

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	RICHLAND	P038202	S-37	U-1W

DEPARTMENT OF UTILITIES & ENGINEERING
CAUGHMAN ROAD UTILITY RELOCATION
(WATER)

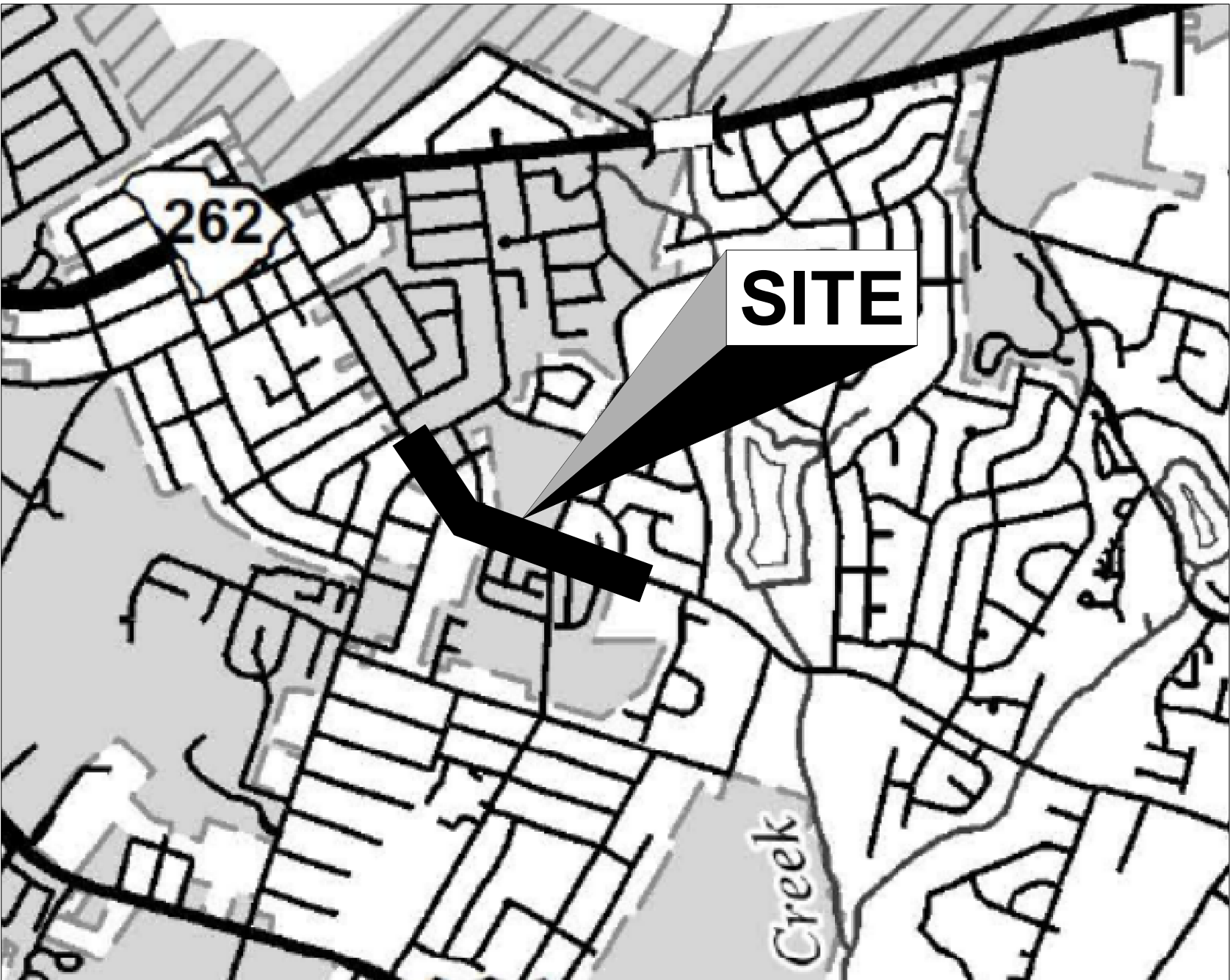
COLUMBIA, SC
FOR
THE CITY OF COLUMBIA

S-404 (CAUGHMAN RD.) & S-1660 (HALLBROOK DR./TRAILWOOD LN.)
C.I.P. #WM4777

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TOTAL SHEETS		13

VICINITY MAP - NTS



PROJECT CONTACTS

OWNER

COLUMBIA WATER
DEPARTMENT OF ENGINEERING
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COLUMBIA, SC 29201
CONTACT: JOHN B. HILBERT
PHONE: 803-545-3283
EMAIL: JOHN.HILBERT@COLUMBIASC.GOV

ENGINEER

MEAD AND HUNT
878 S LAKE DR.
LEXINGTON, SC 29072
CONTACT: KEVIN BARNES, PE
PHONE: (843) 213-3288
EMAIL: KEVIN.BARNES@MEADHUNT.COM



Know what's below.
Call before you dig.

CAUGHMAN ROAD
UTILITY RELOCATION

Mead
& Hunt

TITLE SHEET – WATER

SCALE: 1" = 200' (11"x17") / 1" = 100' (22"x36")

SHEET U-1W

MAYOR

DANIEL J. RICKENMANN

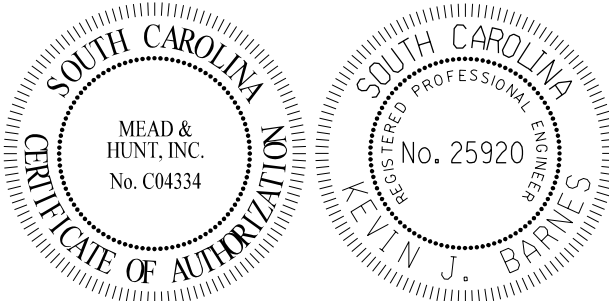
CITY COUNCIL

EDWARD H. MCDOWELL, JR.
WILL BRENNAN
DR. ADITI BUSSELS
TINA N. HERBERT
PETER M. BROWN
TYLER D. BAILEY

DIRECTOR OF UTILITY
OPERATIONS
WILLIAM F. ESKRIDGE, P.E.

DIRECTOR OF ENGINEERING
DANA R. HIGGINS, P.E.

CITY MANAGER
TERESA WILSON



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RIGHT-OF-WAY DATA SHEET

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	RICHLAND	P038202	S-37	U-2AW

TRACT NO.	PROPERTY OWNER	TAX MAP REFERENCE	TOTAL TRACT ACRES	OBTAIN				REMAINDER LEFT ACRES ^	REMAINDER RIGHT ACRES ^	DATE ACQUIRED	TYPE OF INSTRUMENT	PERMISSION (YES)					REMARKS
				OUTFALL DITCH	LEFT	RIGHT	TOTAL					OUTFALL DITCH	SLOPE	DRAINAGE STRUCTURE	EROSION CONTROL	ENTRANCE CONSTRUCTION	
7	ROBBINS JOHN A &	R19112-02-15	0.32														
16	WIGGINS RICHARD L & KATHRYN G	R19112-01-01	0.34										YES	YES			FOR PARTIAL PIPE REMOVAL
17	JACQUELINE BRIGMAN	R19205-05-10	0.16			193 SF (0.004 AC)	193 SF (0.004 AC)		6776 SF						YES		
18	OPTED OUT	R19205-05-11	0.11														
24	15 & 16 ASHLEY, LLC	R19205-05-17	0.16			203 SF (0.005 AC)	203 SF (0.005 AC)		6766 SF								
25	GILMORE CEMETERY	R19205-05-18	3.10			477 SF (0.011 AC)	477 SF (0.011 AC)		3.089								
27	LOWER RICHLAND SCH DIST #5 n/k/a RICHLAND CO SCH DIST. #1	R19205-03-02	23.79			3812 SF (0.088 AC)	3812 SF (0.088 AC)		23.702			YES	YES	YES	YES		FOR SIDEWALK CONSTRUCTION
28	WOLFE STITT M	R19205-03-03	0.30														
29	SKINNER CLIFFORD E	R19205-03-04	0.23														
37	BOGLE KEVIN L	R19205-06-03	0.34														
38	WOODWARD ARTHUR A & KATHRYN J	R19205-06-04	0.29										YES				
39	LIVINGSTON JESSICA A	R19205-06-05	0.34														
40	SMITH KEVIN W	R19205-06-06	0.40														
41	BEERS SANDRA G	R19205-06-07	0.40														
42	DINKINS ISAAC & GERALDINE	R19205-06-08	0.43										YES		YES		
45	MCCLAIN SARAH K	R19205-02-02	0.52														
46	HUTCHINGS RANGER R	R19205-02-03	0.49														
47	ROSE NANCY FINCH MOORE	R19205-02-04	0.44														
59	LIVINGSTON TERRY G	R19205-07-01	0.74														
60	LIVINGSTON TERRY G	R19205-07-10	0.65		3317 SF (0.076 AC)		3317 SF (0.076 AC)	0.573							YES		
61	LIVINGSTON TERRY G & KAREN B	R19205-07-11	0.62		1761 SF (0.040 AC)		1761 SF (0.040 AC)	0.579							YES		
62	SEIGFREID DAVID B	R19205-07-12	0.55												YES		
63	HAWKINS DOUGLAS M	R19205-07-13	0.83														
64	MIRACLE FAITH CHRISTIAN CENTER	R19100-02-05	4.73														OBTAIN TEMPORARY R/W - 559 SF / 0.013 AC
65	COLONIAL COMMONS HOMEOWNERS	R19205-07-17	0.20														
66	MATHIS ANDREA	R19205-07-26	0.11														
67	COLONIAL COMMONS HOMEOWNERS	R19205-07-27	0.01														
68	PERKINS ADAM & MONICA	R19205-10-01	0.15														
69	COLLINS MAHOGANY AMY ZAKIYA	R19205-10-12	0.14														
70	COLONIAL COMMONS HOMEOWNERS	R19100-02-12	0.02														OBTAIN TEMPORARY 38' R/W - 203 SF / 0.005 AC
71	METRO DWELLING, LLC	R19100-02-10	2.15		2272 SF (0.052 AC)		2272 SF (0.052 AC)	2.097					YES		YES		
72	COLONIAL COMMONS HOMEOWNERS	R19100-02-12	0.05														OBTAIN TEMPORARY R/W - 94 SF / 0.002 AC
73	COLONIAL COMMONS HOMEOWNERS	R19108-09-07	0.13														OBTAIN TEMPORARY R/W - 333 SF / 0.008 AC
74	SIMONS TENILLE L	R19108-11-05	0.20														
75	KEITH JOHNNY J & SANDY	R19108-11-04	0.20														
76	ALHINAI HUMAID H &	R19108-11-03	0.20														
77	FLOWERS LUCINDA	R19108-11-02	0.20														
78	MOORE'S CREEK HOMEOWNERS	R19108-11-01	0.20														
79	BURKS ALTO LEE	R19108-10-10	0.20		424 SF (0.010 AC)		424 SF (0.010 AC)	8288 SF					YES		YES		
80	CONREX RESIDENTIAL PROPERTY	R19108-10-09	0.20												YES		
81	WATKINS JANELLA M	R19108-10-08	0.20														
82	FRIERSON MARCUS	R19108-10-07	0.20														
83	GILL WELDON	R19108-10-06	0.20														
84	MALLORY DIANE L	R19108-10-05	0.20														
85	HINGLETON RONNIE	R19108-10-04	0.20														

[illegible]

R/W NOTE:
THE DEPARTMENT WILL UTILIZE THE PRESENT RIGHT OF WAY
AS SHOWN BELOW EXCEPT AS OTHERWISE SHOWN ON PLANS.

[illegible]

NOTES:
A. SHOW REMAINDER IN SQUARE FEET WHEN LESS THAN 0.25 ACRE

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CAUGMAN ROAD UTILITY RELOCATION	
Mead & Hunt	
RIGHT-OF-WAY SHEET 1/2 – WATER	
SCALE: 1" = 200' (11"x17") / 1" = 100' (22"x36")	SHEET U-2AW



RIGHT-OF-WAY DATA SHEET

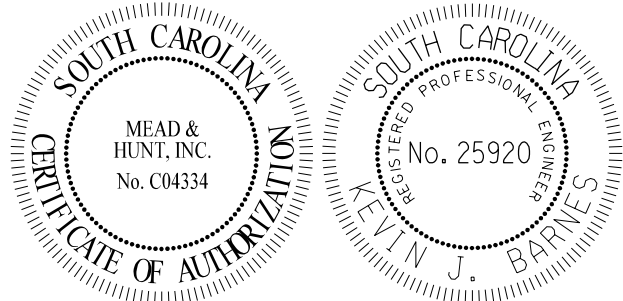
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NOTES:
A. SHOW REMAINDER IN SQUARE FEET WHEN LESS THAN 0.25 ACRE.



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CAUGMAN ROAD UTILITY RELOCATION



RIGHT-OF-WAY SHEET 2/2 - WATER

SCALE: 1" = 200' (11"x17") / 1" = 100' (22"x36") SHEET U-2BW

SUE LEGEND AND NOTES

ELECTRIC SYMBOLS			TELECOMMUNICATION SYMBOLS			UTILITY INFORMATION ABBERVATIONS		
SYM	ABV	DESCRIPTION	SYM	ABV	DESCRIPTION	SYM	ABV	DESCRIPTION
	ETM	ELECTRICAL TRANSFORMER		TB	TELEPHONE BOOTH		EOI	END OF INFORMATION
	EMH	ELECTRICAL MAN HOLE		TVP	CABLE TV PEDESTAL		EOR	END OF RECORDED INFORMATION
	EHH	ELECTRICAL HAND HOLE		TLC	SUBSCRIBER LOOP CARRIER (aka SLICK)		AATUR	UTILITY ABANDONED ACCORDING TO UTILITY RECORDS
	EPP	ELECTRIC PEDESTAL		TPP	TELEPHONE PEDESTAL		EATFI	UTILITY ABANDONED ACCORDING TO FIELD INSPECTION
	EBX	ELECTRIC BOX		TMH	TELEPHONE MAN HOLE		NAP	NO ASSOCIATED PIPING FOUND FROM STRUCTURE
	ESG	ELECTRIC SWITCH GEAR BOX		TFOH	FIBER OPTIC HAND HOLE		DBR	NO ASSOCIATED CABLES FOUND FROM STRUCTURE
	EVT	ELECTRIC VAULT		THH	TELEPHONE HAND HOLE		DATFI	DEPICTED ACCORDING TO FIELD INSPECTION
	EGL	GROUND / LANDSCAPE LIGHT		TVHH	CABLE TV HAND HOLE		EATFI	EMPTY ACCORDING TO FIELD INSPECTION
	EAB	ELECTRIC AIR BRAKE		TBX	TELEPHONE BOX		PR	PROPOSED
	ERO	ELECTRIC RESIDENTIAL OUTLET		TXB	SPLICE BOX		MT	EMPTY
POLE SYMBOLS				TRP	TELEPHONE REPEATER		CAP	CAPACITY
	PSP	SIGNIFICANT POLE (STEEL, CONCRETE, ETC)		TVB	CABLE TV BOX		GR	GROUND
	PP	ELECTRIC COMBINATION POLE		TUV	UNDERGROUND TELEPHONE VAULT	MATERIAL ABBREVIATIONS		
	PMP	METER POLE		UTP	UNDERGROUND TELEPHONE PEDESTAL	C	.....	COPPER
	PLT	TRANSMISSION LINE POLE		UTV	UNDERGROUND CABLE TV PEDESTAL	DI	.....	DUCTILE IRON
	PLP	AREA LIGHT POLE	WATER SYMBOLS			P	.....	PLASTIC
	PTF	TRAFFIC SIGNAL POLE		WM	WATER METER	FO	.....	FIBER OPTIC
	POP	OTHER USE POLE		WV	WATER VALVE	CI	.....	CAST IRON
	PCT	CELL PHONE TOWER		WMW	WATER MONITORING WELL	CO	.....	CONCRETE
	PTP	TELEPHONE POLE		WFH	FIRE HYDRANT	PV	.....	PVC
	PGP	GUY POLE		WMH	WATER MAN HOLE	VY	.....	VYOLON
TRAFFIC CONTROL SYMBOLS				WAR	WATER AIR RELEASE VALVE	TC	.....	TERRA COTTA
	TFV	TRAFFIC SIGNAL CONTROL VAULT		WVB	WATER VALVE BOX	SWC	.....	STEEL WRAPPED COATED
	TFHH	TRAFFIC CONTROL HAND HOLE		WFC	FIRE DEPARTMENT CONNECTION	AC	.....	ASBESTOS CEMENT
	TFJ	TRAFFIC SIGNAL JUNCTION BOX		WBP	WATER BACKFLOW PREVENTER	TF	.....	TRAFFIC SIGNAL CABLE
GAS SYMBOLS				WBO	WATER BLOW OFF VALVE	GW	.....	GUY WIRE
	GM	GAS METER		WH	WELL HOUSE	GNT	.....	CONDUIT
	GVC	GAS VALVE CAP		WVP	POST INDICATOR VALVE	GENERAL ABBREVIATIONS		
	GMH	GAS MAN HOLE	SEWER SYMBOLS			E	.....	ELECTRIC (POWER)
	GVT	GAS VENT		SCO	SEWER CLEAN OUT	W	.....	UNDERGROUND WATER
	GR	GAS PRESSURE REGULATOR		SMH	SEWER MAN HOLE	P	.....	UNDERGROUND GAS
	GTP	GAS LINE TEST POINT		SAR	SEWER AIR RELEASE VALVE	PUPS	.....	PALMETTO UTILITY PROTECTION SERVICES
	GTF	GAS LINE TAP FARM		SST	SEWER STEP TANK	T	.....	TELEPHONE
MISC SYMBOLS				SCV	SEWER CHECK VALVE BOX	TV	.....	CABLE TELEVISION
	MWP	UTILITY WITNESS POST		SGP	SEWER GRINDER / PUMP STATION	FO	.....	FIBER OPTIC
	EOI	END OF INFORMATION		SSV	SEWER VALVE	S	.....	SANITARY SEWER
	MUC	MISC / UNKNOWN VALVE CAP OR COVER		SLS	SEWER LIFT STATION	FS	.....	FORCED SANITARY SEWER, FORCE MAIN
	MPB	PAVED OR BURIED MANHOLE / CAP	NONPOTTABLE WATER SYMBOLS			DB	.....	DUCT BANK
	MUE	UTILITY TERMINI / ENDS		ICV	IRRIGATION CONTROL VALVE	TF	.....	TRAFFIC CONTROL UTILITY
	MTH	TEST HOLE		ICB	IRRIGATION CONTROL BOX	UNK	.....	UNKNOWN UTILITY
				IRH	IRRIGATION / SPRINKLER HEAD	HP	.....	HYDROGEN PEROXIDE
						ST	.....	STEAM LINE

UTILITY LINE STYLES	
	EXISTING AT&T
	EXISTING CHARTER / SPECTRUM OVHD
	EXISTING VERIZON
	EXISTING DOMINION OVH ELECTRIC
	EXISTING DOMINION UG ELECTRIC
	EXISTING DOMINION GAS
	PROPOSED WATER
	EXISTING WATER TO BE ABANDONED
	EXISTING WATER TO BE REMOVED
	PROPOSED GRAVITY SEWER
	PROPOSED SEWER FORCE MAIN
	EXISTING SEWER TO BE ABANDONED
	EXISTING SEWER TO BE REMOVED
QUALITY LEVEL DEFINITIONS	
Level D. This level information comes solely from existing utility records. It may provide an overall "feel" for the congestion of utilities, but it is often highly limited in terms of comprehensiveness and accuracy. Its usefulness should be confined to project planning and route selection activities.	
Level C. This level involves surveying visible aboveground utility facilities (e.g., manholes, valve boxes, posts) and correlating this information with existing utility records. When using this information, it is not unusual to find that many underground utilities have been either omitted or erroneously plotted. Its usefulness, therefore, should be confined to rural projects where utilities are not prevalent, or are not too expensive to repair or relocate.	
Level B. This level involves the use of surface geophysical techniques to determine the existence and horizontal position of underground utilities. This activity is called "designating." Two-dimensional mapping information is obtained. This information is usually sufficient to accomplish preliminary engineering goals. Decisions can be made on where to place storm drainage systems, footers, foundations and other design features in order to avoid conflicts with existing utilities. Slight adjustments in the design can produce substantial cost savings by eliminating utility relocations.	
Level A. This level involves the use of nondestructive digging equipment at critical points to determine the precise horizontal and vertical position of underground utilities, as well as the type, size, condition, material and other characteristics. This activity is called "locating." It is the highest level presently available. When surveyed and mapped, precise plan and profile information are available for use in making final design decisions. By knowing exactly where a utility is positioned in three dimensions, the designer can often make small adjustments in elevations or horizontal locations and avoid the need to relocate utilities. Additional information (e.g., utility materials, condition, size, soil contamination, paving thickness) also assists the designer and Utility Company in their decisions.	

MAP NOTE:

- ALL EXISTING BOUNDARY AND TOPOGRAPHIC INFORMATION HAS BEEN PROVIDED BY SCDOT.
- THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING SCDOT BENCHMARKS PRIOR TO ANY CONSTRUCTION AND SHALL REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER. FIELD VERIFICATION CAN BE ACCOMPLISHED BY CHECKING A MINIMUM OF TWO FIXED OBJECTS DISPLAYED ON THE SURVEY (I.E., MANHOLE RIM, STORM GRATE, PIPE INVERTS, ETC.).
- THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING UTILITIES. IF THERE ARE ANY MAJOR DISCREPANCIES THAT WILL AFFECT THE PROJECT DESIGN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.

