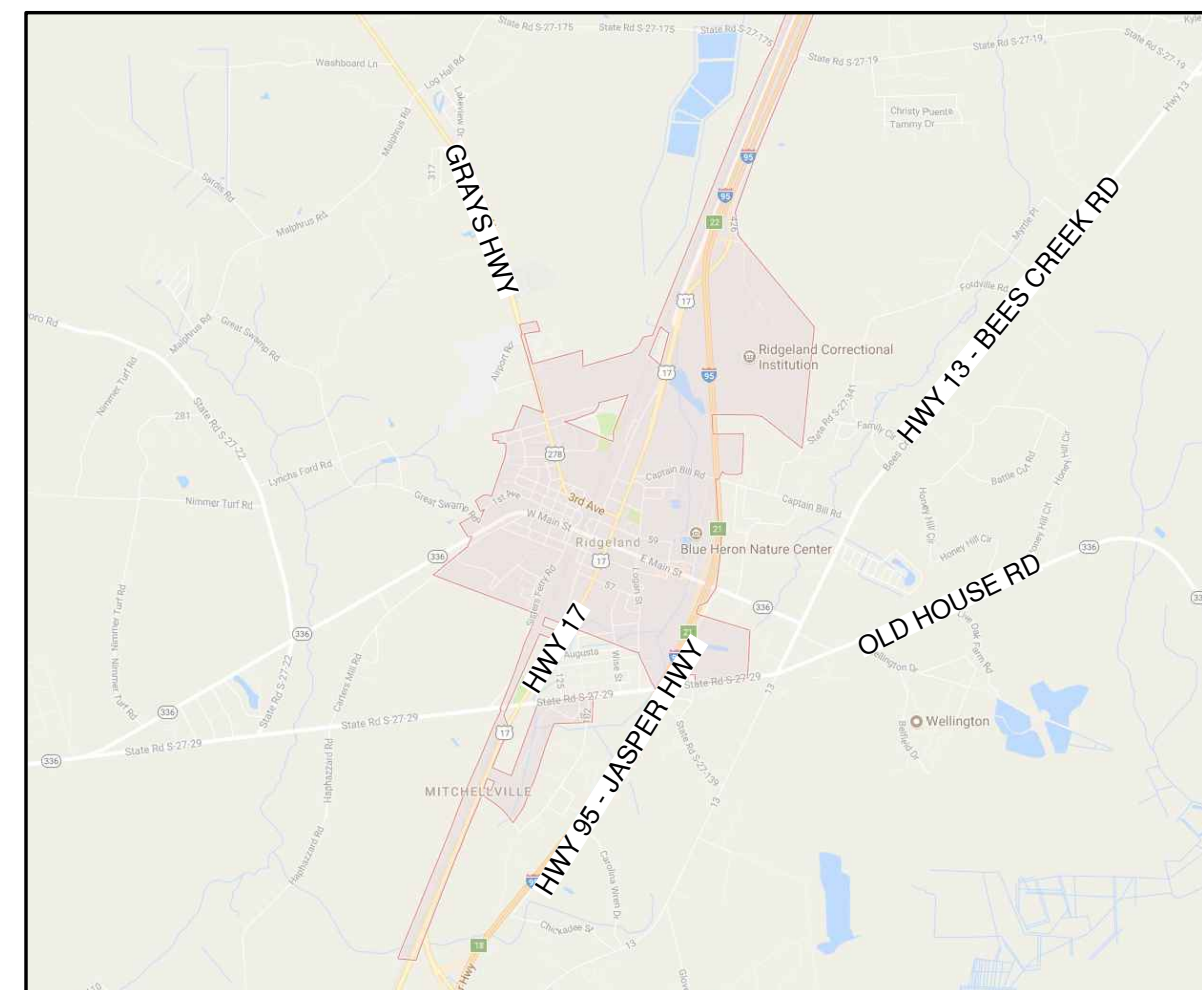


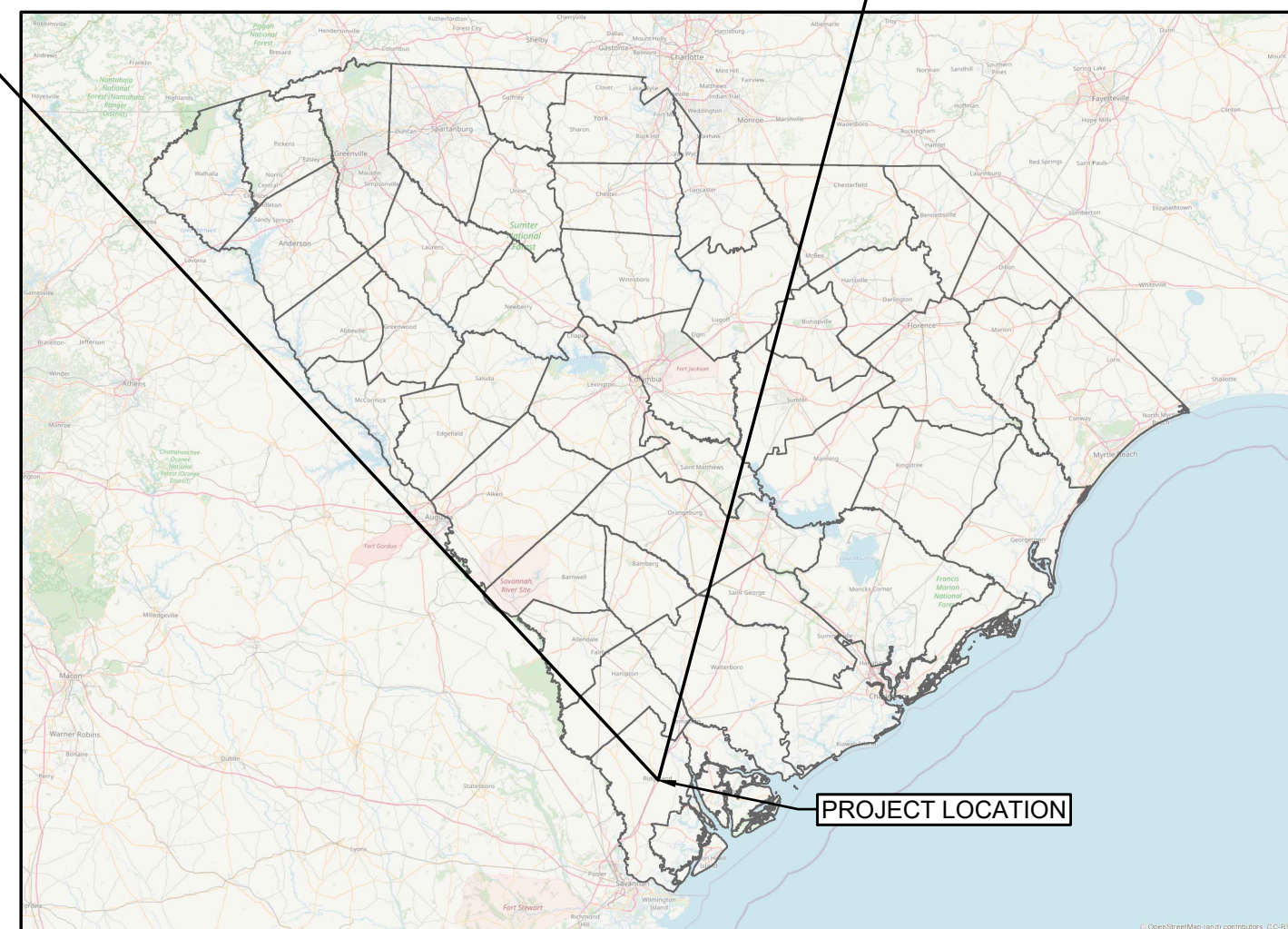
CONSTRUCTION DRAWINGS FOR:

TOWN OF RIDGELAND WATER AND SEWER RESILIENCY IMPROVEMENTS

REQUEST FOR BIDS NO: TOR-2023-02



LOCATION MAP - VICINITY



LOCATION MAP - REGION



MAYOR

JOSEPH N. MALPHRUS, JR

MAYOR PRO TEMPORE

TOMMY RHODES

COUNCIL MEMBERS

JOSEPHINE BOYLES

CHRIS DUBOSE

GRADY WOODS

TOWN ADMINISTRATOR

DENNIS E. AVERKIN

PROJECT #: 17-007:035



PREPARED BY

- | | |
|-----------|------------------------------|
| PART I: | PUMP STATION IMPROVEMENTS |
| PART II: | GRAVITY SEWER REHABILITATION |
| PART III: | WELL SITE #2 IMPROVEMENTS |
| PART IV: | SCADA SYSTEM IMPROVEMENTS |

EDA AWARD #: 04-79-07454

DATE: MAY 2023

ISSUE: BID ISSUE

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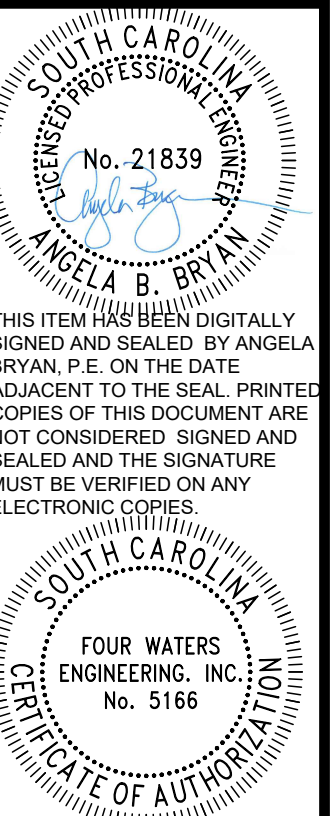
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NOTE:

IF ARCHEOLOGICAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, THE PROCEDURES CODIFIED AT 33 CFR 800.13(B) WILL APPLY AND EDA, THE SOUTH CAROLINA STATE HISTORIC PRESERVATION OFFICE, THE MUSCOGEE (CREEK) NATION AND THE CATAWBA INDIAN NATION SHALL BE CONTACTED IMMEDIATELY. ARCHEOLOGICAL MATERIALS CONSIST OF ANY ITEMS, FIFTY YEARS OR OLDER WHICH WERE MADE OR USED BY MAN. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO, STONE PROJECTILE POINTS (ARROWHEADS), CERAMIC SHERDS, BRICKS, WORKED WOOD, BONE AND STONE, METAL AND GLASS OBJECTS, AND HUMAN SKELETAL REMAINS.



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PROJECT INDEX

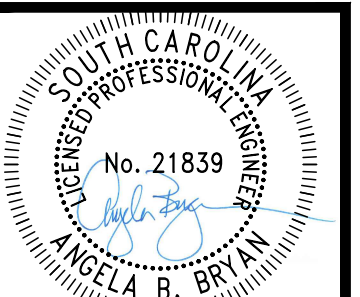
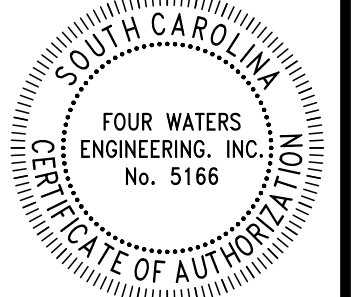
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007	FEB	BID
ABB	JMC			2023	
JOB #	ISSUE	DATE	ISSUE		

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
REGIONAL PROJECT KEY MAP
 TOWN OF RIDGELAND,
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	JOB #	ISSUE DATE	ISSUE	BID
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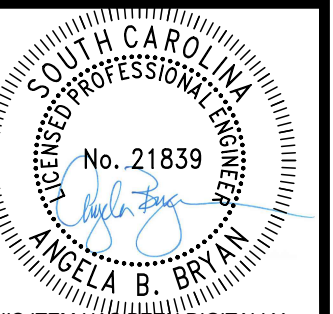
UTILITY SEPARATION NOTES

- 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.
- 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 PROVIDED THAT BOTH LINES ARE CONSTRUCTED OF DUCTILE IRON PIPE.
- VERTICAL SEPARATION BETWEEN WATER MAIN AND SEWER PIPE SHALL BE 18 INCHES. PREFERENCE IS FOR THE WATER MAIN TO BE ABOVE THE OTHER PIPELINE.
- 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.
- 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.

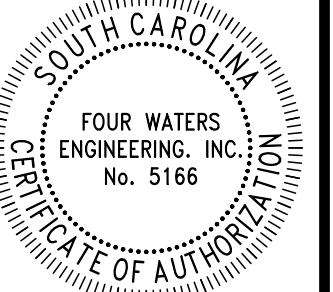
GENERAL NOTES

- ALL ELEVATIONS BASED ON U.S.C. & G.S. DATUM AND SHOWN IN FEET.
- ELEVATIONS:**
ELEVATIONS SHOWN AS THUS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (N.A.V.D.) OF 1988 PER SC SURVEYING CONSULTANTS, INC. 17 SHERINGTON DRIVE, SUITE C, BLUFFTON, SC 29910, PHONE (843) 815-3304, FAX (843) 815-3305

BENCHMARK #1: SET PK NAIL & DISK DURDEN BM SOUTHEAST FACE OF POLE EL (15.72) NAVD 88
BENCHMARK #2: SET PK NAIL & DISK DURDEN BM EAST FACE OF POLE EL (15.28) NAVD 88
- COORDINATE SYSTEMS:**
THE HORIZONTAL COORDINATES FOR THE SURVEY ARE BASED ON SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM (SPC), EAST ZONE (901), NORTH AMERICAN DATUM (NAD) 1983, ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN DATUM OF 1988 (NAVD88) AND ARE EXPRESSED IN FEET.
- 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 CONTRACTOR'S EXPENSE.
- 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.
- STATIONING SHOWN ON DRAWINGS REFERS TO CENTERLINE OF ROAD OR RIGHT-OF-WAY LINE.
- ALL PIPE LENGTHS SHOWN ON PLAN AND PROFILES ARE FROM CENTER TO CENTER OF INLETS OR MANHOLES OR ALONG FORCEMAIN OR WATER MAINS.
- 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.
- MINIMUM PIPE COVER SHALL BE 30 INCHES OVER PIPES 8" IN DIAMETER OR LESS; 36 INCHES FOR PIPES 8" TO 12" IN DIAMETER; 48 INCHES FOR PIPES 14" OR LARGER IN DIAMETER; AND 36 INCHES BELOW ANY SCDOT ROAD ELEVATION.
- 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.
- 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.
- 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.
- 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)
- THE LOCATION(S) OF THE UTILITIES SHOWN IN THE PLANS ARE BASED ON LIMITED INVESTIGATION TECHNOLOGIES AND SHOULD BE CONSIDERED APPROXIMATE ONLY.
- CONTACT SUNSHINE STATE ONE-CALL OF SOUTH CAROLINA, INC. AS REQUIRED BY SC CODE § 58-36-120 (2018).
- CONTRACTOR TO LOCATE, PROTECT AND SUPPORT ALL WATER, SEWER, GAS AND ELECTRIC UTILITIES ENCOUNTERED DURING CONSTRUCTION.
- 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.
- 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.
- 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.
- ALL POTABLE WATER PIPE SHALL BE NSFPPW RATED.
- 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.
- PIPE JOINT DEFLECTION, WHERE ALLOWED BY EXCEPTION, SHALL MATCH THE MANUFACTURER'S RECOMMENDATION FOR THE SIZE AND TYPE OF JOINT.
- ALL PIPELINES, GRAVITY SEWER, FORMAIN, 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 AT EACH LOCATOR POST ON FORCE 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.
- CONTRACTOR SHALL CONTACT EACH PROPERTY OWNER ALONG THE ROUTE OF NEW PIPING 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 CITY R.O.W'S DUE TO WORK BEING PERFORMED BY CONTRACTOR AND/OR SUB-CONTRACTORS.
- 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.
- 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).
- TREE BARRICADE APPROVAL: OBTAIN TOWN APPROVAL OF TREE BARRICADES BEFORE BEGINNING CLEARING OPERATIONS OR ANY CONSTRUCTION.
- SCDOT RIGHTS-OF-WAY PERMITS ARE REQUIRED FOR THIS PROJECT
- 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.



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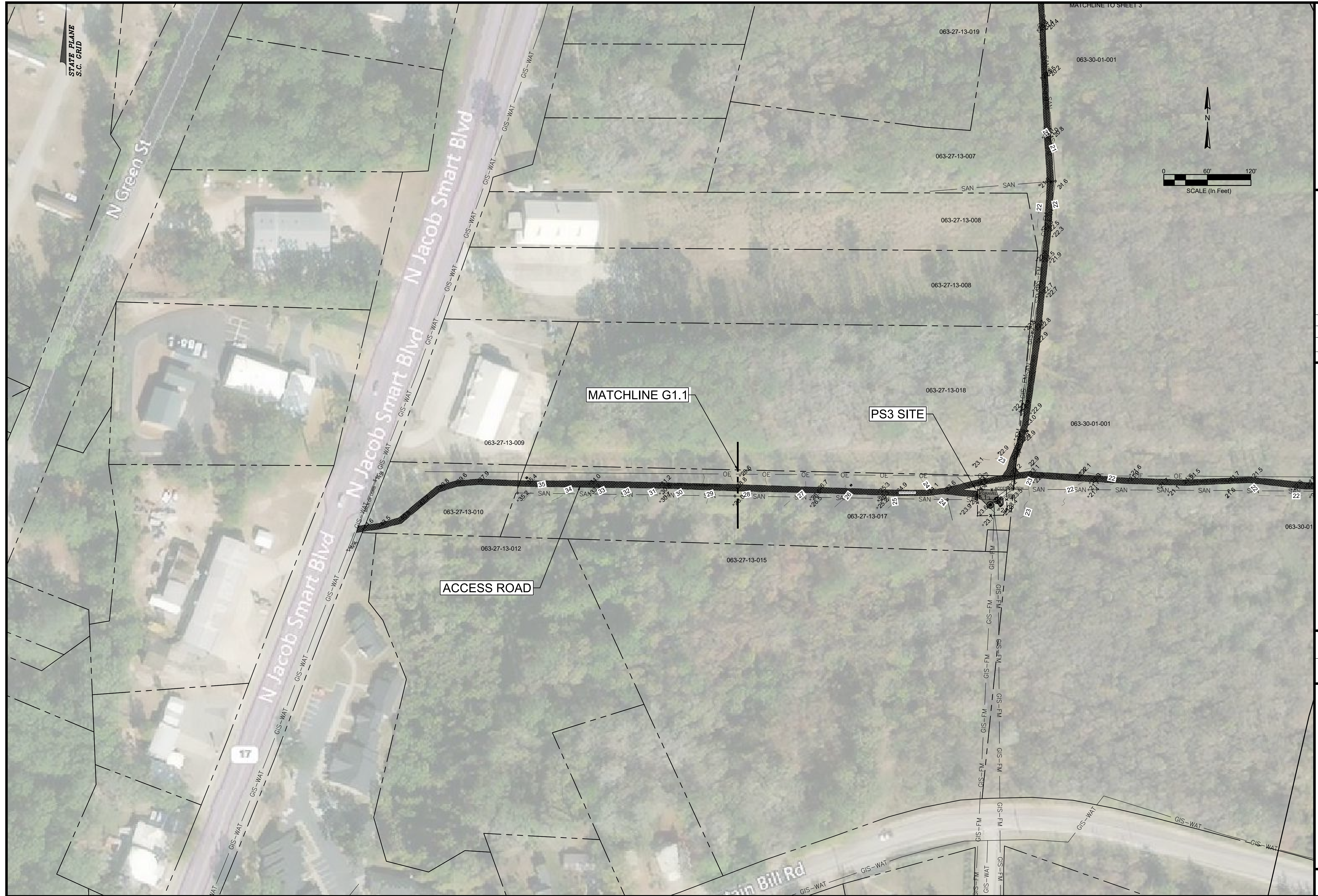
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
GENERAL NOTES
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	JOB #	ISSUE DATE	ISSUE
DRAWN	JMC	17-1007	FEB 2023	BID

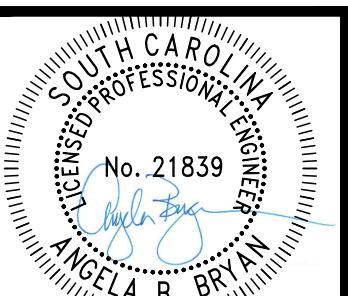


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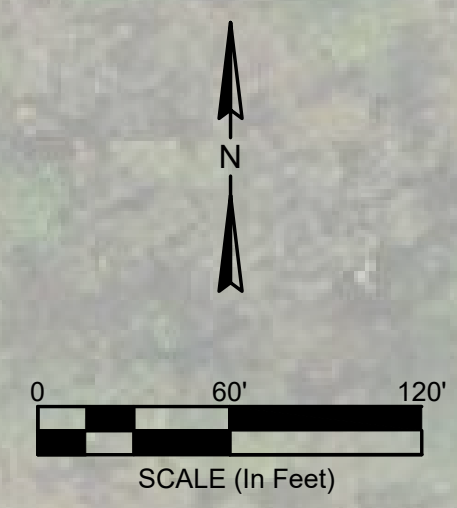
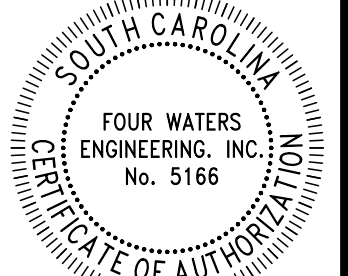


MATCHLINE TO SHEET 3

STATE PLANE
S.C. GRID



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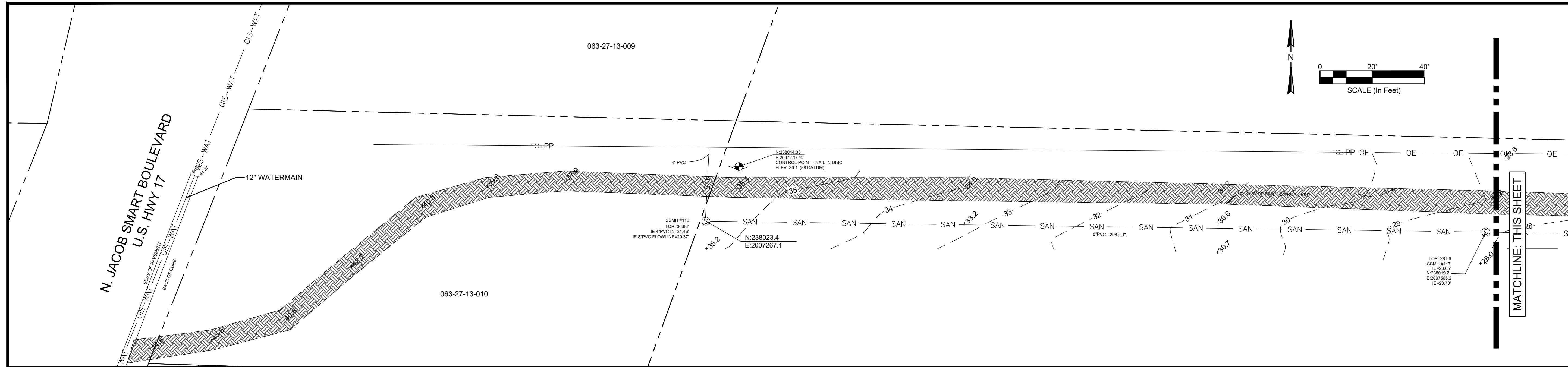
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-3 PROJECT AREA AND VICINITY
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	JMC
JOB #	17-1007
ISSUE DATE	FEB 2023
ISSUE	BID

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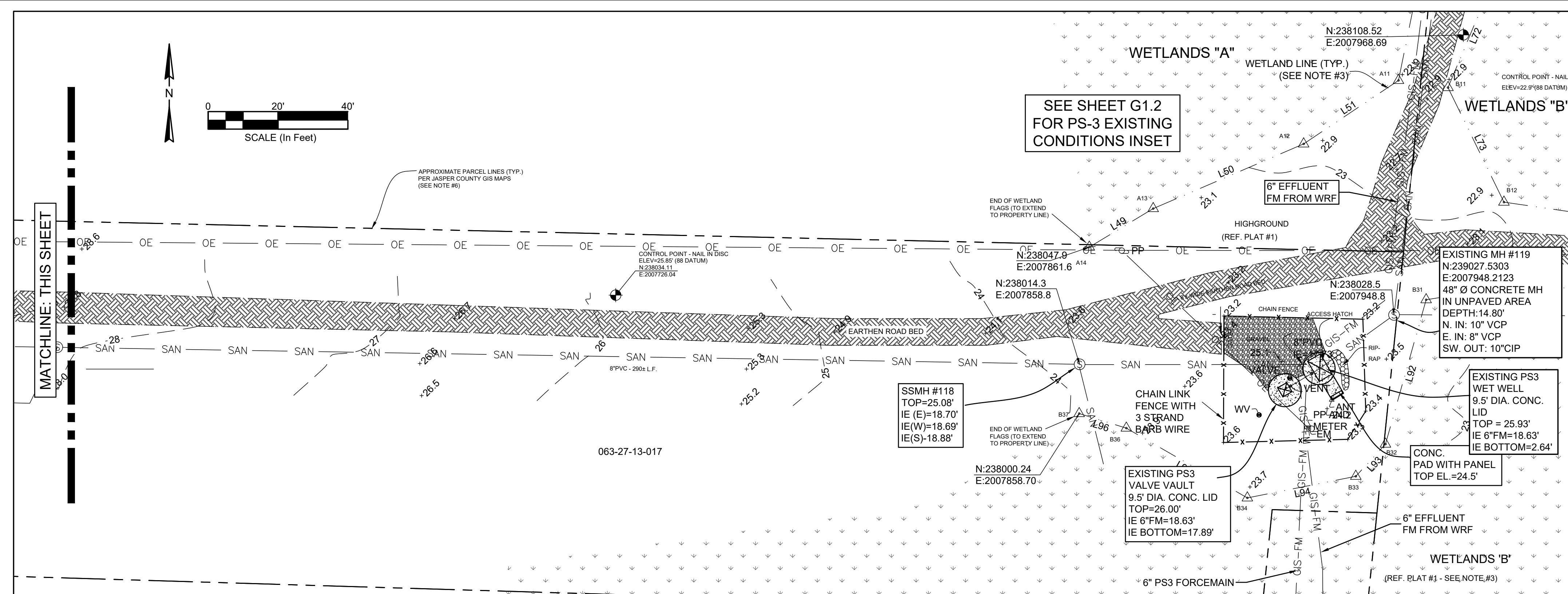
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GIS NOTE
 UTILITIES LABELED "GIS" DENOTE THOSE OBTAINED FROM THE TOWN OF RIDGELAND GIS DATA, WHICH HAVE BEEN ADDED TO SUPPLEMENT SURVEY DATA. SUCH UTILITIES ARE LABELED "GIS" (TYP)

PREPARED FOR: FOUR WATERS ENGINEERING & TOWN OF RIDGELAND

SPECIAL NOTE:
 *HORIZONTAL DATUM IS NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES
 *VERTICAL DATUM IN NAVD 88
 *SEE NOTE #7 BELOW

REFERENCE PLAT:
 1) WETLAND RESOURCE MAP, PS3 SEWER PROJECT, PROJECT #: 04-4584a, JASPER COUNTY, SOUTH CAROLINA, DATED: 06/29/2021, BY: NEWKIRK ENVIRONMENTAL INC.
 2) PLAT OF A PARCEL OF LAND MADE FOR THREE STAR DEVELOPMENT COMPANY, NOW OR FORMERLY SYDNEY N. BROWN, FORMERLY ADA THOMAS, LOCATED NEAR THE TOWN OF RIDGELAND, CONTAINING 41.5 ACRES, DATED: 1973 & 1974, BY: D.W. PRICE, S.C.R.L.S. NO. 3217, RECORDED: P.B. 13, PG. 111, 07/16/1974.



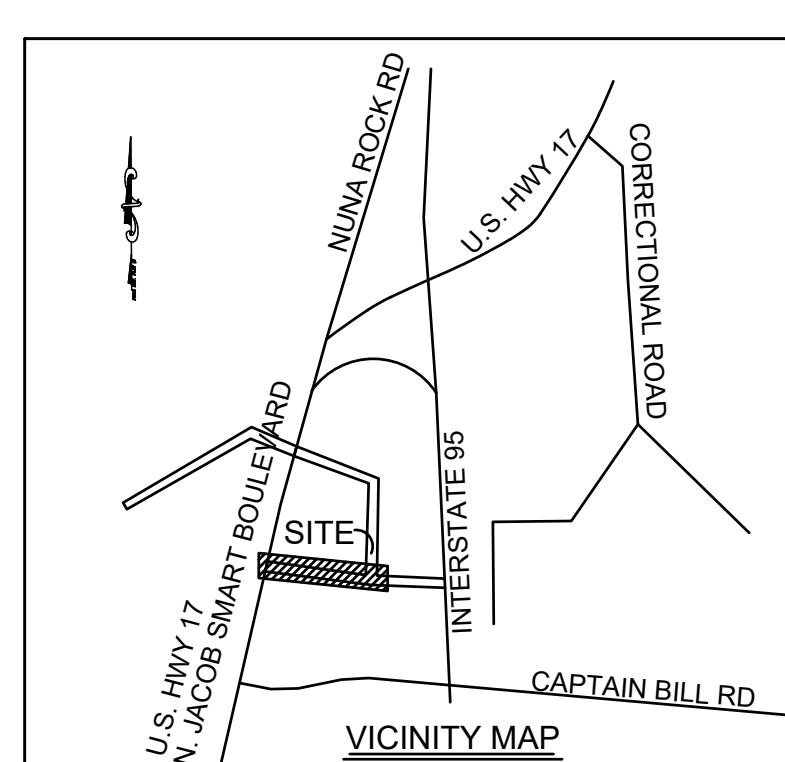
WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-3 OVERALL EXISTING CONDITIONS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	DATE 17-1007	ISSUE DATE FEB 2023	ISSUE BID

- NOTES:**
- I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO OBVIOUS, APPARENT OR VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.
 - UNDERGROUND UTILITIES NOT LOCATED EXCEPT AS SHOWN AND ARE APPROXIMATE. SURVEYING CONSULTANTS DOES NOT CERTIFY TO THE EXACT LOCATION OF ANY UNDERGROUND UTILITY.
 - THE WETLAND LINES SHOWN ARE FIELD LOCATIONS OF FLAGS RECENTLY SET BY NEWKIRK ENVIRONMENTAL (SEE REFERENCE PLAT #1) AND ARE SHOWN FOR INFORMATION PURPOSES ONLY. THIS SHOULD NOT BE CONSTRUED AS A CERTIFIED WETLAND SURVEY
 - SURVEYING CONSULTANTS CERTIFIES TO THE TOPOGRAPHIC AND ASBUILT INFORMATION PROVIDED HEREON AS OF THE DATE OF SURVEY. IF THIS DOCUMENT IS TO BE PROVIDED AS A BASE MAP FOR OTHERS, INFORMATION ADDED AFTER THE DATE OF THIS SURVEY IS NOT THE RESPONSIBILITY OF SURVEYING CONSULTANTS.
 - THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE, THEREFORE THERE MAY BE OTHER EASEMENTS, RIGHT-OF-WAY, SETBACK LINES, AGREEMENTS, RESERVATIONS, RESTRICTIONS, OR OTHER SIMILAR MATTERS OF PUBLIC RECORD, NOT DEPICTED ON THIS SURVEY.
 - NO BOUNDARY LINES AND/OR ROAD RIGHT-OF-WAY LINES WERE NOT ESTABLISHED AS A PART OF THIS SURVEY. THE APPROXIMATE BOUNDARY LINES SHOWN WERE SCALED FROM THE JASPER COUNTY ONLINE GIS MAPPING SERVICE AND WERE NOT FIELD VERIFIED. THIS PLAT SHOULD IN NO WAY BE CONSTRUED AS A BOUNDARY SURVEY.
 - THE HORIZONTAL DATUM SHOWN IS BASED ON NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES. THE VERTICAL DATUM SHOWN IS BASED ON NAVD 88 DATUM. THE HORIZONTAL AND VERTICAL DATUM SHOWN WERE ESTABLISHED FROM THE SC-VRS SURVEY NETWORK.

LEGEND:

	CONTOUR
	SPOT ELEVATION
	SANITARY SEWER MANHOLE
	INVERT ELEVATION
	POWER POLE
	NOT TO SCALE
	RIGHT OF WAY
	TYPICAL WETLAND FLAG LABEL
	POLYVINYL CHLORIDE PIPE
	WATER VALVE
	ELECTRIC METER
	ANTENNA
	GUY WIRE ANCHOR
	CLEANOUT
	OVERHEAD POWERLINE
	SANITARY SEWER LINE



ASBUILT, TOPOGRAPHIC & WETLAND
 EXHIBIT OF
SANITARY SEWER MANHOLES & PUMP STATION #3
 BETWEEN
U.S. HWY 17 & INTERSTATE 95
 A SECTION OF
TOWN OF RIDGELAND
 JASPER COUNTY, SOUTH CAROLINA
 DATE: 08/27/2021 JOB NO: SC210030-PS3
SURVEYING CONSULTANTS
 17 Sherington Drive, Suite C, Bluffton, SC 29910
 SC Telephone: (843) 815-3304 FAX: (843) 815-3305
 GA Telephone: (912) 828-2775
 www.SurveyingConsultants.com
 Email: SC@SurveyingConsultants.com

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 844-414-2400 S.C. COA # 5166 WWW.AWENG.COM
 DRAWING NUMBER
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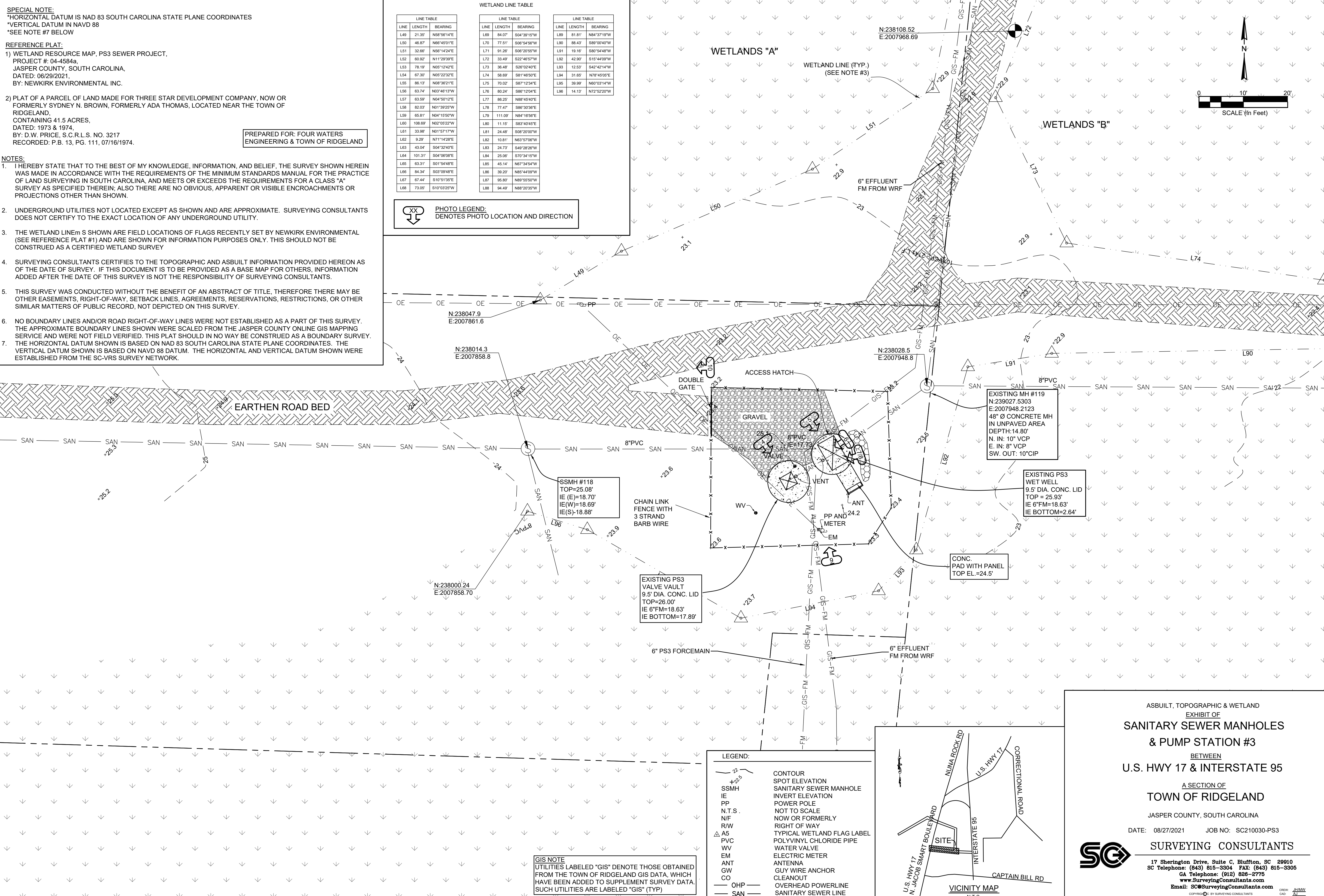
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PREPARED FOR: FOUR WATERS
 ENGINEERING & TOWN OF RIDGELAND

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LINE TABLE			LINE TABLE			LINE TABLE		
LINE	LENGTH	BEARING	LINE	LENGTH	BEARING	LINE	LENGTH	BEARING
L49	21.35'	N68°56'14"E	L69	84.07'	S04°39'10"W	L89	81.61'	N84°37'19"W
L50	46.87'	N66°45'01"E	L70	77.51'	S06°54'56"W	L90	88.43'	S89°00'40"W
L51	32.66'	N66°14'24"E	L71	91.26'	S08°20'55"W	L91	19.16'	S80°54'48"W
L52	60.92'	N11°29'38"E	L72	33.49'	S22°46'57"W	L92	42.90'	S15°44'09"W
L53	78.19'	N05°12'42"E	L73	36.46'	S26°10'40"E	L93	12.53'	S42°42'14"W
L54	67.30'	N05°22'32"E	L74	58.69'	S81°46'50"E	L94	31.65'	N78°40'58"E
L55	86.13'	N09°36'21"E	L75	70.62'	S87°12'34"E	L95	39.99'	N60°03'14"W
L56	63.74'	N03°46'13"W	L76	80.24'	S88°12'04"E	L96	14.13'	N72°52'20"W
L57	63.59'	N04°50'12"E	L77	86.25'	N88°45'40"E			
L58	82.03'	N01°39'25"W	L78	77.47'	S86°30'36"E			
L59	65.81'	N04°19'59"W	L79	111.69'	N84°16'56"E			
L60	106.69'	N02°05'22"W	L80	11.15'	S83°40'45"E			
L61	33.98'	N01°57'17"W	L81	24.48'	S08°20'00"W			
L62	9.29'	N71°14'28"E	L82	10.81'	N83°57'06"W			
L63	43.04'	S04°32'40"E	L83	24.73'	S49°28'28"W			
L64	101.31'	S04°06'08"E	L84	25.06'	S70°34'15"W			
L65	63.31'	S01°54'48"E	L85	45.14'	N67°34'54"W			
L66	84.34'	S03°09'48"E	L86	39.20'	N85°44'09"W			
L67	67.44'	S10°51'35"E	L87	95.80'	N89°55'50"W			
L68	73.05'	S10°03'23"W	L88	94.49'	N88°20'35"W			

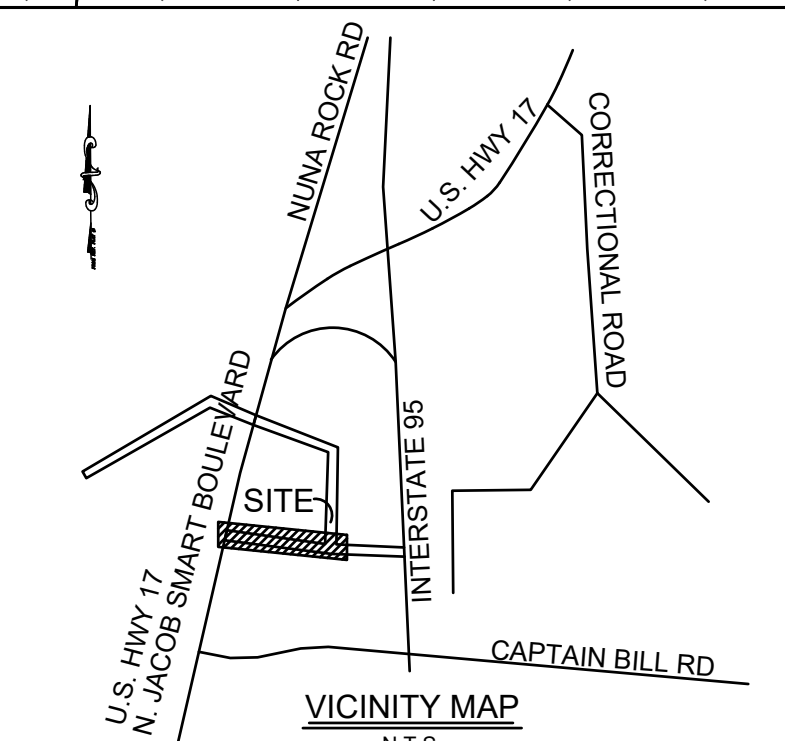
PHOTO LEGEND:
 DENOTES PHOTO LOCATION AND DIRECTION



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	SANITARY SEWER MANHOLE
	INVERT ELEVATION
	POWER POLE
	NOT TO SCALE
	NOW OR FORMERLY
	RIGHT OF WAY
	TYPICAL WETLAND FLAG LABEL
	POLYVINYL CHLORIDE PIPE
	WATER VALVE
	ELECTRIC METER
	ANTENNA
	GUY WIRE ANCHOR
	CLEANOUT
	OVERHEAD POWERLINE
	SANITARY SEWER LINE



ASBUILT, TOPOGRAPHIC & WETLAND
 EXHIBIT OF
**SANITARY SEWER MANHOLES
 & PUMP STATION #3**
 BETWEEN
U.S. HWY 17 & INTERSTATE 95
 A SECTION OF
TOWN OF RIDGELAND
 JASPER COUNTY, SOUTH CAROLINA

DATE: 08/27/2021 JOB NO: SC210030-PS3

SURVEYING CONSULTANTS

17 Sherington Drive, Suite C, Bluffton, SC 29910
 SC Telephone: (843) 815-3304 FAX: (843) 815-3305
 GA Telephone: (912) 828-2776
 www.SurveyingConsultants.com
 Email: SC@SurveyingConsultants.com

CREW: JMM

ANGELA B. BRYAN
 No. 21839
 REGISTERED PROFESSIONAL ENGINEER
 SOUTH CAROLINA
 FOUR WATERS ENGINEERING, INC.
 No. 5166
 CREW: JMM

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
**PS-3 INSET EXISTING
 CONDITIONS AND KEY**
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007	FEB	2023	BID
ABB	JMC					

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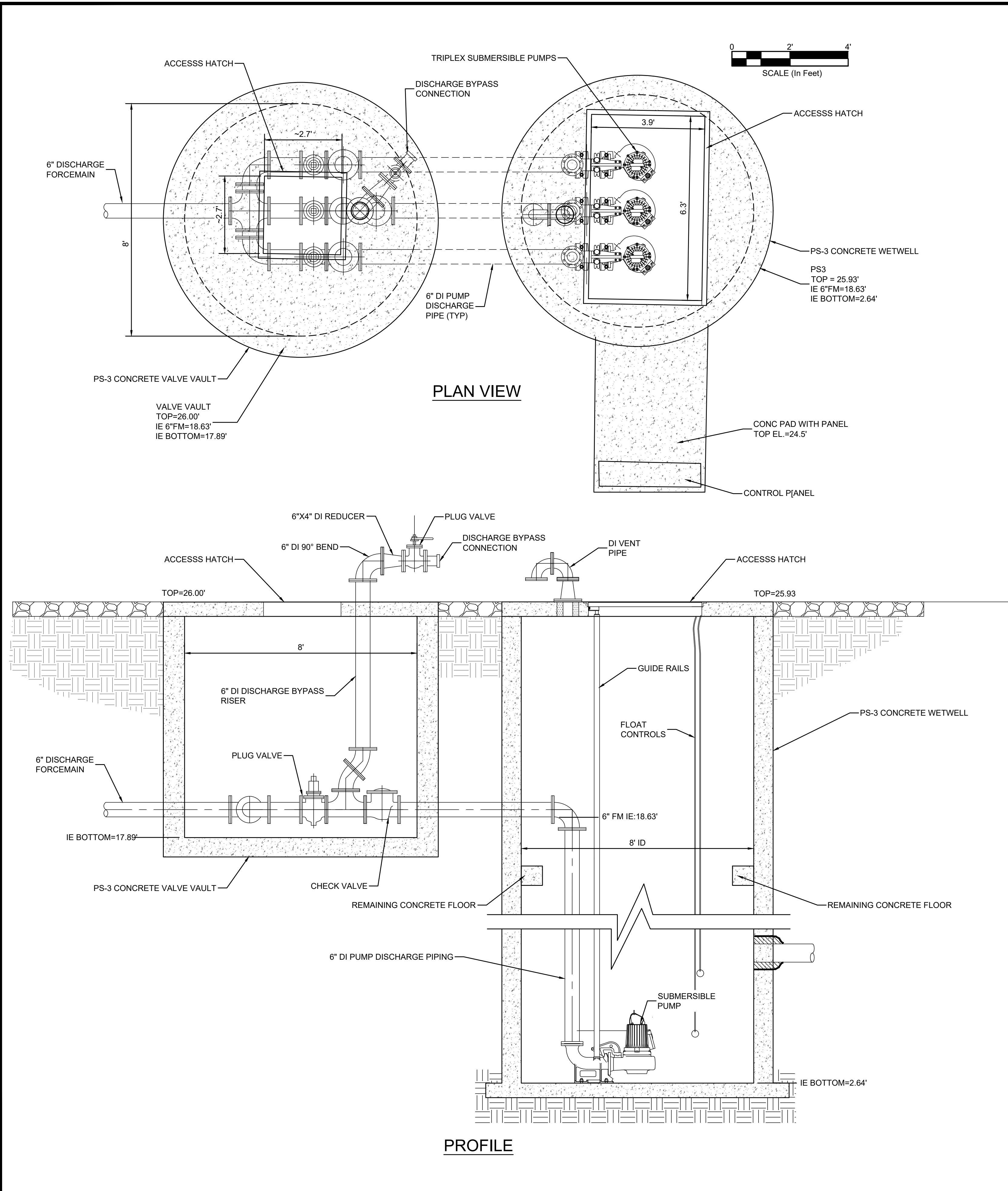


PHOTO-1
LOOKING DOWN IN WET WELL



PHOTO-2
LOOKING DOWN IN WET WELL



PHOTO-3
LOOKING DOWN IN VALVE VAULT

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

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

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-3 EXISTING CONDITIONS DETAIL
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

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JOB #	ISSUE	DATE	ISSUE	DATE	ISSUE

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PHOTO-4
LOOKING SOUTHEAST AT WET WELL AND VALVE VAULT



PHOTO-5
LOOKING SOUTHEAST AT WET WELL



PHOTO-6
LOOKING SOUTHWEST FROM WET WELL TO VALVE VAULT



PHOTO-7
LOOKING DOWN IN WET WELL



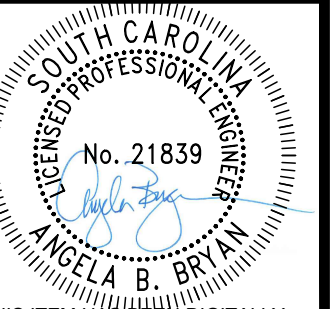
PHOTO-8
LOOKING SOUTHWEST FROM WET WELL TO VALVE VAULT



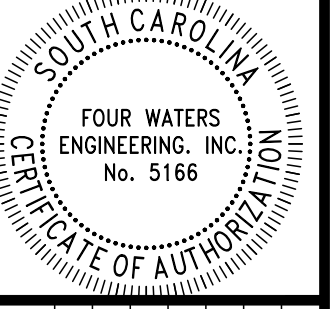
PHOTO-9
LOOKING NORTH



PHOTO-10
LOOKING WEST TOWARD ACCESS ROAD FROM PUMP STATION SITE



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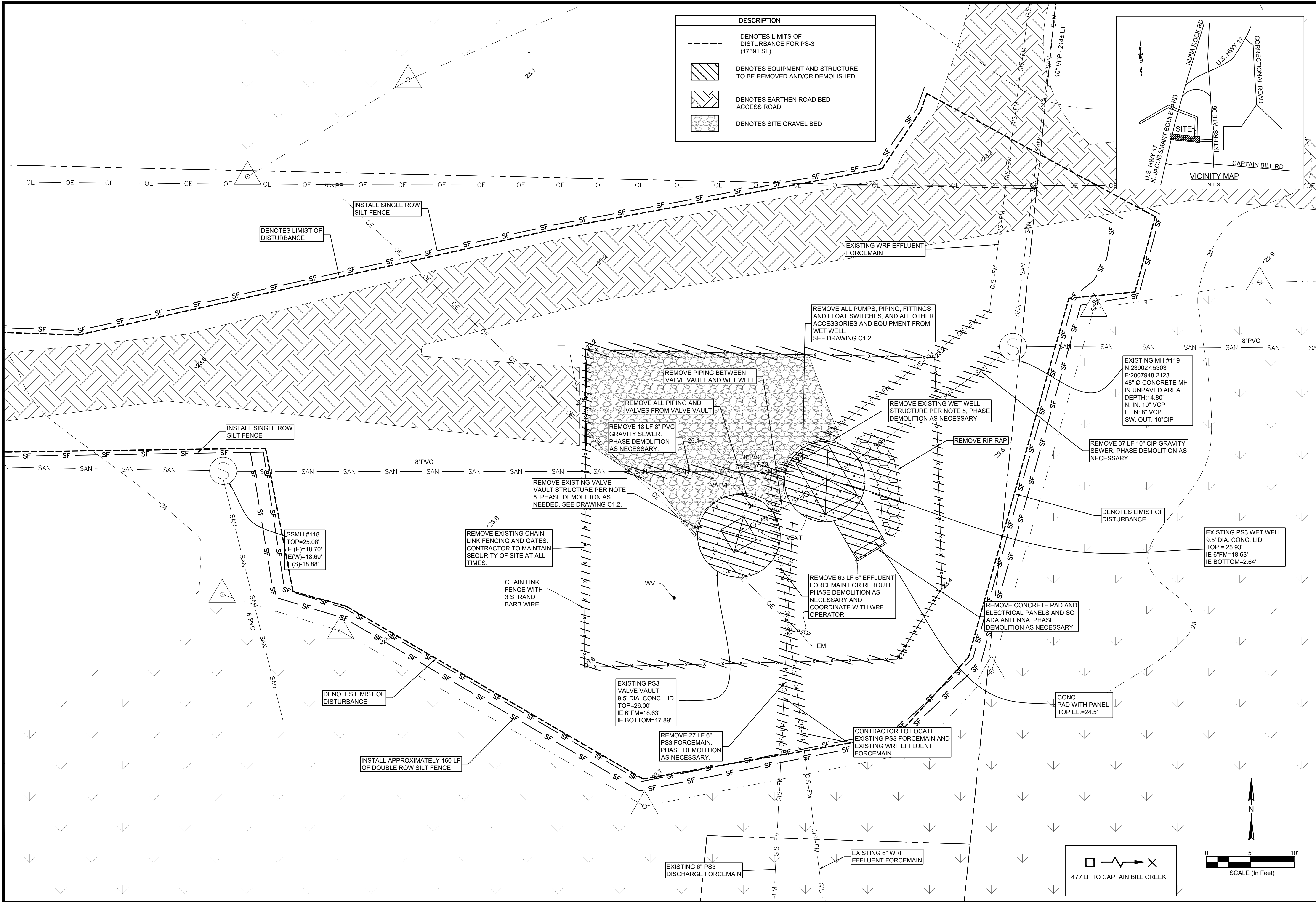
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-3 EXISTING CONDITIONS SITE PHOTOS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

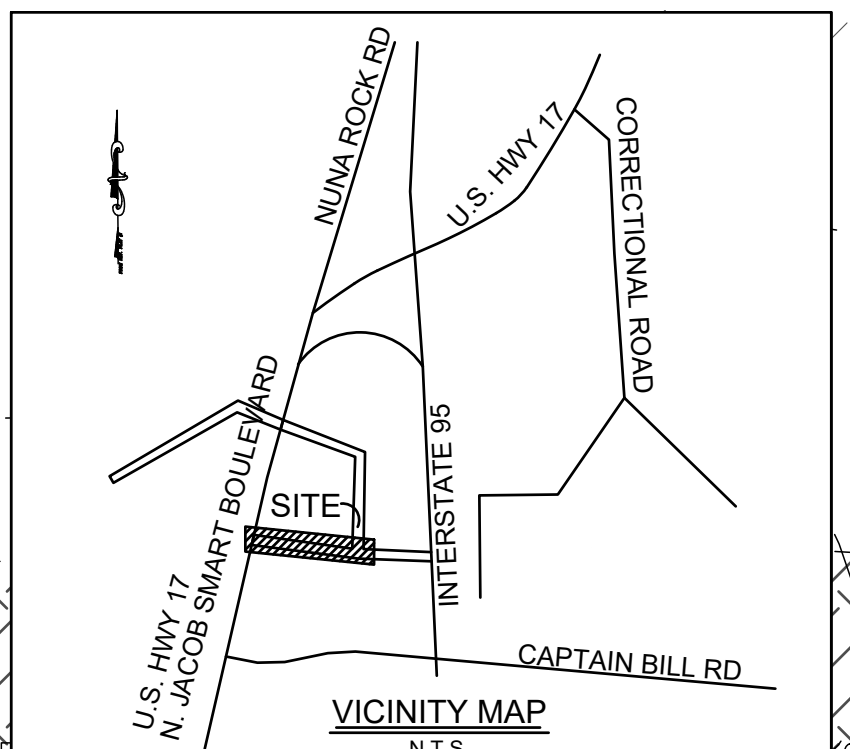
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DRAWING NUMBER
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DESCRIPTION	
--- SF ---	DENOTES LIMITS OF DISTURBANCE FOR PS-3 (17391 SF)
[Hatched Box]	DENOTES EQUIPMENT AND STRUCTURE TO BE REMOVED AND/OR DEMOLISHED
[Diagonal Lines Box]	DENOTES EARTHEN ROAD BED ACCESS ROAD
[Gravel Box]	DENOTES SITE GRAVEL BED



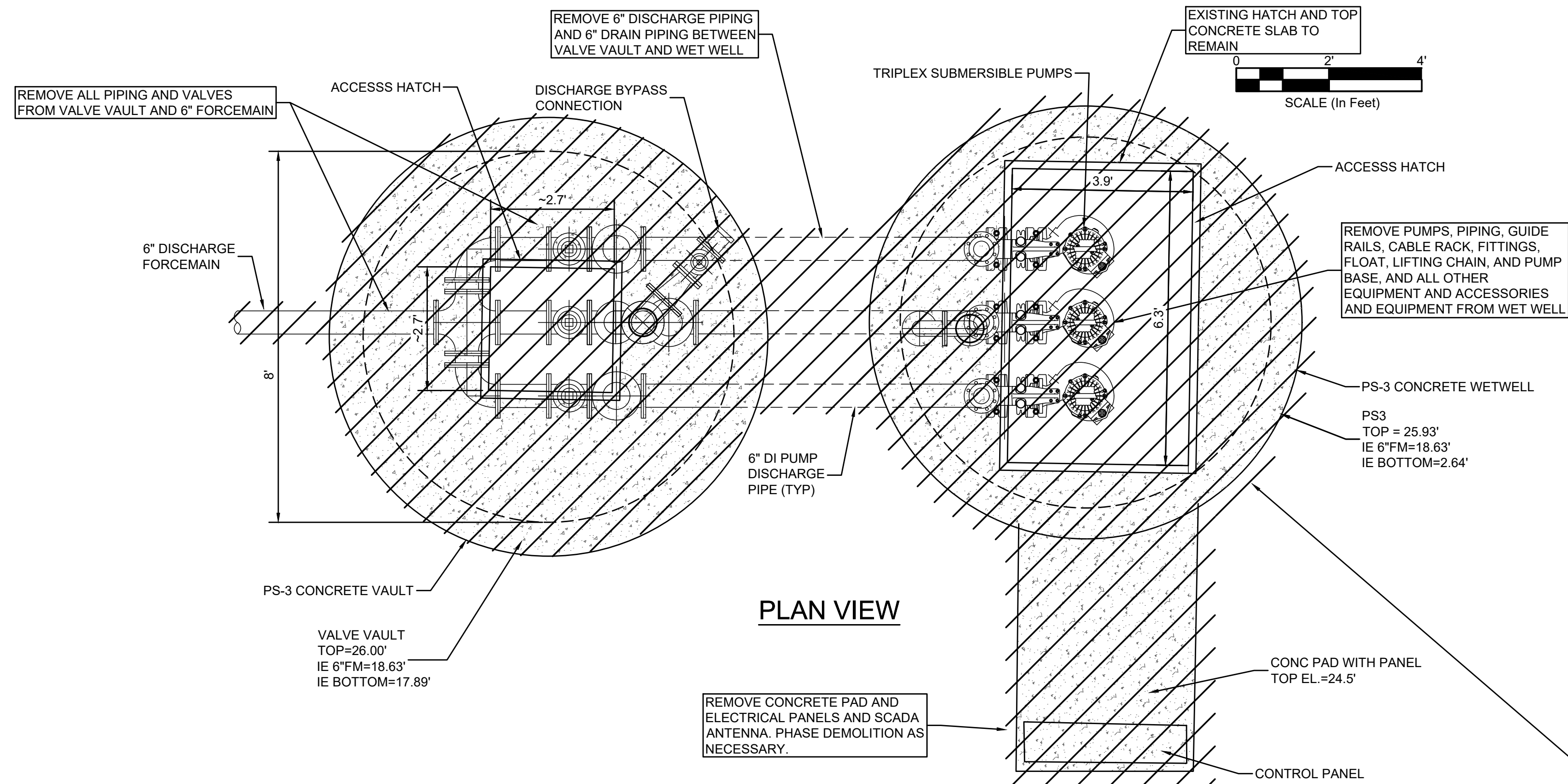
SOUTH CAROLINA
 REGISTERED PROFESSIONAL ENGINEER
 No. 21839
 ANGELA B. BRYAN
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 SOUTH CAROLINA
 CREATED BY AUTOCAD
 FOUR WATERS ENGINEERING, INC.
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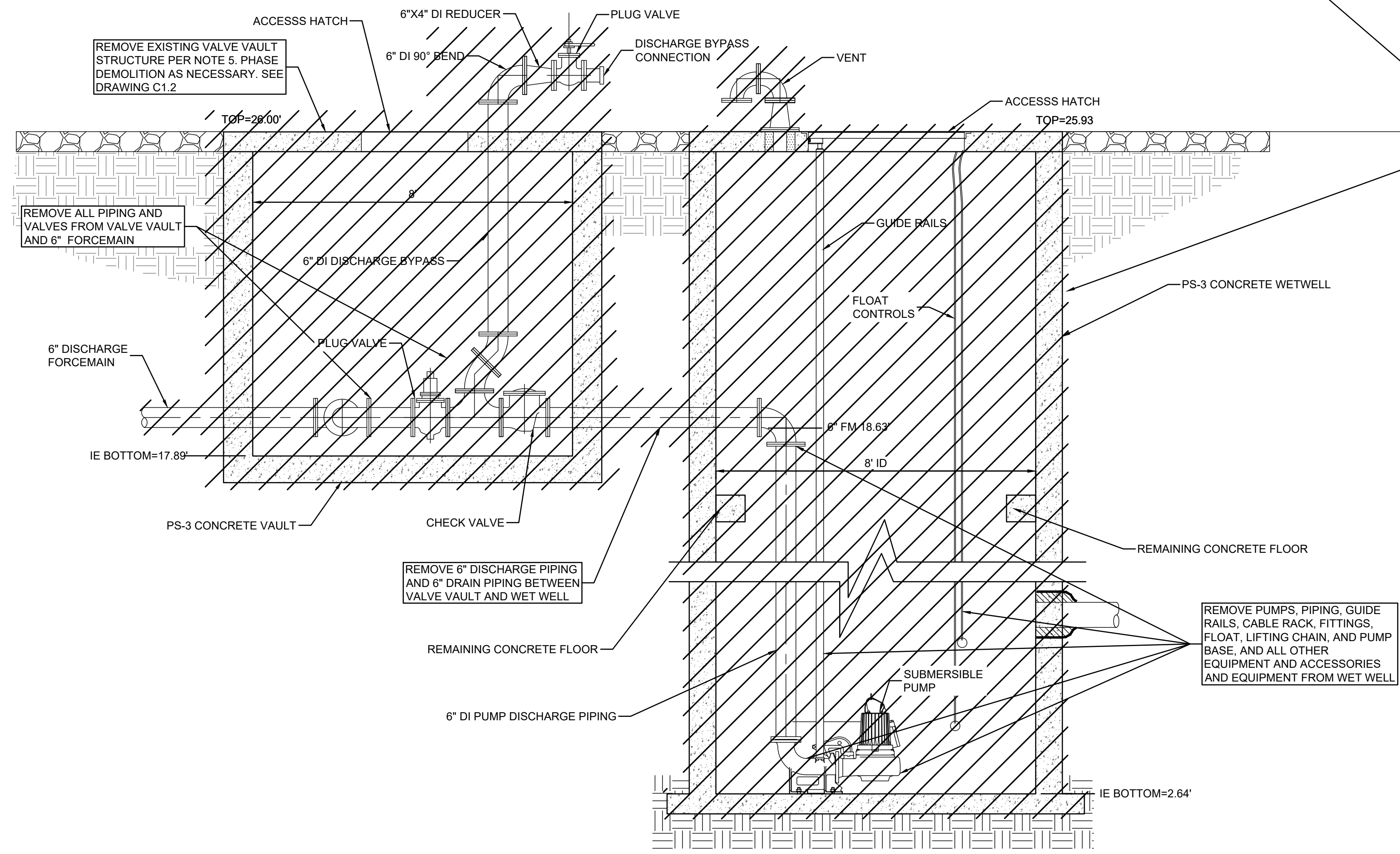
WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-3 DEMOLITION PLAN SITE PLAN
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN
ABB	JMC

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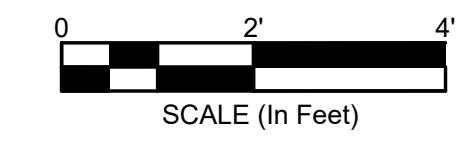


PLAN VIEW

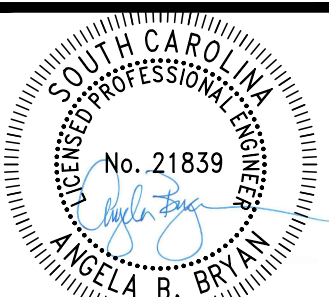


PROFILE

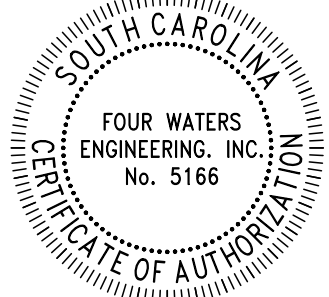
DESCRIPTION
DENOTES EQUIPMENT AND STRUCTURE TO BE REMOVED AND/OR DEMOLISHED



- DEMOLITION NOTES:**
1. ALL NECESSARY TEMPORARY BYPASS OPERATIONS SHALL BE IN PLACE AND OPERATIONAL PRIOR TO INITIATING DEMOLITION ACTIVITIES.
 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.
 4. PRIOR TO DEMOLITION OR REMOVAL OF STRUCTURES USED FOR WASTEWATER, ALL WASTEWATER AND SOLIDS SHALL BE REMOVED FROM THE STRUCTURE AND PROPERLY DISPOSED.



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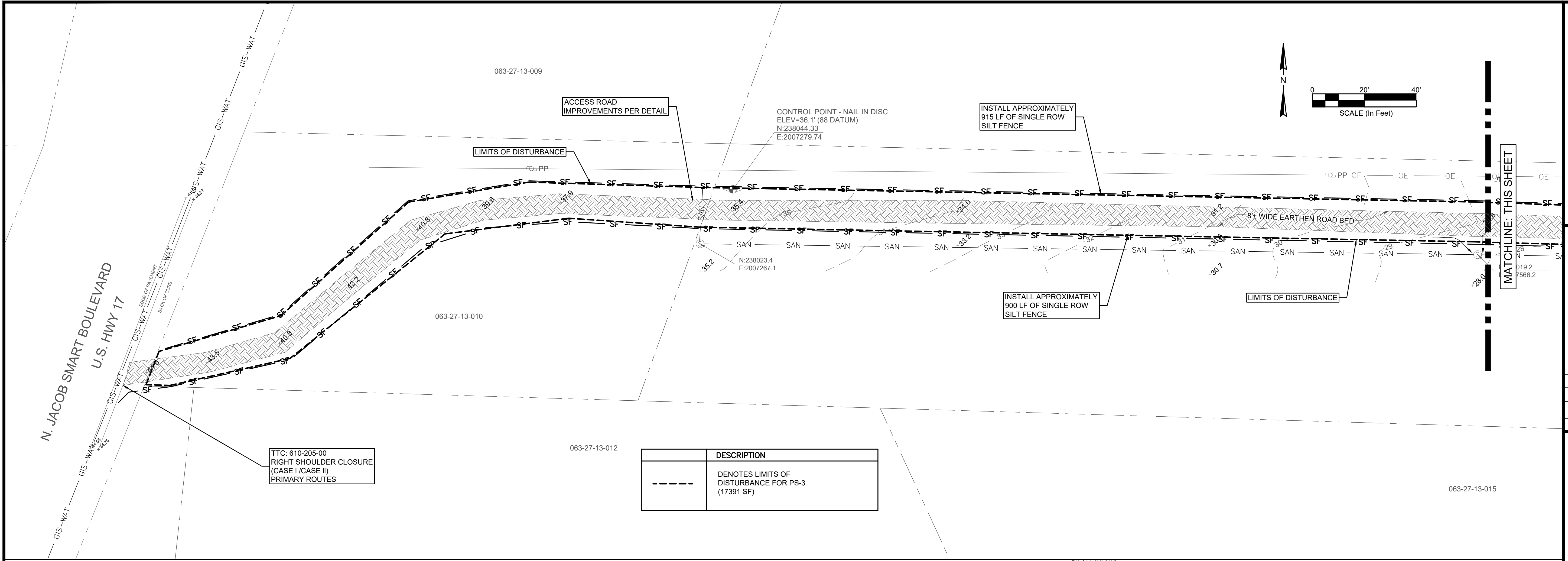
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-3 DEMOLITION PLAN SITE PLAN DETAIL
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	JOB #	ISSUE DATE	ISSUE	BID
		17-1007	FEB 2023		

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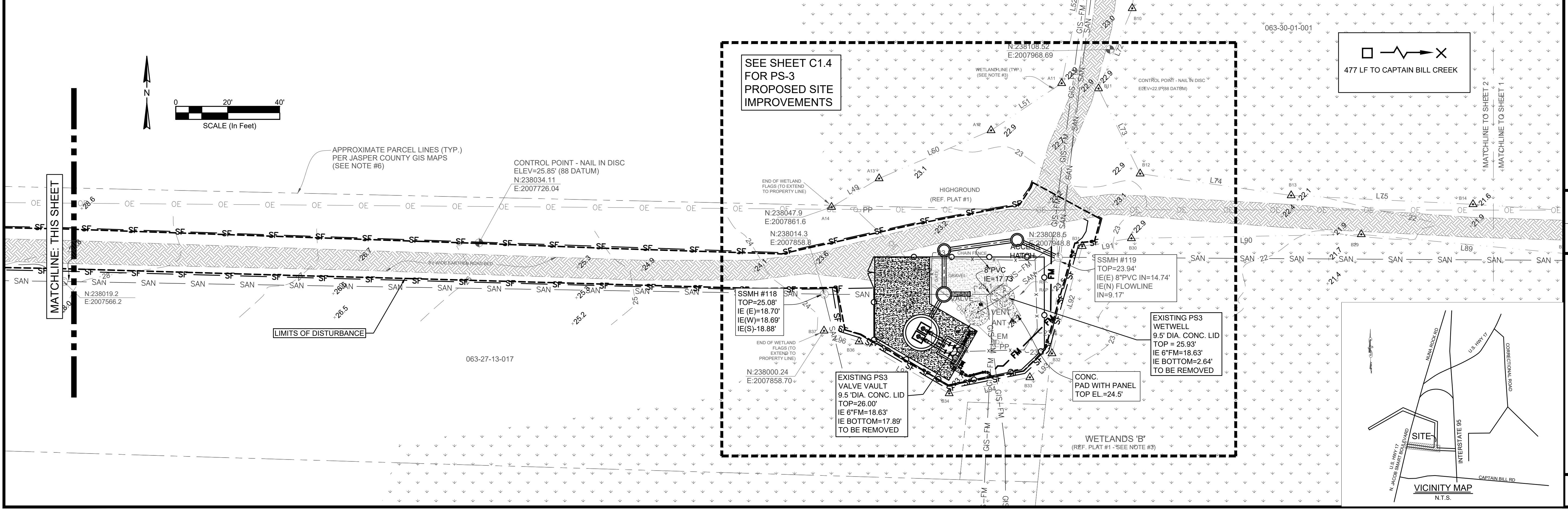


SOUTH CAROLINA
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 No. 21839
 ANGELA B. BRYAN

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 FOUR WATERS ENGINEERING, INC.

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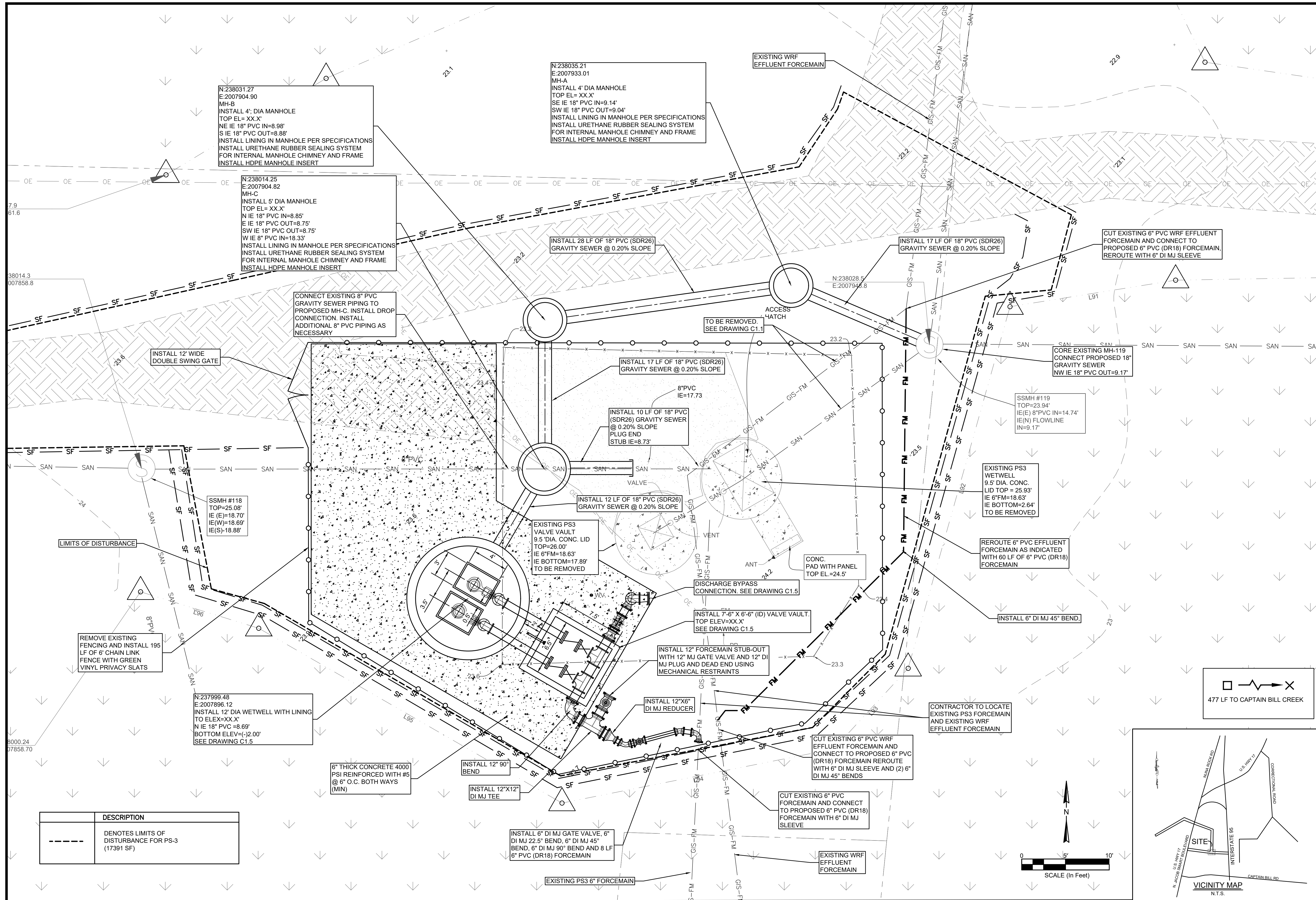


WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-3 PROPOSED ENTRANCE ROAD IMPROVEMENTS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN DRAWN JMC
 ABB 17-1007
 JOB # 17-1007
 ISSUE DATE FEB 2023
 ISSUE

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

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C1.3



ANGELO B. BRYAN
 No. 21839
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF SOUTH CAROLINA

FOUR WATERS
 ENGINEERING, INC.
 No. 5166
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF SOUTH CAROLINA

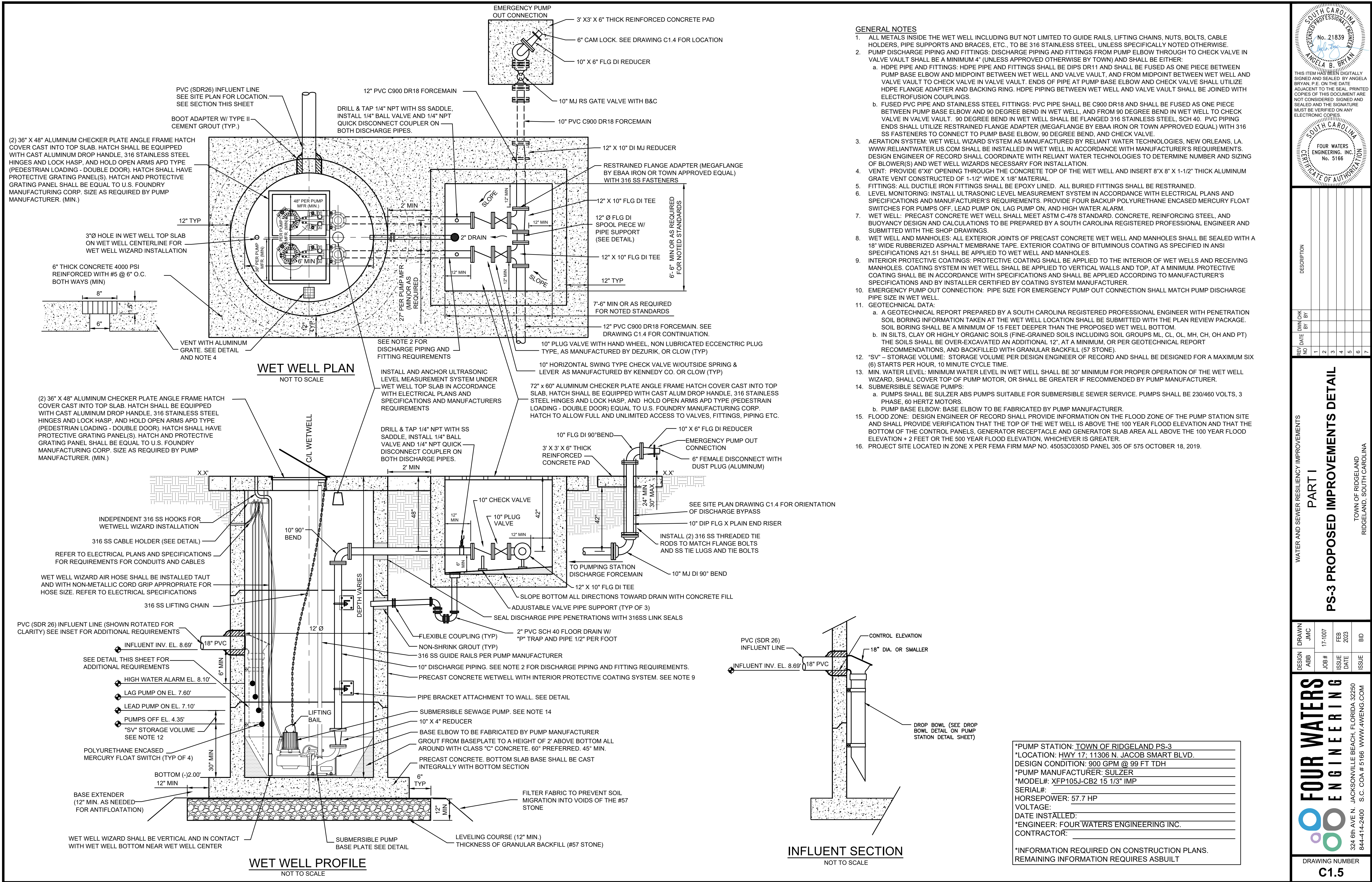
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-3 PROPOSED IMPROVEMENTS PLAN
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

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

DESIGN	DRAWN	JMC	17-1007
ABB	JMC		
JOB #	ISSUE	DATE	ISSUE

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C1.4



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PS-3 PROPOSED IMPROVEMENTS DETAIL
PART I

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		17-1007	FEB 2023		

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C1.5

*PUMP STATION: TOWN OF RIDGELAND PS-3
*LOCATION: HWY 17, 11306 N. JACOB SMART BLVD.
DESIGN CONDITION: 900 GPM @ 99 FT TDH
*PUMP MANUFACTURER: SULZER
*MODEL#: XFP105J-CB2 15 1/3" IMP
SERIAL#: _____
HORSEPOWER: 57.7 HP
VOLTAGE: _____
DATE INSTALLED: _____
*ENGINEER: FOUR WATERS ENGINEERING INC.
CONTRACTOR: _____

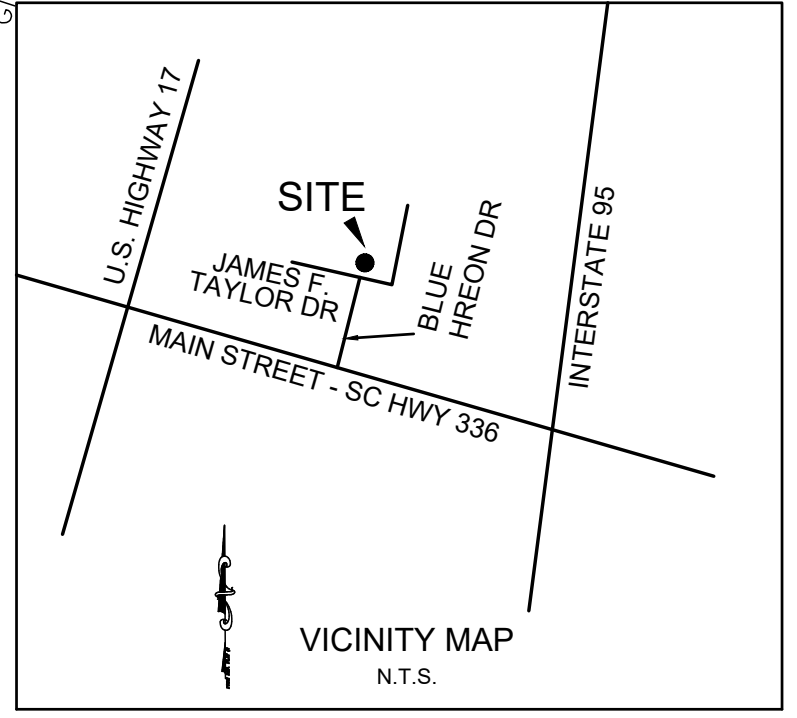
*INFORMATION REQUIRED ON CONSTRUCTION PLANS.
REMAINING INFORMATION REQUIRES ASBUILT

GIS NOTE
 UTILITIES LABELED "GIS" DENOTE THOSE OBTAINED FROM THE TOWN OF RIDGELAND GIS DATA, WHICH HAVE BEEN ADDED TO SUPPLEMENT SURVEY DATA. SUCH UTILITIES ARE LABELED "GIS" (TYP)

PHOTO LEGEND:
 DENOTES PHOTO LOCATION AND DIRECTION

ADDRESS:
 #123 JAMES F. TAYLOR DRIVE
 PARENT TAX PARCEL I.D. NO. 063-31-02-009

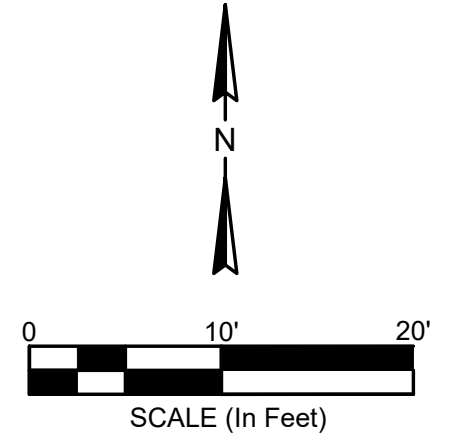
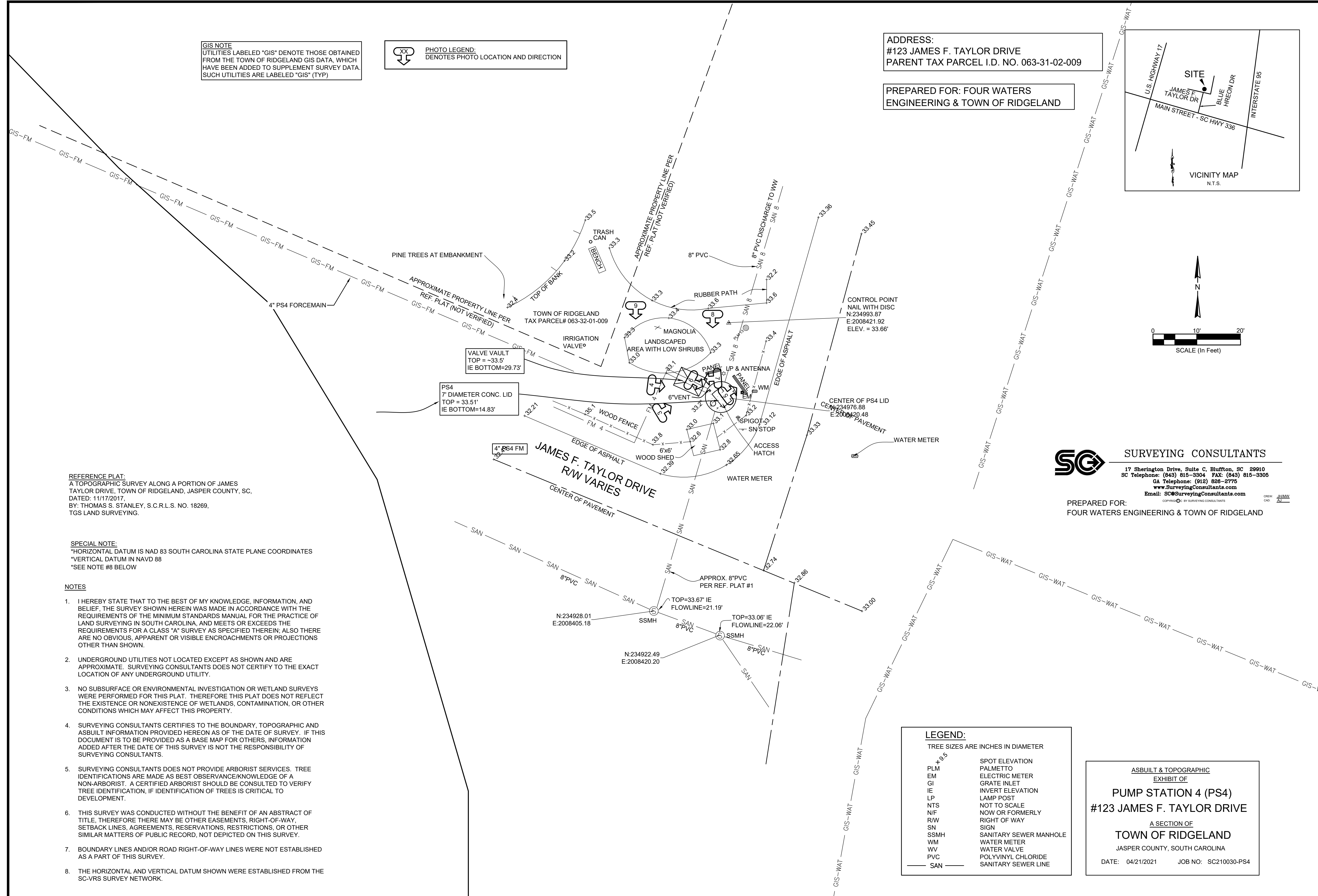
**PREPARED FOR: FOUR WATERS
 ENGINEERING & TOWN OF RIDGELAND**



SOUTH CAROLINA PROFESSIONAL ENGINEER
 No. 21839
 ANGELA B. BRYAN

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



REFERENCE PLAT:
 A TOPOGRAPHIC SURVEY ALONG A PORTION OF JAMES TAYLOR DRIVE, TOWN OF RIDGELAND, JASPER COUNTY, SC, DATED: 11/17/2017, BY: THOMAS S. STANLEY, S.C.R.L.S. NO. 18269, TGS LAND SURVEYING.

SPECIAL NOTE:
 *HORIZONTAL DATUM IS NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES
 *VERTICAL DATUM IN NAVD 88
 *SEE NOTE #8 BELOW

- NOTES**
- I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO OBVIOUS, APPARENT OR VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.
 - UNDERGROUND UTILITIES NOT LOCATED EXCEPT AS SHOWN AND ARE APPROXIMATE. SURVEYING CONSULTANTS DOES NOT CERTIFY TO THE EXACT LOCATION OF ANY UNDERGROUND UTILITY.
 - NO SUBSURFACE OR ENVIRONMENTAL INVESTIGATION OR WETLAND SURVEYS WERE PERFORMED FOR THIS PLAT. THEREFORE THIS PLAT DOES NOT REFLECT THE EXISTENCE OR NONEXISTENCE OF WETLANDS, CONTAMINATION, OR OTHER CONDITIONS WHICH MAY AFFECT THIS PROPERTY.
 - SURVEYING CONSULTANTS CERTIFIES TO THE BOUNDARY, TOPOGRAPHIC AND ASBUILT INFORMATION PROVIDED HEREON AS OF THE DATE OF SURVEY. IF THIS DOCUMENT IS TO BE PROVIDED AS A BASE MAP FOR OTHERS, INFORMATION ADDED AFTER THE DATE OF THIS SURVEY IS NOT THE RESPONSIBILITY OF SURVEYING CONSULTANTS.
 - SURVEYING CONSULTANTS DOES NOT PROVIDE ARBORIST SERVICES. TREE IDENTIFICATIONS ARE MADE AS BEST OBSERVANCE/KNOWLEDGE OF A NON-ARBORIST. A CERTIFIED ARBORIST SHOULD BE CONSULTED TO VERIFY TREE IDENTIFICATION, IF IDENTIFICATION OF TREES IS CRITICAL TO DEVELOPMENT.
 - THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE, THEREFORE THERE MAY BE OTHER EASEMENTS, RIGHT-OF-WAY, SETBACK LINES, AGREEMENTS, RESERVATIONS, RESTRICTIONS, OR OTHER SIMILAR MATTERS OF PUBLIC RECORD, NOT DEPICTED ON THIS SURVEY.
 - BOUNDARY LINES AND/OR ROAD RIGHT-OF-WAY LINES WERE NOT ESTABLISHED AS A PART OF THIS SURVEY.
 - THE HORIZONTAL AND VERTICAL DATUM SHOWN WERE ESTABLISHED FROM THE SC-VRS SURVEY NETWORK.

SG SURVEYING CONSULTANTS
 17 Sherrington Drive, Suite C, Bluffton, SC 29910
 SC Telephone: (843) 815-3304 FAX: (843) 815-3305
 GA Telephone: (912) 826-2775
 www.SurveyingConsultants.com
 Email: SC@SurveyingConsultants.com

PREPARED FOR:
 FOUR WATERS ENGINEERING & TOWN OF RIDGELAND

LEGEND:

TREE SIZES ARE INCHES IN DIAMETER

PLM	SPOT ELEVATION
EM	PALMETTO
GI	ELECTRIC METER
IE	GRATE INLET
LP	INVERT ELEVATION
NTS	LAMP POST
N/F	NOT TO SCALE
R/W	NOW OR FORMERLY
SN	RIGHT OF WAY
SSMH	SIGN
WM	SANITARY SEWER MANHOLE
WV	WATER METER
PVC	POLYVINYL CHLORIDE
SAN	WATER VALVE
	POLYVINYL CHLORIDE
	SANITARY SEWER LINE

**ASBUILT & TOPOGRAPHIC
 EXHIBIT OF
 PUMP STATION 4 (PS4)
 #123 JAMES F. TAYLOR DRIVE
 A SECTION OF
 TOWN OF RIDGELAND**
 JASPER COUNTY, SOUTH CAROLINA
 DATE: 04/21/2021 JOB NO: SC210030-PS4

REV. NO.	DATE	BY	DESCRIPTION
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WATER AND SEWER RESILIENCY IMPROVEMENTS

PART I

PS-4 EXISTING CONDITIONS AND KEY

TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	ISSUE DATE	ISSUE	BID
		17-1007	FEB 2023	

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G2.1

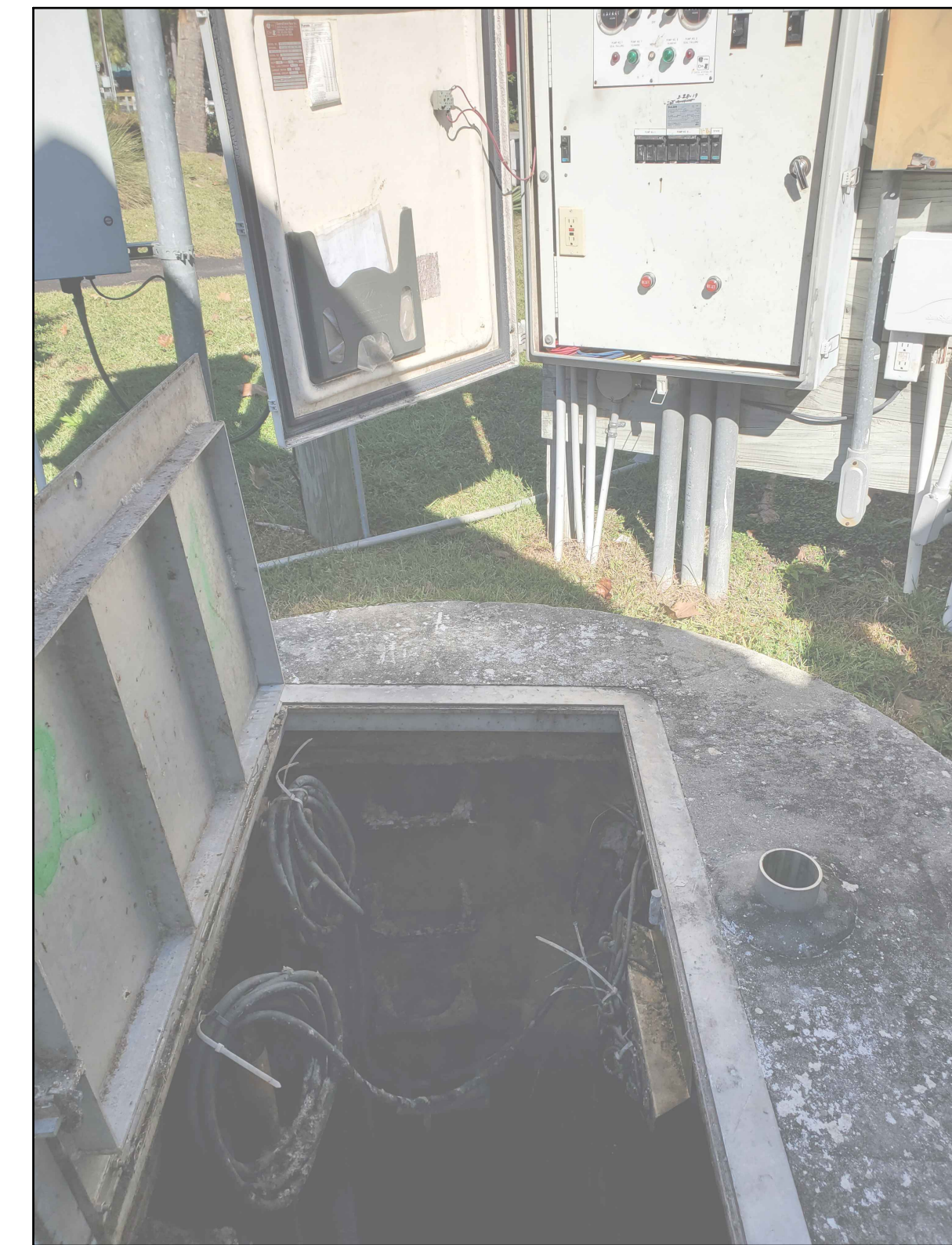
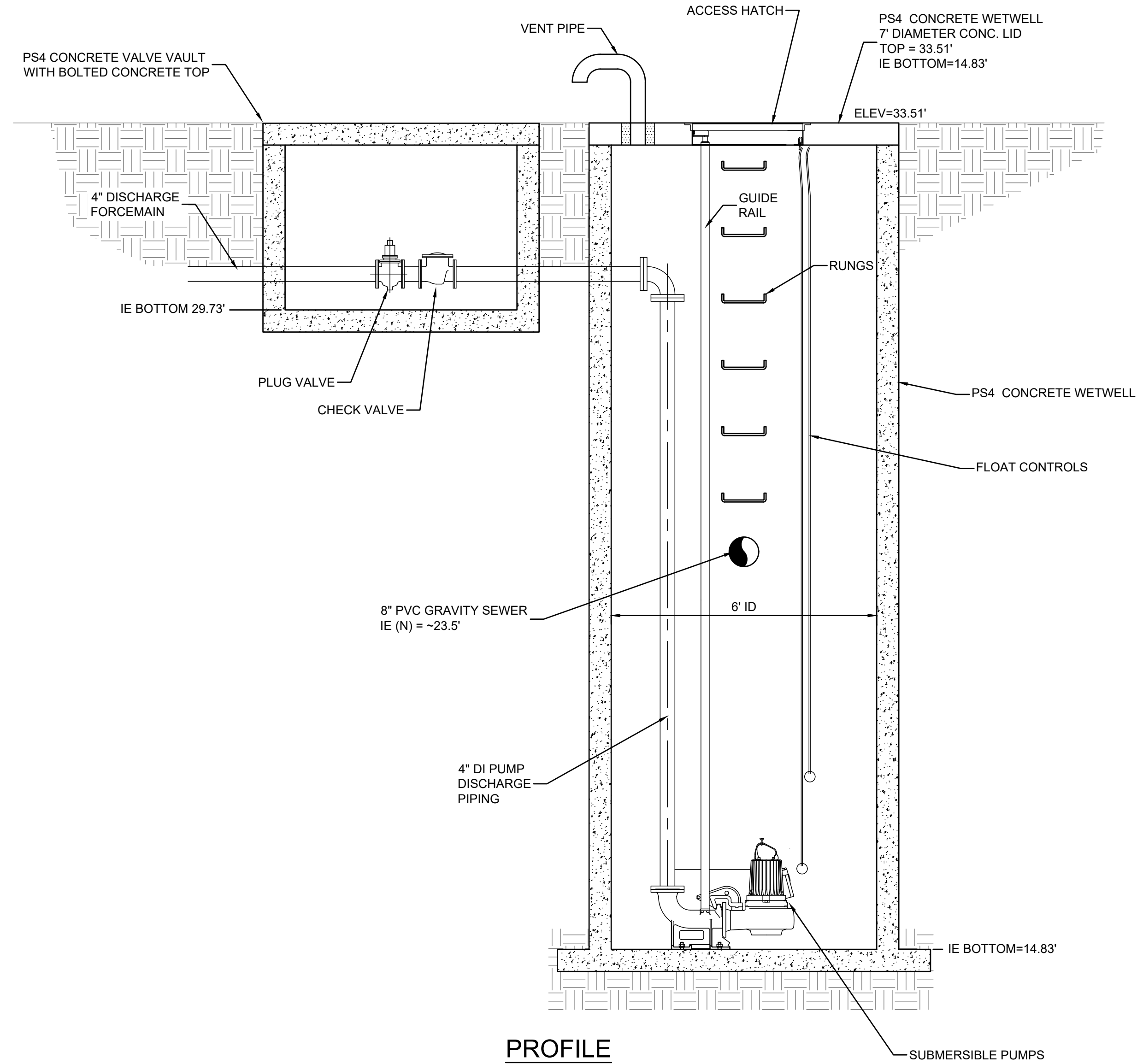
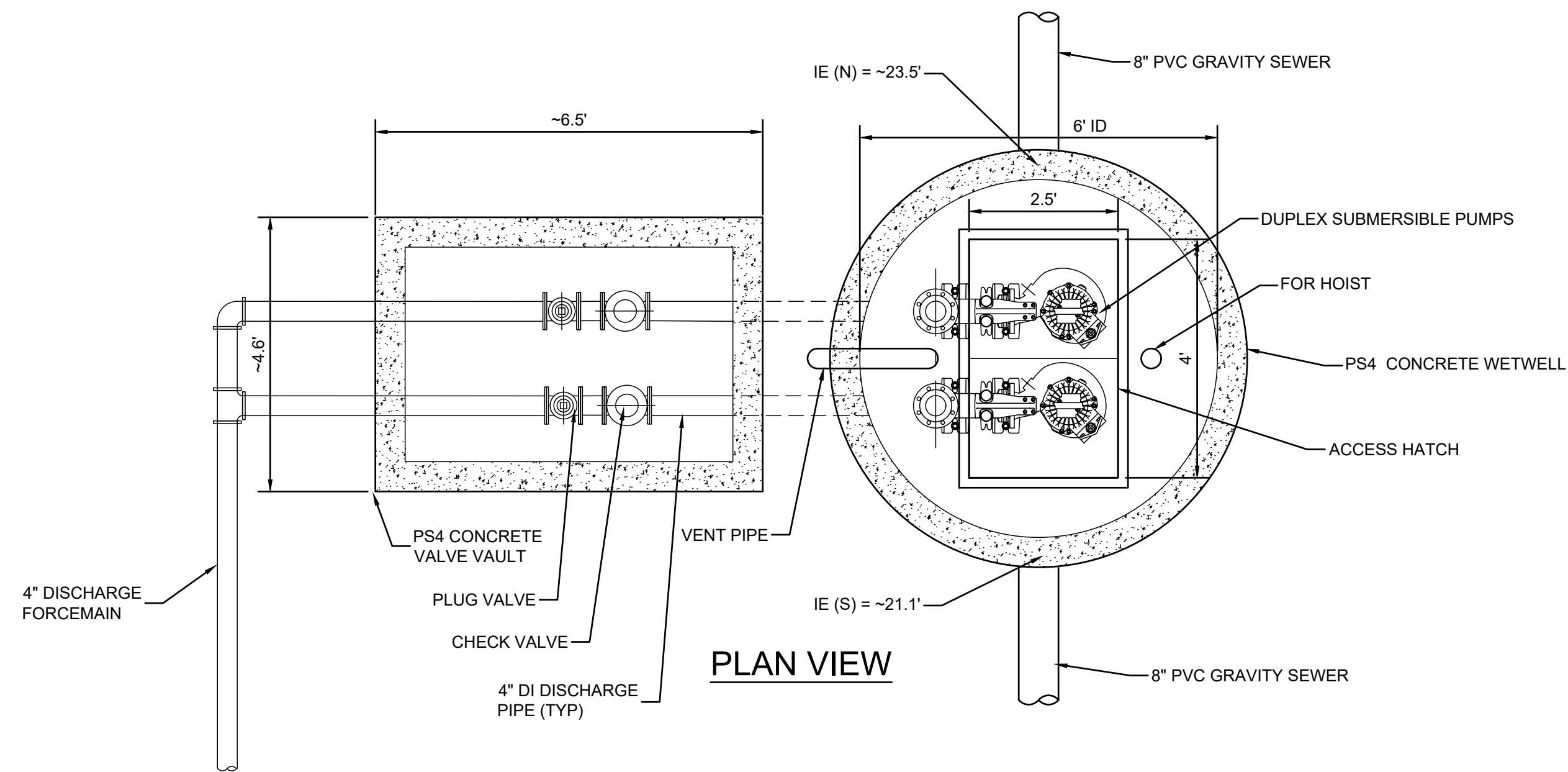


PHOTO-1
LOOKING AT WET WELL

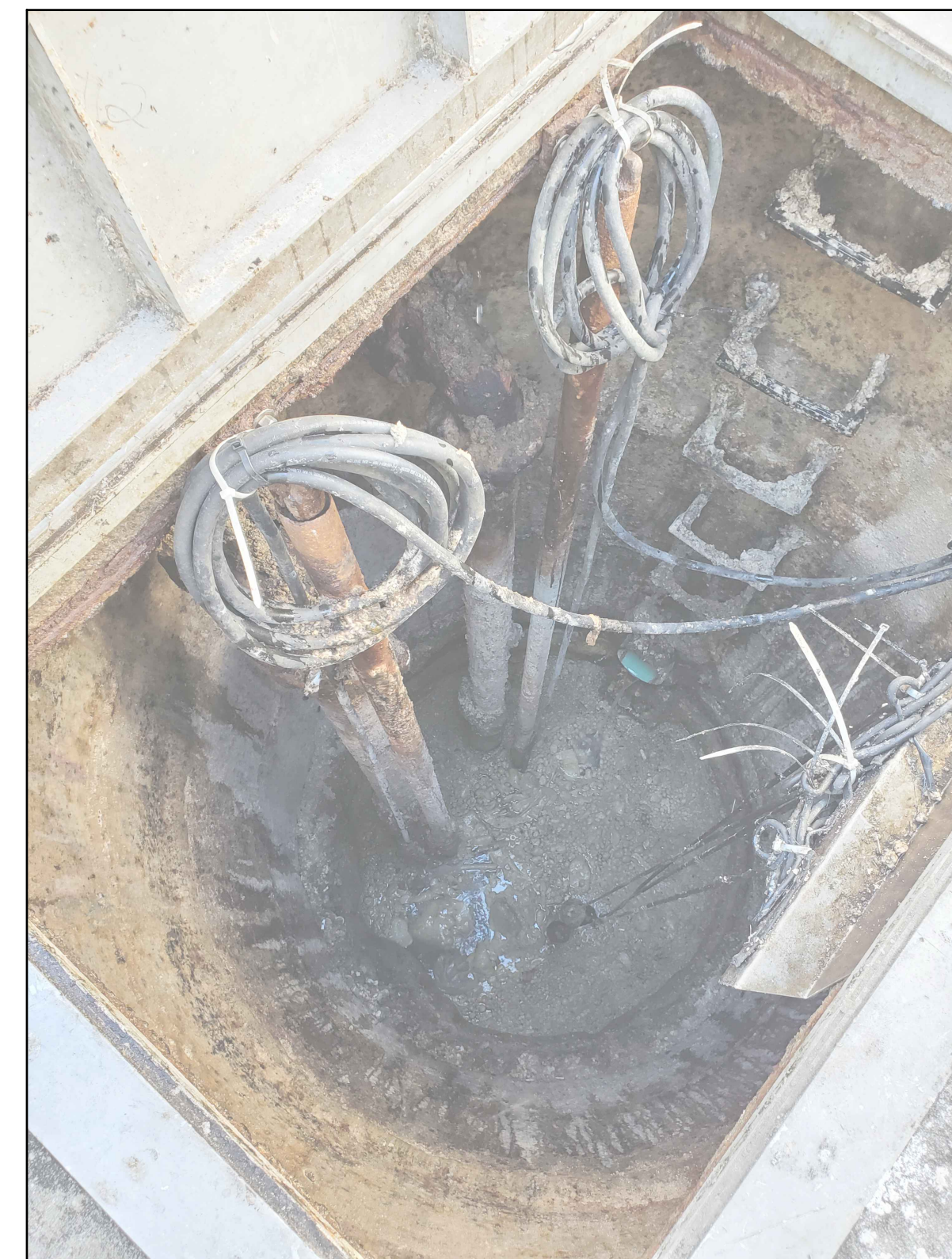
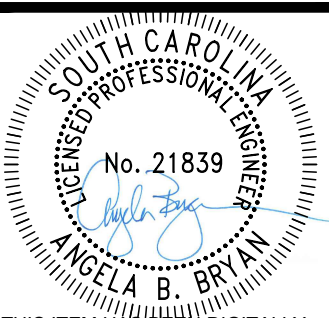
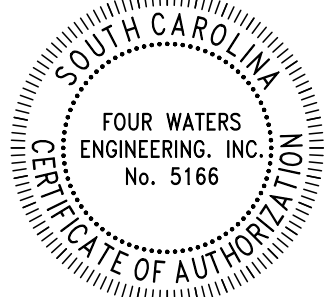


PHOTO-2
LOOKING INTO WET WELL



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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-4 EXISTING CONDITIONS DETAIL
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

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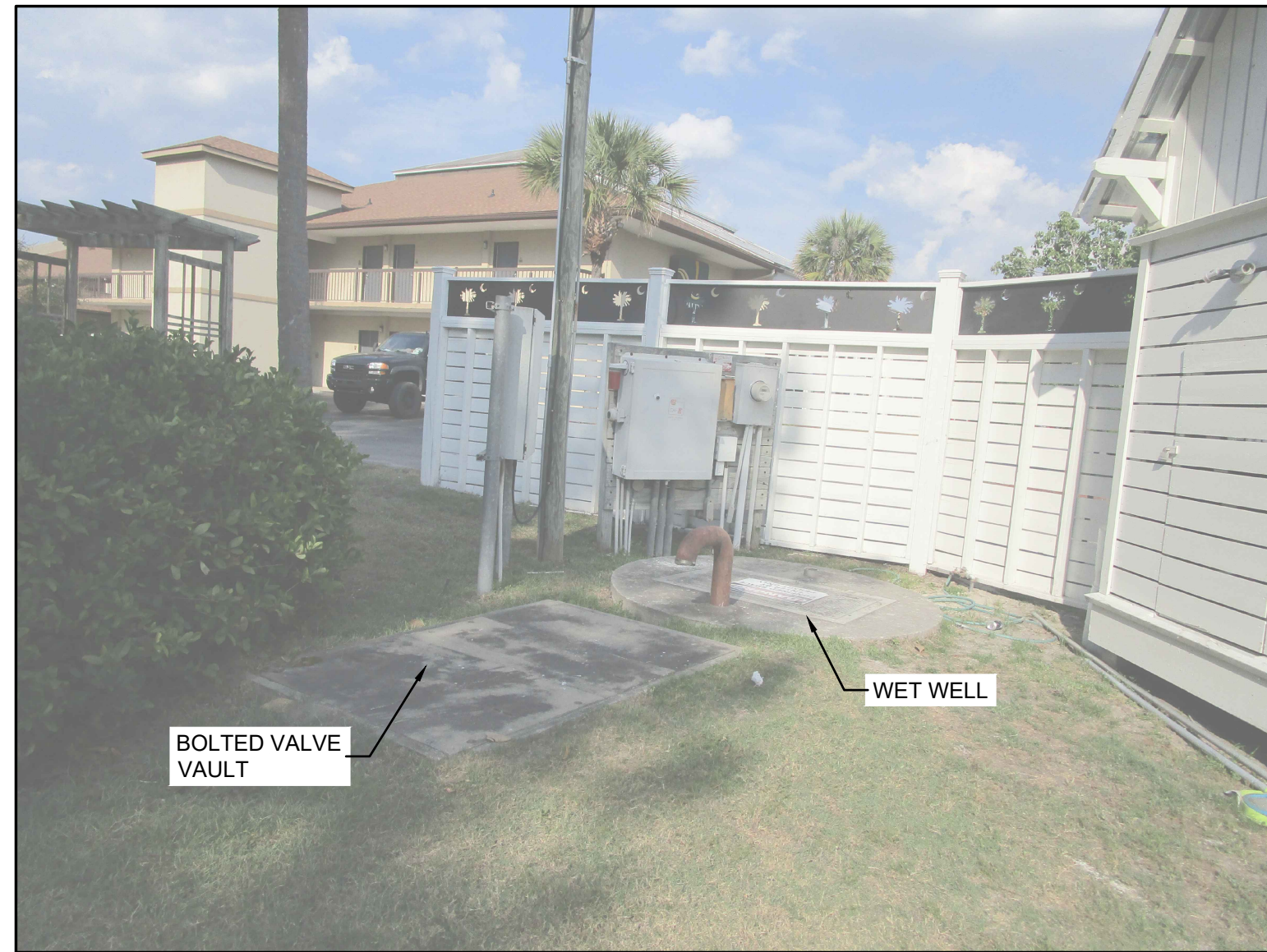


PHOTO-3
LOOKING NORTHEAST AT PS-4



PHOTO-4
LOOKING EAST ACROSS VALVE VAULT AND WET WELL

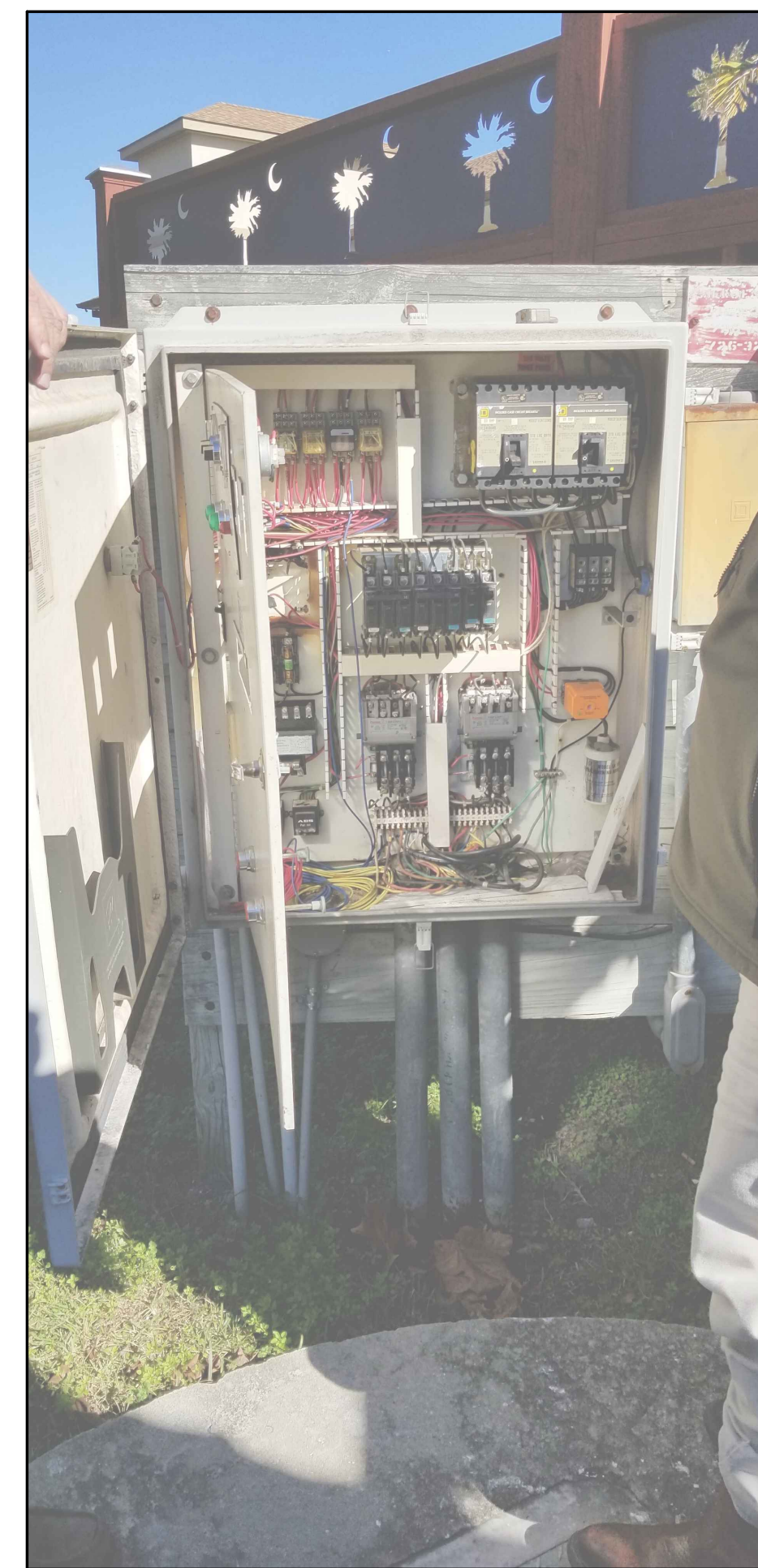


PHOTO-5
LOOKING NORTHEAST AT CONTROL PANEL



PHOTO-6
LOOKING EAST AT WET WELL



PHOTO-7
LOOKING WEST OVER VALVE VAULT



PHOTO-8
LOOKING SOUTH TOWARDS PS-4 FROM GARDEN/PARK



PHOTO-9
LOOKING SOUTH AT PS-4 FROM GARDEN/PARK

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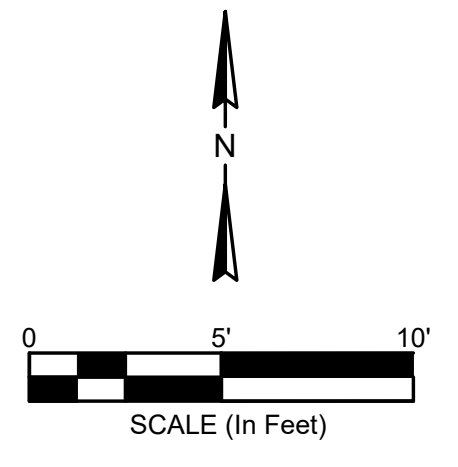
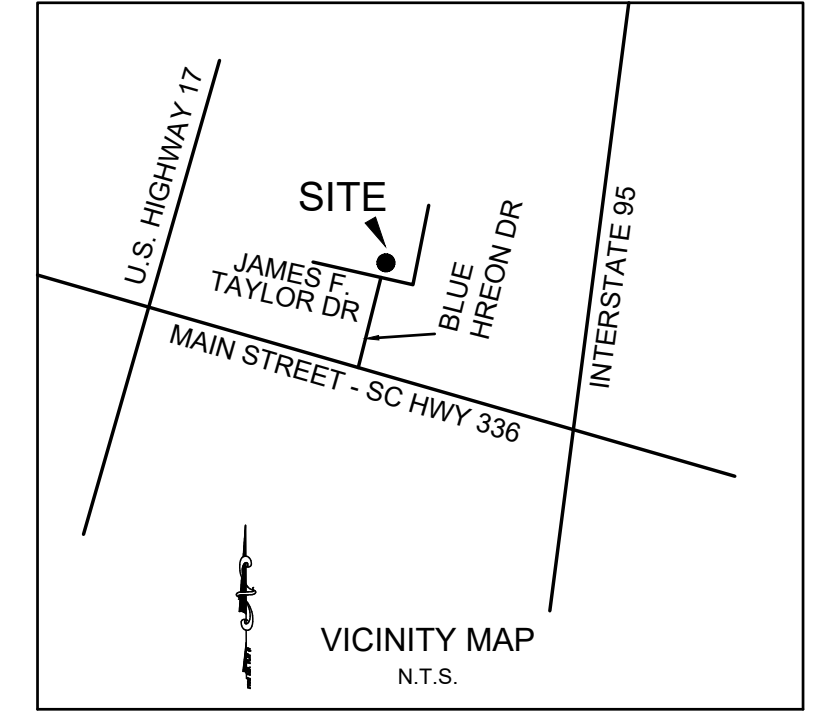
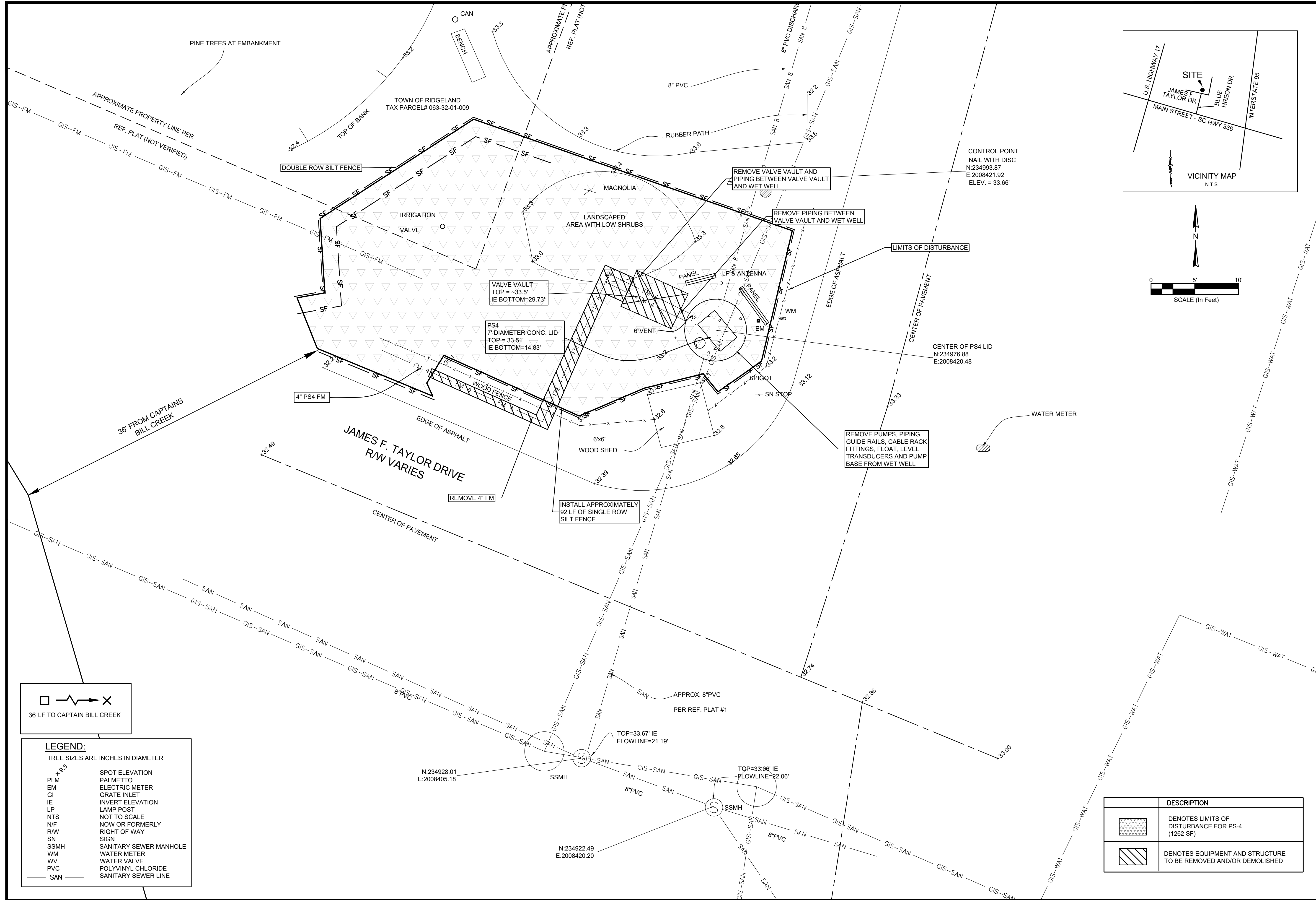
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-4 EXISTING CONDITIONS SITE PHOTOS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

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 FOUR WATERS
 ENGINEERING, INC.
 STATE OF SOUTH CAROLINA

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-4 DEMOLITION PLAN SITE PLAN
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	ISSUE DATE	ISSUE
ABB	JMC	17-1007	BID
		FEB 2023	

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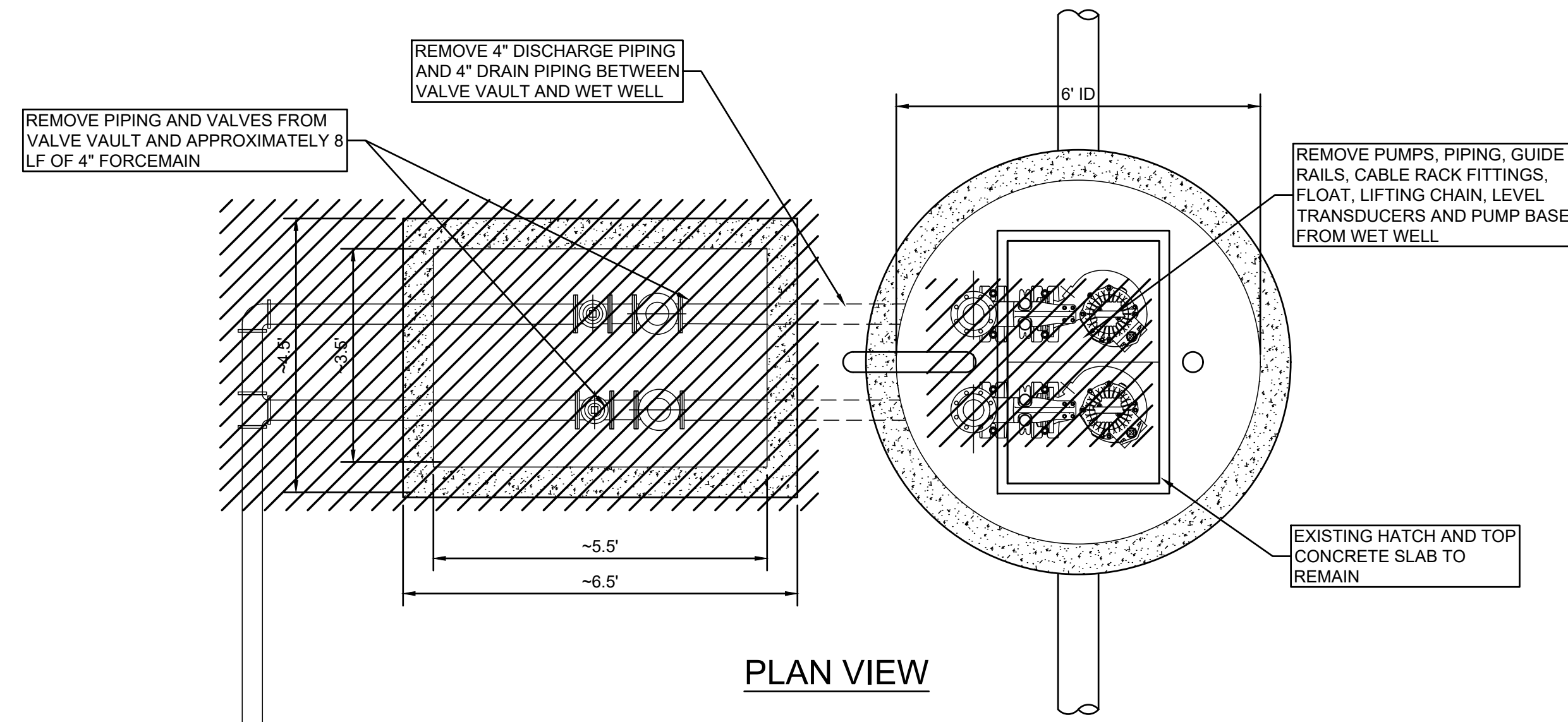
DRAWING NUMBER
C2.1

DESCRIPTION
DENOTES LIMITS OF DISTURBANCE FOR PS-4 (1262 SF)
DENOTES EQUIPMENT AND STRUCTURE TO BE REMOVED AND/OR DEMOLISHED

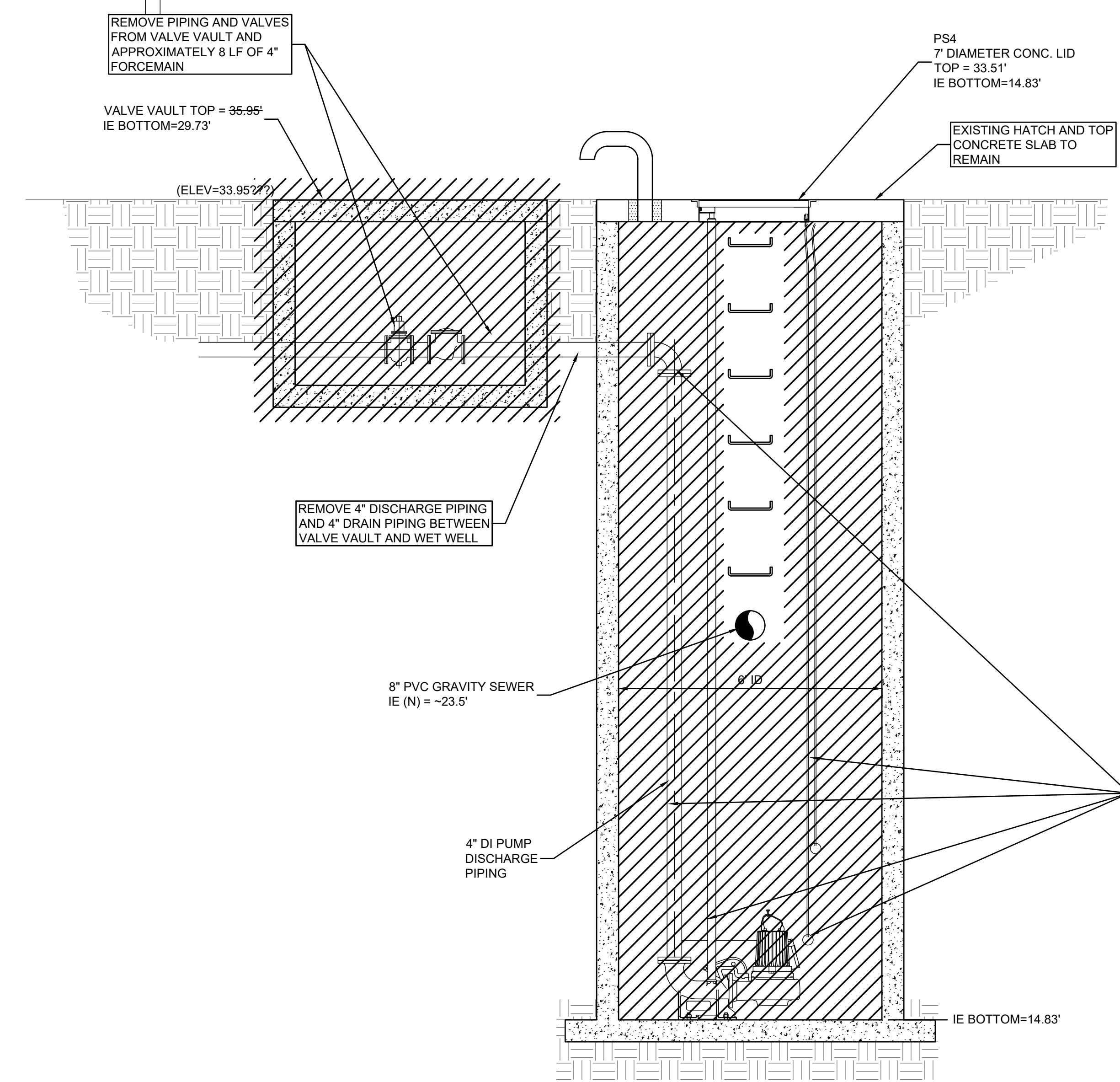
36 LF TO CAPTAIN BILL CREEK

LEGEND:
TREE SIZES ARE INCHES IN DIAMETER

+	SPOT ELEVATION
PLM	PALMETTO
EM	ELECTRIC METER
GI	GRATE INLET
IE	INVERT ELEVATION
LP	LAMP POST
NTS	NOT TO SCALE
NIF	NOW OR FORMERLY
R/W	RIGHT OF WAY
SN	SIGN
SSMH	SANITARY SEWER MANHOLE
WM	WATER METER
WV	WATER VALVE
PVC	POLYVINYL CHLORIDE
SAN	SANITARY SEWER LINE



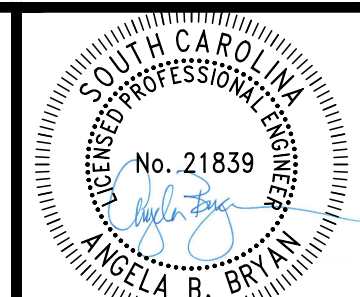
PLAN VIEW



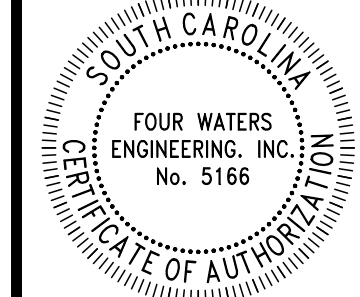
PROFILE

	DESCRIPTION
	DENOTES EQUIPMENT AND STRUCTURE TO BE REMOVED AND/OR DEMOLISHED

- DEMOLITION NOTES:
1. ALL NECESSARY TEMPORARY BYPASS OPERATIONS SHALL BE IN PLACE AND OPERATIONAL PRIOR TO INITIATING DEMOLITION ACTIVITIES.
 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.
 4. PRIOR TO DEMOLITION OR REMOVAL OF STRUCTURES USED FOR WASTEWATER, ALL WASTEWATER AND SOLIDS SHALL BE REMOVED FROM THE STRUCTURE AND PROPERLY DISPOSED.



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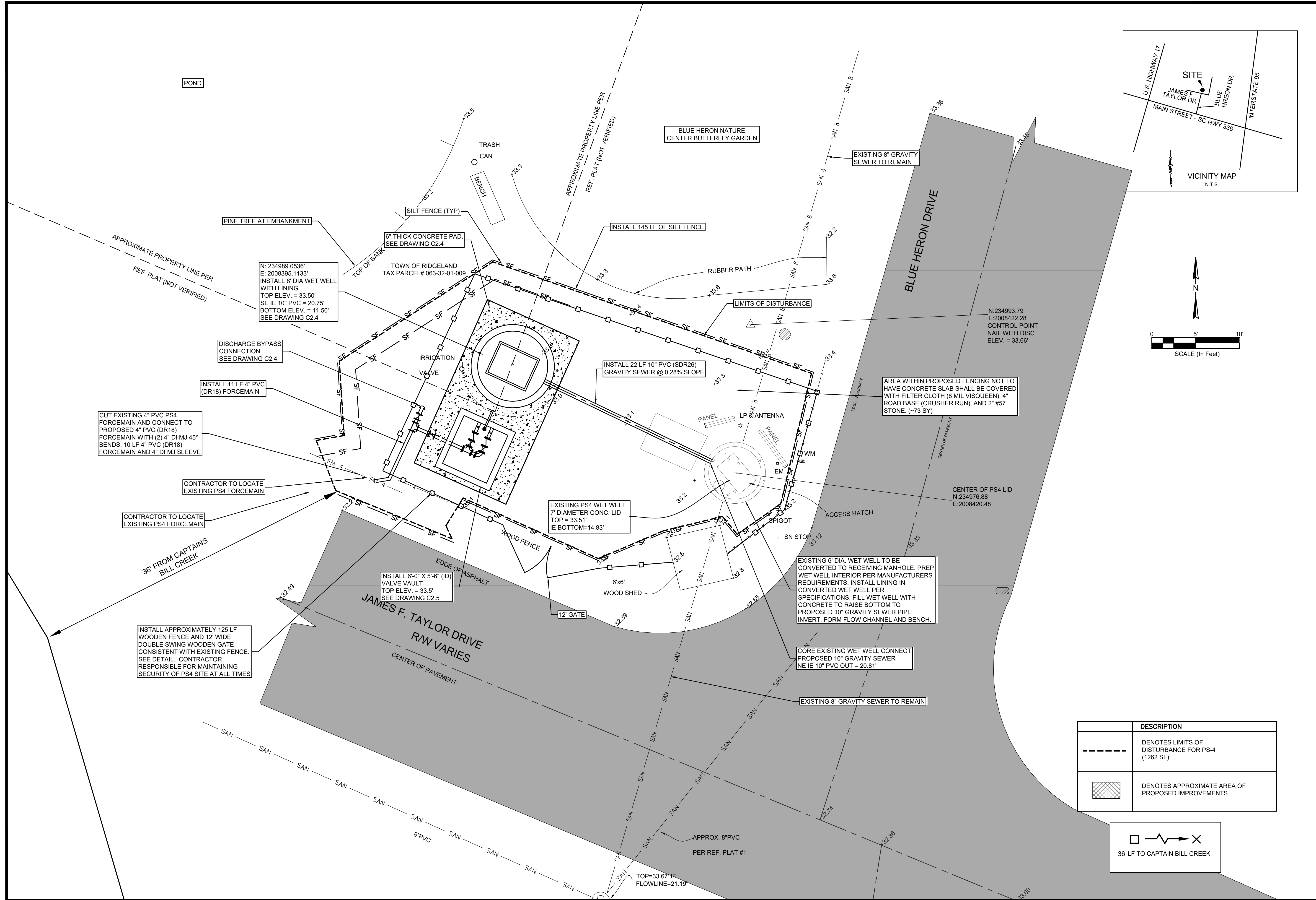
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-4 DEMOLITION PLAN DETAIL
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

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SOUTH CAROLINA
 REGISTERED PROFESSIONAL ENGINEER
 No. 5166
 FOUR WATERS
 ENGINEERING, INC.

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-4 PROPOSED IMPROVEMENTS PLAN
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

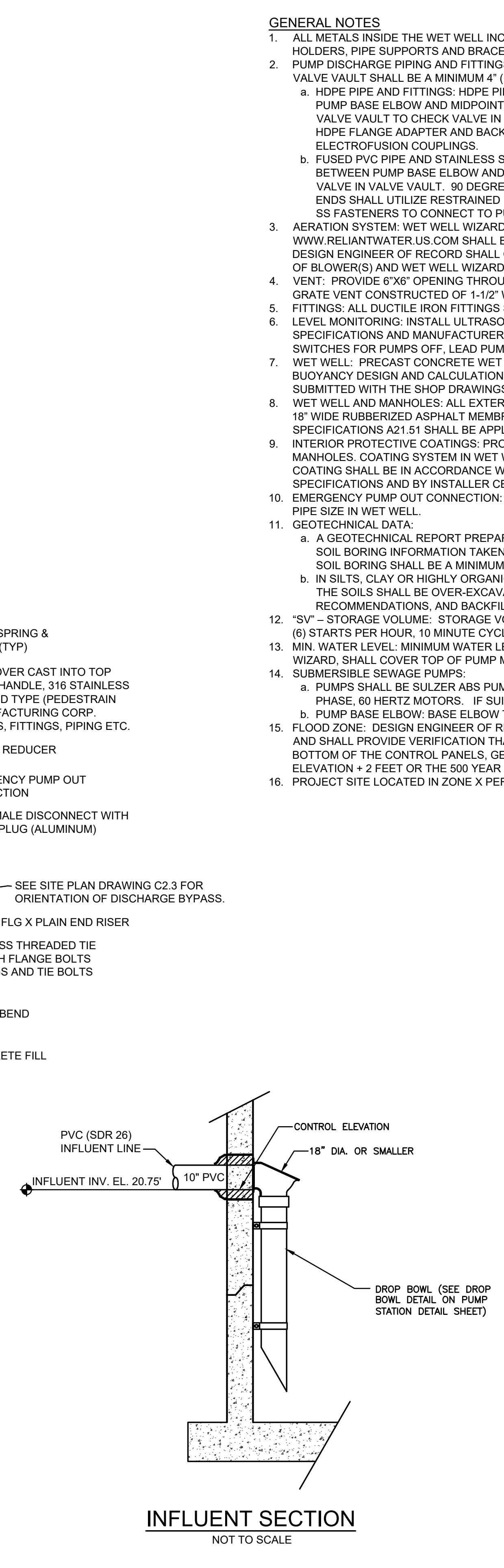
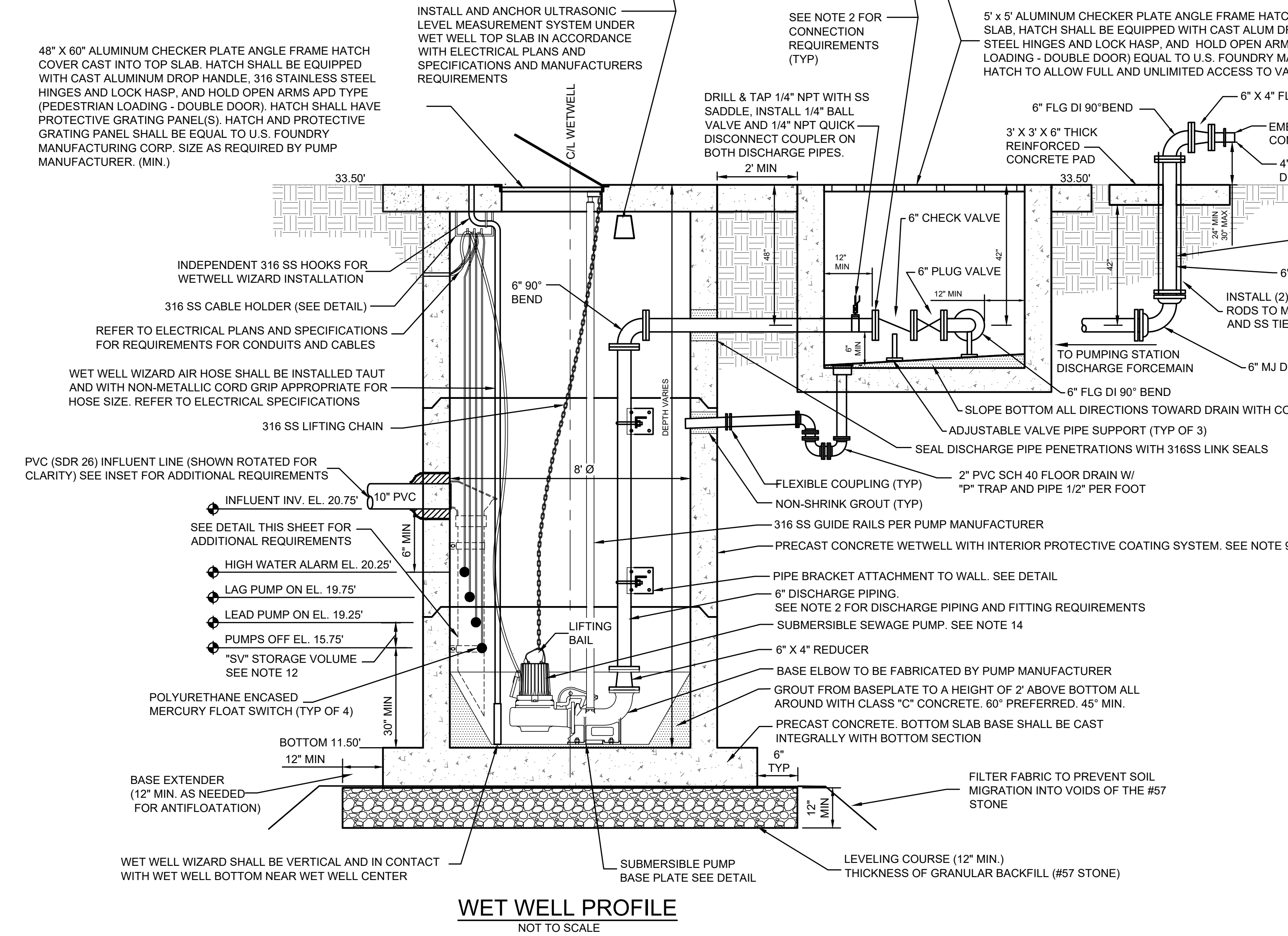
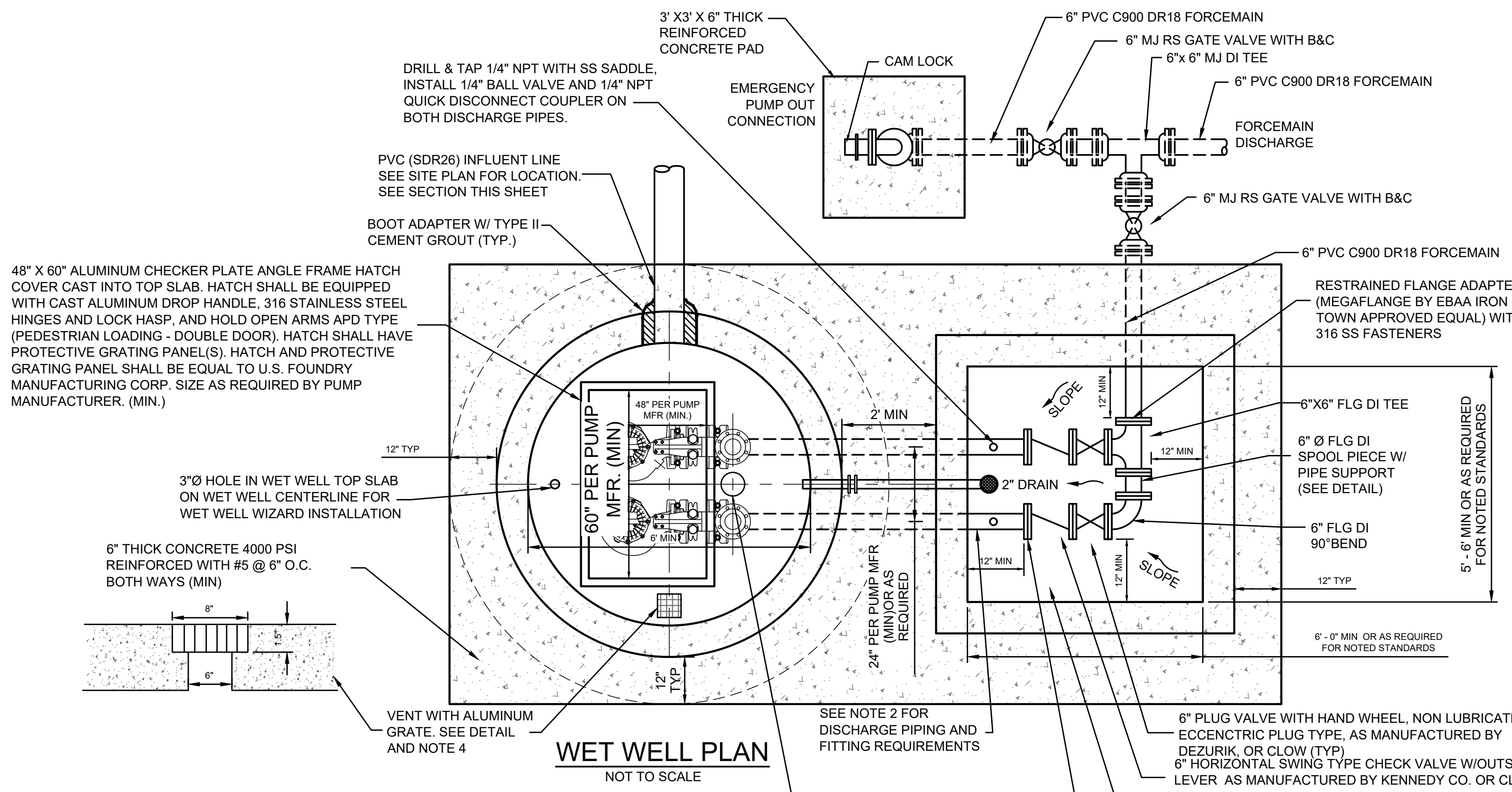
DESIGN	DRWN	DATE	ISSUE	DATE	ISSUE	BID
ABB	JMC	17-1007	FEB	2023		

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DRAWING NUMBER
C2.3

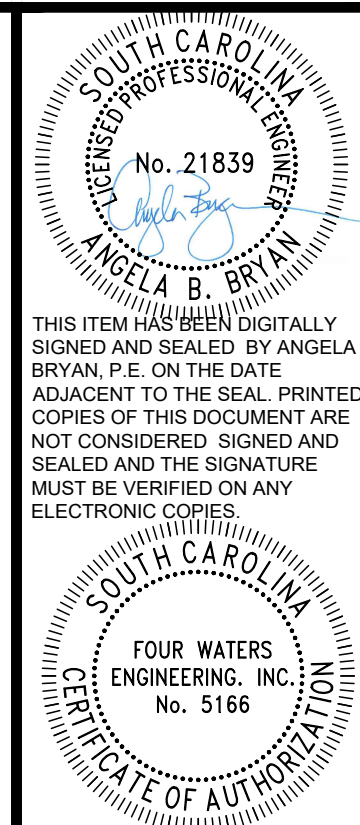
	DESCRIPTION
---	DENOTES LIMITS OF DISTURBANCE FOR PS-4 (1262 SF)
▨	DENOTES APPROXIMATE AREA OF PROPOSED IMPROVEMENTS

□ ———→ X
 36 LF TO CAPTAIN BILL CREEK



- ### GENERAL NOTES
- ALL METALS INSIDE THE WET WELL INCLUDING BUT NOT LIMITED TO GUIDE RAILS, LIFTING CHAINS, NUTS, BOLTS, CABLE HOLDERS, PIPE SUPPORTS AND BRACES, ETC., TO BE 316 STAINLESS STEEL, UNLESS SPECIFICALLY NOTED OTHERWISE.
 - PUMP DISCHARGE PIPING AND FITTINGS: DISCHARGE PIPING AND FITTINGS FROM PUMP ELBOW THROUGH TO CHECK VALVE IN VALVE VAULT SHALL BE A MINIMUM 4" (UNLESS APPROVED OTHERWISE BY TOWN) AND SHALL BE EITHER:
 - HDPE PIPE AND FITTINGS: HDPE PIPE AND FITTINGS SHALL BE DIPS DR11 AND SHALL BE FUSED AS ONE PIECE BETWEEN PUMP BASE ELBOW AND MIDPOINT BETWEEN WET WELL AND VALVE VAULT, AND FROM MIDPOINT BETWEEN WET WELL AND VALVE VAULT TO CHECK VALVE IN VALVE VAULT. ENDS OF PIPE AT PUMP BASE ELBOW AND CHECK VALVE SHALL UTILIZE HDPE FLANGE ADAPTER AND BACKING RING. HDPE PIPING BETWEEN WET WELL AND VALVE VAULT SHALL BE JOINED WITH ELECTROFUSION COUPLINGS.
 - FUSED PVC PIPE AND STAINLESS STEEL FITTINGS: PVC PIPE SHALL BE C900 DR18 AND SHALL BE FUSED AS ONE PIECE BETWEEN PUMP BASE ELBOW AND 90 DEGREE BEND IN WET WELL, AND FROM 90 DEGREE BEND IN WET WELL TO CHECK VALVE IN VALVE VAULT. 90 DEGREE BEND IN WET WELL SHALL BE FLANGED 316 STAINLESS STEEL, SCH 40. PVC PIPING ENDS SHALL UTILIZE RESTRAINED FLANGE ADAPTER (MEGAFLANGE BY EBAA IRON OR TOWN APPROVED EQUAL) WITH 316 SS FASTENERS TO CONNECT TO PUMP BASE ELBOW, 90 DEGREE BEND, AND CHECK VALVE.
 - AERATION SYSTEM: WET WELL WIZARD SYSTEM AS MANUFACTURED BY RELIANT WATER TECHNOLOGIES, NEW ORLEANS, LA. WWW.RELIANTWATER.US.COM SHALL BE INSTALLED IN WET WELL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. DESIGN ENGINEER OF RECORD SHALL COORDINATE WITH RELIANT WATER TECHNOLOGIES TO DETERMINE NUMBER AND SIZING OF BLOWERS(S) AND WET WELL WIZARDS NECESSARY FOR INSTALLATION.
 - VENT: PROVIDE 6"x6" OPENING THROUGH THE CONCRETE TOP OF THE WET WELL AND INSERT 8"x 8" X 1-1/2" THICK ALUMINUM GRATE VENT CONSTRUCTED OF 1-1/2" WIDE X 1/8" MATERIAL.
 - FITTINGS: ALL DUCTILE IRON FITTINGS SHALL BE EPOXY LINED. ALL BURIED FITTINGS SHALL BE RESTRAINED.
 - LEVEL MONITORING: INSTALL ULTRASONIC LEVEL MEASUREMENT SYSTEM IN ACCORDANCE WITH ELECTRICAL PLANS AND SPECIFICATIONS AND MANUFACTURER'S REQUIREMENTS. PROVIDE FOUR BACKUP POLYURETHANE ENCASED MERCURY FLOAT SWITCHES FOR PUMPS OFF, LEAD PUMP ON, LAG PUMP ON, AND HIGH WATER ALARM.
 - WET WELL: PRECAST CONCRETE WET WELL SHALL MEET ASTM C-478 STANDARD. CONCRETE, REINFORCING STEEL AND BUOYANCY DESIGN AND CALCULATIONS TO BE PREPARED BY A SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER AND SUBMITTED WITH THE SHOP DRAWINGS.
 - WET WELL AND MANHOLES: ALL EXTERIOR JOINTS OF PRECAST CONCRETE WET WELL AND MANHOLES SHALL BE SEALED WITH A 18" WIDE RUBBERIZED ASPHALT MEMBRANE TAPE. EXTERIOR COATING OF BITUMINOUS COATING AS SPECIFIED IN ANSI SPECIFICATIONS A21.51 SHALL BE APPLIED TO WET WELL AND MANHOLES.
 - INTERIOR PROTECTIVE COATINGS: PROTECTIVE COATING SHALL BE APPLIED TO THE INTERIOR OF WET WELLS AND RECEIVING MANHOLES. COATING SYSTEM IN WET WELL SHALL BE APPLIED TO VERTICAL WALLS AND TOP, AT A MINIMUM. PROTECTIVE COATING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND SHALL BE APPLIED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND BY INSTALLER CERTIFIED BY COATING SYSTEM MANUFACTURER.
 - EMERGENCY PUMP OUT CONNECTION: PIPE SIZE FOR EMERGENCY PUMP OUT CONNECTION SHALL MATCH PUMP DISCHARGE PIPE SIZE IN WET WELL.
 - GEOTECHNICAL DATA:
 - A GEOTECHNICAL REPORT PREPARED BY A SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER WITH PENETRATION SOIL BORING INFORMATION TAKEN AT THE WET WELL LOCATION SHALL BE SUBMITTED WITH THE PLAN REVIEW PACKAGE. SOIL BORING SHALL BE A MINIMUM OF 15 FEET DEEPER THAN THE PROPOSED WET WELL BOTTOM.
 - IN SILTS, CLAY OR HIGHLY ORGANIC SOILS (FINE-GRAINED SOILS INCLUDING SOIL GROUPS ML, CL, OL, MH, CH, OH AND PT) THE SOILS SHALL BE OVER-EXCAVATED AN ADDITIONAL 12", AT A MINIMUM, OR PER GEOTECHNICAL REPORT RECOMMENDATIONS, AND BACKFILLED WITH GRANULAR BACKFILL (57 STONE).
 - "SV" - STORAGE VOLUME: STORAGE VOLUME PER DESIGN ENGINEER OF RECORD AND SHALL BE DESIGNED FOR A MAXIMUM SIX (6) STARTS PER HOUR, 10 MINUTE CYCLE TIME.
 - MIN. WATER LEVEL: MINIMUM WATER LEVEL IN WET WELL SHALL BE 30" MINIMUM FOR PROPER OPERATION OF THE WET WELL WIZARD. SHALL COVER TOP OF PUMP MOTOR, OR SHALL BE GREATER IF RECOMMENDED BY PUMP MANUFACTURER.
 - SUBMERSIBLE SEWAGE PUMPS:
 - PUMPS SHALL BE SULZER ABS PUMPS SUITABLE FOR SUBMERSIBLE SEWER SERVICE. PUMPS SHALL BE 230/460 VOLTS, 3 PHASE, 60 HERTZ MOTORS. IF SUITABLE SULZER ABS PUMP SELECTION IS NOT AVAILABLE, FLYGT PUMPS MAY BE USED.
 - PUMP BASE ELBOW: BASE ELBOW TO BE FABRICATED BY PUMP MANUFACTURER.
 - FLOOD ZONE: DESIGN ENGINEER OF RECORD SHALL PROVIDE INFORMATION ON THE FLOOD ZONE OF THE PUMP STATION SITE AND SHALL PROVIDE VERIFICATION THAT THE TOP OF THE WET WELL IS ABOVE THE 100 YEAR FLOOD ELEVATION AND THAT THE BOTTOM OF THE CONTROL PANELS, GENERATOR RECEPTACLE AND GENERATOR SLAB AREA ALL ABOVE THE 100 YEAR FLOOD ELEVATION + 2 FEET OR THE 500 YEAR FLOOD ELEVATION, WHICHEVER IS GREATER.
 - PROJECT SITE LOCATED IN ZONE X PER FEMA FIRM MAP NO. 45053C03050 PANEL 305 OF 575 OCTOBER 18, 2019.

