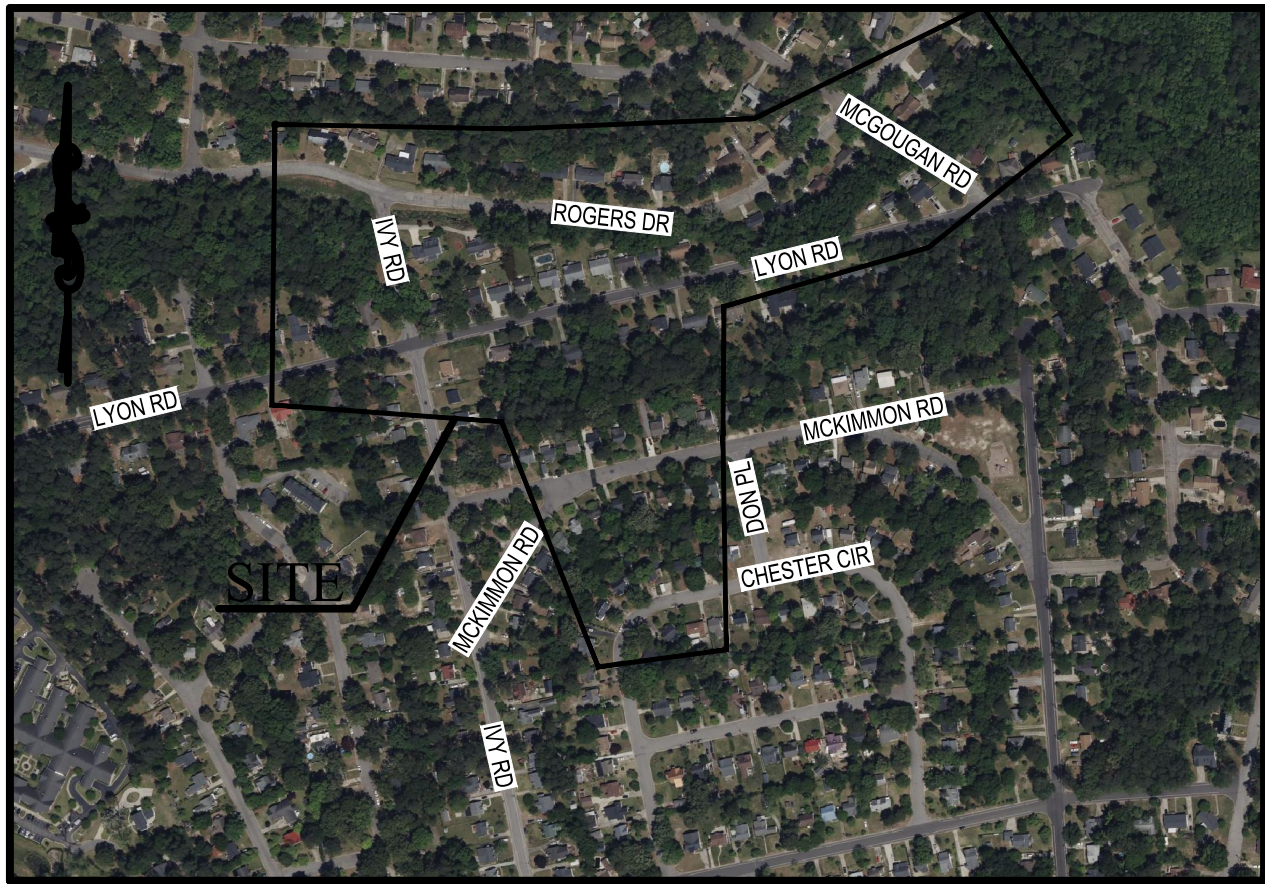


Lyon and Ivy Road Storm Drainage & Utility Improvements



APPENDIX A

Drawings



VICINITY MAP

SCALE: 1" = 500'



PROJECT SCOPE
THIS PROJECT CONSISTS OF:
NEIGHBORHOOD DRAINAGE UPGRADES
STREAM CULVERT UPGRADES
NEIGHBORHOOD SANITARY AND WATER REPLACEMENTS

LYON AND IVY ROAD
STORM DRAINAGE AND UTILITY IMPROVEMENTS

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PROJECT CONTACTS
CITY OF FAYETTEVILLE

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Know what's below.
Call before you dig.

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CONSTRUCTION APPROVAL

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

COVER SHEET

COVER

C001



CONSTRUCTION SET

DRAWN : SHANE VANDERGRIFF	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNGAN	SCALE : N/A
APPROVED :	DATE : 03/08/2024

PROJECT NO. 54960.001
SUB-LEDGER NO.

GENERAL NOTES:

CONTRACTOR IS NOT TO INTERRUPT ANY UTILITY SERVICES TO RESIDENCES WITHOUT PRIOR PERMISSION FROM THE CITY OR UTILITY AUTHORITY.

CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES INSIDE THE LIMITS OF DISTURBANCE. THE CONTRACTOR IS RESPONSIBLE FOR HAVING ALL UTILITIES LOCATED 48 HOURS PRIOR TO MOBILIZATION TO THE SITE. "CALL BEFORE YOU DIG." NORTH CAROLINA ONE CALL CENTER, DIAL 811.

THE CONTRACTOR SHALL FOLLOW OSHA GUIDELINES AND UTILITY OWNER GUIDELINES WHEN WORKING NEAR UTILITIES.

ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO CITY OF FAYETTEVILLE, STATE OF NORTH CAROLINA, AND ALL OTHER APPLICABLE STANDARD SPECIFICATIONS.

CONTRACTORS SHALL VERIFY ALL DIMENSIONS IN FIELD. ANY DISCREPANCIES THEREOF SHALL BE REPORTED TO THE OWNER AND ENGINEER PRIOR TO PROCEEDING WITH THE WORK.

NO TREES OR SHRUBS NOT SHOWN FOR REMOVAL ON THE PLANS SHALL BE REMOVED WITHOUT AN APPROVAL FROM THE CITY THROUGH A PLAN REVISION. WORK SHALL NOT COMMENCE WITHOUT THIS APPROVAL.

BASE TOPOGRAPHIC AND PLANIMETRIC INFORMATION GENERATED FROM FIELD SURVEYS WITHIN THE PROJECT BOUNDARY SUPPLEMENTED WITH NCFMP GIS DATA.

BENCHMARK CONTROLS ARE SHOWN ON THE EXISTING CONDITIONS PLAN. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING THE CONSTRUCTION SURVEY.

PLAN VERTICAL DATUM: NAVD 1988

PLAN HORIZONTAL DATUM: NC STATE PLANE COORDINATES NAD 1983.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGED ITEMS DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO, EXISTING ROADS, SIDEWALKS, CURBING, LANDSCAPING, RESIDENTIAL STRUCTURES, ACCESSORY STRUCTURES, MAILBOXES, ETC.

CONTRACTOR SHALL MAKE EVERY EFFORT TO PREVENT DAMAGE TO TREES WITHIN THE PROJECT AREA THAT ARE NOT PLANNED FOR REMOVAL. IN THE EVENT OF DAMAGE, REPAIR ANY DAMAGE TO THE CROWN, TRUNK, OR ROOT SYSTEM IMMEDIATELY.

ROOTS: REPAIR ROOTS BY CUTTING OFF DAMAGED AREAS AND PAINTING THEM WITH TREE PAINT. SPREAD PEAT MOSS OR MOIST TOPSOIL OVER EXPOSED ROOTS.

TREE BARK: REPAIR DAMAGE TO BARK BY TRIMMING AROUND DAMAGED AREA, TAPER THE CUT TO PROVIDE DRAINAGE, AND PAINT WITH TREE PAINT.

TREE LIMBS: CUT OFF ALL DAMAGED TREE LIMBS ABOVE THE TREE COLLAR AT THE TRUNK OR MAIN BRANCH. USE A SEPARATE CUT TO AVOID PEELING BARK FROM HEALTHY AREA OF THE TREE.

CONTRACTOR SHALL PROVIDE SUBMITTALS AND SHOP DRAWINGS FOR ALL MATERIALS, STRUCTURES, PIPES, FITTINGS, ETC. AS SHOWN ON THE PLANS AND INCLUDED IN THE SPECIFICATIONS IN ACCORDANCE WITH CITY OF FAYETTEVILLE REQUIREMENTS.

ACCESS, STAGING AND STOCKPILE AREA NOTES:

CONSTRUCTION EQUIPMENT SHALL BE LIMITED TO ONLY AREAS WITHIN THE LIMITS OF DISTURBANCE AS SHOWN ON THE PLANS. ALL PARKING IS TO BE LIMITED TO THE STREET.

ALL AREAS OUTSIDE THE SHOWN LIMITS OF DISTURBANCE AREA TO REMAIN IN THEIR NATURAL CONDITION.

THE CONTRACTOR SHALL ESTABLISH STOCKPILE AREAS WITHIN LOD AS SHOWN ON THE PLANS TO CARRY OUT THE WORK. STOCKPILE AREAS MAY BE ADJUSTED WITHIN THE LOD SO LONG AS APPROPRIATE EROSION CONTROL MEASURES ARE PROVIDED IN ACCORDANCE WITH NCDEQ EROSION CONTROL REQUIREMENTS. NO PAYMENT SHALL BE MADE TO REPAIR SURFACES AS A RESULT OF STOCKPILE ACTIVITIES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS MATERIALS DELIVERED TO THE PROJECT SITE.

MATERIALS NOTES:

THE CONTRACTOR IS RESPONSIBLE FOR STOCKPILING ALL MATERIALS AS STATED ABOVE.

SITE SPOIL: ALL EXCESS EXCAVATED MATERIALS (TO INCLUDE BURIED UTILITIES INTENDED FOR REMOVAL) OTHER THAN TOPSOIL SHALL BE CONSIDERED SITE SPOIL AND SHALL BECOME THE PROPERTY OF THE CONTRACTOR TO PROPERLY DISPOSE OF OFFSITE IN AN APPROVED PERMITTED LANDFILL OR RELATED PERMITTED FACILITY.

THE CONTRACTOR SHALL COORDINATE WITH THE OWNER(S) REGARDING THE RELOCATION, REMOVAL, STORAGE, AND RESETTling, OR REPLACEMENT OF ANY PRIVATELY OWNED STRUCTURES INCLUDING BUT NOT LIMITED TO FENCES, SHEDS, PLAYSETS, PLANTING AREAS, MAIL BOXES, ETC.

EROSION CONTROL NOTES:

THE CONTRACTOR SHALL EXERCISE PRECAUTIONS THROUGHOUT THE CONSTRUCTION SEQUENCE TO PREVENT EROSION AND OFF-SITE SEDIMENT. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE PROJECT PLANS, CITY OF FAYETTEVILLE GUIDELINES, AND AS DIRECTED BY THE ENGINEER. ALL SEDIMENTATION AND EROSION CONTROLS ARE TO BE BUILT TO CITY OF FAYETTEVILLE AND NCDEQ STANDARDS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES DURING CONSTRUCTION. THE MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY, AND SHALL BE CHECKED FOR MAINTENANCE ISSUES PER SELF-INSPECTION REQUIREMENTS.

THE CONTRACTOR SHALL PROVIDE GROUND STABILIZATION IN ACCORDANCE WITH NC001 REQUIREMENTS (THIS SHEET).

THE CONTRACTOR SHALL KEEP ALL SURROUNDING PUBLIC ROADWAYS AND DRAINAGE SYSTEMS FREE FROM ALL SEDIMENT AND CONSTRUCTION DEBRIS AT ALL TIMES. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER EXCESS SEDIMENT IS REMOVED.

DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL EROSION CONTROL MEASURES NOT SHOWN ON THE PLANS BUT NECESSARY TO CONTROL EXCESS SEDIMENT.

PROJECT AREA SOILS:

- CUMBERLAND AND HOKE COUNTY SURVEY 1981:
 - o BLANEY-URBAN LAND COMPLEX
 - o FACEVILLE-URBAN LAND COMPLEX
 - o JOHNSTON LOAM
 - o VAUCLUSE LOAMY SAND

RECEIVING WATERCOURSE: LITTLE CROSS CREEK (WS-IV,CA)

NOTIFICATION OF LAND RESOURCES SEDIMENT AND EROSION CONTROL SELF-INSPECTION PROGRAM:

THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2008 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010. THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE APPROVED PLAN. THE INSPECTIONS MUST BE CONDUCTED AFTER EACH PHASE OF THE PROJECT AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED IN ACCORDANCE WITH NC001 134-51.4 AND 15A NC001 48-0131. THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FROM <https://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms>.

IF YOU HAVE QUESTIONS OR CANNOT ACCESS THE FORM, PLEASE CONTACT THIS OFFICE AT (910)433-3300.

CONSTRUCTION SEQUENCE:

GENERAL SITE PREPARATION

THE CONTRACTOR SHALL SUBMIT AN ELECTRONIC NOTICE OF INTENT (E-NOI) TO OBTAIN THE CERTIFICATE OF COVERAGE (COC). THE E-NOI IS AVAILABLE AT <https://deq.nc.gov/forms/ncn01-noi>

THE CONTRACTOR IS REQUIRED TO PERFORM AN INITIAL INSPECTION OF THE SITE AND TO TAKE PHOTOGRAPHS AND VIDEO OF THE PROPOSED CONSTRUCTION, STAGING, AND STOCKPILE AREAS BEFORE DISTURBING THE SITE IN ACCORDANCE WITH THE GENERAL CONDITIONS. APPROVAL TO INSTALL EROSION AND SEDIMENT CONTROL SHALL NOT BE GRANTED UNTIL THE CONTRACTOR HAS RECEIVED WRITTEN APPROVAL FROM NCDEQ DEMLR.