GENERAL NOTES:

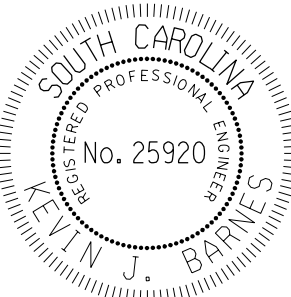
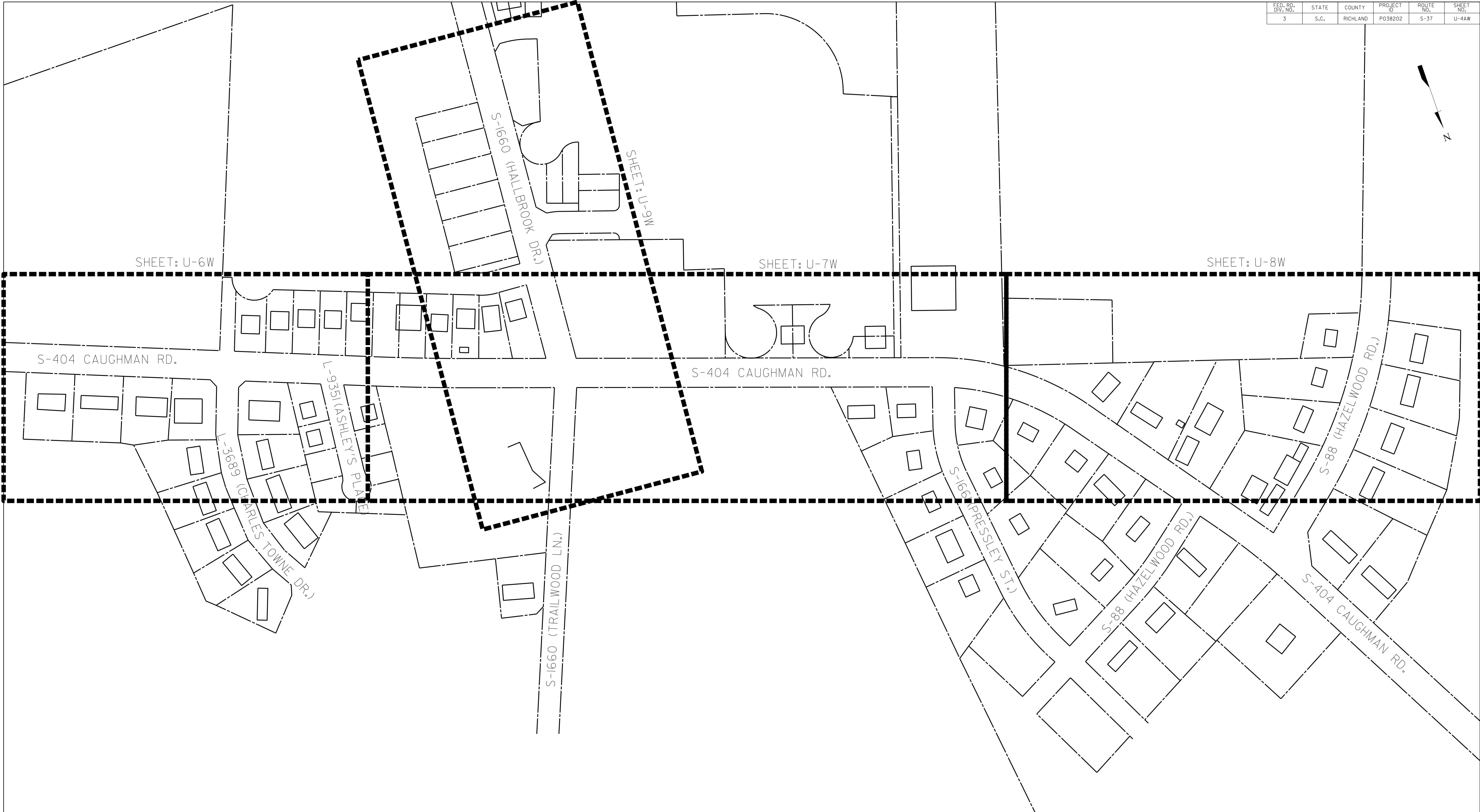
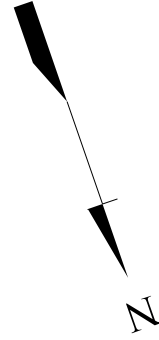
- WITHIN ALL NOTES, THE TERM "CONTRACTOR" SHALL MEAN THE GENERAL CONTRACTOR AND ANY SUBCONTRACTOR OR VENDOR PERFORMING CONSTRUCTION ON THE SITE.
 - A COMPLETE SET OF APPROVED DRAWINGS MUST BE MAINTAINED ON SITE AT ALL TIMES WHILE THE CONTRACTOR IS PERFORMING WORK.
 - THE CONTRACTOR SHALL PERFORM ALL WORK DURING DAYLIGHT HOURS.
 - THE CONTRACTOR SHALL PROVIDE SURVEYED AS-BUILT DATA OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE ENGINEER FOLLOWING COMPLETION OF CONSTRUCTION ACTIVITIES.
 - SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES ON THE DRAWINGS, OR IN THE FIELD PRIOR TO BEGINNING WORK OR DURING CONSTRUCTION, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER.
 - BOUNDARIES AND TOPOGRAPHY HAVE NOT BEEN FIELD VERIFIED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXISTING FIELD CONDITIONS AND REPORTING ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER PRIOR TO CONSTRUCTION.
 - THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND VERIFYING ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION AND IS RESPONSIBLE FOR ANY DAMAGE TO THEM DURING CONSTRUCTION. THE CONTRACTOR SHALL CONTACT THE STATE'S LOCATION SERVICE AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
 - THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS.
 - ALL RIGHT-OF-WAY CONSTRUCTION SHALL MEET SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS (LATEST EDITION).
 - THE CONTRACTOR IS REQUIRED TO MEET ALL APPLICABLE OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS CONCERNING PROJECT SAFETY. THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR SAFETY ON THE PROJECT.
 - THE CONTRACTOR SHALL VERIFY THAT ALL NECESSARY PERMITS FOR CONSTRUCTION HAVE BEEN OBTAINED PRIOR TO THE START OF THE PROJECT.
 - IN THE EVENT OF A CONFLICT WITH WATER, SEWER, DRAINAGE OR OTHER UTILITY LINES, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER PRIOR TO MAKING FIELD ADJUSTMENTS.
 - IN CASE WHERE THE CONTRACTOR CUTS THROUGH AN EXISTING ACTIVE GAS MAIN, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT 911 FIRST, THEN CONTACT THE APPROPRIATE UTILITY PROVIDER.
- ALL WATER MAIN CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF COLUMBIA ENGINEERING REGULATIONS MANUAL SPECIFICATION PART 16.
 - THE CONTRACTOR SHALL STORE, HANDLE, INSTALL, AND MAINTAIN ALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - THE CONTRACTOR SHALL INSTALL ALL WATER MAIN PIPING WITH NO LESS THAN 3 FEET OF COVER AND NO GREATER THAN 5 FEET OF COVER, UNLESS APPROVED BY THE ENGINEER. WATER MAINS INSTALLED WITHIN ROADWAYS SHALL HAVE A MINIMUM OF 4 FEET OF COVER.
 - WATER MAINS SHALL MAINTAIN A MINIMUM HORIZONTAL SEPARATION DISTANCE OF 10 FEET FROM ANY SANITARY OR STORM SEWER, WHEREVER POSSIBLE.
 - WATER MAINS THAT CROSS SANITARY OR STORM SEWERS SHALL BE LAID TO PROVIDE A VERTICAL SEPARATION OF AT LEAST 18 IN. BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SANITARY OR STORM SEWER.
 - NEW WATER LINES CROSS EXISTING UTILITIES THROUGHOUT THE PROJECT AREA. FIELD VERIFY EXISTING UTILITY CROSSINGS AND ADJUST ELEVATION OF NEW WATER LINE AS NEEDED, PROVIDING VERTICAL RESTRAINED JOINT BENDS AND PIPING AS REQUIRED.
 - ALL WATER PIPING, VALVES, FIRE HYDRANTS, AND FITTINGS SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH CITY OF COLUMBIA ENGINEERING REGULATIONS MANUAL SPECIFICATION PART 16.
 - EXTENSION STEMS WILL BE ADDED TO VALVES WHERE THE OPERATOR NUTS ARE 60 INCHES BELOW FINISHED GRADE.
 - CONTRACTOR TO PROVIDE 2" TEMPORARY BLOW OFF FOR TESTING.
 - IF LOCATION OF NEAREST ISOLATION VALVE CANNOT BE DETERMINED, CONTRACTOR TO USE INSERTION VALVE TO ISOLATE EXISTING WATER LINE.
 - AFTER INSTALLATION AND SUCCESSFUL HYDROSTATIC TESTING, THE WATER MAIN SHALL BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH CITY OF COLUMBIA ENGINEERING REGULATIONS MANUAL SPECIFICATION PART 16.
 - CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL WATER METERS AND TIE IN TO NEW WATER MAIN.
 - EXISTING WATER MAIN ABANDONMENT:
13.1. FOR EXISTING WATER MAIN THAT ARE 10" OR LARGER, CUT ABANDONED LINES, FILL WITH FLOWABLE FILL, AND CAP AS NECESSARY.
13.2. FOR EXISTING WATER MAIN THAT ARE LESS THAN 10", CUT AND CAP ABANDONED LINES AS NECESSARY, NO FLOWABLE FILL.
13.3. ABANDONED VALVE BOXES IN PAVED AREAS SHALL BE FILLED WITH FLOWABLE FILL. VALVE BOXES OUTSIDE OF PAVED AREAS OR IN PAVED AREAS THAT ARE SHOWN TO BE PATCHED, THE CAST IRON PORTION OF THE ABANDONED VALVE BOX SHOULD BE REMOVED PRIOR TO FILLING WITH FLOWABLE FILL.
 - TREE PROTECTION: THE CONTRACTOR SHALL CONSULT WITH THE CITY OF COLUMBIA FORESTRY AND BEAUTIFICATION DEPARTMENT REGARDING PROPER TREE PROTECTION.
 - FIRE HYDRANT REMOVAL: EXISTING FIRE HYDRANTS ON WATER MAINS THAT ARE TO BE ABANDONED ARE TO BE ABANDONED AND REMOVED ONCE NEW FIRE HYDRANTS ARE TESTED AND OPERATIONAL. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING HYDRANT, INSTALL RESTRAINED JOINT CAP AT EXISTING HYDRANT VALVE, REMOVE VALVE BOX, AND ABANDON IN PLACE WITH FLOWABLE FILL.
 - ROAD RESURFACING: ALL ROAD RESURFACING SHALL BE DONE AS SPECIFIED ON THE SCDOT ROADWAY PLANS AND IN ACCORDANCE TO SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

CONSTRUCTION NOTES

- ALL MATERIALS, METHODS, AND DETAILS OF CONSTRUCTION SHALL CONFORM TO THE PROJECT SPECIFICATIONS AND DRAWINGS.
- EXISTING UTILITIES THAT ARE SHOWN ON THE DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY. THE ACCURACY AND COMPLETENESS OF SUCH INFORMATION IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND STRUCTURES IN ADVANCE OF ALL TRENCHING AND EXCAVATION TO AVOID DAMAGING EXISTING UTILITIES OR CAUSING UNNECESSARY DELAYS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING INFRASTRUCTURE WITHIN THE PROJECT AREA OR ADJOINING PROPERTIES (I.E., PAVEMENT, CURB, SIDEWALK, UTILITIES, LANDSCAPED AREAS, ETC.). THE CONTRACTOR SHALL REPAIR/REPLACE ALL DAMAGED ITEMS IMMEDIATELY IF NECESSARY, OR PRIOR TO THE END OF THE JOB. THE REPAIR/REPLACEMENT SHALL BE AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ANY NECESSARY TRAFFIC CONTROLS THROUGHOUT THE DURATION OF THE PROJECT. IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION) AND THE ENCROACHMENT PERMIT ISSUED BY THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION.
- THE CONTRACTOR IS RESPONSIBLE FOR STABILIZING AND RETURNING ALL SCDOT MAINTAINED ROADWAY DITCHES TO PRE-CONSTRUCTION CONDITIONS IN A TIMELY MANNER.
- THE CONTRACTOR SHALL CLEAN AND MAINTAIN ALL ROADWAYS AS NECESSARY TO ENSURE THAT NO CONSTRUCTION DEBRIS IS PRESENT FOR EXTENDED PERIODS OF TIME.
- THE CONTRACTOR SHALL ENSURE THAT ALL WEATHER ACCESS TO LOCAL RESIDENCES AND BUSINESSES IS MAINTAINED THROUGHOUT CONSTRUCTION.
- ALL TRENCHING, EXCAVATION, AND COMPACTION OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF COLUMBIA ENGINEERING REGULATIONS MANUAL AND SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
- UNLESS OTHERWISE SPECIFIED, ALL BACKFILL MATERIAL SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF COLUMBIA ENGINEERING REGULATIONS MANUAL AND SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
- TRENCH EXCAVATION SHALL NOT EXCEED BACKFILL BY MORE THAN 100 FEET. NO TRENCH SHALL BE LEFT OPEN AFTER NORMAL BUSINESS HOURS.
- NO OPEN EXCAVATIONS SHALL REMAIN OVERNIGHT.
- ALL VALVE VAULTS SHALL BE FLUSH WITH THE NATURAL GROUND ELEVATION OR ROADWAY.
- THE CONTRACTOR SHALL REMOVE ALL STRIPPINGS, DEBRIS, AND EXCESS EXCAVATED MATERIALS FROM THE PROJECT AREA AND DISPOSE OF THEM IN A LEGAL MANNER.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY DEWATERING TO PERFORM AND MAINTAIN EXCAVATIONS AND GRADES. DEWATERING OPERATIONS SHALL NOT DISCHARGE DIRECTLY INTO MARSH OR WETLAND AREAS. WATER PUMPED FROM EXCAVATION AND OTHER WORK AREAS MUST BE HELD IN SETTLING BASINS OR FILTERED PRIOR TO DISCHARGE INTO SURFACE WATERS OR STORM DRAINAGE SYSTEMS. WATER MUST BE DISCHARGED THROUGH A PIPE, WELL-GRASSED OR LINED CHANNEL, OR EQUIVALENT MEANS SUCH THAT THE DISCHARGE DOES NOT CAUSE EROSION OR SEDIMENTATION.

 	7				CAUGMAN ROAD UTILITY RELOCATION
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REV. NO.	BY	DATE	DESCRIPTION OF REVISION		NOTES – WATER
DWG.	_____	DATE	_____	FILE	
KGD.	_____	DATE	_____	...\\CGMN_UTL_PLAN03W.dgn 5/23/2025 9:52:33 AM	
					SCALE: 1" = 200' (11"x17") / 1" = 100' (22"x36")
					SHEET U-3W

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	RICHLAND	P038202	S-37	U-4AW



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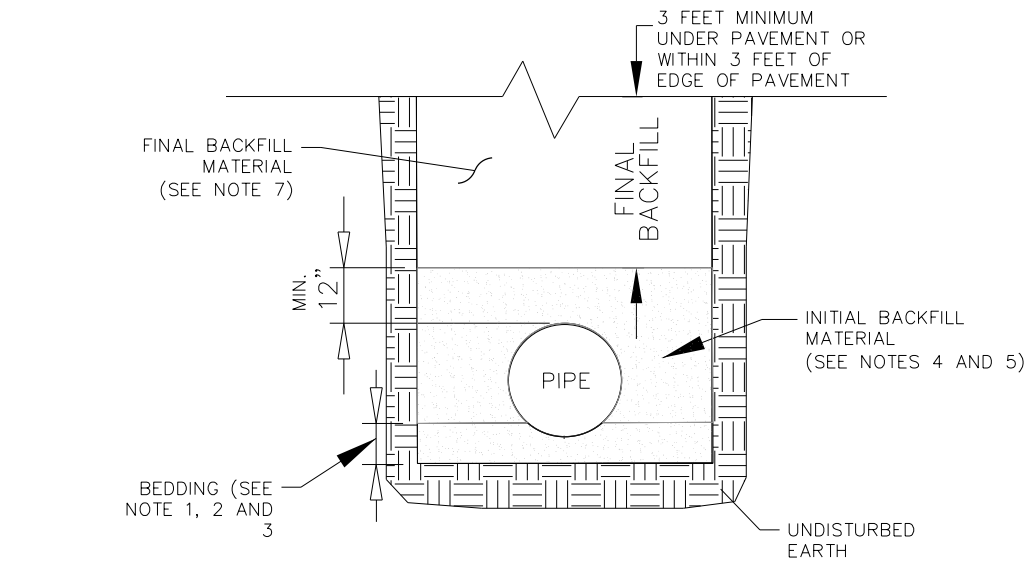
CAUGHMAN ROAD
UTILITY RELOCATION

Mead & Hunt

SHEET INDEX – WATER

SCALE: 1" = 200' (11"x17") / 1" = 100' (22"x36")

SHEET U-4AW

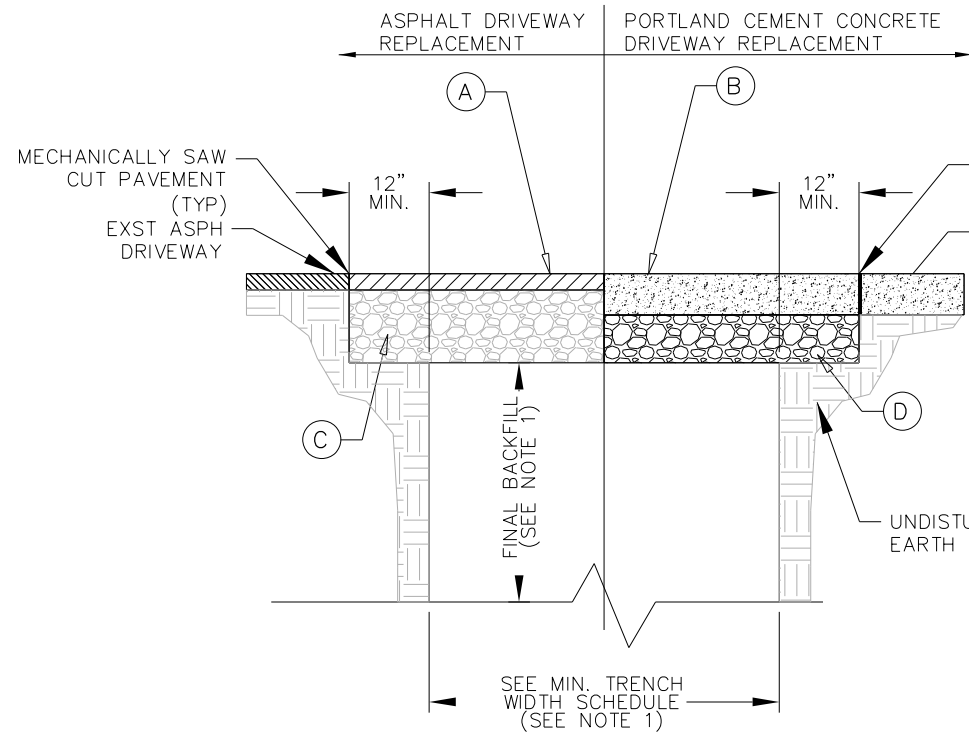


MINIMUM BEDDING FOR WATER MAIN DETAIL
NOT TO SCALE

NOTES:

- BEDDING DEPTH SHALL BE 1/8" PIPE DIAMETER, 6" MINIMUM.
- DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF BEDDING MATERIAL BELOW THE PIPE. THE ENGINEER SHALL DETERMINE IN THE FIELD THE AMOUNT OF UNSUITABLE MATERIAL REQUIRED TO REACH A SUITABLE FOUNDATION.
- BELL HOLES SHALL BE DUG TO PERMIT THE ENTIRE STRAIGHT BARREL OF THE PIPE TO REST ON THE BEDDING MATERIAL.
- BEDDING AND INITIAL BACKFILL MATERIAL SHALL BE SAND CONTAINING NOT MORE THAN 10% TOTAL MATERIAL PASSING THE NO. 200 SIEVE WITH A MAXIMUM OF 6% CLAY OR SUITABLE SAND CLAY MATERIAL AS APPROVED BY A LICENSED GEOTECHNICAL ENGINEER.
- BEDDING AND INITIAL BACKFILL MATERIAL SHALL BE COMPACTED IN 6" LAYERS TO A MINIMUM COMPACTION OF 95% STANDARD PROCTOR WITH AN ALLOWABLE ±5% OF OPTIMUM MOISTURE CONTENT. BACKFILL MATERIAL UP TO A LEVEL 6" OVER TOP OF PIPE.
- WHERE COMPACTION IS REQUIRED IN NOTES 5, AND NOTE 7B, CONTRACTOR WILL PROVIDE TESTING TO DEMONSTRATE COMPACTION COMPLIANCE ONCE PER LIFT AND AT LEAST ONCE PER EVERY 500 LINEAR FEET.
- FINAL BACKFILL MATERIAL:

- IN CROSS COUNTRY AREAS: FINAL BACKFILL MATERIAL SHALL MEET THE REQUIREMENTS OF AASHTO M145 GROUP CLASSIFICATION A1=AB AND BE COMPACTED IN SUFFICIENT DEPTHS TO MEET A MINIMUM COMPACTION OF 90% STANDARD PROCTOR WITH AN ALLOWABLE ±5% OF OPTIMUM MOISTURE CONTENT.
- AREAS INSIDE THE SCDOT COUNTY AND CITY RIGHTS-OF-WAY: FINAL BACKFILL MATERIAL SHALL MEET THE REQUIREMENTS OF AASHTO M145 GROUP CLASSIFICATION A-1, A-2-4 & A-3 AND BE COMPACTED IN 6" LAYERS TO A MINIMUM COMPACTION OF 95% STANDARD PROCTOR WITH AN ALLOWABLE, OR SUITABLE MATERIAL AS APPROVED BY A LICENSED GEOTECHNICAL ENGINEER, ±5% OF OPTIMUM MOISTURE CONTENT.
- UNDER PAVEMENT AND WITHIN THREE FEET OF EDGE OF PAVEMENT: FINAL BACKFILL MATERIAL SHALL BE SCDOT EXCAVATABLE (200 PSI MAX) FLOWABLE FILL TO SUB-BASE OF PAVEMENT OR TO GROUND SURFACE A MINIMUM OF 3 FEET IN CASES OF DEEP TRENCHING. THE ENGINEER MAY SPECIFY ALTERNATE BACKFILL MATERIALS UP TO 3 FEET BELOW PAVEMENT SUB-BASE OR GROUND SURFACE.
- USE OF NATIVE MATERIAL: CLEAN NATIVE MATERIAL MAY BE USED IN BACKFILL ONLY WHEN APPROVED BY THE OWNER



