

VICINITY MAP
NTS

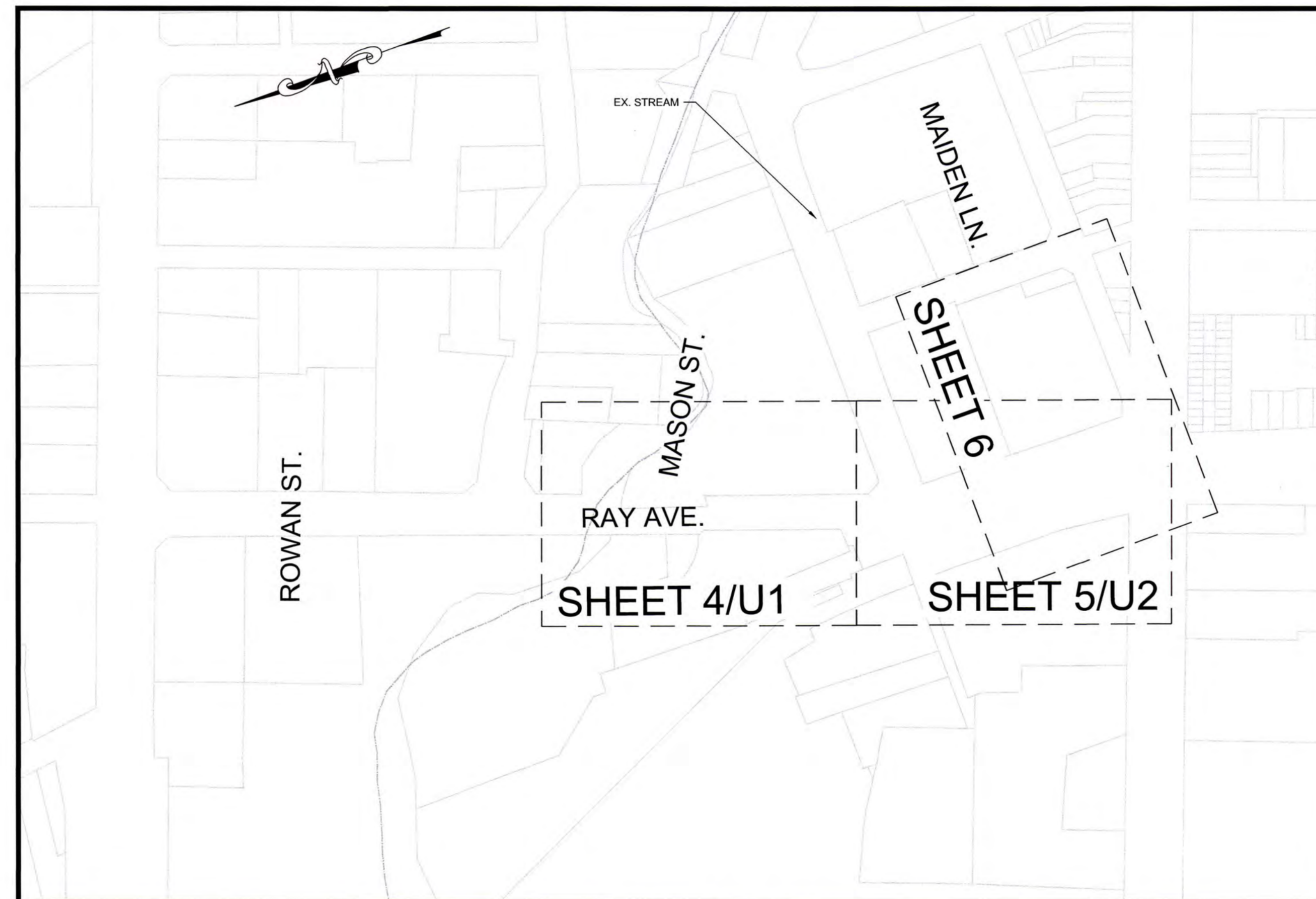


RAY AVE DRAINAGE

PROJECT NUMBER: SRP-SW-ARP-0001

PROJECT SCOPE
THE PROJECT SCOPE INCLUDES DESIGN OF THE RAY AVENUE DRAINAGE SYSTEM TO REPLACE AGING INFRASTRUCTURE ALONG RAY AVE.

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LOCATION MAP
NTS

PROJECT CONTACTS CITY OF FAYETTEVILLE	
Project Engineer	Chris Haddock, PLS 433 Hay Street, Fayetteville, NC 28301 (910) 433-1662 chaddock@ci.fay.nc.us
Construction Management	Jeff Riddle, PLS Construction Manager 339 Alexander Street, Fayetteville, NC 28301 (910) 433-1613 jriddle@ci.fay.nc.us
Traffic Services	Lee Jernigan, PE Assistant Public Services Director 339 Alexander Street, Fayetteville, NC 28301 (910) 433-1660 ljernigan@ci.fay.nc.us



Know what's below.
Call before you dig.

CONSTRUCTION APPROVAL	
Construction Management	
Engineering	
Parks & Recreation	
Real Estate	
Street Maintenance	
Traffic Services	
Utilities - Electrical Services	
Utilities - Sewer Services	
Utilities - Water Services	

ISSUED FOR CONSTRUCTION

 720 CORPORATE CENTER DRIVE RALEIGH, NC 27607 Office Locations: Georgia, North Carolina, South Carolina, Tennessee NC License No. F-0374	RAY AVE DRAINAGE SHEET NUMBER 1 OF 26						
 ENGINEERING DIVISION ENGINEERING & INFRASTRUCTURE DEPARTMENT 433 HAY STREET FAYETTEVILLE, NC 28301	REVISIONS <table border="1"> <tr><th>REV. #</th><th>DESCRIPTION</th><th>DATE</th></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	REV. #	DESCRIPTION	DATE			
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PROJECT NO. 20200251.00.RA SUB-LEADER NO.	DRAWN: E. WIGGS DESIGN: T. MURRAY CHECK: T. MURRAY APPROVED: T. MURRAY PROJECT NAME: RAY AVE DRAINAGE SCALE: 1" = 20' DATE: MARCH 2022						

ABBREVIATIONS

ASPH - ASPHALT
 B/C - BACK OF CURB
 BM - BENCHMARK
 CB - CATCH BASIN
 CP - CABLEVISION PEDISTAL
 C&G - CURB AND GUTTER
 C/L - CHAIN LINK
 CMP - CORRUGATED METAL PIPE
 CO - CLEANOUT
 CONC - CONCRETE
 CONST - CONSTRUCTION
 CP - CONTROL POINT
 CTR - CENTER
 DB - DEED BOOK
 DEPT - DEPARTMENT
 DI - DROP INLET
 DIP - DUCTILE IRON PIPE
 DWA - DRIVEWAY ASPHALT
 DWB - DRIVEWAY BRICK
 DWC - DRIVEWAY CONCRETE
 DWD - DRIVEWAY DIRT
 DWG - DRIVEWAY GRAVEL
 E - EAST/EASTING
 EOP - EDGE OF PAVEMENT
 ESMT - EASEMENT
 EV - ELECTRICAL VAULT
 F/C - FACE OF CURB
 FES - FLARED END SECTION
 FH - FIRE HYDRANT
 FOB - FIBER OPTIC BURIED
 FP - FLAG POLE
 GV - GAS VALVE
 GW - GUY WIRE
 GWV - GATE WATER VALVE
 HDPE - HIGH DENSITY POLYETHYLENE
 INV - INVERT
 JB - JUNCTION BOX
 LF - LINEAR FOOT
 LOD - LIMITS OF DISTURBANCE
 LP - LIGHT POLE
 MAX - MAXIMUM
 MB - MAILBOX
 MHEL - MANHOLE ELECTRIC
 MHSD - MANHOLE STORM DRAIN
 MHSS - MANHOLE SANITARY SEWER
 MHTP - MANHOLE TELEPHONE
 N - NORTH/NORTHING
 O.C. - ON CENTER
 O/H - OVERHEAD
 PVMT - PAVEMENT
 PC - POINT OF CURVATURE
 PERM - PERMANENT
 PG - PAGE
 PI - POINT OF INTERSECTION
 PVC - POLYVINYL CHLORIDE
 PP - POWER POLE
 RCP - REINFORCED CONCRETE PIPE
 RCBC - REINFORCED CONCRETE BOX CULVERT
 R/W - RIGHT OF WAY
 S - SOUTH
 SC - SAWCUT
 SD - STORM DRAIN
 S/R - SPLIT RAIL
 SS - SANITARY SEWER
 STA - STATION
 STB - SIGNAL TRAFFIC BOX
 STD - STANDARD
 SWA - SIDEWALK ASPHALT
 SWB - SIDEWALK BRICK
 SWC - SIDEWALK CONCRETE
 SY - SQUARE YARD
 TC - TRASH CAN
 TD - TRUNCATED DOME
 TCE - TEMPORARY CONSTRUCTION EASEMENT
 TCP - TERRA COTTA PIPE
 TP - TELEPHONE PEDISTAL
 TVP - TRAVERSE POINT
 TYP - TYPICAL
 U.O.N. - UNLESS OTHERWISE NOTED
 UP - UTILITY POLE
 W - WEST
 WCR - WHEELCHAIR RAMP
 WM - WATER METER
 WV - WATER VAULT

	PROPOSED RIGHT-OF-WAY
	PROPOSED FENCE
	PROPOSED UNDERGROUND GAS
	PROPOSED TEMPORARY CONSTRUCTION EASEMENT
	PROPOSED UNDERGROUND WATER
	PROPOSED EASEMENT
	PROPOSED SANITARY SEWER
	PROPOSED STORM SEWER
	SILT FENCE - LIMITS OF DISTURBANCE
	PROPOSED SWALE
	PROPOSED GUARDRAIL
	PROPOSED SANITARY SEWER MAN HOLE
	PROPOSED STORM SEWER MAN HOLE
	PROPOSED CATCH BASIN
	PROPOSED DROP INLET
	PROPOSED ELECTRICAL VAULT
	PROPOSED ELECTRICAL MAN HOLE
	PROPOSED WATER METER
	PROPOSED WATER VAULT
	PROPOSED SANITARY SEWER CLEAN OUT
	PROPOSED TREE
	PROPOSED SHRUB
	PROPOSED CONCRETE CURB AND GUTTER
	PROPOSED SIDEWALK
	PROPOSED CONCRETE
	PROPOSED POWER POLE
	INLET PROTECTION
	PROPOSED FLAIRED END SECTION
	PROPOSED HEADWALL
	PROPOSED GATE WATER VALVE
	PROPOSED GAS VALVE
	PROPOSED FIRE HYDRANT
	PROPOSED LIGHT POLE

LEGEND

	EXISTING RIGHT-OF-WAY
	EXISTING OVERHEAD ELECTRIC
	EXISTING UNDERGROUND ELECTRIC
	EXISTING FIBER OPTIC BURIED
	EXISTING HANDRAIL
	EXISTING UNDERGROUND GAS
	EXISTING UNDERGROUND WATER
	EXISTING TELEPHONE CABLE
	EXISTING CABLEVISION
	EXISTING EASEMENT
	EXISTING SANITARY SEWER
	EXISTING TRAIN TRACKS
	EXISTING STORM SEWER
	EXISTING SWALE
	EXISTING FENCE
	EXISTING SANITARY SEWER MAN HOLE
	EXISTING STORM SEWER MAN HOLE
	EXISTING TELEPHONE PEDESTAL
	EXISTING CATCH BASIN
	EXISTING DROP INLET
	EXISTING ELECTRICAL VAULT
	EXISTING ELECTRICAL MAN HOLE
	EXISTING WATER METER
	EXISTING CONCRETE MONUMENT
	SURVEY CONTROL MARKER
	PROPERTY CORNER (EIR/ERBR/SIR/EIP)
	EXISTING WATER VAULT
	EXISTING FIBER OPTIC MARKER
	EXISTING SANITARY SEWER CLEAN OUT
	EXISTING TREE
	EXISTING CONCRETE CURB AND GUTTER
	EXISTING CONCRETE/SIDEWALK
	EXISTING POWER POLE
	EXISTING MAILBOX

	EXISTING FLAIRED END SECTION
	EXISTING HEADWALL
	EXISTING GATE WATER VALVE
	EXISTING GAS VALVE
	EXISTING FIRE HYDRANT
	EXISTING LIGHT POLE
	WETLANDS
	EXISTING SHRUB
	EXISTING TREELINE

ISSUED FOR CONSTRUCTION

RAY AVE DRAINAGE <small>PLAN TYPE LEGEND</small>	<small>SHEET NUMBER</small> 2 OF 26								
 <small>community infrastructure consultants</small> 720 CORPORATE CENTER DRIVE RALEIGH, NC 27607 Phone: 919.879.8800 Fax: 919.879.8874 Office Locations: Georgia, North Carolina, South Carolina, Tennessee									
 FAYETTEVILLE <small>PUBLIC SERVICES</small> ENGINEERING DIVISION <small>ENGINEERING & INFRASTRUCTURE DEPARTMENT</small> 439 HAY STREET FAYETTEVILLE, NC 28501									
 <small>THOMAS L. MURRAY</small> PROFESSIONAL SEAL 031455 ENGINEER NORTH CAROLINA EXPIRES 12-31-24									
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<small>PROJECT NO. :</small> 20200251.00.RA <small>SUB-LEDGER NO. :</small>									

GENERAL NOTES:

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.

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE CONSTRUCTION STAGING AREA AT HIS EXPENSE. A TEMPORARY USE PERMIT IS REQUIRED FOR THE STAGING AREA (ZONING 433-1705).

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 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 MADE AN AGREEMENT WITH SHALL BE REQUIRED. THE PROPERTY OWNER'S RELEASE IS A CONDITION OF FINAL ACCEPTANCE.

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.

CONTRACTOR SHALL PROVIDE MEASURES DURING CONSTRUCTION TO SECURE THE SITE AND EXCAVATION FROM THE GENERAL PUBLIC AND COMPLY WITH ALL OSHA 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.

CONTRACTOR SHALL REPAIR OR REPLACE DRIVES DISTURBED BY CONSTRUCTION TO EXISTING OR BETTER CONDITIONS. NO SEPARATE PAYMENT UNLESS OTHERWISE INDICATED.

CONTRACTOR SHALL PROVIDE TEMPORARY FENCING WHERE FENCES ARE REMOVED FOR CONSTRUCTION. CONTRACTOR SHALL COORDINATE REMOVAL OF EXISTING FENCE AND INSTALLATION OF TEMPORARY FENCE WITH PROPERTY OWNER PRIOR TO CONSTRUCTION. REMOVAL OF TEMPORARY FENCE AND INSTALLATION OF PERMANENT FENCE MUST ALSO BE COORDINATED WITH PROPERTY OWNER. ALL REMOVAL, TEMPORARY, AND REPLACEMENT FENCING SHALL BE CONSIDERED INCIDENTAL TO THE CITY INSTALLATION AND NO SEPARATE PAYMENT SHALL BE MADE. CONTRACTOR SHALL REINSTALL ALL SHEDS, FENCES, ETC. TO AS GOOD OR BETTER THAN EXISTING CONDITIONS UNLESS OTHERWISE INDICATED. (NO SEPARATE PAYMENT).

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 NCMUTCD TO PROVIDE CONTINUOUS TRAFFIC AWARENESS OF ROADWAY CONDITIONS. (NO SEPARATE PAYMENT).

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).

WHERE CONTRACTOR CEASES WORK OPERATION FOR A 72 HOUR PERIOD OR LONGER, SUCH AS HOLIDAYS, ETC., THE FOLLOWING SHALL BE ACCOMPLISHED PRIOR TO THE WORK STOPPAGE.

- CONTRACTOR WILL STORE ALL EQUIPMENT IN THE CONTRACTOR STAGING AREA OR OFF SITE.
- THE CONTRACTOR SHALL SWEEP ALL STREETS, PERFORM GENERAL CLEANUP AND SHALL PERFORM MAINTENANCE ON ALL EXPOSED PATCHES.

CONTRACTOR SHALL SCHEDULE WORK AND MATERIAL DELIVERIES SO THAT STORED MATERIAL QUANTITIES ON THE JOB SITE SHALL BE MINIMIZED.

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.

GENERAL NOTES FOR RESIDENT RELATIONS (MANDATORY):

THE PROPOSED WORK WILL BE CONSTRUCTED WITHIN A TWO BLOCK SECTION OF PERSON STREET FROM COOL SPRING STREET TO OLD WILMINGTON ROAD. THE CONTRACTOR IS REQUIRED TO DEVELOP GOOD RELATIONS WITH THE RESIDENTS WHICH INCLUDE THE FOLLOWING MANDATORY MINIMUM REQUIREMENTS:

- NO SPEEDING WITH EQUIPMENT AND/OR VEHICLES (25 MPH MAX.)
- DO NOT BLOCK DRIVEWAYS AT ANY TIME
- DO NOT LITTER AT ANY TIME
- DO NOT USE RESIDENT'S WATER WITHOUT THEIR PERMISSION (SIGNED AGREEMENT REQUIRED)
- ALL PLUMBING CODE REQUIREMENTS FOR BACK FLOW PREVENTION WILL BE ADHERED TO
- RESPOND TO RESIDENT'S COMPLAINTS WITHIN 24 HOURS
- DO NOT USE ABUSIVE LANGUAGE, PROFANITY OR CAT-CALLING
- WEAR PROPER PROTECTIVE CLOTHING (HARD HATS, PROPER SHOES, SHIRTS, ETC.) AT ALL TIMES.
- MAINTAIN PROPER SAFETY MEASURES, PARTICULARLY ALONG OPEN

TRENCHES, PLACING CONES ON RAISED MANHOLES AND BACK FILLING OPEN TRENCHES IF CONSTRUCTION IS STOPPED AND THE OPEN TRENCH IS NOT MANNED.

- PERSONNEL MUST WEAR CITY APPROVED SAFETY VEST AT ALL TIMES WHILE WORKING IN THE CITY AND/OR NCDOT RIGHT-OF-WAY
- ALL TRAFFIC CONTROL FLAG PERSONS AND AT LEAST ONE PERSON ON EACH WORK CREW MUST BE FLUENT IN THE ENGLISH LANGUAGE

IF THE CONTRACTOR AND/OR SUBCONTRACTORS CANNOT ADEQUATELY PERFORM AND/OR COMPLY WITH THESE REQUIREMENTS, THE INDIVIDUAL, SUBCONTRACTOR, OR EMPLOYEES MAY BE DIRECTED TO LEAVE THE PROJECT PERMANENTLY. INCONSIDERATE, NON-COOPERATIVE ATTITUDES AND ACTIONS WILL NOT BE TOLERATED.

UTILITIES:

UTILITIES ARE ILLUSTRATED FOR INFORMATION PURPOSES ONLY. THE CITY OR ENGINEER WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF UTILITY LOCATIONS, SIZES, DEPTHS, OR FOR COMPLETENESS OF UTILITY INFORMATION SHOWN.

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY AND MEET WITH ALL UTILITY OWNERS. THE CONTRACTOR SHALL PROTECT ALL UTILITIES FROM DAMAGE CAUSED BY HIS OPERATIONS OR THOSE OF HIS AGENTS. THE CONTRACTOR SHALL HOLD THE CITY HARMLESS FOR ANY THIRD-PARTY INCONVENIENCE CREATED BY WORK OF HIS OWN FORCES OR THAT OF HIS AGENTS. ANY DAMAGES INCURRED SHALL BE THE CONTRACTORS FINANCIAL RESPONSIBILITY.

ADJUSTMENTS/RELOCATIONS WILL BE PERFORMED BY THE VARIOUS UTILITY OWNERS. CITY CONTRACTOR TO ADJUST PWC WATER/SEWER UTILITIES. THE CONTRACTOR SHALL COORDINATE WORK WITH UTILITY OWNERS SO AS NOT TO ADVERSELY AFFECT THE PROJECT SCHEDULE. THE CITY WILL NOT BE HELD RESPONSIBLE FOR ANY DELAYS OR DISRUPTIONS TO THE WORK SCHEDULE OF OTHER UTILITY OWNERS.

- FOR UTILITY LOCATES CALL NORTH CAROLINA ONE-CALL @ 811.
- FOR LOCATES OF UTILITIES NOT MEMBERS OF NORTH CAROLINA ONE-CALL CONTACT PROJECT MANAGER OR UTILITY COORDINATOR.

THE CONTRACTOR SHALL ADJUST ALL WATER VALVES, FIRE HYDRANTS, CLEANOUTS, MANHOLES, WATER METER BOXES AND WATER VAULTS TO FINISHED GRADE. IF REPLACEMENT AND OR ADJUSTMENTS TO MANHOLES AND WATER VALVES ARE REQUIRED, CONTRACTOR SHALL REMOVE AND INSTALL NEW MANHOLE RING AND COVERS AND NEW WATER VALVE BOXES. PWC WILL PROVIDE THE NEW MANHOLE RING AND COVERS AND NEW WATER VALVE BOXES. THE CONTRACTOR SHALL RETURN THE EXISTING RING AND COVERS AND WATER VALVE BOXES TO PWC. WATER METERS, MANHOLES, FIRE HYDRANTS, VALVES, AND CLEANOUTS LOCATED IN SIDEWALKS OR CONCRETE DRIVEWAYS SHALL BE INSTALLED IN ACCORDANCE WITH PWC REQUIREMENTS. NO ABOVE GROUND UTILITY BOXES, POWER POLE, OR OTHER STRUCTURES ARE TO BE LOCATED WITHIN THE SIDEWALK AREA. THE SIDEWALK AREA IS TO BE FREE OF OBSTACLES.

PRIOR TO COMMENCEMENT OF ANY WORK WITHIN EASEMENTS OR RIGHT-OF-WAYS, THE CONTRACTOR IS REQUIRED TO NOTIFY CONCERNED UTILITY COMPANIES IN ACCORDANCE TO GS 87-102. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. NO SEPARATE PAYMENT. EXISTING UTILITIES SHOWN ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED (i.e. GAS, FIBER OPTIC, ETC.).

THE CONTRACTOR SHALL DIG UP EACH UTILITY WHICH MAY CONFLICT WITH CONSTRUCTION 14 DAYS IN ADVANCE TO VERIFY LOCATIONS (HORIZONTALLY AND VERTICALLY) TO ALLOW THE ENGINEER AN OPPORTUNITY TO ADJUST THE DESIGN TO AVOID CONFLICTS (NO SEPARATE PAYMENT).

WHERE DEEMED NECESSARY BY THE ENGINEER THAT A SUBSURFACE DRAINAGE SYSTEM IS REQUIRED, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, LABOR, EQUIPMENT, TIE-INS TO EXISTING DRAINAGE STRUCTURES AND ALL OTHER INCIDENTALS NECESSARY TO PROVIDE COMPLETE INSTALLATION IN ACCORDANCE WITH CITY OF FAYETTEVILLE STANDARDS. IMPROPERLY INSTALLED AND NON-FUNCTIONING DRAINAGE SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. EXISTING FRENCH DRAINAGE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AND/OR REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER.

STORM DRAINAGE REPAIRS BY CONTRACTOR DUE TO CONSTRUCTION DAMAGE AND JOINTS EXPOSED DURING CONSTRUCTION SHALL BE INSPECTED BY THE OWNER PRIOR TO BACKFILLING.

MAIL BOXES:

THE CONTRACTOR SHALL RELOCATE ALL MAIL BOXES AS REQUIRED BY SECTION 107-12 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES. COORDINATE THIS WORK WITH THE U.S. POSTAL SERVICE.

TREES, SHRUBS, AND HEDGES:

ALL TREES THAT ARE TO REMAIN ARE TO BE PROTECTED WITH TREE PROTECTION BARRIERS ACCEPTABLE TO THE CITY ARBORIST OR LANDSCAPE ARCHITECT. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE CITY ARBORIST OR LANDSCAPE ARCHITECT PRIOR TO ROOT PRUNING. WHEN ROOT PRUNING IS ABSOLUTELY NECESSARY, CUT ROOTS CLEANLY USING A DISC TRENCHER OR OTHER APPROVED METHOD.

CONTRACTOR SHALL OBTAIN APPROVAL FROM THE CITY PRIOR TO REMOVING ANY TREES. ALL TREES LOCATED WITHIN THE LOT THAT ARE TO REMAIN AFTER CONSTRUCTION SHALL BE INSPECTED BY THE CITY TO VERIFY THEY ARE SUITABLE TO REMAIN.

GRADING:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BORROW MATERIAL REQUIRED TO CONSTRUCT PROJECT AS SHOWN ON THE CONTRACT DOCUMENTS.

ALL EXCAVATED MATERIALS THAT ARE NOT REQUIRED OR ARE UNSUITABLE FOR THE PROJECT SHALL BE CONSIDERED WASTE AND SHALL BE HAULED OFF SITE AND DISPOSED IN A SAFE AND LEGAL MANNER AT THE CONTRACTOR'S EXPENSE.

EROSION CONTROL:

CONTRACTOR SHALL NOT DISTURB ANY AREAS OUTSIDE OF THE DESIGNATED EASEMENT AREAS.

THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL DEVICES IN ACCORDANCE WITH THE APPROPRIATE CITY AND STATE EROSION AND SEDIMENT CONTROL ORDINANCES. THE CONTRACTOR SHALL PREVENT STANDING WATER DUE TO CONSTRUCTION.

SAWCUTS:

THE CONTRACTOR SHALL SAWCUT EXISTING ASPHALT AND/OR CONCRETE SURFACES PRIOR TO REMOVAL UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SAW CUT WIDTH SHALL BE 1 FOOT MINIMUM FOR THE EXISTING EDGE OF PAVEMENT. SAWCUT PAVEMENT SHALL BE REPLACED AS WELL AS ADDITIONAL PAVEMENT REQUIRED TO TIE-IN TO FACE OF PROPOSED CURB OR GUTTER.

STORM DRAINAGE STRUCTURE, PIPE & GRADING NOTES:

PIPE INVERT ELEVATIONS HAVE PRECEDENCE OVER SLOPES. HOWEVER, SLOPES SHALL NOT BE DECREASED FROM THOSE SHOWN ON PLAN WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

ALL STORM DRAINAGE PIPE TO BE CLASS III REINFORCED CONCRETE UNLESS OTHERWISE NOTED. PIPE LENGTHS INDICATED ON PLAN ARE APPROXIMATE ONLY.

NO SOIL DISTURBANCE OR COMPACTION, CONSTRUCTION MATERIALS, TRAFFIC, TRENCHING, OR OTHER LAND DISTURBING ACTIVITY SHALL BE PERMITTED BEYOND LIMITS OF GRADING WITHOUT PRIOR APPROVAL FROM THE OWNER AND CITY ENGINEERING DEPT.

THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE CITY OF FAYETTEVILLE ANY DISCREPANCIES FOUND BETWEEN ACTUAL CONDITION AND CONSTRUCTION DOCUMENTS AND SHALL WAIT FOR INSTRUCTION FROM THE CITY INSPECTOR PRIOR TO PROCEEDING.

MANHOLE RIM ELEVATIONS SHOWN ON THE PLANS ARE APPROXIMATE. NEW MANHOLE RING AND COVERS SHALL BE INSTALLED FLUSH WITH THE SURROUNDING GRADE SO AS TO AVOID DAMAGE TO MOTOR VEHICLES DURING CONSTRUCTION. THEY ARE TO BE ADJUSTED TO MATCH THE SURROUNDING PROPOSED GRADE PRIOR TO PLACING THE NEW SURFACE COURSE.

THE CONTRACTOR SHALL DESIGN, FURNISH, AND INSTALL ANY TRENCH STABILIZATION NECESSARY TO MAINTAIN EXCAVATION FOR PIPE AND DRAINAGE STRUCTURE INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND REMOVAL OF ANY TRENCH STABILIZATION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ANY DAMAGE TO ADJACENT STRUCTURES RESULTING FROM THE INSTALLATION, REMOVAL OR ABSENCE OF TRENCH STABILIZATION.

GRADES, ELEVATIONS AND LOCATIONS SHOWN ARE APPROXIMATE, AS DIRECTED BY THE ENGINEER. THEY MAY BE ADJUSTED TO ACCOMMODATE UNFORESEEN CONDITIONS. ALL PROPOSED GRADES ARE FINISH GRADES.

THE CONTRACTOR SHALL BACKFILL OPEN EXCAVATIONS AT THE END OF EACH WORKING DAY. AT DRAINAGE STRUCTURE LOCATIONS, THE EXCAVATION SHALL BE COVERED WITH METAL PLATES WHEN PRACTICAL OR COMPLETEY ENCLOSED WITH SAFETY NETTING.

STOCKPILING NOTE:

ANY ONSITE STOCKPILING IS TO BE COORDINATED AND APPROVED BY A CITY INSPECTOR. THE STOCKPILE WILL BE PROVIDED WITH GROUND COVER WITHIN 15 WORKING DAYS OF PROJECT COMPLETION.

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 UNLESS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE A SUFFICIENT AND SUITABLE STOCKPILE AREA AND LOCATION AT THE CONTRACTOR'S EXPENSE.

ORDER OF PRECEDENCE GENERAL NOTES/TECHNICAL SPECIFICATIONS/PHOTOS:

THE NOTES CONTAINED HEREIN ARE INTENDED TO SUPPLEMENT THE TECHNICAL SPECIFICATIONS AND PROVIDE EASY REFERENCE FOR THE CONTRACTOR. IN NO CASE SHALL THESE NOTES VOID ANY PART, SECTION OR REQUIREMENT OUTLINED IN THE TECHNICAL SPECIFICATIONS CONTAINED IN THE CONTRACT DOCUMENTS. IF CONFLICTS OCCUR BETWEEN THE TECHNICAL SPECIFICATIONS AND THE NOTES CONTAINED HEREIN, THE TECHNICAL SPECIFICATIONS SHALL SUPERSEDE.

TRAFFIC CONTROL

CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS FOR WORK ZONE TRAFFIC CONTROL TO CITY TRAFFIC SERVICES DEPARTMENT (910-433-1660) FOR CITY STREETS AND TO MR. TROY BAKER (910-486-1496) FOR NCDOT STREETS. CONTRACTOR SHALL NOT PLACE ANY TRAFFIC CONTROL DEVICES WITHOUT HAVING APPROVAL FROM APPLICABLE TRANSPORTATION DEPARTMENT EITHER NCDOT OR THE CITY OF FAYETTEVILLE.

CONTRACTOR SHALL ENSURE ACCESS TO ALL PROPERTIES BY PROPERTY OWNERS AT ALL TIMES.

CONTRACTOR SHALL NOTIFY CITY ENGINEERING OFFICE ONE WEEK IN ADVANCE OF ANY ROAD CLOSING AND COORDINATE ALL ROAD CLOSINGS/UTILITY INTERRUPTIONS WITH PROPERTY OWNERS AFFECTED 48 HOURS PRIOR TO CLOSING/INTERRUPTING SERVICES.

MINIMUM ONE WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES UNLESS ROAD CLOSURE IS APPROVED BY CITY OF FAYETTEVILLE TRAFFIC SERVICES DEPARTMENT IN WRITING, 5 DAYS IN ADVANCE OF ROAD CLOSURE. AN APPROVED DETOUR PLAN PREPARED BY THE CONTRACTOR SHALL BE REQUIRED AND THE MEASURES INSTALLED PRIOR TO CLOSURE.

CONTRACTOR SHALL COORDINATE/NOTIFY TRAFFIC SERVICES DAILY (BEFORE 2:00 P.M.) AS TO WHICH STREETS WILL BE UNDER CONSTRUCTION IMPEDING TRAFFIC FLOW THE FOLLOWING DAY.

THE CONTRACTOR SHALL NOT IMPEDE TRAFFIC AT ANY TIME UNTIL THE APPROVED TRAFFIC CONTROL DEVICES ARE IN PLACE.

ALL TRAFFIC CONTROL MEASURES, DEVICES, INSTALLATION, METHODS, SEQUENCING AND PLANS SHALL BE IN STRICT ACCORDANCE WITH MUTCD, NCDOT, AND CITY OF FAYETTEVILLE TRAFFIC SERVICES.

PWC UTILITY CONSTRUCTION NOTES:

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

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

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.

CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

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

CONSTRUCTION STAKING IS REQUIRED FOR ALL PWC WATER AND SEWER UTILITY INSTALLATIONS. CUT SHEETS, SIGNED AND SEALED BY A NC PLS, SHALL BE PROVIDED TO THE PWC WATER RESOURCES ENGINEERING DEPARTMENT AND THE CONTRACTOR IN ADVANCE OF CONSTRUCTION FOR PWC WATER AND SEWER UTILITIES.

CONTRACTOR SHALL MAINTAIN A COPY OF THE SIGNED AND SEALED CUT SHEET ON THE JOB SITE. CONSTRUCTION ON PWC WATER AND SEWER UTILITIES CANNOT BEGIN UNTIL THE CONTACTOR POSSESSES, ON SITE, A SIGNED AND SEALED CUT SHEET FROM THE PROFESSIONAL LAND SURVEYOR.

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

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

ALL DUCTILE IRON PIPE IN SANITARY SEWER SERVICE SHALL HAVE AN INTERIOR LINING OF PROTECTO 401 OR APPROVED EQUAL.

ALL NEW MANHOLES ARE TO BE VACUUM-TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.

CONTRACTOR SHALL ABANDON ("KILL-OUT") ANY EXISTING WATER SERVICES THAT WILL NOT BE UTILIZED BY CUTTING THE SERVICE AT THE MAIN, PLUGGING THE CORPORATION, AND TURNING OFF THE CORPORATION. AT THE METER BOX, THE ABANDONED SERVICE IS TO BE CUT OR CRIMPED, AND BURIED A MINIMUM OF 3 FEET BELOW GRADE.

CONTRACTOR SHALL ABANDON ("KILL-OUT") ANY EXISTING SEWER SERVICES THAT WILL NOT BE UTILIZED BY UNCOVERING THE EXISTING LATERAL AT THE MAIN, CUT AND PLUG AT BOTH ENDS, REMOVE THE EXISTING CLEAN-OUT AND COMBINATION, AND PLUG THE TAP OR TEE AT THE MAIN. FOR LATERALS THAT CONNECT TO A MANHOLE AND ARE TO BE ABANDONED ("KILLED-OUT"), THE LATERAL SHALL BE REMOVED FROM THE MANHOLE, PLUGGED, AND THE REMAINING VOID IN THE MANHOLE SHALL BE FILLED WITH BRICK AND MORTAR.

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

ISSUED FOR CONSTRUCTION

RAY AVE DRAINAGE

PLAN TYPE: _____ SHEET NUMBER: 3 OF 26

W.K. DICKSON
COMMUNITY DEVELOPMENT
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919) 782-0495
NC License No. T-0374
www.wkdickson.com
North Carolina
South Carolina
Tennessee

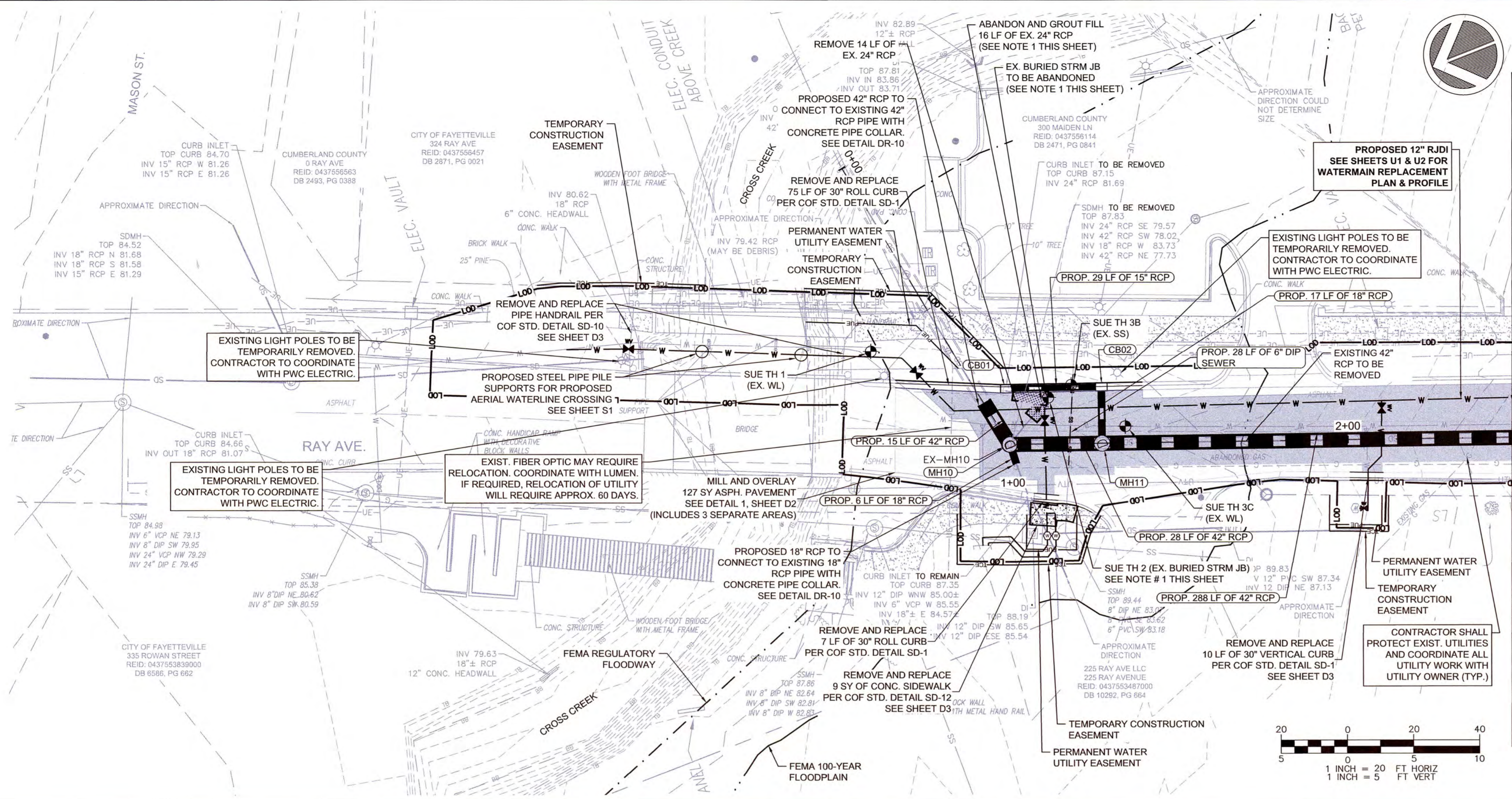
FAYETTEVILLE
PUBLIC SERVICES
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28401

PROFESSIONAL SEAL
031455
THOMAS L. MURRAY
REGISTERED PROFESSIONAL ENGINEER
NORTH CAROLINA
EXPIRES 12/31/2022

REV. #	REVISIONS	REV. BY	DATE
	DESCRIPTION		

PROJECT: RAY AVE DRAINAGE
DRAWN: T. MURRAY
DESIGN: T. MURRAY
CHECK: T. MURRAY
APPROVED: T. MURRAY
SCALE: 1" = 20'
DATE: MARCH 2022

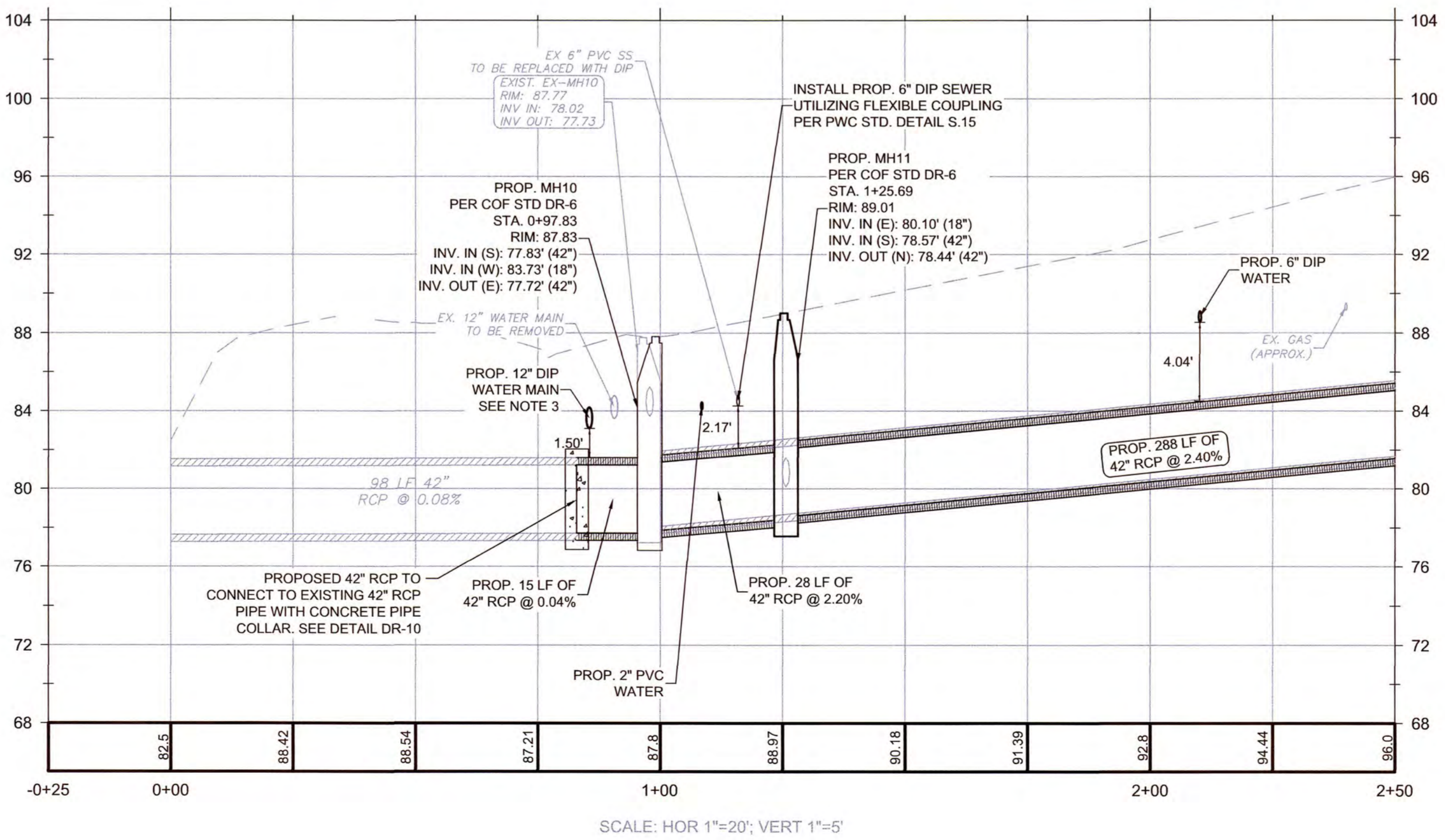
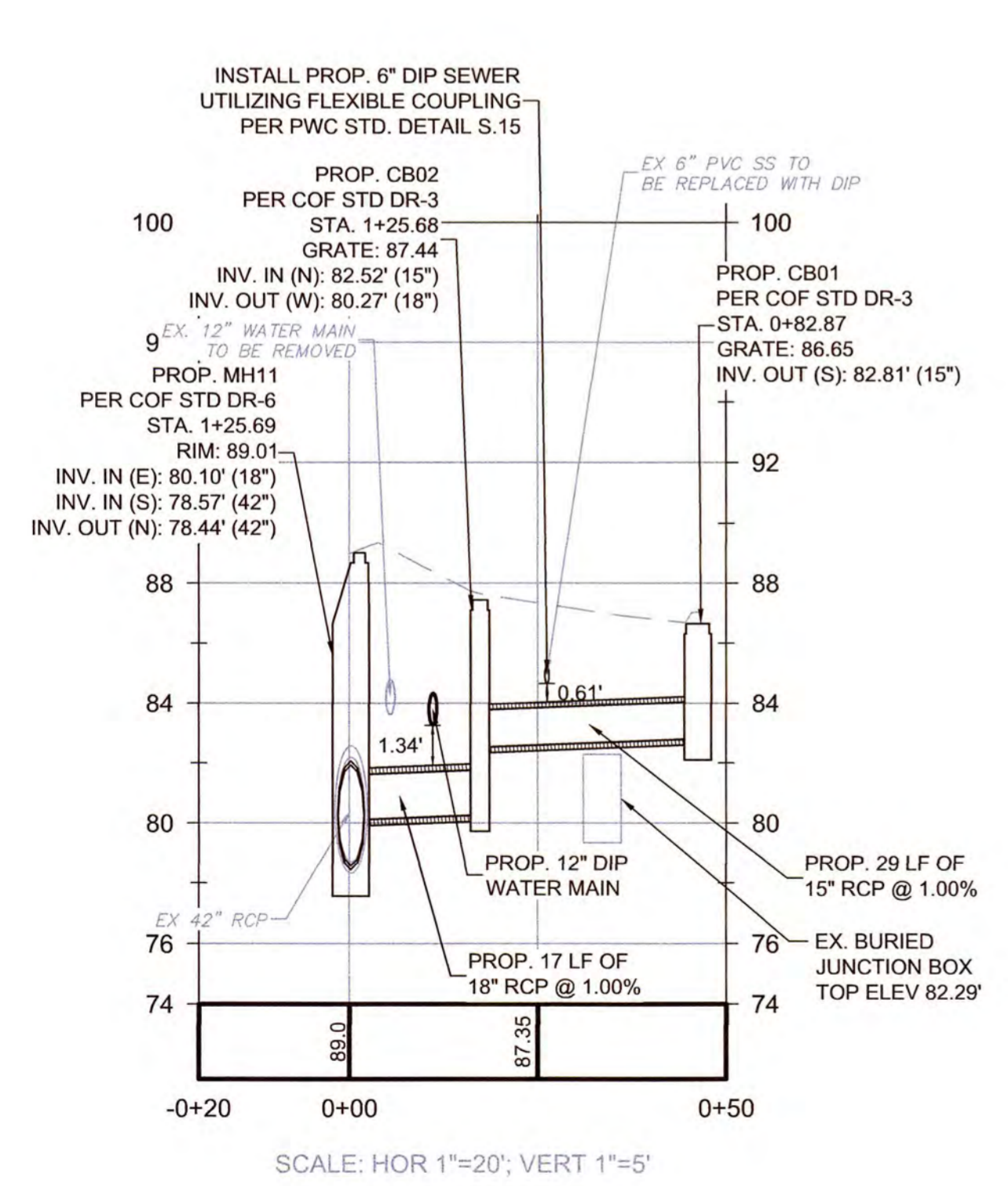
PROJECT NO. 20200251.001RA
SUB-LEDGER NO. _____



MATCHLINE SEE SHT 5

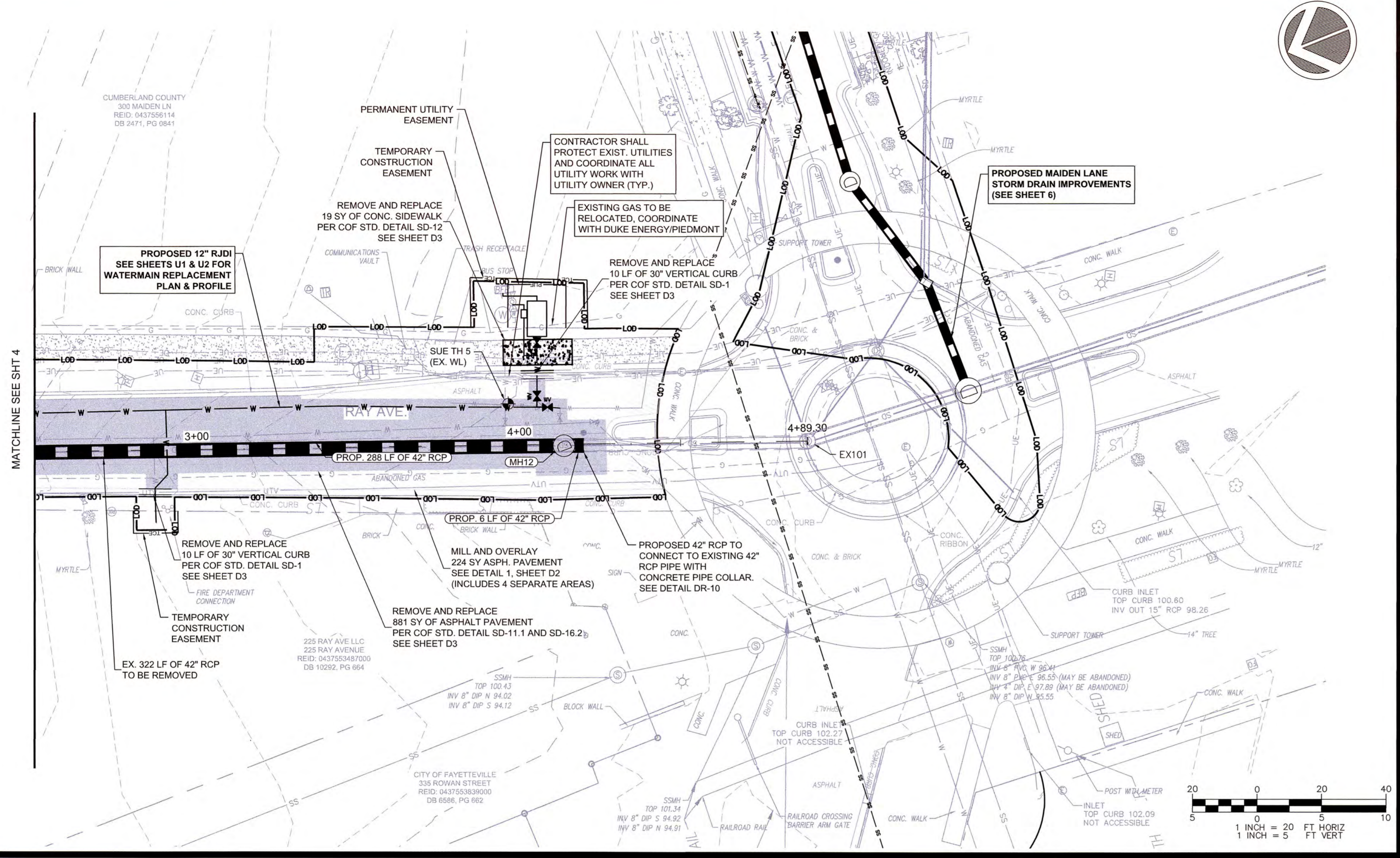
NOTES:

- APPROXIMATE LOCATION OF BURIED JUNCTION BOX AND STORM DRAIN PIPE TO BE ABANDONED. CONTRACTOR TO LOCATE PRIOR TO CONSTRUCTION. IF IN CONFLICT WITH INSTALLATION OF PROPOSED WATER MAIN OR STORM DRAIN, REMOVE SECTION OF BURIED JUNCTION BOX AND STORM DRAIN AS NECESSARY TO INSTALL PROPOSED WATER MAIN OR STORM DRAIN. STORM DRAIN PIPE AND BURIED JUNCTION BOX SECTION REMAINING TO BE GROUT FILLED AND ABANDONED.
- WATERLINE ELEVATIONS ARE ESTIMATED.
- PROTECT PROPOSED 12" WATER MAIN DURING PROPOSED STORM DRAIN INSTALLATION.
- ALL CONCRETE PIPE SHALL BE CLASS III.