*PUMP STATION: TOWN OF RIDGELAND PS-4
 *LOCATION: JAMES F. TAYLOR DR. & BLUE HERON DR.
 DESIGN CONDITION: 350 GPM @ 92 FT TDH
 *PUMP MANUFACTURER: SULZER
 *MODEL#: XFP100G CB1 10 1/3" IMP
 SERIAL#:
 HORSEPOWER: 24.8 HP
 VOLTAGE:
 DATE INSTALLED:
 *ENGINEER: FOUR WATERS ENGINEERING, INC.
 CONTRACTOR:
 *INFORMATION REQUIRED ON CONSTRUCTION PLANS.
 REMAINING INFORMATION REQUIRES ASBUILT



REV	DATE	BY	CHK	DESCRIPTION
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-4 PROPOSED IMPROVEMENTS DETAIL
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	JMC	17-1007	FEB	2023	ISSUE	BID

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

DRAWING NUMBER
C2.4

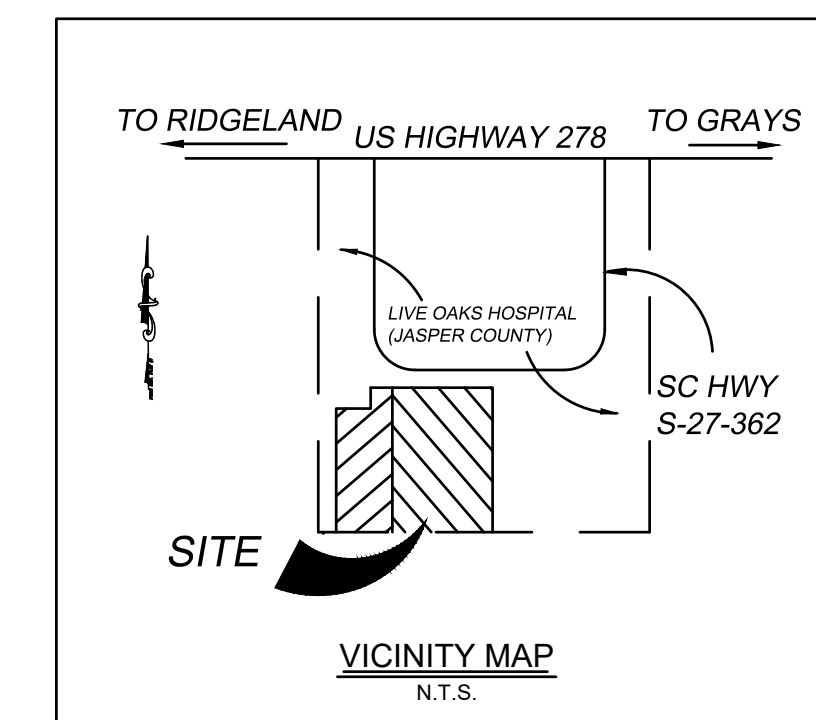
REFERENCE PLAT:

BOUNDARY, TREE & TOPOGRAPHIC SURVEY OF 2.00 ACRES, TRACT C, S.C. HIGHWAY 362, A SECTION OF JASPER COUNTY HOSPITAL, U.S. HIGHWAY 278, RIDGELAND, JASPER COUNTY, SC, BY: TERRY G. HATCHELL, S.C.R.L.S. NO. 11059, SURVEYING CONSULTANTS, RECORDED: P.B. 20 PAGE 281.

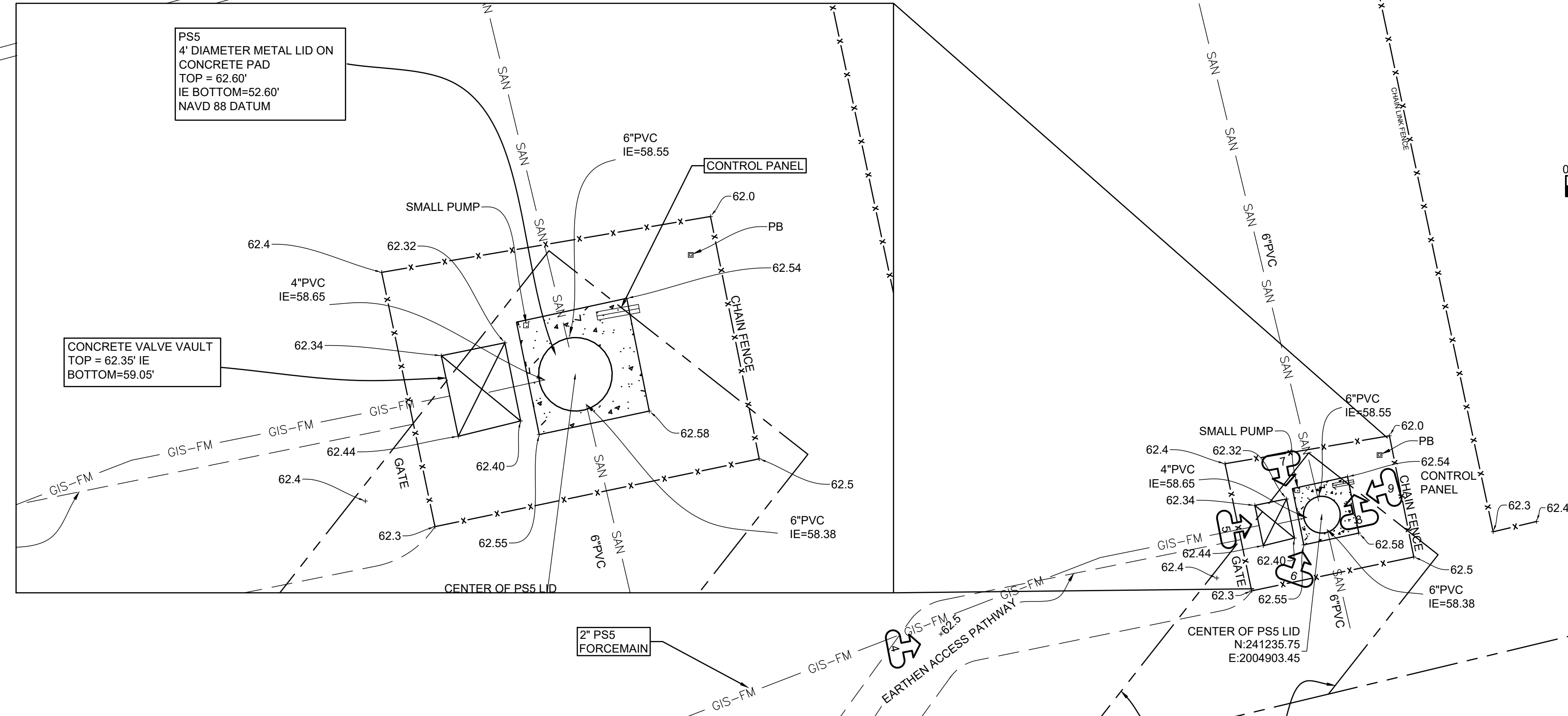
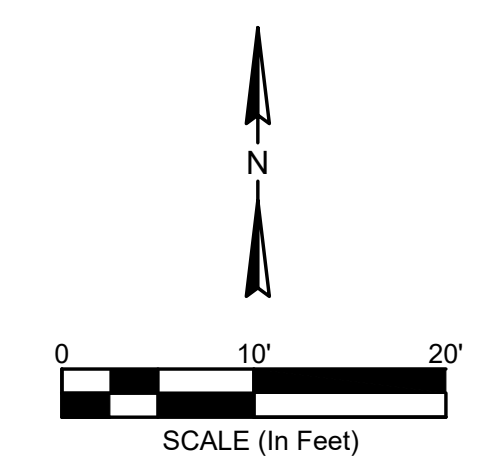
SPECIAL NOTE:

*HORIZONTAL DATUM IS NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES
*VERTICAL DATUM IN NAVD 88
*SEE NOTE #7 BELOW

PHOTO LEGEND:
DENOTES PHOTO LOCATION AND DIRECTION



SOUTH CAROLINA 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 AUTHORITY
FOUR WATERS ENGINEERING, INC.
No. 5166



COUNTY ROAD S-27-362
50' R/W PER REF. PLAT

- NOTES**
- THEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO OBVIOUS, APPARENT OR VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.
 - UNDERGROUND UTILITIES NOT LOCATED EXCEPT AS SHOWN AND ARE APPROXIMATE. SURVEYING CONSULTANTS DOES NOT CERTIFY TO THE EXACT LOCATION OF ANY UNDERGROUND UTILITY.
 - NO SUBSURFACE OR ENVIRONMENTAL INVESTIGATION OR WETLAND SURVEYS WERE PERFORMED FOR THIS PLAT. THEREFORE THIS PLAT DOES NOT REFLECT THE EXISTENCE OR NONEXISTENCE OF WETLANDS, CONTAMINATION, OR OTHER CONDITIONS WHICH MAY AFFECT THIS PROPERTY.
 - SURVEYING CONSULTANTS CERTIFIES TO THE BOUNDARY, TOPOGRAPHIC AND ASBUILT INFORMATION PROVIDED HEREON AS OF THE DATE OF SURVEY. IF THIS DOCUMENT IS TO BE PROVIDED AS A BASE MAP FOR OTHERS, INFORMATION ADDED AFTER THE DATE OF THIS SURVEY IS NOT THE RESPONSIBILITY OF SURVEYING CONSULTANTS.
 - THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE, THEREFORE THERE MAY BE OTHER EASEMENTS, RIGHT-OF-WAY, SETBACK LINES, AGREEMENTS, RESERVATIONS, RESTRICTIONS, OR OTHER SIMILAR MATTERS OF PUBLIC RECORD, NOT DEPICTED ON THIS SURVEY.
 - THE BOUNDARY AND EASEMENT LINES SHOWN ARE BASED ON MINIMAL MONUMENTATION FOUND AND THEIR RELATIONSHIP TO THE REFERENCE PLAT AND SHOULD BE CONSIDERED APPROXIMATE. SURVEYING CONSULTANTS DOES NOT CERTIFY TO THE BOUNDARY AND EASEMENT LINES SHOWN.
 - THE HORIZONTAL AND VERTICAL DATUM SHOWN WERE ESTABLISHED FROM THE SC-VRS SURVEY NETWORK.

CONTROL POINT
CORREBAR FOUND
N:241170.20
E:200472.30

SC DEPT. OF MENTAL
RETARDATION
TAX PARCEL# 060-00-06-014

SC DEPT. OF HEALTH
TAX PARCEL# 060-00-06-015

LEGEND:

+ 63.5	SPOT ELEVATION
PVC	POLYVINYL CHLORIDE PIPE
EM	ELECTRIC METER
IE	INVERT ELEVATION
PP	POWER POLE
NTS	NOT TO SCALE
NIF	NOW OR FORMERLY
R/W	RIGHT OF WAY
SSMH	SANITARY SEWER MANHOLE
WM	WATER METER
FFE	FINISH FLOOR ELEVATION
SAN	SANITARY SEWER LINE

GIS NOTE
UTILITIES LABELED "GIS" DENOTE THOSE OBTAINED FROM THE TOWN OF RIDGELAND GIS DATA, WHICH HAVE BEEN ADDED TO SUPPLEMENT SURVEY DATA. SUCH UTILITIES ARE LABELED "GIS" (TYP)

PREPARED FOR: FOUR WATERS
ENGINEERING & TOWN OF RIDGELAND

ADDRESS:
(OFF OF) GRAYS HIGHWAY (S-27-362)
PARENT TAX PARCEL I.D. NO. 062-00-06-215



ASBUILT & TOPOGRAPHIC
EXHIBIT OF
PUMP STATION #5
OFF OF
GRAYS HIGHWAY (S-27-362)
A SECTION OF
TOWN OF RIDGELAND
JASPER COUNTY, SOUTH CAROLINA
DATE: 07/29/2021 JOB NO: SC210030-PS5

SURVEYING CONSULTANTS
17 Sherrington Drive, Suite C, Bluffton, SC 29910
SC Telephone: (843) 815-3304 FAX: (843) 815-3305
GA Telephone: (912) 828-2775
www.SurveyingConsultants.com
Email: SC@SurveyingConsultants.com

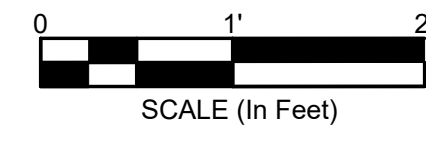
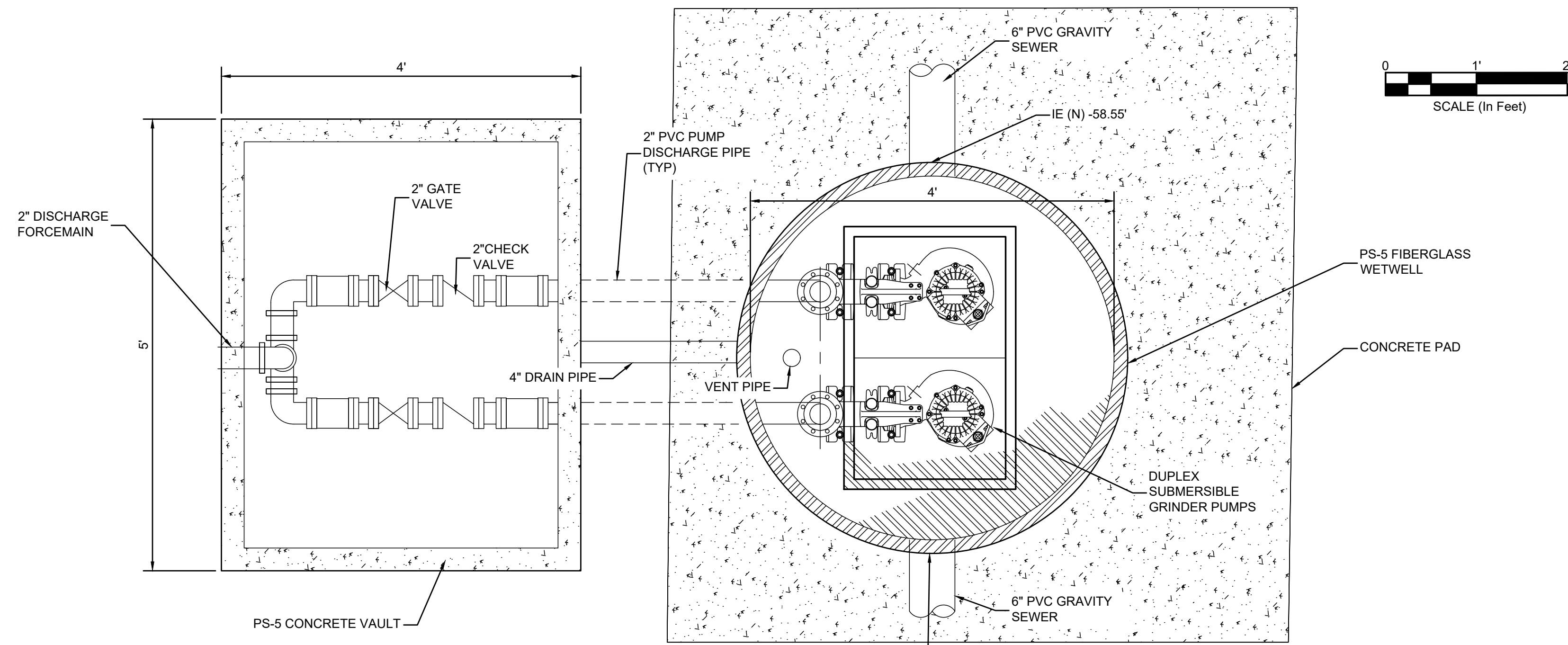
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-5 EXISTING CONDITIONS AND KEY
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

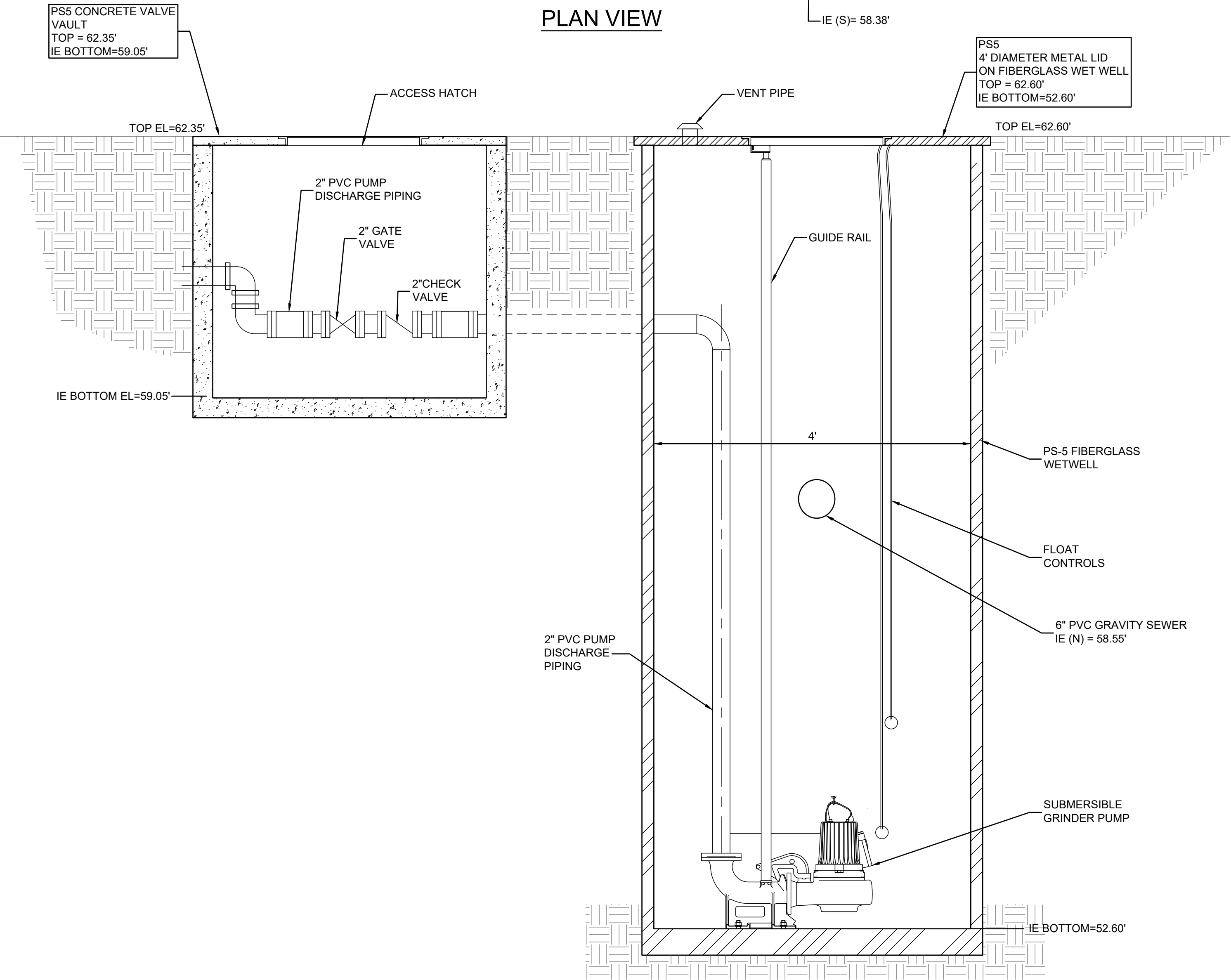
DESIGN ABB	DRAWN JMC	ISSUE DATE	ISSUE	BID
ABB	JMC	17-1007	FEB 2023	

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

DRAWING NUMBER
G3.1



PLAN VIEW



PROFILE



PHOTO-1
LOOKING INTO WET WELL



PHOTO-2
LOOKING INTO WET WELL



PHOTO-3
LOOKING INTO VALVE VAULT

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

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SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. 5166
FOUR WATERS
ENGINEERING, INC.

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-5 EXISTING CONDITIONS DETAIL
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007	FEB	BID
ABB	JMC			2023	
JOB #	ISSUE	DATE	ISSUE	DATE	ISSUE

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844-414-2400 S.C. COA # 5166 WWW.FOURWATERS.COM

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G3.2



PHOTO-4
LOOKING EAST AT PS-5 FROM DRIVEWAY



PHOTO-5
LOOKING EAST AT PS-5

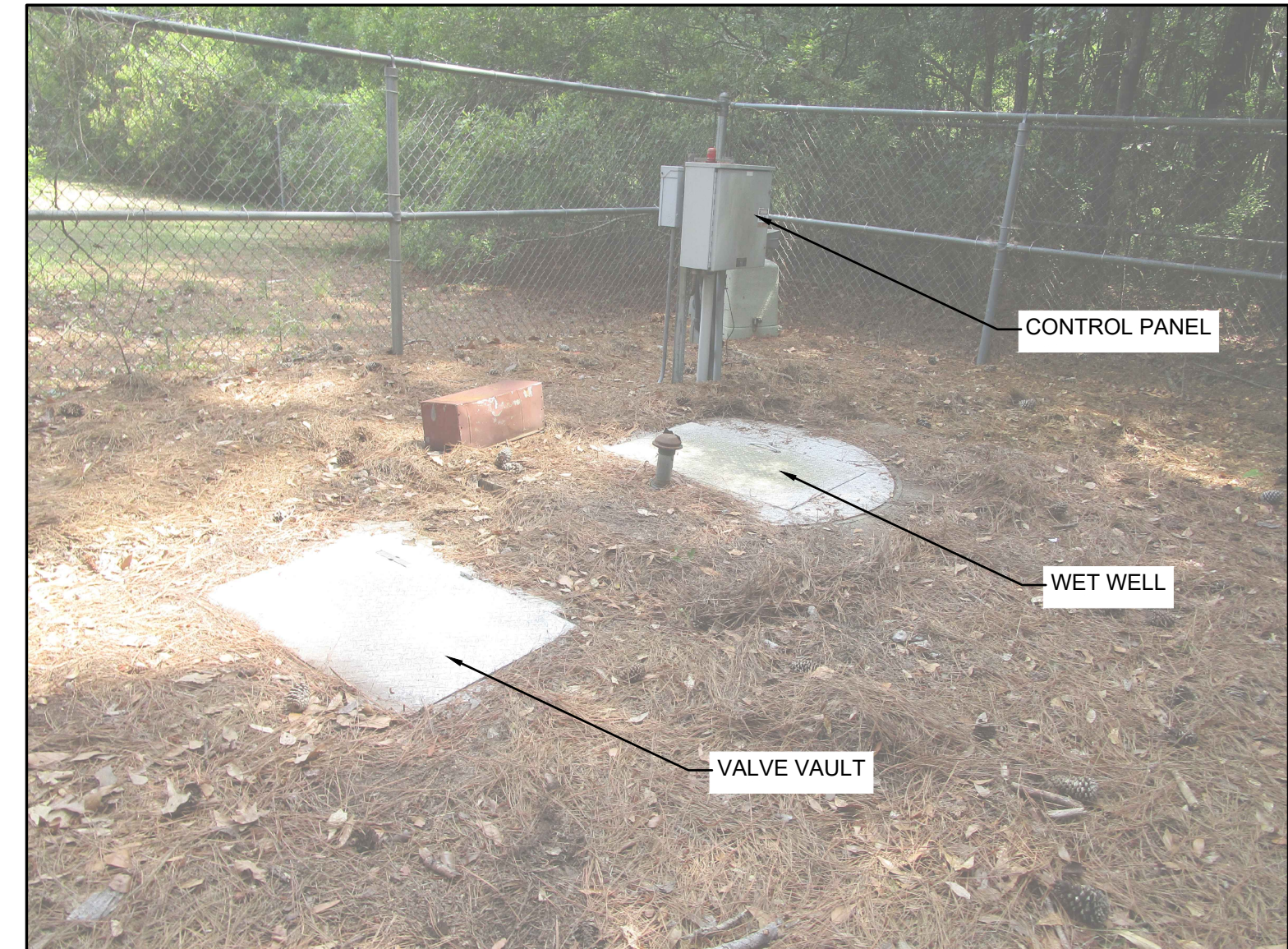


PHOTO-6
LOOKING NORTHEAST AT PUMP STATION



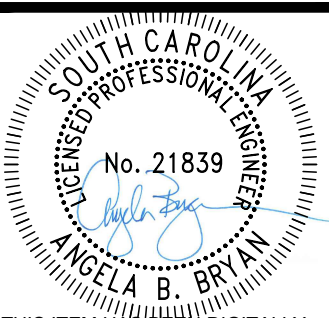
PHOTO-7
LOOKING SOUTH AT WET WELL AND VALVE VAULT



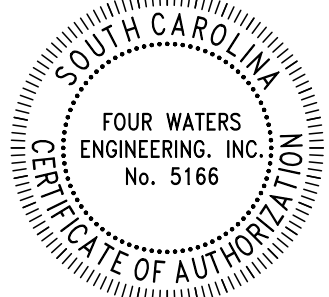
PHOTO-8
LOOKING NORTHWEST AT CONTROL PANEL



PHOTO-9
LOOKING WEST AT WET WELL



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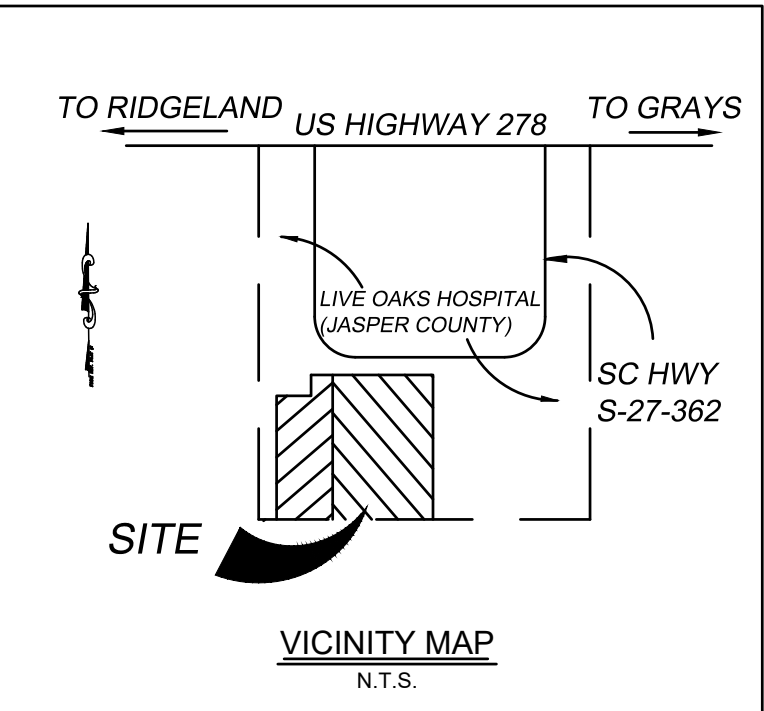
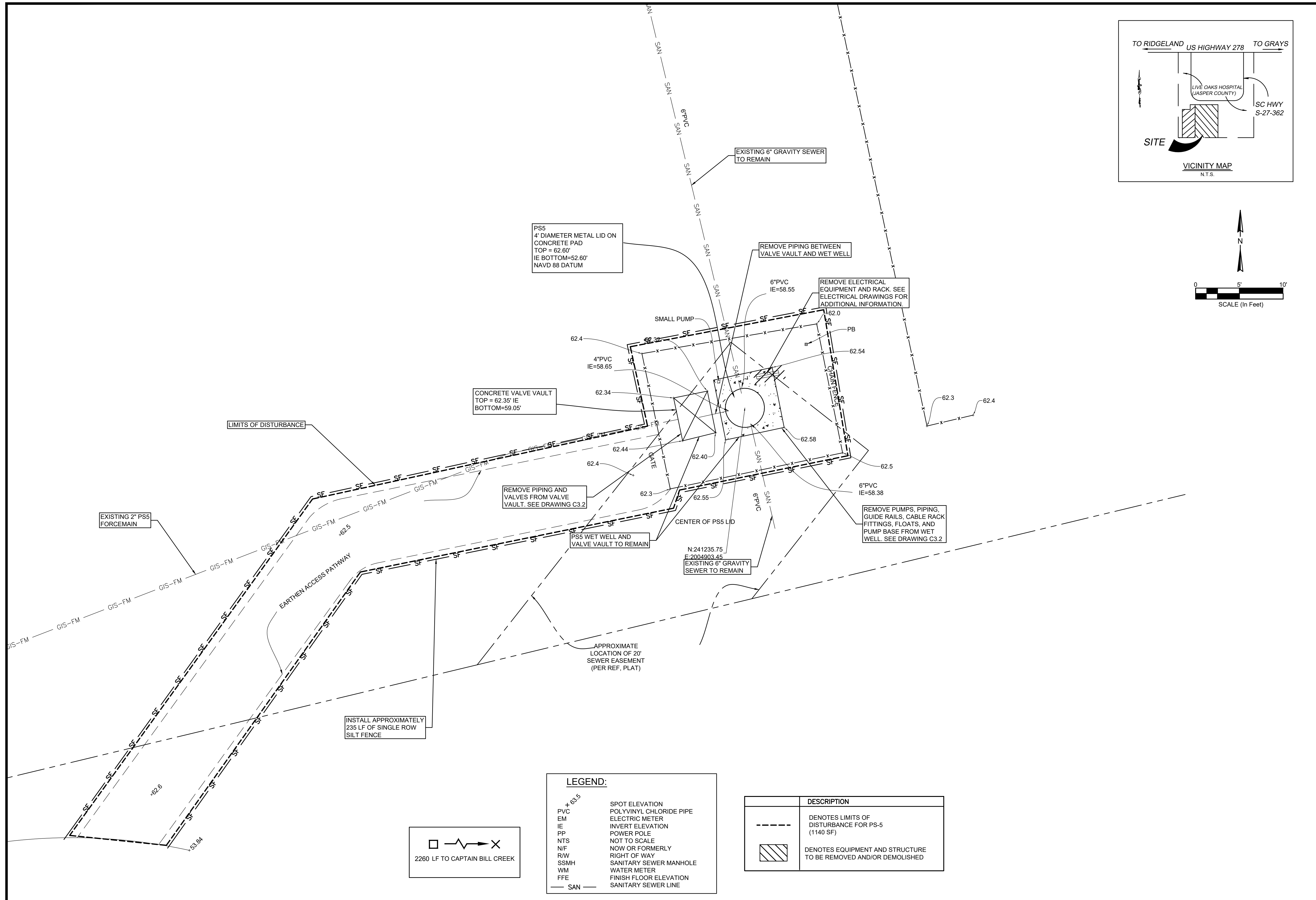
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-5 EXISTING CONDITIONS SITE PHOTOS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	JOB #	ISSUE DATE	ISSUE	BID
		17-1007	FEB 2023		

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REGISTERED PROFESSIONAL ENGINEER
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 SOUTH CAROLINA
 FOUR WATERS ENGINEERING, INC.
 No. 5166
 CERTIFICATE OF AUTHORITY

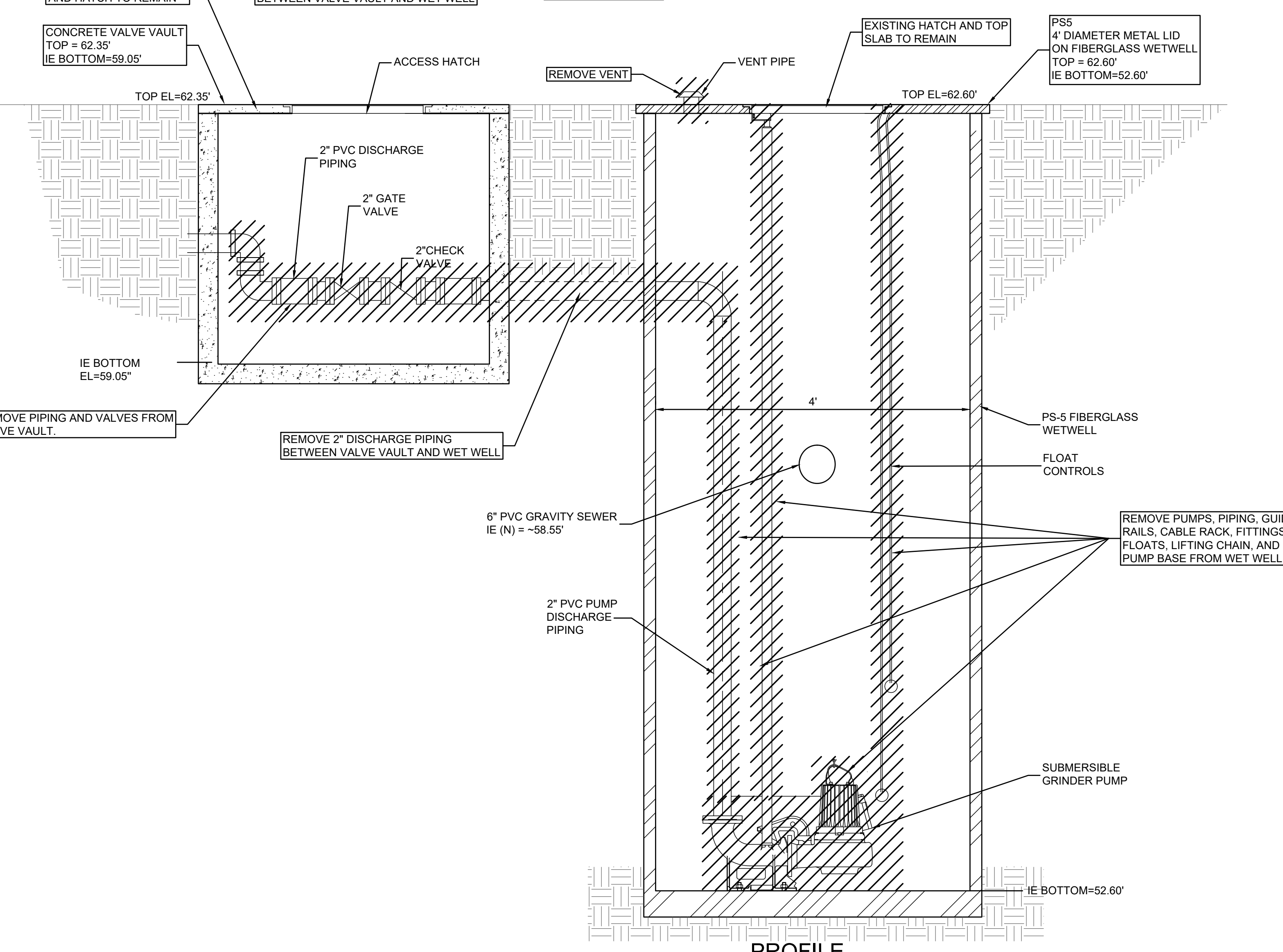
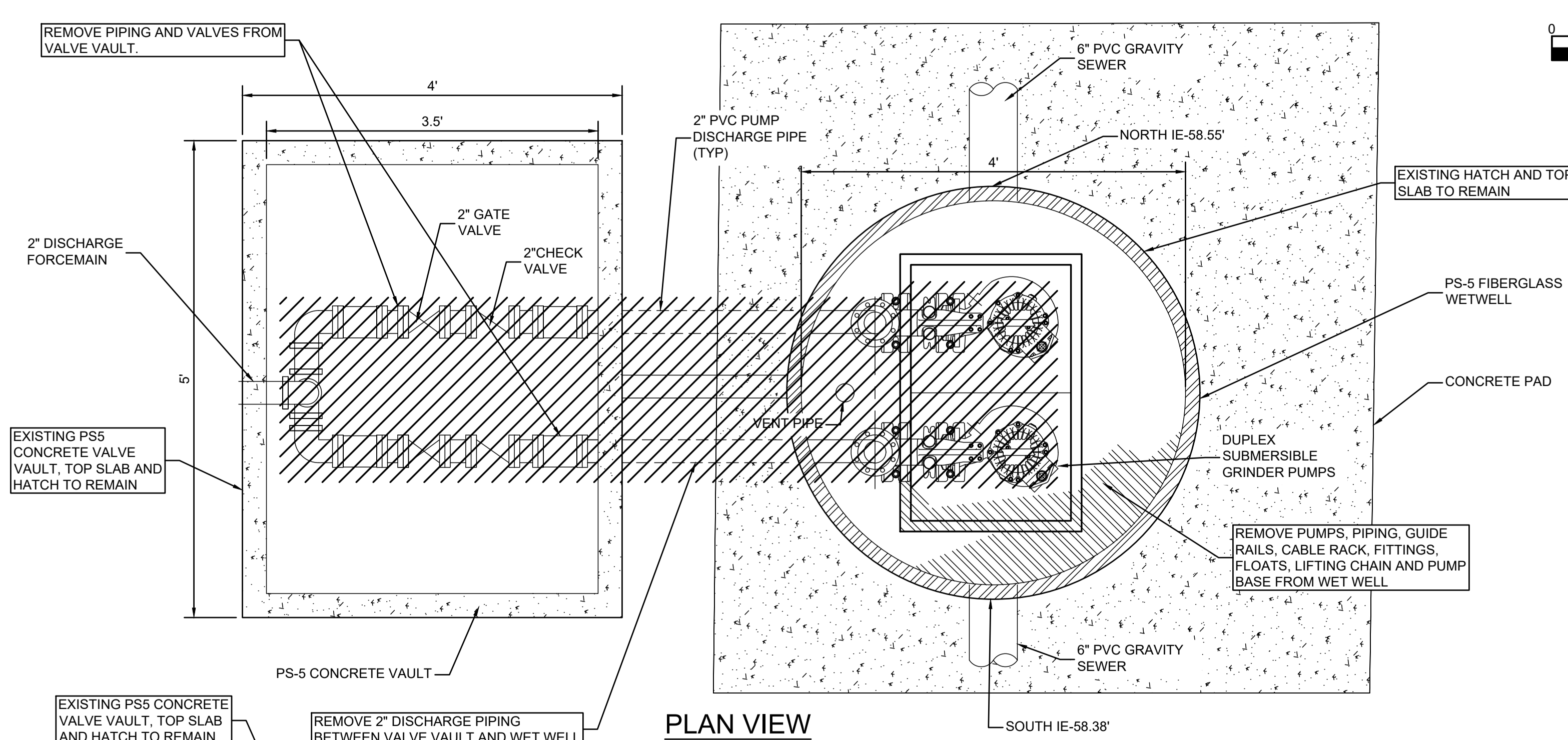
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-5 DEMOLITION PLAN SITE PLAN
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB.	DRAWN JMC.	JOB #	ISSUE DATE	ISSUE	BID
		17-1007	FEB 2023		

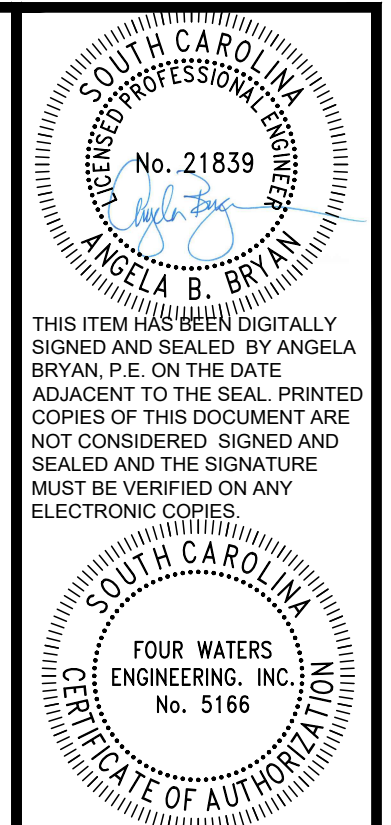
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 844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
C3.1



DESCRIPTION	
	DENOTES EQUIPMENT AND STRUCTURE TO BE REMOVED AND/OR DEMOLISHED

- DEMOLITION NOTES:**
1. ALL NECESSARY TEMPORARY BYPASS OPERATIONS SHALL BE IN PLACE AND OPERATIONAL PRIOR TO INITIATING DEMOLITION ACTIVITIES.
 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.
 4. PRIOR TO DEMOLITION OR REMOVAL OF STRUCTURES USED FOR WASTEWATER, ALL WASTEWATER AND SOLIDS SHALL BE REMOVED FROM THE STRUCTURE AND PROPERLY DISPOSED.



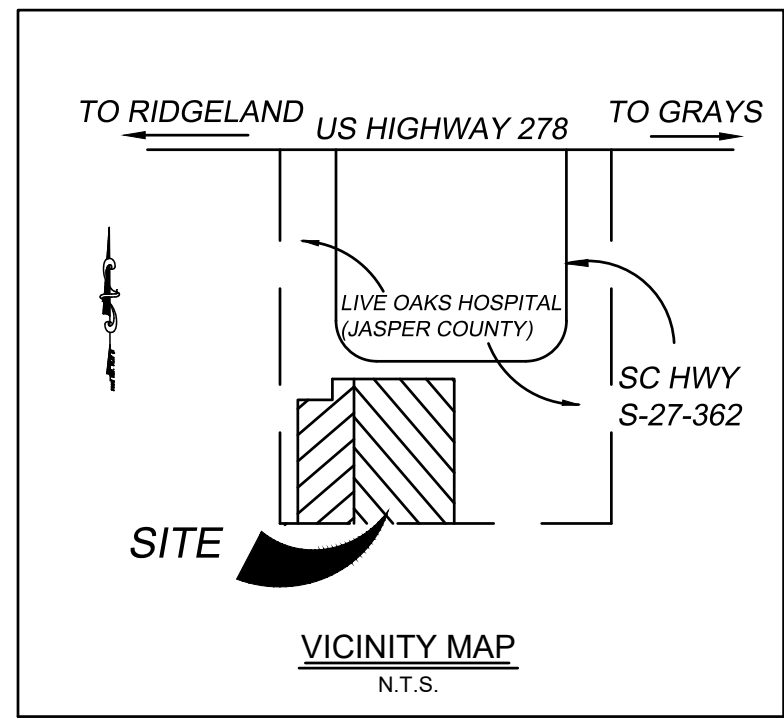
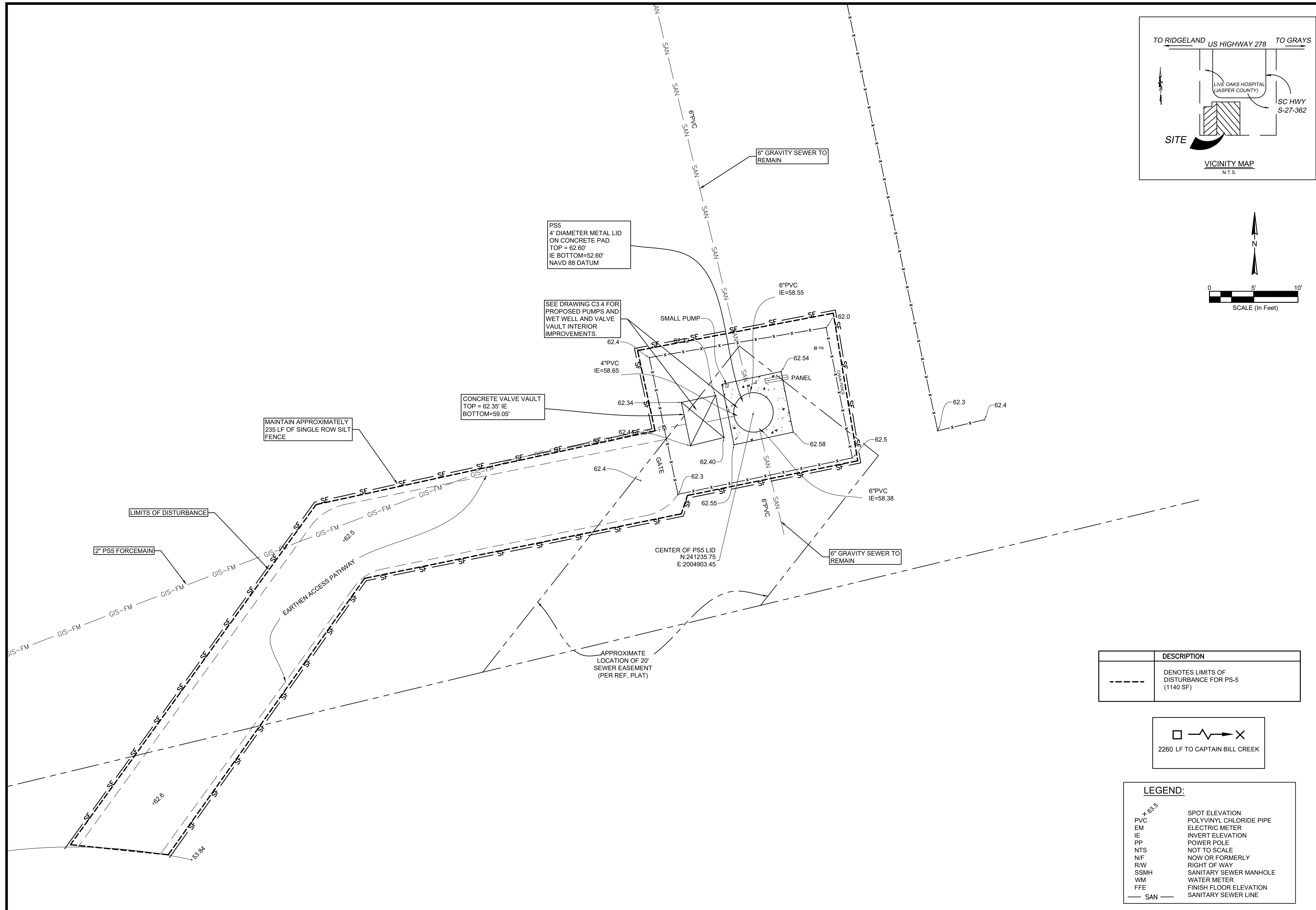
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-5 DEMOLITION PLAN DETAIL
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	DATE	ISSUE	ISSUE	ISSUE
ABB	JMC	17-1007	FEB 2023		
JOB #					
ISSUE DATE					
ISSUE					

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844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
C3.2



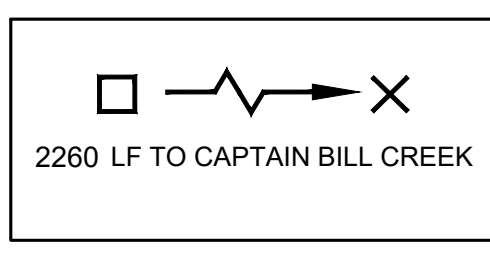
SOUTH CAROLINA
 REGISTERED PROFESSIONAL ENGINEER
 No. 21839
 ANGELA B. BRYAN
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SOUTH CAROLINA
 REGISTERED PROFESSIONAL ENGINEER
 No. 5166
 FOUR WATERS
 ENGINEERING, INC.
 STATE OF SOUTH CAROLINA

REV	NO	DATE	DESCRIPTION
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-5 PROPOSED IMPROVEMENTS PLAN
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	DESCRIPTION
ABB	JMC	DENOTES LIMITS OF DISTURBANCE FOR PS-5 (1140 SF)



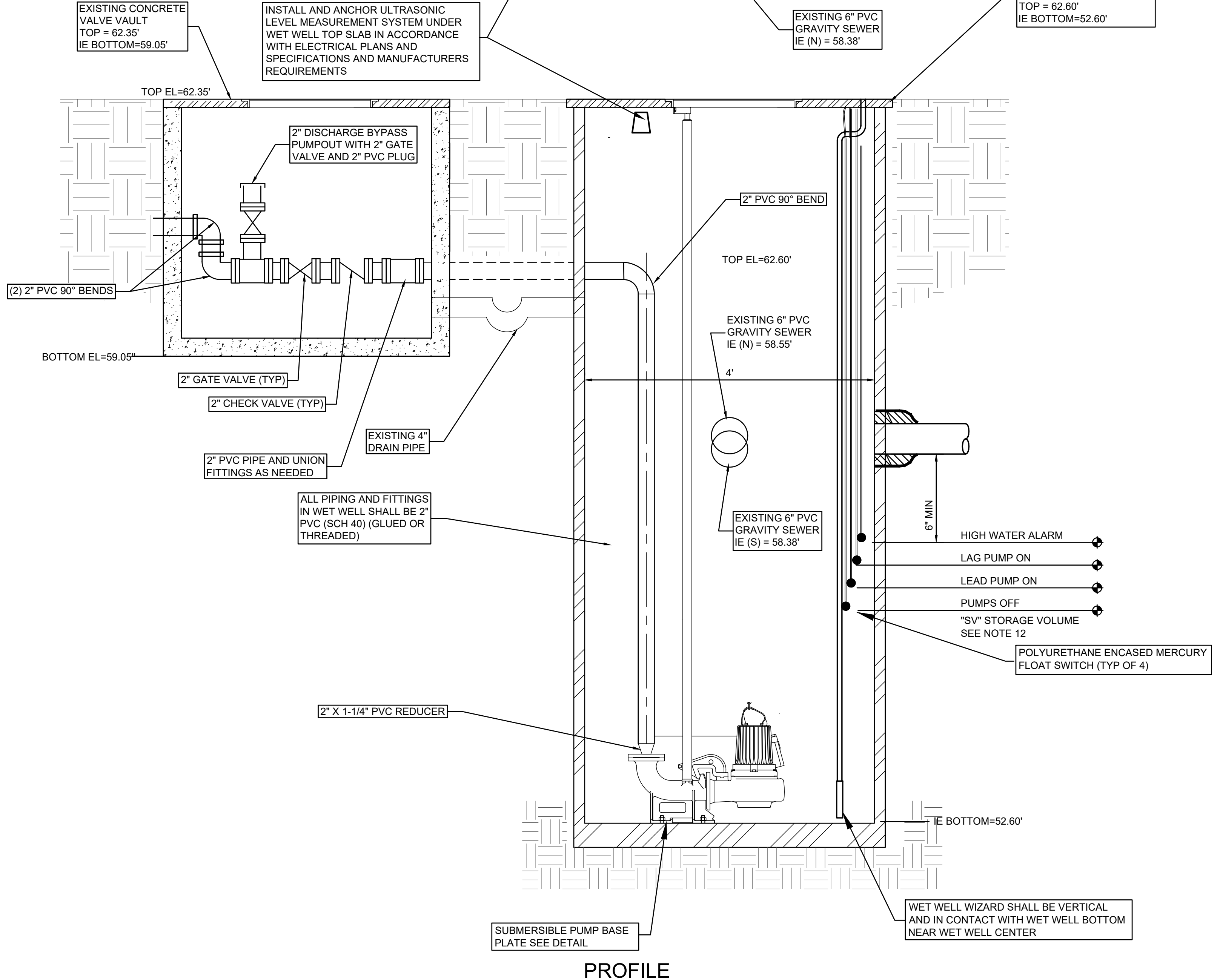
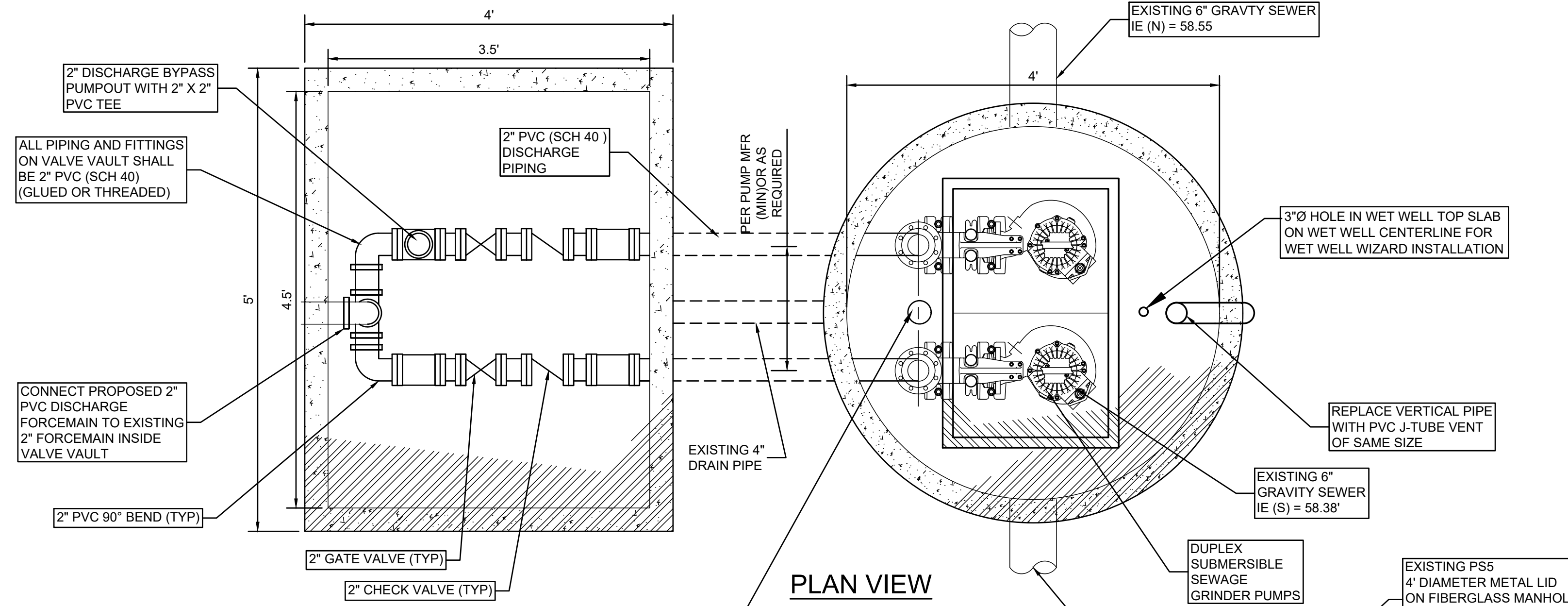
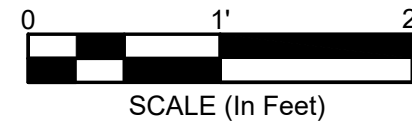
LEGEND:

+ 62.5	SPOT ELEVATION
PVC	POLYVINYL CHLORIDE PIPE
EM	ELECTRIC METER
IE	INVERT ELEVATION
PP	POWER POLE
NTS	NOT TO SCALE
N/F	NOW OR FORMERLY
R/W	RIGHT OF WAY
SSMH	SANITARY SEWER MANHOLE
WM	WATER METER
FFE	FINISH FLOOR ELEVATION
SAN	SANITARY SEWER LINE

DESIGN	DRAWN	DATE	ISSUE	ISSUE	ISSUE
ABB	JMC	17-1007	FEB 2023		

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

DRAWING NUMBER
C3.3

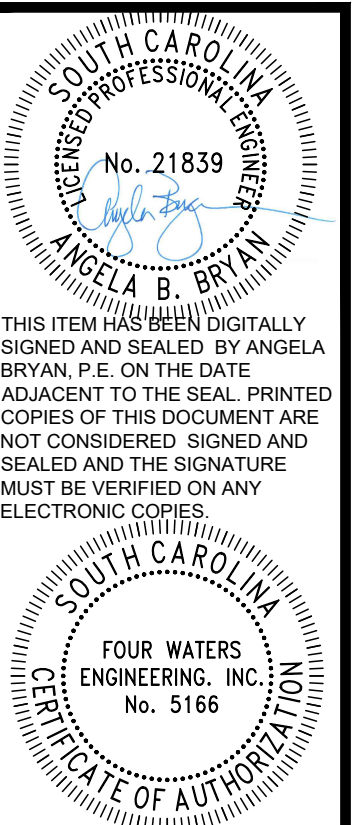


GENERAL NOTES

- ALL METALS INSIDE THE WET WELL INCLUDING BUT NOT LIMITED TO GUIDE RAILS, LIFTING CHAINS, NUTS, BOLTS, CABLE HOLDERS, PIPE SUPPORTS AND BRACES, ETC., TO BE 316 STAINLESS STEEL, UNLESS SPECIFICALLY NOTED OTHERWISE.
- AERATION SYSTEM: WET WELL WIZARD SYSTEM AS MANUFACTURED BY RELIANT WATER TECHNOLOGIES, NEW ORLEANS, LA. WWW.RELIANTWATER.US.COM SHALL BE INSTALLED IN WET WELL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. DESIGN ENGINEER OF RECORD SHALL COORDINATE WITH RELIANT WATER TECHNOLOGIES TO DETERMINE NUMBER AND SIZING OF BLOWER(S) AND WET WELL WIZARDS NECESSARY FOR INSTALLATION.
- LEVEL MONITORING: INSTALL ULTRASONIC LEVEL MEASUREMENT SYSTEM IN ACCORDANCE WITH ELECTRICAL PLANS AND SPECIFICATIONS AND MANUFACTURER'S REQUIREMENTS. PROVIDE FOUR BACKUP POLYURETHANE ENCASED MERCURY FLOAT SWITCHES FOR PUMPS OFF, LEAD PUMP ON, LAG PUMP ON, AND HIGH WATER ALARM.
- EMERGENCY PUMP OUT CONNECTION: PIPE SIZE FOR EMERGENCY PUMP OUT CONNECTION SHALL MATCH PUMP DISCHARGE PIPE SIZE IN WET WELL.
- "SV" - STORAGE VOLUME: STORAGE VOLUME PER DESIGN ENGINEER OF RECORD AND SHALL BE DESIGNED FOR A MAXIMUM SIX (6) STARTS PER HOUR, 10 MINUTE CYCLE TIME.
- MIN. WATER LEVEL: MINIMUM WATER LEVEL IN WET WELL SHALL BE 30" MINIMUM FOR PROPER OPERATION OF THE WET WELL WIZARD. SHALL COVER TOP OF PUMP MOTOR, OR SHALL BE GREATER IF RECOMMENDED BY PUMP MANUFACTURER.
- SUBMERSIBLE SEWAGE PUMPS:
 - PUMPS SHALL BE SULZER ABS PUMPS SUITABLE FOR SUBMERSIBLE SEWER SERVICE. PUMPS SHALL BE 230/460 VOLTS, 3 PHASE, 60 HERTZ MOTORS. IF SUITABLE SULZER ABS PUMP SELECTION IS NOT AVAILABLE, FLYGT PUMPS MAY BE USED.
 - PUMP BASE ELBOW: BASE ELBOW TO BE FABRICATED BY PUMP MANUFACTURER. BASE ELBOW SHALL BE 4"x4" UNLESS APPROVED OTHERWISE BY TOWN.
- FLOOD ZONE: DESIGN ENGINEER OF RECORD SHALL PROVIDE INFORMATION ON THE FLOOD ZONE OF THE PUMP STATION SITE AND SHALL PROVIDE VERIFICATION THAT THE TOP OF THE WET WELL IS ABOVE THE 100 YEAR FLOOD ELEVATION AND THAT THE BOTTOM OF THE CONTROL PANELS, GENERATOR RECEPTACLE AND GENERATOR SLAB AREA ALL ABOVE THE 100 YEAR FLOOD ELEVATION + 2 FEET OR THE 500 YEAR FLOOD ELEVATION, WHICHEVER IS GREATER.

*PUMP STATION:	Town of Ridgeland PS-5
*LOCATION:	Health Complex off Grays Highway (Hwy 278)
*PUMP MANUFACTURER:	Sulzer
*MODEL#:	PIRANHA S20/2D 5-2/3 Inch Imp
SERIAL#:	
HORSEPOWER:	2.41 Hp
VOLTAGE:	208 v
DATE INSTALLED:	
*ENGINEER:	Four Waters Engineering, Inc.
CONTRACTOR:	

*INFORMATION REQUIRED ON CONSTRUCTION PLANS. REMAINING INFORMATION REQUIRES ASBUILT



REV	DATE	BY	CHK	DESCRIPTION
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-5 PROPOSED IMPROVEMENTS DETAIL
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	JMC	17-1007	FEB 2023	BID
JOB #	ISSUE	DATE	ISSUE	ISSUE	

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844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
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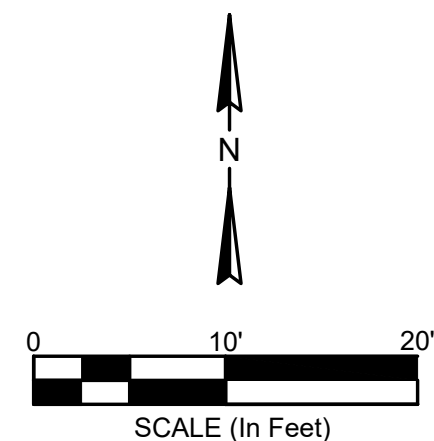
SPECIAL NOTE:
 *HORIZONTAL DATUM IS NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES
 *VERTICAL DATUM IN NAVD 88
 *SEE NOTE #7 BELOW

- NOTES:**
- I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO OBVIOUS, APPARENT OR VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.
 - UNDERGROUND UTILITIES NOT LOCATED EXCEPT AS SHOWN AND ARE APPROXIMATE. SURVEYING CONSULTANTS DOES NOT CERTIFY TO THE EXACT LOCATION OF ANY UNDERGROUND UTILITY.
 - NO SUBSURFACE OR ENVIRONMENTAL INVESTIGATION OR WETLAND SURVEYS WERE PERFORMED FOR THIS PLAT. THEREFORE THIS PLAT DOES NOT REFLECT THE EXISTENCE OR NONEXISTENCE OF WETLANDS, CONTAMINATION, OR OTHER CONDITIONS WHICH MAY AFFECT THIS PROPERTY.
 - SURVEYING CONSULTANTS CERTIFIES TO THE BOUNDARY, TOPOGRAPHIC AND ASBUILT INFORMATION PROVIDED HEREON AS OF THE DATE OF SURVEY. IF THIS DOCUMENT IS TO BE PROVIDED AS A BASE MAP FOR OTHERS, INFORMATION ADDED AFTER THE DATE OF THIS SURVEY IS NOT THE RESPONSIBILITY OF SURVEYING CONSULTANTS.
 - THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE. THEREFORE THERE MAY BE OTHER EASEMENTS, RIGHT-OF-WAY, SETBACK LINES, AGREEMENTS, RESERVATIONS, RESTRICTIONS, OR OTHER SIMILAR MATTERS OF PUBLIC RECORD, NOT DEPICTED ON THIS SURVEY.
 - NO BOUNDARY LINES AND/OR ROAD RIGHT-OF-WAY LINES WERE NOT ESTABLISHED AS A PART OF THIS SURVEY.
 - THE HORIZONTAL DATUM SHOWN IS BASED ON NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES. THE VERTICAL DATUM SHOWN IS BASED ON NAVD 88 DATUM. THE HORIZONTAL AND VERTICAL DATUM SHOWN WERE ESTABLISHED FROM THE SC-VRS SURVEY NETWORK.

PREPARED FOR: FOUR WATERS
 ENGINEERING & TOWN OF RIDGELAND

ADDRESS: #135 CORRECTIONAL ROAD
 PARENT TAX PARCEL I.D. NO. 062-00-10-048

PHOTO LEGEND:
 DENOTES PHOTO LOCATION AND DIRECTION



ASBUILT & TOPOGRAPHIC
 EXHIBIT OF
PUMP STATION #6
 A PORTION OF
TAX PARCEL I.D. NO. 062-00-10-048
 OFF OF
#135 CORRECTIONAL ROAD
 S.C. DEPARTMENT OF CORRECTIONS
 A SECTION OF
TOWN OF RIDGELAND
 JASPER COUNTY, SOUTH CAROLINA

DATE: 07/29/2021 JOB NO: SC210030-PS6



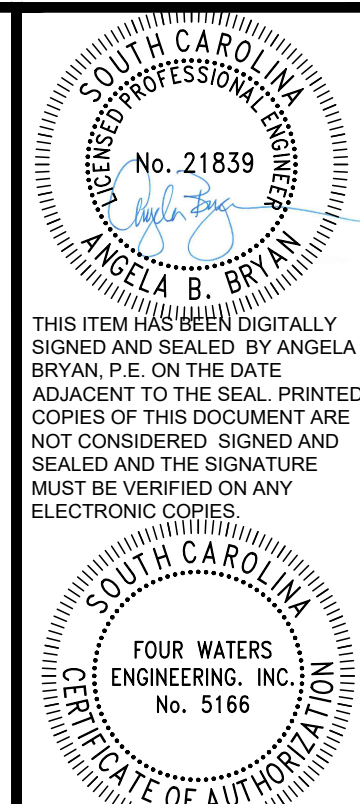
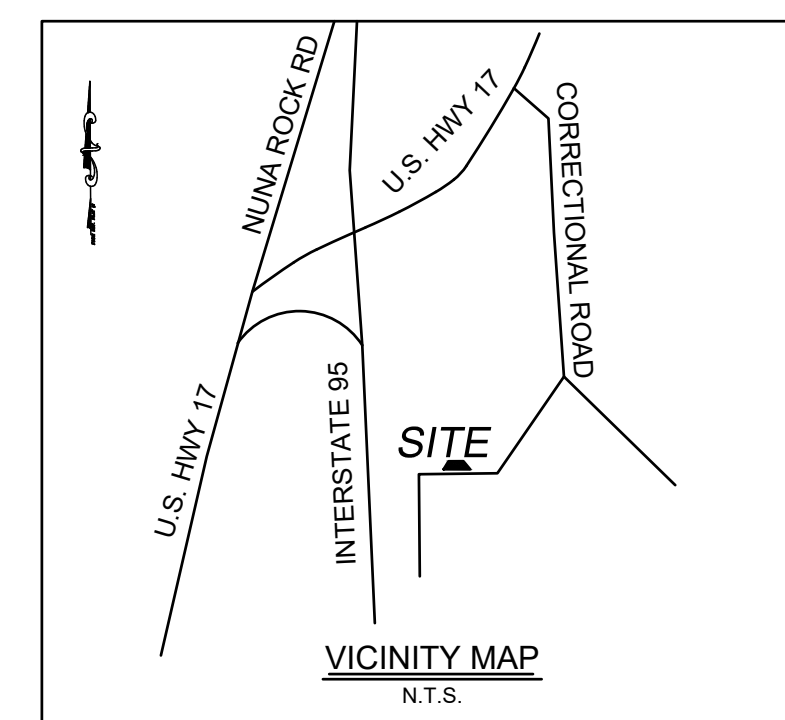
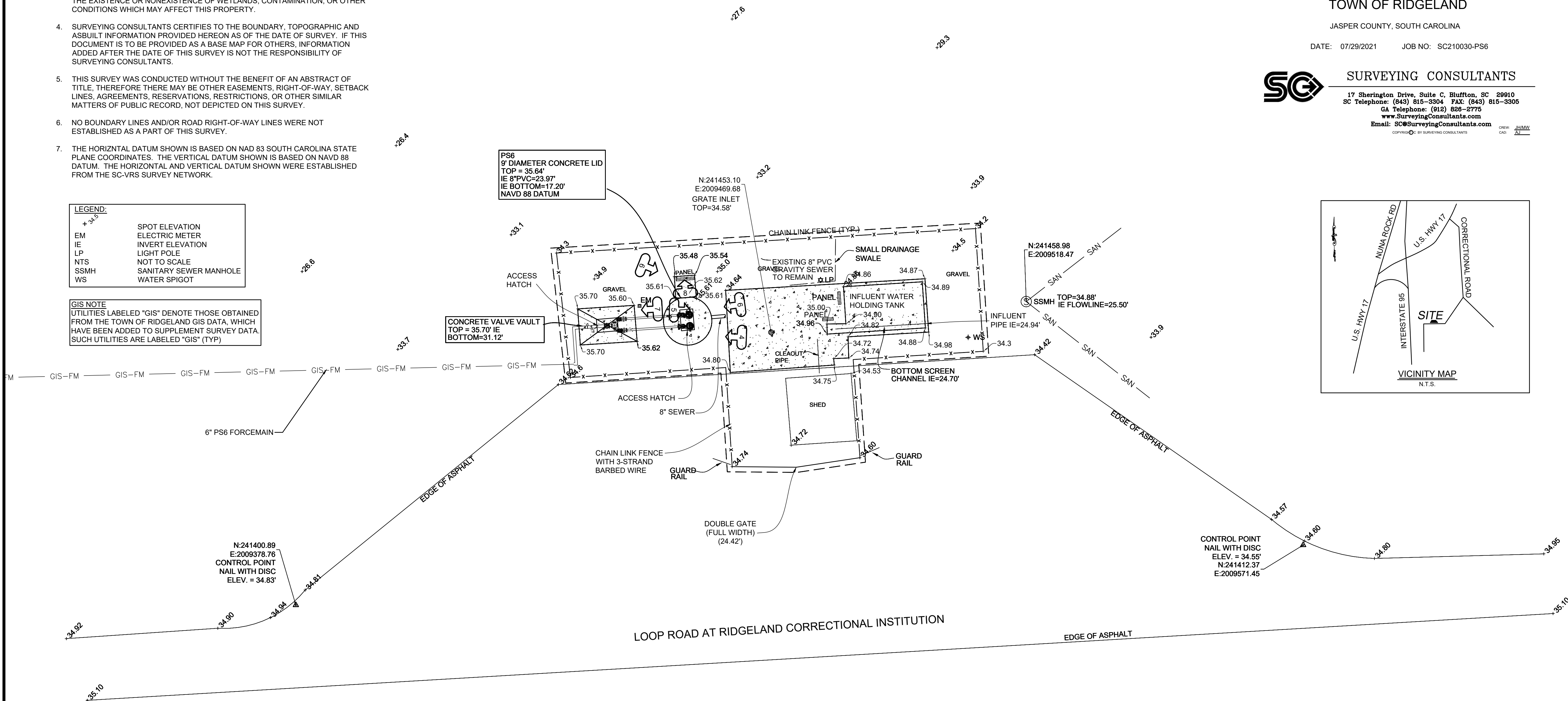
SURVEYING CONSULTANTS

17 Sherington Drive, Suite C, Bluffton, SC 29910
 SC Telephone: (843) 815-3304 FAX: (843) 815-3305
 GA Telephone: (912) 826-2775
 www.SurveyingConsultants.com
 Email: SC@SurveyingConsultants.com

LEGEND:

- + 34.5 SPOT ELEVATION
- EM ELECTRIC METER
- IE INVERT ELEVATION
- LP LIGHT POLE
- NTS NOT TO SCALE
- SSMH SANITARY SEWER MANHOLE
- WS WATER SPIGOT

GIS NOTE
 UTILITIES LABELED "GIS" DENOTE THOSE OBTAINED FROM THE TOWN OF RIDGELAND GIS DATA, WHICH HAVE BEEN ADDED TO SUPPLEMENT SURVEY DATA. SUCH UTILITIES ARE LABELED "GIS" (TYP)



REV	DATE	DESCRIPTION
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-6 EXISTING CONDITIONS AND KEY
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	DATE	ISSUE	ISSUE
ABB	JMC	17-1007	FEB 2023	BID

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

DRAWING NUMBER
G4.1

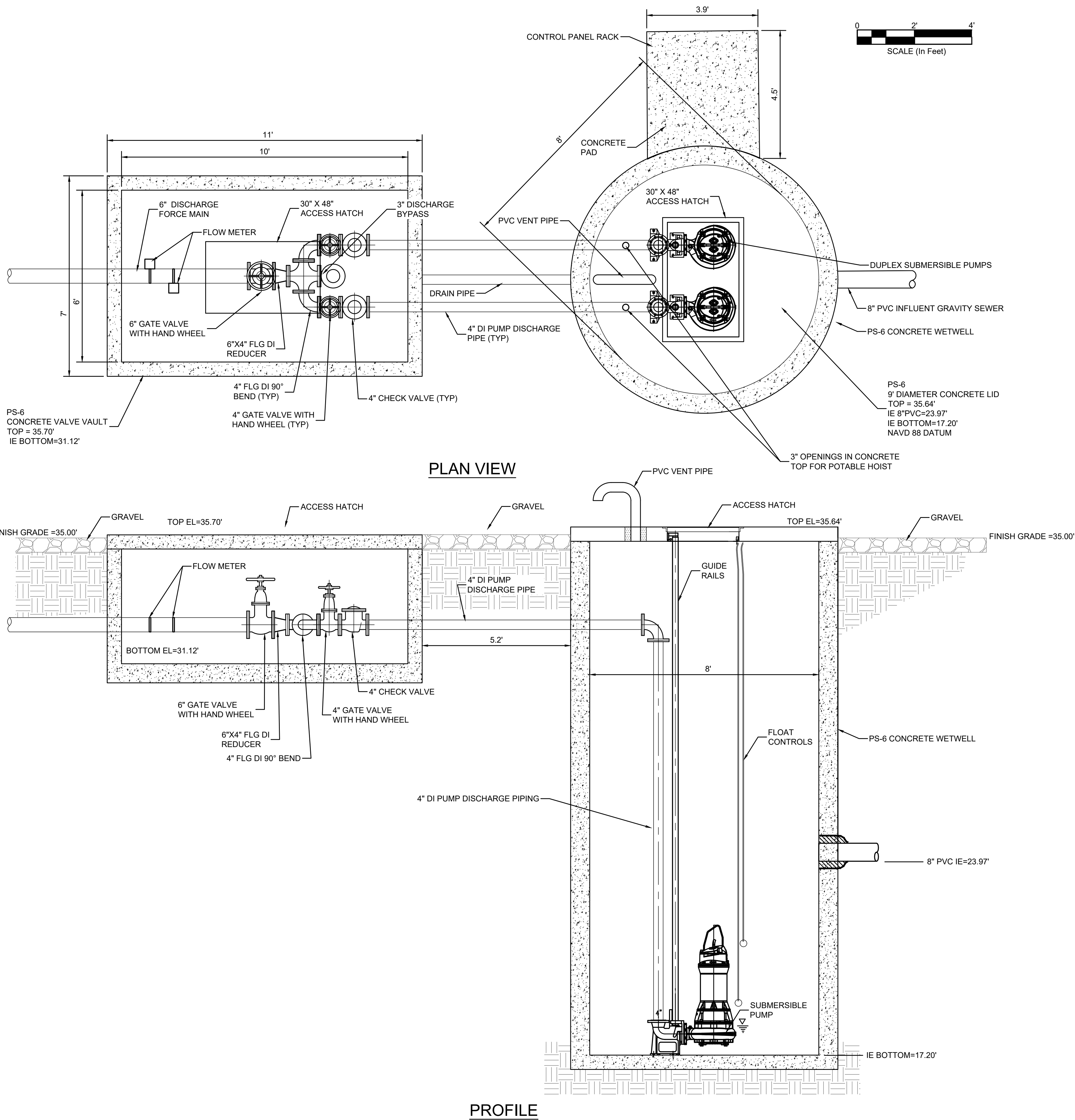


PHOTO-1
LOOKING INTO WET WELL



PHOTO-2
LOOKING INTO WET WELL

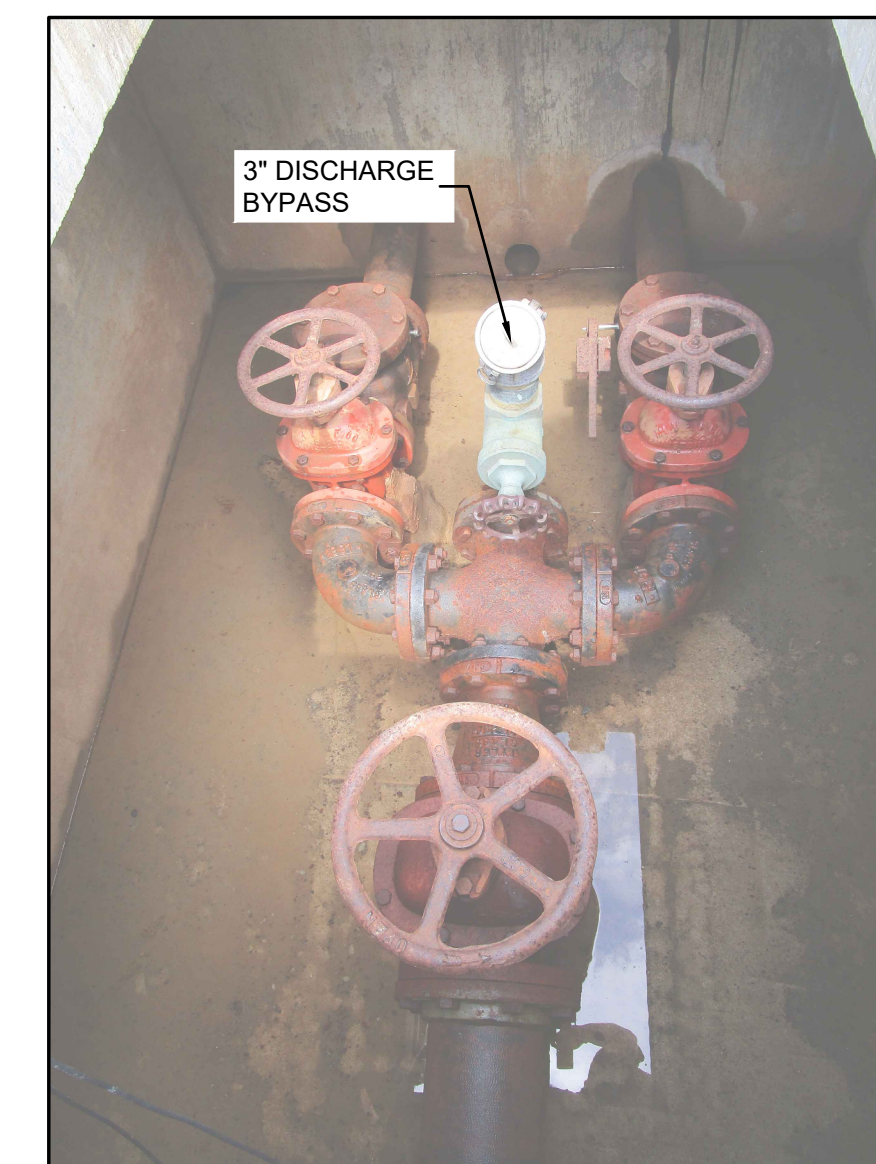


PHOTO-3
LOOKING INTO VALVE VAULT

SOUTH CAROLINA
REGISTERED 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
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SEALED AND THE SIGNATURE
MUST BE VERIFIED ON ANY
ELECTRONIC COPIES.

SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
FOUR WATERS
ENGINEERING, INC.
No. 5166
CERTIFICATE OF AUTHORITY

REV	DATE	BY	CHK	DESCRIPTION
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-6 EXISTING CONDITIONS DETAIL
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JOB #	ISSUE	DATE	ISSUE	BID
ABB	JMC	17-1007	FEB	2023		

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G4.2

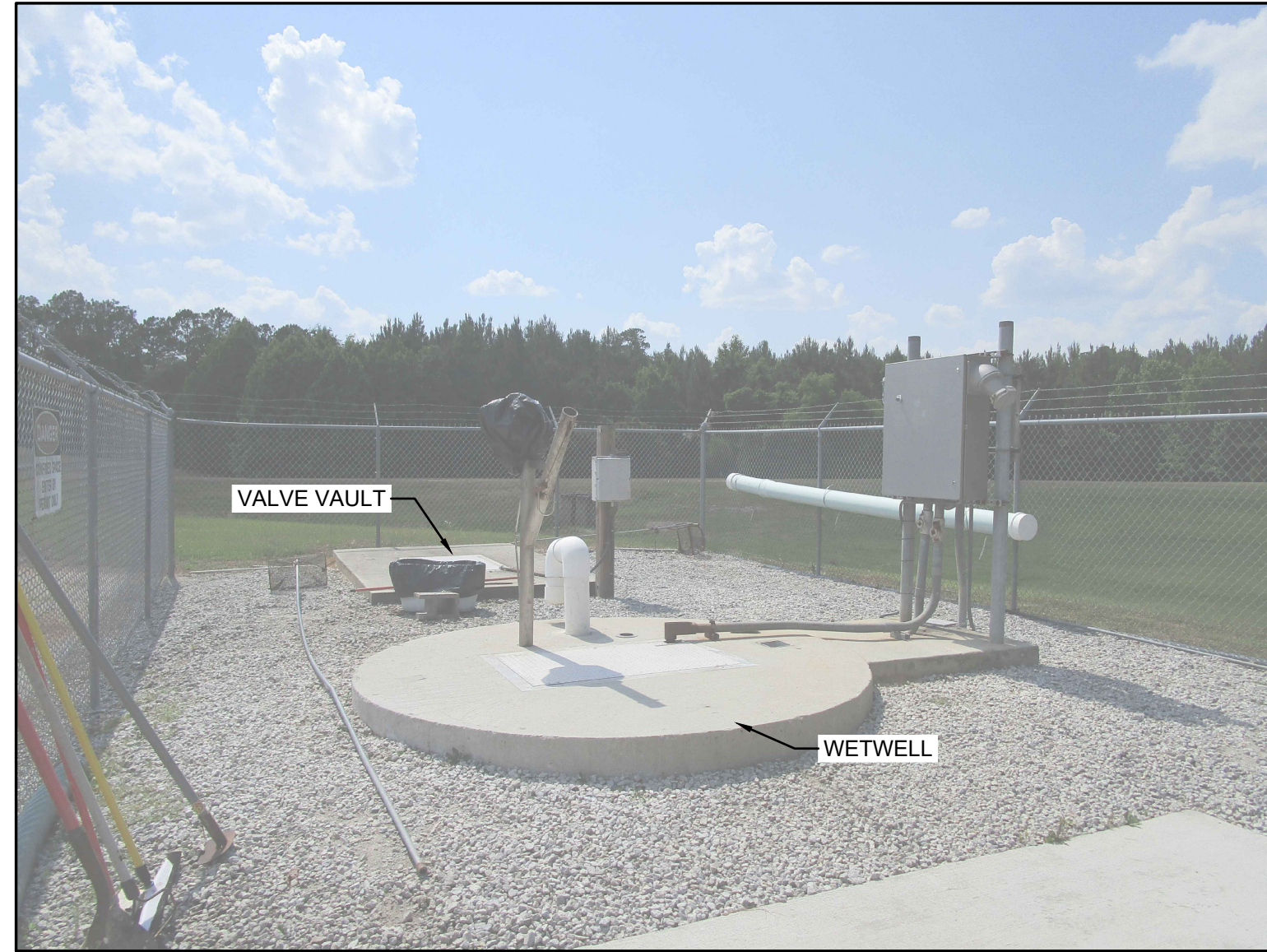


PHOTO-4
LOOKING WEST TOWARDS PUMP STATION FROM CONCRETE PAD



PHOTO-5
LOOKING EAST TOWARDS INFLUENT SCREENING FROM WET WELL



PHOTO-6
LOOKING WEST TOWARDS PUMP STATION



PHOTO-7
LOOKING WEST AT FLOW METER TRANSMITTER BOX ADJACENT TO VALVE VAULT



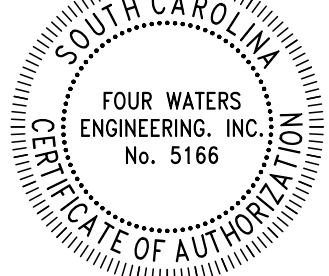
PHOTO-8
LOOKING NORTH AT PUMP STATION CONTROL PANEL



PHOTO-9
LOOKING SOUTHEAST AT BACK OF PANEL RACK



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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-6 EXISTING CONDITIONS SITE PHOTOS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

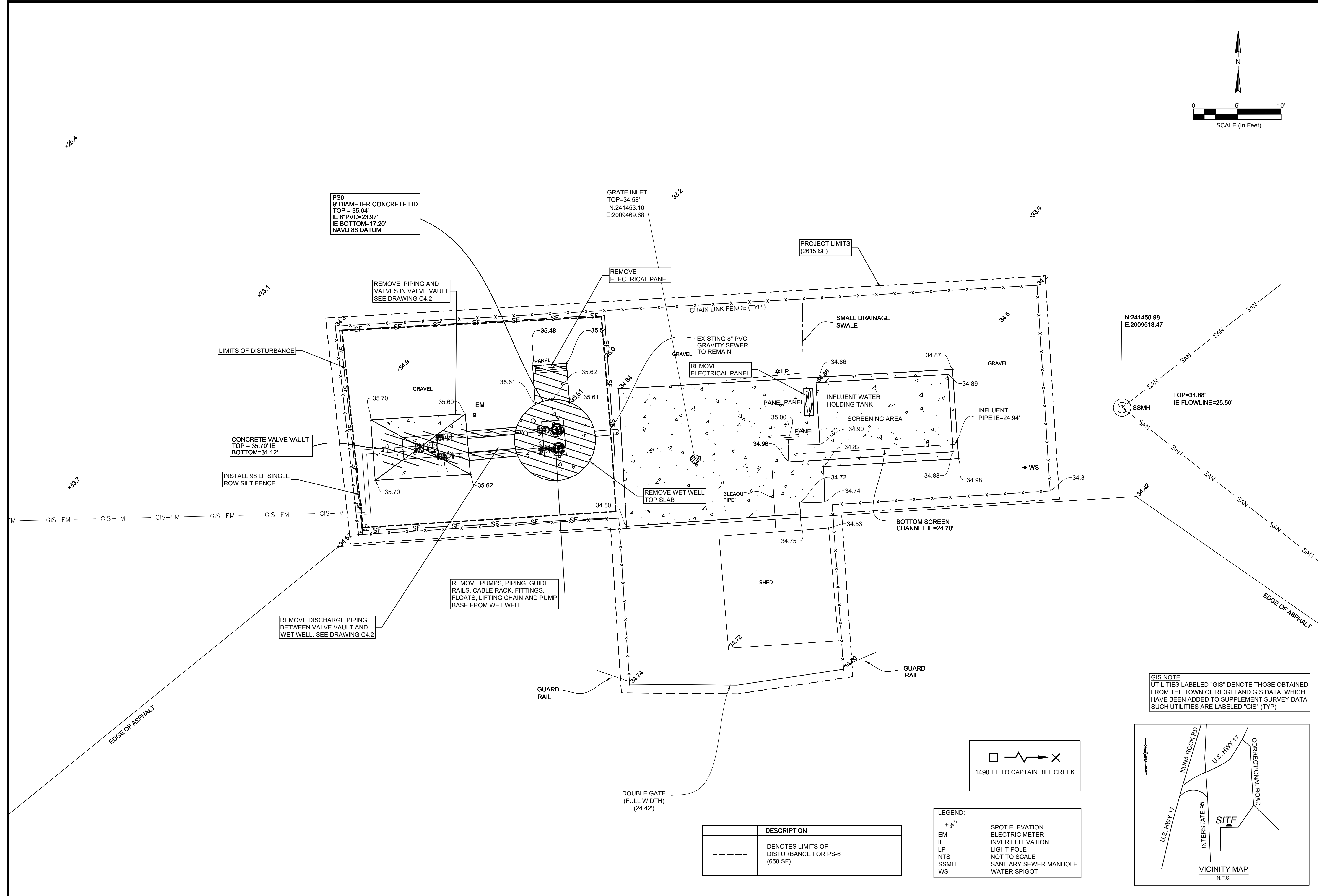
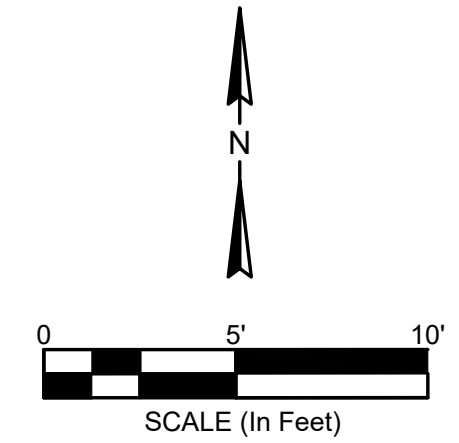
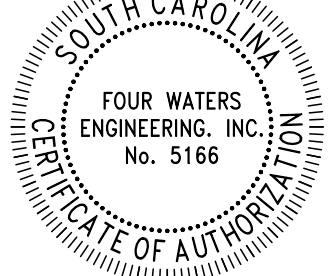
DESIGN ABB	DRAWN JMC	JOB #	ISSUE DATE	ISSUE	BID
		17-1007	FEB 2023		

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PS-6
9' DIAMETER CONCRETE LID
TOP = 35.64'
IE 8" PVC = 23.97'
IE BOTTOM = 17.20'
NAVD 88 DATUM

GRATE INLET
TOP = 34.58'
N: 241453.10
E: 2009469.68

PROJECT LIMITS
(2615 SF)

REMOVE PIPING AND VALVES IN VALVE VAULT
SEE DRAWING C4.2

REMOVE ELECTRICAL PANEL

SMALL DRAINAGE SWALE

LIMITS OF DISTURBANCE

REMOVE ELECTRICAL PANEL

INFLUENT WATER HOLDING TANK

CONCRETE VALVE VAULT
TOP = 35.70' IE
BOTTOM = 31.12'

REMOVE WET WELL
TOP SLAB

SCREENING AREA

INSTALL 98 LF SINGLE ROW SILT FENCE

BOTTOM SCREEN CHANNEL IE = 24.70'

REMOVE PUMPS, PIPING, GUIDE RAILS, CABLE RACK, FITTINGS, FLOATS, LIFTING CHAIN AND PUMP BASE FROM WET WELL

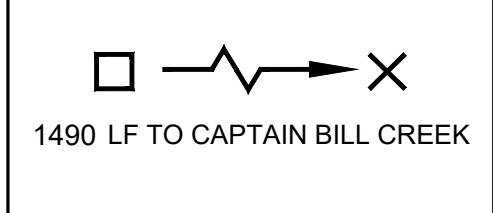
SHED

REMOVE DISCHARGE PIPING BETWEEN VALVE VAULT AND WET WELL. SEE DRAWING C4.2

GUARD RAIL

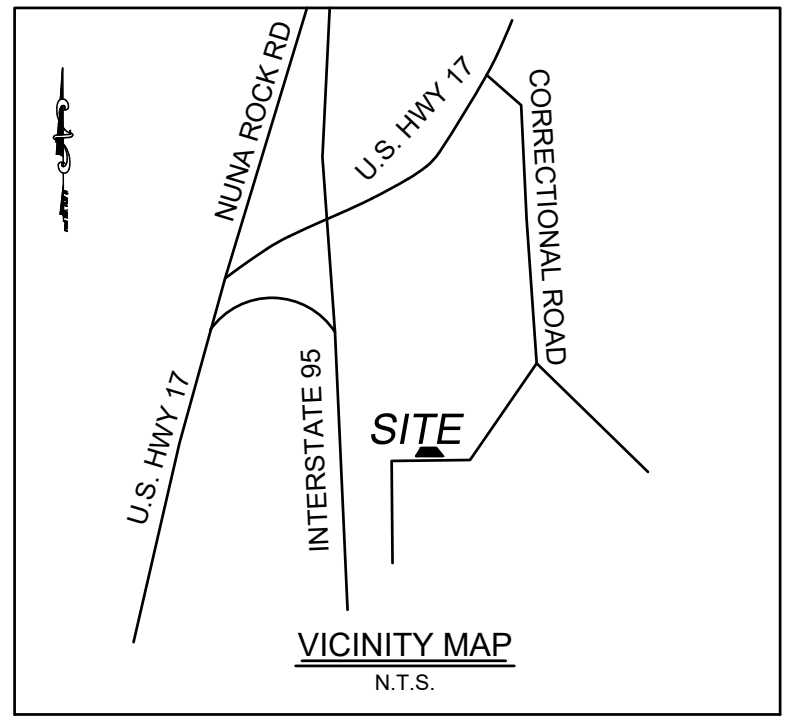
DOUBLE GATE (FULL WIDTH)
(24.42')

GIS NOTE
UTILITIES LABELED "GIS" DENOTE THOSE OBTAINED FROM THE TOWN OF RIDGELAND GIS DATA, WHICH HAVE BEEN ADDED TO SUPPLEMENT SURVEY DATA. SUCH UTILITIES ARE LABELED "GIS" (TYP)



	DESCRIPTION
---	DENOTES LIMITS OF DISTURBANCE FOR PS-6 (658 SF)

LEGEND:	
+3.5	SPOT ELEVATION
EM	ELECTRIC METER
IE	INVERT ELEVATION
LP	LIGHT POLE
NTS	NOT TO SCALE
SSMH	SANITARY SEWER MANHOLE
WS	WATER SPIGOT



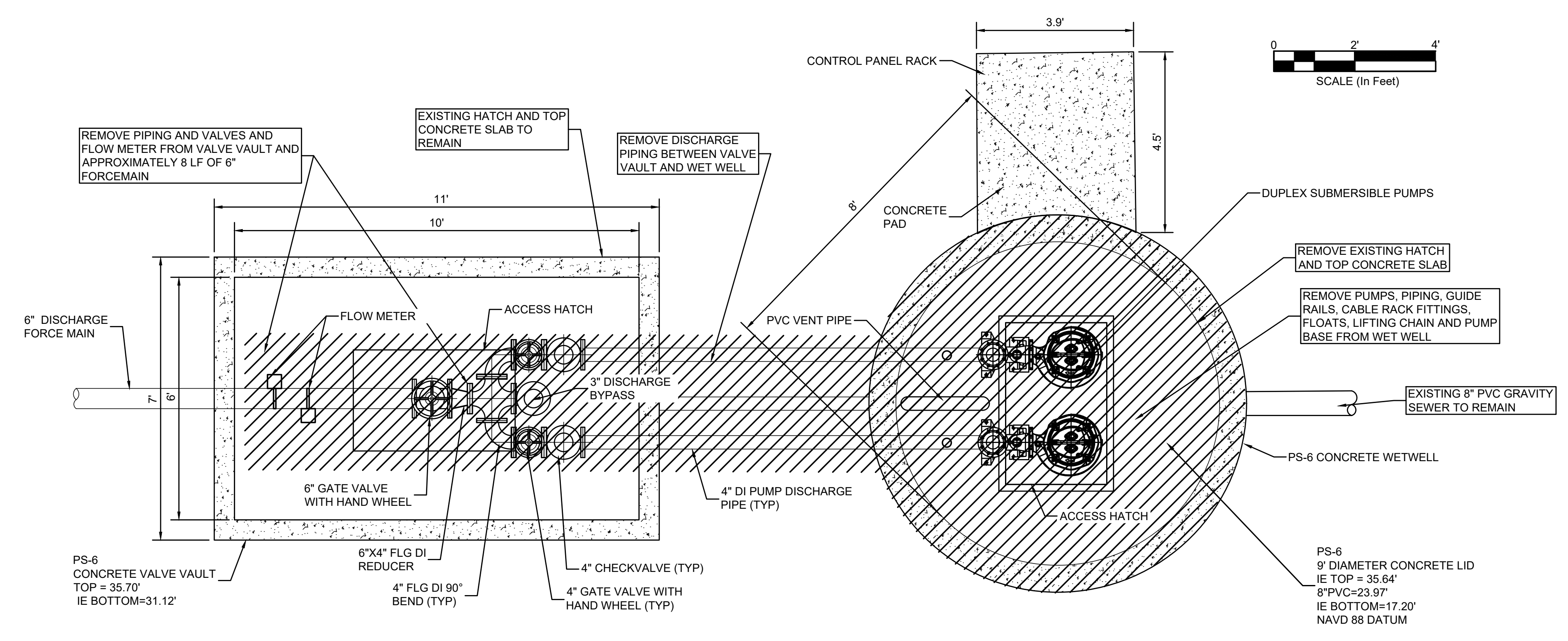
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-6 DEMOLITION PLAN SITE PLAN
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	DATE	ISSUE	ISSUE	BID
ABB	JMC	17-1007	FEB 2023		

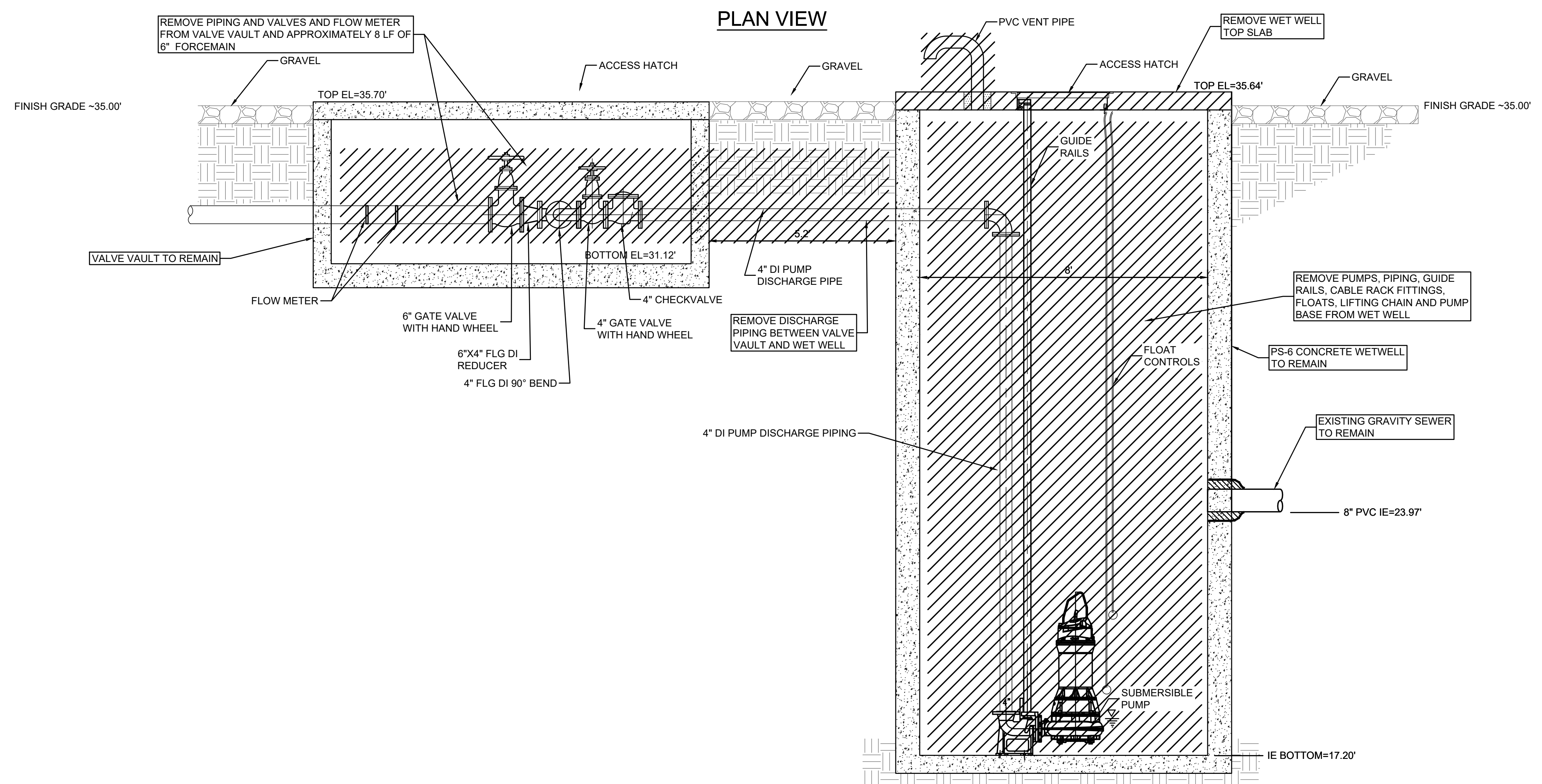
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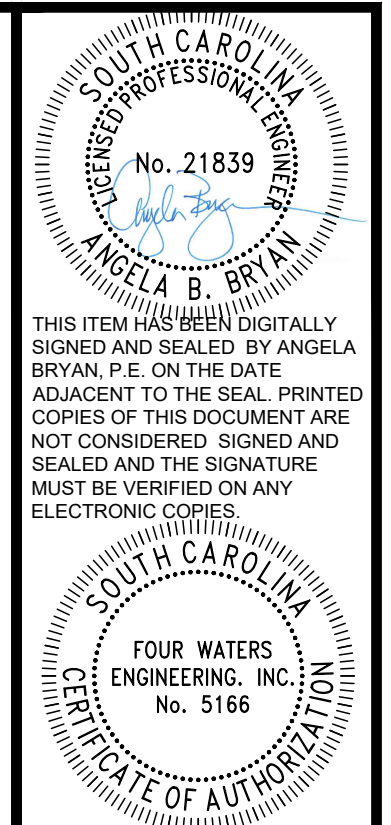
- DEMOLITION NOTES:**
1. ALL NECESSARY TEMPORARY BYPASS OPERATIONS SHALL BE IN PLACE AND OPERATIONAL PRIOR TO INITIATING DEMOLITION ACTIVITIES.
 2. CONTRACTOR SHALL VERIFY ALL UTILITIES BEFORE INITIATING DEMOLITION AND CONSTRUCTION ACTIVITIES. NOTIFY TOWN OF RIDGELAND PROJECT REPRESENTATIVE AND ENGINEER 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.
 4. PRIOR TO DEMOLITION OR REMOVAL OF STRUCTURES USED FOR WASTEWATER, ALL WASTEWATER AND SOLIDS SHALL BE REMOVED FROM THE STRUCTURE AND PROPERLY DISPOSED.

DESCRIPTION	
	DENOTES EQUIPMENT AND STRUCTURE TO BE REMOVED AND/OR DEMOLISHED



PLAN VIEW

PROFILE



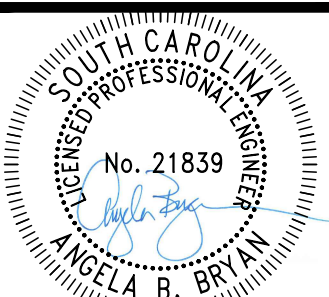
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-6 DEMOLITION PLAN DETAIL
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

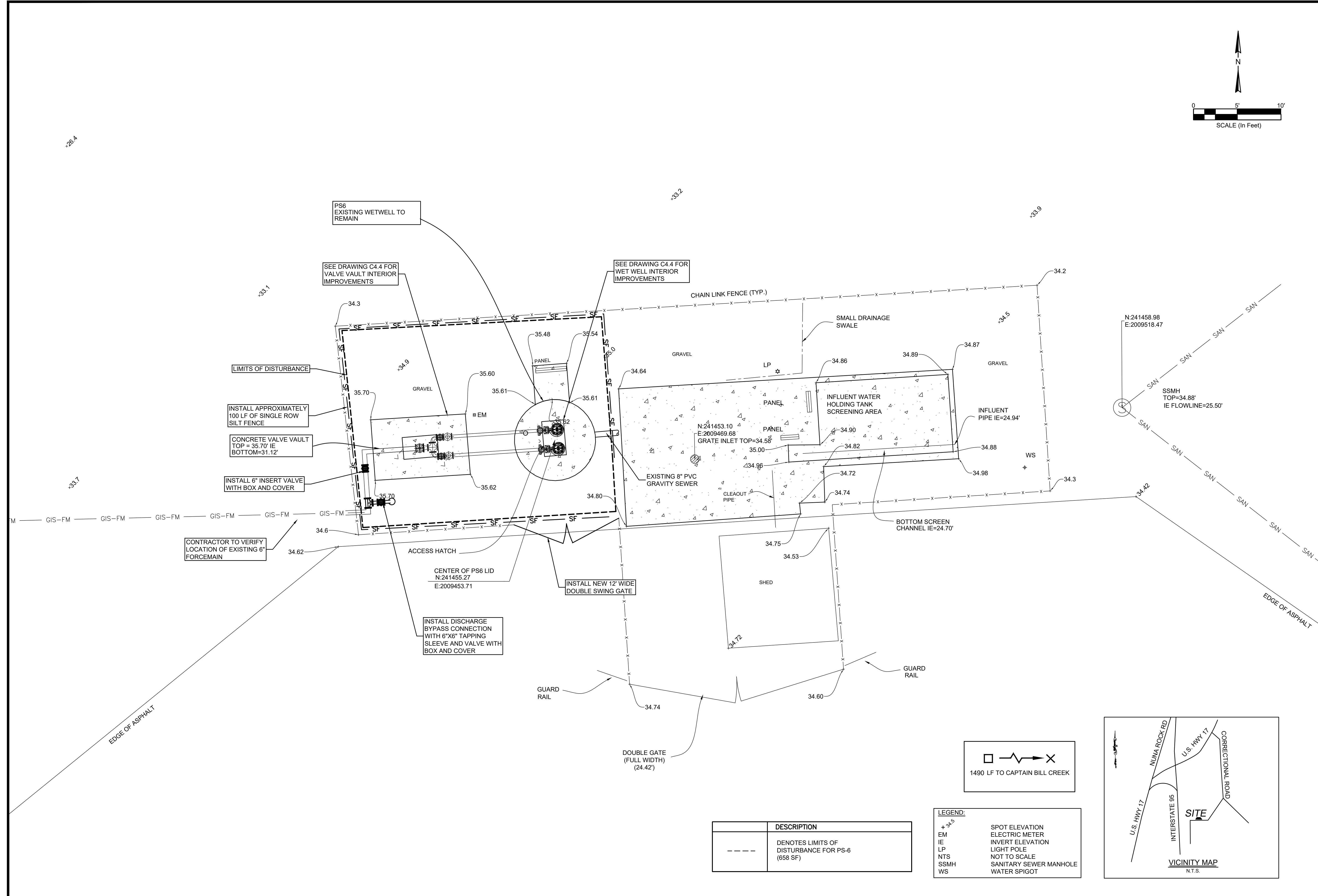
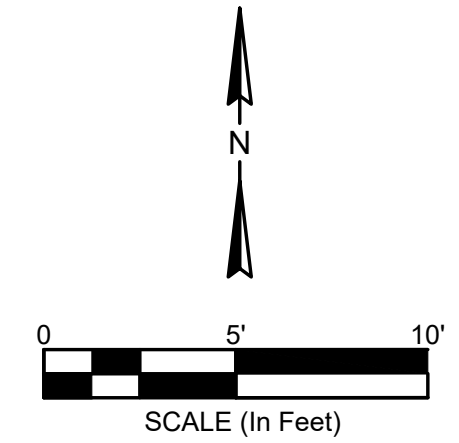
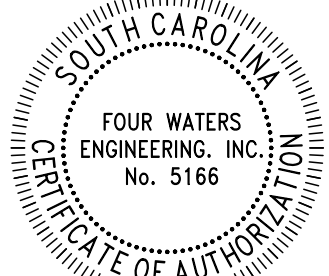
DESIGN	DRAWN	DATE	ISSUE	ISSUE	BID
ABB	JMC	17-1007	FEB 2023		

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DRAWING NUMBER
C4.2



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REV	DATE	DESCRIPTION
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-6 PROPOSED IMPROVEMENTS PLAN

TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	JOB #	ISSUE DATE	ISSUE
		17-1007	FEB 2023	BID

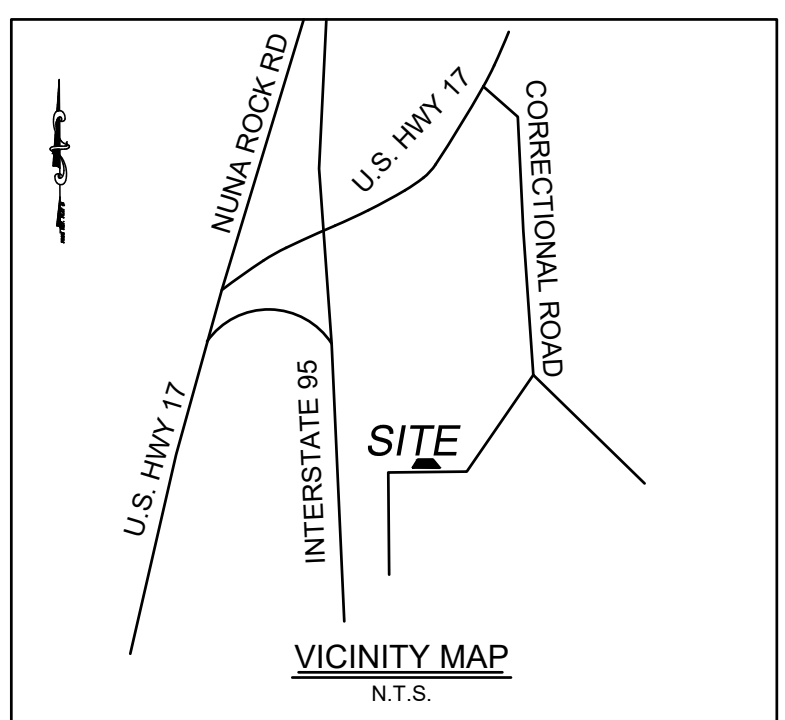
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 844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

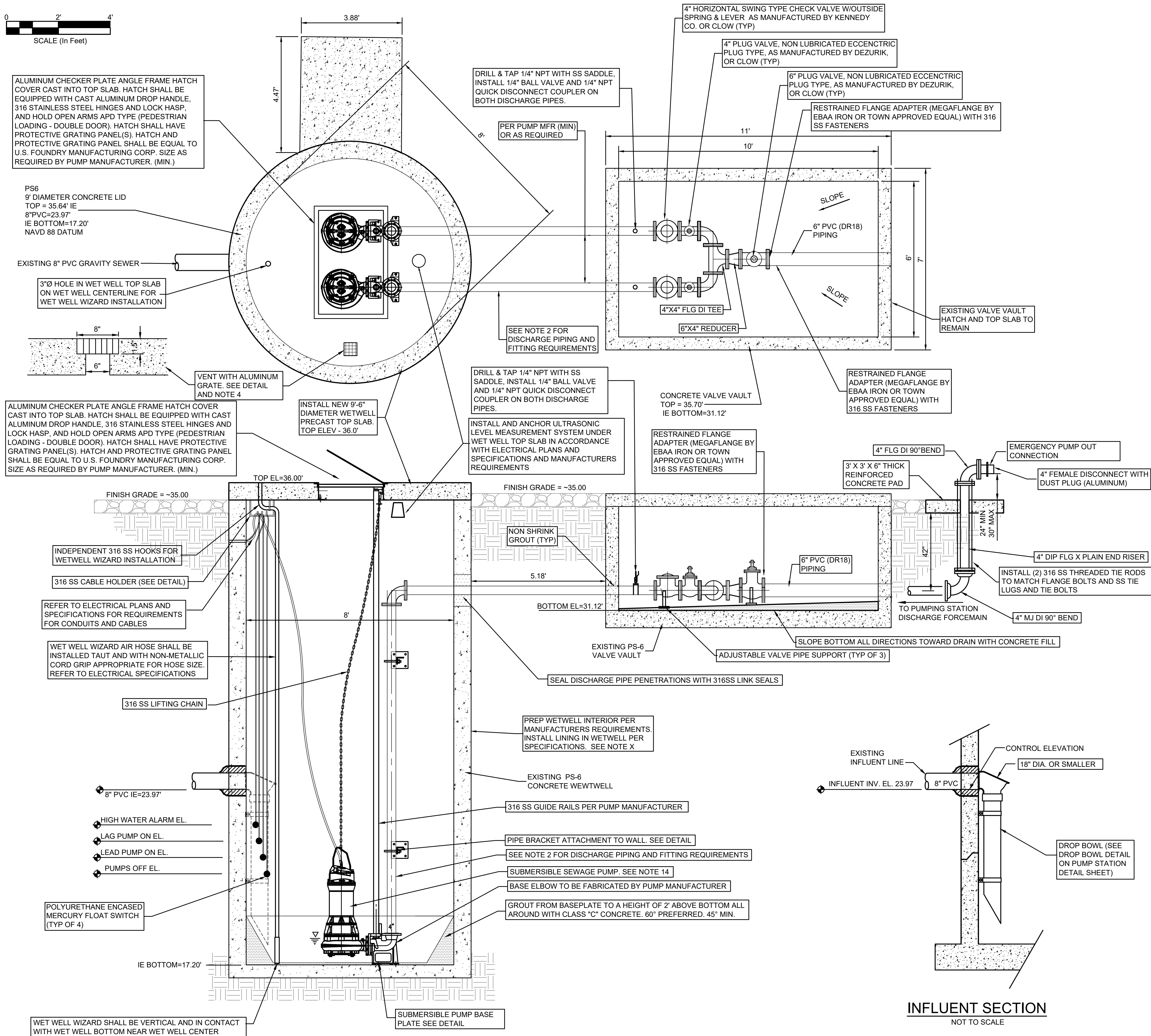
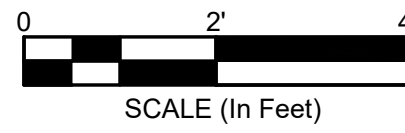
DRAWING NUMBER
C4.3

SYMBOL	DESCRIPTION
---	DENOTES LIMITS OF DISTURBANCE FOR PS-6 (658 SF)

LEGEND:

+ 34.6	SPOT ELEVATION
EM	ELECTRIC METER
IE	INVERT ELEVATION
LP	LIGHT POLE
NTS	NOT TO SCALE
SSMH	SANITARY SEWER MANHOLE
WS	WATER SPIGOT





GENERAL NOTES

- ALL METALS INSIDE THE WET WELL INCLUDING BUT NOT LIMITED TO GUIDE RAILS, LIFTING CHAINS, NUTS, BOLTS, CABLE HOLDERS, PIPE SUPPORTS AND BRACES, ETC., TO BE 316 STAINLESS STEEL, UNLESS SPECIFICALLY NOTED OTHERWISE.
- PUMP DISCHARGE PIPING AND FITTINGS: DISCHARGE PIPING AND FITTINGS FROM PUMP ELBOW THROUGH TO CHECK VALVE IN VALVE VAULT SHALL BE A MINIMUM 4" (UNLESS APPROVED OTHERWISE BY TOWN) AND SHALL BE EITHER:
 - HDPE PIPE AND FITTINGS: HDPE PIPE AND FITTINGS SHALL BE DIPS DR11 AND SHALL BE FUSED AS ONE PIECE BETWEEN PUMP BASE ELBOW AND MIDPOINT BETWEEN WET WELL AND VALVE VAULT, AND FROM MIDPOINT BETWEEN WET WELL AND VALVE VAULT TO CHECK VALVE IN VALVE VAULT. ENDS OF PIPE AT PUMP BASE ELBOW AND CHECK VALVE SHALL UTILIZE HDPE FLANGE ADAPTER AND BACKING RING. HDPE PIPING BETWEEN WET WELL AND VALVE VAULT SHALL BE JOINED WITH ELECTROFUSION COUPLINGS.
 - FUSED PVC PIPE AND STAINLESS STEEL FITTINGS: PVC PIPE SHALL BE C900 DR18 AND SHALL BE FUSED AS ONE PIECE BETWEEN PUMP BASE ELBOW AND 90 DEGREE BEND IN WET WELL, AND FROM 90 DEGREE BEND IN WET WELL TO CHECK VALVE IN VALVE VAULT. 90 DEGREE BEND IN WET WELL SHALL BE FLANGED 316 STAINLESS STEEL, SCH 40. PVC PIPING ENDS SHALL UTILIZE RESTRAINED FLANGE ADAPTER (MEGAFLANGE BY EBAA IRON OR TOWN APPROVED EQUAL) WITH 316 SS FASTENERS TO CONNECT TO PUMP BASE ELBOW, 90 DEGREE BEND, AND CHECK VALVE.
- AERATION SYSTEM: WET WELL WIZARD SYSTEM AS MANUFACTURED BY RELIANT WATER TECHNOLOGIES, NEW ORLEANS, LA. WWW.RELIANTWATER.US.COM SHALL BE INSTALLED IN WET WELL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. DESIGN ENGINEER OF RECORD SHALL COORDINATE WITH RELIANT WATER TECHNOLOGIES TO DETERMINE NUMBER AND SIZING OF BLOWER(S) AND WET WELL WIZARDS NECESSARY FOR INSTALLATION.
- VENT: PROVIDE 6"X6" OPENING THROUGH THE CONCRETE TOP OF THE WET WELL AND INSERT 8"X8" X 1-1/2" THICK ALUMINUM GRATE VENT CONSTRUCTED OF 1-1/2" WIDE X 1/8" MATERIAL.
- FITTINGS: ALL DUCTILE IRON FITTINGS SHALL BE EPOXY LINED. ALL BURIED FITTINGS SHALL BE RESTRAINED.
- LEVEL MONITORING: INSTALL ULTRASONIC LEVEL MEASUREMENT SYSTEM IN ACCORDANCE WITH ELECTRICAL PLANS AND SPECIFICATIONS AND MANUFACTURER'S REQUIREMENTS. PROVIDE FOUR BACKUP POLYURETHANE ENCASED MERCURY FLOAT SWITCHES FOR PUMPS OFF, LEAD PUMP ON, LAG PUMP ON, AND HIGH WATER ALARM.
- WET WELL: PRECAST CONCRETE WET WELL SHALL MEET ASTM C-478 STANDARD. CONCRETE, REINFORCING STEEL, AND BUOYANCY DESIGN AND CALCULATIONS TO BE PREPARED BY A SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER AND SUBMITTED WITH THE SHOP DRAWINGS.
- WET WELL AND MANHOLES: ALL EXTERIOR JOINTS OF PRECAST CONCRETE WET WELL AND MANHOLES SHALL BE SEALED WITH A 18" WIDE RUBBERIZED ASPHALT MEMBRANE TAPE. EXTERIOR COATING OF BITUMINOUS COATING AS SPECIFIED IN ANSI SPECIFICATIONS A21.51 SHALL BE APPLIED TO WET WELL AND MANHOLES.
- INTERIOR PROTECTIVE COATINGS: PROTECTIVE COATING SHALL BE APPLIED TO THE INTERIOR OF WET WELLS AND RECEIVING MANHOLES. COATING SYSTEM IN WET WELL SHALL BE APPLIED TO VERTICAL WALLS AND TOP, AT A MINIMUM, PROTECTIVE COATING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND SHALL BE APPLIED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND BY INSTALLER CERTIFIED BY COATING SYSTEM MANUFACTURER.
- MIN. WATER LEVEL: MINIMUM WATER LEVEL IN WET WELL SHALL BE 30" MINIMUM FOR PROPER OPERATION OF THE WET WELL WIZARD, SHALL COVER TOP OF PUMP MOTOR, OR SHALL BE GREATER IF RECOMMENDED BY PUMP MANUFACTURER.
- SUBMERSIBLE SEWAGE PUMPS:
 - PUMPS SHALL BE SULZER ABS PUMPS SUITABLE FOR SUBMERSIBLE SEWER SERVICE. PUMPS SHALL BE 230/460 VOLTS, 3 PHASE, 60 HERTZ MOTORS. IF SUITABLE SULZER ABS PUMP SELECTION IS NOT AVAILABLE, FLYGT PUMPS MAY BE USED.
 - PUMP BASE ELBOW: BASE ELBOW TO BE FABRICATED BY PUMP MANUFACTURER. BASE ELBOW SHALL BE 4"X4" UNLESS APPROVED OTHERWISE BY TOWN.
- FLOOD ZONE: DESIGN ENGINEER OF RECORD SHALL PROVIDE INFORMATION ON THE FLOOD ZONE OF THE PUMP STATION SITE AND SHALL PROVIDE VERIFICATION THAT THE TOP OF THE WET WELL IS ABOVE THE 100 YEAR FLOOD ELEVATION AND THAT THE BOTTOM OF THE CONTROL PANELS, GENERATOR RECEPTACLE AND GENERATOR FLOOR AREA ALL ABOVE THE 100 YEAR FLOOD ELEVATION + 2 FEET OR THE 500 YEAR FLOOD ELEVATION, WHICHEVER IS GREATER.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL ELEVATIONS AND DIMENSIONS CALLED OUT ON THIS PLAN SET FOR THE PUMP STATION PRIOR TO ORDERING OF ANY MATERIALS OR COMPONENTS OF THE PUMP STATION. ANY DEVIATION OF THE LAYOUTS INDICATED ON THIS PLAN MUST BE COMMUNICATED TO THE TOWN AND ENGINEER OF RECORD FOR FURTHER DIRECTION.
- CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY STABILIZATION FOR DEMOLITION AND CONSTRUCTION AND SHALL HIRE A SPECIALTY PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA TO DESIGN THE STABILIZATION SYSTEM FOR EXCAVATION AND EVALUATE THE DRAWDOWN OF THE DEWATERING OPERATIONS DURING CONSTRUCTION IN ORDER TO PROTECT THE EXISTING PS-6 STRUCTURES. DESIGN AND EVALUATION SHALL BE SIGNED AND SEALED AND SUBMITTED TO THE TOWN OF RIDGELAND AND ENGINEER OF RECORD.
- 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 OPERATIONS, THE CONTRACTOR SHALL PREPARE A DEWATERING PLAN FOR APPROVAL AND SHALL SECURE AN SCDHEC NPDES GENERIC PERMIT WHICH COVERS STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND DEWATERING OF NON-CONTAMINATED GROUNDWATER.
- PS-6 SITE LOCATED IN ZONE X AREA OF MINIMAL FLOODING (NO ESTABLISHED FLOOD ELEVATION), PER NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP PANEL 305 OF 575 JASPER COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS NUMBER 45053 PANEL 0305 SUFFIX D.

*PUMP STATION: TOWN OF RIDGELAND PS-6
 *LOCATION: RIDGELAND CORRECTIONAL INSTITUTE
 *PUMP MANUFACTURER: SULZER
 *MODEL#: XFP100G CB1 10" IMP
 SERIAL#:
 HORSEPOWER: 20.1 HP
 VOLTAGE:
 DATE INSTALLED:
 *ENGINEER: FOUR WATERS ENGINEERING, INC.
 CONTRACTOR:
 *INFORMATION REQUIRED ON CONSTRUCTION PLANS.
 REMAINING INFORMATION REQUIRES ASBUILT



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

PS-6 PROPOSED IMPROVEMENTS DETAIL
 PART I
 WATER AND SEWER RESILIENCY IMPROVEMENTS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	JMC	17-1007	FEB	2023	BID
JOB #	ISSUE	DATE	ISSUE	DATE	ISSUE	DATE

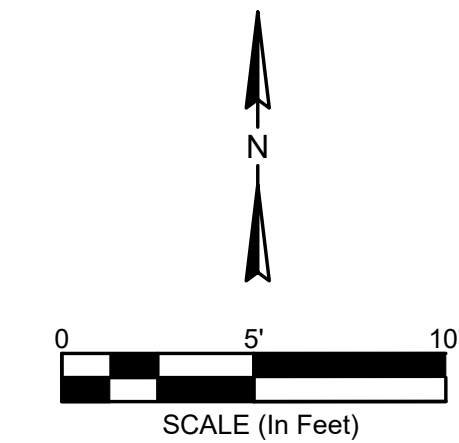
FOUR WATERS ENGINEERING
 324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
 844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
C4.4

SPECIAL NOTE:
 *HORIZONTAL DATUM IS NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES
 *VERTICAL DATUM IN NAVD 88
 *SEE NOTE #7 BELOW

- NOTES:
- I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO OBVIOUS, APPARENT OR VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.
 - UNDERGROUND UTILITIES NOT LOCATED EXCEPT AS SHOWN AND ARE APPROXIMATE. SURVEYING CONSULTANTS DOES NOT CERTIFY TO THE EXACT LOCATION OF ANY UNDERGROUND UTILITY.
 - NO SUBSURFACE OR ENVIRONMENTAL INVESTIGATION OR WETLAND SURVEYS WERE PERFORMED FOR THIS PLAT. THEREFORE THIS PLAT DOES NOT REFLECT THE EXISTENCE OR NONEXISTENCE OF WETLANDS, CONTAMINATION, OR OTHER CONDITIONS WHICH MAY AFFECT THIS PROPERTY.
 - SURVEYING CONSULTANTS CERTIFIES TO THE TOPOGRAPHIC AND ASBUILT INFORMATION PROVIDED HEREON AS OF THE DATE OF SURVEY. IF THIS DOCUMENT IS TO BE PROVIDED AS A BASE MAP FOR OTHERS, INFORMATION ADDED AFTER THE DATE OF THIS SURVEY IS NOT THE RESPONSIBILITY OF SURVEYING CONSULTANTS.
 - THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE, THEREFORE THERE MAY BE OTHER EASEMENTS, RIGHT-OF-WAY, SETBACK LINES, AGREEMENTS, RESERVATIONS, RESTRICTIONS, OR OTHER SIMILAR MATTERS OF PUBLIC RECORD, NOT DEPICTED ON THIS SURVEY.
 - THE EASEMENT LINES, BOUNDARY LINES AND/OR ROAD RIGHT-OF-WAY LINES WERE TAKEN FROM REFERENCE PLAT AND SHOULD BE CONSIDERED APPROXIMATE. A BOUNDARY SURVEY WAS NOT PERFORMED AT THIS TIME
 - THE HORIZONTAL DATUM SHOWN IS BASED ON NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES. THE VERTICAL DATUM SHOWN IS BASED ON NAVD 88 DATUM. THE HORIZONTAL AND VERTICAL DATUM SHOWN WERE ESTABLISHED FROM THE SC-VRS SURVEY NETWORK.

PHOTO LEGEND:
 DENOTES PHOTO LOCATION AND DIRECTION



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

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FOUR WATERS
 ENGINEERING, INC.
 No. 5166
 CERTIFICATE OF AUTHORITY

LEGEND:

+ 84.5	SPOT ELEVATION
RCP	REINFORCED CONCRETE PIPE
IE	INVERT ELEVATION
SSMH	SANITARY SEWER MANHOLE
NTS	NOT TO SCALE
PP	POWER POLE
OHP	OVERHEAD POWER LINE
WV	WATER VALVE
FH	FIRE HYDRANT
EM	ELECTRIC METER

REFERENCE PLAT:
 1) PLAT PREPARED AT THE REQUEST OF JASPER COUNTY, A RIGHT OF WAY SURVEY ON A PORTION OF TAX MAP #048-00-01-009, A PORTION OF TAX MAP #048-00-01-028, & A PORTION OF CYPRESS RIDGE DRIVE, CYPRESS RIDGE INDUSTRIAL PARK, NEAR RIDGELAND, JASPER COUNTY, SC, BY: THOMAS G. STANLEY, S.C.R.L.S. NO. 18269, DATED: 11/10/2011, RECORDED: P.B. 32, PAGE 467, 3/13/2012.

