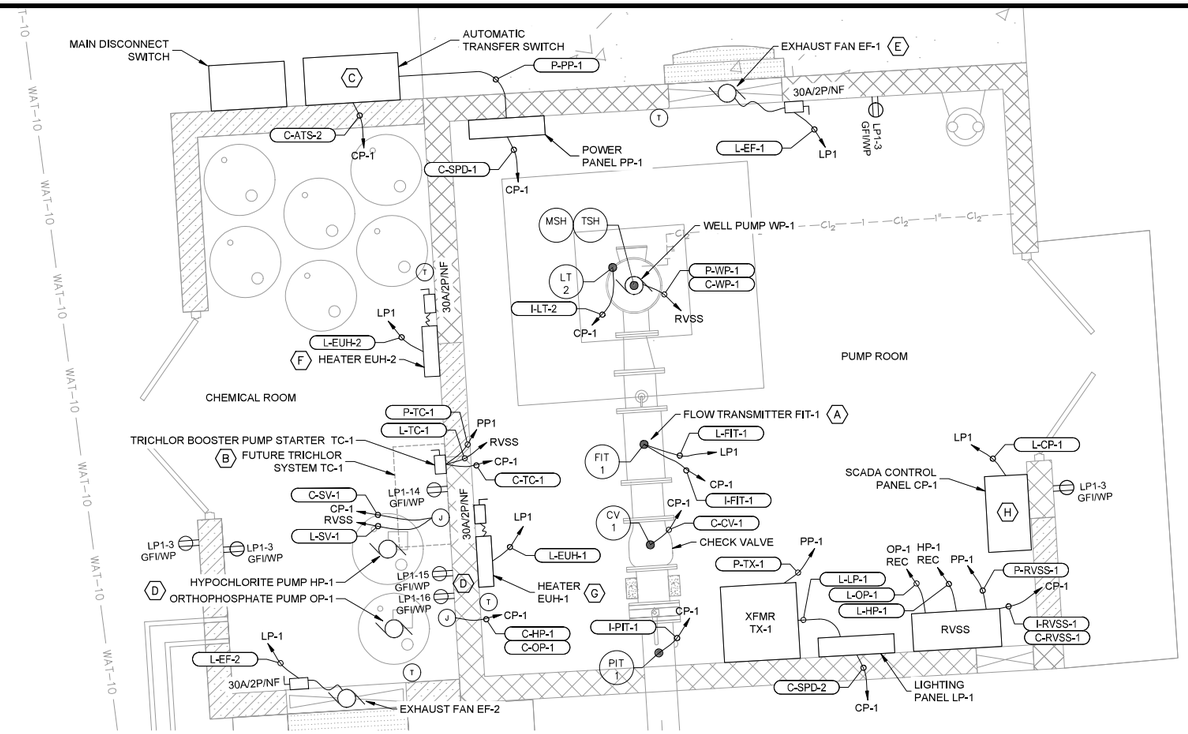
WELL SITE #3 IMPROVEMENTS
RIDGELAND, SOUTH CAROLINA

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN FEW	JOB # 17-1007.41	ISSUE DATE FEBRUARY 2024	ISSUE 100%
DRAWN FEW			

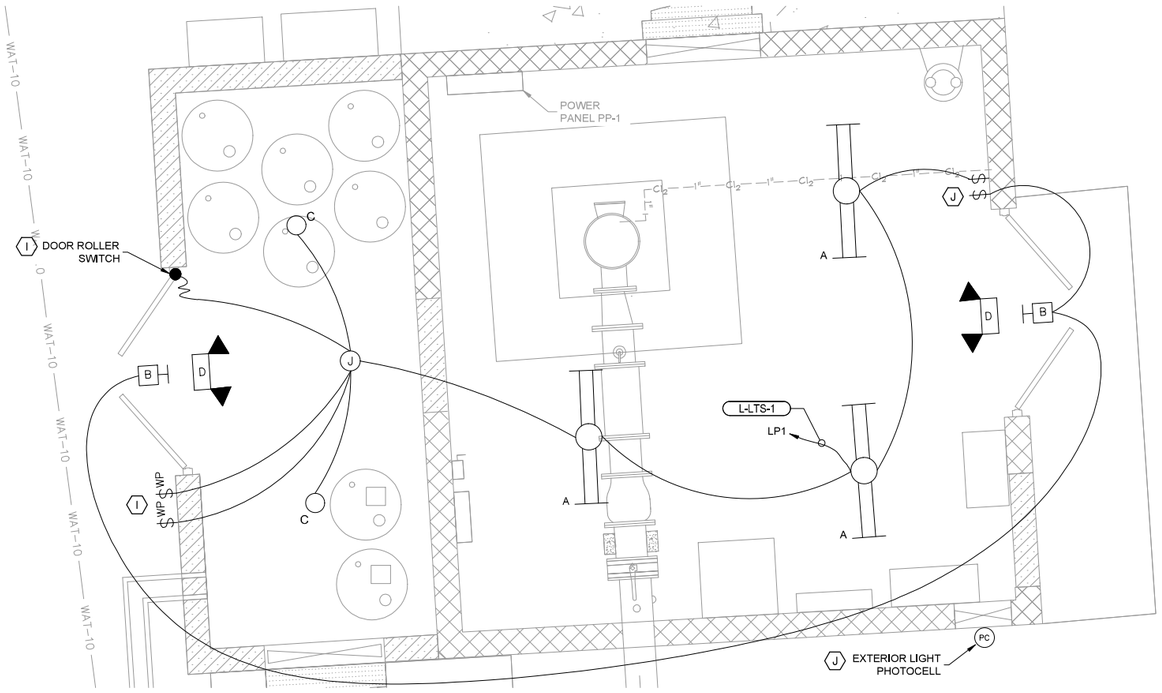
FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 51661 WWW.4WENG.COM

DRAWING NUMBER
E-3



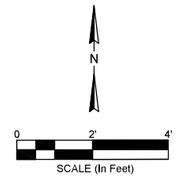
BUILDING POWER PLAN

SCALE: 1" = 4'-0"



BUILDING LIGHTING PLAN

SCALE: 1" = 4'-0"



GENERAL NOTES

1. ALL LIGHTING AND RECEPTACLE CIRCUIT WIRING SHALL BE 1#12, 1#12N, 1#12G COPPER TYPE THHN IN CONDUIT UNLESS NOTED OTHERWISE. REFER TO ELECTRICAL SCHEDULES FOR ADDITIONAL INFORMATION.
2. BRANCH CIRCUITS SHALL HAVE DEDICATED NEUTRALS. NO SHARING OF NEUTRALS IS PERMITTED. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL END DEVICES AND SIZED IN ACCORDANCE WITH NFPA 70, 250,122.
3. CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES AS REQUIRED FOR REQUIRED ROUGH IN REQUIREMENTS PRIOR TO CONSTRUCTION.
4. EMERGENCY AND EXIT LIGHTING SHALL BE CONNECTED TO CONSTANT HOT CONDUCTOR FROM ROOM LIGHTING CIRCUITS, DO NOT SWITCH.
5. INTERIOR BUILDING RECEPTACLES SHALL BE MOUNTED AT 42-INCHES AFF, UNLESS NOTED OTHERWISE.
6. CONDUITS, FITTING, BOXES, AND OUTLETS IN THE CHEMICAL ROOM SHALL BE SCHEDULE 80 PVC. SEAL PENETRATIONS TO PUMP ROOM WITH APPROVED SEALANT. DUCT SEAL ALL CONDUITS AT DEVICE AND JUNCTION BOXES, FIXTURES, AND EQUIPMENT ENCLOSURES.

KEY NOTES

A. FLOW ELEMENT AND METER SHALL BE AN ENDRESS HAUSER PROMAG W400 5WC2F-AAHLHA0DUA12GA, 120VAC, 4-20mA WITH ALUMINUM HOUSING. FLOW RATE SHALL BE 0 - 2,000 GPM.

B. TRICHLOR SKID SYSTEM SHALL TO BE INSTALLED IN THE FUTURE. FURNISH AND INSTALL ELECTRICAL ACCOMMODATIONS NOW FOR FUTURE SYSTEM INCLUDING FVNR SIZE 1 MOTOR STARTER FOR FUTURE BOOSTER PUMP INTERLOCKED WITH RVSS TO RUN ONLY DURING WELL PUMP OPERATION. 120V CONTINUOUSLY POWERED RECEPTACLE FOR THE FUTURE CHLORVAC SYSTEM, AND POWER TO A JUNCTION BOX FOR THE FUTURE TRICHLOR SOLENOID VALVE POWERED FROM THE RVSS TO OPERATE ONLY DURING WELL PUMP OPERATION.

C. EXISTING CUMMINS AUTOMATIC TRANSFER SWITCH TO BE RELOCATED TO NEW LOCATION AS SHOWN. LOCATE, INTERCEPT, AND REROUTE EXISTING POWER AND CONTROL CONDUITS AND CONDUCTORS FROM GENERATOR TO NEW SWITCH LOCATION.

D. COORDINATE CHEMICAL PUMP REQUIREMENTS AND INSTALLATION LOCATIONS IN THE FIELD DURING CONSTRUCTION WITH OTHER DISCIPLINES. INSTALL DEDICATED 20A DUPLEX RECEPTACLES WITH WEATHERPROOF, IN-USE COVERS FOR EACH PUMP. ORTHOPHOSPHATE, HYPOCHLORITE, AND TRICHLOR SYSTEM RECEPTACLES SHALL BE INTERLOCKED WITH THE WELL PUMP RVSS TO OPERATE ONLY DURING WELL PUMP OPERATION. TRICHLOR SYSTEM FAN RECEPTACLE SHALL BE CONTINUOUSLY POWERED.

E. CHEMICAL ROOM EXHAUST FAN SHALL BE GREENHECK MODEL CUE-095-6VG119XQD, 120VAC, 199-1167 CFM WITH FIBERGLASS BACKDRAFT DAMPER. PUMP ROOM EXHAUST FAN SHALL BE GREENHECK CUE-140-7VG122GQD, 120VAC, 851-2808 CFM WITH BACKDRAFT DAMPER. BOTH SHALL BE WALL FANS OR APPROVED EQUAL. FANS SHALL BE PROVIDED WITH WALL GRILLE, WALL MOUNT THERMOSTAT, AND INTEGRAL DISCONNECT. FANS SHALL BE FABRICATED WITH ALUMINUM HOUSING AND IMPELLER WITH HI-PRO POLYESTER COATING FOR CORROSIVE ATMOSPHERES. MOUNT FAN IN CHEMICAL ROOM 1'-0" ABOVE FINISHED FLOOR ELEVATION. CONFIRM THERMOSTAT SETPOINT IN FIELD WITH OWNER DURING CONSTRUCTION.

F. ELECTRIC UNIT HEATER SHALL BE QMARK GUX300812 OR APPROVED EQUAL. PROVIDE WITH WALL MOUNT BRACKET AND WALL MOUNT THERMOSTAT. RATINGS SHALL BE 3KW, 240V, 1PH. PROVIDE 30A/2P/NF ELECTRICAL DISCONNECT WHERE NOT INTEGRAL TO THE MECHANICAL EQUIPMENT. CONFIRM THERMOSTAT SETPOINT IN FIELD WITH OWNER DURING CONSTRUCTION.

G. ELECTRIC UNIT HEATER SHALL BE QMARK MUH0381 OR APPROVED EQUAL. PROVIDE WITH WALL MOUNT BRACKET AND WALL MOUNT THERMOSTAT. RATINGS SHALL BE 3KW, 240V, 1PH. PROVIDE 30A/2P/NF ELECTRICAL DISCONNECT WHERE NOT INTEGRAL TO THE MECHANICAL EQUIPMENT. CONFIRM THERMOSTAT SETPOINT IN FIELD WITH OWNER DURING CONSTRUCTION.

H. CONTROL PANEL SHALL BE FURNISHED AND INSTALLED BY THE SCADA SYSTEM SUPPLIER, UNDER THE EDA WATER AND SEWER RESILIENCY PROJECT. LORD AND COMPANY INDUSTRIAL AUTOMATION, 2100 CAROLINA PLACE DRIVE, FORT MILL, SOUTH CAROLINA, 29708, PHONE NUMBER (803) 802.0060. REROUTE ALL EXISTING INSTRUMENTATION AND CONTROL CIRCUITS FOR THE GENERATOR, TRANSFER SWITCH, AND ELEVATED TANK TO THE NEW CONTROL PANEL LOCATION. CIRCUITS AND CONDUCTORS THAT WILL NOT RELOCATE TO THE NEW PANEL LOCATION SHALL BE PULLED NEW FROM POINT TO POINT. SPLICES ARE NOT ALLOWED UNLESS DIRECTLY APPROVED BY OWNER. FURNISH NEW CIRCUITS AS REQUIRED FOR THE NEW INSTRUMENTATION SYSTEMS.