ASPHALT/CONCRETE
DRIVEWAY REPAIR DETAIL
NOT TO SCALE

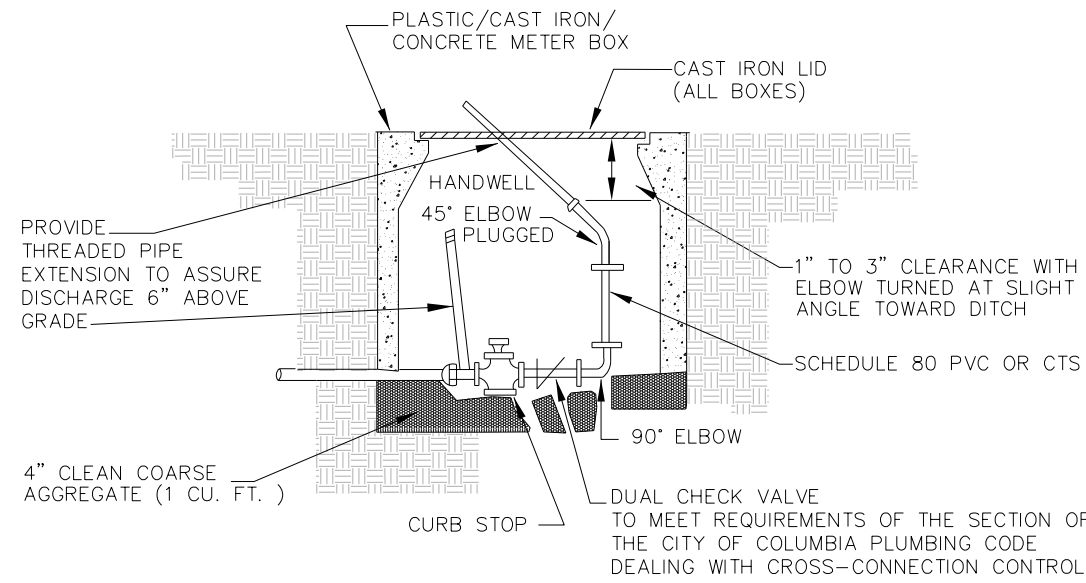
NOTES:

- REFER TO MINIMUM BEDDING FOR WATER/SEWER MAIN DETAIL.
- SEE ASPHALT AND PORTLAND CEMENT PAVEMENT SCHEDULE SHOWN BELOW FOR MATERIAL TYPE AND THICKNESS.
- INTERFACE BETWEEN NEW AND EXISTING SURFACES SHALL BE SMOOTHED TO THE MAXIMUM EXTENT POSSIBLE TO PREVENT ANY DRIVEWAY SURFACE IRREGULARITIES.

- (A) HMA SURFACE COURSE SCDOT TYPE B (2" THICK)
(B) SCDOT CLASS 4000 PORTLAND CEMENT CONCRETE (6" THICK)
(C) SCDOT MACADAM BASE COURSE (6" THICK) TO 98% MAX DENSITY
(D) SCDOT MACADAM BASE COURSE (4" THICK) TO 98% MAX DENSITY

- (E) ASPHALT INTERMEDIATE BASE COURSE SCDOT TYPE B (5" THICK)
(F) TACK COAT PER SCDOT SPECIFICATIONS
(G) ASPHALT INTERMEDIATE BASE COURSE SCDOT TYPE B (7" THICK)

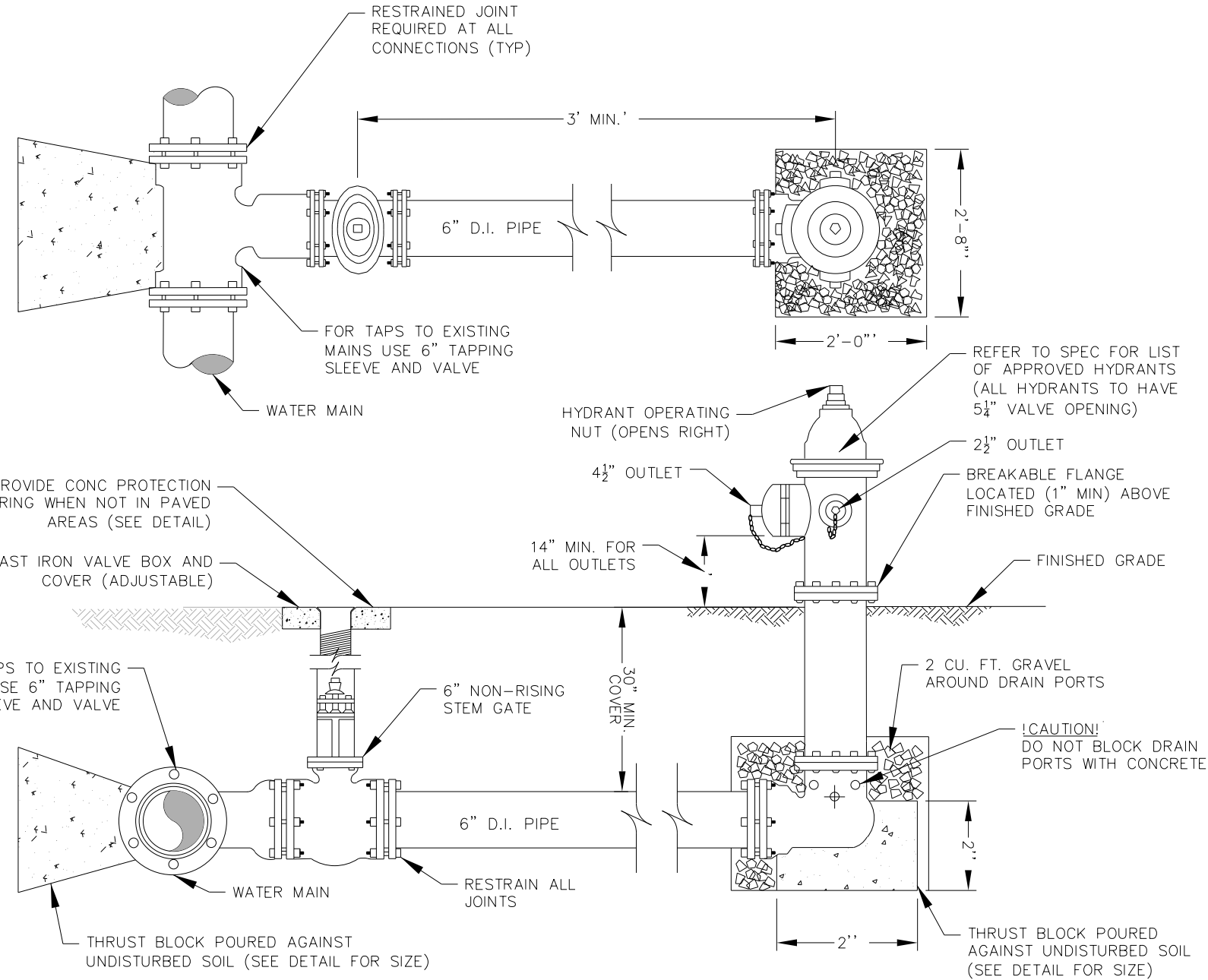
ASPHALT AND PORTLAND CEMENT CONCRETE PAVEMENT SCHEDULE



DIA. OF LINES (IN.)	FLOW REQUIRED (GPM)	MIN. ORIFICE SIZE	RECOMMENDED BLOWOFF SIZE (IN.)
2	25	0.56	3/4
2 1/2	40	0.71	1 1/4
3	60	0.87	1 1/2
4	100	1.10	2
6	220	1.65	2
8	400	2.21	2 1/2

UNDER MOST SITUATIONS, THE ABOVE TABLE CAN BE USED. BUT, IN SOME AREAS WHERE THE STATIC PRESSURES ARE EXCEEDINGLY HIGH, SMALLER BLOWOFFS MAY BE NECESSARY.

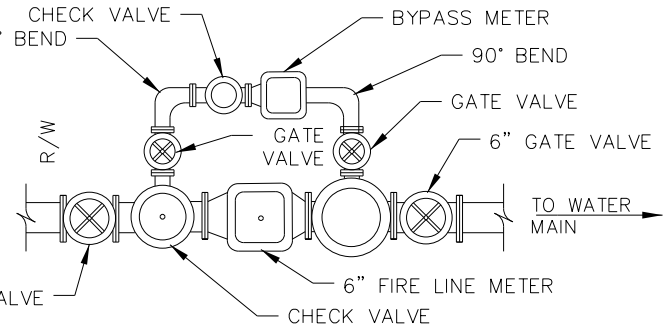
BLOWOFF DETAIL
(NOT TO SCALE)



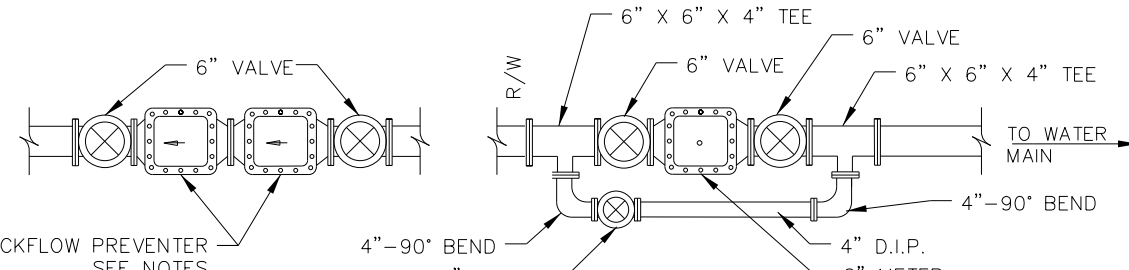
FIRE HYDRANT ASSEMBLY DETAIL
NOT TO SCALE

NOTES:

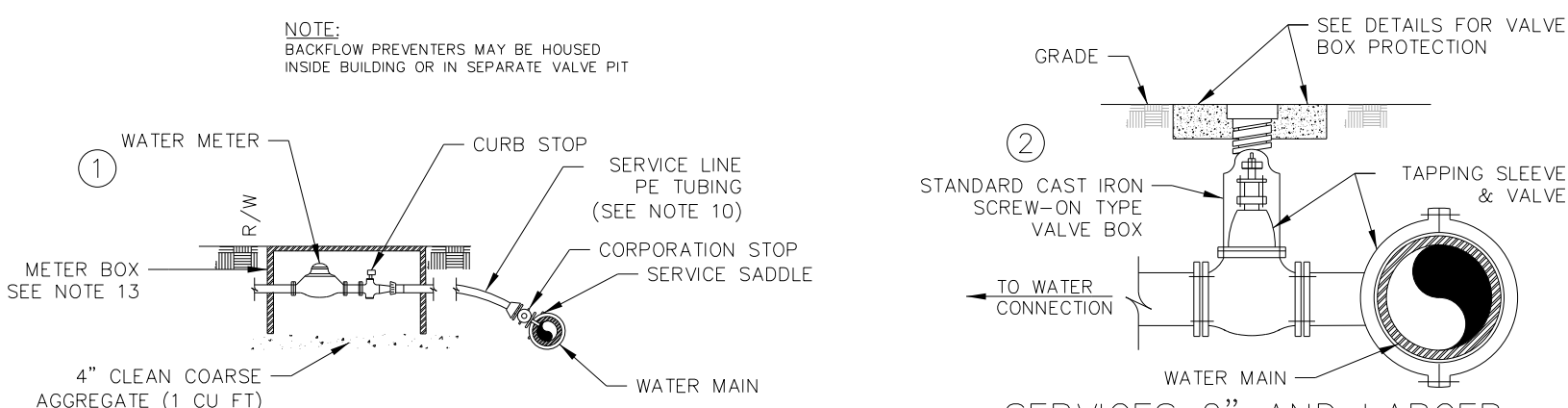
- POOR SOIL A-4-A-8, SILTY SOILS, CLAYS, MUCK, AND PEAT WILL REQUIRE LARGER THRUST BLOCKS OR THE ADDITION OF TWO 3/4" DIA (THREADED ENDS) STEEL RODS AND EYE BOLTS BETWEEN THE TEE AND GATE VALVE AND BETWEEN THE GATE VALVE AND THE HYDRANT. ALL OTHER JOINTS NOT RESTRAINED BY RODS MUST BE MECHANICALLY RESTRAINED.
- PRIOR TO PROJECT FINAL INSPECTION, THE HYDRANT AND ALL ABOVE GROUND PIPING SHALL BE OILED, GREASED AND PAINTED. PAINT HYDRANT IN ACCORDANCE WITH THE SPECIFICATIONS.
- FIRE HYDRANTS SHALL BE ORDERED WITH PROPER "BURY DEPTH" TO MEET ACTUAL FIELD CONDITIONS. THE USE OF HYDRANT EXTENSIONS SHOULD BE MINIMIZED.
- BLUE REFLECTIVE MARKERS SHALL BE INSTALLED AS INDICATED IN THE SPECIFICATIONS.
- IN RESIDENTIAL AND COMMERCIAL DEVELOPMENTS, FIRE HYDRANTS SHALL BE LOCATED AS CLOSE AS POSSIBLE TO THE STREET RIGHT-OF-WAY, BUT NOT LESS THEN 3' FROM THE BACK OF CURB OR EDGE OF ROADWAY..
- MINIMUM DISTANCE BETWEEN THE VALVE AND THE HYDRANT SHALL BE 3'.
- BENDS MAY BE USED IN HYDRANT LEAD TO FACILITATE HYDRANT LOCATION.
- FIRE HYDRANT ASSEMBLY INCLUDES TEE.
- GATE VALVE TO OPEN LEFT.



FIRE SERVICE COMBINED WITH DOMESTIC SERVICE (TYPICAL)



SERVICE CONNECTION 4" & OVER WITHOUT FIRE SERVICE

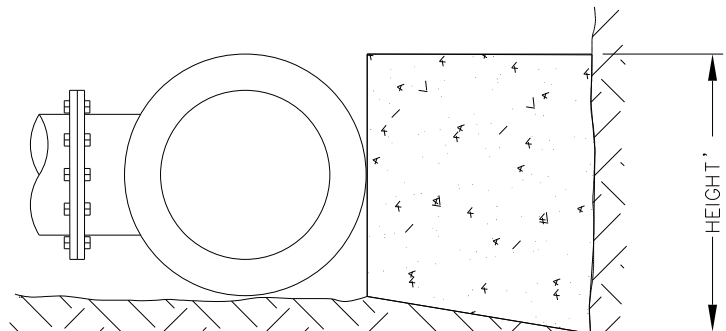


SERVICE SADDLE DETAIL TYPICAL

TYPICAL SERVICE CONNECTIONS
NOT TO SCALE

NOTES:

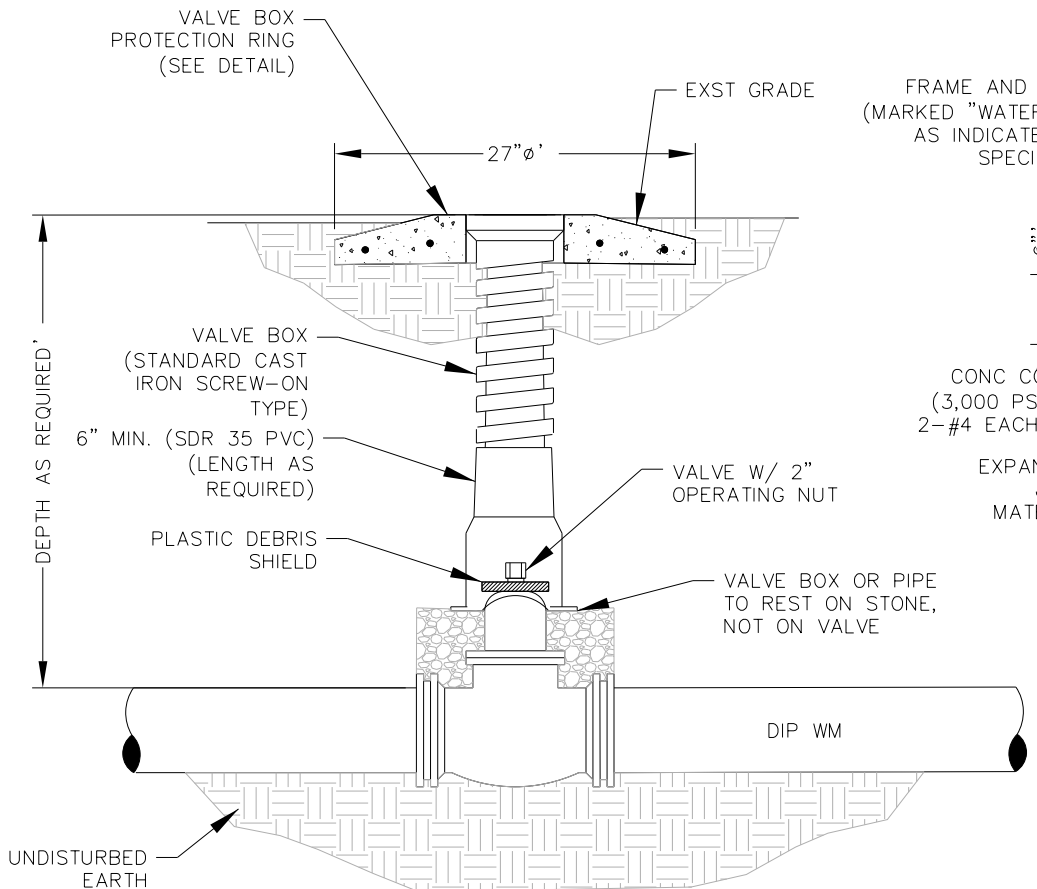
- FIRE SERVICE METER ASSEMBLY UTILIZES ONLY ONE LINE FOR FIRE PROTECTION SERVICE AND DOMESTIC WATER SERVICE. ONLY ONE METER BOX REQUIRED TO HOUSE SERVICE TO PROPERTY.
- THE SIZES OF FIRE LINE METER AND BYPASS METER VARIES WITH APPLICATION.
- METERS AND BACKFLOW PREVENTERS ARE IN SEPARATE PITS NORMALLY.
- TYPE OF BACKFLOW PREVENTER VARIES WITH APPLICATION.
- METERS ARE INSTALLED BY CITY FORCES AT OWNER'S EXPENSE.
- ALL VALVES MUST MEET CITY OF COLUMBIA SPECIFICATIONS.
- VALVES NOT IN PITS WILL BE IN CAST IRON BOXES WITH CAST IRON LIDS AS SHOWN IN MUELLER CATALOG W-103, OR APPROVED EQUAL.
- ALL D.I. PIPE JOINTS TO BE FLARED.
- ALL COPPER JOINTS TO BE FLARED.
- SERVICE LINES 2" AND SMALLER SHALL BE POLYETHYLENE PE 3408 DR-11 CLASS 160 CTS TUBING WITH BRASS FITTINGS. SERVICE SADDLES ARE REQUIRED ON ALL SERVICE CONNECTIONS 2" OR SMALLER ON ALL WATER MAINS. SERVICE SADDLES USED TO MAKE SERVICE CONNECTIONS SHALL PROVIDE FULL SUPPORT AROUND THE CIRCUMFERENCE OF THE WATER MAIN. DIRECT SERVICE TAPS ON WATER MAINS SHALL NOT BE ALLOWED.
- WHEN THE CITY ELECTS TO INSTALL THE SERVICE ON NEW MAINS, THE CONTRACTOR SHALL STUBOUT THE SERVICE WITH A FLANGED TO MECHANICAL JOINT VALVE.
- ALL PRESSURE REDUCING BACKFLOW PREVENTERS SHALL BE IN ACCORDANCE WITH SCDHEC REQUIREMENTS.
- METER BOXES FOR METERS 2" AND SMALLER WITHIN THE TRAVELED WAY MUST BE CAST IN OR CONCRETE. METER BOXES OUTSIDE THE TRAVELED WAY MAY BE CAST IRON, CONCRETE, OR PLASTIC. CAST IRON METER READER COVERS ARE REQUIRED. FOR METERS 3" AND LARGER REFER TO THE STANDARD DETAIL.
- ALL LONG LINE SERVICES 2" AND SMALLER ARE TO BE DRY BORED.



TYPICAL TAPPING SLEEVE AND VALVE DETAIL
NOT TO SCALE

NOTES:

- BASED ON 100 PSI STATIC PRESSURE PLUS AWWA WATER HAMMER ALLOWANCE.
- ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND WITH 2000 PSF BEARING CAPACITY.
- THRUST BLOCKS TO BE USED AT ALL LINES OPERATING UNDER PRESSURE.
- KEEP ALL PIPING JOINTS CLEAR OF THRUST BLOCKS.
- POOR SOIL A-4-A-8, SILTY SOILS, CLAYS, MUCK, AND PEAT WILL REQUIRE LARGER THRUST BLOCKS.