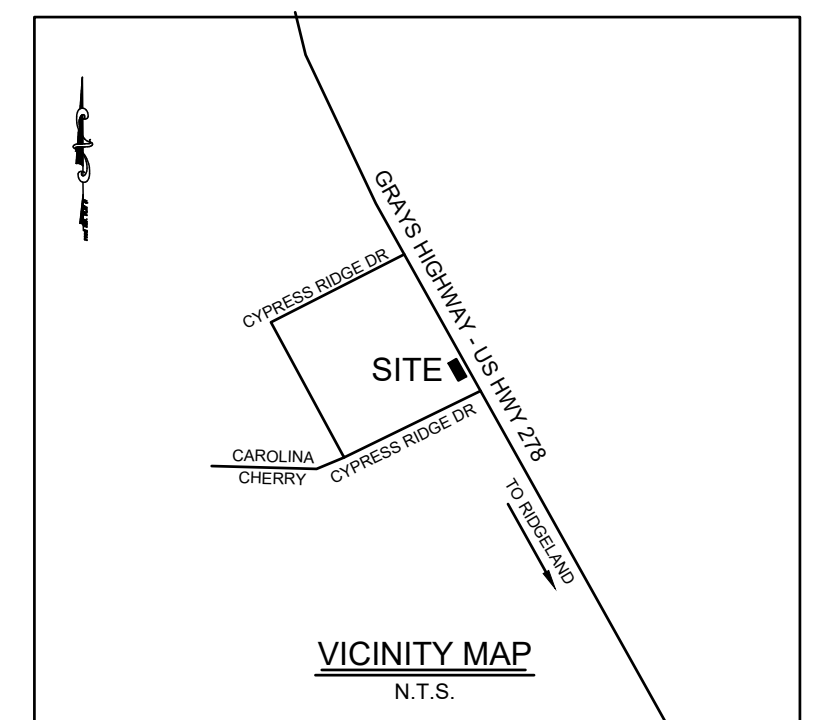
ASBUILT & TOPOGRAPHIC
 EXHIBIT OF
PUMP STATION #8
 TAX PARCEL I.D. NO. 048-00-01-011
 #4399 GRAYS HIGHWAY
 A PORTION OF
 CYPRESS RIDGE INDUSTRIAL PARK,
 OWNED BY THE
TOWN OF RIDGELAND
 JASPER COUNTY, SOUTH CAROLINA

DATE: 07/29/2021 JOB NO: SC210030-PS8

SG SURVEYING CONSULTANTS
 17 Sherington Drive, Suite C, Bluffton, SC 29910
 SC Telephone: (843) 815-3304 FAX: (843) 815-3305
 GA Telephone: (912) 826-2775
 www.SurveyingConsultants.com
 Email: SC@SurveyingConsultants.com

PREPARED FOR: FOUR WATERS
 ENGINEERING & TOWN OF RIDGELAND

ADDRESS: #4399 GRAYS HIGHWAY TAX
 PARCEL I.D. NO. 048-00-01-011



GIS NOTE
 UTILITIES LABELED "GIS" DENOTE THOSE OBTAINED FROM THE TOWN OF RIDGELAND GIS DATA, WHICH HAVE BEEN ADDED TO SUPPLEMENT SURVEY DATA. SUCH UTILITIES ARE LABELED "GIS" (TYP)

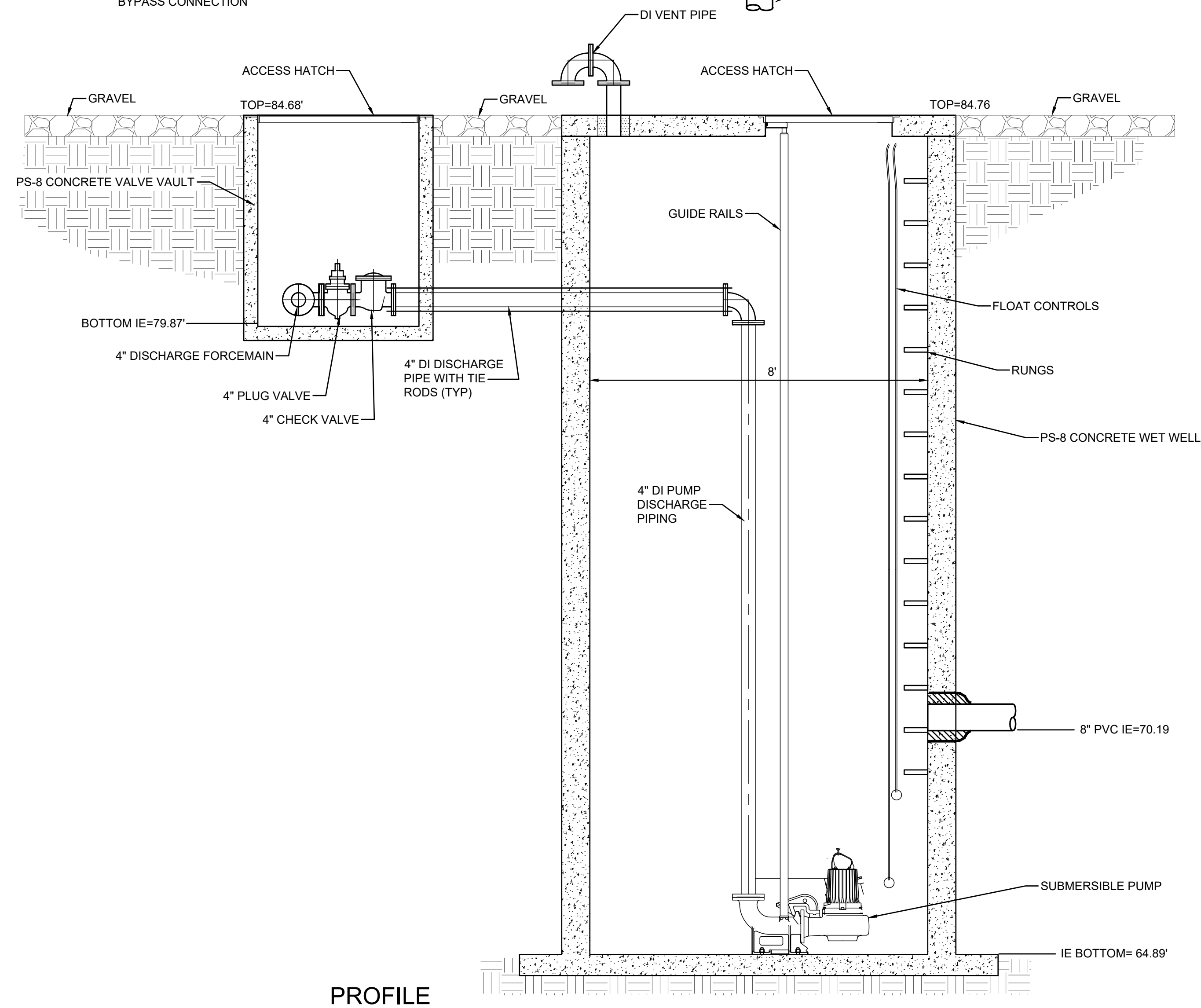
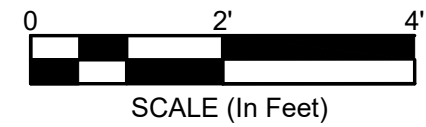
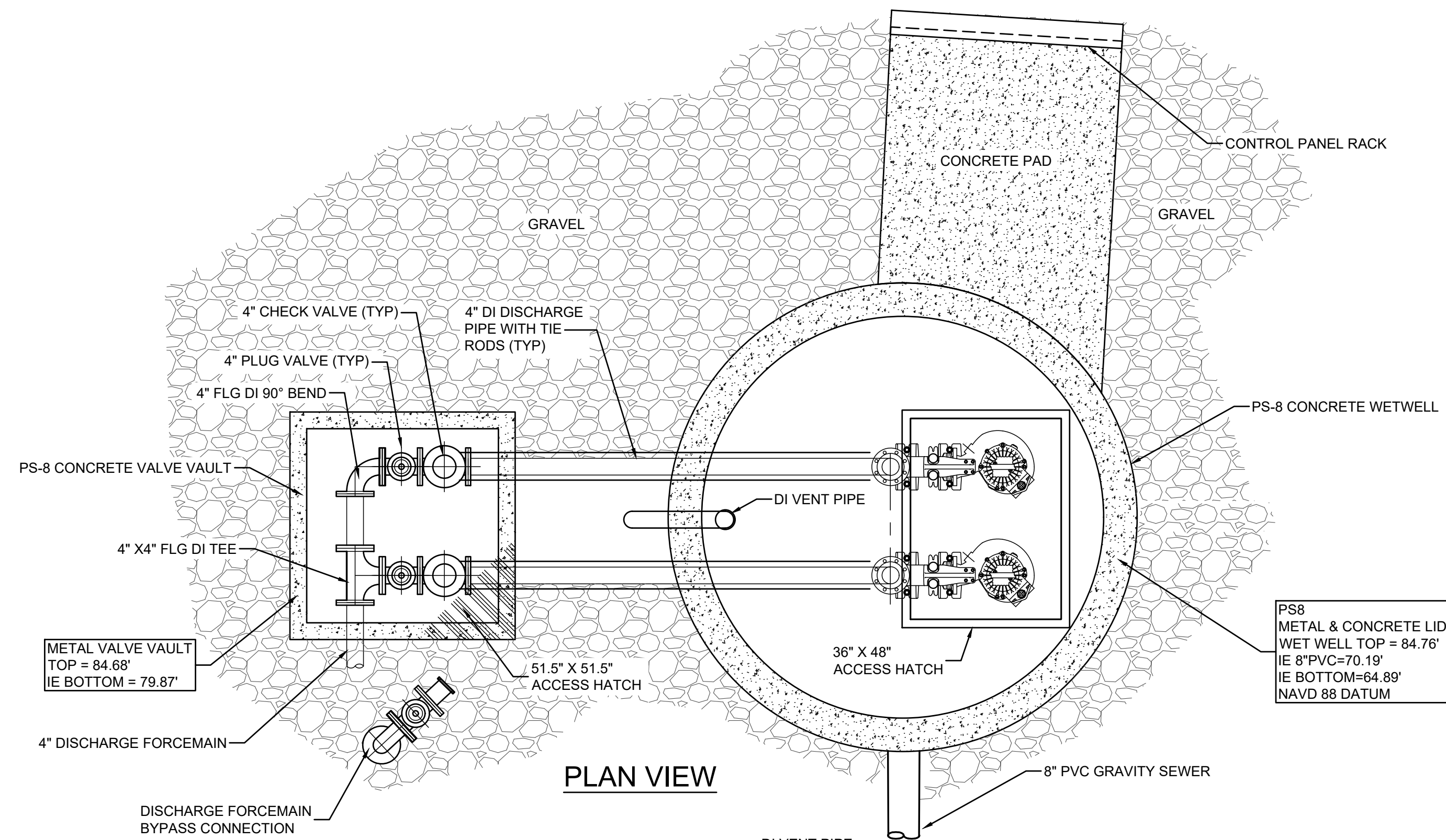
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-8 EXISTING CONDITIONS AND KEY
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC
ABB	17-1007	
JOB #	ISSUE DATE	ISSUE
	FEB 2023	
ISSUE	ISSUE	BID

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 324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
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PROFILE



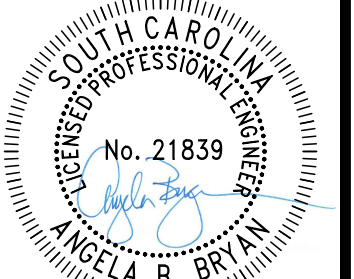
PHOTO-1
LOOKING DOWN INTO WET WELL



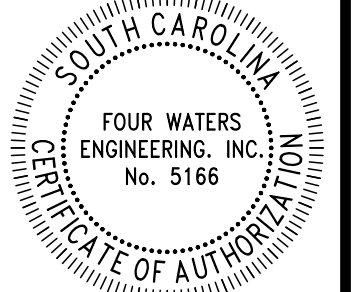
PHOTO-2
LOOKING DOWN INTO WET WELL



PHOTO-3
LOOKING DOWN INTO VALVE VAULT



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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-8 EXISTING CONDITIONS DETAIL
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007	FEB	BID
ABB	JMC			2023	
JOB #				ISSUE	
				DATE	
				ISSUE	

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844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
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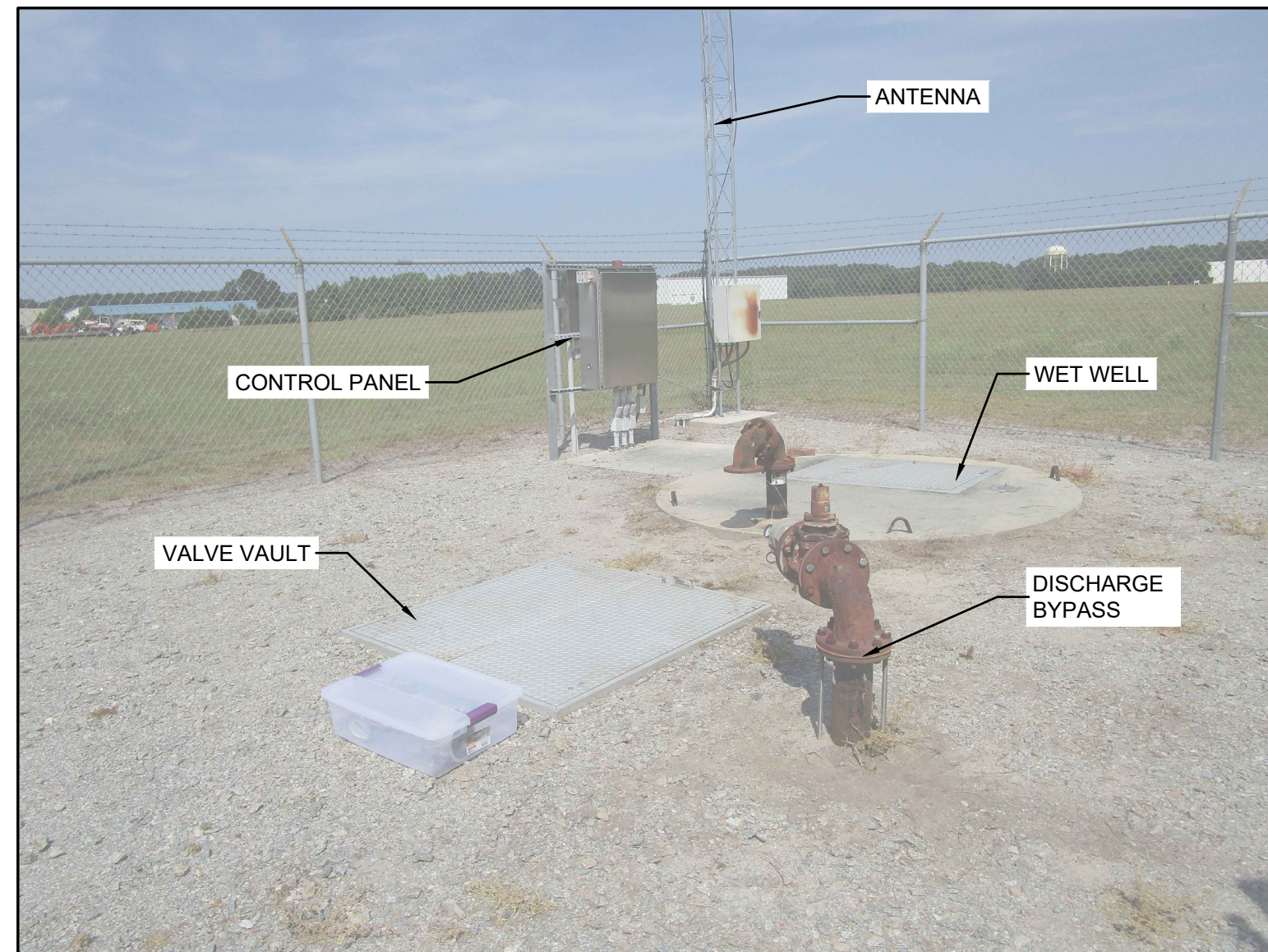


PHOTO-4

LOOKING NORTHEAST AT PUMP STATION SITE



PHOTO-5

LOOKING SOUTHEAST ACROSS WETWELL



PHOTO-6

LOOKING INTO WETWELL



PHOTO-7

DISCHARGE FORCEMAIN BYPASS CONNECTION



PHOTO-8

LOOKING NORTHWEST ACROSS VALVE VAULT



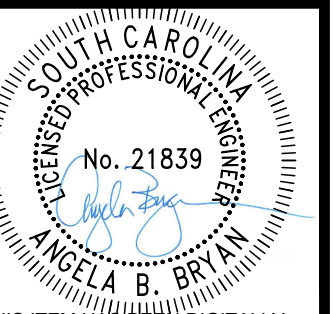
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VALVE VAULT

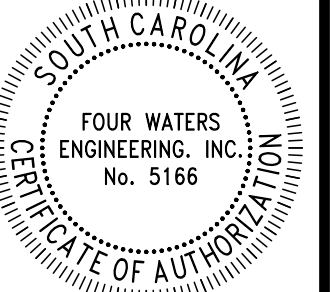


PHOTO-10

LOOKING NORTHWEST ALONG BACK OF PANEL RACK



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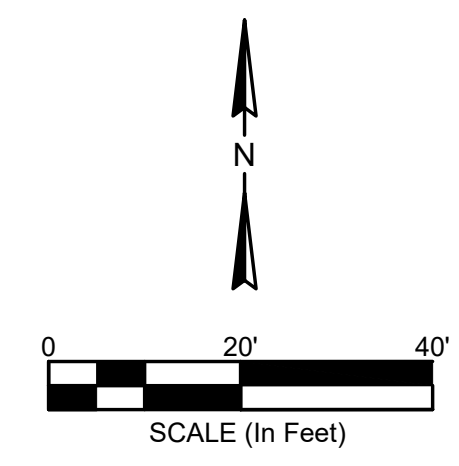
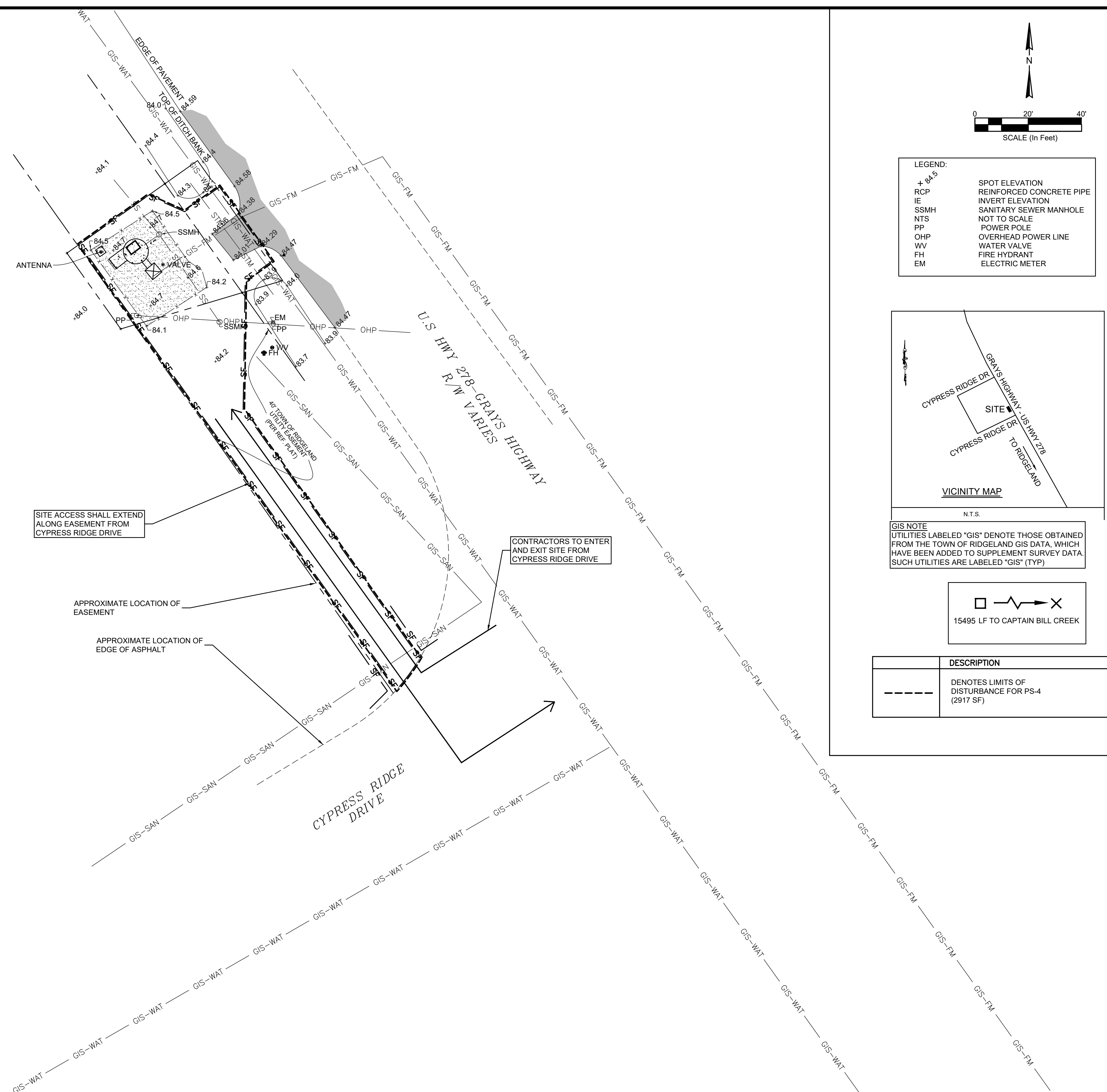
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-8 EXSTING CONDITIONS SITE PHOTOS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	JOB #	ISSUE DATE	ISSUE	BID
		17-1007	FEB 2023		

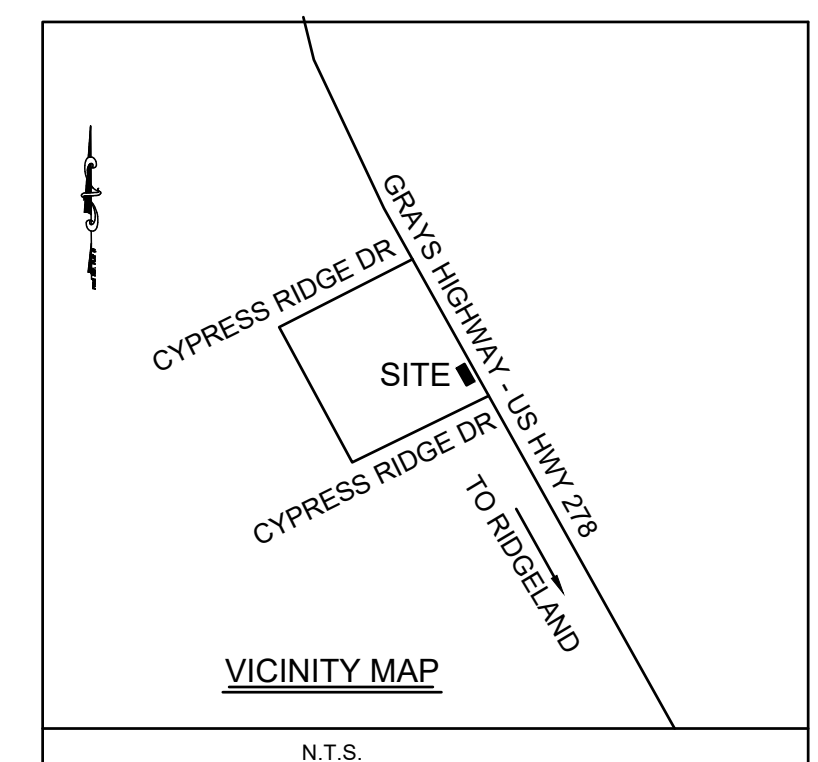
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G5.3

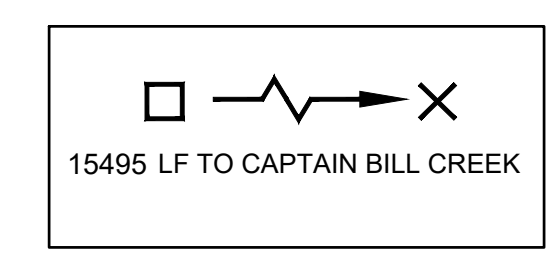


LEGEND:

+ 84.5	SPOT ELEVATION
RCP	REINFORCED CONCRETE PIPE
IE	INVERT ELEVATION
SSMH	SANITARY SEWER MANHOLE
NTS	NOT TO SCALE
PP	POWER POLE
OHP	OVERHEAD POWER LINE
WV	WATER VALVE
FH	FIRE HYDRANT
EM	ELECTRIC METER



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DESCRIPTION
--- DENOTES LIMITS OF DISTURBANCE FOR PS-4 (2917 SF)

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ANGELA B. BRYAN
 No. 21839
 PROFESSIONAL ENGINEER
 SOUTH CAROLINA

FOUR WATERS ENGINEERING, INC.
 No. 5166
 PROFESSIONAL ENGINEER
 SOUTH CAROLINA

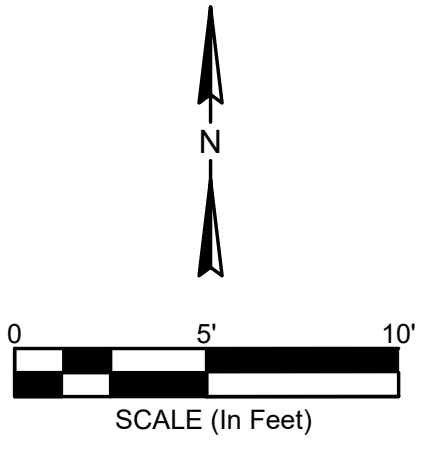
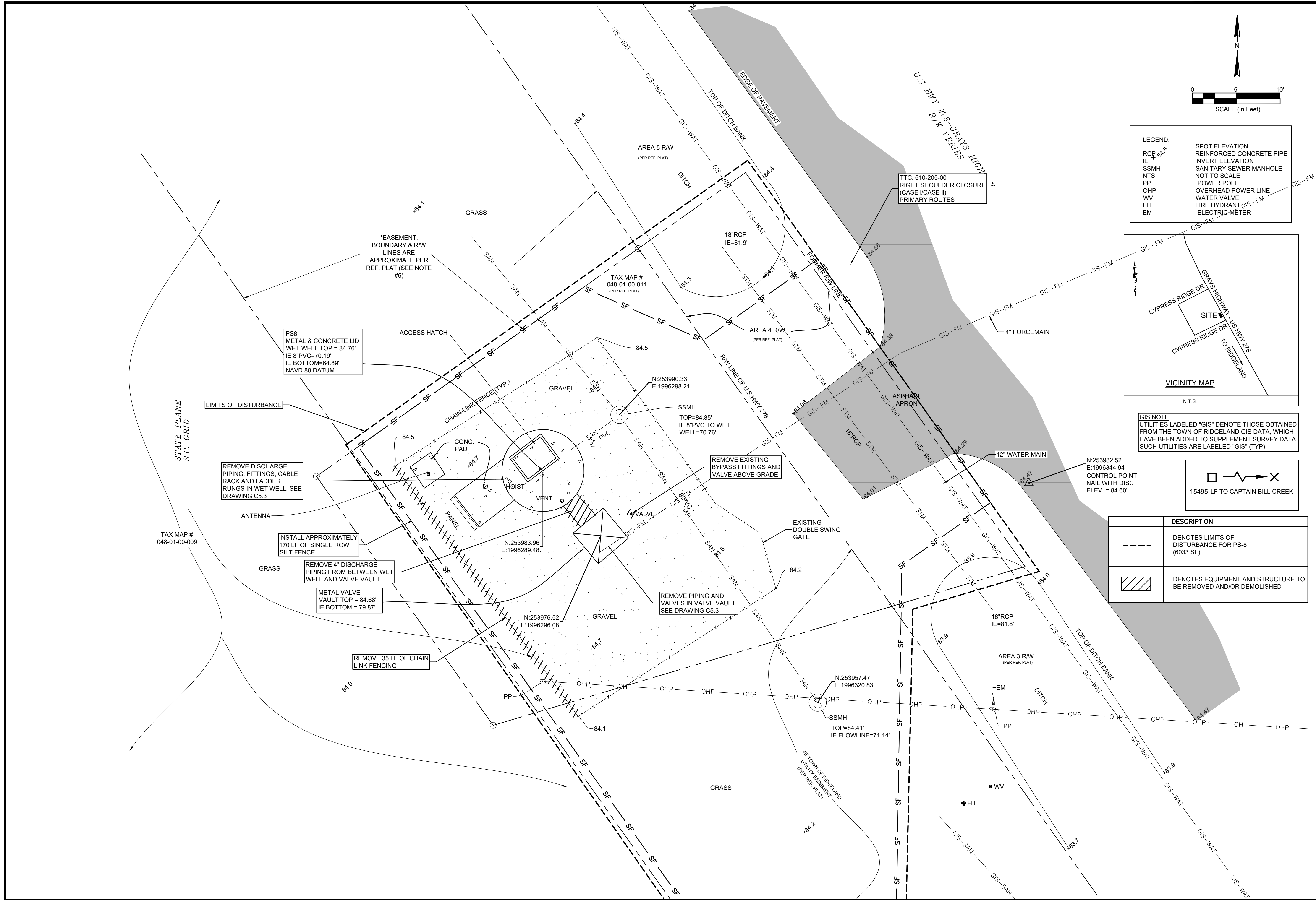
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-8 DEMOLITION PLAN SITE PLAN
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	DATE	ISSUE	DATE	ISSUE
ABB	JMC	17-1007	FEB 2023		

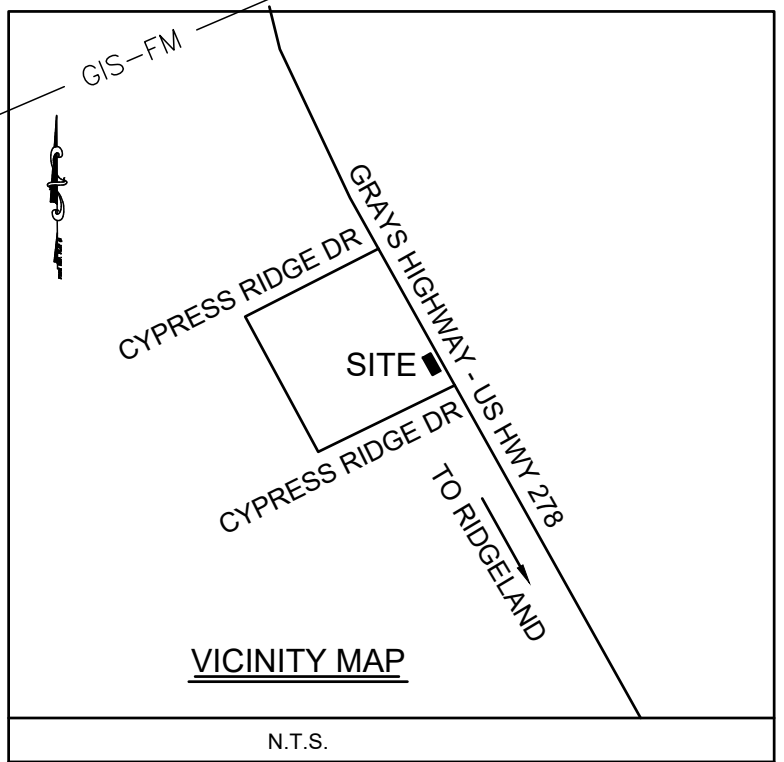
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 844-414-2400 S.C. COA # 5166 WWW.FOURWATERS.COM

DRAWING NUMBER
C5.1

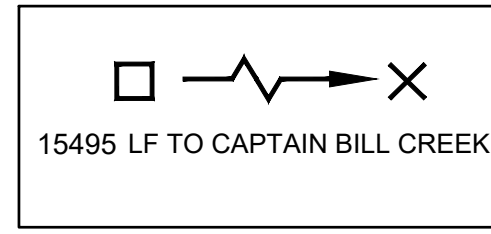


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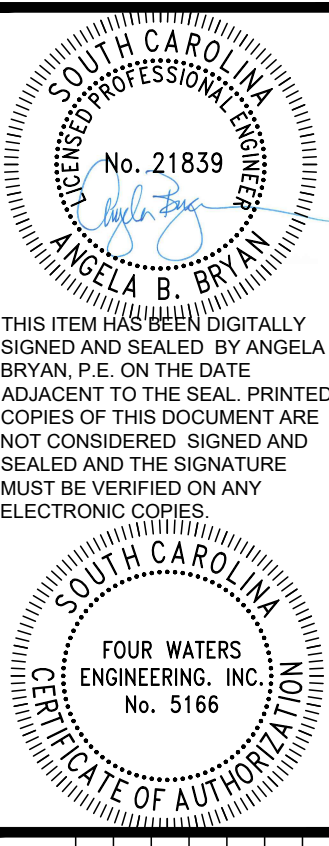
RCP 84.5	SPOT ELEVATION
IE	REINFORCED CONCRETE PIPE
SSMH	INVERT ELEVATION
NTS	SANITARY SEWER MANHOLE
PP	NOT TO SCALE
OHP	OVERHEAD POWER LINE
WV	OVERHEAD POWER LINE
FH	WATER VALVE
EM	FIRE HYDRANT
	ELECTRIC-METER



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DESCRIPTION	
	DENOTES LIMITS OF DISTURBANCE FOR PS-8 (6033 SF)
	DENOTES EQUIPMENT AND STRUCTURE TO BE REMOVED AND/OR DEMOLISHED



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FOUR WATERS ENGINEERING, INC.
 No. 5166
 CERTIFICATE OF AUTHORITY

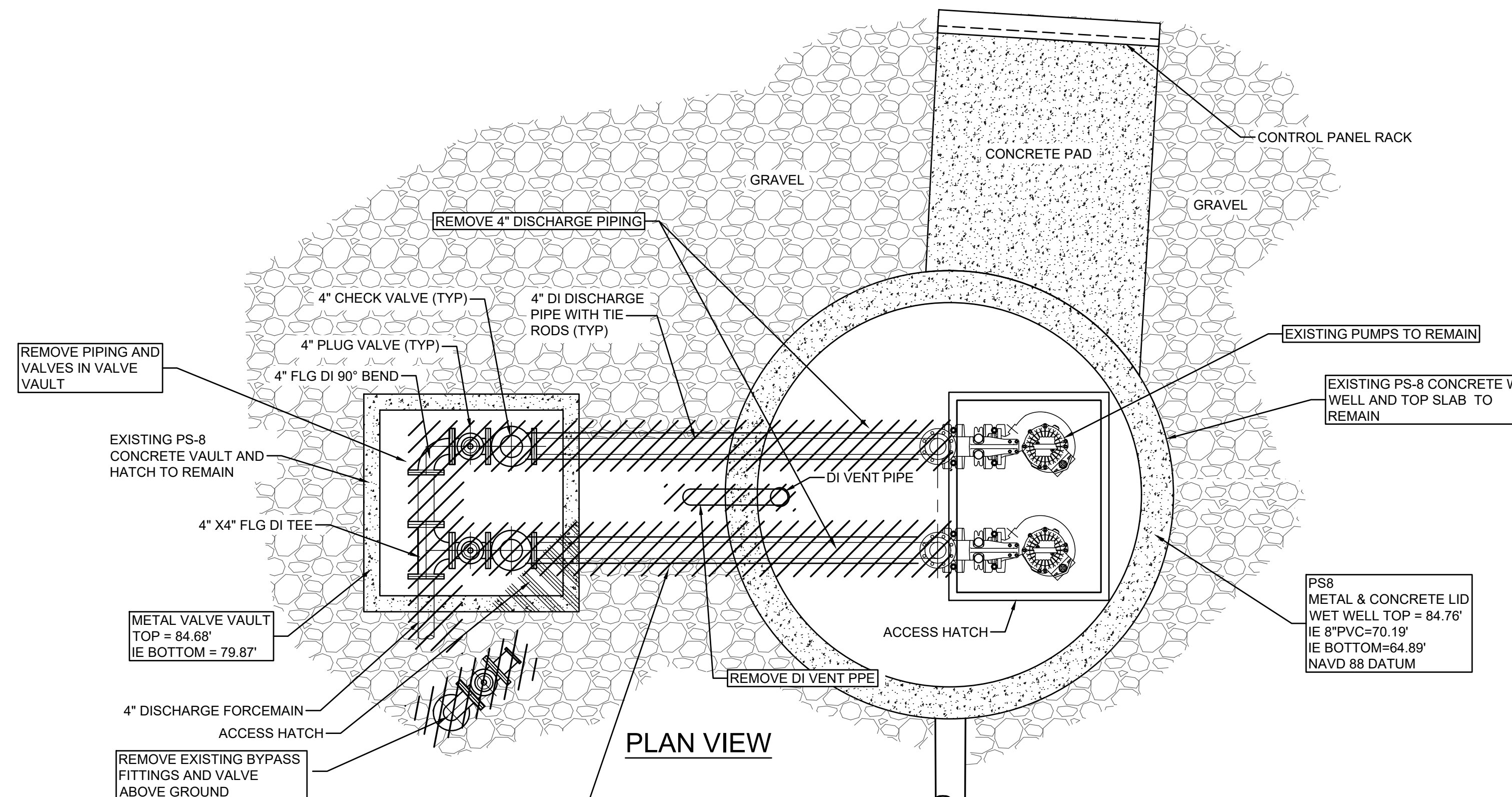
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PART I
PS-8 DEMOLITION PLAN SITE PLAN
 WATER AND SEWER RESILIENCY IMPROVEMENTS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

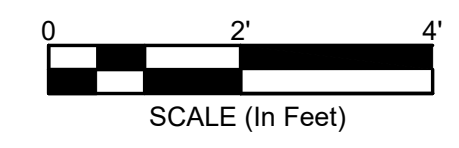
DESIGN ABB	DRAWN JMC

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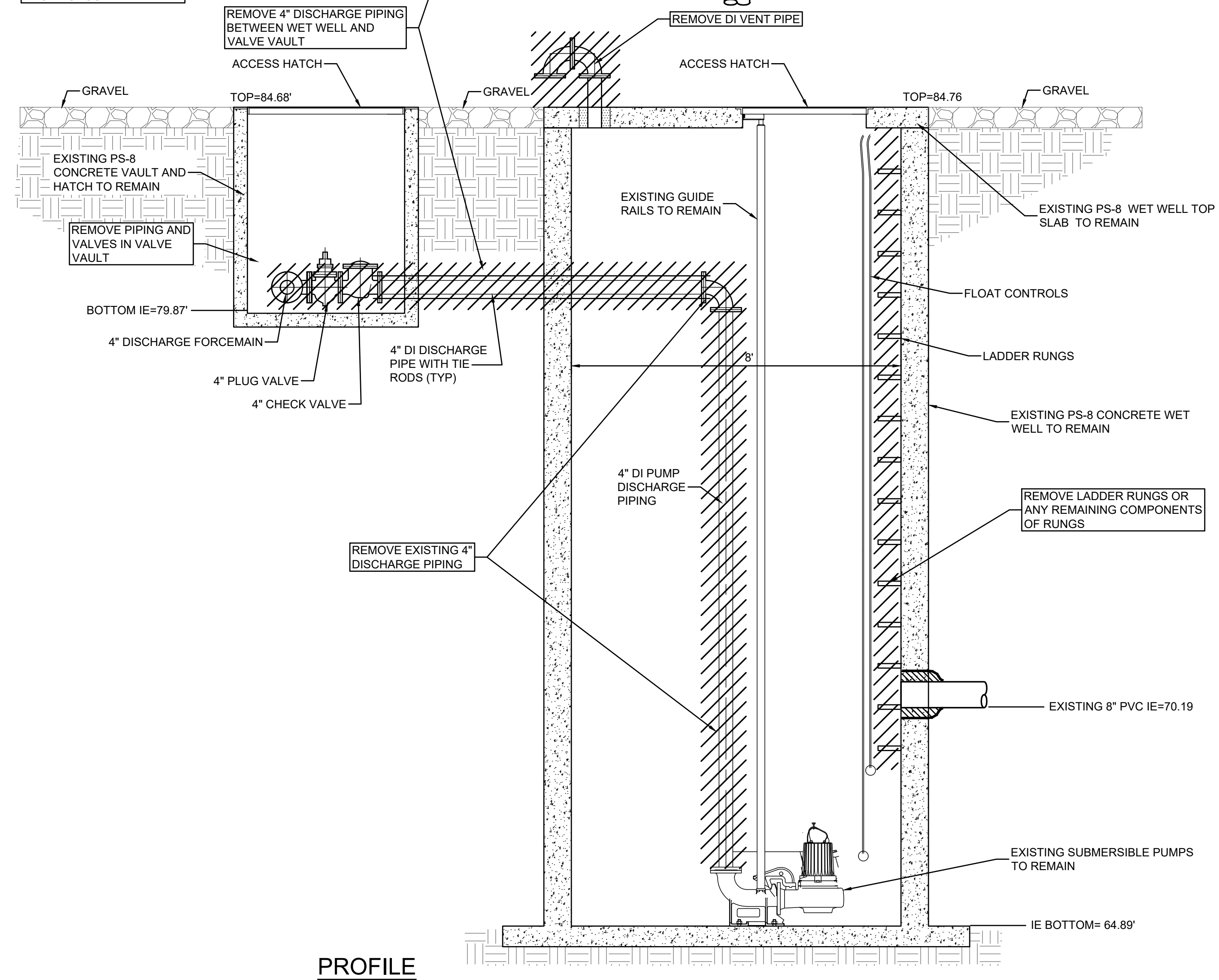
DRAWING NUMBER
C5.2



DESCRIPTION
DENOTES EQUIPMENT AND STRUCTURE TO BE REMOVED AND/OR DEMOLISHED



- DEMOLITION NOTES:**
- ALL NECESSARY TEMPORARY BYPASS OPERATIONS SHALL BE IN PLACE AND OPERATIONAL PRIOR TO INITIATING DEMOLITION ACTIVITIES.
 - 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.
 - 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.
 - PRIOR TO DEMOLITION OR REMOVAL OF STRUCTURES USED FOR WASTEWATER, ALL WASTEWATER AND SOLIDS SHALL BE REMOVED FROM THE STRUCTURE AND PROPERLY DISPOSED.



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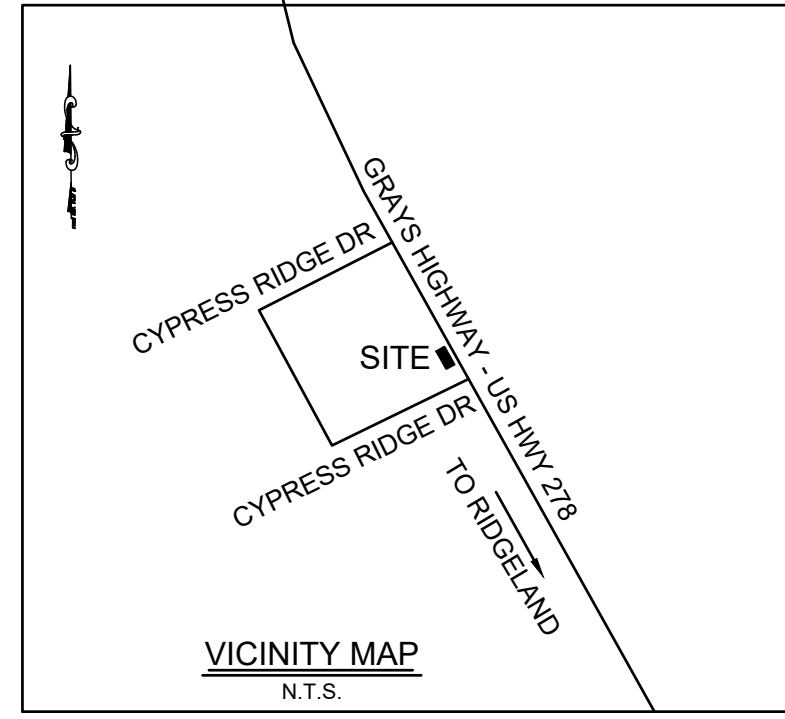
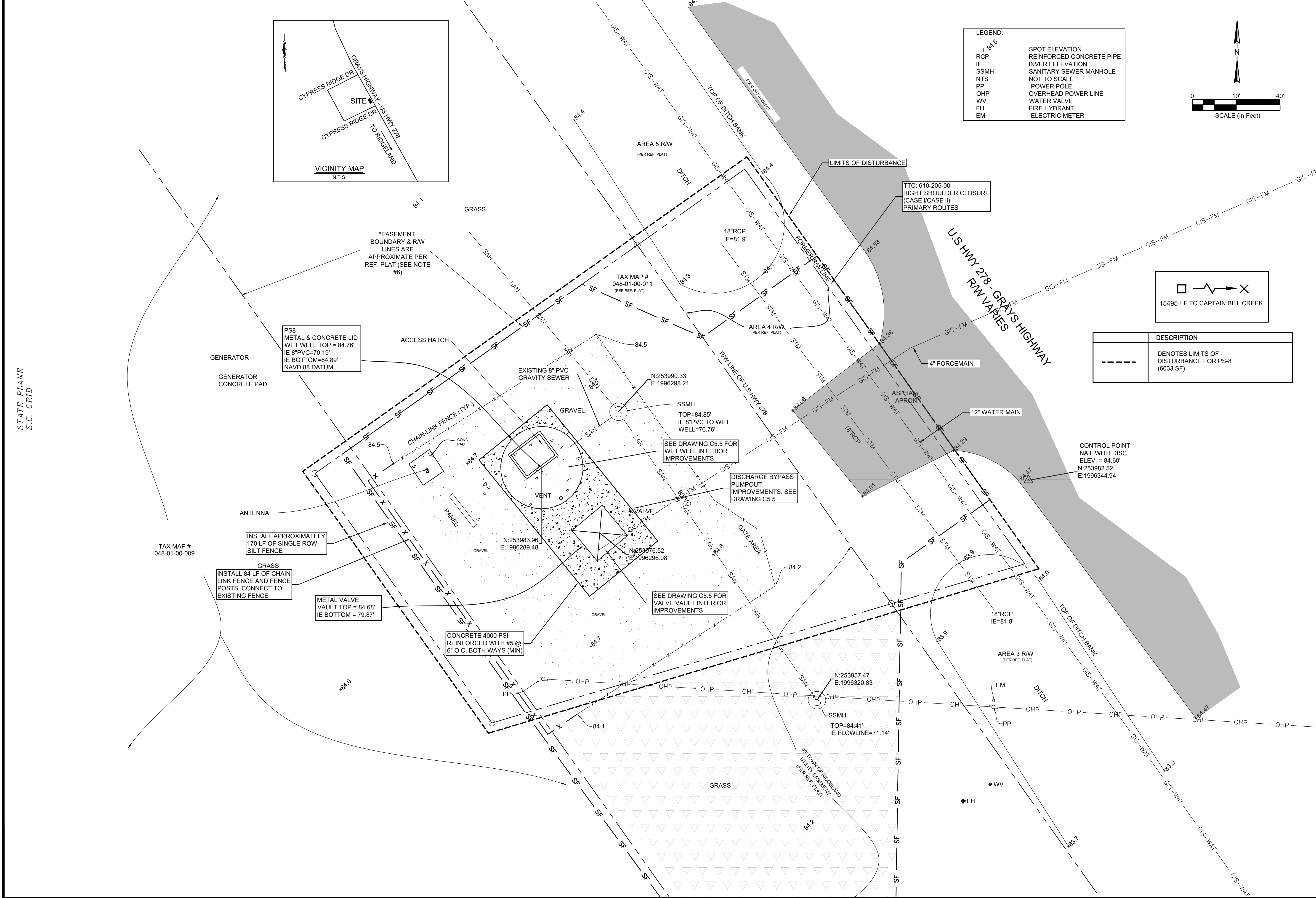
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-8 DEMOLITION PLAN DETAIL
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	DATE	ISSUE	ISSUE	BID
ABB	JMC	17-1007	FEB 2023		

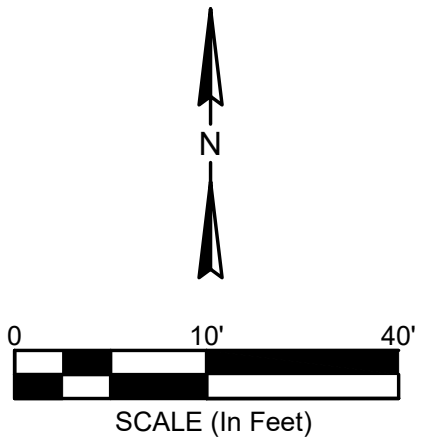
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LEGEND:

+ 84.5	SPOT ELEVATION
RCP	REINFORCED CONCRETE PIPE
IE	INVERT ELEVATION
SSMH	SANITARY SEWER MANHOLE
NTS	NOT TO SCALE
PP	POWER POLE
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EM	ELECTRIC METER



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No. 5166
REGISTERED PROFESSIONAL ENGINEER
SOUTH CAROLINA

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WATER AND SEWER RESILIENCY IMPROVEMENTS

PART I

PS-8 PROPOSED IMPROVEMENTS PLANS

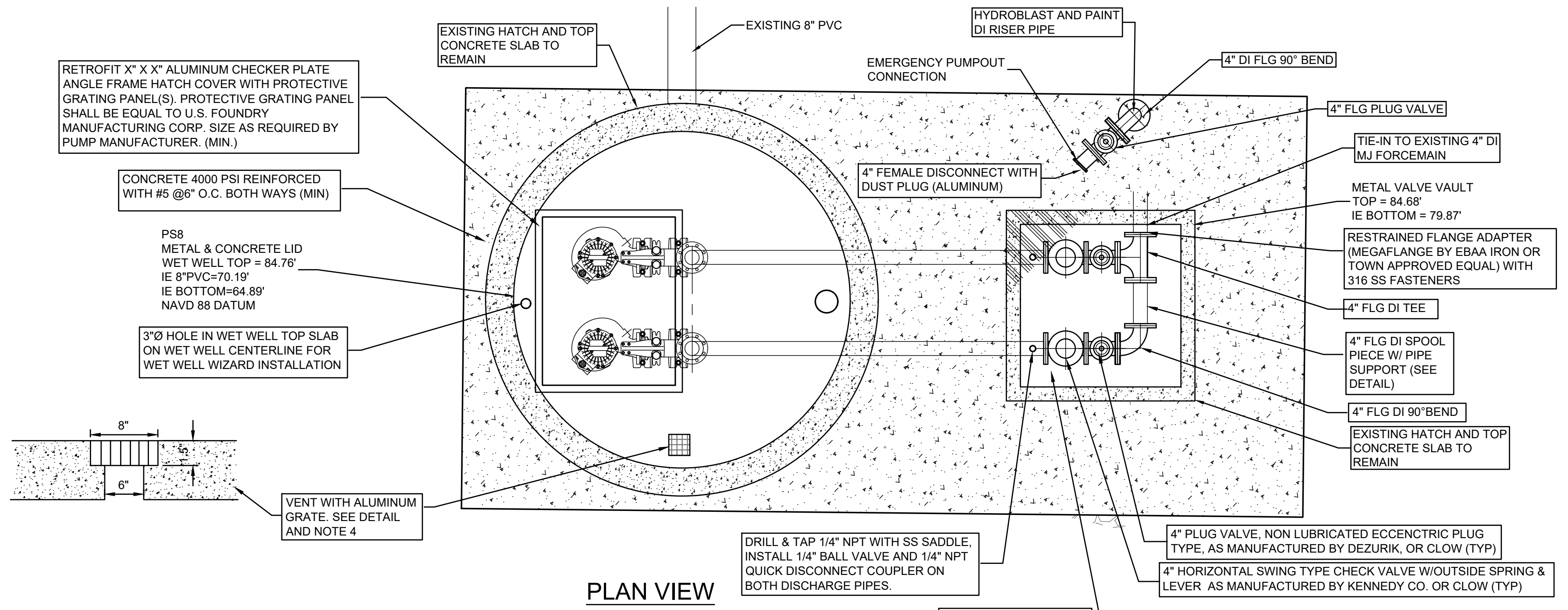
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

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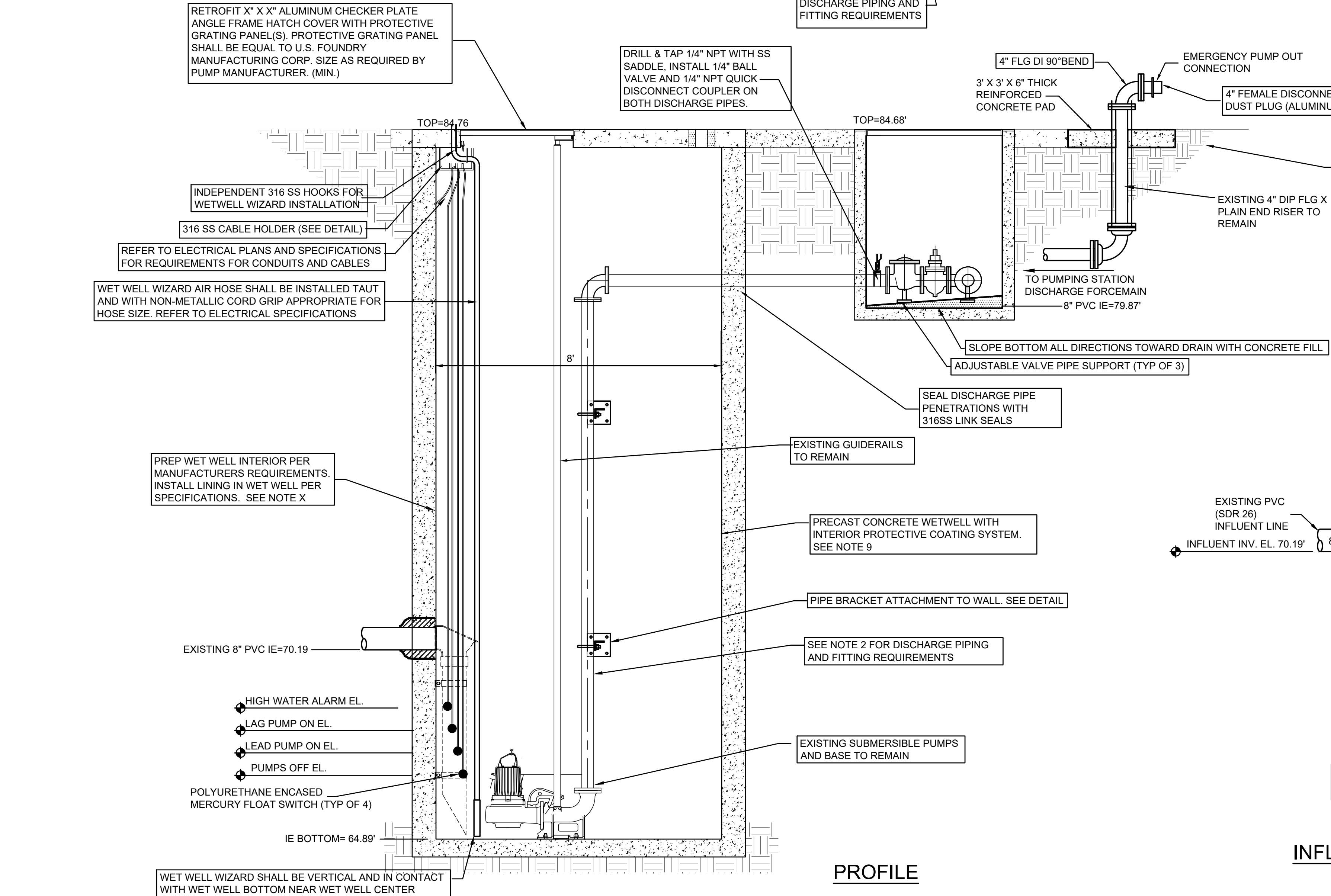
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844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

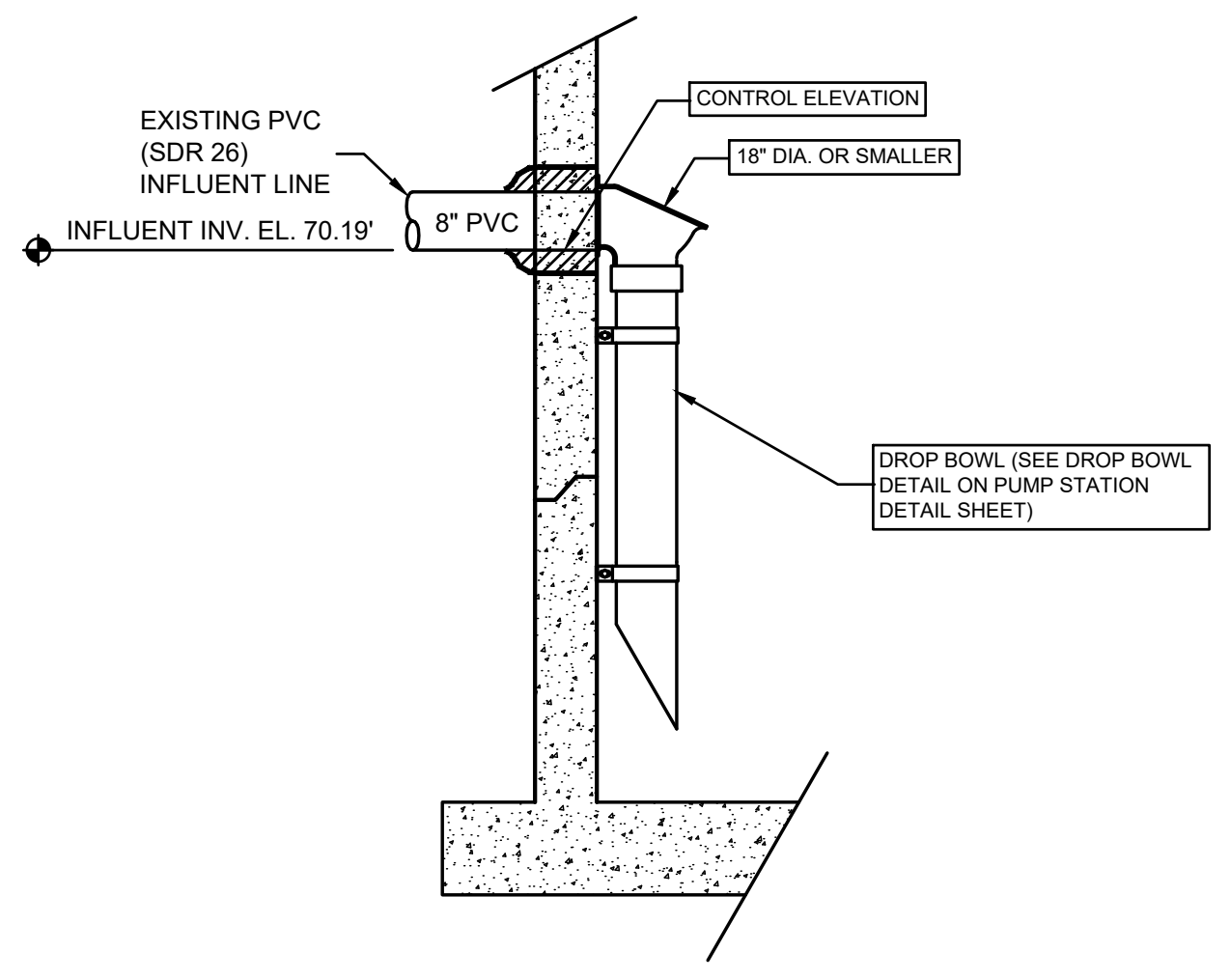
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C5.4



PLAN VIEW



PROFILE

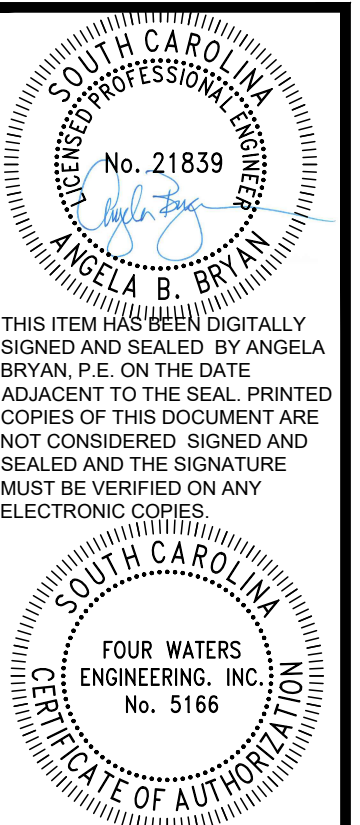


INFLUENT SECTION
NOT TO SCALE



GENERAL NOTES

- ALL METALS INSIDE THE WET WELL INCLUDING BUT NOT LIMITED TO GUIDE RAILS, LIFTING CHAINS, NUTS, BOLTS, CABLE HOLDERS, PIPE SUPPORTS AND BRACES, ETC., TO BE 316 STAINLESS STEEL, UNLESS SPECIFICALLY NOTED OTHERWISE.
- PUMP DISCHARGE PIPING AND FITTINGS: DISCHARGE PIPING AND FITTINGS FROM PUMP ELBOW THROUGH TO CHECK VALVE IN VALVE VAULT SHALL BE A MINIMUM 4" (UNLESS APPROVED OTHERWISE BY TOWN) AND SHALL BE EITHER:
 - HDPE PIPE AND FITTINGS: HDPE PIPE AND FITTINGS SHALL BE DIPS DR11 AND SHALL BE FUSED AS ONE PIECE BETWEEN PUMP BASE ELBOW AND MIDPOINT BETWEEN WET WELL AND VALVE VAULT, AND FROM MIDPOINT BETWEEN WET WELL AND VALVE VAULT TO CHECK VALVE IN VALVE VAULT. ENDS OF PIPE AT PUMP BASE ELBOW AND CHECK VALVE SHALL UTILIZE HDPE FLANGE ADAPTER AND BACKING RING. HDPE PIPING BETWEEN WET WELL AND VALVE VAULT SHALL BE JOINED WITH ELECTROFUSION COUPLINGS.
 - FUSED PVC PIPE AND STAINLESS STEEL FITTINGS: PVC PIPE SHALL BE C900 DR18 AND SHALL BE FUSED AS ONE PIECE BETWEEN PUMP BASE ELBOW AND 90 DEGREE BEND IN WET WELL, AND FROM 90 DEGREE BEND IN WET WELL TO CHECK VALVE IN VALVE VAULT. 90 DEGREE BEND IN VALVE VAULT SHALL BE FLANGED 316 STAINLESS STEEL, SCH 40. PVC PIPING ENDS SHALL UTILIZE RESTRAINED FLANGE ADAPTER (MEGAFLANGE BY EBAA IRON OR TOWN APPROVED EQUAL) WITH 316 SS FASTENERS TO CONNECT TO PUMP BASE ELBOW, 90 DEGREE BEND, AND CHECK VALVE.
- AERATION SYSTEM: WET WELL WIZARD SYSTEM AS MANUFACTURED BY RELIANT WATER TECHNOLOGIES, NEW ORLEANS, LA. WWW.RELIANTWATER.US.COM SHALL BE INSTALLED IN WET WELL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. DESIGN ENGINEER OF RECORD SHALL COORDINATE WITH RELIANT WATER TECHNOLOGIES TO DETERMINE NUMBER AND SIZING OF BLOWER(S) AND WET WELL WIZARDS NECESSARY FOR INSTALLATION.
- VENT: PROVIDE 6"X6" OPENING THROUGH THE CONCRETE TOP OF THE WET WELL AND INSERT 8"X8" X 1-1/2" THICK ALUMINUM GRATE VENT CONSTRUCTED OF 1-1/2" WIDE X 1/8" MATERIAL.
- FITTINGS: ALL DUCTILE IRON FITTINGS SHALL BE EPOXY LINED. ALL BURIED FITTINGS SHALL BE RESTRAINED.
- LEVEL MONITORING: INSTALL ULTRASONIC LEVEL MEASUREMENT SYSTEM IN ACCORDANCE WITH ELECTRICAL PLANS AND SPECIFICATIONS AND MANUFACTURER'S REQUIREMENTS. PROVIDE FOUR BACKUP POLYURETHANE ENCASED MERCURY FLOAT SWITCHES FOR PUMPS OFF, LEAD PUMP ON, LAG PUMP ON, AND HIGH WATER ALARM.
- INTERIOR PROTECTIVE COATINGS: PROTECTIVE COATING SHALL BE APPLIED TO THE INTERIOR OF WET WELLS AND RECEIVING MANHOLES. COATING SYSTEM IN WET WELL SHALL BE APPLIED TO VERTICAL WALLS AND TOP, AT A MINIMUM. PROTECTIVE COATING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND SHALL BE APPLIED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND BY INSTALLER CERTIFIED BY COATING SYSTEM MANUFACTURER.
- EMERGENCY PUMP OUT CONNECTION PIPE SIZE FOR EMERGENCY PUMP OUT CONNECTION SHALL MATCH PUMP DISCHARGE PIPE SIZE IN WET WELL.
- MIN. WATER LEVEL: MINIMUM WATER LEVEL IN WET WELL SHALL BE 30" MINIMUM FOR PROPER OPERATION OF THE WET WELL WIZARD, SHALL COVER TOP OF PUMP MOTOR, OR SHALL BE GREATER IF RECOMMENDED BY PUMP MANUFACTURER.
- FLOOD ZONE: DESIGN ENGINEER OF RECORD SHALL PROVIDE INFORMATION ON THE FLOOD ZONE OF THE PUMP STATION SITE AND SHALL PROVIDE VERIFICATION THAT THE TOP OF THE WET WELL IS ABOVE THE 100 YEAR FLOOD ELEVATION AND THAT THE BOTTOM OF THE CONTROL PANELS, GENERATOR RECEPTACLE AND GENERATOR SLAB AREA ALL ABOVE THE 100 YEAR FLOOD ELEVATION + 2 FEET OR THE 500 YEAR FLOOD ELEVATION, WHICHEVER IS GREATER.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL ELEVATIONS AND DIMENSIONS CALLED OUT ON THIS PLAN SET FOR THE PUMP STATION PRIOR TO ORDERING OF ANY MATERIALS OR COMPONENTS OF THE PUMP STATION. ANY DEVIATION OF THE LAYOUTS INDICATED ON THIS PLAN MUST BE COMMUNICATED TO THE TOWN AND ENGINEER OF RECORD FOR FURTHER DIRECTION.
- CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY STABILIZATION FOR DEMOLITION AND CONSTRUCTION AND SHALL HIRE A SPECIALTY PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA TO DESIGN THE STABILIZATION SYSTEM FOR EXCAVATION AND EVALUATE THE DRAWDOWN OF THE DEWATERING OPERATIONS DURING CONSTRUCTION IN ORDER TO PROTECT THE EXISTING PS-6 STRUCTURES. DESIGN AND EVALUATION SHALL BE SIGNED AND SEALED AND SUBMITTED TO THE TOWN OF RIDGELAND AND ENGINEER OF RECORD.
- 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 OPERATIONS, THE CONTRACTOR SHALL PREPARE A DEWATERING PLAN FOR APPROVAL AND SHALL SECURE AN SCDHEC NPDES GENERIC PERMIT WHICH COVERS STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND DEWATERING OF NON-CONTAMINATED GROUNDWATER.
- PS-6 SITE LOCATED IN ZONE X AREA OF MINIMAL FLOODING (NO ESTABLISHED FLOOD ELEVATION), PER NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP PANEL 305 OF 575 JASPER COUNTY, SOUTH CAROLINA AND INCORPORATED AREA MAP NUMBER 45053C0305D.



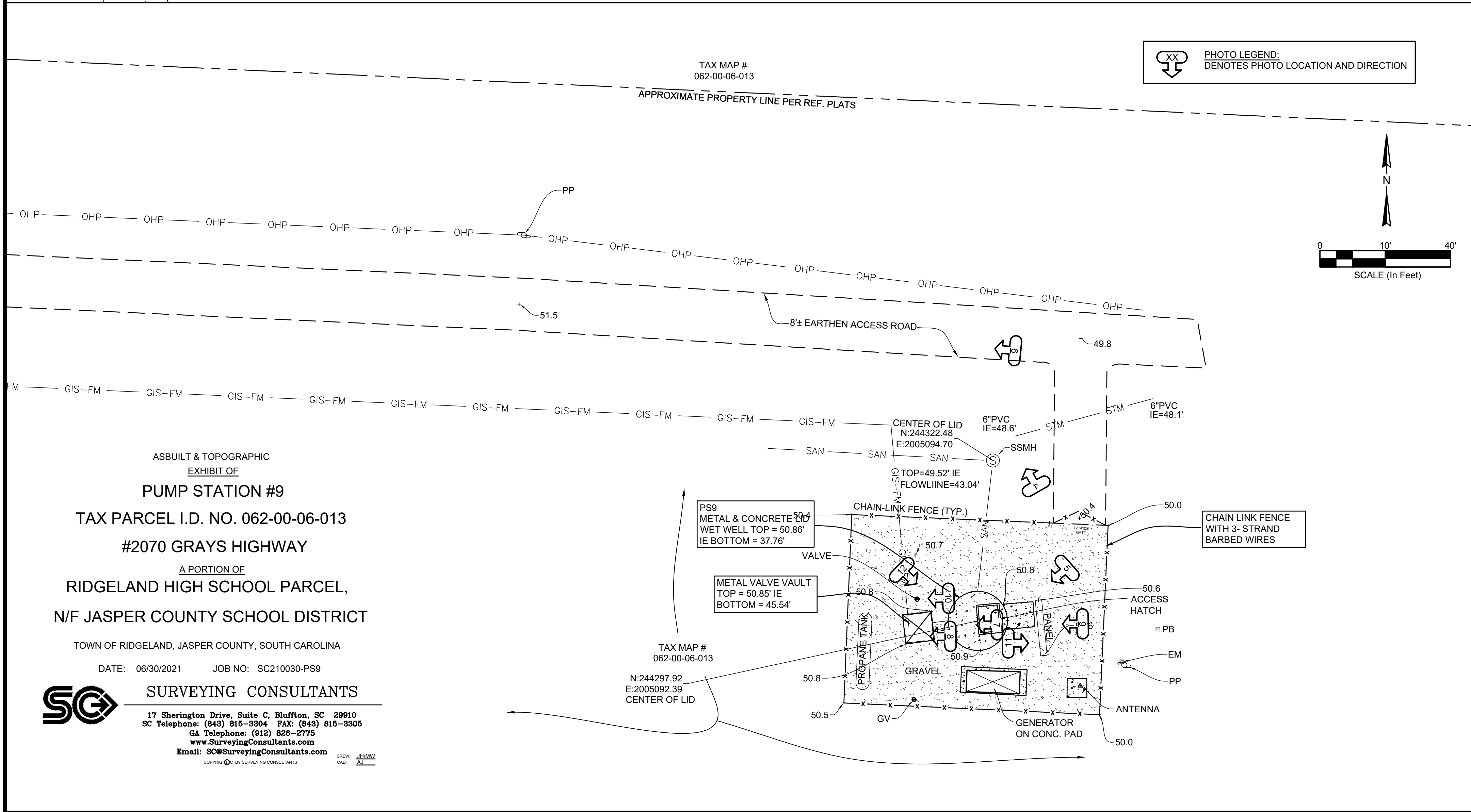
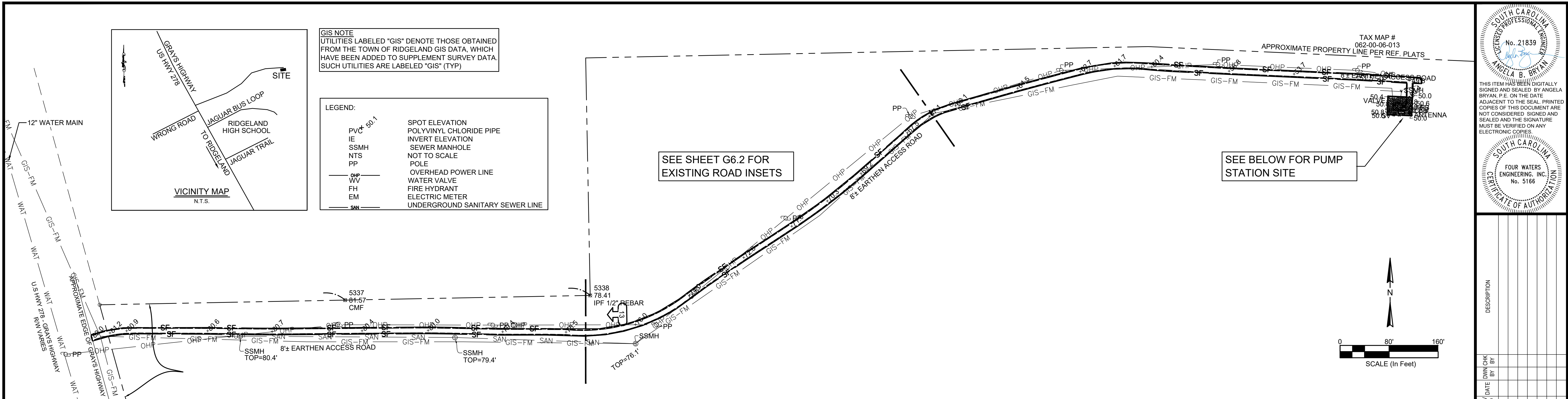
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PS-8 PROPOSED IMPROVEMENTS DETAIL
PART I
WATER AND SEWER RESILIENCY IMPROVEMENTS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DATE	ISSUE	ISSUE
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FOUR WATERS ENGINEERING
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DRAWING NUMBER
C5.5



PREPARED FOR: FOUR WATERS ENGINEERING & TOWN OF RIDGELAND

ADDRESS: #2070 GRAYS HIGHWAY TAX PARCEL I.D. NO. 062-00-06-013

REFERENCE PLAT:

- A BOUNDARY SURVEY OF 122.87 ACRES, U.S. HIGHWAY 278, PREPARED FOR: JASPER COUNTY SCHOOLS, RIDGELAND, JASPER COUNTY, SOUTH CAROLINA, DATED: 11/10/2011, BY: DONALD R. COOK, S.C.R.L.S. NO. 19010, WARD EDWARDS, INC., RECORDED: P.B. 27, PAGE 63.
- AS-BUILT SURVEY OF A PORTION OF TAX MAP# 062-00-06-003, NEAR RIDGELAND, JASPER COUNTY, SC, PREPARED AT REQUEST OF: CLARK LAWSON & DIANE LAWSON, DATED: 12/08/1998, BY: THOMAS G. STANLEY, S.C.R.L.S. NO. 18269, RECORDED: P.B. 23, PAGE 331.

SPECIAL NOTE:
*HORIZONTAL DATUM IS NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES
*VERTICAL DATUM IN NAVD 88
*SEE NOTE #7 BELOW

NOTES:

- I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO OBVIOUS, APPARENT OR VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.
- UNDERGROUND UTILITIES NOT LOCATED EXCEPT AS SHOWN AND ARE APPROXIMATE. SURVEYING CONSULTANTS DOES NOT CERTIFY TO THE EXACT LOCATION OF ANY UNDERGROUND UTILITY.
- NO SUBSURFACE OR ENVIRONMENTAL INVESTIGATION OR WETLAND SURVEYS WERE PERFORMED FOR THIS PLAT. THEREFORE THIS PLAT DOES NOT REFLECT THE EXISTENCE OR NONEXISTENCE OF WETLANDS, CONTAMINATION, OR OTHER CONDITIONS WHICH MAY AFFECT THIS PROPERTY.
- SURVEYING CONSULTANTS CERTIFIES TO THE TOPOGRAPHIC AND ASBUILT INFORMATION PROVIDED HEREON AS OF THE DATE OF SURVEY. IF THIS DOCUMENT IS TO BE PROVIDED AS A BASE MAP FOR OTHERS, INFORMATION ADDED AFTER THE DATE OF THIS SURVEY IS NOT THE RESPONSIBILITY OF SURVEYING CONSULTANTS.
- THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE, THEREFORE THERE MAY BE OTHER EASEMENTS, RIGHT-OF-WAY, SETBACK LINES, AGREEMENTS, RESERVATIONS, RESTRICTIONS, OR OTHER SIMILAR MATTERS OF PUBLIC RECORD, NOT DEPICTED ON THIS SURVEY.
- THE BOUNDARY LINES SHOWN ARE BASED ON MONUMENT FOUND AND THEIR RELATIONSHIP TO THE REFERENCE PLATS AND SHOULD BE CONSIDERED APPROXIMATE. SURVEYING CONSULTANTS DOES NOT CERTIFY TO THE BOUNDARY LINES SHOWN.
- THE HORIZONTAL DATUM SHOWN IS BASED ON NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES. THE VERTICAL DATUM SHOWN IS BASED ON NAVD 88 DATUM. THE HORIZONTAL AND VERTICAL DATUM SHOWN WERE ESTABLISHED FROM THE SC-VRS SURVEY NETWORK.

DESIGN

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			17-1007	FEB 2023		

WATER AND SEWER RESILIENCY IMPROVEMENTS

PART I

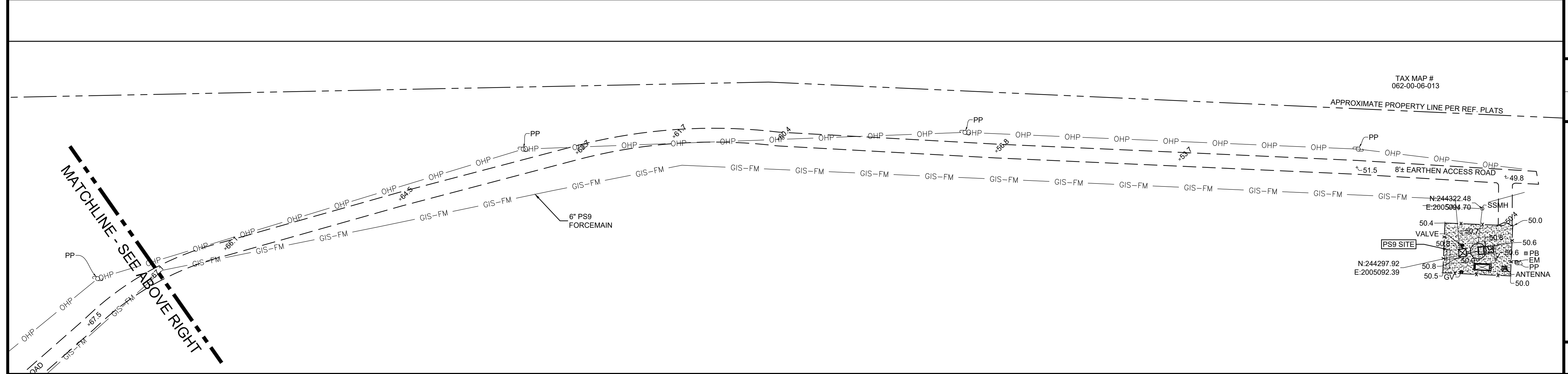
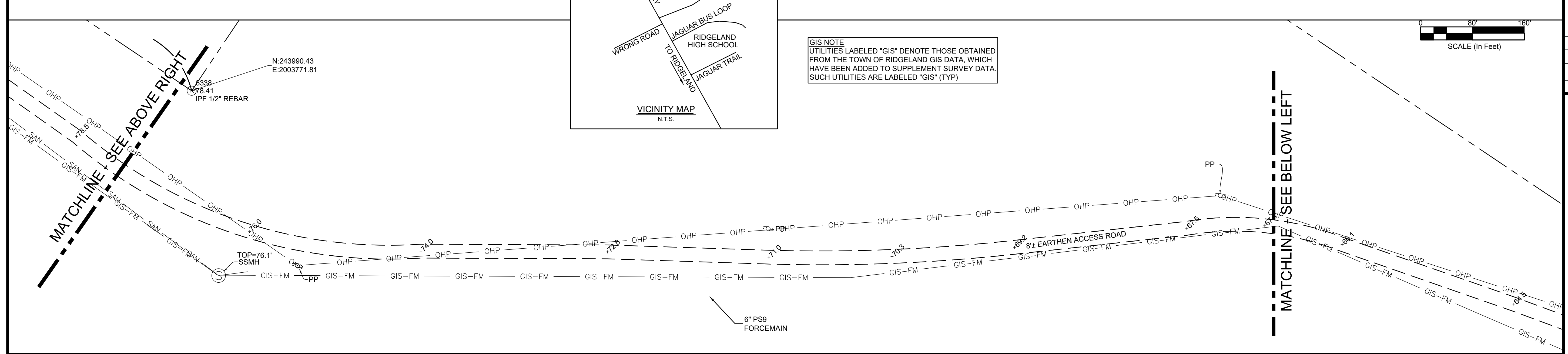
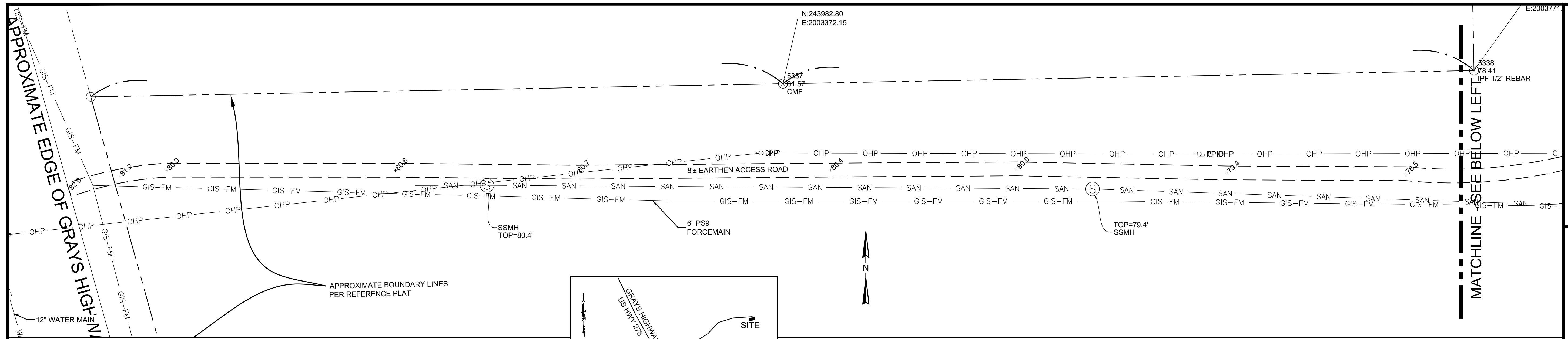
PS-9 EXISTING CONDITIONS AND KEY

TOWN OF RIDGELAND, SOUTH CAROLINA

FOUR WATERS ENGINEERING

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844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
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SOUTH CAROLINA
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 No. 5166
 FOUR WATERS
 ENGINEERING, INC.
 STATE OF SOUTH CAROLINA

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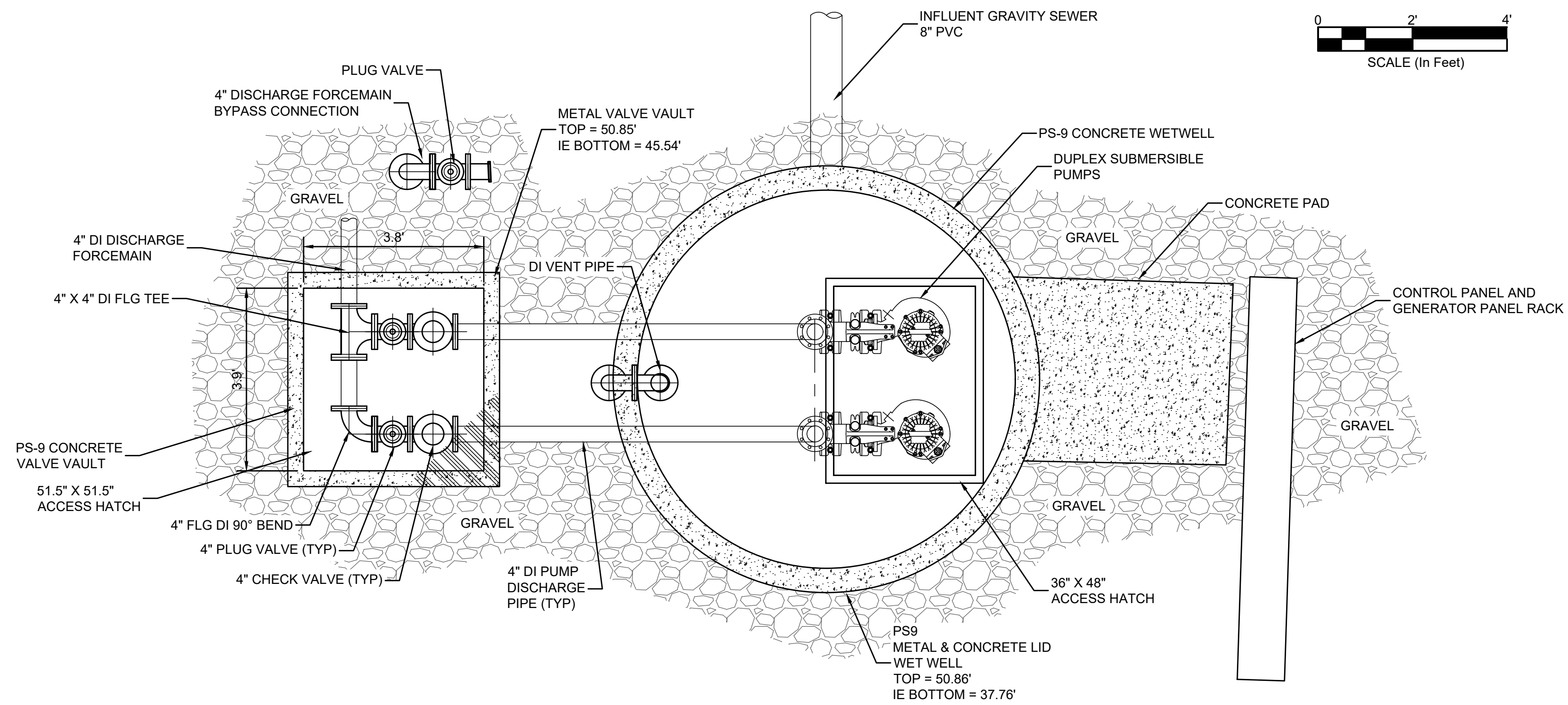
WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-9 EXISTING CONDITIONS
ROADWAY INSETS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

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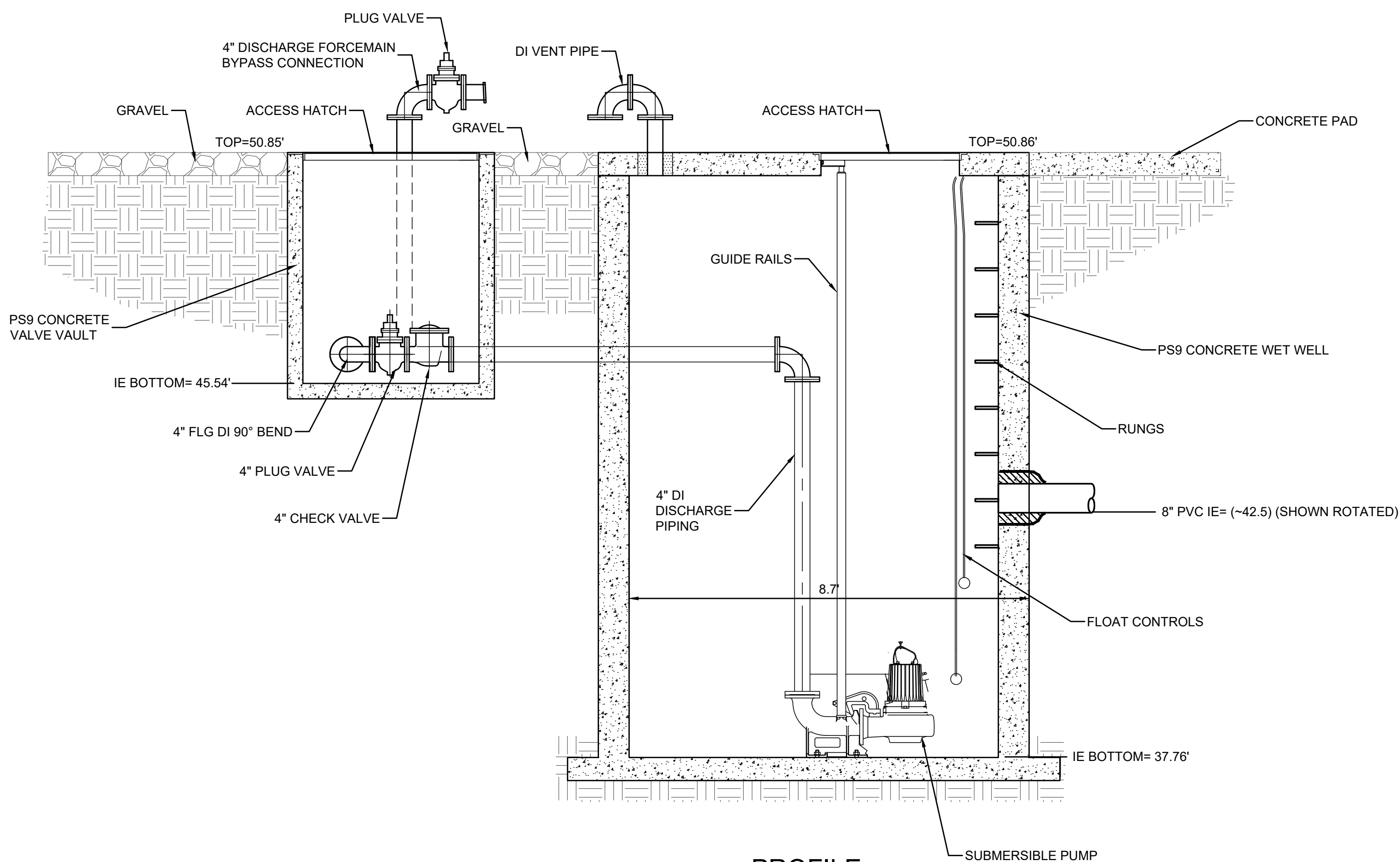
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JOB # 17-1007
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PLAN VIEW



PROFILE



PHOTO-1
LOOKING INTO WET WELL



PHOTO-2
LOOKING INTO WET WELL



PHOTO-3
LOOKING INTO VALVE VAULT

ANGELA B. BRYAN
No. 21839
REGISTERED PROFESSIONAL ENGINEER
SOUTH CAROLINA
STATE OF SOUTH CAROLINA
FOUR WATERS ENGINEERING, INC.
No. 5166
CREATED BY AUTOCAD

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-9 EXISTING CONDITIONS DETAIL
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

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PHOTO-4

LOOKING NORTHWEST FROM PUMP STATION SITE ACROSS JUNCTION/RECEIVING MANHOLE

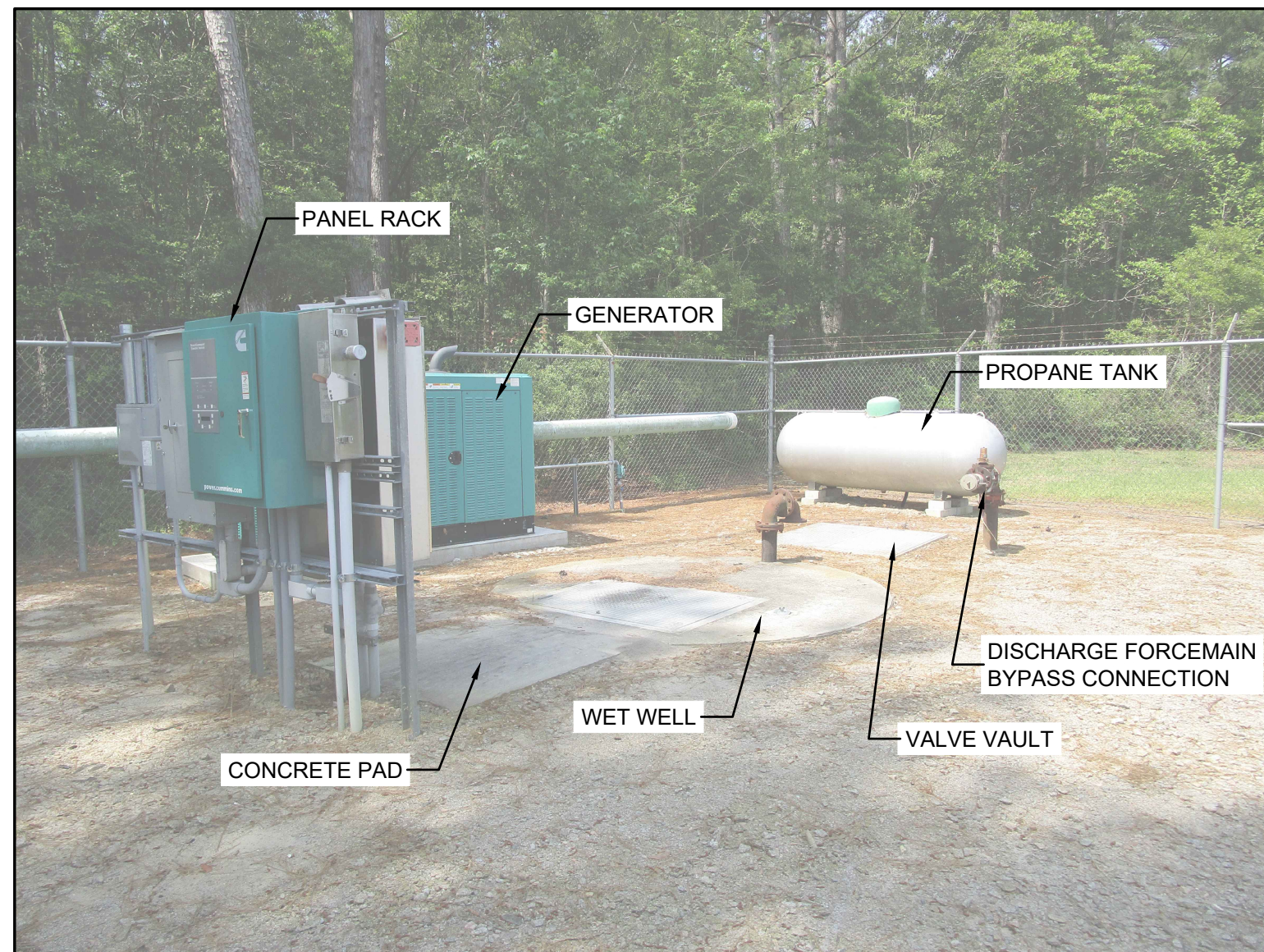


PHOTO-5

LOOKING SOUTHWEST INSIDE SITE



PHOTO-6

LOOKING WEST AT SITE AND ACCESS ROAD



PHOTO-7

LOOKING WEST ACROSS WET WELL



PHOTO-8

LOOKING WEST AT PROPANE TANK



PHOTO-9

LOOKING WEST AT GENERATOR EQUIPMENT PANELS



PHOTO-10

LOOKING WEST AT VALVE VAULT



PHOTO-11

LOOKING EAST AT PUMP STATION CONTROL PANEL

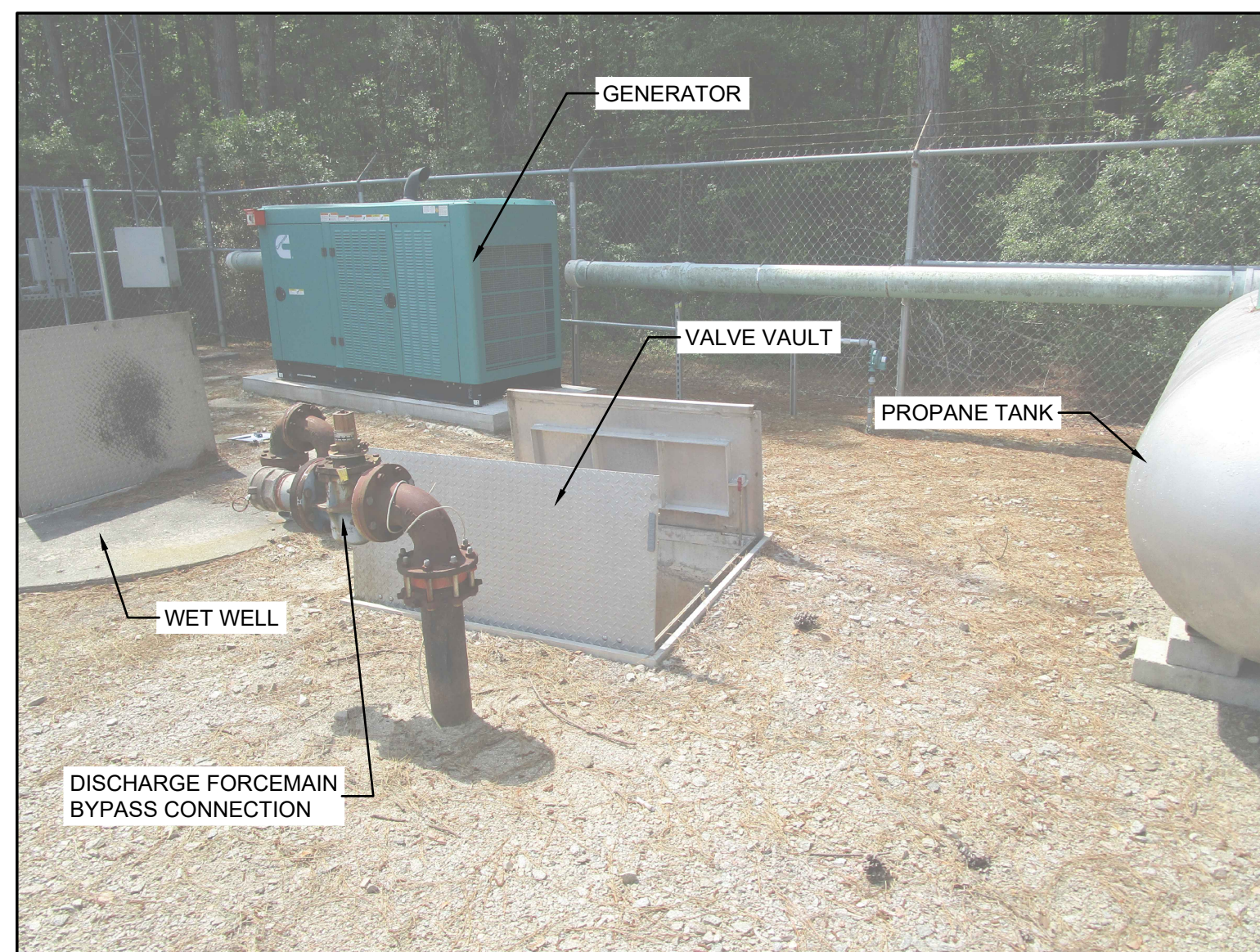


PHOTO-12

LOOKING SOUTHEAST AT PUMP STATION SITE



PHOTO-13

LOOKING WEST ALONG ACCESS ROAD

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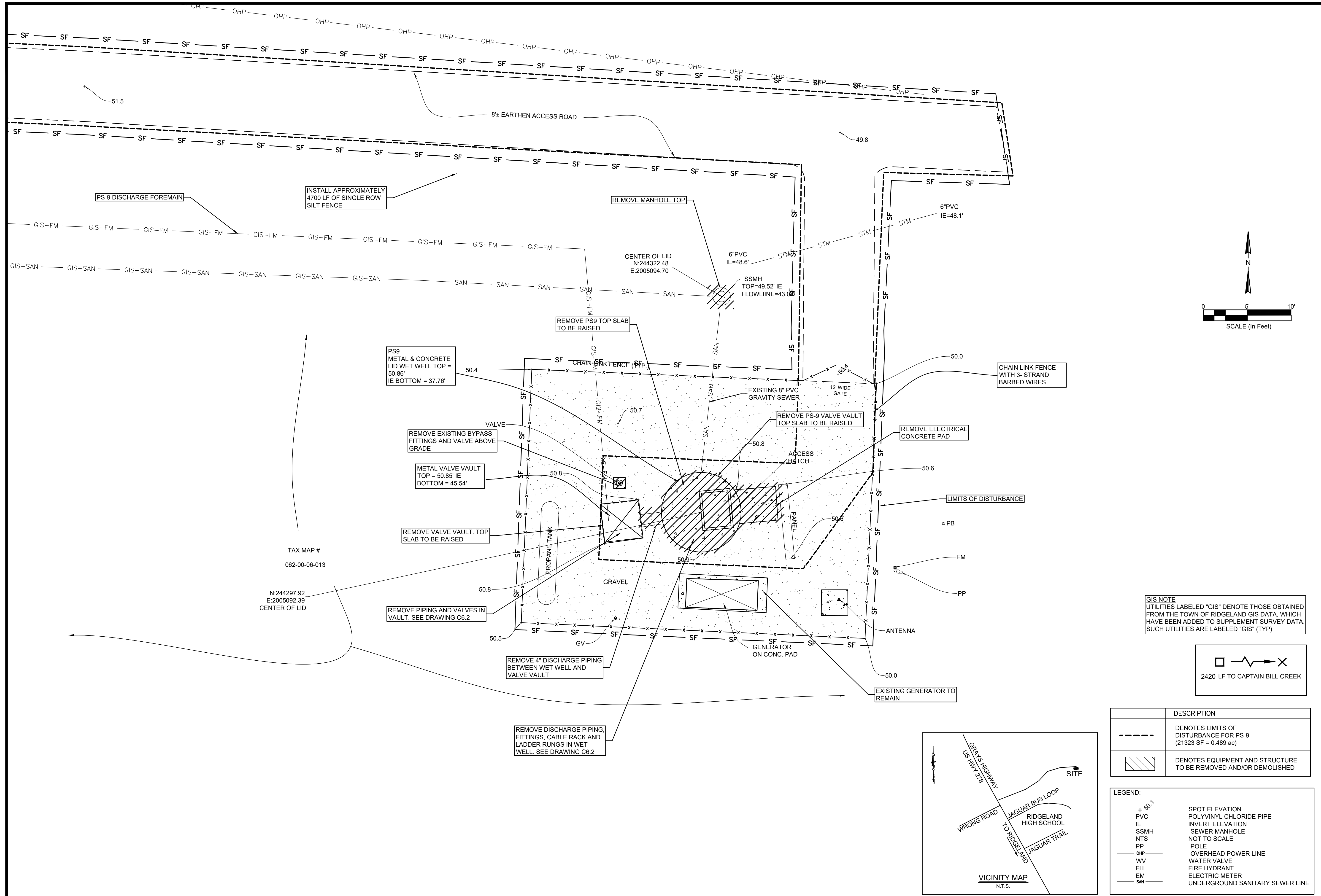
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-9 EXISTING CONDITIONS SITE PHOTOS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

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 REGISTERED PROFESSIONAL ENGINEER
 SOUTH CAROLINA

FOUR WATERS ENGINEERING, INC.
 No. 5166
 CERTIFICATE OF AUTHORITY

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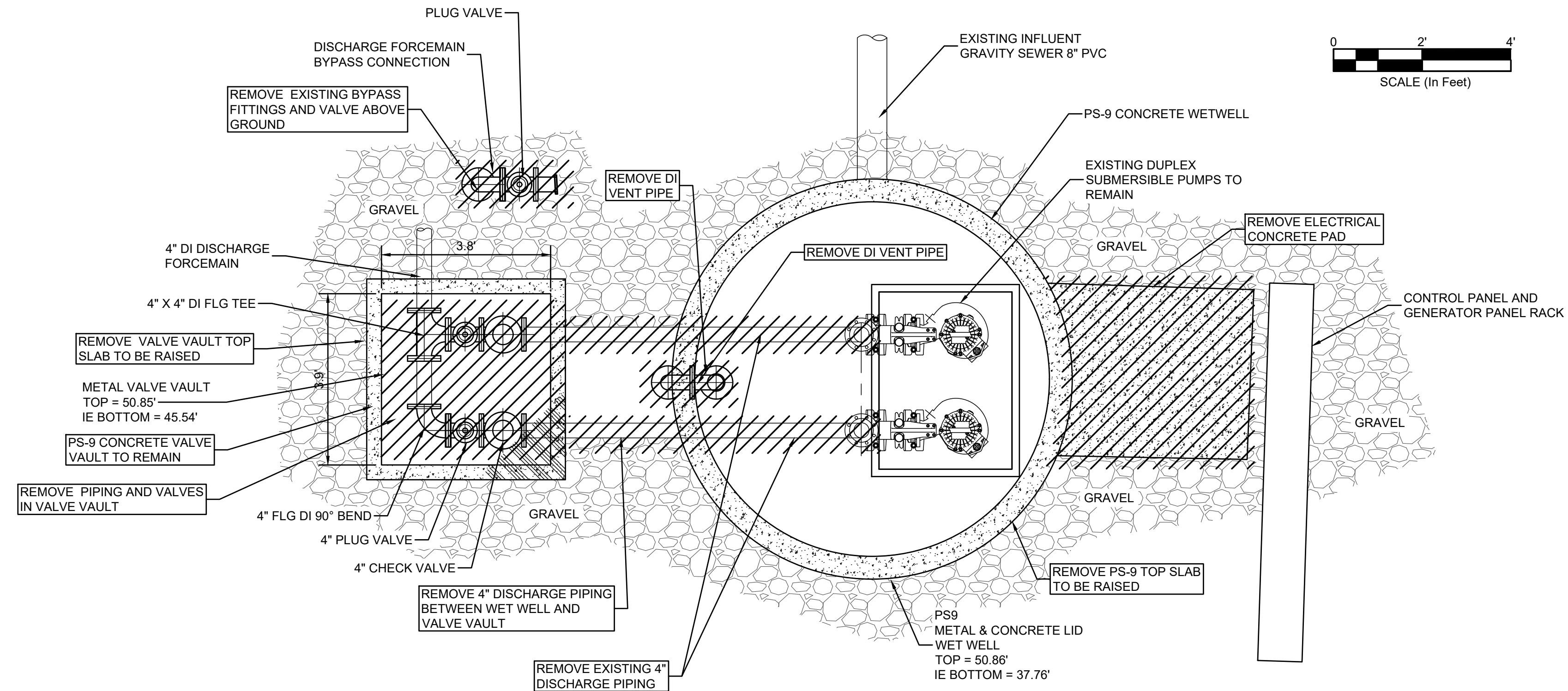
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-9 DEMOLITION PLAN SITE PLAN
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

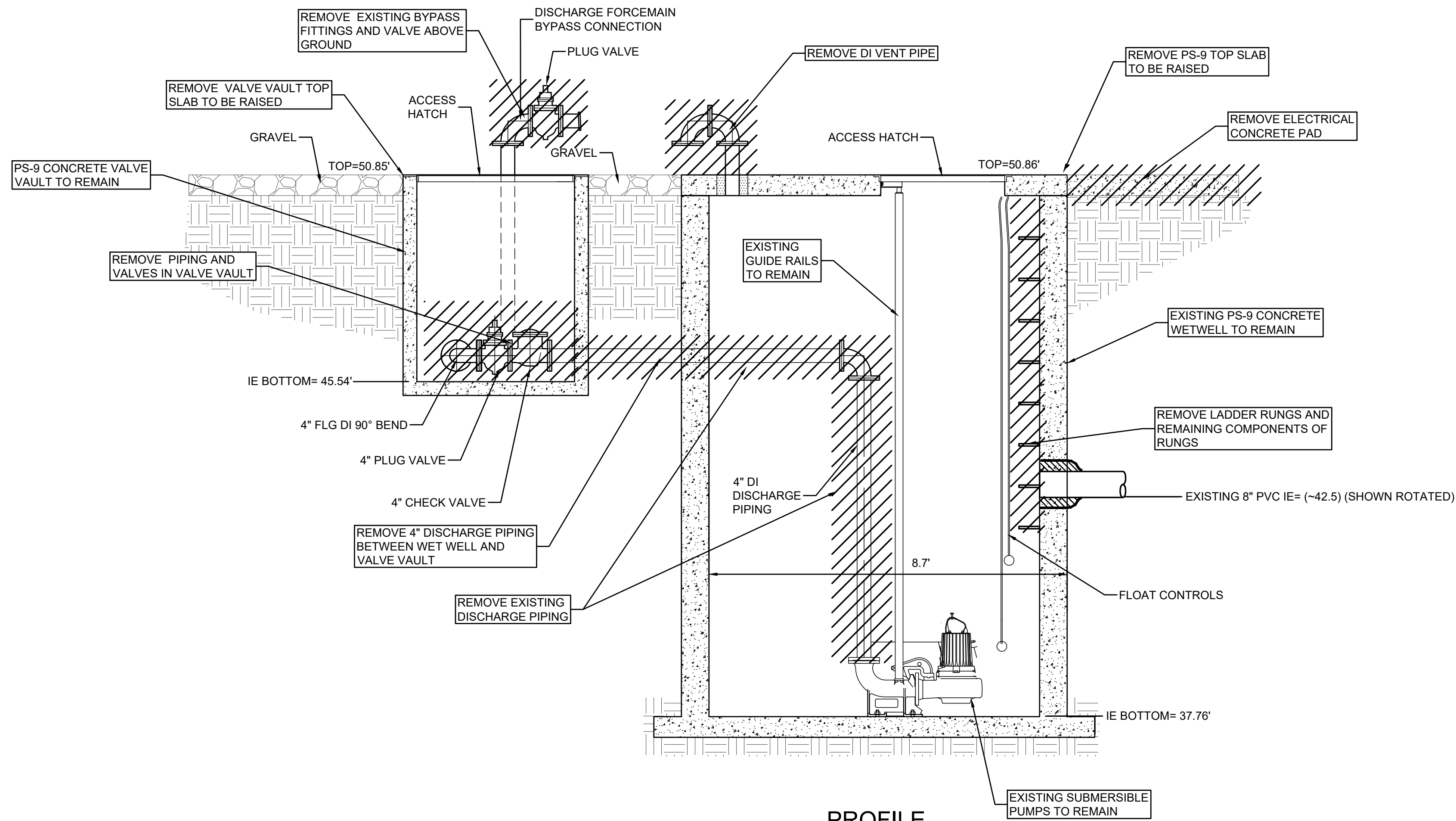
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PLAN VIEW



PROFILE

- DEMOLITION NOTES:**
1. ALL NECESSARY TEMPORARY BYPASS OPERATIONS SHALL BE IN PLACE AND OPERATIONAL PRIOR TO INITIATING DEMOLITION ACTIVITIES.
 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.
 4. PRIOR TO DEMOLITION OR REMOVAL OF STRUCTURES USED FOR WASTEWATER, ALL WASTEWATER AND SOLIDS SHALL BE REMOVED FROM THE STRUCTURE AND PROPERLY DISPOSED.

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SYMBOL	DESCRIPTION
	DENOTES EQUIPMENT AND STRUCTURE TO BE REMOVED AND/OR DEMOLISHED



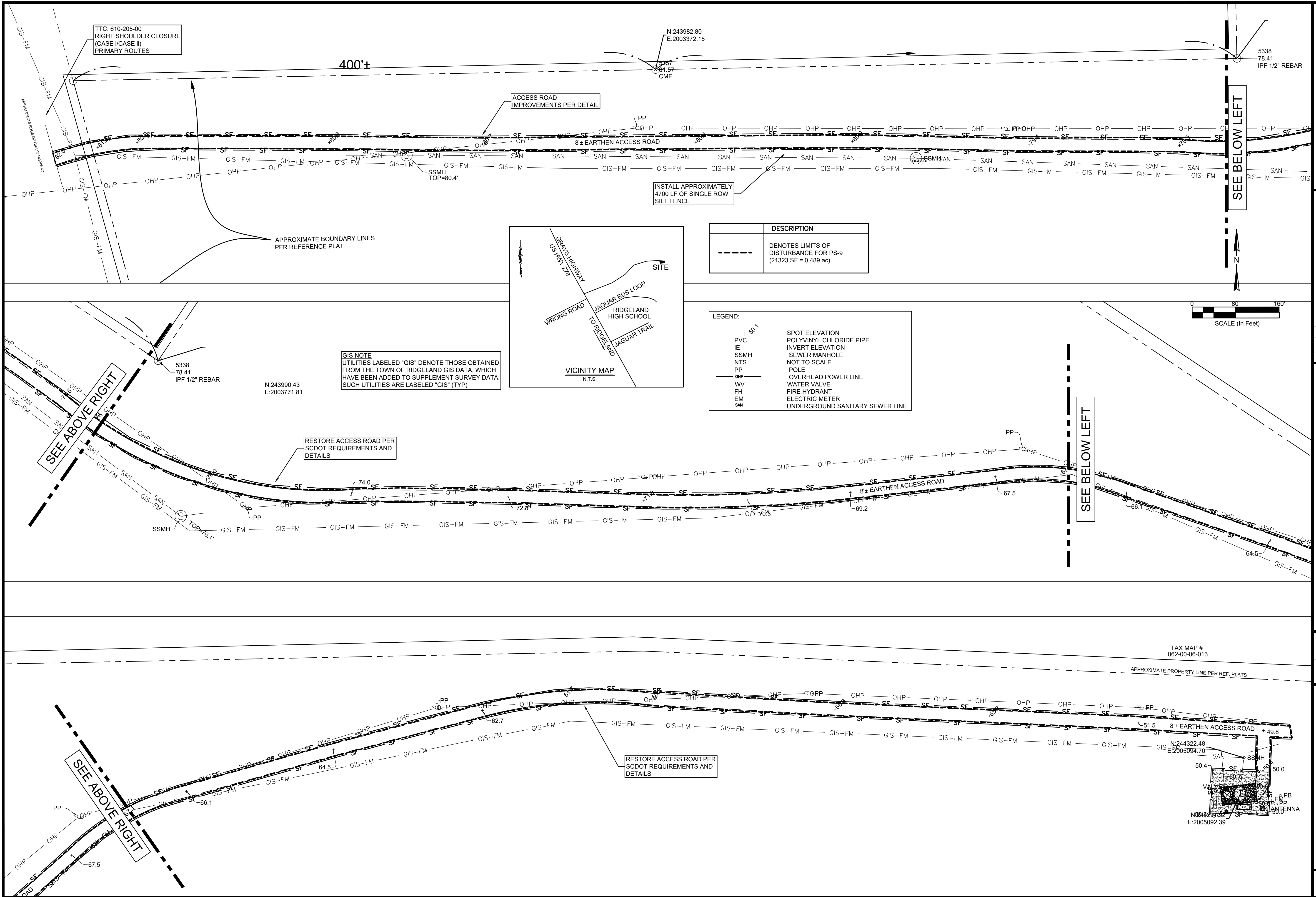
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-9 DEMOLITION PLAN DETAIL
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

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WATER AND SEWER RESILIENCY IMPROVEMENTS

PART I

PS-9 PROPOSED ENTRANCE ROAD

IMPROVEMENTS

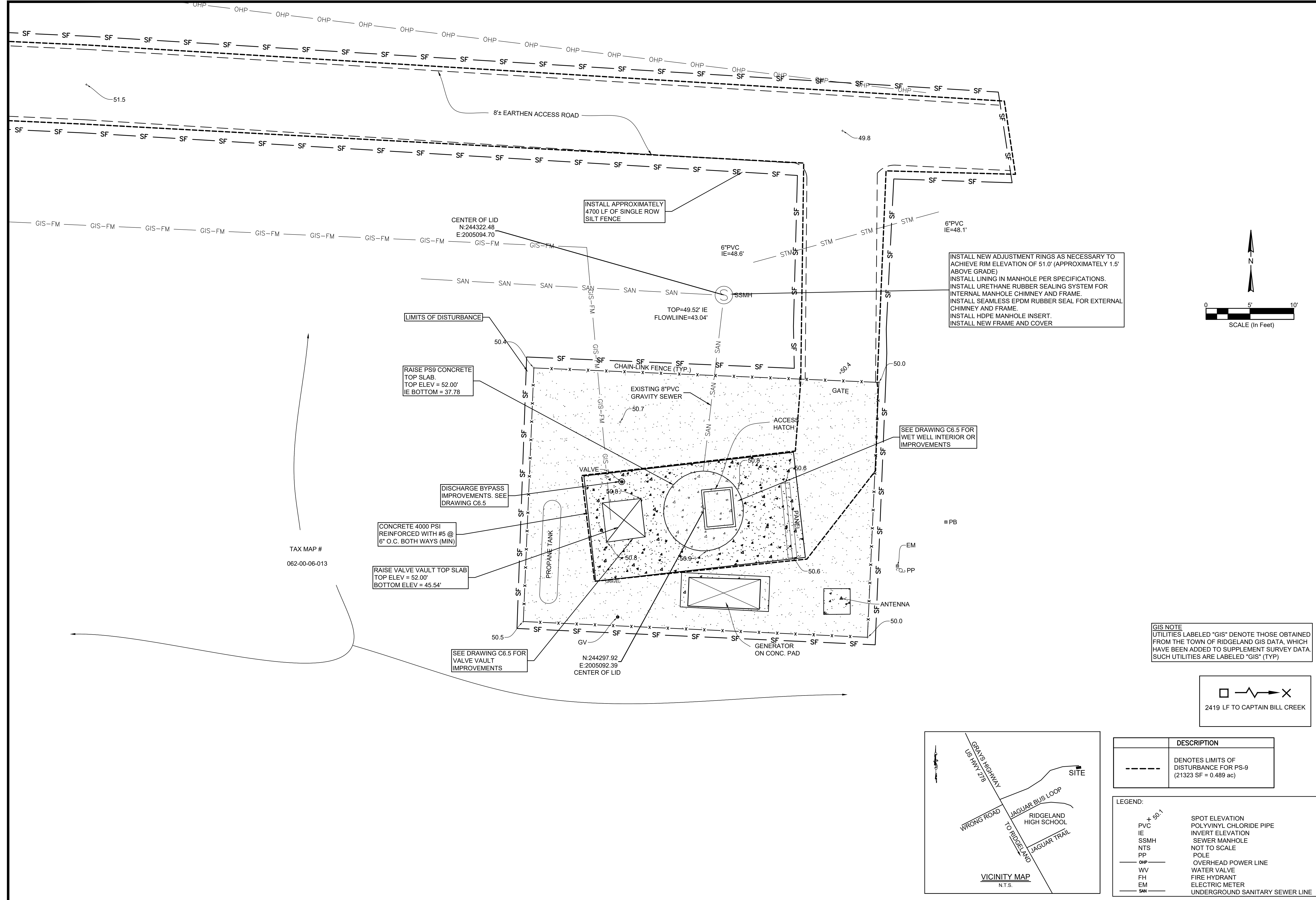
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RIDGELAND, SOUTH CAROLINA

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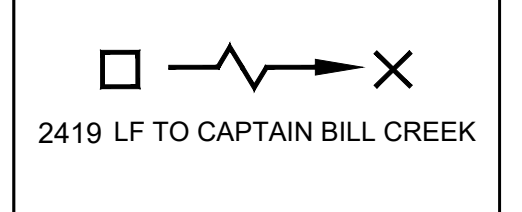
WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-9 PROPOSED IMPROVEMENTS PLAN
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

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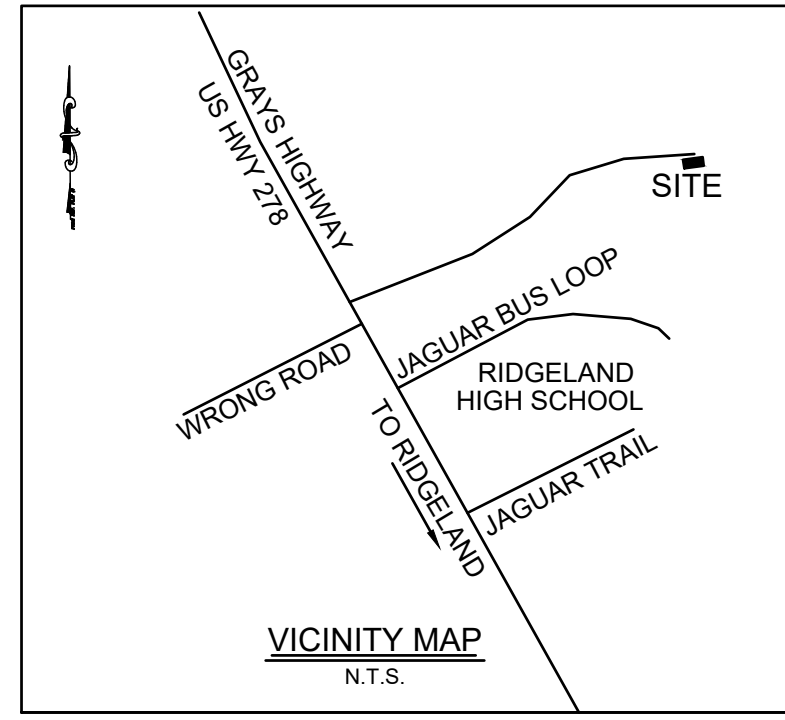
GIS NOTE
UTILITIES LABELED "GIS" DENOTE THOSE OBTAINED FROM THE TOWN OF RIDGELAND GIS DATA, WHICH HAVE BEEN ADDED TO SUPPLEMENT SURVEY DATA. SUCH UTILITIES ARE LABELED "GIS" (TYP)

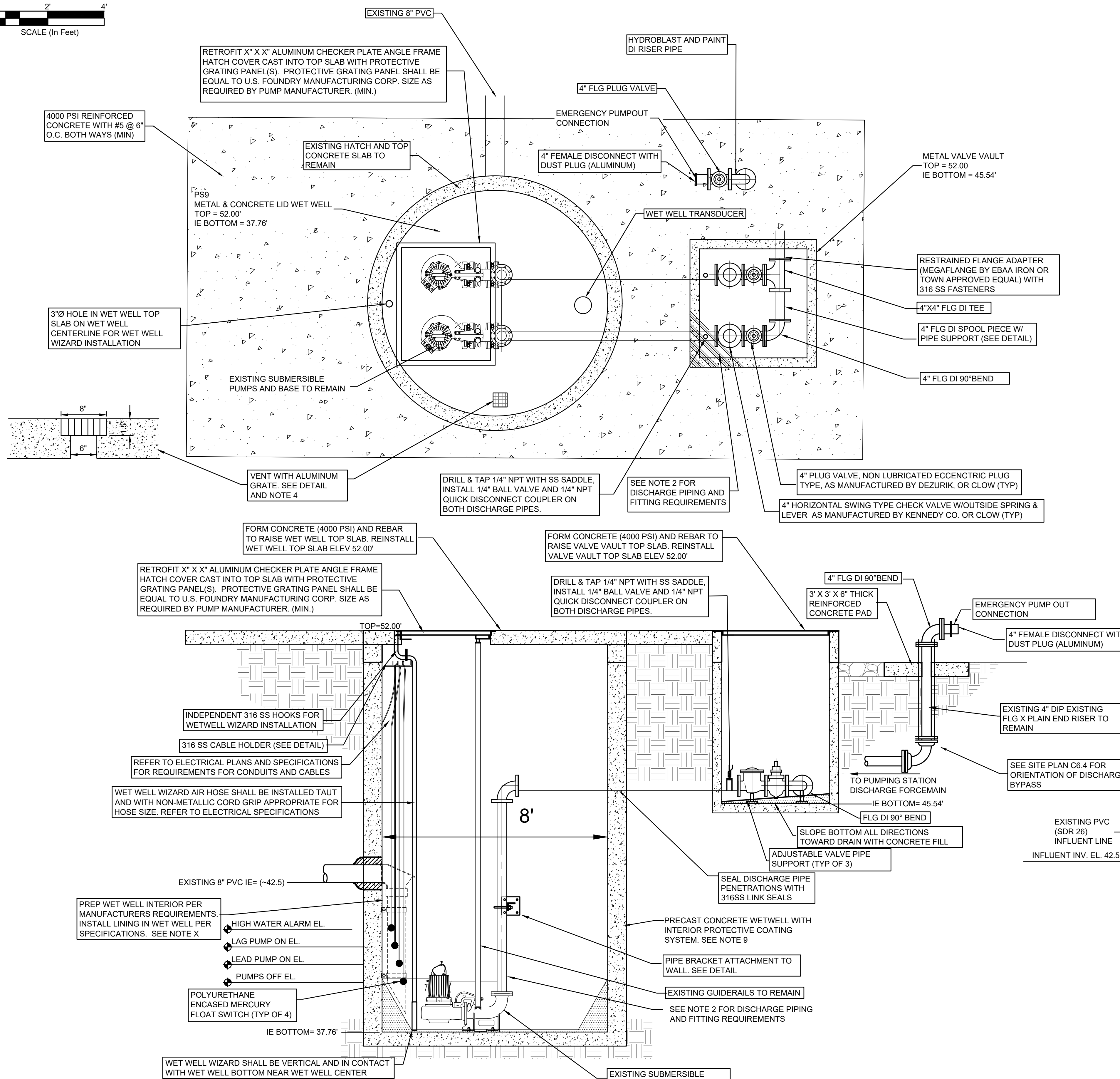
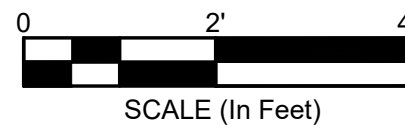


DESCRIPTION
--- DENOTES LIMITS OF DISTURBANCE FOR PS-9 (21323 SF = 0.489 ac)

LEGEND:

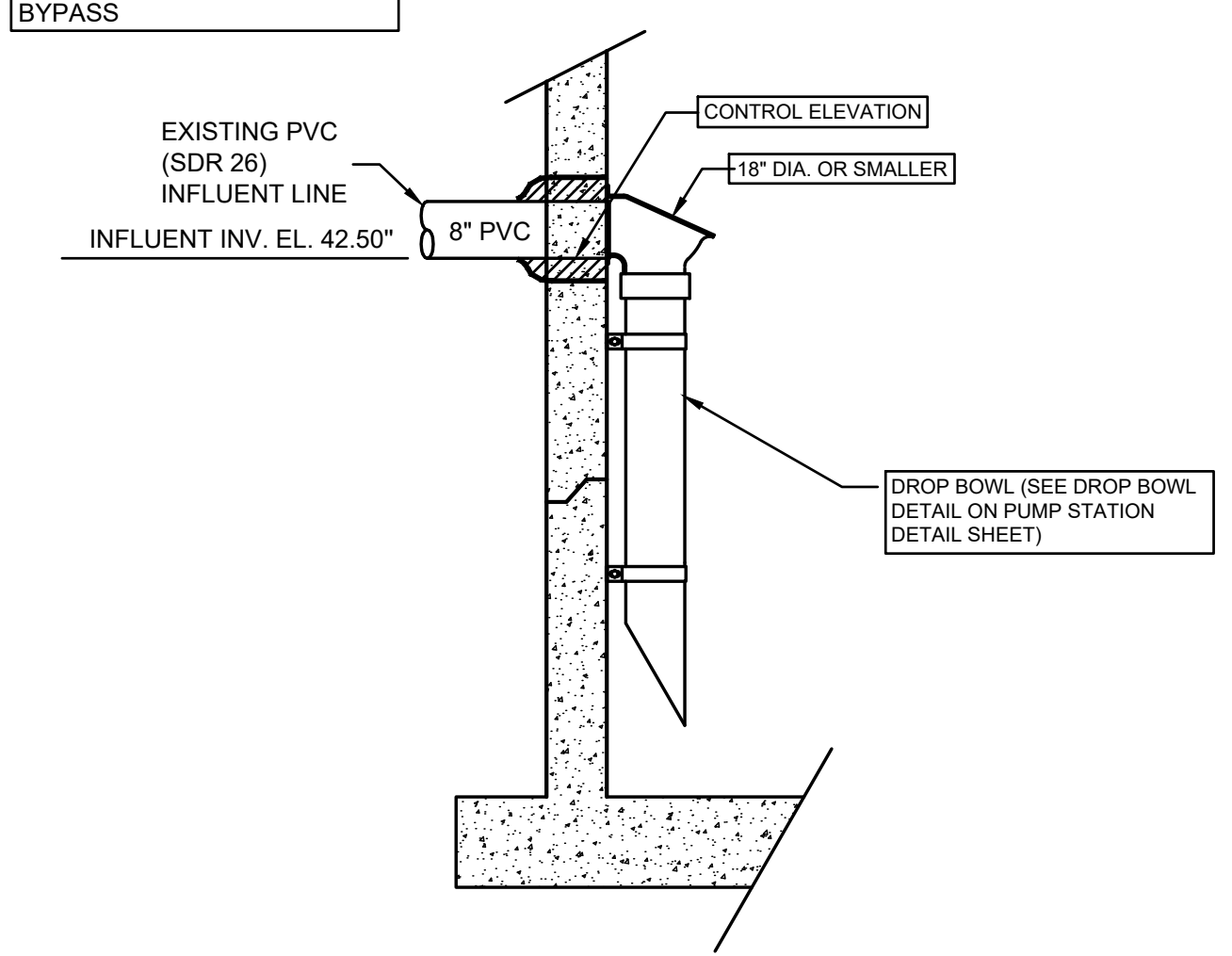
+	SPOT ELEVATION
PVC	POLYVINYL CHLORIDE PIPE
IE	INVERT ELEVATION
SSMH	SEWER MANHOLE
NTS	NOT TO SCALE
PP	POLE
OHP	OVERHEAD POWER LINE
WV	WATER VALVE
FH	FIRE HYDRANT
EM	ELECTRIC METER
SAN	UNDERGROUND SANITARY SEWER LINE



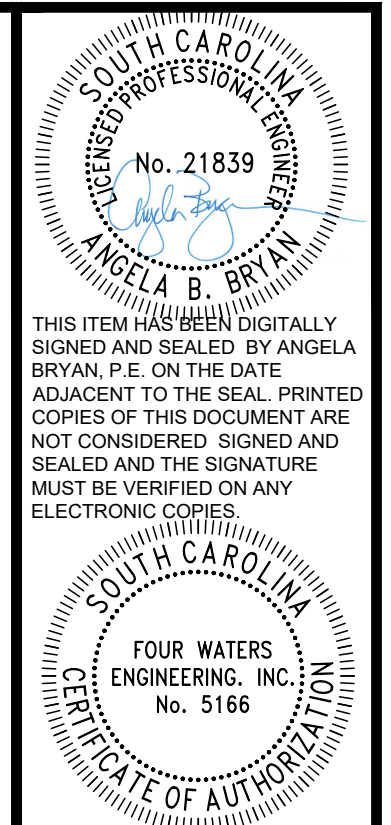


GENERAL NOTES

- ALL METALS INSIDE THE WET WELL INCLUDING BUT NOT LIMITED TO GUIDE RAILS, LIFTING CHAINS, NUTS, BOLTS, CABLE HOLDERS, PIPE SUPPORTS AND BRACES, ETC., TO BE 316 STAINLESS STEEL, UNLESS SPECIFICALLY NOTED OTHERWISE.
- PUMP DISCHARGE PIPING AND FITTINGS: DISCHARGE PIPING AND FITTINGS FROM PUMP ELBOW THROUGH TO CHECK VALVE IN VALVE VAULT SHALL BE A MINIMUM 4" (UNLESS APPROVED OTHERWISE BY TOWN) AND SHALL BE EITHER:
 - HDPE PIPE AND FITTINGS: HDPE PIPE AND FITTINGS SHALL BE DIPS DR11 AND SHALL BE FUSED AS ONE PIECE BETWEEN PUMP BASE ELBOW AND MIDPOINT BETWEEN WET WELL AND VALVE VAULT, AND FROM MIDPOINT BETWEEN WET WELL AND VALVE VAULT TO CHECK VALVE IN VALVE VAULT. ENDS OF PIPE AT PUMP BASE ELBOW AND CHECK VALVE SHALL UTILIZE HDPE FLANGE ADAPTER AND BACKING RING. HDPE PIPING BETWEEN WET WELL AND VALVE VAULT SHALL BE JOINED WITH ELECTROFUSION COUPLINGS.
 - FUSED PVC PIPE AND STAINLESS STEEL FITTINGS: PVC PIPE SHALL BE C900 DR18 AND SHALL BE FUSED AS ONE PIECE BETWEEN PUMP BASE ELBOW AND 90 DEGREE BEND IN WET WELL, AND FROM 90 DEGREE BEND IN WET WELL TO CHECK VALVE IN VALVE VAULT. 90 DEGREE BEND IN WET WELL SHALL BE FLANGED 316 STAINLESS STEEL, SCH 40. PVC PIPING ENDS SHALL UTILIZE RESTRAINED FLANGE ADAPTER (MEGAFLANGE BY EBAA IRON OR TOWN APPROVED EQUAL) WITH 316 SS FASTENERS TO CONNECT TO PUMP BASE ELBOW, 90 DEGREE BEND, AND CHECK VALVE.
- AERATION SYSTEM: WET WELL WIZARD SYSTEM AS MANUFACTURED BY RELIANT WATER TECHNOLOGIES, NEW ORLEANS, LA. WWW.RELIANTWATER.US.COM SHALL BE INSTALLED IN WET WELL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. DESIGN ENGINEER OF RECORD SHALL COORDINATE WITH RELIANT WATER TECHNOLOGIES TO DETERMINE NUMBER AND SIZING OF BLOWER(S) AND WET WELL WIZARDS NECESSARY FOR INSTALLATION.
- VENT: PROVIDE 6"x6" OPENING THROUGH THE CONCRETE TOP OF THE WET WELL AND INSERT 8" X 8" X 1-1/2" THICK ALUMINUM GRATE CONSTRUCTED OF 1-1/2" WIDE X 1/8" MATERIAL.
- FITTINGS: ALL DUCTILE IRON FITTINGS SHALL BE EPOXY LINED. ALL BURIED FITTINGS SHALL BE RESTRAINED.
- LEVEL MONITORING: INSTALL ULTRASONIC LEVEL MEASUREMENT SYSTEM IN ACCORDANCE WITH ELECTRICAL PLANS AND SPECIFICATIONS AND MANUFACTURER'S REQUIREMENTS. PROVIDE FOUR BACKUP POLYURETHANE ENCASED MERCURY FLOAT SWITCHES FOR PUMPS OFF, LEAD PUMP ON, LAG PUMP ON, AND HIGH WATER ALARM.
- WET WELL AND MANHOLES: ALL EXTERIOR JOINTS OF PRECAST CONCRETE WET WELL AND MANHOLES SHALL BE SEALED WITH A 18" WIDE RUBBERIZED ASPHALT MEMBRANE TAPE. EXTERIOR COATING OF BITUMINOUS COATING AS SPECIFIED IN ANSI SPECIFICATIONS A21.51 SHALL BE APPLIED TO WET WELL AND MANHOLES.
- WET WELL AND MANHOLES: ALL EXTERIOR JOINTS OF PRECAST CONCRETE WET WELL AND MANHOLES SHALL BE SEALED WITH A 18" WIDE RUBBERIZED ASPHALT MEMBRANE TAPE. EXTERIOR COATING OF BITUMINOUS COATING AS SPECIFIED IN ANSI SPECIFICATIONS A21.51 SHALL BE APPLIED TO WET WELL AND MANHOLES.
- INTERIOR PROTECTIVE COATINGS: PROTECTIVE COATING SHALL BE APPLIED TO THE INTERIOR OF WET WELLS AND RECEIVING MANHOLES. COATING SYSTEM IN WET WELL SHALL BE APPLIED TO VERTICAL WALLS AND TOP, AT A MINIMUM. PROTECTIVE COATING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND SHALL BE APPLIED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND BY INSTALLER CERTIFIED BY COATING SYSTEM MANUFACTURER.
- EMERGENCY PUMP OUT CONNECTION. PIPE SIZE FOR EMERGENCY PUMP OUT CONNECTION SHALL MATCH PUMP DISCHARGE PIPE SIZE IN WET WELL.
- MIN. WATER LEVEL: MINIMUM WATER LEVEL IN WET WELL SHALL BE 30" MINIMUM FOR PROPER OPERATION OF THE WET WELL WIZARD, SHALL COVER TOP OF PUMP MOTOR, OR SHALL BE GREATER IF RECOMMENDED BY PUMP MANUFACTURER.
- FLOOD ZONE: DESIGN ENGINEER OF RECORD SHALL PROVIDE INFORMATION ON THE FLOOD ZONE OF THE PUMP STATION SITE AND SHALL PROVIDE VERIFICATION THAT THE TOP OF THE WET WELL IS ABOVE THE 100 YEAR FLOOD ELEVATION AND THAT THE BOTTOM OF THE CONTROL PANELS, GENERATOR RECEPTACLE AND GENERATOR SLAB AREA ALL ABOVE THE 100 YEAR FLOOD ELEVATION + 2 FEET OR THE 500 YEAR FLOOD ELEVATION, WHICHEVER IS GREATER.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL ELEVATIONS AND DIMENSIONS CALLED OUT ON THIS PLAN SET FOR THE PUMP STATION PRIOR TO ORDERING OF ANY MATERIALS OR COMPONENTS OF THE PUMP STATION. ANY DEVIATION OF THE LAYOUTS INDICATED ON THIS PLAN MUST BE COMMUNICATED TO THE TOWN AND ENGINEER OF RECORD FOR FURTHER DIRECTION.
- CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY STABILIZATION FOR DEMOLITION AND CONSTRUCTION AND SHALL HIRE A SPECIALTY PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA TO DESIGN THE STABILIZATION SYSTEM FOR EXCAVATION AND EVALUATE THE DRAWDOWN OF THE DEWATERING OPERATIONS DURING CONSTRUCTION IN ORDER TO PROTECT THE EXISTING PS-6 STRUCTURES. DESIGN AND EVALUATION SHALL BE SIGNED AND SEALED AND SUBMITTED TO THE TOWN OF RIDGELAND AND ENGINEER OF RECORD.
- 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 OPERATIONS, THE CONTRACTOR SHALL PREPARE A DEWATERING PLAN FOR APPROVAL AND SHALL SECURE AN SCDHCP NPDES GENERIC PERMIT WHICH COVERS STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND DEWATERING OF NON-CONTAMINATED GROUNDWATER.
- PS-9 SITE LOCATED IN ZONE X AREA OF MINIMAL FLOODING (NO ESTABLISHED FLOOD ELEVATION), PER NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP PANEL 225 OF 575 JASPER COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS MAP NUMBER 4505C0225D OCTOBER 18, 2019



INFLUENT SECTION
NOT TO SCALE



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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-9 PROPOSED IMPROVEMENTS DETAIL

DESIGN	ABB	JOB #	ISSUE DATE	ISSUE
JMC		17-1007	FEB 2023	

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

DRAWING NUMBER
C6.5

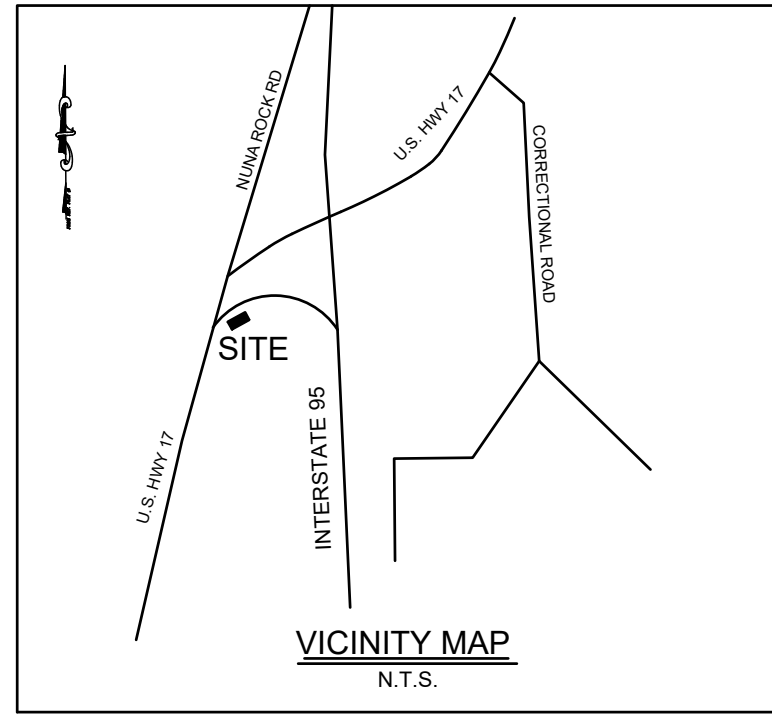
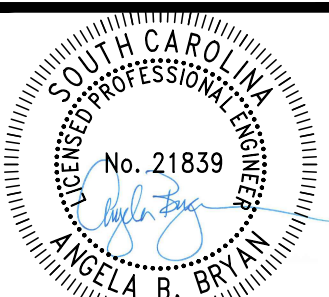
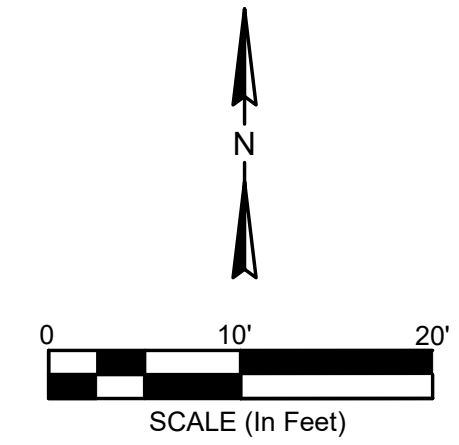
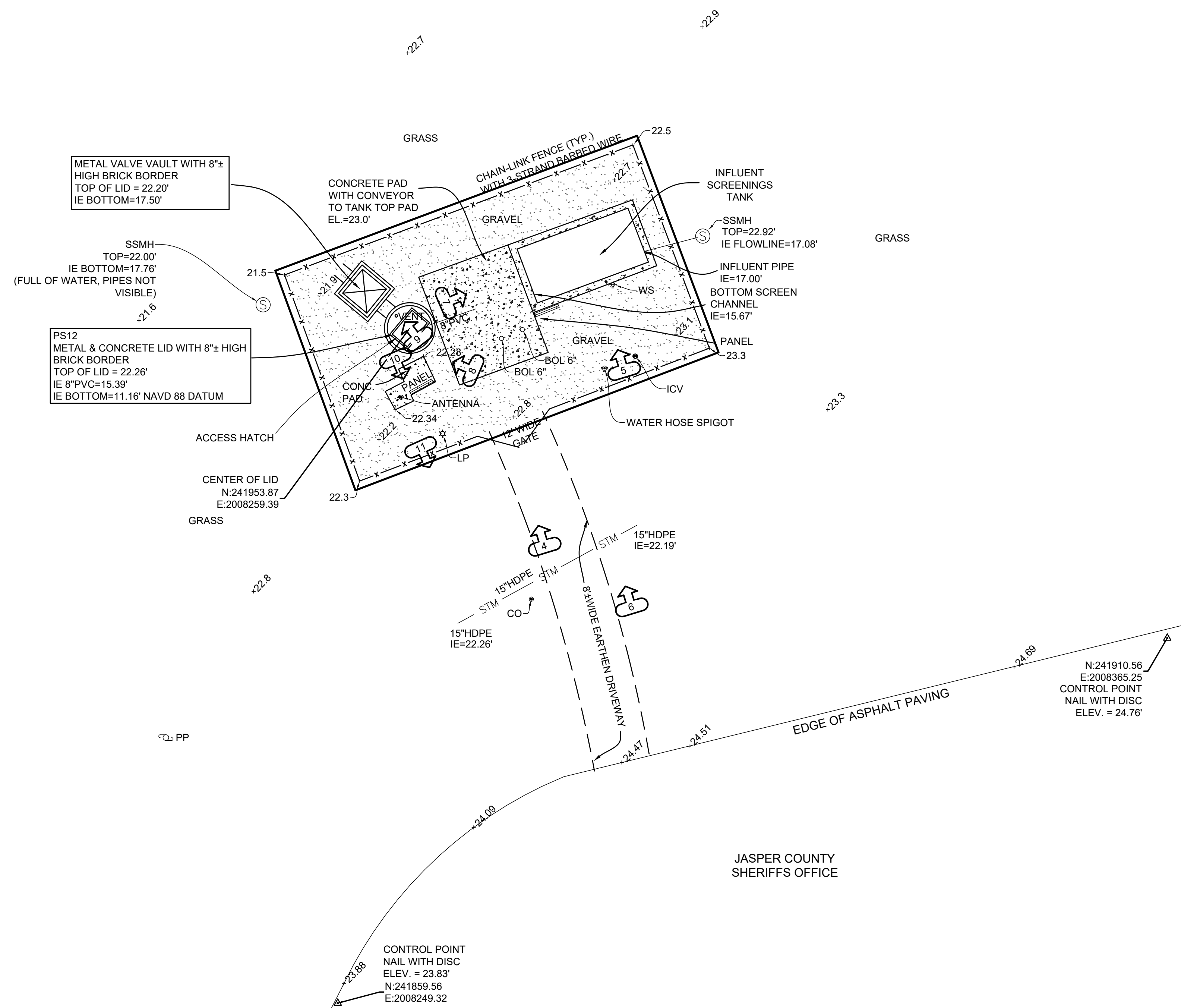
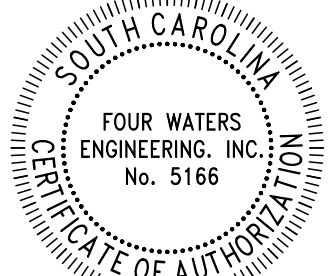


PHOTO LEGEND:
DENOTES PHOTO LOCATION AND DIRECTION



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LEGEND:

+ 22.8	SPOT ELEVATION
HDPE	HIGH DENSITY POLYETHALENE
IE	INVERT ELEVATION
LP	LIGHT POLE
NTS	NOT TO SCALE
SSMH	SANITARY SEWER MANHOLE
WS	WATER SPIGOT
PP	POWER POLE
BOL	BOLLARD
ICV	IRRIGATION CONTROL VALVE
CO	CLEANOUT

SPECIAL NOTE:
*HORIZONTAL DATUM IS NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES
*VERTICAL DATUM IN NAVD 88
*SEE NOTE #7 BELOW

- NOTES:**
- I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO OBVIOUS, APPARENT OR VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.
 - UNDERGROUND UTILITIES NOT LOCATED EXCEPT AS SHOWN AND ARE APPROXIMATE. SURVEYING CONSULTANTS DOES NOT CERTIFY TO THE EXACT LOCATION OF ANY UNDERGROUND UTILITY.
 - NO SUBSURFACE OR ENVIRONMENTAL INVESTIGATION OR WETLAND SURVEYS WERE PERFORMED FOR THIS PLAT. THEREFORE THIS PLAT DOES NOT REFLECT THE EXISTENCE OR NONEXISTENCE OF WETLANDS, CONTAMINATION, OR OTHER CONDITIONS WHICH MAY AFFECT THIS PROPERTY.
 - SURVEYING CONSULTANTS CERTIFIES TO THE BOUNDARY, TOPOGRAPHIC AND ASBUILT INFORMATION PROVIDED HEREON AS OF THE DATE OF SURVEY. IF THIS DOCUMENT IS TO BE PROVIDED AS A BASE MAP FOR OTHERS, INFORMATION ADDED AFTER THE DATE OF THIS SURVEY IS NOT THE RESPONSIBILITY OF SURVEYING CONSULTANTS.
 - THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE. THEREFORE THERE MAY BE OTHER EASEMENTS, RIGHT-OF-WAY, SETBACK LINES, AGREEMENTS, RESERVATIONS, RESTRICTIONS, OR OTHER SIMILAR MATTERS OF PUBLIC RECORD, NOT DEPICTED ON THIS SURVEY.
 - NO BOUNDARY LINES AND/OR ROAD RIGHT-OF-WAY LINES WERE NOT ESTABLISHED AS A PART OF THIS SURVEY.
 - THE HORIZONTAL DATUM SHOWN IS BASED ON NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES. THE VERTICAL DATUM SHOWN IS BASED ON NAVD 88 DATUM. THE HORIZONTAL AND VERTICAL DATUM SHOWN WERE ESTABLISHED FROM THE SC-VRS SURVEY NETWORK.

REFERENCE PLAT:

- BOUNDARY SURVEY OF TAX MAP #062-00-08-002 & TAX MAP #062-00-08-001, TOWN OF RIDGELAND, JASPER COUNTY, SC, BY: THOMAS G. STANLEY, S.C.R.L.S. NO. 18269, DATED: 09/02/1999, RECORDED: P.B. 24, PAGE 86.

PREPARED FOR: FOUR WATERS
ENGINEERING & TOWN OF RIDGELAND

ADDRESS: #12008 N JACOB SMART
BOULEVARD PARENT TAX PARCEL I.D. NO.
062-00-08-001

ASBUILT & TOPOGRAPHIC
EXHIBIT OF
PUMP STATION #12
A PORTION OF
TAX PARCEL I.D. NO. 062-00-08-001
#12008 N JACOB SMART BOULEVARD
A SECTION OF
TOWN OF RIDGELAND
JASPER COUNTY, SOUTH CAROLINA
DATE: 07/29/2021 JOB NO: SC210030-PS12

SG SURVEYING CONSULTANTS
17 Sherington Drive, Suite C, Bluffton, SC 29910
SC Telephone: (843) 815-3304 FAX: (843) 815-3305
GA Telephone: (912) 826-2775
www.SurveyingConsultants.com
Email: SC@SurveyingConsultants.com

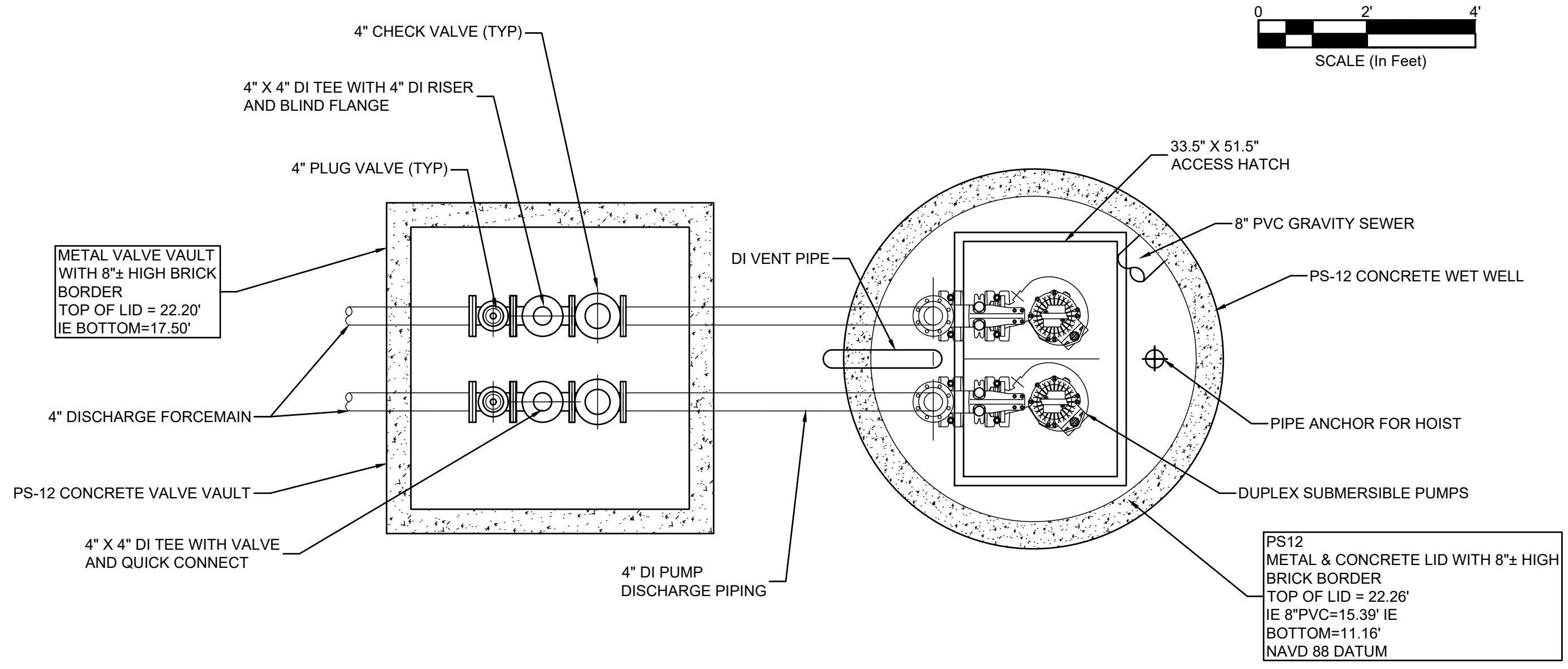
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-12 EXISTING CONDITIONS AND KEY
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

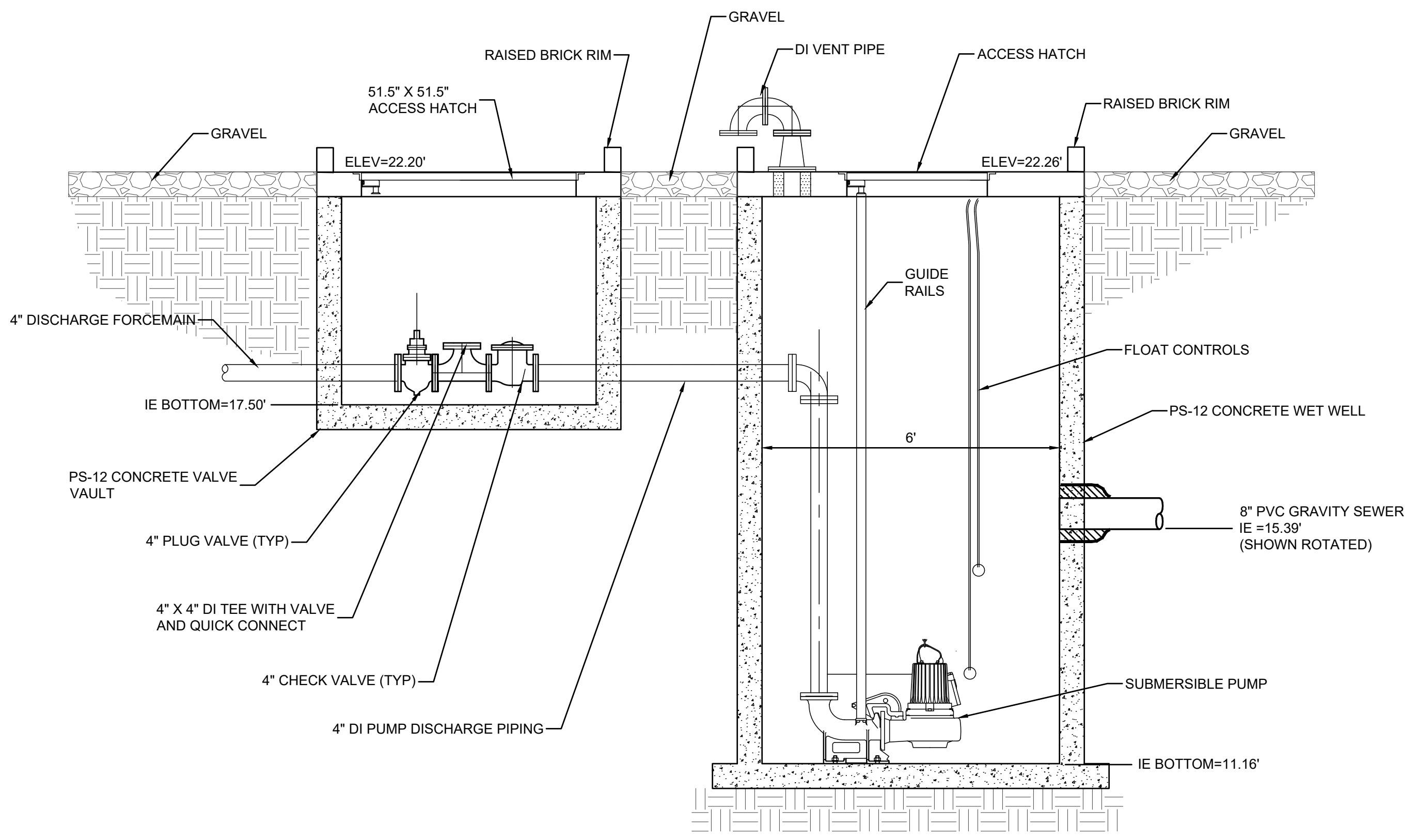
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844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
G7.1



PLAN VIEW



PROFILE



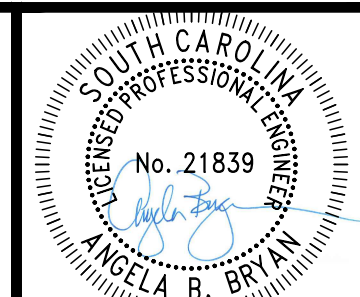
PHOTO-1
LOOKING INTO WET WELL



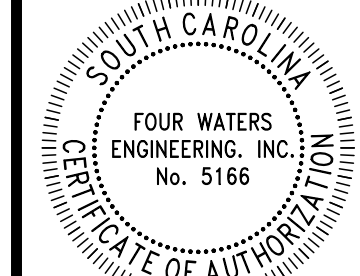
PHOTO-2
LOOKING INTO WET WELL



PHOTO-3
LOOKING INTO VALVE VAULT



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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-12 EXISTING CONDITIONS DETAIL
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007
ABB	JMC		
JOB #	ISSUE DATE	FEB 2023	
ISSUE	ISSUE		

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844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

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PHOTO-4
LOOKING NORTH AT PUMP STATION SITE



PHOTO-5
LOOKING NORTH AT SCREENING AREA OF SITE



PHOTO-10
LOOKING SOUTH AT PUMP STATION CONTROL PANEL



PHOTO-6
LOOKING NORTH AT SITE THROUGH DOUBLE GATES



PHOTO-7
LOOKING EAST AT SCREENING AREA OF SITE



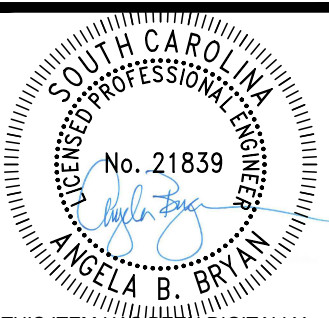
PHOTO-11
LOOKING SOUTH TOWARD MAIN ROAD



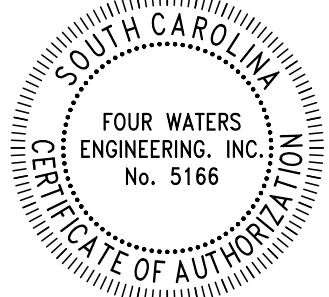
PHOTO-8
LOOKING NORTHWEST AT PUMP STATION AREA OF SITE



PHOTO-9
LOOKING NORTHWEST AT WET WELL



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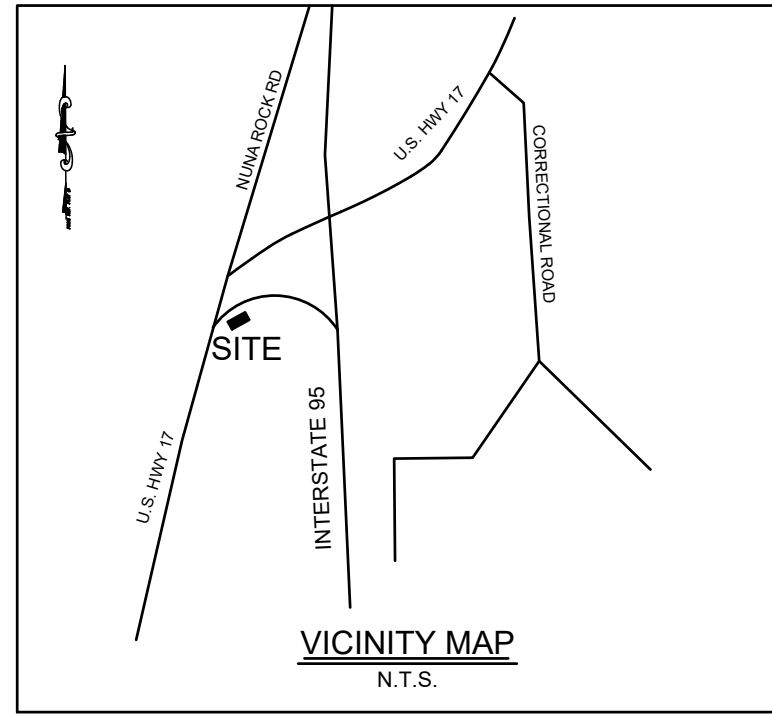
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WATER AND SEWER RESILIENCY IMPROVEMENTS
 PART I
PS-12 EXISTING CONDITIONS SITE PHOTOS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

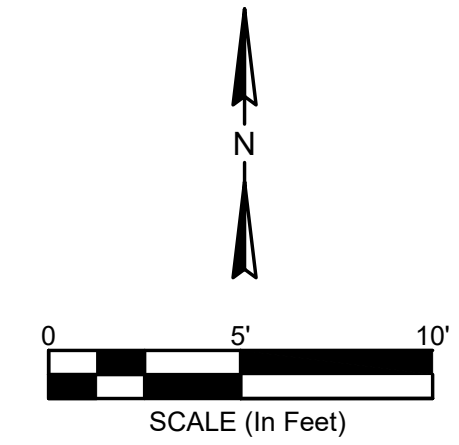
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		17-1007	FEB 2023		

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DRAWING NUMBER
G7.3

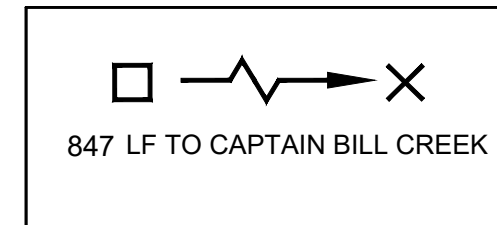


- DEMOLITION NOTES:**
1. ALL NECESSARY TEMPORARY BYPASS OPERATIONS SHALL BE IN PLACE AND OPERATIONAL PRIOR TO INITIATING DEMOLITION ACTIVITIES.
 2. CONTRACTOR SHALL VERIFY ALL UTILITIES BEFORE INITIATING DEMOLITION AND CONSTRUCTION ACTIVITIES. NOTIFY TOWN OF RIDGELAND PROJECT REPRESENTATIVE AND ENGINEER 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.
 4. PRIOR TO DEMOLITION OR REMOVAL OF STRUCTURES USED FOR WASTEWATER, ALL WASTEWATER AND SOLIDS SHALL BE REMOVED FROM THE STRUCTURE AND PROPERLY DISPOSED.



