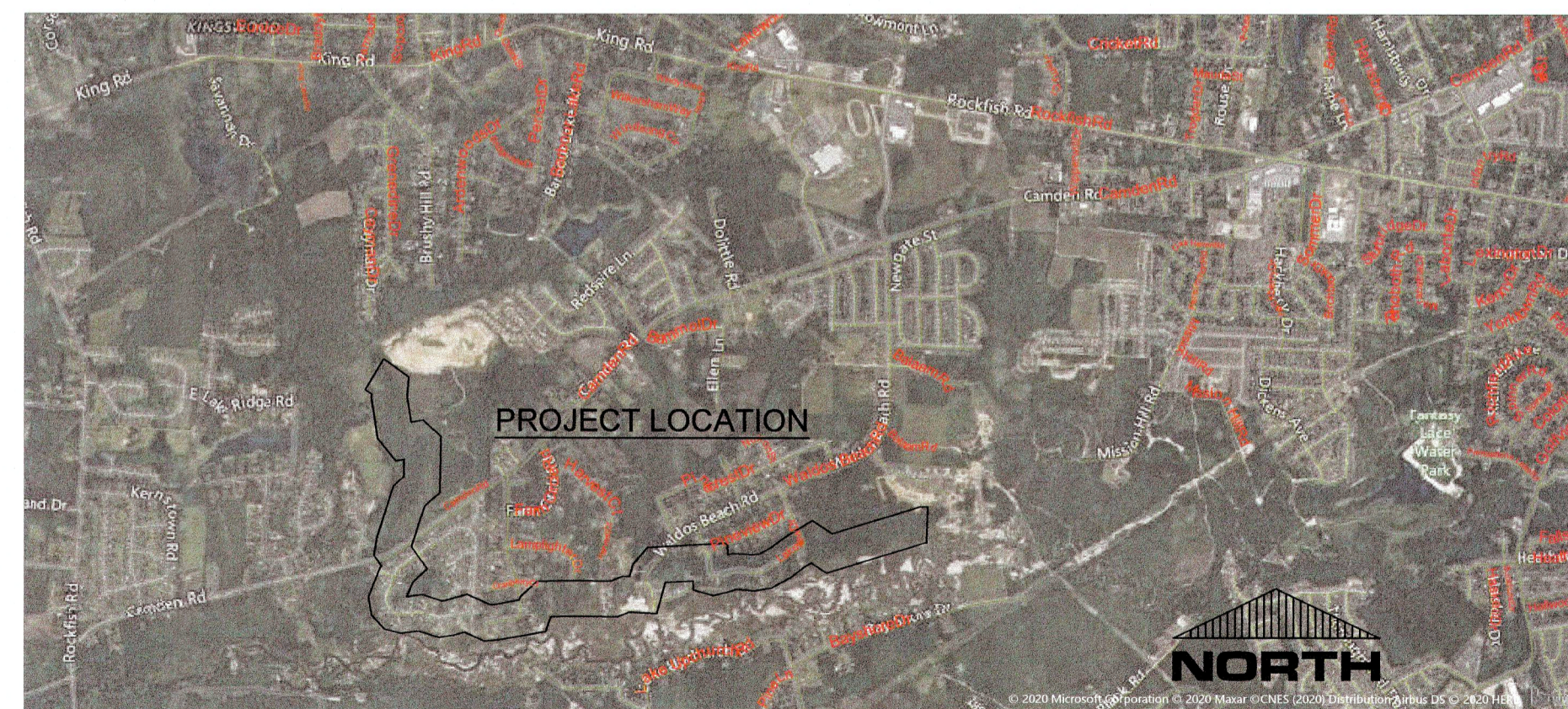


PWC

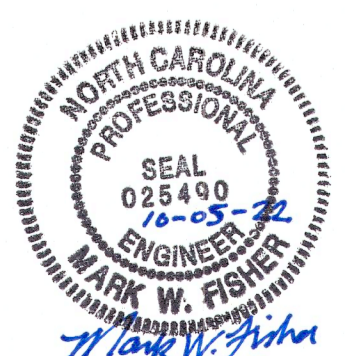
Fayetteville's
HOME TOWN UTILITY
FAYETTEVILLE, N.C.

SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2

NC DWI PROJECT NO. CS370434-15&16



VICINITY MAP
N.T.S.



GENERAL NOTES:

- 1. ACCESS TO SITES SHALL BE BY PUBLIC RIGHT-OF-WAYS AND UTILITY EASEMENTS. OTHER ACCESS LOCATIONS REQUIRED SHALL BE SECURED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. SUPPLEMENTAL EROSION CONTROL MEASURES SHALL BE REQUIRED TO INCLUDE CONSTRUCTION ENTRANCES, SILT FENCING, RESTORATION, ETC. ADDITIONAL MEASURES SHALL BE INCLUDED AS PART OF A SUPPLEMENTAL EROSION CONTROL PLAN PREPARED BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE CONSTRUCTION STAGING AREA AT HIS EXPENSE.
3. THE CONTRACTOR IS EXPECTED AND REQUIRED TO COOPERATE WITH THE PROPERTY OWNERS AFFECTED BY THE WORK. PRIVATE AGREEMENTS WITH PROPERTY OWNERS MUST BE IN WRITING ON A FORM APPROVED BY THE ENGINEER AND A COPY SHALL BE PROVIDED TO THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES AFFECTED BY SAID AGREEMENT. THE AGREEMENT MUST SPECIFY THAT FAYPWC, THE CITY AND THE ENGINEER SHALL BE HELD HARMLESS AGAINST ALL CLAIMS ARISING FROM THE AGREEMENT. THE OWNER DISCOURAGES PRIVATE AGREEMENTS BEFORE FINAL ACCEPTANCE, A RELEASE FROM EACH PROPERTY OWNER THAT THE CONTRACTOR HAS MADE AN AGREEMENT WITH SHALL BE REQUIRED. THE PROPERTY OWNER'S RELEASE IS A CONDITION OF FINAL ACCEPTANCE.
4. CONTRACTOR SHALL MAINTAIN A NEAT AND CLEAN JOB-SITE TO INCLUDE STAGING/STORAGE AREAS AS FOLLOWS:
- PERFORM DUST CONTROL BY WATERING DAILY OR AS DIRECTED BY THE ENGINEER.
- SWEEP STREETS A MINIMUM OF ONCE WEEKLY (FRIDAY) OR AS DIRECTED BY THE ENGINEER.
- BLADE, LEVEL, AND RE-COMPACT ALL EXPOSED TRENCHES WEEKLY (OR AS DIRECTED BY THE ENGINEER) TO PRODUCE A SMOOTH "RIDE".
- PERFORM DAILY CLEAN-UP OF ALL DIRT, DEBRIS, AND SCRAP MATERIALS.
- REMOVE EXCESS EQUIPMENT, MATERIALS, TOOLS, ETC. NOT NEEDED.
5. EXCESS SUITABLE SOIL EXCAVATED DURING CONSTRUCTION SHALL BE STOCKPILED FOR USE ON THE PROJECT OR DISPOSED OF OFF-SITE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL NOT BE ALLOWED TO STOCKPILE MATERIALS OR EXCESS MATERIALS IN THE STREET RIGHT-OF-WAYS AT ANY TIME. THE CONTRACTOR SHALL PROVIDE A SUFFICIENT AND SUITABLE STOCKPILE AREA AND LOCATION AT THE CONTRACTOR'S EXPENSE.
6. CONTRACTOR SHALL PROVIDE MEASURES DURING CONSTRUCTION TO SECURE THE SITE AND EXCAVATION FROM THE GENERAL PUBLIC AND COMPLY WITH ALL O.S.H.A. REGULATIONS. JOB SITE SAFETY IS THE EXCLUSIVE AND SOLE RESPONSIBILITY OF THE CONTRACTOR. OPEN EXCAVATION LEFT UNATTENDED OR OVER NIGHT IS NOT ACCEPTABLE AND SHALL BE FILLED IMMEDIATELY.
7. CONTRACTOR SHALL REPAIR OR REPLACE DRIVES DISTURBED BY CONSTRUCTION TO EXISTING OR BETTER CONDITIONS. NO SEPARATE PAYMENT UNLESS OTHERWISE INDICATED.
8. CONTRACTOR SHALL PROVIDE TEMPORARY FENCING WHERE FENCES ARE REMOVED FOR CONSTRUCTION. CONTRACTOR SHALL COORDINATE FENCE REMOVAL/REINSTALLATION WITH INDIVIDUAL PROPERTY OWNERS PRIOR TO REMOVAL. CONTRACTOR SHALL REPLACE ALL SHEDS TO AS GOOD OR BETTER THAN EXISTING CONDITIONS UNLESS OTHERWISE INDICATED. (NO SEPARATE PAYMENT). ALL FENCE SHALL BE REPLACED WITH NEW LIKE KIND MATERIAL.
9. CONTRACTOR SHALL REPLACE ALL DISTURBED MAILBOXES, SIGNS, ETC. DISTURBED DURING CONSTRUCTION WITHIN 24 HOURS OF DISTURBANCE. PERMANENT ROAD SIGNAGE DISTURBED SHALL BE REPLACED IMMEDIATELY AND IF NECESSARY ROADWAY SIGNS SHALL BE TEMPORARILY INSTALLED IN A LOCATION CONSISTENT WITH THE N.C.M.U.T.C.D. TO PROVIDE CONTINUOUS TRAFFIC AWARENESS OF ROADWAY CONDITIONS. (NO SEPARATE PAYMENT).
10. CONTRACTOR SHALL PROVIDE SECURITY FENCING, SECURITY GUARD, AND ANY AND ALL OTHER MEASURES CONTRACTOR DEEMS NECESSARY TO PROTECT EQUIPMENT AND MATERIALS STORED ON THE PROJECT. (NO SEPARATE PAYMENT).
11. WHERE CONTRACTOR CEASES WORK OPERATIONS FOR A 72 HOUR PERIOD OR LONGER, SUCH AS HOLIDAYS, ETC., THE FOLLOWING SHALL BE ACCOMPLISHED PRIOR TO THE WORK STOPPAGE:
a. CONTRACTOR SHALL STORE ALL EQUIPMENT IN THE CONTRACTOR STAGING AREA OR OFF SITE.
b. THE CONTRACTOR SHALL SWEEP ALL STREETS, PERFORM GENERAL CLEANUP AND SHALL PERFORM MAINTENANCE ON ALL EXPOSED PATCHES.
12. CONTRACTOR SHALL SCHEDULE WORK AND MATERIAL DELIVERIES SO THAT STORED MATERIAL QUANTITIES ON THE JOB SITE SHALL BE MINIMIZED.
13. CONTRACTOR SHALL STORE ALL MATERIALS IN THE CONTRACTOR STAGING AREA 72 HOURS PRIOR TO INCORPORATING INTO THE WORK TO REDUCE OBSTRUCTIONS TO TRAFFIC AND INCONVENIENCE TO RESIDENTS. WHERE UTILITIES ARE BEING CONSTRUCTED IN EASEMENTS OUT OF TRAFFIC AREAS CONTRACTOR MAY STORE MATERIALS AHEAD OF CONSTRUCTION FOR A DISTANCE NOT GREATER THAN 1800 FEET UNLESS APPROVED OTHERWISE BY THE ENGINEER.
14. THE CONTRACTOR SHALL DIG UP EXISTING SHRUBS AND BUSHES WITHIN UTILITY EASEMENT TO BE DISTURBED BY CONSTRUCTION AND SET OUTSIDE THE UTILITY EASEMENT AREA IN A LOCATION DETERMINED BY THE PROPERTY OWNER (NO SEPARATE PAYMENT). PROPERTY OWNER WILL BE RESPONSIBLE FOR REPLANTING SHRUBS AND BUSHES SO REMOVED, AND SHALL BE RESPONSIBLE FOR RE-ESTABLISHING GROWTH.
15. CLEARING AND GRUBBING SHALL BE RESTRICTED TO PERMANENT EASEMENTS ONLY. CONTRACTOR SHALL LIMIT TREE/BUSH CLEARING IN THE TEMPORARY EASEMENTS, BETWEEN HOUSES, AND ALONG PROPERTY LINES TO ONLY ABSOLUTELY NECESSARY FOR CONSTRUCTION.
16. ALL MANHOLES OUTSIDE OF PAVEMENT SHALL HAVE A CAM LOCK FRAME AND COVER PER PWC DETAIL S.6. ALL MANHOLE VENT OPENINGS SHALL POINT DOWNSTREAM.
17. CONSTRUCTION SHALL BE IN ACCORDANCE WITH FAYPWC STANDARD SPECIFICATIONS.
18. ALL SHORING SHALL BE IN ACCORDANCE TO OSHA TRENCHING STANDARDS PART 1926, SUBPART P, AS AMENDED TO DATE.
19. CONTRACTOR SHALL COORDINATE AND COMPLY WITH ALL OF THE TRAFFIC CONTROL REQUIREMENTS OF THE CITY OF FAYETTEVILLE, NCDOT, TOWN OF HOPE MILLS, AND THESE CONTRACT DOCUMENTS. ANY NECESSARY LANE CLOSURES SHALL FOLLOW GUIDELINES OUTLINED IN THE NCDOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
20. DEWATERING: THE CONTRACTOR SHALL AT ALL TIMES PROVIDE AND MAINTAIN AMPLE MEANS AND EQUIPMENT WITH WHICH TO REMOVE AND PROPERLY DISPOSE OF ANY AND ALL WATER ENTERING THE EXCAVATION OR OTHER PARTS OF THE WORK AND KEEP ALL EXCAVATIONS DRY UNTIL SUCH TIME AS PIPE LAYING AND GRADING IS COMPLETED AND STRUCTURES TO BE BUILT THEREIN ARE COMPLETED. NO WATER SHALL BE ALLOWED TO RISE AROUND THE PIPE IN UN-BACKFILLED TRENCHES NOR SHALL IT BE ALLOWED TO RISE OVER MASONRY UNTIL THE CONCRETE OR MORTAR HAS SET (MIN. 24 HOURS). ALL WATER PUMPED OR DRAINED FROM THE WORK SHALL BE DISPOSED OF IN SUCH A MANNER AS TO PREVENT SILTATION AND EROSION TO ADJACENT PROPERTY OR OTHER CONSTRUCTION. ALL TURBID WATER PUMPED OR DRAINED FROM THE WORK SHALL BE DISCHARGED THROUGH A SILT BAG OR SPECIAL STILLING BASIN PER THE DETAIL SHEETS.
21. THE CONTRACTOR SHALL STOCKPILE ALL EXCAVATED MATERIAL UP-GRADE OF THE TRENCH WHERE POSSIBLE BASED ON FIELD CONDITIONS. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AMPLE MEANS WITH WHICH TO ENSURE STOCKPILED MATERIALS DO NOT CAUSE SILTATION AND EROSION TO ADJACENT PROPERTY.
22. GAS LINE ON SHEET C-4 WAS UNCOVERED BY PNG AND LOCATED BY SURVEYORS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING LOCATION OF ALL PNG GAS LINES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY PNG AT LEAST 48 HOURS (MIN.) BEFORE THE DAY ON WHICH THE CROSSING OF THE PNG PIPE LINE WILL BE MADE.
23. DUKE ENERGY AND LREM EASEMENTS: THE CONTRACTOR SHALL NOTIFY DUKE ENERGY AND LREM 48 HOURS PRIOR TO ANY ENCROACHMENT OR CONSTRUCTION THROUGH DUKE POWER OR LREM EASEMENTS.
24. ALL UNDERGROUND UTILITIES ARE APPROXIMATE LOCATION. CONTRACTOR TO VERIFY SIZE, DEPTH, LOCATION AND MATERIAL OF ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION, AND SUPPORT THEM DURING CONSTRUCTION. SERVICE SHALL NOT BE INTERRUPTED. CONTRACTOR SHALL CONTACT NORTH CAROLINA 811 A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION (811 OR 1-800-632-4949).
25. CONTRACTOR SHALL PROVIDE TIMBER MATS FOR WETLAND CROSSINGS WHERE SHOWN ON THE DRAWINGS AND AS DESCRIBED BELOW:
A. WHERE FEASIBLE, PLACE MATS IN A LOCATION THAT WILL MINIMIZE THE AMOUNT NEEDED FOR THE WETLANDS CROSSING.
B. INSTALL ADEQUATE EROSION AND SEDIMENT CONTROLS AT APPROACHES TO MATS TO PROMOTE A SMOOTH TRANSITION TO, AND MINIMIZE SEDIMENT TRACKING ONTO, MATS. MATS SHOULD BE PLACED ALONG THE TRAVEL WAY SO THAT THE INDIVIDUAL TIMBERS ARE RESTING PERPENDICULAR TO THE DIRECTION OF TRAFFIC. NO GAPS SHOULD EXIST BETWEEN TIMBERS.
C. MATS WHICH BECOME COVERED WITH SOILS OR CONSTRUCTION DEBRIS SHOULD BE CLEANED AND THE MATERIALS REMOVED AND DISPOSED OF IN AN UPLAND LOCATION. THE MATERIAL SHOULD NOT BE PLACED IN THE WETLANDS AREA.
D. MATS WHICH BECOME IMBEDDED MUST BE RESET OR LAYERED TO PREVENT MUD FROM COVERING THEM OR WATER PASSING OVER THEM.
E. MATTING SHOULD BE REMOVED BY "BACKING OUT" OF THE SITE, REMOVING MATS ONE AT A TIME. ANY RUTTING OR SIGNIFICANT INDENTATIONS IDENTIFIED DURING MAT REMOVAL SHOULD BE REGRADED IMMEDIATELY, TAKING CARE NOT TO COMPACT SOILS.
F. MATS SHOULD BE CLEANED BEFORE TRANSPORT TO ANOTHER WETLAND LOCATION TO REMOVE SOIL AND ANY INVASIVE PLANT SPECIES, SEED STOCK, OR PLANT MATERIAL.
G. CLEANING METHODS MAY INCLUDE BUT ARE NOT LIMITED TO SHAKING OR DROPPING MATS IN A CONTROLLED MANNER WITH A PIECE OF MACHINERY TO KNOCK OFF ATTACHED SOIL AND DEBRIS, SPRAYING WITH WATER OR AIR, AND SWEEPING.
26. ALL IMPACTED WETLAND AREAS SHALL BE RETURNED TO THEIR ORIGINAL PRE-CONSTRUCTION CONTOURS; THERE SHALL BE NO PERMANENT FILL IN JURISDICTIONAL AREAS.
27. ALL IMPACTED HERBACEOUS WETLANDS SHALL BE SEEDED PER SPECIFICATION 02934.
28. CEMETERIES ARE PROTECTED UNDER NORTH CAROLINA GENERAL STATUTE CHAPTER 65, AND SHOULD BE AVOIDED IF POSSIBLE. IF UNMARKED HUMAN SKELETAL REMAINS ARE ENCOUNTERED DURING CONSTRUCTION IN THE GENERAL VICINITIES NOTED ON THESE PLANS, THE PROVISIONS OF NORTH CAROLINA GENERAL STATUTE CHAPTER 70, ARTICLE 3 APPLY, AND THE STATE ARCHEOLOGIST SHOULD BE CONTACTED IMMEDIATELY. CONSTRUCTION ACTIVITIES SHALL IMMEDIATELY CEASE IF HUMAN REMAINS ARE ENCOUNTERED.
29. CONTRACTOR SHALL REPLACE ALL CURB AND GUTTERS, SIDEWALK, AND ROADS DISTURBED BY CONSTRUCTION ACCORDING TO THE SPECIFICATIONS, SEE DETAILS.
30. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL HOMES AND BUSINESSES DURING CONSTRUCTION. CONTRACTOR SHALL HAVE STEEL PLATES (OR OTHER MEANS) AVAILABLE AT ALL TIMES TO ALLOW EMERGENCY VEHICLES ACCESS TO ALL PROPERTIES.
31. CONTRACTOR SHALL PROTECT, AND/OR RECONSTRUCT/REPLACE, AT CONTRACTORS EXPENSE, EXISTING UTILITY PIPES INCLUDING GAS LINES AND DRIVEWAY CULVERTS DAMAGED DURING CONSTRUCTION.
32. CONTRACTOR SHALL CONSTRUCT ALL SEDIMENTATION AND EROSION CONTROL DEVICES IN ACCORDANCE WITH NCDOT EROSION CONTROL PERMIT AND STANDARDS.
33. CONTRACTOR SHALL INSTALL ANTI-SEEPAGE COLLARS PLACED AT THE DOWNSTREAM WETLAND BOUNDARY AND EVERY 150 FEET, UNTIL THE UTILITY EXITS THE WETLAND.
34. REGISTERED SURVEYOR TO RE-INSTALL LOST/DAMAGED PROPERTY IRONS/PINS AT CONTRACTOR'S COST.
35. CONTRACTOR TO COORDINATE WITH POWER COMPANY TO REMOVE ELECTRICAL SERVICE FROM EACH PUMP STATION.
36. AT LEAST 8 HOURS PRIOR TO ANY CONSTRUCTION WITHIN NCDOT RIGHT OF WAYS, CONTRACTOR SHALL CONTACT NCDOT DIVISION 6, DISTRICT 2 ENGINEER.
37. REGULAR WORKING HOURS WILL BE 7:00AM TO 5:00PM, MONDAY THROUGH FRIDAY.
38. SODDING OR SEEDING SHALL BE PER SPECIFICATIONS 02931, 02933, AND 02934.
39. CONTRACTOR SHALL NOTIFY PWC 48-HOURS IN ADVANCE OF CONSTRUCTION STAKING.
40. CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE PWC PROJECT COORDINATOR TWO (2) BUSINESS DAYS IN ADVANCE.
41. GEOTECHNICAL INFORMATION HAS BEEN GATHERED AND IS FOR REFERENCE ONLY. MANY AREAS WERE INACCESSIBLE TO GEOTECHNICAL EQUIPMENT. THE CONTRACTOR IS RESPONSIBLE FOR INVESTIGATING SUBSURFACE CONDITIONS. GEOTECHNICAL DATA WAS COLLECTED WHILE LAKE UPCHURCH WAS DRAINED. ADDITIONAL HAND AUGERS WERE OBTAINED IN THE VICINITY OF SOME OF THE ORIGINAL SOIL BORINGS TO PROVIDE ADDITIONAL DATA OF GROUNDWATER LEVELS FOLLOWING THE REFILLING OF LAKE UPCHURCH. CONTRACTOR SHALL PROVIDE APPROPRIATE METHODS AND MEANS TO HANDLE ALL GROUNDWATER AND SURFACE WATER IMPACTS THAT COULD INCREASE AS A RESULT OF THE REFILLING OF THE LAKE.
42. CONTRACTOR SHALL BE RESPONSIBLE FOR RENEWING ALL NCDOT AND LOCAL CONSTRUCTION ACCESS/DRIVEWAY PERMITS.
43. NOTE: THE 100 YEAR (1%) FLOODPLAIN LINES SHOWN IN THIS DOCUMENT WERE PLOTTED FROM THE FOLLOWING FLOOD INSURANCE RATE MAPS (FIRM) PANELS, ALL WITH AN EFFECTIVE DATE OF 1/5/2007:
A. 3720040400J, 3720040300J, 3710949400J, 3710949300K, 3710948300L, 3710948400K.

SYMBOL LEGEND table with columns: PROPOSED, DESCRIPTION, EXISTING. Includes symbols for LIGHT POLE, POWER POLE, BLOW OFF, ELECTRIC BOX, TRANSFORMER, TELEPHONE PEDESTAL, CABLE TV PEDESTAL/BOX, WATER VALVE, WATER METER, FIRE HYDRANT, IRON PIPE, IRON ROD, MANHOLE, SILT FENCE STONE OUTLET, ROCK CHECK DAM, CURB INLET PROTECTION, INLET PROTECTION, TEMPORARY GRAVEL CONSTRUCTION ENTRANCE.

EROSION/SEDIMENT CONTROL table with symbols for SILT FENCE STONE OUTLET, ROCK CHECK DAM, CURB INLET PROTECTION, INLET PROTECTION, TEMPORARY GRAVEL CONSTRUCTION ENTRANCE.

EXISTING LINE LEGEND table with columns: DESCRIPTION, LINETYPE. Includes UNDERGROUND CABLE TV, UNDERGROUND PER RECORD CABLE TV, UNDERGROUND ELECTRIC, PER RECORD UNDERGROUND ELECTRIC, UNDERGROUND FIBER OPTIC, PER RECORD UNDERGROUND FIBER OPTIC, SANITARY SEWER FORCE MAIN, PER RECORD SANITARY SEWER FORCE MAIN, UNDERGROUND GAS, UNDERGROUND PER RECORD GAS, OVER HEAD UTILITIES, RECLAIMED WATER LINE, PER RECORD RECLAIMED WATER LINE, GRAVITY SANITARY SEWER, PER RECORD GRAVITY SANITARY SEWER, STORM DRAINAGE, UNDERGROUND TELEPHONE, UNDERGROUND PER RECORD TELEPHONE, UNDERGROUND UNKNOWN, WATER LINE, PER RECORD WATER LINE, FENCE, GUARD RAIL, BACK OF CURB EASEMENT, EDGE OF GRAVEL, EDGE OF PAVEMENT, PROPERTY LINE, RIGHT OF WAY, ROAD CENTER LINE, 100 YEAR FLOODPLAIN, DITCH, MAJOR CONTOUR, MINOR CONTOUR, RIPARIAN BUFFER ZONE 1, RIPARIAN BUFFER ZONE 2, TOP OF BANK, TRELINE, WATERCOURSE, WETLAND BOUNDARY.

AREA LEGEND table with columns: DESCRIPTION, LINETYPE. Includes EXISTING WETLANDS, EXISTING WATER SURFACE, EXISTING STREAM WITH BOUNDARIES, ROADWAY RECONSTRUCTION EXTENTS, ROADWAY MILL AND OVERLAY EXTENTS.

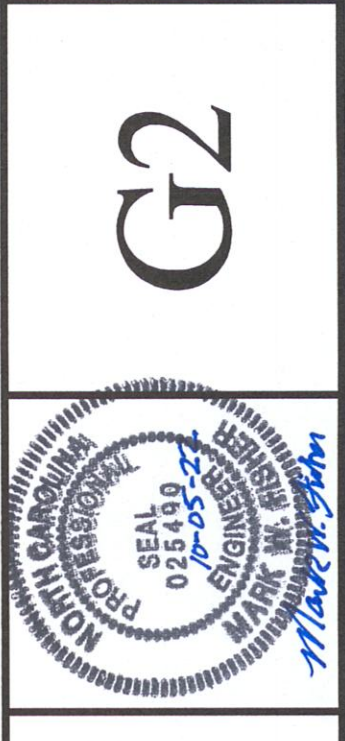
PROPOSED LINE LEGEND table with columns: DESCRIPTION, LINETYPE. Includes PERMANENT EASEMENT, TEMPORARY EASEMENT, SANITARY SEWER FORCE MAIN, RECLAIMED WATER LINE, GRAVITY SANITARY SEWER, WATER LINE, TO BE ABANDONED, DIVERSION DITCH, LIMITS OF DISTURBANCE/CLEARING LIMITS, COMBINATION SILT FENCE/TREE PROTECTION, TEMPORARY SILT FENCE, TEMPORARY SUPER SILT FENCE, TEMPORARY TREE PROTECTION FENCE, PERMANENT FENCE, GUARD RAIL.

ABBREVIATION LEGEND table with columns: ARC, ASBESTOS CEMENT. Includes ARV, BC, BO, CB, C&G, CGF, CI, CMP, CO, CPP, DI, DIP, D/W, E.B., EOG, EP, EOP, EX, LP, FH, FM, FO, GL, GTS, GW, INV, IPF, MB, MAX, MIN, OHE, OE, PP, PVC, RCP, R/W, ROW, SDMH, SO, SSMH, STA, SUE, S/W, SVC, TH, TPF, TYP, UNK, VCP, WB, WV, WM, YI.

Sheet List Table

Sheet List Table with columns: SHEET NUMBER, SHEET TITLE. Lists sheets G1 through G2, including COVER, NOTES INDEX AND LEGEND, INDEX MAP, BIG ROCKFISH OUTFALL MANHOLE SCHEDULE, UTILITY PLANS, MAIN OUTFALL, LIFT STATION DEMOLITION, TRAFFIC CONTROL, SEWER DETAILS, CONSTRUCTION ACCESS.

DATE REVISIONS BY table with columns: DATE, REVISIONS, BY. Lists revision dates from 12.16.2020 to 09.30.2022 and revision descriptions.



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2 NOTES INDEX AND LEGEND

PWC Water Resources Engineering logo and contact information: 1730 Varsity Drive, Suite 500, Raleigh, NC 27605, Phone: (919)233-8901, Fax: (919)233-8931, F-1222, www.mckimcreed.com.



MCKIM & CREED logo and contact information: 1730 Varsity Drive, Suite 500, Raleigh, NC 27605, Phone: (919)233-8901, Fax: (919)233-8931, F-1222, www.mckimcreed.com.

FINAL DESIGN ISSUED FOR BID

PWC DRAWING # AS-I5313CCC

I:\01925\0005\Water\80-Drawings\86-Design\BRC-G3-CONTRACT 2.dwg 09/30/2022 08:14 mp/lec



DATE	REVISIONS	BY
05.18.2021	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
12.16.2021	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
12.21.2021	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
06.30.2021	FINAL DESIGN - CONTRACT ENCROACHMENT AND SIGNIFICANT ENCROACHMENT MODIFICATIONS	PPP
04.13.2022	FINAL DESIGN - CONTRACT ENCROACHMENT MODIFICATIONS	PPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	PPP

SHEET	G3
SURVEY/GIS BY:	MCKIMCREED, INC.
PROCESS/LAYOUT BY:	DATE: 9/30/22
PLAN/PROF (S/S) BY:	TMB/AMB
DESIGN REVIEW BY:	BRL
APPROVED BY:	
SCALE:	AS SHOWN



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
INDEX MAP

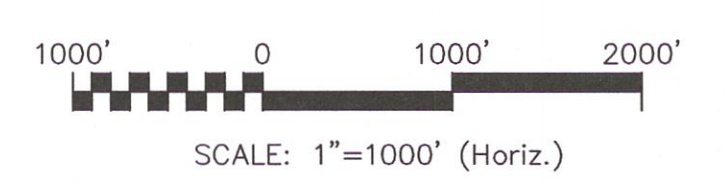
FAYETTEVILLE PUBLIC WORKS COMMISSION
WATER RESOURCES ENGINEERING
 P.O. Box 1088 Fayetteville, NC 28302
 855 Old Wilmington Road, Fayetteville, NC 28301

PLAN LEGEND

C-7		PLAN AND PROFILE SHEET No.
-----	--	----------------------------

ALIGNMENT	STATION	PIPE DIAMETER
BRCO	118+00 - 228+61	24"
BRCO	228+61 - 265+57	18"

PLAN
HORIZ: 1"=1000'



FINAL DESIGN
ISSUED FOR BID



MCKIM & CREED
 1730 Varsity Drive, Suite 500
 Raleigh, NC 27606
 Phone: (919)233-8091, Fax: (919)233-8031
 F-1222
 www.mckimcreed.com

PWC DRAWING # DS-154.86

Main table with columns for BRC OUTFALL EAST MH TABLE, BRC OUTFALL WEST MH TABLE, #05 CAMDEN WOODS MH TABLE, #100 STEEPLCHASE MH TABLE, #05 PEARTREE MH TABLE, and #05 PEARTREE MH TABLE. Each column contains stationing, structure details, and manhole information.

NOTES: 1. E.B. STANDS FOR EXTENDED BASE. SEE DETAIL S.2 ON SHEET D-1 FOR DETAILS.

LEGEND ITEMS UNDER SEPARATE CONTRACT

Project information including DATE, REVISIONS, SHEET, DATE, PROCESSING BY, PLAN/PROF(S) BY, DESIGN REVIEW BY, APPROVED BY, SCALE, AS SHOWN, and project title: SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2. Includes logos for FAYATTEVILLE PUBLIC WORKS COMMISSION and LWC WATER RESOURCES ENGINEERING.

ALIGNMENT STATION PIPE DIAMETER table with columns for Alignment, Station, and Pipe Diameter. Rows include BRCO, CAMDEN WOODS LS, STEEPLCHASE LS, LAKE UPCHURCH LS, SOUTH HAMPTON LS, PEARTREE ESTATE LS, and various stationing ranges.

811 logo and MKM & CREED logo with contact information: 1730 Varsity Drive, Suite 500, Raleigh, NC 27606. Phone: (919)233-8071, Fax: (919)233-8031. Website: www.mckmcreed.com

FINAL DESIGN ISSUED FOR BID

PWC DRAWING # DS-15486

UTILITY PLAN SHEET INDEX	
SHEET NUMBER	SHEET TITLE
UTILITY PLANS	
UP-G	BIG ROCKFISH CREEK OUTFALL UTILITY PLAN COVER SHEET (CONTRACT 2)
UP-3B	BIG ROCKFISH CREEK OUTFALL STA.101+15 - STA.101+50
UP-4	BIG ROCKFISH CREEK OUTFALL STA.101+50 - STA.229+11
UP-5A	BIG ROCKFISH CREEK OUTFALL STA.229+11.00 - STA.289+84

SYMBOL LEGEND		
PROPOSED	DESCRIPTION	EXISTING
	LIGHT POLE	LP
	POWER POLE	
	BLOW OFF	BO
	ELECTRIC BOX	EB
	LIGHT	o
	TRANSFORMER	TF
	TELEPHONE PEDESTAL	TP
	CABLE TV PEDESTAL/BOX	CT
	WATER VALVE	WV
	WATER METER	WM
	FIRE HYDRANT	FH
	IRON PIPE	IP
	IRON ROD	IR
	MANHOLE	o
EROSION/SEDIMENT CONTROL		
	SILT FENCE STONE OUTLET (SEE TABLE SHEET D-H)	
	ROCK CHECK DAM	
	SILT SACK INLET PROTECTION	
	INLET PROTECTION	
	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	

PROPOSED LINE LEGEND	
DESCRIPTION	LINE TYPE
PERMANENT EASEMENT	---
TEMPORARY EASEMENT	---
SANITARY SEWER FORCE MAIN	---
RECLAIMED WATER LINE	---
GRAVITY SANITARY SEWER	---
WATER LINE	---
TO BE ABANDONED	---
DIVERSION DITCH	---
LIMITS OF DISTURBANCE/CLEARING LIMITS	---
COMBINATION SILT FENCE/TREE PROTECTION	---
TEMPORARY SILT FENCE	---
TEMPORARY SUPER SILT FENCE	---
TEMPORARY TREE PROTECTION FENCE	---
PERMANENT FENCE	---
GUARD RAIL	---

EXISTING LINE LEGEND	
DESCRIPTION	LINE TYPE
UNDERGROUND CABLE TV	---
UNDERGROUND PER RECORD CABLE TV	---
UNDERGROUND ELECTRIC	---
PER RECORD UNDERGROUND ELECTRIC	---
UNDERGROUND FIBER OPTIC	---
PER RECORD UNDERGROUND FIBER OPTIC	---
SANITARY SEWER FORCE MAIN	---
PER RECORD SANITARY SEWER FORCE MAIN	---
UNDERGROUND GAS	---
UNDERGROUND PER RECORD GAS	---
OVER HEAD UTILITIES	---
RECLAIMED WATER LINE	---
PER RECORD RECLAIMED WATER LINE	---
GRAVITY SANITARY SEWER	---
PER RECORD GRAVITY SANITARY SEWER	---
STORM DRAINAGE	---
UNDERGROUND TELEPHONE	---
UNDERGROUND PER RECORD TELEPHONE	---
UNDERGROUND UNKNOWN	---
WATER LINE	---
PER RECORD WATER LINE	---
FENCE	---
GUARD RAIL	---
BACK OF CURB	---
EASEMENT	---
EDGE OF GRAVEL	---
EDGE OF PAVEMENT	---
PROPERTY LINE	---
RIGHT OF WAY	---
ROAD CENTER LINE	---
100 YEAR FLOODPLAIN	---
DITCH	---
MAJOR CONTOUR	---
MINOR CONTOUR	---
RIPARIAN BUFFER ZONE 1	---
RIPARIAN BUFFER ZONE 2	---
TOP OF BANK	---
TREELINE	---
WATERCOURSE	---
WETLAND BOUNDARY	---

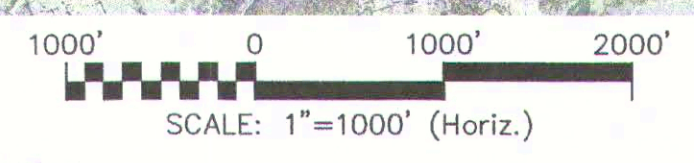
ABBREVIATION LEGEND	
ARC	ASBESTOS CEMENT
ARV	AIR RELEASE VALVE
BC	BACK OF CURB
BO	BLOW OFF VALVE
CB	CATCH BASIN
C&G	CURB AND GUTTER
CGF	COMBINED GRID FACTOR
CI	CURB INLET
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
CPP	CORRUGATED PLASTIC PIPE
DI	DROP INLET
DIP	DUCTILE IRON PIPE
D/W	DRIVEWAY
EOG	EDGE OF GRAVEL
EP, EOP	EDGE OF PAVEMENT
EX	EXISTING
LP	LIGHT POLE
FH	FIRE HYDRANT ASSEMBLY
FM	FORCE MAIN
FO	FIBER OPTIC
GL	GUTTER LINE
GTS	GAS TEST STATION
GW	GUY WIRE
INV	INVERT ELEVATION
IPF	IRON POST FOUND
MB	MAIL BOX
MAX	MAXIMUM
MIN	MINIMUM
OHE, OE	OVER HEAD ELECTRIC
PP	POWER POLE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
R/W, ROW	RIGHT OF WAY
SDMH	STORM DRAIN MANHOLE
SO	STONE OUTLET
SSMH	SANITARY SEWER MANHOLE
STA	STATION
SUE	SUBSURFACE UTILITY ENGINEERING
S/W	SIDE WALK
SVC	SERVICE
TH	TEST HOLE
TPF	TREE PROTECTION FENCE
TYP	TYPICAL
UNK	UNKNOWN
VCP	VITRIFIED CLAY PIPE
WB	WATER BAR
WV	WATER VALVE
WM	WATER METER
YI	YARD INLET

AREA LEGEND	
	EXISTING WETLANDS
	EXISTING WATER SURFACE
	EXISTING STREAM WITH BOUNDARIES



SHEET BORDERS GRAYED OUT ARE NOT PART OF THIS CONTRACT.

OVERVIEW
SCALE HORIZ: 1"=1000'



FINAL DESIGN
ISSUED FOR BID



PWC DRAWING # DS-15486

DATE	REVISIONS	BY
05.08.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	HPP
12.23.2020	FINAL DESIGN NOT FOR CONSTRUCTION	HPP
06.30.2021	FINAL DESIGN - CONTRACT OPERATIONS AND DELIVERABLES	HPP
04.15.2022	FINAL DESIGN - NOT FOR CONSTRUCTION	HPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	HPP

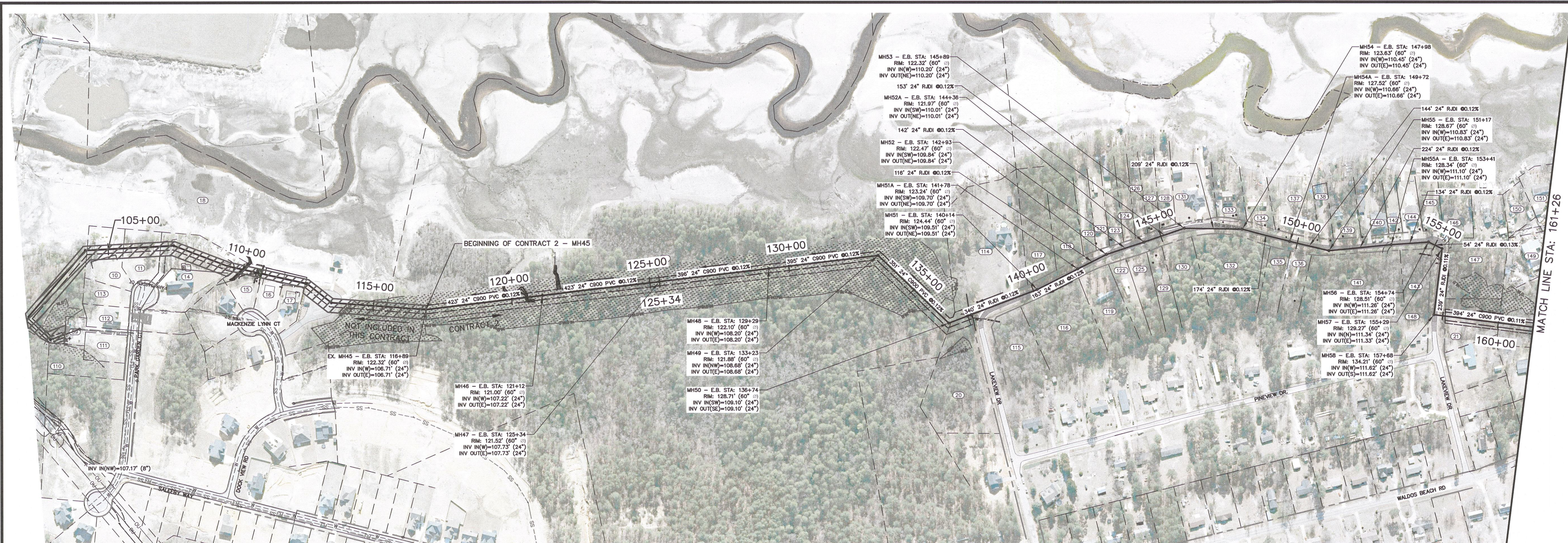
SHEET	DATE
UP-G	9/30/22

SURVEYED BY: MCKIM & CREED, INC.
 PROFESSIONAL SEAL: TMB/AWB
 PLAN/PROF. DESIGNED BY: BRL
 DESIGN REVIEW BY:
 APPROVED BY:
 SCALE: AS SHOWN

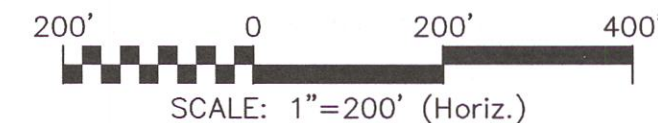


SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
 BIG ROCKFISH CREEK OUTFALL UTILITY PLAN COVER SHEET (CONTRACT 2)

FAYETTEVILLE PUBLIC WORKS COMMISSION
FWC WATER RESOURCES ENGINEERING
 P.O. Box 1089, Fayetteville, NC 28302
 955 Old Wilmington Road, Fayetteville, NC 28301



PLAN VIEW
SCALE HORIZ: 1"=200'



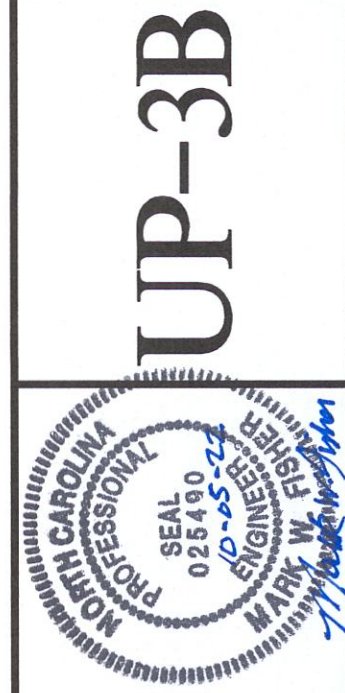
PROPERTY INFORMATION			
PARCEL	OWNER	MAILING ADDRESS	PIN
18	PRESERVE AT LAKE UPCHURCH PROPERTY OWNERS ASSOC INC	2533 RAEFORD RD, FAYETTEVILLE, NC 28305	9494-80-8851
19	BILL CLARK HOMES OF FAY LLC	200 AE ARLINGTON BLV, GREENVILLE, NC 27858	9494-70-7243
20	NOBLE, CHARLES F III & WIFE EDIE NOBLE	2461 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9494-60-2453
21	JTDOOLEY PROPERTIES 2 LLC	276 LAKESIDE RD, RAEFORD, NC 28376	9493-49-4898
59	PRESERVE AT LAKE UPCHURCH PROPERTY OWNERS ASSOC INC	2533 RAEFORD RD, FAYETTEVILLE, NC 28305	9494-90-4801
110	PRESERVE AT LAKE UPCHURCH PROPERTY OWNERS ASSOC INC	2533 RAEFORD RD, FAYETTEVILLE, NC 28305	9494-90-4932
111	H & H CONSTRUCTORS OF FAY LLC	2919 BREEZEWOOD AVE, UNIT/APT 400, FAYETTEVILLE, NC 28303	9494-90-3805
112	GRIGGS, CHRISTINA & HUSBAND TATE RIES	2337 PARK GARDEN CT, FAYETTEVILLE, NC 28306	9494-90-3714
113	H & H CONSTRUCTORS INC	2919 BREEZEWOOD AVE, UNIT/APT 400, FAYETTEVILLE, NC 28303	9494-90-3636
114	LANCE, SCOTT RAY, SARAH MARET GURNEY	PO BOX 337, ANGIER, NC 27501	9493-69-2951
115	HELMS, GEORGIA C	6513 PERRY CREEK RD, RALEIGH, NC 27616	9494-60-0276
116	HARDIN MASONRY & CONTRACTING SERVICE INC	446 DAVIS BRIDGE RD, PARKTON, NC 28371	9494-50-9126
117	ENGLE, CARL C JR & WIFE CHRISTA N	2614 FASHION LN, FAYETTEVILLE, NC 28304	9493-69-0881
118	ENGLE, CARL CLYDE & WIFE CHRISTA NEWTON	2614 FASHION LN, FAYETTEVILLE, NC 28304	9493-59-9880
119	LOCKLEAR, WOODROW W	2551 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9494-50-7087
120	IVEY, NATHAN L	3320 DUNDLE RD, FAYETTEVILLE, NC 28306	9493-59-9725
121	WILLIFORD, DEBORAH L	2545 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-59-8773
122	CHASE, ROBERT C	2550 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9494-50-7001
123	LOCKLEAR, ALTON LIFE ESTATE	2551 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-59-8639
124	HAMMONDS, VEAR LANETTE	2551 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-59-7687
125	CHASE, ROBERT C	2550 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-59-6959
126	HUGGINS, SAMUEL O JR & WIFE DENISE DIXON	5539 HEATHER ST, HOPE MILLS, NC 28348	9493-59-7644
127	HUGGINS, SAMUEL O JR & WIFE DENISE DIXON	5539 HEATHER ST, HOPE MILLS, NC 28348	9493-59-6692
128	HUGGINS, SAMUEL O JR & WIFE DENISE DIXON	5539 HEATHER ST, HOPE MILLS, NC 28348	9493-59-6558
129	NIEDENTHAL, HELGA	2633 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-59-5997
130	VOSS, DAGMAR	2633 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-59-5913
131	BRYANT, ELLIS M & WIFE DEBORAH F	2583 LAKEVIEW DR, FAYETTEVILLE, NC, 28306	9493-59-5529
132	LOWERY, JOHN W SR & WIFE CATHY B	424 S MAPLE ST, GRAHAM, NC 27253	9493-59-3866

PROPERTY INFORMATION			
PARCEL	OWNER	MAILING ADDRESS	PIN
133	MUNSON, LES A & WIFE PAULETTE A	2595 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-59-4529
134	STONE, AUDREY LYNN	2603 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-59-3610
135	COUSINS, WARREN	2633 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-59-2817
136	COUSINS, WARREN	2633 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-59-1836
137	EHLE, ELLIS E	PO BOX 48121, CUMBERLAND, NC 28331	9493-59-1589
138	DEAN, WILLIAM KENT & WILLIAM HOWARD	5733 ROCKFISH RD, HOPE MILLS, NC 28348	9493-59-0589
139	VOSS, DAGMAR	2633 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-59-0517
140	NEWTON, ROSINA RAUER	PO BOX 48084, CUMBERLAND, NC 28331	9493-49-9524
141	COUSINS, WARREN D	2633 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-49-9832
142	PHIPPS, CATHERINE D	2653 LAKEVIEW DR, FAYETTEVILLE, NC, 28306	9493-49-8544
143	SINGLETON, JOSEPH M	303 TREY DR, GREENVILLE, NC 27834	9493-49-7715
144	BRYANT, JEFFREY MACK	2659 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-49-7583
145	EHLE, ELLIS E JR	2667 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-49-7503
146	EHLE, ELLIS E	2673 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-49-6511
147	JOHNSON, ROBERT WAYNE & WIFE PAMELA FONTAINE	2677 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-49-5604
148	JTDOOLEY PROPERTIES 2 LLC	2734 LAKEVIEW DR, FAYETTEVILLE, NC 28306	9493-49-6993
149	BARRETT, BILLY D & WIFE ZITA Y	4203 LOUFIELD DR, FAYETTEVILLE, NC 28311	9493-49-3623
150	BARRETT, BILLY D & WIFE ZITA Y	4203 LOUFIELD DR, FAYETTEVILLE, NC 28311	9493-49-3496
151	HAUGHN, DAVID C & WIFE ANA F	2625 FISHING PIER RD, FAYETTEVILLE, NC 28306	9493-49-3329

LEGEND
 ITEMS UNDER SEPARATE CONTRACT

DATE	REVISIONS	BY
05.18.2024	FINAL DESIGN NOT FOR CONSTRUCTION	ARR
12.16.2023	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
12.21.2023	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
06.30.2023	FINAL DESIGN - CONTRACT SEPARATION AND BID REVISIONS	PPP
04.15.2022	FINAL DESIGN - CONTRACT SEPARATION AND BID REVISIONS	PPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	PPP

SHEET UP-3B
 SURVEY/GPS BY: MCKIM&CREED, INC.
 PROCESS/LAYOUT BY: DATE: 07/30/24
 PLAN/PROF (SDS) BY: TMB/AMB
 DESIGN REVIEW BY: BRL
 APPROVED BY:
 SCALE: AS SHOWN



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
 BIG ROCKFISH OUTFALL STA. 101+15 - STA. 161+50

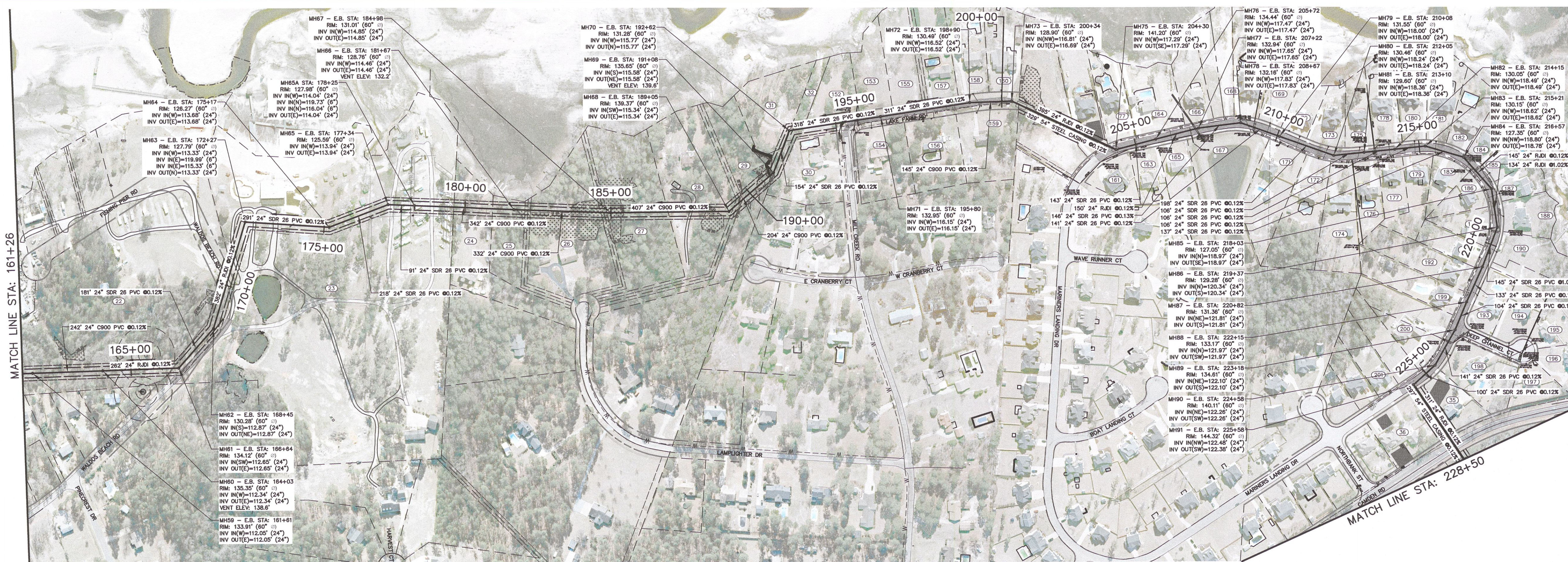
FAYETTEVILLE PUBLIC WORKS COMMISSION
WATER RESOURCES ENGINEERING
 P.O. Box 1084, Fayetteville, NC 28302
 985 Old Wilmington Road, Fayetteville, NC 28301

1730 Varsity Drive, Suite 500
 Raleigh, NC 27606
 Phone: (919)233-8091, Fax: (919)233-8031
 F-1222
 www.mckimcreed.com

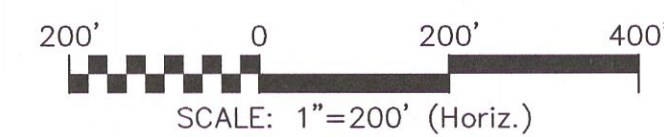
PWC DRAWING # DS-15486

FINAL DESIGN
 ISSUED FOR BID

I:\01925\0005\Water\80-Drawings\86-Design\Utility Plan Sheets\BRC Master Utility Plan.dwg 09/30/2022 08:19 mpjec



PLAN VIEW
SCALE HORIZ: 1"=200'



PROPERTY INFORMATION			
PARCEL	OWNER	MAILING ADDRESS	PIN
22	DEAN, ROY LEE JR & WIFE CHOM CHU DEAN	6742 WALDOS BEACH RD, FAYETTEVILLE, NC 28306	9493-39-9448
23	DEAN, ROY LEE JR & WIFE CHOM CHU DEAN	6742 WALDOS BEACH RD, FAYETTEVILLE, NC 28306	9493-39-1578
24	NOBLIN, JOHN M & WIFE THERESA D NOBLIN	7070 LAMPLIGHTER DR, FAYETTEVILLE, NC 28306	9493-29-6482
25	NOBLIN, JOHN M & WIFE THERESA D NOBLIN	7070 LAMPLIGHTER DR, FAYETTEVILLE, NC 28306	9493-29-5490
26	TAYLOR, DONALD R & WIFE NAN O TAYLOR	7068 LAMPLIGHTER DR, FAYETTEVILLE, NC 28306	9493-29-4305
27	NORMAN, WILLIAM C & WIFE SUSAN M NORMAN	227 JUDD ST, FAYETTEVILLE, NC 28305	9493-19-1286
28	SMITH, MARCIA M	7075 LAMPLIGHTER DR, FAYETTEVILLE, NC 28306	9493-19-9290
29	SMITH, MARCIA M	7075 LAMPLIGHTER DR FAYETTEVILLE, NC 28306	9493-19-7180
30	SANTOY, MICHAEL J & WIFE DEANA R SANTOY	3627 MILL CREEK RD, FAYETTEVILLE, NC 28306	9493-19-5181
31	DOWLESS, CURRIE K & WIFE SONIA P DOWLESS	2460 H BULLARD RD, HOPE MILLS, NC 28348	9493-18-7819
32	MILL CREEK FARMS HOMEOWNERS ASSOC	3619 MILL CREEK RD, FAYETTEVILLE, NC 28304	9493-18-6924
33	WILSON, JEFFREY SCOTT & WIFE THERESA CAROL WILSON	152 BRIDLE RD, RAEFORD, NC 28376	9493-08-7845
34	PATTERSON, DONNA M	7345 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9493-08-6843
35	TORRES, GILBERT & WIFE MICHELLE L TORRES	7105 MARINERS LANDING, FAYETTEVILLE, NC 28306	9483-99-3846
36	GIOVANNETTI, EDWIN JR	7115 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-5916
77	WOODS, MARTY L & WIFE SAMANTHA	7349 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9493-08-5845
152	BRAMBLE, KELVIN	6669 LAKE FARM RD, FAYETTEVILLE, NC 28306	9493-18-5836
153	GRAY, JAMES ALEXANDER III & MELISSA A	7003 LAKE FARM RD, FAYETTEVILLE, NC 28306	9493-18-3776
154	BARROW, JAMES CHRISTIAN	7000 LAKE FARM RD, FAYETTEVILLE, NC 28306	9493-19-3028
155	GRAY, JAMES ALEXANDER III & MELISSA A	7003 LAKE FARM RD, FAYETTEVILLE, NC 28306	9493-18-2770
156	FELMY, LARRY L & WIFE SHERRY B	7004 LAKE FARM RD, FAYETTEVILLE, NC 28306	9493-19-1044
157	SHEPARD, JOE M & BRENDA D	7005 LAKE FARM RD, FAYETTEVILLE, NC 28306	9493-18-1665
158	BLACK KNIGHT HOUSE LLC	7007 LAKE FARM RD, FAYETTEVILLE, NC 28306	9493-18-0653
159	LUHN, TERESA L	7008 LAKE FARM RD, FAYETTEVILLE, NC 28306	9493-09-9060
160	SHOENBERGER, MICHAEL & WIFE BARBARA	7009 LAKE FARM RD, FAYETTEVILLE, NC 28306	9493-08-9627
161	HARMON, JAMES G & WIFE KIMBERLEE S	7344 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9493-09-5131
163	TROWBRIDGE, KRISTIN D	7348 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9493-09-4100
164	SMITH, JOSHUA & WIFE CANDICE	7353 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9493-08-4804
165	SHUMAN, JEFFREY A & WIFE CYNTHIA O	7352 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9493-09-3009
166	BORGER, JUDITH & HUSBAND BENJAMIN	7357 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9493-08-2766
167	MARINERS POINTE HOMEOWNERS ASSOC OF BRAGG INC	PO BOX 87209, FAYETTEVILLE, NC 28304	9493-09-1245
168	MACDOWELL, ANA	7365 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9493-08-0762
169	LUM, SEAN S & WIFE GABRIELLE R	7013 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-98-9841
170	ELBERG, JOSHUA R & WIFE SAIRA D	7017 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-98-8867

PROPERTY INFORMATION			
PARCEL	OWNER	MAILING ADDRESS	PIN
171	HARGIS, THEODORE & WIFE MARIA	7012 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-9173
172	DECOSTA, JOSEPH M	7016 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-8295
173	ROSTETTER, JACK F & WIFE BOBBIE J	7021 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-98-7980
174	WARREN, JERRY M & WIFE LINDA	7020 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-7266
175	BRENNAN, SHAUN & WIFE LARA E	7025 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-98-7807
176	HROBAK, ROBERT J & WIFE JOLENE E	7024 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-6166
177	COOK, MARTZA ELIZABETH & HUSBAND SEAN KELLY	7028 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-5173
178	SODHI, SALLI	7029 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-98-6813
179	HILBURN, CHRISTOPHER O & WIFE KAREN A	7032 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-5106
180	QUANT, KEVIN D & WIFE JANET L	7033 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-98-5821
181	ELLIOTT, WILLIAM & WIFE TINA	7037 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-98-4811
182	WALKER, SEAN P & WIFE KAREN A	7041 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-98-3816
183	MIRANDA, JUAN A JR & WIFE DANIELLE C	7036 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-4100
184	MIRAMONTES, JESSE ANDREW & WIFE JENNIFER DENNIS	7045 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-98-2933
185	FLINN, ANDREW L & WIFE PATRICIA C	7049 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-1050
186	KOORSEN, JOSHUA M & WIFE THERESA	7040 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-3146
187	SMITH, JEFFERY P & WIFE LAURA R	7053 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-1130
188	KOBA, MICHAEL G	7057 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-1201
189	HERLIHY, MICHELLE LYNNETTE & HUSBAND DANIEL JOSEPH IV	7044 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-3225
190	MARINERS POINTE HOMEOWNERS ASSOC OF BRAGG INC	PO BOX 87209, FAYETTEVILLE, NC 28304	9483-99-9492
191	STOVER, WILLIAM & WIFE MAUREEN	7048 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-3382
192	BRADLEY, CURTIS JEROME & WIFE VICKIE LANELLE	7052 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-4386
193	SPELL, HENRY M & WIFE MICHELE S	2905 DEEP CHANNEL CT, FAYETTEVILLE, NC 28306	9483-99-2531
194	MURACH, ROBERT J & WIFE KAREN KULENICH	2909 DEEP CHANNEL CT, FAYETTEVILLE, NC 28306	9483-99-1535
195	RAMOS, ROMAN ESTEVAN & WIFE KRISTINA NICOLE	2913 DEEP CHANNEL CT, FAYETTEVILLE, NC 28306	9483-99-9599
196	CRUZ SANTIAGO, FRANCISCO J & WIFE CAROLYN CRUZ	2916 DEEP CHANNEL CT, FAYETTEVILLE, NC 28306	9483-99-9762
197	MENHART, RICHARD L & WIFE KESA ANN	2912 DEEP CHANNEL CT, FAYETTEVILLE, NC 28306	9483-99-0870
198	MCMURDO, COLLEEN E & HUSBAND TAYLOR K	2908 DEEP CHANNEL CT, FAYETTEVILLE, NC 28306	9483-99-2753
199	LAYO, SHANE A & WIFE NICOLA TUNIA WALLI	7056 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-5415
200	GRAVES, NEWMAN H & WIFE KAREN E KELLY-GRAVES	7104 MARINERS LANDING DR, FAYETTEVILLE, NC 28306	9483-99-5641
201	AMAR, MOHAMADOU MAMOUNTE & WIFE D'IE AISSATOU	7112 MARINERS LANDING	9483-99-6761

FINAL DESIGN
ISSUED FOR BID



DATE	REVISIONS	BY
05.08.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AMB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPF
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPF
06.30.2021	FINAL DESIGN - CONTRACT ESTIMATE AND SUBMITTALS	PPF
04.15.2022	FINAL DESIGN - NOT EMPLOYMENT MODIFICATION	PPF
09.30.2022	FINAL DESIGN - ISSUED FOR BID	PPF

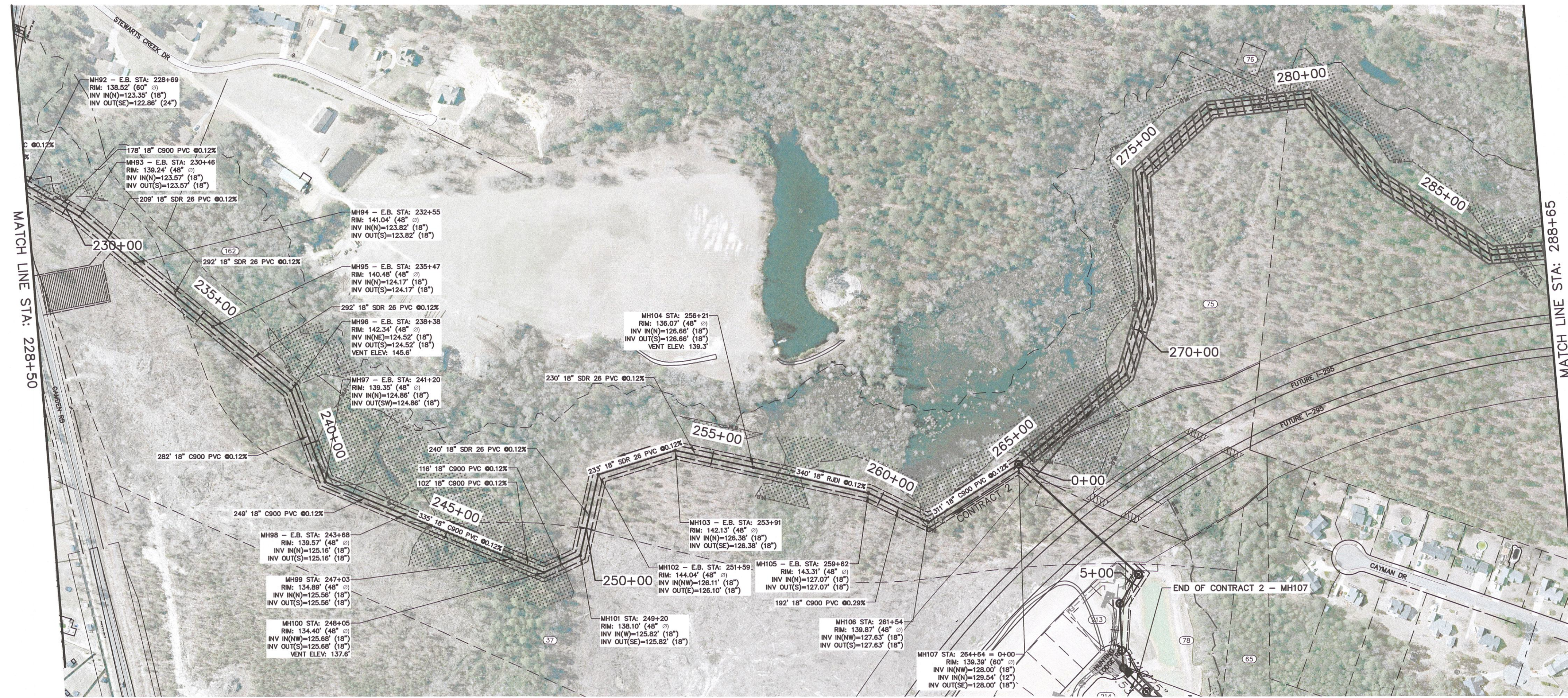
SHEET UP-4

SURVEY/GPS BY: MCKIM&CREED, INC.
 PROCESS/LOUT BY: DATE: 9/30/22
 PLAN/PROF.(S) BY: TMB/AMB
 DESIGN REVIEW BY: BRL
 APPROVED BY:
 SCALE: AS SHOWN

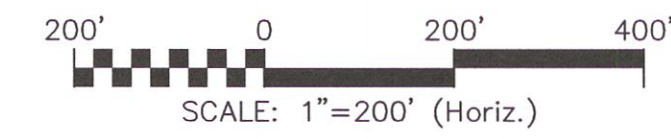


SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
 BIG ROCKFISH OUTFALL STA. 161+50 - STA. 229+11

WATER RESOURCES ENGINEERING
 FAYETTEVILLE PUBLIC WORKS COMMISSION
 P.O. Box 1088 Fayetteville, NC 28302
 855 Old Wilmington Road, Fayetteville, NC 28301



PLAN VIEW
SCALE HORIZ: 1"=200'



LEGEND
 ITEMS UNDER SEPARATE CONTRACT

PROPERTY INFORMATION			
PARCEL	OWNER	MAILING ADDRESS	PIN
37	CAMDEN GLEN DEVELOPMENT LLC	6885 CLIFFDALE RD, FAYETTEVILLE, NC 28314	9484-92-7453
65	HORNADAY CONST CO INC	581 EXECUTIVE PL, UNIT/APT 700, FAYETTEVILLE, NC 28305	9484-93-2843
75	BEASLEY, JOHNNY & BILLY E DEES	PO BOX 495, HOPE MILLS, NC 28348	9484-83-4294
76	AVERETTE, CHARLES DAVID	545 E LAKE RIDGE RD, RAEFORD, NC 28376	9484-73-6270
78	PEARTREE WEST OWNERS ASSOCIATION	2401 ROBESON ST, FAYETTEVILLE, NC 28305	9484-93-3623
162	BEASLEY, JOHNNY & BILLY E DEES	5555 TRADE ST, HOPE MILLS, NC 28348	9484-90-3689
213	CAMDEN GLEN DEVELOPMENT LLC	3257 HUNTING LODGE RD, FAYETTEVILLE, NC 28306	9484-93-3348

DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AMB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
06.30.2021	FINAL DESIGN - CONTRACT SEPARATION AND RESUBMITTALS	PPP
04.13.2022	FINAL DESIGN - CONTRACT SEPARATION AND RESUBMITTALS	PPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	PPP

SHEET	UP-5A
SURVEY/PGS BY:	MCKIM&CREED, INC.
PROCESS/LAYOUT BY:	DATE: 9/30/22
PLAN/PROF/GSSO BY:	TMB/AMB
DESIGN REVIEW BY:	BRL
APPROVED BY:	
SCALE:	AS SHOWN



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
BIG ROCKFISH OUTFALL
 STA. 229+11.00 - STA. 289+64

FAYETTEVILLE PUBLIC WORKS COMMISSION
WATER RESOURCES ENGINEERING
 P.O. Box 1088, Fayetteville, NC 28302
 955 Old Wilmington Road, Fayetteville, NC 28301



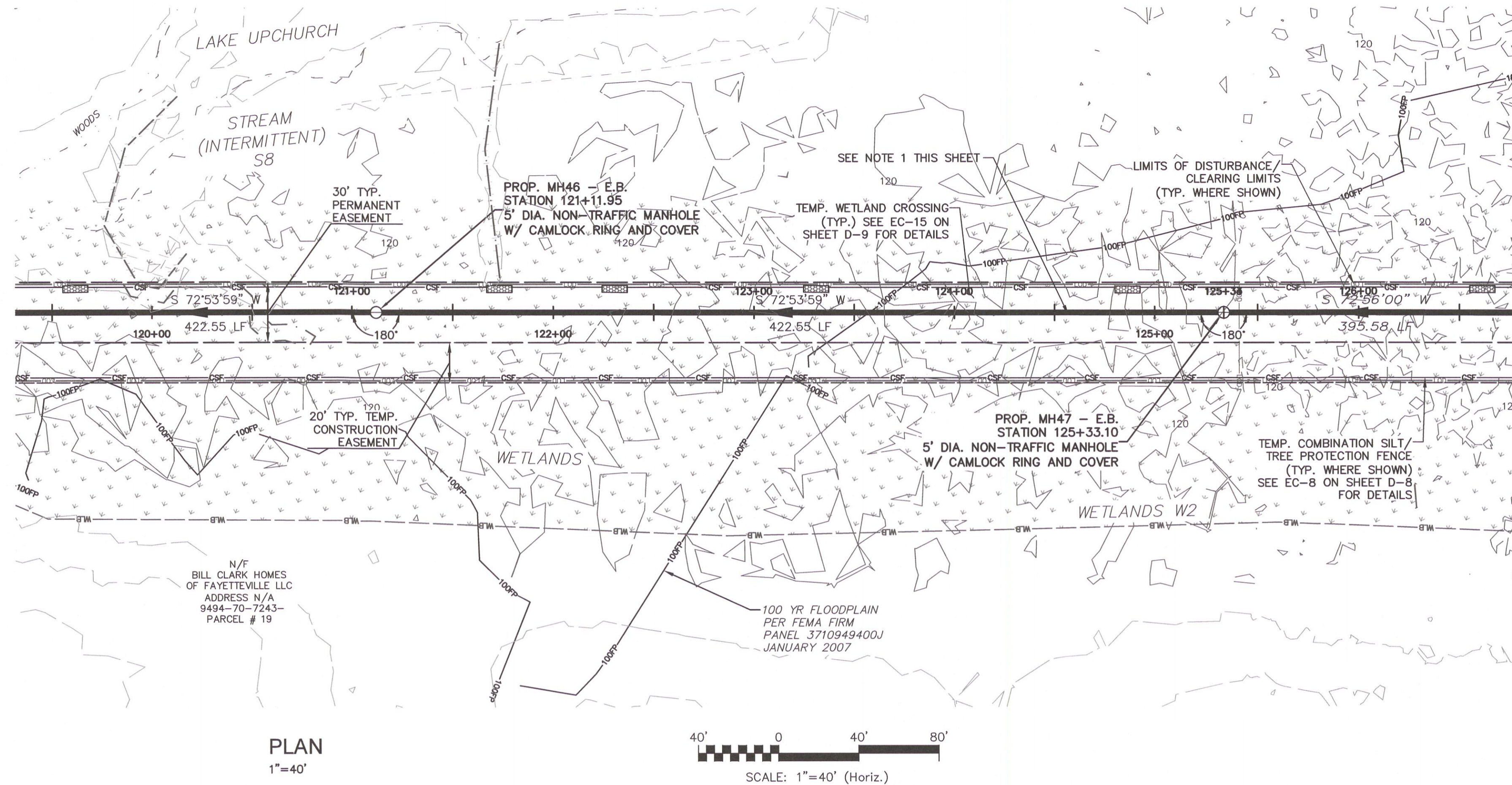
FINAL DESIGN
ISSUED FOR BID

PWC DRAWING # DS-154.86

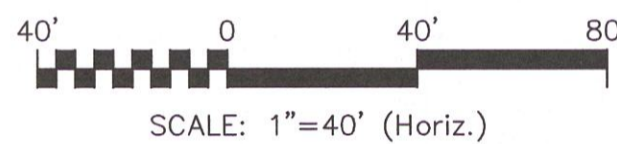
I:\01925\0005\Water\80-Drawings\86-Design\BRC-MAIN-OUTFALL-SHEETS\BRC-C14-PLAN-AND-PROFILE.dwg 09/30/2022 08:25 mplec

MATCH LINE STATION 120+00 SEE SHEET C-10B

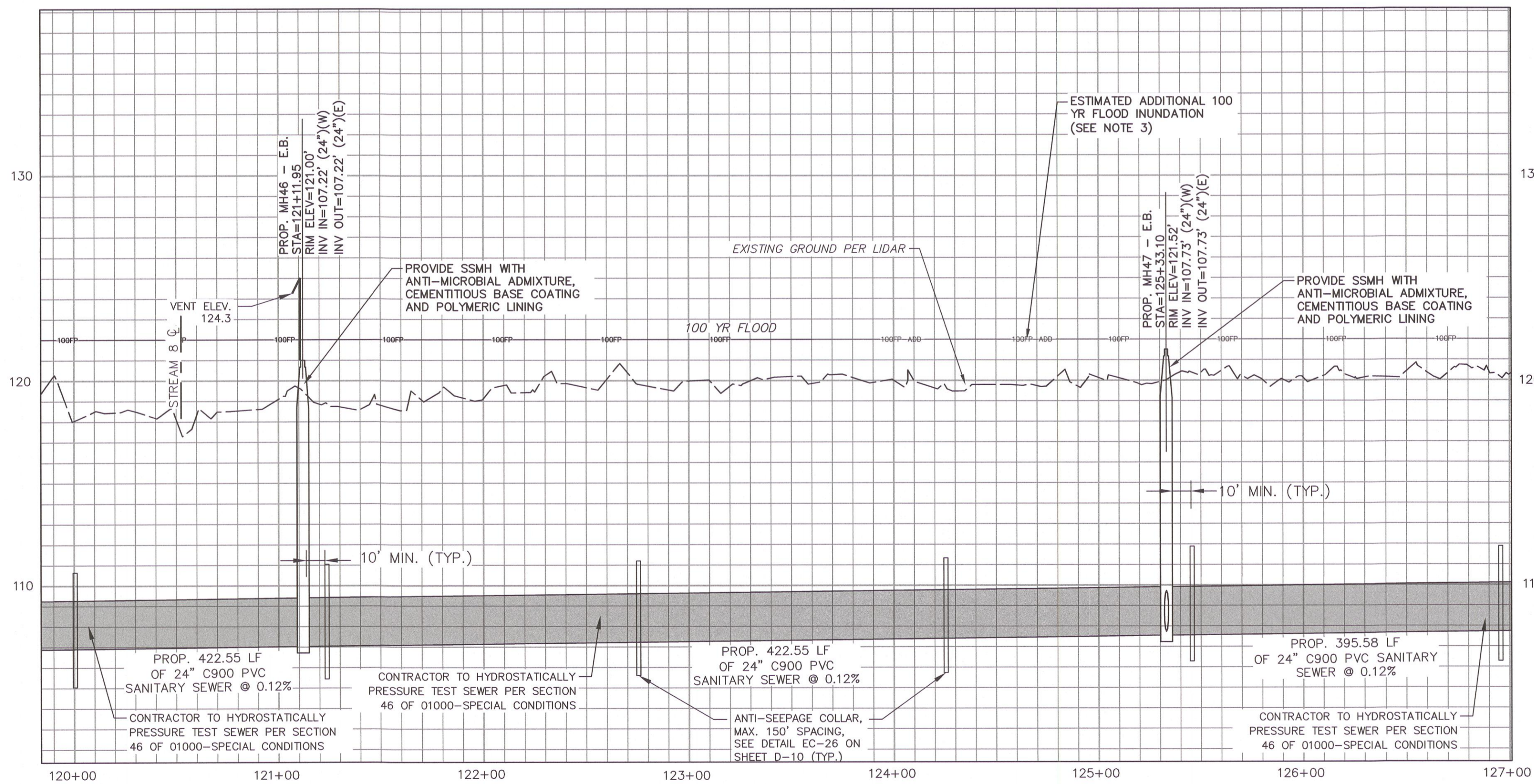
SCALE: 1"=4' (Vert.)