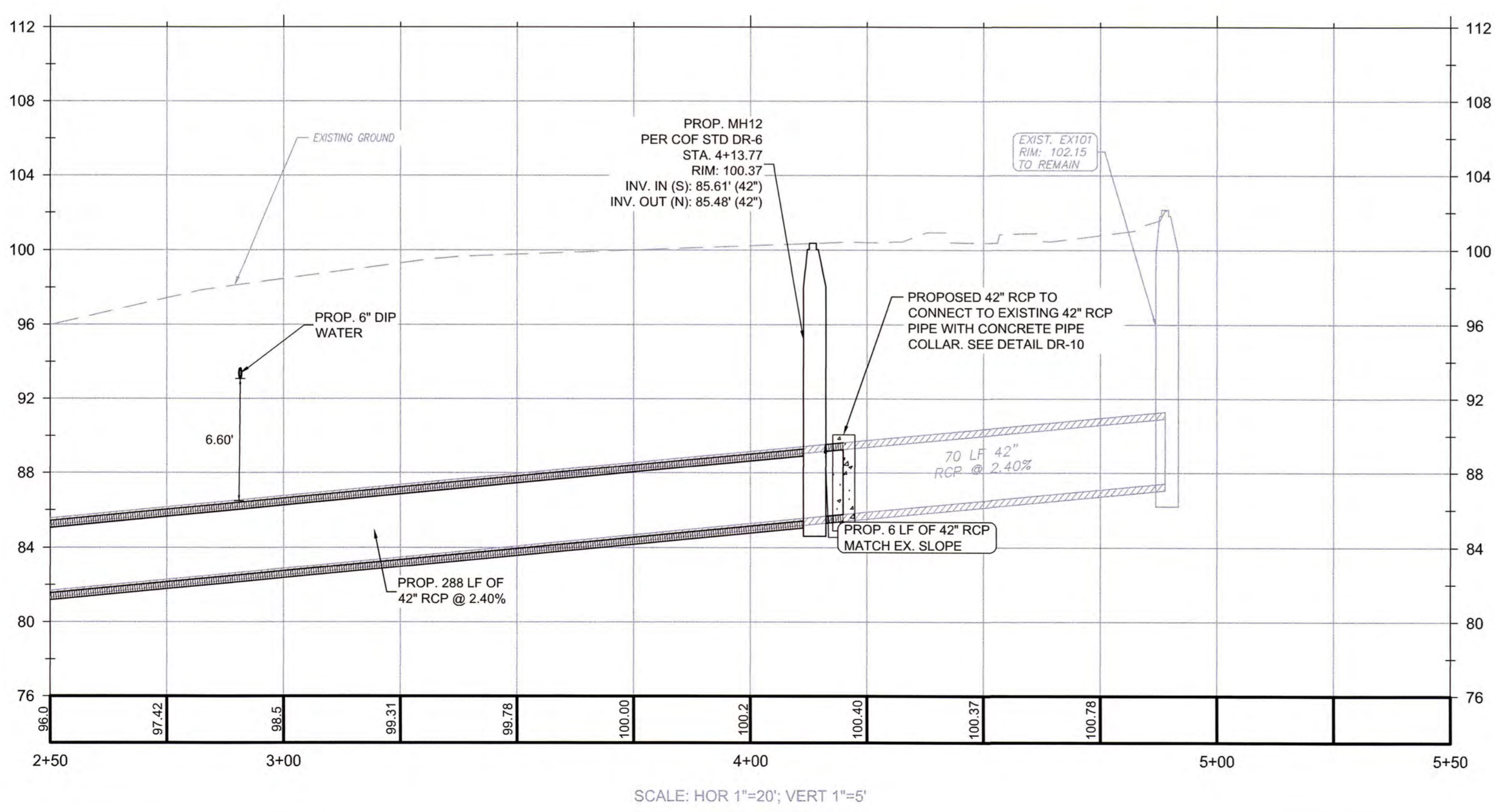


ISSUED FOR CONSTRUCTION

W.K. DICKSON Public Services 700 CORPORATE CENTER DRIVE RALEIGH, NC 27607 (919) 782-0495 NC License No. F-0374 Office Locations: Cary, NC South Carolina, Tennessee	FAYETTEVILLE PUBLIC SERVICES ENGINEERING DIVISION 1000 HAY STREET, SUITE 200 FAYETTEVILLE, NC 28401		RAY AVE DRAINAGE SHEET NUMBER 4 OF 26 PLAN TYPE STORM PLAN & PROFILE
PROJECT: RAY AVE DRAINAGE NAME: T. MURRAY SCALE: 1" = 20' DATE: MARCH 2022 APPROVED: T. MURRAY	REV. # REVISIONS DESCRIPTION REV. BY DATE		
PROJECT NO.: 20200251.00.RA SUB-LEDGER NO.:			

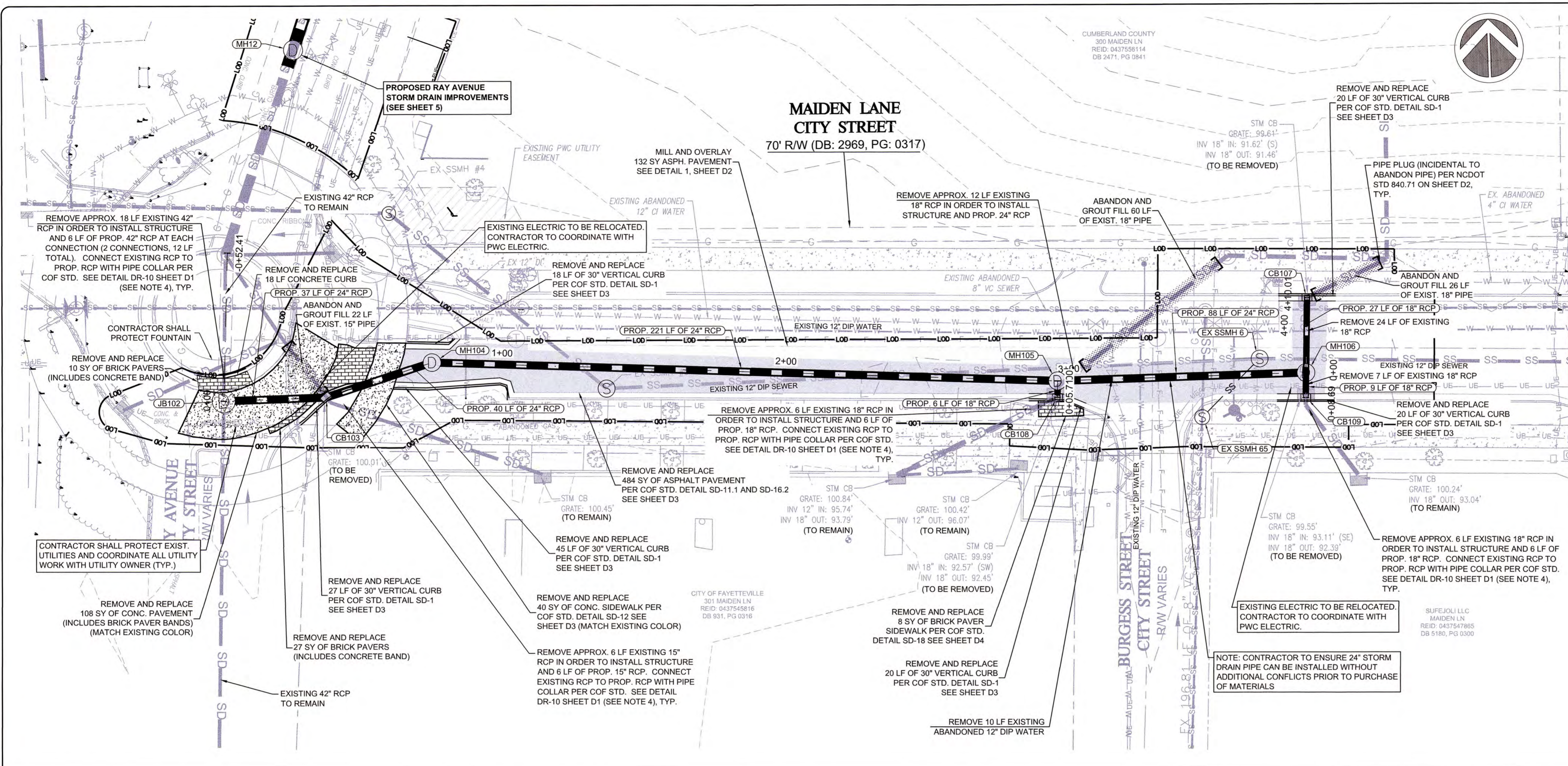


- NOTES:**
1. WATERLINE ELEVATIONS ARE ESTIMATED.
 2. PROTECT PROPOSED 12" WATER MAIN DURING PROPOSED STORM DRAIN INSTALLATION.
 3. ALL CONCRETE PIPE SHALL BE CLASS III.

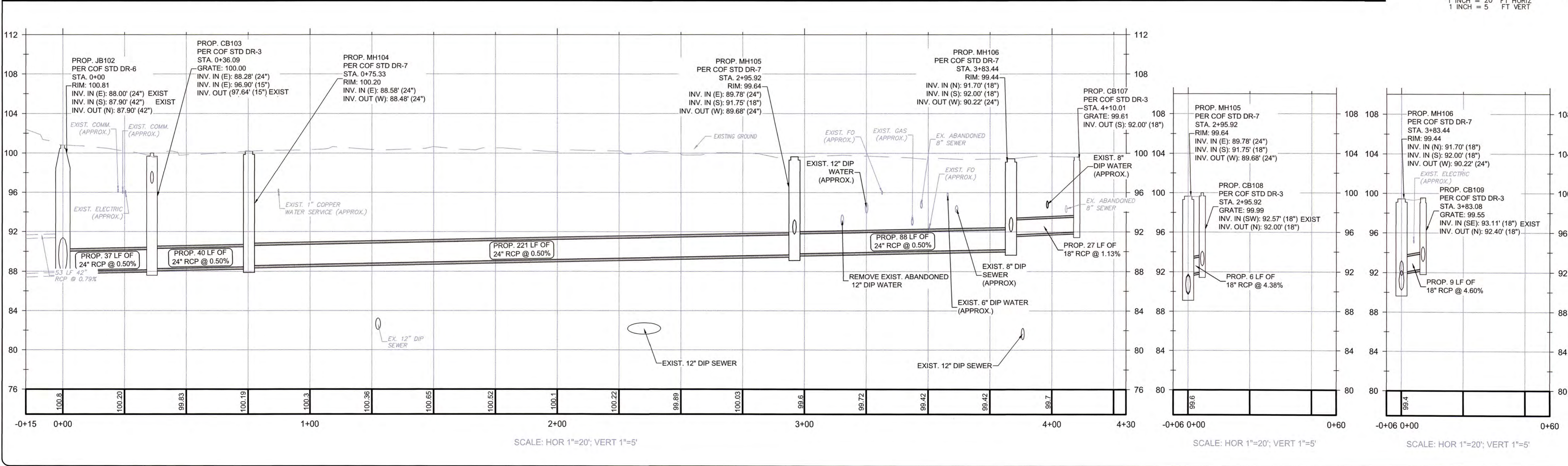
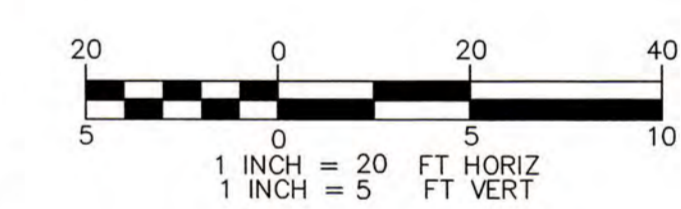


ISSUED FOR CONSTRUCTION

<p>WK DICKSON CORPORATE CENTER DRIVE RALEIGH, NC 27607 (919) 782-0895 NC License No. T-0374 Locations: Raleigh, North Carolina Greenville, South Carolina</p>	<p>FAYETTEVILLE PUBLIC SERVICES ENGINEERING DIVISION ENGINEERING & INFRASTRUCTURE DEPARTMENT 433 HAY STREET FAYETTEVILLE, NC 28301</p>	<p>PROJECT: RAY AVE DRAINAGE NAME: T. MURRAY SCALE: 1" = 20' DATE: MARCH 2022</p>	<p>PROJECT NO.: 20200251.001.RA SUB-LEDGER NO.:</p>								
<p>PROF. CAROLINA SEAL 031455 THOMAS MURRAY</p>		<p>REVISIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV. #</th> <th>DESCRIPTION</th> <th>REV. BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		REV. #	DESCRIPTION	REV. BY	DATE				
REV. #	DESCRIPTION	REV. BY	DATE								
<p>RAY AVE DRAINAGE</p>		<p>PLAN TYPE: STORM PLAN & PROFILE</p>									
<p>SHEET NUMBER: 5 OF 26</p>		<p>DATE: MARCH 2022</p>									



- GENERAL NOTES:**
- MAIDEN LANE SURVEY PROVIDED BY CITY OF FAYETTEVILLE AND PWC.
 - REFERENCE MAIDEN LANE PHASE II FAYPWC DWG #DWS-15280 FOR WATER AND SEWER REPLACEMENT.
 - ALL CONCRETE PIPE SHALL BE CLASS III.
 - EACH EXISTING STORM DRAIN PIPE CONNECTION TO PROPOSED STRUCTURE TO BE MADE WITH ± 6 LF PROPOSED STORM DRAIN PIPE USING CONCRETE PIPE COLLAR CONNECTION WITH EXISTING PIPE.
 - SHRUBS AND TREES (DIAMETER < 6") REMOVED DURING PROJECT CONSTRUCTION SHALL BE REPLACED TO MATCH EXISTING CONDITIONS.



ISSUED FOR CONSTRUCTION

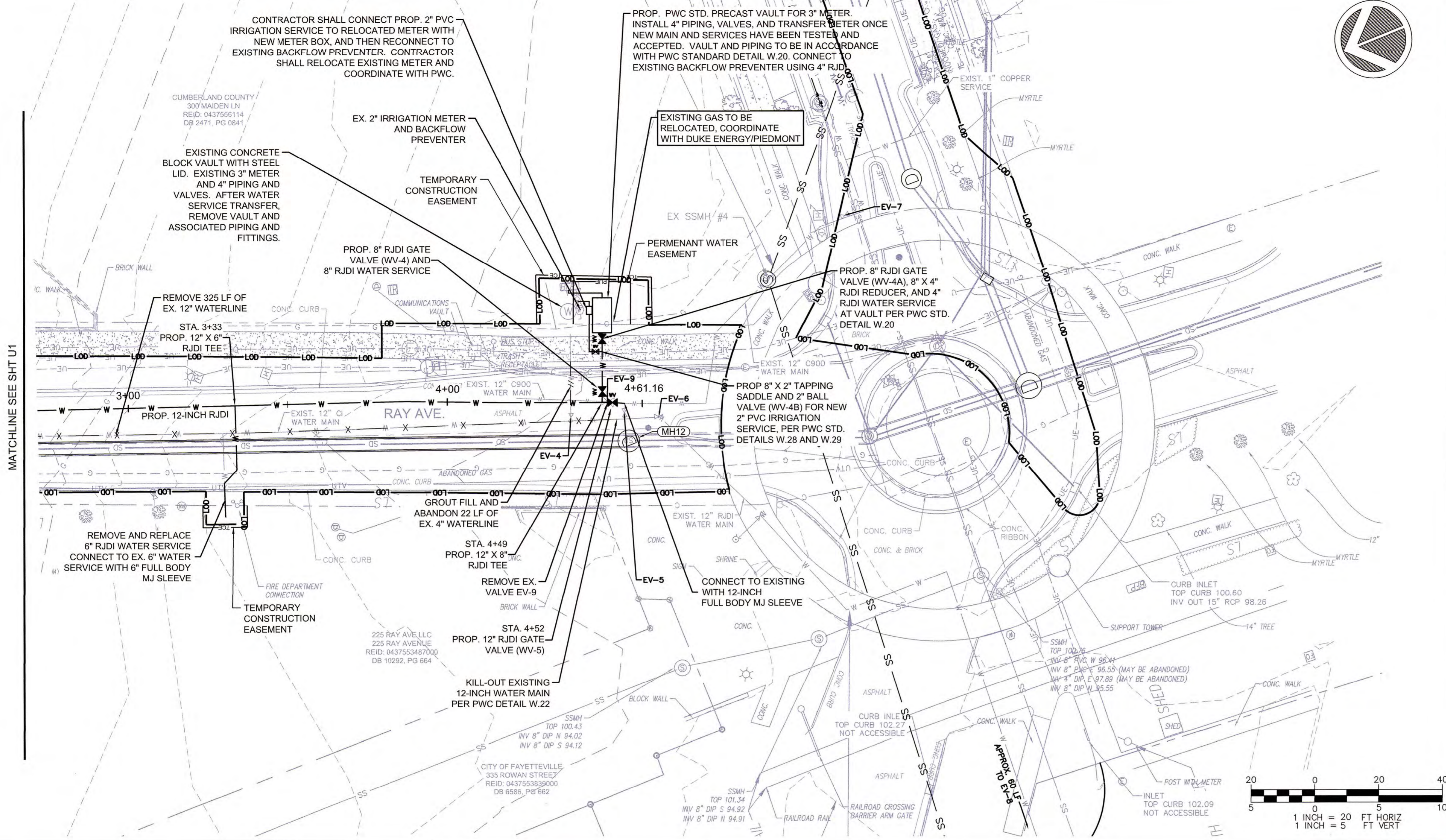
WKS DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
NC License No. F-0374
Georgia
Office Locations:
North Carolina
South Carolina

FAYETTEVILLE
PUBLIC SERVICES
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
453 HAY STREET FAYETTEVILLE, NC 28301

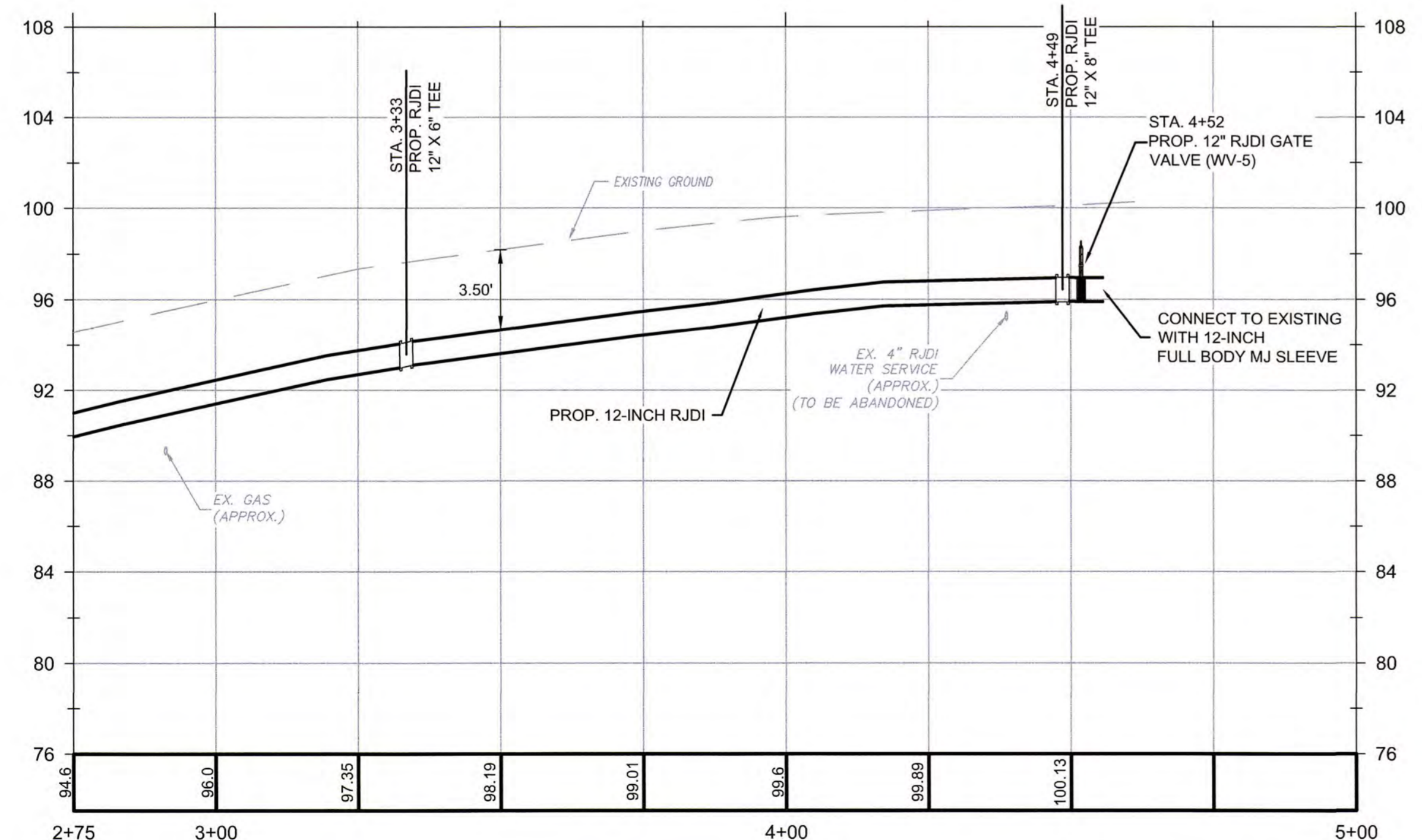
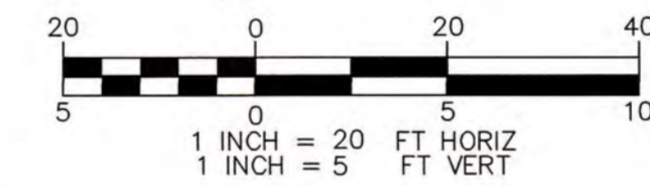


REV. #	DESCRIPTION	DATE

PROJECT NAME : RAY AVE DRAINAGE	PROJECT NO. : 20200251.001.RA
DESIGN : T. MURRAY	SCALE : 1" = 20'
CHECK : T. MURRAY	DATE : MARCH 2022
APPROVED : T. MURRAY	SUB-LEADER NO. :



- PWC UTILITY CONSTRUCTION NOTES:**
- ALL WATER MAINS, LATERALS AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
 - ALL SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
 - ALL CONSTRUCTION TO BE IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
 - CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 - CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE FOR ALL WATER OUTAGES.
 - CONSTRUCTION STAKING IS REQUIRED FOR ALL PWC WATER AND SEWER UTILITY INSTALLATIONS. CUT SHEETS, SIGNED AND SEALED BY A NC PLS, SHALL BE PROVIDED TO THE PWC WATER RESOURCES ENGINEERING DEPARTMENT AND THE CONTRACTOR IN ADVANCE OF CONSTRUCTION FOR PWC WATER AND SEWER UTILITIES.
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 - ALL NEW WATER AND SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE TESTED AND/OR DISINFECTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS PRIOR TO PLACING INTO SERVICE.
 - CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE PWC PROJECT COORDINATOR.
 - ALL DUCTILE IRON PIPE IN SANITARY SEWER SERVICE SHALL HAVE AN INTERIOR LINING OF PROTECTO 401 OR APPROVED EQUAL.
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 - ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE IN ACCORDANCE WITH PWC REQUIREMENTS.



C-WATR-RAY AVE

ISSUED FOR CONSTRUCTION

WKS DICKSON community infrastructure consultants 720 CORPORATE CENTER DRIVE RALEIGH, NC 27607 (919) 782-0495 FAX: 0374 Office Locations: North Carolina, Georgia, South Carolina, Tennessee		RAY AVE DRAINAGE UTILITY PLAN & PROFILE SHEET NUMBER U2 OF 26
FAYETTEVILLE PUBLIC SERVICES ENGINEERING DIVISION ENGINEERING & INFRASTRUCTURE DEPARTMENT 433 HAY STREET FAYETTEVILLE, NC 28501		PROJECT NO. 20200251.00.RA SUB-LEDGER NO.
DRAWN: E. WIGGS DESIGN: T. MURRAY CHECK: T. MURRAY APPROVED: T. MURRAY	PROJECT NAME: RAY AVE DRAINAGE SCALE: 1" = 20' DATE: MARCH 2022	REVISIONS REV. # DESCRIPTION REV. BY DATE



EROSION CONTROL NOTES:

- REFER TO GENERAL NOTES ON SHEET 3.
- DISTURBED AREAS:**
STORM DRAINAGE IMPROVEMENTS
TOTAL = 0.99 AC
- ALL AREAS DISTURBED BY THE CONTRACTOR SHALL BE SEEDED PER THE VEGETATIVE PLAN.
- REVIEW CONSTRUCTION SEQUENCE FOR ADDITIONAL EROSION CONTROL REQUIREMENTS.
- CONSTRUCTION ACCESS AREAS SHOWN ARE TO GUIDE CONTRACTOR DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH ENGINEER IF ALTERNATIVE CONSTRUCTION ACCESS ROUTES WILL IMPROVE EFFICIENCY OF CONSTRUCTION.

EROSION CONTROL:

- INSTALL PERMANENT VEGETATIVE COVER AND THE LONG-TERM EROSION PROTECTION MEASURES OR STRUCTURES AS SOON AS PRACTICAL IN THE CONSTRUCTION PROCESS. APPROPRIATE EROSION CONTROL MEASURES MUST BE PLACED BETWEEN THE DISTURBED AREA AND AFFECTED WATERWAY AND MAINTAINED UNTIL PERMANENTLY VEGETATED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL MEASURES RELATED TO THE CONSTRUCTION SITE.
- AT A MINIMUM, EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL REGULATIONS. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY LOCAL GOVERNING AGENCIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REMOVAL OF ANY SOIL TRACKED INTO THE PUBLIC RIGHT-OF-WAY.
- THE LOCATIONS OF SOME EROSION CONTROL MEASURES MAY HAVE TO BE ALTERED FROM THOSE SHOWN ON THE PLANS IF DRAINAGE PATTERNS CHANGE DURING CONSTRUCTION.
- PROVIDE FOR HANDLING THE INCREASED RUNOFF CAUSED BY CHANGED SOIL AND SURFACE CONDITIONS. USE EFFECTIVE MEANS TO CONSERVE EXISTING ON-SITE SOIL INCLUDING THE USE OF DIVERSION DITCHES.
- ALL DISTURBED AREAS SHALL BE SEEDED. USE TEMPORARY PLANT COVER, MULCHING, AND/OR STRUCTURES TO CONTROL RUNOFF AND PROTECT AREAS SUBJECT TO EROSION DURING CONSTRUCTION. CHANNEL BANKS SHALL BE SEEDED DAILY UPON COMPLETION OF FINAL GRADING.
- ALL SEDIMENT AND EROSION CONTROLS ARE TO BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND AFTER ANY STORM EVENT GREATER THAN OR EQUAL TO 1.0 INCHES OF PRECIPITATION DURING ANY 24-HOUR PERIOD. MAINTENANCE OF SEDIMENT TRAPPING STRUCTURES SHALL BE PERFORMED AS NECESSARY PER THESE INSPECTIONS. SILT FENCING AND DIVERSION DITCHES SHALL BE INSTALLED AS SHOWN ON PLANS.
- STABILIZATION MEASURES SHALL BE INITIATED AT THE END OF EACH DAY IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED EXCEPT WHERE CONSTRUCTION ACTIVITIES SHALL BE REINITIATED WITHIN 7 CALENDAR DAYS.
- CONTRACTOR MUST TAKE THE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO THE PAVED ROADWAY FROM CONSTRUCTION AREAS. DAILY REMOVAL OF MUD/SOIL MAY BE REQUIRED.
- ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. CONTRACTOR SHALL REMOVE ALL TEMPORARY CONTROL DEVICES ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED. SILT FENCING TO BE INSTALLED AROUND INDICATED SPOILS AREAS TO PREVENT LOSS OF SEDIMENT.
- ASPHALT TACKIFIER SHALL NOT BE USED.
- ALL NECESSARY MEASURES MUST BE TAKEN TO PREVENT OIL, TAR, TRASH, AND OTHER POLLUTANTS FROM ENTERING THE ADJACENT OFFSITE AREAS.
- CONSTRUCTION ACTIVITIES MUST AVOID TO THE GREATEST EXTENT PRACTICABLE, ENCROACHMENT INTO ANY WETLAND/STREAM AREAS NOT DESIGNATED AS IMPACT AREAS.
- ACTIVITIES MUST AVOID DISTURBANCE OF WOODY RIPARIAN VEGETATION WITHIN THE PROJECT AREA TO THE GREATEST EXTENT PRACTICABLE. REMOVAL OF VEGETATION MUST BE LIMITED TO ONLY THAT NECESSARY FOR CONSTRUCTION OF THE CHANNEL.
- NO ON-SITE BURIAL OF VEGETATION OR CONSTRUCTION DEBRIS WILL BE PERMITTED.
- ANY GRADING BEYOND THE CONSTRUCTION LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE NORTH CAROLINA EROSION CONTROL ORDINANCE, AND IS SUBJECT TO A FINE.
- ALL CONSTRUCTION SHALL BE COMPLETED IN A DRY CONDITION. PUMP AROUND/ DEWATERING SHALL BE UTILIZED WHERE NECESSARY TO COMPLETE CONSTRUCTION IN A DRY CONDITION.
- PLEASE REFERENCE PLAN SHEET DETAILS AND NCDENR STANDARDS FOR CONSTRUCTION OF EROSION CONTROL MEASURES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL MEASURES RELATED TO THE CONSTRUCTION SITE.

VEGETATIVE PLAN:

- EROSION CONTROL MEASURES SHALL BE PROPERLY MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED. THE CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT THE END OF EACH WORKING DAY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
- DISTURBED AREAS NOT AT FINAL GRADE AND LEFT IDLE SHALL BE TEMPORARILY VEGETATED PER THE GROUND STABILIZATION TABLE SHOWN ON SHEET EC3. SEEDING SHALL BE IN ACCORDANCE WITH SEEDING DETAILS ON SHEET EC3.
- AFTER THE PERMANENT CESSATION OF CONSTRUCTION ACTIVITIES, ANY AREAS WITH TEMPORARY GROUND STABILIZATION SHALL BE CONVERTED TO PERMANENT GROUND STABILIZATION WITH SOIL TO MATCH EXISTING GRASS TYPE AS RECOMMENDED AS SOON AS PRACTICABLE BUT IN NO CASE LONGER THAN 90 CALENDAR DAYS AFTER THE LAST LAND DISTURBING ACTIVITY.
- ONCE PERMANENT VEGETATION AND EROSION CONTROL MEASURES ARE ESTABLISHED, THE CONTRACTOR SHALL SCHEDULE A FINAL INSPECTION IN ORDER TO CLOSE OUT THE PROJECT. AFTER APPROVAL, ALL REMAINING TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED.

MAINTENANCE PLAN:












THE CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES FOR CORRECT OPERATION AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF A RAIN EVENT GREATER THAN OR EQUAL TO 1.0 INCHES OF PRECIPITATION DURING ANY 24-HOUR PERIOD. ANY REQUIRED REPAIRS WILL BE MADE IMMEDIATELY BY THE CONTRACTOR TO MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES AS DESIGNED. A RAIN GAUGE MUST BE INSTALLED ON AND KEPT ONSITE.

- THE CONTRACTOR SHALL REMOVE SEDIMENT FROM EROSION CONTROL DEVICES WHEN STORAGE CAPACITY HAS BEEN APPROXIMATELY 50% FILLED. GRAVEL WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOLS NO LONGER DRAIN PROPERLY.
- THE CONTRACTOR SHALL REMOVE SEDIMENT FROM UPSLOPE SIDE OF SILT FENCE WHEN IT BECOMES 0.5 FOOT DEEP AT THE FENCE. SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER/ITS FUNCTION.
- THE CONTRACTOR SHALL FERTILIZE, RESEED AS NECESSARY, AND MULCH ALL SEEDED AREAS ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
- ALL TEMPORARY EROSION CONTROL AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED AS NOTED ON THE EROSION CONTROL DETAILS. REFER TO EROSION CONTROL DETAILS FOR ADDITIONAL MAINTENANCE NOTES ON EROSION CONTROL STRUCTURES.

CONSTRUCTION SEQUENCE:

- THE CITY OF FAYETTEVILLE SHALL CONDUCT THE PRE-CONSTRUCTION MEETING INCLUDING THE ENGINEER, THE CONTRACTOR'S SUPERINTENDENT, THE PROJECT INSPECTOR AND OTHER AFFECTED PARTIES. CALL THE CITY OF FAYETTEVILLE ENGINEERING DIVISION (910) 433-1656 TO SCHEDULE THE MEETING. A MINIMUM 24-HOUR NOTICE IS REQUIRED. NO PERSON MAY INITIATE A LAND DISTURBANCE ACTIVITY BEFORE NOTIFYING THE CITY OF THE DATE OF THE LAND DISTURBING ACTIVITY.
- A RAIN GAUGE WILL BE INSTALLED ON SITE & COPIES OF THE APPROVED PLAN, AND ANY 401/404 DOCUMENTATION WILL BE KEPT ON SITE UNTIL PROJECT IS CLOSED OUT.
- ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE MAINTAINED UNTIL ALL UPGRADE DRAINAGE AREAS HAVE BEEN STABILIZED WITH THE ESTABLISHMENT OF PERMANENT VEGETATION.
- TO FACILITATE IN CLEANUP OF PAVED SURFACES, A LAYER OF SAND, SCREENINGS OR FINES WILL BE PLACED BEFORE DEPOSITION OF ANY EXCAVATED MATERIAL OR USE BY EQUIPMENT/VEHICLES ASSOCIATED WITH THE PROJECT.
- PRIOR TO CLEARING AND GRUBBING/CONSTRUCTION, INSTALL PERIMETER EROSION CONTROL MEASURES INCLUDING SILT FENCE, SILT FENCE OUTLETS, TREE PROTECTION FENCE, CHECK DAMS, CONSTRUCTION FENCE, AND CONCRETE WASHOUT. INSTALL INLET PROTECTION ON ALL INLETS WITHIN LIMITS OF DISTURBANCE. ONLY CLEAR/DISTURB THE MINIMUM AREAS NECESSARY TO INSTALL THE EROSION CONTROL MEASURES.
- PRIOR TO CLEARING AND GRUBBING/CONSTRUCTION, THE CONTRACTOR SHALL REQUEST AN ON-SITE INSPECTION FROM THE PROJECT INSPECTOR. ONLY WITH PROJECT INSPECTOR APPROVAL, GRUBBING/CONSTRUCTION MAY BEGIN.
- INSTALL NEW WATER MAIN.
- INSTALL REPLACEMENT CLOSED STORM DRAINAGE SYSTEM WITH INLET PROTECTION. IN GENERAL, CONSTRUCTION WILL PROCEED IN A DOWNSTREAM TO UPSTREAM DIRECTION.
- DURING EXCAVATION, DE-WATERING SHALL BE CONDUCTED AS NEEDED. DE-WATERING SHALL BE COMPLETED THROUGH USE OF PUMPS. WATER SHALL BE PUMPED AND OR DIRECTED TO EITHER SEDIMENT BASINS OR TO AN APPROVED SILT BAG PLACED INSIDE THE LIMITS OF CONSTRUCTION.
- PERFORM GRADING AND UTILITY CONSTRUCTION OPERATIONS IN A MANNER AND SEQUENCE SO AS TO REDUCE UNNECESSARY DISTURBANCE OF SURFACE COVER AND TO MINIMIZE INTERRUPTIONS OF WATER AND SEWER SERVICE. PROVIDE TEMPORARY STABILIZATION OF DISTURBED AREAS PER SEEDING PLAN.
- CONTRACTOR SHALL COMPLETE REMAINING WORK ITEMS INCLUDING UTILITIES, SIDEWALK, CURB AND GUTTER, PAVEMENT REPLACEMENT, FINAL GRADING, PERMANENT SEEDING/SODDING, AND STABILIZATION.
- WHEN THE PROJECT IS COMPLETE, CONTACT THE PROJECT INSPECTOR FOR FINAL INSPECTION AND TO CLOSE OUT THE PROJECT.
- ONLY WITH PROJECT INSPECTOR APPROVAL, REMOVE REMAINING EROSION CONTROL MEASURES.
- ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. CONTRACTOR SHALL REMOVE ALL TEMPORARY CONTROL DEVICES ONCE CONSTRUCTION IS COMPLETE, THE SITE IS STABILIZED, AND ONLY WITH PROJECT INSPECTOR APPROVAL.

LEGEND

-  LIMITS OF DISTURBANCE
-  TREE PROTECTION
-  TREE REMOVAL
-  TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT
-  INLET PROTECTION
-  SILT FENCE OUTLET
-  SEDIMENT FENCE (SILT FENCE)
-  CHECK DAM
-  CONCRETE WASHOUT
-  SEEDING (PERMANENT)
-  COIR FIBER MATTING (EROSION CONTROL MATTING)

ISSUED FOR CONSTRUCTION

PROJECT NAME :	RAY AVE DRAINAGE
SCALE :	1" = 20'
DATE :	MARCH 2022

PROJECT NO. 202000251.00.RA
SUB-LEDGER NO. _____

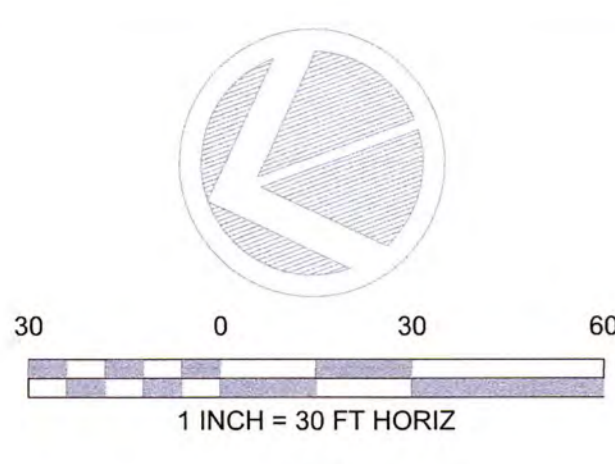
REV. #	REVISIONS	DESCRIPTION	REV. BY	DATE



FAYETTEVILLE
PUBLIC SERVICES
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28301

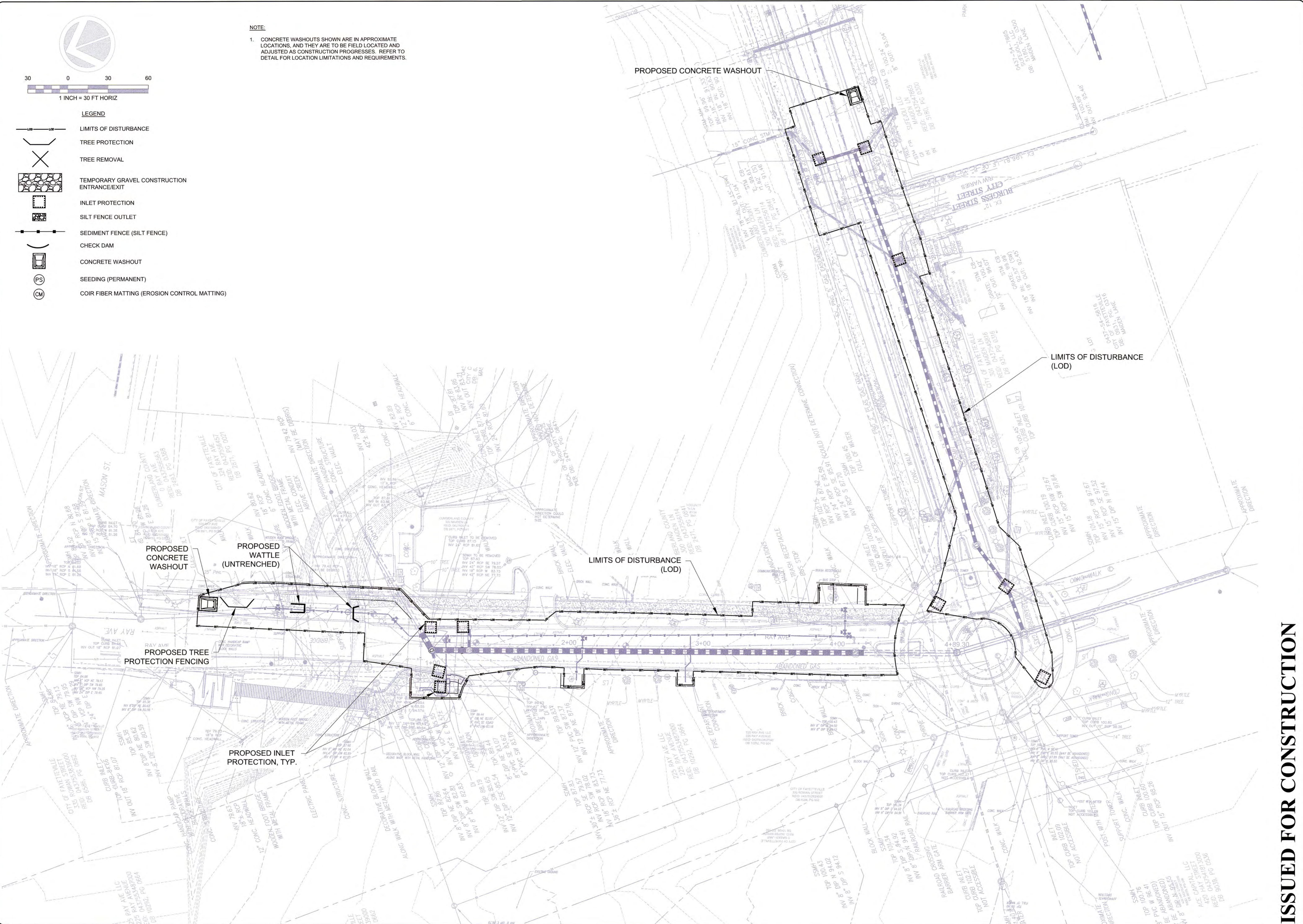
WICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919) 782-0495
Office Locations: North Carolina, Georgia, South Carolina, Tennessee

RAY AVE DRAINAGE
PLAN TYPE
EROSION CONTROL NOTES
SHEET NUMBER
EC1 OF 26



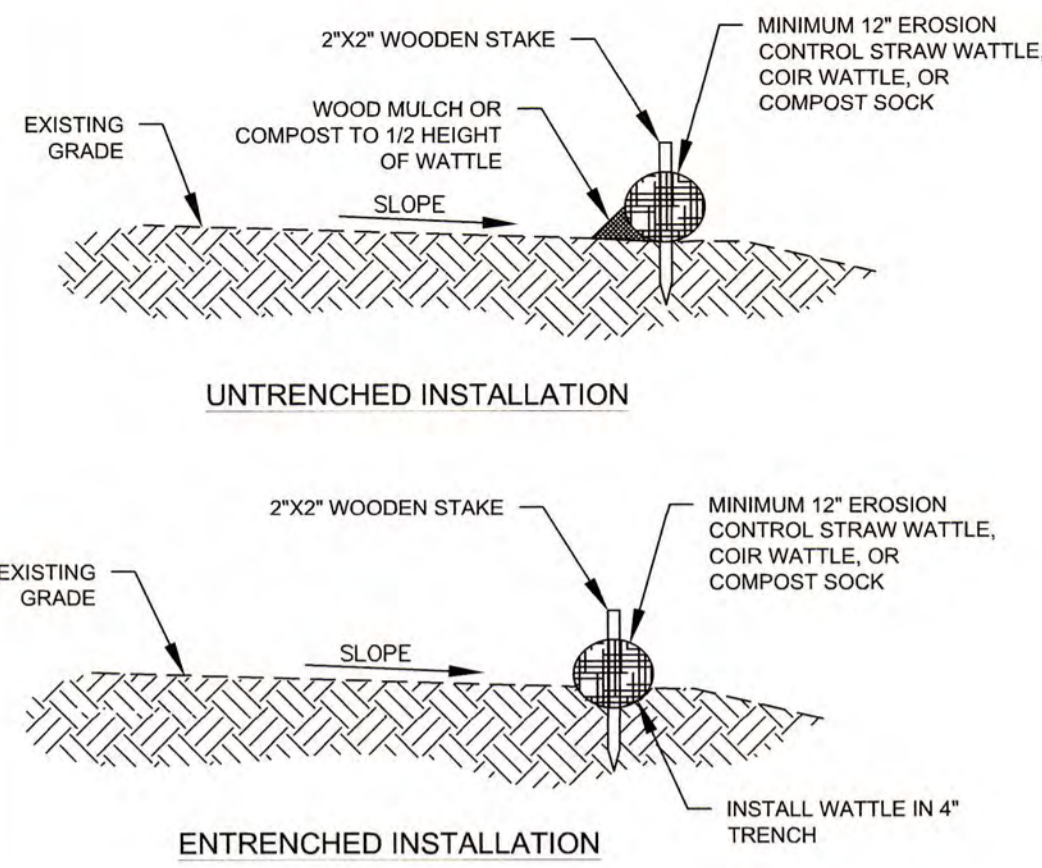
NOTE:
 1. CONCRETE WASHOUTS SHOWN ARE IN APPROXIMATE LOCATIONS, AND THEY ARE TO BE FIELD LOCATED AND ADJUSTED AS CONSTRUCTION PROGRESSES. REFER TO DETAIL FOR LOCATION LIMITATIONS AND REQUIREMENTS.