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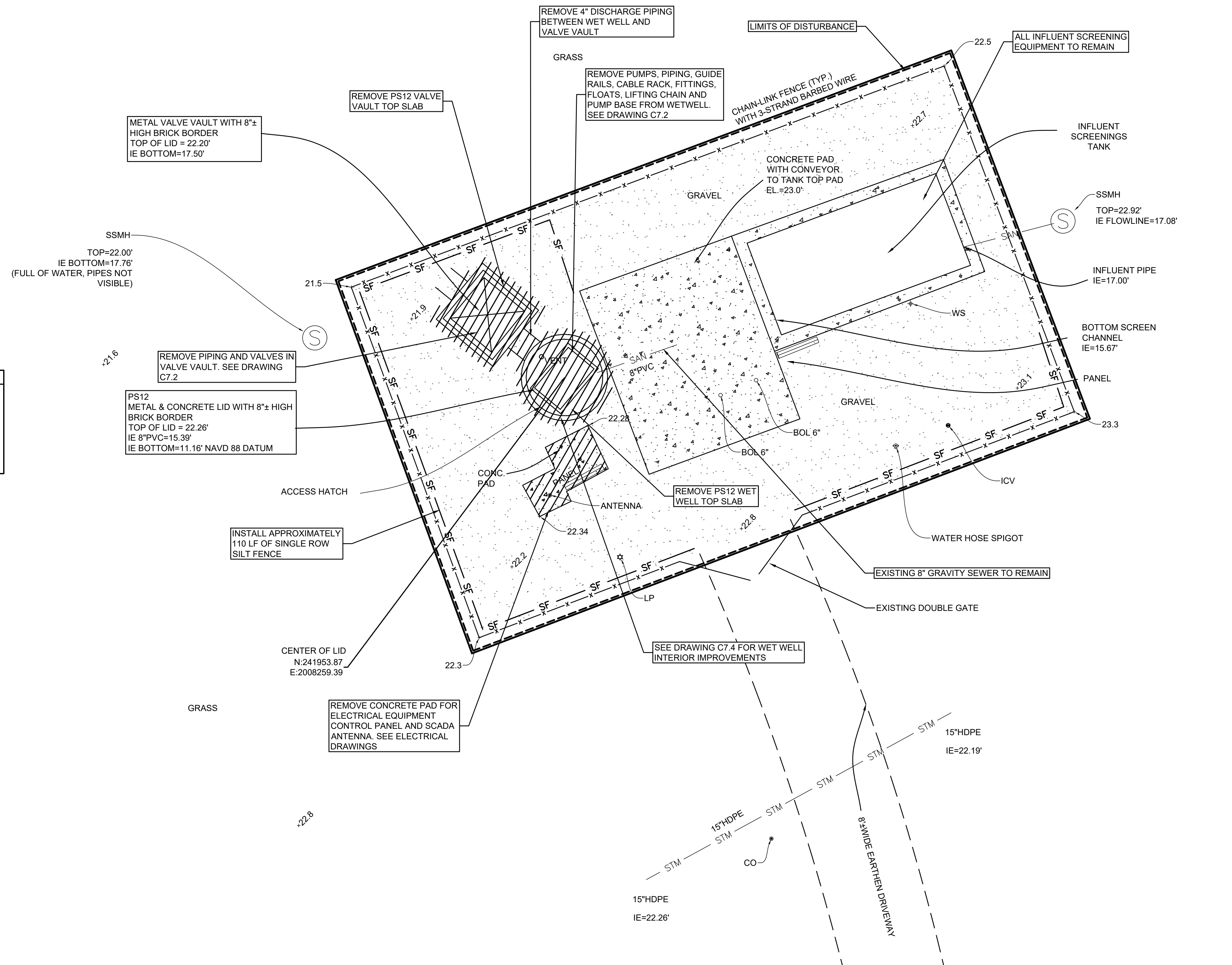
FOUR WATERS ENGINEERING, INC. No. 5166



LEGEND:

+ 22.8	SPOT ELEVATION
HDPE	HIGH DENSITY POLYETHYLENE
IE	INVERT ELEVATION
LP	LIGHT POLE
NTS	NOT TO SCALE
SSMH	SANITARY SEWER MANHOLE
WS	WATER SPIGOT
PP	POWER POLE
BOL	BOLLARD
ICV	IRRIGATION CONTROL VALVE
CO	CLEANOUT

DESCRIPTION
DENOTES LIMITS OF DISTURBANCE FOR PS-12 (1758 SF)
DENOTES EQUIPMENT AND STRUCTURE TO BE REMOVED AND/OR DEMOLISHED



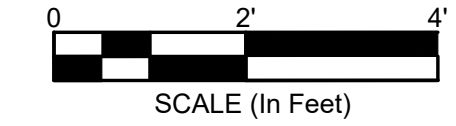
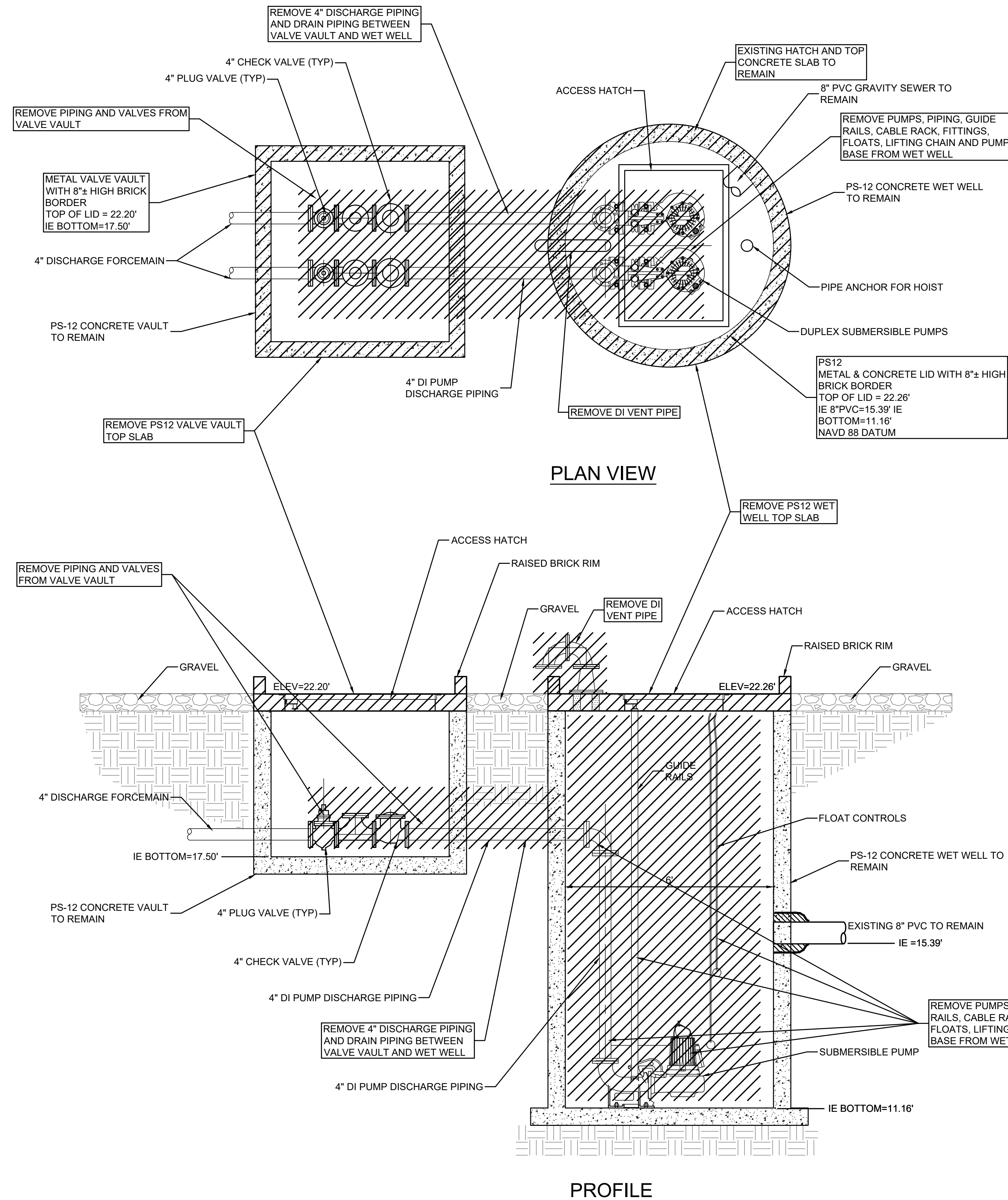
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-12 DEMOLITION PLAN SITE PLAN
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	DATE	DATE	DATE
ABB	JMC	17-1007	FEB 2023	BID
JOB #	ISSUE	DATE	ISSUE	

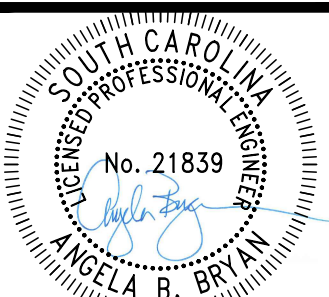
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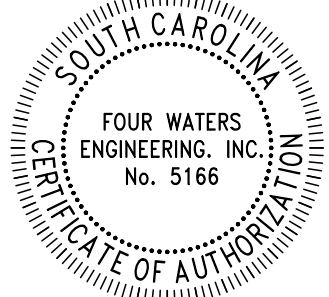


DESCRIPTION	
	DENOTES EQUIPMENT AND STRUCTURE TO BE REMOVED AND/OR DEMOLISHED

- DEMOLITION NOTES:**
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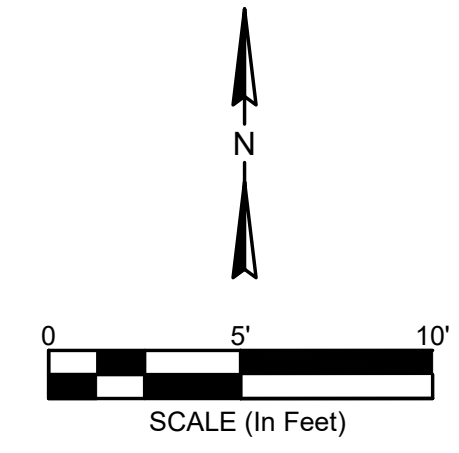
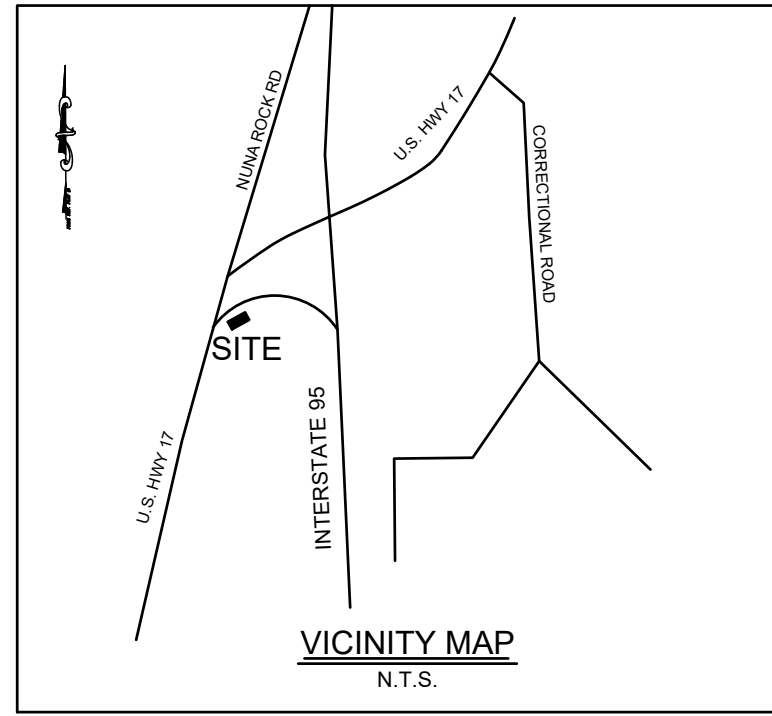
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-12 DEMOLITION PLAN DETAIL
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN	JOB #	ISSUE DATE	ISSUE	BID
ABB	JMC	17-1007	FEB 2023		

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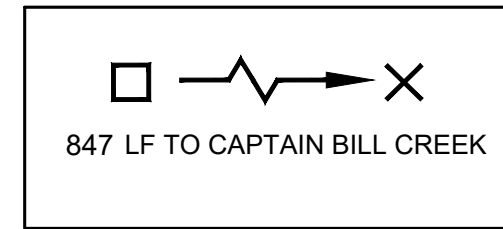
DRAWING NUMBER
C7.2



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

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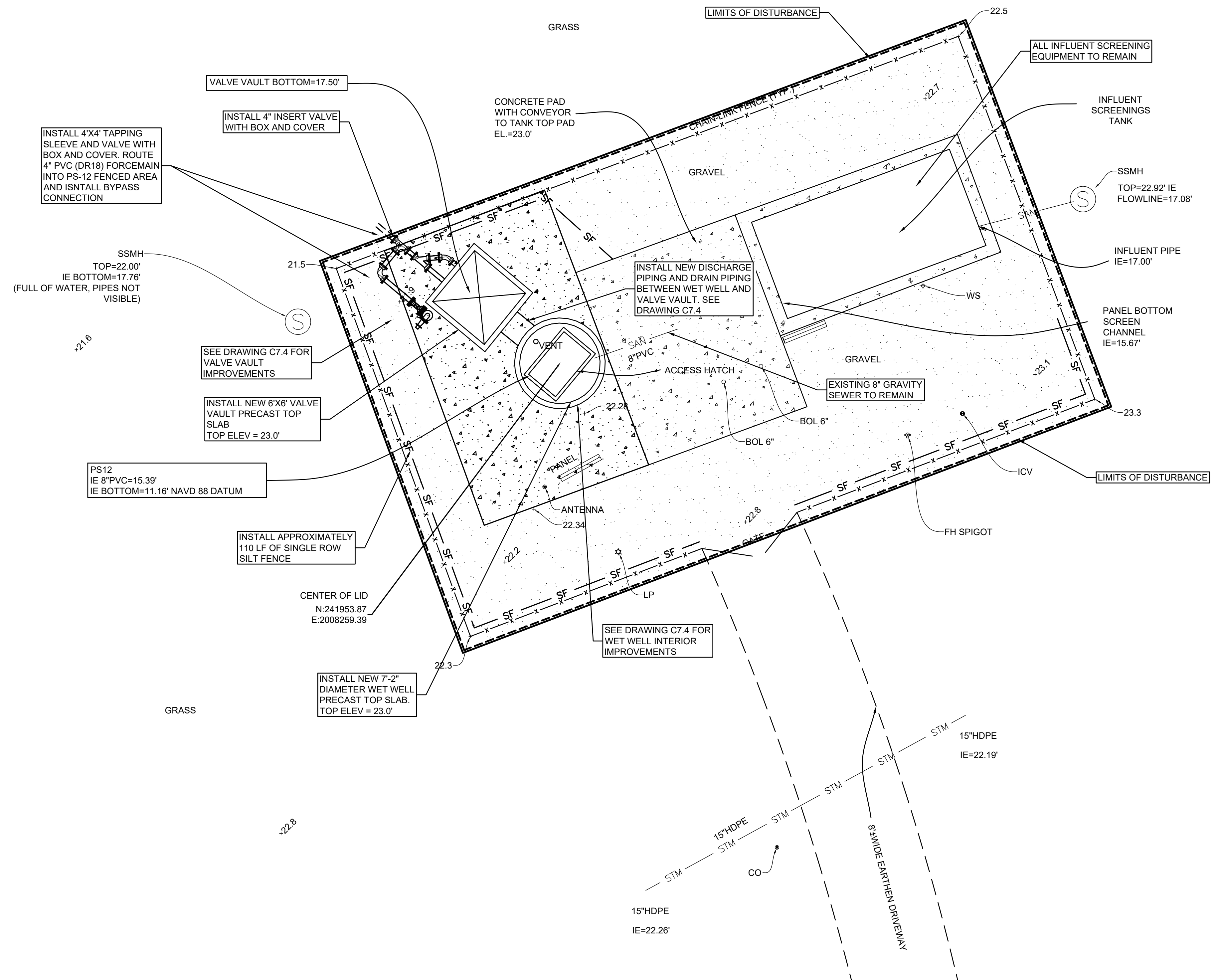
SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
FOUR WATERS ENGINEERING, INC.
No. 5166



LEGEND:

+ 123.8	SPOT ELEVATION
HDPE	HIGH DENSITY POLYETHYLENE
IE	INVERT ELEVATION
LP	LIGHT POLE
NTS	NOT TO SCALE
SSMH	SANITARY SEWER MANHOLE
WS	WATER SPIGOT
PP	POWER POLE
BOL	BOLLARD
ICV	IRRIGATION CONTROL VALVE
CO	CLEANOUT

DESCRIPTION
--- DENOTES LIMITS OF DISTURBANCE FOR PS-12 (1758 SF)



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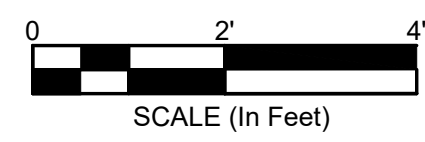
WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
PS-12 PROPOSED IMPROVEMENTS SITE PLAN
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007	FEB	BID
ABB				2023	
JOB #				ISSUE	
				DATE	
				ISSUE	
				DATE	

FOUR WATERS ENGINEERING

324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
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DRAWING NUMBER
C7.3



X" X X" ALUMINUM CHECKER PLATE ANGLE FRAME HATCH COVER CAST INTO TOP SLAB. HATCH SHALL BE EQUIPPED WITH CAST ALUMINUM DROP HANDLE, 316 STAINLESS STEEL HINGES AND LOCK HASP, AND HOLD OPEN ARMS APD TYPE (PEDESTRIAN LOADING - DOUBLE DOOR). HATCH SHALL HAVE PROTECTIVE GRATING PANEL(S). HATCH AND PROTECTIVE GRATING PANEL SHALL BE EQUAL TO U.S. FOUNDRY MANUFACTURING CORP. SIZE AS REQUIRED BY PUMP MANUFACTURER. (MIN.)

FORM CONCRETE (4000 PSI) AND REBAR TO RAISE WET WELL TOP SLAB. INCREASE NEW 7'-2" DIAM WET WELL PRECAST TOP SLAB TO ELEV 23.00'

3'Ø HOLE IN WET WELL TOP SLAB ON WET WELL CENTERLINE FOR WET WELL WIZARD INSTALLATION

VENT WITH ALUMINUM GRATE. SEE DETAIL AND NOTE 4

FORM CONCRETE (4000 PSI) AND REBAR TO RAISE WET WELL TOP SLAB. INCREASE NEW 7'-2" DIAM WET WELL PRECAST TOP SLAB TO ELEV 23.00'

X" X X" ALUMINUM CHECKER PLATE ANGLE FRAME HATCH COVER CAST INTO TOP SLAB. HATCH SHALL BE EQUIPPED WITH CAST ALUMINUM DROP HANDLE, 316 STAINLESS STEEL HINGES AND LOCK HASP, AND HOLD OPEN ARMS APD TYPE (PEDESTRIAN LOADING - DOUBLE DOOR). HATCH SHALL HAVE PROTECTIVE GRATING PANEL(S). HATCH AND PROTECTIVE GRATING PANEL SHALL BE EQUAL TO U.S. FOUNDRY MANUFACTURING CORP. SIZE AS REQUIRED BY PUMP MANUFACTURER. (MIN.)

INSTALL AND ANCHOR ULTRASONIC LEVEL MEASUREMENT SYSTEM UNDER WET WELL TOP SLAB IN ACCORDANCE WITH ELECTRICAL PLANS AND SPECIFICATIONS AND MANUFACTURERS REQUIREMENTS

DRILL & TAP 1/4" NPT WITH SS SADDLE. INSTALL 1/4" BALL VALVE AND 1/4" NPT QUICK DISCONNECT COUPLER ON BOTH DISCHARGE PIPES.

FORM CONCRETE (4000 PSI) AND REBAR TO RAISE VALVE VAULT TOP SLAB. INCREASE NEW 6'x6" VALVE VAULT PRECAST TOP SLAB TO ELEV 23.00'

INDEPENDENT 316 SS HOOKS FOR WETWELL WIZARD INSTALLATION
316 SS CABLE HOLDER (SEE DETAIL)

REFER TO ELECTRICAL PLANS AND SPECIFICATIONS FOR REQUIREMENTS FOR CONDUITS AND CABLES

WET WELL WIZARD AIR HOSE SHALL BE INSTALLED TAUT AND WITH NON-METALLIC CORD GRIP APPROPRIATE FOR HOSE SIZE. REFER TO ELECTRICAL SPECIFICATIONS

PREP WET WELL INTERIOR PER MANUFACTURERS REQUIREMENTS. INSTALL LINING IN WET WELL PER SPECIFICATIONS. SEE NOTE 9

EXISTING 8" INFLUENT SEWER TO REMAIN. SEE SITE PLAN FOR ORIENTATION.
INFLUENT IE=15.39'

PREP WET WELL INTERIOR PER MANUFACTURERS REQUIREMENTS. INSTALL LINING IN WET WELL PER SPECIFICATIONS. SEE NOTE X

SEE DETAIL THIS SHEET FOR ADDITIONAL REQUIREMENTS

- ◆ HIGH WATER ALARM EL.
- ◆ LAG PUMP ON EL.
- ◆ LEAD PUMP ON EL.
- ◆ PUMPS OFF EL.

POLYURETHANE ENCASED MERCURY FLOAT SWITCH (TYP OF 4)
IE BOTTOM=11.16'

WET WELL WIZARD SHALL BE VERTICAL AND IN CONTACT WITH WET WELL BOTTOM NEAR WET WELL CENTER

NON-SHRINK GROUT (TYP)

4" CHECK VALVE
4" PLUG VALVE

ADJUSTABLE VALVE PIPE SUPPORT (TYP OF 3)
SEAL DISCHARGE PIPE PENETRATIONS WITH 316SS LINK SEALS

FLEXIBLE COUPLING (TYP)
NON-SHRINK GROUT (TYP)
316 SS GUIDE RAILS PER PUMP MANUFACTURER

PIPE BRACKET ATTACHMENT TO WALL (TYP). SEE DETAIL
SEE NOTE 2 FOR DISCHARGE PIPING AND FITTING REQUIREMENTS

SUBMERSIBLE SEWAGE PUMP. SEE NOTE 14
BASE ELBOW TO BE FABRICATED BY PUMP MANUFACTURER

GROUT FROM BASEPLATE TO A HEIGHT OF 2' ABOVE BOTTOM ALL AROUND WITH CLASS "C" CONCRETE. 60° PREFERRED. 45° MIN.

EXISTING PS-12 CONCRETE WET WELL

SUBMERSIBLE PUMP BASE PLATE SEE DETAIL

FORM CONCRETE (4000 PSI) AND REBAR TO RAISE VALVE VAULT TOP SLAB. INCREASE NEW 6'x6" VALVE VAULT PRECAST TOP SLAB TO ELEV 23.00'

4" FLG DI 90° BEND
EMERGENCY PUMP OUT CONNECTION
4" FEMALE DISCONNECT WITH DUST PLUG (ALUMINUM)

24" MIN
30" MAX

4" DIP FLG X PLAIN END RISER
INSTALL (2) 316 SS THREADED TIE RODS TO MATCH FLANGE BOLTS AND SS TIE LUGS AND TIE BOLTS

TO PUMPING STATION DISCHARGE FORCEMAIN
4" MJ DI 90° BEND

EXISTING PS12 VALVE VAULT

SLOPE BOTTOM ALL DIRECTIONS TOWARD DRAIN WITH CONCRETE FILL

ADJUSTABLE VALVE PIPE SUPPORT (TYP OF 3)
SEAL DISCHARGE PIPE PENETRATIONS WITH 316SS LINK SEALS

FLEXIBLE COUPLING (TYP)
NON-SHRINK GROUT (TYP)
316 SS GUIDE RAILS PER PUMP MANUFACTURER

2" PVC SCH 40 FLOOR DRAIN W/ "P" TRAP AND PIPE 1/2" PER FOOT

PIPE BRACKET ATTACHMENT TO WALL (TYP). SEE DETAIL
SEE NOTE 2 FOR DISCHARGE PIPING AND FITTING REQUIREMENTS

SUBMERSIBLE SEWAGE PUMP. SEE NOTE 14
BASE ELBOW TO BE FABRICATED BY PUMP MANUFACTURER

GROUT FROM BASEPLATE TO A HEIGHT OF 2' ABOVE BOTTOM ALL AROUND WITH CLASS "C" CONCRETE. 60° PREFERRED. 45° MIN.

EXISTING PS-12 CONCRETE WET WELL

SUBMERSIBLE PUMP BASE PLATE SEE DETAIL

DRILL & TAP 1/4" NPT WITH SS SADDLE. INSTALL 1/4" BALL VALVE AND 1/4" NPT QUICK DISCONNECT COUPLER ON BOTH DISCHARGE PIPES.

CONCRETE 4000 PSI REINFORCED WITH #5 @ 6" O.C. BOTH WAYS (MIN)

FORM CONCRETE (4000 PSI) AND REBAR TO RAISE VALVE VAULT TOP SLAB. INCREASE NEW 6'x6" VALVE VAULT PRECAST TOP SLAB TO ELEV 23.00'

RESTRAINED FLANGE ADAPTER (MEGAFLANGE BY EBAA IRON OR TOWN APPROVED EQUAL) WITH 316 SS FASTENERS (TYP)

VALVE VAULT TOP OF LID = 23.00'
IE BOTTOM=17.50'

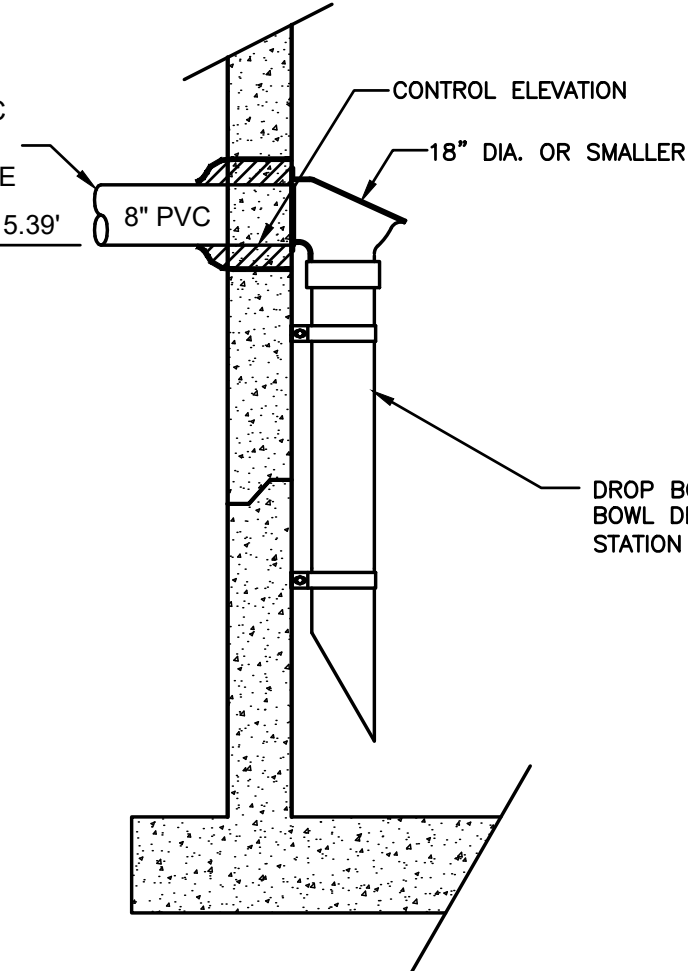
4" PLUG VALVE, NON LUBRICATED ECCENTRIC PLUG TYPE, AS MANUFACTURED BY DEZURIK, OR CLOW (TYP)

4" HORIZONTAL SWING TYPE CHECK VALVE W/OUTSIDE SPRING & LEVER AS MANUFACTURED BY KENNEDY CO. OR CLOW (TYP)

5' x 5' ALUMINUM CHECKER PLATE ANGLE FRAME HATCH COVER CAST INTO TOP SLAB. HATCH SHALL BE EQUIPPED WITH CAST ALUM DROP HANDLE, 316 STAINLESS STEEL HINGES AND LOCK HASP, AND HOLD OPEN ARMS APD TYPE (PEDESTRIAN LOADING - DOUBLE DOOR) EQUAL TO U.S. FOUNDRY MANUFACTURING CORP. HATCH TO ALLOW FULL AND UNLIMITED ACCESS TO VALVES, FITTINGS, PIPING ETC.

GENERAL NOTES

1. ALL METALS INSIDE THE WET WELL INCLUDING BUT NOT LIMITED TO GUIDE RAILS, LIFTING CHAINS, NUTS, BOLTS, CABLE HOLDERS, PIPE SUPPORTS AND BRACES, ETC., TO BE 316 STAINLESS STEEL, UNLESS SPECIFICALLY NOTED OTHERWISE.
2. PUMP DISCHARGE PIPING AND FITTINGS: DISCHARGE PIPING AND FITTINGS FROM PUMP ELBOW THROUGH TO CHECK VALVE IN VALVE VAULT SHALL BE A MINIMUM 4" (UNLESS APPROVED OTHERWISE BY TOWN) AND SHALL BE EITHER:
 - a. HDPE PIPE AND FITTINGS: HDPE PIPE AND FITTINGS SHALL BE DIPS DR11 AND SHALL BE FUSED AS ONE PIECE BETWEEN PUMP BASE ELBOW AND MIDPOINT BETWEEN WET WELL AND VALVE VAULT, AND FROM MIDPOINT BETWEEN WET WELL AND VALVE VAULT TO CHECK VALVE IN VALVE VAULT. ENDS OF PIPE AT PUMP BASE ELBOW AND CHECK VALVE SHALL UTILIZE HDPE FLANGE ADAPTER AND BACKING RING. HDPE PIPING BETWEEN WET WELL AND VALVE VAULT SHALL BE JOINED WITH ELECTROFUSION COUPLINGS.
 - b. FUSED PVC PIPE AND STAINLESS STEEL FITTINGS: PVC PIPE SHALL BE C900 DR18 AND SHALL BE FUSED AS ONE PIECE BETWEEN PUMP BASE ELBOW AND 90 DEGREE BEND IN WET WELL, AND FROM 90 DEGREE BEND IN WET WELL TO CHECK VALVE IN VALVE VAULT. 90 DEGREE BEND IN WET WELL SHALL BE FLANGED 316 STAINLESS STEEL, SCH 40. PVC PIPING ENDS SHALL UTILIZE RESTRAINED FLANGE ADAPTER (MEGAFLANGE BY EBAA IRON OR TOWN APPROVED EQUAL) WITH 316 SS FASTENERS TO CONNECT TO PUMP BASE ELBOW, 90 DEGREE BEND, AND CHECK VALVE.
3. AERATION SYSTEM: WET WELL WIZARD SYSTEM AS MANUFACTURED BY RELIANT WATER TECHNOLOGIES, NEW ORLEANS, LA. WWW.RELIANTWATER.US.COM SHALL BE INSTALLED IN WET WELL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. DESIGN ENGINEER OF RECORD SHALL COORDINATE WITH RELIANT WATER TECHNOLOGIES TO DETERMINE NUMBER AND SIZING OF BLOWER(S) AND WET WELL WIZARDS NECESSARY FOR INSTALLATION.
4. VENT: PROVIDE 6'x6" OPENING THROUGH THE CONCRETE TOP OF THE WET WELL AND INSERT 8'x 8' X 1-1/2" THICK ALUMINUM GRATE VENT CONSTRUCTED OF 1-1/2" WIDE X 1/8" MATERIAL.
5. FITTINGS: ALL DUCTILE IRON FITTINGS SHALL BE EPOXY LINED. ALL BURIED FITTINGS SHALL BE RESTRAINED.
6. LEVEL MONITORING: INSTALL ULTRASONIC LEVEL MEASUREMENT SYSTEM IN ACCORDANCE WITH ELECTRICAL PLANS AND SPECIFICATIONS AND MANUFACTURER'S REQUIREMENTS. PROVIDE FOUR BACKUP POLYURETHANE ENCASED MERCURY FLOAT SWITCHES FOR PUMPS OFF, LEAD PUMP ON, LAG PUMP ON, AND HIGH WATER ALARM.
7. WET WELL: PRECAST CONCRETE WET WELL SHALL MEET ASTM C-478 STANDARD. CONCRETE, REINFORCING STEEL, AND BUOYANCY DESIGN AND CALCULATIONS TO BE PREPARED BY A SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER AND SUBMITTED WITH THE SHOP DRAWINGS.
8. WET WELL AND MANHOLES: ALL EXTERIOR JOINTS OF PRECAST CONCRETE WET WELL AND MANHOLES SHALL BE SEALED WITH A 18" WIDE RUBBERIZED ASPHALT MEMBRANE TAPE. EXTERIOR COATING OF BITUMINOUS COATING AS SPECIFIED IN ANSI SPECIFICATIONS A21.51 SHALL BE APPLIED TO WET WELL AND MANHOLES.
9. INTERIOR PROTECTIVE COATINGS: PROTECTIVE COATING SHALL BE APPLIED TO THE INTERIOR OF WET WELLS AND RECEIVING MANHOLES. COATING SYSTEM IN WET WELL SHALL BE APPLIED TO VERTICAL WALLS AND TOP, AT A MINIMUM. PROTECTIVE COATING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND SHALL BE APPLIED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND BY INSTALLER CERTIFIED BY COATING SYSTEM MANUFACTURER.
10. EMERGENCY PUMP OUT CONNECTION: PIPE SIZE FOR EMERGENCY PUMP OUT CONNECTION SHALL MATCH PUMP DISCHARGE PIPE SIZE IN WET WELL.
11. MIN. WATER LEVEL: MINIMUM WATER LEVEL IN WET WELL SHALL BE 30" MINIMUM FOR PROPER OPERATION OF THE WET WELL WIZARD. SHALL COVER TOP OF PUMP MOTOR, OR SHALL BE GREATER IF RECOMMENDED BY PUMP MANUFACTURER.
12. SUBMERSIBLE SEWAGE PUMPS:
 - a. PUMPS SHALL BE SULZER ABS PUMPS SUITABLE FOR SUBMERSIBLE SEWER SERVICE. PUMPS SHALL BE 230/460 VOLTS, 3 PHASE, 60 HERTZ MOTORS. IF SUITABLE SULZER ABS PUMP SELECTION IS NOT AVAILABLE, FLYGT PUMPS MAY BE USED.
 - b. PUMP BASE ELBOW: BASE ELBOW TO BE FABRICATED BY PUMP MANUFACTURER. BASE ELBOW SHALL BE 4'x4' UNLESS APPROVED OTHERWISE BY TOWN.
13. FLOOD ZONE: DESIGN ENGINEER OF RECORD SHALL PROVIDE INFORMATION ON THE FLOOD ZONE OF THE PUMP STATION SITE AND SHALL PROVIDE VERIFICATION THAT THE TOP OF THE WET WELL IS ABOVE THE 100 YEAR FLOOD ELEVATION AND THAT THE BOTTOM OF THE CONTROL PANELS, GENERATOR RECEPTACLE AND GENERATOR SLAB AREA ALL ABOVE THE 100 YEAR FLOOD ELEVATION + 2 FEET OR THE 500 YEAR FLOOD ELEVATION, WHICHEVER IS GREATER.
14. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL ELEVATIONS AND DIMENSIONS CALLED OUT ON THIS PLAN SET FOR THE PUMP STATION PRIOR TO ORDERING OF ANY MATERIALS OR COMPONENTS OF THE PUMP STATION. ANY DEVIATION OF THE LAYOUTS INDICATED ON THIS PLAN MUST BE COMMUNICATED TO THE TOWN AND ENGINEER OF RECORD FOR FURTHER DIRECTION.
15. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY STABILIZATION FOR DEMOLITION AND CONSTRUCTION AND SHALL HIRE A SPECIALTY PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA TO DESIGN THE STABILIZATION SYSTEM FOR EXCAVATION AND EVALUATE THE DRAWDOWN OF THE DEWATERING OPERATIONS DURING CONSTRUCTION IN ORDER TO PROTECT THE EXISTING PS-6 STRUCTURES. DESIGN AND EVALUATION SHALL BE SIGNED AND SEALED AND SUBMITTED TO THE TOWN OF RIDGELAND AND ENGINEER OF RECORD.
16. 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 OPERATIONS, THE CONTRACTOR SHALL PREPARE A DEWATERING PLAN FOR APPROVAL AND SHALL SECURE AN SCDHEC NPDES GENERIC PERMIT WHICH COVERS STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND DEWATERING OF NON-CONTAMINATED GROUNDWATER.
17. PS-12 SITE LOCATED IN ZONE X AREA OF MINIMAL FLOODING (NO ESTABLISHED FLOOD ELEVATION), PER NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP PANEL 305 OF 575 JASPER COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS MAP NUMBER 45053C0305D OCTOBER 18, 2019



*PUMP STATION: TOWN OF RIDGELAND PS-12
 *LOCATION: 12008 N. JACOB SMART BLVD
 DESIGN CONDITION: 100 GPM @ 27 FT TDH
 *PUMP MANUFACTURER: SULZER
 *MODEL#: XFP80C CB1 8-1/3" Imp
 SERIAL#: _____
 HORSEPOWER: 2.68 HP
 VOLTAGE: _____
 DATE INSTALLED: _____
 *ENGINEER: FOUR WATERS ENGINEERING INC.
 CONTRACTOR: _____

*INFORMATION REQUIRED ON CONSTRUCTION PLANS. REMAINING INFORMATION REQUIRES ASBUILT



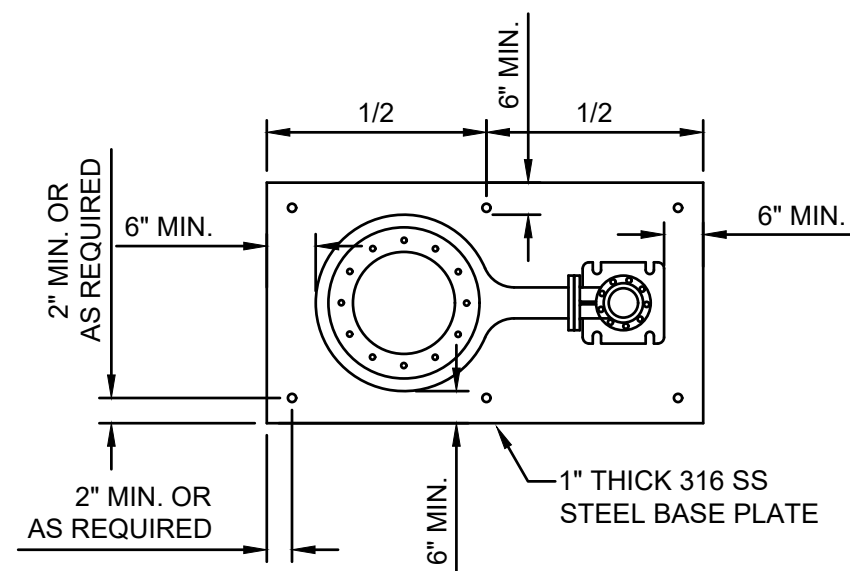
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PART I
PS-12 PROPOSED IMPROVEMENTS DETAIL

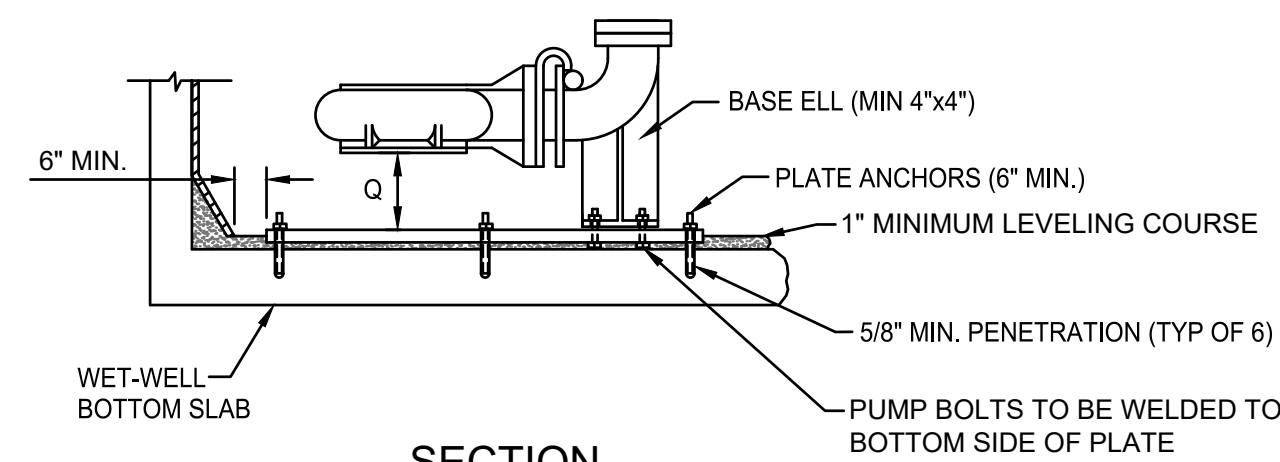
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PLAN



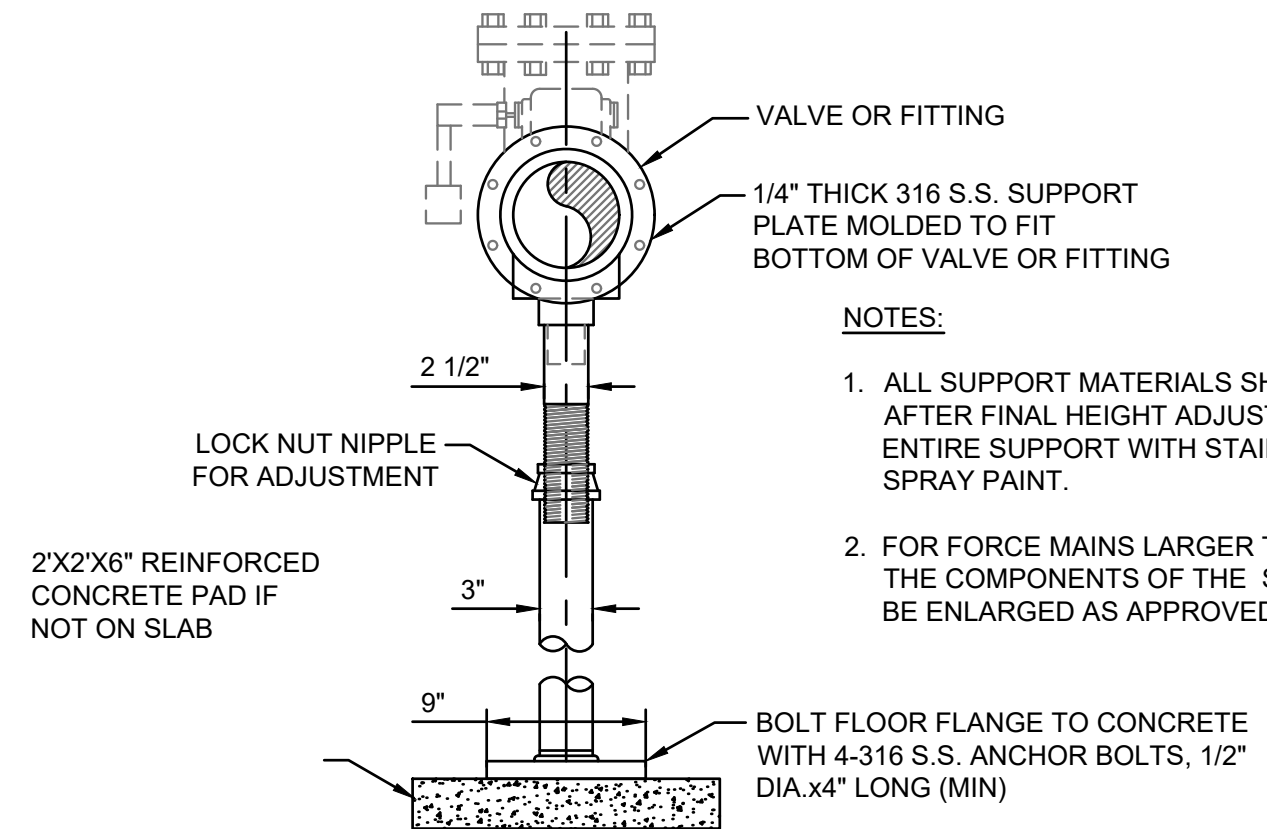
SECTION

SUBMERSIBLE PUMP BASE PLATE DETAIL

NOT TO SCALE

BASE PLATE NOTES:

1. PLATE ANCHORS TO BE 3/4" DIAMETER, CONSTRUCTED OF 316 S.S. (H.A.S. ROD) w/ "HVL" ADHESIVE CAPSULE PROVIDING AN EMBEDMENT DEPTH OF 6 5/8". ACCEPTABLE: HILTI OR ENGINEER APPROVED EQUAL.
2. NO EXPANSION ANCHORS ALLOWED.
3. PLATE SIZE: 6" LARGER THAN BASE ELL & PUMP VOLUTE TYP. ALL AROUND.
4. BASE ELL BOLTS AND STUDS TO BE TYPE 316 STAINLESS STEEL. 5. BASE ELL BOLT HEADS SHALL BE WELDED TO UNDER SIDE OF STEEL PLATE.

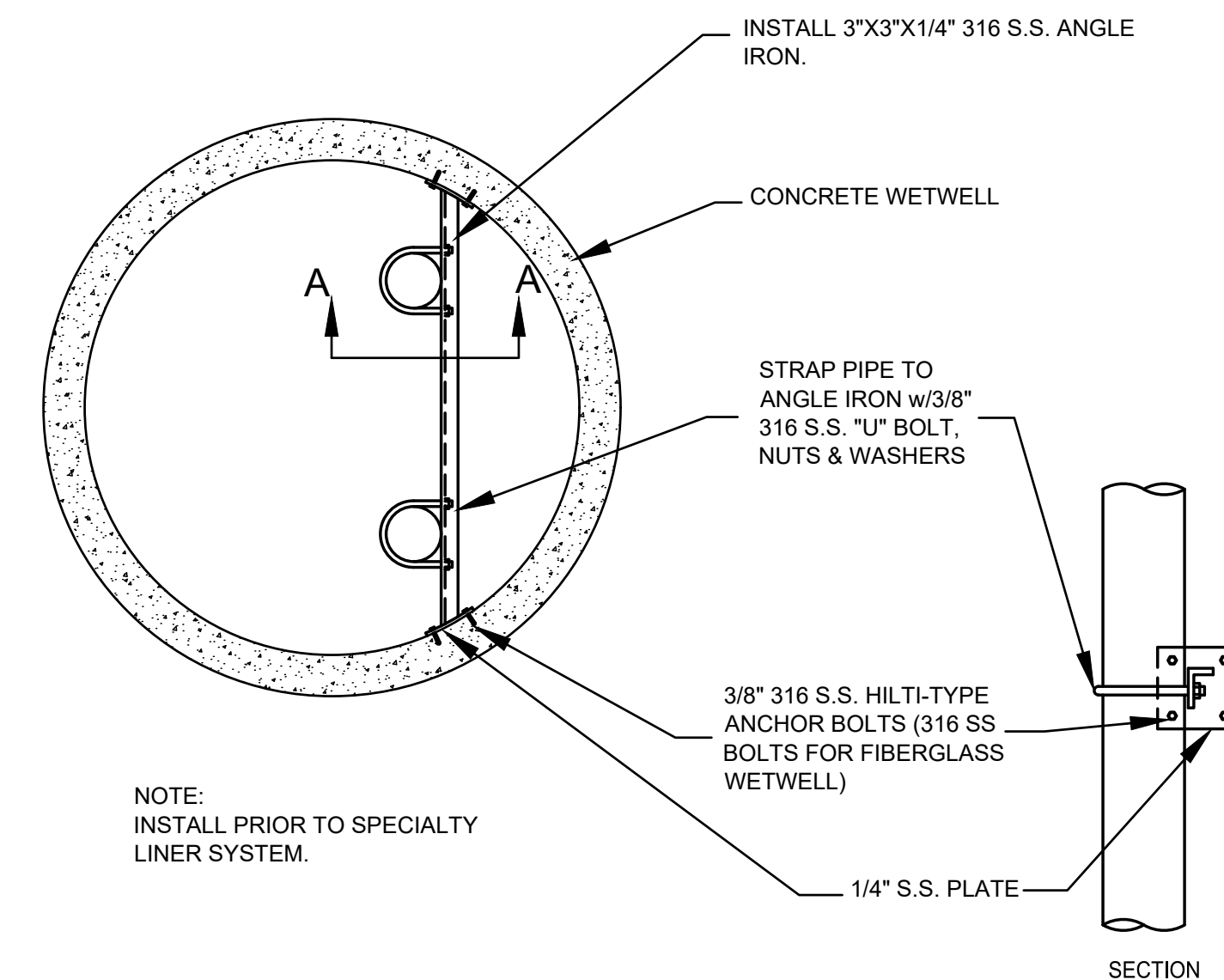


ADJUSTABLE VALVE/PIPE SUPPORT DETAIL

NOT TO SCALE

NOTES:

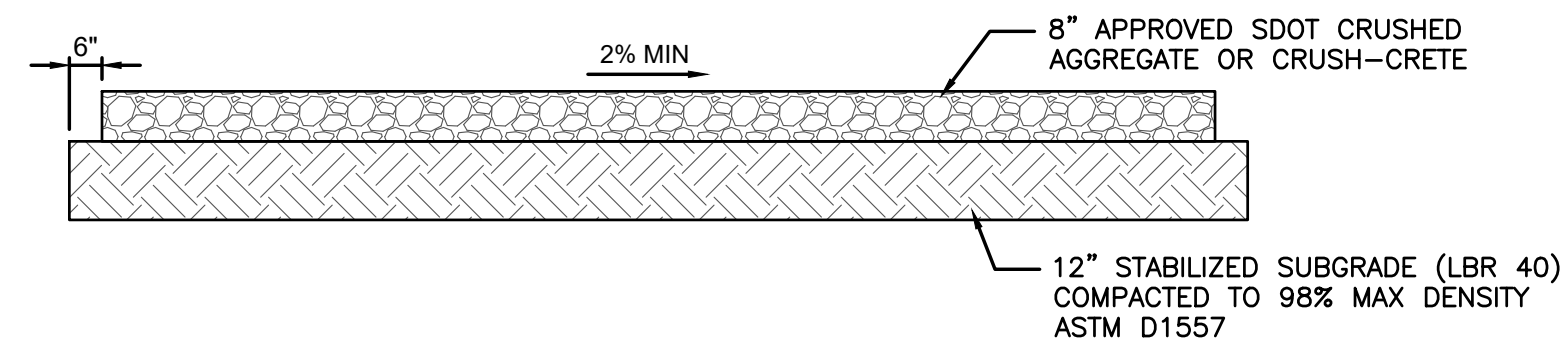
1. ALL SUPPORT MATERIALS SHALL BE 316 S.S. AFTER FINAL HEIGHT ADJUSTMENT, COAT ENTIRE SUPPORT WITH STAINLESS STEEL SPRAY PAINT.
2. FOR FORCE MAINS LARGER THAN 10" SIZE, THE COMPONENTS OF THE SUPPORT SHALL BE ENLARGED AS APPROVED BY ENGINEER



PIPE ATTACHMENT TO WALL DETAIL

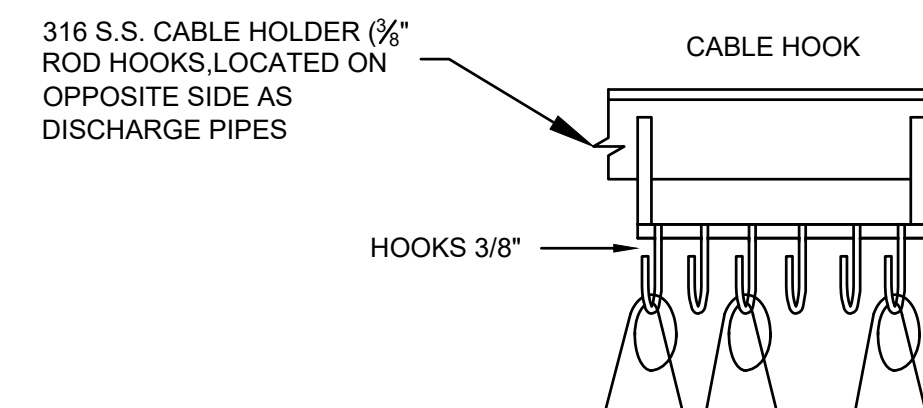
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NOTE:
INSTALL PRIOR TO SPECIALTY LINER SYSTEM.



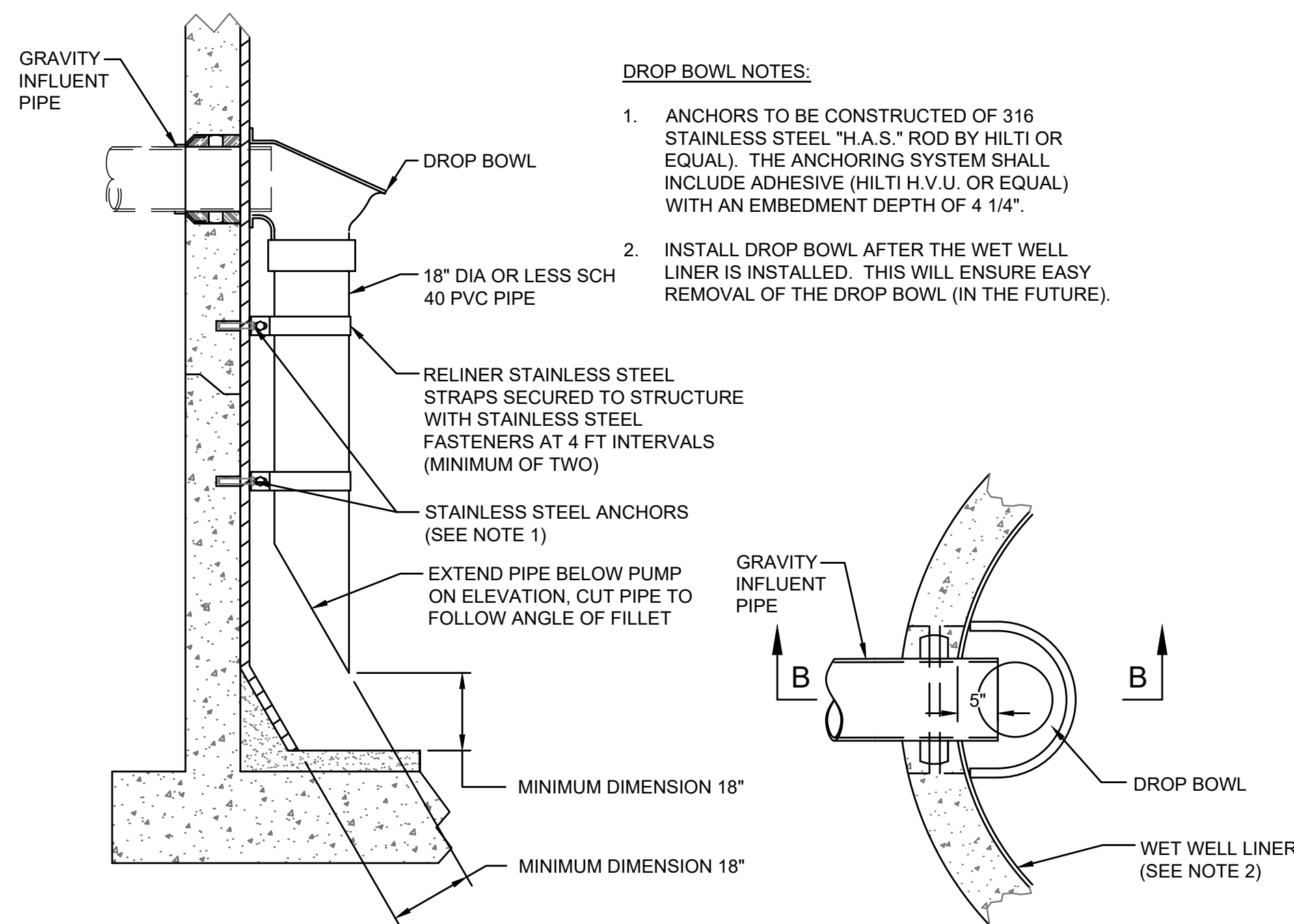
TYPICAL GRAVEL ROADWAY SECTION

NOT TO SCALE



CABLE HOLDER

NOT TO SCALE



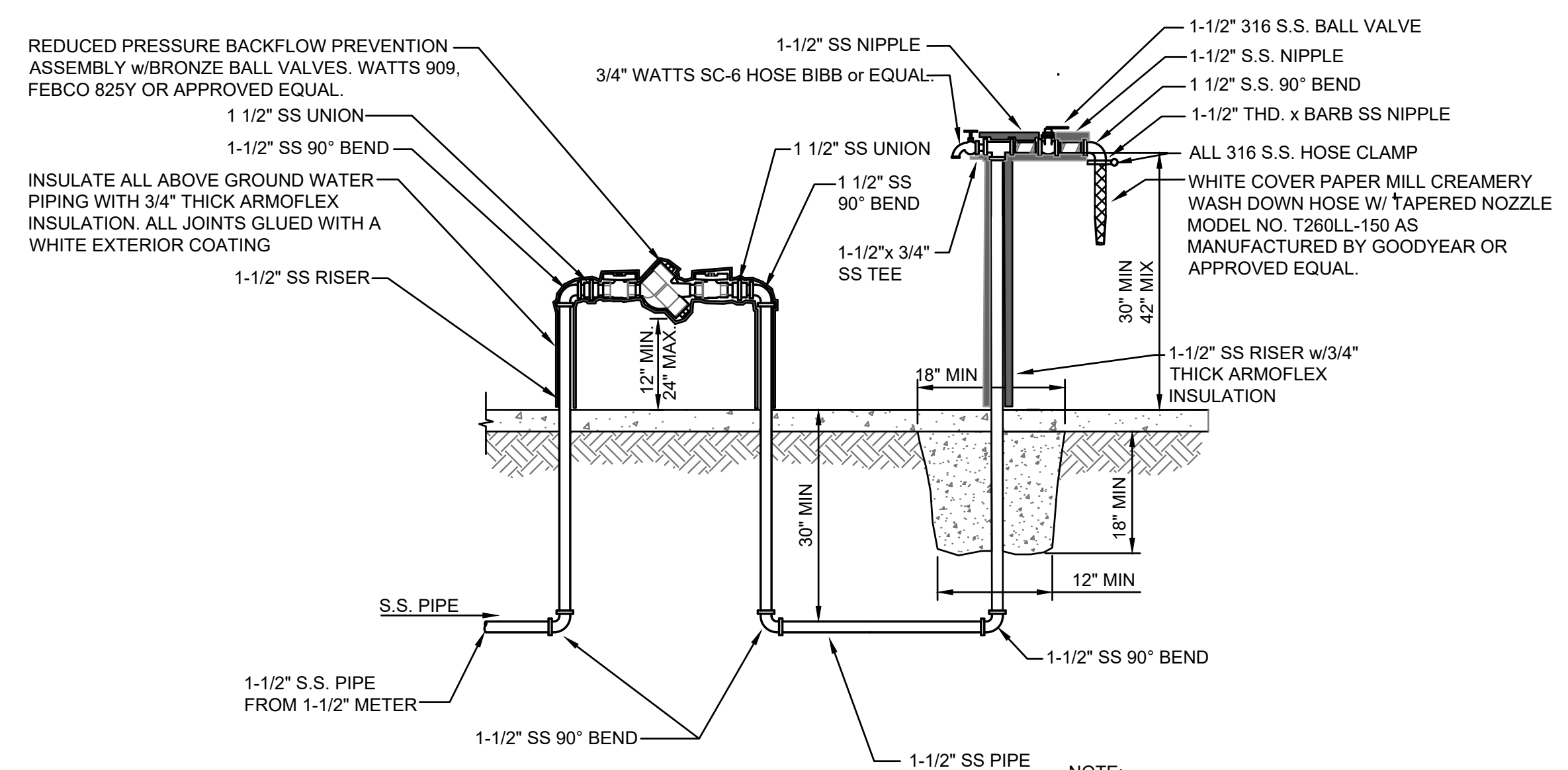
SECTION "B-B"

PLAN VIEW

DROP BOWL DETAIL

DROP BOWL NOTES:

1. ANCHORS TO BE CONSTRUCTED OF 316 STAINLESS STEEL "H.A.S." ROD BY HILTI OR EQUAL). THE ANCHORING SYSTEM SHALL INCLUDE ADHESIVE (HILTI H.V.U. OR EQUAL) WITH AN EMBEDMENT DEPTH OF 4 1/4".
2. INSTALL DROP BOWL AFTER THE WET WELL LINER IS INSTALLED. THIS WILL ENSURE EASY REMOVAL OF THE DROP BOWL (IN THE FUTURE).

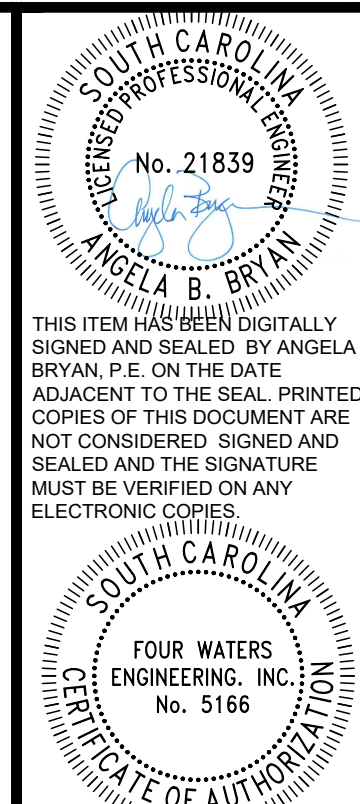


1-1/2" HOSE STATION DETAIL

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.



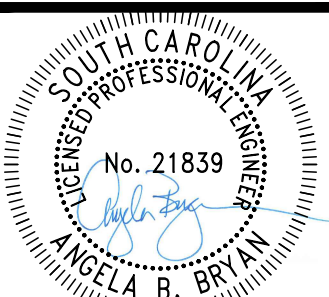
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
STANDARD DUPLEX PUMP STATION
DETAILS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

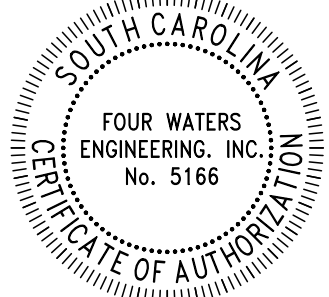
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				DATE	



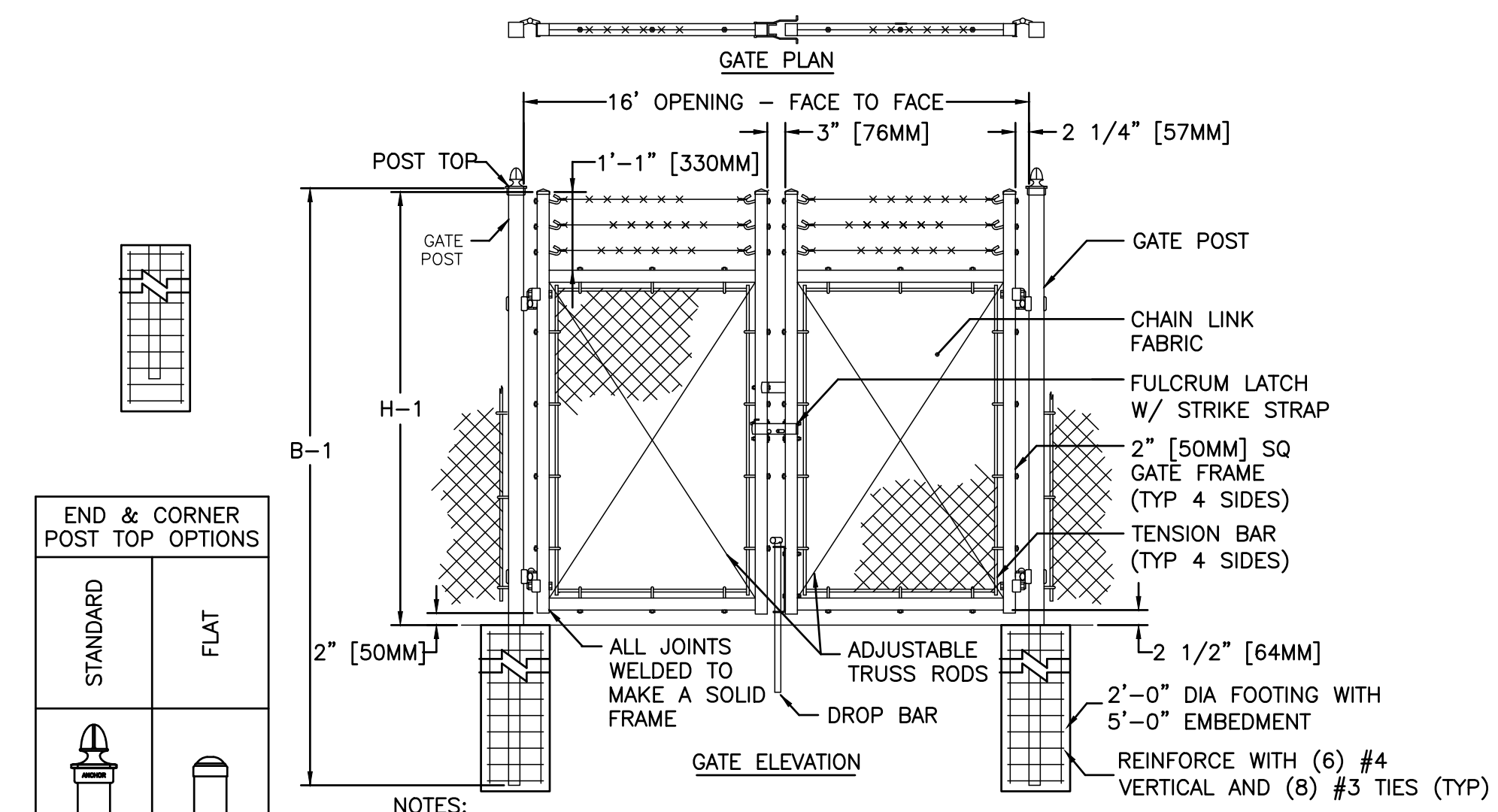
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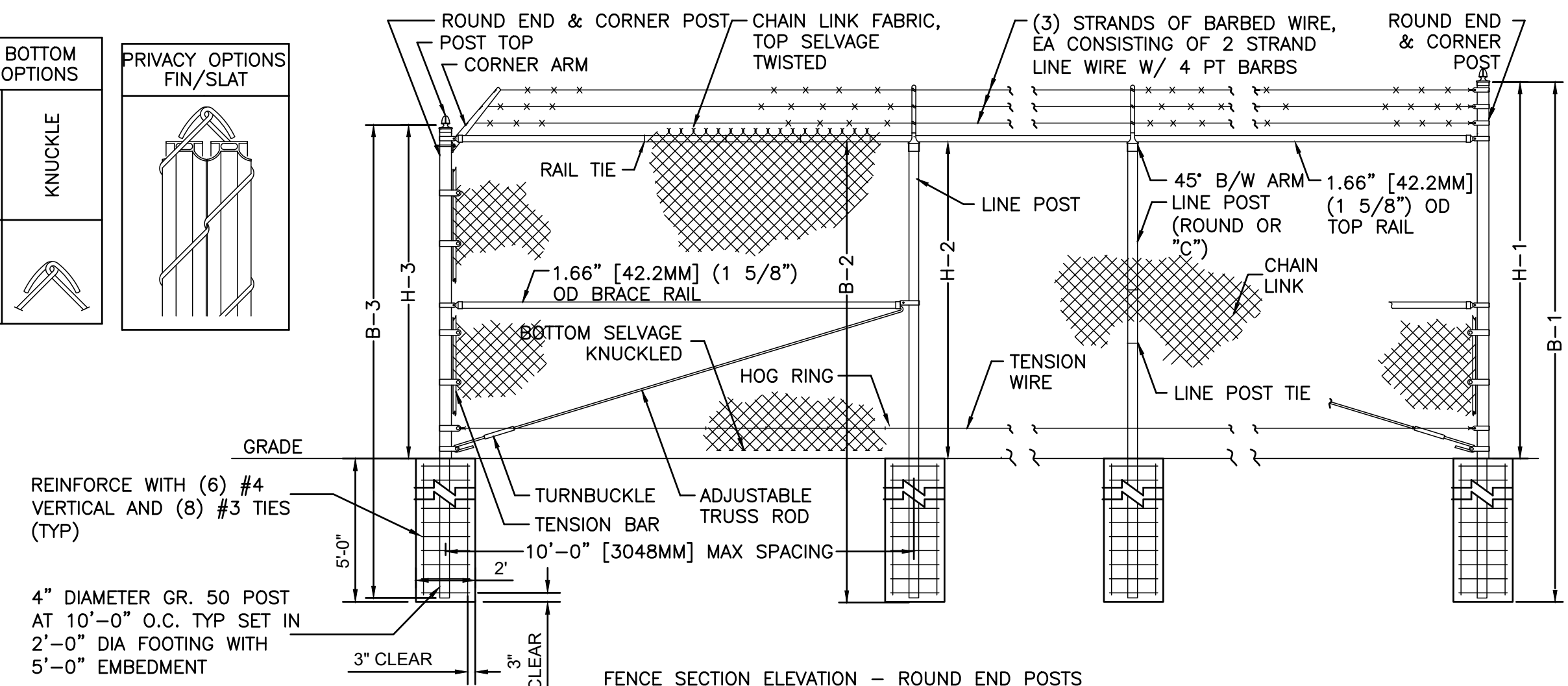
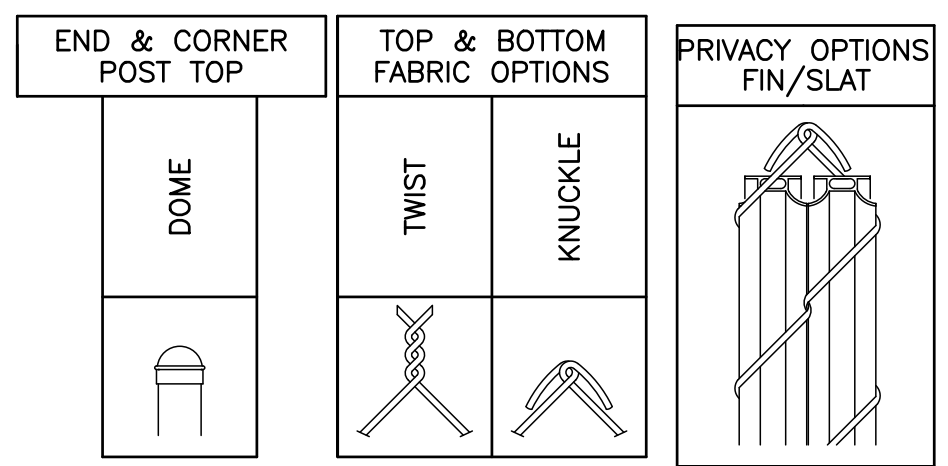
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FENCE HEIGHT	UPRIGHT END & CORNER POSTS		LINE POSTS		CORNER POSTS WITH CORNER ARM	
NOM HT INCLUDING BARBED WIRE	B-1 BAR LENGTH	H-1 HEIGHT ABOVE GRADE	B-2 BAR LENGTH	H-2 HEIGHT ABOVE GRADE	B-3 BAR LENGTH	H-3 HEIGHT ABOVE GRADE
7'-0" [2134MM]	13'-0" [3962MM]	7'-0 5/8" [2150MM]	11'-8" [2555MM]	5'-8 7/8" [1749MM]	12'-0" [3657MM]	6'-0 5/8" [1845MM]



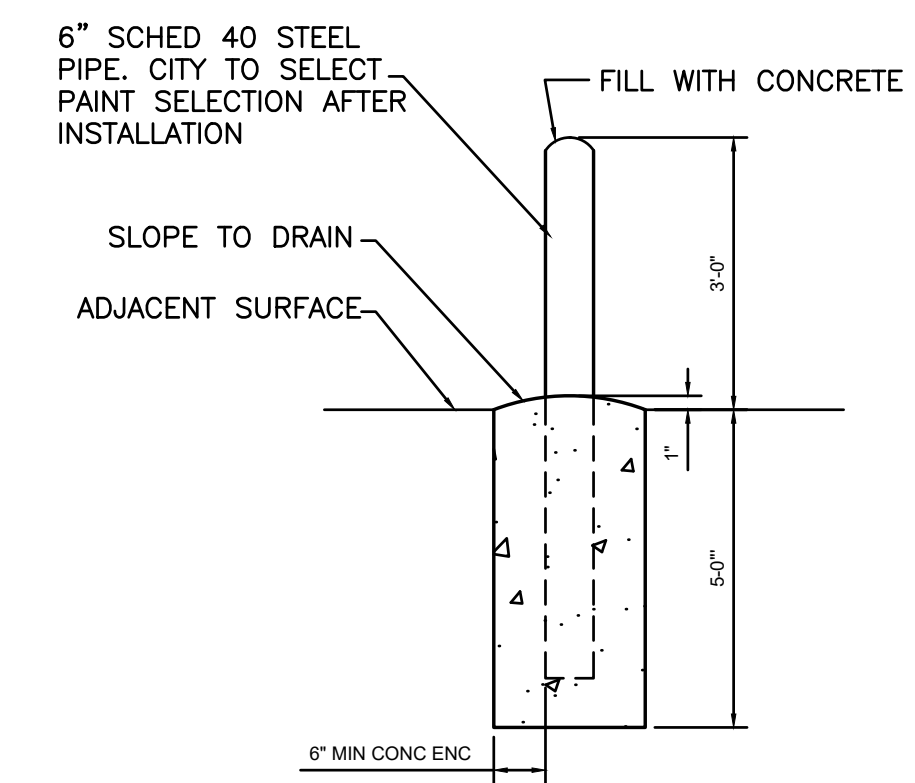
NOTES:
 1. METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS.
 2. GATES SHALL BE MANUALLY OPERATED.
 3. PROVIDE PRIVACY SLATS



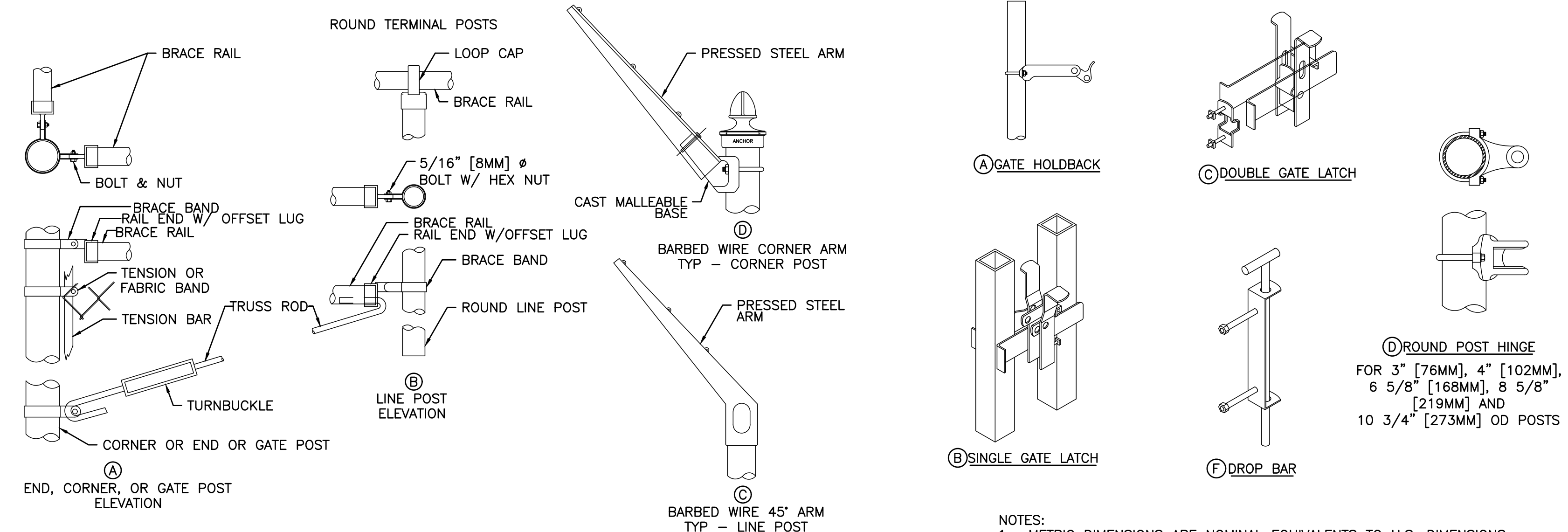
NOTES:
 1. METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS.
 2. PROVIDE BRACE RAIL AND ADJUSTABLE TRUSS ROD AT ALL CORNERS (TERMINALS) AND EACH SIDE OF GATES
 3. PROVIDE PRIVACY SLATS

7' HIGH TYPICAL DOUBLE SWING GATE ROUND END POSTS, WITH BARBED WIRE
 NOT TO SCALE

TYPICAL 7' HIGH FENCE - ROUND END POSTS, WITH TOP RAIL & WITH BARBED WIRE (DIMENSIONS AND SPECIFICATIONS)
 NOT TO SCALE



BOLLARD DETAIL
 NOT TO SCALE



NOTES:
 1. METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS.
 2. ALL MATERIAL TO CONFORM TO FEDERAL SPEC RR-F-191G (1-25-74).
 3. ALL GALVANIZED FITTINGS TO CONFORM TO ASTM-A153.

TYPICAL FENCE ROUND POST DETAILS
 NOT TO SCALE

SWING GATES ROUND POST DETAILS
 NOT TO SCALE

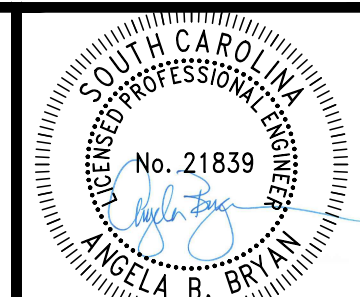
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**PART I
 STANDARD DUPLEX PUMP STATION
 DETAILS**
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

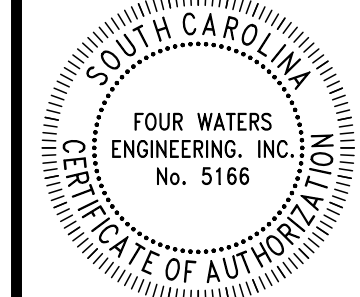
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
TEMPORARY TRAFFIC CONTROL DETAILS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

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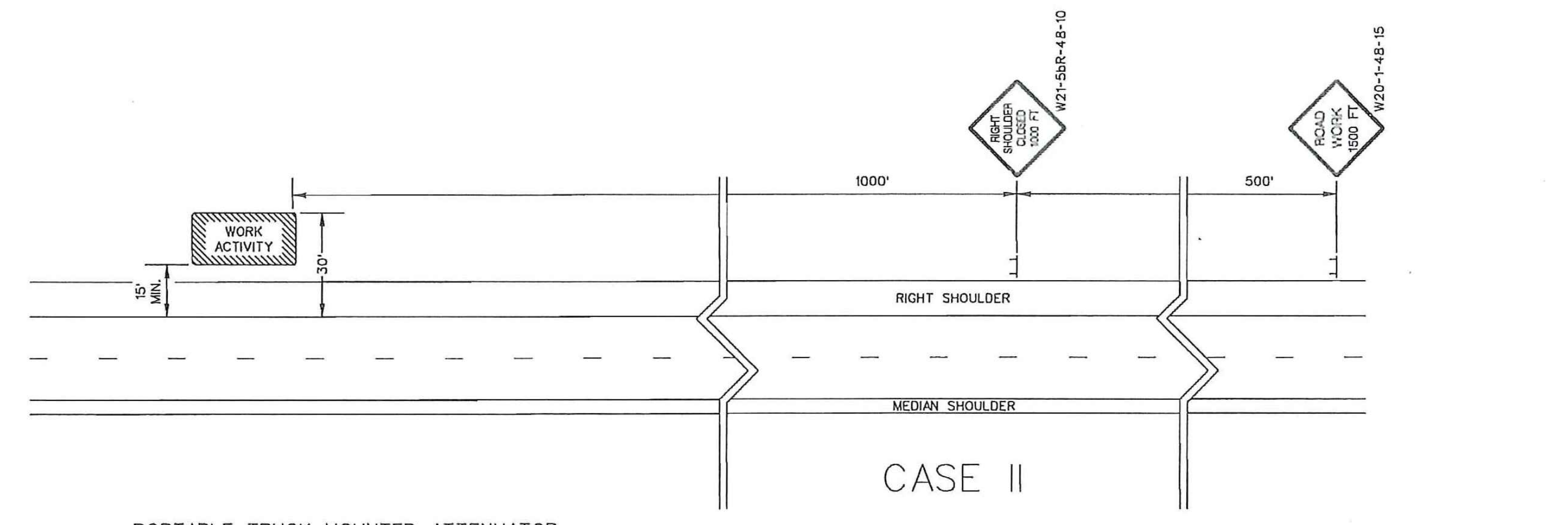
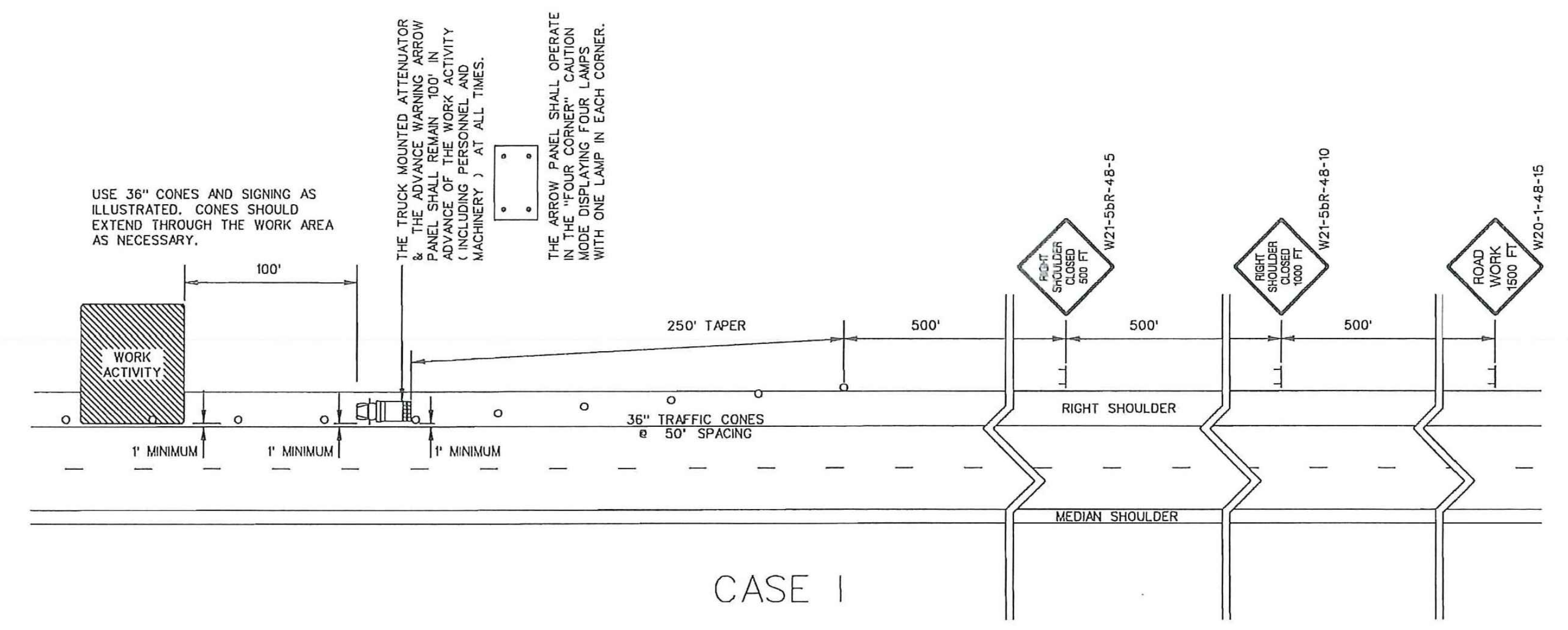
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REFERENCES

GENERAL NOTES

- ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
- INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
- SPACINGS INDICATED ARE FOR NORMAL CONDITIONS; ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
- ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CHANNEL POSTS OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
- REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
- ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org.
- THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS OR DOUBLEFACED GUARDRAIL.
- THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR DAYTIME SHOULDER CLOSURES ARE 36" CONES. THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR NIGHTTIME SHOULDER CLOSURES ARE PORTABLE PLASTIC DRUMS. DURING DAYTIME SHOULDER CLOSURES, 42" OVERSIZED CONES MAY BE SUBSTITUTED FOR 36" CONES. DURING NIGHTTIME SHOULDER CLOSURES, 42" OVERSIZED CONES ARE PROHIBITED FOR USE. IF THIS TRAFFIC CONTROL SETUP EXTENDS INTO THE HOURS OF DARKNESS, REPLACE ALL CONES, 36" OR 42" OVERSIZED, WITH PORTABLE PLASTIC DRUMS.
- THE 36" CONES UTILIZED DURING DAYLIGHT HOURS ARE NOT REQUIRED TO BE REFLECTORIZED. REFLECTORIZE ALL 42" OVERSIZED CONES UTILIZED DURING DAYTIME SHOULDER CLOSURES WITH TYPE III FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. REFLECTORIZE ALL PORTABLE PLASTIC DRUMS WITH TYPE III FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
- THE DEPARTMENT PROHIBITS CONDUCTING WORK ON PRIMARY AND SECONDARY ROUTES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE UNDER A SHOULDER CLOSURE. ALL WORK THAT MAY REQUIRE THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE SHALL BE CONDUCTED UNDER A LANE CLOSURE.
 - CASE I: WHENEVER ANY PORTION OF THE SHOULDER AREA WITHIN 15' BUT NOT CLOSER THAN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE MUST BE OCCUPIED BY EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES TO CONDUCT THE WORK, INSTALL AND MAINTAIN THE SIGNING AND TRAFFIC CONTROL DEVICES AS ILLUSTRATED.
 - CASE II: WHENEVER THE WORK IS CONDUCTED BEYOND 15' BUT WITHIN 30' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE, INCLUDING THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES, INSTALL AND MAINTAIN THE SIGNING AND TRAFFIC CONTROL AS ILLUSTRATED.
- CONDUCT THE WORK IN SUCH A MANNER THAT WILL NOT REQUIRE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.
- PLACE THE TRUCK MOUNTED ATTENUATOR AT A LOCATION 100' IN ADVANCE OF THE WORK ACTIVITY AND NO CLOSER THAN 1' FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.
- FOR A CASE I SCENARIO IN THE RIGHT SHOULDER AREA, ADJUST THE TAPER AS NECESSARY TO FIT THE WIDTH OF THE SHOULDER WHILE MAINTAINING THE REQUIRED 250' TAPER LENGTH.
- IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS AT THE SAME TIME UNDER CASE I SHOULDER CLOSURES, SEPARATE THE TWO LOCATIONS BY NO LESS THAN 1 MILE FROM THE END OF THE FIRST CASE I CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CASE I CLOSURE. A MINIMUM SEPARATION DISTANCE OF ONE-HALF MILE IS RECOMMENDED BETWEEN SHOULDER CLOSURES WHEN ONE OR BOTH SHOULDER CLOSURES IS A CASE II CLOSURE.
- THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
- THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF SHOULDER CLOSURES IN THE RIGHT SHOULDER AREAS OF PRIMARY AND SECONDARY ROADWAYS.



PORTABLE TRUCK MOUNTED ATTENUATOR

- UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICULAR WEIGHT (GVW) OF 15,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
- LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
- PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

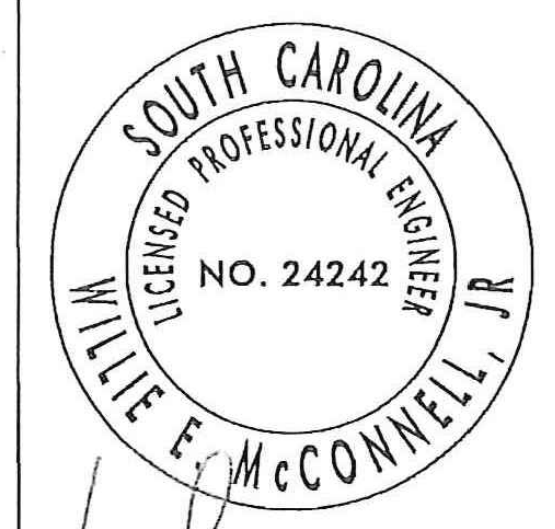
ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BAR" OR THE "ALTERNATING DIAMOND" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

LEGEND
○ 36" TRAFFIC CONES

WORK ZONE TRAFFIC CONTROL ENGINEER



W. McConnell
SIGNATURE
8/2/12
DATE

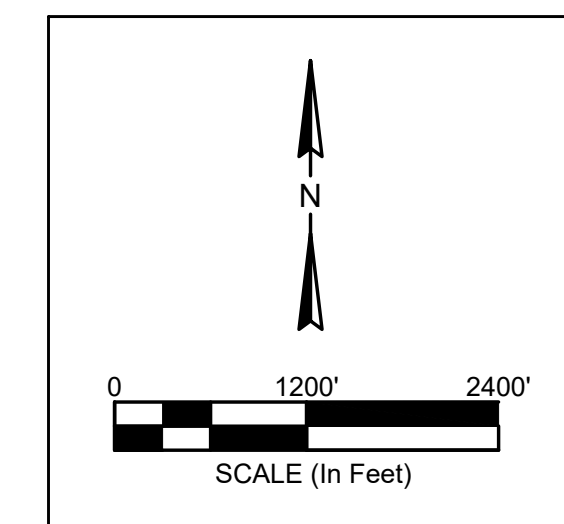
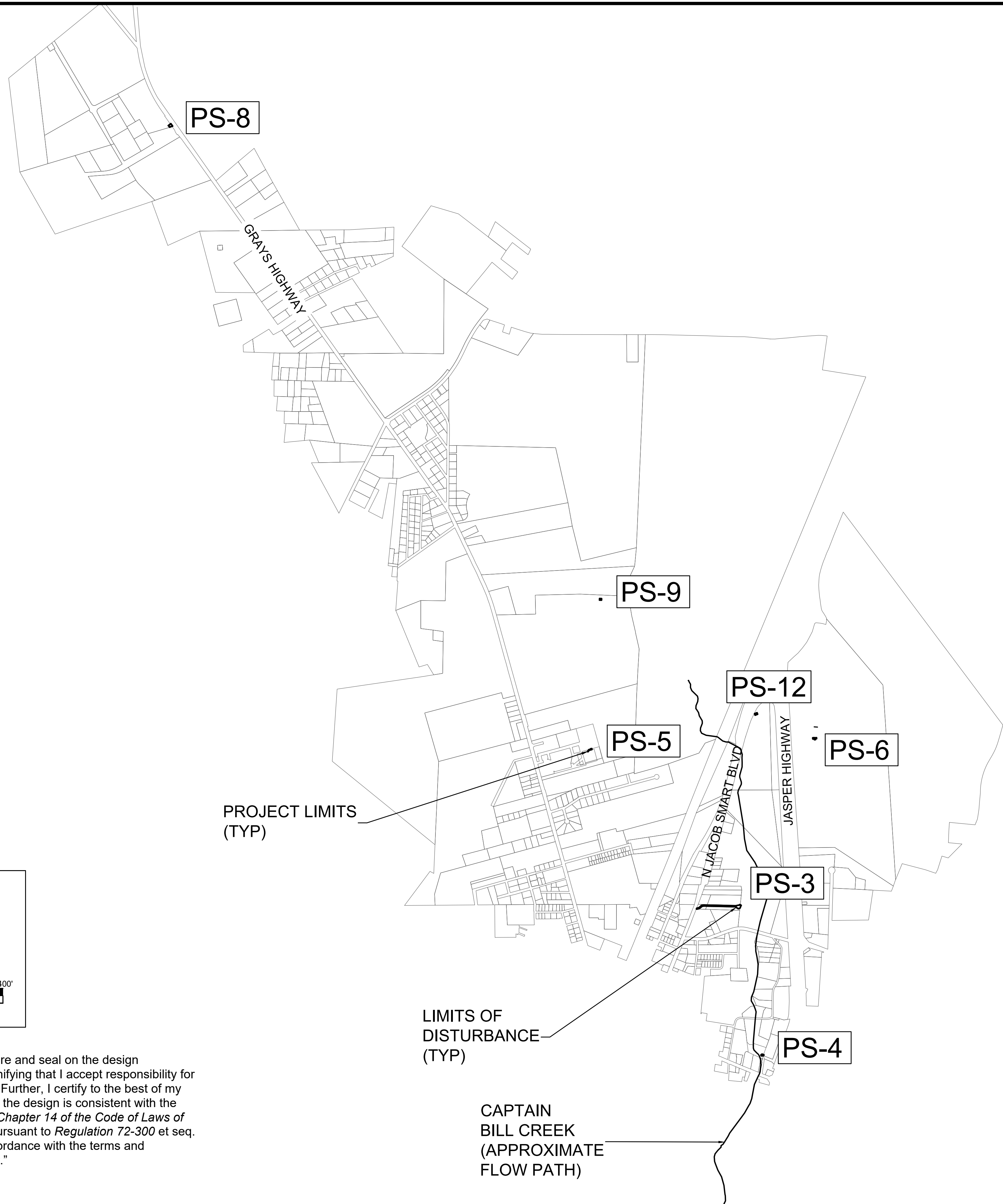
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1	8-12-11	JCS	GENERAL UPDATE
0	8-23-07	JCS	DRAWING NO. UPDATE

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

RIGHT SHOULDER CLOSURE
(CASE I / CASE II)
PRIMARY ROUTES

610-205-00
EFFECTIVE LETTING DATE: *Jan 2013* THIS DRAWING IS NOT TO SCALE



"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."

LIMITS OF DISTURBANCE (TYP)

CAPTAIN BILL CREEK (APPROXIMATE FLOW PATH)

PROJECT LIMIT AND LAND DISTURBANCE LIMITS

SCALE 1" = 1200'

SCDHEC SEDIMENT AND EROSION CONTROL STANDARD NOTES

- 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.
- 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.
- 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.
- 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.
- 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.
- THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO PAVED ROADWAYS FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.
- 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.
- 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.).
- 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.
- 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.
- 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.
- 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:

- CLEARING AND GRUBBING OF AREAS NECESSARY FOR INSTALLATION OF SILT FENCE AND INLET PROTECTION PER CONSTRUCTION PLANS
- DEMOLITION OF EXISTING PUMP STATION STRUCTURES PER CONSTRUCTION PLANS
- SITE GRADING PER CONSTRUCTION PLANS
- INSTALLATION OF SEWER MAIN AND SEWER LATERALS PER CONSTRUCTION PLANS
- REPAVEMENT OF ROADWAY SURFACE AS PER CONSTRUCTION PLANS
- INSTALLATION OF PUMP STATION IMPROVEMENTS PER CONSTRUCTION PLANS
- INSTALLATION OF HYDROSEEDING AND/OR SOD FOR PERMANENT STABILIZATION OF DISTURBED AREAS.
- MAINTAIN GRASS SURFACE.
- REMOVE TEMPORARY SEDIMENT CONTROL FEATURES ONCE FINAL STABILIZATION IS OBTAINED.

PROJECT LIMITS NOTES:

PROJECT LIMITS DETERMINED AS EXTENT OF LAND DISTURBANCE OR PUMP STATION BOUNDARY, WHICHEVER IS GREATER

PROJECT LIMIT AREAS:

APPROX 0.72 ACRES

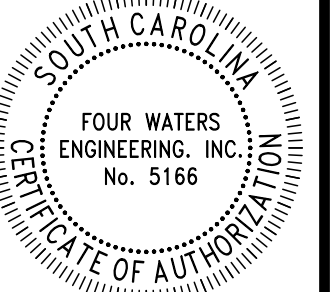
LAND DISTURBANCE LIMITS BASED ON PROJECT IMPROVEMENTS AND CONSTRUCTION RELATED ITEMS

LAND DISTURBANCE AREAS:

APPROX 0.621 ACRES



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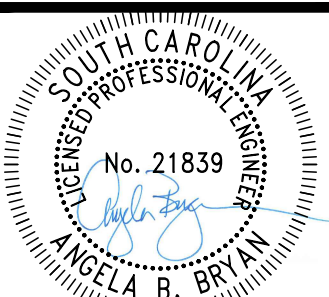
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
SCDHEC SEDIMENT AND EROSION CONTROL NOTES
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

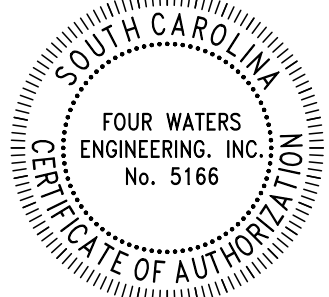
DESIGN ABB.	DRAWN JMC	DATE	ISSUE DATE	ISSUE	BID
ABB	JMC	17-1007	FEB 2023		

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

DRAWING NUMBER
EC8.1



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REV. DATE BY CHK DESCRIPTION

WATER AND SEWER RESILIENCY IMPROVEMENTS
PART I
SEDIMENT AND EROSION CONTROL
DETAILS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007	FEB	BID
ABB	JMC			2023	

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

DRAWING NUMBER
EC8.2

SILT FENCE INSTALLATION

PLAN SYMBOL

—SF—SF—

FLAT-BOTTOM TRENCH DETAIL

V-SHAPED TRENCH DETAIL

SILT FENCE — GENERAL NOTES

- 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.
- Maximum sheet or overland flow path length to the silt fence shall be 100-feet.
- Maximum slope steepness (normal [perpendicular] to the fence line) shall be 2:1.
- 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.
- Attach filter fabric to the steel posts using heavy-duty plastic ties that are evenly spaced within the top 8-inches of the fabric.
- 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.
- 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%)

- Posts shall be equipped with projections to aid in fastening of filter fabric.
- 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.
- 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.
- Post spacing shall be at a maximum of 6-feet on center.

SILT FENCE — INSPECTION & MAINTENANCE

- The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.
- Regular inspections of silt fence shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
- Attention to sediment accumulations along the silt fence is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
- Remove accumulated sediment when it reaches 1/3 the height of the silt fence.
- Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
- 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.
- 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.
- 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.

SILT FENCE — FABRIC REQUIREMENTS

- 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.
- 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.
- 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
- Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
- Filter Fabric shall be installed at a minimum of 24-inches above the ground.

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

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

- 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.
- 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.
- Sediment tube diameters shall range from 18-inches to 24-inches. Sediment tubes with smaller diameters are prohibited when used as inlet protection.
- Curled excelsior wood, or natural coconut products that are rolled up to create a sediment tube are not allowed.
- 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.
- Install all sediment tubes to ensure that no gaps exist between the soil and the bottom of the tube. Manufacturer's recommendations should always be consulted before installation.
- The ends of adjacent sediment tubes should be overlapped 6-inches to prevent flow and sediment from passing through the field joint.
- Sediment tubes should not be stacked on top of one another.
- Each sediment tube should be installed in a trench with a depth equal to 1/5 the diameter of the sediment tube.
- Install stakes at a diagonal facing incoming runoff.

INSPECTION & MAINTENANCE

- The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
- Regular inspections of sediment tube inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
- Attention to sediment accumulations in front of the sediment tube is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
- 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 it fills approximately 1/3 the depth of the sump.
- Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
- Large debris, trash, and leaves should be removed from in front of tubes when found.
- 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.

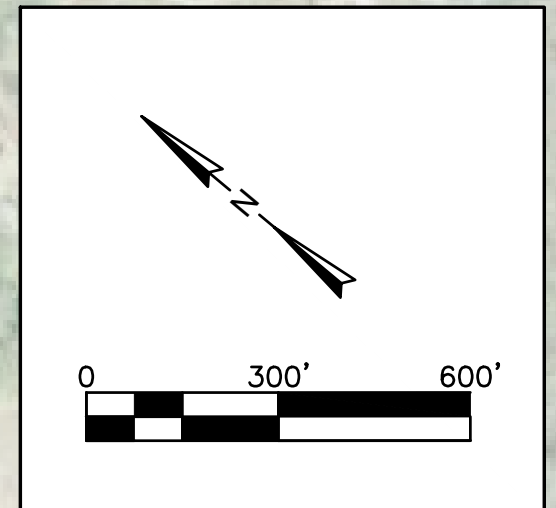
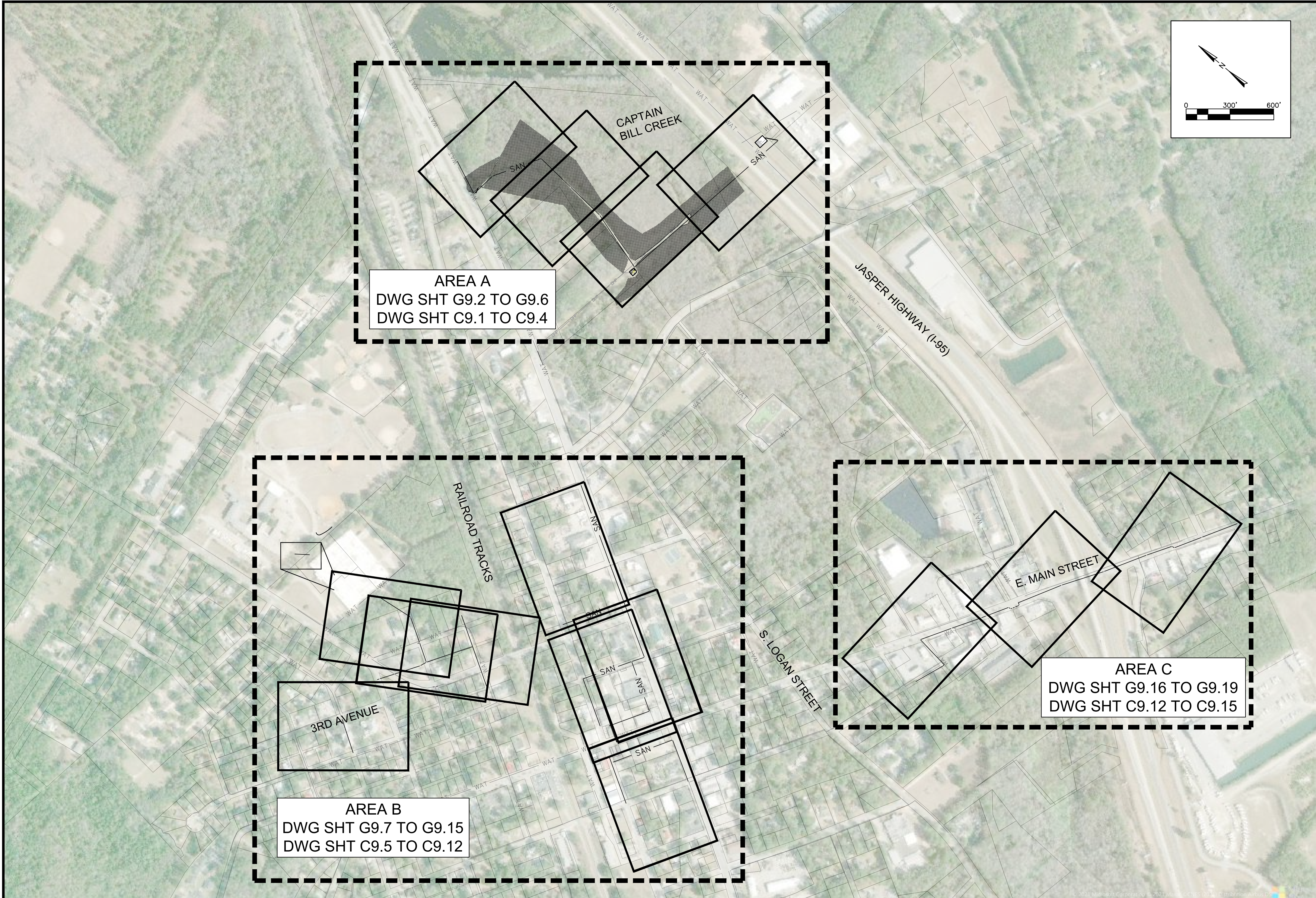
South Carolina Department of Health and Environmental Control

Type A

SEDIMENT TUBE INLET PROTECTION

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

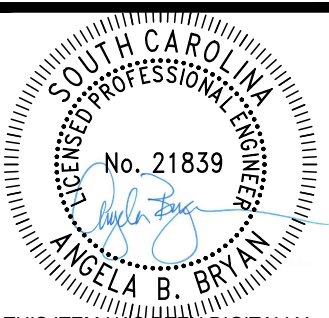
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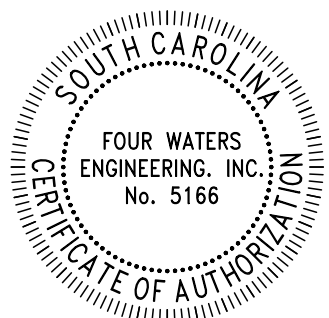
AREA A
 DWG SHT G9.2 TO G9.6
 DWG SHT C9.1 TO C9.4

AREA B
 DWG SHT G9.7 TO G9.15
 DWG SHT C9.5 TO C9.12

AREA C
 DWG SHT G9.16 TO G9.19
 DWG SHT C9.12 TO C9.15



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**WATER AND SEWER RESILIENCY IMPROVEMENTS
 PART 2
 EXISTING CONDITIONS AND PROPOSED
 IMPROVEMENTS MASTER KEY MAP**

DESIGN ABB	DRAWN JMC	JOB #	ISSUE DATE	ISSUE	BID
		17-1007	APRIL 2023		

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

DRAWING NUMBER
G9.0

GENERAL NOTES:

- ALL CONSTRUCTION SHALL CONFORM TO THE PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL PROTECT ALL BENCH MARKS AND MONUMENTS FROM DAMAGE AND SHALL ESTABLISH OFFSET POINTS AS REQUIRED FOR THIS WORK. THE CONTRACTOR IS RESPONSIBLE FOR THE LAYOUT OF ALL SCHEDULED IMPROVEMENTS AS SHOWN ON THE CONTRACT DRAWINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION ACTIVITIES AND NOTIFYING THE TOWN ENGINEER OF POTENTIAL CONFLICTS. THE CONTRACTOR SHALL CONTACT THE LOCAL UTILITY MARK-OUT SERVICE PROVIDER PRIOR TO COMMENCING WORK.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ANY EXISTING ABOVEGROUND AND UNDERGROUND UTILITIES, CONDUITS, STRUCTURES, EQUIPMENT, FOUNDATIONS, PIPE, ETC. AS NECESSARY TO COMPLETE THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE OWNER'S OF THE UTILITY 72 HOURS PRIOR TO STARTING WORK AND SHALL BEAR ALL COSTS ASSOCIATED WITH SAME. VARIOUS UTILITIES MAY NEED TO BE RESET BY THE AFFECTED UTILITY COMPANY. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF THE UTILITY COMPANY TO AVOID DELAYS. NO EXTENSION OF TIME WILL BE PROVIDED DUE TO THE LACK OF COORDINATION BY THE CONTRACTOR. THE CONTRACTOR SHALL PERFORM TEST PITS WHERE EXISTING UTILITIES ARE TO BE CROSSED. TEST PIT INFORMATION SHALL BE GIVEN TO THE TOWN ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENTS AS MAY BE REQUIRED TO AVOID CONFLICTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS WITHIN SCDOT AND TOWN R.O.W.'S AND EASEMENTS. ALL SURVEY LAYOUT VERIFYING THE EXACT LOCATION OF THE R.O.W.'S SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL COSTS FOR SAME SHALL BE INCLUDED WITHIN THE VARIOUS BID ITEMS.
- THE CONTRACTOR SHALL TAKE CARE IN MAINTAINING ALL LANDSCAPING AND YARD STRUCTURES WITHIN THE CONSTRUCTION LIMITS. WHEN RELOCATION IS NECESSARY OR WHERE ANY DAMAGE IS DONE TO SAID ITEMS THEY SHALL BE RESTORED BY THE CONTRACTOR, AT HIS EXPENSE, TO THE SATISFACTION OF THE TOWN ENGINEER.
- ANY CONCRETE STRUCTURE, DRIVEWAY, WALKWAY, OR CURB WHICH IS NOT SHOWN, DIRECTED, OR MARKED OUT BY THE ENGINEER TO BE REPLACED, BUT IS REMOVED, MISALIGNED OR DAMAGED AS A RESULT OF THE CONTRACTOR'S CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR PER SCDOT STANDARDS AT NO ADDITIONAL COSTS TO THE TOWN.
- THE CONTRACTOR SHALL ENSURE THAT POSITIVE DRAINAGE AWAY FROM RESIDENCES AND ALONG ROAD GUTTERS IS MAINTAINED AT ALL LOCATIONS DISTURBED WITHIN THE PROJECT LIMITS.
- IF IT SHALL BECOME ABSOLUTELY NECESSARY TO PERFORM WORK AT NIGHT, THE TOWN ENGINEER SHALL BE INFORMED IN ADVANCE AND APPROVAL PROVIDED. GOOD LIGHTING AND ALL OTHER NECESSARY FACILITIES FOR PROPERLY CARRYING OUT AND INSPECTING THE WORK SHALL BE PROVIDED BY THE CONTRACTOR. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL STATE AND LOCAL REGULATIONS GOVERNING HOURS DURING WHICH CONSTRUCTION EQUIPMENT MAY BE OPERATED.
- OPEN TRENCHES SHALL BE KEPT TO A MINIMUM. NO EXCAVATION AREAS ARE TO REMAIN OPEN OVERNIGHT. BITUMINOUS STABILIZED BASE COURSE SHALL BE PLACED IN ALL TRENCH AREAS WITHIN THE ROADWAY AT THE END OF EACH DAY'S WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF ALL MATERIALS EXCAVATED OF WHATEVER NATURE AT HIS OWN EXPENSE. THE TOWN IS NOT OBLIGATED TO SUPPLY A DISPOSAL SITE. THE CONTRACTOR CAN NOT DEPOSIT ANY OF THE EXCESS MATERIALS WITHIN TOWN LIMITS WITHOUT THE EXPRESS PERMISSION OF THE TOWN ENGINEER. MATERIALS MUST BE DISPOSED OF IN ACCORDANCE WITH ALL STATE REGULATIONS REGARDING SAME.
- ALL STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND DETAILS.
- PROTECTION OF EXISTING TREES WITHIN THE LIMITS OF DISTURBANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE TOWN ENGINEER SHALL DETERMINE IN THE FIELD WHICH TREES REQUIRE TREE PROTECTION. NO CONSTRUCTION EQUIPMENT OR SUPPLIES SHALL BE STOCKPILED OR STORED WITHIN THE DRIP LINE OF ANY EXISTING TREE TO REMAIN.
- ALL PROPERTY CORNERS OR MONUMENTS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY A SOUTH CAROLINA LICENSED LAND SURVEYOR, AT NO ADDITIONAL COST TO THE TOWN.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO MAINTAIN DUST CONTROL AS REQUIRED PER THE EROSION AND SEDIMENTATION DOCUMENTATION AND NPDES PERMIT FOR THE PROJECT. ALL VEHICLES SHALL BE CLEAN AND ALL ROADWAYS SHALL BE MAINTAINED AS DIRECTED BY THE TOWN ENGINEER AND SCDOT.
- ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE SCDOT STANDARDS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING PAVEMENT MARKINGS. CONTRACTOR SHALL NOTIFY TOWN ENGINEER AND SCDOT WHEN TRAFFIC STRIPES AND PAVEMENT MARKINGS HAVE BEEN LAID OUT PRIOR TO PAINTING. SCDOT WILL INSPECT AND APPROVE LAYOUT PRIOR TO CONTRACTOR PAINTING TRAFFIC STRIPES AND PAVEMENT MARKINGS.
- THE CONTRACTOR SHALL PERFORM ONLY THE AMOUNT OF WORK WHICH CAN BE COMPLETED THE SAME DAY. THE ENTIRE ROADWAY SHALL BE OPENED TO TRAFFIC AFTER WORK HOURS UNLESS APPROVED BY TOWN AND SCDOT. SCDOT TEMPORARY PAVEMENT OR APPROVED SURFACE SHALL BE PLACED IN CONSTRUCTION AREAS TO PROVIDE A SMOOTH, SAFE SURFACE FOR VEHICULAR TRAFFIC. THE COST FOR TEMPORARY PAVEMENT SHALL BE INCLUDED IN UNIT PRICE BID FOR VARIOUS CONSTRUCTION ITEMS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION STAKEOUT. OFFSET LINES WITH STAKES SHALL BE SET AT APPROPRIATE INTERVALS TO FACILITATE CONSTRUCTION. CUT SHEETS SHALL BE SUBMITTED FOR APPROVAL TO THE TOWN ENGINEER AND TO THE WORK CREWS AT LEAST 5 DAYS PRIOR TO CONSTRUCTION.
- ALL EXISTING STRUCTURES AND ALL UNDERGROUND STRUCTURES ARE TO BE REMOVED IN ACCORDANCE WITH STATE REGULATIONS.
- THE CONTRACTOR SHALL NOTIFY THE TOWN ENGINEER IMMEDIATELY IF ANY FIELD CONDITIONS ENCOUNTERED DIFFER FROM THOSE SHOWN HEREIN.
- WORK WITHIN SCDOT ROW SHALL BE CONDUCTED IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF THE NPDES PERMIT(S) ISSUED TO SCDOT TO GOVERN THE DISCHARGE OF STORM WATER AND NON-STORM WATER FROM ITS PROPERTIES AND PER THE NPDES PERMIT FOR THE PROJECT
- THESE GENERAL NOTES SHALL APPLY FOR THE ENTIRE PROJECT.

LEGEND:

- SSMH CONTOUR
- IE SPOT ELEVATION
- PP SANITARY SEWER MANHOLE
- N.T.S. INVERT ELEVATION
- R/W POWER POLE
- AS NOT TO SCALE
- N/F NOW OR FORMERLY
- R/W RIGHT OF WAY
- AS TYPICAL WETLAND FLAG LABEL
- PVC POLYVINYL CHLORIDE PIPE
- WV WATER VALVE
- EM ELECTRIC METER
- ANT ANTENNA
- GW GUY WIRE ANCHOR
- CO CLEANOUT
- OP OVERHEAD POWERLINE
- SS SANITARY SEWER LINE
- WETLAND LINE

SPECIAL NOTE:

- *HORIZONTAL DATUM IS NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES
- *VERTICAL DATUM IN NAVD 88
- *SEE NOTE #7 BELOW

SURVEY NOTES:

THE FOLLOWING INFORMATION APPLIES TO DRAWINGS G9.2-G9.6 AND C9.1-C9.4

- I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO OBVIOUS, APPARENT OR VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.
- UNDERGROUND UTILITIES NOT LOCATED EXCEPT AS SHOWN AND ARE APPROXIMATE. SURVEYING CONSULTANTS DOES NOT CERTIFY TO THE EXACT LOCATION OF ANY UNDERGROUND UTILITY.
- THE WETLAND LINES SHOWN ARE FIELD LOCATIONS OF FLAGS RECENTLY SET BY NEWKIRK ENVIRONMENTAL (SEE REFERENCE PLAT #1) AND ARE SHOWN FOR INFORMATION PURPOSES ONLY. THIS SHOULD NOT BE CONSTRUED AS A CERTIFIED WETLAND SURVEY
- SURVEYING CONSULTANTS CERTIFIES TO THE TOPOGRAPHIC AND ASBUILT INFORMATION PROVIDED HEREON AS OF THE DATE OF SURVEY. IF THIS DOCUMENT IS TO BE PROVIDED AS A BASE MAP FOR OTHERS, INFORMATION ADDED AFTER THE DATE OF THIS SURVEY IS NOT THE RESPONSIBILITY OF SURVEYING CONSULTANTS.
- THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE, THEREFORE THERE MAY BE OTHER EASEMENTS, RIGHT-OF-WAY, SETBACK LINES, AGREEMENTS, RESERVATIONS, RESTRICTIONS, OR OTHER SIMILAR MATTERS OF PUBLIC RECORD, NOT DEPICTED ON THIS SURVEY.
- NO BOUNDARY LINES AND/OR ROAD RIGHT-OF-WAY LINES WERE NOT ESTABLISHED AS A PART OF THIS SURVEY. THE APPROXIMATE BOUNDARY LINES SHOWN WERE SCALED FROM THE JASPER COUNTY ONLINE GIS MAPPING SERVICE AND WERE NOT FIELD VERIFIED. THIS PLAT SHOULD IN NO WAY BE CONSTRUED AS A BOUNDARY SURVEY.
- THE HORIZONTAL DATUM SHOWN IS BASED ON NAD 83 SOUTH CAROLINA STATE PLANE COORDINATES. THE VERTICAL DATUM SHOWN IS BASED ON NAVD 88 DATUM. THE HORIZONTAL AND VERTICAL DATUM SHOWN WERE ESTABLISHED FROM THE SC-VRS SURVEY NETWORK.

REFERENCE PLAT:

- WETLAND RESOURCE MAP, PS3 SEWER PROJECT, PROJECT # 04-4884g, JASPER COUNTY, SOUTH CAROLINA, DATED: 06/29/2021, BY: NEWKIRK ENVIRONMENTAL INC.
- PLAT OF A PARCEL OF LAND MADE FOR THREE STAR DEVELOPMENT COMPANY, NOW OR FORMERLY SYDNEY M. BROWN, FORMERLY ADA THOMAS, LOCATED NEAR THE TOWN OF RIDGELAND, CONTAINING 41.5 ACRES. DATED: 1973 & 1974, BY: D.W. PRICE, S.C.R.L.S. NO. 3217, RECORDED: P.B. 13, PG. 111, 07/16/1974.

SCALE: 1" = 30'

DATE: 09/08/2021 JOB NO: SC210030-PS3

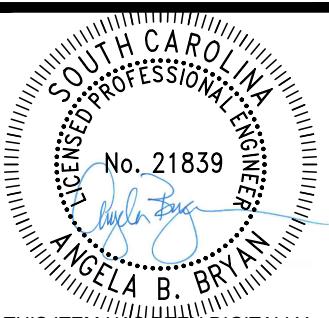


SURVEYING CONSULTANTS

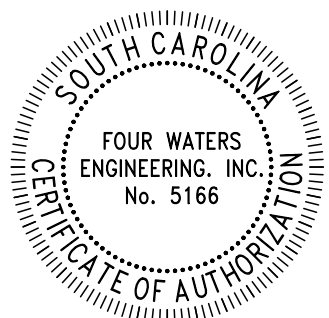
17 Sherrington Drive, Suite C, Bluffton, SC 29910
 SC Telephone: (843) 815-3304 FAX: (843) 815-3305
 GA Telephone: (912) 858-2776
 www.SurveyingConsultants.com
 Email: SC@SurveyingConsultants.com
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NOTES FOR MAINTENANCE AND PROTECTION OF TRAFFIC:

- ALL DEVICES AND PROCEDURES FOR THE MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE SCDOT. THE CONTRACTOR SHALL PLAN AND CARRY OUT HIS WORK TO PROVIDE FOR THE CONVENIENT AND SAFE PASSAGE OF ALL VEHICULAR AND PEDESTRIAN TRAFFIC ON ADJACENT STREETS.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING MAINTENANCE AND PROTECTION OF TRAFFIC THROUGH THE DURATION OF CONSTRUCTION. NO SEPARATE PAYMENTS WILL BE MADE FOR RELOCATING THE DEVICES AS REQUIRED, OR AS DIRECTED BY THE TOWN ENGINEER, DURING THE COURSE OF CONSTRUCTION.
- DURING CONSTRUCTION, ALL ROADS SHALL BE PROPERLY MAINTAINED TO ACCOMMODATE EMERGENCY VEHICLES AT ALL TIMES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE LOCAL AND STATE POLICE DEPARTMENTS FOR TRAFFIC OPERATIONS AND PARKING PROHIBITIONS DURING CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE ANY TEMPORARY DETOURS NECESSARY WITH THE POLICE, TOWN ENGINEER AND/OR FIRE DEPARTMENTS PRIOR TO CONSTRUCTION. ALL EMERGENCY VEHICLES MUST HAVE ACCESS TO STREETS AT ALL TIMES AND ALL RESIDENTS MUST HAVE ACCESS TO THEIR HOMES AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING THE ROADWAY TO A SAFE CONDITION AT THE END OF EACH DAY'S WORK PER SCDOT STANDARDS.
- ALL TRAFFIC CONTROL SIGNS AND STRIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE SCDOT. EXACT LOCATION OF STREET SIGNS SHALL BE DETERMINED BY SCDOT SPECIFICATIONS.



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WATER AND SEWER RESILIENCY IMPROVEMENTS

PART 2

GENERAL NOTES

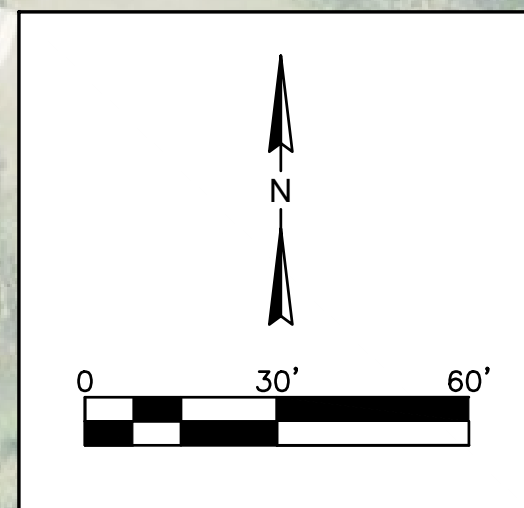
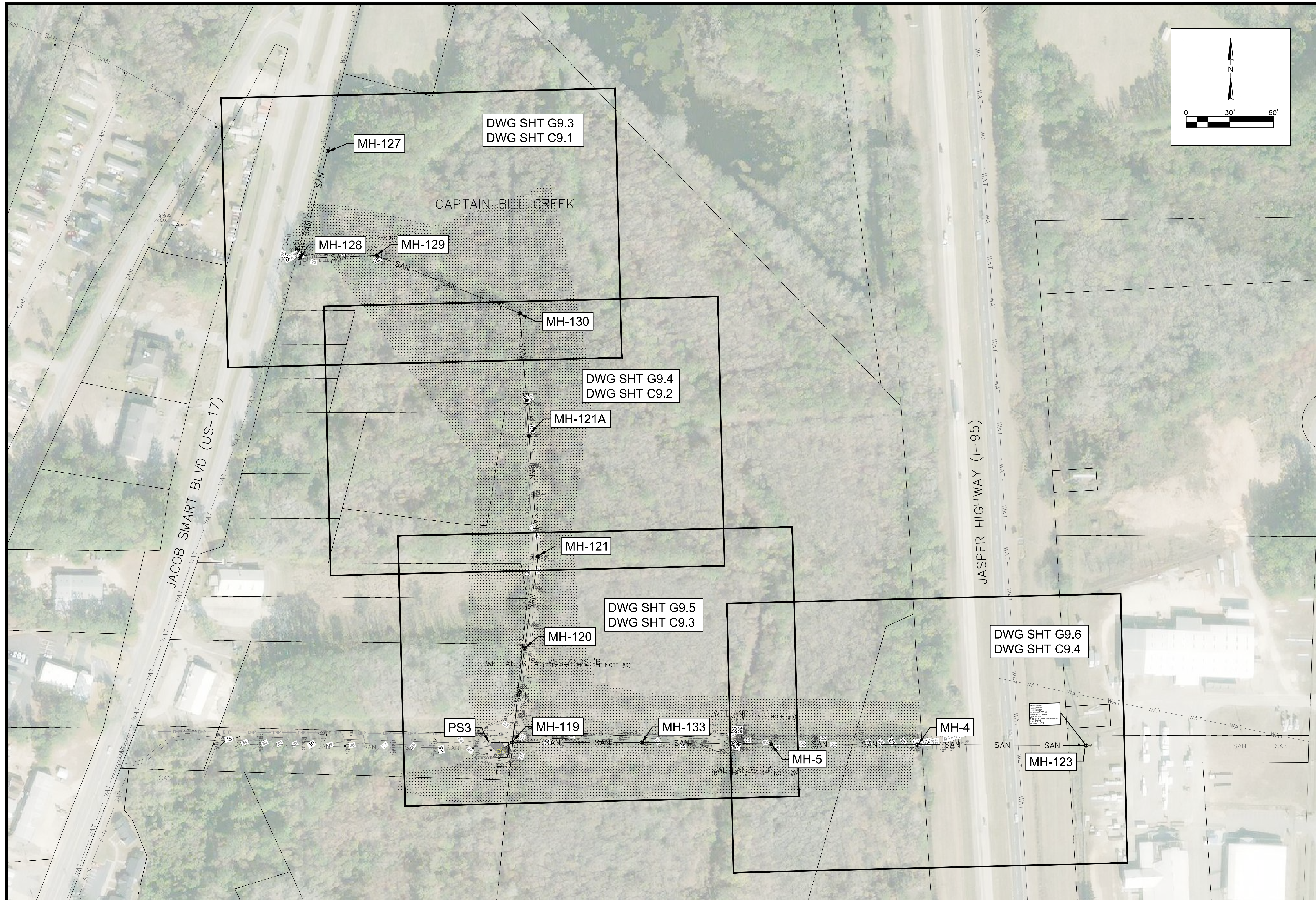
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	JOB #	ISSUE DATE	ISSUE	BID
		17-1007	APRIL 2023		

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

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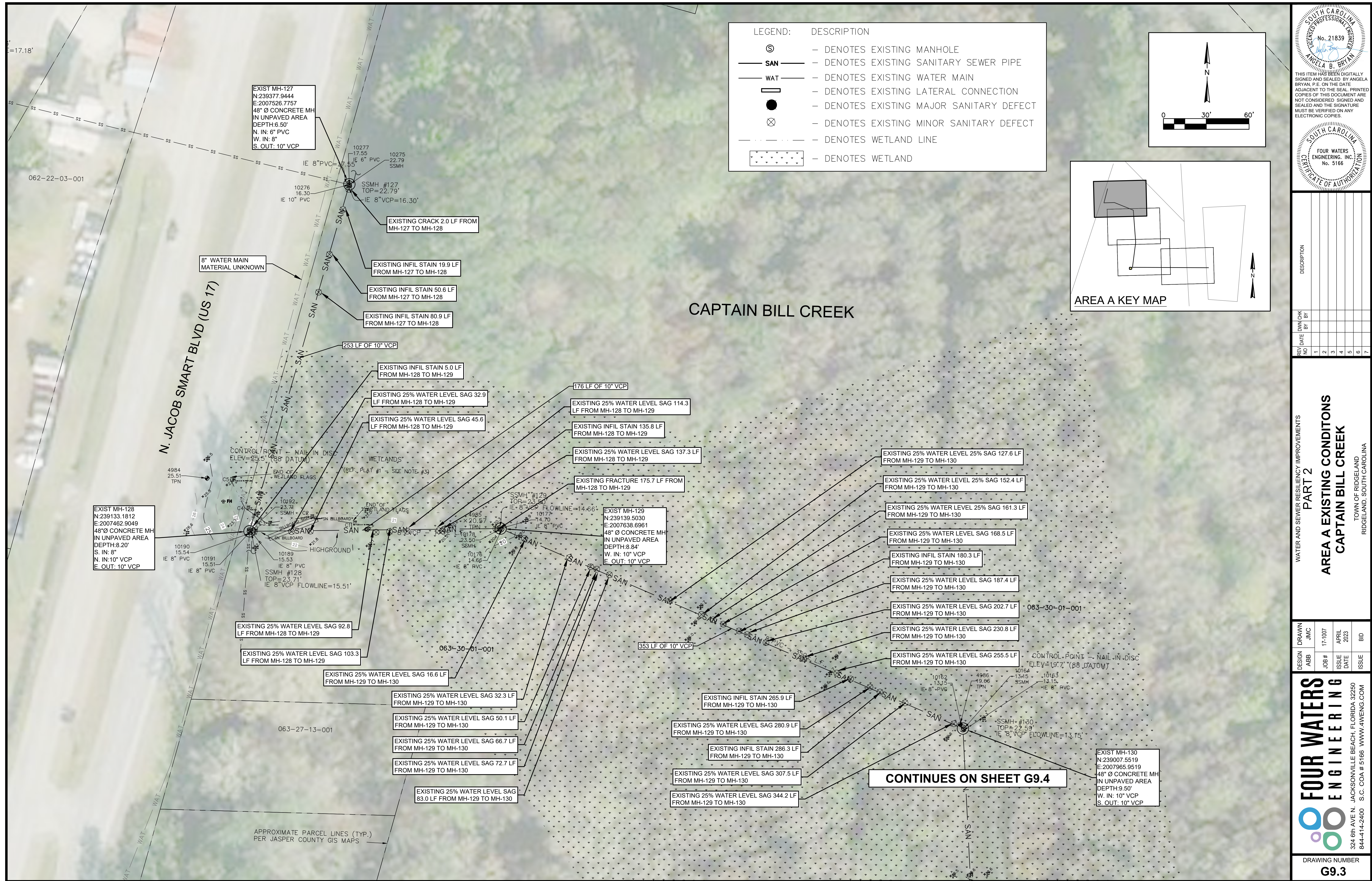
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA A EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS KEY MAP
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

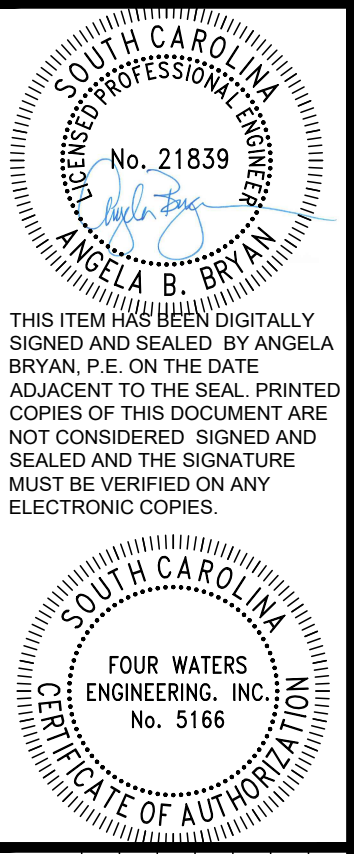
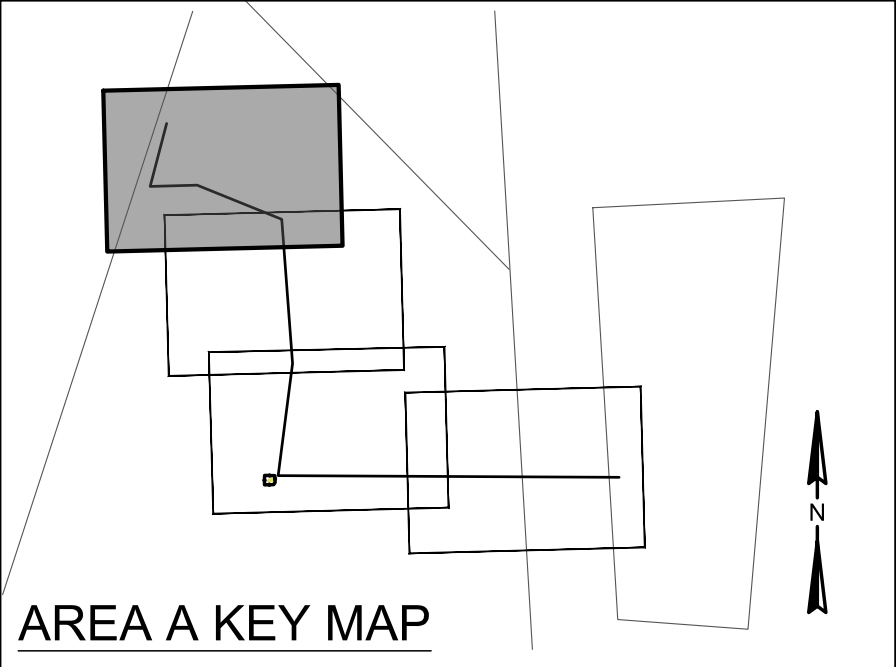
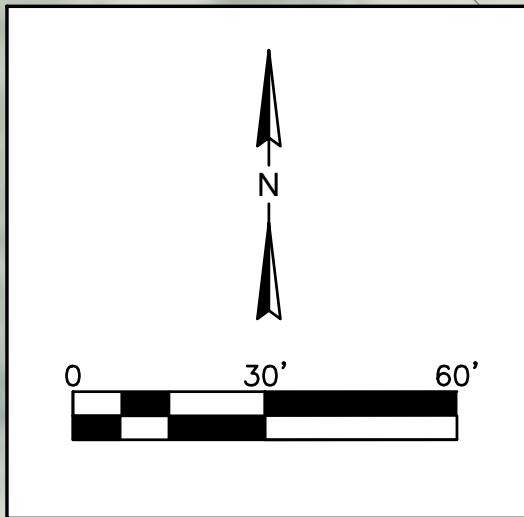
DESIGN ABB	DRAWN JMC	ISSUE DATE	ISSUE
		17-1007	
		APRIL 2023	
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G9.2



LEGEND:	DESCRIPTION
⊙	- DENOTES EXISTING MANHOLE
— SAN —	- DENOTES EXISTING SANITARY SEWER PIPE
— WAT —	- DENOTES EXISTING WATER MAIN
—	- DENOTES EXISTING LATERAL CONNECTION
●	- DENOTES EXISTING MAJOR SANITARY DEFECT
⊗	- DENOTES EXISTING MINOR SANITARY DEFECT
- - -	- DENOTES WETLAND LINE
[Pattern]	- DENOTES WETLAND



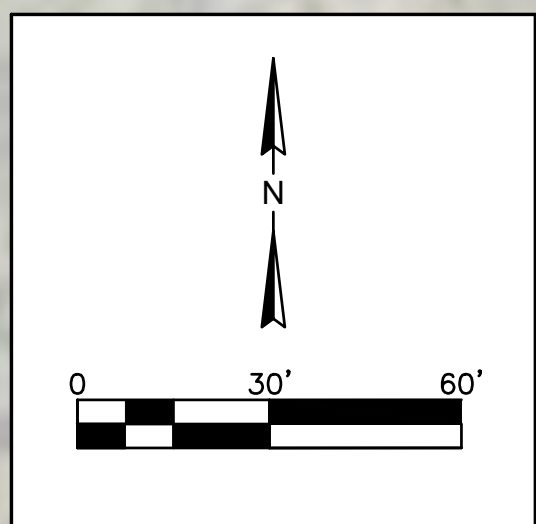
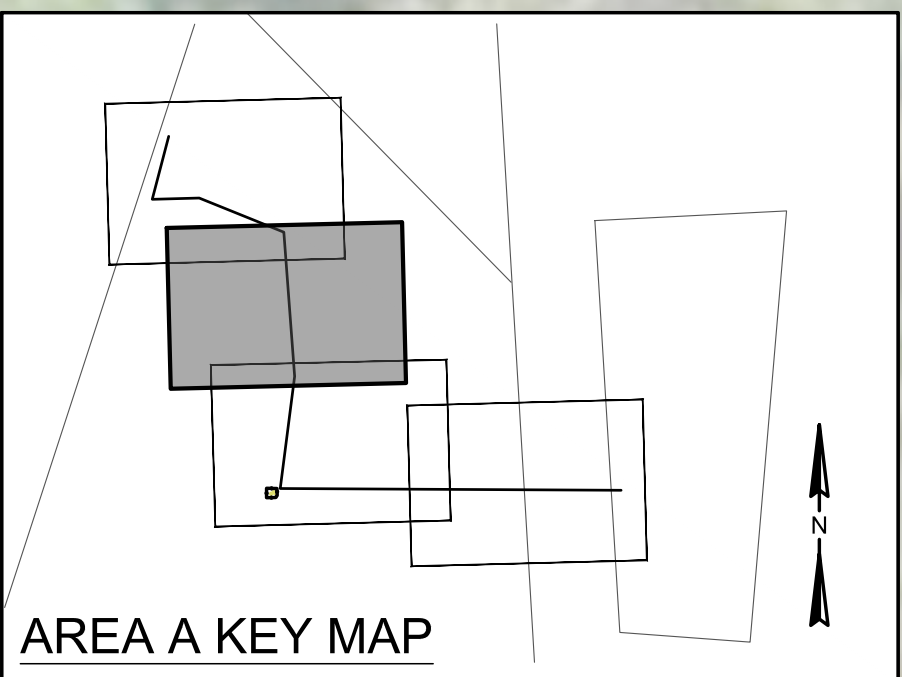
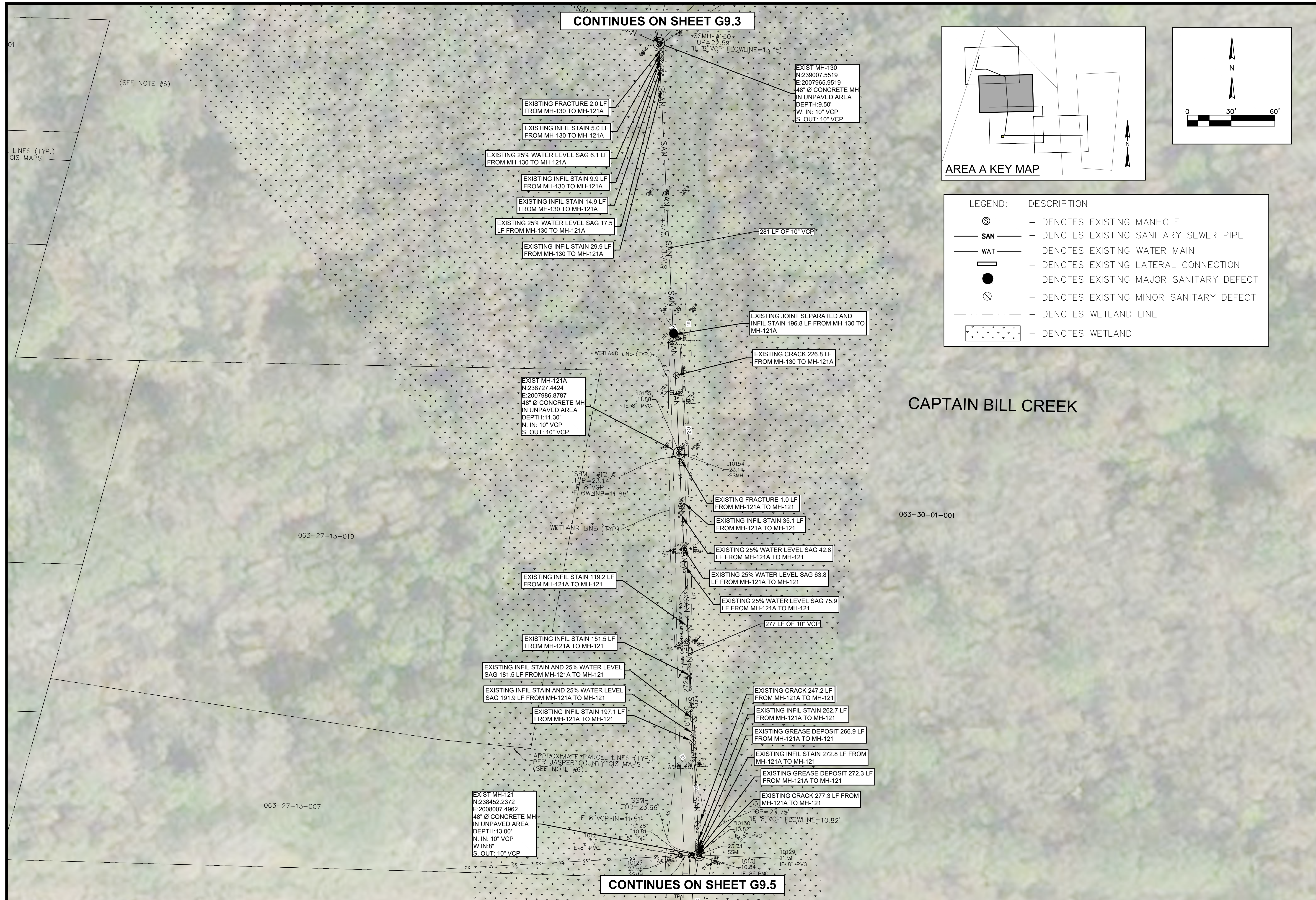
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA A EXISTING CONDITIONS
CAPTAIN BILL CREEK
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB.	DRAWN JMC	JOB #	ISSUE DATE	ISSUE
		17-1007	APRIL 2023	BID

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DRAWING NUMBER
G9.3



LEGEND: DESCRIPTION

- ⊙ - DENOTES EXISTING MANHOLE
- SAN — - DENOTES EXISTING SANITARY SEWER PIPE
- WAT — - DENOTES EXISTING WATER MAIN
- ▭ - DENOTES EXISTING LATERAL CONNECTION
- - DENOTES EXISTING MAJOR SANITARY DEFECT
- ⊗ - DENOTES EXISTING MINOR SANITARY DEFECT
- - - - - DENOTES WETLAND LINE
- ▨ - DENOTES WETLAND

FOUR WATERS ENGINEERING, INC.
No. 21839
ANGELA B. BRYAN
REGISTERED PROFESSIONAL ENGINEER

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No. 5166
CERTIFICATE OF AUTHORITY

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA A EXISTING CONDITIONS
CAPTAIN BILL CREEK
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	DATE	ISSUE	ISSUE
ABB	JMC	17-1007	APRIL 2023	BID

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DRAWING NUMBER
G9.4

063-27-13-007

CONTINUES ON SHEET G9.4

EXIST MH-121
N:238452.2372
E:2008007.4962
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:13.00'
N. IN: 10" VCP
W. IN: 8"
S. OUT: 10" VCP

EXISTING GREASE DEPOSITS
59.1 LF FROM MH-121 TO
MH-120

EXISTING GREASE DEPOSIT 89.6 LF
FROM MH-121 TO MH-120

EXISTING 20% WATER LEVEL SAG
92.9 LF FROM MH-121 TO MH-120

EXISTING GREASE DEPOSIT 93.2 LF
FROM MH-121 TO MH-120

EXISTING CRACK 100.6 LF FROM
MH-121 TO MH-120

EXISTING 20% WATER LEVEL SAG
101.2 LF FROM MH-121 TO MH-120

EXISTING 20% WATER LEVEL SAG
110.0 LF FROM MH-121 TO MH-120

EXIST MH-120
N:238243.6614
E:2007976.4640
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:14.90'
N. IN: 10" VCP
S. OUT: 10" VCP

EXISTING INFIL STAIN 30.9 LF
FROM MH-120 TO MH-119

EXISTING INFIL STAIN 60.9 LF
FROM MH-120 TO MH-119

EXISTING INFIL STAIN 101.4
LF FROM MH-120 TO MH-119

EXISTING INFIL STAIN 137.0 LF
FROM MH-120 TO MH-119

EXISTING INFIL STAIN 143.7 LF
FROM MH-133 TO MH-5

EXISTING INFIL STAIN 125.7 LF
FROM MH-133 TO MH-5

EXISTING INFIL STAIN 107.4 LF
FROM MH-133 TO MH-5

EXISTING 5% WATER LEVEL SAG
72.4 LF FROM MH-133 TO MH-5

EXISTING INFIL STAIN 70.7 LF
FROM MH-133 TO MH-5

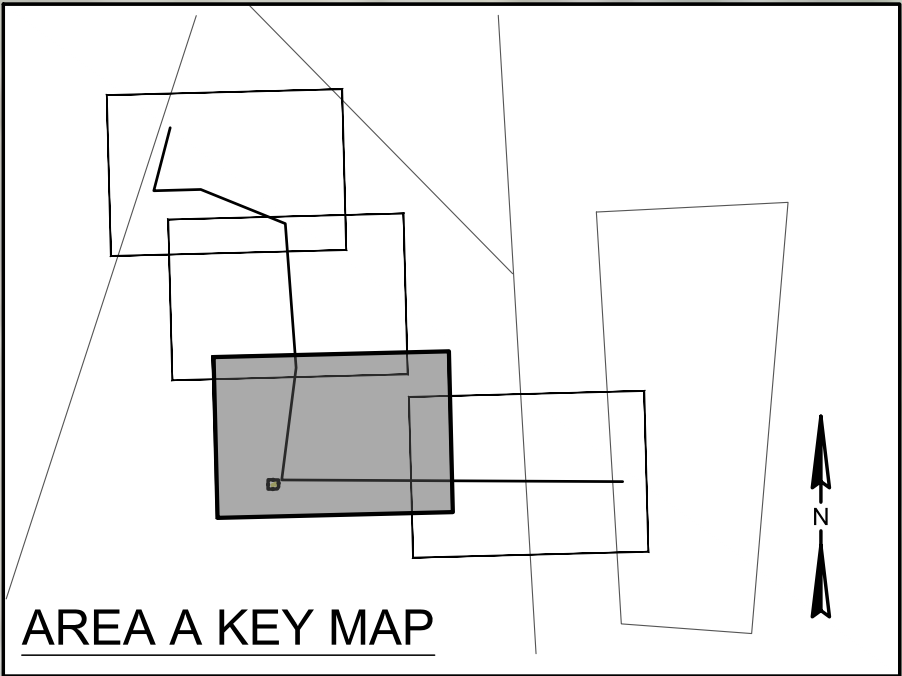
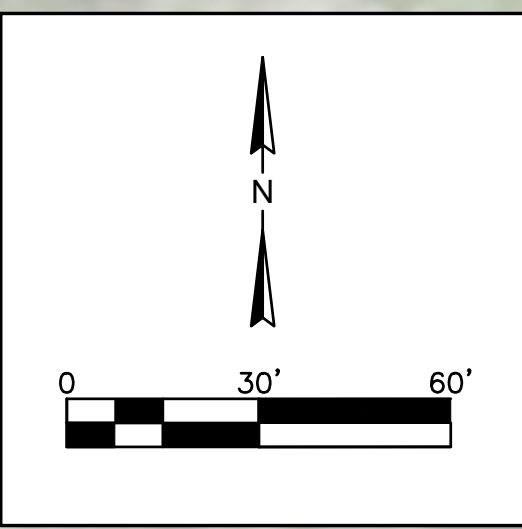
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E:2007948.2123
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:14.80'
N. IN: 10" VCP
E. IN: 8" VCP
SW. OUT: 10" CIP

EXIST MH-133
N:238027.6472
E:2008244.3569
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:7.40'
E. IN: 8" PVC
W. OUT: 8" VCP

EXIST MH-5
N:238024.5269
E:2008539.0040
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:6.10'
E. IN: 8" PVC
W. OUT: 8" PVC

LEGEND: DESCRIPTION

- ⊙ - DENOTES EXISTING MANHOLE
- SAN — - DENOTES EXISTING SANITARY SEWER PIPE
- WAT — - DENOTES EXISTING WATER MAIN
- - - - - DENOTES EXISTING LATERAL CONNECTION
- - DENOTES EXISTING MAJOR SANITARY DEFECT
- ⊗ - DENOTES EXISTING MINOR SANITARY DEFECT



CAPTAIN BILL CREEK

063-30-01-001

063-27-13-018

063-27-13-017

063-30-01-001

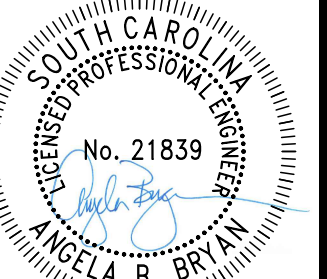
063-30-01-001

PS-3 SITE

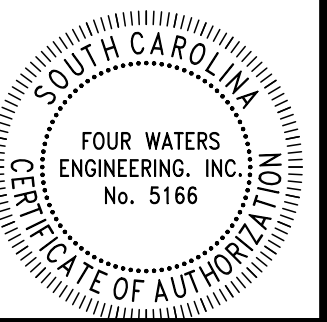
SEE SHEET G1.2 FOR EXISTING
CONDITIONS

LARGE GREASE DEPOSITS IMPEDING
FLOW FROM MH-133 TO MH-119

LARGE RAGS AND DEBRIS BLOCKAGE
220 LF FROM MH-133 TO MH-5



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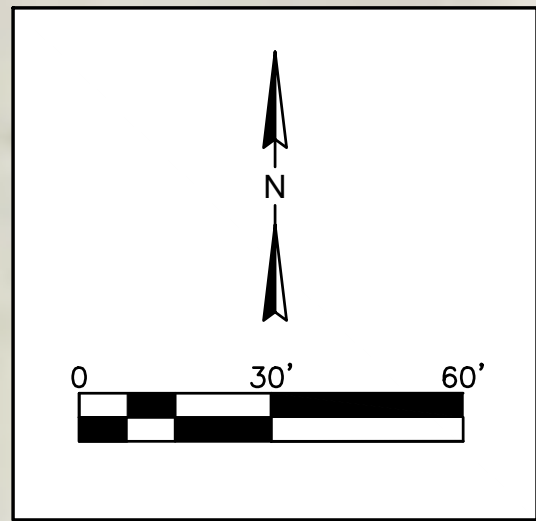
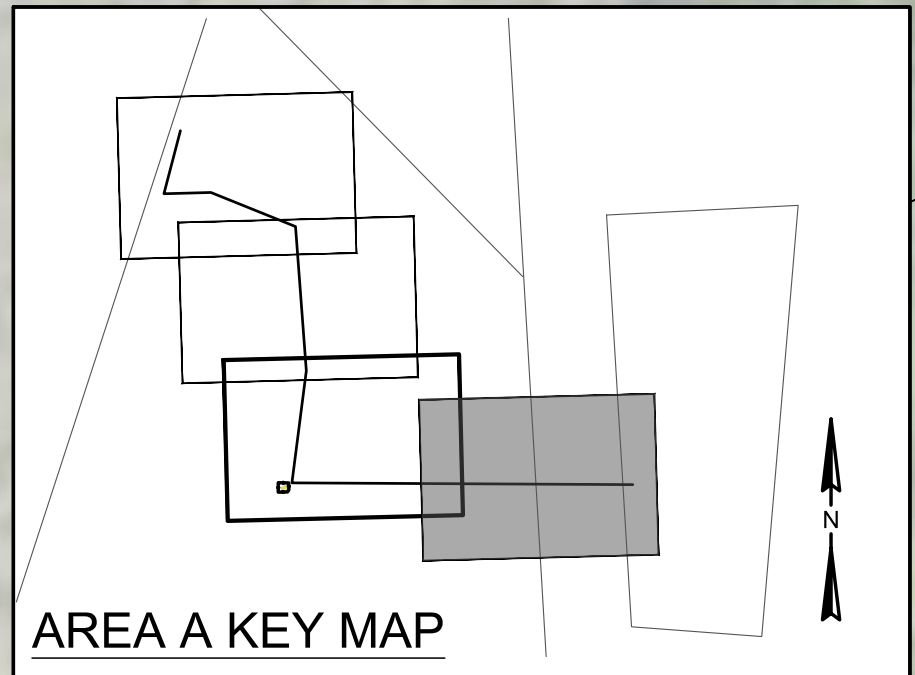
WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA A EXISTING CONDITIONS
CAPTAIN BILL CREEK
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMNC	17-1007	APRIL	2023	BID
ABB						

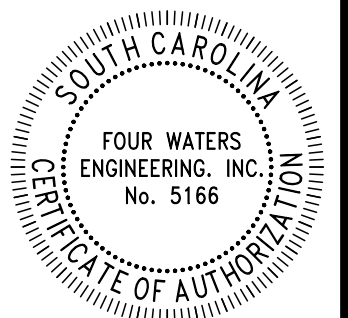
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DRAWING NUMBER
G9.5

LEGEND:	DESCRIPTION
⊙	- DENOTES EXISTING MANHOLE
— SAN —	- DENOTES EXISTING SANITARY SEWER PIPE
— WAT —	- DENOTES EXISTING WATER MAIN
—	- DENOTES EXISTING LATERAL CONNECTION
●	- DENOTES EXISTING MAJOR SANITARY DEFECT
⊗	- DENOTES EXISTING MINOR SANITARY DEFECT



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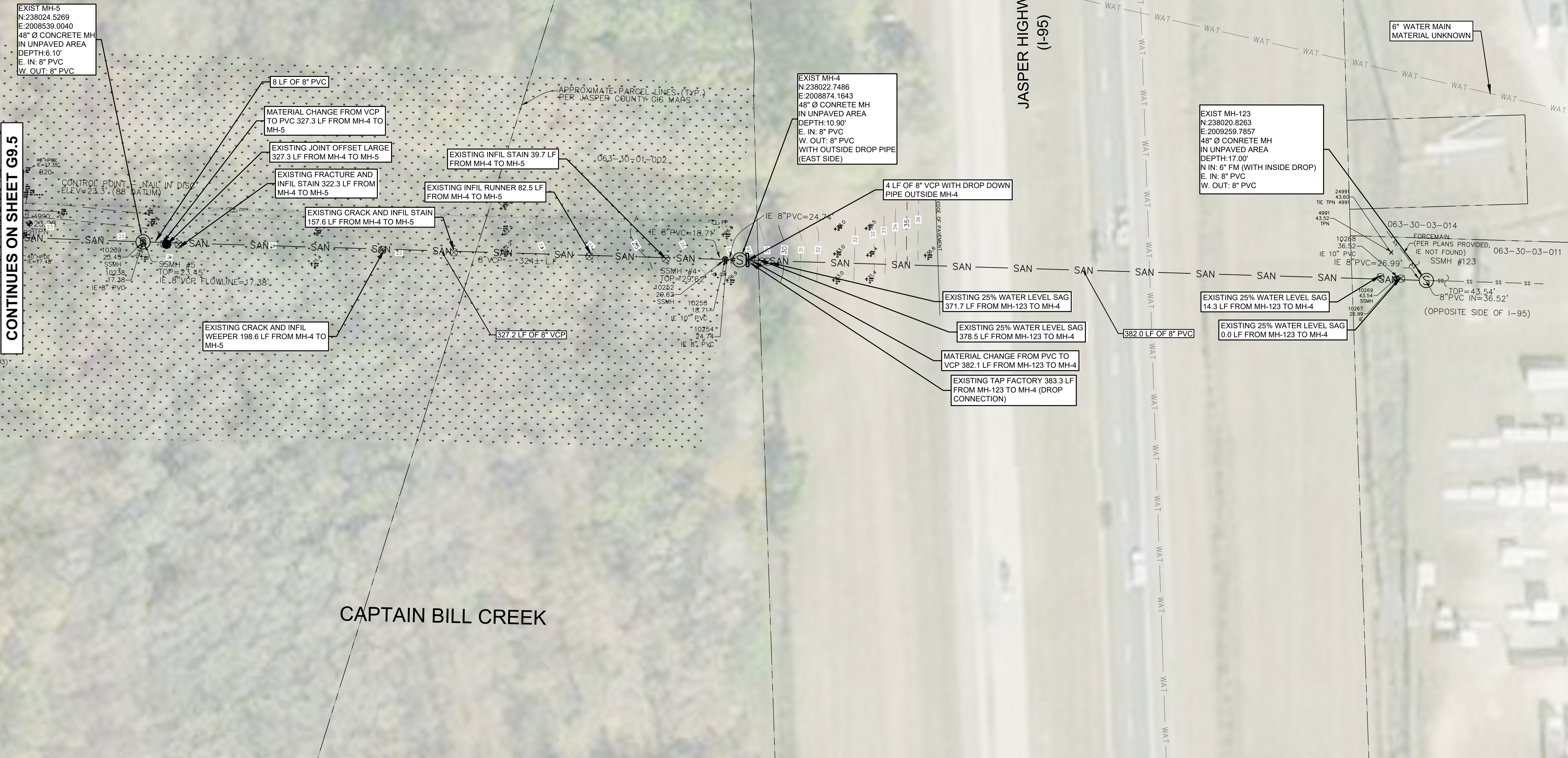


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CONTINUES ON SHEET G9.5

JASPER HIGHWAY (I-95)

WATER AND SEWER RESILIENCY IMPROVEMENTS
 PART 2
 AREA A EXISTING CONDITIONS
 CAPTAIN BILL CREEK TO JASPER HIGHWAY
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA



DESIGN	DRAWN
ABB	JMC
JOB #	17-1007
ISSUE DATE	APRIL 2023
ISSUE	BID

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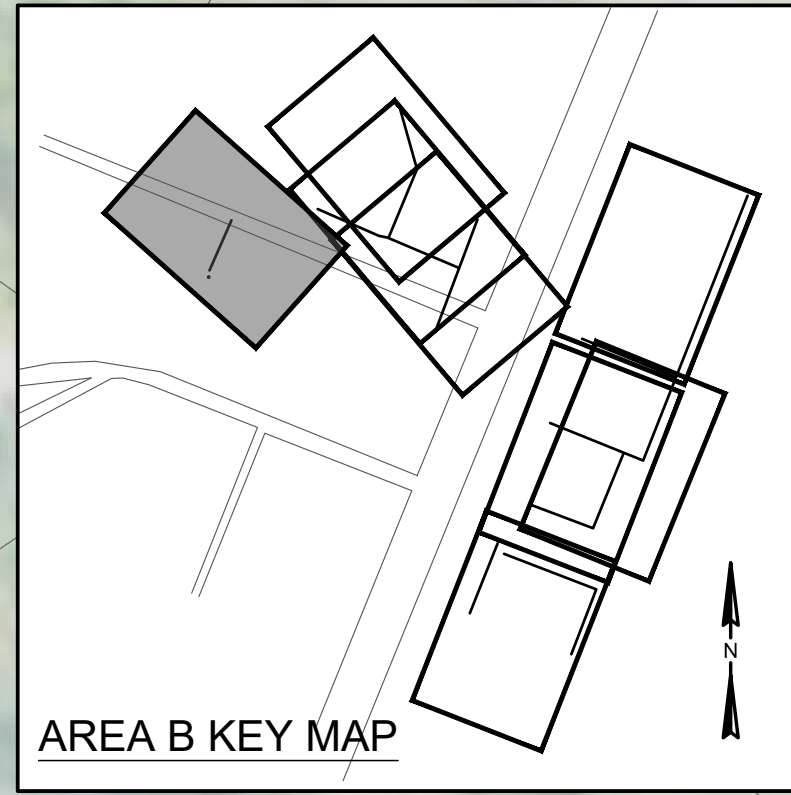
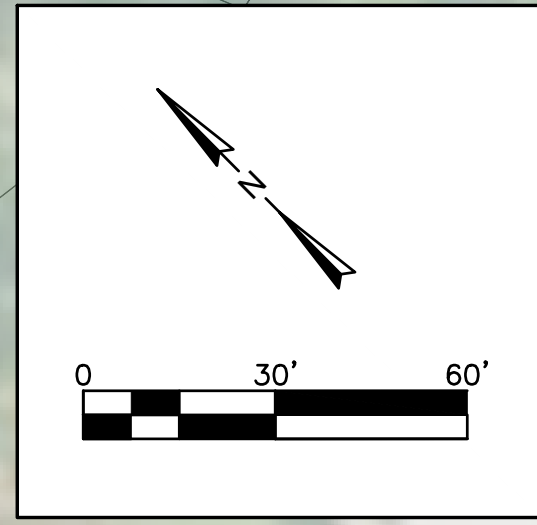
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS KEY MAP
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

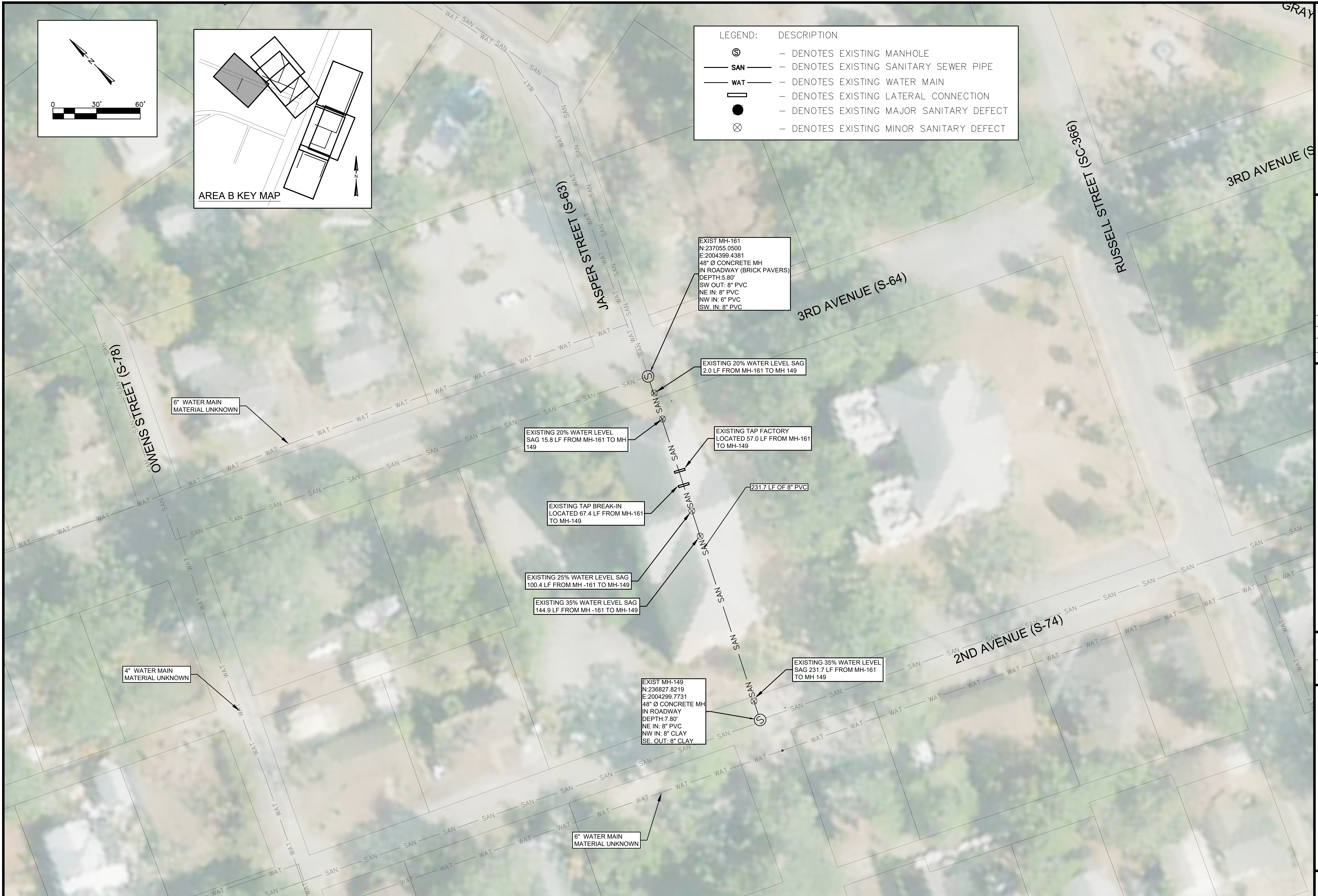
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		17-1007	APRIL 2023	BID

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DRAWING NUMBER
G9.7



LEGEND:	DESCRIPTION
⊙	- DENOTES EXISTING MANHOLE
— SAN —	- DENOTES EXISTING SANITARY SEWER PIPE
— WAT —	- DENOTES EXISTING WATER MAIN
—	- DENOTES EXISTING LATERAL CONNECTION
●	- DENOTES EXISTING MAJOR SANITARY DEFECT
⊗	- DENOTES EXISTING MINOR SANITARY DEFECT



6" WATER MAIN
MATERIAL UNKNOWN

4" WATER MAIN
MATERIAL UNKNOWN

6" WATER MAIN
MATERIAL UNKNOWN

EXISTING 20% WATER LEVEL
SAG 15.8 LF FROM MH-161 TO MH-149

EXISTING 25% WATER LEVEL SAG
100.4 LF FROM MH -161 TO MH-149

EXISTING 35% WATER LEVEL SAG
144.9 LF FROM MH -161 TO MH-149

EXISTING TAP BREAK-IN
LOCATED 67.4 LF FROM MH-161
TO MH-149

EXIST MH-161
N:237055.0500
E:2004399.4381
48" Ø CONCRETE MH
IN ROADWAY (BRICK PAVERS)
DEPTH:5.80'
SW OUT: 8" PVC
NE IN: 8" PVC
NW IN: 6" PVC
SW IN: 8" PVC

EXISTING 20% WATER LEVEL SAG
2.0 LF FROM MH-161 TO MH 149

EXISTING TAP FACTORY
LOCATED 57.0 LF FROM MH-161
TO MH-149

231.7 LF OF 8" PVC

EXISTING 35% WATER LEVEL
SAG 231.7 LF FROM MH-161
TO MH 149

EXIST MH-149
N:236827.8219
E:2004299.7731
48" Ø CONCRETE MH
IN ROADWAY
DEPTH:7.80'
NE IN: 8" PVC
NW IN: 8" CLAY
SE OUT: 8" CLAY

STATE OF SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. 21839
ANGELA B. BRYAN, P.E.

