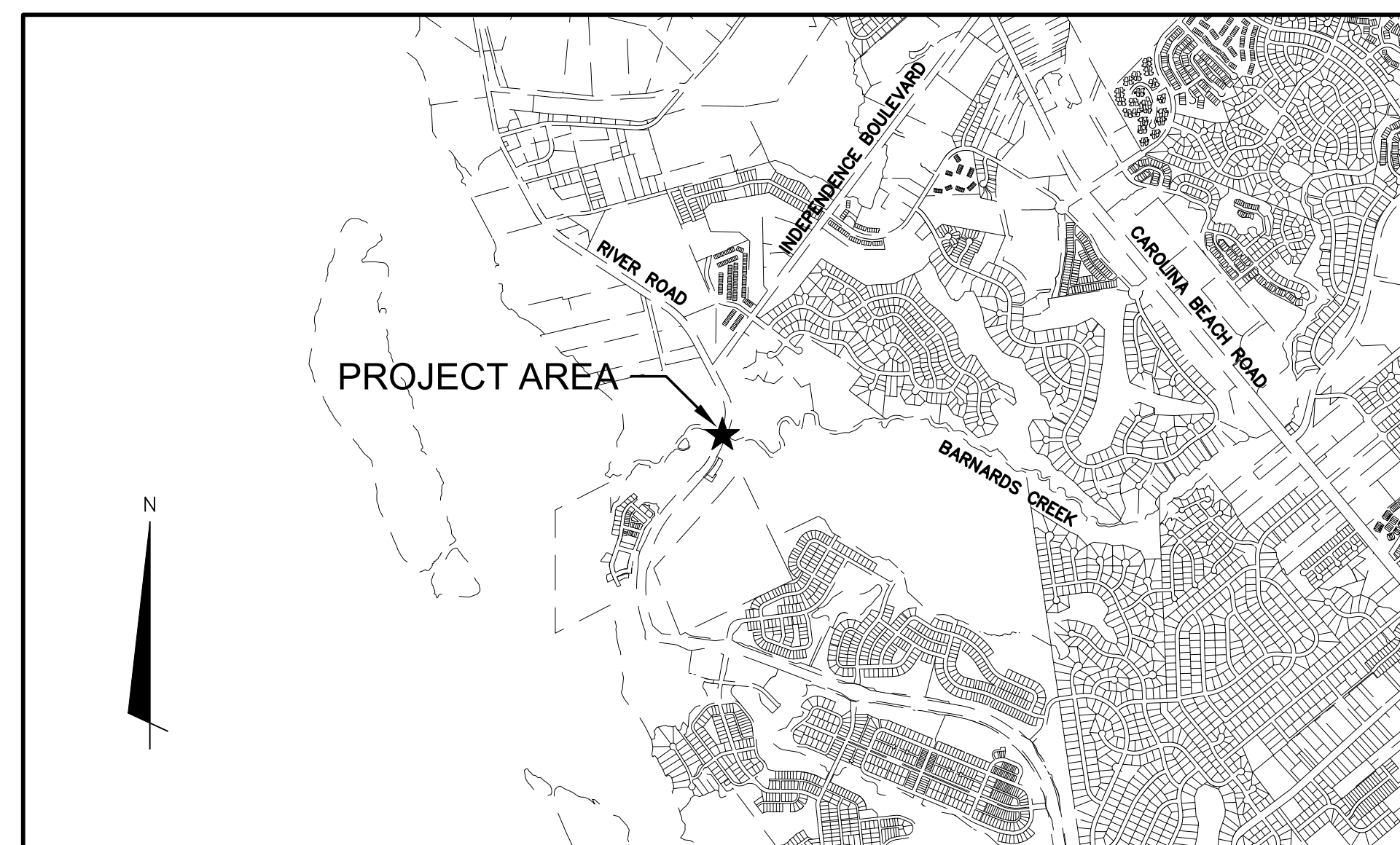


BARNARDS CREEK FORCE MAIN REPAIR/REPLACEMENT

McKim & Creed Project #05367-0054

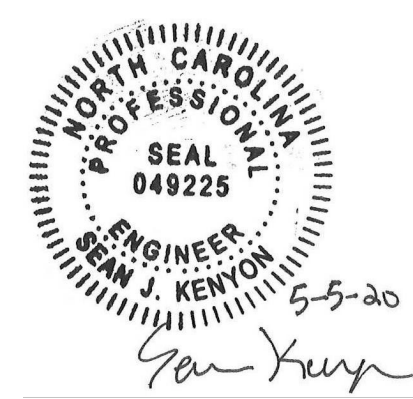
ISSUED FOR BID - NOT FOR CONSTRUCTION MAY 2020



VICINITY MAP
NOT TO SCALE

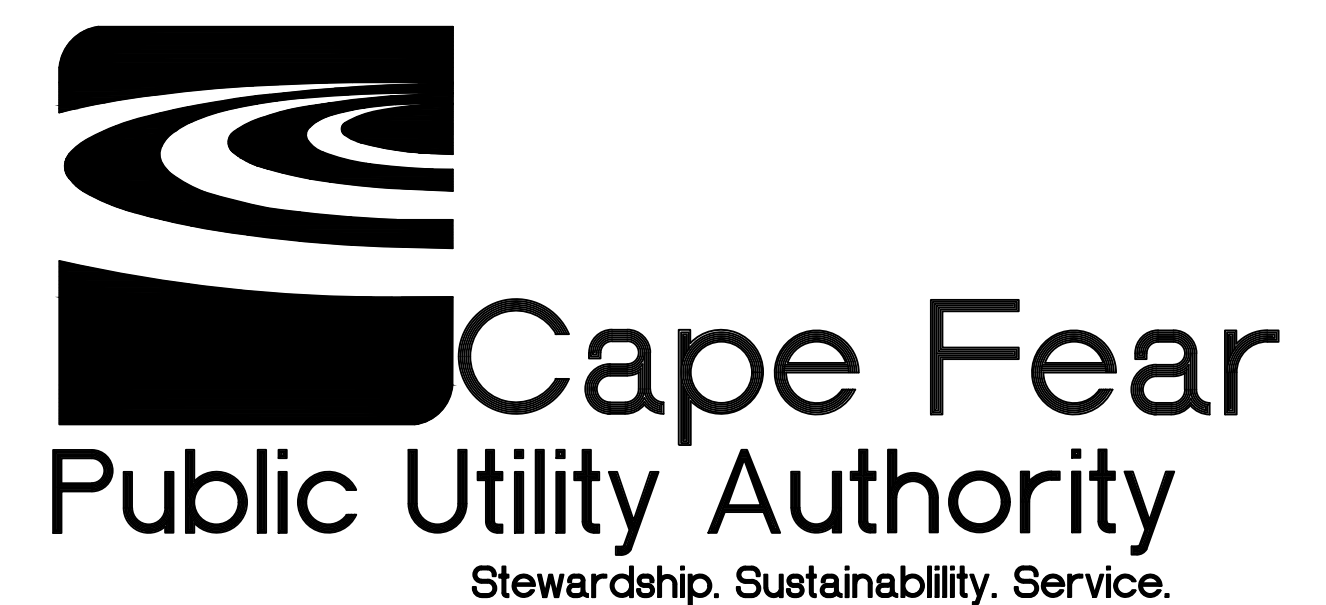
SHEET INDEX

- G-1 COVER SHEET
- G-2 GENERAL NOTES
- C-1 FORCE MAIN HDD PLAN AND PROFILE
- C-2 FORCE MAIN HDD DETAILS
- D-1 GENERAL DETAILS
- D-2 TRAFFIC CONTROL DETAILS



243 N. Front Street
Wilmington, North Carolina 28401
Phone: (910) 343-1048, Fax: (910) 251-8282

NC License# F-1222
www.mckimcreed.com

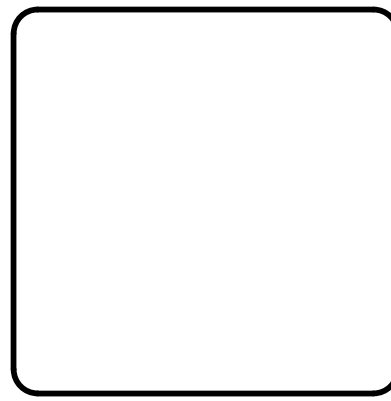


- NOTES:**
- ALL WORK SHALL COMPLY WITH APPLICABLE STATE, FEDERAL, AND LOCAL CODES, AND ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE, UNLESS PREVIOUSLY OBTAINED BY THE OWNER AND PROVIDED AT THE PRE CONSTRUCTION CONFERENCE.
 - DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR WRITTEN CONSENT BY THE OWNER OR HIS REPRESENTATIVE OR THE ENGINEER MAY BE CAUSE FOR WORK TO BE UNACCEPTABLE.
 - ALL PIPE LINE CONSTRUCTION SHALL CONFORM TO NCDEQ REGULATIONS, AND TO CAPE FEAR PUBLIC UTILITY AUTHORITY TECHNICAL STANDARDS, AND SPECIFICATIONS.
 - ALL PIPE LENGTHS AND DISTANCES BETWEEN STRUCTURES ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE ALONG A HORIZONTAL PLANE.
 - LOCATIONS OF EXISTING SHOWN UTILITIES ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE SIZE, DEPTH, MATERIAL, AND LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION AND TO TAKE WHATEVER STEPS ARE NECESSARY TO PROVIDE FOR THEIR PROTECTION. THE ENGINEER HAS ATTEMPTED TO LOCATE AND INDICATE ALL EXISTING UTILITIES ON THE PLANS; HOWEVER, THIS INFORMATION IS SHOWN FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE ENGINEER AND THE OWNER ASSUME NO RESPONSIBILITY FOR THE LOCATIONS OF UTILITIES SHOWN OR NOT SHOWN. AT LEAST 48 HOURS PRIOR TO DIGGING ON OR OFF SITE, THE CONTRACTOR SHALL HAVE ALL UTILITIES LOCATIONS LOCATED BY "NC ONE-CALL" 1-800-632-4949. THE CONTRACTOR SHALL CONTACT ANY UTILITY COMPANY WHOSE UTILITIES ARE NOT LOCATED BY "NC ONE CALL" FOR EXACT LOCATION OF THEIR UTILITIES PRIOR TO STARTING CONSTRUCTION. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND/OR REPLACE ANY AND ALL DAMAGE MADE TO UTILITIES BY THE CONTRACTOR TO EXISTING CONDITIONS AT THE CONTRACTOR'S EXPENSE.
 - THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD ANY FIELD CONDITIONS BE ENCOUNTERED THAT VARY FROM THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS.
 - THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SHEETING REQUIRED FOR THE INSTALLATION OF THE UTILITY, ALL EXCAVATIONS SHALL BE KEPT WITHIN THE DESIGNATED RIGHT OF WAY OR EASEMENT WIDTHS, EXCAVATION WITHIN PAVED AREAS SHALL BE KEPT TO A MINIMUM. SHEETING SHALL BE INSTALLED AS REQUIRED TO PROTECT EXISTING UTILITIES.
 - CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND PUBLIC. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND ERECT AND MAINTAIN AT ALL TIMES SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAG MEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNAGE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE NCDOT.
 - CLEARING REQUIREMENTS AND/OR CLEARING LIMITS ARE NOT DEPICTED ON PLANS. CLEARING THAT IS NOT SHOWN ON PLANS WILL BE NECESSARY FOR CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY REQUIRED CLEARING PRIOR TO SUBMITTING A BID AND SHALL INCLUDE COST TO PERFORM ALL CLEARING NECESSARY FOR CONSTRUCTION OF THE PROJECT IN THE COST OF THE WORK. THEREFORE NO SEPARATE PAYMENT FOR CLEARING SHALL BE MADE. ALL MATERIAL CLEARED AND GRUBBED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK, SUCH AS TREES, VEGETATION, FENCING, ETC., SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE AT A STATE APPROVED DISPOSAL SITE. RECEIVE ENGINEER'S APPROVAL FOR ANY LANDSCAPE REMOVAL.
 - PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VIDEOTAPE PIPE LINE ALIGNMENT INCLUDING ALL DRIVEWAYS, SIDEWALKS, ETC., TO BE DISTURBED WITHIN THE PROJECT CONSTRUCTION AREA. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER. VIDEO SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.
 - CONTRACTOR SHALL MAINTAIN AN APPROPRIATE CONSTRUCTION ENTRANCE FOR INGRESS/EGRESS TO EACH PROPERTY AT ALL TIMES.
 - LIMITS OF CONSTRUCTION ARE SHOWN AS ALLOWED LIMITS OF DISTURBANCE AND DO NOT GRANT RIGHT OF ENTRY TO PRIVATE PROPERTY. CONTRACTOR TO SECURE RIGHT OF ENTRY FOR ALL PROPERTIES OUTSIDE OF EASEMENTS & PUBLIC RIGHT-OF-WAY WHICH WILL BE DISTURBED OR ENCLOSED UPON DURING CONSTRUCTION. WHERE THE CONTRACTOR DETERMINES THAT ENCROACHMENT ONTO PRIVATE PROPERTY IS NECESSARY, AND AN EASEMENT HAS NOT BEEN PROVIDED, THE CONTRACTOR SHALL CONTACT INDIVIDUAL PROPERTY OWNERS AND OBTAIN WRITTEN APPROVAL FOR THAT ENCROACHMENT.
 - THE CONTRACTOR SHALL PROVIDE ALL SURVEY WHERE NECESSARY FOR CONSTRUCTION. ANY EXISTING STAKE OUT OR BENCHMARKS SHALL NOT BE USED BY THE CONTRACTOR.
 - CONTRACTOR SHALL NOTIFY HOME AND BUSINESS OWNERS AT LEAST 14 DAYS PRIOR TO ANY CONSTRUCTION ACTIVITY THAT WILL TAKE PLACE IN THEIR AREA.
 - CONTRACTOR SHALL REMOVE, STORE AND REPLACE ALL CONFLICTING MAIL BOXES, CULVERTS, HEADWALL, ORNAMENTAL STRUCTURES, ETC. WITHIN THE RIGHT OF WAY. CONFLICTING TREES WITHIN THE RIGHT OF WAY SHALL BE REMOVED AS DIRECTED BY THE ENGINEER BUT NOT REPLACED.

- EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED ACCORDING TO NORTH CAROLINA SEDIMENT AND EROSION CONTROL STANDARDS AND AS DIRECTED BY THE ENGINEER. ALL DEVICES SHALL BE MAINTAINED SUCH THAT THEY FUNCTION AS INTENDED. AFTER COMPLETION OF THE PROJECT THE CONTRACTOR SHALL REMOVE ALL EROSION CONTROL DEVICES WHERE A GOOD STAND OF GRASS HAS BEEN ESTABLISHED AND EROSION IS NO LONGER EVIDENT. REMOVAL OF THE REMAINDER OF THE EROSION CONTROL DEVICES SHALL OCCUR AS OTHER AREAS ARE STABILIZED. REMOVAL OF THE EROSION CONTROL DEVICES SHALL BE PERMITTED ONLY WITH THE PRIOR APPROVAL OF THE ENGINEER.
- ALL AREAS DISTURBED BY GRADING, EXCAVATION, AND GENERAL CONSTRUCTION SHALL BE SEEDED, MULCHED, AND RESTORED IN ACCORDANCE WITH NORTH CAROLINA SEDIMENT AND EROSION CONTROL STANDARDS.
- EXISTING VEGETATION OUTSIDE OF THE CLEARING LIMITS TO REMAIN SHALL BE PROTECTED FROM DAMAGE.
- ALL CONSTRUCTION ACTIVITY SHALL BE LIMITED TO PUBLIC RIGHT-OF-WAY, CITY OF WILMINGTON RIGHT-OF-WAY, AND OWNER OBTAINED EASEMENTS.
- ANY AREAS THE CONTRACTOR UTILIZES FOR STOCKPILING SHALL HAVE ADEQUATE EROSION CONTROL MEASURES INSTALLED PER THE NORTH CAROLINA SEDIMENT AND EROSION CONTROL HANDBOOK. CONTRACTOR IS RESPONSIBLE FOR SECURING WRITTEN PERMISSION FROM PROPERTY OWNER PRIOR TO STOCKPILING MATERIAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS CONSTRUCTION ACTIVITIES WITH THOSE OF OTHER CONTRACTORS AND OTHER ENTITIES INVOLVED IN ORDER TO ASSURE EFFICIENT AND ORDERLY INSTALLATION OF EACH PART OF THE WORK. COORDINATION CONFLICTS SHALL BE IMMEDIATELY DIRECTED TO THE ENGINEER.
- THE CONTRACTOR SHALL NOT USE EXISTING SANITARY SEWERS AS A MEANS OF DEWATERING DURING CONSTRUCTION WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SURFACE WATER RUNOFF AND GROUND WATER FROM THE TRENCHES AND SHALL PROVIDE NECESSARY DEWATERING AND PUMPING EQUIPMENT FOR HANDLING THESE FLOWS DURING CONSTRUCTION. DEWATERING ACTIVITIES TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS. ANY ADDITIONAL PERMITS REQUIRED AS A RESULT OF DEWATERING ACTIVITIES ARE THE CONTRACTOR'S RESPONSIBILITY. ALL DEWATERING COSTS ARE CONSIDERED ANCILLARY TO THE COST OF WORK AND NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR DEWATERING. EROSION CONTROL MEASURES SHOWN ON PLANS ARE DESIGNED FOR RAINFALL EVENTS ONLY AS PER NCDEQ REGULATIONS. ADDITIONAL MEASURES REQUIRED TO CONTAIN/CONTROL DEWATERING ACTIVITIES AND ASSOCIATED DISCHARGES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN THE COST OF THE WORK.
- ANY AND ALL DISTURBED PROPERTY PINS SHALL BE RESET BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF NORTH CAROLINA.
- EXISTING WATER & SEWER SERVICES DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED/REPLACED/RELOCATED AS REQUIRED FOR CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL HAVE ON SITE AT ALL TIMES REPAIR MATERIALS FOR ALL EXISTING PIPE LINES SHOWN ON THE PLANS. ALL REPAIR CLAMPS & HARDWARE MUST BE OF STAINLESS STEEL CONSTRUCTION.
- NO PIPE JOINT SHALL EXCEED PIPE MANUFACTURER'S MAX. ALLOWABLE LIMITS FOR DEFLECTION OR CAPE FEAR PUBLIC UTILITY AUTHORITY'S MAX. ALLOWABLE DEFLECTION WHICHEVER IS LESS.
- LIMITS OF CONSTRUCTION SHALL BE DEFINED AS WITHIN THE LIMITS OF CITY RIGHT-OF-WAY AND OWNER OBTAINED EASEMENTS DEPICTED ON THE DRAWINGS UNLESS OTHERWISE NOTED. ALL DAMAGES INCURRED AS A RESULT OF ACTIVITY OUTSIDE THE DESIGNATED CONSTRUCTION LIMITS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- CONTRACTOR TO VERIFY SIZE, DEPTH, MATERIAL AND LOCATION FOR ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. TEST EXCAVATIONS TO DETERMINE SUCH INFORMATION SHALL BE DONE PRIOR TO CONSTRUCTION AT THE CONTRACTOR'S EXPENSE.
- SEDIMENT & EROSION CONTROLS SHOWN ARE MINIMUM ALLOWABLE. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION & MAINTENANCE OF ADDITIONAL SEDIMENT & EROSION CONTROLS AS REQUIRED TO COMPLY WITH ALL APPLICABLE FEDERAL, STATE & LOCAL LAWS.
- BY SUBMITTING A BID THE CONTRACTOR ATTESTS THEY HAVE PERFORMED ALL SITE VERIFICATIONS AS REQUIRED TO BE CONFIDENT IN EXISTING CONDITIONS AND AS SUCH NO CLAIMS FOR ADDITIONAL PAYMENT SHALL BE CONSIDERED FOR FIELD CONDITIONS WHICH MAY DIFFER FROM WHAT IS SHOWN ON THE PLAN SHEETS.
- SLOPES (INCLUDING CUTS, FILLS AND DITCH BANKS) THAT ARE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL LEFT EXPOSED WILL, WITHIN SEVEN (7) CALENDAR DAYS AFTER COMPLETION OF ANY PHASE OF GRADING, BE PROVIDED WITH GROUNDCOVER. SLOPES THAT ARE 3 HORIZONTAL TO 1 VERTICAL OR FLATTER WILL BE PROVIDED WITH GROUNDCOVER WITHIN FOURTEEN (14) CALENDAR DAYS.
- TEMPORARY CONSTRUCTION EXCAVATION SHORING SHALL COMPLY WITH LOCAL, STATE, & FEDERAL GOVERNING REGULATIONS, INCLUDING OSHA (29 CFR PART 1926) EXCAVATION TRENCH SAFETY STANDARDS.
- STOCKPILES SHALL BE SETBACK A MINIMUM HORIZONTAL DISTANCE FROM THE TOP EDGE OF THE EXCAVATION EQUAL TO THE MAXIMUM DEPTH OF THE EXCAVATION, UNLESS A SHORING SYSTEM IS DESIGN BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA TO HANDLE STOCKPILE SURCHARGE LOADS.

SYMBOL LEGEND		TREE LEGEND	
	FIRE HYDRANT		= CEDAR
	LIGHT POLE		= CHERRY
	POWER POLE		= CRAPE
	GUY WIRE		= DOGWOOD
	GAS VALVE		= GUM
	PROPOSED SANITARY SEWER MANHOLE		= HICKORY
	EXISTING SANITARY SEWER MANHOLE		= HOLLY
	SANITARY SEWER VALVE		= OAK
	CLEANOUT		= MAGNOLIA
	CURB INLET (CI) OR CATCH BASIN (CB)		= MAPLE
	GUTTER INLET (GI)		= MIMOSA
	STORM DRAIN MANHOLE		= PECAN
	YARD LIGHT		= PINE
	ELECTRIC HANDHOLE		= POPLAR
	FIBER OPTIC PEDESTAL		= SYCAMORE
	FIBER OPTIC MARKER/FLAG		= MISC HARDWOOD
	MAILBOX		
	CHECK DAM		
	IRON ROD FOUND		
	WATER METER		
	VALVE		
	SIGN		
	TELEPHONE PEDESTAL		
	ELECTRICAL METER BOX		
	TREE LINE/LANDSCAPING		
	SILT FENCE		
	CONTOUR		
	STORM PIPE		
	UNDERGROUND TELEPHONE LINE		
	UNDERGROUND FIBER OPTIC LINE		
	UNDERGROUND GAS MAIN		
	FENCE		
	WATERLINE		
	SEWER FORCE MAIN		
	GRAVITY SEWER MAIN		
	OVERHEAD ELECTRIC LINE		
	RIGHT OF WAY (SEE NOTE 1B)		
	TEST HOLE LOCATION (TYP) REFER TO TECHNICAL SPECIFICATIONS FOR TEST HOLE DATA TEST HOLES		
	BENCHMARK		
	ALLOWABLE OPEN CUT TRENCH WIDTH		
	BRICK PAVER REMOVAL AND OVERLAY		

REV. NO.	DESCRIPTION	DATE
C	ISSUED FOR BID - NOT FOR CONSTRUCTION	2020.05
B	FINAL DESIGN - NOT FOR CONSTRUCTION	2020.04
A	PRELIMINARY DESIGN - NOT FOR CONSTRUCTION	2020.03



MCKIM & CREED

243 N. Front Street
Wilmington, North Carolina 28401
Phone: (910) 343-1048, Fax: (910) 251-8282

NC License# F-1222
www.mckimcreed.com

Cape Fear
Public Utility Authority

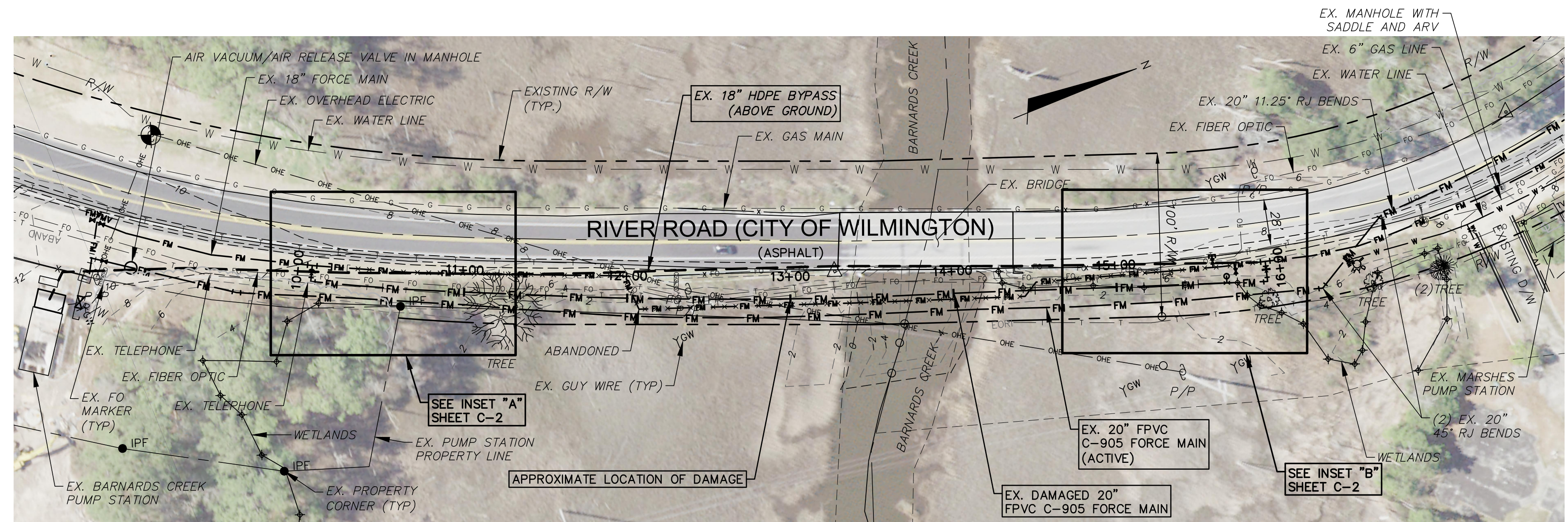
Stewardship. Sustainability. Service.

**BARNARDS CREEK
FORCE MAIN REPAIR/REPLACEMENT**

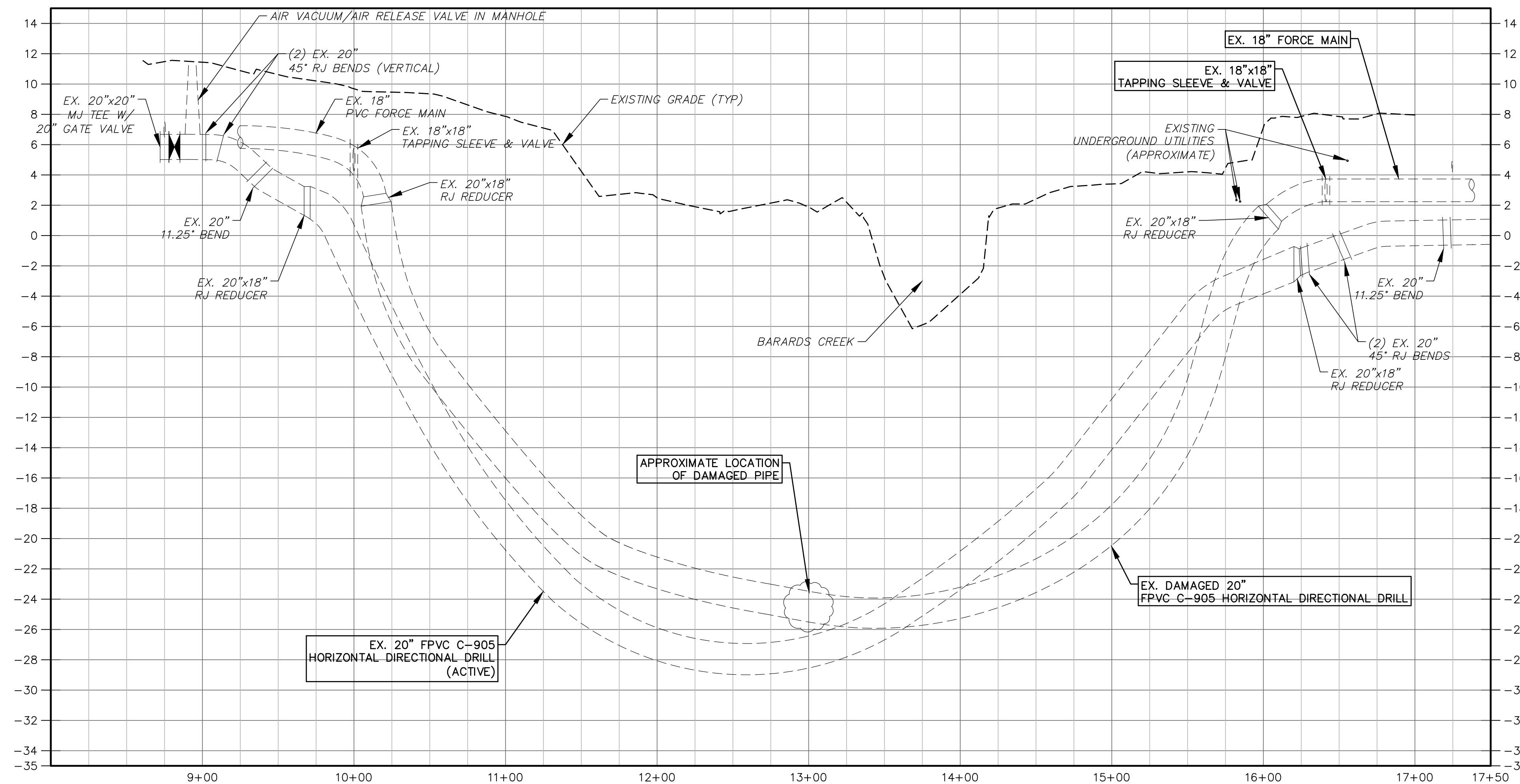
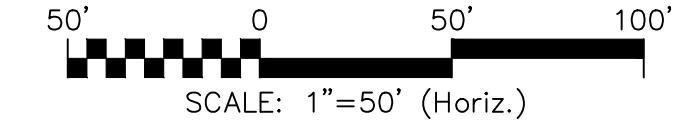
**GENERAL
GENERAL NOTES**

PROJ. START DATE: 2020.03	SCALE
MCE PROJ. # 05367-0054	HORIZONTAL: G-2
DRAWN: MTN	AS NOTED
DESIGNED: SJK	VERTICAL: N/A
CHECKED: SJK	C
PROJ. MGR.: SJK	REVISION

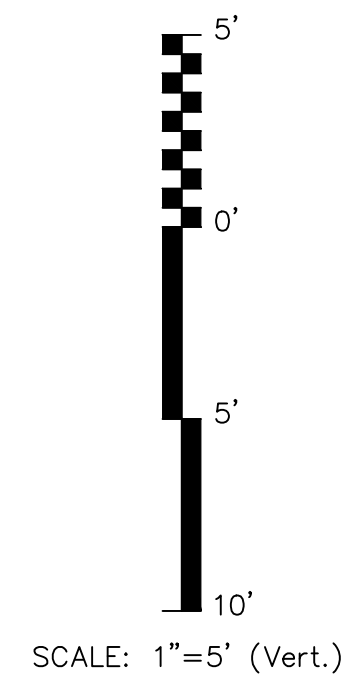
STATUS: **ISSUED FOR BID
NOT FOR CONSTRUCTION**



PLAN VIEW
HORIZ: 1"=50'

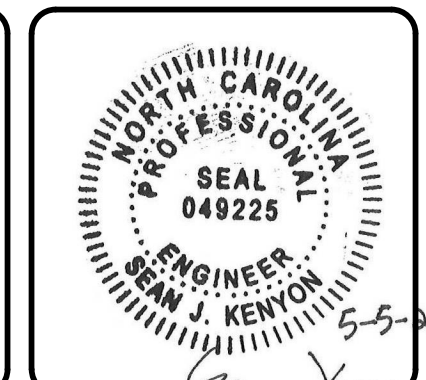
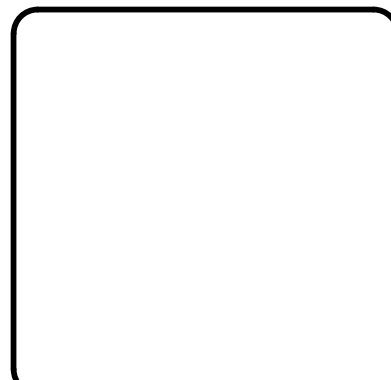


PROFILE VIEW
HORIZ: 1"=50'
VERT: 1"=5'



NOTE:
1. CONTRACTOR IS ADVISED THAT PROFILES OF EXISTING FORCE MAINS ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED.
2. CONTRACTOR SHALL FIELD EXCAVATE EXISTING UTILITIES AND COORDINATE WITH OWNER AND ENGINEER FOR FINAL LOCATION OF ENTRY AND EXIT POINTS.