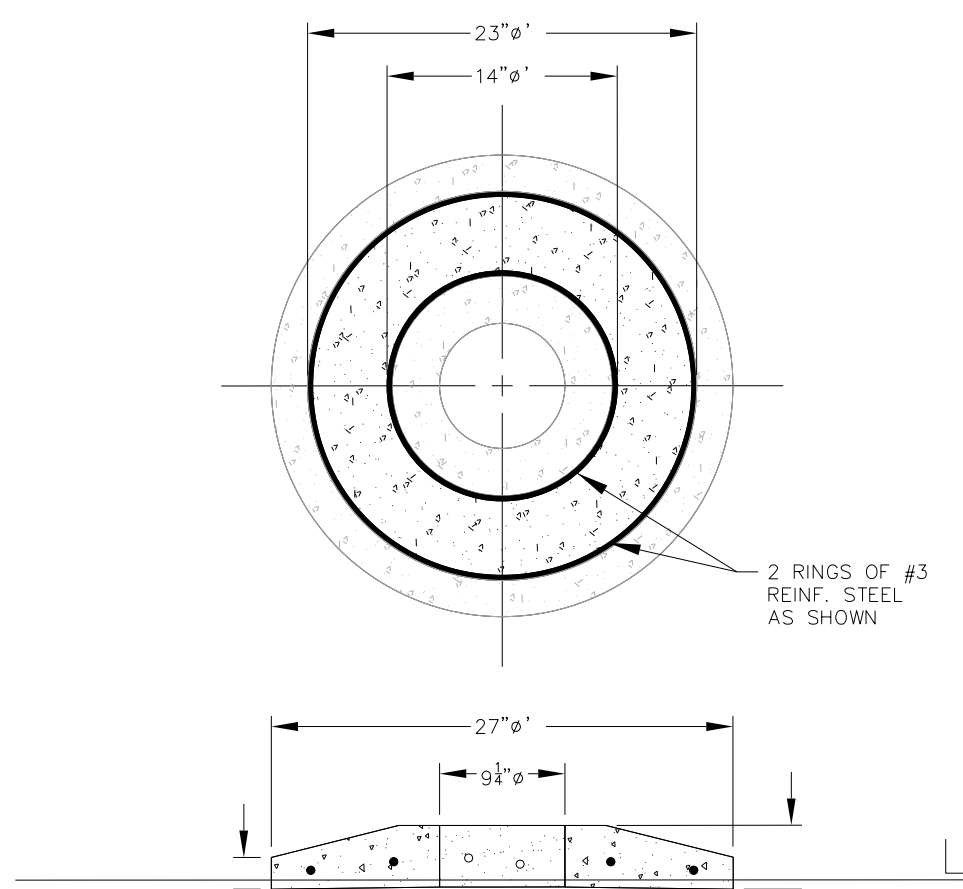


GATE VALVE AND VALVE BOX DETAIL
NOT TO SCALE

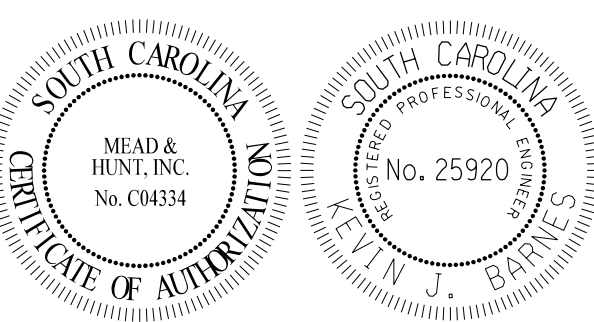
NOTES:

- FOR UNPAVED LOCATIONS, A CONCRETE VALVE BOX PROTECTOR RING SHALL BE PROVIDED AND INSTALLED FLUSH WITH GRADE. PROTECTOR RING PAD IS NOT REQUIRED FOR VALVE LOCATED IN THE ROADWAY, UNLESS SHOWN OR NOTED OTHERWISE.
- FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS. ROUTE LOCATE WIRES THROUGH THE ADJUSTMENT SECTION OF BOX OR DRILL 2" HOLE IN THE BOX TOP SECTION. THE LOCATE WIRES SHALL BE CONNECTED TOGETHER WITH WIRE NUT.
- GATE VALVES SHALL OPEN LEFT.
- PROVIDE A WHITE OR BLACK PLASTIC DEBRIS SHIELD WHICH INSTALLS BELOW THE OPERATING NUT. SHIELD SHALL BE BY AFC, BOXLOK OR APPROVED EQUAL.

PAVED AREAS

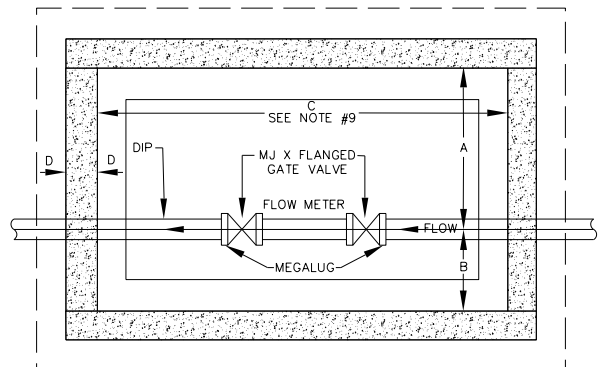


CONCRETE PROTECTION RING DETAIL
NOT TO SCALE

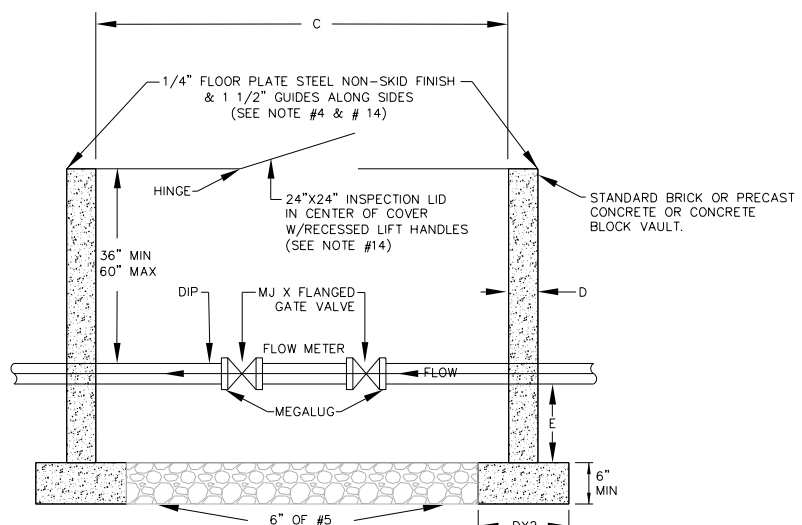


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TYPICAL METER BOX FOR METERS 4' AND ABOVE
NOT TO SCALE



PLAN VIEW

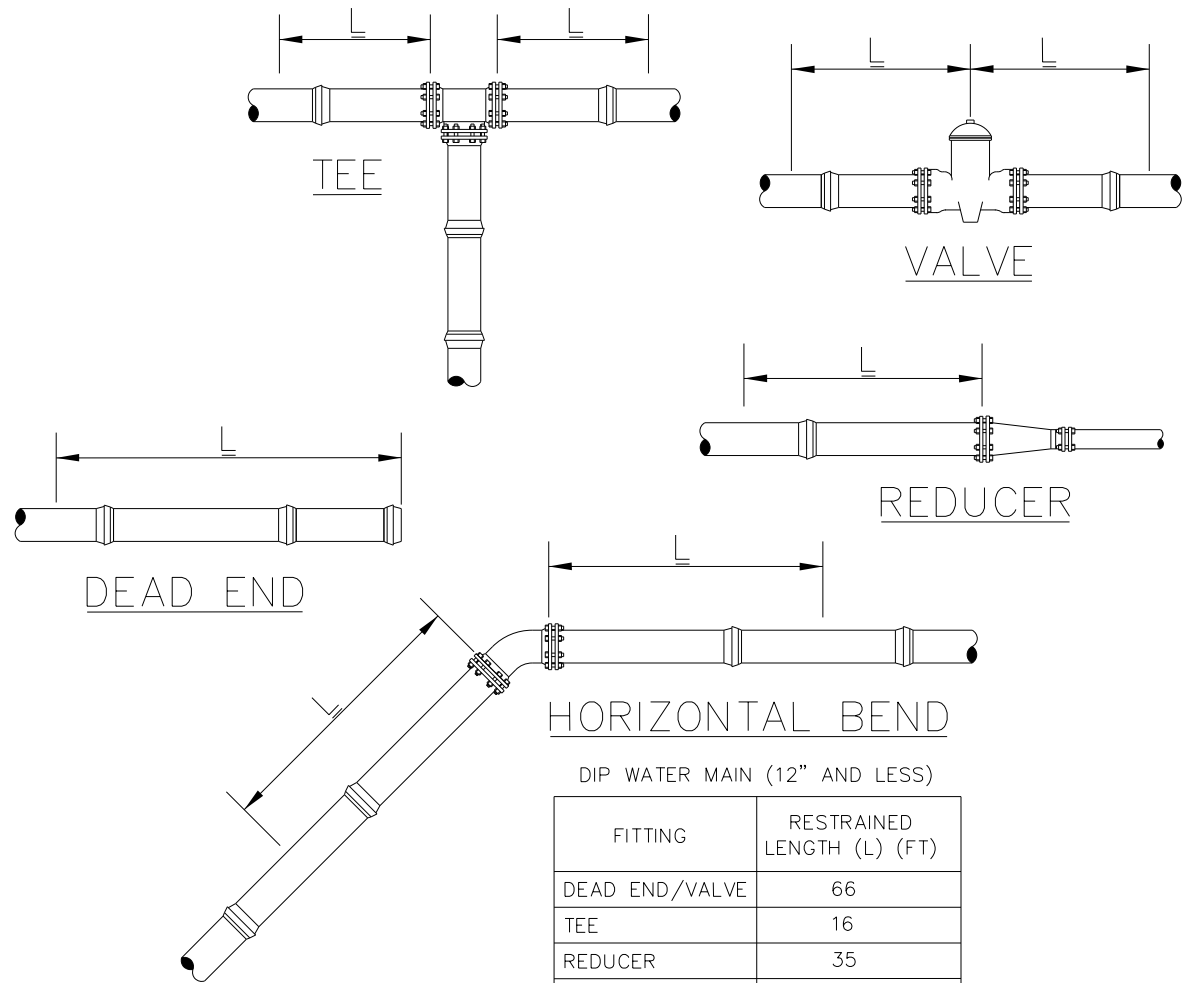


ELEVATION VIEW

METER SIZE	4'	6'	8'	10'
A	30"	36"	42"	48"
B	18"	24"	26"	32"
C	84"	96"	104"	120"
D	6"	6"	8"	8"
E	12"	12"	18"	18"
ACCESS DOOR	24"	24"	24"	24"

- METER BOXES FOR METERS 4' AND ABOVE SHALL BE SITE CONSTRUCTED OF THE MATERIALS AND TO THE DIMENSIONS SPECIFIED HEREIN.
- METER BOXES CONSTRUCTED WITHIN THE TRAVELED WAY MUST WITHSTAND HEAVY SUPERIMPOSED LOADS. EACH MUST BE DESIGNED TO MEET THE REQUIREMENTS OF THE INDIVIDUAL ENCIRONMENT IN WHICH IT IS TO BE USED. DETAILS/SHOP DRAWINGS AND DESIGN CALCULATIONS MUST BE SUBMITTED AND APPROVED PRIOR TO INSTALLATION OF THE METER.
- METER BOXES SHALL BE PROVIDED WITH A COVER FABRICATED FROM ONE FOURTH (1/4") INCH THICK FLOOR PLATE STEEL WITH A NON-SKID SURFACE PRIMERD AND PAINTED TO COVER THE ENTIRE BOX. THE COVER MUST HAVE A HINGED 24"x24" INSPECTION LID IN THE CENTER OF THE COVER WITH LIFT HANDLES FOR MANIPULATING THE LID. COVER HANDLES AND HINGE MUST LAY FLAT AND BELOW THE SURFACE OF THE COVER.
- THE BOX COVER SHALL BE FLUSH WITH THE SURROUNDING GROUND SURFACE AND SHALL HAVE ONE AND A HALF (1 1/2") INCH GUIDES ALONG ADJACENT SIDES TO PREVENT LATERAL MOVEMENT.
- THE BOX SHALL BE CONSTRUCTED OF STANDARD BRICK, OR CONCRETE BLOCK USING PORTLAND CEMENT MORTAR IN A STANDARD MIXTURE OR BY USING PRECAST CONCRETE.
- SIX (6") INCHES OF #5 CRUSHED STONE SHALL BE PLACED IN THE BOTTOM OF EACH BOX. SEE 'E' FOR PROPER CLEARANCE BETWEEN THE TOP OF THE STONE AND THE BOTTOM OF THE PIPE.
- DUCTILE IRON PIPE MUST RUN COMPLETELY THROUGH THE METER BOX WITHOUT EXPOSED PIPE BELL OR FITTINGS.
- VALVE WITH BOX SHALL BE INSTALLED BETWEEN METER BOX AND SOURCE WATER MAIN.
- ALL METER BOXES SHALL HAVE THE DIMENSIONS SHOWN BY THE ABOVE TABLE.
- METER BOXES FOR METERS TEN (10') INCHES AND ABOVE SHALL BE APPROVED BY THE CITY ENGINEERING DEPARTMENT PRIOR TO BEGINNING CONSTRUCTION.
- INSTALLATION OF FIRE METERS SHALL BE BY A CITY APPROVED CONTRACTOR.
- TOUCH PADS TO BE INSTALLED BY THE APPROVED CONTRACTOR.
- NO UNFURLANGES ARE ALLOWED.
- WHERE POSSIBLE, ALL METER BOXES ARE TO BE LOCATED OUTSIDE PAVED AREAS. SHOULD THE METER BOXES HAVE TO BE LOCATED IN PAVED AREAS OR SIDEWALKS, THE CONTRACTOR SHALL USE A TRAFFIC RATED SLAB AND A 30"x30" ALUMINUM HATCH-RATED H2O LOADING (TOUCH PADS SHALL BE LOCATED ON THE HINGED SIDE OF THE ALUMINUM HATCH).
- ALL PIPING ARE TO BE DISINFECTED WITH CHLORINE IN ACCORDANCE WITH AWWA STANDARDS.
- A LIEN WAIVER MUST BE PROVIDED TO THE CITY PRIOR TO ANY METER BEING INSTALLED.

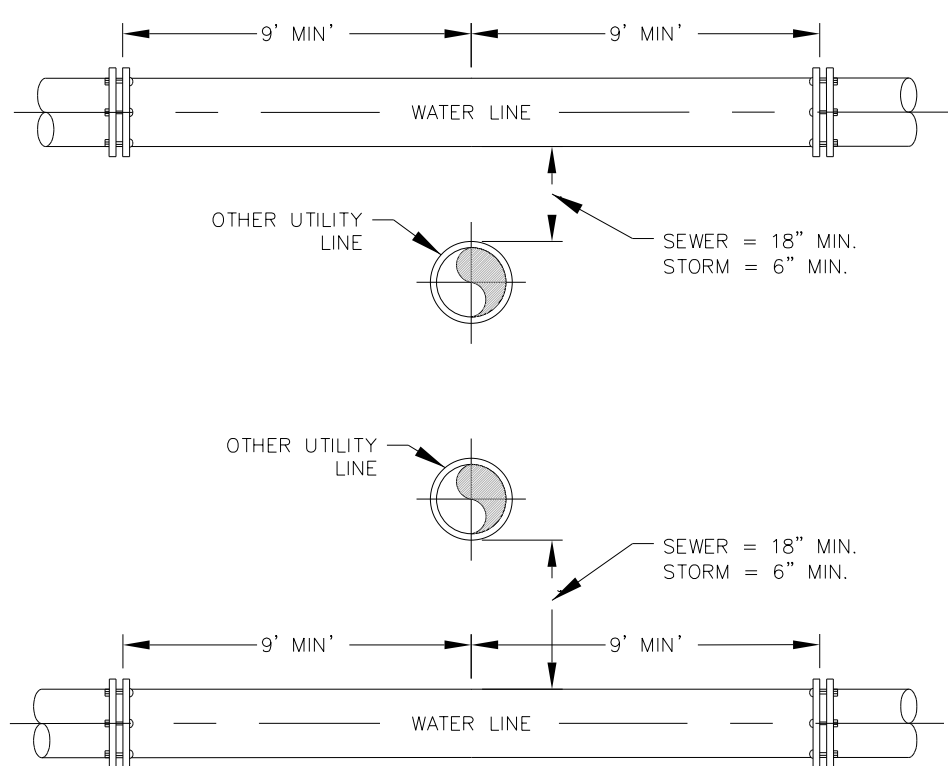
DEPARTMENT OF UTILITIES & ENGINEERING
STANDARD DETAIL WC #1A



FITTING	RESTRAINED LENGTH (L) (FT)
DEAD END/VALVE	66
TEE	16
REDUCER	35
90° BEND	28 ON EACH SIDE
45° BEND	12 ON EACH SIDE
22.5° BEND	6 ON EACH SIDE
11.25° BEND	3 ON EACH SIDE

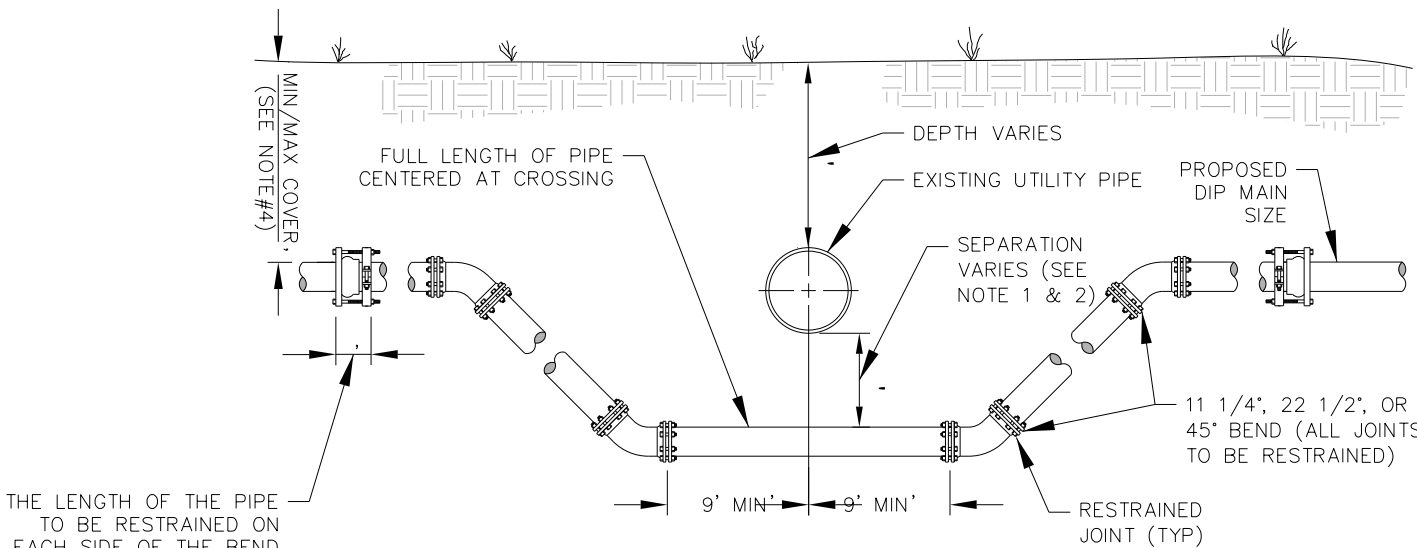
DIP RESTRAINED JOINT DETAILS AND TABLE
NOT TO SCALE

- ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS INDICATED ON THE ABOVE SCHEDULE AT A MINIMUM.
- THE RESTRAINED LENGTHS ARE CALCULATED USING THE EBAA RESTRAINED LENGTH CALCULATOR. ALL JOINTS WITHIN THE CALCULATED LENGTH MUST BE RESTRAINED. THE RESULTS ARE BASED ON THE FOLLOWING CONDITIONS:
 - SOIL TYPE: SM (UCS CLASSIFICATION)
 - TEST PRESSURE: 150 PSI
 - SAFETY FACTOR: 1.5
 - TRENCH TYPE: 5
 - DEPTH OF BURY: 3 FT
- PVC TO DIP TRANSITIONS, USE PVC RESTRAINED JOINT LENGTHS.
- WHEN TAPPING AN EXISTING MAIN, NEW MAIN SHALL BE RESTRAINED 66 FEET FROM TAP.



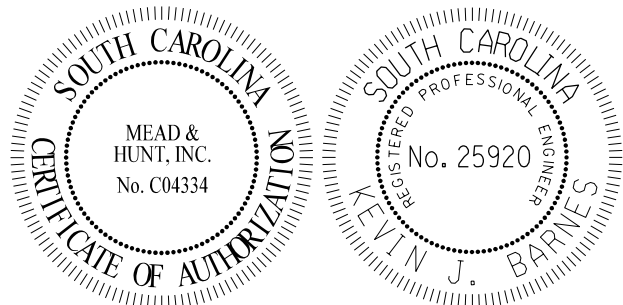
WATER AND SEWER/STORM CROSSING DETAIL
NOT TO SCALE

- NOTES:
- WHERE A WATER LINE CROSSES UNDER AN EXISTING UTILITY, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE OTHER EXISTING UTILITY TO PREVENT DAMAGE TO THE WATER MAIN.
 - IF CLEARANCE OF STORM DRAIN IS LESS THAN 18", USE CONCRETE ENCASEMENT ON DIP, WHICH SHALL HAVE POLYETHYLENE ENCASEMENT PRIOR TO CONCRETE BEING POURED.