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No. 5166
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ENGINEERING, INC.

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B EXISTING CONDITIONS
3RD AVENUE TO 2ND AVENUE
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	JOB #	ISSUE DATE	ISSUE
JMC	17-1007	APRIL 2023	BID	

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DRAWING NUMBER
G9.8

SEE INSET A THIS SHEET FOR NORTH WEST PIPE

GRETSCH BUILDING

8" WATER MAIN MATERIAL UNKNOWN

- EXIST MH-79
N:237526.0182
E:2005138.3914
48" Ø BRICK MH
IN PAVED AREA
DEPTH:3.30'
N. IN: 8" VCP
S. OUT: 8" VCP
- EXISTING FRACTURE AND CRACK 1.0 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE AND ROOTS (FINE) VISIBLE 10.6 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 26.7 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 31.4 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE AND ROOTS (TAP) VISIBLE 36.5 LF FROM MH-79 TO MH-256
- EXISTING ROOTS VISIBLE (FINE) 41.7 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 46.9 LF FROM MH-79 TO MH-256
- EXISTING CRACK 52.9 LF FROM MH-79 TO MH-256

- EXISTING FRACTURE 88.7 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE AND ROOTS (TAP) VISIBLE 93.6 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE AND ROOTS (TAP-2) VISIBLE 109.4 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 115.2 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 119.9 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE AND ROOTS (TAP) VISIBLE 124.9 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 140.5 LF FROM MH-79 TO MH-256
- EXISTING 25% WATER LEVEL SAG 140.9 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 151.2 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 156.3 LF FROM MH-79 TO MH-256
- EXISTING 25% WATER LEVEL SAG 166.8 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE AND 20% WATER LEVEL SAG 176.8 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 182.2 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 187.4 LF FROM MH-79 TO MH-256
- EXISTING 20% WATER LEVEL SAG 196.6 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 197.9 LF FROM MH-79 TO MH-256

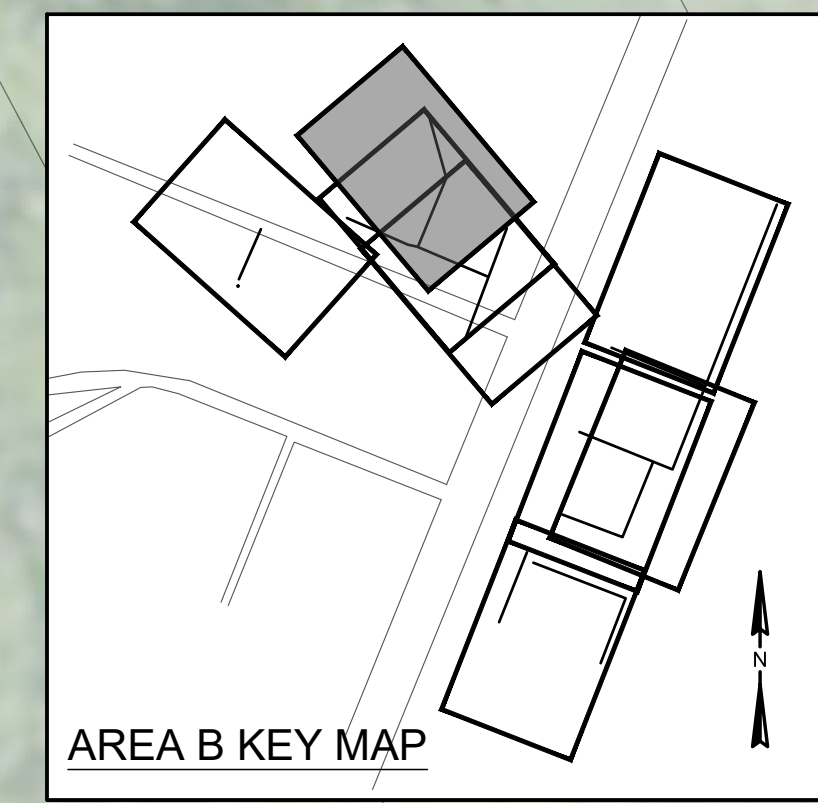
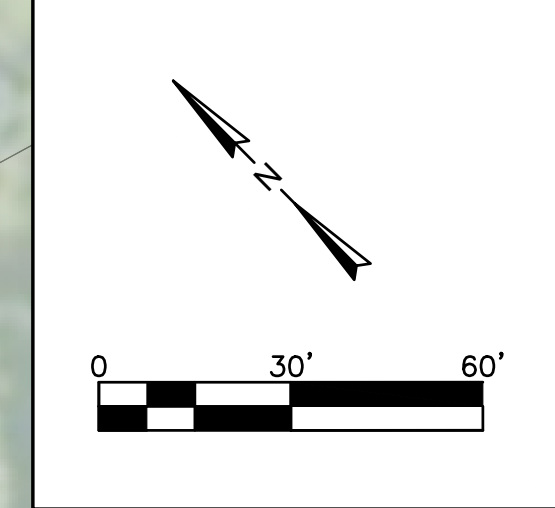
- EXISTING FRACTURE 213.2 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 223.4 LF FROM MH-79 TO MH-256
- EXISTING CRACK 228.4 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE AND CRACK 248.8 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 269.4 LF FROM MH-79 TO MH-256
- EXISTING CRACK 271.7 LF FROM MH-79 TO MH-256
- EXISTING FRACTURE 1.0 LF FROM MH-256 TO MH-255
- EXISTING CRACK 20.3 LF FROM MH-256 TO MH-255
- EXISTING CRACK 30.2 LF FROM MH-256 TO MH-255
- EXISTING CRACK 35.5 LF FROM MH-256 TO MH-255
- EXISTING FRACTURE 97.1 LF FROM MH-256 TO MH-255
- EXISTING FRACTURE 133.5 LF FROM MH-256 TO MH-255
- EXISTING FRACTURE 138.7 LF FROM MH-256 TO MH-255
- EXISTING FRACTURE 76.8 LF FROM MH-256 TO MH-255
- EXISTING CRACK 82.0 LF FROM MH-256 TO MH-255
- EXISTING FRACTURE 87.0 LF FROM MH-256 TO MH-255

- EXIST MH-256
N:237262.3510
E:2005212.3216
48" Ø BRICK MH
IN ROADWAY
DEPTH:4.30'
N. IN: 8" VCP
S. OUT: 8" VCP
- EXISTING FRACTURE 143.8 LF FROM MH-256 TO MH-255
- EXISTING FRACTURE 178.6 LF FROM MH-256 TO MH-255
- EXISTING BROKEN VOID VISIBLE FRACTURE 3.0 LF FROM MH-255 TO MH-257
- EXISTING FRACTURE 7.3 LF FROM MH-255 TO MH-257
- EXISTING CRACK 12.4 LF FROM MH-255 TO MH-257
- EXISTING FRACTURE 22.7 LF FROM MH-255 TO MH-257
- EXISTING CRACK 73.9 LF FROM MH-255 TO MH-257
- EXISTING FRACTURE 89.2 LF FROM MH-255 TO MH-257
- EXISTING CRACK 94.0 LF FROM MH-255 TO MH-257
- EXISTING FRACTURE 104.3 LF FROM MH-255 TO MH-257
- EXISTING CRACK 119.7 LF FROM MH-255 TO MH-257
- EXISTING FRACTURE 124.7 LF FROM MH-255 TO MH-257

- EXIST MH-255
N:237091.0156
E:2005141.8694
48" Ø BRICK MH
IN UNPAVED AREA (GRAVEL)
DEPTH:4.20'
N. IN: 8" VCP
W. IN: 8" VCP
SW. OUT: 8" VCP
- EXISTING FRACTURE 38.1 LF FROM MH-255 TO MH-257
- EXISTING FRACTURE 43.3 LF FROM MH-255 TO MH-257
- EXISTING FRACTURE 48.6 LF FROM MH-255 TO MH-257
- EXISTING CRACK 53.8 LF FROM MH-255 TO MH-257
- EXISTING FRACTURE 59.1 LF FROM MH-255 TO MH-257
- EXIST MH-257
N:236960.2217
E:2005087.3042
48" Ø BRICK MH
IN ROADWAY
DEPTH:5.20'
W. IN: 8" VCP
NE. IN: 8" VCP
SE. OUT: 8" VCP
- EXIST MH-321
N:236970.2919
E:2006040.1233
48" Ø BRICK MH
IN UNPAVED AREA (GRAVEL)
DEPTH:5.50'
NW. IN: 8" VCP
E. OUT: 8" VCP

LEGEND: DESCRIPTION

- ⊙ - DENOTES EXISTING MANHOLE
- SAN — - DENOTES EXISTING SANITARY SEWER PIPE
- WAT — - DENOTES EXISTING WATER MAIN
- - - - - DENOTES EXISTING LATERAL CONNECTION
- - DENOTES EXISTING MAJOR SANITARY DEFECT
- ⊗ - DENOTES EXISTING MINOR SANITARY DEFECT



SOUTH CAROLINA PROFESSIONAL ENGINEER
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ANGELA B. BRYAN
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No. 5166
CERTIFICATE OF AUTHORITY

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B EXISTING CONDITIONS
TOWN SQUARE
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007	APRIL	2023	ISSUE	BID
ABB	JMC						

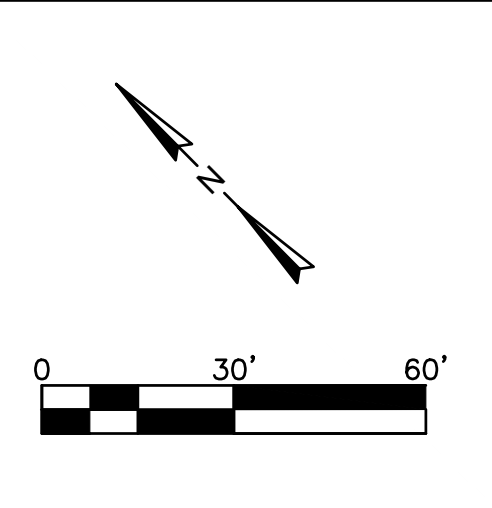
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CONTINUES ON SHEET G9.10

CONTINUES ON SHEET G9.10

INSET A



VOLUNTEER PARK ROAD

MANHOLE LOCATED IN SWALE EMBANKMENT

EXIST MH-270
N:238037.9114
E:2004983.5485
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:2.06'
NW. IN: 6" DIP
SE. OUT: 6" DIP

EXIST MH-80
N:238113.8779
E:2004906.1312
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:1.71'
NW. IN: 6" SE. OUT: 6" DIP

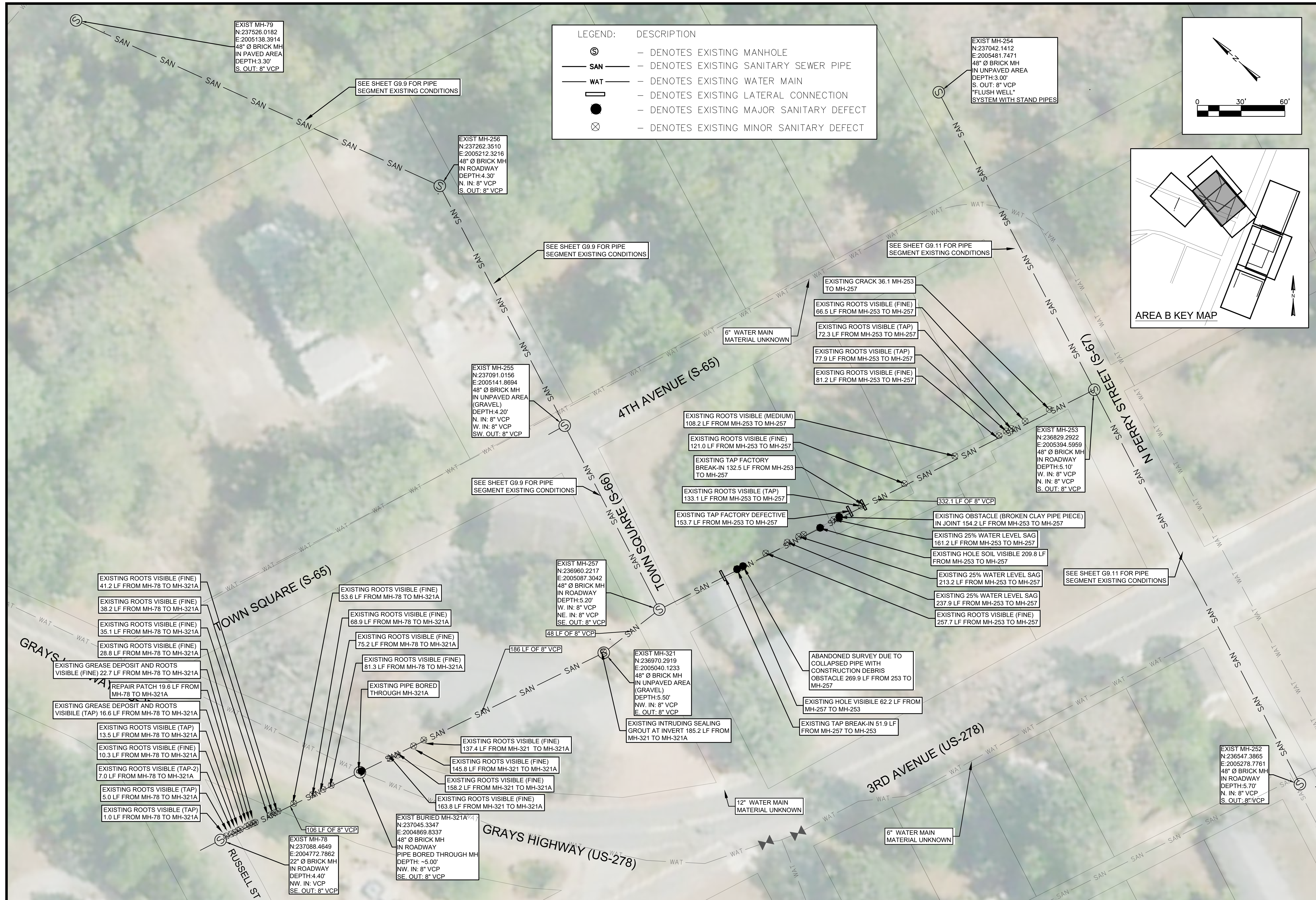
GRETSCH BUILDING

GRAYS HIGHWAY (US-278)

TOWN SQUARE (S-65)

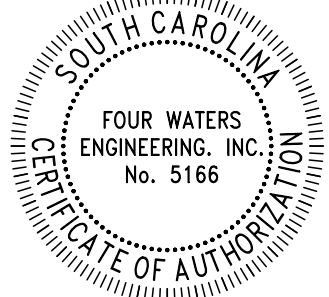
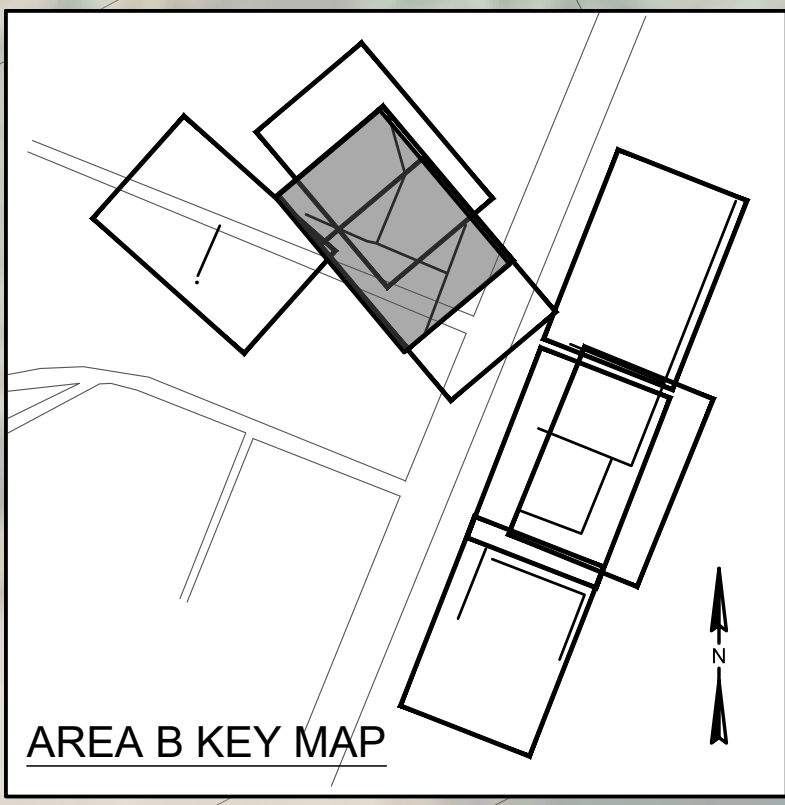
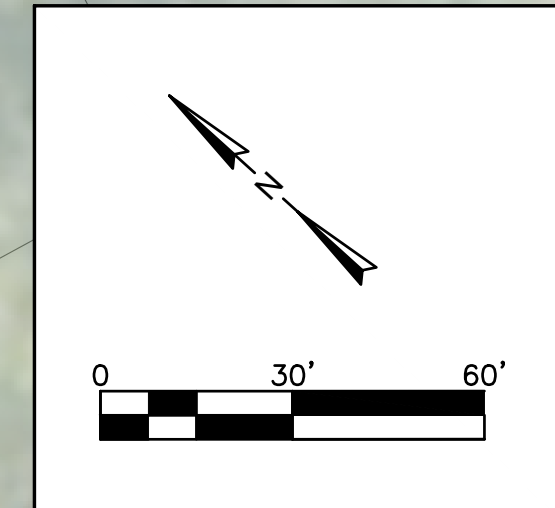
4TH AVENUE (S-65)

TOWN SQUARE (S-65)



LEGEND: DESCRIPTION

- ⊙ - DENOTES EXISTING MANHOLE
- SAN — DENOTES EXISTING SANITARY SEWER PIPE
- WAT — DENOTES EXISTING WATER MAIN
- DENOTES EXISTING LATERAL CONNECTION
- - DENOTES EXISTING MAJOR SANITARY DEFECT
- ⊗ - DENOTES EXISTING MINOR SANITARY DEFECT



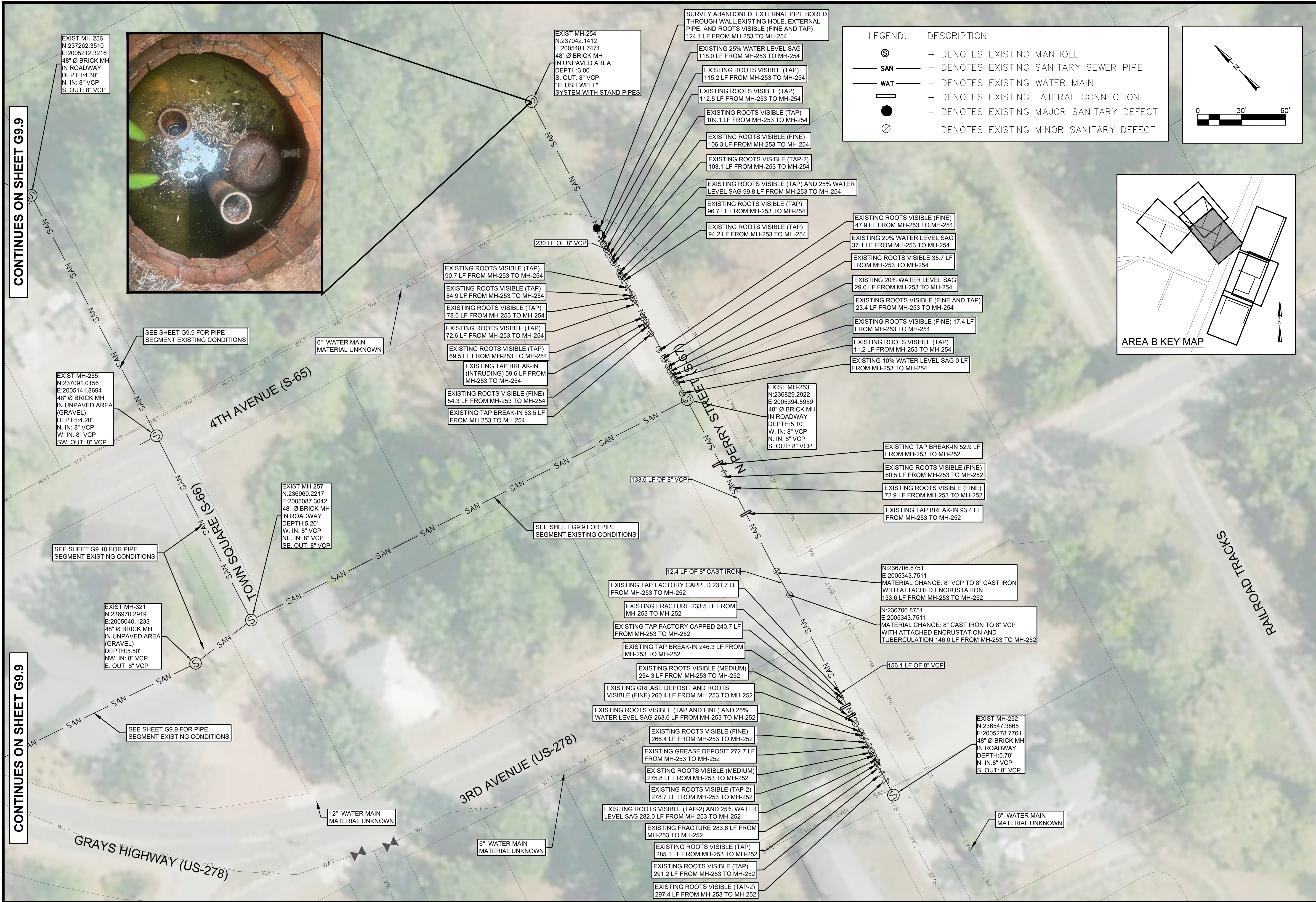
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B EXISTING CONDITIONS
GRAYS HIGHWAY TO N. PERRY STREET
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC
ABB		

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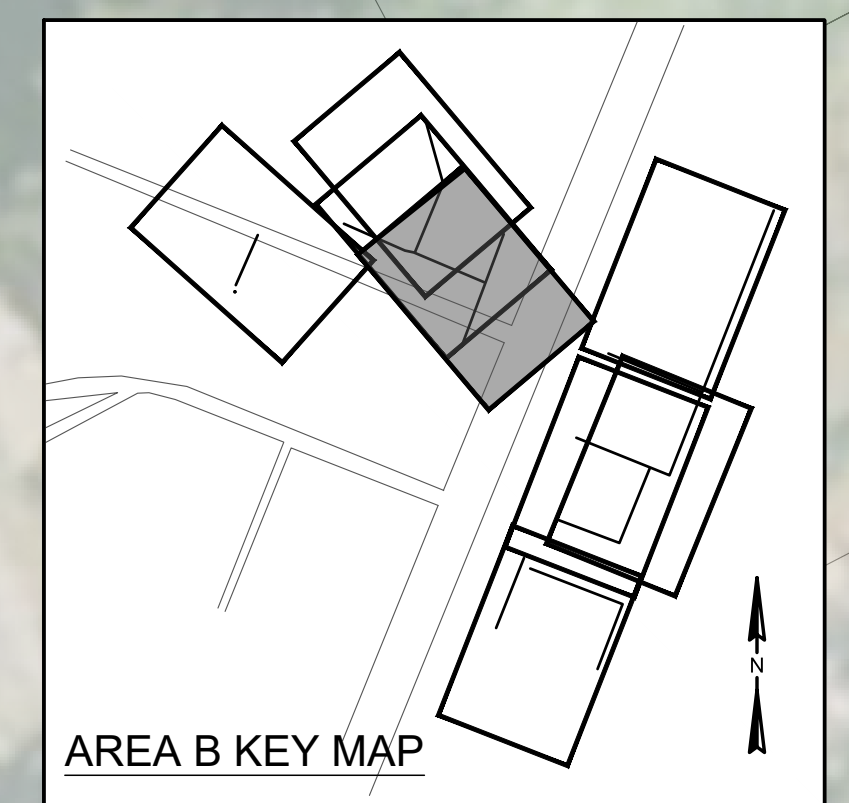


CONTINUES ON SHEET G9.9

CONTINUES ON SHEET G9.9

LEGEND: DESCRIPTION

- ⊙ - DENOTES EXISTING MANHOLE
- SAN — - DENOTES EXISTING SANITARY SEWER PIPE
- WAT — - DENOTES EXISTING WATER MAIN
- — - DENOTES EXISTING LATERAL CONNECTION
- - DENOTES EXISTING MAJOR SANITARY DEFECT
- ⊗ - DENOTES EXISTING MINOR SANITARY DEFECT



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No. 21839
ANGELA B. BRYAN

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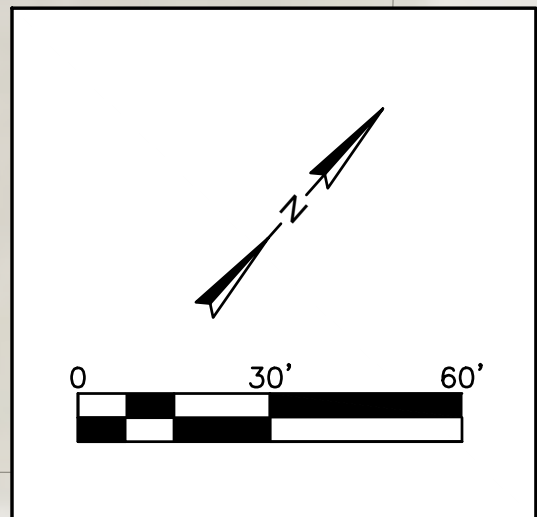
WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B EXISTING CONDITIONS
4TH AVENUE TO 3RD AVENUE
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

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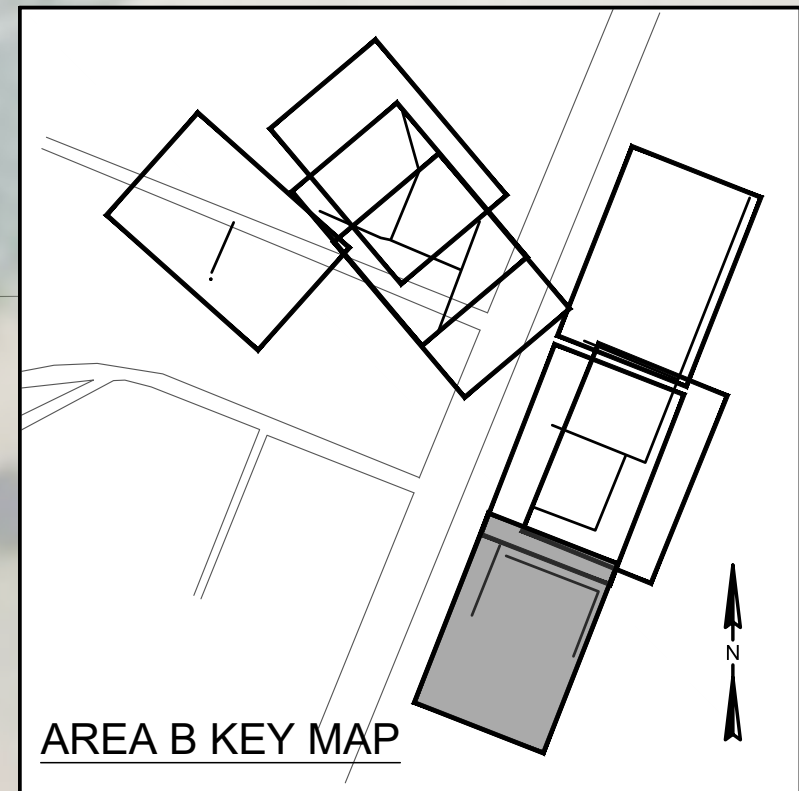
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DRAWING NUMBER
G9.11



LEGEND:	DESCRIPTION
⊙	- DENOTES EXISTING MANHOLE
— SAN —	- DENOTES EXISTING SANITARY SEWER PIPE
— WAT —	- DENOTES EXISTING WATER MAIN
—	- DENOTES EXISTING LATERAL CONNECTION
●	- DENOTES EXISTING MAJOR SANITARY DEFECT
⊗	- DENOTES EXISTING MINOR SANITARY DEFECT

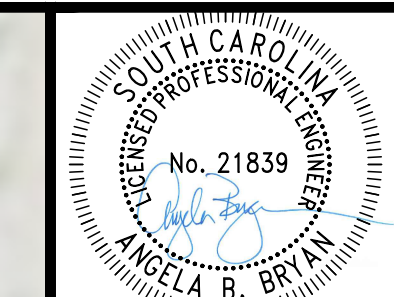
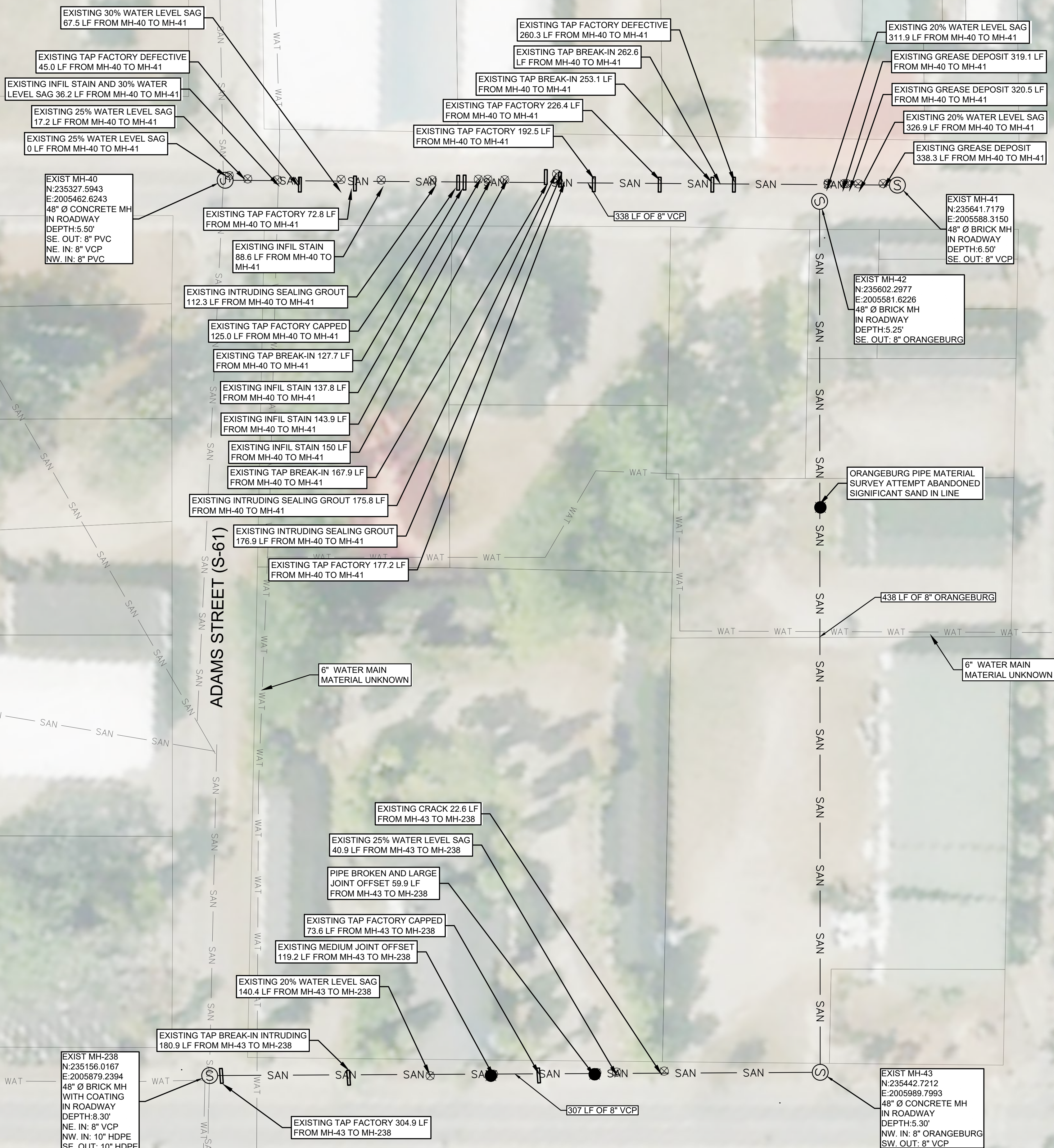


S.GREEN STREET (S-32)

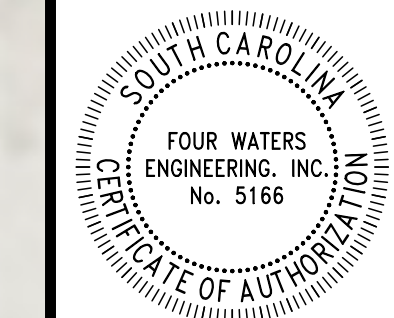
W. MAIN STREET (S-336)

ADAMS STREET (S-61)

S. JACOB SMART BOULEVARD (HWY-17)



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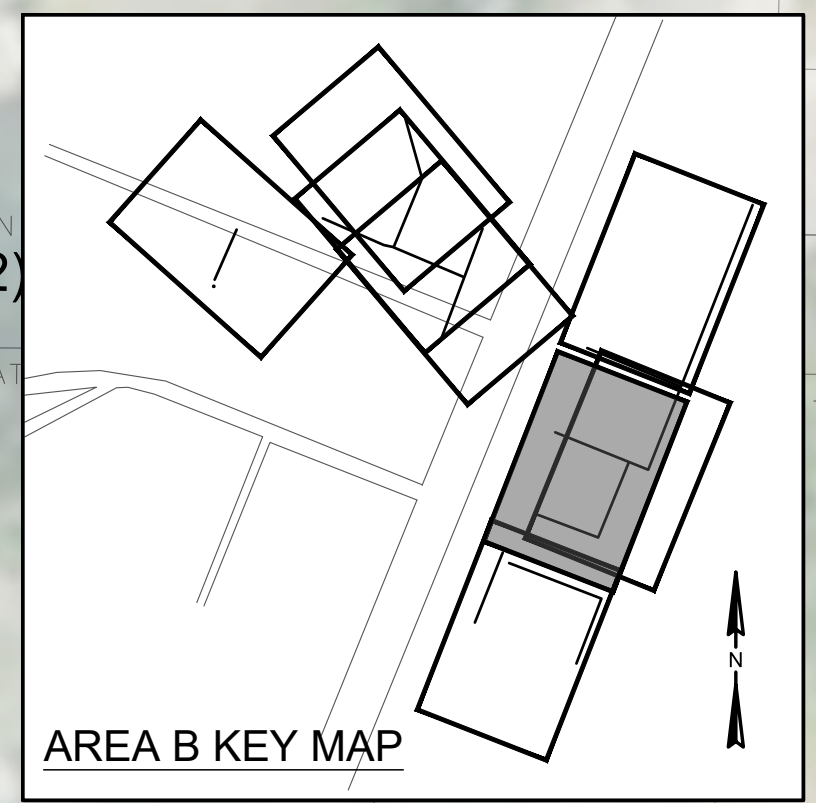
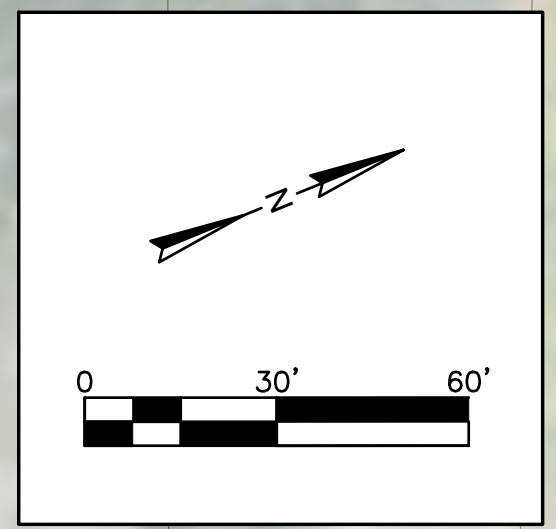
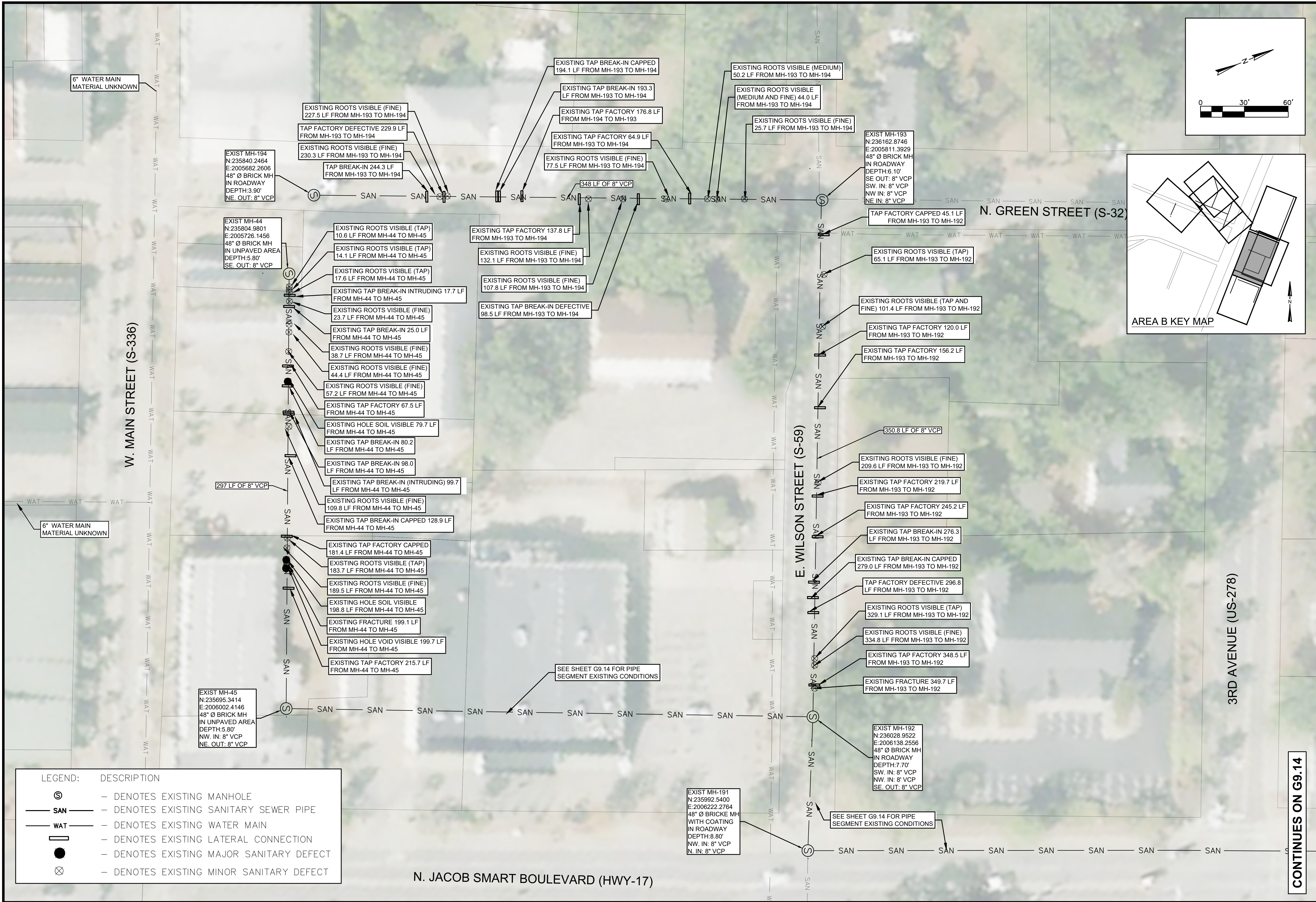
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B EXISTING CONDITIONS
S. JACOB SMART BLVD TO S. GREEN ST
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

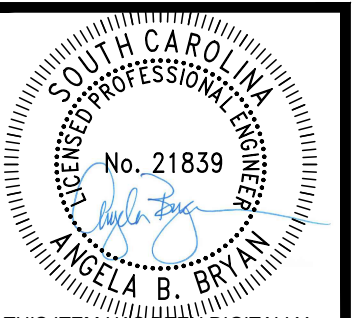
DESIGN	ABB	JOB #	ISSUE DATE	ISSUE	BID
JMC		17-1007	APRIL 2023		

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

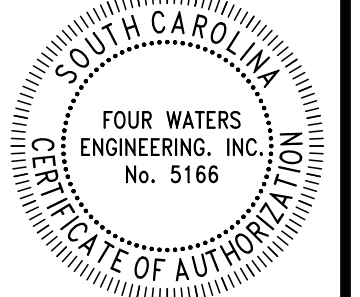
DRAWING NUMBER
G9.12



LEGEND:	DESCRIPTION
⊙	- DENOTES EXISTING MANHOLE
— SAN —	- DENOTES EXISTING SANITARY SEWER PIPE
— WAT —	- DENOTES EXISTING WATER MAIN
—	- DENOTES EXISTING LATERAL CONNECTION
●	- DENOTES EXISTING MAJOR SANITARY DEFECT
⊗	- DENOTES EXISTING MINOR SANITARY DEFECT



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**WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B EXISTING CONDITIONS
N. JACOB SMART BLVD TO N. GREEN ST**

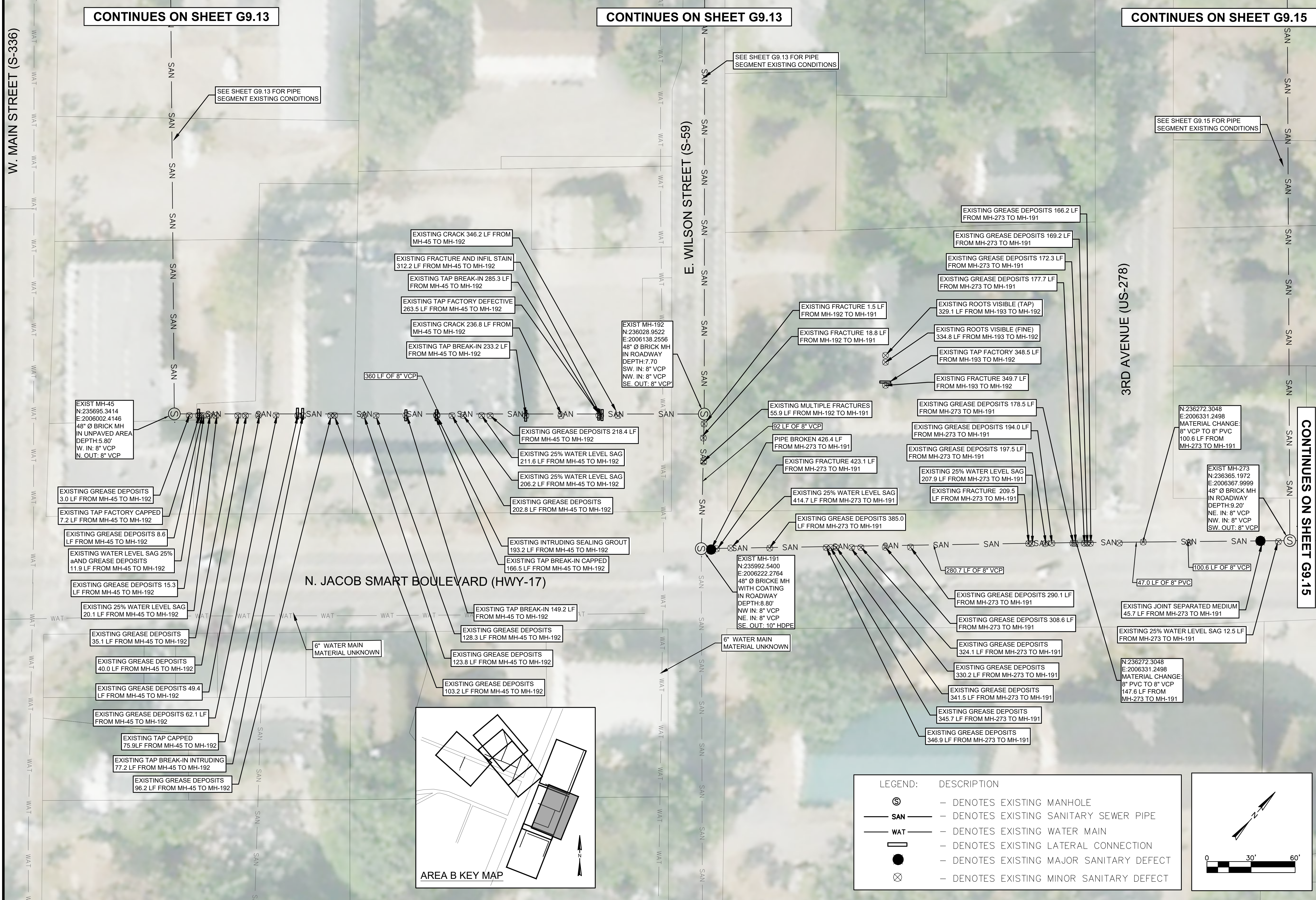
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

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G9.13



CONTINUES ON SHEET G9.13

CONTINUES ON SHEET G9.13

CONTINUES ON SHEET G9.15

SEE SHEET G9.13 FOR PIPE SEGMENT EXISTING CONDITIONS

SEE SHEET G9.13 FOR PIPE SEGMENT EXISTING CONDITIONS

SEE SHEET G9.15 FOR PIPE SEGMENT EXISTING CONDITIONS

EXIST MH-45
N:235695.3414
E:2006002.4146
48" Ø BRICK MH
IN UNPAVED AREA
DEPTH:5.80'
W. IN: 8" VCP
N. OUT: 8" VCP

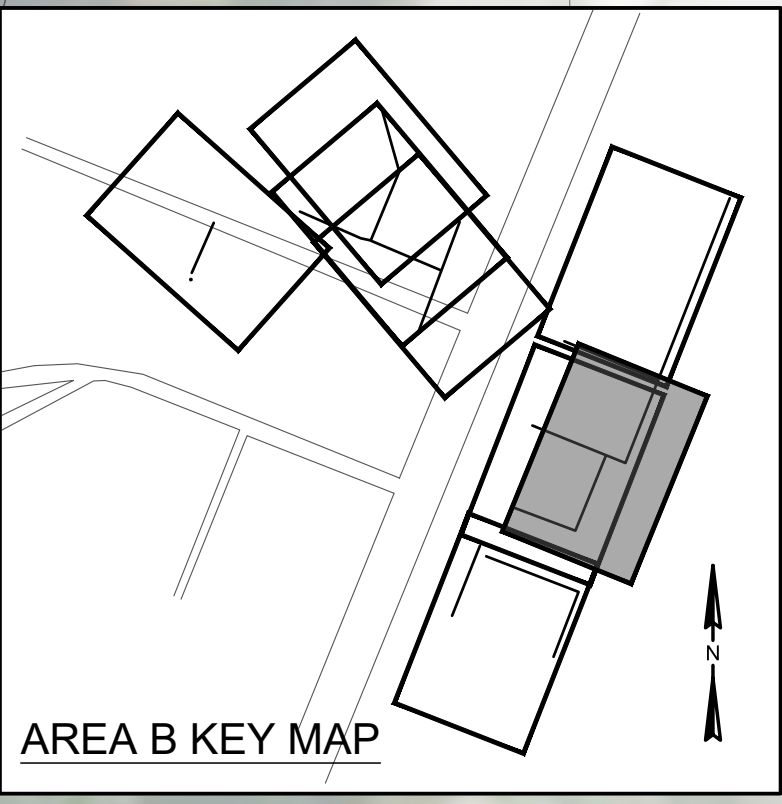
EXIST MH-192
N:236028.9522
E:2006138.2556
48" Ø BRICK MH
IN ROADWAY
DEPTH:7.70
SW. IN: 8" VCP
SE. OUT: 8" VCP

N:236272.3048
E:2006331.2498
MATERIAL CHANGE:
8" VCP TO 8" PVC
100.6 LF FROM
MH-273 TO MH-191

EXIST MH-273
N:236365.1972
E:2006367.9999
48" Ø BRICK MH
IN ROADWAY
DEPTH:9.20'
NE. IN: 8" VCP
SW. OUT: 8" VCP

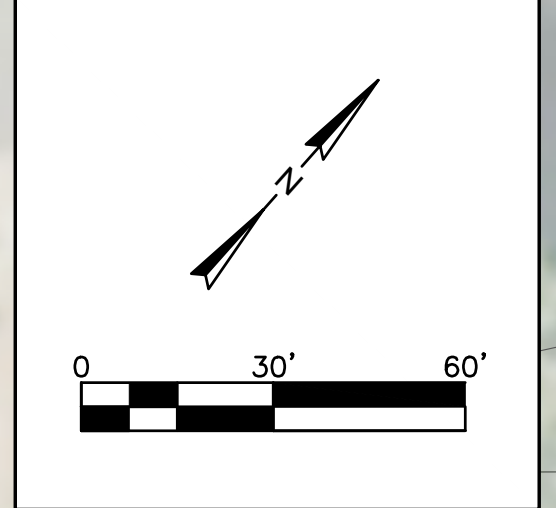
EXIST MH-191
N:235992.5400
E:2006222.2764
48" Ø BRICK MH
WITH COATING
IN ROADWAY
DEPTH:8.80'
NW. IN: 8" VCP
NE. IN: 8" VCP
SE. OUT: 10" HDPE

N:236272.3048
E:2006331.2498
MATERIAL CHANGE:
8" PVC TO 8" VCP
147.6 LF FROM
MH-273 TO MH-191



LEGEND: DESCRIPTION

- ⊙ - DENOTES EXISTING MANHOLE
- SAN - DENOTES EXISTING SANITARY SEWER PIPE
- WAT - DENOTES EXISTING WATER MAIN
- - DENOTES EXISTING LATERAL CONNECTION
- - DENOTES EXISTING MAJOR SANITARY DEFECT
- ⊗ - DENOTES EXISTING MINOR SANITARY DEFECT



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

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No. 5166
SOUTH CAROLINA
CERTIFICATE OF AUTHORITY

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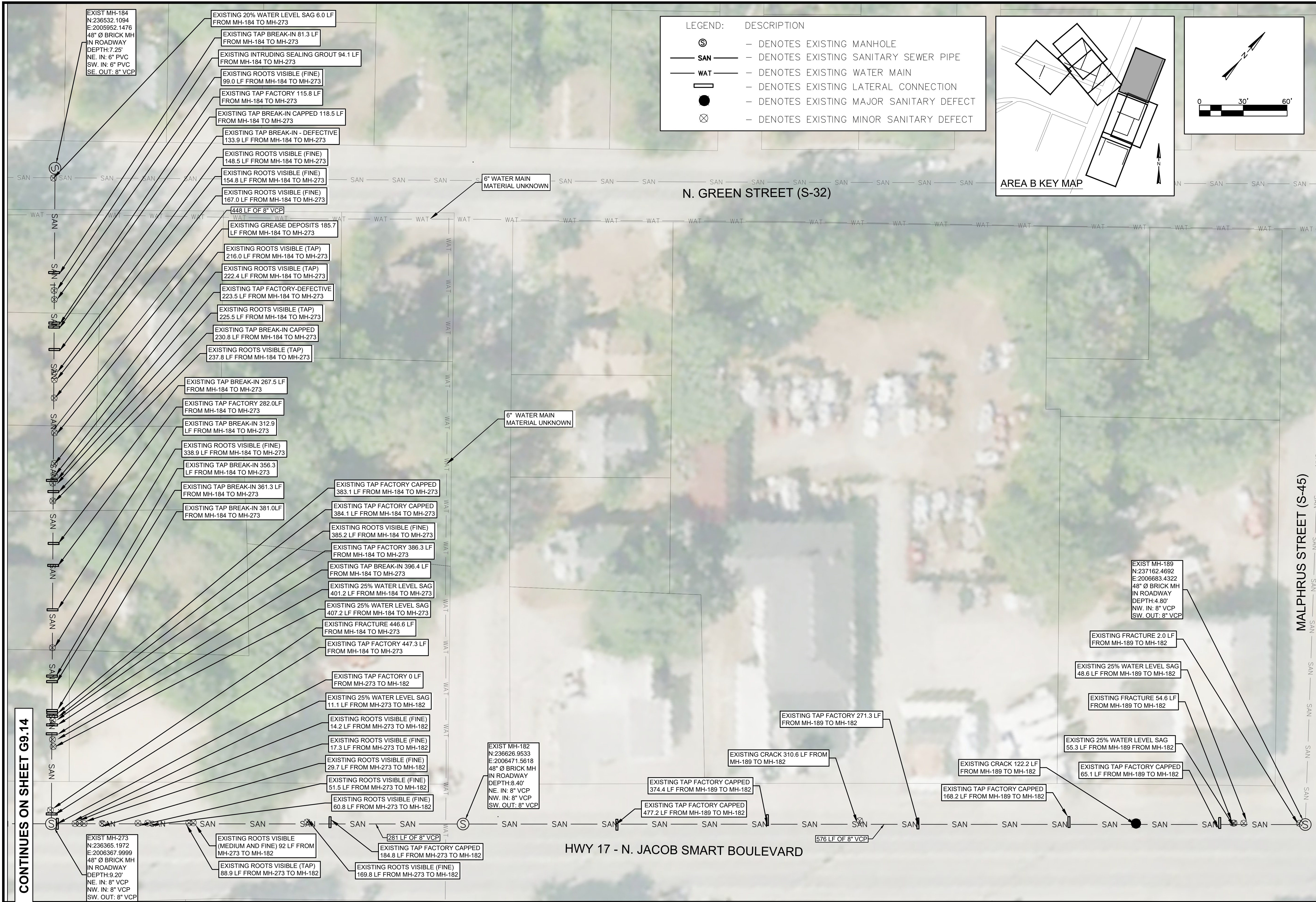
WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B EXISTING CONDITIONS
N. JACOB SMART BLVD TO N. GREEN ST
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	DATE	ISSUE	BID
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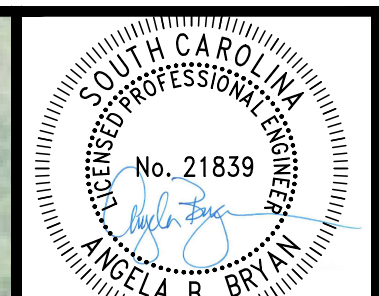
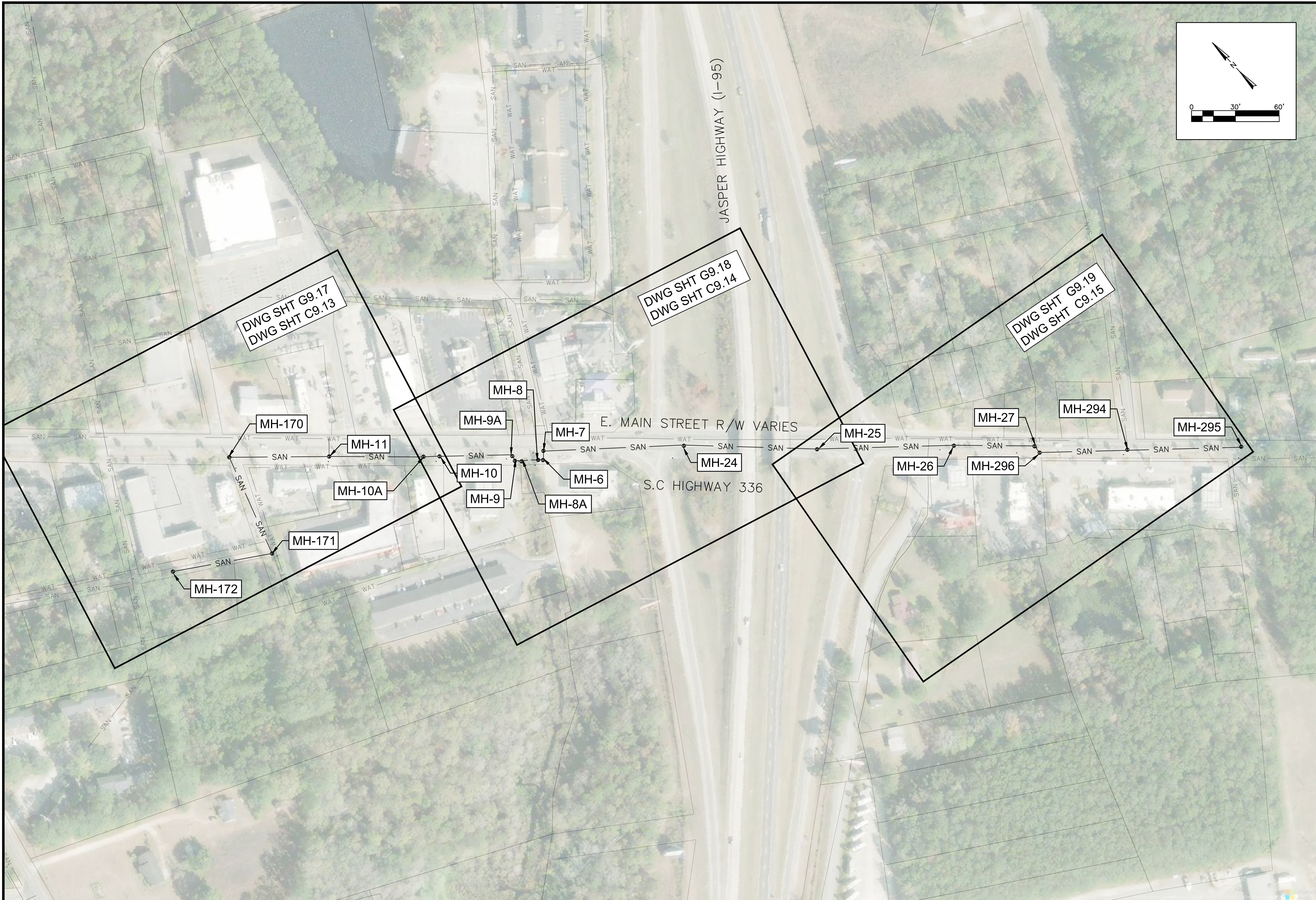
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B EXISTING CONDITIONS
N. GREEN ST TO MALPHRUS ST (S-45)
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

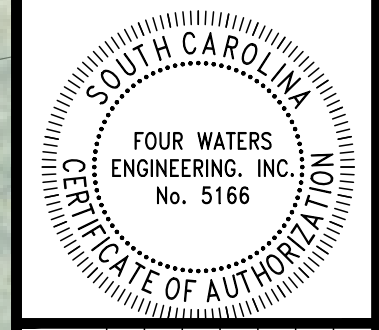
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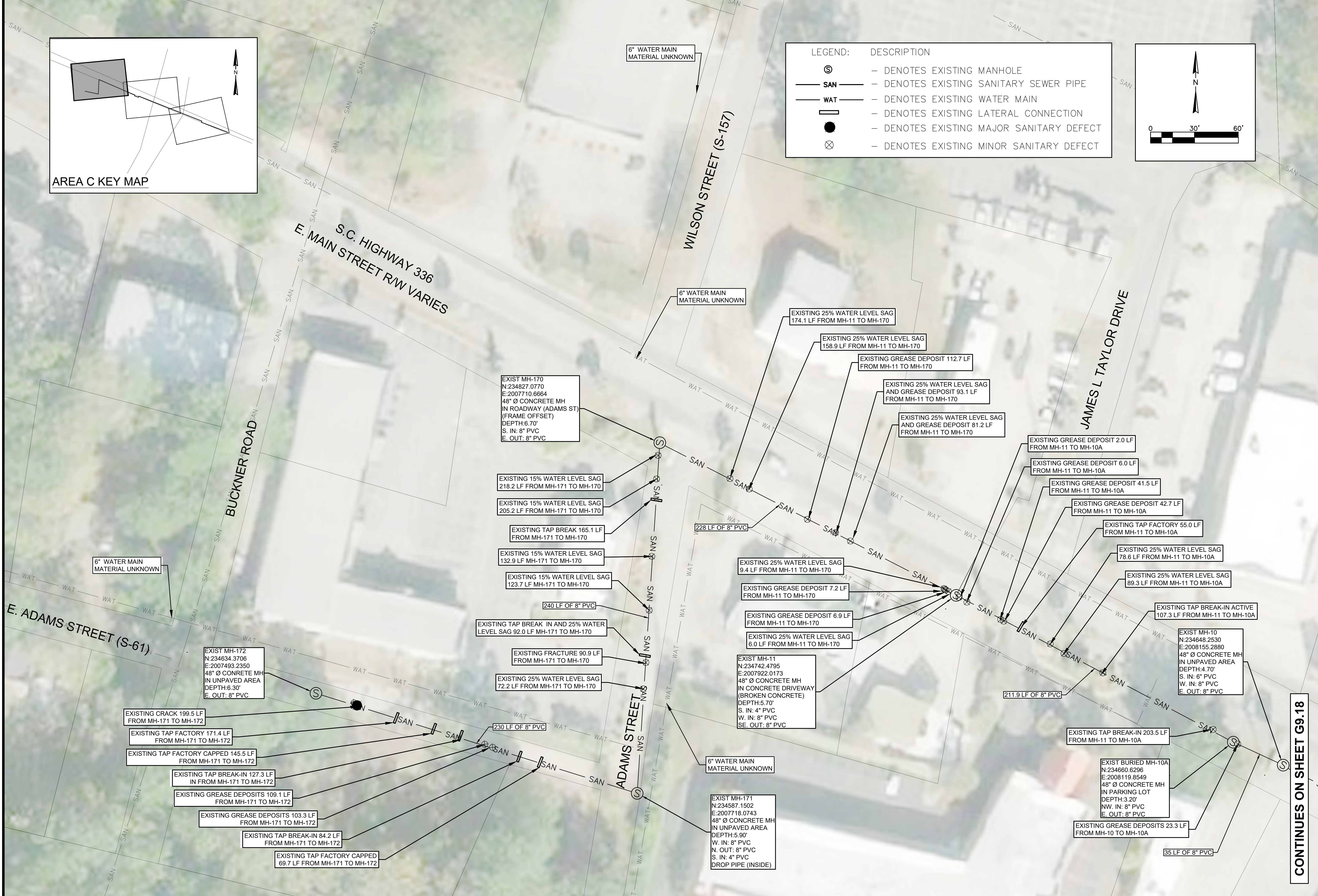
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA C EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS KEY MAP
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	DATE	ISSUE
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JOB #		APRIL 2023	
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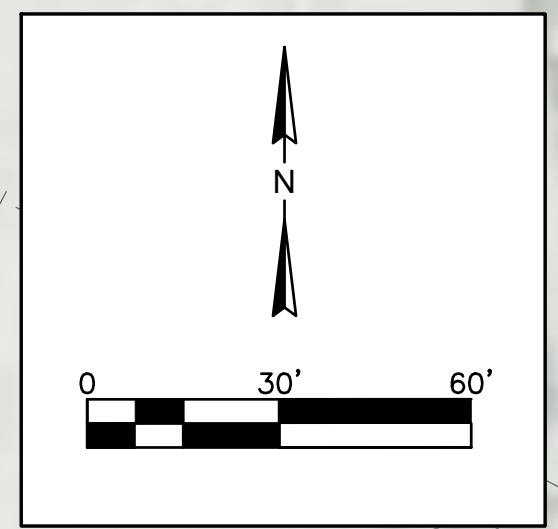
DRAWING NUMBER
G9.16



AREA C KEY MAP

LEGEND: DESCRIPTION

- ⊙ - DENOTES EXISTING MANHOLE
- SAN — - DENOTES EXISTING SANITARY SEWER PIPE
- WAT — - DENOTES EXISTING WATER MAIN
- — - DENOTES EXISTING LATERAL CONNECTION
- - DENOTES EXISTING MAJOR SANITARY DEFECT
- ⊗ - DENOTES EXISTING MINOR SANITARY DEFECT



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

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 FOUR WATERS
 ENGINEERING, INC.
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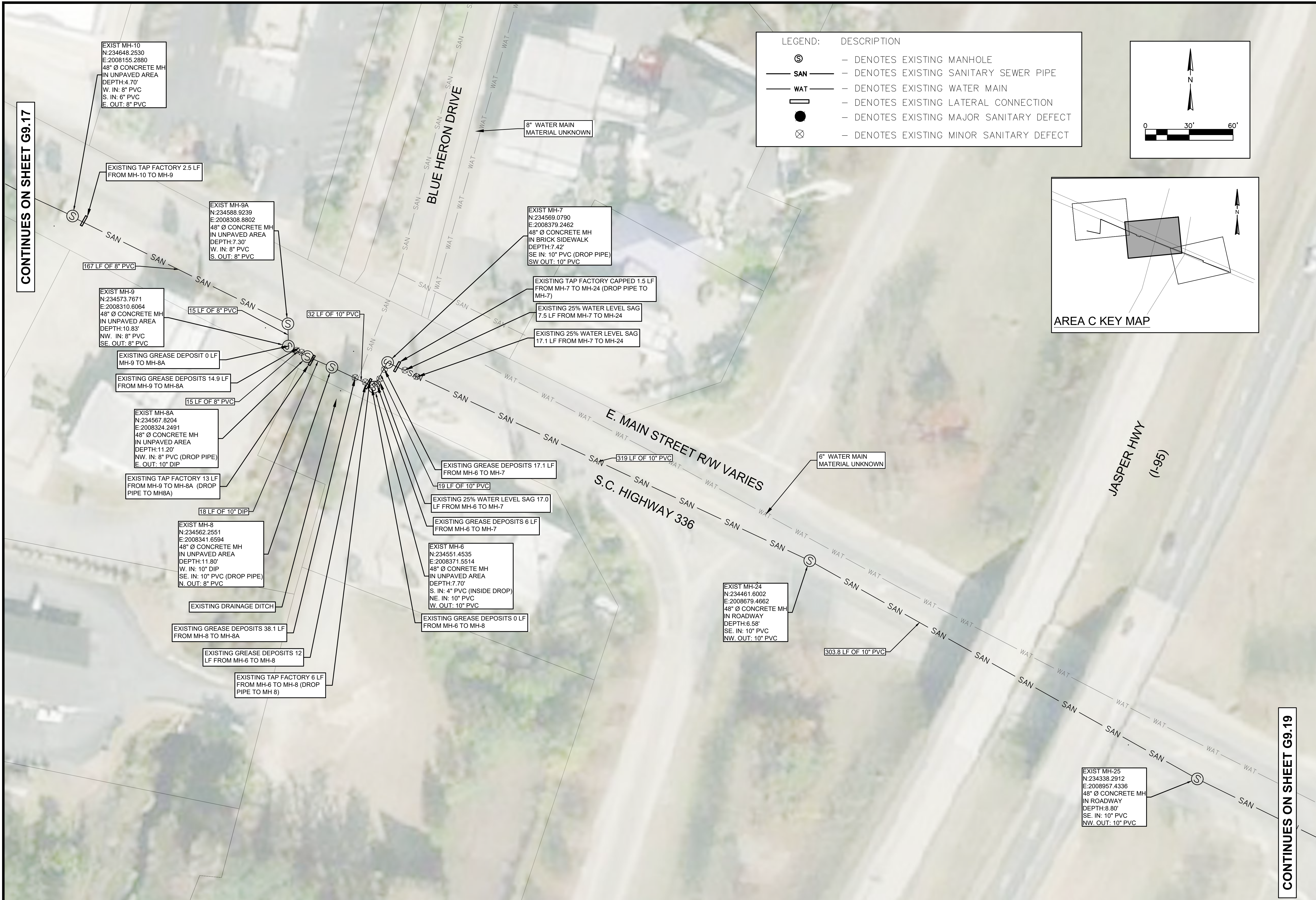
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA C EXISTING CONDITIONS
E. ADAM STREET TO MAIN STREET
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN DRAWN: JMC
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 JOB #: APRIL 2023
 ISSUE DATE: APRIL 2023
 ISSUE: BID

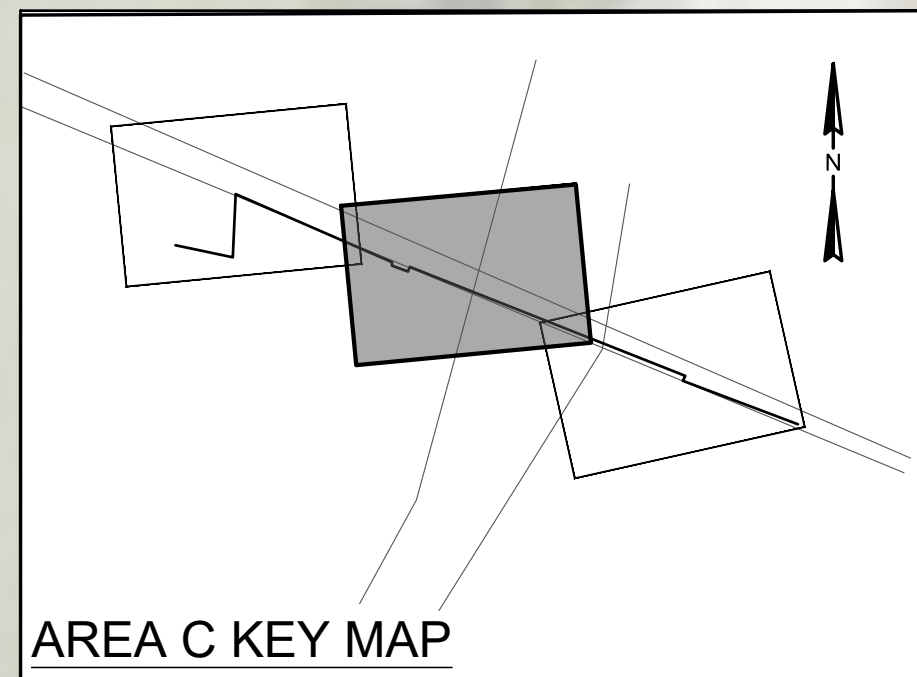
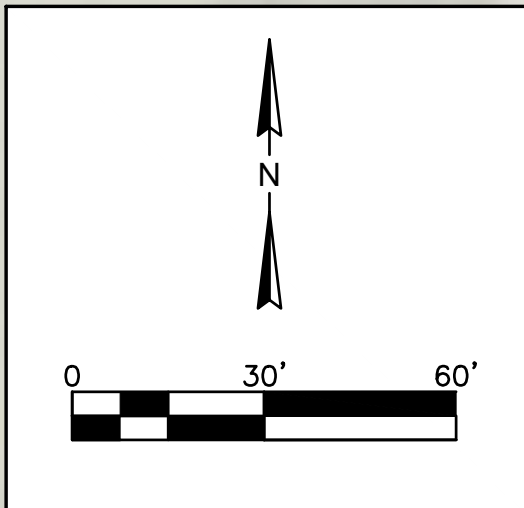
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CONTINUES ON SHEET G9.17

CONTINUES ON SHEET G9.19



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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA C EXISTING CONDITIONS
MAIN STREET
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

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G9.18

CONTINUES ON SHEET G9.18

EXIST MH-25
N:234338.2912
E:2008957.4336
48" Ø CONCRETE MH
IN ROADWAY
DEPTH:8.80'
SE. IN: 10" PVC
NW. OUT: 10" PVC

EXISTING 25% WATER LEVEL SAG
244.9 LF MH-25 TO MH-26

EXIST MH-26
N:234227.9514
E:2009250.3559
48" Ø CONCRETE MH
IN ROADWAY
DEPTH:10.50'
SE. IN: 10" PVC
SE. IN: 6" PVC
SW. IN: 6" CIP
(INSIDE DROP)
NW. OUT: 10" PVC

EXISTING TAP BREAK-IN ACTIVE
69.9 LF FROM MH-27 TO MH-26

EXIST MH-296
N:234137.3082
E:2009424.2165
48" Ø CONCRETE MH
IN BRICK SIDEWALK
DEPTH:7.70'
SE. IN: 10" PVC
N. OUT: 10" PVC

EXISTING TAP FACTORY DEFECTIVE
26.4 LF FROM MH-296 TO MH-294
EXISTING GREASE DEPOSITS 33.5 LF
FROM MH-296 TO MH-294
EXISTING GREASE DEPOSITS 40.5 LF
FROM MH-296 TO MH-294

EXIST MH-27
N:234157.4069
E:2009419.1443
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:8.60'
S. IN: 10" PVC
S. IN: 4" PVC
NW. OUT: 10" PVC

EXIST BURIED MH-294
N:234067.4025
E:2009613.2212
48" Ø CONCRETE MH
IN BRICK SIDEWALK
DEPTH:8.60'
SE. IN: 10" PVC
NE. IN: 8" PVC
NW. OUT: 10" PVC

EXISTING GREASE DEPOSITS 201.8 LF
FROM MH-296 TO MH-294

EXISTING TAP FACTORY 44.0
LF FROM MH-294 TO MH-295

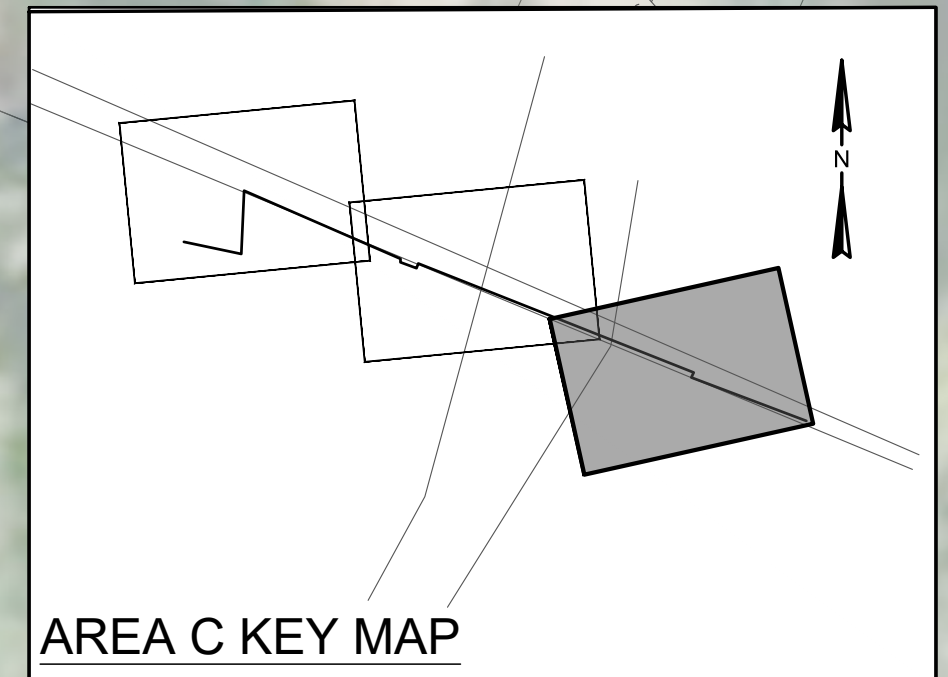
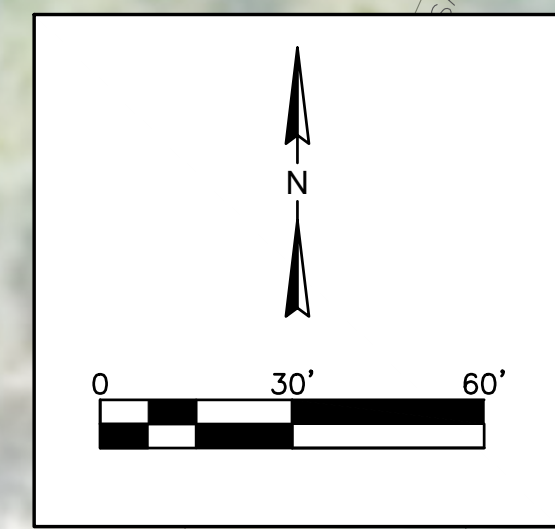
EXIST MH-295
N:233974.7681
E:2009859.0189
48" Ø CONCRETE MH
IN ROADWAY
DEPTH:8.30'
SE. IN: 10" PVC
SW. IN: 8" PVC
NW. OUT: 10" PVC

EXISTING TAP FACTORY 192.0 LF
FROM MH-294 TO MH-295

EXISTING TAP FACTORY 220.2 LF
FROM MH-294 TO MH-295

LEGEND: DESCRIPTION

- ⊙ - DENOTES EXISTING MANHOLE
- SAN — - DENOTES EXISTING SANITARY SEWER PIPE
- WAT — - DENOTES EXISTING WATER MAIN
- - - - - DENOTES EXISTING LATERAL CONNECTION
- - DENOTES EXISTING MAJOR SANITARY DEFECT
- ⊗ - DENOTES EXISTING MINOR SANITARY DEFECT



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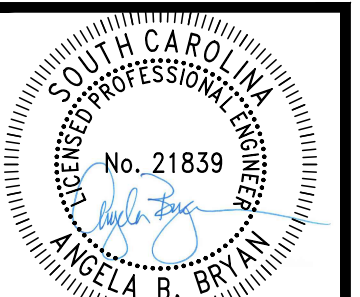
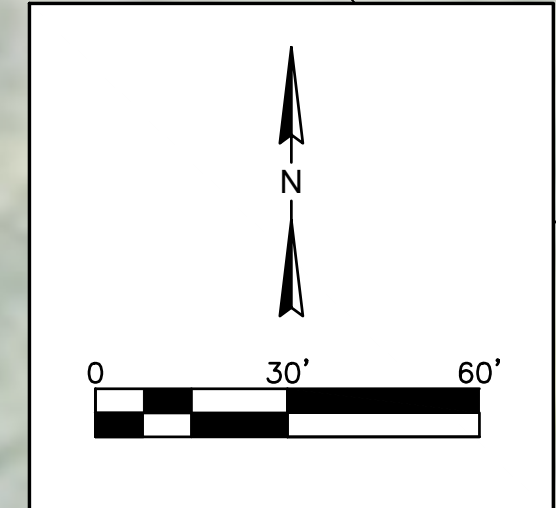
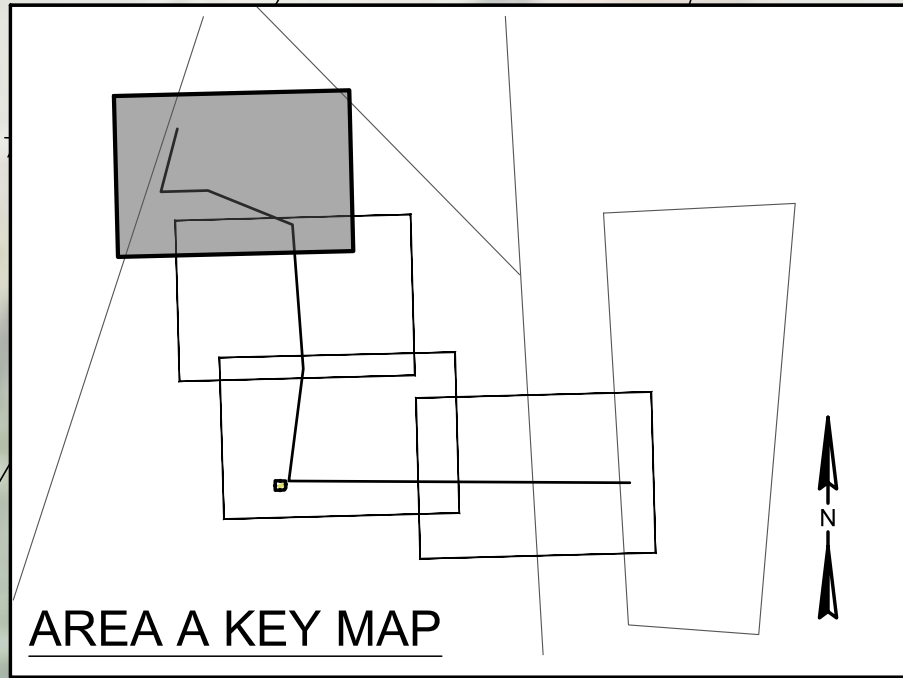
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA C EXISTING CONDITIONS
GRAHAMVILLE ROAD
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

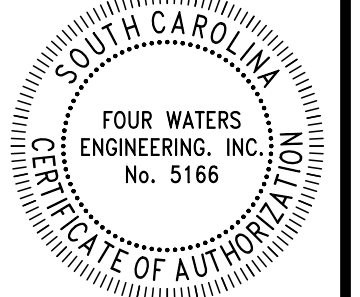
DESIGN	ABB	JMC	17-1007	APRIL 2023	BID

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**WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA A PROPOSED IMPROVEMENTS
CAPTAIN BILL CREEK**

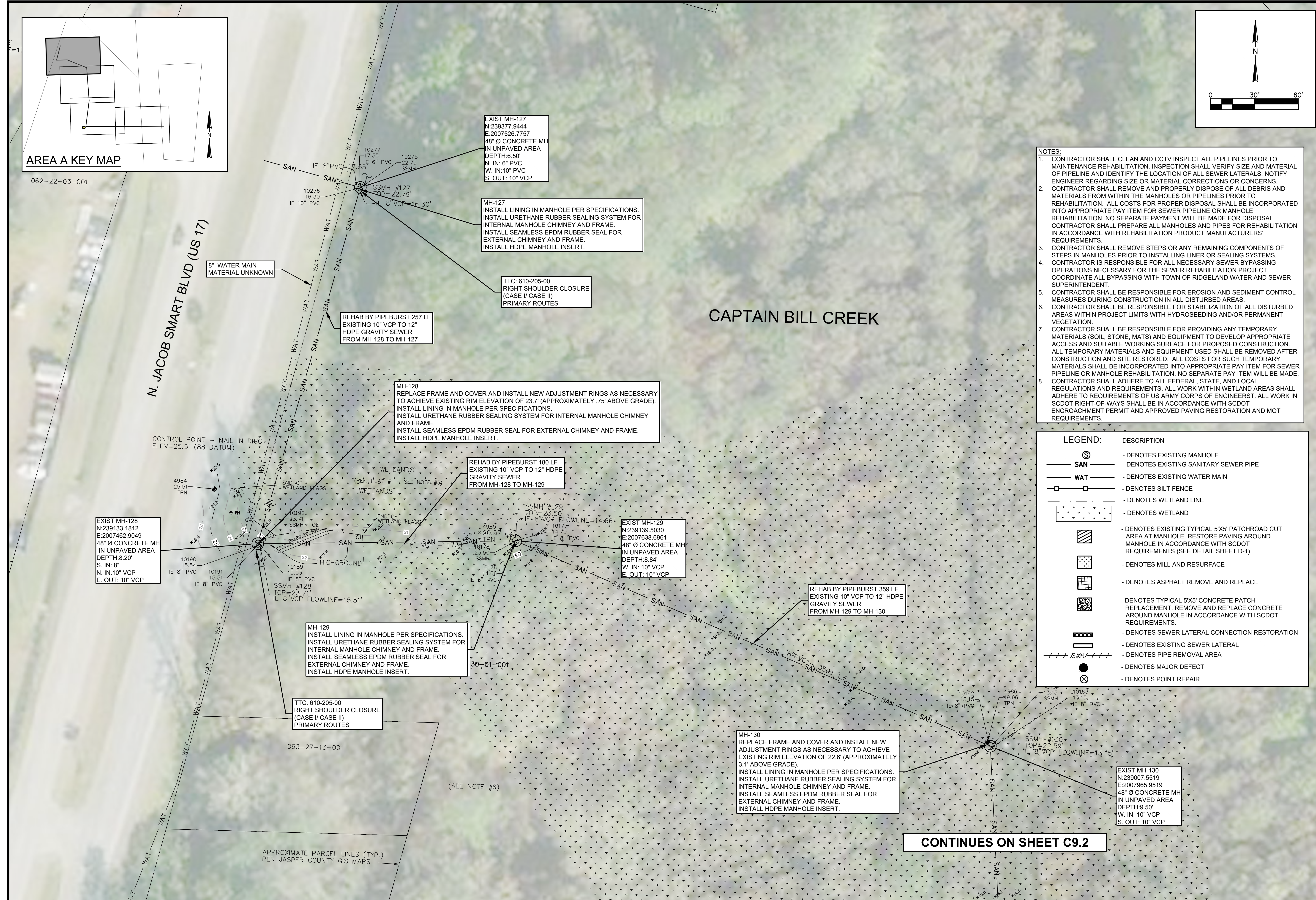
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN ABB.	DRAWN JMC	JOB #	ISSUE DATE	ISSUE
		17-1007	APRIL 2023	BID

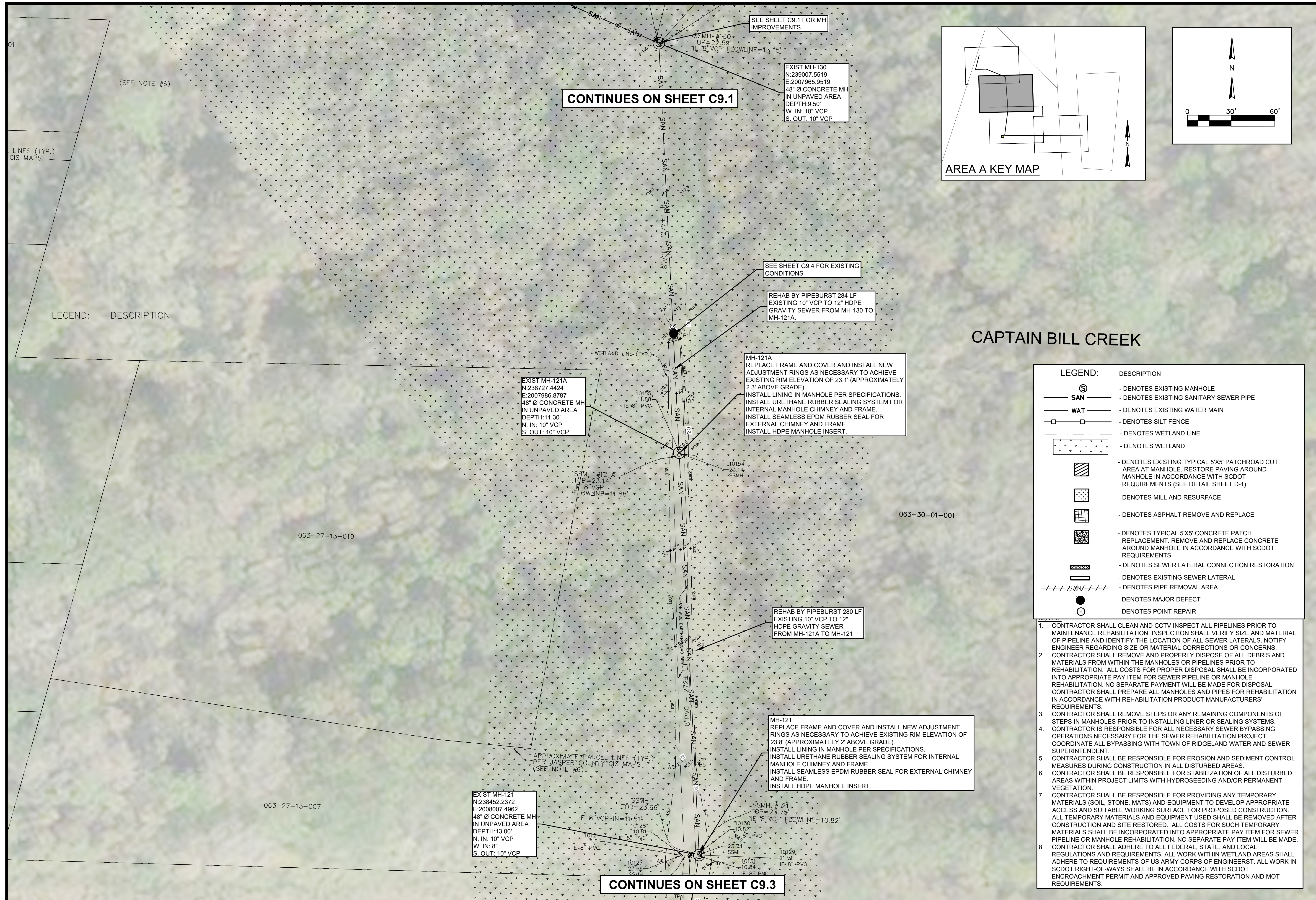
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C9.1



CONTINUES ON SHEET C9.2



CONTINUES ON SHEET C9.1

SEE SHEET C9.1 FOR MH IMPROVEMENTS

EXIST MH-130
N: 239007.5519
E: 2007965.9519
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH: 9.50'
W. IN: 10" VCP
S. OUT: 10" VCP

SEE SHEET G9.4 FOR EXISTING CONDITIONS

REHAB BY PIPEBURST 284 LF
EXISTING 10" VCP TO 12" HDPE
GRAVITY SEWER FROM MH-130 TO
MH-121A.

MH-121A
REPLACE FRAME AND COVER AND INSTALL NEW
ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE
EXISTING RIM ELEVATION OF 23.1' (APPROXIMATELY
2.3' ABOVE GRADE).
INSTALL LINING IN MANHOLE PER SPECIFICATIONS.
INSTALL URETHANE RUBBER SEALING SYSTEM FOR
INTERNAL MANHOLE CHIMNEY AND FRAME.
INSTALL SEAMLESS EPDM RUBBER SEAL FOR
EXTERNAL CHIMNEY AND FRAME.
INSTALL HDPE MANHOLE INSERT.

EXIST MH-121A
N: 238727.4424
E: 2007986.8787
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH: 11.30'
N. IN: 10" VCP
S. OUT: 10" VCP

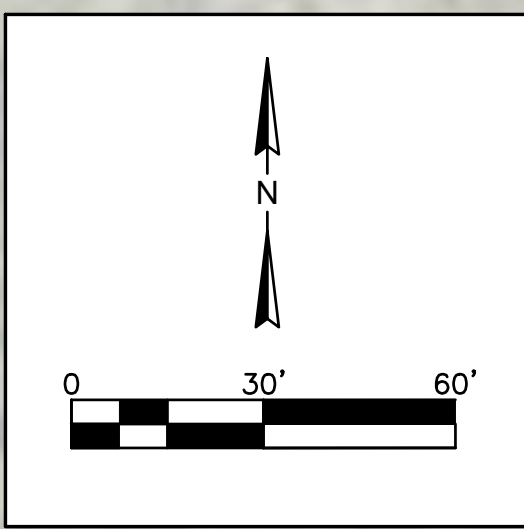
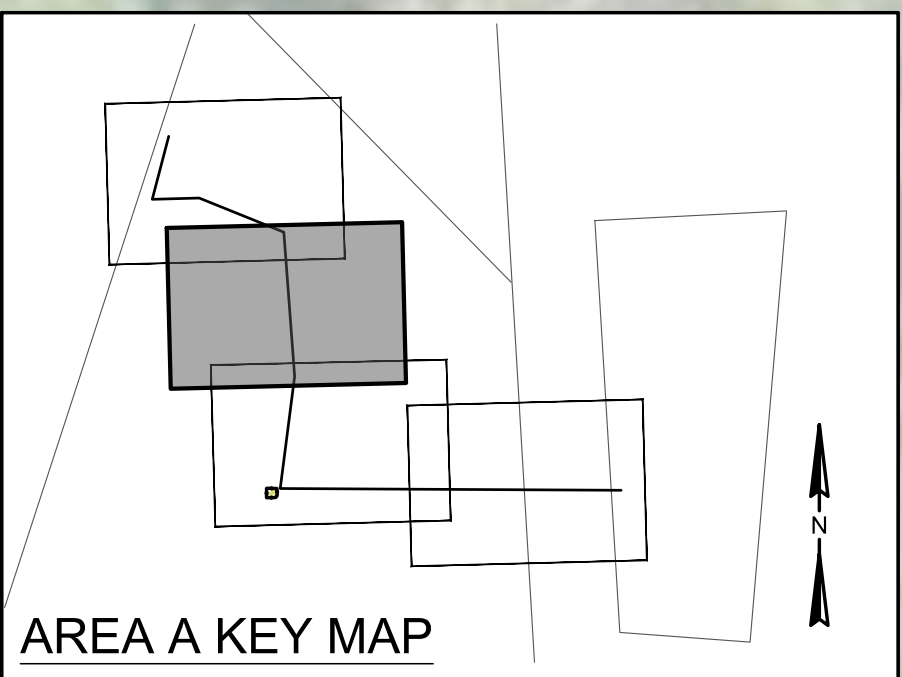
SSMH #121A
TOP = 23.14'
IE 8" PVC
FLOWLINE = 14.88'

REHAB BY PIPEBURST 280 LF
EXISTING 10" VCP TO 12"
HDPE GRAVITY SEWER
FROM MH-121A TO MH-121

MH-121
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT
RINGS AS NECESSARY TO ACHIEVE EXISTING RIM ELEVATION OF
23.8' (APPROXIMATELY 2' ABOVE GRADE).
INSTALL LINING IN MANHOLE PER SPECIFICATIONS.
INSTALL URETHANE RUBBER SEALING SYSTEM FOR INTERNAL
MANHOLE CHIMNEY AND FRAME.
INSTALL SEAMLESS EPDM RUBBER SEAL FOR EXTERNAL CHIMNEY
AND FRAME.
INSTALL HDPE MANHOLE INSERT.

EXIST MH-121
N: 238452.2372
E: 2008007.4962
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH: 13.00'
N. IN: 10" VCP
W. IN: 8"
S. OUT: 10" VCP

CONTINUES ON SHEET C9.3



CAPTAIN BILL CREEK

LEGEND:

SYMBOL	DESCRIPTION
⊙	- DENOTES EXISTING MANHOLE
— SAN —	- DENOTES EXISTING SANITARY SEWER PIPE
— WAT —	- DENOTES EXISTING WATER MAIN
□	- DENOTES SILT FENCE
—	- DENOTES WETLAND LINE
+	- DENOTES WETLAND
▨	- DENOTES EXISTING TYPICAL 5'X5' PATCHROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)
▩	- DENOTES MILL AND RESURFACE
▧	- DENOTES ASPHALT REMOVE AND REPLACE
▦	- DENOTES TYPICAL 5'X5' CONCRETE PATCH REPLACEMENT. REMOVE AND REPLACE CONCRETE AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS.
▤	- DENOTES SEWER LATERAL CONNECTION RESTORATION
▥	- DENOTES EXISTING SEWER LATERAL
+++ SAN +++	- DENOTES PIPE REMOVAL AREA
●	- DENOTES MAJOR DEFECT
⊗	- DENOTES POINT REPAIR

- CONTRACTOR SHALL CLEAN AND CCTV INSPECT ALL PIPELINES PRIOR TO MAINTENANCE REHABILITATION. INSPECTION SHALL VERIFY SIZE AND MATERIAL OF PIPELINE AND IDENTIFY THE LOCATION OF ALL SEWER LATERALS. NOTIFY ENGINEER REGARDING SIZE OR MATERIAL CORRECTIONS OR CONCERNS.
- CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS AND MATERIALS FROM WITHIN THE MANHOLES OR PIPELINES PRIOR TO REHABILITATION. ALL COSTS FOR PROPER DISPOSAL SHALL BE INCORPORATED INTO APPROPRIATE PAY ITEM FOR SEWER PIPELINE OR MANHOLE REHABILITATION. NO SEPARATE PAYMENT WILL BE MADE FOR DISPOSAL. CONTRACTOR SHALL PREPARE ALL MANHOLES AND PIPES FOR REHABILITATION IN ACCORDANCE WITH REHABILITATION PRODUCT MANUFACTURERS' REQUIREMENTS.
- CONTRACTOR SHALL REMOVE STEPS OR ANY REMAINING COMPONENTS OF STEPS IN MANHOLES PRIOR TO INSTALLING LINER OR SEALING SYSTEMS.
- CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY SEWER BYPASSING OPERATIONS NECESSARY FOR THE SEWER REHABILITATION PROJECT. COORDINATE ALL BYPASSING WITH TOWN OF RIDGELAND WATER AND SEWER SUPERINTENDENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION IN ALL DISTURBED AREAS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS WITHIN PROJECT LIMITS WITH HYDROSEEDING AND/OR PERMANENT VEGETATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY TEMPORARY MATERIALS (SOIL, STONE, MATS) AND EQUIPMENT TO DEVELOP APPROPRIATE ACCESS AND SUITABLE WORKING SURFACE FOR PROPOSED CONSTRUCTION. ALL TEMPORARY MATERIALS AND EQUIPMENT USED SHALL BE REMOVED AFTER CONSTRUCTION AND SITE RESTORED. ALL COSTS FOR SUCH TEMPORARY MATERIALS SHALL BE INCORPORATED INTO APPROPRIATE PAY ITEM FOR SEWER PIPELINE OR MANHOLE REHABILITATION. NO SEPARATE PAY ITEM WILL BE MADE.
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FOUR WATERS ENGINEERING, INC.
No. 21839
ANGELA B. BRYAN
REGISTERED PROFESSIONAL ENGINEER
SOUTH CAROLINA
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REV. NO.	DATE	DRWN	CHK	BY	DESCRIPTION
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
**AREA A PROPOSED IMPROVEMENTS
CAPTAIN BILL CREEK**
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007	APRIL	2023	ISSUE	BID
ABB							

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

DRAWING NUMBER
C9.2

063-27-13-007

EXIST MH-121
N:238452.2372
E:2008007.4962
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:13.00'
N. IN: 10" VCP
W. IN: 8"
S. OUT: 10" VCP

CONTINUES ON SHEET C9.2

063-27-13-008

REHAB BY PIPEBURST 215 LF
EXISTING 10" VCP TO 12" HDPE
GRAVITY SEWER
FROM MH-121 TO MH-120

063-27-13-008

EXIST MH-120
N:238243.6614
E:2007976.4640
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:14.90'
N. IN: 10" VCP
S. OUT: 10" VCP

REHAB BY PIPEBURST 220 LF
EXISTING 10" VCP TO 12" HDPE
GRAVITY SEWER
FROM MH-120 TO MH-119

MH-119
INSTALL LINING IN MANHOLE PER SPECIFICATIONS.
INSTALL URETHANE RUBBER SEALING SYSTEM
FOR INTERNAL MANHOLE CHIMNEY AND FRAME.
INSTALL SEAMLESS EPDM RUBBER SEAL FOR
EXTERNAL CHIMNEY AND FRAME.
INSTALL HDPE MANHOLE INSERT.

063-30-01-001

EXIST MH-119
N:238027.5305
E:2007948.2123
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:14.80'
N. IN: 10" VCP
E. IN: 8" VCP
SW. OUT: 10" CIP

MH-5
REPLACE FRAME AND COVER AND INSTALL NEW
ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE
EXISTING RIM ELEVATION OF 23.5' (APPROXIMATELY 1.8'
ABOVE GRADE).
INSTALL LINING IN MANHOLE PER SPECIFICATIONS.
INSTALL URETHANE RUBBER SEALING SYSTEM FOR
INTERNAL MANHOLE CHIMNEY AND FRAME.
INSTALL SEAMLESS EPDM RUBBER SEAL FOR
EXTERNAL CHIMNEY AND FRAME.
INSTALL HDPE MANHOLE INSERT.

EXIST MH-5
N:238024.5269
E:2008539.0040
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:6.10'
E. IN: 8" PVC
W. OUT: 8" PVC

EXIST MH-133
N:238027.6472
E:2008244.3569
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:7.40'
E. IN: 8" PVC
W. OUT: 8" VCP

REHAB BY PIPEBURST 296 LF
EXISTING 8" VCP TO 10" HDPE
GRAVITY SEWER
FROM MH-133 TO MH-119

MH-133
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT
RINGS AS NECESSARY TO ACHIEVE EXISTING RIM ELEVATION OF
23.4' (APPROXIMATELY 1.7' ABOVE GRADE).
INSTALL LINING IN MANHOLE PER SPECIFICATIONS.
INSTALL URETHANE RUBBER SEALING SYSTEM FOR INTERNAL
MANHOLE CHIMNEY AND FRAME.
INSTALL SEAMLESS EPDM RUBBER SEAL FOR EXTERNAL
CHIMNEY AND FRAME.
INSTALL HDPE MANHOLE INSERT.

REHAB BY PIPEBURST 294 LF
EXISTING 8" PVC TO 10" HDPE
GRAVITY SEWER
FROM MH-5 TO MH-133

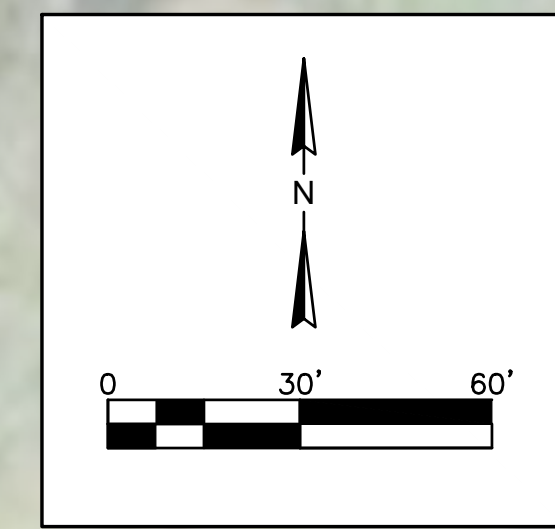
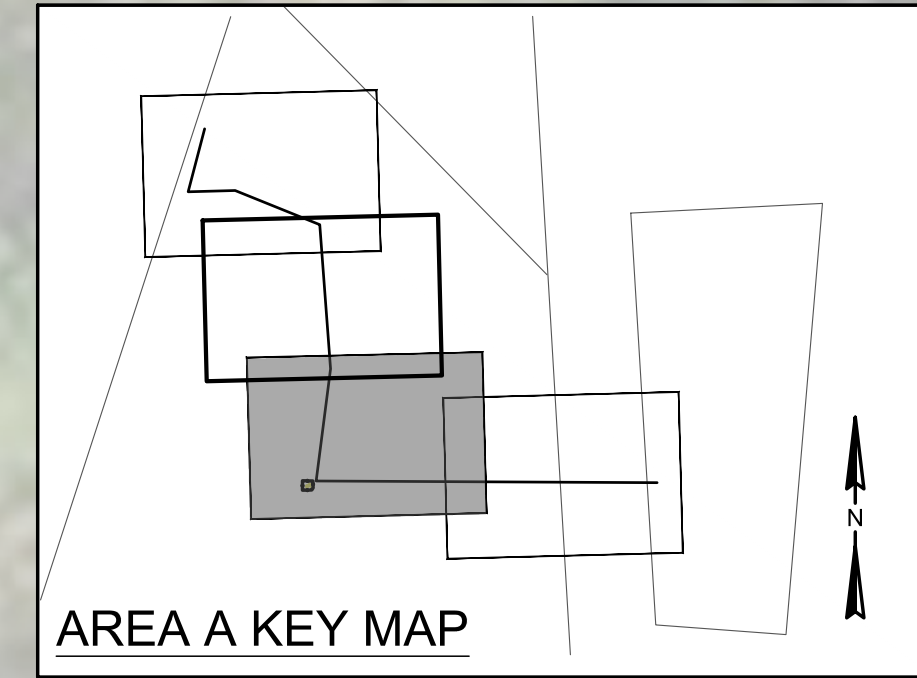
063-30-01-001

SEE SHEET C1.4 FOR
PROPOSED IMPROVEMENTS

063-27-13-017

LEGEND:

- ⊙ - DENOTES EXISTING MANHOLE
- SAN — - DENOTES EXISTING SANITARY SEWER PIPE
- WAT — - DENOTES EXISTING WATER MAIN
- - DENOTES SILT FENCE
- - DENOTES WETLAND LINE
- ▨ - DENOTES WETLAND
- ▨ - DENOTES EXISTING TYPICAL 5'X5' PATCHROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)
- ▨ - DENOTES MILL AND RESURFACE
- ▨ - DENOTES ASPHALT REMOVE AND REPLACE
- ▨ - DENOTES TYPICAL 5'X5' CONCRETE PATCH REPLACEMENT. REMOVE AND REPLACE CONCRETE AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS.
- - DENOTES SEWER LATERAL CONNECTION RESTORATION
- - DENOTES EXISTING SEWER LATERAL
- - DENOTES PIPE REMOVAL AREA
- - DENOTES MAJOR DEFECT
- ⊗ - DENOTES POINT REPAIR

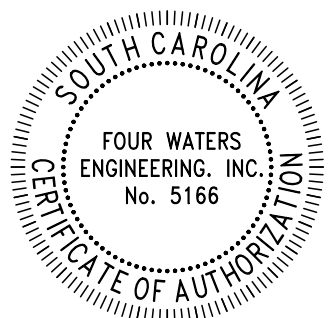


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CAPTAIN BILL CREEK



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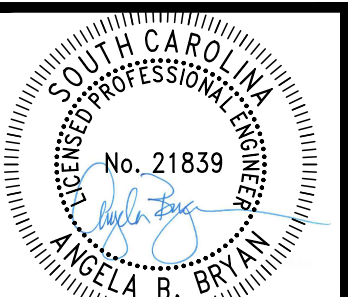
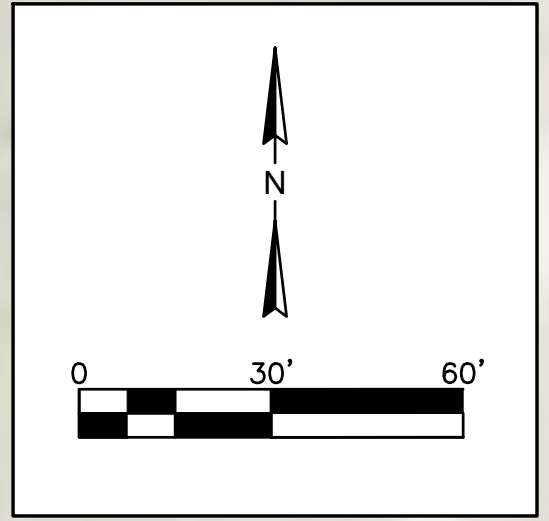
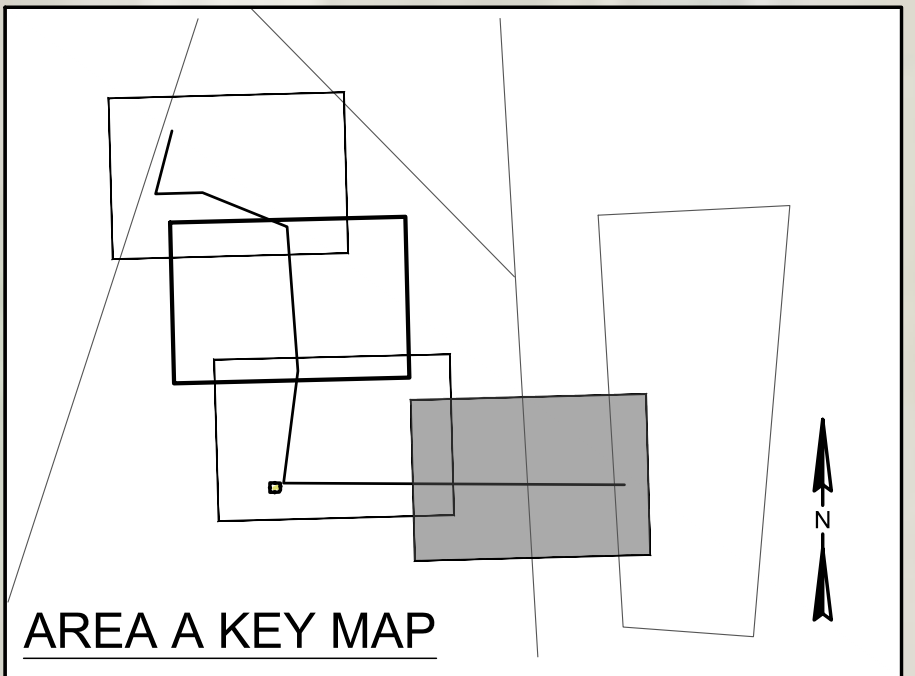
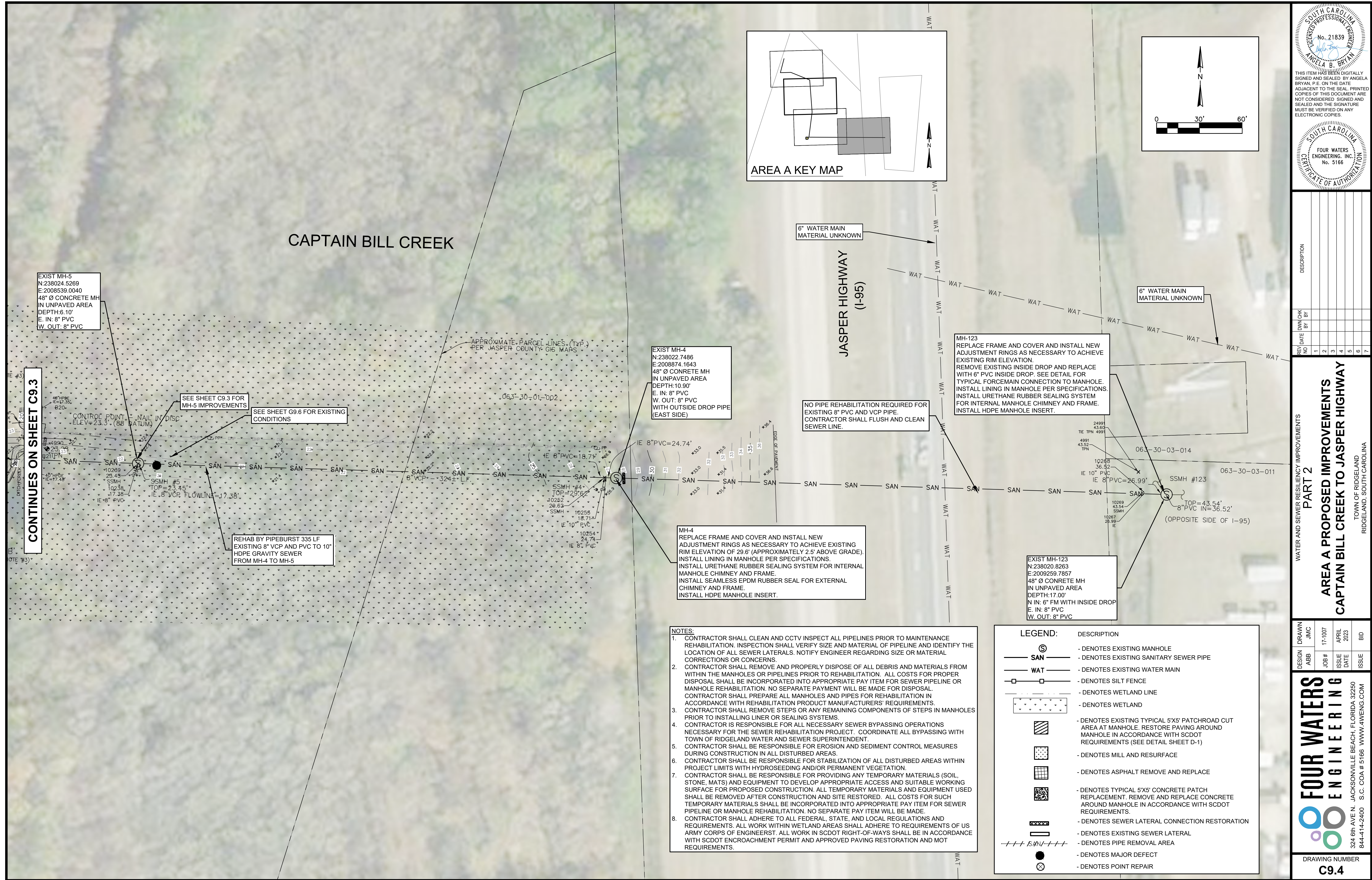
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
**AREA A PROPOSED IMPROVEMENTS
CAPTAIN BILL CREEK**
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

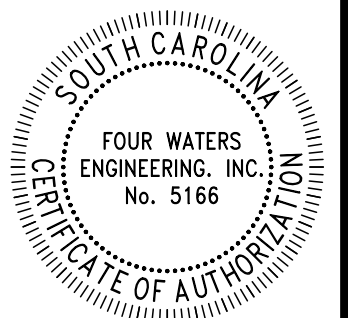
DESIGN	DRAWN	JMC	17-1007	APRIL	2023	ISSUE
ABB	JMC					

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

DRAWING NUMBER
C9.3



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**WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA A PROPOSED IMPROVEMENTS
CAPTAIN BILL CREEK TO JASPER HIGHWAY**

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	JOB #	ISSUE DATE	ISSUE	BID
		17-1007	APRIL 2023		

FOUR WATERS ENGINEERING

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

DRAWING NUMBER
C9.4

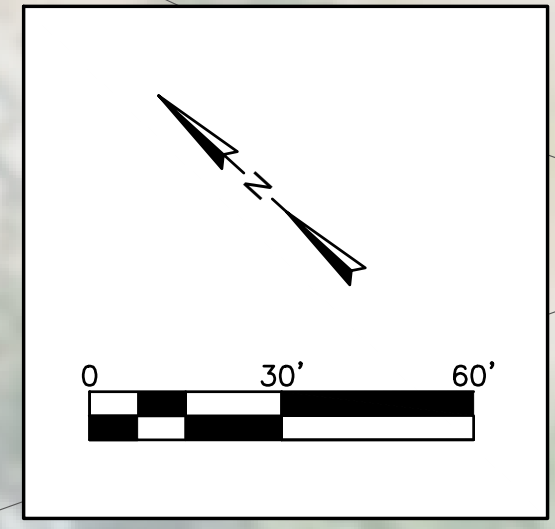
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LEGEND:

SYMBOL	DESCRIPTION
⊙	- DENOTES EXISTING MANHOLE
SAN	- DENOTES EXISTING SANITARY SEWER PIPE
WAT	- DENOTES EXISTING WATER MAIN
□	- DENOTES SILT FENCE
--- (dotted)	- DENOTES WETLAND LINE
--- (stippled)	- DENOTES WETLAND
▨	- DENOTES EXISTING TYPICAL 5'X5' PATCHROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)
▤	- DENOTES MILL AND RESURFACE
▥	- DENOTES ASPHALT REMOVE AND REPLACE
▧	- DENOTES TYPICAL 5'X5' CONCRETE PATCH REPLACEMENT. REMOVE AND REPLACE CONCRETE AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS.
--- (dashed)	- DENOTES SEWER LATERAL CONNECTION RESTORATION
--- (solid)	- DENOTES EXISTING SEWER LATERAL
+++ SAN +++	- DENOTES PIPE REMOVAL AREA
●	- DENOTES MAJOR DEFECT
⊗	- DENOTES POINT REPAIR

NOTES:

1. CONTRACTOR SHALL CLEAN AND CCTV INSPECT ALL PIPELINES PRIOR TO MAINTENANCE REHABILITATION. INSPECTION SHALL VERIFY SIZE AND MATERIAL OF PIPELINE AND IDENTIFY THE LOCATION OF ALL SEWER LATERALS. NOTIFY ENGINEER REGARDING SIZE OR MATERIAL CORRECTIONS OR CONCERNS.
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FOUR WATERS ENGINEERING, INC.

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B PROPOSED IMPROVEMENTS
3RD AVENUE TO 2ND AVENUE
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	JOB #	ISSUE DATE	ISSUE	BID
		17-1007	APRIL 2023		

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

DRAWING NUMBER
C9.5

EXIST MH-161
 N:237054.9905
 E:2004399.5805
 48" Ø CONCRETE MH
 IN ROADWAY (BRICK PAVERS)
 DEPTH:5.80'
 SW OUT: 8" PVC
 NE IN: 8" PVC
 NW IN: 6" PVC
 SW IN: 8" PVC

TTC: 610-005-20
 FLAGGING OPERATIONS, WORKING ZONES CONTINUING THROUGH STOP SIGN CONTROLLED SIDE ROADS

MH-161
 INSTALL LINING IN MANHOLE PER SPECIFICATIONS.
 INSTALL URETHANE RUBBER SEALING SYSTEM FOR INTERNAL MANHOLE CHIMNEY AND FRAME.
 INSTALL HDPE MANHOLE INSERT.

JASPER COUNTY GOVERNMENT BUILDINGS COMPLEX AND VEHICLE RESTRICTED BRICK PAVEMENT PEDESTRIAN AREA

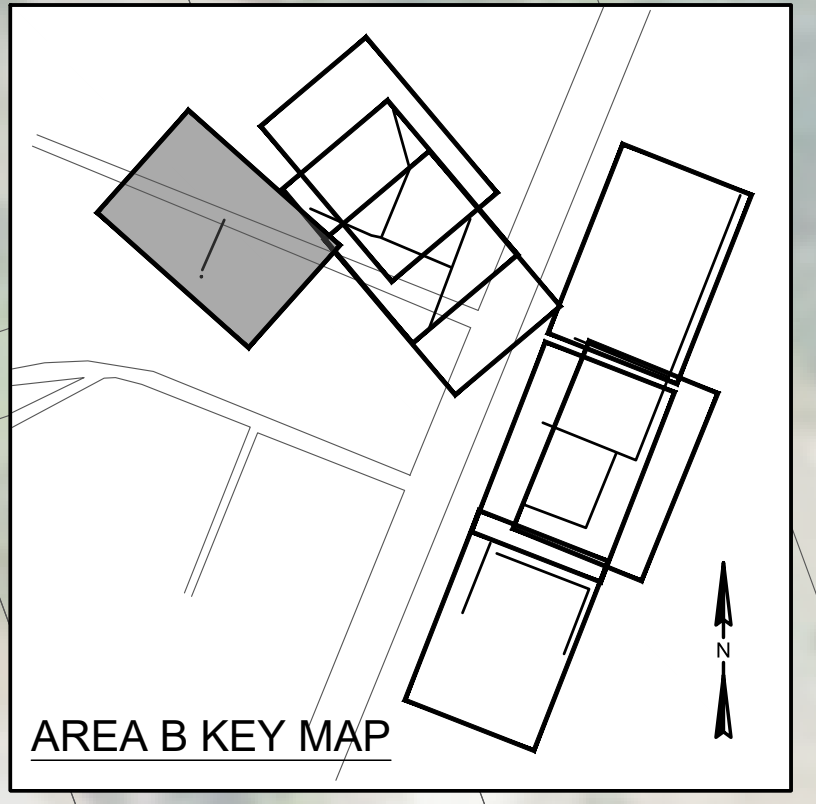
REHAB BY CIPP 232 LF EXISTING 8" PVC GRAVITY SEWER FROM MH-161 TO MH-149

TTC: 610-610-00
 DETOUR SIGNING FOR SECONDARY ROUTES

MH-149
 REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE.
 INSTALL LINING IN MANHOLE PER SPECIFICATIONS.
 INSTALL URETHANE RUBBER SEALING SYSTEM FOR INTERNAL MANHOLE CHIMNEY AND FRAME.
 INSTALL HDPE MANHOLE INSERT.

