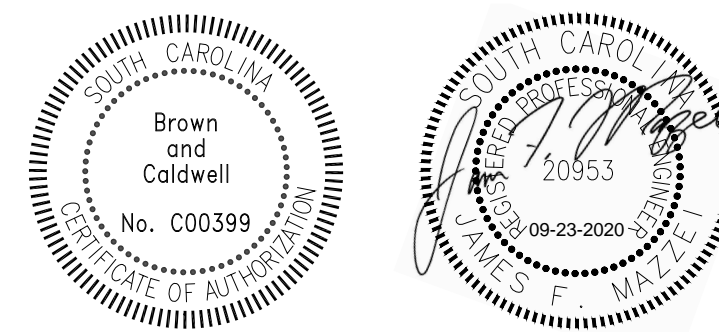


# LOWER SALUDA RELIEF SEWER AND MAJOR PIPE REHABILITATION

## SS7428



**100% BID DOCUMENTS  
SEPTEMBER 2020**

PREPARED BY:

**Brown AND Caldwell**

*Environmental Engineering and Consulting*  
250 Berryhill Road, Suite 104, Columbia, SC 29210 803-873-9701



\*\*\*\*\*UTILITY WARNING\*\*\*\*\*  
THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE ENGINEER/SURVEYOR MAKES NO GAURANTEEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER/SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE ENGINEER/SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

MAYOR

**STEPHEN K. BENJAMIN**

CITY COUNCIL

**SAM DAVIS**

**TAMEIKA I. DEVINE**

**HOWARD E. DUVALL, JR.**

**EDWARD H. MCDOWELL, JR.**

**DANIEL J. RICKENMANN**

**WILL BRENNAN**

CITY MANAGER

**TERESA B. WILSON**

ASSISTANT CITY MANAGER OF COLUMBIA WATER

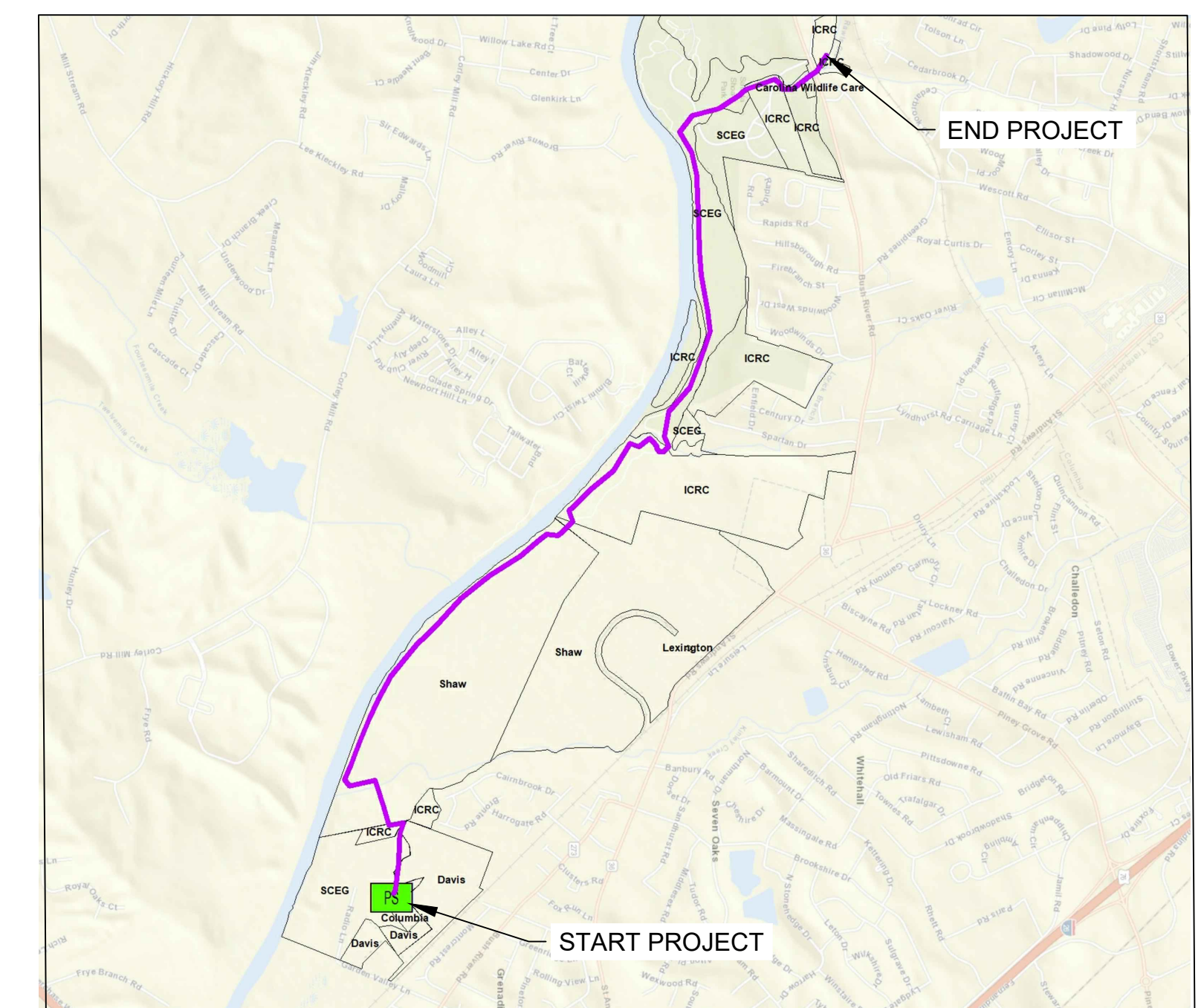
**CLINT SHEALY, P.E.**

DIRECTOR OF UTILITY OPERATIONS

**JOSEPH D. JACO, P.E.**

DIRECTOR OF ENGINEERING

**DANA R. HIGGINS, P.E.**

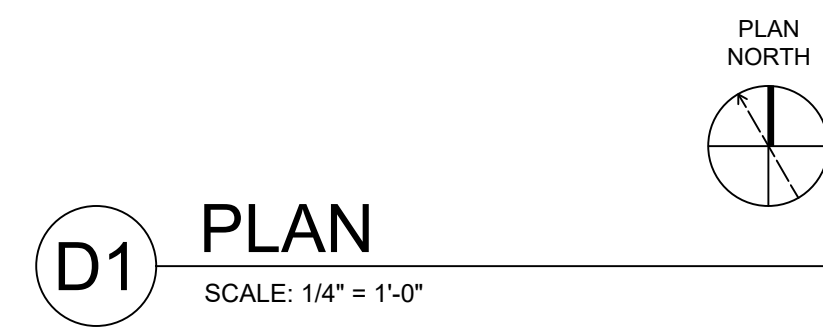


LOCATION MAP  
NTS

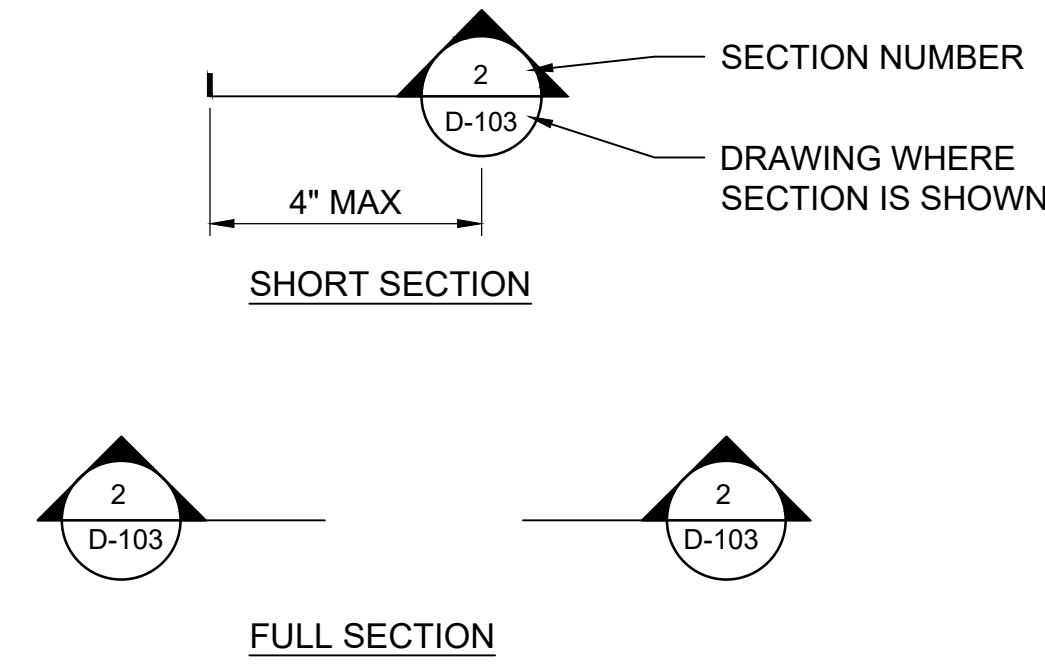


CROSS REFERENCING SYSTEM

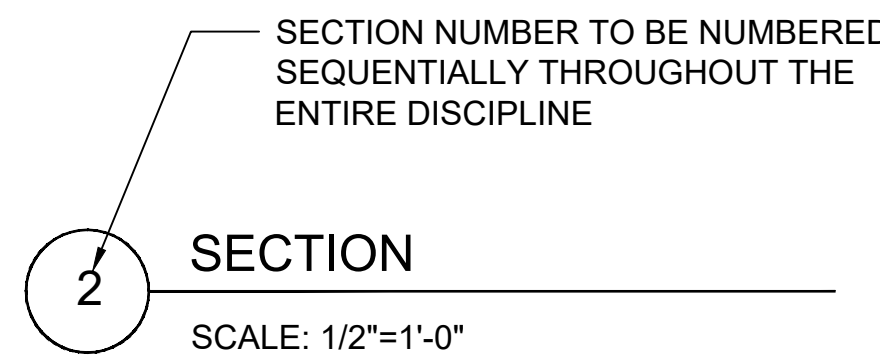
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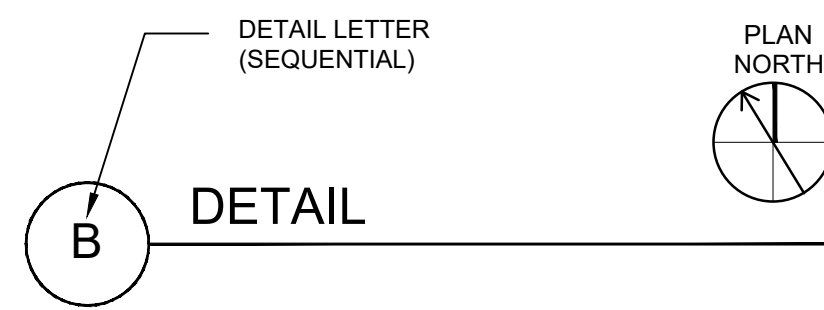
2. SECTION CUTS:



3. SECTIONS TITLES:

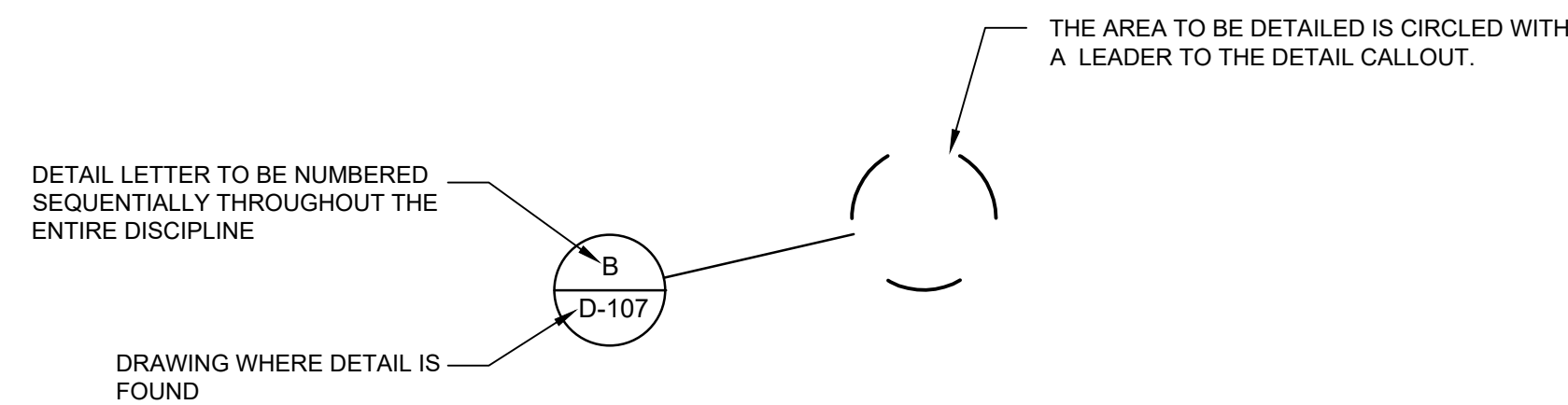


4. DETAIL TITLES:



5. DETAIL CALLOUT:

A. BY CALLOUT

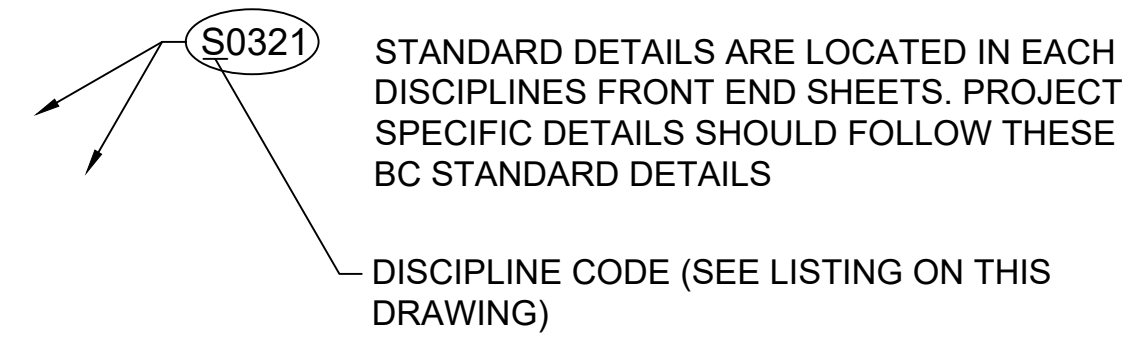


B. BY NOTE: "SEE DETAIL BID-105"

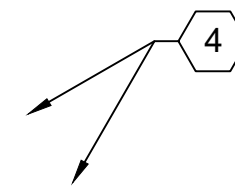
- B IS DETAIL REFERENCE LETTER
- D-105 IS DRAWING WHERE DETAIL IS SHOWN

CROSS REFERENCING SYSTEM (CONTINUED)

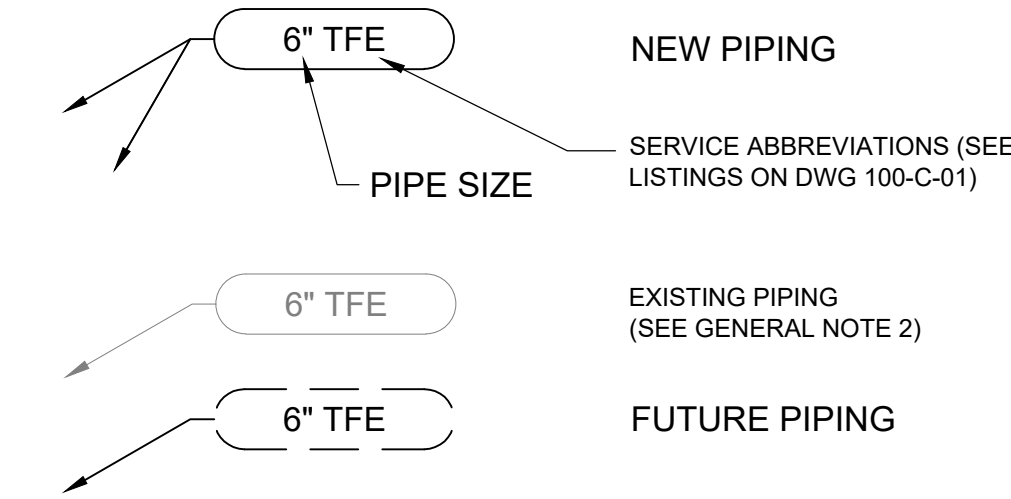
6. STANDARD DETAILS REFERENCE:



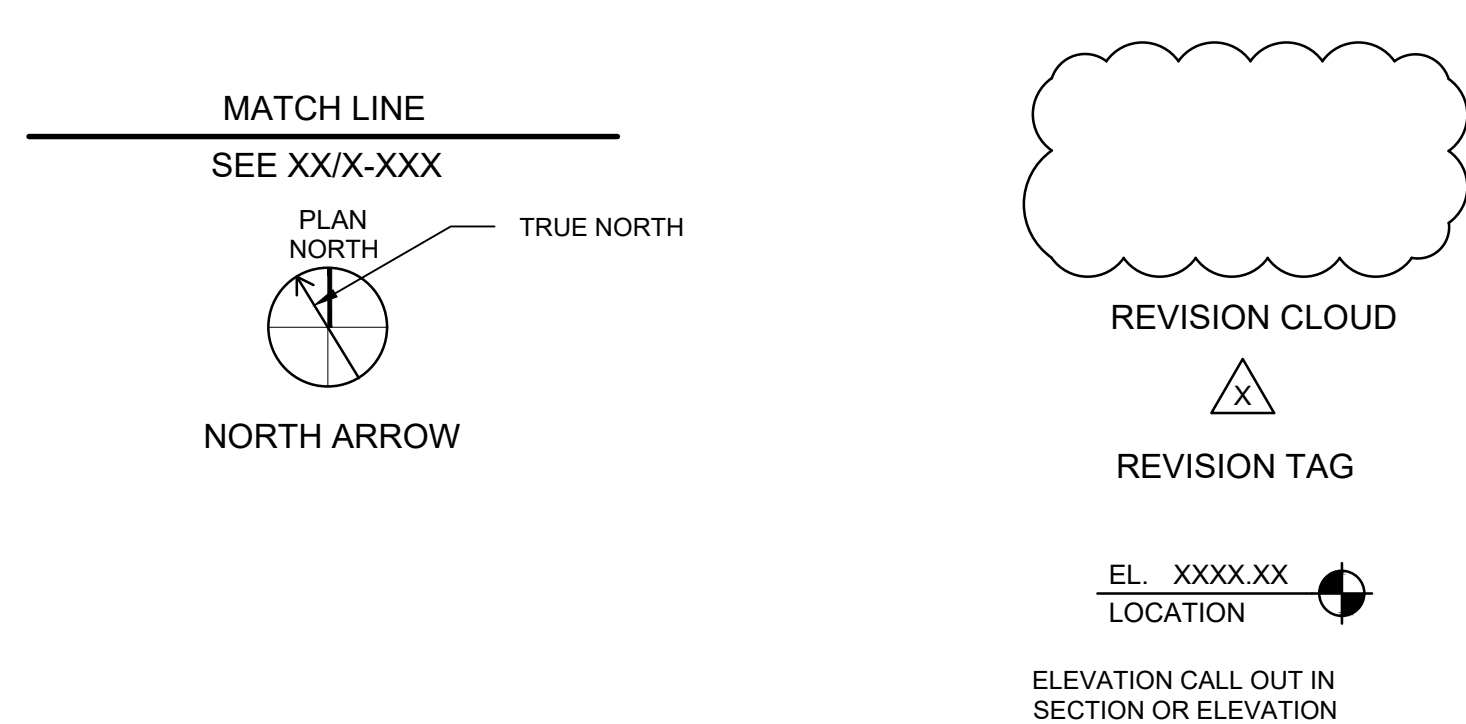
7. KEYNOTES:



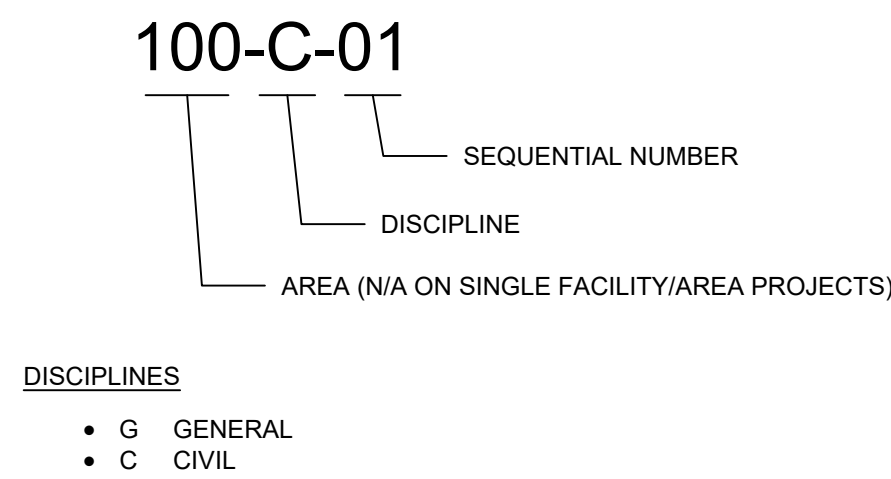
PIPING IDENTIFICATION SYSTEM



MISCELLANEOUS



DRAWING NUMBERING SYSTEM



GENERAL NOTES

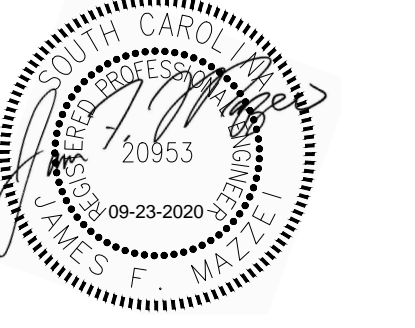
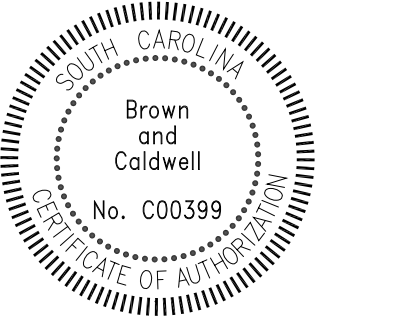
- THE NOTE IN THE TITLEBLOCK OF THIS DRAWING WHICH READS "TWO INCHES AT FULL SCALE" APPEARS ON DRAWINGS FOR IDENTIFICATION OF SCALE DISTORTIONS ON HALF SIZE DRAWINGS AND DRAWING REPRODUCTIONS. IT SHALL MEAN THAT THE DRAWING IS FULL SIZE AND THE DRAWING SCALES ACCURATE WHEN THE LENGTH OF THIS LINE IS TWO INCHES. IF THE LENGTH IS OTHER THAN TWO INCHES, DRAWING SCALES MUST BE ADJUSTED ACCORDINGLY.
- EXISTING PIPING IS DESIGNATED BY SERVICE RATHER THAN MATERIAL TYPE. MATERIAL TYPES, IF KNOWN, APPEAR OUTSIDE THE PIPING CALL OUT BUBBLE, AND MAY NOT BE THE SAME MATERIAL TYPES SPECIFIED FOR NEW PIPING.
- ABBREVIATIONS USED IN THIS CONTRACT DOCUMENT CONFORM TO ANSI Y1.1, UNLESS NOTED OTHERWISE ON DRAWINGS. SEE SHEET 000-C-01.
- ALL STANDARD DETAILS APPLY TO ALL THE CONTRACTORS WORK WHETHER SPECIFICALLY REFERENCED OR NOT.
- SEE FRONT END SHEETS FOR EACH DISCIPLINES STANDARD SYMBOLS, ETC.
- SEE ADDITIONAL GENERAL NOTES THROUGHOUT DRAWING SET.

SHEET INDEX

152166 - LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION		
SHEET INDEX		
SHEET NUMBER	DRAWING NUMBER	DRAWING TITLE
<b>GENERAL</b>		
1	000-G-00	COVER
2	000-G-01	INDEX OF DRAWINGS, GENERAL NOTES, AND REFERENCING
<b>CIVIL</b>		
3	000-C-01	GENERAL NOTES, SYMBOLS AND ABBREVIATIONS
4	000-C-02	CIVIL DETAILS 1
5	000-C-03	CIVIL DETAILS 2
6	000-C-04	CIVIL DETAILS 3
7	000-C-05	CIVIL DETAILS 4
8	000-C-06	STREAM CROSSING DETAILS 1
9	000-C-07	STREAM CROSSING DETAILS 2
10	000-C-08	EROSION & SEDIMENT CONTROL LEGEND AND NOTES
11	000-C-09	EROSION & SEDIMENT CONTROL DETAILS 1
12	000-C-10	EROSION & SEDIMENT CONTROL DETAILS 2
13	000-C-11	OVERALL LAYOUT, EXISTING MANHOLE DATA & CONSTRUCTION SQUENCE
14	000-C-12	SALUDA RIVER PUMP STATION SITE PLAN
15	100-C-01	PLAN AND PROFILE STA. 0+00 TO STA. 9+00
16	100-C-02	PLAN AND PROFILE STA. 9+00 TO STA 18+00
17	100-C-03	PLAN AND PROFILE STA. 18+00 TO STA. 27+00
18	100-C-04	PLAN AND PROFILE STA. 27+00 TO STA. 36+00
19	100-C-05	PLAN AND PROFILE STA. 36+00 TO STA. 45+00
20	100-C-06	PLAN AND PROFILE STA. 45+00 TO STA. 54+00
21	100-C-07	PLAN AND PROFILE STA. 54+00 TO STA. 63+00
22	100-C-08	PLAN AND PROFILE STA. 63+00 TO STA. 72+00
23	100-C-09	PLAN AND PROFILE STA. 72+00 TO STA. 81+00
24	100-C-10	PLAN AND PROFILE STA. 81+00 TO STA. 90+00
25	100-C-11	PLAN AND PROFILE STA. 90+00 TO STA. 99+00
26	100-C-12	PLAN AND PROFILE STA. 99+00 TO STA. 107+50
27	100-C-13	PLAN AND PROFILE STA. 107+50 TO STA. 117+00
28	100-C-14	PLAN AND PROFILE STA. 117+00 TO STA. 126+00
29	100-C-15	PLAN AND PROFILE STA. 126+00 TO STA. 135+00
30	100-C-16	PLAN AND PROFILE STA. 135+00 TO STA. 144+00
31	100-C-17	PLAN AND PROFILE STA. 144+00 TO STA. 153+00
32	100-C-18	PLAN AND PROFILE STA. 153+00 TO STA. 162+00
33	100-C-19	PLAN AND PROFILE STA. 162+00 TO STA. 171+00
34	100-C-20	PLAN AND PROFILE STA. 171+00 TO STA. 180+00
35	100-C-21	PLAN AND PROFILE STA. 180+00 TO STA. 189+00
36	100-C-22	PLAN AND PROFILE STA. 189+00 TO STA. 197+58
37	100-C-23	MISCELLANEOUS PROFILES
38	200-C-01	EASEMENTS, ESC PLAN STA. 0+00 TO STA. 18+00
39	200-C-02	EASEMENTS, ESC PLAN STA. 18+00 TO STA. 36+00
40	200-C-03	EASEMENTS, ESC PLAN STA. 36+00 TO STA. 54+00
41	200-C-04	EASEMENTS, ESC PLAN STA. 54+00 TO STA. 72+00
42	200-C-05	EASEMENTS, ESC PLAN STA. 72+00 TO STA. 90+00
43	200-C-06	EASEMENTS, ESC PLAN STA. 90+00 TO STA. 107+50
44	200-C-07	EASEMENTS, ESC PLAN STA. 107+50 TO STA. 126+00
45	200-C-08	EASEMENTS, ESC PLAN STA. 126+00 TO STA. 144+00
46	200-C-09	EASEMENTS, ESC PLAN STA. 144+00 TO STA. 162+00
47	200-C-10	EASEMENTS, ESC PLAN STA. 162+00 TO STA. 180+00
48	200-C-11	EASEMENTS, ESC PLAN STA. 180+00 TO STA. 197+58
49	300-C-01	SEWER BYPASS PLAN 1
50	300-C-02	SEWER BYPASS PLAN 2
51	300-C-03	SEWER BYPASS PLAN 3
52	400-C-01	TRAIL CLOSURE PLAN 1
53	400-C-02	TRAIL CLOSURE PLAN 2
54	400-C-03	TRAIL CLOSURE PLAN 3
55	400-C-04	TRAIL CLOSURE PLAN 4



COLUMBIA, SOUTH CAROLINA



LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: J. Mazzei  
 DRAWN: A. Jumper  
 CHECKED: C. Lucie  
 CHECKED: J. Mazzei  
 APPROVED: J. Mazzei

FILENAME: 000-G-001.DWG  
 BC PROJECT NUMBER: 152166  
 CLIENT PROJECT NUMBER (CITY CIP#): SS7428

GENERAL

INDEX OF DRAWINGS, GENERAL NOTES & REFERENCING

DRAWING NUMBER  
**000-G-01**

SHEET NUMBER  
 2 OF 55



Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\CAD\2-SHEETS\CIVIL FILENAME: 000-C-01.DWG PLOT DATE: 10/29/2019 9:55 AM CAD USER: BETSY DARNELL

GENERAL NOTES	
1.	CONTRACTOR SHALL PROVIDE SHORING, SHEETING AND BRACING, AS NEEDED, IN CONFORMANCE WITH THE APPLICABLE RULES AND REGULATIONS PROMULGATED BY THE DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), INCLUDING OSHA MANUAL 2226, "EXCAVATIONS", WHEN REQUIRED BY RULES AND REGULATIONS. THE CONTRACTOR SHALL PROVIDE DESIGNED SHORING SYSTEMS CERTIFICATIONS APPROVED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF SOUTH CAROLINA TO THE OWNER AND ENGINEER FOR REFERENCE ONLY.
2.	CONTRACTOR SHALL COMPLY WITH THE GUIDELINES OF THE SCDHEC SOUTH CAROLINA STORM WATER MANAGEMENT AND SEDIMENT AND EROSION CONTROL HANDBOOK FOR LAND DISTURBANCE ACTIVITIES DURING THE ENTIRE CONSTRUCTION PERIOD. SEDIMENT AND EROSION CONTROL PRACTICES SHALL INCLUDE, BUT NOT BE LIMITED TO, SILT FENCES, BERMS, SEDIMENT TUBES, ETC. AS NEEDED OR AS DIRECTED BY THE ENGINEER.
3.	RESTORE ALL AREAS DISTURBED BY CONTRACTOR OPERATIONS TO ORIGINAL CONTOURS, UNLESS OTHERWISE NOTED.
4.	AREAS DISTURBED BY CONSTRUCTION SHALL BE GRASSED IN ACCORDANCE WITH THE APPROVED SEEDING SCHEDULE ON SHEET 000-C-08, UNLESS OTHERWISE NOTED.
5.	DRAINAGE PIPES DESTROYED DURING CONSTRUCTION ARE TO BE REPLACED WITH NEW CLASS III - WALL B REINFORCED CONCRETE PIPE COMPLYING WITH ASTM C76. SIZE AND INVERTS OF NEW PIPES SHALL MATCH EXISTING.
6.	NOTE THE PROXIMITY OF POWER POLES, GUY WIRES AND TRANSFORMER BOXES IN RELATIONSHIP TO THE PROJECT AND PROTECT DURING CONSTRUCTION.
7.	UTILITIES SHOWN ARE APPROXIMATE LOCATIONS DETERMINED FROM BEST AVAILABLE INFORMATION AND SITE SURVEYS. HOWEVER, PRIOR TO BEGINNING ANY EXCAVATION, CALL PALMETTO UTILITY PROTECTION SERVICE (PUPS) AT 1-888-721-7877 OR 811 TO LOCATE ALL EXISTING UTILITIES. TO LOCATE EXISTING WATER AND SEWER FACILITIES, CONTACT COLUMBIA WATER OFFICES.
8.	REPAIR OR REPLACE EXISTING FEATURES DISTURBED OR DESTROYED DURING CONTRACTOR ACTIVITIES OF THIS PROJECT AT NO ADDITIONAL COST TO THE OWNER. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO, FENCES, IRRIGATION SYSTEMS, SHRUBS, SMALL TREES, LANDSCAPE MATERIALS, CONCRETE CURBING AND SIDEWALKS.
9.	THE CONTRACTOR SHALL RESTORE ROAD RIGHTS OF WAY TO EXISTING OR BETTER CONDITION. ALL DITCHES AND SWALES SHALL BE RESTORED PER SCDOT STANDARD SPECIFICATIONS CONCERNING SLOPE AND GRADE. THE CONTRACTOR SHALL DETERMINE GRADES ON EXISTING STORM CULVERTS PRIOR TO REMOVAL TO ENSURE PROPER REPLACEMENT AT EXISTING GRADES AND ELEVATIONS.
10.	THE CONTRACTOR SHALL RESTORE ALL SIDEWALKS, DRIVEWAYS AND CURBING DAMAGED OR REMOVED DURING CONTRACTOR ACTIVITIES AND SHALL REPLACE IN ACCORDANCE WITH SCDOT STANDARDS. DRIVEWAYS AND SIDEWALKS SHALL BE SAW CUT ALONG THE RIGHT-OF-WAY LINE OR NEAREST JOINT AND REMOVED AND REPLACED TO THE EDGE OF THE STREET.
11.	CONTRACTOR SHALL PRESERVE AND PROTECT FROM INJURY ALL TREES NOT REQUIRED TO BE REMOVED. PROVIDE BARRICADES OR OTHER TYPES OF PROTECTION NECESSARY TO PREVENT UNNECESSARY DAMAGE TO TREES 12" IN DIAMETER OR LARGER. ORNAMENTAL SHRUBBERY AND TREE BRANCHES SHALL BE TEMPORARILY TIED BACK, WHERE APPROPRIATE, TO MINIMIZE DAMAGE. WHERE REMOVED OR DAMAGED, THEY WILL BE REPLACED IN LIKE KIND.
12.	MAINTAIN A HORIZONTAL SEPARATION OF 10-FEET AND VERTICAL SEPARATION OF 18-INCHES FROM OR BETWEEN GRAVITY SEWER AND WATER MAINS AND IRRIGATION LINES. SEE DETAIL 8 ON DRAWING 000-C-03.
13.	CONTRACTOR SHALL COORDINATE ALL CONNECTIONS TO THE EXISTING SYSTEM WITH THE CITY.
14.	ALL TREES, SHRUBBERY, SPOILS, ROCK, ETC. THAT ARE REMOVED/EXCAVATED FOR CONSTRUCTION OF THE PROPOSED FACILITIES, AND NOT INCORPORATED INTO THE WORK (i.e. BACKFILL) SHALL BE HAULED OFF SITE AND DISPOSED OF BY THE CONTRACTOR.
15.	ENSURE THAT ALL CONDITIONS OF CITY OF COLUMBIA, SCDHEC PERMITS ARE MET INCLUDING BUT NOT LIMITED TO SCHEDULING.
16.	SEE ALL APPROVED SCDOT ENCROACHMENT PERMITS FOR MAINTENANCE OF TRAFFIC REQUIREMENTS AND DETAILS.

ABBREVIATIONS			
AC	ASPHALTIC CONCRETE	PL	PROPERTY LINE, PIPELINE, PLATE
ABN	ABANDONED	PP	POWER POLE
AR	AUGER REFUSAL	PV	PLUG VALVE,
ATT	AT&T TRANSMISSION	PVT	PAVEMENT
C	BEGINNING OF CURVE	Q	RATE OF FLOW
BF	BLIND FLANGE	R	RADIUS
BHP	BRAKE HORSEPOWER	RCP	REINFORCED CONCRETE PIPE
BFV	BUTTERFLY VALVE	SHT	SHEET
BT	BORE TERMINATION	SS	SANITARY SEWER
BV	BALL VALVE	S.S.	STAINLESS STEEL
CAB	DIRECT BURIAL CABLE	STM	STEAM
CF	CUBIC FEET	SSRV	SANITARY SEWER SERVICE
CF#	CITY FILE NUMBER	T/C	TOP OF CURB
CFH	CUBIC FEET PER HOUR	TYP	TYPICAL
CFR	CODE OF FEDERAL REGULATIONS	UFO	UNDERGROUND FIBER OPTIC CABLE
CL	CLEARANCE	UK	UNKNOWN
CNTL	CONTROL	UT	UTILITY POLE
CO	CLEANOUT	UTEL	UNDERGROUND TELEPHONE CABLE
CJ	CONSTRUCTION JOINT	V	VALVE, VOLTS, VENT
CONT	CONTINUED	WSTP	WATERSTOP
DB	DUCT BANK	WL	WATER LINE
DI	DUCTILE IRON	WT	WATERTIGHT
DWG	DRAWING		
EQ	ELEVATION		
EQ	EQUAL		
EQUIP	EQUIPMENT EQ		
EWEF	EACH WAY EACH FACE		
EXIST	EXISTING		
FH	FIRE HYDRANT		
FIN	FINISHED		
FLR	FLOOR		
FM	FORCE MAIN		
FO	FIBER OPTIC		
FPC	FLEXIBLE PIPE COUPLING		
GPD	GALLONS PER DAY		
GRT	GROUT		
GSP	GALVANIZED STEEL PIPE		
GV	GATE VALVE		
HOR	HORIZONTAL		
HYDT	HYDRANT		
INF	INFLUENT		
INTER	INTERMEDIATE		
INT	INTERIOR		
INV	INVERT		
LF	LINEAR FEET		
MGD	MILLION GALLONS PER DAY		
MH	MANHOLE		
MIE	MISC. INSTRUMENTATION EQUIPMENT		
MIN	MINIMUM, MINUTE		
MJ	MECHANICAL JOINT		
MME	MISC. MECHANICAL EQUIPMENT		
MOT	MAINTENANCE OF TRAFFIC		
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES		
OE	OVERHEAD ELECTRIC		
P	PUMP		
PAR	PARALLEL		

UTILITY DESIGNATION SYSTEMS	
	EVERGREEN TREE
	SHRUB
	DECIDUOUS TREE
	MAILBOX
	STREET SIGN
	MISCELLANEOUS SIGN
	WATER IRRIGATION SPRINKLER
	IRON PIN PLACED (5/8" REBAR)
	IRON PIN FOUND
	COMPUTED CORNER
	AIR CONDITIONING UNIT
	WATER SPIGOT
	IRRIGATION CONTROL VALVE
	ELECTRICAL TRANSFORMER
	SEWER CLEAN OUT (C.O.)
	SEWER MANHOLE
	CATCH BASIN
	DROP INLET
	STORM DRAIN MANHOLE
	GAS METER
	WATER METER
	GAS VALVE
	WATER VALVE
	NEW WATER VALVE
	FIRE HYDRANT
	NEW FIRE HYDRANT
	TELEPHONE PEDESTAL
	TELEPHONE BOX
	GUY WIRE
	LIGHT POLE
	POWER POLE
	GAS MAIN
	NUMBER OF PARKING SPACES (DOESN'T INCLUDE HANDICAP SPACES)
	HANDICAP PARKING SPACES
	CONC MON
	IPF #4 REBAR
	PK NAIL

SITE AND SURVEY NOTES, WARNINGS AND UTILITY CONTACTS	
<p><b>Survey Note:</b> Survey data was compiled from property information obtained through Lexington County GIS Departments and field data provided by Chao &amp; Associates, Columbia, SC. All drawings reside within the South Carolina State Plane Coordinate System with a datum of NAD83/NAVD88. Project controls and benchmarks shown throughout plan sheets.</p> <p><b>GeoTech Note:</b> Geotechnical information used in the preparation of Drawings and Specifications is based upon explorations and tests of subsurface conditions at the site by Terracon Consultants, Inc. and included in a report dated August 16, 2018, entitled: "Geotechnical Engineering Report: Lower Saluda Relief Sewer and Major Pipe Rehabilitation". The report contains "technical data" upon which the Contractor may rely. Bore locations shown on the plans are general in nature. Actual locations, if needed, should be coordinated with Terracon.</p> <p><b>*****UTILITY WARNING:*****</b> The underground utilities shown have been located from field survey information and existing drawings. The engineer/surveyor makes no guarantee that the underground utilities shown comprise all such utilities in the area, either in service or abandoned. The engineer/surveyor further does not warrant that the underground utilities shown are in the exact location indicated although he does certify that they are located as accurately as possible from the information available. The engineer/surveyor have not physically located the underground utilities.</p>	<p><b>COLUMBIA WATER</b> PHONE: 803-545-3400</p> <p><b>DOMINION ENERGY CAROLINA</b> CONTACT: JOHNNY HUGGINS (LAND AGENT) GAS TRANSMISSION PHONE: 803-888-3436 EMAIL: john.s.huggins@dominionenergy.com</p> <p><b>DOMINION ENERGY SOUTH CAROLINA</b> CONTACT: CHASE CLAYTON ELECTRIC TRANSMISSION ENGINEERING PHONE: 803-217-2069 EMAIL: chase.clayton@scanna.com</p> <p><b>SANTEE-COOPER</b> CONTACT: ALAN BOWEN (SUPERVISOR) RIGHT -OF-WAY MANAGEMENT PHONE: 843-761-8000 EMAIL: pabowen@santeecooper.com</p> <p><b>IRMO-CHAPIN RECREATION COMMISSION</b> CONTACT: JAY DOWNS OPERATIONS &amp; FACILITIES PHONE: 803-513-5687</p> <p><b>SHAW INDUSTRIES</b> CONTACT: LARRY JONES PLANT MAINTENANCE PHONE: 803-750-4537 EMAIL: larry.jones@shawinc.com</p>

SITE AND SURVEY CONTROL SYMBOLS	
	SURVEY CONTROL POINT W/NUMBER
	BORE LOCATION
	SURVEY BENCHMARK
	PERMANENT EASEMENT (WIDTH VARIES)
	TEMPORARY EASEMENT (WIDTH VARIES)
	EXISTING EASEMENT
	LIMITS OF CONSTRUCTION
	100 YEAR FLOOD PLAIN (APPROXIMATE)
	PROPERTY LINE

PIPELINE SYMBOLS	
	NEW SANITARY SEWER MANHOLE
	EXISTING SEWER MANHOLE
	EXISTING CROSSING UTILITY
	STEEL CASING
	SEWER PIPE & MANHOLE TO BE REHABILITATED
	SEWER TO BE PIPE BURST

UTILITY LINE AND DESIGNATIONS	
	NATURAL GAS LINE
	SANITARY SEWER LINE (MATERIAL UNKNOWN)
	WATER LINE
	FENCE
	OVERHEAD ELECTRIC
	UNDERGROUND TELEPHONE
	UNDERGROUND FIBER OPTIC LINE
	AT&T
	UNDERGROUND CABLE TV
	STORM PIPE
	UNDERGROUND ELECTRIC
	STEAM LINE (USC)
	UNKNOWN UTILITY

**Brown and Caldwell**

COLUMBIA, SOUTH CAROLINA

J. MAZZEI  
Professional Engineer  
No. C00399  
720953  
09-23-2020

**Columbia Water**  
Drinking Water • Wastewater • Stormwater

**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: J. Mazzei  
DRAWN: A. Jumper  
CHECKED: C. Lucie  
CHECKED: J. Mazzei  
APPROVED: J. Mazzei

FILENAME: 000-C-01.DWG  
BC PROJECT NUMBER: 152166  
CLIENT PROJECT NUMBER (CITY CIP#): SS7428

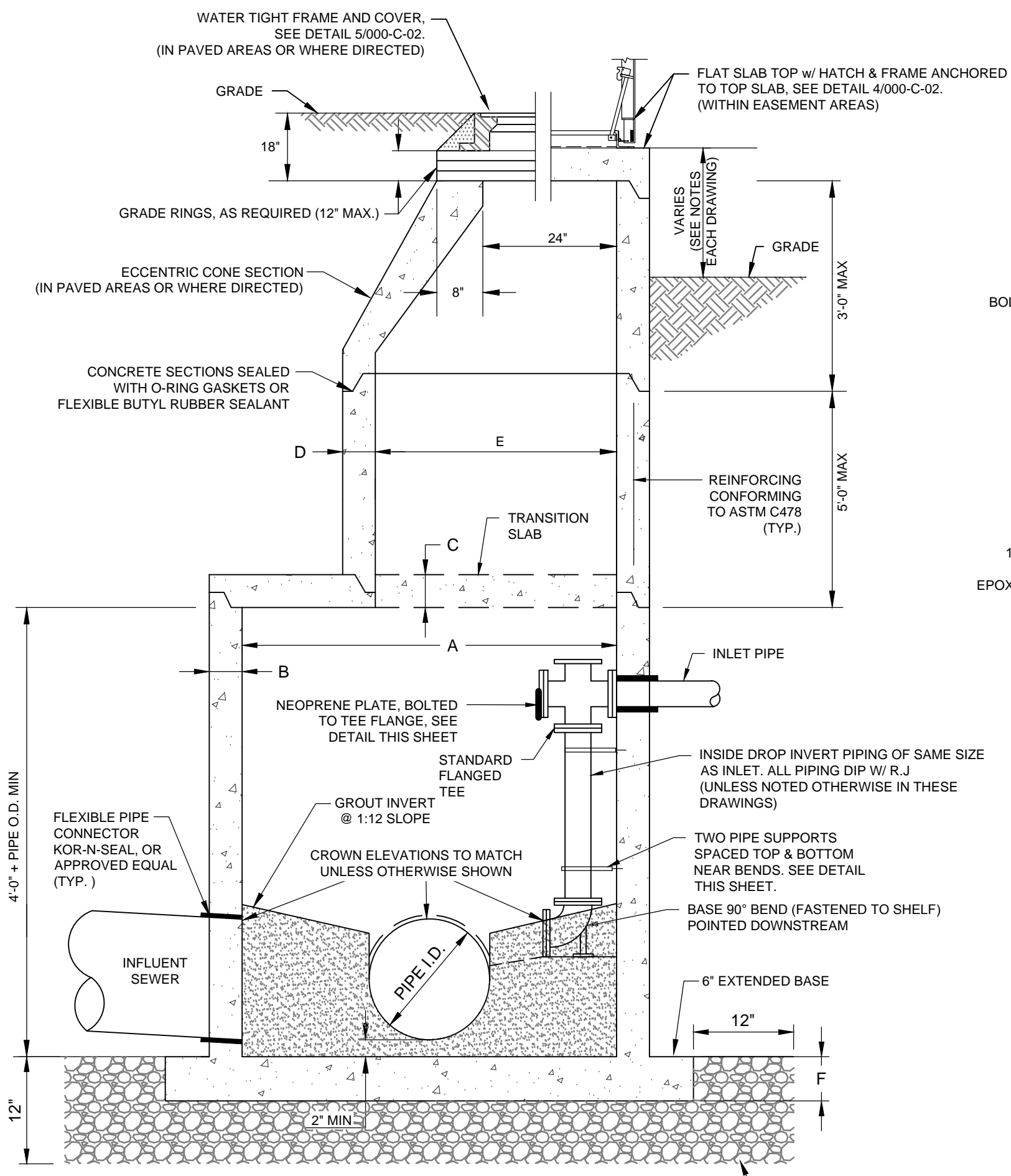
**CIVIL**

**GENERAL NOTES, SYMBOLS AND ABBREVIATIONS**

DRAWING NUMBER: **000-C-01**  
SHEET NUMBER: 3 OF 55

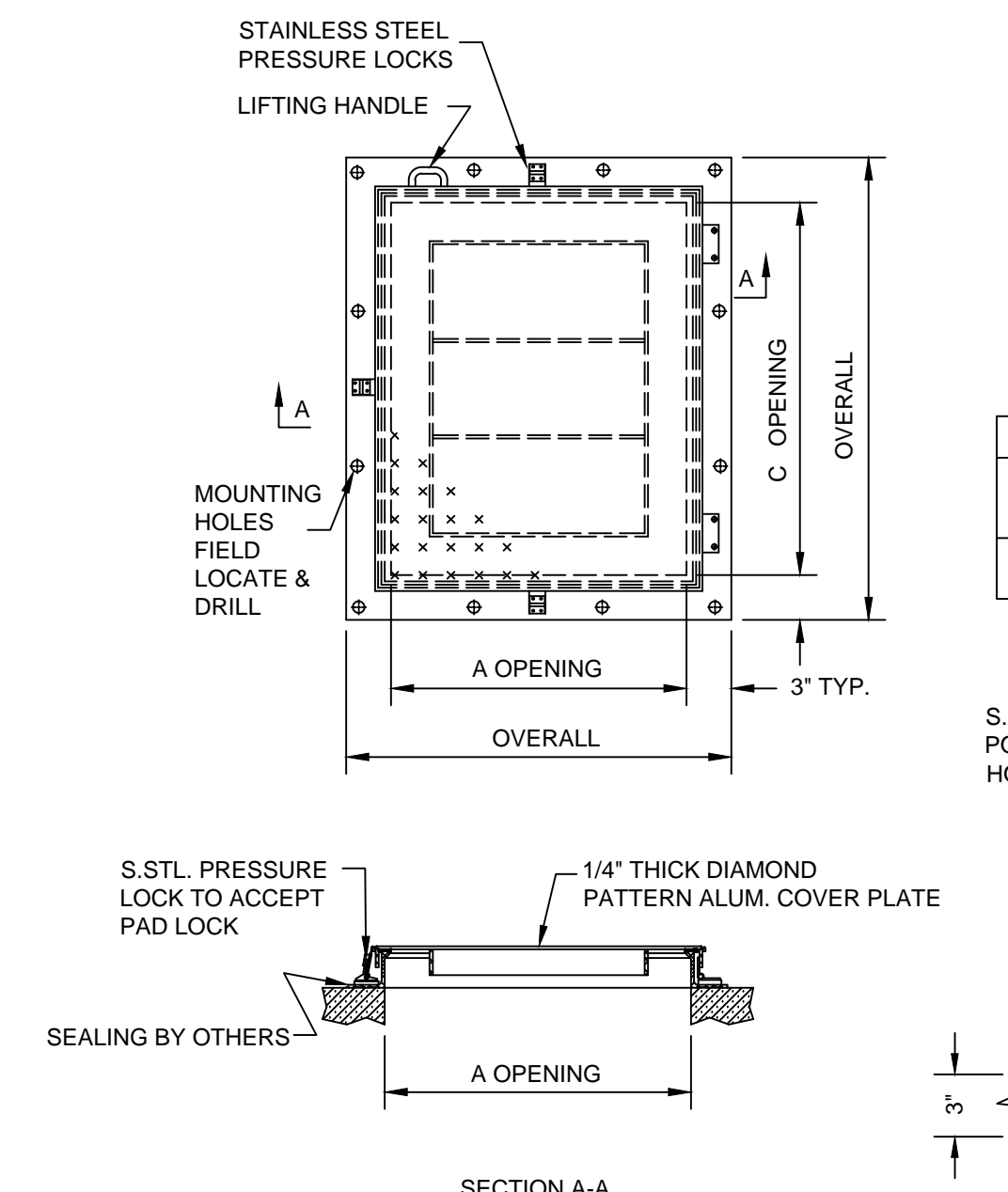


Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\CAD\2-SHEETS\CIVIL FILENAME: 000-C-02.DWG PLOT DATE: 11/6/2019 2:50 PM CAD USER: ANDY\_JUMPER

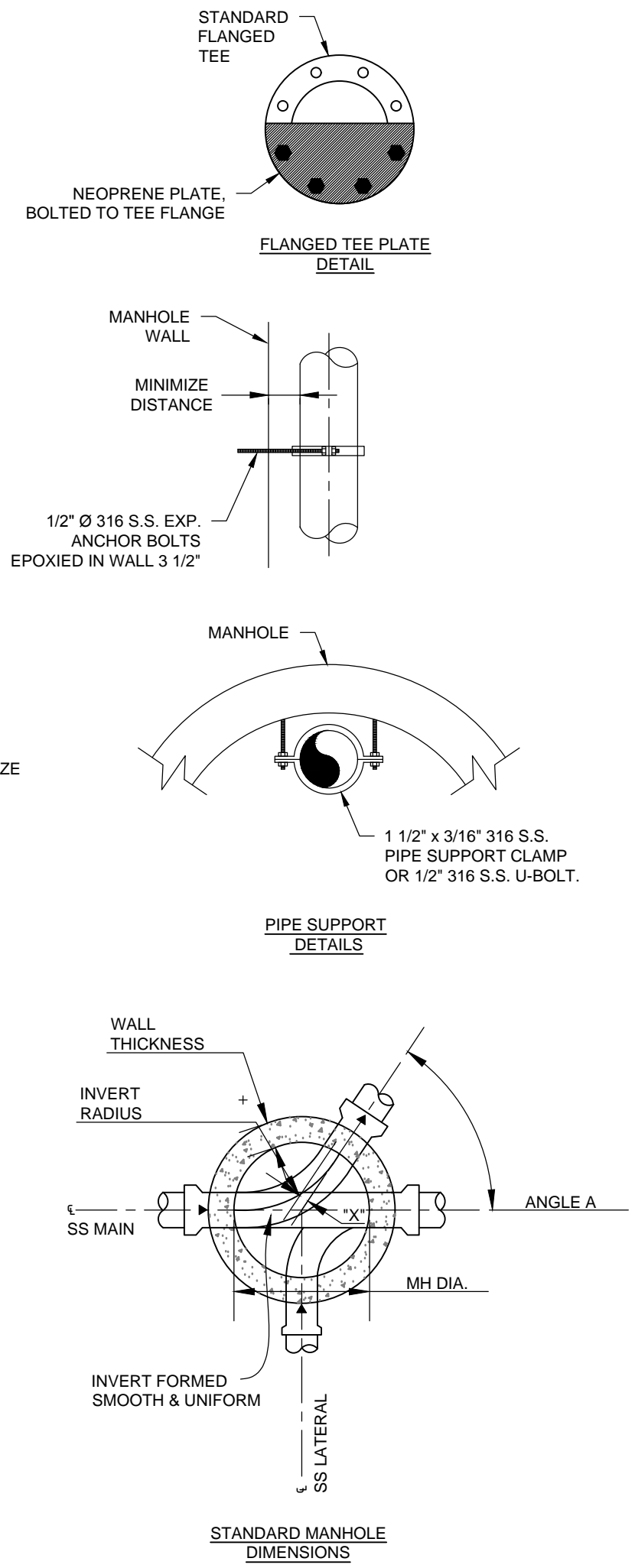


PIPE ID (IN)	ANGLE *	A (IN)	B (IN)	C (IN)	D (IN)	E (IN)	F (IN)
24	0 - 90	60	6	N/A	6	60	8
30	0 - 60	60	6	N/A	6	60	8
30	60 - 90	72	7		7	5	60
36	0 - 90	72	7		7	5	60
42	0 - 60	84	8		10	5	60
42	60 - 90	96	9		10	5	60

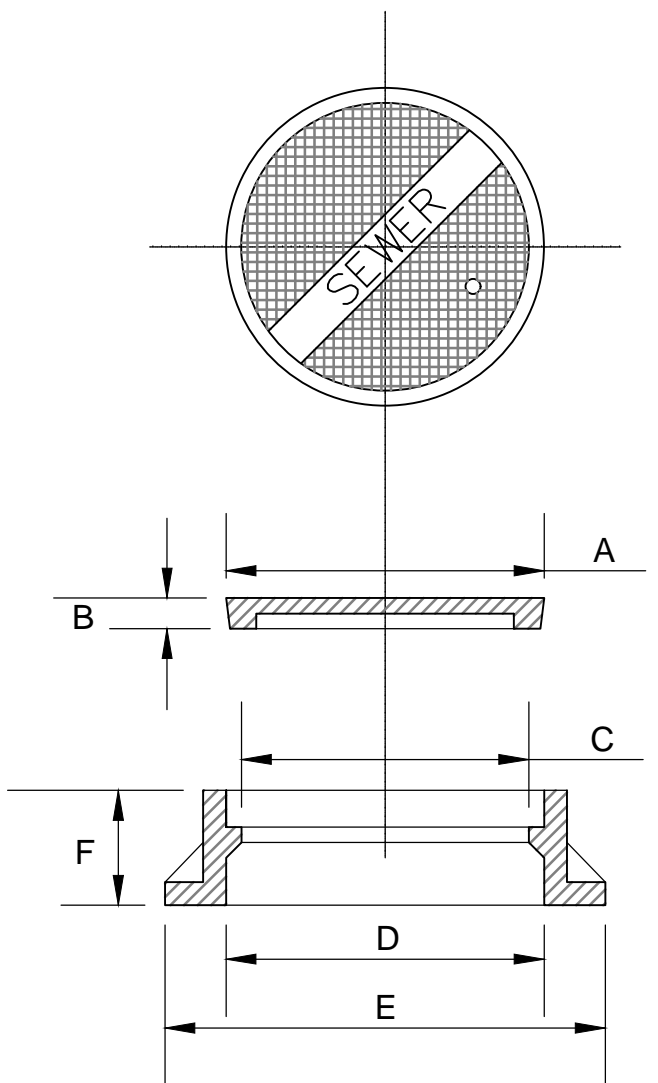
**1** PRECAST CONCRETE MANHOLE DETAIL  
SCALE: NONE



**4** MANHOLE HATCH DETAIL  
SCALE: NONE



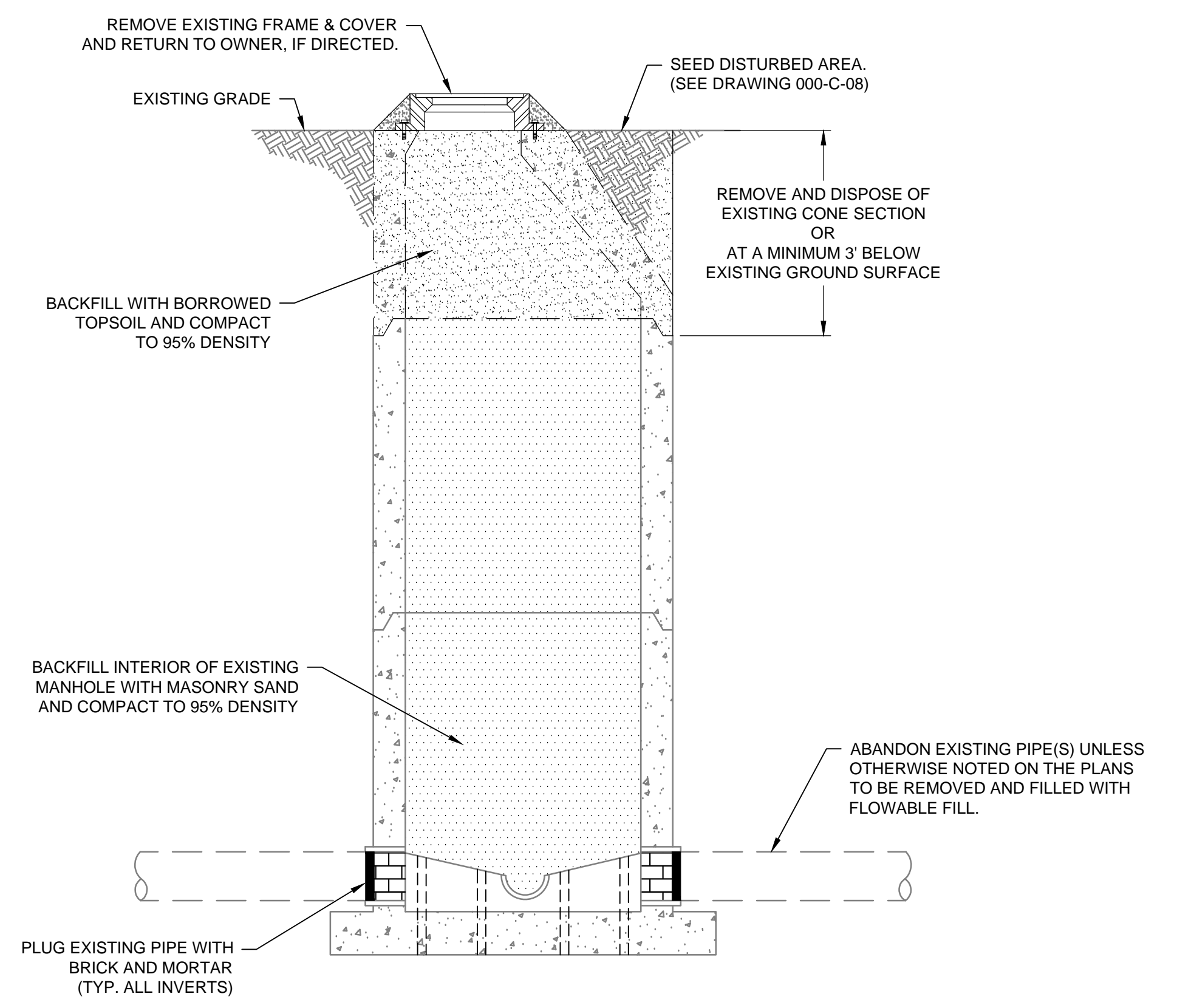
**2** FLEXIBLE PIPE CONNECTOR DETAIL  
SCALE: NONE



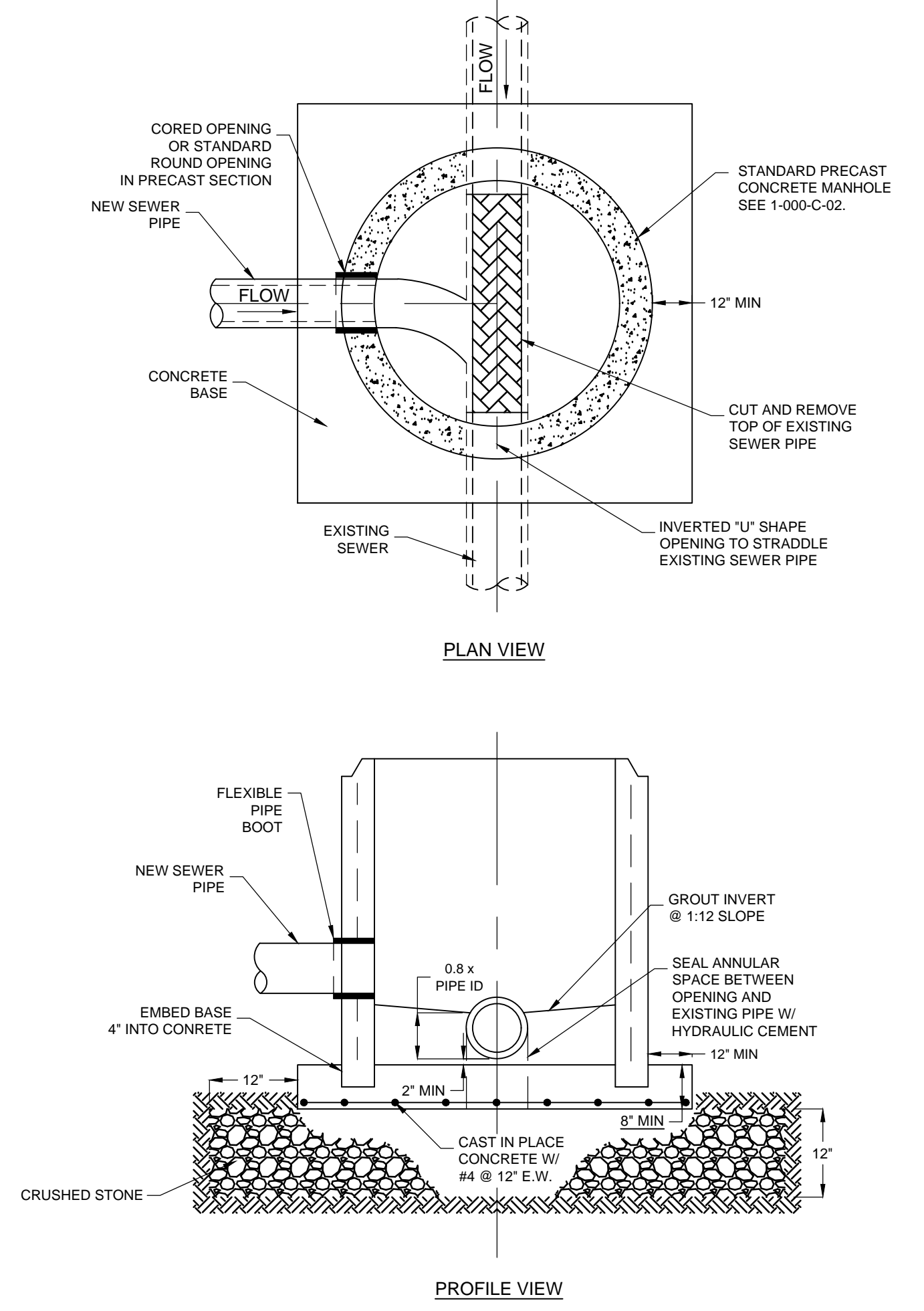
NOTE: MEET CITY OF COLUMBIA STANDARD SPECIFICATIONS FOR WATERTIGHT FRAME AND COVER.

FRAME & COVER DIMENSIONS		
DIMENSION	STANDARD	WATERTIGHT
A	23 1/2"	25 1/2"
B	1"	1 1/2"
C	22 1/2"	22 1/2"
D	25 1/2"	22 1/2"
E	33	32 1/2"
F	7 1/2"	6"

**5** WATERTIGHT MANHOLE FRAME & COVER DETAIL



**3** MANHOLE AND PIPE ABANDONMENT DETAIL  
SCALE: NONE



**6** MANHOLE BASE OVER EXISTING SEWER (DOGHOUSE) DETAIL  
SCALE: NONE



COLUMBIA, SOUTH CAROLINA



LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

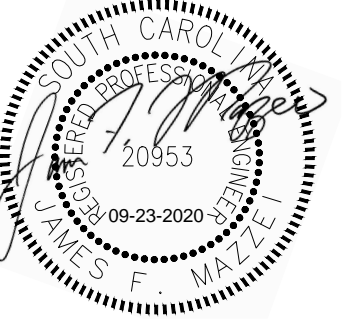
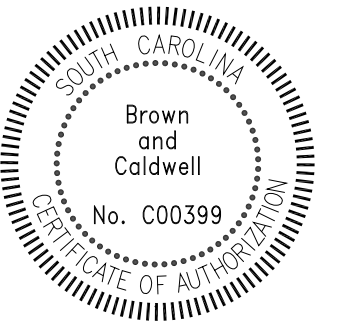
REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED: J. Mazzei  
DRAWN: A. Jumper  
CHECKED: C. Lucie  
CHECKED: J. Mazzei  
APPROVED: J. Mazzei  
FILENAME: 000-C-02.DWG  
BC PROJECT NUMBER

CIVIL  
CIVIL DETAILS 1

DRAWING NUMBER  
**000-C-02**  
SHEET NUMBER  
4 OF 55





**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

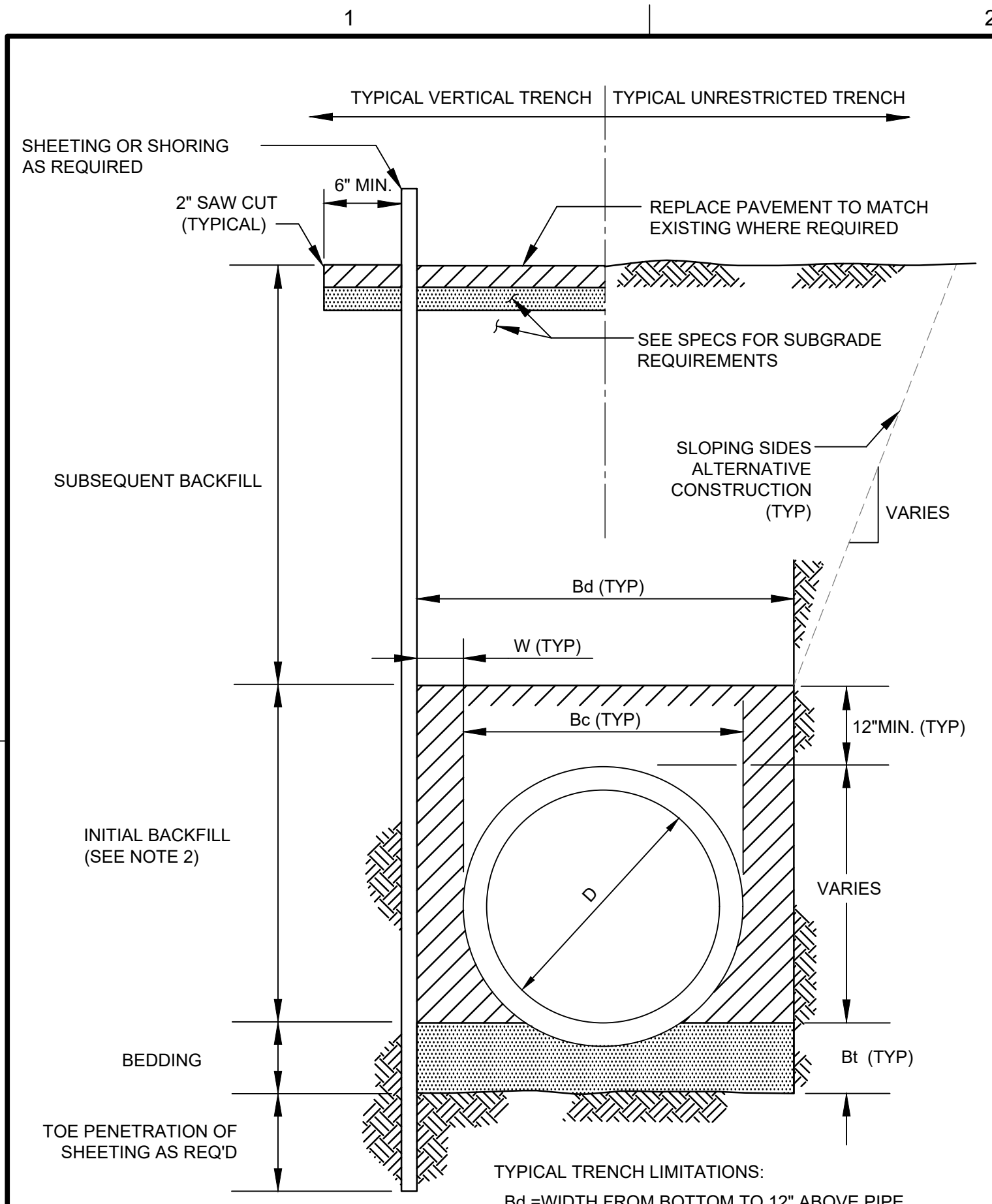
LINE IS 2 INCHES AT FULL SIZE

DESIGNED: J. Mazzei  
 DRAWN: A. Jumper  
 CHECKED: C. Lucie  
 CHECKED: J. Mazzei

APPROVED: J. Mazzei  
 FILENAME: 000-C-03.DWG  
 BC PROJECT NUMBER

CIVIL  
 CIVIL DETAILS 2

DRAWING NUMBER  
**000-C-03**  
 SHEET NUMBER  
 5 OF 55

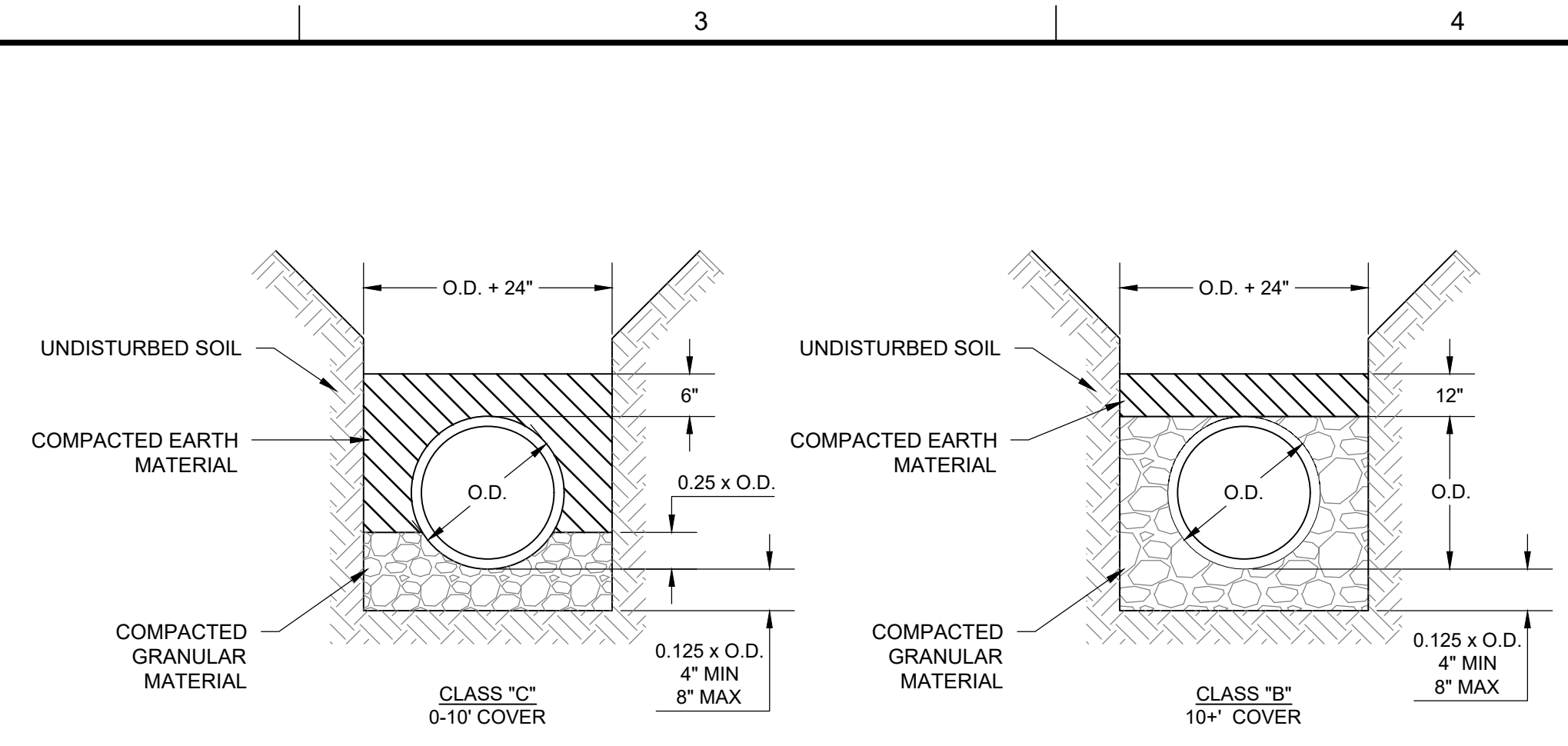


**7**  
 TYPICAL TRENCH SECTION DETAIL  
 SCALE: NONE

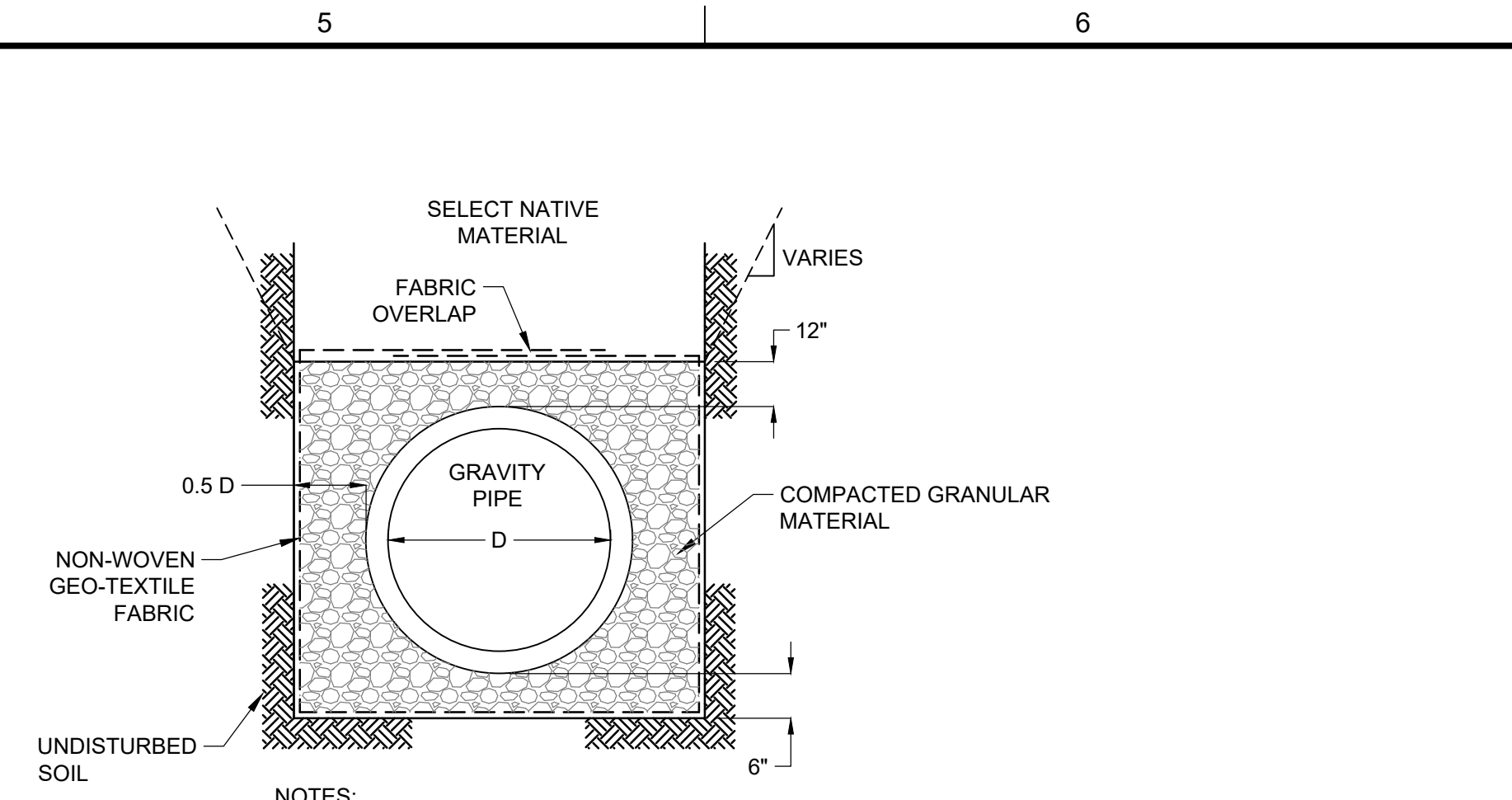
TYPICAL TRENCH LIMITATIONS:

D, IN.	W MIN, IN.	Bd MAX, IN.	Bt MIN, IN.
0-6	6	D +24	3
8-24	8	D +24	6
27-60	12	D +36	12
OVER 60	18	D +42	12

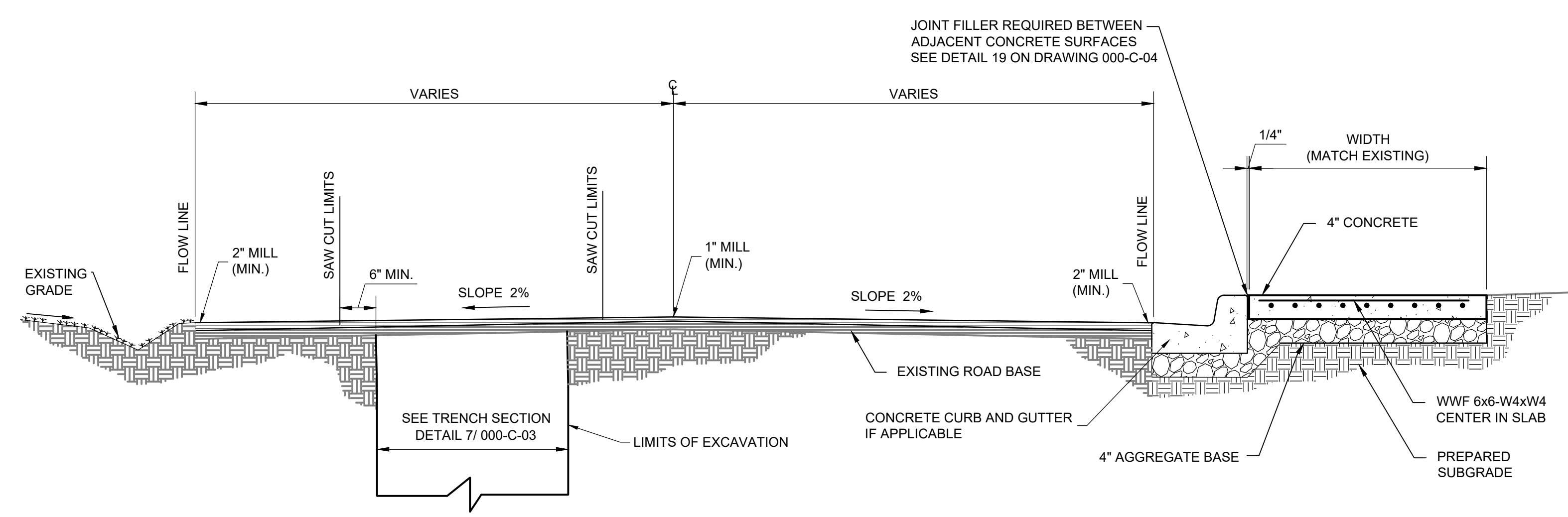
NOTES:  
 1. FOR BEDDING TYPES SEE DETAILS 8/000-C-03 AND 9/000-C-03.  
 2. INITIAL & SUBSEQUENT BACKFILL: SEE TABLE A, SECTION 02200.



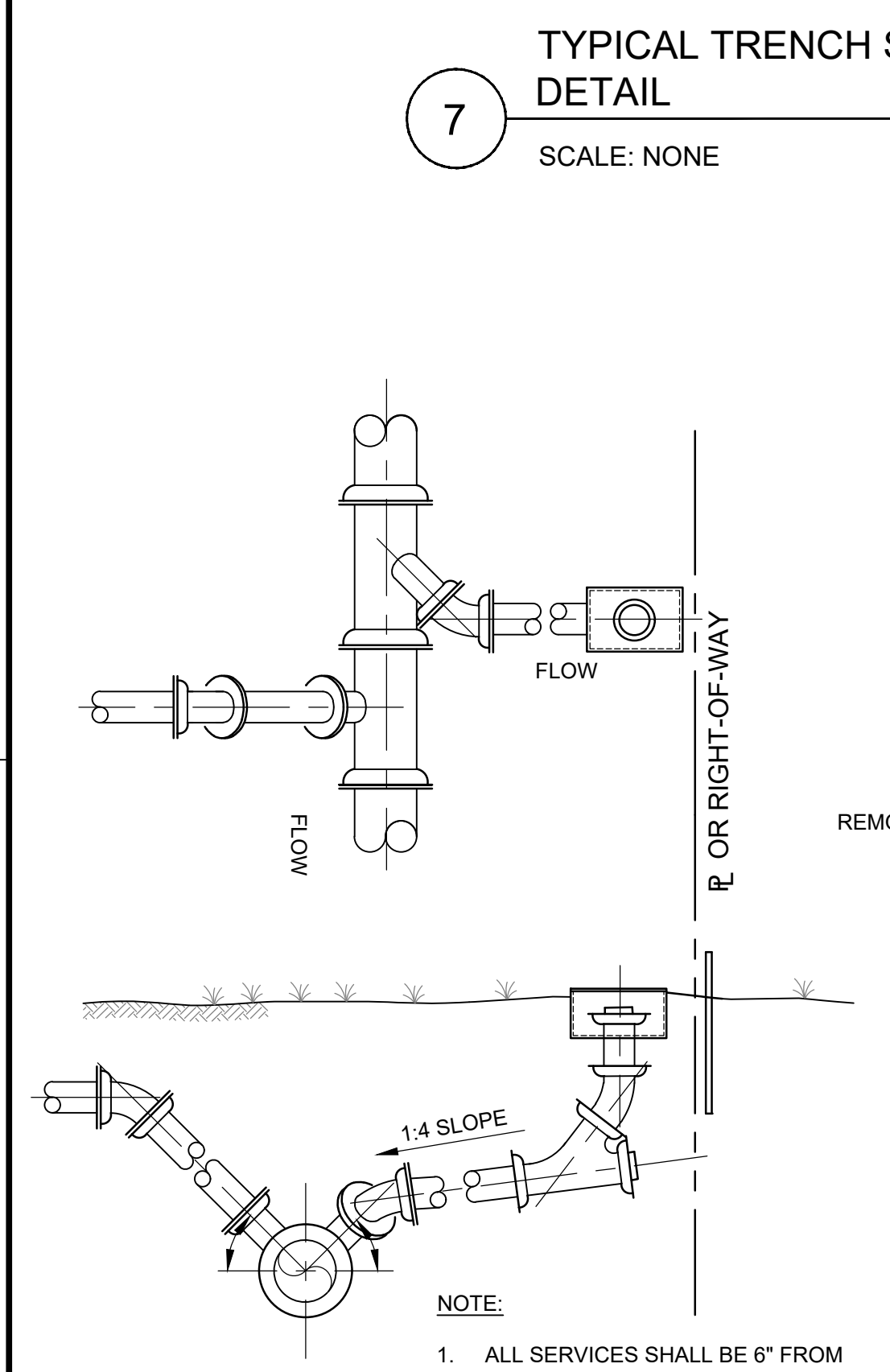
**8**  
 DIP GRAVITY PIPE BEDDING TYPES DETAIL  
 SCALE: NONE



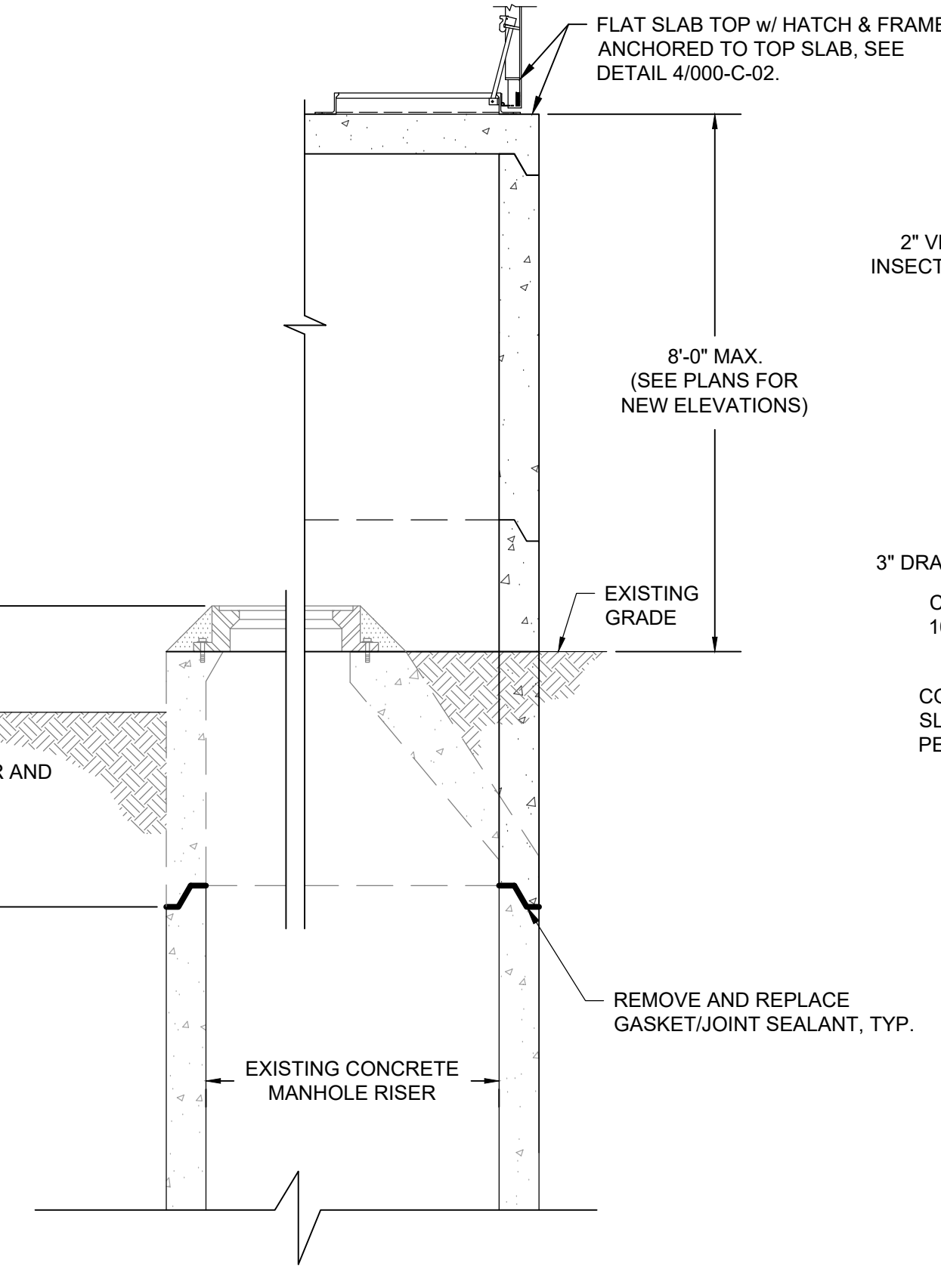
**9**  
 BEDDING FOR FIBERGLASS REINFORCED POLYMER PIPE DETAIL  
 SCALE: NONE



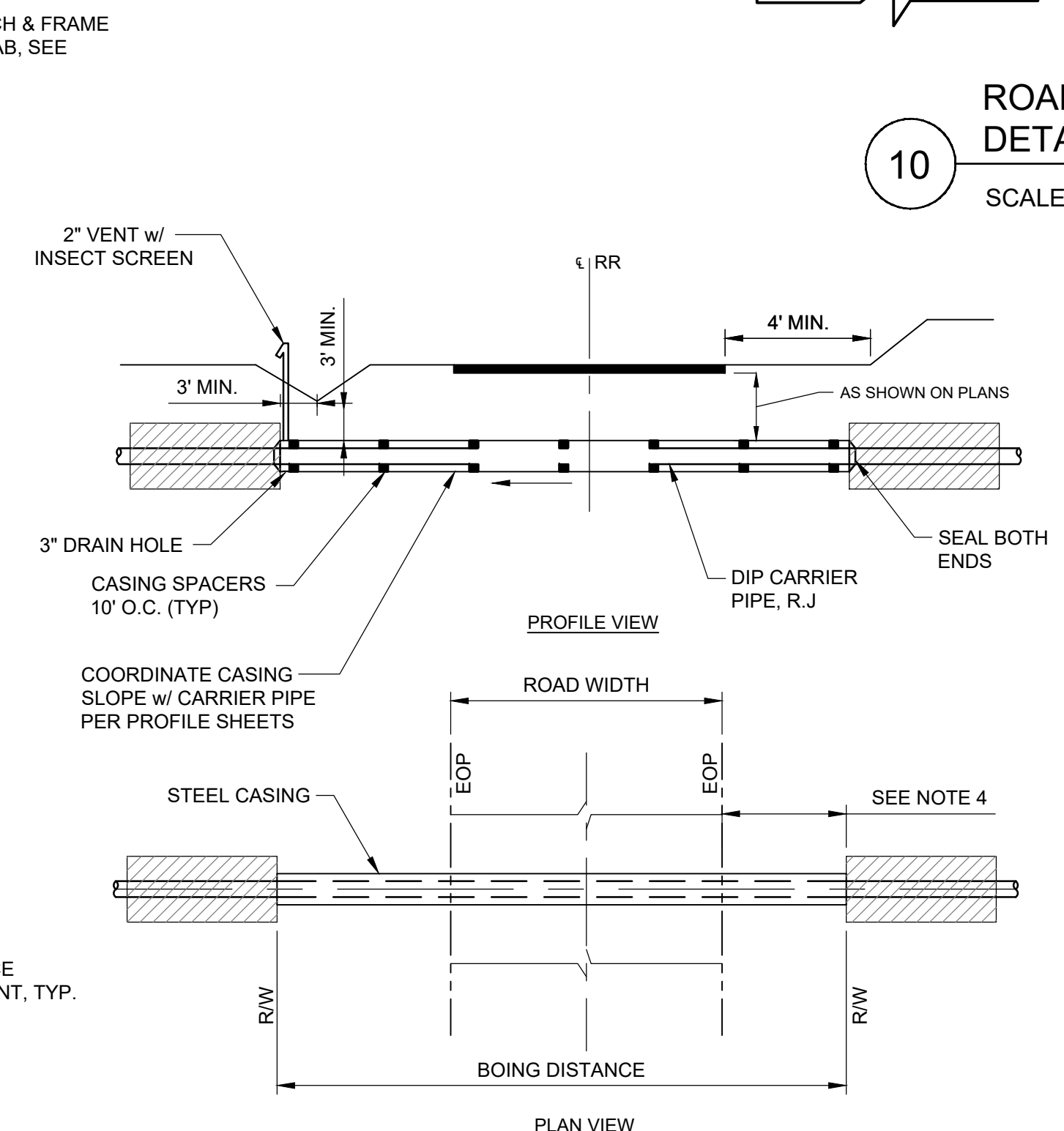
**10**  
 ROADWAY w/ CURB, GUTTER & SIDEWALK RESURFACING DETAIL  
 SCALE: NONE



**11**  
 SEWER SERVICE CONNECTION DETAIL  
 SCALE: NONE



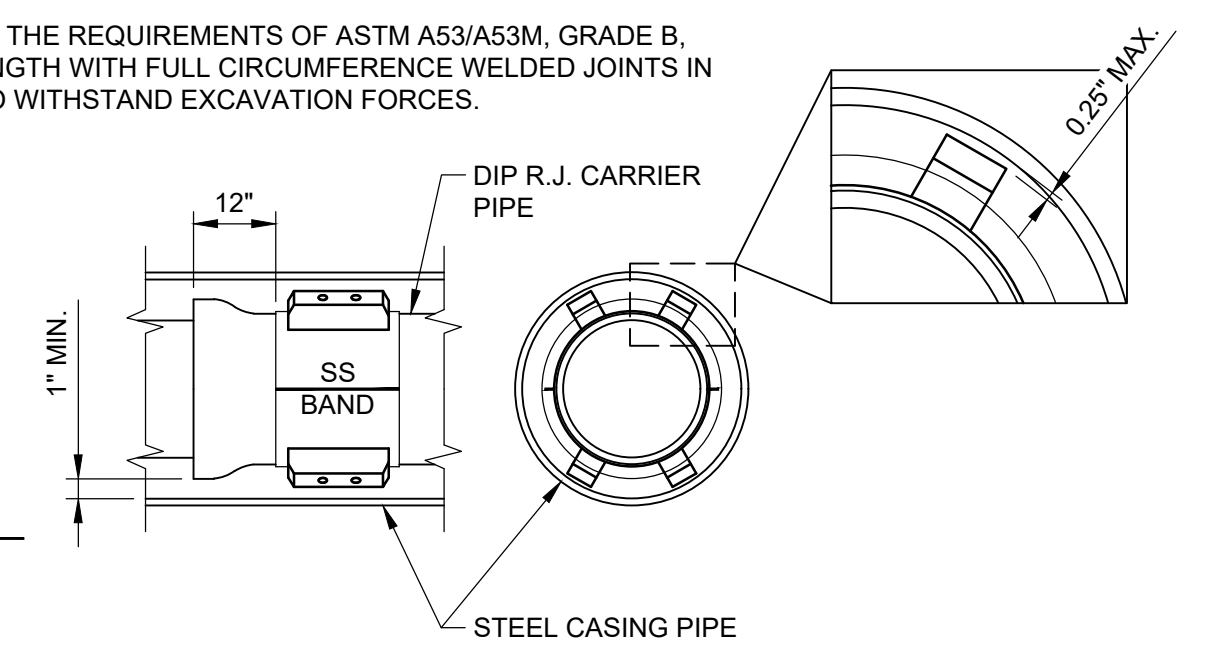
**12**  
 RAISE EXISTING MANHOLE DETAIL  
 SCALE: NONE



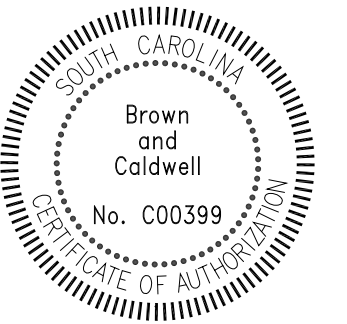
**13**  
 TYPICAL BORE AND JACK DETAIL  
 SCALE: NONE

CARRIER PIPE DIAMETER (IN)	CASING PIPE DIAMETER (IN)	CASING PIPE WALL THICKNESS (IN)	
		UNDER HIGHWAYS	UNDER RAILROADS
			UNCOATED
24	36	0.563	0.688
30	42	0.657	0.657
36	48	0.688	0.688
42	54	0.781	0.781

NOTES:  
 1. CASING SPACERS SHALL BE MANUFACTURED BY CASCADE WATERWORKS MANUFACTURING COMPANY  
 2. DIP CARRIER PIPE SHALL BE RESTRAINED USING MFG DESIGNED RESTRAINED JOINTS (I.E. LOK-RING).  
 3. STEEL CASING PIPE SHALL MEET THE REQUIREMENTS OF ASTM A53/A53M, GRADE B, 35,000 PSI MINIMUM YIELD STRENGTH WITH FULL CIRCUMFERENCE WELDED JOINTS IN ACCORDANCE WITH AWS D1.1 TO WITHSTAND EXCAVATION FORCES.