REV. NO.	DESCRIPTION	DATE
C	ISSUED FOR BID - NOT FOR CONSTRUCTION	2020.05
B	FINAL DESIGN - NOT FOR CONSTRUCTION	2020.04
A	PRELIMINARY DESIGN - NOT FOR CONSTRUCTION	2020.03



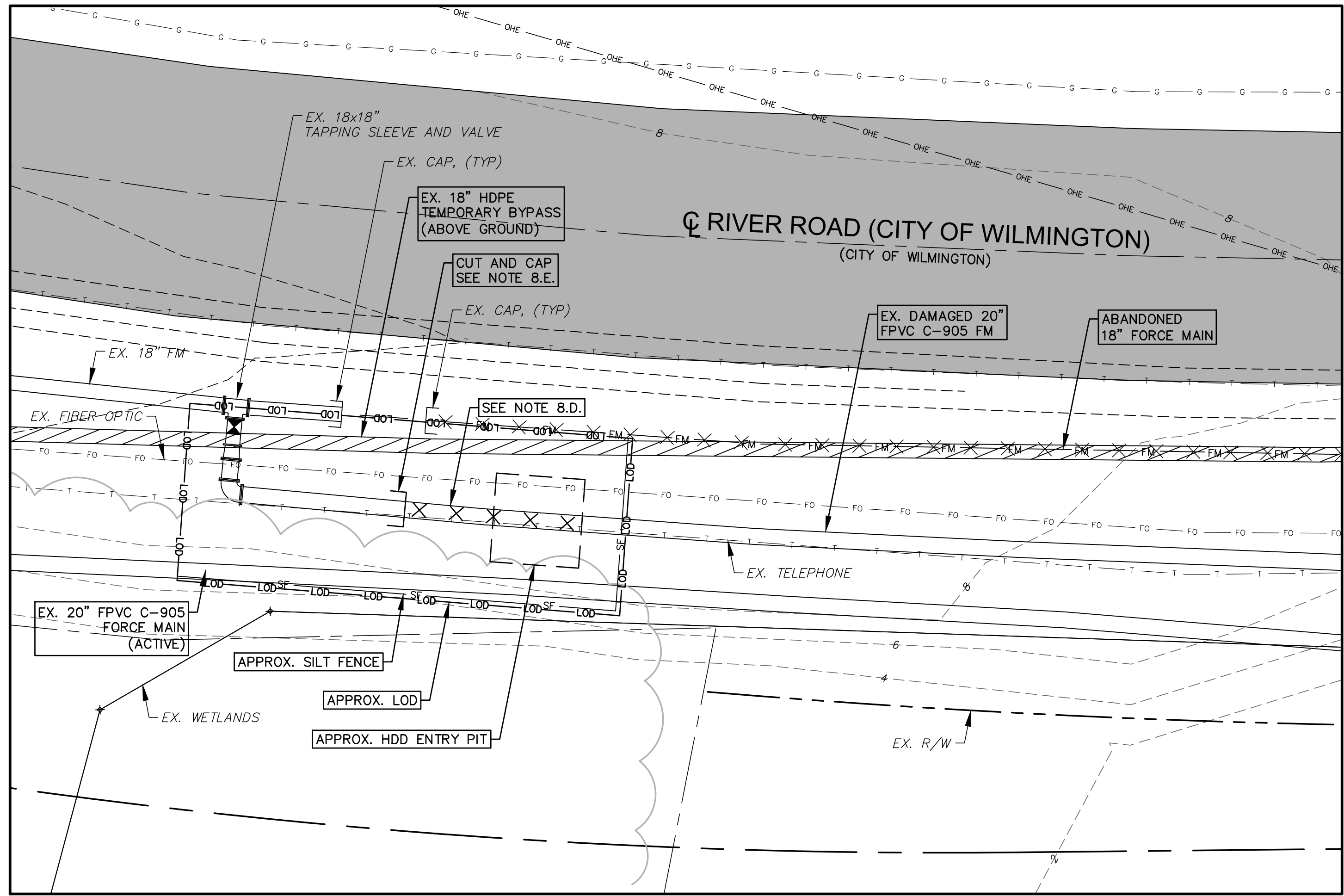
MCKIM & CREED
243 N. Front Street
Wilmington, North Carolina 28401
Phone: (910) 343-1048, Fax: (910) 251-8282
NC License# F-1222
www.mckimcreed.com

Cape Fear
Public Utility Authority
Stewardship. Sustainability. Service.

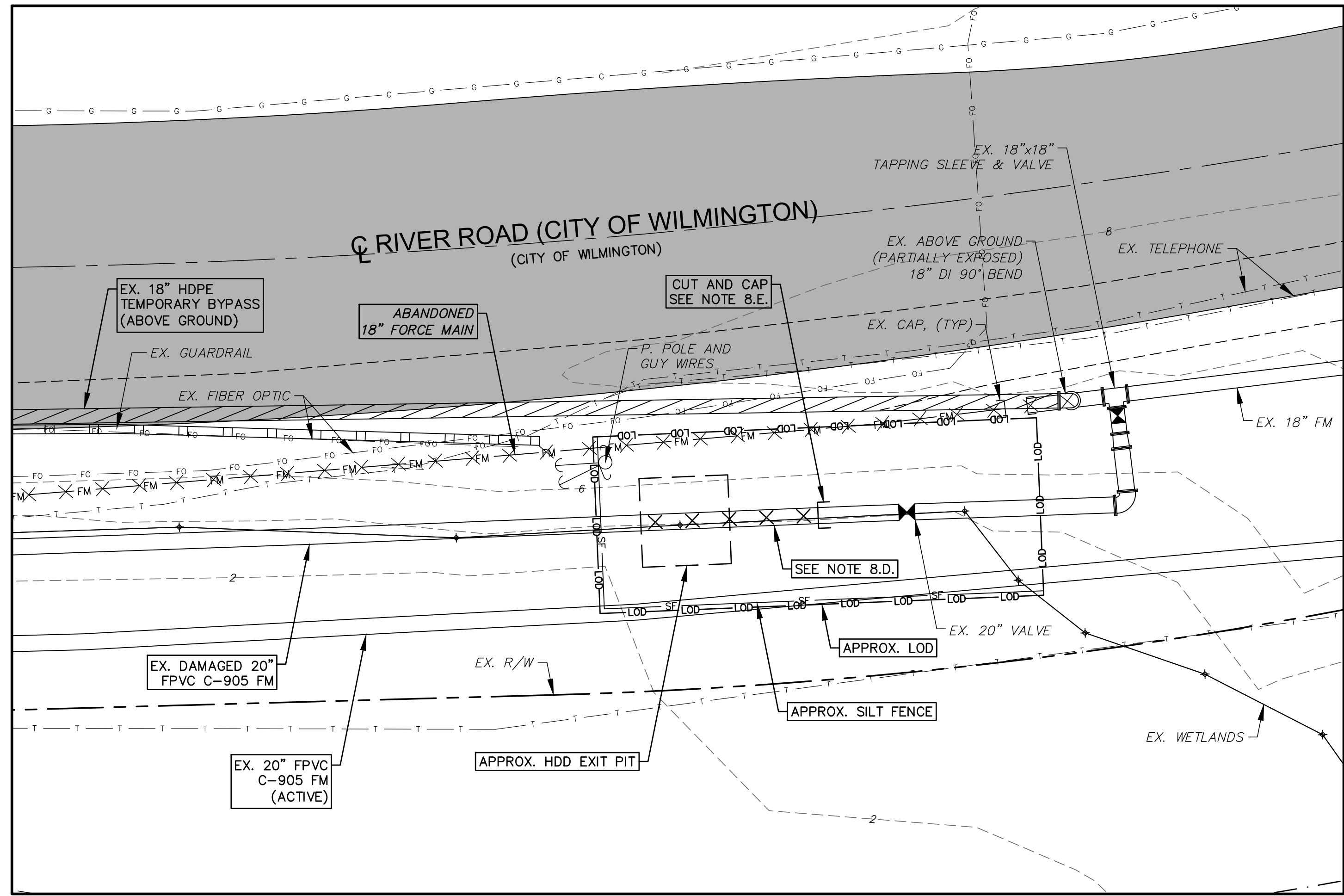
**BARNARDS CREEK
FORCE MAIN REPAIR/REPLACEMENT**
CIVIL
**FORCE MAIN HDD
PLAN AND PROFILE**

PROJ. START DATE:	2020.03
MCE PROJ. #	05367-0054
DRAWN	MTN
DESIGNED	SJK
CHECKED	SJK
PROJ. MGR.	SJK

C-1
DRAWING NUMBER
C
REVISION
**ISSUED FOR BID
NOT FOR CONSTRUCTION**



INSET "A"
SCALE: 1" = 10'

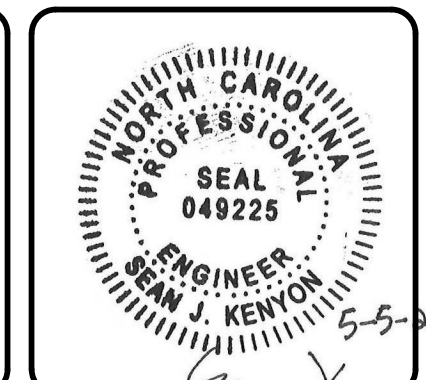


INSET "B"
SCALE: 1" = 10'

- NOTE:
- CONTRACTOR SHALL LOCATE AND PROTECT ALL UTILITY PIPES AND REPLACE/REPAIR ALL UTILITY PIPES DAMAGED AS A RESULT OF CONSTRUCTION.
 - CONTRACTOR SHALL COORDINATE WITH GAS COMPANY TO RELOCATE OR REPLACE GAS MAINS AS NECESSARY TO FACILITATE CONSTRUCTION. SERVICE SHALL NOT BE INTERRUPTED.
 - CONTRACTOR SHALL LOCATE AND SUPPORT EXISTING UNDERGROUND TELEPHONE, FIBER OPTIC AND ELECTRIC DURING CONSTRUCTION. SERVICE SHALL NOT BE INTERRUPTED.
 - THE EXISTING ACTIVE 20" PARALLEL FORCE MAIN SHALL REMAIN IN SERVICE THROUGHOUT THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL MAINTAIN THE ABOVE GROUND BYPASS PIPING SHOWN IN-PLACE ON THIS PLAN SHEET AT ALL TIMES.
 - CONTRACTOR SHALL RESTORE ALL ASPHALT, GUARDRAILS, AND ANY OTHER ROAD FEATURES TO ORIGINAL CONDITIONS, IF DISTURBED.
 - INSTALL TRAFFIC CONTROL MEASURES SHOWN ON PLAN SHEET D-2. ALL TRAFFIC CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S (NCDOT) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
 - DRILL PIT IS SHOWN FOR INFORMATIONAL PURPOSES ONLY. FINAL PIT SIZING, STAGING AREA, EROSION CONTROL AND DRILLING FLUID CONTAINMENT (IF REQUIRED) WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL BE AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL SUBMIT A PLAN FOR STAGING AND DRILLING FLUID CONTAINMENT FOR REVIEW.

8. GENERAL SEQUENCE OF CONSTRUCTION SHALL BE AS FOLLOWS:
- EXISTING 18" FORCE MAIN WAS DAMAGED BY A HELICAL COIL AUGER DURING THE INSTALLATION OF A GUY WIRE. CONTRACTOR SHALL COORDINATE WITH ERIC THISPEN OF MASTEC AT (919) 674-5911 FOR REMOVAL OF THE AUGER PRIOR TO CONSTRUCTION. ONCE THE AUGER IS REMOVED, CONTRACTOR SHALL CONTINUE TO 8.B OF THE CONSTRUCTION SEQUENCE ON THIS PLAN SHEET. IF THE AUGER CANNOT BE REMOVED, NO FURTHER ACTION WILL BE REQUIRED OF THE CONTRACTOR.
 - CONTRACTOR SHALL LOCATE AND EXPOSE EXISTING DAMAGED FORCE MAIN AT APPROXIMATE INSET STAGE LOCATIONS SHOWN ON THIS PLAN SHEET.
 - CONTRACTOR SHALL VERIFY THE DEPTH, LOCATION AND MATERIAL OF THE PIPE AT EACH INSET LOCATION.
 - CONTRACTOR SHALL COORDINATE WITH THE ENGINEER/OWNER ON FINAL LOCATION OF DRILL PIT ON EITHER SIDE OF THE PROPOSED DRILL.
 - UPON FINAL APPROVAL OF DRILL PIT LOCATIONS WITH ENGINEER/OWNER, CONTRACTOR SHALL EXCAVATE AND REMOVE SECTION(S) OF EXISTING PIPE AS NECESSARY TO GAIN ACCESS FOR HDD OPERATION AND INSTALLING CABLE THROUGH THE EXISTING FORCE MAIN.
 - CONTRACTOR SHALL CAP AND RESTRAIN THE PIPE AT THE LOCATIONS SHOWN ON INSET "A" AND "B", RESPECTIVELY.
 - THE INTENT OF THIS PROJECT IS TO INSTALL A CABLE THROUGH THE DAMAGED 20 INCH FORCE MAIN FOR A FUTURE PIPE BURSTING OPERATION. CONTRACTOR SHALL UTILIZE HDD METHODS AND INSTALL THE DRILL THROUGH THE EXISTING FORCE MAIN. CONTRACTOR SHALL COMPLETE DRILL THROUGH EXISTING FORCE MAIN TO CLEAR ANY DEBRIS OR SEDIMENT THAT HAS SETTLED IN THE DAMAGED FORCE MAIN. CONTRACTOR IS ADVISED THAT DAMAGE WAS CAUSED BY AN AUGER USED TO INSTALL A GUY WIRE. EXTENT OF DAMAGE IS UNKNOWN.
 - CONTRACTOR SHALL EXHAUST EVERY EFFORT TO COMPLETE THE HDD. IF THE HDD FAILS ON ONE SIDE OF THE PIPE, CONTRACTOR SHALL REMOBILIZE TO THE OPPOSITE SIDE. IF THE HDD FAILS FROM BOTH SIDES, THE HDD SHALL BE TERMINATED. IF THE HDD IS SUCCESSFUL, CONTRACTOR SHALL CONTINUE TO 8.I OF THE CONSTRUCTION SEQUENCE ON THIS PLAN SHEET.
 - CONTRACTOR SHALL PULL BACK A MIN. 5/8" STEEL BRAIDED CABLE MEETING THE TECHNICAL SPECIFICATIONS OF GRUNDOWNINCH RW10 OR EQUAL THROUGH THE EXISTING FORCE MAIN.
 - UPON COMPLETION OF DRILL, CONTRACTOR SHALL BACKFILL TO ORIGINAL GRADE AND EXTEND APPROXIMATELY 5 FEET OF ADDITIONAL CABLE ABOVE GRADE ON EITHER END OF THE DRILL. CONTRACTOR SHALL CUT CABLE AT THIS LENGTH AND CRIMP AS NECESSARY TO FORM A LOOP FOR FUTURE PULL OF PIPE BURSTING EQUIPMENT. CONTRACTOR SHALL COVER CABLE AS NECESSARY TO PROTECT EXPOSED CABLE FOR FUTURE PULL OF PIPE BURSTING EQUIPMENT.