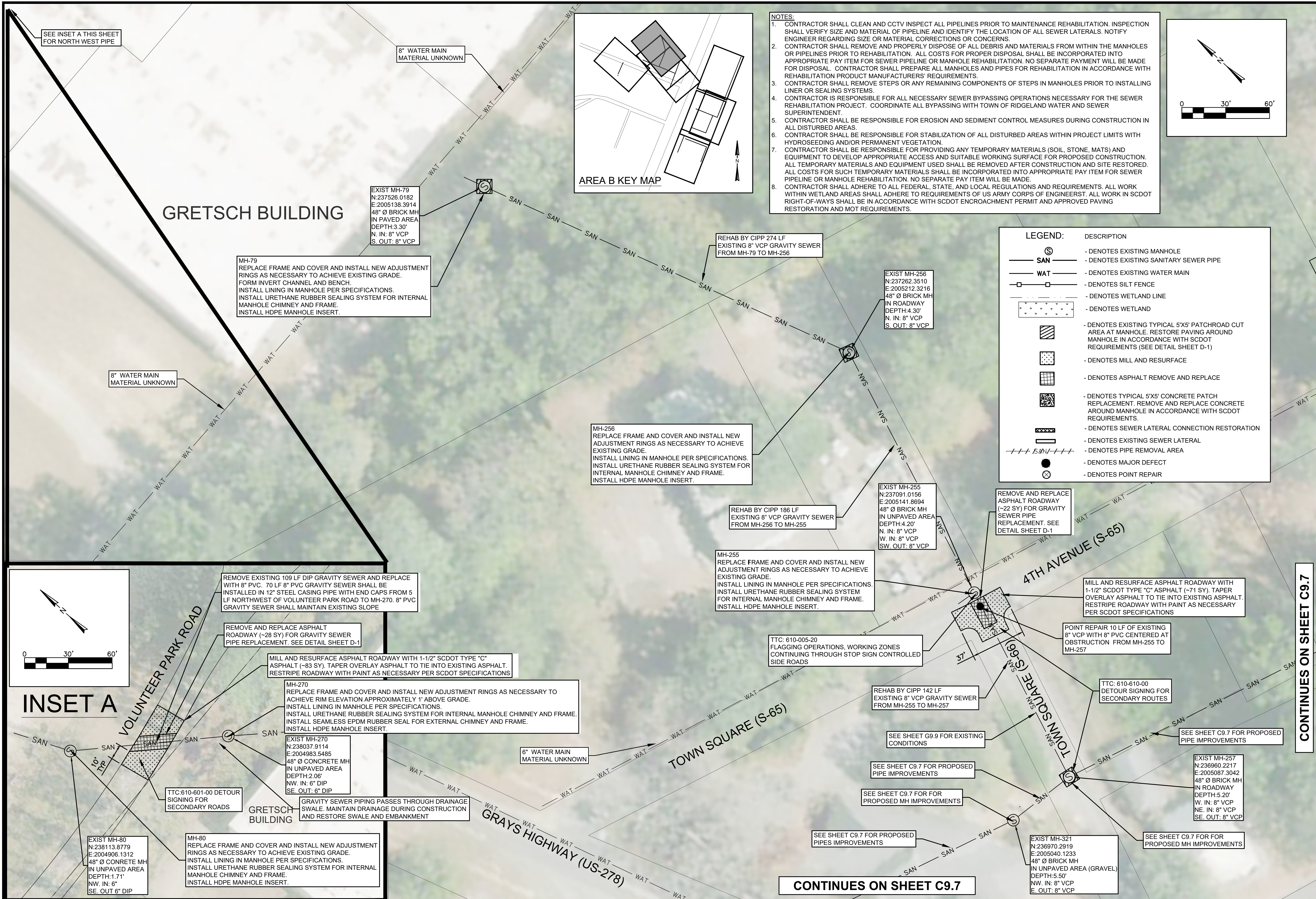
EXIST MH-149
 N:236827.8219
 E:2004299.7731
 48" Ø CONCRETE MH
 IN ROADWAY
 DEPTH:7.80'
 NE IN: 8" PVC
 NW IN: 8" CLAY
 SE OUT: 8" CLAY

6" WATER MAIN MATERIAL UNKNOWN



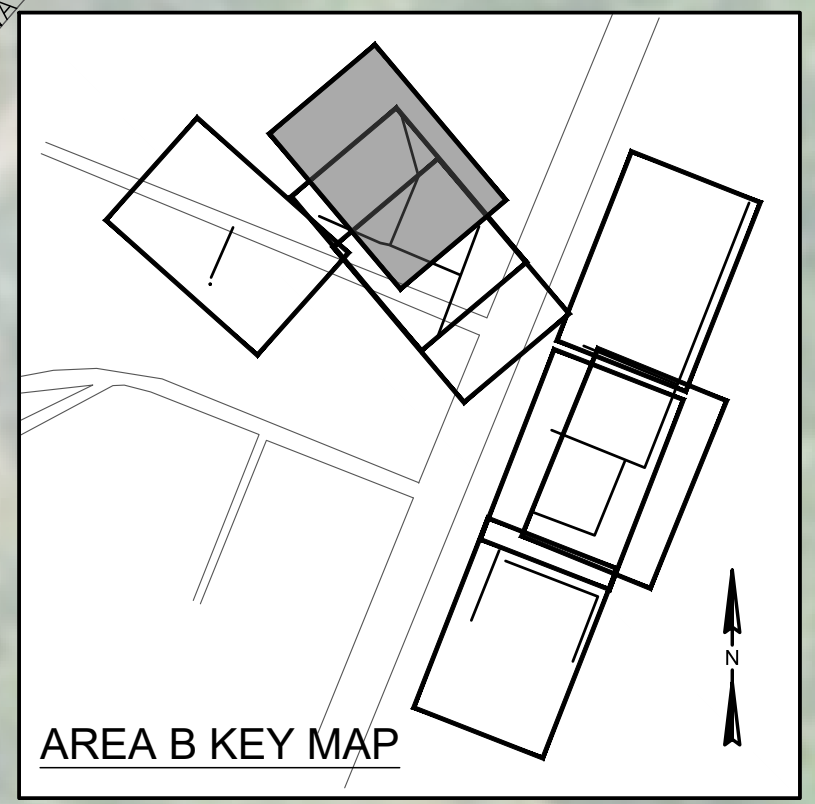
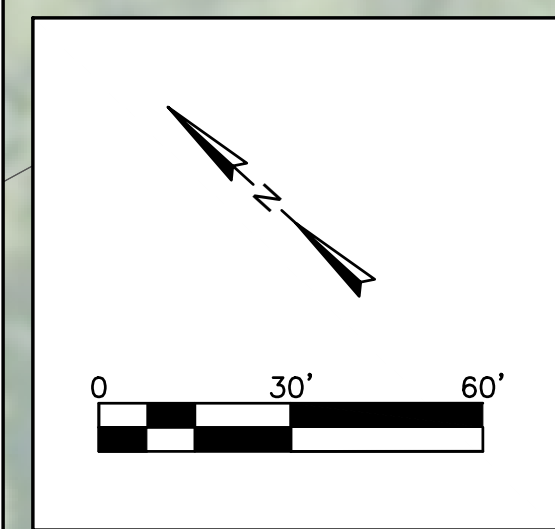
LEGEND:

SYMBOL	DESCRIPTION
⊙	- DENOTES EXISTING MANHOLE
— SAN —	- DENOTES EXISTING SANITARY SEWER PIPE
— WAT —	- DENOTES EXISTING WATER MAIN
□	- DENOTES SILT FENCE
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▨	- DENOTES WETLAND
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▩	- DENOTES MILL AND RESURFACE
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▬	- DENOTES SEWER LATERAL CONNECTION RESTORATION
—	- DENOTES EXISTING SEWER LATERAL
+++ SAN +++	- DENOTES PIPE REMOVAL AREA
⊗	- DENOTES MAJOR DEFECT
⊙	- DENOTES POINT REPAIR



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LEGEND:

DESCRIPTION	SYMBOL
- DENOTES EXISTING MANHOLE	⊙
- DENOTES EXISTING SANITARY SEWER PIPE	SAN
- DENOTES EXISTING WATER MAIN	WAT
- DENOTES SILT FENCE	□
- DENOTES WETLAND LINE	---
- DENOTES WETLAND	+
- DENOTES EXISTING TYPICAL 5'X5' PATCHROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)	▨
- DENOTES MILL AND RESURFACE	▤
- DENOTES ASPHALT REMOVE AND REPLACE	▥
- DENOTES TYPICAL 5'X5' CONCRETE PATCH REPLACEMENT. REMOVE AND REPLACE CONCRETE AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS.	▧
- DENOTES SEWER LATERAL CONNECTION RESTORATION	▩
- DENOTES EXISTING SEWER LATERAL	---
- DENOTES PIPE REMOVAL AREA	---/---
- DENOTES MAJOR DEFECT	⊗
- DENOTES POINT REPAIR	⊙

SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. 21839
ANGELA B. BRYAN, P.E.
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SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
FOUR WATERS ENGINEERING, INC.
No. 5166
CERTIFICATE OF AUTHORITY

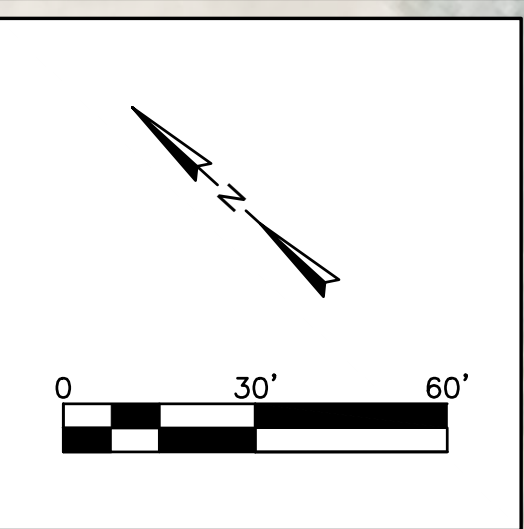
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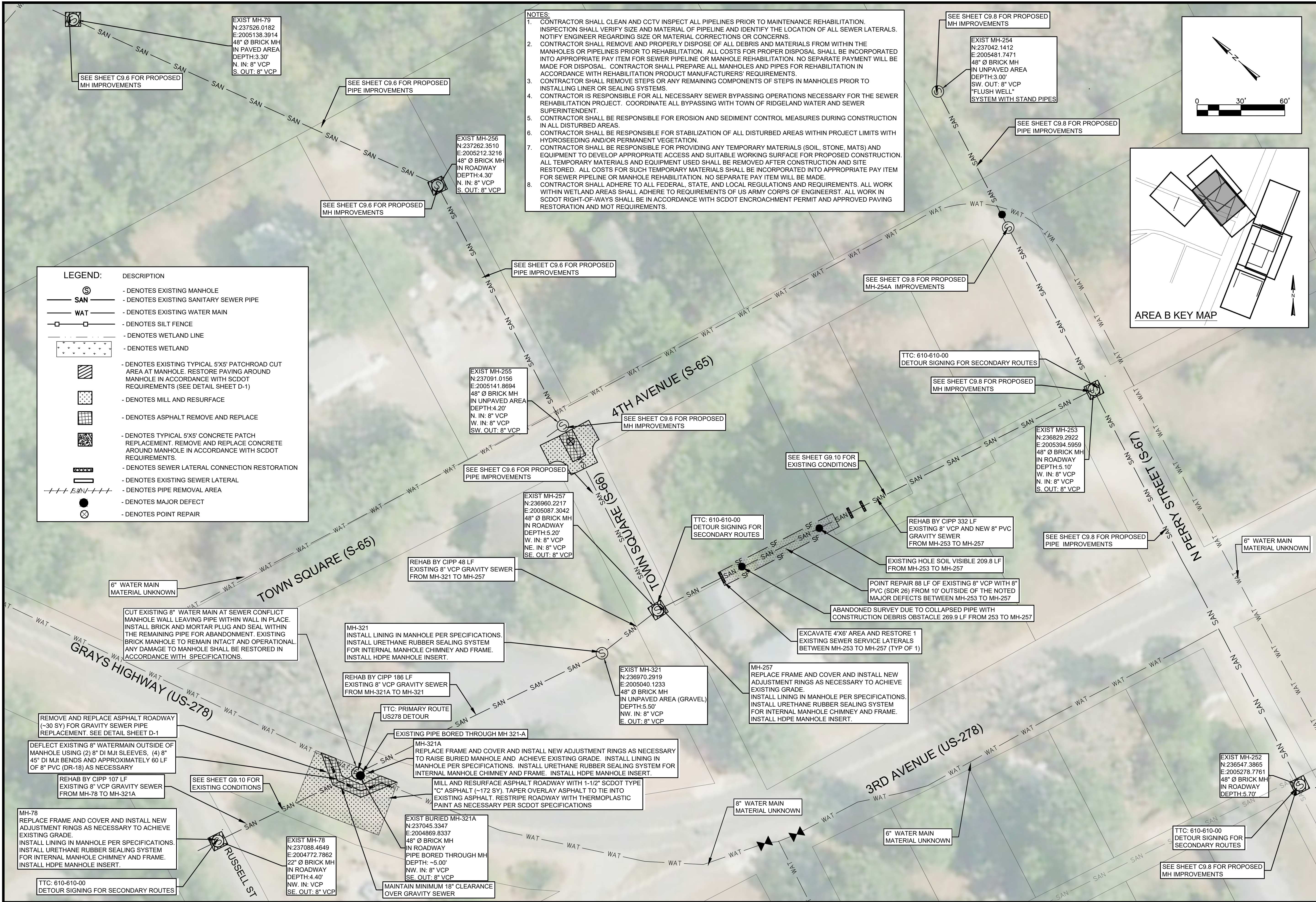
WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B PROPOSED IMPROVEMENTS
TOWN SQUARE
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	JMC	DATE	ISSUE	ISSUE	BID
			17-1007	APRIL 2023		

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

DRAWING NUMBER
C9.6



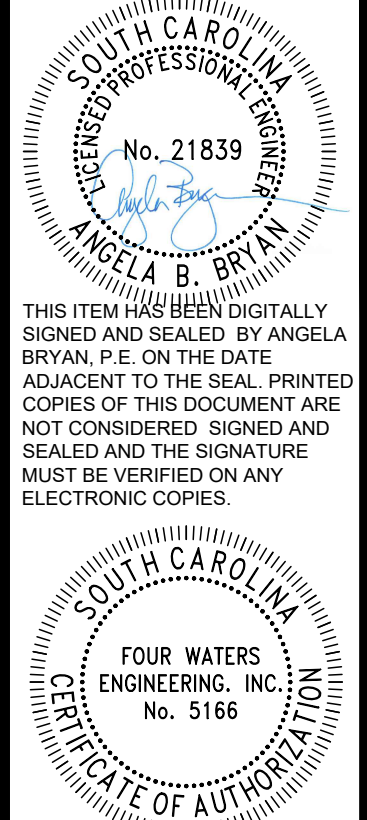
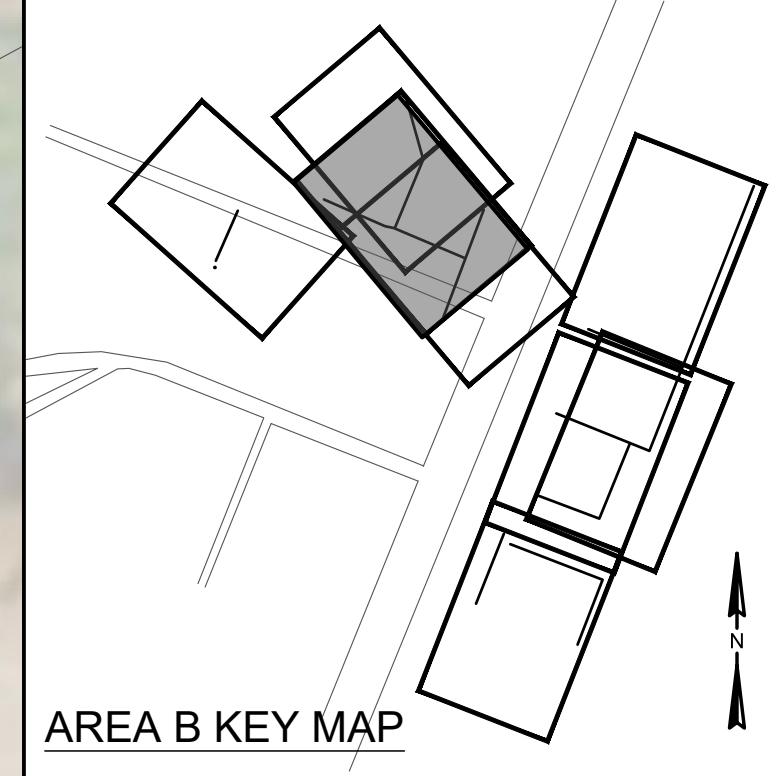
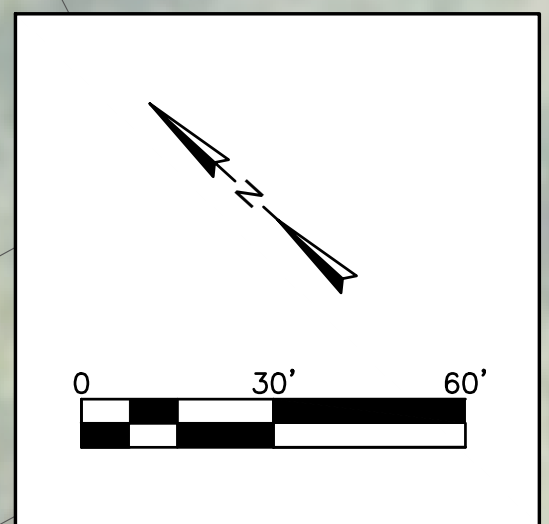


NOTES:

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DESCRIPTION	DESCRIPTION
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	- DENOTES EXISTING SANITARY SEWER PIPE
	- DENOTES EXISTING WATER MAIN
	- DENOTES SILT FENCE
	- DENOTES WETLAND LINE
	- DENOTES WETLAND
	- DENOTES EXISTING TYPICAL 5'X5' PATCHROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)
	- DENOTES MILL AND RESURFACE
	- DENOTES ASPHALT REMOVE AND REPLACE
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	- DENOTES EXISTING SEWER LATERAL
	- DENOTES PIPE REMOVAL AREA
	- DENOTES MAJOR DEFECT
	- DENOTES POINT REPAIR



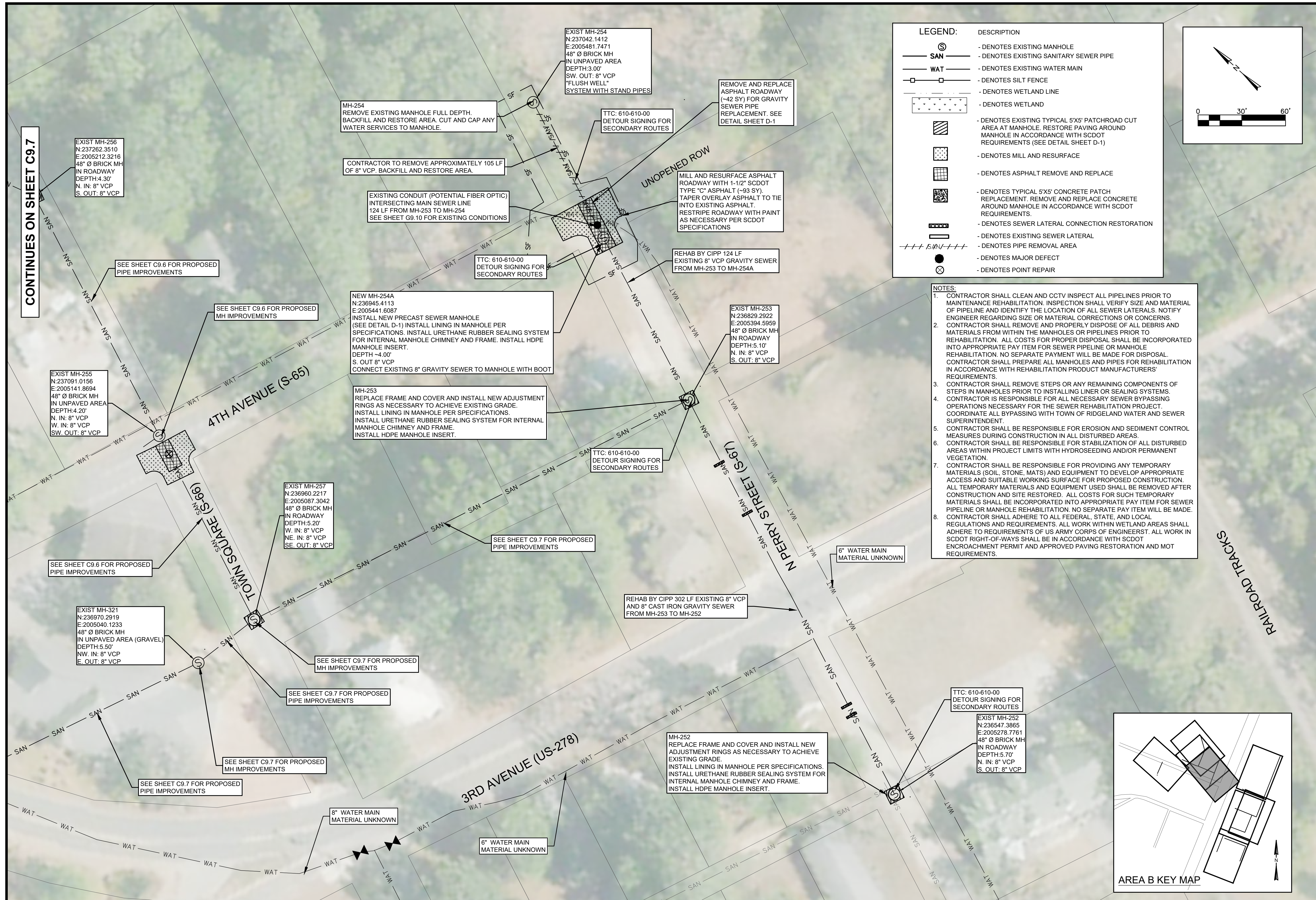
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**AREA B PROPOSED IMPROVEMENTS
GRAYS HIGHWAY TO N. PERRY STREET**

DESIGN	ABB	JMC	17-1007	APRIL	2023	ISSUE	BID



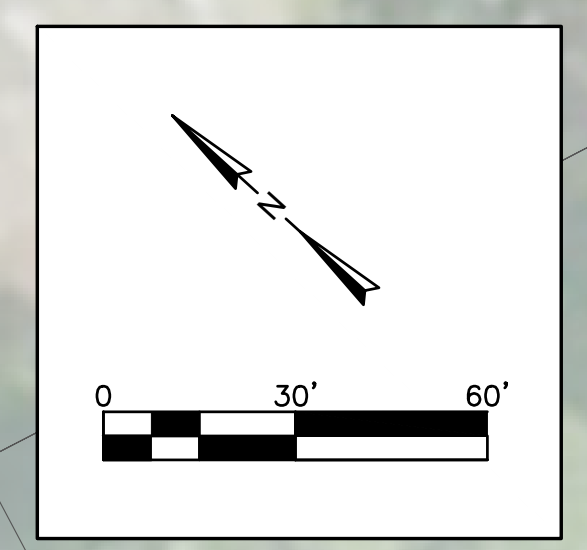
DRAWING NUMBER
C9.7



LEGEND:

DESCRIPTION	SYMBOL
- DENOTES EXISTING MANHOLE	⊙
- DENOTES EXISTING SANITARY SEWER PIPE	— SAN —
- DENOTES EXISTING WATER MAIN	— WAT —
- DENOTES SILT FENCE	— [] —
- DENOTES WETLAND LINE	— [] —
- DENOTES WETLAND	[]
- DENOTES EXISTING TYPICAL 5'X5' PATCHROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)	[]
- DENOTES MILL AND RESURFACE	[]
- DENOTES ASPHALT REMOVE AND REPLACE	[]
- DENOTES TYPICAL 5'X5' CONCRETE PATCH REPLACEMENT. REMOVE AND REPLACE CONCRETE AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS.	[]
- DENOTES SEWER LATERAL CONNECTION RESTORATION	[]
- DENOTES EXISTING SEWER LATERAL	[]
- DENOTES PIPE REMOVAL AREA	[]
- DENOTES MAJOR DEFECT	⊗
- DENOTES POINT REPAIR	⊙

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FOUR WATERS ENGINEERING, INC.
No. 21839
ANGELA B. BRYAN, P.E.
REGISTERED PROFESSIONAL ENGINEER

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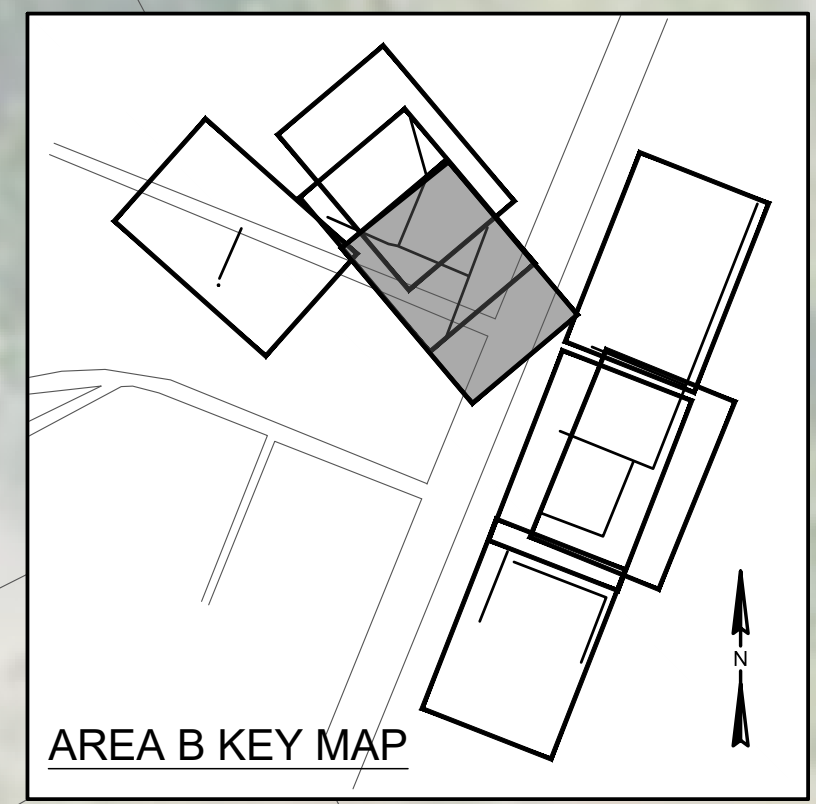
FOUR WATERS ENGINEERING, INC.
No. 5166
CERTIFICATE OF AUTHORITY

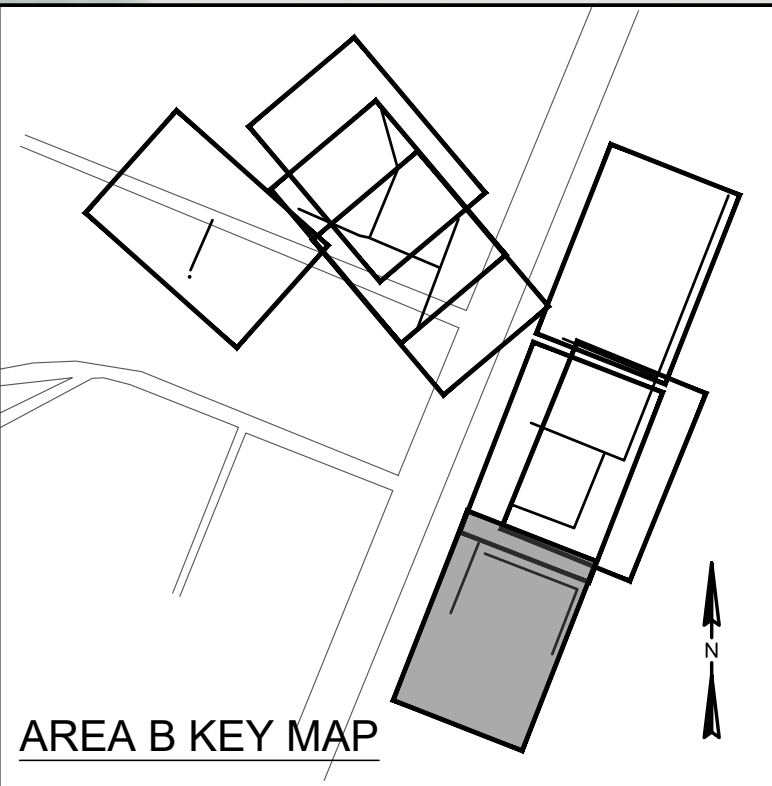
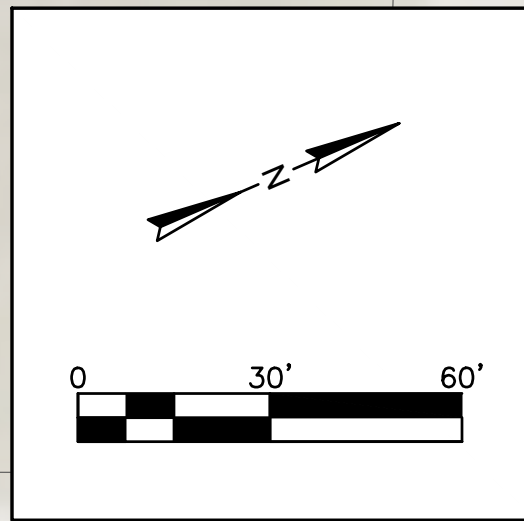
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B PROPOSED IMPROVEMENTS
4TH AVENUE TO 3RD AVENUE
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	ABB	JMC	17-1007	APRIL	2023	BID
JOB #	ISSUE	DATE	ISSUE	DATE	ISSUE	BID

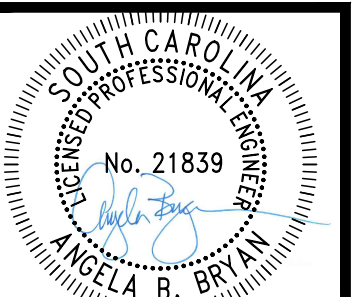
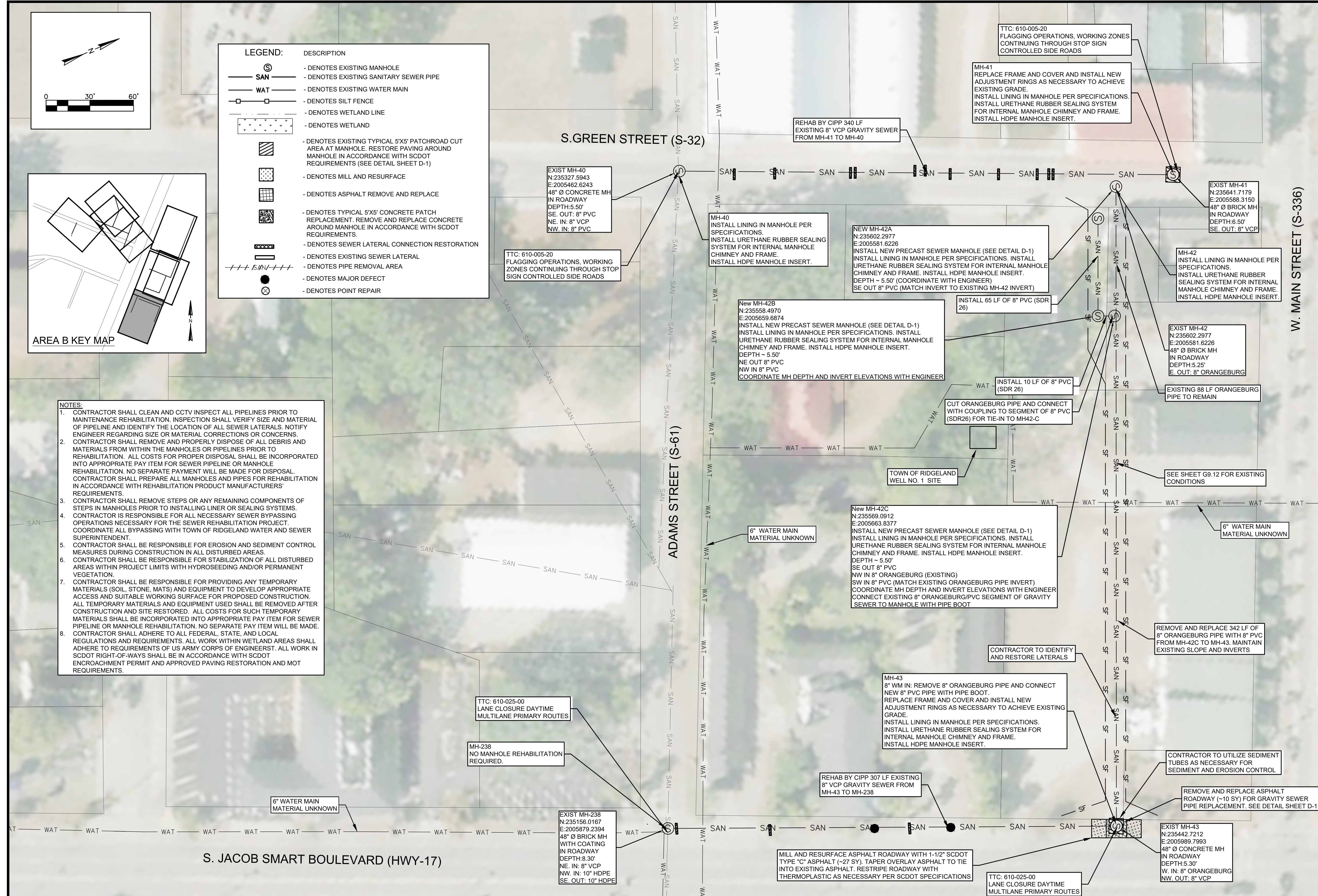
FOUR WATERS ENGINEERING
324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
844-414-2400 S.C. COA # 5166 WWW.4WENG.COM



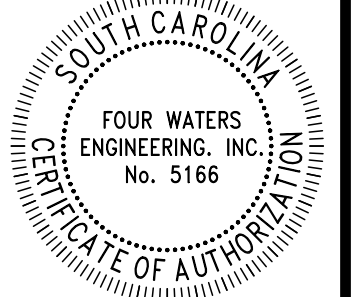


LEGEND:	DESCRIPTION
(S)	- DENOTES EXISTING MANHOLE
— SAN —	- DENOTES EXISTING SANITARY SEWER PIPE
— WAT —	- DENOTES EXISTING WATER MAIN
□	- DENOTES SILT FENCE
—	- DENOTES WETLAND LINE
■	- DENOTES WETLAND
▨	- DENOTES EXISTING TYPICAL 5'X5' PATCHROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)
□	- DENOTES MILL AND RESURFACE
■	- DENOTES ASPHALT REMOVE AND REPLACE
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—	- DENOTES SEWER LATERAL CONNECTION RESTORATION
—	- DENOTES EXISTING SEWER LATERAL
---	- DENOTES PIPE REMOVAL AREA
●	- DENOTES MAJOR DEFECT
⊗	- DENOTES POINT REPAIR

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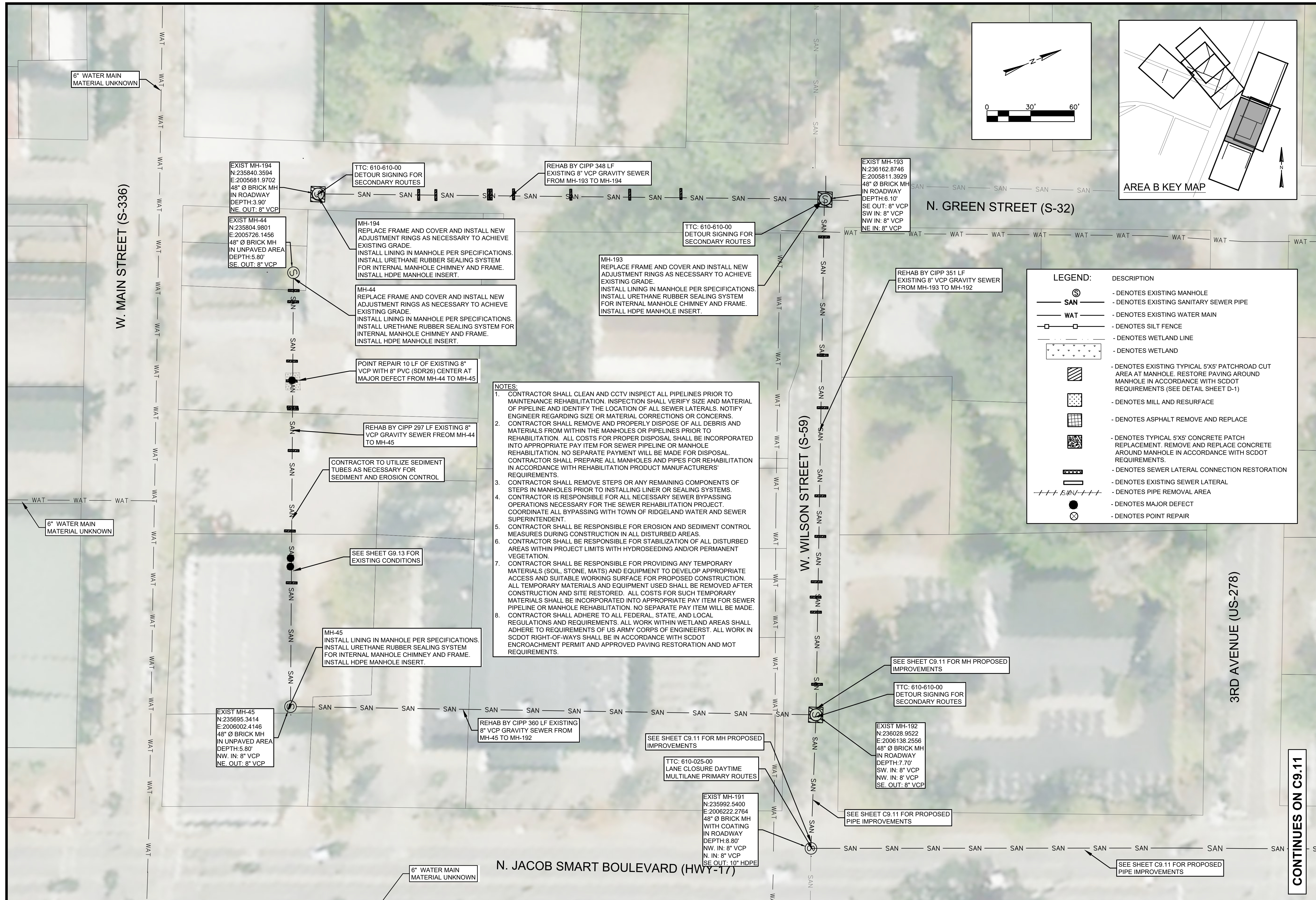
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B PROPOSED IMPROVEMENTS
S. JACOB SMART BLVD TO S. GREEN ST
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JNC	DATE	ISSUE
ABB	JNC		17-1007	APRIL 2023

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

DRAWING NUMBER
C9.9



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FOUR WATERS ENGINEERING, INC.

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B PROPOSED IMPROVEMENTS
N. JACOB SMART BLVD TO N. GREEN ST
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	JOB #	ISSUE DATE	ISSUE	BID
ABB	JMC	17-1007	APRIL 2023		

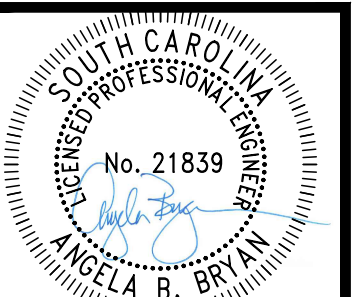
FOUR WATERS ENGINEERING
 324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
 844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
C9.10

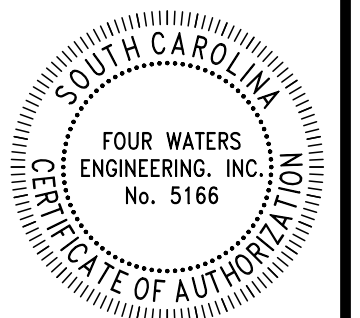
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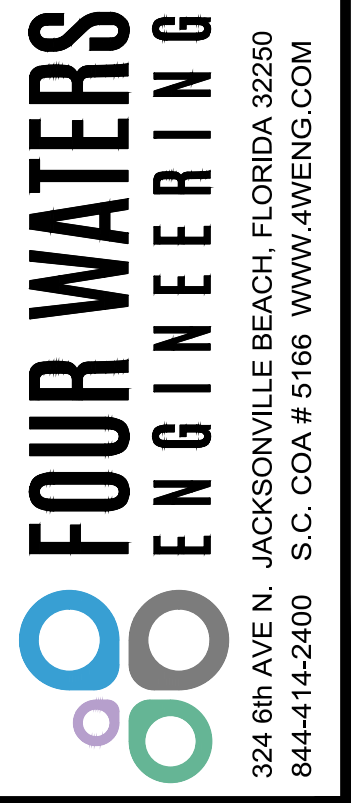
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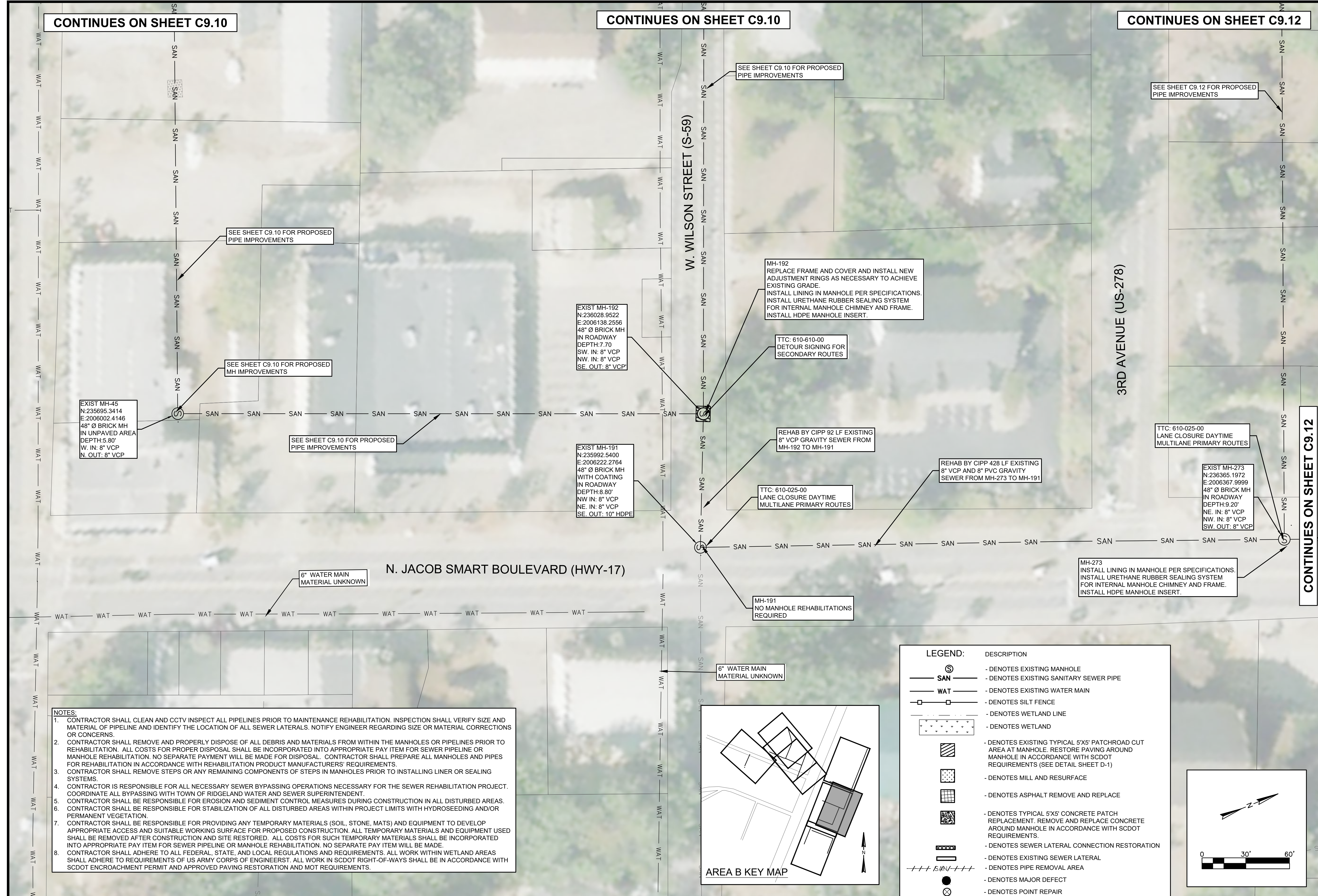
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B PROPOSED IMPROVEMENTS
N. JACOB SMART BLVD TO N. GREEN ST
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRWN	DATE	ISSUE	ISSUE	ISSUE	ISSUE
ABB	JMC	17-1007	APRIL	2023		
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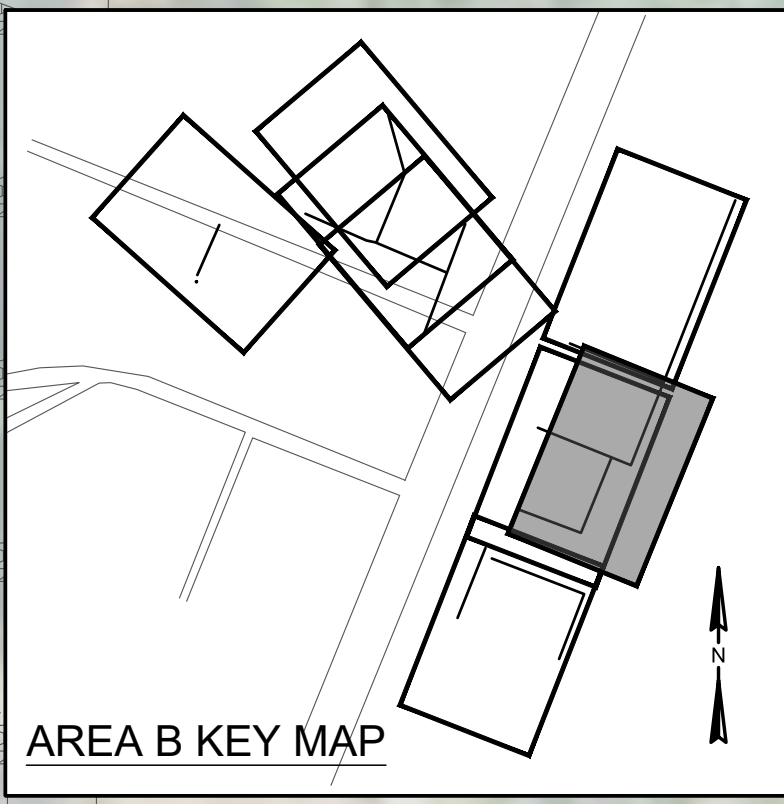


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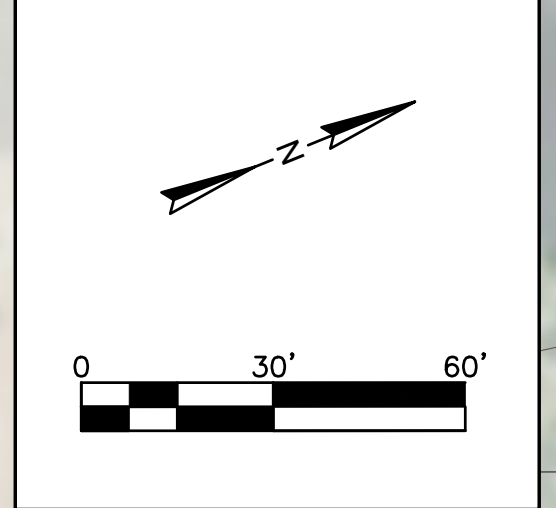
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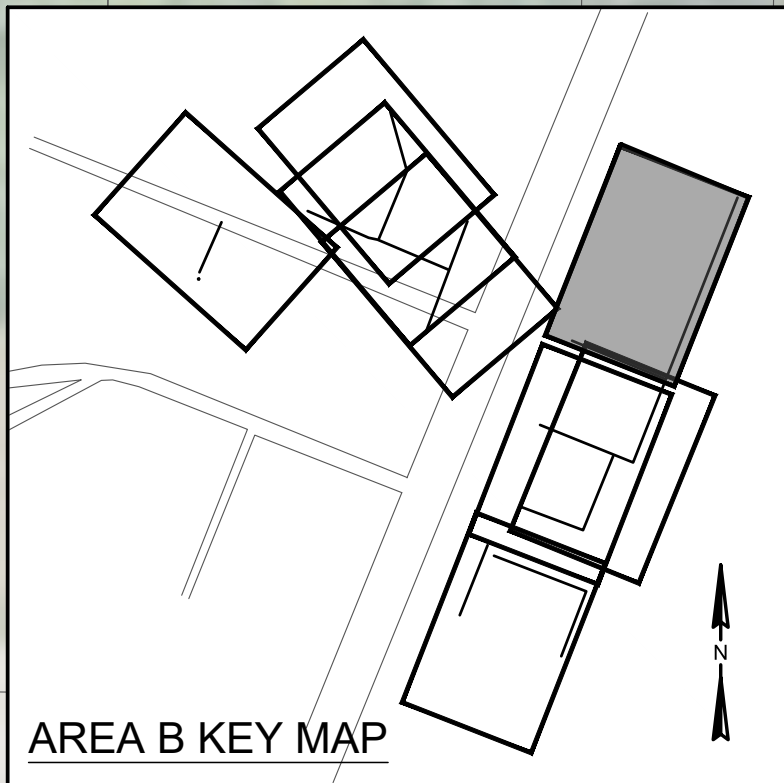
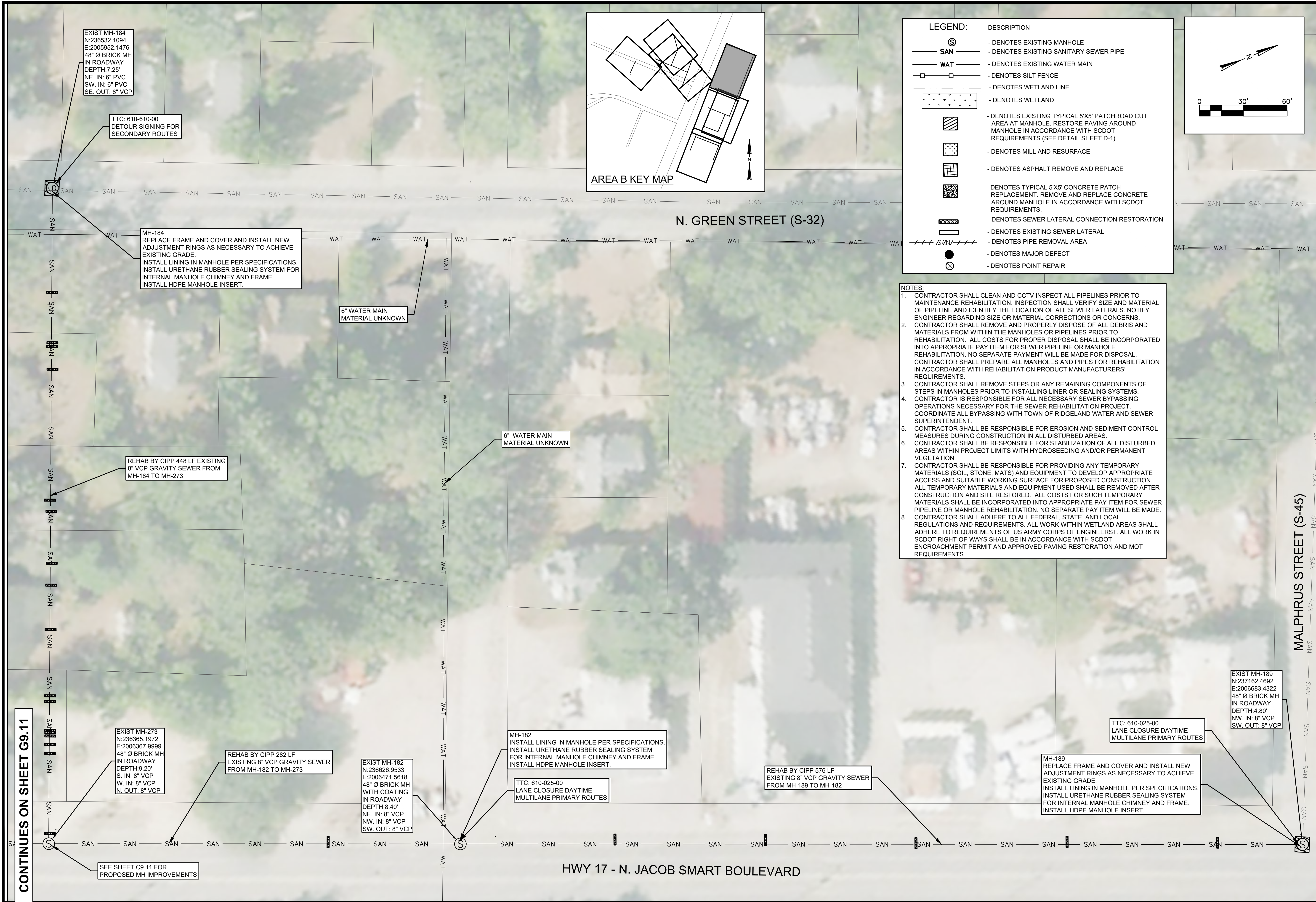
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LEGEND:

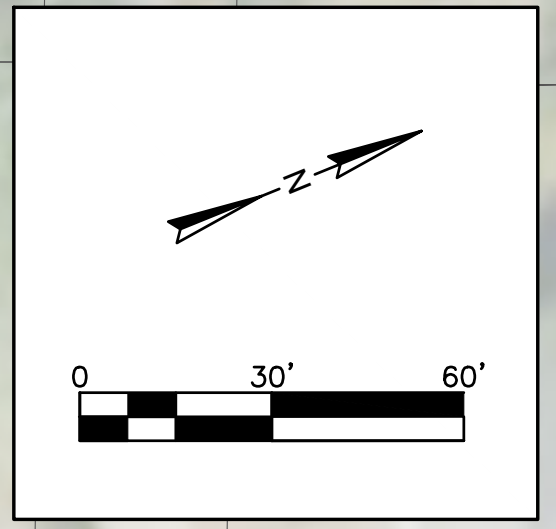
SYMBOL	DESCRIPTION
⊙	- DENOTES EXISTING MANHOLE
— SAN —	- DENOTES EXISTING SANITARY SEWER PIPE
— WAT —	- DENOTES EXISTING WATER MAIN
□	- DENOTES SILT FENCE
—	- DENOTES WETLAND LINE
▨	- DENOTES WETLAND
▨	- DENOTES EXISTING TYPICAL 5'X5' PATCHROAD CUT AREA AT MANHOLE. RESTORE PAVING AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS (SEE DETAIL SHEET D-1)
▨	- DENOTES MILL AND RESURFACE
▨	- DENOTES ASPHALT REMOVE AND REPLACE
▨	- DENOTES TYPICAL 5'X5' CONCRETE PATCH REPLACEMENT. REMOVE AND REPLACE CONCRETE AROUND MANHOLE IN ACCORDANCE WITH SCDOT REQUIREMENTS.
▨	- DENOTES SEWER LATERAL CONNECTION RESTORATION
▨	- DENOTES EXISTING SEWER LATERAL
---	- DENOTES PIPE REMOVAL AREA
●	- DENOTES MAJOR DEFECT
⊗	- DENOTES POINT REPAIR





LEGEND:

SYMBOL	DESCRIPTION
⊙	- DENOTES EXISTING MANHOLE
— SAN —	- DENOTES EXISTING SANITARY SEWER PIPE
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—	- DENOTES EXISTING SEWER LATERAL
--- SAN ---	- DENOTES PIPE REMOVAL AREA
●	- DENOTES MAJOR DEFECT
⊗	- DENOTES POINT REPAIR



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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA B PROPOSED IMPROVEMENTS
GREEN ST TO MALPHRUS ST (S-45)
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

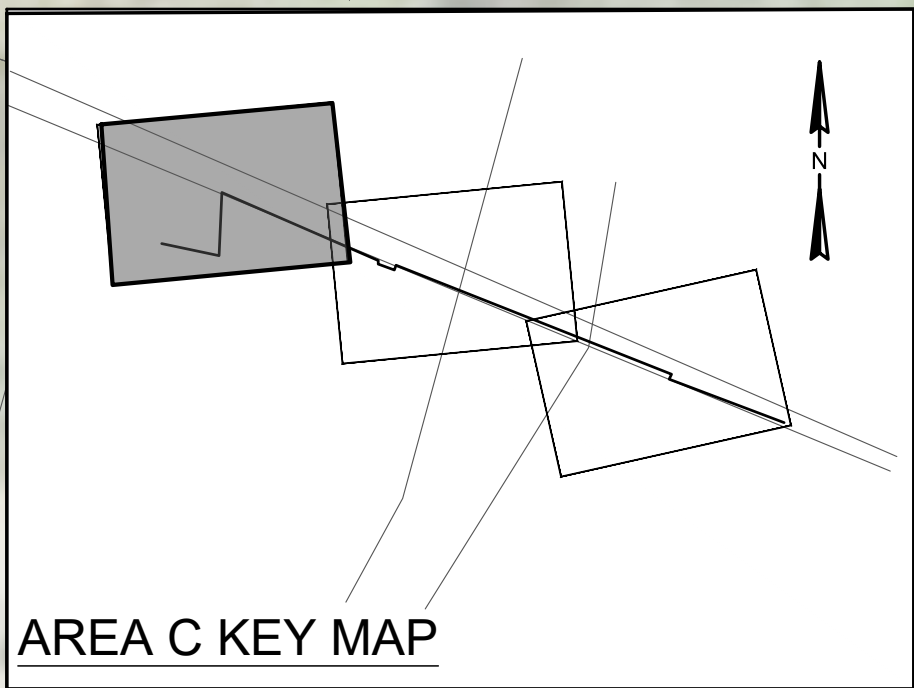
DESIGN	DRAWN	DATE	ISSUE	ISSUE
ABB	JMC	17-1007	APRIL 2023	BID

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

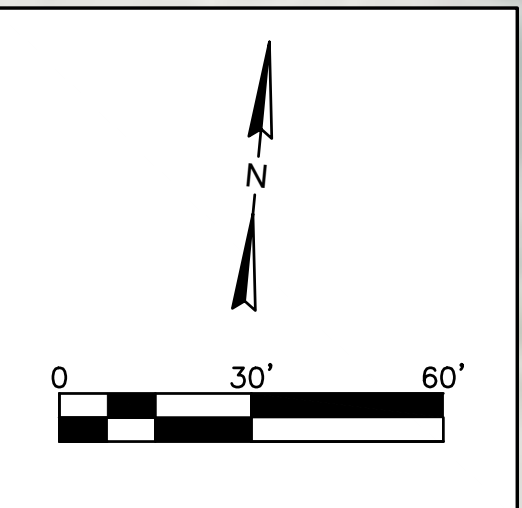
DRAWING NUMBER **C9.12**

LEGEND:

DESCRIPTION	DESCRIPTION
	- DENOTES EXISTING MANHOLE
	- DENOTES EXISTING SANITARY SEWER PIPE
	- DENOTES EXISTING WATER MAIN
	- DENOTES SILT FENCE
	- DENOTES WETLAND LINE
	- DENOTES WETLAND
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	- DENOTES EXISTING SEWER LATERAL
	- DENOTES PIPE REMOVAL AREA
	- DENOTES MAJOR DEFECT
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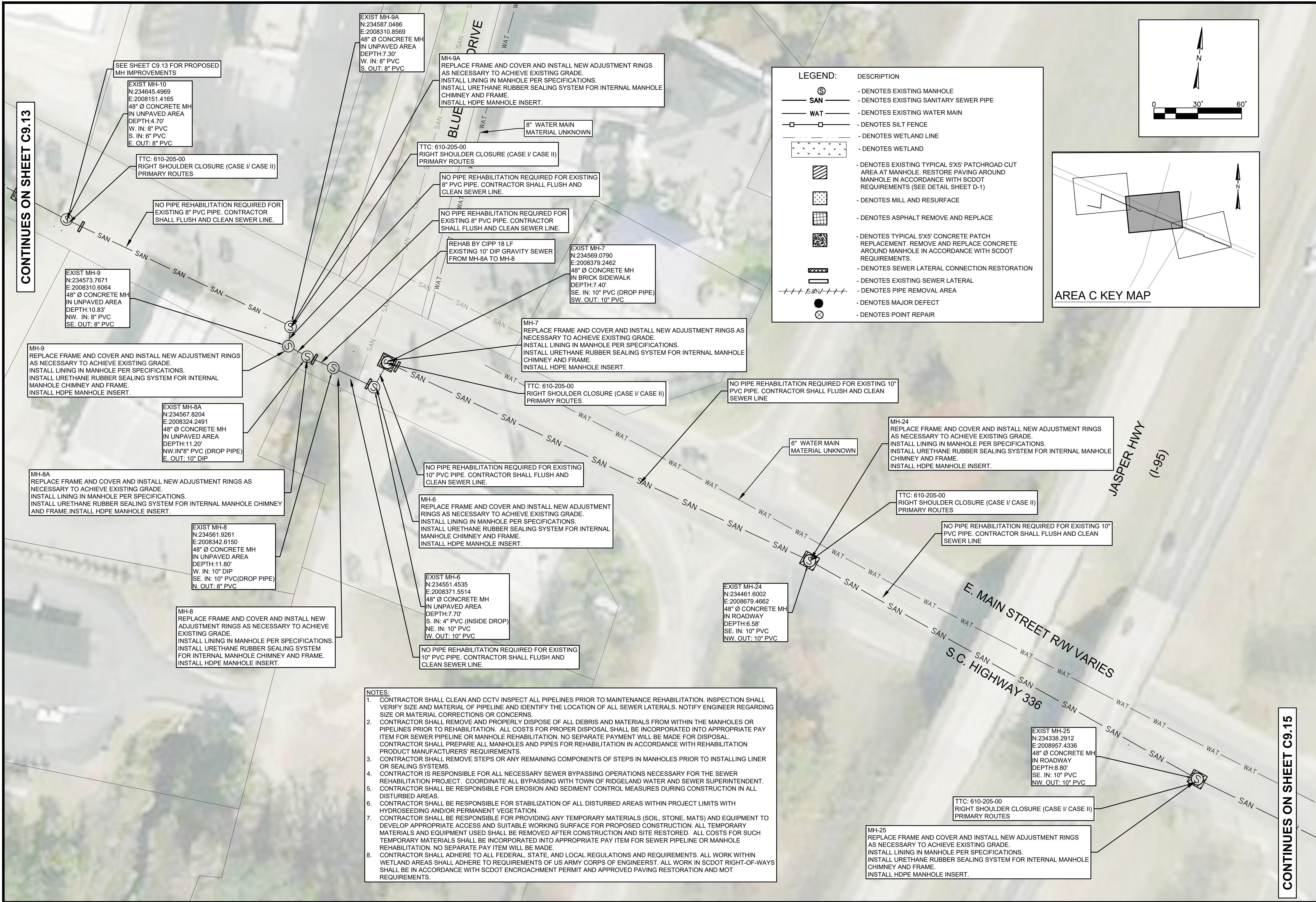
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**WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA C PROPOSED IMPROVEMENTS
E. ADAM ST TO MAIN ST
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA**

DESIGN ABB.	JMC	JOB #	ISSUE DATE	ISSUE	BID
ABB	JMC	17-1007	APRIL 2023		

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

DRAWING NUMBER
C9.13

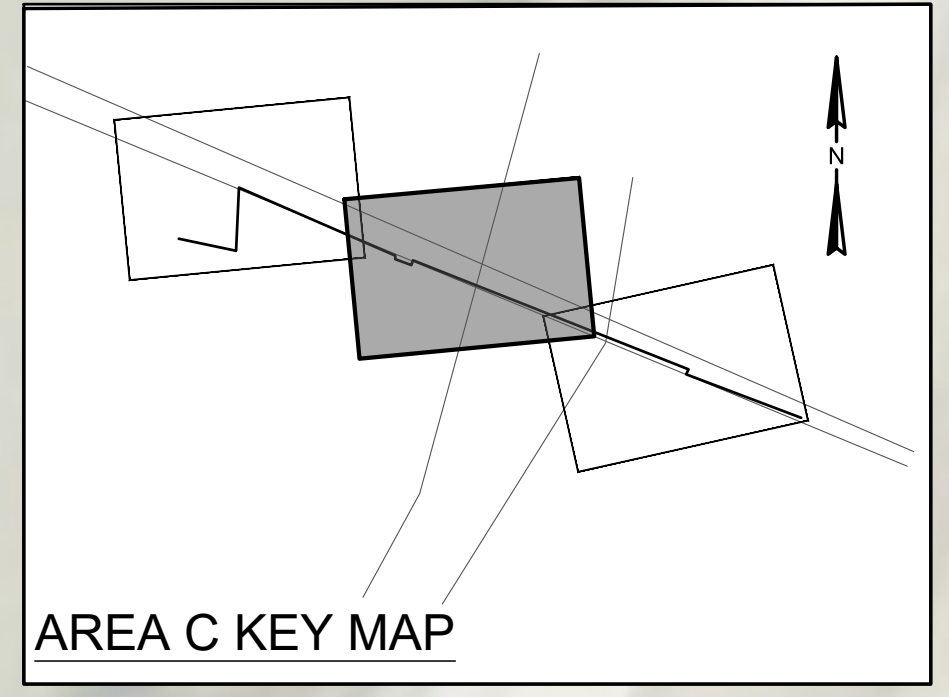
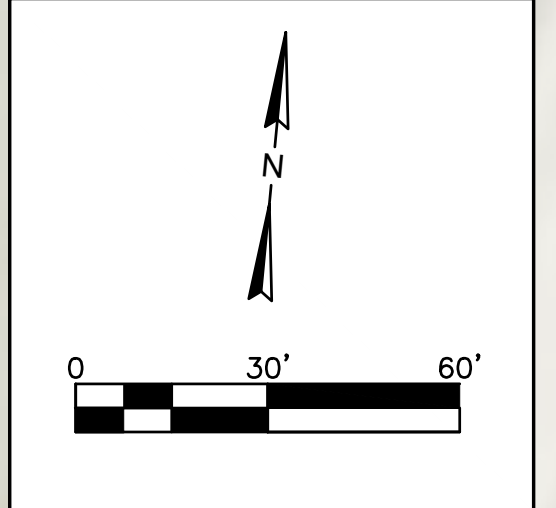


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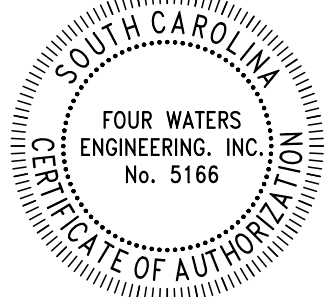
CONTINUES ON SHEET C9.15

LEGEND:

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	- DENOTES EXISTING SANITARY SEWER PIPE
	- DENOTES EXISTING WATER MAIN
	- DENOTES SILT FENCE
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REV. NO.	DATE	DESCRIPTION
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**AREA C PROPOSED IMPROVEMENTS
PART 2
MAIN STREET**

DESIGN ABB.	DATE	ISSUE
JMC	17-1007	APRIL 2023

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

DRAWING NUMBER
C9.14

CONTINUES ON SHEET C9.14

SEE SHEET C9.14 FOR PROPOSED MH IMPROVEMENTS

EXIST MH-25
N:234338.2912
E:2008957.4336
48" Ø CONCRETE MH
IN ROADWAY
DEPTH:8.80'
SE. IN: 10" PVC
NW. OUT: 10" PVC

NO PIPE REHABILITATION REQUIRED FOR EXISTING 10" PVC PIPE. CONTRACTOR SHALL FLUSH AND CLEAN SEWER LINE.

TTC: 610-005-10
FLAGGING OPERATIONS,
TWO LANE TWO-WAY ROADWAYS WITHOUT INTERSECTIONS

MH-26
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE.
INSTALL LINING IN MANHOLE PER SPECIFICATIONS.
INSTALL URETHANE RUBBER SEALING SYSTEM FOR INTERNAL MANHOLE CHIMNEY AND FRAME.
INSTALL HDPE MANHOLE INSERT.

NO PIPE REHABILITATION REQUIRED FOR EXISTING 10" PVC PIPE. CONTRACTOR SHALL FLUSH AND CLEAN SEWER LINE.

MH-27
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE.
INSTALL LINING IN MANHOLE PER SPECIFICATIONS.
INSTALL URETHANE RUBBER SEALING SYSTEM FOR INTERNAL MANHOLE CHIMNEY AND FRAME.
INSTALL HDPE MANHOLE INSERT.

TTC: 610-205-00
RIGHT SHOULDER CLOSURE (CASE I/ CASE II)
PRIMARY ROUTES

EXIST MH-27
N:234157.4069
E:2009419.1443
48" Ø CONCRETE MH
IN UNPAVED AREA
DEPTH:8.60'
S. IN: 10" PVC
N.W. OUT: 10" PVC

NO PIPE REHABILITATION REQUIRED FOR EXISTING 10" PVC PIPE. CONTRACTOR SHALL FLUSH AND CLEAN SEWER LINE.

EXIST MH-26
N:234227.9514
E:2009250.3559
48" Ø CONCRETE MH
IN ROADWAY
DEPTH:10.50'
SE. IN: 10" PVC
SW. IN: 6" CIP
(INSIDE DROP)
NW. OUT: 10" PVC

EXIST MH-296
N:234137.3082
E:2009424.2165
48" Ø CONCRETE MH
IN BRICK SIDEWALK
DEPTH:7.70'
SE. IN: 10" PVC
N. OUT: 10" PVC

TTC: 610-205-00
RIGHT SHOULDER CLOSURE (CASE I/ CASE II)
PRIMARY ROUTES

MH-296
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE.
INSTALL LINING IN MANHOLE PER SPECIFICATIONS.
INSTALL URETHANE RUBBER SEALING SYSTEM FOR INTERNAL MANHOLE CHIMNEY AND FRAME.
INSTALL HDPE MANHOLE INSERT.

NO PIPE REHABILITATION REQUIRED FOR EXISTING 10" PVC PIPE. CONTRACTOR SHALL FLUSH AND CLEAN SEWER LINE.

TTC: 610-205-00
RIGHT SHOULDER CLOSURE (CASE I/ CASE II)
PRIMARY ROUTES

MH-294
REPLACE FRAME AND COVER AND INSTALL NEW ADJUSTMENT RINGS AS NECESSARY TO ACHIEVE EXISTING GRADE.
INSTALL LINING IN MANHOLE PER SPECIFICATIONS.
INSTALL URETHANE RUBBER SEALING SYSTEM FOR INTERNAL MANHOLE CHIMNEY AND FRAME.
INSTALL HDPE MANHOLE INSERT.

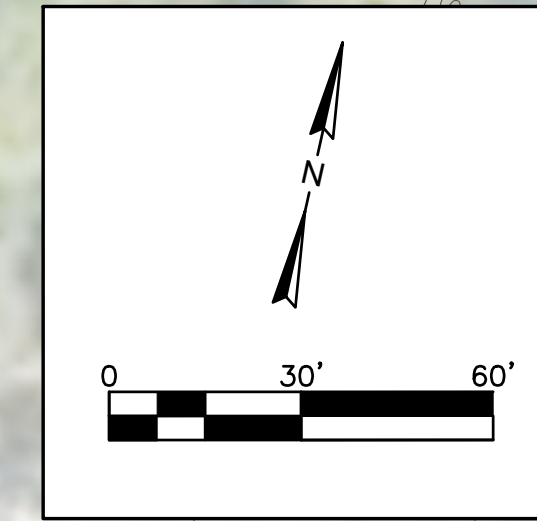
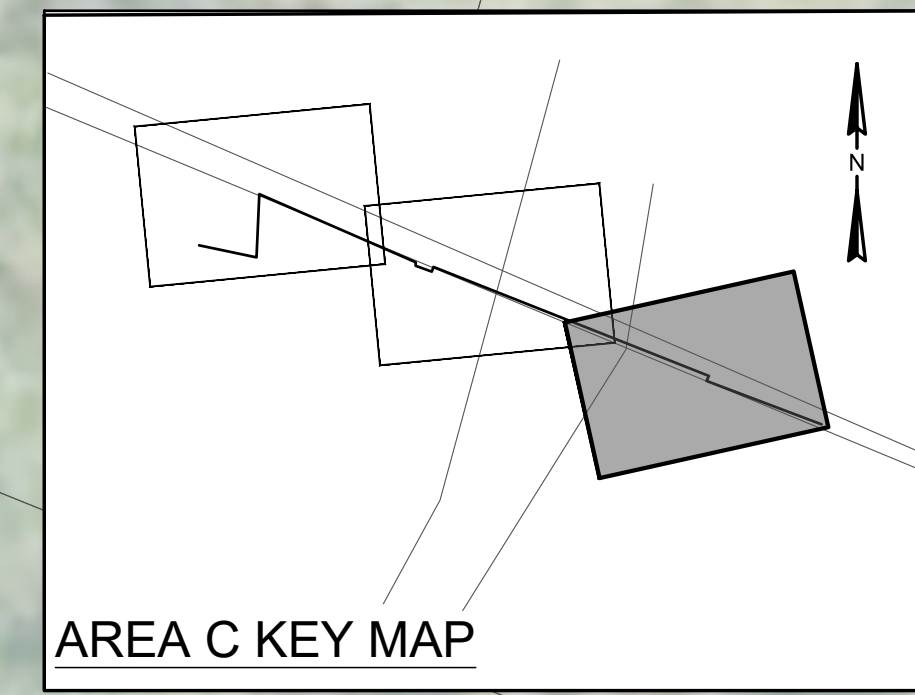
EXIST BURIED MH-294
N:234067.4025
E:2009613.2212
48" Ø CONCRETE MH
IN BRICK SIDEWALK
DEPTH:8.60'
SE. IN: 10" PVC
NE. IN: 8" PVC
NW. OUT: 10" PVC

NO PIPE REHABILITATION REQUIRED FOR EXISTING 10" PVC PIPE. CONTRACTOR SHALL FLUSH AND CLEAN SEWER LINE.

MH-295
REPLACE MANHOLE COVER
INSTALL LINING IN MANHOLE PER SPECIFICATIONS.
INSTALL URETHANE RUBBER SEALING SYSTEM FOR INTERNAL MANHOLE CHIMNEY AND FRAME.
INSTALL HDPE MANHOLE INSERT.

TTC: 610-205-00
RIGHT SHOULDER CLOSURE (CASE I/ CASE II)
PRIMARY ROUTES

EXIST MH-295
N:233974.7681
E:2009859.0189
48" Ø CONCRETE MH
IN ROADWAY
DEPTH:8.30'
SE. IN: 10" PVC
SW. IN: 8" PVC
NW. OUT: 10" PVC



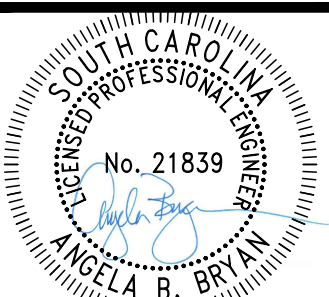
CAMORE DRIVE

GRAHAMVILLE ROAD (S-336)

HENRY LAWTON ROAD (SR-S-27-405)

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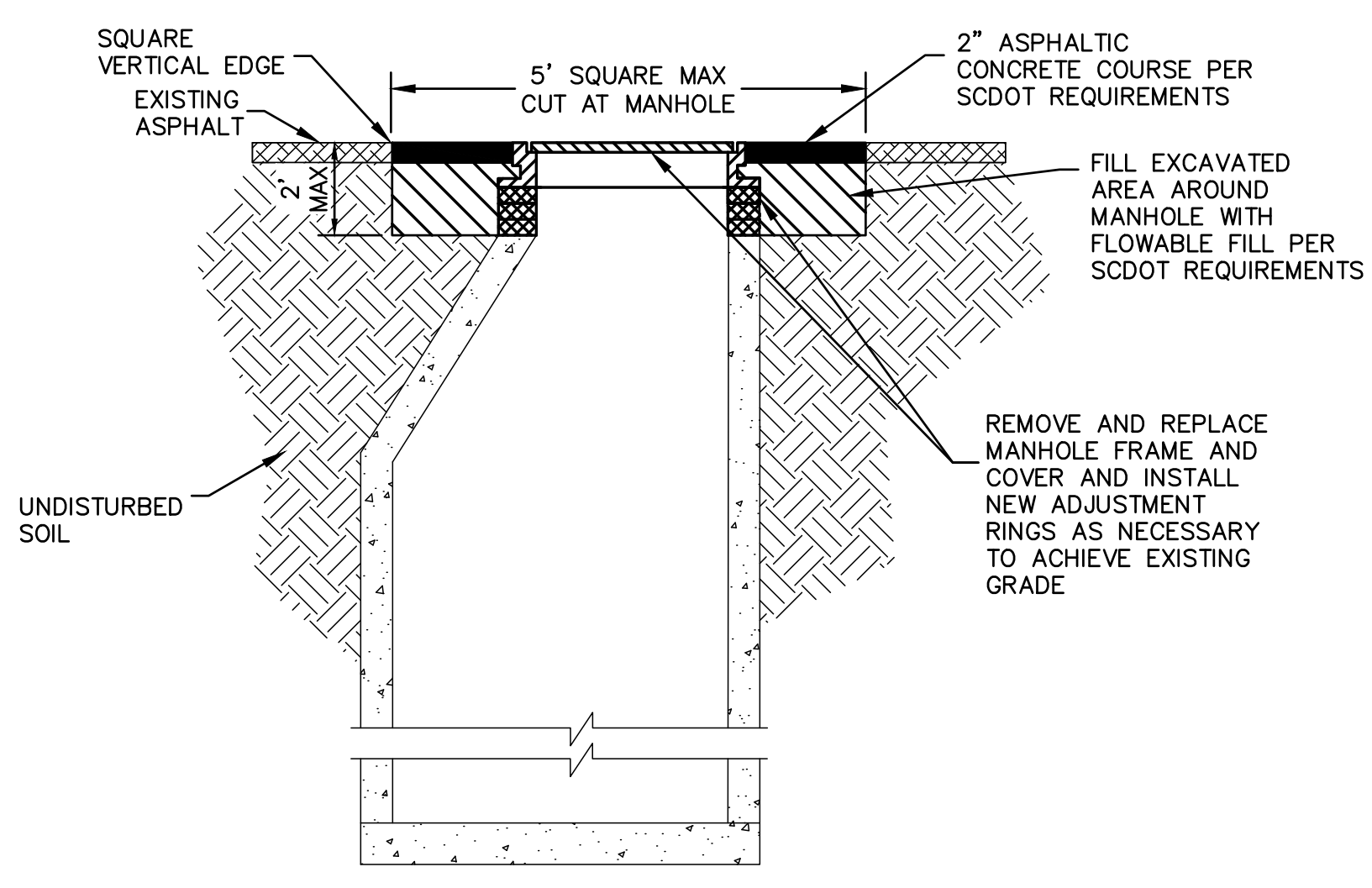
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
AREA C PROPOSED IMPROVEMENTS
GRAHAMVILLE ROAD
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

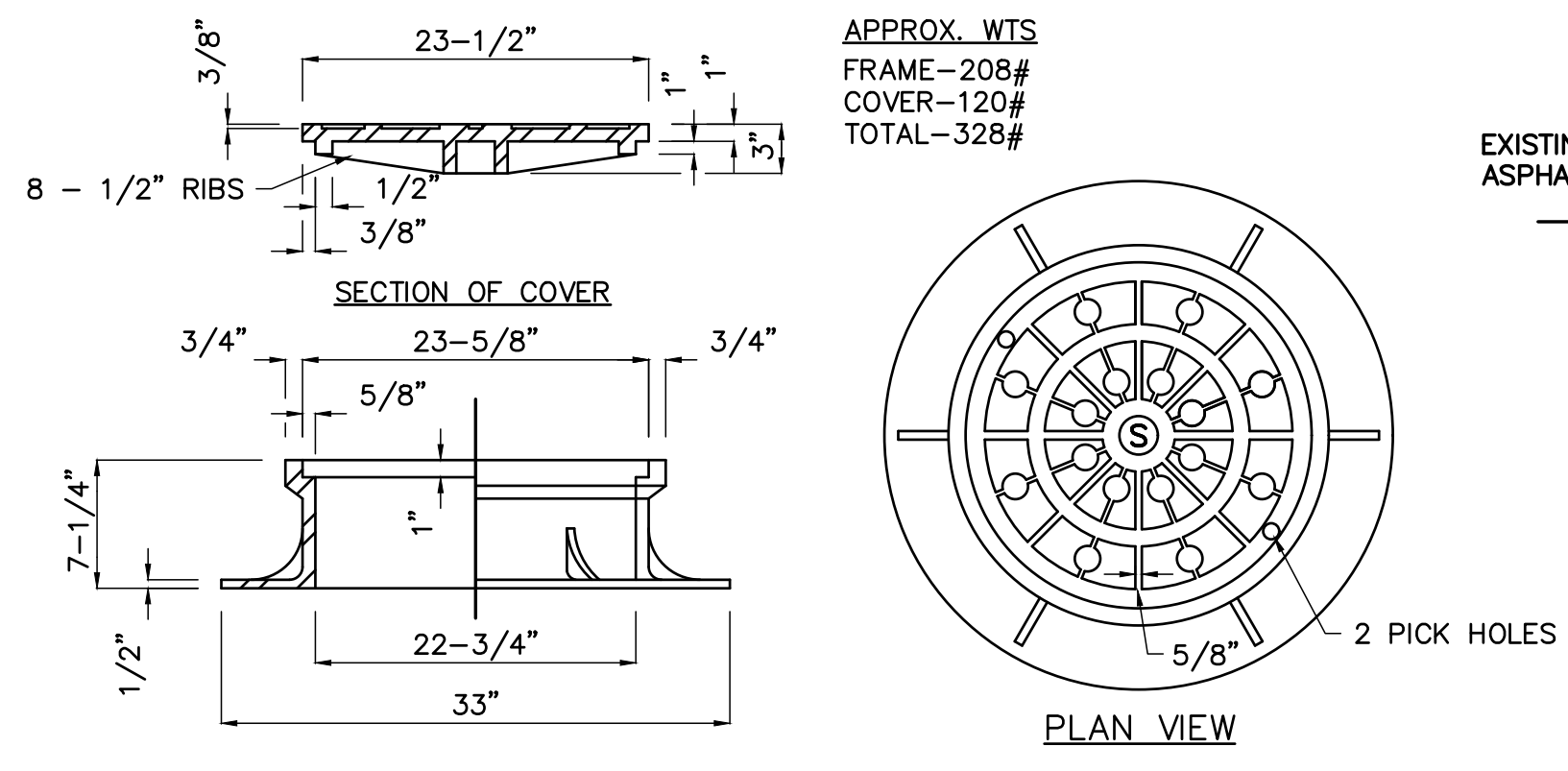
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		17-1007	APRIL 2023		

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

DRAWING NUMBER
C9.15



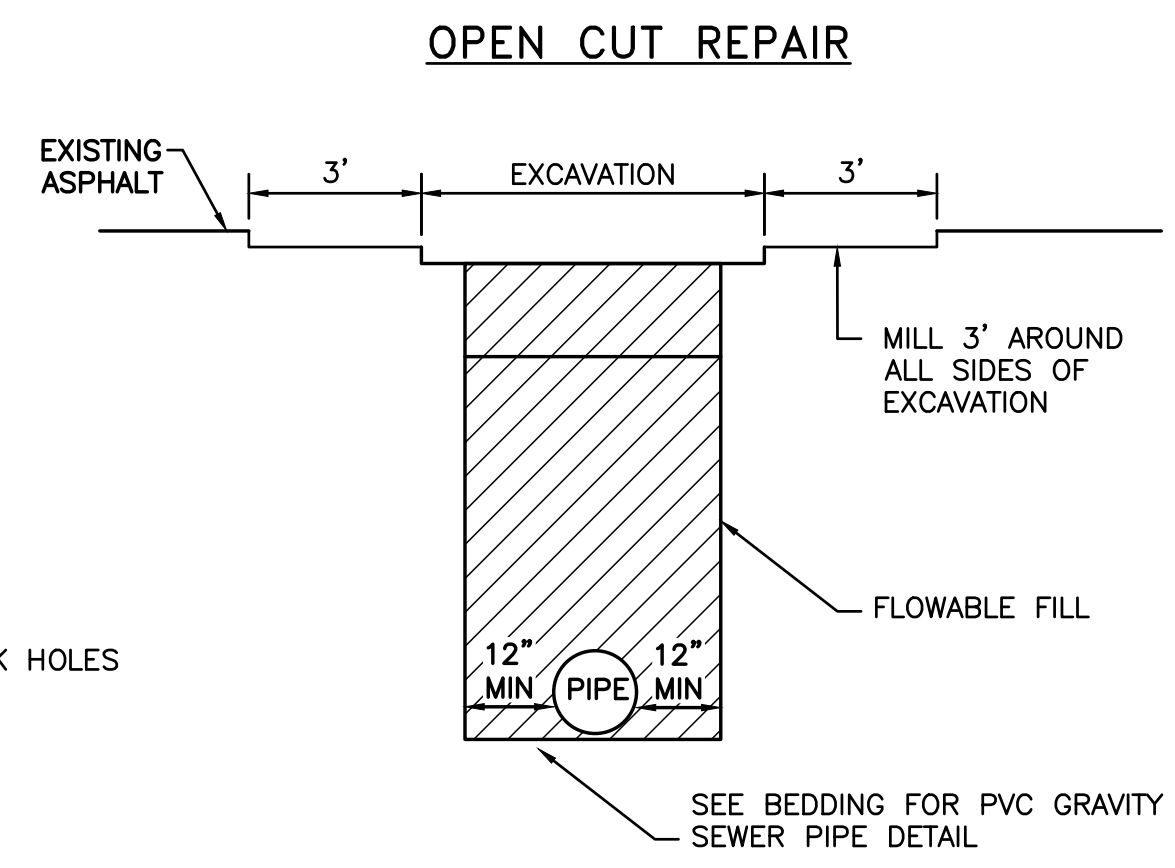
SECTION
OPEN CUT SCDOT PAVEMENT REPAIR FOR
LOW VOLUME ASPHALT AT MANHOLE
 NOT TO SCALE



HALF SECTION FRAME **HALF ELEVATION FRAME**
PLAN VIEW

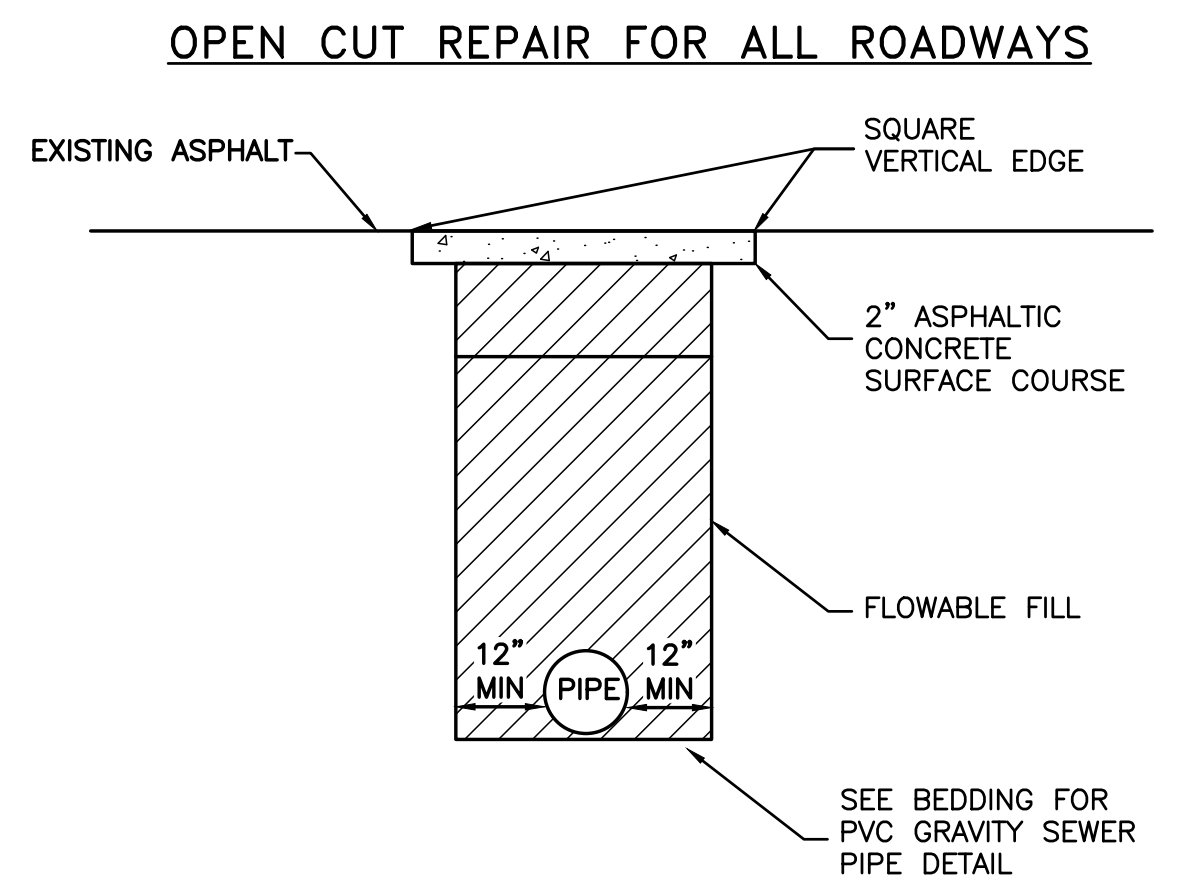
- NOTES:**
1. AS MANUFACTURED U.S. FOUNDRY MODEL 680. PROVIDE WITH 2 COATS OF BITUMASTIC PAINT.
 2. MACHINED BEARING SURFACES BETWEEN COVER AND FRAME.

STANDARD SEWER MANHOLE FRAME & COVER
 NOT TO SCALE



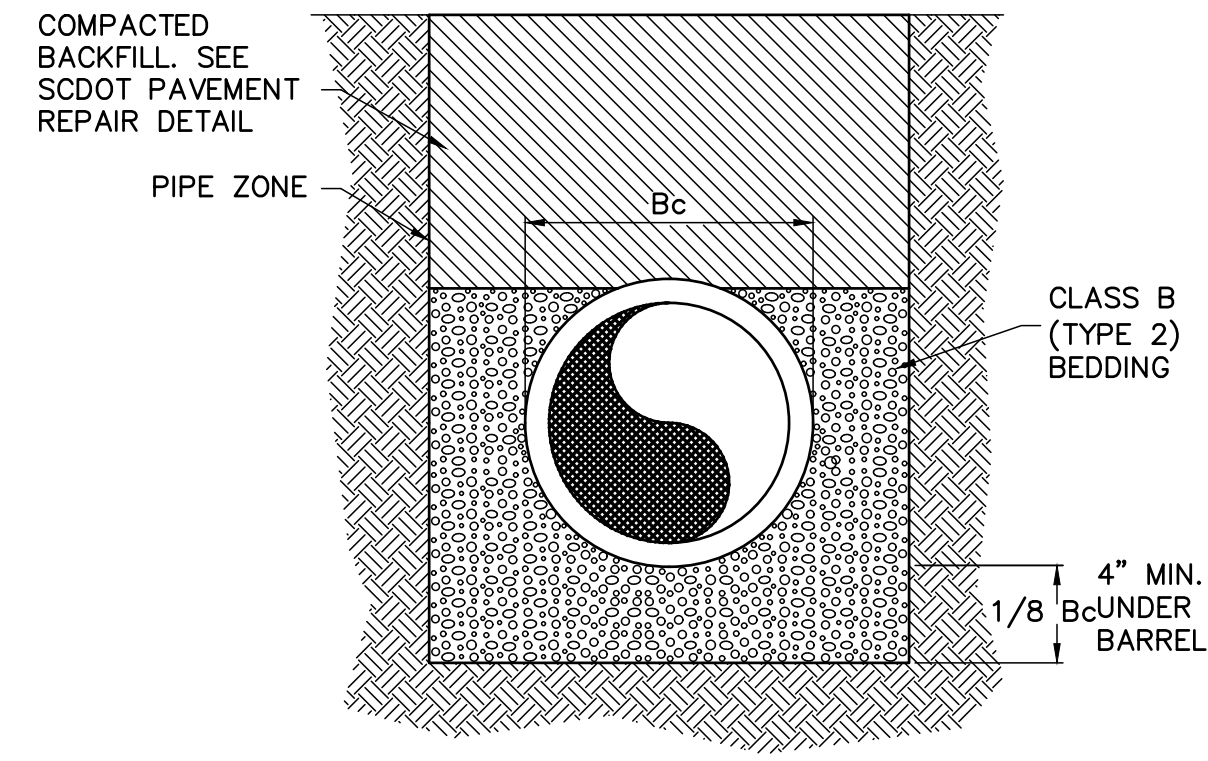
- NOTES:**
1. COMPACTION TESTS TO BE CONDUCTED BY A GEOTECHNICAL PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA AND SUBMITTED TO THE TOWN AND SCDOT FOR REVIEW AND APPROVAL PRIOR TO PAVING. TESTING RESULTS SHALL BE PROVIDED DIRECTLY TO SCDOT BY TESTING LAB.
 2. COMPACTION TESTS SHALL BE CONDUCTED ON EACH SIDE OF THE MANHOLE (2 TOTAL) ABOVE THE PIPE INSTALLATION AND AS REQUIRED BY SCDOT FOR THE STRUCTURE. TESTS TO BE CONDUCTED BY A GEOTECHNICAL PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA AND SUBMITTED TO THE TOWN AND SCDOT FOR REVIEW AND APPROVAL PRIOR TO PAVING.
 3. ALL EXCAVATION AREAS SHALL BE COVERED WITH STEEL PLATE TO SCDOT STANDARDS AND TRAFFIC RESTORED AT THE END OF THE WORK DAY.
 4. ALL DISTRIBUTED PAVEMENT STRIPING AND MARKINGS SHALL BE RESTORED TO SCDOT STANDARDS (THERMOPLASTIC IN PRIMARY ROADS AND PAINT IN SECONDARY ROADS).

SCDOT PAVEMENT REPAIR
 NOT TO SCALE

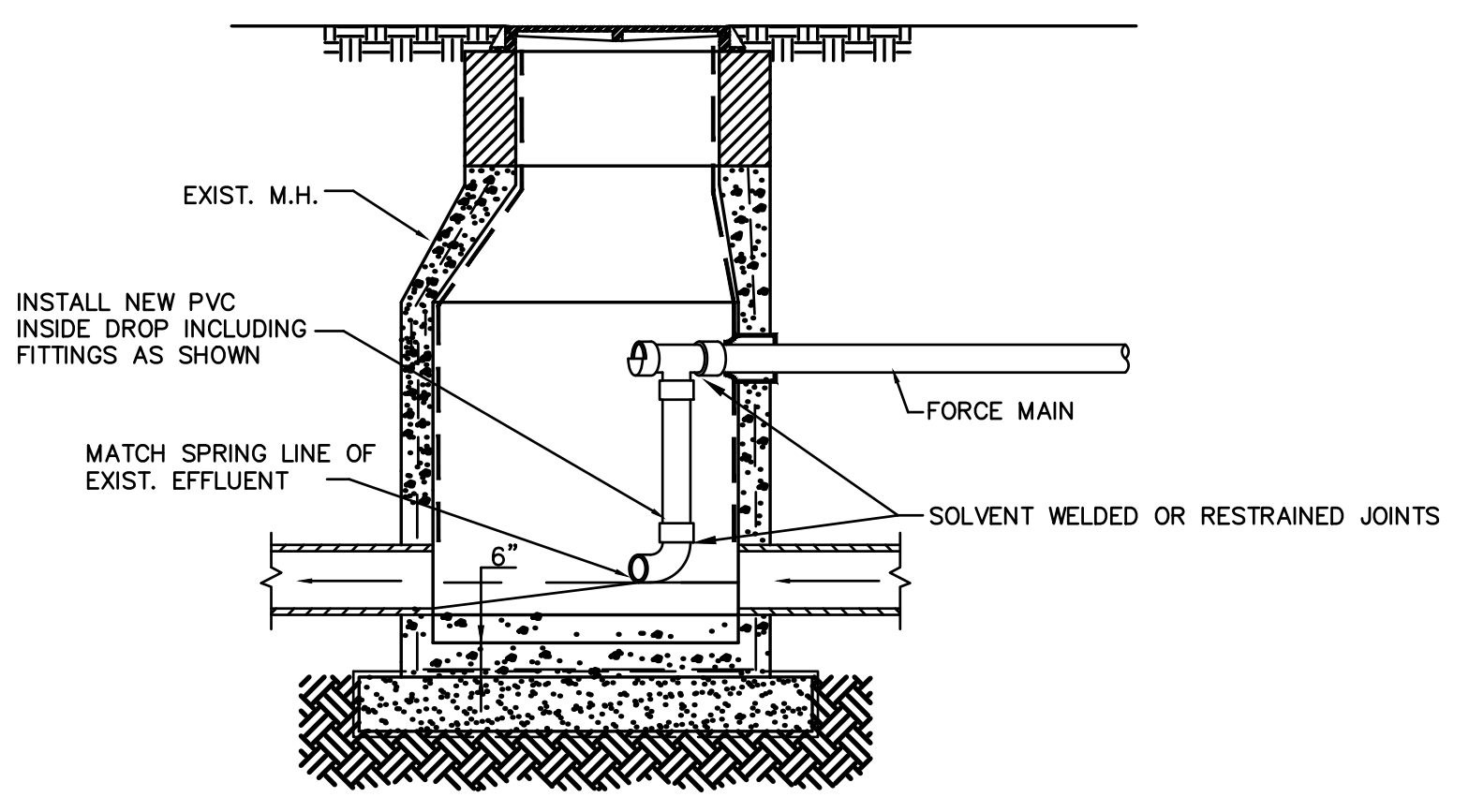
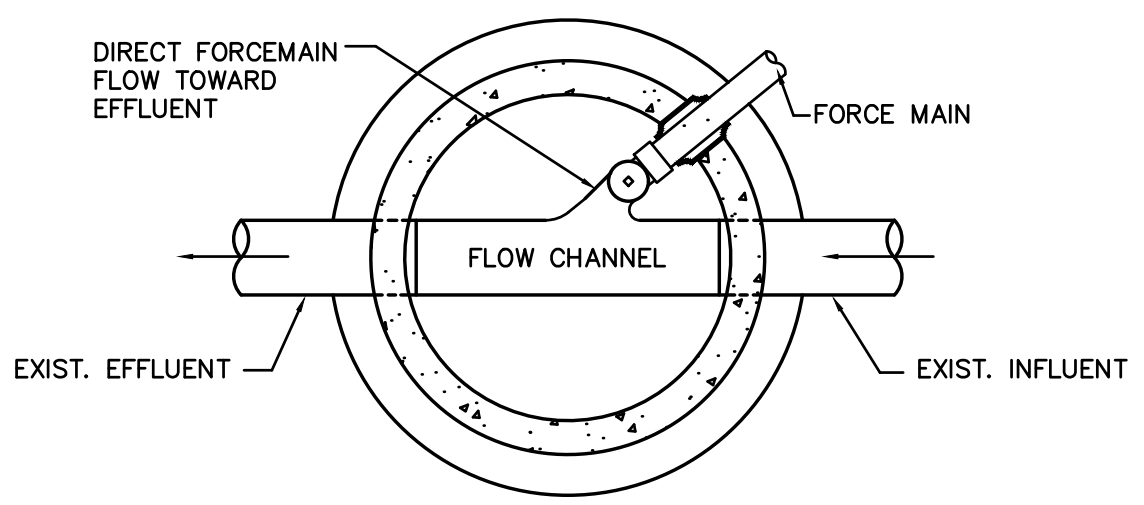


- NOTES:**
1. COMPACTION TESTS TO BE CONDUCTED BY A GEOTECHNICAL PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA AND SUBMITTED TO THE TOWN AND SCDOT FOR REVIEW AND APPROVAL PRIOR TO PAVING. TESTING RESULTS SHALL BE PROVIDED DIRECTLY TO SCDOT BY TESTING LAB.
 2. COMPACTION TESTS SHALL BE CONDUCTED ON EACH SIDE OF THE MANHOLE (2 TOTAL) ABOVE THE PIPE INSTALLATION AND AS REQUIRED BY SCDOT FOR THE STRUCTURE. TESTS TO BE CONDUCTED BY A GEOTECHNICAL PROFESSIONAL ENGINEER LICENSED IN THE STATE OF SOUTH CAROLINA AND SUBMITTED TO THE TOWN AND SCDOT FOR REVIEW AND APPROVAL PRIOR TO PAVING.
 3. ALL EXCAVATION AREAS SHALL BE COVERED WITH STEEL PLATE TO SCDOT STANDARDS AND TRAFFIC RESTORED AT THE END OF THE WORK DAY.
 4. ALL DISTRIBUTED PAVEMENT STRIPING AND MARKINGS SHALL BE RESTORED TO SCDOT STANDARDS (THERMOPLASTIC IN PRIMARY ROADS AND PAINT IN SECONDARY ROADS).

SCDOT PAVEMENT REPAIR
 NOT TO SCALE

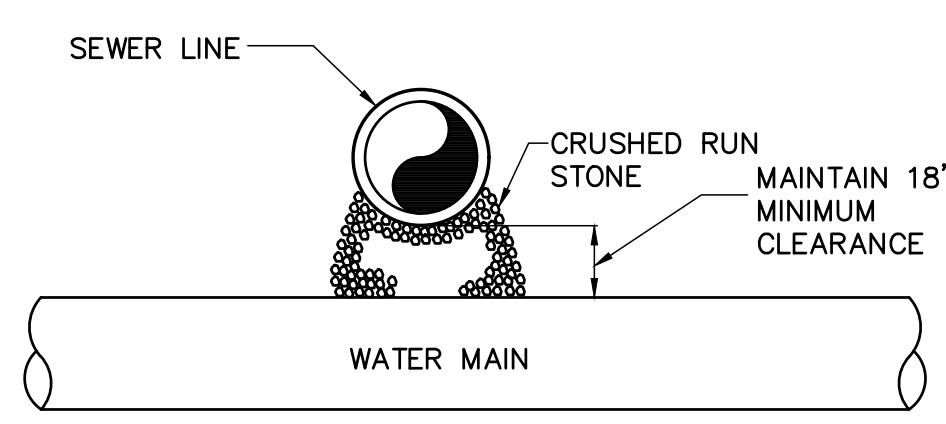


BEDDING FOR PVC GRAVITY SEWER PIPE
 NOT TO SCALE



TYPICAL FORCE MAIN CONNECTION TO MANHOLE

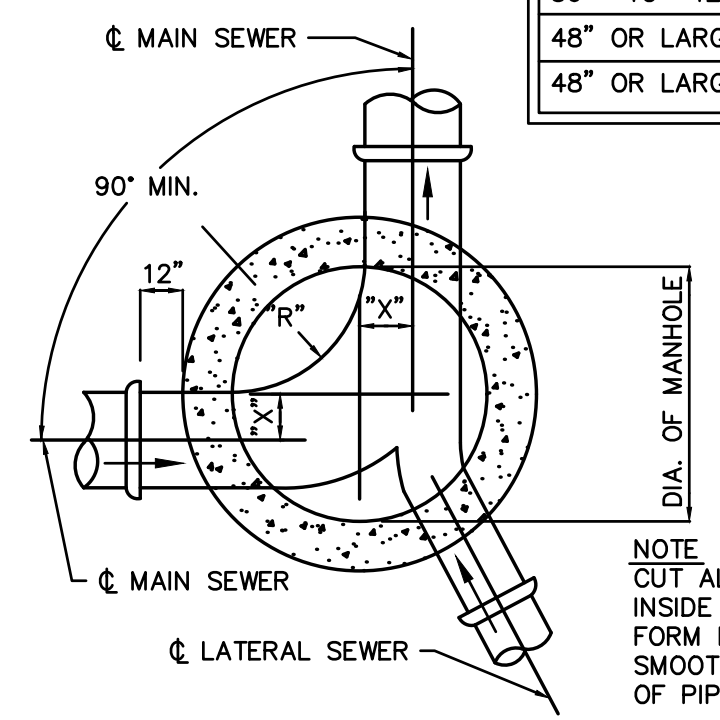
- NOTE:**
1. PVC PIPE AND FITTINGS SHALL BE (SCH 80) WITH SOLVENT WELDED JOINTS OR C900 PVC WITH INTEGRAL RESTRAINED JOINTS



- NOTE:**
1. FULL JOINT OF DUCTILE IRON PIPE FOR BOTH WATER AND SEWER TO BE CENTERED AT CROSSING.

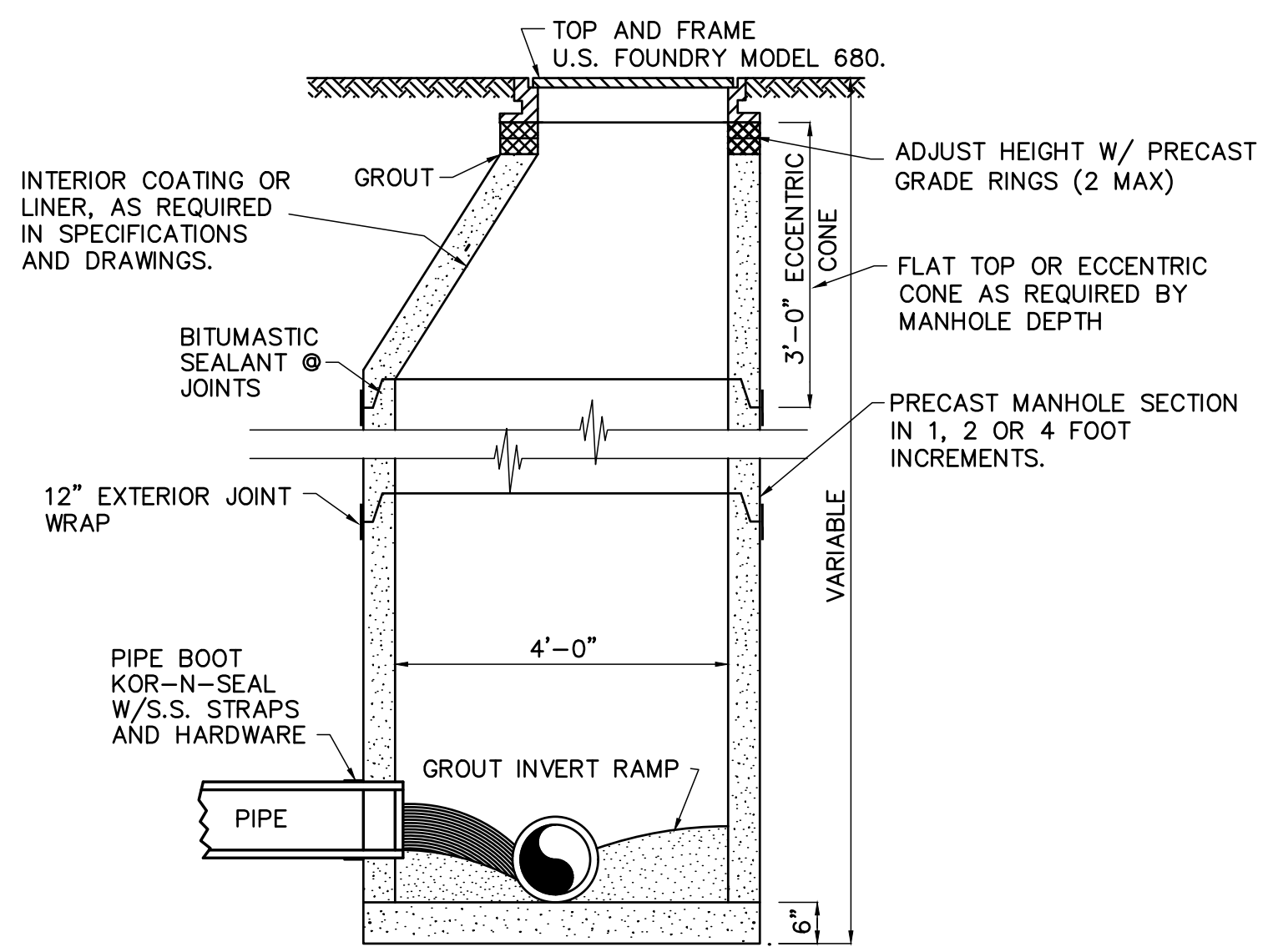
SEWER CROSSING ABOVE WATER LINE DETAIL
 NOT TO SCALE

STANDARD MANHOLES				
SCHEDULE OF GOVERNING DIMENSIONS				
PIPE SIZE	ANGLE Δ	MANHOLE DIAMETER	"R"	"X"
8" TO 15"	0° TO 90°	4'-0"	2'-0"	0"
18" TO 30"	0° TO 90°	5'-0"	2'-0"	6"
36" TO 42"	0° TO 60°	6'-0"	3'-0"	9"
36" TO 42"	60° TO 90°	6'-0"	3'-0"	1'-2"
48" OR LARGER	0° TO 45°	7'-0"	4'-0"	6"
48" OR LARGER	45° TO 90°	8'-0"	3'-0"	1'-3"



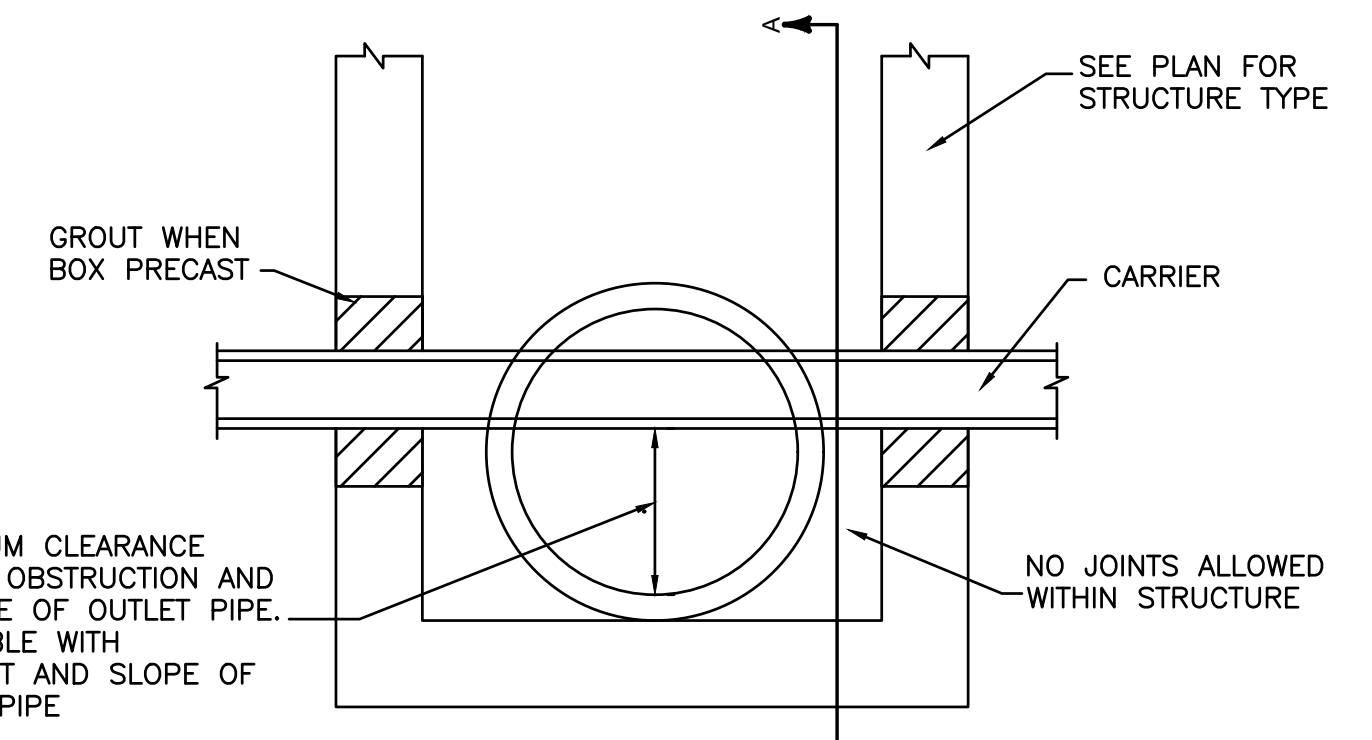
- NOTE:**
1. CUT ALL PIPE FLUSH WITH INSIDE WALL OF MANHOLE FORM INVERT UNIFORM AND SMOOTH. CUT OFF TOP HALF OF PIPE AT WALL.

TYPICAL PLAN STANDARD MANHOLE

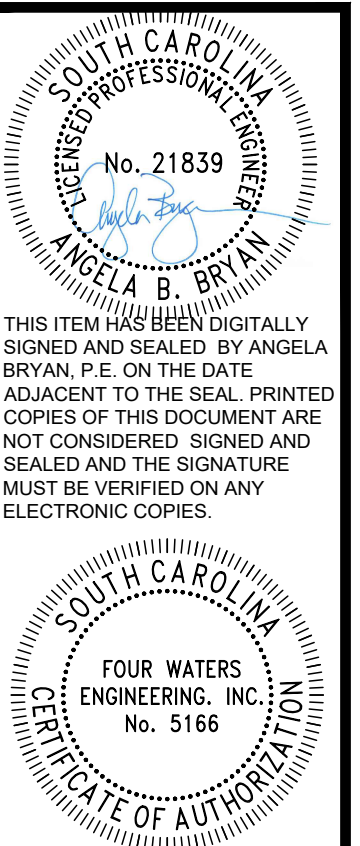


- NOTES:**
1. GROUT ALL JOINTS INSIDE AND OUTSIDE USING NON-SHRINK GROUT.
 2. INSTALL INTERIOR COATING OR LINER AS REQUIRED IN THE SPECIFICATIONS AND DRAWINGS.
 3. INSTALL SEAL WRAP EXTERIOR JOINT SEALER AS MANUFACTURED BY MAR-MAC.

SECTION
PRECAST SEWER MANHOLE
 NOT TO SCALE



SECTION LONGITUDINAL TO CARRIER PIPE
 UTILITY CONFLICT CONDITION 1
 (NON-PRESSURE OR NON-FLUID CARRIER)



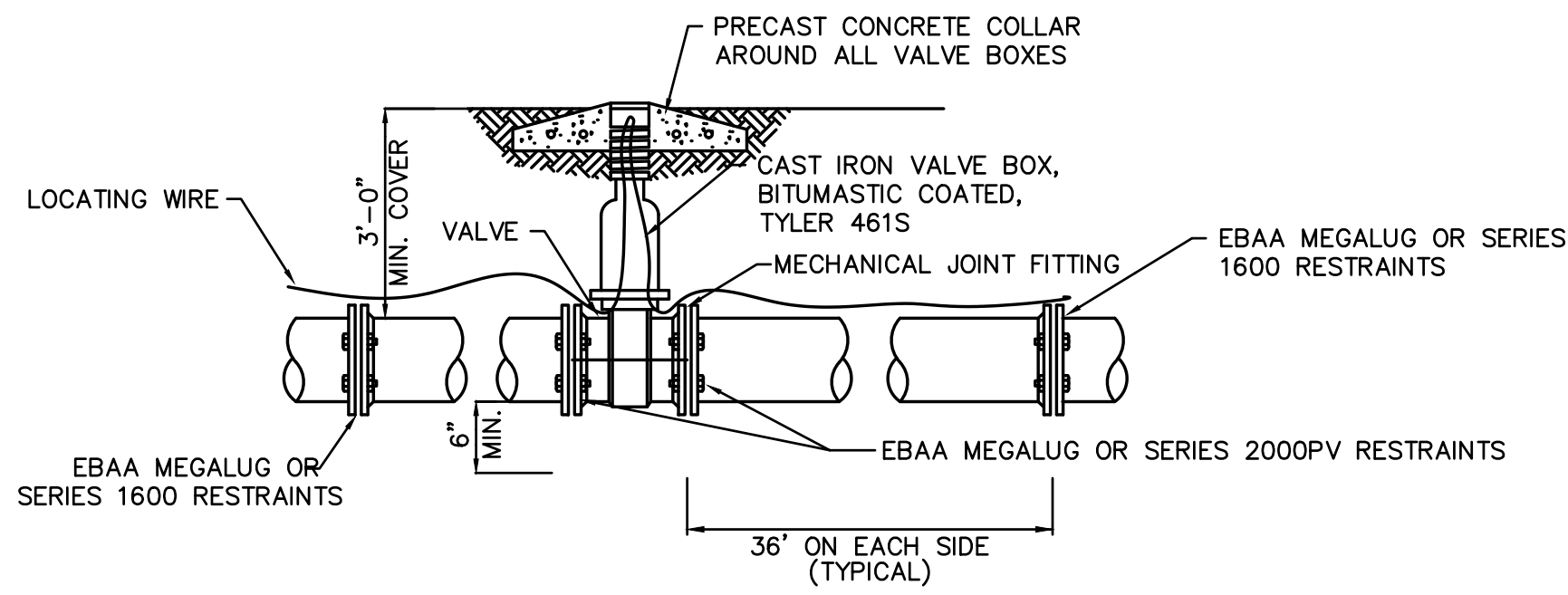
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
CONSTRUCTION DETAILS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

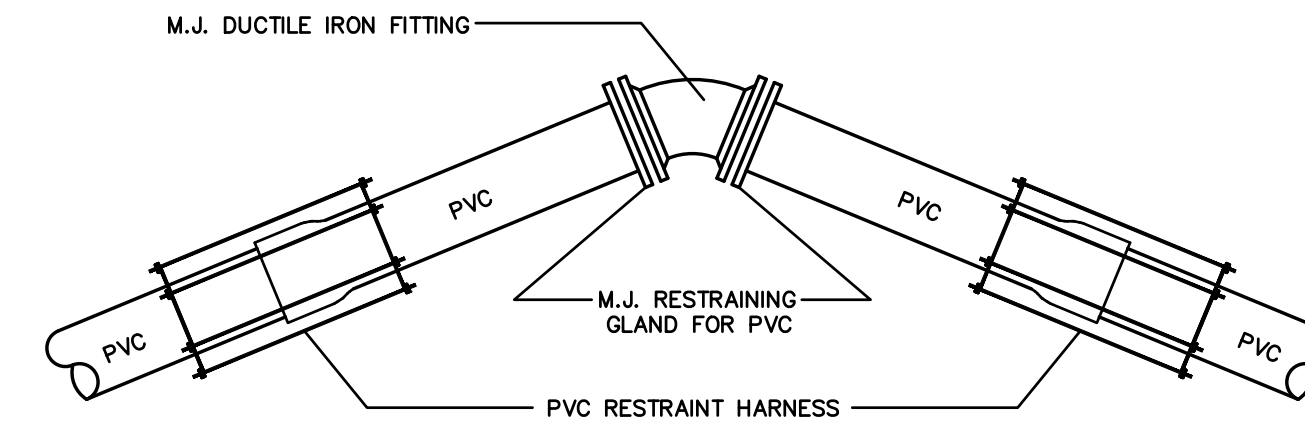
DESIGN	DRAWN	JMC	17-1007	APRIL	2023	ISSUE	BID
ABB	JMC	JMC	17-1007	APRIL	2023	ISSUE	BID

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GATE VALVE SETTING DETAIL
NOT TO SCALE



RESTRAINED JOINT FITTING DETAIL
NOT TO SCALE

PVC PIPE RESTRAINT JOINT SCHEDULE

PVC PIPE RESTRAINT NOTES:

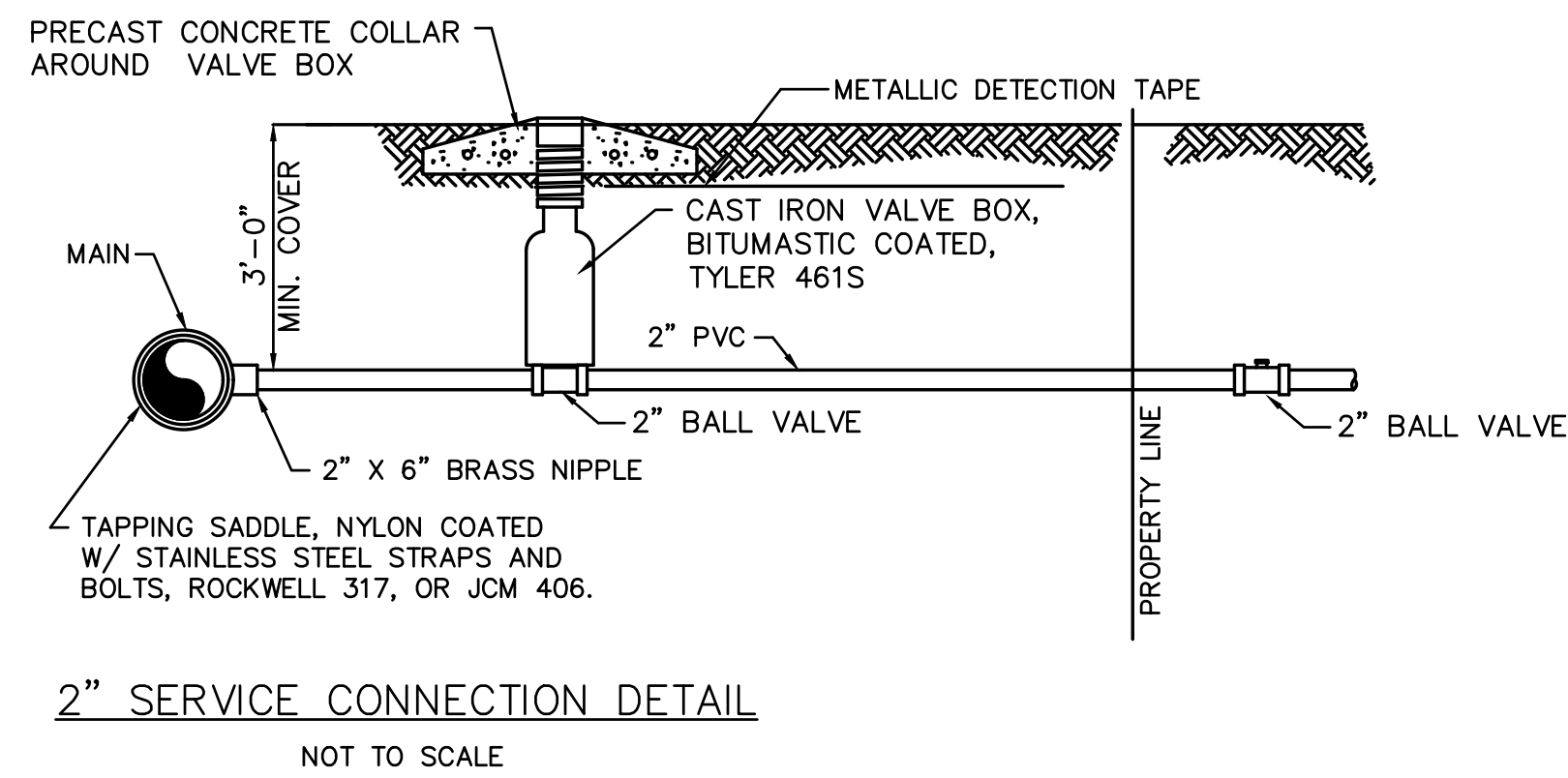
- THIS SCHEDULE SHALL BE UTILIZED ON ALL WATER, SEWER FORCE MAIN OR RECLAIMED WATER SYSTEMS. ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS INDICATED ON THE ABOVE SCHEDULE, AT A MINIMUM.
- ASSUMPTIONS: PVC PIPE, SAFETY FACTOR=1.5, TEST PRESSURE=150PSI, SOIL=GM OR SM, TRENCH TYPE 3, DEPTH OF COVER=30 INCHES FOR 20" AND SMALLER PIPE SIZE OR 36 INCHES FOR 24" AND LARGER PIPE SIZE.
- BENDS AND VALVES: SHALL BE RESTRAINED ON EACH SIDE OF FITTING.
- VERTICAL OFFSETS: ARE APPROX. 3 FEET COVER ON TOP AND APPROX. 8 FEET COVER ON BOTTOM. PER THE DETAILS, L_U IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL. L_L IS THE RESTRAINED LENGTH FOR THE LOWER (DEEPER) LEVEL. ASSUME 45 DEGREE BENDS.
- TEES: TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN). SEE SCHEDULE ABOVE FOR RESTRAINT LENGTH ON TEE "BRANCH" LINE.
- HDPE TO PVC TRANSITIONS: THE PVC PIPE SIDE SHALL BE RESTRAINED 35 FT (MIN).
- THE INSTALLATION OF BELL HARNESS RESTRAINTS AT PVC JOINTS (DR-18 & 25 PIPE) SHALL BE COMPLETED PER THE MANUFACTURERS RECOMMENDATION, WHICH INCLUDES NOT OVER TIGHTENING THE PARALLEL RODS/NUTS. THESE NUTS SHOULD ONLY BE SNUG TIGHT. THE HOME MARKS ON THE PIPE SHOULD ALWAYS BE VISIBLE AFTER THE RESTRAINT IS INSTALLED. OVERHOMING THE JOINT MAY CAUSE A FAILURE AT THE BELL RESULTING IN A SERVICE OUTAGE.

LENGTH (L) TO BE RESTRAINED

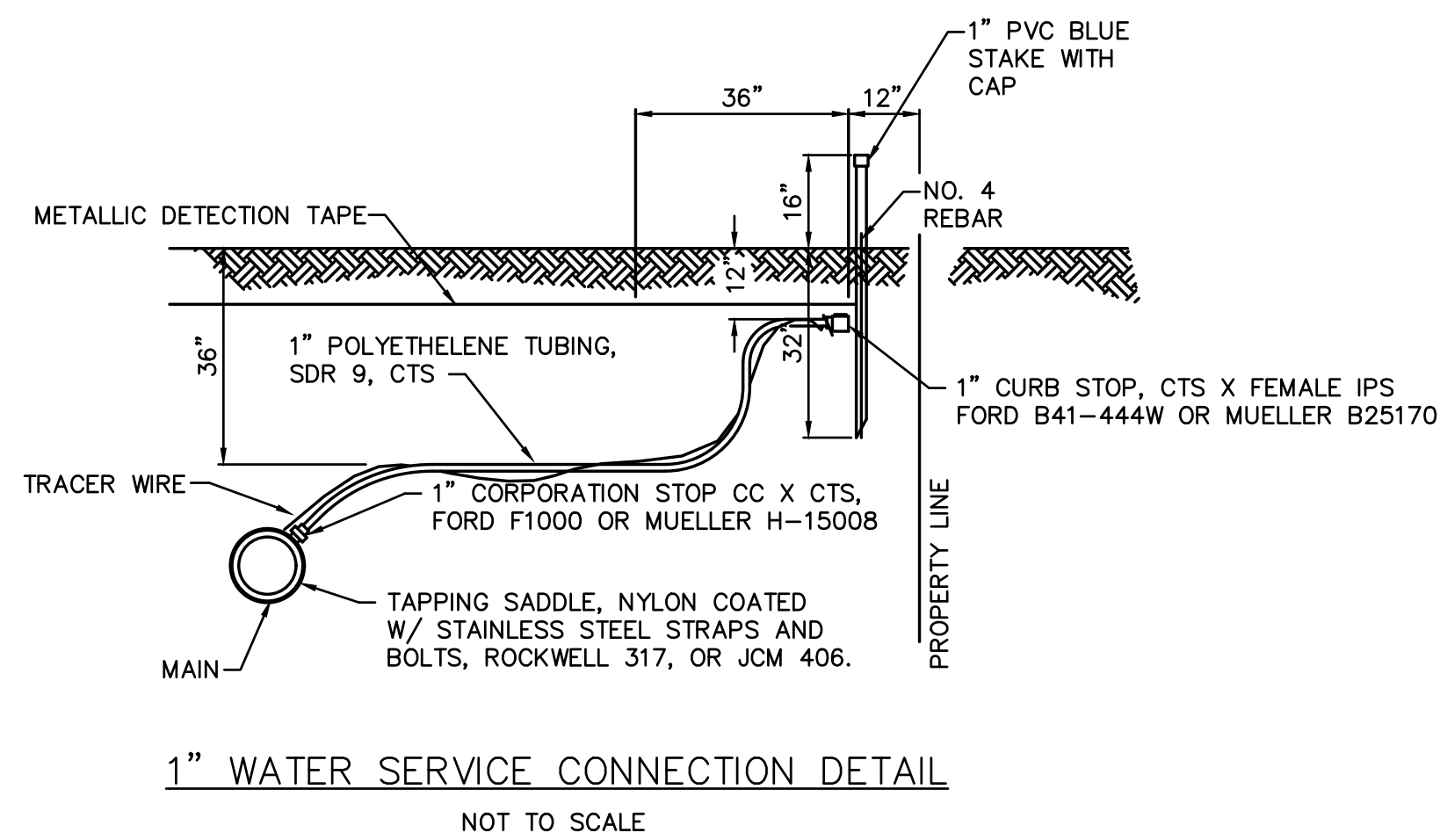
(SEE PLATE Nos. 38C & 38D FOR ADDITIONAL DETAILS)

NOMINAL PIPE SIZE (IN.)	HORIZONTAL BENDS				VERTICAL OFFSETS 45° BENDS (SEE NOTE 4)		VALVES OR DEAD ENDS	REDUCERS		TEES SEE NOTE 5		
	90° BENDS L (FT.)	45° BENDS L (FT.)	22.5° BENDS L (FT.)	11.25° BENDS L (FT.)	UPPER L (FT.)	LOWER L (FT.)		SIZE (IN.)	L (FT.)	RUN SIZE (IN.)	BRANCH SIZE (IN.)	L (FT.)
4	21	9	5	3	17	3	47	6x4	34	4	4	F.O.
6	30	13	6	3	23	4	66	8x6	36	4	6	10
8	38	16	8	4	30	6	86	8x4	62	4 < LESS	8	F.O.
10	45	19	9	5	36	7	103	10x8	35	8	8	29
12	53	22	11	6	43	8	121	10x6	63	6 < LESS	8	F.O.
14	61	26	13	6	50	9	140	12x10	36	10	10	45
16	66	28	14	7	55	10	154	12x8	64	8 < LESS	12	13
18	73	30	15	8	60	11	170	16x12	66	10	10	32
20	79	33	16	8	66	12	186	16x10	92	8 < LESS	12	F.O.
24	79	33	16	8	77	15	185	20x18	35	16	16	94
30	93	39	19	10	97	17	222	20x16	66	12	12	39
36	106	39	21	11	107	20	257	20x12	117	10 < LESS	10	5
42	117	49	24	12	120	24	289	24x20	56	20	20	125
48	144	53	26	13	133	26	321	24x18	80	16	16	76
								24x16	101	10 < LESS	12	14
								30x24	78	24	24	F.O.
								30x20	121	20	20	84
								36x30	78	16	16	36
								36x24	141	12 < LESS	12	F.O.
								42x36	75	30	30	159
								42x30	140	24	24	104
								48x42	75	16 < LESS	16	60
								48x36	139	16 < LESS	16	5
										36	36	192
										30	30	142
										24	24	83
										20	20	33
										16 < LESS	16	F.O.
										42	42	223
										36	30	178
										30	24	124
										24	24	59
										20	20	5
										16 < LESS	16	F.O.
										48	48	253
										42	42	209
										36	36	162
										30	30	104
										24	24	34
										20 < LESS	20	F.O.

F.O. = FITTING ONLY



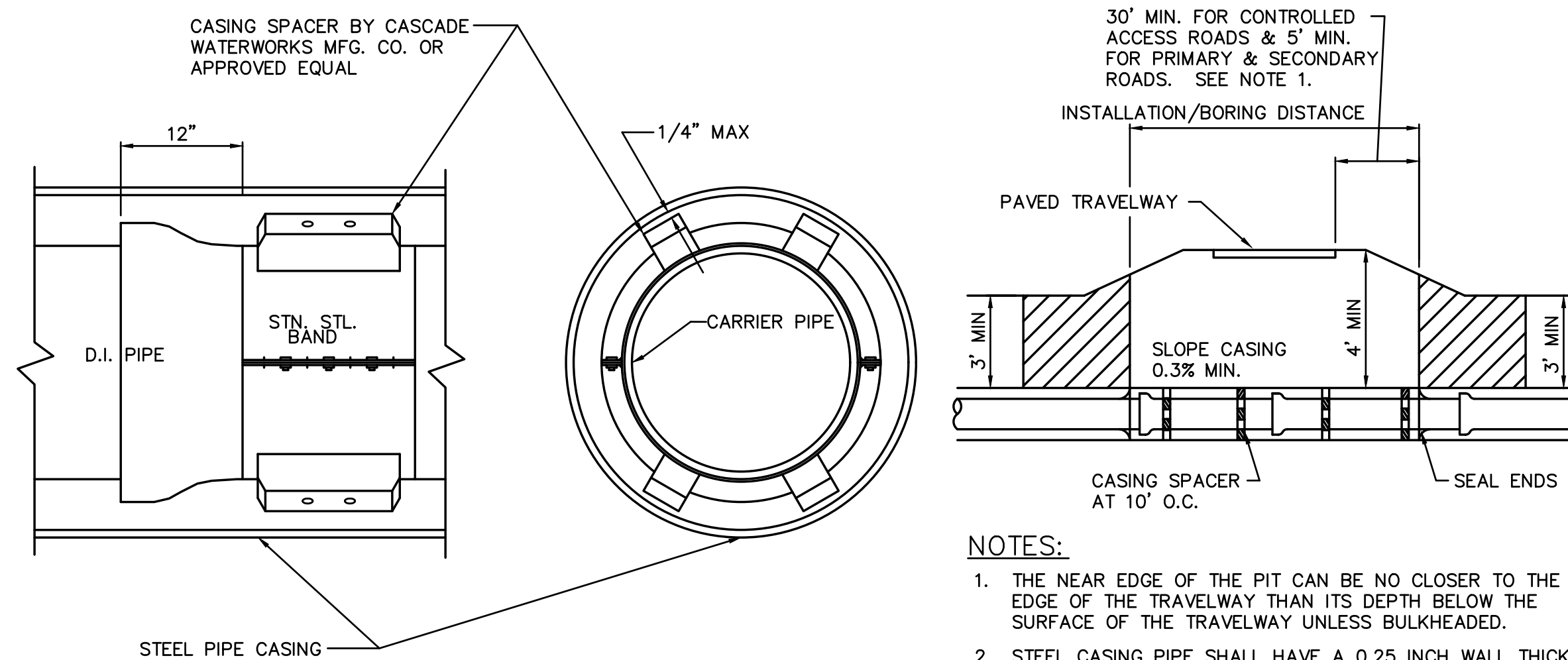
2" SERVICE CONNECTION DETAIL
NOT TO SCALE



1" WATER SERVICE CONNECTION DETAIL
NOT TO SCALE

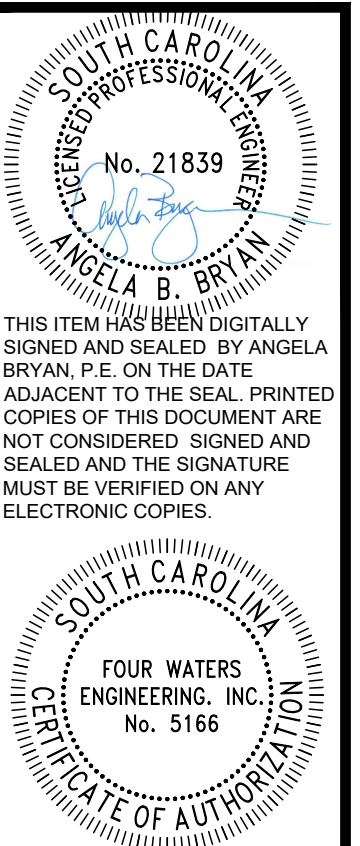
CARRIER PIPE INSTALLATION IN CASING

NOT TO SCALE



NOTES:

- THE NEAR EDGE OF THE PIT CAN BE NO CLOSER TO THE EDGE OF THE TRAVELWAY THAN ITS DEPTH BELOW THE SURFACE OF THE TRAVELWAY UNLESS BULKHEADED.
- STEEL CASING PIPE SHALL HAVE A 0.25 INCH WALL THICKNESS.

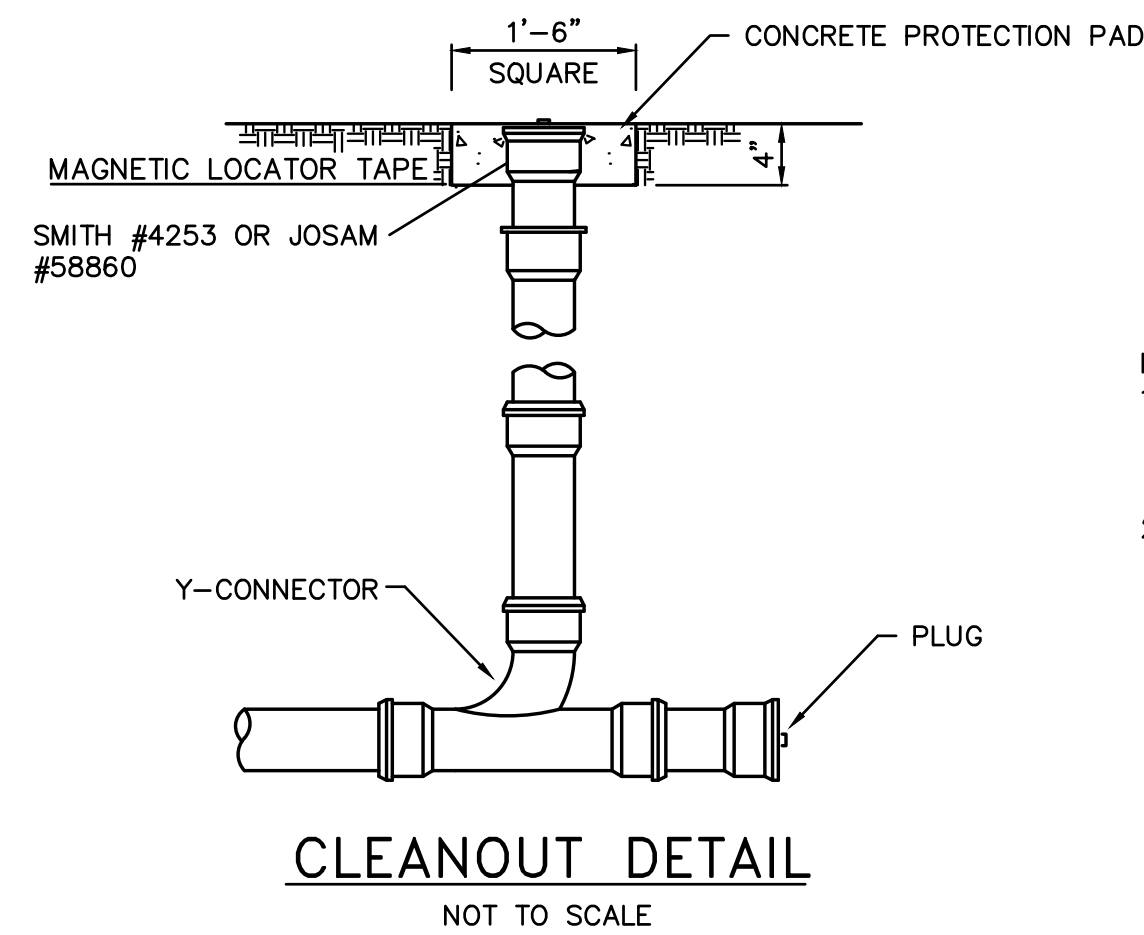


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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
CONSTRUCTION DETAILS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

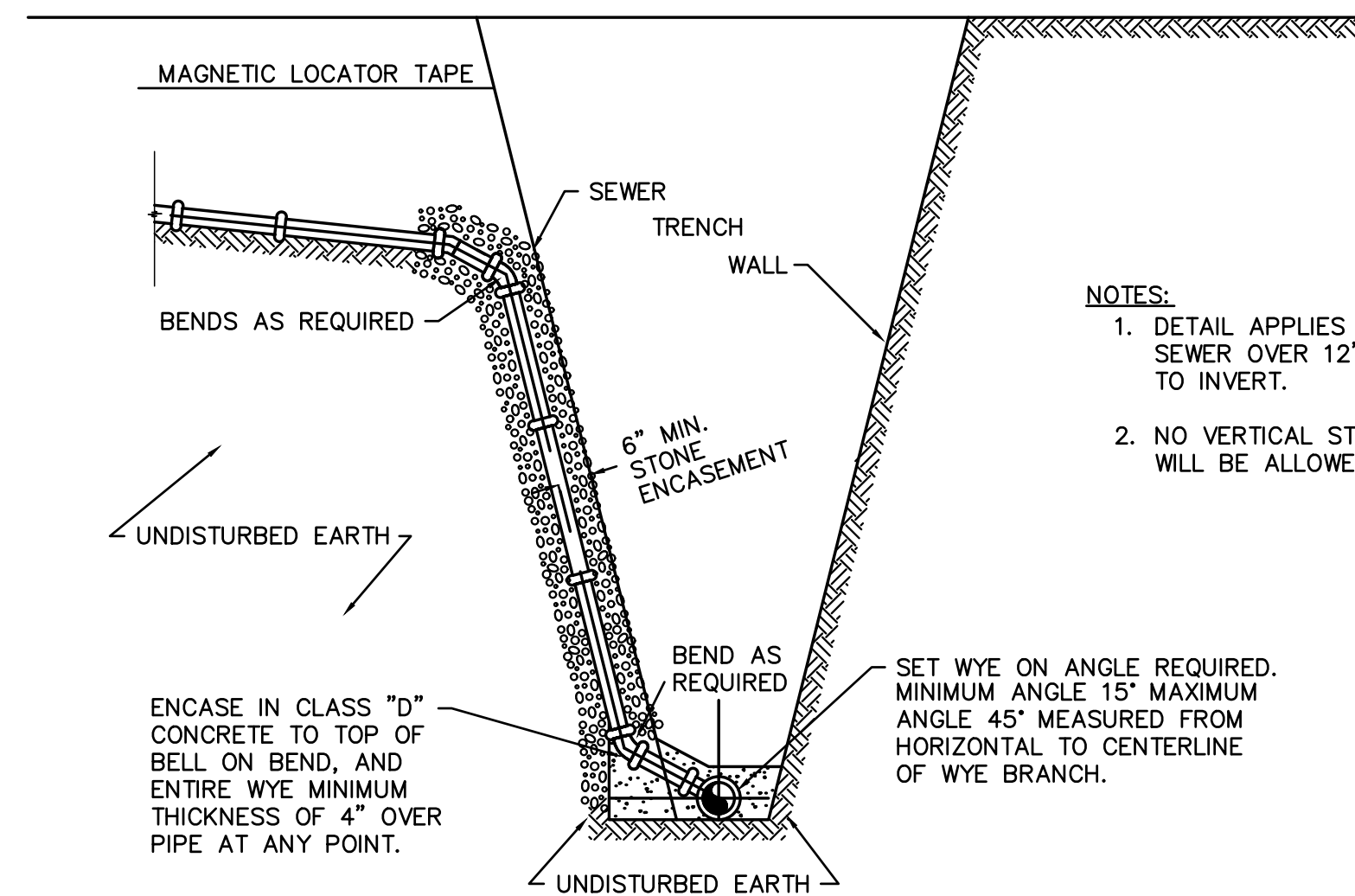
DESIGN ABB JMC
JOB # 17-1007
ISSUE DATE APRIL 2023
ISSUE BID
FOUR WATERS ENGINEERING
 324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
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D9.2



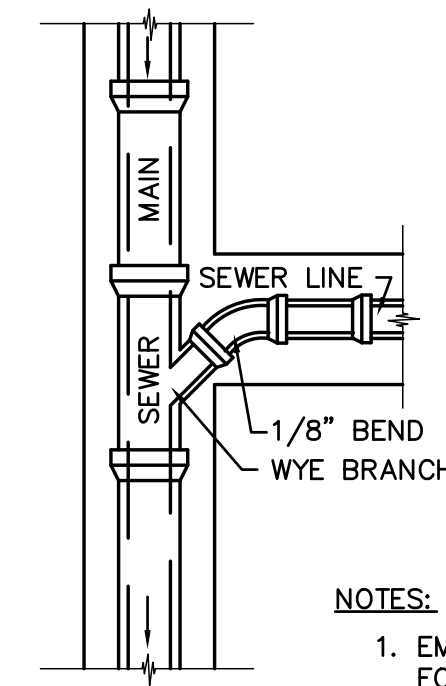
- NOTES:
1. THE CLEANOUT SHOULD BE THE SAME SIZE DIAMETER AS THE LINE THAT IT IS INSTALLED ON.
 2. CLEANOUT SHOULD CONSIST OF A PLUG SUITABLE FOR AIR TEST.

CLEANOUT DETAIL
NOT TO SCALE



- NOTES:
1. DETAIL APPLIES TO SEWER OVER 12' DEEP TO INVERT.
 2. NO VERTICAL STACKING WILL BE ALLOWED

DEEP SEWER SERVICE DETAIL
NOT TO SCALE

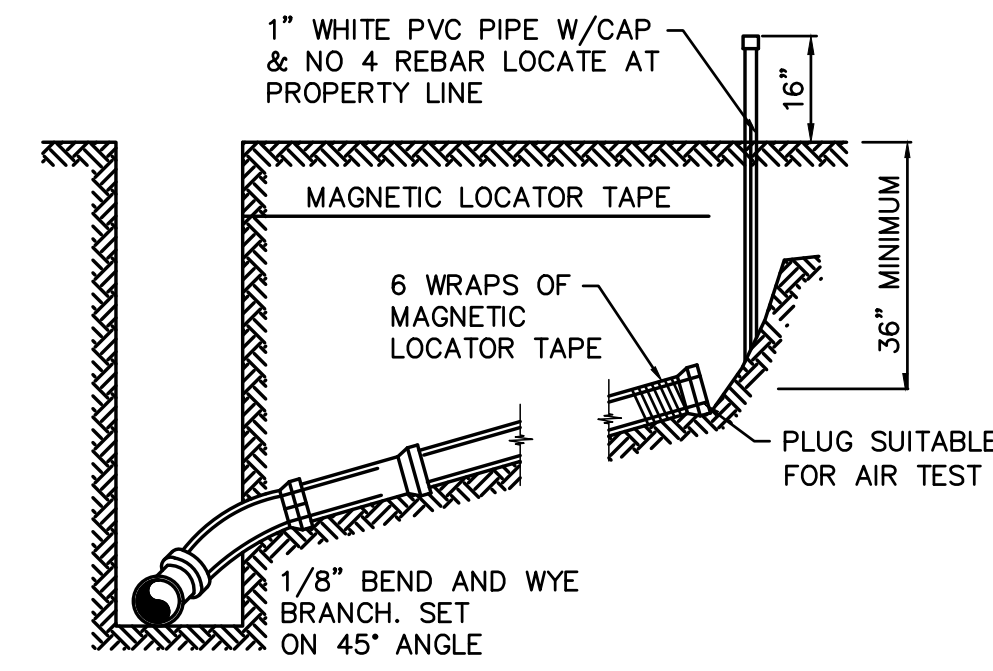


NOTES:

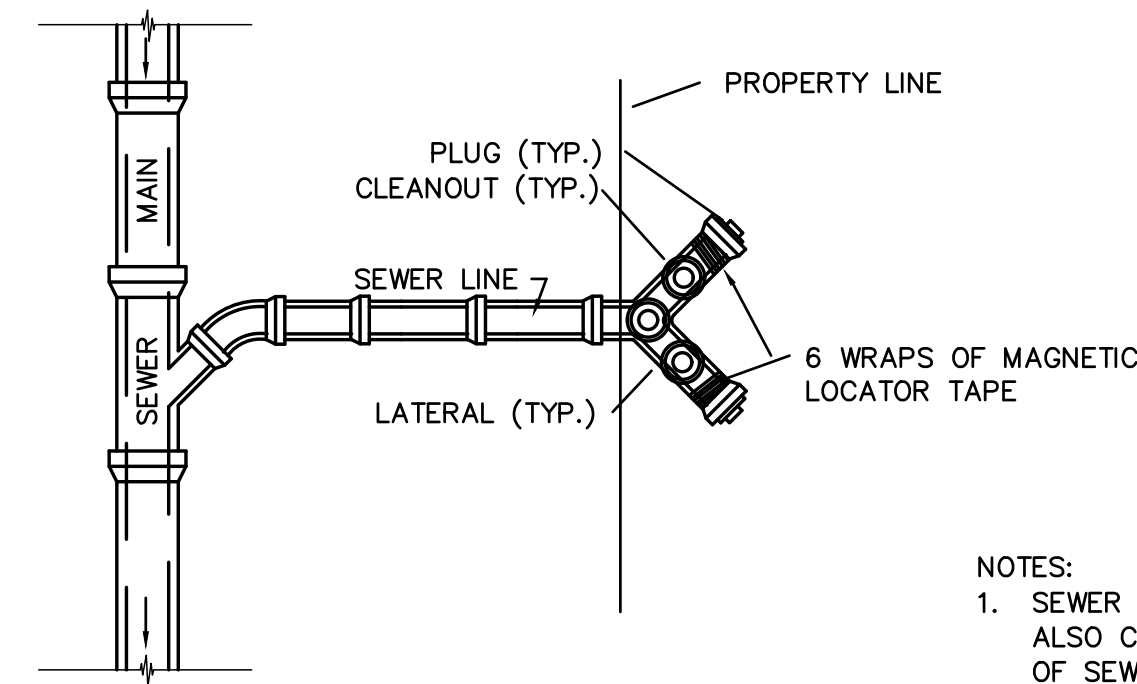
1. EMBEDMENT SAME AS FOR SEWER LINE.
2. SERVICE LINE SHALL BE ON SUCH A GRADE THAT WILL PERMIT SERVICING OF PROPERTY. MINIMUM GRADE SHALL BE 1.0%. MAXIMUM GRADE SHALL BE 50%
3. NO VERTICAL STACKING WILL BE ALLOWED.

PLAN

SEWER SERVICE CONNECTION DETAIL
NOT TO SCALE



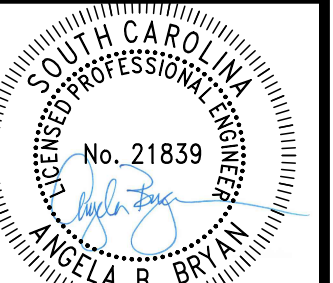
SECTION



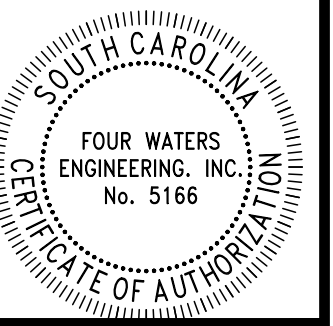
NOTES:

1. SEWER SERVICE CONNECTION SHOULD ALSO COMPLY WITH REQUIREMENTS OF SEWER SERVICE DETAIL.
2. CLEANOUTS ON INDIVIDUAL LATERALS SHALL BE PLACED AT PROPERTY LINE.
3. CONNECTION TO MAIN SHALL BE 6" PIPE. SERVICES MAY BE 4".

DOUBLE SEWER SERVICE
NOT TO SCALE



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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
CONSTRUCTION DETAILS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	DATE	ISSUE	ISSUE
ABB	JMC	17-1007	APRIL 2023	BID

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REFERENCES

FLAGGING OPERATIONS
GENERAL NOTES

(ALL NOTES, SPECIFICATIONS AND REQUIREMENTS ON THIS STANDARD DRAWING APPLY TO ALL SUBSEQUENT STANDARD DRAWINGS REGARDING FLAGGING OPERATIONS UNLESS OTHERWISE NOTED)

FLAGGING OPERATIONS -

1. KEY FEATURES RELEVANT TO FLAGGING OPERATIONS:

- APPROACH TAPER** - THIS IS A ONE-LANE TWO-WAY TAPER PLACED IN THE TRAVEL LANE WHERE THE WORK ACTIVITY TAKES PLACE. THIS TAPER PRECEDES THE BUFFER SPACE AND THE WORK ACTIVITY AREA. THE LENGTH OF THIS TAPER MAY VARY FROM 50 FEET TO 100 FEET. INSTALL AND MAINTAIN NO LESS THAN FIVE (5) TRAFFIC CONTROL DEVICES EQUALLY SPACED AT 10' TO 25' INTERVALS AS NECESSARY TO CORRESPOND WITH THE LENGTH OF THE TAPER.
- DOWNSTREAM TAPER** - THIS TAPER, PLACED IN THE TRAVEL LANE WHERE THE WORK ACTIVITY TAKES PLACE, FOLLOWS THE WORK ACTIVITY AREA AND SERVES AS THE TERMINATION AREA FOR THE CLOSURE OF THE TRAVEL LANE. THE LENGTH OF THIS TAPER MAY VARY FROM 50 FEET TO 100 FEET. INSTALL AND MAINTAIN NO LESS THAN FIVE (5) TRAFFIC CONTROL DEVICES IN THIS TAPER.
- FLAGGER STATION** - THIS IS THE SPECIFIC LOCATION OF THE FLAGGER.
- CLOSED LANE FLAGGER** - THIS FLAGGER IS STATIONED ADJACENT TO THE FIRST TRAFFIC CONTROL DEVICE IN THE APPROACH TAPER WHO CONTROLS THE TRAFFIC THAT REQUIRES RELOCATION FROM THE TRAVEL LANE BEING CLOSED TO TRAFFIC.
- OPEN LANE FLAGGER** - THIS FLAGGER IS STATIONED 100 FEET BEYOND THE LAST TRAFFIC CONTROL DEVICE IN THE DOWNSTREAM TAPER WHO CONTROLS THE TRAFFIC OPERATING IN THE TRAVEL LANE REMAINING OPEN TO TRAFFIC.
- SIDE ROAD FLAGGER** - THIS FLAGGER IS STATIONED ON AN INTERSECTING SIDE ROAD AND CONTROLS THE SIDE ROAD TRAFFIC ENTERING INTO THE ROADWAY WHERE THE WORK ACTIVITY AREA IS LOCATED.
- BUFFER SPACE** - THIS AREA IS LOCATED BETWEEN THE DOWNSTREAM END OF THE APPROACH TAPER AND THE NEAREST LIMITS OF THE WORK ACTIVITY AREA AND MAY PROVIDE SOME RECOVERY SPACE FOR AN ERRANT VEHICLE. THE PRESENCE OF PERSONNEL, TOOLS, MATERIALS, EQUIPMENT, WORK VEHICLES, ETC. WITHIN THE LIMITS OF THE BUFFER SPACE IS PROHIBITED. HOWEVER, WHEN THE MINIMUM DISTANCE REQUIREMENTS FOR THE BUFFER SPACE ARE UNAVAILABLE, A TRUCK MOUNTED ATTENUATOR MAY TEMPORARILY ENCROACH UPON THE BUFFER SPACE IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE SECTION BELOW ENTITLED, "BUFFER SPACE", WHEN APPROVED BY THE ENGINEER.
- WORK ACTIVITY AREA** - PERSONNEL, MATERIALS, EQUIPMENT, WORK VEHICLES, ETC. ARE PRESENT WITHIN THIS AREA TO CONDUCT THE WORK.
- LIMITS OF THE WORK ACTIVITY AREA** - THIS IS THE BOUNDARY OF THE WORK ACTIVITY AREA FIRST ENCOUNTERED, FROM EITHER DIRECTION, BY MOTORISTS PASSING BY THE WORK ACTIVITY AREA IN THE ADJACENT TRAVEL LANE OPEN TO TRAFFIC AND CONTROLLED BY THE FLAGGERS.
- APPROACH LANE** - TRAFFIC APPROACHES AN INTERSECTION OR A SPECIFIC LOCATION IN THIS TRAVEL LANE.
- DEPARTURE LANE** - TRAFFIC DEPARTS FROM AN INTERSECTION OR A SPECIFIC LOCATION IN THIS TRAVEL LANE.
- MAINLINE APPROACH** - THIS IS AN APPROACH TO THE WORK ACTIVITY AREA ON THE ROADWAY WHERE THE WORK ACTIVITY AREA IS LOCATED.
- SIDE ROADS** - THESE ROADS INTERSECT THE ROADWAY ON WHICH THE WORK ACTIVITY AREA IS LOCATED.
- LIMITS OF THE INTERSECTION** - THE LIMITS OF OR THE PHYSICAL AREA WITHIN AN INTERSECTION IS DEFINED BY THE LOCATION OF STOP BARS WHEN PRESENT, WHEN STOP BARS ARE ABSENT, THE LIMITS OF OR THE PHYSICAL AREA WITHIN AN INTERSECTION IS DEFINED BY THE LOCATION POINTS WHERE THE CORNER RADII BETWEEN ADJACENT ROADWAY APPROACHES TIE TO THE EDGE OF PAVEMENT OR THE EDGE OF TRAVEL LANE ADJACENT TO THE EDGE OF PAVEMENT OF EACH ROADWAY.