PLAN
1"=40'



MATCH LINE STATION 120+00 SEE SHEET C-10B



PROFILE VIEW
HORIZ: 1"=40'
VERT: 1"=4'

MATCH LINE STATION 127+00 SEE SHEET C-12

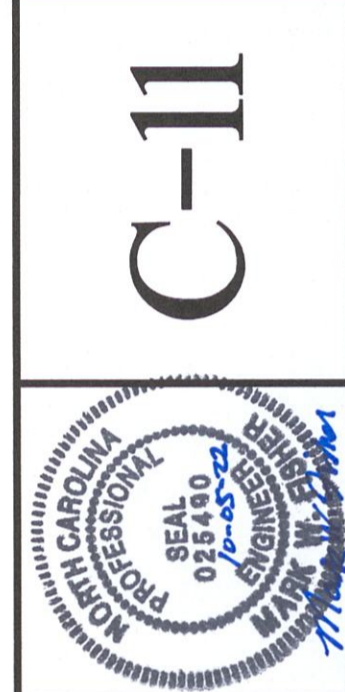
- NOTE:
1. CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS OR WITHIN 100' OF A PRIVATE WELL IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.
 2. CONTRACTOR SHALL PROVIDE MANHOLES LOCATED IN WETLANDS WITH AN ANTI-MICROBIAL ADMIXTURE, CEMENTITIOUS BASE COATING AND POLYMERIC LINING.
 3. LIDAR SURVEY PROVIDED BY FYPWC FOR USE ON THIS PROJECT INDICATES THE EXISTING GROUND SURFACE IS BELOW THE FEMA 100 YR FLOOD ELEVATION OF 121.9. THEREFORE, ADDITIONAL INUNDATION OF THE PROPOSED SEWER LINE AND EASEMENT CAN BE EXPECTED.
 4. PRIOR TO ORDERING SSMH 46 AND SSMH 47, CONTRACTOR SHALL COORDINATE CONSTRUCTION STAKING TO CONFIRM GROUND ELEVATION AND FINAL CASTING HEIGHTS OF THESE MANHOLES.

MATCH LINE STATION 127+00 SEE SHEET C-12



DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
06.30.2021	FINAL DESIGN - CONTRACT MODIFICATIONS	PPP
06.13.2021	FINAL DESIGN - BEST PRACTICE MODIFICATIONS	PPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	PPP

SHEET	C-11
SURVEY/GPS BY:	MCKIM&CREED, INC.
PROCESS/LAYOUT BY:	DATE: 09/30/22
PLAN/PROF (S/S/S) BY:	TMB/AWB
DESIGN REVIEW BY:	BRL
APPROVED BY:	
SCALE:	AS SHOWN



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
BIG ROCKFISH OUTFALL STA. 120+00 - 127+00

FAYETTEVILLE PUBLIC WORKS COMMISSION
WATER RESOURCES ENGINEERING
P.O. Box 1088 Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28301

Know what's below. Call before you dig.

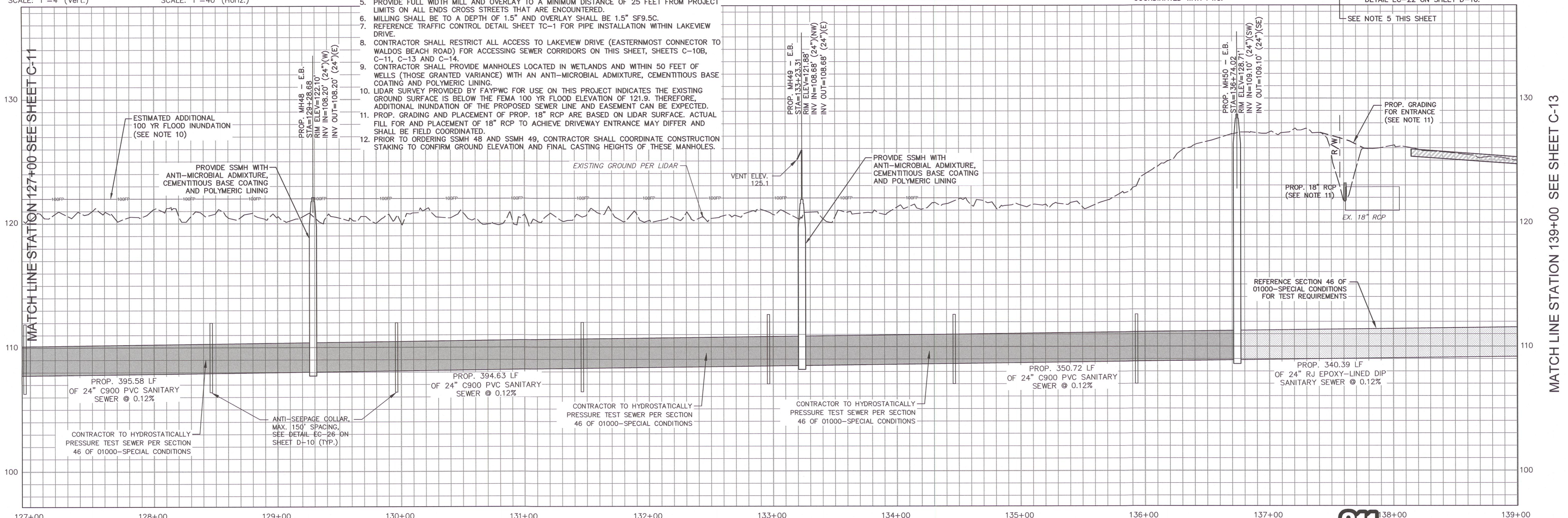
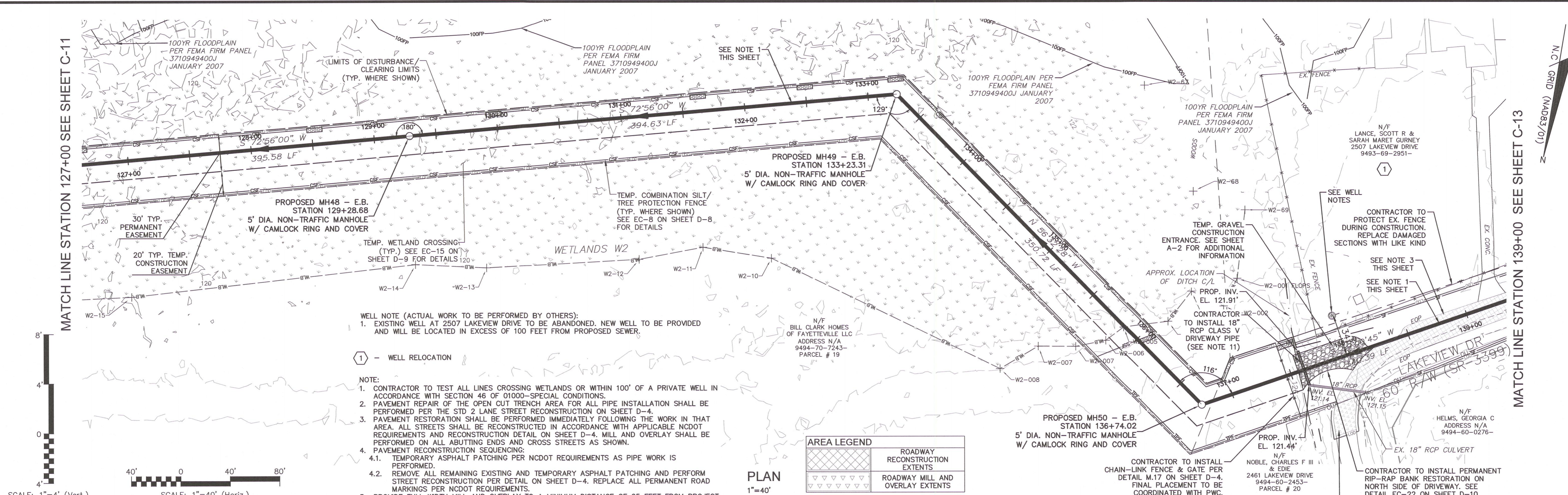
1730 Varsity Drive, Suite 500
Raleigh, NC 27606
Phone: (919)233-8091, Fax: (919)233-8031
F-1222
www.mckimcreed.com

FINAL DESIGN
ISSUED FOR BID

I:\01925\0005\Water\80-Drawings\86-Design\BRC-Main Outfall Sheets\BRC C15-C33 PLAN AND PROFILE.dwg 09/30/2022 08:28 mpic

MATCH LINE STATION 127+00 SEE SHEET C-11

MATCH LINE STATION 139+00 SEE SHEET C-13



PROFILE VIEW
HORIZ: 1"=40'
VERT: 1"=4'

FINAL DESIGN
ISSUED FOR BID

811 Know what's below. Call before you dig.

MCKIM & CREED
1730 Varsity Drive, Suite 500
Raleigh, NC 27606
Phone: (919)233-8091, Fax: (919)233-8031
F-1222
www.mckimcreed.com

PWC DRAWING # DS-15486

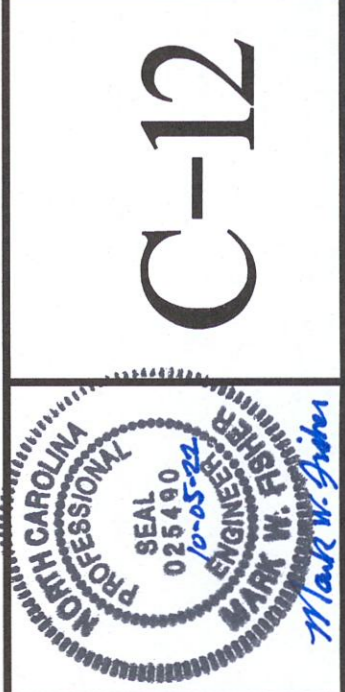
- WELL NOTE (ACTUAL WORK TO BE PERFORMED BY OTHERS):
1. EXISTING WELL AT 2507 LAKEVIEW DRIVE TO BE ABANDONED. NEW WELL TO BE PROVIDED AND WILL BE LOCATED IN EXCESS OF 100 FEET FROM PROPOSED SEWER.
- 1 - WELL RELOCATION
- NOTE:
1. CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS OR WITHIN 100' OF A PRIVATE WELL IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.
2. PAVEMENT REPAIR OF THE OPEN CUT TRENCH AREA FOR ALL PIPE INSTALLATION SHALL BE PERFORMED PER THE STD 2 LANE STREET RECONSTRUCTION ON SHEET D-4.
3. PAVEMENT RESTORATION SHALL BE PERFORMED IMMEDIATELY FOLLOWING THE WORK IN THAT AREA. ALL STREETS SHALL BE RECONSTRUCTED IN ACCORDANCE WITH APPLICABLE NCDOT REQUIREMENTS AND RECONSTRUCTION DETAIL ON SHEET D-4. MILL AND OVERLAY SHALL BE PERFORMED ON ALL ABUTTING ENDS AND CROSS STREETS AS SHOWN.
4. PAVEMENT RECONSTRUCTION SEQUENCING:
4.1. TEMPORARY ASPHALT PATCHING PER NCDOT REQUIREMENTS AS PIPE WORK IS PERFORMED.
4.2. REMOVE ALL REMAINING EXISTING AND TEMPORARY ASPHALT PATCHING AND PERFORM STREET RECONSTRUCTION PER DETAIL ON SHEET D-4. REPLACE ALL PERMANENT ROAD MARKINGS PER NCDOT REQUIREMENTS.
5. PROVIDE FULL WIDTH MILL AND OVERLAY TO A MINIMUM DISTANCE OF 25 FEET FROM PROJECT LIMITS ON ALL ENDS CROSS STREETS THAT ARE ENCOUNTERED.
6. MILLING SHALL BE TO A DEPTH OF 1.5" AND OVERLAY SHALL BE 1.5" SF9.5C.
7. REFERENCE TRAFFIC CONTROL DETAIL SHEET TC-1 FOR PIPE INSTALLATION WITHIN LAKEVIEW DRIVE.
8. CONTRACTOR SHALL RESTRICT ALL ACCESS TO LAKEVIEW DRIVE (EASTERMOST CONNECTOR TO WALDOS BEACH ROAD) FOR ACCESSING SEWER CORRIDORS ON THIS SHEET, SHEETS C-10B, C-11, C-13 AND C-14.
9. CONTRACTOR SHALL PROVIDE MANHOLES LOCATED IN WETLANDS AND WITHIN 50 FEET OF WELLS (THOSE GRANTED VARIANCE) WITH AN ANTI-MICROBIAL ADMIXTURE, CEMENTITIOUS BASE COATING AND POLYMERIC LINING.
10. LIDAR SURVEY PROVIDED BY FAYPWC FOR USE ON THIS PROJECT INDICATES THE EXISTING GROUND SURFACE IS BELOW THE FEMA 100 YR FLOOD ELEVATION OF 121.9. THEREFORE, ADDITIONAL INUNDATION OF THE PROPOSED SEWER LINE AND EASEMENT CAN BE EXPECTED.
11. PROP. GRADING AND PLACEMENT OF PROP. 18" RCP ARE BASED ON LIDAR SURFACE. ACTUAL FILL FOR AND PLACEMENT OF 18" RCP TO ACHIEVE DRIVEWAY ENTRANCE MAY DIFFER AND SHALL BE FIELD COORDINATED.
12. PRIOR TO ORDERING SSMH 48 AND SSMH 49, CONTRACTOR SHALL COORDINATE CONSTRUCTION STAKING TO CONFIRM GROUND ELEVATION AND FINAL CASTING HEIGHTS OF THESE MANHOLES.

AREA LEGEND

	ROADWAY RECONSTRUCTION EXTENTS
	ROADWAY MILL AND OVERLAY EXTENTS

DATE	REVISIONS	BY
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	MHP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	MHP
06.30.2021	FINAL DESIGN - CONTRACT REVISION AND REVISED	MHP
09.02.2021	FINAL DESIGN - CONTRACT REVISION AND REVISED	MHP
04.15.2022	FINAL DESIGN - CONTRACT REVISION AND REVISED	MHP
09.30.2022	FINAL DESIGN - CONTRACT REVISION AND REVISED	MHP

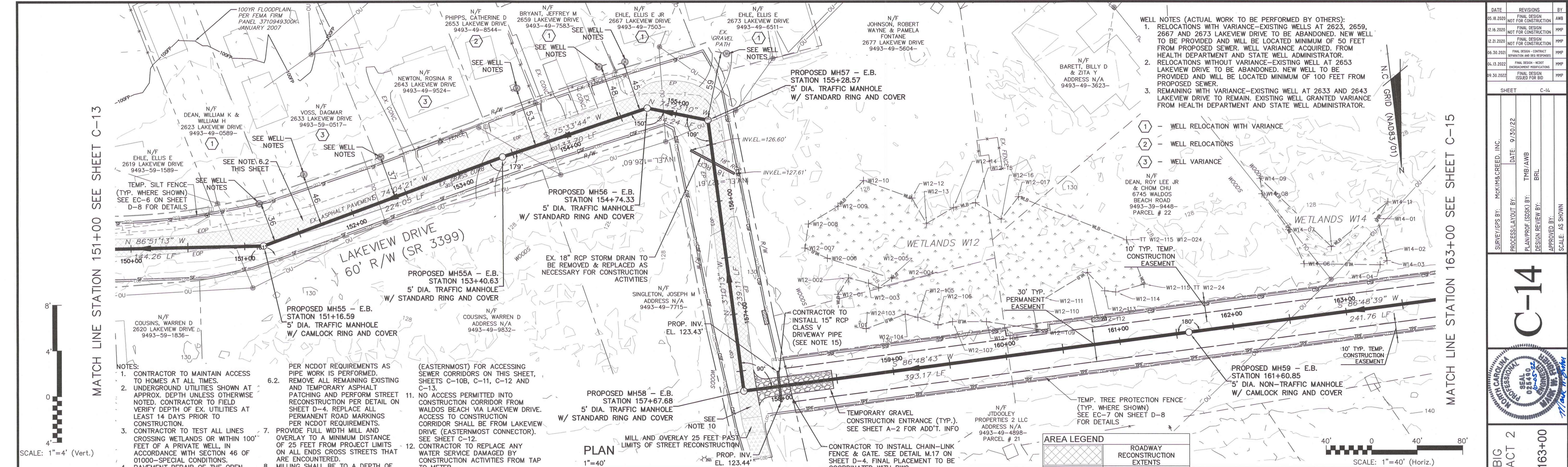
SHEET	C-12
DATE	9/30/22
DESIGNED BY	TMB/AMB
CHECKED BY	BRL
APPROVED BY	
SCALE	AS SHOWN



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
BIG ROCKFISH OUTFALL STA. 127+00 - 139+00

FAYETTEVILLE PUBLIC WORKS COMMISSION

FAYETTEVILLE WATER RESOURCES ENGINEERING
P.O. Box 1084, Fayetteville, NC 28302
985 Old Wilmington Road, Fayetteville, NC 28301

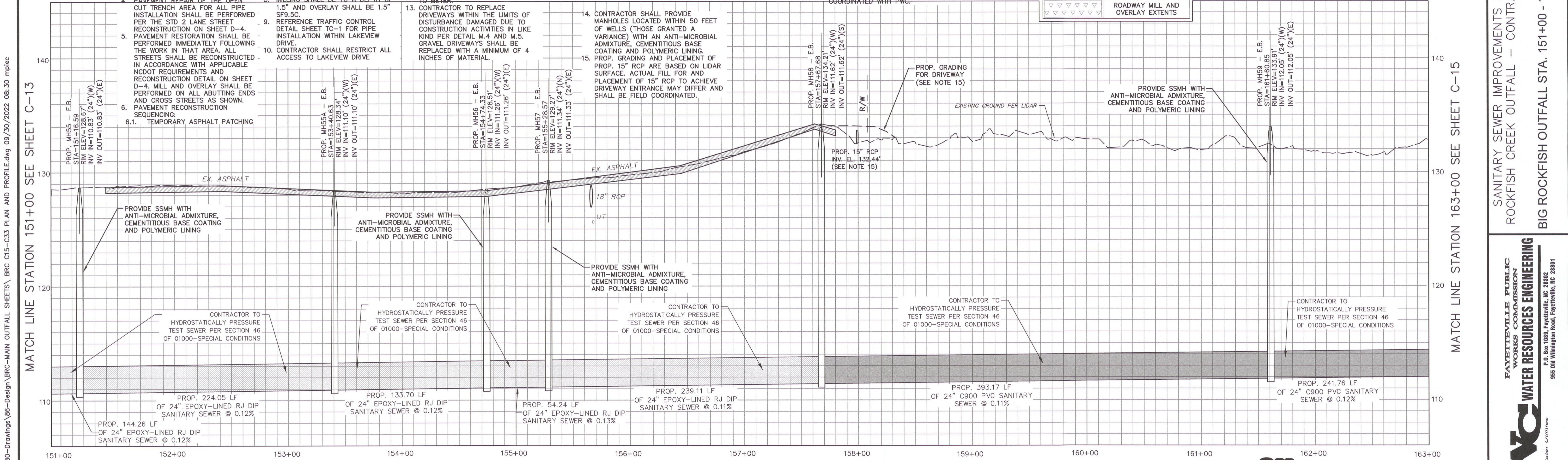


WELL NOTES (ACTUAL WORK TO BE PERFORMED BY OTHERS):

1. RELOCATIONS WITH VARIANCE—EXISTING WELLS AT 2623, 2659, 2667 AND 2673 LAKEVIEW DRIVE TO BE ABANDONED. NEW WELL TO BE PROVIDED AND WILL BE LOCATED MINIMUM OF 50 FEET FROM PROPOSED SEWER. WELL VARIANCE ACQUIRED FROM HEALTH DEPARTMENT AND STATE WELL ADMINISTRATOR.
2. RELOCATIONS WITHOUT VARIANCE—EXISTING WELL AT 2653 LAKEVIEW DRIVE TO BE ABANDONED. NEW WELL TO BE PROVIDED AND WILL BE LOCATED MINIMUM OF 100 FEET FROM PROPOSED SEWER.
3. REMAINING WITH VARIANCE—EXISTING WELL AT 2633 AND 2643 LAKEVIEW DRIVE TO REMAIN. EXISTING WELL GRANTED VARIANCE FROM HEALTH DEPARTMENT AND STATE WELL ADMINISTRATOR.

- 1 - WELL RELOCATION WITH VARIANCE
- 2 - WELL RELOCATIONS
- 3 - WELL VARIANCE

AREA LEGEND	
	ROADWAY RECONSTRUCTION EXTENTS
	ROADWAY MILL AND OVERLAY EXTENTS



PROFILE VIEW
HORIZ: 1"=40'
VERT: 1"=4'

FINAL DESIGN
ISSUED FOR BID

PWC DRAWING # DS-15486

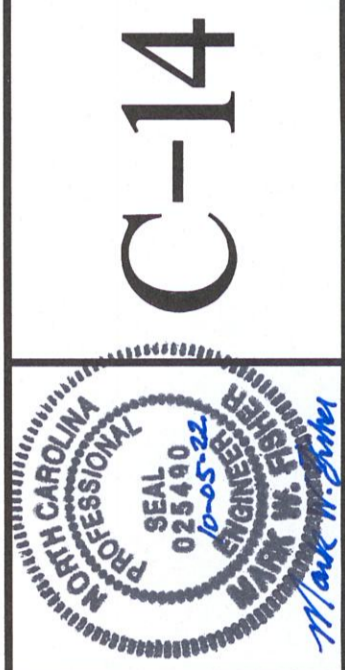
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MATCH LINE STATION 151+00 SEE SHEET C-13

MATCH LINE STATION 163+00 SEE SHEET C-15

DATE	REVISIONS	BY
09.08.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
06.30.2021	FINAL DESIGN - CONTRACT OPERATIONS AND 603 RESPONSE	PPP
04.13.2022	FINAL DESIGN - CONTRACT OPERATIONS AND 603 RESPONSE	PPP
09.30.2022	FINAL DESIGN - CONTRACT OPERATIONS AND 603 RESPONSE	PPP

SHEET	DATE	BY
C-14	9/30/22	BRL



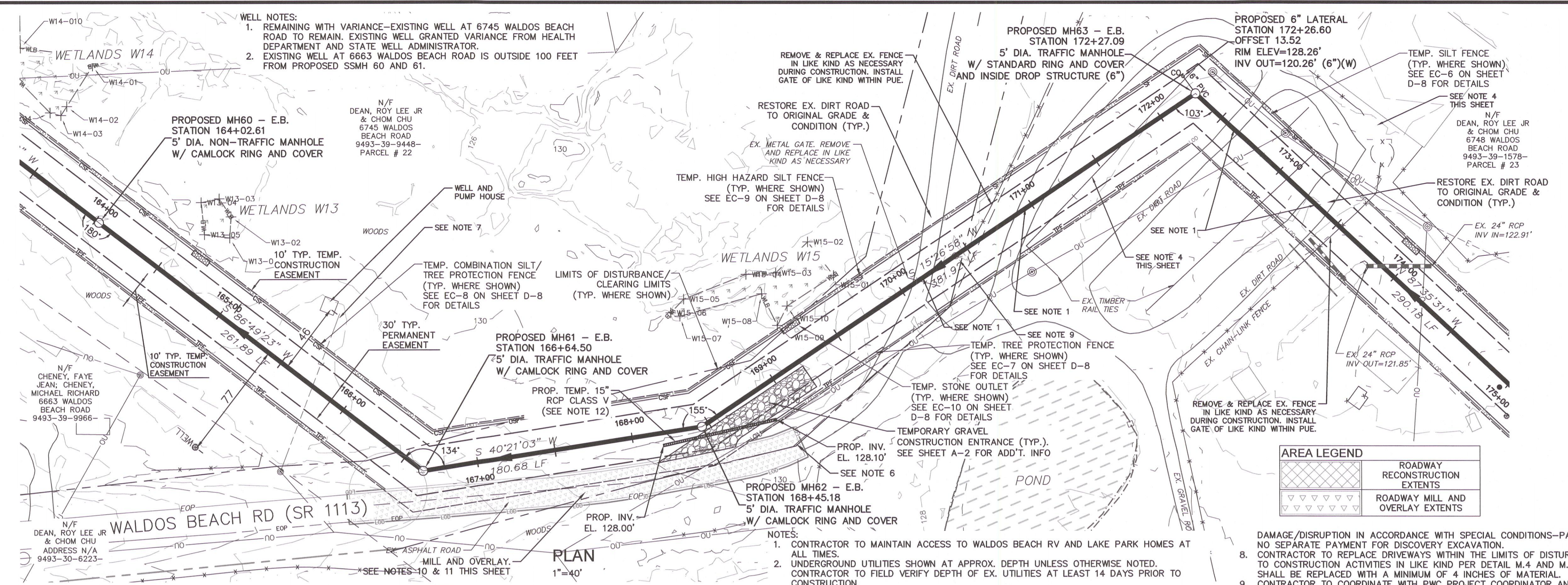
SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
BIG ROCKFISH OUTFALL STA. 151+00 - 163+00

FAYETTEVILLE PUBLIC WORKS COMMISSION
PWC WATER RESOURCES ENGINEERING
P.O. Box 1089, Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28301

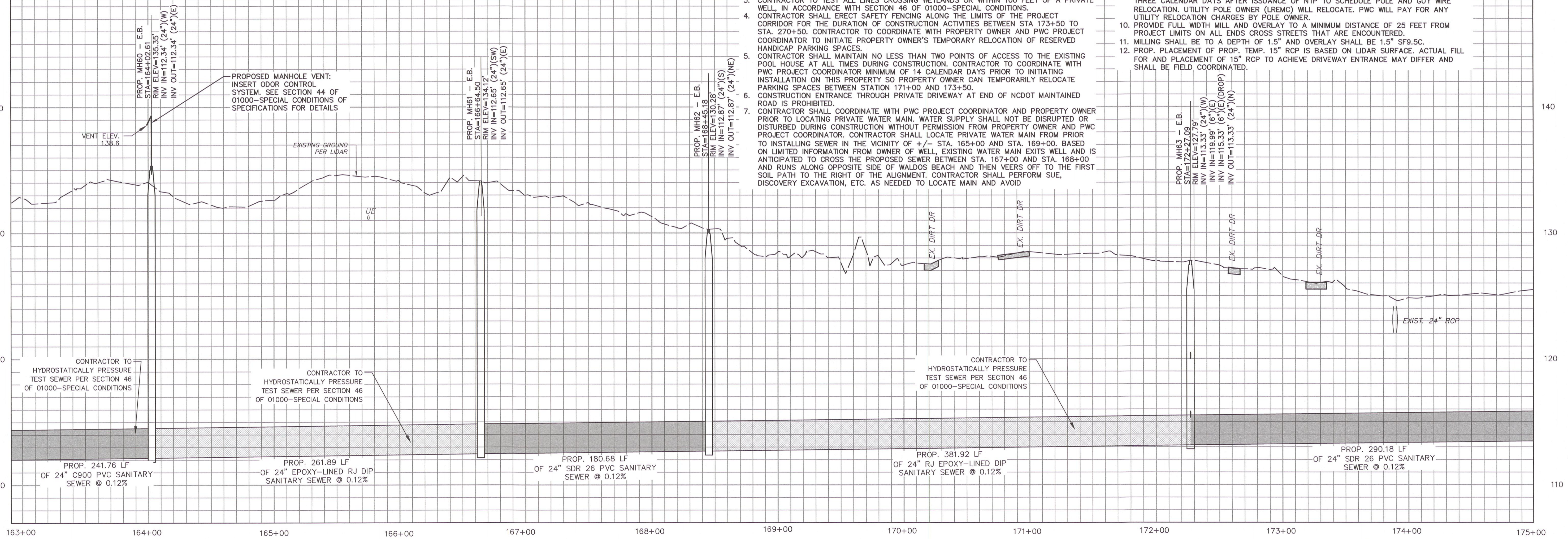
7730 Varsity Drive, Suite 500
Raleigh, NC 27606
Phone: (919)233-8091, Fax: (919)233-8031
F-1222
www.mckimcreed.com

I:\01925\0005\Water\80-Drawings\86-Design\BRC-C15-C33 PLAN AND PROFILE.dwg, 09/30/2022, 08:30 mpj:pc
 MATCH LINE STATION 163+00 SEE SHEET C-14

MATCH LINE STATION 163+00 SEE SHEET C-14

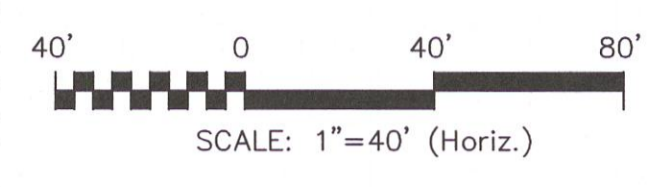


MATCH LINE STATION 175+00 SEE SHEET C-16



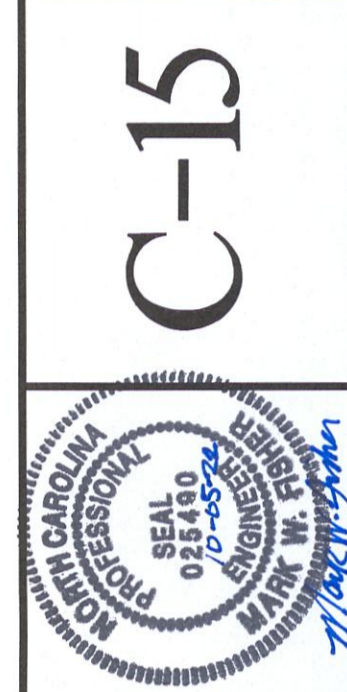
PROFILE VIEW
 HORIZ: 1"=40'
 VERT: 1"=4'

FINAL DESIGN
 ISSUED FOR BID



DATE	REVISIONS	BY
05.18.2024	FINAL DESIGN	AWB
12.16.2023	NOT FOR CONSTRUCTION	AWB
12.21.2023	FINAL DESIGN	HPP
06.30.2023	NOT FOR CONSTRUCTION	HPP
06.30.2023	FINAL DESIGN - CONTRACT SEPARATION AND DESIGN REVISIONS	HPP
04.13.2022	FINAL DESIGN - MEET REQUIREMENT APPLICATIONS	HPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	HPP

SHEET	C-15
PROCESS LAYOUT BY:	DATE: 09/30/22
PLAN/PROF/ISSUED BY:	TMB/AMB
DESIGN REVIEW BY:	BRL
APPROVED BY:	
SCALE:	AS SHOWN



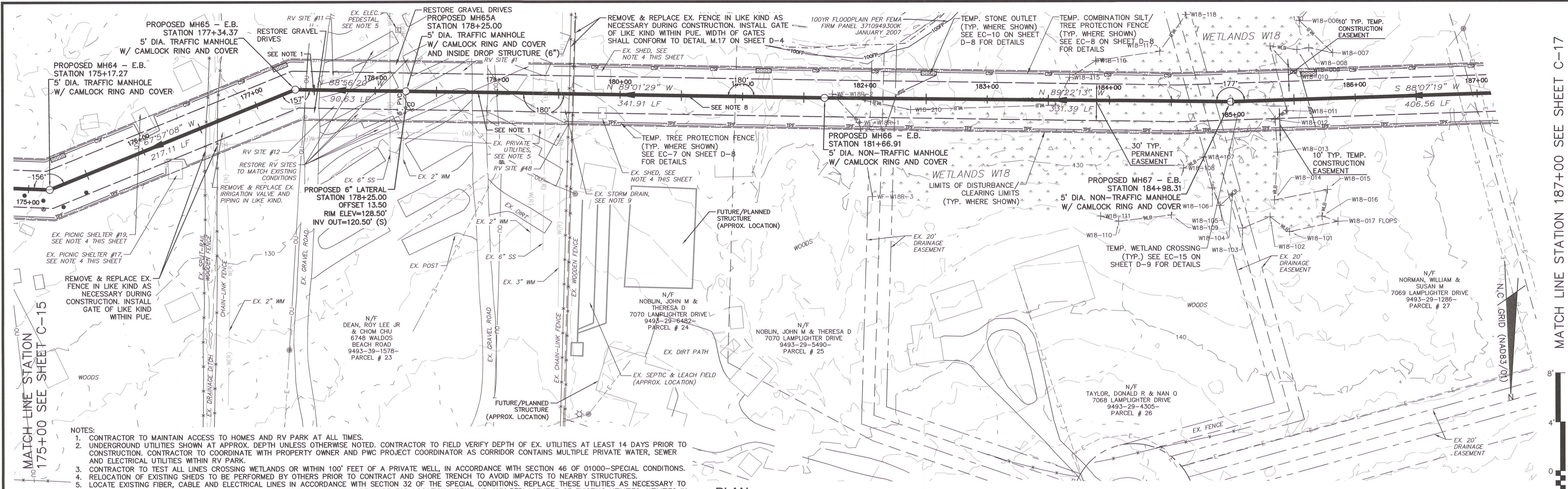
SANITARY SEWER IMPROVEMENTS BIG
 ROCKFISH CREEK OUTFALL - CONTRACT 2
 BIG ROCKFISH OUTFALL STA. 163+00 - 175+00

FAYETTEVILLE PUBLIC
 WORKS COMMISSION
PWC
 WATER RESOURCES ENGINEERING
 P.O. Box 1088 Fayetteville, NC 28302
 855 Old Wilmington Road, Fayetteville, NC 28301



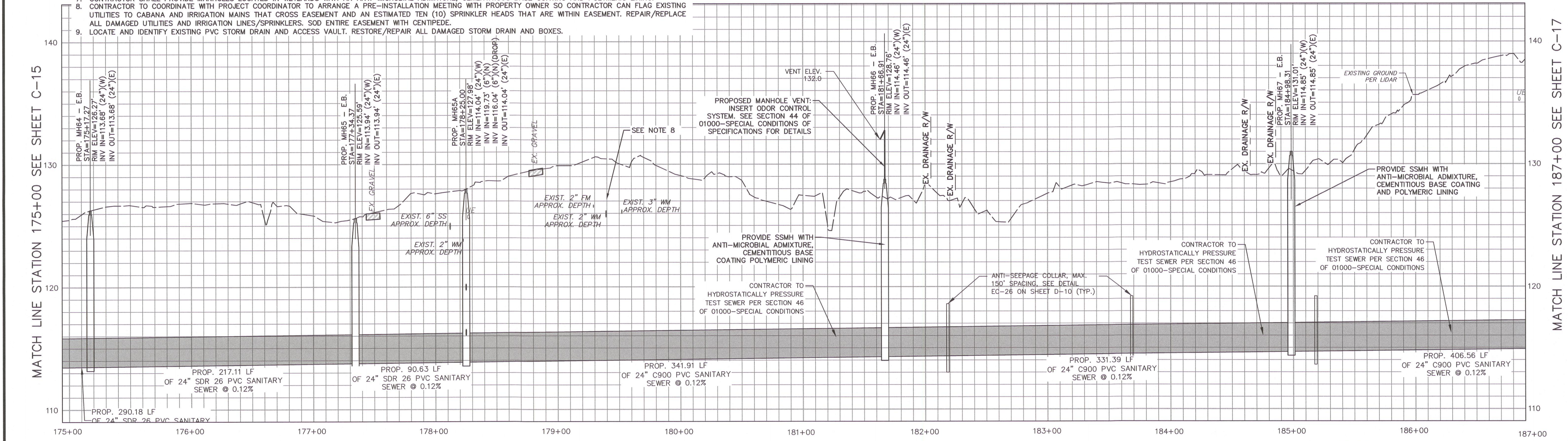
PWC DRAWING # DS-154.86

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NOTES:

- CONTRACTOR TO MAINTAIN ACCESS TO HOMES AND RV PARK AT ALL TIMES.
- UNDERGROUND UTILITIES SHOWN AT APPROX. DEPTH UNLESS OTHERWISE NOTED. CONTRACTOR TO FIELD VERIFY DEPTH OF EX. UTILITIES AT LEAST 14 DAYS PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH PROPERTY OWNER AND PWC PROJECT COORDINATOR AS CORRIDOR CONTAINS MULTIPLE PRIVATE WATER, SEWER AND ELECTRICAL UTILITIES WITHIN RV PARK.
- CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS OR WITHIN 100' FEET OF A PRIVATE WELL, IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.
- RELOCATION OF EXISTING SHEDS TO BE PERFORMED BY OTHERS PRIOR TO CONTRACT AND SHORE TRENCH TO AVOID IMPACTS TO NEARBY STRUCTURES.
- LOCATE EXISTING FIBER, CABLE AND ELECTRICAL LINES IN ACCORDANCE WITH SECTION 32 OF THE SPECIAL CONDITIONS. REPLACE THESE UTILITIES AS NECESSARY TO ACCOMMODATE INSTALLATION OF OUTFALL. NO SEPARATE PAYMENT SHALL BE MADE FOR LOCATION WORK AND ANY REPLACEMENT OF EXISTING UTILITIES. UTILITIES IN CONFLICT WITH OUTFALL INSTALLATION INCLUDE BUT ARE NOT LIMITED TO WATER SUPPLY AND SEWER COLLECTION MAINS, ELECTRICAL TEMPORARY CONNECTION RISERS, PRIMARY CIRCUIT FOR TEMPORARY RV POWER FEEDS, WATER AND SEWER HOOKUP SERVICES FOR RV LOTS, TELECOMMUNICATION/INTERNET/CABLE, ETC. TWO PRIMARY CORRIDORS ARE ANTICIPATED NEAR STATION 176+50 AND 179+75. ALL REINSTATEMENT OF PIPE SERVICES, WIRING SHALL BE IN ACCORDANCE WITH LOCAL AND STATE BUILDING CODE. CONTRACTOR TO BE RESPONSIBLE FOR ALL LOCAL PERMITTING AND INSPECTION REQUIRED BY THE COUNTY.
- CONTRACTOR TO REPLACE DRIVEWAYS WITHIN THE LIMITS OF DISTURBANCE DAMAGED DUE TO CONSTRUCTION ACTIVITIES IN LIKE KIND PER DETAIL M.4 AND M.5. GRAVEL DRIVEWAYS SHALL BE REPLACED WITH A MINIMUM OF 8 INCHES OF MATERIAL.
- CONTRACTOR SHALL PROVIDE MANHOLES LOCATED IN WETLANDS WITH AN ANTI-MICROBIAL ADMIXTURE, CEMENTITIOUS BASE COATING AND POLYMERIC LINING.
- CONTRACTOR TO COORDINATE WITH PROJECT COORDINATOR TO ARRANGE A PRE-INSTALLATION MEETING WITH PROPERTY OWNER SO CONTRACTOR CAN FLAG EXISTING UTILITIES TO CABANA AND IRRIGATION MAINS THAT CROSS EASEMENT AND AN ESTIMATED TEN (10) SPRINKLER HEADS THAT ARE WITHIN EASEMENT. REPAIR/REPLACE ALL DAMAGED UTILITIES AND IRRIGATION LINES/SPRINKLERS. SOD ENTIRE EASEMENT WITH CENTIPEDE.
- LOCATE AND IDENTIFY EXISTING PVC STORM DRAIN AND ACCESS VAULT. RESTORE/REPAIR ALL DAMAGED STORM DRAIN AND BOXES.



PROFILE VIEW
 HORIZ: 1"=40'
 VERT: 1"=4'

FINAL DESIGN
 ISSUED FOR BID

PROVIDE SSMH WITH ANTI-MICROBIAL ADMIXTURE, CEMENTITIOUS BASE COATING POLYMERIC LINING

CONTRACTOR TO HYDROSTATICALLY PRESSURE TEST SEWER PER SECTION 46 OF 01000-SPECIAL CONDITIONS

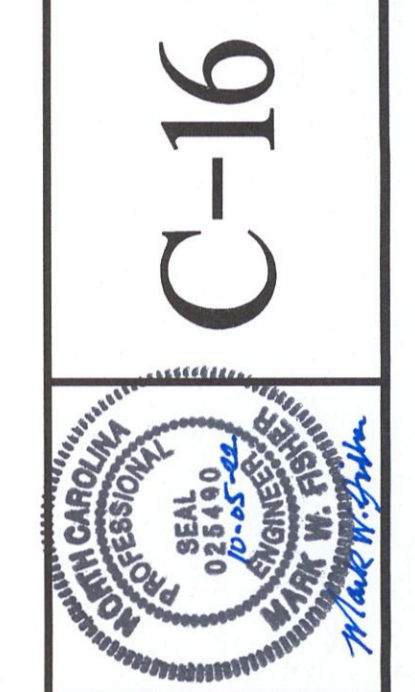
ANTI-SEEPAGE COLLAR, MAX. 150' SPACING, SEE DETAIL EC-26 ON SHEET D-10 (TYP.)

CONTRACTOR TO HYDROSTATICALLY PRESSURE TEST SEWER PER SECTION 46 OF 01000-SPECIAL CONDITIONS

CONTRACTOR TO HYDROSTATICALLY PRESSURE TEST SEWER PER SECTION 46 OF 01000-SPECIAL CONDITIONS

DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN FOR CONSTRUCTION	AWB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPF
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPF
06.30.2021	FINAL DESIGN - CONTRACT REVISIONS AND REVISED PERMITS	PPF
01.18.2022	FINAL DESIGN - NOT FOR CONSTRUCTION	PPF
09.30.2022	FINAL DESIGN - NOT FOR CONSTRUCTION	PPF

SHEET	C-16
SURVEY/GPS BY:	MCKIMCREED, INC.
PROCESS/LAYOUT BY:	DATE: 9/30/22
PLAN/PROF. (S/S/S) BY:	TMB/AMB
DESIGN REVIEW BY:	BRL
APPROVED BY:	SCALE: AS SHOWN



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2

BIG ROCKFISH OUTFALL STA. 175+00 - 187+00

FAYETTEVILLE PUBLIC WORKS COMMISSION

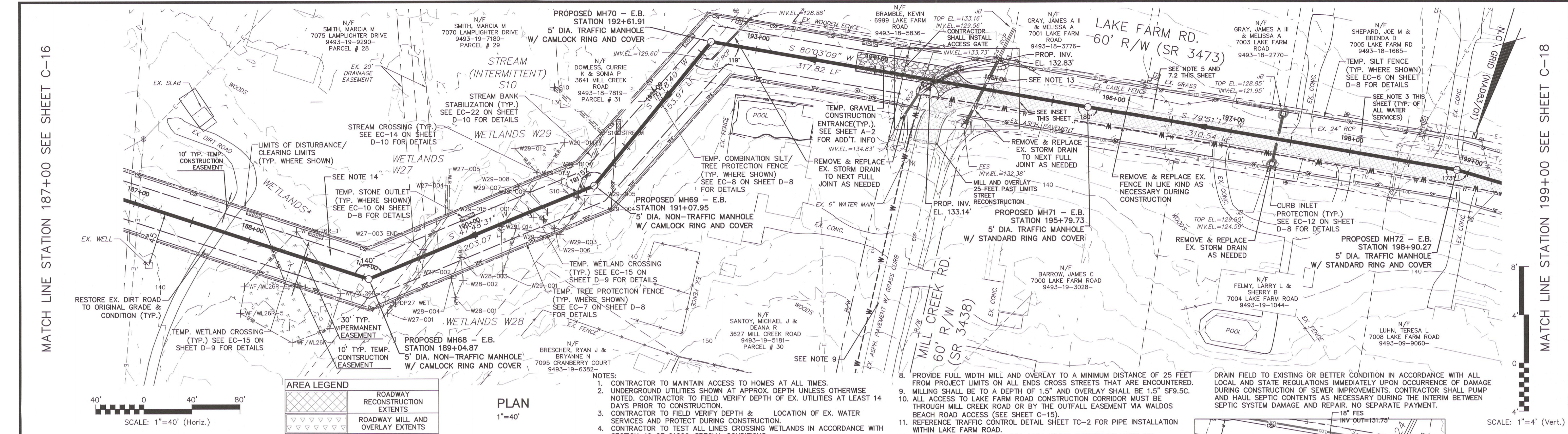
WATER RESOURCES ENGINEERING

P.O. Box 1088 Fayetteville, NC 28302
 Phone: (919)233-8091, Fax: (919)233-8031
 F-1222
 www.mckimcreed.com

811
 Know what's below. Call before you dig.

MCKIM & CREED
 1730 Varsity Drive, Suite 500
 Raleigh, NC 27606
 www.mckimcreed.com

PWC DRAWING # DS-154.86

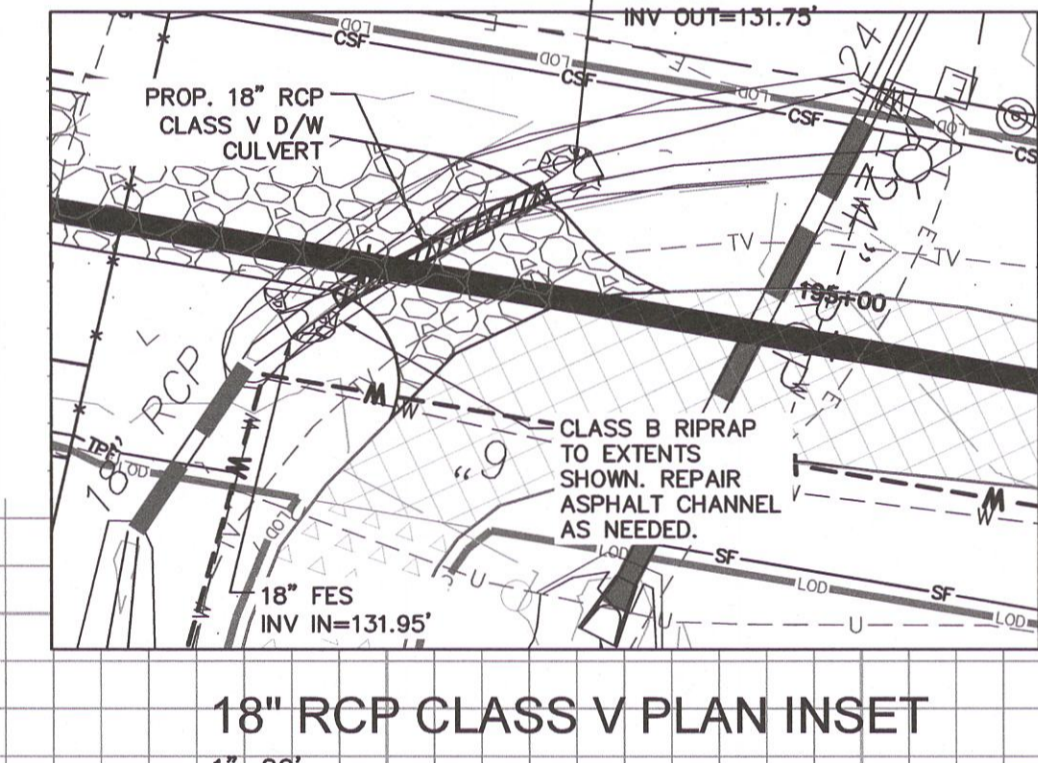


AREA LEGEND

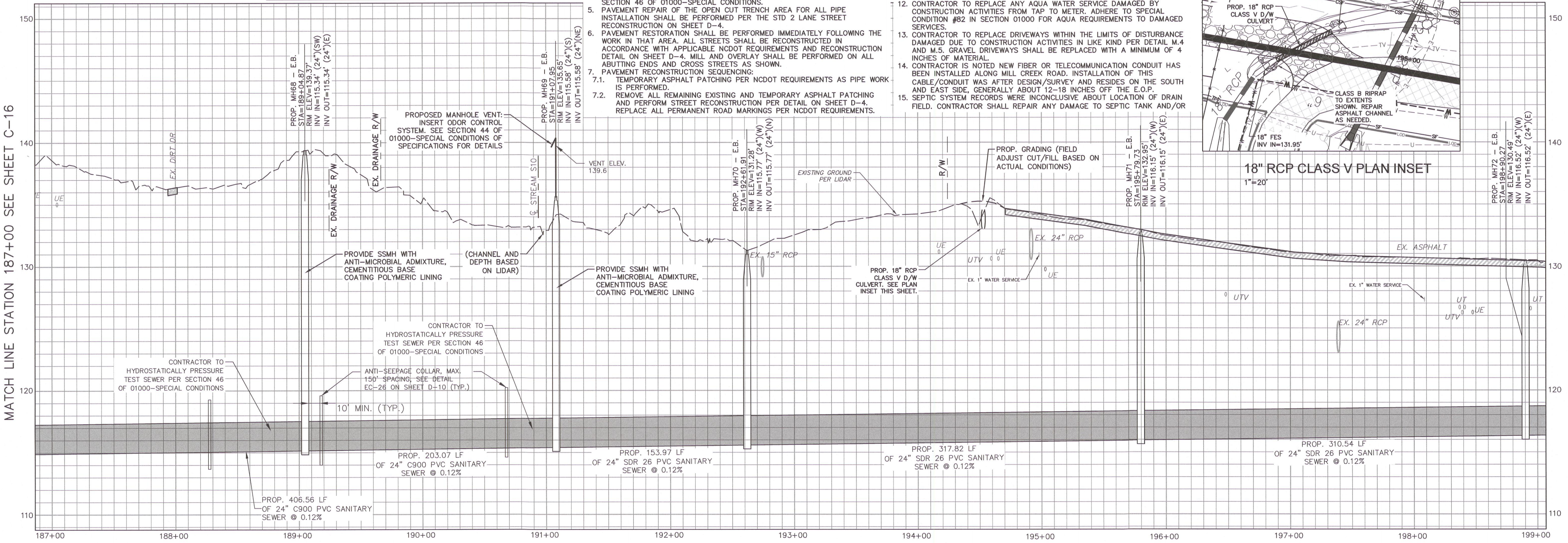
[Symbol]	ROADWAY RECONSTRUCTION EXTENTS
[Symbol]	ROADWAY MILL AND OVERLAY EXTENTS

PLAN
1"=40'

- NOTES:**
- CONTRACTOR TO MAINTAIN ACCESS TO HOMES AT ALL TIMES.
 - UNDERGROUND UTILITIES SHOWN AT APPROX. DEPTH UNLESS OTHERWISE NOTED. CONTRACTOR TO FIELD VERIFY DEPTH OF EX. UTILITIES AT LEAST 14 DAYS PRIOR TO CONSTRUCTION.
 - CONTRACTOR TO FIELD VERIFY DEPTH & LOCATION OF EX. WATER SERVICES AND PROTECT DURING CONSTRUCTION.
 - CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.
 - PAVEMENT REPAIR OF THE OPEN CUT TRENCH AREA FOR ALL PIPE INSTALLATION SHALL BE PERFORMED PER THE STD 2 LANE STREET RECONSTRUCTION ON SHEET D-4.
 - PAVEMENT RESTORATION SHALL BE PERFORMED IMMEDIATELY FOLLOWING THE WORK IN THAT AREA. ALL STREETS SHALL BE RECONSTRUCTED IN ACCORDANCE WITH APPLICABLE NCDOT REQUIREMENTS AND RECONSTRUCTION DETAIL ON SHEET D-4. MILL AND OVERLAY SHALL BE PERFORMED ON ALL ABUTTING ENDS AND CROSS STREETS AS SHOWN.
 - PAVEMENT RECONSTRUCTION SEQUENCING:
 - TEMPORARY ASPHALT PATCHING PER NCDOT REQUIREMENTS AS PIPE WORK IS PERFORMED.
 - REMOVE ALL REMAINING EXISTING AND TEMPORARY ASPHALT PATCHING AND PERFORM STREET RECONSTRUCTION PER DETAIL ON SHEET D-4. REPLACE ALL PERMANENT ROAD MARKINGS PER NCDOT REQUIREMENTS.
 - PROVIDE FULL WIDTH MILL AND OVERLAY TO A MINIMUM DISTANCE OF 25 FEET FROM PROJECT LIMITS ON ALL ENDS CROSS STREETS THAT ARE ENCOUNTERED.
 - MILLING SHALL BE TO A DEPTH OF 1.5" AND OVERLAY SHALL BE 1.5" SF9.5C.
 - ALL ACCESS TO LAKE FARM ROAD CONSTRUCTION CORRIDOR MUST BE THROUGH MILL CREEK ROAD OR BY THE OUTFALL EASEMENT VIA WALDOS BEACH ROAD ACCESS (SEE SHEET C-15).
 - REFERENCE TRAFFIC CONTROL DETAIL SHEET TC-2 FOR PIPE INSTALLATION WITHIN LAKE FARM ROAD.
 - CONTRACTOR TO REPLACE ANY AQUA WATER SERVICE DAMAGED BY CONSTRUCTION ACTIVITIES FROM TAP TO METER. ADHERE TO SPECIAL CONDITION #82 IN SECTION 01000 FOR AQUA REQUIREMENTS TO DAMAGED SERVICES.
 - CONTRACTOR TO REPLACE DRIVEWAYS WITHIN THE LIMITS OF DISTURBANCE DAMAGED DUE TO CONSTRUCTION ACTIVITIES IN LIKE KIND PER DETAIL M.4 AND M.5. GRAVEL DRIVEWAYS SHALL BE REPLACED WITH A MINIMUM OF 4 INCHES OF MATERIAL.
 - CONTRACTOR IS NOTED NEW FIBER OR TELECOMMUNICATION CONDUIT HAS BEEN INSTALLED ALONG MILL CREEK ROAD. INSTALLATION OF THIS CABLE/CONDUIT WAS AFTER DESIGN/SURVEY AND RESIDES ON THE SOUTH AND EAST SIDE, GENERALLY ABOUT 12-18 INCHES OFF THE E.O.P.
 - SEPTIC SYSTEM RECORDS WERE INCONCLUSIVE ABOUT LOCATION OF DRAIN FIELD. CONTRACTOR SHALL REPAIR ANY DAMAGE TO SEPTIC TANK AND/OR DRAIN FIELD TO EXISTING OR BETTER CONDITION IN ACCORDANCE WITH ALL LOCAL AND STATE REGULATIONS IMMEDIATELY UPON OCCURRENCE OF DAMAGE DURING CONSTRUCTION OF SEWER IMPROVEMENTS. CONTRACTOR SHALL PUMP AND HAUL SEPTIC CONTENTS AS NECESSARY DURING THE INTERIM BETWEEN SEPTIC SYSTEM DAMAGE AND REPAIR. NO SEPARATE PAYMENT.



18" RCP CLASS V PLAN INSET
1"=20'



PROFILE VIEW
HORIZ: 1"=40'
VERT: 1"=4'

FINAL DESIGN
ISSUED FOR BID

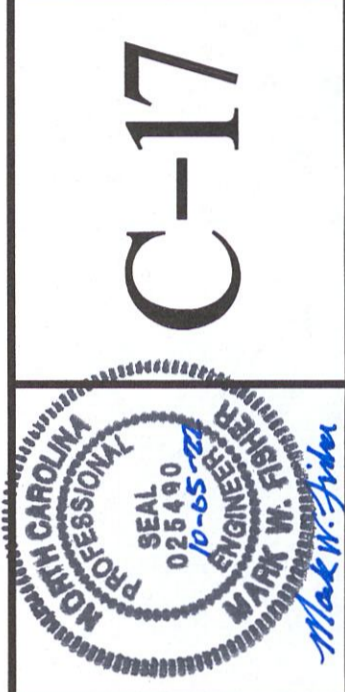
PWC DRAWING # DS-15486

REVISIONS

DATE	REVISIONS	BY
05.20.2021	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
02.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
04.30.2020	FINAL DESIGN - CONTRACT PREPARED AS PER REQUIREMENTS	PPP
04.15.2020	FINAL DESIGN - NOT INCORPORATED	PPP
09.30.2020	FINAL DESIGN - ISSUED FOR BID	PPP

PROCESS LOG

DATE	BY
09/30/22	MB
	BRL
	MB
	MB
	MB

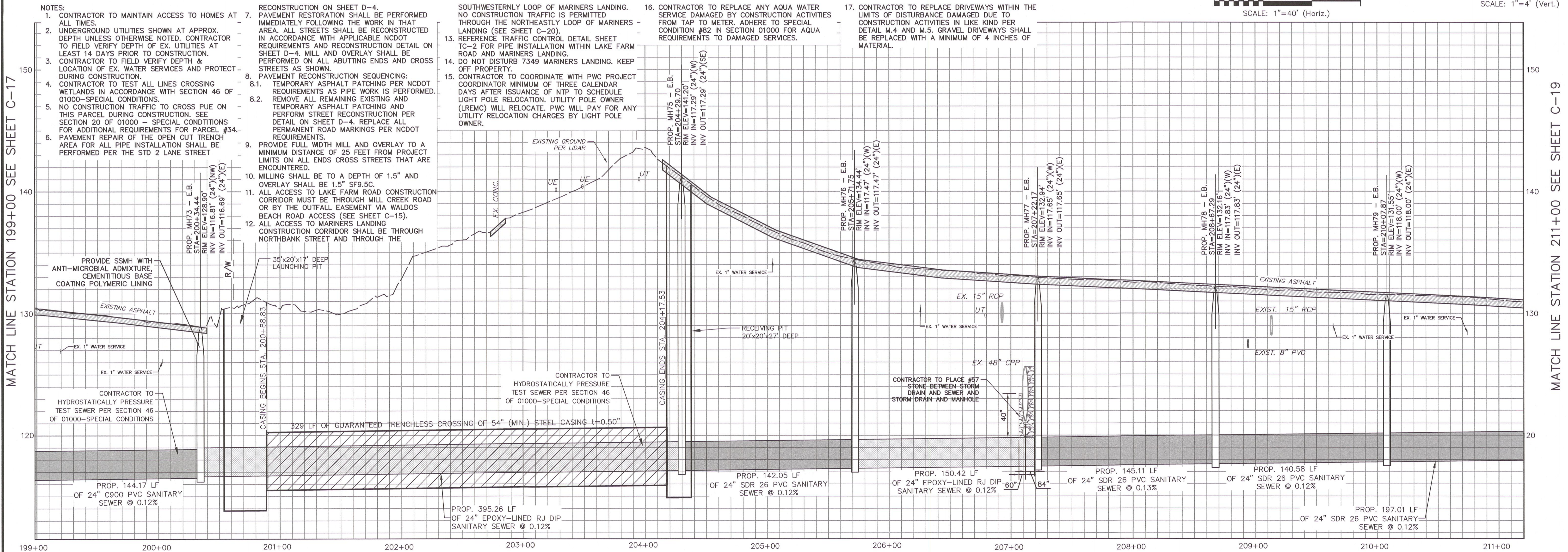
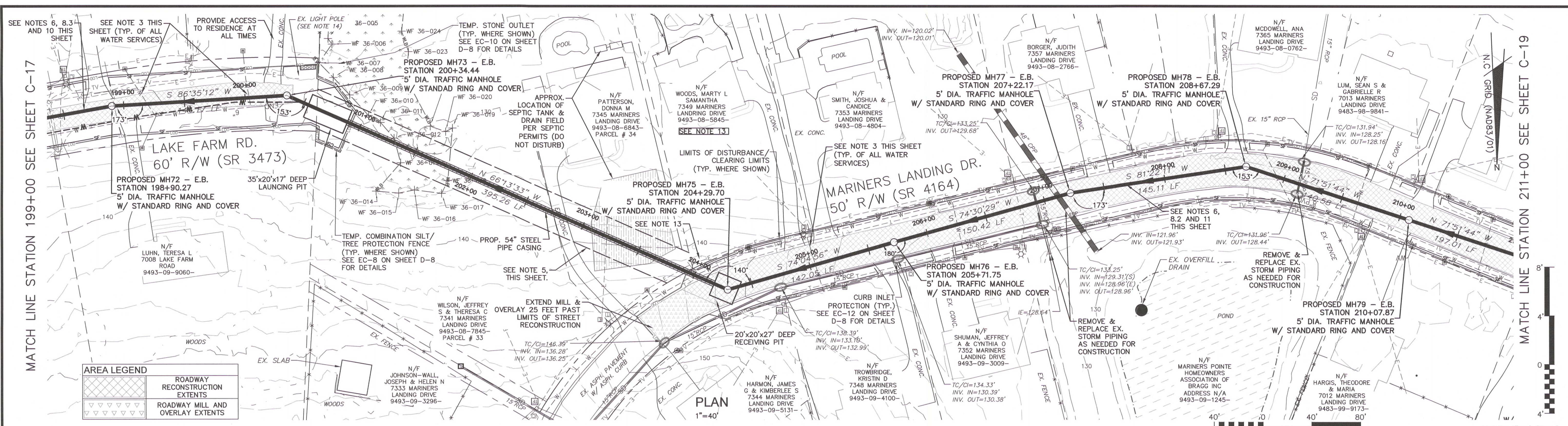


SANITARY SEWER IMPROVEMENTS BIG
ROCKFISH CREEK OUTFALL - CONTRACT 2
BIG ROCKFISH OUTFALL STA. 187+00 - 199+00

FAYETTEVILLE PUBLIC WORKS COMMISSION
WATER RESOURCES ENGINEERING
P.O. Box 1089 Fayetteville, NC 28302
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811
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Raleigh, NC 27606
Phone: (919)233-8081, Fax: (919)233-8031
F-1222
www.mckimcreed.com



SEE NOTES 6, 8.3 AND 10 THIS SHEET

PROVIDE ACCESS TO RESIDENCE AT ALL TIMES

SEE NOTE 3 THIS SHEET (TYP. OF ALL WATER SERVICES)

LAKE FARM RD. 60' R/W (SR 3473)

PROPOSED MH72 - E.B. STATION 198+90.27 5' DIA. TRAFFIC MANHOLE W/ STANDARD RING AND COVER

PROPOSED MH73 - E.B. STATION 200+34.44 5' DIA. TRAFFIC MANHOLE W/ STANDARD RING AND COVER

PROPOSED MH75 - E.B. STATION 204+29.70 5' DIA. TRAFFIC MANHOLE W/ STANDARD RING AND COVER

MARINERS LANDING DR. 50' R/W (SR 4164)

PROPOSED MH77 - E.B. STATION 207+22.17 5' DIA. TRAFFIC MANHOLE W/ STANDARD RING AND COVER

PROPOSED MH78 - E.B. STATION 208+67.29 5' DIA. TRAFFIC MANHOLE W/ STANDARD RING AND COVER

PROPOSED MH76 - E.B. STATION 205+71.75 5' DIA. TRAFFIC MANHOLE W/ STANDARD RING AND COVER

PROPOSED MH79 - E.B. STATION 210+07.87 5' DIA. TRAFFIC MANHOLE W/ STANDARD RING AND COVER

AREA LEGEND

ROADWAY RECONSTRUCTION EXTENTS

ROADWAY MILL AND OVERLAY EXTENTS

NOTES:

- CONTRACTOR TO MAINTAIN ACCESS TO HOMES AT ALL TIMES.
- UNDERGROUND UTILITIES SHOWN AT APPROX. DEPTH UNLESS OTHERWISE NOTED. CONTRACTOR TO FIELD VERIFY DEPTH OF EX. UTILITIES AT LEAST 14 DAYS PRIOR TO CONSTRUCTION.
- CONTRACTOR TO FIELD VERIFY DEPTH & LOCATION OF EX. WATER SERVICES AND PROTECT DURING CONSTRUCTION.
- CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.
- NO CONSTRUCTION TRAFFIC TO CROSS PUE ON THIS PARCEL DURING CONSTRUCTION. SEE SECTION 20 OF 01000 - SPECIAL CONDITIONS FOR ADDITIONAL REQUIREMENTS FOR PARCEL #34.
- PAVEMENT REPAIR OF THE OPEN CUT TRENCH AREA FOR ALL PIPE INSTALLATION SHALL BE PERFORMED PER THE STD 2 LANE STREET
- PAVEMENT RESTORATION SHALL BE PERFORMED IMMEDIATELY FOLLOWING THE WORK IN THAT AREA. ALL STREETS SHALL BE RECONSTRUCTED IN ACCORDANCE WITH APPLICABLE NCDOT REQUIREMENTS AND RECONSTRUCTION DETAIL ON SHEET D-4. MILL AND OVERLAY SHALL BE PERFORMED ON ALL ABUTTING ENDS AND CROSS STREETS AS SHOWN.
- PAVEMENT RECONSTRUCTION SEQUENCING:
 - TEMPORARY ASPHALT PATCHING PER NCDOT REQUIREMENTS AS PIPE WORK IS PERFORMED.
 - REMOVE ALL REMAINING EXISTING AND TEMPORARY ASPHALT PATCHING AND PERFORM STREET RECONSTRUCTION PER DETAIL ON SHEET D-4. REPLACE ALL PERMANENT ROAD MARKINGS PER NCDOT REQUIREMENTS.
- PROVIDE FULL WIDTH MILL AND OVERLAY TO A MINIMUM DISTANCE OF 25 FEET FROM PROJECT LIMITS ON ALL ENDS CROSS STREETS THAT ARE ENCOUNTERED.
- MILLING SHALL BE TO A DEPTH OF 1.5" AND OVERLAY SHALL BE 1.5" SF3.5C.
- ALL ACCESS TO LAKE FARM ROAD CONSTRUCTION CORRIDOR MUST BE THROUGH MILL CREEK ROAD OR BY THE OUTFALL EASEMENT VIA WALDOS BEACH ROAD ACCESS (SEE SHEET C-15).
- ALL ACCESS TO MARINERS LANDING CONSTRUCTION CORRIDOR SHALL BE THROUGH NORTHBANK STREET AND THROUGH THE
- SOUTHWESTERNLY LOOP OF MARINERS LANDING. NO CONSTRUCTION TRAFFIC IS PERMITTED THROUGH THE NORTHEASTLY LOOP OF MARINERS LANDING (SEE SHEET C-20).
- REFERENCE TRAFFIC CONTROL DETAIL SHEET TC-2 FOR PIPE INSTALLATION WITHIN LAKE FARM ROAD AND MARINERS LANDING.
- DO NOT DISTURB 7349 MARINERS LANDING. KEEP OFF PROPERTY.
- CONTRACTOR TO COORDINATE WITH PWC PROJECT COORDINATOR MINIMUM OF THREE CALENDAR DAYS AFTER ISSUANCE OF NTP TO SCHEDULE LIGHT POLE RELOCATION. UTILITY POLE OWNER (LREM) WILL RELOCATE. PWC WILL PAY FOR ANY UTILITY RELOCATION CHARGES BY LIGHT POLE OWNER.
- CONTRACTOR TO REPLACE ANY AQUA WATER SERVICE DAMAGED BY CONSTRUCTION ACTIVITIES FROM TAP TO METER. ADHERE TO SPECIAL CONDITION #82 IN SECTION 01000 FOR AQUA REQUIREMENTS TO DAMAGED SERVICES.
- CONTRACTOR TO REPLACE DRIVEWAYS WITHIN THE LIMITS OF DISTURBANCE DAMAGED DUE TO CONSTRUCTION ACTIVITIES IN LIKE KIND PER DETAIL M.4 AND M.5. GRAVEL DRIVEWAYS SHALL BE REPLACED WITH A MINIMUM OF 4 INCHES OF MATERIAL.

MATCH LINE STATION 199+00 SEE SHEET C-17

MATCH LINE STATION 211+00 SEE SHEET C-19

DATE: 05.18.2024 REVISIONS BY: AWW
05.18.2024 FINAL DESIGN NOT FOR CONSTRUCTION
05.18.2024 FINAL DESIGN NOT FOR CONSTRUCTION
05.18.2024 FINAL DESIGN NOT FOR CONSTRUCTION
05.18.2024 FINAL DESIGN NOT FOR CONSTRUCTION
05.18.2024 FINAL DESIGN NOT FOR CONSTRUCTION
05.18.2024 FINAL DESIGN NOT FOR CONSTRUCTION

SHEET: C-18

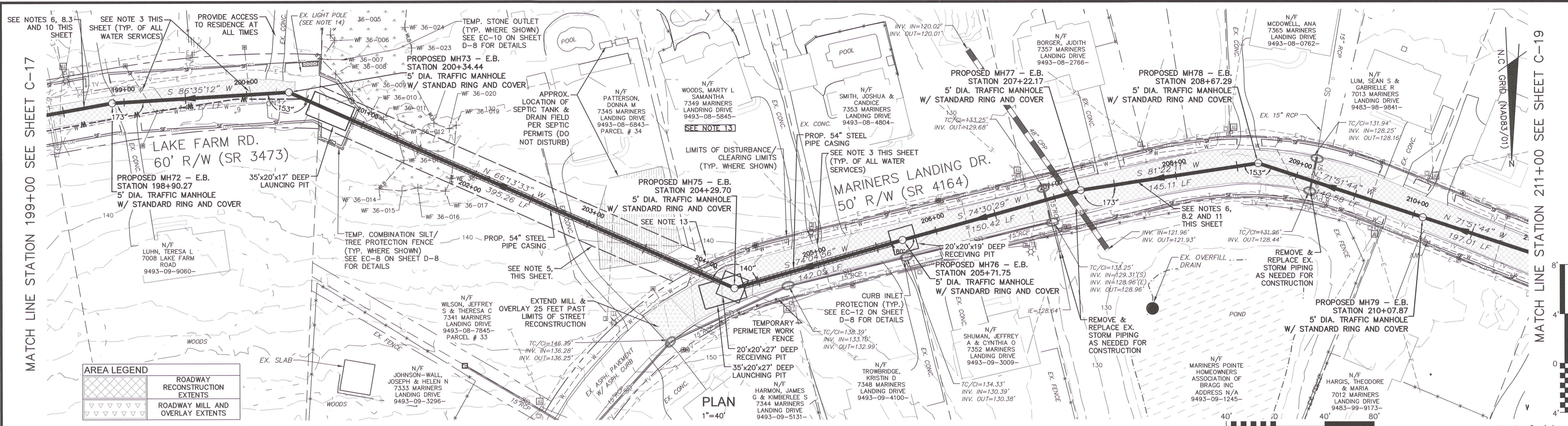
PROCESS LAYOUT BY: MCKIM & CREED, INC. DATE: 05/20/22
PLAN/PROF (SS) BY: TMB/AWB
DESIGN/REVIEW BY: BRL
APPROVED BY: [Signature]
SCALE: AS SHOWN

C-18

PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA
02540
06-05-20
MCKIM & CREED, INC.
1730 Varsity Drive, Suite 500
Raleigh, NC 27606

SANITARY SEWER IMPROVEMENTS BIG
ROCKFISH CREEK OUTFALL - CONTRACT 2
BIG ROCKFISH OUTFALL STA. 199+00 - 211+00

FAYETTEVILLE PUBLIC
WORKS COMMISSION
WATER RESOURCES ENGINEERING
P.O. Box 1088 Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28301

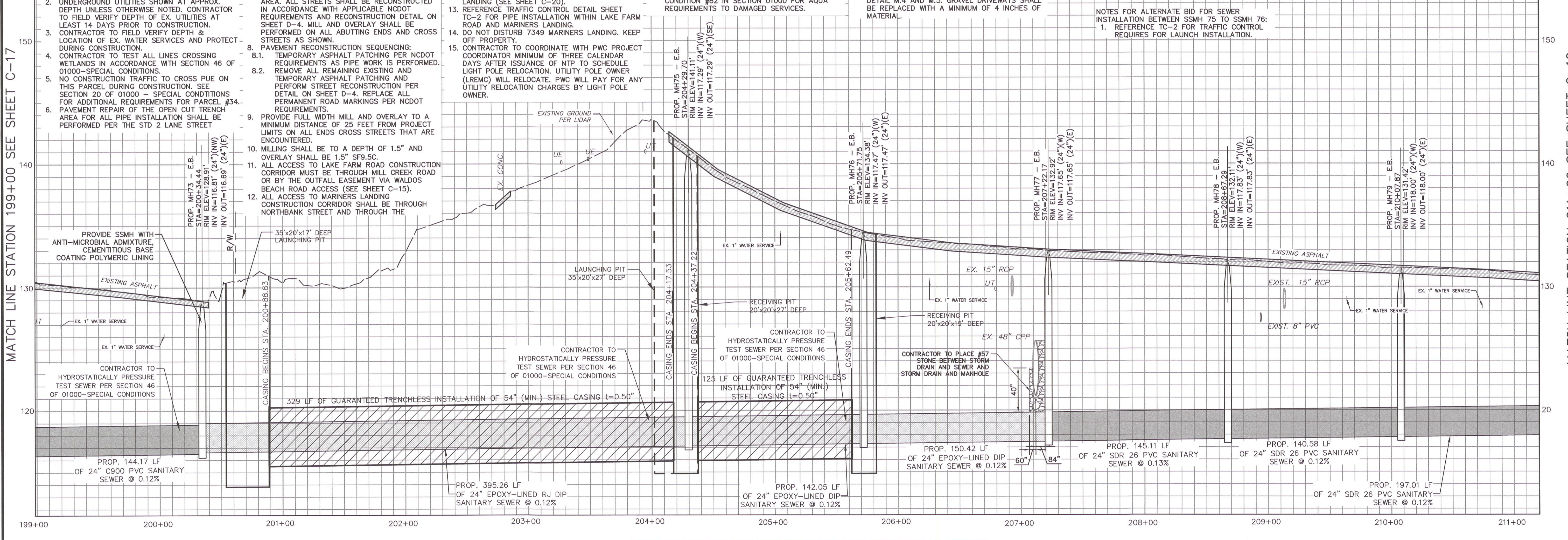


AREA LEGEND

	ROADWAY RECONSTRUCTION EXTENTS
	ROADWAY MILL AND OVERLAY EXTENTS

NOTES:

- CONTRACTOR TO MAINTAIN ACCESS TO HOMES AT ALL TIMES.
- UNDERGROUND UTILITIES SHOWN AT APPROX. DEPTH UNLESS OTHERWISE NOTED. CONTRACTOR TO FIELD VERIFY DEPTH OF EX. UTILITIES AT LEAST 14 DAYS PRIOR TO CONSTRUCTION.
- CONTRACTOR TO FIELD VERIFY DEPTH & LOCATION OF EX. WATER SERVICES AND PROTECT DURING CONSTRUCTION.
- CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.
- NO CONSTRUCTION TRAFFIC TO CROSS PUE ON THIS PARCEL DURING CONSTRUCTION. SEE SECTION 20 OF 01000 - SPECIAL CONDITIONS FOR ADDITIONAL REQUIREMENTS FOR PARCEL #34.
- PAYMENT REPAIR OF THE OPEN CUT TRENCH AREA FOR ALL PIPE INSTALLATION SHALL BE PERFORMED PER THE STD 2 LANE STREET
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- PAVEMENT RECONSTRUCTION SEQUENCING:
 - TEMPORARY ASPHALT PATCHING PER NCDOT REQUIREMENTS AS PIPE WORK IS PERFORMED. REMOVE ALL REMAINING EXISTING AND TEMPORARY ASPHALT PATCHING AND PERFORM STREET RECONSTRUCTION PER DETAIL ON SHEET D-4. REPLACE ALL PERMANENT ROAD MARKINGS PER NCDOT REQUIREMENTS.
 - PROVIDE FULL WIDTH MILL AND OVERLAY TO A MINIMUM DISTANCE OF 25 FEET FROM PROJECT LIMITS ON ALL ENDS CROSS STREETS THAT ARE ENCOUNTERED.
 - MILLING SHALL BE TO A DEPTH OF 1.5" AND OVERLAY SHALL BE 1.5" SFG.50.
 - ALL ACCESS TO LAKE FARM ROAD CONSTRUCTION CORRIDOR MUST BE THROUGH MILL CREEK ROAD OR BY THE OUTFALL EASEMENT VIA WALDOS BEACH ROAD ACCESS (SEE SHEET C-15).
 - ALL ACCESS TO MARINERS LANDING CONSTRUCTION CORRIDOR SHALL BE THROUGH NORTHBANK STREET AND THROUGH THE
- SOUTHWESTERNLY LOOP OF MARINERS LANDING. NO CONSTRUCTION TRAFFIC IS PERMITTED THROUGH THE NORTHEASTLY LOOP OF MARINERS LANDING (SEE SHEET C-20).
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- CONTRACTOR TO REPLACE DRIVEWAYS WITHIN THE LIMITS OF DISTURBANCE DAMAGED DUE TO CONSTRUCTION ACTIVITIES IN LIKE KIND PER DETAIL M.4 AND M.5. GRAVEL DRIVEWAYS SHALL BE REPLACED WITH A MINIMUM OF 4 INCHES OF MATERIAL.