- LEGEND**
- LIMITS OF DISTURBANCE
 - TREE PROTECTION
 - TREE REMOVAL
 - TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT
 - INLET PROTECTION
 - SILT FENCE OUTLET
 - SEDIMENT FENCE (SILT FENCE)
 - CHECK DAM
 - CONCRETE WASHOUT
 - SEEDING (PERMANENT)
 - COIR FIBER MATTING (EROSION CONTROL MATTING)



ISSUED FOR CONSTRUCTION

DRAWN : E. WIGGS DESIGN : T. MURRAY CHECK : T. MURRAY APPROVED : T. MURRAY	PROJECT NAME : RAY AVE DRAINAGE SCALE : 1" = 20' DATE : MARCH 2022	REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV. #</th> <th>DESCRIPTION</th> <th>REV. BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV. #	DESCRIPTION	REV. BY	DATE				
REV. #	DESCRIPTION	REV. BY	DATE							
PROJECT NO. : 20200251.00.RA SUB-LEDGER NO. :		PROJECT TYPE : EROSION CONTROL PLAN SHEET NUMBER : EC2 OF 26								

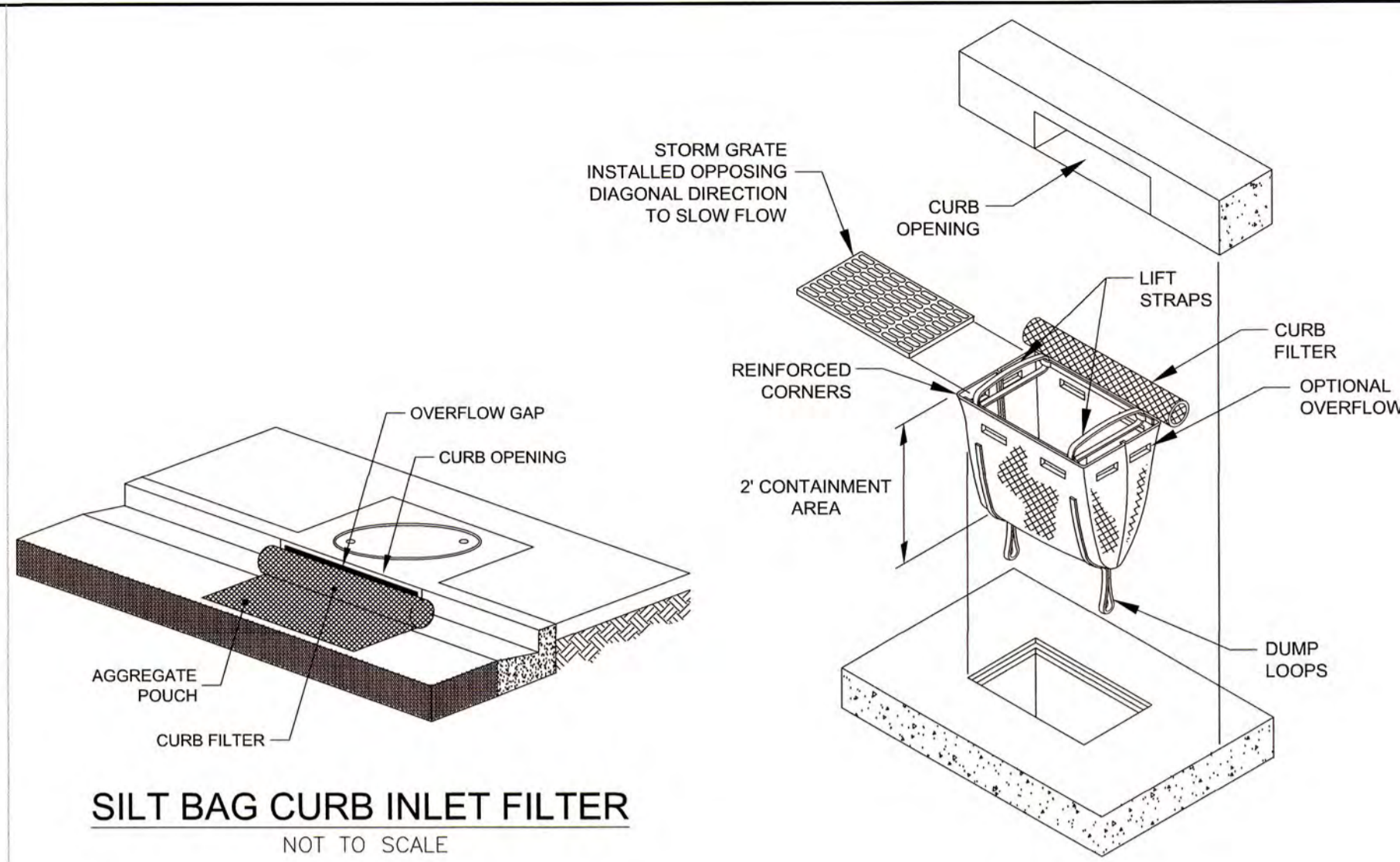


- INSTALLATION:**
1. WATTLES SHALL BE FILLED WITH STRAW, COIR, COMPOST, OR OTHER APPROVED MATERIAL.
 2. WATTLES SHOULD BE LOCATED AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN.
 3. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND OTHER DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF THE WATTLE.
 4. WATTLES SHOULD BE INSTALLED PARALLEL TO THE TOE OF A GRADED SLOPE, A MINIMUM OF 10 FEET BEYOND THE TOE OF THE SLOPE. WATTLES LOCATED BELOW FLAT AREAS SHOULD BE LOCATED AT THE EDGE OF THE LAND-DISTURBANCE. THE ENDS OF THE WATTLES SHOULD BE TURNED SLIGHTLY UP-SLOPE TO PREVENT RUNOFF FROM GOING AROUND THE END OF THE WATTLES.
 5. FILL WATTLE NETTING UNIFORMLY WITH APPROVED MATERIAL TO THE DESIRED LENGTH SUCH THAT WATTLES DO NOT DEFORM.
 6. OAK OR OTHER DURABLE HARDWOOD STAKES 2" X 2" IN CROSS SECTION SHOULD BE DRIVEN VERTICALLY PLUMB, THROUGH THE CENTER OF THE WATTLE. STAKES SHOULD BE PLACED AT A MAXIMUM INTERVAL OF 4 FEET (UNTRENCHED INSTALLATION), OR A MAXIMUM INTERVAL OF 8 FEET IF THE WATTLE IS PLACED IN A 4 INCH TRENCH (ENTRENCHED INSTALLATION). THE STAKES SHOULD BE DRIVEN TO A MINIMUM DEPTH OF 12 INCHES, WITH A MINIMUM OF 3 INCHES PROTRUDING ABOVE THE WATTLE.
 7. IN THE EVENT STAKING IS NOT POSSIBLE (I.E., WHEN WATTLES ARE USED ON PAVEMENT) HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE WATTLE TO HOLD IT IN PLACE DURING RUNOFF EVENTS.
 8. IF THE WATTLE IS TO BE LEFT AS PART OF THE NATURAL LANDSCAPE, IT MAY BE SEEDED AT TIME OF INSTALLATION FOR ESTABLISHMENT OF PERMANENT VEGETATION USING THE SEEDING SPECIFICATION IN THE EROSION AND SEDIMENTATION CONTROL PLAN.
 9. WATTLES ARE NOT TO BE USED IN PERENNIAL OR INTERMITTENT STREAMS.

- MAINTENANCE:**
1. INSPECT WATTLES WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT (1/2 INCH OR GREATER). REMOVE ACCUMULATED SEDIMENT AND ANY DEBRIS. THE WATTLE MUST BE REPLACED IF CLOGGED OR TORN. IF PONDING BECOMES EXCESSIVE, THE WATTLE MAY NEED TO BE REPLACED WITH A LARGER DIAMETER OR A DIFFERENT MEASURE. THE WATTLE NEEDS TO BE REINSTALLED IF UNDERMINED OR DISLOADED. THE WATTLE SHALL BE INSPECTED UNTIL LAND DISTURBANCE IS COMPLETE AND THE AREA ABOVE THE MEASURE HAS BEEN PERMANENTLY STABILIZED.

NOTE:
1. EROSION CONTROL WATTLES OR COIR LOGS/WATTLES MAY BE USED IN PLACE OF SILT FENCE.

1
EC3 **WATTLE**
NOT TO SCALE



SILT BAG CURB INLET FILTER
NOT TO SCALE

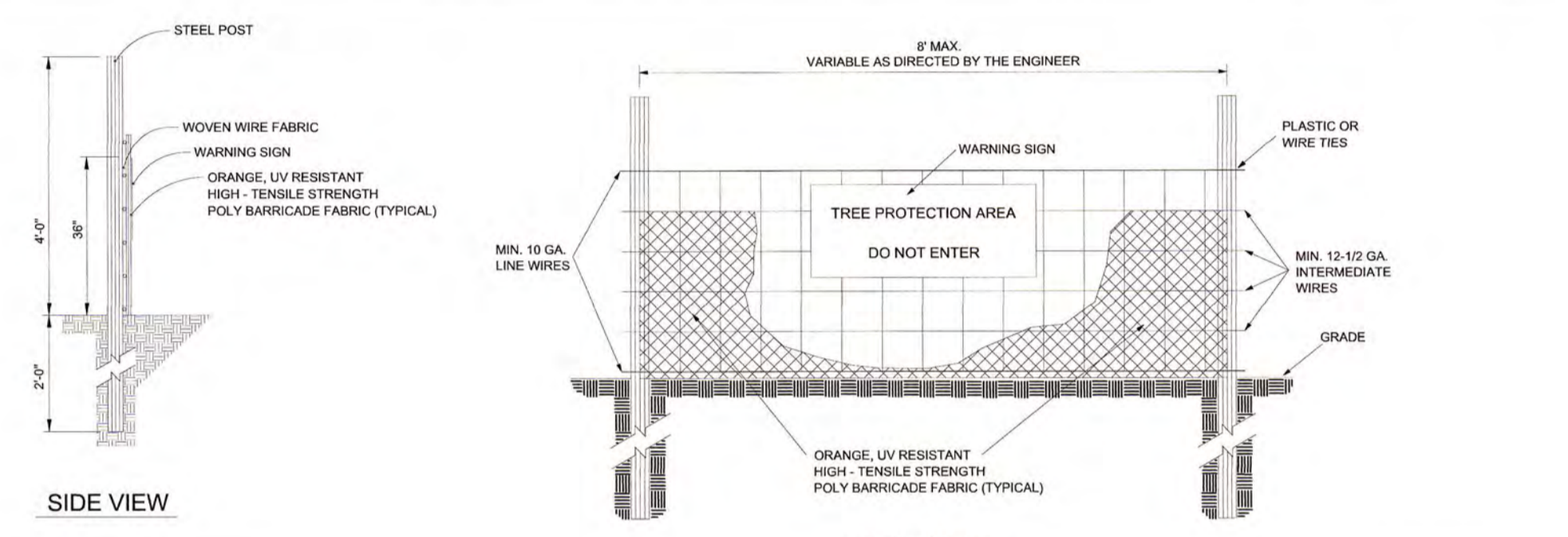
SILT SACK
NOT TO SCALE

2
EC3 **TEMPORARY INLET PROTECTION**
NOT TO SCALE

TEMPORARY SEEDING AND MULCHING FOR STREAM BANK STABILIZATION

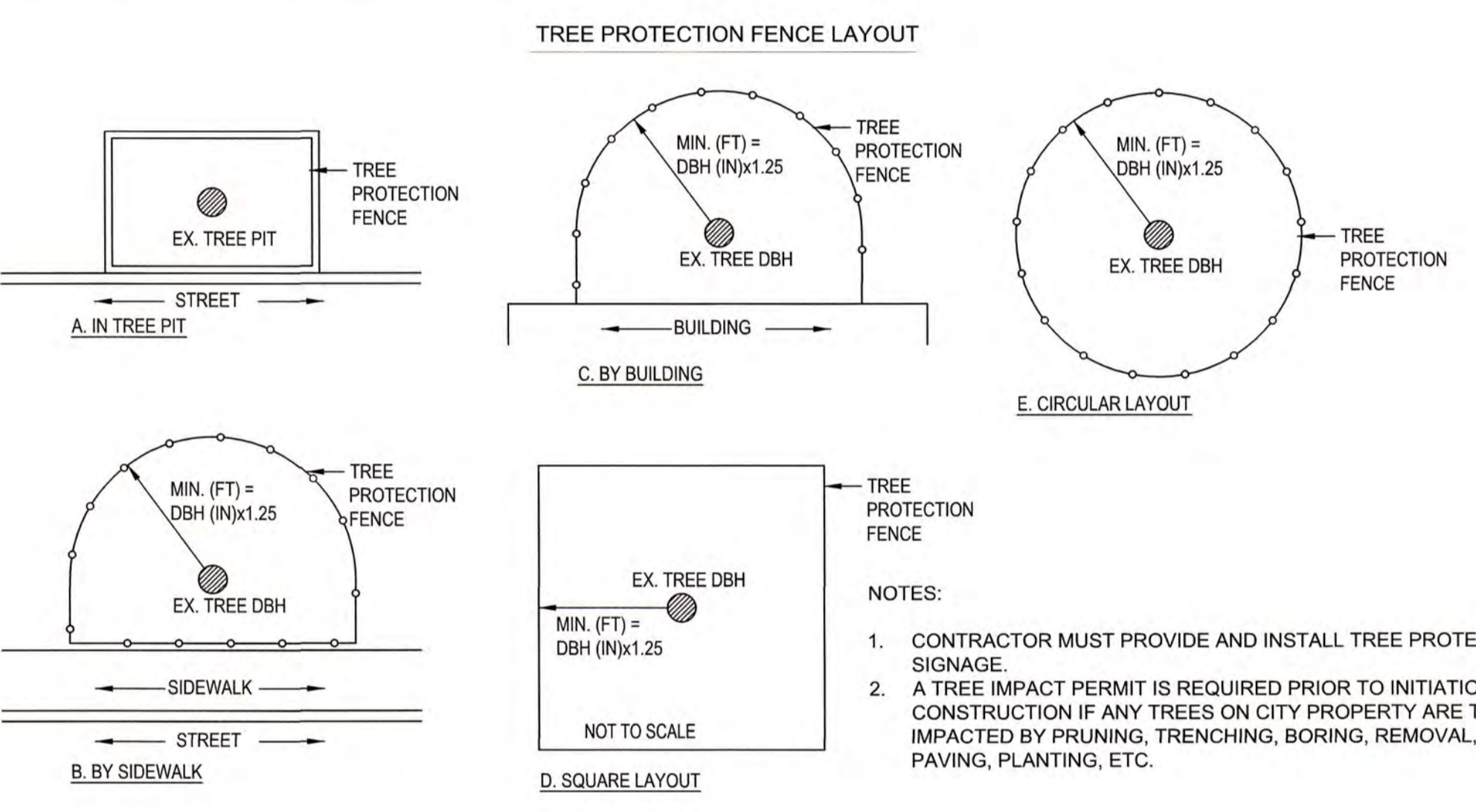
	SUMMER SEASON	WINTER SEASON
SEEDING MIXTURE	40 LBS/ACRE OF: 50% BROWNTOP MILLET (BRACHIARIA RAMOSA) 50% PEARL MILLET (PENNISETUM GLAUCUM)	50 LBS/ACRE OF: 50% BARLEY (HORDEUM VULGARE) 50% WINTER RYE (SECALE CEREALE)
SEEDING DATES	APRIL 1 - OCTOBER 1	OCTOBER 1 - APRIL 1
SEEDING AMENDMENTS	TEMPORARY SEEDING WILL BE REQUIRED ON ALL STREAM BANK STABILIZATION AREAS DISTURBED FOLLOWING ALL LAND DISTURBING ACTIVITIES. ALL SOIL IN PLANTING AREAS SHALL BE TESTED AND THE RATE OF FERTILIZATION AND LIMING SHALL BE IN ACCORDANCE WITH THE TEST RESULTS. THE PLANTING OF ANY SPECIES OF FESCUE GRASS ALONG OR ADJACENT TO STREAMS AND CHANNELS IS PROHIBITED UNLESS OTHERWISE APPROVED BY THE ENGINEER. ALL AREAS SHALL BE MULCHED FOR EROSION CONTROL UPON COMPLETION OF CONSTRUCTION ACTIVITIES OR AS DIRECTED BY THE ENGINEER.	TEMPORARY SEEDING WILL BE REQUIRED ON ALL STREAM BANK STABILIZATION AREAS DISTURBED FOLLOWING ALL LAND DISTURBING ACTIVITIES. ALL SOIL IN PLANTING AREAS SHALL BE TESTED AND THE RATE OF FERTILIZATION AND LIMING SHALL BE IN ACCORDANCE WITH THE TEST RESULTS. THE PLANTING OF ANY SPECIES OF FESCUE GRASS ALONG OR ADJACENT TO STREAMS AND CHANNELS IS PROHIBITED UNLESS OTHERWISE APPROVED BY THE ENGINEER. ALL AREAS SHALL BE MULCHED FOR EROSION CONTROL UPON COMPLETION OF CONSTRUCTION ACTIVITIES OR AS DIRECTED BY THE ENGINEER.

3
EC3 **SEEDING AND MULCHING**
NOT TO SCALE

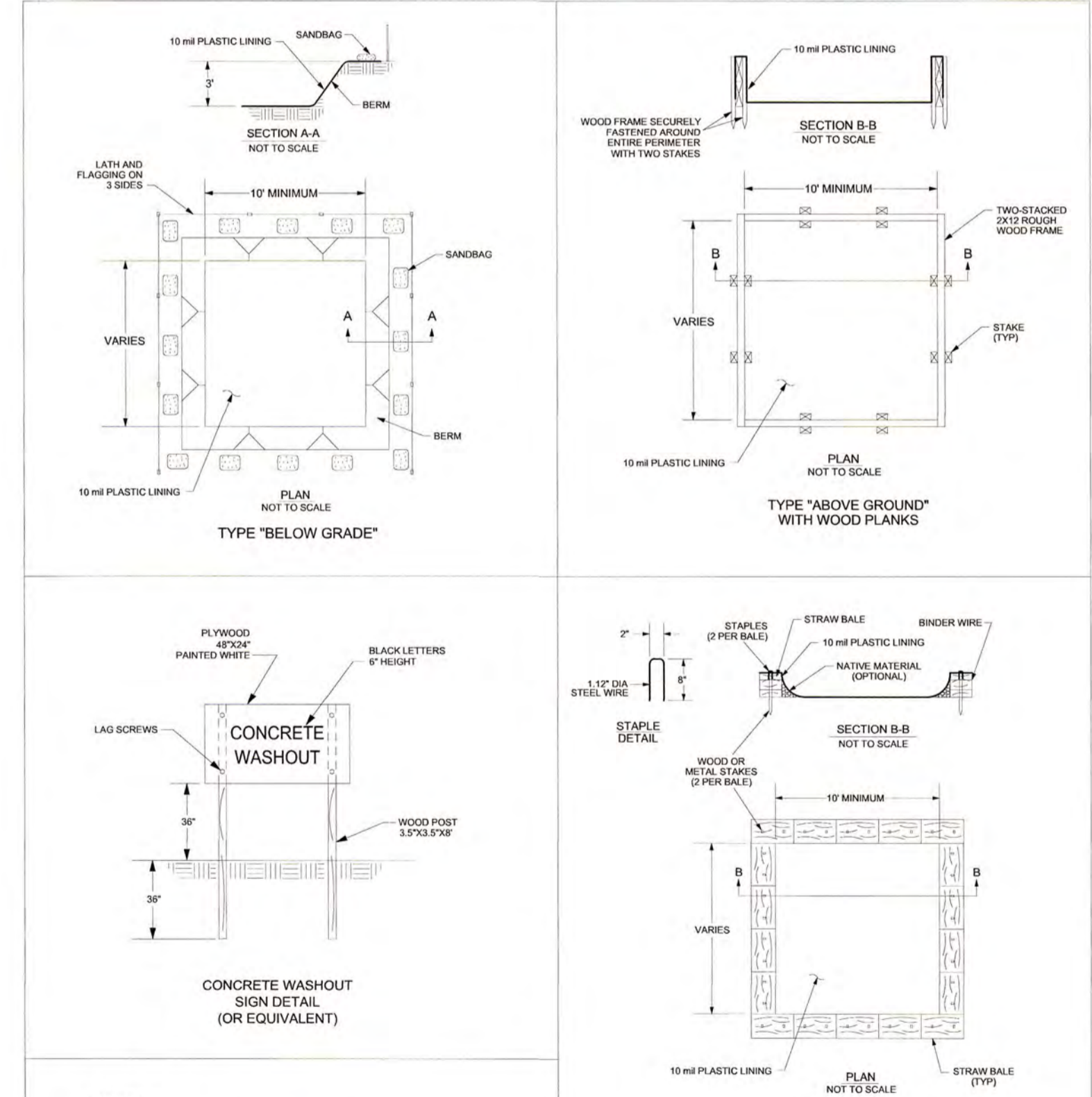


- NOTES:**
1. TREE PROTECTION FENCING MUST BE INSTALLED AT A MINIMUM RADIUS OF THE CRITICAL ROOT ZONE (TREE PROTECTION FENCE LAYOUTS A-E FOR EXAMPLES).
 2. THE TREE PROTECTION FENCING MUST REMAIN IN PLACE FOR THE DURATION OF THE PROJECT UNLESS OTHERWISE APPROVED BY URBAN FORESTRY STAFF.
 3. APPROVED IMPACT PROTECTION DEVICES MUST BE REMOVED AFTER CONSTRUCTION WHEN APPLICABLE.
 4. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER FOR THE REMAINDER.
 5. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTED AREA.
 6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
 7. ADDITIONAL SIGNS MAY BE REQUIRED BASED ON ACTUAL FIELD CONDITIONS.
 8. SIGNS ARE TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL WITH LETTERS A MINIMUM OF 3" HIGH, CLEARLY LEGIBLE AND SPACED AS SHOWN.

4
EC3 **TEMPORARY TREE PROTECTION FENCE**
NOT TO SCALE



- NOTES:**
1. CONTRACTOR MUST PROVIDE AND INSTALL TREE PROTECTION SIGNAGE.
 2. A TREE IMPACT PERMIT IS REQUIRED PRIOR TO INITIATION OF CONSTRUCTION IF ANY TREES ON CITY PROPERTY ARE TO BE IMPACTED BY PRUNING, TRENCHING, BORING, REMOVAL, PAVING, PLANTING, ETC.



- NOTES:**
1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
 2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
 3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
 4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.
 5. MUST BE LOCATED >50 FT AWAY FROM INLETS/WATERWAYS UNLESS THERE IS NO OTHER PRACTICAL ALTERNATIVE.

5
EC3 **CONCRETE WASHOUT**
NOT TO SCALE

	WARMER SEASON	COOL SEASON
SEEDING MIXTURE	100 lbs/acre of tall fescue 25 lbs/acre of german millet 25 lbs/acre of hulled bermuda	100 lbs/acre of tall fescue 30 lbs/acre of wheat 25 lbs/acre of unhulled bermuda
SEEDING DATES	March 15 - September 15	September 15 - March 15
SEEDING AMENDMENTS	Apply lime and fertilizer per soil tests, or 4000 lbs/acre limestone and 1000 lbs/acre 10-10-10 fertilizer.	Apply lime and fertilizer per soil tests, or 4000 lbs/acre limestone and 1000 lbs/acre 10-10-10 fertilizer.

STABILIZATION TIMEFRAMES

SITE AREA DESCRIPTION	STABILIZATION	INTERMEDIATE EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES, SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES

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PERMANENT SEEDING SCHEDULE

Rev. Date: 16JAN18
Not to Scale
Review Date: 01JAN19

EC-7

	EARLY SUMMER SEASON	FALL/WINTER SEASON
SEEDING MIXTURE	40 lbs/acre of German millet 80 lbs/acre of tall fescue	120 lbs/acre Rye (grain) 80 lbs/acre tall fescue
SEEDING DATES	May 1 - August 15	October 25 - December 30
SEEDING AMENDMENTS	Refer to site plan for details. If growth is not fully adequate, Apply 4000 lbs/acre straw or equivalent hydroseeding.	Between December 30 - February 15, add 50 lbs/acre of annual Kobe lespedeza. Apply 4000 lbs/acre straw or equivalent hydroseeding.
SEEDING AMENDMENTS	Apply lime and fertilizer per soil tests, or 2000 lbs/acre limestone and 750 lbs/acre 10-10-10 fertilizer.	Apply lime and fertilizer per soil tests, or 2000 lbs/acre limestone and 750 lbs/acre 10-10-10 fertilizer.

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TEMPORARY SEEDING SCHEDULE (SEASONAL)

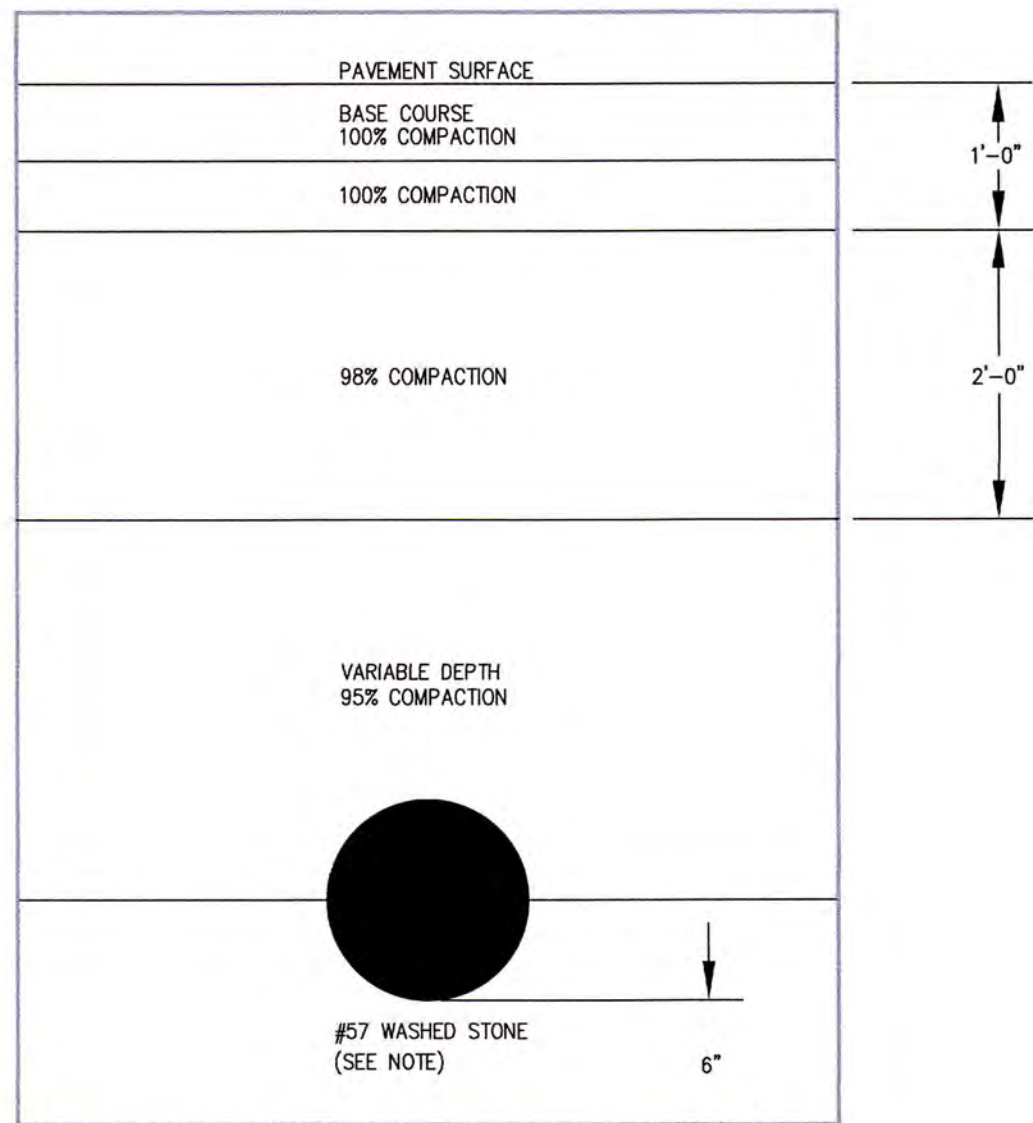
Rev. Date: 16JAN18
Not to Scale
Review Date: 01JAN19

EC-8

REV. #	DESCRIPTION	DATE

PROJECT NAME: RAY AVE DRAINAGE	PROJECT NO.: 20200251.00.RA
DESIGN: T. MURRAY	SCALE: 1" = 20'
CHECK: T. MURRAY	DATE: MARCH 2022
APPROVED: T. MURRAY	SUB-LEADER NO.: _____

ISSUED FOR CONSTRUCTION



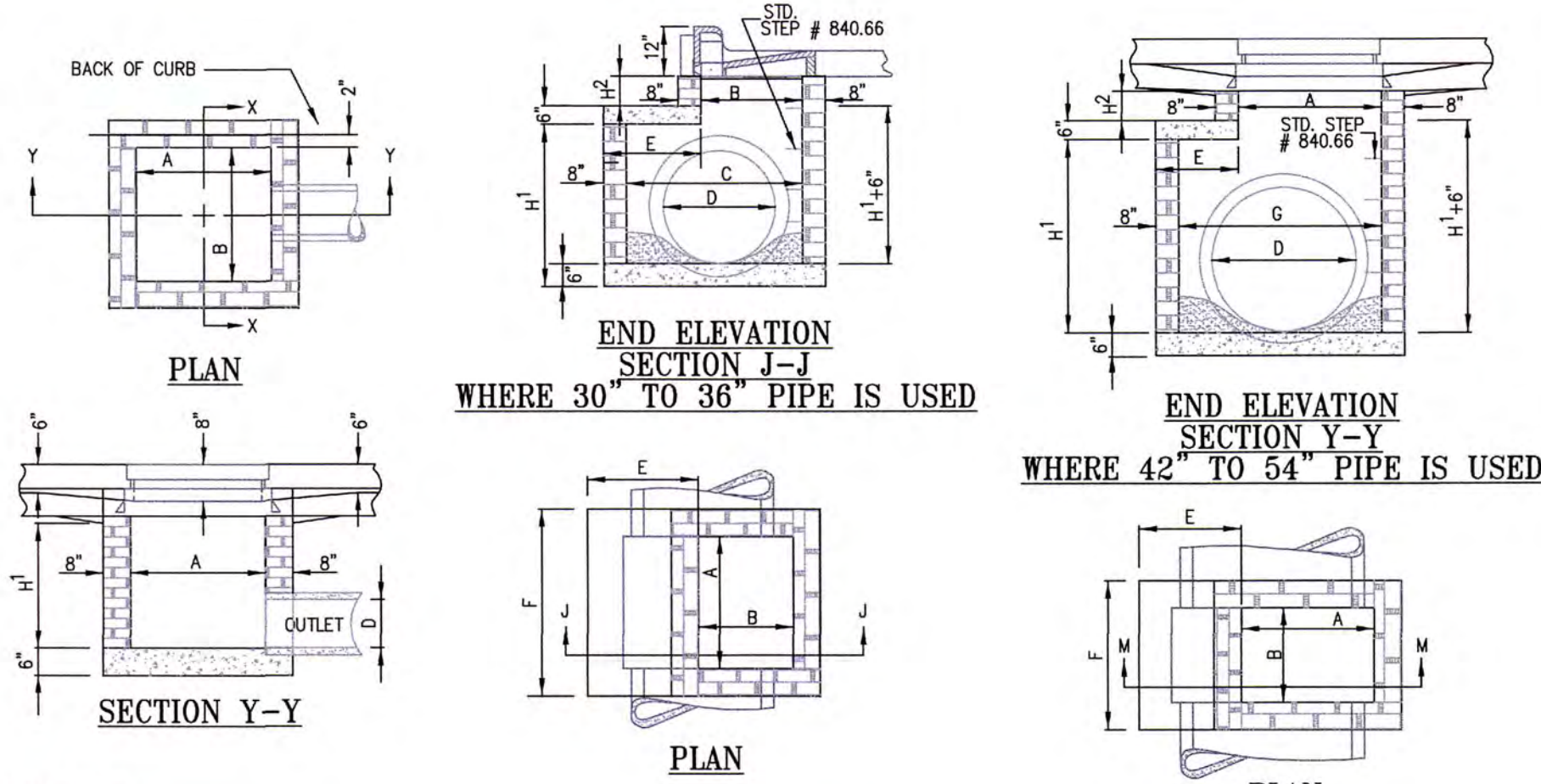
NOTES:

- STONE BEDDING FOR PIPE IS REQUIRED UNLESS OTHERWISE APPROVED BY CITY ENGINEER OR THEIR DESIGNEE.

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TYPICAL STORM DRAIN COMPACTION
Rev. Date: 10/21/18
Not to Scale
Review Date: 01/11/19

DR 1



GENERAL NOTES:

- MORTAR JOINTS 1/2" 1/8" THICK.
- 3000 P.S.I. CONCRETE TO BE USED.
- THE POURING OF FLOOR SLAB TO BE ACCOMPLISHED BY FORMING.
- ALL CATCH BASINS OVER 3'-6" IN DEPTH SHALL BE PROVIDED WITH STEPS 1'-2" ON CENTERS.
- USE TYPE "F", "T", & "C" GRATE UNLESS OTHERWISE INDICATED.
- JUNDO BRICK WILL BE PERMITTED. CONCRETE BRICK OR 4" SOLID CONCRETE BLOCKS MAY BE USED IN LIEU OF CLAY BRICKS.
- FOR 8'-0" IN HEIGHT OR LESS USE 8" WALL OVER 8'-0" IN HEIGHT USE 12" WALL TO 6'-0" FROM TOP OF WALL, 8" WALL FOR THE UPPER 6'-0".
- INVERTS SHALL BE SHAPED TO FORM A SMOOTH, REGULAR SURFACE, SLOPED TO PREVENT SEDIMENTATION.
- FOR VARIABLE DIMENSIONS, SEE STANDARD DETAIL DR-3.1.

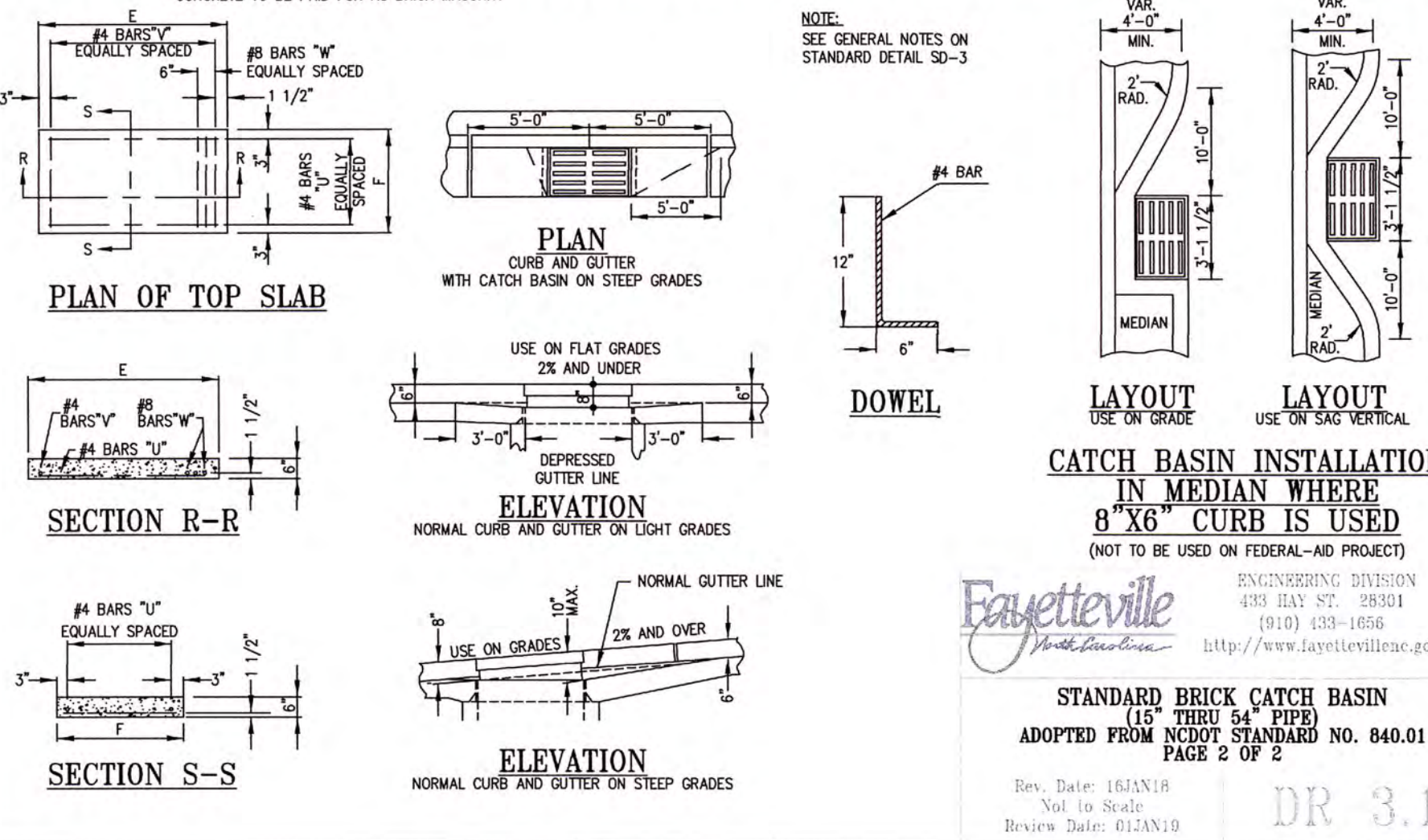
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STANDARD BRICK CATCH BASIN (15" THRU 36" PIPE)
ADOPTED FROM NCDOT STANDARD NO. 840.01
PAGE 1 OF 2
Rev. Date: 10/21/18
Not to Scale
Review Date: 01/11/19

DR 3

REINFORCING

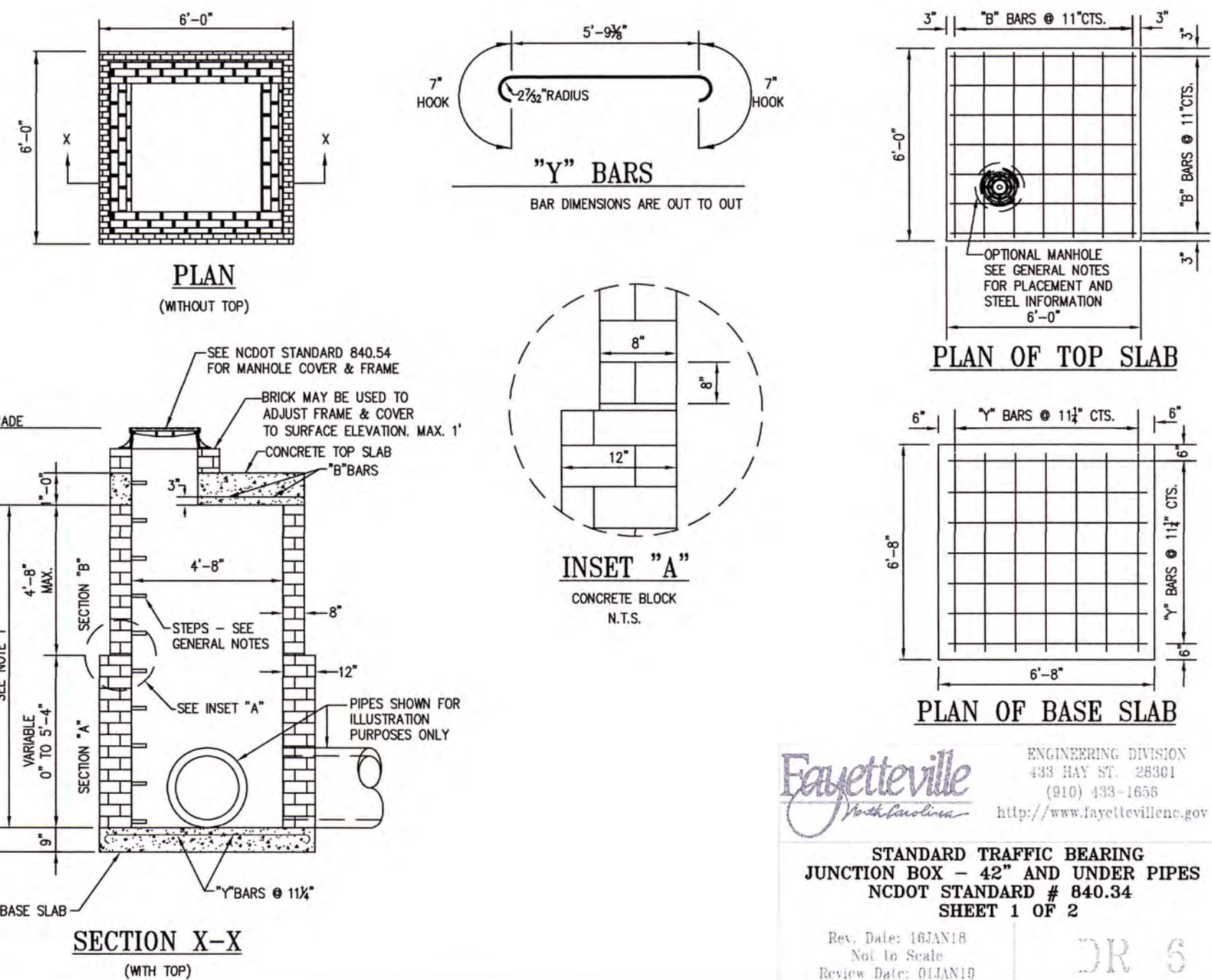
PIPE	SPAN	WIDTH	THICK	SPAN	HEIGHT	HEIGHT	COVER	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	TOTAL	CUBIC YARDS OF CONCRETE IN BOX	BRICK MASONRY PER FT. TOTAL	DEDUCTIONS FOR ONE PIPE
15"	3'-0"	2'-2"	8"	3'-0"	3'-0"	3'-0"	1"	4	4'-0"	4	2'-0"	4	4'-0"	48	0.281	0.281	0.044
18"	3'-0"	2'-2"	8"	3'-0"	3'-0"	3'-0"	1"	4	4'-0"	4	2'-0"	4	4'-0"	48	0.281	0.281	0.044
24"	3'-0"	2'-2"	8"	3'-0"	3'-0"	3'-0"	1"	4	4'-0"	4	2'-0"	4	4'-0"	48	0.281	0.281	0.044
30"	3'-0"	2'-2"	8"	3'-0"	3'-0"	3'-0"	1"	4	4'-0"	4	2'-0"	4	4'-0"	48	0.281	0.281	0.044
36"	3'-0"	2'-2"	8"	3'-0"	3'-0"	3'-0"	1"	4	4'-0"	4	2'-0"	4	4'-0"	48	0.281	0.281	0.044



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STANDARD BRICK CATCH BASIN (15" THRU 36" PIPE)
ADOPTED FROM NCDOT STANDARD NO. 840.01
PAGE 2 OF 2
Rev. Date: 10/21/18
Not to Scale
Review Date: 01/11/19

DR 3.1



GENERAL NOTES:

- STANDARD OR JUNDO BRICK SHALL BE USED FOR WALL CONSTRUCTION. SOLID CONCRETE BRICK OR BLOCK ARE OPTIONAL WALL CONSTRUCTION MATERIAL.
- PRECAST UNITS MADE OF CLASS "AA" CONCRETE MAY BE USED IN LIEU OF BRICK MASONRY CONSTRUCTION. DESIGN OF PRECAST UNITS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO CONSTRUCTION.
- ALL ADJUSTMENTS TO WALLS, SLABS OR REINFORCING MATERIAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH UNIT.