PERFORM ALL UTILITY IDENTIFICATION AND MARKING/FLAGGING AS NECESSARY.

COORDINATE WITH UTILITY COMPANIES TO RELOCATE OR PROTECT UTILITIES.

STAKE CONSTRUCTION LIMITS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

INSTALL A PLAN BOX AT A VISIBLE LOCATION WITHIN THE SITE TO KEEP TWO COPIES OF THE APPROVED EROSION CONTROL PLANS, NPDES REPORTS, 30 DAYS OF RAINFALL DATA, ETC. POST THE EROSION CONTROL PERMIT IN A VISIBLE LOCATION ON THE PLAN BOX. THE PLAN BOX WILL BE RELOCATED AS NECESSARY DURING THE PROGRESS OF CONSTRUCTION.

CONSTRUCT ADDITIONAL EROSION CONTROL MEASURES NECESSARY AS SHOWN ON THE EROSION CONTROL PLAN. THE CONTRACTOR SHALL EXERCISE EVERY REASONABLE PRECAUTION THROUGHOUT THE CONSTRUCTION OF THE PROJECT TO PREVENT EROSION AND OFF-SITE SEDIMENTATION. WHEN THE MEASURES ARE COMPLETE CALL FOR AN INSPECTION BY THE OWNER.

IDENTIFY STAGING AND STOCKPILE AREAS AS SHOWN ON PLANS. ALL EXCAVATED MATERIAL SHALL BE STOCKPILED WITHIN STAGING AREAS OR THE LIMITS OF DISTURBANCE FOR LATER USE AS FILL MATERIAL OR DISPOSAL. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING APPROPRIATE STABILIZATION MEASURES AROUND THE STOCKPILE AREA(S) TO PREVENT EROSION AND SEDIMENTATION. ANY STOCKPILE MUST BE

STABILIZED IF INACTIVE FOR MORE THAN 7 CALENDAR DAYS.

SELF-INSPECTIONS FOR EROSION AND SEDIMENTATION CONTROL MEASURES ARE TO BE PERFORMED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF EVERY EVENT OF GREATER THAN 1 INCH. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN MEASURES AS DESIGNED. ALL E&S MEASURES SHALL BE MAINTAINED AS SPECIFIED IN THE CONSTRUCTION DETAILS ON THIS PLAN. A RAIN GAUGE SHALL BE INSTALLED AT THE PROJECT SITE FOR MONITORING.

STAGE 01 MCGOUGAN ROAD IMPROVEMENTS

INSTALL EROSION CONTROL MEASURES TO INCLUDE SILT FENCE, TREE PROTECTION FENCING, CHECK DAM, TIRE WASH STATION, AND PUMP-AROUND OPERATIONS. PROVIDE "CLEAN-WATER" PUMP-AROUND FOR NORMAL AND STORM FLOW UPSTREAM OF THE WORK AREA AND DISCHARGE DOWNSTREAM OF THE WORK AREA. PROVIDE "WORK AREA DEWATERING PUMPING" AND DISCHARGE THROUGH A SILT BAG.

MOBILIZE CONSTRUCTION EQUIPMENT.

COORDINATE UTILITY RELOCATION FOR GAS MAIN AND UNDERGROUND DRY UTILITIES AS NECESSARY.

REPLACE EXISTING 12-INCH CAST IRON WATER MAIN WITH 12-INCH DUCTILE IRON PIPE (DIP) AND RESTRAINT OR THRUST BLOCKING AT BENDS. ENSURE THE NEW LINE IS TESTED IN ACCORDANCE WITH THE SPECIFICATIONS. PROVIDE TEMPORARY WATER SERVICE TO ALL AFFECTED PROPERTIES THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.

BEGIN DEMOLITION OF EXISTING BOX CULVERT AND EXISTING 18-INCH RCP OUTFALL. ENSURE WORK AREA IS PROPERLY DEWATERED THROUGH A SILT BAG DURING CONSTRUCTION OPERATIONS.

COMPLETE INSTALLATION OF WATER MAIN.

PERFORM STREAM AND FLOODPLAIN BENCH GRADING. ENSURE THE STREAM BANK IS STABLE WITH ROCK TOE PROTECTION AND MATTING AS SHOWN ON THE PLANS. AVOID IMPACTING THE STREAM BED. RESTORE TO ORIGINAL CONDITION.

INSTALL PROPOSED BOX CULVERTS, HEADWALLS AND PROPOSED 18-INCH RCP OUTFALL.

STAGE 02 IVY ROAD IMPROVEMENTS

INSTALL EROSION CONTROL MEASURES TO INCLUDE CONSTRUCTION ENTRANCE, SILT FENCE, TREE PROTECTION FENCING, CHECK DAM, TIRE WASH STATION, AND PUMP-AROUND OPERATIONS. PROVIDE "CLEAN-WATER" PUMP-AROUND FOR NORMAL AND STORM FLOW UPSTREAM OF THE WORK AREA AND DISCHARGE DOWNSTREAM OF THE WORK AREA. PROVIDE "WORK AREA DEWATERING PUMPING" AND DISCHARGE THROUGH A SILT BAG.

MOBILIZE CONSTRUCTION EQUIPMENT.

COORDINATE UTILITY RELOCATION FOR UNDERGROUND DRY UTILITIES AS NECESSARY.

REPLACE EXISTING 6-INCH CAST IRON WATER MAIN WITH 8-INCH DUCTILE IRON PIPE (DIP) AND RESTRAINT OR THRUST BLOCKING AT BENDS. ENSURE THE NEW LINE IS TESTED IN ACCORDANCE WITH THE SPECIFICATIONS. PROVIDE TEMPORARY WATER SERVICE TO ALL AFFECTED PROPERTIES THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.

BEGIN SANITARY SEWER PUMP-AROUND OPERATIONS.

BEGIN DEMOLITION OF SANITARY SEWER MAIN, EXISTING HEADWALLS, AND BOX CULVERT.

PERFORM STREAM GRADING AND ENSURE THE STREAM BANK IS STABLE WITH ROCK TOE OR MATTING AS SHOWN ON THE PLANS. AVOID IMPACTING THE STREAM BED. RESTORE TO ORIGINAL CONDITION.

INSTALL PROPOSED BOX CULVERTS AND HEADWALLS.

COMPLETE INSTALLATION OF WATER MAIN.

INSTALL NEW SANITARY SEWER MAIN.

SPECIAL NOTE: THE SANITARY SEWER MAIN CAN BE REPLACED PRIOR TO THE CULVERT REPLACEMENT, BUT THE CONTRACTOR SHALL TAKE MEASURES TO PROTECT THE NEW SEWER PIPE DURING INSTALLATION OF THE NEW BOX CULVERT. PROVIDE TEMPORARY SANITARY SEWER SERVICE TO ALL AFFECTED PROPERTIES DURING CONSTRUCTION ACTIVITIES.

STAGE 03 ROGERS DRIVE AND LYON ROAD

INSTALL EROSION CONTROL MEASURES TO INCLUDE SILT FENCE, TREE PROTECTION FENCING, CHECK DAMS, TIRE WASH STATION, AND PUMP-AROUND OPERATIONS. PROVIDE "CLEAN-WATER" PUMP-AROUND FOR NORMAL AND STORM FLOW UPSTREAM OF THE WORK AREA AND DISCHARGE DOWNSTREAM OF THE WORK AREA. PROVIDE "WORK AREA DEWATERING PUMPING" AND DISCHARGE THROUGH A SILT BAG.

COORDINATE RELOCATION OF THE EXISTING UTILITY POLE AT THE CORNER OF LOTS 13 AND 14 ON THE NORTH SIDE OF LYON ROAD.

MOBILIZE CONSTRUCTION EQUIPMENT.

REPLACE EXISTING CURB INLET ON SOUTH SIDE OF ROGERS DRIVE. REMOVE EXISTING 15-INCH RCP AND REPLACE WITH 15-INCH RCP AT ELEVATIONS SHOWN ON THE PLANS.

RESTORE NORTHERN STREAM BANK AND STABILIZE THE STREAM BANK WITH RIPRAP ARMOR AND MATTING AS SHOWN ON THE PLANS.

PLACE PROPOSED EMBEDDED STONE RIFFLE IN THE STREAM BED.

BEGIN DEMOLITION OF THE EXISTING HEADWALL AND 42-INCH RCP BEGINNING AT THE DOWNSTREAM END. INSTALL PROPOSED HEADWALL A1.

PERFORM STREAM BANK STABILIZATION AND TIE-IN WITH THE PROPOSED HEADWALL. MINIMIZE DISTURBANCE TO THE BANK AS MUCH AS POSSIBLE AND PROVIDE RIPRAP ARMOR AS SHOWN ON THE PLANS.

PROTECT FOUNDATIONS OF HOUSES AND POOL DURING CONSTRUCTION WITH APPROPRIATE BRACING/SHEET PILES (TO BE DESIGNED BY STRUCTURAL ENGINEER AND PROVIDED TO THE CITY OF REVIEW AND APPROVAL).

CONTINUE INSTALLATION OF THE PROPOSED 48-INCH RCP AND JUNCTION BOX A2 BETWEEN LOTS 13 AND 14. BACKFILL AND STABILIZE AS WORK PROGRESSES.

REMOVE THE EXISTING BLIND JUNCTION BOXES AND CURB INLETS.

INSTALL PROPOSED CURB INLET A3.

INSTALL THE PROPOSED 36-INCH RCP FROM THE EXISTING STORM DRAINAGE MANHOLE (SDMH #10359) TO CURB INLET A3. USE FLOWABLE FILL TO GROUT THE EXISTING PIPES TO BE ABANDONED.

INSTALL THE PROPOSED 48-INCH RCP AND CURB INLET A4.

ENSURE PUMP-AROUND IS IN PLACE FOR THE STREAM ON THE SOUTH SIDE OF LYON ROAD.

REMOVE THE REMAINING SECTION OF 36-INCH RCP AND THE HEADWALL.

INSTALL THE REMAINING 48-INCH RCP AND PROPOSED HEADWALL A5. MINIMIZE IMPACTS TO STREAM BANK AND BED. RESTORE TO ORIGINAL CONDITION.

REPLACE EXISTING 12-INCH CAST IRON WATER MAIN WITH 12-INCH DIP AND RESTRAINT OR THRUST BLOCKING AT BENDS. ENSURE THE NEW LINE IS TESTED IN ACCORDANCE WITH THE SPECIFICATIONS. PROVIDE TEMPORARY WATER SERVICE TO ALL AFFECTED PROPERTIES THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.

REMOVE AND REPLACE SANITARY SEWER MAIN AS SHOWN ON THE PLANS. PROVIDE TEMPORARY SEWER SERVICE TO ALL AFFECTED PROPERTIES THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.

REPLACE ALL SITE FEATURES REMOVED FOR CONSTRUCTION TO INCLUDE ALL DRIVEWAYS, DRIVEWAY APRONS, ACCESSORY BUILDINGS, FENCES, MAILBOXES, AND ANY OTHER FEATURE REMOVED.

STAGE 04 MCKIMMON ROAD

INSTALL EROSION CONTROL MEASURES TO INCLUDE SILT FENCE, TREE PROTECTION FENCING, CHECK DAMS, TIRE WASH STATION, AND PUMP-AROUND OPERATIONS. PROVIDE "CLEAN-WATER" PUMP-AROUND FOR NORMAL AND STORM FLOW UPSTREAM OF THE WORK AREA AND DISCHARGE DOWNSTREAM OF THE WORK AREA. PROVIDE "WORK AREA DEWATERING PUMPING" AND DISCHARGE THROUGH A SILT BAG.

MOBILIZE CONSTRUCTION EQUIPMENT.

INSTALL SANITARY SEWER CIPP LINER PRIOR TO CONDUCTING LAND-DISTURBING ACTIVITIES FOR STAGE 04. ENSURE LINER IS PROPERLY CURED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

BEGINNING AT THE DOWNSTREAM END, REMOVE THE EXISTING HEADWALL AND 24-INCH RCP.

PERFORM STREAM GRADING. ENSURE THE STREAM BANK IS STABLE WITH ROCK TOE PROTECTION. AVOID IMPACTING THE STREAM BED. RESTORE TO ORIGINAL CONDITION.

INSTALL PROPOSED HEADWALL A6 AND 36-INCH RCP AS SHOWN ON THE PLANS.

THE CONTRACTOR SHALL LOCATE BURIED EXISTING STORM DRAINAGE MANHOLE (SDMH #9781). IF LOCATION AND PIPE ORIENTATION VARIES FROM THE PLANS, COORDINATE WITH THE OWNER ON PROPOSED STRUCTURE AND PIPE ORIENTATION. OTHERWISE, INSTALL JUNCTION BOX A7. PROVIDE CONNECTION TO EXISTING CURB INLET CI #9676.

INSTALL PROPOSED 36-INCH RCP AND PROPOSED YARD INLET A9. PROTECT FOUNDATIONS OF HOUSES DURING CONSTRUCTION WITH APPROPRIATE BRACING/SHEET PILES (TO BE DESIGN BY STRUCTURAL ENGINEER AND PROVIDED FOR CITY REVIEW AND APPROVAL). THE CONTRACTOR SHALL LOCATE THE BLIND JUNCTION BOX ESTIMATED TO BE LOCATED NEAR THE PROPERTY LINE ADJOINING LOTS 21 AND 28. YARD INLET A10 WILL REPLACE THE BLIND JUNCTION BOX. COORDINATE WITH THE OWNER ON PROPOSED LOCATION AND PROXIMITY OR CONFLICT WITH ANY OTHER UNDERGROUND UTILITIES OR SITE FEATURES.