ALTERNATE BID FOR SEWER INSTALLATION BETWEEN SSMH 75 TO SSMH 76

PROFILE VIEW
 HORIZ: 1"=40'
 VERT: 1"=4'

FINAL DESIGN
 NCDOT ENCROACHMENT MODIFICATIONS

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PWC DRAWING # DS-15486

DATE: 05.18.2020
 REVISIONS:
 05.18.2020 NOT FOR CONSTRUCTION
 12.16.2020 FINAL DESIGN NOT FOR CONSTRUCTION
 12.21.2020 FINAL DESIGN NOT FOR CONSTRUCTION
 06.30.2021 FINAL DESIGN - CONTACT APPROVAL AND RED REVISIONS
 04.13.2022 FINAL DESIGN - CONTACT APPROVAL AND RED REVISIONS
 09.30.2022 FINAL DESIGN - CONTACT APPROVAL AND RED REVISIONS

DATE: 9/30/22
 THB/AMB
 PLAN/PROF. (S/SK): BRL
 DESIGN REVIEW BY: BRL
 APPROVED BY: [Signature]

SCALE: AS SHOWN

C-18A

PROFESSIONAL SEAL
 025430
 MARY W. WILSON
 CIVIL ENGINEER

MATCH LINE STATION 199+00 SEE SHEET C-17

MATCH LINE STATION 211+00 SEE SHEET C-19

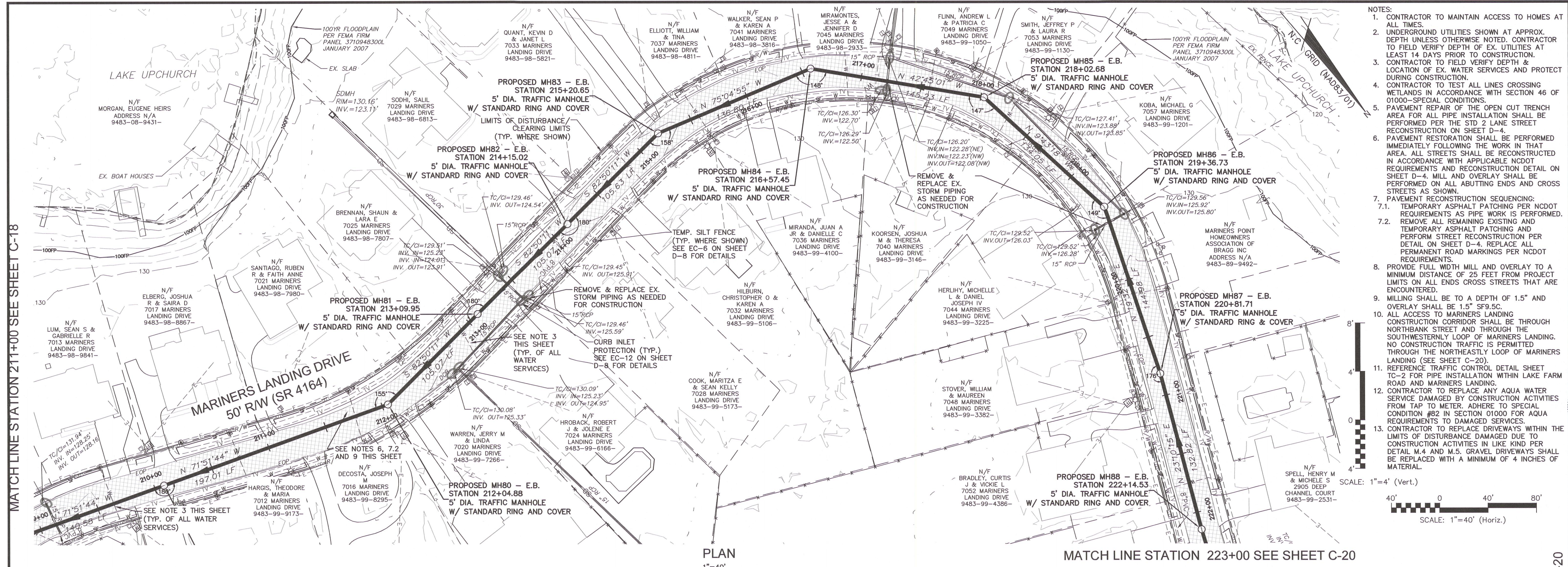
SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2

BIG ROCKFISH OUTFALL STA. 199+00 - 211+00

FAYETTEVILLE PUBLIC WORKS COMMISSION

WATER RESOURCES ENGINEERING

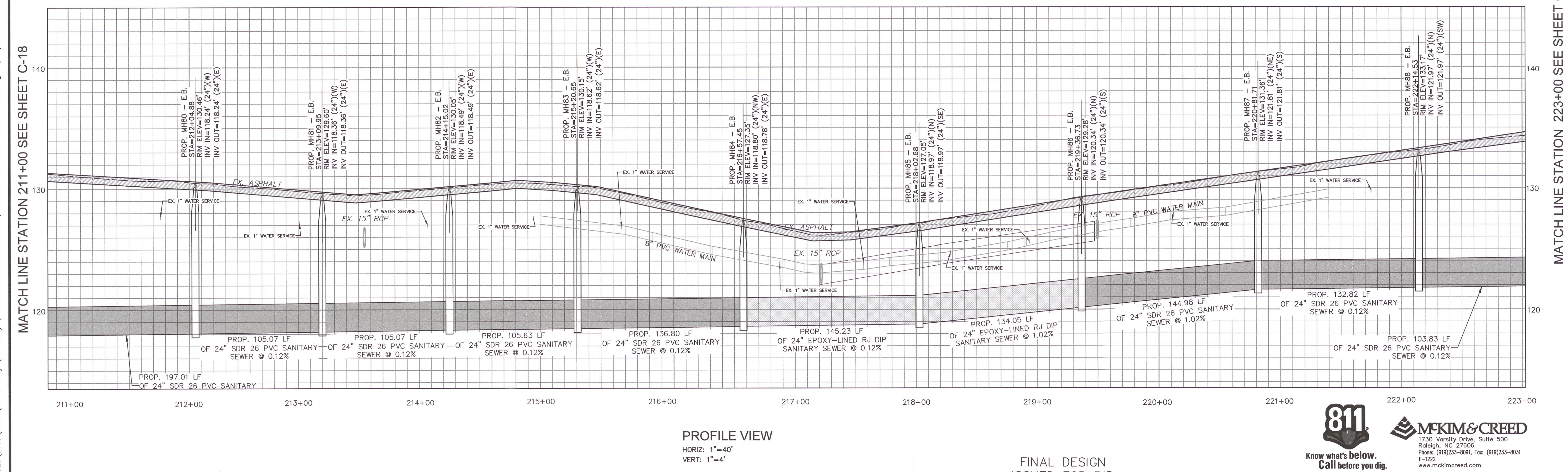
P.O. Box 1089, Fayetteville, NC 28302
 955 Old Wilmington Road, Fayetteville, NC 28301



- NOTES:
- CONTRACTOR TO MAINTAIN ACCESS TO HOMES AT ALL TIMES.
 - UNDERGROUND UTILITIES SHOWN AT APPROX. DEPTH UNLESS OTHERWISE NOTED. CONTRACTOR TO FIELD VERIFY DEPTH OF EX. UTILITIES AT LEAST 14 DAYS PRIOR TO CONSTRUCTION.
 - CONTRACTOR TO FIELD VERIFY DEPTH & LOCATION OF EX. WATER SERVICES AND PROTECT DURING CONSTRUCTION.
 - CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.
 - PAVEMENT REPAIR OF THE OPEN CUT TRENCH AREA FOR ALL PIPE INSTALLATION SHALL BE PERFORMED PER THE STD 2 LANE STREET RECONSTRUCTION ON SHEET D-4.
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 - PROVIDE FULL WIDTH MILL AND OVERLAY TO A MINIMUM DISTANCE OF 25 FEET FROM PROJECT LIMITS ON ALL ENDS CROSS STREETS THAT ARE ENCOUNTERED.
 - MILLING SHALL BE TO A DEPTH OF 1.5" AND OVERLAY SHALL BE 1.5" SF9.5C.
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DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AMB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	MFP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	MFP
06.30.2022	FINAL DESIGN NOT FOR CONSTRUCTION	MFP
04.15.2022	FINAL DESIGN NOT FOR CONSTRUCTION	MFP
09.30.2022	FINAL DESIGN NOT FOR CONSTRUCTION	MFP

SHEET C-19	DATE: 9/30/22
PROCESSOR/LAYOUT BY: MCKIM&CREED, INC.	TMB/AMB
PLANNING/DESIGN BY: MCKIM&CREED, INC.	BRL
DESIGN REVIEW BY: MCKIM&CREED, INC.	
APPROVED BY: MCKIM&CREED, INC.	
SCALE: AS SHOWN	



i:\01925\0005\Water\80-Drawings\86-Design\BRC-MAIN OUTFALL SHEETS\BRC-C15-C33 PLAN AND PROFILE.dwg 09/30/2022 08:34 mp/lec

MATCH LINE STATION 211+00 SEE SHEET C-18
 MATCH LINE STATION 223+00 SEE SHEET C-20
 SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
 BIG ROCKFISH OUTFALL STA. 211+00 - 223+00
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PWC WATER RESOURCES ENGINEERING
 P.O. Box 1089, Fayetteville, NC 28302
 955 Old Wilmington Road, Fayetteville, NC 28301

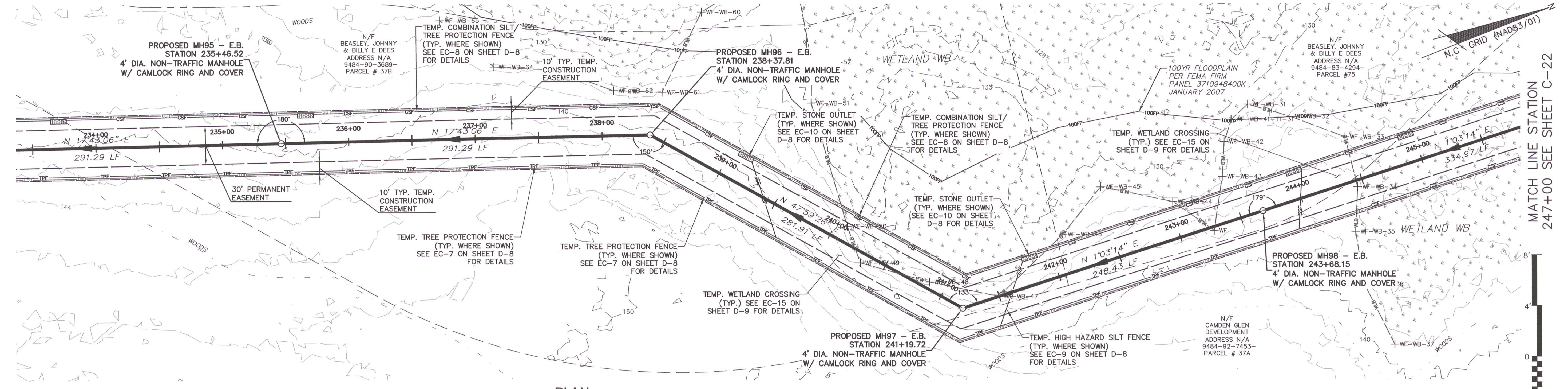


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 F-1222
 www.mckimcreed.com

PROFILE VIEW
 HORIZ: 1"=40'
 VERT: 1"=4'
FINAL DESIGN
ISSUED FOR BID
PWC DRAWING # DS-15486

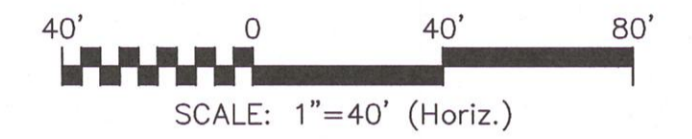
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MATCH LINE STATION 235+00 SEE SHEET C-20



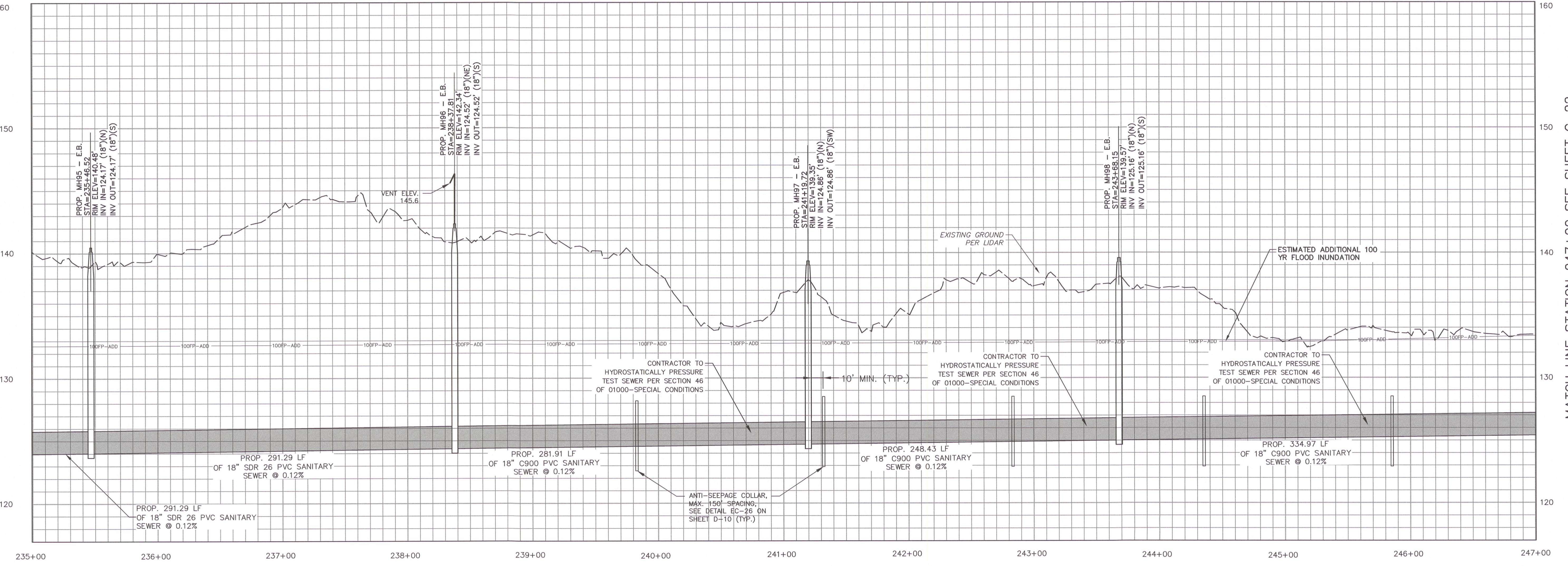
NOTE:
1. CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.

PLAN
1"=40'



SCALE: 1"=4' (Vert.)

MATCH LINE STATION 235+00 SEE SHEET C-20



PROFILE VIEW
HORIZ: 1"=40'
VERT: 1"=4'

FINAL DESIGN
ISSUED FOR BID

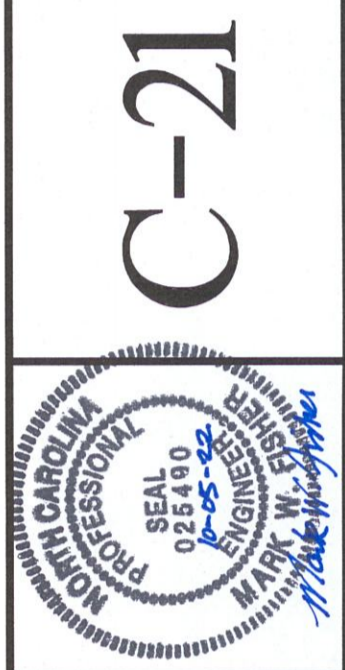


PWC DRAWING # DS-15486

MATCH LINE STATION 247+00 SEE SHEET C-22

DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	HPD
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	HPD
04.30.2021	FINAL DESIGN - CONTRACT APPROVAL AND ISSUED FOR BID	HPD
04.13.2022	FINAL DESIGN - MOST ENDOUSEMENT MODIFICATIONS	HPD
09.30.2022	FINAL DESIGN ISSUED FOR BID	HPD

SURVEY(GPS) BY:	MCKIM&CREED, INC.
PROCESS LAYOUT BY:	DATE: 9/30/22
PLAN/PROF. (SDS) BY:	TMB/AWB
DESIGN REVIEW BY:	BRL
APPROVED BY:	
SCALE:	AS SHOWN



SANITARY SEWER IMPROVEMENTS BIG
ROCKFISH CREEK OUTFALL - CONTRACT 2
BIG ROCKFISH OUTFALL STA. 235+00 - 247+00

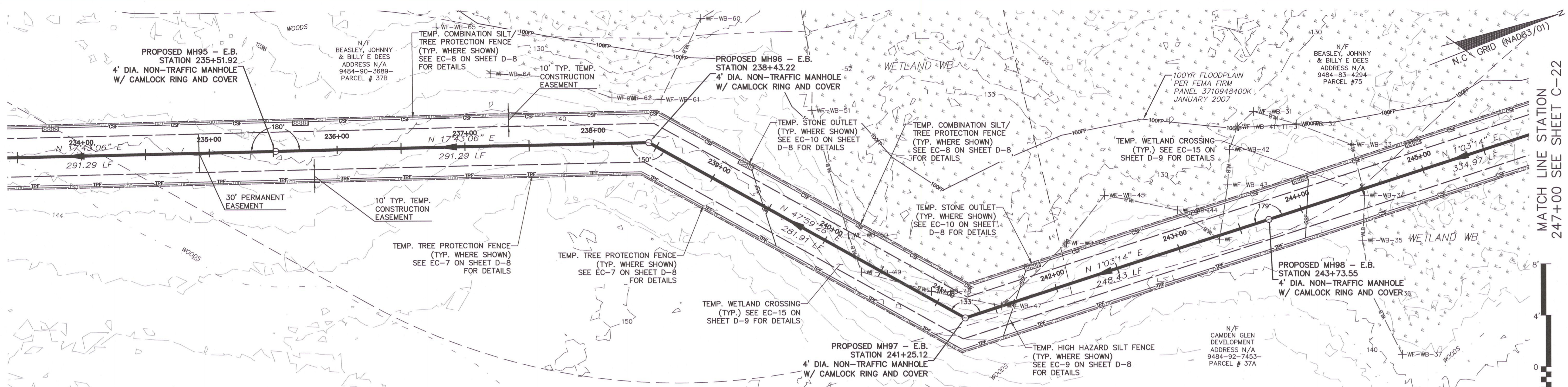
FAYETTEVILLE PUBLIC WORKS COMMISSION
PWC WATER RESOURCES ENGINEERING
P.O. Box 1089, Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28801



I:\01925\0005\Water\80-drawings\B6-drawings\BRC-C33 PLAN AND PROFILE.dwg 09/30/2022 10:03 mpic

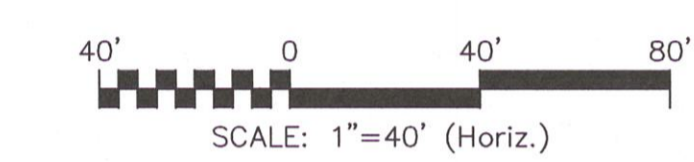
MATCH LINE STATION 235+00 SEE SHEET C-20

MATCH LINE STATION 247+00 SEE SHEET C-22



NOTE:
1. CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.

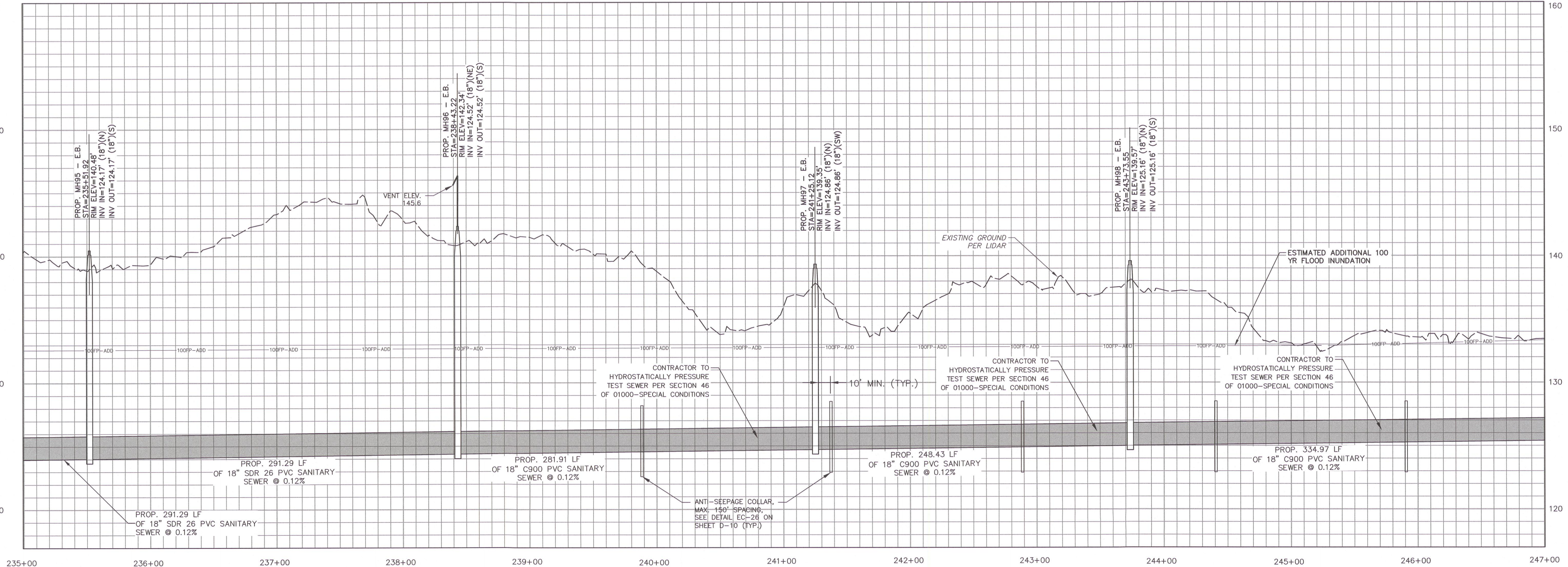
PLAN
1"=40'



SCALE: 1"=4' (Vert.)

MATCH LINE STATION 235+00 SEE SHEET C-20

MATCH LINE STATION 247+00 SEE SHEET C-22



ALTERNATE BID FOR SEWER INSTALLATION BETWEEN SSMH 90 TO SSMH 91 - NO DESIGN CHANGES UPSTREAM FROM SSMH 91; ALTERNATE BID RESULTS IN STATIONING CHANGES

PROFILE VIEW
HORIZ: 1"=40'
VERT: 1"=4'

FINAL DESIGN
NCDOT ENCROACHMENT MODIFICATIONS



PWC DRAWING # DS-15486

DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
04.30.2021	FINAL DESIGN - CONTRACT APPROVAL AND REVISIONS	PPP
04.13.2022	FINAL DESIGN - MOST ENCROACHMENT MODIFICATIONS	PPP
09.30.2022	FINAL DESIGN - PREPARED FOR BID	PPP

SHEET	C-21A
DATE	9/30/22
DESIGN REVIEW BY:	BRL
APPROVED BY:	
SCALE:	AS SHOWN



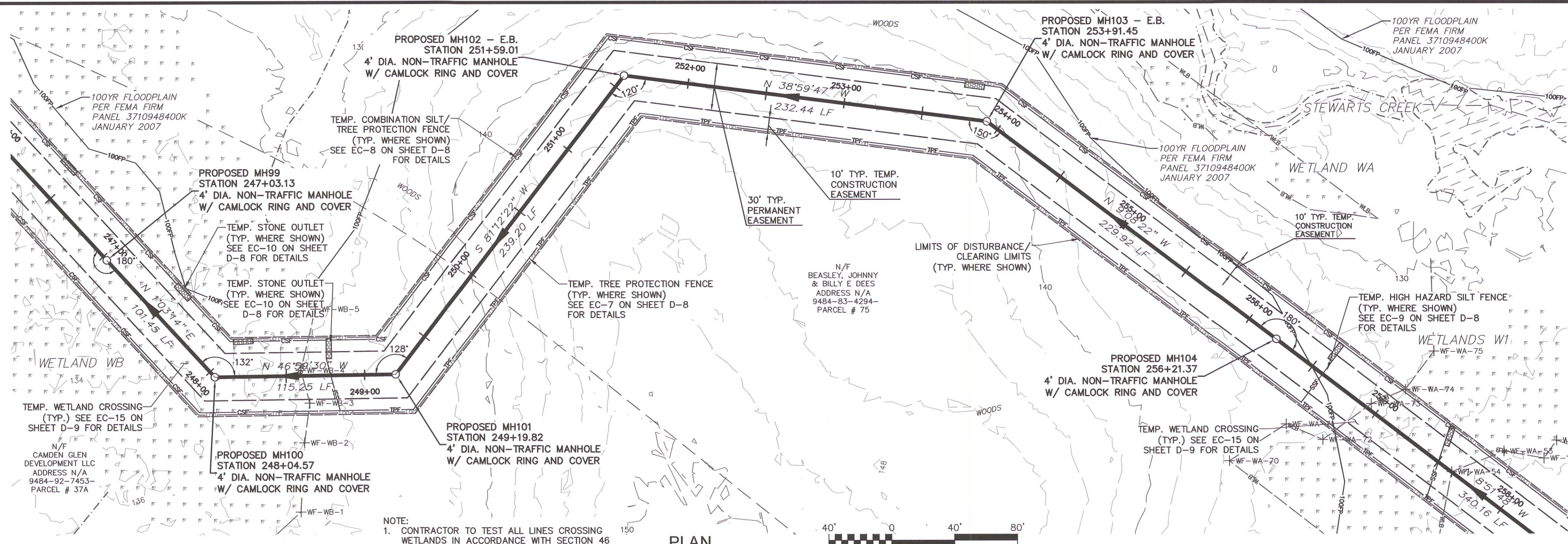
SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
BIG ROCKFISH OUTFALL STA. 235+00 - 247+00

FAYETTEVILLE PUBLIC WORKS COMMISSION
WATER RESOURCES ENGINEERING
P.O. Box 1089, Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28301

I:\01925\0005\Water\80-Drawings\B6-Design\BRC-MAIN-OUTFALL SHEETS\BRC C15-C33 PLAN AND PROFILE.dwg 09/30/2022 08:37 mp/lec

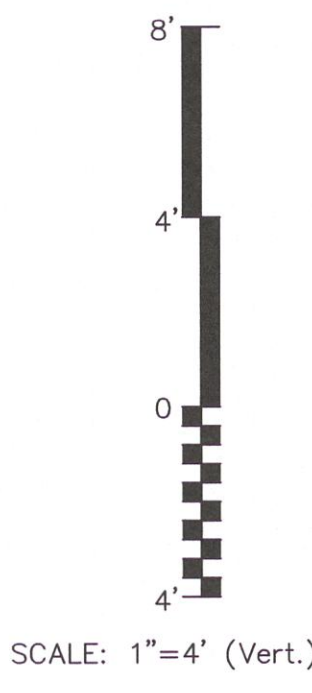
MATCH LINE STATION 247+00 SEE SHEET C-21

MATCH LINE STATION 259+00 SEE SHEET C-23A



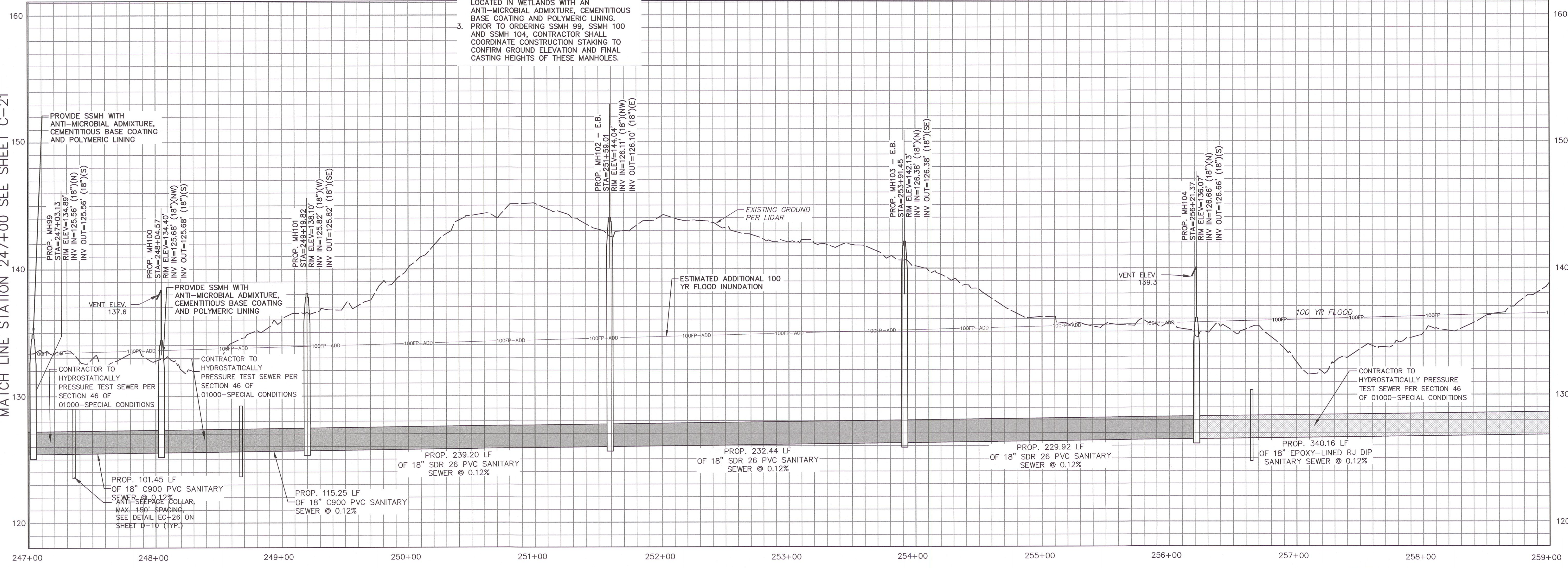
- NOTE:
- CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.
 - CONTRACTOR SHALL PROVIDE MANHOLES LOCATED IN WETLANDS WITH AN ANTI-MICROBIAL ADMIXTURE, CEMENTITIOUS BASE COATING AND POLYMERIC LINING.
 - PRIOR TO ORDERING SSMH 99, SSMH 100 AND SSMH 104, CONTRACTOR SHALL COORDINATE CONSTRUCTION STAKING TO CONFIRM GROUND ELEVATION AND FINAL CASTING HEIGHTS OF THESE MANHOLES.

PLAN
1"=40'
SCALE: 1"=40' (Horiz.)



MATCH LINE STATION 247+00 SEE SHEET C-21

MATCH LINE STATION 259+00 SEE SHEET C-23A

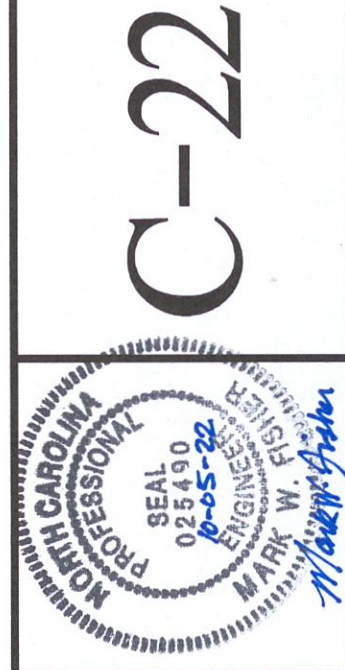


PROFILE VIEW
HORIZ: 1"=40'
VERT: 1"=4'

FINAL DESIGN
ISSUED FOR BID

DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
06.30.2021	FINAL DESIGN - CONTRACT MODIFICATIONS AND REVISIONS	PPP
04.13.2022	FINAL DESIGN - CONTRACT MODIFICATIONS AND REVISIONS	PPP
09.30.2022	FINAL DESIGN - CONTRACT MODIFICATIONS AND REVISIONS	PPP

SHEET	C-22
SURVEY/GPS BY:	MCKIMCREED, INC.
PROCESS/ABOUT BY:	DATE: 09/30/22
PLAN/PROF (SDS) BY:	TMB/AWB
DESIGN REVIEW BY:	BRL
APPROVED BY:	SCALE: AS SHOWN



MATCH LINE STATION 259+00 SEE SHEET C-23A

SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2

BIG ROCKFISH OUTFALL STA. 247+00 - 259+00

FAYETTEVILLE PUBLIC WORKS COMMISSION

FWC WATER RESOURCES ENGINEERING

P.O. Box 1088 Fayetteville, NC 28402
985 Old Wilmington Road, Fayetteville, NC 28301

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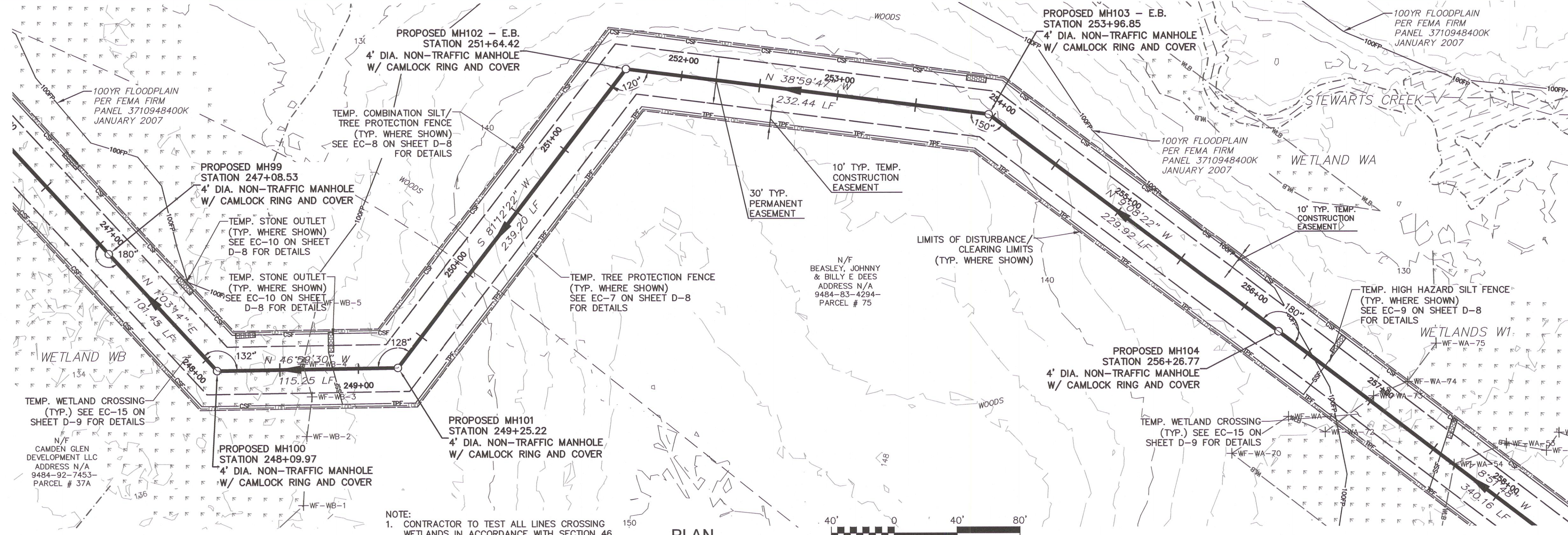
MCKIM & CREED
1730 Varsity Drive, Suite 500
Raleigh, NC 27606
Phone: (919)233-8091, Fax: (919)233-8031
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PWC DRAWING # DS-154.86

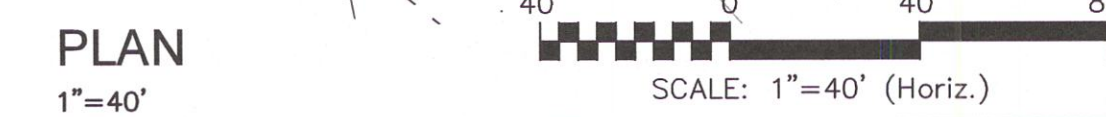
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MATCH LINE STATION 247+00 SEE SHEET C-21

MATCH LINE STATION 259+00 SEE SHEET C-23A

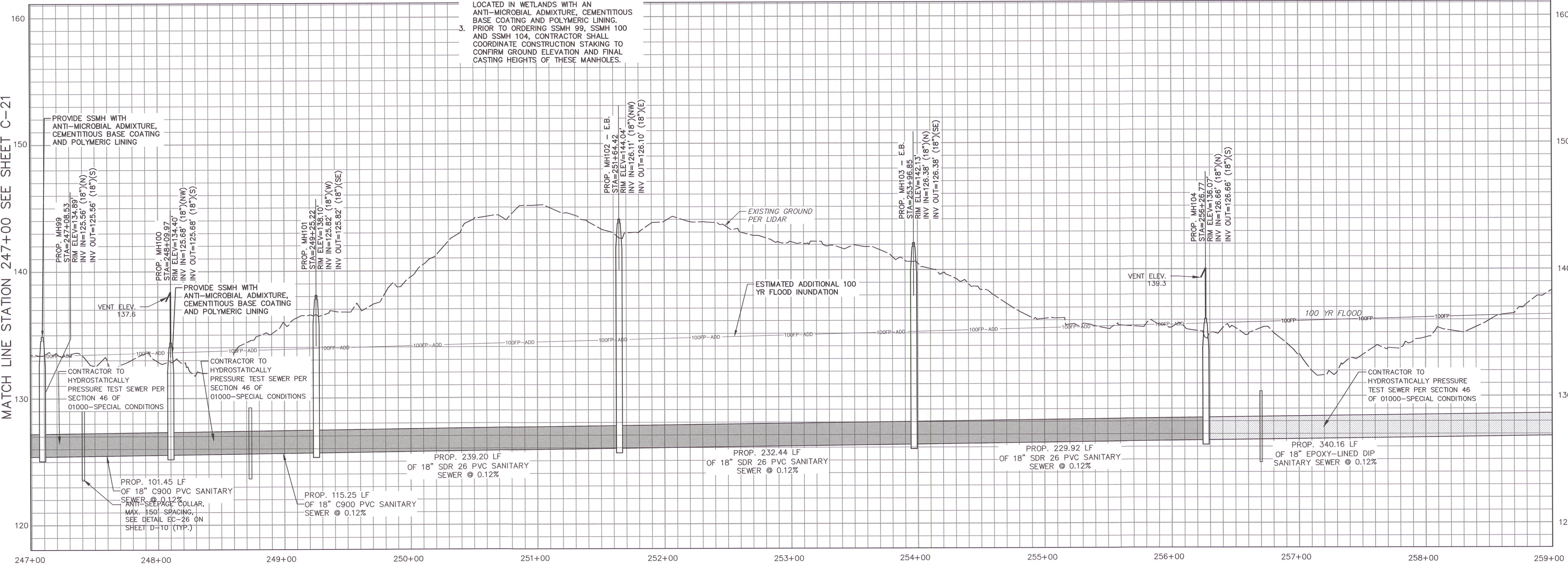


- NOTE:
- CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.
 - CONTRACTOR SHALL PROVIDE MANHOLES LOCATED IN WETLANDS WITH AN ANTI-MICROBIAL ADMIXTURE, CEMENTITIOUS BASE COATING AND POLYMERIC LINING.
 - PRIOR TO ORDERING SSMH 99, SSMH 100 AND SSMH 104, CONTRACTOR SHALL COORDINATE CONSTRUCTION STAKING TO CONFIRM GROUND ELEVATION AND FINAL CASTING HEIGHTS OF THESE MANHOLES.



MATCH LINE STATION 247+00 SEE SHEET C-21

MATCH LINE STATION 259+00 SEE SHEET C-23A



ALTERNATE BID FOR SEWER INSTALLATION BETWEEN SSMH 90 TO SSMH 91 - NO DESIGN CHANGES UPSTREAM FROM SSMH 91; ALTERNATE BID RESULTS IN STATIONING CHANGES

PROFILE VIEW
HORIZ: 1"=40'
VERT: 1"=4'

FINAL DESIGN
NCDOT ENCROACHMENT MODIFICATIONS

DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
02.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	HPP
12.21.2019	FINAL DESIGN NOT FOR CONSTRUCTION	HPP
06.30.2019	FINAL DESIGN NOT FOR CONSTRUCTION	HPP
04.13.2019	FINAL DESIGN NOT FOR CONSTRUCTION	HPP
09.30.2018	FINAL DESIGN NOT FOR CONSTRUCTION	HPP

SHEET	C-22A
SURVEYED BY:	MCKIM&CREED, INC.
PROCESS LAYOUT BY:	DATE: 9/30/22
PLAN/PROF (S/S):	TMB/AMB
DESIGN REVIEW BY:	BRL
APPROVED BY:	
SCALE:	AS SHOWN

C-22A

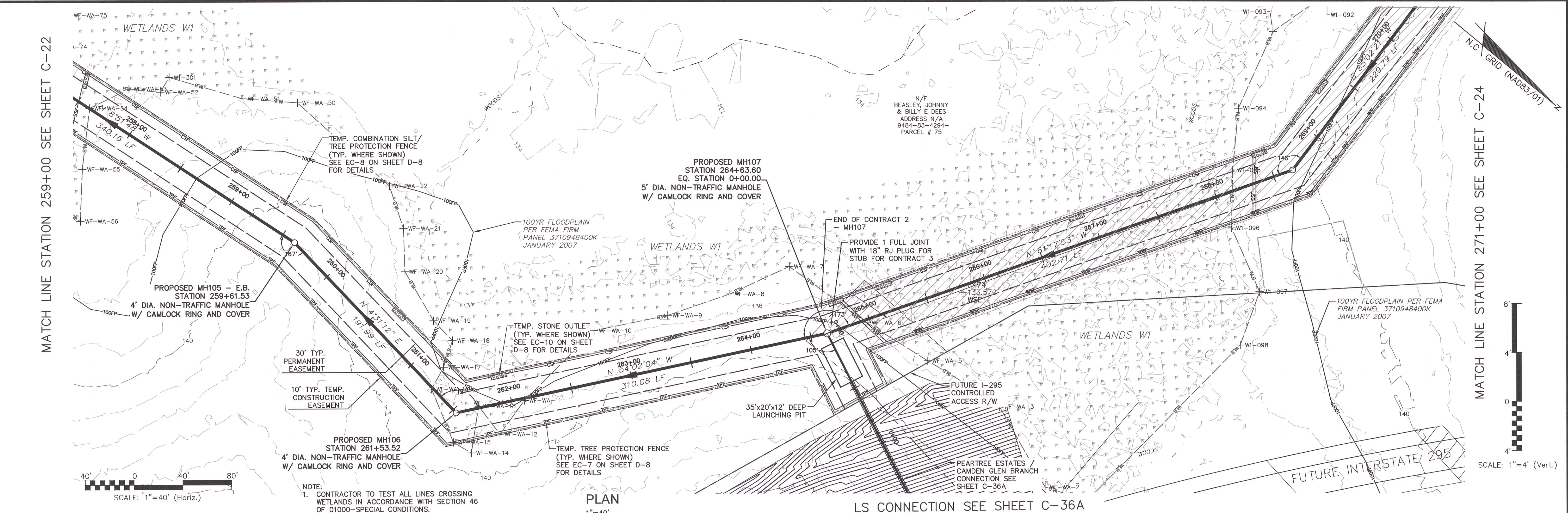
SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
BIG ROCKFISH OUTFALL STA. 247+00 - 259+00

PWC WATER RESOURCES ENGINEERING
FAYETTEVILLE PUBLIC WORKS COMMISSION
P.O. Box 1089, Fayetteville, NC 28405
955 Old Wilmington Road, Fayetteville, NC 28301

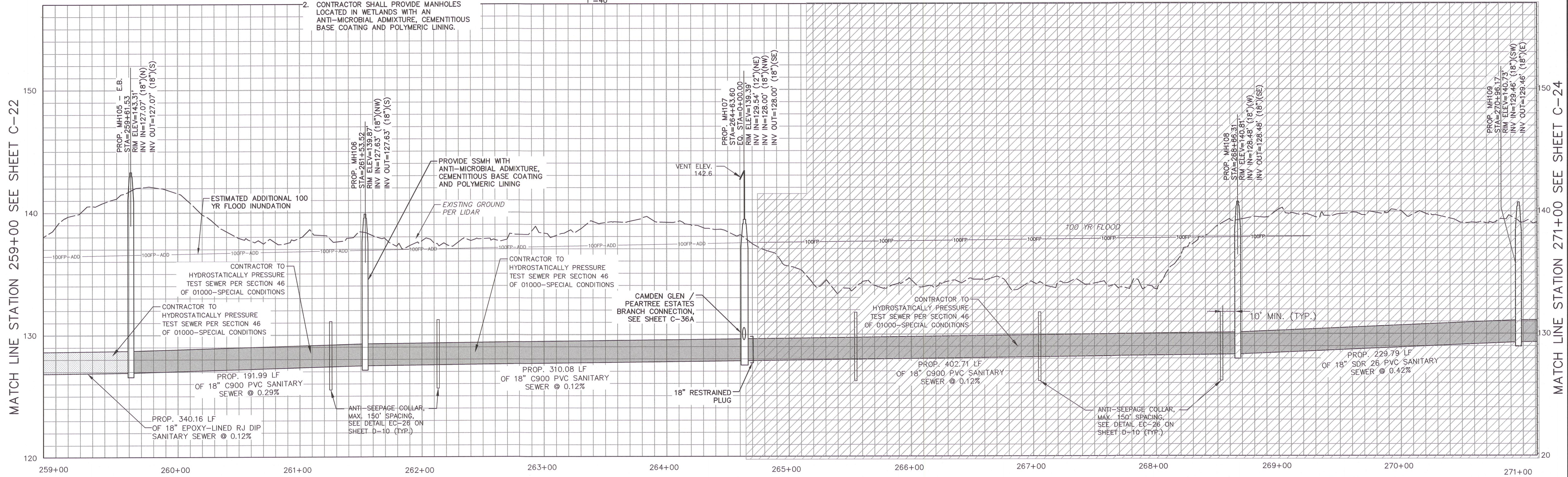
811 Know what's below. Call before you dig.
MCKIM & CREED
1730 Varsity Drive, Suite 500
Raleigh, NC 27608
Phone: (919)233-8091, Fax: (919)233-8031
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www.mckimcreed.com

PWC DRAWING # DS-15486

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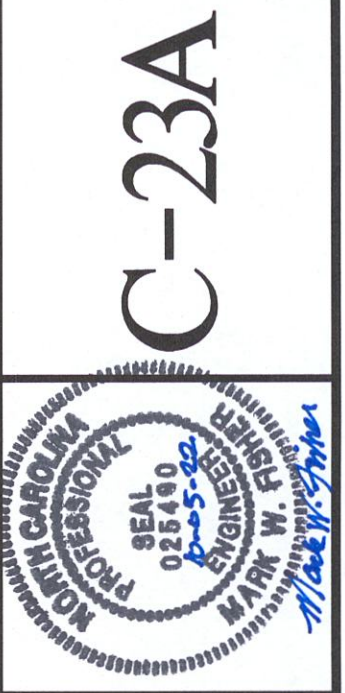


- NOTE:**
- CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.
 - CONTRACTOR SHALL PROVIDE MANHOLES LOCATED IN WETLANDS WITH AN ANTI-MICROBIAL ADMIXTURE, CEMENTITIOUS BASE COATING AND POLYMERIC LINING.



DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN FOR CONSTRUCTION	AWB
12.16.2020	FINAL DESIGN FOR CONSTRUCTION	PPP
12.21.2020	FINAL DESIGN FOR CONSTRUCTION	PPP
06.30.2021	FINAL DESIGN - CONTRACT SPECIFICATION AND PERMITS	PPP
04.13.2022	FINAL DESIGN - NOT ENCLASUREMENT MODIFICATIONS	PPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	PPP

SURVEYED BY: MCKIMCREED, INC.	DATE: 9/30/22	THB/AMB
PROCESS/LAYOUT BY: TMB/AMB	DESIGN REVIEW BY: BRL	APPROVED BY: AS SHOWN
SHEET C-23A		



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
BIG ROCKFISH OUTFALL STA. 259+00 - 271+00

FAVETTVILLE PUBLIC WORKS COMMISSION

PWC WATER RESOURCES ENGINEERING

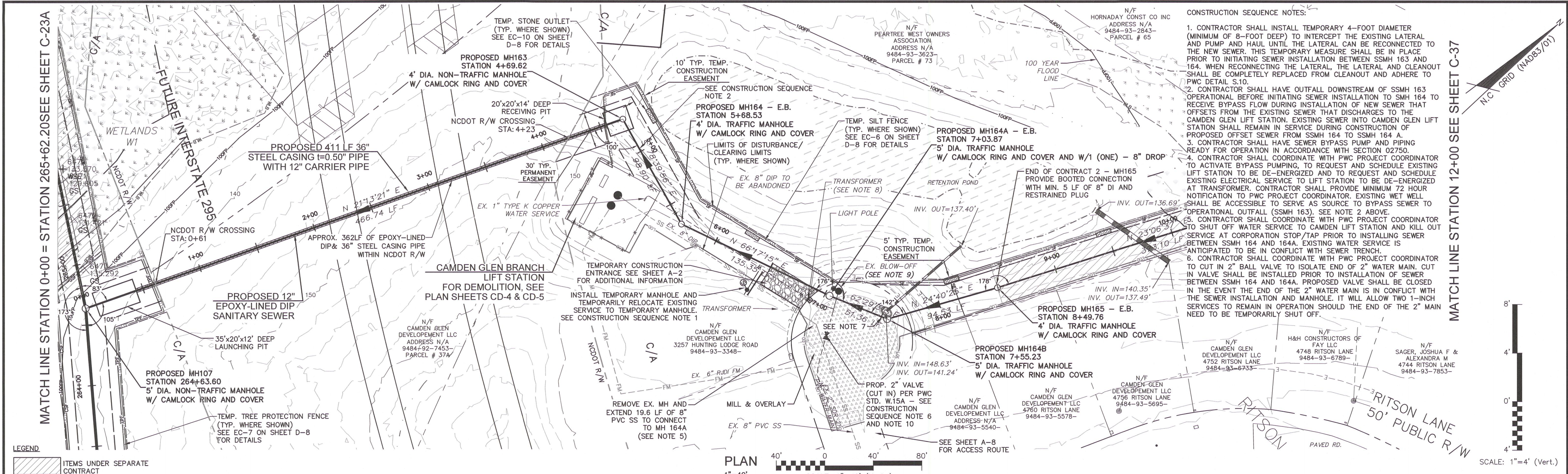
P.O. Box 1089, Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28301

811
Know what's below. Call before you dig.

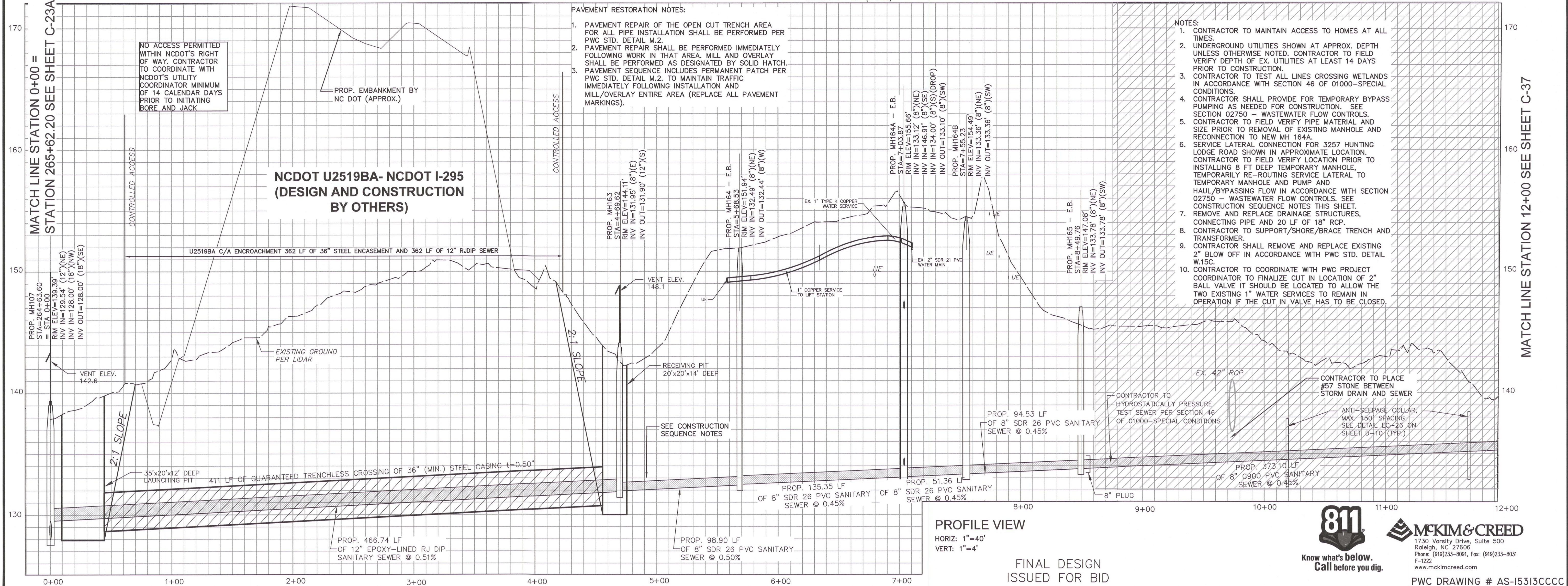
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Raleigh, NC 27606
Phone: (919)233-8091, Fax: (919)233-8031
F-1222
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PWC DRAWING # DS-15486

FINAL DESIGN
ISSUED FOR BID



- CONSTRUCTION SEQUENCE NOTES:**
1. CONTRACTOR SHALL INSTALL TEMPORARY 4-FOOT DIAMETER (MINIMUM OF 8-FOOT DEEP) TO INTERCEPT THE EXISTING LATERAL AND PUMP AND HAUL UNTIL THE LATERAL CAN BE RECONNECTED TO THE NEW SEWER. THIS TEMPORARY MEASURE SHALL BE IN PLACE PRIOR TO INITIATING SEWER INSTALLATION BETWEEN SSMH 163 AND 164. WHEN RECONNECTING THE LATERAL AND CLEANOUT SHALL BE COMPLETELY REPLACED FROM CLEANOUT AND ADHERE TO PWC DETAIL S.10.
 2. CONTRACTOR SHALL HAVE OUTFALL DOWNSTREAM OF SSMH 163 OPERATIONAL BEFORE INITIATING SEWER INSTALLATION TO SMH 164 TO RECEIVE BYPASS FLOW DURING INSTALLATION OF NEW SEWER THAT OFFSETS FROM THE EXISTING SEWER THAT DISCHARGES TO THE CAMDEN GLEN LIFT STATION. EXISTING SEWER INTO CAMDEN GLEN LIFT STATION SHALL REMAIN IN SERVICE DURING CONSTRUCTION OF PROPOSED OFFSET SEWER FROM SSMH 164 TO SSMH 164 A.
 3. CONTRACTOR SHALL HAVE SEWER BYPASS PUMP AND PIPING READY FOR OPERATION IN ACCORDANCE WITH SECTION 02750.
 4. CONTRACTOR SHALL COORDINATE WITH PWC PROJECT COORDINATOR TO ACTIVATE BYPASS PUMPING, TO REQUEST AND SCHEDULE EXISTING LIFT STATION TO BE DE-ENERGIZED AND TO REQUEST AND SCHEDULE EXISTING ELECTRICAL SERVICE TO LIFT STATION TO BE DE-ENERGIZED AT TRANSFORMER. CONTRACTOR SHALL PROVIDE MINIMUM 72 HOUR NOTIFICATION TO PWC PROJECT COORDINATOR. EXISTING WET WELL SHALL BE ACCESSIBLE TO SERVE AS SOURCE TO BYPASS SEWER TO OPERATIONAL OUTFALL (SSMH 163). SEE NOTE 2 ABOVE.
 5. CONTRACTOR SHALL COORDINATE WITH PWC PROJECT COORDINATOR TO SHUT OFF WATER SERVICE TO CAMDEN LIFT STATION AND KILL OUT SERVICE AT CORPORATION STOP/TAP PRIOR TO INSTALLING SEWER BETWEEN SSMH 164 AND 164A. EXISTING WATER SERVICE IS ANTICIPATED TO BE IN CONFLICT WITH SEWER TRENCH.
 6. CONTRACTOR SHALL COORDINATE WITH PWC PROJECT COORDINATOR TO CUT IN 2" BALL VALVE TO ISOLATE END OF 2" WATER MAIN. CUT IN VALVE SHALL BE INSTALLED PRIOR TO INSTALLATION OF SEWER BETWEEN SSMH 164 AND 164A. PROPOSED VALVE SHALL BE CLOSED IN THE EVENT THE END OF THE 2" WATER MAIN IS IN CONFLICT WITH THE SEWER INSTALLATION AND MANHOLE IT WILL ALLOW TWO 1-INCH SERVICES TO REMAIN IN OPERATION SHOULD THE END OF THE 2" MAIN NEED TO BE TEMPORARILY SHUT OFF.



- PAVEMENT RESTORATION NOTES:**
1. PAVEMENT REPAIR OF THE OPEN CUT TRENCH AREA FOR ALL PIPE INSTALLATION SHALL BE PERFORMED PER PWC STD. DETAIL M.2.
 2. PAVEMENT REPAIR SHALL BE PERFORMED IMMEDIATELY FOLLOWING WORK IN THAT AREA. MILL AND OVERLAY SHALL BE PERFORMED AS DESIGNATED BY SOLID HATCH.
 3. PAVEMENT SEQUENCE INCLUDES PERMANENT PATCH PER PWC STD. DETAIL M.2 TO MAINTAIN TRAFFIC IMMEDIATELY FOLLOWING INSTALLATION AND MILL/OVERLAY ENTIRE AREA (REPLACE ALL PAVEMENT MARKINGS).

- NOTES:**
1. CONTRACTOR TO MAINTAIN ACCESS TO HOMES AT ALL TIMES.
 2. UNDERGROUND UTILITIES SHOWN AT APPROX. DEPTH UNLESS OTHERWISE NOTED. CONTRACTOR TO FIELD VERIFY DEPTH OF EX. UTILITIES AT LEAST 14 DAYS PRIOR TO CONSTRUCTION.
 3. CONTRACTOR TO TEST ALL LINES CROSSING WETLANDS IN ACCORDANCE WITH SECTION 46 OF 01000-SPECIAL CONDITIONS.
 4. CONTRACTOR SHALL PROVIDE FOR TEMPORARY BYPASS BETWEEN SSMH 164 AND 164A. EXISTING WATER SERVICE IS ANTICIPATED TO BE IN CONFLICT WITH SEWER TRENCH. CONTRACTOR TO FIELD VERIFY LOCATION PRIOR TO INSTALLING 8 FT DEEP TEMPORARY MANHOLE. TEMPORARILY RE-ROUTING SERVICE LATERAL TO TEMPORARY MANHOLE AND PUMP AND HAUL/BYPASSING FLOW IN ACCORDANCE WITH SECTION 02750 - WASTEWATER FLOW CONTROLS.
 5. CONTRACTOR TO FIELD VERIFY PIPE MATERIAL AND SIZE PRIOR TO REMOVAL OF EXISTING MANHOLE AND RECONNECTION TO NEW MH 164A.
 6. SERVICE LATERAL CONNECTION FOR 3257 HUNTING LODGE ROAD SHOWN IN APPROXIMATE LOCATION. CONTRACTOR TO FIELD VERIFY LOCATION PRIOR TO INSTALLING 8 FT DEEP TEMPORARY MANHOLE. TEMPORARILY RE-ROUTING SERVICE LATERAL TO TEMPORARY MANHOLE AND PUMP AND HAUL/BYPASSING FLOW IN ACCORDANCE WITH SECTION 02750 - WASTEWATER FLOW CONTROLS. SEE CONSTRUCTION SEQUENCE NOTES THIS SHEET.
 7. REMOVE AND REPLACE DRAINAGE STRUCTURES, CONNECTING PIPE AND 20 LF OF 18" RCP.
 8. CONTRACTOR TO SUPPORT/SHORE/BRACE TRENCH AND TRANSFORMER.
 9. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING 2" BLOW OFF IN ACCORDANCE WITH PWC STD. DETAIL W.15C.
 10. CONTRACTOR TO COORDINATE WITH PWC PROJECT COORDINATOR TO FINALIZE CUT IN LOCATION OF 2" BALL VALVE IT SHOULD BE LOCATED TO ALLOW THE TWO EXISTING 1" WATER SERVICES TO REMAIN IN OPERATION IF THE CUT IN VALVE HAS TO BE CLOSED.