REV. NO.	DESCRIPTION	DATE
C	ISSUED FOR BID - NOT FOR CONSTRUCTION	2020.05
B	FINAL DESIGN - NOT FOR CONSTRUCTION	2020.04
A	PRELIMINARY DESIGN - NOT FOR CONSTRUCTION	2020.03

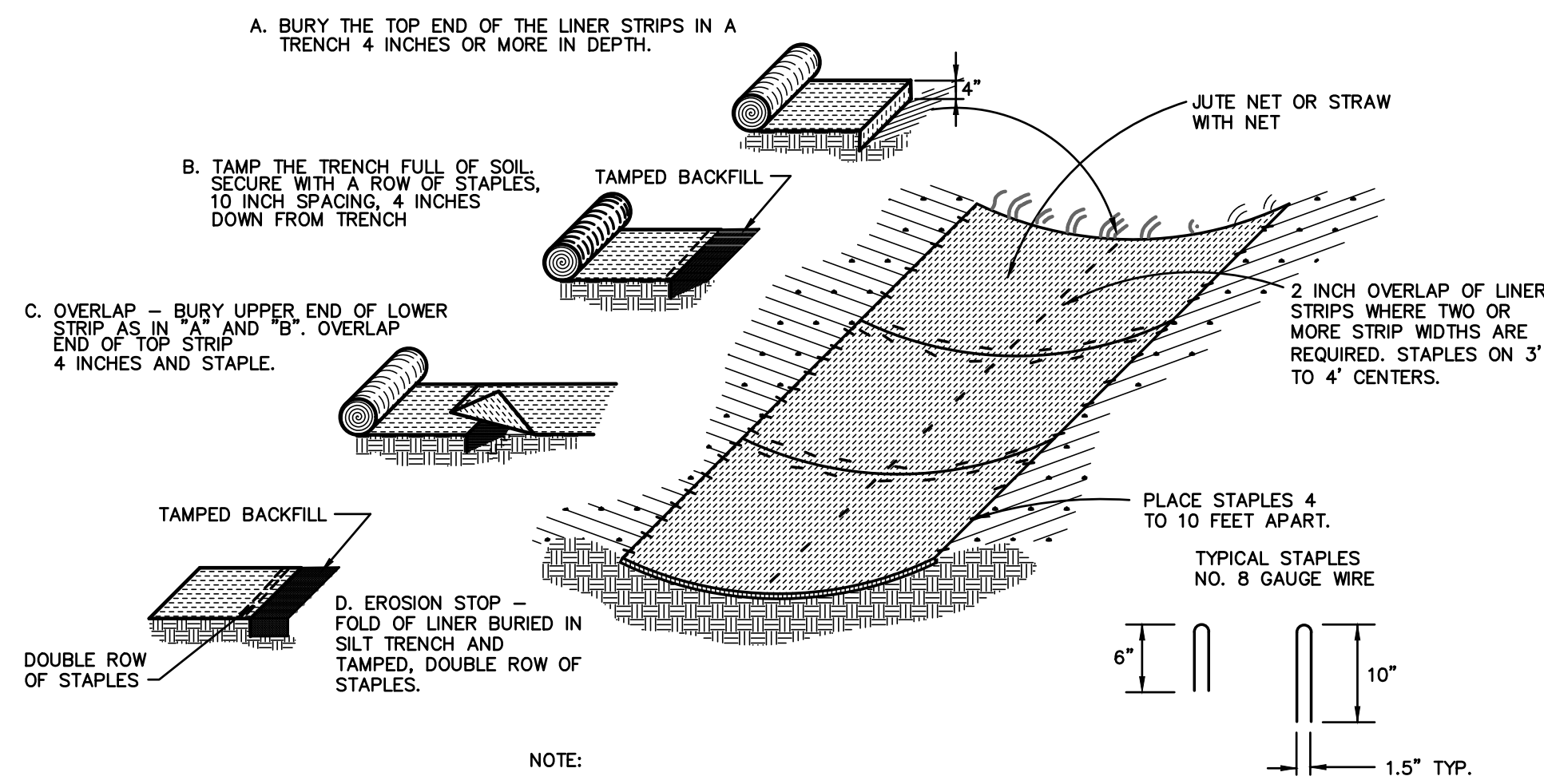


MCKIM & CREED
 243 N. Front Street
 Wilmington, North Carolina 28401
 Phone: (910) 343-1048, Fax: (910) 251-8282
 NC License# F-1222
 www.mckimcreed.com

Cape Fear
 Public Utility Authority
 Stewardship. Sustainability. Service.

**BARNARDS CREEK
 FORCE MAIN REPAIR/REPLACEMENT**
 CIVIL
**FORCE MAIN HDD
 DETAILS**

PROJ. START DATE: 2020.03	SCALE	C-2 DRAWING NUMBER C REVISION
MCE PROJ. # 05367-0054	HORIZONTAL: 1" = 50'	
DRAWN: MTN	VERTICAL: 1" = 5'	
DESIGNED: SJK		
CHECKED: SJK		
PROJ. MGR.: SJK		
STATUS:		ISSUED FOR BID NOT FOR CONSTRUCTION



NOTE:
INSTALL TACKED MULCH IN EXISTING DITCHES AT AREAS WHERE DITCH IS DISTURBED UNLESS OTHERWISE NOTED.

TEMPORARY LINERS
NOT TO SCALE

SEEDING SCHEDULE FOR STABILIZATION GRASS

SHOULDERS, SIDE DITCHES, SLOPES (MAX. 3:1)

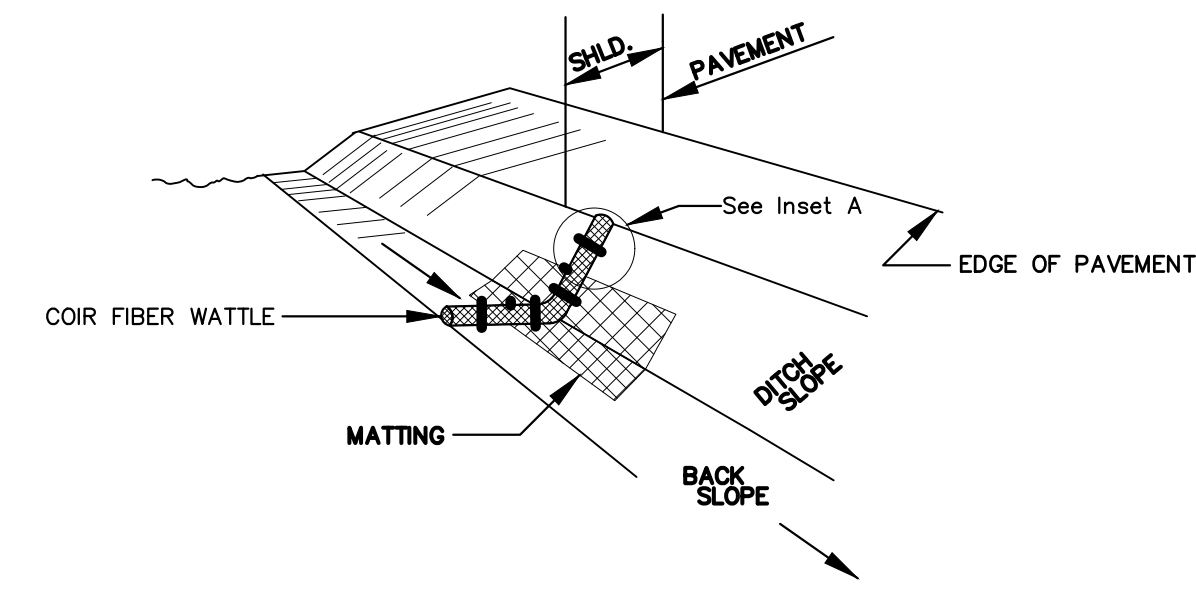
DATE	TYPE	PLANTING RATE
AUG. 15 - NOV. 1	TALL FESCUE	300 LBS/ACRE
NOV. 1 - MAR. 1	TALL FESCUE & ABRUZZI RYE	300 LBS/ACRE
MAR. 1 - APR. 15	TALL FESCUE	300 LBS/ACRE
APR. 15 - JUN. 30	HULLED COMMON BERMUDA GRASS	25 LBS/ACRE
JUL. 1 - AUG. 15	TALL FESCUE AND *** BROWNTOP MILLET	120 LBS/ACRE
	*** OR SORGHUM - SUDAN HYBRIDS	35 LBS/ACRE
		30 LBS/ACRE
SHOULDERS, SIDE DITCHES, SLOPES (3:1 TO 2:1)		
MAR. 1 - JUN. 1	SERICEA LESPEDEZA (SCARIFIED) &	50 LBS/ACRE
(MAR. 1 - APR. 15)	ADD TALL FESCUE	120 LBS/ACRE
(MAR. 1 - JUN. 30)	OR ADD WEEPING LOVERGRASS	10 LBS/ACRE
(MAR. 1 - JUN. 30)	OR ADD HULLED COMMON BERMUDA GRASS	25 LBS/ACRE
JUN. 1 - SEP. 1	*** TALL FESCUE AND *** BROWNTOP MILLET	120 LBS/ACRE
	*** OR SORGHUM - SUDAN HYBRIDS	35 LBS/ACRE
		30 LBS/ACRE
SEP. 1 - MAR. 1	SERICEA LESPEDEZA (UNHULLED - UNSCARIFIED)	70 LBS/ACRE
	AND TALL FESCUE	120 LBS/ACRE
NOV. 1 - MAR. 1	ADD ABRUZZI RYE	25 LBS/ACRE

CONSULT CONSERVATION ENGINEER OR SOIL CONSERVATION SERVICE FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENuded AREAS. THE ABOVE VEGETATION RATES ARE THOSE WHICH DO WELL UNDER LOCAL CONDITIONS, OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.

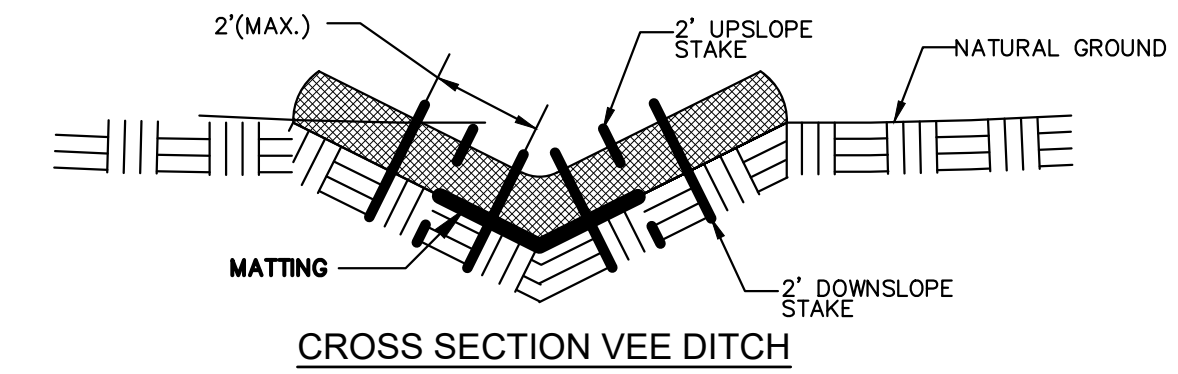
*** TEMPORARY -- RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW OVER 12" IN HEIGHT BEFORE MOWING, OTHERWISE FESCUE MAY BE SHADED OUT.

SEEDBED PREPARATION

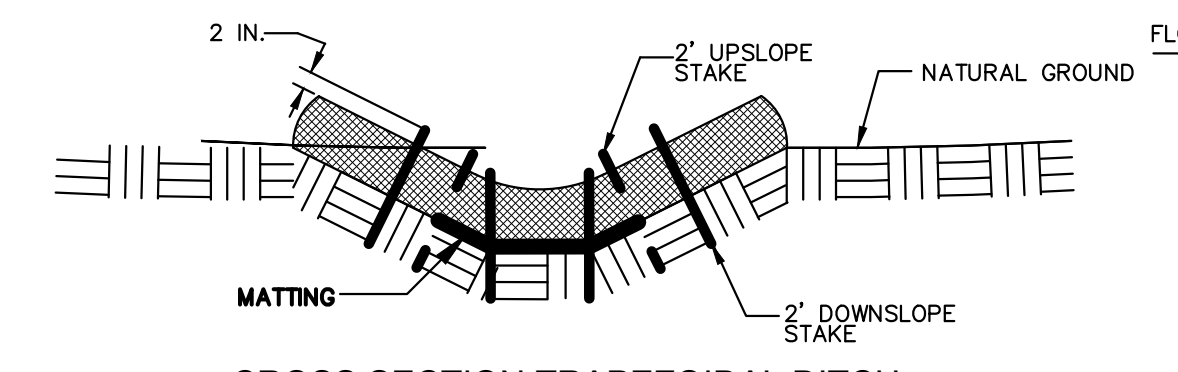
- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
 - RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
 - REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
 - APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW*).
 - CONTINUE TILLAGE UNTIL A WELL - PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
 - SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTPACK 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 REESTABLISHED FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
 - CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.
- * APPLY: AGRICULTURAL LIMESTONE - 2 TONS/ACRE OR 3 TONS/ACRE IN CLAY SOILS
FERTILIZER - 1000 LBS/ACRE (10-10-10)
SUPERPHOSPHATE - 500 LBS/ACRE (20%)
MULCH - 2 TONS/ACRE (SMALL GRAIN STRAW)
ANCHOR - ASPHALT EMULSION AT 450 GAL./ACRE