BILL OF MATERIALS

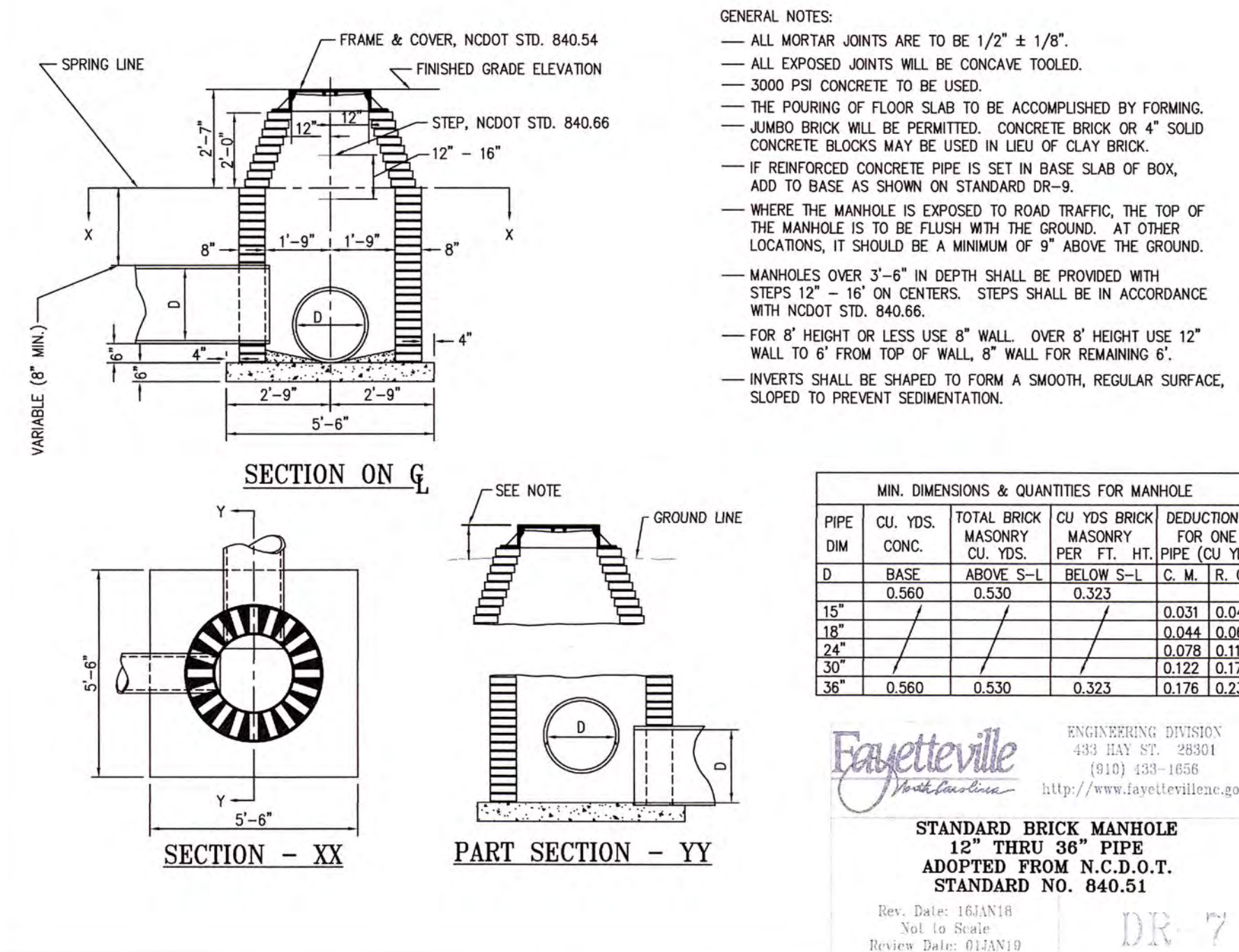
BAR	QTY	SIZE	LENGTH	WEIGHT
A	4	#4	1'-2"	80.3
B	14	#4	5'-5"	80.3
C	28	#4	1'-6"	28.1
D	28	#4	8'-11 3/8"	101.5
STEEL TOTAL WEIGHT				217.6
CU YDS. CLASS "AA" CONC.				2.6
CU YDS. BRICK/FT. HT. (8")				0.53
CU YDS. BRICK/FT. HT. (12")				0.84

- NOTE 1: SECTION "B" OF THE PROPOSED WALL SHALL BE 8" THICK. SECTION "A" SHALL BE 12" THICK.
- NOTE 2: IF PROPOSED STRUCTURE EXCEEDS 12'-0" VERTICAL HEIGHT A DESIGN WILL BE REQUIRED FOR APPROVAL.
- NOTE 3: ALL REINFORCING STEEL SHALL BE SINGLE MAT; EXCEPT DOUBLE MAT STEEL MAY BE USED IN LIEU OF HOOK BARS IN BASE SLAB.

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STANDARD TRAFFIC BEARING JUNCTION BOX - 42" AND UNDER PIPES
NCDOT STANDARD # 840.34
SHEET 2 OF 2
Rev. Date: 10/21/18
Not to Scale
Review Date: 01/11/19

DR 6.1



- GENERAL NOTES:**
- ALL MORTAR JOINTS ARE TO BE 1/2" ± 1/8".
 - ALL EXPOSED JOINTS WILL BE CONCAVE TOOLED.
 - 3000 PSI CONCRETE TO BE USED.
 - THE POURING OF FLOOR SLAB TO BE ACCOMPLISHED BY FORMING.
 - JUNDO BRICK WILL BE PERMITTED. CONCRETE BRICK OR 4" SOLID CONCRETE BLOCKS MAY BE USED IN LIEU OF CLAY BRICK.
 - IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD DR-9.
 - WHERE THE MANHOLE IS EXPOSED TO ROAD TRAFFIC, THE TOP OF THE MANHOLE IS TO BE FLUSH WITH THE GROUND. AT OTHER LOCATIONS, IT SHOULD BE A MINIMUM OF 1" ABOVE THE GROUND.
 - MANHOLES OVER 3'-6" IN DEPTH SHALL BE PROVIDED WITH STEPS 12" - 16" ON CENTERS. STEPS SHALL BE IN ACCORDANCE WITH NCDOT STD. 840.66.
 - FOR 8' HEIGHT OR LESS USE 8" WALL OVER 8' HEIGHT USE 12" WALL TO 6" FROM TOP OF WALL, 8" WALL FOR REMAINING 6".
 - INVERTS SHALL BE SHAPED TO FORM A SMOOTH, REGULAR SURFACE, SLOPED TO PREVENT SEDIMENTATION.

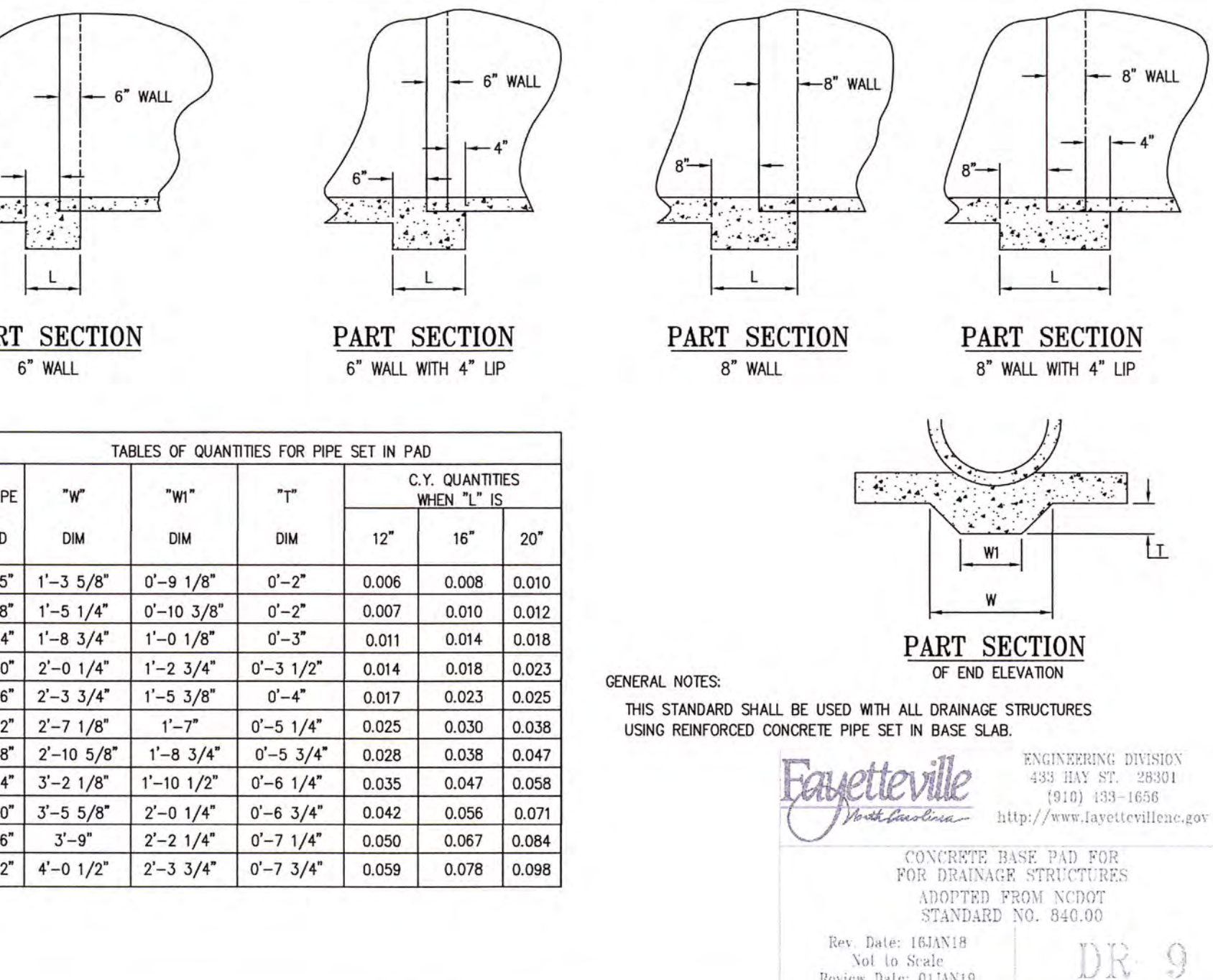
MIN. DIMENSIONS & QUANTITIES FOR MANHOLE

PIPE	CU. YDS.	TOTAL BRICK MASONRY	CU YDS. BRICK MASONRY	DEDUCTIONS FOR ONE PIPE (CU YDS)
D	BASE	ABOVE S-L	BELOW S-L	C. M. (R. C.)
15"	0.560	0.530	0.323	0.031 0.047
18"				0.044 0.065
24"				0.078 0.113
30"				0.122 0.170
36"	0.560	0.530	0.323	0.178 0.238

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STANDARD BRICK MANHOLE (12" THRU 36" PIPE)
ADOPTED FROM N.C.D.O.T. STANDARD NO. 840.51
Rev. Date: 10/21/18
Not to Scale
Review Date: 01/11/19

DR 7

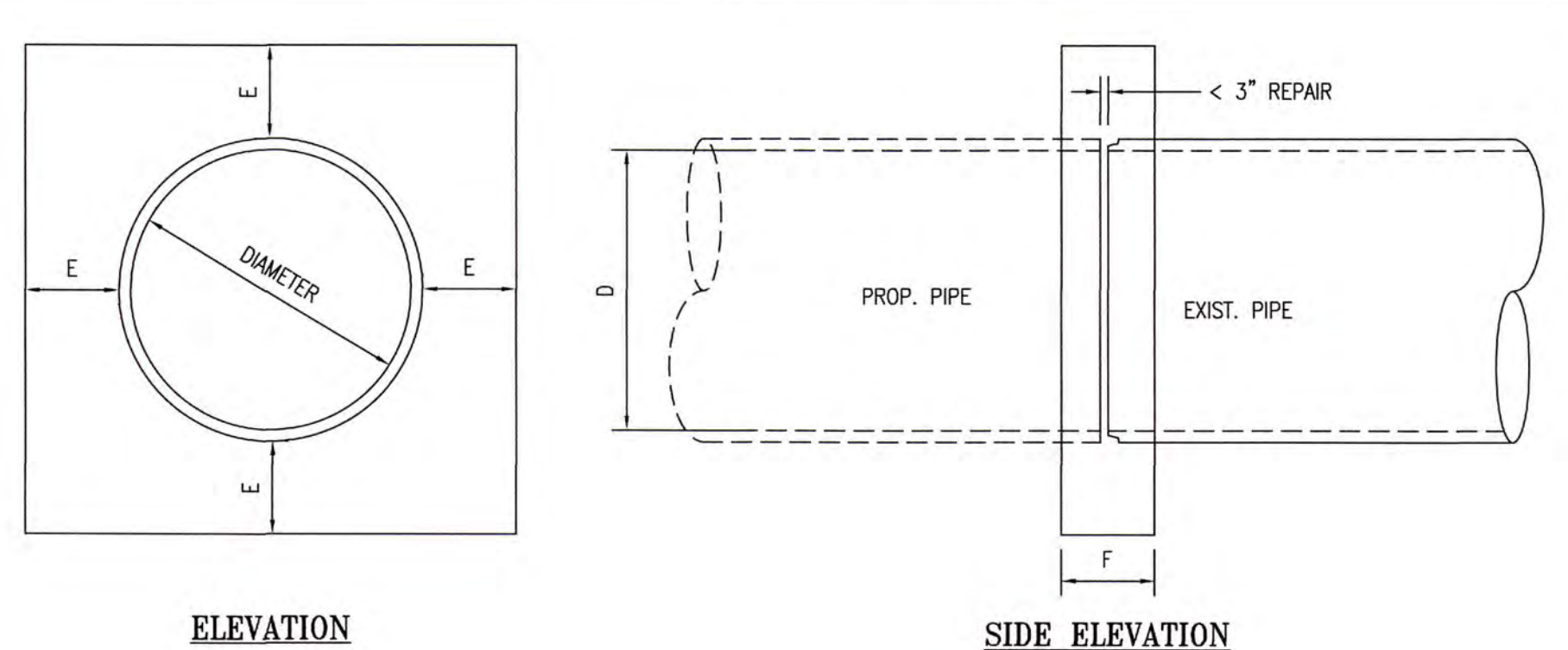


- GENERAL NOTES:**
- THIS STANDARD SHALL BE USED WITH ALL DRAINAGE STRUCTURES USING REINFORCED CONCRETE PIPE SET IN BASE SLAB.

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CONCRETE BASE PAD FOR DRAINAGE STRUCTURES
ADOPTED FROM NCDOT STANDARD NO. 840.00
Rev. Date: 10/21/18
Not to Scale
Review Date: 01/11/19

DR 9



GENERAL NOTES:

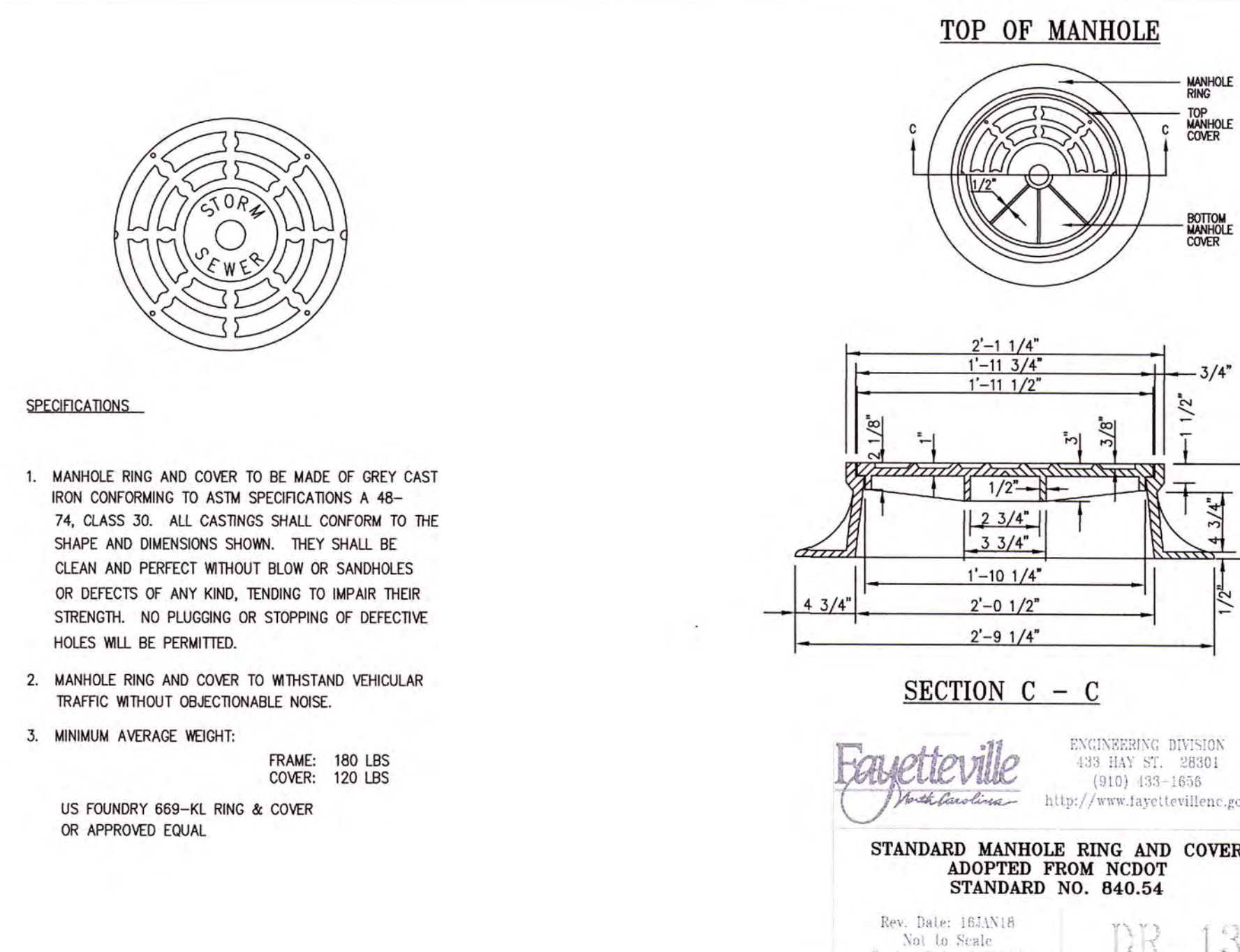
- DIMENSION "F" SHALL BE 12" + WIDTH OF DAMAGE.
- EXISTING PIPE REMOVED SHALL BE REPLACED WITH NEW RCP.
- COLLARS NOT TO BE USED IF DAMAGE IS 16" OR CLOSER TO EXISTING STRUCTURE. IF DAMAGE IS THIS CLOSE NEW PIPE TO BE RELIED TO NEAREST STRUCTURE.
- ALL WORK TO BE INSPECTED BY SENIOR ENGINEER OR DESIGNATE PRIOR TO CONCRETE PLACEMENT.
- CONSTRUCT COLLAR WITH FORMED 3000 PSI CONCRETE WITH AIR ENTRAINMENT.
- DAMAGED PIPE WITH MORE THAN 3" OF DAMAGE SHALL BE REPLACED WITH NEW PIPE.
- METAL FLASHING SHALL BE USED TO SEAL JOINT PRIOR TO CONCRETE PLACEMENT. GAP AT JOINT MAY NOT EXCEED 3".

D	E	F	CU. YD.
15"	8"	12"	0.3990
18"	8"	12"	0.4465
24"	12"	12"	0.5526
30"	12"	12"	0.6560
36"	12"	12"	0.7640
42"	12"	12"	0.8856
48"	12"	12"	1.0126
54"	18"	18"	2.5793
60"	18"	18"	2.8506
66"	18"	18"	3.1307
72"	18"	18"	3.4176

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CONCRETE PIPE COLLAR FOR REPAIRING STORM DRAINS
ADOPTED FROM NCDOT STANDARD NO. 840.00
Rev. Date: 10/21/18
Not to Scale
Review Date: 01/11/19

DR 10



- SPECIFICATIONS**
- MANHOLE RING AND COVER TO BE MADE OF GREY CAST IRON CONFORMING TO ASTM SPECIFICATIONS A 48-74, CLASS 30. ALL CASTINGS SHALL CONFORM TO THE SHAPE AND DIMENSIONS SHOWN. THEY SHALL BE CLEAN AND PERFECT WITHOUT BLOW OR SANDHOLES OR DEFECTS OF ANY KIND, TENDING TO IMPAIR THEIR STRENGTH. NO PLUGGING OR STOPPING OF DEFECTIVE HOLES WILL BE PERMITTED.
 - MANHOLE RING AND COVER TO WITHSTAND VEHICULAR TRAFFIC WITHOUT OBJECTIONABLE NOISE.
 - MINIMUM AVERAGE WEIGHT:
FRAME: 180 LBS
COVER: 120 LBS
OR APPROVED EQUAL

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STANDARD MANHOLE RING AND COVER
ADOPTED FROM NCDOT STANDARD NO. 840.54
Rev. Date: 10/21/18
Not to Scale
Review Date: 01/11/19

DR 13

ISSUED FOR CONSTRUCTION

RAY AVE DRAINAGE

W. DICKSON ENGINEERING DIVISION
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919) 782-0485
Professional Engineer License No. PE-0374
North Carolina South Carolina Georgia

FAYETTEVILLE PUBLIC SERVICES

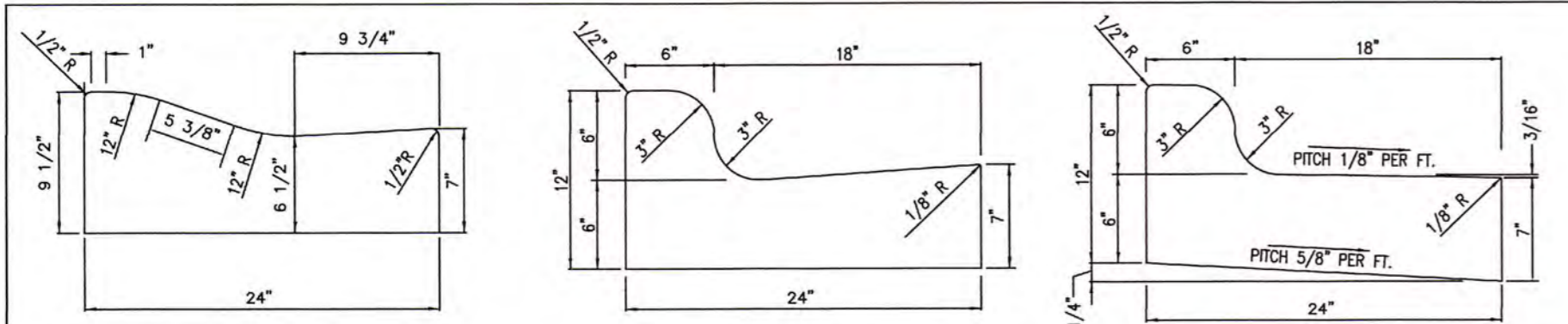
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET, FAYETTEVILLE, NC 28301

PROJECT # 20200251.001A
SUB-LEADER #

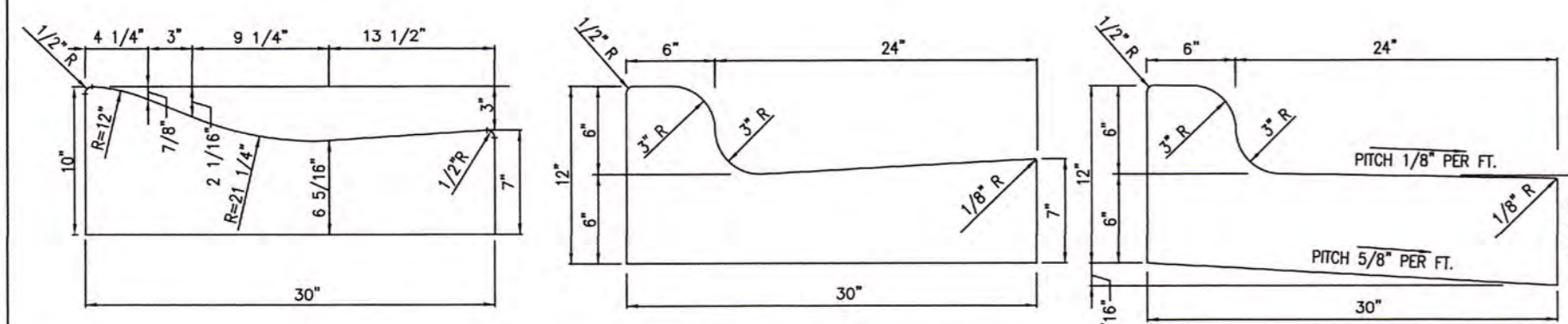
REVISIONS
REV. # DESCRIPTION
REV. DATE

PROJECT RAY AVE DRAINAGE
DESIGN: T. MURRAY
CHECK: T. MURRAY
APPROVED: T. MURRAY
SCALE: AS SHOWN
DATE: OCTOBER 2019

SHEET NUMBER: D1 OF 26



TYPICAL 24" ROLL-BACK CURB TYPICAL 24" VERTICAL CURB TYPICAL 24" SPILL-OFF CURB



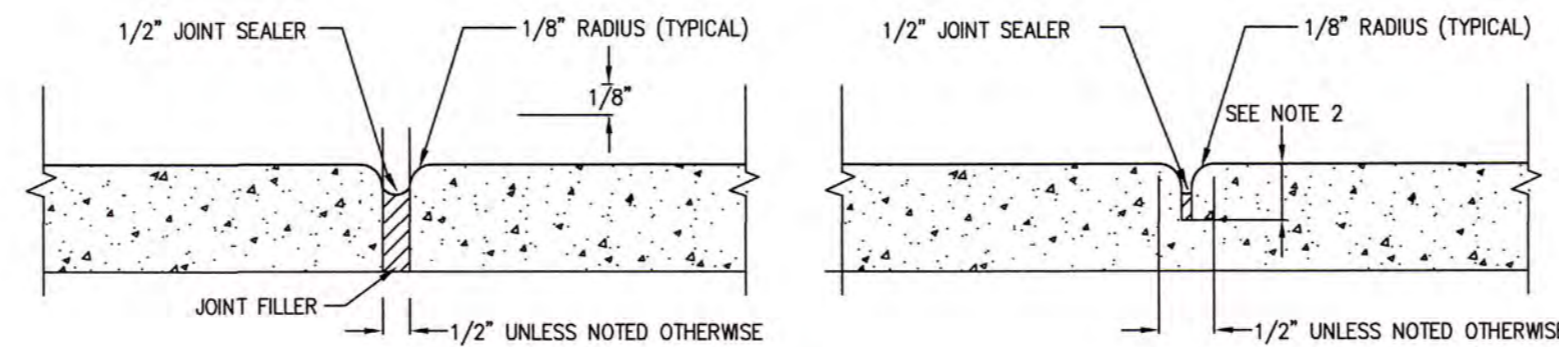
TYPICAL 30" ROLL CURB TYPICAL 30" VERTICAL CURB TYPICAL 30" SPILL-OFF CURB

- NOTES:
- ALL CURBS CONSTRUCTED OF 3000 PSI CONCRETE.
 - CONTRACTION JOINTS EVERY 10'; EXPANSION JOINTS EVERY 30'.
 - CURB SHALL BE DEPRESSED AT INTERSECTIONS TO PROVIDE FOR FUTURE ACCESSIBLE RAMPS.
 - TOP 6" OF SUBGRADE BENEATH THE CURB AND GUTTER SHALL BE COMPACTED TO 100% STANDARD PROCTOR DENSITY.

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24" AND 30" CURB DETAILS

Rev. Date: 16JAN18 Not to Scale
Review Date: 01JAN19 **SD-1**



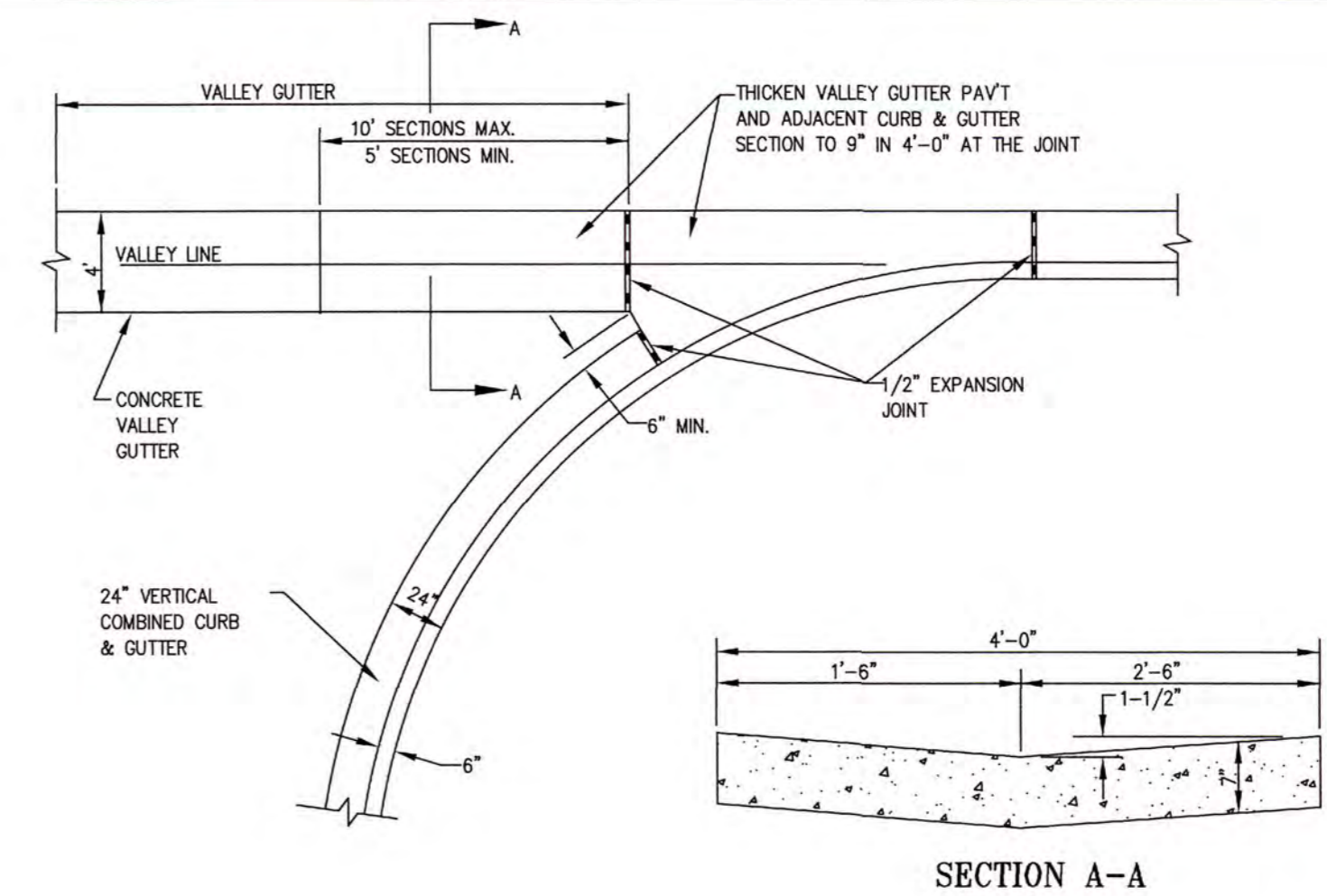
EXPANSION JOINT CONTRACTION JOINT

- NOTES:
- CONTRACTION JOINTS IN CURB AND GUTTER SHALL BE SPACED AT 10-FOOT INTERVALS. SIDEWALK CONTRACTION JOINTS SHALL BE SPACED AT 5-FOOT INTERVALS. JOINT SPACING MAY BE ALTERED BY THE CITY ENGINEER TO PREVENT UNCONTROLLED CRACKING.
 - CONTRACTION JOINTS SHALL BE MINIMUM 1" DEEP WHEN INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1 1/2" SHALL BE OBTAINED.
 - ALL EXPANSION JOINTS SHALL BE SPACED AT 30-FOOT INTERVALS FOR HAND FORMED, AND ADJACENT TO ALL RIGID OBJECTS. JOINTS SHALL MATCH LOCATIONS WITH JOINTS IN ADJUTING SIDEWALK. IF CURB IS MACHINED A 90' SPACING IS ALLOWABLE.
 - REFER TO NCDOT DETAILS 846.01 AND 848.01 FOR MORE INFORMATION.

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CONTRACTION AND EXPANSION JOINT

Rev. Date: 16JAN18 Not to Scale
Review Date: 01JAN19 **SD-3**



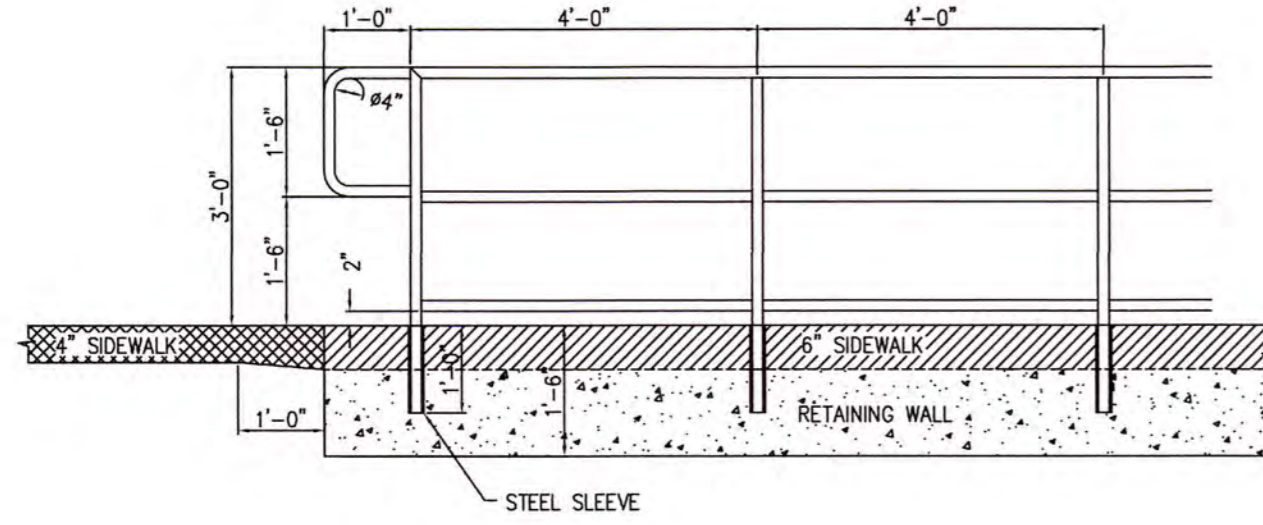
SECTION A-A

NOTE: TO BE CONSTRUCTED AT ALL INTERSECTIONS WITH LESS THAN 1% GRADE.

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CONCRETE VALLEY GUTTER DETAIL

Rev. Date: 16JAN18 Not to Scale
Review Date: 01JAN19 **SD-7**

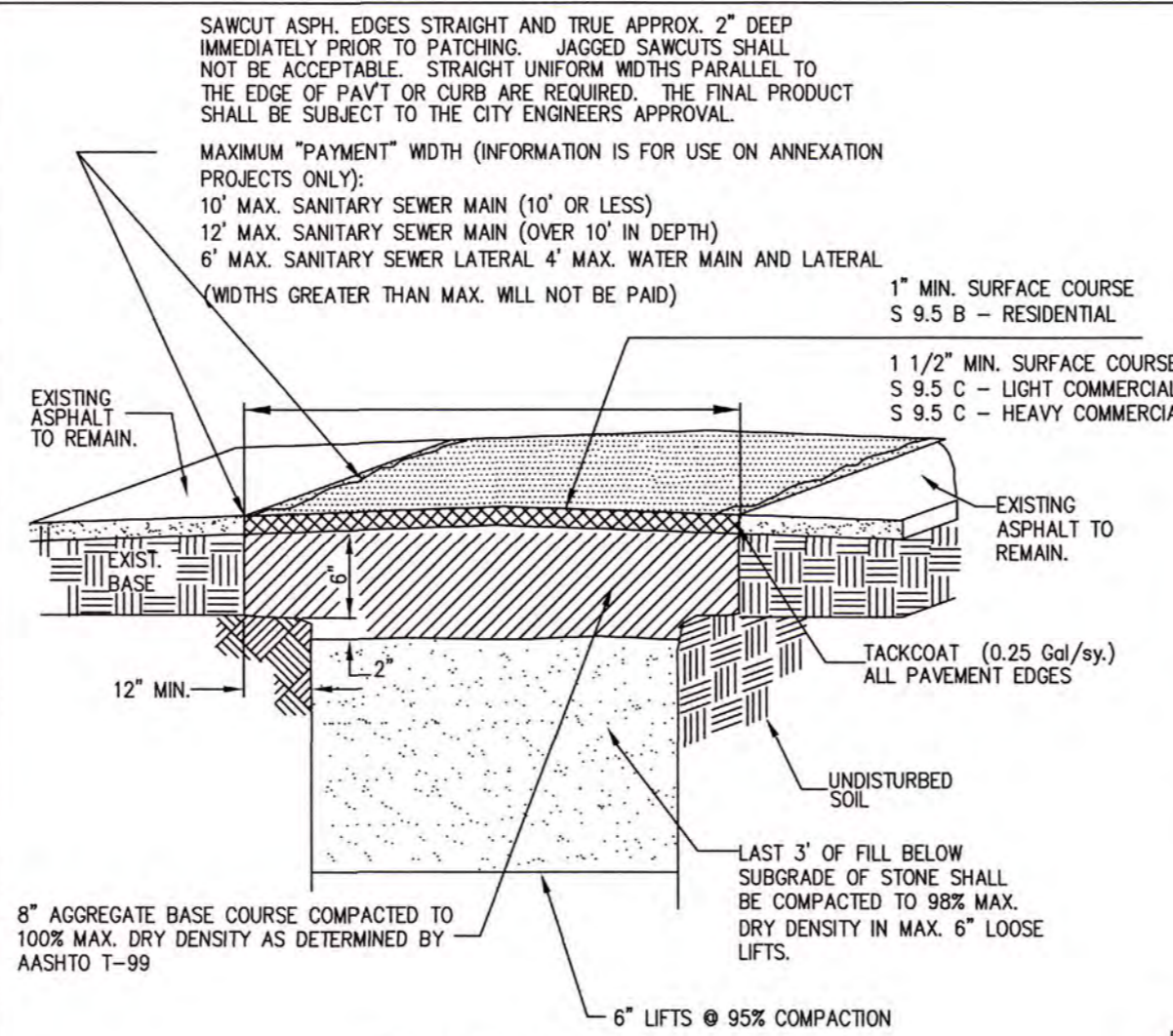


- NOTES:
- HORIZONTAL RAIL TO BE 1-1/4" (ADA) I.D. - SCHEDULE 40-TYPE E, GRADE A OR STRONGER (MIN. YIELD STRESS TO BE 30 KSI, WHICH ALLOWS 21.6 KSI DESIGN STRESS).
 - POSTS TO BE 1-1/2" I.D. - SCHEDULE 80-TYPE E, GRADE A OR STRONGER (MIN. YIELD STRESS TO BE 30 KSI, WHICH ALLOWS 21.6 KSI DESIGN STRESS).
 - ALL JOINTS TO BE WELDED AND GROUND TO A SMOOTH SURFACE. PREFABRICATED CONNECTIONS MAY BE USED IF APPROVED BY CITY ENGINEER. WELDS ARE REQUIRED TO MEET AMERICAN WELDING SOCIETY SPECIFICATIONS.
 - POSTS TO BE EMBEDDED A MIN. OF 12" IN A CORE DRILLED HOLE OR PRESET PIPE SLEEVE. SLEEVE SHALL BE SCHEDULE 40, TYPE E, GRADE A STEEL OR STRONGER.
 - FINISH WITH 1 COAT OF PRIMER AND 2 COATS OF ALL WEATHER ENAMEL USE PAINT. A NEUTRAL COLOR TO BE APPROVED BY PROJECT ENGINEER.
 - CONTRACTOR SHALL WARRANT PAINT AND HANDRAIL FOR 1 YEAR.
 - ANY CHANGES FROM ABOVE RAIL DESIGN SHALL BE SUBMITTED OVER SEAL OF REGISTERED N.C. ENGINEER WITH DESIGN CRITERIA AND STRESS CALCULATIONS.
 - ALL CONCRETE TO BE 3000 PSI COMPRESSIVE STRENGTH.
 - STEEL SLEEVE TO ACCOMMODATE 1-1/2" I.D. SCHEDULE 80 TYPE E POST.
 - ALLOW A 12" TRANSITION FROM A 4" SIDEWALK TO A 6" SIDEWALK AND VICE VERSA.

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PIPE HANDRAIL

Rev. Date: 01MAY18 Not to Scale
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ISOMETRIC

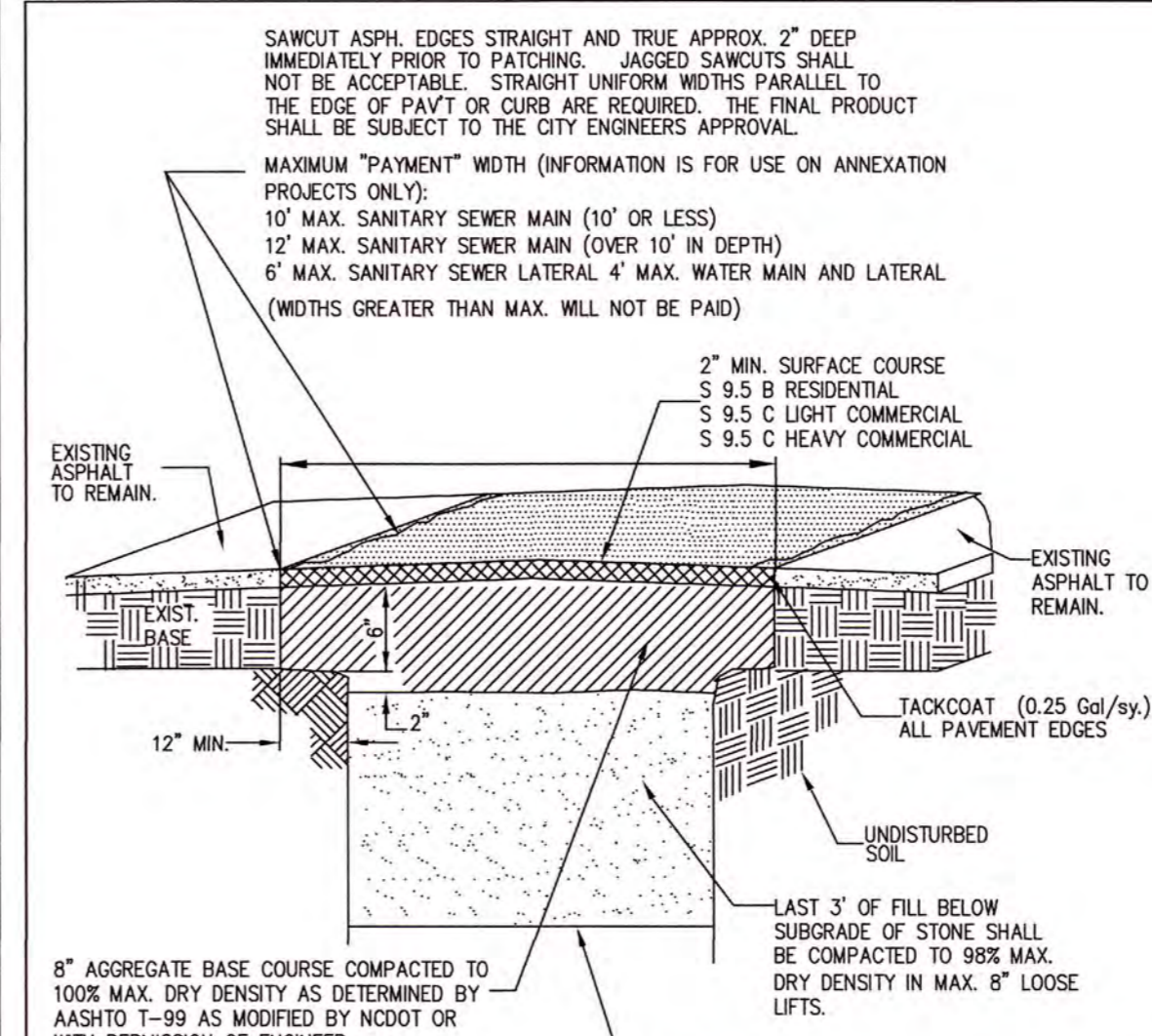
NOTE: TEMPORARY PATCH IS ONLY ALLOWED TO BE USED IF CONVERTED TO PERMANENT PATCH WITHIN 12 MONTHS. SEE DETAIL SD-11.1.

SEE ADDITIONAL NOTES ON DETAIL SD-11.2

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TYPICAL TEMPORARY SAWCUT AND PAVEMENT PATCH
PAGE 1 OF 3

Rev. Date: 01MAY18 Not to Scale
Review Date: 01JAN19 **SD-11**



ISOMETRIC

NOTE: SEE DETAIL SD-16.2 FOR TYPICAL CROSS SECTION OF PAVEMENT STRUCTURE.