REPLACE EXISTING 6-INCH CAST IRON WATER MAIN WITH 8-INCH DIP AND RESTRAINT OR THRUST BLOCKING AT BENDS. ENSURE THE NEW LINE IS TESTED IN ACCORDANCE WITH THE SPECIFICATIONS. PROVIDE TEMPORARY WATER SERVICE TO ALL AFFECTED PROPERTIES THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.

REMOVE AND REPLACE SANITARY SEWER MAIN AS SHOWN ON THE PLANS. PROVIDE TEMPORARY SEWER SERVICE TO ALL AFFECTED PROPERTIES THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.

REPLACE ALL SITE FEATURES REMOVED FOR CONSTRUCTION TO INCLUDE ALL DRIVEWAYS, DRIVEWAY APRONS, ACCESSORY BUILDINGS, FENCES, MAILBOXES, AND ANY OTHER FEATURE REMOVED.

GENERAL SITE COMPLETION

COMPLETE SITE SEEDING AND PLANTING FOR EACH WORK AREA AS DESCRIBED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS.

PERMETER MEASURES MUST BE LEFT IN PLACE UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED. AFTER EACH WORK AREA SITE IS PERMANENTLY STABILIZED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND PROVIDE PERMANENT SEEDING WHERE TEMPORARY MEASURES HAVE BEEN REMOVED AND GROUND COVER IS NOT ADEQUATE.

DURING OPERATION, SILT BAGS WILL BE CONTINUOUSLY MONITORED.

REPAIR AREAS USED FOR CONSTRUCTION ACCESS, CONSTRUCTION ACTIVITIES AND STOCKPILE LOCATIONS. REMOVE CONSTRUCTION ENTRANCES.

SEED AND MULCH STAGING AREAS, STOCKPILE AREAS, ALL HAUL/ACCESS ROADS AND ANY REMAINING NON-VEGETATED AREAS.

COMPLETE SITE CLEANUP AND STABILIZATION AS CALLED FOR ON THE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL SWEEP AND COLLECT ALL SEDIMENT THAT IS TRACKED OUT OF THE PROJECT AREA.

EROSION CONTROL DEVICES SHALL BE REMOVED FROM THEIR RESPECTIVE LOCATIONS ONLY WHEN THE STABILIZATION OF THE ADJACENT GROUND HAS BEEN ESTABLISHED.

OBTAIN FINAL APPROVALS FROM CITY OF FAYETTEVILLE AND NCDEQ DEMLR.

DEMOLIBIZE.

WHEN VEGETATION IS ESTABLISHED CONTACT NCDEQ LAND QUALITY INSPECTOR FOR FINAL INSPECTION AND CERTIFICATE OF COMPLIANCE.

UPON RECEIPT OF THE CERTIFICATE OF COMPLIANCE THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.

WHEN THE PROJECT IS COMPLETE, THE PERMITTEE SHALL CONTACT DEMLR TO CLOSE OUT THE E&S PLAN. AFTER DEMLR INFORMS THE PERMITTEE OF THE PROJECT CLOSE OUT, VIA INSPECTION REPORT, THE PERMITTEE SHALL VISIT DEQ.NC.GOV/NC01 TO SUBMIT AN ELECTRONIC NOTICE OF TERMINATION (E-NOT). A \$100 ANNUAL GENERAL PERMIT FEE WILL BE CHARGED UNTIL THE E-NOT HAS BEEN FILLED OUT.

UTILITY CONSTRUCTION NOTES:

1. ALL WATER MAINS, LATERALS AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
2. ALL SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
3. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
4. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE FOR ALL WATER OUTAGES.
6. 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.
7. 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 CONTRACTOR POSSESSES, ON SITE, A SIGNED AND SEALED CUT SHEET FROM THE PROFESSIONAL LAND SURVEYOR.
8. 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.
9. CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE PWC PROJECT COORDINATOR.
10. ALL DUCTILE IRON PIPE IN SANITARY SEWER SERVICE SHALL HAVE AN INTERIOR LINING OF PROTECTO 401 OR APPROVED EQUAL.
11. ALL NEW MANHOLES ARE TO BE VACUUM-TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
12. 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.
13. 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 BIG WOOD AND MORTAR.
14. ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE IN ACCORDANCE WITH PWC REQUIREMENTS.

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NC001 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NC001 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

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

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

GROUND STABILIZATION SPECIFICATION

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

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

POLYACRYLAMIDES (PAMs) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEANING WASTE

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

PAINT AND OTHER LIQUID WASTE

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

PORABLE TOILETS

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

EARTHEN STOCKPILE MANAGEMENT

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

ON-SITE CONCRETE WASHOUT STRUCTURE WITH LINER

CONCRETE WASHOUTS

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

HERBICIDES, PESTICIDES AND RODENTICIDES

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

HAZARDOUS AND TOXIC WASTE

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

NC001 GROUND STABILIZATION AND MATERIALS HANDLING EFFECTIVE: 04/01/19

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

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

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	• Daily rainfall amounts. • If no daily rain gauge observations are made during weekend or holiday periods, and no individual daily rainfall information is available, record the calendar day measurement for those unattended days (are this will constitute a site inspection is needed). Any on which no rainfall occurred shall be recorded as "no rain". The permittee may use one weather-resistant device approved by the Division.
(2) E&S Measures	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Identification of the measure inspected. 2. Date and time of the inspection. 3. Name of the person performing the inspection. 4. Evidence of the person performing the inspection. 5. Description of the maintenance needs for the measure. 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outlets (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Identification of the discharge outlet/inlet/SDO taken. 2. Date and time of the inspection. 3. Name of the person performing the inspection. 4. Evidence of the person performing the inspection. 5. Description, evidence, and date of corrective actions taken.
(4) Nonpoint source of site	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Identification of the discharge outlet/inlet/SDO taken. 2. Date and time of the inspection. 3. Name of the person performing the inspection. 4. Evidence of the person performing the inspection. 5. Description, evidence, and date of corrective actions taken.
(5) Erosion or sedimentation on or off-site	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Identification of the discharge outlet/inlet/SDO taken. 2. Date and time of the inspection. 3. Name of the person performing the inspection. 4. Evidence of the person performing the inspection. 5. Description, evidence, and date of corrective actions taken.
(6) Ground stabilization measures	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Identification of the discharge outlet/inlet/SDO taken. 2. Date and time of the inspection. 3. Name of the person performing the inspection. 4. Evidence of the person performing the inspection. 5. Description, evidence, and date of corrective actions taken.

SECTION B: RECORDKEEPING

1. E&S Plan Documentation

The approved E&S plan as well as any approved deviation shall be kept on the site. The approved E&S plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&S plan shall be kept on site and available for inspection at all times during normal business hours:

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

2. Additional Documentation to be Kept on Site

In addition to the E&S plan documents above, the following items shall be kept on the site and available for inspection at all times during normal business hours, unless the Division provides a life-specific exemption based on unique site conditions that make this requirement not practicable:

- (a) This Record Permit as well as the Certificate of Coverage, after it is received.
- (b) General inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar form that includes all the required elements. Use of electronically-obtainable records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.
- (c) Documentation to be Retained for Three Years
All data used to complete the E-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. (40 CFR 122.41)

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

- (a) Visible sediment deposition in a stream or wetland.
- (b) Oil spills if:
 - They are 25 gallons or more,
 - They are less than 25 gallons but cannot be cleaned up within 24 hours,
 - They cause sheen on surface waters (regardless of volume), or
 - They are within 100 feet of surface waters (regardless of volume).
- (c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 113.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
- (d) Anticipated bypasses and unanticipated bypasses.
- (e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0386.

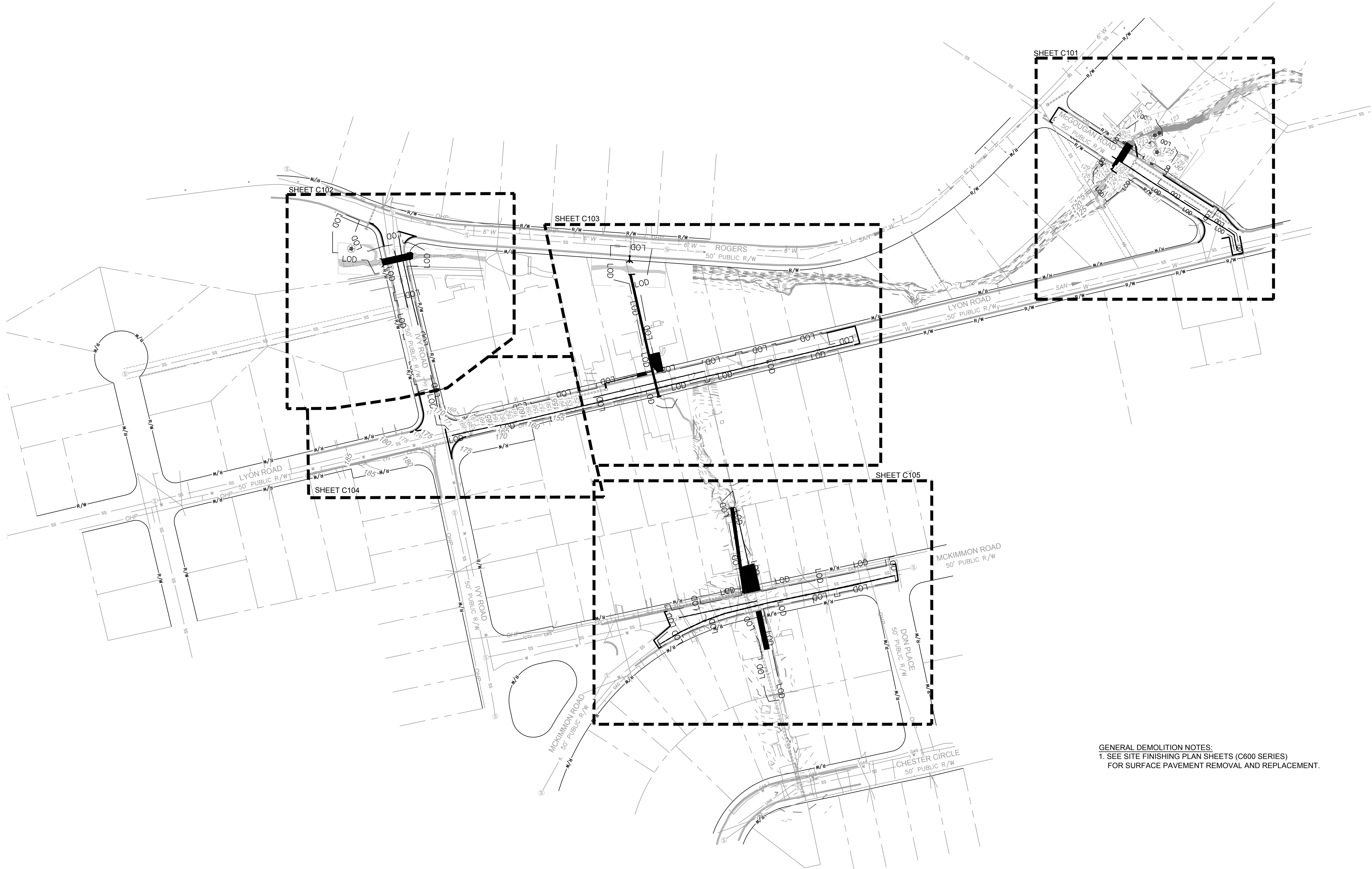
Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis.
(b) Oil spills and releases of hazardous substances per item 1(b)-(c) above	• If the stream is named on the NC DWR List as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired waters condition. • Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume, and location of the spill or release.
(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 113.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85	• A report of least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Anticipated bypasses and unanticipated bypasses	• Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment (40 CFR 122.41(d)(7))	• A report of least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.

DRAWING OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

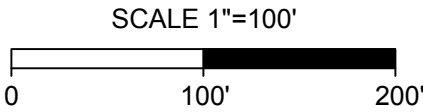
Sediment basins and traps that receive runoff from drainage areas of one acre or more shall outflow structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria are being met:

- (a) The E&S plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&S plan authority has approved these items.
- (b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, item (2

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GENERAL DEMOLITION NOTES:
1. SEE SITE FINISHING PLAN SHEETS (C600 SERIES)
FOR SURFACE PAVEMENT REMOVAL AND REPLACEMENT.