I. PROVIDE SEPARATE MANUAL SWITCHES FOR THE CHEMICAL ROOM LIGHTS AND CHEMICAL ROOM EXHAUST FAN. PROVIDE DOUBLE POLE SINGLE THROW ROLLER SWITCH IN DOOR FRAME FOR AUTOMATIC CHEMICAL ROOM LIGHT AND FAN OPERATION WHEN DOOR IS OPENED.

J. PROVIDE 3-POSITION SWITCH FOR EXTERIOR LIGHT OPERATION, UP FOR PHOTOCELL CONTROL, CENTER FOR OFF, AND DOWN FOR MANUAL CONTROL.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER
No. 41556
FRANK E. WELLS
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY FRANK E. WELLS, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
EVANLILY CONTRACTING LLC No. 7159

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS
RIDGELAND, SOUTH CAROLINA

WELL NO. 3 BUILDING POWER AND LIGHTING PLAN

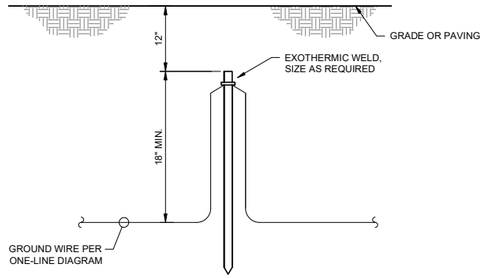
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JOB #	ISSUE DATE	ISSUE
FEW	FEW	17-1007.41	FEBRUARY 2024	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 51661 WWW.4WENG.COM

DRAWING NUMBER
E-4

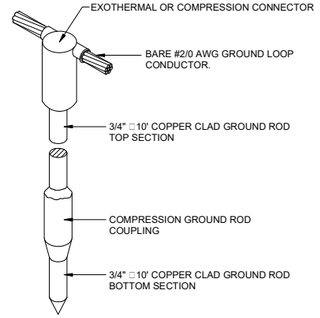
EVANLILY ENGINEERING
Client Focused Electrical Engineering with Quality and Value
FRANK E. WELLS, PE – 904.509.7784 – FRANK.WELLS@EVANLILYENGINEERING.COM



NOTE:
MINIMUM SYSTEM RESISTANCE TO GROUND SHALL BE 10 OHMS OR LESS. IF THIS RESISTANCE CANNOT BE MET WITH SINGLE 10' RODS, ADD ADDITIONAL SECTIONS TO RODS OR ADD NEW RODS AS REQUIRED SPACED WITH A DISTANCE EQUAL TO LENGTH OF GROUND ROD.

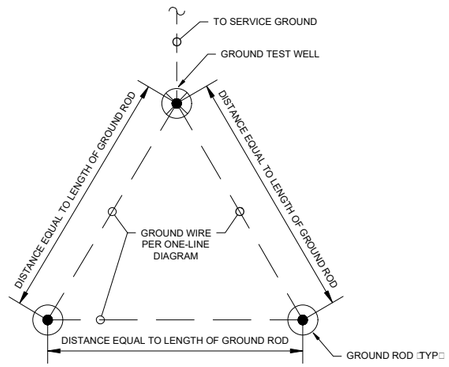
GROUND ROD ASSEMBLY

NOT TO SCALE



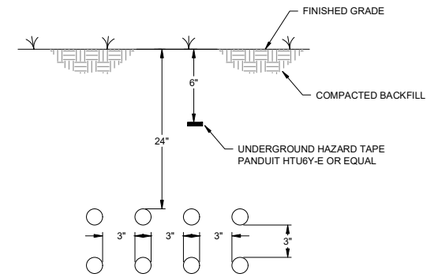
TYPICAL GROUND ROD DETAIL

NOT TO SCALE



GROUNDING DELTA DETAIL

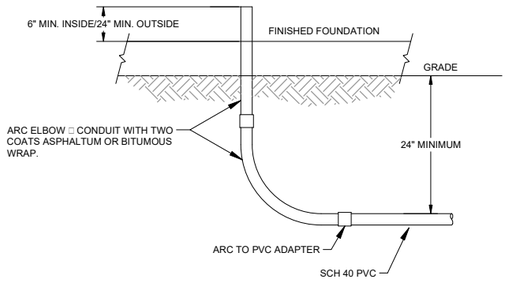
NOT TO SCALE



1. CONDUITS INSTALLED UNDERGROUND SHALL BE PROVIDED WITH CARLON "SNAP-N-STAC" COMBO SPACERS DESIGNED TO PROVIDE 3" CONDUIT SEPARATION. SPACERS SHALL BE INSTALLED PER MFG. RECOMMENDATIONS.
2. CONDUIT SEPERATION MAY BE REDUCED TO 1-1/2" WITHIN 10' OF HANDHOLE/MANHOLE PROVIDED "FLOWABLE FILL" IS USED AROUND CONDUIT FOR COMPACTION.

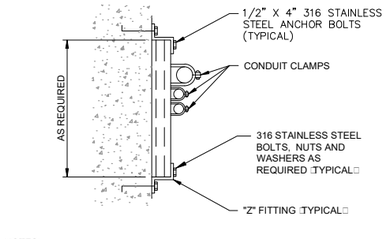
UNDERGROUND DIRECT BURIED CONDUIT DETAIL

NOT TO SCALE



U/G PVC CONDUIT INSTALLATION DETAIL

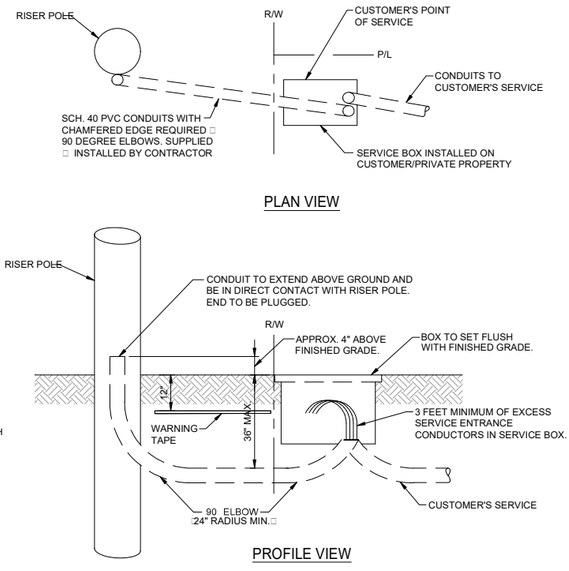
NOT TO SCALE



NOTES:
1. THIS DETAIL TYPICAL FOR BOTH VERTICAL AND HORIZONTAL MOUNTING.
2. CHANNEL AND ALL SUPPORT DEVICES TO BE STAINLESS STEEL.
3. CHANNEL TO BE SPACED 5' MAXIMUM.

WALL SUPPORT FOR CONDUITS

NOT TO SCALE



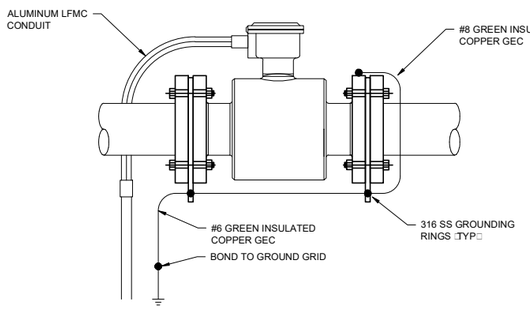
PLAN VIEW

PROFILE VIEW

NOTES:
1. THE MINIMUM DISTANCE BETWEEN THE SERVICE BOX AND SERVICE POLE IS 4 FEET.
2. THE CUSTOMER MUST PICK A CLEAR SIDE OF THE RISER POLE FOR THE SECONDARY CONDUCTORS, CLEAR FROM PHONE OR COMMUNICATION CABLES, OR ANY OTHER EQUIPMENT, FROM FINISHED GRADE TO CONNECTIONS TO OVERHEAD FACILITIES.
3. THE ELECTRIC UTILITY WILL MAKE ALL CONNECTIONS TO THE CUSTOMER'S SERVICE WIRE IN THE SERVICE BOX.

COMMERCIAL SERVICE FROM AN OVERHEAD POLE

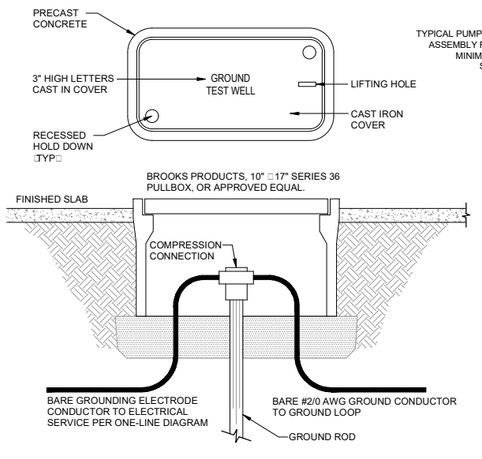
NOT TO SCALE



1. FLOW TUBE SHALL HAVE 5 STRAIGHT UPSTREAM AND 2 STRAIGHT DOWNSTREAM PIPE DIAMETERS.
2. PROVIDE GROUNDING RINGS ON BOTH SIDE OF FLOW METER PER MANUFACTURER'S REQUIREMENTS.

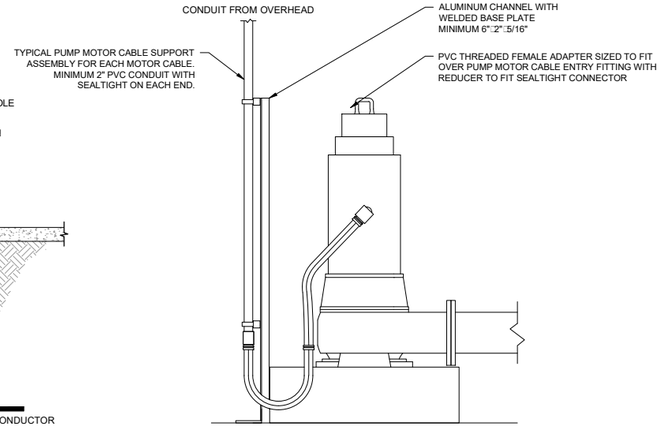
MAGNETIC FLOW METER

NOT TO SCALE



GROUND SYSTEM TEST WELL DETAIL

NOT TO SCALE



NOTES:
1. CONDUIT SHALL NOT INTERFERE WITH ROOF ACCESS FOR PUMP REMOVAL.

VERTICAL TURBINE PUMP DETAIL

NOT TO SCALE

EVANLILY ENGINEERING
Client Focused Electrical Engineering with Quality and Value
FRANK E. WELLS, PE – 904.509.7784 – FRANK.WELLS@EVANLILYENGINEERING.COM

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 41556 FRANK E. WELLS

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY FRANK E WELLS, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION EVANLILY CONTRACTING LLC No. 7159

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS
RIDGELAND, SOUTH CAROLINA

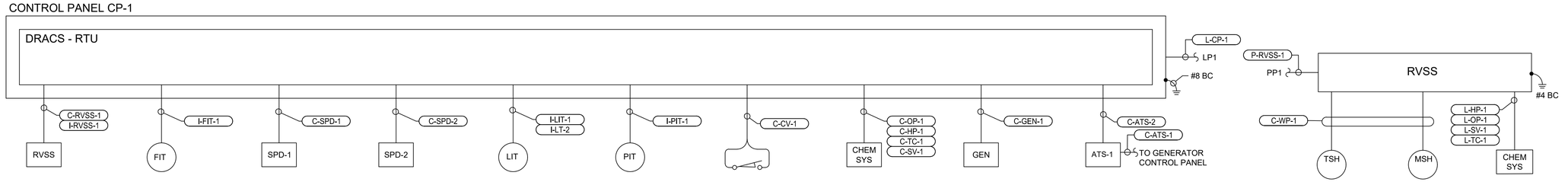
ELECTRICAL DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JOB #	ISSUE DATE	
FEW	FEW	17-1007.41	JANUARY 2024	100%

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 51661 WWW.4WENG.COM

DRAWING NUMBER
E-5



REDUCED VOLTAGE SOFT STARTER

CONTROL SIGNALS:
DIGITAL INPUTS
-RVSS RUNNING
-RVSS FAULT
-RVSS IN AUTO
-PUMP TEMP SWITCH
DIGITAL OUTPUTS
-RVSS RUN COMMAND

COMMUNICATIONS
-V/I READINGS
-ERROR LOGS
-RUNTIME

FLOW METERS

CONTROL SIGNALS:
ANALOG INPUTS
-DISCHARGE FLOW

POWER PANEL SPD-1

CONTROL SIGNALS:
DIGITAL INPUTS
-SPD FAULT

LIGHTING PANEL SPD-2

CONTROL SIGNALS:
DIGITAL INPUTS
-SPD FAULT

LEVEL TRANSMITTERS

CONTROL SIGNALS:
ANALOG INPUTS
-ELEVATED TOWER LEVEL
-WELL LEVEL

STATION DISCHARGE PRESSURE

CONTROL SIGNALS:
ANALOG INPUTS
-STATION DISCHARGE PRESSURE

CHECK VALVE LIMIT SWITCH

CONTROL SIGNALS:
DIGITAL INPUTS
-CHECK VALVE CLOSED

CHEMICAL SYSTEM

CONTROL SIGNALS:
DIGITAL INPUTS
-ORTHO PUMP RUNNING
-HYPO PUMP RUNNING
-TRICHLOR BOOSTER PUMP RUNNING
-SOLENOID VALVE OPEN