ADJUSTMENT UNDER EXISTING UTILITIES DETAIL
NOT TO SCALE

- NOTES:
- THE SOILS BETWEEN THE NEW MAIN AND THE CONFLICT PIPE SHALL COMPACTED IN 6" LAYERS TO A MINIMUM COMPACTION OF 98% STANDARD PROCTOR WITH AN ALLOWABLE ±5% OF OPTIMUM MOISTURE CONTENT.
 - FOR MINIMUM VERTICAL SEPARATION REQUIREMENTS SEE DETAIL ON THIS SHEET.
 - THE COVER FOR PIPING LESS THAN 24" SIZE SHALL BE 36" (MIN) IN UNPAVED AREAS, 48" (MIN) IN PAVED AREAS AND A MAXIMUM COVER OF 84", UNLESS APPROVED BY THE CITY ENGINEER.

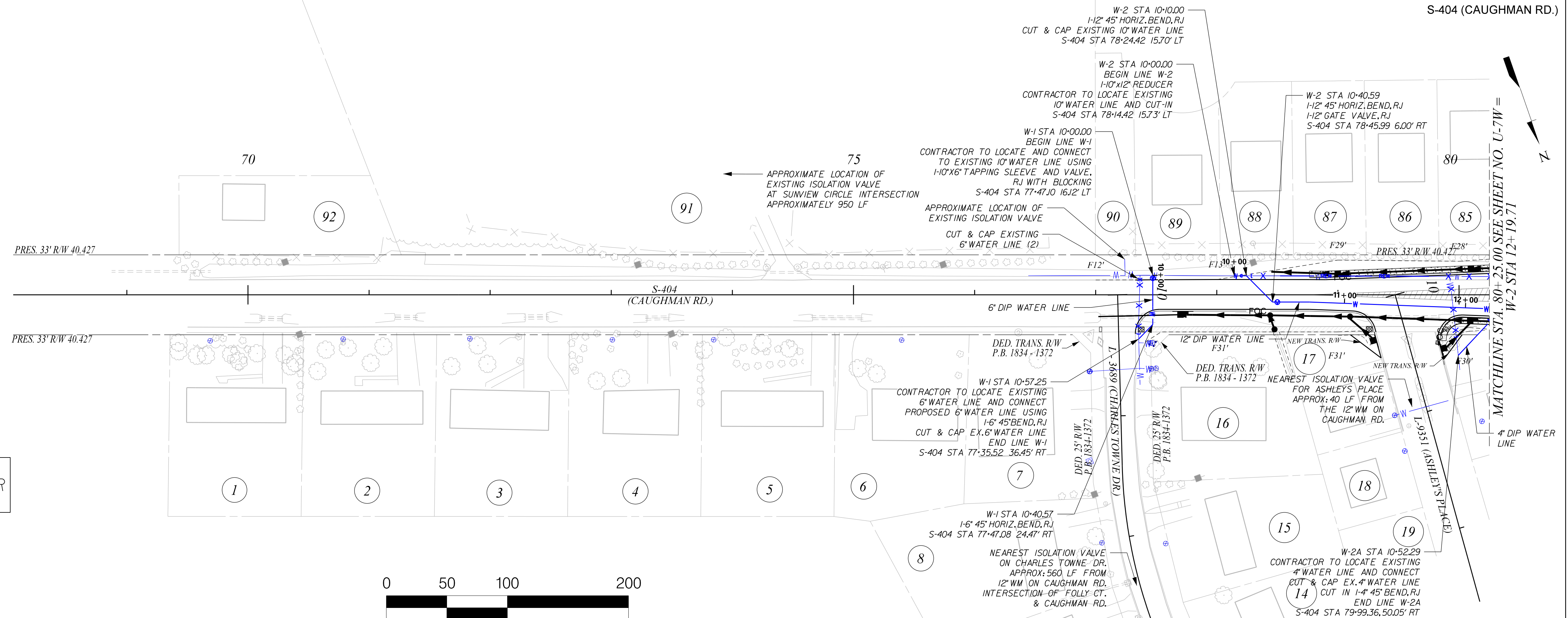


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CAUGMAN ROAD UTILITY RELOCATION
Mead & Hunt
DETAILS – WATER
SCALE: 1" = 200' (11"x17") / 1" = 100' (22"x36")
SHEET U-4CW

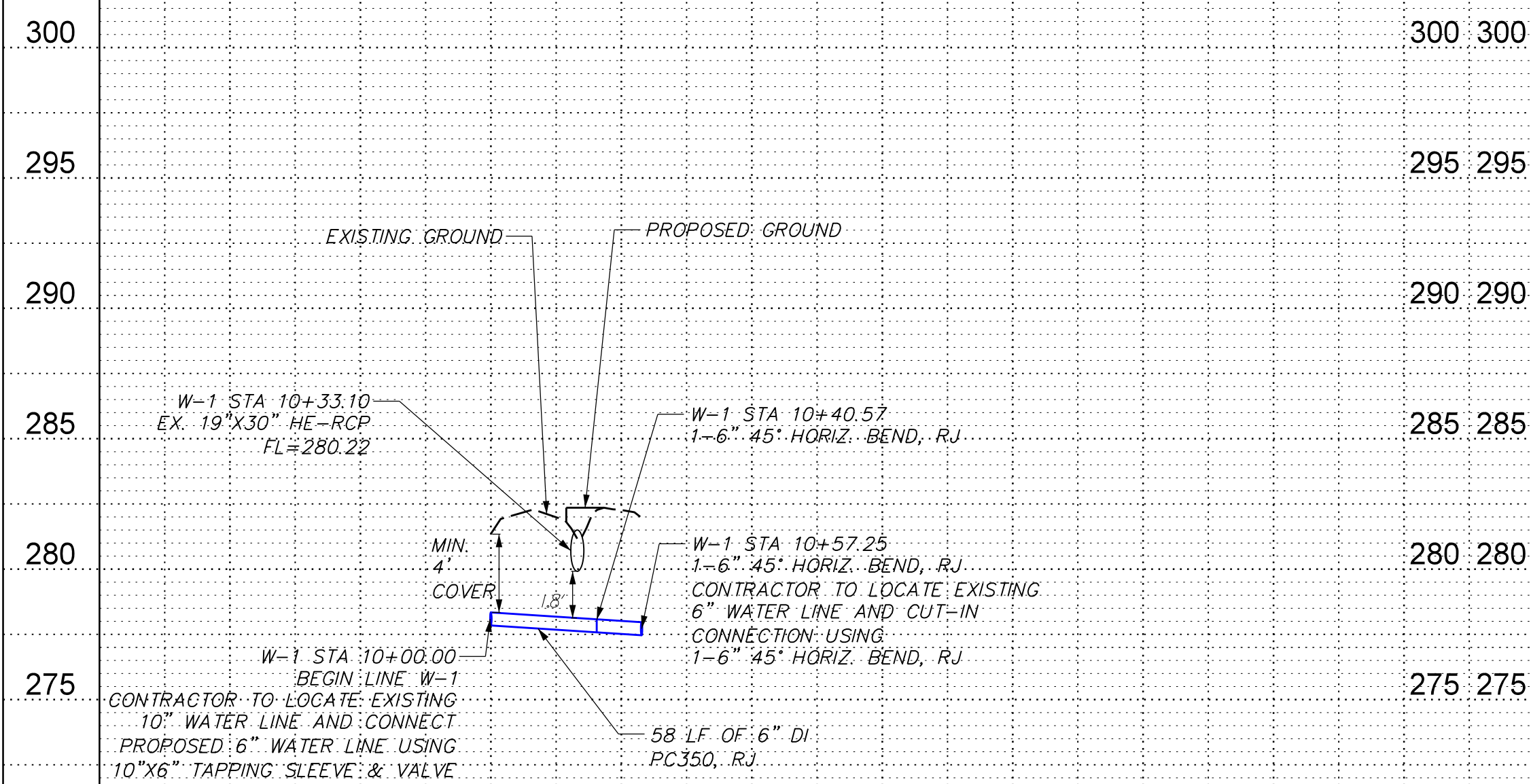
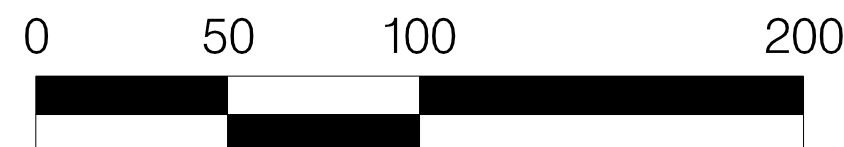
FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	RICHLAND	PO37535	S-404	U-6W

S-404 (CAUGHMAN RD.)

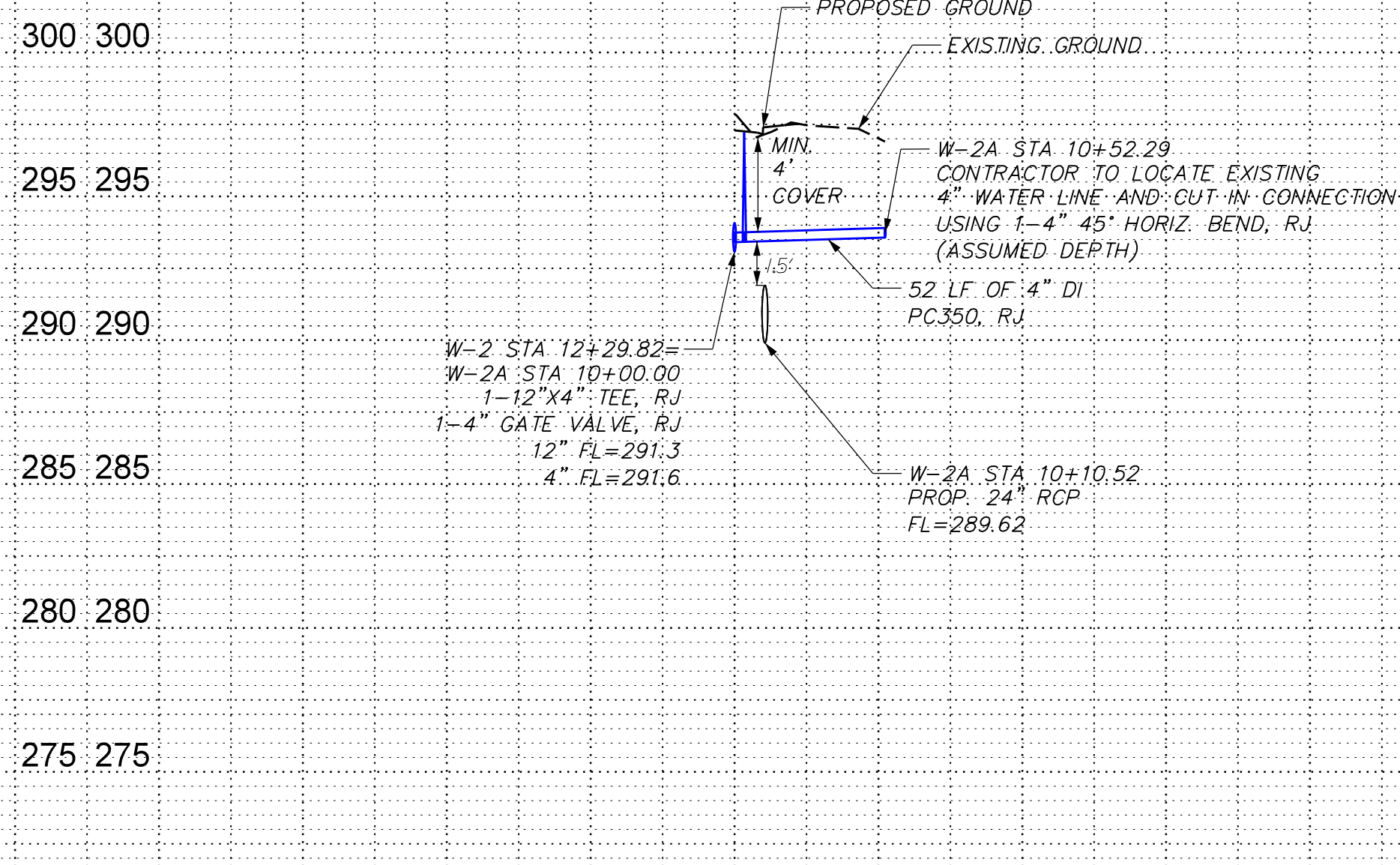


RECONNECT ALL EXISTING WATER SERVICES
TO PROPOSED 12-INCH WATER LINE. ALL WATER
METERS TO BE SET AT THE RIGHT-OF-WAY

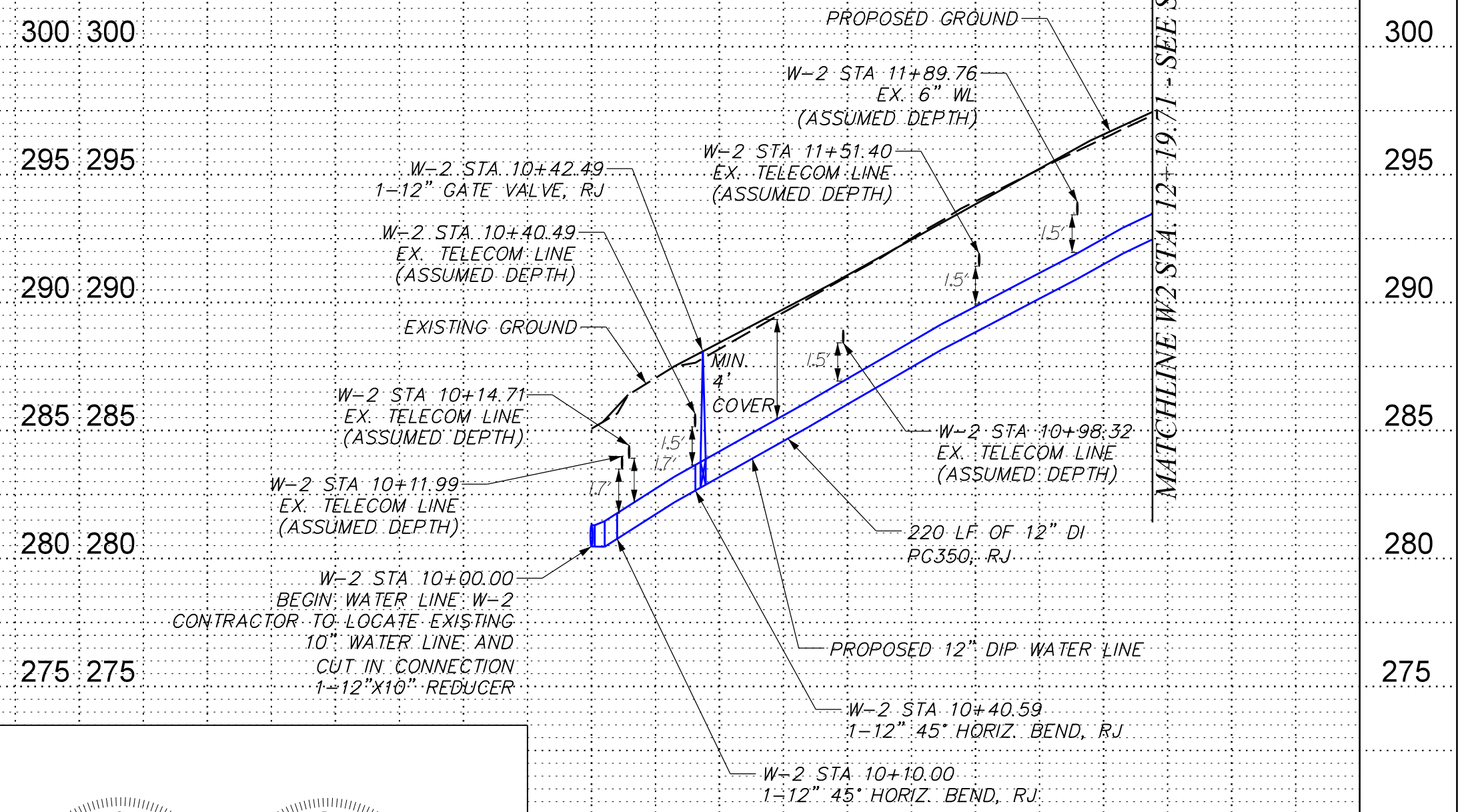
ADJUST WATER/SEWER
SERVICES AS NEEDED



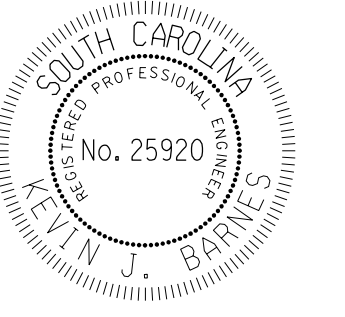
W-I PROFILE



W-2A PROFILE



W-2 PROFILE



**Mead
& Hunt**

PLAN /PROFILE SHEET

SCALE HORIZONTAL: 1" = 100' (11"x17") / 1" = 50' (22"x36")
SCALE VERTICAL: 1" = 10' (11"x17") / 1" = 5' (22"x36")

11+00	12+00
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10+00	11+00	12+00
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FED. ROAD DIST. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	RICHLAND	PO37535	S-404	U-7W

S-404 (CAUGHMAN RD.)

W-3 STA 11-30.95
 RECONNECT WATER SERVICE
 S-404 STA 94-87.97 28.0' LT

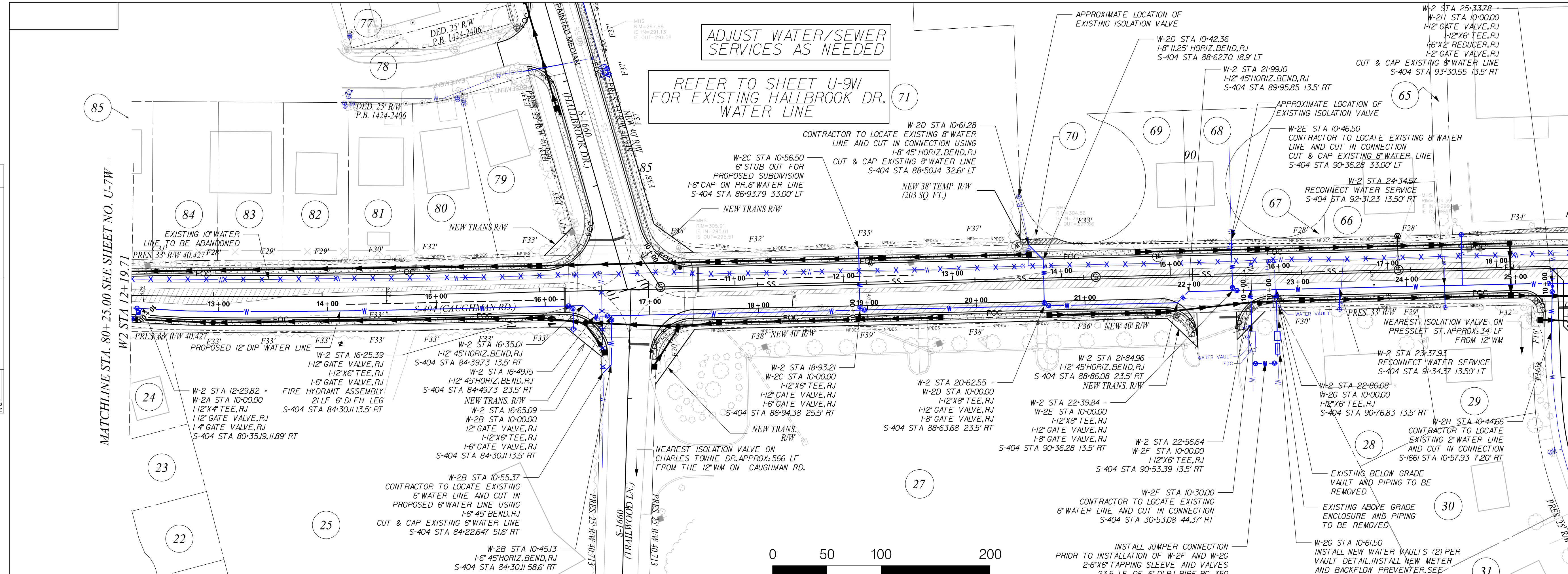
RELOCATE FH
 BEHIND S/W

NEW VAR. TEMP. R/W
 (359 SQ. FT.)

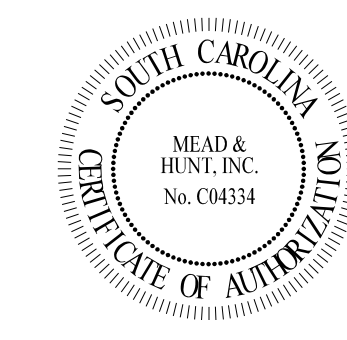
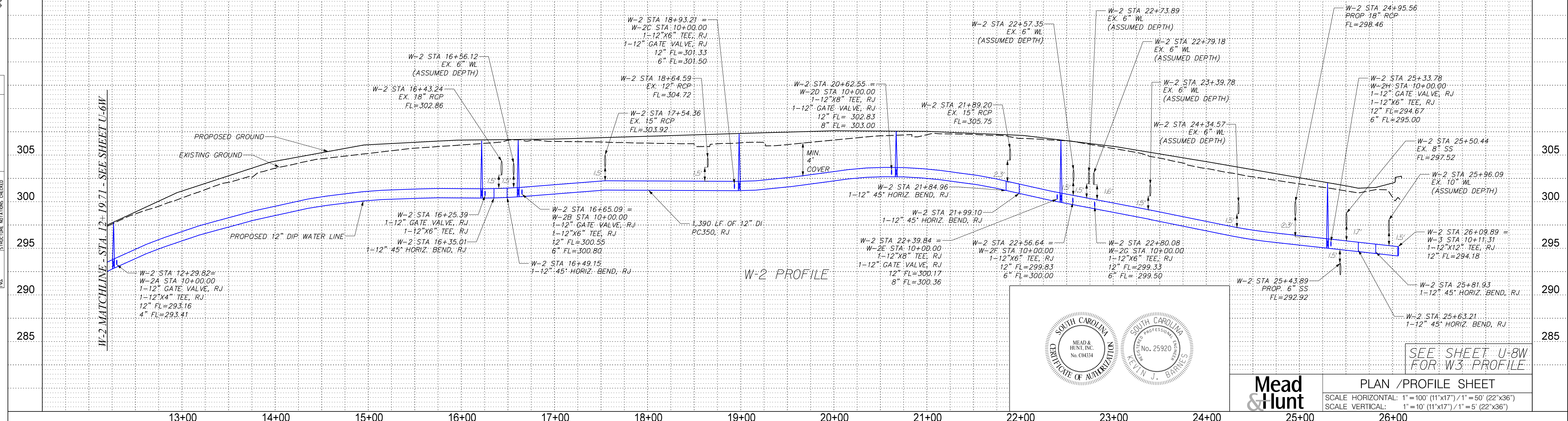
W-2 STA 26-09.89 -
 W-3 STA 10-11.31
 1-12" GATE VALVE, RJ
 1-12" GATE VALVE, RJ
 1-6" GATE VALVE, RJ
 FIRE HYDRANT ASSEMBLY
 11.5 LF 6" DI FH LEG
 S-404 STA 93-75.78 28J LT

W-2 STA 25-81.93
 1-12" 45° HORIZ. BEND, RJ
 S-404 STA 93-73.77 0' RT

W-2 STA 25-63.21
 1-12" 45° HORIZ. BEND, RJ
 S-404 STA 93-60.02 13.5' RT



RECONNECT ALL EXISTING WATER SERVICES
 TO PROPOSED 12-INCH WATER LINE. ALL WATER
 METERS TO BE SET AT THE RIGHT-OF-WAY.