DRAWN : SHANE VANDERGRIFT	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNGAN	SCALE : 1"=100'
APPROVED :	DATE : 03/08/2024

PROJECT NO. 54960.001
SUB-LEDGER NO. _____



FAYETTEVILLE!
AMERICA'S CAN DO CITY

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

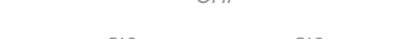


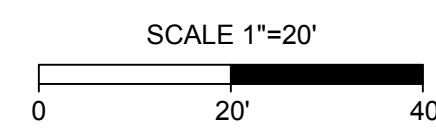
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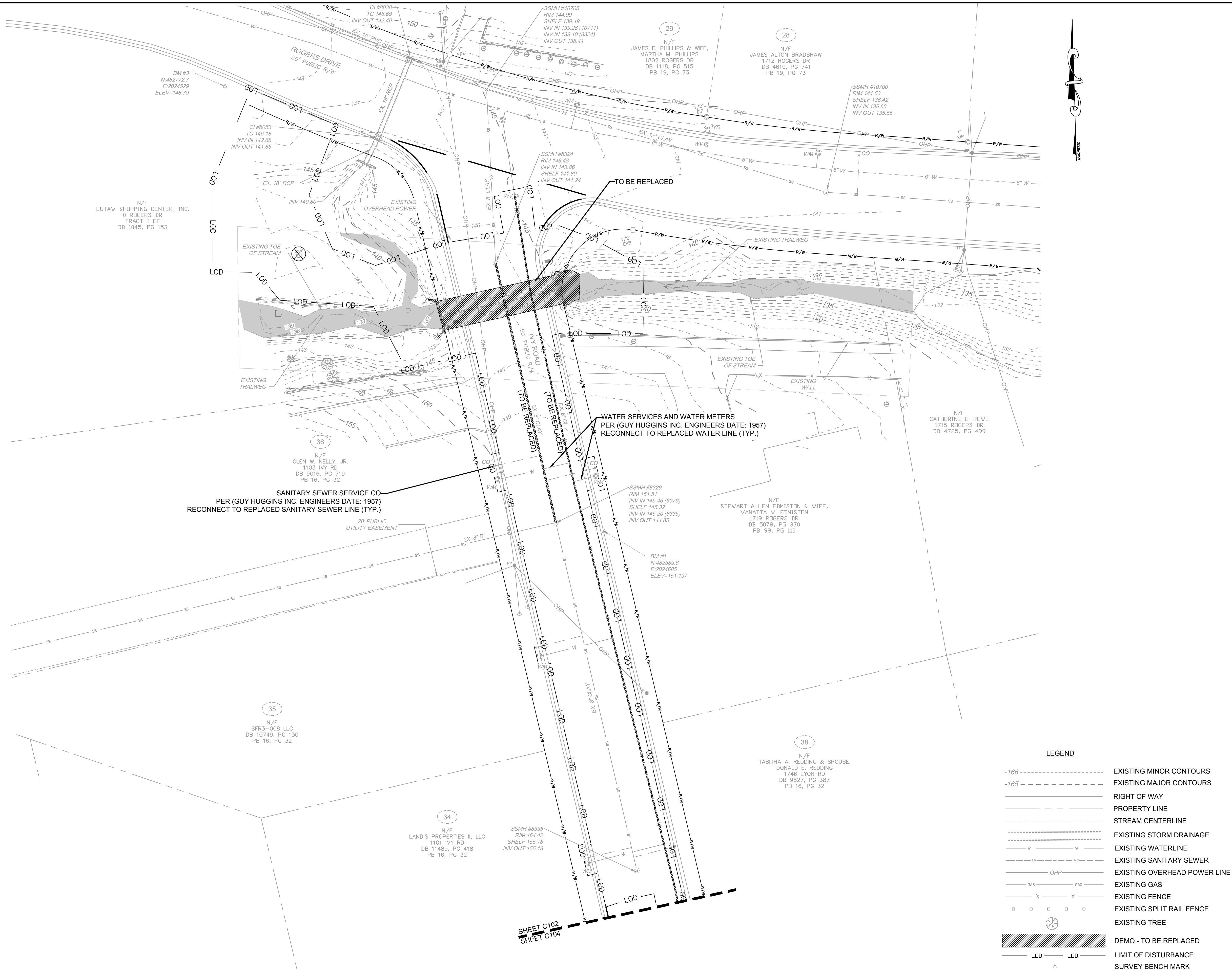


	EXISTING MINOR CONTOURS
	EXISTING MAJOR CONTOURS
	RIGHT OF WAY
	PROPERTY LINE
	STREAM CENTERLINE
	EXISTING STORM DRAINAGE
	EXISTING WATERLINE
	EXISTING SANITARY SEWER
	EXISTING OVERHEAD POWER LINE
	EXISTING GAS
	EXISTING FENCE
	EXISTING SPLIT RAIL FENCE
	EXISTING TREE
	DEMO - TO BE REPLACED
	LIMIT OF DISTURBANCE
	SURVEY BENCH MARK



PROJECT NO. 54960.001
SUB-LEDGER NO. _____

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DESIGN : CHRIS ROGERS		NAME : DRAINAGE IMPROVEMENTS	
CHECK : DAVID DUNGAN		SCALE : 1"=20'	
APPROVED :		DATE : 03/08/2024	

REV.		REVISIONS		REV. BY	
#		DESCRIPTION		DATE	

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ENGINEERING & INFRASTRUCTURE DEPARTMENT		439 HAY STREET FAYETTEVILLE, NC 28301	

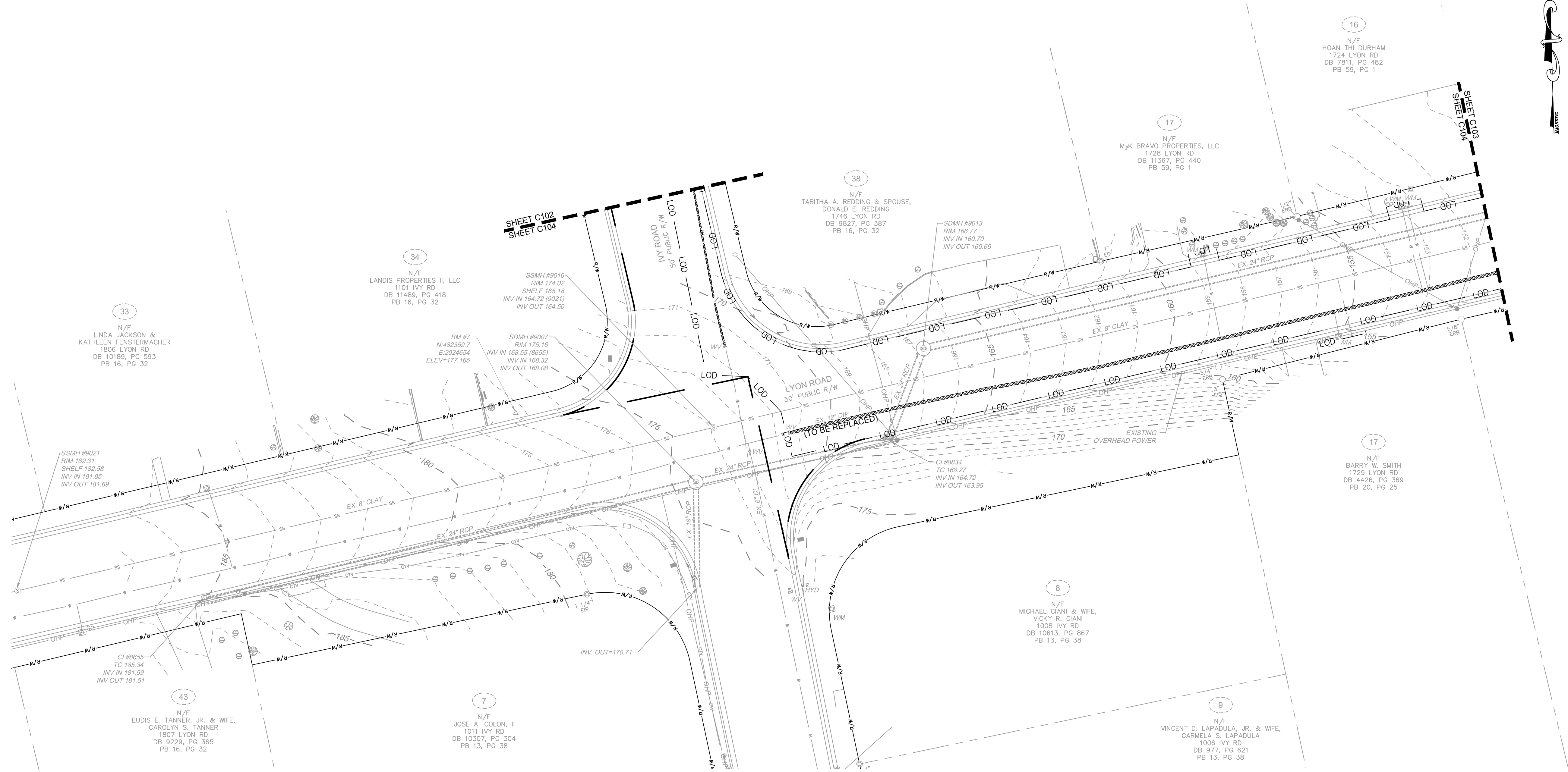
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CONSTRUCTION SET	
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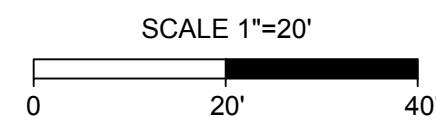
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LEGEND

- 166 - - - - - EXISTING MINOR CONTOURS
- 165 - - - - - EXISTING MAJOR CONTOURS
- RIGHT OF WAY
- PROPERTY LINE
- STREAM CENTERLINE
- EXISTING STORM DRAINAGE
- EXISTING WATERLINE
- EXISTING SANITARY SEWER
- EXISTING OVERHEAD POWER LINE
- EXISTING GAS
- EXISTING FENCE
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- EXISTING TREE
- DEMO - TO BE REPLACED
- LIMIT OF DISTURBANCE
- △ SURVEY BENCH MARK

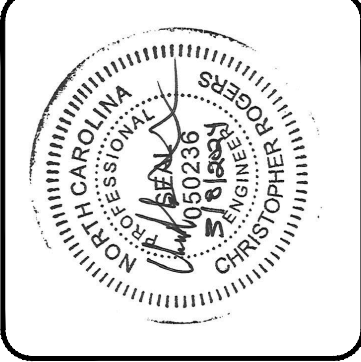


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CONSTRUCTION SET

DRAWN : SHANE VANDERGIFT	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNCAN	SCALE : 1"=20'
APPROVED :	DATE : 03/08/2024

PROJECT NO. : 54960.001
SUB-LEDGER NO. :



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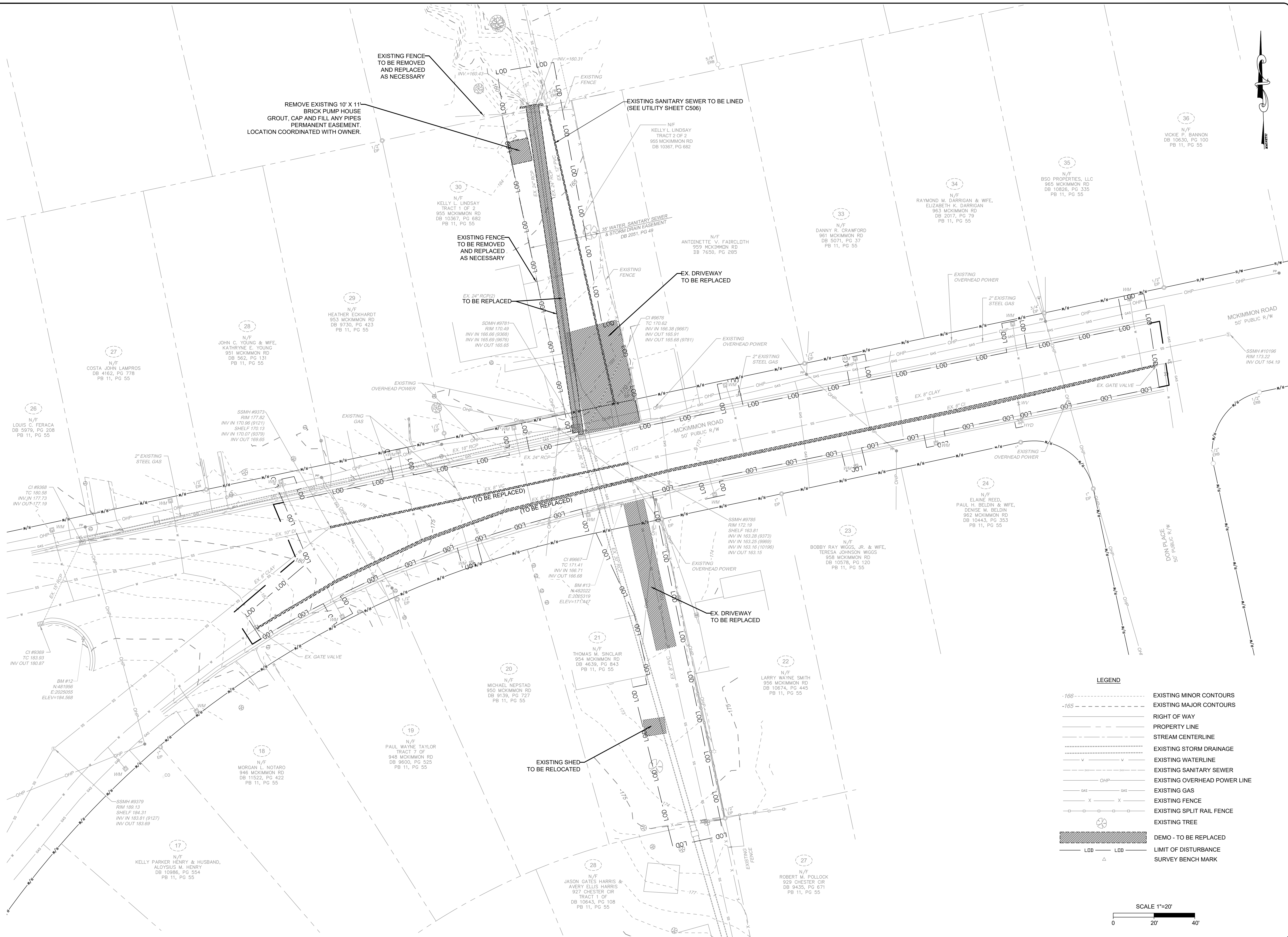
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
439 HAY STREET FAYETTEVILLE, NC 28301