SEE APPLICABLE TRENCH DETAIL FOR COMPACTION OF REMAINING TRENCH.

SEE ADDITIONAL NOTES ON DETAIL SD-11.2

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TYPICAL PERMANENT SAWCUT AND PAVEMENT PATCH
PAGE 2 OF 3

Rev. Date: 01MAY18 Not to Scale
Review Date: 01JAN19 **SD-11.1**

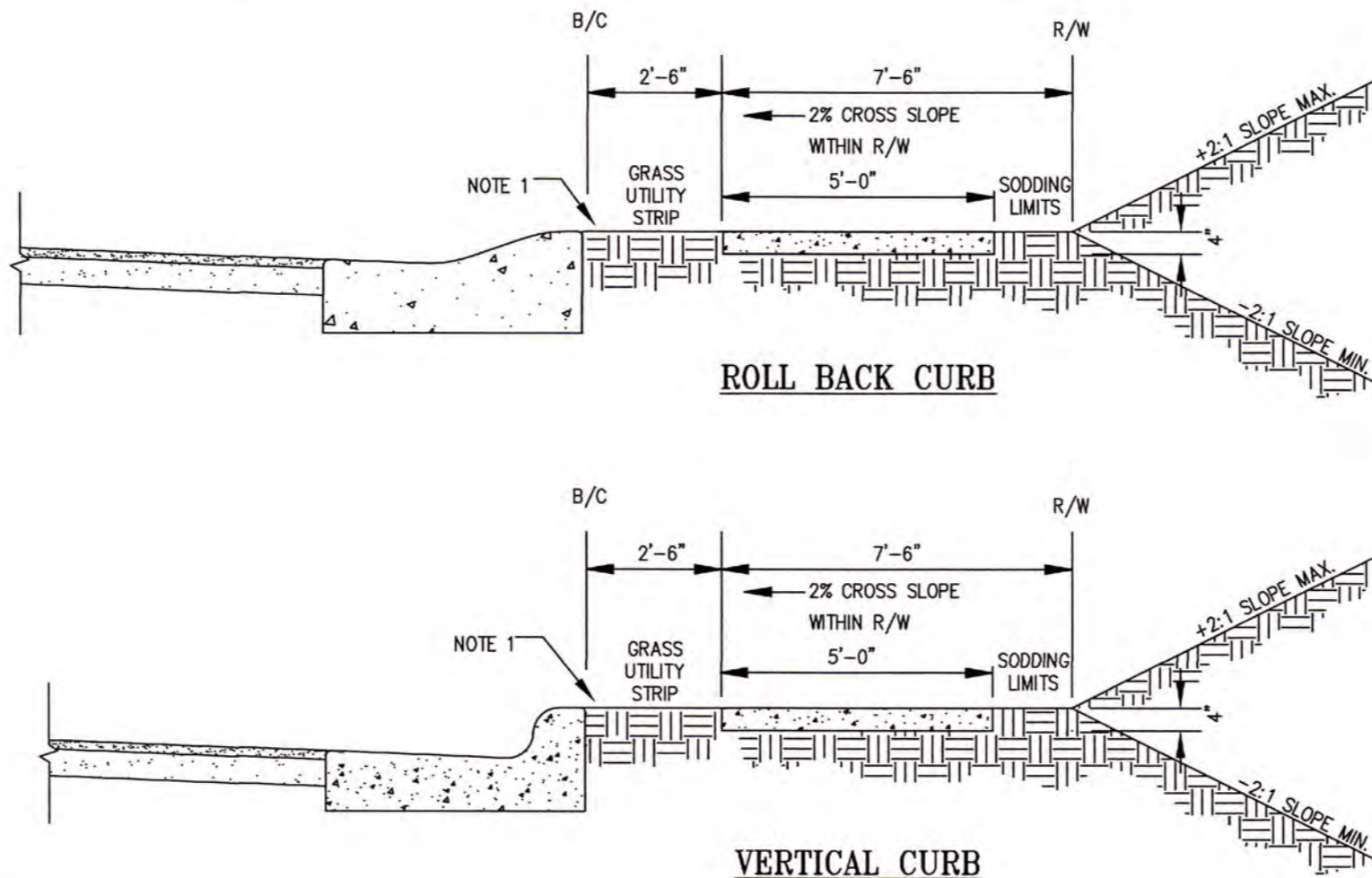
- NOTES:
- CONTRACTOR SHALL PATCH PAVEMENT TO THE SAME PAVEMENT CROSS SECTION AS EXISTED PRIOR TO REMOVING PAVEMENT. THE STREET CROWN SHALL BE RESTORED. PATCH SHALL MATCH EXISTING PAVEMENT WITHIN 0.2' WHEN CHECKED WITH A 10' STRAIGHT EDGE. ADJUST PAVEMENT AS REQUIRED. PATCH PAVING MAY OCCUR PRIOR TO PULLING MANHOLE THRU SS PROVIDED DENSITY TEST OF TRENCH BACKFILL MEET THE REQUIRED DENSITY AND ENGINEER APPROVES PATCHING STREET PRIOR TO MANHOLE TESTING SANITARY SEWER MAIN.
 - WHERE PATCH OF CURBING OCCURS CONTRACTOR SHALL MATCH EXISTING CURB GRADES WITHIN 0.02 FEET. PATCHES THAT ARE ABOVE THE CURB GRADE LINE WILL NOT BE ACCEPTABLE AND SHALL BE REMOVED AND REPATCHED AT NO EXPENSE TO THE OWNER. CURB PATCH SHALL BE THE SAME SHAPE/TEMPLATE AS THE EXISTING CURB.
 - CONTRACTOR SHALL BE REQUIRED TO PROVIDE TRAFFIC CONTROL AND DEVICES AS REQUIRED BY THE MUTCD OR N.C. SUPPLEMENT. WORK CAN NOT PROCEED UNTIL THE MEASURES ARE IN PLACE. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT NEW PAVEMENT FROM TRAFFIC AND OTHER SOURCES OF DAMAGE UNTIL ASPHALT HAS SUFFICIENTLY COOLED TO PREVENT DAMAGE FROM SURFACE DEFLECTIONS.
 - CONTRACTOR SHALL SAWCUT EXIST. PAVEMENT STRAIGHT AND TRUE PRIOR TO REMOVING ASPHALT FOR UTILITY INSTALLATION. THE ENGINEER MAY APPROVE THE USE OF A MILLING MACHINE FOR REMOVAL OF THE EXISTING PAVEMENT WITHIN TRENCH LIMITS. WHERE MILLING IS APPROVED THE CONTRACTOR SHALL PLACE AND COMPACT MILLINGS IN MILLED AREA TO PROVIDE AN INTERIM TRAFFIC SURFACE. MILLING WHERE APPROVED BY ENGINEER IS AN ALTERNATE TO CUTTING ASPHALT AND DISPOSING OFF-SITE.
 - AFTER UTILITY IS INSTALLED AND TESTED AND THE EXCESS BASE MATERIAL REMOVED (APPROX. 2") CONTRACTOR SHALL AGAIN SAWCUT EXISTING PAVEMENT STRAIGHT AND TRUE IMMEDIATELY PRIOR TO PAVING AS NOTED ABOVE.
 - MILLING OPERATIONS SHALL BE LIMITED TO 1800 FEET PER MAIN LINE CREW NOT TO EXCEED 3000 FEET IN TOTAL OF DISTURBED ROADWAY FOR THE ENTIRE PROJECT AT ONE TIME WHERE CONTRACTOR SHALL PATCH PAVED DISTURBED AREA OF ROADWAY PRIOR TO DISTURBING ADDITIONAL ROADWAY.
 - AT NO TIME SHALL THE TRENCH BE LEFT UNATTENDED WITH A VERTICAL DROP GREATER THAN 1 INCH FROM ASPHALT SURFACE TO TOP OF BACKFILLED TRENCH.

- IF PAVEMENT SETTLEMENT OCCURS WITHIN WARRANTY PERIOD CROSS SECTION AS EXISTED PRIOR TO REMOVING PAVEMENT. THE STREET CROWN SHALL BE RESTORED. PATCH SHALL MATCH EXISTING PAVEMENT WITHIN 0.2' WHEN CHECKED WITH A 10' STRAIGHT EDGE. ADJUST PAVEMENT AS REQUIRED. PATCH PAVING MAY OCCUR PRIOR TO PULLING MANHOLE THRU SS PROVIDED DENSITY TEST OF TRENCH BACKFILL MEET THE REQUIRED DENSITY AND ENGINEER APPROVES PATCHING STREET PRIOR TO MANHOLE TESTING SANITARY SEWER MAIN.
 - CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT NEW PAVEMENT FROM TRAFFIC AND OTHER SOURCES OF DAMAGE UNTIL ASPHALT HAS SUFFICIENTLY COOLED TO PREVENT DAMAGE FROM SURFACE DEFLECTIONS.
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 - AT NO TIME SHALL THE TRENCH BE LEFT UNATTENDED WITH A VERTICAL DROP GREATER THAN 1 INCH FROM ASPHALT SURFACE TO TOP OF BACKFILLED TRENCH.
- * -- NOTES 5 & 9 APPLY TO PERMANENT PAVEMENT PATCHES ONLY.

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NOTES FOR TYPICAL PERMANENT AND TEMPORARY SAWCUT AND PAVEMENT PATCH
PAGE 3 OF 3

Rev. Date: 01MAR18 Not to Scale
Review Date: 01JAN19 **SD-11.2**



ROLL BACK CURB

VERTICAL CURB

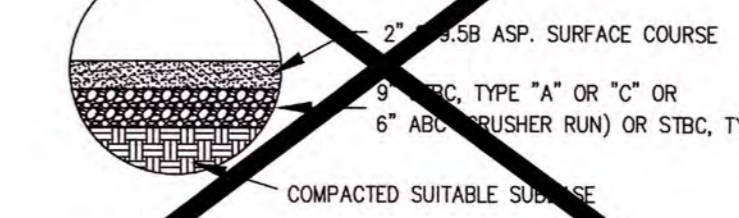
- NOTES:
- VERTICAL CURB - GRASS UTILITY STRIP MAY BE REMOVED UPON APPROVAL OF THE CITY ENGINEER. IF NO GRASS UTILITY STRIP, INSTALL 1/2" EXPANSION JOINT MATERIAL BETWEEN BACK OF CURB AND SIDEWALK.
 - SEE DETAIL SD-3 CONTRACTION AND EXPANSION JOINT.
 - SEE DETAIL SD-9 TYPICAL RESIDENTIAL DRIVEWAY APRON AND DETAIL SD-8.1 TYPICAL COMMERCIAL DRIVEWAY APRON.
 - SODDING LIMITS INCLUDE THE GRASS UTILITY STRIP BETWEEN THE BACK OF CURB AND THE SIDEWALK AS WELL AS 2'6" BEYOND THE SIDEWALK.
 - SEE TECHNICAL SPECIFICATION SECTION 00455, PART 3, SUB-SECTION 3.02, SUB-PART F.

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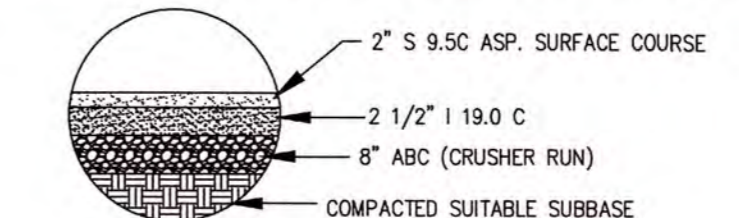
TYPICAL SIDEWALK SECTION & SODDING LIMITS

Rev. Date: 31OCT18 Not to Scale
Review Date: 01JAN19 **SD-12**

TYPICAL RESIDENTIAL CROSS SECTION



TYPICAL LIGHT & HEAVY COMMERCIAL CROSS SECTION



- ASPHALT THICKNESS SHALL BE PER DETAIL UNLESS MORE THICKNESS IS REQUIRED TO MATCH THE EXISTING PAVEMENT SECTION.
- ALL PAVED SURFACES SHALL BE RECONSTRUCTED AT A 2% CROSS SLOPE.

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TYPICAL CROSS SECTIONS FOR ALL CITY PAVEMENT

Rev. Date: 01JAN19 Not to Scale
Review Date: 01JAN19 **SD-16.2**

ISSUED FOR CONSTRUCTION

RAY AVE DRAINAGE
SHEET NUMBER
D3 OF 26

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RANDOLPH, NC 28134
(910) 792-0455
NC License No. F-0374
Georgia
Office Locations:
North Carolina
South Carolina

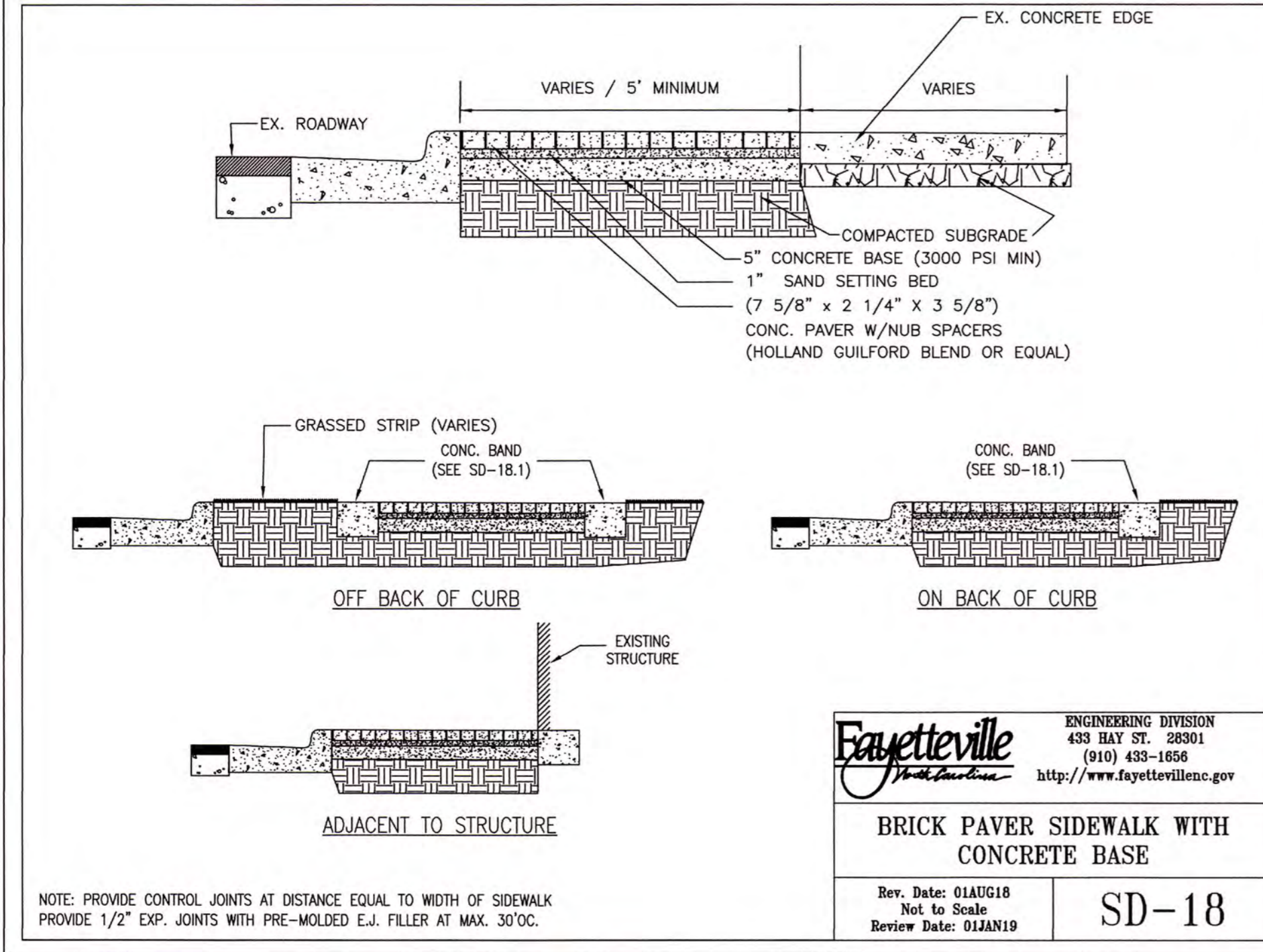
FAYETTEVILLE
PUBLIC SERVICES
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28301

PROFESSIONAL SEAL
THOMAS L. MURRAY
031455
REGISTERED PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA

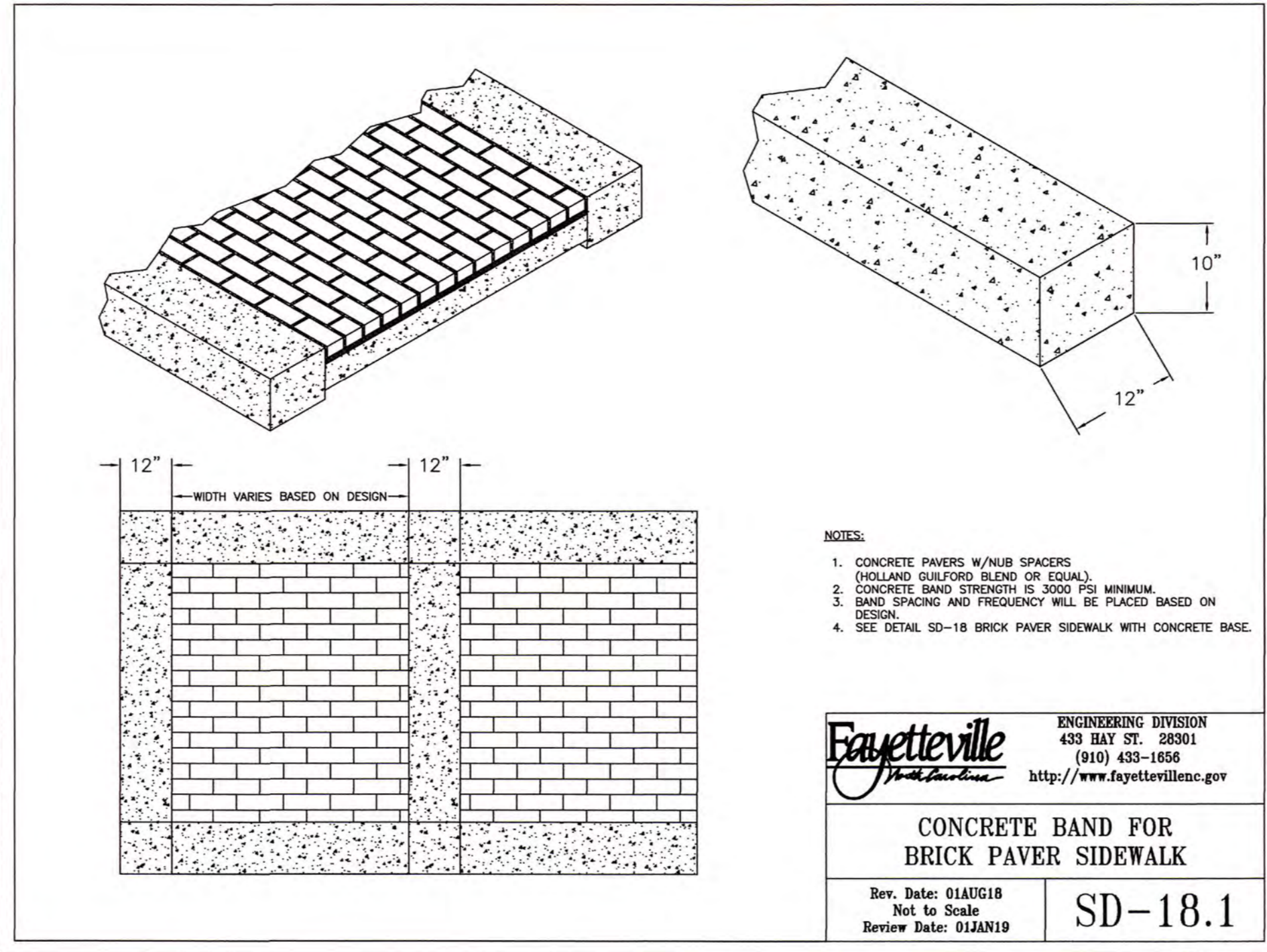
REV #	DESCRIPTION	DATE

DRAWN: E. WIGGS
PROJECT: RAY AVE DRAINAGE
NAME: T. MURRAY
CHECK: T. MURRAY
APPROVED: T. MURRAY
DATE: OCTOBER 2019

PROJECT # 20200251.00.RA
SUB-LEADER #



NOTE: PROVIDE CONTROL JOINTS AT DISTANCE EQUAL TO WIDTH OF SIDEWALK
PROVIDE 1/2" EXP. JOINTS WITH PRE-MOLDED E.J. FILLER AT MAX. 30'OC.



ISSUED FOR CONSTRUCTION

DRAWN :	E. WIGGS	PROJECT :	RAY AVE DRAINAGE
DESIGN :	T. MURRAY	NAME :	AS SHOWN
CHECK :	T. MURRAY	SCALE :	AS SHOWN
APPROVED :	T. MURRAY	DATE :	OCTOBER 2019

PROJECT # _____
SUB-LEDGER # _____
20200251.00.RA

REV #	REVISIONS	DESCRIPTION	REV BY	DATE



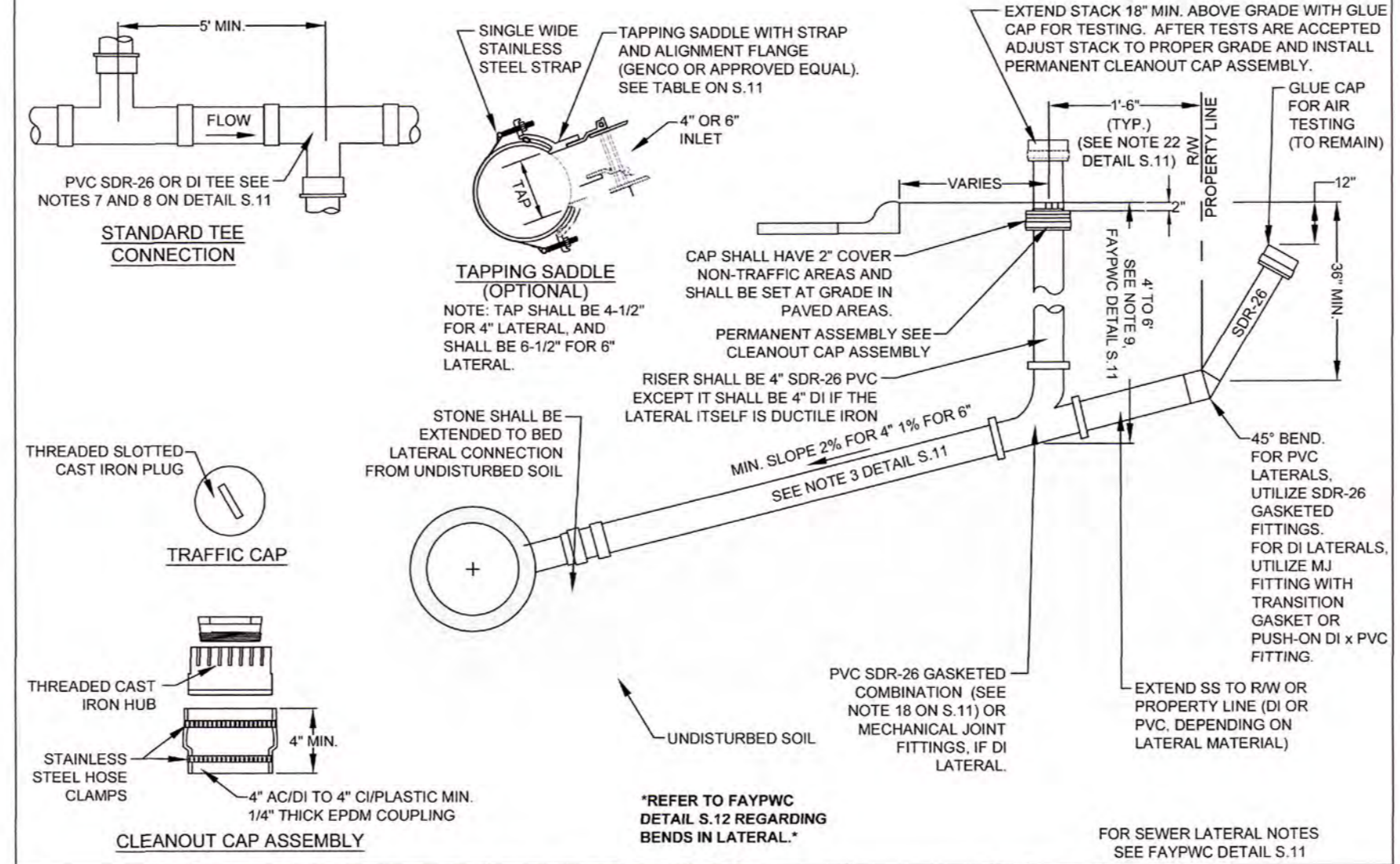
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PUBLIC SERVICES

ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28301

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RANDOLPH, NC 28134
(910) 782-0465
NC License No. F-0374

Office Locations:
North Carolina
South Carolina
Georgia

- ALL SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE FAYPWC STANDARDS.
- CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- CONSTRUCTION STAKING IS REQUIRED FOR ALL FAYPWC WATER AND SEWER UTILITY INSTALLATIONS. CUT SHEETS, SIGNED AND SEALED BY A P.E. SHALL BE PROVIDED TO THE FAYPWC WATER RESOURCES ENGINEERING DEPARTMENT AND THE CONTRACTOR IN ADVANCE OF CONSTRUCTION FOR FAYPWC WATER AND SEWER UTILITIES.
- CONTRACTOR SHALL MAINTAIN A COPY OF THE SIGNED AND SEALED CUT SHEET ON THE JOB SITE. CONSTRUCTION ON FAYPWC WATER AND SEWER UTILITIES CANNOT BEGIN UNTIL THE CONTRACTOR POSSESSES, ON SITE, A SIGNED AND SEALED CUT SHEET FROM THE PROFESSIONAL LAND SURVEYOR.
- ALL NEW WATER AND SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE TESTED AND/OR DISINFECTED IN ACCORDANCE WITH FAYETTEVILLE FAYPWC STANDARDS PRIOR TO PLACING INTO SERVICE.
- CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE FAYPWC PROJECT COORDINATOR.
- ALL DUCTILE IRON PIPE IN SANITARY SEWER SERVICE SHALL HAVE AN INTERIOR LINING OF PROTECTO 401 OR APPROVED EQUAL.
- ALL NEW MANHOLES ARE TO BE VACUUM-TESTED IN ACCORDANCE WITH FAYETTEVILLE FAYPWC STANDARDS.
- CONTRACTOR SHALL REPAIR ALL SEWER LATERALS AND MAINS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY REPORT ALL SEWER MAIN AND LATERAL BREAKS TO THE FAYPWC PROJECT COORDINATOR. THE CONTRACTOR SHALL INITIATE IMMEDIATE REPAIRS IN ACCORDANCE WITH FAYPWC STANDARDS.
- TRANSFER OF SEWER SERVICES SHALL BE ACCOMPLISHED AS FOLLOWS:
 - INSTALL AND TEST NEW MAINS, MANHOLES, AND LATERALS. CLEANOUTS SHALL BE INSTALLED 18" INSIDE R/W UNLESS OTHERWISE DIRECTED BY FAYPWC.
 - CONNECT EXISTING PIPING TO NEW LATERAL UTILIZING THE NECESSARY FITTINGS AS DIRECTED BY FAYPWC.
 - AFTER ALL SERVICES HAVE BEEN TRANSFERRED TO THE NEW MAIN, THE EXISTING SEWER SYSTEM SHALL BE ABANDONED IN ACCORDANCE WITH FAYPWC REQUIREMENTS.
- CONTRACTOR SHALL ABANDON ("KILL-OUT") ANY EXISTING SEWER SERVICES THAT WILL NOT BE UTILIZED BY UNCOVERING THE EXISTING LATERAL AT THE MAIN, CUT AND PLUG AT BOTH ENDS, REMOVE THE EXISTING CLEANOUT AND COMBINATION, AND PLUG THE TAP OR TEE AT THE MAIN. FOR LATERALS THAT CONNECT TO A MANHOLE AND ARE TO BE ABANDONED ("KILLED-OUT"), THE LATERAL SHALL BE REMOVED FROM THE MANHOLE AND THE REMAINING VOID IN THE MANHOLE SHALL BE FILLED WITH BLOCK AND MORTAR.
- SEWER PLUGS SHALL BE INSTALLED TO ELIMINATE ANY DEBRIS OR OTHER MATERIAL FROM ENTERING THE ACTIVE SEWER SYSTEM. UPON ACCEPTANCE OF THE NEW SEWER SYSTEM, THE CONTRACTOR SHALL CLEAN THE NEW MAINS, REMOVE ALL DEBRIS, AND THEN REMOVE THE PLUG.
- ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE, IN ACCORDANCE WITH FAYPWC REQUIREMENTS.
- ALL WORK ON FAYPWC SEWER UTILITIES (MAINS, LATERALS, ETC) SHALL BE PERFORMED BY A LICENSED UTILITY CONTRACTOR, THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL OBSERVE AND APPROVE ALL WORK ON FAYPWC SEWER UTILITIES. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH FAYPWC REQUIREMENTS.
- SEPARATION REQUIREMENTS:
 - LATERAL SEPARATION OF SEWER AND WATER MAINS: WATER MAINS SHALL BE LAID AT LEAST 18 FEET LATERALLY FROM EXISTING OR PROPOSED SEWER MAIN LATERAL, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT LATERAL SEPARATION, IN WHICH CASE:
 - 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 MAIN LATERAL; OR
 - THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER MAIN LATERAL WITH THE WATER MAIN LOCATED AT ONE SIDE ON 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.
 - CROSSING A WATER MAIN OVER A SEWER: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER MAIN LATERAL, 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 MAIN LATERAL.
 - CROSSING WATER MAIN UNDER A SEWER: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER MAIN LATERAL, A MINIMUM OF 24-INCHES OF SEPARATION SHALL BE PROVIDED. BOTH THE WATER MAIN AND THE SEWER MAIN LATERAL SHALL BE CONSTRUCTED OF DUCTILE IRON MATERIAL AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
 - CROSSING STORM DRAINAGE LINES: A MINIMUM OF 24-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN A SEWER MAIN LATERAL CROSSING UNDER A STORM DRAINAGE LINE UNLESS DUCTILE IRON PIPE IS USED. IF DUCTILE IRON PIPE IS USED, A MINIMUM OF SIX(6) INCHES OF SEPARATION SHALL BE MAINTAINED, UNLESS OTHERWISE APPROVED BY FAYPWC.



- SEWER LATERAL NOTES**
- HOLE IN SANITARY SEWER MAIN MUST BE CUT WITH SHELL CUTTER. NO HAMMER TAPS ALLOWED.
 - LATERAL SHALL CONFORM TO ASTM SPECS. D-3034 SDR-26 UNLESS OTHERWISE INDICATED AS DI.
 - ALL PIPE AND FITTINGS SHALL BE 4" OR 6" UNLESS OTHERWISE SPECIFIED.
 - ALL DI PIPE SHALL HAVE AN INTERIOR LINING OF CERAMIC EPOXY (PROTECTO 401). THE ENTIRE DI LATERAL SHALL BE COMPRISED OF DI PIPE AND MECHANICAL JOINT FITTINGS.
 - ALL CONNECTIONS SHALL HAVE RUBBER GASKET SEALS.
 - SANITARY SEWER LATERAL CLEANOUT STACK SHALL BE LOCATED 18" FROM LATERAL LOCK VALVE WHEN IN THE SAME DITCH.
 - INSTALLATION OTHER THAN AS SHOWN MUST BE APPROVED BY THE FAYPWC.
 - CONNECTIONS TO THE TOP OF MAIN SHALL NOT BE ALLOWED, UNLESS OTHERWISE APPROVED BY THE FAYPWC PROJECT COORDINATOR.
 - THE DESIGN ENGINEER SHALL DETERMINE THE SLOPE AND DEPTH OF THE LATERAL BASED ON THE TOPOGRAPHY OF THE LOT.
 - LATERAL SHALL CONFORM TO 2% MINIMUM SLOPE FOR 4" OR 1% MINIMUM SLOPE FOR 6". THE MAXIMUM LENGTH OF A SEWER LATERAL SHALL BE 60 FEET.
 - INTERIOR DROP STRUCTURE OR SLIDE, MORTAR SLIDE AND SHELF DETAIL FOR VERTICAL DROPS OF MAINS AND LATERALS.
 - LATERALS LESS THAN 3' IN DEPTH OR GREATER THAN 20' DEPTH SHALL UTILIZE DUCTILE IRON PIPE AND FITTINGS WITH CERAMIC EPOXY (PROTECTO 401), OR WHEN SEPARATION REQUIREMENTS CANNOT BE MET.
 - ENTIRE SEWER LATERAL ASSEMBLY SHALL BE AIR TESTED CONCURRENTLY WITH SEWER MAIN.
 - INDIVIDUAL LATERALS SHALL BE CLEANED AND FLUSHED PRIOR TO FINISHING SANITARY SEWER MAINS.
 - LATERAL SHALL NOT BE BACK-FILLED UNTIL INSPECTED BY THE FAYPWC PROJECT COORDINATOR.
 - WYE CONNECTIONS SHALL NOT BE USED TO THE LATERALS INTO A MANHOLE.
 - IF BENDS ARE APPROVED BY THE PROJECT COORDINATOR, STONE BEDDING IS REQUIRED TO BE INSTALLED FROM UNDISTURBED (SEE DETAIL S.12) SOIL TO BOTTOM OF BEND.
 - PVC COMBINATION SHALL BE A MOLDED WYE AND BEND, GASKETED, SDR-26, AS MANUFACTURED BY HARCO, GPK, OR APPROVED EQUAL.
 - NO MORE THAN 4 FOUR-INCH LATERALS OR 3 SIX-INCH LATERALS SHALL ENTER A 4' DIAMETER TERMINAL MANHOLE. NO MORE THAN 2 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.
 - ALL LATERALS (4" AND 6") SHALL UTILIZE 4" RISER (STACK).
 - REFER TO DETAIL S.12 FOR SEPARATION REQUIREMENTS.
 - FOR SINGLE FAMILY RESIDENTIAL LOTS, CLEANOUT SHALL BE LOCATED 18" FROM RIGHT-OF-WAY OR EASEMENT. FOR ALL NON-SINGLE FAMILY LOTS, CLEANOUT SHALL BE NO CLOSER THAN 10' TO FRONT OF BUILDING, UNLESS OTHERWISE APPROVED BY FAYPWC.
- THE FOLLOWING TABLE SUMMARIZES THE MATERIALS TO BE UTILIZED FOR SEWER MAIN TO LATERAL CONNECTIONS:
- | | PVC Main | DI Main |
|-------------|--------------------------------|--|
| DI Lateral | DI fitting or approved saddle | MJ fitting or approved saddle |
| PVC Lateral | PVC fitting or approved saddle | MJ fitting with transition gasket or approved saddle |
- NOTE: REFER TO FAYPWC TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- SEWER LATERAL NOTES (4-INCH AND 6-INCH)**
N.T.S.
- DATE: JAN. 01, 2024 APPROVED BY: M.M.M.
- REVISIONS:
- | NO. | DATE | REVISION |
|-----|-------|-------------------------------|
| 3 | 01/13 | REVISED NOTES AND ADDED TABLE |
| 4 | 01/15 | REVISED NOTE 22, TABLE |
| 5 | 07/18 | REVISED NOTES 6, 9 |

GENERAL NOTES
SANITARY SEWER UTILITY

DATE: JAN. 01, 2024 APPROVED BY: M.M.M.

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

NO. DATE REVISION

1	01/18	ADDED NOTES 5, 8
2	09/21	ADDED NOTES 1-6 AND RENUMBERED
3	11/23	REVISED NOTE 15

S1-SEWER-NOTES.dwg

SEWER LATERAL (4-INCH AND 6-INCH)
N.T.S.

DATE: JAN. 01, 2024 APPROVED BY: M.M.M.

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

NO. DATE REVISION

2	01/14	ADDED TAILPIECE, NOTES
3	01/15	REVISED NOTES RE. TAILPIECE
4	07/18	REVISED NOTE RE. LATERAL DEPTH

S10-RESSLAT.dwg

SEWER LATERAL NOTES (4-INCH AND 6-INCH)
N.T.S.

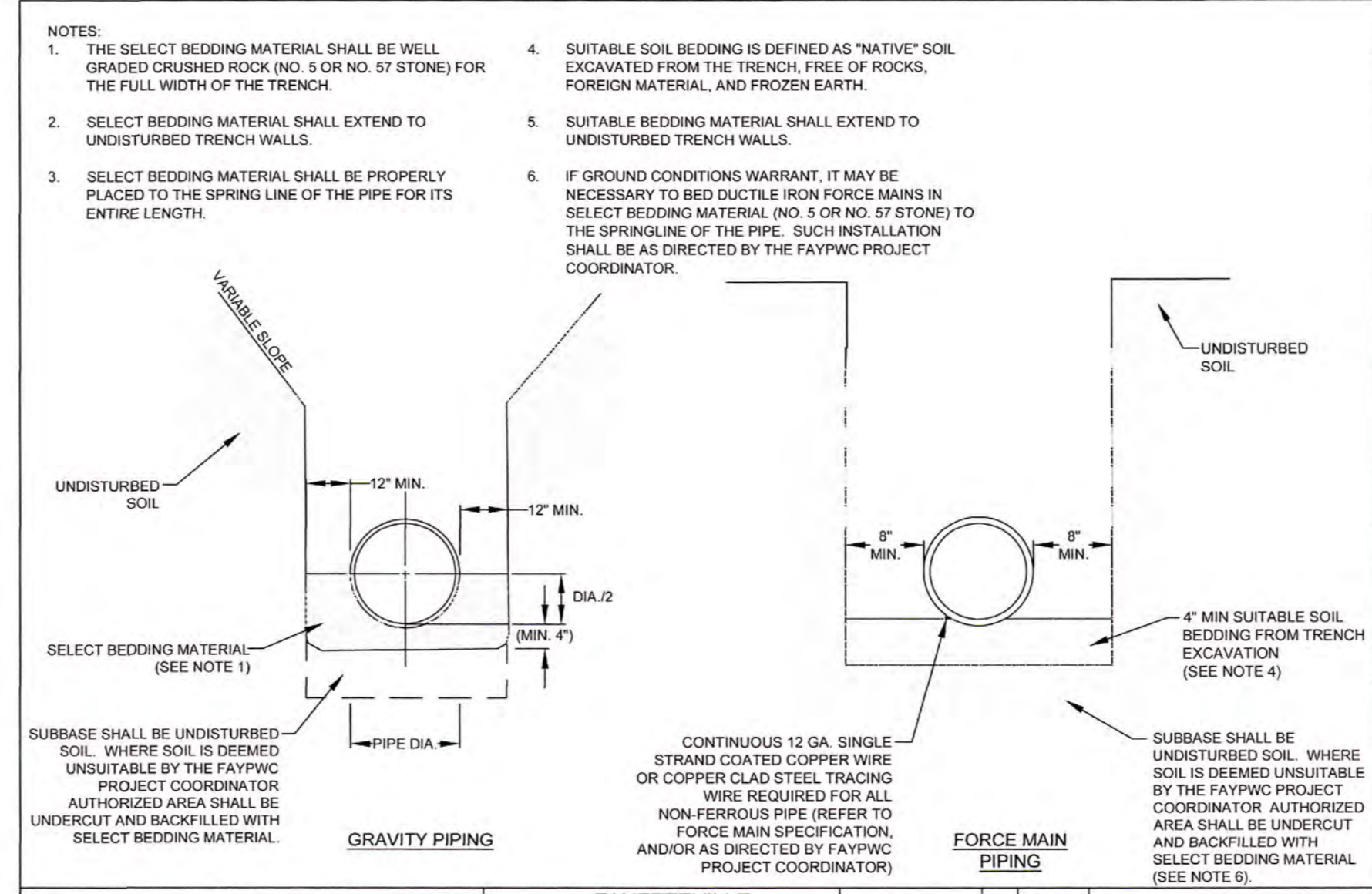
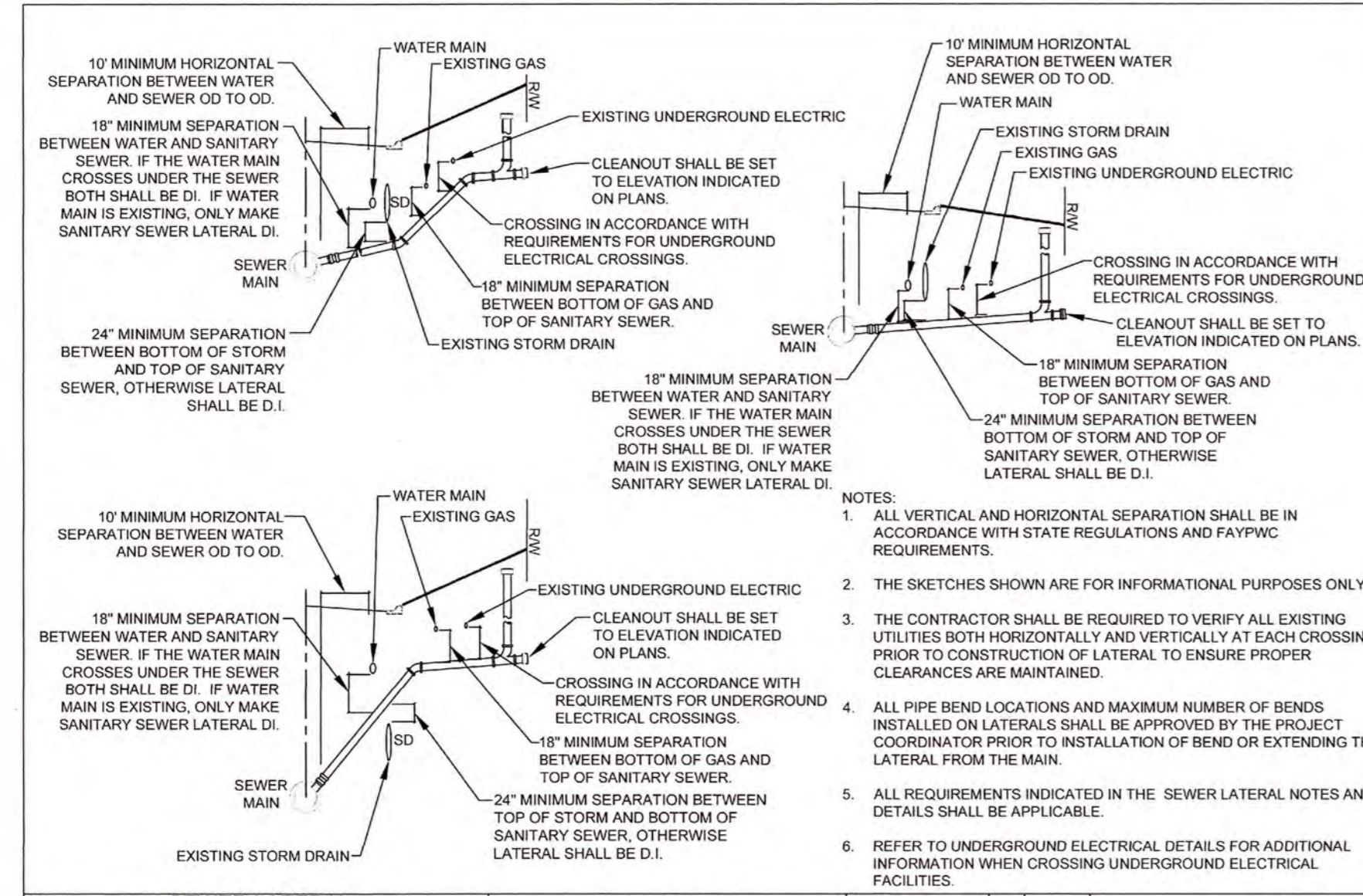
DATE: JAN. 01, 2024 APPROVED BY: M.M.M.