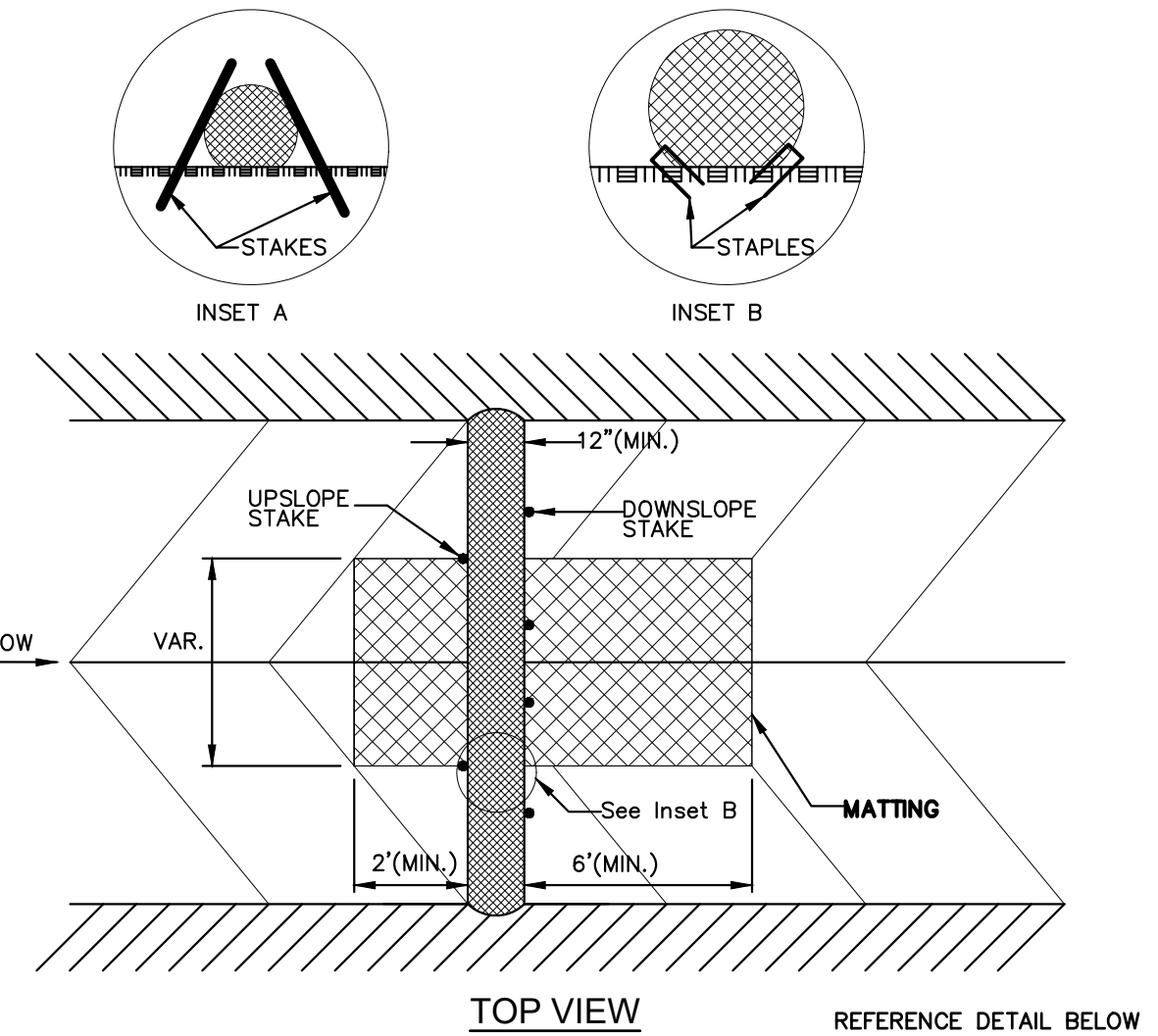
ISOMETRIC VIEW



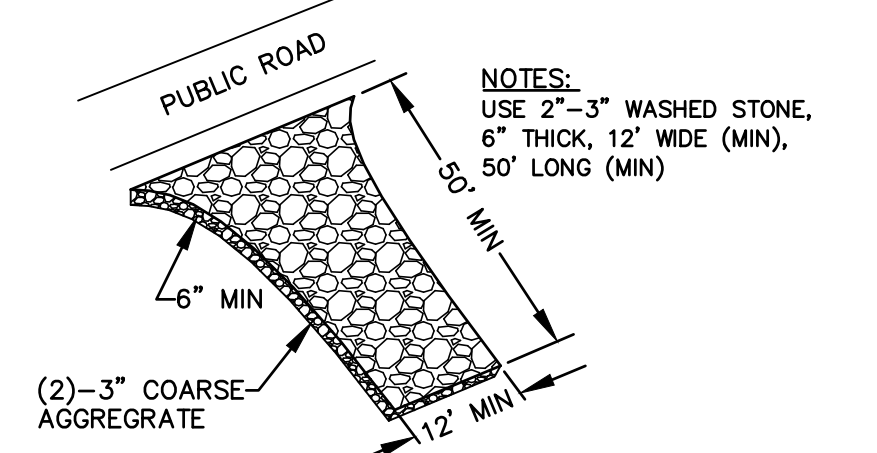
CROSS SECTION VEE DITCH



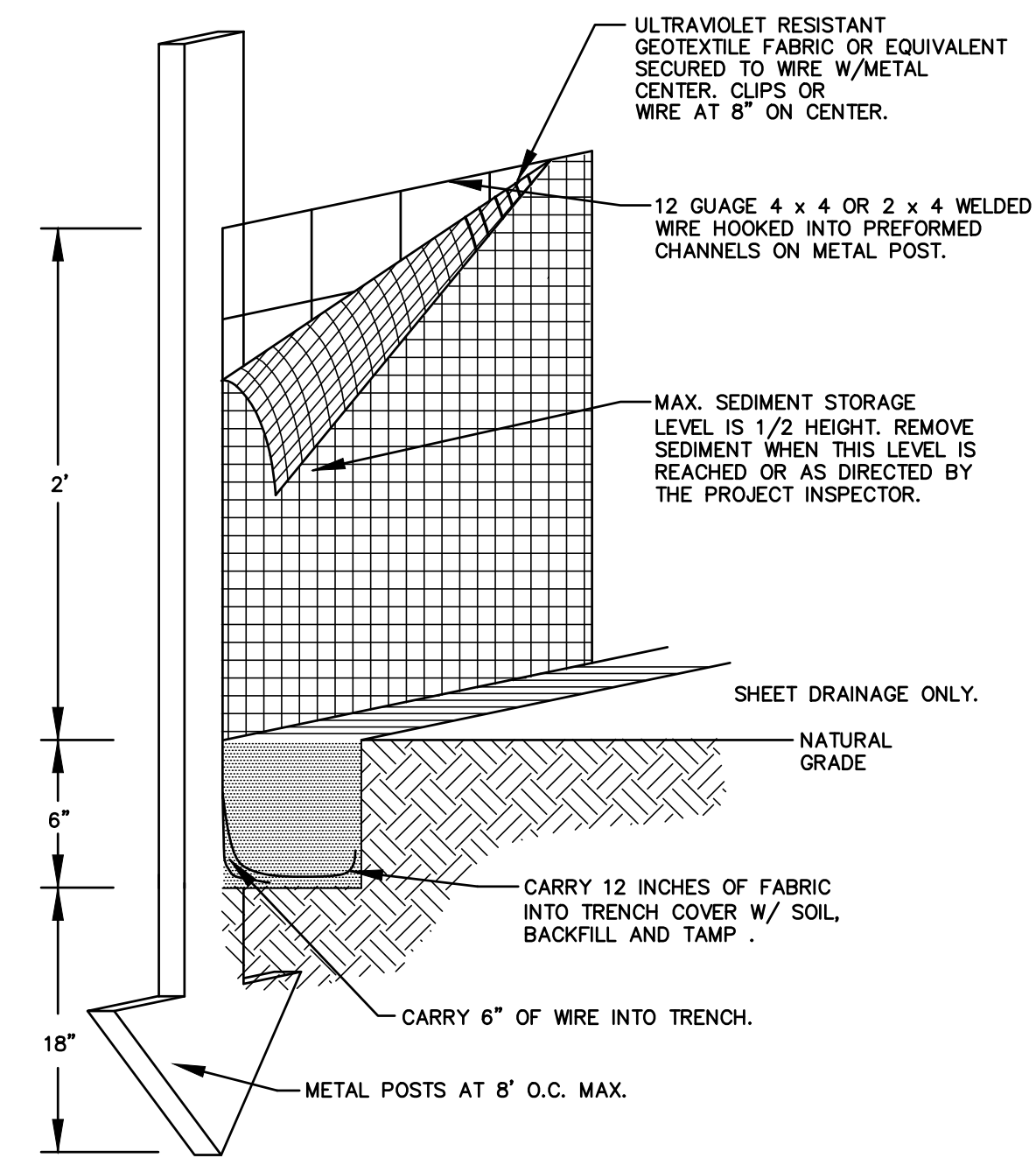
CROSS SECTION TRAPEZOIDAL DITCH



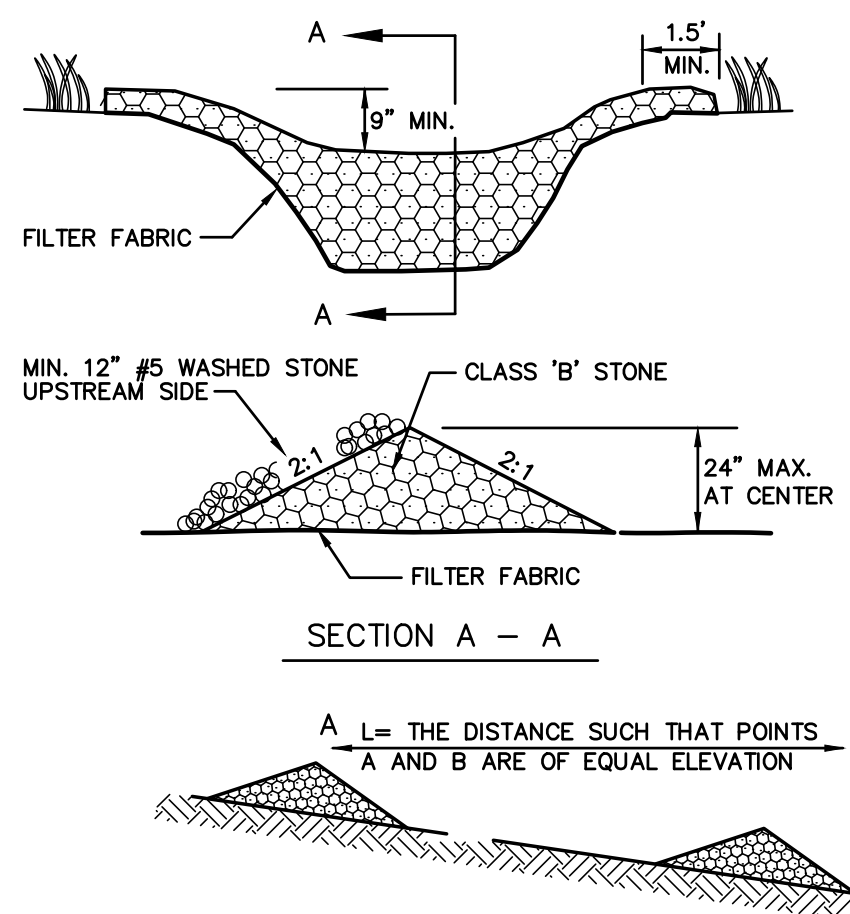
COIR FIBER WATTLE DETAIL
NOT TO SCALE



TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
NOT TO SCALE



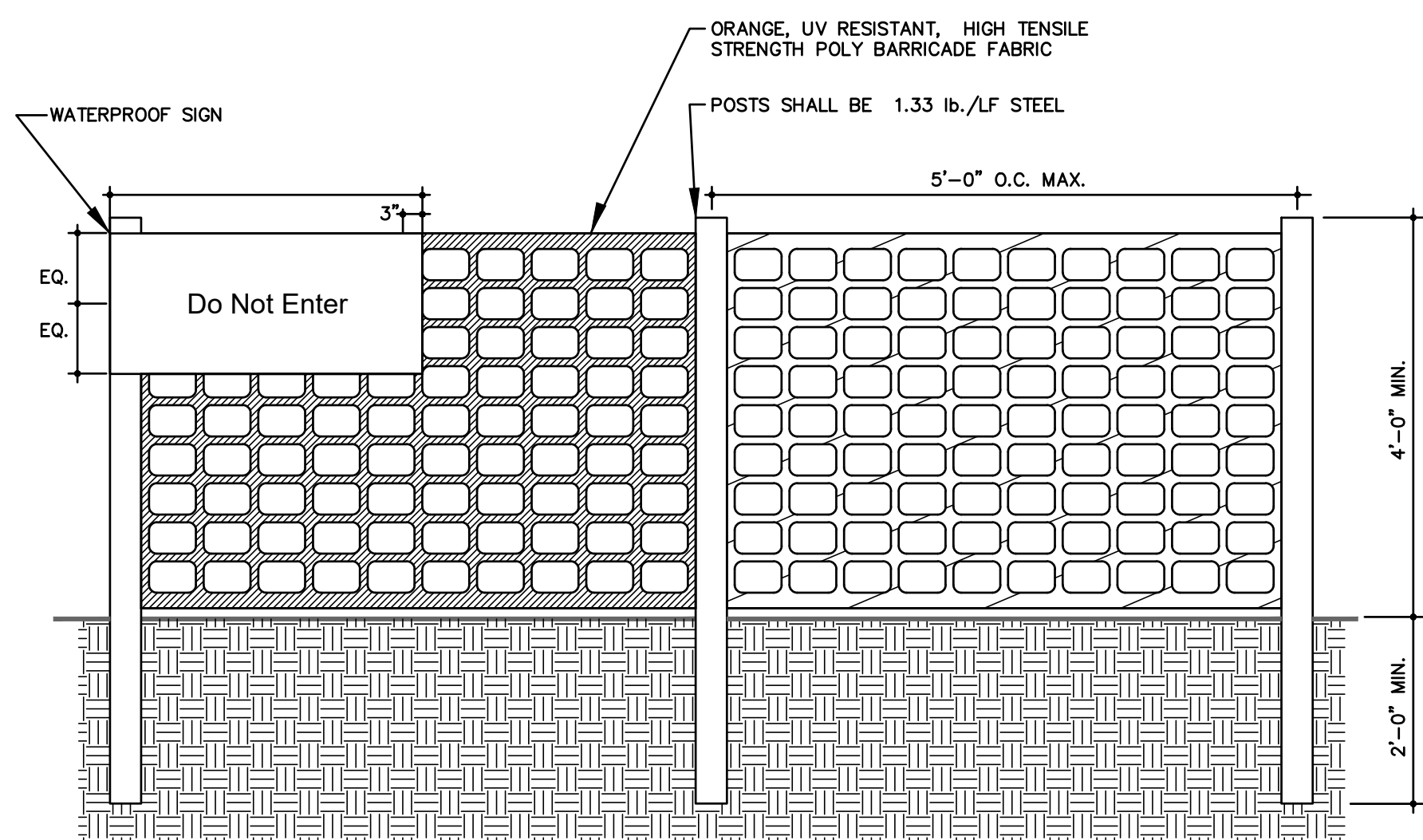
SILT FENCE DETAIL
NOT TO SCALE



NOTES:
(1) STONE SHOULD BE PLACED OVER THE CHANNEL BANKS TO KEEP WATER FROM CUTTING AROUND THE DAM.
(2) STONE CHECK DAMS SHOULD BE SPACED IN A CHANNEL SO THAT THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF UPSTREAM DAM.

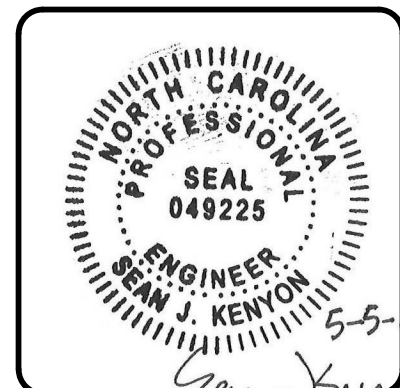
STONE CHECK DAM DETAIL
NOT TO SCALE

- CONSTRUCTION SEQUENCE**
- INSTALL TEMPORARY SILT FENCING, CHECK DAMS, OR OTHER MEASURES AS SHOWN ON THE APPROVED PLANS, AND AS NOTED IN TECHNICAL SPECIFICATION SECTION 022410.
 - INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE WHERE REQUIRED TO ACCESS WORK AREA.
 - PROTECT INLETS WITH SILT FENCING, SEDIMENT TRAPS OR OTHER APPROVED MEASURES AS SHOWN ON THE PLANS, AND AS NOTED IN TECHNICAL SPECIFICATION SECTION 022410.
 - CALL FOR ONSITE INSPECTION BY ENVIRONMENTAL INSPECTOR AND OBTAIN CERTIFICATION OF COMPLIANCE, PRIOR TO CONSTRUCTION IN EACH AREA.
 - OPEN TRENCH, INSTALL PIPELINE, AND BACKFILL TRENCH.
 - STABILIZE SITE AS TRENCH IS RESTORED TO ORIGINAL GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC., AS NOTED IN TECHNICAL SPECIFICATION SECTIONS 022480, 022410, AND 022200.
 - WHEN VEGETATION HAS BECOME ESTABLISHED, AS NOTED IN TECHNICAL SPECIFICATION SECTION 022410, CALL FOR FINAL SITE INSPECTION BY ENVIRONMENTAL INSPECTOR.
 - REMOVE SILT FENCING & CHECK DAMS AFTER FINAL APPROVAL FROM ENVIRONMENTAL INSPECTOR.



TREE PROTECTION FENCE DETAIL
NOT TO SCALE

REV. NO.	DESCRIPTION	DATE
C	ISSUED FOR BID - NOT FOR CONSTRUCTION	2020.05
B	FINAL DESIGN - NOT FOR CONSTRUCTION	2020.04
A	PRELIMINARY DESIGN - NOT FOR CONSTRUCTION	2020.03



MCKIM & CREED
243 N. Front Street
Wilmington, North Carolina 28401
Phone: (910) 343-1048, Fax: (910) 251-8282
NC License# F-1222
www.mckimcreed.com

Cape Fear
Public Utility Authority
Stewardship. Sustainability. Service.

BARNARDS CREEK
FORCE MAIN REPAIR/REPLACEMENT
DETAILS
GENERAL DETAILS

PROJ. START DATE: 2020.03
MCE PROJ. # 05367-0054
DRAWN: MTN
DESIGNED: SJK
CHECKED: SJK
PROJ. MGR.: SJK

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

D-1
DRAWING NUMBER
C
REVISION

STATUS: **ISSUED FOR BID**
NOT FOR CONSTRUCTION

FIGURE TCP-1: LANE CLOSURE ON A TWO-LANE ROAD WITH LOW TRAFFIC VOLUME (MUTCD 6-H11)

TRAFFIC CONTROL GENERAL NOTES

1. TRAFFIC CONTROL PLANS (TCP) FOR THIS PROJECT CONSISTS OF TYPICAL DRAWINGS AND/OR ROADWAY STANDARDS SHOWING TRAFFIC CONTROL DEVICES TO BE USED WHERE VARIOUS TYPES OF CONSTRUCTION ACTIVITIES ARE OCCURRING ON THIS PROJECT. THESE DRAWINGS ARE FOR TYPICAL SITUATIONS AND SHOULD BE ADAPTED TO ACTUAL FIELD CONDITIONS WHICH EXIST. DUE TO UNFORESEEN SITUATIONS, IT MAY BE IMPOSSIBLE TO ADAPT THE PRESCRIBED TYPICAL DRAWING EXACTLY AS SHOWN TO THE ACTUAL FIELD SITUATIONS. PRESCRIBED TYPICAL DRAWING EXACTLY AS SHOWN TO THE ACTUAL FIELD SITUATIONS. THE CONTRACTOR SHALL MOVE, SUPPLEMENT, CHANGE, AND/OR REMOVE THE TRAFFIC CONTROL DEVICES ASSOCIATED WITH THESE TYPICAL DRAWINGS AND/OR ROADWAY STANDARD DRAWINGS TO ENSURE THAT THE MOTORIST CAN PASS THROUGH THE CONSTRUCTION AREA IN A SAFE AND EFFICIENT MANNER.

2. BEGINNING OF WORK AND STREET CLOSINGS: THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE CITY OF WILMINGTON 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 ARE TO REMAIN COVERED UNTIL ROAD CONSTRUCTION BEGINS. THE CONTRACTOR SHALL BEGIN CONSTRUCTION ACTIVITY ON THE SCHEDULED DATE OF THE CLOSING OF THE TRAVEL LANE.