EXISTING CONDITIONS
AND DEMOLITION

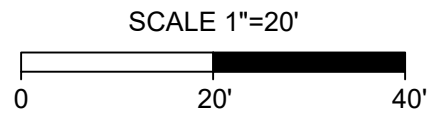
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LEGEND	
	EXISTING MINOR CONTOURS
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	RIGHT OF WAY
	PROPERTY LINE
	STREAM CENTERLINE
	EXISTING STORM DRAINAGE
	EXISTING WATERLINE
	EXISTING SANITARY SEWER
	EXISTING OVERHEAD POWER LINE
	EXISTING GAS
	EXISTING FENCE
	EXISTING SPLIT RAIL FENCE
	EXISTING TREE
	DEMO - TO BE REPLACED
	LIMIT OF DISTURBANCE
	SURVEY BENCH MARK



EXISTING CONDITIONS
AND DEMOLITION

PLAN TYPE
DEMO

SHEET NUMBER
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AMERICA'S CAN DO CITY

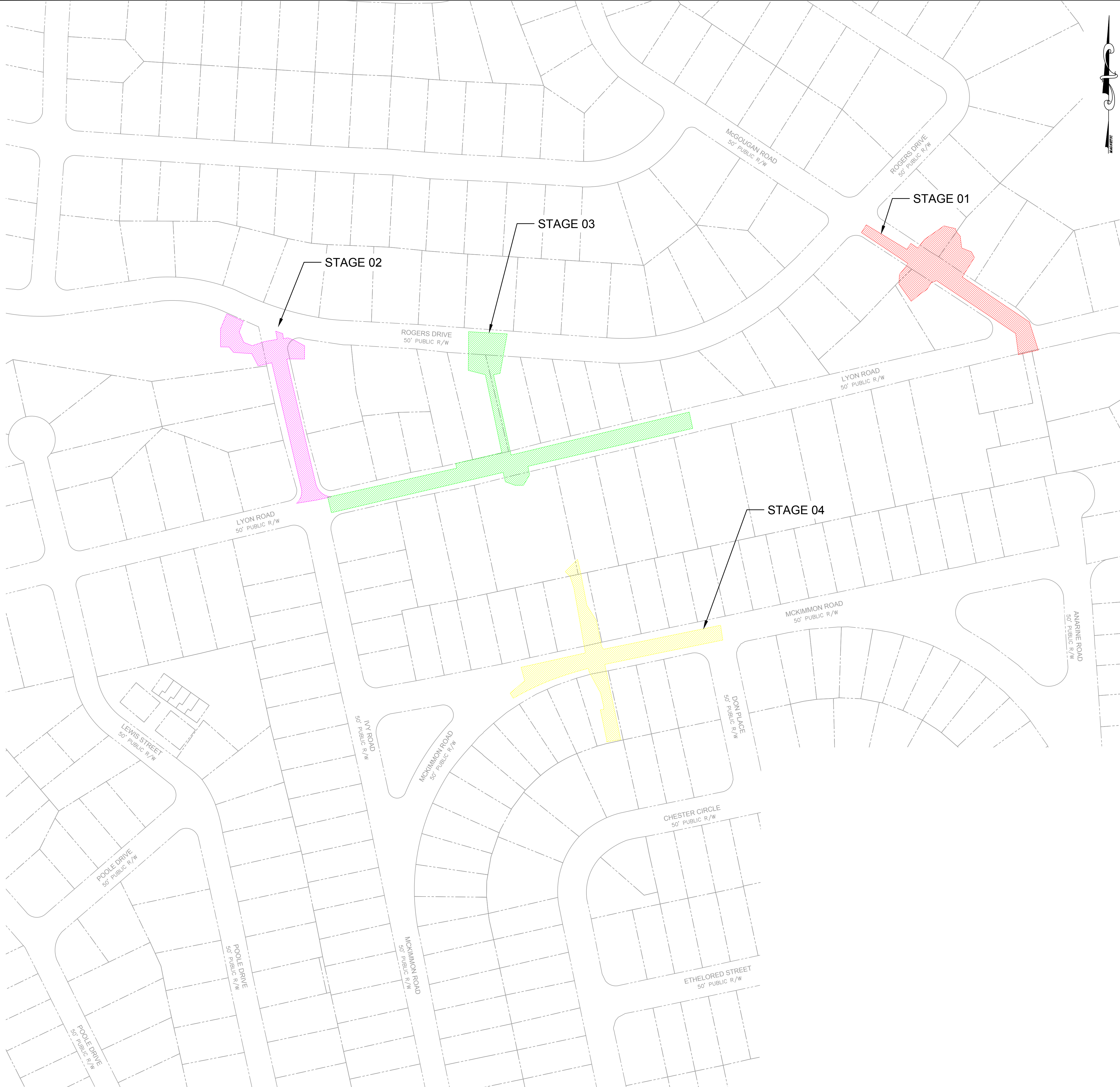
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
439 HAY STREET FAYETTEVILLE, NC 28501

REV.	REVISIONS	REMOVED	REV. BY	SV
2	PUMP HOUSE REMOVAL			6/16/2025

DRAWN : SHANE VANDERGRIFF	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNCAN	SCALE : 1"=20'
APPROVED :	DATE : 03/09/2024

PROJECT NO. : 54960.001
SUB-LEDGER NO. :

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MAINTENANCE OF TRAFFIC NOTES

1. PRIOR TO THE SCHEDULING OF A PRE-CONSTRUCTION CONFERENCE, THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A DETAILED MAINTENANCE OF TRAFFIC CONTROL PLAN (MOT) WITH THE CONTRACTOR'S PERMIT APPLICATION TO WORK IN THE RIGHT-OF-WAY. THE MOT SHALL BE A DRAWING OR AERIAL PHOTO WITH SITE SPECIFIC DETAILS. THESE SHALL INCLUDE BUT ARE NOT LIMITED TO: TRAFFIC SIGNS, DIRECTIONAL SIGNS, DESTINATION SIGNAGE, CHANNELIZING DEVICES, WATER-FILLED BARRIERS, PORTABLE MESSAGE BOARDS WITH MESSAGES TO BE DISPLAYED AND TIMES AND DURATIONS OF DISPLAYED MESSAGES. ADDITIONALLY, THE MOT SHALL DISPLAY THE EXACT LOCATION OF ALL SIGNS AND/OR DEVICES INCLUDING SPACING FOR EACH SIGN AND/OR DEVICE, SPACING BEING APPROPRIATE FOR THE WORK ZONE LOCATION AND POSTED SPEED LIMITS. ALL MOT PLANS SHALL CONFORM TO THE CURRENT ISSUE OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. CONTRACTORS SHOULD CONSIDER THESE ITEMS WHEN BIDDING PROJECT FOR CONSTRUCTION. FOLLOWING APPROVAL OF THE PLAN, A REPRODUCIBLE DRAWING SHALL BE SUBMITTED TO THE OFFICE OF PUBLIC SERVICE FOR USE AND DISTRIBUTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ZONE SIGNING, DELINEATION PAVEMENT MARKINGS AND ANY OTHER TRAFFIC CONTROL DEVICES NECESSARY TO PERFORM THE WORK. UPON COMPLETION OF THE WORK THE CONTRACTOR SHALL IMMEDIATELY REMOVE ALL SUCH TEMPORARY DEVICES.
3. NO LANE CLOSURES AND/OR WORK IN THE RIGHT OF WAY, INCLUDING GRADING, SIDEWALK, CURB AND GUTTER, AND DRIVEWAY APRON INSTALLATION WILL BE ALLOWED WITHOUT A PERMIT. SEQUENCE OF CONSTRUCTION SHOULD MINIMIZE LANE AND INTERSECTION CLOSURES TO THE MAXIMUM EXTENT PRACTICAL.
4. EMERGENCY VEHICLE ACCESS SHALL BE MAINTAINED AT ALL TIMES WITHOUT EXCEPTION.

MAINTENANCE OF TRAFFIC SEQUENCE OF CONSTRUCTION

SEE EROSION CONTROL SEQUENCE OF CONSTRUCTION ON SHEET C002 FOR DETAILS OF CONSTRUCTION.

STAGE 01 (MCGOUGAN ROAD AND LYON ROAD IMPROVEMENTS):

CONSTRUCTION CONSISTS OF THE REPLACEMENT OF THE EXISTING BOX CULVERT AND UTILITIES IMPROVEMENTS INCLUDE THE REPLACEMENT OF THE EXISTING WATER MAIN AND SEWER MAIN. THE WATER MAIN WILL BE REPLACED STARTING AT THE EXISTING 12-INCH CAST IRON PIPE AT LYON ROAD UP TO THE EXISTING WATER VALVE JUST EAST OF ROGERS DRIVE. THE STREETS WILL BE CLOSED TO THROUGH-TRAFFIC FOR THE DURATION OF THE CONSTRUCTION WHICH WILL INVOLVE UTILITY TRENCHING AND GRADING ADJACENT TO THE ROADWAY AT THE CULVERT LOCATION. LOCAL TRAFFIC DURING THIS PHASE WILL BE ALLOWED TO ACCESS THE RESIDENCES AS MUCH AS POSSIBLE THROUGH THE USE OF STEEL UTILITY TRENCH PLATES OR OTHER MEANS OF SECURING THE WORKSITE AT THE END OF DAY.

LYON ROAD TRAFFIC SHALL BE MAINTAINED ACCORDING TO TA-20 AS PRESCRIBED IN THE CURRENT VERSION OF THE MUTCD. DETOURED TRAFFIC WILL USE MCKIMMON ROAD, ANARINE ROAD, AND EDENWOOD DRIVE TO BYPASS THE WORK AREA AT THE INTERSECTION OF LYON ROAD AND MCGOUGAN ROAD.

MCGOUGAN ROAD TRAFFIC SHALL BE MAINTAINED ACCORDING TO TA-20 AS PRESCRIBED IN THE CURRENT VERSION OF THE MUTCD. DETOURED TRAFFIC WILL USE IVY ROAD AND ROGERS DRIVE TO BYPASS THE WORK AREA.

STAGE 02 (IVY ROAD IMPROVEMENTS):

CONSTRUCTION CONSISTS OF THE REPLACEMENT OF THE EXISTING BOX CULVERT AND UTILITIES IMPROVEMENTS INCLUDE THE REPLACEMENT OF THE EXISTING WATER MAIN AND SEWER MAIN. THE STREET WILL BE CLOSED TO THROUGH-TRAFFIC FOR THE DURATION OF THE CONSTRUCTION WHICH WILL INVOLVE UTILITY TRENCHING AND GRADING ADJACENT TO THE ROADWAY AT THE CULVERT LOCATION. LOCAL TRAFFIC DURING THIS PHASE WILL BE ALLOWED TO ACCESS THE RESIDENCES AS MUCH AS POSSIBLE THROUGH THE USE OF STEEL UTILITY TRENCH PLATES OR OTHER MEANS OF SECURING THE WORKSITE AT THE END OF DAY.

IVY ROAD TRAFFIC SHALL BE MAINTAINED ACCORDING TO TA-20 AS PRESCRIBED IN THE CURRENT VERSION OF THE MUTCD. DETOURED TRAFFIC WILL USE MCGOUGAN ROAD TO BYPASS THE WORK AREA.

STAGE 03A (ROGERS DRIVE STORM DRAINAGE SYSTEM IMPROVEMENTS):

CONSTRUCTION CONSISTS OF THE REPLACEMENT OF THE CURB INLET AND PIPE. THE EASTBOUND LANE WILL BE CLOSED FOR THE DURATION OF THE CONSTRUCTION WHICH WILL INVOLVE UTILITY TRENCHING AND GRADING ADJACENT TO THE ROADWAY AT THE PIPE LOCATION.

TRAFFIC SHALL BE MAINTAINED ACCORDING TO TA-11 AS PRESCRIBED IN THE CURRENT VERSION OF THE MUTCD.

STAGE 03B (LYON ROAD STORMWATER AND UTILITIES IMPROVEMENTS):

CONSTRUCTION CONSISTS OF THE REPLACEMENT OF THE EXISTING STORMWATER OUTFALL FROM THE UPSTREAM HEADWALL SOUTH OF LYON ROAD BETWEEN 1713 AND 1717 LYON ROAD TO THE OUTFALL BEHIND 1716 AND 1712 LYON ROAD. THE WATER MAIN FROM IVY ROAD TO 1701 LYON ROAD WILL BE REPLACED. THE SANITARY SEWER MAIN WILL BE REPLACED FROM THE MANHOLE AT 1725 LYON ROAD TO 1708 LYON ROAD. THE IMPROVEMENTS WILL INVOLVE TRENCHING IN THE ROADWAY ALONG THE FRONTAGE OF MULTIPLE RESIDENCES. TRENCHING AND UTILITY REPLACEMENT SHOULD BE PERFORMED PROGRESSIVELY TO ALLOW LOCAL TRAFFIC TO ACCESS THE RESIDENCES THROUGH THE USE OF STEEL UTILITY TRENCH PLATES OR OTHER MEANS OF SECURING THE WORKSITE AT THE END OF DAY. THE ROAD WILL BE CLOSED TO THROUGH-TRAFFIC FOR THE DURATION OF CONSTRUCTION.

LYON ROAD TRAFFIC SHALL BE MAINTAINED ACCORDING TO TA-20 AS PRESCRIBED IN THE CURRENT VERSION OF THE MUTCD. DETOURED TRAFFIC WILL USE ROGERS DRIVE TO BYPASS THE WORK AREA.