**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

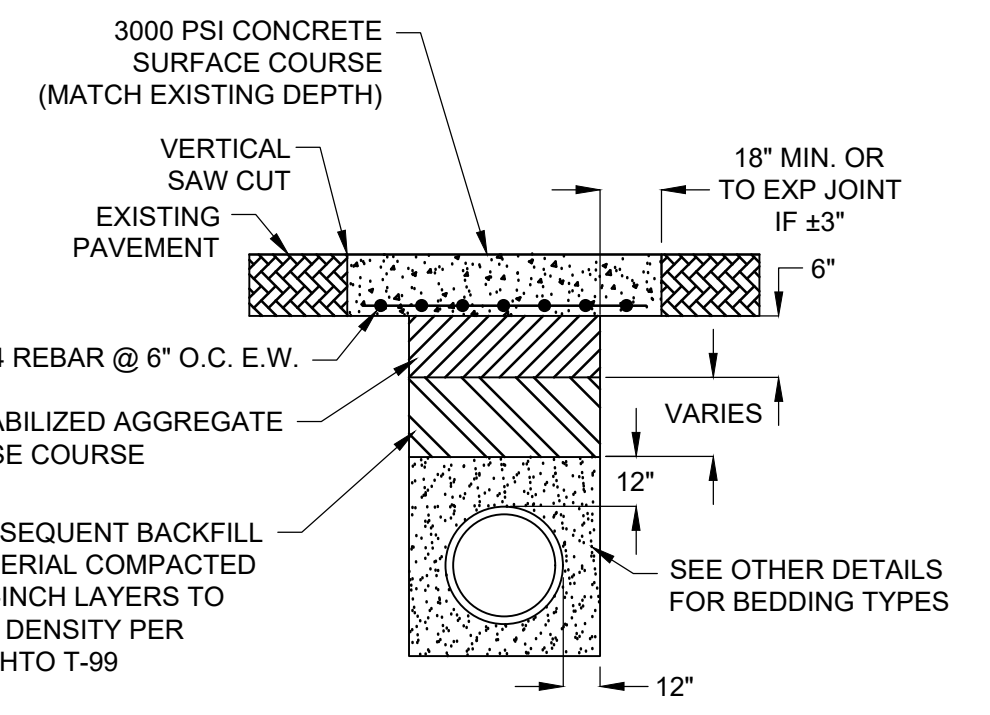
LINE IS 2 INCHES AT FULL SIZE

DESIGNED: J. Mazzei  
 DRAWN: A. Jumper  
 CHECKED: C. Lucie  
 CHECKED: J. Mazzei  
 APPROVED: J. Mazzei

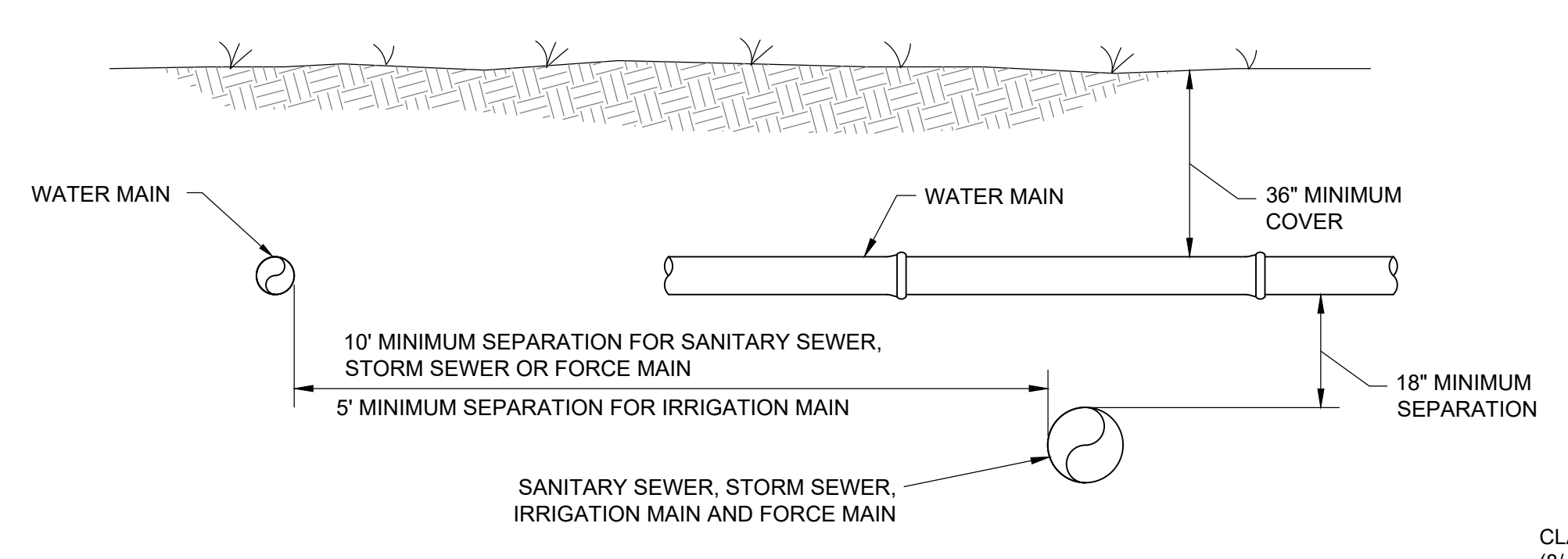
FILENAME: 000-C-04.DWG  
 BC PROJECT NUMBER

CIVIL  
 CIVIL DETAILS 3

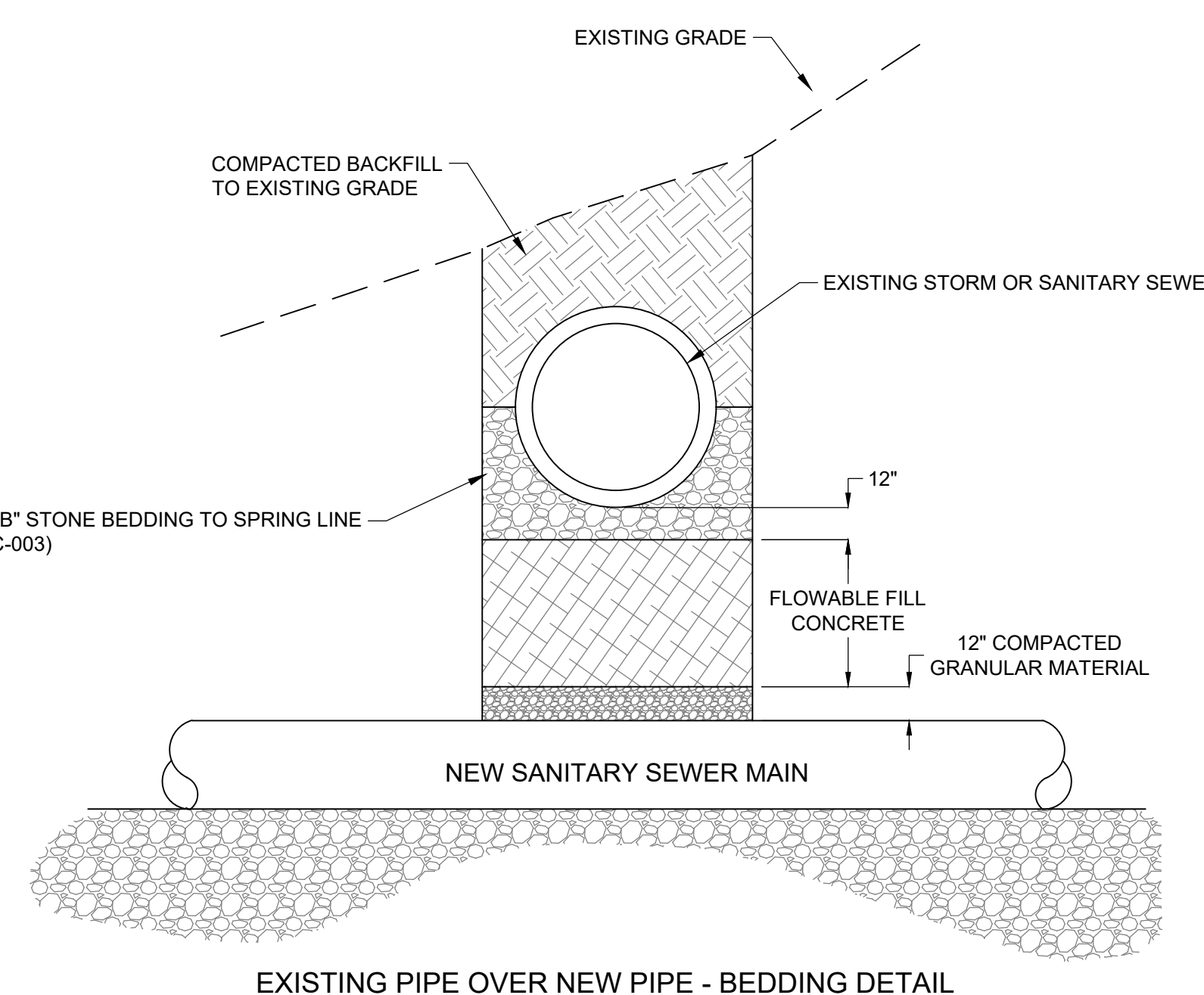
DRAWING NUMBER  
**000-C-04**  
 SHEET NUMBER  
 6 OF 55



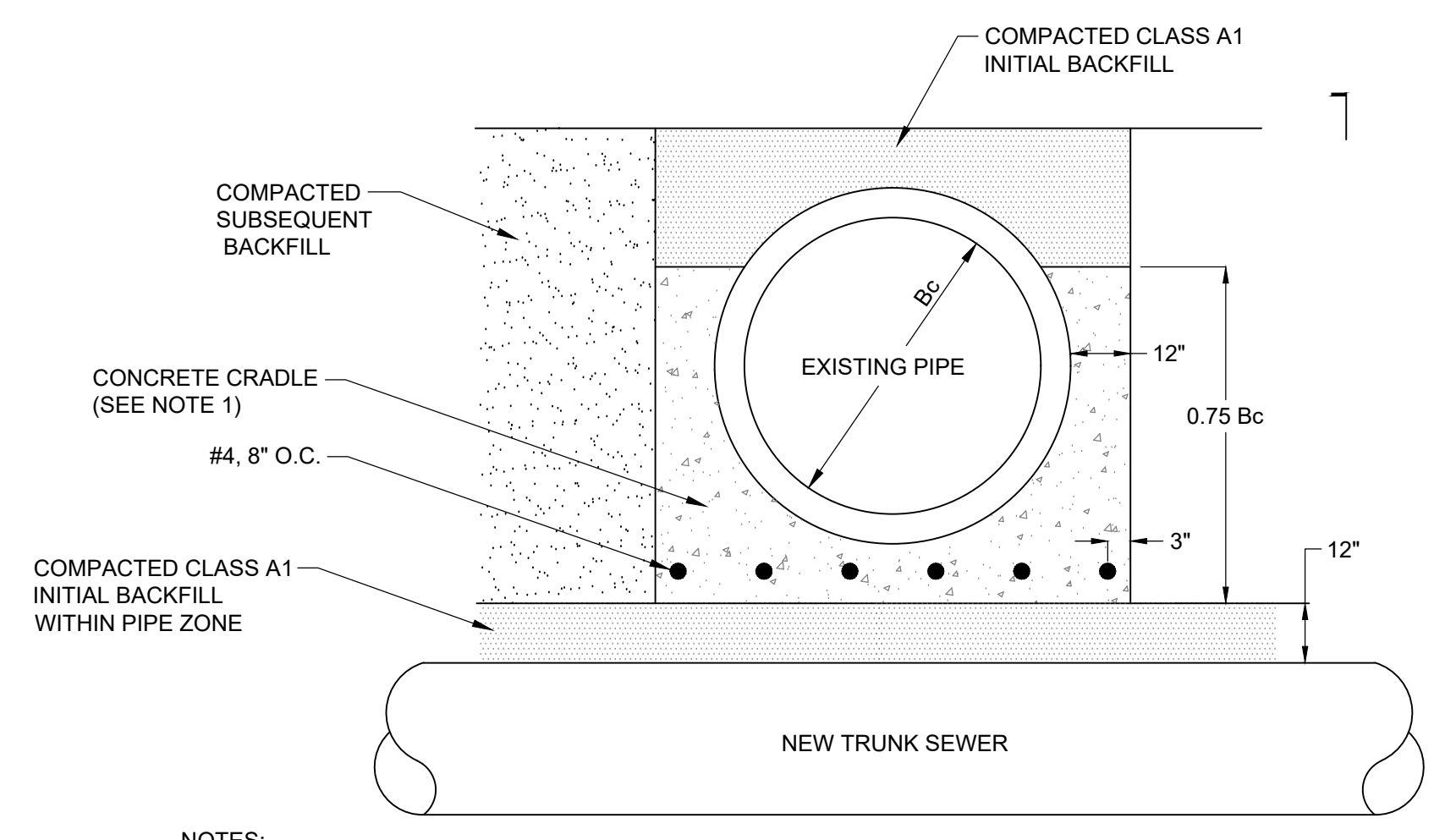
**14 CONCRETE PAVEMENT REPLACEMENT DETAIL**  
 SCALE: NONE



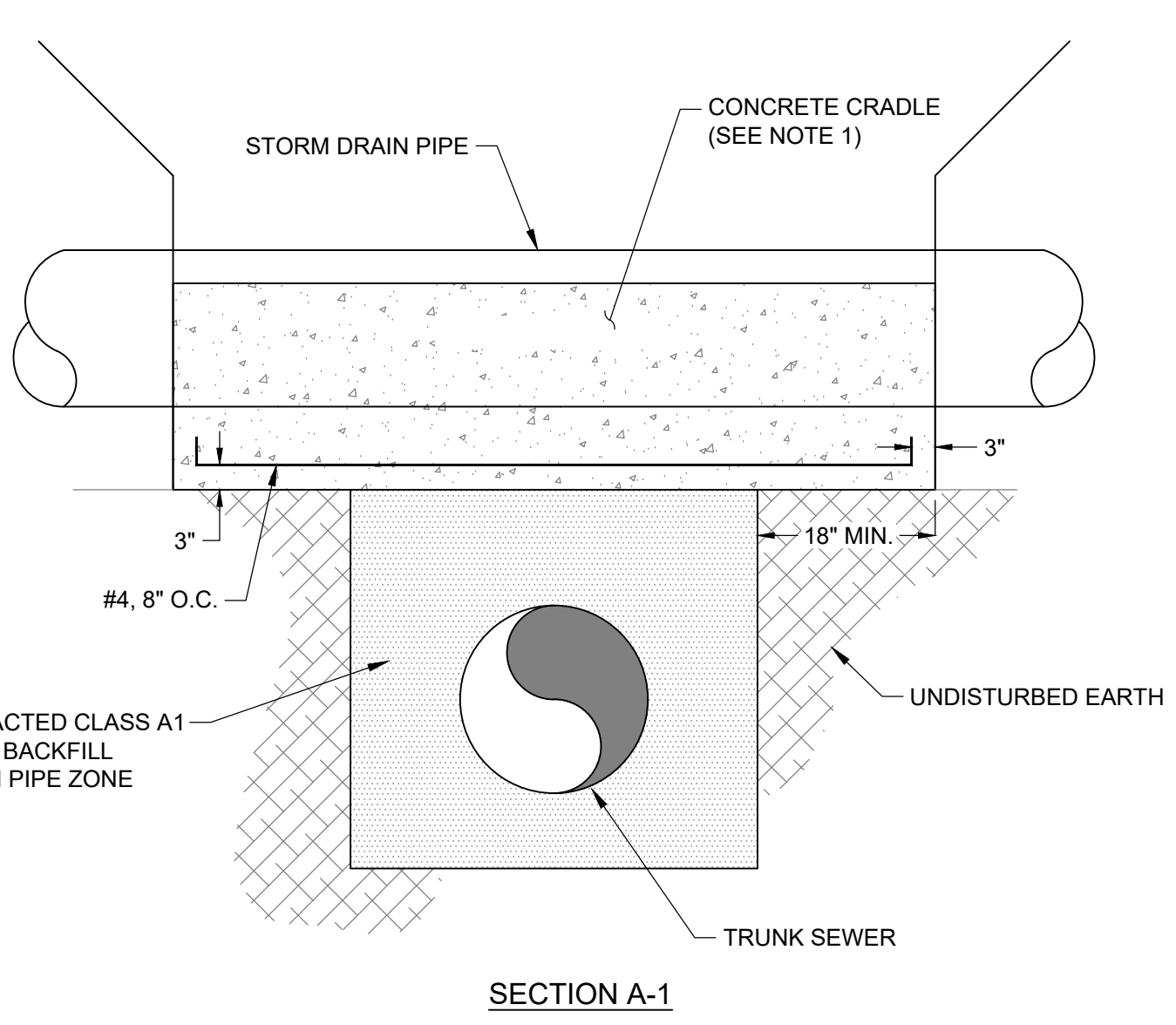
**15 TYPICAL WATER/SEWER SEPARATION DETAIL**  
 SCALE: NONE



**16 EXISTING PIPE OVER NEW PIPE - BEDDING DETAIL**  
 SCALE: NONE



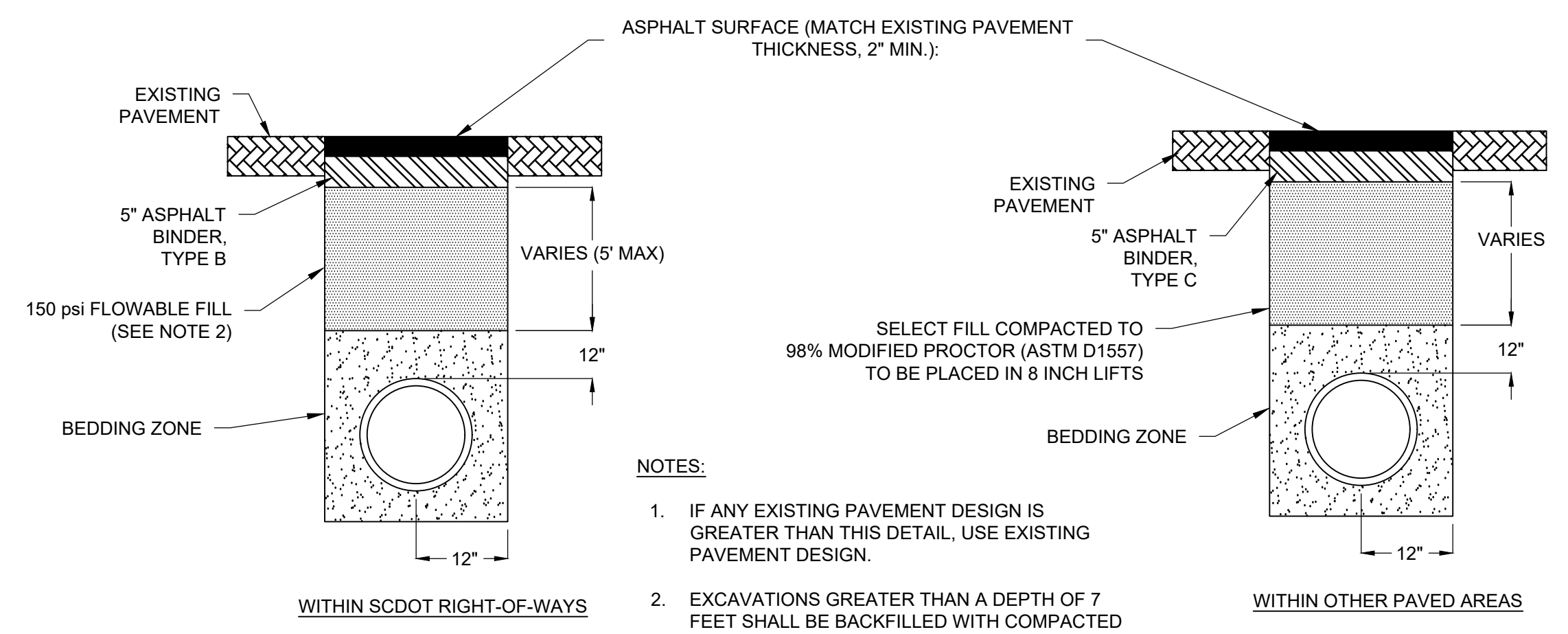
**17 CONCRETE SUPPORT CRADLE DETAIL**  
 SCALE: NONE



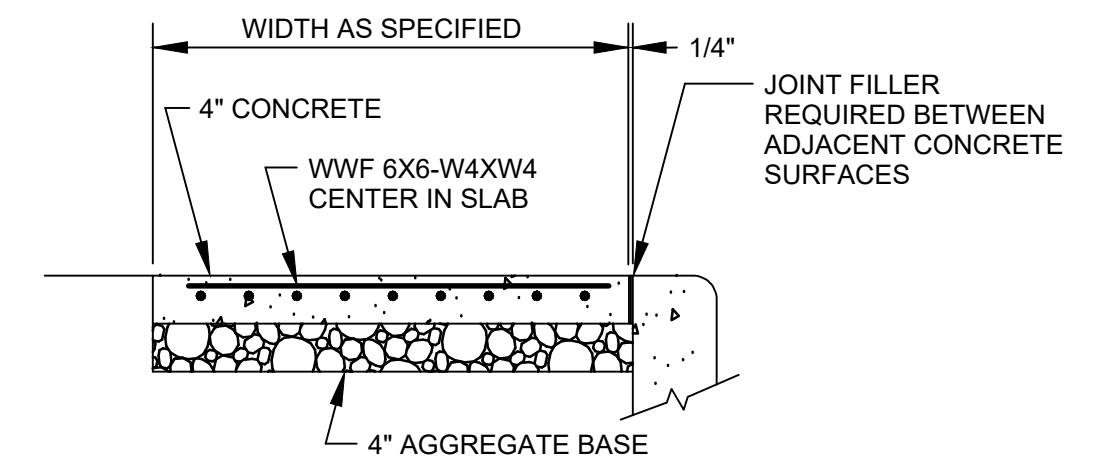
SECTION A-1

**17 EXISTING PIPE OVER NEW PIPE - BEDDING DETAIL**  
 SCALE: NONE

- NOTES:
- CONCRETE CRADLE EXTENDS TO 18" MIN. ON UNDISTURBED EARTH EACH SIDE OF TRENCH FOR PIPE LINE CONSTRUCTION.
  - SEE OTHER DETAILS FOR SUBSEQUENT BACKFILL AND PAVEMENT REPAIR REQUIREMENTS.

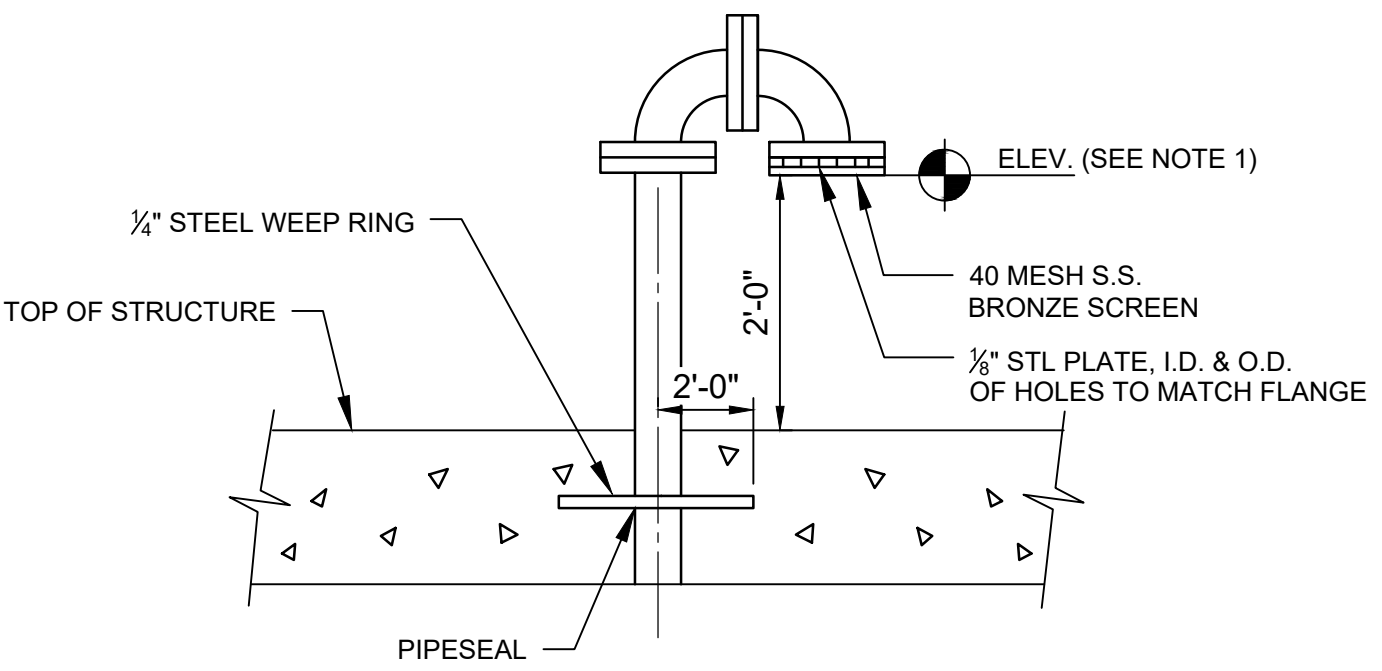


**18 ASPHALT PAVEMENT REPLACEMENT DETAIL**  
 SCALE: NONE



NOTE: PROVIDE 1/8" X 1/2" DEEP JOINT EVERY 4 FT AND FULL JOINT WITH PREFORMED JOINT FILLER EVERY 20 FT.

**19 CONCRETE WALK DETAIL**  
 SCALE: NONE



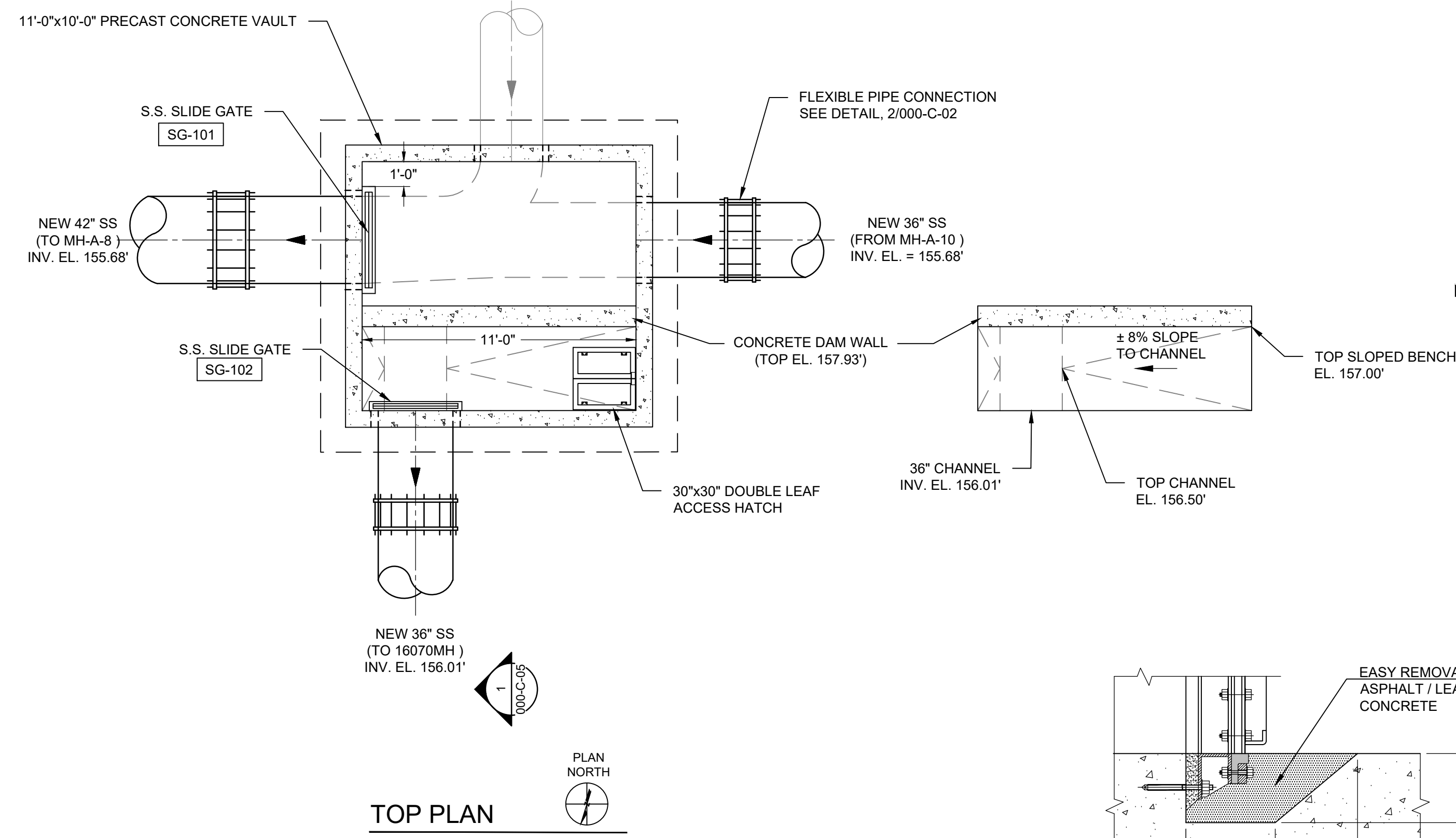
NOTE: ALL MANHOLE VENTS SHALL BE RAISED TO THE PROJECTED FLOOD ELEVATION NOTED ON EACH DRAWING.

**20 MANHOLE VENT DETAIL**  
 SCALE: NONE

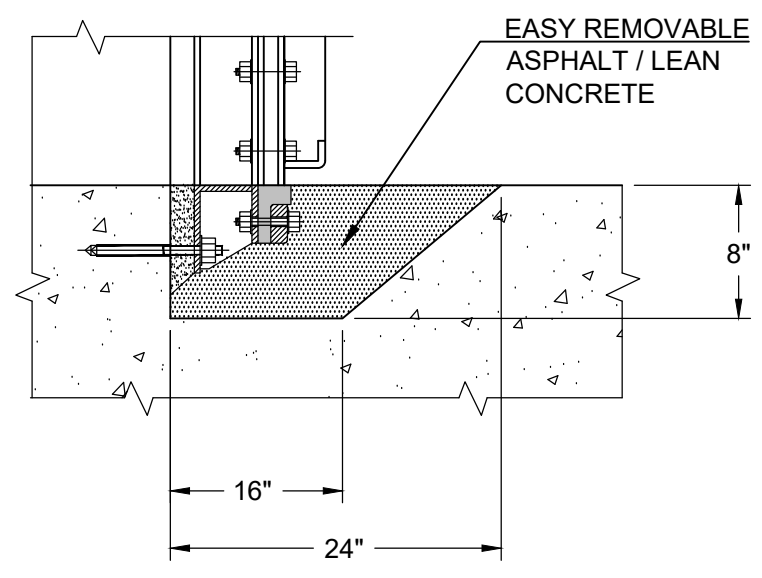
Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\CAD\2-SHEETS\C-CIVIL FILENAME: 000-C-04.DWG PLOT DATE: 10/29/2019 9:58 AM CAD USER: BETSY DARNELL



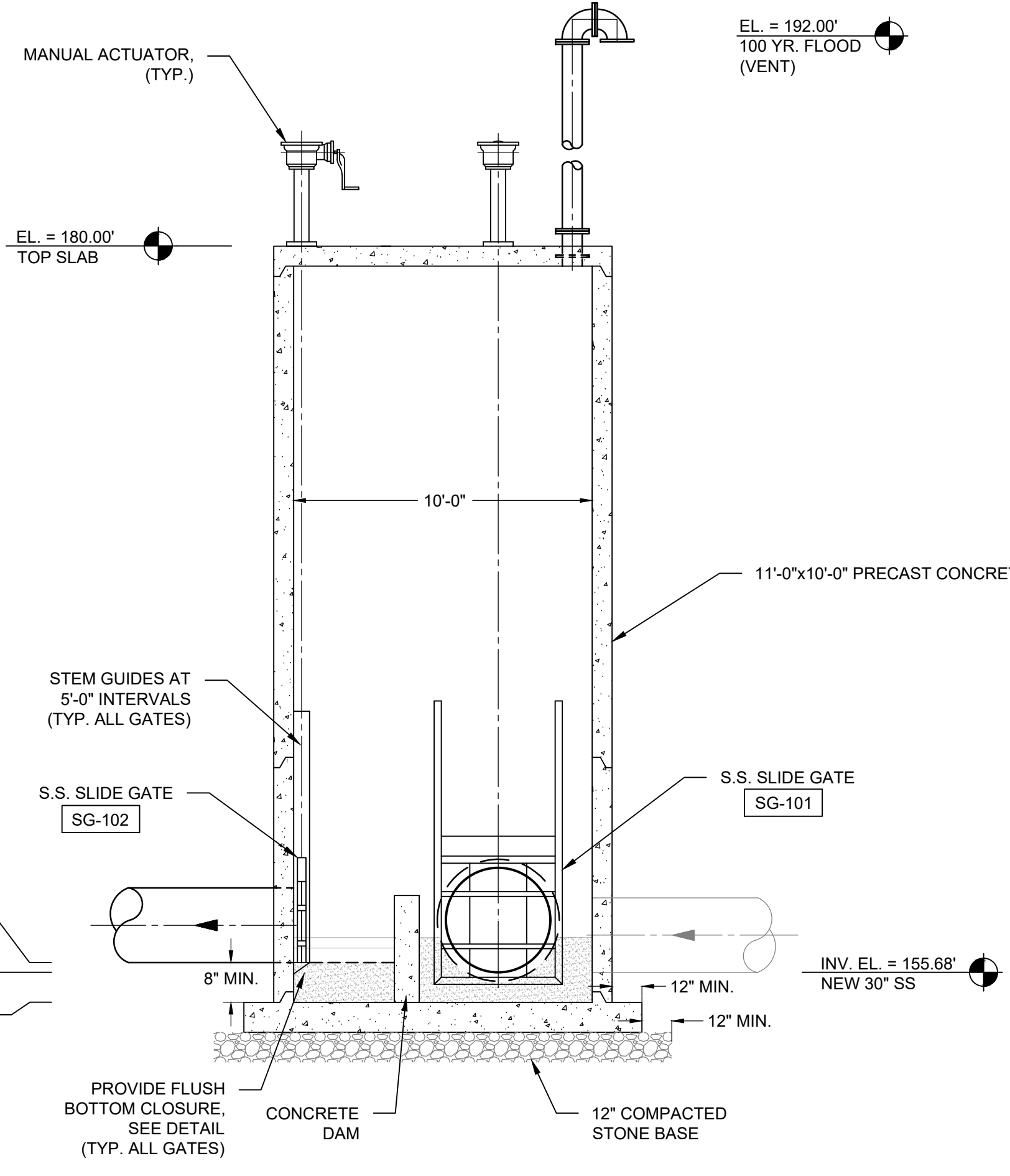
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TOP PLAN

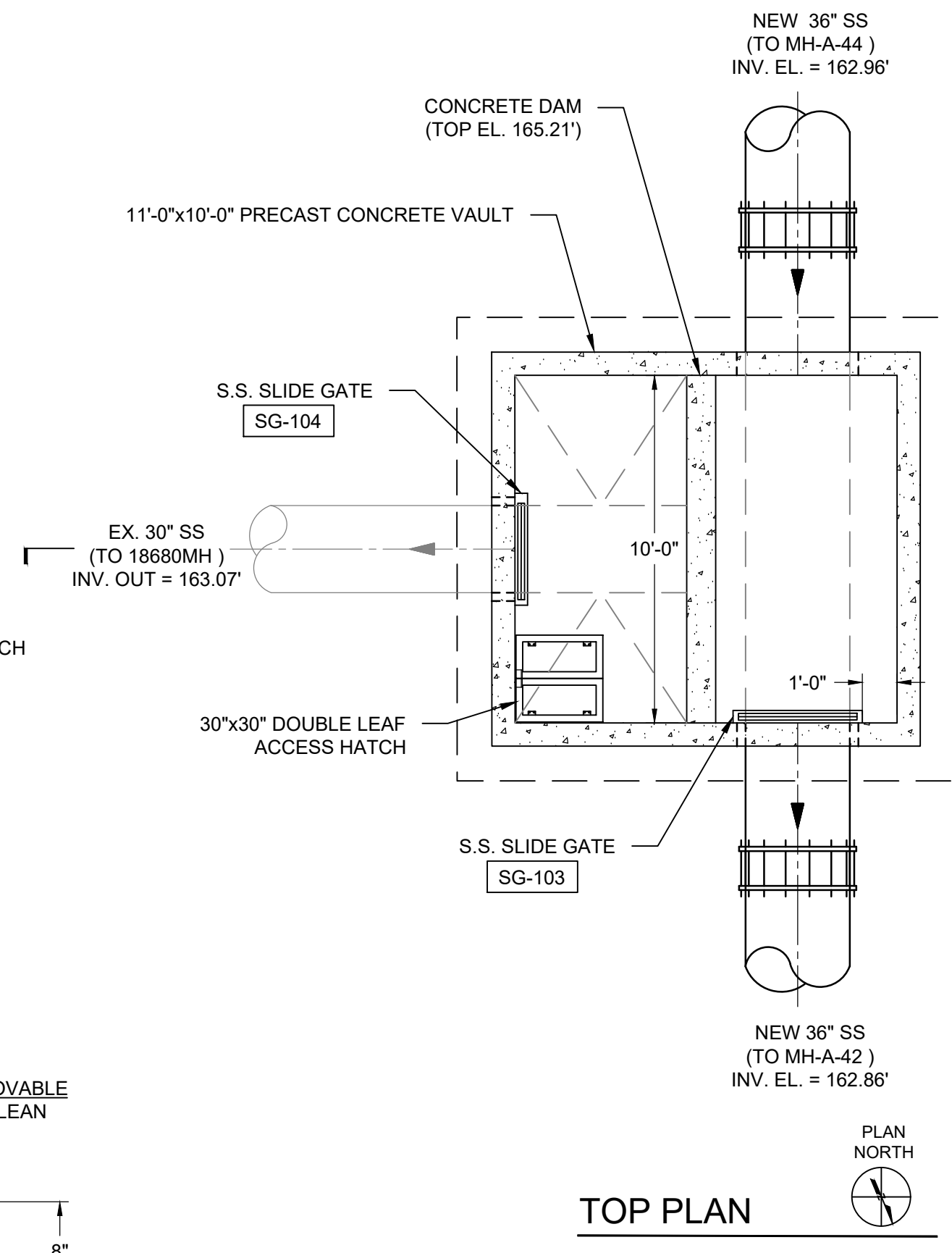


FLUSH BOTTOM CLOSURE DETAIL  
SCALE: NONE

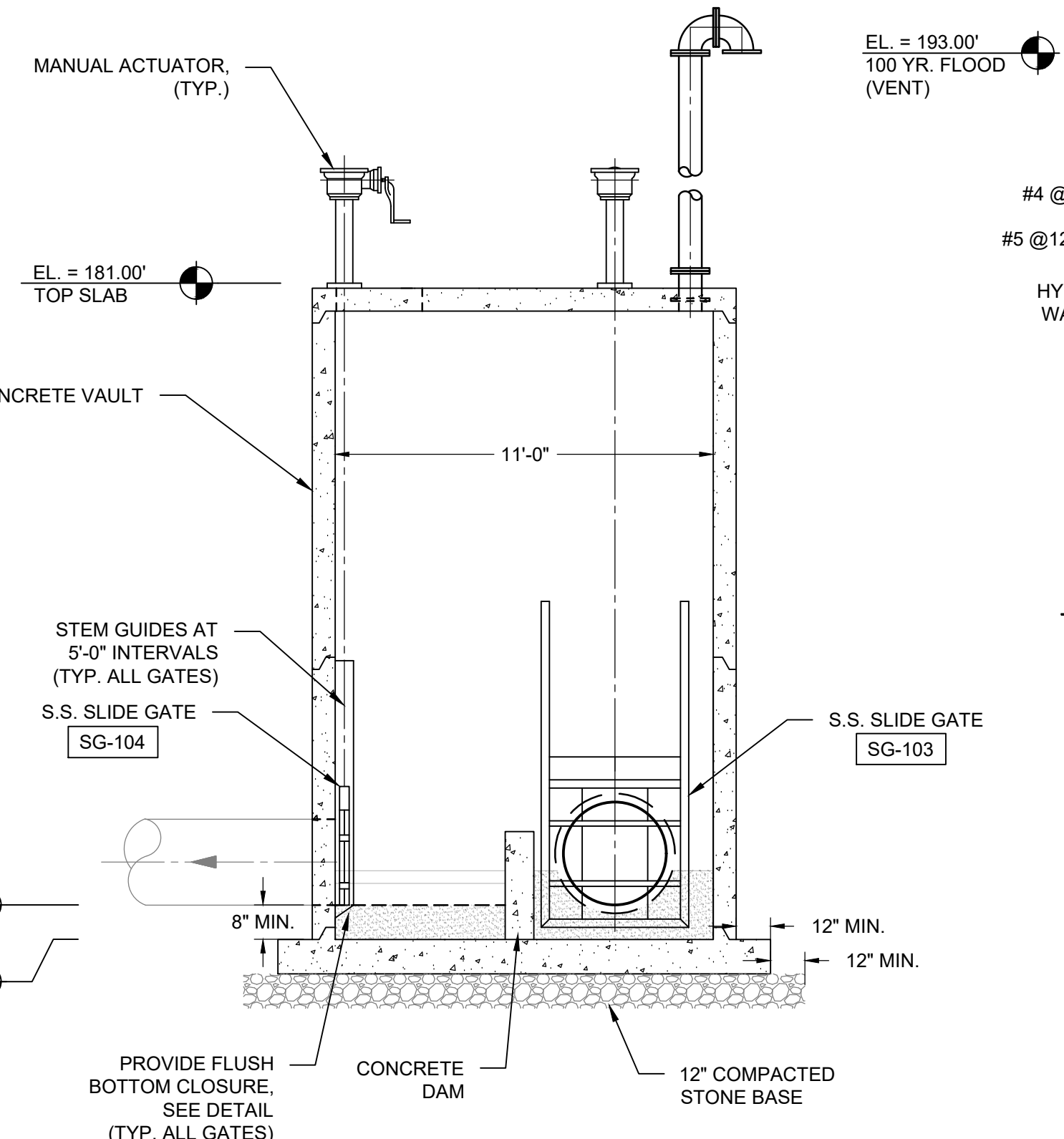


SECTION 1

21 DIVERSION STRUCTURE @ MH-A-9  
SCALE: 1/4" = 1'-0"



TOP PLAN

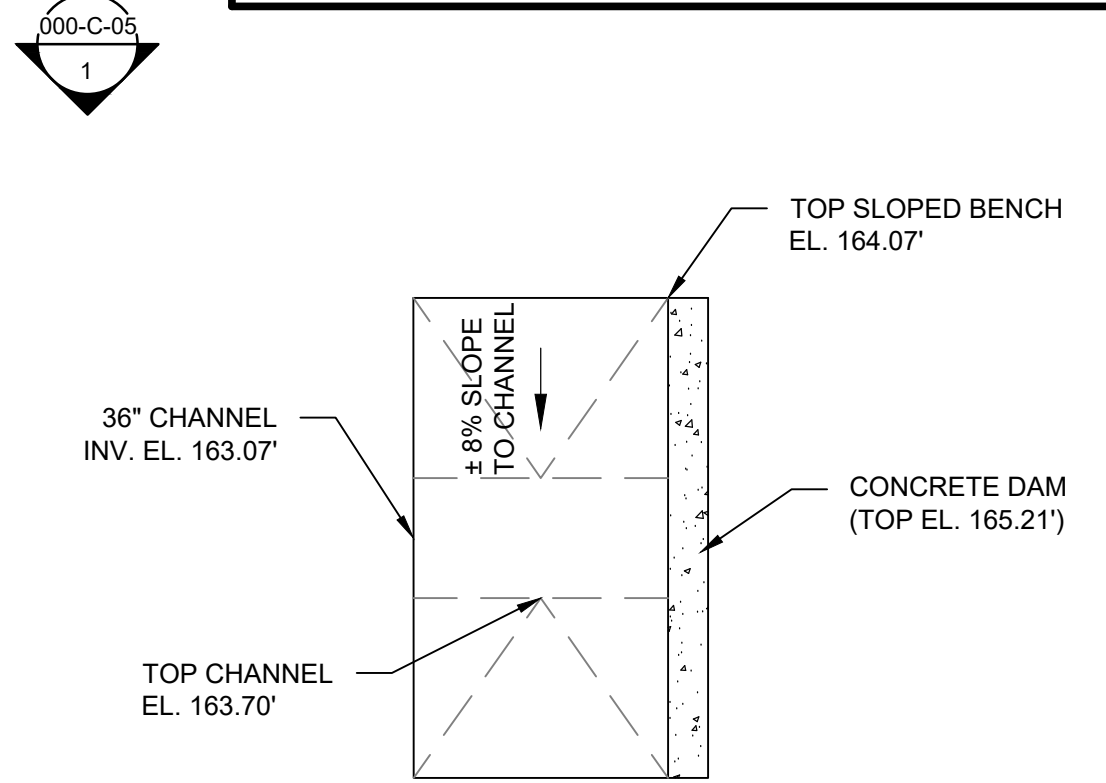


SECTION 1

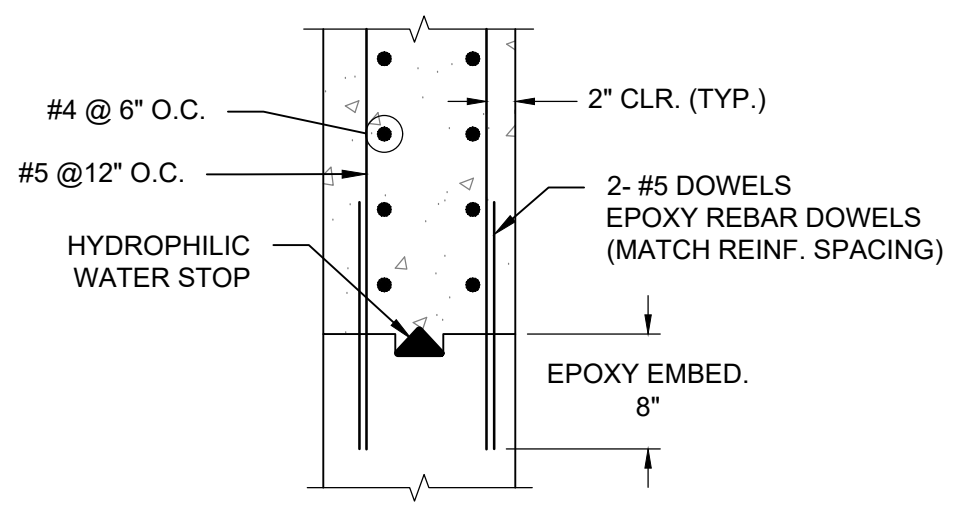
22 DIVERSION STRUCTURE @ MH-A-43  
SCALE: 1/4" = 1'-0"

**GENERAL NOTES:**

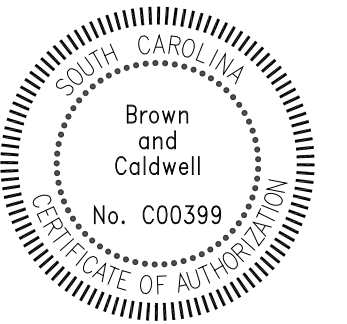
- SEE SECTION 03400 FOR PRECAST CONCRETE VAULTS.
- SEE SECTIONS 11109 AND 15184 FOR FABRICATED SLIDE GATES AND MANUAL ACTUATORS.
- REFERENCE DETAIL 2/000-C-02 FOR FLEXIBLE PIPE CONNECTORS.
- REFERENCE SECTION 02605 AND DETAIL 4/000-C-02 FOR HATCHES.
- REFERENCE VENT DETAIL SHOWN ON 20/000-C-04.
- REFERENCE 02200 FOR EARTHWORK AND BEDDING REQUIREMENTS.



TYPICAL CONCRETE DAM SECTION  
SCALE: NONE



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

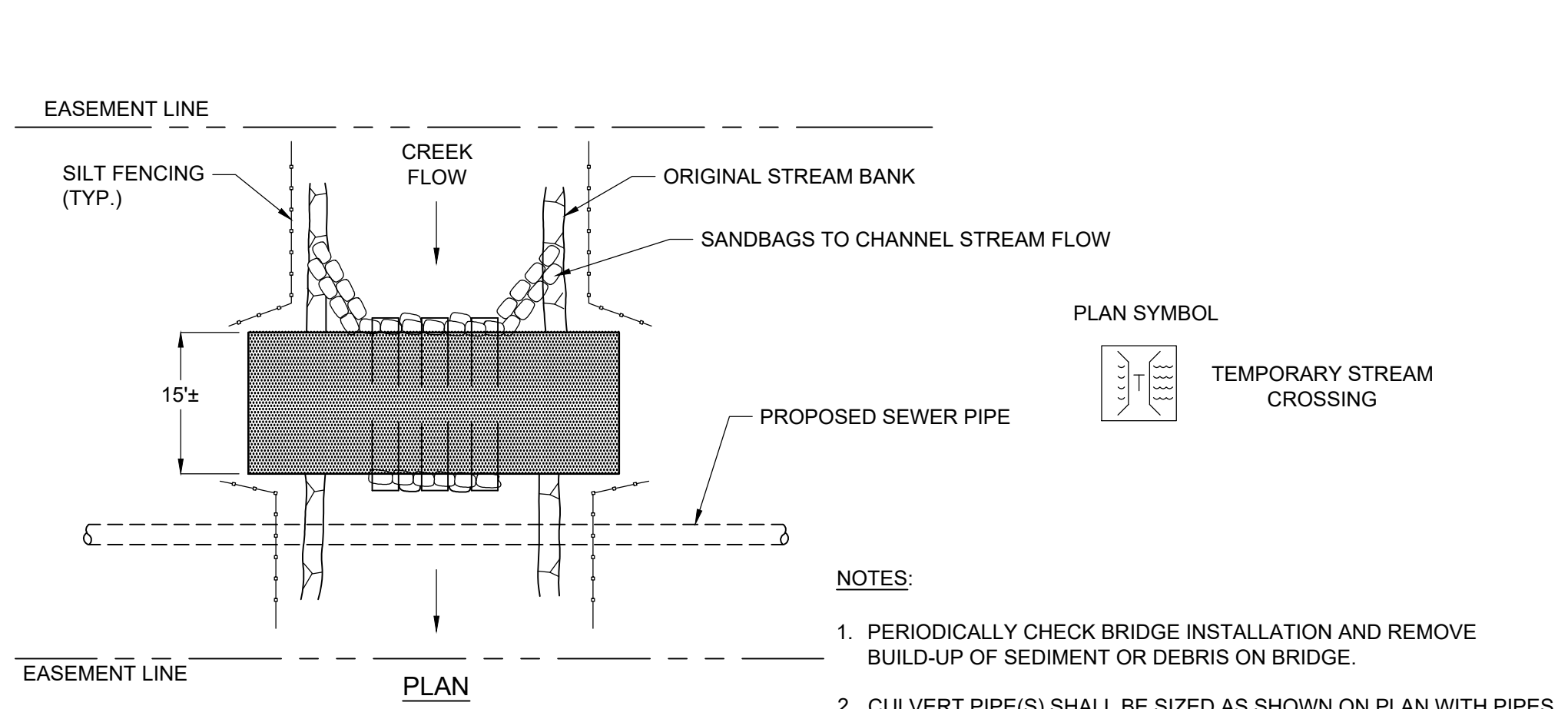
DESIGNED: J. Mazzei  
 DRAWN: A. Jumper  
 CHECKED: C. Lucie  
 CHECKED: J. Mazzei  
 APPROVED: J. Mazzei

CIVIL  
 CIVIL DETAILS 4

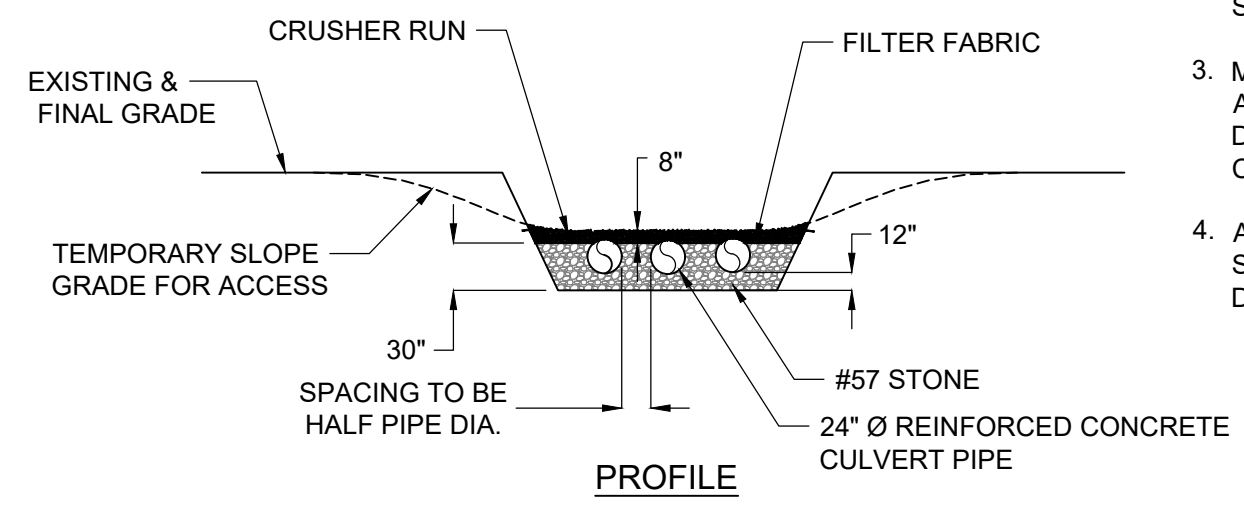
DRAWING NUMBER  
**000-C-05**  
 SHEET NUMBER  
 7 OF 55



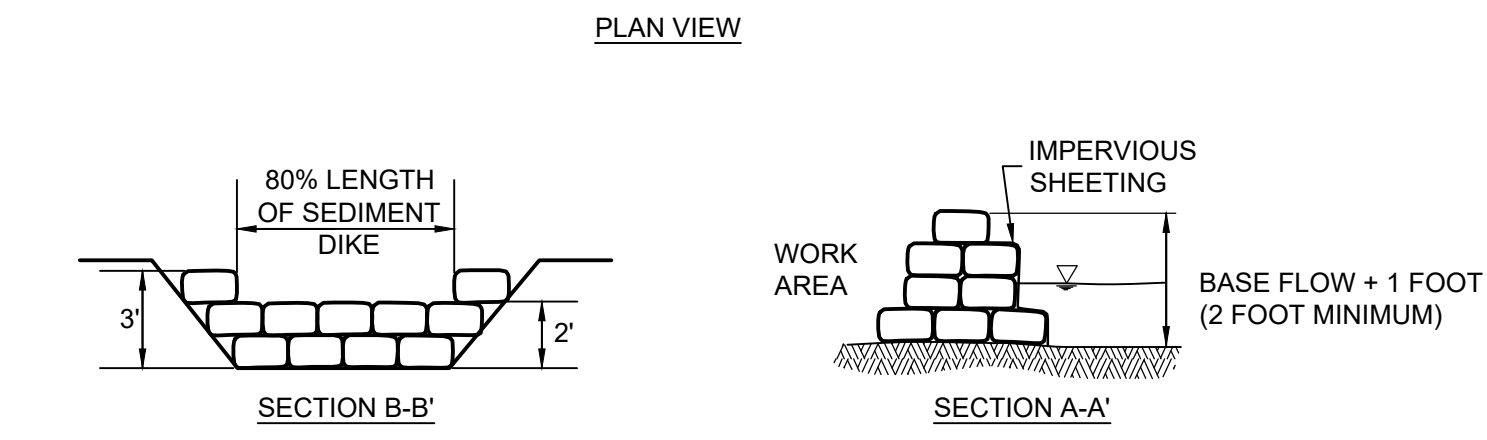
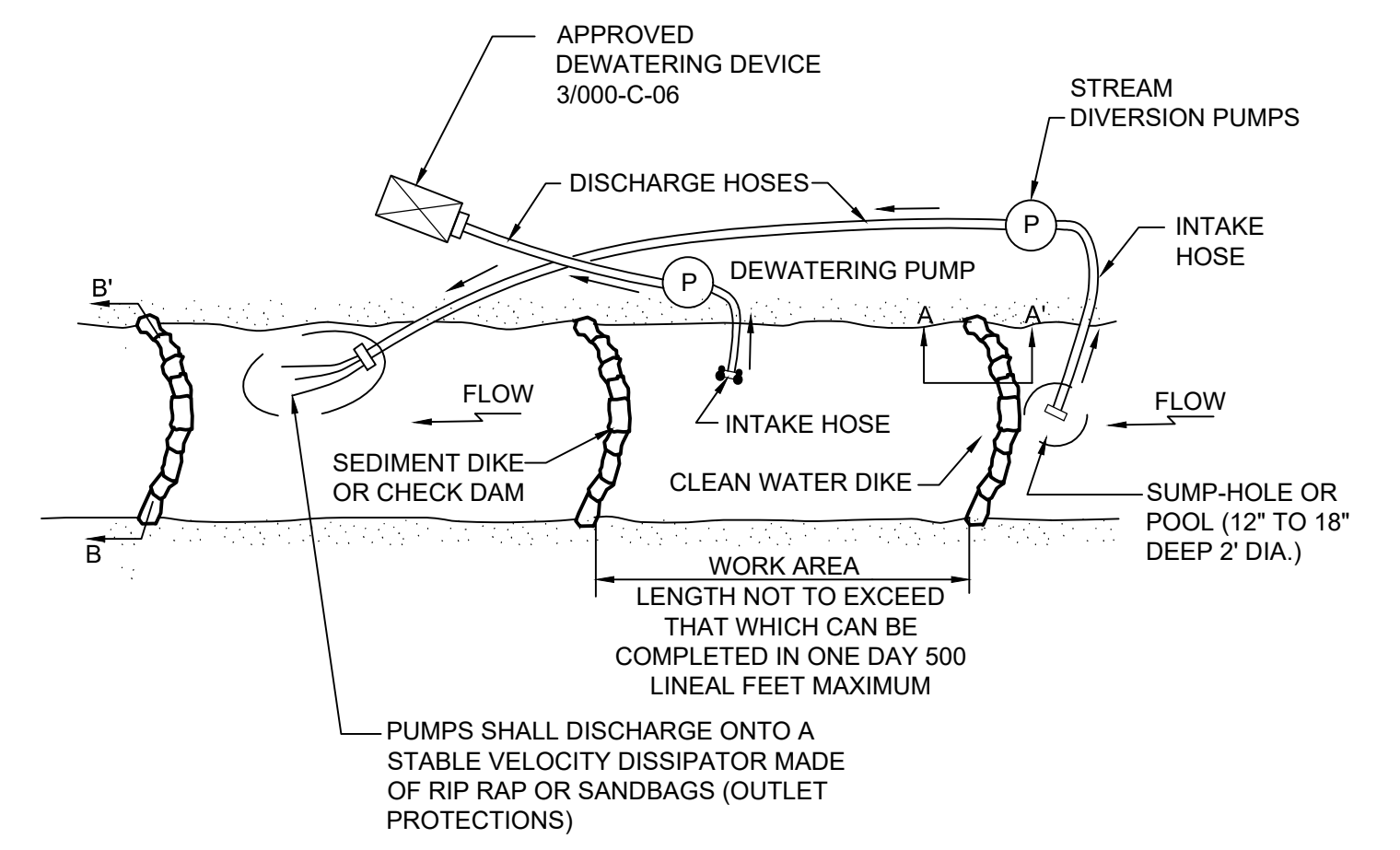
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- NOTES:**
1. PERIODICALLY CHECK BRIDGE INSTALLATION AND REMOVE BUILD-UP OF SEDIMENT OR DEBRIS ON BRIDGE.
  2. CULVERT PIPE(S) SHALL BE SIZED AS SHOWN ON PLAN WITH PIPES SPACED ONE-HALF (1/2) THEIR DIAMETER APART.
  3. MATERIALS PLACED IN STREAM CHANNEL SHALL BE SIZED ACCORDING TO PLAN AND SHALL BE COMPLETELY REMOVED DURING FINAL CLEAN-UP. REMOVAL OF THIS ITEM IS NOT CONTINGENT UPON ESTABLISHMENT OF PERMANENT VEGETATION.
  4. AFTER REMOVAL, STREAM BANKS SHALL BE RESTORED AND BANK STABILIZATION MEASURES ADDED. SEE DETAIL 25 AND 26 ON DRAWING 000-C-07.

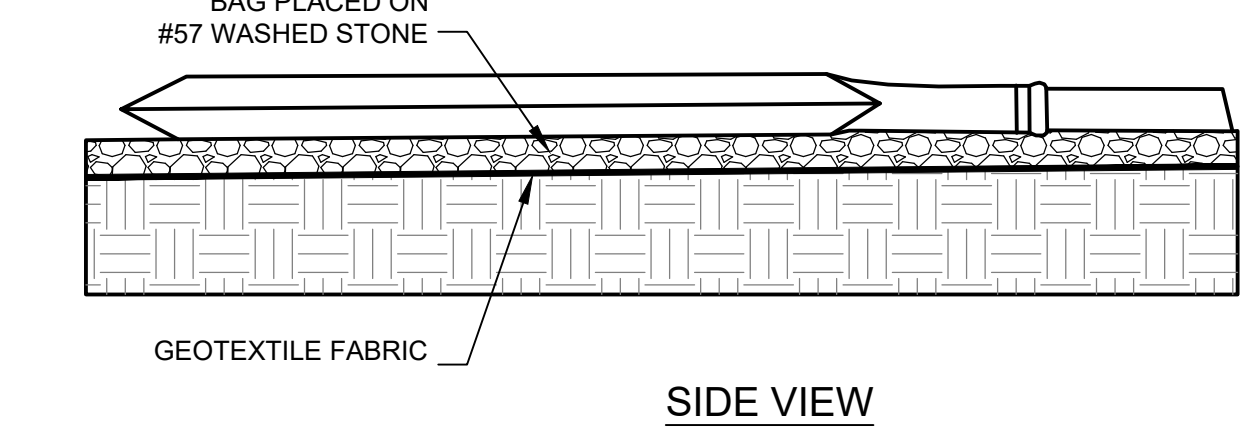
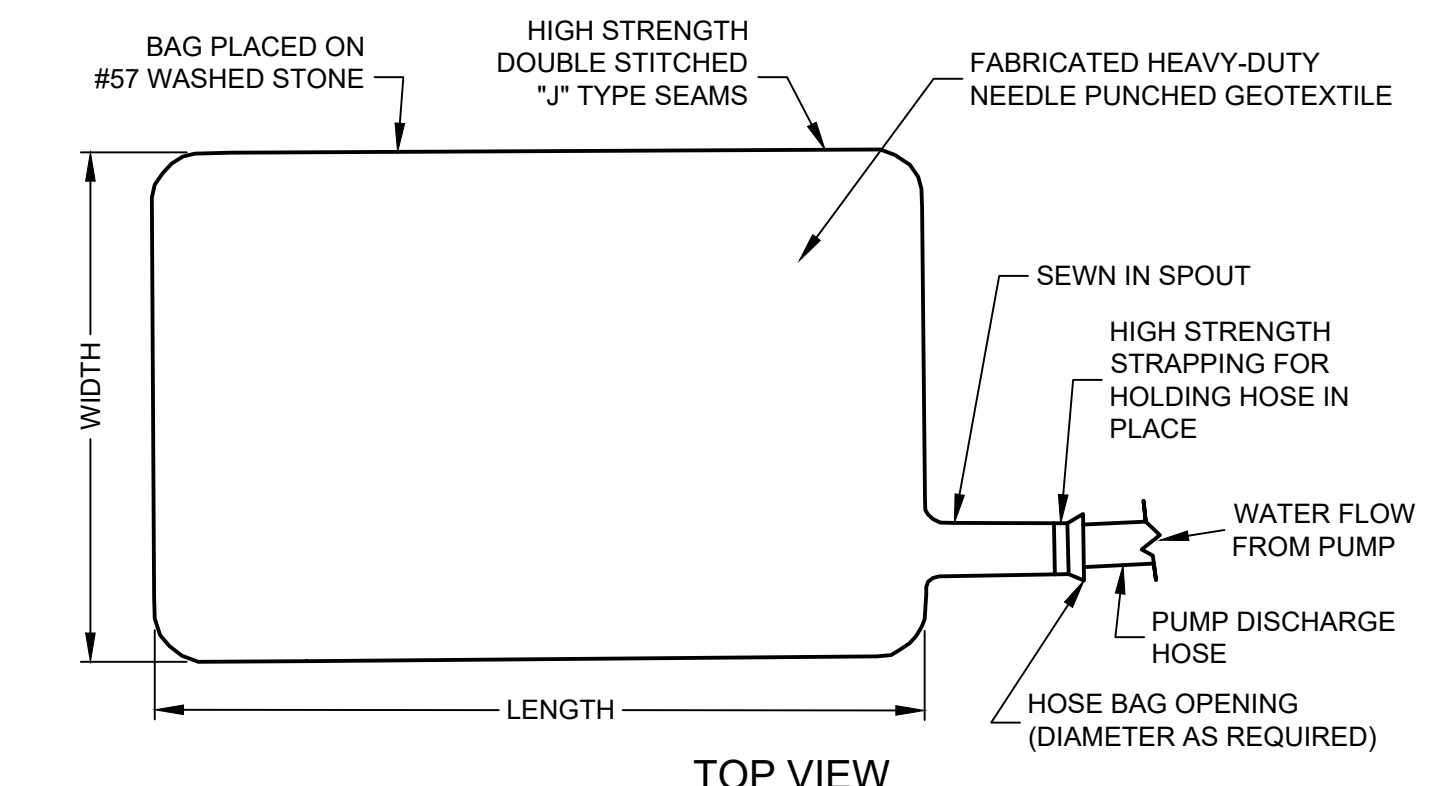


**23** TYPICAL STREAM CROSSING DETAIL  
SCALE: NONE



- NOTES:**
1. SET UP PUMP AND HOSE AS SHOWN, OR USE OTHER PRACTICAL ALTERNATIVES. PUMP SHALL HAVE TWICE THE PUMPING CAPACITY OF ANTICIPATED FLOW.
  2. ALL INTAKE HOSES WILL BE SCREENED.
  3. DISMANTLE DOWNSTREAM DAM, THEN UPSTREAM DAM. KEEP PUMP RUNNING TO MAINTAIN STREAM FLOW.
  4. PUMP AROUND MAY NOT BE LEFT IN PLACE FOR MORE THAN 24 HOURS.

**24** PUMP AROUND AND VELOCITY DISSIPATOR DETAIL  
SCALE: NONE



**25** SILT BAG DEWATERING DEVICE DETAIL  
SCALE: NONE

SCIENTIFIC NAME	COMMON NAME	SIZE	GAL.	ROOT	SPACING	ZONE	COMMENT
ACER NEGUNDO	BOX ELDER	-	-	LIVE CUTTING	-	GEOGRID LAYERING	-
ALNUS SERRULATA	TAG ALDER	2-3'	3 GAL.	CONT.	4' O.C.	LOWER TO MID STREAMBANK	FULL / VIGOROUS
ARONIA MELANOCARPA	BLACK CHOKEBERRY	2-3'	3 GAL.	CONT.	4' O.C.	MID TO UPPER STREAMBANK	FULL / VIGOROUS
CORNUS AMOMUM	SILKY DOGWOOD	2-3'	3 GAL.	CONT.	4' O.C.	LOWER TO MID STREAMBANK	FULL / VIGOROUS
SALIX NIGRA	BLACK WILLOW	-	-	LIVE CUTTING	1' O.C.	EDGE OF WATER / GEOGRID LAYERING	PLANT 3 ROWS STAGGERED UP BANK
SAMBUCUS CANADENSIS	AMERICAN ELDERBERRY	-	-	LIVE CUTTING	-	GEOGRID LAYERING	-
VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	2-3'	3 GAL.	CONT.	4' O.C.	MID TO UPPER STREAMBANK	FULL / VIGOROUS

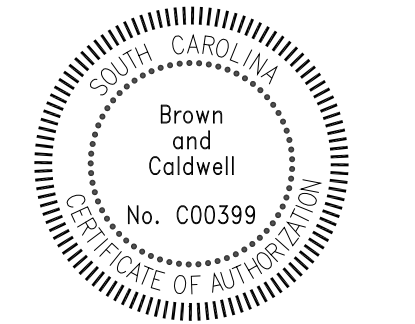
SCIENTIFIC NAME	COMMON NAME	QTY.	TYPE	ZONE	COMMENT
AGROSTIS PERENNANS	AUTUMN BENTGRASS	13%	SEED	MID TO UPPER STREAMBANK	SEED AT RATE OF 4 LBS./1000 S.F.
ANDROPOGON GERARDII	BIG BLUESTEM	17%	SEED	MID TO UPPER STREAMBANK	
ELYMUS CANADENSIS	CANADA WILD RYE	15%	SEED	MID TO UPPER STREAMBANK	
ELYMUS HYSTRIX	BOTTLEBRUSH GRASS	12%	SEED	MID TO UPPER STREAMBANK	
ELYMUS VILLOSUS	SILKY WILD RYE	13%	SEED	MID TO UPPER STREAMBANK	
PANICUM VIRGATUM	SWITCH GRASS	15%	SEED	MID TO UPPER STREAMBANK	

SCIENTIFIC NAME	COMMON NAME	QTY.	ROOT	ZONE	COMMENT
AGROSTIS PERENNANS	AUTUMN BENTGRASS	10%	SEED	LOWER TO MID STREAMBANK	SEED AT RATE OF 4 LBS./1000 S.F.
ANDROPOGON GERARDII	BIG BLUESTEM	8%	SEED	LOWER TO MID STREAMBANK	
ANDROPOGON GLOMERATUS	BUSHY BLUESTEM	20%	SEED	LOWER TO MID STREAMBANK	
CAREX STRICTA	TUSSOCK SEDGE	12%	SEED	LOWER TO MID STREAMBANK	
DACTYLIS GLOMERATA	ORCHARDGRASS	10%	SEED	LOWER TO MID STREAMBANK	
ELYMUS HYSTRIX	BOTTLEBRUSH GRASS	12%	SEED	LOWER TO MID STREAMBANK	
ELYMUS RIPARIUS	RIVERBANK WILD RYE	20%	SEED	LOWER TO MID STREAMBANK	
PANICUM VIRGATUM	SWITCHGRASS	8%	SEED	LOWER TO MID STREAMBANK	

**26** PLANT & SEEDING SCHEDULE FOR CREEK CROSSINGS DETAIL  
SCALE: NONE



COLUMBIA, SOUTH CAROLINA



LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

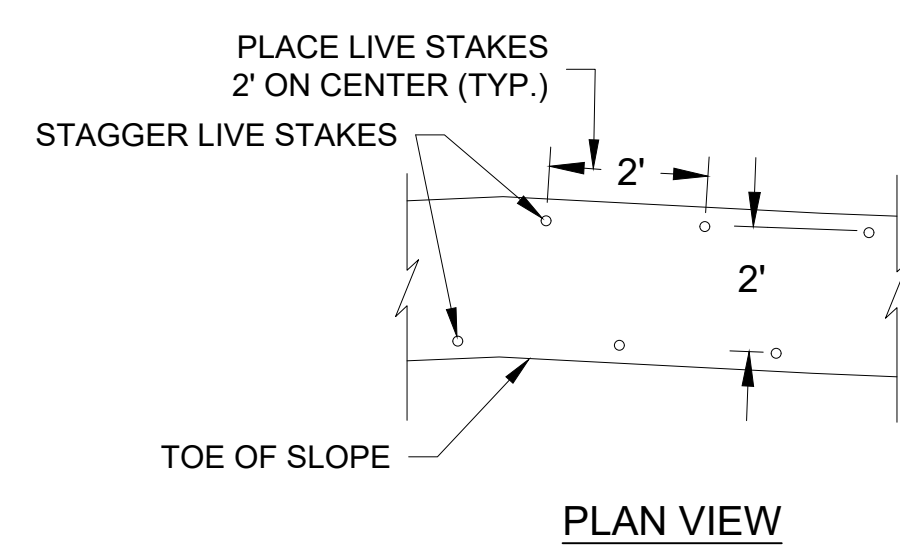
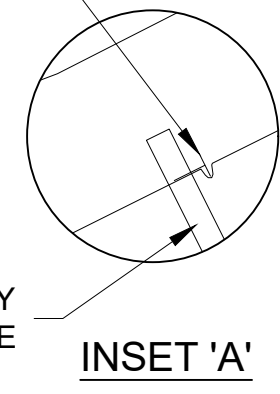
DESIGNED: J. Mazzei  
 DRAWN: A. Jumper  
 CHECKED: C. Lucie  
 CHECKED: J. Mazzei  
 APPROVED: J. Mazzei  
 FILENAME: 000-C-06.DWG  
 BC PROJECT NUMBER  
 CLIENT PROJECT NUMBER

CIVIL  
 STREAM CROSSING DETAILS 1

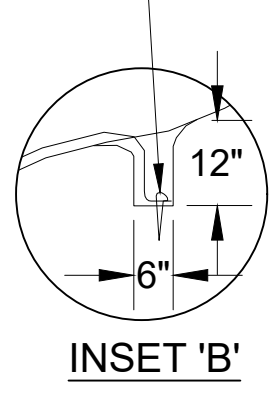
DRAWING NUMBER  
**000-C-06**  
 SHEET NUMBER  
 8 OF 55



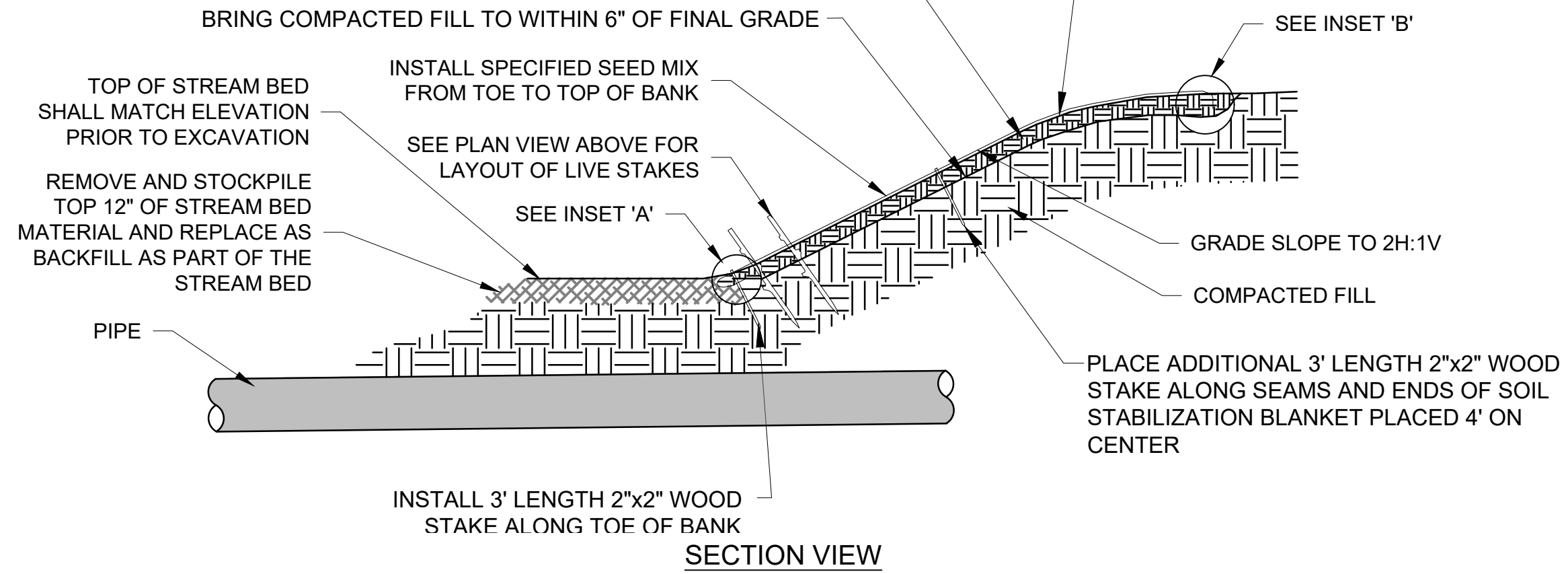
INSERT 2" GALVANIZED ROOFING NAIL INTO WOOD STAKE TO HOLD STABILIZATION BLANKET AS SHOWN



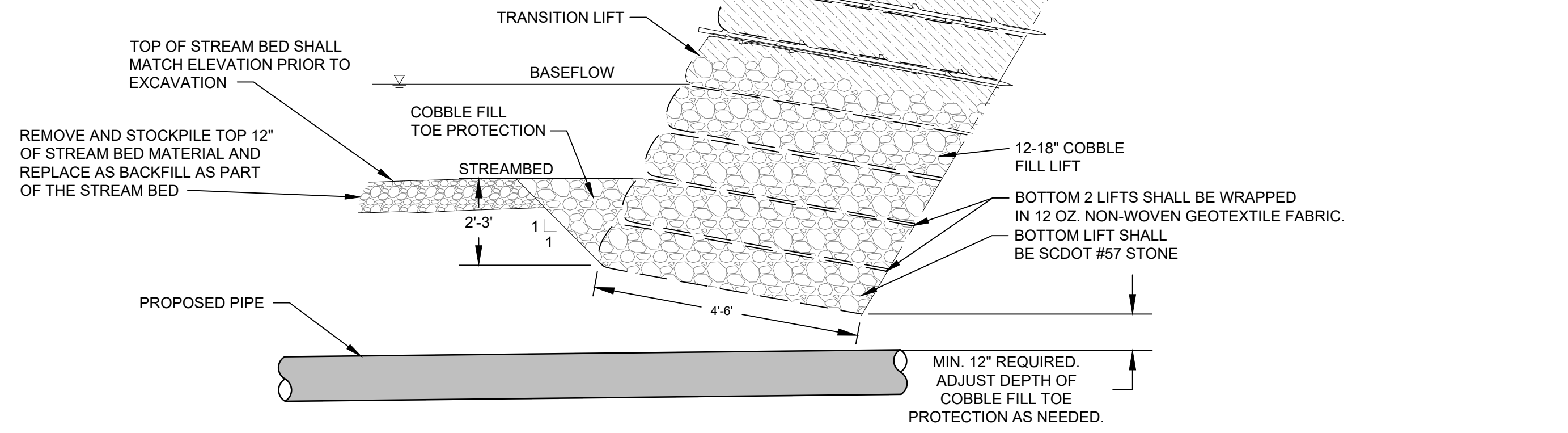
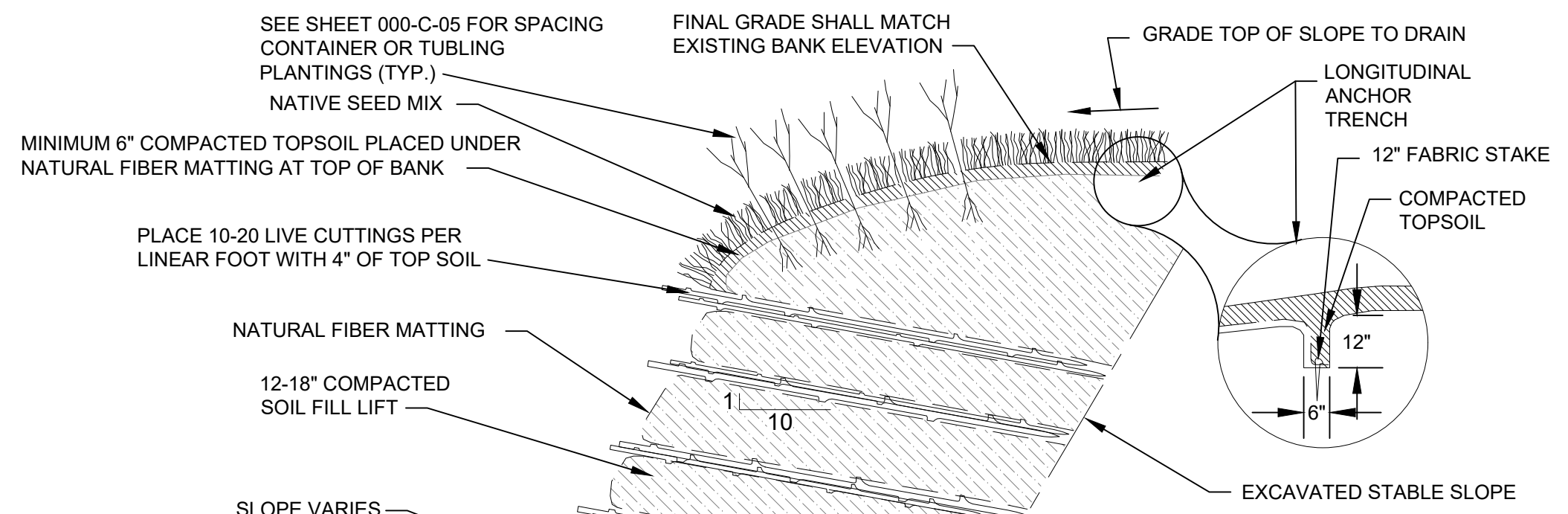
SECURE BLANKET IN TRENCH USING A 12" STAKE INTO END OF BLANKET AT TOP OF BANK



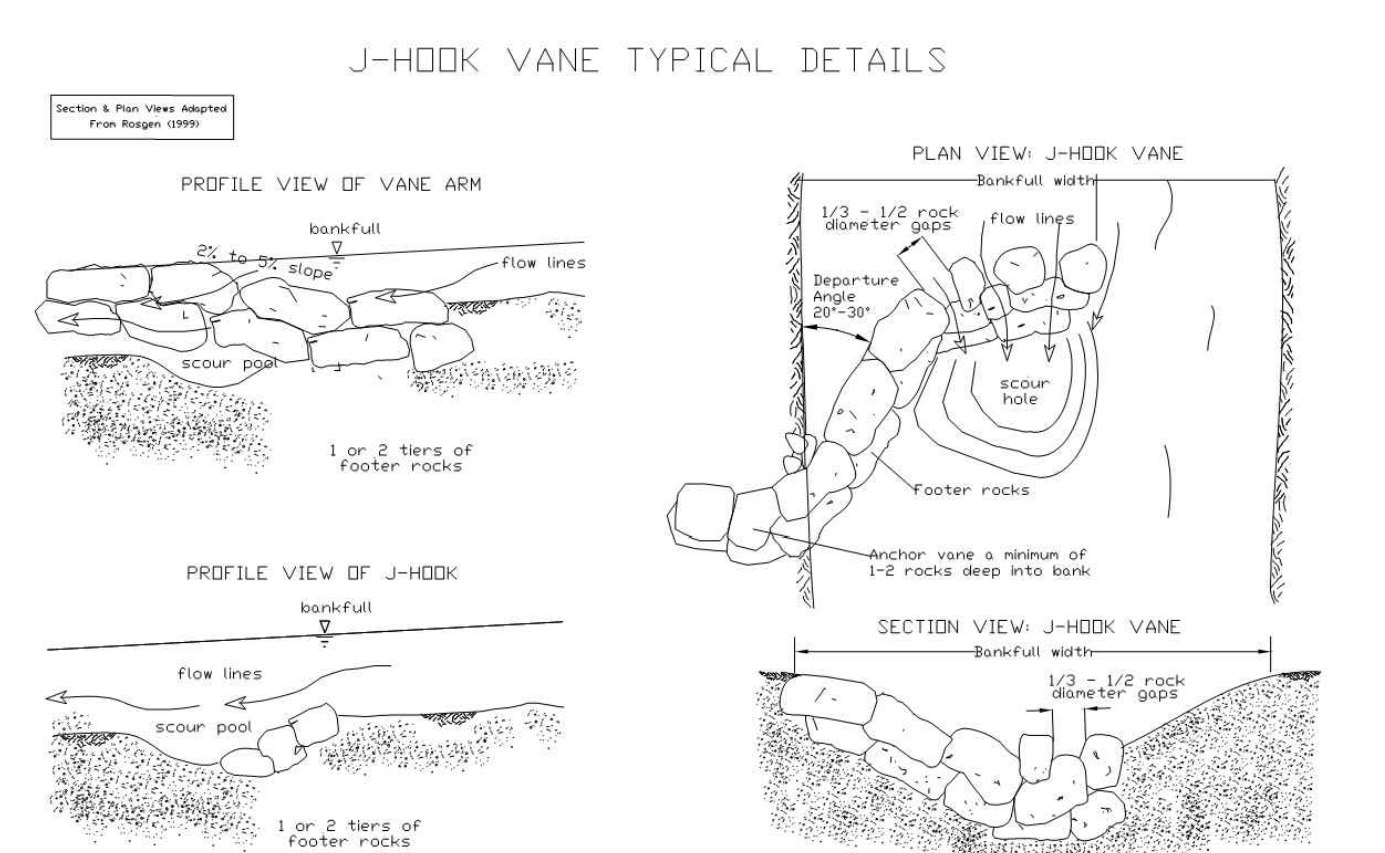
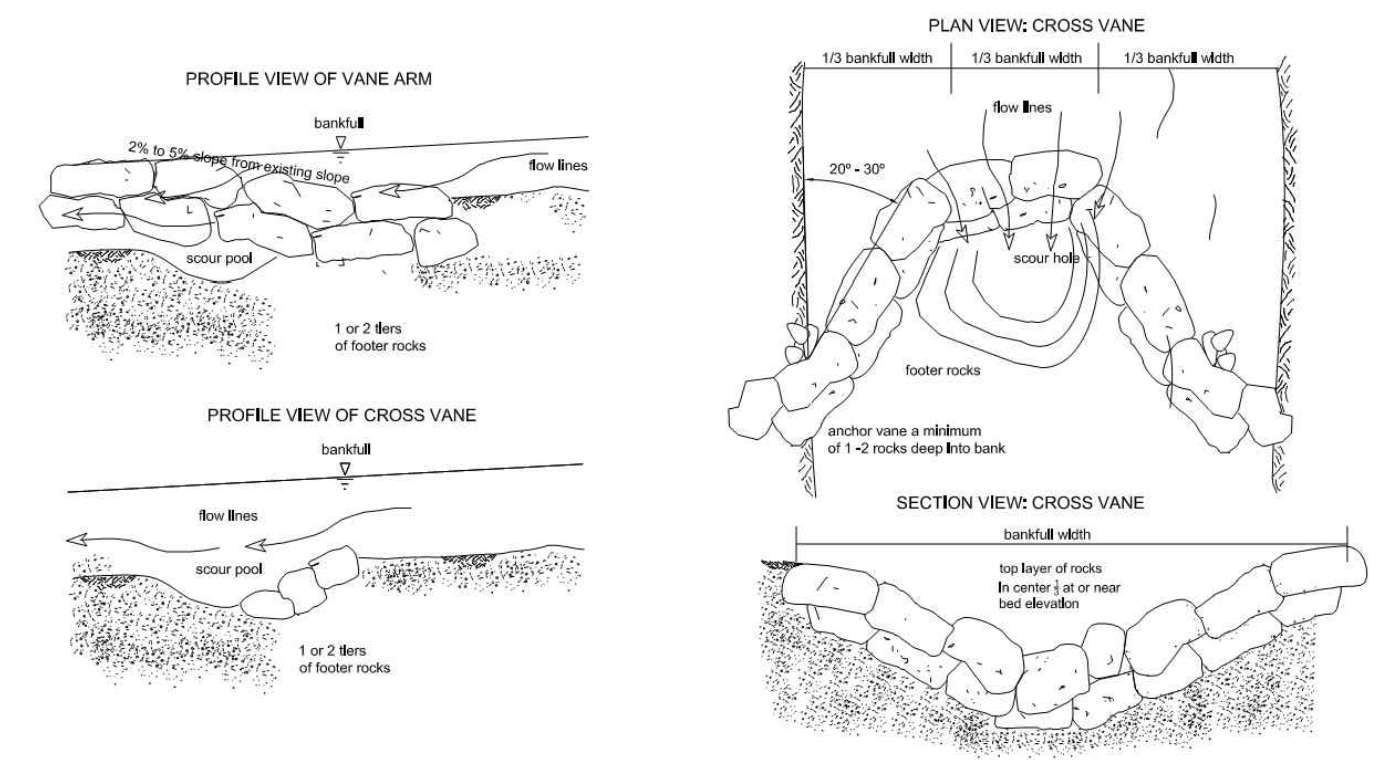
FINAL 6" OF FILL TO CONSIST OF SALVAGED OR IMPORTED TOPSOIL. COMPACT THE TOP 6" TO 85% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 TO OBTAIN FIRMNESS AND FINAL GRADES.