GENERATOR CONTROL PANEL

CONTROL SIGNALS:
DIGITAL INPUTS
-RUNNING
-FAULT

AUTOMATIC TRANSFER SWITCH

CONTROL SIGNALS:
DIGITAL INPUTS
-UTILITY PWR AVAILABLE
-GEN PWR AVAILABLE
-IN EMERGENCY
-IN NORMAL

DIGITAL OUTPUTS
-REMOTE GO TO EMERGENCY

CONTROL PANEL CP-1 CONTROL BLOCK DIAGRAM

NO SCALE

THERMAL SWITCH

CONTROL SIGNALS:
DIGITAL INPUTS
-TEMP OK

MOTOR SPACE HEATER

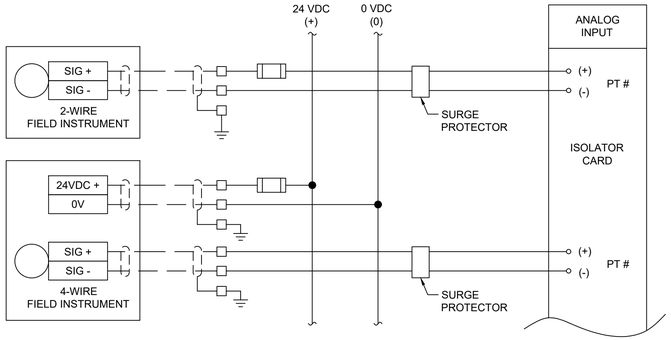
POWER:
-120VAC

CHEMICAL SYSTEM

CONTROL SIGNALS:
-HP-1 RECEPTACLE RVSS RUNNING INTERLOCK (LP1-15)
-OP-1 RECEPTACLE RVSS RUNNING INTERLOCK (LP1-16)
-SV-1 SOLENOID OPEN COMMAND
-TC-1 STARTER START COMMAND

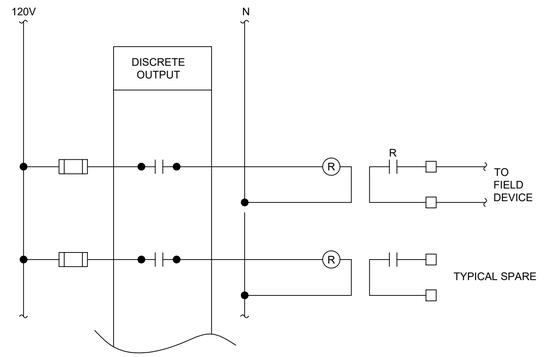
RVSS BLOCK DIAGRAM

NO SCALE



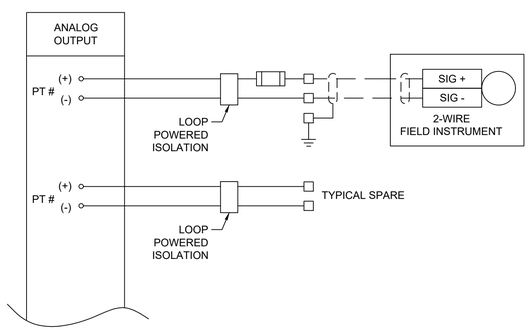
TYPICAL ANALOG INPUTS FROM FIELD DEVICE

NO SCALE



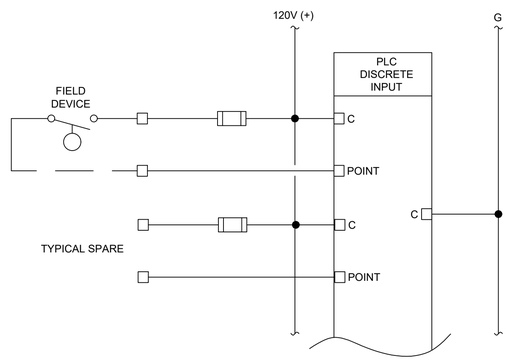
ISOLATED DRY CONTACT DISCRETE OUTPUT TO FIELD DEVICE

NO SCALE



TYPICAL ANALOG OUTPUT TO FIELD DEVICE

NO SCALE



ISOLATED DISCRETE INPUT FROM FIELD DEVICE

NO SCALE

GENERAL NOTES

1. CONTROL PANEL SHALL BE FURNISHED AND INSTALLED BY THE SCADA SYSTEM SUPPLIER, UNDER THE EDA WATER AND SEWER RESILIENCY PROJECT, LORD AND COMPANY INDUSTRIAL AUTOMATION, 2100 CAROLINA PLACE DRIVE, FORT MILL, SOUTH CAROLINA, 29708. PHONE NUMBER (803) 802.0060. REROUTE ALL EXISTING INSTRUMENTATION AND CONTROL CIRCUITS FOR THE GENERATOR, TRANSFER SWITCH, AND ELEVATED TANK TO THE NEW CONTROL PANEL LOCATION. CIRCUITS AND CONDUCTORS THAT WILL NOT RELOCATE TO THE NEW PANEL LOCATION SHALL BE PULLED NEW FROM POINT TO POINT, SPLICES ARE NOT ALLOWED UNLESS DIRECTLY APPROVED BY OWNER. FURNISH NEW CIRCUITS AS REQUIRED FOR THE NEW INSTRUMENTATION SYSTEMS.

EVANLILY ENGINEERING
Client Focused Electrical Engineering with Quality and Value
FRANK E. WELLS, PE – 904.509.7784 – FRANK.WELLS@EVANLILYENGINEERING.COM

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 41556
FRANK E. WELLS

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY FRANK E. WELLS, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
EVANLILY CONTRACTING LLC
No. 7159

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1	4-5-24	FEW	FEW	ADDENDUM
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS
RIDGELAND, SOUTH CAROLINA

CONTROL BLOCK DIAGRAM

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	FEW	DRAWN	FEW
JOB #	17-1007.41	ISSUE DATE	FEBRUARY 2024
ISSUE			100%

FOUR WATERS ENGINEERING
JACKSONVILLE BEACH, FLORIDA 32250
S.C. COA # 51661 WWW.4WENG.COM
324 6th AVE N.
844-414-2400

DRAWING NUMBER
E-6

			POWER PANEL PP-1			LOCATION:		PUMP ROOM					
VOLTS L-L:	480		MAIN OVERCURRENT:	300A MCB		BUS MATERIAL:	Cu	MOUNTING:	SURFACE				
VOLTS L-N:	277		MAIN BUS RATING:	400A		NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	NEMA 3R				
PHASE:	3		MINIMUM A.I.C.:	42kA				GROUND:	EQUIPMENT				
WIRE:	4												
CKT#	BKR.	POLE	TYPE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	TYPE	POLE	BKR.	CKT#
1	300	3		WELL PUMP RVSS (3 #3/0, 1 #4G)	43230	51420			8190	TRANSFORMER TX-1 (2#8, 1 #10G)		2	50	2
3					43230		50060		6830					4
5					43230			43230		SPACE				6
7	20	3		TRICHLOR SYSTEM BOOSTER PUMP (3 #12, 1 #12G)	1330	1330				SPACE				8
9					1330		1330			SPACE				10
11					1330			1330		SPACE				12
13				SPACE		0				SPACE				14
15				SPACE			0			SPACE				16
17				SPACE				0		SPACE				18
19				SPACE		0				SPACE				20
21				SPACE			0			SPACE				22
23				SPACE				0		SPACE				24
25				SPACE		0				SPACE				26
27				SPACE			0			SPACE				28
29				SPACE				0		SPACE				30
31				SPACE		0				SPACE				32
33				SPACE			0			SPACE				34
35				SPACE				0		SPACE				36
37				SPACE		10			10	SPD-1 (NOTE 1)		1	30	38
39				SPACE			10		10					40
41				SPACE				10	10					42
				TOTAL CONNECTED LOAD (VA) PER PHASE:		52760	51400	44570						
				CONNECTED LOAD (AMPS) PER PHASE:		190	186	161						
				TOTAL CONNECTED LOAD (VA):		148730								
				TOTAL CONNECTED LOAD (AMPS):		179								

NOTES:

1. PROVIDE MANUFACTURES STANDARD UL 1449 INTEGRAL SURGE PROTECTION DEVICE.
2. PROVIDE PRINTED PANEL SCHEDULE AFFIXED TO INSIDE OF PANEL DOOR.
3. CONTRACTOR SHALL COORDINATE ALL LOADS IN THE FIELD DURING CONSTRUCTION WITH APPROVED VENDOR DRAWINGS.

POWER PANEL PP-1 SCHEDULE

			LIGHTING PANEL LP-1			LOCATION:		PUMP ROOM					
OPTIONS													
VOLTS L-L:	240		MAIN OVERCURRENT:	125A MCB		BUS MATERIAL:	Cu	MOUNTING:	SURFACE				
VOLTS L-N:	120		MAIN BUS RATING:	125A		NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	NEMA 3R				
PHASE:	1		MINIMUM A.I.C.:	14kA				GROUND:	EQUIPMENT				
WIRE:	3												
CKT#	BKR.	POLE	TYPE	DESCRIPTION	VA	PHASE	PHASE	VA	DESCRIPTION	TYPE	POLE	BKR.	CKT#
1	20	1		BLDG LIGHTS	300	1800		1500	EUH-1 (2#10, 1#10G)		2	30	2
3	20	1		BLDG RECEPTS	720		2220	1500					4
5	20	1		CONTROL PANEL CP-1 (2#10, 1#10G)	1200	2700		1500	EUH-2 (2#10, 1#10G)		2	30	6
7	20	1		GEN BATTERY CHARGER	1200		2700	1500					8
9	20	1		FIT-1	600	2256		1656	EF-1 (1#10, 1#10N, 1#10G)		1	25	10
11	25	2		GEN COOLANT HEATER (1#10, 1#10N, 1#10G)	1000		1528	528	EF-2		1	20	12
13					1000	1600		600	TRICHLOR TC-1		1	20	14
15	20	1		HYPO PUMP RECEPT (VIA RVSS)	600		1200	600	ORTHOPHOSPHATE PUMP RECEPT (VIA RVSS)		1	20	16
17	20	1		SPARE		1140		1140	SUMP PUMP SP-1		1	20	18
19	20	1		SPARE			0		SPARE		1	20	20
21	20	1		SPARE		0			SPARE		1	20	22
23							0						24
25						0							26
27							0						28
29						0							30
31							0						32
33						10		10	SPD-2 (NOTE 1)		2	30	34
35							10	10					36
				TOTAL CONNECTED LOAD (VA) PER PHASE:		9506	7658						
				CONNECTED LOAD (AMPS) PER PHASE		79	64						
				TOTAL CONNECTED LOAD (VA):		17164							
				TOTAL CONNECTED LOAD (AMPS):		72							

NOTES:

1. PROVIDE MANUFACTURES STANDARD UL 1449 INTEGRAL SURGE PROTECTION DEVICE.
2. ALL CIRCUITS ARE 1#12, 1#12N, 1#12G IN 3/4" RIGID ALUMINUM CONDUIT UNLESS NOTED OTHERWISE.
2. CONTRACTOR SHALL PROVIDE A LAMINATED PANEL SCHEDULE IN CLEAR PLASTIC SLEEVE ADHERED TO INSIDE OF PANEL COVER.
4. CONTRACTOR SHALL COORDINATE FINAL BREAKER SIZES FOR ALL LOADS IN THE FIELD DURING CONSTRUCTION WITH APPROVED VENDOR DRAWINGS.