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

NO. DATE REVISION

3	01/13	REVISED NOTES AND ADDED TABLE
4	01/15	REVISED NOTE 22, TABLE
5	07/18	REVISED NOTES 6, 9

S11-RESSLAT-NOTES.dwg



- GRAVITY SANITARY SEWER PIPE REPAIR**
N.T.S.
- DATE: JAN. 01, 2024 APPROVED BY: M.M.M.
- FAYETTEVILLE PUBLIC WORKS COMMISSION
FAYETTEVILLE, N.C.
WATER RESOURCES ENGINEERING DEPARTMENT
- NO. DATE REVISION
- | | | |
|---|-------|--------------------------|
| 1 | 01/05 | REVISED REPLACEMENT PIPE |
| 2 | 07/11 | REVISED NOTES |
- S15-VCP-REPAIR.dwg
- THE SELECT BEDDING MATERIAL SHALL BE WELL GRADED CRUSHED ROCK (NO. 5 OR NO. 3) STONE) FOR THE FULL WIDTH OF THE TRENCH.
 - SELECT BEDDING MATERIAL SHALL EXTEND TO UNDISTURBED TRENCH WALLS.
 - SELECT BEDDING MATERIAL SHALL BE PROPERLY PLACED TO THE SPRING LINE OF THE PIPE FOR ITS ENTIRE LENGTH.
 - SUITABLE SOIL BEDDING IS DEFINED AS "NATIVE" SOIL EXCAVATED FROM THE TRENCH, FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH.
 - SUITABLE BEDDING MATERIAL SHALL EXTEND TO UNDISTURBED TRENCH WALLS.
 - IF GROUND CONDITIONS WARRANT, IT MAY BE NECESSARY TO BED DUCTILE IRON FORCE MAINS IN SELECT BEDDING MATERIAL (NO. 5 OR NO. 3) STONE) TO THE SPRINGLINE OF THE PIPE. SUCH INSTALLATION SHALL BE AS DIRECTED BY THE FAYPWC PROJECT COORDINATOR.
- SANITARY SEWER REPAIR SHALL BE APPROVED BY FAYPWC PRIOR TO MAKING THE REPAIR. IF THE REPAIR IS WITHIN 20' OF AN EXISTING MANHOLE, THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND RELAY PIPE TO NEAREST MANHOLE, UNLESS OTHERWISE DIRECTED BY FAYPWC.
 - ALL MATERIALS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE FAYETTEVILLE PUBLIC WORKS COMMISSION.
 - CONTRACTOR SHALL PROVIDE ALL NECESSARY PUMPS, HEADER PIPE, PUMPING EQUIPMENT, ETC. PRIOR TO BEGINNING CONSTRUCTION. DUPLICATE SEWAGE HANDLING PUMPS, PIPING, ETC. SHALL BE ON-SITE AND AVAILABLE FOR IMMEDIATE USE SHOULD PRIMARY PUMP OR FORCE MAIN FAIL. INSURE PUMPS, HEADER PIPING, ETC. ARE PROPERLY SIZED AND OPERATIONAL BEFORE BEGINNING WORK.
 - PIPE REPAIR SHALL EXHIBIT STRAIGHT HORIZONTAL ALIGNMENT AND INVERT SHALL BE THE SAME AS THE EXISTING PIPE SLOPE. DEFLECTIONS OF HORIZONTAL AND VERTICAL ALIGNMENT ARE NOT ACCEPTABLE.
 - PIPE SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH FAYPWC STANDARD SPECIFICATION.
 - REPLACEMENT PIPE SHALL BE PROPERLY BEDDED IN ACCORDANCE WITH FAYPWC STANDARD DETAIL S.13.
 - THERE SHALL BE NO MORE THAN 1/4" SPACE BETWEEN THE EXISTING SEWER MAIN AND THE REPLACEMENT PIPE AT EACH END.
 - DAMAGED SECTION SHALL BE CUT OUT WITHOUT DAMAGING THE PIPE TO REMAIN.
 - DI SEWER PIPE AND FITTINGS SHALL HAVE AN INTERIOR COATING OF PROTECTO 401 OR APPROVED EQUAL.
 - DI PIPE SHALL BE UTILIZED WHEN STATE MINIMUM SEPARATION REQUIREMENTS CANNOT BE MET OR AS DIRECTED BY FAYPWC.
 - PIPE REPAIRS ON MATERIALS OTHER THAN SHOWN, SHALL BE AS DIRECTED BY FAYPWC.
 - THE MINIMUM LENGTH OF REPAIR SHALL BE 5 FEET, UNLESS OTHERWISE DIRECTED BY FAYPWC.

SEWER LATERAL UTILITY CONFLICT SEPARATION REQUIREMENTS
N.T.S.

DATE: JAN. 01, 2024 APPROVED BY: M.M.M.

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

NO. DATE REVISION

1	11/06	ADDED NOTE ON DI LATERALS
2	03/10	ADDED LATERAL AND WM SEPARATION
3	11/23	REVISED/CLEARIFIED NOTES

S12-UTIL-CONFLICT.dwg

SEWER BEDDING
N.T.S.

DATE: JAN. 01, 2024 APPROVED BY: M.M.M.

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

NO. DATE REVISION

1	01/01/05	REVISED NOTES
2	01/01/16	REVISED NOTES

S13-SEWER-BEDDING.dwg

GRAVITY SANITARY SEWER PIPE REPAIR
N.T.S.

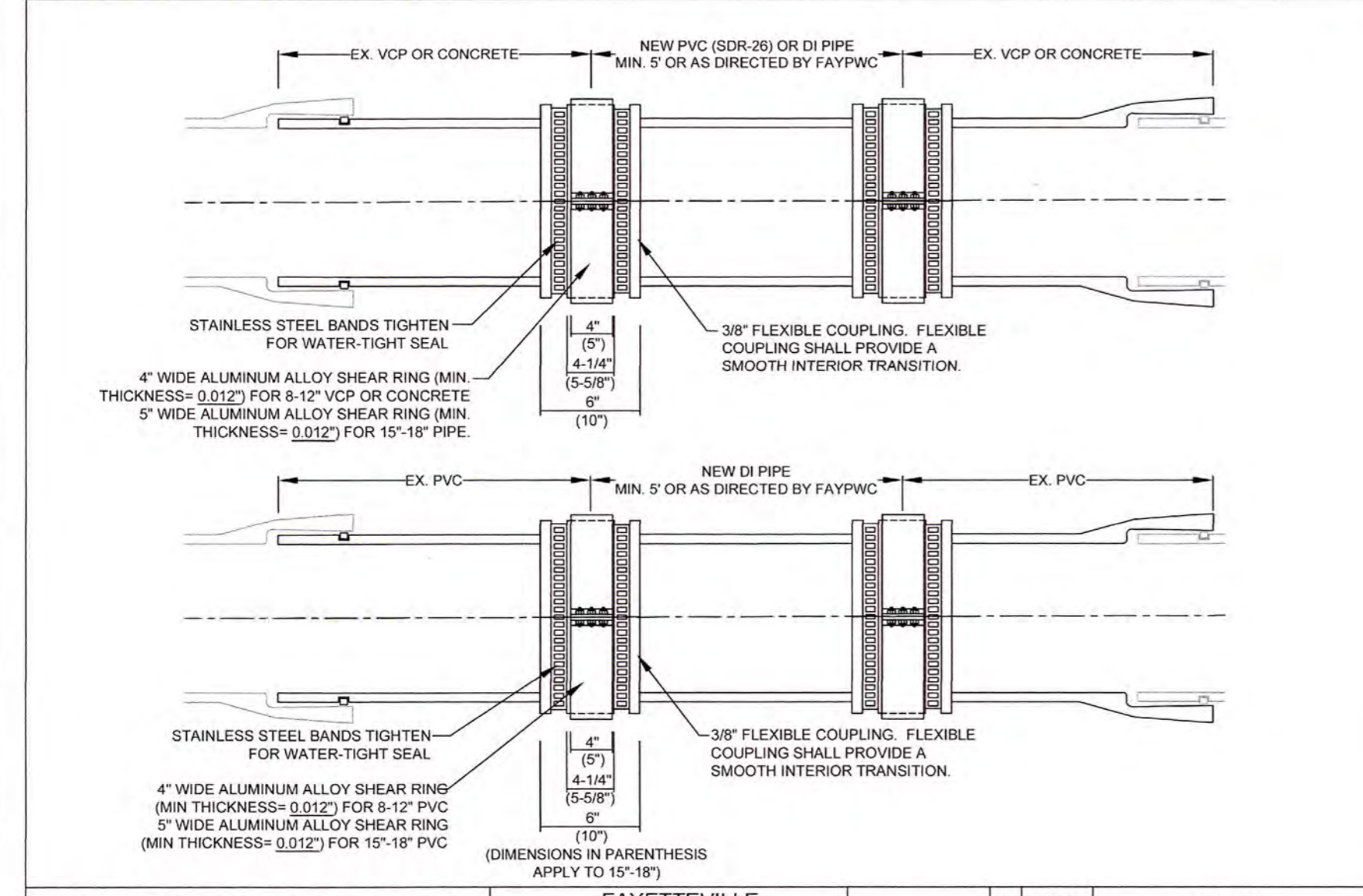
DATE: JAN. 01, 2024 APPROVED BY: M.M.M.

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

NO. DATE REVISION

1	01/05	REVISED REPLACEMENT PIPE
2	07/11	REVISED NOTES

S15-VCP-REPAIR.dwg



GRAVITY SANITARY SEWER PIPE REPAIR
N.T.S.

DATE: JAN. 01, 2024 APPROVED BY: M.M.M.

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

NO. DATE REVISION

1	01/05	REVISED REPLACEMENT PIPE
2	07/11	REVISED NOTES

S15-VCP-REPAIR.dwg

GRAVITY SANITARY SEWER PIPE REPAIR
N.T.S.

DATE: JAN. 01, 2024 APPROVED BY: M.M.M.

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

NO. DATE REVISION

1	01/05	REVISED REPLACEMENT PIPE
2	07/11	REVISED NOTES

S15-VCP-REPAIR.dwg

GRAVITY SANITARY SEWER PIPE REPAIR
N.T.S.

DATE: JAN. 01, 2024 APPROVED BY: M.M.M.

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

NO. DATE REVISION

1	01/05	REVISED REPLACEMENT PIPE
2	07/11	REVISED NOTES

S15-VCP-REPAIR.dwg

GRAVITY SANITARY SEWER PIPE REPAIR
N.T.S.

DATE: JAN. 01, 2024 APPROVED BY: M.M.M.

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

NO. DATE REVISION

1	01/05	REVISED REPLACEMENT PIPE
2	07/11	REVISED NOTES

S15-VCP-REPAIR.dwg

GRAVITY SANITARY SEWER PIPE REPAIR
N.T.S.

DATE: JAN. 01, 2024 APPROVED BY: M.M.M.

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

NO. DATE REVISION

1	01/05	REVISED REPLACEMENT PIPE
2	07/11	REVISED NOTES

S15-VCP-REPAIR.dwg

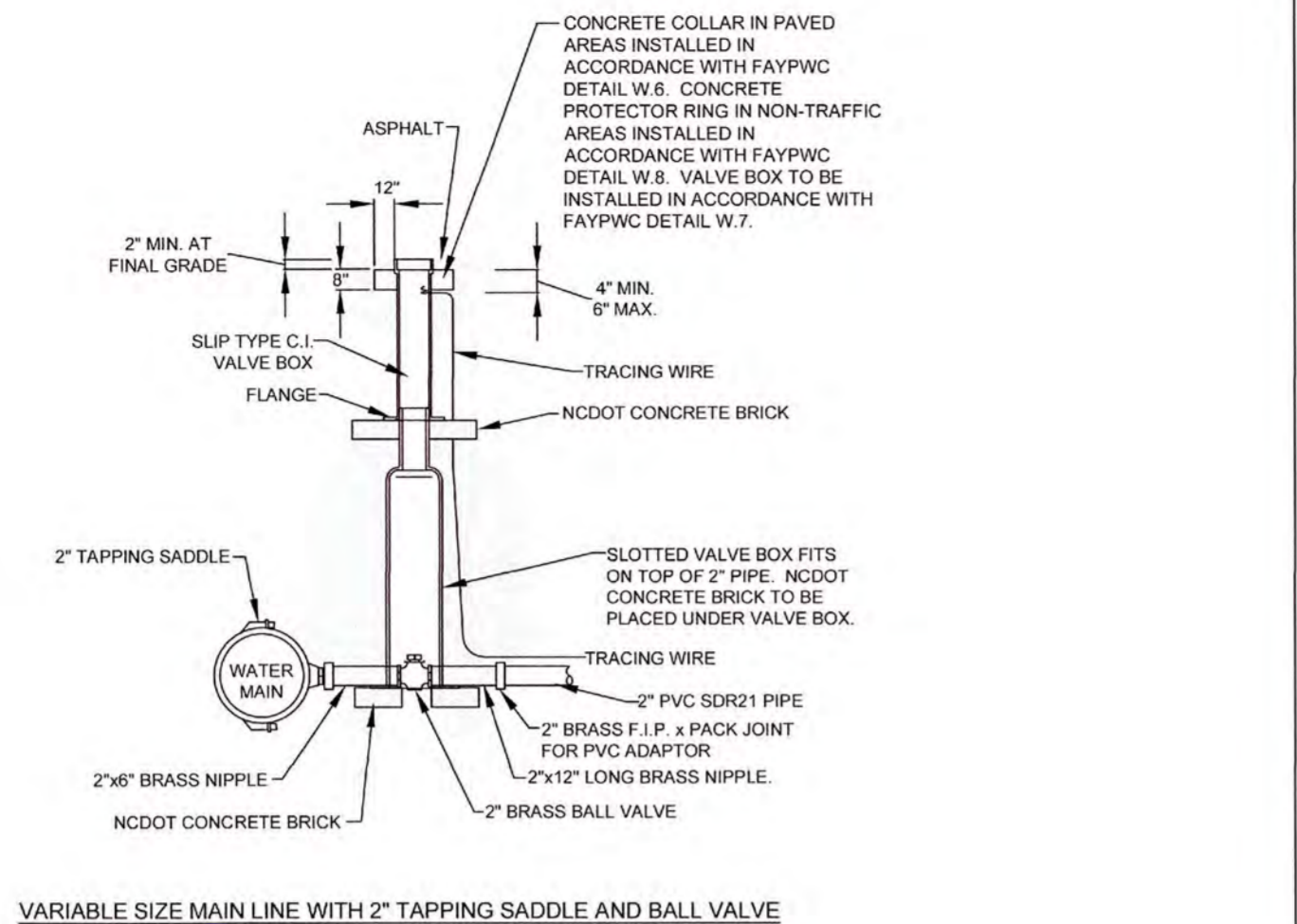
REVISIONS

REV. #	DESCRIPTION	DATE

PROJECT # 20200251.00.RA
SUB-LEDDGER #

RAY AVE DRAINAGE
PROJECT NAME: AS SHOWN
DESIGN: T. MURRAY
CHECKED: T. MURRAY
APPROVED: T. MURRAY
DATE: OCTOBER 2019

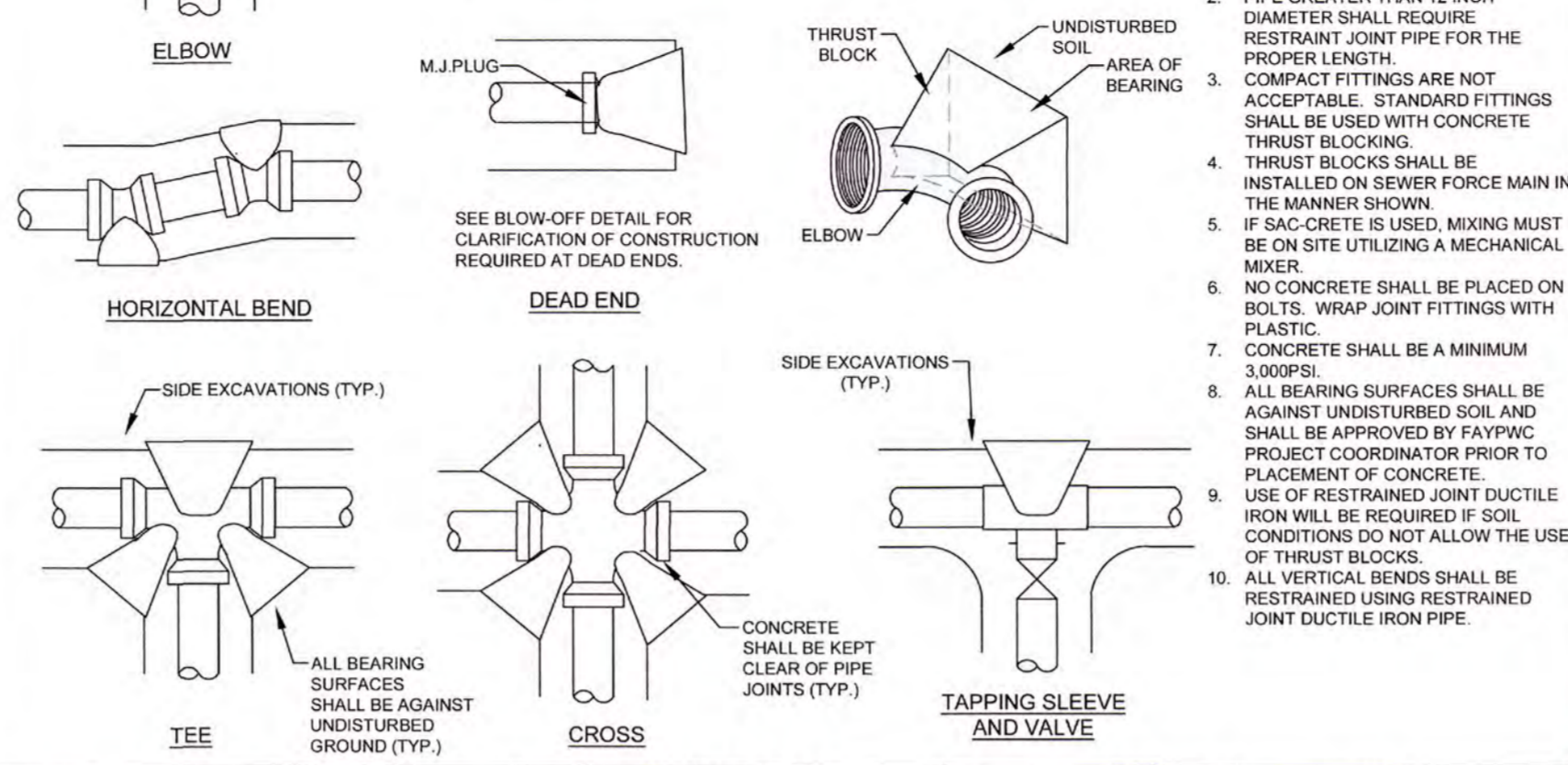
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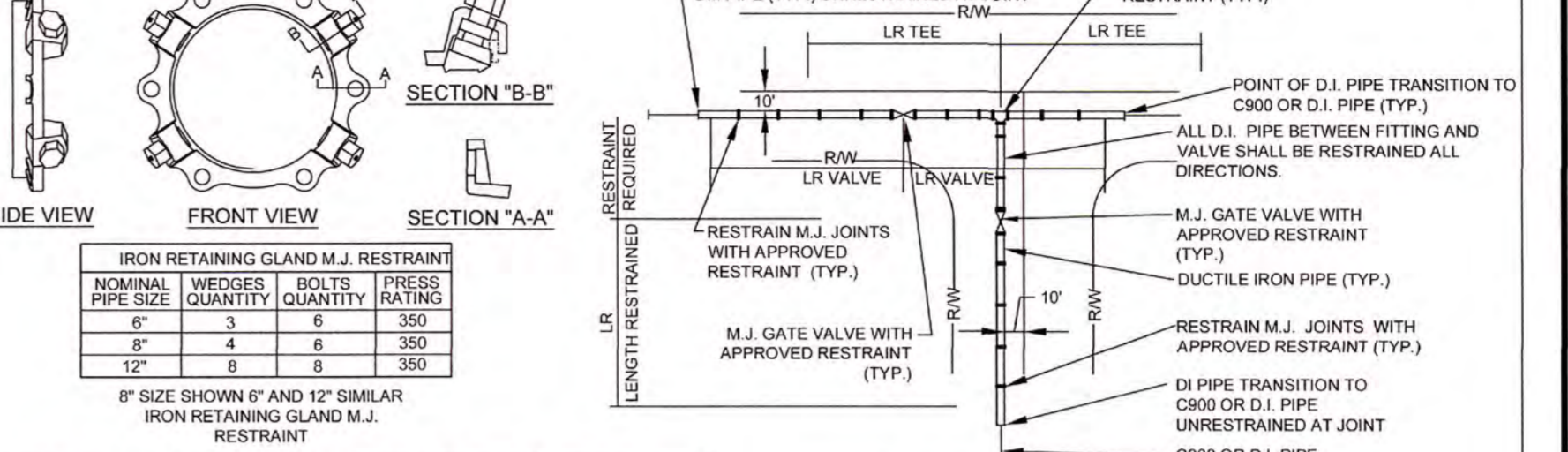
VARIABLE SIZE MAIN LINE WITH 2" TAPPING SADDLE AND BALL VALVE

2" WET TAP N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO. W.15B		WATER RESOURCES ENGINEERING DEPARTMENT		1	09/05	ADDED NOTE ON CONCRETE COLLAR
DWG. BY: FAYFWC		APPROVED BY: M.M.M.		2	01/07	REVISED VALVE LOCATION
DATE: JAN. 01, 2024				3	07/17	REVISED NOTES
SHEET NO. 1 OF 1						

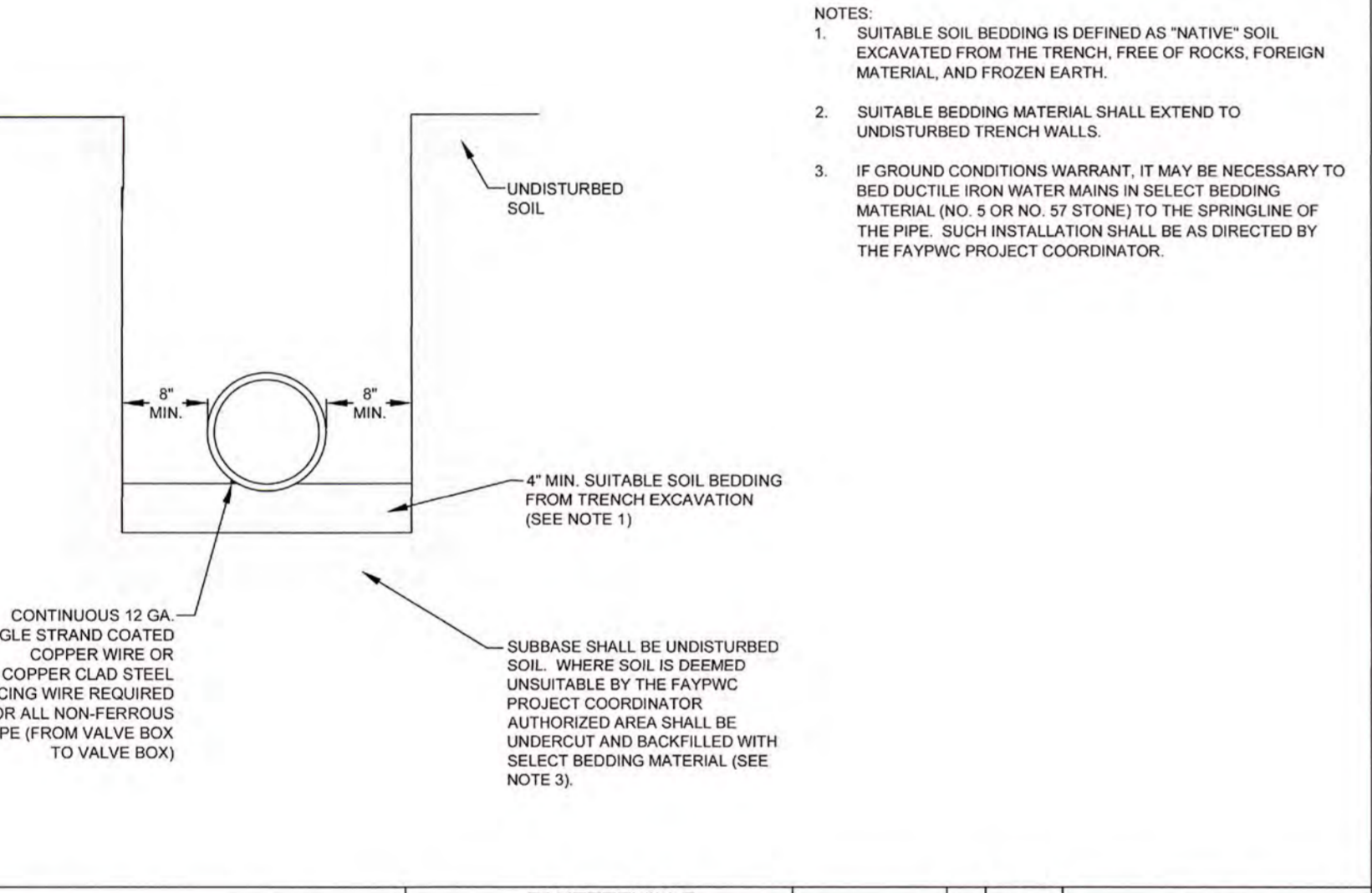
MINIMUM BEARING AREA EACH DIRECTION OF THRUST IN SQUARE FEET (Based on soil supporting value of 2,000psf @ 200 psig test pressure)				
PIPE SIZE	TEES & DEAD ENDS	90° ELBOWS	45° ELBOW & CROSSES	22-1/2° ELBOWS
6"	4	6	3	2
8"	7	10	5	3
12"	15	21	11	6



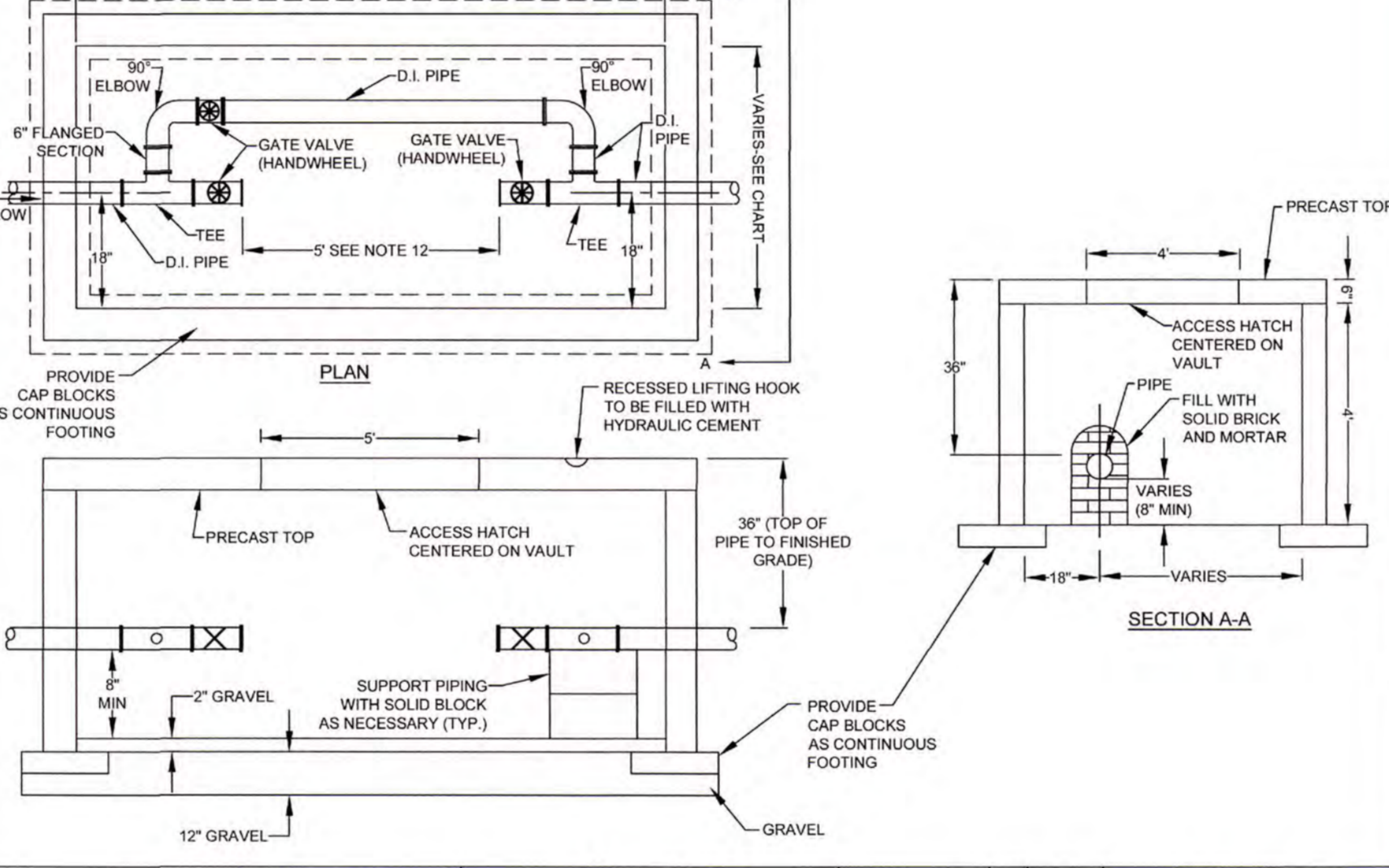
CONCRETE THRUST BLOCK DETAIL N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO. W.17		WATER RESOURCES ENGINEERING DEPARTMENT		1	09/05	REVISED TABLE
DWG. BY: FAYFWC		APPROVED BY: M.M.M.		2	02/07	ADDED NOTES 9 AND 10
DATE: JAN. 01, 2024				3	07/13	ADDED TAPPING SLEEVE AND VALVE DETAIL
SHEET NO. 1 OF 1						



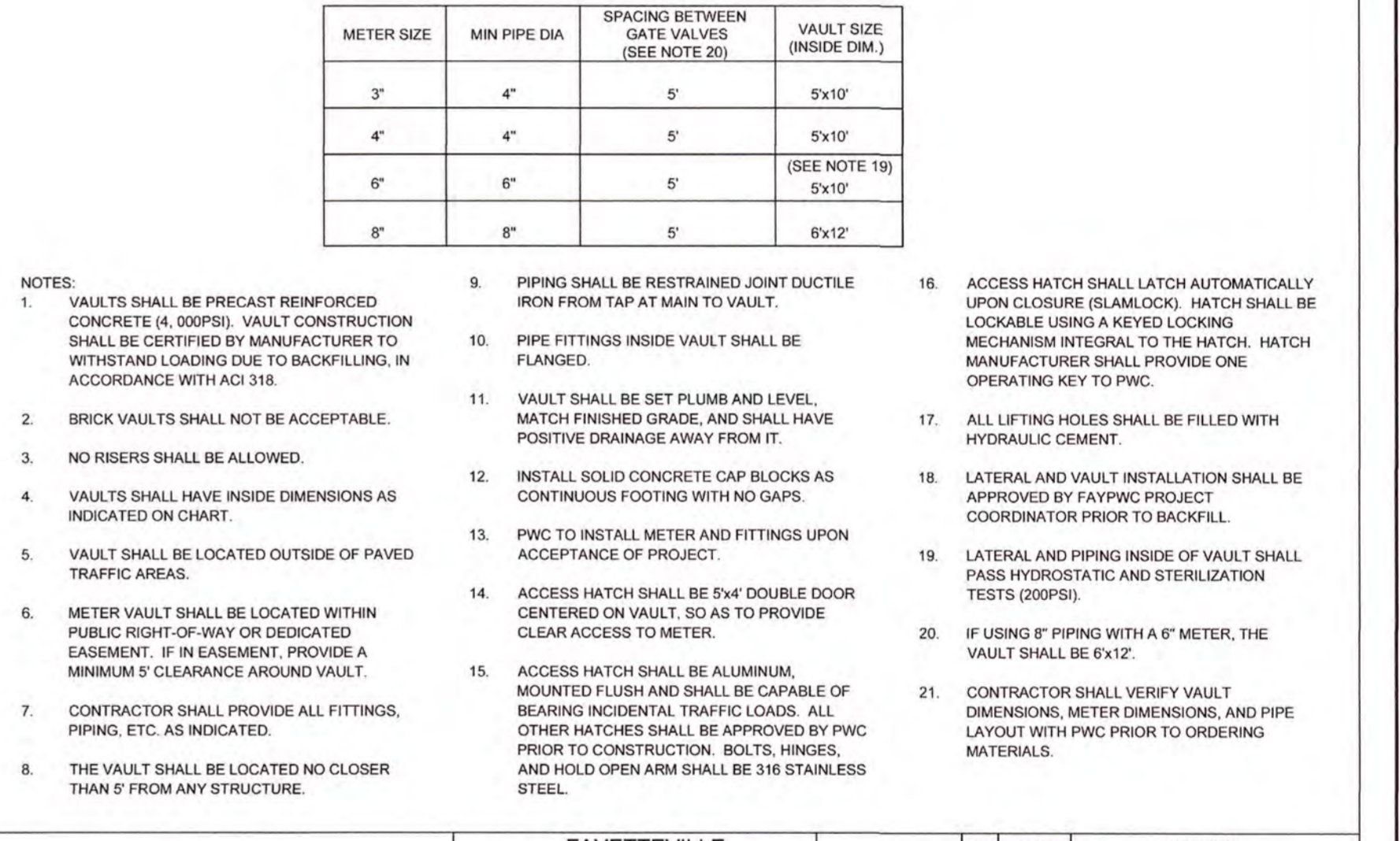
ALTERNATE RESTRAINT DETAIL (DUCTILE IRON PIPE ONLY)		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO. W.18		WATER RESOURCES ENGINEERING DEPARTMENT		1	11/16/07	REVISED TABLE, ADDED NOTE 8
DWG. BY: FAYFWC		APPROVED BY: M.M.M.				
DATE: JAN. 01, 2024						
SHEET NO. 1 OF 1						



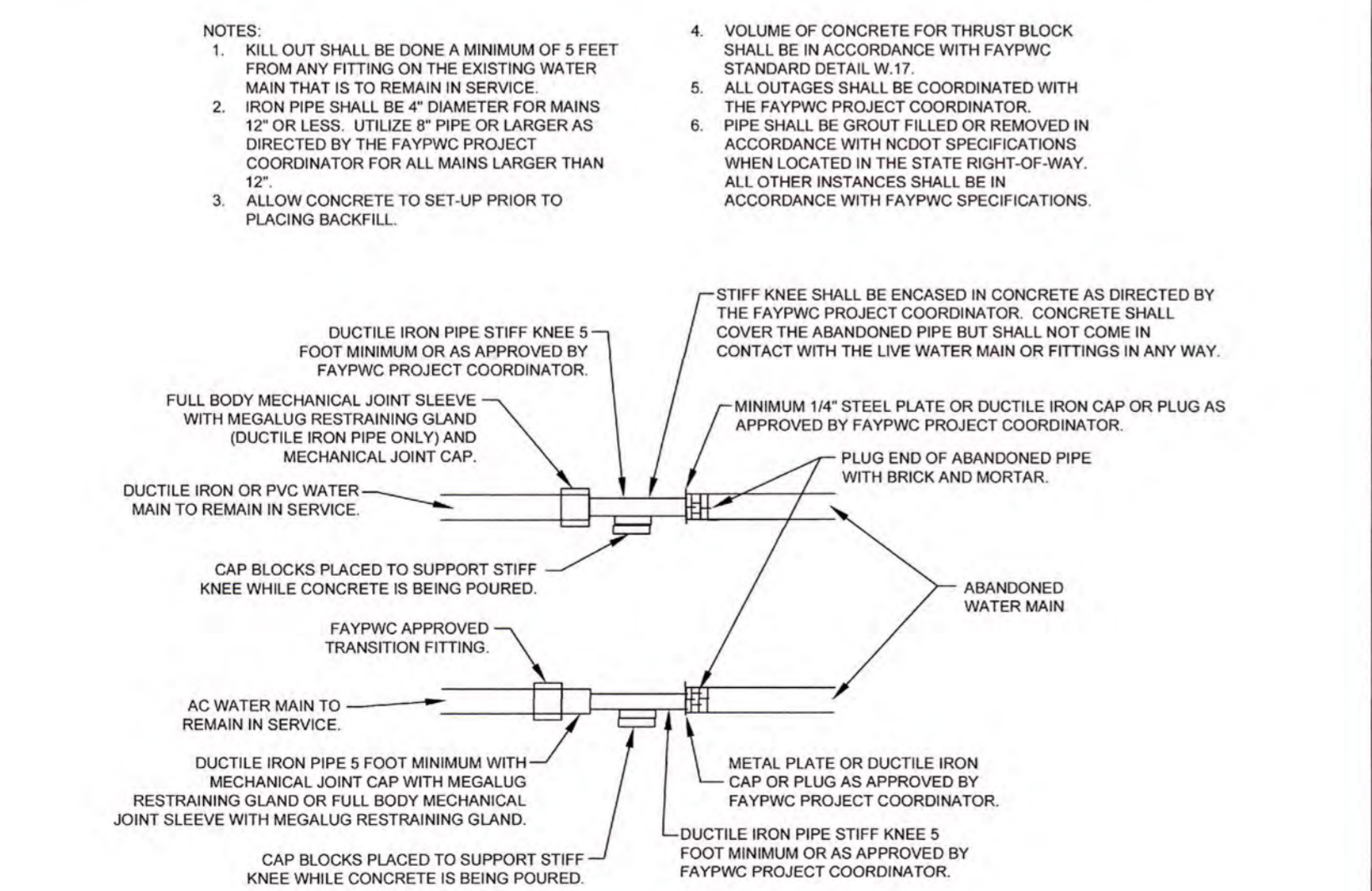
WATER MAIN BEDDING DETAIL N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO. W.19		WATER RESOURCES ENGINEERING DEPARTMENT		1	01/01/17	REVISED NOTES
DWG. BY: FAYFWC		APPROVED BY: M.M.M.		2	07/01/13	REVISED NOTE RE: TRACER WIRE
DATE: JAN. 01, 2024						
SHEET NO. 1 OF 1						



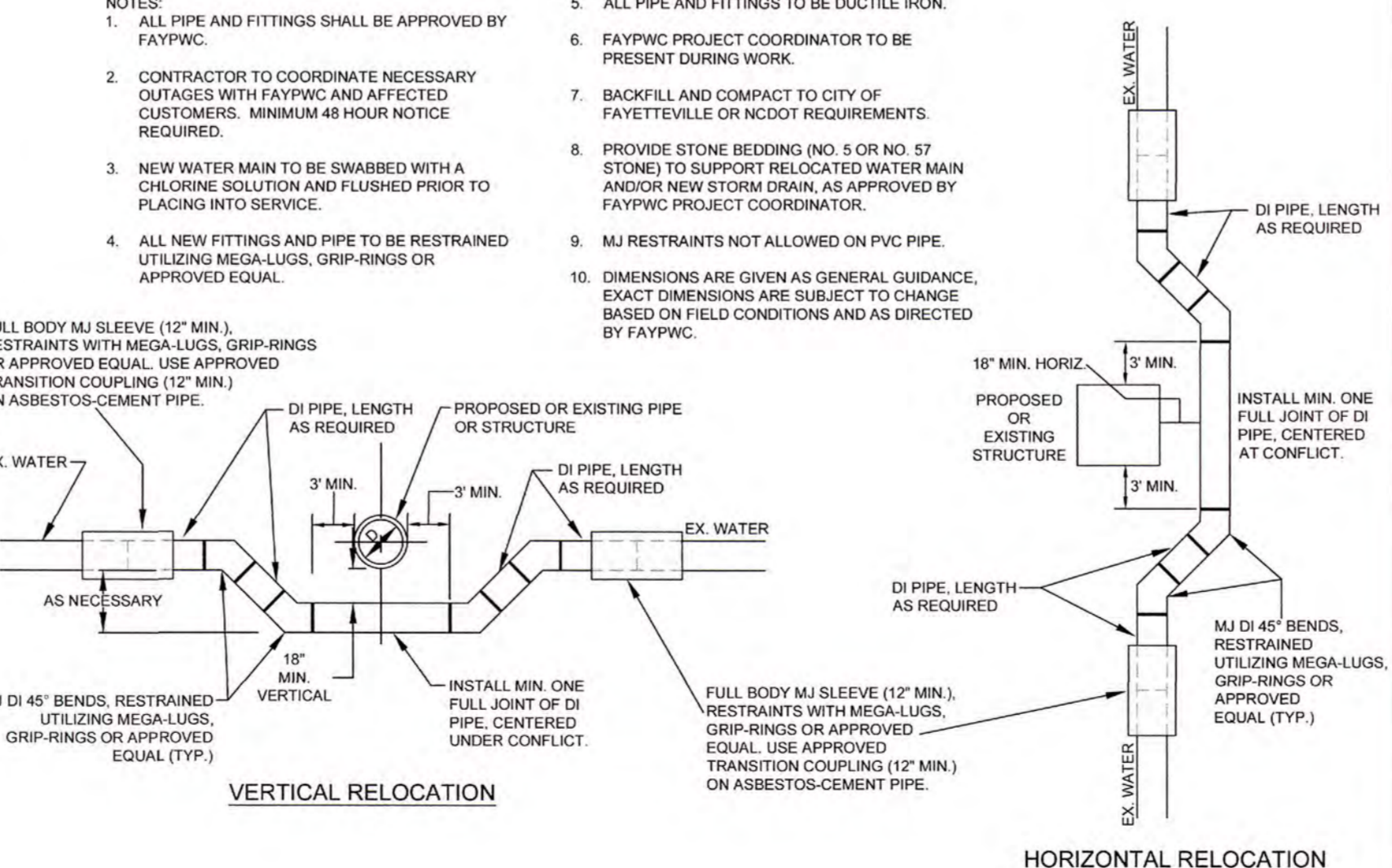
METER VAULT N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO. W.20		WATER RESOURCES ENGINEERING DEPARTMENT		1	09/10	REVISED PIPE BURY DEPTH, NOTES
DWG. BY: FAYFWC		APPROVED BY: M.M.M.		2	11/23	CLARIFIED FOOTING REQUIREMENTS
DATE: JAN. 01, 2024				3		
SHEET NO. 1 OF 2						



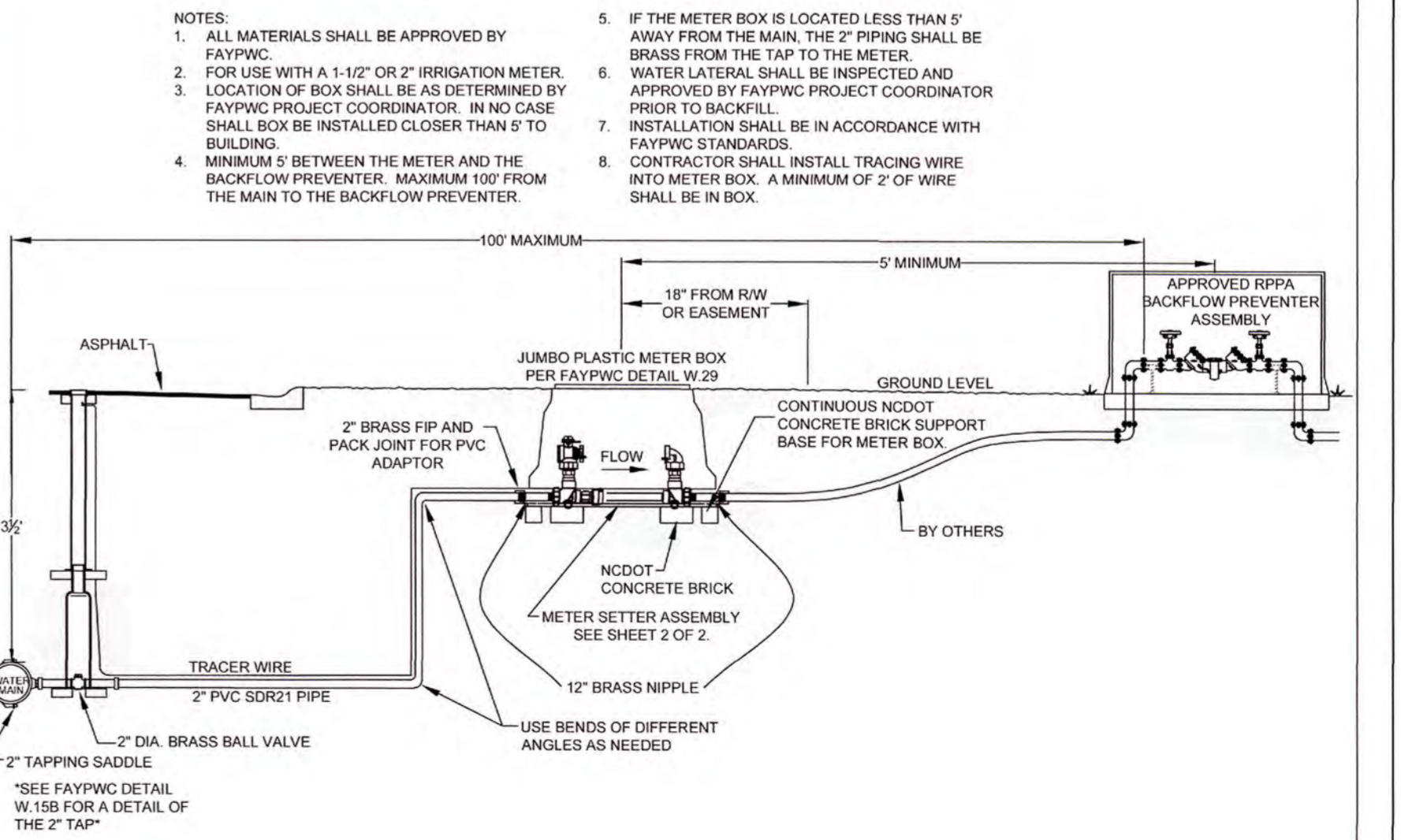
METER VAULT		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO. W.20		WATER RESOURCES ENGINEERING DEPARTMENT		1	09/10	REVISED PIPE BURY DEPTH, NOTES
DWG. BY: FAYFWC		APPROVED BY: M.M.M.		2	11/23	CLARIFIED FOOTING REQUIREMENTS
DATE: JAN. 01, 2024				3		
SHEET NO. 2 OF 2						



WATER MAIN KILL-OUT N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO. W.22		WATER RESOURCES ENGINEERING DEPARTMENT				
DWG. BY: FAYFWC		APPROVED BY: M.M.M.				
DATE: JAN. 01, 2024						
SHEET NO. 1 OF 1						



PIPE RELOCATION DETAIL N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO. W.26		WATER RESOURCES ENGINEERING DEPARTMENT		1	07/12	REVISED NOTES, ADDED HORIZONTAL RELOCATION
DWG. BY: FAYFWC		APPROVED BY: M.M.M.				
DATE: JAN. 01, 2024						
SHEET NO. 1 OF 1						



2" IRRIGATION LATERAL N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO. DATE REVISION		
DWG. NO. W.28		WATER RESOURCES ENGINEERING DEPARTMENT		1	07/17	REVISED NOTES, ADDED SHEET 2
DWG. BY: FAYFWC		APPROVED BY: M.M.M.				
DATE: JAN. 01, 2024						
SHEET NO. 1 OF 2						