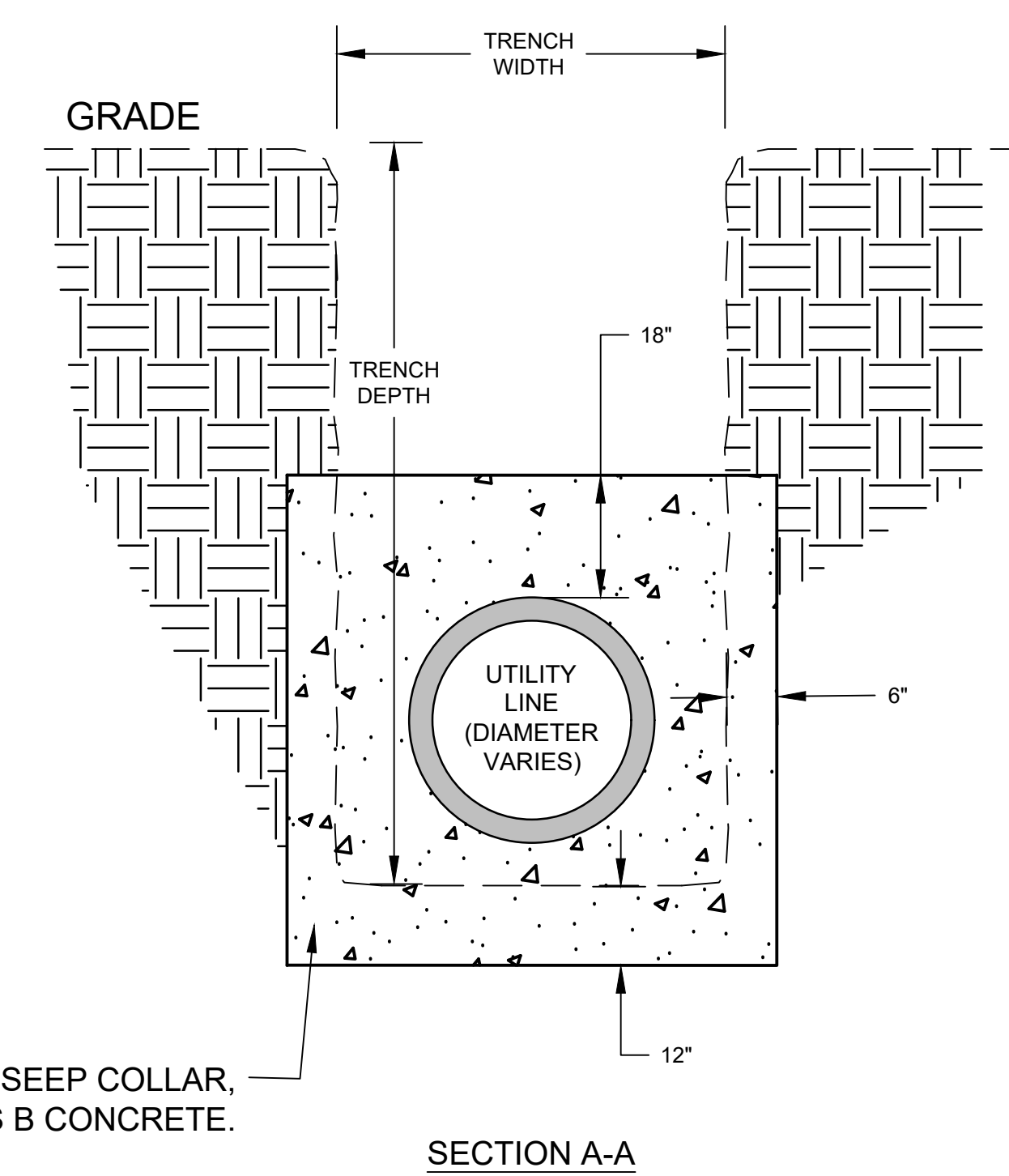
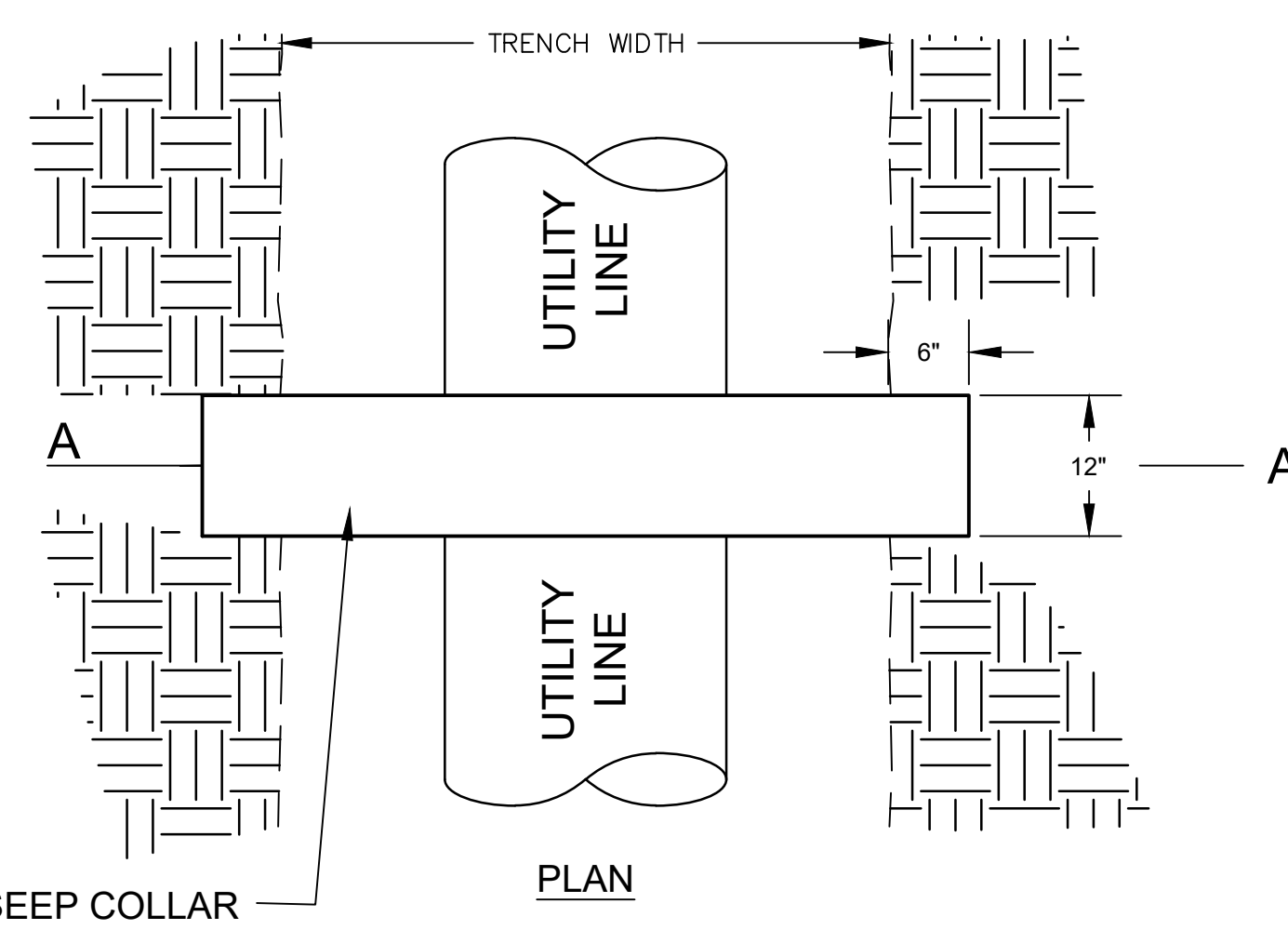
**27** TYPICAL BANK STABILIZATION DETAIL  
SCALE: NONE



**28** VEGETATED SOIL LIFT BANK STABILIZATION DETAIL  
SCALE: NONE



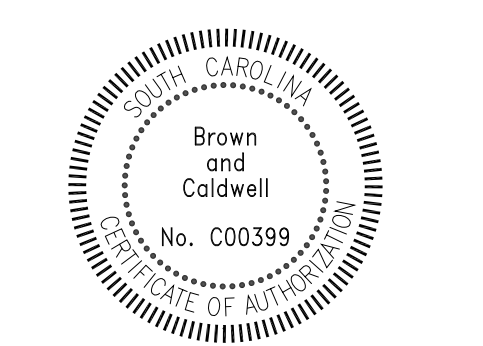
**29** CROSS VANE FOR STREAM PIPE PROTECTION DETAIL  
SCALE: NONE



**30** ANTI-SEEP COLLAR DETAIL  
SCALE: NONE



COLUMBIA, SOUTH CAROLINA



LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED: J. Mazzei  
DRAWN: A. Jumper  
CHECKED: C. Lucie  
CHECKED: J. Mazzei  
APPROVED: J. Mazzei

FILENAME: 000-C-07.DWG  
BC PROJECT NUMBER

CIVIL  
STREAM CROSSING DETAILS 2

DRAWING NUMBER  
**000-C-07**  
SHEET NUMBER  
9 OF 55

Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\CAD\2-SHEETS\CIVIL FILENAME: 000-C-07.DWG PLOT DATE: 9/24/2020 10:20 AM CAD USER: ANDY JUMPER



SCDHEC STANDARD SEDIMENT & EROSION CONTROL 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 INSTALLED, 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 SHALL 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
  - 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.
- INSTALL SILT BARRIERS AS SHOWN ON THESE PLAN SHEETS. SILT BARRIERS SHALL BE MAINTAINED AND KEPT IN WORKING CONDITION UNTIL PERMANENT GROUND COVER IS ESTABLISHED. SILT FENCING SHOULD BE CLEANED OR REPLACED WHEN SILT ACCUMULATION REACHES 1/3 THE HEIGHT OF THE FENCE.
- ALL DISTURBED AREAS THAT WILL NOT BE PAVED SHALL BE GRASSED. TEMPORARY GRASSING, MULCHING, OR OTHER STRUCTURAL MEASURES MAY BE REQUIRED TO PREVENT EROSION.
- ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL CLEARED AND GRADED AREAS SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS ESTABLISHED. ANY ERODED AREAS SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION AND PROTECTED FROM FURTHER EROSION AT NO ADDITIONAL COST TO THE OWNER.
- PROVIDE SILT FENCE AND/OR OTHER EROSION CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED AND STABILIZED WITH GRASSING IMMEDIATELY AFTER COMPLETION OF CONSTRUCTION IN THE AREA.
- CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO THE PAVED ROADWAY FROM CONSTRUCTION AREAS. CONTRACTOR TO DAILY REMOVE MUD/SOIL FROM PAVEMENT AS REQUIRED.
- ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING 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 TO THE SATISFACTION OF SCDHEC AND LEXINGTON COUNTY.

SYMBOLS FOR EROSION AND SEDIMENT CONTROL PRACTICES

SITE PREPARATION

- SURFACE ROUGHENING
- TOP SOILING
- TREE PRESERVATION AND PROTECTION
- TEMPORARY GRAVEL CONSTRUCTION ENTRY/EXIT
- TEMPORARY STREAM CROSSING

SURFACE STABILIZATION

- TEMPORARY SEEDING
- PERMANENT SEEDING
- SODDING
- RIP RAP
- TEMPORARY DIVERSIONS
- PERMANENT DIVERSIONS
- EROSION CONTROL BLANKET (ECB) OR TURF REINFORCEMENT MATS (TRM)

NOTES:

- ABOVE SYMBOLS AND NUMBERS DENOTE EROSION AND SEDIMENT CONTROL PRACTICES PER THE SOUTH CAROLINA DHEC STORM WATER MANAGEMENT BMP HANDBOOK, LATEST REVISION. THESE DETAILS ARE INCORPORATED BY REFERENCE.
- THE ABOVE LISTING IS GENERAL IN NATURE. SOME PRACTICES MAY NOT BE REQUIRED ON THIS CONTRACT AND SOME PRACTICES NOT SHOWN MAY BE REQUIRED.

STABILIZATION NOTES:

- ALL DISTURBED AREAS SHALL BE GRASSED IMMEDIATELY UPON COMPLETION OF GRADING OPERATIONS.
- TEMPORARY STABILIZATION SHALL BE UTILIZED FROM NOVEMBER THROUGH FEBRUARY, BUT PERMANENT STABILIZATION IS REQUIRED IN ALL AREAS BEFORE PROJECT COMPLETION.
- ALL DITCHES, SWALES, AND SLOPES SHALL BE DOUBLE SEEDING AND COVERED WITH STRAW OR EROSION CONTROL MATTING TO PROMOTE RAPID STABILIZATION.
- FOR DETAILS ON MIXES PLEASE CONSULT THE LEXINGTON SOIL AND WATER CONSERVATION DISTRICT, (803)-359-3165 EXT.3

TEMPORARY VEGETATION SCHEDULE

SPECIES	RATE (LBS/ACRE)	APPLICATION DATES
BROWNTOP MILLET (ALONE)	40	APRIL - AUGUST
BROWNTOP MILLET (MIX)*	10	APRIL - AUGUST
RYE GRAIN (ALONE)	56	SEPT. - DEC. & FEB. - APRIL
RYE GRAIN (MIX)*	10	SEPT. - DEC. & FEB. - APRIL
RYE GRASS (ALONE)	50	SEPT. - NOV.
RYE GRASS (MIX)*	8	SEPT. - NOV.

NOTE:  
ALL STABILIZATION WITHIN SALUDA SHOALS PARK SHALL MATCH THE EXISTING TYPE OF GRASSING.

OUTLET PROTECTION

- OUTLET STAB. STRUCTURE

INLET PROTECTION

- TEMPORARY FABRIC DROP INLET PROTECTION
- TEMPORARY BLOCK & GRAVEL INLET PROTECTION
- SOD DROP INLET PROTECTION
- TYPE A - FABRIC INLET PROTECTION
- TYPE D - RIGID INLET FILTERS
- TYPE E - SURFACE COURSE CURB INLET FILTER
- TYPE F - INLET TUBE
- TYPE A - SEDIMENT TUBE INLET PROTECTION
- TEMPORARY SEDIMENT TRAP
- SEDIMENT BASIN
- SILT FENCE
- CHECK DAM
- SEDIMENT TUBE

PERMANENT VEGETATION SCHEDULE

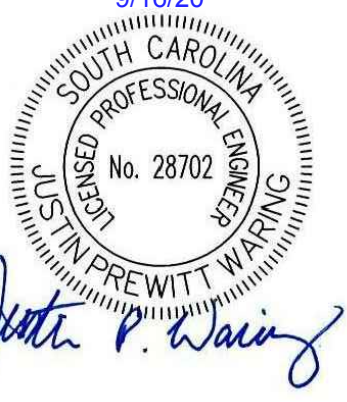
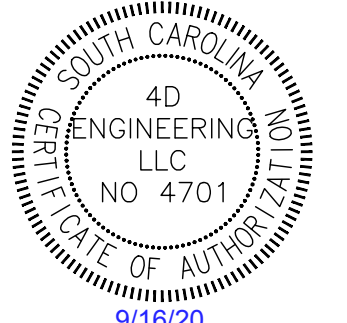
SPECIES	RATE (LBS/ACRE)	APPLICATION DATES
BAHIA GRASS (ALONE)	40	APRIL - JULY
BAHIA GRASS (MIX)*	30	APRIL - JULY
BERMUDA GRASS (HULLED) (ALONE)	8-12	MAY - AUGUST
BERMUDA GRASS (HULLED) (MIX)*	4-6	MAY - AUGUST
FESCUE, TALL (KY31) (ALONE)	40	SEPT. - DEC.
FESCUE, TALL (KY31) (MIX)*	20	SEPT. - DEC.
SERICEA LESPEDEZ (SCARIFIED, MIX)*	40	MAY - AUGUST
LADINO CLOVER (MIX)*	2	SEPT. - DEC.

NOTE:  
ALL STABILIZATION WITHIN SALUDA SHOALS PARK SHALL MATCH THE EXISTING TYPE OF GRASSING.

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COLUMBIA, SOUTH CAROLINA



LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED:	JTB
DRAWN:	CBB
CHECKED:	JPW
CHECKED:	CWD
APPROVED:	JPW
FILENAME	18016-MOD
BC PROJECT NUMBER	152166
CLIENT PROJECT NUMBER	CITY CIP# S57428

CIVIL

EROSION & SEDIMENT CONTROL LEGEND & NOTES

DRAWING NUMBER

000-C-08

SHEET NUMBER  
10 OF 55

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**ENGINEERING**

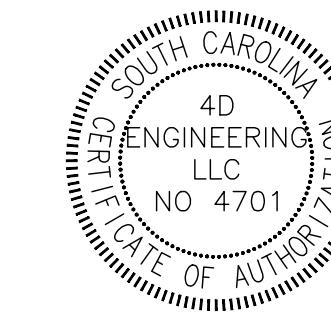
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COLUMBIA, SOUTH CAROLINA



**LOWER  
SALUDA RIVER  
RELIEF SEWER  
AND  
MAJOR PIPE  
REHABILITATION**

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES  
AT FULL SIZE

DESIGNED: JTB

DRAWN: CBB

CHECKED: JPW

CHECKED: CWD

APPROVED: JPW

FILENAME  
18016-MOD

BC PROJECT NUMBER  
152166

CLIENT PROJECT NUMBER  
CITY CIP# SS7428

CIVIL

**EROSION &  
SEDIMENT  
CONTROL DETAILS 1**

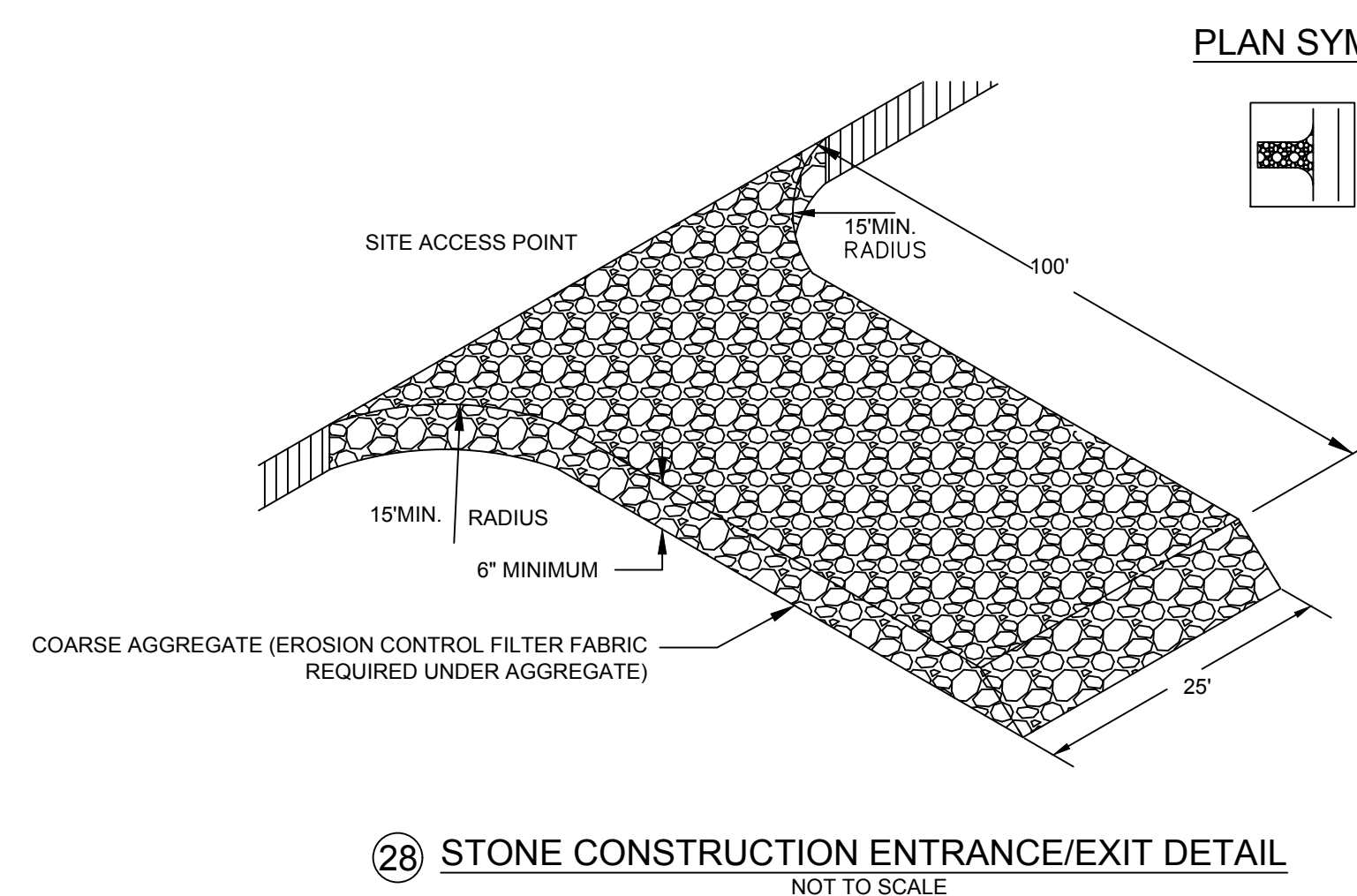
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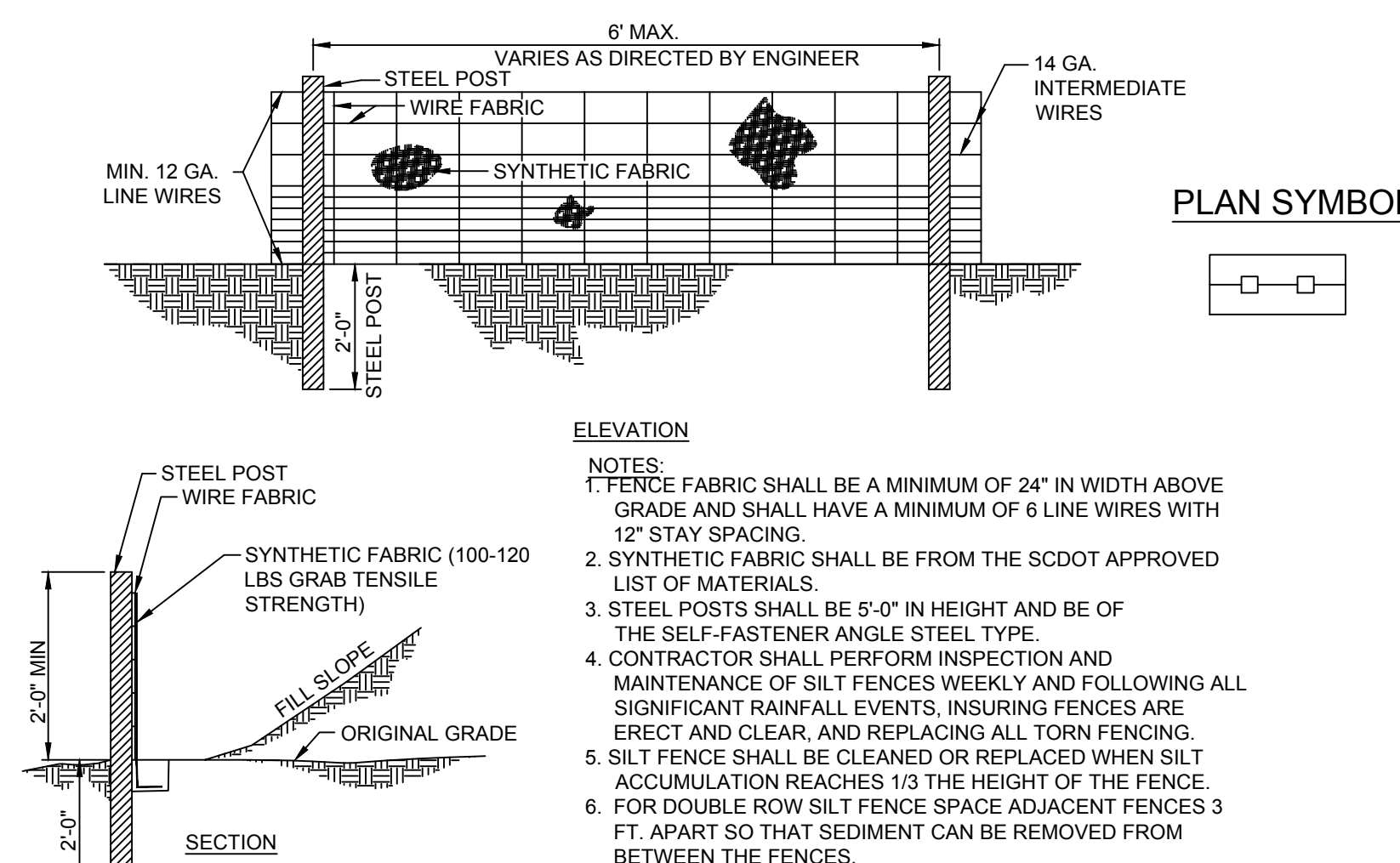
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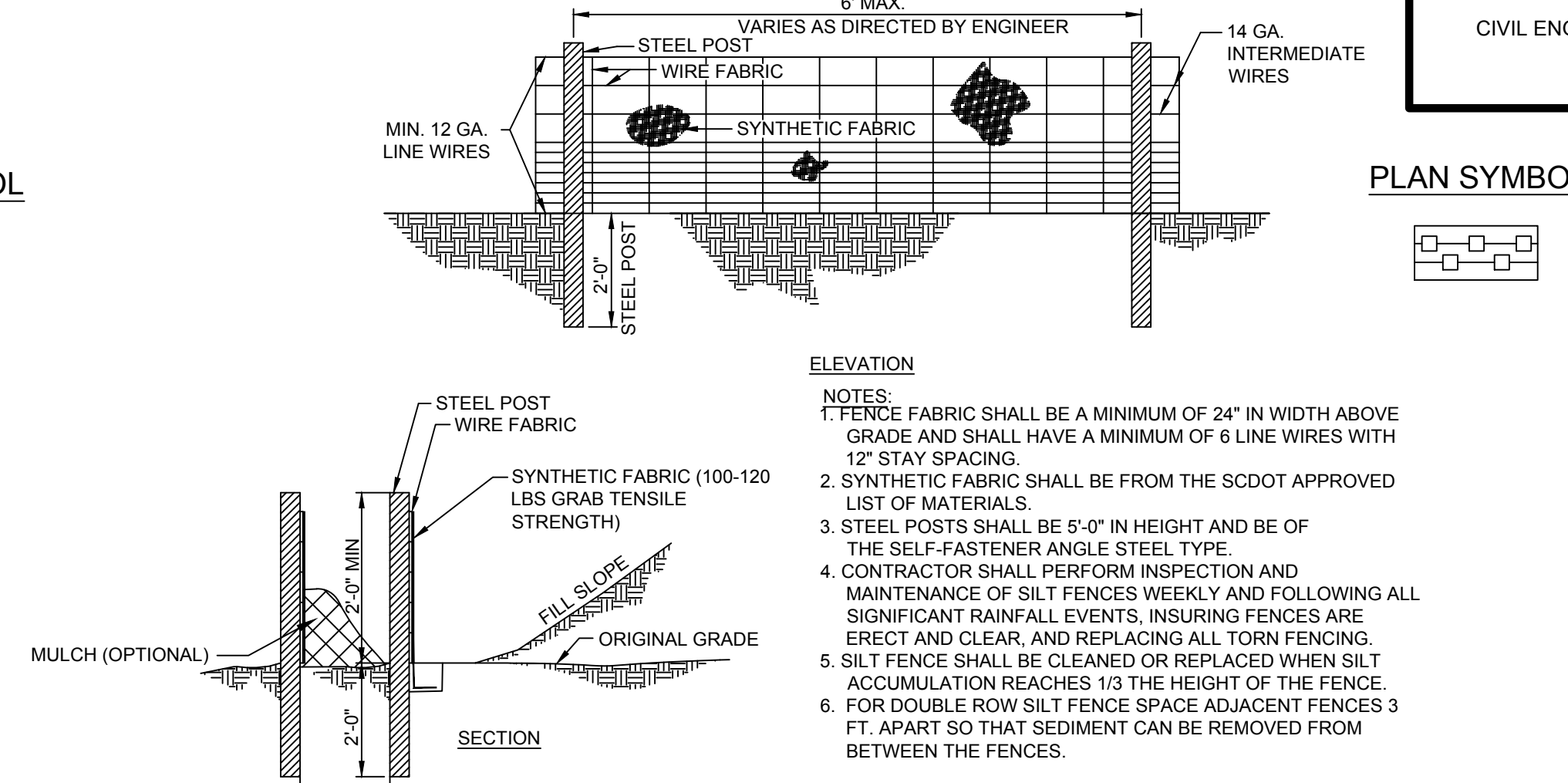
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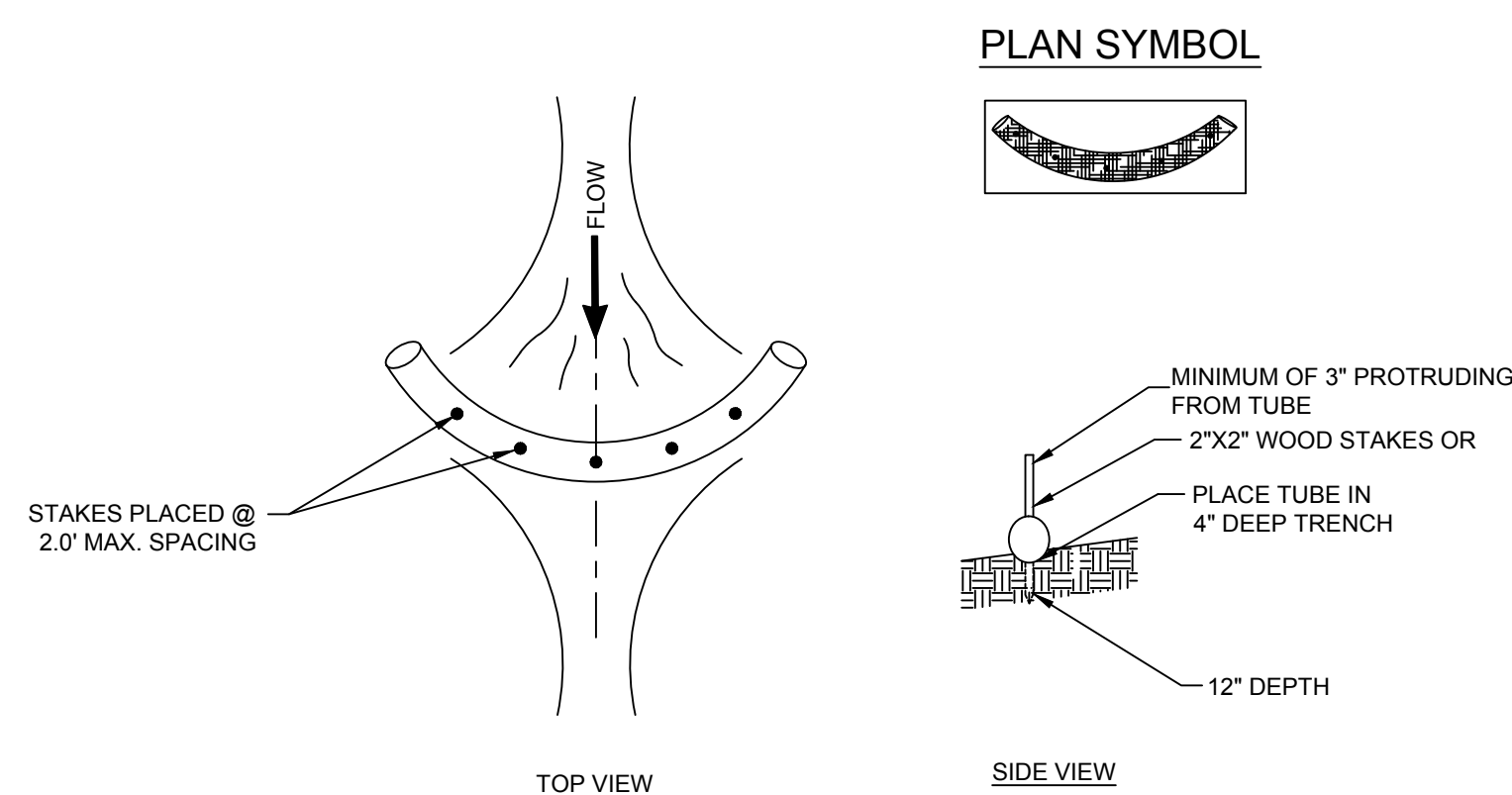
**28** STONE CONSTRUCTION ENTRANCE/EXIT DETAIL  
NOT TO SCALE



**29** SILT FENCE WITH WIRE FABRIC DETAIL  
NOT TO SCALE

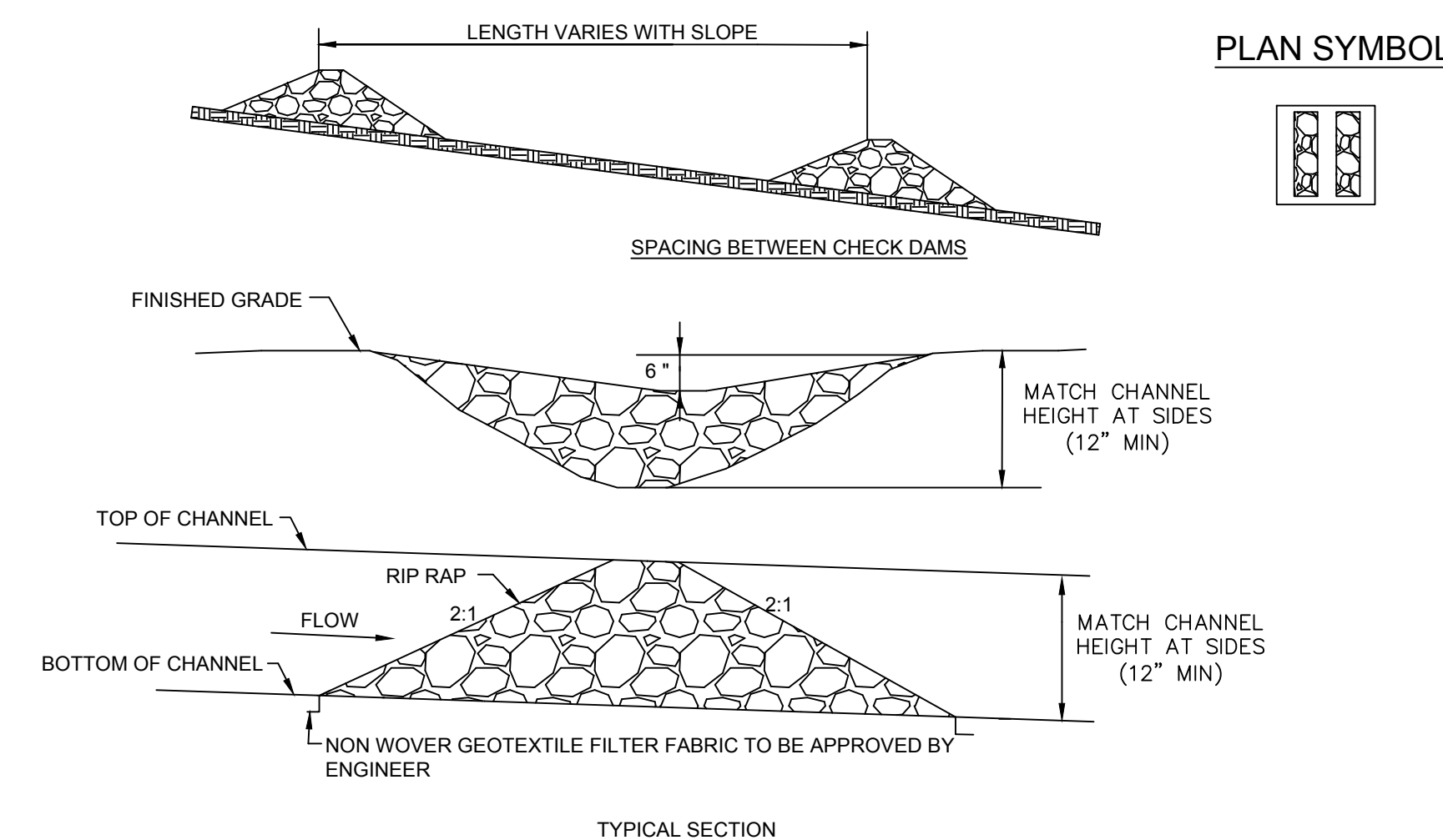


**30** DOUBLE ROW SILT FENCE WITH WIRE FABRIC DETAIL  
NOT TO SCALE



- NOTES:**
1. PROVIDE SEDIMENT TUBE CHECK DAMS ALONG ALL SWALES AND TEMPORARY DIVERSIONS EVERY 2' OF VERTICAL GRADE DROP OR EVERY 80 LINEAR FEET, WHICHEVER IS MORE FREQUENT.
  2. ADDITIONAL SEDIMENT TUBE CHECK DAMS MAY BE REQUIRED BY THE ENGINEER AS NEEDED TO PROPERLY CONTROL SEDIMENTATION ON ALL AREAS OF THE PROJECT SITE.
  3. INSPECT SEDIMENT TUBES AFTER INSTALLATION FOR GAPS UNDER THE SEDIMENT TUBES AND FOR GAPS BETWEEN THE JOINTS OF ADJACENT ENDS OF SEDIMENT TUBES.
  4. INSPECT EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT OF 0.5 INCHES OR GREATER.
  5. REPAIR ALL RILLS, GULLIES AND UNDERCUTTING NEAR SEDIMENT TUBES.
  6. REMOVE ALL SEDIMENT DEPOSITS THAT IMPAIR THE FILTRATION CAPABILITY OF SEDIMENT TUBES WHEN THE SEDIMENT REACHES 1/3 THE HEIGHT OF THE EXPOSED SEDIMENT TUBE.
  7. REMOVE AND/OR REPLACE INSTALLED SEDIMENT TUBES AS REQUIRED TO ADAPT TO CHANGING CONSTRUCTION SITE CONDITIONS.
  8. REMOVE SEDIMENT TUBES FROM THE SITE WHEN THE FUNCTIONAL LONGEVITY IS EXCEEDED.
  9. GATHER SEDIMENT TUBES AND DISPOSE OF THEM IN REGULAR MEANS AS NON-HAZARDOUS, INERT MATERIAL.
  10. PRIOR TO FINAL STABILIZATION, BACKFILL ALL TRENCHES, DEPRESSIONS AND OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF SEDIMENT TUBES.

**31** SEDIMENT TUBE CHECK DAM DETAIL  
NOT TO SCALE



- NOTES:**
1. CONSTRUCT STONE CHECK DAMS OF RIP RAP VARYING IN SIZE WITH NO SINGLE STONE WEIGHING MORE THAN 100 LBS AND AT LEAST 25 PERCENT OF THE STONES WEIGHING MORE THAN 50 LBS AND NO MORE THAN 25 PERCENT OF STONES WEIGHING LESS THAN 25 LBS.
  2. HAND PLACEMENT OR ADJUSTMENT OF STONES WILL LIKELY BE NECESSARY TO ENSURE THAT THE CENTER OF EACH CHECK DAM IS LOWER THAN THE SIDES TO ALLOW CONTROLLED FLOW THROUGH THE CENTER OF EACH CHECK DAM.
  3. REGULAR INSPECTIONS SHALL BE MADE TO INSPECT THE CONDITION AND PROPER FUNCTION OF EACH CHECK DAM THROUGHOUT THE CONSTRUCTION PROCESS. ANY DAMAGE OR EROSION SHALL BE REPAIRED IMMEDIATELY AS OFTEN AS NECESSARY TO ALLOW PROPER FUNCTION.
  4. REMOVE SEDIMENT DEPOSITION FROM EACH CHECK DAM WHEN THE HEIGHT OF SEDIMENT REACHES 1/3 THE HEIGHT OF THE CHANNEL OR WHENEVER NECESSARY TO ALLOW CONTINUED SEDIMENT TRAPPING AND ADEQUATE FLOW OF RUNOFF.

**32** STONE CHECK DAM DETAIL  
NOT TO SCALE



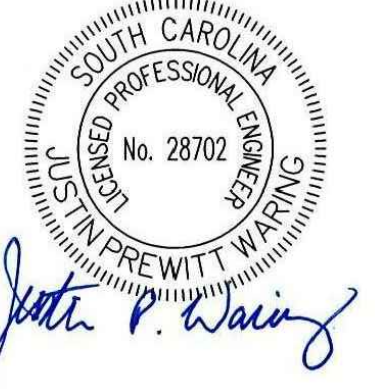
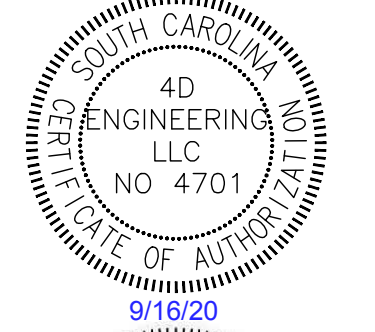


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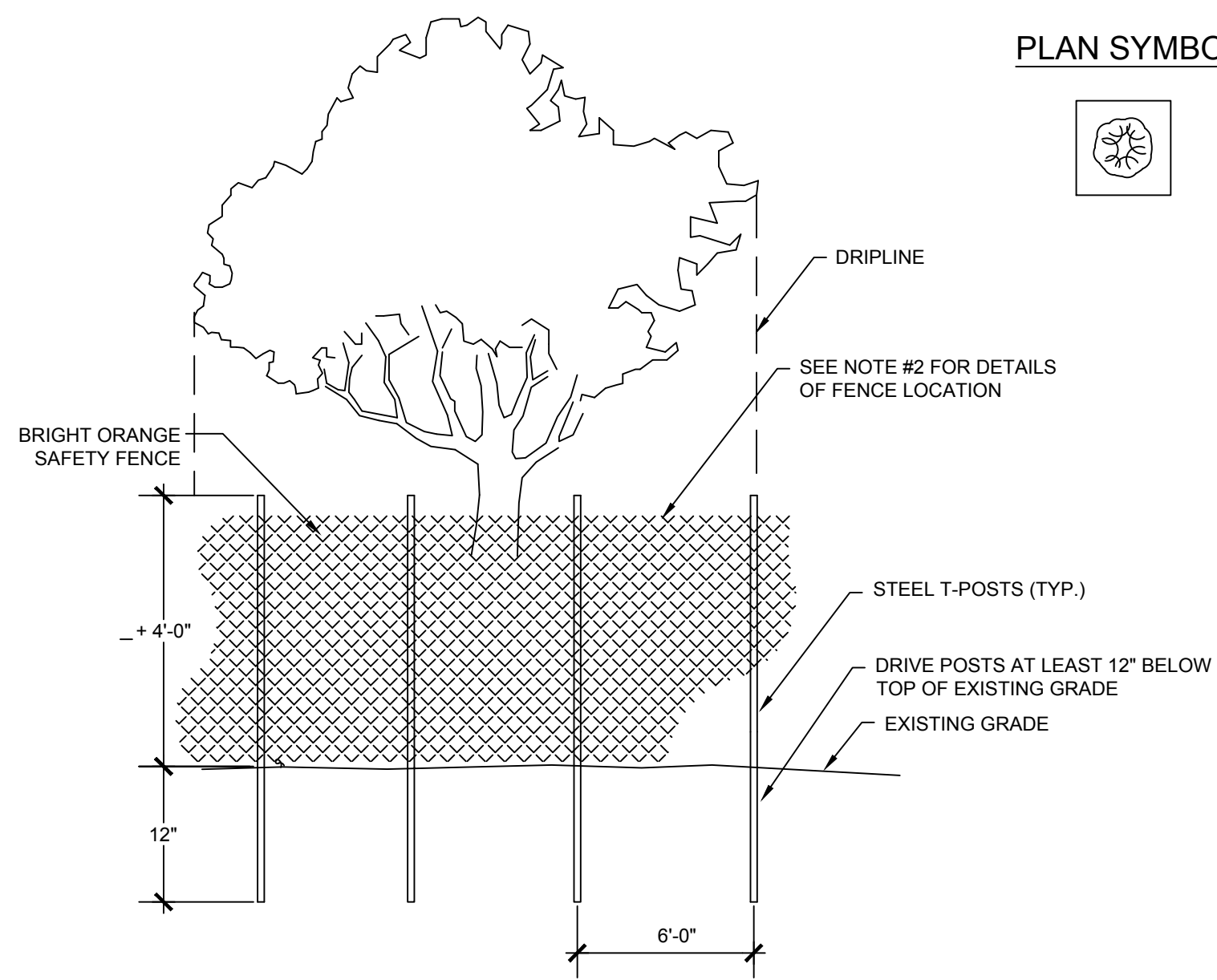
LOWER  
SALUDA RIVER  
RELIEF SEWER  
AND  
MAJOR PIPE  
REHABILITATION

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE	
DESIGNED:	JTB
DRAWN:	CBB
CHECKED:	JPW
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FILENAME	18016-MOD
BC PROJECT NUMBER	152166
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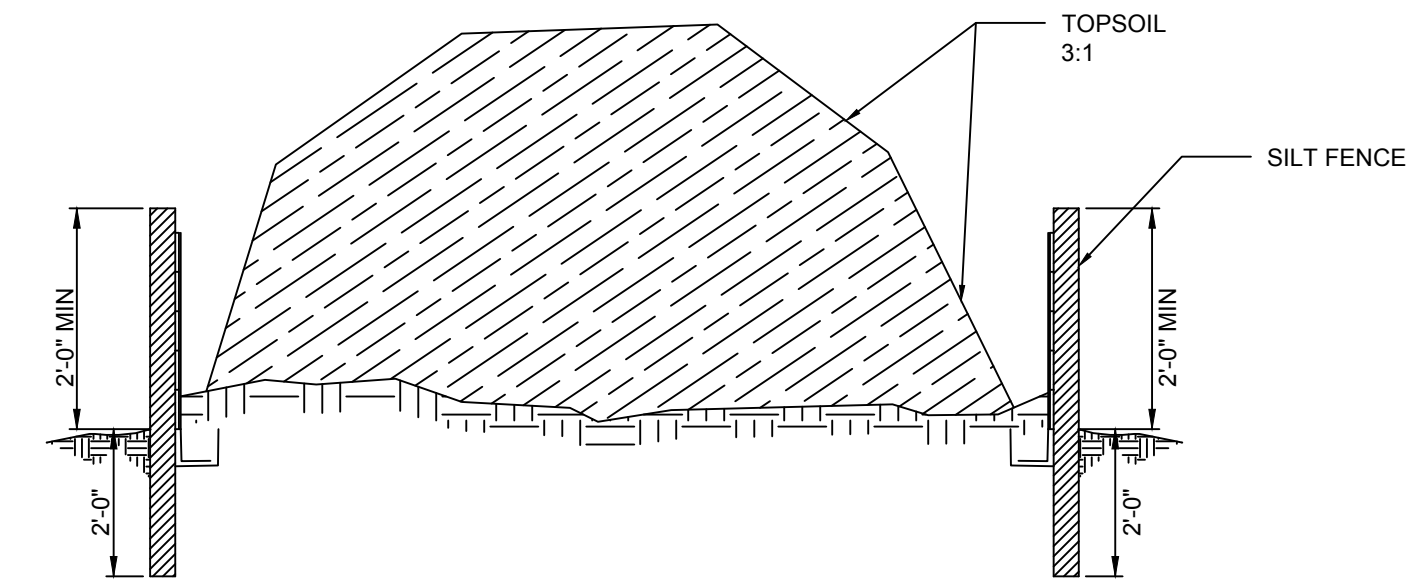
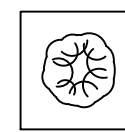
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EROSION & SEDIMENT CONTROL DETAILS  
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DRAWING NUMBER  
**000-C-10**  
  
SHEET NUMBER  
12 OF 55



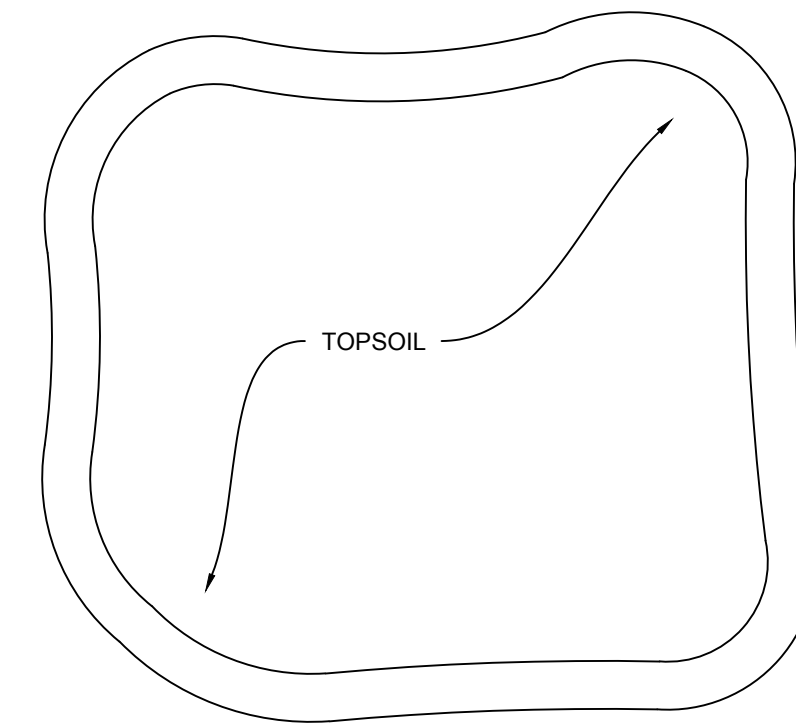
- NOTES:**
1. ROOT PROTECTION ZONE SHALL BE ONE FOOT FOR EACH INCH OF TRUNK DIAMETER.
  2. PROTECTION FENCING SHALL BE PROVIDED FOR ALL TREES TO REMAIN, AS SHOWN ON THE DRAWINGS AND SHALL REMAIN IN PLACE UNTIL THE ZONING ADMINISTRATOR OR LAND DEVELOPMENT PLANNER APPROVES THEIR REMOVAL.
  3. PROTECTION FENCING SHALL BE PLACED OUTSIDE OF DRIPLINE OF THE TREE CANOPY WHENEVER POSSIBLE.
  4. FENCING SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITY.
  5. NO GRADING OR GRUBBING IS ALLOWED WITHIN THE ROOT OR TREE PROTECTION ZONES. PARKING, MATERIAL STORAGE, BURY PITS, CONCRETE WASHOUT, BURNING OF DEBRIS, OR OTHER SIMILAR CONSTRUCTION SITE ACTIVITIES THAT COULD DISTURB OR COMPACT THE SOIL WITHIN THE TREE PROTECTION ZONE ARE NOT PERMITTED.

**33** TREE PROTECTION DETAIL  
NOT TO SCALE

**PLAN SYMBOL**



SECTION VIEW



PLAN VIEW

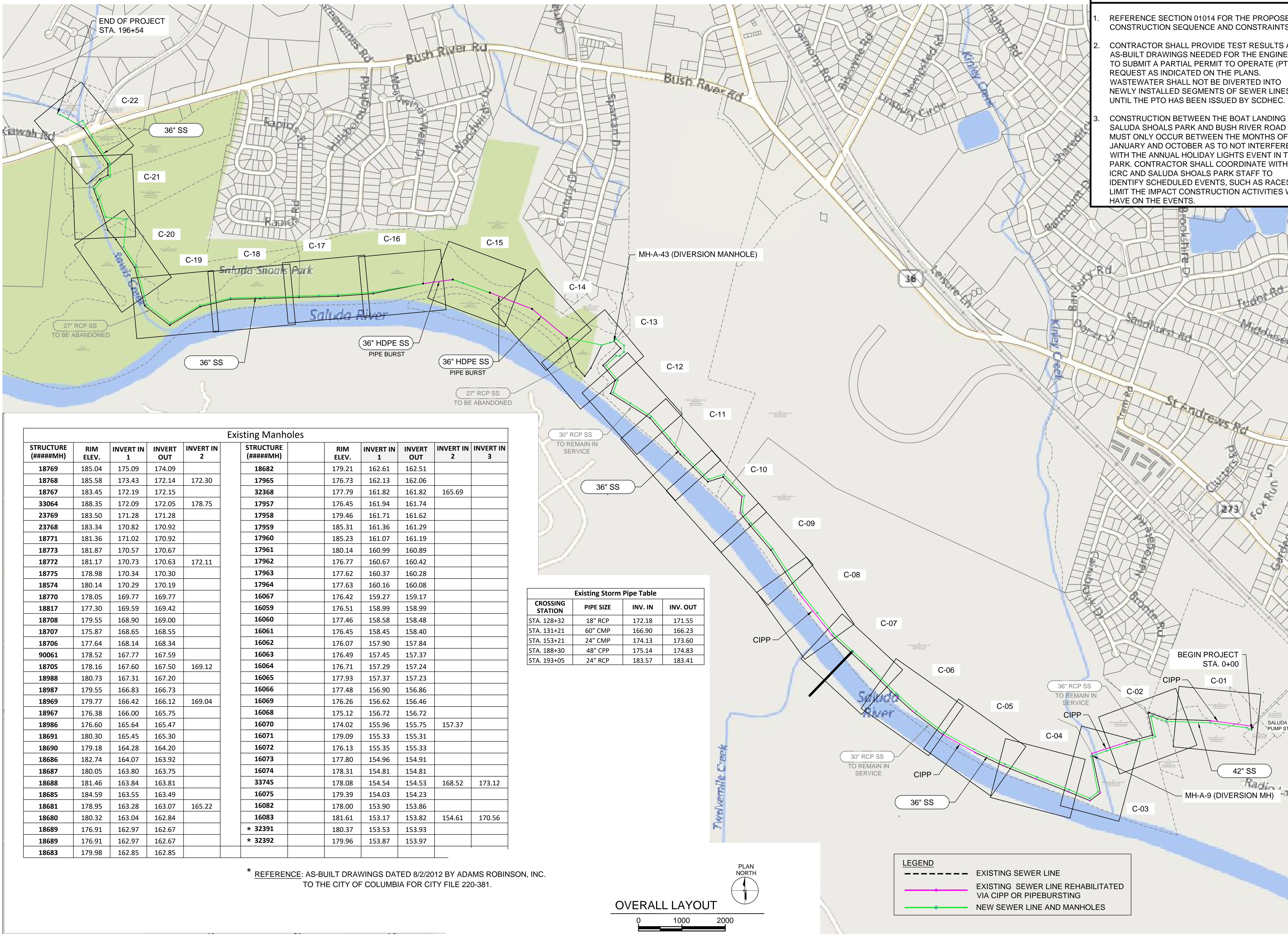
- NOTES:**
1. EXCESS SOIL FROM GRADING OPERATIONS SHALL AS MUCH AS PRACTICABLE BE STORED IN THE SOIL STOCKPILE SHOWN ON THE PLANS.
  2. SILT FENCE SHALL BE PLACED AROUND THE STOCKPILE TO CONTAIN TOPSOIL EROSION AND TRANSPORT.
  3. CONTRACTOR TO INSPECT AND MAINTAIN STOCKPILE AS MUCH AS NECESSARY TO ENSURE PROPER FUNCTIONING OF SILT FENCE.

**34** EXCAVATED MATERIAL STOCKPILE DETAIL  
NOT TO SCALE





Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\CAD\2-SHEETS\CIVIL FILENAME: 000-C-11.DWG PLOT DATE: 11/7/2019 10:09 AM CAD USER: ANDY JUMPER

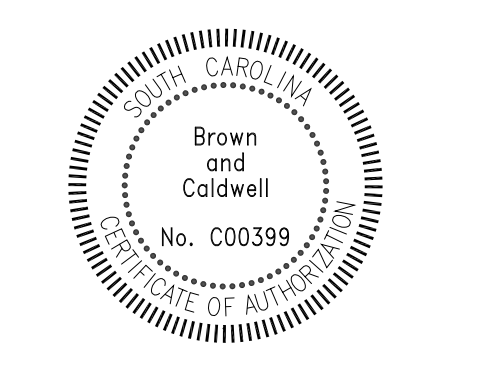


**GENERAL NOTES:**

- REFERENCE SECTION 01014 FOR THE PROPOSED CONSTRUCTION SEQUENCE AND CONSTRAINTS.
- CONTRACTOR SHALL PROVIDE TEST RESULTS AND AS-BUILT DRAWINGS NEEDED FOR THE ENGINEER TO SUBMIT A PARTIAL PERMIT TO OPERATE (PTO) REQUEST AS INDICATED ON THE PLANS. WASTEWATER SHALL NOT BE DIVERTED INTO NEWLY INSTALLED SEGMENTS OF SEWER LINES UNTIL THE PTO HAS BEEN ISSUED BY SCDHEC.
- CONSTRUCTION BETWEEN THE BOAT LANDING AT SALUDA SHOALS PARK AND BUSH RIVER ROAD MUST ONLY OCCUR BETWEEN THE MONTHS OF JANUARY AND OCTOBER AS TO NOT INTERFERE WITH THE ANNUAL HOLIDAY LIGHTS EVENT IN THE PARK. CONTRACTOR SHALL COORDINATE WITH THE ICRC AND SALUDA SHOALS PARK STAFF TO IDENTIFY SCHEDULED EVENTS, SUCH AS RACES, TO LIMIT THE IMPACT CONSTRUCTION ACTIVITIES WILL HAVE ON THE EVENTS.



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

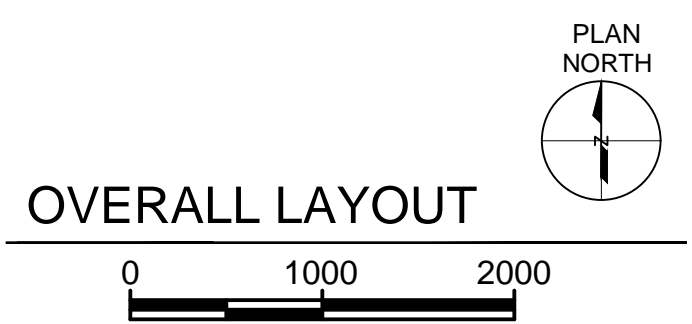
DESIGNED:	J. Mazzei
DRAWN:	A. Jumper
CHECKED:	C. Lucie
CHECKED:	J. Mazzei
APPROVED:	J. Mazzei
FILENAME:	000-C-11.DWG
BC PROJECT NUMBER:	152166
CLIENT PROJECT NUMBER:	(CITY CIP# SS7428)

**CIVIL OVERALL LAYOUT, EXISTING MANHOLE DATA AND CONSTRUCTION SEQUENCE**

DRAWING NUMBER  
**000-C-11**  
SHEET NUMBER  
13 OF 55

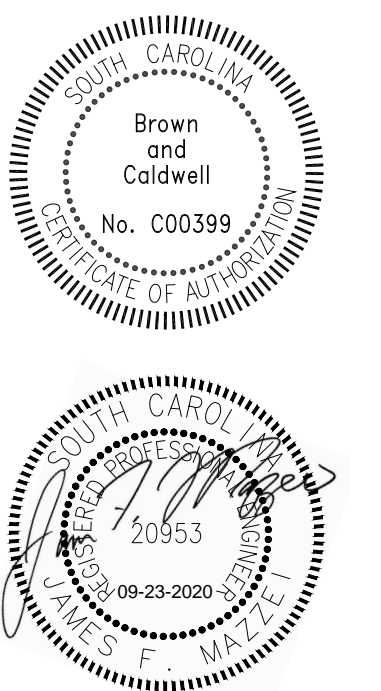
Existing Manholes					Existing Storm Pipe Table					
STRUCTURE (#####MH)	RIM ELEV.	INVERT IN 1	INVERT OUT	INVERT IN 2	STRUCTURE (#####MH)	RIM ELEV.	INVERT IN 1	INVERT OUT	INVERT IN 2	INVERT IN 3
18769	185.04	175.09	174.09		18682	179.21	162.61	162.51		
18768	185.58	173.43	172.14	172.30	17965	176.73	162.13	162.06		
18767	183.45	172.19	172.15		32368	177.79	161.82	161.82	165.69	
33064	188.35	172.09	172.05	178.75	17957	176.45	161.94	161.74		
23769	183.50	171.28	171.28		17958	179.46	161.71	161.62		
23768	183.34	170.82	170.92		17959	185.31	161.36	161.29		
18771	181.36	171.02	170.92		17960	185.23	161.07	161.19		
18773	181.87	170.57	170.67		17961	180.14	160.99	160.89		
18772	181.17	170.73	170.63	172.11	17962	176.77	160.67	160.42		
18775	178.98	170.34	170.30		17963	177.62	160.37	160.28		
18574	180.14	170.29	170.19		17964	177.63	160.16	160.08		
18770	178.05	169.77	169.77		16067	176.42	159.27	159.17		
18817	177.30	169.59	169.42		16059	176.51	158.99	158.99		
18708	179.55	168.90	169.00		16060	177.46	158.58	158.48		
18707	175.87	168.65	168.55		16061	176.45	158.45	158.40		
18706	177.64	168.14	168.34		16062	176.07	157.90	157.84		
90061	178.52	167.77	167.59		16063	176.49	157.45	157.37		
18705	178.16	167.60	167.50	169.12	16064	176.71	157.29	157.24		
18988	180.73	167.31	167.20		16065	177.93	157.37	157.23		
18987	179.55	166.83	166.73		16066	177.48	156.90	156.86		
18969	179.77	166.42	166.12	169.04	16069	176.26	156.62	156.46		
18967	176.38	166.00	165.75		16068	175.12	156.72	156.72		
18986	176.60	165.64	165.47		16070	174.02	155.96	155.75	157.37	
18691	180.30	165.45	165.30		16071	179.09	155.33	155.31		
18690	179.18	164.28	164.20		16072	176.13	155.35	155.33		
18686	182.74	164.07	163.92		16073	177.80	154.96	154.91		
18687	180.05	163.80	163.75		16074	178.31	154.81	154.81		
18688	181.46	163.84	163.81		33745	178.08	154.54	154.53	168.52	173.12
18685	184.59	163.55	163.49		16075	179.39	154.03	154.23		
18681	178.95	163.28	163.07	165.22	16082	178.00	153.98	153.86		
18680	180.32	163.04	162.84		16083	181.61	153.17	153.82	154.61	170.56
18689	176.91	162.97	162.67		* 32391	180.37	153.53	153.93		
18689	176.91	162.97	162.67		* 32392	179.96	153.87	153.97		
18683	179.98	162.85	162.85							

\* REFERENCE: AS-BUILT DRAWINGS DATED 8/2/2012 BY ADAMS ROBINSON, INC. TO THE CITY OF COLUMBIA FOR CITY FILE 220-381.



LEGEND	
	EXISTING SEWER LINE
	EXISTING SEWER LINE REHABILITATED VIA CIPP OR PIPEBURSTING
	NEW SEWER LINE AND MANHOLES





**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

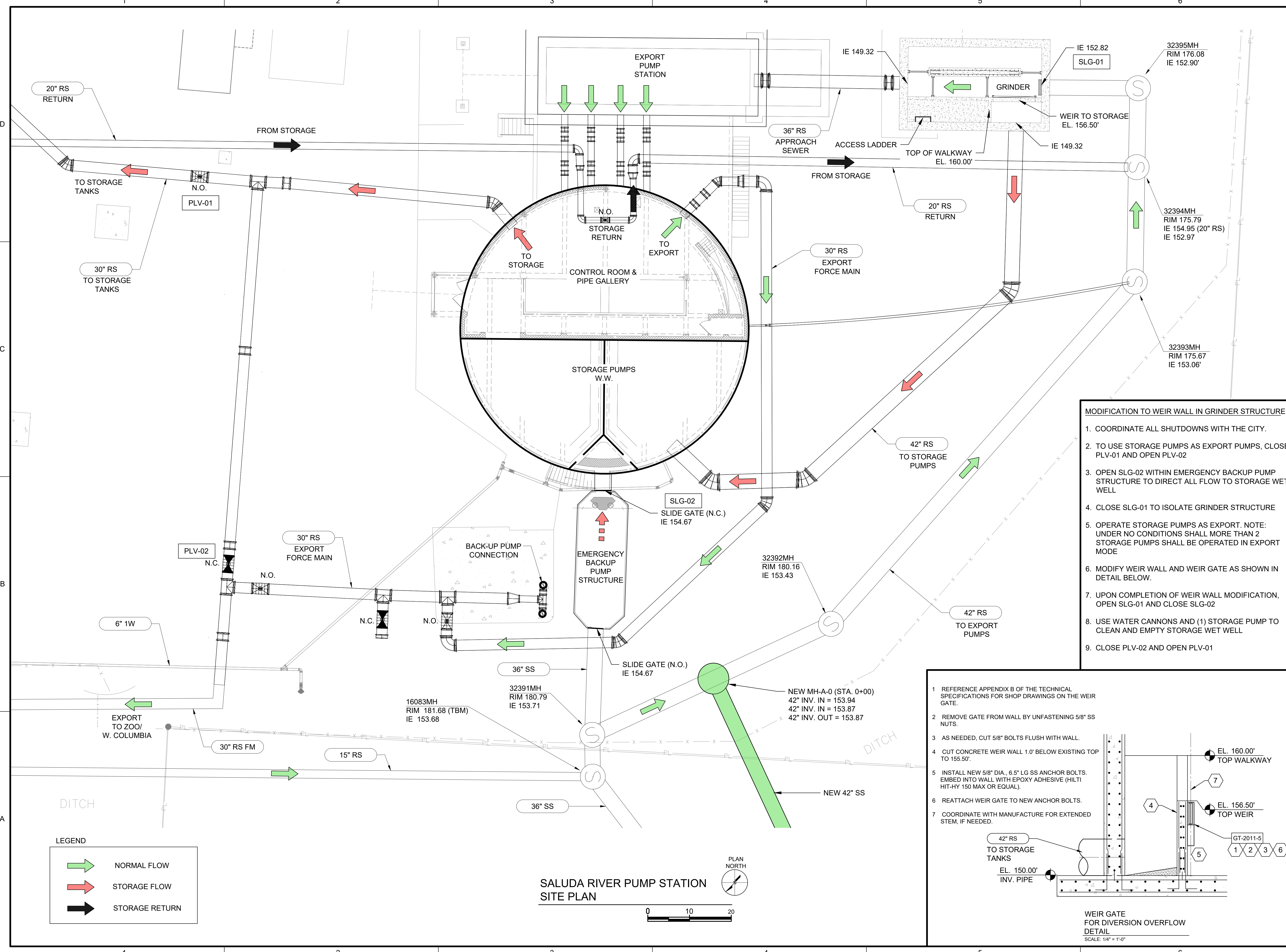
DESIGNED: J. Mazzei  
 DRAWN: A. Jumper  
 CHECKED: C. Lucie  
 CHECKED: J. Mazzei  
 APPROVED: J. Mazzei

FILENAME: 000-C-12.DWG  
 BC PROJECT NUMBER: 152166  
 CLIENT PROJECT NUMBER (CITY CIP#): SS7428

**CIVIL**

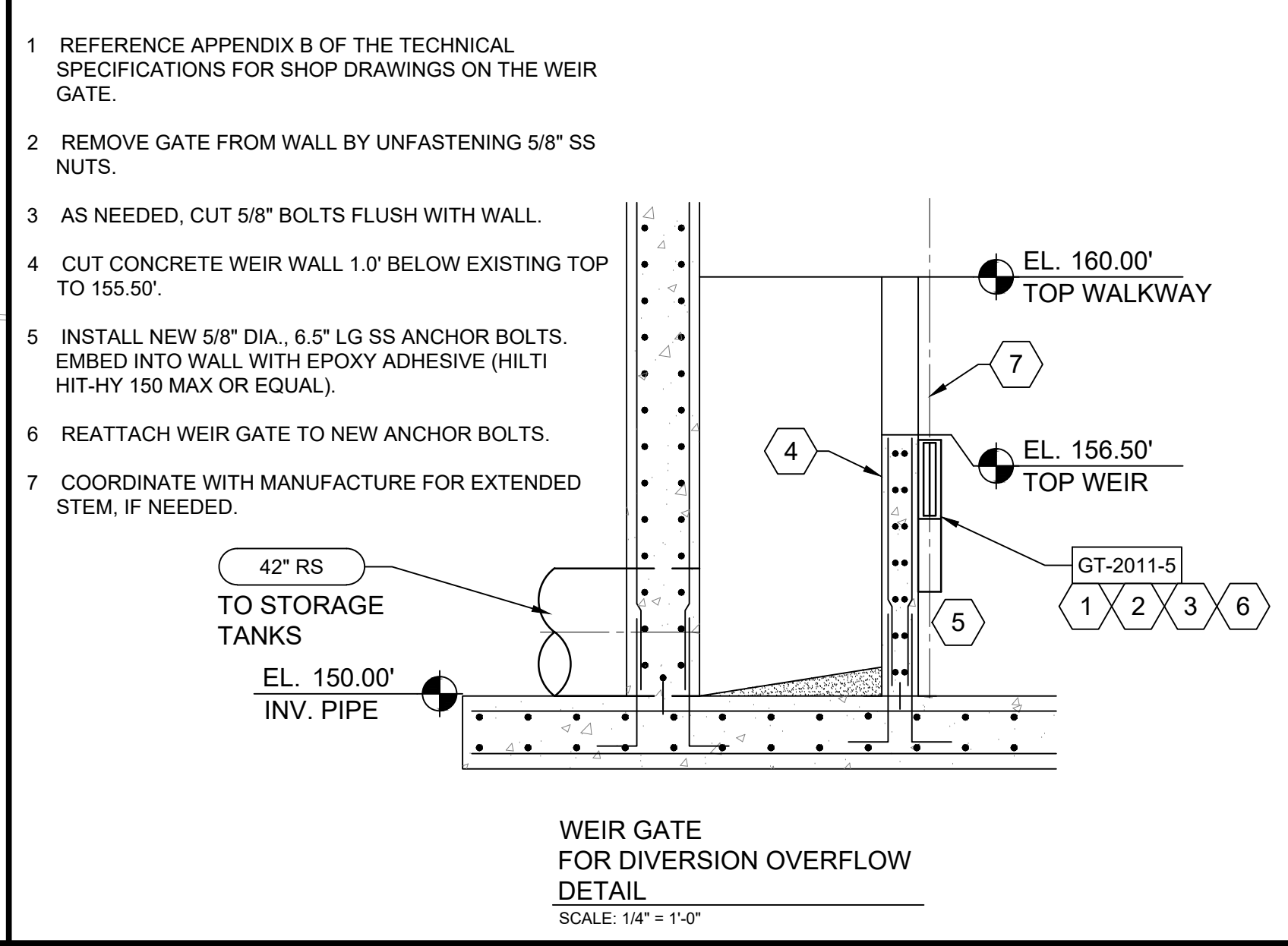
**SALUDA RIVER PUMP STATION SITE PLAN**

DRAWING NUMBER: **000-C-12**  
 SHEET NUMBER: 14 OF 55



**MODIFICATION TO WEIR WALL IN GRINDER STRUCTURE**

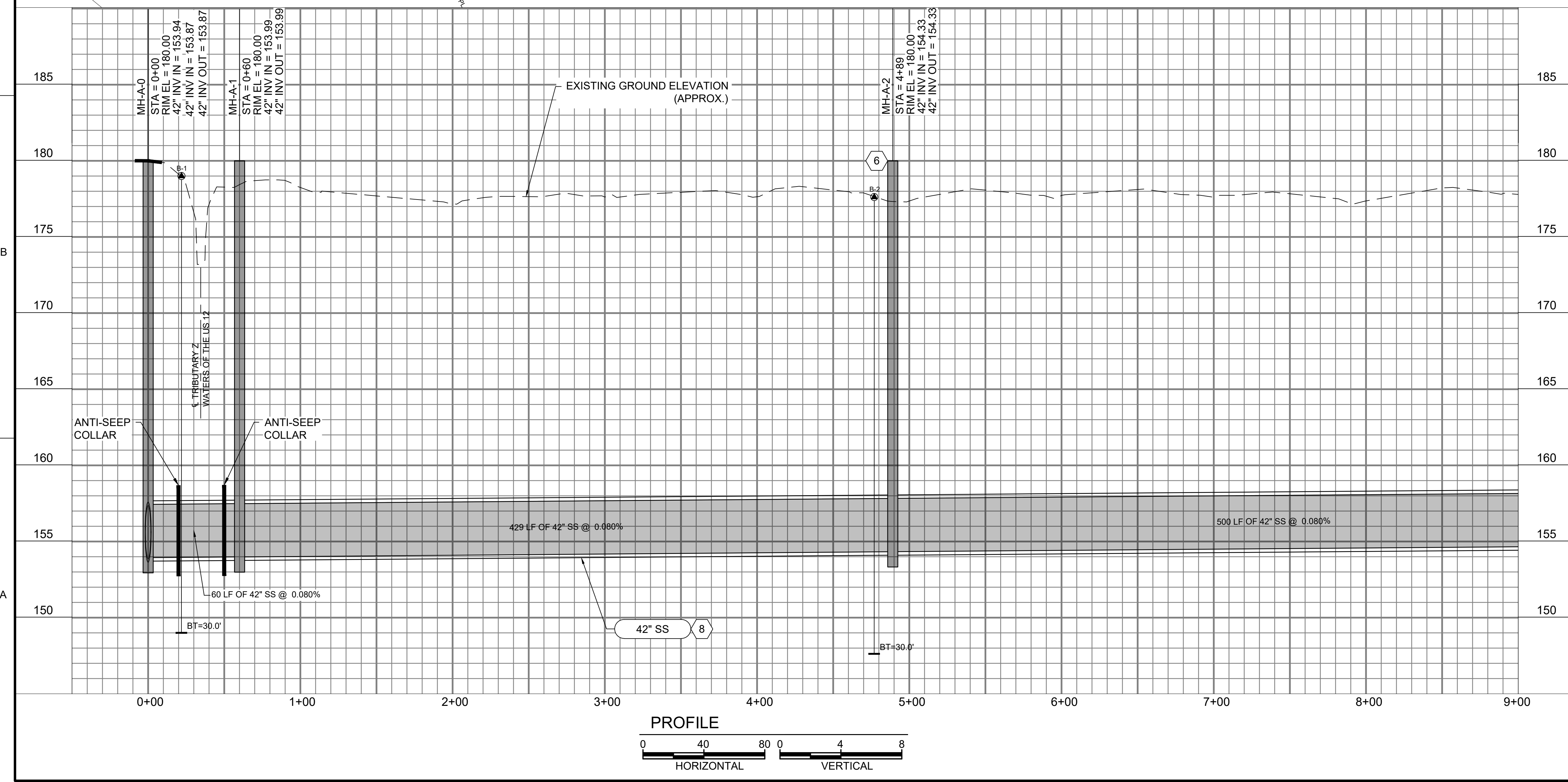
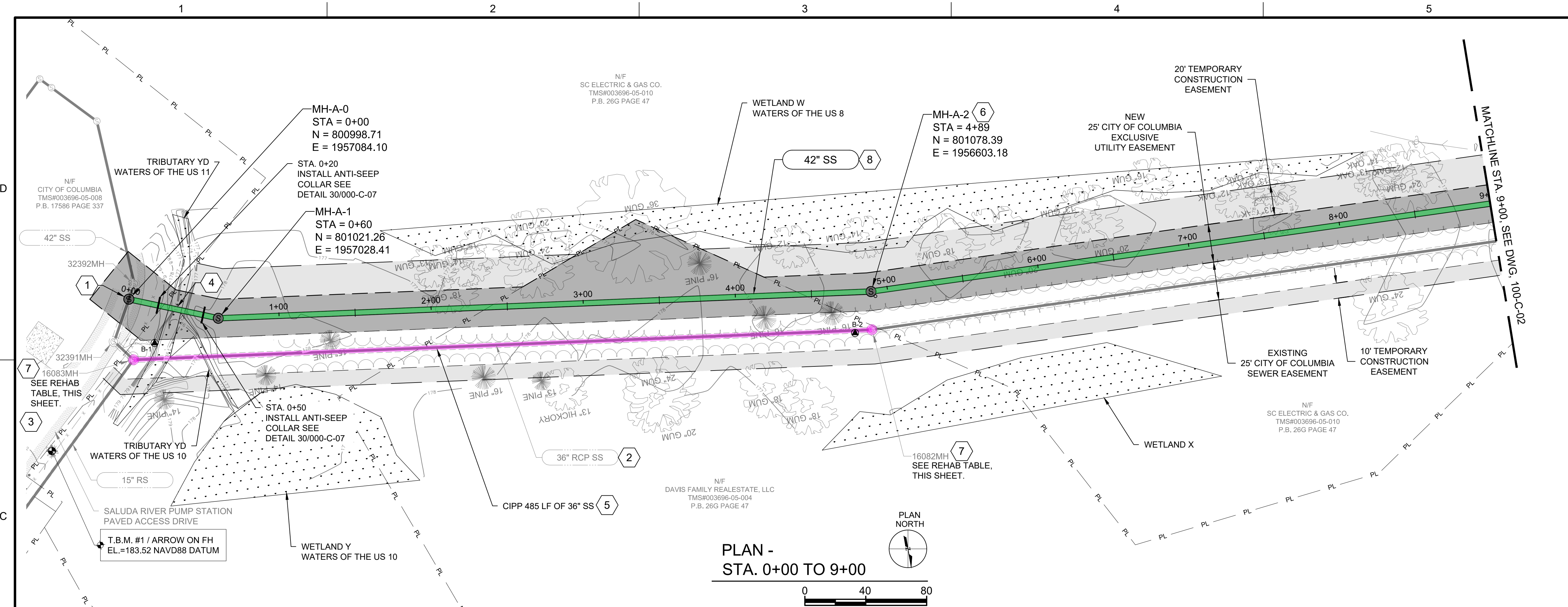
- COORDINATE ALL SHUTDOWNS WITH THE CITY.
- TO USE STORAGE PUMPS AS EXPORT PUMPS, CLOSE PLV-01 AND OPEN PLV-02
- OPEN SLG-02 WITHIN EMERGENCY BACKUP PUMP STRUCTURE TO DIRECT ALL FLOW TO STORAGE WET WELL
- CLOSE SLG-01 TO ISOLATE GRINDER STRUCTURE
- OPERATE STORAGE PUMPS AS EXPORT. NOTE: UNDER NO CONDITIONS SHALL MORE THAN 2 STORAGE PUMPS SHALL BE OPERATED IN EXPORT MODE
- MODIFY WEIR WALL AND WEIR GATE AS SHOWN IN DETAIL BELOW.
- UPON COMPLETION OF WEIR WALL MODIFICATION, OPEN SLG-01 AND CLOSE SLG-02
- USE WATER CANNONS AND (1) STORAGE PUMP TO CLEAN AND EMPTY STORAGE WET WELL
- CLOSE PLV-02 AND OPEN PLV-01



Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\ CAD\2-SHEETS\CIVIL FILENAME: 000-C-12.DWG PLOT DATE: 10/5/2020 12:20 PM CAD USER: ANDY JUMPER



Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\ CAD\2-SHEETS\CIVIL FILENAME: 100-C-01.DWG PLOT DATE: 9/21/2020 3:59 PM CAD USER: ANDY JUMPER



**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 178.00' FROM STA. 0+00 TO STA. 27+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- DOGHOUSE MANHOLE, SEE DETAIL 6 ON DRAWING 000-C-02.
- EXISTING 36" SS TO REMAIN IN SERVICE.
- SEE DRAWING 000-C-12 FOR SALUDA RIVER PUMP STATION SITE PLAN. ACCESS SHALL BE FROM GARDEN VALLEY LANE. COORDINATE WITH THE CITY OF COLUMBIA.
- INSTALL 42" SS VIA OPEN CUT THROUGH STREAM. SEE STREAM CROSSING AND STABILIZATION DETAILS, DRAWING 000-C-06 AND 000-C-07.
- CIPP LINING OF 16083MH TO 16082MH IS OCCUR AFTER NEW LINES FROM MH-A-9 TO SALUDA RIVER PUMP STATION ARE IN SERVICE.
- MANHOLE VENT, SEE DETAIL 20 ON DRAWING 000-C-04.
- RAISE EXISTING MANHOLE RIM TO ELEVATION 180.00'.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-1 TO MH-A-9 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.

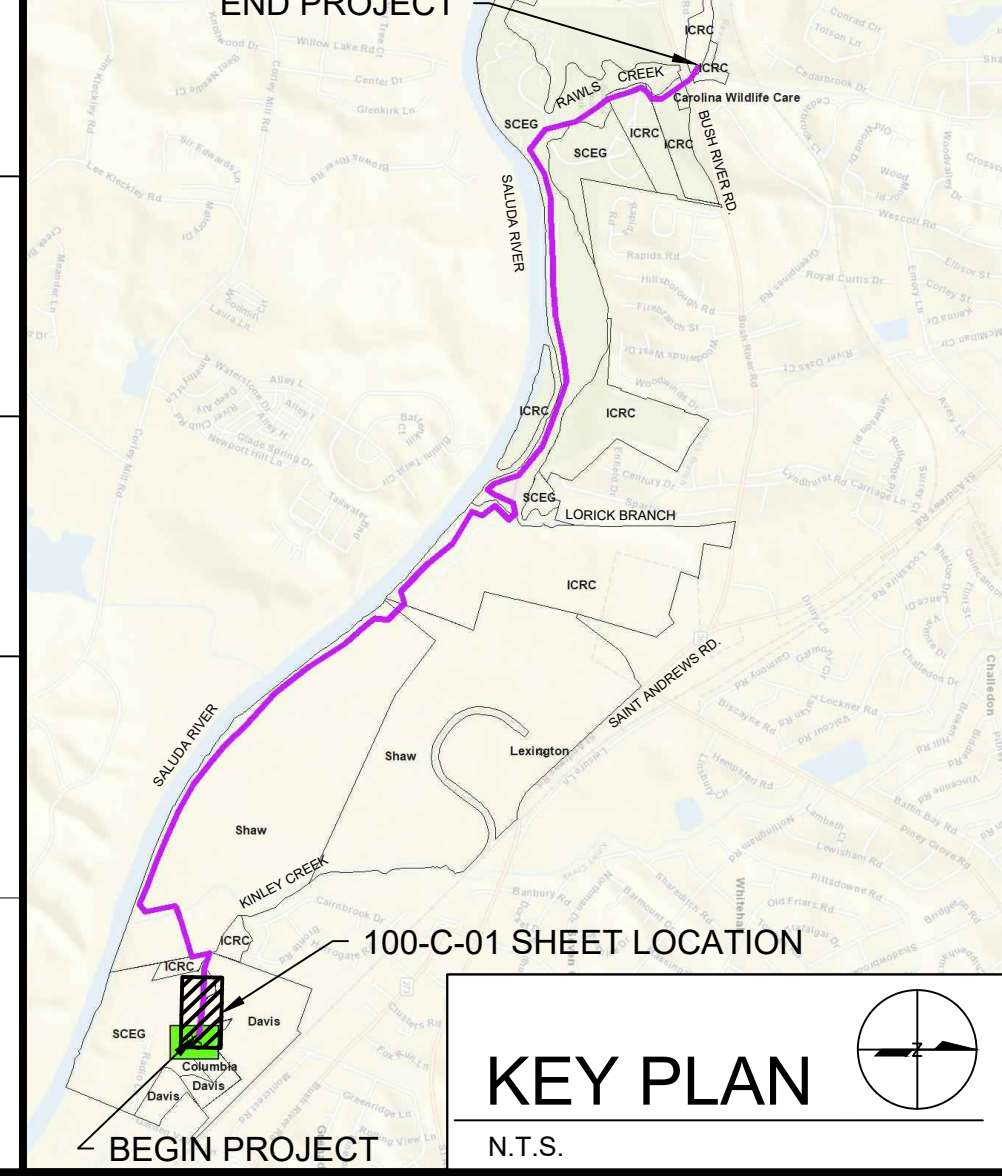
MANHOLE REHABILITATION TABLE					
Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/Invert Repair	C-9 Replace Frame & Cover
32391MH	24		X		
16083MH	27.86	X	X		
16082MH	24.20	X	X	X	

PERMANENT EASEMENT (WIDTH VARIES)

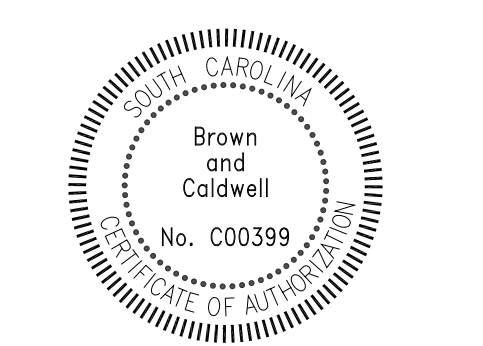
TEMPORARY EASEMENT (WIDTH VARIES)

EXISTING EASEMENT

**811**  
Know what's below. Call before you dig. 1-888-721-7877



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS

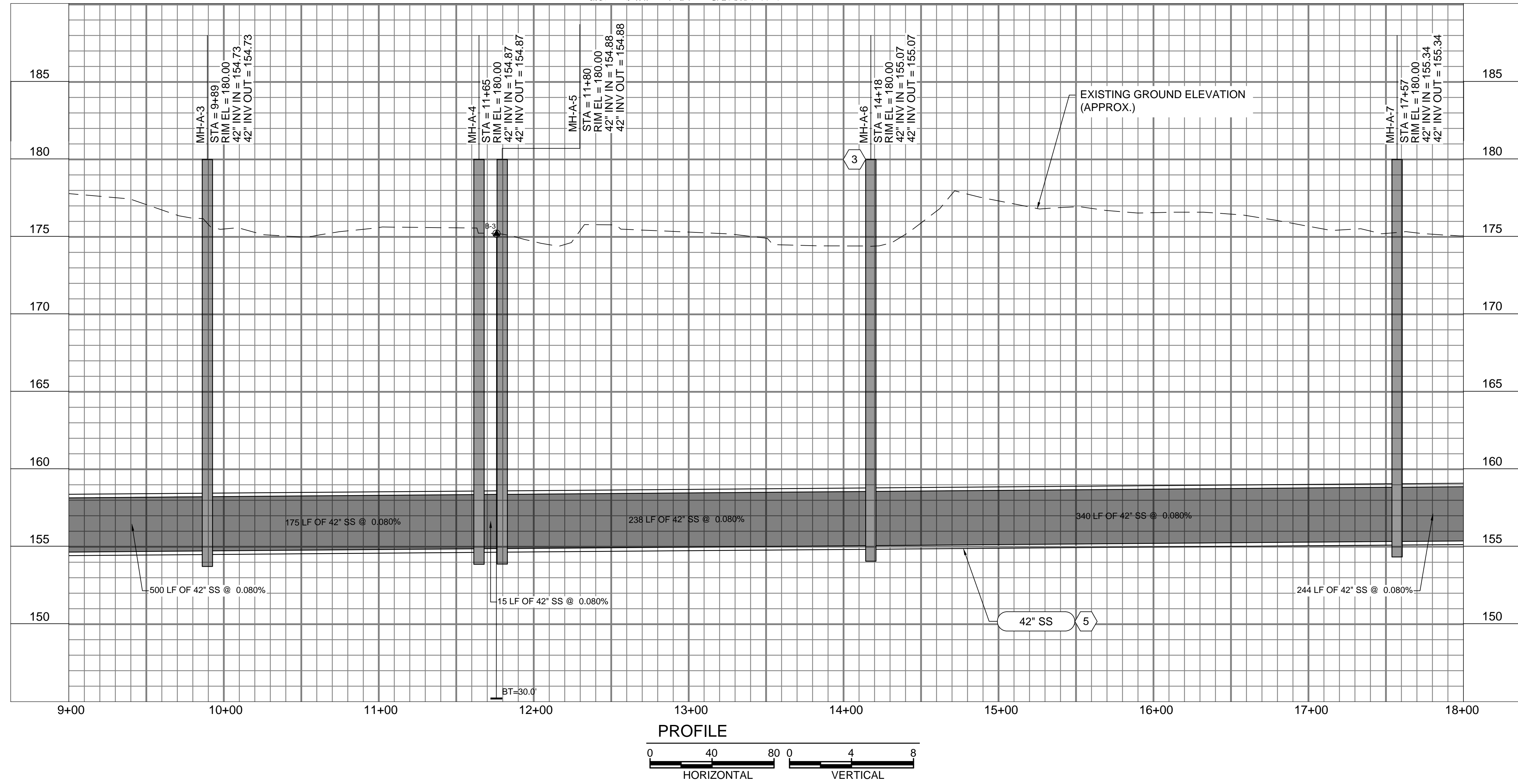
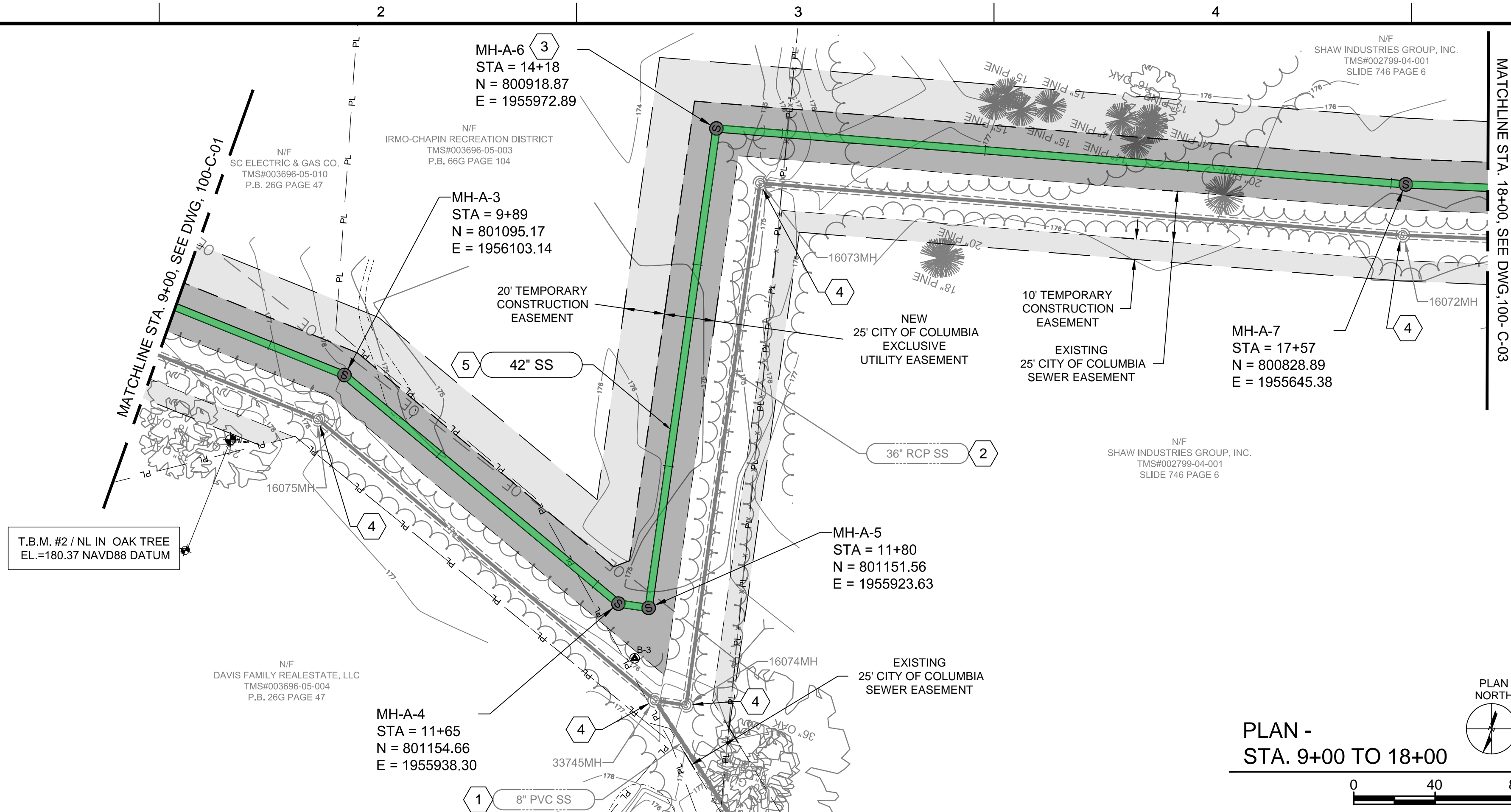
REV	DATE	DESCRIPTION

DESIGNED: J. MAZZEI  
 DRAWN: A. JUMPER  
 CHECKED: C. LUCIE  
 CHECKED: J. MAZZEI  
 APPROVED: J. MAZZEI

CIVIL  
 PLAN & PROFILE  
 STA. 0+00 TO STA. 9+00  
 DRAWING NUMBER  
**100-C-01**  
 SHEET NUMBER  
 15 OF 55



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**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 178.00' FROM STA. 0+00 TO STA. 27+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- EXISTING 8" SS TO STAY IN SERVICE.
- EXISTING 36" SS TO STAY IN SERVICE.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- RAISE EXISTING MANHOLE RIM TO ELEVATION 180.00'.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-1 TO MH-A-9 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.