LIGHTING PANEL LP-1 SCHEDULE

CONDUIT AND CONDUCTOR SCHEDULE						
CIRCUIT ID	# OF SETS	CONDUIT SIZE	CONDUCTOR IN EACH SET	FROM	TO	NOTES
C-ATS-1	1	3/4"	2#14, 1#14G	TRANSFER SWITCH ATS-1	GENERATOR	PARTIAL EXISTING CONDUIT
C-ATS-2	1	3/4"	10#14, 1#14G	TRANSFER SWITCH ATS-1	CONTROL PANEL CP-1	
C-CV-1	1	3/4"	2#14, 1#14G	CHECK VALVE CV-1	CONTROL PANEL CP-1	
C-GEN-1	1	1"	8#14, 1#14G	GENERATOR	CONTROL PANEL CP-1	PARTIAL EXISTING CONDUIT
C-HP-1	1	3/4"	2#14, 1#14G	PUMP HP-1 RECEPT	CONTROL PANEL CP-1	
C-OP-1	1	3/4"	2#14, 1#14G	PUMP OP-1 RECEPT	CONTROL PANEL CP-1	
C-RVSS-1	1	3/4"	8#14, 1#14G	RVSS	CONTROL PANEL CP-1	
C-SPD-1	1	3/4"	2#14, 1#14G	POWER PANEL PP-1 SPD	CONTROL PANEL CP-1	
C-SPD-2	1	3/4"	2#14, 1#14G	LIGHTING PANEL LP-1 SPD	CONTROL PANEL CP-1	
C-SV-1	1	3/4"	2#14, 1#14G	TRICHLOR SOLENOID SV-1	CONTROL PANEL CP-1	
C-TC-1	1	3/4"	2#14, 1#14G	TRICHLOR STARTER TC-1	CONTROL PANEL CP-1	
C-WP-1	1	3/4"	4#14, 1#14G	RVSS	WELL PUMP WP-1	
I-FIT-1	1	3/4"	1-2PR#18 TWIS	DISCHARGE FLOW FIT-1	CONTROL PANEL CP-1	
I-LIT-1	1	1"	1-2PR#18 TWIS	TOWER LEVEL LIT-1	CONTROL PANEL CP-1	PARTIAL EXISTING CONDUIT
I-LT-2	1	3/4"	1-2PR#18 TWIS	WELL PUMP LEVEL LT-2	CONTROL PANEL CP-1	
I-PIT-1	1	3/4"	1-2PR#18 TWIS	DISCHARGE PRESSURE PIT-1	CONTROL PANEL CP-1	
I-RVSS-1	1	3/4"	1-ETHERNET	RVSS	CONTROL PANEL CP-1	
L-CP-1	1	3/4"	1#10, 1#10N, 1#10G	LIGHTING PANEL LP-1	CONTROL PANEL CP-1	
L-EF-1	1	3/4"	1#10, 1#10N, 1#10G	LIGHTING PANEL LP-1	EXHAUST FAN EF-1	
L-EF-2	1	3/4"	1#12, 1#12N, 1#12G	LIGHTING PANEL LP-1	EXHAUST FAN EF-2	
L-EUH-1	1	1"	2#10, 1#10G	LIGHTING PANEL LP-1	HEATER EUH-1	
L-EUH-2	1	1"	2#10, 1#10G	LIGHTING PANEL LP-1	HEATER EUH-2	
L-FIT-1	1	3/4"	1#12, 1#12N, 1#12G	DISCHARGE FLOW FIT-1	LIGHTING PANEL LP-1	
L-GEN-1	1	1"	1#12, 1#12N, 1#12G	GENERATOR BATTERY CHARGER	LIGHTING PANEL LP-1	PARTIAL EXISTING CONDUIT
L-GEN-2	1	1"	2#10, 1#10G	GENERATOR COOLANT HEATER	LIGHTING PANEL LP-1	PARTIAL EXISTING CONDUIT
L-HP-1	1	3/4"	2#12, 1#12G	RVSS	CHEMICAL PUMP HP-1 RECEPTACLE	RVSS INTERLOCK
L-LP-1	1	1-1/2"	2#2, 1#2N, 1#2G	TRANSFORMER TX-1	LIGHTING PANEL LP-1	
L-LTS-1	1	3/4"	1#12, 1#12N, 1#12G	BUILDING LIGHTS	LIGHTING PANEL LP-1	
L-OP-1	1	3/4"	2#12, 1#12G	RVSS	CHEMICAL PUMP OP-1 RECEPTACLE	RVSS INTERLOCK
L-REC-1	1	3/4"	1#12, 1#12N, 1#12G	BUILDING RECEPTACLES	LIGHTING PANEL LP-1	
L-SP-1	1	1"	1#12, 1#12N, 1#12G	LIGHTING PANEL LP-1	SUMP PUMP SP-1	
L-SV-1	1	3/4"	4#14, 1#14G	RVSS	SOLENOID SV-1 J-BOX	RVSS INTERLOCK
L-TC-1	1	3/4"	4#14, 1#14G	RVSS	TRICHLOR STARTER TC-1	RVSS INTERLOCK
P-ATS-1	1	3"	3#350, 1#350N, 1#350G	MAIN DISCONNECT DS-1	TRANSFER SWITCH ATS-1	
P-ATS-2	1	3"	3#350, 1#350N, 1#350G	GENERATOR	TRANSFER SWITCH ATS-1	
P-DS-1	1	3"	3#350, 1#350N	SERVICE HANDHOLE	MAIN DISCONNECT SWITCH DS-1	
P-PP-1	1	3"	3#350, 1#350N, 1#350G	POWER PANEL PP-1	MAIN DISCONNECT DS-1	
P-RVSS-1	1	2"	3#3/0, 1#3/0G	POWER PANEL PP-1	RVSS	
P-TC-1	1	3/4"	3#12, 1#12G	POWER PANEL PP-1	TRICHLOR STARTER TC-1	
P-TX-1	1	1"	3#8, 1#8G	POWER PANEL PP-1	TRANSFORMER TX-1	
P-WP-1	1	2"	3#3/0, 1#3/0G	RVSS	WELL PUMP WP-1	

CONDUIT AND CONDUCTOR SCHEDULE

LIGHTING FIXTURE SCHEDULE - NOTES 1, 2, 3								
MARK	MFR.	CATALOG NUMBER.	LAMP	VOLTAGE	MOUNTING	WATTS	HEIGHT	REMARKS
A	LITHONIA	PUMP ROOM - VAPOR TIGHT LED CSVT-L48-4000LM-MVOLT-SWW3-80CRI	LED	120	CEILING	42	10'-0"	PROVIDE WITH STAINLESS STEEL LATCHES
B	LITHONIA	EXTERIOR - WALL PACK WPX1-LED-P1-40K-MVOLT-2900LM-DDBXD	LED	120	WALL	24	8'-6"	EXTERIOR WALL PACK
C	KILLARK	CHEMICAL ROOM - HAZARDOUS NON-METALLIC NVL-2-30-X-2-G	LED	120	CEILING	20	10'-0"	PROVIDE WITH GUARD
D	LITHONIA	EMERGENCY / EXIT COMBO LIGHT LHQM-LED-R-M6	LED	120	WALL	4.3	8'-6"	MOUNT ABOVE EXIT DOOR

NOTES:

1. CONTRACTOR SHALL PROVIDE FIXTURES SPECIFIED OR ENGINEER APPROVED EQUAL.
2. CONTRACTOR SHALL VERIFY ALL LOCATIONS AND MOUNTING HEIGHTS PRIOR TO CONSTRUCTION.
3. CONTRACTOR SUBMIT ALL MATERIALS FOR REVIEW AND APPROVAL PRIOR TO ORDERING.

FIXTURE SCHEDULE

EVANLILY ENGINEERING
Client Focused Electrical Engineering with Quality and Value
FRANK E. WELLS, PE – 904.509.7784 – FRANK.WELLS@EVANLILYENGINEERING.COM

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 41556 FRANK E. WELLS

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY FRANK E. WELLS, P.E., ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION EVANLILY CONTRACTING LLC No. 7159

REV NO	DATE	DRWN BY	CHKD BY	DESCRIPTION
1				
2				
3				
4				
5				
6				
7				

WELL SITE #3 IMPROVEMENTS
RIDGELAND, SOUTH CAROLINA

ELECTRICAL SCHEDULES

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN		
FEW	FEW		
JOB #	17-1007.41		
ISSUE DATE	FEBRUARY 2024		
ISSUE	100%		

FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 51661 WWW.4WENG.COM

DRAWING NUMBER
E-7

PROJECT PARTICIPANTS

OWNER

TOWN OF RIDGELAND

1 TOWN SQUARE
RIDGELAND,SC 29936

CIVIL AND ENVIRONMENTAL ENGINEERING

FOUR WATER ENGINEERING

324 6TH AVE
JACKSONVILLE BEACH, FLORIDA 32250

CONTACT: ANGELA BRYAN, PE, LEED AP
PHONE: 844-414-2400
EMAIL: abryan@4weng.com

ARCHITECT

WOODS DENDY ARCHITECTS, LLC

2201 BOUNDARY ST
BEAUFORT, SC 29902

CONTACT: GRADY L. WOODS, AIA, NCARB
PHONE: 843 379 7730
EMAIL: thenry@woodsdendy.com

STRUCTURAL

SOUTHERN CONSULTING AND ENGINEERING, INC
105 CENTRAL AVE 100A
GOOSE CREEK, SC

CONTACT: ADAM AUSTIN, PE
PHONE: 843-718 - 2525

1. ARCHITECT IS NOT RESPONSIBLE FOR INTERPRETING THE INTENT OF THESE CONSTRUCTION DOCUMENTS, INCLUDING MAKING MODIFICATIONS AS MAY BE NECESSARY DURING THE CONSTRUCTION PHASE. THE ABOVE NAMED COMPANY AND ARCHITECT OF RECORD ARE NOT LIABLE FOR THE WORK WHERE CHANGES TO THESE DOCUMENTS HAVE BEEN MADE.

2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES. ALL WORK REQUIRING MEASURING SHALL BE DONE ACCORDING TO FIGURES ON DRAWINGS AND NOT SCALED FROM DRAWINGS. THE ARCHITECT SHALL FURNISH ANY MISSING DIMENSIONS UPON REQUEST.

3. ALL WORK SHALL CONFORM TO PREVAILING CODES, ORDINANCES AND REQUIREMENTS, CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION AND SHALL PAY ALL APPLICABLE FEES.

4. EXISTING CONDITIONS AND ACTUAL FIELD CONDITIONS MAY VARY FROM INDICATIONS ON DRAWINGS. ALL NEW WORK RELATED TO OR AFFECTED BY EXISTING CONDITIONS SHALL BE MODIFIED TO ACHIEVE THE INTENT OF THE DRAWINGS (COORDINATE WITH ARCHITECT AND OWNER), THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE OWNER AND THE ARCHITECT BEFORE PROCEEDING WITH DIRECTLY AFFECTED DEMOLITION OR CONSTRUCTION.

5. THE CONTRACTOR SHALL SURVEY PROJECT SITE BEFORE BEGINNING ANY WORK TO VERIFY EXISTING CONDITIONS, REPORT ANY DISCREPANCIES TO OWNER AND ARCHITECT BEFORE BEGINNING WORK.

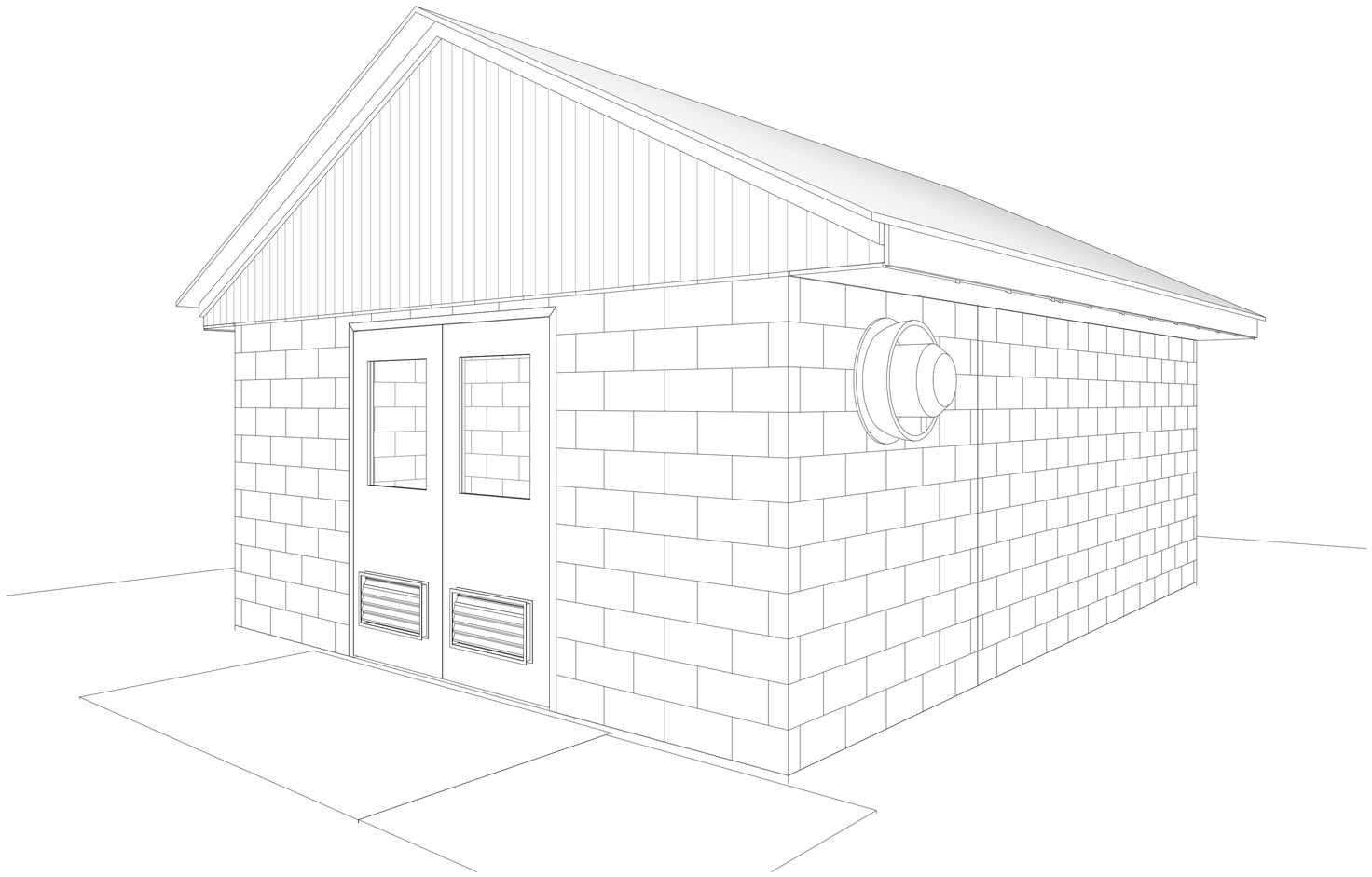
6. PRIOR TO ANY NEW WORK, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ARCHITECT OF ANY UNFORESEEN EXISTING CONDITIONS IN NEED OF REPAIR OR WHICH MAY CAUSE DAMAGE TO THE NEW WORK. THE CONTRACTOR SHALL NOTIFY AND ALLOW SUFFICIENT TIME FOR THE OWNER AND ARCHITECT TO INSPECT THE CONDITION OF THE EXPOSED WORK PRIOR TO INSTALLING NEW CONSTRUCTION.