PROFILE VIEW
 HORIZ: 1"=40'
 VERT: 1"=4'

FINAL DESIGN
ISSUED FOR BID

811
 Know what's below.
 Call before you dig.

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 Raleigh, NC 27606
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 F-1222
 www.mckimcreed.com

DATE	REVISIONS	BY
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	MPP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	MPP
06.30.2021	FINAL DESIGN - REVISIONS FOR RESPONSE	MPP
04.15.2022	FINAL DESIGN - REVISIONS FOR RESPONSE	MPP
07.18.2022	FINAL DESIGN - REVISIONS FOR RESPONSE	MPP
09.30.2022	FINAL DESIGN - REVISIONS FOR RESPONSE	MPP

SHEET	C-36A
SURVEYORS BY:	MCKIM & CREED, INC.
PROCESS/LAYOUT BY:	DATE: 9/30/22
PLANNING/DESIGN BY:	TMB/AMB
DESIGN REVIEW BY:	BRL
APPROVED BY:	
SCALE:	AS SHOWN

C-36A

PROFESSIONAL SEAL
 STATE OF NORTH CAROLINA
 EXPIRES 02/28/2025
 MCKIM & CREED, INC.
 1730 Varsity Drive, Suite 500
 Raleigh, NC 27606

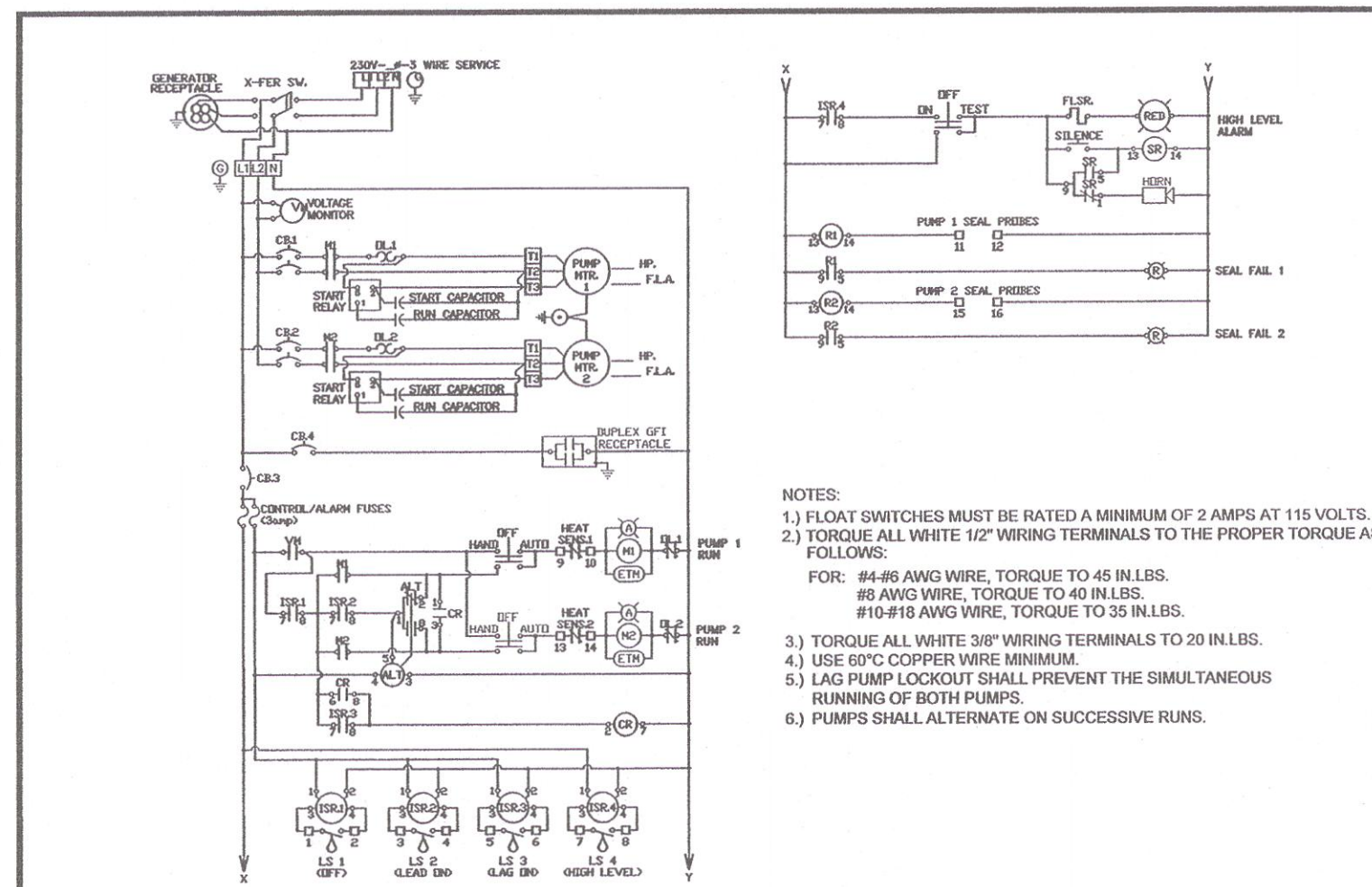
SANITARY SEWER IMPROVEMENTS, BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
 PEARTREE ESTATE LS CONNECTION
 STA. 0+00 - 12+00

FAYETTEVILLE PUBLIC WORKS COMMISSION

PWC WATER RESOURCES ENGINEERING
 P.O. Box 1088, Fayetteville, NC 28302
 955 Old Wilmington Road, Fayetteville, NC 28301

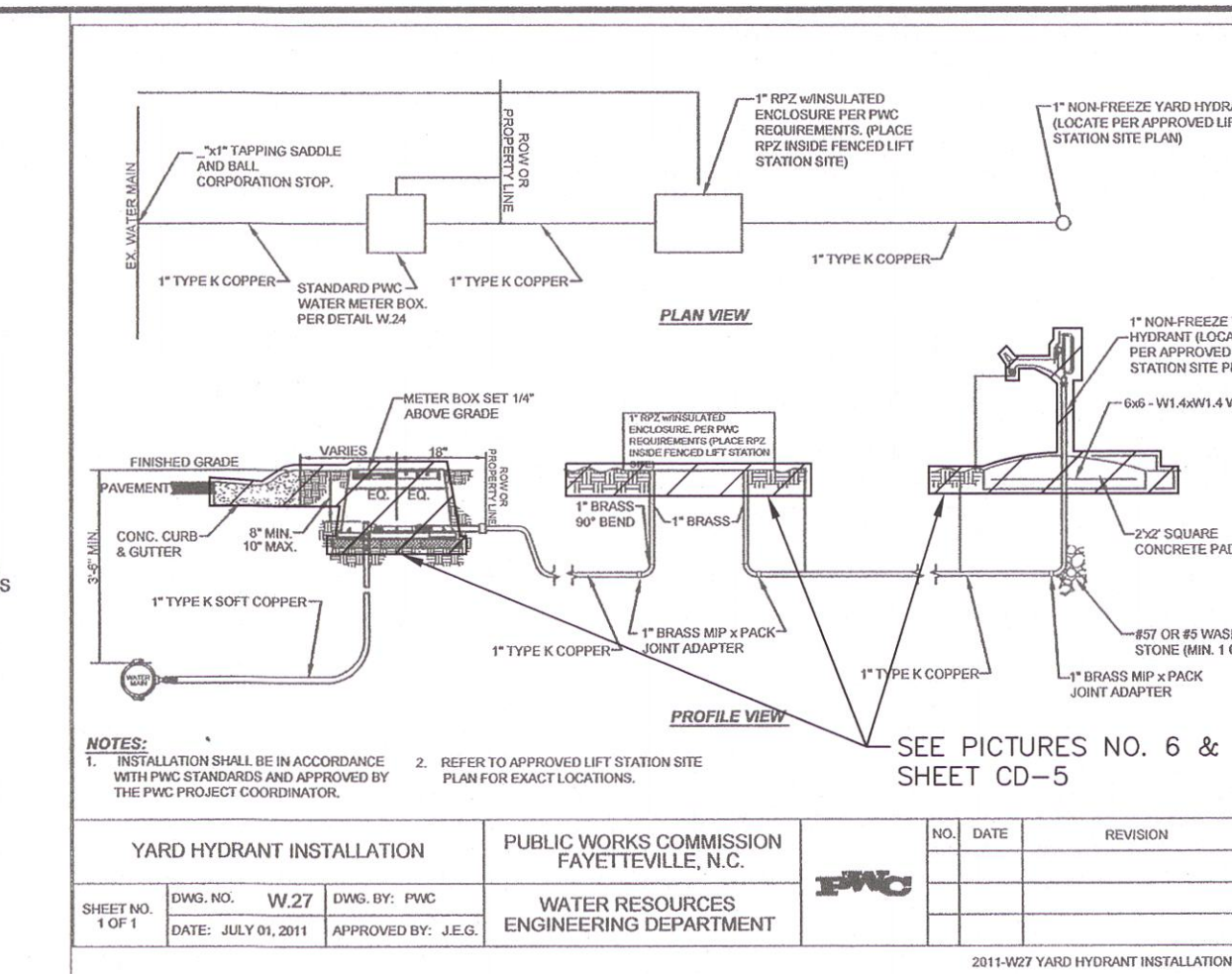
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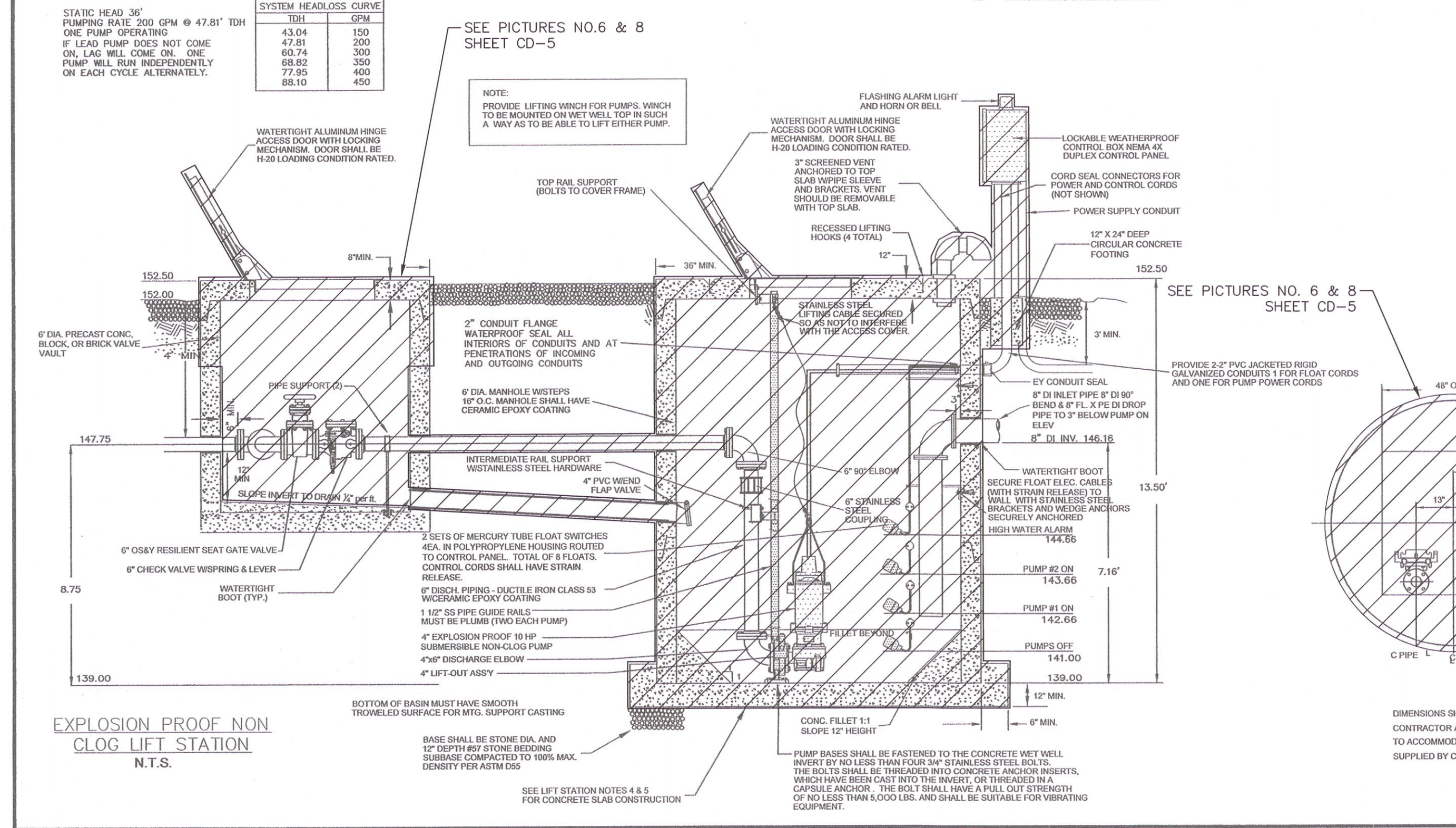
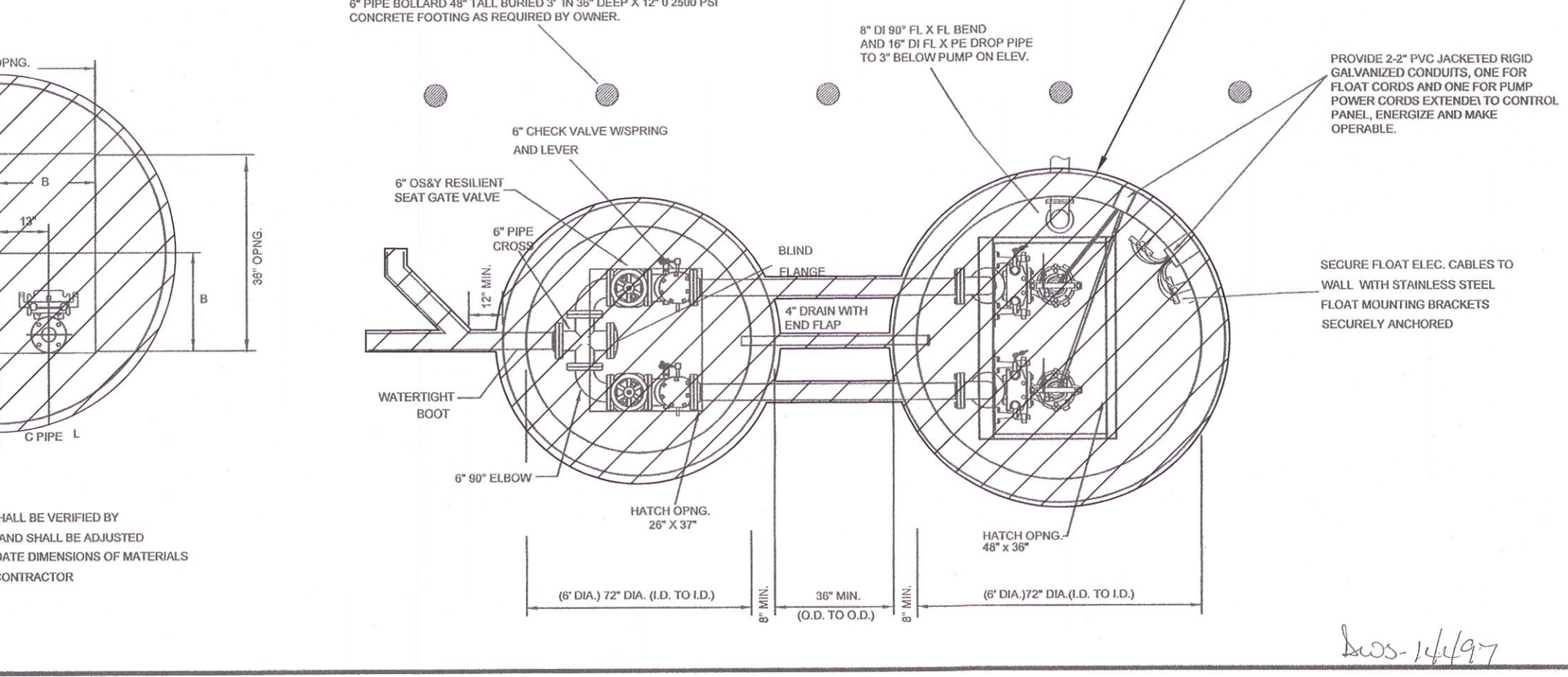
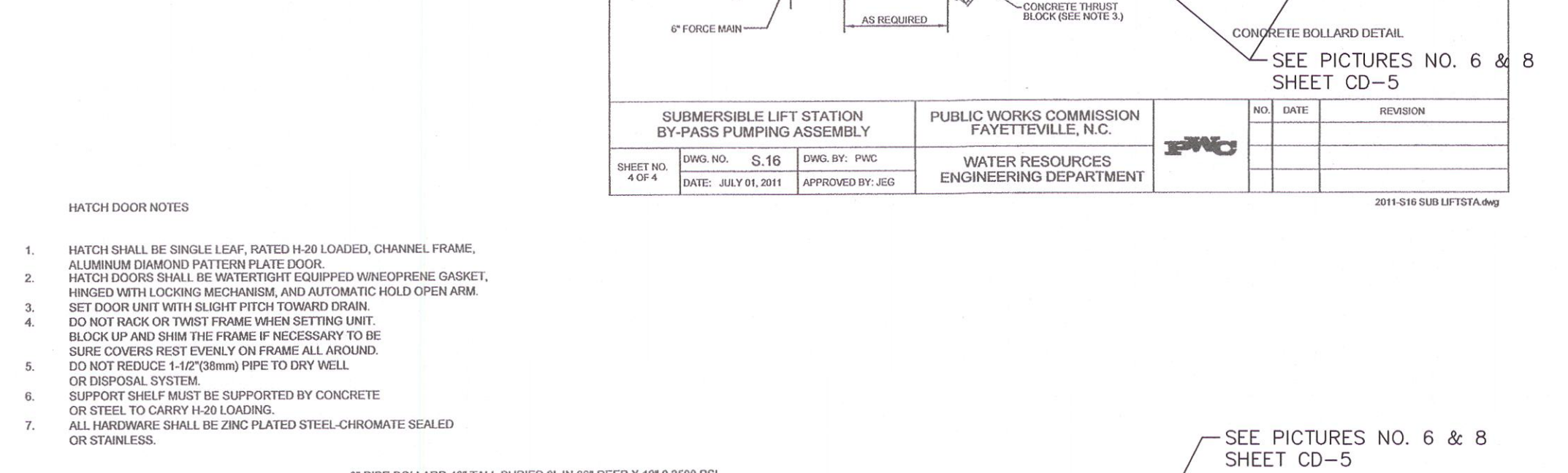
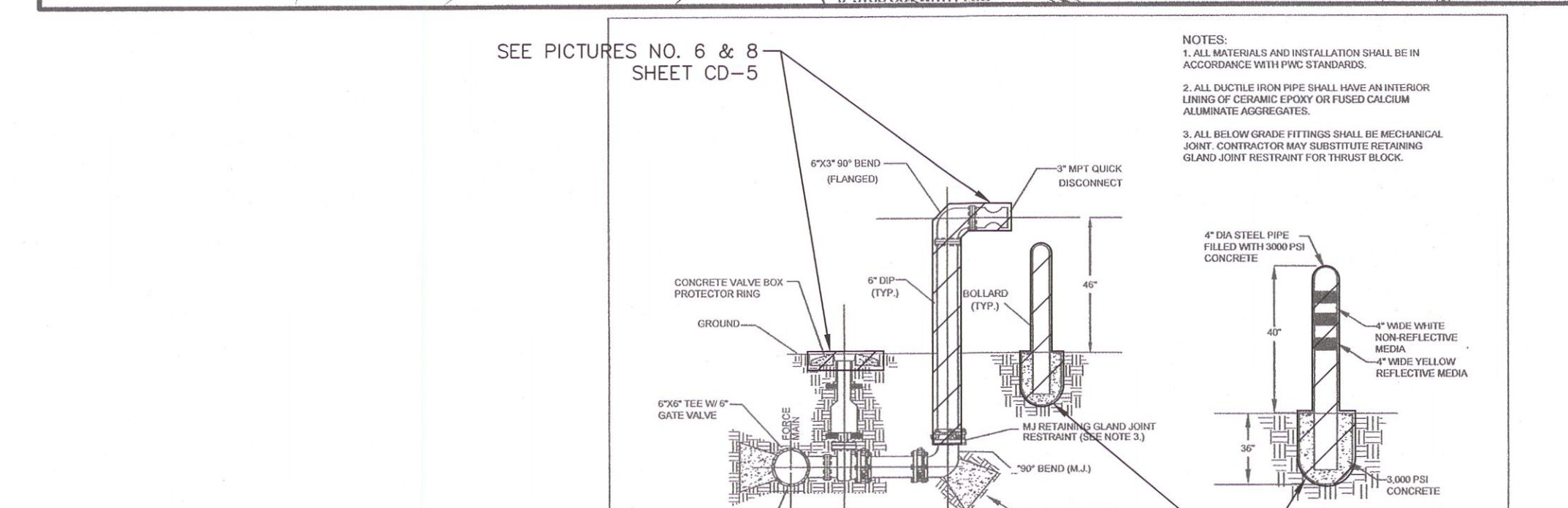
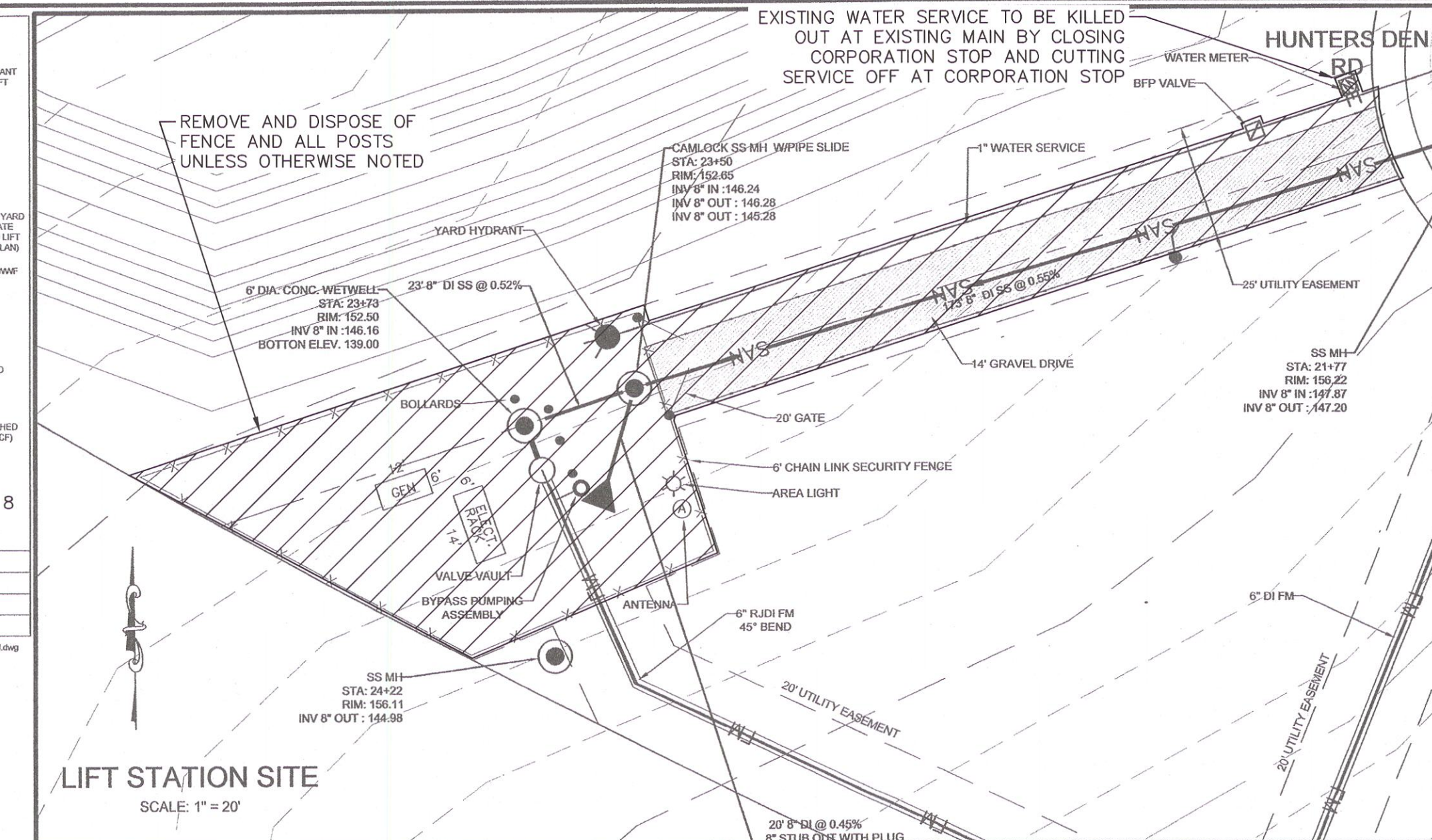
NOTES:
1.) FLOAT SWITCHES MUST BE RATED A MINIMUM OF 2 AMPS AT 115 VOLTS.
2.) TORQUE ALL WHITE 1/2" WIRING TERMINALS TO THE PROPER TORQUE AS FOLLOWS:
FOR: #14 AWG WIRE, TORQUE TO 45 IN.LBS.
#16 AWG WIRE, TORQUE TO 40 IN.LBS.
#18 AWG WIRE, TORQUE TO 35 IN.LBS.
3.) TORQUE ALL WHITE 3/8" WIRING TERMINALS TO 20 IN.LBS.
4.) USE 60°C COPPER WIRE MINIMUM.
5.) LAD PUMP LOCKOUT SHALL PREVENT THE SIMULTANEOUS RUNNINGS OF BOTH PUMPS.
6.) PUMPS SHALL ALTERNATE ON SUCCESSIVE RUNS.

EXPLOSION PROOF SUBMERSIBLE LIFT STATION PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. WATER RESOURCES ENGINEERING DEPARTMENT



YARD HYDRANT INSTALLATION PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. WATER RESOURCES ENGINEERING DEPARTMENT

- LIFT STATION NOTES: 1. CONCRETE SHALL BE 4,000 PSI COMPRESSION STRENGTH MANHOLE SHALL MEET REQUIREMENTS OF ASTM C-478. 2. ALL ELECTRICAL MATERIALS AND INSTALLATION SHALL BE BY A LICENSED ELECTRICIAN AND IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL ORDINANCES AND REGULATIONS OF LOCAL AUTHORITIES HAVING JURISDICTION. MATERIALS SHALL BE LISTED OR LABELED BY THE UNDERWRITERS LABORATORIES STANDARDS. 3. LIFT STATION MANHOLE CONCRETE SLAB AND HATCH SHALL BE MANUFACTURED TO WITHSTAND 1400 LBS. CONCRETE. MANUFACTURER SHALL BE REQUIRED TO SUBMIT DESIGN CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER WITH SHOP DRAWINGS AND REVIEW SUBMITTAL. 4. SHOP DRAWINGS AND WIRING DIAGRAMS SHALL BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT. 5. ENGINEER TO APPROVE FOUNDATION BEFORE SETTING MANHOLES. FOUNDATION SHALL BE 16" OF DIA. AND 12" DEPTH 407 STONE BEDDING. CONTRACTOR TO PROVIDE DEWATERING EQUIPMENT AS REQUIRED FOR CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER. HATCH DOORS AND CONTROL PANEL BOX SHALL BE LOCKABLE AND KEYS TO PWC MASTER LOCK SYSTEM. CONTRACTOR SHALL PROVIDE START UP SERVICE WITHIN 2 DAYS. CONTRACTOR SHALL PROVIDE ALL NECESSARY LUBRICANTS FOR STARTUP AND SHALL ASSIST THE EQUIPMENT MANUFACTURER AND OWNER WITH INITIAL STARTUP. CONTRACTOR SHALL FURNISH AND INSTALL ALL PUMPS, PIPING, EQUIPMENT, MATERIALS AND ACCESSORIES REQUIRED TO MAKE THE LIFT STATION FULLY OPERATIONAL AND IN ACCORDANCE WITH PWC STANDARDS. 6. RECESSED LIFTING HOOKS SHALL BE PLACED IN CONCRETE WET WELL COVER CONTROL PANEL BOX SHALL BE ANCHORED IN 12" X 24" DEEP CONCRETE FOOTING. PIPEWORK SHALL BE ASSEMBLED, INSTALLED, AND FULLY SUPPORTED SO AS NOT TO PUT A STRAIN ON THE PUMPING EQUIPMENT. PIPE FITTINGS AND ELBOWS. ALL THROUGH-WALL SLEEVES AND CARRIER PIPES INTO THE WET WELL SHALL BE INSTALLED ABSOLUTELY WATERTIGHT WITH NO SIGNS OF SEEPAGE OR INFILTRATION. ENTIRE SITE SHALL BE FENCED FOR SECURITY. CONTRACTOR SHALL PROVIDE KEYS FOR GATE KEYS TO THE PWC MASTER LOCK SYSTEM. 7. ALL HANGERS, CLAMPS, FLANGE BOLTS, AND CONNECTIONS SHALL BE STAINLESS STEEL UNLESS OTHERWISE SPECIFIED. 8. ALL DIMENSIONS SHALL BE VERIFIED BY CONTRACTOR AND SHALL BE ADJUSTED TO ACCOMMODATE DIMENSIONS OF MATERIALS SUPPLIED BY CONTRACTOR AND OWNER. FLANGE FACES SHALL BE SERRATED.



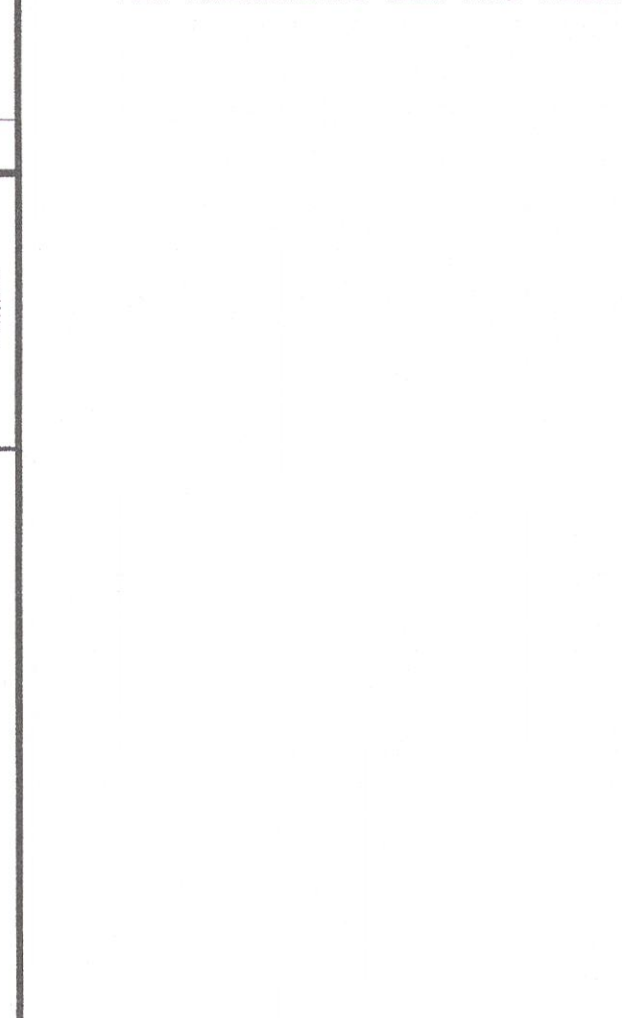
EXPLOSION PROOF NON CLOG LIFT STATION N.T.S. BOTTOM OF BASIN MUST HAVE SMOOTH TRAVELLED SURFACE FOR MTR SUPPORT CASTING. BASE SHALL BE STONE DIA. AND 12" DEPTH #27 STONE BEDDING. SUBMITTALS COMPACTED TO 98% MAX. DENSITY PER ASTM D55. SEE LIFT STATION NOTES 4 & 5 FOR CONCRETE SLAB CONSTRUCTION.

CAMDEN GLEN NORTH LIFT STATION DETAILS PROPERTY OF CAMDEN GLEN DEVELOPERS, LLC. CUMBERLAND CO., N. C. ROCKFISH TWP.

115 BROADFOOT AVE FAYETTEVILLE, NC 28305 P.O. BOX 53774 P-910-484-5191 LICENSE # F-0106

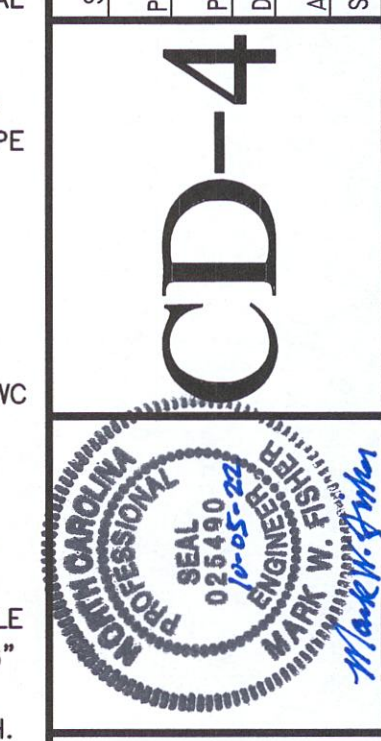
SCALE: HOR. 1"=40' VERT. 1"=4' BOOK NO. 8201 SHEET 27

NOTES:
1. EXISTING PLANS TAKEN FROM MK&R RECORD DRAWINGS DATED SEPTEMBER 2011. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND CONDITIONS AS NEEDED PRIOR TO DEMOLITION.
2. SEE SECTION 46 OF 01000-SPECIAL PROVISIONS OF THE SPECIFICATIONS FOR FURTHER DETAILS ON DEMOLITION RELATED ACTIVITIES.
3. PROVIDE BYPASS PUMPING AS NECESSARY TO REMOVE EXISTING LIFT STATION FROM SERVICE. REMOVE STRUCTURE AND ROOF (WHERE APPLICABLE) AND DISPOSE OFFSITE IN ACCORDANCE WITH LOCAL LAWS AND REGULATIONS. RECYCLING IS ENCOURAGED, ALTHOUGH NOT REQUIRED. REMOVE LIFT STATION PUMPS, MOTORS, FLOAT SYSTEMS, SUCTION AND DISCHARGE PIPING AND VALVES, ELECTRIC METER, ELECTRICAL CONTROLS AND COMPONENTS, ANTENNA, SCADA SYSTEM, RTU, GENERATOR, WET WELL COVER SLAB AND APPURTENANCES. SEAL ALL PIPE PENETRATIONS INTO THE WET WELL WITH 2" GROUT PLUG PRIOR TO ABANDONING. CONTRACTOR TO COORDINATE WITH UTILITY SERVICE PROVIDER FOR DISCONNECTION OF UTILITY ELECTRICAL SERVICE. CLEAN AND DELIVER REMOVED ITEMS TO PWC WAREHOUSE ON OLD WILMINGTON ROAD. DEMOLISH UPPER 2' OF LIFT STATION WET WELL (OR REMOVE UPPER RISER AND DELIVER TO PWC WAREHOUSE ON OLD WILMINGTON ROAD). FILL WET WELL WITH SUITABLE MATERIAL FROM ONSITE. PLACE 4-6" TOPSOIL FROM ONSITE MATERIALS. ADD AMENDMENTS SEED AND MULCH.



REVISIONS table with columns for DATE, REVISIONS, and BY.

PROCESS LOG table with columns for DATE, BY, and DESCRIPTION.



SAINTARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2 CAMDEN GLEN LS CONNECTION DEMO PLAN

Logos for Fayetteville Public Works Commission, Water Resources Engineering, and M&R Engineers, Planners, Surveyors, Moorman, Kizer & Reitzel, Inc.

I:\01925\0005\Water\80-Drawings\86-Design\BRC_LS_CONNECTION_SHEETS\BRC_LS_DEMO\BRC_C48_LS_CAMDEN_GLEN.dwg 09/30/2022 08:41 mplec



PICTURE NO. 6

REMOVE SURFACE AND RESTORE PER SECTION 9 OF 0100-SPECIAL CONDITIONS



PICTURE NO. 7

REMOVE AND DISPOSE OF FENCE AND ALL POSTS UNLESS OTHERWISE NOTED



PICTURE NO. 8

NOTES:

- EXISTING PLANS TAKEN FROM MK&R RECORD DRAWINGS DATED SEPTEMBER 2011. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND CONDITIONS AS NEEDED PRIOR TO DEMOLITION.
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LEGEND:

 - TO BE DEMOLISHED

CAMDEN GLEN RECORD DRAWING
NOT TO SCALE

FINAL DESIGN
ISSUED FOR BID

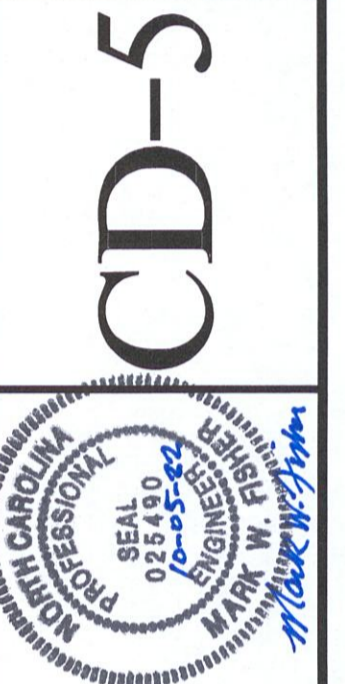


PWC DRAWING # DS-15486

DATE	REVISIONS	BY
06.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	JAW
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
06.30.2021	FINAL DESIGN - CONTRACT SEPARATION AND DIS RESPONSE	PPP
04.13.2022	FINAL DESIGN - COST ESTIMATES MODIFICATIONS	PPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	PPP

SHEET CD-5

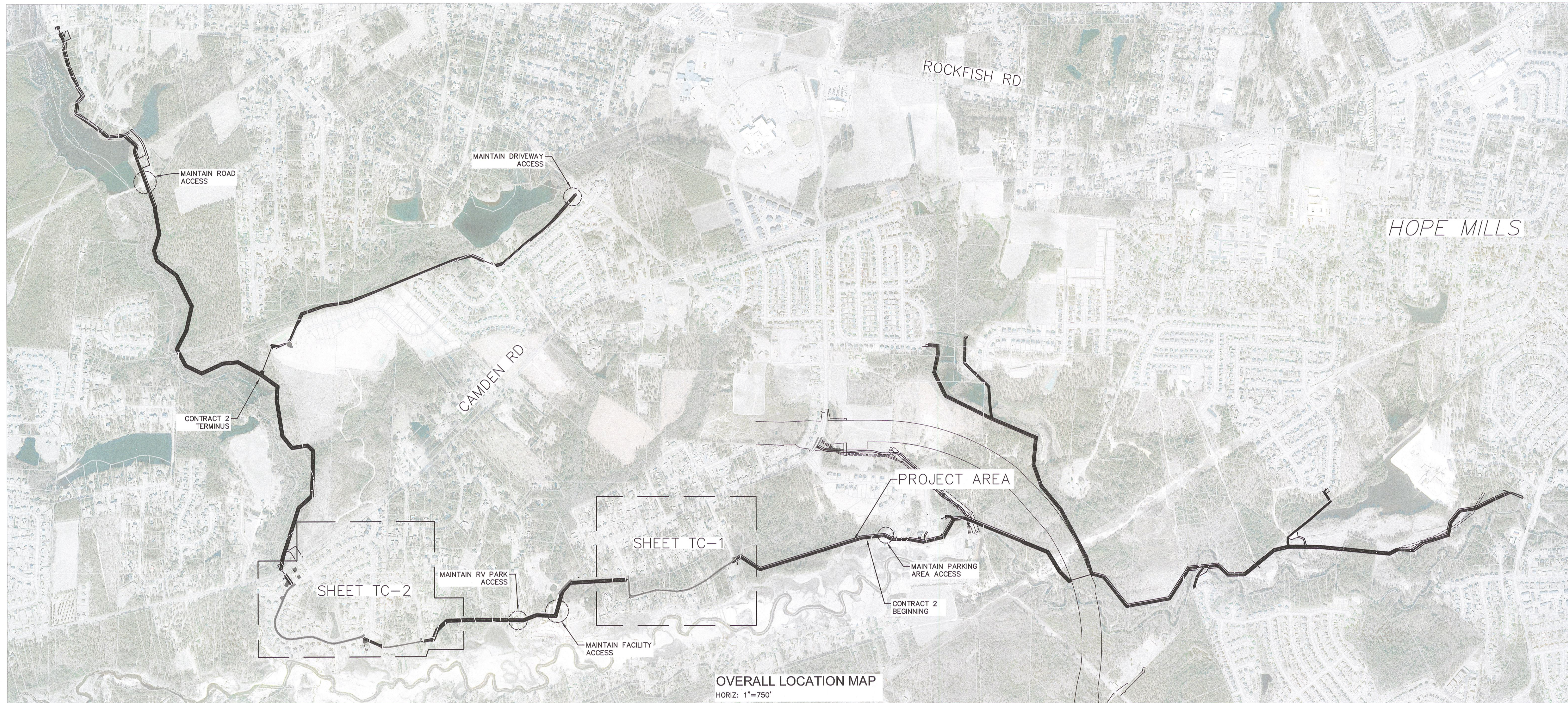
PROCESS LAYOUT BY: DATE: 9/30/22
DESIGN REVIEW BY: TMB/AWB
APPROVED BY: BRL
SCALE: AS SHOWN



SANITARY SEWER IMPROVEMENTS BIG
ROCKFISH CREEK OUTFALL - CONTRACT 2
CAMDEN GLEN LS CONNECTION DEMO
PLAN



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WORK ZONE TRAFFIC CONTROL GENERAL NOTES

MAINTAIN TRAFFIC IN ACCORDANCE WITH DIVISIONS 10 AND 11 OF THE JANUARY 2018 NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES & JANUARY 2018 ROADWAY STANDARD DRAWINGS (RSD) AND THE FOLLOWING PROVISIONS:

COORDINATE WITH THE NCDOT RESIDENT ENGINEER IN CHARGE OF ANY PROJECT IN THE VICINITY OF THIS PROJECT FOR ANY WORK THAT MAY AFFECT THE CONSTRUCTION AND THE TRAFFIC CONTROL OF THIS PROJECT.

PERFORM WORK ONLY WHEN WEATHER AND VISIBILITY CONDITIONS ALLOW SAFE OPERATIONS AS DIRECTED BY THE ENGINEER.

PROVIDE APPROPRIATE LIGHTING IN ACCORDANCE WITH SECTION 105-14, STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

OPERATE EQUIPMENT AND CONDUCT OPERATIONS IN THE SAME DIRECTION AS THE FLOW OF TRAFFIC. DO NOT CROSS MEDIANS WITH EQUIPMENT, EXCEPT AT PROPERLY DESIGNATED INTERCHANGES.

TRAFFIC CONTROL GENERAL NOTES

- ALL SIGNAGE SHALL ADHERE TO MUTCD STANDARDS AND SPECIFICATIONS.
- NO PLACEMENT OF EQUIPMENT OR MATERIALS IS ALLOWED OUTSIDE OF THE APPROVED AREA.
- THE SIDEWALK AND PAVEMENT SHALL BE FREE AND CLEAR OF DEBRIS AT ALL TIMES.
- ALL SIDEWALKS ARE PUBLIC & MUST BE ACCESSIBLE TO PEDESTRIANS WHO ARE VISUALLY IMPAIRED AND/OR PEOPLE WITH MOBILITY DISABILITIES. EXISTING & ALTERNATIVE PEDESTRIAN ROUTES DURING CONSTRUCTION SHALL BE REQUIRED TO BE COMPLIANT WITH THE PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG), 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN & THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- CONSTRUCTION FENCING SHOULD NOT ENCROACH INTO THE PUBLIC RIGHT OF WAY. IF IT DOES, IT MUST BE MOVABLE IN CASE

ADJUSTMENTS HAVE TO BE MADE. NO DRILLING, BORING OR ANY PERMANENT FASTENING OF THE FENCE IS ALLOWED IN THE PUBLIC RIGHT OF WAY.

- ACCESS TO ALL DRIVEWAYS, ACCESS ROADS, AND SIDE STREETS SHALL BE MAINTAINED AT ALL TIMES.
- BEGINNING OF WORK AND STREET CLOSINGS: THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE NC DEPARTMENT OF TRANSPORTATION, DIVISION 6, DISTRICT 2 AT 910-437-2529 OF ANY WORK WHERE THE NUMBER OF TRAVEL LANES IS REDUCED FROM NORMAL CONDITIONS. THE CONTRACTOR SHALL INSTALL THE PROJECT ADVANCED WARNING SIGNS. THESE SIGNS SHALL BE IN PLACE FOR ONE WEEK BEFORE CONSTRUCTION ACTIVITY BEGINS. THE SIGNS SHALL BE REMOVED WITHIN SEVEN DAYS OF CLOSING THE CONSTRUCTION ENTRANCE.
- CONTRACTOR WILL BE RESPONSIBLE FOR ALL PERMANENT SIGNING. ALL SIGNS SHALL BE INSTALLED ON METAL "U" POSTS. ALL PERMANENT ROAD SIGNS SHALL BE TYPE "E" SIGNS WITH A BACKGROUND OF TYPE III SHEETING.
- CONTRACTOR TO ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- RIGHT OF WAY USE PERMIT: THE OWNER WILL OBTAIN RIGHT OF WAY PERMIT(S) FROM NCDOT FOR APPROVAL TO WORK IN STREET RIGHT-OF-WAY(S) OF NORTH CAROLINA WHERE APPLICABLE.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NCDOT STANDARDS.
- THE CONTRACTOR SHALL REPAIR ALL DAMAGED INFRASTRUCTURE IN THE RIGHT-OF-WAY AND RESTORE IT TO PREVIOUS OR BETTER CONDITION.
- THE CONTRACTOR SHALL REPAIR ANY DAMAGES TO ADJACENT PROPERTIES AND RESTORE IT TO PREVIOUS OR BETTER CONDITION.
- TRAFFIC CONTROL PLAN: THE CONTRACTOR SHALL MAINTAIN THE TRAFFIC CONTROL AS DESCRIBED HEREIN UNLESS THE CONTRACTOR SUBMITS AN ALTERNATE TRAFFIC CONTROL PLAN TO THE ENGINEER AND IT IS APPROVED BY THE ENGINEER. THE ENGINEER MAY DIRECT THE CONTRACTOR TO MODIFY TRAFFIC CONTROL IF, IN THE ENGINEER'S

OPINION, TRAFFIC OR PEDESTRIANS ARE NOT MOVING SAFELY OR EFFICIENTLY.

- TRAFFIC CONTROL DEVICES SHALL BE SET UP PRIOR TO THE START OF CONSTRUCTION OR MAINTENANCE OPERATIONS, AND SHALL BE REMOVED OR RELOCATED AS THE WORK IS FINISHED OR WORK CONDITIONS CHANGE. THE CONTRACTOR DOING THE WORK SHALL PATROL THE WORK SITE AS REQUIRED TO ENSURE THAT ALL TRAFFIC CONTROL DEVICES ARE IN PLACE AND OPERATING AT ALL TIMES.
- ALL TRAFFIC CONTROL SIGNS FOR THE WORK AREA SHALL BE REFLECTORIZED IN ACCORDANCE WITH ROADWAY STANDARD DRAWINGS NO. 1101.01.
- WHENEVER TRAFFIC MUST BE ROUTED ACROSS THE CENTERLINE, THE TWO DIRECTIONS MUST BE PHYSICALLY SEPARATED. TRAFFIC CONES CAN BE EFFECTIVELY USED FOR THIS PURPOSE DURING DAYLIGHT HOURS; REFLECTORIZED DRUMS MUST BE USED AT NIGHT.
- TRAFFIC SHALL NOT BE ROUTED ACROSS CENTERLINE WITH CONES OR DRUMS DURING NON-WORKING HOURS. CONTRACTOR MUST BE ON SITE OR CHANGE PAVEMENT MARKINGS APPROPRIATELY.
- THE CONTRACTOR DOING THE WORK SHALL PROVIDE FLAGGERS AND/OR POLICE CONTROL WHEN REQUIRED. CONTRACTOR MAY ALSO BE REQUIRED TO PROVIDE A UNIFORMED OFFICER TO CONTROL TRAFFIC WHEN WORKING IN AND AROUND A SIGNALIZED INTERSECTION.
- EVERY ATTEMPT SHALL BE MADE TO SCHEDULE AND EXPEDITE THE WORK TO CAUSE THE LEAST INCONVENIENCE TO THE TRAVELING PUBLIC.
- WHEN PERSONAL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITH THE CLOSED TRAVEL LANE.
- WHERE LANE CLOSURES ARE REQUIRED, REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED.

- THE DIRECTOR OF THE DEPARTMENT OF TRANSPORTATION OR THEIR REPRESENTATIVES ARE AUTHORIZED TO STOP ANY CONSTRUCTION OR MAINTENANCE ACTIVITY WHICH IS NOT PROPERLY SIGNED OR BARRICADED AS REQUIRED BY THIS STANDARD AND MUTCD UNTIL SUCH REQUIREMENTS ARE MET.

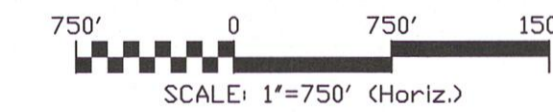
- THIS DESIGN STANDARD CANNOT BE USED FOR ALL ROADWAY CONSTRUCTION SITUATIONS. IT IS INTENDED ONLY TO BE USED AS A GUIDELINE. SPECIFIC SITUATIONS MAY REQUIRE ENGINEERING JUDGEMENT IN THE PLACEMENT OF TRAFFIC CONTROL DEVICES BECAUSE OF LIMITED VERTICAL AND/OR HORIZONTAL SIGHT DISTANCE. CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE, OR RESULT IN DUPLICATE OR UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES.

- OPERATIONAL SIGNS ARE GENERALLY MOUNTED ON PORTABLE SUPPORTS. THESE ARE USUALLY USED FOR SHORT TERM OPERATIONS TO WARN AND GUIDE TRAFFIC. ADVANCED WARNING SIGNS (CONSTRUCTION AHEAD) SHALL BE MOUNTED ON U-POST PERMANENT TYPE MOUNTING 7 DAYS PRIOR TO BEGINNING CONSTRUCTION.

- CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING RATED CAPACITY OF ALL EXISTING BRIDGES AND CULVERTS TO DETERMINE WEIGHT/AXLE LOADING LIMITATIONS PRIOR TO USE.

- ALL TRAFFIC CONTROL SIGNS SHALL COMPLY WITH MUTCD STANDARDS AND SHALL BE ON U-POST WITH PERMANENT TYPE MOUNTING.

- IF COORDINATION IS REQUIRED FOR WORK NEAR ROADWAYS OWNED BY THE TOWN OF HOPE MILLS, CONTACT HOPE MILLS PUBLIC WORKS REPRESENTATIVES DON SISCO AT 910-429-3384 OR BRUCE D. CLARK AT 910-429-3380.



DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	POP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	POP
04.30.2021	FINAL DESIGN - CONTRACT ENCROACHMENT AND SIGN REVISIONS	POP
04.12.2021	FINAL DESIGN - NIGHT ENCROACHMENT MODIFICATIONS	POP
09.30.2022	FINAL DESIGN ISSUED FOR BID	POP

SHEET TC-0

SURVEYED BY: MCKIMCREED, INC.
 PROCESS/LAYOUT BY: DATE: 9/30/22
 PLAN/PROF. (S/S/S) BY: TMB/AWB
 DESIGN REVIEW BY: BRL
 APPROVED BY: [Signature]
 SCALE: AS SHOWN



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
 TRAFFIC CONTROL OVERVIEW

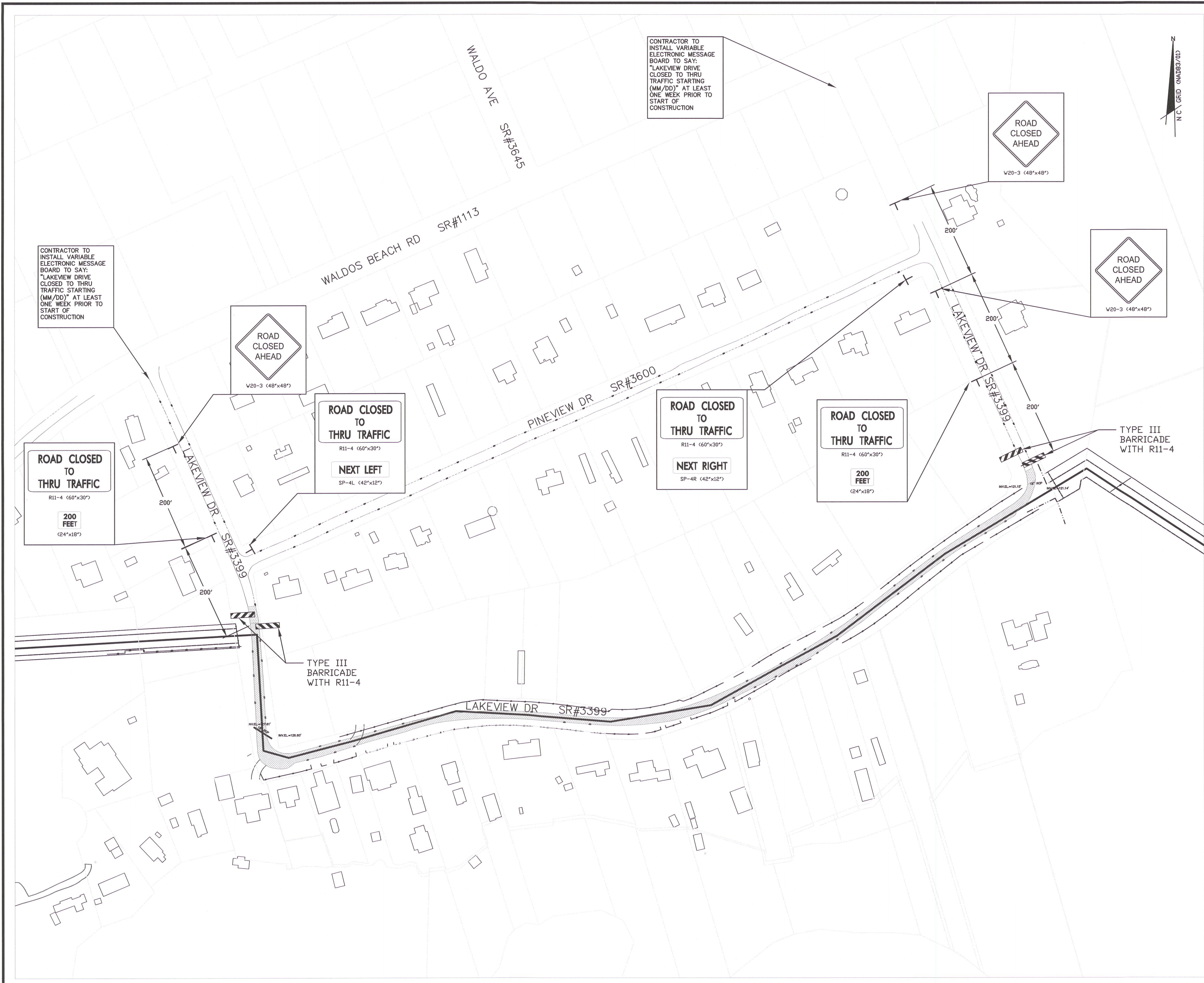
FAYETTEVILLE PUBLIC WORKS COMMISSION
FWC WATER RESOURCES ENGINEERING
 P.O. Box 1089, Fayetteville, NC 28302
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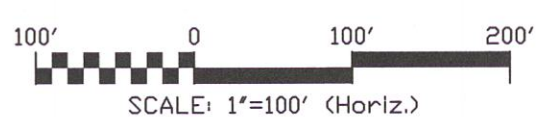
PWC DRAWING # DS-15486

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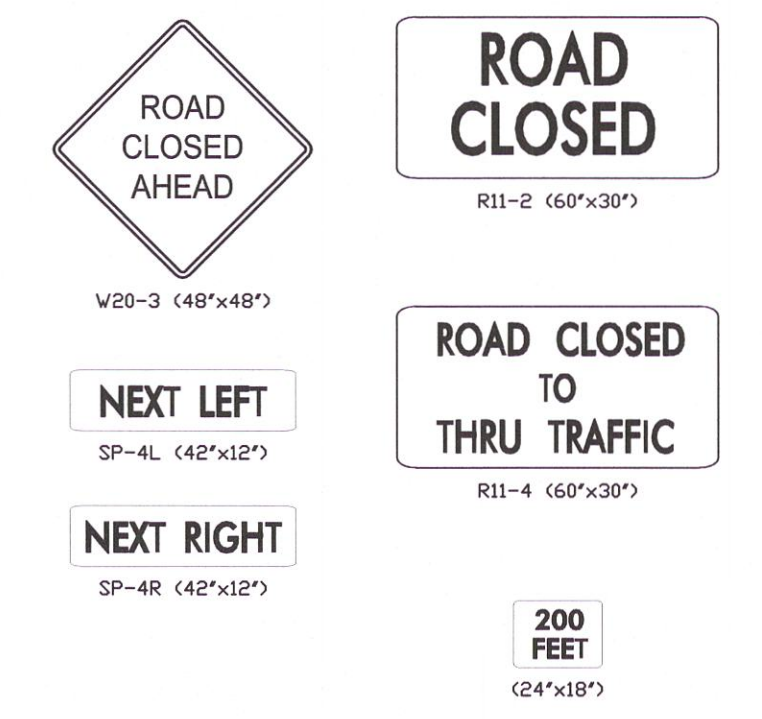
CONTRACTOR TO INSTALL VARIABLE ELECTRONIC MESSAGE BOARD TO SAY: "LAKEVIEW DRIVE CLOSED TO THRU TRAFFIC STARTING (MM/DD)" AT LEAST ONE WEEK PRIOR TO START OF CONSTRUCTION

CONTRACTOR TO INSTALL VARIABLE ELECTRONIC MESSAGE BOARD TO SAY: "LAKEVIEW DRIVE CLOSED TO THRU TRAFFIC STARTING (MM/DD)" AT LEAST ONE WEEK PRIOR TO START OF CONSTRUCTION

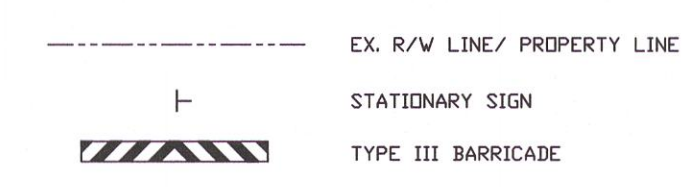


LAKEVIEW DRIVE
HORIZ: 1"=100'

SIGN LEGEND



LEGEND



LAKEVIEW DRIVE NOTES

1. LAKEVIEW DRIVE ROAD CLOSURE SHALL BE A ROLLING CLOSURE AND ONLY PERMITTED TO SPAN EACH WORKING DAY AND FOR THE LOCAL WORKING AREA.
2. INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL DWELLINGS AFFECTED BY THE PROJECT. ACCESS SHALL BE PROVIDED TO POLICE, EMS, FIRE, ETC.
3. AT END OF WORKING DAY AND WHENEVER CONSTRUCTION IS NOT ONGOING, ROAD SHALL BE TRAVERSABLE. STEEL PLATING OF ALL TRENCHES SHALL BE IN ACCORDANCE WITH SECTION 02500.

DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AJB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	HPF
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	HPF
01.30.2021	FINAL DESIGN - CONTRACT REVISION AND BID RESPONSE	HPF
04.13.2022	FINAL DESIGN - NIGHT ENCROACHMENT MODIFICATIONS	HPF
09.30.2022	FINAL DESIGN ISSUED FOR BID	HPF

SHEET	TC-1
SURVEY/PS BY: MCKIM&CREED, INC.	DATE: 9/30/22
PROCESS/OUT BY: TMB/AWB	BRL
PLAN/PROF (GDSX) BY: TMB/AWB	BRL
DESIGN REVIEW BY: TMB/AWB	BRL
APPROVED BY:	SCALE: AS SHOWN

TC-1



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
TRAFFIC CONTROL PLAN

FAYETTEVILLE PUBLIC WORKS COMMISSION
PWC WATER RESOURCES ENGINEERING
P.O. Box 0859, Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28301



MCKIM & CREED
1730 Varsity Drive, Suite 500
Raleigh, NC 27606
Phone: (919)233-8091, Fax: (919)233-8031
F-1222
www.mckimcreed.com

FINAL DESIGN
ISSUED FOR BID

PWC DRAWING # DS-15486

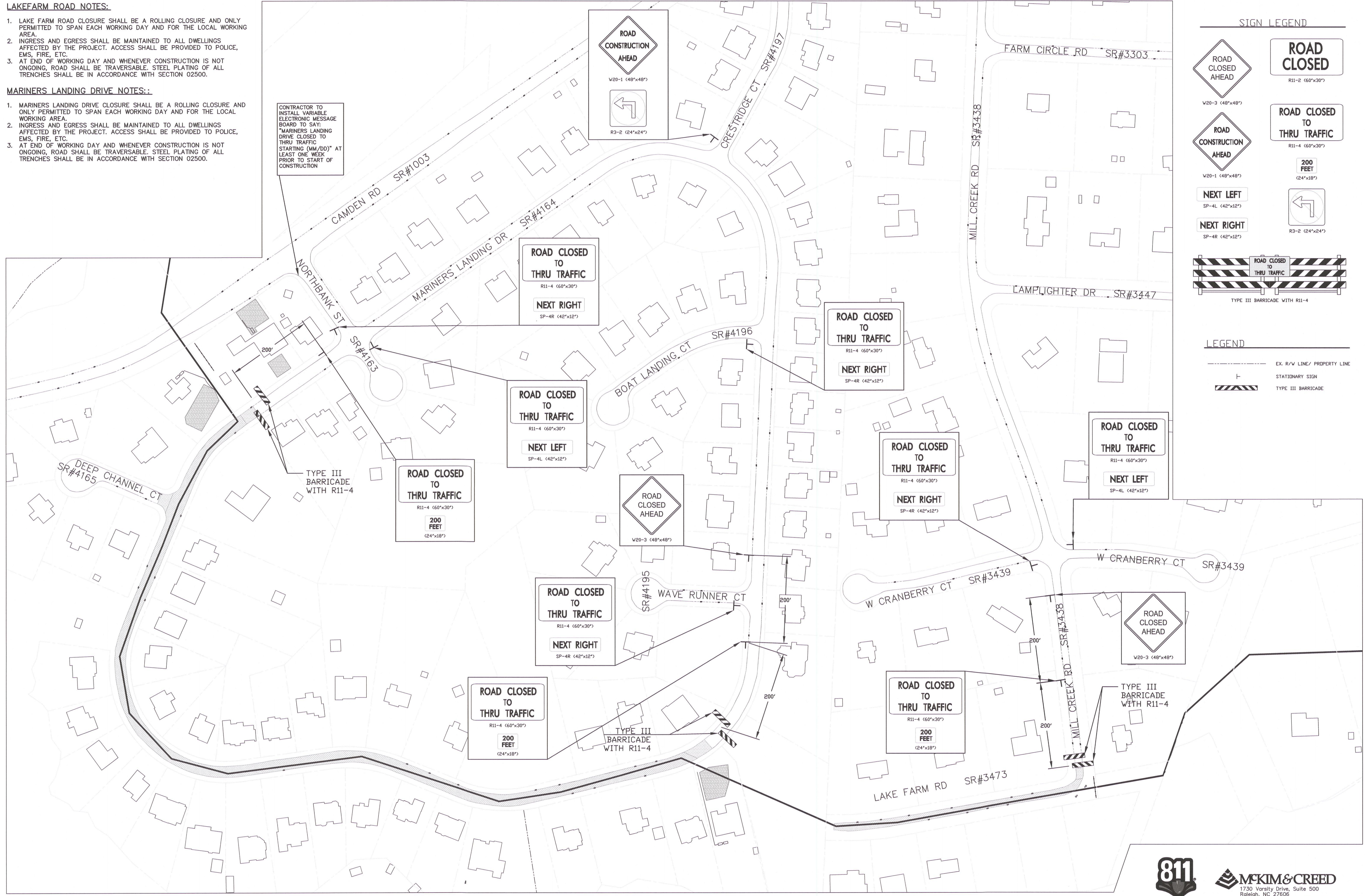
LAKEFARM ROAD NOTES:

- LAKE FARM ROAD CLOSURE SHALL BE A ROLLING CLOSURE AND ONLY PERMITTED TO SPAN EACH WORKING DAY AND FOR THE LOCAL WORKING AREA.
- INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL DWELLINGS AFFECTED BY THE PROJECT. ACCESS SHALL BE PROVIDED TO POLICE, EMS, FIRE, ETC.
- AT END OF WORKING DAY AND WHENEVER CONSTRUCTION IS NOT ONGOING, ROAD SHALL BE TRAVERSABLE. STEEL PLATING OF ALL TRENCHES SHALL BE IN ACCORDANCE WITH SECTION 02500.

MARINERS LANDING DRIVE NOTES:

- MARINERS LANDING DRIVE CLOSURE SHALL BE A ROLLING CLOSURE AND ONLY PERMITTED TO SPAN EACH WORKING DAY AND FOR THE LOCAL WORKING AREA.
- INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL DWELLINGS AFFECTED BY THE PROJECT. ACCESS SHALL BE PROVIDED TO POLICE, EMS, FIRE, ETC.
- AT END OF WORKING DAY AND WHENEVER CONSTRUCTION IS NOT ONGOING, ROAD SHALL BE TRAVERSABLE. STEEL PLATING OF ALL TRENCHES SHALL BE IN ACCORDANCE WITH SECTION 02500.

CONTRACTOR TO INSTALL VARIABLE ELECTRONIC MESSAGE BOARD TO SAY: "MARINERS LANDING DRIVE CLOSED TO THRU TRAFFIC STARTING (MM/DD)" AT LEAST ONE WEEK PRIOR TO START OF CONSTRUCTION

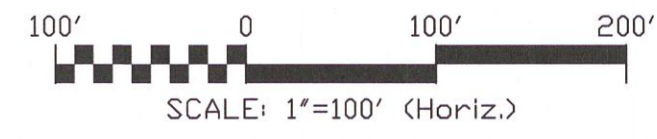


SIGN LEGEND

- ROAD CLOSED AHEAD (R11-2 60"x30")
- ROAD CLOSED TO THRU TRAFFIC (R11-4 60"x30")
- 200 FEET (24"x18")
- ROAD CLOSED AHEAD (W20-3 48"x48")
- ROAD CONSTRUCTION AHEAD (W20-1 48"x48")
- NEXT LEFT (SP-4L 42"x12")
- NEXT RIGHT (SP-4R 42"x12")
- ROAD CLOSED TO THRU TRAFFIC (R11-4 60"x30")
- TYPE III BARRICADE WITH R11-4

LEGEND

- EX. R/V LINE/ PROPERTY LINE
- STATIONARY SIGN
- TYPE III BARRICADE



LAKE FARM ROAD AND MARINERS LANDING
 FINAL DESIGN
 ISSUED FOR BID
 HORIZ: 1"=100'

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PWC DRAWING # DS-15486

DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
04.30.2021	FINAL DESIGN - CONTRACT SENSATION AND BID RESPONSE	PPP
04.15.2021	FINAL DESIGN - CONTRACT SENSATION AND BID RESPONSE	PPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	PPP

SHEET TC-2

SURVEY/GIS BY: MCKIM&CREED, INC. DATE: 9/30/22
 PROCESS/LAYOUT BY: TMB/AWB
 PLAN/PROF. (GSX) BY: BRL
 DESIGN REVIEW BY: BRL
 APPROVED BY: [Signature]
 SCALE: AS SHOWN

TC-2

PROFESSIONAL SEAL
 02440
 10/04/2022
 MCKIM & CREED, INC.
 W. W. W. W.

SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
 TRAFFIC CONTROL PLAN

FAYETTEVILLE PUBLIC WORKS COMMISSION
PWC
 WATER RESOURCES ENGINEERING
 P.O. Box 1084, Fayetteville, NC 28302
 955 Old Wilmington Road, Fayetteville, NC 28301

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LAKEFARM ROAD NOTES:

- LAKE FARM ROAD CLOSURE SHALL BE A ROLLING CLOSURE AND ONLY PERMITTED TO SPAN EACH WORKING DAY AND FOR THE LOCAL WORKING AREA.
- INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL DWELLINGS AFFECTED BY THE PROJECT. ACCESS SHALL BE PROVIDED TO POLICE, EMS, FIRE, ETC.
- AT END OF WORKING DAY AND WHENEVER CONSTRUCTION IS NOT ONGOING, ROAD SHALL BE TRAVERSABLE. STEEL PLATING OF ALL TRENCHES SHALL BE IN ACCORDANCE WITH SECTION 02500.

MARINERS LANDING DRIVE NOTES (ALTERNATE BID – TRENCHLESS INSTALLATION COMBINED WITH OPEN CUT):

- LAUNCH PIT WORK AREA IS BASED ON A TEMPORARY ROAD CLOSURE. WORK AREA MUST BE SECURED USING 6-FOOT HIGH TEMPORARY CHAIN LINK FENCE WITH GATES AS NECESSARY FOR CONSTRUCTION ACCESS. EXCAVATION FOR LAUNCH PIT MUST BE ADEQUATELY SECURED USING STEEL PLATES THAT COVER THE ENTIRE EXCAVATION PIT A MINIMUM OF 2 FEET ON ALL SIDES WHENEVER WORK IS NOT PROGRESSING. OTHER EXCAVATION PROTECTION TECHNIQUES MAY BE CONSIDERED ACCEPTABLE UPON REVIEW AND ACCEPTANCE BY PWC.
- CONTRACTOR SHALL ONLY HAVE ONE TEMPORARY ROAD CLOSURE OCCURRING AT ANY GIVEN TIME. CONTRACTOR SHALL NOT HAVE TEMPORARY ROAD CLOSURE OCCURRING FOR ALTERNATE BID FOR SSMH 75 TO SSMH 76 OCCURRING AT THE SAME TIME AS ALTERNATE BID FOR SSMH 90 AND SSMH 91.
- ALL WORK OUTSIDE OF THE LAUNCH PIT SHALL CONFORM TO NCDOT ENCROACHMENT PROVISIONS FOR HAVING MARINERS LANDING TRAVERSABLE AT END OF WORKING DAY AND WHENEVER WORK IS NOT IN PROGRESS.

CONTRACTOR TO INSTALL VARIABLE ELECTRONIC MESSAGE BOARD TO SAY: "MARINERS LANDING DRIVE CLOSED TO THRU TRAFFIC STARTING (MM/DD)" AT LEAST ONE WEEK PRIOR TO START OF CONSTRUCTION

ALTERNATE BID TRENCHLESS INSTALLATION-ROAD CLOSURE FOR LAUNCH INSTALLATION

TYPE III BARRICADE WITH R11-4 (ALTERNATE BID) - SEE BID ALTERNATE NOTES FOR ROAD CLOSURE

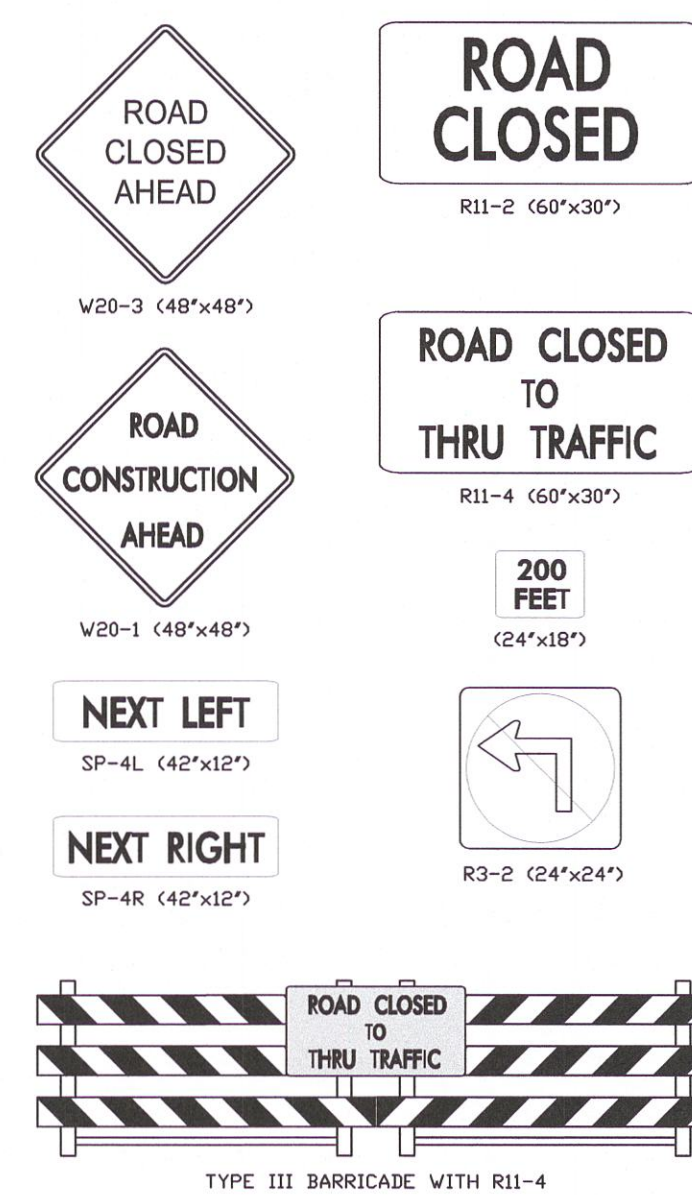
ALTERNATE BID TRENCHLESS INSTALLATION-ROAD CLOSURE FOR LAUNCH INSTALLATION

TYPE III BARRICADE WITH R11-4 (ALTERNATE BID) - SEE BID ALTERNATE NOTES FOR ROAD CLOSURE

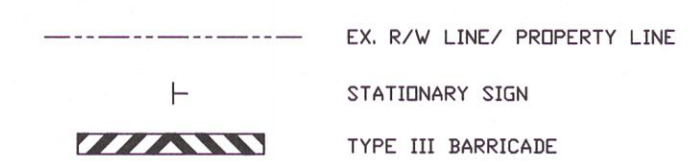
LAKE FARM ROAD AND MARINERS LANDING
HORIZ: 1"=100'

FINAL DESIGN
NCDOT ENCROACHMENT MODIFICATIONS

SIGN LEGEND

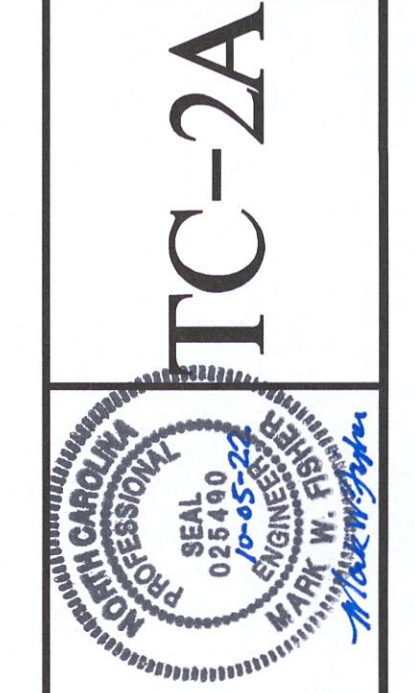


LEGEND



DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	ARR
02.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
02.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
06.30.2021	FINAL DESIGN CONTRACT SEPARATION AND BID RESPONSES	PPP
04.15.2022	FINAL DESIGN CONTRACT SEPARATION AND BID RESPONSES	PPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	PPP

SHEET	TC-2A
SURVEY/PGS BY: MCKIM&CREED, INC.	DATE: 07/30/22
PROCESS/LAYOUT BY: TMB/AWB	DATE: 07/30/22
PLAN/PROF. (GSD) BY: TMB/AWB	DATE: 07/30/22
DESIGN REVIEW BY: BRJ	DATE: 07/30/22
APPROVED BY: MARY W.	DATE: 07/30/22
SCALE: AS SHOWN	



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL – CONTRACT 2
TRAFFIC CONTROL PLAN

FAYETTEVILLE PUBLIC WORKS COMMISSION
PWC WATER RESOURCES ENGINEERING
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PWC DRAWING # DS-15486

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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
SKINNY-DRUM

GENERAL NOTES

- USE BALLAST AS SPECIFIED BY THE MANUFACTURER. DO NOT PLACE BALLAST ON TOP OF THE DRUM.
- IF NECESSARY, PLACE THE NAME OF THE AGENCY, CONTRACTOR, OR SUPPLIER ON NON-RETROREFLECTIVE SURFACES. SHOW THE LETTERS AND NUMBERS USING A NON-RETROREFLECTIVE COLOR AND NOT OVER 2" IN HEIGHT.
- REFER TO SECTION 1180, STANDARD SPECIFICATIONS FOR ROADS AND INSTRUCTIONS FOR ADDITIONAL REQUIREMENTS.
- USE TYPE 3 OR HIGHER HIGH INTENSITY PRISMATIC SHEETING.
- USE THE DEPARTMENT'S APPROVED PRODUCTS LIST AT <https://apps.dot.state.nc.us/vendor/approvedproducts>.

SHEET 1 OF 1
1180.01

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
PORTABLE WORK ZONE SIGNS
MOUNTING HEIGHT & LATERAL CLEARANCE

GENERAL NOTES

- DIMENSIONS SHOWN ARE MINIMUM VALUES. MOUNT SIGNS SO THEY WILL BE CLEARLY VISIBLE TO APPROACHING TRAFFIC EVEN WHEN SIGNS ARE MOUNTED BEHIND TRAFFIC CONTROL DEVICES SUCH AS DRUMS, BARRIERS, OR OTHER OBJECTS.
- ALL PORTABLE SIGNS AND STANDS MUST MEET OR EXCEED THE REQUIREMENTS OF NCHP 350 FOR CATEGORY II DEVICES. USE PORTABLE WORK ZONE SIGNS AND STANDS SPECIFICALLY DESIGNED FOR ONE ANOTHER.
- ALL PORTABLE WORK ZONE SIGNS AND STANDS MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCTS LIST AT <https://apps.dot.state.nc.us/vendor/approvedproducts>.

SHEET 1 OF 1
1110.02

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
BARRICADES
TYPE-III

GENERAL NOTES

- HORIZONTAL BARRIERS MAY BE CONSTRUCTED OF APPROVED COMPOSITE, HOLLOW/CORRUGATED EXTRUDED RIGID POLYPROPYLENE, HIGH DENSITY POLYETHYLENE, OR OTHER NCOT APPROVED MATERIAL.
- BARRICADE SHALL BE LIMITED TO A MAXIMUM LENGTH OF 8 FT UNLESS NCHP 350 CRASH TESTED FOR CATEGORY II DEVICES AND NCOT APPROVED.
- ONLY NCOT APPROVED COMPOSITE AND ROLL-UP SIGNS MAY BE MOUNTED ON THE BARRICADE RAILS. MOUNT SIGNS TO BARRICADE RAILS TO ENSURE SIGN WILL NOT BECOME DETACHED UNDER NORMAL WIND AND TRAFFIC CONDITIONS.
- SIGNS SHALL BE MOUNTED A MINIMUM OF 1 FOOT FROM THE GROUND TO THE BOTTOM OF THE SIGN UNLESS SIGNS R11-3 OR R11-4 ARE REQUIRED BY THE PLANS OR DIRECTED BY THE ENGINEER.
- USE TYPE VII OR HIGHER PRISMATIC RETROREFLECTIVE SHEETING ON BOTH SIDES OF THE BARRICADE RAILS.
- BARRICADE MUST BE NCHP 350 FOR CATEGORY II DEVICES AND NCOT APPROVED WITH STABILIZER BAR OR ADEQUATE LATERAL BRACING.
- ASSEMBLY OF THE BARRICADE MUST BE SELF CERTIFIED BY THE ASSEMBLER.
- BARRICADES USED TO CLOSE A ROADWAY SHALL EXTEND ACROSS THE ENTIRE ROADWAY. WHERE LOCAL TRAFFIC MUST BE MAINTAINED, THEY MAY BE PLACED IN A STAGGERED PATTERN.
- STRIPES ON WORK ZONE BARRICADE RAILS SHALL BE ALTERNATE ORANGE AND WHITE RETROREFLECTIVE STRIPES, SLOPED DOWNWARD TOWARDS THE SIDE WHICH TRAFFIC IS TO PASS OR TURN IN RETOURING. WHERE NO TURNS ARE EXTENDED, THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.
- USE RED AND WHITE STRIPES FOR PERMANENT BARRICADES.
- SEE THE DEPARTMENT'S APPROVED PRODUCTS LIST AT <https://apps.dot.state.nc.us/vendor/approvedproducts>.
- PLACE MANUFACTURER'S NAME AND FEDERAL HIGHWAY ADMINISTRATION'S NCHP 350 APPROVAL LETTER NUMBER ON BARRICADE FRAME.
- PLACE SANDBAGS OR OTHER APPROVED BALLASTING METHODS ON THE FEET OF THE FRAME. DO NOT PLACE SANDBAGS ON TOP OF A STRIPED RAIL OR STABILIZER BAR. DO NOT BALLAST BARRICADES BY HEAVY OBJECTS SUCH AS ROCKS, CHUNKS OF CONCRETE OR OTHER ITEMS THAT WOULD CAUSE DAMAGE IF THE BARRICADE IS STRUCK BY A VEHICLE.

SHEET 1 OF 1
1145.01

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
SPACING OF TEMPORARY SIGNS IN SERIES

GENERAL NOTES

- REFER TO 2000 METCO.
- USE THIS STANDARD DRAWING IN CONJUNCTION WITH OTHER TRAFFIC CONTROL ROADWAY STANDARD DRAWINGS WHERE SIGN SPACING DISTANCES A, B, C, ARE SPECIFIED.
- APPLY THE ADVANCE WARNING SIGN SPACING CHART WHERE A SERIES OF 2 OR MORE SIGNS ARE USED. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS VARIOUS CONDITIONS OCCUR, SUCH AS LIMITED SIGHT DISTANCE, OBSTRUCTION INTERFERENCE, ETC.

SHEET 4 OF 4
1101.11

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
SPACING OF TEMPORARY SIGNS IN SERIES

GENERAL NOTES

- REFER TO 2000 METCO.
- USE THIS STANDARD DRAWING IN CONJUNCTION WITH OTHER TRAFFIC CONTROL ROADWAY STANDARD DRAWINGS WHERE SIGN SPACING DISTANCES A, B, C, ARE SPECIFIED.
- APPLY THE ADVANCE WARNING SIGN SPACING CHART WHERE A SERIES OF 2 OR MORE SIGNS ARE USED. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS VARIOUS CONDITIONS OCCUR, SUCH AS LIMITED SIGHT DISTANCE, OBSTRUCTION INTERFERENCE, ETC.

SHEET 4 OF 4
1101.11

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
TEMPORARY BARRIER FLARE RATES

GENERAL NOTES

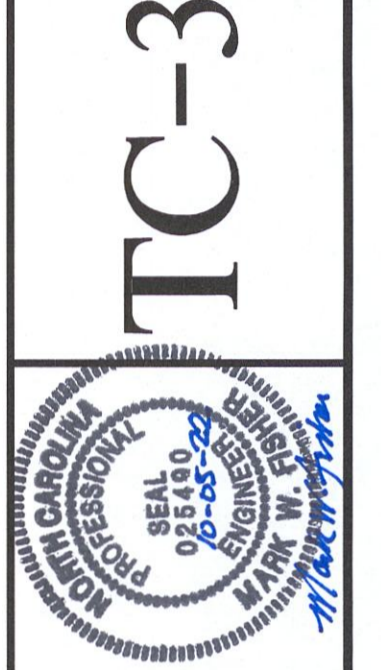
- REFER TO 2002 ROADSIDE DESIGN GUIDE.
- A BARRIER IS CONSIDERED FLARED WHEN IT IS NOT PARALLEL TO THE EDGE OF THE TRAVELWAY.
- THE PRIMARY USE OF BARRIERS ARE FOR WORK AREA PROTECTION. WHEN SERVING THE ADDITIONAL FUNCTION OF A CHANNELIZING DEVICE, SUCH AS WHEN SHIFTING TRAFFIC, BARRIER TAPERS SHALL MEET STANDARD CHANNELIZING TAPER LENGTHS AS SHOWN ON STD. 1101.11 SHEET 1.