**MANHOLE REHABILITATION TABLE**

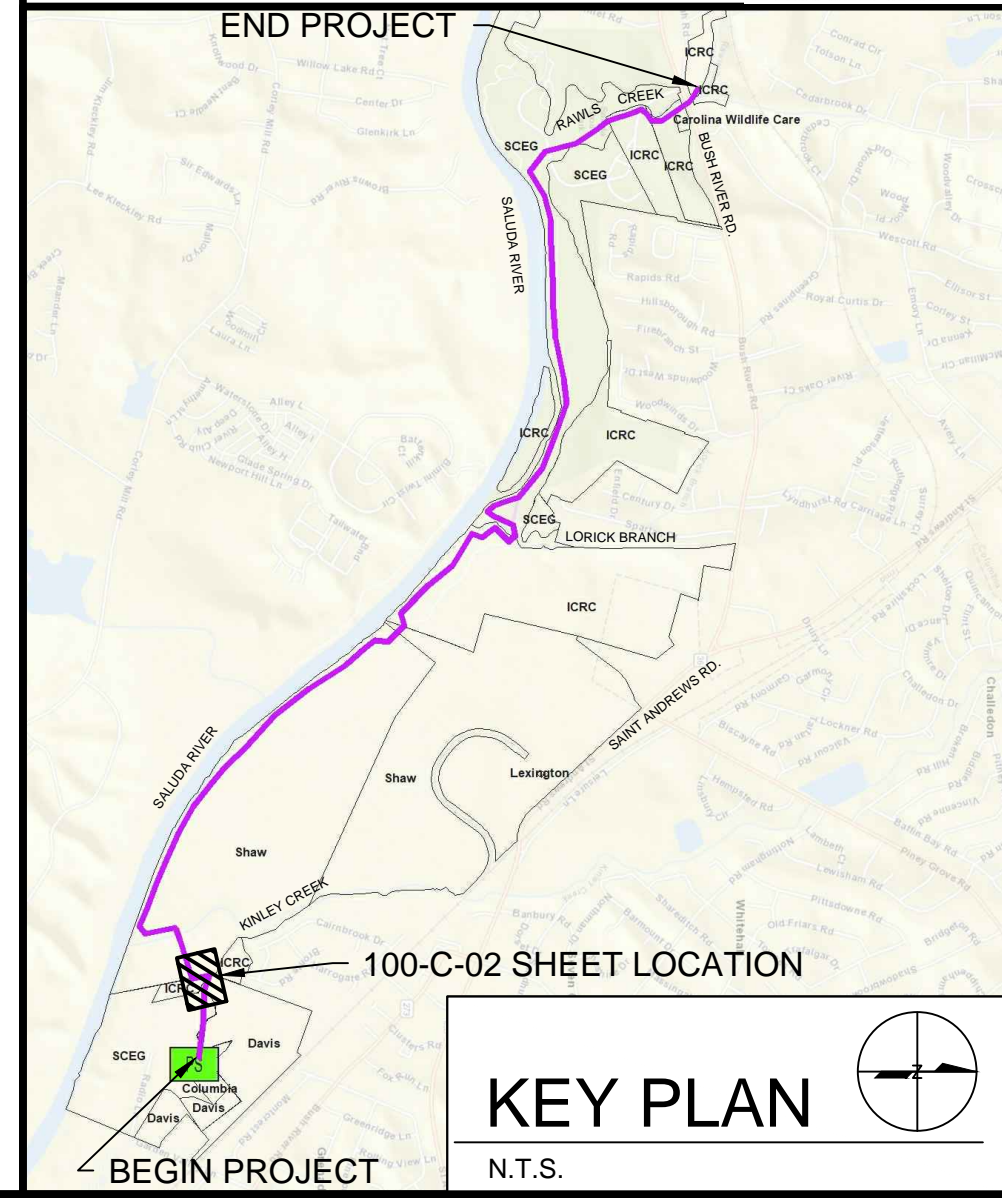
Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/ Invert Repair	C-9 Replace Frame & Cover
16075MH	25.20	X	X	X	
33745MH	23.60	X	X		
16074MH	23.60	X	X	X	
16073MH	22.80	X	X	X	
16072MH	20.80	X	X	X	

PERMANENT EASEMENT (WIDTH VARIES)

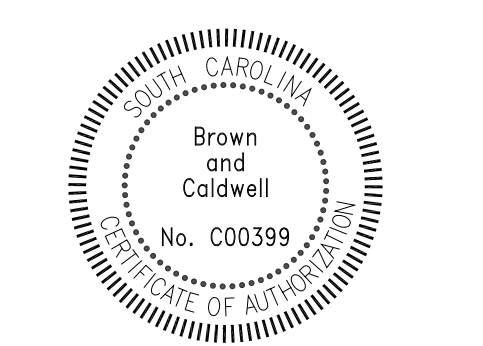
TEMPORARY EASEMENT (WIDTH VARIES)

EXISTING EASEMENT

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COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

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**REVISIONS**

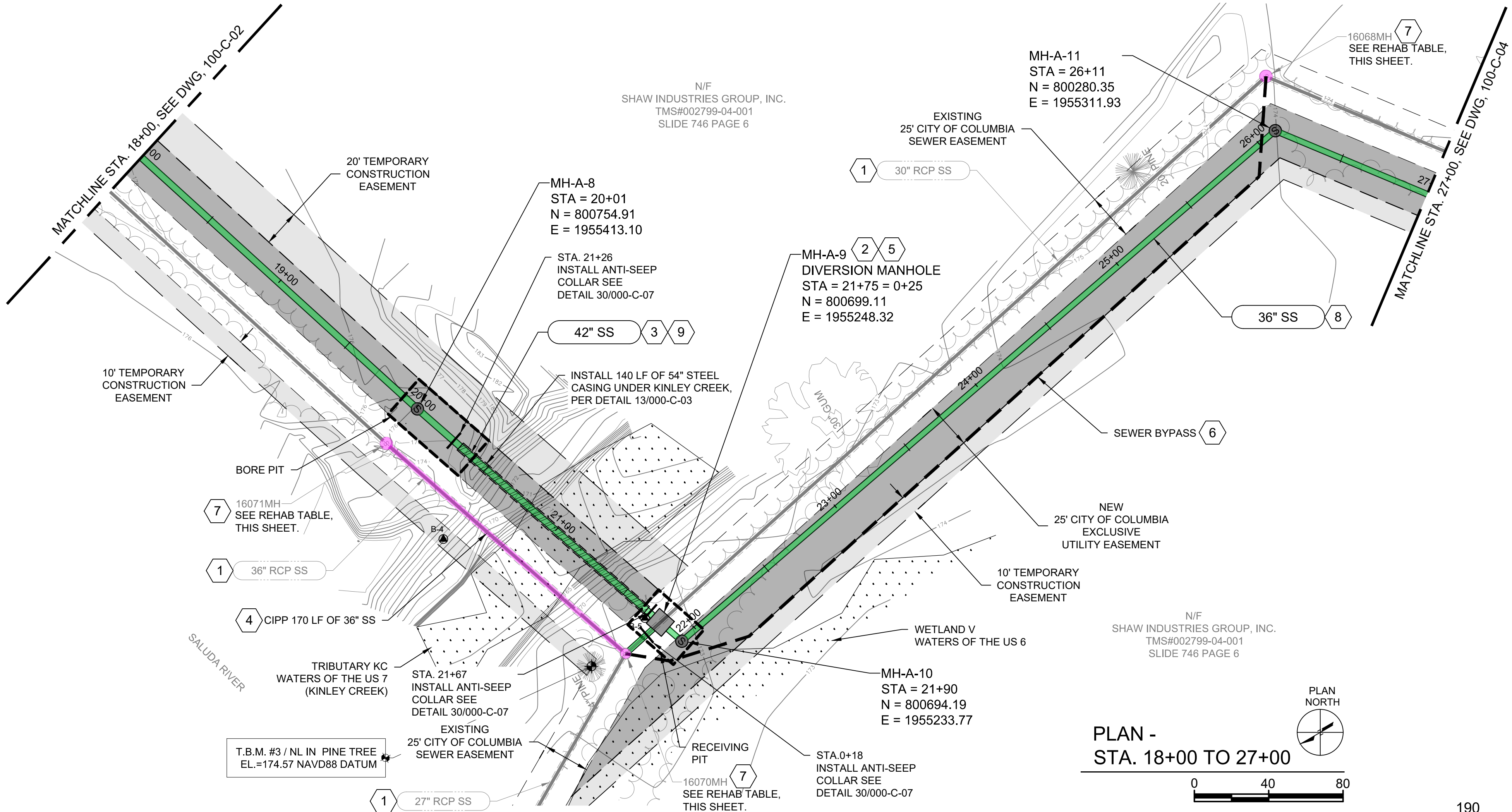
REV	DATE	DESCRIPTION

DESIGNED: J. MAZZEI  
 DRAWN: A. JUMPER  
 CHECKED: C. LUCIE  
 CHECKED: J. MAZZEI  
 APPROVED: J. MAZZEI

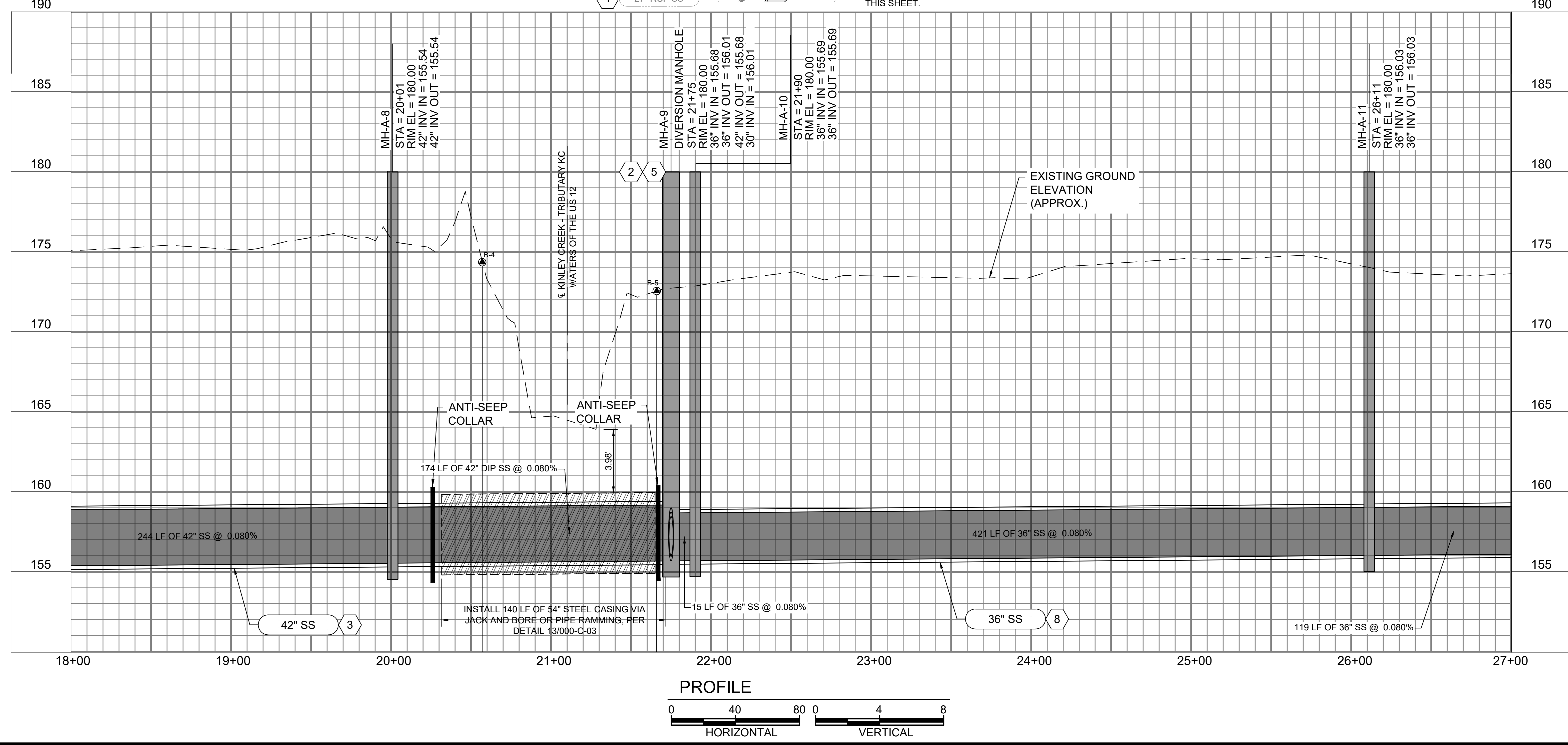
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**PLAN & PROFILE**  
 STA. 9+00 TO STA. 18+00  
 DRAWING NUMBER **100-C-02**  
 SHEET NUMBER 16 OF 55



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PLAN -  
STA. 18+00 TO 27+00



PROFILE  
HORIZONTAL VERTICAL

**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 178.00' FROM STA. 0+00 TO STA. 27+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- EXISTING 36" SS, 30" SS AND 27" SS TO REMAIN IN SERVICE.
- CONSTRUCT MH-A-9 PER DETAIL 21/000-C-05. SEE BYPASS PLAN AND DETAILS ON DRAWING 300-C-01 FOR CONNECTION TO EXISTING 30" SS AND INSTALLATION OF MH-A-9.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-1 TO MH-A-9 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.
- CIPP LINING OF 16070MH TO 16071MH IS TO OCCUR AFTER NEW LINES FROM MH-A-9 TO SALUDA RIVER PUMP STATION ARE IN SERVICE.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- SEWER BYPASS ROUTE. SEE SEWER BYPASS PLAN ON DRAWING 300-C-01.
- RAISE EXISTING MANHOLE RIM TO ELEVATION 180.00'. SEE PROFILE ON DRAWING 100-C-23.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-9 TO MH-A-43 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.
- PIPE SEGMENT SHALL BE DIP.

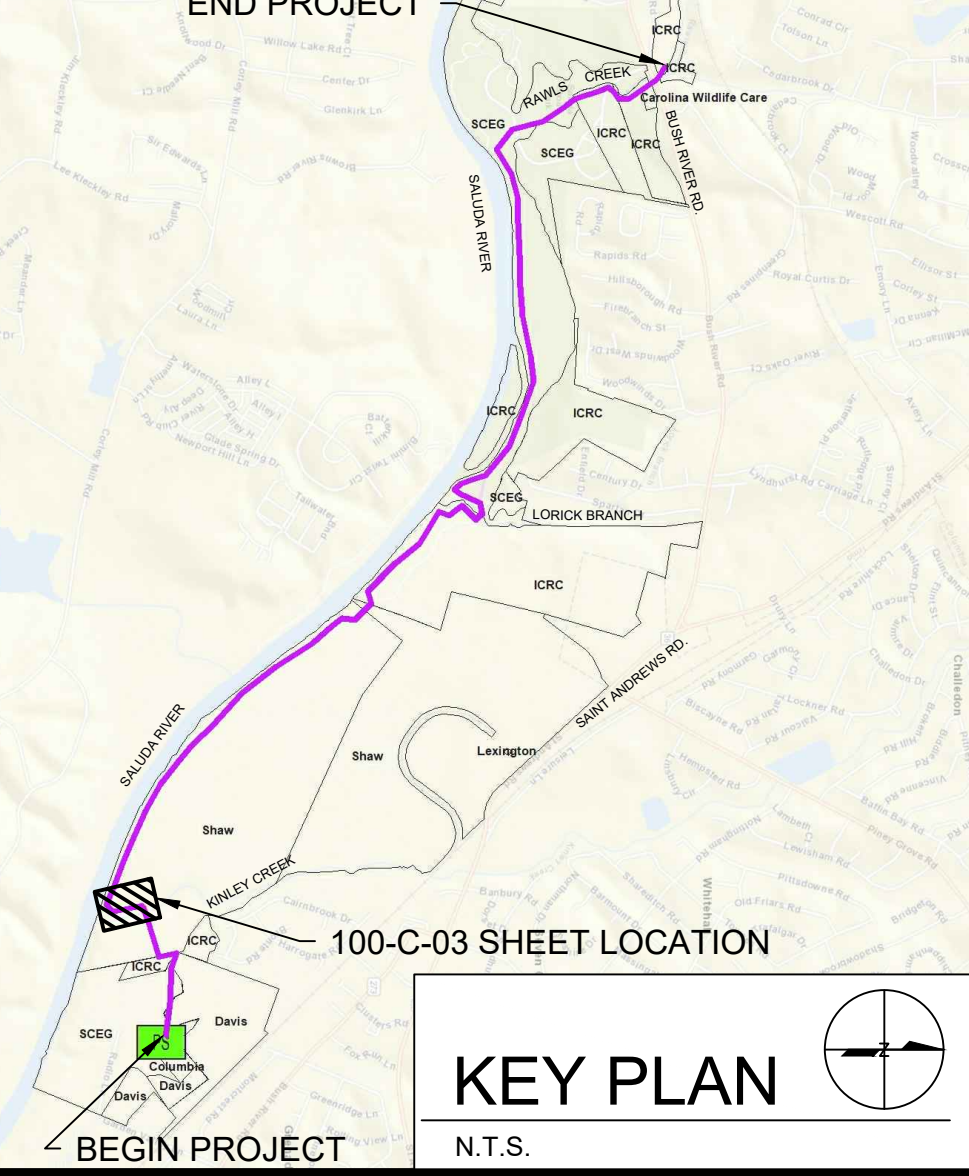
MANHOLE REHABILITATION TABLE					
Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/ Invert Repair	C-9 Replace Frame & Cover
16071MH	23.78	X	X		
16070MH	18.05	X	X		
16068MH	18.55	X	X	X	

PERMANENT EASEMENT (WIDTH VARIES)

TEMPORARY EASEMENT (WIDTH VARIES)

EXISTING EASEMENT

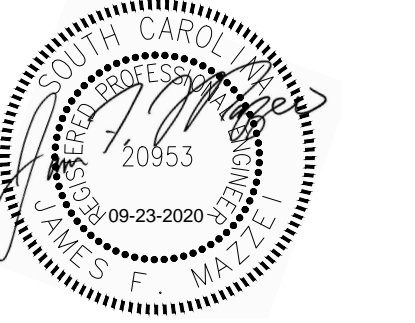
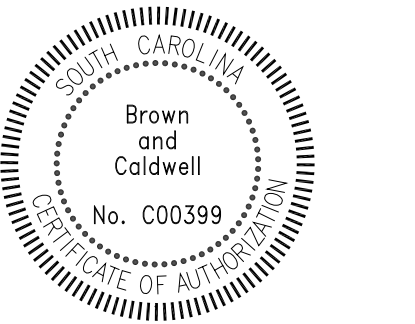
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KEY PLAN  
N.T.S.



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

DESIGNED: J. MAZZEI  
DRAWN: A. JUMPER  
CHECKED: C. LUCIE  
CHECKED: J. MAZZEI  
APPROVED: J. MAZZEI

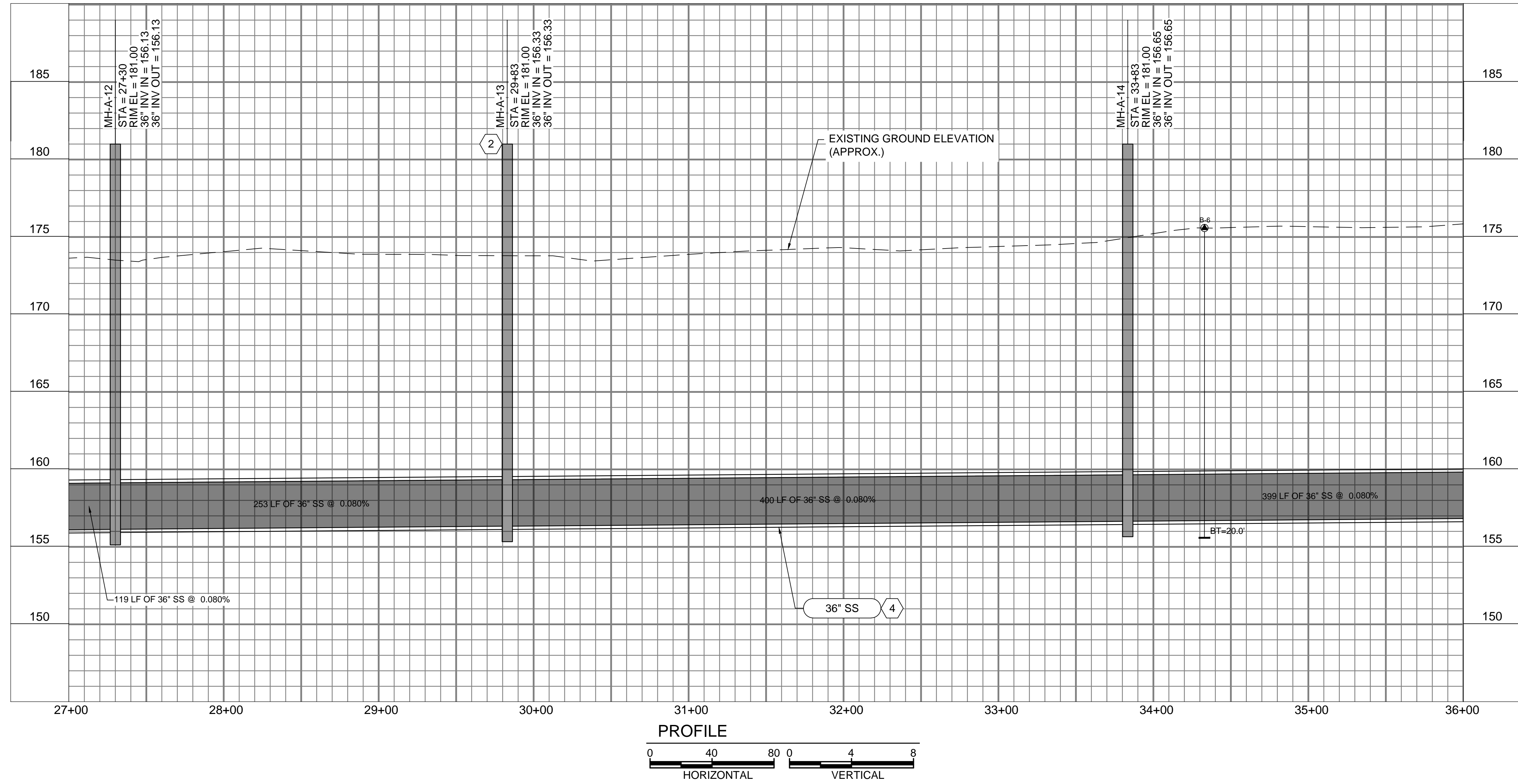
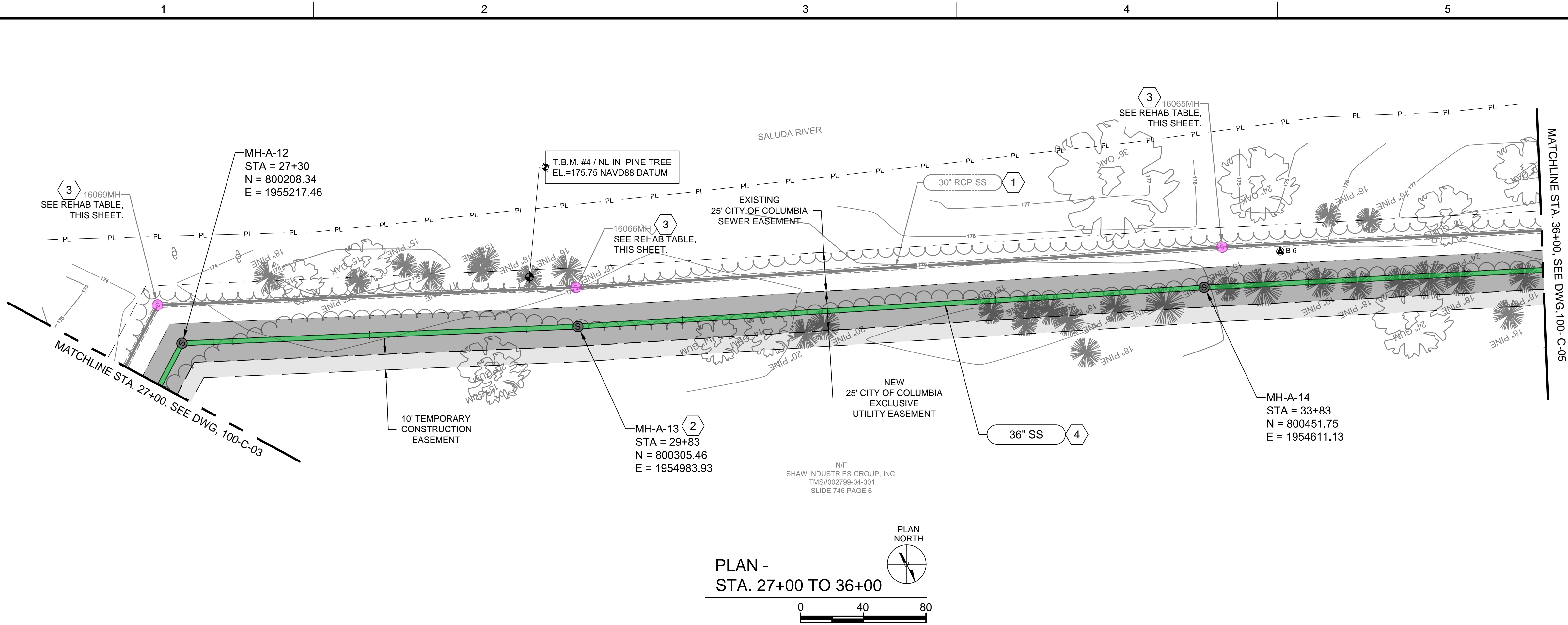
CIVIL

PLAN & PROFILE  
STA. 18+00 TO STA. 27+00

DRAWING NUMBER  
**100-C-03**  
SHEET NUMBER  
17 OF 55



Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RIVER RELIEF SEWER\CAD\2-SHEETS\C-CIVIL FILENAME: 100-C-04.DWG PLOT DATE: 10/31/2019 1:18 PM CAD USER: ANDY JUMPER



- ### GENERAL NOTES:
- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
  - SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
  - SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
  - SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 179.00' FROM STA. 27+00 TO STA. 63+00.
  - CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

- ### KEY NOTES
- EXISTING 30" SS TO REMAIN IN SERVICE.
  - MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
  - RAISE EXISTING MANHOLE RIM TO ELEVATION 181.00'.
  - PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-9 TO MH-A-43 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.

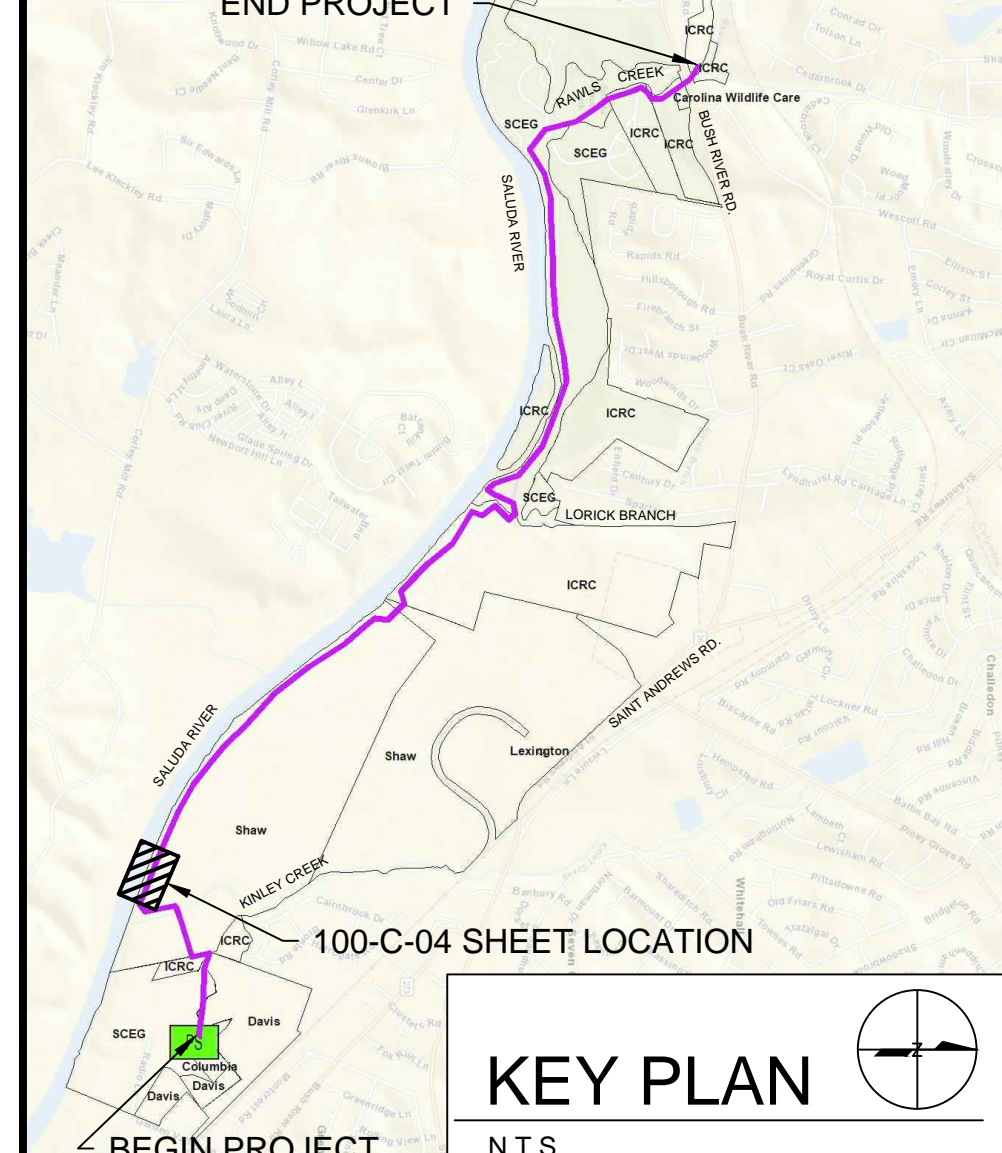
MANHOLE REHABILITATION TABLE					
Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/ Invert Repair	C-9 Replace Frame & Cover
16069MH	19.55	X	X	X	
16066MH	20.60	X	X	X	
16065MH	20.65	X	X	X	

PERMANENT EASEMENT (WIDTH VARIES)

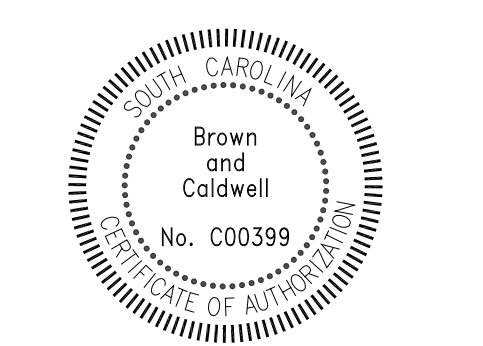
TEMPORARY EASEMENT (WIDTH VARIES)

EXISTING EASEMENT

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COLUMBIA, SOUTH CAROLINA



## LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

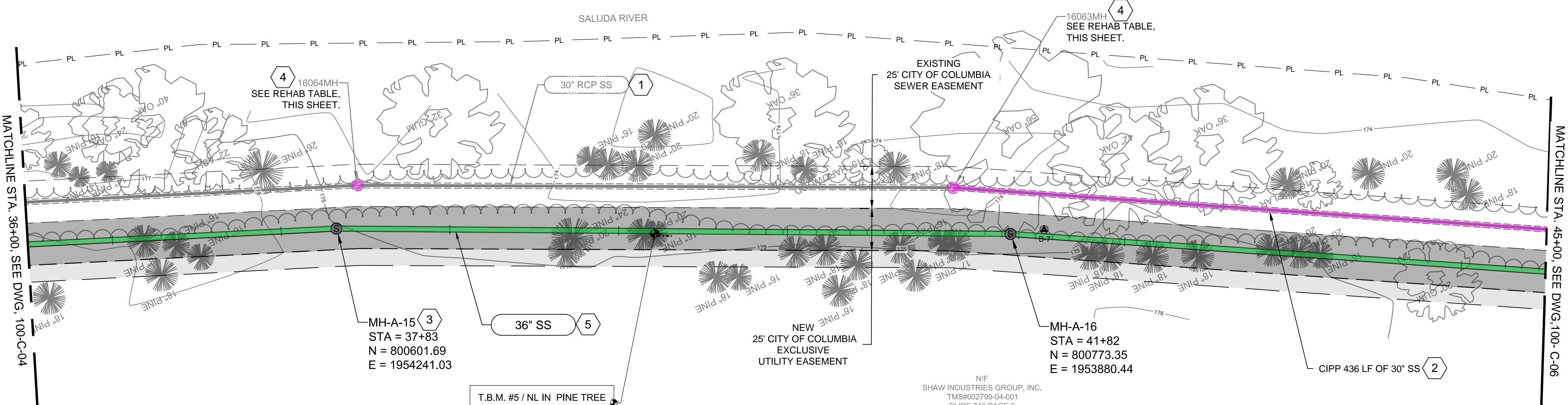
DESIGNED: J. MAZZEI  
 DRAWN: A. JUMPER  
 CHECKED: C. LUCIE  
 CHECKED: J. MAZZEI  
 APPROVED: J. MAZZEI

CIVIL

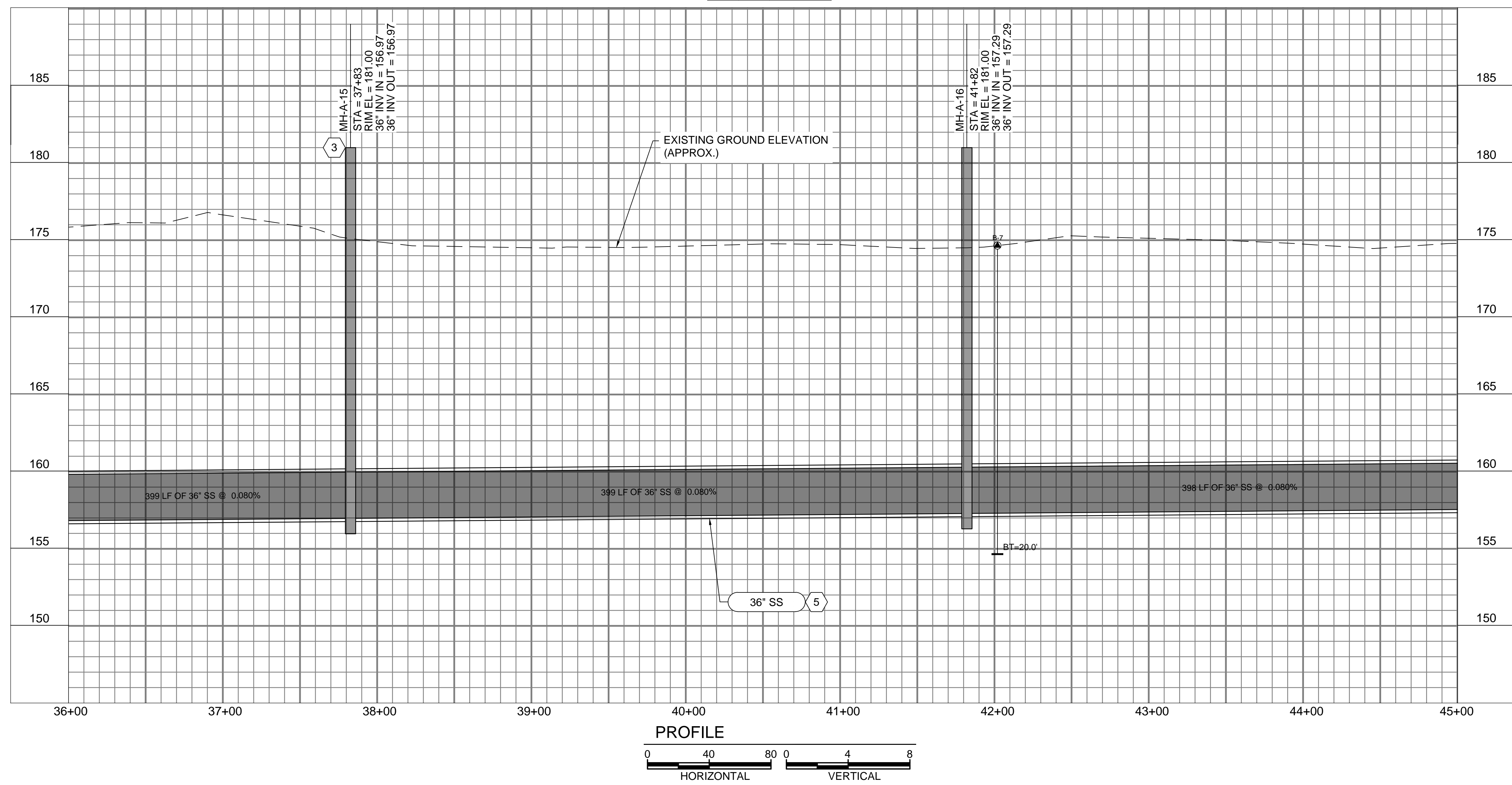
PLAN & PROFILE  
 STA. 27+00  
 TO  
 STA. 36+00  
 DRAWING NUMBER  
**100-C-04**  
 SHEET NUMBER  
 18 OF 55



Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\CAD\2-SHEETS\C-CIVIL FILENAME: 100-C-05.DWG PLOT DATE: 10/31/2019 1:44 PM CAD USER: ANDY JUMPER



PLAN -  
STA. 36+00 TO 45+00



PROFILE  
HORIZONTAL VERTICAL

**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±192.00' MSL REFERENCE: FEMA MAP45063C0142J, DATED 07/05/18.
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 179.00' FROM STA. 27+00 TO STA. 63+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- EXISTING 30" SS TO STAY IN SERVICE.
- CIPP LINING OF 16063MH TO 16062MH IS TO OCCUR AFTER NEW LINES FROM MH-A-43 TO SALUDA RIVER PUMP STATION ARE IN SERVICE.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- RAISE EXISTING MANHOLE RIM TO ELEVATION 181.00'.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-9 TO MH-A-43 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.

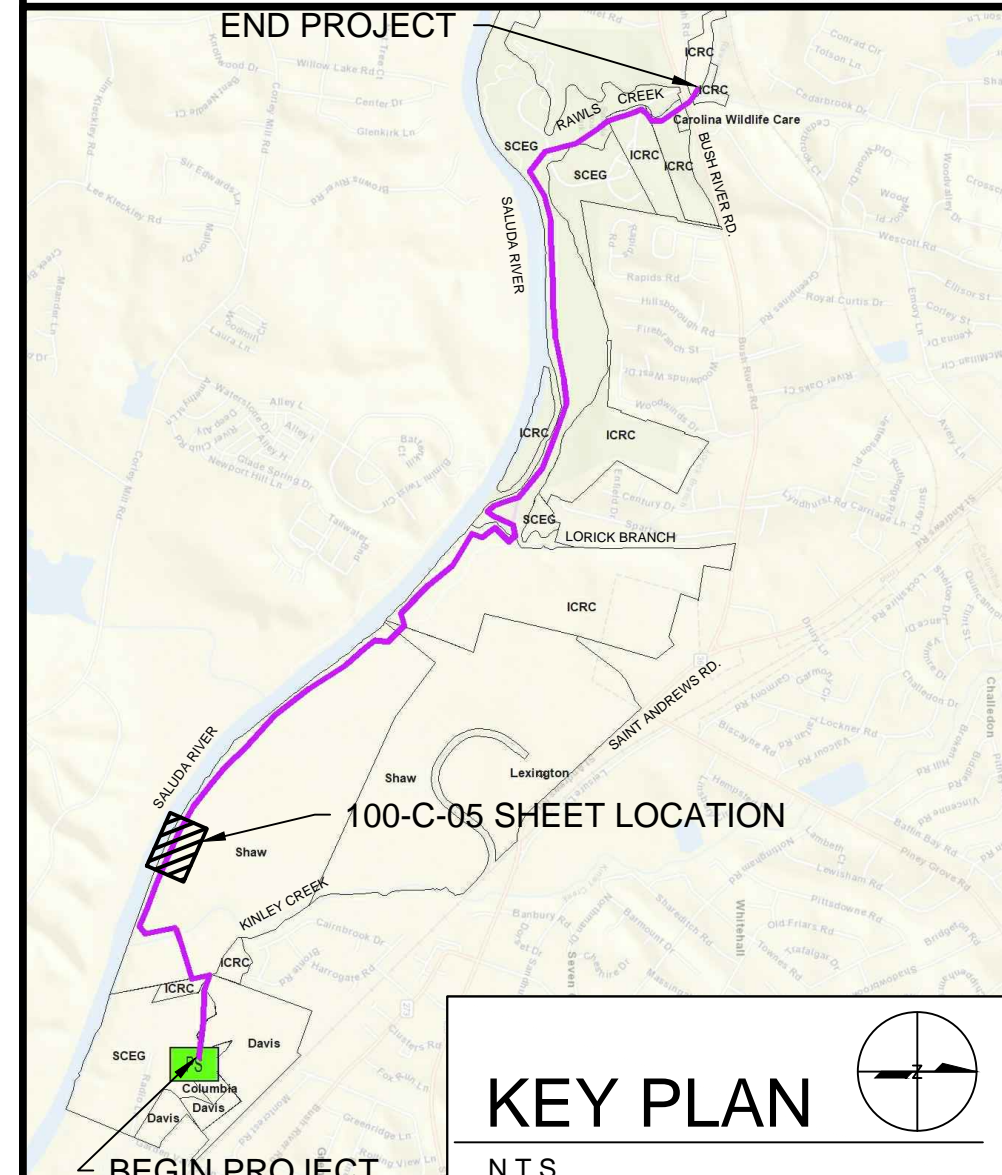
MANHOLE REHABILITATION TABLE					
Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/ Invert Repair	C-9 Replace Frame & Cover
16064MH	19.00	X	X	X	
16063MH	17.10	X	X		

PERMANENT EASEMENT (WIDTH VARIES) [Solid Grey Box]

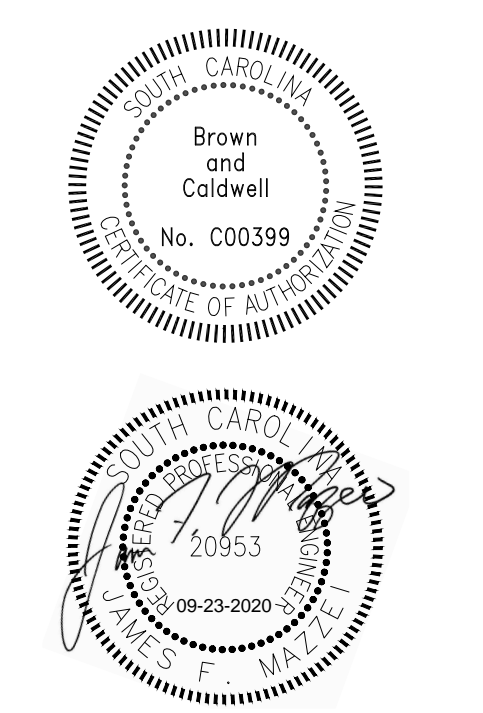
TEMPORARY EASEMENT (WIDTH VARIES) [Dashed Grey Box]

EXISTING EASEMENT [Dashed Line]

**811**  
Know what's below. Call before you dig. 1-888-721-7877



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

DESIGNED: J. MAZZEI  
DRAWN: A. JUMPER  
CHECKED: C. LUCIE  
CHECKED: J. MAZZEI  
APPROVED: J. MAZZEI

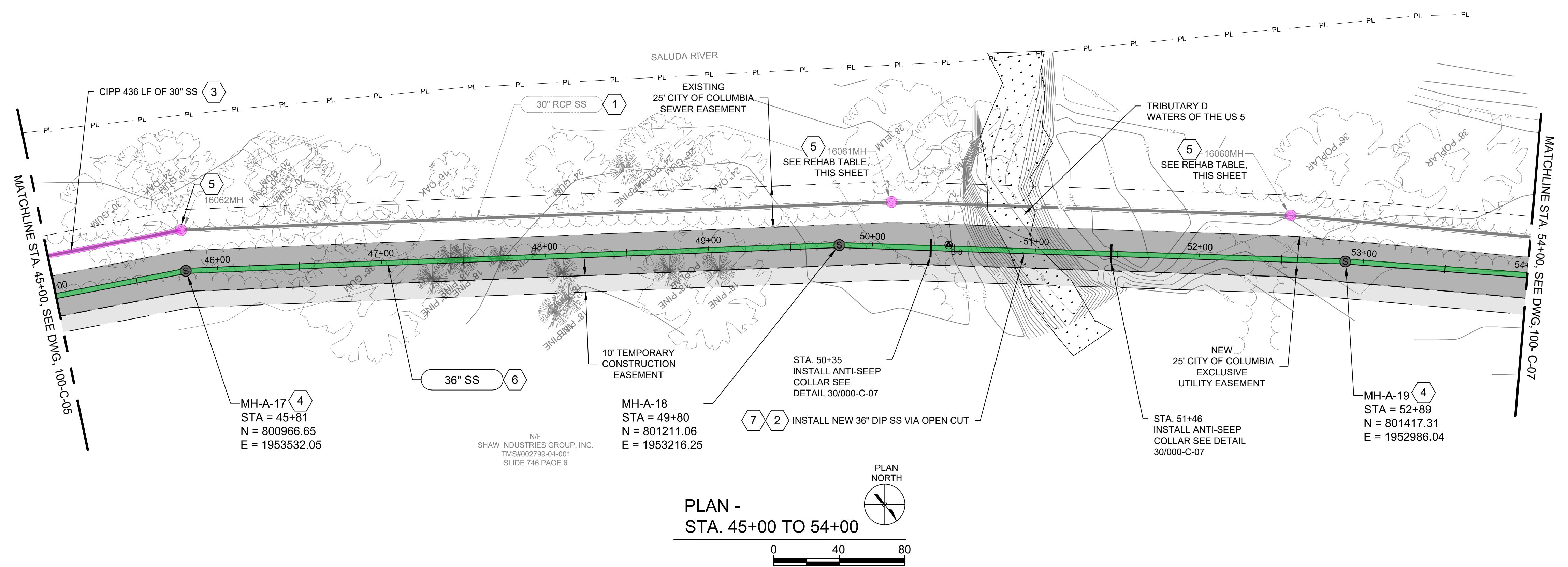
FILENAME: 100-C-05.DWG  
BC PROJECT NUMBER: 152166  
CLIENT PROJECT NUMBER (CITY CIP#): SS7428

**CIVIL**

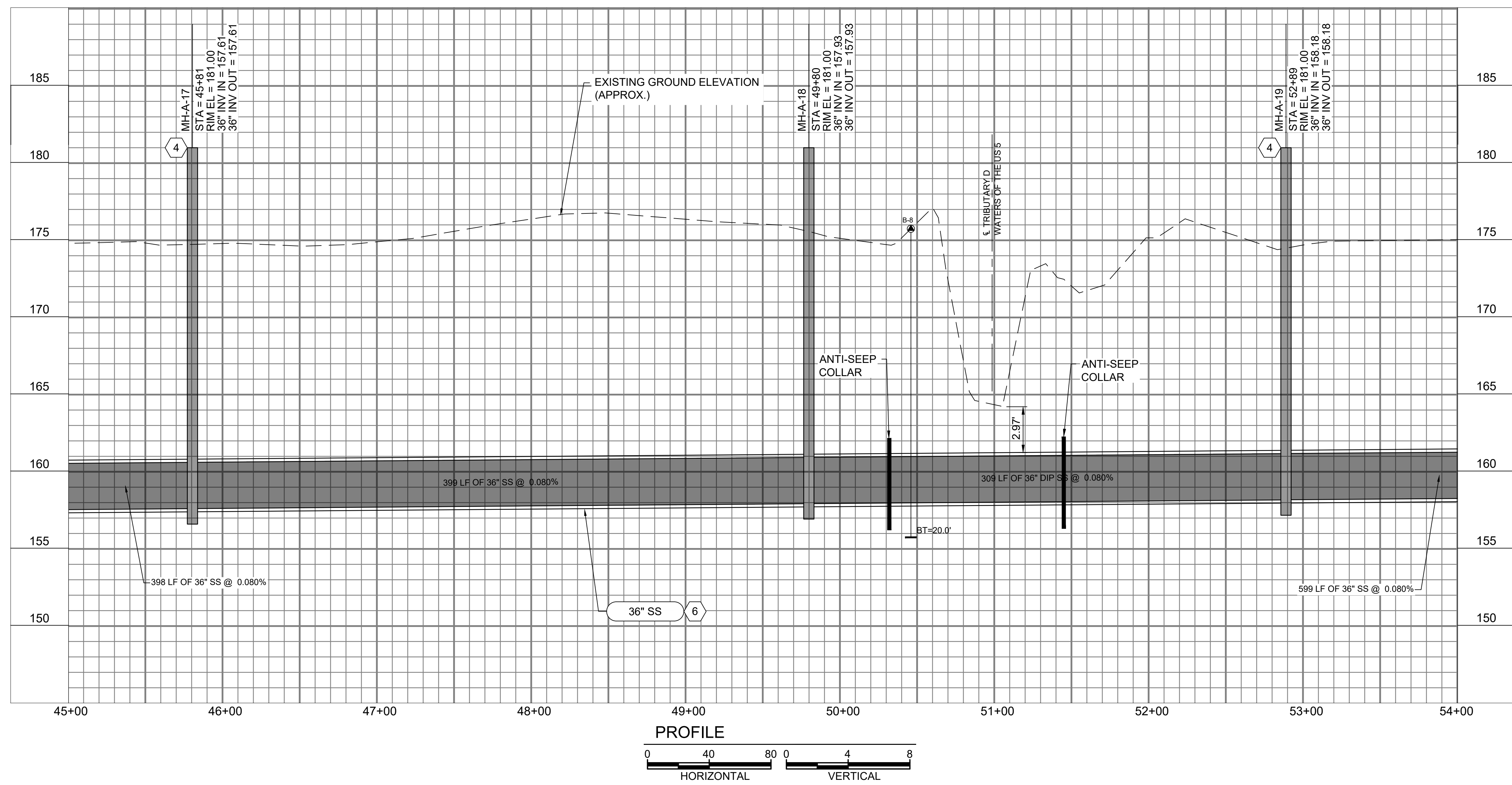
**PLAN & PROFILE**  
STA. 36+00 TO STA. 45+00  
DRAWING NUMBER: 100-C-05  
SHEET NUMBER: 19 OF 55



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PLAN -  
STA. 45+00 TO 54+00



PROFILE  
HORIZONTAL VERTICAL

**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±192.00' MSL. REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 179.00' FROM STA. 27+00 TO STA. 63+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- EXISTING 30" SS TO REMAIN IN SERVICE.
- SEE STREAM CROSSING AND STABILIZATION DETAILS, DRAWING 000-C-06 AND 000-C-07.
- CIPP LINING OF 16063MH TO 16062MH IS TO OCCUR AFTER NEW LINES FROM MH-A-43 TO SALUDA RIVER PUMP STATION ARE IN SERVICE.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- RAISE EXISTING MANHOLE RIM TO ELEVATION 181.00'.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-9 TO MH-A-43 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.
- PIPE SEGMENT SHALL BE DIP.

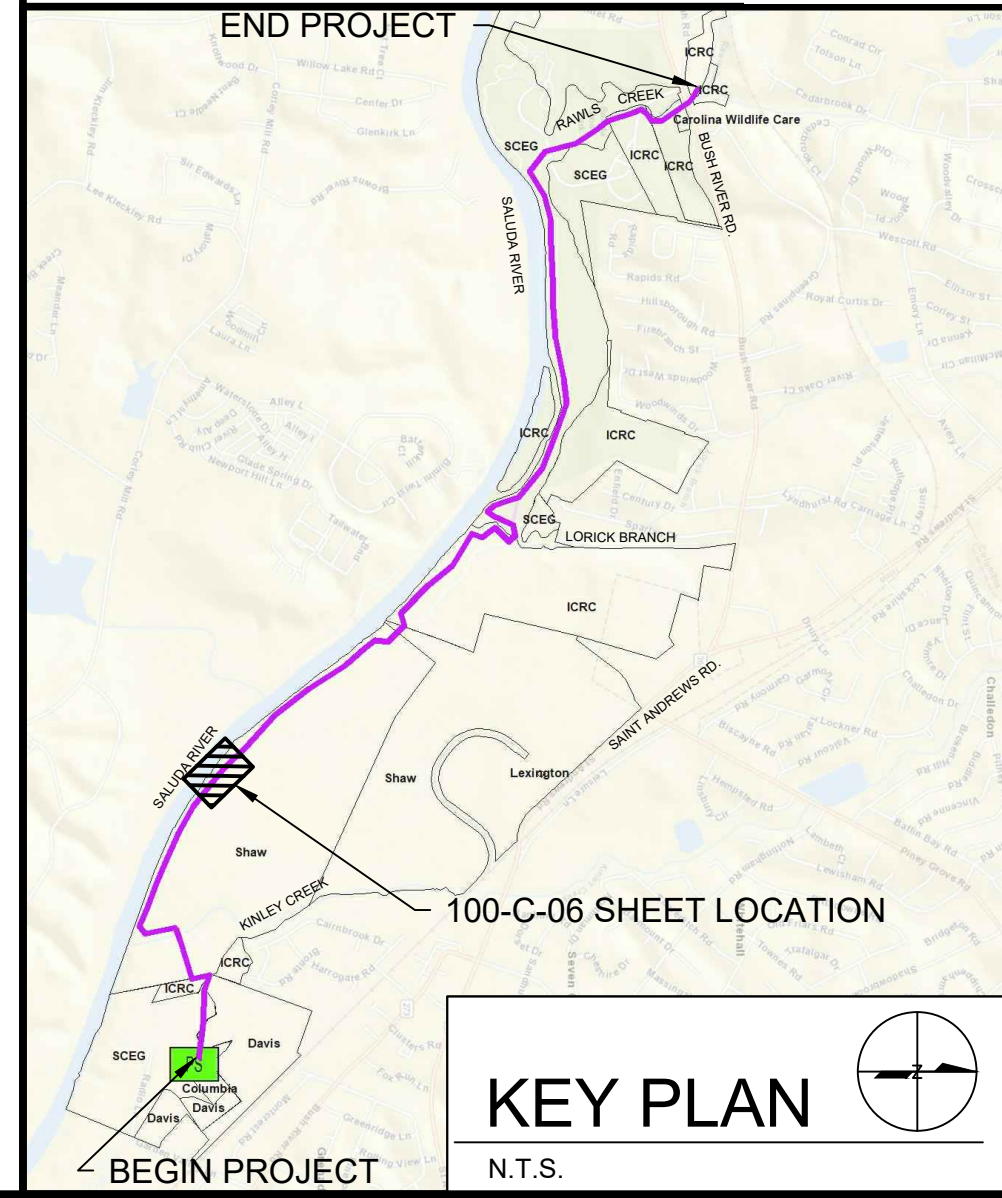
MANHOLE REHABILITATION TABLE					
Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/ Invert Repair	C-9 Replace Frame & Cover
16062MH	18.20	X	X	X	
16061MH	18.00	X	X		
16060MH	18.92	X	X	X	

PERMANENT EASEMENT (WIDTH VARIES)

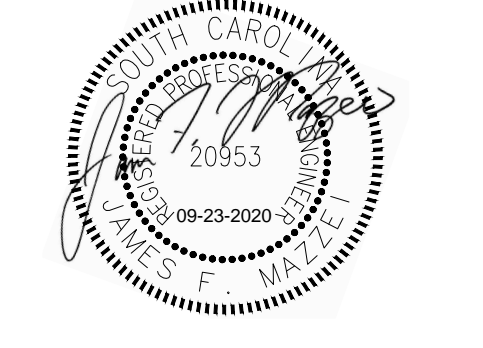
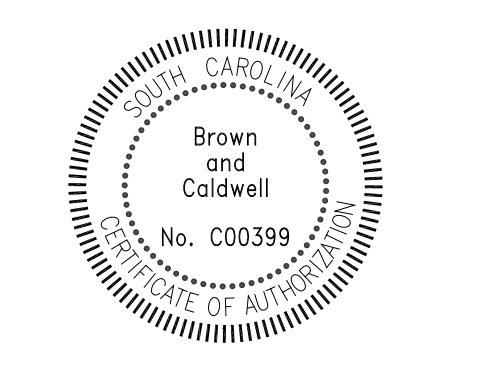
TEMPORARY EASEMENT (WIDTH VARIES)

EXISTING EASEMENT

**811**  
Know what's below.  
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1-888-721-7877



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

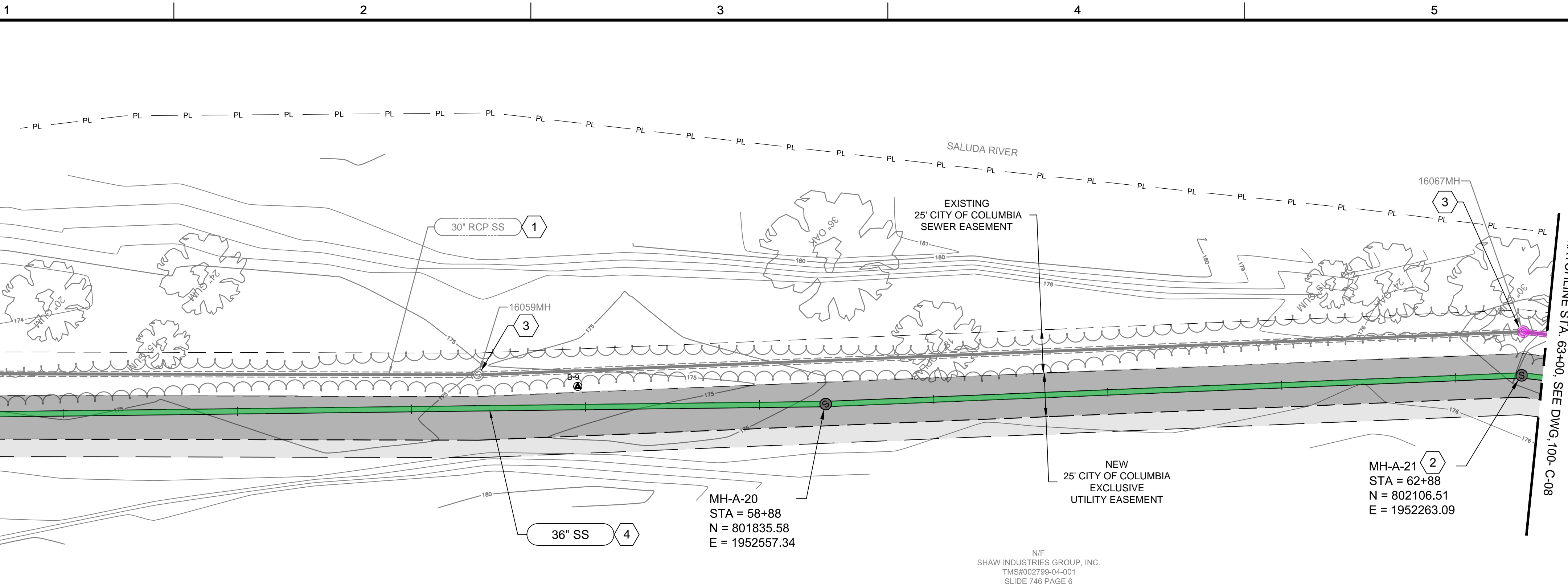
DESIGNED: J. MAZZEI  
DRAWN: A. JUMPER  
CHECKED: C. LUCIE  
CHECKED: J. MAZZEI  
APPROVED: J. MAZZEI

FILENAME: 100-C-06.DWG  
BC PROJECT NUMBER: 152166  
CLIENT PROJECT NUMBER (CITY CIP#): SS7428

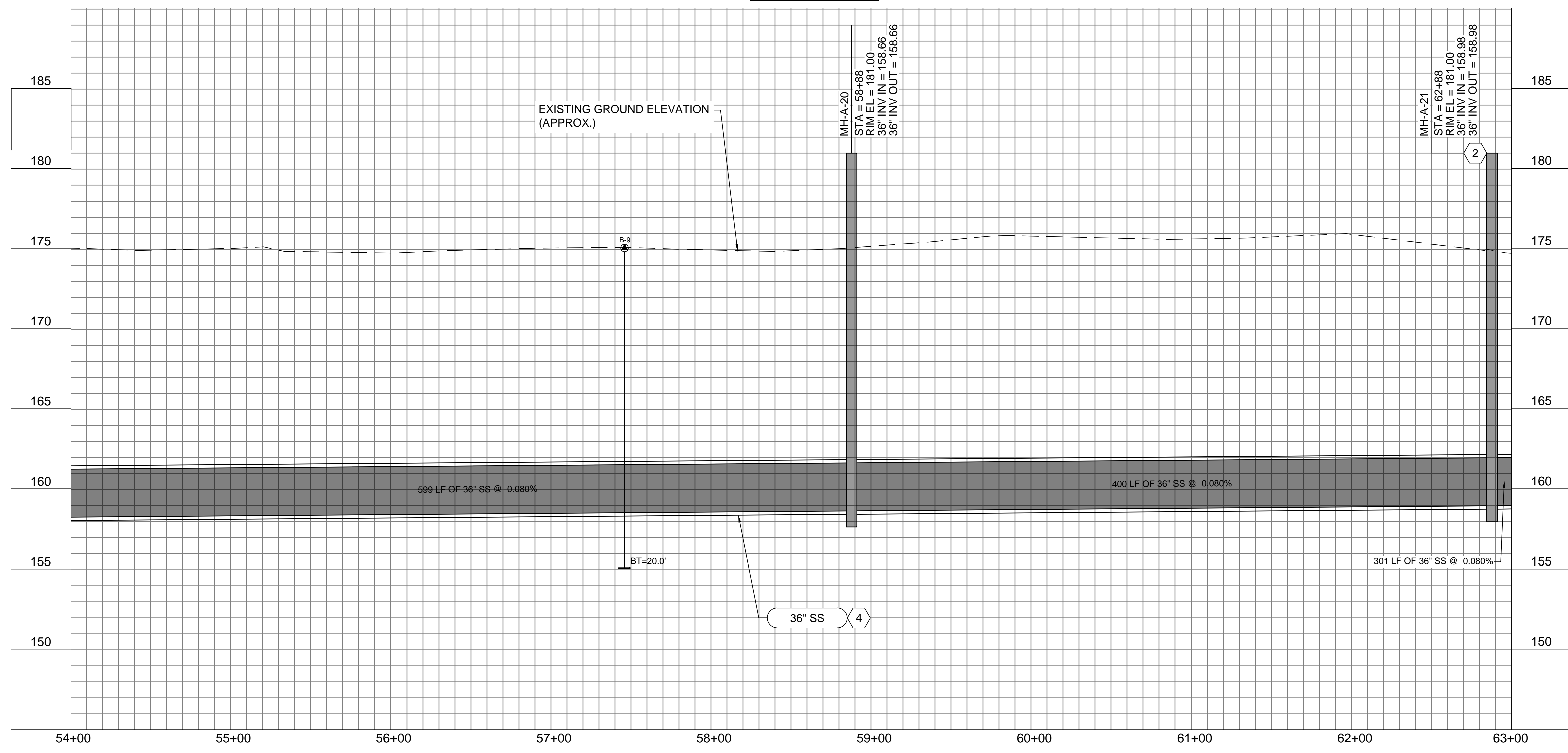
**CIVIL**

**PLAN & PROFILE**  
STA. 45+00 TO STA. 54+00  
DRAWING NUMBER: 100-C-06  
SHEET NUMBER: 20 OF 55





PLAN -  
STA. 54+00 TO 63+00



PROFILE

**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±192.00' MSL. REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 179.00' FROM STA. 27+00 TO STA. 63+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- EXISTING 30\"/>

MANHOLE REHABILITATION TABLE

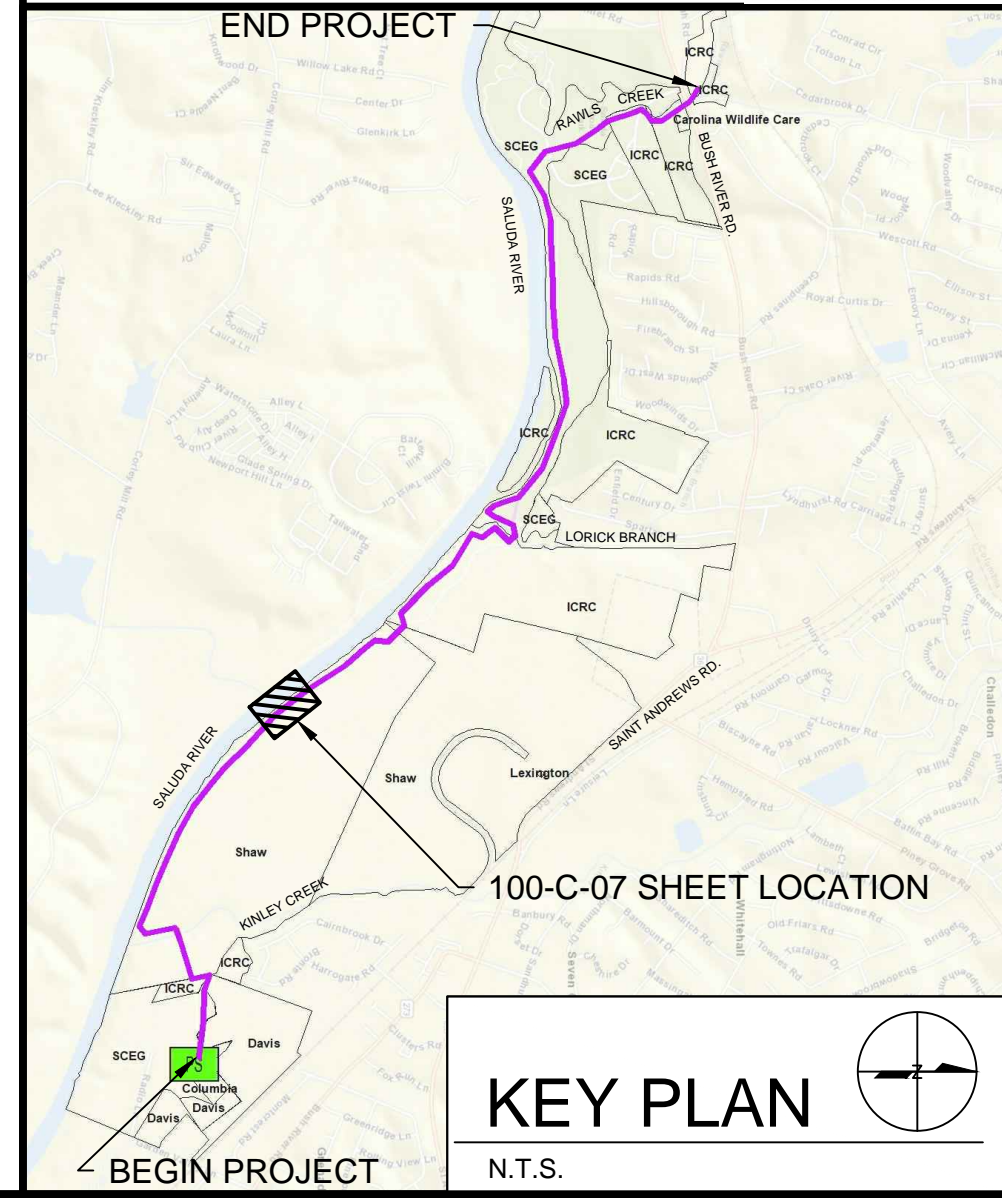
Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/ Invert Repair	C-9 Replace Frame & Cover
16059MH	17.60	X	X		
16067MH	17.00	X	X		

PERMANENT EASEMENT (WIDTH VARIES)

TEMPORARY EASEMENT (WIDTH VARIES)

EXISTING EASEMENT

**811**  
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COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: J. MAZZEI  
DRAWN: A. JUMPER  
CHECKED: C. LUCIE  
CHECKED: J. MAZZEI  
APPROVED: J. MAZZEI

FILENAME: 100-C-07.DWG  
BC PROJECT NUMBER: 152166  
CLIENT PROJECT NUMBER (CITY CIP#): SS7428

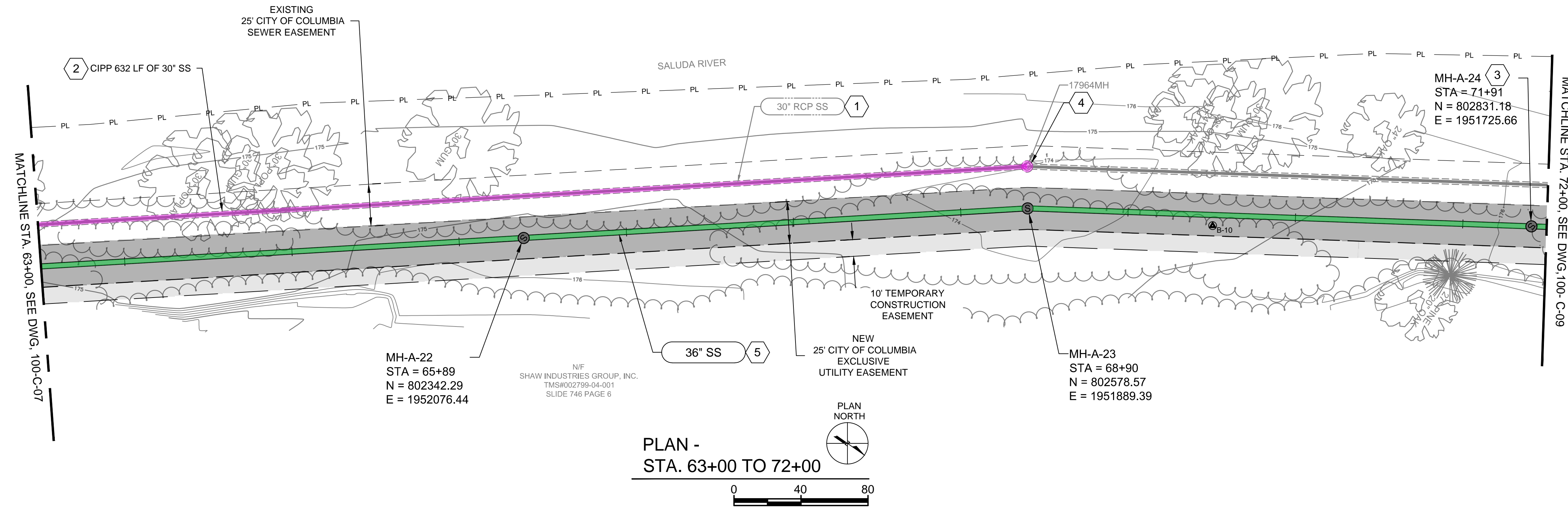
**CIVIL**

**PLAN & PROFILE**  
STA. 54+00 TO STA. 63+00  
DRAWING NUMBER: 100-C-07  
SHEET NUMBER: 21 OF 55

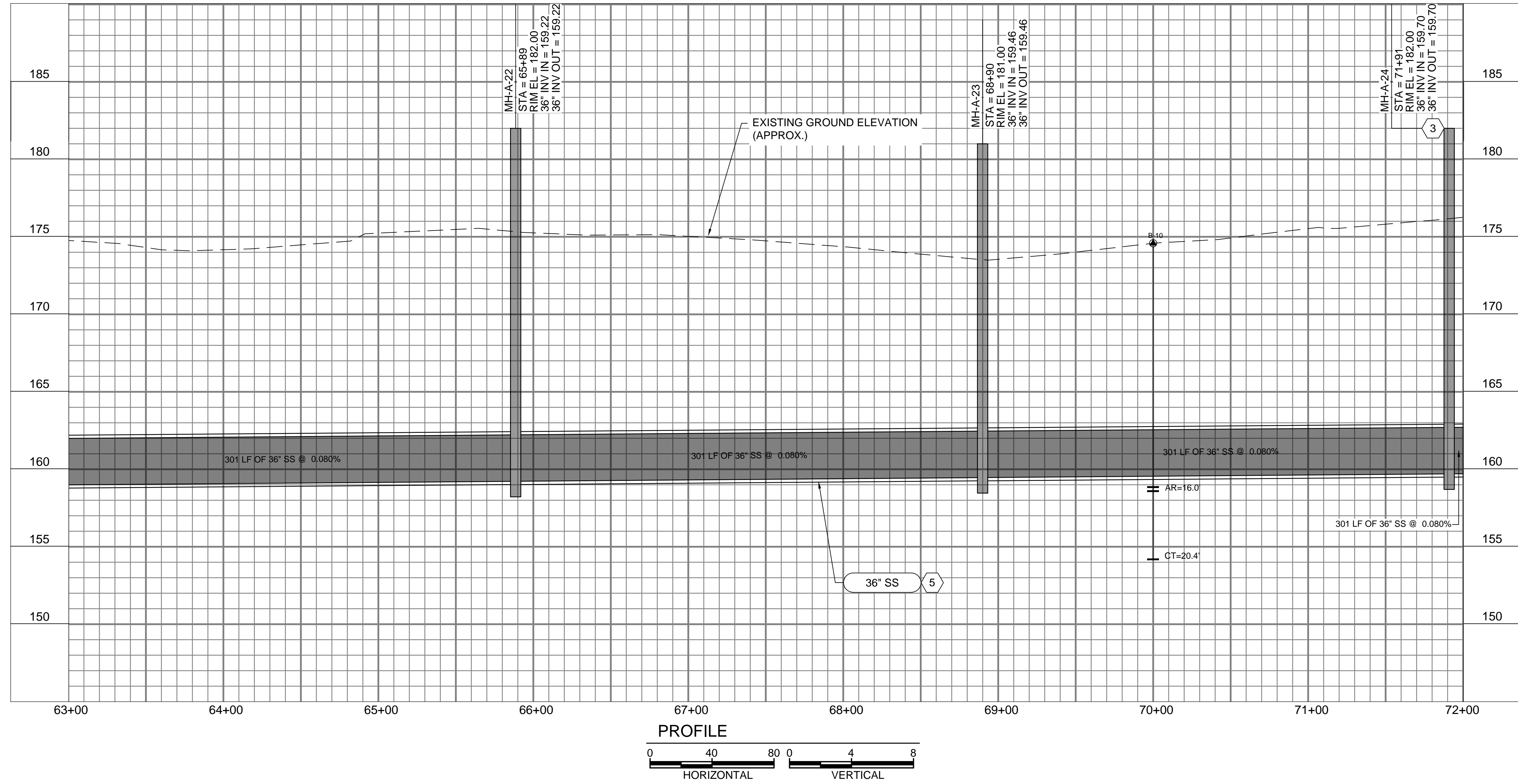
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PLAN -  
STA. 63+00 TO 72+00



PROFILE  
HORIZONTAL VERTICAL

**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±192.00' MSL. REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 180.00' FROM STA. 63+00 TO STA. 99+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

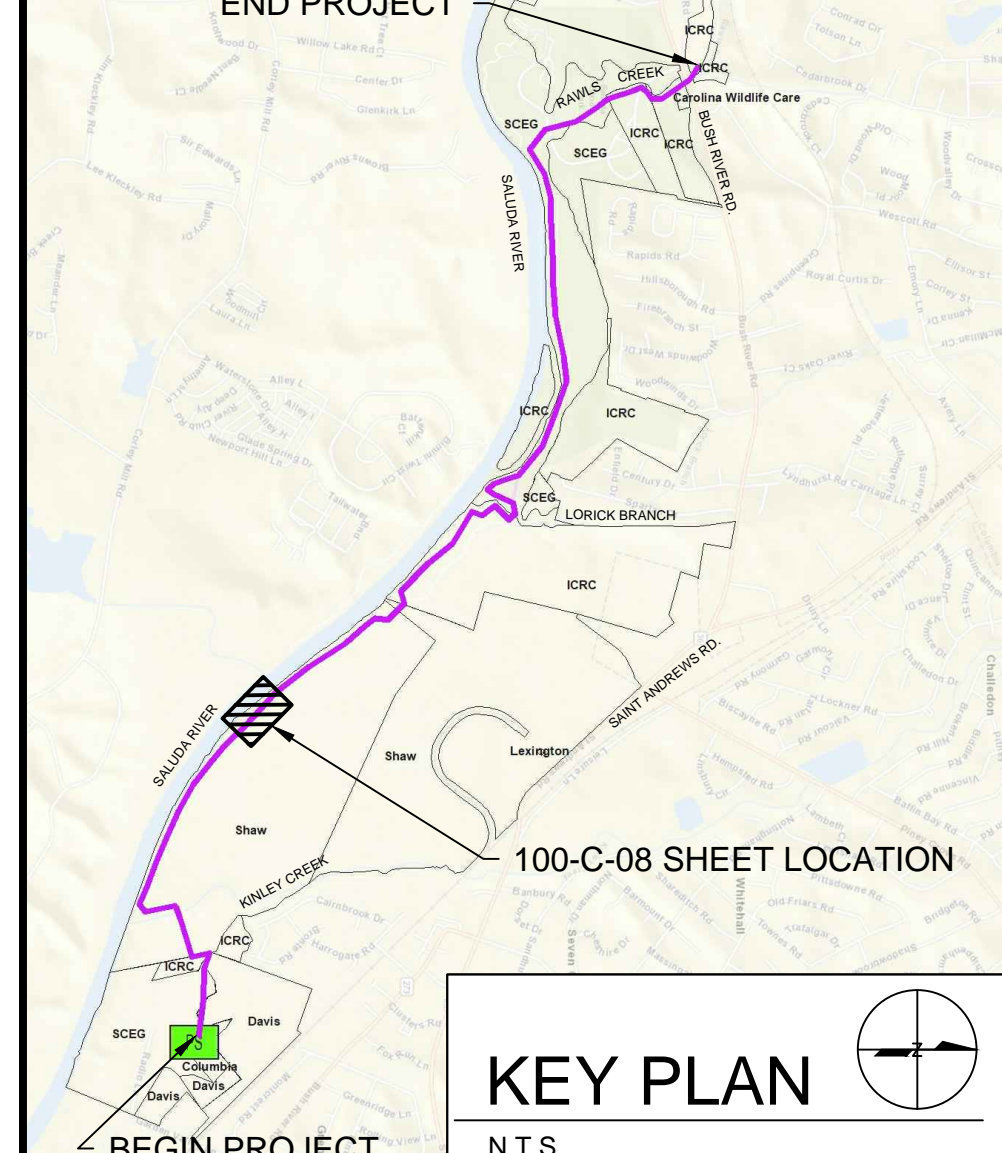
- EXISTING 30" SS TO REMAIN IN SERVICE.
- CIPP LINING OF 16067MH TO 17964MH IS TO OCCUR AFTER NEW LINES FROM MH-A-43 TO SALUDA RIVER PUMP STATION ARE IN SERVICE.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- RAISE EXISTING MANHOLE RIM TO ELEVATION 181.00'.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-9 TO MH-A-43 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.

MANHOLE REHABILITATION TABLE

Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/Invert Repair	C-9 Replace Frame & Cover
17964MH	17.70	X	X	X	

PERMANENT EASEMENT (WIDTH VARIES)  
 TEMPORARY EASEMENT (WIDTH VARIES)  
 EXISTING EASEMENT

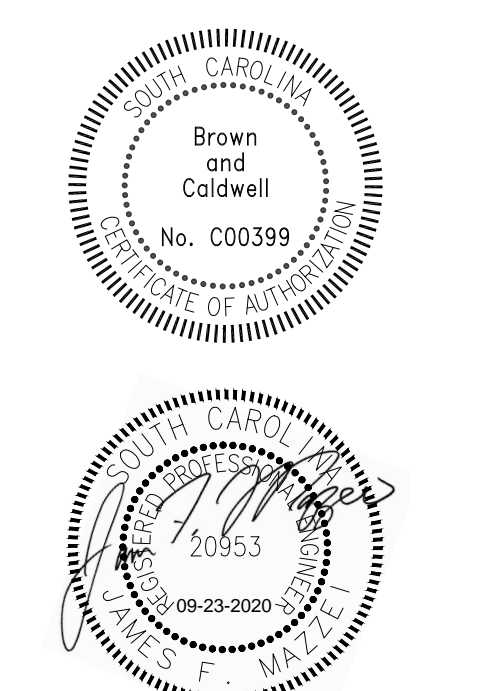
**811**  
 Know what's below. Call before you dig. 1-888-721-7877



KEY PLAN  
N.T.S.



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE  
 DESIGNED: J. MAZZEI  
 DRAWN: A. JUMPER  
 CHECKED: C. LUCIE  
 CHECKED: J. MAZZEI  
 APPROVED: J. MAZZEI

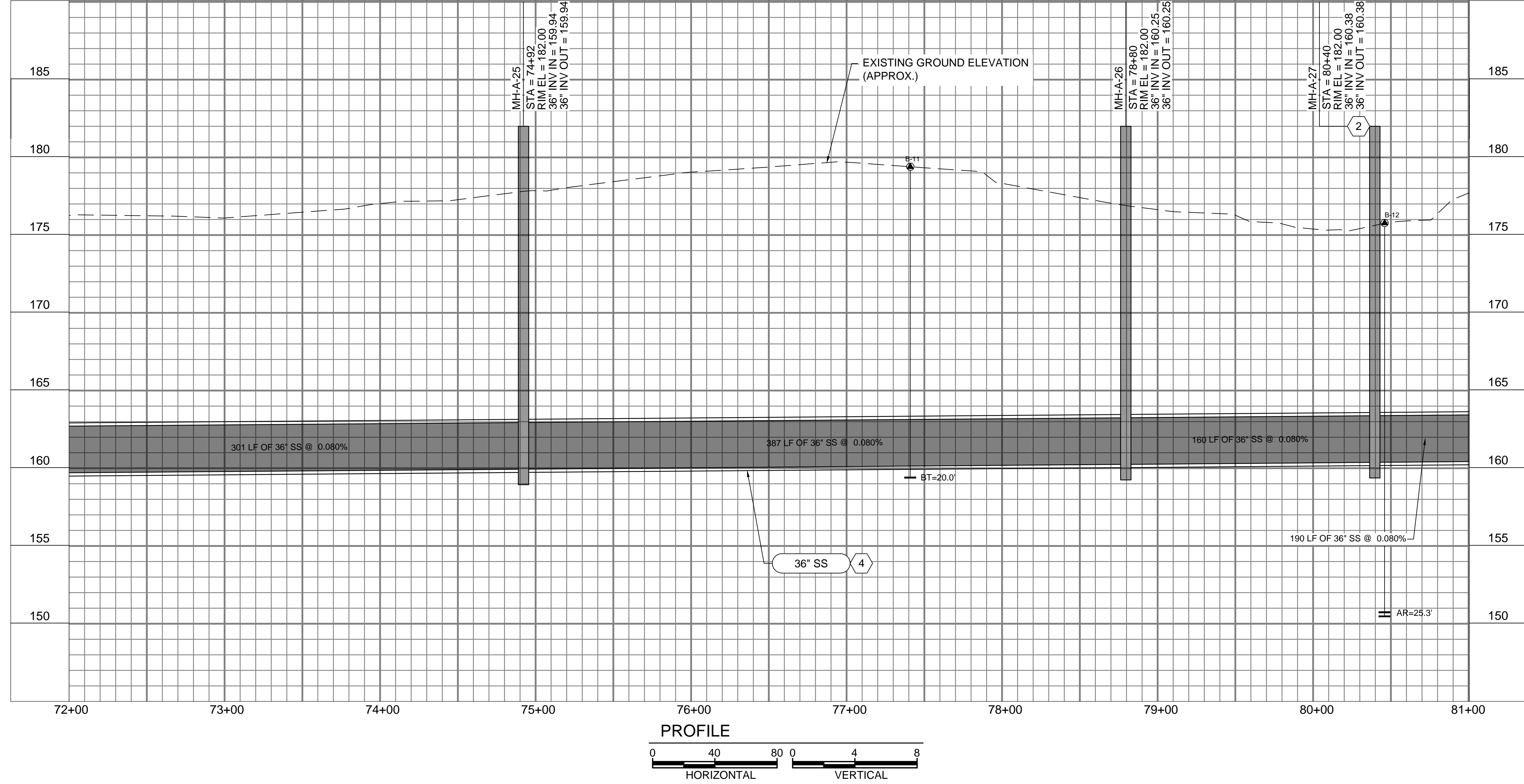
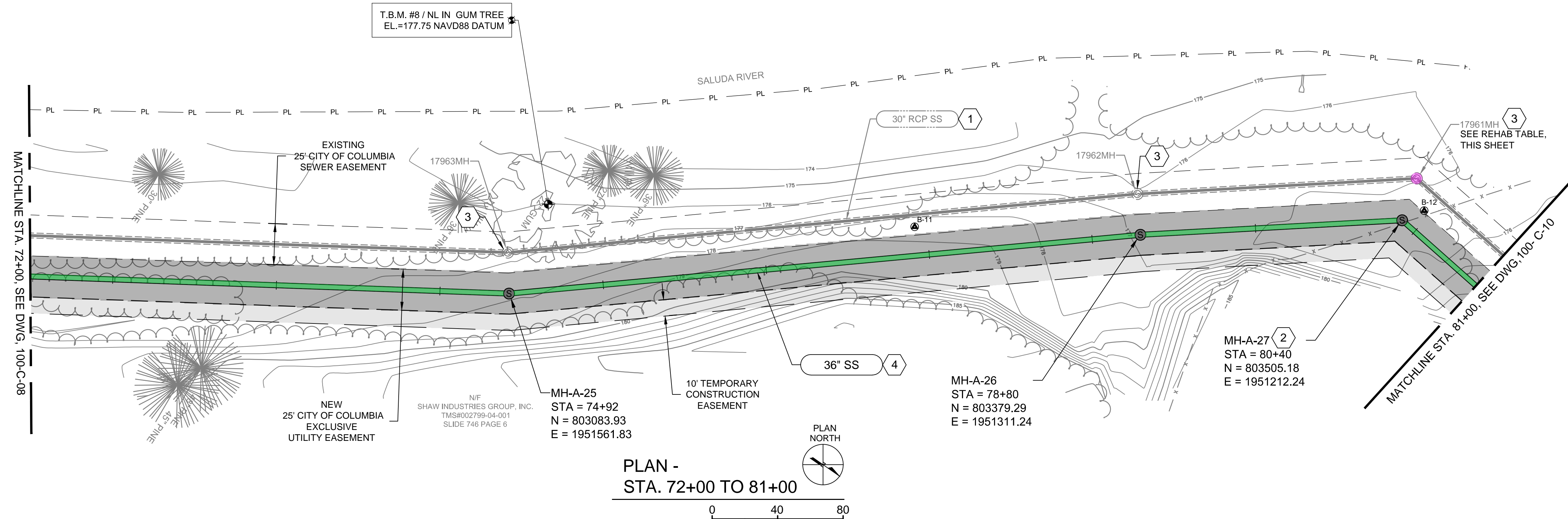
FILENAME: 100-C-08.DWG  
 BC PROJECT NUMBER: 152166  
 CLIENT PROJECT NUMBER (CITY CIP#): SS7428

**CIVIL**

PLAN & PROFILE  
 STA. 63+00 TO STA. 72+00  
 DRAWING NUMBER: 100-C-08  
 SHEET NUMBER: 22 OF 55



Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\CAD\2-SHEETS\C-CIVIL FILENAME: 100-C-09.DWG PLOT DATE: 10/31/2019 2:47 PM CAD USER: ANDY JUMPER



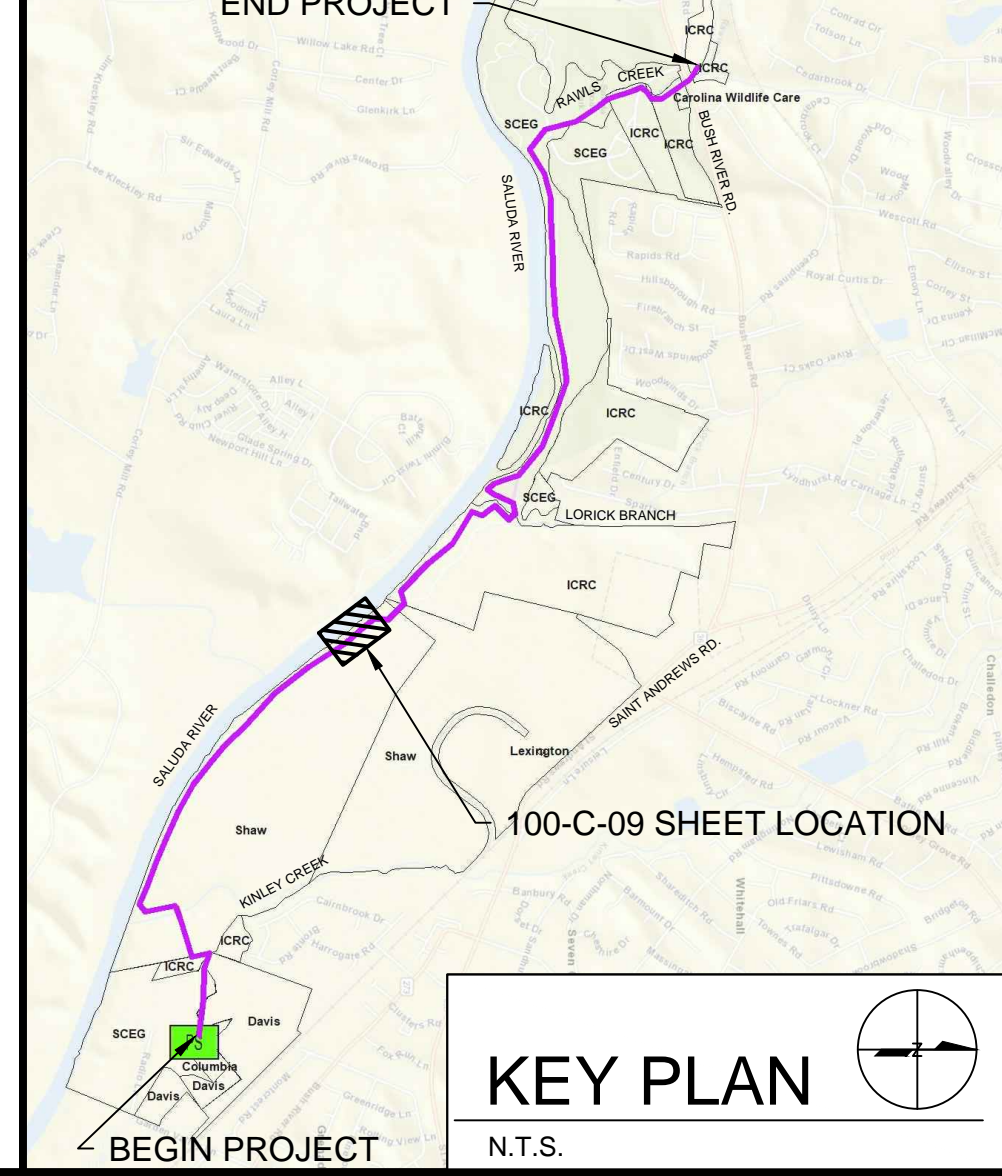
- ### GENERAL NOTES:
- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
  - SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
  - SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
  - PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±192.00' MSL. REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
  - SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 180.00' FROM STA. 63+00 TO STA. 99+00.
  - CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

- ### KEY NOTES
- EXISTING 30" SS TO REMAIN IN SERVICE.
  - MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
  - RAISE EXISTING MANHOLE RIM TO ELEVATION 182.00'.
  - PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-9 TO MH-A-43 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.