ISSUED FOR CONSTRUCTION

DESIGN:	T. MURRAY	SCALE:	AS SHOWN
CHECK:	T. MURRAY	DATE:	OCTOBER, 2019
APPROVED:	T. MURRAY		

RAY AVE DRAINAGE

UTILITY DETAILS

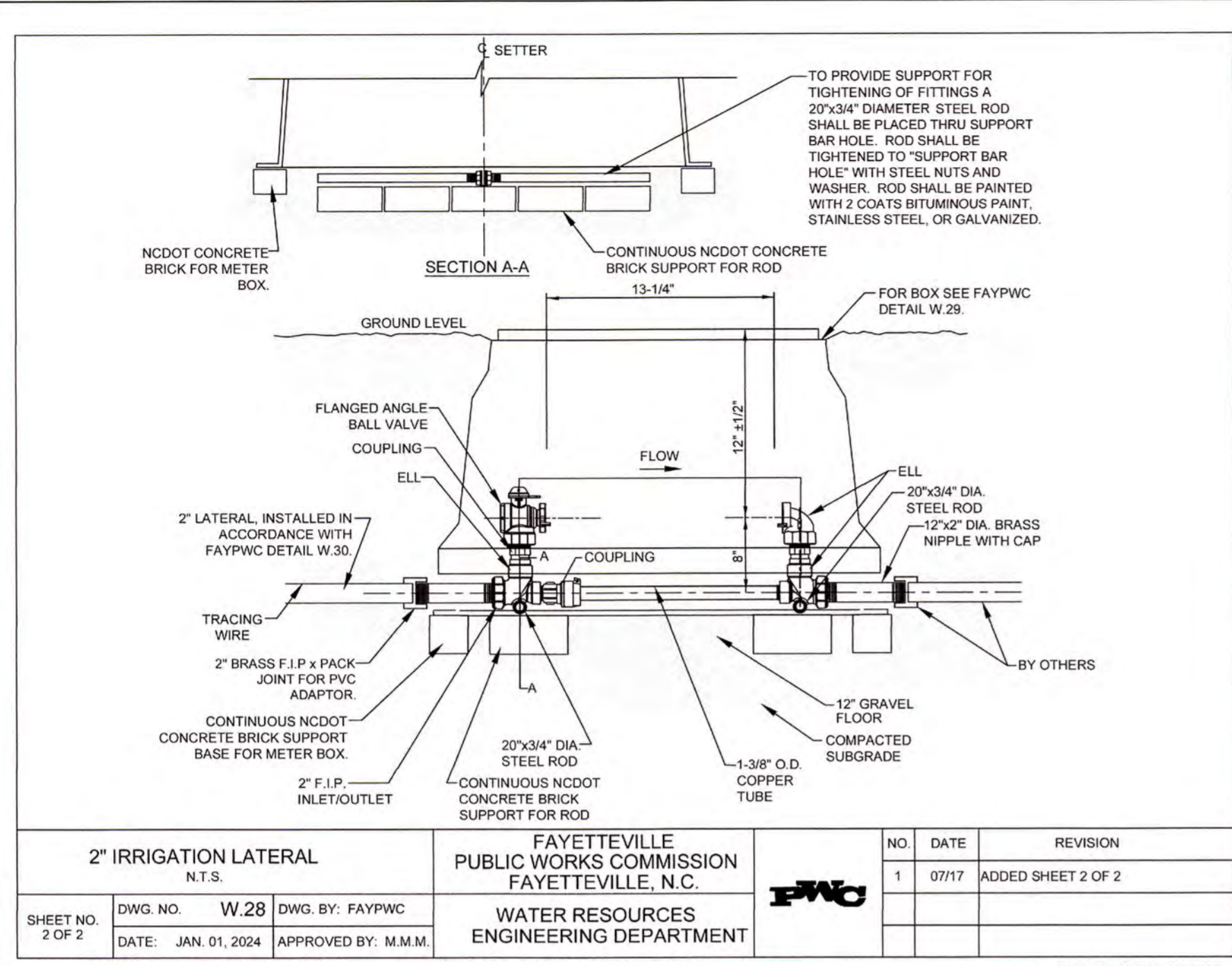
SHEET NUMBER: D7 OF 26

WK DICKSON
COMMUNITY INFRASTRUCTURE CONSULTANTS
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919) 782-0405
Office Location: North Carolina
South Carolina

FAYETTEVILLE
PUBLIC SERVICES

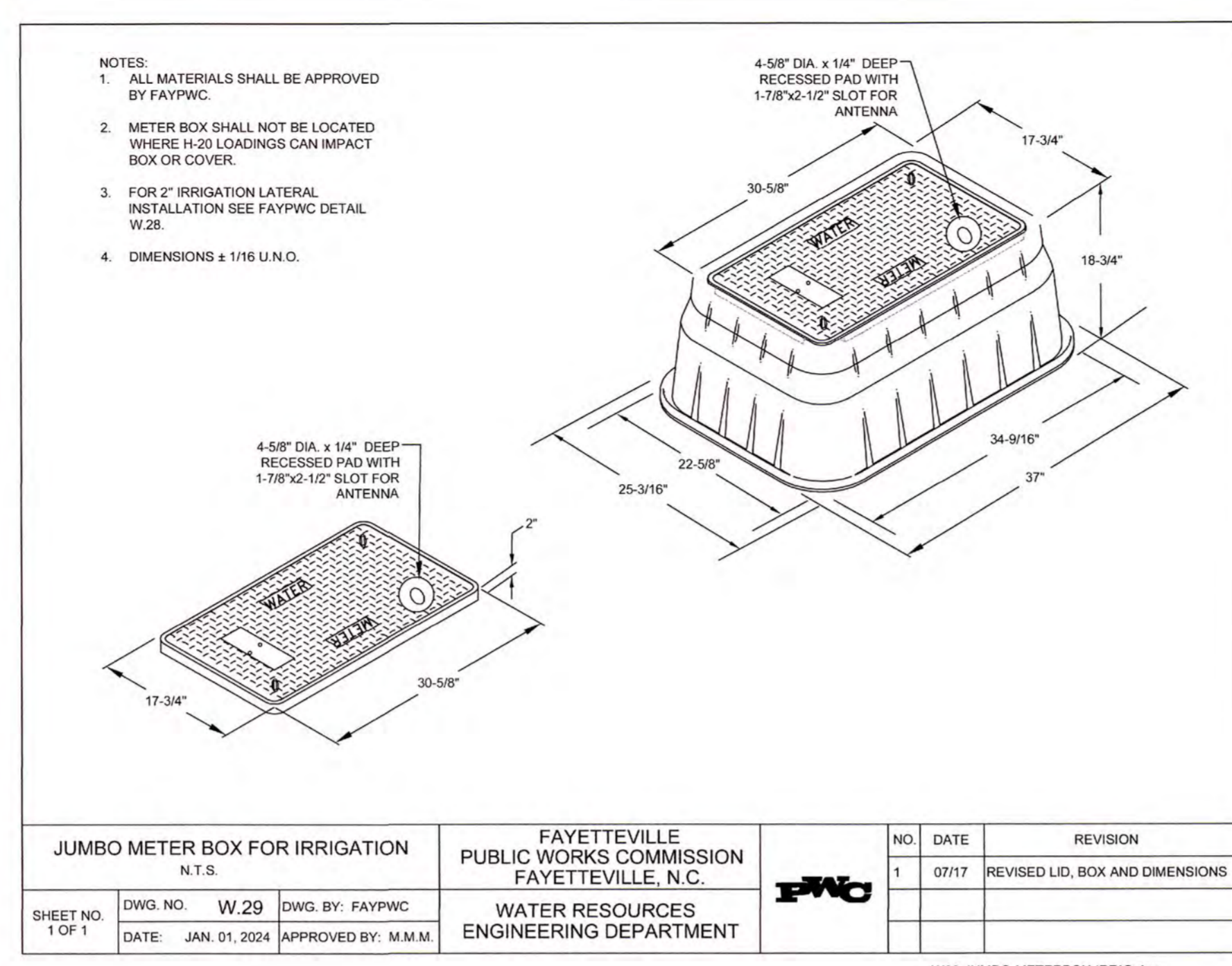
ENGINEERING DIVISION
ENGINEERING AND ARCHITECTURE DEPARTMENT
243 EAST STREET, FAYETTEVILLE, NC 28401

PROJECT # 20200251.001RA
SUB-LEADER #



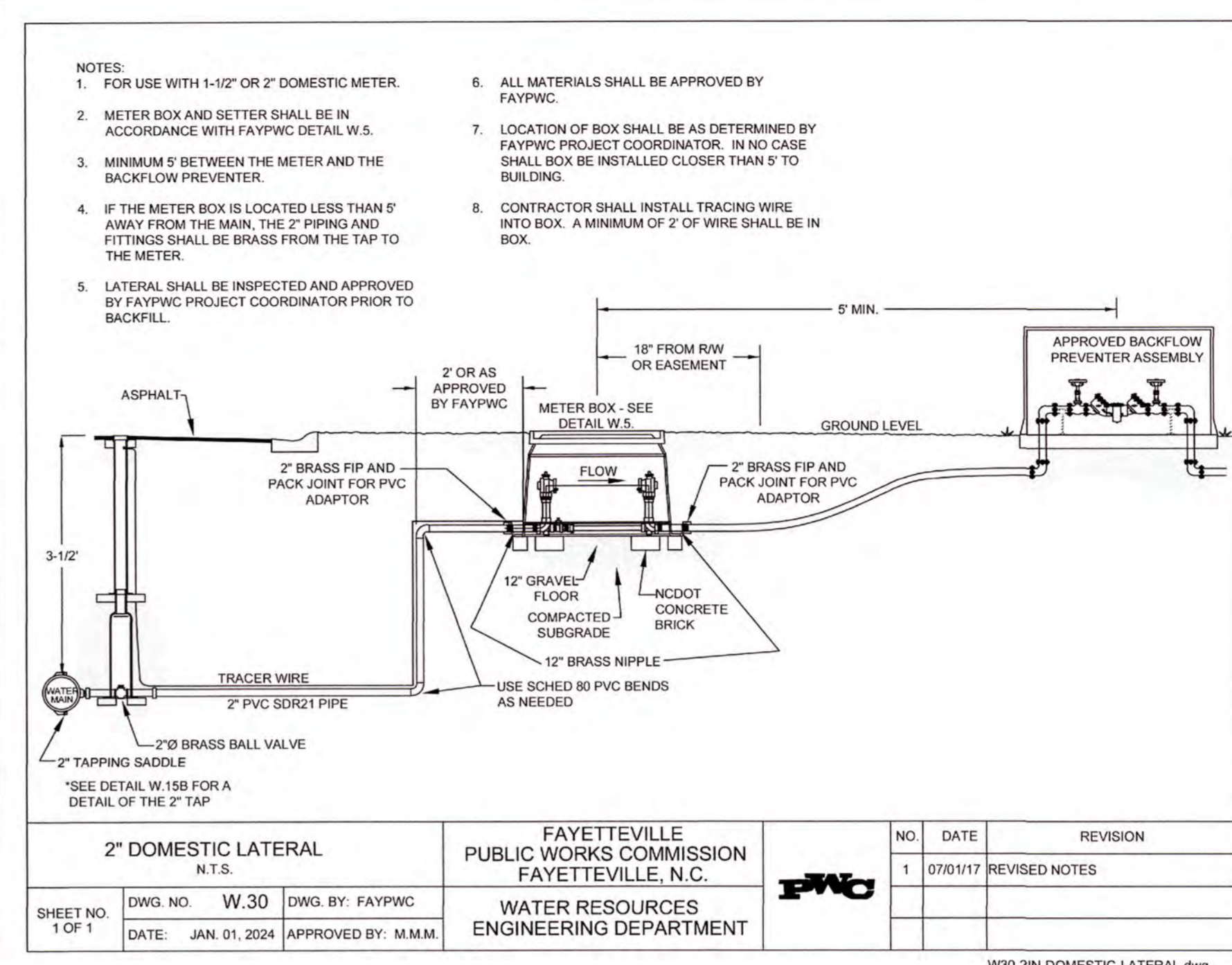
2" IRRIGATION LATERAL		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. W.28	DWG. BY: FAYPWC	1	07/17	ADDED SHEET 2 OF 2	
DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	WATER RESOURCES ENGINEERING DEPARTMENT			

W28-2IN-IRRIG-LAT.DWG



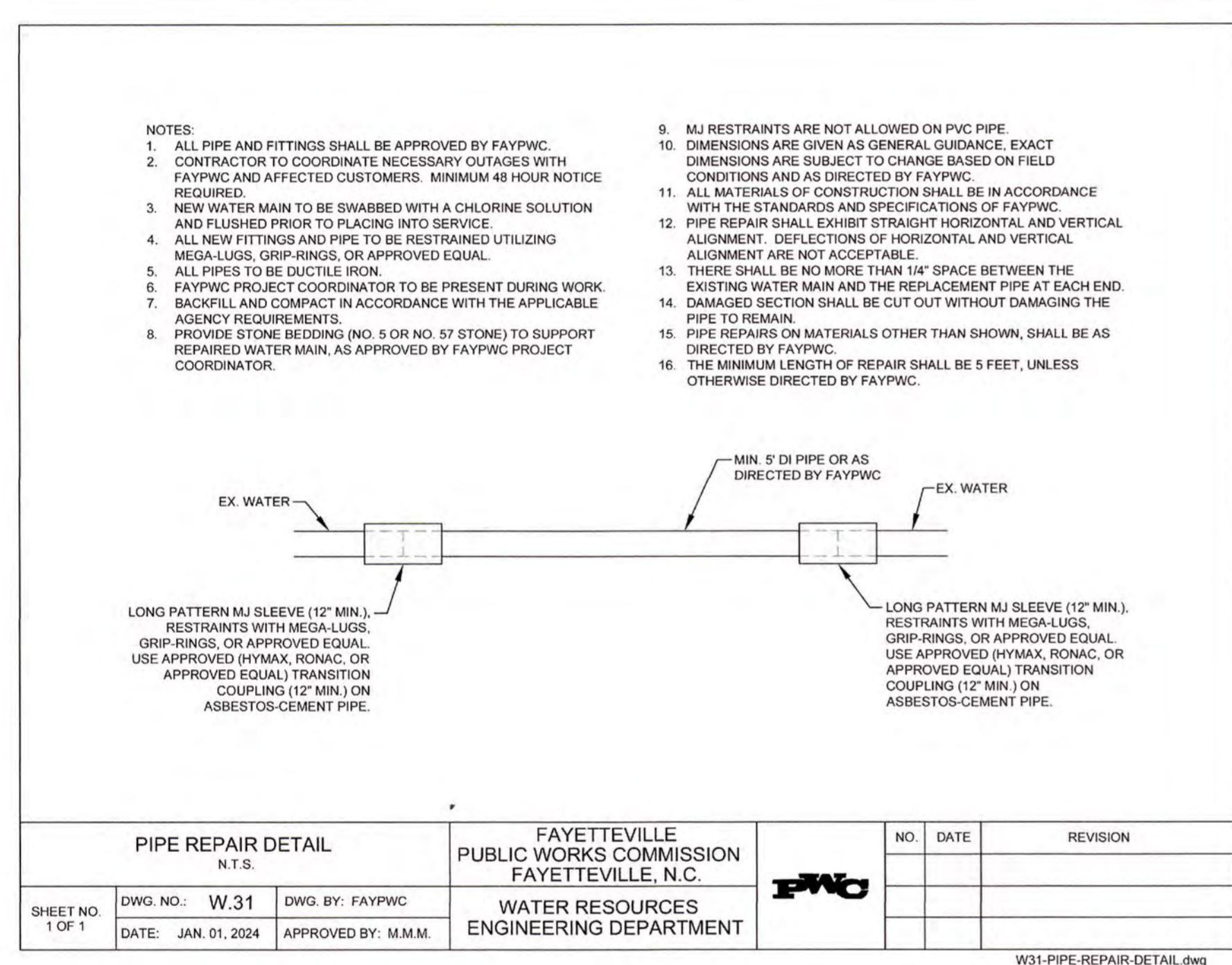
JUMBO METER BOX FOR IRRIGATION		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. W.29	DWG. BY: FAYPWC	1	07/17	REVISED LID, BOX AND DIMENSIONS	
DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	WATER RESOURCES ENGINEERING DEPARTMENT			

W29-JUMBO-METERBOX-IRRIG.dwg



2" DOMESTIC LATERAL		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. W.30	DWG. BY: FAYPWC	1	07/01/17	REVISED NOTES	
DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	WATER RESOURCES ENGINEERING DEPARTMENT			

W30-2IN-DOMESTIC-LATERAL.dwg



PIPE REPAIR DETAIL		FAYETTEVILLE PUBLIC WORKS COMMISSION		NO. DATE REVISION	
N.T.S.		FAYETTEVILLE, N.C.			
DWG. NO. W.31	DWG. BY: FAYPWC				
DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	WATER RESOURCES ENGINEERING DEPARTMENT			

W31-PIPE-REPAIR-DETAIL.dwg

ISSUED FOR CONSTRUCTION

PROJECT NAME: RAY AVE DRAINAGE	DATE: OCTOBER 2019
DESIGN: T. MURRAY	SCALE: AS SHOWN
CHECK: T. MURRAY	DATE: OCTOBER 2019
APPROVED: T. MURRAY	

REV. #	DESCRIPTION	REVISIONS	REVIEW DATE



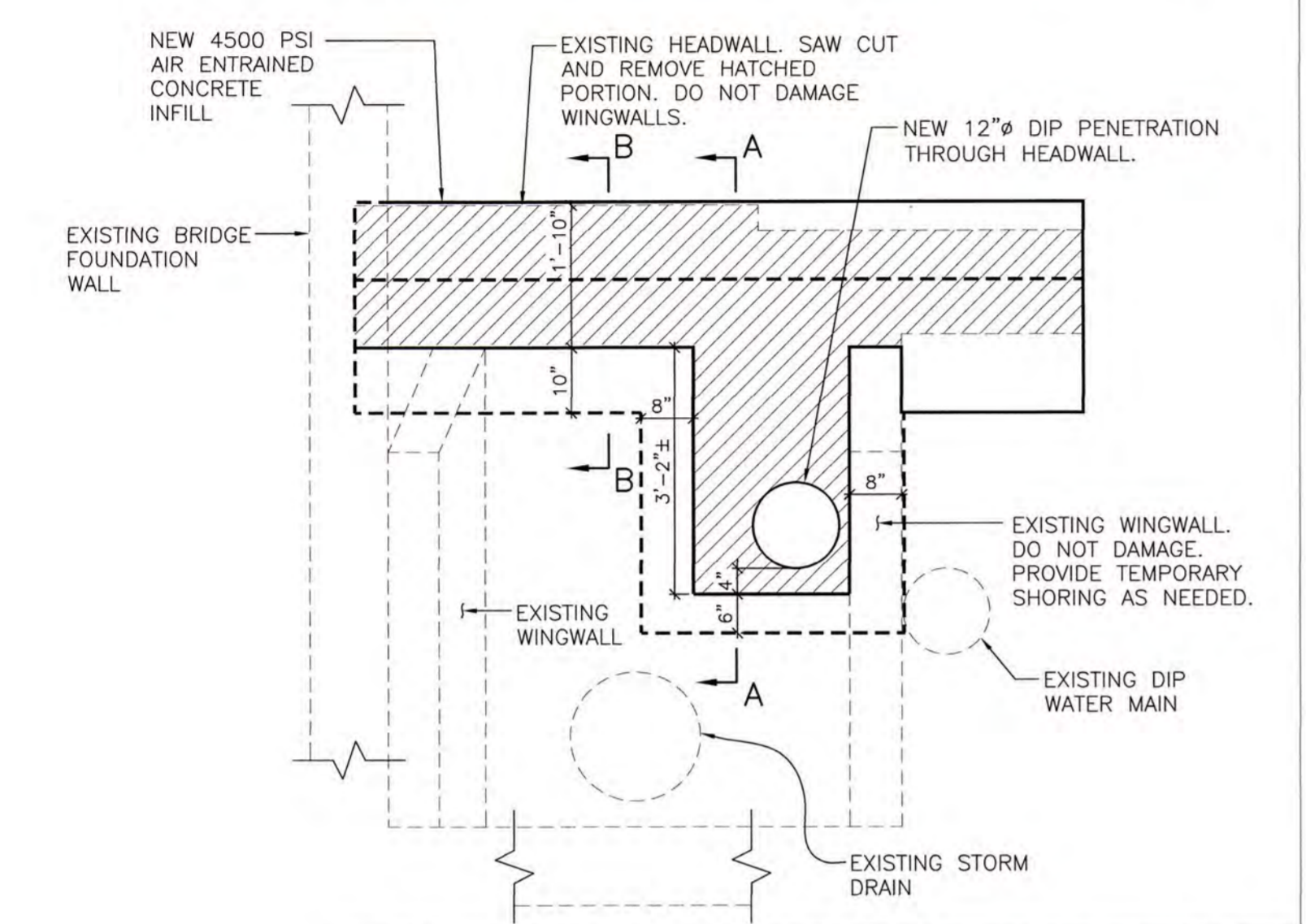
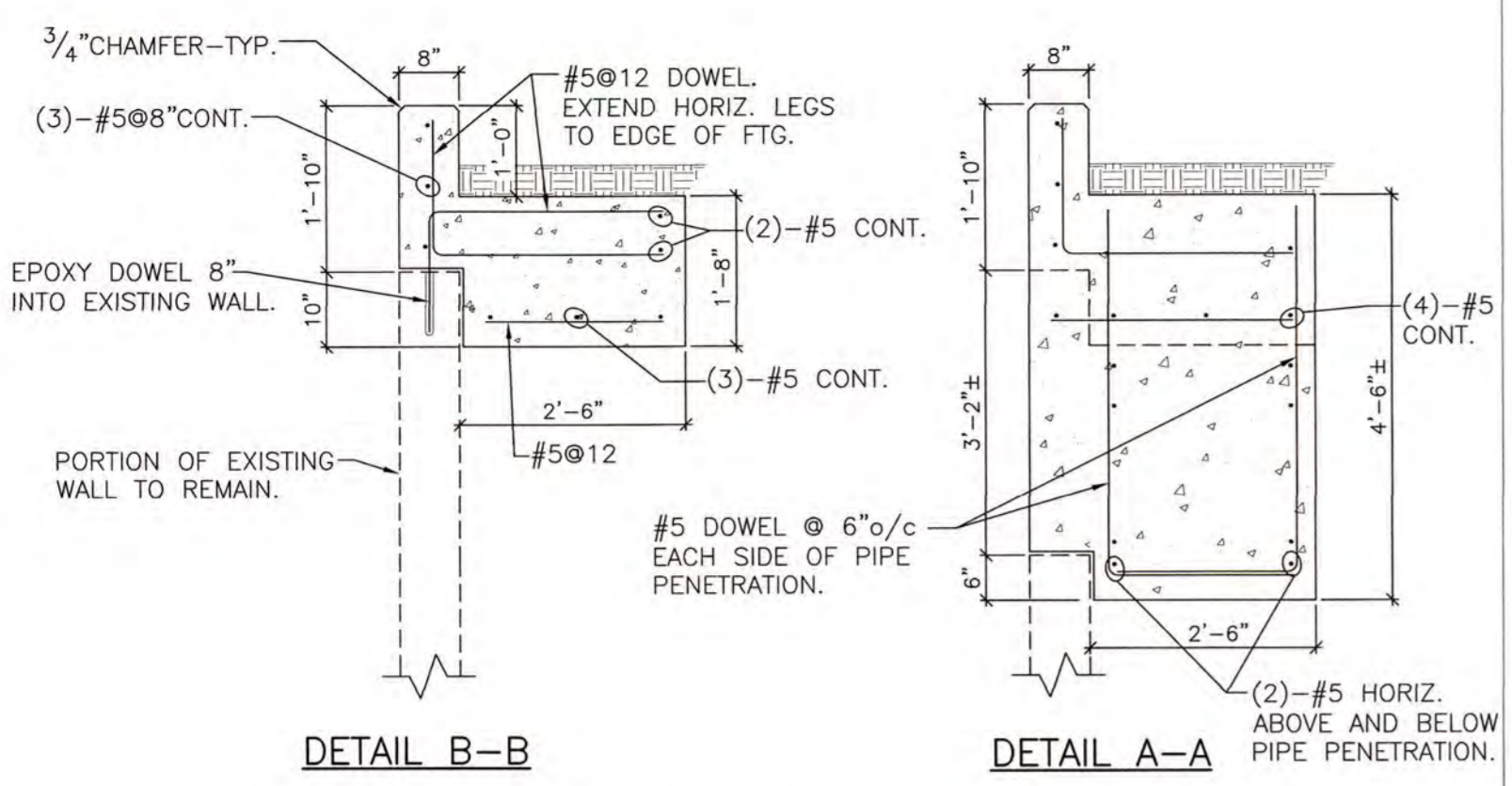
FAYETTEVILLE
PUBLIC SERVICES

ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
455 HAY STREET, FAYETTEVILLE, NC 28401

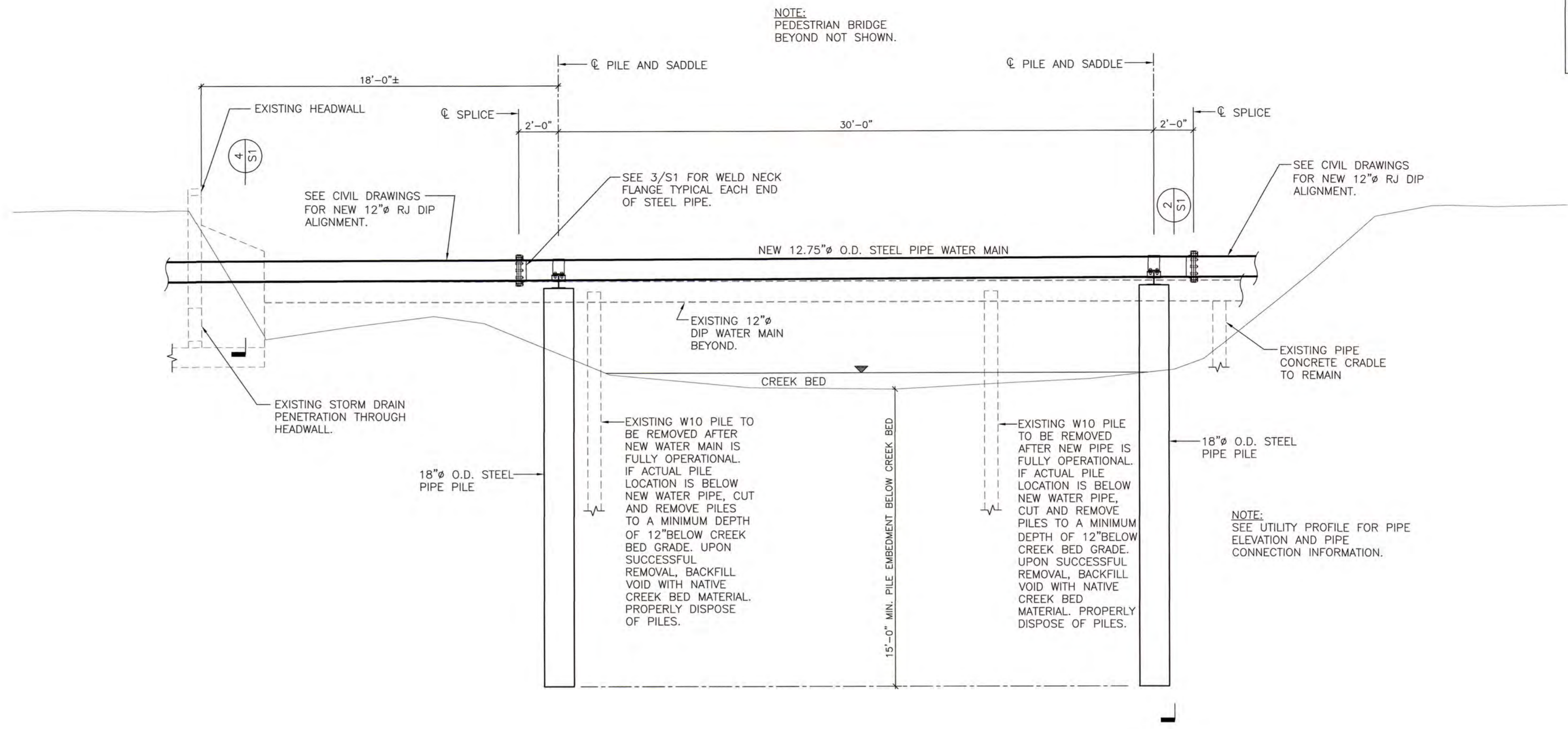
WICKSON
COMMUNITY INFRASTRUCTURE CONSULTANTS
730 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919) 782-0495
Office: Fayetteville, NC
North Carolina
South Carolina

REVISIONS	REVISIONS	REVISIONS	REVISIONS
NO.	DESCRIPTION	DATE	BY

PROJECT	RAY AVE DRAINAGE
DESIGN	S. DUNCAN
CHECK	S. FLEMING
APPROVED	S. DUNCAN
SCALE	AS INDICATED
DATE	JUNE 9, 2022
PROJECT NO.	20200251.00
SUB-LEADER NO.	



NEW 12" DIP PENETRATION THROUGH EXISTING HEADWALL
 1/2" = 1'-0" S1

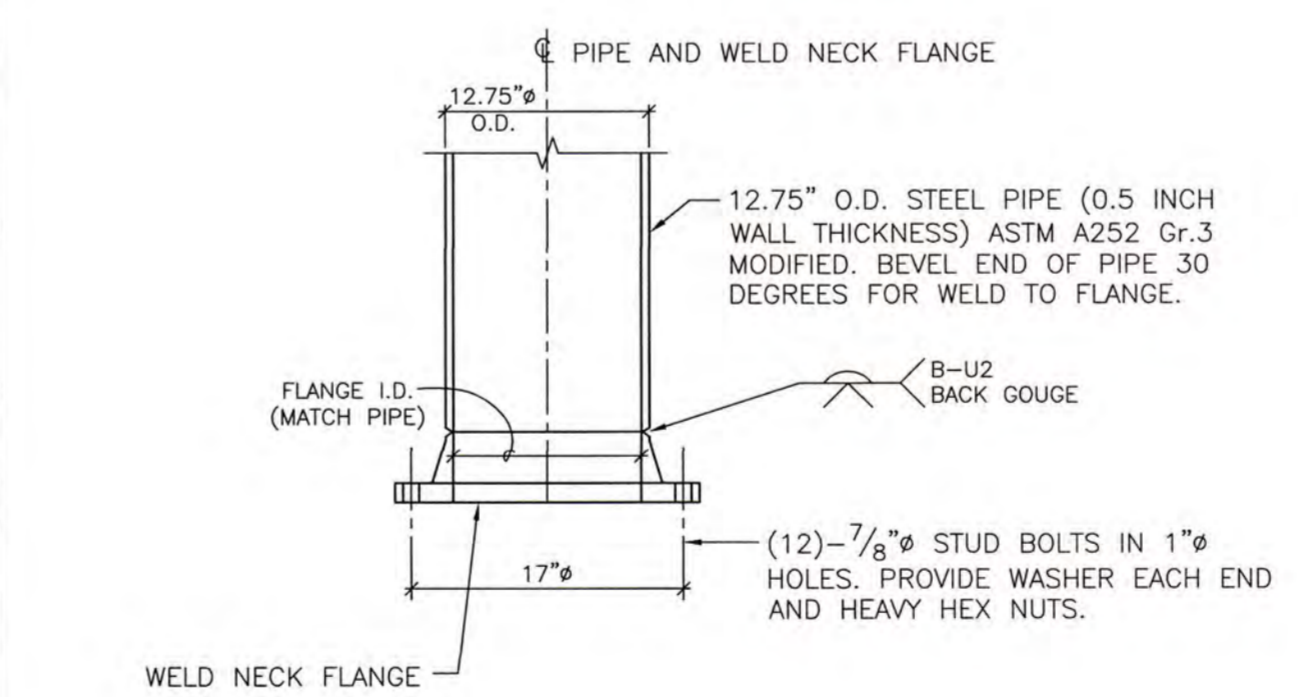


AERIAL CROSSING ELEVATION LOOKING DOWNSTREAM
 1/4" = 1'-0" S1

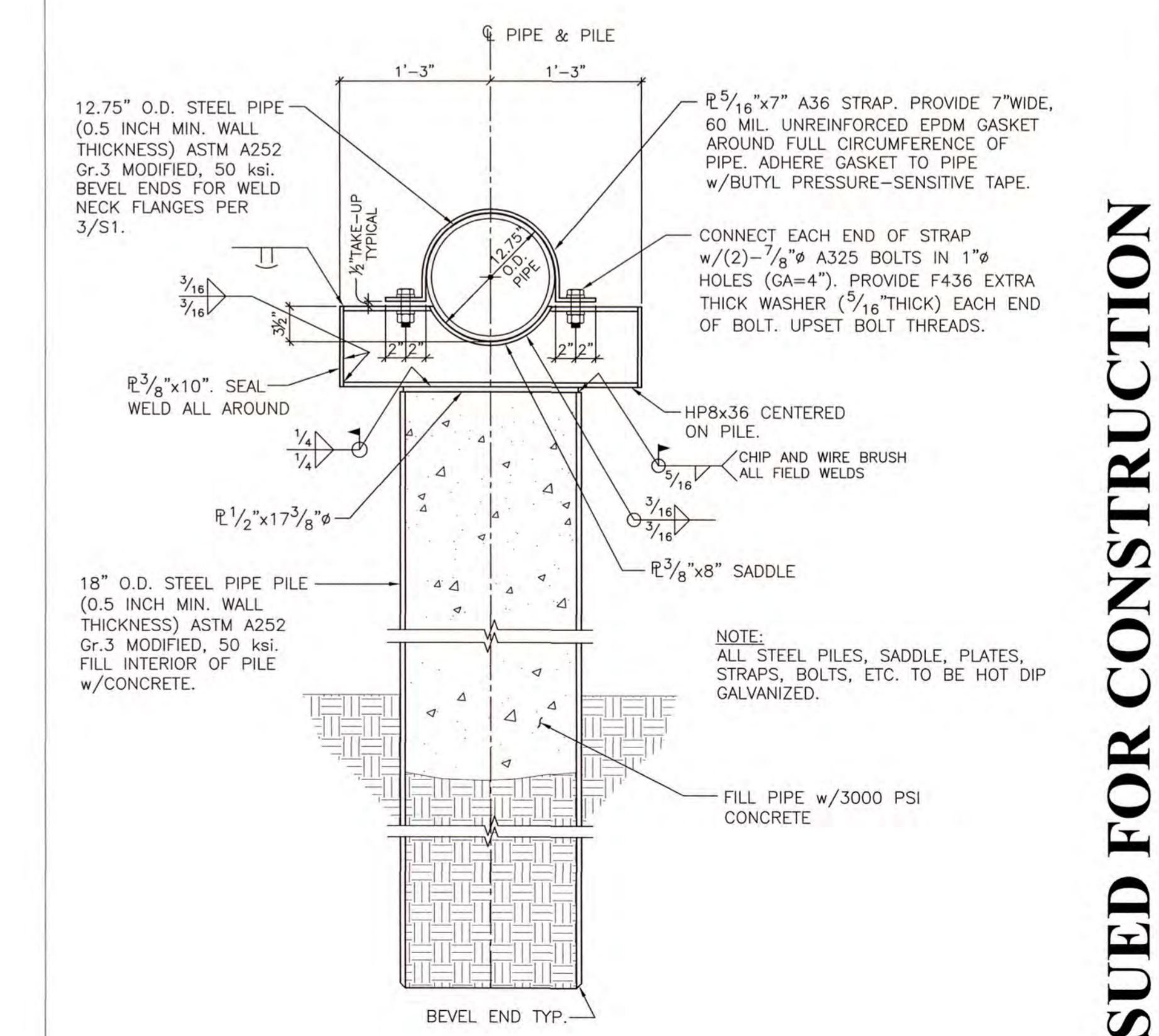
- Design Loads**
 - Wind Load:**
 Ultimate Design Wind Speed 125 mph (ASCE 7-10/2018 NC Building Code) Risk Category II
 - Estimated design stream flow: 5 ft/sec (exceeds 10-year and 100-year modeled stream velocity)
- Materials**
 - Concrete
 f_c = 3000 psi Reg. wt. pipe infill
 f_c = 4500 psi Reg. wt. (air entrained) at headwall repair
 Maximum slump at point of placement 5"±1".
 ASTM A-36 U.N.O. (Hot-dip galv. per ASTM A123)
 ASTM A-572 Grade 50 at HP shapes (Hot-dip galv. per ASTM A123)
 ASTM A-252 Grade 3 modified, 50 ksi for steel water main pipe *
 - ERW, DSAW, or spiral welded
 ASTM A-252 Grade 3 modified, 50 ksi for steel round pipe piles (hot-dip galv.)
 - ERW, DSAW, or spiral welded
 - Bolts for pipe straps
 ASTM A-325N (Hot-dip galvanized per ASTM A153)
 - Weld Electrodes
 E70
 - Weld Neck Pipe Flange
 See 3/S1.

* See civil drawings/specifications for interior/exterior coating of water main pipes typical.
- Quality Assurance**
 - Comply with all pertinent federal, state, and local laws and codes. In addition, pile foundation work shall comply with the latest edition of the North Carolina State Building Code. Where Provisions of pertinent codes conflict with these drawings and notes, the more stringent provisions shall govern.
 - Fabricator of steel water main pipe and round piles is to be one of the following: American Steel Pipe, Northwest Pipe Company, Saginaw Pipe, JSW Steel, Dura-Bond Pipe, Skyline Steel, ESC Steel, or approved equal.
 - The inspector employed by the Owner shall oversee the installation of the entire piling operation and advise the Owner of any extraordinary circumstances that need resolution and suggest measures as warranted to produce a sound foundation system.
 - Unless otherwise specifically approved by the Owner, the pile contractor shall have been successfully engaged in installing similar types of piling in the general area for a period of not less than five (5) years prior to performing this work.
- Pile Installation Notes**
 - All pile locations shall be staked and surveyed as part of the construction staking process.
 - Subsurface parameters are based on the Report of Subsurface Exploration and Geotechnical Engineering Evaluation performed by Building & Earth Sciences, LLP (Project No. RD 200788) dated December 18, 2020.
 - Prior to installation, carefully inspect the site and verify that the piles can be installed as specified. Piles shall not be placed in the center of the stream. Contractor to verify dimensions and elevations shown on this drawing and on civil drawings with existing conditions before placing piles. Verify that piles can be installed in accordance with all pertinent codes and regulations. Notify Engineer of any significant discrepancies.
 - The pile driving rig shall be of adequate size and capacity to permit driving the piles at the locations shown on the drawings and with required axial alignment. The pile driving hammer is to be sized to achieve the minimum embed length shown on the drawings without damaging the pile. Pile driving criteria should be established at the time of construction based upon the characteristics of the proposed pile driving equipment and the estimated subsurface conditions. Each pile should be driven to the desired tip elevation and driving resistance should be monitored without interruption in the driving operations.
 - Contractor may refer to the Subsurface Report by Building & Earth dated December 18, 2020. Pile size and required embedment are to be according to this drawing. S1. No adjustments to the design are permitted without written permission from the Structural Engineer of Record.
 - Provide cutting shoes if required to properly install piles to embed depth shown on the drawings.
 - Piles are to be cut off square at the required finish elevation and prepared for weld to saddle beam.
 - Pile Tolerances: plumbness = 1" total, location = 2" maximum, elevation = ±0.01". The pile contractor shall be responsible for installing, at his expense, any piles which may be downgraded or rejected because of misalignment or displacement.
 - Remove any accumulated water from inside piles before filling with concrete. All concrete work shall conform to ACI 301 and ACI 318, unless otherwise noted on the drawings and specifications.

- Superstructure**
 - All strap connection bolts will have heavy hex nuts and (2) F436 extra thick washers.
 - All welders, shop and field, will be certified for the type of work involved.
 - All detailing, fabricating, and erection shall conform to the following specifications (latest editions), except as otherwise indicated:
 AISC - "Specification for Structural Steel Buildings."
 AISC - "Code of Standard Practice for Steel Buildings and Bridges."
 Paragraph 4.4.1 of the above code is hereby modified by deletion of the following sentence:
 a) "Confirmation that the Fabricator has correctly interpreted the Contract Documents in the preparation of those submittals."
 AWS - "Structural Welding Code - Steel."
 - All steel saddle beams and straps will be power tool cleaned to a minimum of SSPC-SP3 and hot dip galvanized per ASTM A123. Bolts and washers will be hot-dip galvanized per ASTM A153. All field welds will be grinded and coated with (2) coats of a cold applied galvanizing paint. Touch up any damaged galvanizing.
 - Contractor shall have sole responsibility for site safety.
- Submittals**
 - Mill certificates on all structural steel shapes.
 - Steel water pipe and round pile information to include pipe manufacturer and grade of steel.
 - Interior and Exterior Coatings - submittal review by Civil Engineer.
 - Equipment Data: Submit a detailed description of the equipment proposed to be used to install piles.
 - Steel shop drawings for saddle beam, straps, and bolts.
 - Pile inspector's report to include:
 - Actual installed depth elevation of each pile and the cut off elevation of each pile.
 - Any unusual conditions and/or obstructions encountered while driving pile.
 - Hammer blows per foot at not less than 5 feet intervals and continuous count during the last 6' of driving.
 - Elevations before and after cut off.
 - Concrete Mix Design
- Miscellaneous**
 - The structural drawing takes precedence when a conflict occurs between the structural drawing, the civil drawings, and the specifications concerning the aerial crossing. Notify Engineer in writing for clarification prior to bidding. The term unless noted otherwise (U.N.O.), means unless noted otherwise on the structural drawings. If there is a conflict on the structural drawings, civil drawings, or specifications, the most stringent requirement will control.
 - Installation of piles and any other work to install the new aerial crossing or remove the existing aerial crossing shall utilize all necessary environmental protection measures to ensure that groundwater and stream are not contaminated. Provide turbidity curtains or other approved protective measures when installing/removing piles.
 - Equipment utilized during construction activity must be operated and maintained in a manner to prevent the pollution of surface or ground waters. Fuels, lubricants, coolants, hydraulic fluids, or any other petroleum products shall not be discharged on the ground or into surface waters. Spent fluids shall not enter ground or surface waters. Fluids shall be disposed of in accordance with applicable federal, state, and local regulations. Any spilled fluids shall be immediately cleaned up and disposed of to prevent entry into surface or ground waters. The contractor shall provide primary and secondary containment systems for fluid storage, fueling and servicing equipment.
 - The contractor shall pay all costs of the clean up and removal of any such unauthorized discharge and pay any and all fines, penalties, and/or damages.



- WELD NECK FLANGE (ASME B16.5):**
- CLASS 150.
 - FLAT FACE (FF)
 - CARBON STEEL ASTM A105
 - DOMESTIC
- GASKET:**
- PER SPECIFICATIONS.
- STUD BOLTS:**
- STUD BOLTS - ASTM A193 GR. B7 (ASME B18.2.1)
 - HEAVY HEX NUTS - ASTM A194 GR. 2H (ASME B18.2.2)
 - WASHERS - F436
 - FINISH - HOT DIP GALV.
 - TORQUE WELL LUBRICATED FASTENERS WITH A TORQUE WRENCH TO MANUFACTURER'S RECOMMENDED TORQUE IN 1/3RD INCREMENTS ACCORDING TO PROPER BOLTING PATTERNS. VERIFY INSTALLATION PROCEDURES AND TORQUE w/GASKET MANUFACTURER TO INSURE ADEQUATE SEAL.
- OTHER:**
- SEE SPECIFICATIONS FOR ADDITIONAL INFO TO INCLUDE INTERIOR AND EXTERIOR COATING SYSTEM FOR PIPE.