SHEET 3 OF 4
1101.11

DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
02.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
02.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
06.30.2021	FINAL DESIGN - CONTRACT MODIFICATION AND BID RESPONSES	PPP
04.15.2021	FINAL DESIGN - CONTRACT MODIFICATION AND BID RESPONSES	PPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	PPP

SHEET TC-3

SURVEY/GPS BY: MCKIM&CREED, INC.
PROCESS/LAYOUT BY: DATE: 09/30/22
PLAN/PROF. (SDS) BY: TMB/AMB
DESIGN REVIEW BY: BRL
APPROVED BY:
SCALE: AS SHOWN



SANITARY SEWER IMPROVEMENTS BIG
ROCKFISH CREEK OUTFALL - CONTRACT 2
TRAFFIC CONTROL DETAILS

FAYETTEVILLE PUBLIC WORKS COMMISSION
PWC WATER RESOURCES ENGINEERING
P.O. Box 085, Fayetteville, NC 28302
555 Old Wilmington Road, Fayetteville, NC 28301

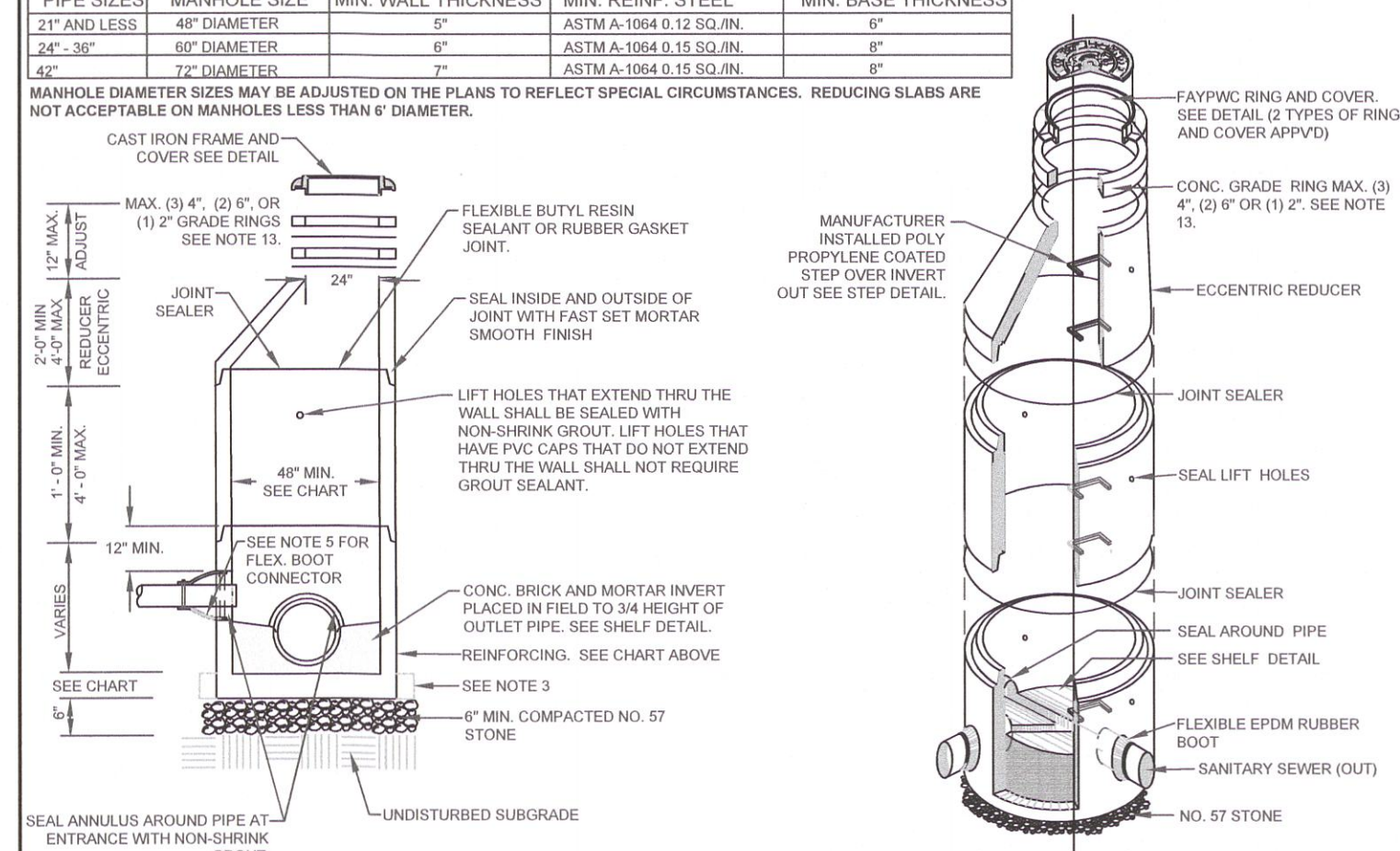
811
Know what's below. Call before you dig.

MCKIM&CREED
1730 Varsity Drive, Suite 500
Raleigh, NC 27606
Phone: (919)233-8091, Fax: (919)233-8031
F-1222
www.mckimcreed.com

PWC DRAWING # DS-15486

FINAL DESIGN
ISSUED FOR BID

1. ALL SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE FAYFWC STANDARDS.
2. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. CONSTRUCTION STAKING IS REQUIRED FOR ALL FAYFWC WATER AND SEWER UTILITY INSTALLATIONS. CUT SHEETS, SIGNED AND RELEASD BY A.C. P.L.C. SHALL BE PROVIDED TO THE FAYFWC WATER RESOURCES ENGINEERING DEPARTMENT AND THE CONTRACTOR IN ADVANCE OF CONSTRUCTION FOR FAYFWC WATER AND SEWER UTILITIES.
4. CONTRACTOR SHALL MAINTAIN A COPY OF THE SIGNED AND SEALED CUT SHEET ON THE JOB SITE. CONSTRUCTION OF FAYFWC WATER AND SEWER UTILITIES CANNOT BEGIN UNTIL THE PROFESSIONAL LAND SURVEYOR HAS REVIEWED AND SIGNED THE CUT SHEET.
5. ALL NEW WATER AND SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE TESTED AND INSPECTED IN ACCORDANCE WITH FAYETTEVILLE FAYFWC STANDARDS PRIOR TO PLACING INTO SERVICE.
6. CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE FAYFWC PROJECT COORDINATOR.
7. ALL DUCTILE IRON PIPE IN VACUUM-TESTED SEWER SERVICE SHALL HAVE AN INTERIOR LINKS OF PROTECTIVE AS OR APPROVED EQUAL.
8. ALL NEW MANHOLES ARE TO BE VACUUM-TESTED IN ACCORDANCE WITH FAYETTEVILLE FAYFWC STANDARDS.
9. CONTRACTOR SHALL REPAIR ALL SEWER LATERALS AND MAINS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY REPORT ALL SEWER MAIN AND LATERAL REPAIRS IN ACCORDANCE WITH FAYFWC STANDARDS.
10. TRANSFER OF SEWER SERVICES SHALL BE ACCOMPLISHED AS FOLLOWS:
 - A. INSTALL AND TEST NEW MANHOLES AND LATERALS. CLEANINGS SHALL BE INSTALLED 18" INSIDE R/W UNLESS OTHERWISE DIRECTED BY P.W.C.
 - B. CONNECT EXISTING PIPING TO NEW LATERAL/PIPELINE AS NECESSARY. FITTINGS AS DIRECTED BY FAYFWC.
 - C. AFTER ALL SERVICES HAVE BEEN TRANSFERRED TO THE NEW MAIN, THE EXISTING SEWER SYSTEM SHALL BE ABANDONED IN ACCORDANCE WITH FAYFWC REQUIREMENTS.
11. CONTRACTOR SHALL ABANDON (YIELD-OUT) ANY EXISTING SEWER SERVICES THAT WILL NOT BE UTILIZED BY DISCONNECTING THE EXISTING LATERAL AT THE MAIN CUT AND PLUG AT BOTH ENDS. REMOVE THE EXISTING CLEANOUT AND CONNECTION, AND PLUG THE TOP OF THE MAIN. THE LATERAL SHALL BE REMOVED AT THE MAIN AND THE REMAINING PORTION OF THE MANHOLE SHALL BE FILLED WITH BLOCK AND MORTAR.
12. SEWER PIPING SHALL BE INSTALLED TO DRAINAGE ANY DEBRIS OR OTHER MATERIAL FROM THE EXISTING SEWER SYSTEM. UPON ACCEPTANCE OF THE NEW SEWER SYSTEM, THE CONTRACTOR SHALL CLEAN THE NEW MAIN, REMOVE ALL DEBRIS, AND THEN REMOVE THE CLEANOUT.
13. ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE, IN ACCORDANCE WITH FAYFWC REQUIREMENTS.
14. ALL WORK ON FAYFWC SEWER UTILITIES (MAIN, LATERALS, ETC) SHALL BE PERFORMED BY A LICENSED UTILITY CONTRACTOR. THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL OBSERVE AND APPROVE ALL WORK ON FAYFWC SEWER UTILITIES. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH FAYFWC REQUIREMENTS.
15. SEPARATION REQUIREMENTS
A">
 - A. LATERAL SEPARATION OF SEWER AND WATER MAINS. WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWER MAINLATERAL, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10 FOOT LATERAL SEPARATION. IN WHICH CASE:
I">
 - I. THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAINLATERAL, OR
 - II. THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER MAINLATERAL WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OR INSUBURSED GRADE AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE ELEVATION OF THE BOTTOM OF THE SEWER MAINLATERAL WITH THE TRENCH WIDTH MAINTAINED AS SHOWN ON THE PLAN.
 - B. CROSSING A WATER MAIN OVER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER MAINLATERAL, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAINLATERAL, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION. IN WHICH CASE BOTH THE SEWER MAIN AND SEWER MAINLATERAL SHALL BE CONSTRUCTED OF FERROUS MATERIAL AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 5 FEET ON EACH SIDE OF THE CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
 - C. CROSSING WATER MAIN UNDER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER MAINLATERAL, BOTH THE WATER MAIN AND THE COVER MAINLATERAL SHALL BE CONSTRUCTED OF DUCTILE IRON MATERIAL AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 5 FEET ON EACH SIDE OF THE CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
 - D. CROSSING STORM DRAINAGE LINES. A MINIMUM OF 24 INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN EXISTING OR PROPOSED STORM DRAINAGE LINES AND EXISTING OR PROPOSED SEWER MAINS. UNLESS DUCTILE IRON PIPE IS USED, A MINIMUM OF 50% INCHES OF SEPARATION SHALL BE MAINTAINED, UNLESS OTHERWISE APPROVED BY FAYFWC.

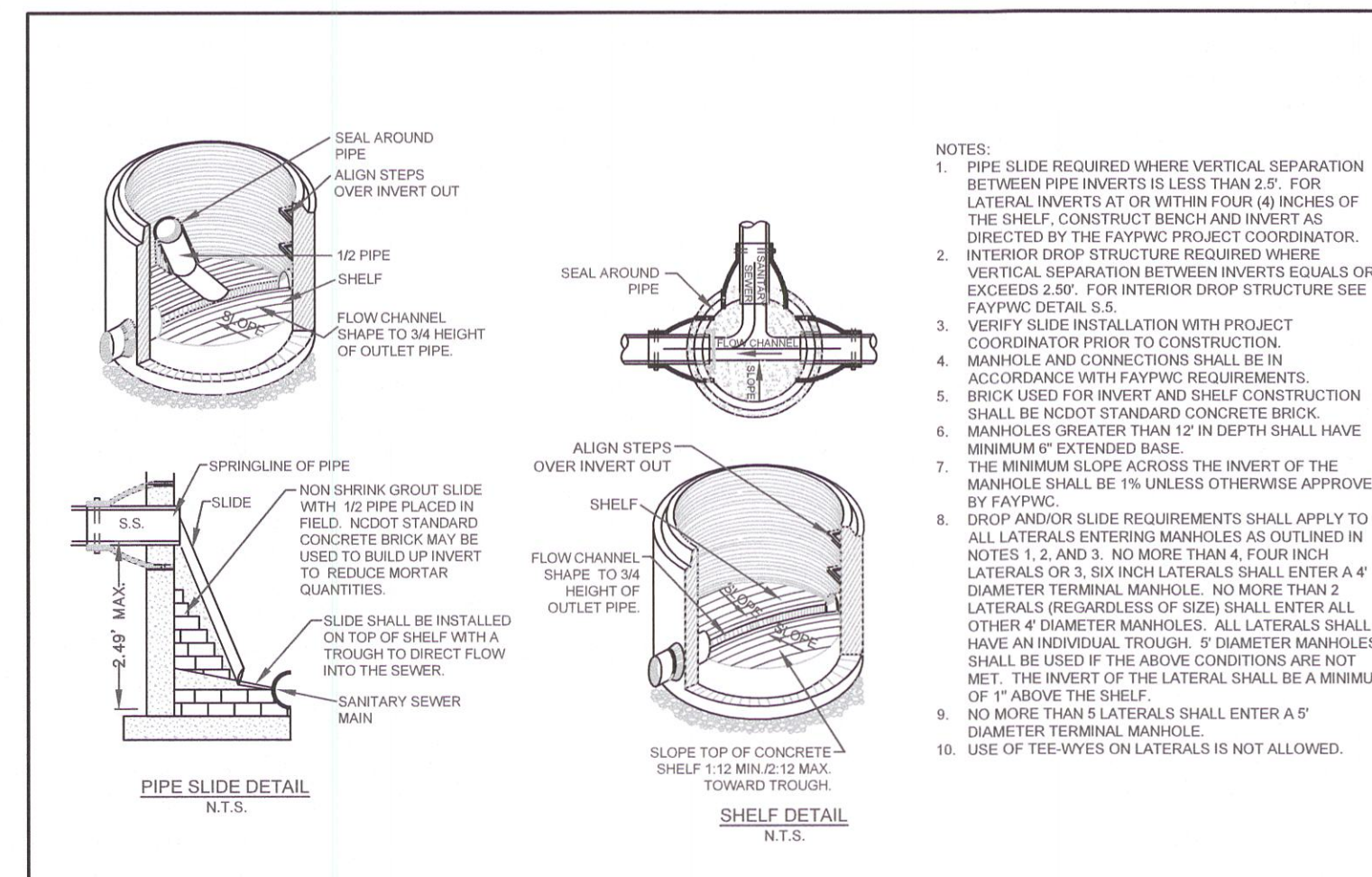
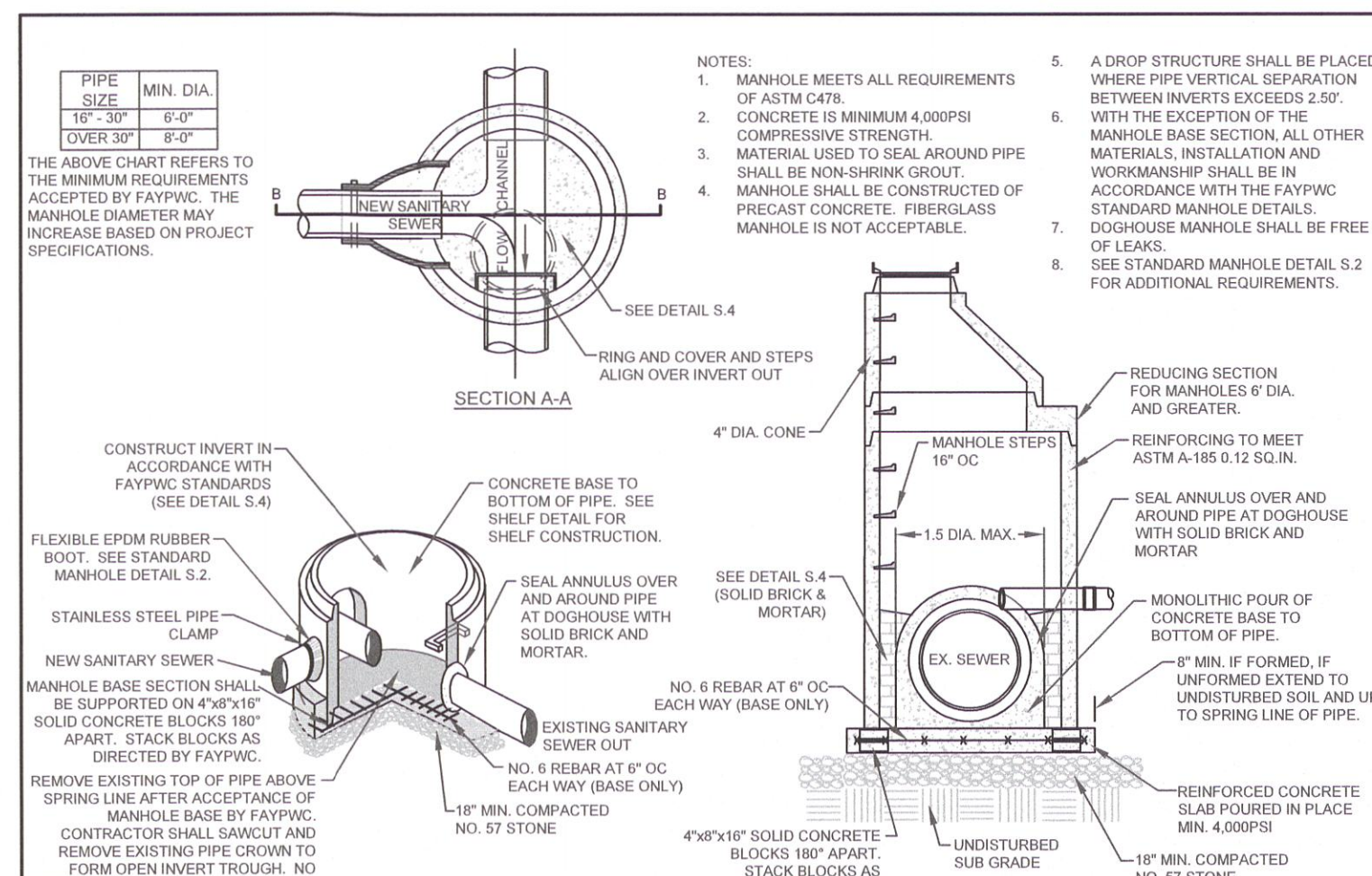
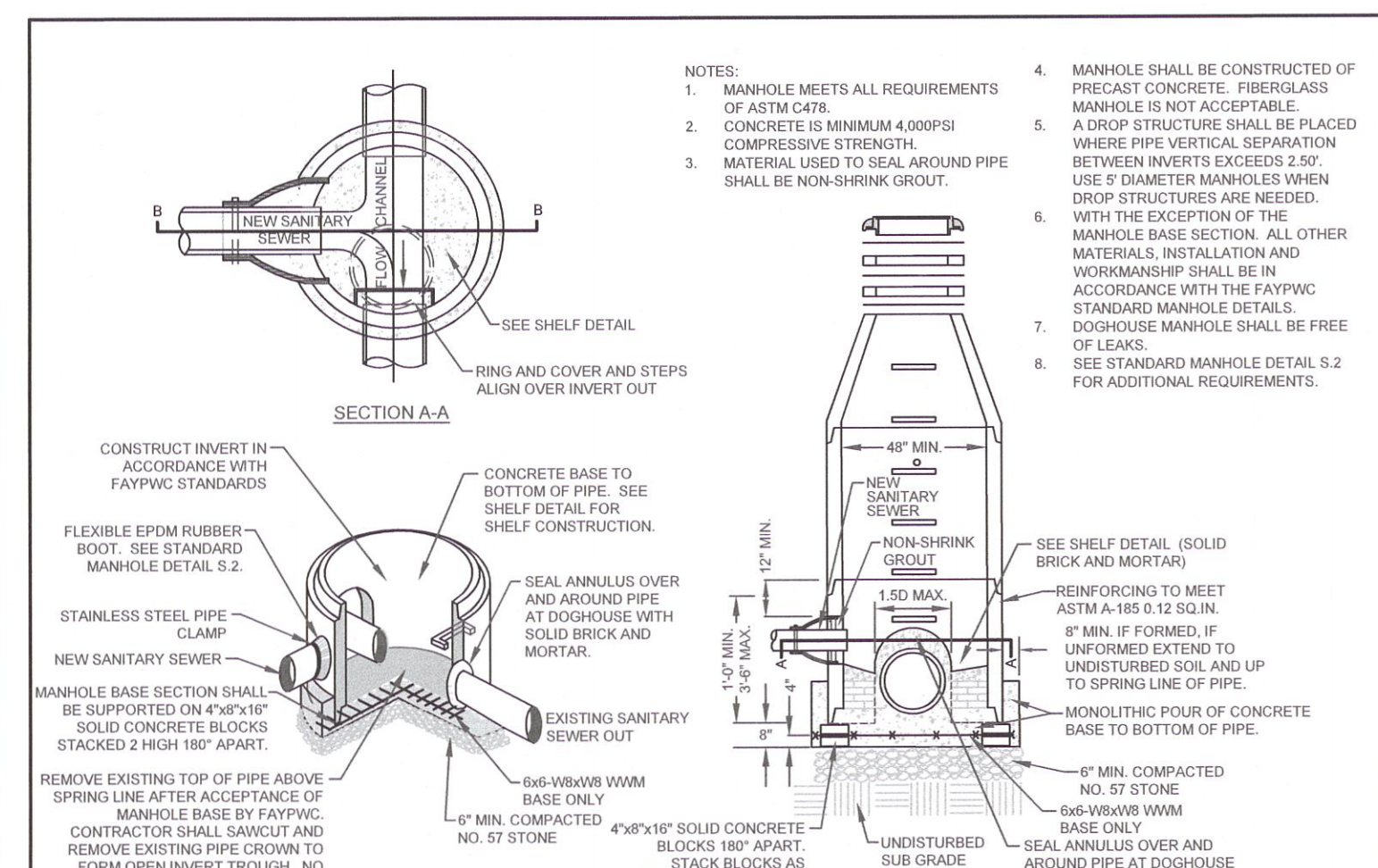


1. PRECAST REINFORCED CONCRETE MANHOLES SHALL BE IN ACCORDANCE WITH ASTM C-478.
2. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000 PSI.
3. MANHOLES GREATER THAN 12" DEPTH SHALL HAVE MINIMUM 6" EXTENDED BASE.
4. FLEXIBLE BUTYL RESIN JOINT SEALANT SHALL BE IN ACCORDANCE WITH ASTM C996.
5. FLEXIBLE EPDM RUBBER BOOT CONNECTORS SHALL BE IN ACCORDANCE WITH ASTM C1221. INSTALL BY MANUFACTURER WITH STAINLESS STEEL COMPRESSION RING AND TAKE UP CLAMP. CONNECTION TO MANHOLE SHALL BE BY CONTRACTOR WITH STAINLESS STEEL PIPE CLAMP.
6. CONNECTIONS TO EXISTING MANHOLES SHALL BE BY CORING MANHOLE AND FIELD INSTALLING A FLEXIBLE EPDM RUBBER BOOT CONNECTOR. DO NOT ALLOW DEBRIS TO ENTER SYSTEM.
7. MORTAR SHALL BE QUICK SETTING, NON-SHINK GROUT MIXED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. MANHOLE STEPS SHALL BE IN ACCORDANCE WITH ASTM C478 AND OSHA REGULATIONS. ALIGN STEPS WITH INVERT OUT.
9. PRECAST INVERTS ARE NOT ALLOWED.
10. VERTICAL DROPS BETWEEN THE INFLOW PIPES AND OUTFLOW PIPES SHALL REQUIRE THE FOLLOWING:
A">
 - A. GREATER THAN 2' SEE DROP STRUCTURE DETAIL (MIN. 6" DIAMETER MIN. REQUIRED).
 - B. LESS THAN 2' SEE PIPE SLIDE DETAIL.
11. AN ECCENTRIC CONE SHALL BE UTILIZED ON ALL MANHOLES, UNLESS OTHERWISE APPROVED BY FAYFWC.
12. INVERT ON PLANS IS TO MANHOLE CENTERLINE.
13. CONCRETE GRADE RINGS SHALL NOT BE USED FOR ABOVE GRADE ADJUSTMENTS (IE: OUTFALL AREAS). USE OF GRADE RINGS ARE ALLOWABLE IN YARD AREAS AND PAVEMENT, WHERE THE RING AND COVER ARE AT GROUND LEVEL.
14. THE MINIMUM SLOPE ACROSS THE INVERT OF THE MANHOLE SHALL BE 1%, UNLESS OTHERWISE APPROVED BY FAYFWC. STANDING WATER IN INVERT OF MANHOLE IS NOT ACCEPTABLE.
15. THE EXTERIOR MANHOLE RISER JOINTS, INCLUDING THE JOINT AT THE CONE, SHALL BE SEALED ON THE OUTSIDE BY AN APPROVED JOINT WRAP. THE WRAP SHALL BE IN ACCORDANCE WITH FAYFWC STANDARDS.
16. MANHOLE BOOT FOR 4-INCH LATERALS, SHOULD IT BE NECESSARY TO INSTALL A 4-INCH LATERAL INTO A MANHOLE, THE RUBBER BOOT THAT THE LATERAL IS INSERTED INTO SHALL BE INSTALLED FASTENED TO THE CONE HOLE BY UTILIZING A STAINLESS STEEL BAND THAT IS TIGHTENED USING A JACK OR A TORQUE WRENCH AND TAKE UP CLAMP. CONNECTION TO MANHOLE SHALL BE BY CONTRACTOR WITH STAINLESS STEEL PIPE CLAMP.
17. NO MORE THAN 4 FOUR-INCH LATERALS OR 3 SIX-INCH LATERALS SHALL ENTER A 4 DIAMETER TERMINAL MANHOLE. NO MORE THAN 4 LATERALS (REGARDLESS OF SIZE) SHALL ENTER ALL OTHER 4 DIAMETER MANHOLES. ALL LATERALS SHALL HAVE AN INDIVIDUAL TROUGH. 3" DIAMETER MANHOLES SHALL BE USED IF THE ABOVE CONDITIONS ARE NOT MET.
18. NO MORE THAN 5 LATERALS SHALL ENTER A 6 DIAMETER MANHOLE.
19. USE OF TEE-WYES ON LATERALS IS NOT ALLOWED.
20. ALL MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH FAYFWC STANDARDS.

GENERAL NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION	
SANITARY SEWER UTILITY		FAYETTEVILLE, N.C.	
DWG. NO. S.1	DWG. BY: FAYFWC	WATER RESOURCES ENGINEERING DEPARTMENT	
DATE: JULY 01, 2022	APPROVED BY: M.M.M.		
NO.	DATE	REVISION	
1	07/16	ADDED NOTE 6	
2	09/18	ADDED NOTES 5, 8	
3	09/21	ADDED NOTES 1-8 AND RENUMBERED	

STANDARD MANHOLE		FAYETTEVILLE PUBLIC WORKS COMMISSION	
N.T.S.		FAYETTEVILLE, N.C.	
DWG. NO. S.2	DWG. BY: FAYFWC	WATER RESOURCES ENGINEERING DEPARTMENT	
DATE: JULY 01, 2022	APPROVED BY: M.M.M.		
NO.	DATE	REVISION	
1	02/27	CREATED S.2-2 ADDED NOTES 13-17	
2	07/13	ADDED SHEET 2 OF 2	

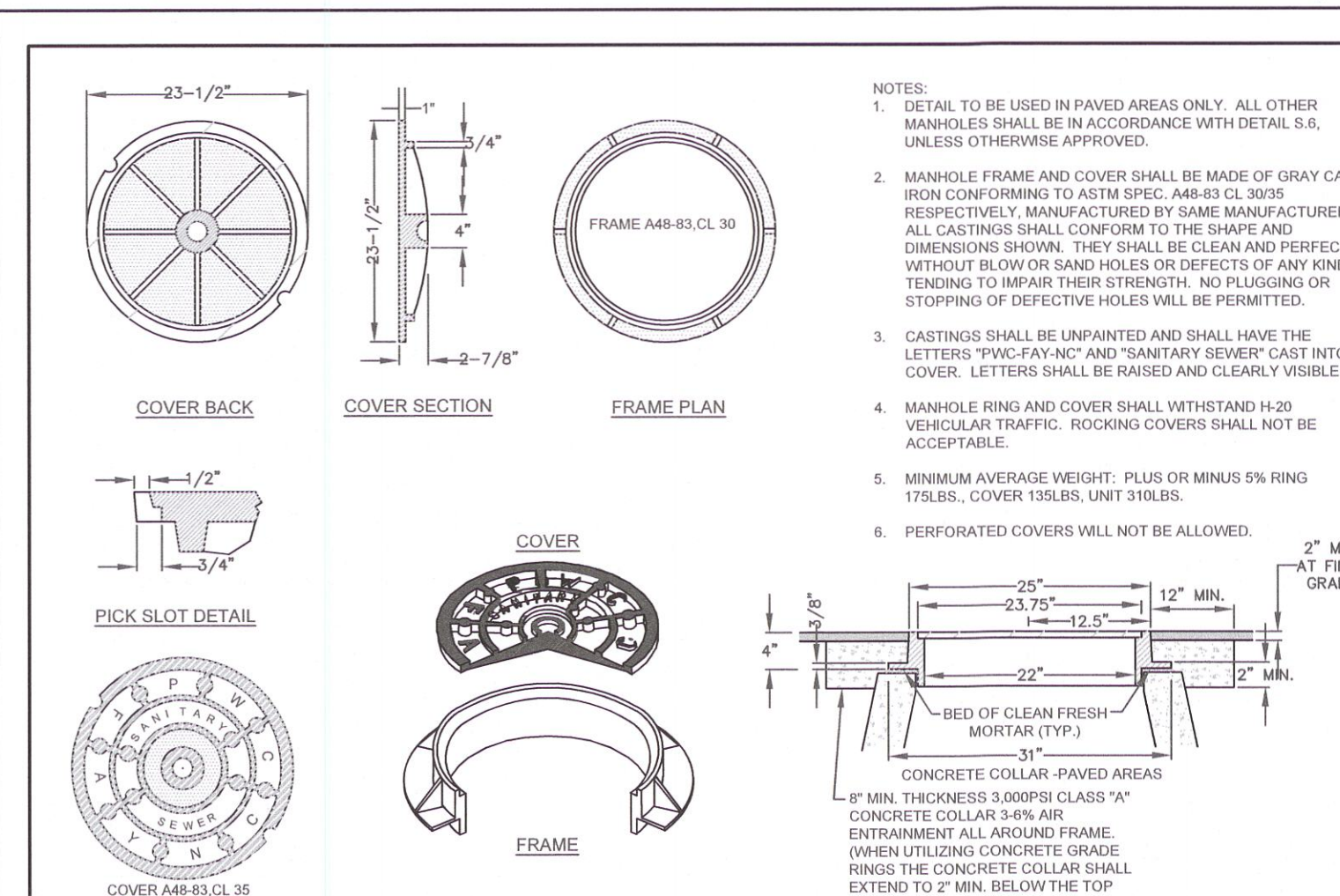
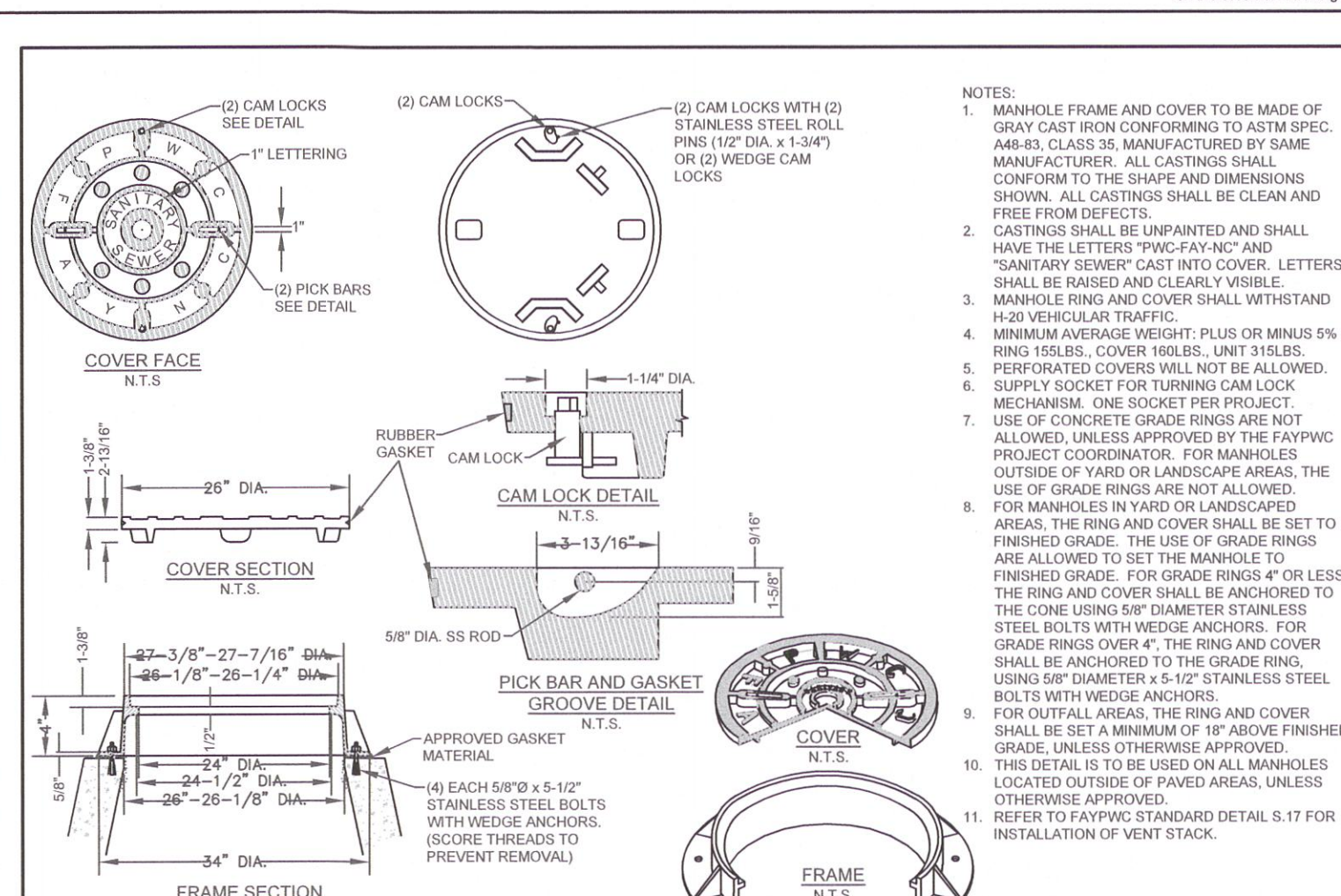
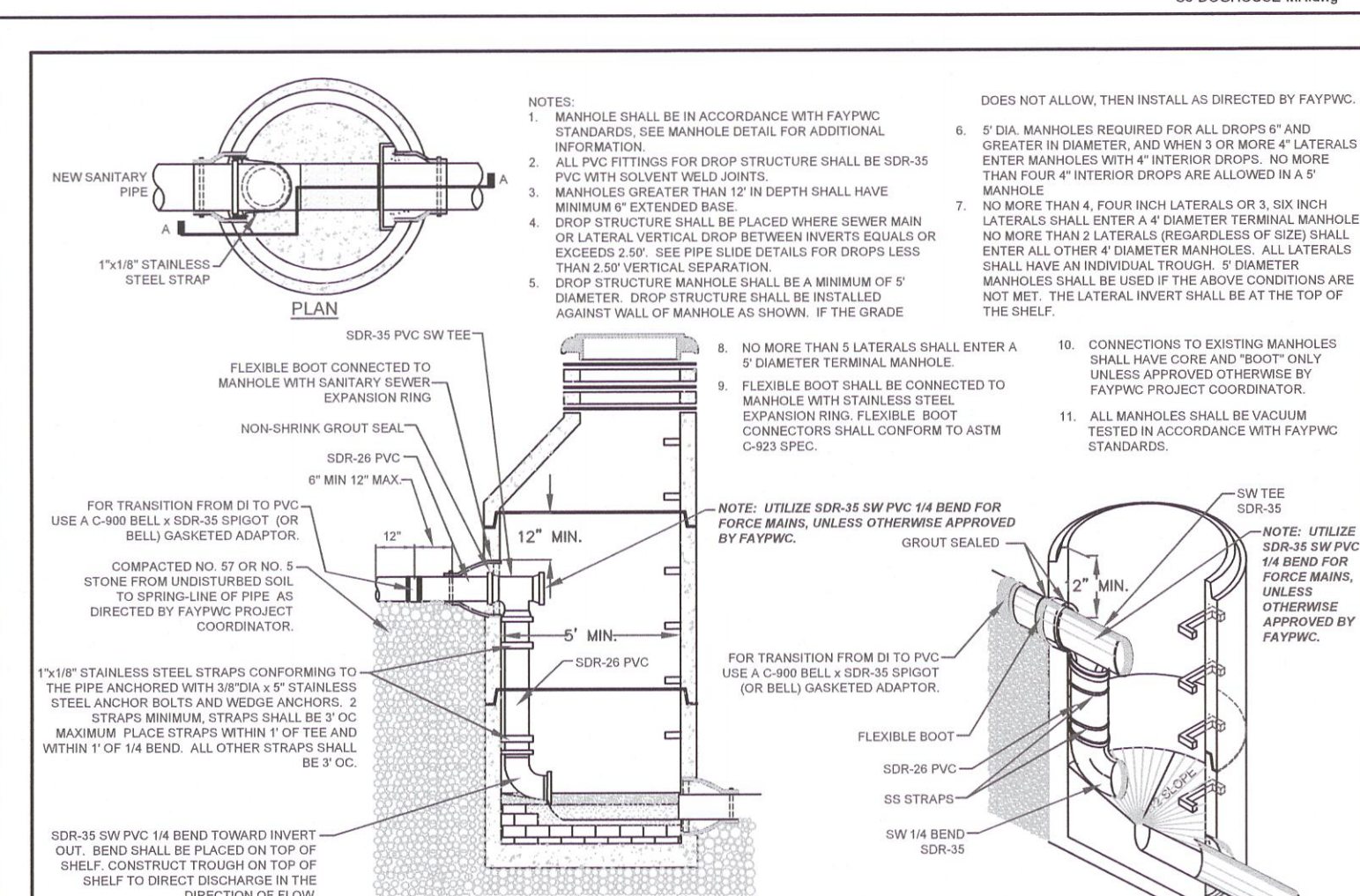
STANDARD MANHOLE		FAYETTEVILLE PUBLIC WORKS COMMISSION	
N.T.S.		FAYETTEVILLE, N.C.	
DWG. NO. S.2	DWG. BY: FAYFWC	WATER RESOURCES ENGINEERING DEPARTMENT	
DATE: JULY 01, 2022	APPROVED BY: M.M.M.		
NO.	DATE	REVISION	
1	01/08	CREATED DETAIL. ADDED NOTES 14-20	
2	07/13	REVISED NOTES 9, 10, 11, 15 CONVERTED TO S.2 SHEET 2 OF 2	
3	01/01/19		



DOGHOUSE MANHOLE (MAINS 15" OR LESS)		FAYETTEVILLE PUBLIC WORKS COMMISSION	
N.T.S.		FAYETTEVILLE, N.C.	
DWG. NO. S.3	DWG. BY: FAYFWC	WATER RESOURCES ENGINEERING DEPARTMENT	
DATE: JULY 01, 2022	APPROVED BY: M.M.M.		
NO.	DATE	REVISION	
1	07/16	ADDED SHEET 2	
2	11/25/09	MADE CHANGES TO NOTES	

DOGHOUSE MANHOLE (MAINS 16" OR LARGER)		FAYETTEVILLE PUBLIC WORKS COMMISSION	
N.T.S.		FAYETTEVILLE, N.C.	
DWG. NO. S.3	DWG. BY: FAYFWC	WATER RESOURCES ENGINEERING DEPARTMENT	
DATE: JULY 01, 2022	APPROVED BY: M.M.M.		
NO.	DATE	REVISION	
1	07/16	ADDED SHEET 2	
2	11/25/09	MADE CHANGES TO NOTES	
3	01/01/19	ADDED MH CHART	

PIPE SLIDE AND SHELF DETAILS		FAYETTEVILLE PUBLIC WORKS COMMISSION	
N.T.S.		FAYETTEVILLE, N.C.	
DWG. NO. S.4	DWG. BY: FAYFWC	WATER RESOURCES ENGINEERING DEPARTMENT	
DATE: JULY 01, 2022	APPROVED BY: M.M.M.		
NO.	DATE	REVISION	
1	01/08	ADDED NOTE 9	
2	02/27	REVISED NOTE 8. SLIDE DETAIL. ADDED NOTES 10, 11, 12	
3	07/18	SELECTED MORTAR SLIDE. REVISED NOTES	



INTERIOR DROP STRUCTURE SEWER MAINS AND LATERALS		FAYETTEVILLE PUBLIC WORKS COMMISSION	
N.T.S.		FAYETTEVILLE, N.C.	
DWG. NO. S.5	DWG. BY: FAYFWC	WATER RESOURCES ENGINEERING DEPARTMENT	
DATE: JULY 01, 2022	APPROVED BY: M.M.M.		
NO.	DATE	REVISION	
4	11/08	REVISED FITTING MATERIAL	
5	07/12	REVISED NOTES 5, 8, AND SUB CHART	
6	07/14	ADDED FORCE MAIN NOTE	

STANDARD NON-TRAFFIC AREA MANHOLE RING AND COVER WITH WIPER GASKET AND CAM LOCK		FAYETTEVILLE PUBLIC WORKS COMMISSION	
N.T.S.		FAYETTEVILLE, N.C.	
DWG. NO. S.6	DWG. BY: FAYFWC	WATER RESOURCES ENGINEERING DEPARTMENT	
DATE: JULY 01, 2022	APPROVED BY: M.M.M.		
NO.	DATE	REVISION	
1	07/09	REVISED NOTES ON FRAME SECTION/REVISED NOTE 3	
2	07/17	ADDED NOTE ON WEDGE CAM LOCKS	
3	01/18	UPDATED NOTES 7 AND 8	

STANDARD TRAFFIC AREA MANHOLE RING AND COVER		FAYETTEVILLE PUBLIC WORKS COMMISSION	
N.T.S.		FAYETTEVILLE, N.C.	
DWG. NO. S.7	DWG. BY: FAYFWC	WATER RESOURCES ENGINEERING DEPARTMENT	
DATE: JULY 01, 2022	APPROVED BY: M.M.M.		
NO.	DATE	REVISION	
1	01/08	CHANGED NON TRAFFIC DETAIL	
2	07/06	ADDED NOTE ON CONCRETE COLLAR	
3	02/27	REMOVED NON TRAFFIC AREA AND REVISED NOTES	
4	07/08	REVISED ASPHALT THICKNESS	

DATE	REVISIONS	BY
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	MPF
12.21.2020	NOT FOR CONSTRUCTION	MPF
06.30.2021	FINAL DESIGN - BIDDING AND BIDDING RESPONSES	MPF
04.15.2022	FINAL DESIGN - BIDDING AND BIDDING RESPONSES	MPF
07.18.2022	FINAL DESIGN - BIDDING AND BIDDING RESPONSES	MPF
09.30.2022	FINAL DESIGN - BIDDING AND BIDDING RESPONSES	MPF

SHEET D-1

DATE: 9/30/22

THB/AMB

DESIGN REVIEW BY: ERL

APPROVED BY: M.M.M.

SCALE: AS SHOWN



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2

STANDARD SANITARY SEWER DETAILS

FAYETTEVILLE PUBLIC WORKS COMMISSION

WATER RESOURCES ENGINEERING

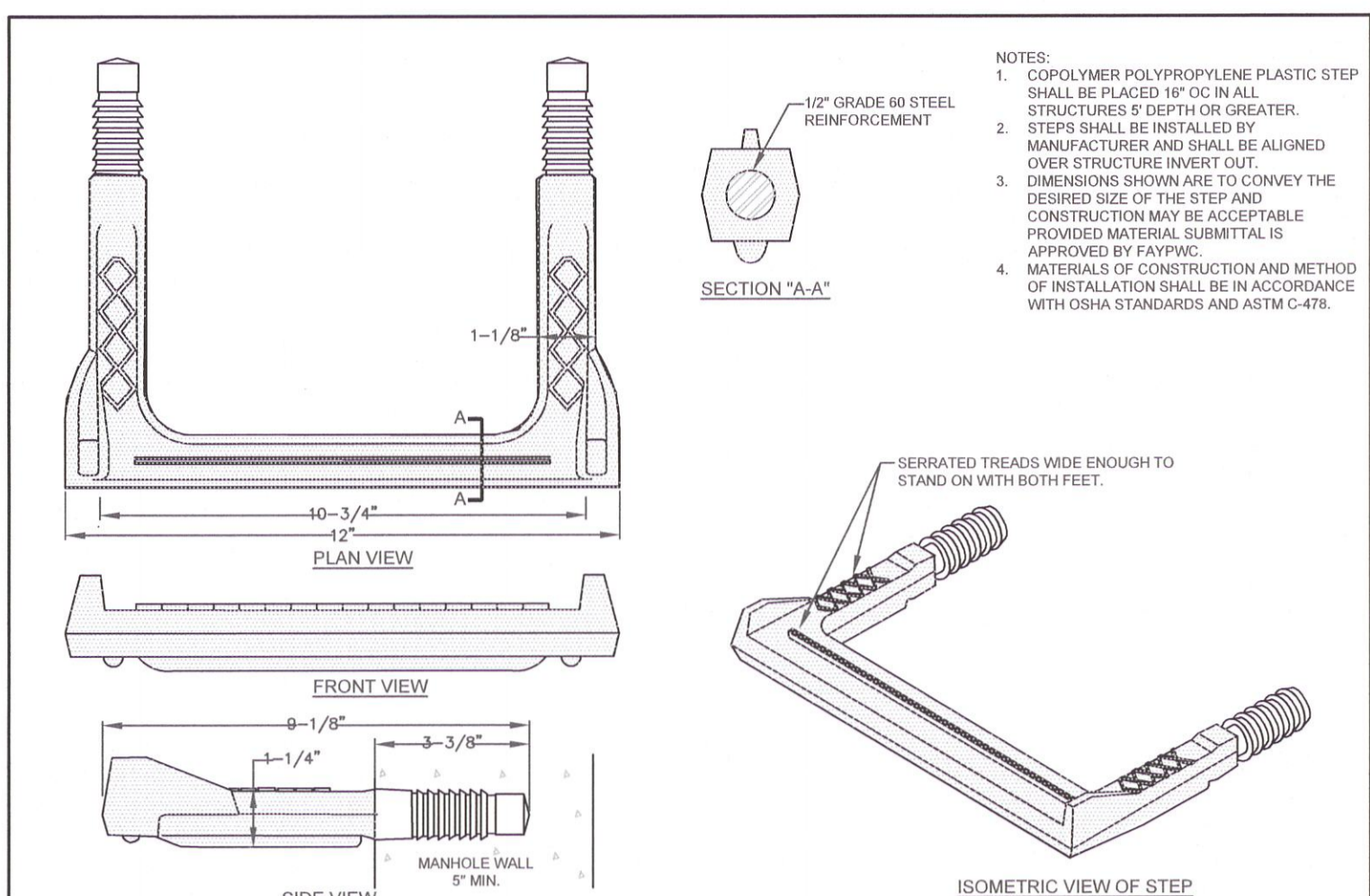
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955 Old Wilmington Road, Fayetteville, NC 28301

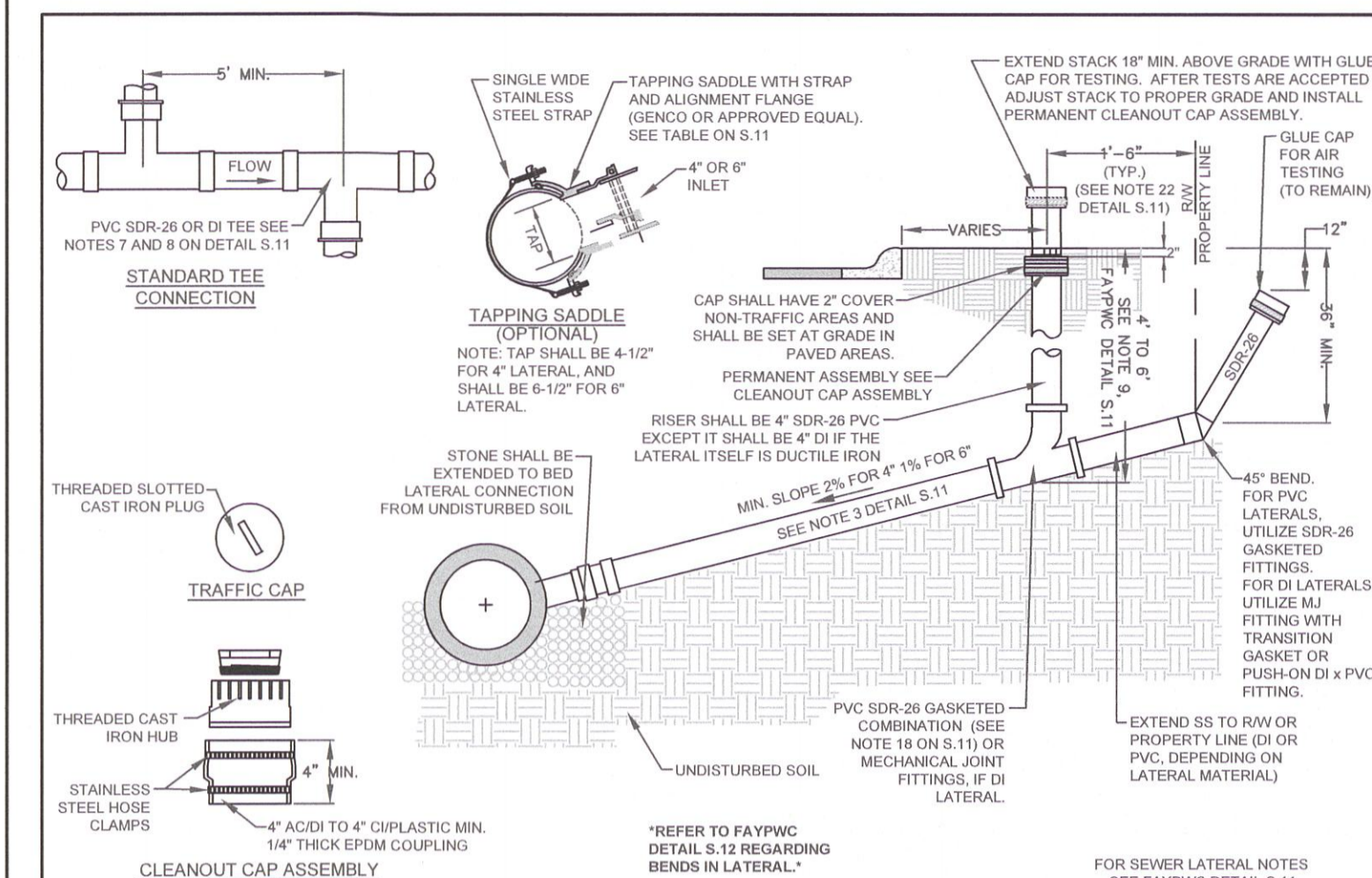


FINAL DESIGN
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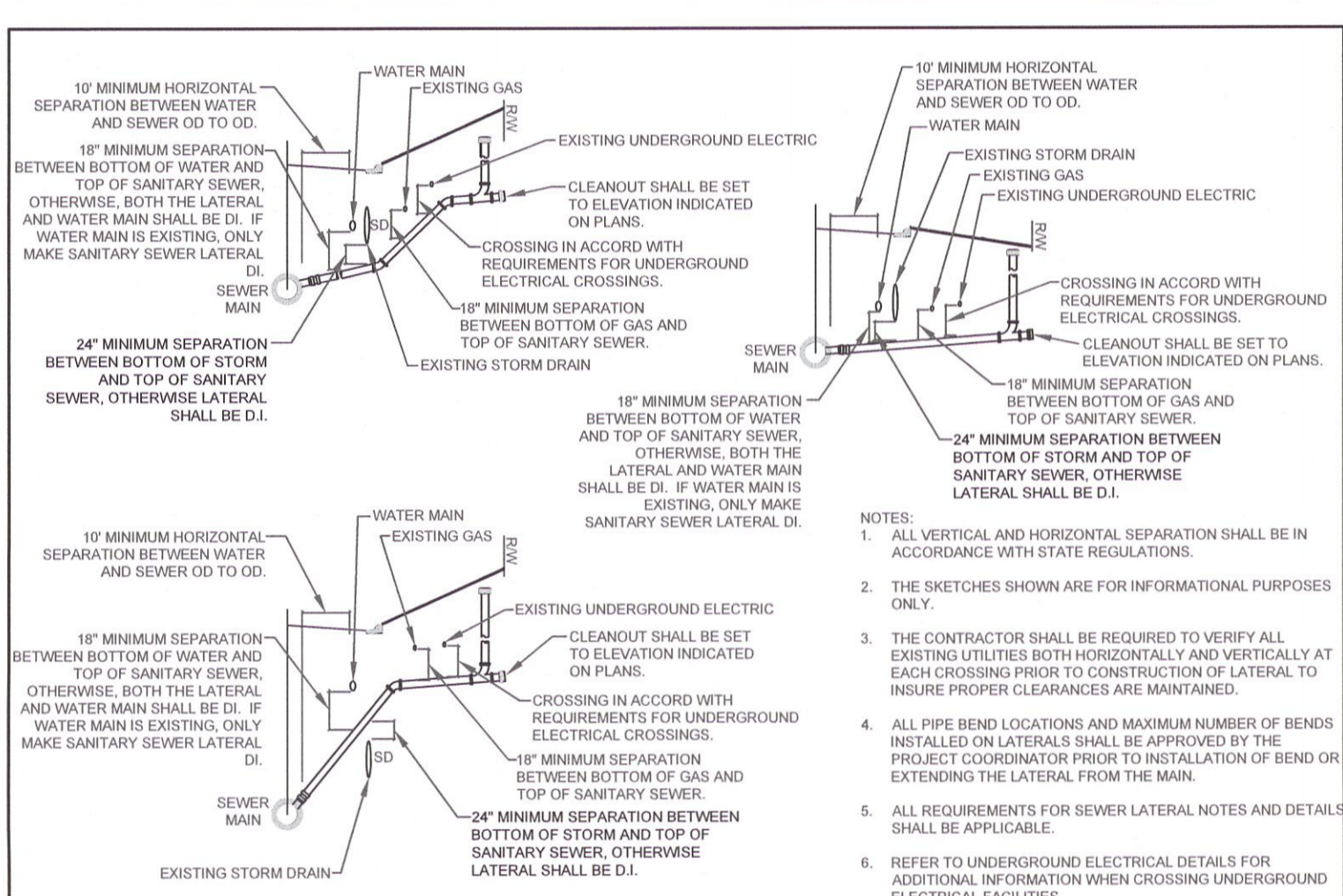
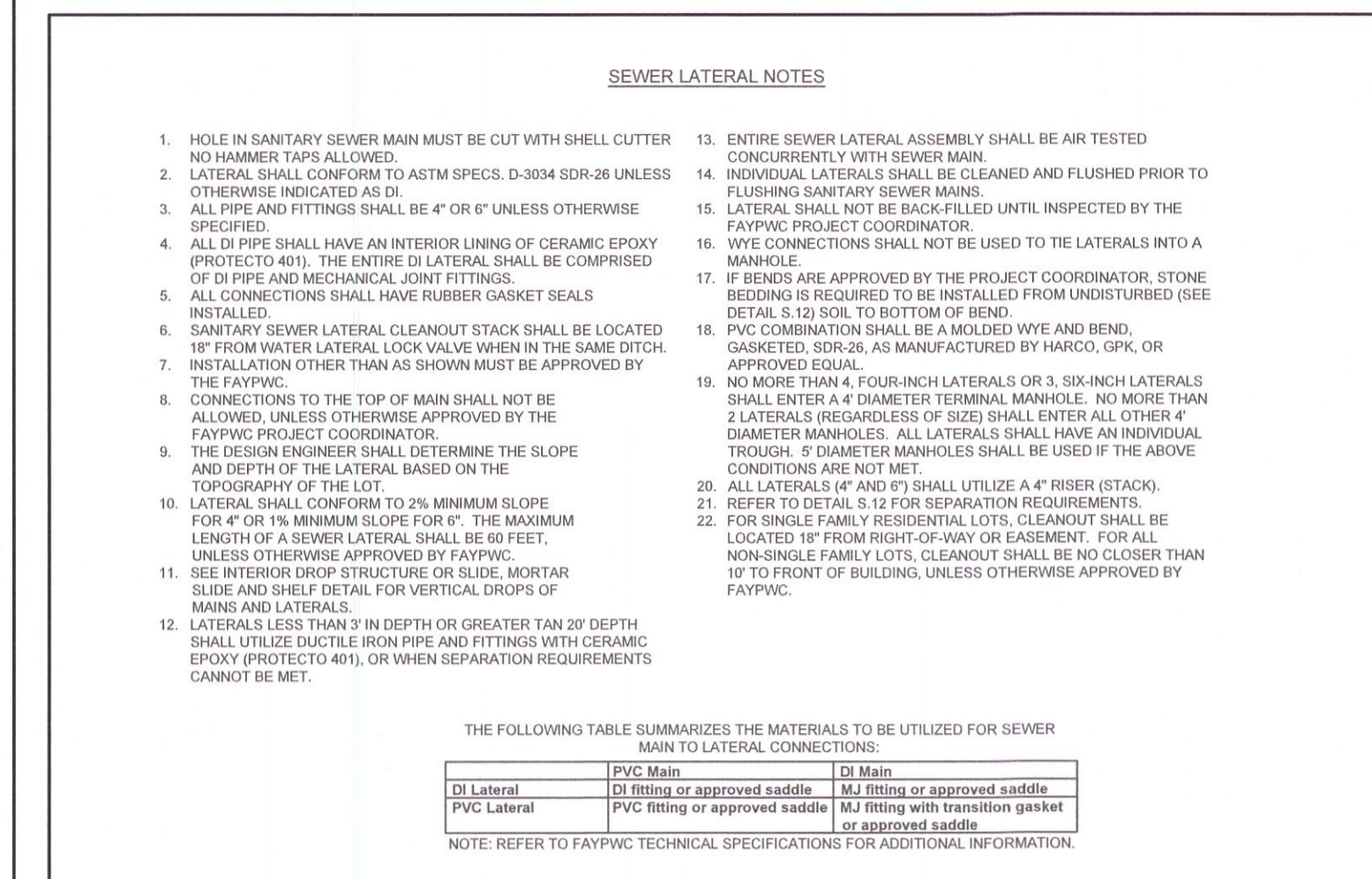
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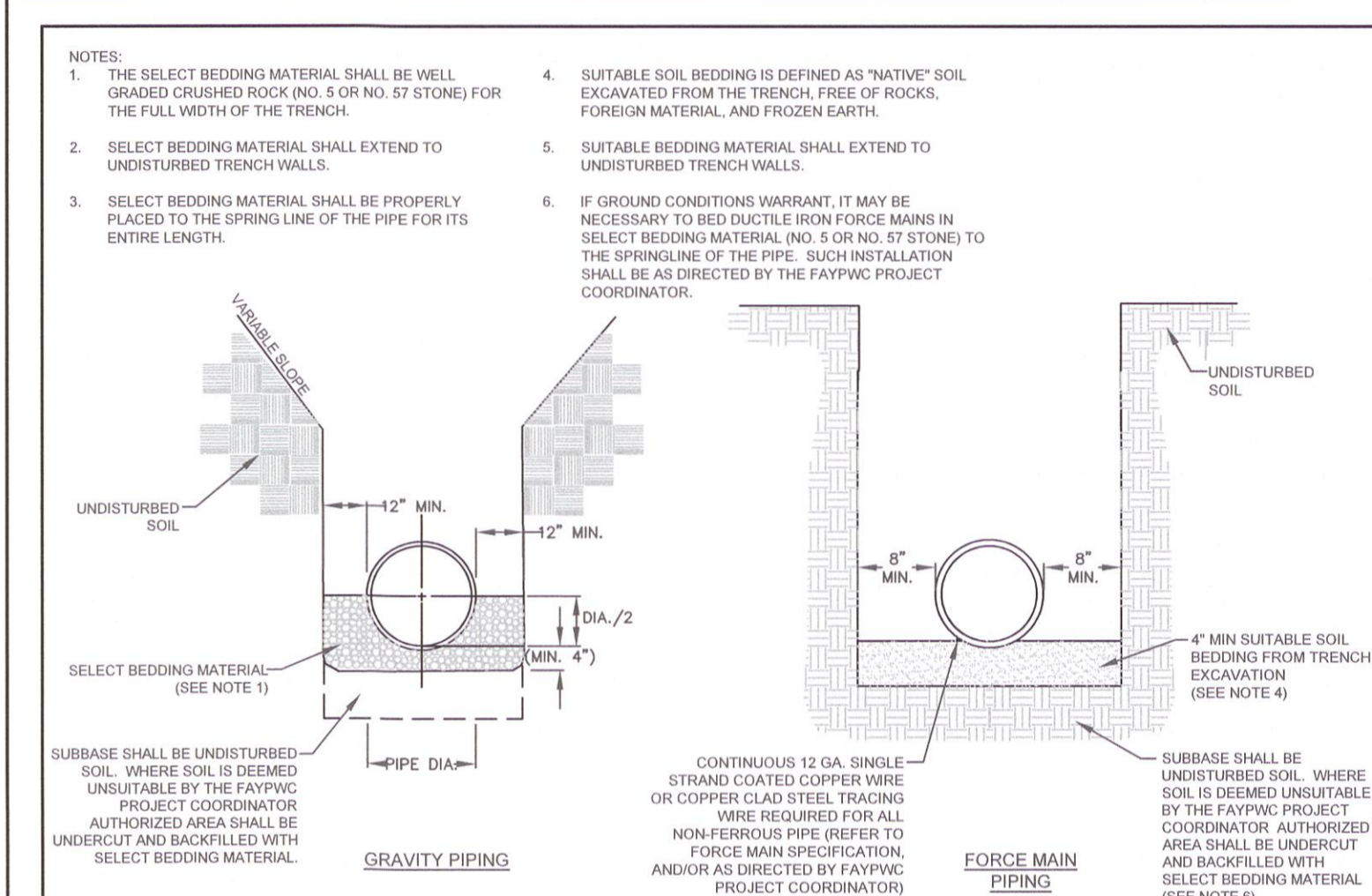
STRUCTURE STEP		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
DWG. NO. S.8	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT		NO.	DATE
DATE: JULY 01, 2022	APPROVED BY: M.M.M.			REVISION	



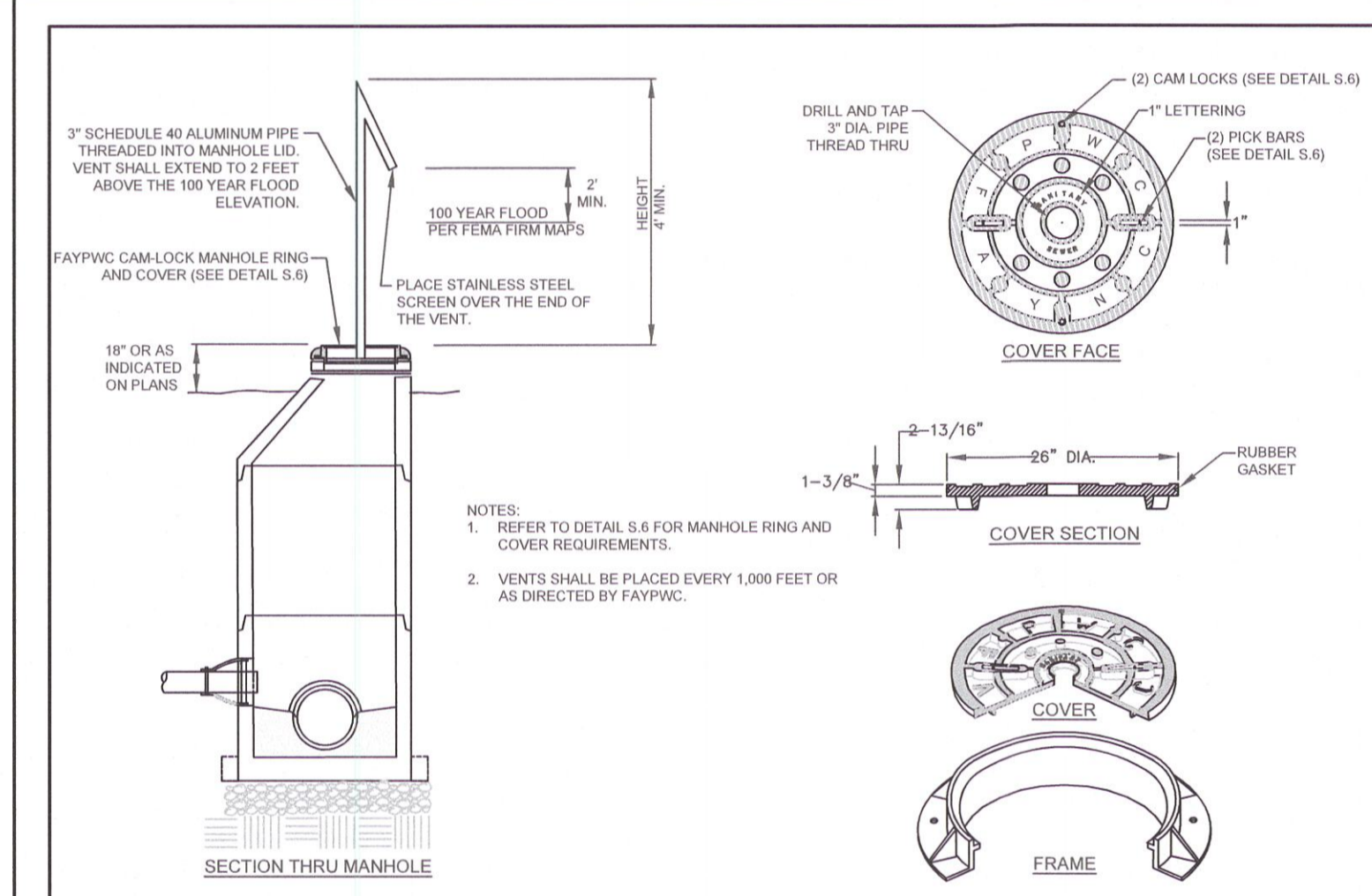
SEWER LATERAL (4-INCH AND 6-INCH)		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
DWG. NO. S.10	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT		NO.	DATE
DATE: JULY 01, 2022	APPROVED BY: M.M.M.			REVISION	



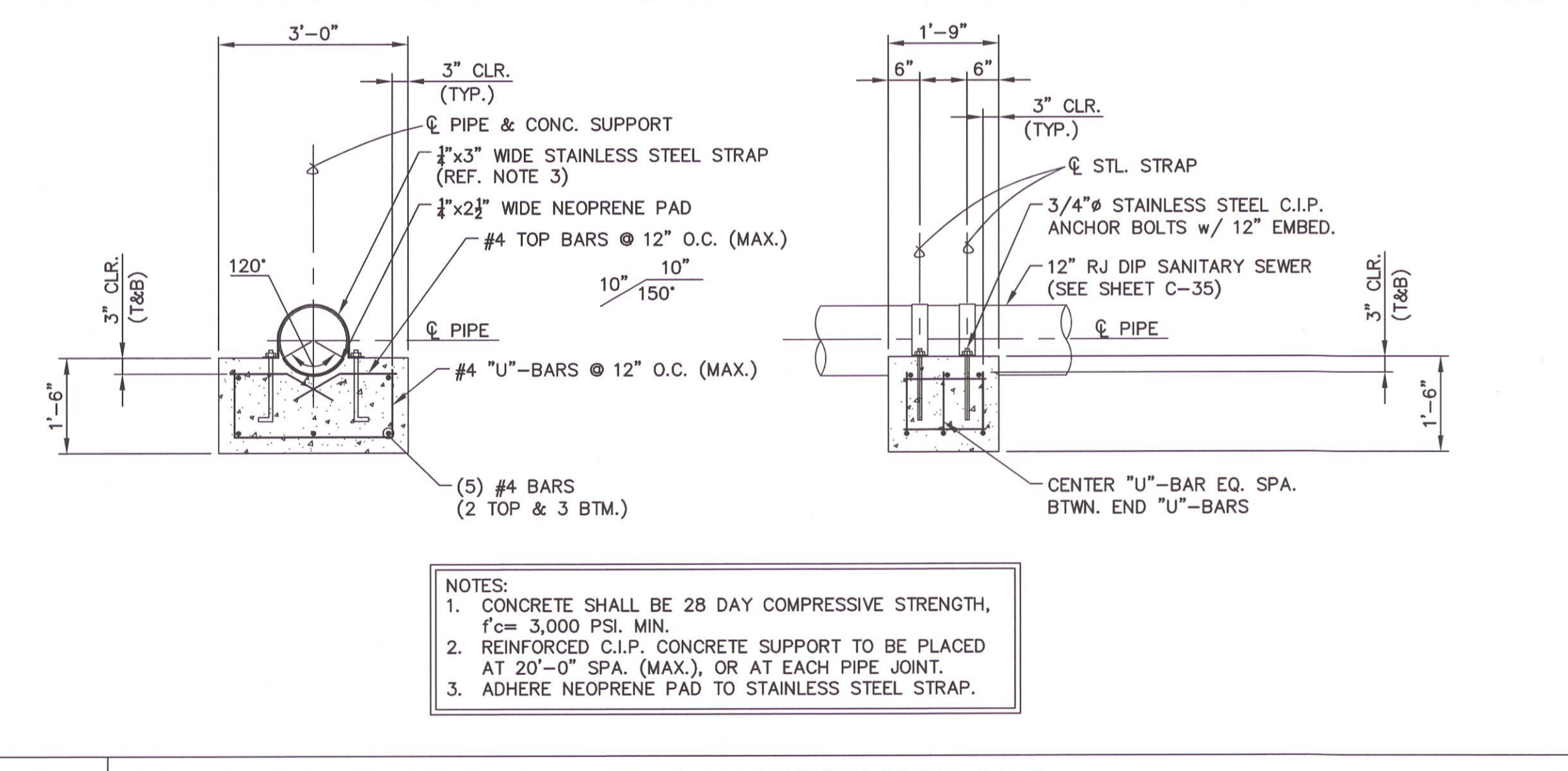
SEWER LATERAL UTILITY CONFLICT SEPARATION REQUIREMENTS		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
DWG. NO. S.12	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT		NO.	DATE
DATE: JULY 01, 2022	APPROVED BY: M.M.M.			REVISION	



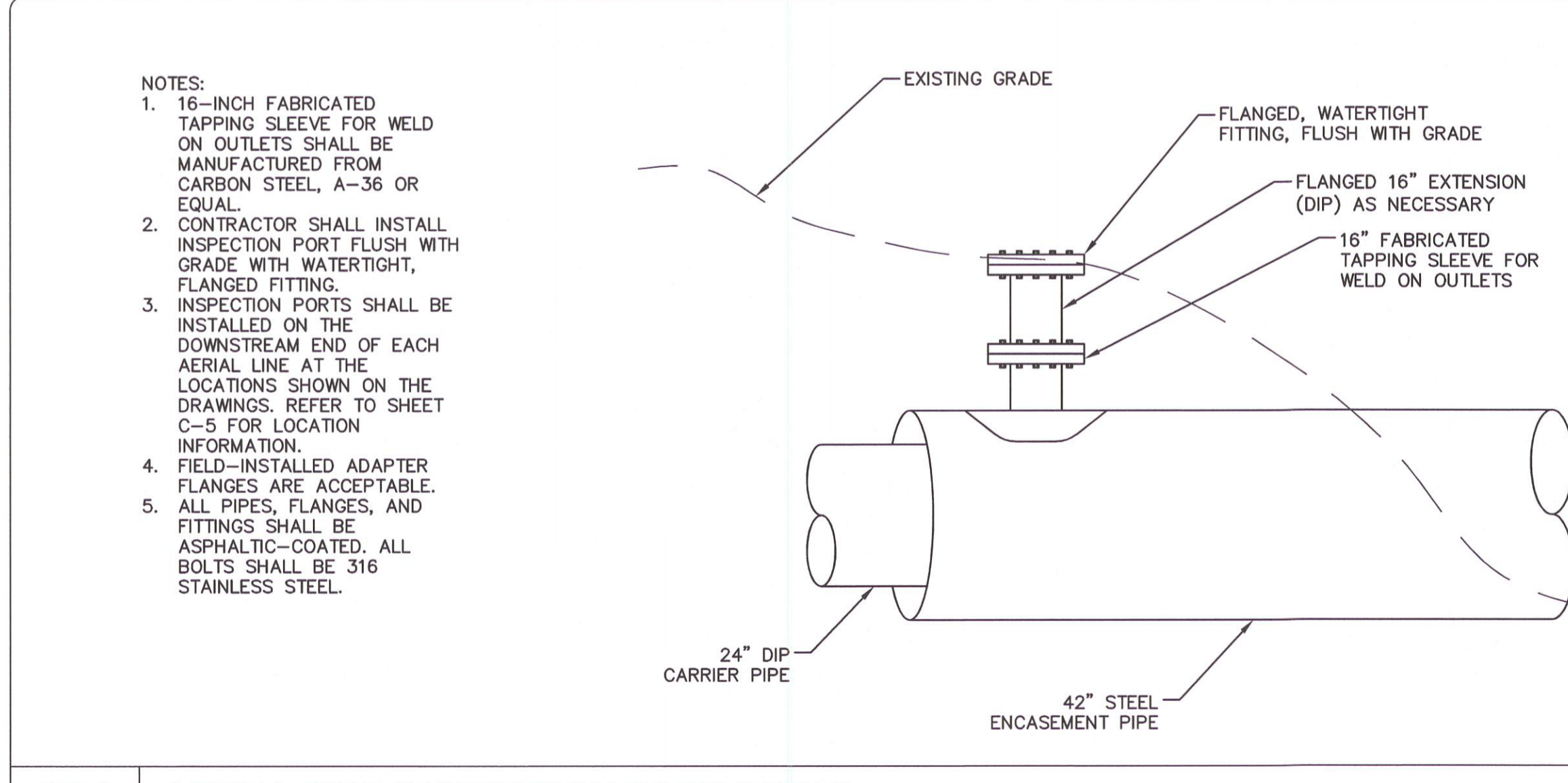
SEWER BEDDING		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
DWG. NO. S.13	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT		NO.	DATE
DATE: JULY 01, 2022	APPROVED BY: M.M.M.			REVISION	



MANHOLE VENT		FAYETTEVILLE PUBLIC WORKS COMMISSION		FAYETTEVILLE, N.C.	
DWG. NO. S.17	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT		NO.	DATE
DATE: JULY 01, 2022	APPROVED BY: M.M.M.			REVISION	



ST-1 SANITARY SEWER BUOYANCY CONCRETE SUPPORT SCALE: 1/2" = 1'-0"



ST-2 AERIAL PIPE INSPECTION PORT DETAIL N.T.S.