7. INFORMATION CONTAINED ON THESE DRAWINGS IS PROVIDED FOR THE CONVENIENCE OF THE GENERAL CONTRACTOR IN EXECUTING THE WORK. EVERY ATTEMPT HAS BEEN MADE TO PROVIDE COMPLETE AND ACCURATE REPRESENTATIONS OF SUCH CONDITIONS.

8. ALL ITEMS ON PLANS, ELEVATIONS AND DETAILS FOR NEW CONSTRUCTION SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.

9. ALL CONSTRUCTION SHALL COMPLY WITH IBC SECTION 1612 AS IT RELATED TO FLOOD LOADS AND MATERIALS. WALL AND CEILINGS SHALL BE 5/8" TYPE X GYPSUM BOARD.

10. EXTERIOR PAINT COLORS TO MATCH EXISTING. PRIMER AND TWO COATS OF EXTERIOR LATEX PAINT.



1 3D View 1

CODE REFERENCES

CODE ENFORCEMENT JURISDICTION:	TOWN ON RIDGELAND
INTERNATIONAL BUILDING CODE (IBC):	2021
INTERNATIONAL MECHANICAL CODE:	2021
INTERNATIONAL PLUMBING CODE:	2021
INTERNATIONAL FUEL GAS CODE:	2021
INTERNATIONAL FIRE CODE:	2021
INTERNATIONAL ENERGY CODE:	2009
THE NATIONAL ELECTRICAL CODE:	2020
ICC/ANSI A117.1:	2017
ASCE 7 -10 ASCE 24	
CLIMATE ZONE	ZONE 3
ALL ELEVATIONS SHOWN ARE:	NAVD 88

Sheet List

Sheet Number	Sheet Name
A-1	COVER SHEET
A-2	FLOOR PLAN AND ELEVATIONS
A-3	SECTIONS
A-4	DOOR SCHEDULE AND PHOTOS
S100	GENERAL NOTES
S101	FOUNDATION PLAN
S201	SECTION AND DETAILS

WDA

Woods Dendy Architects, LLC

AMERICAN INSTITUTE OF ARCHITECTS MEMBERS

2201 BOUNDARY ST #103
BEAUFORT, SC 29902
PHONE: 843-379-7730

STATE OF SOUTH CAROLINA WOODS DENDY ARCHITECTS, LLC ARF101634 REGISTERED ARCHITECT

STATE OF SOUTH CAROLINA GRADY LAMER WOODS Commission Number 25000 REGISTERED ARCHITECT

100% SUBMISSION 9 FEB 24

NEW CONSTRUCTION FOR:

WELL SITE #3 IMPROVEMENTS

CAPTAIN BILL ROAD
RIDGELAND, SC

PROJECT NO.
22014

DRAWN BY: TH CHECKED BY: Checker

REVISION SCHEDULE

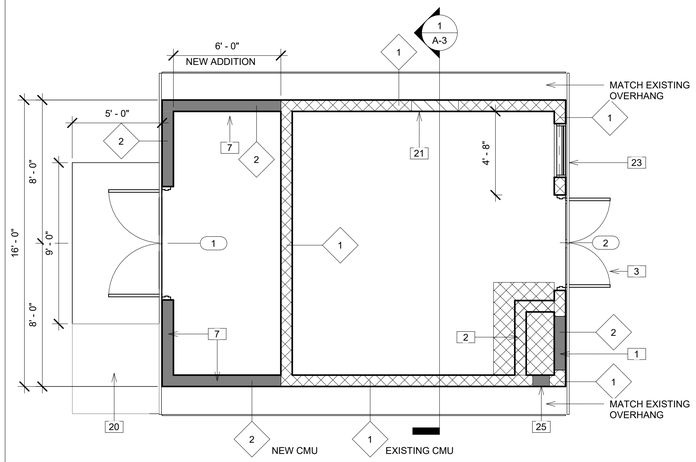
REV. NO.	REV. DATE

Project Status
DATE: 29 JAN 24

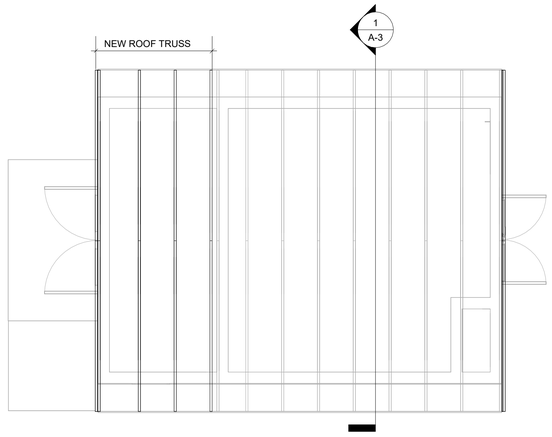
COVER SHEET

A-1

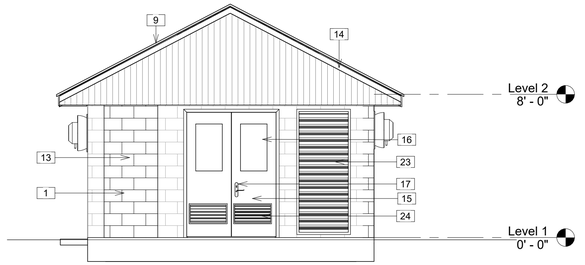
PLOT INFO: 2/9/2024 8:31:53 AM C:\Users\thomas.henry\WDA Dropbox\Projects\2022\22014 WELL #3 RIDGELAND\DRAWINGS\WELL #3 REV 2.rvt



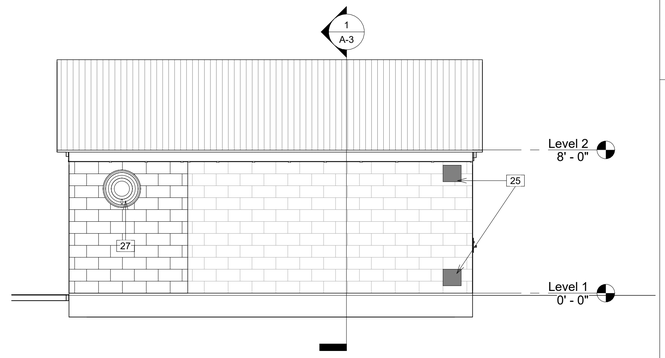
1 Level 1
1/4" = 1'-0"



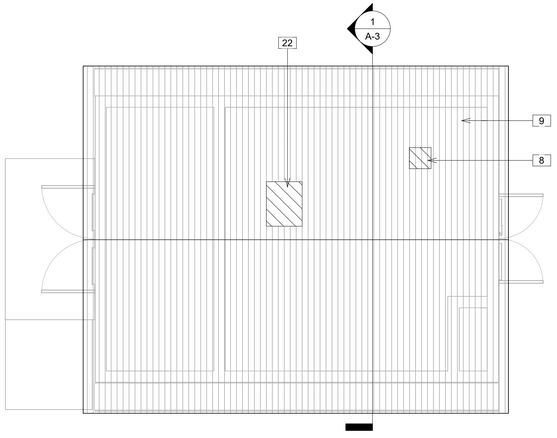
7 ROOF FRAMING
1/4" = 1'-0"



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



5 South
1/4" = 1'-0"



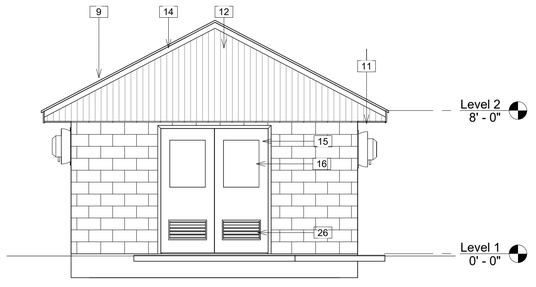
2 Level 2
1/4" = 1'-0"

TYPE 1 EXISTING 8" CMU

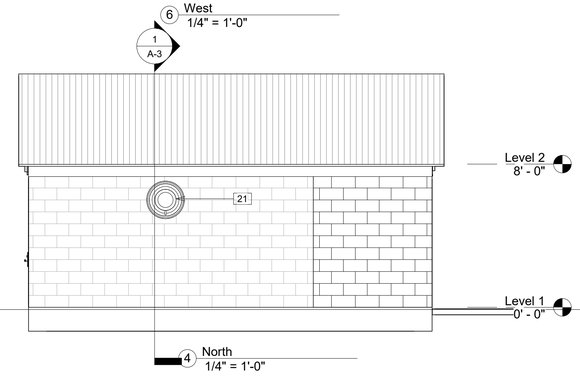
TYPE 2 NEW 8" CMU

WALL TYPE
1/2" = 1'-0"

KEYNOTE LEGEND	
Key Value	Keynote Text
1	REMOVE EXISTING DOOR AND CLOSE OPENING TO MATCH EXISTING BUILDING
2	REMOVE INTERIOR CMU WALL AND PATCH SURFACES AND PAINT TO MATCH EXISTING
3	REMOVE AND REPLACE DOOR
7	NEW 8" CMU WALLS
8	REMOVE EXISTING ROOF VENTILATOR AND CLOSE OPENING
9	REMOVE AND REPLACE STANDING SEAM ROOFING INCLUSIVE OF ASPHALT SHINGLES BELOW. REMOVE FELT AND REPLACE WITH ICE AND WATERSHIELD MEMBRANE FOR ENTIRE ROOF.
10	ROOF TRUSS AS PER STRUCTURAL
11	NEW FASCIA AND SOFFIT TYPICAL
12	MATCH EXISTING GABLE SIDING FOR NEW CONSTRUCTION
13	NEW CMU INFILL
14	1 X 6 TRIM TO MATCH EXISTING
15	NEW CHEMICAL RESISTANCE FIBERGLAS DOOR OR APPROVED EQUAL. PROVIDE DOOR CLOSERS, SEALS, THRESHOLD, HEAD AND FOOT BOLT
16	HIGH IMPACT GLASS
17	SCHLAGE HARDWARE LOCK SET OR APPROVED EQUAL
18	VERIFY ROOF PITCH AND MATCH EXISTING
19	R-23 CLOSED CELL SPRAY FOAM INSULATION
20	EXISTING CONCRETE SPILLWAY TO BE REMOVED AND NEW CONCRETE SPILLWALL TO BE BUILT ON THE SIDESIDE OF BUILDING
21	EXISTING EXHAUST FAN OPENING 41" X 41" TO BE INFILLED TO A 18.5 X 18.5 OPENING FOR CUE WALL EXHAUST WITH BACKDRAFT DAMPER
22	EXISTING ROOF OPENING FOR REMOVAL OF TURBINE WELL PUMP TO REMAIN.
23	CUT OPENING TO RECEIVE 3' X 7' LOUVER. PROVIDE PRECAST LINTEL. LOUVER SIZE 36" X 84" RUSKIN LC6375D OR APPROVED EQUAL WITH INSECT SCREEN
24	DOOR LOUVERS FREE AREA OF .59FT^2
25	REMOVE EXISTING INTAKE AND EXHAUST LOUVERS AND FILL IN OPENING
26	DOOR LOUVER WITH FREE AREA OF .75FT^2
27	CUE WALL EXHAUST FAN PROVIDED WITH FIBERGLASS BACK DRAFT DAMPER 15.5" X 15.5" OPENING



6 West
1/4" = 1'-0"



4 North
1/4" = 1'-0"

WDA
Woods Dendy Architects, LLC
AMERICAN INSTITUTE OF ARCHITECTS MEMBERS
2201 BOUNDARY ST #103
BEAUFORT, SC 29902
PHONE: 843-379-7730