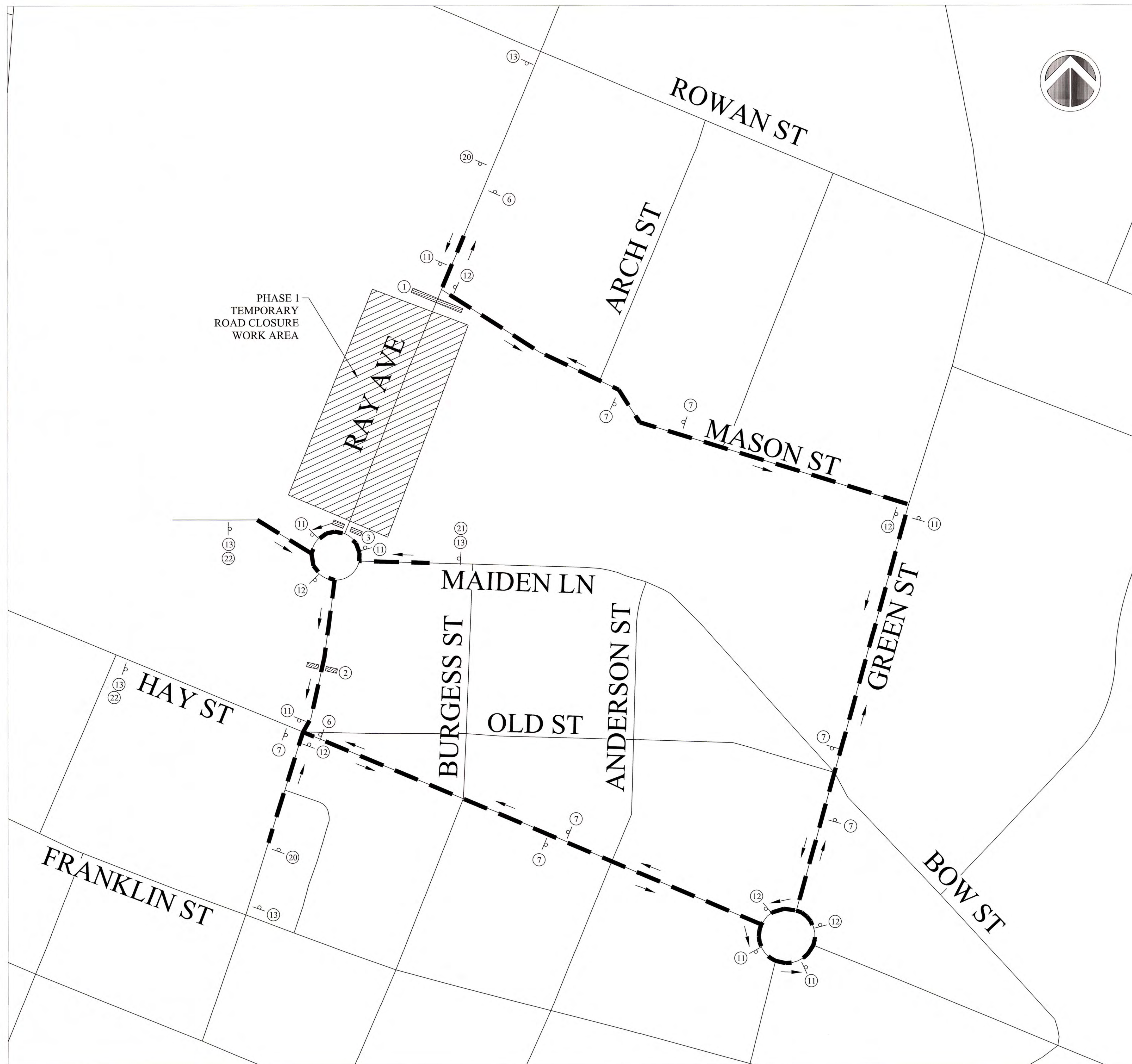


GENERAL NOTES 5
 NO SCALE S1

TYPICAL WELD NECK FLANGE FOR STEEL PIPE 3
 WATER MAIN (PLAN VIEW) 1" = 1'-0" S1

SECTION 2
 1" = 1'-0" S1

ISSUED FOR CONSTRUCTION



TRAFFIC CONTROL PLAN - PHASE 1
RAY AVE CLOSURE
 SCALE: 1"=120'

TRAFFIC CONTROL NOTES

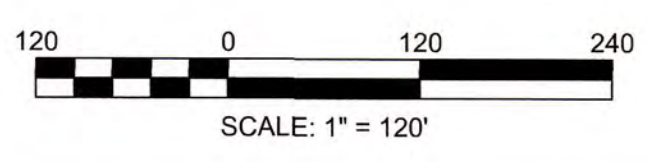
- REFER TO TRAFFIC CONTROL NOTES AND SIGN LEGEND ON SHEET TC1 - TRAFFIC CONTROL NOTES.
- DIAGRAM SHOWN FOR REPRESENTATIONAL PURPOSES ONLY. REFER TO SHEET TC4 - TRAFFIC CONTROL DETAILS FOR SIGN SPACING AND FURTHER INFORMATION.
- ALL DETOUR SIGNS FOR PHASE 1 RAY AVE. ROAD CLOSURE TO INCLUDE SIGN "RAY AVE."
- UNLESS OTHERWISE INDICATED, CONTRACTOR SHALL MAINTAIN ACCESS FOR PROPERTY OWNERS AT ALL TIMES.
- THE 225 WEST RAY AVE. BUILDING PARKING LOT ENTRANCE OFF OF RAY AVE. WILL BE INTERRUPTED AND MAY BE TEMPORARILY CLOSED DURING PROJECT WORK; HOWEVER, THE CONTRACTOR SHALL ENSURE A MINIMUM OF ONE-WAY ACCESS REMAINS ACCESSIBLE AND INTERRUPTIONS SHALL BE MINIMIZED TO THE MAXIMUM EXTENT POSSIBLE. CONTRACTOR SHALL HAVE FLAGGERS CONTROL ENTRANCE TO PARKING LOT WHEN CONSTRUCTION OCCURS IN THE AREA. COORDINATE ALL CONSTRUCTION WORK AND ASSOCIATED PARKING LOT INTERRUPTIONS WITH BUILDING MANAGER AND CITY OF FAYETTEVILLE PRIOR TO ANY CONSTRUCTION.
- THE LIBRARY STAFF PARKING LOT ENTRANCE OFF OF RAY AVE. WILL BE INTERRUPTED AND MAY BE TEMPORARILY CLOSED DURING PROJECT WORK; HOWEVER, INTERRUPTIONS IF ANY SHALL BE MINIMIZED TO THE MAXIMUM EXTENT POSSIBLE. COORDINATE ALL CONSTRUCTION WORK AND ASSOCIATED PARKING LOT INTERRUPTIONS WITH LIBRARY AND CITY OF FAYETTEVILLE PRIOR TO ANY CONSTRUCTION.
- CITY OF FAYETTEVILLE BUS SERVICE STOP ALONG RAY AVE. WILL BE TEMPORARILY RELOCATED TO SOUTH OF TRAFFIC CIRCLE DURING PROJECT WORK. CITY OF FAYETTEVILLE TO DETERMINE EXACT LOCATION.
- AS CONSTRUCTION ACTIVITIES AND CONSTRUCTION LOCATIONS MOVE WITHIN THE PROJECT AREA, TYPE III BARRICADES 1, 2, AND 3 WILL BE REQUIRED TO BE MOVED AND REPOSITIONED TO ACCOMMODATE CONSTRUCTION WORK AS WELL AS BUSINESS AND LIBRARY STAFF ACCESS. DO TO THE NATURE OF THE CONSTRUCTION, PORTIONS OF THE ROAD WILL BE REQUIRED TO BE CLOSED. REFER TO NOTE 5 AND 6 ABOVE.
- ALL SIDEWALKS AFFECTED BY CONSTRUCTION ACTIVITIES WILL BE CLOSED OR BARRICADED OFF WITH TEMPORARY FENCING; HOWEVER, INTERRUPTIONS SHALL BE MINIMIZED TO THE MAXIMUM EXTENT POSSIBLE.

PHASE 1 DESCRIPTION OF WORK

PHASE 1 OF WORK EXTENDS ALONG RAY AVE. FROM SOUTH OF INTERSECTION WITH MASON STREET TO JUST NORTH OF THE TRAFFIC CIRCLE AT INTERSECTION WITH MAIDEN LANE. WORK INCLUDES INSTALLATION OF WATER LINE REPLACEMENT, DRAINAGE SYSTEM REPLACEMENT, SANITARY SEWER LATERAL REPLACEMENT, AND PAVEMENT REPLACEMENT.

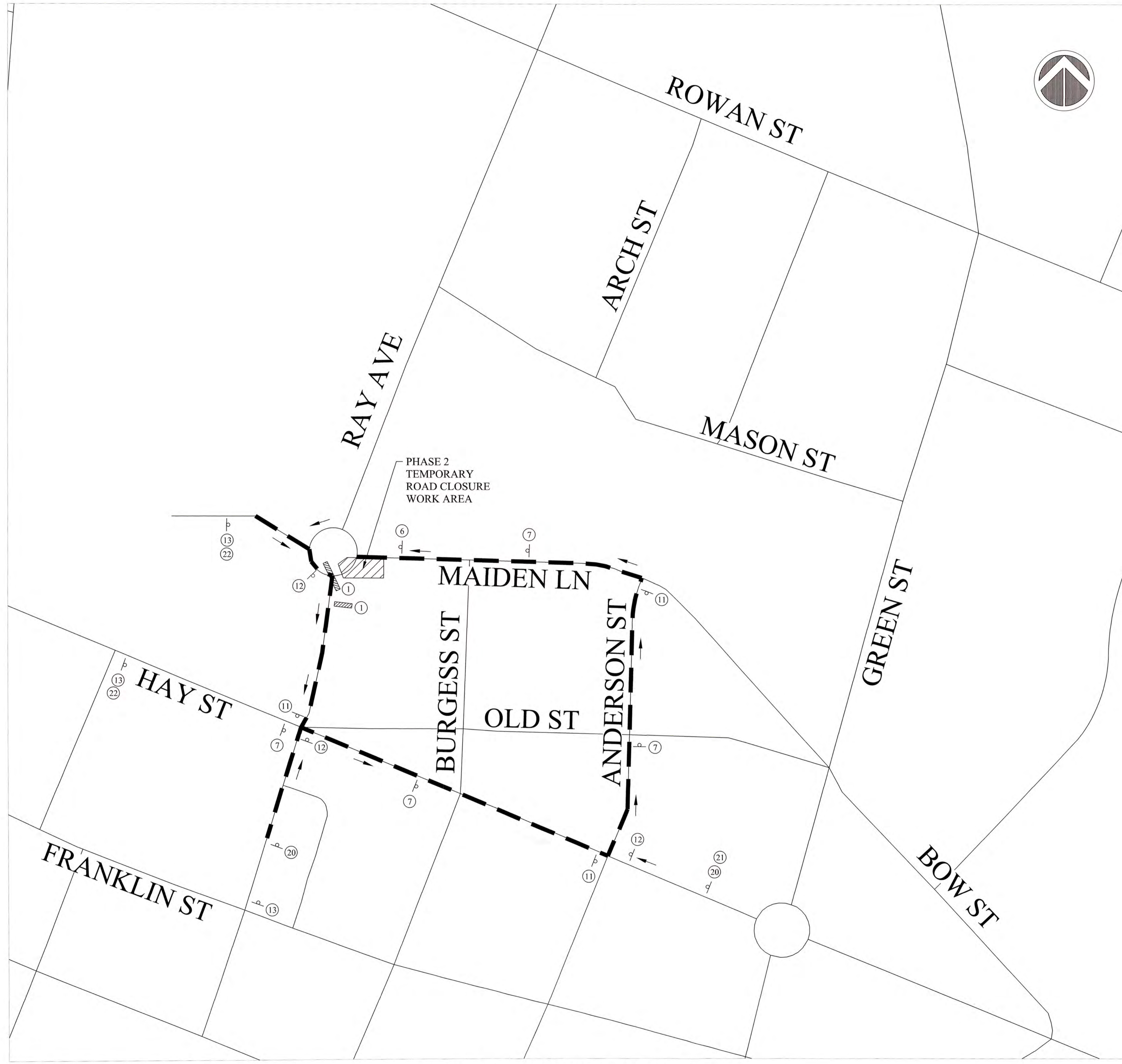
LEGEND

- TRAFFIC CONTROL DEVICES**
- PHASE WORK AREA
 - TYPE III BARRICADE
 - DETOUR ROUTE (ARROWS INDICATE DIRECTION OF TRAVEL)
 - DRUM
 - FLAGGER
 - STATIONARY OR PORTABLE SIGN



ISSUED FOR CONSTRUCTION

DRAWN : E. WIGGS DESIGN : T. MURRAY CHECK : T. MURRAY APPROVED : T. MURRAY	PROJECT : RAY AVE DRAINAGE NAME : SCALE : 1"=100' DATE : OCTOBER, 2019	REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV. #</th> <th>DESCRIPTION</th> <th>REV BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV. #	DESCRIPTION	REV BY	DATE					PROJECT # : 20200251.00.RA SUB-LEDGER # :	PROJECT : RAY AVE DRAINAGE SHEET NUMBER : TC2 OF 26 SHEET TITLE : TRAFFIC CONTROL PLAN - PHASE 1
REV. #	DESCRIPTION	REV BY	DATE									



**TRAFFIC CONTROL PLAN - PHASE 2
RAY AVE TRAFFIC CIRCLE CLOSURE**
SCALE: 1"=120'

- TRAFFIC CONTROL NOTES**
1. REFER TO TRAFFIC CONTROL NOTES AND SIGN LEGEND ON SHEET TC1 - TRAFFIC CONTROL NOTES.
 2. DIAGRAM SHOWN FOR REPRESENTATIONAL PURPOSES ONLY. REFER TO SHEET TC4 - TRAFFIC CONTROL DETAILS FOR SIGN SPACING AND FURTHER INFORMATION.
 3. ALL DETOUR SIGNS FOR PHASE 2 RAY AVE. ROAD CLOSURE TO INCLUDE SIGN "RAY AVE."
 4. UNLESS OTHERWISE INDICATED, CONTRACTOR SHALL MAINTAIN ACCESS FOR PROPERTY OWNERS AT ALL TIMES.
 5. ALL SIDEWALKS AFFECTED BY CONSTRUCTION ACTIVITIES WILL BE CLOSED OR BARRICADED OFF WITH TEMPORARY FENCING; HOWEVER, INTERRUPTIONS SHALL BE MINIMIZED TO THE MAXIMUM EXTENT POSSIBLE.

PHASE 2 DESCRIPTION OF WORK
PHASE 2 OF WORK EXTENDS WITHIN SOUTHEAST PORTION OF RAY AVE. TRAFFIC CIRCLE AND CONTINUES INTO MAIDEN LANE. WORK INCLUDES INSTALLATION OF DRAINAGE SYSTEM REPLACEMENT AND PAVEMENT REPLACEMENT.

LEGEND

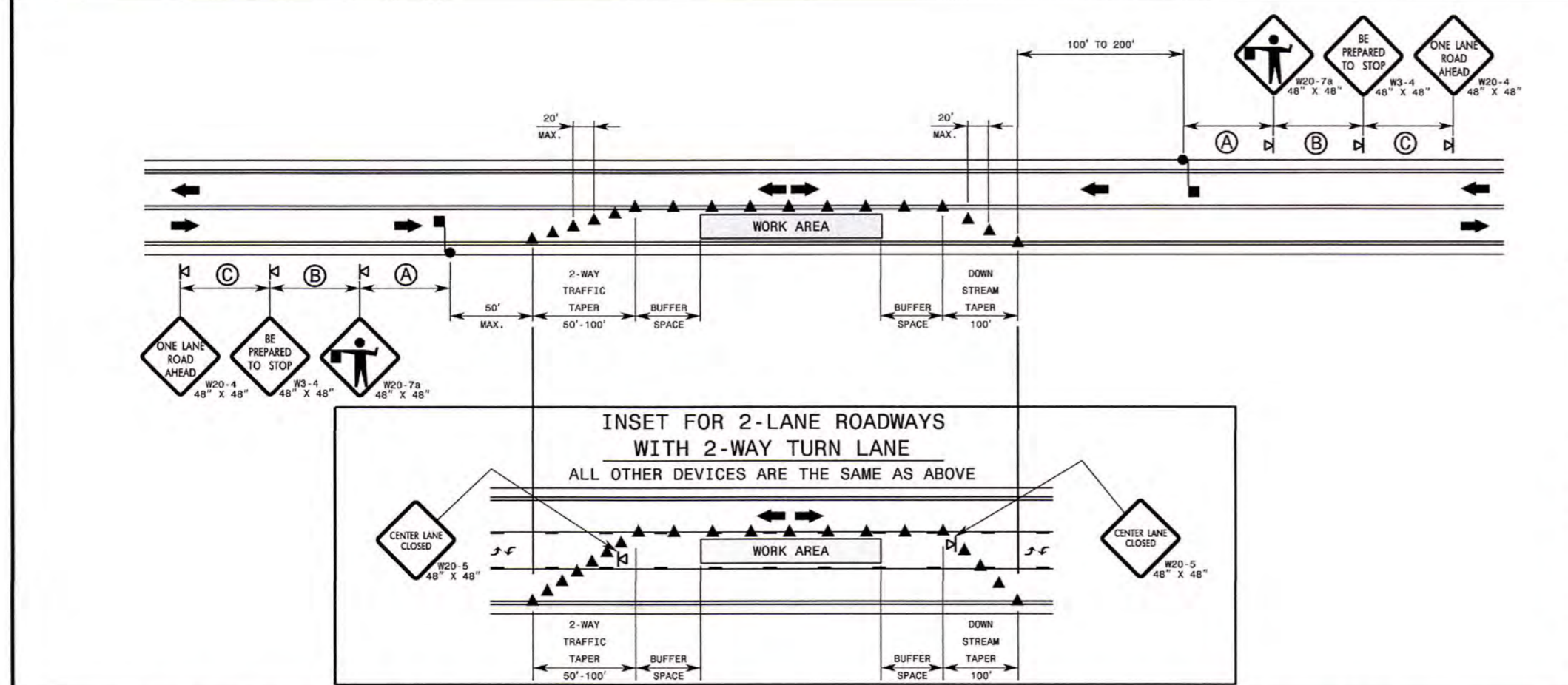
TRAFFIC CONTROL DEVICES

- PHASE WORK AREA
- TYPE III BARRICADE
- DETOUR ROUTE (ARROWS INDICATE DIRECTION OF TRAVEL)
- DRUM
- FLAGGER
- STATIONARY OR PORTABLE SIGN

SCALE: 1" = 120'

ISSUED FOR CONSTRUCTION

DRAWN : E. WIGGS DESIGN : T. MURRAY CHECK : T. MURRAY APPROVED : T. MURRAY	PROJECT : RAY AVE DRAINAGE NAME : SCALE : 1"=100' DATE : OCTOBER 2019	PROJECT # : 20200251.00.0A SUB-LEDGER # :
REVISIONS REV. # DESCRIPTION DATE		
WK DICKSON community infrastructure consultants 720 CORPORATE CENTER DRIVE RALEIGH, NC 27607 NC License No. E-0374	Office Locations North Carolina South Carolina Georgia	RAY AVE DRAINAGE TRAFFIC CONTROL PLAN - PHASE 2 SHEET NUMBER TC3 OF 26



GENERAL NOTES FOR FLAGGING OPERATIONS

- REFER TO RSD, 1101.11, SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- PLACE CONES THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO RSD, 1101.11, SHEET 21).
- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
- DRUMS OR SKINNY DRUMS MAY BE USED IN LIEU OF CONES. REFER TO RSD, 1180.01 FOR SKINNY DRUM REQUIREMENTS.
- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-74) PLACED APPROXIMATELY 250 FT. IN ADVANCE OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND USE LAW ENFORCEMENT.
- REFER TO THE CURRENT MUTCD FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
- DO NOT EXCEED A 1/2 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

GENERAL NOTES FOR PILOT CAR OPERATIONS

- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.
- IF ROADWAY WIDTH IS LESS THAN 22 FEET (EOP TO EOP), CONES MAY NOT BE REQUIRED ALONG WORK AREA, AND AT THE DISCRETION OF THE ENGINEER, CONES MAY BE OMITTED ALONG THE WORK AREA IF USING A PILOT CAR.
- CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS.
- MOUNT SIGN R22-4 "PILOT CAR FOLLOW ME" AT A CONSPICUOUS POSITION ON THE REAR OF THE PILOT VEHICLE.
- DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
- ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE LIMITS ABOUT METHODS OF SAFE EGRESS AND INGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

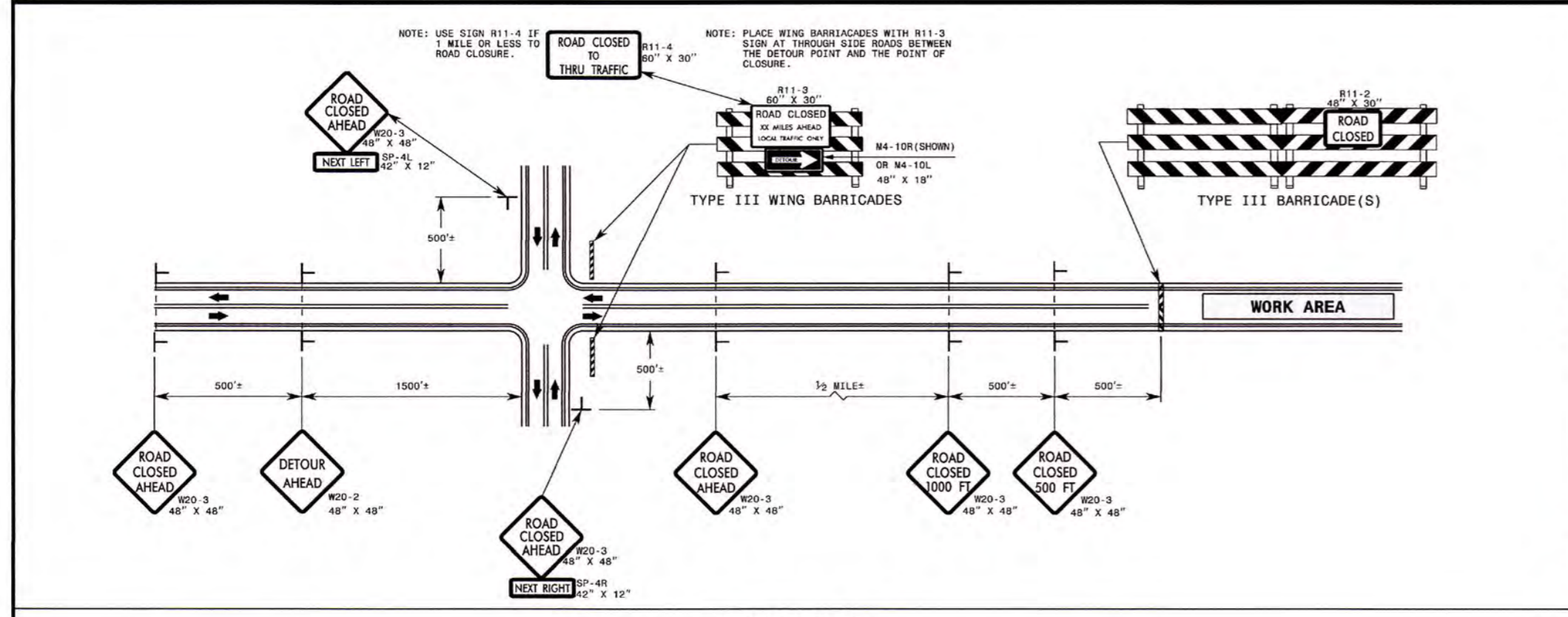
LEGEND

- FLAGGER
- CONES
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

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

ROADWAY STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY-1 LANE CLOSED

SHEET 1 OF 14
1101.02



GENERAL NOTES

- IF NECESSARY USE THIS RSD. FOR 2-LANE, 2-WAY, AND MULTILANE DIVIDED AND UNDIVIDED ROADWAYS.
- INSTALLATION OF DETOUR ROUTING PANELS, TEMPORARY ROUTE MARKERS, DESTINATION SIGNS, AND ANY NECESSARY MODIFICATIONS TO EXISTING OR PROPOSED REGULATORY OR WARNING SIGNS WILL BE MADE BY OTHERS (STATE OR CITY FORCES) UNLESS OTHERWISE DESIGNATED IN THE PLANS. PROVIDE A MINIMUM 30 CALENDAR DAY NOTICE TO STATE FORCES BEFORE A ROADWAY IS CLOSED TO TRAFFIC SUCH THAT THE NECESSARY PROVISIONS CAN BE MADE TO INSTALL DETOUR ROUTE SIGNS, INFORM LOCAL EMERGENCY AND LAW ENFORCEMENT PERSONNEL, SCHOOLS, OR ANY OTHER PARTIES AFFECTED BY THE ROAD CLOSURE.
- INSTALL SIGNS BEFORE THE BARRICADES WHEN CLOSING THE ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING THE ROADWAY TO TRAFFIC. INSTALL/REMOVE SIGNS AND BARRICADES WITHIN THE SAME CALENDAR DAY.
- USE ADDITIONAL TYPE III BARRICADES IN STAGGERED LOCATIONS SUPPLEMENTED WITH SIGN R11-4 "ROAD CLOSED TO THRU TRAFFIC" IN THE EVENT THAT TRAFFIC MUST BE MAINTAINED BEYOND THE DETOUR POINT.
- DO NOT DISPLAY FRACTIONS OR DECIMALS ON SIGN R11-3 "ROAD CLOSED XX MILES AHEAD".
- POSITION WING BARRICADES ON THE SHOULDERS AND SLOPE THE STRIPES DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING.
- USE PORTABLE SIGNS IF ROAD CLOSURE IS TO BE IMPLEMENTED FOR LESS THAN THREE DAYS, OR FOR EMERGENCIES.

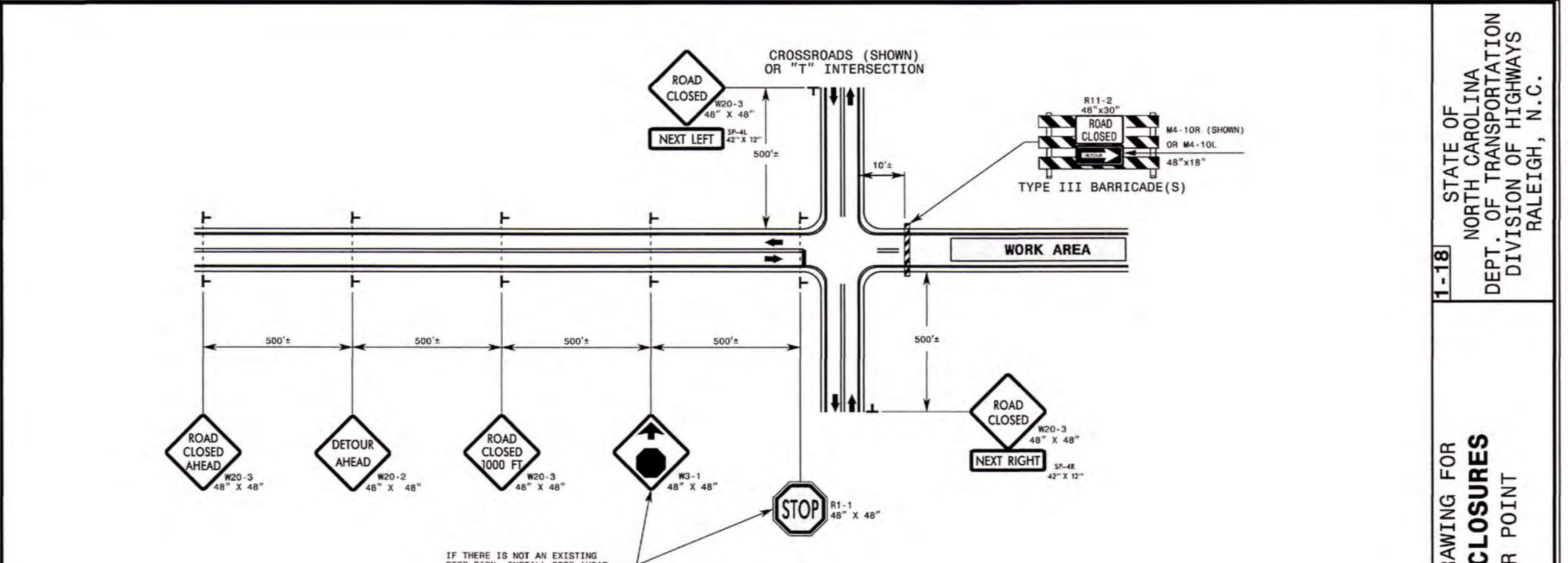
LEGEND

- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW

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

ROADWAY STANDARD DRAWING FOR
TEMPORARY ROAD CLOSURES
CLOSURE BEYOND DETOUR POINT

SHEET 1 OF 9
1101.03



GENERAL NOTES

- IF NECESSARY USE THIS RSD. FOR CROSS-ROADS AS SHOWN OR FOR "T" INTERSECTIONS ON 2-LANE, 2-WAY AND MULTILANE UNDIVIDED AND DIVIDED ROADWAYS.
- INSTALLATION OF DETOUR ROUTING PANELS, TEMPORARY ROUTE MARKERS, DESTINATION SIGNS, AND ANY NECESSARY MODIFICATIONS TO EXISTING OR PROPOSED REGULATORY OR WARNING SIGNS WILL BE MADE BY OTHERS (STATE OR CITY FORCES) UNLESS OTHERWISE DESIGNATED IN THE PLANS. A MINIMUM 30 CALENDAR DAY NOTICE IS REQUIRED TO BE PROVIDED TO STATE FORCES BEFORE A ROADWAY IS CLOSED TO TRAFFIC SUCH THAT THE NECESSARY PROVISIONS CAN BE MADE TO INSTALL DETOUR ROUTE SIGNS, AND TO INFORM LOCAL EMERGENCY AND LAW ENFORCEMENT PERSONNEL, SCHOOLS, OR ANY OTHER PARTIES AFFECTED BY THE ROAD CLOSURE.
- INSTALL SIGNS BEFORE BARRICADES WHEN CLOSING THE ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING THE ROADWAY TO TRAFFIC. INSTALL/REMOVE SIGNS AND BARRICADES WITHIN THE SAME CALENDAR DAY.
- POSITION BARRICADES SUCH THAT THE STRIPES ARE SLOPED DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING.
- USE PORTABLE SIGNS IF ROAD CLOSURE IS TO BE IMPLEMENTED FOR LESS THAN THREE DAYS, OR FOR EMERGENCIES. IN THIS CASE, NO STOP BAR IS NECESSARY.

LEGEND

- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW

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

ROADWAY STANDARD DRAWING FOR
TEMPORARY ROAD CLOSURES
CLOSURE AT DETOUR POINT

SHEET 2 OF 9
1101.03

ISSUED FOR CONSTRUCTION

PROJECT :	RAY AVE DRAINAGE
DESIGN :	T. MURRAY
CHECK :	T. MURRAY
APPROVED :	T. MURRAY
DATE :	OCTOBER 2019
PROJECT # :	20200251.00.BA
SUB-LEDGER # :	

REV. #	DESCRIPTION	REVISIONS	DATE



FAYETTEVILLE
PUBLIC SERVICES

ENGINEERING DIVISION
ENGINEER: T. MURRAY
433 HAY STREET, FAYETTEVILLE, NC 28301

W. DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
NC License No. F-0374

Office Location:
North Carolina
South Carolina
Georgia

RAY AVE DRAINAGE

TRAFFIC CONTROL DETAILS

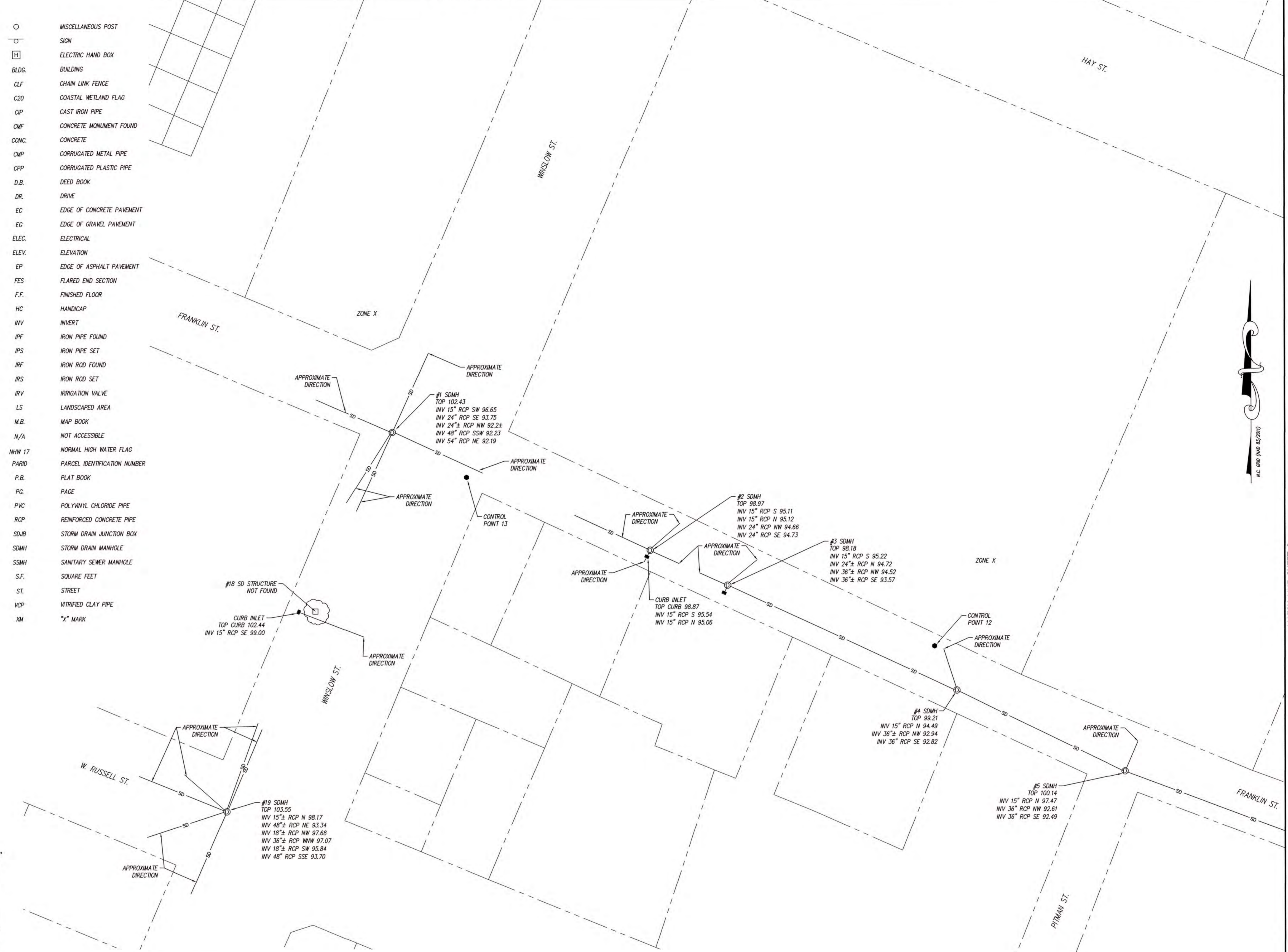
SHEET NUMBER
TC4 OF 26



MATCH LINE SHEET 3

LEGEND

---	PROPERTY LINE VIA CUMBERLAND COUNTY GIS	○	MISCELLANEOUS POST
---	ADJOINING PROPERTY LINE VIA DEEDS/MAPS OF RECORD	□	SIGN
---	STORM SEWER	▭	ELECTRIC HAND BOX
---	SANITARY SEWER	BLDG.	BUILDING
---	FORCE MAIN	CLF	CHAIN LINK FENCE
---	WATER LINE	C20	COASTAL WETLAND FLAG
---	OVERHEAD ELECTRIC	CIP	CAST IRON PIPE
---	UNDERGROUND ELECTRIC	CMF	CONCRETE MONUMENT FOUND
---	FIBER OPTIC	CONC.	CONCRETE
---	COMMUNICATION LINE	CMP	CORRUGATED METAL PIPE
---	CABLE TELEVISION	CPP	CORRUGATED PLASTIC PIPE
---	GAS LINE	D.B.	DEED BOOK
---	TREE LINE	DR.	DRIVE
---	SHRUB LINE	EC	EDGE OF CONCRETE PAVEMENT
---	FENCE	EG	EDGE OF GRAVEL PAVEMENT
---	CONTOUR	ELEC.	ELECTRICAL
---	DITCH LINE	ELEV.	ELEVATION
---	UNDERGROUND UTILITY	EP	EDGE OF ASPHALT PAVEMENT
---	WETLANDS BOUNDARY LINE	FES	FLARED END SECTION
---	LIGHT POLE	F.F.	FINISHED FLOOR
---	UTILITY POLE	HC	HANDICAP
---	ANCHOR POLE	INV	INVERT
---	ANCHOR	IPF	IRON PIPE FOUND
---	ELECTRIC TRANSFORMER	IPS	IRON PIPE SET
---	SANITARY SEWER MANHOLE	IRF	IRON ROD FOUND
---	CLEAN OUT	IRS	IRON ROD SET
---	VALVE	IRV	IRRIGATION VALVE
---	WATER METER	LS	LANDSCAPED AREA
---	FIRE HYDRANT	M.B.	MAP BOOK
---	BACKFLOW PREVENTER	N/A	NOT ACCESSIBLE
---	POST VALVE	NHW 17	NORMAL HIGH WATER FLAG
---	FIBER OPTIC MARKER	PARID	PARCEL IDENTIFICATION NUMBER
---	TELEPHONE RISER	P.B.	PLAT BOOK
---	CABLE TELEVISION RISER	PG.	PAGE
---	VALVE (UNKNOWN UTILITY)	PVC	POLYVINYL CHLORIDE PIPE
---	MAIL BOX	RCP	REINFORCED CONCRETE PIPE
---	IRRIGATION VALVE	SDJB	STORM DRAIN JUNCTION BOX
---	BOLLARD	SDMH	STORM DRAIN MANHOLE
---	BORING	SSMH	SANITARY SEWER MANHOLE
---	SHRUB	S.F.	SQUARE FEET
---	SATELLITE DISH	ST.	STREET
---	HEAT AND AIR UNIT	VCP	VITRIFIED CLAY PIPE
---	DROP INLET	XM	"X" MARK
---	STORM DRAINAGE MANHOLE		



NGCS MONUMENT
 "LUMBER"
 PUBLISHED COORDINATES
 NAD83/2001
 N 469562.60
 E 2028498.65
 ELEV. 150.62 NAVD 88
 COMBINED FACTOR 0.99987741

CONTROL POINTS GROUND LOCALIZED ABOUT NGS MONUMENT "LUMBER"

**CONTROL POINT TABLE
 GROUND COORDINATES**

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
2	475,077.32'	2,035,381.86'	100.51'	PK SET
3	474,813.43'	2,035,330.88'	102.10'	PK SET
4	475,641.10'	2,035,625.61'	84.71'	PK SET
6	475,332.64'	2,035,454.28'	89.24'	PK SET
12	474,356.98'	2,034,594.94'	98.92'	PK SET
13	474,485.00'	2,034,241.68'	101.30'	PK SET
14	475,937.61'	2,034,524.18'	94.14'	PK SET
15	476,246.46'	2,034,580.57'	91.19'	PK SET
16	474,503.04'	2,035,227.65'	103.16'	PK SET
17	474,110.94'	2,035,097.57'	102.48'	PK SET
18	474,865.92'	2,034,332.62'	101.43'	PK SET
19	475,237.77'	2,034,492.85'	100.74'	PK SET
20	475,585.47'	2,034,505.87'	96.19'	PK SET

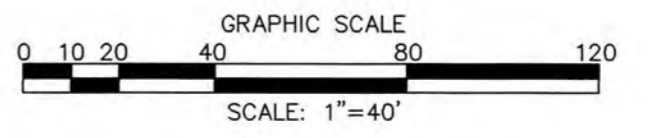
CERTIFICATE OF SURVEY AND ACCURACY
 I, DURWARD S. LEGGETT, CERTIFY THAT THIS PROJECT WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION. THAT THIS GROUND SURVEY WAS PERFORMED IN ACCORDANCE WITH THE MINIMUM STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA; THAT THE RATIO OF PRECISION IS 1:10,000 ±; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS FOR A TOPOGRAPHIC/PLANIMETRIC SURVEY TO THE HORIZONTAL ACCURACY OF CLASS "AA" AND VERTICAL ACCURACY TO THE CLASS "C" STANDARD.

I FURTHER CERTIFY THAT THIS SURVEY WAS BASED ON HORIZONTAL AND VERTICAL CONTROL POINTS DETERMINED FROM AN ACTUAL GPS (OR GNSS) SURVEY MADE UNDER MY DIRECT SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THE SURVEY:

HORIZONTAL POSITIONAL ACCURACY: 0.10 FEET
 VERTICAL ACCURACY: .10 FEET
 TYPE OF GPS: RTK/MRS
 DATE OF SURVEY: 07/09/2020 AND 08/06/2020
 HORIZONTAL DATUM/EPOCH: NAD83(2011)
 VERTICAL DATUM: NAVD 88
 PUBLISHED/FIXED-CONTROL: NCGS "LUMBER"
 GRID MODEL: GEOID18B
 COMBINED FACTOR: 0.99987741
 UNITS: US SURVEY FEET



- NOTES:**
- THE UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE LOCATIONS AND ARE BASED ON ABOVE GROUND FEATURES, PHYSICAL EVIDENCE, PAINT MARKINGS PROVIDED BY STEWART, OTHERS, AND UTILITY PLANS. THE SURVEYOR DOES NOT GUARANTEE THAT ALL EXISTING UNDERGROUND STRUCTURES SUCH AS UTILITIES, TANKS, PIPES, ETC. ARE LOCATED HEREON, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. NO EXCAVATIONS WERE MADE BY THE SURVEYOR TO LOCATE ANY BURIED UTILITIES OR STRUCTURES.
 - CONTACT NC 811 REGARDING UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION.
 - NO DETERMINATION HAS BEEN MADE BY THE SURVEYOR AS TO THE FOLLOWING: UNDERGROUND STORAGE TANKS, INLET UTILITIES, GRAVES, CEMETERIES, OR BURIAL GROUNDS; HAZARDOUS WASTE DEPOSITS OR MATERIALS.
 - ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
 - THE HORIZONTAL DATUM IS N.C. GRID NAD 83/2011.
 - THE VERTICAL DATUM IS NAVD 88 IN U.S. SURVEY FEET. THE CONTOUR INTERVAL IS ONE FOOT.
 - THIS IS NOT A PROPERTY BOUNDARY SURVEY.
 - DATE OF SURVEY: 07/09/2020 THRU 09/15/2020 AND 02/10/22.
 - THIS SURVEY IS IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), ZONE X (0.2% ANNUAL CHANCE FLOOD HAZARD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTH LESS THAN ONE FOOT OR DRAINAGE AREAS OF LESS THAN ONE SQUARE MILE), ZONE AE (BASE FLOOD ELEVATION VARIES), REGULATORY FLOODWAY ACCORDING TO FEMA FLOOD MAP NUMBER 3720043700L, MAP REVISED 1/05/07.



MATCH LINE SHEET 2

Title:
TOPOGRAPHIC/PLANIMETRIC SURVEY
 RAY AVENUE
 DRAINAGE IMPROVEMENTS
 FAYETTEVILLE, CUMBERLAND
 COUNTY, NORTH CAROLINA

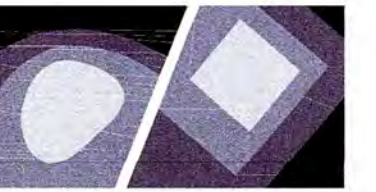
FOR
W.K. DICKSON AND CO, INC.
 720 CORPORATE CENTER DR
 RALEIGH, NORTH CAROLINA 27607

Revisions:

No.	Date	Description
01	02/15/22	LEVEL A TEST HOLE DATA

Seal:

Project number: G20086 Sheet:
 Date: 02/15/2022
 Drawn by: JRM
 Checked by: DSL **1 OF 5**



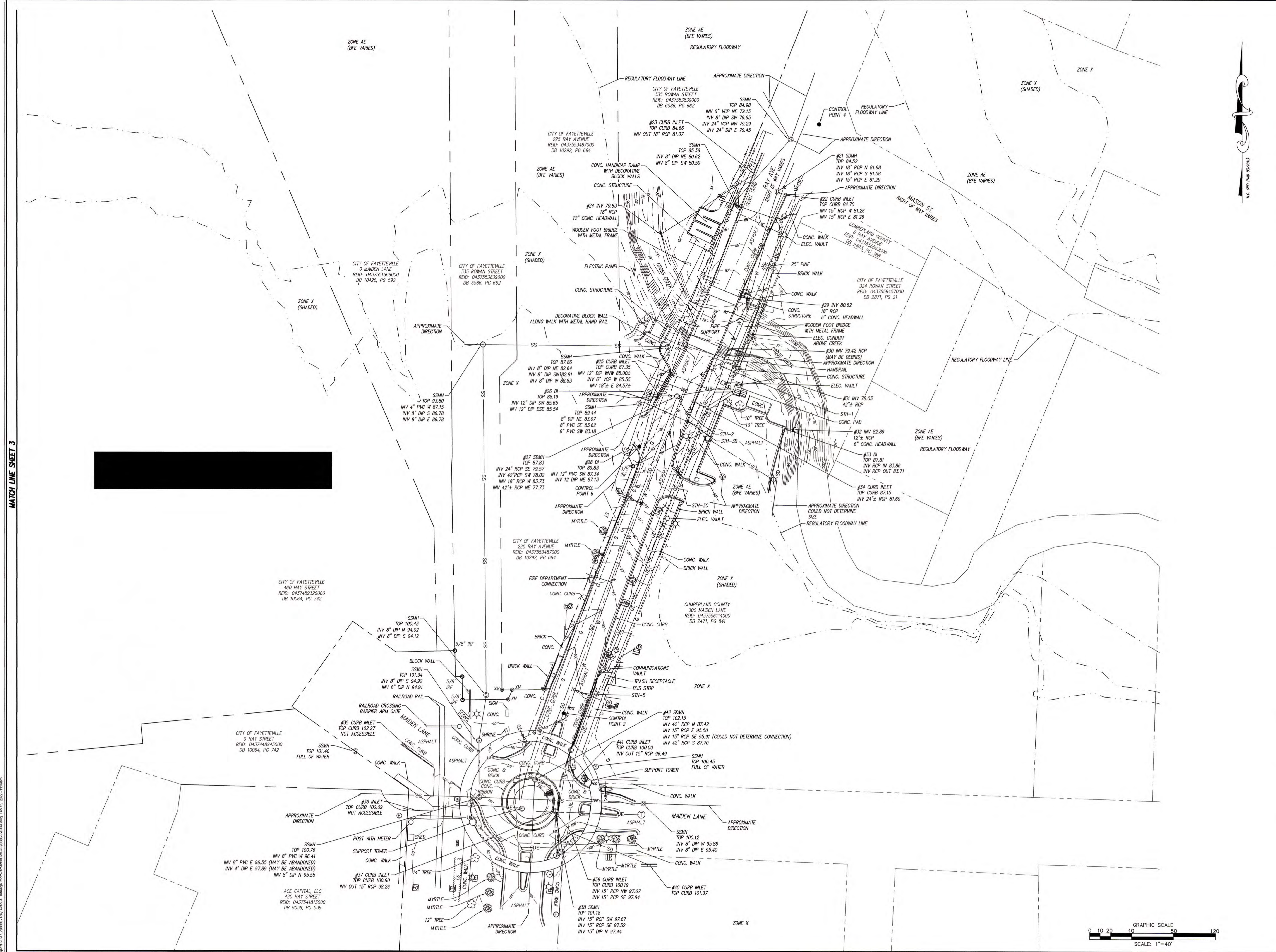
STEWART

2018 EASTWOOD RD, STE 207 / 208 FIRM LICENSE #: C-1051
WILMINGTON, NC 28403 www.stewartinc.com
T 910-796-0142

Vicinity Map:

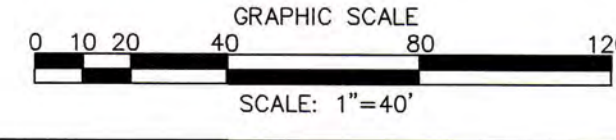


N.C. 080 (Rev. 02/2017)



MATCH LINE SHEET 3

MATCH LINE SHEET 2

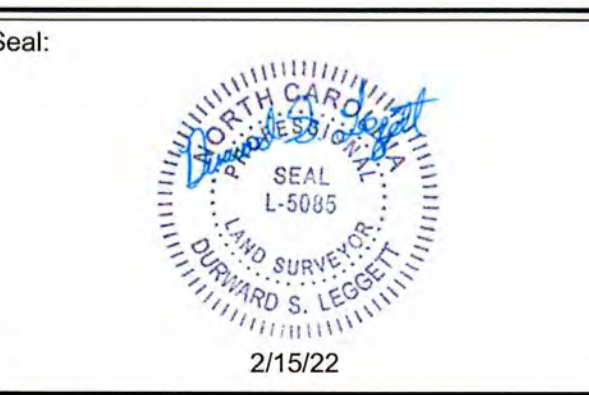


Title:
TOPOGRAPHIC/PLANIMETRIC SURVEY

RAY AVENUE DRAINAGE IMPROVEMENTS
FAYETTEVILLE, CUMBERLAND COUNTY, NORTH CAROLINA

FOR
W.K. DICKSON AND CO., INC.
720 CORPORATE CENTER DR
RALEIGH, NORTH CAROLINA 27607

Revisions:	No.	Date	Description
	01	02/15/22	LEVEL A TEST HOLE DATA



Project number: G20086 Sheet:
Date: 02/15/2022
Drawn by: JRM
Checked by: DSL **4 OF 5**

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