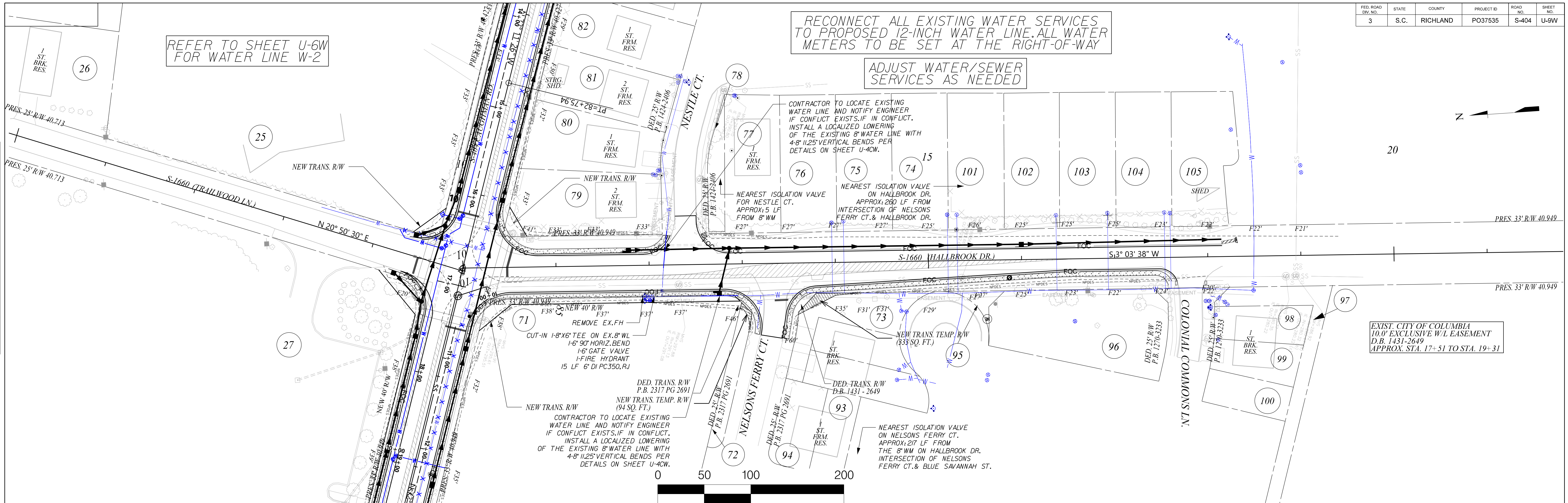


Mead & Hunt

PLAN / PROFILE SHEET
 SCALE HORIZONTAL: 1"=100' (11"x17") / 1"=50' (22"x36")
 SCALE VERTICAL: 1"=10' (11"x17") / 1"=5' (22"x36")

SEE SHEET U-8W
 FOR W-3 PROFILE

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	RICHLAND	PO37535	S-404	U-9W

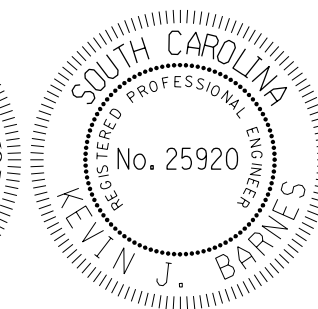


S-1660 (HALLBROOK DR.)

PLAN	SURVEYED _____	BY _____	DATE _____
NOTE BOOK	PLOTTED _____		
	ALIGNMENT CHECKED _____		
	PT. OF WAY CHECKED _____		
IN _____			

PROFILE	BY	DATE
SURVEYED		
PLOTTED		
GRADES CHECKED		
B.M.'S NOTED		
STRUCTURE NOTATIONS CHECKED		
No.		

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$user$
$$$$$path$$$$$filename$$$$$
$$$$$date$$$$$
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**Mead
& Hunt**

PLAN /PROFILE SHEET

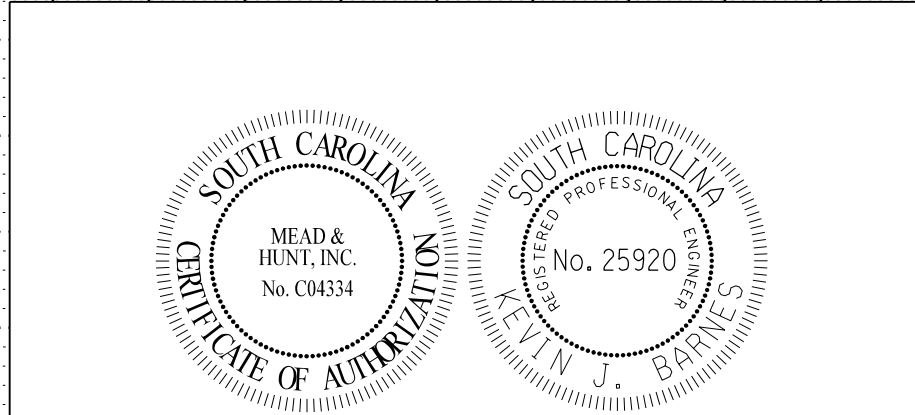
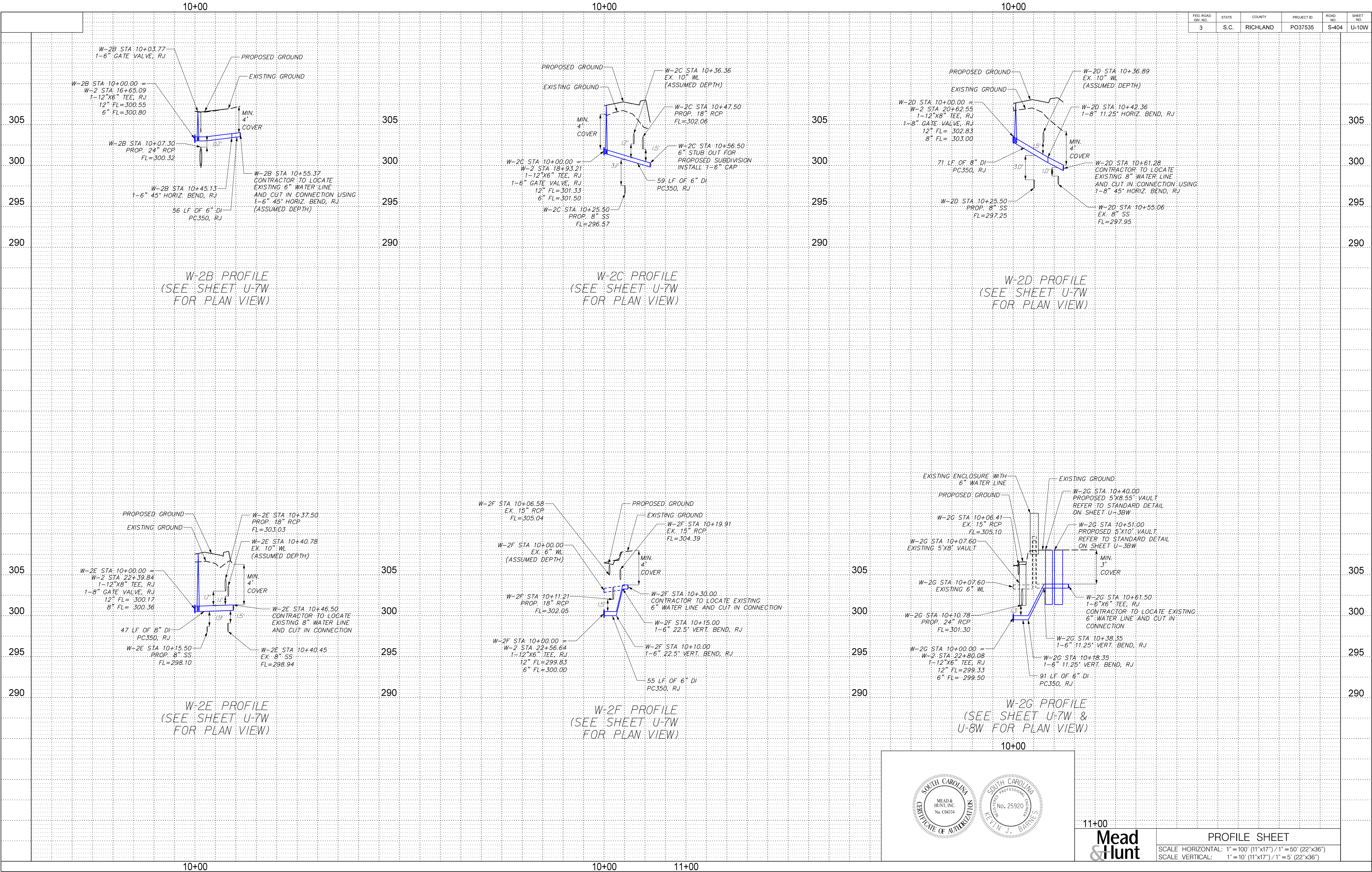
SCALE HORIZONTAL: $1" = 100' (11" \times 17") / 1" = 50' (22" \times 36")$
SCALE VERTICAL: $1" = 10' (11" \times 17") / 1" = 5' (22" \times 36")$

PLAN	DATE
NOTED	
BOOK	
NO.	

\$\$\$USER\$\$\$
\$\$\$\$\$DATE\$\$\$\$\$
\$\$\$\$\$FILENAME\$\$\$\$\$
\$\$\$\$\$DATE\$\$\$\$\$

PROFILE	DATE
NOTED	
BOOK	
NO.	

PROFILE	DATE
NOTED	
BOOK	
NO.	



11+00
Mead & Hunt

PROFILE SHEET
SCALE HORIZONTAL: 1"=100' (11"x17") / 1"=50' (22"x36")
SCALE VERTICAL: 1"=10' (11"x17") / 1"=5' (22"x36")

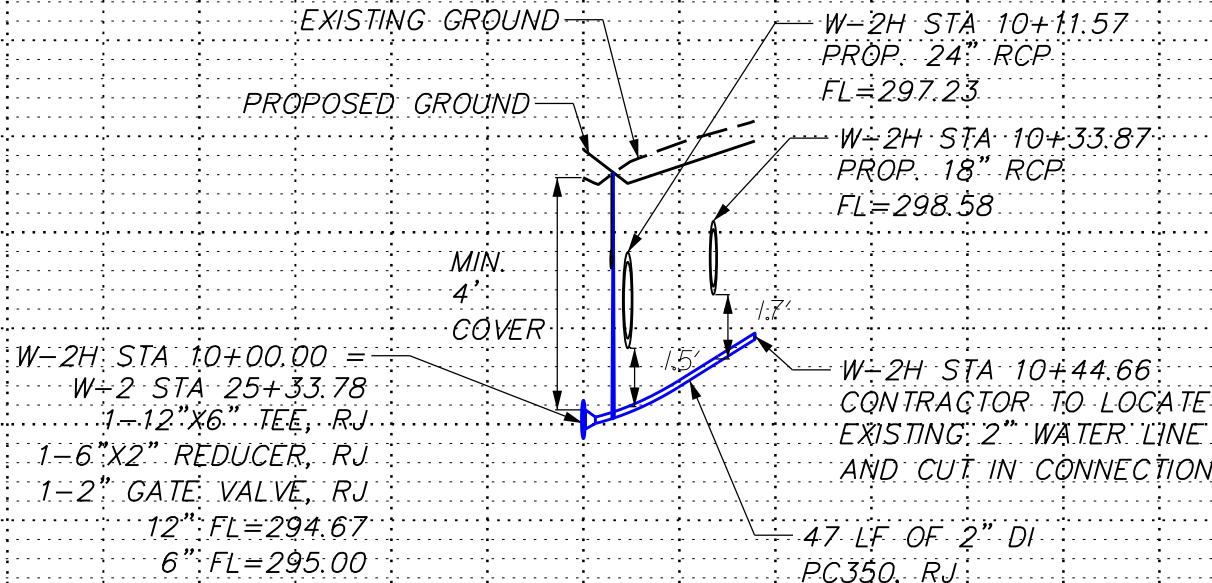
PROFILE	SURVEYED	BY	DATE
NOTE BOOK	GRADES CHECKED		
No.	BLM'S NOTED		
	STRUCTURE NOTATIONS CHECKED		

PLAN	SURVEYED	BY	DATE
NOTE BOOK	ALIGNMENT CHECKED		
No.	RT. OF WAY CHECKED		

\$\$\$user\$\$\$
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10+00

FED. ROAD DIST. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	RICHLAND	PO37535	S-404	U-11W



W-2H PROFILE
(SEE SHEET U-7W
FOR PLAN VIEW)



PROFILE SHEET

SCALE HORIZONTAL: 1" = 100' (11"x17") / 1" = 50' (22"x36")
SCALE VERTICAL: 1" = 10' (11"x17") / 1" = 5' (22"x36")

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	RICHLAND	P038202	S-37	U-1S

DEPARTMENT OF UTILITIES & ENGINEERING
CAUGHMAN ROAD UTILITY RELOCATION
(SEWER)

COLUMBIA, SC
FOR
THE CITY OF COLUMBIA

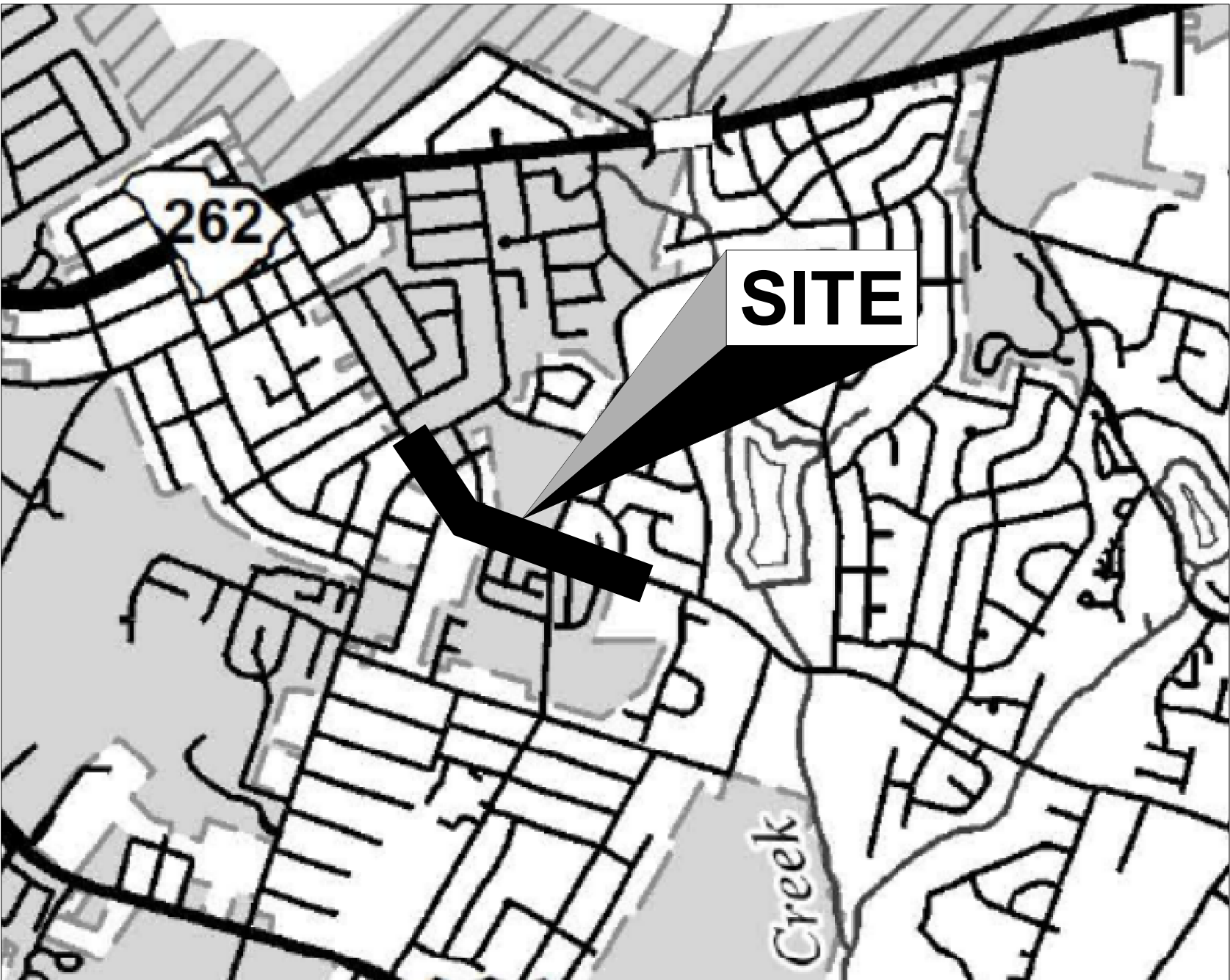
S-404 (CAUGHMAN RD.) & S-1660 (HALLBROOK DR./TRAILWOOD LN.)
C.I.P. #SS7642

DRAWING INDEX

SHEET NO.	DESCRIPTION	SHEET SUBTOTALS
U-1S	TITLE	1
U-2AS - U-2BS	ROW SHEETS	2
U-3S	NOTES	1
U-4AS - U-4BS	SHEET INDEX - DETAILS	2
U-6S - U-9S	PLAN/PROFILE	4

TOTAL SHEETS 10

VICINITY MAP - NTS



PROJECT CONTACTS

OWNER

COLUMBIA WATER
DEPARTMENT OF ENGINEERING
PO BOX 147
COLUMBIA, SC 29201
CONTACT: JOHN B. HILBERT
PHONE: 803-545-3283
EMAIL: JOHN.HILBERT@COLUMBIASC.GOV

ENGINEER

MEAD AND HUNT
878 S LAKE DR.
LEXINGTON, SC 29072
CONTACT: KEVIN BARNES, PE
PHONE: (843) 213-3288
EMAIL: KEVIN.BARNES@MEADHUNT.COM



Know what's below.
Call before you dig.

CAUGHMAN ROAD
UTILITY RELOCATION

Mead
& Hunt

TITLE SHEET – SEWER

SCALE: 1" = 200' (11"x17") / 1" = 100' (22"x36")

SHEET U-1S

MAYOR

DANIEL J. RICKENMANN

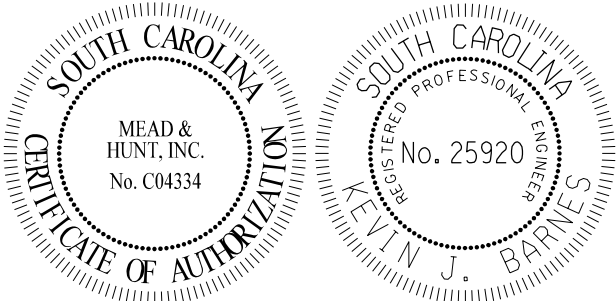
CITY COUNCIL

EDWARD H. MCDOWELL, JR.
WILL BRENNAN
DR. ADITI BUSSELS
TINA N. HERBERT
PETER M. BROWN
TYLER D. BAILEY

DIRECTOR OF UTILITY
OPERATIONS
WILLIAM F. ESKRIDGE, P.E.

DIRECTOR OF ENGINEERING
DANA R. HIGGINS, P.E.