STATE OF SOUTH CAROLINA
WOODS DENDY ARCHITECTS, LLC
ARF101634
REGISTERED ARCHITECT

STATE OF SOUTH CAROLINA
GRADY LANIER III
REGISTERED ARCHITECT

100% SUBMISSION 9 FEB 24

NEW CONSTRUCTION FOR:
WELL SITE #3 IMPROVEMENTS
CAPTAIN BILL ROAD
RIDGELAND, SC

PROJECT NO.
22014

DRAWN BY: TH
CHECKED BY: Checker

REVISION SCHEDULE

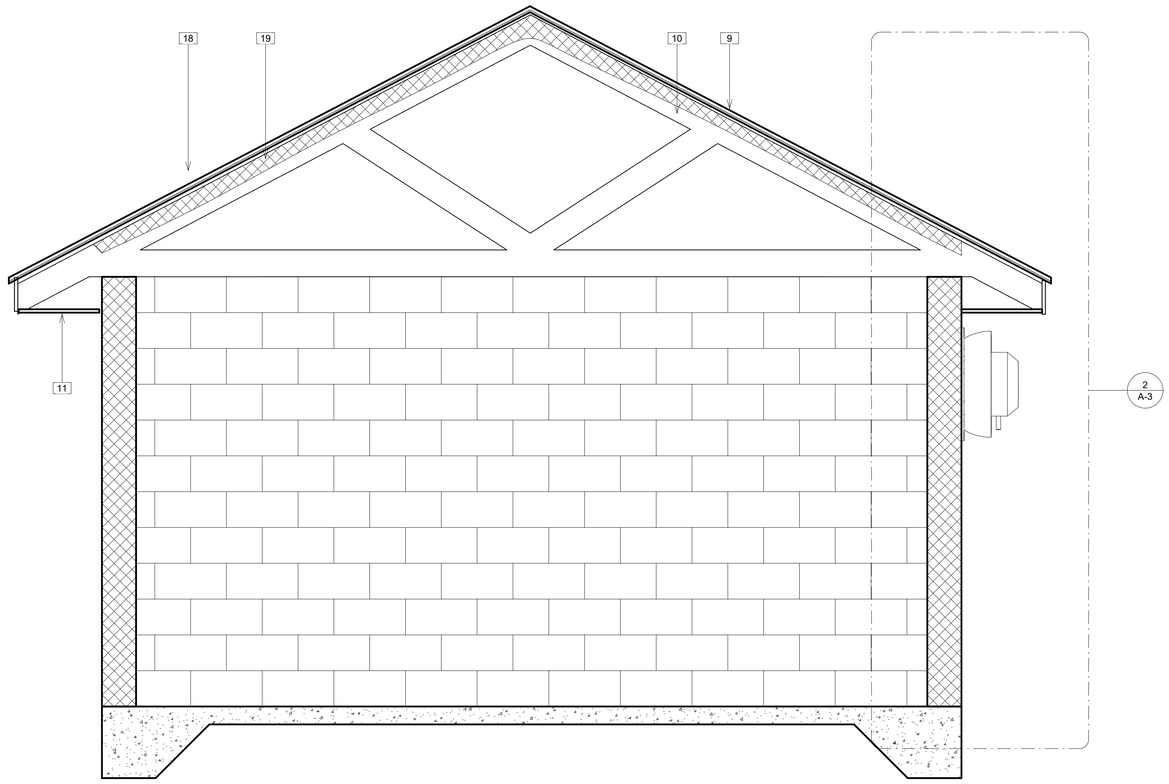
REV. NO.	REV. DATE

Project Status
DATE: 29 JAN 24

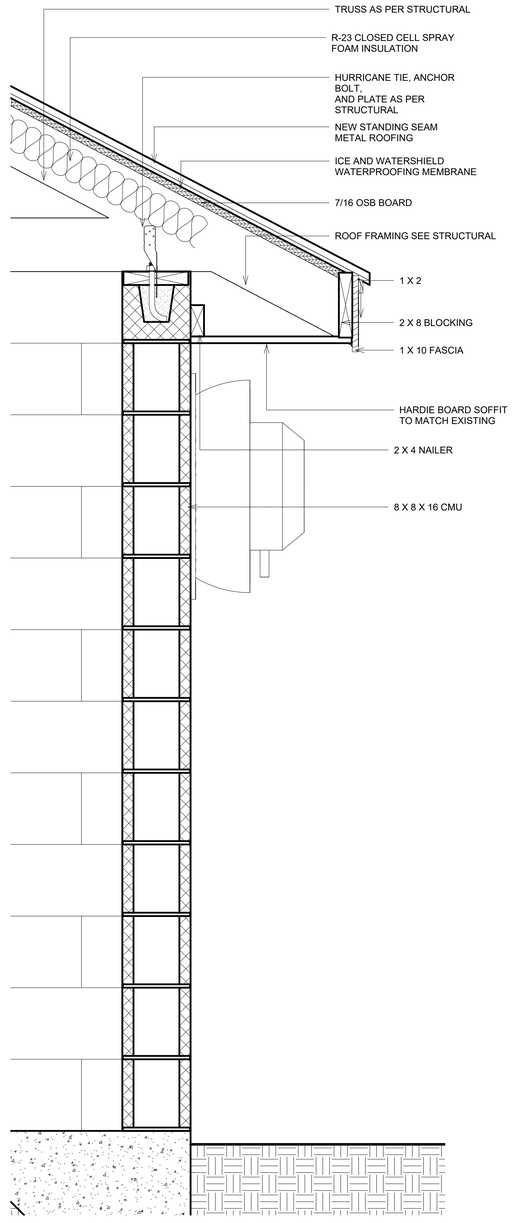
FLOOR PLAN AND ELEVATIONS

A-2

PLOT INFO: 2/9/2024 8:31:54 AM C:\Users\thomas henry\WDA Dropbox\Projects\2022\22014 WELL #3 RIDGELAND\DRAWINGS\WELL #3 REV 2.rvt



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



2 Section 1 - Callout 1
1 1/2" = 1'-0"

WDA

Woods Dendy Architects, LLC

AMERICAN INSTITUTE OF ARCHITECTS MEMBERS

2201 BOUNDARY ST #103
BEAUFORT, SC 29902
PHONE: 843-379-7730

STATE OF SOUTH CAROLINA
WOODS DENDY ARCHITECTS, LLC
ARF101634
REGISTERED ARCHITECT

STATE OF SOUTH CAROLINA
GRADY LANIER WOODS DENDY
REGISTERED ARCHITECT

100% SUBMISSION 9 FEB 24

NEW CONSTRUCTION FOR:

WELL SITE #3 IMPROVEMENTS

CAPTAIN BILL ROAD
RIDGELAND, SC

PROJECT NO.
22014

DRAWN BY: TH CHECKED BY: Checker

REVISION SCHEDULE

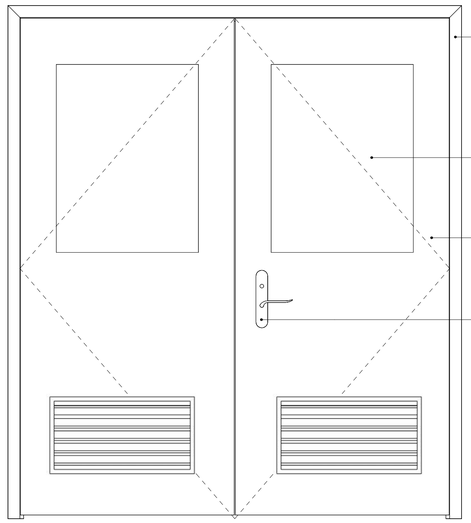
REV. NO.	REV. DATE

Project Status
DATE: 29 JAN 24

SECTIONS

A-3

PLOT INFO: 2/9/2024 8:31:54 AM C:\Users\thomas henry\WDA Dropbox\Projects\2022\22014 WELL #3 RIDGELAND\DRAWINGS\WELL #3 REV 2.rvt



CHEMICAL RESISTANCE FRAME

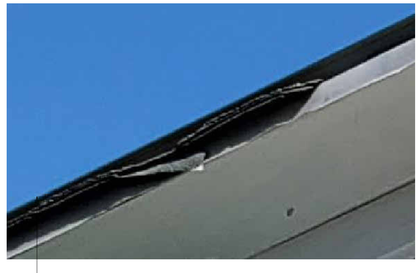
HIGH IMPACT GLASS

CHEMICAL RESISTANCE FIBERGLAS DOOR OR APPROVED EQUAL. PROVIDE DOOR CLOSERS, THRESHOLD, SEALS AND HEAD AND FOOT BOLT FOR INACTIVE DOOR.

SCHLAGE HARDWARE LOCK SET OR APPROVED EQUAL

Door Schedule			
Mark	Width	Height	Comments
1	6' - 0"	7' - 0"	
2	5' - 0"	7' - 0"	FIELD VERIFY AND FIT TO OPENING

DOOR
1" = 1'-0"



EVIDENCE OF ASPHALT SHINGLES. REMOVE STANDING SEAM METAL ROOFING AND ASPHALT SHINGLES DOWN TO SHEATHING. INSTALL ICE AND WATERSHIELD MEMBRANE AND REPLACE WITH NEW STANDING SEA,M METAL ROOFING

1 PHOTOS
3/64" = 1'-0"

WDA

Woods Dendy Architects, LLC

AMERICAN INSTITUTE OF ARCHITECTS MEMBERS

2201 BOUNDARY ST #103
BEAUFORT, SC 29902
PHONE: 843-379-7730

STATE OF SOUTH CAROLINA
WOODS DENDY ARCHITECTS, LLC
ARF101634
REGISTERED ARCHITECT

STATE OF SOUTH CAROLINA
GRADY LANIER WOODS
REGISTERED ARCHITECT

100% SUBMISSION 9 FEB 24

NEW CONSTRUCTION FOR:

WELL SITE #3 IMPROVEMENTS

CAPTAIN BILL ROAD
RIDGELAND, SC

PROJECT NO.
22014

DRAWN BY: TH CHECKED BY: Checker

REVISION SCHEDULE

REV. NO.	REV. DATE

Project Status
DATE: 29 JAN 24

DOOR SCHEDULE AND PHOTOS

A-4

PLOT INFO: 2/9/2024 8:31:55 AM C:\Users\thomas henry\WDA Dropbox\Projects\2022\22014 WELL #3 RIDGELAND\DRAWINGS\WELL #3 REV 2.rvt

ABBREVIATION LEGEND

T/	–	TOP OR TOP OF
FTG	–	FOOTING
SF	–	STEP FOOTING (LOCATION)
CONC	–	CONCRETE
WWM	–	WELDED WIRE MESH
CMU	–	CONCRETE MASONRY UNIT (CONCRETE BLOCK)
WCJ	–	MASONRY / CONCRETE WALL CONTROL JOINT
STL	–	STRUCTURAL STEEL OR STEEL
O.C.	–	ON CENTER (SPACING)
PSI	–	POUNDS PER SQUARE INCH (STRENGTH)
TYP	–	TYPICAL
X	–	READ AS 'BY'
CLR	–	CLEAR
SQ	–	SQUARE
DEG	–	DEGREE OR DEGREES
E.W.	–	EACH WAY
UNO	–	UNLESS NOTED OTHERWISE
TD	–	TREATED, PRESSURE TREATED PER AWPA SPECS, GROUND CONTACT WITHIN 1000 YRS FOR WATER, MARINE EXPOSURE.
CONT	–	CONTINUOUS
W/	–	WITH
W/OUT	–	WITH OUT
A. BOLTS	–	ANCHOR BOLTS OR BOLT
@	–	READ AS 'AT'
PL	–	PLATE
REINF	–	REINFORCING
SHTHG	–	SHEATHING, GENERALLY PLYWOOD
DIA	–	DIAMETER

GEOTECHNICAL REPORTS: IF A SPECIFIC REPORT IS NOT ADDRESSED HEREIN THE PLANS HAVE BEEN DESIGNED BASED ON ASSUMPTIONS. IT IS THE SOLE RESPONSIBILITY OF THE OWNER TO RETAIN A QUALIFIED GEOTECHNICAL ENGINEER WHO SHALL PERFORM INVESTIGATIONS TO INSURE THAT THE SOIL CONDITIONS ARE AT LEAST THAT WHICH ARE REQUIRED HEREIN.

ANY AND ALL FILL SHALL BE ENGINEERED FILL AND PLACED IN STRICT ADHERENCE WITH THE PROJECT GEOTECHNICAL ENGINEERS REQUIREMENTS. FILL CAN AND WILL INDUCE SETTLEMENTS. PLACING FILL WITHOUT THE DIRECTION OF A GEOTECHNICAL ENGINEER IS PROHIBITED. FILL SHALL BE PLACED IN LIFTS NOT TO EXCEED 8 INCHES, LOOSE MEASURE. EACH LIFT SHALL BE COMPACTED TO WITHIN 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY PRIOR TO PROCEEDING WITH THE NEXT LIFT.