DATE	REVISIONS	BY
12.16.2020	FINAL DESIGN FOR CONSTRUCTION	MFP
12.2.2020	FINAL DESIGN NOT FOR CONSTRUCTION	MFP
06.30.2021	FINAL DESIGN - CONTRACT REVISION AND RE-REVISION	MFP
04.15.2022	FINAL DESIGN - REVISIONS	MFP
07.8.2022	FINAL DESIGN - REVISIONS	MFP
09.30.2022	FINAL DESIGN - ISSUED FOR BID	MFP

DATE: 9/30/22
 PROCESS/LAYOUT BY: TMB/AMB
 PLAN/PROF. (S/S) BY: BRL
 DESIGN REVIEW BY: BRL
 APPROVED BY: [Signature]
 SCALE: AS SHOWN

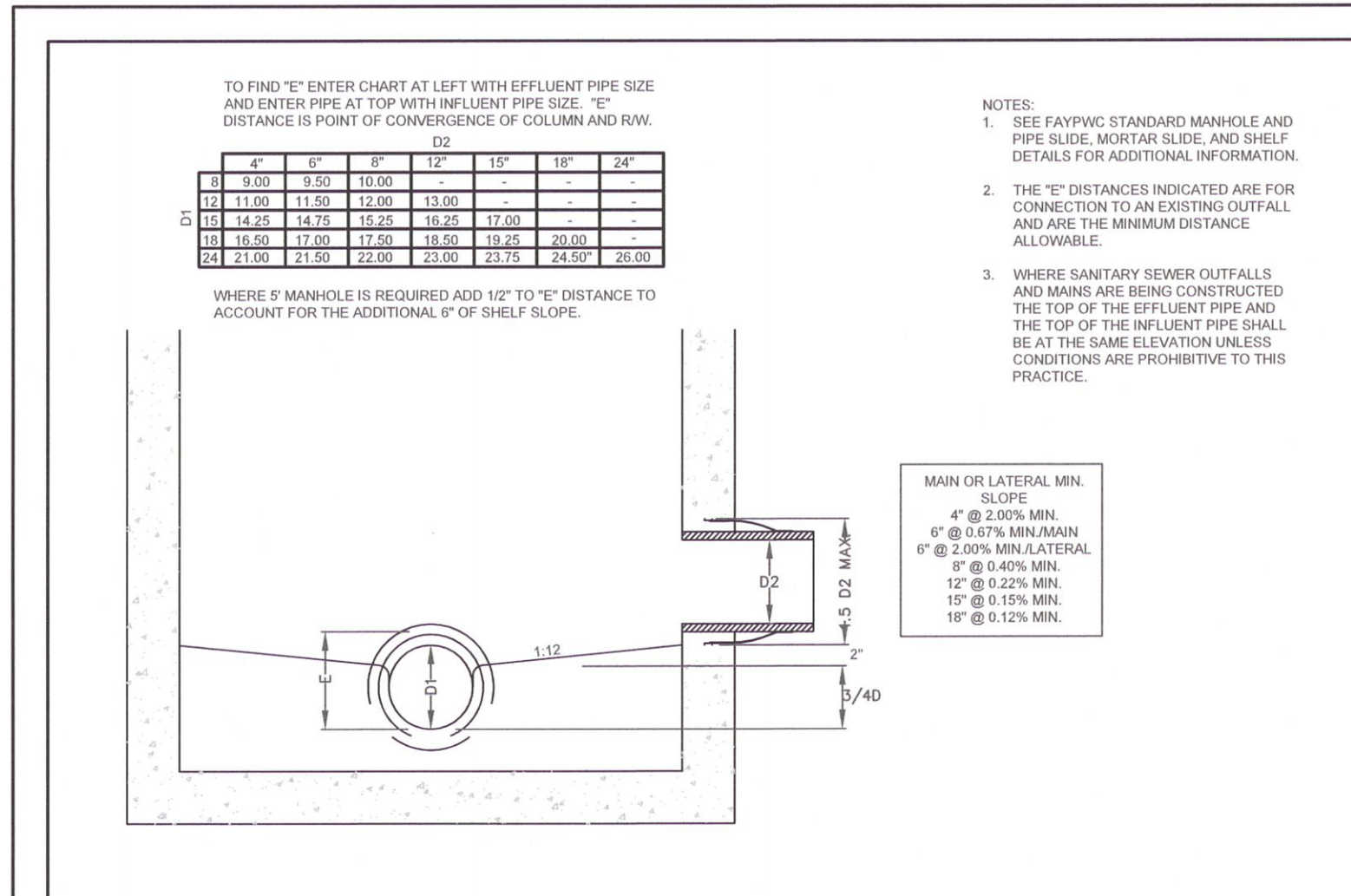
SANITARY SEWER IMPROVEMENTS, BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
 STANDARD SANITARY SEWER DETAILS

FAYETTEVILLE PUBLIC WORKS COMMISSION
FAYETTEVILLE WATER RESOURCES ENGINEERING
 P.O. Box 1088, Fayetteville, NC 28302
 955 Old Wilmington Road, Fayetteville, NC 28301

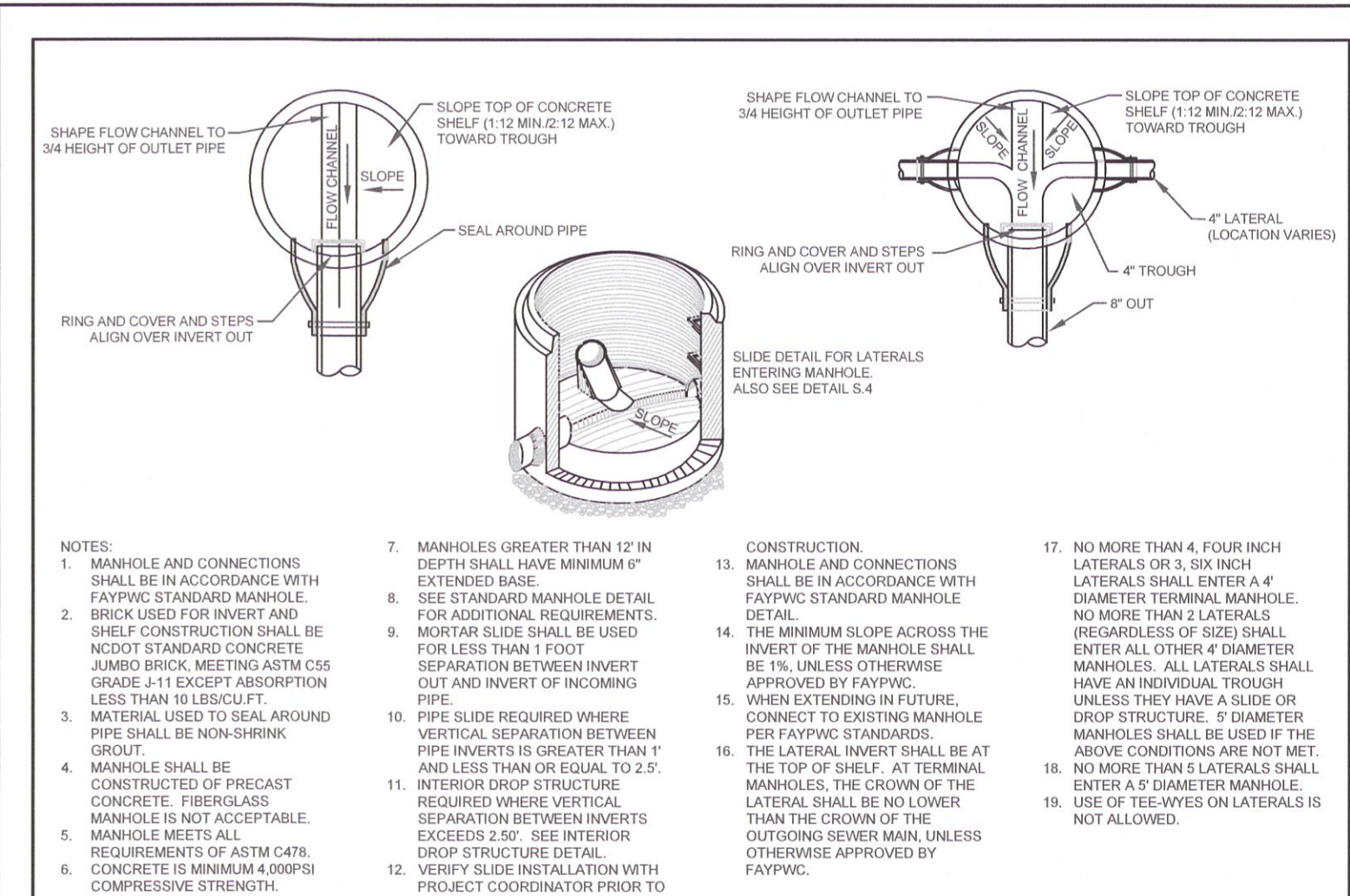
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MCKIM & CREED
 1730 Varsity Drive, Suite 500
 Raleigh, NC 27603
 Phone: (919)233-8091, Fax: (919)233-8031
 F-1222
 www.mckimcreed.com

FINAL DESIGN
 ISSUED FOR BID

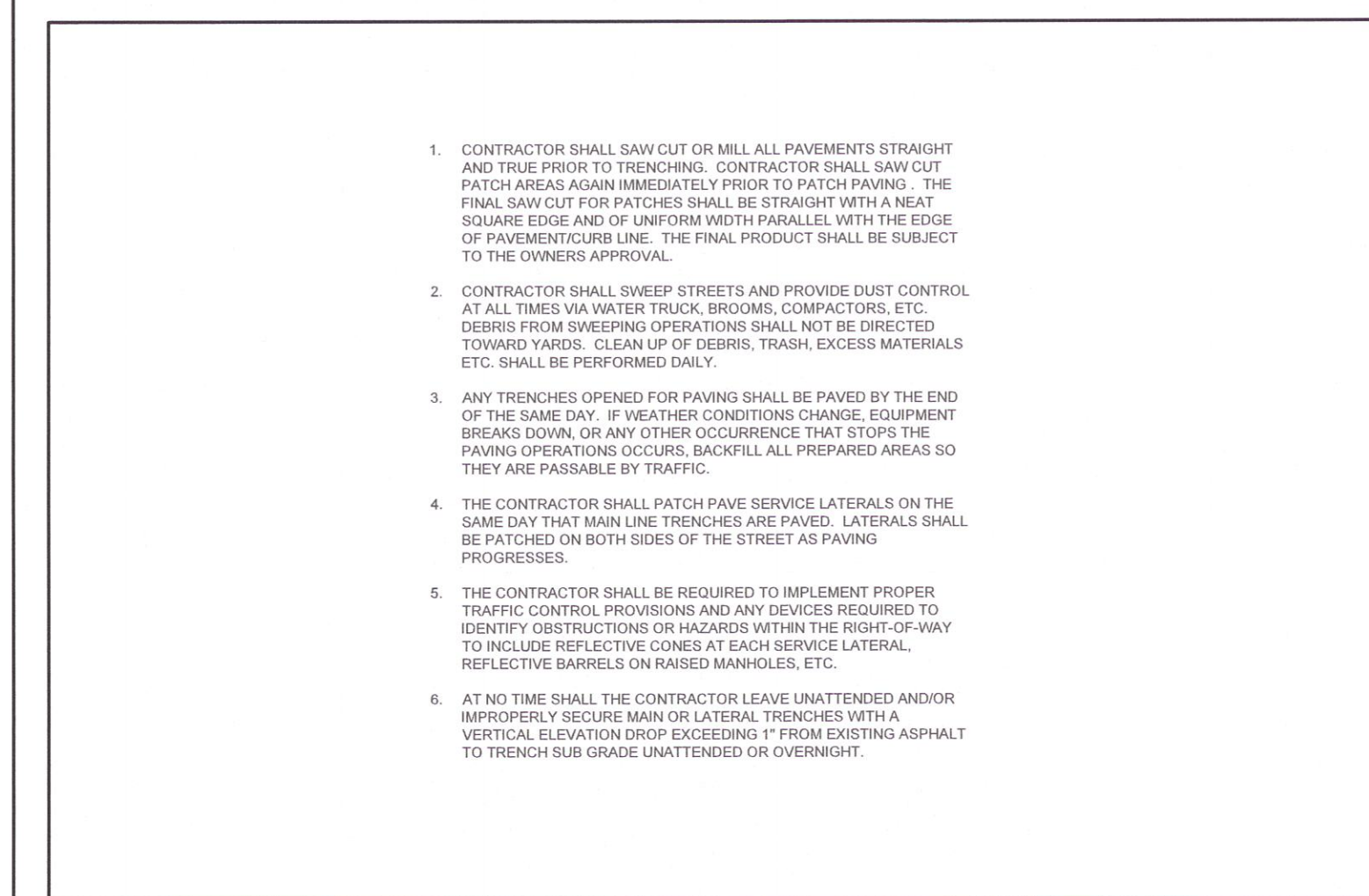
PWC DRAWING # AS-15313CCCC



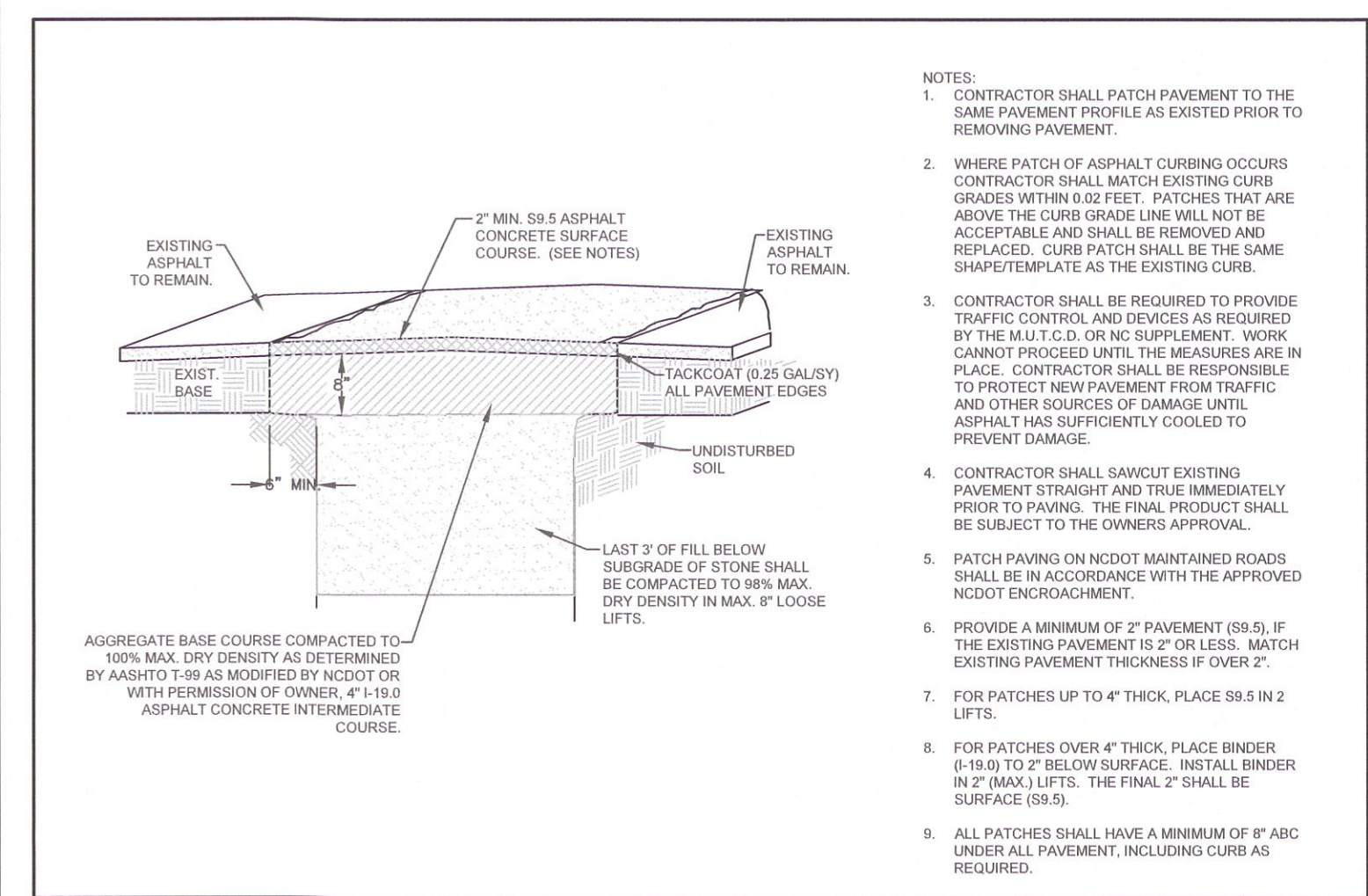
MH CONNECTION DESIGN GUIDE N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. S.18	DWG. BY: FAYFVC	WATER RESOURCES ENGINEERING DEPARTMENT			
DATE: JULY 01, 2022	APPROVED BY: M.M.M.					



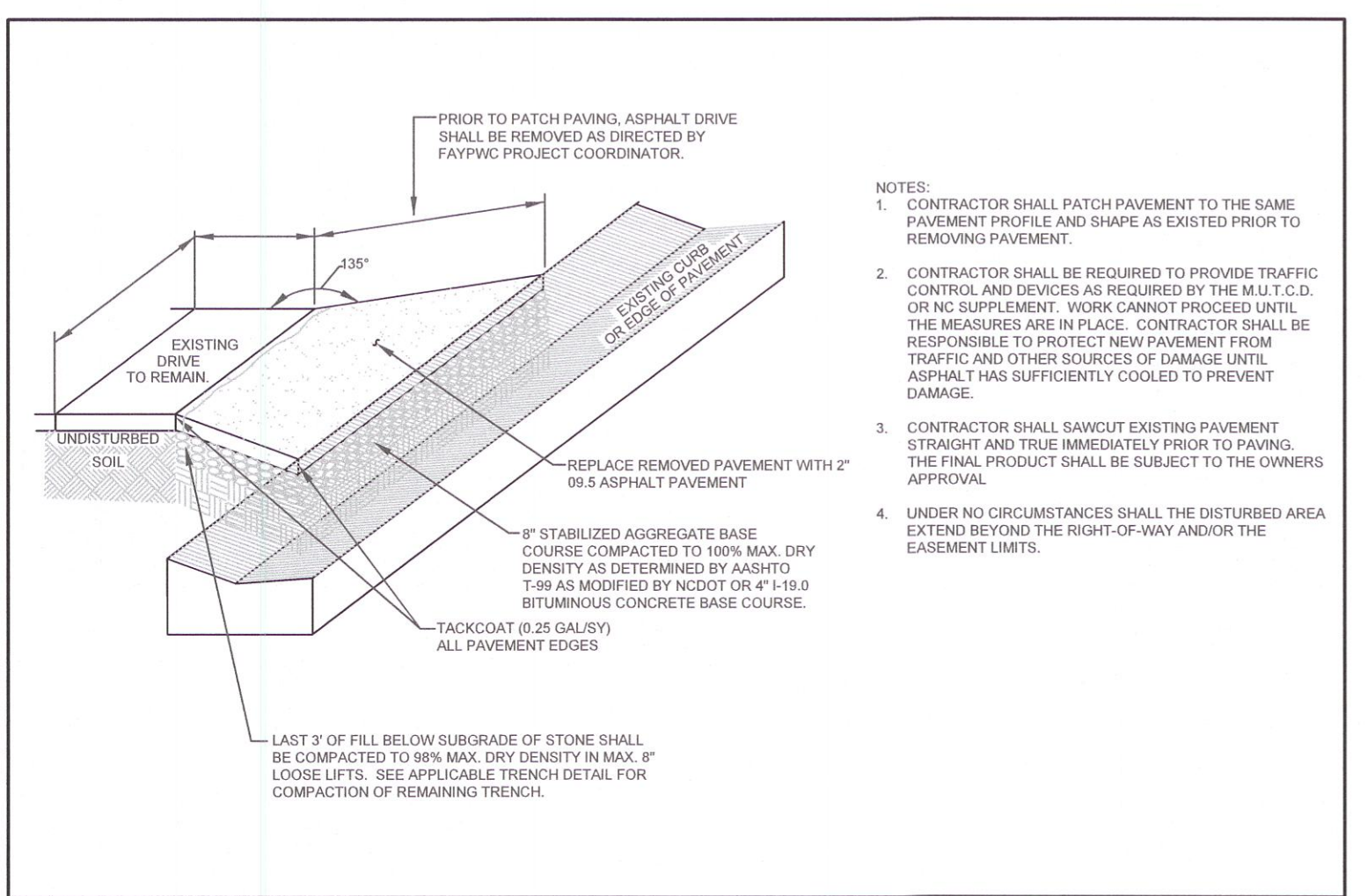
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SHEET NO. 1 OF 1	DWG. NO. S.20	DWG. BY: FAYFVC	WATER RESOURCES ENGINEERING DEPARTMENT			
DATE: JULY 01, 2022	APPROVED BY: M.M.M.					



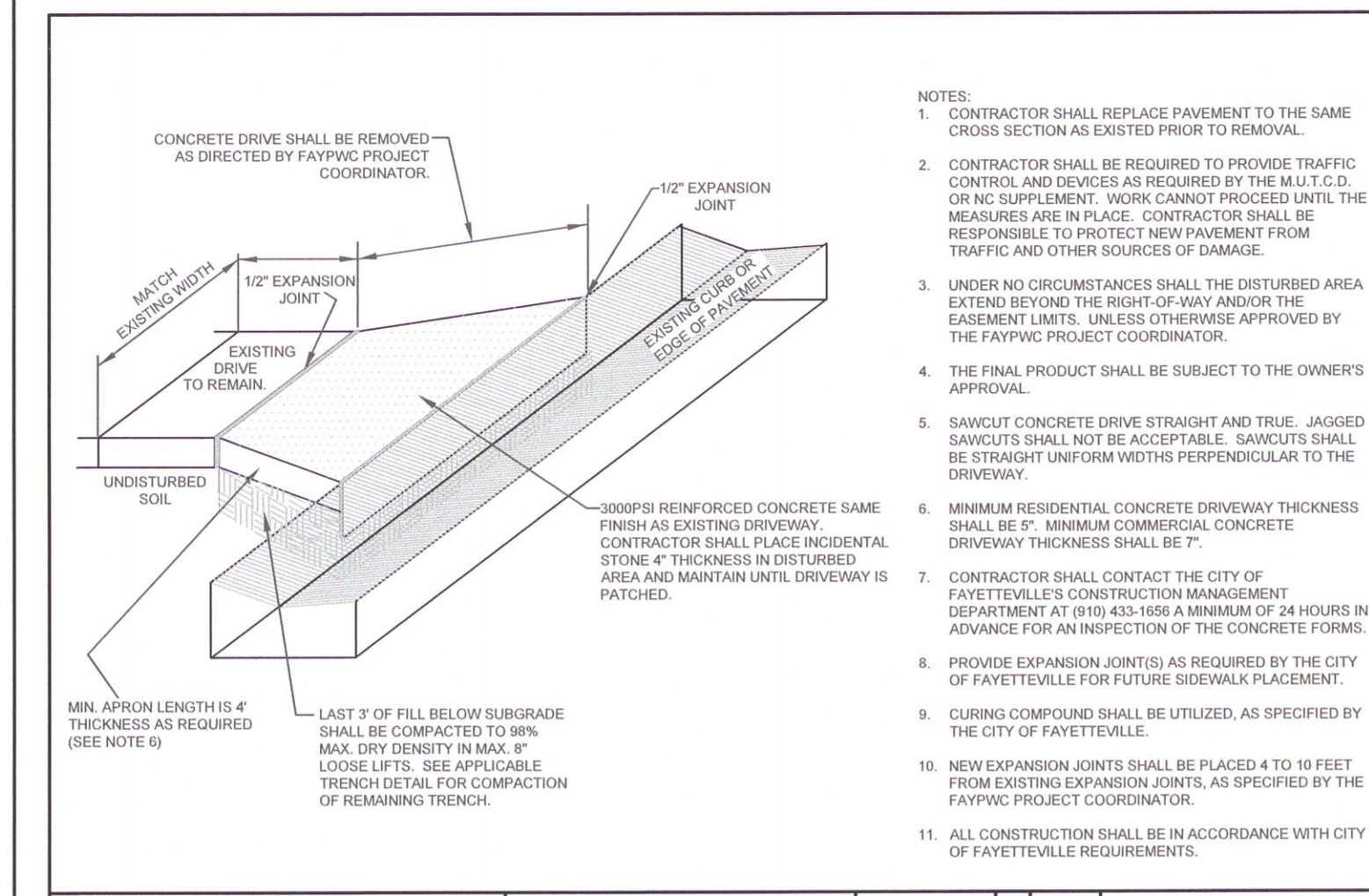
PAVEMENT REPAIR NOTES N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. M.1	DWG. BY: FAYFVC	WATER RESOURCES ENGINEERING DEPARTMENT	1	07/10	REVISED, DELETED NOTES
DATE: JULY 01, 2022	APPROVED BY: M.M.M.					



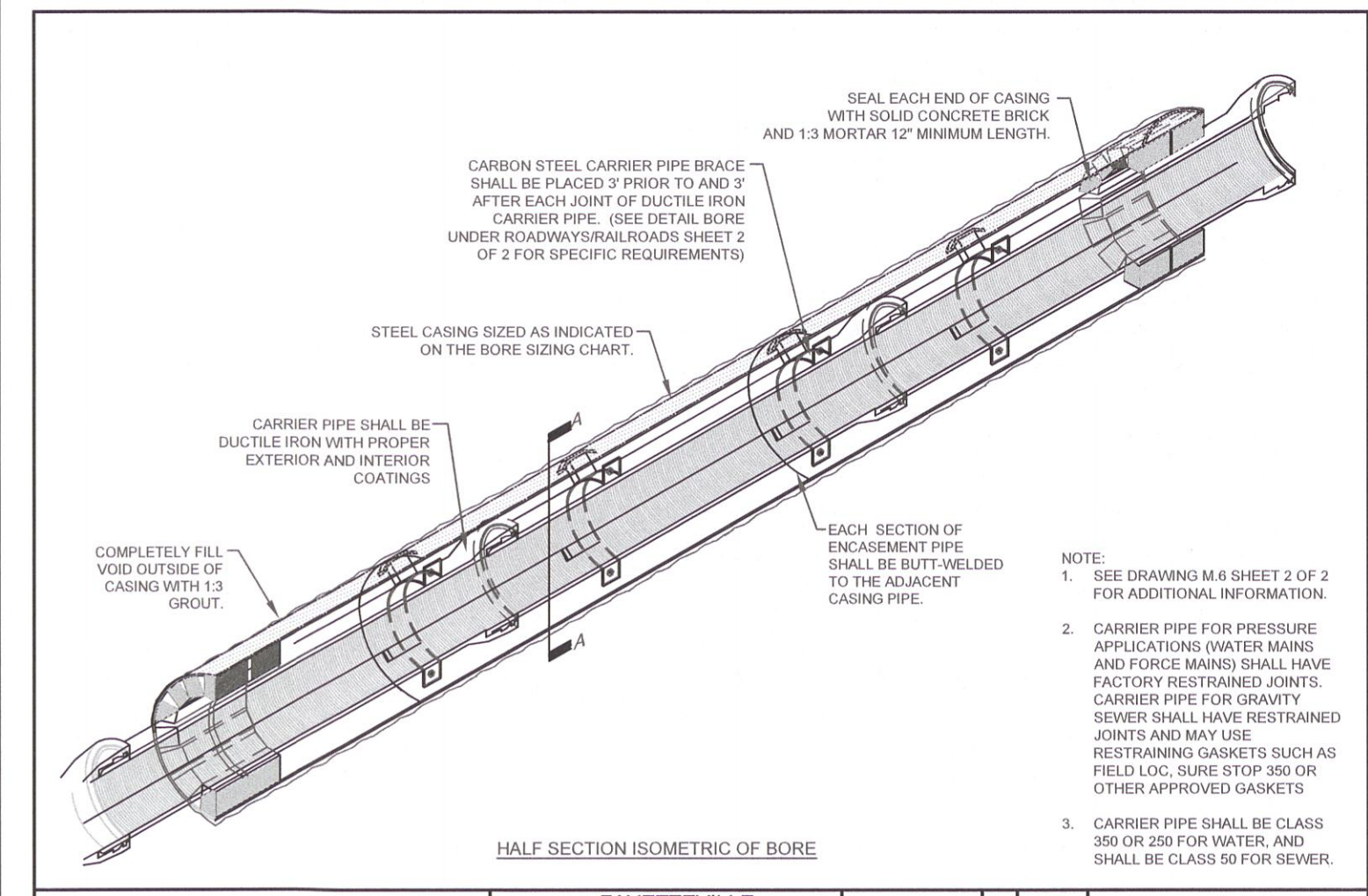
PERMANENT PAVEMENT PATCH N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. M.2	DWG. BY: FAYFVC	WATER RESOURCES ENGINEERING DEPARTMENT	1	08/07	CHANGED ASPHALT MIX
DATE: JULY 01, 2022	APPROVED BY: M.M.M.			2	08/10	REVISED, DELETED NOTES



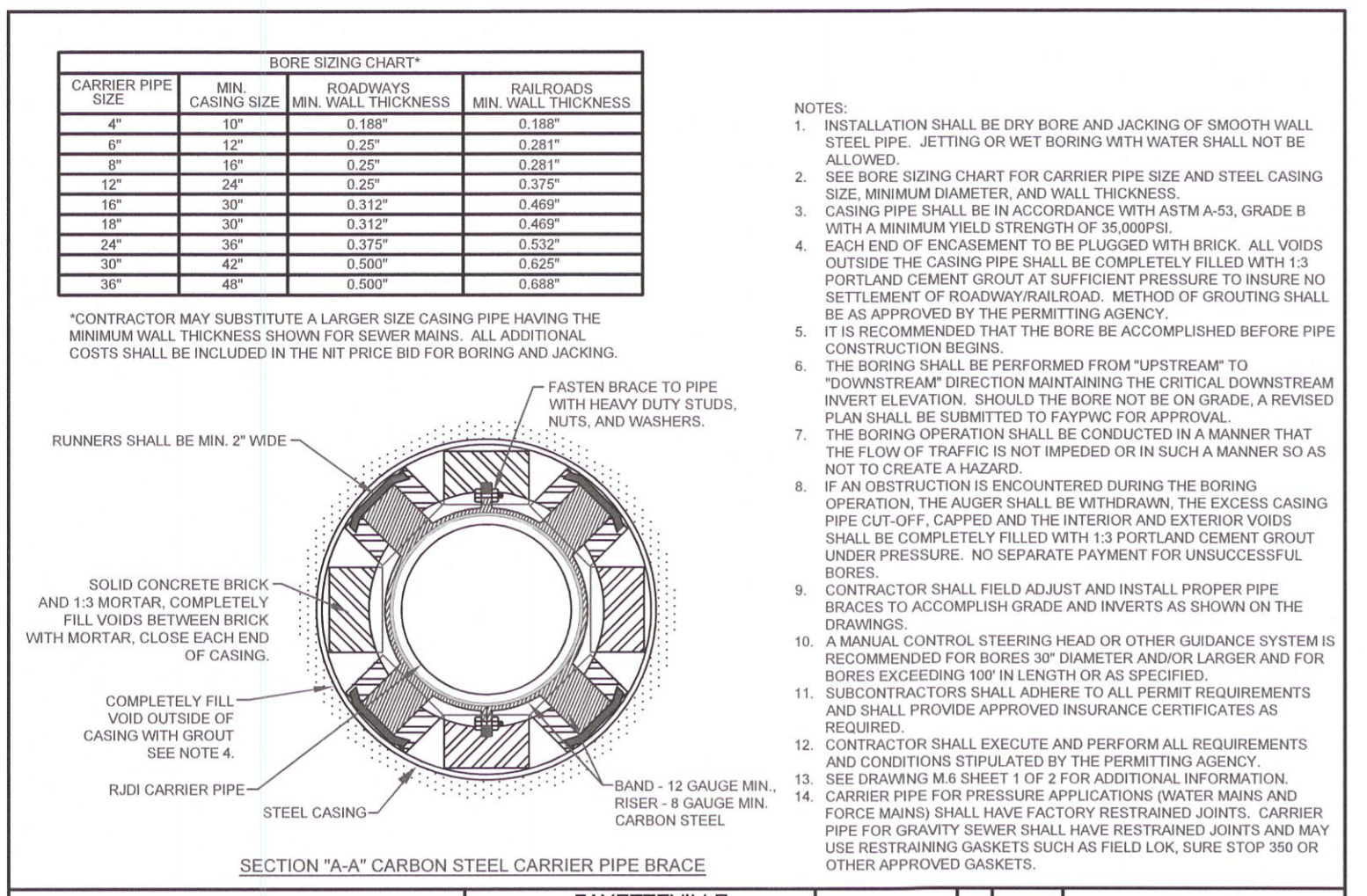
ASPHALT DRIVEWAY/PARKING LOT PATCH N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. M.4	DWG. BY: FAYFVC	WATER RESOURCES ENGINEERING DEPARTMENT	1	08/10	REVISED, DELETED NOTES
DATE: JULY 01, 2022	APPROVED BY: M.M.M.					



CONCRETE DRIVEWAY PATCH N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. M.5	DWG. BY: FAYFVC	WATER RESOURCES ENGINEERING DEPARTMENT			
DATE: JULY 01, 2022	APPROVED BY: M.M.M.					



BORE UNDER ROADWAYS/RAILROADS N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 2	DWG. NO. M.6	DWG. BY: FAYFVC	WATER RESOURCES ENGINEERING DEPARTMENT	1	01/05	ADDED NOTES 2 AND 3
DATE: JULY 01, 2022	APPROVED BY: M.M.M.			2	10/09	CLARIFIED RESTRAINT REQUIREMENTS



BORE UNDER ROADWAYS/RAILROADS N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 2 OF 2	DWG. NO. M.6	DWG. BY: FAYFVC	WATER RESOURCES ENGINEERING DEPARTMENT	1	02/11/04	ADDED CARRIER PIPE TO BORE SIZING CHART
DATE: JULY 01, 2022	APPROVED BY: M.M.M.			2	07/10	REVISED NOTES, SIZING CHART

DATE	REVISIONS	BY
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	M.P.P.
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	M.P.P.
06.30.2021	FINAL DESIGN - CONTRACT REVISIONS AND RE-PROCESSED	M.P.P.
04.15.2022	FINAL DESIGN - MOST INCLEMENT REVISIONS	M.P.P.
07.11.2022	FINAL DESIGN - MOST INCLEMENT REVISIONS	M.P.P.
09.30.2022	FINAL DESIGN - ISSUE FOR BID	M.P.P.

PROCESS/LAYOUT BY: TMB/AMB
DATE: 9/30/22
PLANNING/DESIGN BY: BRJ
APPROVED BY: AS SHOWN
SCALE: AS SHOWN

SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
STANDARD SANITARY SEWER AND PAVEMENT REPAIRS DETAILS

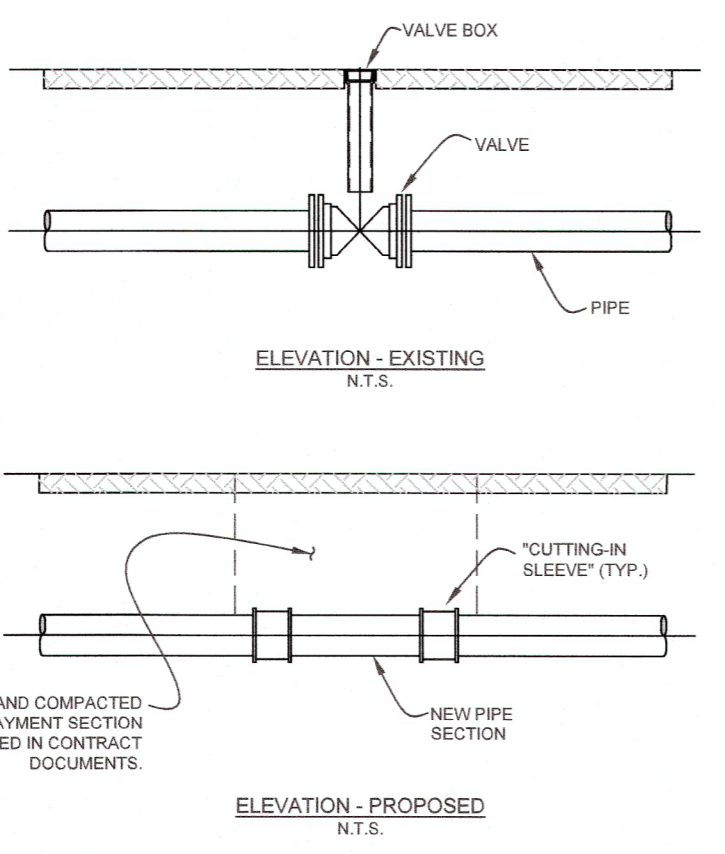
FAYETTEVILLE PUBLIC WORKS COMMISSION
WATER RESOURCES ENGINEERING
P.O. Box 1084, Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28301

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F-1222
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PWC DRAWING # AS-15313CCC

FINAL DESIGN
ISSUED FOR BID

I:\01925\0005\Water\80-Drawings\86-Design\Detail_Sheets\DETAILS SH A_BRC-CONTRACT 2.dwg 10/03/2022 22:58 mplec

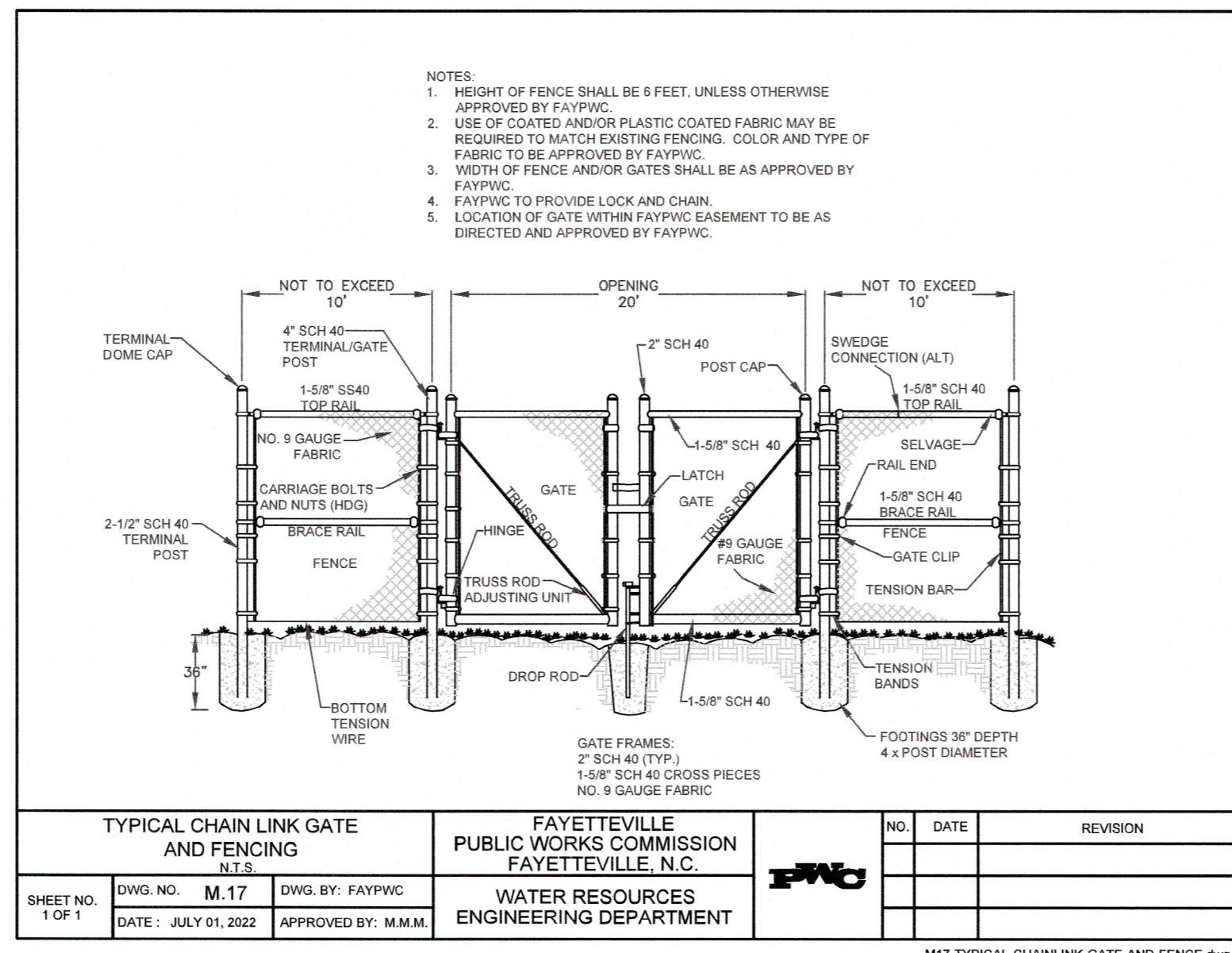
MINIMUM LENGTH OF BURIED PIPE BETWEEN CLOSED VALVE AND EXCAVATION FOR RESTRAINT BASED ON MINIMUM TYPE 2 BEDDING IN SILT SOIL		
Diameter (inches)	Depth of Cover (feet)	Length (feet)
16	3-1/2	251
16	4-0	173
16	4-7/8	120
16	5-1/2	92
16	>= 10	75
12	3-1/2	174
12	4-0	135
12	4-7/8	93
12	5-1/2	71
12	>= 10	57
10	3-1/2	149
10	4-0	115
10	4-7/8	79
10	5-1/2	60
10	>= 10	49
8	3-1/2	123
8	4-0	95
8	4-7/8	65
8	5-1/2	49
8	>= 10	40
6	3-1/2	99
6	4-0	73
6	4-7/8	50
6	5-1/2	38
6	>= 10	31



VALVE REMOVAL WITH EXCAVATION		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. M.15		WATER RESOURCES ENGINEERING DEPARTMENT			
DATE: JULY 01, 2021		APPROVED BY: M.M.M.			

UTILITY GENERAL NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. N.2		WATER RESOURCES ENGINEERING DEPARTMENT			
DATE: JULY 01, 2021		APPROVED BY: J.E.G.			

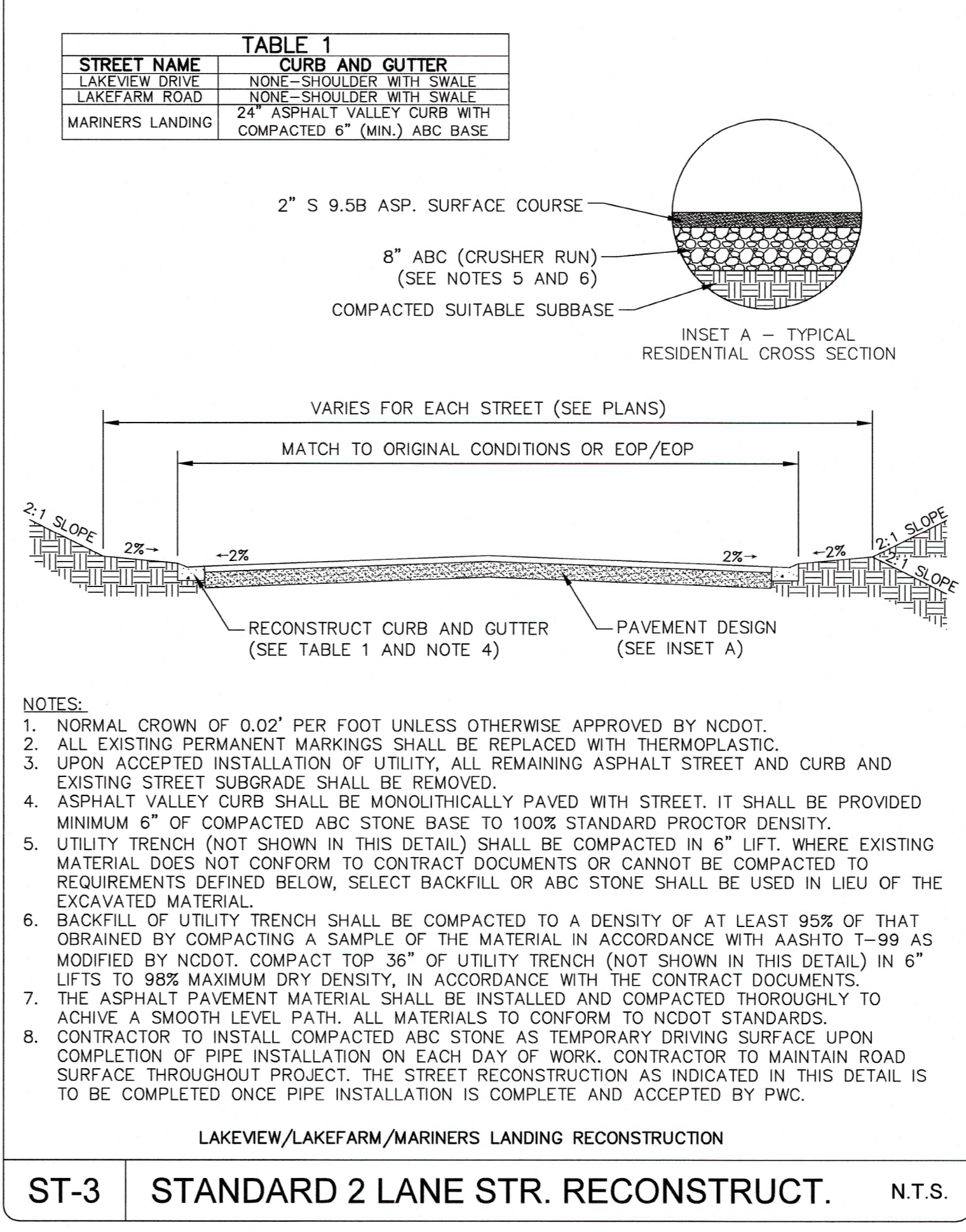
TRAFFIC CONTROL NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. N.4		WATER RESOURCES ENGINEERING DEPARTMENT			
DATE: JULY 01, 2021		APPROVED BY: J.E.G.			



TYPICAL CHAIN LINK GATE AND FENCING		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. M.17		WATER RESOURCES ENGINEERING DEPARTMENT			
DATE: JULY 01, 2022		APPROVED BY: M.M.M.			

GENERAL NOTES (RESIDENT RELATIONS-REQUIRED)		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. N.3		WATER RESOURCES ENGINEERING DEPARTMENT			
DATE: JULY 01, 2021		APPROVED BY: J.E.G.			

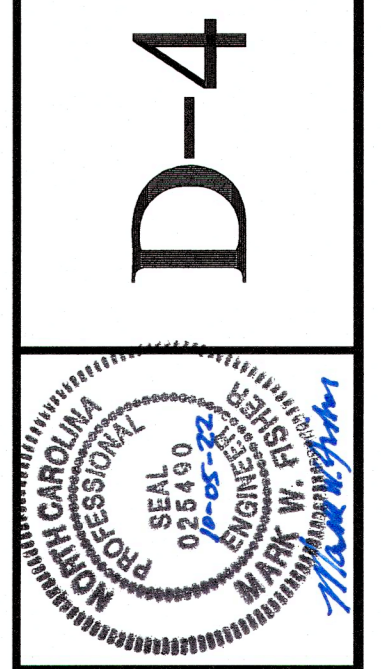
WETLAND CONSTRUCTION REQUIREMENTS		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. N.6		WATER RESOURCES ENGINEERING DEPARTMENT			
DATE: JULY 01, 2021		APPROVED BY: J.E.G.			



ST-3 STANDARD 2 LANE STR. RECONSTRUCT.		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. M.17		WATER RESOURCES ENGINEERING DEPARTMENT			
DATE: JULY 01, 2022		APPROVED BY: M.M.M.			

DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AWB
02.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	HPP
02.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	HPP
06.30.2020	FINAL DESIGN - CONTRACT SEPARATION AND RES RESPONSES	HPP
09.13.2022	FINAL DESIGN - NOTIFICATION MODIFICATIONS	HPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	HPP

SHEET	D-4
SUBMIT/GPS BY:	MCKIMCREED, INC.
PROCESS/LAYOUT BY:	DATE: 10/3/22
PLAN/PROF (SS/S) BY:	TMB/AWB
DESIGN REVIEW BY:	BRL
APPROVED BY:	
SCALE:	AS SHOWN



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
STANDARD SANITARY SEWER DETAILS

FAYETTEVILLE PUBLIC WORKS COMMISSION
WATER RESOURCES ENGINEERING
P.O. Box 1089, Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28301

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1730 Varsity Drive, Suite 500
Raleigh, NC 27606
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PWC DRAWING # DS-15486

1. ALL WATER MAINS, LATERALS AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.

2. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

3. CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE FOR ALL WATER OUTAGES.

4. CONSTRUCTION STAKING IS REQUIRED FOR ALL PVC WATER AND SEWER UTILITY INSTALLATIONS. CUT SHEETS, BONDED AND SEALED BY A N.C. P.L.S. SHALL BE PROVIDED TO THE PWC WATER RESOURCES ENGINEERING DEPARTMENT AND THE CONTRACTOR IN ADVANCE OF CONSTRUCTION FOR PVC WATER AND SEWER UTILITIES.

5. CONTRACTOR SHALL MAINTAIN A COPY OF THE BONDED AND SEALED CUT SHEET ON THE JOB SITE. CONSTRUCTION ON PVC WATER AND SEWER UTILITIES CANNOT BEGIN UNTIL THE CONTRACTOR POSSESSES ON SITE A BONDED AND SEALED CUT SHEET FROM THE PROFESSIONAL AND SUPERVISOR.

6. ALL NEW WATER AND SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE TESTED AND/OR INSPECTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS PRIOR TO PLACING INTO SERVICE.

7. CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE PWC PROJECT COORDINATOR.

8. CONTRACTOR SHALL REPAIR ALL WATER LATERALS AND MAINS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL REPORT IMMEDIATELY ALL WATER MAIN AND LATERAL BREAKS TO THE PWC PROJECT COORDINATOR. THE CONTRACTOR SHALL IMMEDIATELY REPAIR IN ACCORDANCE WITH PWC STANDARDS. CONTRACTOR SHALL NOT OPERATE PVC WATER MAIN VALVES WITHOUT PWC APPROVAL AND SHALL COORDINATE ALL VALVE CLOSURES WITH PWC.

9. THE CONTRACTOR SHALL NOT USE HOSE BIBBS OR ANY OTHER METHOD OF BLOW OFF WHICH ALLOWING DOMESTIC WATER CONTAINING SEDIMENT OR HIGH LEVELS OF CHLORINE TO PASS THRU RESIDENTS METERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES RESULTING FROM ALLOWING DIRTY WATER TO ENTER RESIDENTS PLUMBING SYSTEM, SUCH AS WATER HEATERS, STAINED CLOTHING, CLOGGED SINKS, ETC.

10. TRANSFER OF WATER SERVICES SHALL BE ACCOMPLISHED AS FOLLOWS:
 A. INSTALL, TEST AND STERILIZE NEW MAIN AND LATERALS. LATERALS SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
 B. TRANSFER EXISTING METER TO NEW METER BOX AND THE NEW WATER LATERAL TO EXISTING DOMESTIC WATER CONTAINING SEDIMENT OR HIGH LEVELS OF CHLORINE. NUMBER SHALL BE INSTALLED ON SAME ADDRESS AND/OR CUSTOMER. BLOW OFF SERVICE AT HOSE BIBB OR HOSE ONLY AFTER METER HAS BEEN TRANSFERRED.
 C. AFTER ALL SERVICES ARE TRANSFERRED TO THE NEW SYSTEM, SHUT OFF VALVE ON EXISTING SYSTEM AND ABANDON EXISTING MAINS IN ACCORDANCE WITH PWC DETAILS.
 D. CONTRACTOR SHALL SUPPLY NEW METER BOXES AND DISPOSE OF EXISTING METER BOXES.

11. CONTRACTOR SHALL ABANDON (PULL-OUT) ANY EXISTING WATER SERVICES THAT WILL NOT BE UTILIZED BY CUTTING THE SERVICE AT THE MAIN, FLOUSING THE CONNECTION AND TURNING OFF THE CONNECTION AT THE METER BOX. THE ABANDONED SERVICE IS TO BE CUT OR COMPIED, AND BURIED A MINIMUM OF 18 INCHES BELOW GRADE.

12. ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE. IN ACCORDANCE WITH PWC REQUIREMENTS.

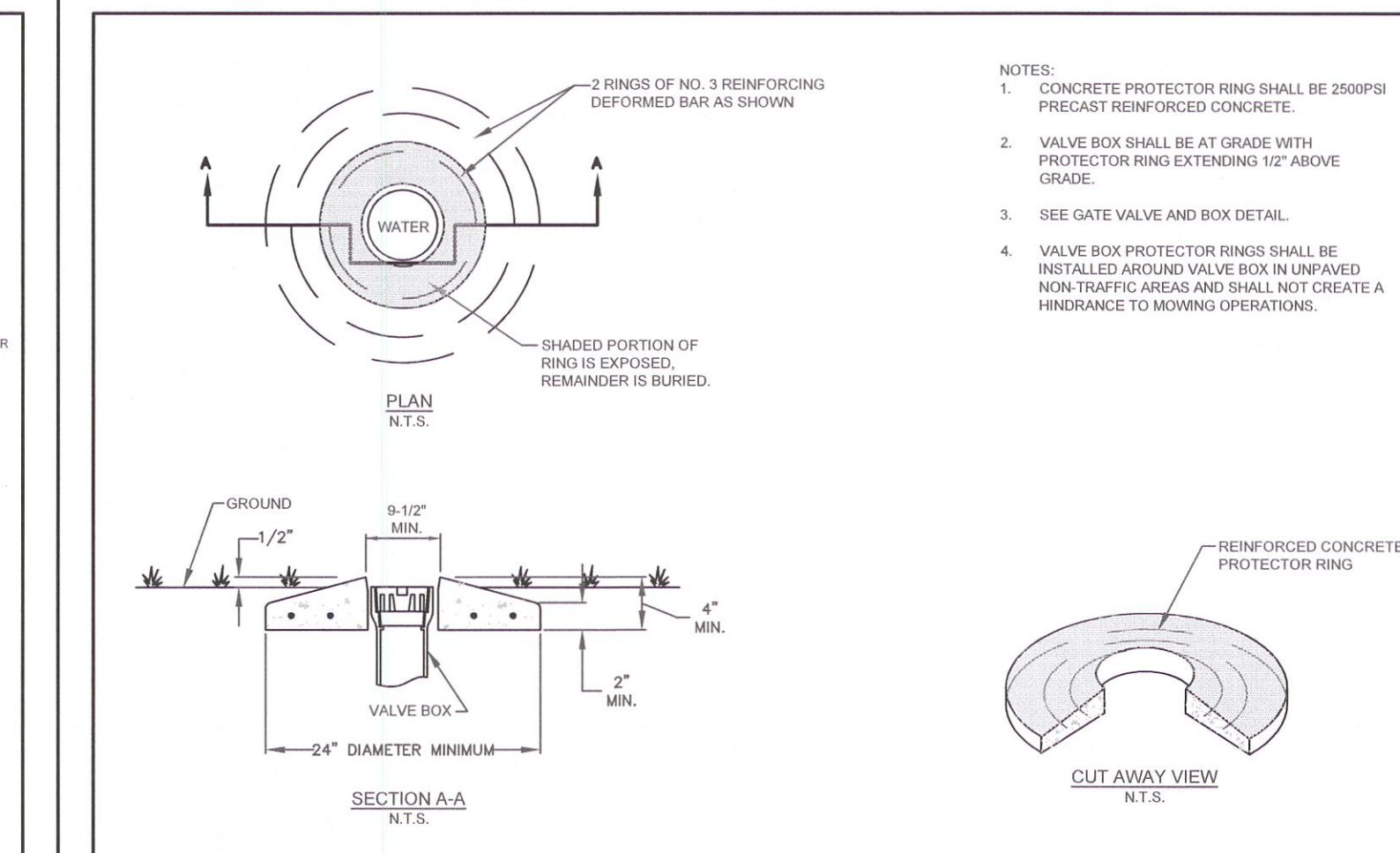
13. ALL WORK ON PVC WATER UTILITIES (MAINS, LATERALS, ETC) SHALL BE PERFORMED BY A LICENSED UTILITY CONTRACTOR. THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL OBSERVE AND APPROVE ALL WORK ON PVC WATER UTILITIES. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH PWC REQUIREMENTS.

14. SEPARATION REQUIREMENTS:
 A. LATERAL SEPARATION OF SEWER AND WATER MAINS: WATER MAINS SHALL BE LAD IN AT LEAST 18 INCHES FROM EXISTING OR PROPOSED SEWER MAINS, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 18 FOOT LATERAL SEPARATION. IN WHICH CASE:
 I. THE WATER MAIN IS LAD IN A SEPARATE TRENCH WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAIN/LATERAL.
 II. THE WATER MAIN IS LAD IN THE SAME TRENCH AS THE SEWER MAIN/LATERAL WITH THE WATER MAIN LOCATED AT ONE SIDE OR A BENCH OF UNDISTURBED EARTH AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAIN/LATERAL.
 B. CROSSING WATER MAIN OVER A SEWER: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, THE WATER MAIN SHALL BE LAD AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAIN/LATERAL. UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION. IN WHICH CASE BOTH THE WATER MAIN AND SEWER MAIN/LATERAL SHALL BE DUCTILE IRON IN ACCORDANCE WITH PWC REQUIREMENTS.
 C. CROSSING WATER MAIN UNDER A SEWER: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER MAIN/LATERAL SHALL BE DUCTILE IRON IN ACCORDANCE WITH PWC REQUIREMENTS. A FULLE DUCTILE IRON PIPE SHALL BE INSTALLED ON THE WATER MAIN CENTERED AT THE POINT OF CROSSING.

15. WATER OUTAGES: THE CONTRACTOR SHALL SCHEDULE A COORDINATION MEETING WITH THE PWC PROJECT COORDINATOR AND PROJECT ENGINEER A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO ANY PLANNED WATER OUTAGE. THE COORDINATION MEETING SHALL BE CONDUCTED PRIOR TO ANY NOTICES BEING ISSUED. ADDITIONALLY, THE CONTRACTOR SHALL LOCATE (VERTICALLY AND HORIZONTALLY) ANY UTILITIES WITHIN THE WORK AREA. IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS, THE LOCATION OF ALL UTILITIES WITHIN THE WORK AREA SHALL BE DETERMINED PRIOR TO THE COORDINATION MEETING. ANY CONFLICTS WITH THE PROPOSED WORK AND THE EXISTING UTILITIES SHALL BE IDENTIFIED AND A PLAN FOR RESOLVING ANY CONFLICTS SHALL BE PRESENTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROPOSED OUTAGE. THE CONTRACTOR HAS A GOOD UNDERSTANDING OF THE REQUIREMENTS RELATED TO THE PROPOSED OUTAGE. VERIFY THAT THERE ARE NO UTILITIES CONFLICTS THAT WILL PREVENT THE WORK FROM BEING COMPLETED. ALL EQUIPMENT IS IN GOOD WORKING ORDER. ALL EQUIPMENT IS FUNCTIONAL. ALL MATERIALS ARE ON SITE. ALL NECESSARY TOOLS ARE ON SITE. CIRCUMSTANCES ANY NECESSARY CONTINGENCY PLANS, AND ANY OTHER ITEMS NECESSARY TO ENSURE THAT THE FAYETTEVILLE PUBLIC WORKS COMMISSION HAS CONFIDENCE THAT THE WORK CAN BE ACCOMPLISHED WITHIN THE GIVEN TIME PERIOD. SHOULD FOR ANY REASON, THE FAYETTEVILLE PUBLIC WORKS COMMISSION DEEM THAT THE CONTRACTOR IS NOT PREPARED FOR THE PROPOSED OUTAGE, THE OUTAGE NOTIFICATION WILL BE DEFERRED AND THE OUTAGE SHALL BE POSTPONED A MINIMUM OF TWO (2) WEEKS. THE FAYETTEVILLE PUBLIC WORKS COMMISSION WILL PROVIDE WRITTEN NOTIFICATION TO THE CONTRACTOR OF THIS DECISION. NO ADDITIONAL CONTRACT TIME WILL BE GRANTED FOR THIS DELAY. SHOULD THE CONTRACT TIME EXPIRE WITHIN THAT TWO (2) WEEK PERIOD, THE FAYETTEVILLE PUBLIC WORKS COMMISSION RESERVE THE RIGHT TO ASSESS LIQUIDATED DAMAGES AS OUTLINED IN THESE CONTRACT DOCUMENTS.

16. THE CONTRACTOR SHALL COMPLETE THE REQUIRED WORK AND RESTORE WATER SERVICE WITHIN THE GIVEN TIME PERIOD FOR THE OUTAGE. IF THE FAYETTEVILLE PUBLIC WORKS COMMISSION DEEM THAT THE CONTRACTOR IS NOT PREPARED TO RESTORE WATER SERVICE WITHIN THE APPROVED TIMEFRAME, THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL ASSESS LIQUIDATED DAMAGES AS OUTLINED IN THESE CONTRACT DOCUMENTS. SHOULD THE CONTRACTOR FAIL TO COMPLETE THE WORK WITHIN THE ALLOTTED TIME, THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL ASSESS A PENALTY OF \$500 PER 15-MINUTE INTERVAL OR ANY PORTION THEREOF UNTIL WATER SERVICE IS RESTORED. THIS PENALTY WILL BE DEDUCTED FROM THE CONTRACTOR'S PAY APPLICATION OR BE BILLED DIRECTLY TO THE CONTRACTOR. THE PENALTY MAY BE WAIVED FOR THIS DELAY. SHOULD THE CONTRACTOR FAIL TO RESTORE WATER SERVICE WITHIN THE APPROVED TIMEFRAME, THE CONTRACTOR SHALL ASSESS TO ALL INSTRUCTIONS GIVEN BY THE FAYETTEVILLE PUBLIC WORKS COMMISSION. THE CONTRACTOR SHALL ACHIEVE TO ALL INSTRUCTIONS GIVEN BY THE PWC PROJECT COORDINATOR.

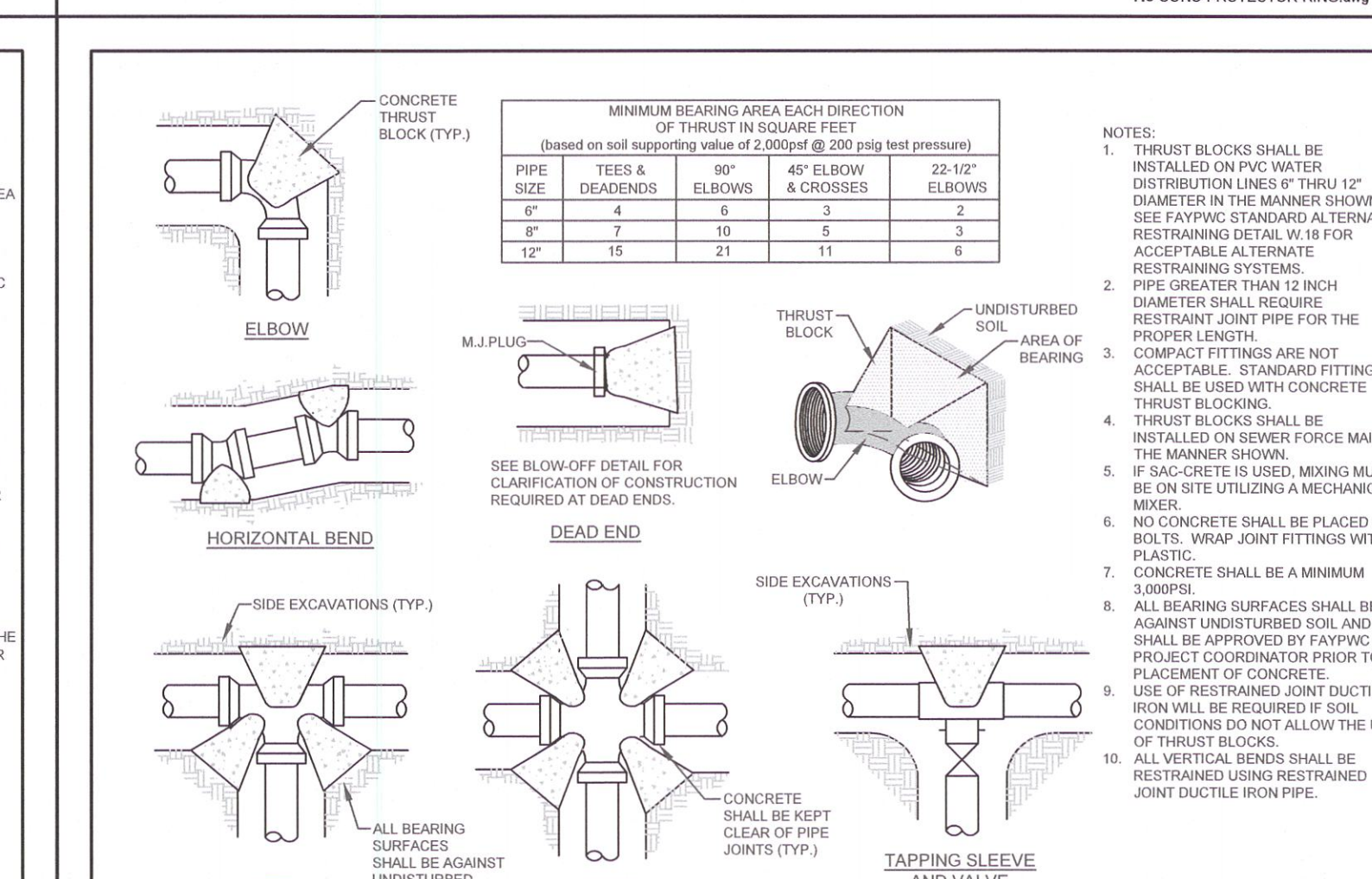
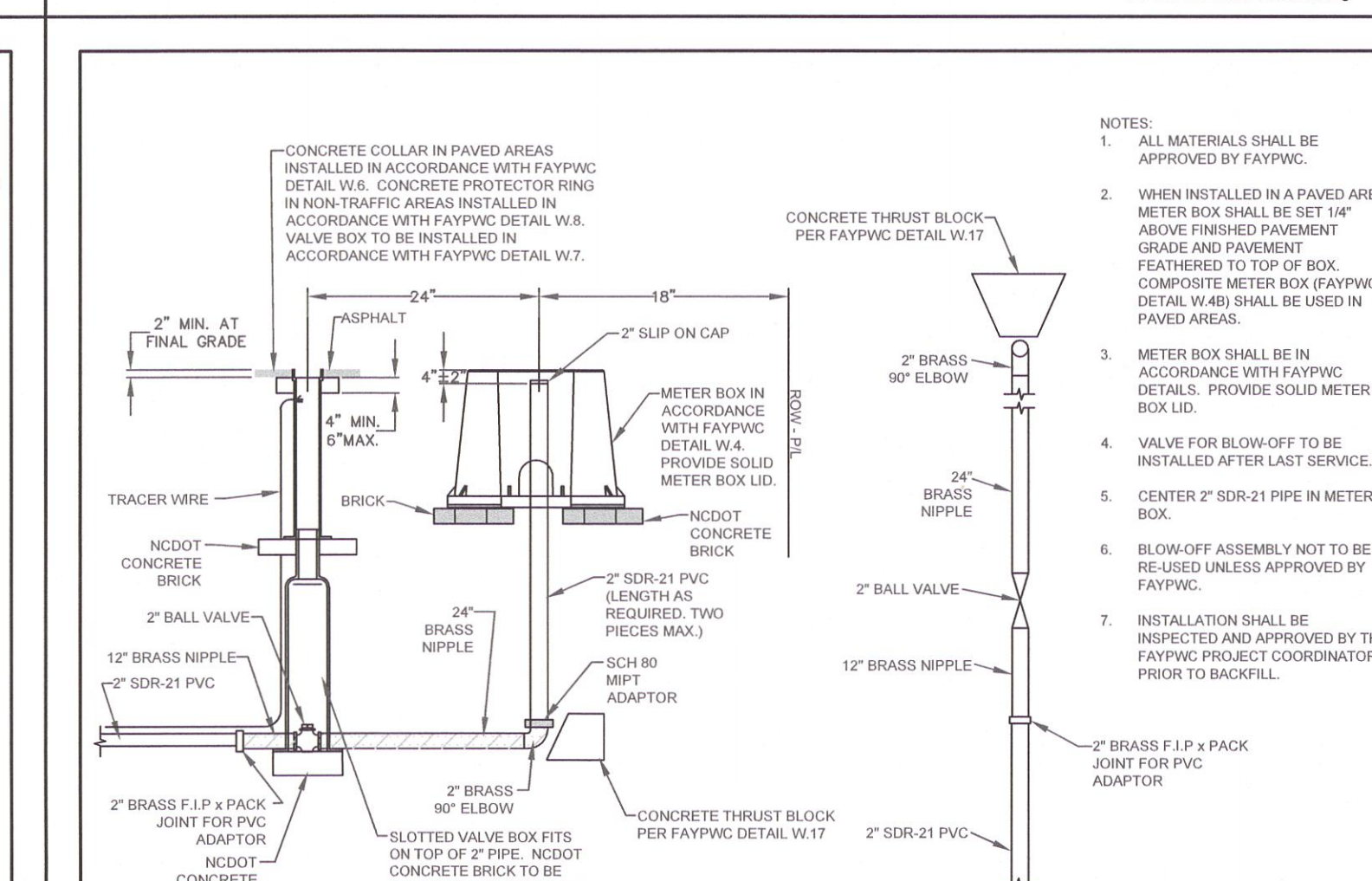
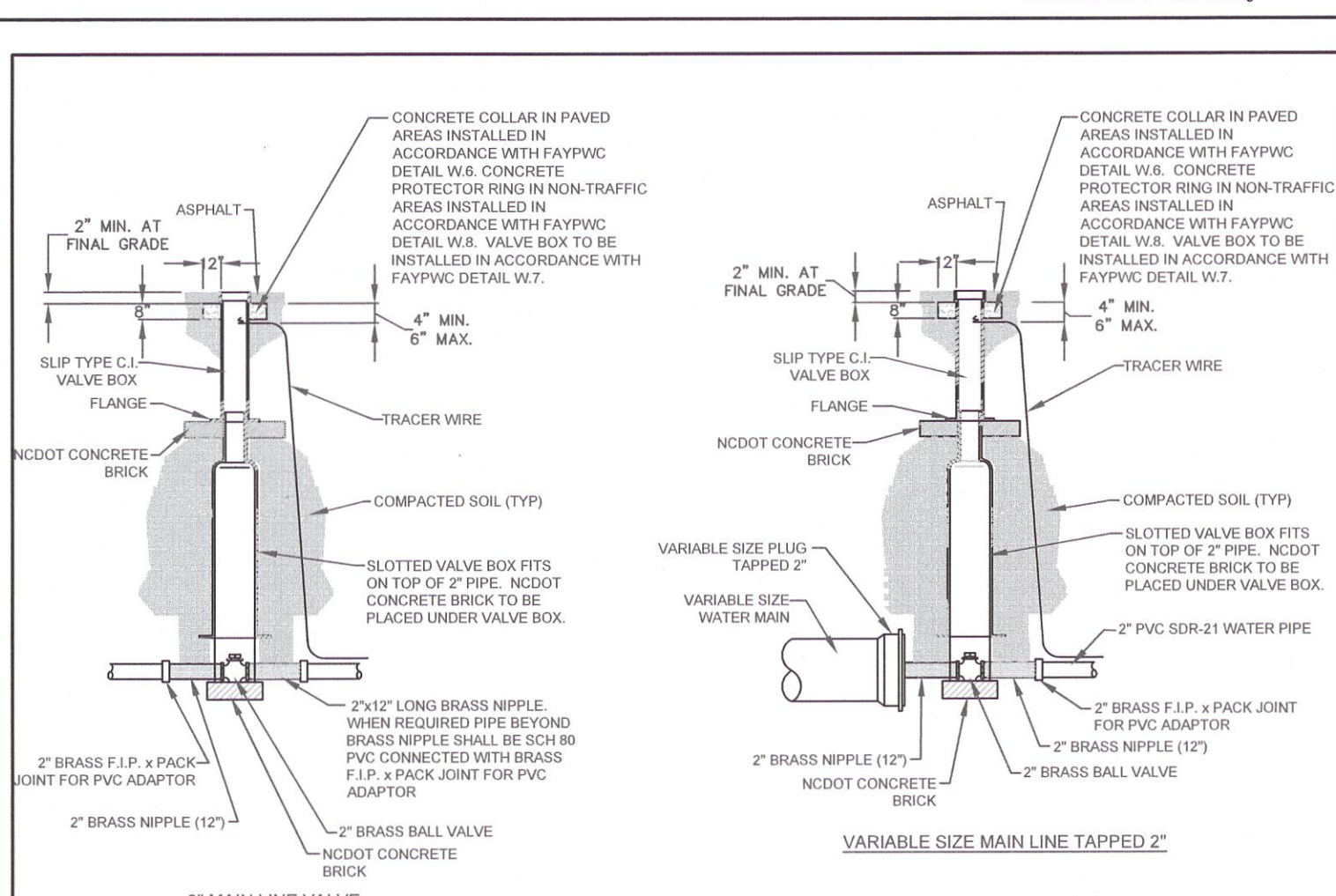
17. SHOULD THE CONTRACTOR FAIL TO COMPLETE THE WORK WITHIN THE ALLOTTED TIME, THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL ASSESS A PENALTY OF \$500 PER 15-MINUTE INTERVAL OR ANY PORTION THEREOF UNTIL WATER SERVICE IS RESTORED. THIS PENALTY WILL BE DEDUCTED FROM THE CONTRACTOR'S PAY APPLICATION OR BE BILLED DIRECTLY TO THE CONTRACTOR. THE PENALTY MAY BE WAIVED FOR THIS DELAY. SHOULD THE CONTRACTOR FAIL TO RESTORE WATER SERVICE WITHIN THE APPROVED TIMEFRAME, THE CONTRACTOR SHALL ASSESS TO ALL INSTRUCTIONS GIVEN BY THE FAYETTEVILLE PUBLIC WORKS COMMISSION. THE CONTRACTOR SHALL ACHIEVE TO ALL INSTRUCTIONS GIVEN BY THE PWC PROJECT COORDINATOR.