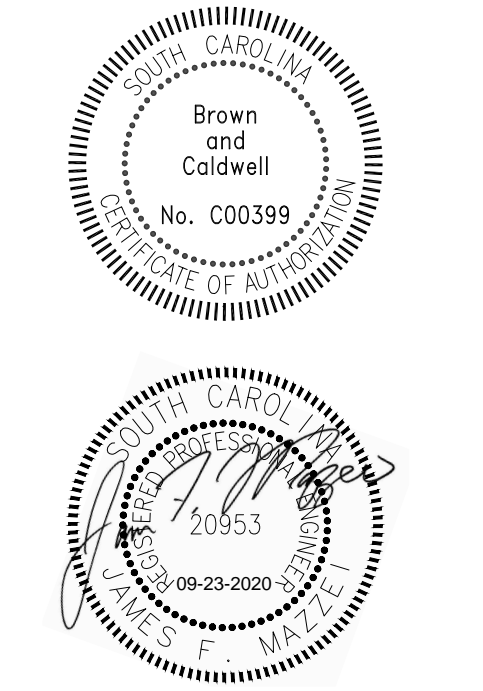
Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/ Invert Repair	C-9 Replace Frame & Cover
17963MH	17.30	X	X		
17962MH	17.00	X	X	X	
17961MH	19.25	X	X		

PERMANENT EASEMENT (WIDTH VARIES)  
 TEMPORARY EASEMENT (WIDTH VARIES)  
 EXISTING EASEMENT

**811**  
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COLUMBIA, SOUTH CAROLINA



## LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

### REVISIONS

REV	DATE	DESCRIPTION

DESIGNED: J. MAZZEI  
 DRAWN: A. JUMPER  
 CHECKED: C. LUCIE  
 CHECKED: J. MAZZEI  
 APPROVED: J. MAZZEI

FILENAME: 100-C-09.DWG  
 BC PROJECT NUMBER: 152166  
 CLIENT PROJECT NUMBER (CITY CIP#): SS7428

CIVIL

PLAN & PROFILE  
 STA. 72+00 TO STA. 81+00  
 DRAWING NUMBER: 100-C-09  
 SHEET NUMBER: 23 OF 55



1

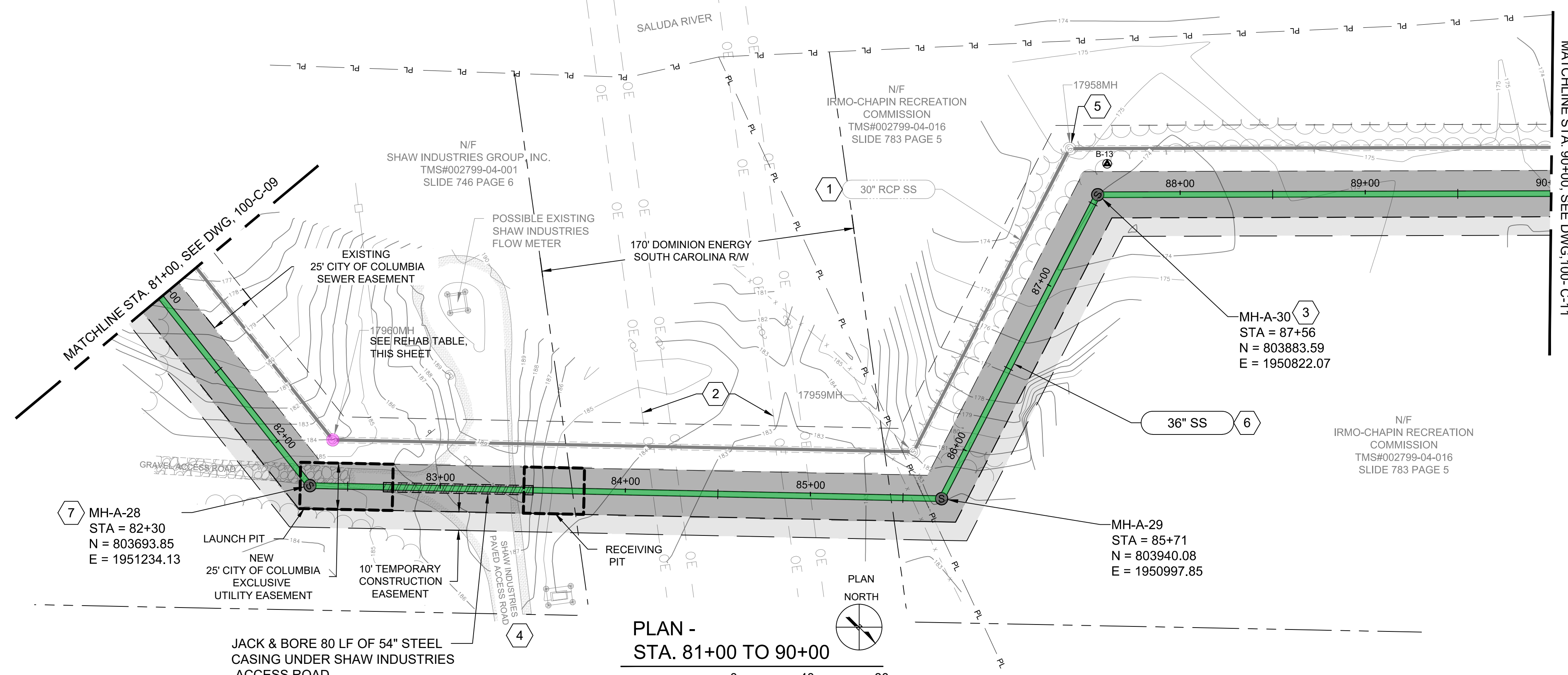
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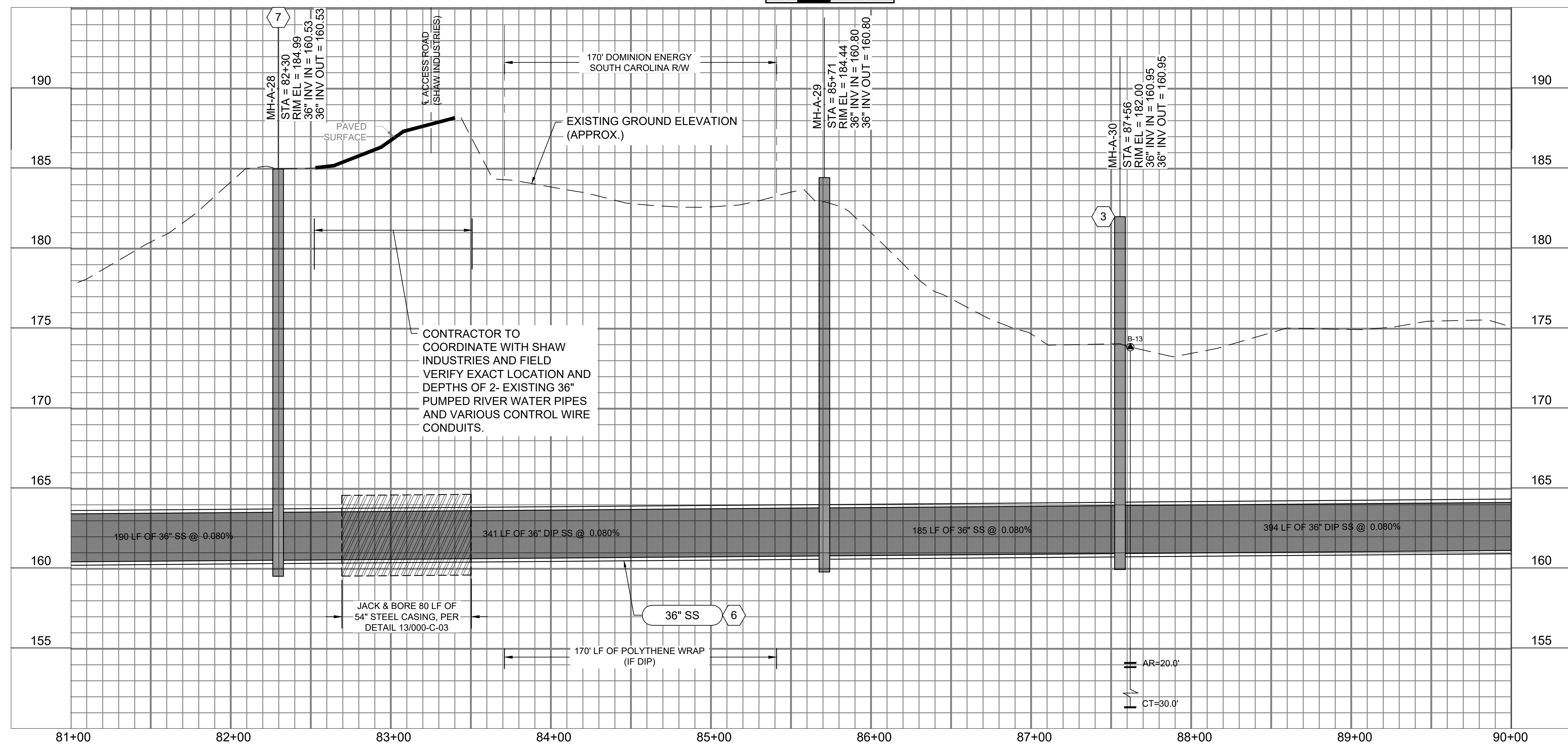
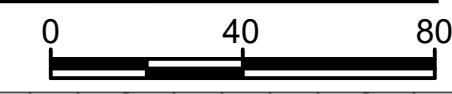
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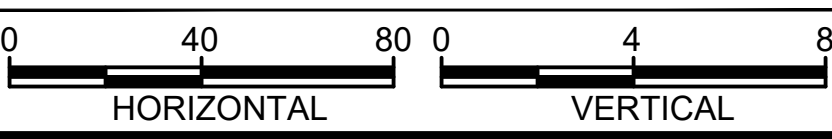
6



PLAN -  
STA. 81+00 TO 90+00



PROFILE



**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±192.00' MSL REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
- COORDINATE WITH SHAW INDUSTRIES FOR INGRESS/EGRESS THRU PLANT ENTRANCE OFF ST. ANDREWS ROAD.
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 180.00' FROM STA. 63+00 TO STA. 99+00.
- CONTRACTOR TO COORDINATE ALL CONSTRUCTION ACTIVITIES WITH APPROPRIATE SHAW INDUSTRIES PERSONNEL. (SEE CONTACT INFORMATION, 000-C-001.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- EXISTING 30" SS TO REMAIN IN SERVICE.
- \*\*CAUTION\*\* OVERHEAD POWERLINES
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- SHAW INDUSTRIAL WILL REQUIRE PAVED DRIVE TO REMAIN ACCESSIBLE AT ALL TIMES.
- RAISE EXISTING MANHOLE RIM TO ELEVATION 182.00'.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-9 TO MH-A-43 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.
- MH-A-28 IS TO BE FLUSH WITH GRAVEL SURFACE WITH THE USE OF CITY STANDARD WATERTIGHT FRAME AND COVER, PER DETAIL 1/000-C-02.

MANHOLE REHABILITATION TABLE

Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/Invert Repair	C-9 Replace Frame & Cover
17960MH	24.10		X		X
17959MH	24.00		X		
17958MH	17.80	X	X		

PERMANENT EASEMENT (WIDTH VARIES) [Symbol]

TEMPORARY EASEMENT (WIDTH VARIES) [Symbol]

EXISTING EASEMENT [Symbol]

**811**  
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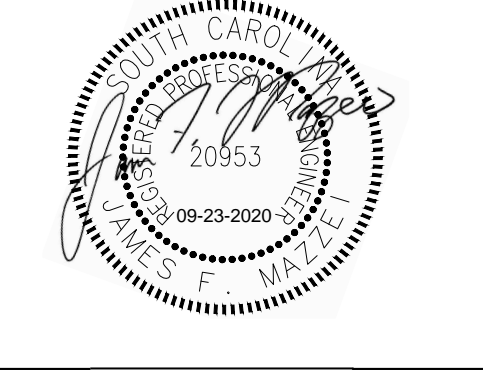
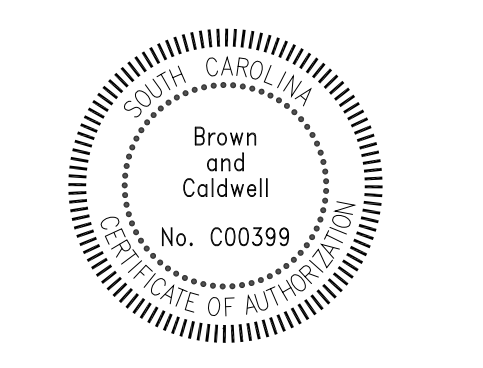
END PROJECT

KEY PLAN

N.T.S.



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

DESIGNED: J. MAZZEI  
DRAWN: A. JUMPER  
CHECKED: C. LUCIE  
CHECKED: J. MAZZEI  
APPROVED: J. MAZZEI

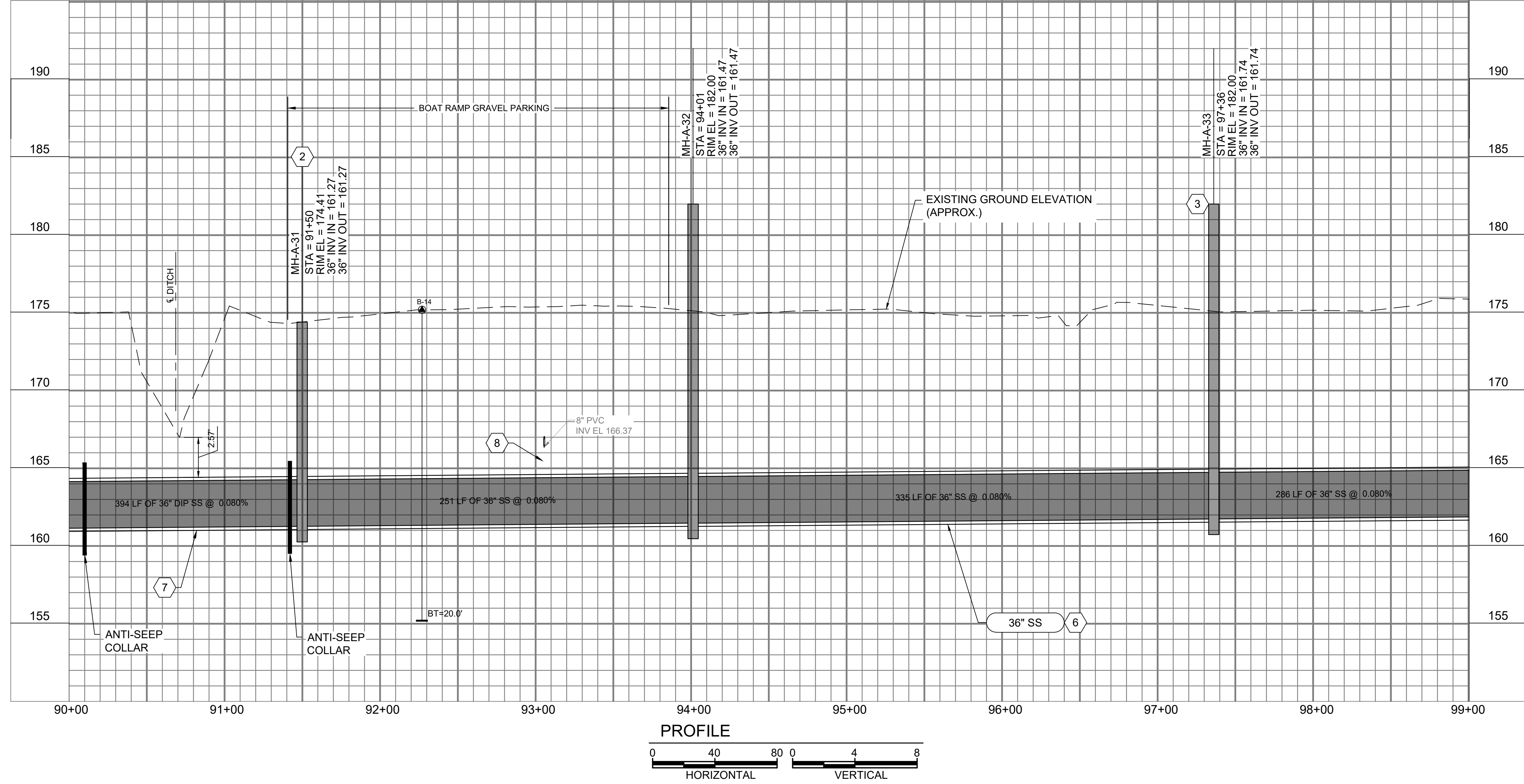
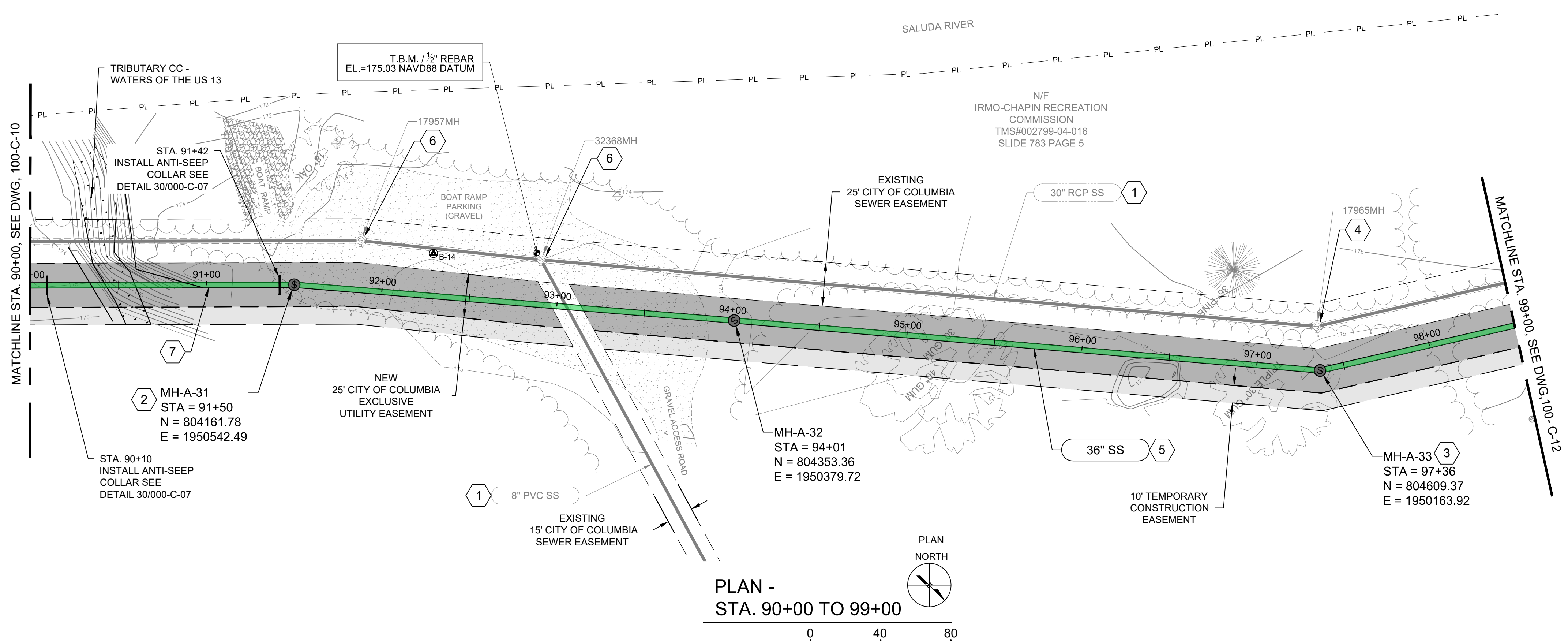
CIVIL

PLAN & PROFILE  
STA. 81+00  
TO  
STA. 90+00  
DRAWING NUMBER  
**100-C-10**  
SHEET NUMBER  
24 OF 55

Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\CAD\2-SHEETS\CIVIL FILENAME: 100-C-10.DWG PLOT DATE: 9/21/2020 5:45 PM CAD USER: ANDY JUMPER



Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\_CAD\2-SHEETS\C-CIVIL FILENAME: 100-C-11.DWG PLOT DATE: 9/22/2020 3:40 PM CAD USER: ANDY JUMPER



**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±192.00' MSL. REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18.
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 180.00' FROM STA. 63+00 TO STA. 99+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- EXISTING 30" SS TO REMAIN IN SERVICE.
- MH-A-31 IS TO BE FLUSH WITH GRAVEL PARKING LOT SURFACE WITH THE USE OF CITY STANDARD WATERTIGHT FRAME AND COVER.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- RAISE EXISTING MANHOLE RIM TO ELEVATION 182.00'.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-9 TO MH-A-43 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.
- EXISTING 17957MH & 32368MH SHALL BE LOWERED TO EXISTING ELEVATION OF GRAVEL PARKING LOT SURFACE WITH THE USE OF CITY STANDARD WATERTIGHT FRAME AND COVER.
- PIPE SEGMENT SHALL BE DIP.
- CONCRETE PIPE SUPPORT, SEE DETAIL 17 ON DRAWING 000-C-04.

MANHOLE REHABILITATION TABLE					
Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/Invert Repair	C-9 Replace Frame & Cover
32368MH	15.97	Lower MH per note 6	X		
17957MH	14.70	Lower MH per note 6			
17965MH	14.70	X	X		

PERMANENT EASEMENT (WIDTH VARIES)

TEMPORARY EASEMENT (WIDTH VARIES)

EXISTING EASEMENT

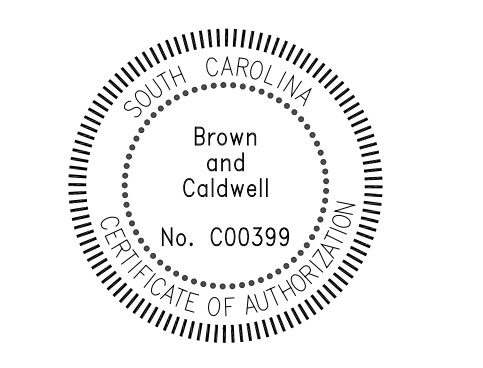
**811**  
Know what's below. Call before you dig. 1-888-721-7877

END PROJECT

KEY PLAN  
N.T.S.



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

DESIGNED: J. MAZZEI  
 DRAWN: A. JUMPER  
 CHECKED: C. LUCIE  
 CHECKED: J. MAZZEI  
 APPROVED: J. MAZZEI

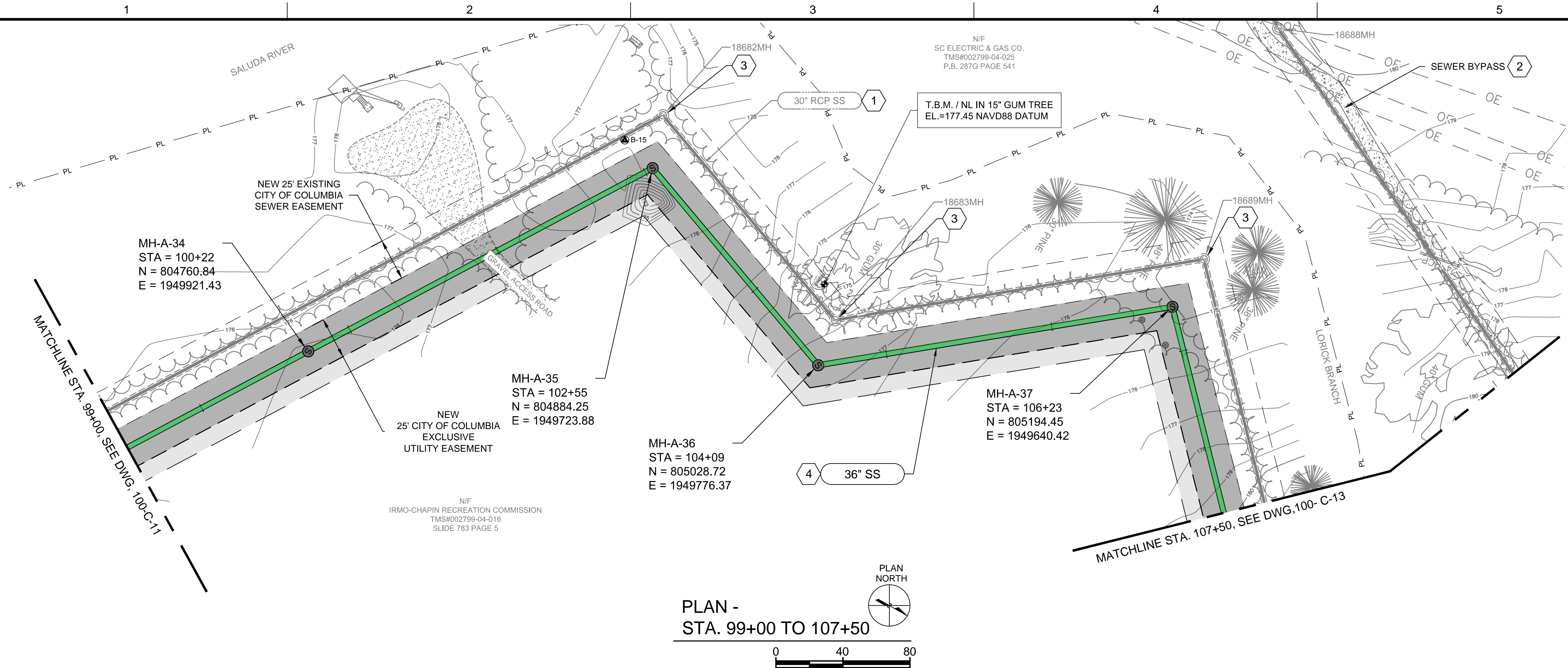
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 BC PROJECT NUMBER: 152166  
 CLIENT PROJECT NUMBER (CITY CIP#): SS7428

**CIVIL**

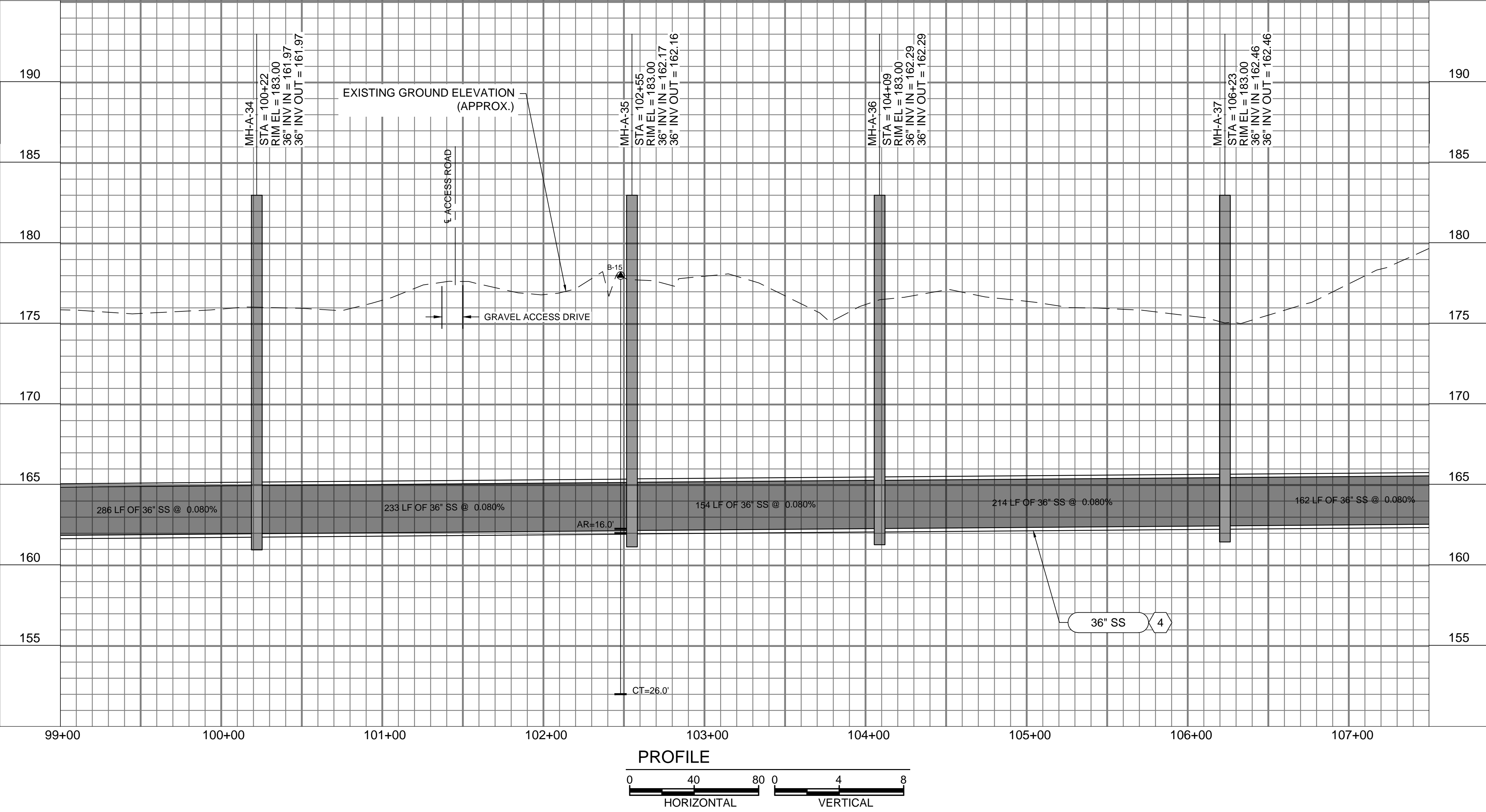
PLAN & PROFILE  
 STA. 90+00 TO STA. 99+00  
 DRAWING NUMBER: 100-C-11  
 SHEET NUMBER: 25 OF 55



Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\CAD\2-SHEETS\CIVIL FILENAME: 100-C-12.DWG PLOT DATE: 10/31/2019 3:01 PM CAD USER: ANDY JUMPER



PLAN -  
STA. 99+00 TO 107+50



PROFILE

**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±193.00' MSL REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 181.00' FROM STA. 99+00 TO STA. 126+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- EXISTING 30" SS TO REMAIN IN SERVICE.
- SEWER BYPASS ROUTE. SEE SEWER BYPASS PLAN ON DRAWING 300-C-01.
- RAISE EXISTING MANHOLE RIM TO ELEVATION 183.00'.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-9 TO MH-A-43 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.

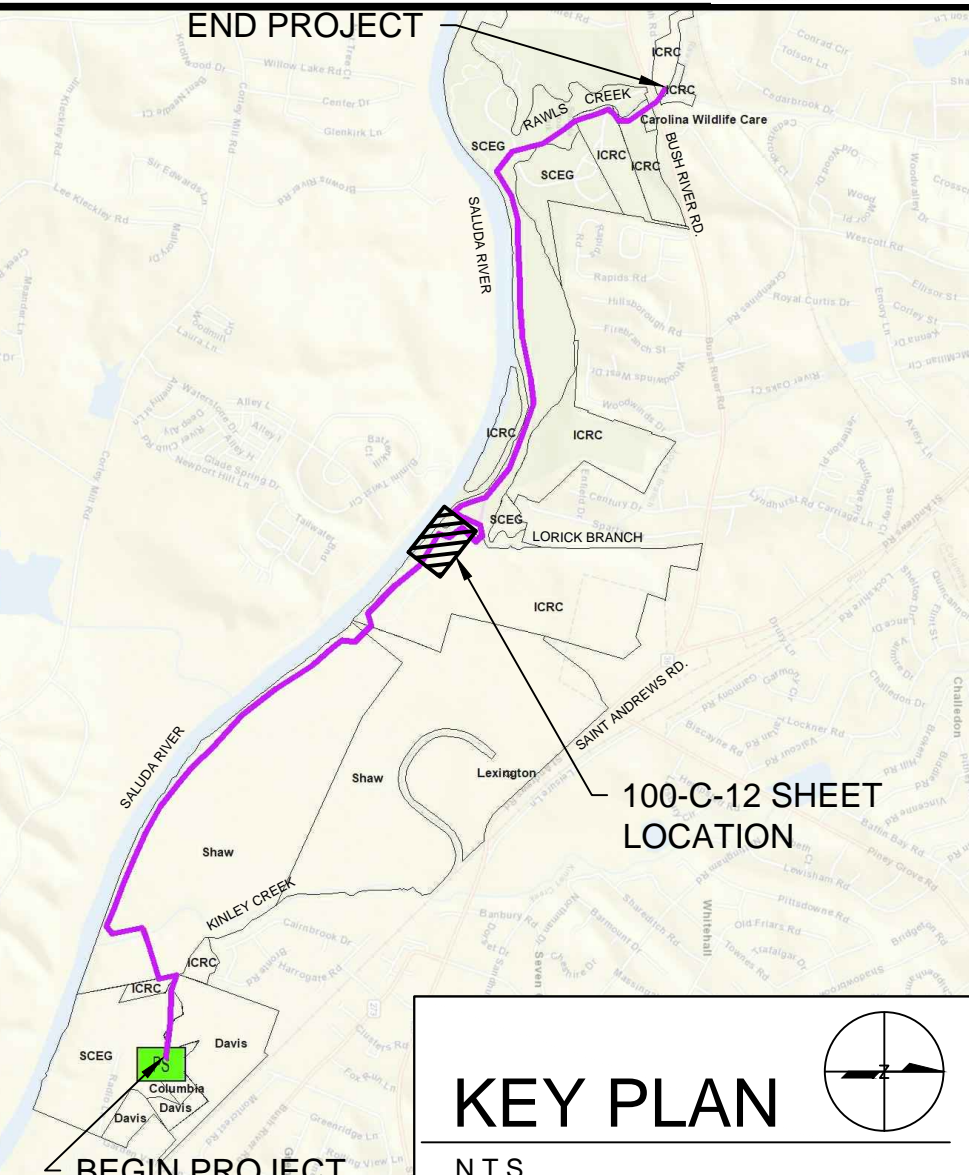
MANHOLE REHABILITATION TABLE					
Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/Invert Repair	C-9 Replace Frame & Cover
18682MH	16.70	X	X		
18683MH	17.30	X	X		
18689MH	14.20	X	X		

PERMANENT EASEMENT (WIDTH VARIES)

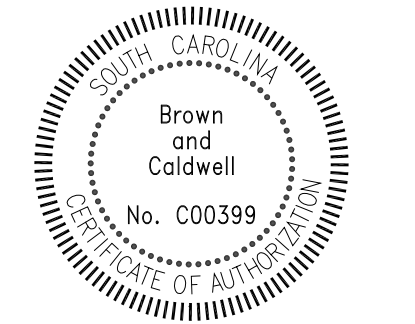
TEMPORARY EASEMENT (WIDTH VARIES)

EXISTING EASEMENT

**811**  
Know what's below. Call before you dig. 1-888-721-7877



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

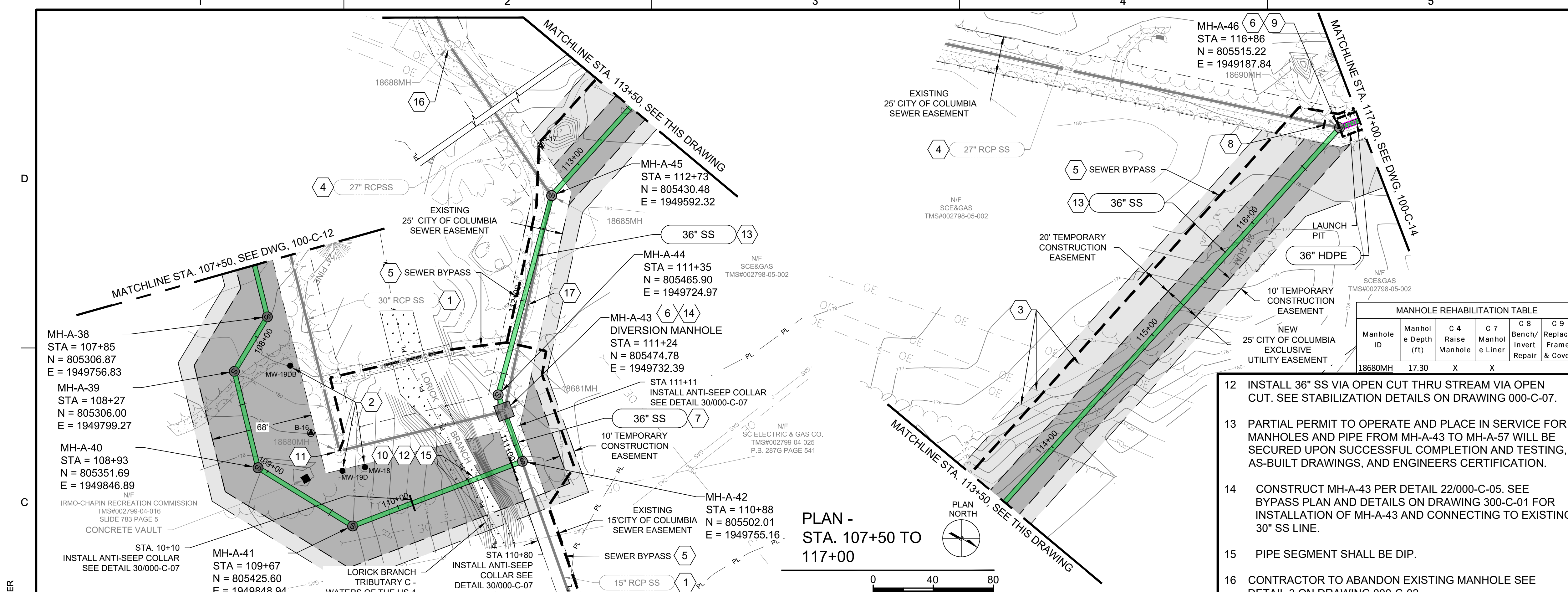
DESIGNED: J. MAZZEI  
DRAWN: A. JUMPER  
CHECKED: C. LUCIE  
CHECKED: J. MAZZEI  
APPROVED: J. MAZZEI

CIVIL

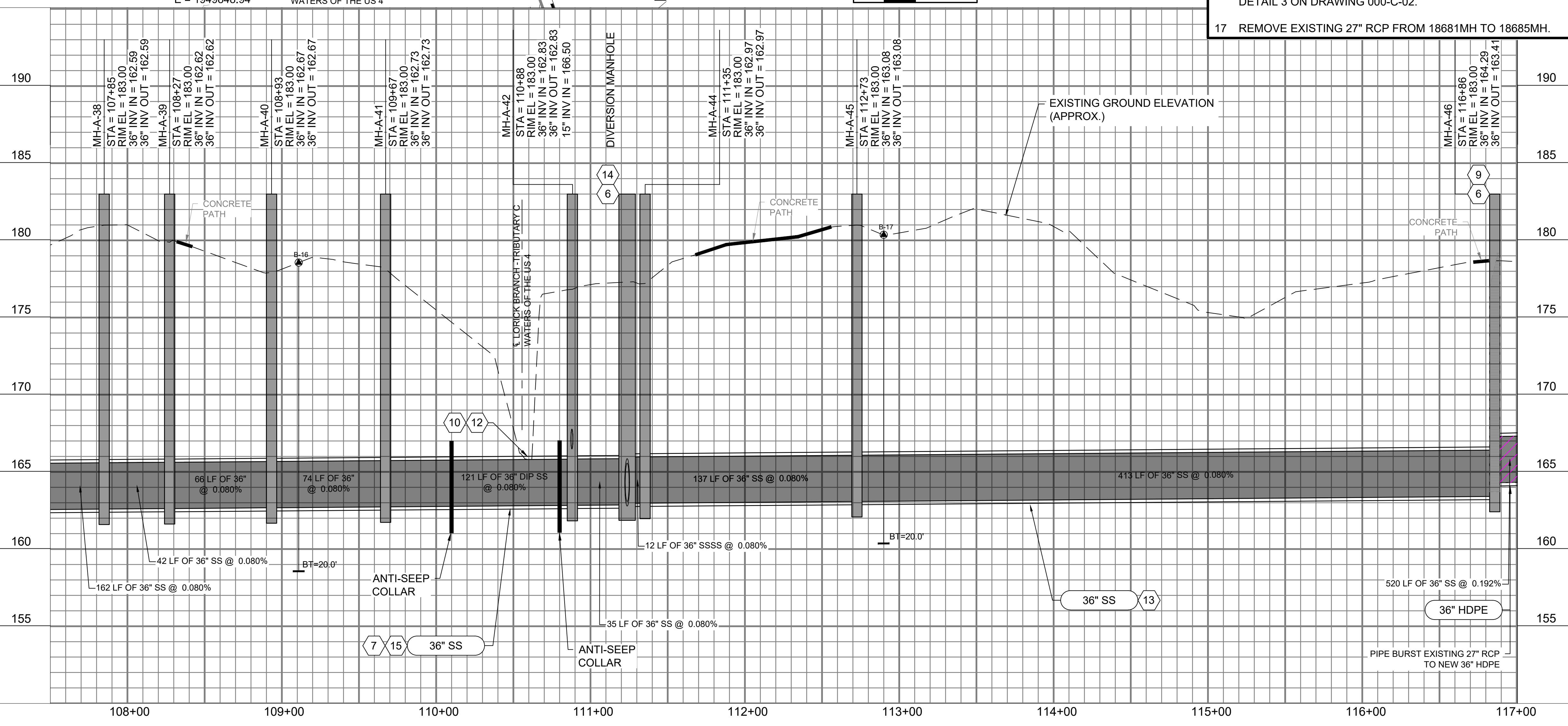
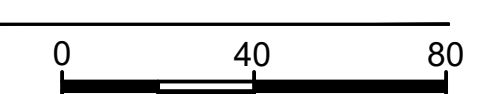
PLAN & PROFILE  
STA. 99+00 TO STA. 107+50

DRAWING NUMBER  
**100-C-12**  
SHEET NUMBER  
26 OF 55





PLAN - STA. 107+50 TO 117+00



PROFILE  
HORIZONTAL VERTICAL

**GENERAL NOTES:**

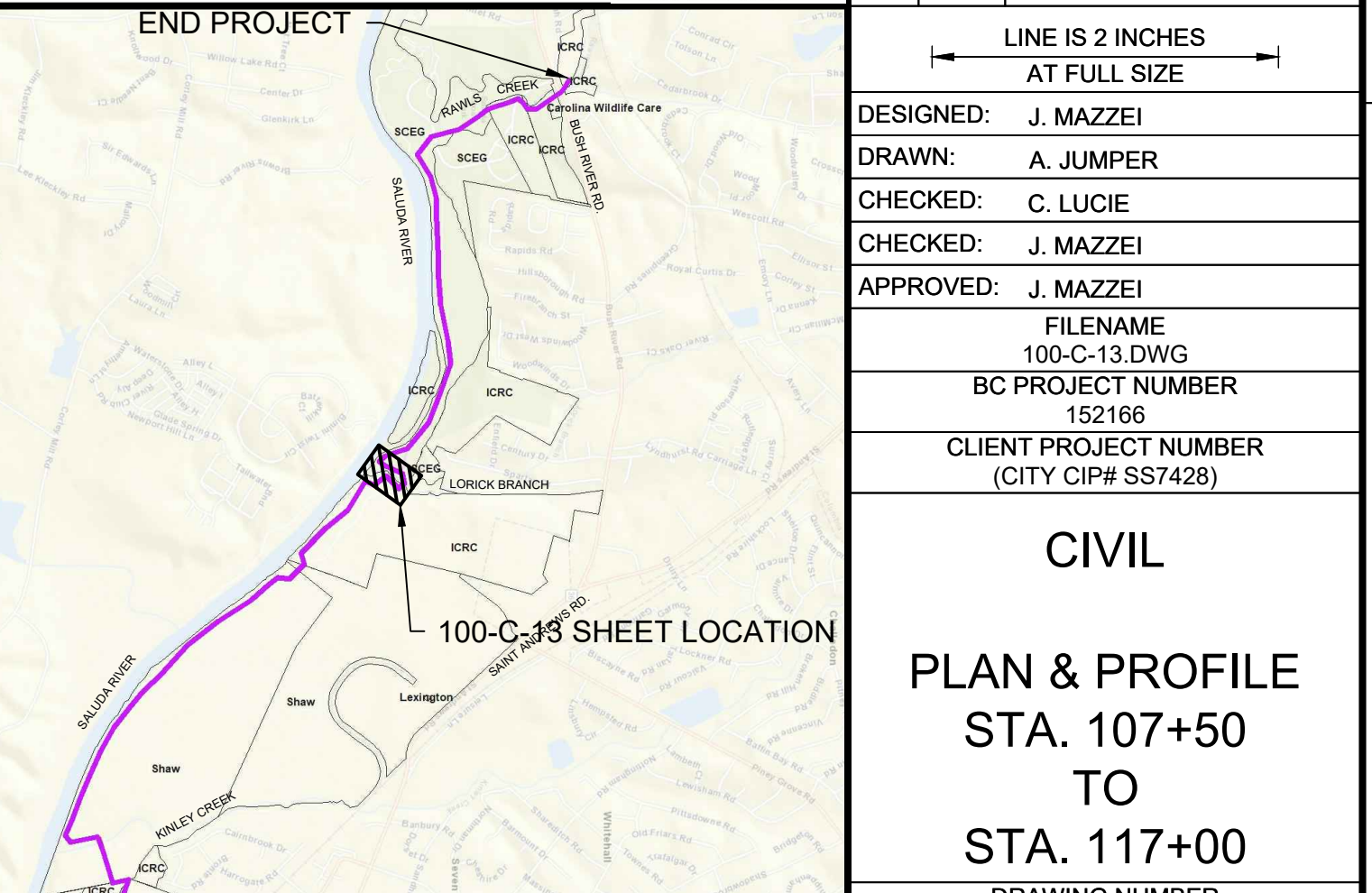
- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±193.00' MSL REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 181.00' FROM STA. 99+00 TO STA. 126+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- EXISTING 30" SS DOWNSTREAM OF NEW MH-A-42 TO REMAIN IN SERVICE.
- NEW SEWER PIPE INSTALLATION AROUND GROUND GAS MONITORING WELLS (18, 19D, 19DB) SHALL BE COORDINATED THRU DOMINION ENERGY/GAS DIVISION. SEE CONTACT REFERENCE ON DRAWING 000-C-01.
- \*\*CAUTION\*\* OVERHEAD POWER LINES
- EXISTING 27" SS WILL BE ABANDONED IN PLACE. SEE DRAWING 000-C-02 FOR DETAIL ON ABANDONMENT OF EXISTING LINES AND MANHOLES.
- SEWER BYPASS ROUTE. SEE SEWER BYPASS PLAN ON DRAWING 300-C-01.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-9 TO MH-A-43 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING. AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.
- CUT AND CAP EXISTING 27" SANITARY SEWER LINE AT APPROXIMATE LOCATION.
- CONTRACTOR TO REMOVE AND DISPOSE OF EXISTING MANHOLE AND REPLACE WITH NEW PRECAST CONCRETE MANHOLE.
- PIPE PROTECTION, SEE DETAIL 29 ON DRAWING 000-C-07
- RAISE EXISTING MANHOLE RIM TO ELEVATION 183.00'.

**MANHOLE REHABILITATION TABLE**

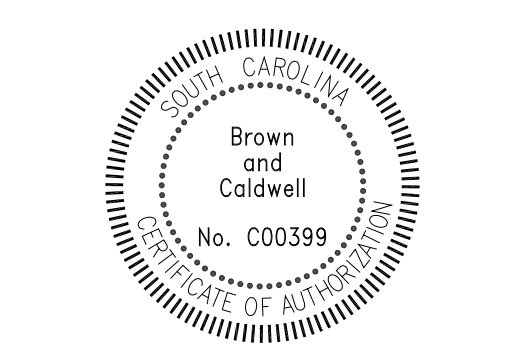
Manhole ID	Manhole Depth (ft)	C-4 Raise Manhole	C-7 Manhole Liner	C-8 Bench/Invert Repair	C-9 Replace Frame & Cover
18680MH	17.30	X	X		



KEY PLAN  
N.T.S.



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

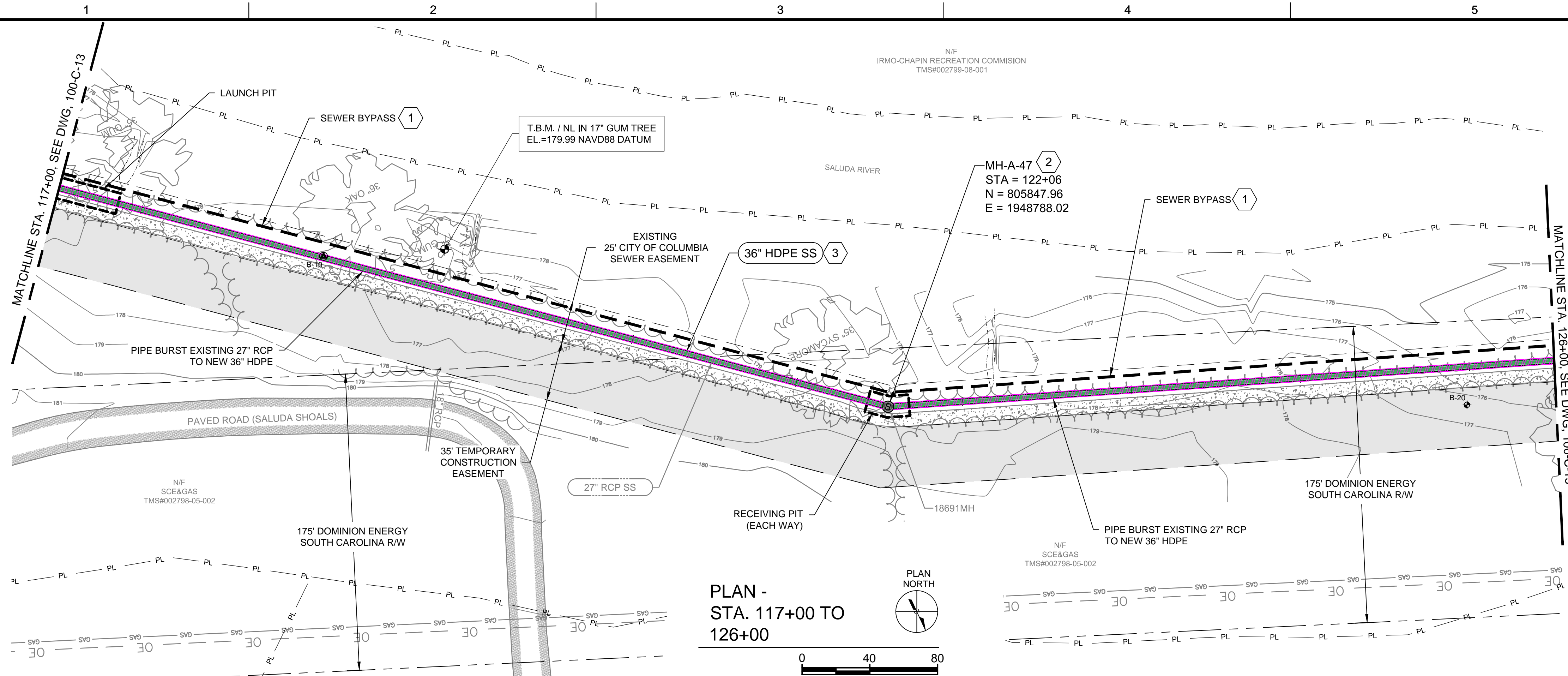
DESIGNED: J. MAZZEI  
DRAWN: A. JUMPER  
CHECKED: C. LUCIE  
CHECKED: J. MAZZEI  
APPROVED: J. MAZZEI

CIVIL  
PLAN & PROFILE  
STA. 107+50 TO STA. 117+00  
DRAWING NUMBER  
**100-C-13**  
SHEET NUMBER  
27 OF 55

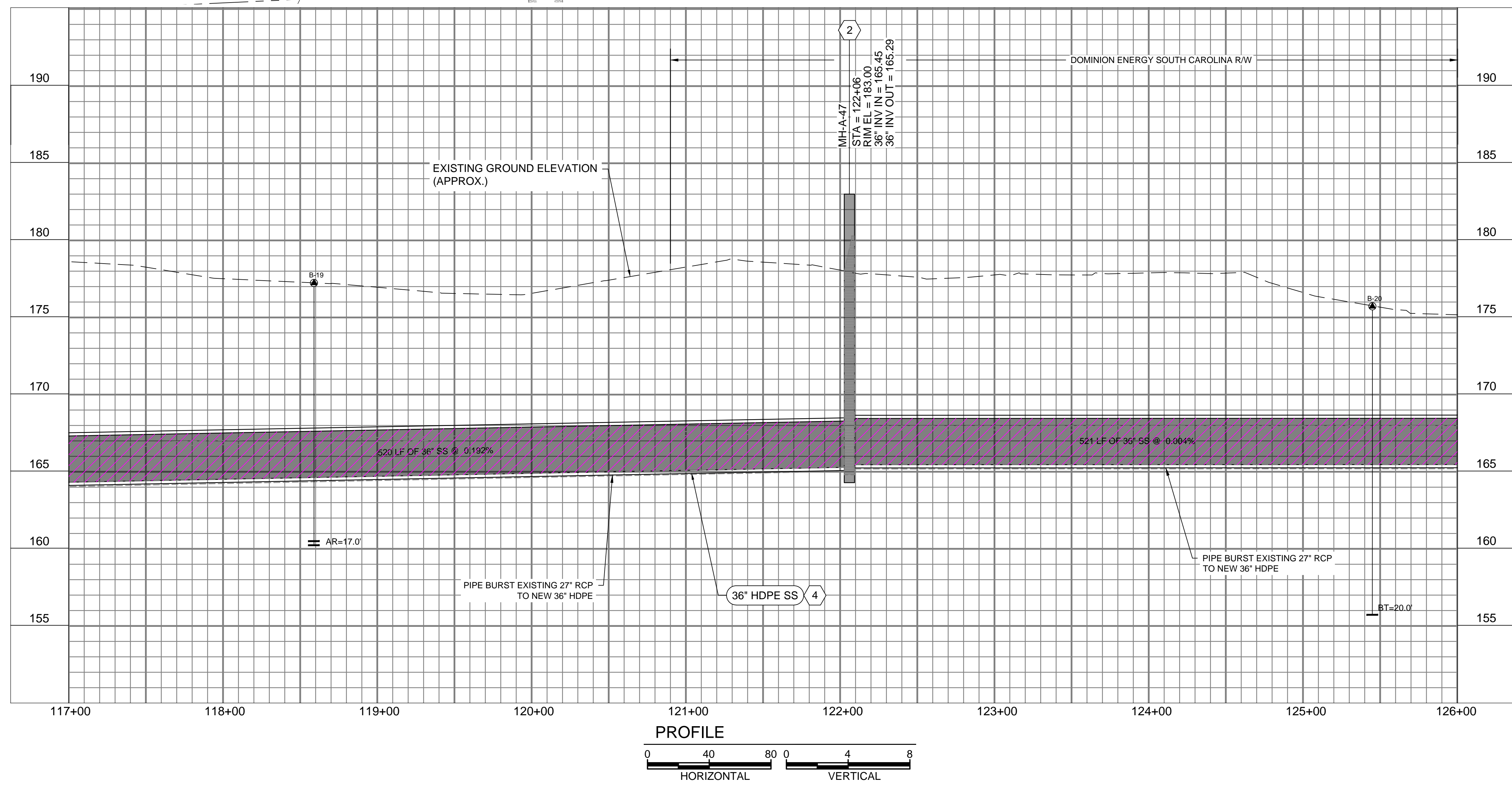
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PLAN -  
STA. 117+00 TO  
126+00



PROFILE  
HORIZONTAL VERTICAL

**GENERAL NOTES:**

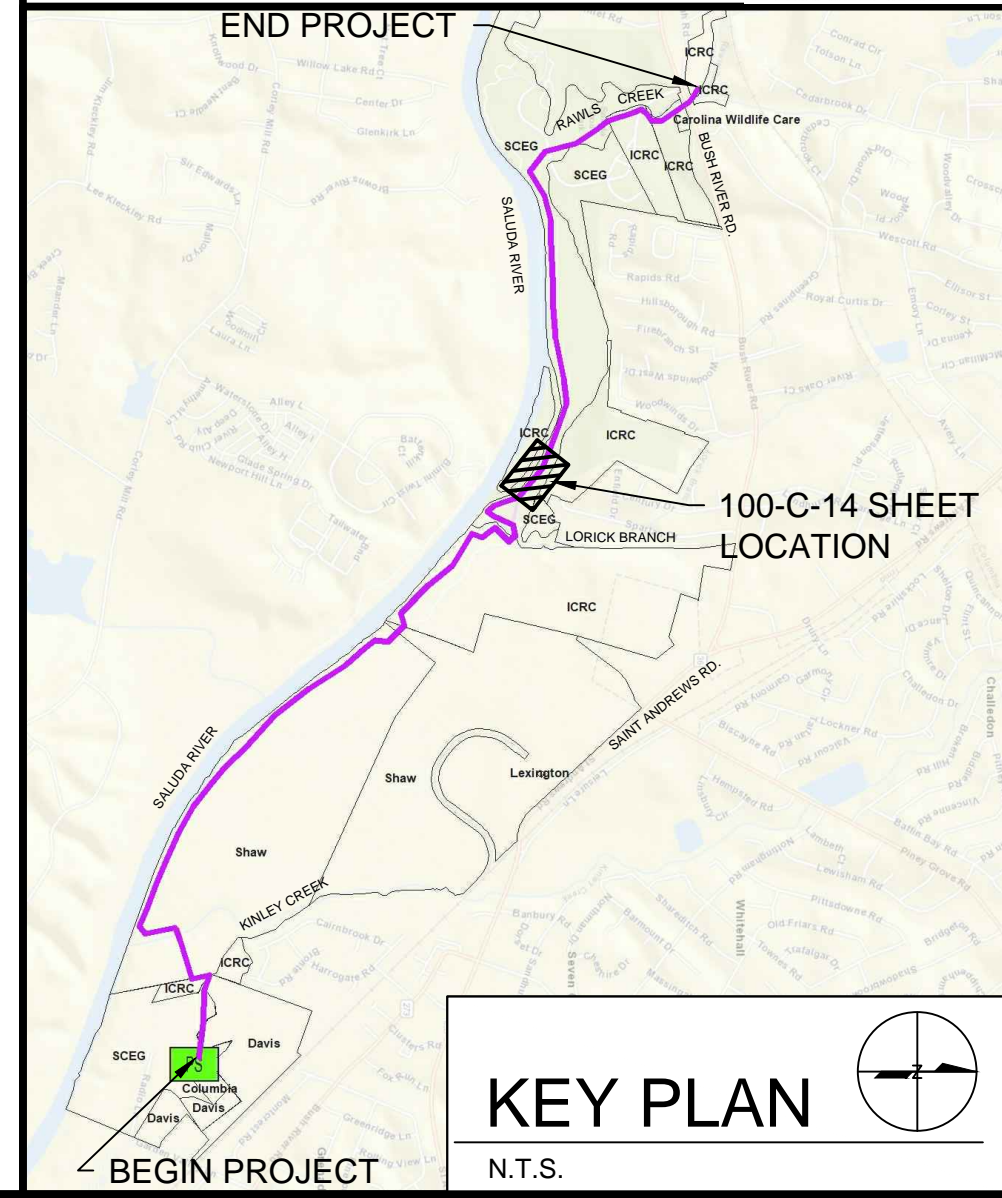
- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±193.00' MSL. REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 181.00' FROM STA. 99+00 TO STA. 126+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- SEWER BYPASS ROUTE. SEE SEWER BYPASS PLAN ON DRAWING 300-C-02.
- CONTRACTOR TO REMOVE AND DISPOSE OF EXISTING MANHOLE AND REPLACE WITH NEW PRECAST CONCRETE MANHOLE.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-43 TO MH-A-55 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.

PERMANENT EASEMENT (WIDTH VARIES)  
TEMPORARY EASEMENT (WIDTH VARIES)  
EXISTING EASEMENT

**811**  
Know what's below. Call before you dig. 1-888-721-7877



KEY PLAN  
N.T.S.



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED: J. MAZZEI  
DRAWN: A. JUMPER  
CHECKED: C. LUCIE  
CHECKED: J. MAZZEI  
APPROVED: J. MAZZEI

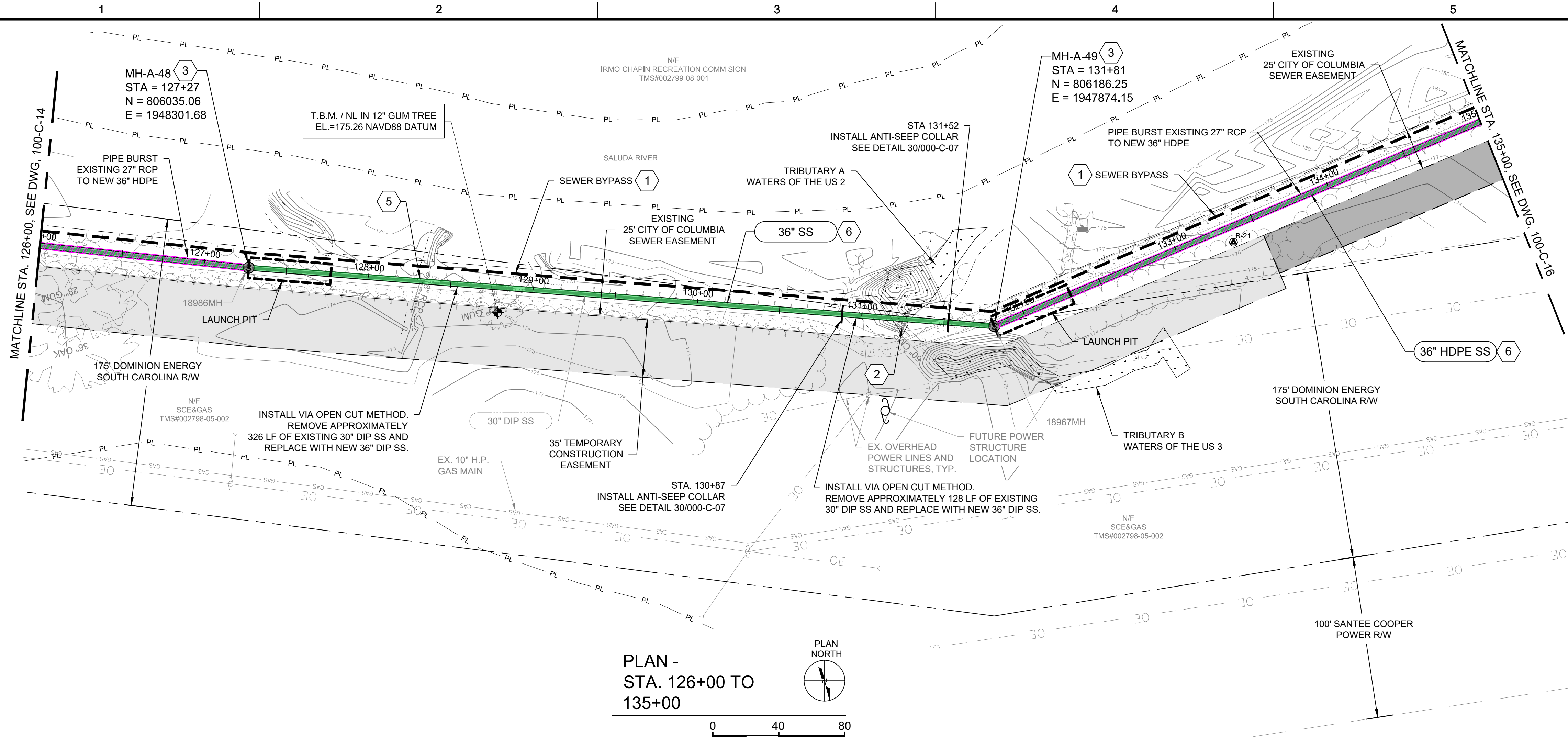
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BC PROJECT NUMBER: 152166  
CLIENT PROJECT NUMBER (CITY CIP#): SS7428

**CIVIL**

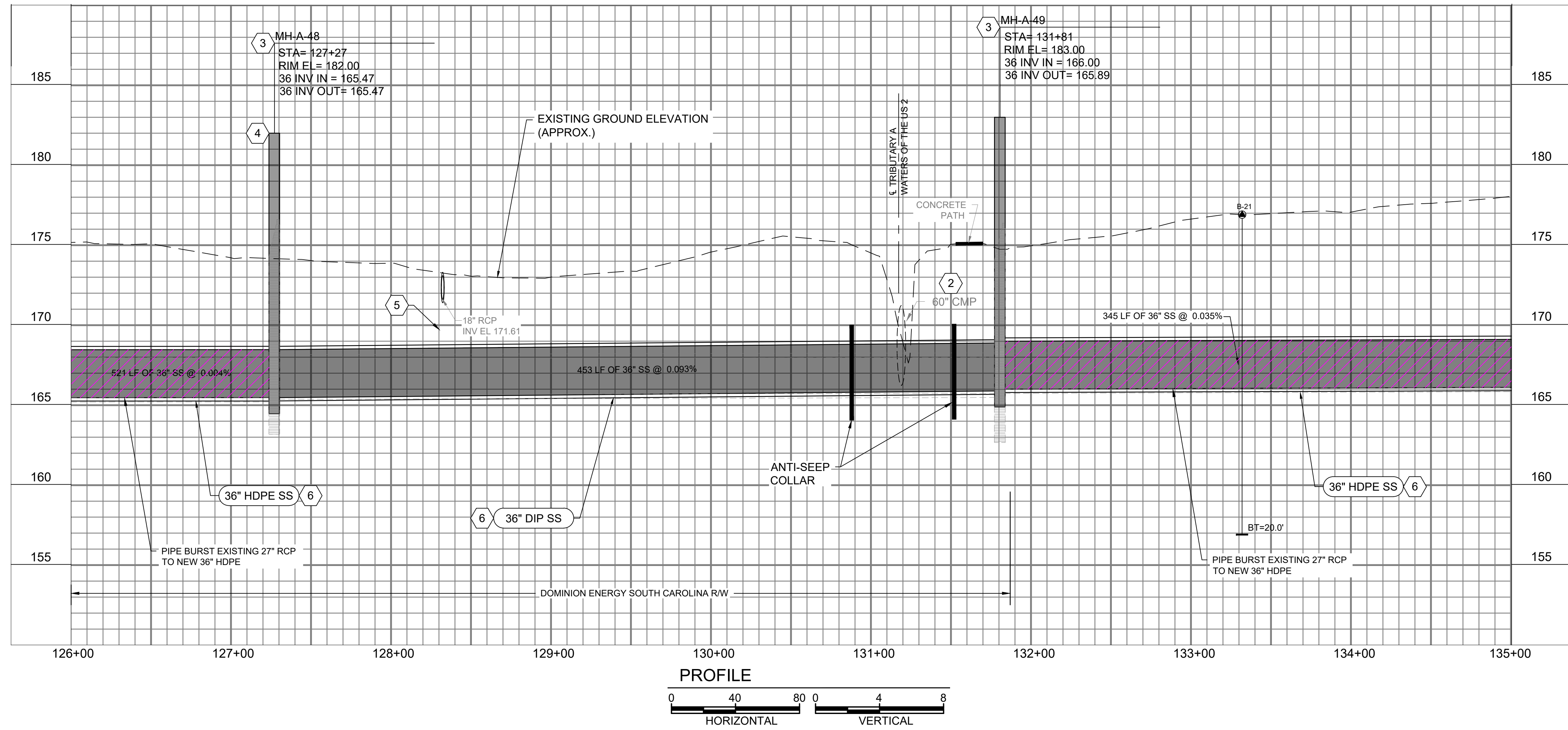
PLAN & PROFILE  
STA. 117+00 TO  
STA. 126+00  
DRAWING NUMBER  
**100-C-14**  
SHEET NUMBER  
28 OF 55



Path: P:\CLIENTS\COLUMBIA, CITY OF\152166 - LOWER SALUDA RELIEF SEWER\_CAD\2-SHEETS\CIVIL FILENAME: 100-C-15.DWG PLOT DATE: 9/22/2020 4:10 PM CAD USER: ANDY\_JUMPER



PLAN -  
STA. 126+00 TO  
135+00



PROFILE  
HORIZONTAL 0 40 80  
VERTICAL 0 4 8

**GENERAL NOTES:**

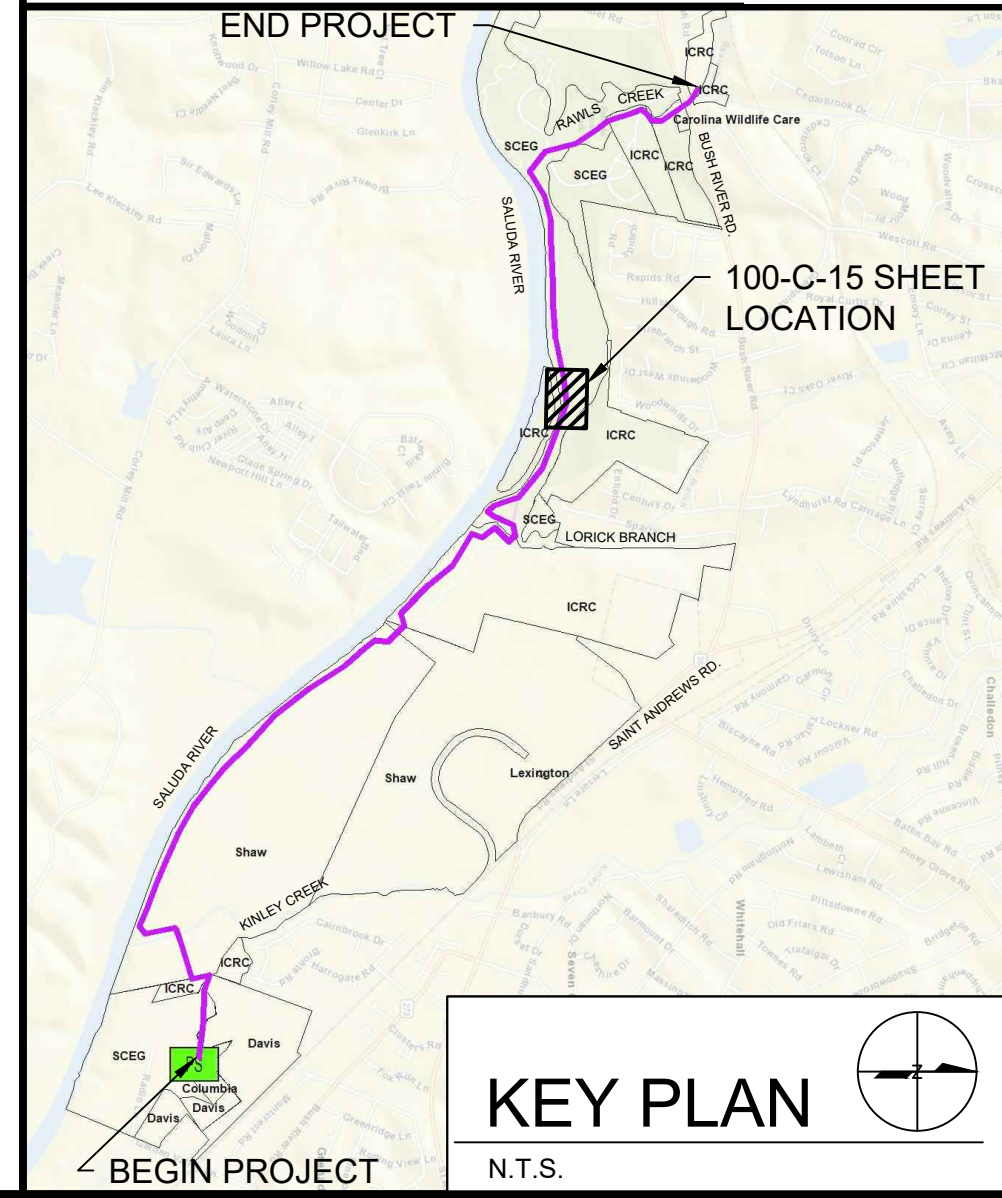
- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±194.00' MSL REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 182.00' FROM STA. 126+00 TO STA. 153+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- SEWER BYPASS ROUTE. SEE SEWER BYPASS PLAN ON DRAWING 300-C-02.
- EXISTING 60" CMP SHALL BE REMOVED AND REPLACED DURING CONSTRUCTION.
- CONTRACTOR TO REMOVE AND DISPOSE OF EXISTING MANHOLE AND REPLACE WITH NEW PRECAST CONCRETE MANHOLE.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- CONCRETE PIPE SUPPORT, SEE DETAIL 17 ON DRAWING 000-C-04.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-43 TO MH-A-55 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.

PERMANENT EASEMENT (WIDTH VARIES) [Symbol]  
 TEMPORARY EASEMENT (WIDTH VARIES) [Symbol]  
 EXISTING EASEMENT [Symbol]

**811**  
 Know what's below. Call before you dig. 1-888-721-7877



KEY PLAN  
N.T.S.



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

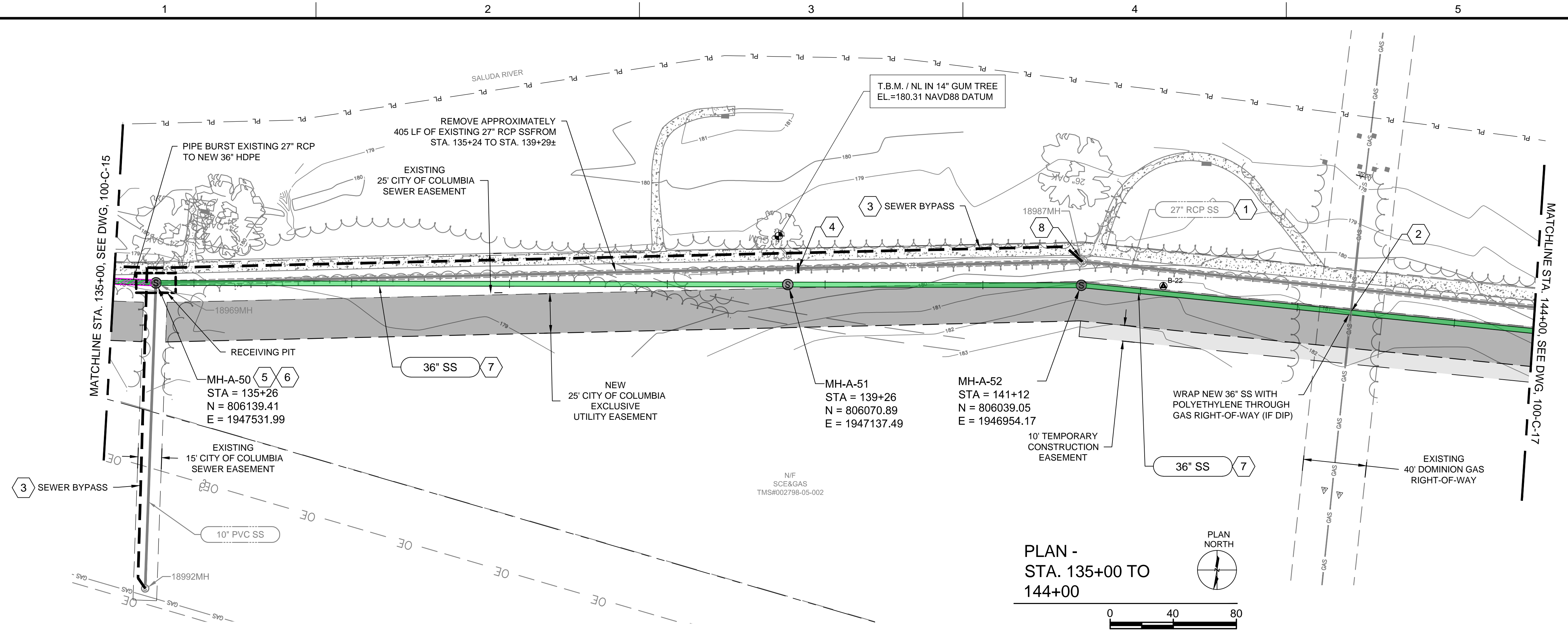
REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED:	J. MAZZEI
DRAWN:	A. JUMPER
CHECKED:	C. LUCIE
CHECKED:	J. MAZZEI
APPROVED:	J. MAZZEI
FILENAME:	100-C-15.DWG
BC PROJECT NUMBER:	152166
CLIENT PROJECT NUMBER (CITY CIP#):	SS7428

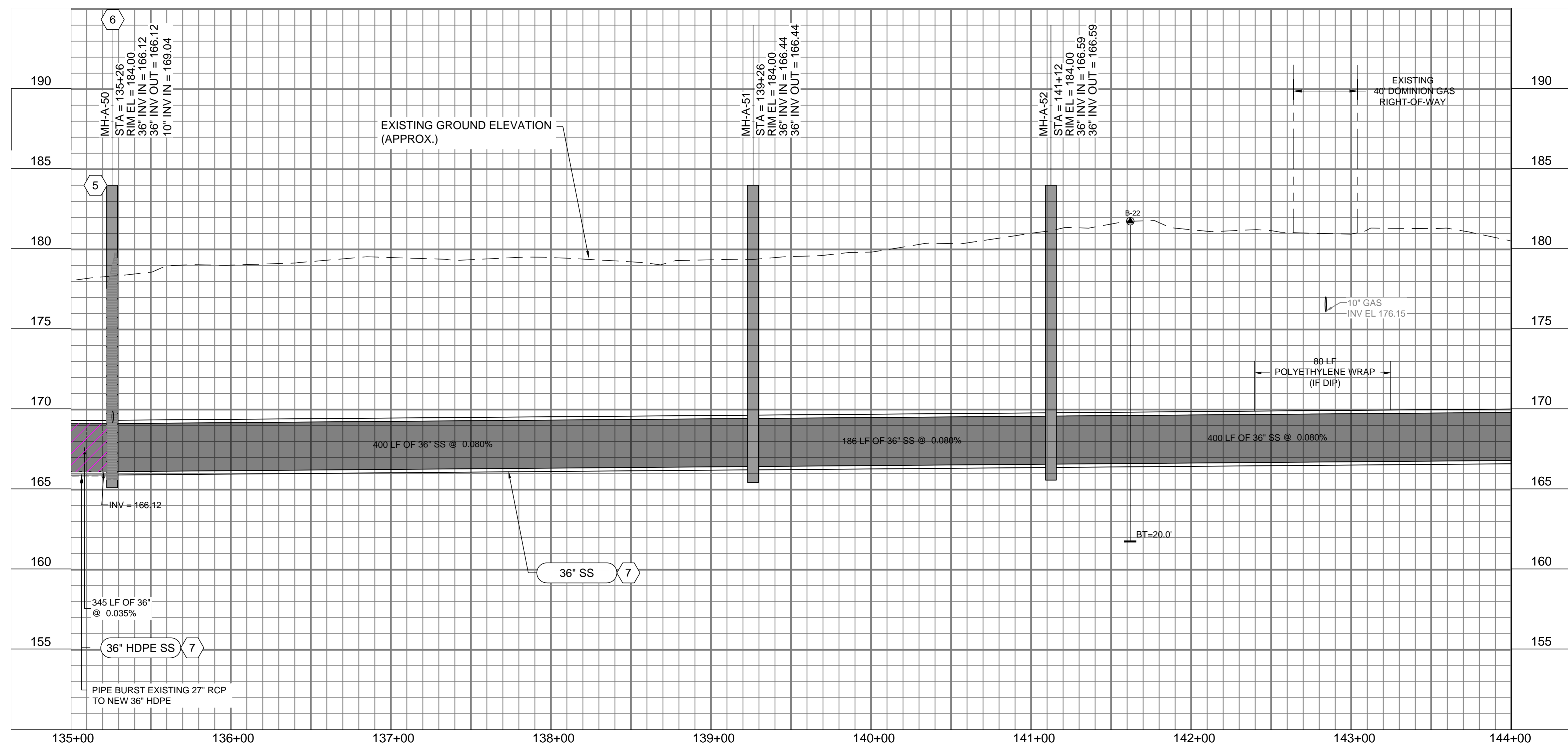
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 PLAN & PROFILE  
 STA. 126+00 TO STA. 135+00  
 DRAWING NUMBER  
**100-C-15**  
 SHEET NUMBER  
 29 OF 55



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PLAN -  
STA. 135+00 TO  
144+00



PROFILE  
HORIZONTAL 0 40 80  
VERTICAL 0 4 8

**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±196.00' MSL. REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 182.00' FROM STA. 126+00 TO STA. 153+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- EXISTING 27" SS TO BE ABANDONED AFTER NEW 36" SS IS IN SERVICE.
- GAS CROSSING SHALL BE COORDINATED THRU DOMINION ENERGY/GAS DIVISION, SEE CONTACT REFERENCE ON DRAWING 000-C-01.
- SEWER BYPASS ROUTE. SEE SEWER BYPASS PLAN ON DRAWING 300-C-02.
- CUT AND CAP EXISTING 27" SANITARY SEWER AT APPROXIMATE LOCATION.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- CONTRACTOR TO REMOVE AND DISPOSE OF EXISTING MANHOLE AND REPLACE WITH NEW PRECAST CONCRETE MANHOLE.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-43 TO MH-A-55 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.
- CONTRACTOR TO ABANDON EXISTING MANHOLE. SEE DETAIL 3 ON DRAWING 000-C-02.

PERMANENT EASEMENT (WIDTH VARIES) [Solid Grey Box]  
 TEMPORARY EASEMENT (WIDTH VARIES) [Dashed Grey Box]  
 EXISTING EASEMENT [Dotted Grey Box]

**811**  
 Know what's below.  
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**END PROJECT**

**KEY PLAN**  
N.T.S.

DESIGNED: J. MAZZEI  
 DRAWN: A. JUMPER  
 CHECKED: C. LUCIE  
 CHECKED: J. MAZZEI  
 APPROVED: J. MAZZEI

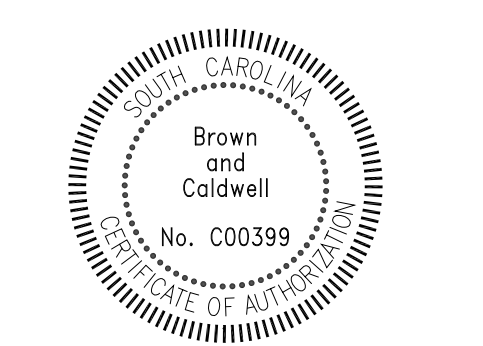
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 CLIENT PROJECT NUMBER (CITY CIP# SS7428)

**CIVIL**

**PLAN & PROFILE**  
 STA. 135+00  
 TO  
 STA. 144+00  
 DRAWING NUMBER  
**100-C-16**  
 SHEET NUMBER  
 30 OF 55



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: J. MAZZEI  
 DRAWN: A. JUMPER  
 CHECKED: C. LUCIE  
 CHECKED: J. MAZZEI  
 APPROVED: J. MAZZEI

FILENAME: 100-C-16.DWG  
 BC PROJECT NUMBER: 152166  
 CLIENT PROJECT NUMBER (CITY CIP# SS7428)

**CIVIL**

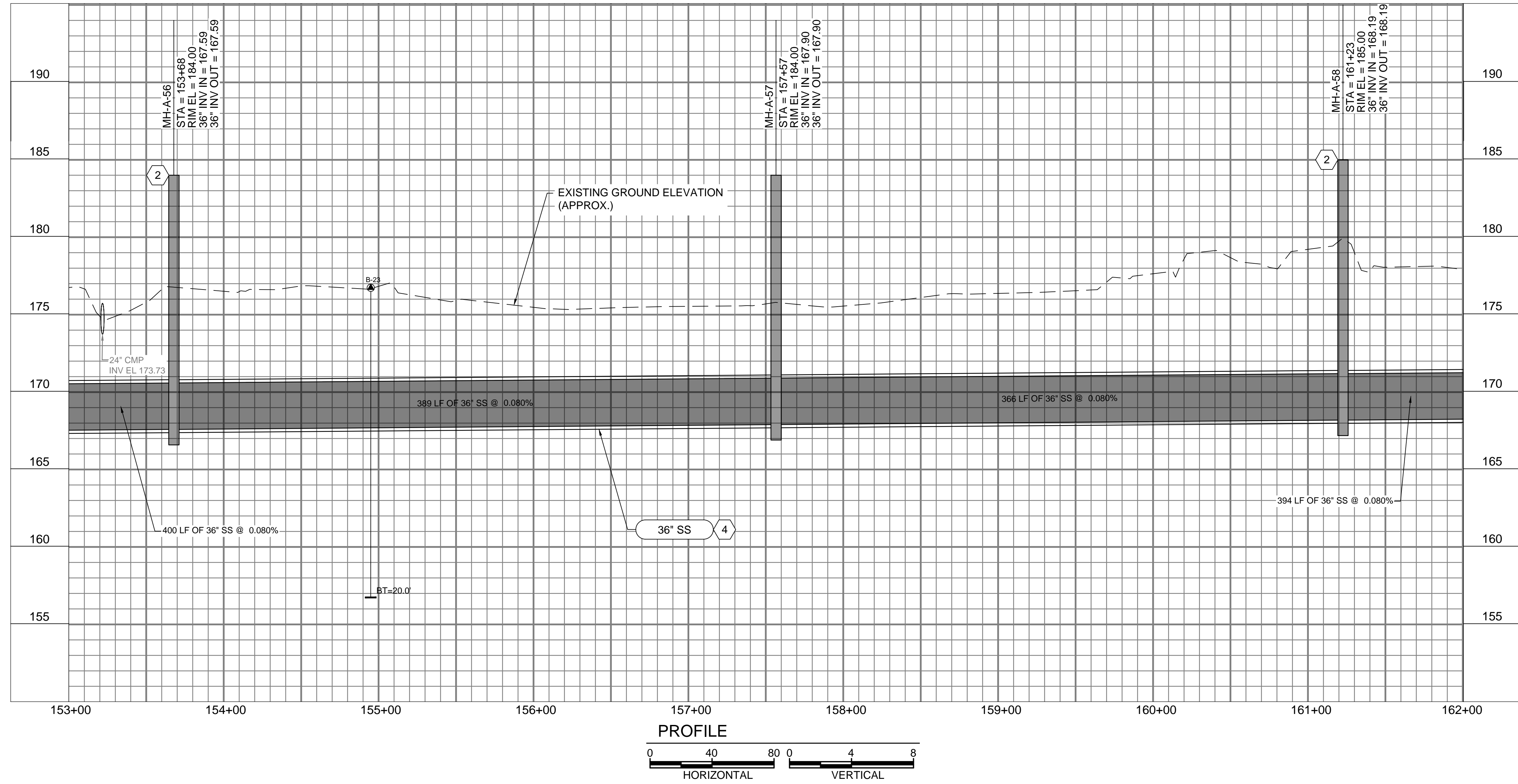
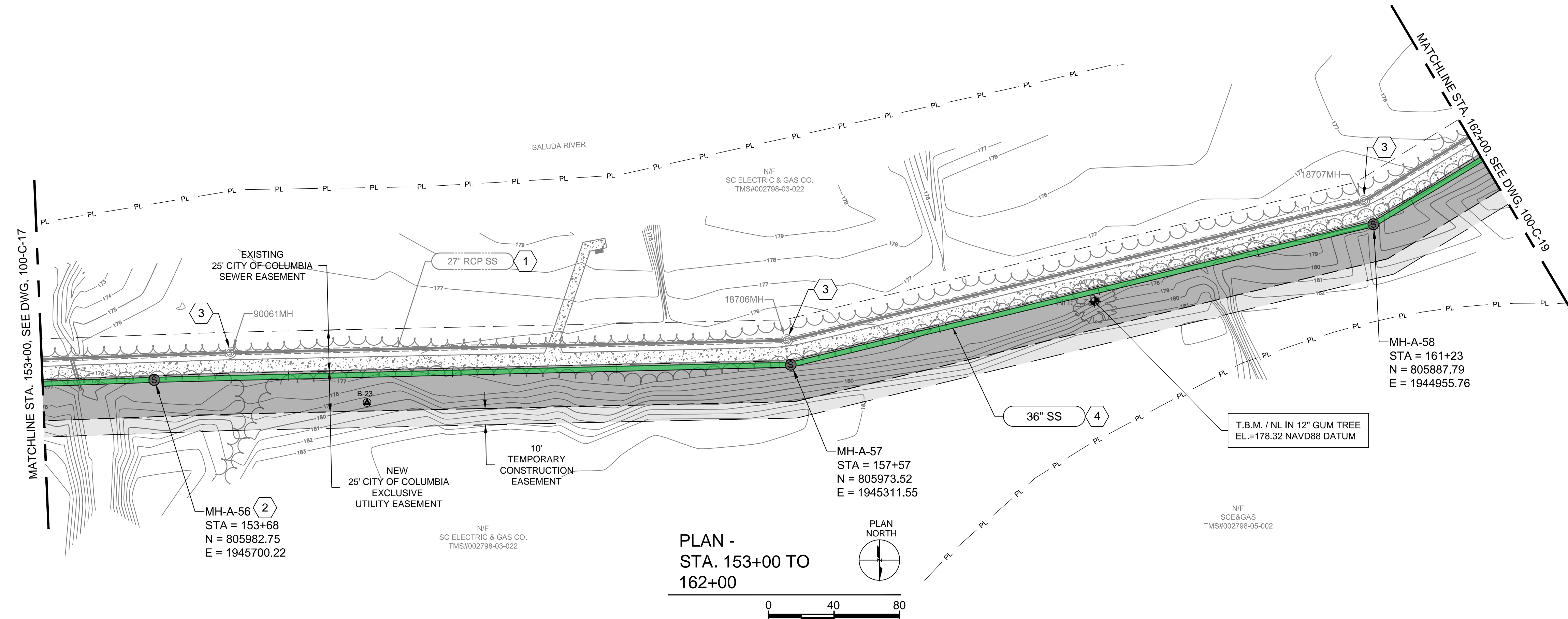
**PLAN & PROFILE**  
 STA. 135+00  
 TO  
 STA. 144+00  
 DRAWING NUMBER  
**100-C-16**  
 SHEET NUMBER  
 30 OF 55







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**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±196.00' MSL. REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 183.00' FROM STA. 153+00 TO STA. 198+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- EXISTING 27" SS TO BE ABANDONED AFTER NEW 36" SS IS IN SERVICE.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- CONTRACTOR TO ABANDON EXISTING MANHOLE. SEE DETAIL 3 ON DRAWING 000-C-02.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-55 TO MH-A-75 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.