ALL SLABS ON GRADE, UNLESS NOTED OR REQUIRED OTHERWISE BY THE PROJECT GEOTECHNICAL ENGINEER, SHALL BE PLACED ON COMPACTED FILL OR SUBGRADE. ALL SLABS SHALL BE PLACED OVER MIN 10 MIL VAPOR BARRIER (VB). VB SHALL BE INSTALLED IN A SMOOTH CONDITION, LAP ENDS NOT LESS THAN 12 INCHES. REPAIR ANY AND ALL PUNCTURES PRIOR TO CONC. PLACEMENT.

THE GENERAL CONTRACTOR SHALL RETAIN THE SERVICES OF A QUALIFIED SURVEYOR WHO SHALL VERIFY ALL SITE AND BUILDING ELEVATIONS. THE GENERAL CONTRACTOR SHALL INSURE THAT THE LOWEST HORIZONTAL STRUCTURAL MEMBER IS ABOVE ANY AND ALL FEDERAL, STATE AND LOCAL REQUIREMENTS FOR CLEARANCE AND FLOOD ZONE RELATED ISSUES.

SEE ARCH'L DRAWINGS FOR ISSUES RELATED TO HYDROSTATIC VENTING, OPEN SIZES AND LOCATIONS. WHERE NOT SHOWN IN ARCH'L DRWGS ALLOW FOR THE MOST STRINGENT AND COSTLY APPROACH IN BASE BID AND AWAIT FURTHER DIRECTION FROM ARCHITECT.

SEE THE ARCHITECTURAL DRAWINGS FOR ANY AND ALL DIMENSIONS AND CONDITIONS NOT NOTED HEREIN. WHERE DIMENSIONAL DIFFERENCES ARE FOUND, THE ARCHITECTURAL DRAWINGS SHALL GOVERN. THE CONTRACTOR SHALL COORDINATE ALL TOP OF BEAM, TOP OF CMU AND TOP OF STEEL ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS.

THE GENERAL CONTRACTOR SHALL MAKE NO SUBSTITUTIONS FROM THOSE ITEMS SPECIFIED HEREIN WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE ARCHITECT OR ENGINEER.

GENERAL NOTES

1. Structural drawings shall be used in conjunction with architectural and mechanical drawings and drawings relating to other trades. Contractor shall be responsible for checking and coordinating dimensions, clearances, etc. with the work of other trades. In case of conflict between drawings, the more stringent requirement shall govern.
2. In case of conflict between the drawings, notes and specifications, the specifications shall govern.
3. Work not indicated on a part of the drawings but reasonably implied to be similar to that shown at corresponding places shall be repeated.
4. Review all project documents prior to fabrication and start of construction. Report any discrepancies to the project Architect prior to proceeding with work.
5. It is the contractor's responsibility to protect existing facilities, structures and utility lines from all damage during construction.
6. Coordinate structural and other drawings that are part of the contract documents for anchored, embedded or supported items which may affect the structural drawings.
7. All details and sections on the drawings are intended to be typical and shall be construed to apply to any similar situation elsewhere on the project except where a separate detail is shown.
8. Use of contract drawings reproduced in whole or any part in shop drawing shall not relieve the contractor nor subcontractors from their responsibility to accurately layout, coordinate, detail, fabricate and install a complete structure.
9. Review all shop drawings for conformance with the contract documents and for completeness and answer all contractor related questions. Stamp and initial all sheets as Approved prior to submitting shop drawings to Architect for review.

FOUNDATION NOTES

1. Backfill and fill material shall be placed in thin successive layers, 8" loose measurement, and each layer shall be compacted to at least 95% of maximum laboratory density.
2. Backfill material shall consist of sand clay soil as directed and approved by the project geotechnical engineer.
3. Soil to be stripped, compacted and tested in accordance with the recommendations of the soils engineer.
4. Center all footings under their respective columns or walls unless otherwise shown on plans. Maximum misplacement or eccentricity – 2".
5. Horizontal joints in footings will not be permitted.
6. Where vertical construction joints occur in continuous footings, provide a minimum continuous 2" x 4" keyway across joint for each 12" of depth.
7. Notify Architect if soil conditions are uncovered that prevent the required soil bearing pressure from being obtained.
8. Coordinate plumbing and foundation elevations to minimize interference. Where plumbing interferes with footing, step footing down as directed by engineer.
9. Excavating under or near in–place footings/foundations which disturbs the compacted soil beneath the footings/foundations will not be permitted.
10. Reinforcing shall be supported on precast concrete pads or metal chairs.

CONCRETE NOTES

1. Typical 28 day concrete compressive strength (f'c).

LOCATION:	f'c (psi)
Slab On Grade	3000
Footings	3000

NOTE: All concrete shall be normal weight unless noted otherwise.
2. Reinforcing steel: ASTM A 615, grade 60. Minimum lap shall be 40 bar diameters or 24 inches, U.N.O.
3. Welded wire fabric: ASTM A 185 or ASTM A 497. Lap all edges 1'–0" mesh minimum.
4. Concrete cover: Footings 3", slabs 1 1/2" (U.N.O.).
5. All footings shall rest either on undisturbed soil or a manually operated vibratory sled or tamper should be used to densify any soils in the bottom of the footing trenches loosened during the excavation operation.
6. Contractor is responsible for adequately protecting all excavation slopes.
7. No backfilling against foundation walls shall be done until concrete has attained 75% of its 28 day strength. Provide temporary bracing for walls sustaining more than 3'–6" of earth pressure. This bracing to remain until slabs on grade or floor framing supporting the wall have been poured and set.
8. All continuous horizontal reinforcing and vertical wall reinforcing shall be lapped according to lap splice and embedment requirements per ACI 318, latest edition.
9. Reinforcement shall be securely held in place while placing concrete. If required, additional bars and stirrups shall be provided by the contractor to furnish support for bars.
15. For waterproofing details and locations, see architectural drawings.
16. Dowels shall match wall reinforcing.
13. Contractor shall make no deviations from design drawings without written approval of the Project Architect.
19. Structural concrete shall conform to ACI 301 and have the following slumps and aggregate requirements

Location	Slump	Max. Aggregate
Footings	3"	1" ASTM #57
Slabs	4"	1" ASTM #57

All course granite shall be crushed granite.
20. All reinforcing steel shall be detailed, fabricated and installed in accordance with ACI 318 and ACI detailing manual, ACI–315 latest edition.
21. Not used.
22. Shop drawings for placement shall be submitted for review prior to rebar fabrication unless approved otherwise by project Architect.
23. No reinforcing bars shall be cut to accommodate the installation of anchors, embeds or other items.
24. Use the structural drawings including revisions and addenda in conjunction with reviewed shop drawings for placement of reinforcing.
25. At changes in direction of concrete walls, beams and strip footings, provide corner bars of same size and quantity (U.N.O.) as horizontal steel. Refer to typical detail.
26. Place concrete per ACI 304. Use internal mechanical vibration for all concrete. Limit maximum free fall drop of concrete to 6'–0" for #57 aggregate and 8'–0" for #8 aggregate. All precautions should be taken to avoid segregation of concrete during placement.
27. Saw cut all slabs not less than 1/4 slab depth. Cut shall be made as soon as possible without dislodging the course aggregate, same day as placement. ACI 302

MASONRY NOTES

1. Masonry construction shall conform to ACI "Building Code Requirements for Masonry Structures" (ACI/ASCE 530) and "Specifications for Masonry Structures" (ACI/ASCE 530.1) except as amended below.
2. Obtain copy of masonry code and specifications for reference at the job site.
4. Use type "S" mortar with minimum compressive strength of 1800 psi.
5. Masonry units shall conform to ASTM C90 with a minimum compressive strength of 1900 psi on net section, to provide net area compressive strength of masonry (f'm) of 1500 psi.
6. Provide filled cells as shown on plans. In addition, provide filled cells adjacent to all openings, at anchorage of connections.
7. Provide full mortar bedding around all filled cells with vertical reinforcing.
8. Reinforcing for filled cells shall conform to ASTM A615, Grade 60. Provide the following lap splices for reinforcing: #4 Bars 24" #5 Bars 30"
9. Reinforce wall with ladder type reinforcement in bed joints at 16" o.c. measured vertically. Lap splice all horizontal wall reinforcing 6". Provide prefabricated "tee" or corner sections at all intersecting walls.
10. Refer to typical wall sections for maximum construction height of masonry walls. Provide clean–out holes at base of filled cell when the concrete pour exceeds 5 feet in height.
11. Concrete for filled cells shall be vibrated during placement using a "pencil" type vibrator.
12. The masonry walls are not designed to withstand temporary construction loads. It is the contractor's responsibility at all times to maintain wall stability during the construction phase of this project.
14. The use of solid load bearing masonry units is prohibited on this project.
15. Masonry wall construction requires expansion/contraction joints. Locate these joints as directed by the project Architect not more than 40 feet on center. Avoid locations near windows and doors or other geometry that would lend to the formation of epxansion cracks.
16. All lintels over masonry openings shall be Cast–Crete Lintels. Cast–Crete lintels are available from General Materials, Inc.
17. Provide seismically rated brick ties for all brick veneer in accordance with manf'r install instructions.

STRUCTURAL STEEL NOTES

1. Structural Steel materials shall conform to the following ASTM specification (U.N.O.):

Angles, plates, misc. steel	ASTM A36, Fy=36 ksi
Tubes	ASTM A500, Grade B
Anchor Bolts	ASTM A449

2. Provide temporary bracing or guys to provide lateral support until permanent lateral bracing is installed.
3. The contractor shall coordinate the bottom of base plate elevation with the top of concrete and masonry elevation. In case of conflict, the contractor shall make allowance in his bid for the more stringent requirement.
4. All steel details and connections shall be in accordance with the requirement of the AISC SPECIFICATIONS (Latest Edition), including all supplements and revisions.
5. Shop connections not specifically detailed on the drawings may be welded or bolted. Field connections not specifically detailed on the drawing shall be bolted.
6. Fabrication and erection of structural steel shall conform to the AISC "Manual of Steel Construction," and the AISC "Specification for Structural Steel Buildings," latest Editions.
7. All bolts cast in concrete shall conform to ASTM A–36 or A–307.
8. Beams shall be supported on columns by tab plates welded through the center line of the column unless specifically shown otherwise herein.
9. All beams shall be punched for two rows of bolts for the attachment of wood blocking. Blocking shall be placed along the top flange, along the web and along the bottom flange unless spedified otherwise. Bolts shall be two rows at 16" o.c. staggred.

TIMBER FRAMING NOTES

1. All timber construction shall be in accordance with AITC specifications and requirements.
2. All timber framing, unless noted otherwise, shall be not less than #2 SYP or SPF kiln dried with minimum properties of: (fb=1300 psi, Ft=675 psi, Fc=1200 psi).
3. All engineered timber shall have minimum properties of: (Fb=2800 psi, Ft=2600 psi, Fc=2400 psi).
4. Any and all timbers exposed to the earth, weather or in contact with concrete or masonry components or withing eight (8) inches of exposed grade shall be treated in accordance with AWPA standards.
5. All connectors shall be by the simpson company unless approved otherwise by the project Architect, G90 finishes.
6. All floor/roof bracing, blocking and connections shall be by the truss or Engineered component manufacturer.
7. All multiple ply girders shall be glued and nailed together with three rows of 16d nails at 8" o.c. per row and per layer or ply.
8. Provide a double joist below all parallel walls not shown otherwise. Provide a double joist adjacent to all changes in span to minimize differential settlement.
9. Layout all plumbing line and fixture locations and space joists to avoid cutting of joists. Where a joist must be cut provide an additional joist on each side of the cut joist, as close as possible. If cut joists supports more than starndard floor loadings notify engineer for review.
10. Support all joists and beams on joist and beam hangers. Nailers shall not be permitted without prior authorization from engineer.
11. Provide simpson CS16 X 24" straps across all ridges and valleys at 32" o.c. Install to prevent against uplift forces (i.e. across tops of ridges), or collar ties at the same spacing.
12. Solid blocking that matches the depth of the floor joists, shall be installed between joists along all interior and exterior walls. Additional blocking shall be installed between joists at 1/3 points for 2x joist framing.
14. All walls supporting two floors and a roof shall be 2x6's at 16" o.c., 2x4's at 8" o.c. or 3x4's at 12" o.c.
15. The GC shall anticipate and provide furing strips or blocking as may be required to provide a smooth surface for the application of sheetrock. This requirement primarily occurs at, but is not limited to, vaulted ceilings and other such special conditions.
16. The framing and foundations shown herein are based on normal carpet and vinyl floor finishes, normal weight cabinets and counter tops. If heavier materials are used notify engineer and await framing modifications prior to proceeding.
17. Where roof trusses are used, provide uplift connectors with uplift ratings in excess of the uplift reactions listed within the roof truss shop drawings. Contact engineer for specific directions if required.
18. Top plates, drag struts, shall be nailed together with two rows of 16d nails at 12" o.c. staggered.
19. Bottom plate splices shall have attachments on either side. Where the plate is attached to concrete you can provide 1/2" dia exp'n bolt with 12" ea. side of ea. splice, or you may provide two powder driven fasteners within 8" ea. side of ea. splice. Plates attached to timber framing shall have two 16d nails driven into the supporting framing within 6" ea. side of ea. splice.
20. Provide min 3" x 3" x 1/4" square plate washers between TD bottom wall plates and the nut for anchor bolts.
21. Steel beams and columns shall not bear on timber framing. Provide embeded weld plates and steel columns bearing directly on concrete or masonry as necessary for proper support.
22. All timber framing, unless addressed otherwise herein, shall be installed in accordance with the current edition of the Wood Framed Construction Manual.