- 2. INSTALL, CONDUCT AND MAINTAIN FLAGGING OPERATIONS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, THE STANDARD DRAWINGS, THE MUTCD AND THE "SOUTH CAROLINA FLAGGER'S HANDBOOK" UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. INSTALL ALL SIGNS RELATIVE TO A FLAGGING OPERATION PRIOR TO INITIATION OF THE OPERATION AND REMOVE OR COVER ALL SIGNS IMMEDIATELY UPON TERMINATION OF THE OPERATION. EQUIP EACH FLAGGER WITH A 24" x 24" STOP/SLOW PADDLE MOUNTED ON A RIGID HANDLE WITH A MINIMUM LENGTH OF 7 FEET. THE DEPARTMENT PROHIBITS THE USE OF FLAGS EXCEPT DURING EMERGENCY SITUATIONS.
- 3. LANE CLOSURES FOR FLAGGING OPERATIONS ARE RESTRICTED TO A MAXIMUM DISTANCE OF 2 MILES UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE WORK LIMITS WILL COMPLY WITH THE CONTRACT AND SHALL REQUIRE THE ENGINEER'S APPROVAL PRIOR TO BEGINNING THE WORK.
- 4. INSTALL AND MAINTAIN THE PROPER ARRAY OF ADVANCE WARNING SIGNS FOR EACH "MAINLINE APPROACH" WHEN A FLAGGING OPERATION IS IN PLACE AND ACTIVE. WHEN NECESSARY TO RELOCATE THE "FLAGGER STATION" WHILE ACTIVELY MAINTAINING THE FLAGGING OPERATION, INSTALL AN ADDITIONAL ARRAY OF ADVANCE WARNING SIGNS AT THE LOCATION RELATIVE TO THE NEW "FLAGGER STATION" AND REMOVE THE ORIGINAL ARRAY OF ADVANCE WARNING SIGNS IMMEDIATELY UPON COMPLETION OF THE RELOCATION OF THE FLAGGER TO THE NEW "FLAGGER STATION".
- 5. INSTALL ALL ADVANCE WARNING SIGNS IMMEDIATELY PRIOR TO INITIATING A FLAGGING OPERATION AND REMOVE OR COVER ALL SIGNS IMMEDIATELY UPON TERMINATION OF THE OPERATION.
- 6. MAINTAIN TWO-WAY RADIO COMMUNICATIONS BETWEEN ALL FLAGGERS.

- 7. EACH FLAGGER SHALL WEAR SAFETY APPAREL IN COMPLIANCE WITH THE REQUIREMENTS OF ANSI/ISEA 107 STANDARD PERFORMANCE FOR CLASS 3 RISK EXPOSURE, LATEST REVISION, WHEN CONDUCTING NIGHTTIME FLAGGING OPERATIONS.
- 8. ILLUMINATE EACH "FLAGGER STATION" WITH ANY COMBINATION OF PORTABLE LIGHTS, STANDARD ELECTRIC LIGHTS, EXISTING STREET LIGHTS, ETC. THAT WILL PROVIDE A MINIMUM ILLUMINATION LEVEL OF 108 Lx OR 10 fc WHEN CONDUCTING NIGHTTIME FLAGGING OPERATIONS.
- 9. SUPPLEMENT EACH ARRAY OF ADVANCE WARNING SIGNS ON EACH "MAINLINE APPROACH" WITH A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN. THESE CHANGEABLE MESSAGE SIGNS ARE NOT REQUIRED ON THE "SIDE ROADS" INTERSECTING THE ROADWAY WHERE THE "WORK ACTIVITY AREA" IS LOCATED. ALSO, THESE CHANGEABLE MESSAGE SIGNS ARE NOT REQUIRED DURING DAYTIME FLAGGING OPERATIONS UNLESS OTHERWISE DIRECTED BY THE STANDARD DRAWINGS. INSTALL THE CHANGEABLE MESSAGE SIGNS IN ADVANCE OF THE ADVANCE WARNING SIGN ARRAYS. THE MESSAGES SHOULD BE "PREPARE TO STOP", "FLAGGER AHEAD". A TRUCK MOUNTED CHANGEABLE MESSAGE SIGN IS NOT AN ACCEPTABLE ALTERNATIVE TO A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN DURING NIGHTTIME FLAGGING OPERATIONS.
- 10. UTILIZE PORTABLE PLASTIC DRUMS OR 42" OVERSIZED TRAFFIC CONES IN PLACE OF 36" STANDARD TRAFFIC CONES DURING NIGHTTIME FLAGGING OPERATIONS.

NIGHTTIME FLAGGING OPERATIONS -

- 1. THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" ARE BASED UPON THE LEGAL POSTED REGULATORY SPEED LIMIT OF THE ROADWAY PRIOR TO BEGINNING THE WORK.

SPEED LIMIT	DISTANCES
LOW SPEED ≤ 35 MPH	200 FEET
INTERMEDIATE SPEED 40 - 50 MPH	300 FEET
HIGH SPEED 55 MPH	400 FEET

- 2. THE PRESENCE OF PERSONNEL, TOOLS, MATERIALS, EQUIPMENT, WORK VEHICLES, ETC. WITHIN THE LIMITS OF THE "BUFFER SPACE" IS PROHIBITED. A TRUCK MOUNTED ATTENUATOR IS THE ONLY WORK VEHICLE THAT MAY TEMPORARILY ENCROACH UPON THE "BUFFER SPACE" IN ACCORDANCE WITH THE CONDITIONS SPECIFIED IN THE FOLLOWING NOTE WHEN APPROVED BY THE ENGINEER. SEE NOTE NO. 3.
- 3. WHEN THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" ARE UNAVAILABLE DUE TO FIELD CONDITIONS, IT MAY BE NECESSARY FOR A TRUCK MOUNTED ATTENUATOR TO TEMPORARILY ENCROACH UPON THE "BUFFER SPACE" WHEN APPROVED BY THE ENGINEER. A TRUCK MOUNTED ATTENUATOR IS THE ONLY VEHICLE PERMITTED TO TEMPORARILY ENCROACH UPON THE "BUFFER SPACE" AND THIS ENCROACHMENT IS ONLY PERMITTED WHEN ALL REASONABLE OPTIONS TO AVOID DOING SO HAVE BEEN EXHAUSTED. WHEN ENCROACHMENT UPON THE "BUFFER SPACE" IS APPROVED BY THE ENGINEER, MINIMIZE THE TIME DURATION OF THE ENCROACHMENT BY REMOVAL OF THE TRUCK MOUNTED ATTENUATOR FROM THE "BUFFER SPACE" AT THE FIRST OPPORTUNITY THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" BECOME AVAILABLE.

SIGNS AND TRAFFIC CONTROL DEVICES -

- 1. MEASURE THE ADVANCE WARNING SIGN LOCATIONS FOR EACH APPROACH FROM THE "FLAGGER STATION" LOCATED ON THAT APPROACH.
- 2. INSTALL THE ADVANCE WARNING SIGNS AS SPACING INTERVALS BASED UPON THE POSTED REGULATORY SPEED LIMIT OF THE ROADWAY PRIOR TO BEGINNING ANY WORK. THE ADVANCE WARNING SIGN SPACING INTERVALS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS TO THESE DISTANCES MAY BE NECESSARY DUE TO EXISTING SIGNS, INTERSECTING ROADWAYS, HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS. SEE TABLE A.
- 3. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
- 4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CHANNEL OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
- 5. REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
- 6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE REQUIREMENTS OF NCHRP REPORT 350 OR THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org.
- 7. REFLECTORIZATION OF 36" TRAFFIC CONES USED DURING DAYLIGHT HOURS IS NOT REQUIRED IN THE EVENT A DAYTIME FLAGGING OPERATION EXTENDS INTO THE NIGHTTIME HOURS, REPLACE ALL 36" TRAFFIC CONES WITH EITHER PORTABLE PLASTIC DRUMS OR 42" OVERSIZED TRAFFIC CONES. REFLECTORIZE ALL PORTABLE PLASTIC DRUMS AND 42" OVERSIZED TRAFFIC CONES WITH TYPE III OR GREATER FLEXIBLE MICROPRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
- 8. DELINEATE THE TANGENT AREA OF THE LANE CLOSURE WITH THE NECESSARY TRAFFIC CONTROL DEVICES TO MINIMIZE ENCROACHMENT BY MOTORISTS INTO THE CLOSED TRAVEL LANE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ON ROADWAYS WITH POSTED REGULATORY SPEED LIMITS OF 35 MPH OR LESS, INSTALL THE TRAFFIC CONTROL DEVICES AT SPACING INTERVALS OF 25 FEET. ON ROADWAYS WITH POSTED REGULATORY SPEED LIMITS OF 40 MPH OR GREATER, INSTALL THE TRAFFIC CONTROL DEVICES AT SPACING INTERVALS OF 50 FEET. SEE TABLE B.

ADVANCE WARNING ARROW PANEL -

- 1. DURING FLAGGING OPERATIONS, AN ADVANCE WARNING ARROW PANEL SHALL OPERATE IN THE "FOUR CORNERS" CAUTION MODE WHEN LOCATED WITHIN OR IN BETWEEN THE LIMITS OF THE ADVANCE WARNING SIGN ARRAYS SPECIFIC TO A FLAGGING OPERATION. OPERATION OF AN ADVANCE WARNING ARROW PANEL IN AN ARROW, CHEVRON OR ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE WHEN LOCATED WITHIN OR IN BETWEEN THE LIMITS OF THE ADVANCE WARNING SIGN ARRAYS AS SPECIFIED HEREIN IS PROHIBITED.
- 2. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION. THE SPECIFIC LOCATION OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS.

TRUCK MOUNTED ATTENUATOR -

- 1. A TRUCK MOUNTED ATTENUATOR IS OPTIONAL. UTILIZATION OF A TRUCK MOUNTED ATTENUATOR SHOULD BE CONSIDERED WHEN THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" ARE UNAVAILABLE DUE TO FIELD CONDITIONS. HOWEVER, A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL MAY BE UTILIZED IN PLACE OF A TRUCK MOUNTED ATTENUATOR DURING TRAFFIC CONTROL SETUPS FOR WORK ACTIVITIES SUCH AS ASPHALT CONCRETE PLACEMENT OPERATIONS WHEN APPROVED BY THE ENGINEER.
- 2. WHEN UTILIZING A TRUCK MOUNTED ATTENUATOR, ENSURE THE TRUCK HAS THE CORRECT GROSS VEHICULAR WEIGHT (GVW) REQUIRED FOR THE TYPE OF TRUCK MOUNTED ATTENUATOR BEING UTILIZED. A DIRECT TRUCK MOUNTED TRUCK MOUNTED ATTENUATOR, A UNIT MOUNTED AND ATTACHED TO BRACKETS OR SIMILAR DEVICES CONNECTED TO THE FRAME OF THE TRUCK, REQUIRES A TRUCK WITH A MINIMUM GVW OF 15,000 POUNDS (ACTUAL WEIGHT) UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. A TRAILER TOWED TRUCK MOUNTED ATTENUATOR, A TRAILER TYPE UNIT TOWED FROM BEHIND AND ATTACHED TO THE FRAME OF THE TRUCK VIA A PINTLE HOOK / HITCH, REQUIRES A TRUCK WITH A MINIMUM GVW OF 10,000 POUNDS (ACTUAL WEIGHT) UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR (4) SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE IN ITS ENTIRETY AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
- 3. LOCATE THE TRUCK MOUNTED ATTENUATOR APPROXIMATELY 100 FEET IN ADVANCE OF THE "WORK ACTIVITY AREA" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- 4. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

GENERAL -

- 1. CONDUCT THE WORK IN SUCH A MANNER SO AS NOT TO ENCROACH ONTO THE ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
- 2. IF WORK IS BEING CONDUCTED AT TWO DIFFERENT LOCATIONS AT THE SAME TIME, SEPARATE THE TWO LOCATIONS BY NO LESS THAN 2 MILES FROM THE LAST TRAFFIC CONTROL DEVICE IN THE "DOWNSTREAM TAPER" OF THE FIRST LANE CLOSURE TO THE FIRST TRAFFIC CONTROL DEVICE IN THE "APPROACH TAPER" OF THE SECOND LANE CLOSURE ENCOUNTERED BY A MOTORIST UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- 3. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.

TABLE A

SIGN PLACEMENT INTERVALS	
SPEED LIMIT	*
* ≤ 35 MPH LOW SPEED	200
* 40 - 50 MPH INTERMEDIATE SPEED	350
* 55 MPH HIGH SPEED	500

* REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

TABLE B

TRAFFIC CONTROL DEVICE SPACING INTERVALS WORK ACTIVITY / BUFFER SPACE AREAS	
SPEED LIMIT	SPACING INTERVALS
≤ 35 MPH	25 FEET
40 - 55 MPH	50 FEET

WORK ZONE TRAFFIC
CONTROL ENGINEER



Willie E. McConnell, Jr.
SIGNATURE
6/1/2018
DATE

#	DATE	CHK	DESCRIPTION
5			
4			
3			
2			
1	4-27-18	WEM	REVISED FLAGGING OPERATIONS NOTE 1
0	1-14-15	JCS	NEW DRAWING

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

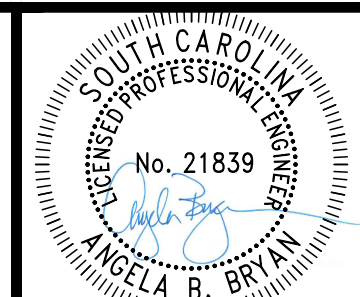
STANDARD DRAWING

FLAGGING
OPERATIONS
TWO-LANE TWO-WAY
PRIMARY &
SECONDARY ROUTES

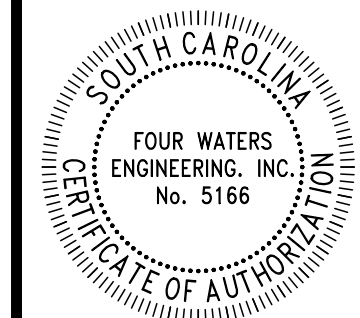
610-005-00

EFFECTIVE LETTING DATE JAN 2019

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
TEMPORARY TRAFFIC CONTROL DETAILS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

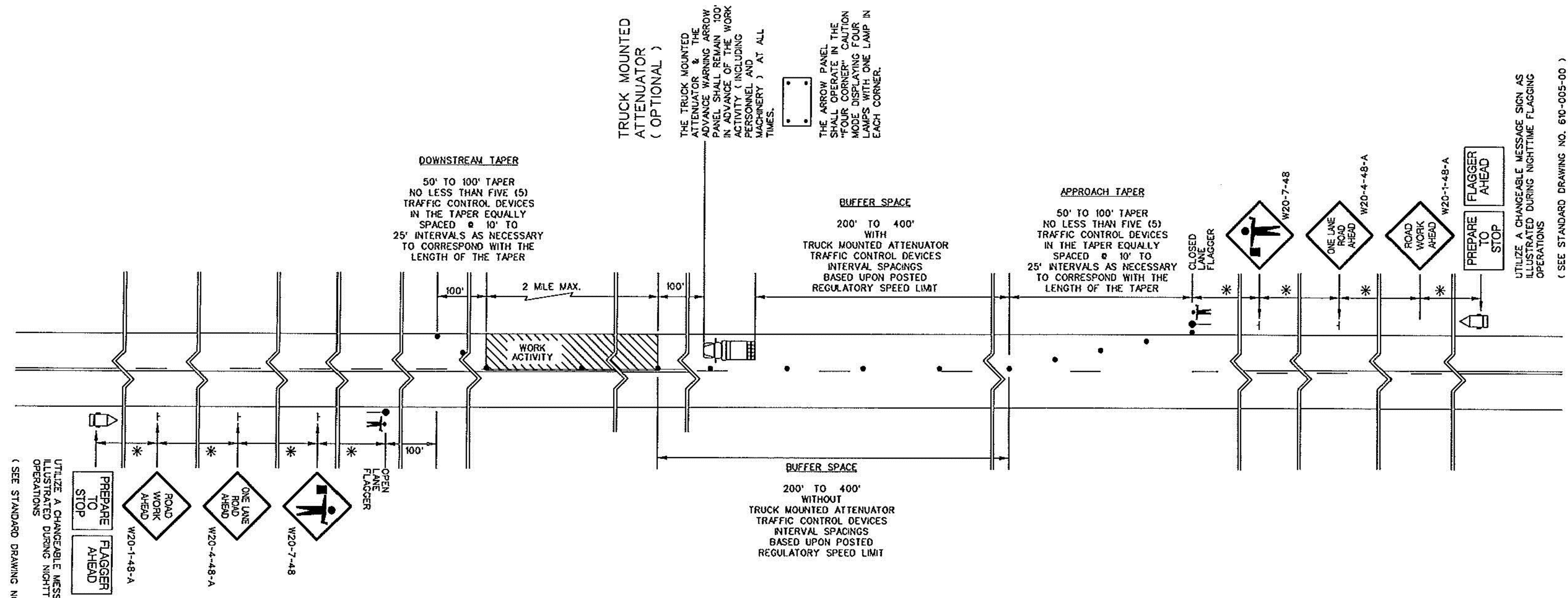
DESIGN	DRAWN	JNC	17-1007	APRIL	2023	ISSUE	BID
ABB	JNC						
JOB #	ISSUE	DATE					

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

DRAWING NUMBER
D9.4

DRAWING 610-005-10 NOTES

1. SEE STANDARD DRAWING NO. 610-005-00 FOR ALL GENERAL NOTES AND REQUIREMENTS.



UTILIZE A CHANGEABLE MESSAGE SIGN AS ILLUSTRATED DURING NIGHTTIME FLAGGING OPERATIONS
(SEE STANDARD DRAWING NO. 610-005-00)

TRUCK MOUNTED ATTENUATOR (OPTIONAL)
THE TRUCK MOUNTED ATTENUATOR & THE ADVANCE WARNING ARROW PANEL SHALL REMAIN 100' IN ADVANCE OF ALL WORK ACTIVITY (INCLUDING PERSONNEL AND MACHINERY) AT ALL TIMES.

THE ARROW PANEL, THE ADVANCE WARNING ARROW PANEL, CORNER LAMP MODE DISPLAYING FOUR LAMPS WITH ONE LAMP IN EACH CORNER.

BUFFER SPACE
200' TO 400' WITH TRUCK MOUNTED ATTENUATOR TRAFFIC CONTROL DEVICES INTERVAL SPACINGS BASED UPON POSTED REGULATORY SPEED LIMIT

APPROACH TAPER
50' TO 100' TAPER NO LESS THAN FIVE (5) TRAFFIC CONTROL DEVICES IN THE TAPER EQUALLY SPACED @ 10' TO 25' INTERVALS AS NECESSARY TO CORRESPOND WITH THE LENGTH OF THE TAPER

UTILIZE A CHANGEABLE MESSAGE SIGN AS ILLUSTRATED DURING NIGHTTIME FLAGGING OPERATIONS
(SEE STANDARD DRAWING NO. 610-005-00)

TABLE A

SIGN PLACEMENT INTERVALS	
SPEED LIMIT	*
# ≤ 35 MPH LOW SPEED	200
# 40 - 50 MPH INTERMEDIATE SPEED	350
# 55 MPH HIGH SPEED	500

* REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

TABLE B

TRAFFIC CONTROL DEVICE SPACING INTERVALS WORK ACTIVITY / BUFFER SPACE AREAS	
SPEED LIMIT	SPACING INTERVALS
≤ 35 MPH	25 FEET
40 - 55 MPH	50 FEET

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER



Willie E. McConnell
SIGNATURE
7/27/15
DATE

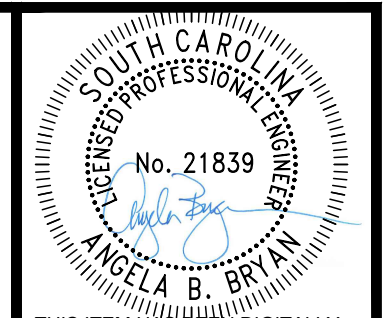
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0	1-15-15	JCS	NEW DRAWING
#	DATE	CHK	DESCRIPTION



STANDARD DRAWING

FLAGGING OPERATIONS
TWO-LANE TWO-WAY ROADWAYS WITHOUT INTERSECTIONS

610-005-10
EFFECTIVE LETTING DATE JAN 2016



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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
TEMPORARY TRAFFIC CONTROL DETAILS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

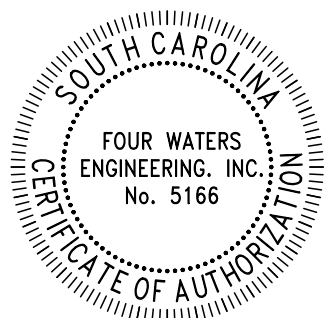
DESIGN ABB	JMC	17-1007	APRIL 2023	BID

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
TEMPORARY TRAFFIC CONTROL DETAILS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN ABB	DRAWN JMC	JOB #	ISSUE DATE	ISSUE BID
		17-1007	APRIL 2023	

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844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
D9.6

REFERENCES

DRAWING 610-005-20 NOTES

- SEE STANDARD DRAWING NO. 610-005-00 FOR ALL GENERAL NOTES AND REQUIREMENTS. THE FOLLOWING NOTES ARE SPECIFIC REQUIREMENTS FOR THIS STANDARD DRAWING.
- WHEN THE WORK ZONE PROCEEDS THROUGH OR MUST ENCR OACH UPON THE "LIMITS OF THE INTERSECTION", DO NOT ALLOW THE "APPROACH TAPER" OR THE "DOWNSTREAM TAPER" OF THE LANE CLOSURE TO ENCR OACH UPON THE "LIMITS OF THE INTERSECTION". ONLY THE "BUFFER SPACE" OR THE "WORK ACTIVITY AREA" OF THE LANE CLOSURE MAY ENCR OACH UPON THE "LIMITS OF THE INTERSECTION".
- WHEN THE WORK ZONE PROCEEDS THROUGH OR MUST ENCR OACH UPON THE "LIMITS OF THE INTERSECTION" WITH "STOP SIGN CONTROLLED" "SIDE ROADS", UTILIZE FLAGGERS TO CONTROL THE TRAFFIC FROM THE INTERSECTING "SIDE ROADS" UNLESS OTHERWISE DIRECTED BY THE ENGINEER. MAINTAIN THESE FLAGGERS IN PLACE FOR THE DURATION THAT ANY PORTION OF THE "BUFFER SPACE" OR THE "WORK ACTIVITY AREA" MAY ENCR OACH UPON THE "LIMITS OF THE INTERSECTION".
- WHEN THE WORK ZONE PROCEEDS THROUGH OR MUST ENCR OACH UPON THE "LIMITS OF THE INTERSECTION" WITH "STOP SIGN CONTROLLED" "SIDE ROADS", THE CONTRACTOR SHOULD CONTINUE THE WORK OPERATIONS THROUGH THE INTERSECTION TO A LOCATION POINT BEYOND THE "LIMITS OF THE INTERSECTION" THAT WILL PERMIT THE WORK TRAIN TO CLEAR THE INTERSECTION AND THE LOCATION OF THE SUBSEQUENT "FLAGGER STATION" BE NO LESS THAN 200' PAST THE "LIMITS OF THE INTERSECTION" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- WHEN THE WORK ZONE PROCEEDS THROUGH A "STOP SIGN CONTROLLED" "SIDE ROAD" INTERSECTION, CONTINUE THE WORK OPERATIONS THROUGH THE INTERSECTION TO A SPECIFIC LOCATION POINT WITHIN THE "DEPARTURE LANE" NO LESS THAN 300 FT TO 500 FT BEYOND THE LIMITS OF THE INTERSECTION TO ALLOW THE WORK TRAIN AND ALL PORTIONS OF THE LANE CLOSURE TO CLEAR THE INTERSECTION.
- MAINTAIN THE MAXIMUM TIME DURATION OF 5 TO 7 1/2 MINUTES FOR STOPPED TRAFFIC ON THE ROADWAY WHERE THE WORK ACTIVITY IS LOCATED AND BEING CONDUCTED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. WHEN ANY PORTION OF THE "WORK ACTIVITY AREA" ENCR OACHES UPON THE "LIMITS OF THE INTERSECTION", VARIOUS TYPES OF WORK MAY REQUIRE TRAFFIC TO AND FROM THE "SIDE ROADS" BE STOPPED FOR TIME DURATIONS GREATER THAN THE MAXIMUM TIME DURATION OF 5 TO 7 1/2 MINUTES. ONLY WHEN APPROVED BY THE ENGINEER MAY THE MAXIMUM TIME DURATION OF 5 TO 7 1/2 MINUTES FOR STOPPED TRAFFIC FOR THE SIDE ROAD TRAFFIC BE EXCEEDED. IN THE EVENT THE TYPE OF WORK REQUIRES THE SIDE ROAD TRAFFIC BE STOPPED FOR TIME DURATIONS GREATER THAN 5 TO 7 1/2 MINUTES, THE SIDE ROAD TRAFFIC MAY BE STOPPED FOR TIME PERIODS UP TO 20 MINUTES IF APPROVED BY THE ENGINEER. IF THE SIDE ROAD TRAFFIC MUST BE STOPPED FOR TIME PERIODS GREATER THAN 20 MINUTES, CLOSURE OF THE "SIDE ROADS" MAY BE CONSIDERED IF APPROVED BY THE ENGINEER. IN THE EVENT CLOSURE OF THE "SIDE ROADS" IS APPROVED, CLOSE THE "SIDE ROADS" TO TRAFFIC IN ACCORDANCE WITH THE REQUIREMENTS OF STANDARD DRAWING NO. 610-510-00. INSTALL AND MAINTAIN APPROPRIATE DETOURS WHEN NECESSARY AND AS DIRECTED BY THE ENGINEER.

WORK ZONE TRAFFIC CONTROL ENGINEER



Signature: *Willie E. McConnell, Jr.*
DATE: 6/1/2018

#	DATE	CHK	DESCRIPTION
1	4-27-18	WEM	REVISED WORK ACTIVITY DIMENSION AND NOTE 5
0	1-15-15	JCS	NEW DRAWING

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING
FLAGGING OPERATIONS WORK ZONES CONTINUING THROUGH STOP SIGN CONTROLLED SIDE ROADS
610-005-20
EFFECTIVE LETTING DATE: JAN 2019

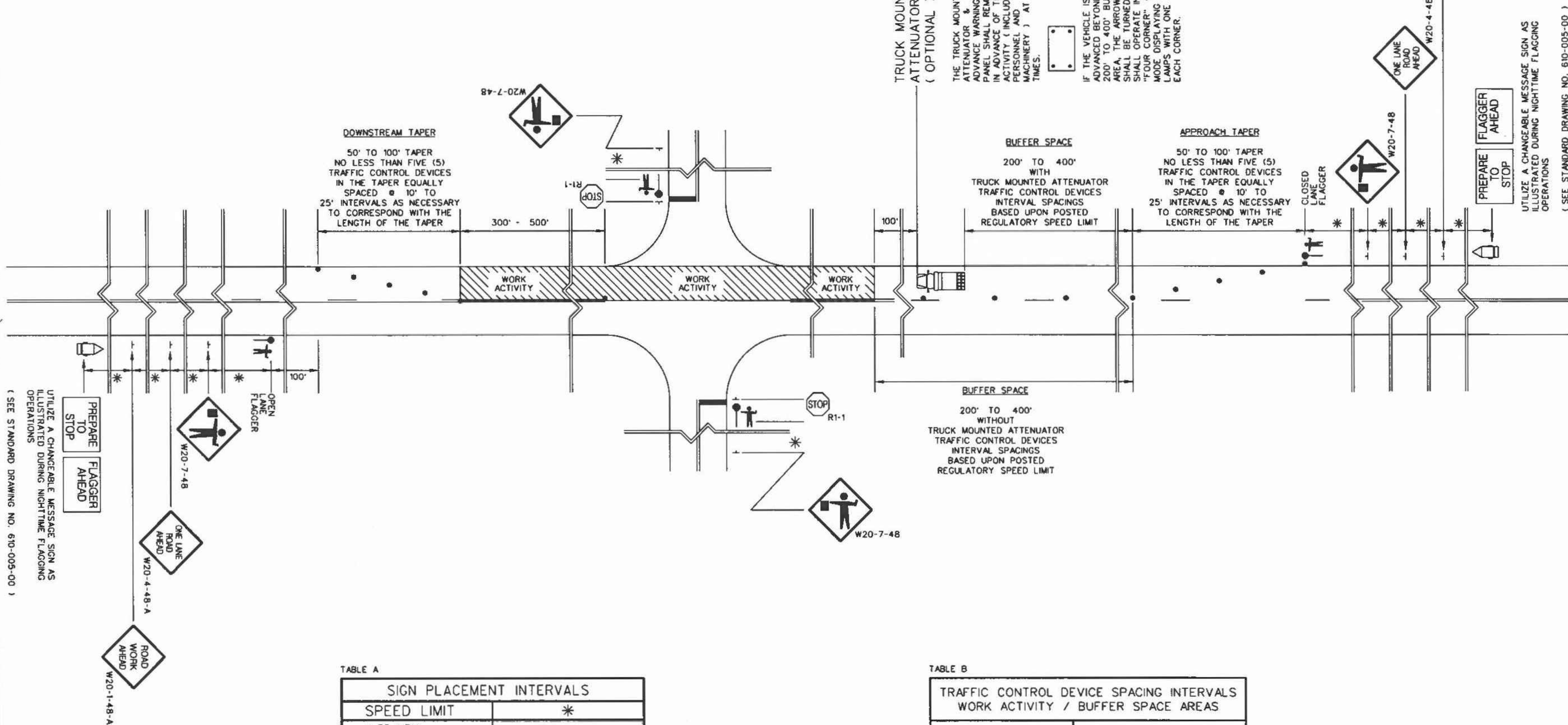


TABLE A
SIGN PLACEMENT INTERVALS

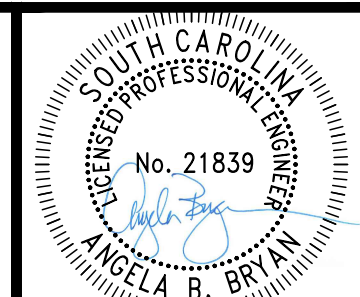
SPEED LIMIT	INTERVALS
* ≤ 35 MPH LOW SPEED	200
* 40 - 50 MPH INTERMEDIATE SPEED	350
* 55 MPH HIGH SPEED	500

* REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

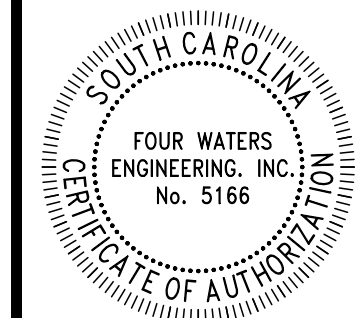
TABLE B
TRAFFIC CONTROL DEVICE SPACING INTERVALS
WORK ACTIVITY / BUFFER SPACE AREAS

SPEED LIMIT	SPACING INTERVALS
≤ 35 MPH	25 FEET
40 - 55 MPH	50 FEET

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2

TEMPORARY TRAFFIC CONTROL DETAILS

TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	ISSUE	DATE	ISSUE	BID
ABB	JMC		17-1007	APRIL 2023		

FOUR WATERS ENGINEERING

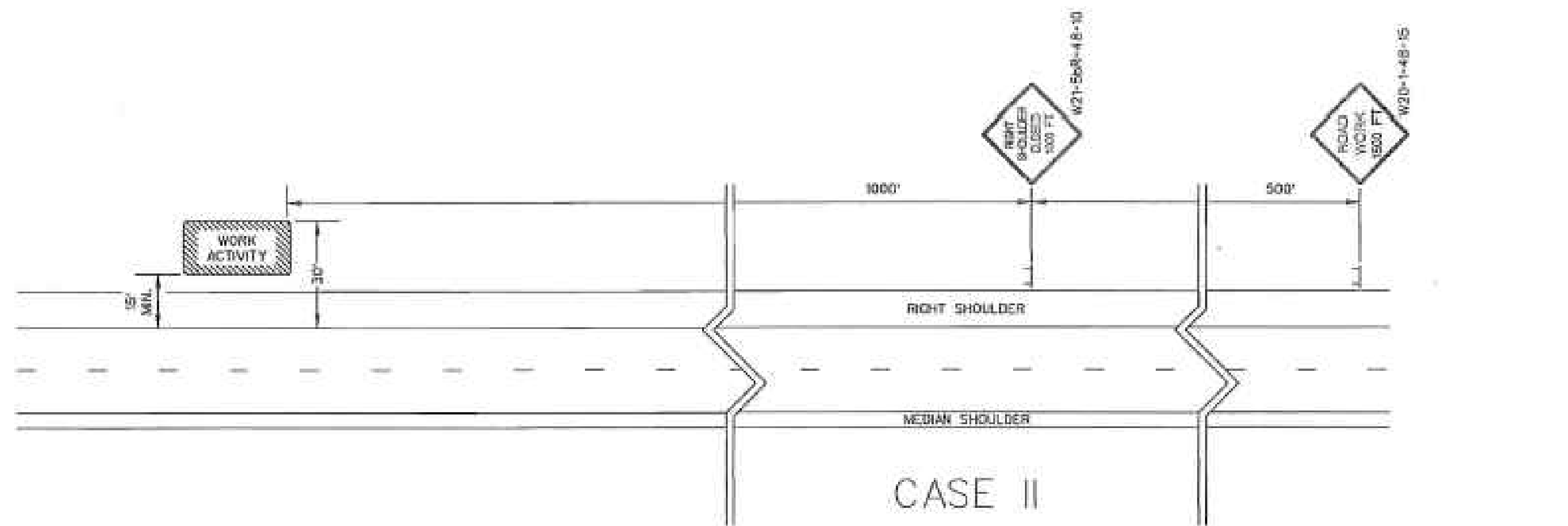
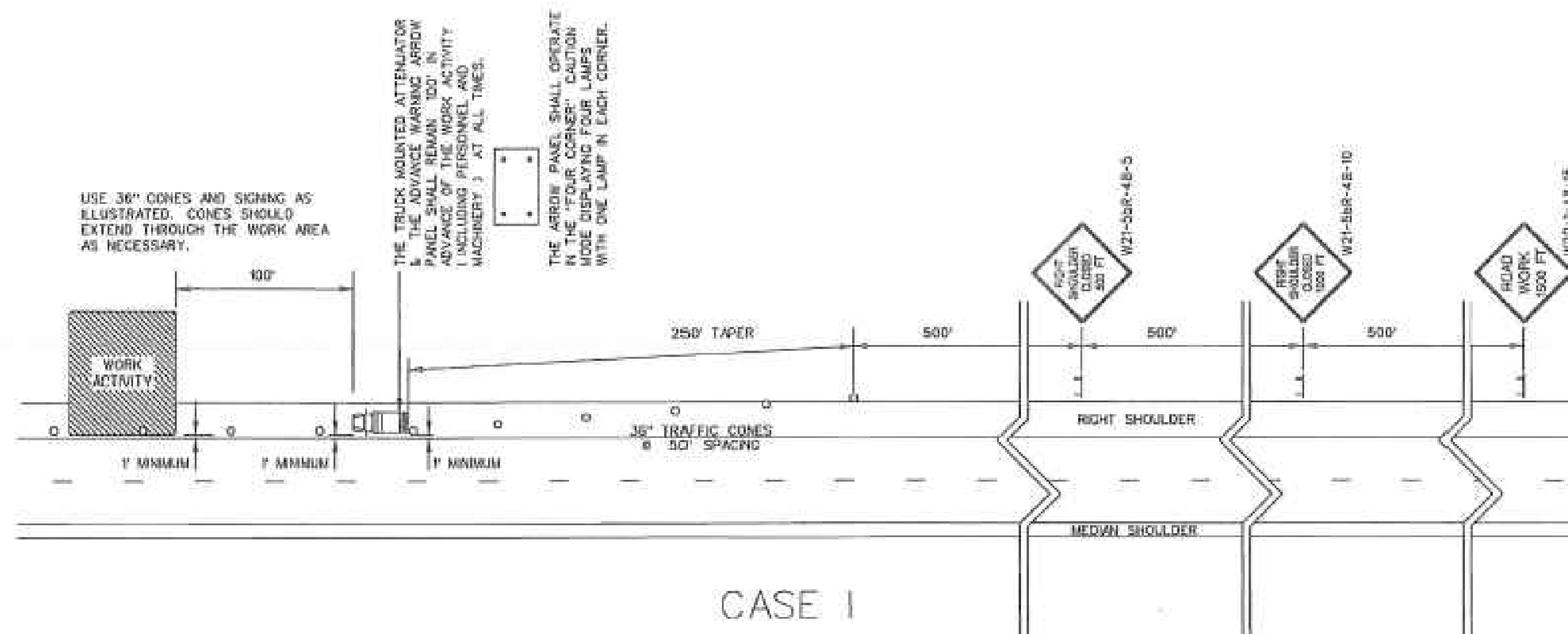
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844-414-2400 S.C. COA # 5166 WWW.AWENG.COM

DRAWING NUMBER
D9.7

REFERENCES

GENERAL NOTES

- ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
- INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
- SPACINGS INDICATED ARE FOR NORMAL CONDITIONS; ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
- ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CHEMEL POSTS OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
- REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
- ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org.
- THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE, MEDIAN BARRIER, BRIDGE PARAPET WALLS OR DOUBLEFACED GUARDRAIL.
- THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR DAYTIME SHOULDER CLOSURES ARE 36" CONES. THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR NIGHTTIME SHOULDER CLOSURES ARE PORTABLE PLASTIC DRUMS. DURING DAYTIME SHOULDER CLOSURES, 42" OVERSIZED CONES MAY BE SUBSTITUTED FOR 36" CONES. DURING NIGHTTIME SHOULDER CLOSURES, 42" OVERSIZED CONES ARE PROHIBITED FOR USE. IF THIS TRAFFIC CONTROL SETUP EXTENDS INTO THE HOURS OF DARKNESS, REPLACE ALL CONES, 36" OR 42" OVERSIZED, WITH PORTABLE PLASTIC DRUMS.
- THE 36" CONES UTILIZED DURING DAYLIGHT HOURS ARE NOT REQUIRED TO BE REFLECTORIZED. REFLECTORIZE ALL 42" OVERSIZED CONES UTILIZED DURING DAYTIME SHOULDER CLOSURES WITH TYPE II FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. REFLECTORIZE ALL PORTABLE PLASTIC DRUMS WITH TYPE II FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
- THE DEPARTMENT PROHIBITS CONDUCTING WORK ON PRIMARY AND SECONDARY ROUTES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE UNDER A SHOULDER CLOSURE. ALL WORK THAT MAY REQUIRE THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE SHALL BE CONDUCTED UNDER A LANE CLOSURE.
 - CASE I: WHENEVER ANY PORTION OF THE SHOULDER AREA WITHIN 15' BUT NOT CLOSER THAN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE MUST BE OCCUPIED BY EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES TO CONDUCT THE WORK, INSTALL AND MAINTAIN THE SIGNING AND TRAFFIC CONTROL DEVICES AS ILLUSTRATED.
 - CASE II: WHENEVER THE WORK IS CONDUCTED BEYOND 15' BUT WITHIN 30' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE, INCLUDING THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES, INSTALL AND MAINTAIN THE SIGNING AND TRAFFIC CONTROL AS ILLUSTRATED.
- CONDUCT THE WORK IN SUCH A MANNER THAT WILL NOT REQUIRE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.
- PLACE THE TRUCK MOUNTED ATTENUATOR AT A LOCATION 100' IN ADVANCE OF THE WORK ACTIVITY AND NO CLOSER THAN 1' FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.
- FOR A CASE I SCENARIO IN THE RIGHT SHOULDER AREA, ADJUST THE TAPER AS NECESSARY TO FIT THE WIDTH OF THE SHOULDER WHILE MAINTAINING THE REQUIRED 250' TAPER LENGTH.
- IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS AT THE SAME TIME UNDER CASE I SHOULDER CLOSURES, SEPARATE THE TWO LOCATIONS BY NO LESS THAN 1 MILE FROM THE END OF THE FIRST CASE I CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CASE I CLOSURE. A MINIMUM SEPARATION DISTANCE OF ONE-HALF MILE IS RECOMMENDED BETWEEN SHOULDER CLOSURES WHEN ONE OR BOTH SHOULDER CLOSURES IS A CASE II CLOSURE.
- THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
- THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF SHOULDER CLOSURES IN THE RIGHT SHOULDER AREAS OF PRIMARY AND SECONDARY ROADWAYS.



PORTABLE TRUCK MOUNTED ATTENUATOR

- UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICLE WEIGHT (GVW) OF 10,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
- LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
- PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BARR" OR THE "ALTERNATING DRUMS" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

LEGEND

○ 36" TRAFFIC CONES

WORK ZONE TRAFFIC CONTROL ENGINEER



Signature: *Willie E. McConnell*
Date: 8/2/23

#	DATE	CHK	DESCRIPTION
1	8-12-11	JCS	GENERAL UPDATE
2	8-23-07	JCS	DRAWING NO. UPDATE

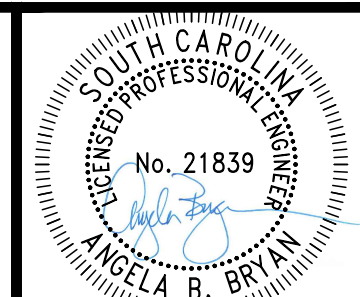
SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

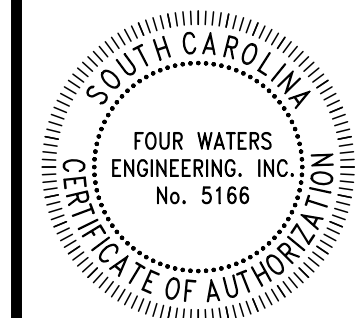
RIGHT SHOULDER CLOSURE (CASE I / CASE II) PRIMARY ROUTES.

610-205-00

EFFECTIVE LITTING DATE: 5/20/23 THIS DRAWING IS NOT TO SCALE



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REV	LIST NO	DATE	BY	CHK	DESCRIPTION
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
TEMPORARY TRAFFIC CONTROL DETAILS
DETOUR SIGNING - SECONDARY ROUTES
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	DATE	ISSUE	DATE	ISSUE
ABB	JMC	17-1007	APRIL	2023	BID

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

DRAWING NUMBER
D9.8

GENERAL NOTES

- 1.) ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
- 2.) IN AREAS WITH PAVED SHOULDERS OR CURB & GUTTER, GROUND MOUNT ALL DETOUR SIGN ASSEMBLIES 2 FEET FROM EITHER THE PAVEMENT EDGE OF A PAVED SHOULDER OR THE FACE OF A CURB. IN AREAS WITH NO PAVED SHOULDERS OR CURB & GUTTER, GROUND MOUNT ALL DETOUR SIGN ASSEMBLIES 6-12 FEET FROM THE NEAR EDGE OF AN ADJACENT TRAVEL LANE TO THE NEAREST EDGE OF THE SIGN ASSEMBLY. MOUNT EACH DETOUR SIGN ASSEMBLY SO THE BOTTOM EDGE OF THE BOTTOM SIGN HAS A MINIMUM MOUNTING HEIGHT OF NO LESS THAN 5 FEET ABOVE THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.
- 3.) SPACINGS INDICATED ARE FOR NORMAL CONDITIONS; ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
- 4.) MOUNT ALL SIGNS SUCH THAT THEY ARE STRAIGHT AND LEVEL AND THE FACE OF THE SIGNS ARE PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
- 5.) REFLECTORIZE ALL DETOUR MARKERS, DETOUR SIGNS, AND DETOUR ARROW SIGNS WITH A FLUORESCENT ORANGE COLORED PRISMATIC REFLECTIVE SHEETING.
- 6.) ALL TRAFFIC CONTROL DEVICES, INCLUDING TYPE III BARRICADES, PORTABLE SIGN SUPPORTS, SIGN SUBSTRATUMS, BREAKAWAY SYSTEMS FOR GROUND MOUNTED SIGN SUPPORTS, WARNING LIGHTS, ETC., SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL BE APPROVED BY THE DEPARTMENT. ALL APPROVED TRAFFIC CONTROL DEVICES ARE INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES". THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org.
- 7.) SPECIAL SIGN MOUNTING ASSEMBLIES MAY BE NECESSARY IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS, OR DOUBLEFACED GUARDRAIL AND SHALL BE PROVIDED BY THE CONTRACTOR.
- 8.) REFLECTORIZE ALL BARRICADES WITH A TYPE III HIGH INTENSITY REFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
- 9.) ALL SUPPLEMENTAL SIGNS ATTACHED TO TYPE III BARRICADES SHALL BE CONSTRUCTED OF AN APPROVED REFLECTIVE ROLL-UP MATERIAL OR AN APPROVED ALUMINUM COMPOSITE MATERIAL. ONLY THOSE ALUMINUM COMPOSITE MATERIALS INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" SUCH AS "ALPOLIC", "DIBOND", OR "REYNOLITE" ARE APPROVED. ALL OTHER RIGID SIGN SUBSTRATUMS, INCLUDING .08 AND .10 ALUMINUM SIGN BLANKS, ARE PROHIBITED FOR ATTACHMENT TO A TYPE III BARRICADE.
- 10.) THE TRAFFIC CONTROL SETUP SHOWN IS A TYPICAL INSTALLATION FOR A SECONDARY ROADWAY. SPECIFIC SIGNING WILL BE BASED ON SITE CONDITIONS AND SHALL REQUIRE THE ENGINEER'S APPROVAL PRIOR TO INSTALLATION. ROAD AND STREET NAMES MAY ALSO BE USED.
- 11.) THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT CONSTRUCTION OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS, AND/OR THE ENGINEER.
- 12.) THE TRAFFIC CONTROL SETUP ILLUSTRATED ON THIS STANDARD DRAWING, INCLUDING INSTALLATION AND MAINTENANCE OF THE DETOUR SIGNING AND ALL TRAFFIC CONTROL DEVICES PERTINENT TO THE DETOUR, SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE BID ITEM FOR TRAFFIC CONTROL.
- 13.) COORDINATE THE SIGNS IN EACH SIGN ASSEMBLY ACCORDING TO LOCATION, ROUTE, DIRECTION, SIZE, AND COLOR.

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER



Willie McConnell
SIGNATURE
1-30-2008
DATE

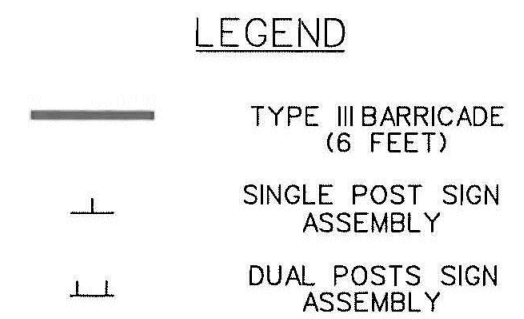
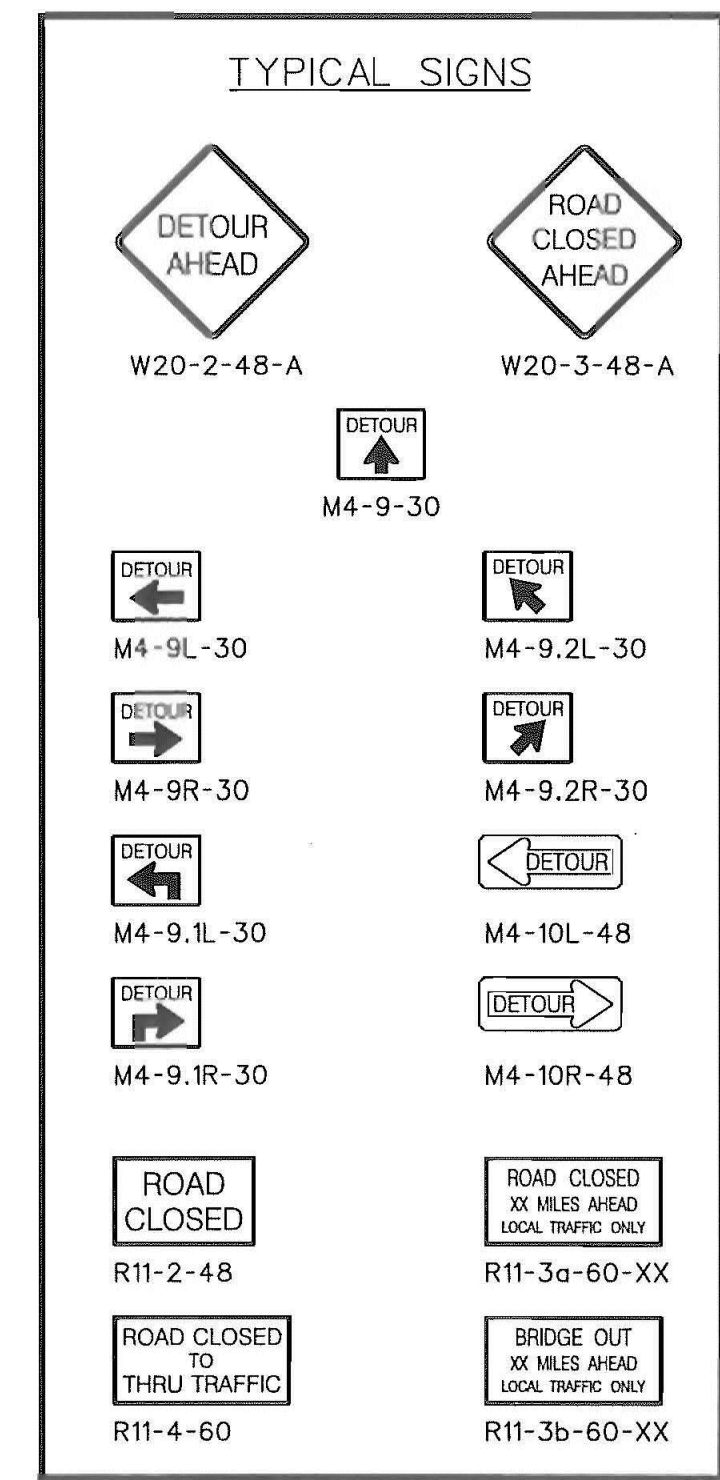
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STANDARD DRAWING

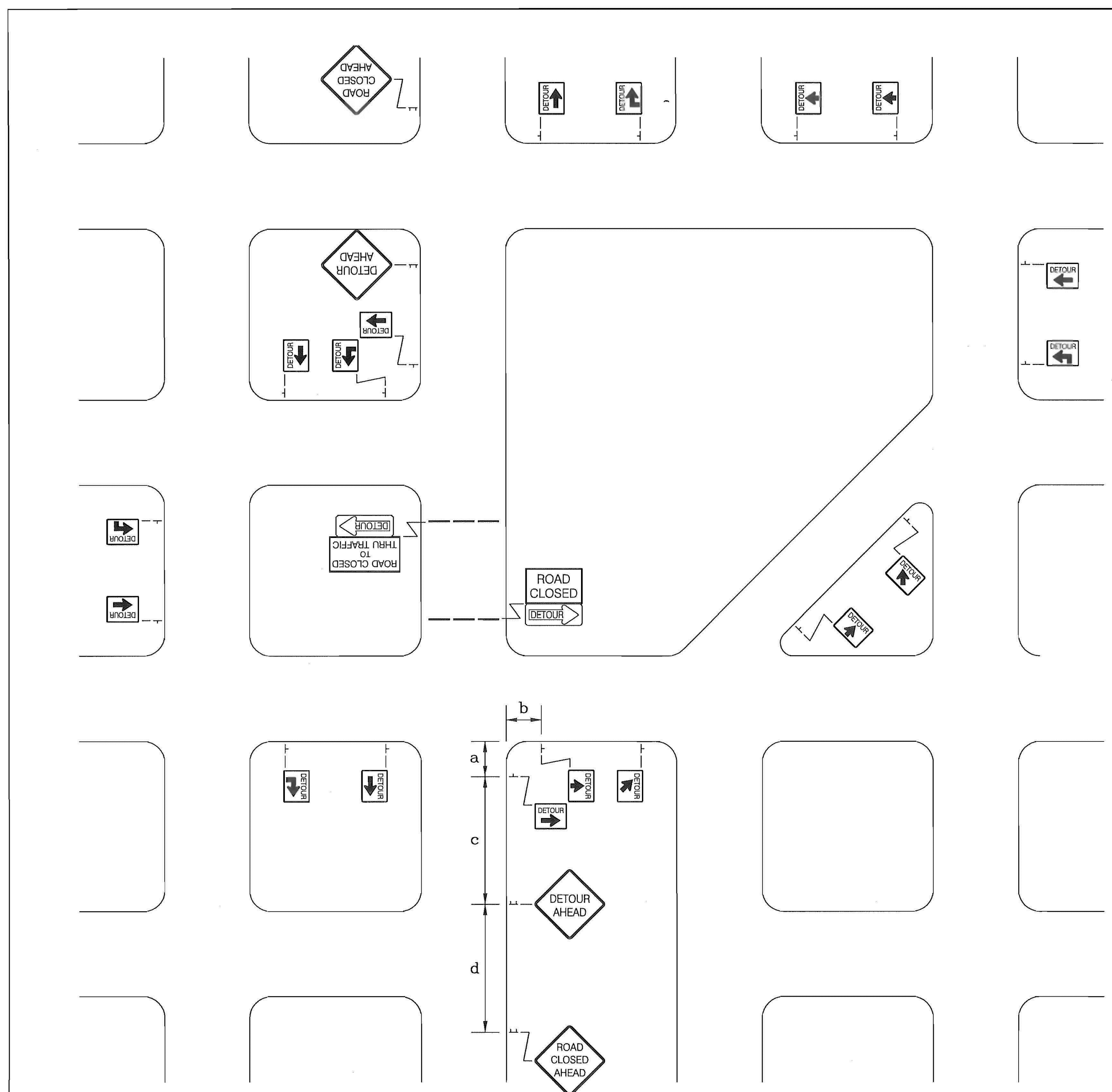
DETOUR SIGNING FOR SECONDARY ROUTES

610-610-00
EFFECTIVE LETTING DATE: MAY 2008

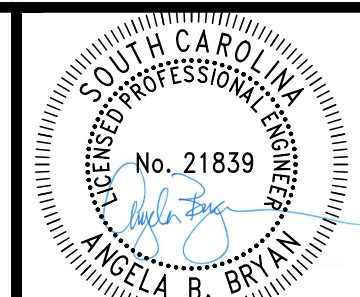


SIGN PLACEMENT AND SPACING INTERVALS

SPEED LIMIT	a	b	c	d
35 mph OR LESS	50'	100'	200'	200'
40 mph TO 50 mph	75'	150'	350'	350'
55 mph OR GREATER	100'	200'	500'	500'



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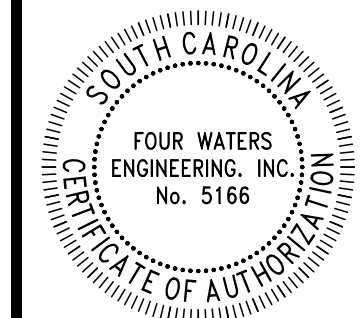


Table with 7 columns: REV, DATE, DRAWN BY, CHECKED BY, DESCRIPTION, NO. 1-7

WATER AND SEWER RESILIENCY IMPROVEMENTS PART 2 TEMPORARY TRAFFIC CONTROL DETAILS TOWN OF RIDGELAND, SOUTH CAROLINA

Table with 4 columns: DESIGN ABB, DRAWN JMC, JOB # 17-1007, ISSUE DATE APRIL 2023, ISSUE BID

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

DRAWING NUMBER D9.9

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER



SIGNATURE: [Signature] DATE: 8/2/12

Table with 3 columns: #, DATE, DESCRIPTION

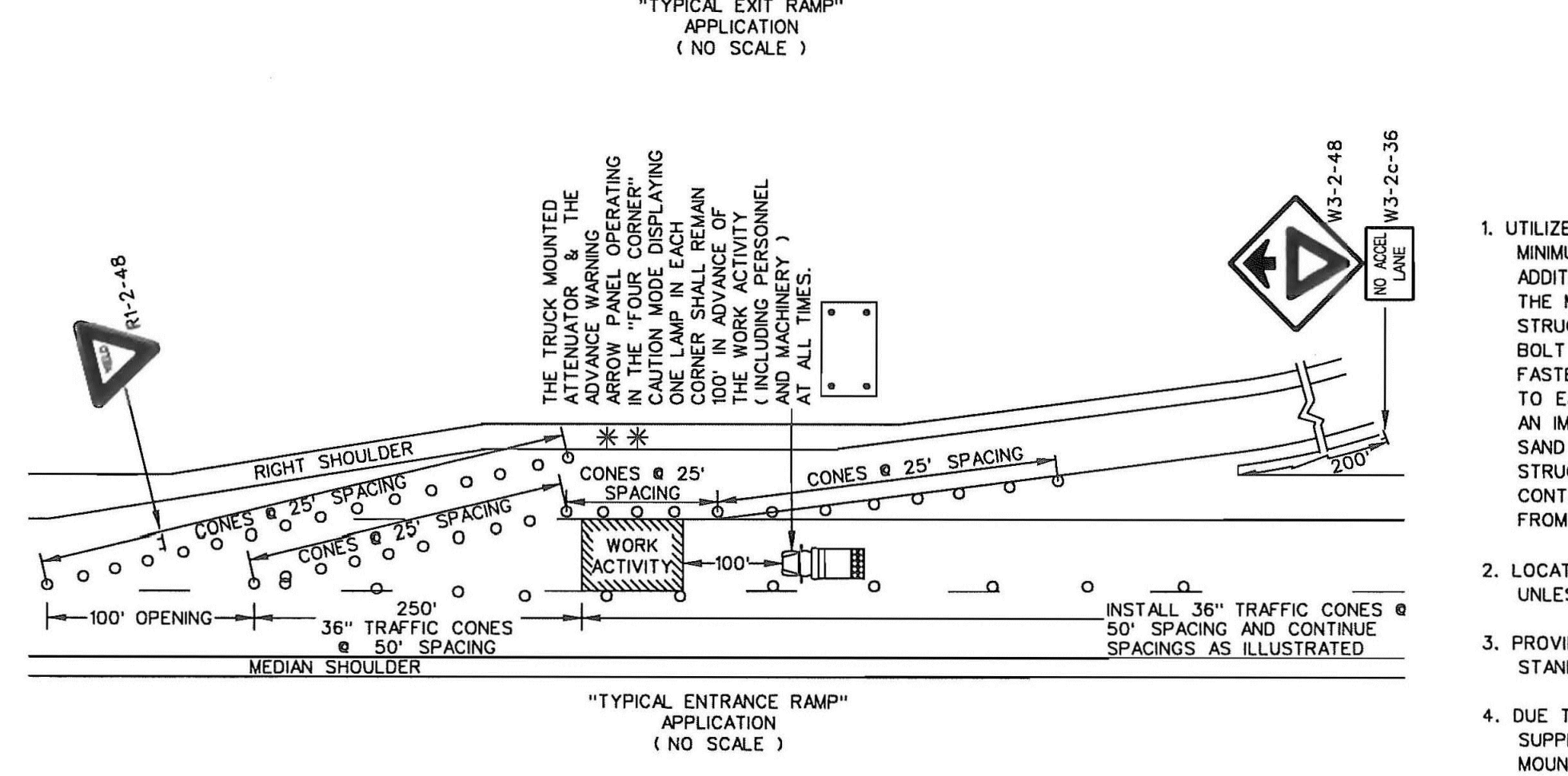
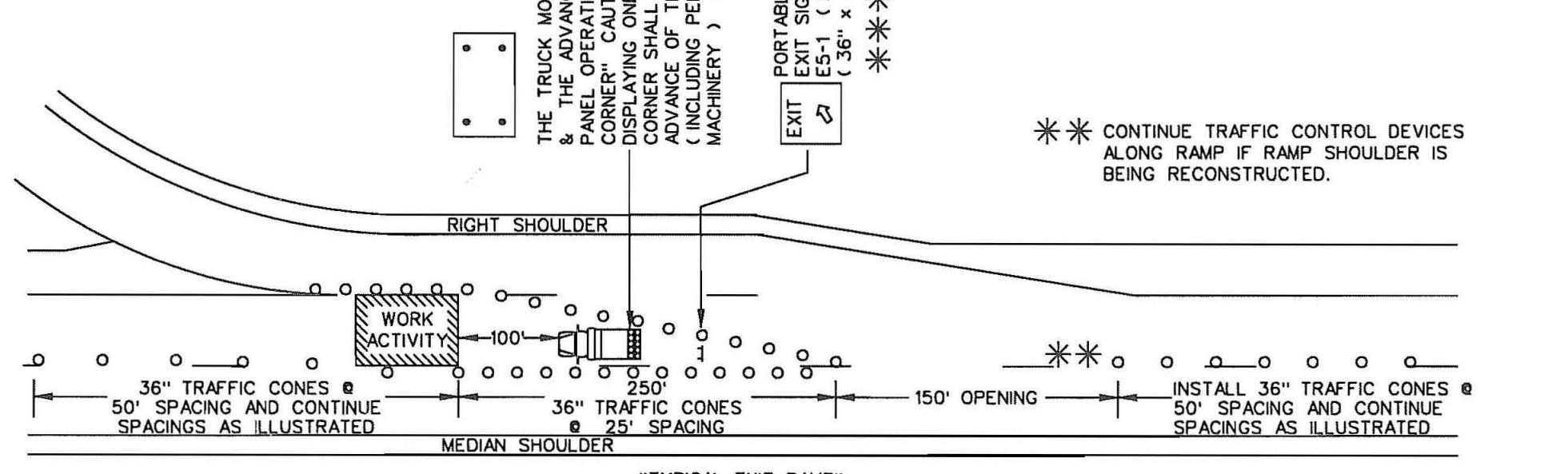
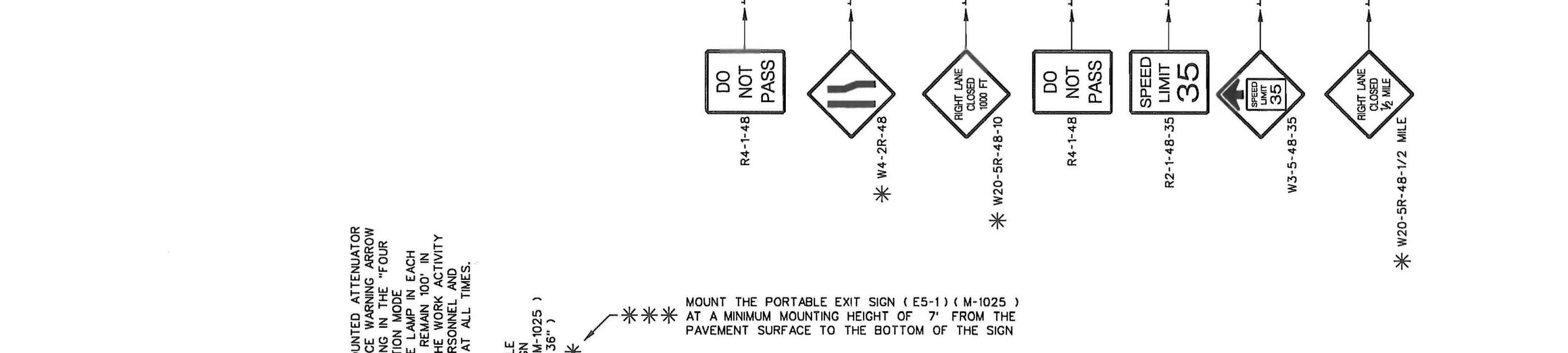
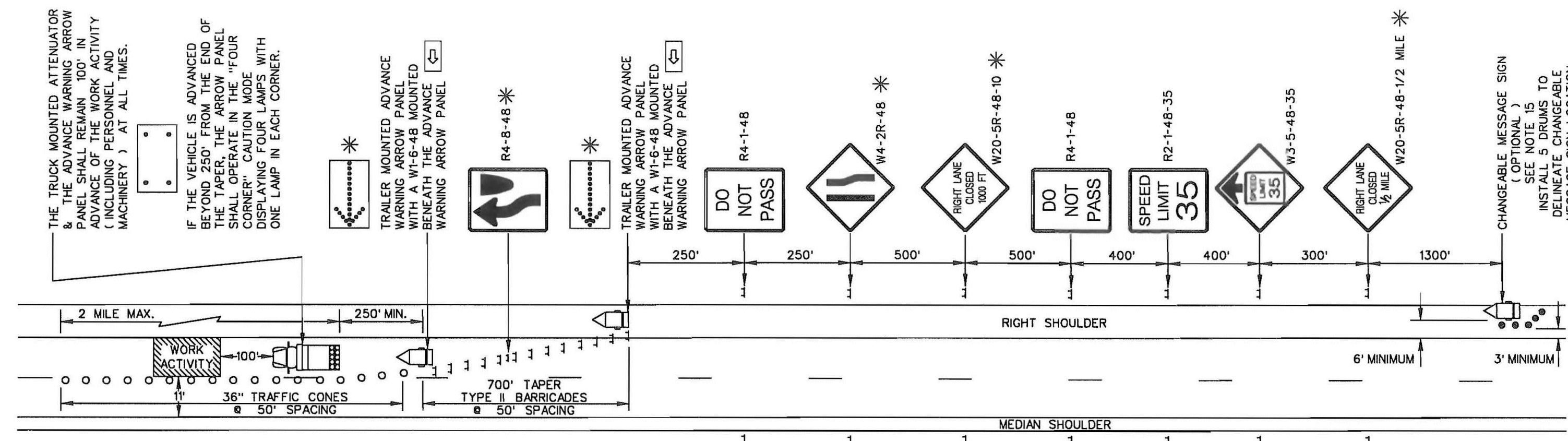
SCDOT SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS OFFICE 955 PARK STREET ROOM 405 COLUMBIA, SC 29201

STANDARD DRAWING

LANE CLOSURE DAYTIME MULTILANE PRIMARY ROUTES

610-025-00

EFFECTIVE LETTING DATE: JAN, 2013 THIS DRAWING IS NOT TO SCALE



GENERAL NOTES

- 1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS.
3. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS; ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN.
5. REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT.
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIAN BARRIERS, BRIDGE PARAPETS OR DOUBLE FACED GUARDRAIL.
8. REFLECTORIZATION OF 36" TRAFFIC CONES USED DURING DAYLIGHT HOURS IS NOT REQUIRED.
9. REFLECTORIZE ALL BARRICADES WITH A TYPE VIII OR IX PRISMATIC RETROREFLECTIVE SHEETING ON ALL PROJECTS LET TO CONTRACT AFTER MAY 1, 2012 UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
10. TYPE I BARRICADES SHALL HAVE A MINIMUM WIDTH OF 3 FEET UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL MINIMIZE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES ONTO AN ADJACENT TRAVEL LANE OPEN TO TRAFFIC.
12. LANE CLOSURES ARE RESTRICTED TO MAXIMUM LENGTHS OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS AND/OR THE DEPARTMENT.
13. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS WITHIN THE SAME TRAVEL LANE UNDER TWO SEPARATE LANE CLOSURES ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 2 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE PAPER OF THE SECOND CLOSURE.
14. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS IN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LANES UNDER TWO SEPARATE LANE CLOSURES ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 4 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
15. UTILIZATION OF A CHANGEABLE MESSAGE SIGN IS OPTIONAL WITH THIS TRAFFIC CONTROL SETUP. HOWEVER, WHEN A CHANGEABLE MESSAGE SIGN IS UTILIZED, INSTALL THE SIGN AS ILLUSTRATED ON THIS STANDARD DRAWING UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS, THE PLANS AND/OR THE ENGINEER.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
17. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF A LANE CLOSURE ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER.

LEFT LANE CLOSURE

- 1. SIGNS ILLUSTRATED ARE FOR A RIGHT LANE CLOSURE.
2. WHEN CLOSING THE LEFT TRAVEL LANE, USE THE FOLLOWING:
3. THE STRIPES ON THE BARRICADES TO THE LEFT OF THE TRAFFIC SHALL SLOPE DOWNWARD FROM THE UPPER LEFT TO THE LOWER RIGHT.
4. THE FLASHING ARROW AND THE "LARGE ARROW" SIGN (W1-6-48) SHALL POINT TO THE RIGHT.
5. THE CHANGEABLE MESSAGE SIGN SHALL FLASH ALTERNATELY TO READ "LEFT LANE CLOSED", "MERGE RIGHT".

PORTABLE TRUCK MOUNTED ATTENUATOR

- 1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICULAR WEIGHT (GVW) OF 15,000 POUNDS (ACTUAL WEIGHT).
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
4. DUE TO THE WEIGHT OF A TRUCK MOUNTED ATTENUATOR, THE TRUCK MOUNTED ATTENUATOR SUPPLEMENTED WITH AN ADVANCE WARNING ARROW PANEL MAY BE REPLACED WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL WHEN THIS TRAFFIC CONTROL SETUP IS UTILIZED FOR ASPHALT CONCRETE PAVEMENT OPERATIONS.

ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.
WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BAR" OR THE "ALTERNATING DIAMOND" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

LEGEND

○ 36" TRAFFIC CONES

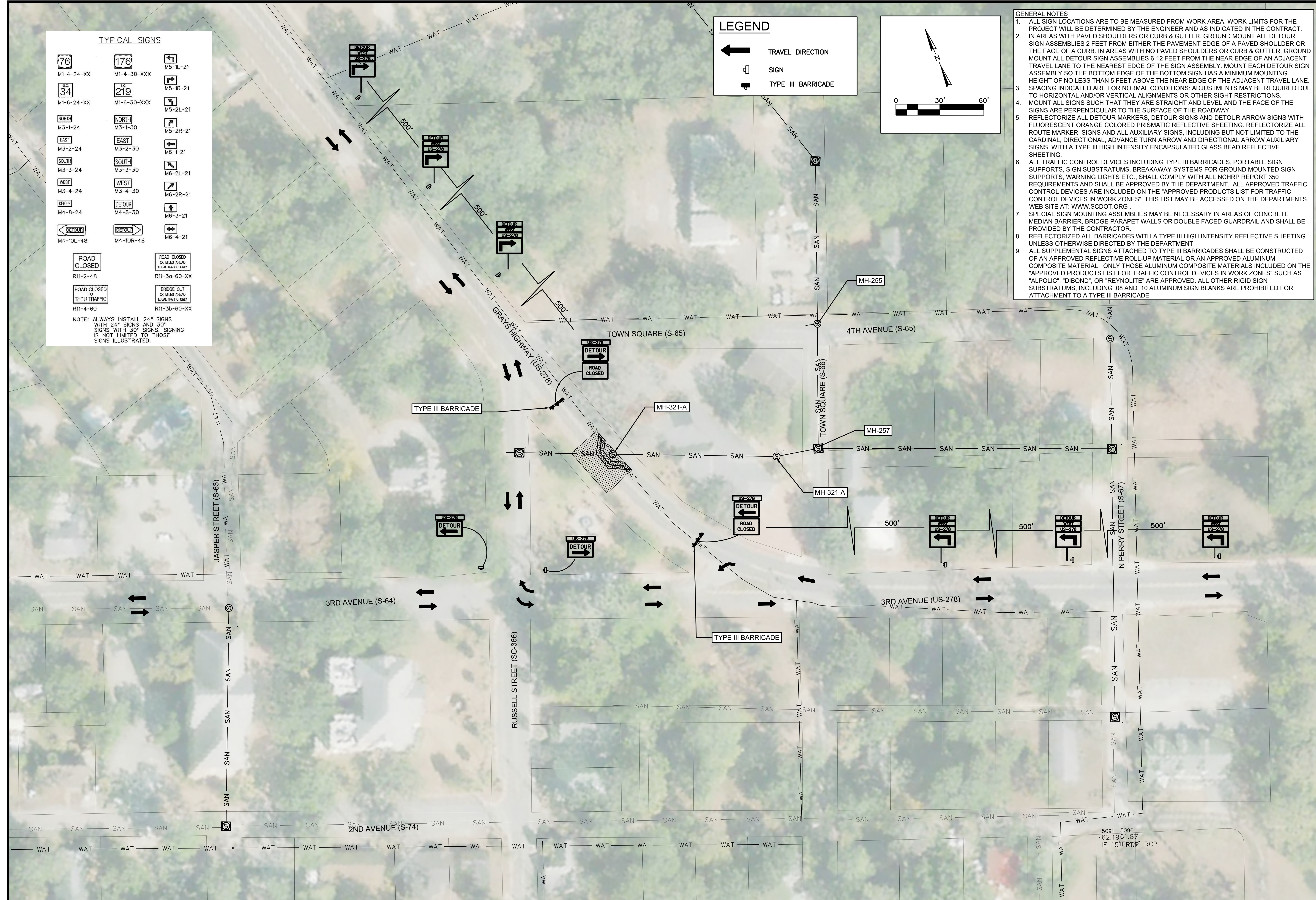
TYPICAL SIGNS

NOTE: ALWAYS INSTALL 24" SIGNS WITH 24" SIGNS AND 30" SIGNS WITH 30" SIGNS. SIGNING IS NOT LIMITED TO THOSE SIGNS ILLUSTRATED.

LEGEND

- TRAVEL DIRECTION
- SIGN
- TYPE III BARRICADE

- GENERAL NOTES**
- ALL SIGN LOCATIONS ARE TO BE MEASURED FROM WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
 - IN AREAS WITH PAVED SHOULDERS OR CURB & GUTTER, GROUND MOUNT ALL DETOUR SIGN ASSEMBLIES 2 FEET FROM EITHER THE PAVEMENT EDGE OF A PAVED SHOULDER OR THE FACE OF A CURB. IN AREAS WITH NO PAVED SHOULDERS OR CURB & GUTTER, GROUND MOUNT ALL DETOUR SIGN ASSEMBLIES 6-12 FEET FROM THE NEAR EDGE OF AN ADJACENT TRAVEL LANE TO THE NEAREST EDGE OF THE SIGN ASSEMBLY. MOUNT EACH DETOUR SIGN ASSEMBLY SO THE BOTTOM EDGE OF THE SIGN HAS A MINIMUM MOUNTING HEIGHT OF NO LESS THAN 5 FEET ABOVE THE NEAR EDGE OF THE ADJACENT TRAVEL LANE. SPACING INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT RESTRICTIONS.
 - MOUNT ALL SIGNS SUCH THAT THEY ARE STRAIGHT AND LEVEL AND THE FACE OF THE SIGNS ARE PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
 - REFLECTORIZE ALL DETOUR MARKERS, DETOUR SIGNS AND DETOUR ARROW SIGNS WITH FLUORESCENT ORANGE COLORED PRISMATIC REFLECTIVE SHEETING. REFLECTORIZE ALL ROUTE MARKER SIGNS AND ALL AUXILIARY SIGNS, INCLUDING BUT NOT LIMITED TO THE CARDINAL, DIRECTIONAL, ADVANCE TURN ARROW AND DIRECTIONAL ARROW AUXILIARY SIGNS, WITH A TYPE III HIGH INTENSITY ENCAPSULATED GLASS BEAD REFLECTIVE SHEETING.
 - ALL TRAFFIC CONTROL DEVICES INCLUDING TYPE III BARRICADES, PORTABLE SIGN SUPPORTS, SIGN SUBSTRATUMS, BREAKAWAY SYSTEMS FOR GROUND MOUNTED SIGN SUPPORTS, WARNING LIGHTS ETC., SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL BE APPROVED BY THE DEPARTMENT. ALL APPROVED TRAFFIC CONTROL DEVICES ARE INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES". THIS LIST MAY BE ACCESSED ON THE DEPARTMENTS WEB SITE AT: WWW.SCDOT.ORG.
 - SPECIAL SIGN MOUNTING ASSEMBLIES MAY BE NECESSARY IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS OR DOUBLE FACED GUARDRAIL AND SHALL BE PROVIDED BY THE CONTRACTOR.
 - REFLECTORIZED ALL BARRICADES WITH A TYPE III HIGH INTENSITY REFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
 - ALL SUPPLEMENTAL SIGNS ATTACHED TO TYPE III BARRICADES SHALL BE CONSTRUCTED OF AN APPROVED REFLECTIVE ROLL-UP MATERIAL OR AN APPROVED ALUMINUM COMPOSITE MATERIAL. ONLY THOSE ALUMINUM COMPOSITE MATERIALS INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" SUCH AS "ALPOLIC", "DIBOND", OR "REYNOLITE" ARE APPROVED. ALL OTHER RIGID SIGN SUBSTRATUMS, INCLUDING .08 AND .10 ALUMINUM SIGN BLANKS ARE PROHIBITED FOR ATTACHMENT TO A TYPE III BARRICADE.



Professional Engineer Seal for Angela B. Bryan, No. 21839, State of South Carolina.

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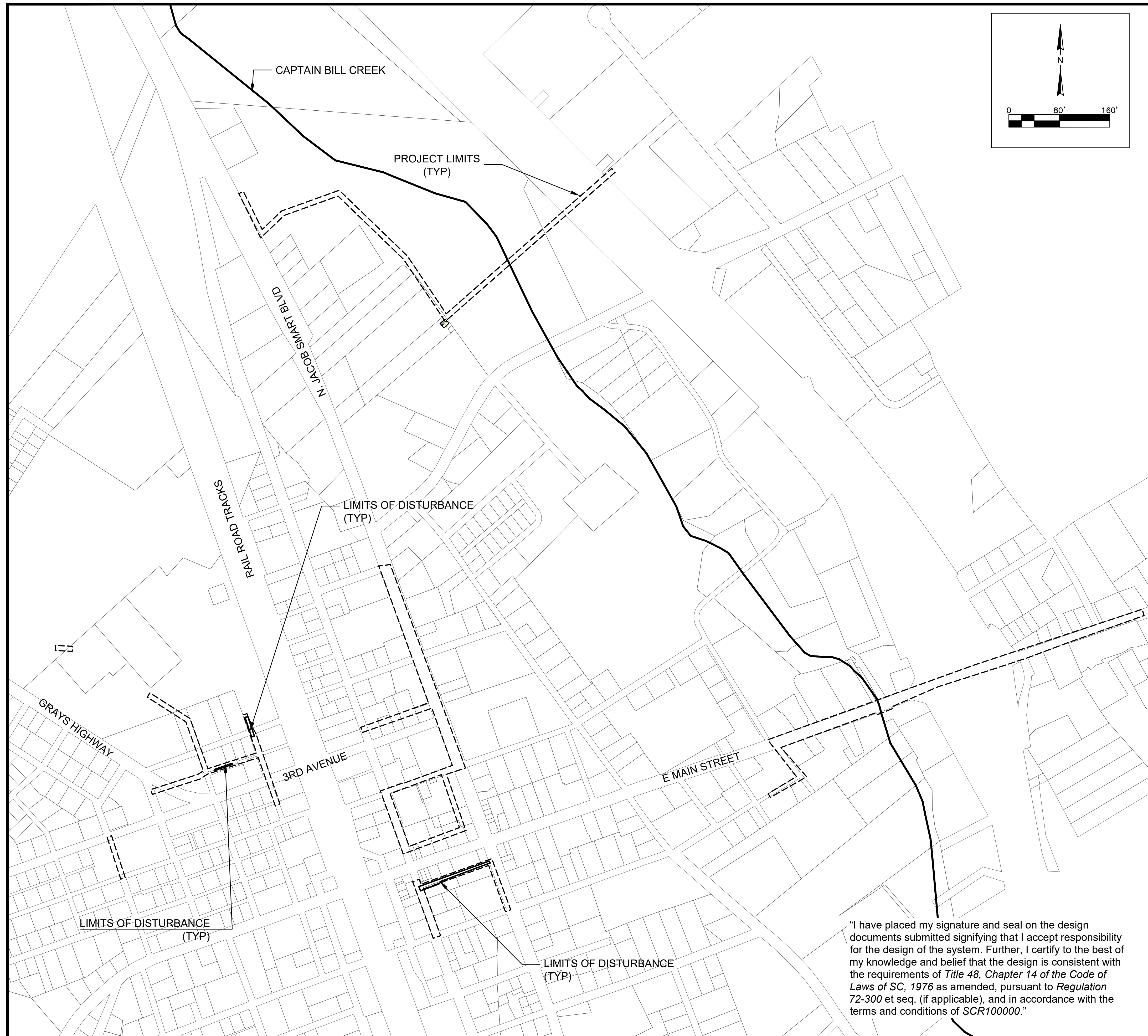
WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 2
MAINTENANCE OF TRAFFIC PLAN
PRIMARY ROUTE US 278 DETOUR
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN

ABB	JMC
JOB #	17-1007
ISSUE DATE	APRIL 2023
ISSUE	BID

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

DRAWING NUMBER
D9.10



"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."

PROJECT LIMIT AND LAND DISTURBANCE LIMITS

SCALE 1" = 80'

SCDHEC SEDIMENT AND EROSION CONTROL STANDARD NOTES

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.
- 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.
- 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.).
- 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.
- 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.
- 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.
- 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:

- CLEARING AND GRUBBING OF AREAS NECESSARY FOR INSTALLATION OF SILT FENCE AND INLET PROTECTION PER CONSTRUCTION PLANS.
- INSTALLATION OF SEWER MAIN AND SEWER LATERALS PER CONSTRUCTION PLANS
- REPAVEMENT OF ROADWAY SURFACE AS PER CONSTRUCTION PLANS
- INSTALLATION OF HYDROSEEDING AND/OR SOD FOR PERMANENT STABILIZATION OF DISTURBED AREAS.
- MAINTAIN GRASS SURFACE.
- REMOVE TEMPORARY SEDIMENT CONTROL FEATURES ONCE FINAL STABILIZATION IS OBTAINED.

PROJECT LIMITS NOTES:

PROJECT LIMITS DETERMINED BY RIGHT-OF-WAY DIMENSIONS AS SPECIFIED AND SHOWN ON DRAWINGS.

PROJECT LIMIT AREAS:
APPROX 11.645 ACRES

LAND DISTURBANCE LIMITS BASED ON PROJECT IMPROVEMENTS AND CONSTRUCTION RELATED ITEMS (DOES NOT INCLUDE MAINTENANCE OF ROADWAYS).

LAND DISTURBANCE AREAS:
APPROX 0.243 ACRES



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.



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WATER AND SEWER RESILIENCY IMPROVEMENTS PART 2 SCDHEC SEDIMENT AND EROSION CONTROL NOTES

DESIGN	DRAWN	DATE	ISSUE	ISSUE
ABB	JMC	17-1007	APRIL 2023	BID

FOUR WATERS ENGINEERING

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

DRAWING NUMBER
EC9.1

SILT FENCE INSTALLATION

1.25 LB./LINEAR FT. STEEL POSTS
MAXIMUM SPACING = 6 FT.
HEAVY DUTY PLASTIC TIE FOR STEEL POSTS (RESTRICT TO TOP 8-INCHES OF FABRIC)
BACKFILL TRENCH WITH COMPACTED EARTH
RUNOFF
USE EITHER FLAT-BOTTOM OR V-BOTTOM TRENCH SEE DETAILS
BURY FABRIC

PLAN SYMBOL
—SF—SF—

FLAT-BOTTOM TRENCH DETAIL

FILTER FABRIC
HEAVY DUTY PLASTIC TIES
18-IN. TO 24-IN.
COMPACTED EARTH
RUNOFF
6-IN.
6-IN.
24-IN. (MINIMUM)

V-SHAPED TRENCH DETAIL

FILTER FABRIC
HEAVY DUTY PLASTIC TIES
18-IN. TO 24-IN.
COMPACTED EARTH
RUNOFF
6-IN.
6-IN.
24-IN. (MINIMUM)
BURY FILTER FABRIC AT LEAST 12-INCHES

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.
- Weight 1.25 pounds per foot (± 8%)

- Posts shall be equipped with projections to aid in fastening of filter fabric.
- 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.
- 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.
- Post spacing shall be at a maximum of 6-feet on center.

SILT FENCE — GENERAL NOTES

- 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.
- Maximum sheet or overland flow path length to the silt fence shall be 100-feet.
- Maximum slope steepness (normal [perpendicular] to the fence line) shall be 2:1.
- 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 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.
- Attach filter fabric to the steel posts using heavy-duty plastic ties that are evenly spaced within the top 8-inches of the fabric.
- 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.
- 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.

SILT FENCE — FABRIC REQUIREMENTS

- 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.
- 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.
- 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
- Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
- Filter Fabric shall be installed at a minimum of 24-inches above the ground.

SILT FENCE — INSPECTION & MAINTENANCE

- The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.
- 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.
- Attention to sediment accumulations along the silt fence is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
- Remove accumulated sediment when it reaches 1/3 the height of the silt fence.
- Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
- 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.
- 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.
- 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.

2" x 2" WOOD STAKES or 1.25 #/FT STEEL POSTS
18-IN. MIN.
2-FT. MAX. SPACING

POST INSTALLATION DETAIL

SEDIMENT TUBE INSTALLATION DETAIL

PLAN SYMBOL
A

18-IN. TO 24-IN. DIA.
24-IN. MIN.
1/5 "D"
"D"=TUBE DIAMETER

SEDIMENT TUBE BURIAL DETAIL

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

South Carolina Department of Health and Environmental Control

SILT FENCE

STANDARD DRAWING NO. SC-03 PAGE 2 of 2

GENERAL NOTES FEBRUARY 2014 DATE

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

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

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.

FOUR WATERS ENGINEERING, INC.
No. 5166
SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER

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TYPE A — SEDIMENT TUBE INLET PROTECTION

GENERAL NOTES

- 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.
- 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.
- Sediment tube diameters shall range from 18-inches to 24-inches. Sediment tubes with smaller diameters are prohibited when used as inlet protection.
- Curled excelsior wood, or natural coconut products that are rolled up to create a sediment tube are not allowed.
- 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.
- Install all sediment tubes to ensure that no gaps exist between the soil and the bottom of the tube. Manufacturer's recommendations should always be consulted before installation.
- The ends of adjacent sediment tubes should be overlapped 6-inches to prevent flow and sediment from passing through the field joint.
- Sediment tubes should not be stacked on top of one another.
- Each sediment tube should be installed in a trench with a depth equal to 1/5 the diameter of the sediment tube.
- Install stakes at a diagonal facing incoming runoff.

INSPECTION & MAINTENANCE

- The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
- 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.
- Attention to sediment accumulations in front of the sediment tube is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
- 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 it fills approximately 1/3 the depth of the sump.
- Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
- Large debris, trash, and leaves should be removed from in front of tubes when found.
- 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

TYPE A — FILTER FABRIC REQUIREMENTS

- 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.
- 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.
- 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
- Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
- Filter Fabric shall be installed at a minimum of 24-inches above the ground.

TYPE A — 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.
 - Weight 1.25 pounds per foot (± 8%)
- Posts shall be equipped with projections to aid in fastening of filter fabric.
- 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.
- Post spacing shall be at a maximum of 3-feet on center.

TYPE A — INSPECTION & MAINTENANCE

- The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
- Regular inspections of 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.
- Attention to sediment accumulations along the filter fabric is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
- Remove accumulated sediment when it reaches 1/3 the height of the filter fabric. When a sump is installed in front of the fabric, sediment should be removed when it fills approximately 1/3 the depth of the sump.
- Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
- Check for areas where stormwater runoff has eroded a channel beneath the filter fabric, or where the fabric has sagged or collapsed due to runoff overtopping the inlet protection.
- Check for tears within the filter fabric, areas where fabric has begun to decompose, and for any other circumstance that may render the inlet protection ineffective. Removed damaged fabric and reinstall new filter fabric immediately.
- Inlet protection structures should be removed after all 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

Filter Fabric Inlet Protection

STANDARD DRAWING NO.

GENERAL NOTES

WATER AND SEWER RESILIENCY IMPROVEMENTS

PART 2

SCDHEC SEDIMENT AND EROSION CONTROL DETAILS

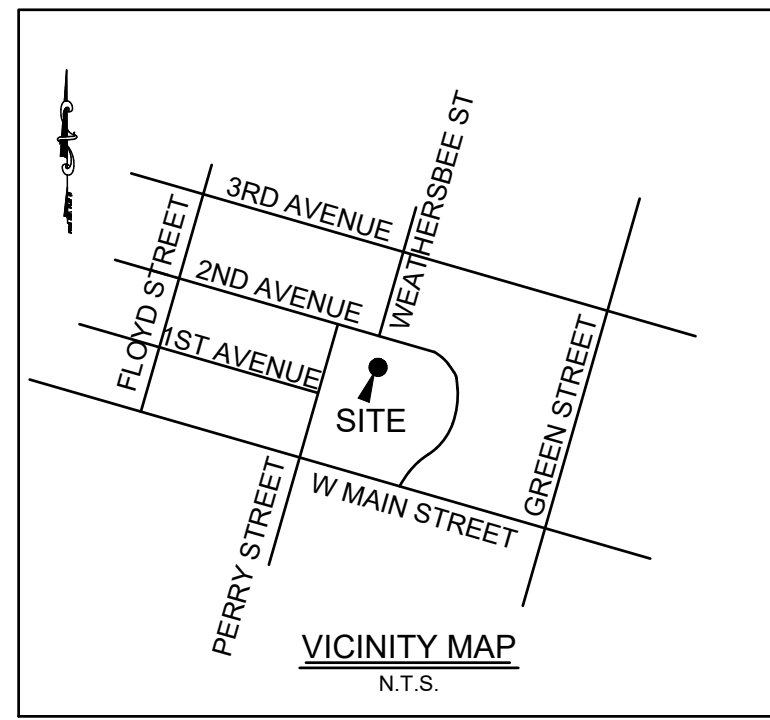
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007	APRIL	2023	ISSUE	BID
ABB	JMC						
JOB #	ISSUE DATE	ISSUE					

FOUR WATERS ENGINEERING

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

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EC9.2



LEGEND:

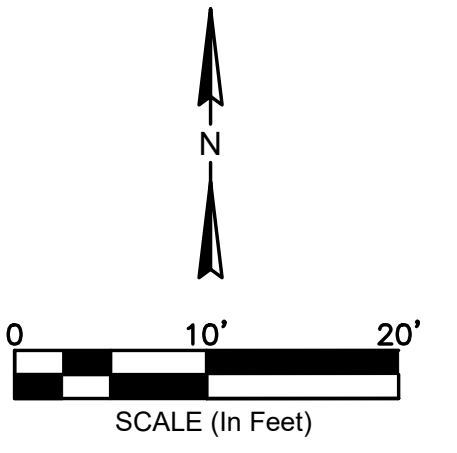
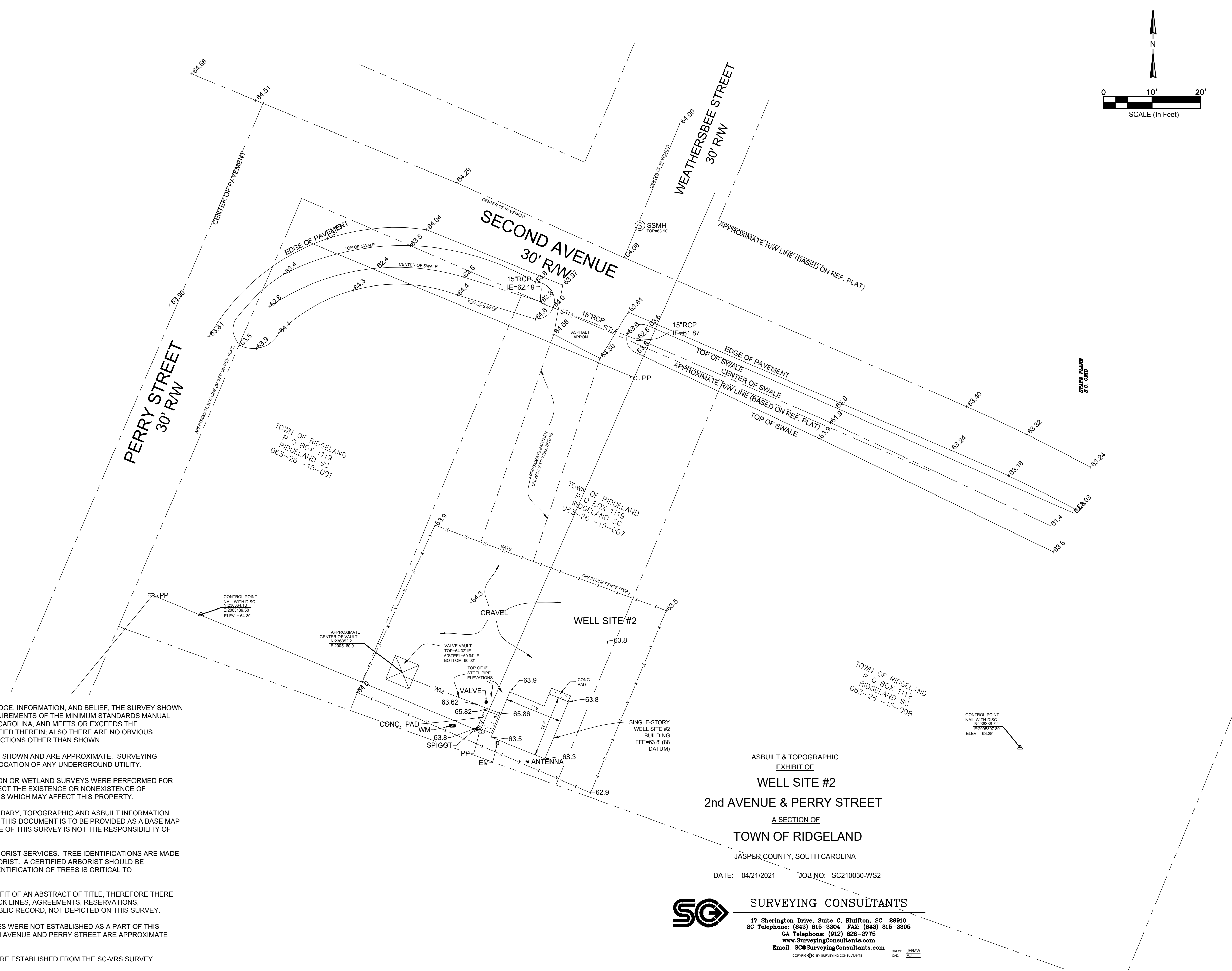
+9.5	SPOT ELEVATION
RCP	REINFORCED CONCRETE PIPE
EM	ELECTRIC METER
IE	INVERT ELEVATION
PP	POWER POLE
NTS	NOT TO SCALE
N/F	NOW OR FORMERLY
R/W	RIGHT OF WAY
SSMH	SANITARY SEWER MANHOLE
WM	WATER METER
FFE	FINISH FLOOR ELEVATION
SAN	SANITARY SEWER LINE

PREPARED FOR:
 FOUR WATERS ENGINEERING & TOWN OF
 RIDGELAND
 ADDRESS: 2nd AVENUE & PERRY STREET PARENT
 TAX PARCEL I.D. Nos. 063-26-15-001, 007 & 008

REFERENCE PLAT:
 PROPERTY OF MAE P. ROBERTSON,
 TOWN OF RIDGELAND, JASPER COUNTY, SC.
 REFERENCES: DEED 89, PAGE 370,
 DATED: 09/17/1990.
 BY: NIELS CHRISTENSEN IV, S.C.R.L.S. NO. 13162,
 RECORDED: P.B. 19 PAGE 85.

SPECIAL NOTE:
 *HORIZONTAL DATUM IS NAD 83 SOUTH
 CAROLINA STATE PLANE COORDINATES
 *VERTICAL DATUM IN NAVD 88
 *SEE NOTE #8 BELOW

- NOTES:**
- I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO OBVIOUS, APPARENT OR VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.
 - UNDERGROUND UTILITIES NOT LOCATED EXCEPT AS SHOWN AND ARE APPROXIMATE. SURVEYING CONSULTANTS DOES NOT CERTIFY TO THE EXACT LOCATION OF ANY UNDERGROUND UTILITY.
 - NO SUBSURFACE OR ENVIRONMENTAL INVESTIGATION OR WETLAND SURVEYS WERE PERFORMED FOR THIS PLAT. THEREFORE THIS PLAT DOES NOT REFLECT THE EXISTENCE OR NONEXISTENCE OF WETLANDS, CONTAMINATION, OR OTHER CONDITIONS WHICH MAY AFFECT THIS PROPERTY.
 - SURVEYING CONSULTANTS CERTIFIES TO THE BOUNDARY, TOPOGRAPHIC AND ASBLUT INFORMATION PROVIDED HEREON AS OF THE DATE OF SURVEY. IF THIS DOCUMENT IS TO BE PROVIDED AS A BASE MAP FOR OTHERS, INFORMATION ADDED AFTER THE DATE OF THIS SURVEY IS NOT THE RESPONSIBILITY OF SURVEYING CONSULTANTS.
 - SURVEYING CONSULTANTS DOES NOT PROVIDE ARBORIST SERVICES. TREE IDENTIFICATIONS ARE MADE AS BEST OBSERVANCE/KNOWLEDGE OF A NON-ARBORIST. A CERTIFIED ARBORIST SHOULD BE CONSULTED TO VERIFY TREE IDENTIFICATION, IF IDENTIFICATION OF TREES IS CRITICAL TO DEVELOPMENT.
 - THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE. THEREFORE THERE MAY BE OTHER EASEMENTS, RIGHT-OF-WAY, SETBACK LINES, AGREEMENTS, RESERVATIONS, RESTRICTIONS, OR OTHER SIMILAR MATTERS OF PUBLIC RECORD, NOT DEPICTED ON THIS SURVEY.
 - BOUNDARY LINES AND/OR ROAD RIGHT-OF-WAY LINES WERE NOT ESTABLISHED AS A PART OF THIS SURVEY. THE RIGHT-OF-WAY LINES SHOWN FOR 2nd AVENUE AND PERRY STREET ARE APPROXIMATE BASED ON THE CENTER OF THE ROAD.
 - THE HORIZONTAL AND VERTICAL DATUM SHOWN WERE ESTABLISHED FROM THE SC-VRS SURVEY NETWORK.



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

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SOUTH CAROLINA
 REGISTERED PROFESSIONAL ENGINEER
 FOUR WATERS ENGINEERING, INC.
 No. 5166

REV. NO.	DATE	BY	DESCRIPTION
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 3
WELL SITE #2 EXISTING CONDITIONS
 TOWN OF RIDGELAND,
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007
ABB	JMC		
JOB #	ISSUE	DATE	ISSUE

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

DRAWING NUMBER
G10.1

ASBLUT & TOPOGRAPHIC
 EXHIBIT OF
WELL SITE #2
 2nd AVENUE & PERRY STREET
 A SECTION OF
TOWN OF RIDGELAND
 JASPER COUNTY, SOUTH CAROLINA
 DATE: 04/21/2021 JOB NO: SC210030-WS2

SC SURVEYING CONSULTANTS
 17 Sherington Drive, Suite C, Bluffton, SC 29910
 SC Telephone: (843) 815-3304 FAX: (843) 815-3305
 GA Telephone: (912) 828-2775
 www.SurveyingConsultants.com
 Email: SC@SurveyingConsultants.com

GENERAL NOTES

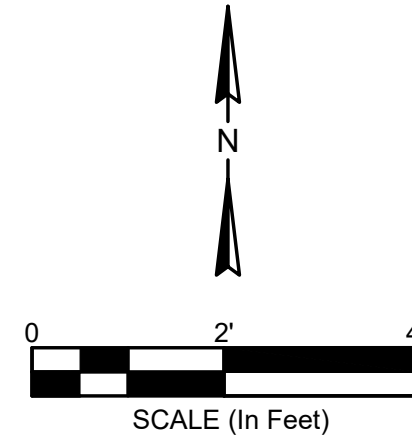
1. ALL ELEVATIONS BASED ON U.S.C. & G.S. DATUM AND SHOWN IN FEET.
2. ELEVATIONS:
ELEVATIONS SHOWN AS THUS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (N.A.V.D.) OF 1988 PER SC SURVEYING CONSULTANTS, INC. 17 SHERINGTON DRIVE, SUITE C, BLUFFTON, SC 29910, PHONE (843) 815-3304, FAX (843) 815-3305
BENCHMARK #1: SET PK NAIL & DISK DURDEN BM SOUTHEAST FACE OF POLE EL (15.72) NAVD 88
BENCHMARK #2: SET PK NAIL & DISK DURDEN BM EAST FACE OF POLE EL (15.28) NAVD 88
3. COORDINATE SYSTEMS:
THE HORIZONTAL COORDINATES FOR THE SURVEY ARE BASED ON SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM (SPC), EAST ZONE (901), NORTH AMERICAN DATUM (NAD) 1983. ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN DATUM OF 1988 (NAVD88) AND ARE EXPRESSED IN FEET.
4. ARCHITECTURAL DETAILS AND NOTES ARE FOR REFERENCE PURPOSE ONLY. COMPLETE ARCHITECTURAL PLANS FOR CONSTRUCTION ARE INCLUDED ON ATTACHED SHEETS XXX THROUGH ZZZ AND IN ASSOCIATED SECTIONS OF WRITTEN SPECIFICATIONS.
5. ELECTRICAL DETAILS AND NOTES ARE FOR REFERENCE PURPOSE ONLY. COMPLETE ARCHITECTURAL PLANS FOR CONSTRUCTION ARE INCLUDED ON ATTACHED SHEETS XXX THROUGH ZZZ AND IN ASSOCIATED SECTIONS OF WRITTEN SPECIFICATIONS.

DEMOLITION NOTES:

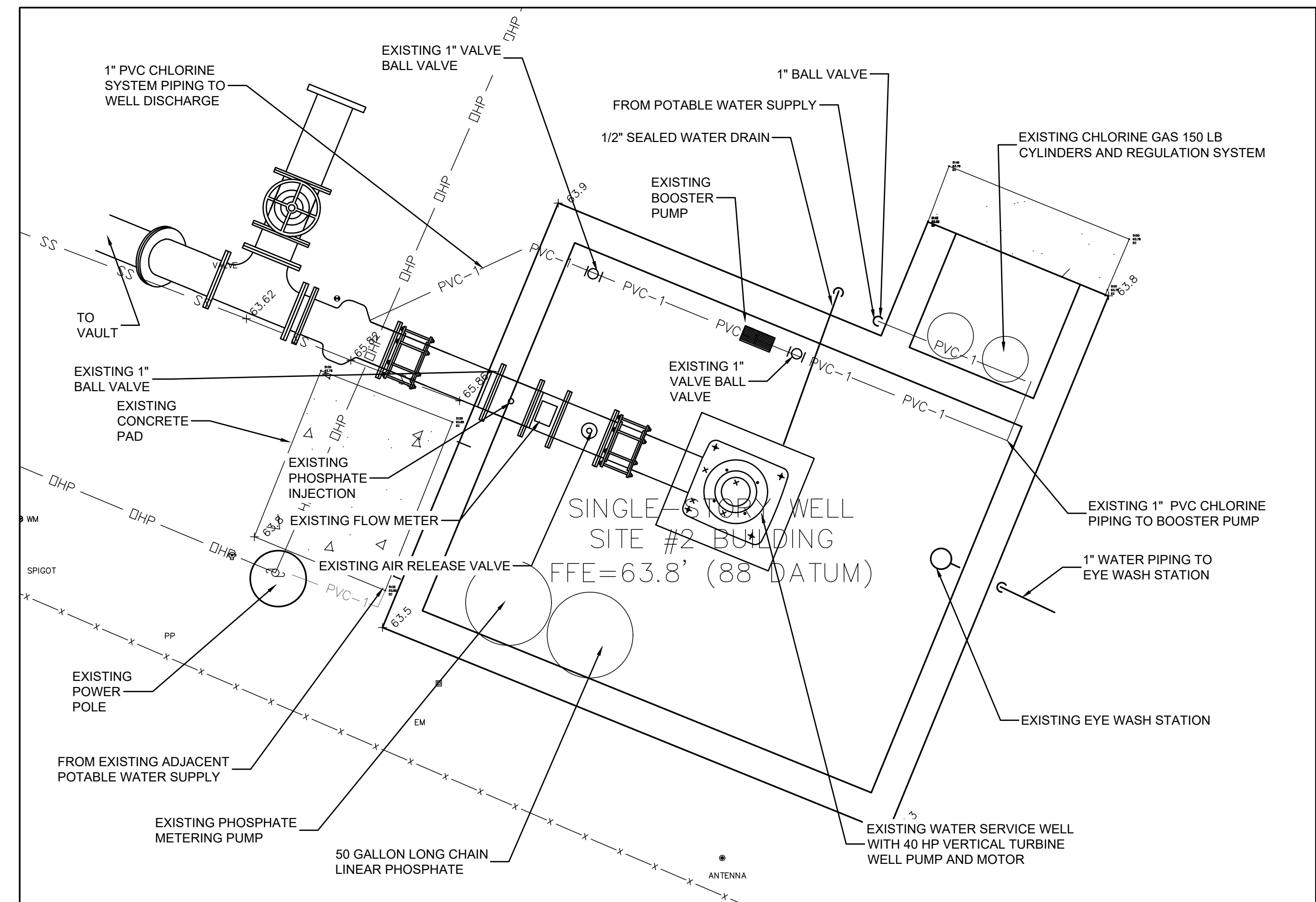
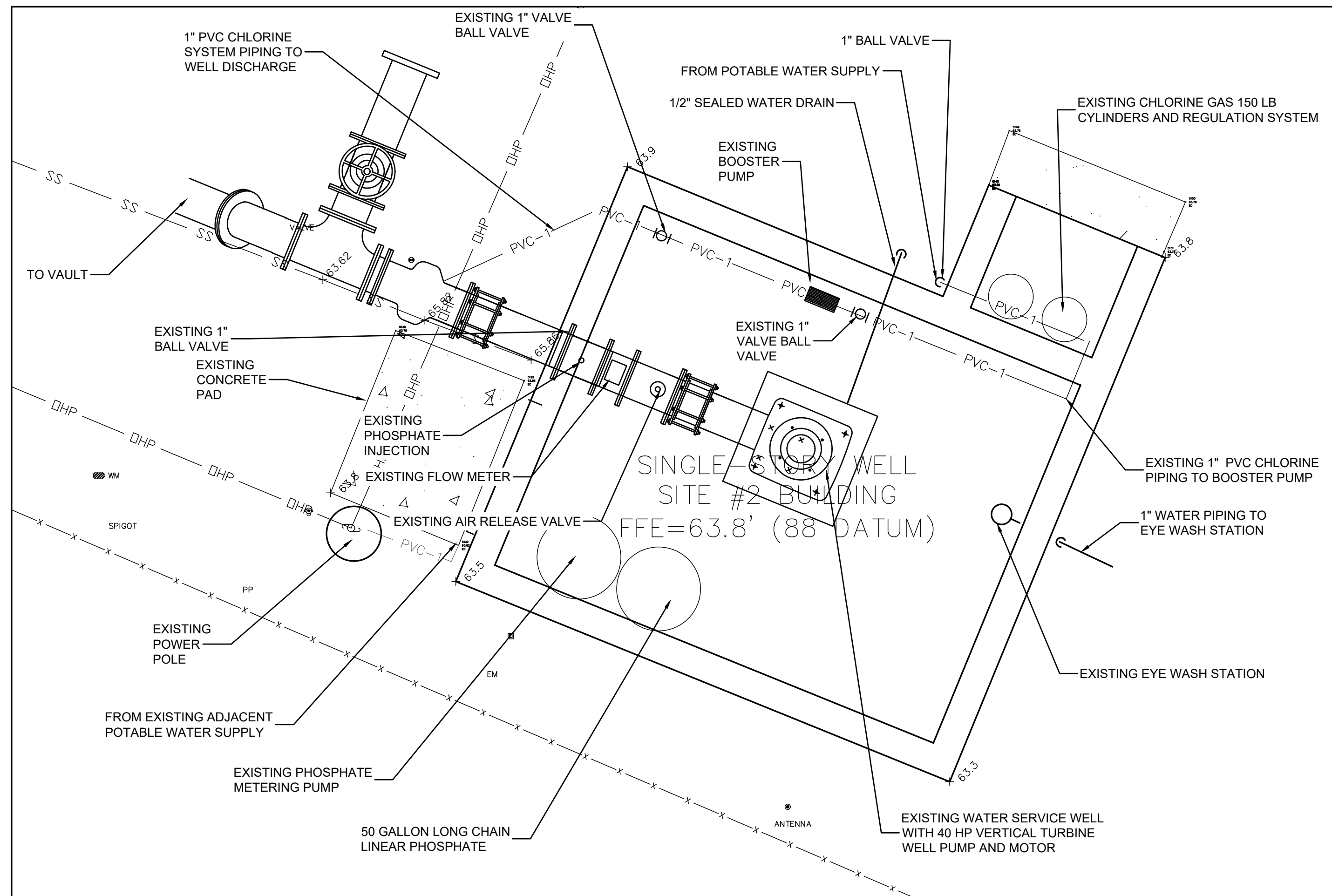
1. COORDINATE REMOVAL OF GAS CHLORINE SYSTEM WITH TOWN STAFF.
2. REMOVE EXISTING WALLS AND CONCRETE PAD AS SHOWN AND REPAIR FOUNDATION/FLOOR AND ANY AFFECTED REMAINING WALLS WITH EPOXY/CEMENT MORTAR (SIKADUR 45 OR EQUIVALENT).
3. RELOCATE EXISTING SCADA PANEL ON WALL ADJACENT TO ELECTRICAL PANELS.

CONSTRUCTION NOTES:

1. COORDINATE INSTALLATION OF SODIUM HYPOCHLORITE SYSTEM WITH TOWN STAFF.



DEMOLITION PLAN INSET



EXISTING CONDITIONS

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

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No. 5166
SOUTH CAROLINA
CERTIFICATE OF AUTHORITY

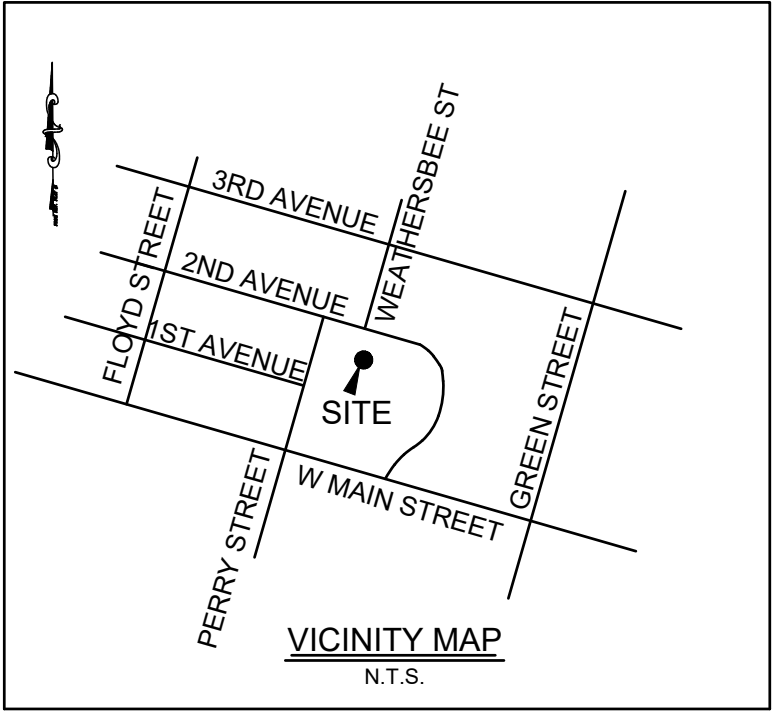
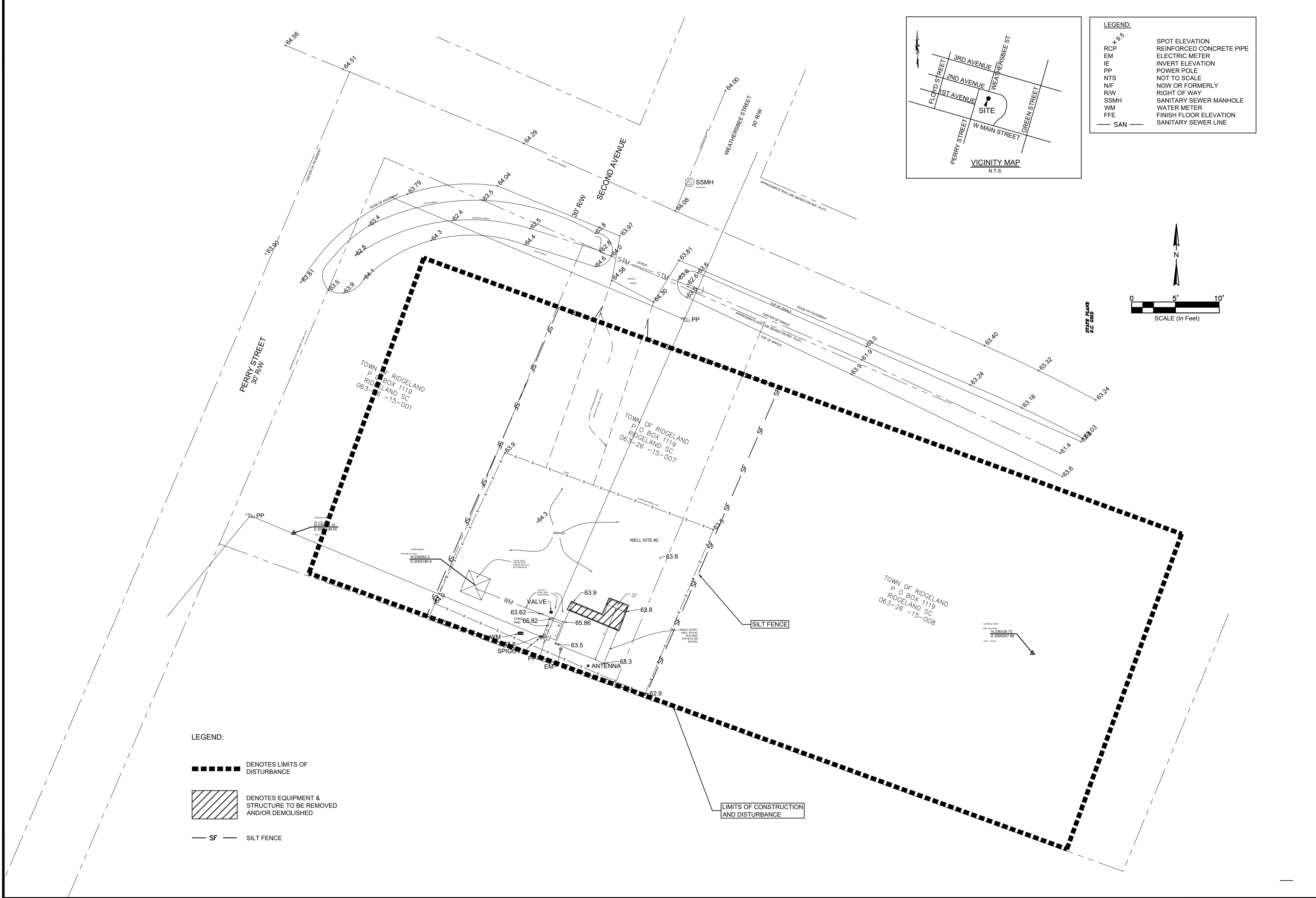
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 3
WELL #2 EXISTING CONDITIONS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	DATE	ISSUE	ISSUE
ABB	JMC	17-1007	FEB 2023	BID

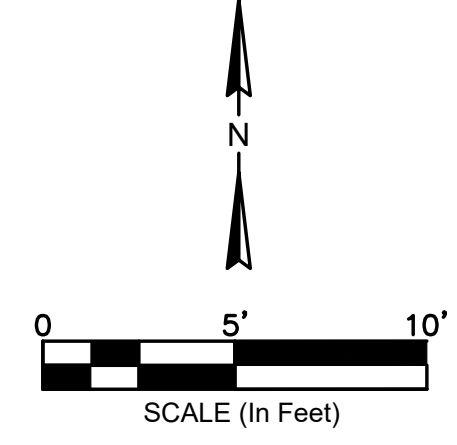
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LEGEND:

SPOT ELEVATION	+
REINFORCED CONCRETE PIPE	RCP
ELECTRIC METER	EM
INVERT ELEVATION	IE
POWER POLE	PP
NOT TO SCALE	NTS
NOW OR FORMERLY	N/F
RIGHT OF WAY	R/W
SANITARY SEWER MANHOLE	SSMH
WATER METER	WM
FINISH FLOOR ELEVATION	FFE
SANITARY SEWER LINE	SAN



LEGEND:

DENOTES LIMITS OF DISTURBANCE	--- (Thick Dashed Line)
DENOTES EQUIPMENT & STRUCTURE TO BE REMOVED AND/OR DEMOLISHED	▨ (Hatched Area)
SILT FENCE	— SF —

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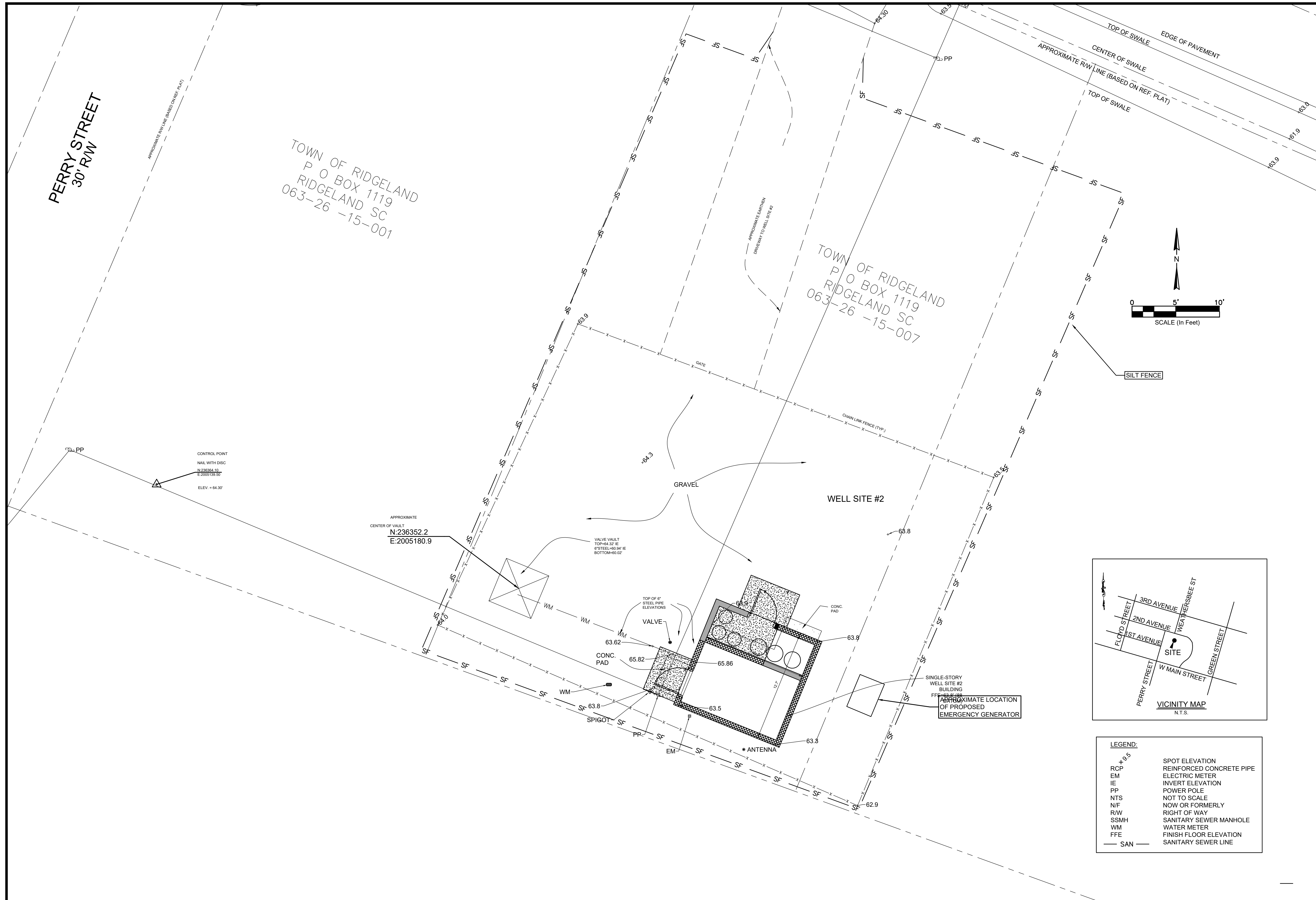
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 3
WELL SITE #2 CONSTRUCTION LIMITS AND DEMOLITION PLAN
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

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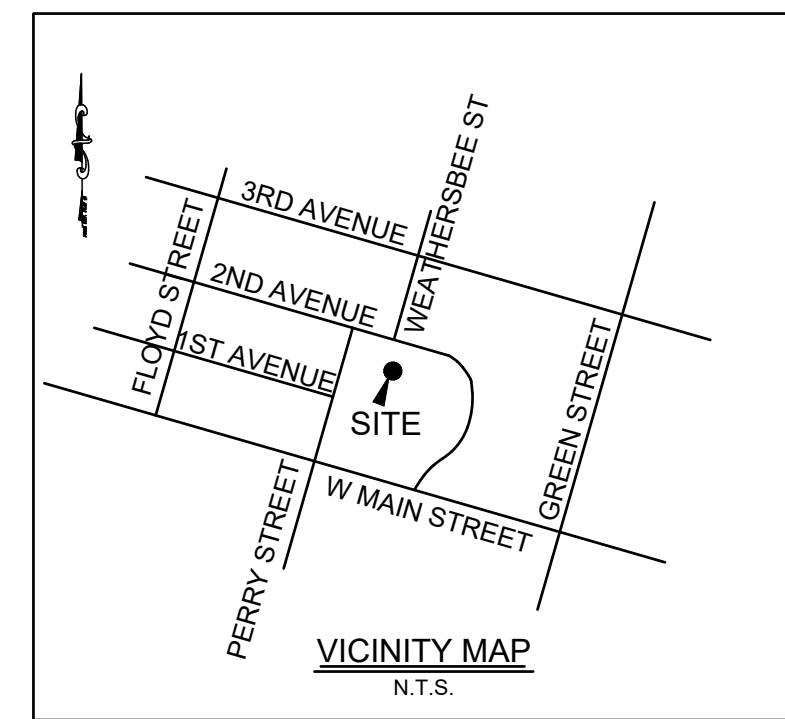
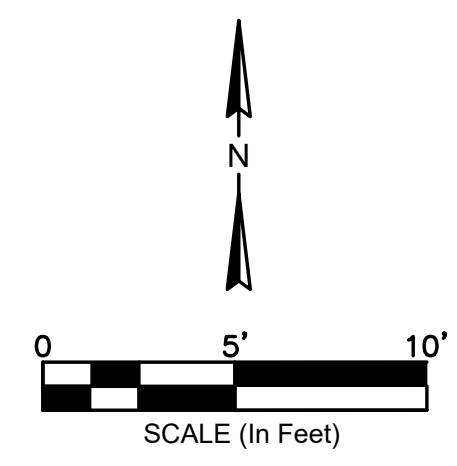
DRAWING NUMBER
C10.1



PERRY STREET
30' RW

TOWN OF RIDGELAND
P O BOX 1119
RIDGELAND SC
063-26 -15-001

TOWN OF RIDGELAND
P O BOX 1119
RIDGELAND SC
063-26 -15-007



LEGEND:

SPOT ELEVATION	SPOT ELEVATION
RCP	REINFORCED CONCRETE PIPE
EM	ELECTRIC METER
IE	INVERT ELEVATION
PP	POWER POLE
NTS	NOT TO SCALE
N/F	NOW OR FORMERLY
R/W	RIGHT OF WAY
SSMH	SANITARY SEWER MANHOLE
WM	WATER METER
FFE	FINISH FLOOR ELEVATION
SAN	SANITARY SEWER LINE

REGISTERED PROFESSIONAL ENGINEER
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SOUTH CAROLINA
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No. 5166
FOUR WATERS ENGINEERING, INC.

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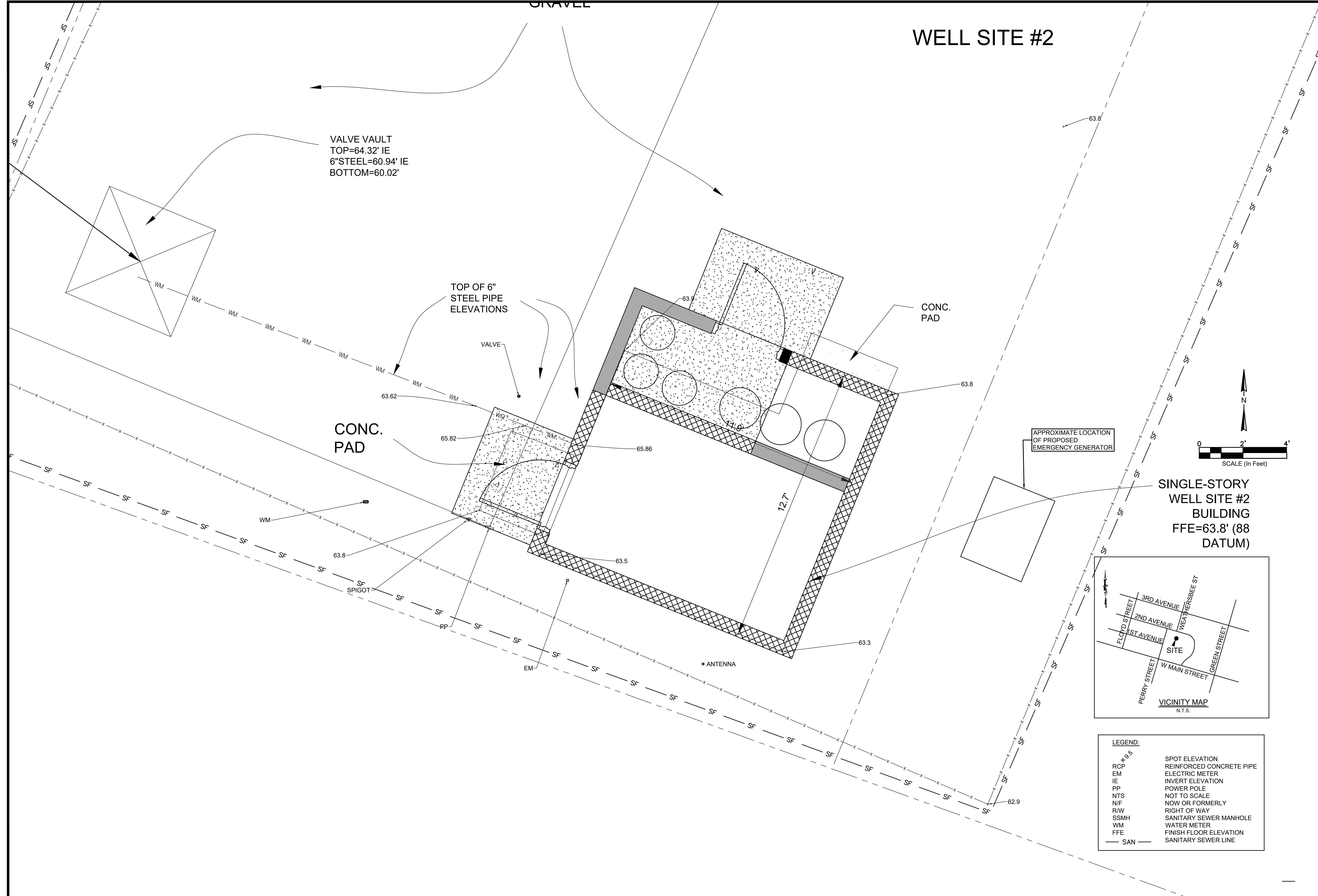
WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 3
WELL SITE #2 CONSTRUCTION PLAN
SITEPLAN
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

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WELL SITE #2



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PROFESSIONAL ENGINEER
No. 5166
FOUR WATERS ENGINEERING, INC.
STATE OF SOUTH CAROLINA

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 3
**WELL SITE #2 CONSTRUCTION PLAN
DETAIL**
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007
ABB	JMC		
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PROJECT LIMIT AND LAND DISTURBANCE LIMITS

SCALE 1" = 1200'

SCDHEC SEDIMENT AND EROSION CONTROL STANDARD NOTES

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 CANT 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.
- 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.
- 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.
- INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3:1V OR GREATER) WHERE LAND-DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 7 CALENDAR DAYS.
- MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.
- 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.
- 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.).
- 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.
- 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.
- 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.
- 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:

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

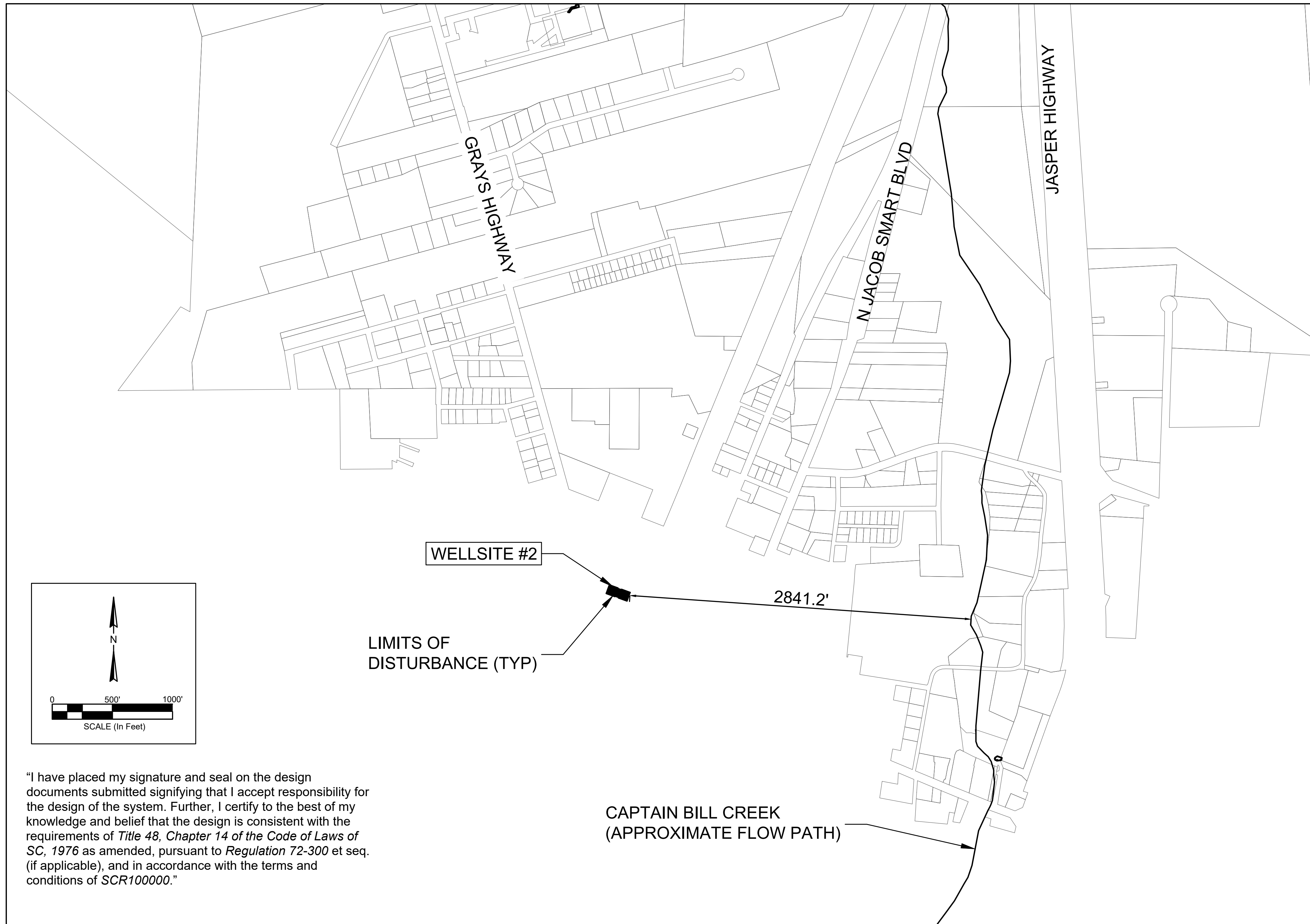
PROJECT LIMITS NOTES:

PROJECT LIMITS DETERMINED AS EXTENT OF LAND DISTURBANCE OR WELL SITE BOUNDARY, WHICHEVER IS GREATER

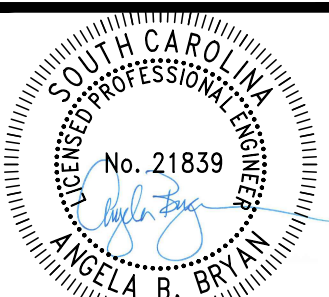
PROJECT LIMIT AREAS:
APPROX 0.32 ACRES

LAND DISTURBANCE LIMITS BASED ON PROJECT IMPROVEMENTS AND CONSTRUCTION RELATED ITEMS

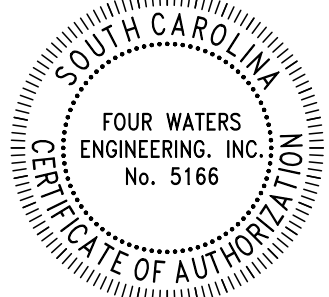
LAND DISTURBANCE AREAS:
APPROX 0.32 ACRES



"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."



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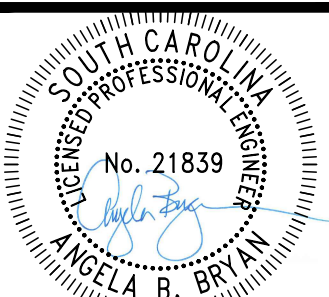
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 3
SCDHEC SEDIMENT AND EROSION CONTROL FIGURE AND DETAILS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

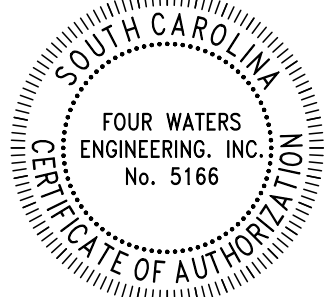
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		17-1007	FEB 2023		

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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 3
SEDIMENT AND EROSION CONTROL
FIGURE AND DETAILS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

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DRAWING NUMBER
D10.2

SILT FENCE INSTALLATION

1.25 LB./LINEAR FT. STEEL POSTS
 FILTER FABRIC
 MAXIMUM SPACING = 6 FT.
 BACKFILL TRENCH WITH COMPACTED EARTH
 RUNOFF
 USE EITHER FLAT-BOTTOM OR V-BOTTOM TRENCH SEE DETAILS
 HEAVY DUTY PLASTIC TIE FOR STEEL POSTS (RESTRICT TO TOP 8-INCHES OF FABRIC)
 BURY FABRIC

PLAN SYMBOL
 —SF—SF—

FLAT-BOTTOM TRENCH DETAIL

FILTER FABRIC
 HEAVY DUTY PLASTIC TIES
 COMPACTED EARTH
 RUNOFF
 6-IN.
 18-IN. TO 24-IN.
 24-IN. (MINIMUM)
 6-IN.

V-SHAPED TRENCH DETAIL

FILTER FABRIC
 HEAVY DUTY PLASTIC TIES
 COMPACTED EARTH
 RUNOFF
 6-IN.
 18-IN. TO 24-IN.
 24-IN. (MINIMUM)
 6-IN.
 BURY FILTER FABRIC AT LEAST 12-INCHES

SILT FENCE — GENERAL NOTES

- 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.
- Maximum sheet or overland flow path length to the silt fence shall be 100-feet.
- Maximum slope steepness (normal [perpendicular] to the fence line) shall be 2:1.
- 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.
- Attach filter fabric to the steel posts using heavy-duty plastic ties that are evenly spaced within the top 8-inches of the fabric.
- 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.
- 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%)

- Posts shall be equipped with projections to aid in fastening of filter fabric.
- 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.
- 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.
- Post spacing shall be at a maximum of 6-feet on center.

SILT FENCE — INSPECTION & MAINTENANCE

- The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.
- Regular inspections of silt fence shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
- Attention to sediment accumulations along the silt fence is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
- Remove accumulated sediment when it reaches 1/3 the height of the silt fence.
- Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
- 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.
- 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.
- 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.

SILT FENCE — FABRIC REQUIREMENTS

- 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.
- 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.
- 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
- Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
- Filter Fabric shall be installed at a minimum of 24-inches above the ground.

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

2" x 2" WOOD STAKES or 1.25 #/FT STEEL POSTS
 18-IN. MIN.
 2-FT. MAX. SPACING

SEDIMENT TUBE INSTALLATION DETAIL

PLAN SYMBOL
 (A)

SEDIMENT TUBE BURIAL DETAIL

18-IN. TO 24-IN. DIA.
 24-IN. MIN.
 1/5 "D"
 "D"=TUBE DIAMETER

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

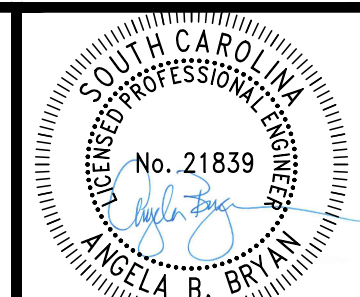
GENERAL NOTES

- 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.
- 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.
- Sediment tube diameters shall range from 18-inches to 24-inches. Sediment tubes with smaller diameters are prohibited when used as inlet protection.
- Curled excelsior wood, or natural coconut products that are rolled up to create a sediment tube are not allowed.
- 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.
- Install all sediment tubes to ensure that no gaps exist between the soil and the bottom of the tube. Manufacturer's recommendations should always be consulted before installation.
- The ends of adjacent sediment tubes should be overlapped 6-inches to prevent flow and sediment from passing through the field joint.
- Sediment tubes should not be stacked on top of one another.
- Each sediment tube should be installed in a trench with a depth equal to 1/5 the diameter of the sediment tube.
- Install stakes at a diagonal facing incoming runoff.

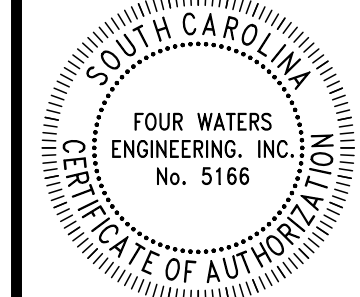
INSPECTION & MAINTENANCE

- The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
- Regular inspections of sediment tube inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
- Attention to sediment accumulations in front of the sediment tube is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
- 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 it fills approximately 1/3 the depth of the sump.
- Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
- Large debris, trash, and leaves should be removed from in front of tubes when found.
- 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



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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 3
TEMPORARY TRAFFIC CONTROL
DETAILS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	17-1007	FEB	BID
ABB				2023	
JOB #					
ISSUE					
DATE					
ISSUE					

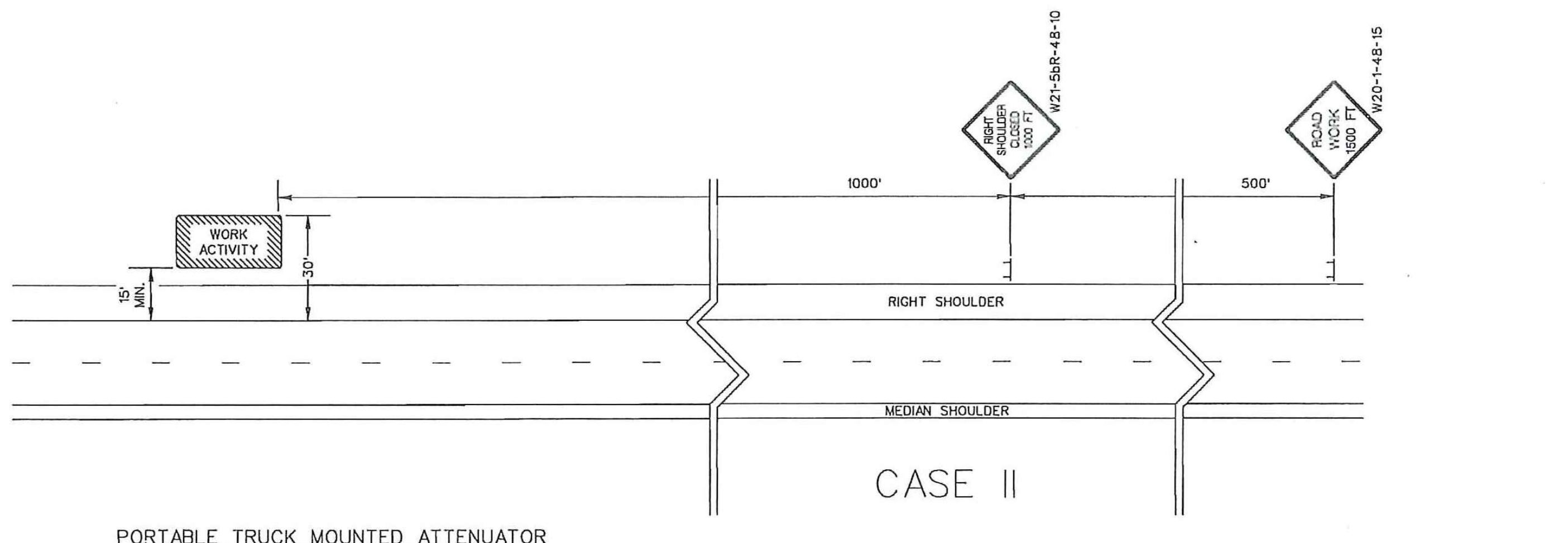
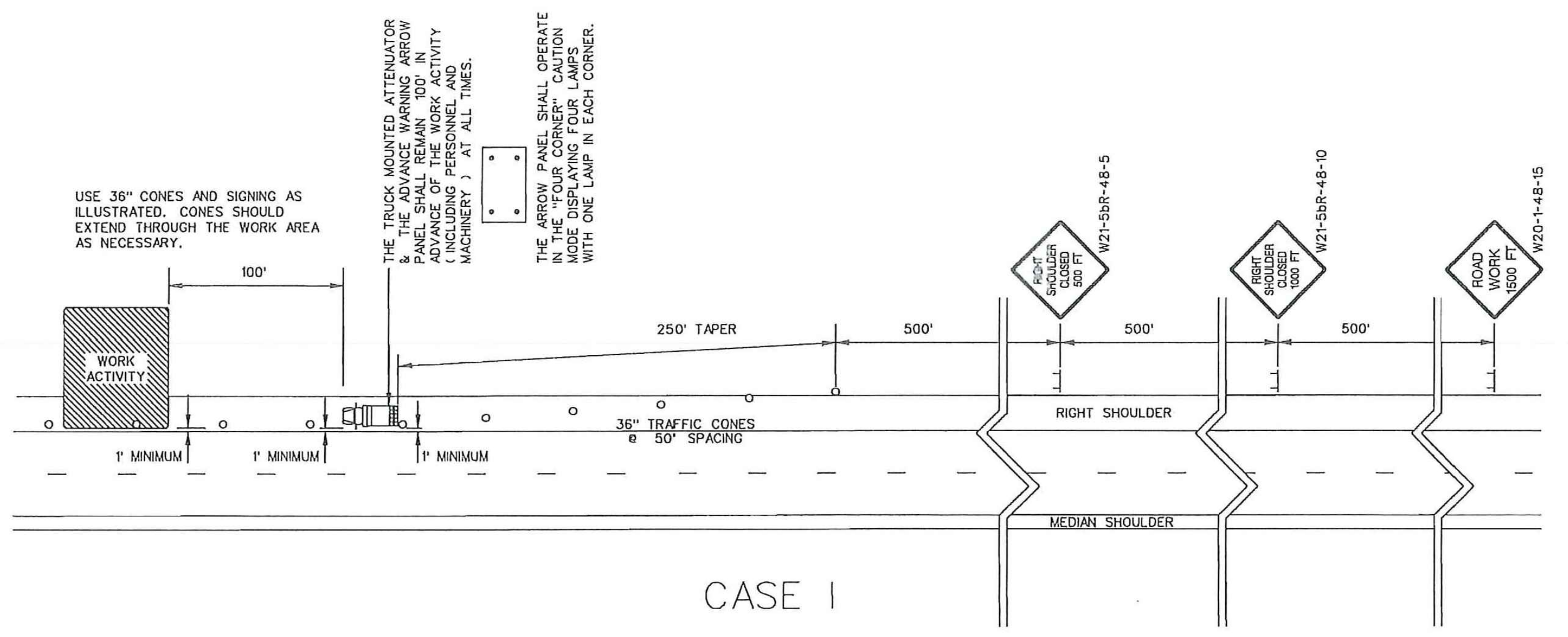
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 324 6th AVE N. JACKSONVILLE BEACH, FLORIDA 32250
 844-414-2400 S.C. COA # 5166 WWW.4WENG.COM

DRAWING NUMBER
D10.3

REFERENCES

GENERAL NOTES

- ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
- INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
- SPACINGS INDICATED ARE FOR NORMAL CONDITIONS; ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
- ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CHANNEL POSTS OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
- REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
- ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org.
- THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS OR DOUBLEFACED GUARDRAIL.
- THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR DAYTIME SHOULDER CLOSURES ARE 36" CONES. THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR NIGHTTIME SHOULDER CLOSURES ARE PORTABLE PLASTIC DRUMS. DURING DAYTIME SHOULDER CLOSURES, 42" OVERSIZED CONES MAY BE SUBSTITUTED FOR 36" CONES. DURING NIGHTTIME SHOULDER CLOSURES, 42" OVERSIZED CONES ARE PROHIBITED FOR USE. IF THIS TRAFFIC CONTROL SETUP EXTENDS INTO THE HOURS OF DARKNESS, REPLACE ALL CONES, 36" OR 42" OVERSIZED, WITH PORTABLE PLASTIC DRUMS.
- THE 36" CONES UTILIZED DURING DAYLIGHT HOURS ARE NOT REQUIRED TO BE REFLECTORIZED. REFLECTORIZE ALL 42" OVERSIZED CONES UTILIZED DURING DAYTIME SHOULDER CLOSURES WITH TYPE III FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. REFLECTORIZE ALL PORTABLE PLASTIC DRUMS WITH TYPE III FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
- THE DEPARTMENT PROHIBITS CONDUCTING WORK ON PRIMARY AND SECONDARY ROUTES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE UNDER A SHOULDER CLOSURE. ALL WORK THAT MAY REQUIRE THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE SHALL BE CONDUCTED UNDER A LANE CLOSURE.
 - CASE I: WHENEVER ANY PORTION OF THE SHOULDER AREA WITHIN 15' BUT NOT CLOSER THAN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE MUST BE OCCUPIED BY EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES TO CONDUCT THE WORK, INSTALL AND MAINTAIN THE SIGNING AND TRAFFIC CONTROL DEVICES AS ILLUSTRATED.
 - CASE II: WHENEVER THE WORK IS CONDUCTED BEYOND 15' BUT WITHIN 30' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE, INCLUDING THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES, INSTALL AND MAINTAIN THE SIGNING AND TRAFFIC CONTROL AS ILLUSTRATED.
- CONDUCT THE WORK IN SUCH A MANNER THAT WILL NOT REQUIRE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.
- PLACE THE TRUCK MOUNTED ATTENUATOR AT A LOCATION 100' IN ADVANCE OF THE WORK ACTIVITY AND NO CLOSER THAN 1' FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.
- FOR A CASE I SCENARIO IN THE RIGHT SHOULDER AREA, ADJUST THE TAPER AS NECESSARY TO FIT THE WIDTH OF THE SHOULDER WHILE MAINTAINING THE REQUIRED 250' TAPER LENGTH.
- IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS AT THE SAME TIME UNDER CASE I SHOULDER CLOSURES, SEPARATE THE TWO LOCATIONS BY NO LESS THAN 1 MILE FROM THE END OF THE FIRST CASE I CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CASE I CLOSURE. A MINIMUM SEPARATION DISTANCE OF ONE-HALF MILE IS RECOMMENDED BETWEEN SHOULDER CLOSURES WHEN ONE OR BOTH SHOULDER CLOSURES IS A CASE II CLOSURE.
- THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
- THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF SHOULDER CLOSURES IN THE RIGHT SHOULDER AREAS OF PRIMARY AND SECONDARY ROADWAYS.