CITY MANAGER
TERESA WILSON



7			
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REV. NO.	BY	DATE	DESCRIPTION OF REVISION
DWG.	DATE	FILE	
CKD.	DATE	5/23/2025	9:53:38 AM



RIGHT-OF-WAY DATA SHEET

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	RICHLAND	P038202	S-37	U-2AS

TRACT NO.	PROPERTY OWNER	TAX MAP REFERENCE	TOTAL TRACT ACRES	OBTAIN				REMAINDER LEFT ACRES ^	REMAINDER RIGHT ACRES ^	DATE ACQUIRED	TYPE OF INSTRUMENT	PERMISSION (YES)					REMARKS
				OUTFALL DITCH	LEFT	RIGHT	TOTAL					OUTFALL DITCH	SLOPE	DRAINAGE STRUCTURE	EROSION CONTROL	ENTRANCE CONSTRUCTION	
7	ROBBINS JOHN A &	R19112-02-15	0.32														
16	WIGGINS RICHARD L & KATHRYN G	R19112-01-01	0.34										YES	YES			FOR PARTIAL PIPE REMOVAL
17	JACQUELINE BRIGMAN	R19205-05-10	0.16			193 SF (0.004 AC)	193 SF (0.004 AC)		6776 SF						YES		
18	OPTED OUT	R19205-05-11	0.11														
24	15 & 16 ASHLEY, LLC	R19205-05-17	0.16			203 SF (0.005 AC)	203 SF (0.005 AC)		6766 SF								
25	GILMORE CEMETERY	R19205-05-18	3.10			477 SF (0.011 AC)	477 SF (0.011 AC)		3.089								
27	LOWER RICHLAND SCH DIST #5 n/k/a RICHLAND CO SCH DIST. #1	R19205-03-02	23.79			3812 SF (0.088 AC)	3812 SF (0.088 AC)		23.702			YES	YES	YES	YES		FOR SIDEWALK CONSTRUCTION
28	WOLFE STITT M	R19205-03-03	0.30														
29	SKINNER CLIFFORD E	R19205-03-04	0.23														
37	BOGLE KEVIN L	R19205-06-03	0.34														
38	WOODWARD ARTHUR A & KATHRYN J	R19205-06-04	0.29										YES				
39	LIVINGSTON JESSICA A	R19205-06-05	0.34														
40	SMITH KEVIN W	R19205-06-06	0.40														
41	BEERS SANDRA G	R19205-06-07	0.40														
42	DINKINS ISAAC & GERALDINE	R19205-06-08	0.43										YES		YES		
45	MCCLAIN SARAH K	R19205-02-02	0.52														
46	HUTCHINGS RANGER R	R19205-02-03	0.49														
47	ROSE NANCY FINCH MOORE	R19205-02-04	0.44														
59	LIVINGSTON TERRY G	R19205-07-01	0.74														
60	LIVINGSTON TERRY G	R19205-07-10	0.65		3317 SF (0.076 AC)		3317 SF (0.076 AC)	0.573							YES		
61	LIVINGSTON TERRY G & KAREN B	R19205-07-11	0.62		1761 SF (0.040 AC)		1761 SF (0.040 AC)	0.579							YES		
62	SEIGFREID DAVID B	R19205-07-12	0.55												YES		
63	HAWKINS DOUGLAS M	R19205-07-13	0.83														
64	MIRACLE FAITH CHRISTIAN CENTER	R19100-02-05	4.73														OBTAIN TEMPORARY R/W - 559 SF / 0.013 AC
65	COLONIAL COMMONS HOMEOWNERS	R19205-07-17	0.20														
66	MATHIS ANDREA	R19205-07-26	0.11														
67	COLONIAL COMMONS HOMEOWNERS	R19205-07-27	0.01														
68	PERKINS ADAM & MONICA	R19205-10-01	0.15														
69	COLLINS MAHOGANY AMY ZAKIYA	R19205-10-12	0.14														
70	COLONIAL COMMONS HOMEOWNERS	R19100-02-12	0.02														OBTAIN TEMPORARY 38' R/W - 203 SF / 0.005 AC
71	METRO DWELLING, LLC	R19100-02-10	2.15		2272 SF (0.052 AC)		2272 SF (0.052 AC)	2.097					YES		YES		
72	COLONIAL COMMONS HOMEOWNERS	R19100-02-12	0.05														OBTAIN TEMPORARY R/W - 94 SF / 0.002 AC
73	COLONIAL COMMONS HOMEOWNERS	R19108-09-07	0.13														OBTAIN TEMPORARY R/W - 333 SF / 0.008 AC
74	SIMONS TENILLE L	R19108-11-05	0.20														
75	KEITH JOHNNY J & SANDY	R19108-11-04	0.20														
76	ALHINAI HUMAID H &	R19108-11-03	0.20														
77	FLOWERS LUCINDA	R19108-11-02	0.20														
78	MOORE'S CREEK HOMEOWNERS	R19108-11-01	0.20														
79	BURKS ALTO LEE	R19108-10-10	0.20		424 SF (0.010 AC)		424 SF (0.010 AC)	8288 SF					YES		YES		
80	CONREX RESIDENTIAL PROPERTY	R19108-10-09	0.20												YES		
81	WATKINS JANELLA M	R19108-10-08	0.20														
82	FRIERSON MARCUS	R19108-10-07	0.20														
83	GILL WELDON	R19108-10-06	0.20														
84	MALLORY DIANE L	R19108-10-05	0.20														
85	HINGLETON RONNIE	R19108-10-04	0.20														

[illegible]

R/W NOTE:
THE DEPARTMENT WILL UTILIZE THE PRESENT RIGHT OF WAY
AS SHOWN BELOW EXCEPT AS OTHERWISE SHOWN ON PLANS.

[illegible]

NOTES:
A. SHOW REMAINDER IN SQUARE FEET WHEN LESS THAN 0.25 ACRE

SOUTH CAROLINA MEAD & HUNT, INC. No. C04334 CERTIFICATE OF AUTHORIZATION SOUTH CAROLINA No. 25920 REGISTERED PROFESSIONAL ENGINEER EVN J. BARBES				7 6 5 4 3 2 1	CAUGMAN ROAD UTILITY RELOCATION	
				Mead Hunt		
				RIGHT-OF-WAY SHEET 1/2 – SEWER		
				SCALE: 1" = 200' (11"x17") / 1" = 100' (22"x36")		
				SHEET U-2AS		



RIGHT-OF-WAY DATA SHEET

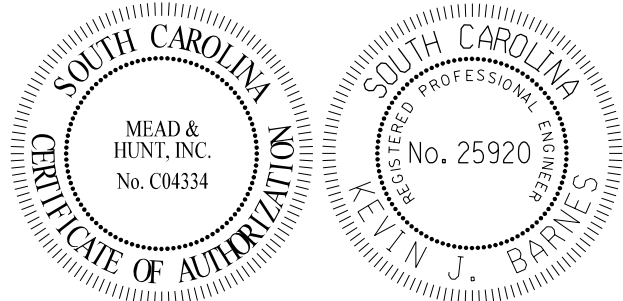
FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	RICHLAND	P038202	S-37	U-2BS

[illegible][illegible]

R/W NOTE:
THE DEPARTMENT WILL UTILIZE THE PRESENT RIGHT OF WAY
AS SHOWN BELOW EXCEPT AS OTHERWISE SHOWN ON PLANS.

[illegible]

NOTES:
A. SHOW REMAINDER IN SQUARE FEET WHEN LESS THAN 0.25 ACRE.



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REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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CKD. _____	DATE _____		...\\CGMN_UTL_PLAN02BS.dgn
			5/23/2025 9:53:47 AM

CAUGMAN ROAD UTILITY RELOCATION



RIGHT-OF-WAY SHEET 2 /2 - SEWER

SCALE: 1" = 200' (11"x17") / 1" = 100' (22"x36") SHEET U-2BS

SUE LEGEND AND NOTES

ELECTRIC SYMBOLS			TELECOMMUNICATION SYMBOLS			UTILITY INFORMATION ABBERVATIONS		
SYM	ABV	DESCRIPTION	SYM	ABV	DESCRIPTION	SYM	ABV	DESCRIPTION
	ETM	ELECTICAL TRANSFORMER		TB	TELEPHONE BOOTH		EOI	END OF INFORMATION
	EMH	ELECTRICAL MAN HOLE		TVP	CABLE TV PEDESTAL		EOR	END OF RECORDED INFORMATION
	EHH	ELECTRICAL HAND HOLE		TLC	SUBSCRIBER LOOP CARRIER (aka SLICK)		AATUR	UTILITY ABANDONED ACCORDING TO UTILITY RECORDS
	EPP	ELECTRIC PEDESTAL		TPP	TELEPHONE PEDESTAL		AATFI	UTILITY ABANDONED ACCORDING TO FIELD INSPECTION
	EBX	ELECTRIC BOX		TMH	TELEPHONE MAN HOLE		NAP	NO ASSOCIATED PIPING FOUND FROM STRUCTURE
	ESG	ELECTRIC SWITCH GEAR BOX		TFOH	FIBER OPTIC HAND HOLE		NBR	NO ASSOCIATED CABLES FOUND FROM STRUCTURE
	EVT	ELECTRIC VAULT		THH	TELEPHONE HAND HOLE		DATFI	DEPICTED ACCORDING TO FIELD INSPECTION
	EGL	GROUND / LANDSCAPE LIGHT		TVHH	CABLE TV HAND HOLE		EATFI	EMPTY ACCORDING TO FIELD INSPECTION
	EAB	ELECTRIC AIR BRAKE		TBX	TELEPHONE BOX		PR	EMPTY
	ERO	ELECTRIC RESIDENTIAL OUTLET		TXB	SPLICE BOX		MT	EMPTY
POLE SYMBOLS				TRP	TELEPHONE REPEATER		CAP	CAPACITY
	PSP	SIGNIFICANT POLE (STEEL, CONCRETE, ETC)		TVB	CABLE TV BOX		GR	GROUND
	PP	ELECTRIC COMBINATION POLE		TUV	UNDERGROUND TELEPHONE VAULT	MATERIAL ABBREVIATIONS		
	PMP	METER POLE		UTP	UNDERGROUND TELEPHONE PEDESTAL	C	.....	COPPER
	PLT	TRANSMISSION LINE POLE		UTV	UNDERGROUND CABLE TV PEDESTAL	DI	.....	DUCTILE IRON
	PLP	AREA LIGHT POLE	WATER SYMBOLS			S	.....	STEEL
	PTF	TRAFFIC SIGNAL POLE		WM	WATER METER	P	.....	PLASTIC
	POP	OTHER USE POLE		WV	WATER VALVE	FO	.....	FIBER OPTIC
	PCT	CELL PHONE TOWER		WMW	WATER MONITORING WELL	CI	.....	CAST IRON
	PTP	TELEPHONE POLE		WVFH	FIRE HYDRANT	CO	.....	CONCRETE
	PGP	GUY POLE		WMH	WATER MAN HOLE	PV	.....	PVC
TRAFFIC CONTROL SYMBOLS				WAR	WATER AIR RELEASE VALVE	VY	.....	VYOLON
	TFV	TRAFFIC SIGNAL CONTROL VAULT		WVB	WATER VALVE BOX	TC	.....	TERRA COTTA
	TFHH	TRAFFIC CONTROL HAND HOLE		WFC	FIRE DEPARTMENT CONNECTION	SWC	.....	STEEL WRAPPED COATED
	TFJ	TRAFFIC SIGNAL JUNCTION BOX		WPB	WATER BACKFLOW PREVENTER	AC	.....	ASBESTOS CEMENT
GAS SYMBOLS				WBO	WATER BLOW OFF VALVE	TF	.....	TRAFFIC SIGNAL CABLE
	GM	GAS METER		WMH	WELL HOUSE	GW	.....	GUY WIRE
	GVC	GAS VALVE CAP		WPV	POST INDICATOR VALVE	GNT	.....	CONDUIT
	GMH	GAS MAN HOLE	SEWER SYMBOLS			GENERAL ABBREVIATIONS		
	GVT	GAS VENT		SCO	SEWER CLEAN OUT	E	.....	ELECTRIC (POWER)
	GR	GAS PRESSURE REGULATOR		SMH	SEWER MAN HOLE	W	.....	UNDERGROUND WATER
	GTP	GAS LINE TEST POINT		SAR	SEWER AIR RELEASE VALVE	G	.....	UNDERGROUND GAS
	GTF	GAS LINE TAP FARM		SST	SEWER STEP TANK	PUPS	.....	PALMETTO UTILITY PROTECTION SERVICES
MISC SYMBOLS				SCV	SEWER CHECK VALVE BOX	TV	.....	TELEPHONE, TELECOMMUNICATION
	MWP	UTILITY WITNESS POST		SGP	SEWER GRINDER / PUMP STATION	C	.....	CABLE TELEVISION
	EOI	END OF INFORMATION		SSV	SEWER VALVE	FO	.....	FIBER OPTIC
	MUC	MISC / UNKNOWN VALVE CAP OR COVER		SLS	SEWER LIFT STATION	S	.....	SANITARY SEWER
	MPB	PAVED OR BURIED MANHOLE / CAP	NONPOTTABLE WATER SYMBOLS			FS	.....	FORCED SANITARY SEWER, FORCE MAIN
	MUE	UTILITY TERMINI / ENDS		ICV	IRRIGATION CONTROL VALVE	DB	.....	DUCT BANK
	MTH	TEST HOLE		ICB	IRRIGATION CONTROL BOX	TF	.....	TRAFFIC CONTROL UTILITY
				IRH	IRRIGATION / SPRINKLER HEAD	HP	.....	HYDROGEN PEROXIDE
						ST	.....	STEAM LINE
						R	.....	RECLAIMED WATER / SLURRY LINE
						DB	.....	DUCT BANK
						TNL	.....	TUNNEL
						CA	.....	GASES MATERIAL
						GENERAL NOTES		
						-GRAVITY SANITARY SEWER LINES ARE SHOWN AS LEVEL 'C'.		
						-AERIAL UTILITY LINES ARE CONSIDERED AS LEVEL 'C'.		
						-UTILITY OWNER INFORMATION SHOWN ON UTILITY TITLE SHEET.		

UTILITY LINE STYLES

	EXISTING AT&T
	EXISTING CHARTER / SPECTRUM OVHD
	EXISTING VERIZON
	EXISTING DOMINION OVH ELECTRIC
	EXISTING DOMINION UG ELECTRIC
	EXISTING DOMINION GAS
	PROPOSED WATER
	EXISTING WATER TO BE ABANDONED
	EXISTING WATER TO BE REMOVED
	PROPOSED GRAVITY SEWER
	PROPOSED SEWER FORCE MAIN
	EXISTING SEWER TO BE ABANDONED
	EXISTING SEWER TO BE REMOVED

QUALITY LEVEL DEFINITIONS

Level D. This level information comes solely from existing utility records. It may provide an overall "feel" for the congestion of utilities, but it is often highly limited in terms of comprehensiveness and accuracy. Its usefulness should be confined to project planning and route selection activities.

Level C. This level involves surveying visible aboveground utility facilities (e.g., manholes, valve boxes, posts) and correlating this information with existing utility records. When using this information, it is not unusual to find that many underground utilities have been either omitted or erroneously plotted. Its usefulness, therefore, should be confined to rural projects where utilities are not prevalent, or are not too expensive to repair or relocate.

Level B. This level involves the use of surface geophysical techniques to determine the existence and horizontal position of underground utilities. This activity is called "designating." Two-dimensional mapping information is obtained. This information is usually sufficient to accomplish preliminary engineering goals. Decisions can be made on where to place storm drainage systems, footers, foundations and other design features in order to avoid conflicts with existing utilities. Slight adjustments in the design can produce substantial cost savings by eliminating utility relocations.

Level A. This level involves the use of nondestructive digging equipment at critical points to determine the precise horizontal and vertical position of underground utilities, as well as the type, size, condition, material and other characteristics. This activity is called "locating." It is the highest level presently available. When surveyed and mapped, precise plan and profile information are available for use in making final design decisions. By knowing exactly where a utility is positioned in three dimensions, the designer can often make small adjustments in elevations or horizontal locations and avoid the need to relocate utilities. Additional information (e.g., utility materials, condition, size, soil contamination, paving thickness) also assists the designer and Utility Company in their decisions.

MAP NOTE:

- ALL EXISTING BOUNDARY AND TOPOGRAPHIC INFORMATION HAS BEEN PROVIDED BY SCODOT.
- THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING SCODOT BENCHMARKS PRIOR TO ANY CONSTRUCTION AND SHALL REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER. FIELD VERIFICATION CAN BE ACCOMPLISHED BY CHECKING A MINIMUM OF TWO FIXED OBJECTS DISPLAYED ON THE SURVEY (I.E., MANHOLE RIM, STORM GRATE, PIPE INVERTS, ETC.).
- THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING UTILITIES. IF THERE ARE ANY MAJOR DISCREPANCIES THAT WILL AFFECT THE PROJECT DESIGN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.

GENERAL NOTES:

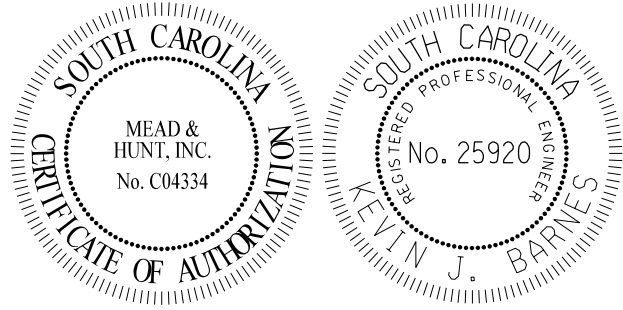
- WITHIN ALL NOTES, THE TERM "CONTRACTOR" SHALL MEAN THE GENERAL CONTRACTOR AND ANY SUBCONTRACTOR OR VENDOR PERFORMING CONSTRUCTION ON THE SITE.
- A COMPLETE SET OF APPROVED DRAWINGS MUST BE MAINTAINED ON SITE AT ALL TIMES WHILE THE CONTRACTOR IS PERFORMING WORK.
- THE CONTRACTOR SHALL PERFORM ALL WORK DURING DAYLIGHT HOURS.
- THE CONTRACTOR SHALL PROVIDE SURVEYED AS-BUILT DATA OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE ENGINEER FOLLOWING COMPLETION OF CONSTRUCTION ACTIVITIES.
- SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES ON THE DRAWINGS, OR IN THE FIELD PRIOR TO BEGINNING WORK OR DURING CONSTRUCTION, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER.
- BOUNDARIES AND TOPOGRAPHY HAVE NOT BEEN FIELD VERIFIED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXISTING FIELD CONDITIONS AND REPORTING ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND VERIFYING ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION AND IS RESPONSIBLE FOR ANY DAMAGE TO THEM DURING CONSTRUCTION. THE CONTRACTOR SHALL CONTACT THE STATE'S LOCATION SERVICE AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
- THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS.
- ALL RIGHT-OF-WAY CONSTRUCTION SHALL MEET SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS (LATEST EDITION).
- THE CONTRACTOR IS REQUIRED TO MEET ALL APPLICABLE OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS CONCERNING PROJECT SAFETY. THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR SAFETY ON THE PROJECT.
- THE CONTRACTOR SHALL VERIFY THAT ALL NECESSARY PERMITS FOR CONSTRUCTION HAVE BEEN OBTAINED PRIOR TO THE START OF THE PROJECT.
- IN THE EVENT OF A CONFLICT WITH WATER, SEWER, DRAINAGE OR OTHER UTILITY LINES, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER PRIOR TO MAKING FIELD ADJUSTMENTS.
- IN CASE WHERE THE CONTRACTOR CUTS THROUGH AN EXISTING ACTIVE GAS MAIN, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT 911 FIRST, THEN CONTACT THE APPROPRIATE UTILITY PROVIDER.

CONSTRUCTION NOTES

- ALL MATERIALS, METHODS, AND DETAILS OF CONSTRUCTION SHALL CONFORM TO THE PROJECT SPECIFICATIONS AND DRAWINGS.
- EXISTING UTILITIES THAT ARE SHOWN ON THE DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY. THE ACCURACY AND COMPLETENESS OF SUCH INFORMATION IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND STRUCTURES IN ADVANCE OF ALL TRENCHING AND EXCAVATION TO AVOID DAMAGING EXISTING UTILITIES OR CAUSING UNNECESSARY DELAYS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING INFRASTRUCTURE WITHIN THE PROJECT AREA OR ADJOINING PROPERTIES (I.E., PAVEMENT, CURB, SIDEWALK, UTILITIES, LANDSCAPED AREAS, ETC.). THE CONTRACTOR SHALL REPAIR/REPLACE ALL DAMAGED ITEMS IMMEDIATELY IF NECESSARY, OR PRIOR TO THE END OF THE JOB. THE REPAIR/REPLACEMENT SHALL BE AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ANY NECESSARY TRAFFIC CONTROLS THROUGHOUT THE DURATION OF THE PROJECT. IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION) AND THE ENCROACHMENT PERMIT ISSUED BY THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION.
- THE CONTRACTOR IS RESPONSIBLE FOR STABILIZING AND RETURNING ALL SCODOT MAINTAINED ROADWAY DITCHES TO PRE-CONSTRUCTION CONDITIONS IN A TIMELY MANNER.
- THE CONTRACTOR SHALL CLEAN AND MAINTAIN ALL ROADWAYS AS NECESSARY TO ENSURE THAT NO CONSTRUCTION DEBRIS IS PRESENT FOR EXTENDED PERIODS OF TIME.
- THE CONTRACTOR SHALL ENSURE THAT ALL-WEATHER ACCESS TO LOCAL RESIDENCES AND BUSINESSES IS MAINTAINED THROUGHOUT CONSTRUCTION.
- ALL TRENCHING, EXCAVATION, AND COMPACTION OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF COLUMBIA ENGINEERING REGULATIONS MANUAL AND SCODOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
- UNLESS OTHERWISE SPECIFIED, ALL BACKFILL MATERIAL SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF COLUMBIA ENGINEERING REGULATIONS MANUAL AND SCODOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
- TRENCH EXCAVATION SHALL NOT EXCEED BACKFILL BY MORE HAN 100 FEET. NO TRENCH SHALL BE LEFT OPEN AFTER NORMAL BUSINESS HOURS.
- NO OPEN EXCAVATIONS SHALL REMAIN OVERNIGHT.
- THE CONTRACTOR SHALL REMOVE ALL STRIPPINGS, DEBRIS, AND EXCESS EXCAVATED MATERIALS FROM THE PROJECT AREA AND DISPOSE OF THEM IN A LEGAL MANNER.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY DEWATERING TO PERFORM AND MAINTAIN EXCAVATIONS AND GRADES. DEWATERING OPERATIONS SHALL NOT DISCHARGE DIRECTLY INTO MARSH OR WETLAND AREAS. WATER PUMPED FROM EXCAVATION AND OTHER WORK AREAS MUST BE HELD IN SETTLING BASINS OR FILTERED PRIOR TO DISCHARGE INTO SURFACE WATERS OR STORM DRAINAGE SYSTEMS. WATER MUST BE DISCHARGED THROUGH A PIPE, WELL-GRASSED OR LINED CHANNEL, OR EQUIVALENT MEANS SUCH THAT THE DISCHARGE DOES NOT CAUSE EROSION OR SEDIMENTATION.