3. OPERATIONAL SIGNS ARE GENERALLY MOUNTED ON PORTABLE SUPPORTS. THESE ARE NORMALLY USED FOR SHORT TERM OPERATIONS TO WARN AND GUIDE TRAFFIC THROUGH OR AROUND CONSTRUCTION AREAS WITHIN A CONSTRUCTION ZONE. OPERATIONAL SIGNS SHALL BE INSTALLED PRIOR TO THE START OF OPERATIONS AS SHOWN ON THE PLANS. SIGNS SHALL BE MAINTAINED IN PROPER POSITION AND KEPT CLEAN AND LEGIBLE AT ALL TIMES. IF NEEDED THEY SHALL BE BALLASTED OR WEIGHTED IN SUCH A MANNER THAT THEY WILL BE STABLE UNDER WIND AND VEHICLE ACTION. BALLASTING SHALL BE DONE WITH SANDBAGS OR OTHER YIELDING MATERIALS PLACED IN SUCH A MANNER THAT THEY DO NOT BECOME MISSILES OR CAUSE UNREASONABLE DAMAGE IF HIT. SIGNS SHALL BE REMOVED WHEN NOT APPLICABLE. THE BOTTOM OF PORTABLE SIGNS SHALL BE A MINIMUM OF 1 FOOT ABOVE THE PAVEMENT SURFACE.

4. THE CONTRACTOR SHALL MARK ALL HAZARDS WITHIN THE LIMITS OF THE PROJECT WITH WELL-MAINTAINED SIGNS, BARRICADES, WARNING AND/OR CHANNELIZING DEVICES. THESE DEVICES SHALL BE MOVED, SUPPLEMENTED, CHANGED OR REMOVED AS REQUIRED DURING THE PROGRESS OF CONSTRUCTION.

5. THE CONTRACTOR SHALL FURNISH, INSTALL, RELOCATE AND MAINTAIN ALL TRAFFIC CONTROL DEVICES, SIGNS, BARRICADES, WARNING AND/OR CHANNELIZING DEVICES FOR WORK SITES AND DETOUR ROUTES AS SHOWN IN TRAFFIC CONTROL PLANS UNLESS OTHERWISE SPECIFIED.

6. WORK ON THE PROJECT OR ANY SEPARATE ACTIVITY THEREIN SHALL NOT START UNTIL ALL OF THE REQUIRED SIGNS, BARRICADES, WARNING AND/OR CHANNELIZING DEVICES ARE INSTALLED, INCLUDING DEVICES INVOLVING THE ROUTING OF TRAFFIC OVER ROADS OUTSIDE THE LIMITS OF THE PROJECT.

7. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH NEW HANOVER COUNTY NOISE ORDINANCE.

8. AT THE END OF EACH WORKDAY, THE CONTRACTOR SHALL BE REQUIRED TO COMPLETELY BACKFILL EXCAVATED AREAS, RE-PAVE DAMAGED AREAS, AND REMOVE ALL TRAFFIC CONTROL DEVICES FROM TRAVELWAYS UNLESS OTHERWISE AGREED TO BY NCDOT.

9. AT NIGHT AND DURING PERIODS OF CONSTRUCTION INACTIVITY, THE CONTRACTOR SHALL PLACE DRUMS AND OTHER CHANNELIZING DEVICES 3' FROM EDGE OF TRAVEL LANES.

10. 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.

11. DURING PERIODS OF CONSTRUCTION INACTIVITY, ALL CONSTRUCTION MATERIALS AND EQUIPMENT SHALL BE STORED NOT CLOSER THAN 10' FROM ANY TRAVEL LANES.

12. ALL TRAVEL LANES SHALL BE OPEN DURING PERIODS OF CONSTRUCTION INACTIVITY UNLESS OTHERWISE INDICATED ON THE PLANS.

13. A SINGLE BARRICADE OR DRUM SHALL NOT BE PLACED ALONE IN A TRAVEL LANE.

14. A TRAVEL LANE SHALL NOT BE MADE LESS THAN 10' WIDE UNLESS OTHERWISE INDICATED ON THE PLANS.

15. THE CONTRACTOR SHALL NOT REMOVE, RELOCATE OR OBSTRUCT ANY EXISTING PERMANENT SIGNS WITHIN THE CONSTRUCTION LIMITS.

16. ALL PIPE INSTALLATION WORK SHALL BE DONE USING TRENCHING OR SHORING METHODS NO BENCHING WILL BE ALLOWED.

17. CONSTRUCTION WORK SHALL NOT BE ALLOWED ON BOTH SIDES OF THE ROAD SIMULTANEOUSLY WITHIN THE SAME AREA.

18. 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 THE TRAFFIC CONTROL DEVICES BECAUSE OF LIMITED VERTICAL AND/OR HORIZONTAL SIGHT DISTANCE.

20. THE AGENCY 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.

PROJECT SPECIFIC:

1. THE WORK COVERED HEREIN SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. IT SHALL ALSO BE IN ACCORDANCE WITH THE CURRENT EDITION OF "WORK ZONE SAFETY GUIDELINES" FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION, MUNICIPALITIES, COUNTIES, UTILITIES, AND CONTRACTORS AND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE CURRENT EDITION SHALL BE THE CURRENT EDITION ON THE DATE OF ADVERTISEMENT FOR THE PROJECT.

2. CHANNELIZING DEVICES IN WORK AREAS SHALL BE ON CENTERS APPROXIMATELY EQUAL TO POSTED SPEED LIMIT IN TANGENT AREAS AND TAPERS, AND ON 10' CENTERS IN RADI AND SHALL BE SET 3' OFF THE EDGE OF TRAVEL WAY, UNLESS OTHERWISE INDICATED ON THE PLANS.

3. BY THE END OF EACH WORKDAY, THE CONTRACTOR SHALL REPLACE ANY EXISTING PAVEMENT MARKINGS WHICH HAVE BEEN OBLITERATED BY CONSTRUCTION PROCEDURES. THE CONTRACTOR SHALL RE-PAVE ANY DAMAGED PAVEMENT SECTIONS AT THE END OF THE WORK DAY AND PRIOR TO RE-OPENING TRAVEL LANES.

4. THE CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS TO ALL BUSINESSES AND DWELLINGS AFFECTED BY THE PROJECT.

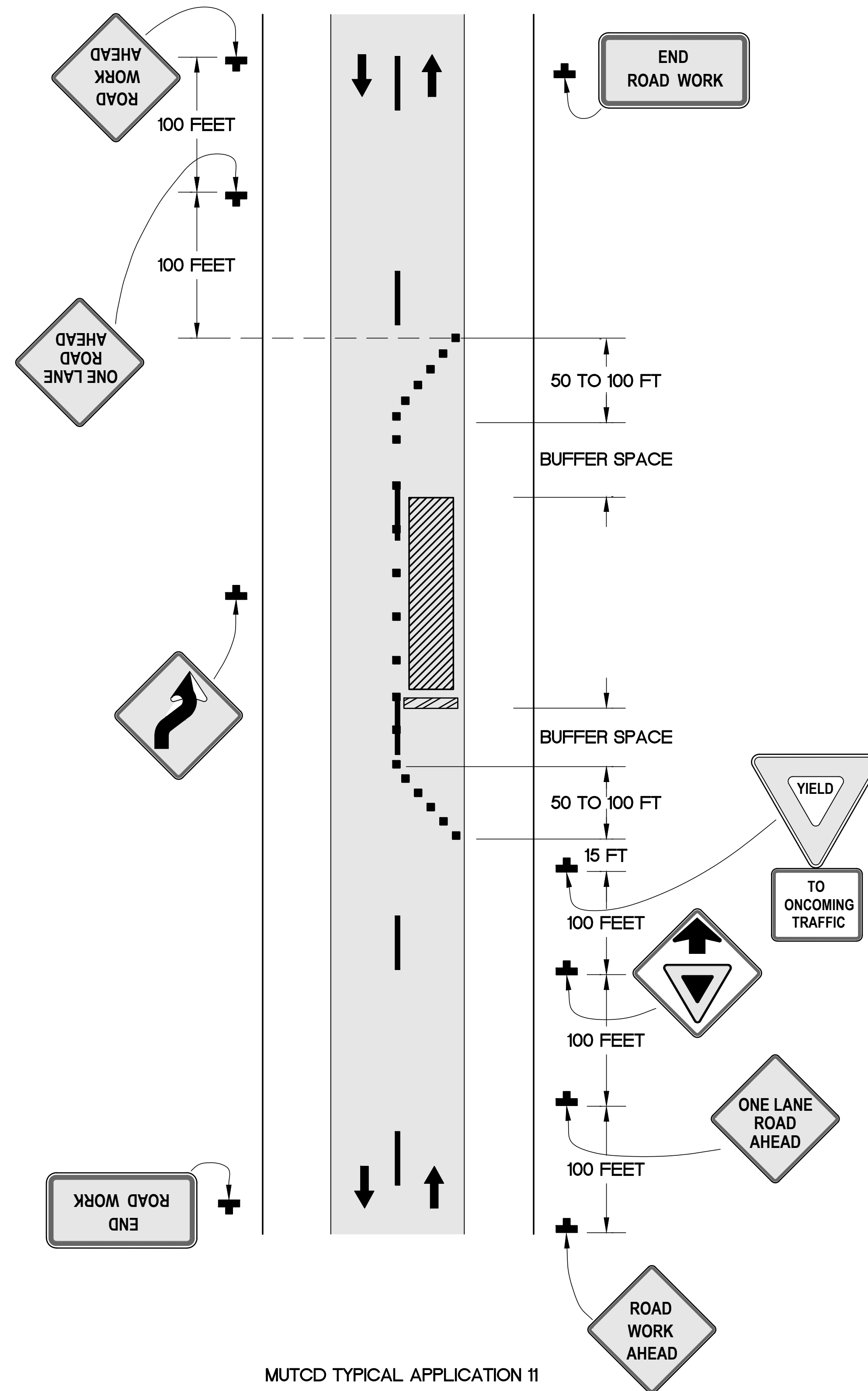
5. ALL TRAFFIC CONTROL SIGNS, DEVICES, AND METHODS SHALL BE IN ACCORDANCE WITH THE PLAN SHOWN AND IN ACCORDANCE WITH THE "WORK ZONE TRAFFIC CONTROL" DIAGRAMS BY NCDOT.

EXAMPLES ONLY:

1-ALL CONSTRUCTION, MAINTENANCE AND UTILITY WORK IN THE RIGHT OF WAY SHALL BE PERMITTED AND FOLLOW MUTCD (PART 6) AND/OR NCDOT GUIDELINES FOR TEMPORARY TRAFFIC CONTROL (TTC).
2-A TTC PLAN SHALL CONSIDER SAFETY AND ACCESSIBILITY OF ALL MOTORISTS, BICYCLISTS AND PEDESTRIANS AND BE PERMITTED BY THE CITY PRIOR TO PLACING SIGNS, ETC.

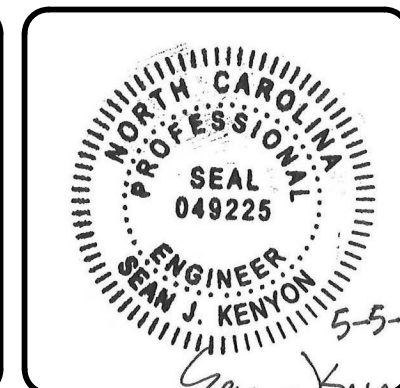
DATE: DECEMBER, 2011	STANDARD DETAIL	<p>CITY OF WILMINGTON NORTH CAROLINA ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807</p>
DRAWN BY JSR	GUIDELINES FOR TEMPORARY TRAFFIC CONTROL	
CHECKED BY BDR, P.E.		
SCALE NOT TO SCALE		

SD 15-07



MUTCD TYPICAL APPLICATION 11

REV. NO.	DESCRIPTION	DATE
C	ISSUED FOR BID - NOT FOR CONSTRUCTION	2020.05
B	FINAL DESIGN - NOT FOR CONSTRUCTION	2020.04
A	PRELIMINARY DESIGN - NOT FOR CONSTRUCTION	2020.03



MCKIM & CREED

243 N. Front Street
Wilmington, North Carolina 28401
Phone: (910) 343-1048, Fax: (910) 251-8282

NC License# F-1222
www.mckimcreed.com

Cape Fear
Public Utility Authority

Stewardship. Sustainability. Service.