PERMANENT EASEMENT (WIDTH VARIES)  
 TEMPORARY EASEMENT (WIDTH VARIES)  
 EXISTING EASEMENT

**811**  
 Know what's below.  
 Call before you dig.  
 1-888-721-7877

END PROJECT

KEY PLAN  
 N.T.S.



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

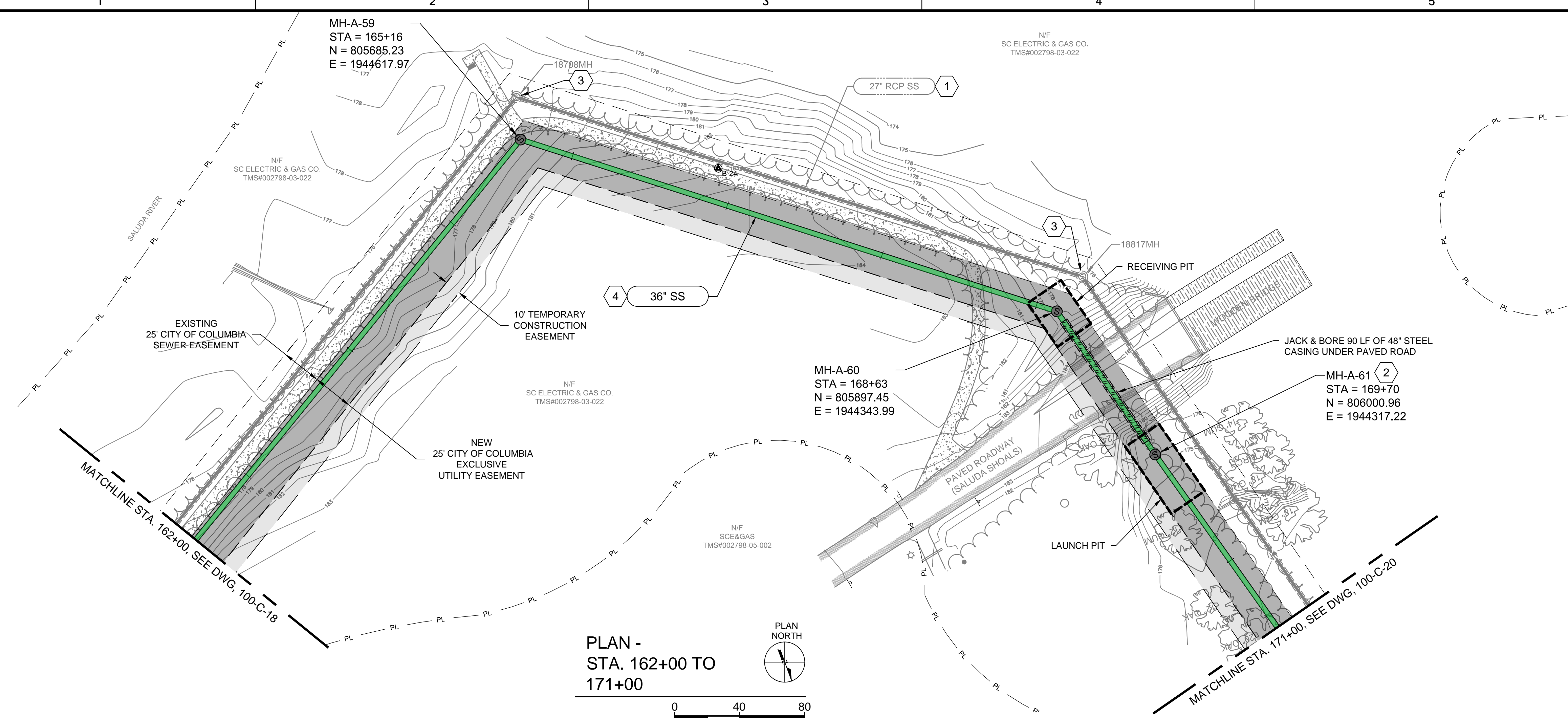
REVISIONS		
REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE  
 DESIGNED: J. MAZZEI  
 DRAWN: A. JUMPER  
 CHECKED: C. LUCIE  
 CHECKED: J. MAZZEI  
 APPROVED: J. MAZZEI

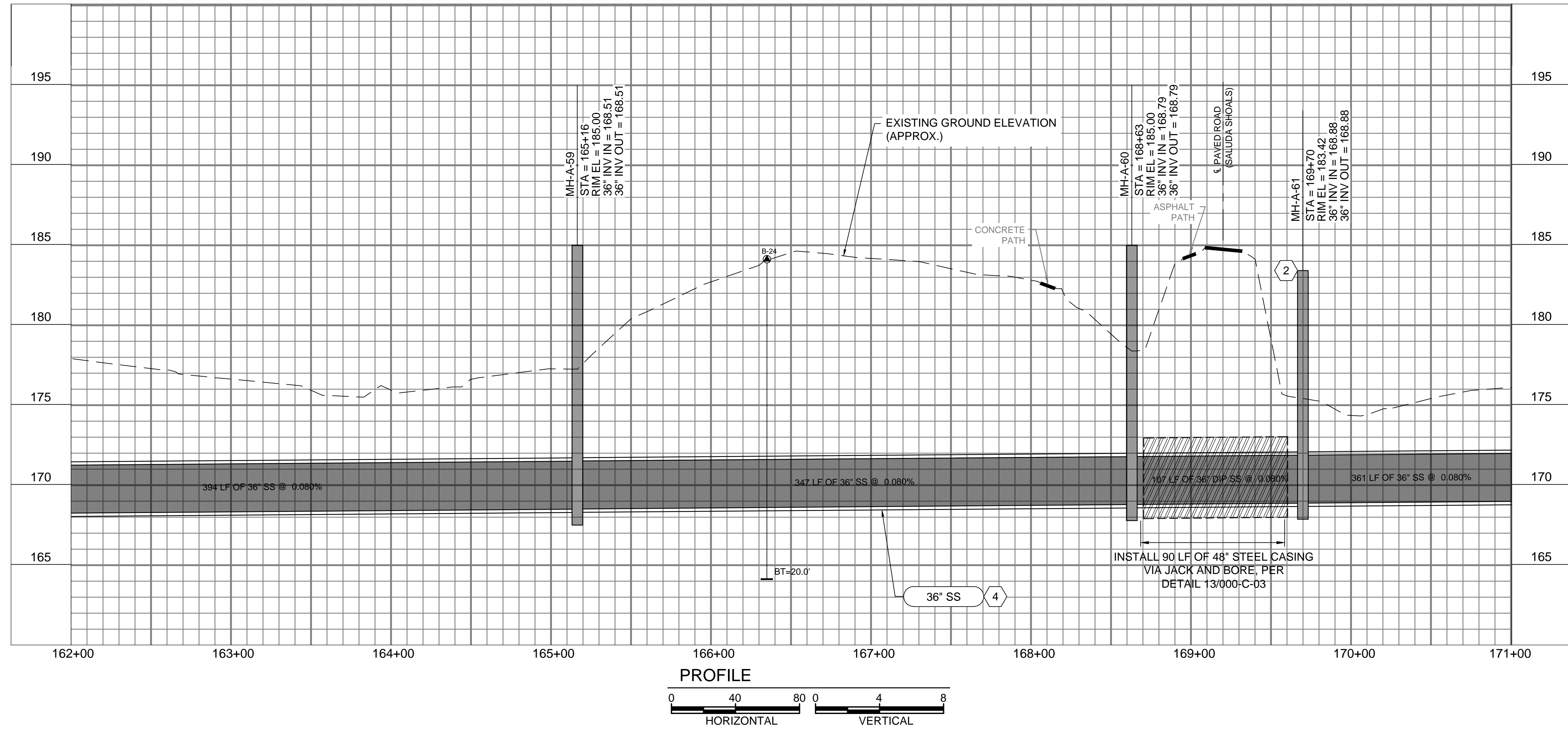
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 PLAN & PROFILE  
 STA. 153+00 TO STA. 162+00  
 DRAWING NUMBER  
**100-C-18**  
 SHEET NUMBER  
 32 OF 55



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PLAN - STA. 162+00 TO 171+00  
 PLAN NORTH  
 0 40 80



PROFILE  
 0 40 80 0 4 8  
 HORIZONTAL VERTICAL

**GENERAL NOTES:**

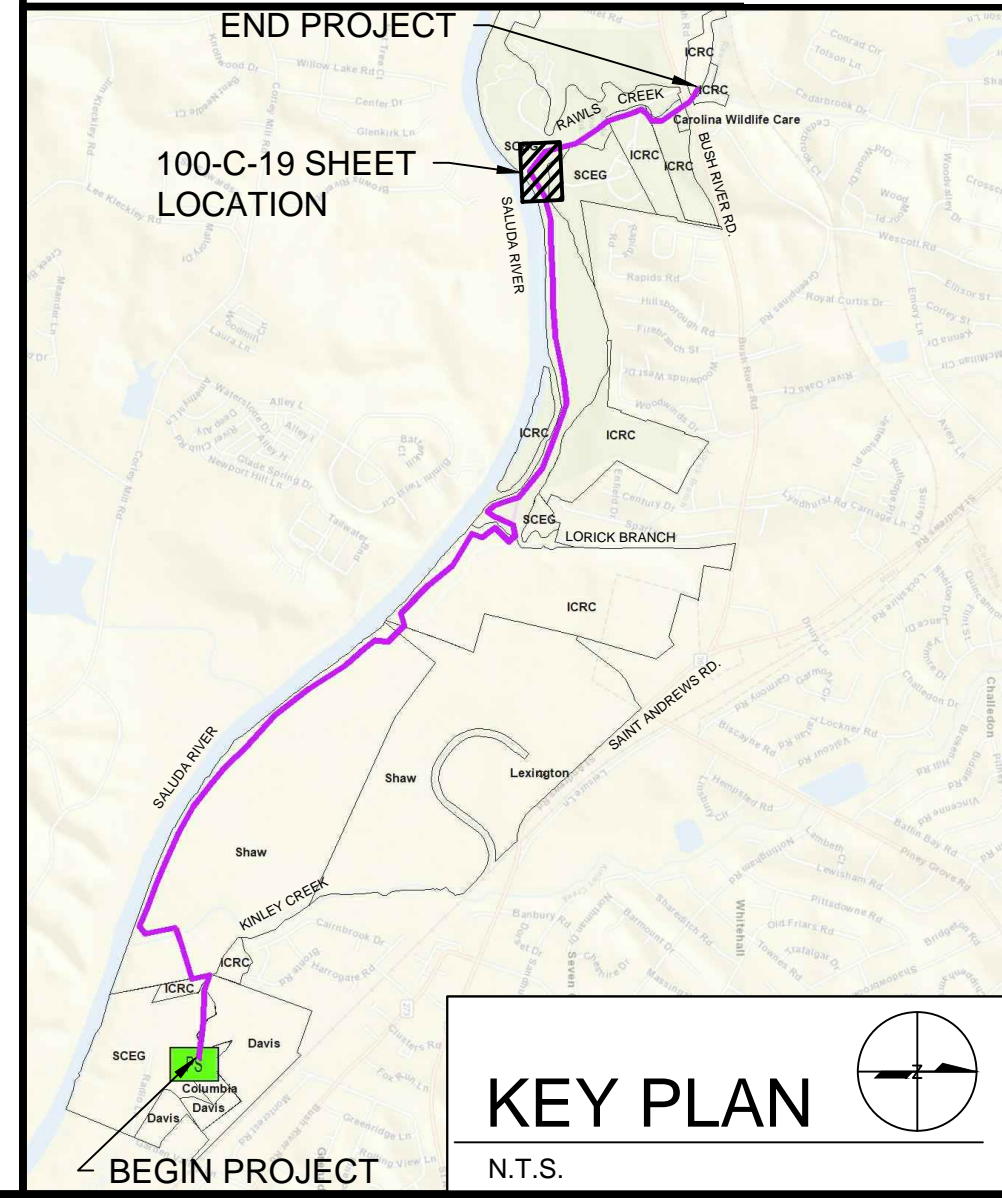
- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±197.00' MSL. REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 183.00' FROM STA. 153+00 TO STA. 198+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- EXISTING 27" SS TO BE ABANDONED AFTER NEW 36" SS IS IN SERVICE.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- CONTRACTOR TO ABANDON EXISTING MANHOLE. SEE DETAIL 3 ON DRAWING 000-C-02.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-55 TO MH-A-75 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.

PERMANENT EASEMENT (WIDTH VARIES)  
 TEMPORARY EASEMENT (WIDTH VARIES)  
 EXISTING EASEMENT

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KEY PLAN  
 N.T.S.



COLUMBIA, SOUTH CAROLINA



LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED:	J. MAZZEI
DRAWN:	A. JUMPER
CHECKED:	C. LUCIE
CHECKED:	J. MAZZEI
APPROVED:	J. MAZZEI
FILENAME:	100-C-19.DWG
BC PROJECT NUMBER:	152166
CLIENT PROJECT NUMBER (CITY CIP#):	SS7428

CIVIL

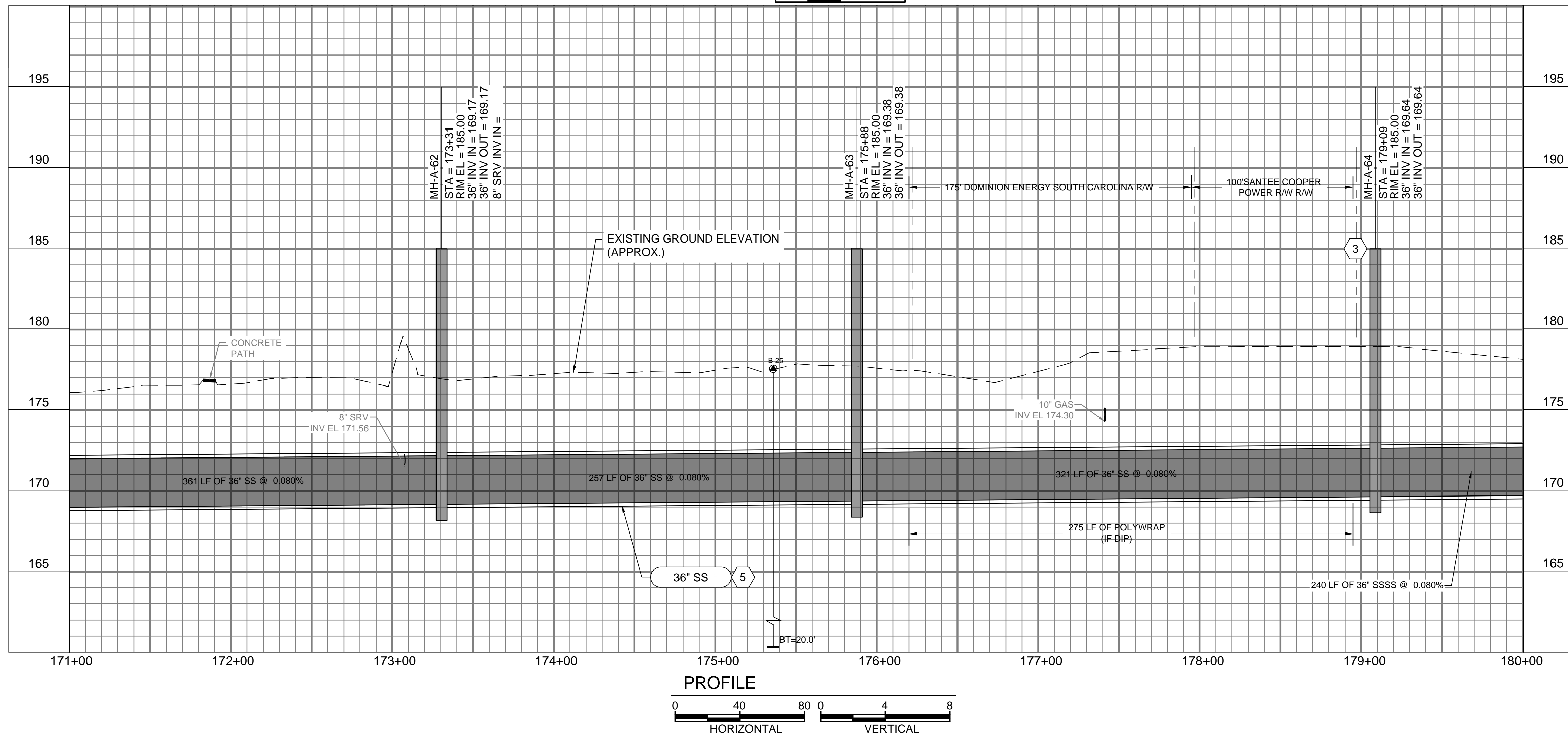
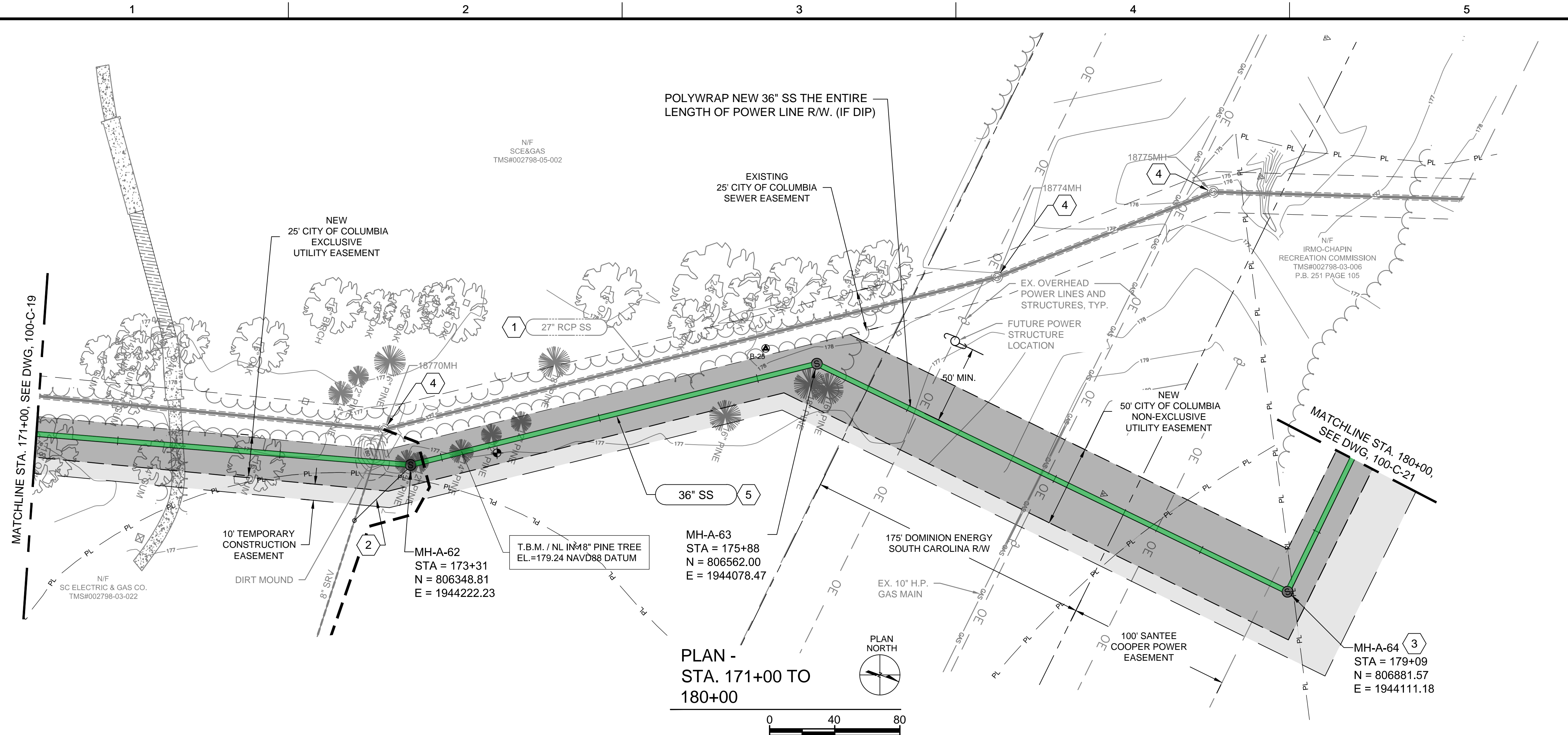
PLAN & PROFILE  
 STA. 162+00 TO STA. 171+00

DRAWING NUMBER  
**100-C-19**

SHEET NUMBER  
 33 OF 55



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**GENERAL NOTES:**

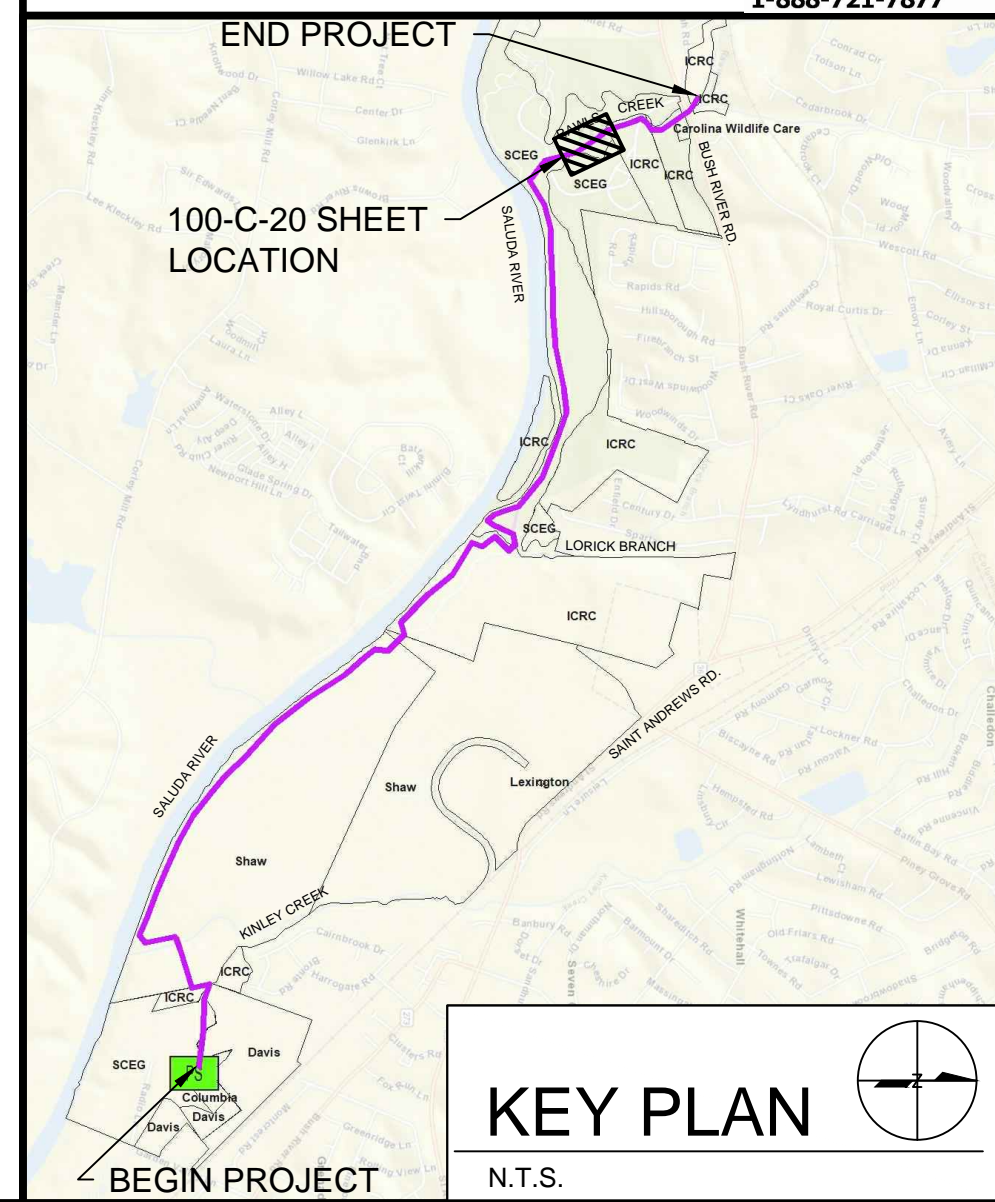
- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
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- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 183.00' FROM STA. 153+00 TO STA. 198+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

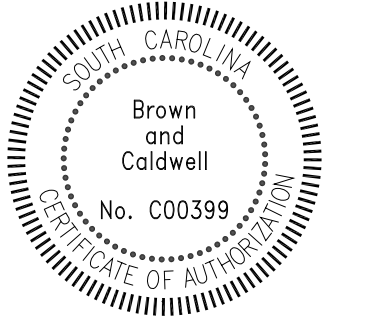
- EXISTING 27" SS TO BE ABANDONED AFTER NEW 36" SS IS IN SERVICE.
- RECONNECT EXISTING 8" SEWER SERVICE TO MH-A-64. INSTALL CLEAN-OUT WHERE SHOWN.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- CONTRACTOR TO ABANDON EXISTING MANHOLE. SEE DETAIL 3 ON DRAWING 000-C-02.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-55 TO MH-A-75 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.

PERMANENT EASEMENT (WIDTH VARIES)  
 TEMPORARY EASEMENT (WIDTH VARIES)  
 EXISTING EASEMENT

**811**  
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 1-888-721-7877



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

DESIGNED: J. MAZZEI  
 DRAWN: A. JUMPER  
 CHECKED: C. LUCIE  
 CHECKED: J. MAZZEI  
 APPROVED: J. MAZZEI

CIVIL

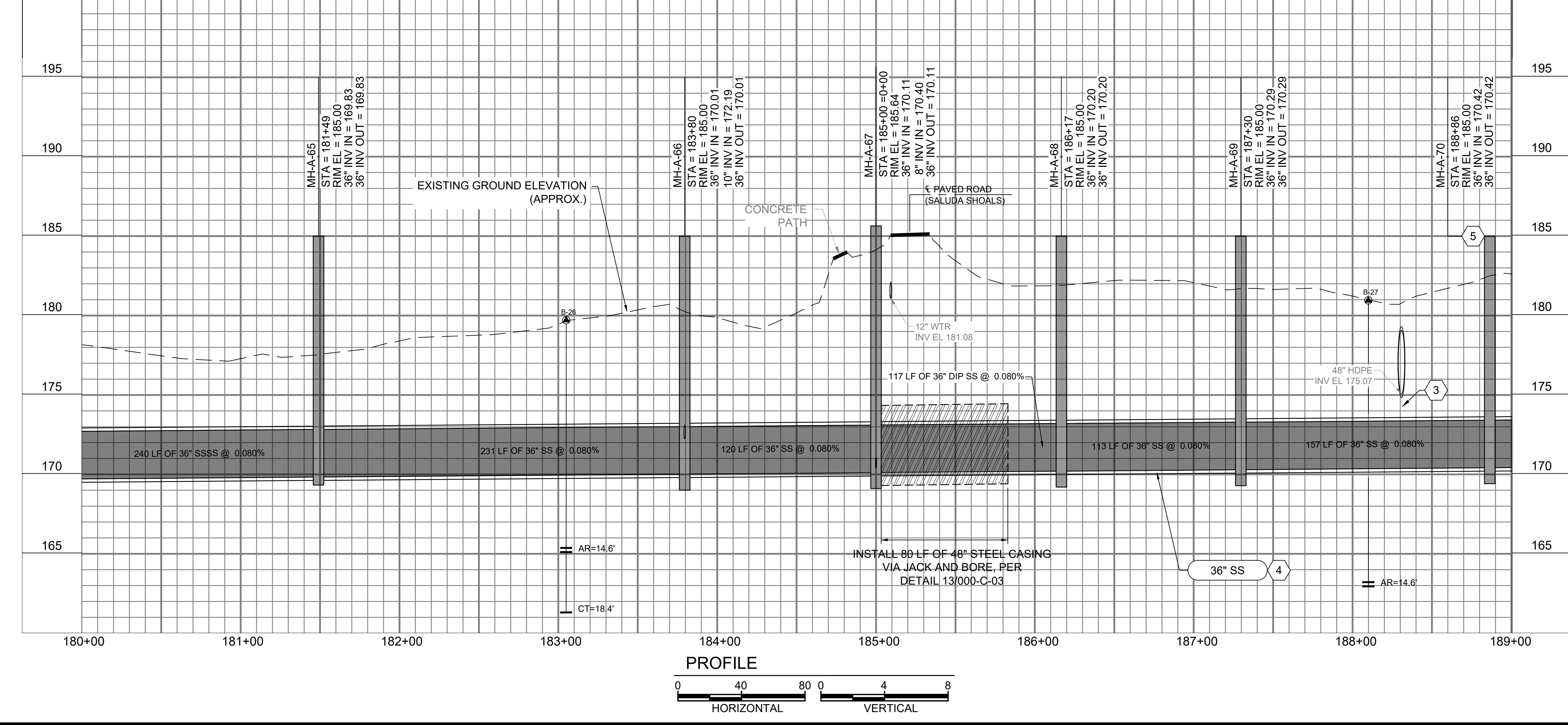
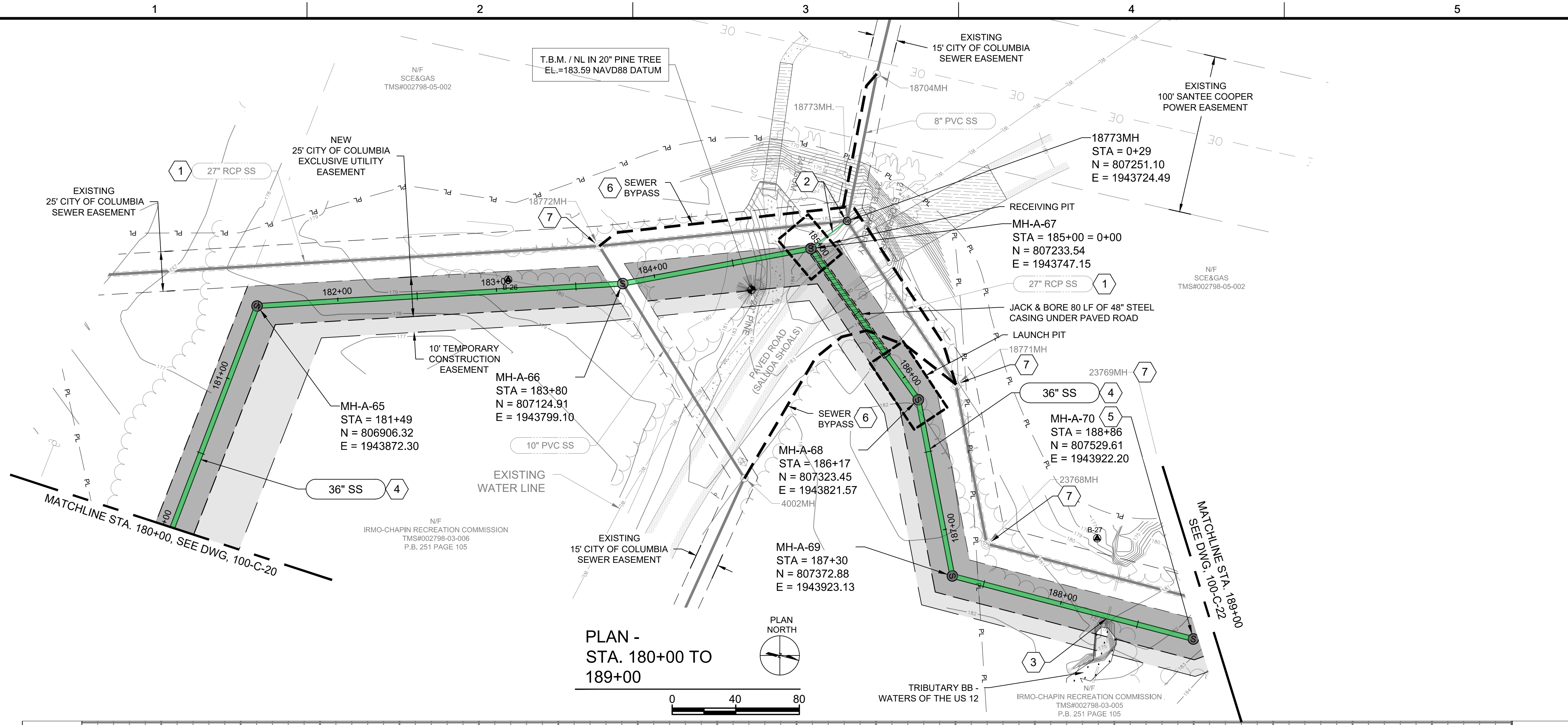
**PLAN & PROFILE**  
 STA. 171+00 TO STA. 180+00

DRAWING NUMBER  
**100-C-20**

SHEET NUMBER  
 34 OF 55



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### GENERAL NOTES:

1. SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
2. SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
3. SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
4. PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±197.00' MSL. REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
5. SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 183.00' FROM STA. 153+00 TO STA. 198+00.
6. CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

### KEY NOTES

1. EXISTING 27" SS TO BE ABANDONED AFTER NEW 36" SS IS IN SERVICE.
2. REMOVE AND REPLACE EXISTING 18773MH WITH NEW 48" DIA. MANHOLE WITH WATERTIGHT HATCH. INSTALL 29 LF OF NEW 8" DIP SS LINE. SEE PROFILE ON DRAWING 100-C-23.
3. EXISTING 48" STORM PIPE TO BE REMOVED AND REPLACED. INSTALL PIPE CRADLE, SEE DETAIL 17 ON SHEET 000-C-04.
4. PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-55 TO MH-A-75 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.
5. MANHOLE VENT, SEE DETAIL 20, ON SHEET 000-C-04.
6. SEWER BYPASS ROUTE. SEE SEWER BYPASS PLAN ON DRAWING 300-C-03.
7. CONTRACTOR TO ABANDON EXISTING MANHOLE. SEE DETAIL 3 ON DRAWING 000-C-02.

### KEY PLAN

N.T.S.

### 100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

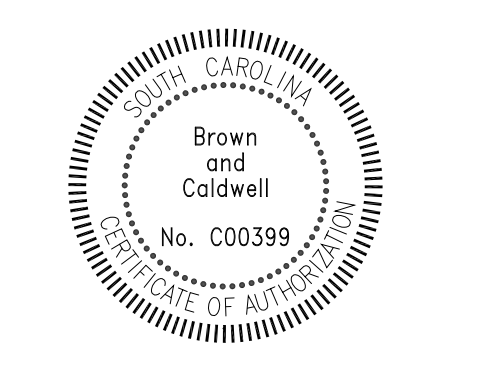
DESIGNED: J. MAZZEI  
 DRAWN: A. JUMPER  
 CHECKED: C. LUCIE  
 CHECKED: J. MAZZEI  
 APPROVED: J. MAZZEI

CIVIL

PLAN & PROFILE  
 STA. 180+00 TO  
 STA. 189+00  
 DRAWING NUMBER  
**100-C-21**  
 SHEET NUMBER  
 35 OF 55



COLUMBIA, SOUTH CAROLINA



## LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

### REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: J. MAZZEI  
 DRAWN: A. JUMPER  
 CHECKED: C. LUCIE  
 CHECKED: J. MAZZEI  
 APPROVED: J. MAZZEI

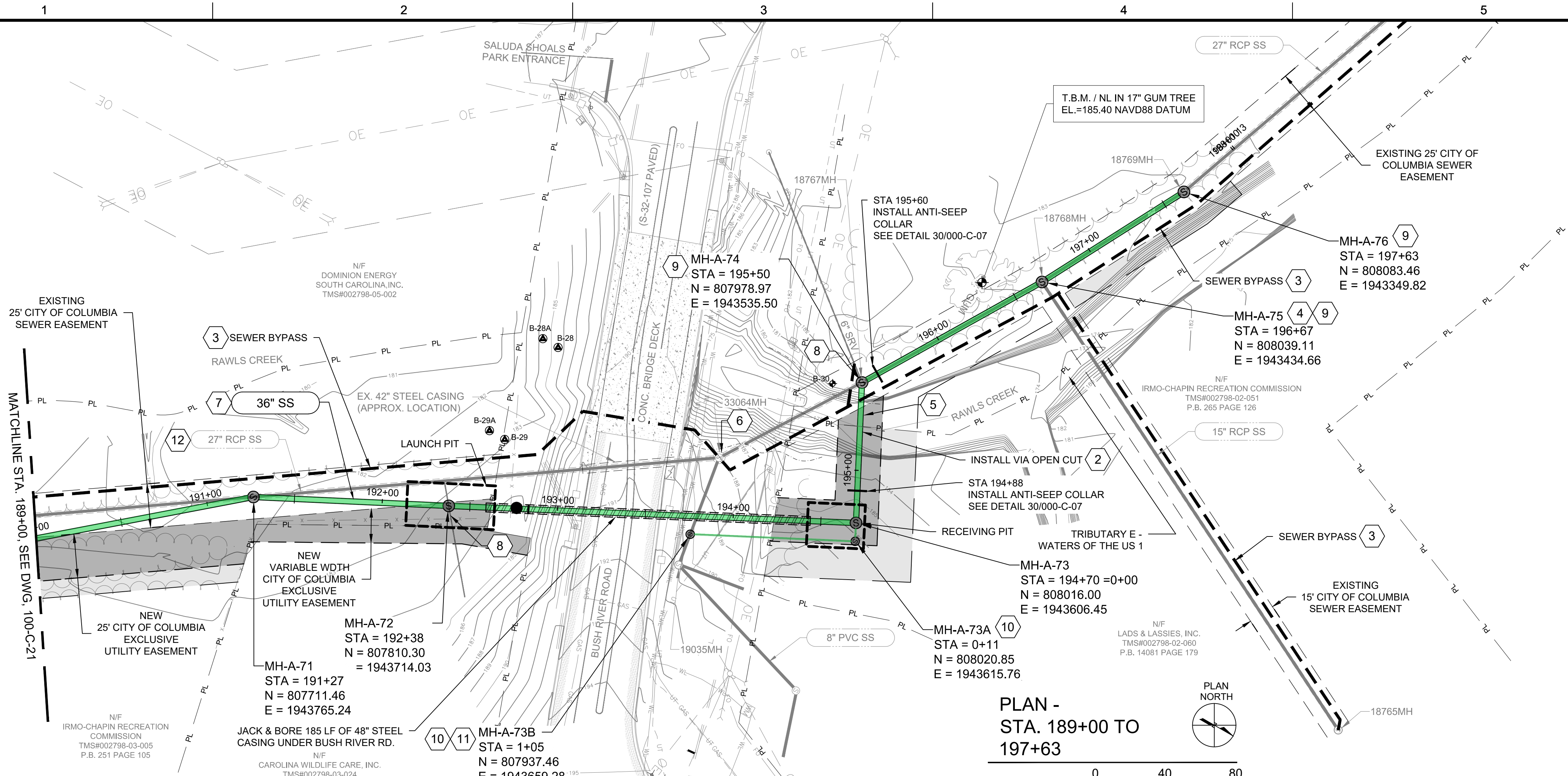
CIVIL

PLAN & PROFILE  
 STA. 180+00 TO  
 STA. 189+00  
 DRAWING NUMBER  
**100-C-21**

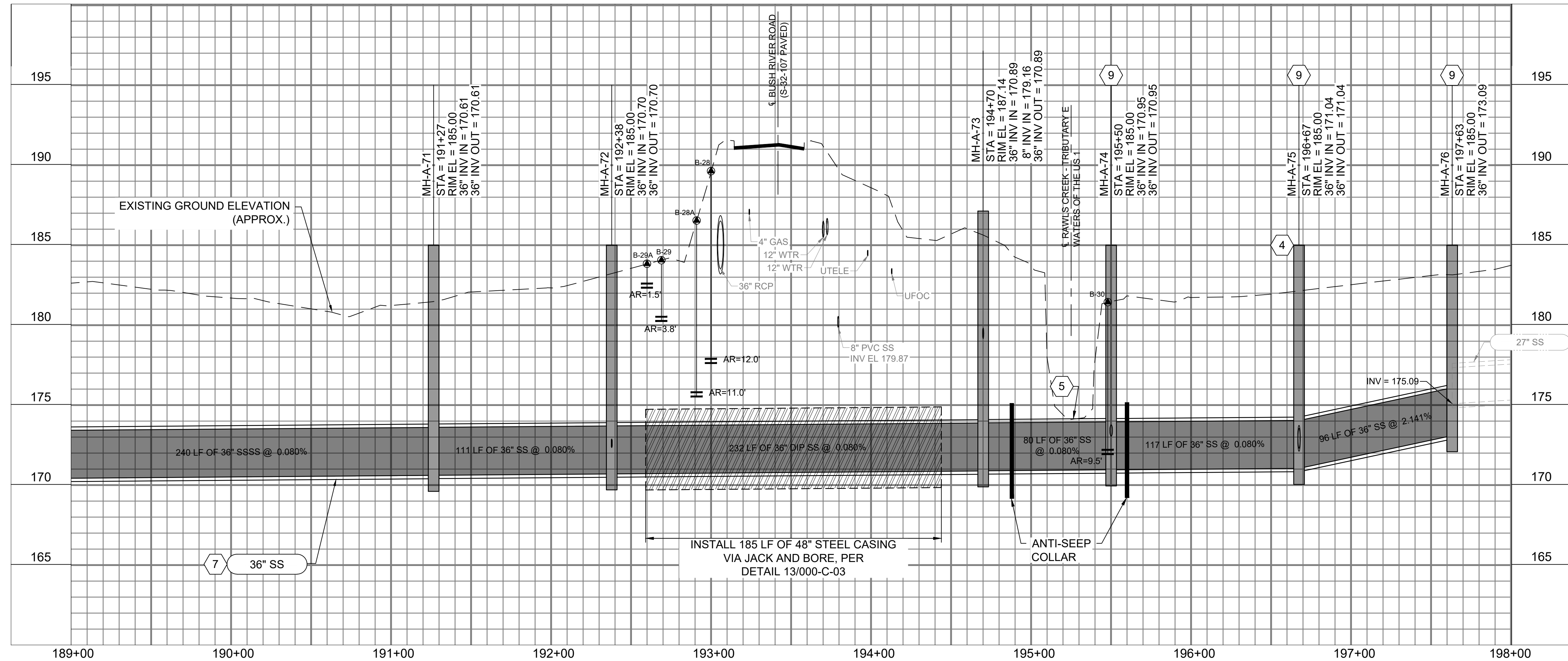
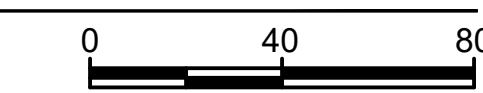
SHEET NUMBER  
 35 OF 55



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PLAN -  
STA. 189+00 TO  
197+63



PROFILE  
HORIZONTAL VERTICAL

**GENERAL NOTES:**

- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- PROJECT LOCATED IN FLOOD ZONE AE. 100-YEAR BASE FLOOD ELEVATION. THIS SHEET: ±197.00' MSL REFERENCE: FEMA MAP45063C0141J, DATED 07/05/18
- SALUDA RIVER AVERAGE ANNUAL HIGH WATER ELEVATION = 183.00' FROM STA. 153+00 TO STA. 198+00.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

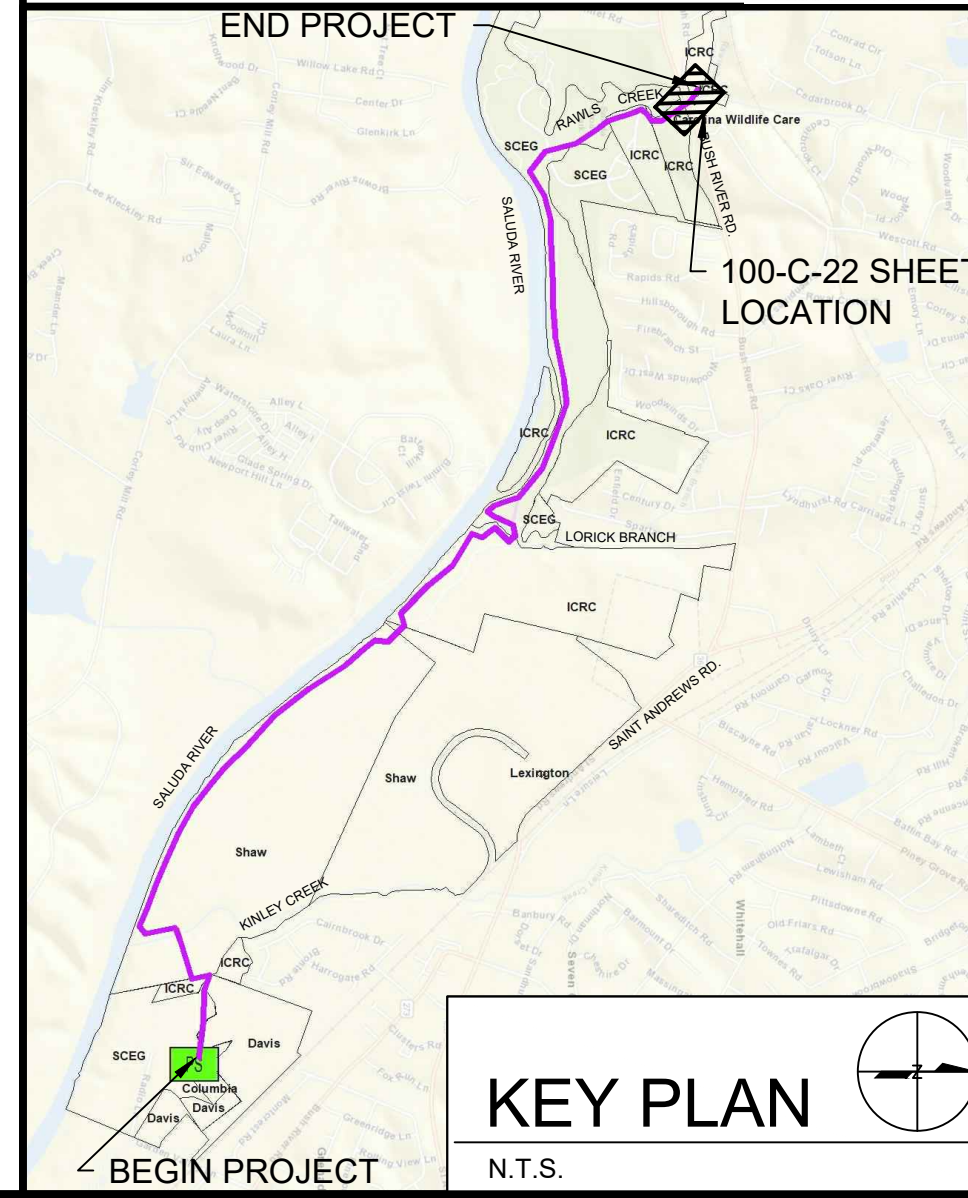
- EXISTING 27" SS TO BE ABANDONED AFTER NEW 36" SS IS IN SERVICE.
- INSTALL 36" SS VIA OPEN CUT. SEE STABILIZATION DETAILS ON DRAWING 000-C-07.
- SEWER BYPASS ROUTE. SEE SEWER BYPASS PLAN ON DRAWING 300-C-03.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- PIPE PROTECTION, SEE DETAIL 29 ON DRAWING 000-C-07.
- CONTRACTOR TO ABANDON EXISTING MANHOLE. SEE DETAIL 3 ON DRAWING 000-C-02.
- PARTIAL PERMIT TO OPERATE AND PLACE IN SERVICE FOR MANHOLES AND PIPE FROM MH-A-55 TO MH-A-76 WILL BE SECURED UPON SUCCESSFUL COMPLETION AND TESTING, AS-BUILT DRAWINGS, AND ENGINEERS CERTIFICATION.
- RECONNECT EXISTING SEWER SERVICES AT MH-A-72 AND MH-A-74.
- REMOVE AND DISPOSE OF 18767MH, 18768MH & 18769MH AND REPLACE WITH NEW MANHOLE.
- SEE PROFILE ON DRAWING 100-C-23.
- DOGHOUSE MANHOLE, SEE DETAIL 6 ON SHEET 000-C-02.
- REMOVE APPROXIMATELY 263 LF OF EXISTING 27" RCP SS FROM STA. 190+00 TO STA. 192+63.

PERMANENT EASEMENT (WIDTH VARIES)

TEMPORARY EASEMENT (WIDTH VARIES)

EXISTING EASEMENT

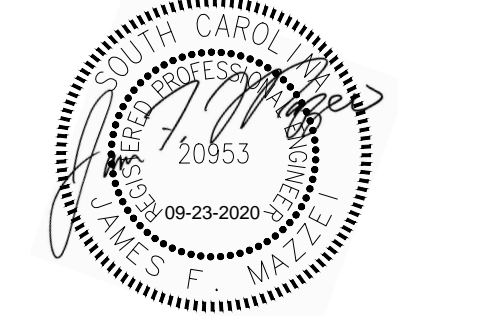
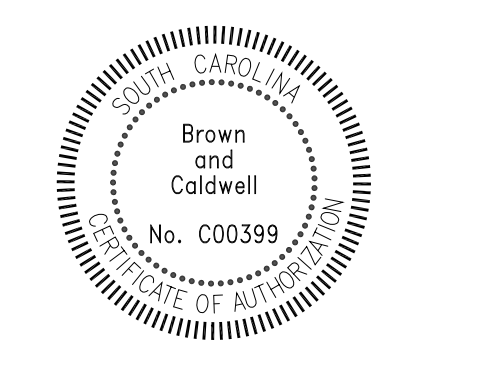
**811**  
Know what's below. Call before you dig. 1-888-721-7877



KEY PLAN  
N.T.S.



COLUMBIA, SOUTH CAROLINA



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS

REV	DATE	DESCRIPTION

DESIGNED:	J. MAZZEI
DRAWN:	A. JUMPER
CHECKED:	C. LUCIE
CHECKED:	J. MAZZEI
APPROVED:	J. MAZZEI
FILENAME:	100-C-22.DWG
BC PROJECT NUMBER:	152166
CLIENT PROJECT NUMBER (CITY CIP#):	SS7428

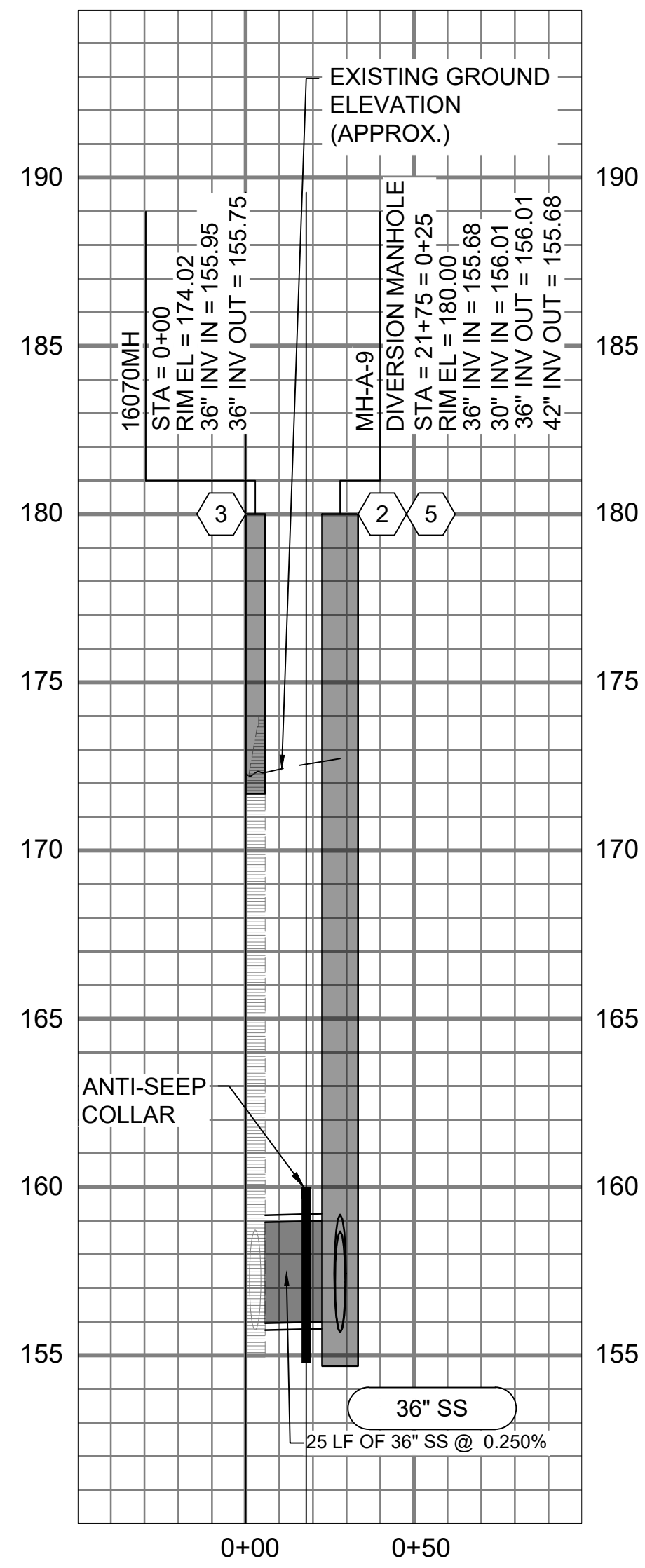
CIVIL

PLAN & PROFILE  
STA. 189+00  
TO  
STA. 197+63

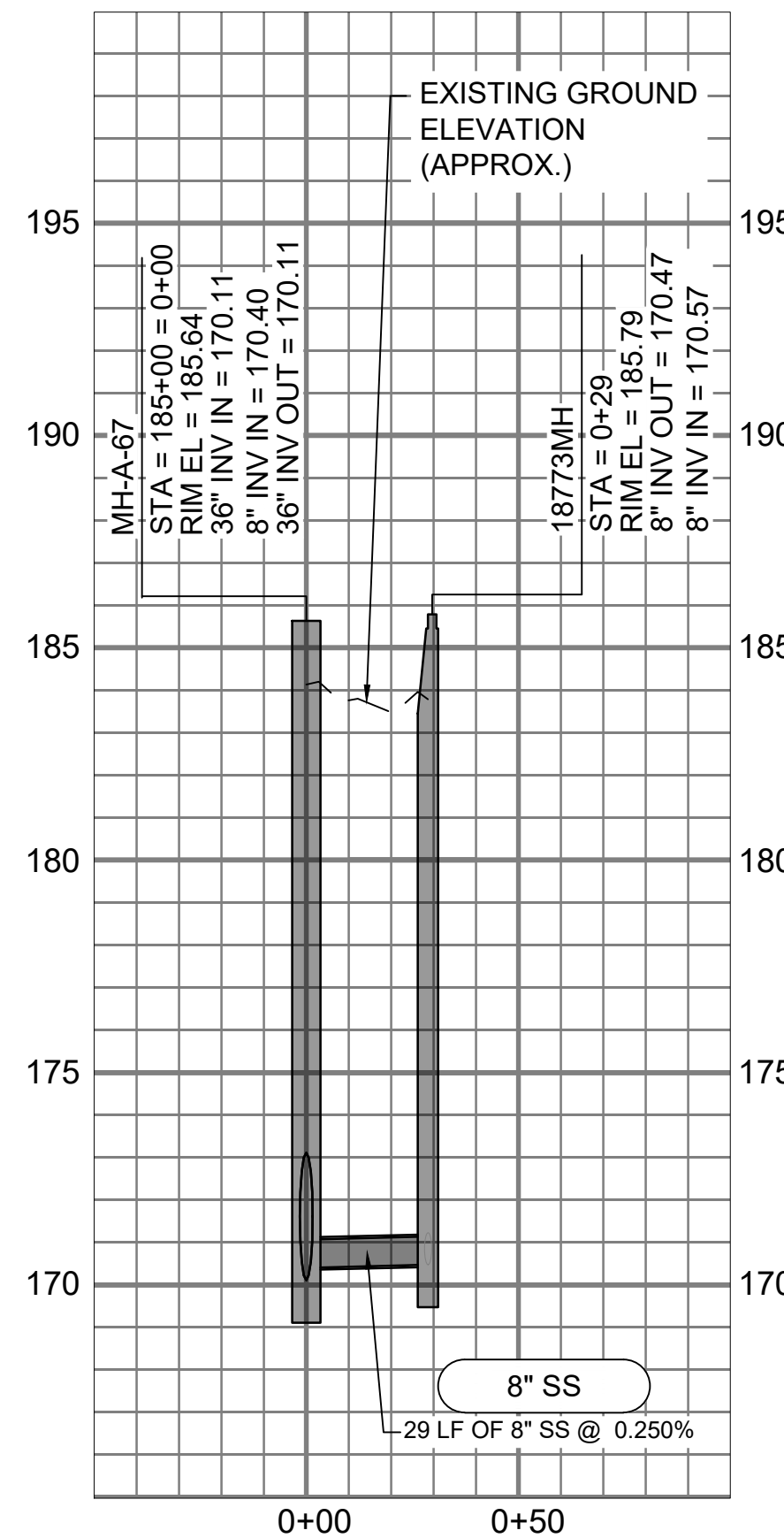
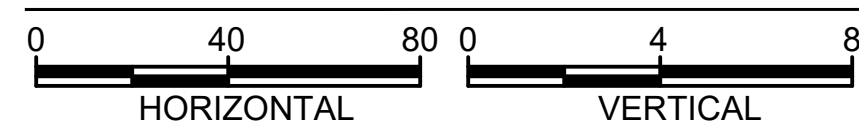
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**100-C-22**  
SHEET NUMBER  
36 OF 55



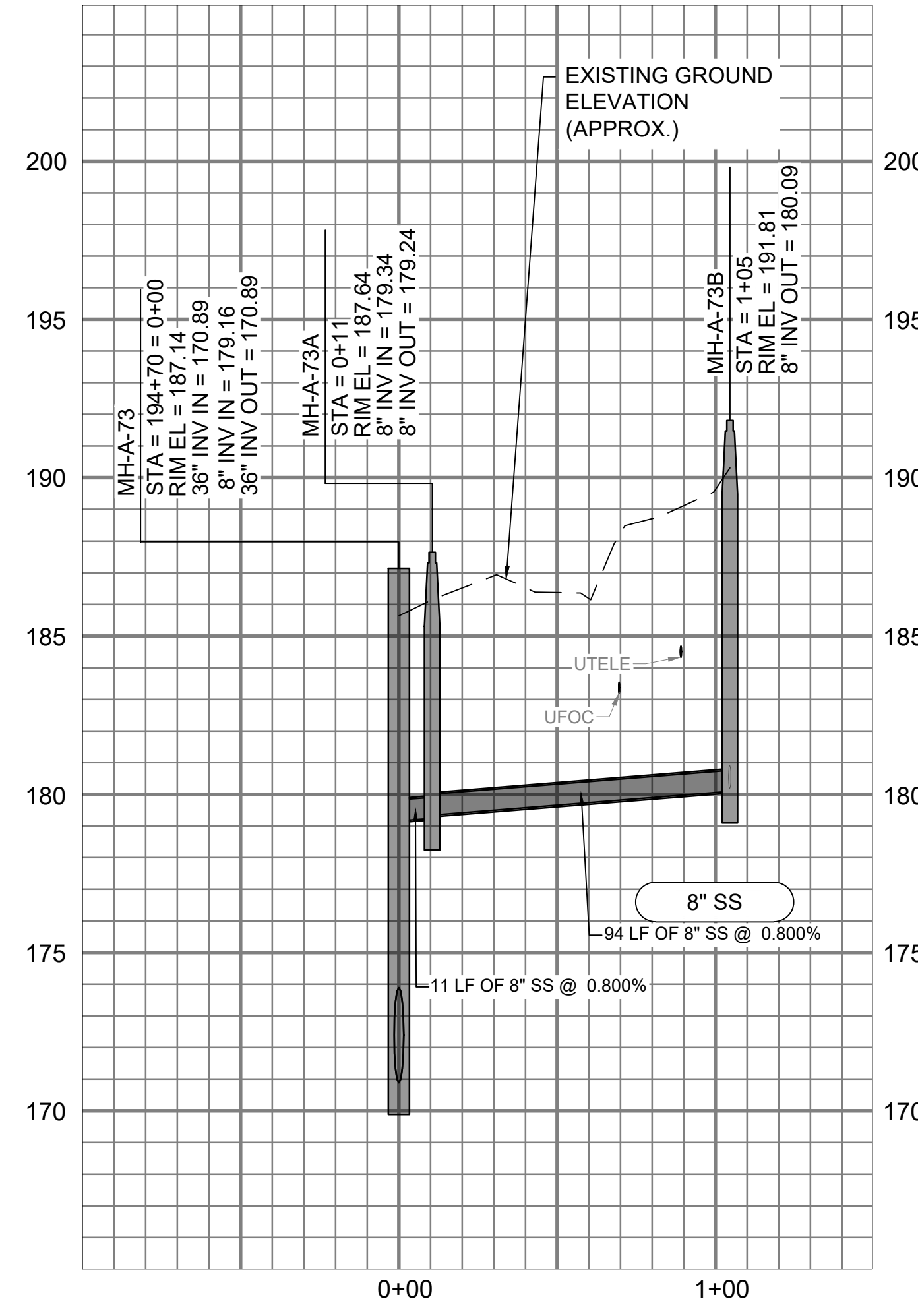
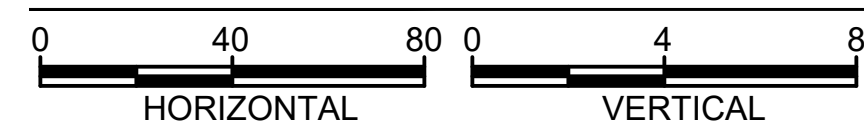
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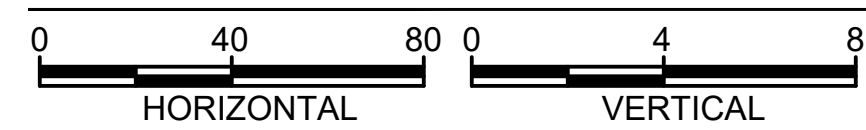
MH-A-9 (STA. 21+75) TO 16070MH PROFILE



MH-A-67 (STA. 185+00) TO 18773MH PROFILE



MH-A-73 (STA. 194+67) TO MH-A-73B PROFILE



**GENERAL NOTES:**

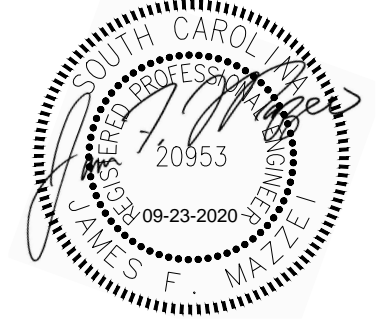
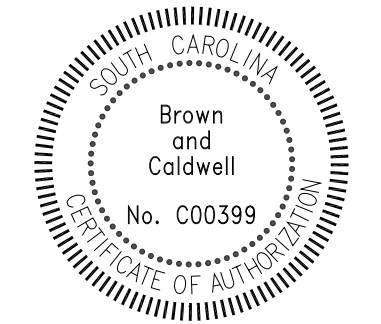
- SEE DRAWING 000-C-11 FOR EXISTING SEWER AND STORM INVERT DATA.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR EASEMENT AND EROSION CONTROL INFORMATION.
- SEE DRAWINGS 200-C-01 THRU 200-C-11 FOR TREE PROTECTION AND REMOVAL LIMITATIONS.
- CONSTRUCT ALL MANHOLES PER DETAIL 1/000-C-02 UNLESS OTHERWISE NOTED.

**KEY NOTES**

- CONSTRUCT MH-A-9 PER DETAIL 21/000-C-05. SEE BYPASS PLAN AND DETAILS ON DRAWING 300-C-01 FOR CONNECTION TO EXISTING 30" SS AND INSTALLATION OF MH-A-9.
- MANHOLE VENT, SEE DETAIL 20 ON SHEET 000-C-04.
- RAISE EXISTING MANHOLE RIM TO ELEVATION 180.00'.



COLUMBIA, SOUTH CAROLINA



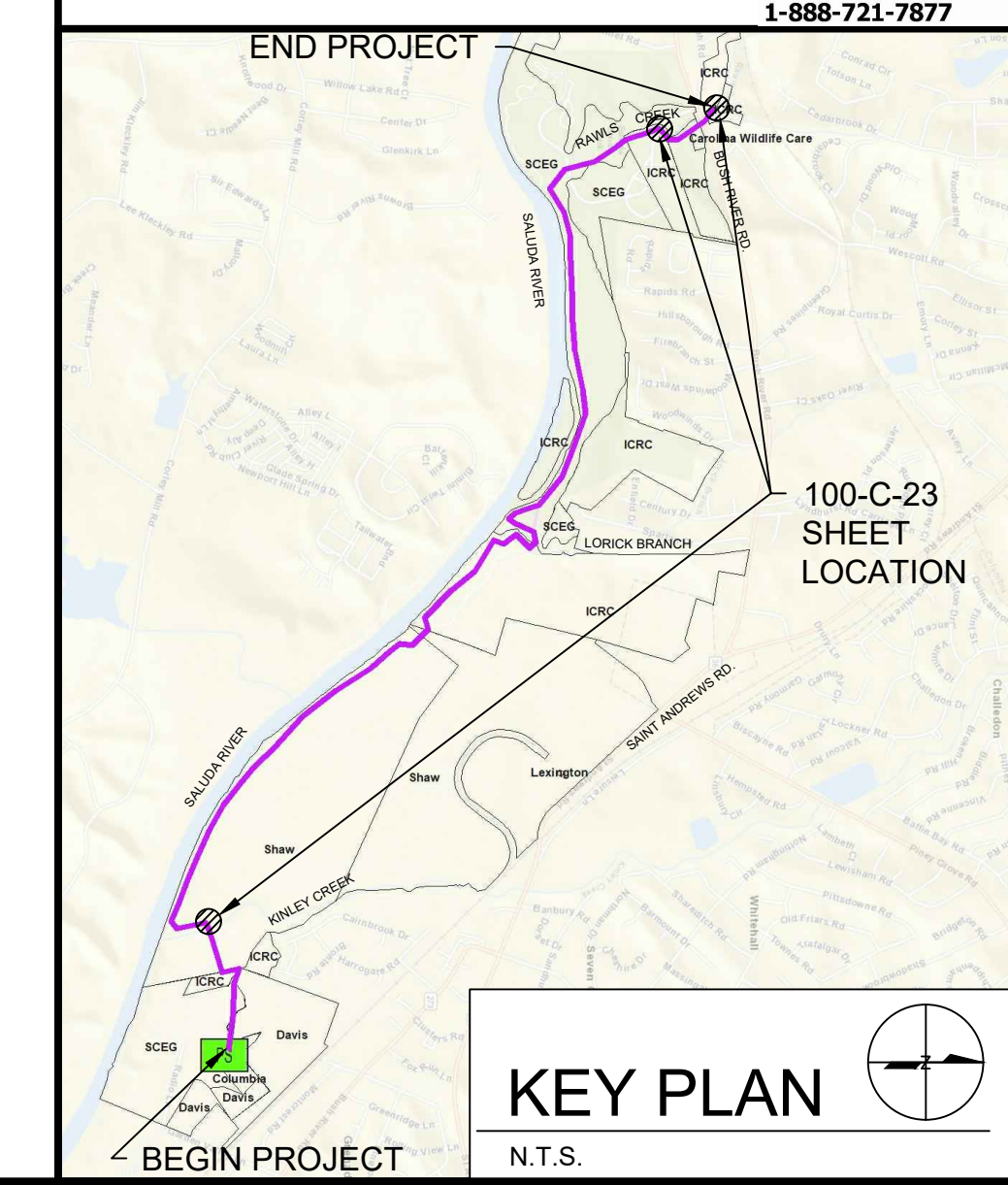
**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION



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**KEY PLAN**

LINE IS 2 INCHES AT FULL SIZE

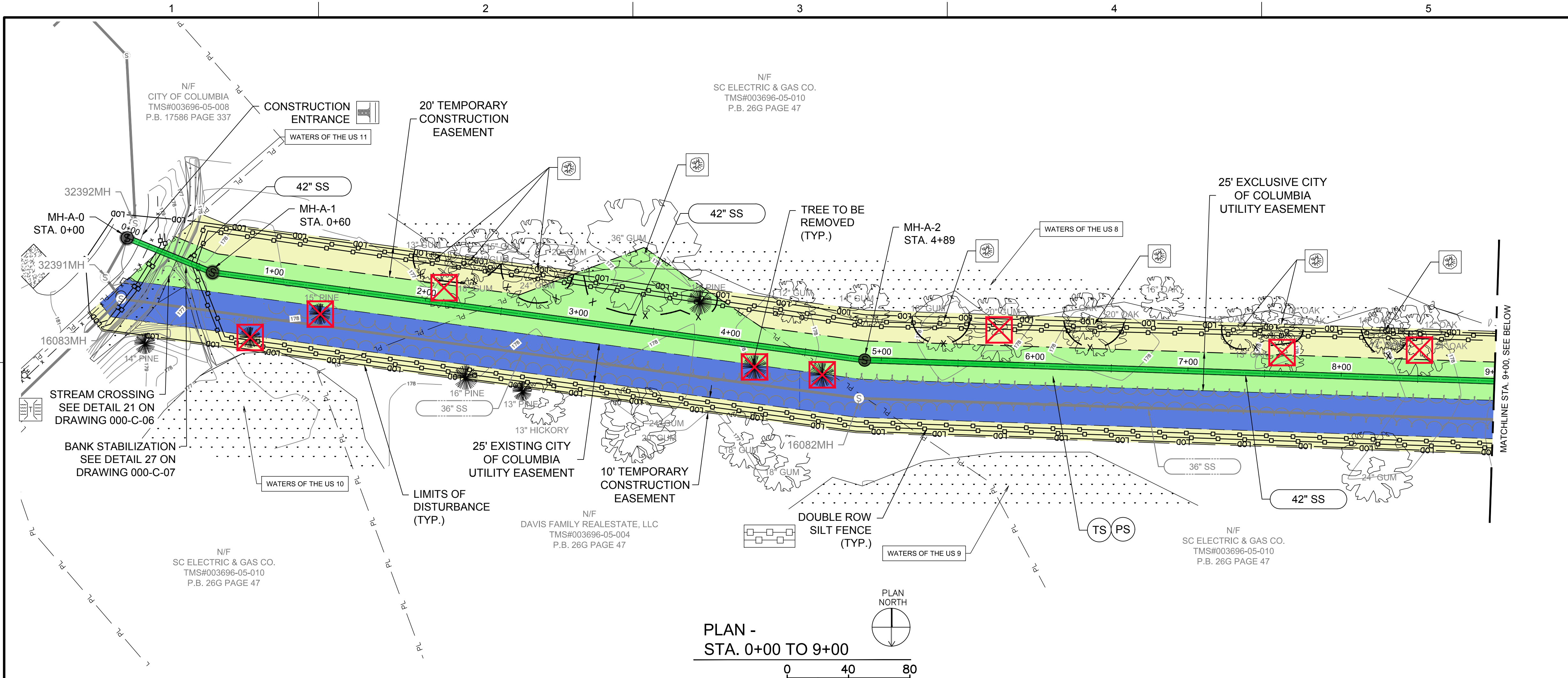
DESIGNED:	J. MAZZEI
DRAWN:	A. JUMPER
CHECKED:	C. LUCIE
CHECKED:	J. MAZZEI
APPROVED:	J. MAZZEI
FILENAME:	100-C-23.DWG
BC PROJECT NUMBER:	152166
CLIENT PROJECT NUMBER (CITY CIP#):	SS7428

CIVIL

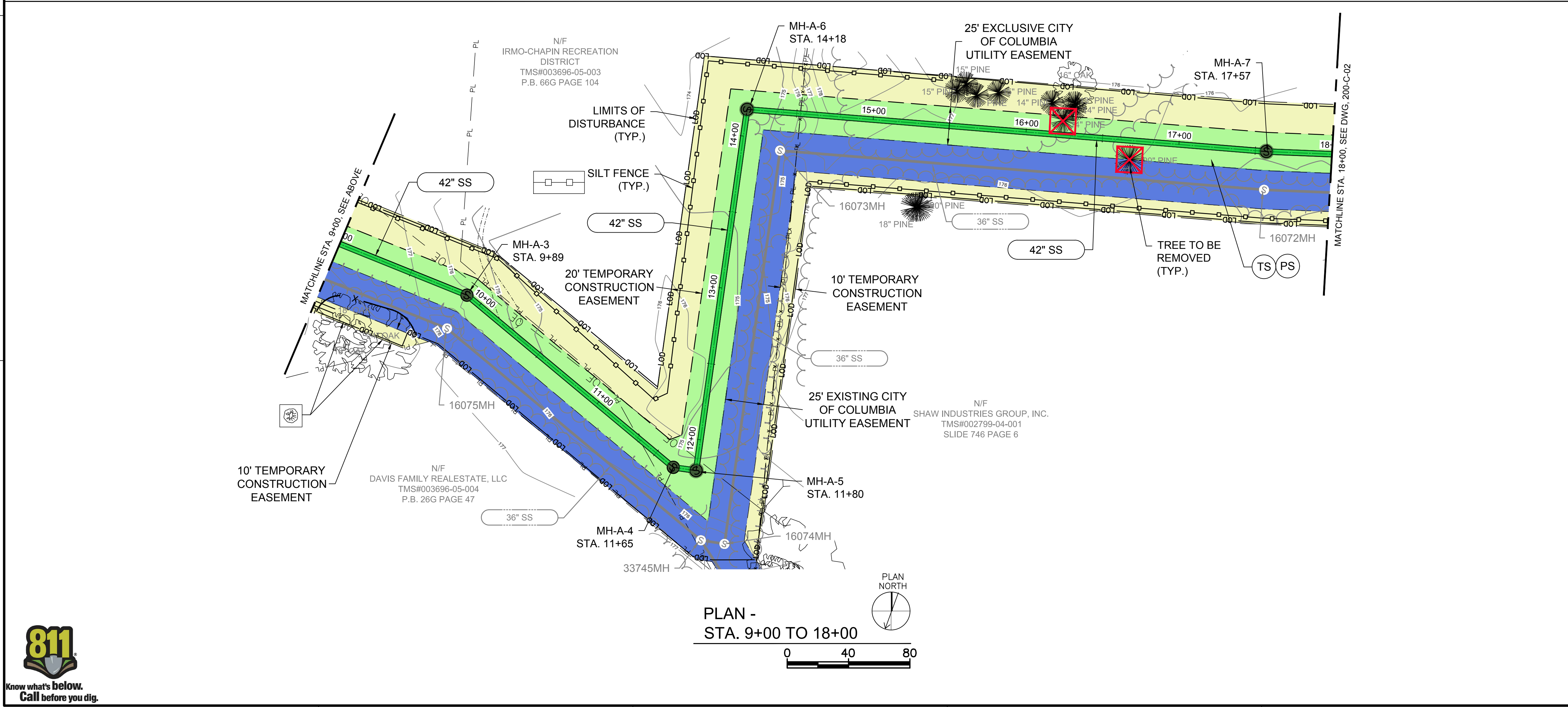
MISCELLANEOUS PROFILES

DRAWING NUMBER  
**100-C-23**  
SHEET NUMBER  
37 OF 55





PLAN -  
STA. 0+00 TO 9+00



PLAN -  
STA. 9+00 TO 18+00

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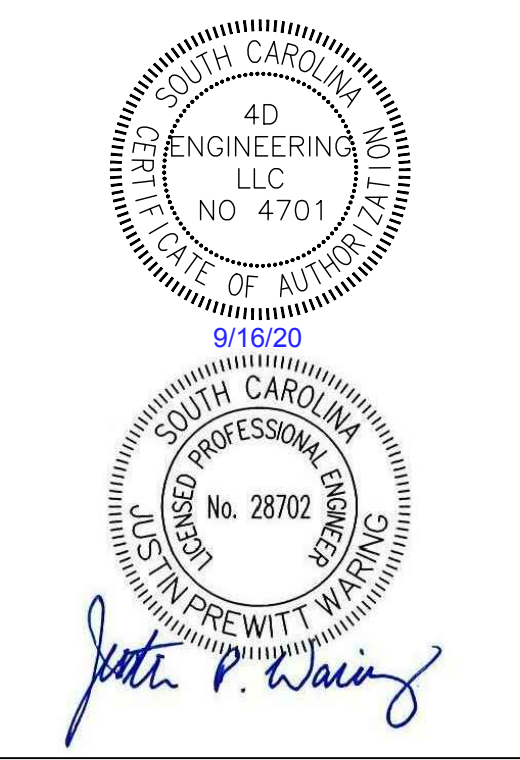
COLUMBIA, SOUTH CAROLINA

**LEGEND**

- SILT FENCE
- DOUBLE ROW SILT FENCE
- TREE PROTECTION
- EXISTING TREE TO BE REMOVED
- PROPOSED EASEMENT AREA (WIDTH VARIES)
- PROPOSED TEMP. EASEMENT AREA (WIDTH VARIES)
- EXISTING EASEMENT AREA

**EROSION CONTROL NOTES:**

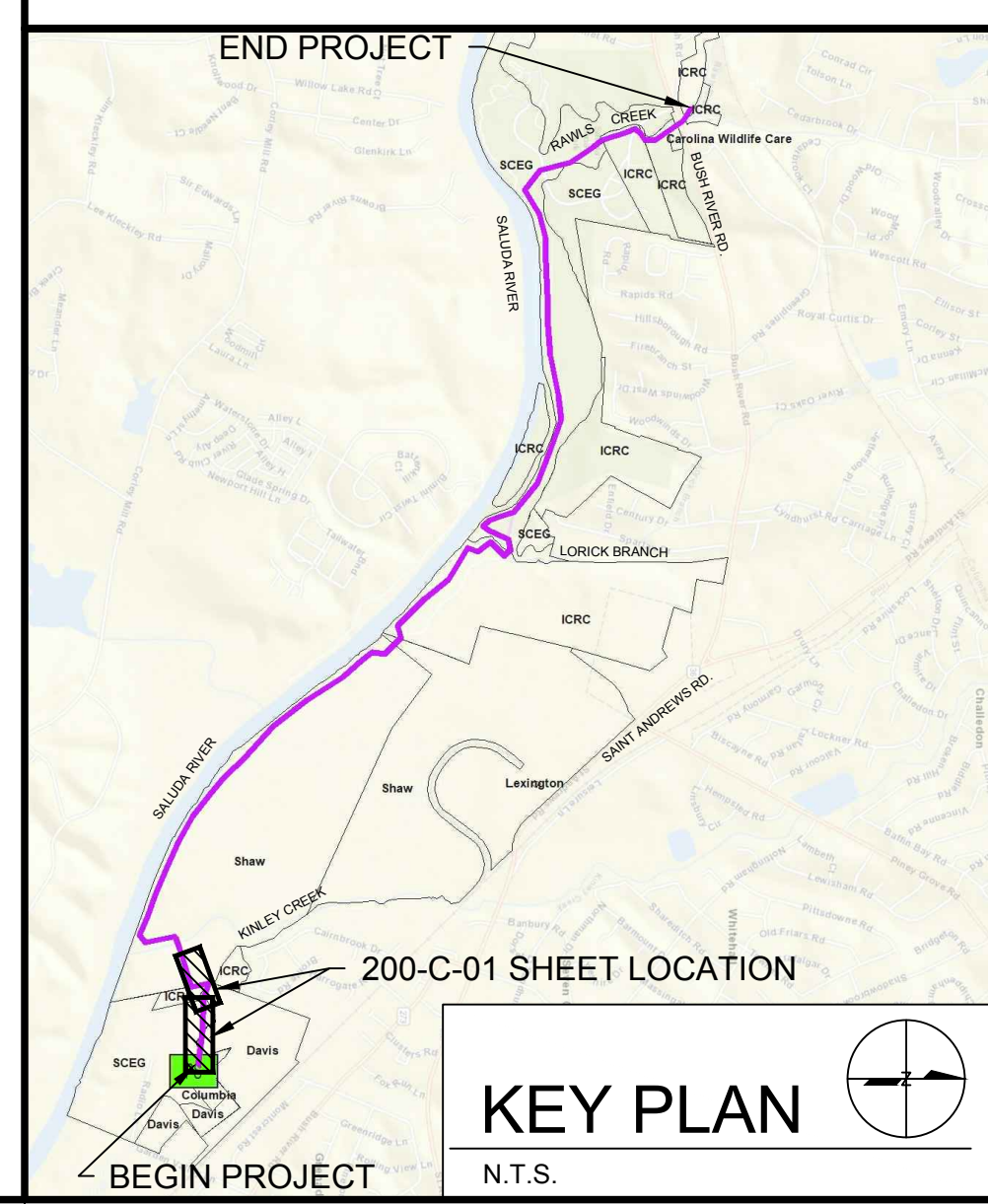
1. SYMBOLS AND NUMBERS DENOTE EROSION AND SEDIMENT CONTROL PRACTICES PER THE SCDHEC STORM WATER MANAGEMENT BMP HANDBOOK, LATEST REVISION. THESE DETAILS ARE INCORPORATED BY REFERENCE.
2. BMP'S SHALL BE PLACED PRIOR TO ANY WORK BEING DONE AND SHOULD BE MAINTAINED AS OFTEN AS NECESSARY. EROSION AND SEDIMENT CONTROL INSPECTIONS SHOULD OCCUR WEEKLY AND BMP'S SHALL BE ADJUSTED/ADDED TO MATCH ONSITE CONDITIONS AND LIMIT SEDIMENT AND EROSION.
3. TREES SHOWN TO BE PROTECTED SHALL REMAIN IN PLACE. IF A PROTECTED TREE NEEDS TO BE REMOVED DUE TO POTENTIAL IMPACTS, CONTACT ENGINEER FOR APPROVAL PRIOR TO REMOVAL.
4. AREA WITHIN LIMITS OF DISTURBANCE TO BE CLEARED, EXCEPT FOR TREES SPECIFICALLY CALLED OUT FOR PROTECTION.



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION



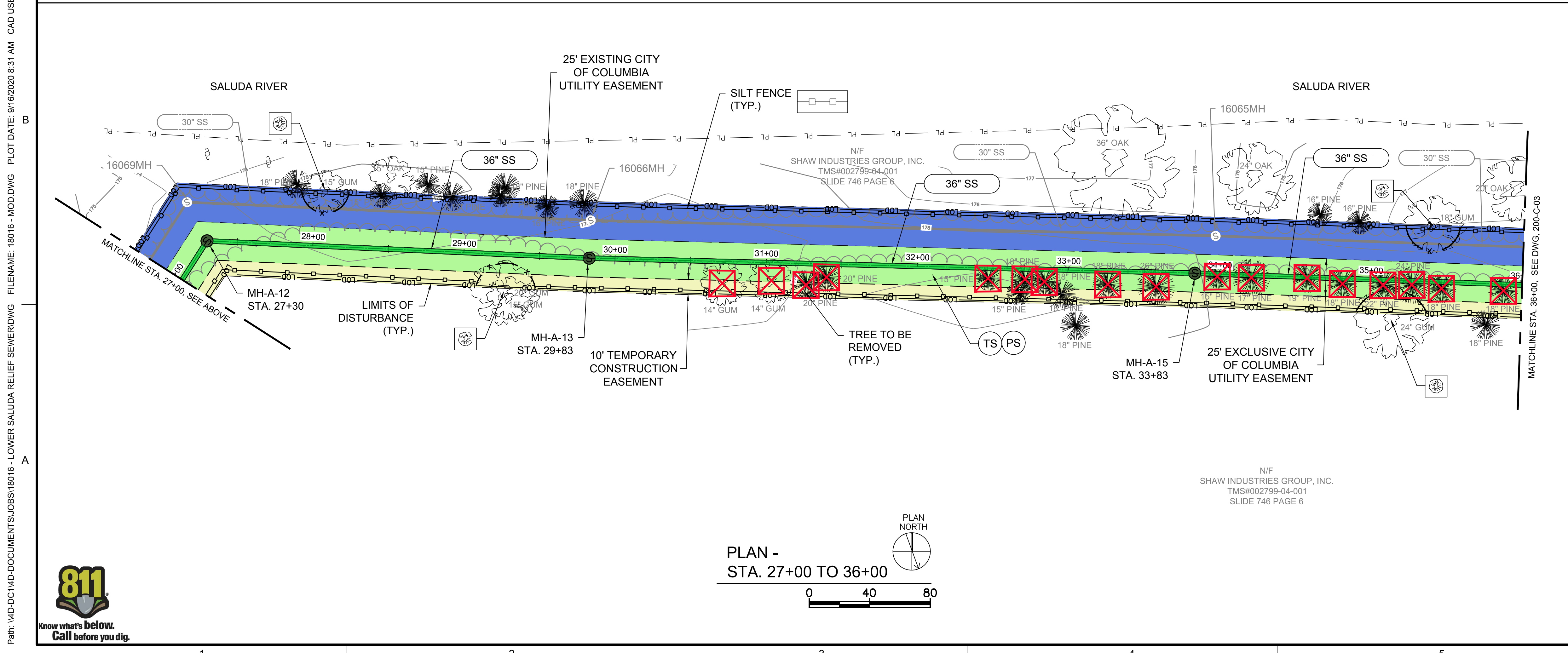
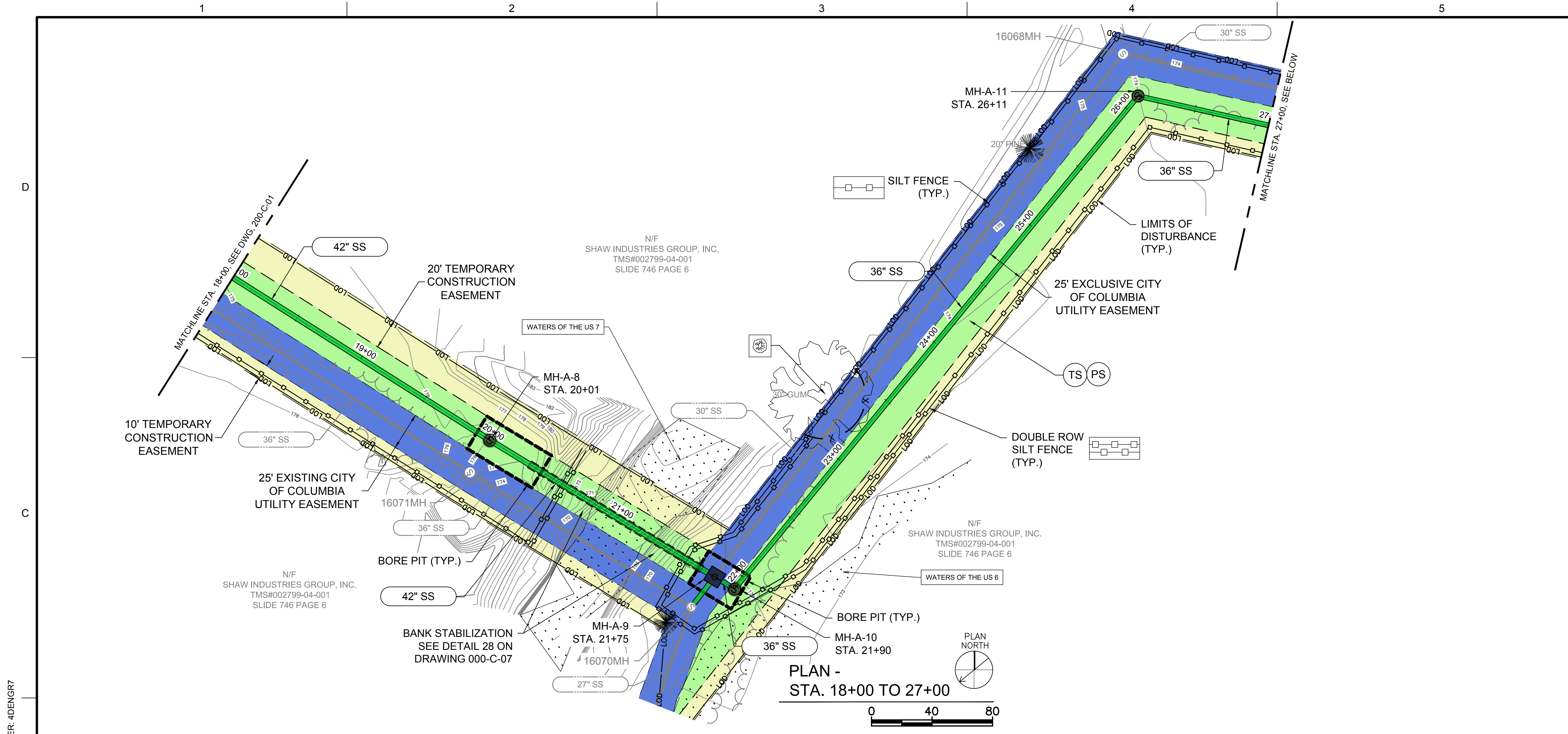
**KEY PLAN**  
N.T.S.