DESIGN CRITERIA

DESIGN BASED ON THE 2018 IBC

DEAD LOADINGS
ACTUAL SELF WEIGHT

DESIGN LOADS & INFORMATION	
BASIC WIND SPEED	134 MPH
WIND EXPOSURE CAT.	EXPOSURE C
SEISMIC DESIGN INFORMATION	ASCE–7
RISK CATEGORY	II
Sds	.43
Sdl	.23
SITE CLASS	D
SEISMIC DESIGN CATEGORY	D
SEISMIC FORCE RESIST. SYSTEM	LT. FRAMEWALL/SHEAR PANELS
DESIGN BASE SHEAR	10,000 LBS
ANALYSIS PROCEDURE	SIMPLE STATIC
FLOOR LL	100 PSF
FLOOR DL	25 PSF
ROOF LL	20 PSF
ROOF DL	20 PSF
STAIRS LL	100 PSF
GROUND SNOW LOAD	5 PSF

SPECIAL INSPECTIONS

1. SUBMIT CONCRETE MIX DESIGN TO ENGINEER FOR REVIEW PRIOR TO THE START OF WORK.
2. INDEPENDENT THIRD PARTY INSPECTORS TO BE PRESENT DURING CMU BLOCK GROUTING PROCESS AND CONFIRM PROPER AND COMPLETE GROUTING OF REINFORCED CELLS.
3. THIRD PARTY INSPECTOR TO VISUALLY VERIFY UPLIFT CONNECTOR SIZE, LOCATION AND ATTACHMENT.

REV.	BY	DATE

Southern Consulting & Engineering, Inc.
Structural Engineering
2135 N.A.D. Road
North Charleston, SC
Bus(843) 718-2525
Fax (843) 718-2776
www.SCEstructure.com

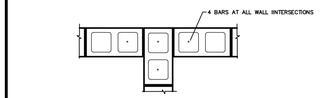
SOUTHERN CONSULTING AND ENGINEERING, INC.

STATE OF SOUTH CAROLINA PROFESSIONAL ENGINEER 34907 JOHN W. AUSTIN 2-19-24

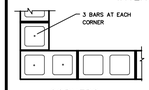
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION SOUTHERN CONSULTING & ENGINEERING, INC. No. C03355

Ridgeland Pump Station #3
Town of Ridgeland
Jasper County, SC

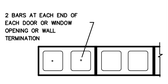
DATE	February 19, 2024
SCALE	SEE PLAN
JOB NO.	23585–0
SHEET	S100



INTERSECTIONS



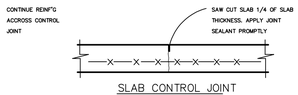
CORNERS



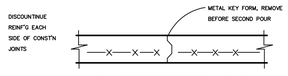
TERMINATIONS

PROVIDE CONTROL JOINTS IN CMU WALLS NOT MORE THAN 30'-0" O.C. AVOIDING ANY AND ALL OPENINGS IN THE WALL BY AT LEAST 24"

TYP. CMU DETAILS



SLAB CONTROL JOINT



SLAB CONSTRUCTION JOINT

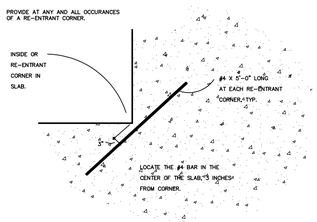
SPACE CONTROL JOINTS NOT MORE THAN 15'-0" O.C. AND PLACE SO AS NO SLAB SEGMENT HAS A LONG SIDE MORE THAN 1.5 TIMES THE SHORT SIDE.

SLAB JOINTS ARE TO BE PLACED AS SOON AS THE SLAB CAN BE CUT WITHOUT DISLODGING THE COURSE AGGREGATE, SAME DAY AS SLAB PLACEMENT.

SEAL OPEN JOINTS PROMPTLY TO PREVENT INTRUSION OF DEBRIS.

SLAB CONTROL JOINTS CAN CREATE CRACKS AND OTHER ISSUES WITH BRITTLE FLOOR FINISHES. WHERE ALTERNATE JOINT LOCATIONS MAY BE REQUIRED NOTIFY ENGINEER FOR ASSISTANCE OR SUBMIT ALTERNATE LAYOUT FOR APPROVAL.

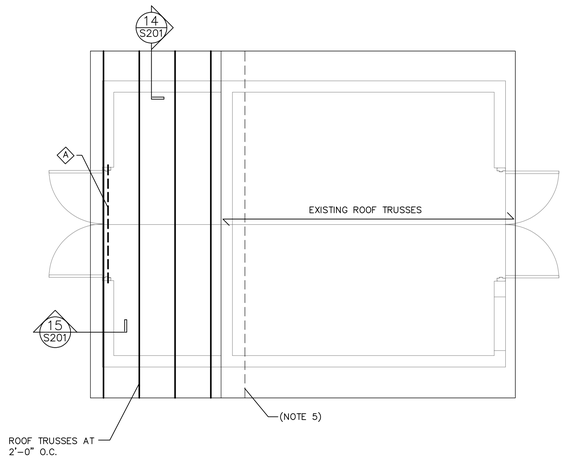
TYP. SLAB JOINT'G DETAILS



TYP. RE-ENTRANT CORNER DETAIL

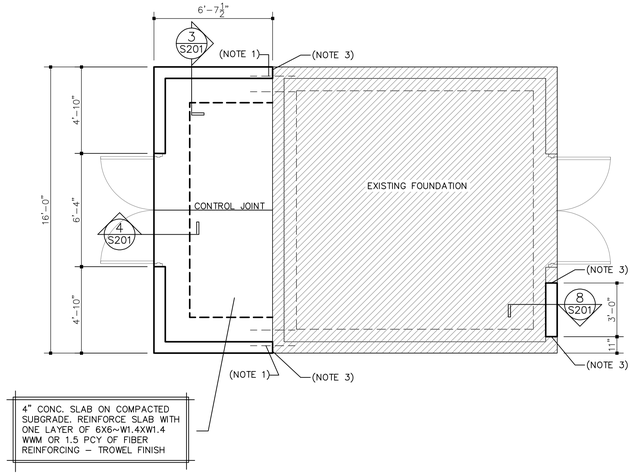
CMU LINTEL SCHEDULE

(A) 8"X8" CMU LINTEL WITH (2)#5'S IN BOTTOM. GROUT SOLID WITH 3000 PSI PEA GRAVEL CONCRETE



ROOF FRAMING

SCALE: 1/4" = 1'-0"



FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

SEE ARCH'L DRAWINGS FOR DIMENSIONS AND CONDITIONS NOT SHOWN HEREIN.

TOP OF FOOTINGS SHALL BE NOT LESS THAN 8" BELOW FINISHED GRADE

FOOTINGS AND SLABS SHALL NOT BE PLACED ON UNCONTROLLED FILL. PLACEMENT AND USE OF COMPACTED FILL, IN EXCESS OF 12" SHALL REQUIRE THE INVOLVEMENT AND BE PLACED UNDER THE SUPERVISION OF A QUALIFIED GEOTECHNICAL ENGINEER.

MASONRY HEIGHT ABOVE GRADE SHALL NOT EXCEED 8'-0" WITHOUT PRIOR WRITTEN APPROVAL FROM ENGINEER.

NO SOILS REPORT OR SOILS INVESTIGATION HAS BEEN PERFORMED ON THIS SITE. THIS FOUNDATION DESIGN IS BASED ON ASSUMED SOIL CONDITIONS AND AN ASSUMED SOIL CAPACITY OF 2000 PSF. IT IS THE SOLE RESPONSIBILITY OF THE OWNER AND/OR CONTRACTOR TO RETAIN THE SERVICES OF A QUALIFIED GEOTECHNICAL ENGINEER TO VERIFY THE SOIL CONDITIONS ARE ADEQUATE AND THE SITE HAS BEEN PROPERLY PREPARED PRIOR TO THE START OF WORK.

THE GC SHALL REVIEW AND APPROVE ALL DIMENSIONS SHOWN HEREIN PRIOR TO THE START OF WORK. NOTIFY ENGINEER OF ANY DIMENSION OR CONDITION FOUND CONTRARY TO THAT SHOWN WITHIN THE ARCH'L DRAWINGS.

DRAWING NOTES (NOTE X)

(1) – DRILL AND EPOXY (2)#4'S X 2'-6" NOT LESS THAN 6" INTO FOOTING WHERE NEW ABUTS EXISTING

(2) – EXTEND CMU LINTEL NOT LESS THAN 8" ONTO ADJACENT CMU. TOOTH INTO EXISTING AS REQUIRED.

(3) – PROVIDE A VERTICAL CMU CONTROL JOINT BETWEEN NEW AND EXISTING CMU.

(4) – NOT USED

(5) – EXTEND NEW ROOF SHEATHING 16" BEYOND EDGE OF NEW CONSTRUCTION. NEW SHEATHING TO FLUSH WITH TOP OF EXISTING. ADD BLOCKING AS REQUIRED TO SUPPORT EDGE OF NEW AND EXISTING SHEATHING

REV.	BY	DATE

Southern Consulting & Engineering, Inc.
Structural Engineering
2135 N.A.D. Road
North Charleston, SC
Bus(843) 718-2525
Fax (843) 718-2776
www.SCEstructure.com

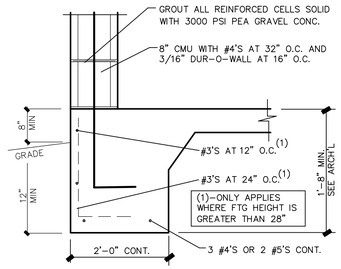
SOUTHERN CONSULTING AND ENGINEERING, INC.

Ridgeland Pump Station #3
Town of Ridgeland
Jasper County, SC

DATE	February 19, 2024
SCALE	SEE PLAN
JOB NO.	23585-0
SHEET	S101

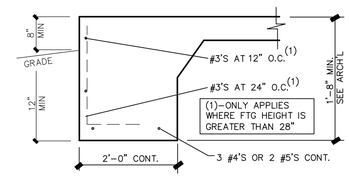
1

2



WALL FOOTING DETAIL

3



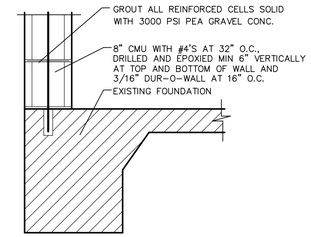
SECTION AT DOOR OPENING

4

5

6

7



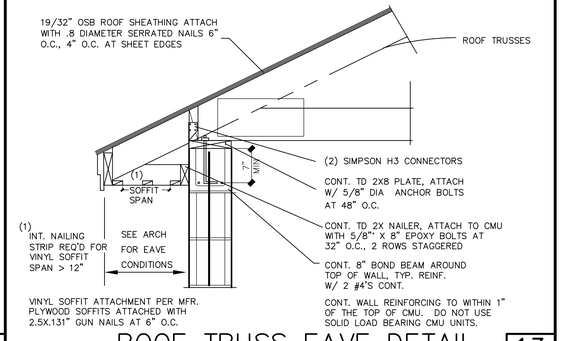
CMU AT EXISTING

8

9

10

11

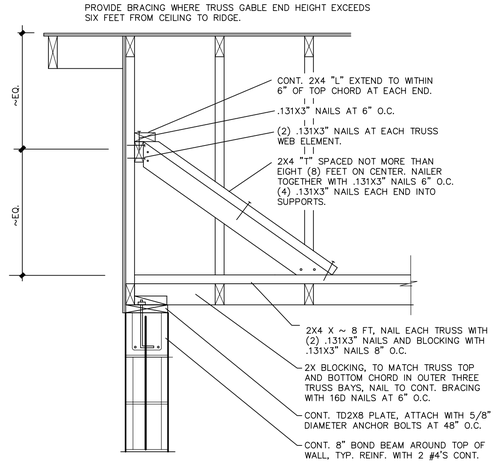


ROOF TRUSS EAVE DETAIL

12

13

14



GABLE END BRACING

15

REV.	BY	DATE

Southern Consulting & Engineering, Inc.
Structural Engineering
2135 N.A.D. Road
North Charleston, SC
Bus(843) 718-2525
Fax (843) 718-2776
www.SCEstructure.com

SOUTHERN CONSULTING AND ENGINEERING, INC.

Ridgeland Pump Station #3
Town of Ridgeland
Jasper County, SC

DATE	February 19, 2024
SCALE	SEE PLAN
JOB NO.	23585-0
SHEET	S201