STAGE 04A (MCKIMMON ROAD WATER MAIN REPLACEMENT):

CONSTRUCTION CONSISTS OF THE REPLACEMENT OF THE EXISTING WATER MAIN FROM THE VALVE AT THE INTERSECTION WITH DON PLACE TO A VALVE AT THE WYE-INTERSECTION WHERE MCKIMMON ROAD SPLITS IN FRONT OF 946 MCKIMMON ROAD. THE IMPROVEMENTS WILL INVOLVE TRENCHING IN THE ROADWAY ALONG THE FRONTAGE OF MULTIPLE RESIDENCES. TRENCHING AND UTILITY REPLACEMENT SHOULD BE PERFORMED PROGRESSIVELY TO ALLOW LOCAL TRAFFIC TO ACCESS THE RESIDENCES THROUGH THE USE OF STEEL UTILITY TRENCH PLATES OR OTHER MEANS OF SECURING THE WORKSITE AT THE END OF DAY. THE ROAD WILL BE CLOSED TO THROUGH-TRAFFIC FOR THE DURATION OF CONSTRUCTION.

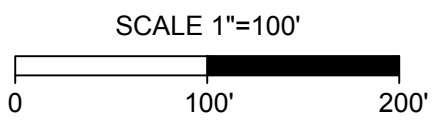
MCKIMMON ROAD TRAFFIC SHALL BE MAINTAINED ACCORDING TO TA-20 AS PRESCRIBED IN THE CURRENT VERSION OF THE MUTCD. DETOURED TRAFFIC WILL USE ANARINE ROAD, EDENWOOD DRIVE, LYON ROAD, AND IVY ROAD DRIVE TO BYPASS THE WORK AREA.

DON PLACE TRAFFIC SHALL BE MAINTAINED ACCORDING TO TA-20 AS PRESCRIBED IN THE CURRENT VERSION OF THE MUTCD. DETOURED TRAFFIC WILL USE CHESTER CIRCLE AND MCPHERSON ROAD TO BYPASS THE WORK AREA.

STAGE 04B (MCKIMMON ROAD STORMWATER AND SANITARY SEWER IMPROVEMENTS):

CONSTRUCTION CONSISTS OF THE REPLACEMENT OF THE EXISTING STORMWATER OUTFALL FROM THE HEADWALL BEHIND 955 AND 959 MCKIMMON ROAD TO THE INLET AND JUNCTION BOX ON THE NORTH SIDE OF MCKIMMON ROAD. A PROPOSED JUNCTION BOX WILL BE INSTALLED ON THE NORTH SIDE OF MCKIMMON ROAD AND A 36-INCH RCP WILL BE INSTALLED PARALLEL TO THE EXISTING 30-INCH RCP. ADDITIONAL INLETS WILL BE INSTALLED IN THE REAR YARDS OF 954 AND 959 MCKIMMON ROAD. THE EXISTING SANITARY SEWER MAIN WILL BE REPLACED FROM THE MANHOLE AT THE WYE-INTERSECTION OF MCKIMMON ROAD TO THE MANHOLE AT 959 MCKIMMON ROAD. THE IMPROVEMENTS WILL INVOLVE TRENCHING IN THE ROADWAY ALONG THE FRONTAGE OF MULTIPLE RESIDENCES. TRENCHING AND UTILITY REPLACEMENT SHOULD BE PERFORMED PROGRESSIVELY TO ALLOW LOCAL TRAFFIC TO ACCESS THE RESIDENCES THROUGH THE USE OF STEEL UTILITY TRENCH PLATES OR OTHER MEANS OF SECURING THE WORKSITE AT THE END OF DAY. THE ROAD WILL BE CLOSED TO THROUGH-TRAFFIC FOR THE DURATION OF CONSTRUCTION.

MCKIMMON ROAD TRAFFIC SHALL BE MAINTAINED ACCORDING TO TA-20 AS PRESCRIBED IN THE CURRENT VERSION OF THE MUTCD. DETOURED TRAFFIC WILL USE ANARINE ROAD, EDENWOOD DRIVE, LYON ROAD, AND IVY ROAD DRIVE TO BYPASS THE WORK AREA.

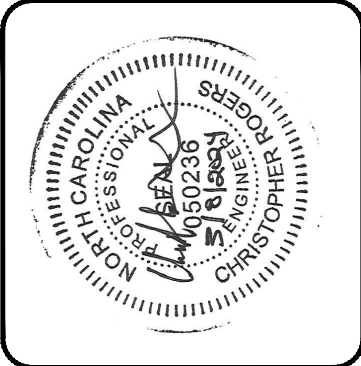


OVERALL
TRAFFIC CONTROL

PLAN TYPE
TRAF

SHEET NUMBER
C200

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AMERICA'S CAN DO CITY
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
439 HAY STREET FAYETTEVILLE, NC 28501



REVISIONS		REV. #	DESCRIPTION	REV. BY	DATE
CONSTRUCTION SET					

DRAWN : SHANE VANDERGRIFF
DESIGN : CHRIS ROGERS
CHECK : DAVID DUNGAN
APPROVED :
PROJECT : SHANE VANDERGRIFF
NAME : DRAINAGE IMPROVEMENTS
SCALE : 1"=100'
DATE : 03/08/2024

PROJECT NO. 54960.001
SUB-LEDGER NO.

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M.O.T. LEGEND

PROPOSED SIGN

WORK ZONE

DETOUR ROUTE

TYPE 3 BARRICADE W/ SIGN

W20-1
30"x30"
A

W20-2
30"x30"
D

R11-4
60"x30"
M4-8
24"x14"
G

W20-4
30"x30"
M

W20-7
30"x30"
B

R3-1
24"x24"
E

M4-8a
24"x18"
K

W3-2
30"x30"
N

W20-3
30"x30"
C

R3-2
24"x24"
F

M4-9R
30"x24"
I

R11-2
48"x30"
L

R01-02
36"x36"x36"
R01-02AP
36"x30"
O

SCALE 1"=100'

0

100'

200'

DRAWN : SHANE VANDERGRIFF	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNCAN	SCALE : 1"=100'
APPROVED :	DATE : 03/08/2024

PROJECT NO. 54960.001

SUB-LEDGER NO. _____

REV. #	REVISIONS	DESCRIPTION	REV. BY	DATE
CONSTRUCTION SET				

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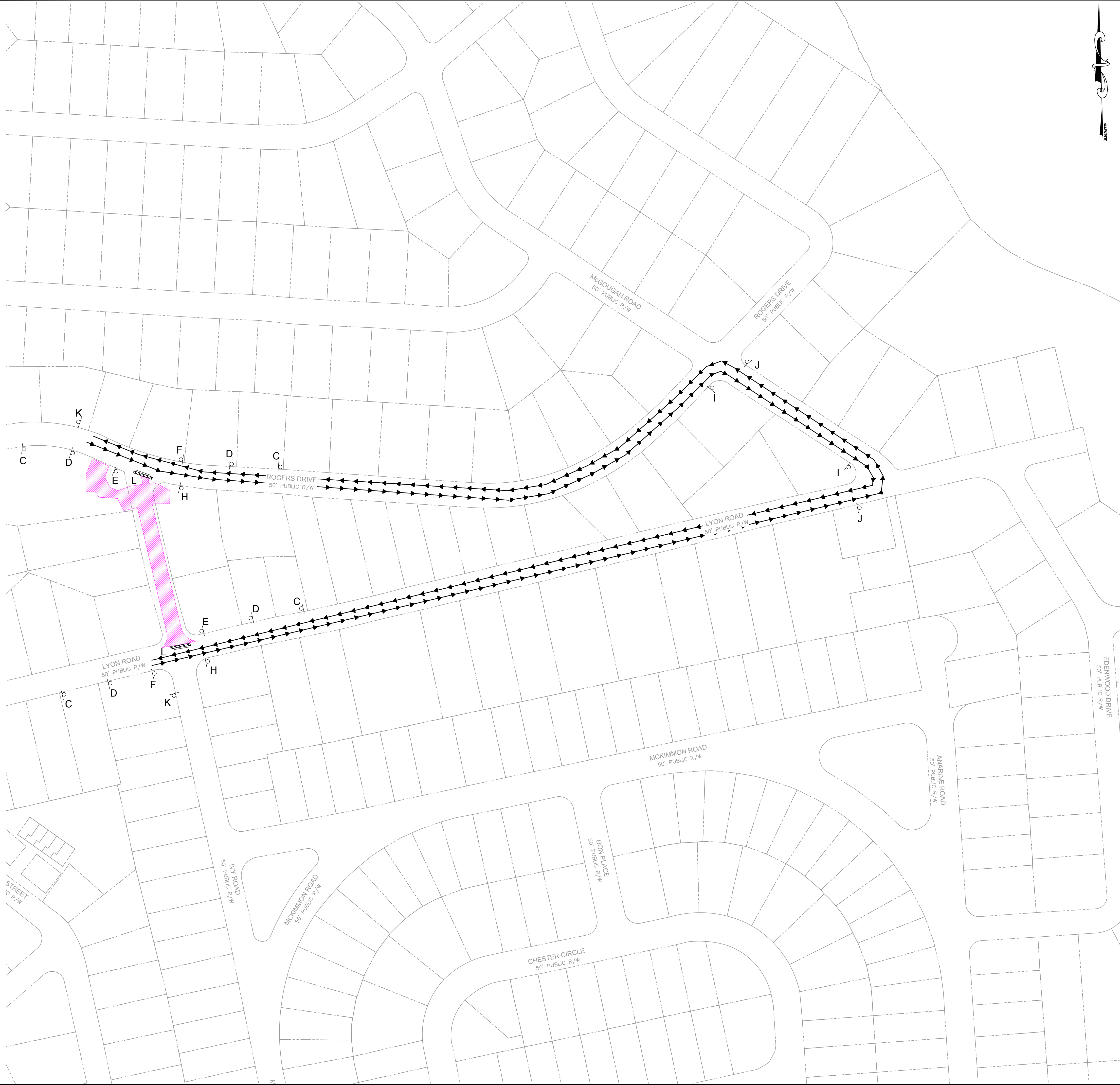
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
439 HAY STREET FAYETTEVILLE, NC 28301

TRAFFIC CONTROL

PLAN TYPE: TRAF

SHEET NUMBER: C201

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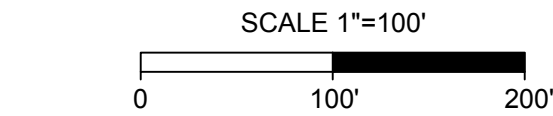
M.O.T. LEGEND

PROPOSED SIGN

WORK ZONE

DETOUR ROUTE

TYPE 3 BARRICADE W/ SIGN



W20-1 30"x30" A	W20-7 30"x30" B	W20-3 30"x30" C
W20-2 30"x30" D	R3-1 24"x24" E	R3-2 24"x24" F
R11-4 60"x30" M4-8 24"x14" G	M4-8 24"x12" H	M4-9R 30"x24" I
M4-9L 30"x24" J	M4-8a 24"x18" K	R11-2 48"x30" L
W20-4 30"x30" M	W3-2 30"x30" N	R01-02 36"x36"x36" R01-02AP 36"x30" O
W1-4 30"x30" P		

DRAWN : SHANE VANDERGRIFF	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNCAN	SCALE : 1"=100'
APPROVED :	DATE : 03/08/2024

PROJECT NO. 54960.001
SUB-LEDGER NO. _____

REVISIONS		REV. #	DESCRIPTION	REV. BY	DATE
CONSTRUCTION SET					



AMERICA'S CAN DO CITY

ENGINEERING DIVISION

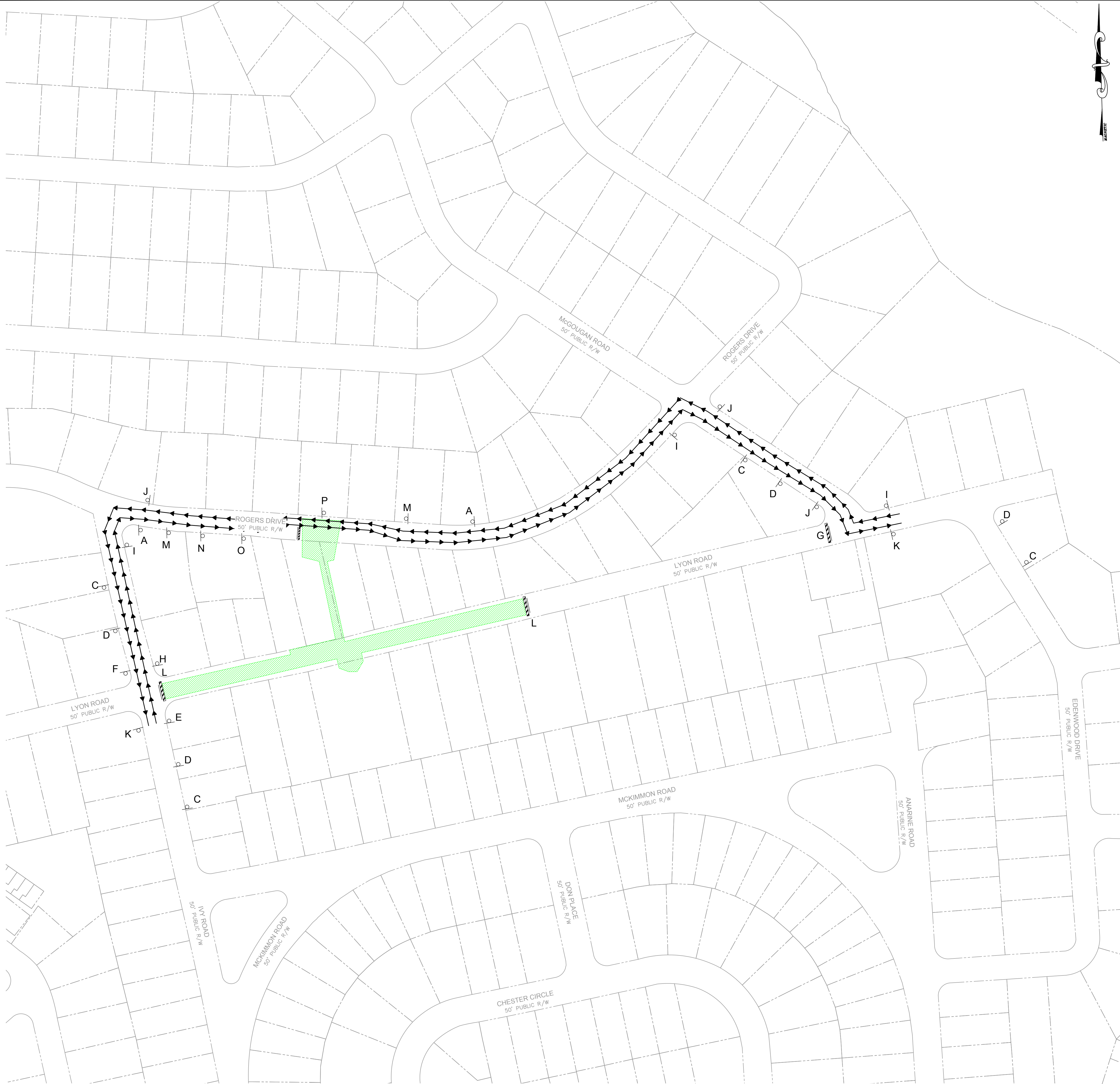
ENGINEERING & INFRASTRUCTURE DEPARTMENT

433 HAY STREET FAYETTEVILLE, NC 28301

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TRAFFIC CONTROL	PLAN TYPE	TRAF	SHEET NUMBER	C202
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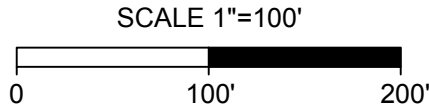
M.O.T. LEGEND