CIVIL  
EASEMENTS, ESC  
PLAN  
STA. 0+00 TO  
18+00  
DRAWING NUMBER  
**200-C-01**  
SHEET NUMBER  
38 OF 55

Path: \\4D-DC14D\DOCUMENTS\JOBS\18016 - LOWER SALUDA RELIEF SEWER\DWG FILENAME: 18016 - MOD.DWG PLOT DATE: 9/16/2020 8:31 AM CAD USER: 4DENGR7







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**Brown AND Caldwell**  
 COLUMBIA, SOUTH CAROLINA

**LEGEND**

- SILT FENCE
- DOUBLE ROW SILT FENCE
- TREE PROTECTION
- EXISTING TREE TO BE REMOVED
- PROPOSED EASEMENT AREA (WIDTH VARIES)
- PROPOSED TEMP. EASEMENT AREA (WIDTH VARIES)
- EXISTING EASEMENT AREA

- EROSION CONTROL NOTES:**
- SYMBOLS AND NUMBERS DENOTE EROSION AND SEDIMENT CONTROL PRACTICES PER THE SCDHEC STORM WATER MANAGEMENT BMP HANDBOOK, LATEST REVISION. THESE DETAILS ARE INCORPORATED BY REFERENCE.
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  - TREES SHOWN TO BE PROTECTED SHALL REMAIN IN PLACE. IF A PROTECTED TREE NEEDS TO BE REMOVED DUE TO POTENTIAL IMPACTS, CONTACT ENGINEER FOR APPROVAL PRIOR TO REMOVAL.
  - AREA WITHIN LIMITS OF DISTURBANCE TO BE CLEARED, EXCEPT FOR TREES SPECIFICALLY CALLED OUT FOR PROTECTION.

**KEY PLAN**  
 N.T.S.

END PROJECT  
 BEGIN PROJECT

200-C-02 SHEET LOCATION

SOUTH CAROLINA  
 4D ENGINEERING LLC  
 NO. 4701  
 9/19/20

SOUTH CAROLINA  
 PROFESSIONAL ENGINEER  
 No. 28702  
 JOHN P. WAIN

**Columbia Water**  
 Drinking Water • Wastewater • Stormwater

**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED:	JTB
DRAWN:	CBB
CHECKED:	JPW
CHECKED:	CWD
APPROVED:	JPW
FILENAME:	18016-MOD
BC PROJECT NUMBER:	152166
CLIENT PROJECT NUMBER:	CITY CIP# SS7428

**CIVIL**

**EASEMENTS, ESC PLAN**  
 STA. 18+00 TO 36+00

DRAWING NUMBER  
**200-C-02**

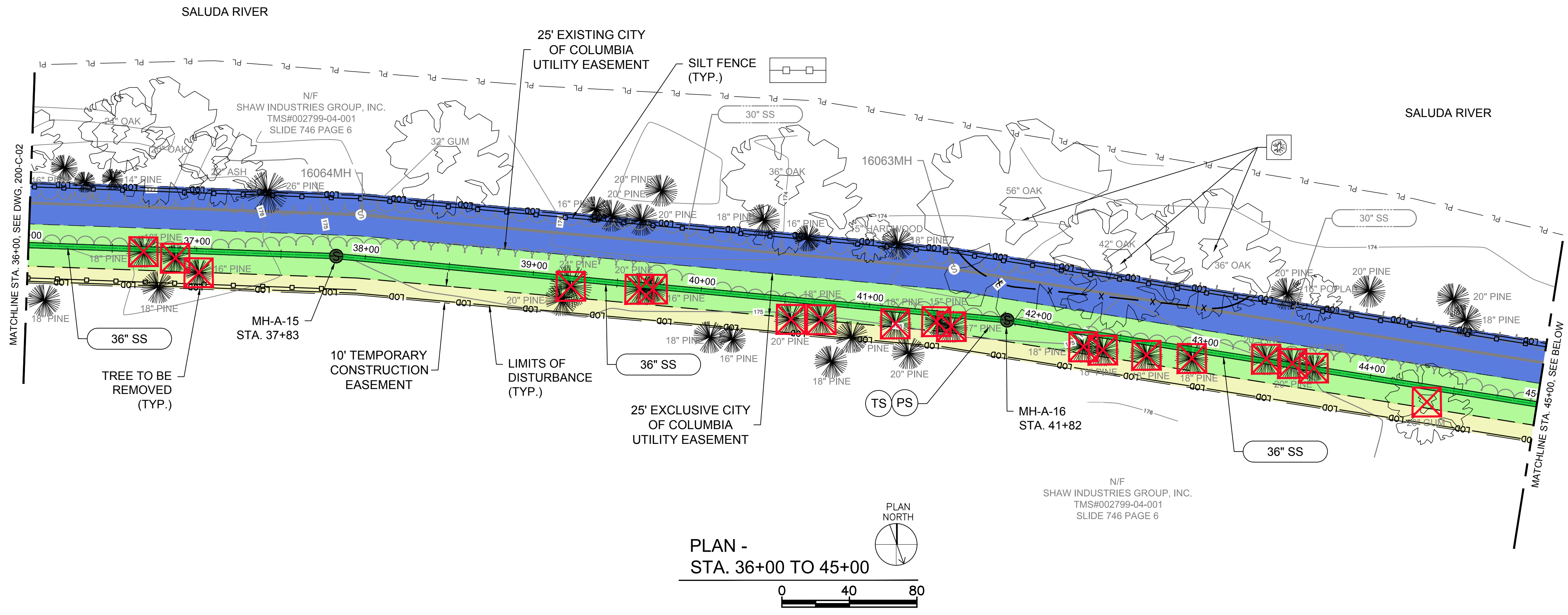
SHEET NUMBER  
 39 OF 55

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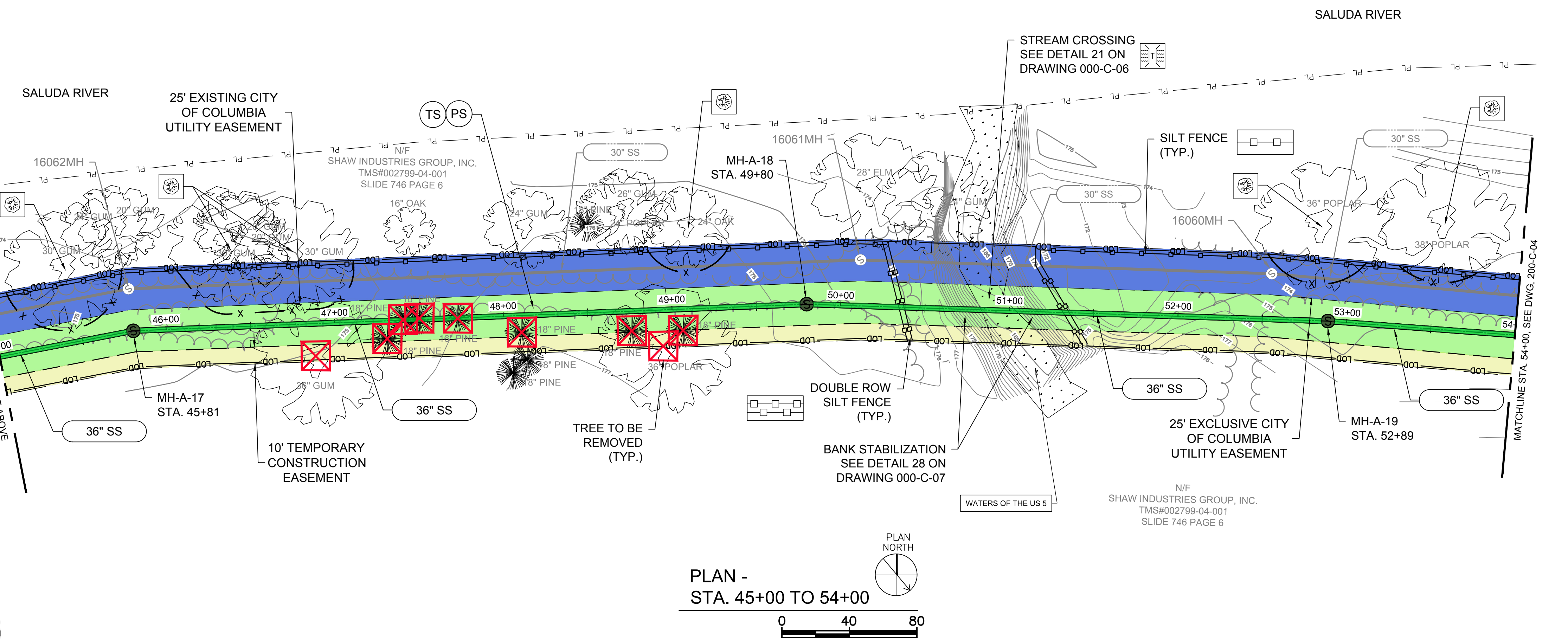




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PLAN -  
STA. 36+00 TO 45+00



PLAN -  
STA. 45+00 TO 54+00

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ENGINEERING SOLUTIONS"  
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**Brown AND Caldwell**

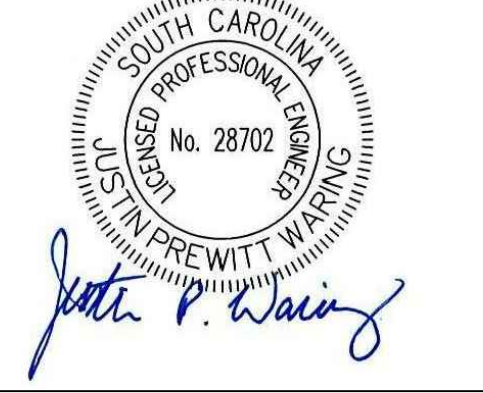
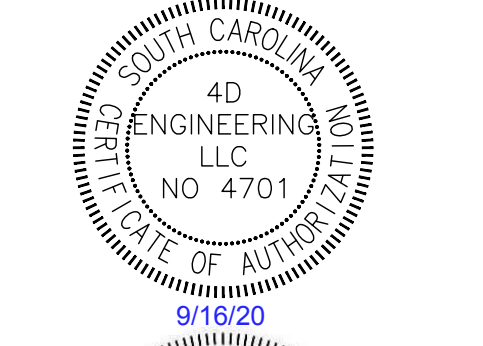
COLUMBIA, SOUTH CAROLINA

**LEGEND**

- SILT FENCE
- DOUBLE ROW SILT FENCE
- TREE PROTECTION
- EXISTING TREE TO BE REMOVED
- PROPOSED EASEMENT AREA (WIDTH VARIES)
- PROPOSED TEMP. EASEMENT AREA (WIDTH VARIES)
- EXISTING EASEMENT AREA

**EROSION CONTROL NOTES:**

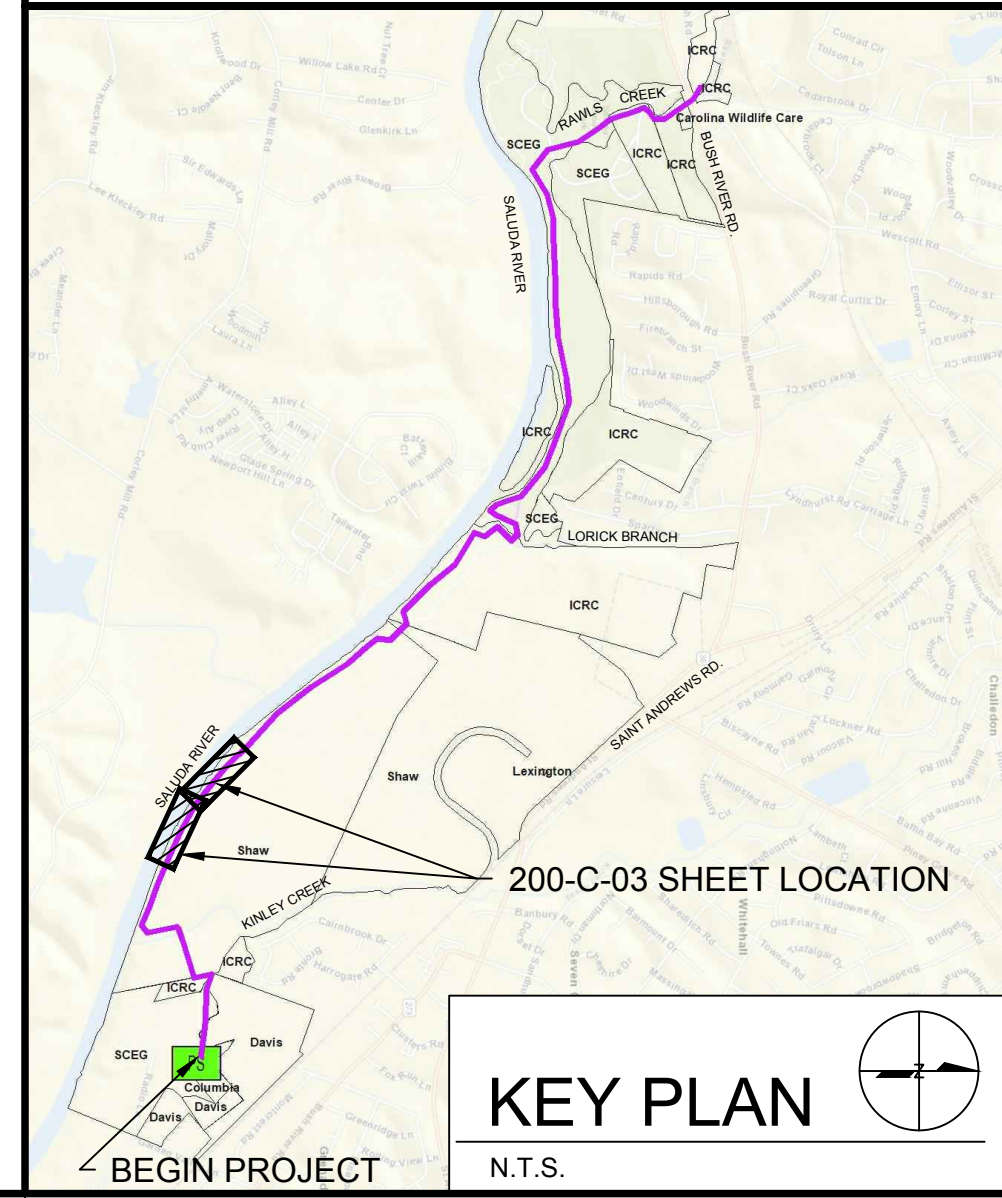
1. SYMBOLS AND NUMBERS DENOTE EROSION AND SEDIMENT CONTROL PRACTICES PER THE SCDHEC STORM WATER MANAGEMENT BMP HANDBOOK, LATEST REVISION. THESE DETAILS ARE INCORPORATED BY REFERENCE.
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4. AREA WITHIN LIMITS OF DISTURBANCE TO BE CLEARED, EXCEPT FOR TREES SPECIFICALLY CALLED OUT FOR PROTECTION.



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION



**KEY PLAN**  
N.T.S.

**CIVIL**  
**EASEMENTS, ESC PLAN**  
**STA. 36+00 TO 54+00**  
DRAWING NUMBER  
**200-C-03**  
SHEET NUMBER  
40 OF 55





# 4D

**ENGINEERING**

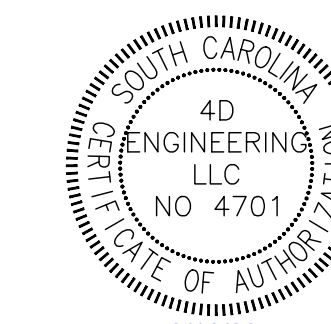
"SUPERIOR COMPREHENSIVE  
ENGINEERING SOLUTIONS"

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CIVIL ENGINEERING

**Brown AND Caldwell**

COLUMBIA, SOUTH CAROLINA



*John P. Wainwright*



### LEGEND

- SILT FENCE
- DOUBLE ROW SILT FENCE
- TREE PROTECTION
- EXISTING TREE TO BE REMOVED
- PROPOSED EASEMENT AREA (WIDTH VARIES)
- PROPOSED TEMP. EASEMENT AREA (WIDTH VARIES)
- EXISTING EASEMENT AREA

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### LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

#### REVISIONS

REV	DATE	DESCRIPTION

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DESIGNED: JTB  
DRAWN: CBB  
CHECKED: JPW  
CHECKED: CWD  
APPROVED: JPW

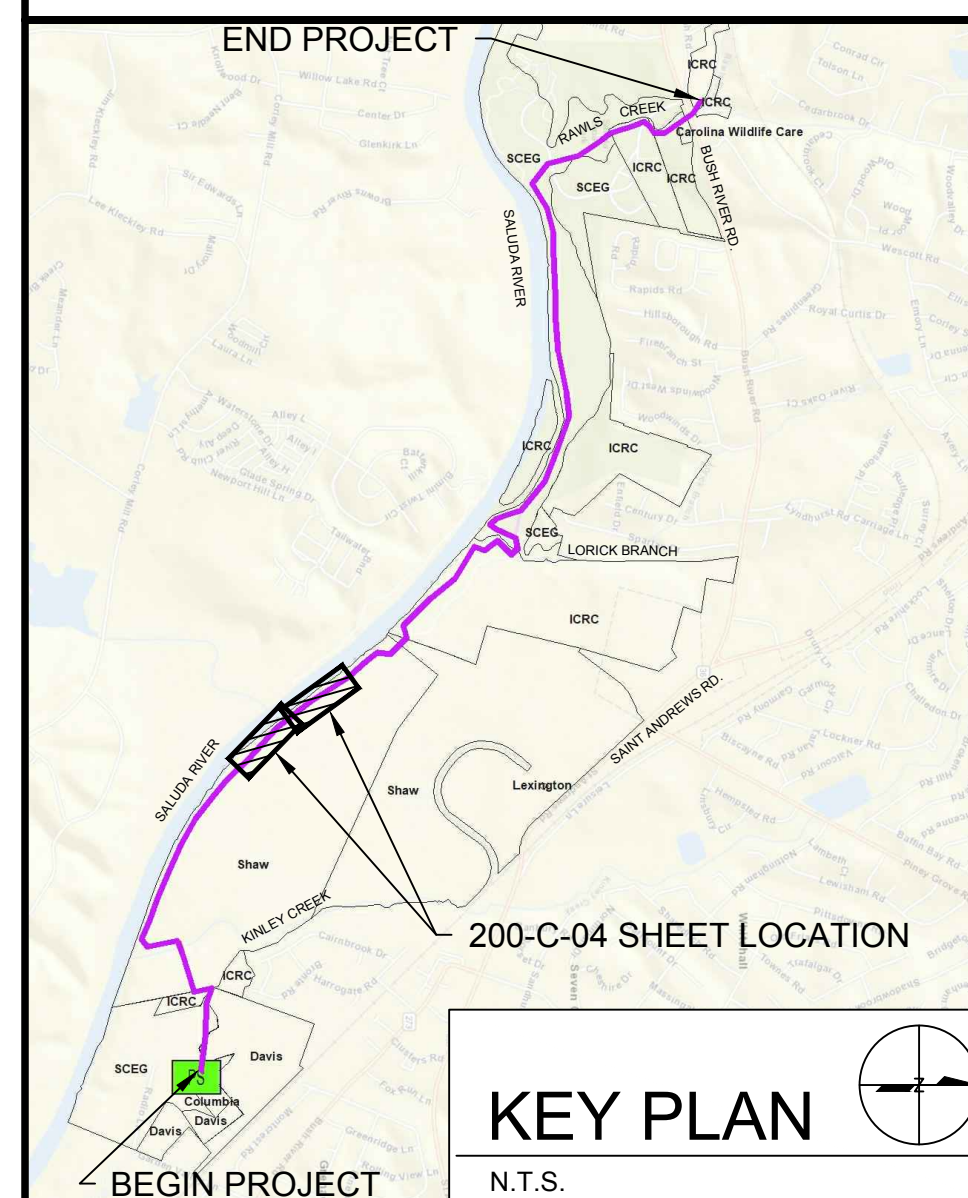
FILENAME: 18016-MOD  
BC PROJECT NUMBER: 152166  
CITY CIP# SS7428

CIVIL

EASEMENTS, ESC PLAN  
STA. 54+00 TO 72+00

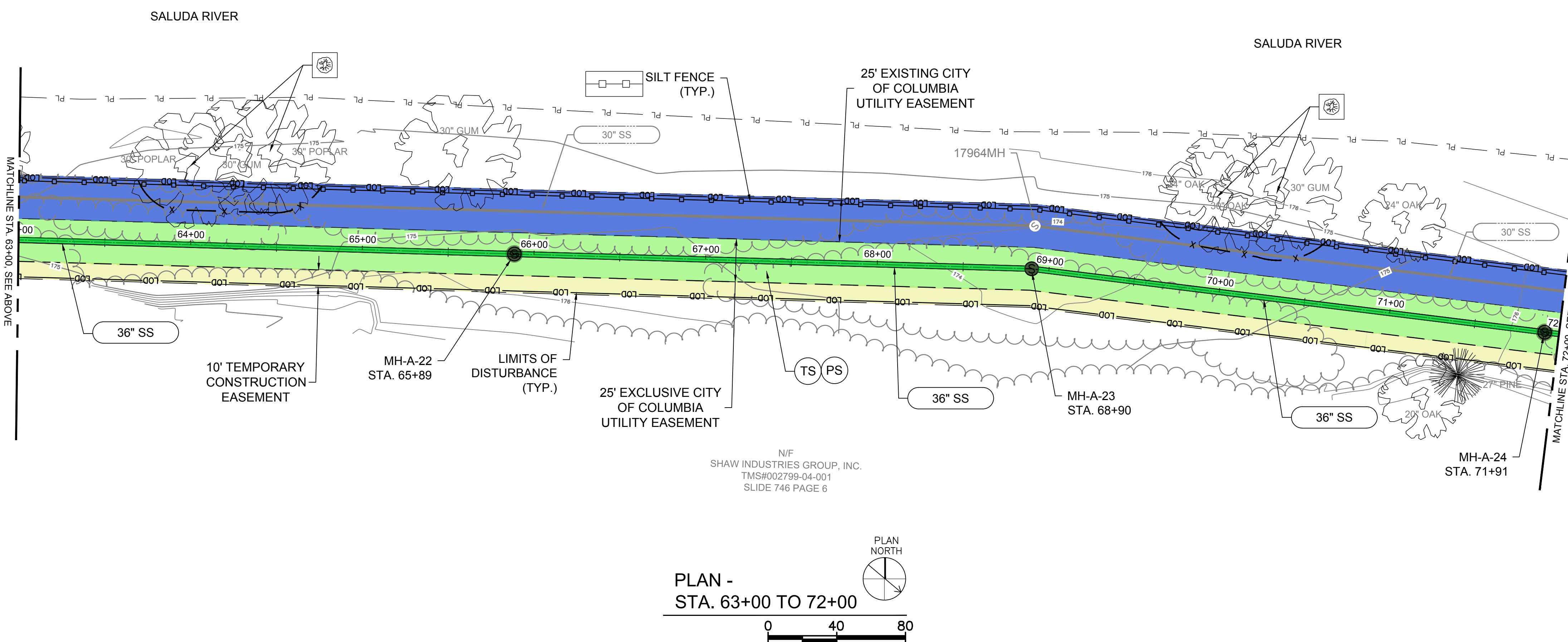
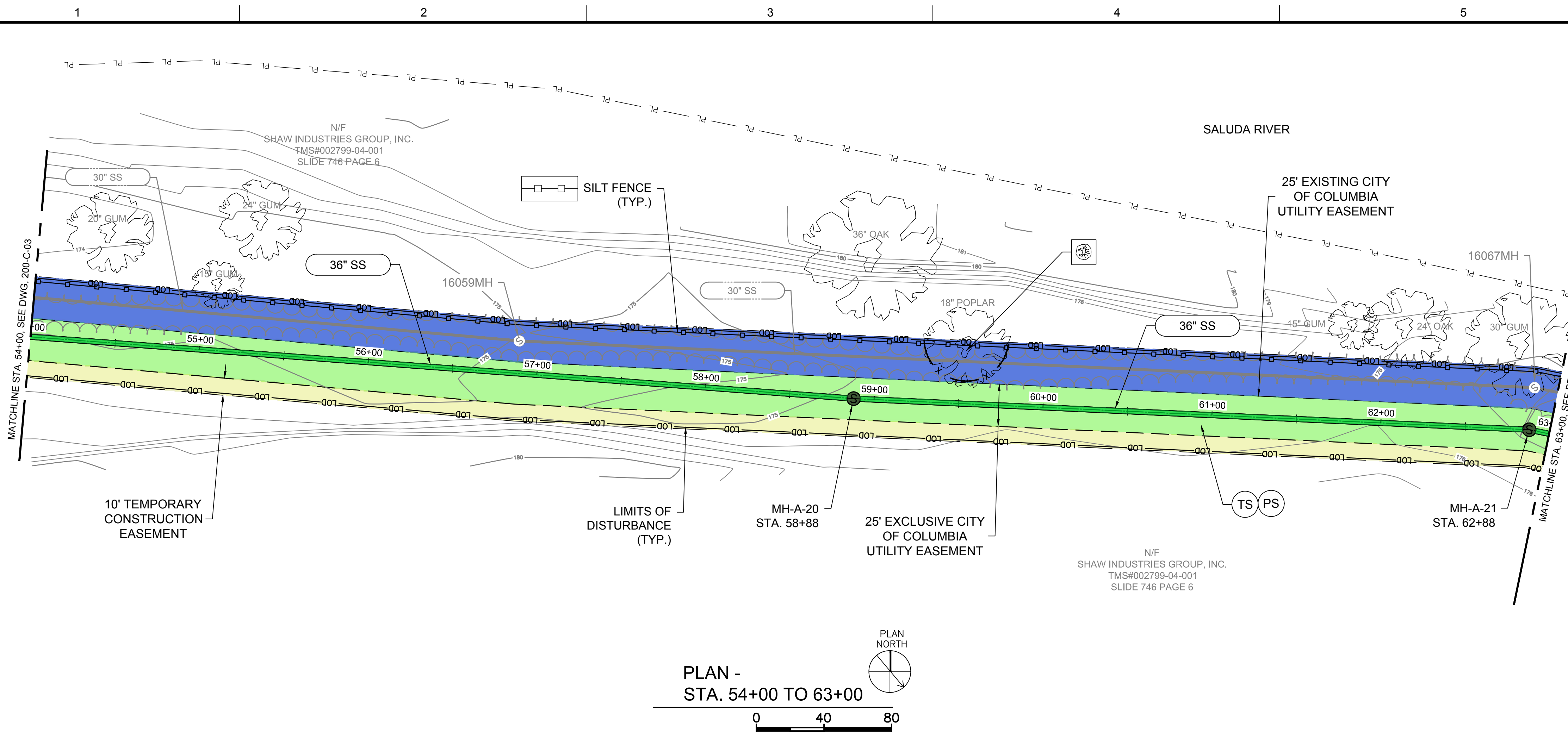
DRAWING NUMBER  
**200-C-04**

SHEET NUMBER  
41 OF 55



**KEY PLAN**

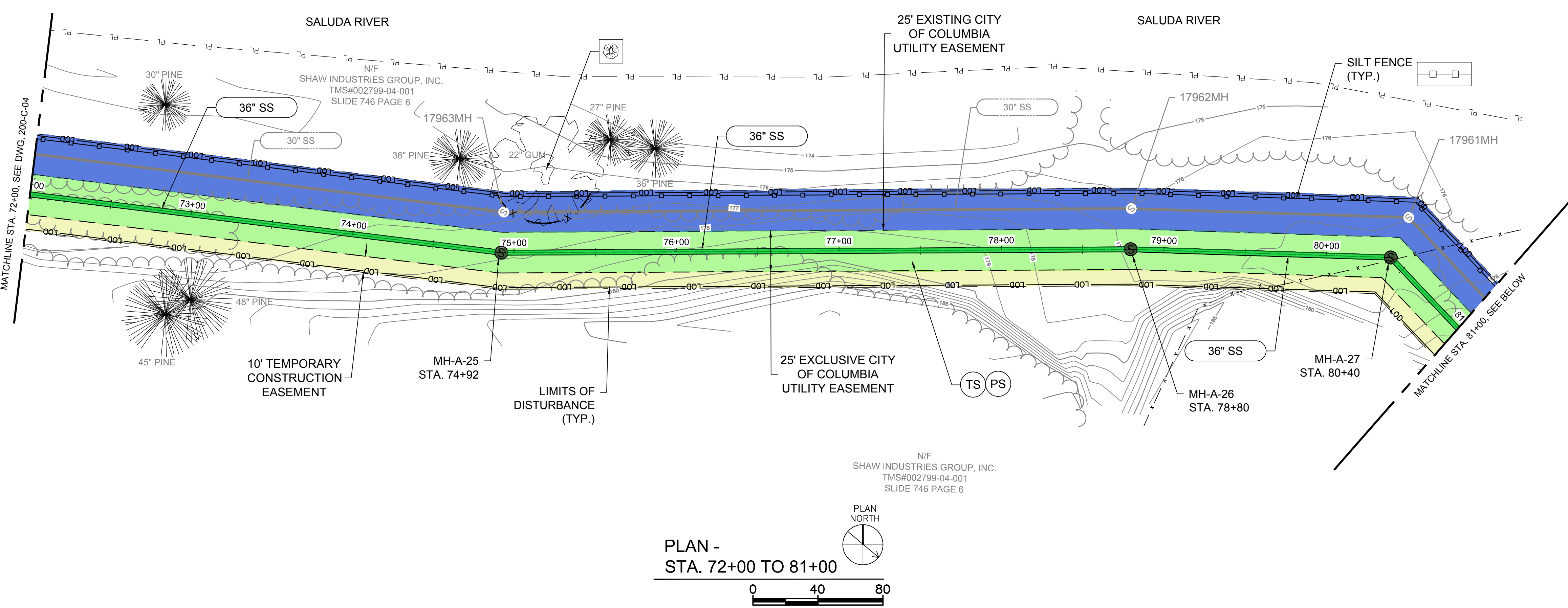
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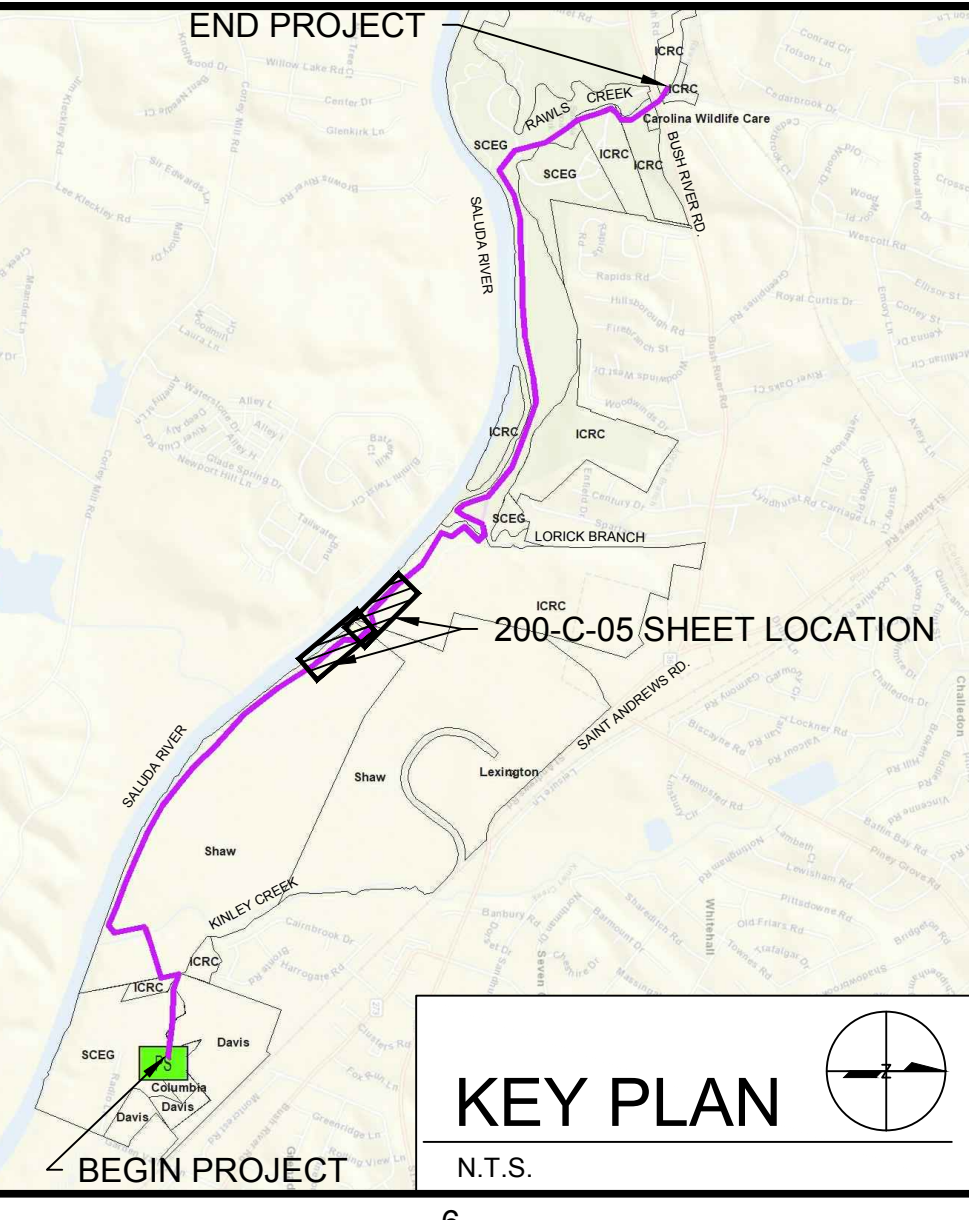


PLAN -  
STA. 72+00 TO 81+00

### LEGEND

- SILT FENCE
- DOUBLE ROW SILT FENCE
- TREE PROTECTION
- EXISTING TREE TO BE REMOVED
- PROPOSED EASEMENT AREA (WIDTH VARIES)
- PROPOSED TEMP. EASEMENT AREA (WIDTH VARIES)
- EXISTING EASEMENT AREA

- ### EROSION CONTROL NOTES:
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## LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED: JTB  
DRAWN: CBB  
CHECKED: JPW  
CHECKED: CWD  
APPROVED: JPW

FILENAME: 18016-MOD  
BC PROJECT NUMBER: 152166  
CITY PROJECT NUMBER: CIP# SS7428

CIVIL

EASEMENTS, ESC PLAN  
STA. 72+00 TO 90+00

DRAWING NUMBER: 200-C-05  
SHEET NUMBER: 42 OF 55

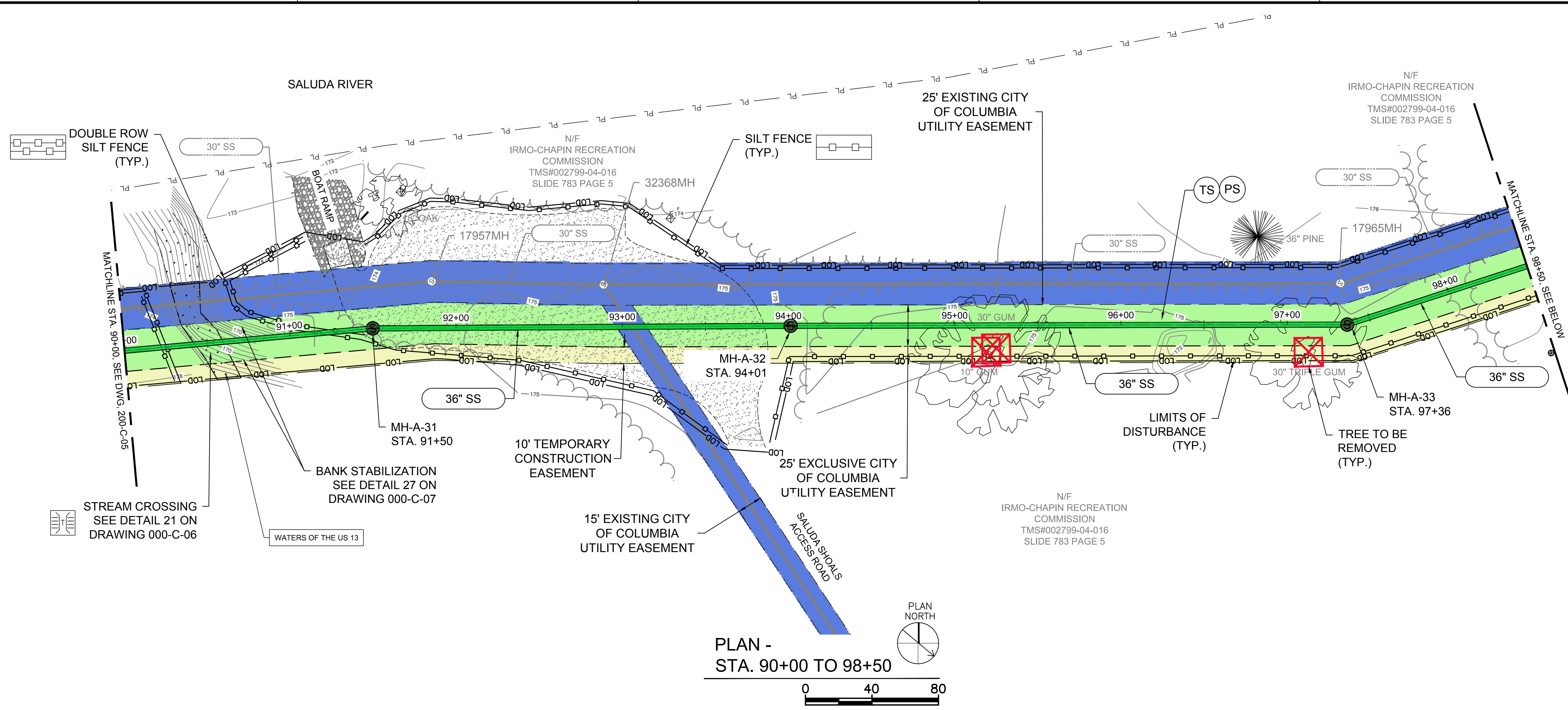
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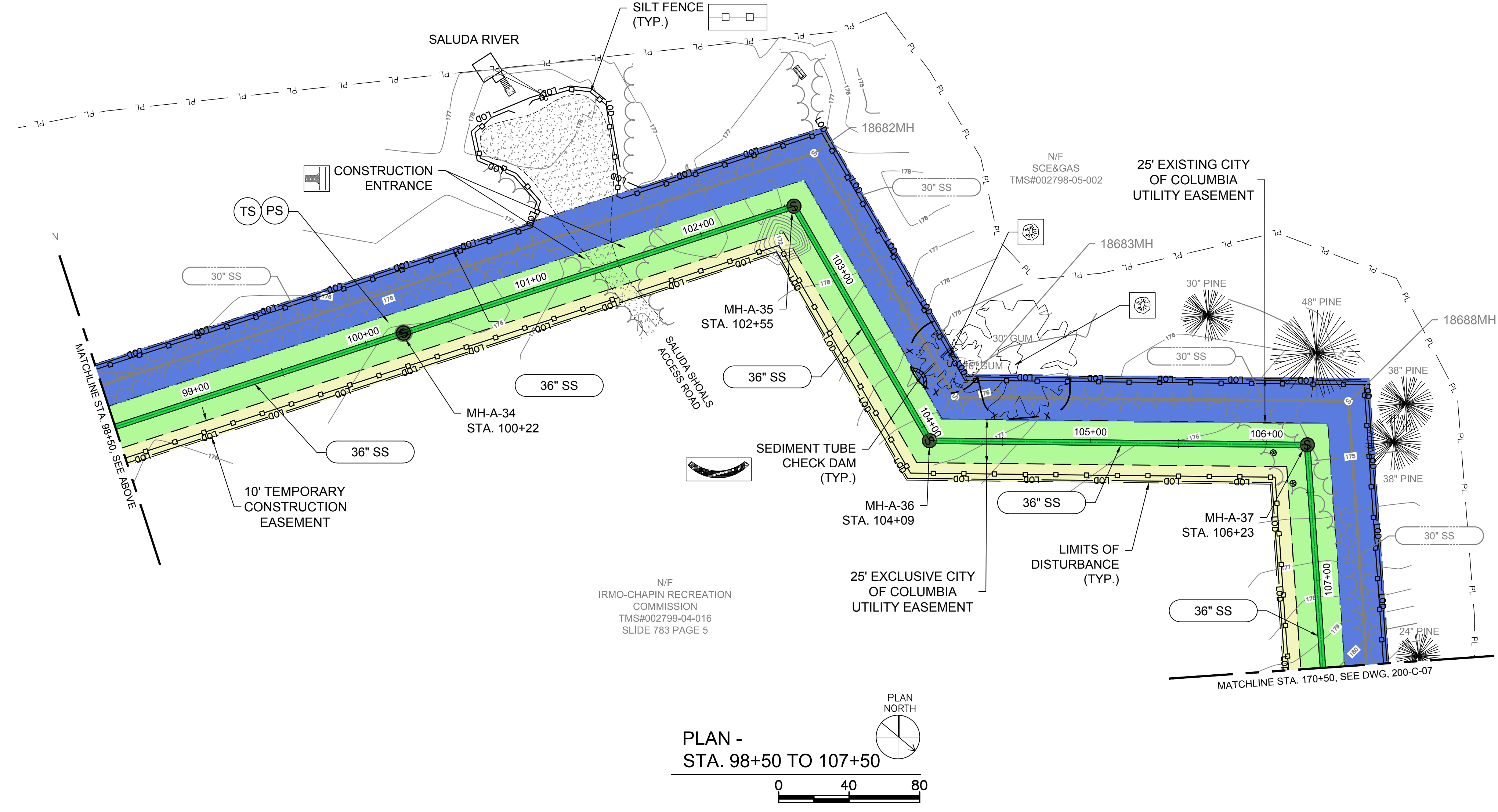
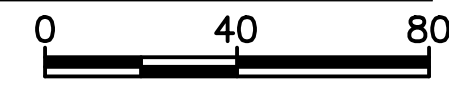
PERMISSION TO UTILIZE THE ACCESS ROAD FOR CONSTRUCTION SHALL BE OBTAINED PRIOR TO THE START OF CONSTRUCTION

PLAN -  
STA. 81+00 TO 90+00

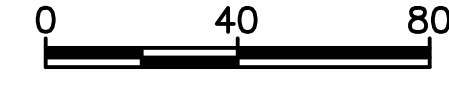




PLAN -  
STA. 90+00 TO 98+50



PLAN -  
STA. 98+50 TO 107+50



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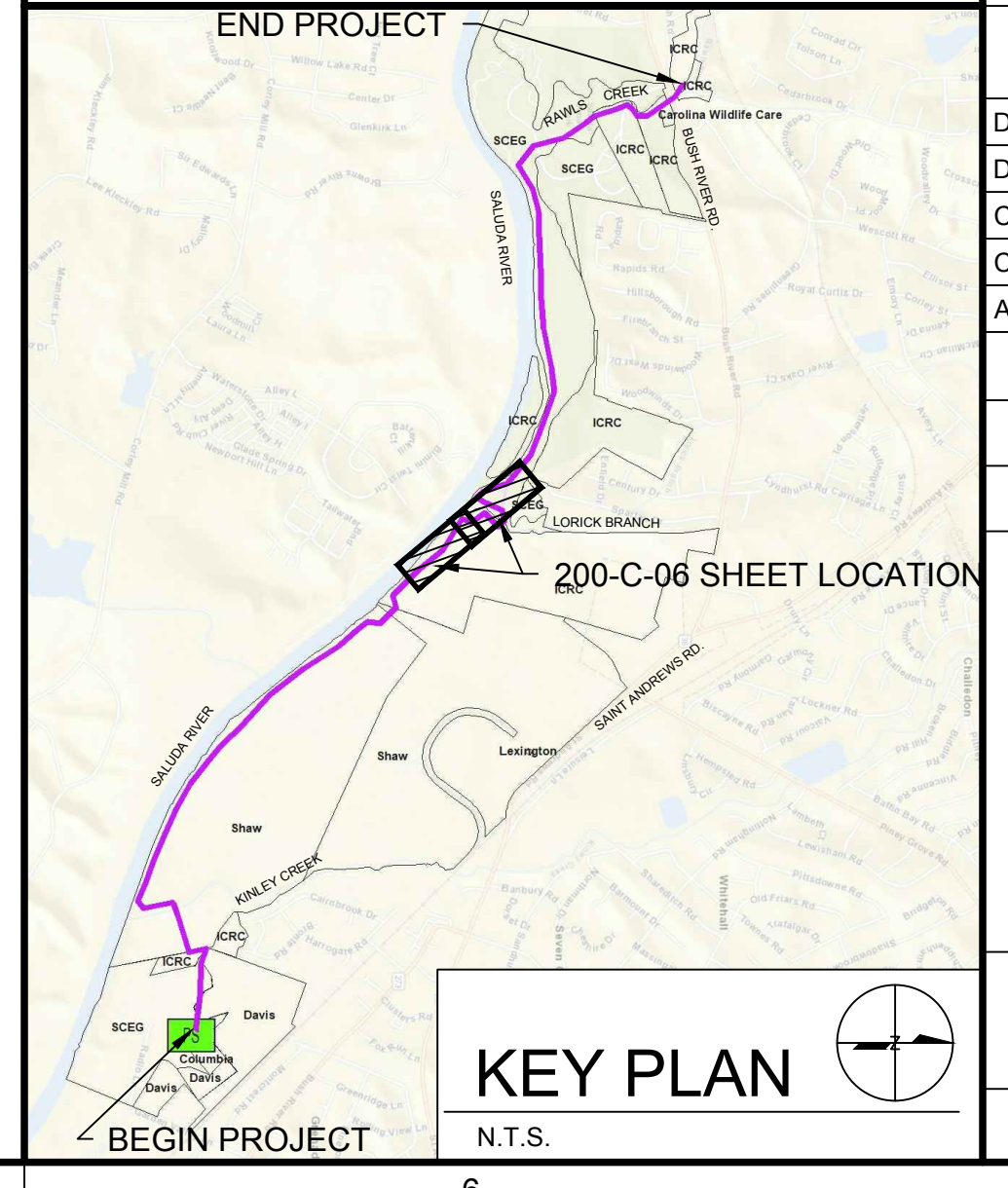
COLUMBIA, SOUTH CAROLINA

**LEGEND**

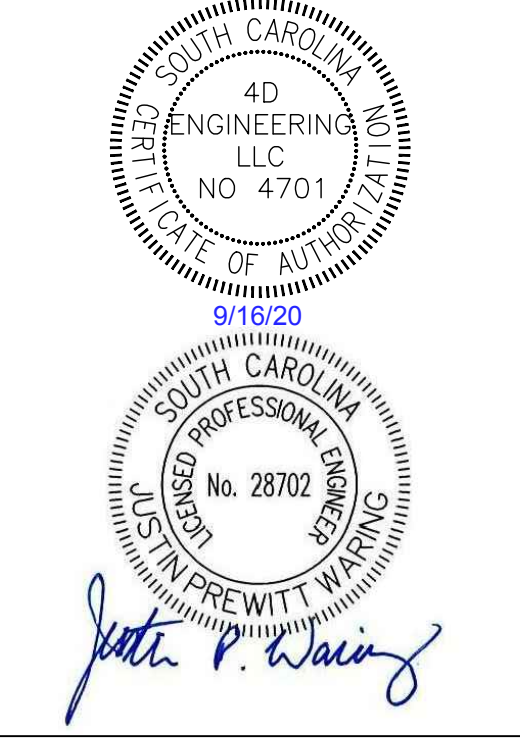
- SILT FENCE
- DOUBLE ROW SILT FENCE
- TREE PROTECTION
- EXISTING TREE TO BE REMOVED
- PROPOSED EASEMENT AREA (WIDTH VARIES)
- PROPOSED TEMP. EASEMENT AREA (WIDTH VARIES)
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**KEY PLAN**  
N.T.S.



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED:	JTB
DRAWN:	CBB
CHECKED:	JPW
CHECKED:	CWD
APPROVED:	JPW
FILENAME:	18016-MOD
BC PROJECT NUMBER:	152166
CLIENT PROJECT NUMBER:	CITY CIP# SS7428

**CIVIL**  
**EASEMENTS, ESC PLAN**  
**STA. 90+00 TO 107+50**  
DRAWING NUMBER  
**200-C-06**  
SHEET NUMBER  
43 OF 55

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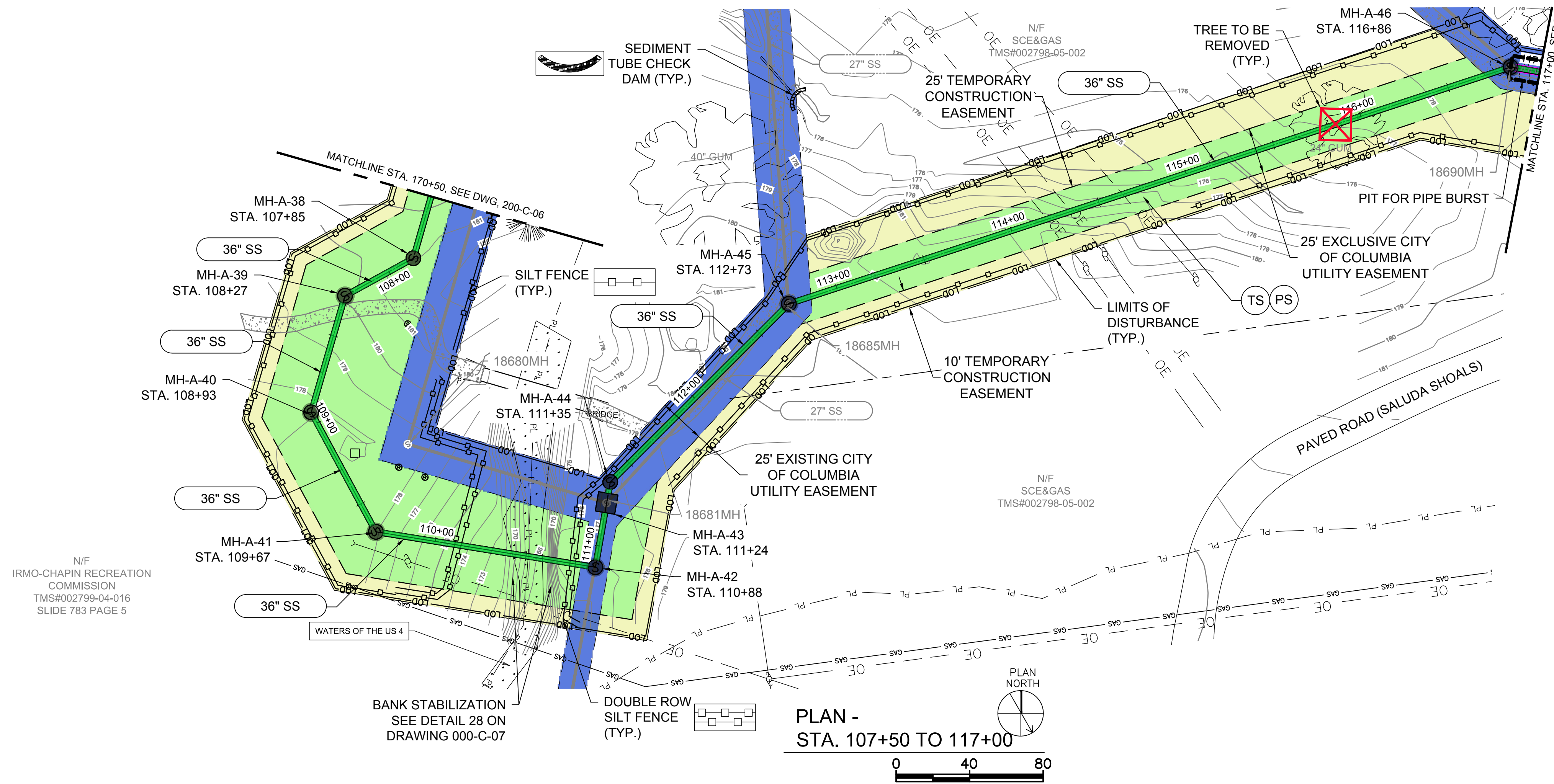




1 2 3 4 5 6

D

C



PLAN -  
STA. 107+50 TO 117+00

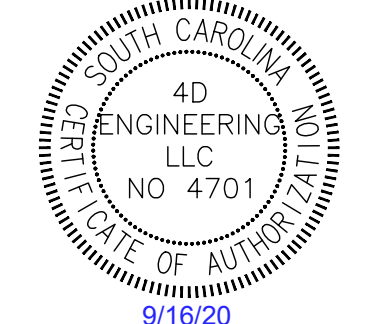
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**LEGEND**

- SILT FENCE
- DOUBLE ROW SILT FENCE
- TREE PROTECTION
- EXISTING TREE TO BE REMOVED
- PROPOSED EASEMENT AREA (WIDTH VARIES)
- PROPOSED TEMP. EASEMENT AREA (WIDTH VARIES)
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**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

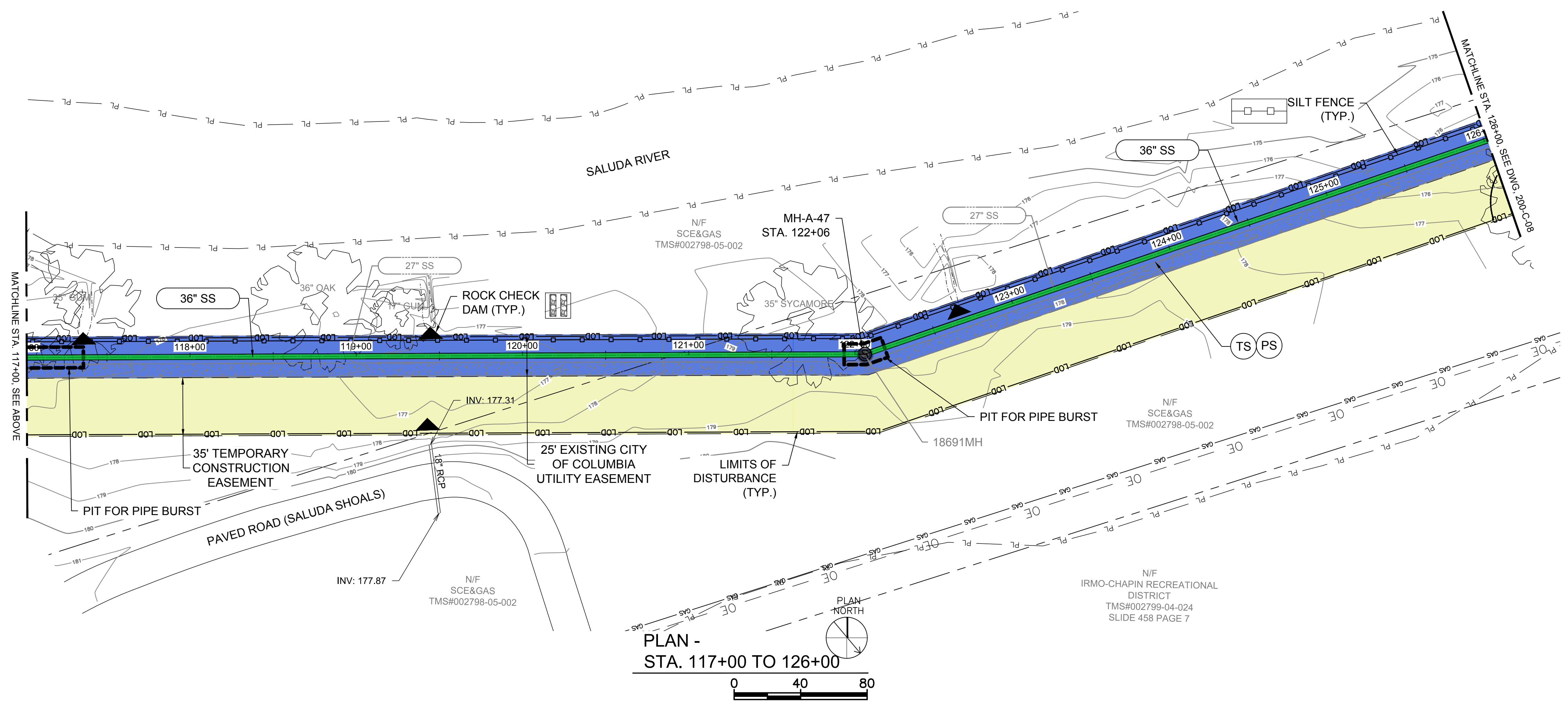
100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

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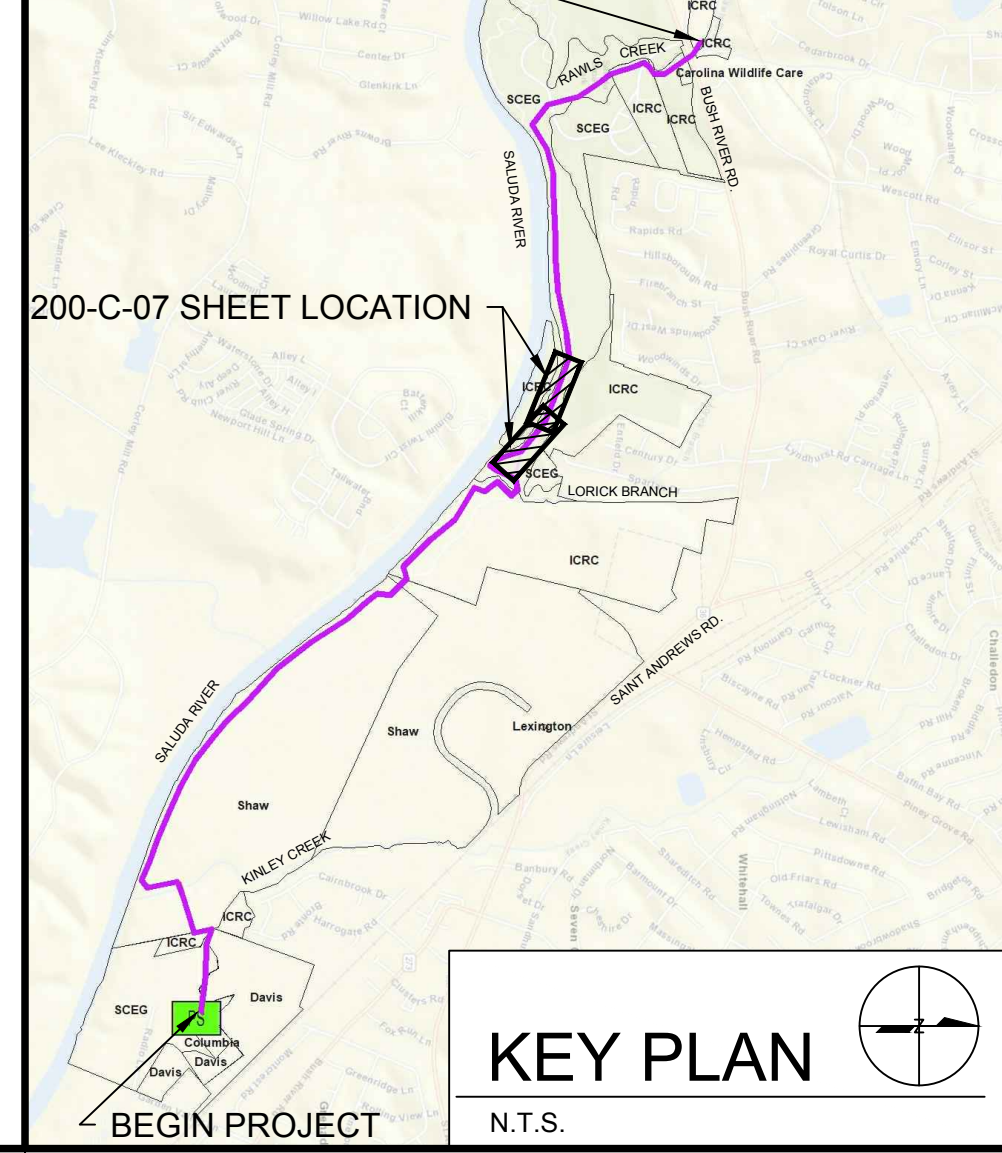
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PLAN -  
STA. 117+00 TO 126+00

**END PROJECT**



**KEY PLAN**  
N.T.S.

DESIGNED:	JTB
DRAWN:	CBB
CHECKED:	JPW
CHECKED:	CWD
APPROVED:	JPW
FILENAME:	18016-MOD
BC PROJECT NUMBER:	152166
CLIENT PROJECT NUMBER:	CITY CIP# SS7428

**CIVIL**

**EASEMENTS, ESC PLAN**  
STA. 107+50 TO 126+00

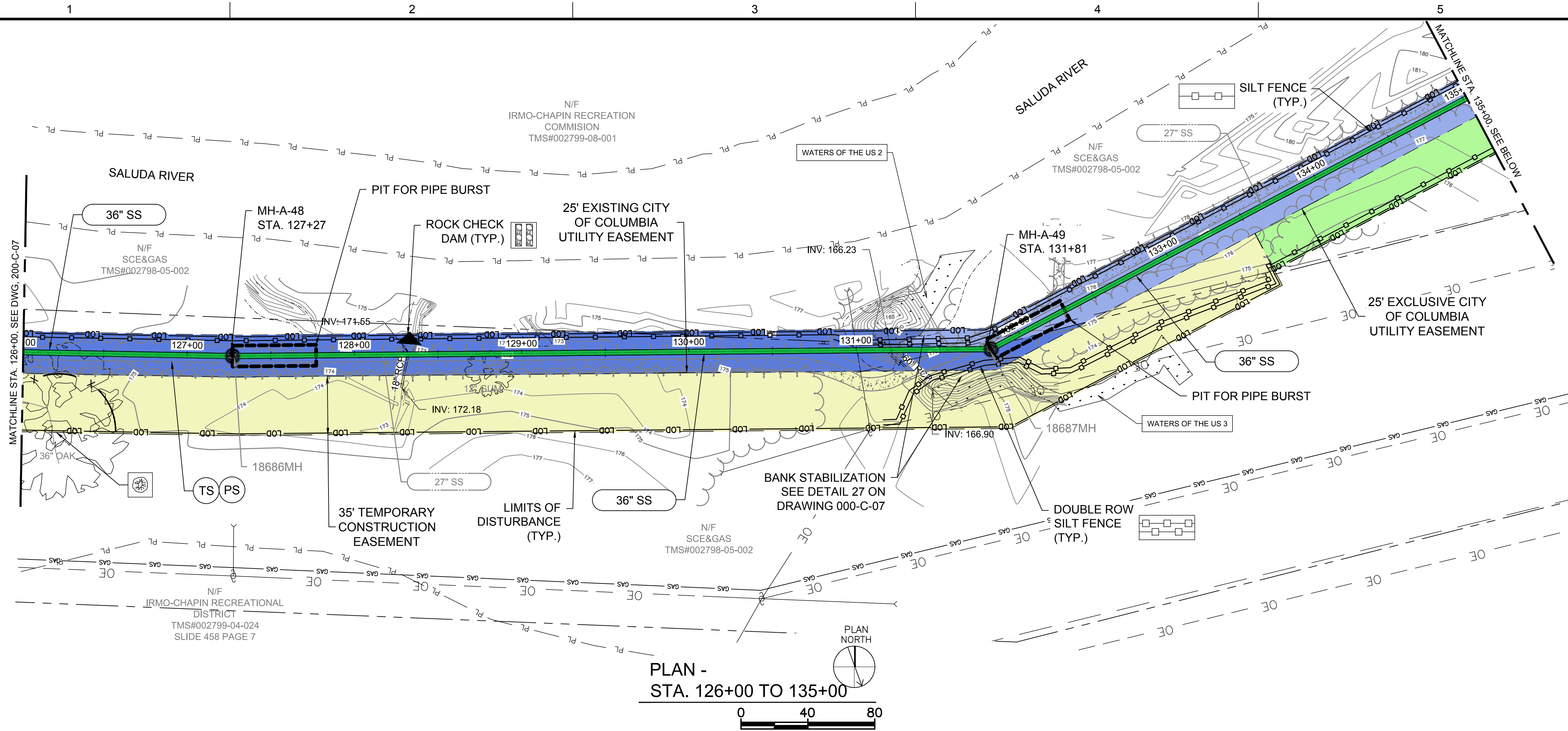
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SHEET NUMBER  
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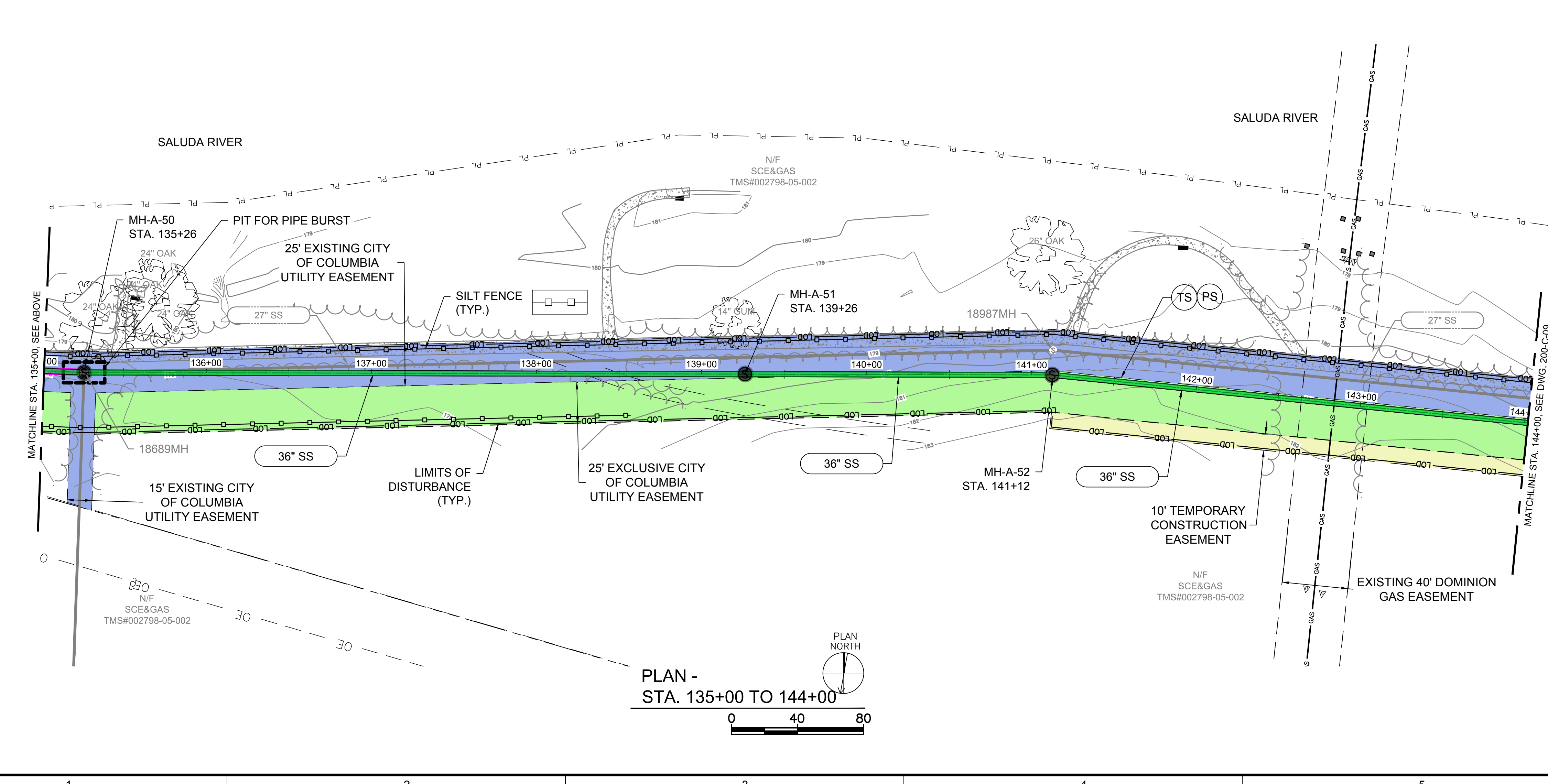


PLAN -  
STA. 126+00 TO 135+00

### LEGEND

- SILT FENCE
- DOUBLE ROW SILT FENCE
- TREE PROTECTION
- EXISTING TREE TO BE REMOVED
- PROPOSED EASEMENT AREA (WIDTH VARIES)
- PROPOSED TEMP. EASEMENT AREA (WIDTH VARIES)
- EXISTING EASEMENT AREA

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PLAN -  
STA. 135+00 TO 144+00

### KEY PLAN

200-C-08 SHEET LOCATION

BEGIN PROJECT

END PROJECT

N.T.S.

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Professional Engineer Seal: South Carolina, No. 28702, John P. Wainwright

**Columbia Water**

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## LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED:	JTB
DRAWN:	CBB
CHECKED:	JPW
CHECKED:	CWD
APPROVED:	JPW
FILENAME:	18016-MOD
BC PROJECT NUMBER:	152166
CLIENT PROJECT NUMBER:	CITY CIP# SS7428

CIVIL

EASEMENTS, ESC PLAN

STA. 126+00 TO 144+00

DRAWING NUMBER

**200-C-08**

SHEET NUMBER

45 OF 55

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# 4D

**ENGINEERING**

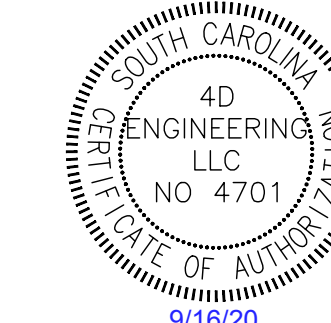
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**Brown AND Caldwell**

COLUMBIA, SOUTH CAROLINA



*John P. Wainwright*



### LEGEND

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- DOUBLE ROW SILT FENCE
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- EXISTING TREE TO BE REMOVED
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### LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION

100% BID DOCUMENTS

#### REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

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 DRAWN: CBB  
 CHECKED: JPW  
 CHECKED: CWD  
 APPROVED: JPW

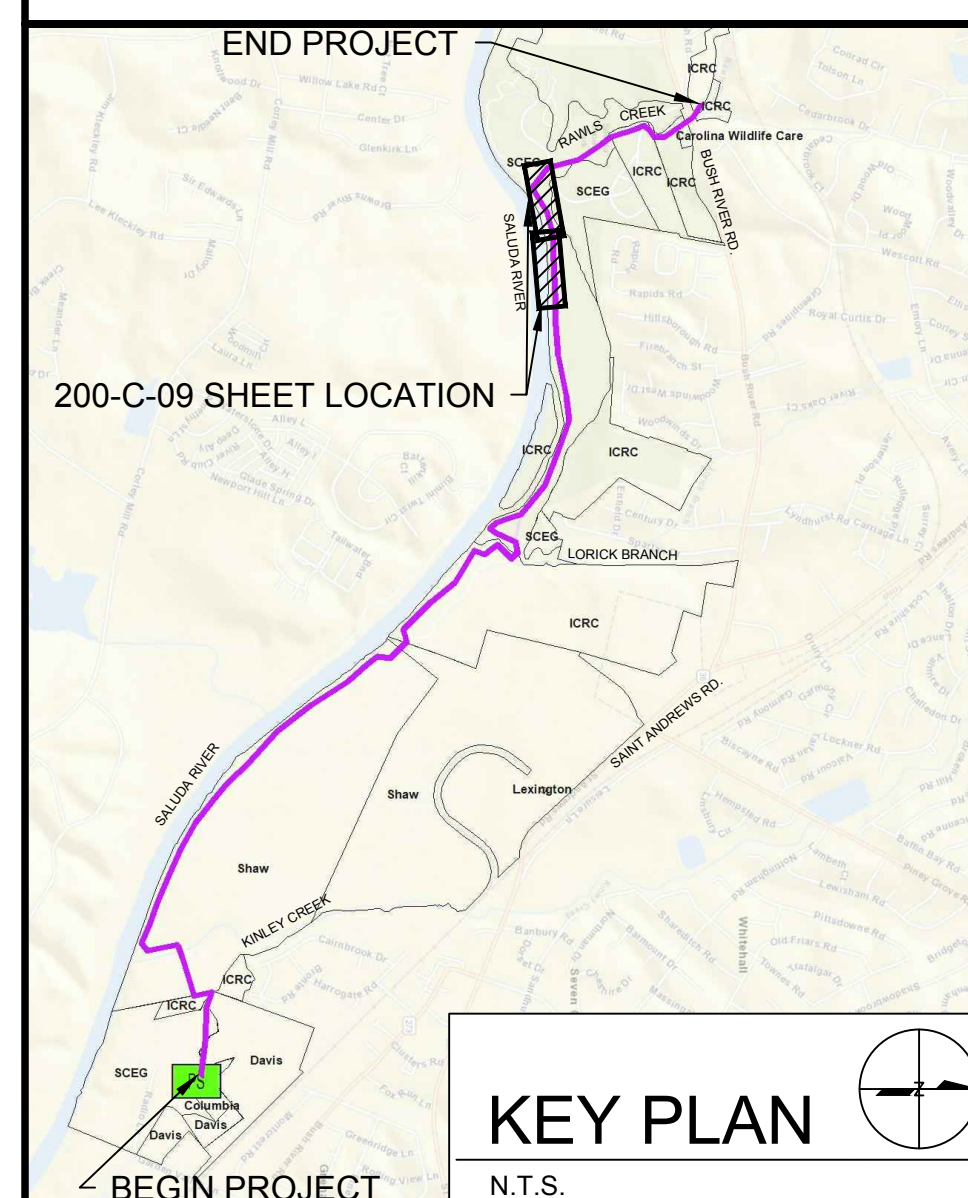
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 CLIENT PROJECT NUMBER: CITY CIP# SS7428

**CIVIL**

**EASEMENTS, ESC PLAN**  
 STA. 144+00 TO 162+00

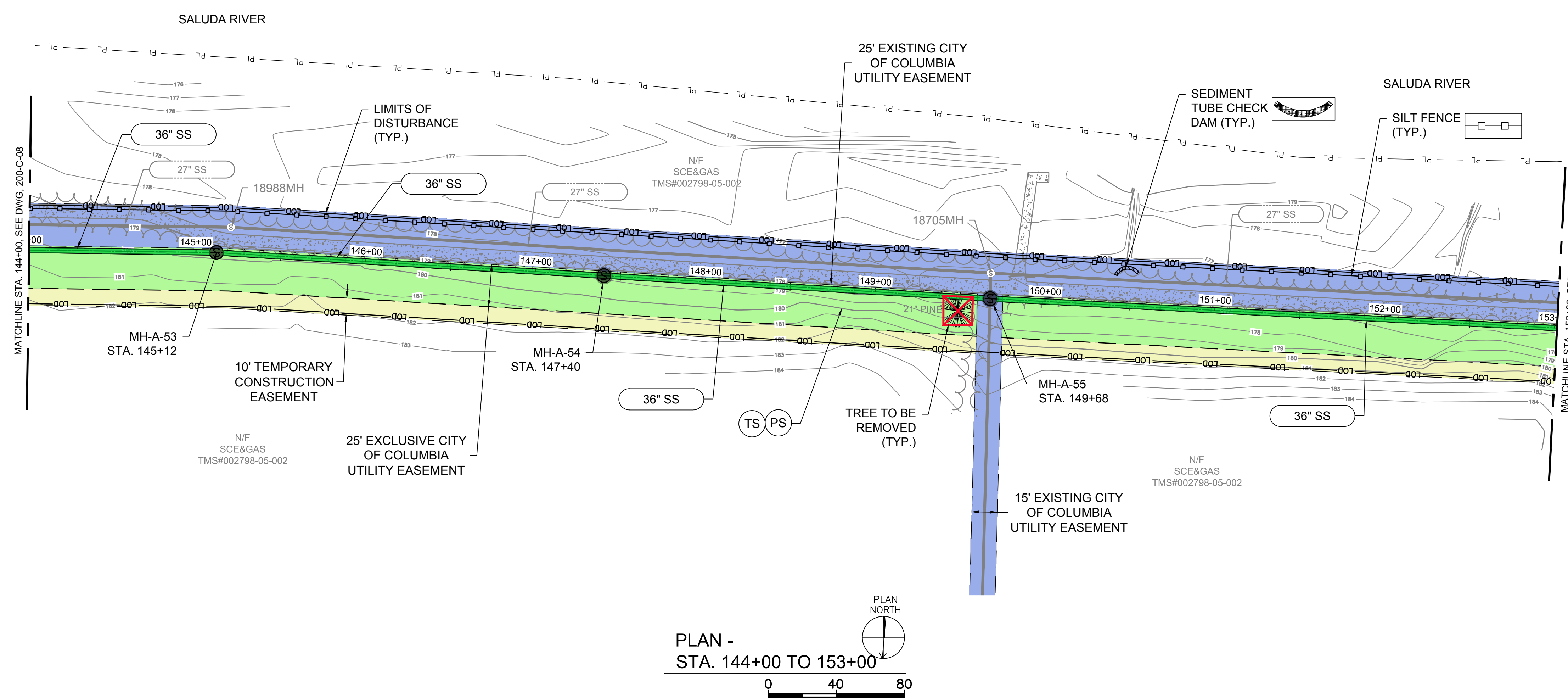
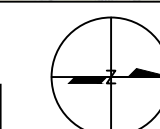
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SHEET NUMBER  
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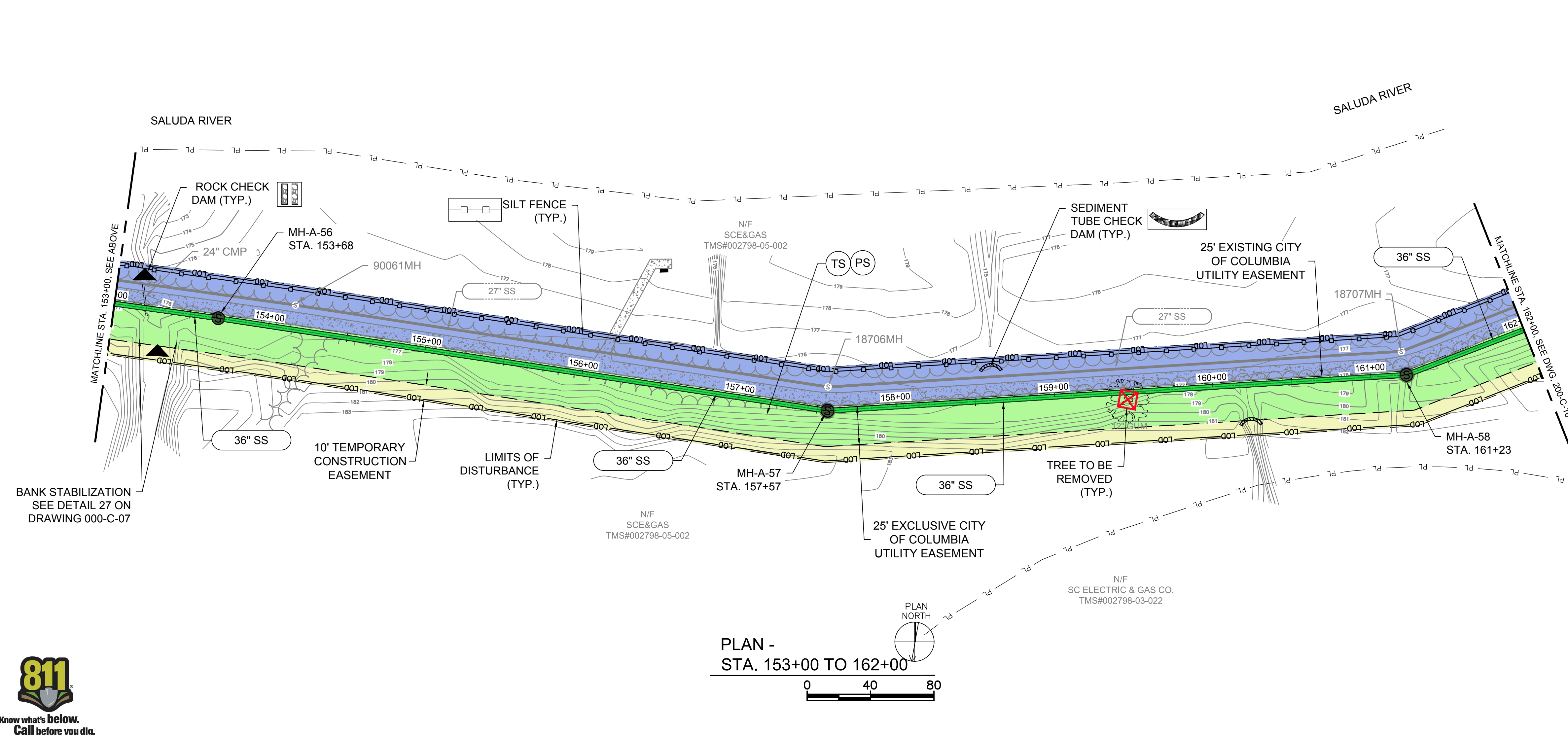
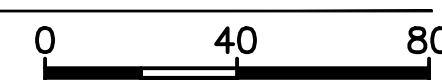


**KEY PLAN**

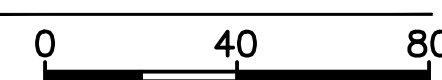
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PLAN - STA. 144+00 TO 153+00



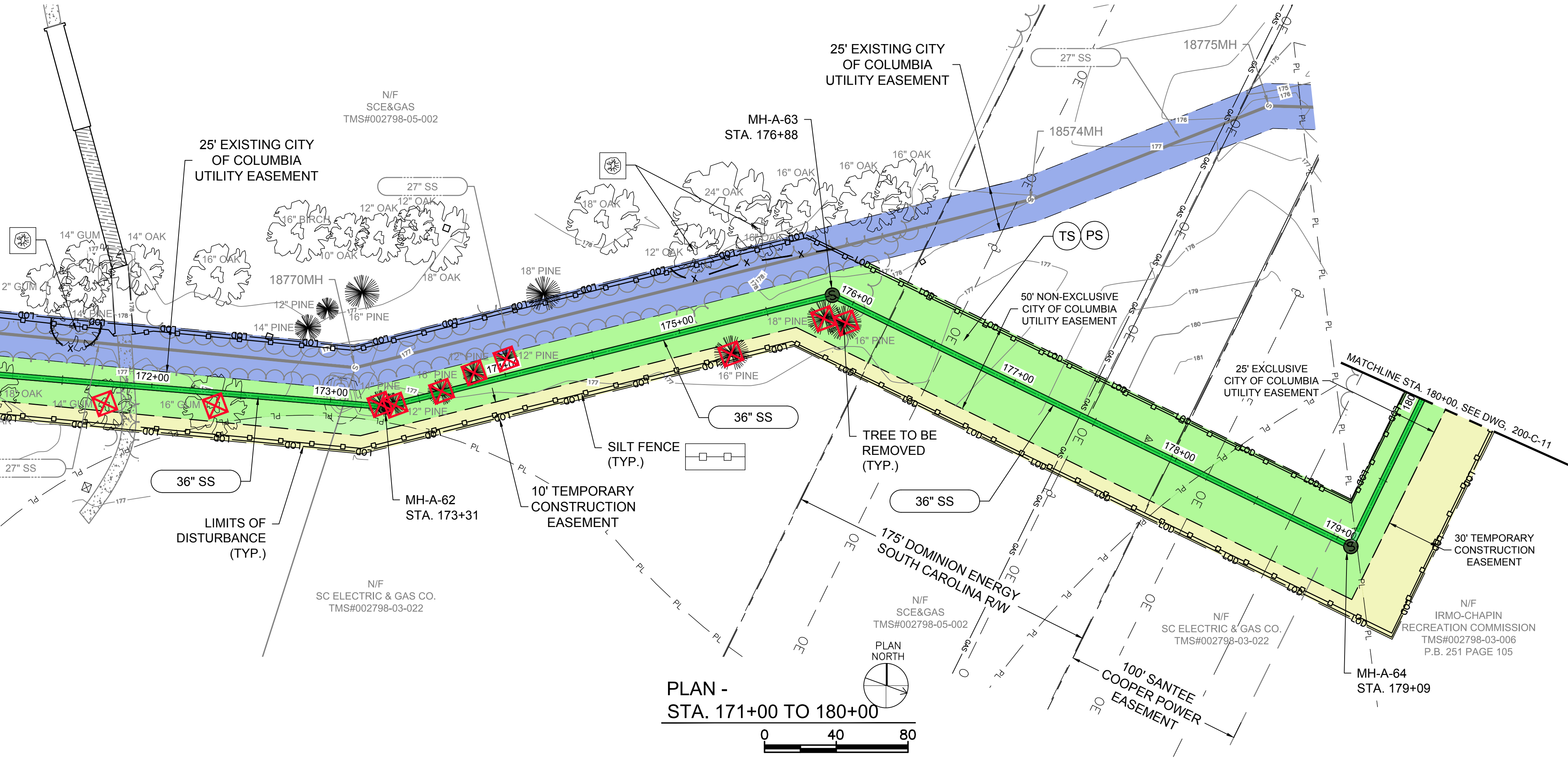
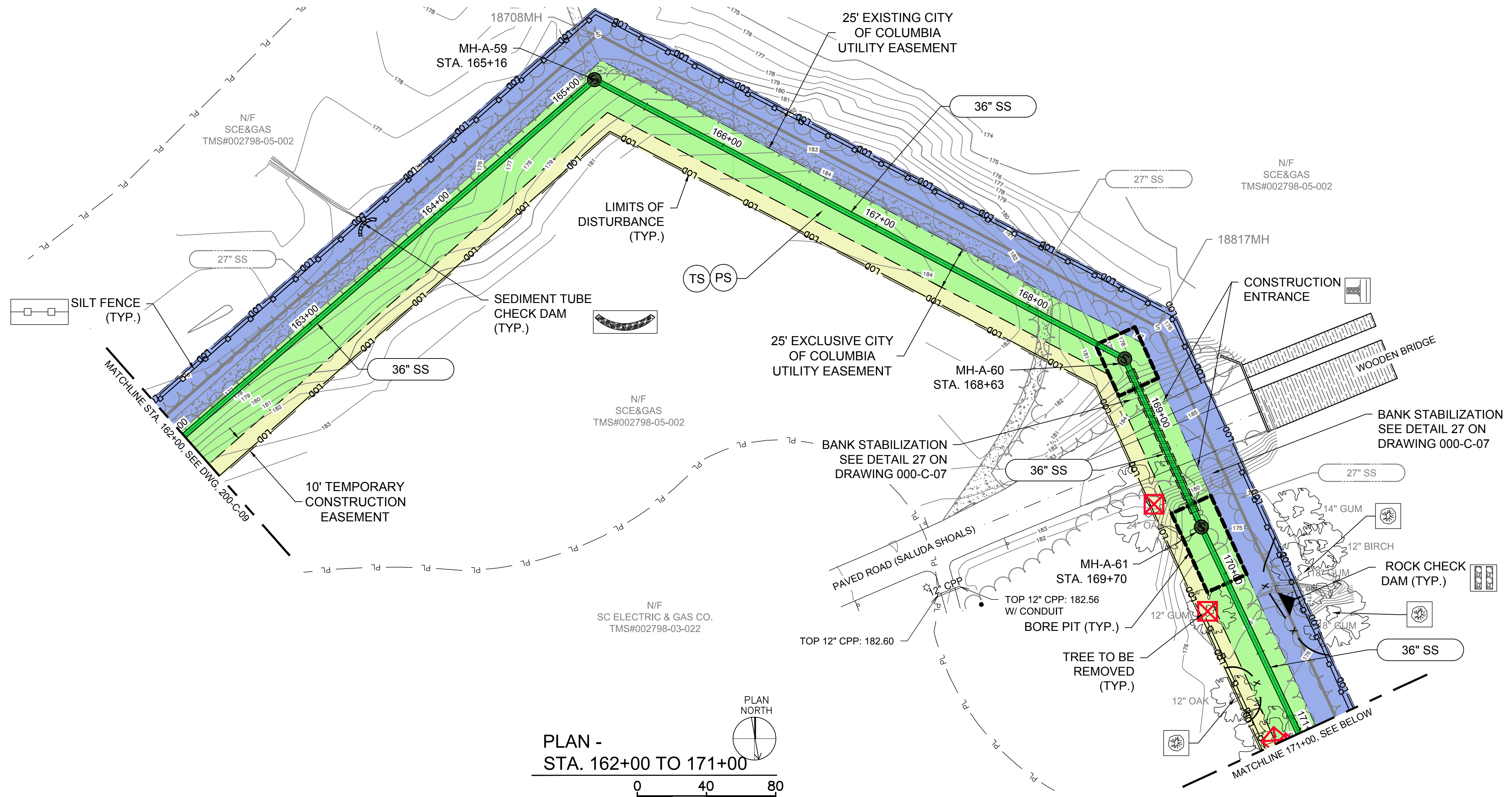
PLAN - STA. 153+00 TO 162+00



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 COLUMBIA, SOUTH CAROLINA

**LEGEND**

- SILT FENCE
- DOUBLE ROW SILT FENCE
- TREE PROTECTION
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- EXISTING EASEMENT AREA

- EROSION CONTROL NOTES:**
- SYMBOLS AND NUMBERS DENOTE EROSION AND SEDIMENT CONTROL PRACTICES PER THE SCDHEC STORM WATER MANAGEMENT BMP HANDBOOK, LATEST REVISION. THESE DETAILS ARE INCORPORATED BY REFERENCE.
  - BMP'S SHALL BE PLACED PRIOR TO ANY WORK BEING DONE AND SHOULD BE MAINTAINED AS OFTEN AS NECESSARY. EROSION AND SEDIMENT CONTROL INSPECTIONS SHOULD OCCUR WEEKLY AND BMP'S SHALL BE ADJUSTED/ADDED TO MATCH ONSITE CONDITIONS AND LIMIT SEDIMENT AND EROSION.
  - TREES SHOWN TO BE PROTECTED SHALL REMAIN IN PLACE. IF A PROTECTED TREE NEEDS TO BE REMOVED DUE TO POTENTIAL IMPACTS, CONTACT ENGINEER FOR APPROVAL PRIOR TO REMOVAL.
  - AREA WITHIN LIMITS OF DISTURBANCE TO BE CLEARED, EXCEPT FOR TREES SPECIFICALLY CALLED OUT FOR PROTECTION.