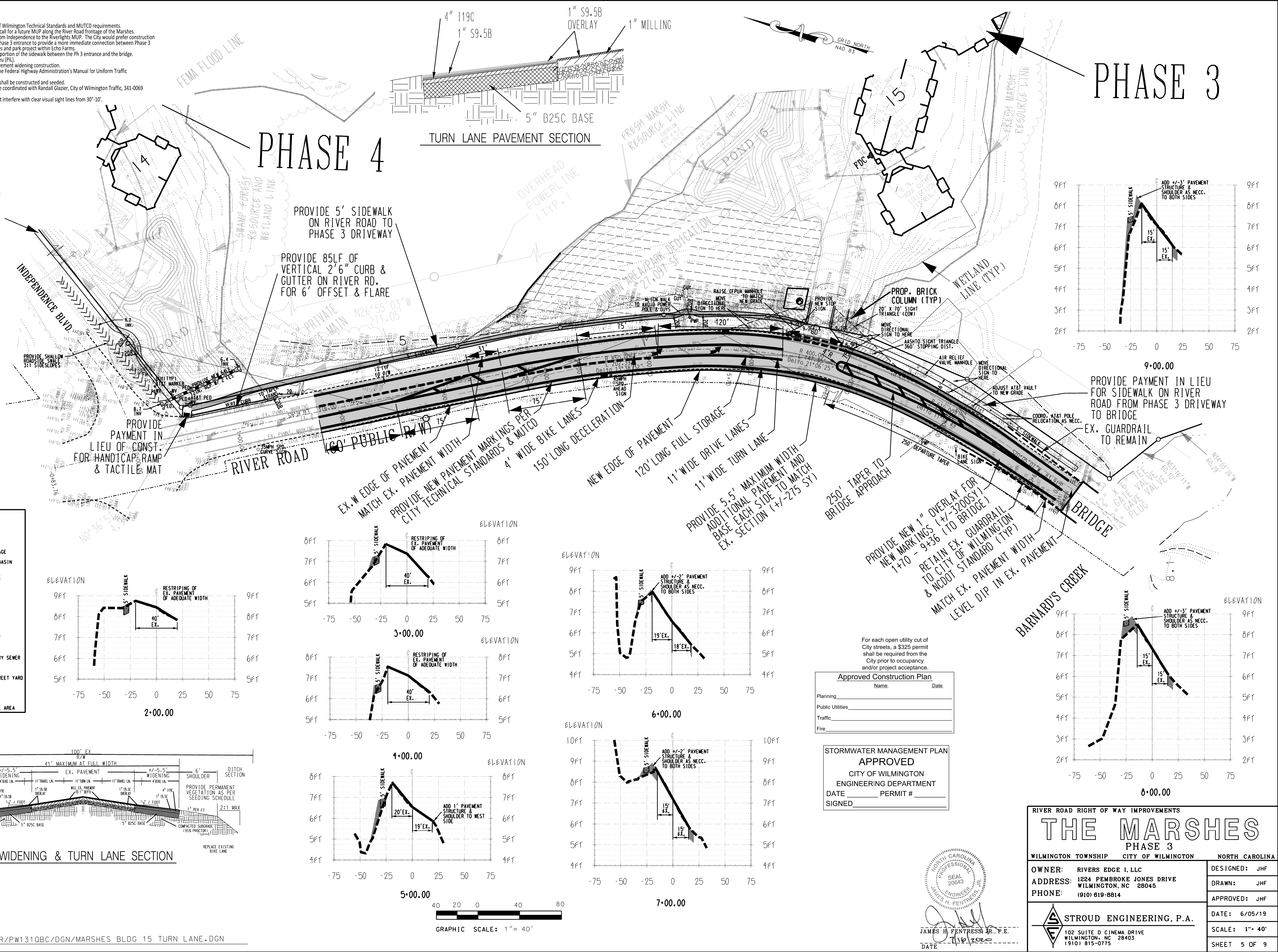
BARNARDS CREEK
FORCE MAIN REPAIR/REPLACEMENT

DETAILS
TRAFFIC CONTROL DETAILS

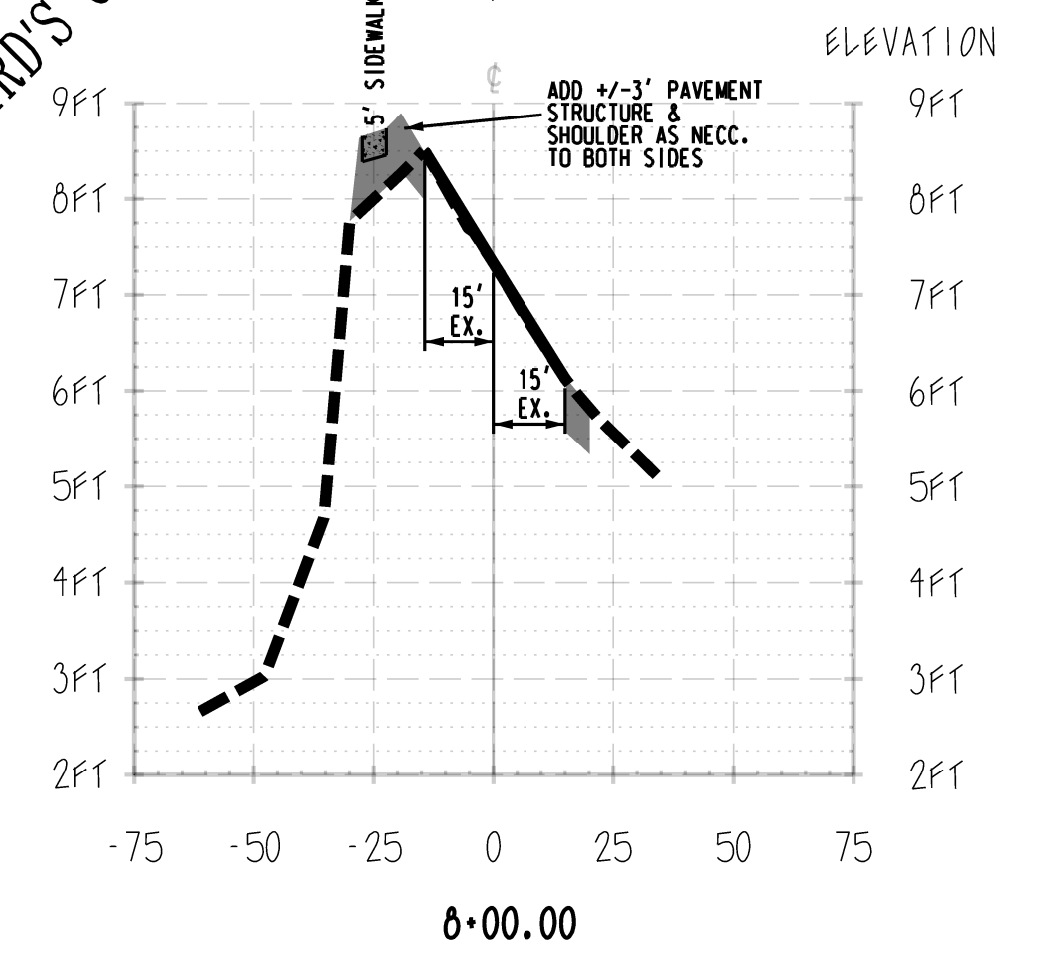
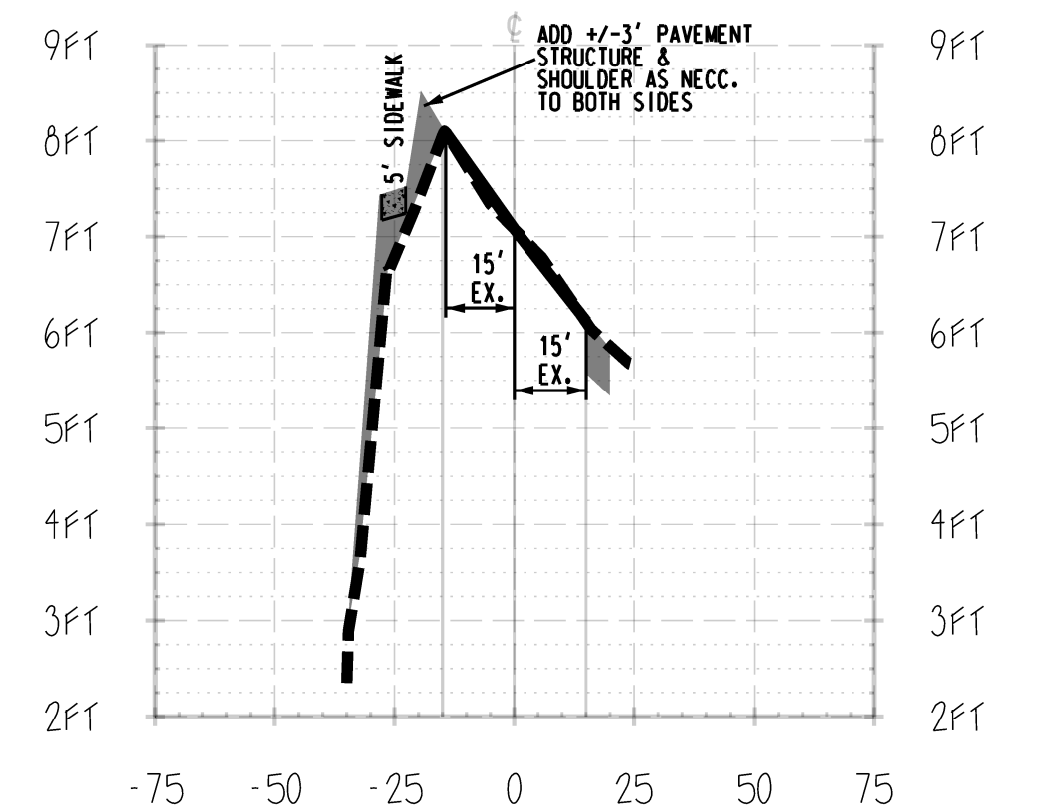
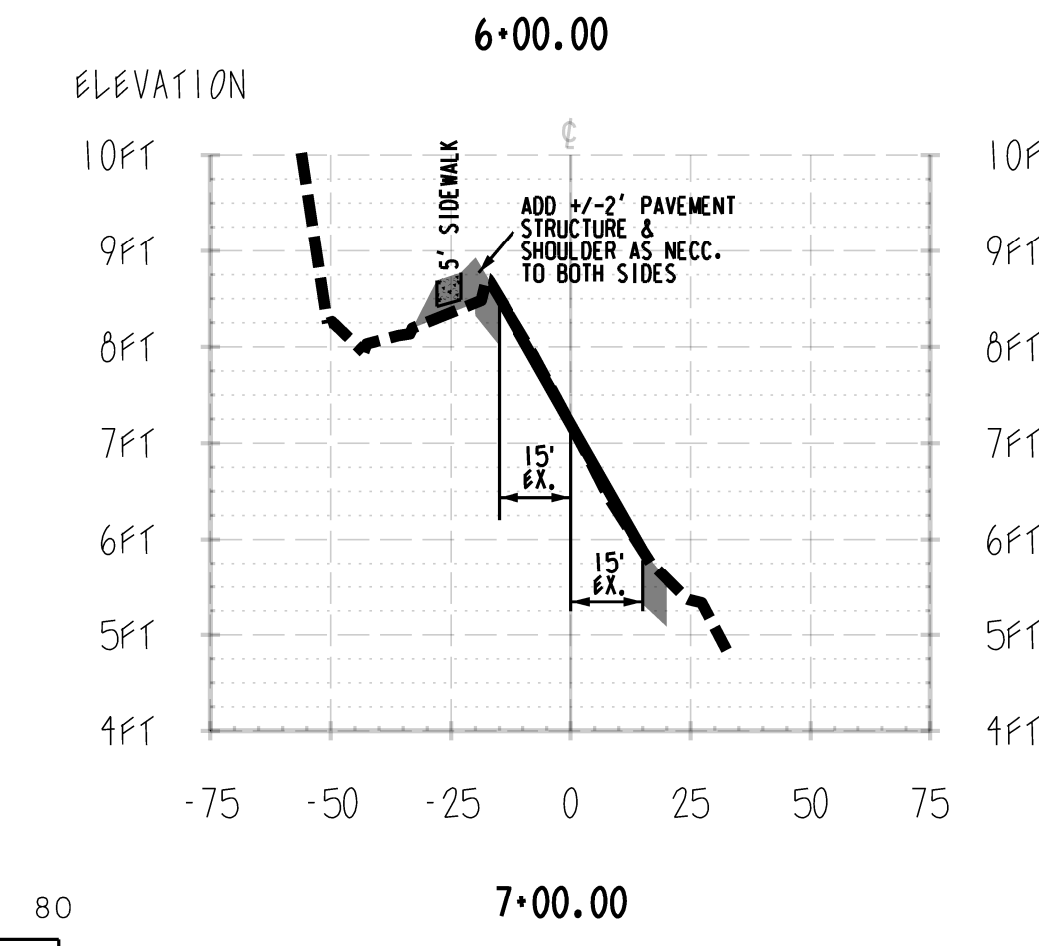
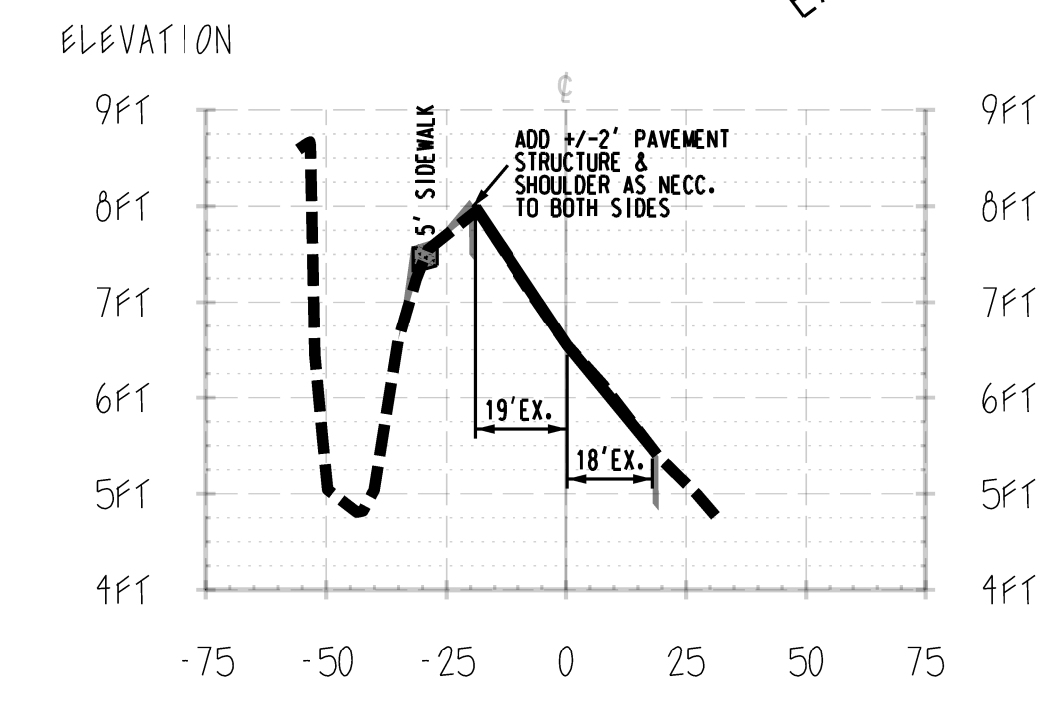
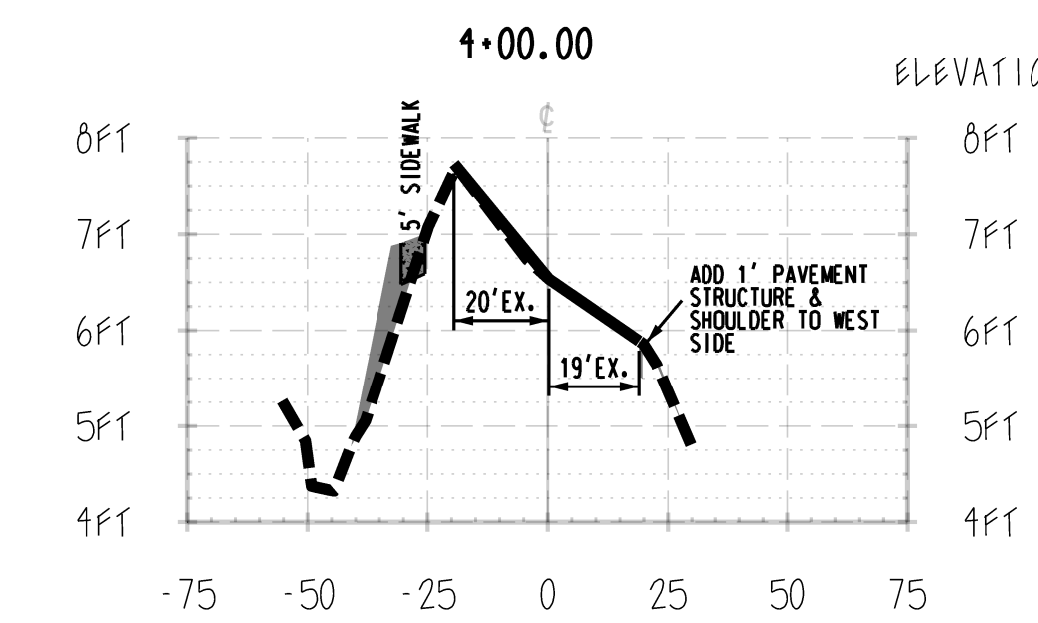
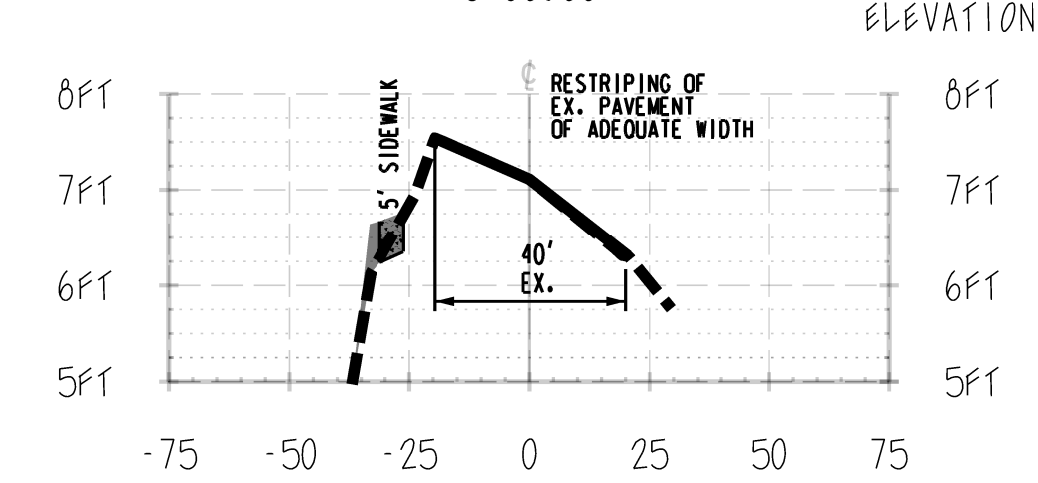
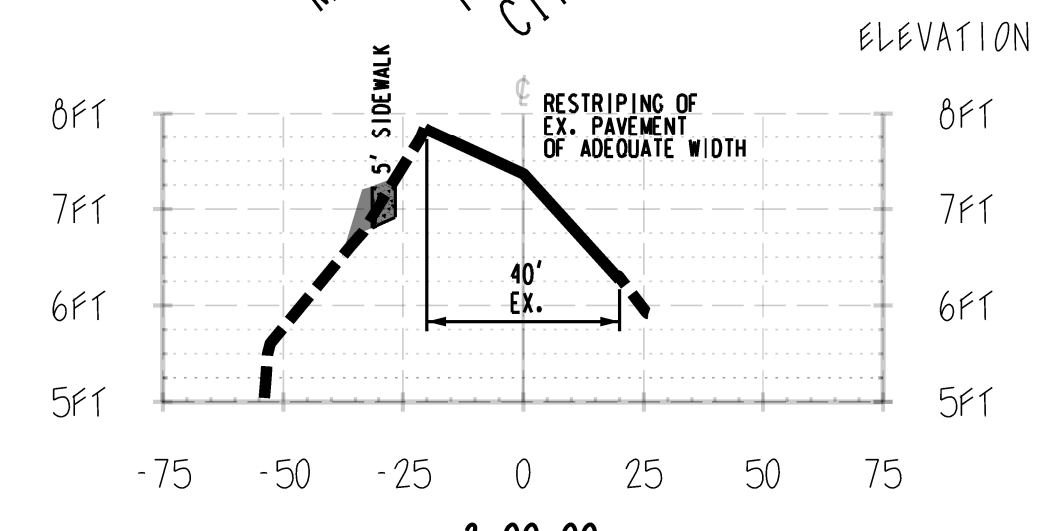
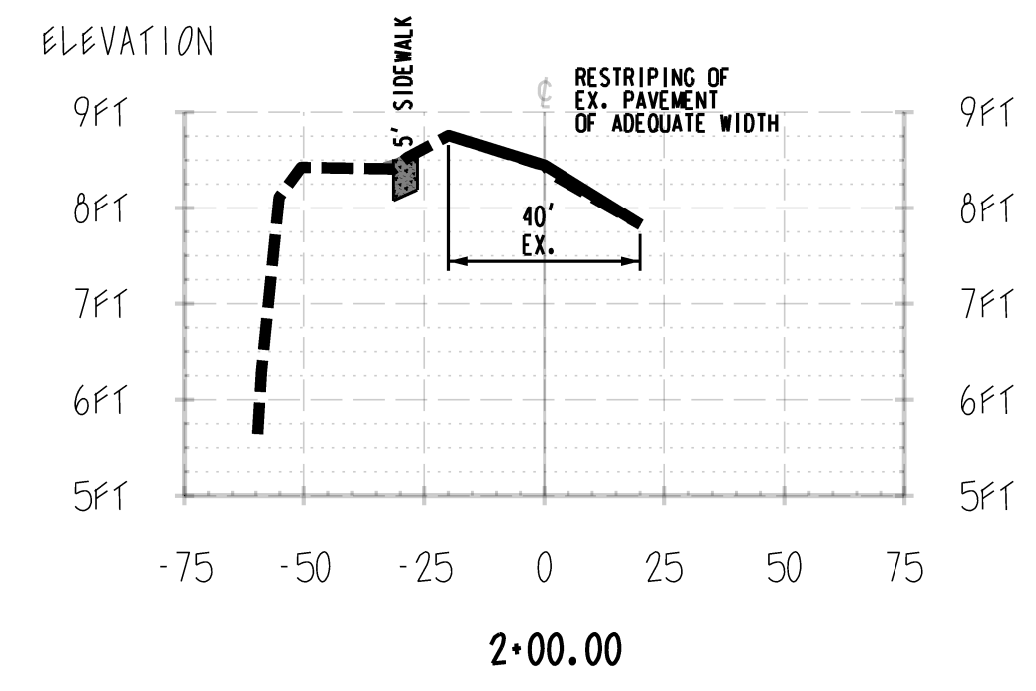
PROJ. START DATE: 2020.03	SCALE	<p>D-2 DRAWING NUMBER</p> <p>C REVISION</p>
MCE PROJ. # 05367-0054	HORIZONTAL: AS NOTED	
DRAWN: MTN	VERTICAL: N/A	
DESIGNED: SJK		
CHECKED: SJK		
PROJ. MGR.: SJK		
STATUS:		ISSUED FOR BID NOT FOR CONSTRUCTION