PROPOSED SIGN

WORK ZONE

DETOUR ROUTE

TYPE 3 BARRICADE W/ SIGN



DRAWN : SHANE VANDERGRIFF
DESIGN : CHRIS ROGERS
CHECK : DAVID DUNGAN
APPROVED :

REV. #	REVISIONS	DESCRIPTION	REV. BY	DATE



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433 HAY STREET FAYETTEVILLE, NC 28501

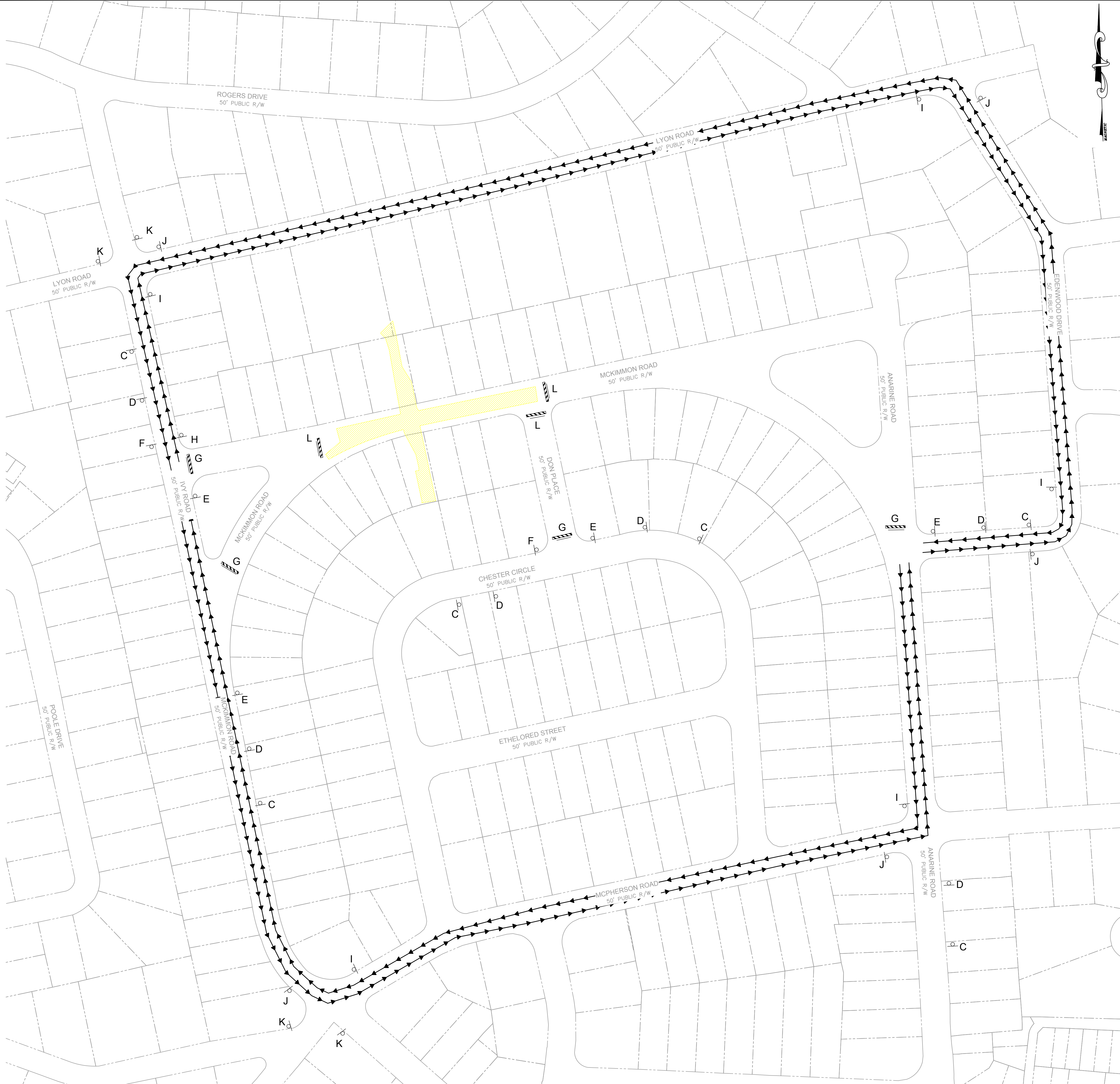
TRAFFIC CONTROL
PLAN TYPE: TRAF
SHEET NUMBER: C203

PROJECT : SHANE VANDERGRIFF
NAME : DRAINAGE IMPROVEMENTS
SCALE : 1"=100'
DATE : 03/08/2024

PROJECT NO. 54960.001
SUB-LEDGER NO. _____

CONSTRUCTION SET

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M.O.T. LEGEND

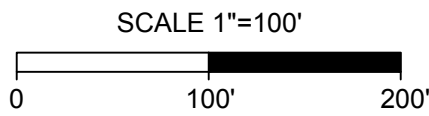
PROPOSED SIGN

WORK ZONE

DETOUR ROUTE

TYPE 3 BARRICADE W/ SIGN

W20-1 30"x30" A	W20-7 30"x30" B	W20-3 30"x30" C
W20-2 30"x30" D	R3-1 24"x24" E	R3-2 24"x24" F
R11-4 60"x30" M4-8 24"x14" G	M4-8 24"x12" H	M4-9R 30"x24" I
M4-9L 30"x24" J	M4-8a 24"x18" K	R11-2 48"x30" L
W20-4 30"x30" M	W3-2 30"x30" N	R01-02 36"x36"x36" R01-02AP 36"x30" O
W1-4 30"x30" P		



DRAWN : SHANE VANDERGRIFF	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNCAN	SCALE : 1"=100'
APPROVED :	DATE : 03/08/2024

PROJECT NO. : 54960.001
SUB-LEDGER NO. : _____

REV. #	REVISIONS	DESCRIPTION	REV. BY	DATE

CONSTRUCTION SET



AMERICA'S CAN DO CITY

ENGINEERING DIVISION

ENGINEERING & INFRASTRUCTURE DEPARTMENT

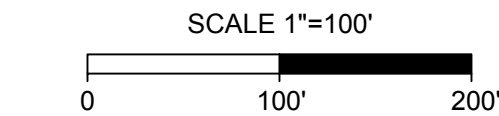
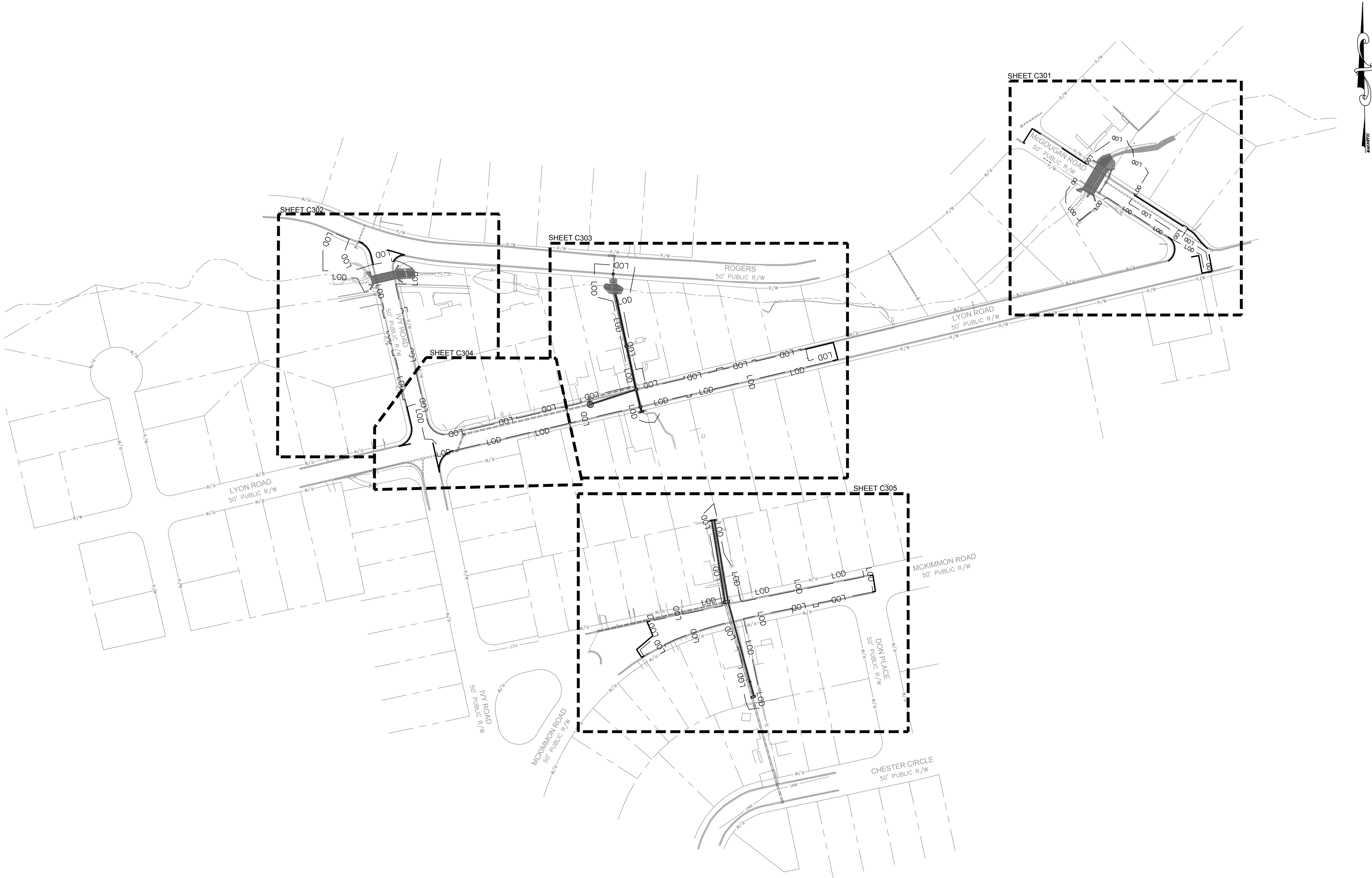
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TRAFFIC CONTROL	PLAN TYPE
TRAF	C204

SHEET NUMBER

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LIMITS OF DISTURBANCE: 2.24 ACRES

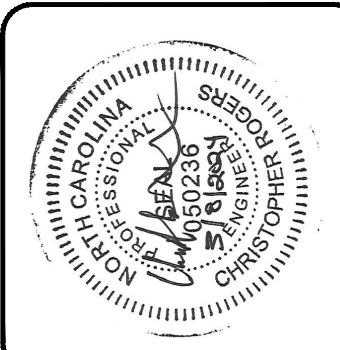


DRAWN : SHANE VANDERGRIFT	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNGAN	SCALE : 1"=100'
APPROVED :	DATE : 03/08/2024

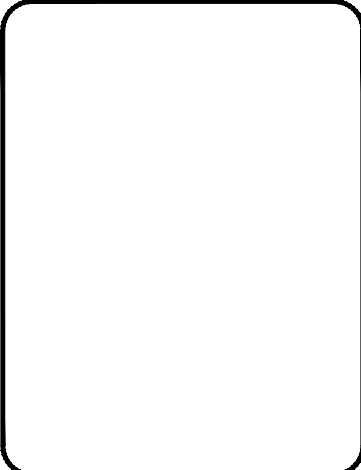
PROJECT NO. 54960.001
SUB-LEDGER NO. _____