**END PROJECT**  
 200-C-10 SHEET LOCATION

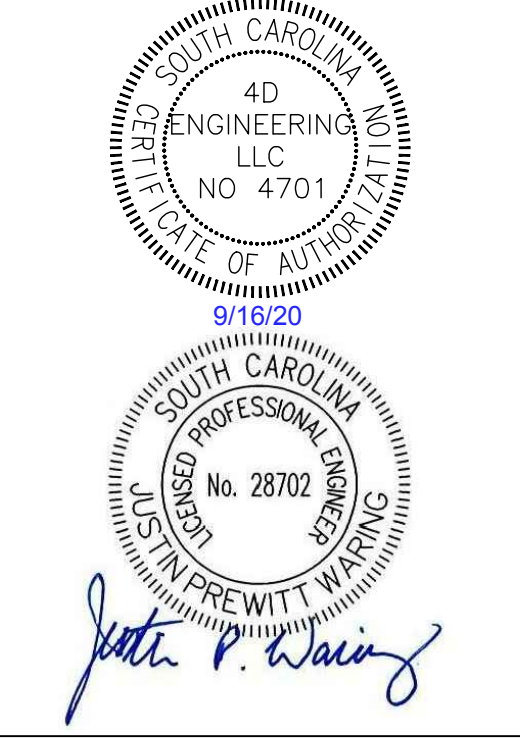
**KEY PLAN**  
 N.T.S.

DESIGNED: JTB  
 DRAWN: CBB  
 CHECKED: JPW  
 CHECKED: CWD  
 APPROVED: JPW

FILENAME: 18016-MOD  
 BC PROJECT NUMBER: 152166  
 CLIENT PROJECT NUMBER: CITY CIP# SS7428

**CIVIL**

**EASEMENTS, ESC PLAN**  
 STA. 162+00 TO 180+00  
 DRAWING NUMBER: 200-C-10  
 SHEET NUMBER: 47 OF 55



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

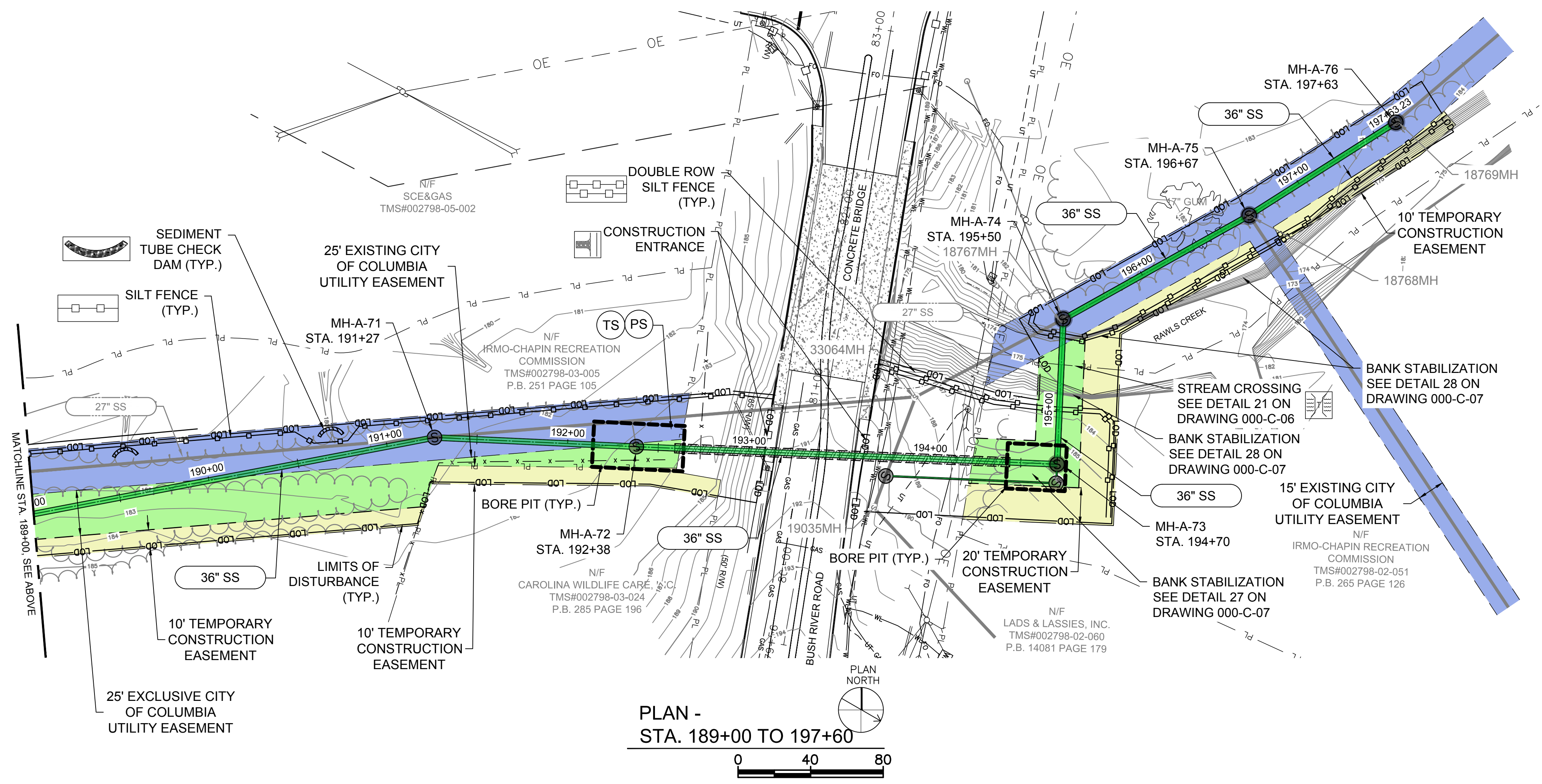
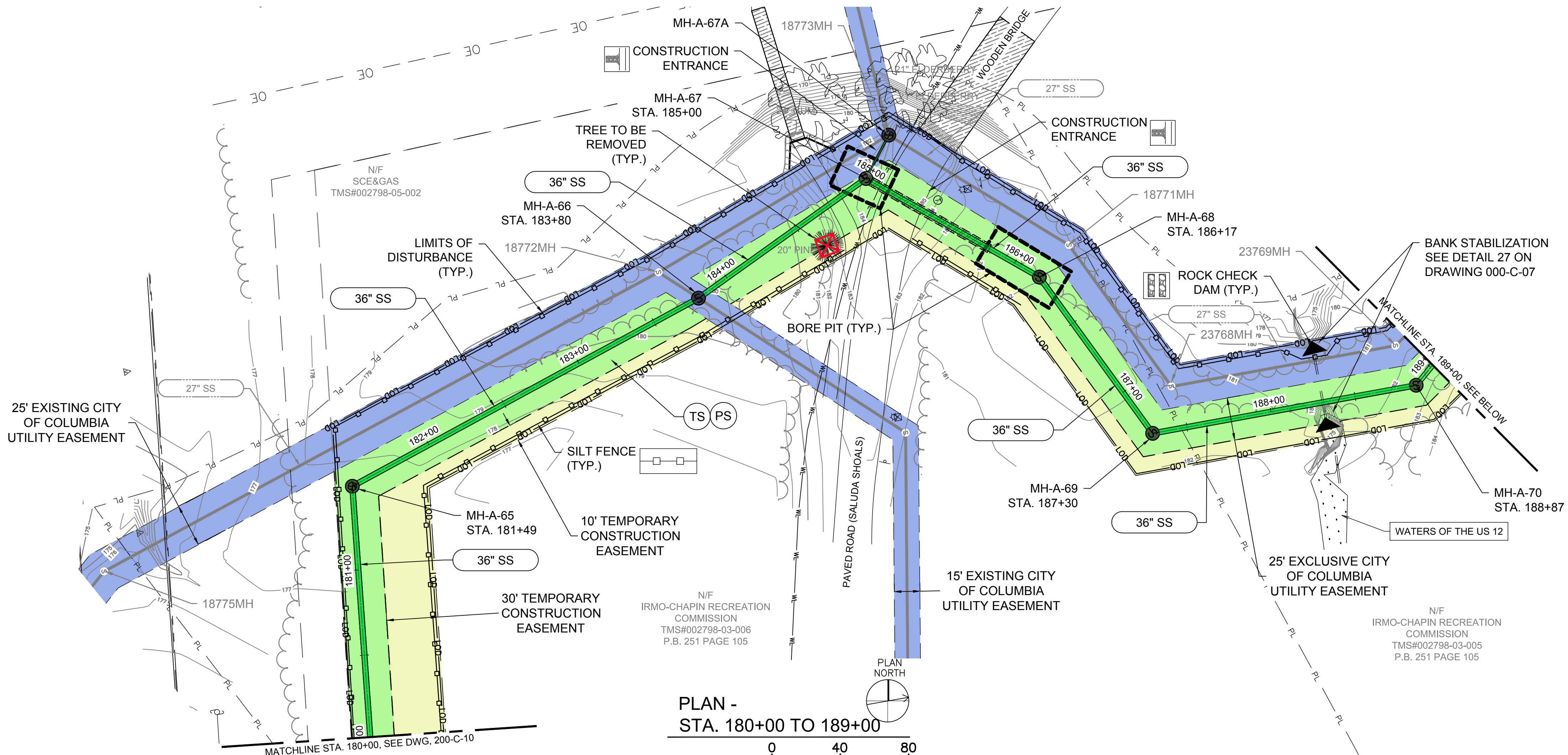
100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

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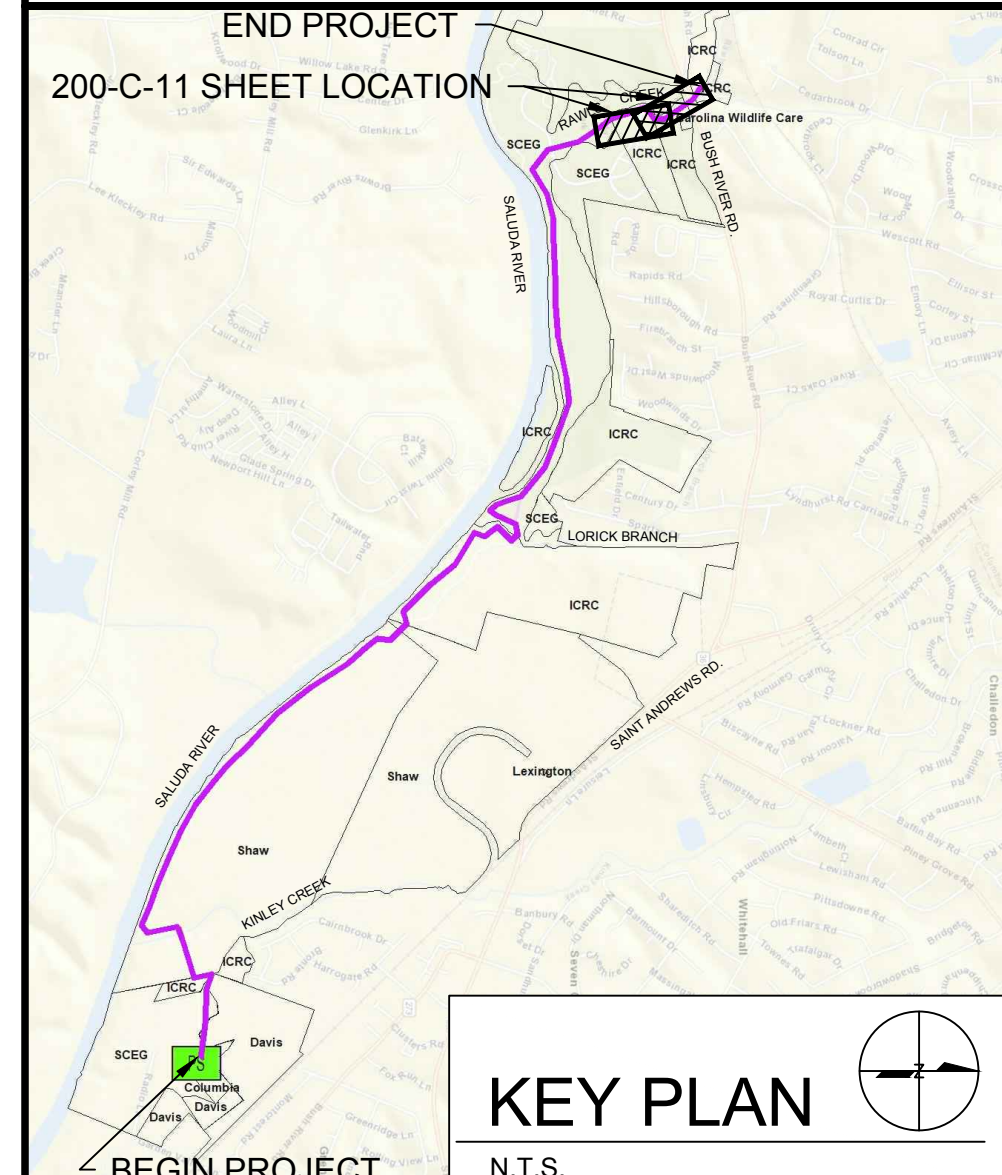
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**LEGEND**

- SILT FENCE
- DOUBLE ROW SILT FENCE
- TREE PROTECTION
- EXISTING TREE TO BE REMOVED
- PROPOSED EASEMENT AREA (WIDTH VARIES)
- PROPOSED TEMP. EASEMENT AREA (WIDTH VARIES)
- EXISTING EASEMENT AREA

- EROSION CONTROL NOTES:**
- SYMBOLS AND NUMBERS DENOTE EROSION AND SEDIMENT CONTROL PRACTICES PER THE SCDHEC STORM WATER MANAGEMENT BMP HANDBOOK, LATEST REVISION. THESE DETAILS ARE INCORPORATED BY REFERENCE.
  - BMP'S SHALL BE PLACED PRIOR TO ANY WORK BEING DONE AND SHOULD BE MAINTAINED AS OFTEN AS NECESSARY. EROSION AND SEDIMENT CONTROL INSPECTIONS SHOULD OCCUR WEEKLY AND BMP'S SHALL BE ADJUSTED/ADDED TO MATCH ONSITE CONDITIONS AND LIMIT SEDIMENT AND EROSION.
  - TREES SHOWN TO BE PROTECTED SHALL REMAIN IN PLACE. IF A PROTECTED TREE NEEDS TO BE REMOVED DUE TO POTENTIAL IMPACTS, CONTACT ENGINEER FOR APPROVAL PRIOR TO REMOVAL.
  - AREA WITHIN LIMITS OF DISTURBANCE TO BE CLEARED, EXCEPT FOR TREES SPECIFICALLY CALLED OUT FOR PROTECTION.



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 4D ENGINEERING LLC  
 No. 28702  
 9/19/20

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**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED: JTB  
 DRAWN: CBB  
 CHECKED: JPW  
 CHECKED: CWD  
 APPROVED: JPW

FILENAME: 18016-MOD  
 BC PROJECT NUMBER: 152166  
 CLIENT PROJECT NUMBER: CITY CIP# SS7428

**CIVIL**

**EASEMENTS, ESC PLAN STA. 180+00 TO 197+60**

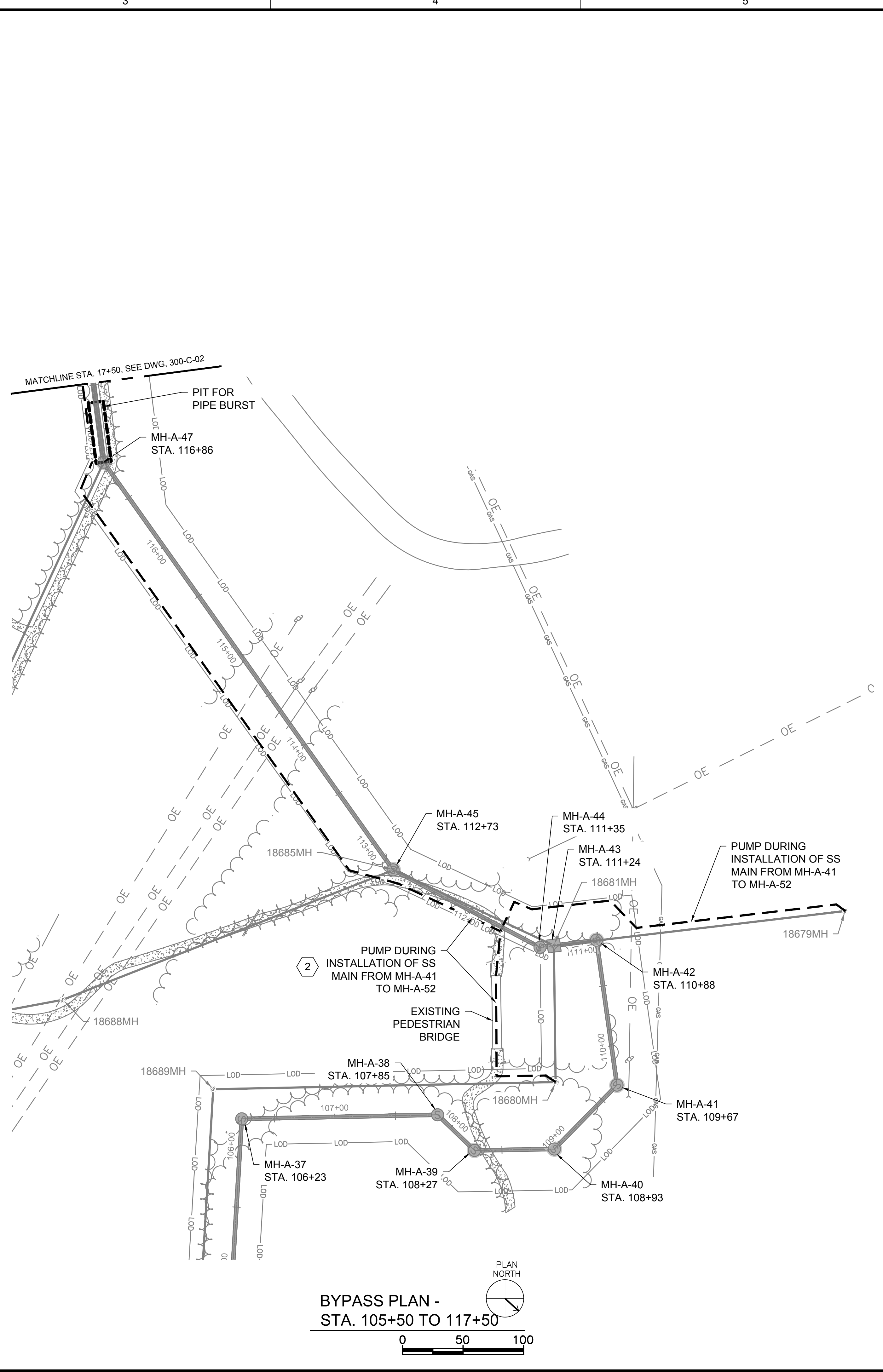
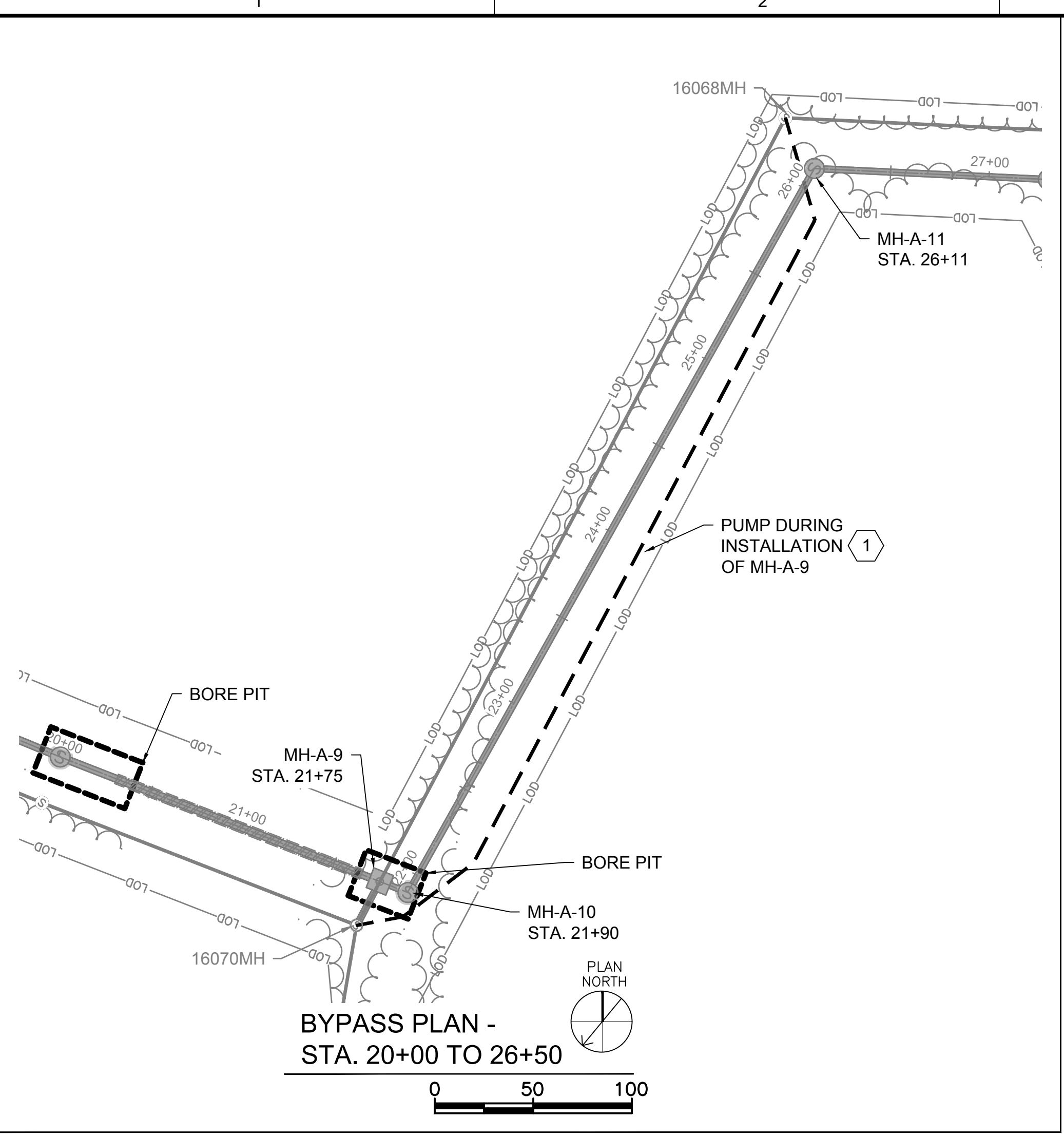
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 SHEET NUMBER: 48 OF 55

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- GENERAL NOTES:
- CONTRACTOR SHALL PROVIDE BYPASS PUMPING FOR THE EXISTING SEWER THROUGHOUT THE DURATION OF THE INSTALLATION OF ANY GIVEN SS MAIN AND SHALL TAKE WHATEVER MEASURES NECESSARY TO BYPASS THE EXISTING FLOW SAFELY.
  - ALL BYPASS PLANS SHALL BE SUBMITTED TO THE ENGINEER AND CITY FOR REVIEW AND APPROVAL PRIOR TO THE START OF CONSTRUCTION.
  - ALL PROPOSED SANITARY SEWER LINES THAT ARE PROPOSED TO RECEIVE FLOW DURING BYPASS SHALL HAVE EITHER A TEMPORARY PERMIT TO OPERATE OR THE PERMIT TO OPERATE.

SOUTH CAROLINA  
 4D ENGINEERING  
 LLC  
 NO. 4701  
 9/19/20  
 STATE OF SOUTH CAROLINA  
 PROFESSIONAL ENGINEER  
 No. 28702  
 JOHN P. WAIN  
 JOHN P. WAIN

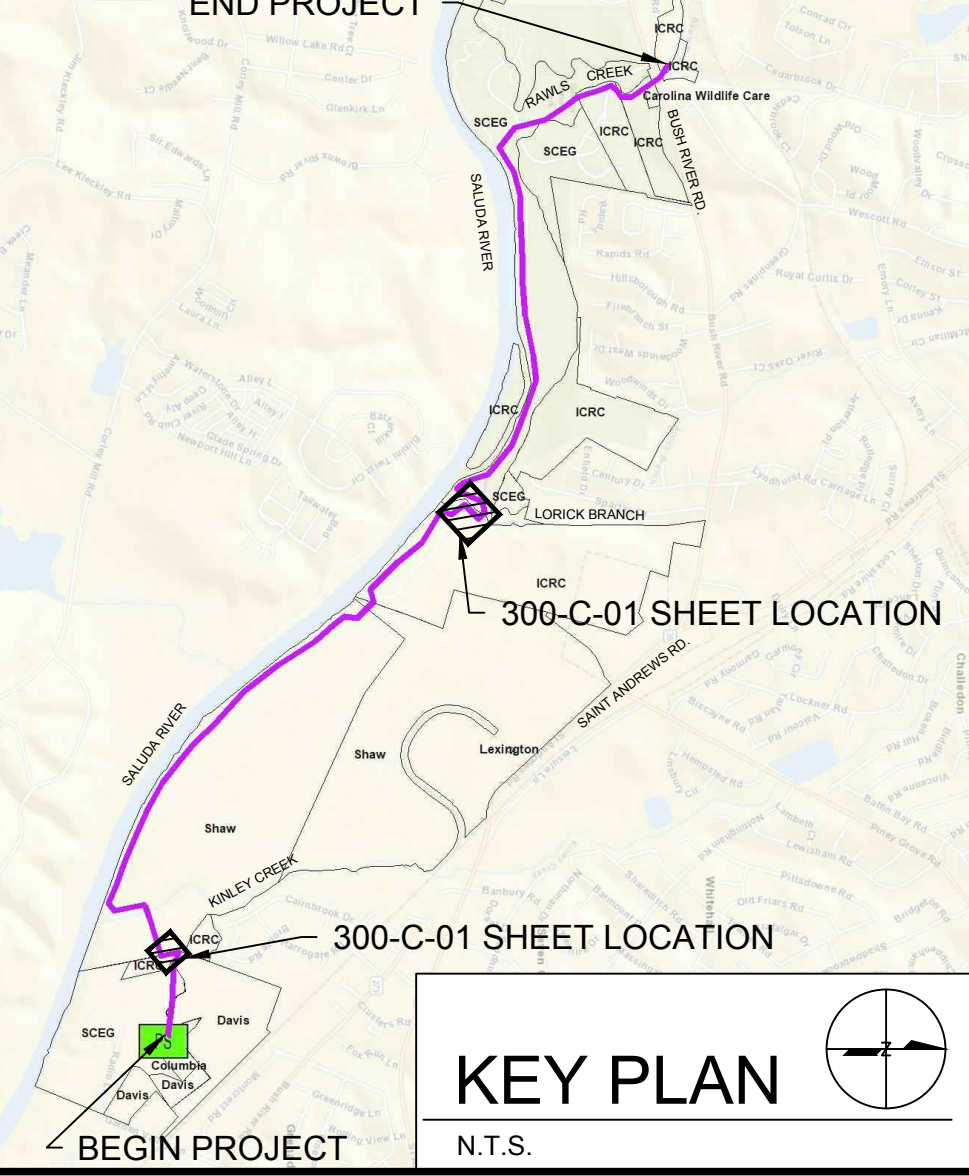
- KEY NOTES:
- BYPASS PUMP FROM 16068MH TO 16070MH FOR THE INSTALLATION OF MH-A-9.
  - BYPASS PUMP FROM 18987MH AND MH-18679 TO 18680MH FOR INSTALLATION OF SS MAIN FROM MH-A-41 TO MH-A-52. BYPASS PIPING SHALL NOT BE PLACED IN THE EXISTING CREEK INSTEAD PIPING CAN BE PLACED ALONG THE EXISTING PEDESTRIAN BRIDGE THAT GOES OVER THE CREEK.

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**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

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REVISIONS		
REV	DATE	DESCRIPTION

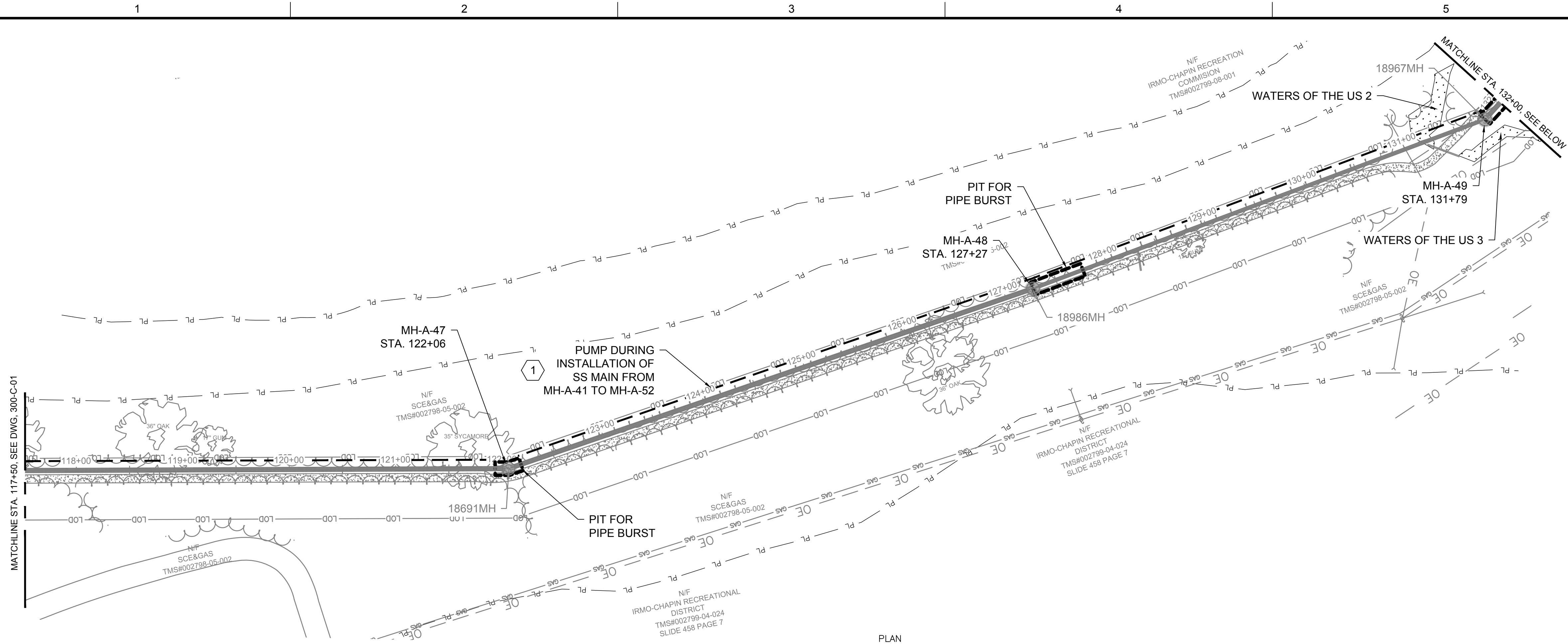


LINE IS 2 INCHES AT FULL SIZE  
 DESIGNED: JTB  
 DRAWN: CBB  
 CHECKED: JPW  
 CHECKED: CWD  
 APPROVED: JPW  
 FILENAME: 18016-MOD  
 BC PROJECT NUMBER: 152166  
 CLIENT PROJECT NUMBER: CITY CIP# SS7428

CIVIL  
 SEWER BYPASS PLAN 1  
 DRAWING NUMBER: 300-C-01  
 SHEET NUMBER: 49 OF 55

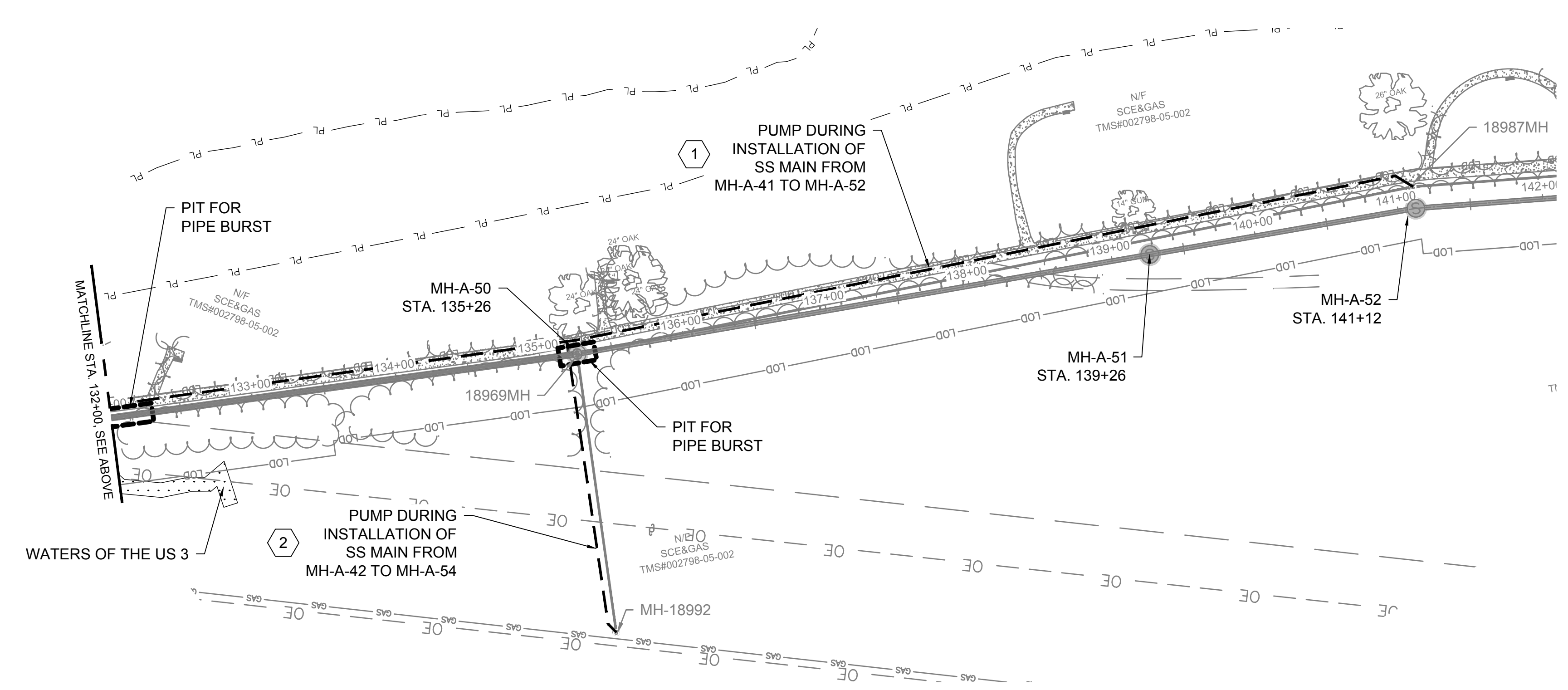






**BYPASS PLAN -  
STA. 117+50 TO 132+00**

0 60 120



**BYPASS PLAN -  
STA. 132+00 TO 142+00**

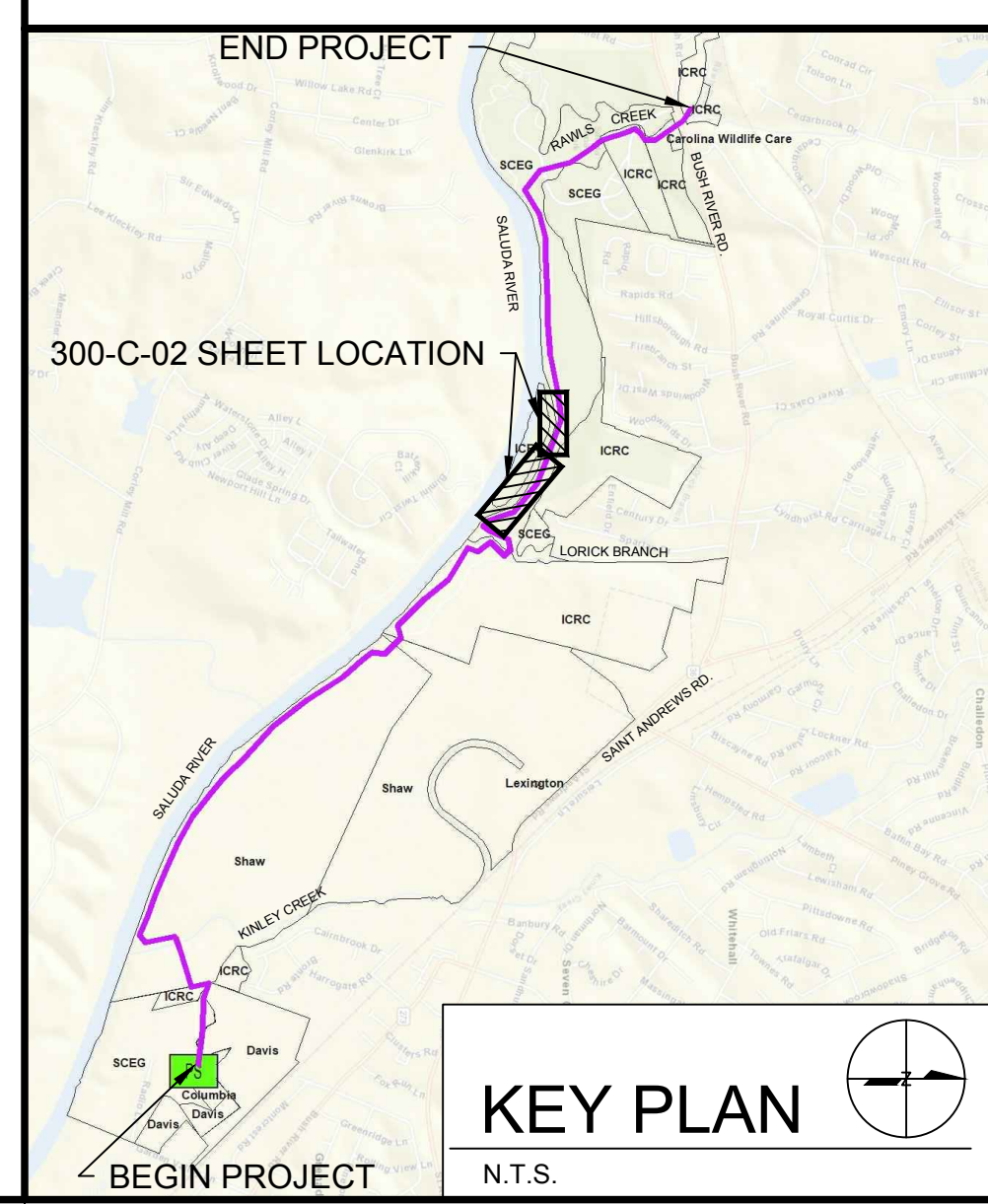
0 60 120

**GENERAL NOTES:**

1. CONTRACTOR SHALL PROVIDE BYPASS PUMPING FOR THE EXISTING SEWER THROUGHOUT THE DURATION OF THE INSTALLATION OF ANY GIVEN SS MAIN AND SHALL TAKE WHATEVER MEASURES NECESSARY TO BYPASS THE EXISTING FLOW SAFELY.
2. ALL BYPASS PLANS SHALL BE SUBMITTED TO THE ENGINEER AND CITY FOR REVIEW AND APPROVAL PRIOR TO THE START OF CONSTRUCTION.
3. ALL PROPOSED SANITARY SEWER LINES THAT ARE PROPOSED TO RECEIVE FLOW DURING BYPASS SHALL HAVE EITHER A TEMPORARY PERMIT TO OPERATE OR THE PERMIT TO OPERATE.

**KEY NOTES:**

1. BYPASS PUMP FROM 18987MH TO 18680MH FOR THE INSTALLATION OF THE SS MAIN AND MANHOLES FROM MH-A-41 TO MH-A-52. BYPASS SHALL OCCUR DURING THE ENTIRE DURATION OF THE INSTALLATION AND SHOULD NOT BE TERMINATED UNTIL PTO'S HAVE BEEN OBTAINED.
2. BYPASS PUMP FROM 18992MH TO 18680MH FOR THE INSTALLATION OF THE SS MAIN AND MANHOLES FROM MH-A-41 TO MH-A-52.



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Professional Engineer Seal: SOUTH CAROLINA, 4D ENGINEERING LLC, NO. 4701, 91920.  
Professional Engineer Seal: SOUTH CAROLINA, No. 28702, JOHN P. WAIN.



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED:	JTB
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APPROVED:	JPW
FILENAME:	18016-MOD
BC PROJECT NUMBER:	152166
CLIENT PROJECT NUMBER:	CITY CIP# SS7428

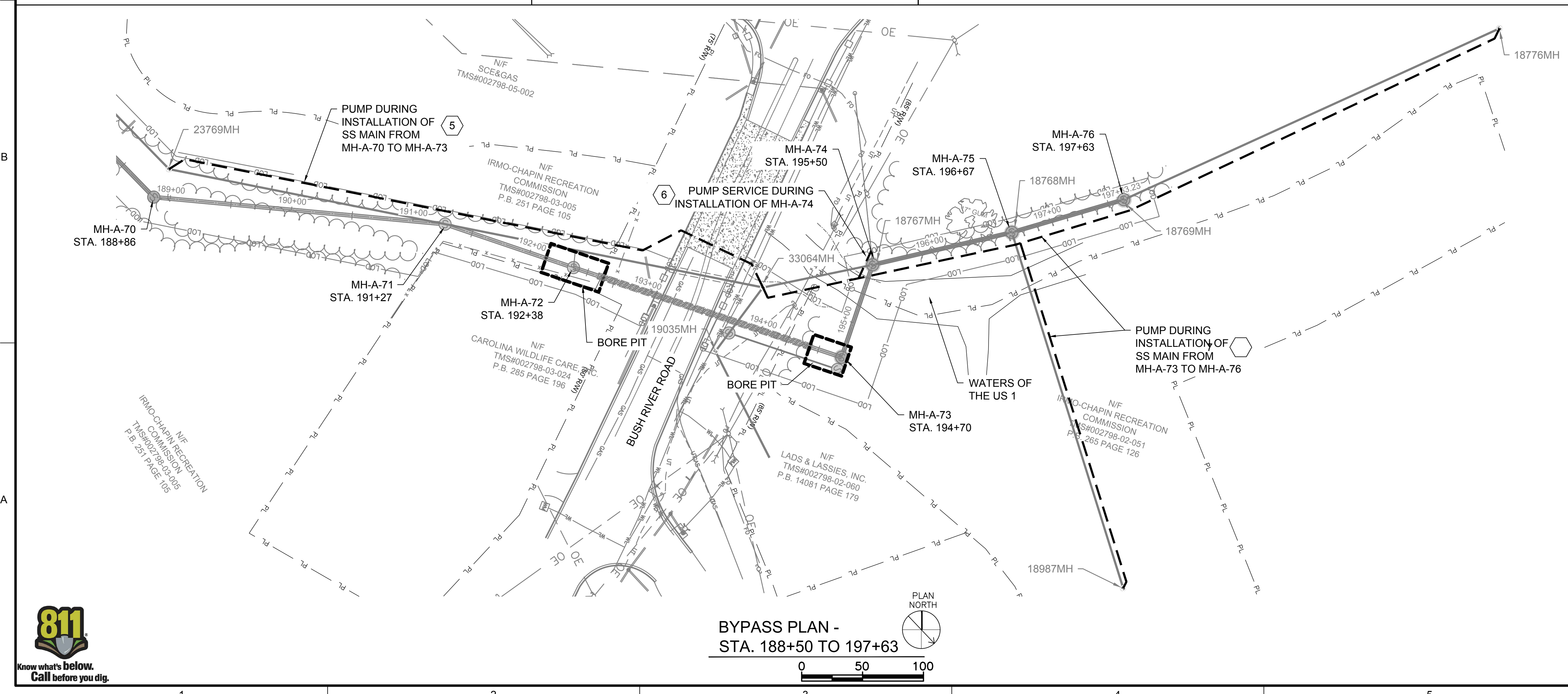
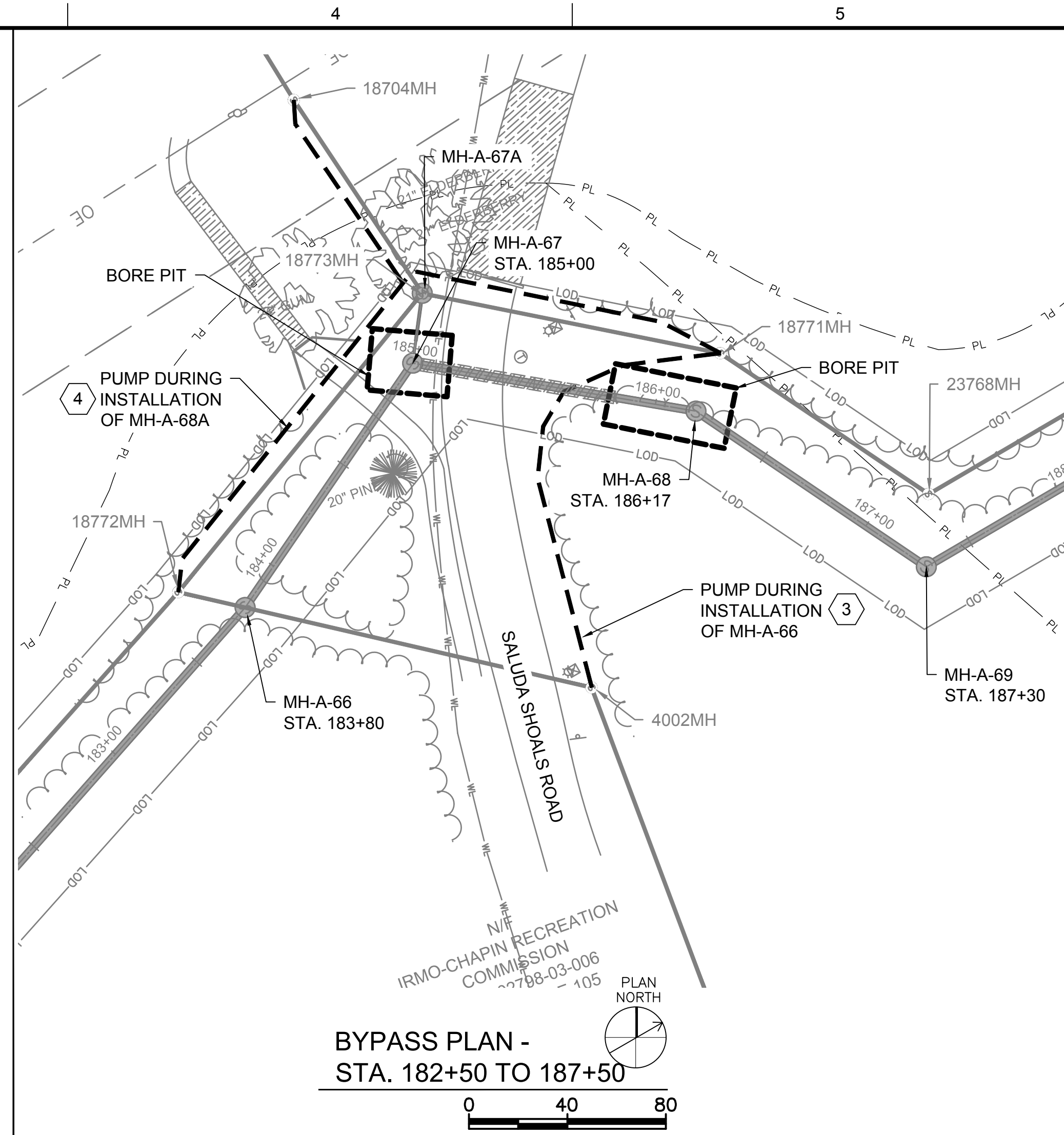
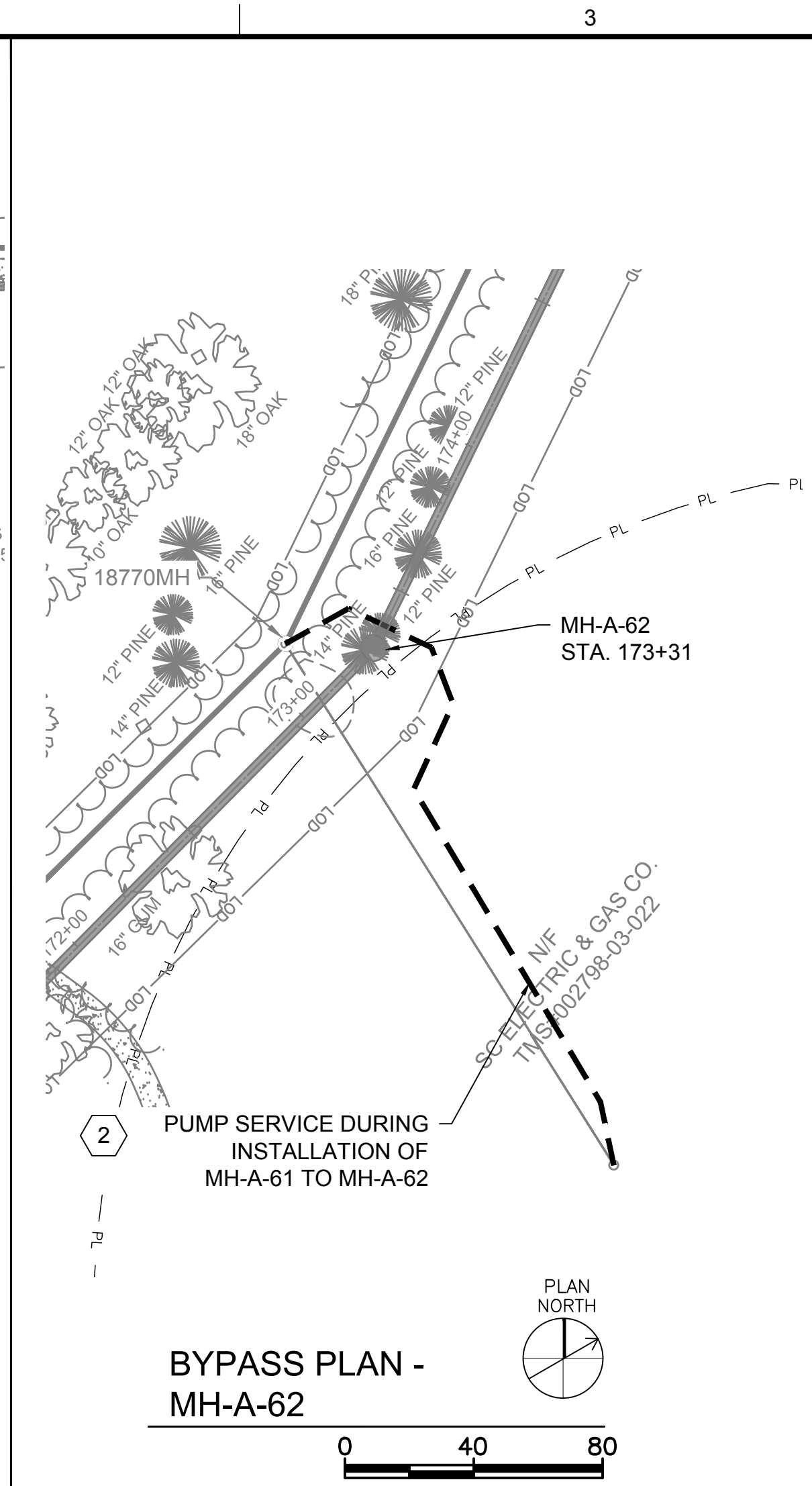
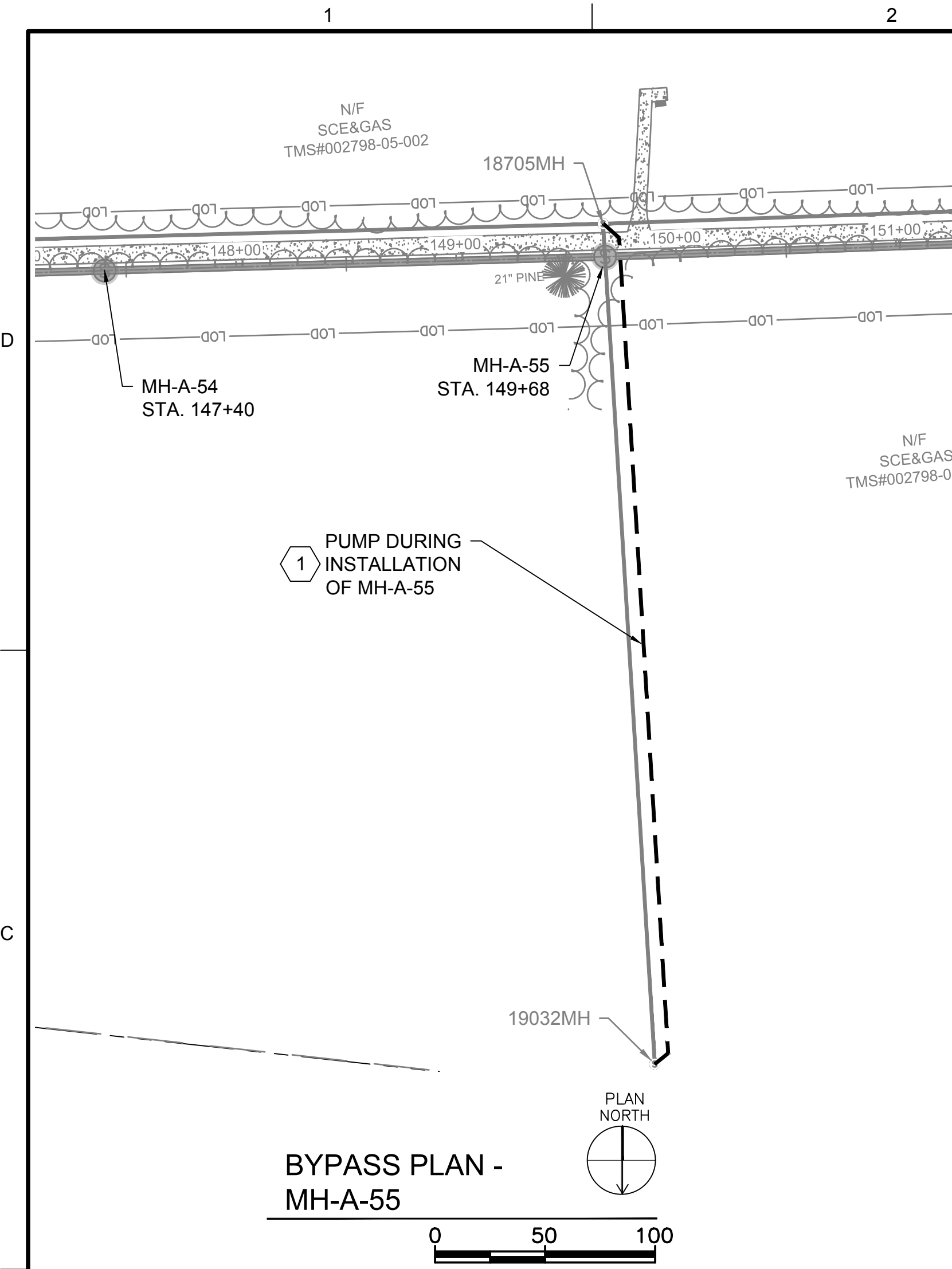
**CIVIL SEWER BYPASS PLAN 2**

DRAWING NUMBER	<b>300-C-02</b>
SHEET NUMBER	50 OF 55

Path: \\4D-DC1\4D-DOCUMENTS\JOBS\18016 - LOWER SALUDA RELIEF SEWER\DWG FILENAME: 18016 - MOD.DWG PLOT DATE: 9/16/2020 8:39 AM CAD USER: 4DENGR7







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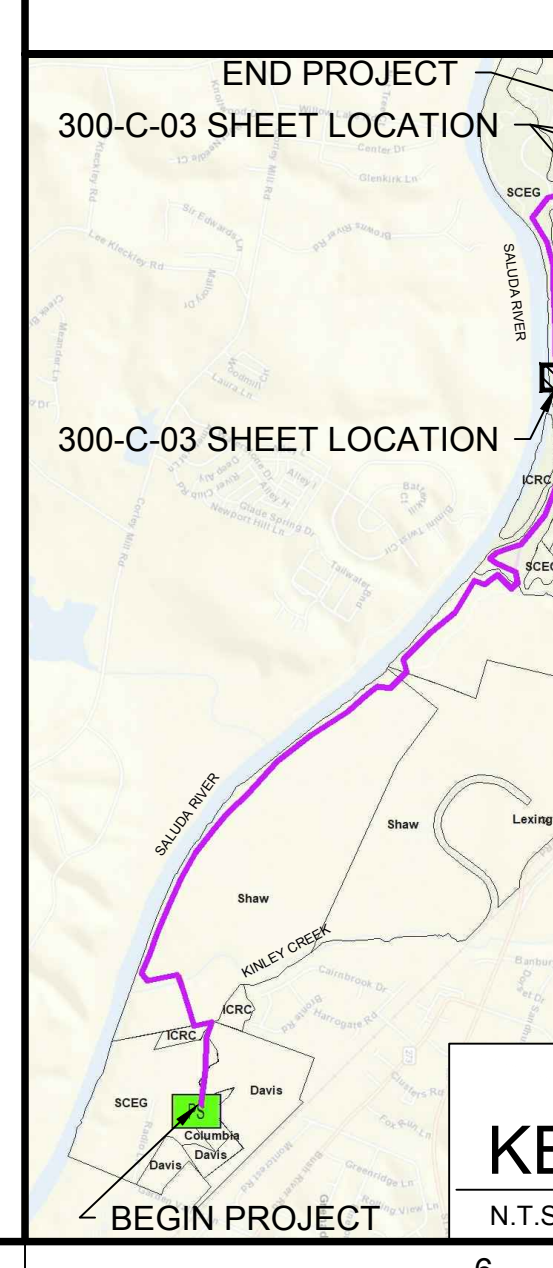
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**GENERAL NOTES:**

- CONTRACTOR SHALL PROVIDE BYPASS PUMPING FOR THE EXISTING SEWER THROUGHOUT THE DURATION OF THE INSTALLATION OF ANY GIVEN SS MAIN AND SHALL TAKE WHATEVER MEASURES NECESSARY TO BYPASS THE EXISTING FLOW SAFELY.
- ALL BYPASS PLANS SHALL BE SUBMITTED TO THE ENGINEER AND CITY FOR REVIEW AND APPROVAL PRIOR TO THE START OF CONSTRUCTION.
- ALL PROPOSED SANITARY SEWER LINES THAT ARE PROPOSED TO RECEIVE FLOW DURING BYPASS SHALL HAVE EITHER A TEMPORARY PERMIT TO OPERATE OR THE PERMIT TO OPERATE.

**KEY NOTES:**

- BYPASS PUMP FROM 19032MH TO 18705MH FOR THE INSTALLATION OF THE MH-A-55.
- BYPASS THE EXISTING SERVICE DURING THE INSTALLATION OF THE SS MAIN FROM MH-A-61 TO MH-A-62.
- BYPASS PUMP FROM 4002MH TO 18771MH FOR THE INSTALLATION OF THE MH-A-66.
- BYPASS PUMP FROM 18771MH AND 18704MH TO 18772MH FOR THE INSTALLATION OF THE MH-A-67A.
- BYPASS PUMP FROM 33064MH TO 23769MH FOR INSTALLATION OF SS MAIN AND MANHOLES FROM MH-A-70 TO MH-A-73.
- CONTINUE BYPASS SETUP AS DESCRIBED IN NOTE 5 AND ADD BYPASS OF THE EXISTING SERVICE DURING THE INSTALLATION OF MH-A-74.
- CONTINUE BYPASS SETUP AS DESCRIBED IN NOTE 5 AND ADD BYPASS PUMPING FROM 18776MH AND 18987MH TO 23769MH FOR THE INSTALLATION OF THE SS MAIN AND MANHOLES FROM MH-A-73 TO MH-A-75.



**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

100% BID DOCUMENTS

REVISIONS	
REV	DESCRIPTION

DESIGNED: JTB  
 DRAWN: CBB  
 CHECKED: JPW  
 CHECKED: CWD  
 APPROVED: JPW

FILENAME: 18016-MOD  
 BC PROJECT NUMBER: 152166  
 CLIENT PROJECT NUMBER: CITY CIP# SS7428

**CIVIL**

**SEWER BYPASS PLAN 3**

DRAWING NUMBER: **300-C-03**  
 SHEET NUMBER: 51 OF 55

Path: \\4D-DC14D\DOCUMENTS\JOBS\18016 - LOWER SALUDA RELIEF SEWER\DWG FILENAME: 18016 - MOD.DWG PLOT DATE: 9/16/2020 8:39 AM CAD USER: 4DENGR7



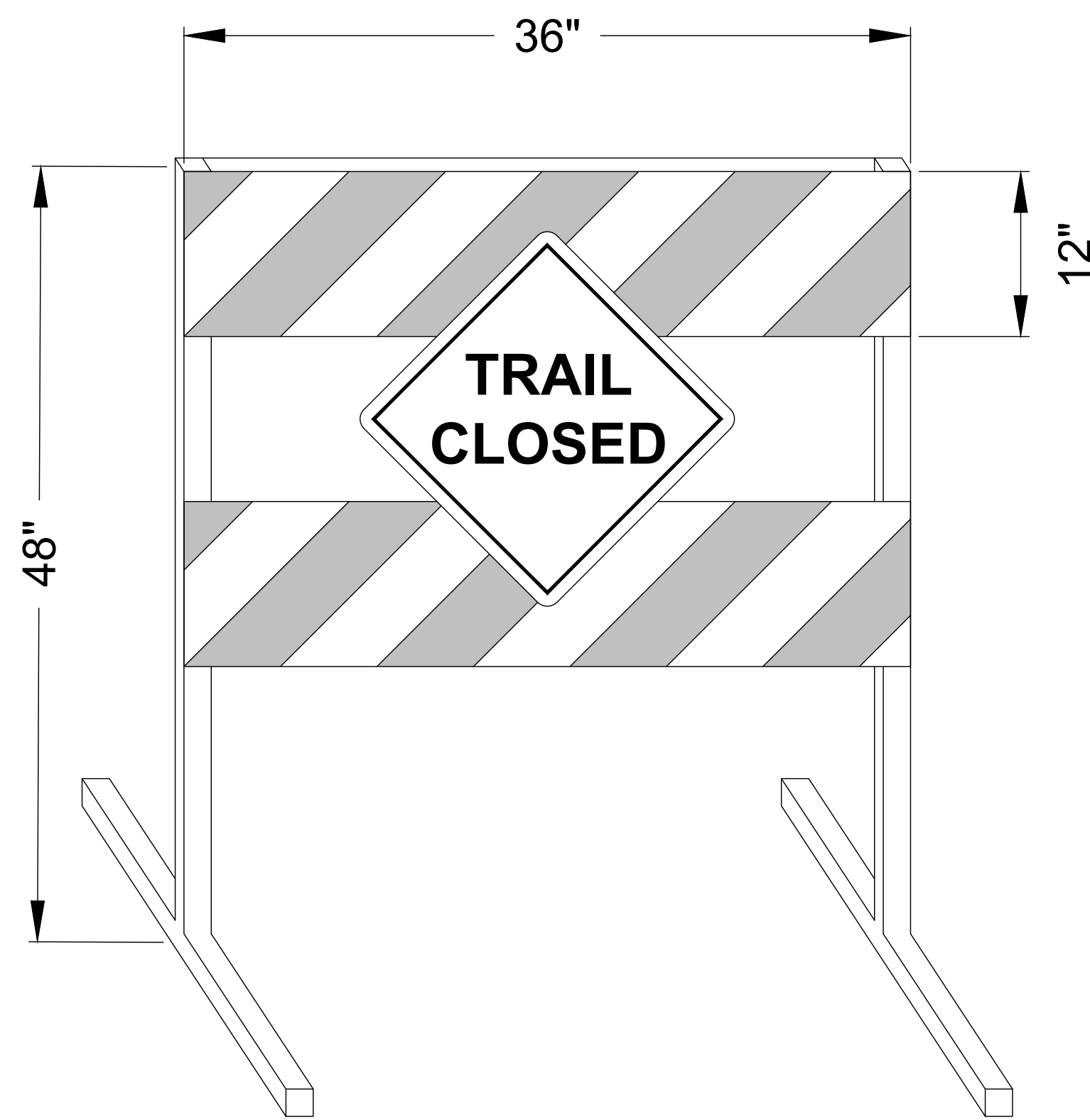


**GENERAL NOTES:**

- TRAIL INFORMATION PROVIDED BY IRMO CHAPIN RECREATION COMMISSION (ICRC).
- COORDINATE WITH ICRC PARK STAFF FOR ANY TRAIL CLOSURES AND DETOURS PRIOR TO EACH IMPLEMENTATION.
- TRAIL CLOSURE SIGNS SHALL BE PLACED AT ALL NECESSARY LOCATIONS TO COMMUNICATE TO PEDESTRIANS OF TRAIL CLOSURE, PRIOR TO THE START OF CONSTRUCTION IN ANY GIVEN SECTION. SEE DETAIL FOR TRAIL CLOSURE SIGN.
- TRAILS SHALL BE REESTABLISHED AS SOON AS POSSIBLE AFTER CONSTRUCTION IN THAT SECTION IS COMPLETED. CONTRACTOR SHALL ENSURE THAT SECTION IS ADEQUATE FOR PEDESTRIAN USE PRIOR TO REOPENING ANY SECTION OF TRAIL.
- TEMPORARY TRAILS SHALL BE PROVIDED AS SHOWN AND AS NEEDED. COORDINATE WITH ENGINEER TO OBTAIN ICRC APPROVAL ON ANY TEMPORARY TRAILS NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL PROVIDE TREE TRIMMING AND CLEARING OF UNDERBRUSH FOR ANY TEMPORARY TRAIL. WHEN TEMPORARY TRAIL IS NO LONGER NEEDED CONTRACTOR SHALL RESTORE/STABILIZE THE AREA.

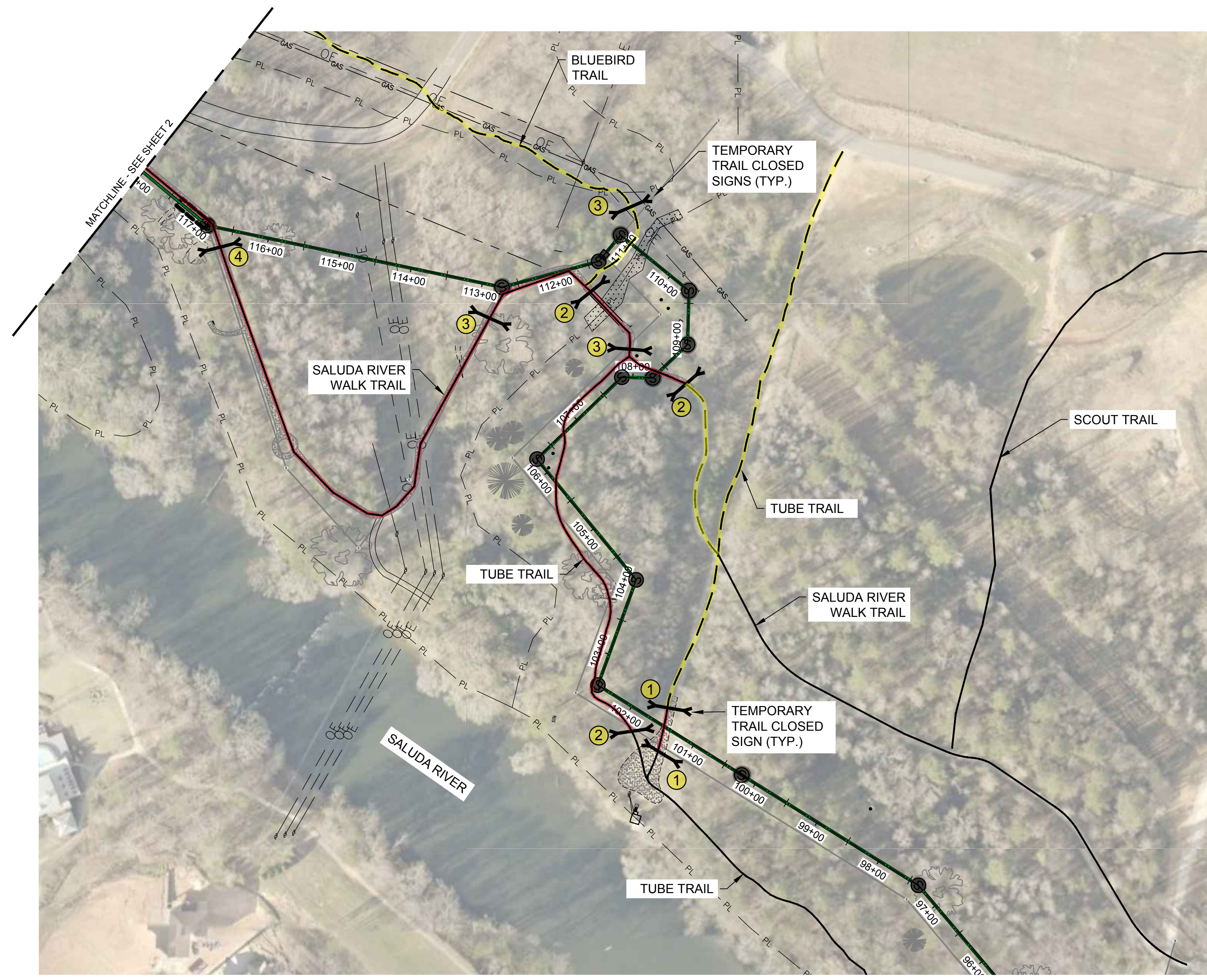
**TRAIL CLOSURE KEY NOTES:**

- SECTION OF THE "TUBE TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 101+00 TO 102+00.
- THE "TUBE TRAIL" AND PORTIONS OF THE "SALUDA RIVER WALK TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 102+00 TO 110+00. PEDESTRIANS SHOULD BE DIRECTED TO TAKE THE "TUBE TRAIL" AS SHOWN OR TO LOOP AROUND ON THE BLUE BIRD TRAIL.
- PORTIONS OF THE "SALUDA RIVER WALK TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 110+00 TO 113+00. PEDESTRIANS SHOULD BE DIRECTED TO LOOP AROUND ALONG THE "SALUDA RIVER WALK TRAIL" AND THE "TUBE TRAIL" OR TO TURN BACK ALONG THE "SALUDA RIVER WALK TRAIL."
- PORTIONS OF THE "SALUDA RIVER WALK TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 116+50 TO 135+00. PEDESTRIANS SHOULD BE DIRECTED TO TURN BACK ALONG THE "SALUDA RIVER WALK TRAIL" AND TO TAKE THE "BLUEBIRD TRAIL" OR TO TAKE THE TEMPORARY TRAIL AS SHOWN ON SHEET 2.



TRAIL CLOSED BARRICADE

N.T.S.



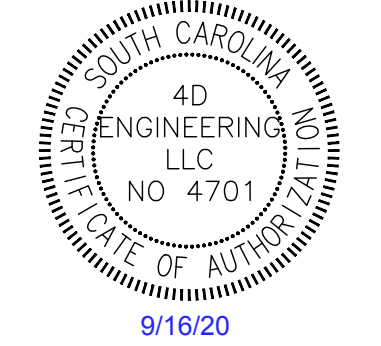
**LEGEND:**

- CLOSED TRAIL
- TRAIL DETOUR
- TEMPORARY TRAIL TO BE CONSTRUCTED

PLAN NORTH

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**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

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REVISIONS		
REV	DATE	DESCRIPTION

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DRAWN:	CBB
CHECKED:	JPW
CHECKED:	CWD
APPROVED:	JPW
FILENAME:	18016-MOD
BC PROJECT NUMBER:	152166
CLIENT PROJECT NUMBER:	CITY CIP# SS7428

**CIVIL**

**TRAIL CLOSURE PLAN 1**

DRAWING NUMBER  
**400-C-01**

SHEET NUMBER  
 52 OF 55

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**GENERAL NOTES:**

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- COORDINATE WITH ICRC PARK STAFF FOR ANY TRAIL CLOSURES AND DETOURS PRIOR TO EACH IMPLEMENTATION.
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- TRAILS SHALL BE REESTABLISHED AS SOON AS POSSIBLE AFTER CONSTRUCTION IN THAT SECTION IS COMPLETED. CONTRACTOR SHALL ENSURE THAT SECTION IS ADEQUATE FOR PEDESTRIAN USE PRIOR TO REOPENING ANY SECTION OF TRAIL.
- TEMPORARY TRAILS SHALL BE PROVIDED AS SHOWN AND AS NEEDED. COORDINATE WITH ENGINEER TO OBTAIN ICRC APPROVAL ON ANY TEMPORARY TRAILS NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL PROVIDE TREE TRIMMING AND CLEARING OF UNDERBRUSH FOR ANY TEMPORARY TRAIL. WHEN TEMPORARY TRAIL IS NO LONGER NEEDED CONTRACTOR SHALL RESTORE/STABILIZE THE AREA.

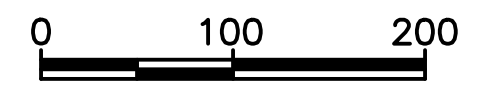
**TRAIL CLOSURE KEY NOTES:**

- PORTIONS OF THE "SALUDA RIVER WALK TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 116+50 TO 135+00. PEDESTRIANS SHOULD BE DIRECTED TO TURN BACK ALONG THE "SALUDA RIVER WALK TRAIL" AND TO TAKE THE "BLUEBIRD TRAIL" AS SHOWN ON SHEET 1 OR TO TAKE THE TEMPORARY TRAIL AS SHOWN.
- PORTIONS OF THE "SALUDA RIVER WALK TRAIL" AND THE "EAGLE TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 135+50 TO STA. 140+00. PEDESTRIANS SHOULD BE DIRECTED TO TAKE THE TEMPORARY TRAIL OR TO LOOP BACK ALONG THE EAGLE TRAIL.
- PORTION OF THE "SALUDA RIVER WALK TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 138+00 TO STA. 142+75. PEDESTRIANS SHOULD BE DIRECTED TO TAKE THE EAGLE TRAIL OR TO TAKE THE TEMPORARY TRAIL.



**LEGEND:**

- CLOSED TRAIL
- TRAIL DETOUR
- TEMPORARY TRAIL TO BE CONSTRUCTED



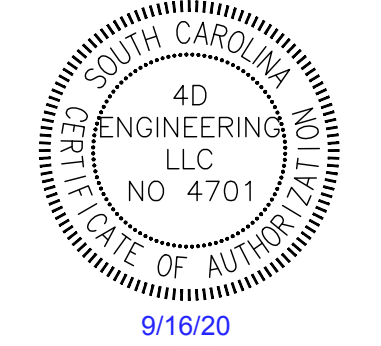
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**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

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REV	DATE	DESCRIPTION

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 DRAWN: CBB  
 CHECKED: JPW  
 CHECKED: CWD  
 APPROVED: JPW

FILENAME: 18016-MOD  
 BC PROJECT NUMBER: 152166  
 CLIENT PROJECT NUMBER: CITY CIP# SS7428

**CIVIL TRAIL CLOSURE PLAN 2**

DRAWING NUMBER: **400-C-02**  
 SHEET NUMBER: 53 OF 55



**GENERAL NOTES:**

- TRAIL INFORMATION PROVIDED BY IRMO CHAPIN RECREATION COMMISSION (ICRC).
- COORDINATE WITH ICRC PARK STAFF FOR ANY TRAIL CLOSURES AND DETOURS PRIOR TO EACH IMPLEMENTATION.
- TRAIL CLOSURE SIGNS SHALL BE PLACED AT ALL NECESSARY LOCATIONS TO COMMUNICATE TO PEDESTRIANS OF TRAIL CLOSURE, PRIOR TO THE START OF CONSTRUCTION IN ANY GIVEN SECTION. SEE DETAIL FOR TRAIL CLOSURE SIGN. TRAILS SHALL BE REESTABLISHED AS SOON AS POSSIBLE AFTER CONSTRUCTION IN THAT SECTION IS COMPLETED. CONTRACTOR SHALL ENSURE THAT SECTION IS ADEQUATE FOR PEDESTRIAN USE PRIOR TO REOPENING ANY SECTION OF TRAIL.
- TEMPORARY TRAILS SHALL BE PROVIDED AS SHOWN AND AS NEEDED. COORDINATE WITH ENGINEER TO OBTAIN ICRC APPROVAL ON ANY TEMPORARY TRAILS NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL PROVIDE TREE TRIMMING AND CLEARING OF UNDERBRUSH FOR ANY TEMPORARY TRAIL. WHEN TEMPORARY TRAIL IS NO LONGER NEEDED CONTRACTOR SHALL RESTORE/STABILIZE THE AREA.

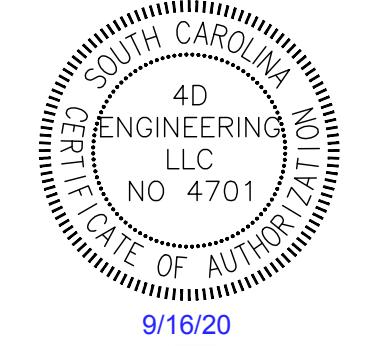
**TRAIL CLOSURE KEY NOTES:**

- PORTIONS OF THE "SALUDA RIVER WALK TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 138+00 TO STA. 142+75. PEDESTRIANS SHOULD BE DIRECTED TO TAKE THE EAGLE TRAIL OR TO TAKE THE TEMPORARY TRAIL.
- PORTIONS OF THE "SALUDA RIVER WALK TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 143+25 TO STA. 149+50. PEDESTRIANS SHOULD BE DIRECTED TO THE TEMPORARY TRAILS AND TO LOOP AROUND USING THE "EAGLE TRAIL."
- PORTIONS OF THE "SALUDA RIVER WALK TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 150+00 TO STA. 159+00. PEDESTRIANS SHOULD BE DIRECTED TO THE TEMPORARY TRAILS AND TO LOOP AROUND USING THE "EAGLE TRAIL."
- PORTIONS OF THE "SALUDA RIVER WALK TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 159+50 TO STA. 168+50. PEDESTRIANS SHOULD BE DIRECTED TO THE TEMPORARY TRAIL AND TO LOOP AROUND USING THE "EAGLE TRAIL."
- PORTIONS OF THE "FISH TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 168+50 TO STA. 171+50. PEDESTRIANS SHOULD BE DIRECTED TO THE "ENTRANCE TRAIL", "FISHERMANS TRAIL WEST", AND THE "CATTAIL CONNECTOR TRAIL."

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**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

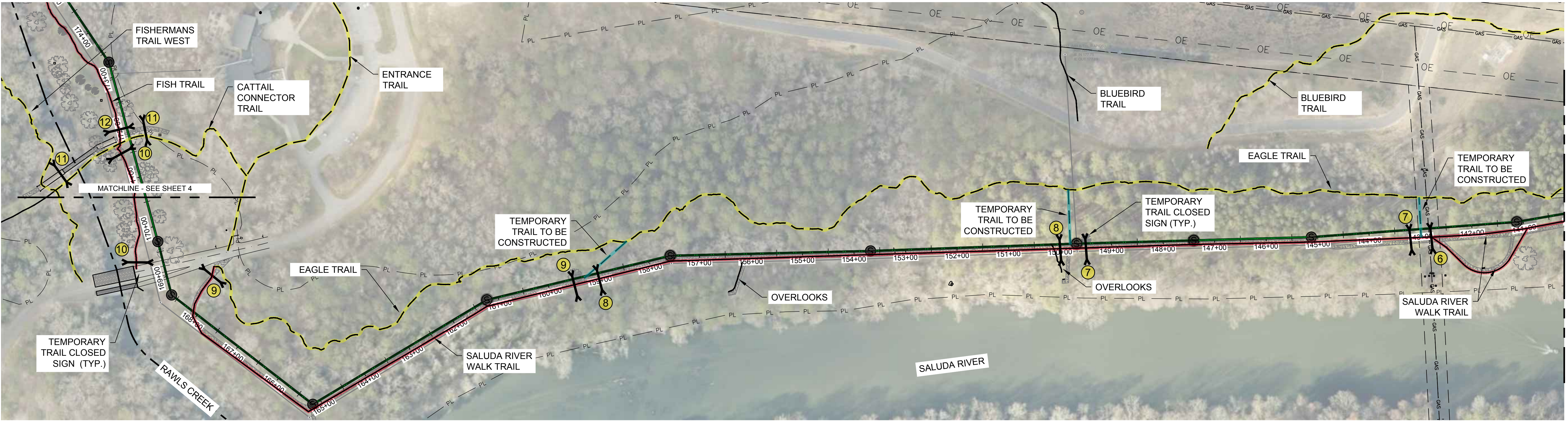
100% BID DOCUMENTS

REVISIONS		
REV	DATE	DESCRIPTION

DESIGNED:	JTB
DRAWN:	CBB
CHECKED:	JPW
CHECKED:	CWD
APPROVED:	JPW
FILENAME:	18016-MOD
BC PROJECT NUMBER:	152166
CLIENT PROJECT NUMBER:	CITY CIP# SS7428

**CIVIL**  
**TRAIL CLOSURE PLAN 3**

DRAWING NUMBER  
**400-C-03**  
SHEET NUMBER  
54 OF 55



**LEGEND:**

- CLOSED TRAIL
- TRAIL DETOUR
- TEMPORARY TRAIL TO BE CONSTRUCTED

0 100 200  
PLAN NORTH

Path: \\4D-DC14D\DOCUMENTS\JOBS\18016 - LOWER SALUDA RIVER RELIEF SEWER\DWG FILENAME: 18016 - MOD - TRAIL EXHIBITS.DWG PLOT DATE: 9/16/2020 8:40 AM CAD USER: 4DENGR7



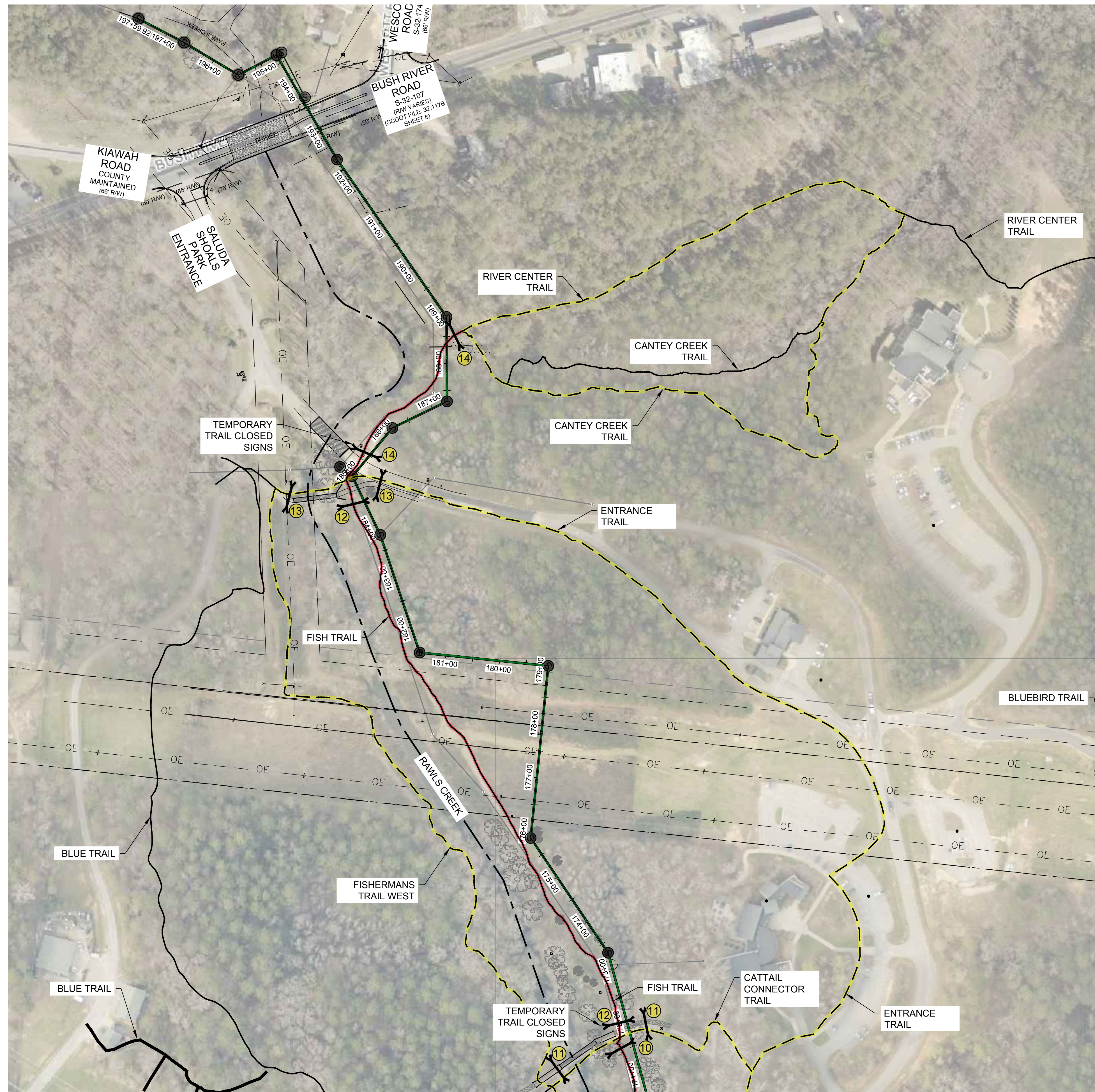


**GENERAL NOTES:**

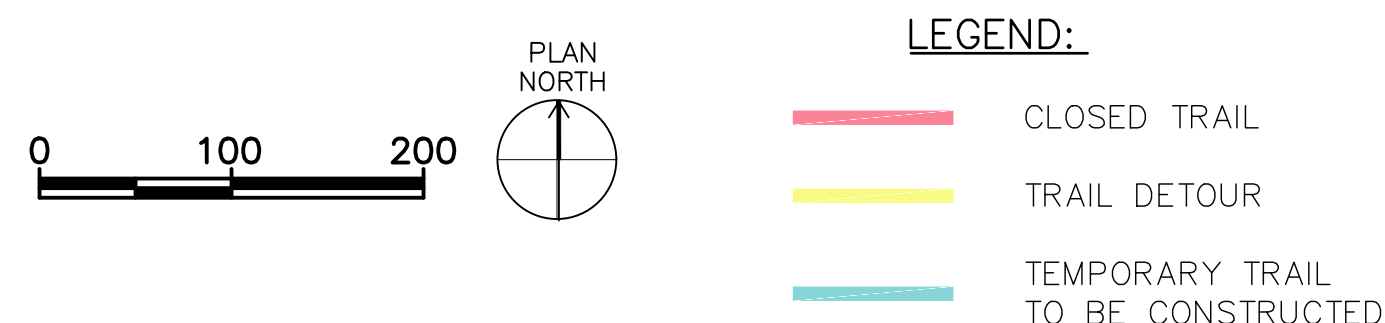
1. TRAIL INFORMATION PROVIDED BY IRMO CHAPIN RECREATION COMMISSION (ICRC).
2. TRAIL CLOSURE SIGNS SHALL BE PLACED AT ALL NECESSARY LOCATIONS TO COMMUNICATE TO PEDESTRIANS OF TRAIL CLOSURE, PRIOR TO THE START OF CONSTRUCTION IN ANY GIVEN SECTION. SEE DETAIL FOR TRAIL CLOSURE SIGN.
3. TRAILS SHALL BE REESTABLISHED AS SOON AS POSSIBLE AFTER CONSTRUCTION IN THAT SECTION IS COMPLETED. CONTRACTOR SHALL ENSURE THAT SECTION IS ADEQUATE FOR PEDESTRIAN USE PRIOR TO REOPENING ANY SECTION OF TRAIL.
4. TEMPORARY TRAILS SHALL BE PROVIDED AS SHOWN AND AS NEEDED. COORDINATE WITH ENGINEER TO OBTAIN ICRC APPROVAL ON ANY TEMPORARY TRAILS NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL PROVIDE TREE TRIMMING AND CLEARING OF UNDERBRUSH FOR ANY TEMPORARY TRAIL. WHEN TEMPORARY TRAIL IS NO LONGER NEEDED CONTRACTOR SHALL RESTORE/STABILIZE THE AREA.

**TRAIL CLOSURE KEY NOTES:**

10. PORTIONS OF THE "FISH TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 168+50 TO STA. 171+50. PEDESTRIANS SHOULD BE DIRECTED TO THE "ENTRANCE TRAIL", "FISHERMANS TRAIL WEST", AND THE "CATTAIL CONNECTOR TRAIL."
11. PORTIONS OF THE "CATTAIL CONNECTOR TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 171+50 TO STA. 172+00. PEDESTRIANS SHOULD BE DIRECTED TO THE "FISHERMANS TRAIL WEST" OR TO THE "ENTRANCE TRAIL." TRAIL SHOULD BE REOPENED AS SOON AS POSSIBLE AFTER THE CONSTRUCTION OF THE SEWER MAIN.
12. PORTIONS OF THE "FISH TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 172+00 TO STA. 184+50. PEESTRIANS SHOULD BE DIRECTED TO THE "FISHERMANS TRAIL WEST" OR TO THE "ENTRANCE TRAIL."
13. PORTIONS OF THE "ENTRANCE TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 184+50 TO STA. 158+50. PEDESTRIANS SHOULD BE DIRECTED TO THE "FISHERMANS TRAIL WEST" OR TO TURN BACK ON THE "ENTRANCE TRAIL." TRAIL SHOULD BE REOPENED AS SOON AS POSSIBLE AFTER CONSTRUCTION OF THE SEWER MAIN.
14. PORTIONS OF THE "RIVER CENTER TRAIL" SHALL BE CLOSED DURING CONSTRUCTION OF THE SEWER MAIN FROM STA. 185+50 TO STA. 189+00. PEDESTRIANS SHOULD BE DIRECTED TO THE "ENTRANCE TRAIL" OR TO LOOP AROUND ON THE "CANTEY CREEK TRAIL."

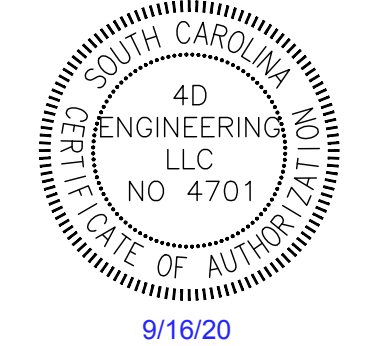


MATCHLINE - SEE SHEET 3



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**LOWER SALUDA RIVER RELIEF SEWER AND MAJOR PIPE REHABILITATION**

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APPROVED:	JPW
FILENAME	18016-MOD
BC PROJECT NUMBER	152166
CIVIL PROJECT NUMBER	CITY CIP# SS7428

**CIVIL TRAIL CLOSURE PLAN 4**

DRAWING NUMBER	<b>400-C-04</b>
SHEET NUMBER	55 OF 55

Path: \\4D-DC14D-DOCUMENTS\JOBS\18016 - LOWER SALUDA RELIEF SEWER\DWG FILENAME: 18016 - MOD - TRAIL EXHIBITS.DWG PLOT DATE: 9/16/2020 8:40 AM CAD USER: 4DENGR7