GENERAL NOTES:

- The proposed left turn lane is required to meet City of Wilmington Technical Standards and MUTCD requirements.
- The Walk Wilmington plan and Comp Greenway plan call for a future MUP along the River Road frontage of the Marshes. There are no funded plans for the MUP connection from Independence to the Riverlights MUP. The City would prefer construction of this required sidewalk from Independence to the Phase 3 entrance to provide a more immediate connection between Phase 3 portion of the project and the neighborhood amenities and park project within Echo Farms.
- City staff is willing to accept a payment in lieu for the portion of the sidewalk between the Ph 3 entrance and the bridge. The developer desires to submit such a payment-in-lieu (PII).
- Existing Utility adjustments shall be made prior to pavement widening construction.
- Chevron signs shall be relocated in accordance with the Federal Highway Administration's Manual for Uniform Traffic Control Devices section 2C.10.
- The road shoulder where payment in lieu is provided shall be constructed and seeded.
- Any and all sign relocation or installation work shall be coordinated with Randall Glazier, City of Wilmington Traffic, 341-0069. Randall.Glazier@wilmington.gov
- All proposed vegetation within sight triangles shall not interfere with clear visual sight lines from 30'-10'.



- DENOTES PROPOSED CONTOUR
- DENOTES EX. CONTOUR
- DENOTES PROPOSED GRADE
- DENOTES PROPOSED STORM DRAINAGE
- DENOTES DROP INLET OR CATCH BASIN W/ INLET PROTECTION
- DENOTES LIMITS OF DISTURBANCE
- DENOTES SILT FENCE
- DENOTES SEDIMENT TRAP
- DENOTES DRAINAGE DIRECTION
- DENOTES WETLAND LINES
- DENOTES DRAINAGE AREA
- DENOTES PROPOSED FIRE HYDRANT
- DENOTES PROPOSED MANHOLE
- DENOTES PROPOSED 8 IN SANITARY SEWER
- DENOTES PHASE LINE
- DENOTES SQUARE FOOTAGE OF STREET YARD
- DENOTES PROPOSED WATER
- DENOTES PROPOSED GATE VALVE
- DENOTES PARKING LOT LANDSCAPE AREA



For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

Approved Construction Plan

Name _____ Date _____

Planning _____

Public Utilities _____

Traffic _____

Fire _____

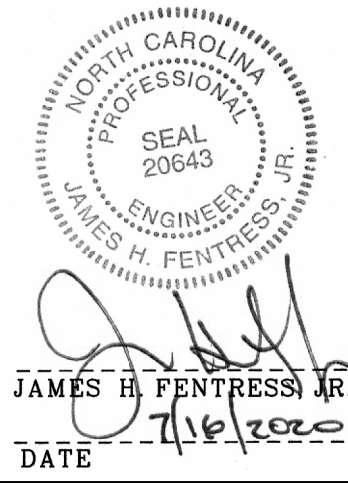
STORMWATER MANAGEMENT PLAN APPROVED

CITY OF WILMINGTON

ENGINEERING DEPARTMENT

DATE _____ PERMIT # _____

SIGNED _____



RIVER ROAD RIGHT OF WAY IMPROVEMENTS

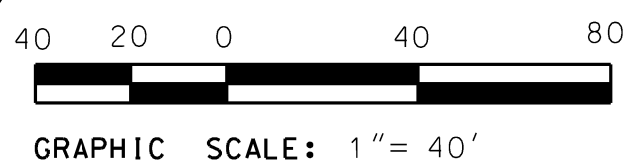
THE MARSHES

PHASE 3

WILMINGTON TOWNSHIP	CITY OF WILMINGTON	NORTH CAROLINA
OWNER: RIVERS EDGE I. LLC	ADDRESS: 1224 PEMBROKE JONES DRIVE WILMINGTON, NC 28045	PHONE: (910) 819-8814
DESIGNED: JHF	DRAWN: JHF	APPROVED: JHF
DATE: 6/05/19	SCALE: 1" = 40'	SHEET 5 OF 9

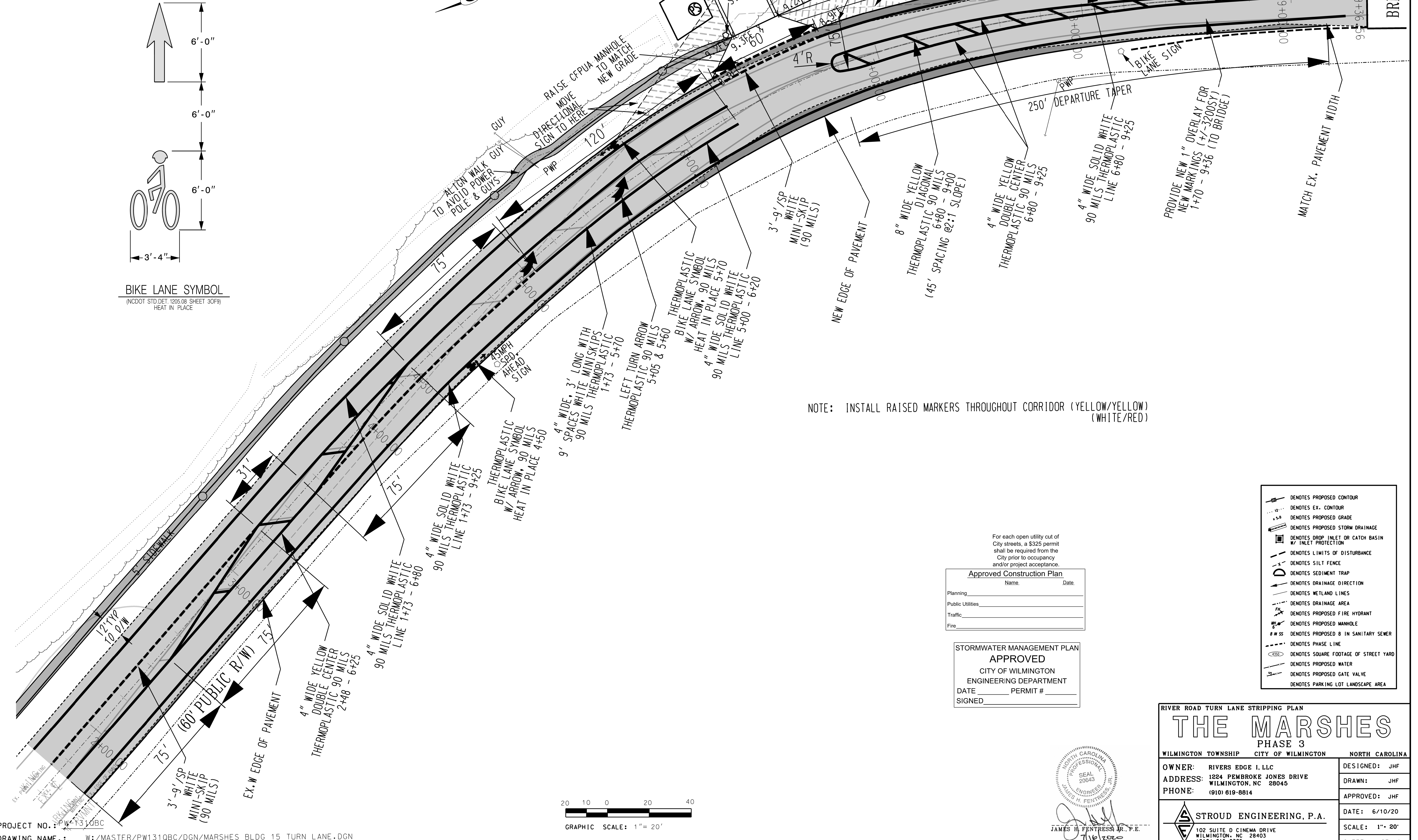
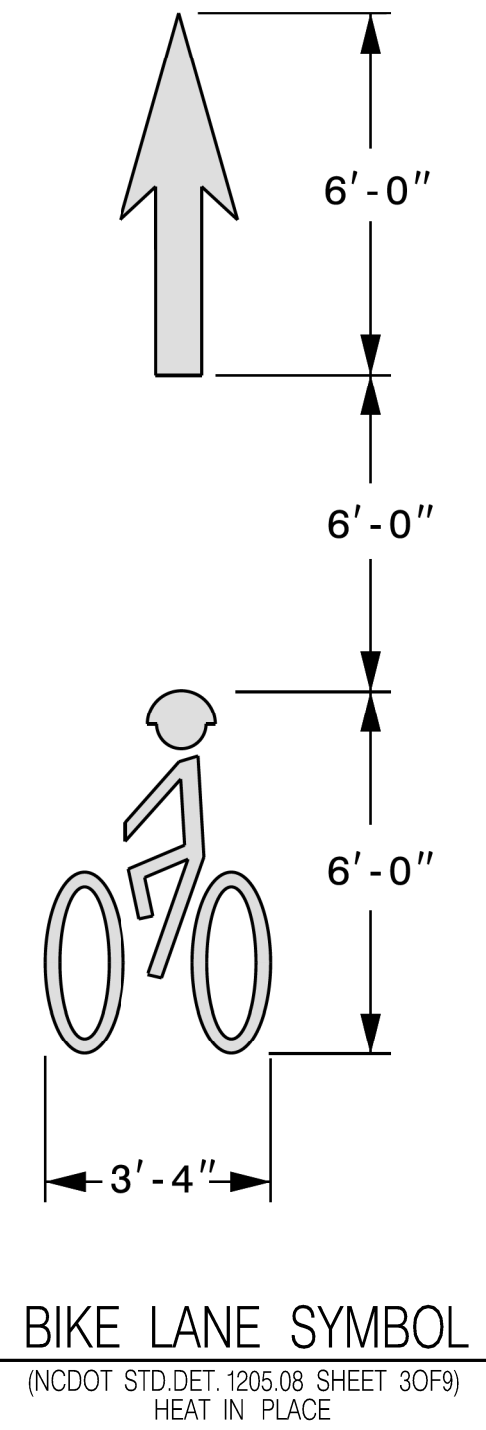
STROUD ENGINEERING, P.A.

102 SUITE D CINEMA DRIVE WILMINGTON, NC 28403 (910) 815-0775



CITY OF WILMINGTON CONSTRUCTION PLAN SET

- The proposed left turn lane is required to meet City of Wilmington Technical Standards and MUTCD requirements.
- The Walk Wilmington plan and Comp Greenway plan call for a future MUP along the River Road frontage of the Marshes. There are no funded plans for the MUP connection from Independence to the Riverlights MUP. The City would prefer construction of this required sidewalk from Independence to the Phase 3 entrance to provide a more immediate connection between Phase 3 portion of the project and the neighborhood amenities and park project within Echo Farms.
- City staff is willing to accept a payment-in-lieu for the portion of the sidewalk between the Ph 3 entrance and the bridge. The developer desires to submit such a payment-in-lieu (PII).
- Existing utility adjustments shall be made prior to pavement widening construction.
- Choron signs shall be relocated in accordance with the Federal Highway Administration's Manual for Uniform Traffic Control Devices section 2C10.
- The road shoulder where payment in lieu is provided shall be constructed and seeded.
- Any and all sign relocation or installation work shall be coordinated with Randall Glazier, City of Wilmington Traffic, 341-0069 Randall.Glazier@wilmingtonnc.gov
- All proposed vegetation within sight triangles shall not interfere with clear visual sight lines from 30'-10'.



NOTE: INSTALL RAISED MARKERS THROUGHOUT CORRIDOR (YELLOW/YELLOW) (WHITE/RED)

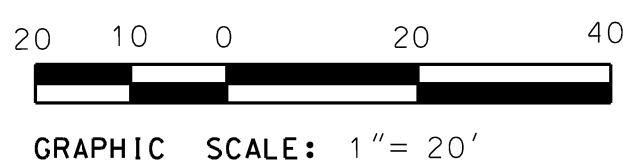
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

Approved Construction Plan
Name _____ Date _____

Planning _____
Public Utilities _____
Traffic _____
Fire _____

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE _____ PERMIT # _____
SIGNED _____

- DENOTES PROPOSED CONTOUR
- DENOTES EX. CONTOUR
- DENOTES PROPOSED GRADE
- DENOTES PROPOSED STORM DRAINAGE
- DENOTES DROP INLET OR CATCH BASIN W/ INLET PROTECTION
- DENOTES LIMITS OF DISTURBANCE
- DENOTES SILT FENCE
- DENOTES SEDIMENT TRAP
- DENOTES DRAINAGE DIRECTION
- DENOTES WETLAND LINES
- DENOTES DRAINAGE AREA
- DENOTES PROPOSED FIRE HYDRANT
- DENOTES PROPOSED MANHOLE
- DENOTES PROPOSED 8 IN SANITARY SEWER
- DENOTES PHASE LINE
- DENOTES SQUARE FOOTAGE OF STREET YARD
- DENOTES PROPOSED WATER
- DENOTES PROPOSED GATE VALVE
- DENOTES PARKING LOT LANDSCAPE AREA



Professional Engineer Seal for James H. Pentress, Jr., State of North Carolina, License No. 20643.

RIVER ROAD TURN LANE STRIPPING PLAN

THE MARSHES

PHASE 3

WILMINGTON TOWNSHIP CITY OF WILMINGTON NORTH CAROLINA

OWNER: RIVERS EDGE I, LLC
ADDRESS: 1224 PEMBROKE JONES DRIVE WILMINGTON, NC 28045
PHONE: (910) 619-8814

DESIGNED: JHF
DRAWN: JHF
APPROVED: JHF
DATE: 6/10/20
SCALE: 1" = 20'
SHEET 5A OF 9

STROUD ENGINEERING, P.A.
102 SUITE D CINEMA DRIVE WILMINGTON, NC 28403 (910) 815-0775

PROJECT NO.: PW-1310BC

PROJECT NO.: PW-1310BC
DRAWING NAME: W:/MASTER/PW1310BC/DGN/MARSHES BLDG 15 TURN LANE.DGN