SEWER MAIN CONSTRUCTION NOTES:

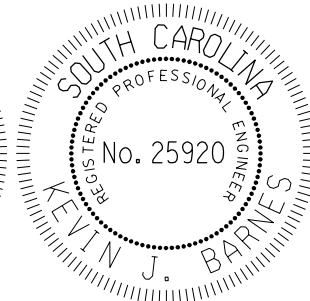
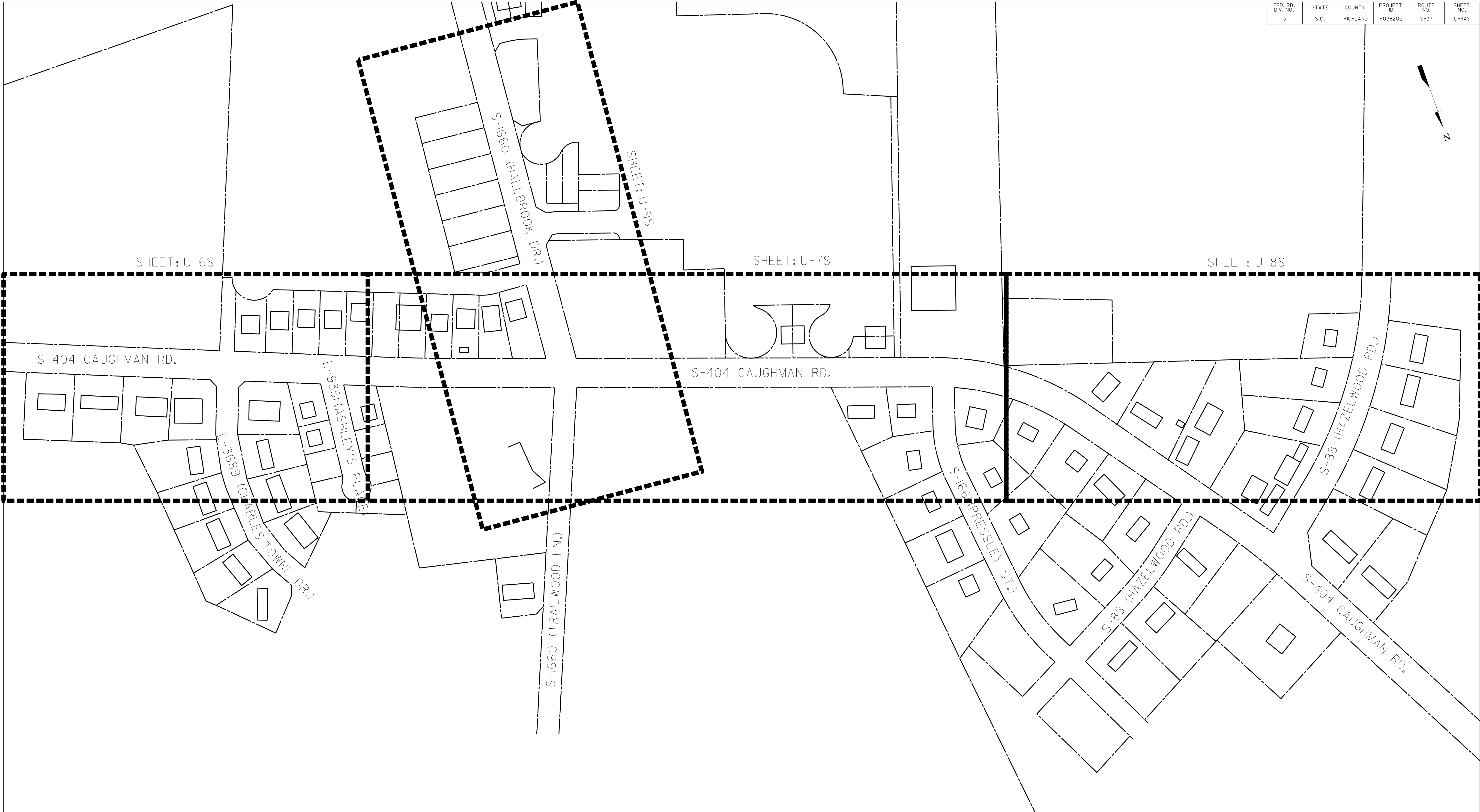
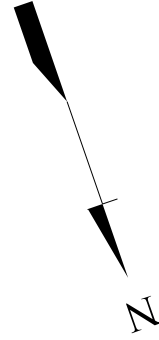
- ALL SEWER MAIN CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF COLUMBIA ENGINEERING REGULATIONS MANUAL SPECIFICATION PART 17.
- THE CONTRACTOR SHALL STORE, HANDLE, INSTALL, AND MAINTAIN ALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- THE CONTRACTOR SHALL INSTALL ALL SEWER MAIN PIPING WITH NO LESS THAN 4 FEET OF COVER.
- SEWER MAINS SHALL MAINTAIN A MINIMUM HORIZONTAL SEPARATION DISTANCE OF 10 FEET FROM ALL WATER MAINS, WHEREVER POSSIBLE.
- SEWER MAINS THAT CROSS WATER MAINS SHALL BE LAID TO PROVIDE A VERTICAL SEPARATION OF AT LEAST 18 IN. BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SANITARY OR STORM SEWER.
- NEW SEWER FORCE MAINS CROSS EXISTING UTILITIES THROUGHOUT THE PROJECT AREA. FIELD VERIFY EXISTING UTILITY CROSSINGS AND ADJUST ELEVATION OF NEW SEWER FORCE MAIN AS NEEDED.
- ALL SEWER PIPING AND MANHOLES SHALL BE TESTED IN ACCORDANCE WITH CITY OF COLUMBIA ENGINEERING REGULATIONS AND MANUAL SPECIFICATION PART 17.
- SEWER MANHOLES SHALL BE CONSTRUCTED SO THAT NO WATER PIPE OR OTHER CONDUIT IS IN CONTACT WITH OR ENCLOSED BY ANY PART OF A SEWER OR SEWER MANHOLE.
- MANHOLES SHALL BE LEAK-TIGHT AND MAY BE CONSTRUCTED OF PRECAST UNITS, PORTLAND CEMENT CONCRETE BRICK OR CAST-IN PLACE CONCRETE, ALL IN ACCORDANCE WITH PLANS AND THE CITY OF COLUMBIA ENGINEERING REGULATIONS AND MANUAL SPECIFICATION PART 17.
- ALL CONCRETE USED IN MANHOLE CONSTRUCTION SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 28 DAYS. STRENGTH DETERMINATION SHALL BE IN ACCORDANCE WITH ASTM C90, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- TREE PROTECTION: THE CONTRACTOR SHALL CONSULT WITH THE CITY OF COLUMBIA FORESTRY AND BEAUTIFICATION DEPARTMENT REGARDING PROPER TREE PROTECTION.
- ROAD RESURFACING: ALL ROAD RESURFACING SHALL BE DONE AS SPECIFIED ON THE SCODOT ROADWAY PLANS AND IN ACCORDANCE TO SCODOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.



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CAUGMAN ROAD UTILITY RELOCATION	
NOTES – SEWER	
SCALE: 1" = 200' (11"x17") / 1" = 100' (22"x36")	
SHEET U-3S	

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	RICHLAND	P038202	S-37	U-4AS



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CAUGHMAN ROAD UTILITY RELOCATION	
Mead & Hunt	
SHEET INDEX – SEWER	
SCALE: 1" = 200' (11"x17") / 1" = 100' (22"x36")	SHEET U-4AS

2. BEDDING DEPTH SHALL BE 6" MINIMUM FOR PIPE DIAMETER LESS THAN 12".
3. PRIOR FOR REMOVAL OF UNSUITABLE MATERIAL SHALL COVER DEPTH OF BEDDING MATERIAL BELOW THE PIPE. THE ENGINEER SHALL DETERMINE IN THE FIELD THE AMOUNT OF UNSUITABLE MATERIAL REQUIRED TO REACH A SUITABLE FOUNDATION.
3. THE PIPE BEDDING SHALL BE CONSOLIDATED NO. 57 STONE IN 6" LAYERS TO THE BOTTOM OF THE PIPE, THEN BACKFILLED WITH HAND PLACED MATERIAL CONSOLIDATED IN 6" LAYERS TO THE SPRINGLINE OF THE PIPE.
4. FINAL BACKFILL MATERIAL
 - A. AREAS OUTSIDE THE SCOTD, COUNTY, AND CITY RIGHT-OF-WAYS: FINAL BACKFILL MATERIAL SHALL BE SUBJECT TO THE REQUIREMENTS OF AASHTO M145 GROUP CLASSIFICATION A1-A6 AND BE COMPACTED IN SUFFICIENT DEPTHS TO MEET A MINIMUM COMPACTION OF 85% STANDARD PROCTOR WITH AN ALLOWABLE $\pm 5\%$ OF OPTIMUM MOISTURE CONTENT.
 - B. AREAS INSIDE THE SCOTD, COUNTY, AND CITY RIGHT-OF-WAYS: FINAL BACKFILL MATERIAL SHALL MEET THE REQUIREMENTS OF AASHTO M145 GROUP CLASSIFICATION A1-A3 AND BE COMPACTED IN 6" LAYERS TO A MINIMUM COMPACTION OF 95% STANDARD PROCTOR WITH AN ALLOWABLE $\pm 5\%$ OF OPTIMUM MOISTURE CONTENT.
 - C. UNDER ROADWAY PAVEMENT (TO THREE FEET FROM EDGE OF PAVEMENT): FINAL BACKFILL MATERIAL SHALL BE SCOTD EXCAVATABLE (200 PSI MAX) FLOWABLE FILL FOR ALL SCOTD ROADWAYS.
 - D. UNDER DRIVEWAYS: FINAL BACKFILL MATERIAL SHALL MEET REQUIREMENTS OF AASHTO M14 GROUP CLASSIFICATION A1-A3 AND BE COMPACTED IN 6" LAYERS TO A MINIMUM COMPACTION OF 98% STANDARD PROCTOR WITH AN ALLOWABLE $\pm 5\%$ OF OPTIMUM MOISTURE CONTENT.
 - E. USE OF NATIVE MATERIAL: NATIVE MATERIAL MAY BE USED IN FINAL BACKFILL ONLY WHEN APPROVED BY THE ENGINEER.

1. FOR SEPTIC TANK PHASE-OUT PROJECTS, A SEWER SERVICE LATERAL MARKER IS REQUIRED FOR ALL LATERALS WHICH ARE "NOT IN USE". SEWER SERVICE LATERAL MARKER SHALL BE, A LANDSCAPE TIMBER OR 3x3 MIN. P.T. POST (TOP PAINTED GREEN) SHALL BE INSTALLED TO MARK THE LOCATION OF THE 6" PLUG.
2. THE MINIMUM SIZE OF ALL HOUSE LATERALS SHALL BE 6 INCHES. THE MAXIMUM LENGTH OF A HOUSE LATERAL SHALL BE 60 FEET (LENGTH BETWEEN SEWER MAIN TO CUSTOMERS PROPERTY LINE).
3. ALL SEWER SERVICE LATERAL PIPE AND FITTINGS (INCLUDING THE TEE-WYE FITTING) WITH A "DEPTH OF CUT" EQUAL OR GREATER THAN 12 FEET, SHALL BE DIP. PRESSURE CLASS 350, LINED IN ACCORDANCE WITH THE SPECIFICATIONS.
4. THE SEWER SERVICE LATERAL SHALL BE CONSTRUCTED AT A DEPTH TO ALLOW A GRAVITY CONNECTION BY THE CUSTOMER, WHERE POSSIBLE (CONTINGENT UPON MEETING THE CUSTOMER'S ON-SITE CONDITIONS AND LOCAL CONSTRUCTION STANDARDS). A LATERAL REQUIRING MORE THAN 60" OF COVER MUST BE APPROVED, PRIOR TO CONSTRUCTION, BY THE ENGINEER.
5. CONNECTION TO EXISTING YARD PIPING (TO BE LOCATED PRIOR TO INSTALLING THE TEE BRANCH) SHALL BE MADE WITH A FLEXIBLE ADAPTER COUPLING (FERRO OR EQUAL).

1. SEE SPECIFICATIONS FOR MANHOLE RING AND COVER.
2. SEAL ALL EXTERNAL JOINTS WITH MASTIC SEALANT. SEE SPECIFICATIONS.

1. FOR SEPTIC TANK PNE-~~NOT~~ OUT PROJECTS, A SEWER SERVICE LATERAL MARKER IS REQUIRED FOR ALL LATERALS WHICH ARE "NOT IN USE". SEWER SERVICE LATERAL MARKER SHALL BE, A LANDSCAPE MARKER 3.53 MIN. DIA. P.T. POST (TOP PAINTED GREEN) SHALL BE INSTALLED TO MARK THE LOCATION OF THE 6" PLUG.
2. THE MINIMUM SIZE OF ALL HOUSE LATERALS SHALL BE 6 INCHES THE MAXIMUM LENGTH OF A HOUSE LATERAL SHALL BE 60 FEET (LENGTH BETWEEN SEWER MAIN TO CUSTOMER'S PROPERTY LINE).
3. ALL SEWER SERVICE LATERAL PIPE AND FITTINGS (INCLUDING THE TEE-WYE FITTING) WITH A "DEPTH OF CUT" EQUAL OR GREATER THAN 12 FEET, SHALL BE DIP, PRESSURE CLASS 350, LINED IN ACCORDANCE WITH THE SPECIFICATIONS.

1. ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS INDICATED ON THE ABOVE SCHEDULE AT A MINIMUM.
2. THE RESTRAINED LENGTHS ARE CALCULATED USING THE EBAA RESTRAINED LENGTH CALCULATOR. ALL JOINTS WITHIN THE CALCULATED LENGTH MUST BE RESTRAINED. THE RESULTS ARE BASED ON THE FOLLOWING CONDITIONS:
 - SOIL TYPE: SM (UCS CLASSIFICATION)
 - TEST PRESSURE: 150 PSI
 - SAFETY FACTOR: 1.5
 - TRENCH TYPE: 5
 - DEPTH OF BURY: 3 FT
3. PVC TO TAP DISINTEGRATIONS, USE PVC RESTRAINED JOINT LENGTHS.
4. WHEN TAPPING AN EXISTING MAIN, NEW MAIN SHALL BE RESTRAINED 72 FEET FROM TAP.
5. ALL FITTINGS TO BE DUCTILE IRON, MECHANICAL JOINT.

1. TROWEL SHAPE INVERTS TO BE UNIFORM AND SMOOTH
2. ARROWS INDICATE DIRECTION OF SLOPE.

SHEET U-4BS

FED. ROAD DIST. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	RICHLAND	PO37535	S-404	U-6S

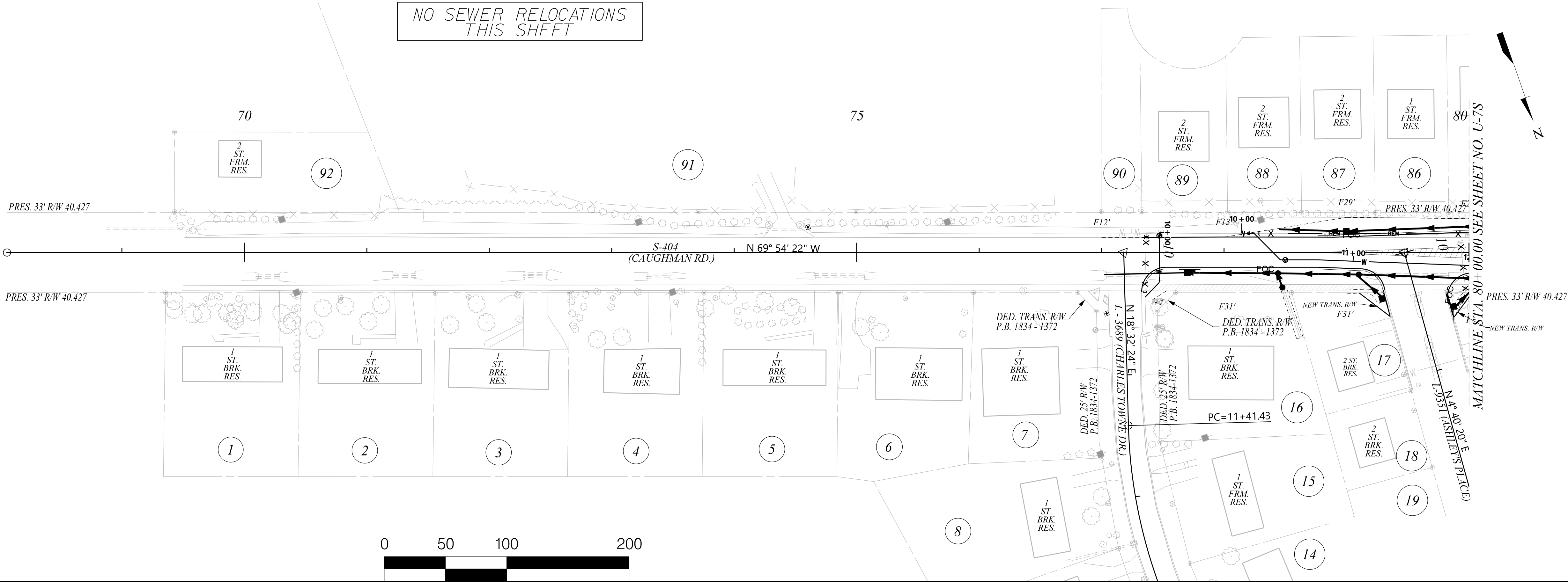
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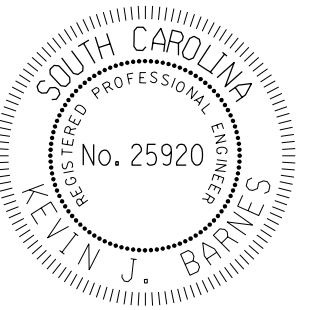
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GRADES CHECKED
B.A.'S NOTED
STRUCTURE NOTATIONS CHECKED



NO SEWER RELOCATIONS
THIS SHEET



**Mead
& Hunt**

PLAN /PROFILE SHEET

SCALE HORIZONTAL: 1"=100' (11"x17")/1"=50' (22"x36")
SCALE VERTICAL: 1"=10' (11"x17")/1"=5' (22"x36")

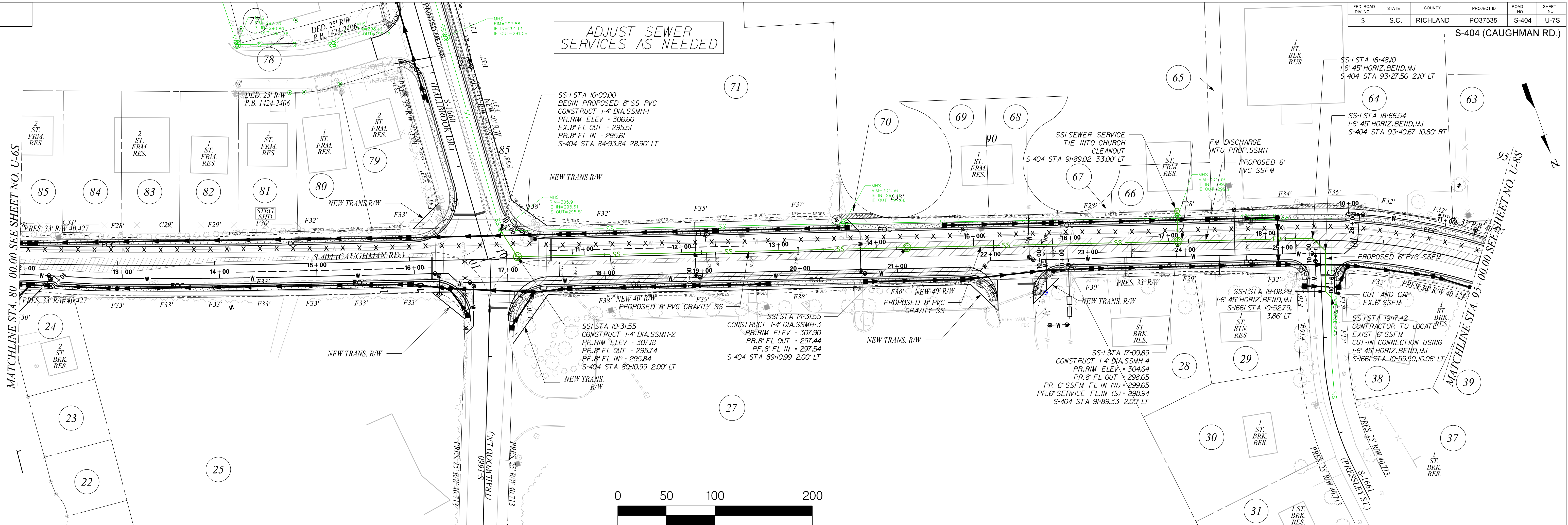
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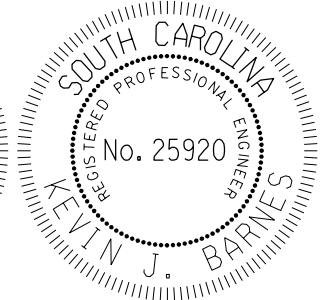
FED. ROAD DIST. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	RICHLAND	PO37535	S-404	U-7S

S-404 (CAUGHMAN RD.)



SS-1 SEWER SERVICE PROFILE

SS-1 PROFILE



Mead & Hunt

PLAN / PROFILE SHEET

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SCALE VERTICAL: 1"=10' (11"x17")/1"=5' (22"x36")

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	RICHLAND	PO37535	S-404	U-8S

S-404 (CAUGHMAN RD.)