PORTABLE TRUCK MOUNTED ATTENUATOR

- UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICULAR WEIGHT (GVW) OF 15,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
- LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
- PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BAR" OR THE "ALTERNATING DIAMOND" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

LEGEND
 ○ 36" TRAFFIC CONES

WORK ZONE TRAFFIC CONTROL ENGINEER



W. McConnell
 SIGNATURE
 8/2/12
 DATE

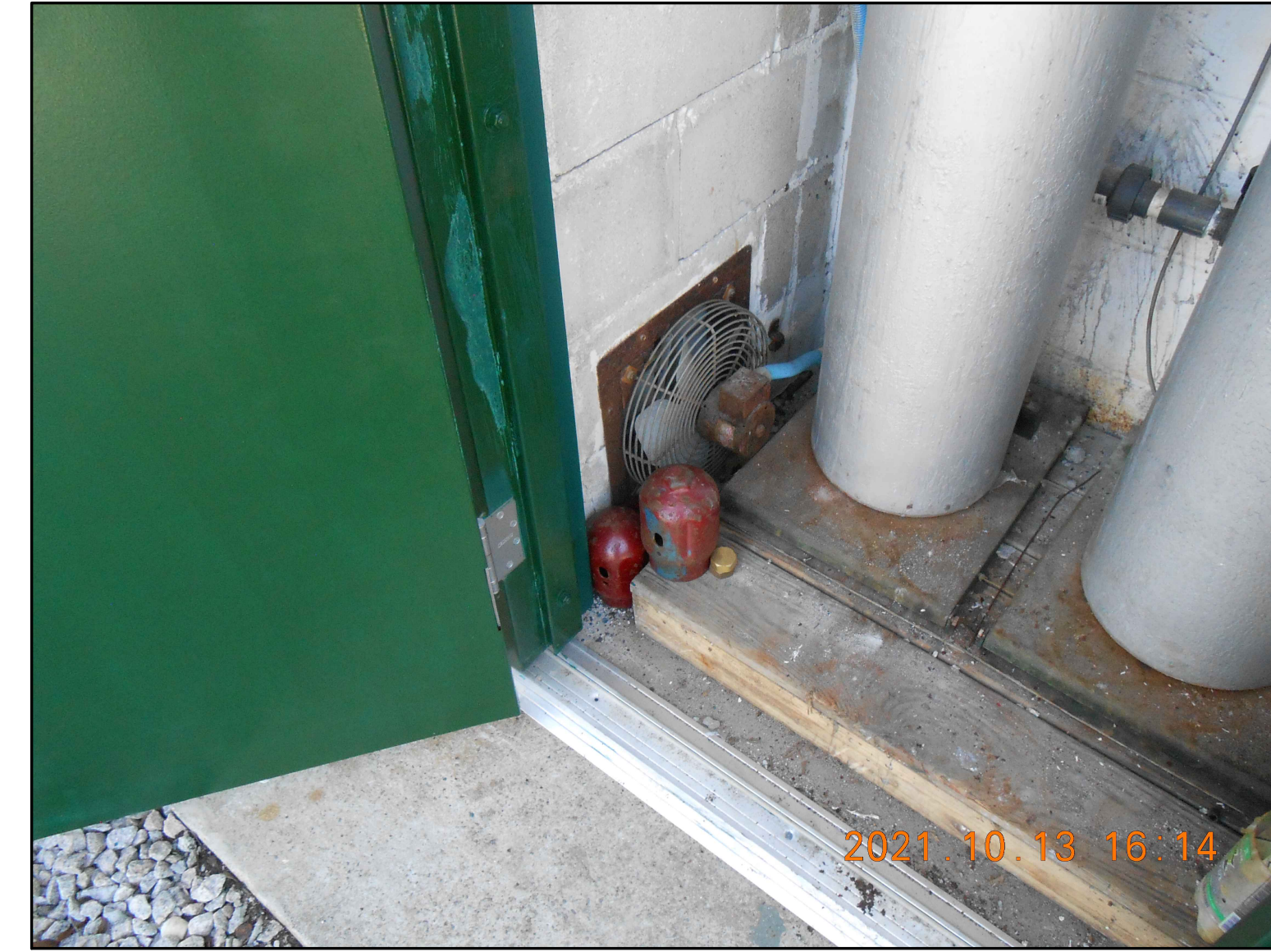
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0	8-23-07	JCS	DRAWING NO. UPDATE
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SCDOT
 SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DESIGN STANDARDS OFFICE
 955 PARK STREET
 ROOM 405
 COLUMBIA, SC 29201

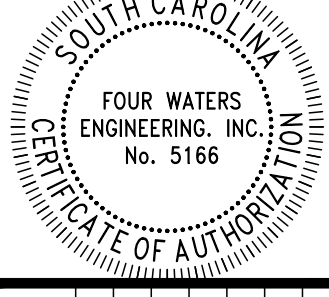
STANDARD DRAWING

RIGHT SHOULDER CLOSURE
 (CASE I / CASE II)
 PRIMARY ROUTES

610-205-00
 EFFECTIVE LETTING DATE: *Jan, 2013* THIS DRAWING IS NOT TO SCALE



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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 3
SITE PHOTOS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	DATE	ISSUE	ISSUE	DATE	ISSUE
ABB	JMC	17-1007	FEB	FEB	2023	BID

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

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ENGINEERING, INC.
No. 5166
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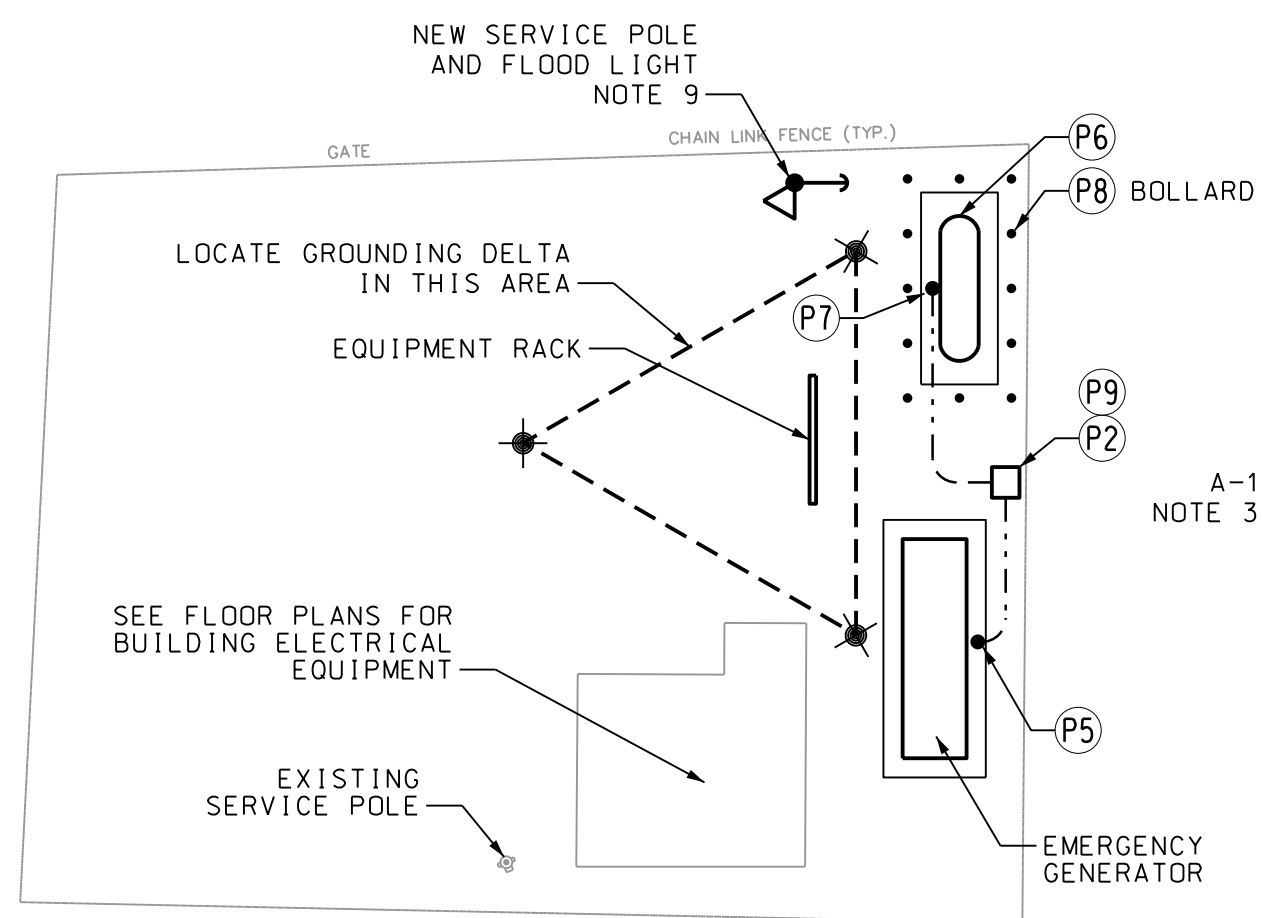
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART 3
SITE PHOTOS
TOWN OF RIDGELAND
RIDGELAND, SOUTH CAROLINA

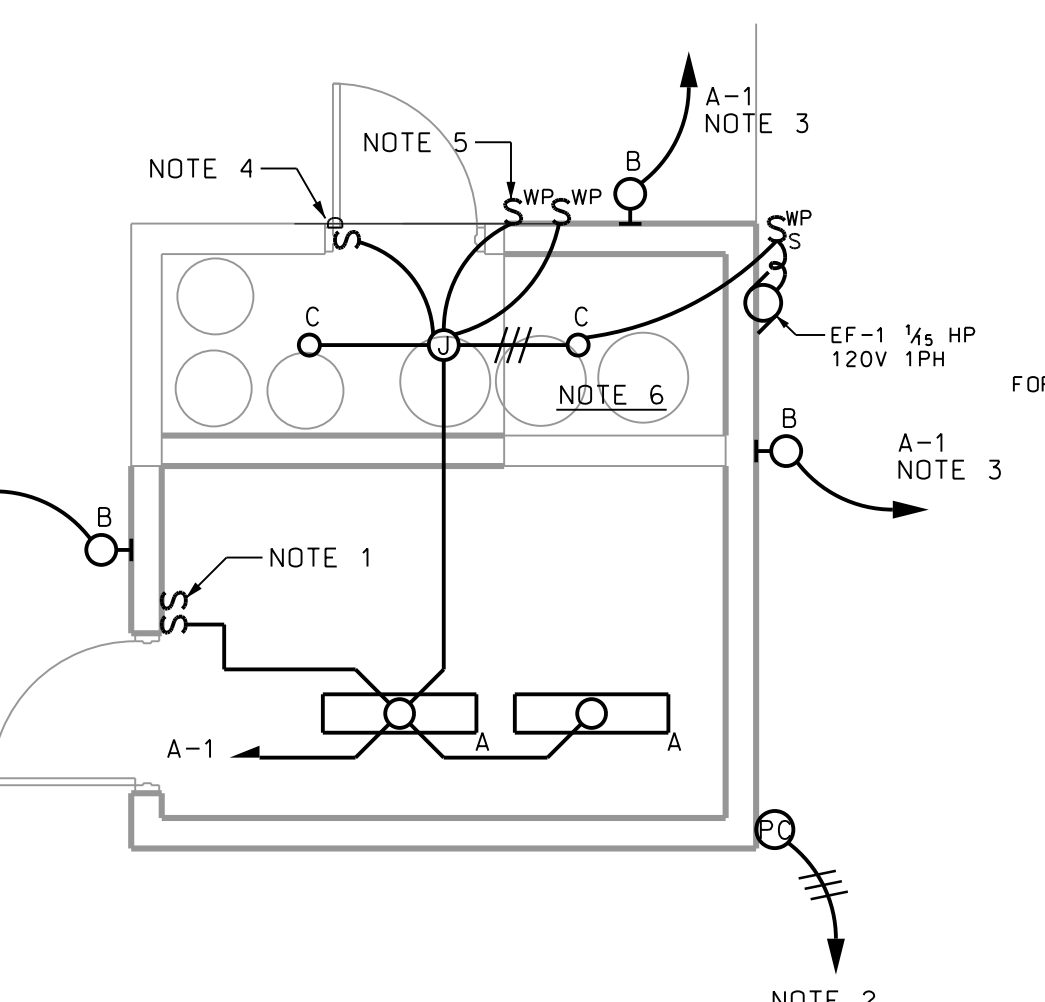
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ABB	JMC	17-1007	FEB 2023		

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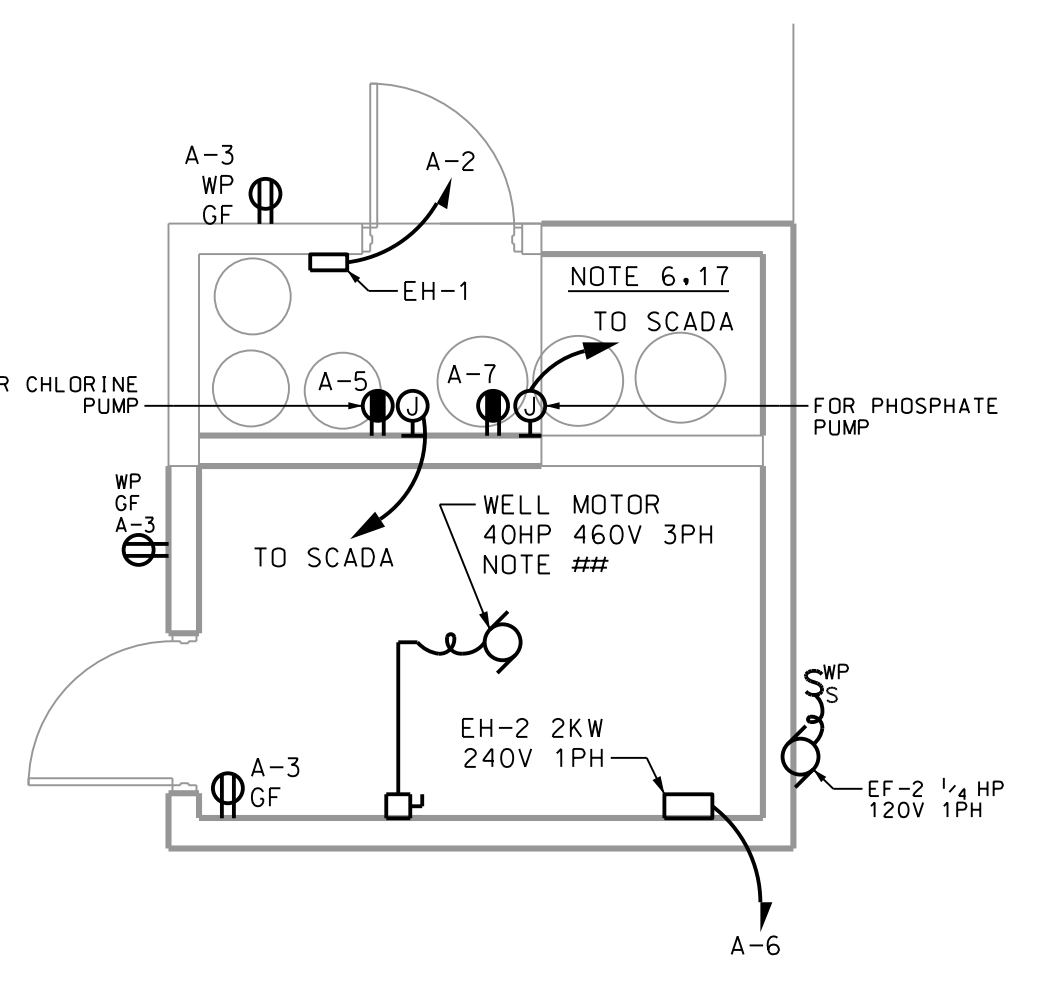
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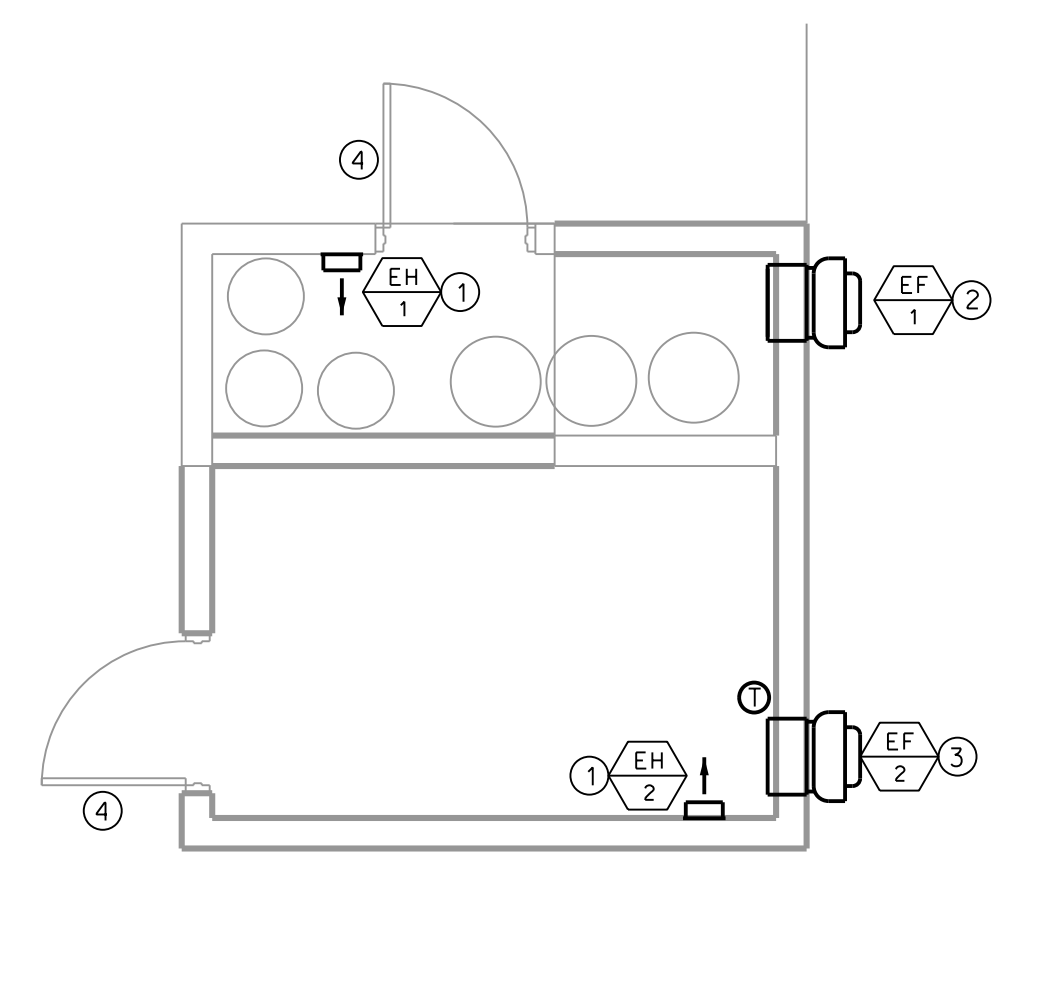
1 SITE PLAN - ELECTRICAL
E-2 SCALE: 1" = 10' - 0"



2 FLOOR PLAN - LIGHTING
E-2 SCALE: 1/4" = 1' - 0"



3 FLOOR PLAN - POWER
E-2 SCALE: 1/4" = 1' - 0"



4 FLOOR PLAN - HVAC
E-2 SCALE: 1/4" = 1' - 0"

NOTES: (LIGHTING AND POWER PLANS)

- 3-POSITION SWITCH FOR CONTROL OPERATION LIGHTS: UP-PHOTO, CENTER-OFF, DOWN-MANUAL ON. FURNISH HUBBELL CAT. NO. HBL1381.
- PHOTOCELL MOUNTED UNDER EAVE. EXTEND CONTROL THROUGH 3-POSITION SWITCH (NOTE 1). PROVIDE TORK 2107.
- EXTEND CIRCUIT THROUGH 3-POSITION SWITCH IN PUMP ROOM.
- ROLLER SWITCH MOUNTED IN DOOR FRAME. PROVIDE DOUBLE-POLE SINGLE THROW SWITCH. EXTEND CHLORINE ROOM LIGHT AND EXHAUST FAN CONTROL THROUGH SWITCH. INSTALL SUCH THAT BOTH LIGHT AND FAN ENERGIZE WHEN DOOR IS OPENED. PROVIDE SQUARE D CLASS 9007 WITH ROLLER ARM.
- PROVIDE SEPARATE SWITCHES FOR CHLORINE ROOM LIGHTS AND EXHAUST FAN. FURNISH WEATHERPROOF, IN-USE, EXTRA DUTY TYPE COVER. FURNISH HUBBELL WP262E.
- ALL CONDUITS, FITTINGS, BOXES AND OUTLETS IN THE CHLORINE ROOM SHALL BE PVC. PROVIDE SILICONE CAULK AROUND ALL CONDUIT PENETRATIONS TO THE CHLORINE ROOM. SEAL ALL CONDUITS WITH DUCT SEAL AT EVERY OUTLET BOX, JUNCTION BOX, FIXTURE AND EQUIPMENT ENCLOSURE.
- THE EXACT LOCATION OF SERVICE SHALL BE COORDINATED IN THE FIELD WITH OTHER WORK ON THE PROJECT SITE AND THE ELECTRICAL UTILITY. COORDINATE WITH DOMINION ENERGY.
- THE SERVICE METER SHALL BE PROVIDED IN ACCORDANCE WITH THE ELECTRICAL UTILITY STANDARDS. PROVIDE METER GROUND AS REQUIRED.
- MOUNT THE FLOOD LIGHT ON THE PRESSURE TREATED SERVICE POLE. THE FLOOD LIGHT SHALL BE LITHONIA D-SERIES SIZE 2 LED FLOOD WITH SLIPFITTER MOUNT, WOOD POLE, AND INTEGRAL PHOTOCELL; REFER TO THE FIXTURE SCHEDULE.
A. PROVIDE A WEATHERPROOF SWITCH ON THE POLE. 48" ABOVE FINISH GRADE.
- THE SCADA SYSTEM SHALL BE PROVIDED BY LORD & COMPANY INDUSTRIAL AUTOMATION, 2100 CAROLINA PLACE DRIVE, FORT MILL, SOUTH CAROLINA 29708, 803-802-0060. CONTACT FOR PRICING ON SCADA SYSTEM. EXTEND CONDUCTORS AS REQUIRED FROM THE PANEL HA, A. THE ATS/GENERATOR, THE WELL STARTER AND EQUIPMENT FOR COMMUNICATION OF THE ALARMS TO THE OWNER'S SYSTEM.
- SIZE THE EQUIPMENT FRAME TO FIT EQUIPMENT TO BE INSTALLED. CIRCUIT BREAKER AND SWITCH OPERATING HANDLES SHALL BE A MAXIMUM OF 66" ABOVE FINISHED GRADE. PROVIDE STAINLESS STEEL BOLTS, NUTS AND WASHERS. MAXIMUM SPAN BETWEEN VERTICAL SUPPORTS: 60".
- THE SCADA SYSTEM SHALL MONITOR AND TRANSMIT THE FOLLOWING POINTS AND TELEMETRY:
DIGITAL POINTS:
- RTU FAIL - WELL RUNNING - POWER FAILURE
- PHASE FAIL - CL PUMP - PHOSPHATE PUMP
- WELL FAIL - WELL CALL TO RUN - WELL STATUS
- SURGE PROTECTION PANEL A - SURGE PROTECTION PANEL HA
- GENERATOR PRE-ALARM - GENERATOR FAIL
- GENERATOR IN 'AUTO' POSITION - ATS SWITCH POSITION
- REFER TO THE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL ELECTRICAL REQUIREMENTS.
- THE GENERATOR SHALL BE A PROPANE FUELED UNIT.
- SEAL ALL CONDUITS ENTERING THE PANEL AND ENCLOSURE WITH ELECTRICAL DUCT SEAL.
- FURNISH THE REDUCED VOLTAGE SOLID STATE STARTER WITH H-O-A SWITCH, RUN (BLUE) AND FAIL (RED) PILOT LIGHTS, INTEGRAL 100A/3P DISCONNECT BREAKER, ETHERNET CARD/CONNECTION TO SCADA, CONTROL POWER TRANSFORMER AND NEMA 4X STAINLESS STEEL ENCLOSURE PAINTED WHITE. PROVIDE WITH ENGRAVED NAMEPLATE.
- ALL RECEPTACLES IN CHEMICAL TREATMENT ROOM SHALL BE CORROSION RESISTANT TYPE. PROVIDE HUBBELL HBL53GM62. INTERLOCK THROUGH WELL STARTER.

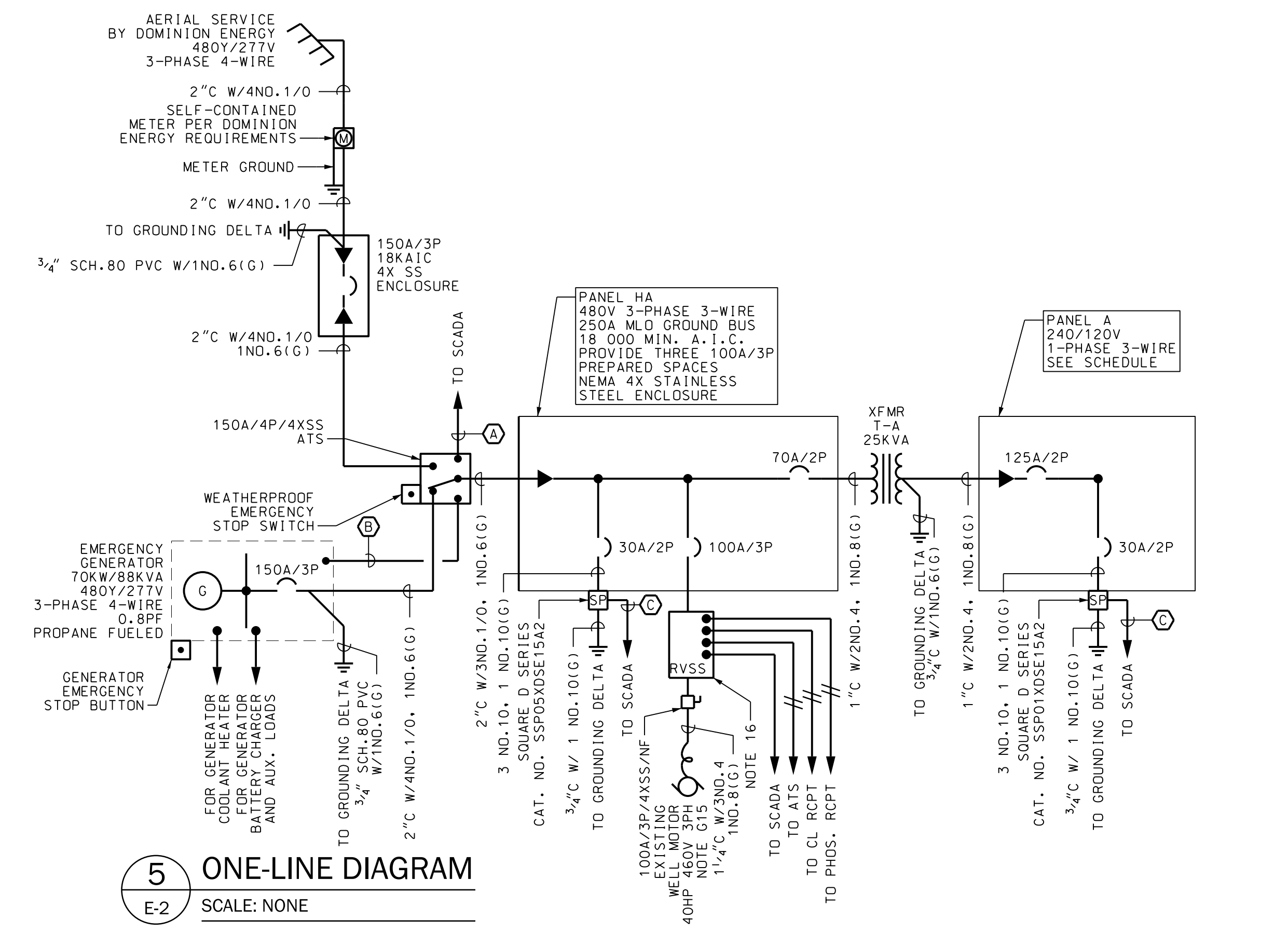
HVAC NOTES:

- MOUNT HEATER ON WALL. BOTTOM OF HEATER SHALL BE 12" AFF. HEATER SHALL BE QMARK MODEL CWH OR APPROVED EQUAL. HEATER SIZED FOR 2.0 KW. PROVIDE WITH MOUNTING FRAME AND INTEGRAL THERMOSTAT.
- FAN SHALL BE GREENHECK MODEL: CUE WALL FAN. FAN SHALL BE FABRICATED WITH ALUMINUM HOUSING AND IMPELLER. FAN SHALL HAVE HI-PRO POLYESTER COATING FOR CORROSIVE ATMOSPHERE. FAN SHALL BE PROVIDED WITH WALL GRILLE AND DISCONNECT SWITCH. SEE ELECTRICAL FOR CONTROLS. FAN SHALL BE SIZED FOR 600 CFM AT 0.375" STATIC PRESSURE WITH A 1/15 HP MOTOR. MOUNT BOTTOM OF OPENING FOR FAN 1'-0" AFF.
- FAN SHALL BE GREENHECK MODEL: CUE WALL FAN OR APPROVED EQUAL. FAN SHALL BE SIZED FOR 1200 CFM AT 0.375" ESP AND 1/4 HP. FAN SHALL BE PROVIDED WITH WALL GRILLE, WALL MOUNT THERMOSTAT, AND DISCONNECT SWITCH.
- SEE CIVIL PLANS. DOORS PROVIDED WITH LOUVER FOR INTAKE AIR.

PROPANE FUEL NOTES:

- ALL PROPANE GAS PIPING ABOVE GROUND SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH THREADED JOINTS. ALL WORK AND MATERIALS ON THE GAS SYSTEM SHALL COMPLY WITH THE "INTERNATIONAL GAS CODE". PAINT ALL EXPOSED GAS PIPING WITH RUST INHIBITING PRIMER AND 1 COAT OF OIL BASED YELLOW ENAMEL PAINT.
- PROPANE GAS PRESSURE REGULATOR SIZED FOR 725 SCFH AT 13 INCH MAX WC OUTLET PRESSURE. COORDINATE WITH PROPANE COMPANY.
- PROPANE GAS LINE U/G BY CONTRACTOR. COORDINATE WITH PROPANE COMPANY.
- 3" GAS DOWN TO UNDERGROUND. UNDERGROUND PIPING SHALL BE SDR 11 POLYETHYLENE PIPE AND FITTINGS.
- 3" GAS UP TO GENERATOR. PROVIDE PLUG VALVE, UNION AND DRIPLEG AT CONNECTION. COORDINATE EXACT LOCATION OF CONNECTION WITH GENERATOR.
- PROVIDE A CONCRETE PAD FOR THE PROPANE TANK. 12" THICK, 24" WIDER AND 24" LONGER THAN THE PROPANE TANK. REFER TO GENERATOR FOUNDATION DETAIL FOR CONSTRUCTION REQUIREMENTS. PROVIDE 48HRS OF RUN TIME FUEL FOR THE GENERATOR AT FULL LOAD.
- PROVIDE 2" SCH.80 PVC RISER AT TANK MID-POINT. EXTEND TO WITHIN 5' OF GENERATOR. CONDUIT SHALL BE 30" BELOW FINISH GRADE. MINIMUM. PROVIDE DETECTABLE PLASTIC WARNING TAPE 12" BELOW FINISH GRADE.
- PROVIDE STEEL PIPE BOLLARDS IN FRONT OF THE PROPANE TANK. 36" ON CENTER. SEE DETAIL ON C709. BOLLARDS SHALL EXTEND BEYOND THE END OF THE PROPANE TANK.
- FIELD COORDINATE INLET LOCATION ON GENERATOR AND THE REGULATOR WITH THE PROPANE PROVIDER. THE REGULATOR SHALL NOT BE WITHIN 5' OF THE GENERATOR.

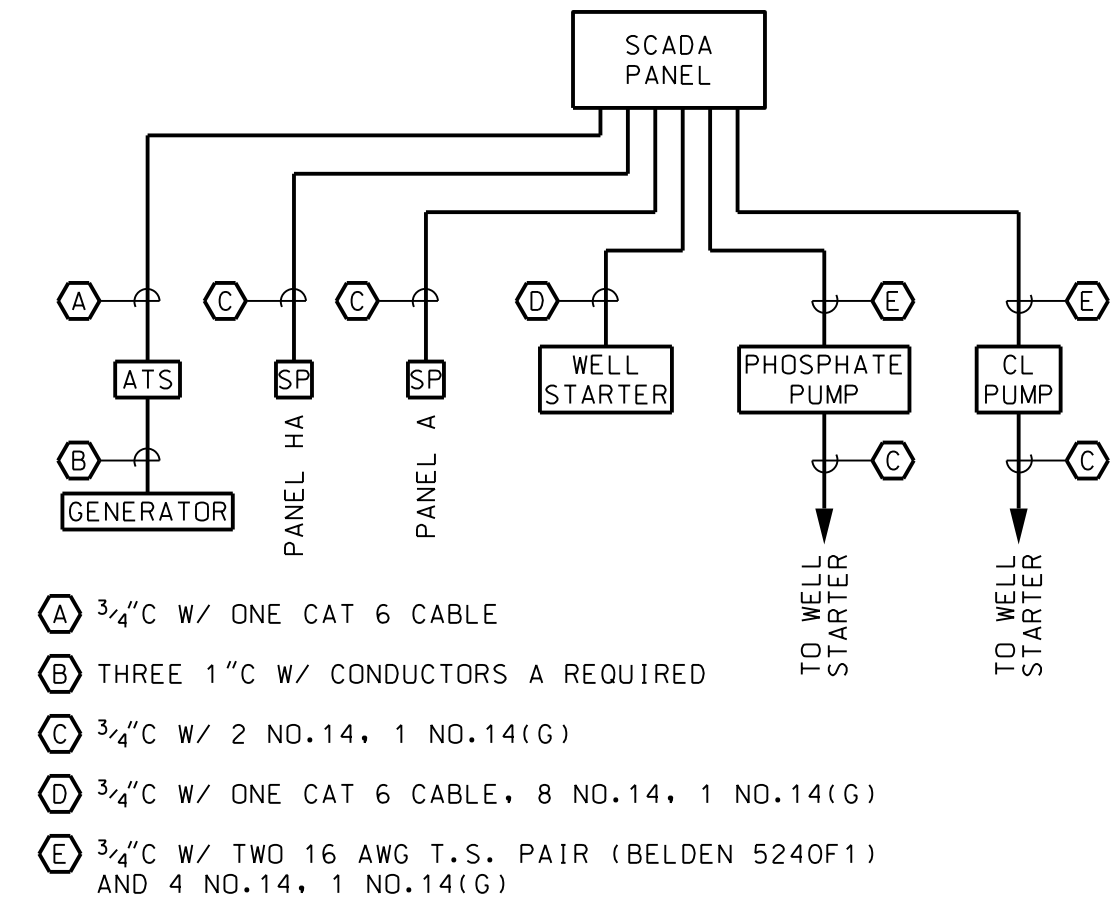
LIGHT FIXTURE SCHEDULE - RIDGELAND WELL #2					
TYPE	DESCRIPTION	VOLTAGE	LAMP	MOUNTING	NOTES
A	LED VAPOR TIGHT LED ENCLOSED & GASKETED LITHONIA CSVT-L48-AL03-MVOLT-SWWV3-80CRI LITHONIA CSVT-STSL-LATCH	120V	LED	SURFACE	PROVIDE WITH STAINLESS STEEL LATCHES
B	LED WALL PACK LITHONIA WPX1-LED-P1-40K-MVOLT-DOBxD	120V	LED	WALL @ EAVE	MOUNT UNDER EAVE AT TOP OF WALL
C	NON-METALLIC LED HAZARDOUS FIXTURE KILLARK NVL-2-30-X-2-G	120V	LED	SURFACE	FURNISH WITH GUARD
D	LED FLOOD LIGHT LITHONIA DXSF2 LED-3-A530/40K-WFL-MOVLIT-IS-PE-DOBxD LITHONIA SMAWSB-BS17-DOBxD	120V	LED	WOOD POLE	PROVIDE WITH INTEGRAL BUTTON PHOTOCELL PROVIDE WITH WOOD POLE SIDE BULLHORN



5 ONE-LINE DIAGRAM
E-2 SCALE: NONE

SCHEDULE OF PANEL 'A'											
VOLTAGE: 240 / 120			PHASE: 1						WIRE: 3		
BUS AMPS: 225 A			DEVICE AMPS: 125 A MCB						NEMA: 4X		
A.I.C RATING: 10,000 A			MOUNTING: SURFACE								
LOCATION DESCRIPTION	LOAD (KVA)	LOAD TYPE	TRIP POLE	#	PH	#	TRIP POLE	LOAD TYPE	LOAD (KVA)	LOCATION DESCRIPTION	
LIGHTS	0.6	A	20A/1P	1	A	2	20A/2P	E	1.0	EH-1 2KW	
RECEPTACLES	0.6	B	20A/1P	3	B	4	-	E	1.0	240V 1PH	
CHLORINE PUMP	1.0	F	20A/1P	5	A	6	20A/2P	E	1.0	EH-2 2KW	
PHOSPHATE PUMP	1.0	G	20A/1P	7	B	8	-	E	1.0	240V 1PH	
SPARE			20A/1P	9	A	10	20A/1P	G	0.7	EF-2 1/4HP 120V 1PH	
SPARE			20A/1P	11	B	12	20A/2P	H	1.3	GENERATOR COOLANT HEATER	
SPARE			20A/1P	13	A	14	-	H	1.3	2500W 240V 1PH	
SPARE			20A/1P	15	B	16	20A/1P	H	1.5	GENERATOR BATTERY CHARGER	
SPARE			20A/1P	17	A	18	20A/1P	H	1.0	SCADDA	
SPARE			20A/1P	19	B	20	20A/1P			SPARE	
SPARE			20A/1P	21	A	22	20A/1P			SPARE	
SPARE			20A/1P	23	B	24	20A/1P			SPARE	
SPARE			20A/1P	25	A	26	20A/1P			SPARE	
SPARE			20A/1P	27	B	28	20A/1P			SPARE	
SURGE PROTECTION			30A/2P	29	A	30	20A/1P			SPARE	
				29	A	30	20A/1P			SPARE	

PANEL LOAD ANALYSIS									
Load Type	DESCRIPTION	Conn. KVA	Demand KVA	2017 NEC Reference	Load Type	DESCRIPTION	Conn. KVA	Demand KVA	2017 NEC Reference
A	Lighting	0.6	0.8	NEC Article 215.3	E	Heating	4.0	4.0	NEC Article 220.60
B	Receptacles	0.6	0.6	NEC Table 220.44	F	Largest Motor	1.0	1.3	NEC Article 440.7
C	Kitchen Equipment	0.0	0.0	NEC Table 220.56	G	Other Motors	1.7	1.7	NEC Article 440.7
D	Air-Conditioning	0.0	0.0	NEC Article 220.60	H	Other Loads	5.0	5.0	
Phase A Connected Load		6.6 KVA		Notes:		TOTAL CONNECTED LOAD		12.9 KVA	53.8 AMPS
Phase B Connected Load		6.4 KVA				TOTAL DEMAND LOAD		13.3 KVA	55.4 AMPS
						MINIMUM SIZING AMPS		20.8 KVA	86.6 AMPS



6 SCADA RISER
E-2 SCALE: NONE

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY XXXX X. XXXX PE 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	DRWN	CHKD	BY	DESCRIPTION
1						
2						
3						
4						
5						
6						
7						

ELECTRICAL EQUIPMENT ELEVATION, ONE-LINE DIAGRAM & NOTES
 WATER AND SEWER RESILIENCY IMPROVEMENTS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN DRAWN LC
 CC 17-0007-035
JOB # MARCH 2021
ISSUE DATE 100%
ISSUE

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

DRAWING NUMBER **E-2**

PROJECT PARTICIPANTS

OWNER

TOWN OF RIDGELAND
1 TOWN SQUARE
RIDGELAND, SC 29936

ARCHITECT

WOODS DENDY ARCHITECTS, LLC
893 GRAYS HIGHWAY
RIDGELAND, SC 29936

CONTACT: GRADY L. WOODS, AIA, NCARB
PHONE: 843 726 6730
EMAIL: thenry@woodsdeny.com

STRUCTURAL

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

CONTACT: TONY 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.



CODE REFERENCES

CODE ENFORCEMENT JURISDICTION: TOWN ON RIDGELAND

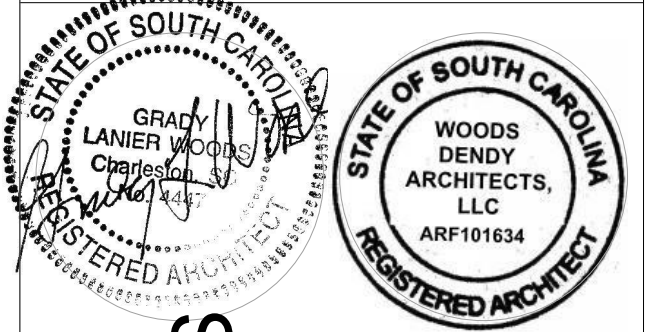
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INTERNATIONAL FIRE CODE: 2018
INTERNATIONAL ENERGY CODE: 2009
THE NATIONAL ELECTRICAL CODE: 2017
ICC/ANSI A117.1: 2017
ASCE 7 -10
ASCE 24
CLIMATE ZONE: ZONE 3
ALL ELEVATIONS SHOWN ARE: NAVD 88

Sheet List	
Sheet Number	Sheet Name
A001	COVER SHEET
A100	SITE PLAN
A101	EXISTING AND PROPOSED FLOOR PLANS
A102	ROOF FRAMING PLAN
A103	ROOF PLAN
A104	ELEVATIONS AND PERSPECTIVES
A105	BUILDING SECTION
A106	EXISTING BUILDING PHOTOS
S100	STRUCTURAL NOTES
S101	ROOF FRAMING AND FOUNDATION
S201	SECTION AND DETAILS

WDA

Woods Dendy Architects, LLC
AMERICAN INSTITUTE OF ARCHITECTS MEMBERS

893 GRAYS HIGHWAY
RIDGELAND, SC 299336
PHONE: 843-726-6730



NEW CONSTRUCTION FOR:
WATER & SEWER RESILIENCY IMPROVEMENTS

SECOND AVE AND WEATHERSBEE ST
RIDGELAND, SC

PROJECT NO. 21025

DRAWN BY: Author CHECKED BY: Checker

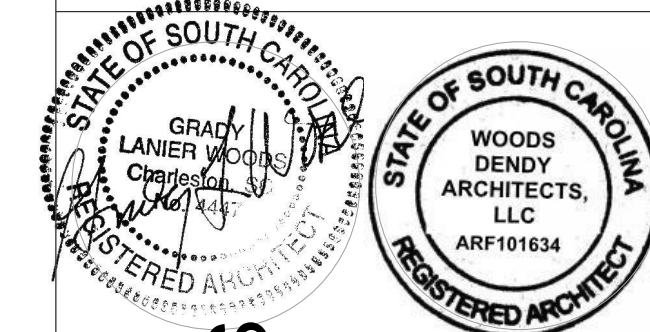
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DATE: 12 AUG 22

COVER SHEET

A001

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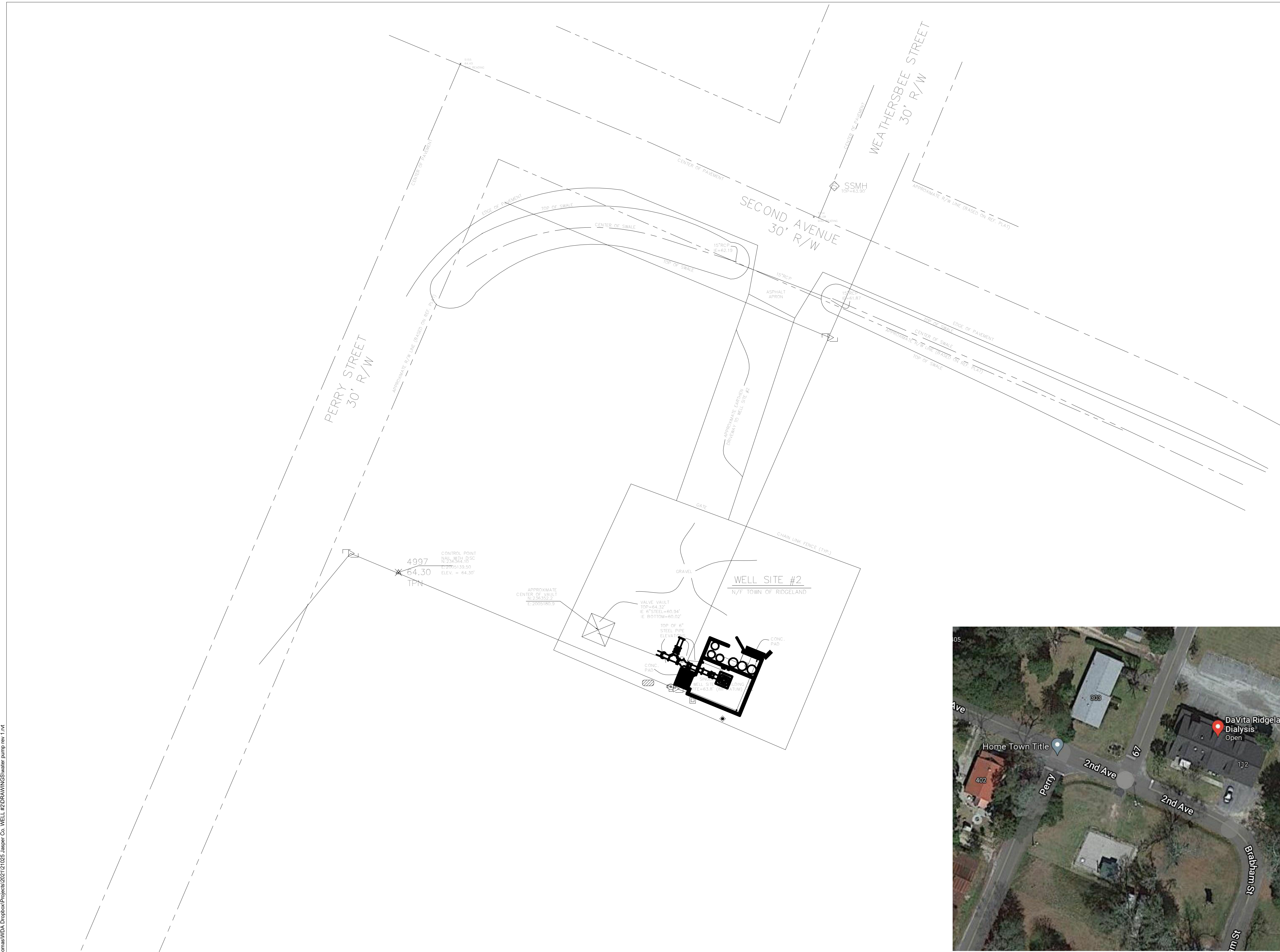
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Project Status
DATE: 12 AUG 22

SITE PLAN

A100

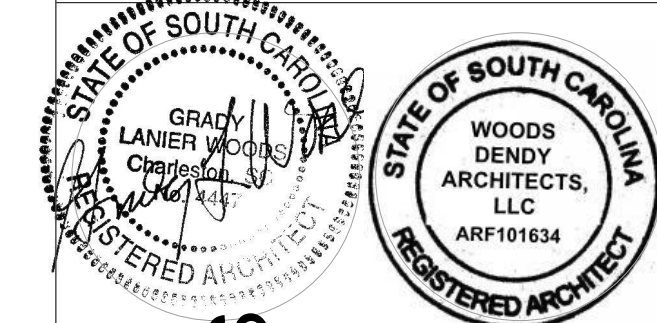
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1 SITE PLAN
1" = 10'-0"

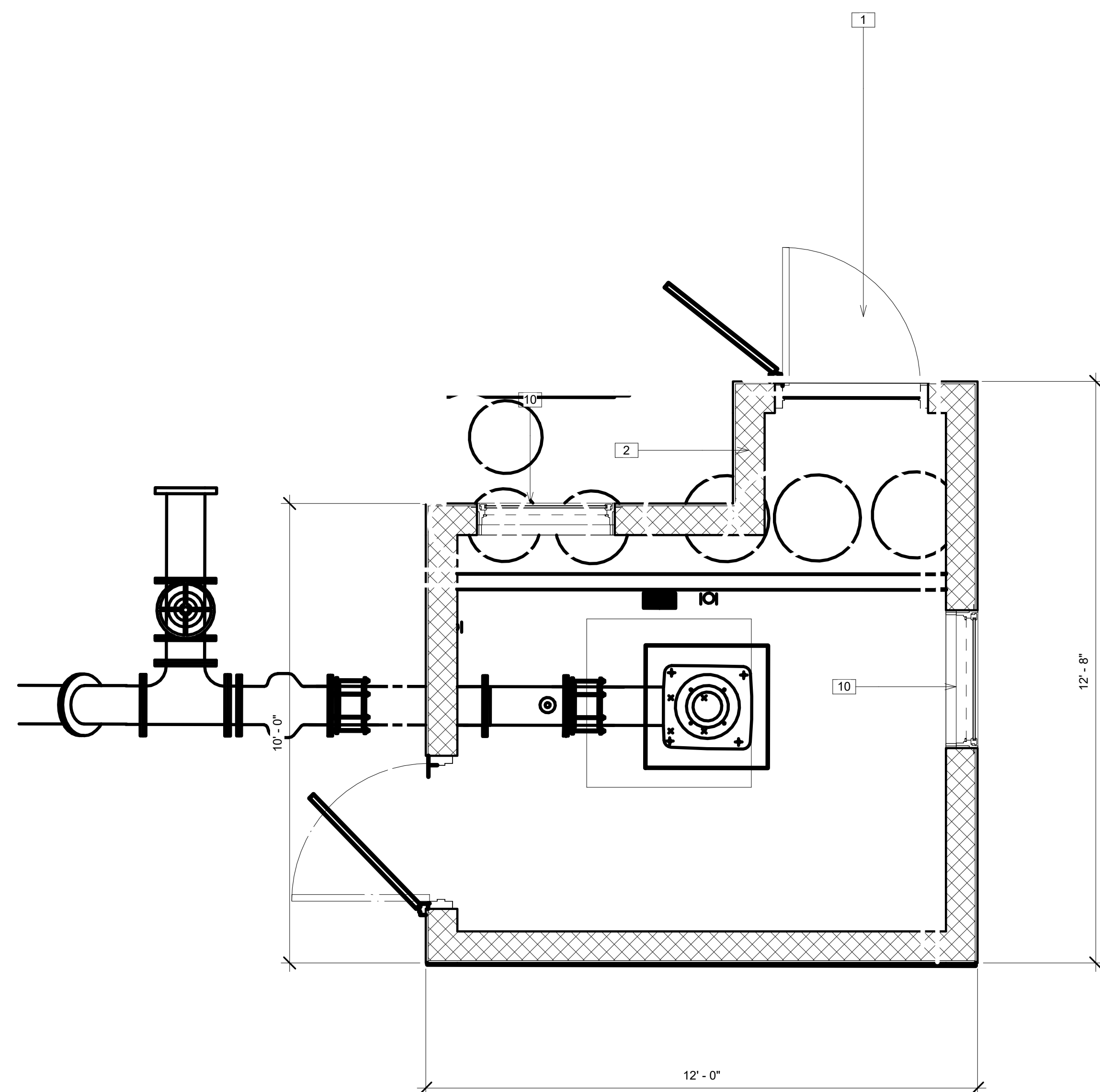


2 VICINITY MAP
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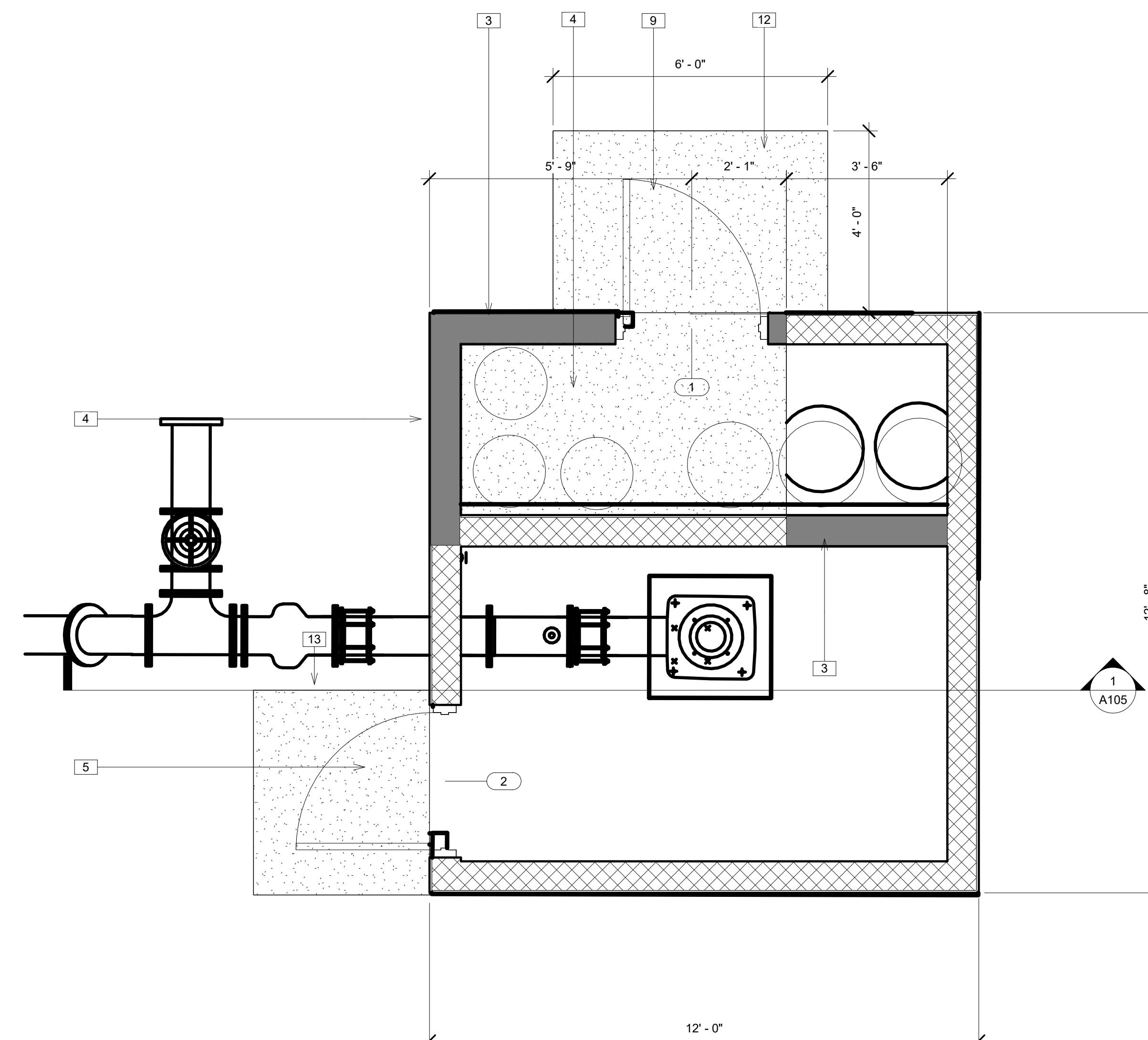


NEW CONSTRUCTION FOR:
WATER & SEWER RESILIENCY IMPROVEMENTS

SECOND AVE AND WEATHERSBEE ST
RIDGELAND, SC



EXISTING LEVEL 1 PLAN



PROPOSED LEVEL 1 PLAN

Keynote Legend	
Key Value	Keynote Text
1	REMOVE EXISTING DOOR, CLOSE OPENING AND MATCH EXISTING FINISHES
2	REMOVE CMU WALL, TIE BEAM AND PATCH FLOOR TO MATCH EXISTING
3	NEW CMU WALL. SEE STRUCTURAL
4	NEW 4" CONCRETE SLAB.. SEE STRUCTURAL
5	REPLACE DOORS. SEE DOOR SCHEDULE
6	ACCESS HOLE AND CAP TO REMAIN AS IS
7	NEW ROOF FRAMING. SEE STRUCTURAL
8	REMOVE AND REPLACE STANDING SEAM ROOFING TO MATCH EXISTING
9	NEW DOOR. 3-0 / 7-0 HOLLOW METAL FRAME WITH GLASS LIGHT
10	REMOVE WINDOW AND FILL IN WITH CMU TO MATCH EXISTING
11	EXISTING ROOF ACCESS HOLE. COVER NOT SHOWN BUT TO REMAIN AS IS
12	NEW 4" CONCRETE STOOP
13	EXISTING STOOP
14	5/8" STUCCO EXTERIOR SAND FLOAT FINISH

PROJECT NO.

21025

DRAWN BY: Author CHECKED BY: Checker

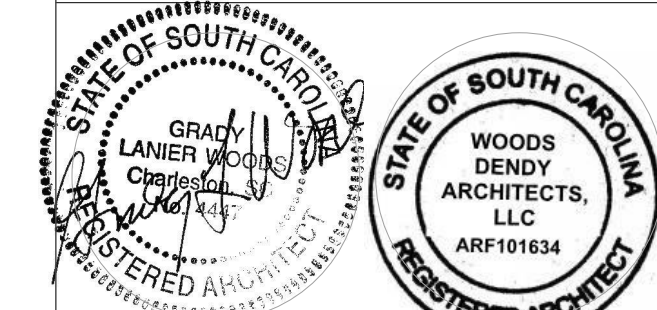
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Project Status
DATE: 12 AUG 22

EXISTING AND PROPOSED FLOOR PLANS

A101

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NEW CONSTRUCTION FOR:
WATER & SEWER RESILIENCY IMPROVEMENTS

SECOND AVE AND WEATHERSBEE ST
 RIDGELAND, SC

PROJECT NO. **21025**

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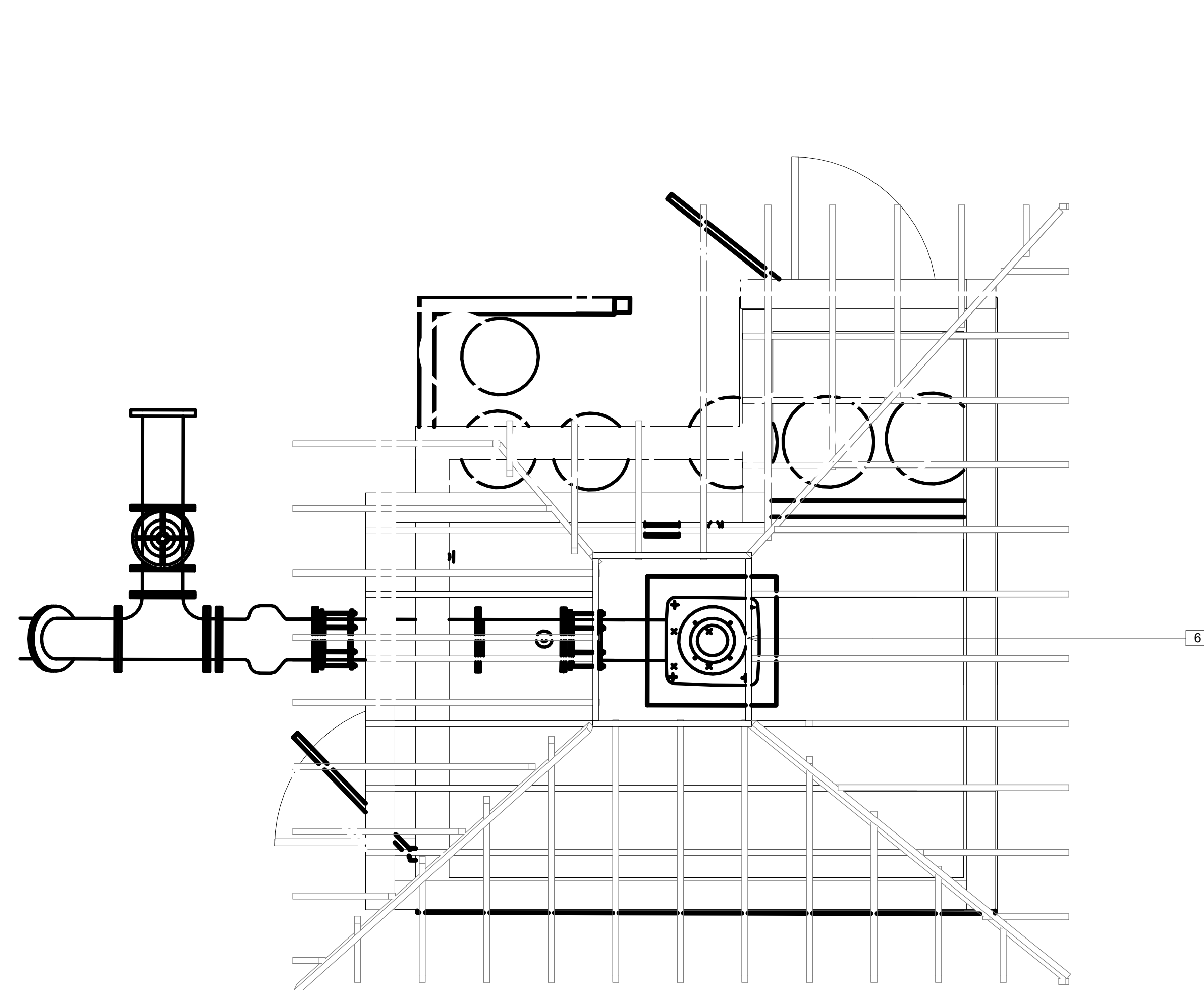
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Project Status
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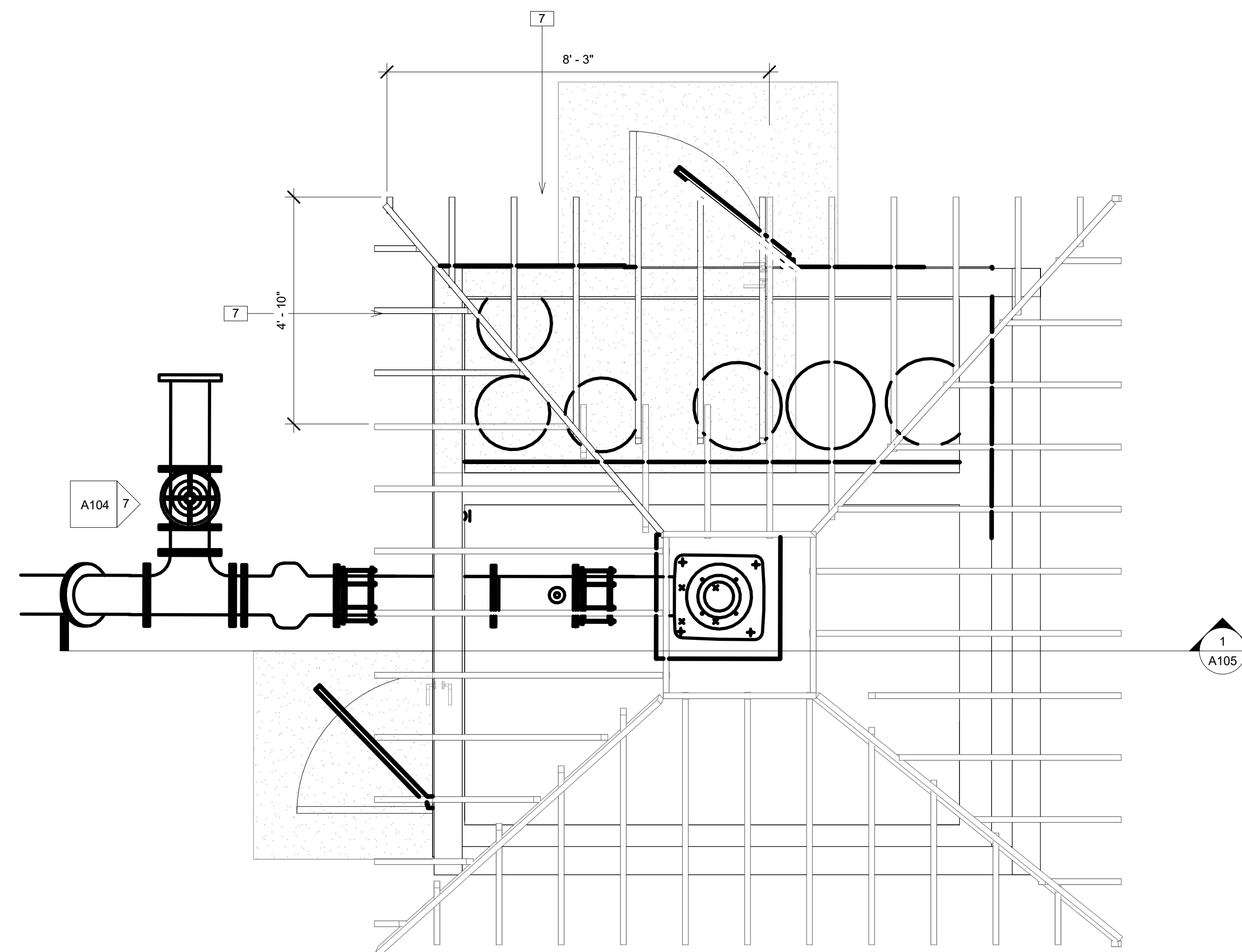
ROOF FRAMING PLAN

A102

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EXISTING FRAMING LAYOUT

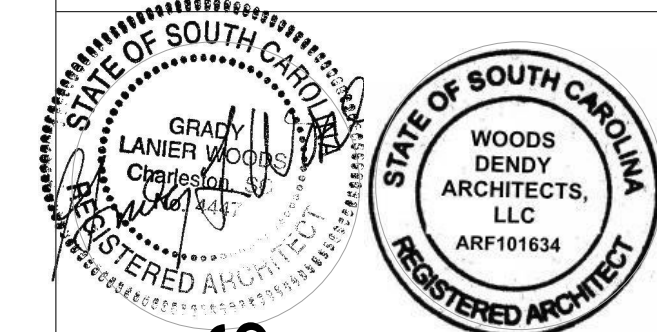


PROPOSED ROOF FRAMING

NOTE:

SEE STRUCTURAL DRAWINGS FOR FOUNDATION AND FRAMING DETAILS

Keynote Legend	
Key Value	Keynote Text
1	REMOVE EXISTING DOOR, CLOSE OPENING AND MATCH EXISTING FINISHES
2	REMOVE CMU WALL, TIE BEAM AND PATCH FLOOR TO MATCH EXISTING
3	NEW CMU WALL. SEE STRUCTURAL
4	NEW 4" CONCRETE SLAB. SEE STRUCTURAL
5	REPLACE DOORS. SEE DOOR SCHEDULE
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9	NEW DOOR. 3-0 / 7-0 HOLLOW METAL FRAME WITH GLASS LIGHT
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11	EXISTING ROOF ACCESS HOLE. COVER NOT SHOWN BUT TO REMAIN AS IS
12	NEW 4" CONCRETE STOOP
13	EXISTING STOOP
14	5/8" STUCCO EXTERIOR SAND FLOAT FINISH



NEW CONSTRUCTION FOR:
WATER & SEWER RESILIENCY IMPROVEMENTS

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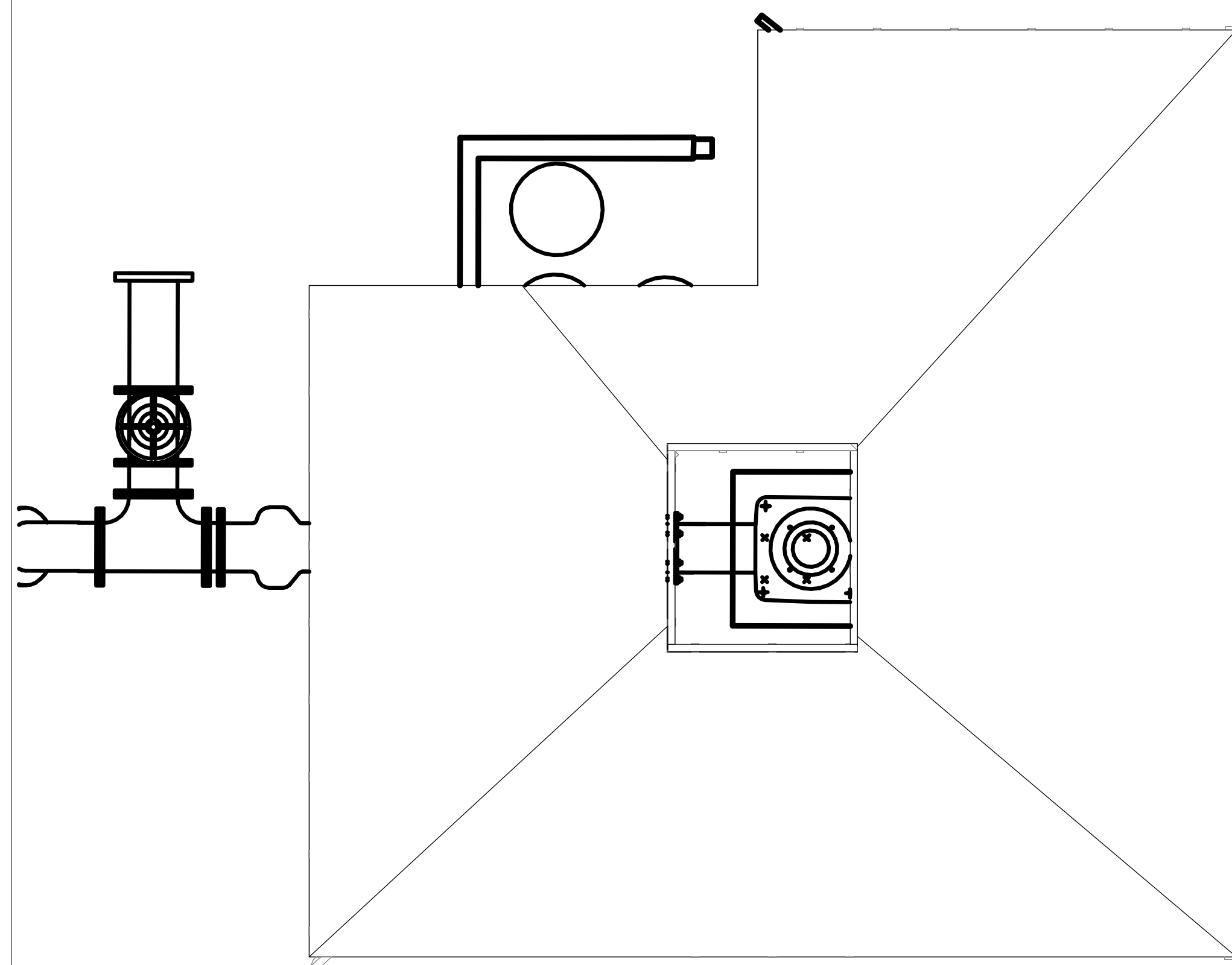
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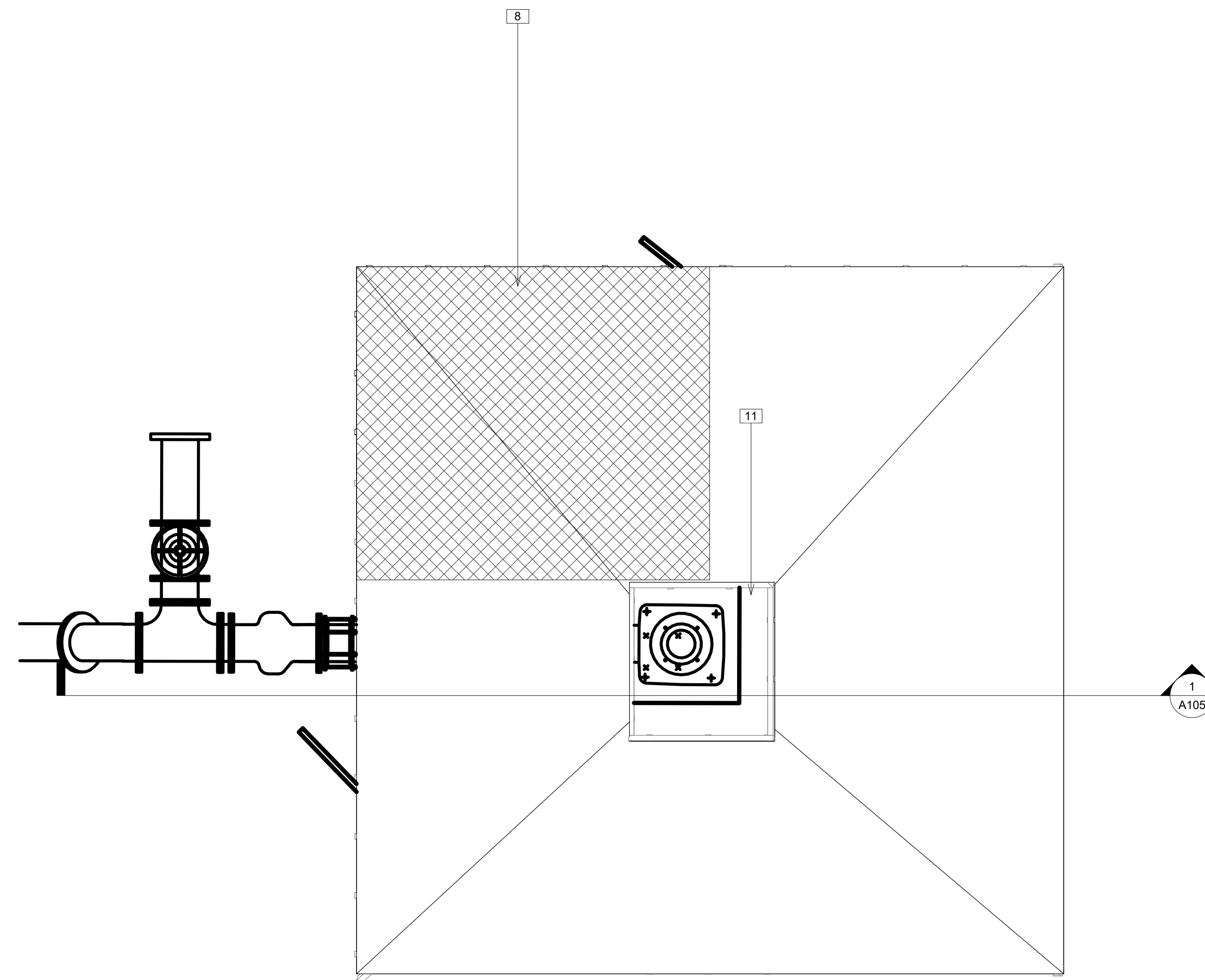
ROOF PLAN

A103

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EXISTING ROOF

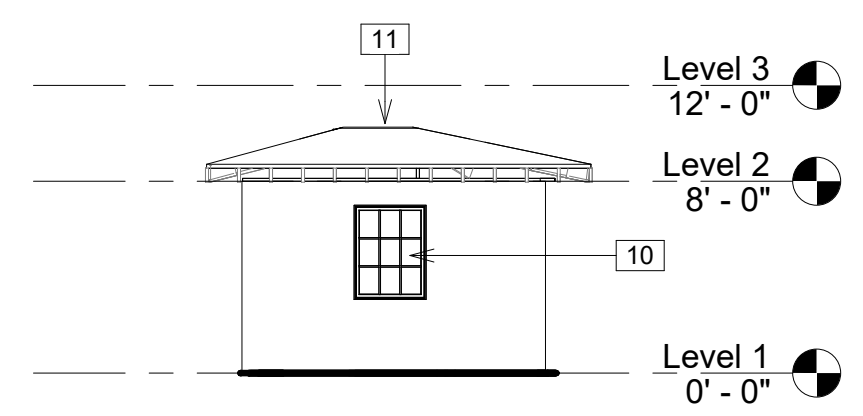


PROPOSED ROOF

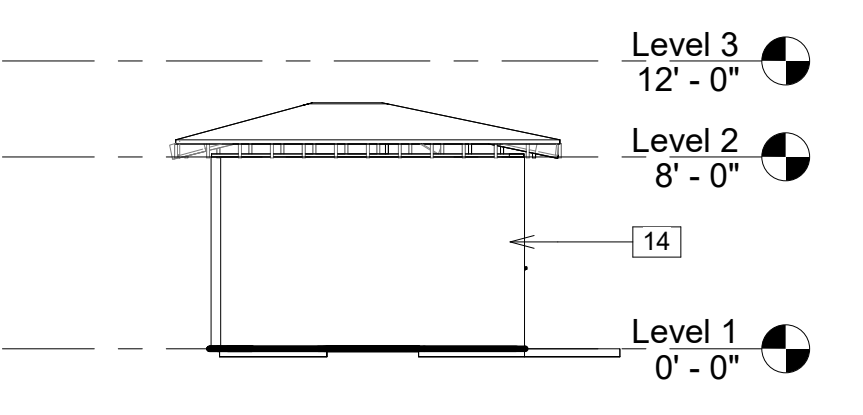
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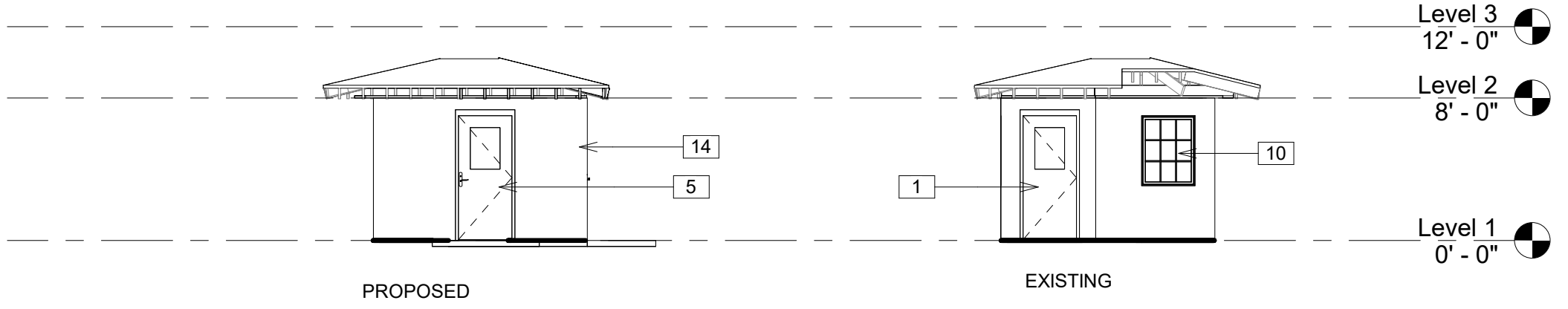
NEW CONSTRUCTION FOR:
WATER & SEWER RESILIENCY IMPROVEMENTS
SECOND AVE AND WEATHERSBEE ST
RIDGELAND, SC



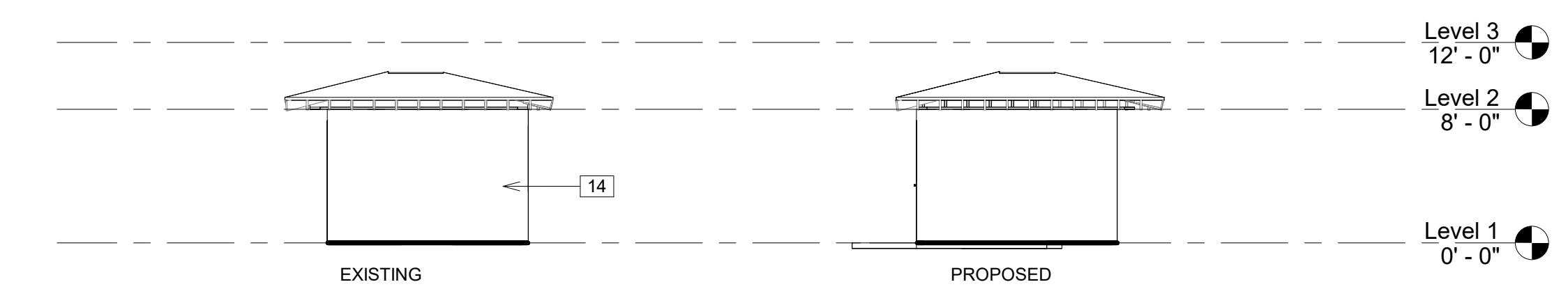
6 EAST ELEVATION EXISTING
1/8" = 1'-0"



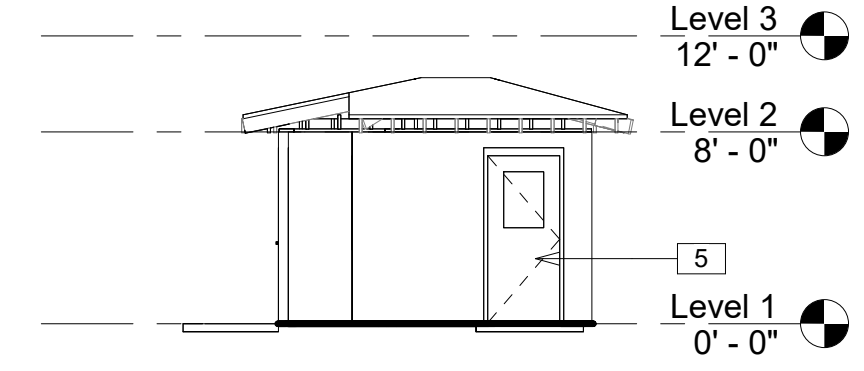
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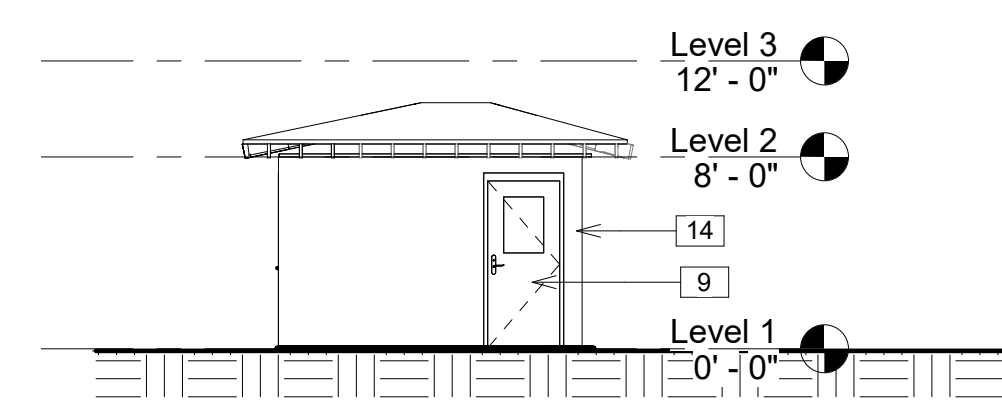
3 NORTH EXISTING AND PROPOSED
1/8" = 1'-0"



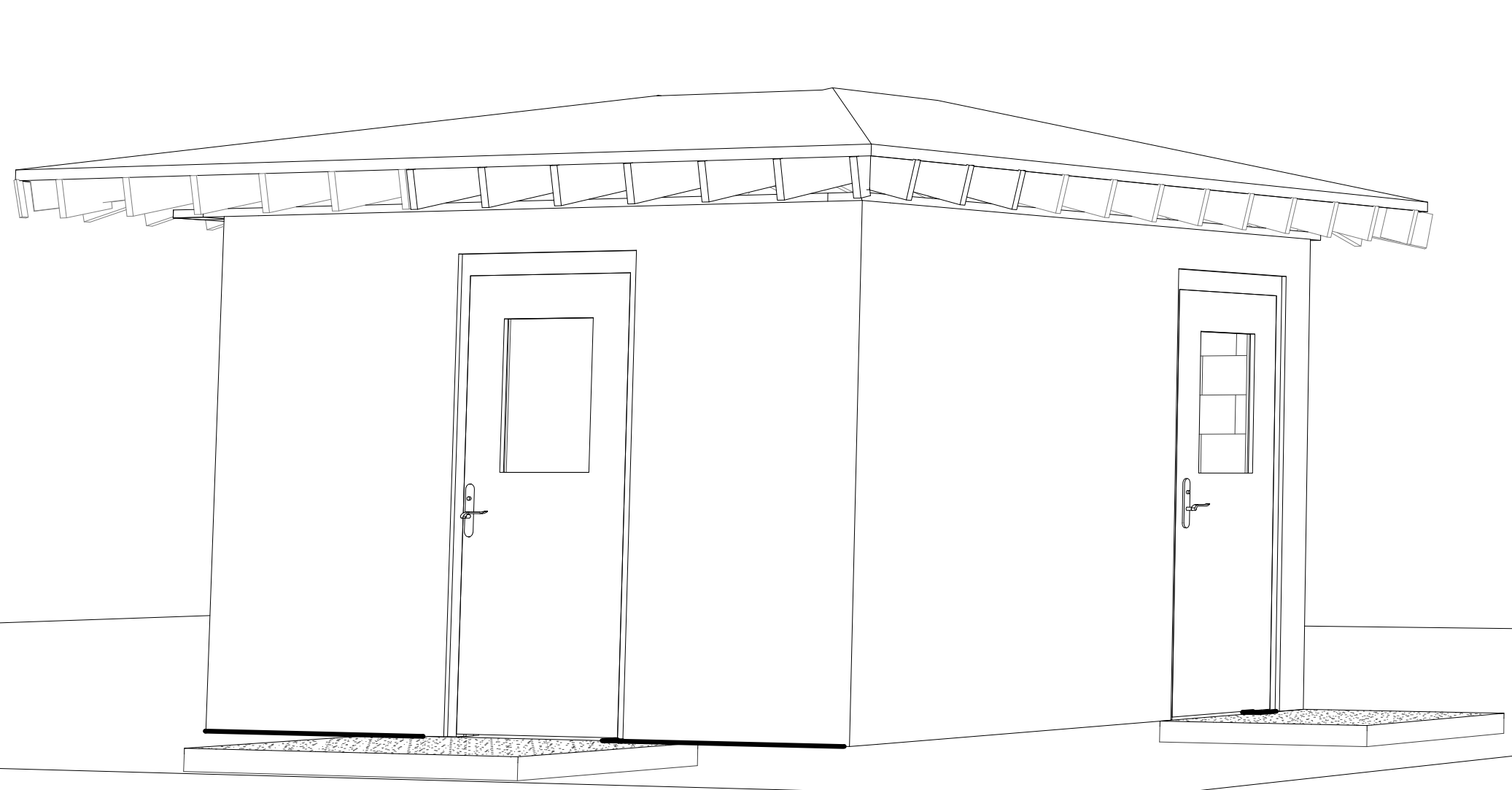
4 SOUTH EXISTING AND PROPOSED
1/8" = 1'-0"



5 WEST ELEVATION EXISTING
1/8" = 1'-0"



7 WEST ELEVATION PROPOSED
1/8" = 1'-0"



PROPOSED



EXISTING

Keynote Legend	
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1	REMOVE EXISTING DOOR, CLOSE OPENING AND MATCH EXISTING FINISHES
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3	NEW CMU WALL. SEE STRUCTURAL
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5	REPLACE DOORS. SEE DOOR SCHEDULE
6	ACCESS HOLE AND CAP TO REMAIN AS IS
7	NEW ROOF FRAMING. SEE STRUCTURAL
8	REMOVE AND REPLACE STANDING SEAM ROOFING TO MATCH EXISTING
9	NEW DOOR. 3-0 / 7-0 HOLLOW METAL FRAME WITH GLASS LIGHT
10	REMOVE WINDOW AND FILL IN WITH CMU TO MATCH EXISTING
11	EXISTING ROOF ACCESS HOLE. COVER NOT SHOWN BUT TO REMAIN AS IS
12	NEW 4" CONCRETE STOOP
13	EXISTING STOOP
14	5/8" STUCCO EXTERIOR SAND FLOAT FINISH

PROJECT NO. 21025

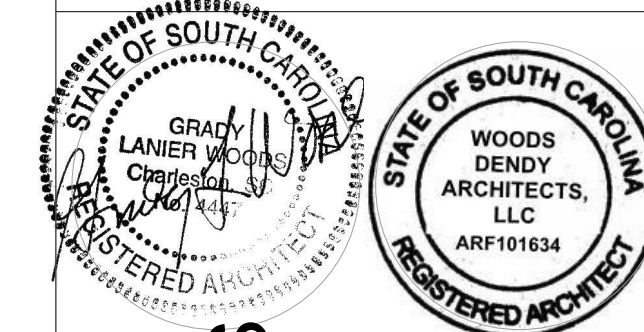
DRAWN BY: Author CHECKED BY: Checker
REVISION SCHEDULE
REV. NO. REV. DATE

Project Status
DATE: 12 AUG 22

ELEVATIONS AND PERSPECTIVES

A104

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NEW CONSTRUCTION FOR:
WATER & SEWER RESILIENCY IMPROVEMENTS

SECOND AVE AND WEATHERSBEE ST
RIDGELAND, SC

PROJECT NO. 21025

DRAWN BY: Author CHECKED BY: Checker

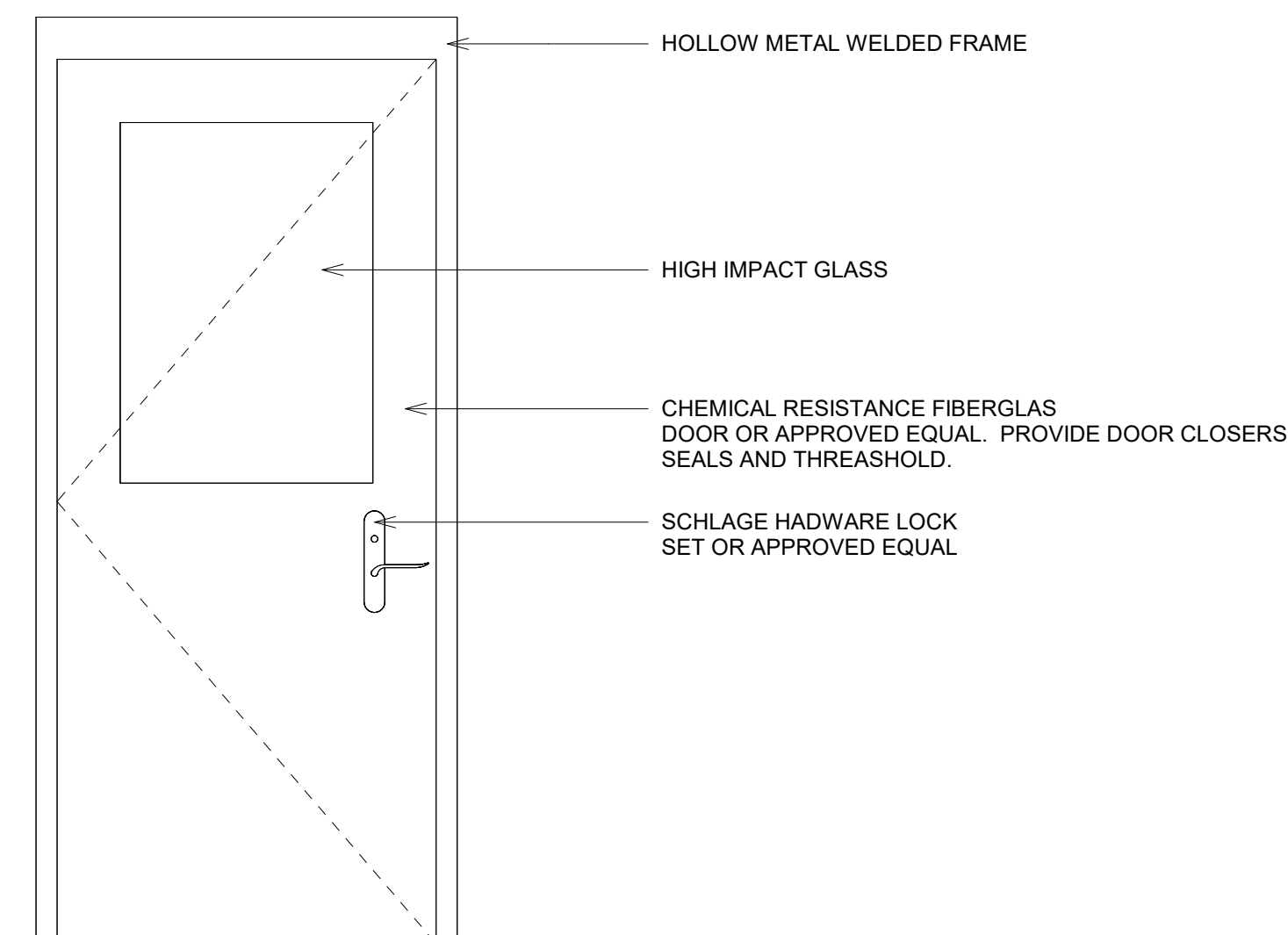
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Project Status
DATE: 12 AUG 22

BUILDING SECTION

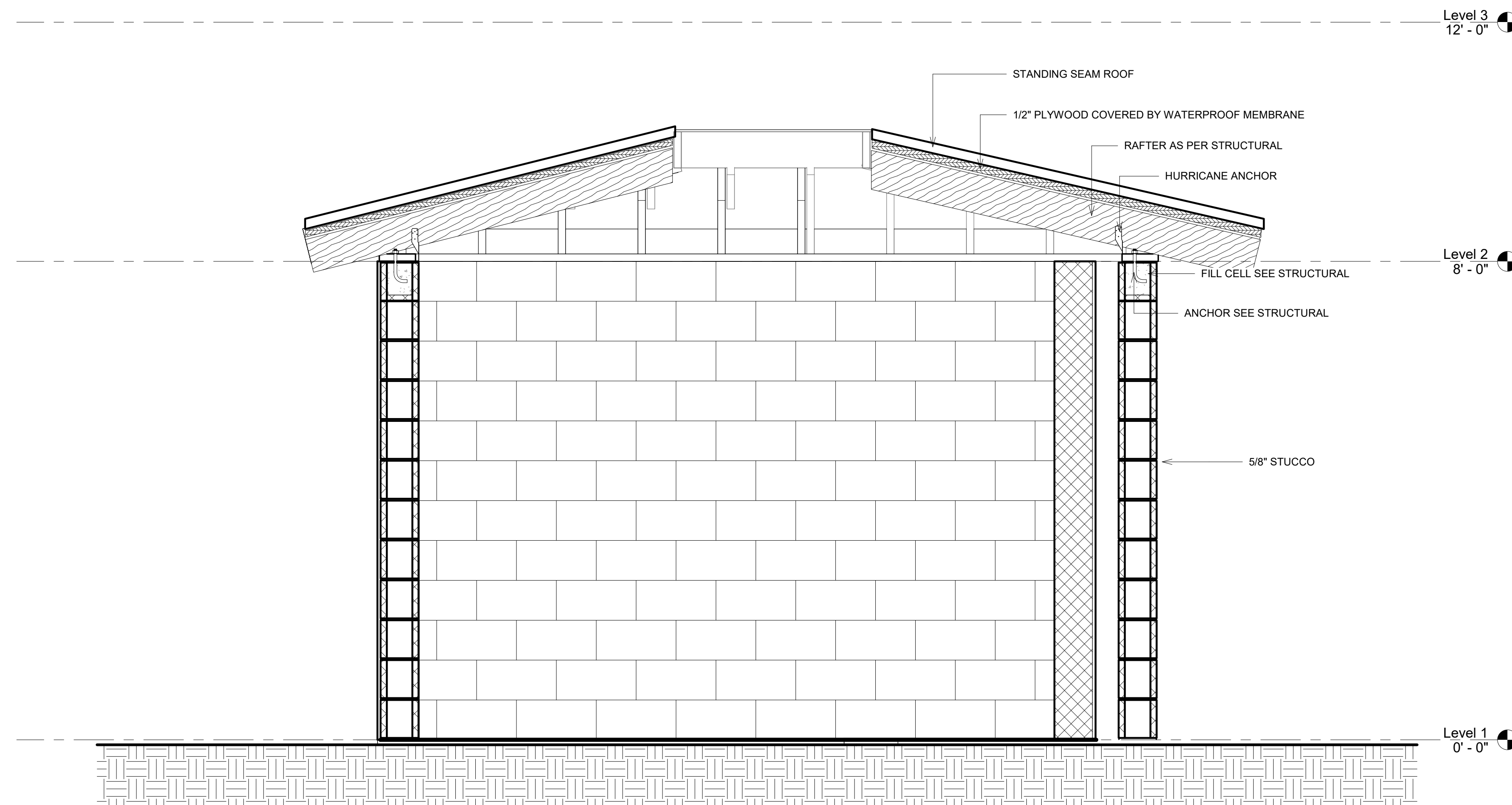
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DOOR
3/4" = 1'-0"

Door Schedule			
Mark	Width	Height	Comments
1	3' - 0"	7' - 0"	
2	3' - 0"	7' - 0"	



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

EXISTING ROOF ACCESS



EXISTING LOOKING EAST



EXISTING LOOKING EAST



EXISTING LOOKING NORTH



EXISTING LOOKING SOUTH



EXISTING LOOKING WEST



EXISTING INTERIOR LOOKING NORTH



INTERIOR LOOKING SOUTH



INTERIOR LOOKING EAST



SCALES LOOKING SOUTH



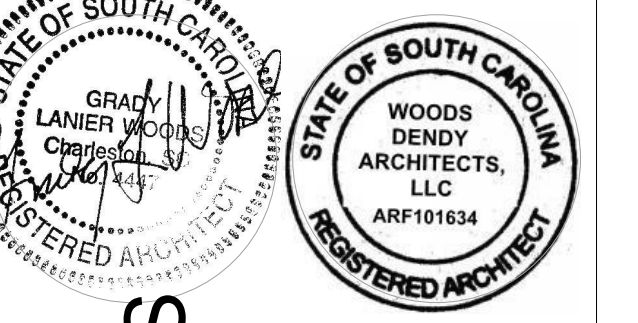
SCALES LOOKING SOUTH



ROOF FRAMING TYPICAL



EXISTING ROOF ACCESS FRAMING



NEW CONSTRUCTION FOR:
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EXISTING BUILDING PHOTOS

A106

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 AWWA 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 ENGINEER'S 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 15 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

- 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.
- In case of conflict between drawings, notes and specifications, the specifications shall govern.
- Work not indicated on a part of the drawings but reasonably implied to be similar to that shown at corresponding places shall be repeated.
- Review all project documents prior to fabrication and start of construction. Report any discrepancies to the project Architect prior to proceeding with work.
- It is the contractor's responsibility to protect existing facilities, structures and utility lines from all damage during construction.
- Coordinate structural and other drawings that are part of the contract documents for anchored, embedded or supported items which may affect the structural drawings.
- 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.
- Use of contract drawings reproduce 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.
- 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

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

CONCRETE NOTES

- 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.
- Reinforcing steel: ASTM A 615, grade 60. Minimum lap shall be 40 bar diameters or 24 inches, U.N.O.
- Welded wire fabric: ASTM A 185 or ASTM A 497. Lap all edges 1'-0" mesh minimum.
- Concrete cover: Footings 3", slabs 1 1/2" (U.N.O.).
- 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.
- Contractor is responsible for adequately protecting all excavation slopes.
- 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.
- All continuous horizontal reinforcing and vertical wall reinforcing shall be lapped according to lap splice and embedment requirements per ACI 318, latest edition.
- 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.
- For waterproofing details and locations, see architectural drawings.
- Dowels shall match wall reinforcing.
- Contractor shall make no deviations from design drawings without written approval of the Project Architect.
- 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.

- All reinforcing steel shall be detailed, fabricated and installed in accordance with ACI 318 and ACI detailing manual, ACI-315 latest edition.
- Not used.

- Shop drawings for placement shall be submitted for review prior to rebar fabrication unless approved otherwise by project Architect.
- No reinforcing bars shall be cut to accommodate the installation of anchors, embeds or other items.
- Use the structural drawings including revisions and addenda in conjunction with reviewed shop drawings for placement of reinforcing.
- 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.
- 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.
- 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

- 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.
- Obtain copy of masonry code and specifications for reference at the job site.

- Use type "S" mortar with minimum compressive strength of 1800 psi.
- 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.
- Provide filled cells as shown on plans. In addition, provide filled cells adjacent to all openings, at anchorage of connections.
- Provide full mortar bedding around all filled cells with vertical reinforcing.
- Reinforcing for filled cells shall conform to ASTM A615, Grade 60. Provide the following lap splices for reinforcing: #4 Bars 24" #5 Bars 30"
- 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.
- 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.
- Concrete for filled cells shall be vibrated during placement using a "pencil" type vibrator.
- 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.
- The use of solid load bearing masonry units is prohibited on this project.
- 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 expansion cracks.
- All lintels over masonry openings shall be Cast-Crete Lintels. Cast-Crete lintels are available from General Materials, Inc.
- Provide seismically rated brick ties for all brick veneer in accordance with man'r install instructions.

STRUCTURAL STEEL NOTES

- 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	
- Provide temporary bracing or guys to provide lateral support until permanent lateral bracing is installed.
- 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.
- All steel details and connections shall be in accordance with the requirement of the AISC SPECIFICATIONS (Latest Edition), including all supplements and revisions.
- Shop connections not specifically detailed on the drawings may be welded or bolted. Field connections not specifically detailed on the drawing shall be bolted.
- 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.
- All bolts cast in concrete shall conform to ASTM A-36 or A-307.
- Beams shall be supported on columns by tab plates welded through the center line of the column unless specifically shown otherwise herein.
- 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 specified otherwise. Bolts shall be two rows at 16" o.c. staggered.

TIMBER FRAMING NOTES

- All timber construction shall be in accordance with AITC specifications and requirements.
- 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).
- All engineered timber shall have minimum properties of: (Fb=2800 psi, Ft=2600 psi, Fc=2400 psi).
- Any and all timbers exposed to the earth, weather or in contact with concrete or masonry components or within eight (8) inches of exposed grade shall be treated in accordance with AWWA standards.
- All connectors shall be by the simpson company unless approved otherwise by the project Architect, G90 finishes.
- All floor/roof bracing, blocking and connections shall be by the truss or Engineered component manufacturer.
- 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.
- 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.
- 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 standard floor loadings notify engineer for review.
- Support all joists and beams on joist and beam hangers. Nailers shall not be permitted without prior authorization from engineer.
- 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.
- 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.
- 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.
- The GC shall anticipate and provide furring 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.
- 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.
- 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.
- Top plates, drag struts, shall be nailed together with two rows of 16d nails at 12" o.c. staggered.
- 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.
- Provide min 3" x 3" x 1/4" square plate washers between TD bottom wall plates and the nut for anchor bolts.
- Steel beams and columns shall not bear on timber framing. Provide embedded weld plates and steel columns bearing directly on concrete or masonry as necessary for proper support.
- 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	IBC 2018
SEISMIC USE GROUP	GROUP 1
Sds	.43
SDI	.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
GROUND SNOW LOAD	5 PSF

SPECIAL INSPECTIONS

- Submit concrete mix design to engineer for review prior to the start of work.
- Independent third party inspector to be present during CMU block grouting process and confirm proper and complete grouting of reinforced cells.
- Third party inspector to visually verify rafter uplift connector size, location & attachment.

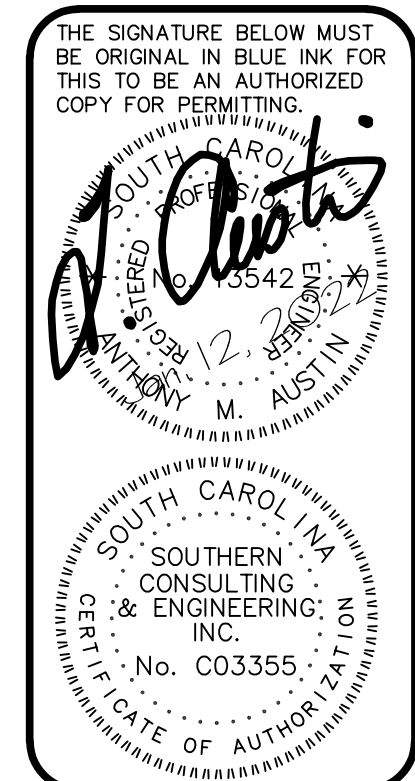
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Second Ave. and Weathersbee
Street
Ridgeland, SC

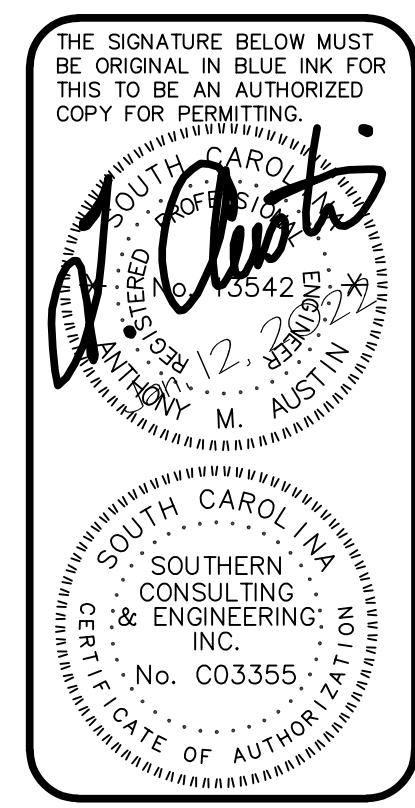
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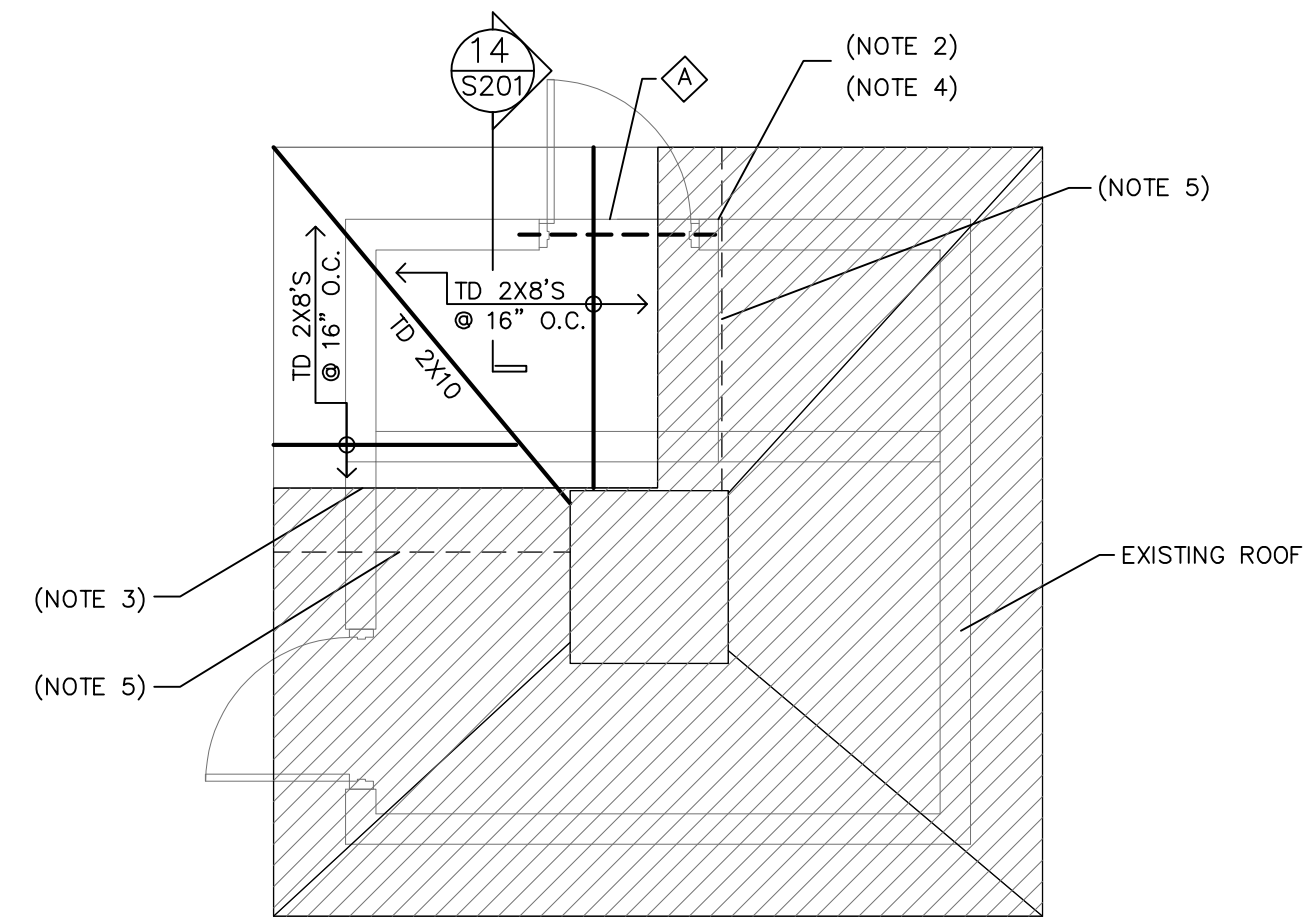


Ridgeland Pump Station
Second Ave. and Weathersbee Street
Ridgeland, SC

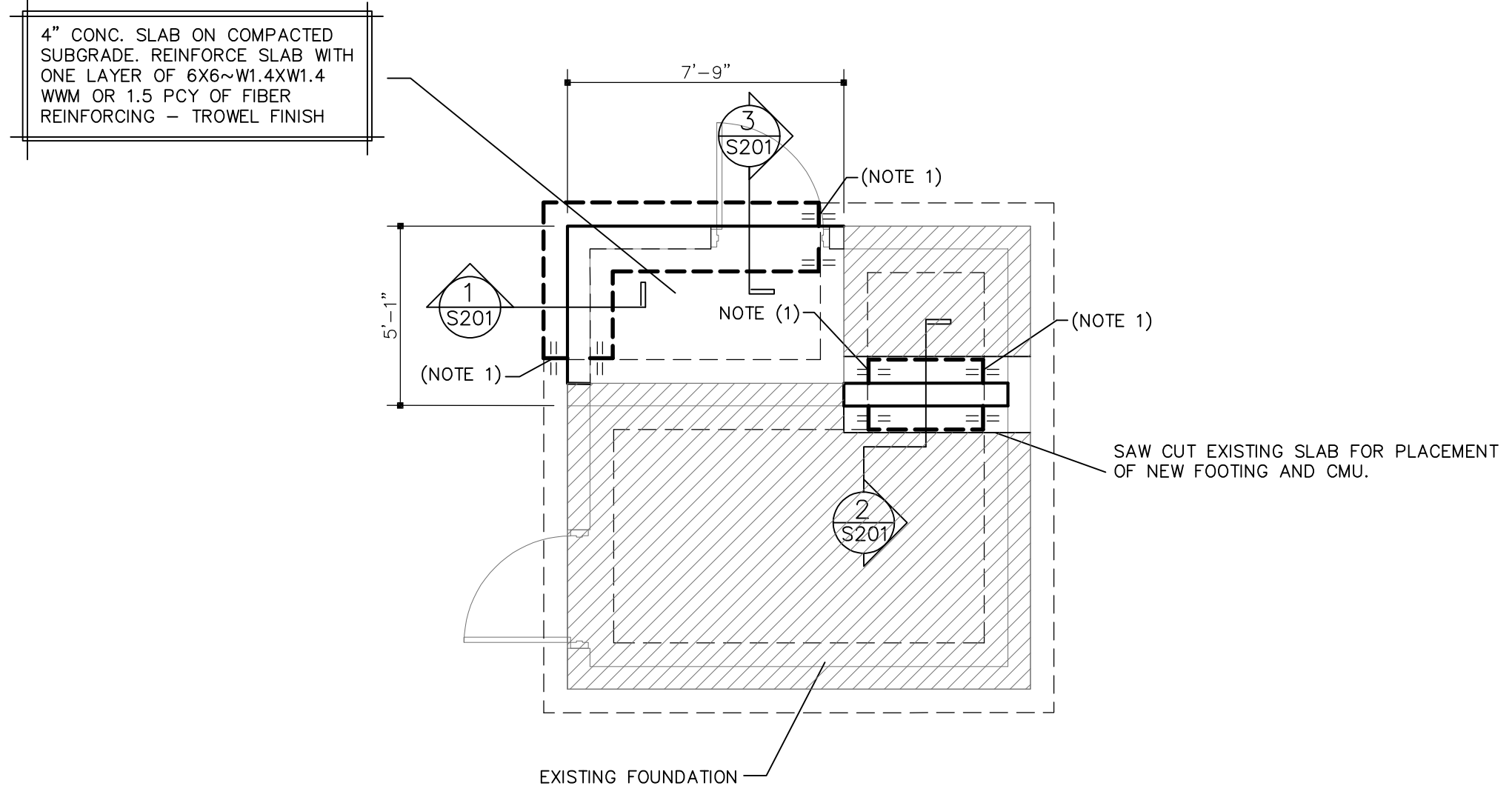
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CMU LINTEL SCHEDULE
 8"x8" CMU LINTEL WITH (2)#5'S IN BOTTOM.
 GROUT SOLID WITH 3000 PSI PEA GRAVEL CONCRETE



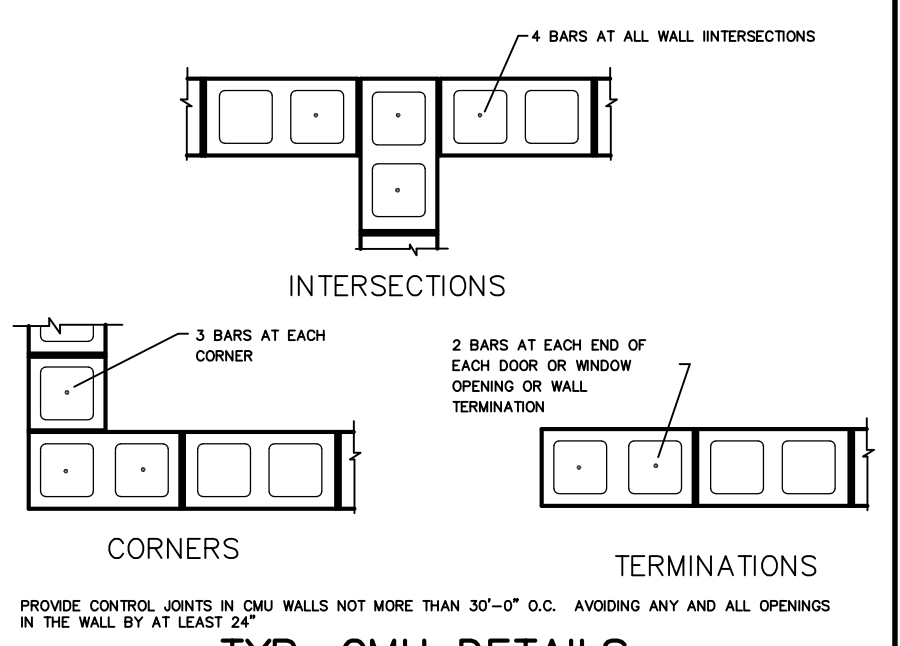
ROOF FRAMING
 SCALE: 1/4" = 1'-0"



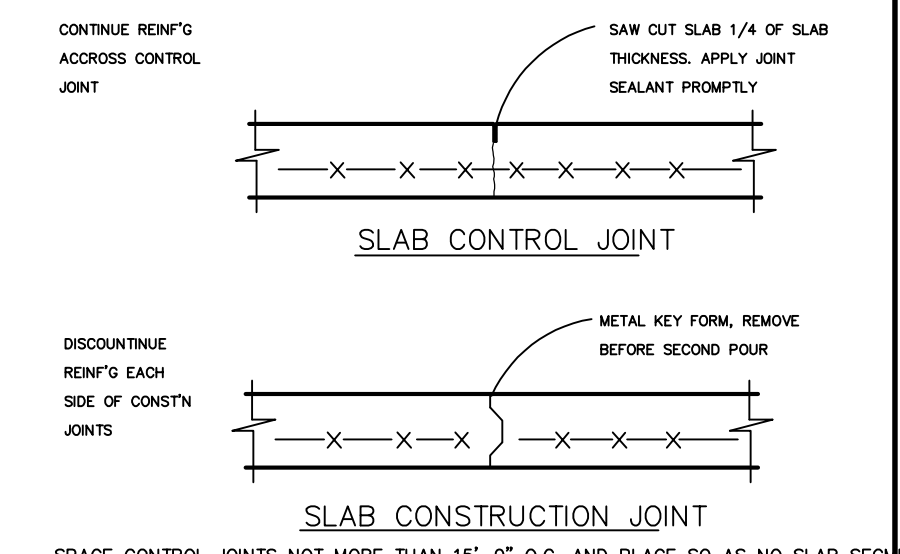
- DRAWING NOTES (NOTE X)**
- DRILL AND EPOXY (2)#4'S X 2'-6" NOT LESS THAN 6" INTO FOOTING WHERE NEW ABUTS EXISTING
 - EXTEND CMU LINTEL NOT LESS THAN 8" ONTO ADJACENT CMU. TOOTH INTO EXISTING AS REQUIRED.
 - PROVIDE A VERTICAL CMU CONTROL JOINT BETWEEN NEW AND EXISTING CMU.
 - TOOTH NEW CMU INTO EXISTING AT ALTERNATE COURSES. REINFORCE 2 CELLS EACH SIDE OF NEW DOOR OPENING.
 - 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

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

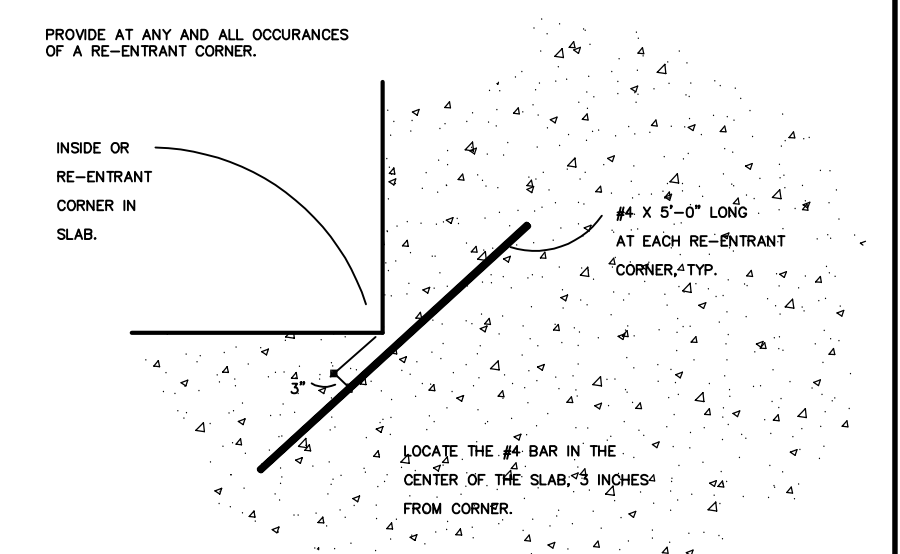
SEE ARCH'L DRAWINGS FOR DIMENSIONS AND CONDITIONS NOT SHOWN HEREIN.
 TOP OF FOOTINGS SHALL BE NOT LESS THAN 8" BELOW FINISHED GRADE
 FOOTINGS AND SLABS SHALL NOT BE PLACED ON UNCONTROLLED FILL. PLACEMENT AND USE OF COMPACTED FILL, IN EXCESS OF 12" SHALL REQUIRE THE INVOLVEMENT AND BE PLACED UNDER THE 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.



TYP. CMU DETAILS



TYP. SLAB JOINT'G DETAILS

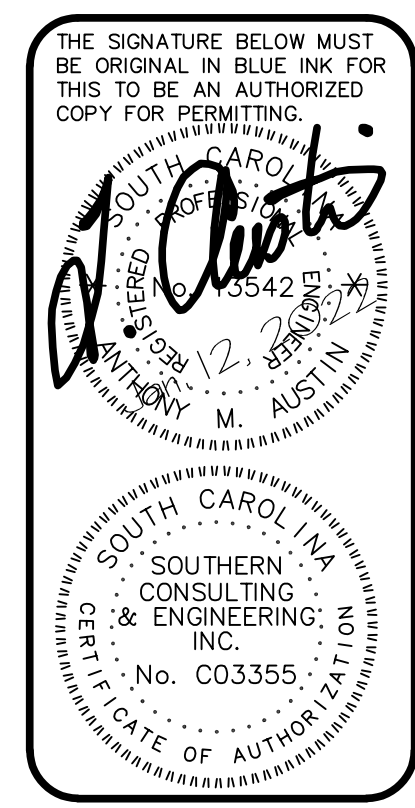


TYP. RE-ENTRANT CORNER DETAIL

REV.	BY	DATE

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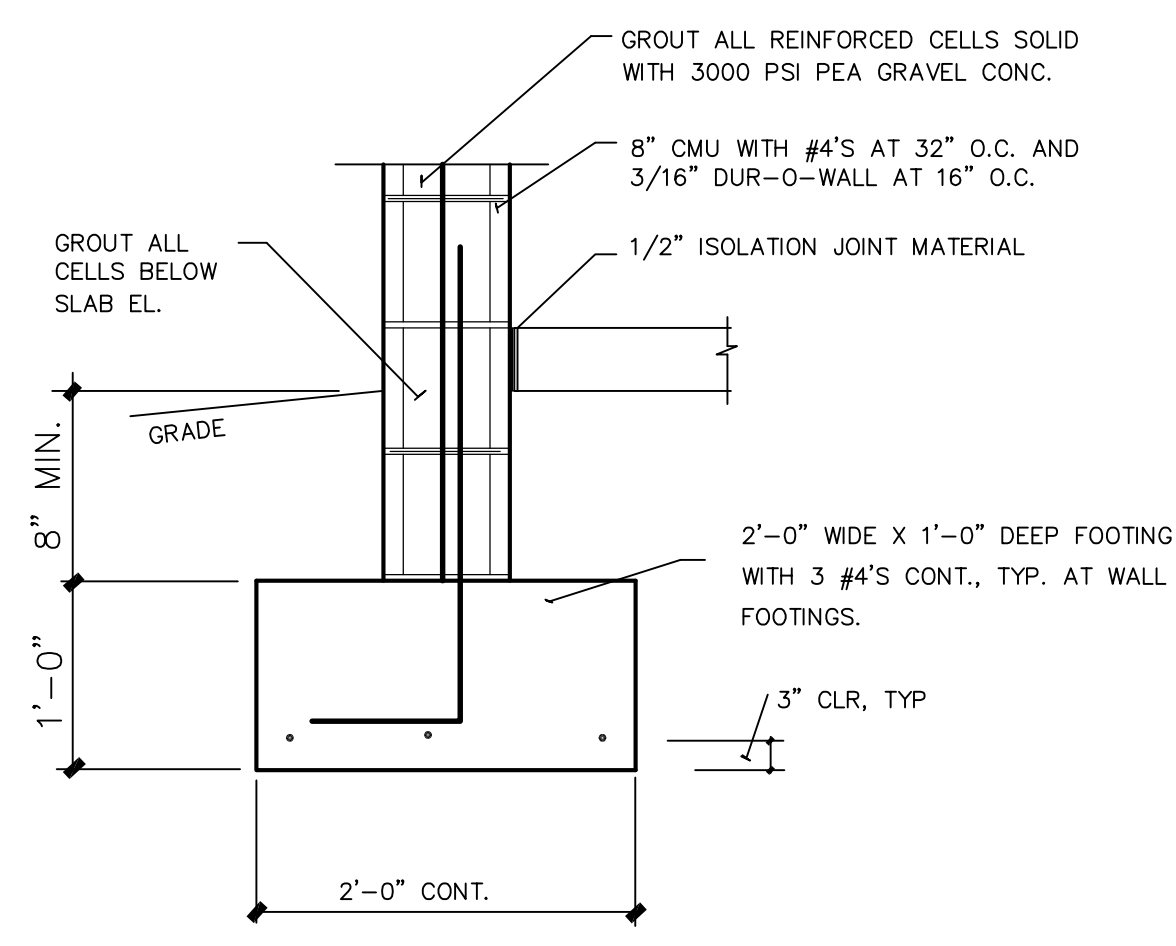
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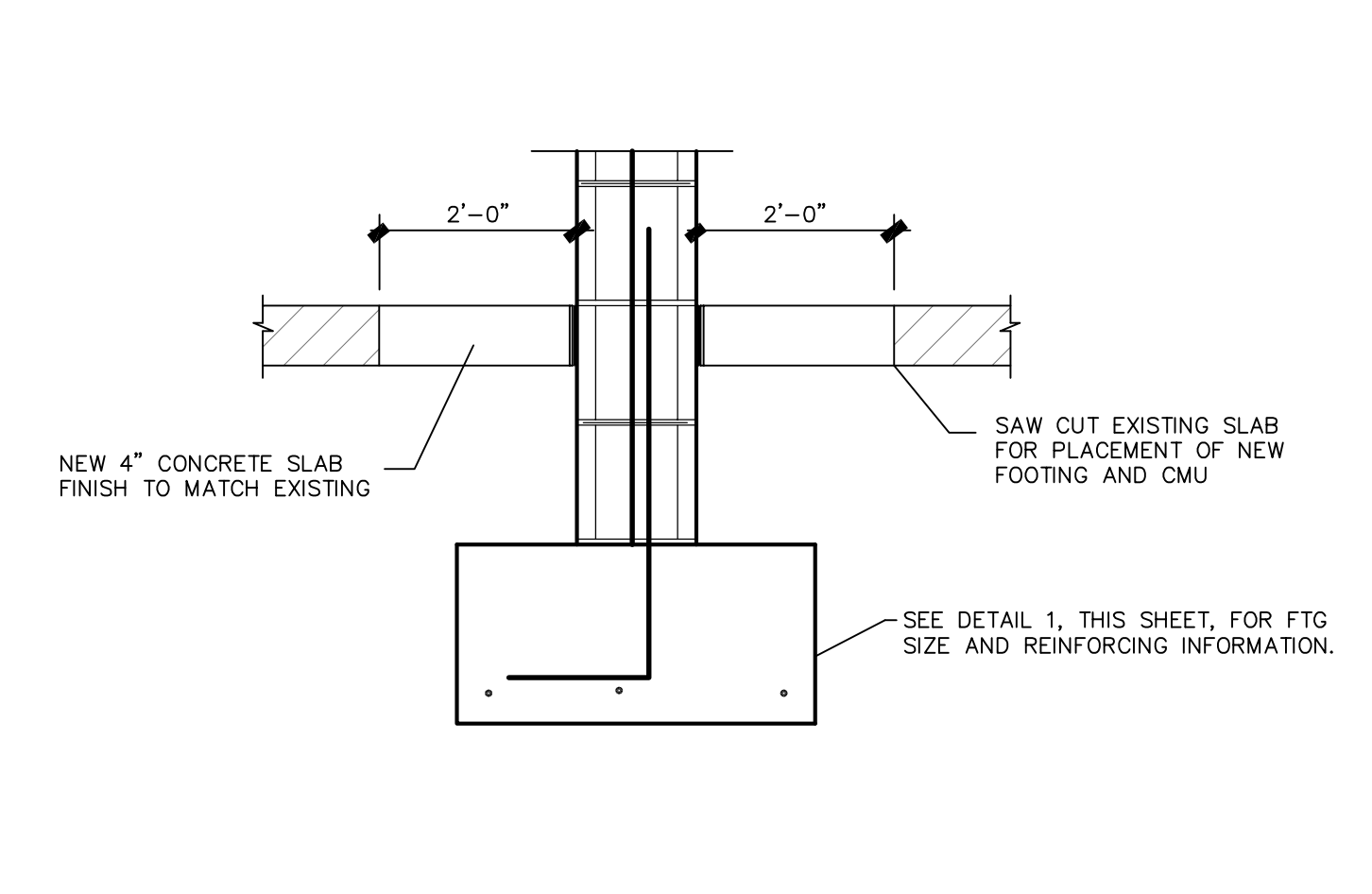
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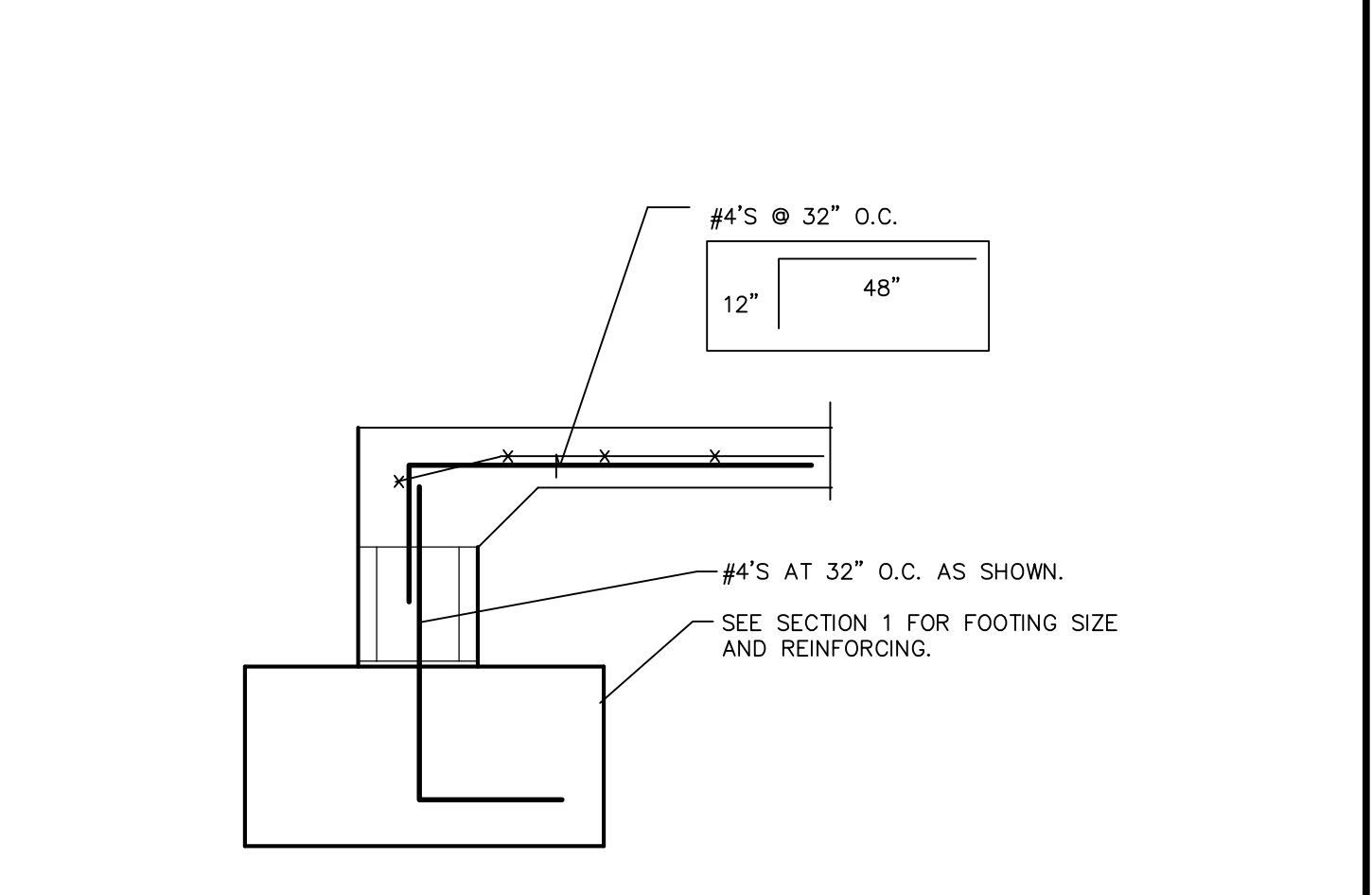
WALL FOOTING DETAIL

1



TYP. INT. FOOTING DETAIL

2



SECTION AT DOOR OPENING

3

4

5

6

7

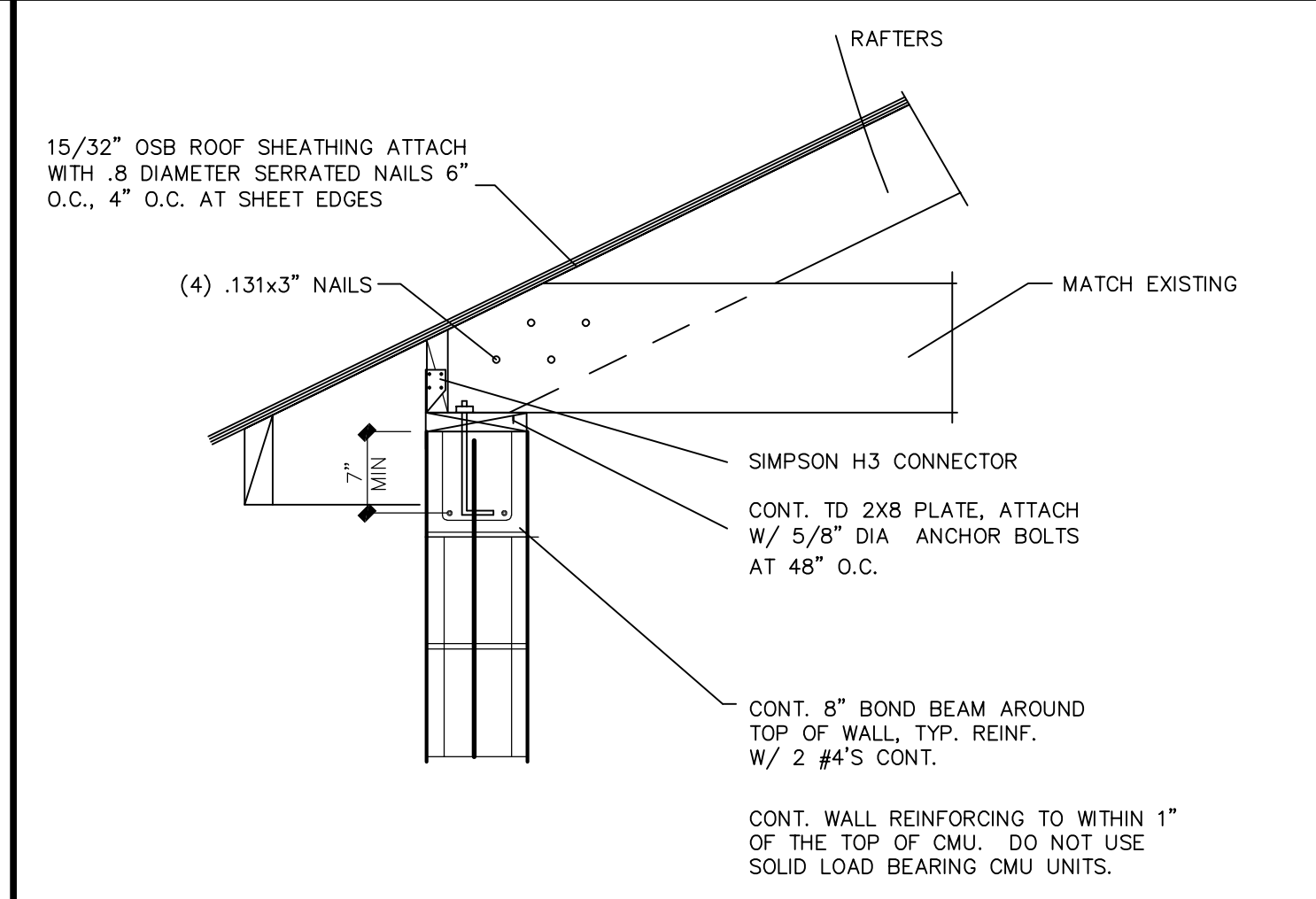
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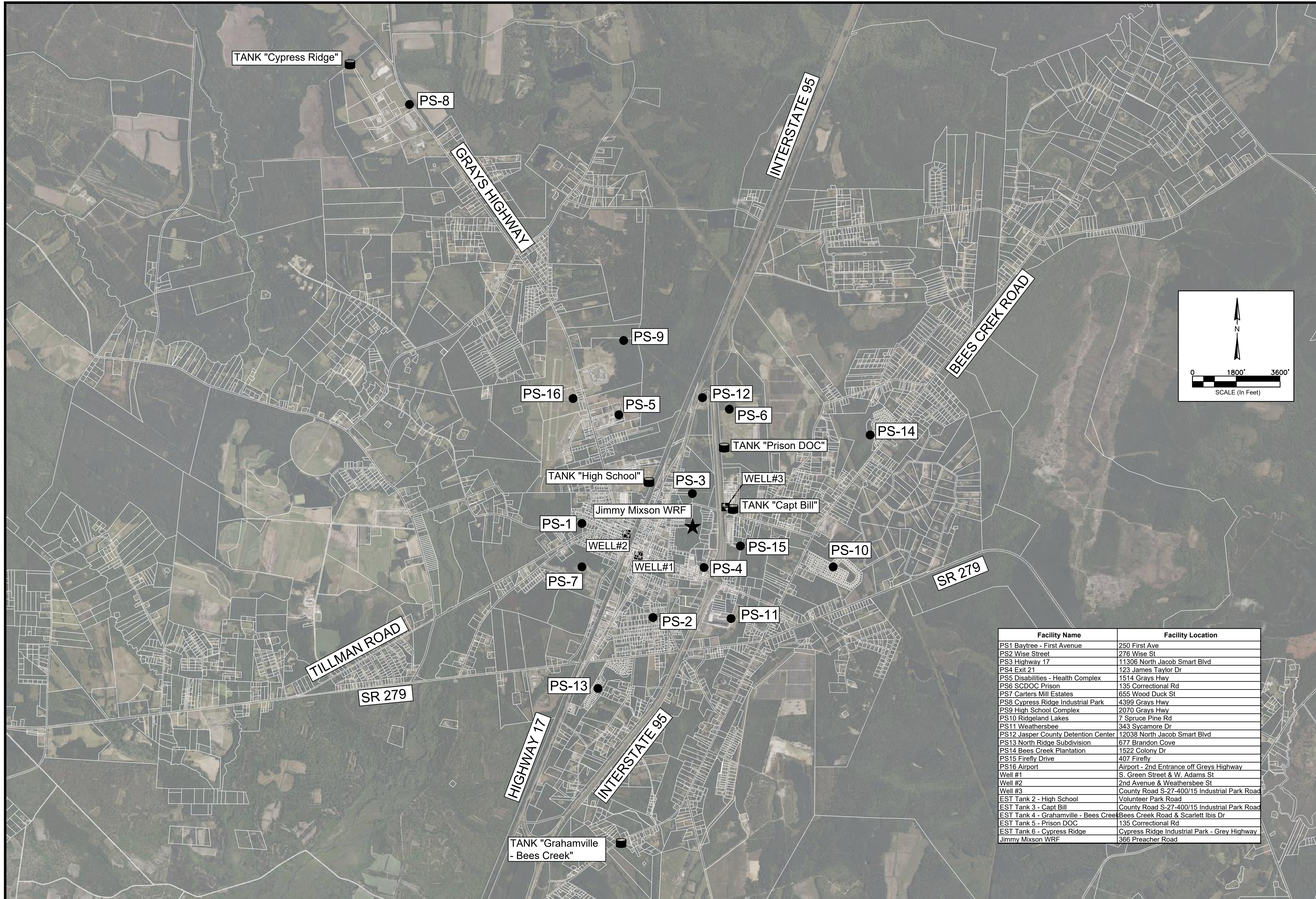
EAVE DETAIL

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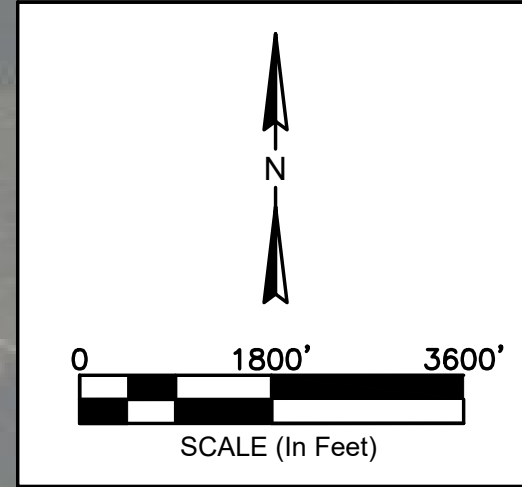


SOUTH CAROLINA
 REGISTERED PROFESSIONAL ENGINEER
 No. 21839
 ANGELA B. BRYAN

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 BRYAN, P.E. ON THE DATE
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SOUTH CAROLINA
 REGISTERED PROFESSIONAL ENGINEER
 No. 5166
 FOUR WATERS
 ENGINEERING, INC.
 STATE OF SOUTH CAROLINA

REV	DATE	BY	DESCRIPTION
1			
2			
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5			
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WATER AND SEWER RESILIENCY IMPROVEMENTS
PART IV
WATER AND SEWER SCADA SYSTEM
UPGRADES LOCATIONS
 TOWN OF RIDGELAND
 RIDGELAND, SOUTH CAROLINA

DESIGN	DRAWN	JMC	DATE	ISSUE	ISSUE	BID
ABB	JMC		17-1007	FEB 2023		

FOUR WATERS
ENGINEERING

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

DRAWING NUMBER
G11.1

Facility Name	Facility Location
PS1 Baytree - First Avenue	250 First Ave
PS2 Wise Street	276 Wise St
PS3 Highway 17	11306 North Jacob Smart Blvd
PS4 Exit 21	123 James Taylor Dr
PS5 Disabilities - Health Complex	1514 Grays Hwy
PS6 SCDOC Prison	135 Correctional Rd
PS7 Carters Mill Estates	655 Wood Duck St
PS8 Cypress Ridge Industrial Park	4399 Grays Hwy
PS9 High School Complex	2070 Grays Hwy
PS10 Ridgeland Lakes	7 Spruce Pine Rd
PS11 Weathersbee	343 Sycamore Dr
PS12 Jasper County Detention Center	12038 North Jacob Smart Blvd
PS13 North Ridge Subdivision	677 Brandon Cove
PS14 Bees Creek Plantation	1522 Colony Dr
PS15 Firefly Drive	407 Firefly
PS16 Airport	Airport - 2nd Entrance off Greys Highway
Well #1	S. Green Street & W. Adams St
Well #2	2nd Avenue & Weathersbee St
Well #3	County Road S-27-400/15 Industrial Park Road
EST Tank 2 - High School	Volunteer Park Road
EST Tank 3 - Capt Bill	County Road S-27-400/15 Industrial Park Road
EST Tank 4 - Grahamville - Bees Creek	Bees Creek Road & Scarlett Ibis Dr
EST Tank 5 - Prison.DOC	135 Correctional Rd
EST Tank 6 - Cypress Ridge	Cypress Ridge Industrial Park - Grey Highway
Jimmy Mixson WRF	366 Preacher Road