WATER UTILITY NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		WATER RESOURCES ENGINEERING DEPARTMENT	
NO.	DATE	REVISION	NO.	DATE	REVISION
1	07/01/16	ADDED NOTE 6	1	07/01/16	ADDED NOTE 6
2	01/01/18	ADDED NOTES 6, 8	2	01/01/18	ADDED NOTES 6, 8
3	06/01/21	ADDED NOTES 1-7 AND RENUMBERED	3	06/01/21	ADDED NOTES 1-7 AND RENUMBERED

WATER UTILITY NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		WATER RESOURCES ENGINEERING DEPARTMENT	
NO.	DATE	REVISION	NO.	DATE	REVISION
1	07/01/16	ADDED NOTE 6	1	07/01/16	ADDED NOTE 6
2	01/01/18	ADDED NOTES 6, 8	2	01/01/18	ADDED NOTES 6, 8
3	06/01/21	ADDED NOTES 1-7 AND RENUMBERED	3	06/01/21	ADDED NOTES 1-7 AND RENUMBERED

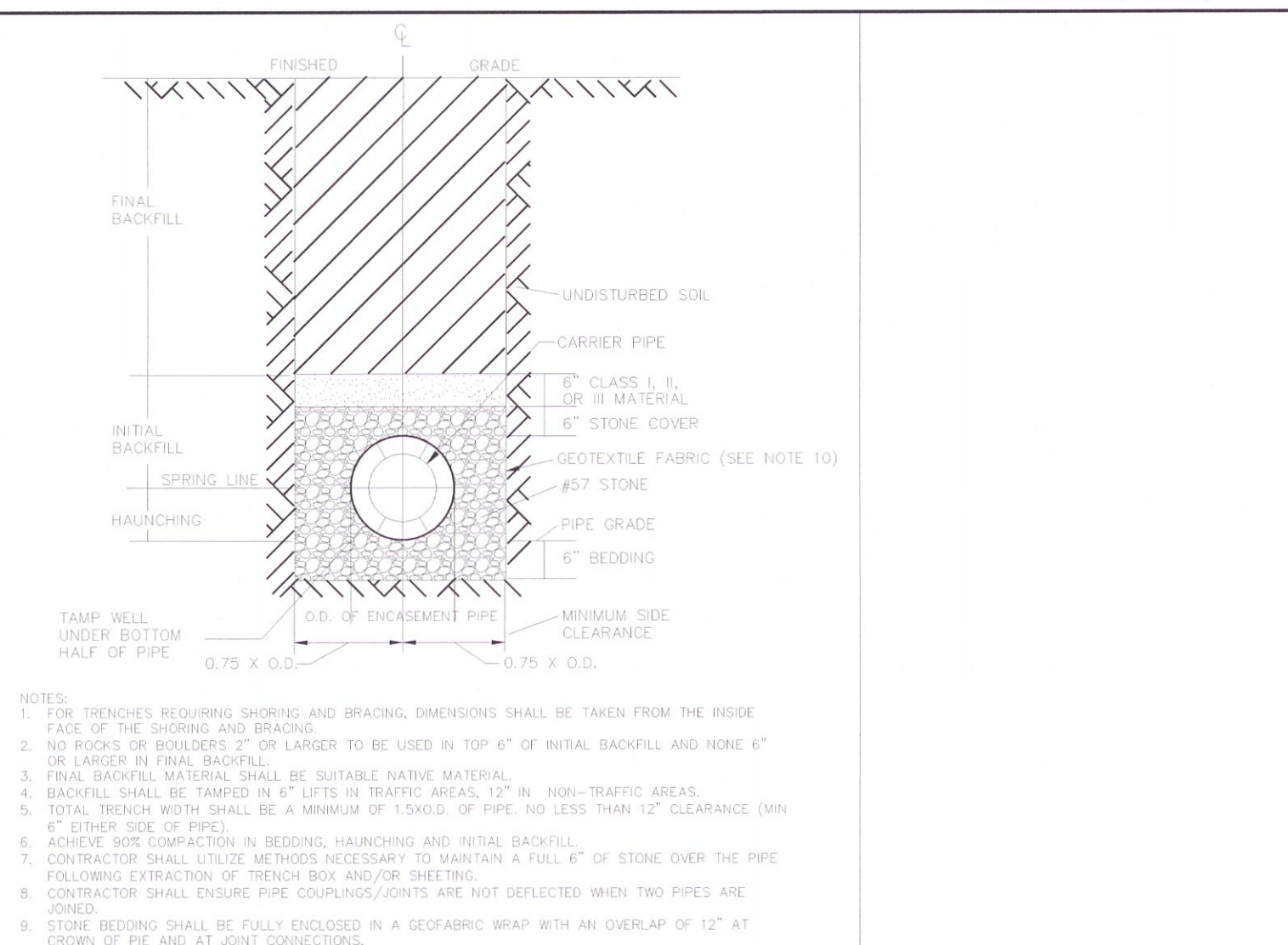
VALVE BOX PROTECTOR RING N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		WATER RESOURCES ENGINEERING DEPARTMENT	
NO.	DATE	REVISION	NO.	DATE	REVISION
1	07/01/16	ADDED NOTE 6	1	07/01/16	ADDED NOTE 6
2	01/01/18	ADDED NOTES 6, 8	2	01/01/18	ADDED NOTES 6, 8
3	06/01/21	ADDED NOTES 1-7 AND RENUMBERED	3	06/01/21	ADDED NOTES 1-7 AND RENUMBERED



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NO.	DATE	REVISION	NO.	DATE	REVISION
1	06/08	ADDED NOTE ON CONCRETE COLLAR	1	06/08	ADDED NOTE ON CONCRETE COLLAR
2	07/17	UPDATED NOTES	2	07/17	UPDATED NOTES

2\"/>					
NO.	DATE	REVISION	NO.	DATE	REVISION
1	07/17	REVISED NOTES	1	07/17	REVISED NOTES

CONCRETE THRUST BLOCK DETAIL N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		WATER RESOURCES ENGINEERING DEPARTMENT	
NO.	DATE	REVISION	NO.	DATE	REVISION
1	06/06	REVISED TABLE	1	06/06	REVISED TABLE
2	03/07	ADDED NOTES 9 AND 10	2	03/07	ADDED NOTES 9 AND 10
3	07/13	ADDED TAPPING SLEEVE AND VALVE DETAIL	3	07/13	ADDED TAPPING SLEEVE AND VALVE DETAIL



SS-2 - TYPICAL TRENCH BOTTOM AND BACKFILL DETAIL FOR RESTRAINED PVC CARRIER PIPE WITH HDPE ENCASEMENT PIPE N.T.S.

NOTES:
 1. FOR TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
 2. NO RODS OR BOLTERS, 2\"/>

DATE: 09/30/2022
 REVISIONS:
 15.10.2020 FINAL DESIGN NOT FOR CONSTRUCTION
 12.16.2020 FINAL DESIGN NOT FOR CONSTRUCTION
 06.30.2021 FINAL DESIGN - CONTRACT SEPARATION AND BID RESPONSE
 04.15.2022 FINAL DESIGN NOT FOR CONSTRUCTION
 09.30.2022 FINAL DESIGN RESET FOR BID

SHEET D-5

SURVEYED BY: MCKIM&CREED, INC.
 PREPARED BY: TMB/AWB
 DATE: 09/30/22
 PLAN/PROF. DESIGNED BY: BRL
 DESIGN REVIEW BY: BRL
 APPROVED BY: AS SHOWN
 SCALE: AS SHOWN

D-5

PROFESSIONAL SEAL
 022440
 MCKIM & CREED, INC.
 ENGINEER
 STATE OF NORTH CAROLINA

SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
 STANDARD SANITARY SEWER DETAILS

FAYETTEVILLE PUBLIC WORKS COMMISSION
 WATER RESOURCES ENGINEERING
 P.O. Box 1084, Fayetteville, NC 28302
 955 Old Wilmington Road, Fayetteville, NC 28301

811
 Know what's below. Call before you dig.

MCKIM & CREED
 1730 Varsity Drive, Suite 500
 Raleigh, NC 27603
 Phone: (919)233-8091, Fax: (919)233-8031
 F-1222
 www.mckimcreed.com

FINAL DESIGN
 ISSUED FOR BID

PWC DRAWING # DS-15486

I:\01925\0005\Water\80-Drawings\86-Design\Detail_Sheets\DETAILS SH A_BRC-CONTRACT 2.dwg 09/30/2022 08:44 mpjec

**PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

SECTION A: SELF-INSPECTION
Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the inspection record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain monitoring device approved by the Division.
(2) E&S&C Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected. 2. Date and time of the inspection. 3. Name of the person performing the inspection. 4. Indication of whether the measures were operating properly. 5. Description of maintenance needs for the measures. 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (S&O)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected. 2. Date and time of the inspection. 3. Name of the person performing the inspection. 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration. 5. Indication of visible sediment leaving the site. 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits. 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part 16, Section 5, Item (d)(4) of this permit of this permit.
(6) Ground stabilization measures	After each phase of grading	3. The phase of grading (installation of perimeter E&S&C measures, clearing and grubbing, installation of storm drainage facilities, completion of all land disturbing activity, construction or reassignment, permanent ground cover). 3. Documentation that the required ground stabilization measures have been provided within the required timeframes or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

**PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

SECTION B: RECORDKEEPING
1. E&S&C Plan Documentation
The approved E&S&C plan as well as any approved deviation shall be kept on the site. The approved E&S&C plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&S&C plan shall be documented in the manner described:

Item to Document	Documentation Requirements
(a) Each E&S&C Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&S&C Plan.	Initial and date each E&S&C Measure on a copy of the approved E&S&C Plan or complete, date and sign an inspection report that lists each E&S&C Measure shown on the approved E&S&C Plan. This documentation is required upon the initial installation of the E&S&C Measures or if the E&S&C Measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&S&C Plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&S&C Plan.	Initial and date a copy of the approved E&S&C Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&S&C Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&S&C Measures.	Initial and date a copy of the approved E&S&C Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation
In addition to the E&S&C Plan documents above, the following items shall be kept on the site and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This general permit as well as the certificate of coverage, after it is received.

(b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

(c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

**PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

SECTION C: REPORTING
1. Occurrences that must be reported
Permittees shall report the following occurrences:
(a) Visible sediment deposition in a stream or wetland.
(b) Oil spills if:
• They are 25 gallons or more,
• They are less than 25 gallons but cannot be cleaned up within 24 hours,
• They cause sheen on surface waters (regardless of volume), or
• They are within 100 feet of surface waters (regardless of volume).
(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 302 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
(d) Anticipated bypasses and unanticipated bypasses.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements
After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• Within 24 hours , an oral or electronic notification. • Within 7 calendar days , a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 8030(a) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 3(b)-(c) above	• Within 24 hours , an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release. • A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass. • Within 24 hours , an oral or electronic notification. • Within 7 calendar days , a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. [40 CFR 122.41(i)(6)]. • Division staff may waive the requirement for a written report on a case-by-case basis.
(c) Unanticipated bypasses (40 CFR 122.41(m)(3))	• Within 24 hours , an oral or electronic notification. • Within 7 calendar days , a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. [40 CFR 122.41(i)(6)].
(d) Noncompliance with the conditions of this permit that may endanger health or the environment (40 CFR 122.41(j)(7))	• Within 24 hours , an oral or electronic notification. • Within 7 calendar days , a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. [40 CFR 122.41(i)(6)].

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT
Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed. -7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(d) Slopes 3:1 to 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION
Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the [NC DWR List of Approved PAMS/Flocculants](#).
- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
- Apply flocculants at the concentrations specified in the [NC DWR List of Approved PAMS/Flocculants](#) and in accordance with the manufacturer's instructions.
- Provide ponding area for containment of treated Stormwater before discharging offsite.
- Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number and size of waste containers (e.g. dumpster, trash receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility.
- On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled, sized and placed appropriately for the needs of site.
- Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind site fence or place on a gravel pad and surround with sand bags.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
- Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

CONCRETE WASHOUTS

- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
- Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
- Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
- Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
- Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
- Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
- Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
- At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
- Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
- Do not stockpile these materials on-site.

HAZARDOUS AND TOXIC WASTE

- Create designated hazardous waste collection areas on-site.
- Place hazardous waste containers under cover or in secondary containment.
- Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2

STANDARD EROSION CONTROL DETAILS

FAYETTEVILLE PUBLIC WORKS COMMISSION
PWC WATER RESOURCES ENGINEERING
P.O. Box 1080, Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28301

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F-1222
www.mckimcreed.com

PWC DRAWING # DS-15486

DATE: 05.18.2020
REVISIONS:
NOT FOR CONSTRUCTION
DATE: 12.16.2020
FINAL DESIGN
NOT FOR CONSTRUCTION
DATE: 02.21.2020
FINAL DESIGN
NOT FOR CONSTRUCTION
DATE: 06.30.2022
FINAL DESIGN - CONTRACT
OPERATIONS AND MAINTENANCE
DATE: 04.13.2022
FINAL DESIGN - NIGHT
ENCLOSURE PROPORTIONS
DATE: 09.30.2022
FINAL DESIGN
ISSUED FOR BID

SHEET: D-6

SURVEYED BY: MCKIMCREED, INC.
PROCESS/LAYOUT BY: TMB/AMB
DATE: 9/30/22
DESIGNED BY: TMB/AMB
PLAN/PROF. (SS) BY: BRL
DESIGN REVIEW BY:
APPROVED BY:
SCALE: AS SHOWN

D-6

PROFESSIONAL SEAL
OF THE STATE OF NORTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
NO. 10000
MCKIM & CREED, INC.
1730 VARSITY DRIVE, SUITE 500
RALEIGH, NC 27606
919.233.8091

- THE INTENT OF THE CONSTRUCTION SEQUENCE IS TO PROVIDE THE CONTRACTOR WITH A GENERAL GUIDE FOR CONSTRUCTION PURPOSES. THIS SEQUENCE IS NOT INTENDED TO OUTLINE ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.
- CONTRACTOR SHALL ARRANGE PRE-CONSTRUCTION MEETING WITH THE OWNER'S REPRESENTATIVE, ENGINEER, AND NCDQ-LAND QUALITY SECTION REPRESENTATIVE (919-791-4200) PRIOR TO ANY LAND DISTURBING ACTIVITY ON SITE.
- ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NORTH CAROLINA EROSION AND SEDIMENTATION CONTROL PLANNING AND DESIGN MANUAL.
- ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER RAINFALL EVENTS. NEEDED REPAIRS SHALL BE MADE IMMEDIATELY.
- IF IT IS DETERMINED DURING CONSTRUCTION THAT ANY SEDIMENT IS LEAVING THE SITE, DESPITE PROPER IMPLEMENTATION AND MAINTENANCE, THE CONTRACTOR IS OBLIGATED TO TAKE ADDITIONAL CORRECTIVE ACTION. CONTRACT OWNER'S REPRESENTATIVE AND ENGINEER WITH ANY ADDITIONAL MEASURES NEEDED.
- CONTRACTOR SHALL ESTABLISH GROUND COVER ON DISTURBED AREAS WITHIN DAYS SPECIFIED BY THE NPDES GENERAL PERMIT STABILIZATION REQUIREMENTS AFTER COMPLETION OF ANY PHASE OF GRADING. SEEDING SHALL BE IN ACCORDANCE WITH THIS SHEET.
- MAINTAIN A COPY OF THE LETTER OF PLAN APPROVAL ON SITE FOR SEDIMENTATION AND EROSION CONTROL FROM NCDQ-LAND QUALITY SECTION AS WELL AS THE PREVIOUS 30 DAYS OF SELF INSPECTION RECORDS, RAIN GAUGE, APPROVAL CERTIFICATE/LETTER, APPROVED PLAN, AND NPDES PERMIT. THESE ITEMS SHOULD BE LOCATED NEAR THE MAIN CONSTRUCTION ENTRANCE. COORDINATE WITH THE INSPECTOR IF AN ALTERNATIVE LOCATION IS PREFERRED. ADDITIONAL INFORMATION AND A LINK TO THE NCDQ COMBINED SELF-MONITORING FORM CAN BE FOUND AT: [HTTPS://DEQ.NC.GOV/ABOUT/DIVISIONS/ENERGY-MINERAL-LAND-RESOURCES/ENERGY-MINERAL-LAND-PERMIT/STORMWATER-PERMIT/CONSTRUCTION-5W](https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-permits/stormwater-permits/construction-5w).
- CONTRACTOR TO VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES TO AVOID CONFLICT DURING INSTALLATION OF EROSION CONTROL MEASURES, STORM SEWER PIPES AND UNDERGROUND UTILITY LINES. CONTRACTOR IS TO CALL EROSION CONTROL MEASURES, STORM SEWER PIPES AND UTILITIES LOCATED.
- CONTRACTOR TO HAVE A PROFESSIONAL LAND SURVEYOR FLAG PROPERTY LINES, EASEMENTS, STREAM BUFFERS, TREE PROTECTION AREAS AND LIMITS OF DISTURBANCE PRIOR TO LAND DISTURBING ACTIVITIES.
- INSTALL TEMPORARY GRAVEL ACCESS POINTS PER THE PLANS AND DETAIL EC-5 ON THIS SHEET. INSTALL CONSTRUCTION ENTRANCES WHERE REQUIRED AND SHOWN IN THESE PLANS. ACCESS WORK AREAS.
- INSTALL TEMPORARY SILT FENCE, SUPER SILT FENCE, HIGH HAZARD SILT FENCE, TREE PROTECTION FENCE AND OTHER MEASURES AS SHOWN ON PLANS. SILT FENCE SHOULD BE INSTALLED ON ALL DOWNSLOPE PORTIONS OF THE DISTURBED AREA. SILT FENCE SHOULD NOT BE INSTALLED ON THE HIGH SIDE OF THE DISTURBANCE AREA (TREE PROTECTION FENCING IS AN ACCEPTABLE ALTERNATIVE IF DESIRED). SILT FENCE OUTLETS SHOULD BE INSTALLED AT LOW SPOTS AND ANYWHERE WATER IS POOLING. SILT FENCE AND OUTLET LOCATIONS MAY VARY FROM THE APPROVED PLANS PER SITE CONDITIONS. CONTRACTOR SHALL PROVIDE SILT FENCE AROUND ALL BORROW/STOCKPILE/WASTE AREAS, ALL LAYOUT/STAGING AREAS, AND ALONG EITHER SIDE OF ALL TEMPORARY CONSTRUCTION ACCESS ROADS/CORRIDORS.
- CONTRACTOR TO INSTALL EROSION CONTROL MEASURES AS SHOWN AND DETAILED IN THESE PLANS. CONTRACTOR TO PHASE THE OVERALL EROSION CONTROL BASED ON INSTALLATION OF THE SEWER LINE. CONTRACTOR TO COORDINATE THE EROSION CONTROL INSTALLATION WITH PWC AND NCDQ.
- CONTRACTOR TO ATTEND TO THE EROSION CONTROL AND STREAM CROSSING DETAILS (EC-14 & EC-15) AS REQUIRED DURING THE INSTALLATION OF THE SEWER LINE. AT ALL STREAM CROSSINGS, CONTRACTOR SHALL ADHERE TO THE FOLLOWING SEQUENCE:
 - SET UP PUMP WITH SUCTION AND DISCHARGE HOSE.
 - INSTALL UP-STREAM COFFER DAM, COMPLETE WORK IN DRY AREAS, RESTORE STREAM, AND REMOVE UP-STREAM COFFERDAM.
 - INSTALL DOWN-STREAM COFFER DAM, COMPLETE WORK IN DRY AREAS, RESTORE STREAM, AND REMOVE DOWN-STREAM COFFERDAM.
 - THE PUMP MUST RUN CONTINUOUSLY WHILE WORKING IN THE STREAM.
 - STREAM BANKS MUST BE STABILIZED AT THE END OF EACH DAY.
 - CONTRACTOR TO TAKE ADDITIONAL EROSION CONTROL MEASURES AS NEEDED DURING STREAM AND WETLAND CROSSINGS. CONTRACTOR TO MINIMIZE THE IMPACTS TO STREAMS AND WETLANDS DURING INSTALLATION.
 - TEMPORARY INLET PROTECTION TO BE INSTALLED AS SHOWN ON THE PLANS. THESE DEVICES ARE TO REMAIN IN PLACE UNTIL THE SITE HAS BEEN STABILIZED AND APPROVAL FOR REMOVAL HAS BEEN GIVEN.
 - INSTALL STRAW WATTLE/CHECK DAMS AS SHOWN ON PLANS WHEN CONTRACTOR IS WORKING IN THESE AREAS. THE

- DEVICES ARE TO REMAIN IN PLACE UNTIL THE AREA IS STABILIZED AND APPROVAL FOR REMOVAL HAS BEEN GIVEN BY NCDQ-LAND QUALITY SECTION AND ENGINEER.
- FOR OPEN TRENCH CONSTRUCTION, INSTALL SANITARY SEWER AND BACKFILL TRENCH DAILY. WHEN BACKFILLING THESE AREAS, STABILIZATION SHALL BE INSTALLED PER THE LATEST NCDQ REQUIREMENTS.
- CONTRACTOR IS TO DEWATER THE OPENED TRENCH DAILY AS NEEDED BUT AT A MINIMUM AFTER EVERY RAINFALL EVENT. REFER TO DETAIL EC-26 FOR DEWATERING CONSTRUCTION SPECIFICATIONS AND REQUIREMENTS.
- WHEN STABILIZING WETLAND CROSSINGS, CONTRACTOR IS TO PLANT SEED PER THE RIPARIAN BUFFER AND WETLAND SEEDING SCHEDULE SHOWN ON DETAIL EC-4 ON THIS SHEET.
- CONTRACTOR TO STABILIZE STREAM BANKS PER DETAIL EC-17 OR DETAIL EC-22 AS SHOWN ON PLANS.
- CONTRACTOR SHALL STABILIZE WETLANDS, AND STREAM CROSSINGS AT THE TIME OF THE ACTUAL CROSSING. CONTRACTOR TO UTILIZE EXTREME CAUTION TO ENSURE THESE AREAS ARE STABILIZED AND THAT NO SEDIMENT ENROACHES DOWNSTREAM OF THESE CROSSINGS.
- SPOIL PLACEMENT SHALL BE ON THE UPSTREAM SIDE OF THE TRENCH ONLY. ANY ADDITIONAL EXCAVATED MATERIAL SHALL BE HAULLED OFF AND DISPOSED OF IN AN APPROVED LANDFILL AT THE CONTRACTOR'S EXPENSE. SPOILS SHALL BE MAINTAINED IN ACCORDANCE WITH THE SOIL STOCKPILE MAINTENANCE REQUIREMENTS OUTLINED IN DETAIL EC-10 ON THIS SHEET.
- CONTRACTOR TO UTILIZE SEDIMENT FILTER BAG FOR DEWATERING THE TRENCHES AS REQUIRED (REFER TO EC-19).
- REMOVE THESE MEASURES AND INSTALL PERMANENT SEEDING PER DETAIL EC-3 ON THIS SHEET.
- PLANS. THIS STABILIZATION IS TO BE COMPLETED DAILY.
- PERFORM SEEDING AND MULCHING AS REQUIRED IN ACCORDANCE WITH THE EROSION CONTROL (EC) DETAILS AND TECHNICAL SPECIFICATIONS.
- REMOVE TEMPORARY CONSTRUCTION ENTRANCES WHEN WORK IS COMPLETE IN AN AREA AND BRING AREAS BACK TO ORIGINAL GRADES AS REQUIRED.
- ONCE ALL GROUND COVER HAS BEEN ESTABLISHED IN A SPECIFIC AREA, THE CONTRACTOR SHALL CONTACT NCDQ-LAND QUALITY SECTION AND ENGINEER FOR SITE INSPECTION BEFORE REMOVING ANY TEMPORARY EROSION CONTROL MEASURES.
- ONCE AREA HAS BEEN APPROVED FOR REMOVAL OF EROSION AND SEDIMENTATION MEASURES, CONTRACTOR SHALL REMOVE THESE MEASURES AND INSTALL PERMANENT SEEDING PER DETAIL EC-3 ON THIS SHEET.
- AFTER THE ENTIRE SITE IS COMPLETELY STABILIZED, CONTRACTOR SHALL REQUEST PERMISSION FROM NCDQ-LAND QUALITY SECTION AND ENGINEER TO REMOVE ALL TEMPORARY MEASURES. ONCE APPROVAL IS GIVEN, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION AS REQUIRED AND ON ANY RESULTING BARE AREAS. REPAIR ANY AREAS DISTURBED DURING REMOVAL.

EC-1 EROSION CONTROL CONSTRUCTION SEQUENCE N.T.S.

- GENERAL EROSION AND SEDIMENT CONTROL NOTES:**
- ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NORTH CAROLINA EROSION AND SEDIMENTATION CONTROL PLANNING AND DESIGN MANUAL.
 - ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER RAINFALL EVENTS. NEEDED REPAIRS SHALL BE MADE IMMEDIATELY.
 - ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY NEED TO BE INSTALLED IF DEEMED NECESSARY BY EITHER THE ENGINEER OR ENVIRONMENTAL INSPECTOR.
 - TEMPORARY SEDIMENT CONTROL MEASURES (SILT FENCE, CONSTRUCTION ENTRANCE, ETC.) SHALL BE MAINTAINED UNTIL ALL CONTRIBUTING AREAS ARE GRADED AND STABILIZED.
 - DUST ON SITE SHALL BE MINIMIZED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION IS STRICTLY PROHIBITED.
 - IF THE MAJORITY OF MUD OR DIRT IS NOT REMOVED FROM CONSTRUCTION TRAFFIC BY CONSTRUCTION ENTRANCES, CONTRACTOR SHALL CONSTRUCT VEHICLE WASH AREAS AT CONSTRUCTION TRAFFIC EXIT POINTS. MUD AND DIRT SHALL BE INTERCEPTED AND TRAPPED BEFORE WASH WATER IS ALLOWED TO BE DISCHARGED OFFSITE. RINSE-OFF WILL NOT BE ALLOWED OUTSIDE THE PROJECT CONSTRUCTION LIMITS.
 - SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT REACHES 1-FOOT DEEP.
 - MAXIMUM GRADED SLOPE SHALL NOT EXCEED 3:1.
 - NO CONCRETE OR CEMENT SLURRY SHALL BE DISCHARGED FROM THE SITE. ANY HARDENED CONCRETE RESIDUE WILL BE DISPOSED OF, OR RECYCLED OFF SITE, IN ACCORDANCE WITH LOCAL AND STATE SOLID WASTE REGULATIONS.
 - ALL SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT PER THE STABILIZATION TIMEFRAMES PER THE LATEST NCDQ REQUIREMENTS. REFER TO EROSION CONTROL DETAILS FOR ADDITIONAL REQUIREMENTS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A PERMIT FOR ANY BORROW AND/OR SPOIL AREAS OR DISTURBED AREAS NOT SHOWN ON THESE PLANS. THIS SHALL INCLUDE ALL COST ASSOCIATED WITH OBTAINING PERMIT.
 - CONTRACTOR SHALL FOLLOW EROSION CONTROL CONSTRUCTION SEQUENCE UNLESS GIVEN WRITTEN APPROVAL FROM ENGINEER FOR VARIANCE.
 - LIMITS OF DISTURBANCE SHALL BE PHASED THROUGHOUT THE PROJECT SITE. DISTURBANCE TIMEFRAMES FOR TEMPORARY STREAM AND WETLAND CROSSINGS ARE TO BE MINIMIZED. CONTRACTOR TO COORDINATE THE DISTURBANCE LENGTH WITH THE PWC AND NCDQ.
 - IF RIP-RAP IS NOT REQUIRED AND STRAW WITH NET LINER IS TO BE USED, WATER COURSE SHALL BE SEEDED PER SIDE DITCH SEEDING SCHEDULE DETAIL USING SEEDBED PREPARATION SCHEDULE DETAIL.
 - TOTAL DISTURBED AREA IS 53.56 ACRES (CONTRACT II - 17.15 ACRES)
 - IN AREAS WHERE RIP-RAP IS TO BE INSTALLED, THE CONTRACTOR IS TO INSTALL PER DETAIL EC-22.
 - WOODMAT SHALL HAVE SIDE PANELS TO PREVENT MATERIAL FROM FALLING OFF THE SIDES AND INTO THE STREAM.
 - IN SOME CASES A WATER BAR ABOVE STREAM CROSSING MAY BE NEEDED TO PREVENT RUNOFF ON THE CONSTRUCTION ENTRANCE FLOWING DOWN TO THE STREAM.
 - ALL WORK WITHIN BUFFERS AND WETLANDS SHALL BE STABILIZED AT THE END OF EACH WORK DAY (COVER STOCKPILES WITH MATTING/TARPS, SEED/MULCH, ETC). DISTURBANCES OF UPLAND AREAS SHALL BE LIMITED TO LENGTHS THAT CAN BE STABILIZED AT THE END OF EACH WORK DAY.
 - COMPOST SOOK MAY BE SUBSTITUTED FOR SILT FENCE OUTLET GRAVEL, SLOPE BREAKS, CHECK DAMS AND INLET PROTECTION. THE COMPOST SOOK MUST BE INSTALLED PER MANUFACTURER SPECIFICATIONS. THEY MUST BE SIZED TO PREVENT OVERTOPPING. FOR SILT FENCE OUTLETS, THE INSTALLED HEIGHT CAN BE NO LESS THAN 16 INCHES. WATTLES, COIR LOGS, FILTER LOGS, ETC. ARE NOT ACCEPTABLE FOR THESE USES.
 - UTILIZE SILT FENCE J-HOOKS AT SILT FENCE OUTLET LOCATIONS IN WHICH THE RUNOFF FLOW DIRECTION IS PARALLEL TO THE OUTLET. THIS WILL HELP PREVENT OUTLET BYPASS AND REDUCE RUNOFF ALONG THE SILT FENCE.
 - PLACE A LAYER OF SAND, SCREENINGS OR FINES ON PAVED SURFACES PRIOR TO DEPOSITION OF EXCAVATED MATERIALS. THESE AREAS ARE TO BE WITHIN THE PERMITTED LIMITS OF DISTURBANCE.
 - AFTER THE PERMANENT CESSATION OF CONSTRUCTION ACTIVITIES, ANY AREAS WITH TEMPORARY GROUND STABILIZATION SHALL BE CONVERTED TO PERMANENT GROUND STABILIZATION WITHIN 15 WORKING DAYS, OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING THE LAST LAND-DISTURBING ACTIVITY.

- SOIL STOCKPILE MAINTENANCE REQUIREMENTS:**
- EXCAVATED MATERIAL FROM TRENCHES ARE TO BE PLACED ON THE UPSTREAM SIDE OF THE TRENCH. NO ADDITIONAL "STOCKPILE" AREAS ARE TO BE UTILIZED OUTSIDE OF THE EXISTING LIMITS OF DISTURBANCE.
 - SEEDING OR COVERING OF STOCKPILES WITH TARP OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEPT IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDER THE PLASTIC.
 - THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE(S) ARE IN USE.
 - STOCKPILE HEIGHT SHALL NOT EXCEED 10 FEET TALL.
 - STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.

EC-1a EROSION CONTROL NOTES N.T.S.

- RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING**
- SEEDING MIXTURE:
- SPECIES: RATE (lb/acre):
- RYE (GRAIN) 120
- ANNUAL LESPEDEZA (KOBE IN PIEDMONT & COASTAL PLAIN, KOREAN IN MOUNTAINS) 50

- OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE
- SEEDING DATES:
- MOUNTAINS (ABOVE 2,500'): FEB. 15 - MAY 15
- (BELOW 2,500'): FEB. 1 - MAY 1
- PIEDMONT: JAN. 1 - MAY 1
- COASTAL PLAIN: DEC. 1 - APR. 15

- SOIL AMENDMENTS:**
- FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER.

- MULCH:**
- APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT (min. 400 gal/acre), NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

- MAINTENANCE:**
- REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

- RECOMMENDATIONS FOR FALL**
- SEEDING MIXTURE:
- SPECIES: RATE (lb/acre):
- RYE (GRAIN) 120

- SEEDING DATES:
- MOUNTAINS: AUG. 15 - DEC. 15
- COASTAL PLAIN AND PIEDMONT: AUG. 15 - DEC. 30

- SOIL AMENDMENTS:**
- FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER

- MULCH:**
- APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT (min. 400 gal/acre), NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL. IF CRIMPING IS TO BE USED, INSTALL 1/2 OF THE MULCH, THEN CRIMP, AND INSTALL THE OTHER 1/2 OF MULCH ON TOP.

- MAINTENANCE:**
- REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 lb/acre OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 lb/acre KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

- RECOMMENDATIONS FOR SUMMER**
- SEEDING MIXTURE:
- SPECIES: RATE (lb/acre):
- GERMAN MILLET 40

- IN THE PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 lb/acre.
- SEEDING DATES:
- MOUNTAINS: MAY 15 - AUG. 15
- PIEDMONT: MAY 1 - AUG. 15
- COASTAL PLAIN: APR. 15 - AUG. 15

- SOIL AMENDMENTS:**
- FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER

- MULCH:**
- APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT (min. 400 gal/acre), NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL. IF CRIMPING IS TO BE USED, INSTALL 1/2 OF THE MULCH, THEN CRIMP, AND INSTALL THE OTHER 1/2 OF MULCH ON TOP.

- MAINTENANCE:**
- REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

EC-2 TEMPORARY SEEDING SCHEDULE N.T.S.

- RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING**
- SEEDING MIXTURE:
- SPECIES: RATE (lb/acre):
- TALL FESCUE 300
- KOBE LESPEDEZA 40

- NURSE PLANTS:**
- BETWEEN MAY 1 AND AUG. 15, ADD 10 lb/acre GERMAN MILLET OR 15 lb/acre SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG. 15, ADD 40 lb/acre RYE (GRAIN)

- SEEDING DATES:
- BEST: AUG. 15 - SEPT. 15 POSSIBLE: AUG. 20 - OCT. 25
- LATE WINTER: FEB. 15 - MAR. 21 FEB. 1 - APR. 15.

- FALL IS BEST FOR TALL FESCUE AND LATER WINTER FOR LESPEDEZAS. OVERSEEDING OF DOBE LESPEDEZA OVER FALL-SEEDED TALL FESCUE IS VERY EFFECTIVE.

- SOIL AMENDMENTS:**
- FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER

- MULCH:**
- APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT (min. 400 gal/acre), NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL. *

- MAINTENANCE:**
- REFERTILIZE IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. MAY BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY. RESEED, FERTILIZE AND MULCH DAMAGED AREAS IMMEDIATELY.

- RECOMMENDATIONS FOR GRASS-LINED CHANNELS**
- SEEDING MIXTURE:
- SPECIES: RATE (lb/acre):
- TALL FESCUE 300

- NURSE PLANTS:**
- BETWEEN MAY 1 AND AUG. 15, ADD 10 lb/acre SUDANGRASS OR 15 lb/acre GERMAN MILLET. PRIOR TO MAY 1 OR AFTER AUG. 15, ADD 40 lb/acre RYE (GRAIN)

- SEEDING DATES:
- BEST: AUG. 25 - OCT. POSSIBLE: FEB. - APR. 15

- AVOID SEEDING FROM NOV. TO JAN. IF SEEDING MUST BE DONE AT THIS TIME, ADD 40 lb/acre RYE GRAIN AND USE A CHANNEL LINING THAT OFFERS MAXIMUM PROTECTION

- SOIL AMENDMENTS:**
- FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 4,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 1,000 lb/acre 10-10-10 FERTILIZER

- MULCH:**
- USE ROLLED EROSION CONTROL PRODUCT TO COVER THE BOTTOM OF THE CHANNELS AND DITCHES, AND STAPLE SECURELY. THE LINING SHOULD EXTEND TO THE TOP OF BANK, ON CHANNEL SIDE SLOPES ABOVE THIS HEIGHT, AND IN DRAINAGES NOT REQUIRING TEMPORARY LININGS, APPLY 4,000 lb/acre GRASS STRAW, AND ANCHOR STRAW BY STAPLING NETTING OVER THE TOP.

- MULCH AND ANCHORING MATERIALS MUST NOT BE ALLOWED TO WASH DOWN SLOPES WHERE THEY CAN CLOG DRAINAGE DEVICES.

- MAINTENANCE:**
- INSPECT AND REPAIR MULCH FREQUENTLY. REFERTILIZE IN LATE WINTER OF THE FOLLOWING YEAR; USE SOIL TESTS OR APPLY 150 lb/acre 10-10-10. MOW REGULARLY TO A HEIGHT OF 2-4 INCHES.

- RECOMMENDATIONS FOR RIPARIAN BUFFERS AND WETLANDS**
- SEEDING MIXTURE:
- RECOMMENDED APPLICATION RATE: 20-25 LBS. PER ACRE

SPECIES	COMMON NAME	PERCENT
ELYMUS VIRGINICUS	MIRGONIA WILD RYE	15
PANICUM VIRGATUM	SWITCHGRASS	15
AGROSTIS STOLONIFERA	CREeping BENTGRASS	10
RUDBECKIA HIRTA	BLACK-EYED SUSAN	10
COROPHIS LANCOLATA	COROPHIS	10
PANICUM CLANDESTINUM	DEER TONGUE	5
ANDROPOGON GERARDI	BIG BLUESTEM	5
LINDCUS EFUSUS	SOFT RUSH	5
ECHINOCHLOA MURICATA	AWNED BARNYARD GRASS	5
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	5
SORGHASTRUM NUTANS	INDIAN GRASS	5
TRIPESACUM DACTYLOIDES	GAMMA	5

AS SPECIFIED BY MELLOW MARSH IN SILER CITY OR APPROVED EQUAL.

- SEEDING DATES:**
- BEST: MAR. 1 - MAY 1
- POSSIBLE: OCT. - FEB.

- NO SEEDING FROM JUNE TO SEPTEMBER.

- SOIL AMENDMENTS:**
- CONTRACTOR TO WORK COMPOST INTO THE SOILS SURFACE AT A MINIMUM OF 2 INCHES.
- FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 1,500 lb/acre GROUND AGRICULTURAL LIMESTONE.

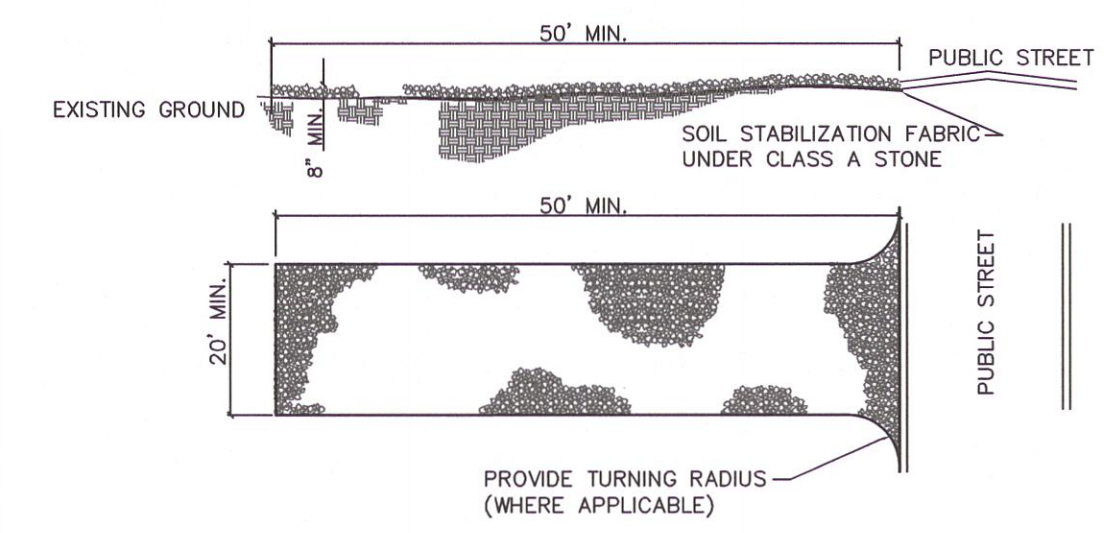
- MAINTENANCE:**
- INSPECT AND REPAIR MULCH FREQUENTLY. MOWING IN AUGUST - SEPTEMBER ONLY TO HELP DISPERSE SEEDS.

NOTES:

- SEE NCDENR'S EROSION AND SEDIMENT CONTROL PLANNING DESIGN MANUAL SECTION 6.11 FOR ADDITIONAL PERMANENT SEEDING OPTIONS.
- IF CRIMPING IS TO BE USED, INSTALL 1/2 OF THE MULCH, THEN CRIMP, AND INSTALL THE OTHER 1/2 OF MULCH ON TOP.

EC-3 PERMANENT SEEDING SCHEDULE N.T.S.

- SOIL STOCKPILE MAINTENANCE REQUIREMENTS:**
- A STABILIZED ENTRANCE PAD OF 2-3 INCH COURSE AGGREGATE SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR EXIT THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
 - FILTER FABRIC OR COMPACTED CRUSHER RUN STONE SHALL BE USED AS A BARRIER FOR THE CONSTRUCTION ENTRANCE.
 - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT, AND REPAIR OR CLEAN-OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 - ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS MUST BE REMOVED IMMEDIATELY.
 - WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN. SEE DETAIL, THIS SHEET.



EC-4 TEMP. CONSTRUCTION ENTRANCE N.T.S.

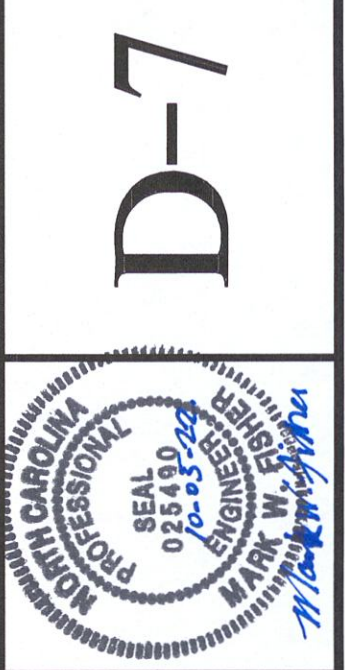
- SEEDBED PREPARATION:**
- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, WHERE REQUIRED.
 - RIP THE ENTIRE AREA TO A 6 INCHES DEPTH.
 - REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
 - APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE EC-4).
 - CONTINUE TILLAGE UNTIL A WELL - PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
 - SEE EC-4 FOR PERMANENT SEEDING SCHEDULE.
 - SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
 - MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
 - INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
 - CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

EC-2 SEEDBED PREPARATION N.T.S.

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DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AMB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	HMP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	HMP
04.30.2021	FINAL DESIGN - CONTRACT REVISIONS	HMP
04.19.2022	FINAL DESIGN - REVISIONS	HMP
09.30.2022	FINAL DESIGN - CONTRACT REVISIONS	HMP

SURVEYED BY: MCKIMCREED, INC.	DATE: 9/30/22
PROCESS/LAYOUT BY: TMB/AMB	DATE: 9/30/22
PLAN/PROF. (S&S) BY: BRL	DATE: 9/30/22
DESIGN REVIEW BY: BRL	DATE: 9/30/22
APPROVED BY: BRL	DATE: 9/30/22
SCALE: AS SHOWN	



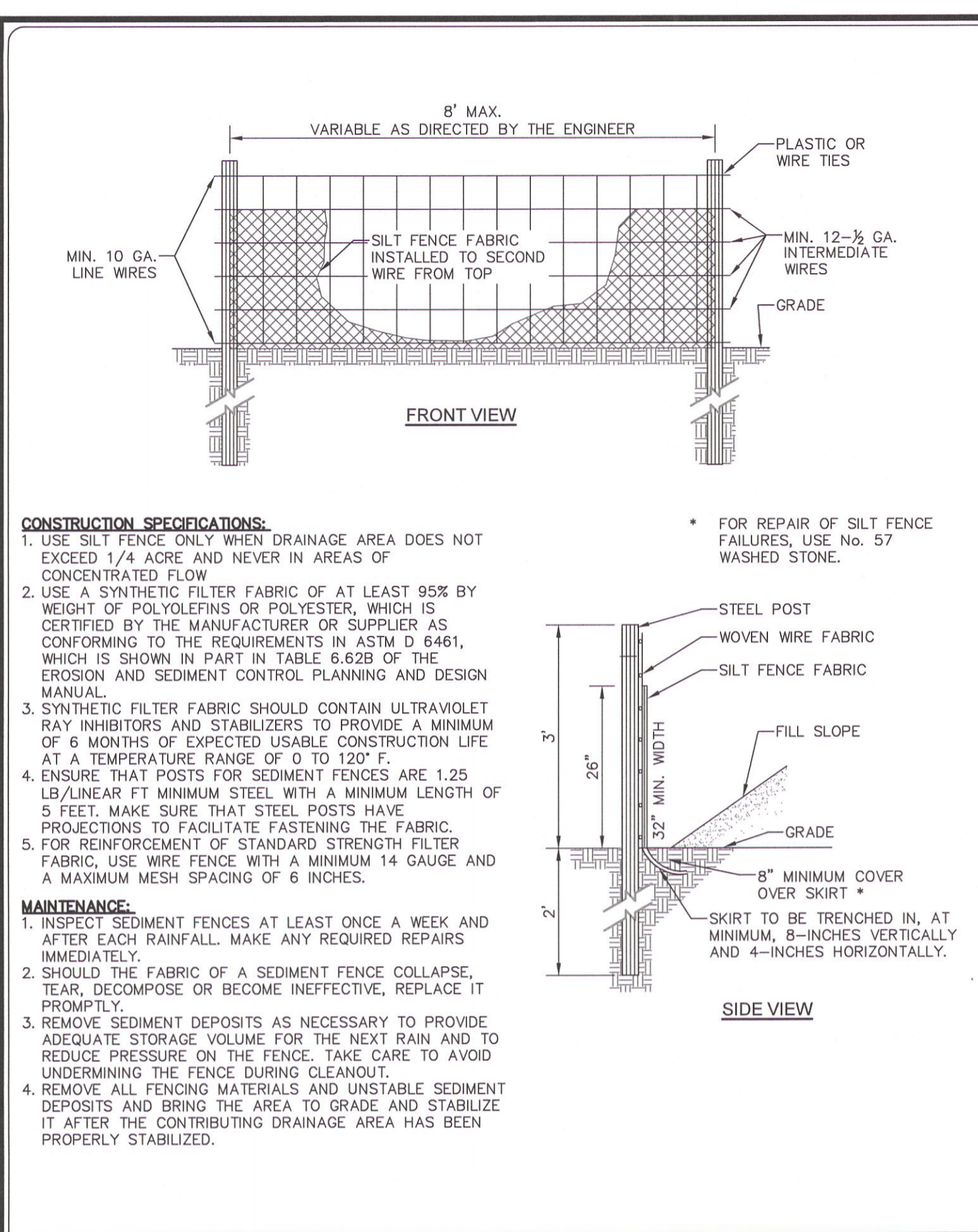
SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
STANDARD EROSION CONTROL DETAILS

PWC WATER RESOURCES ENGINEERING
P.O. Box 1089, Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28301

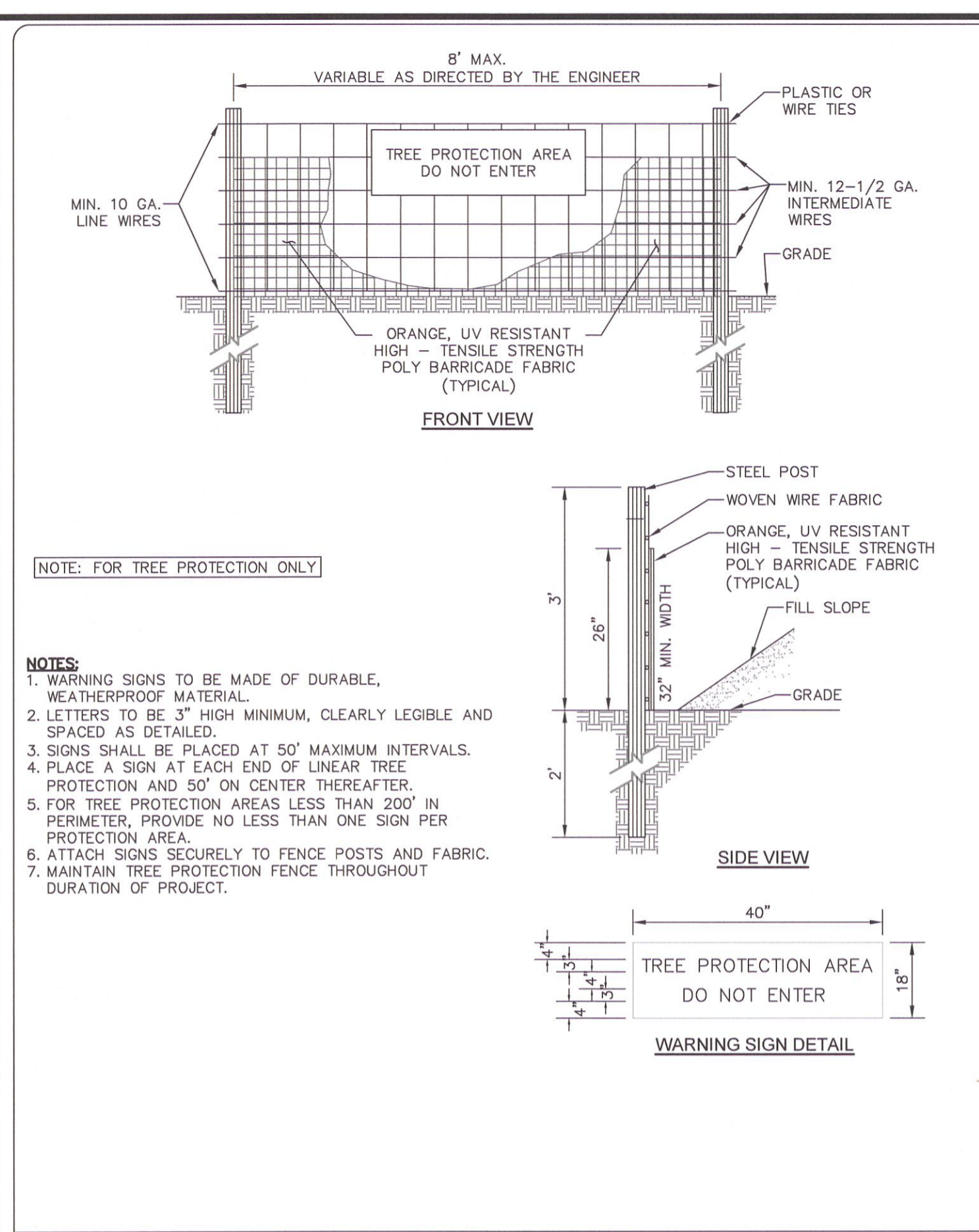


FINAL DESIGN
ISSUED FOR BID

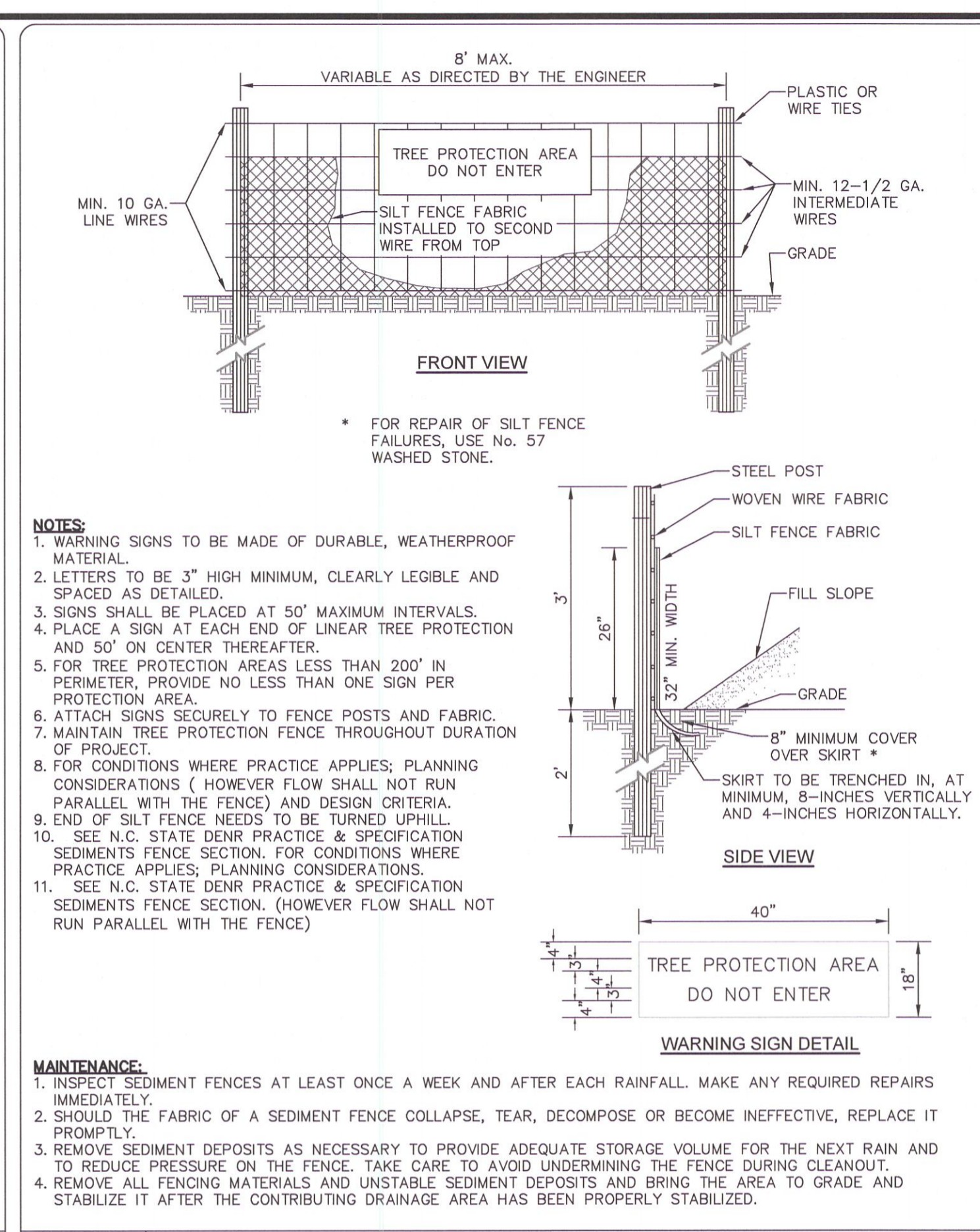
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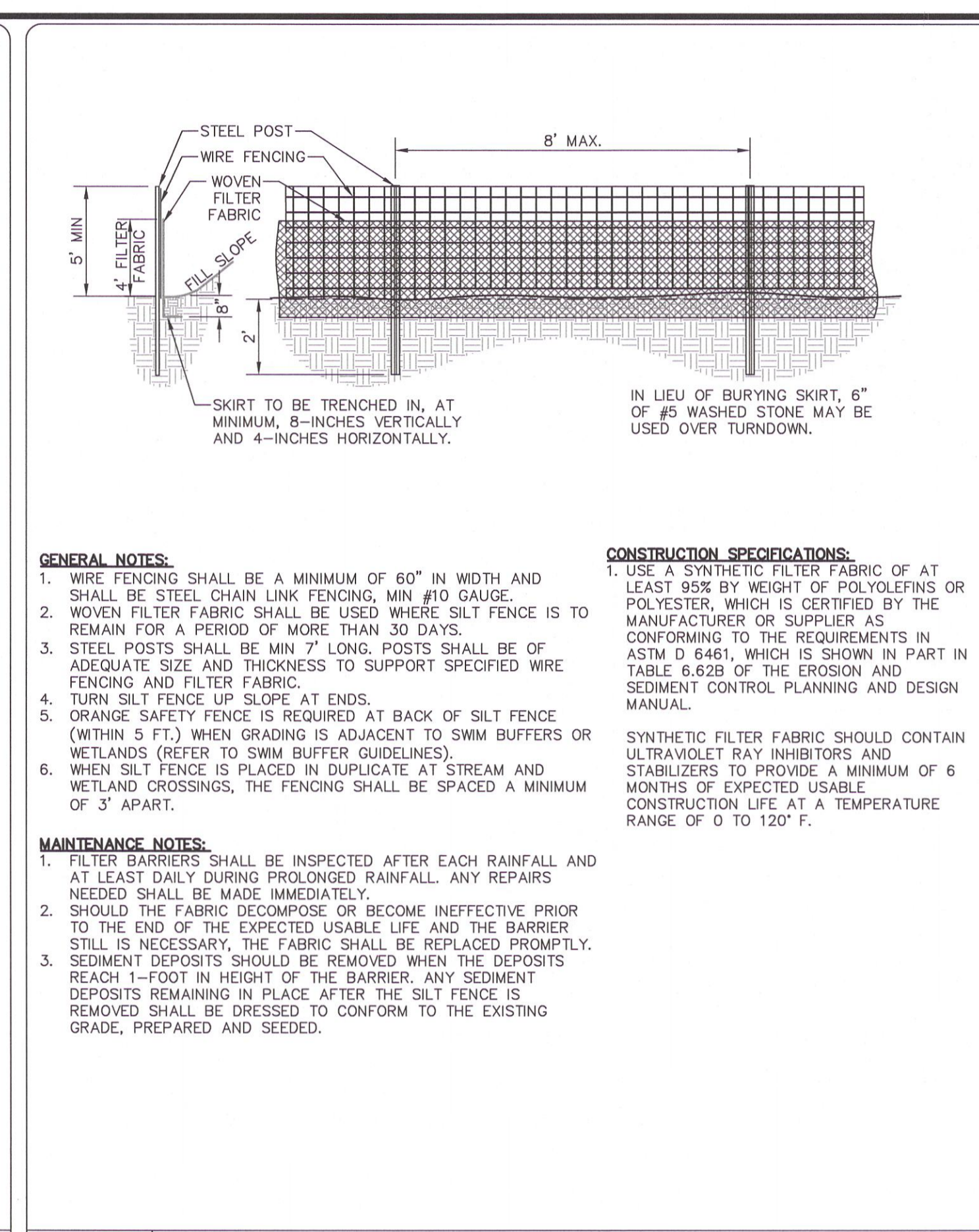
EC-6 TEMPORARY SILT FENCE N.T.S.



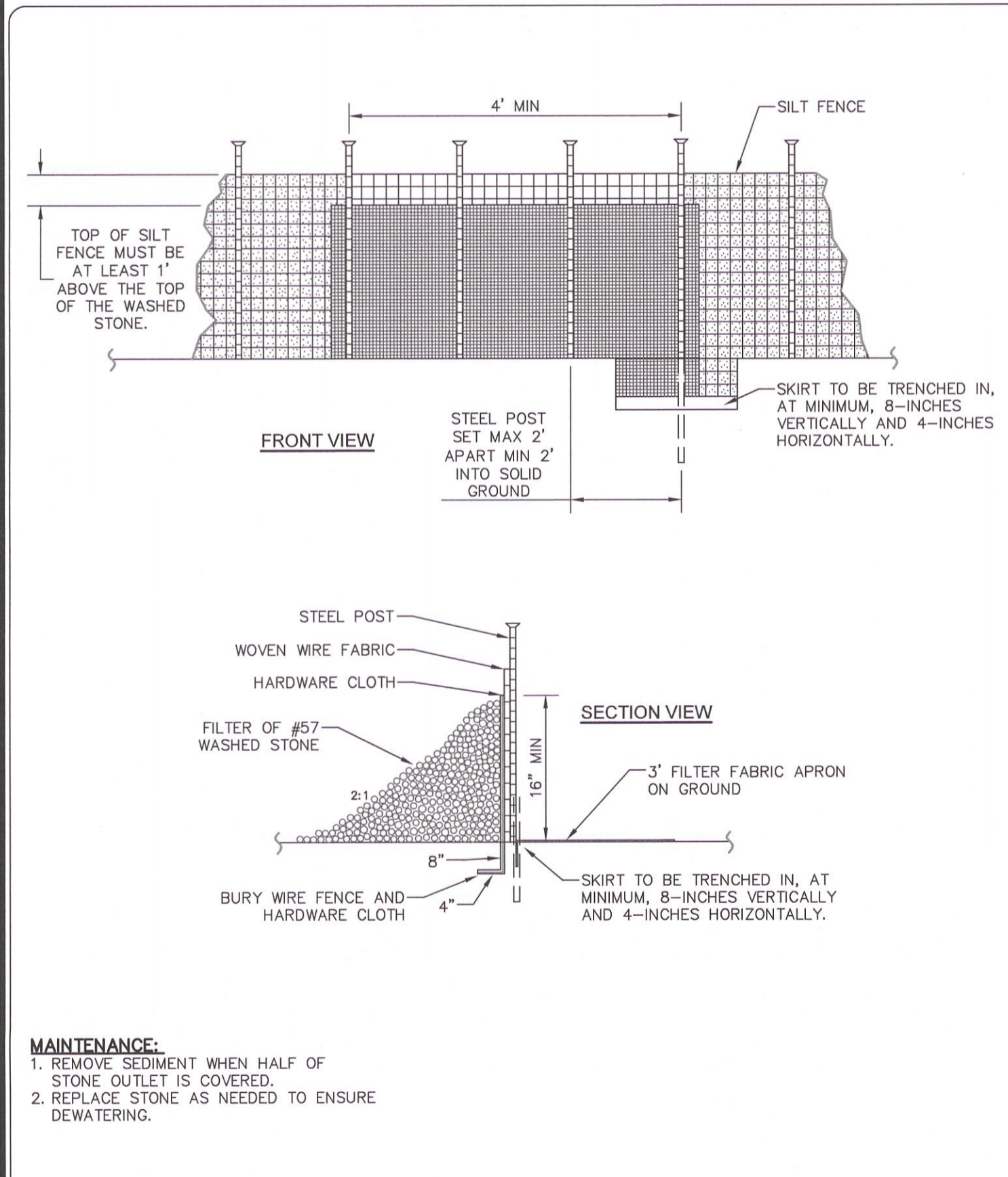
EC-7 TEMPORARY TREE PROTECTION FENCE N.T.S.



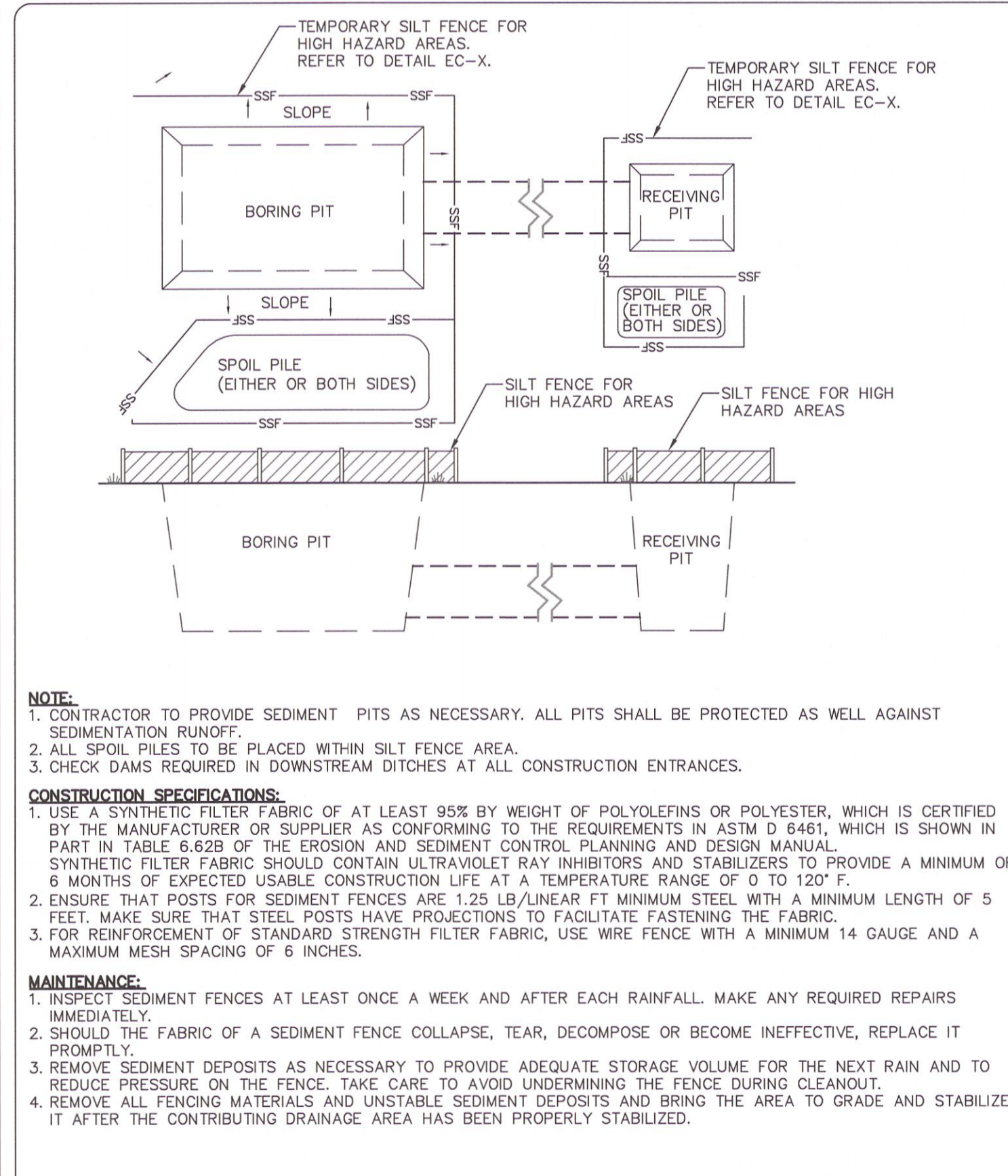
EC-8 TEMP. SILT/TREE PROTECTION FENCE N.T.S.



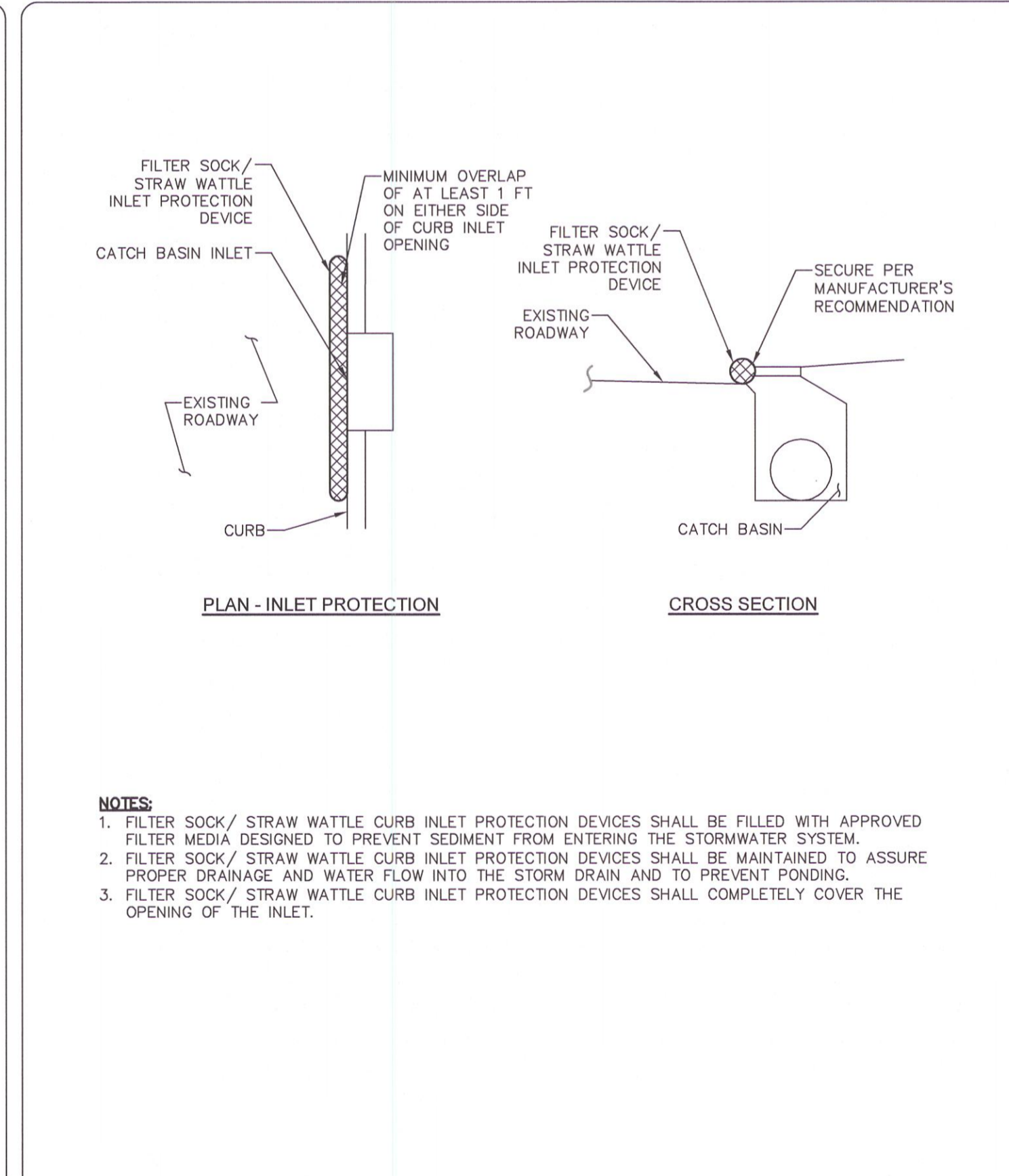
EC-9 TEMP. HIGH HAZARD SILT FENCE N.T.S.



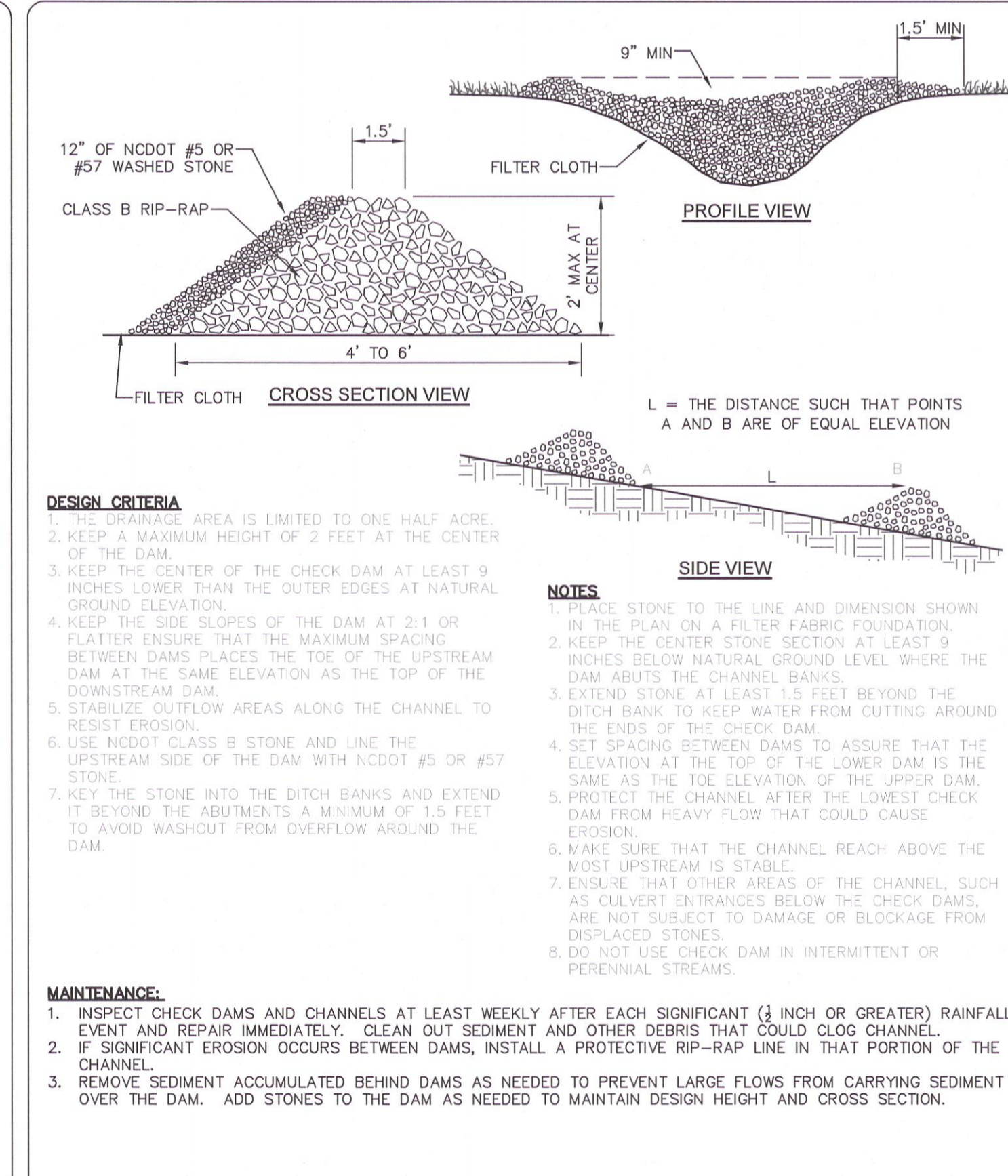
EC-10 SILT FENCE OUTLET N.T.S.



EC-11 SILT FENCE LAYOUT AT PIT LOCATIONS N.T.S.



EC-12 TEMP. WATTLE CURB INLET PROTECTION N.T.S.



EC-13 STONE CHECK DAM N.T.S.

DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN FOR CONSTRUCTION	AWB
12.16.2020	FINAL DESIGN FOR CONSTRUCTION	MPF
12.21.2020	FINAL DESIGN FOR CONSTRUCTION	MPF
06.30.2021	FINAL DESIGN - CONTRACT SIGNATURE AND REVISIONS	MPF
04.15.2022	FINAL DESIGN - BEST ENHANCEMENT REVISIONS	MPF
09.30.2022	FINAL DESIGN ISSUED FOR BID	MPF

SHEET D-8

DATE: 9/30/22

PROCESS LAYOUT BY: TMB/AMB

DESIGN (S/S) BY: BRL

DESIGN REVIEW BY: BRL

APPROVED BY: AS SHOWN

SCALE: AS SHOWN

D-8

PROFESSIONAL SEAL
025440
MAY 11, 2011
MCKIM & CREED, INC.

SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2

STANDARD EROSION CONTROL DETAILS

FAYETTEVILLE PUBLIC WORKS COMMISSION

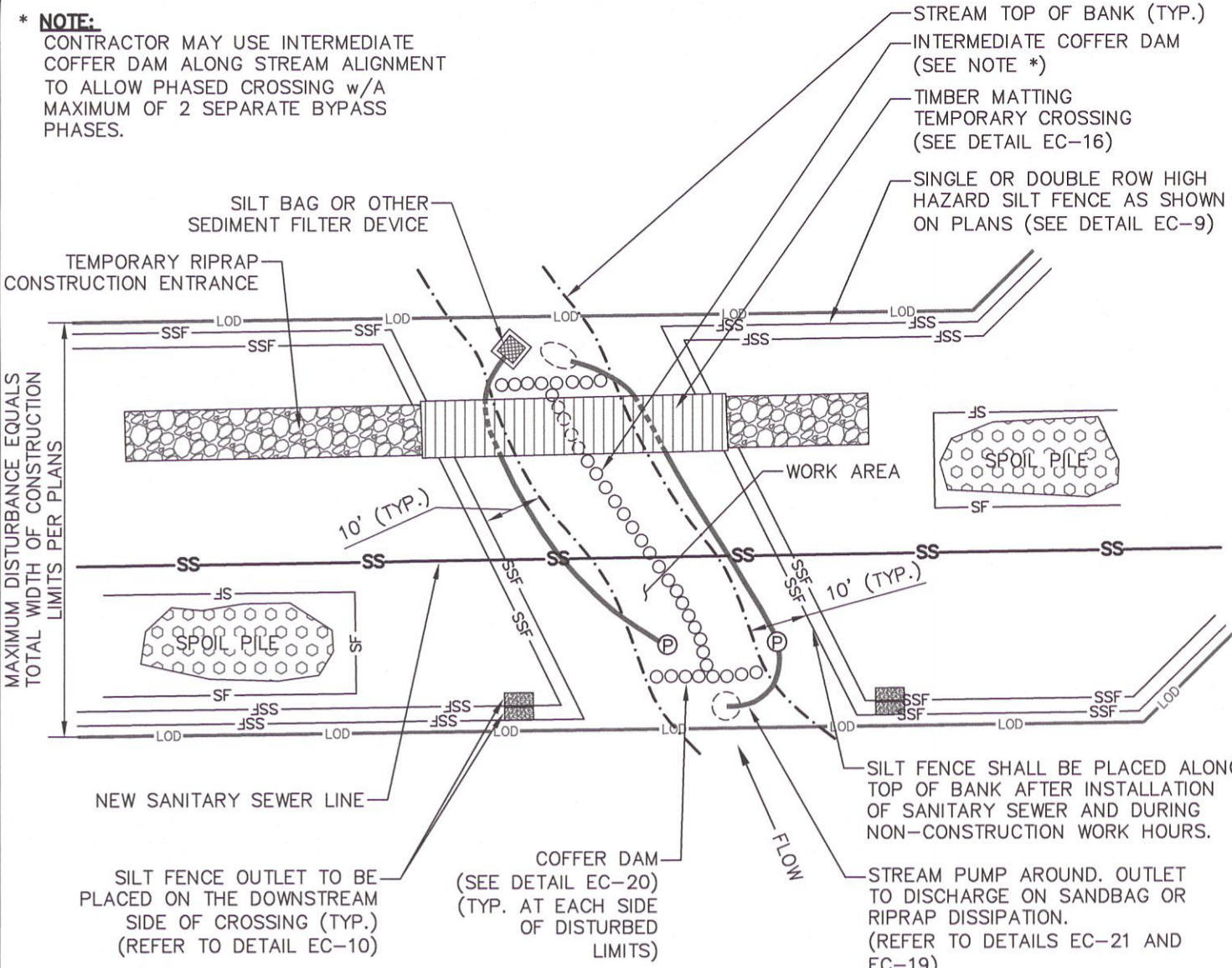
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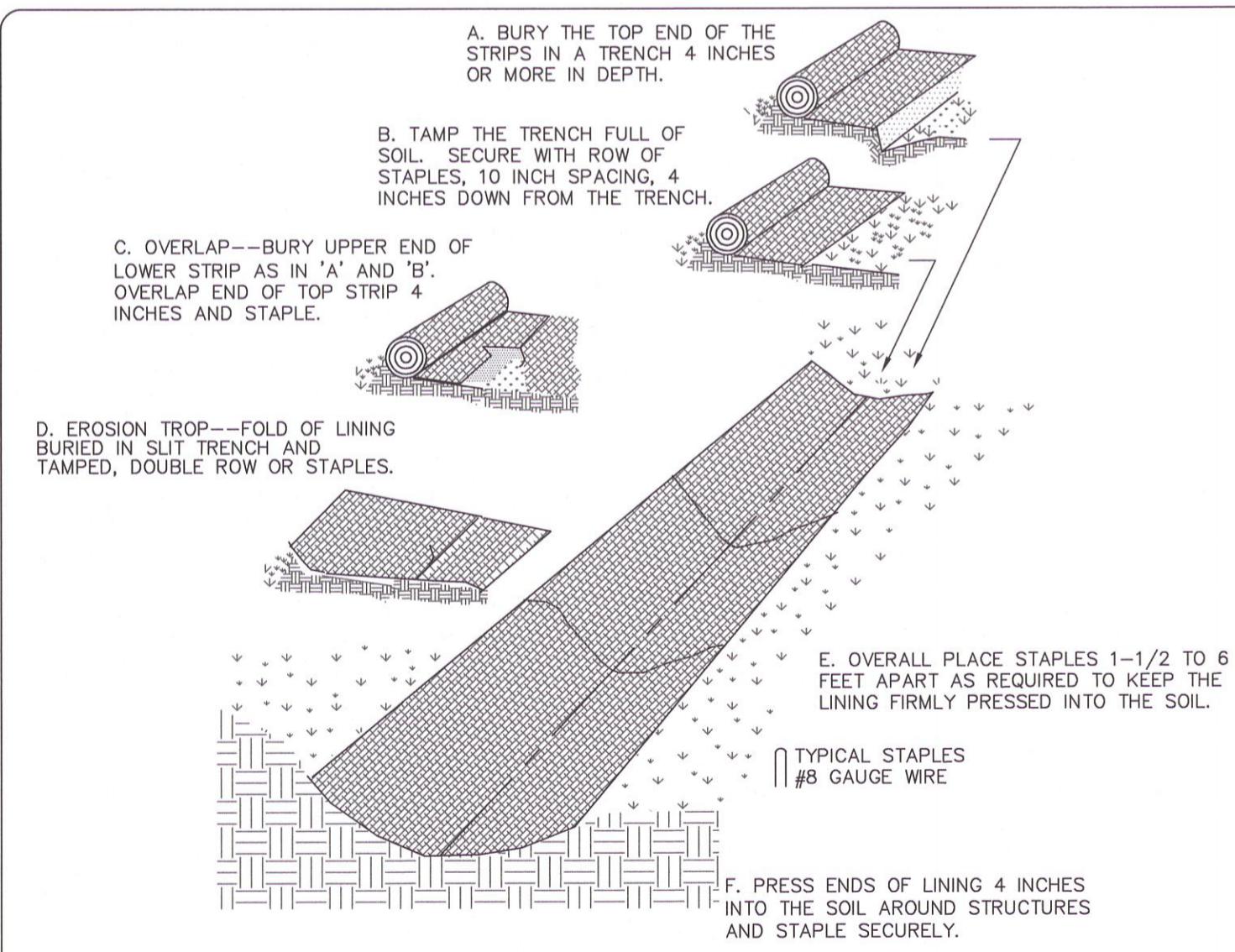


- CONSTRUCTION SPECIFICATIONS:**
- KEEP CLEARING AND EXCAVATION OF THE STREAM BANKS AND BED AND APPROACH SECTIONS TO A MINIMUM.
 - DIVERT ALL SURFACE WATER FROM THE CONSTRUCTION SITE ONTO UNDISTURBED AREAS ADJOINING THE STREAM.
 - KEEP STREAM CROSSING AT RIGHT ANGLES TO THE STREAM FLOW.
 - ALIGN ROAD APPROACHES WITH THE CENTER LINE OF THE CROSSING FOR A MINIMUM DISTANCE OF 30 FEET. RAISE BRIDGE ABUTMENTS AND CULVERT FILLS A MINIMUM OF 1 FOOT ABOVE THE ADJOINING APPROACH SECTIONS TO PREVENT EROSION FROM SURFACE RUNOFF AND TO ALLOW FLOOD FLOWS TO PASS AROUND THE STRUCTURE.
 - STABILIZE ALL DISTURBED AREAS SUBJECT TO FLOWING WATER, INCLUDING PLANNED OVERFLOW AREAS, WITH RIPRAP OR OTHER SUITABLE MEANS IF DESIGN VELOCITY EXCEEDS THE ALLOWABLE FOR THE IN-PLACE SOIL.
 - ENSURE THAT BYPASS CHANNELS NECESSARY TO DEWATER THE CROSSING SITE ARE STABLE BEFORE DIVERTING THE STREAM. UPON COMPLETION OF THE CROSSING, FILL, COMPACT, AND STABILIZE THE BYPASS CHANNEL APPROPRIATELY.
 - REMOVE TEMPORARY STREAM CROSSINGS IMMEDIATELY WHEN THEY ARE NO LONGER NEEDED. RESTORE THE STREAM CHANNEL TO ITS ORIGINAL CROSS-SECTION, AND SMOOTH AND APPROPRIATELY STABILIZE ALL DISTURBED AREAS.
 - ANY IN-STREAM SEDIMENT CONTROL MEASURES MUST BE REMOVED UPON STABILIZATION OF THE AREA.

- IMPLEMENTATION SEQUENCE:**
SEDIMENT CONTROL MEASURES, PUMP-AROUND PRACTICES FOR STREAM CROSSINGS, AND ASSOCIATED CONSTRUCTION SHALL BE COMPLETED IN THE FOLLOWING SEQUENCE (REFER TO DETAIL).
- THE INTENT OF THIS CONSTRUCTION SEQUENCE IS TO PROVIDE THE CONTRACTOR WITH A GENERAL GUIDE FOR CONSTRUCTION PURPOSES. THIS SEQUENCE IS NOT INTENDED TO OUTLINE ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.
 - CONTRACTOR TO INSTALL SUPER SILT FENCE AND SILT FENCE OUTLETS PER THE PLANS.
 - PUMP AROUND DEVICES SHALL BE INSTALLED PER THE IMPLEMENTATION SEQUENCE SHOWN ON DETAIL EC-21.
 - TIMBER MATTING SHALL BE INSTALLED PER DETAIL EC-16.
 - ONCE THE TEMPORARY PUMP AROUND HAS BEEN INSTALLED, THE CONTRACTOR SHALL INSTALL THE SEWER LINE AS SHOWN IN THESE PLANS.
 - CONTRACTOR TO MAINTAIN THE PUMP AROUND AT EACH STREAM CROSSING TO PREVENT ANY SEDIMENT FROM LEAVING THE WORK AREA.
 - ONCE THE INSTALLATION OF THE SEWER LINE HAS BEEN INSTALLED AT A STREAM CROSSING, THE CONTRACTOR IS TO RESTORE THE STREAM AND BANKS TO PRE-CONSTRUCTION GROUND ELEVATIONS.
 - THE CONTRACTOR IS TO STABILIZE THE SLOPES PER DETAIL EC-22 OR EC-17 AND THE PROJECT SPECIFICATIONS. CONTRACTOR SHALL ESTABLISH STABILIZED GROUND COVER WITHIN 7 DAYS WITHIN RIPARIAN BUFFER ZONES.

- MAINTENANCE:**
- INSPECT TEMPORARY STREAM CROSSINGS AFTER RUNOFF-PRODUCING RAINS TO CHECK FOR BLOCKAGE IN CHANNEL, EROSION OF ABUTMENTS, CHANNEL SCOUR, RIPRAP DISPLACEMENT, OR PIPING. MAKE ALL REPAIRS IMMEDIATELY TO PREVENT FURTHER DAMAGE TO THE INSTALLATION.

EC-14 TEMPORARY STREAM CROSSING N.T.S.

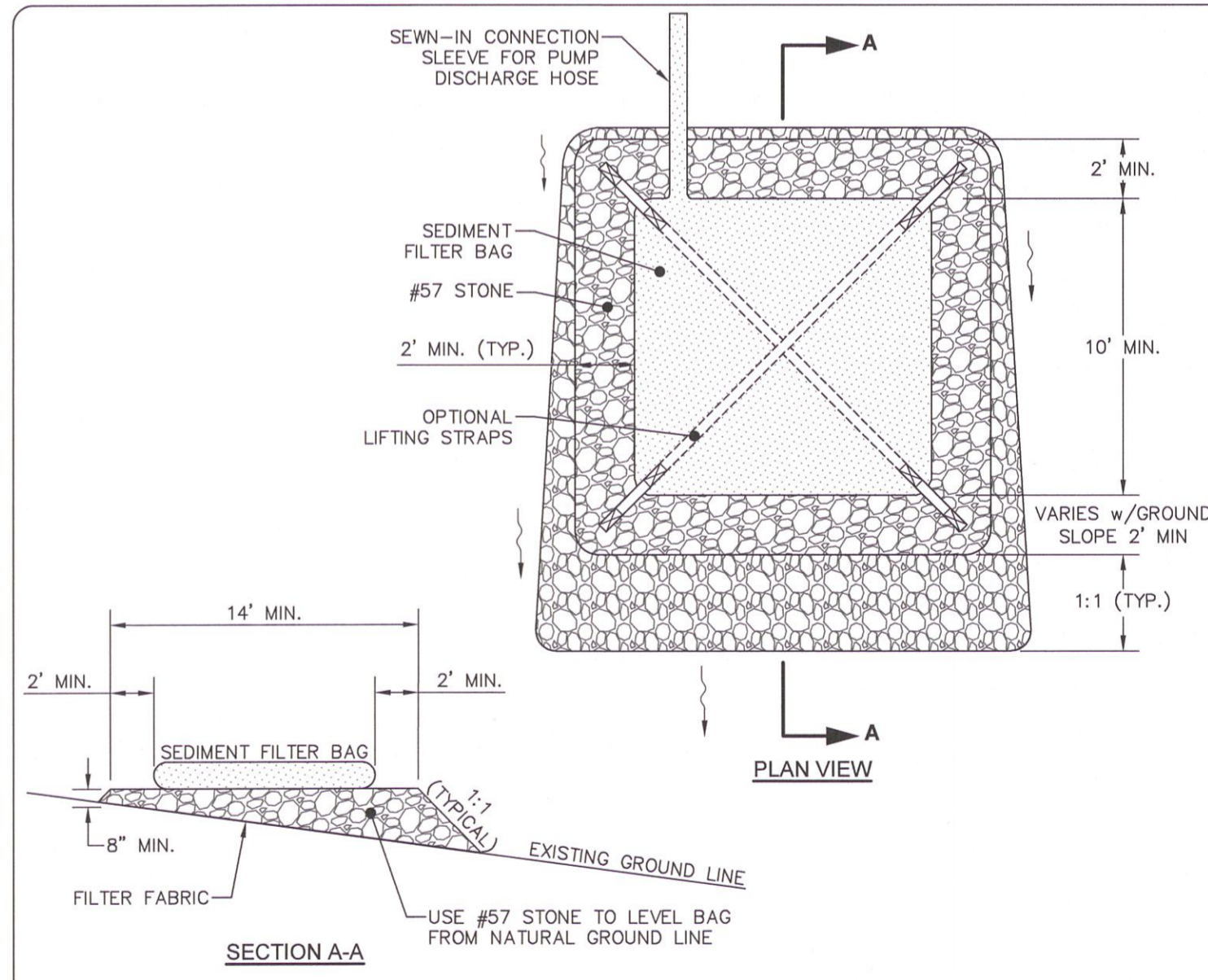


- CONSTRUCTION SPECIFICATIONS:**
1. FILTER BAG IS TO BE PLACED ON A LEVEL BED OF AGGREGATE.
 2. INSERT THE DISCHARGE HOSE AND SECURE IT TIGHTLY PER MANUFACTURER RECOMMENDATIONS.
 3. THE BAG IS TO BE MONITORED TO AVOID RUPTURE OR EXCESSIVE LEAKAGE AROUND THE DISCHARGE HOSE.
 4. SEDIMENT FILTER BAG AND THE CAPTURED SEDIMENT SHOULD BE DISPOSED OF PER LOCAL REGULATIONS.
- MAINTENANCE:**
1. INSPECT TEMPORARY STREAM CROSSINGS AFTER RUNOFF-PRODUCING RAINS TO CHECK FOR BLOCKAGE IN CHANNEL, EROSION OF ABUTMENTS, CHANNEL SCOUR, RIPRAP DISPLACEMENT, OR PIPING. MAKE ALL REPAIRS IMMEDIATELY TO PREVENT FURTHER DAMAGE TO THE INSTALLATION.

EC-17 TEMPORARY STRAW WITH NET LINER N.T.S.

- MAINTENANCE:**
1. INSPECT ROLLED EROSION CONTROL PRODUCTS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAIN FALL EVENT REPAIR IMMEDIATELY.
 2. GOOD CONTACT WITH THE GROUND MUST BE MAINTAINED, AND EROSION MUST NOT OCCUR BENEATH THE RECP. ANY AREAS OF THE STRAW WITH NET LINER THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
 3. IF EROSION OCCURS DUE TO POORLY CONTROLLED DRAINAGE, THE PROBLEM SHALL BE FIXED AND THE ERODED AREA PROTECTED.
 4. MONITOR AND REPAIR THE RECP AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.
 5. **STABILIZATION NOTE:** STABILIZED GROUND COVER MUST BE ESTABLISHED WITHIN 7 DAYS IN AREAS WHERE SLOPES ARE STEEPER THAN 3:1 (SEE NCDOT REQUIREMENTS SHEET D-6)

EC-15 TEMPORARY WETLAND CROSSING N.T.S.

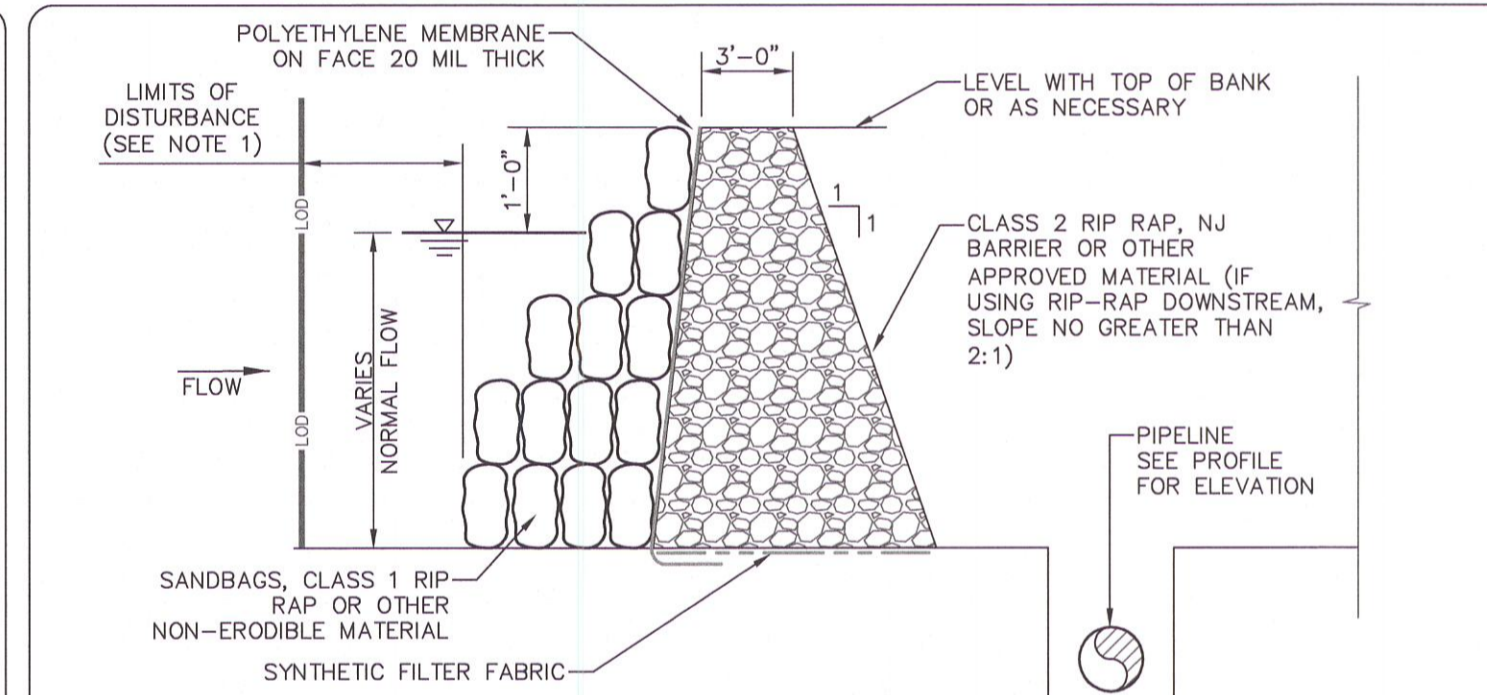


- NOTES:**
1. THE TOP 12" OF SOIL REMOVED FROM THE DISTURBED WETLAND AREA SHALL BE STOCKPILED ADJACENT TO THE WORK AREA AND REUSED FOR FINAL BACKFILL AT THE RESTORED GROUND SURFACE.
 2. THE CONTRACTOR SHALL USE MATTING OR OTHER MEASURES NECESSARY FOR CROSSING WETLAND AREAS DURING EXCAVATION, INSTALLATION AND BACKFILL OF THE SANITARY SEWER.
 3. WETLAND AREAS SHALL BE RESTORED TO THE PRE-CONSTRUCTION GROUND ELEVATIONS AND REPLANTED IN ACCORDANCE WITH THE WETLAND SEEDING SCHEDULE, TECHNICAL SPECIFICATIONS AND THE APPROVED SECTION 404/401 NATIONWIDE PERMIT.
- CONSTRUCTION SPECIFICATIONS:**
1. KEEP CLEARING AND EXCAVATION OF THE WETLAND BED AND APPROACH SECTIONS TO A MINIMUM.
 2. DIVERT ALL SURFACE WATER FROM THE CONSTRUCTION SITE ONTO UNDISTURBED AREAS ADJOINING THE WETLANDS.
 3. KEEP WETLAND CROSSING AS PERPENDICULAR AS POSSIBLE TO THE FLOW.
 4. STABILIZE ALL DISTURBED AREAS SUBJECT TO FLOWING WATER, INCLUDING PLANNED OVERFLOW AREAS, WITH RIPRAP OR OTHER SUITABLE MEANS IF DESIGN VELOCITY EXCEEDS THE ALLOWABLE FOR THE IN-PLACE SOIL.
 5. REMOVE TEMPORARY WETLAND CROSSINGS IMMEDIATELY WHEN THEY ARE NO LONGER NEEDED. RESTORE THE WETLAND BED TO ITS ORIGINAL CROSS-SECTION, AND SMOOTH AND APPROPRIATELY STABILIZE ALL DISTURBED AREAS.
 6. ANY IN-WETLAND SEDIMENT CONTROL MEASURES MUST BE REMOVED UPON STABILIZATION OF THE AREA.
- IMPLEMENTATION SEQUENCE:**
SEDIMENT CONTROL MEASURES, PUMP-AROUND PRACTICES FOR WETLAND CROSSINGS, AND ASSOCIATED CONSTRUCTION SHALL BE COMPLETED IN THE FOLLOWING SEQUENCE (REFER TO DETAIL).
1. THE INTENT OF THIS CONSTRUCTION SEQUENCE IS TO PROVIDE THE CONTRACTOR WITH A GENERAL GUIDE FOR CONSTRUCTION PURPOSES. THIS SEQUENCE IS NOT INTENDED TO OUTLINE ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.
 2. CONTRACTOR TO INSTALL HIGH HAZARD SILT FENCE AND SILT FENCE OUTLETS PER THE PLANS AND DETAILS.
 3. CONTRACTOR IS TO MINIMIZE THE CLEARING AND EXCAVATION OF THE WETLAND BED, BANKS AND APPROACH SECTIONS TO A MINIMUM.
 4. ONCE THE INSTALLATION OF THE SEWER LINE HAS BEEN INSTALLED AT A WETLAND CROSSING, THE CONTRACTOR IS TO RESTORE THE WETLAND BED TO ITS ORIGINAL CROSS-SECTION, AND SMOOTH AND APPROPRIATELY STABILIZE ALL DISTURBED AREAS.
 5. THE CONTRACTOR IS TO SEED THE WETLAND IN ACCORDANCE WITH THE DETAILS SHOWN IN THESE PLANS (EC-3) AND THE PROJECT SPECIFICATIONS.

EC-19 SEDIMENT FILTER BAG WITH GRAVEL PAD N.T.S.

- CONSTRUCTION SPECIFICATIONS:**
1. MOBILIZATION AREAS FOR PLACEMENT OR CONSTRUCTION SHOULD BE KEPT AS SMALL AS POSSIBLE TO FACILITATE EROSION AND SEDIMENT CONTROL AND SHOULD BE PROTECTED WITH DOWNGRADIENT SEDIMENT BARRIERS.
 2. PLACEMENT ACTIVITIES SHOULD MINIMIZE VEGETATION REMOVAL AND DISTURBANCE OF ADJACENT AREAS TO THE MAXIMUM EXTENT PRACTICABLE.
 3. WHERE POSSIBLE, USE BARRIER CONTROLS CONSTRUCTED WITHOUT EARTH FILL. ACCEPTABLE COFFER DAM MATERIALS INCLUDE SAND BAGS, SAND TOTES, JERSEY WALL SECTIONS, COLLAPSIBLE FABRIC MEMBRANE DAMS, WATER FILLED BAGS/TUBES OR OTHER SUITABLE MATERIALS.
 4. EARTH FILL BARRIERS REQUIRE STABILIZATION TO PREVENT EROSION AS BARE SOILS COME INTO CONTACT WITH FLOWING WATER. STABILIZATION CAN OFTEN BE ACHIEVED BY COVERING BARE AREAS WITH WELL-SECURED PLASTIC SHEETING.
 5. ENSURE THE BARRIER STRUCTURES ARE OF SUFFICIENT HEIGHT TO PREVENT WAVES OR OVERFLOWS FROM FLOODING THE ENCLOSED WORK AREA.
 6. FOR DEWATERING A STREAM REACH, INSTALL BARRIERS AT UPSTREAM AND DOWNSTREAM LOCATIONS. IF USED, STABILIZE THE BYPASS TRENCH/CHANNEL WITH PLASTIC SHEETING, ROCK, OR OTHER LINER MATERIAL TO PREVENT TURBIDITY DOWNSTREAM.
 7. DEWATERING OF THE ENCLOSURE TYPICALLY REQUIRES SEDIMENT REMOVAL TO ENSURE THAT TURBID WATER IS NOT DISCHARGED INTO NEARBY WATERBODIES.
 8. IF STORED ON-SITE, MATERIAL EXCAVATED FROM THE MOBILIZATION SITE, THE ENCLOSURE, OR REMOVED FROM THE DISCHARGE WATER SHOULD BE PLACED IN STOCKPILES PROTECTED WITH EROSION AND SEDIMENT CONTROL MEASURES, SUCH AS PLASTIC SHEETING OR TARPAULIN COVERS, DOWNGRADIENT SEDIMENT BARRIERS, TEMPORARY MULCH AND SEED, OR OTHER MEASURES.
 9. UPON COMPLETION OF WORK IN THE BARRIER AREA, DEMOBILIZATION AND BACKFILLING SHOULD OCCUR WITH MINIMAL ADDITIONAL SOIL DISTURBANCE AND IN A MANNER THAT MINIMIZES TURBIDITY IN THE NEARBY WATERBODY. BACKFILLING WITH HYDRAULIC DREDGE OR VIA SLURRY APPLICATION SHOULD BE AVOIDED IF POSSIBLE.

EC-20 COFFER DAM N.T.S.



- IMPLEMENTATION SEQUENCE:**
SEDIMENT CONTROL MEASURES, PUMP-AROUND PRACTICES, AND ASSOCIATED CONSTRUCTION SHALL BE COMPLETED IN THE FOLLOWING SEQUENCE (REFER TO DETAIL).
1. COFFER DAMS SHALL BE SITUATED AT THE ENDS OF THE WORK AREA AS SHOWN ON THE PLANS (REFER TO DETAIL EC-12), AND WATER ON THE UPSIDE OF THE DAM AREA SHALL BE PUMPED AROUND THE WORK AREA.
 2. THE DIVERSION PUMPS SHALL DISCHARGE ONTO A STABLE VELOCITY DISSIPATOR MADE OF RIP-RAP OR SANDBAGS.
 3. WATER FROM THE WORK AREA SHALL BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A TEMPORARY WOOD CHIP DEWATERING BASIN, SILT BAG OR OTHER APPROVED SEDIMENT FILTERING MEASURE (REFER TO DETAIL EC-16).
 4. AFTER THE SANITARY SEWER IS INSTALLED AND THE SLOPES HAVE BEEN STABILIZED, THE PUMP INTAKE HOSES, DISSIPATOR PADS AND FILTER MEASURES SHALL BE REMOVED AND THEN THE COFFER DAMS SHALL BE REMOVED.
 5. A PUMP AROUND MUST BE INSTALLED ON ANY TRIBUTARY OR STORM DRAIN OUTFALL WHICH CONTRIBUTES BASEFLOW TO THE WORK AREA. THIS SHALL BE ACCOMPLISHED BY LOCATING A COFFER DAM AT THE DOWNSTREAM END OF THE TRIBUTARY OR STORM DRAIN OUTFALL AND PUMPING THE STREAM FLOW AROUND THE WORK AREA. THIS WATER SHALL DISCHARGE ONTO THE SAME VELOCITY DISSIPATOR USED FOR THE MAIN STREAM PUMP AROUND.
 6. CONTRACTOR MAY USE INTERMEDIATE COFFER DAM ALONG STREAM ALIGNMENT TO ALLOW PHASED CROSSING W/A MAXIMUM OF 2 SEPARATE BYPASS PHASES.

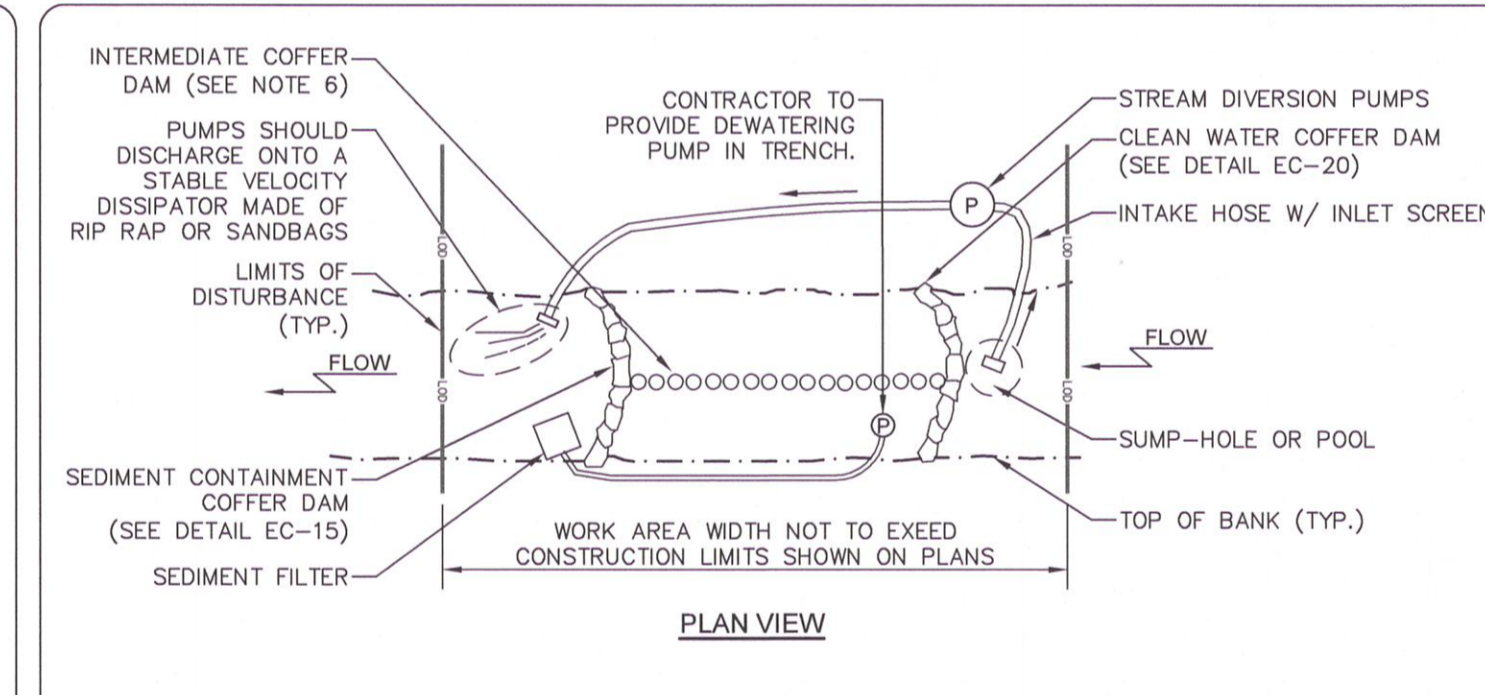
EC-21 TEMPORARY PUMP AROUND N.T.S.

- CONSTRUCTION SPECIFICATIONS:**
1. BRIDGEMAT SHALL BE INSTALLED TO HAVE A SOLID DECK SUCH THAT THERE IS NO SPACE BETWEEN PLANKS.
 - 25'-FT MINIMUM SILT FENCE (TYPICAL).
 - 6" LIP.
 - MINIMUM.
 - ANCHOR BRIDGEMAT TO A TREE, OR OTHER PERMANENT OBJECT WITH SUFFICIENT STRENGTH, USING STEEL CHAIN OR CABLE.
 - AGGREGATE APPROACHWAY 2"-3" SURGE STONE OR RAILROAD BALLAST.
 - 1/4 SUPPORTED.
 - 1/4 SUPPORTED.
 - MINIMUM 6" LIP.
 - SURFACE FLOW DIVERSION.
 - BRIDGEMAT.
 - STREAM.
 - ORIGINAL STREAMBANK.
 - SURFACE FLOW DIVERSION.

EC-16 TIMBER MATTING FOR TEMP. WETLAND/STREAM CROSSING N.T.S.

- INSTALLATION NOTES:**
1. REFER TO NORTH CAROLINA DIVISION OF FOREST RESOURCES' LITERATURE, INSTALLATION MAINTENANCE GUIDELINES, & "NORTH CAROLINA FORESTRY BMP MANUAL-2007"
 2. INSTALL WATER DIVERSION DEVICES (WATER BARS, TURNOUTS, BROAD-BASED DIPs, ETC.) ON BOTH SIDES OF THE MATS.
 3. STABILIZE EXPOSED MINERAL SOIL WITH TREE TOPS OR BRUSH DURING MAT INSTALLATION, AND SEEDING/MULCH AFTER MAT REMOVAL.
 4. INSTALL MATS TO CREATE A MINIMUM TEN FOOT BRIDGE WIDTH.
 5. INCLUDE COARSE AGGREGATE ON THE APPROACHWAY FOR A MINIMUM OF 25 FEET AND SILT FENCE ALONG STREAMBANKS ADJACENT TO CROSSING FOR A MINIMUM OF 25 FEET.
- MAINTENANCE NOTES:**
1. KEEP MATS' SURFACE FREE OF MINERAL SOIL AND DEBRIS THAT COULD ENTER STREAM.
 2. PERIODICALLY CHECK MAT HARDWARE; RETIGHTEN NUTS & CABLE CLAMPS AS NECESSARY TO MAINTAIN BRIDGE STRENGTH AND INTEGRITY.
 3. IMMEDIATELY REMOVE ANY DEBRIS WHICH ENTERS THE STREAM AT THE CROSSING LOCATION.
- REMOVAL NOTES:**
1. CLEAN OFF BRIDGE SURFACE.
 2. REMOVE MATS BY USING MAT CABLE LOOP OR SKIDDER GRAPPLE.
 3. PERMANENTLY STABILIZE DISTURBED PORTIONS OF STREAMBANK AND APPROACH ROADS WITH PERENNIAL GRASSES/MULCH (OR WETLAND MIX WHEN APPLICABLE).
 4. LEAVE APPROPRIATE WATER DIVERSION STRUCTURES IN PLACE ON BOTH SIDES OF STREAM.
 5. RESTORE THE STREAM CHANNEL TO ITS ORIGINAL CROSS-SECTION, AND SMOOTH AND APPROPRIATELY STABILIZE ALL DISTURBED AREAS.

EC-16 TIMBER MATTING FOR TEMP. WETLAND/STREAM CROSSING N.T.S.



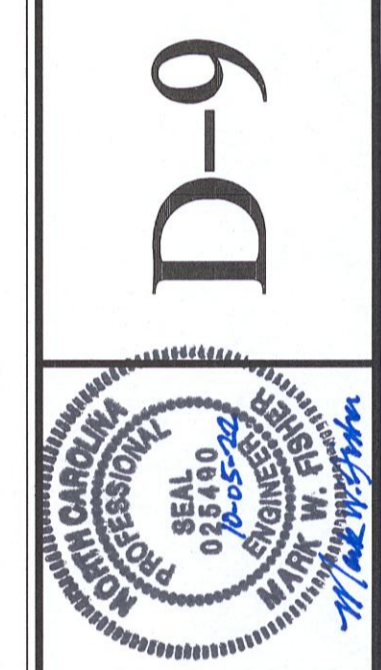
- CONSTRUCTION SPECIFICATIONS:**
1. MOBILIZATION AREAS FOR PLACEMENT OR CONSTRUCTION SHOULD BE KEPT AS SMALL AS POSSIBLE TO FACILITATE EROSION AND SEDIMENT CONTROL AND SHOULD BE PROTECTED WITH DOWNGRADIENT SEDIMENT BARRIERS.
 2. PLACEMENT ACTIVITIES SHOULD MINIMIZE VEGETATION REMOVAL AND DISTURBANCE OF ADJACENT AREAS TO THE MAXIMUM EXTENT PRACTICABLE.
 3. WHERE POSSIBLE, USE BARRIER CONTROLS CONSTRUCTED WITHOUT EARTH FILL. ACCEPTABLE COFFER DAM MATERIALS INCLUDE SAND BAGS, SAND TOTES, JERSEY WALL SECTIONS, COLLAPSIBLE FABRIC MEMBRANE DAMS, WATER FILLED BAGS/TUBES OR OTHER SUITABLE MATERIALS.
 4. EARTH FILL BARRIERS REQUIRE STABILIZATION TO PREVENT EROSION AS BARE SOILS COME INTO CONTACT WITH FLOWING WATER. STABILIZATION CAN OFTEN BE ACHIEVED BY COVERING BARE AREAS WITH WELL-SECURED PLASTIC SHEETING.
 5. ENSURE THE BARRIER STRUCTURES ARE OF SUFFICIENT HEIGHT TO PREVENT WAVES OR OVERFLOWS FROM FLOODING THE ENCLOSED WORK AREA.
 6. FOR DEWATERING A STREAM REACH, INSTALL BARRIERS AT UPSTREAM AND DOWNSTREAM LOCATIONS. IF USED, STABILIZE THE BYPASS TRENCH/CHANNEL WITH PLASTIC SHEETING, ROCK, OR OTHER LINER MATERIAL TO PREVENT TURBIDITY DOWNSTREAM.
 7. DEWATERING OF THE ENCLOSURE TYPICALLY REQUIRES SEDIMENT REMOVAL TO ENSURE THAT TURBID WATER IS NOT DISCHARGED INTO NEARBY WATERBODIES.
 8. IF STORED ON-SITE, MATERIAL EXCAVATED FROM THE MOBILIZATION SITE, THE ENCLOSURE, OR REMOVED FROM THE DISCHARGE WATER SHOULD BE PLACED IN STOCKPILES PROTECTED WITH EROSION AND SEDIMENT CONTROL MEASURES, SUCH AS PLASTIC SHEETING OR TARPAULIN COVERS, DOWNGRADIENT SEDIMENT BARRIERS, TEMPORARY MULCH AND SEED, OR OTHER MEASURES.
 9. UPON COMPLETION OF WORK IN THE BARRIER AREA, DEMOBILIZATION AND BACKFILLING SHOULD OCCUR WITH MINIMAL ADDITIONAL SOIL DISTURBANCE AND IN A MANNER THAT MINIMIZES TURBIDITY IN THE NEARBY WATERBODY. BACKFILLING WITH HYDRAULIC DREDGE OR VIA SLURRY APPLICATION SHOULD BE AVOIDED IF POSSIBLE.

EC-21 TEMPORARY PUMP AROUND N.T.S.

- CONSTRUCTION SPECIFICATIONS:**
1. MOBILIZATION AREAS FOR PLACEMENT OR CONSTRUCTION SHOULD BE KEPT AS SMALL AS POSSIBLE TO FACILITATE EROSION AND SEDIMENT CONTROL AND SHOULD BE PROTECTED WITH DOWNGRADIENT SEDIMENT BARRIERS.
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DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN	AKB
12.16.2020	NOT FOR CONSTRUCTION	MFP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	MFP
04.30.2021	FINAL DESIGN NOT FOR CONSTRUCTION	MFP
04.30.2021	FINAL DESIGN - CONTRACT SEPARATION AND BIDDING	MFP
04.30.2022	FINAL DESIGN - REVISION INCORPORATION	MFP
09.30.2022	FINAL DESIGN - READY FOR BID	MFP

SHEET	D-9
SURVEYORS BY: MCKIM&CREED, INC.	DATE: 9/30/22
PROCESS/LAYOUT BY: TMB/AMB	DATE: 9/30/22
PLANNING/DESIGN BY: BRL	DATE: 9/30/22
DESIGN REVIEW BY: BRL	DATE: 9/30/22
APPROVED BY: AS SHOWN	DATE: 9/30/22
SCALE: AS SHOWN	DATE: 9/30/22



SANITARY SEWER IMPROVEMENTS, BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
STANDARD EROSION CONTROL DETAILS

FAYETTEVILLE PUBLIC WORKS COMMISSION
PWC WATER RESOURCES ENGINEERING
P.O. Box 1086, Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28301



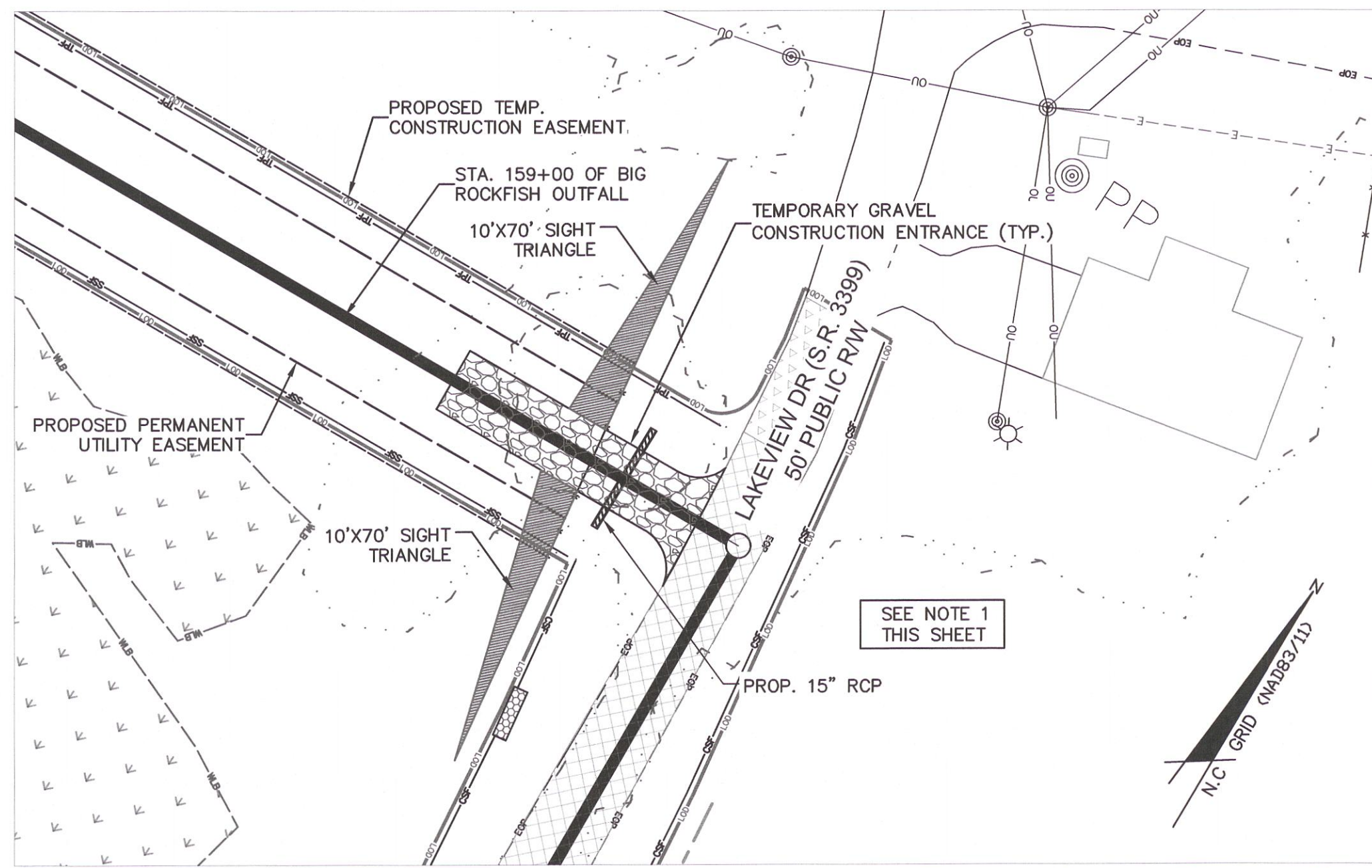
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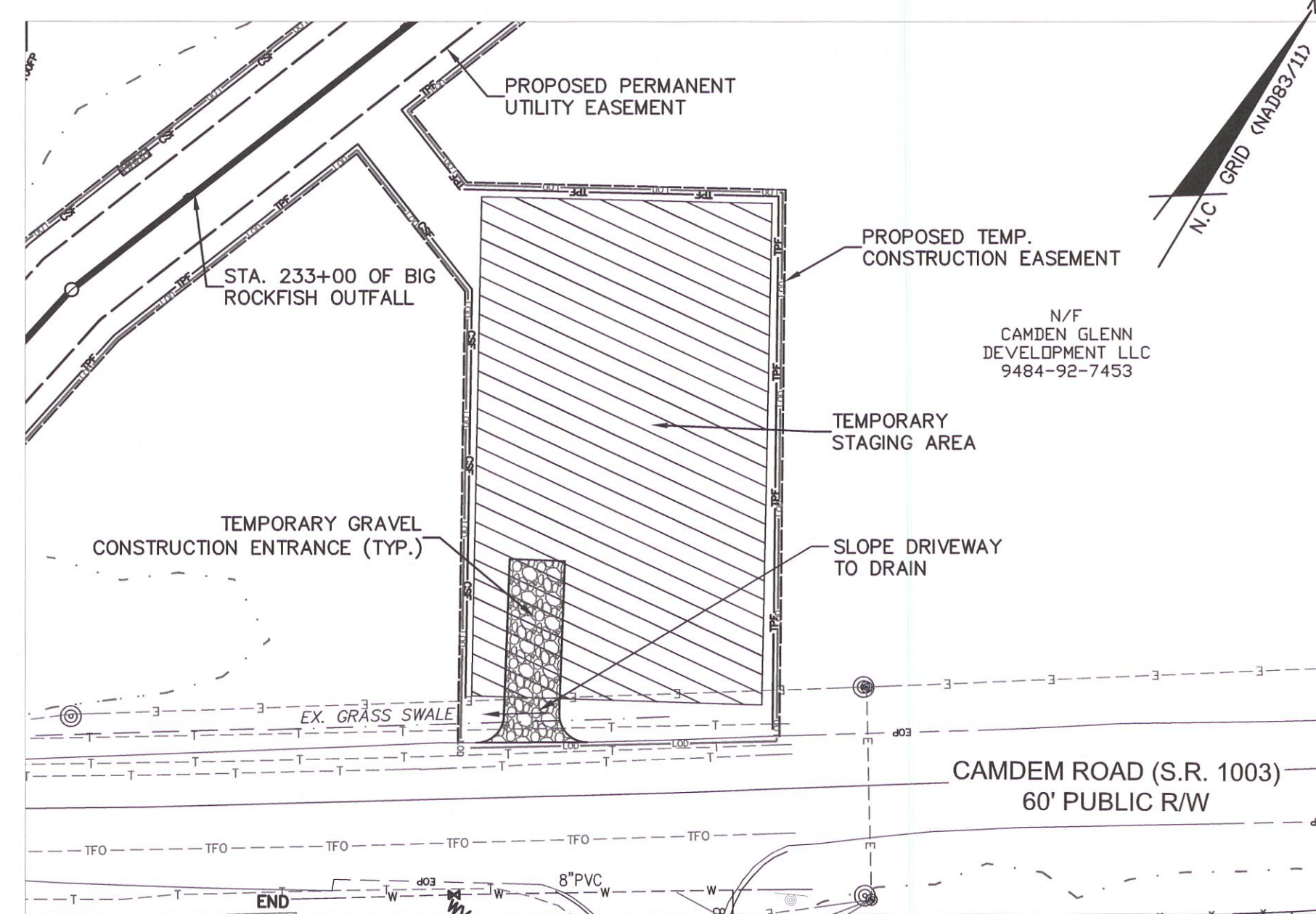
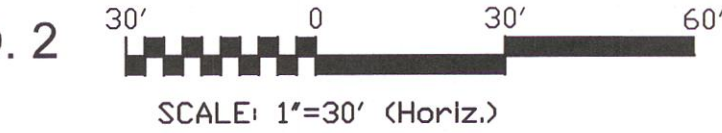
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FINAL DESIGN
ISSUED FOR BID

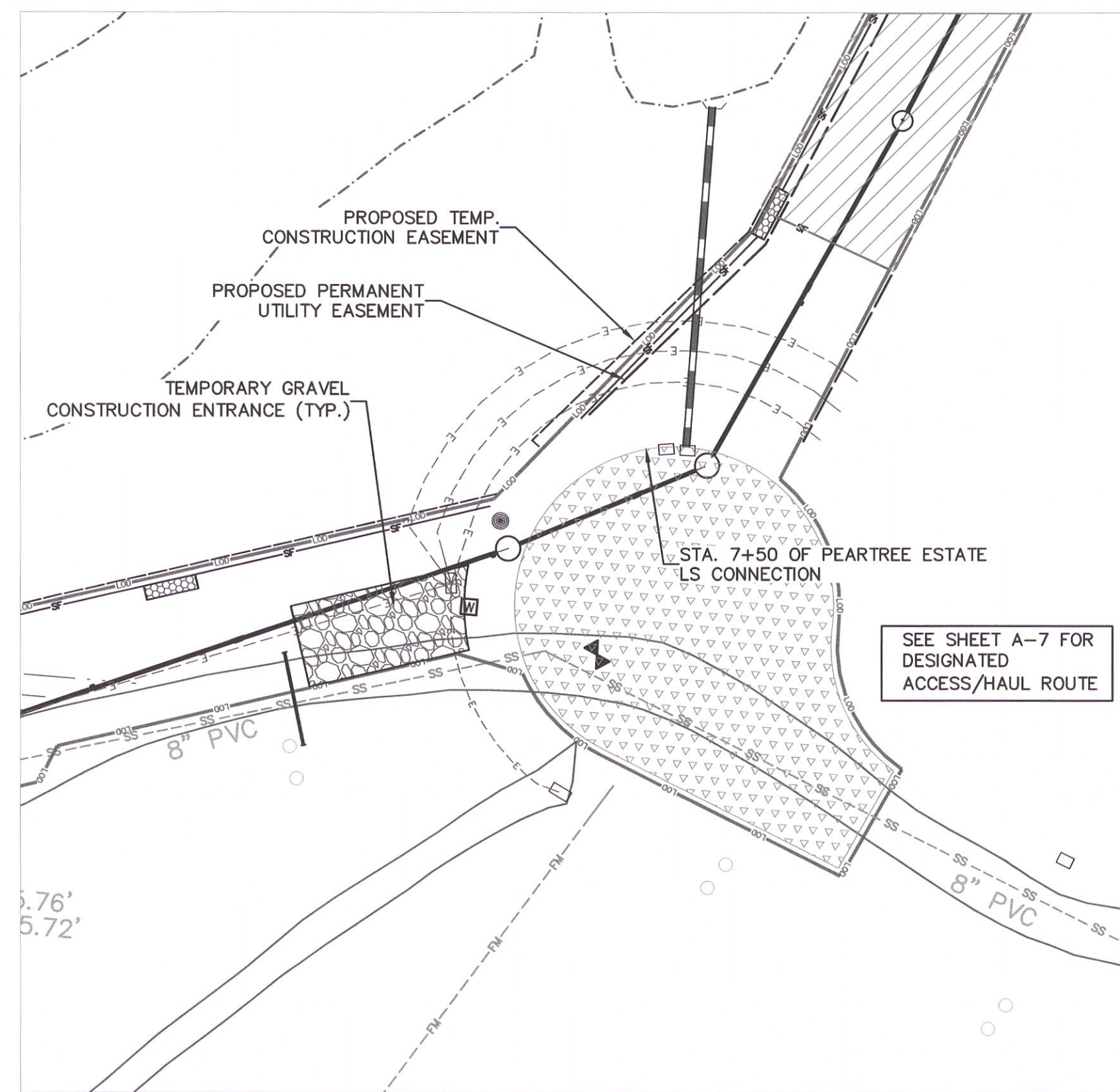
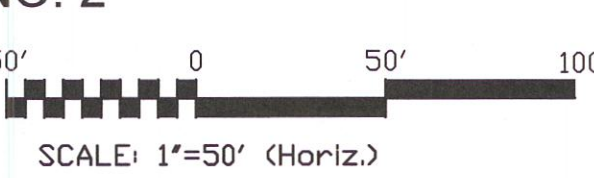
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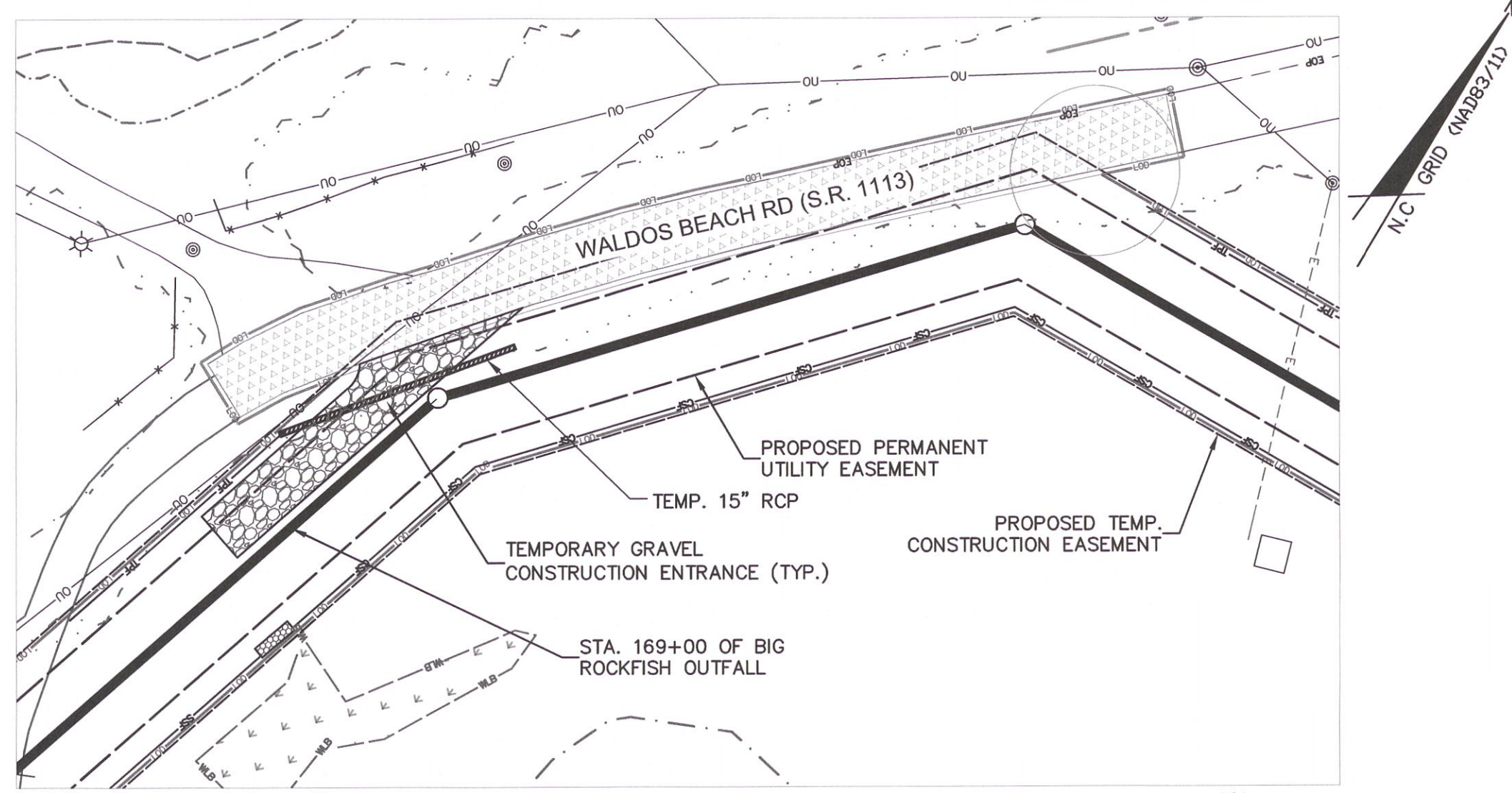
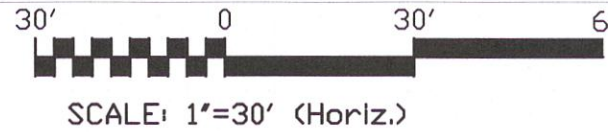
LAKEVIEW DRIVE - PERMANENT ACCESS NO. 2



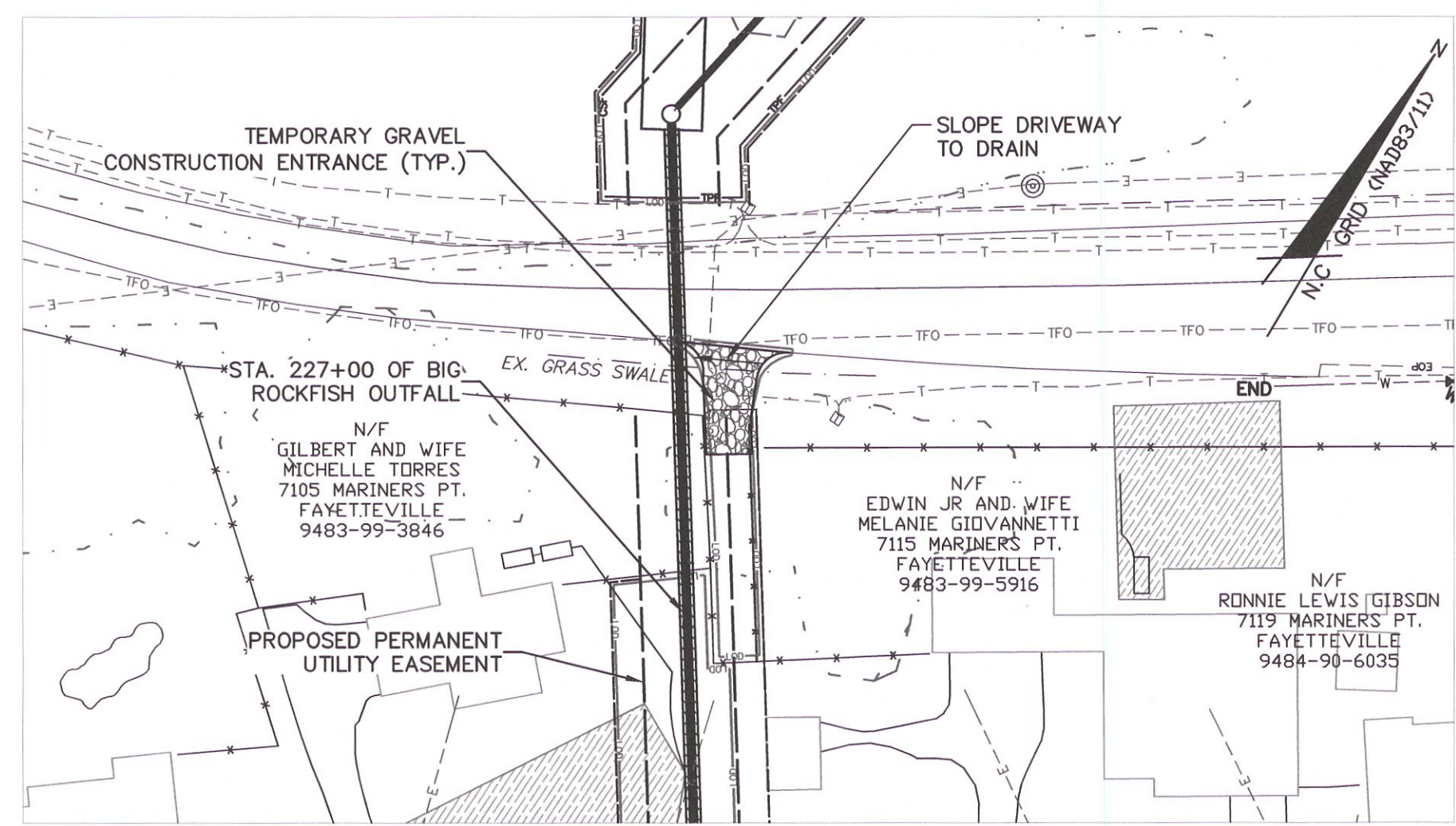
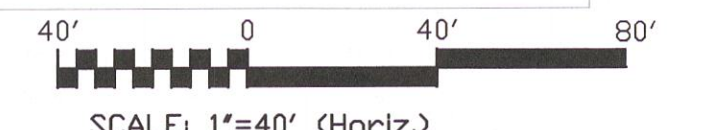
CAMDEN ROAD/CONSTRUCTION STAGING AREA NO. 2



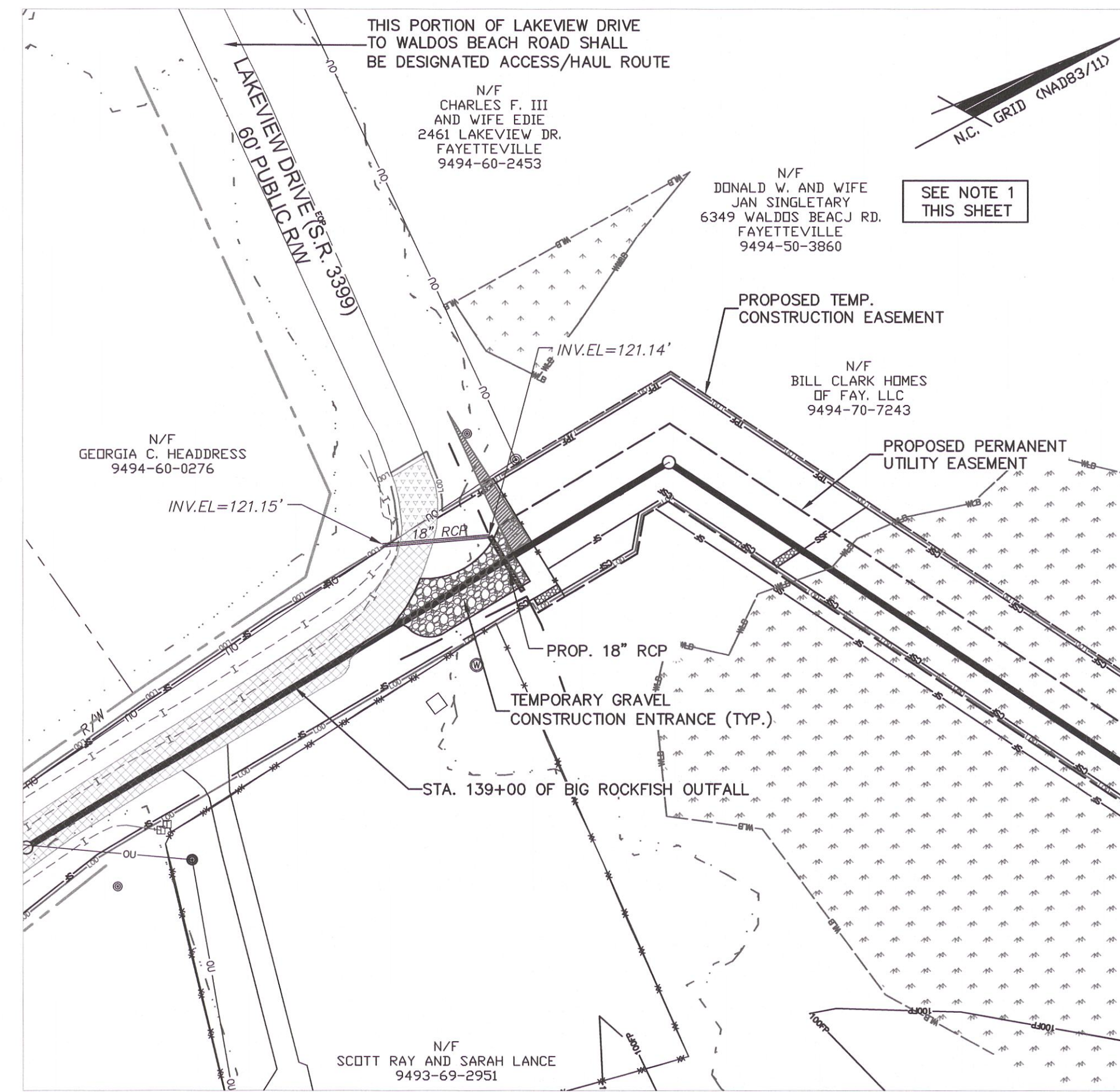
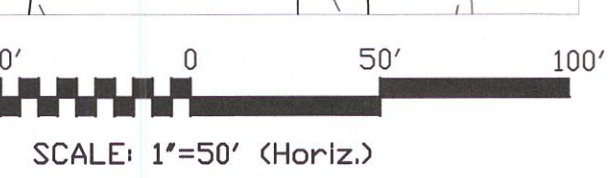
CAMDEN GLEN ROAD - TEMPORARY ACCESS



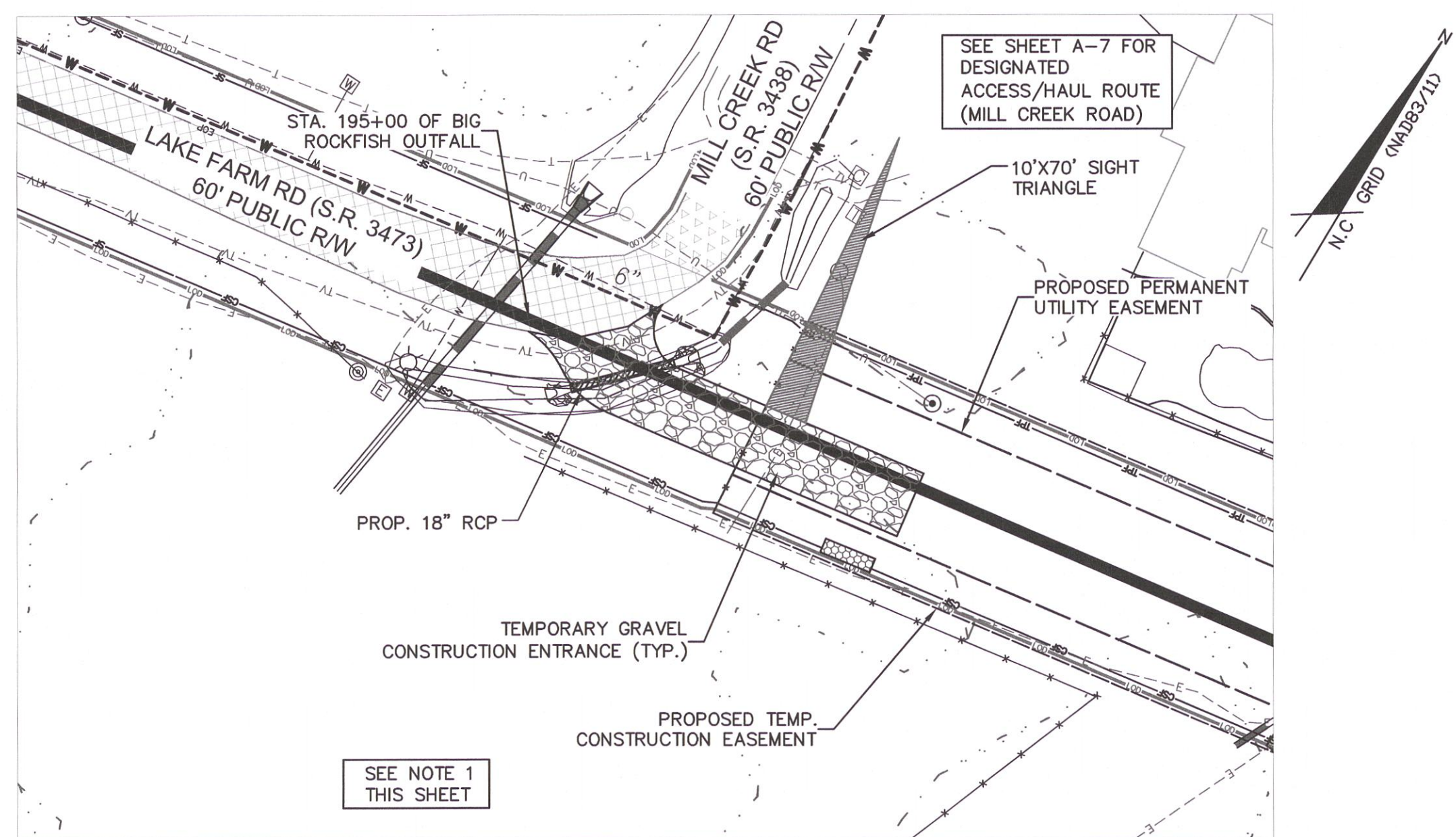
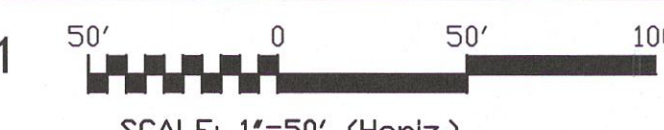
WALDOS BEACH ROAD - TEMPORARY ACCESS



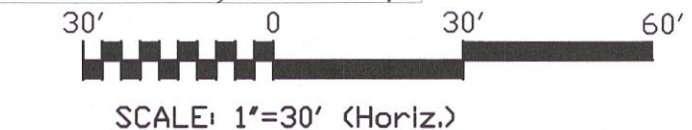
CAMDEN ROAD - TEMPORARY ACCESS



LAKEVIEW DRIVE - PERMANENT ACCESS NO. 1



LAKE FARM ROAD - PERMANENT ACCESS



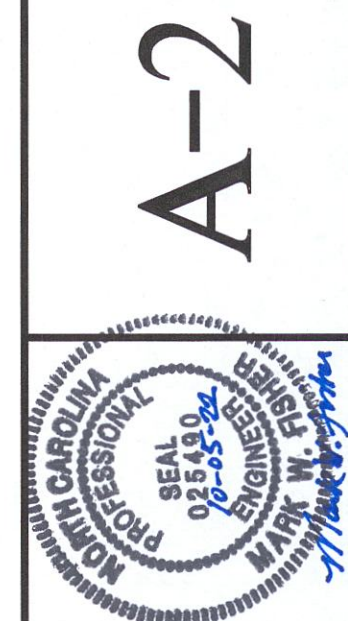
LEGEND

	ITEMS UNDER SEPARATE CONTRACT
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- NOTES:**
- PERMANENT ASPHALT DRIVEWAY TO BE INSTALLED FROM EXISTING EDGE OF PAVEMENT TO RIGHT-OF-WAY. DRIVEWAYS SHALL BE INSTALLED IN ACCORDANCE WITH NCDOT POLICY ON STREET AND DRIVEWAY ACCESS TO NORTH CAROLINA HIGHWAYS. PAVEMENT AND BASE COURSE SHALL BE PER DETAIL M.4 ON SHEET D-3.
 - CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS INTO ALL RESIDENCES AND BUSINESSES. IN THE EVENT A BUSINESS DRIVE MUST BE CLOSED, THE CLOSURE SHALL BE DONE AFTER BUSINESS HOURS AND COORDINATED WITH THE AFFECTED BUSINESS TO MINIMIZE IMPACTS.
 - ANY PAVEMENT CUTS REQUIRED FOR THE INSTALLATION OF THE PROPOSED ENTRANCES, ACCESS PATHS, OR STAGING AREAS, SHALL BE PATCHED AND REPAIRED IN ACCORDANCE WITH THE STANDARD DETAILS AND SPECIFICATIONS OF THE PROJECT.
 - THE EXISTING CONDITION OF RESIDENTIAL AND COMMERCIAL STREETS TO BE USED DURING CONSTRUCTION SHALL BE INSPECTED AND DOCUMENTED PRIOR TO USE. ANY SECTIONS DAMAGED DUE TO CONSTRUCTION TRAFFIC AND EQUIPMENT SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARDS DETAILS AND SPECIFICATIONS OF THE PROJECT.

DATE	REVISIONS	BY
05.18.2020	FINAL DESIGN NOT FOR CONSTRUCTION	AMB
12.16.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
12.21.2020	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
06.30.2021	FINAL DESIGN NOT FOR CONSTRUCTION	PPP
04.15.2022	FINAL DESIGN - NOT FOR CONSTRUCTION	PPP
09.30.2022	FINAL DESIGN ISSUED FOR BID	PPP

SHEET	DATE	BY	APPROVED BY
A-2	9/30/22	THB/AMB	BRL



SANITARY SEWER IMPROVEMENTS BIG ROCKFISH CREEK OUTFALL - CONTRACT 2
ACCESS DRIVE & CONSTRUCTION STAGING AREA (CONTRACT 2)

FAYETTEVILLE PUBLIC WORKS COMMISSION
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FINAL DESIGN
ISSUED FOR BID

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