REV. #	REVISIONS	DESCRIPTION	REV. BY	DATE

CONSTRUCTION SET

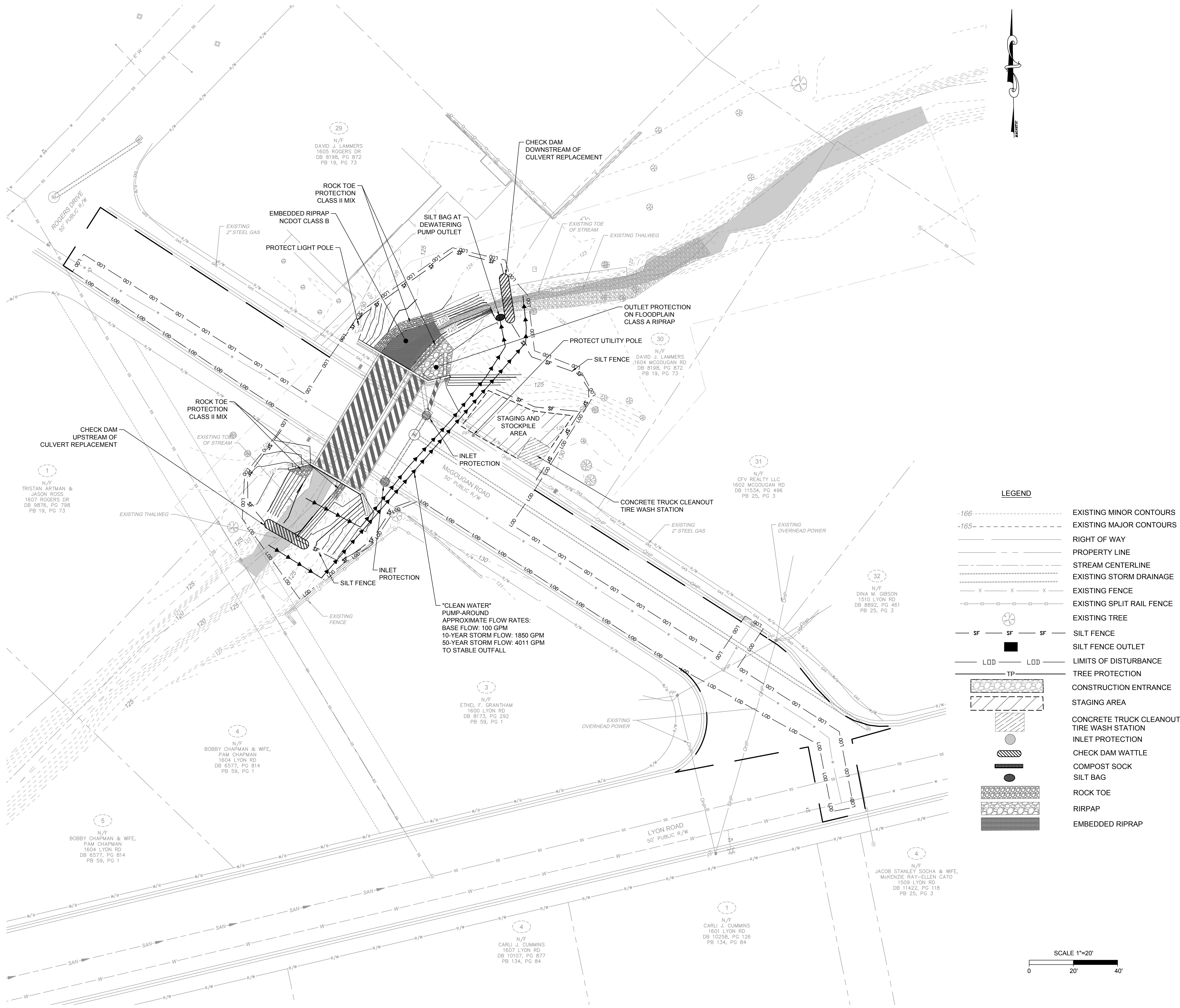


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ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28301



OVERALL EROSION CONTROL	SHEET NUMBER C300
PLAN TYPE EROSION	

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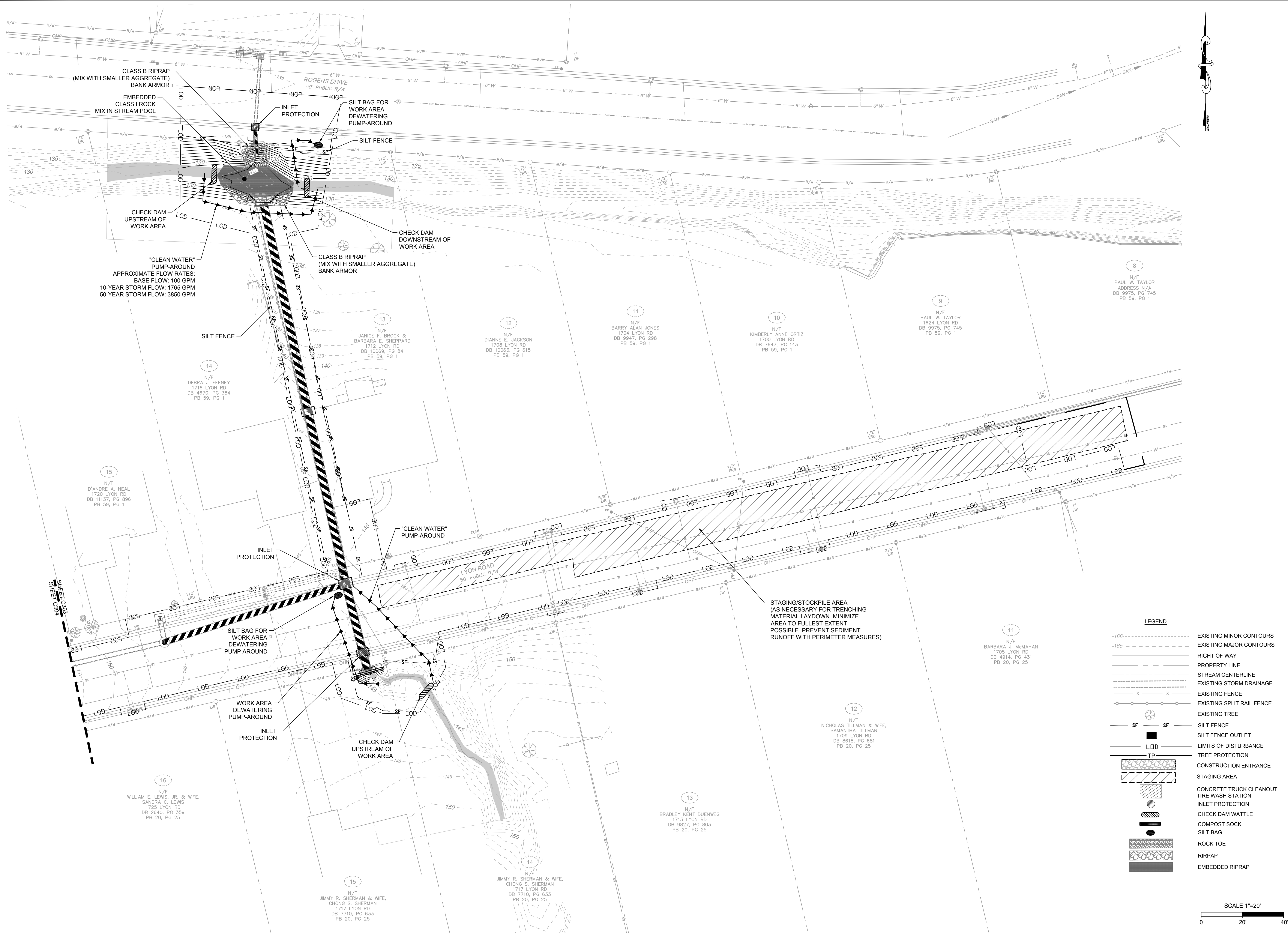
SCALE 1"=20'



A horizontal scale bar with a white left half and a black right half. It is marked with '0' at the left end, '20'' at the midpoint, and '40'' at the right end.

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EROSION CONTROL

EROSION

SHEET NUMBER
C303

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433 HAY STREET FAYETTEVILLE, NC 28301

REVISIONS

REV. #

DESCRIPTION

REV. #

DATE

CONSTRUCTION SET

DRAWN : SHANE VANDERGRIFF

DESIGN : CHRIS ROGERS

CHECK : DAVID DUNCAN

APPROVED :

PROJECT : IVY AND LYON ROAD

NAME : DRAINAGE IMPROVEMENTS

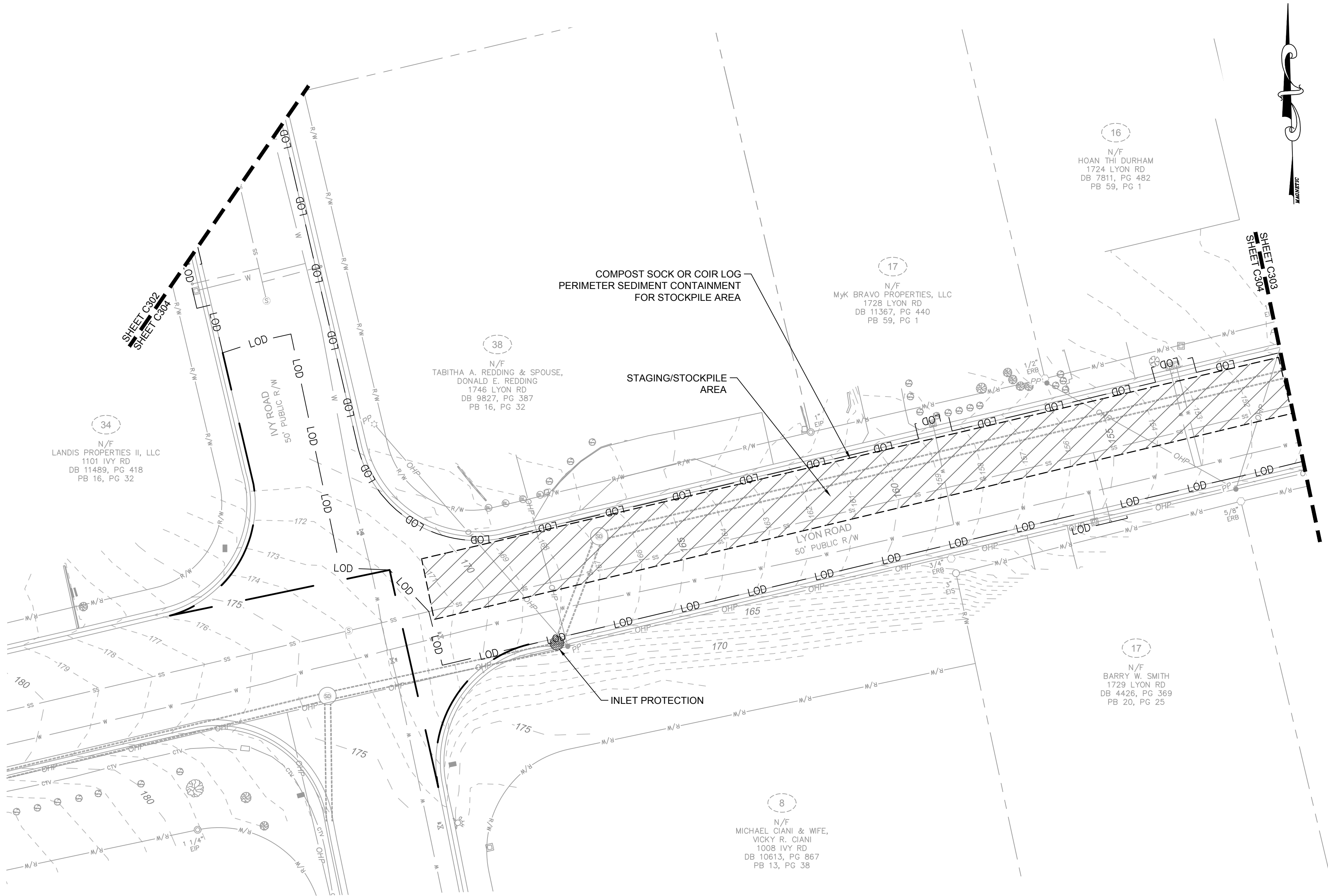
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DATE : 03/08/2024

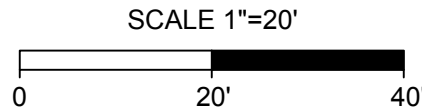
PROJECT NO. : 54960.001

SUB-LEDGER NO. :

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LEGEND	
	EXISTING MINOR CONTOURS
	EXISTING MAJOR CONTOURS
	RIGHT OF WAY
	PROPERTY LINE
	STREAM CENTERLINE
	EXISTING STORM DRAINAGE
	EXISTING FENCE
	EXISTING SPLIT RAIL FENCE
	EXISTING TREE
	SILT FENCE
	SILT FENCE OUTLET
	LIMITS OF DISTURBANCE
	TREE PROTECTION
	CONSTRUCTION ENTRANCE
	STAGING AREA
	CONCRETE TRUCK CLEANOUT
	TIRE WASH STATION
	INLET PROTECTION
	CHECK DAM WATTLE
	COMPOST SOCK
	SILT BAG
	ROCK TOE
	RIPRAP
	EMBEDDED RIPRAP

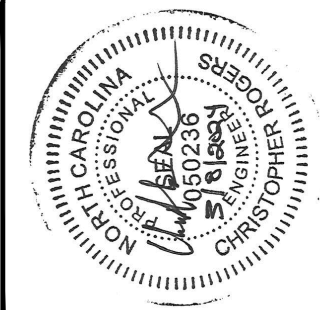


DRAWN : SHANE VANDERGRIFF	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNCAN	SCALE : 1"=20'
APPROVED :	DATE : 03/08/2024

PROJECT NO. 54960.001
SUB-LEDGER NO. _____

CONSTRUCTION SET

REV. #	REVISIONS		REV. BY	DATE
	DESCRIPTION			



AMERICA'S CAN DO CITY
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
439 HAY STREET FAYETTEVILLE, NC 28301

AMERICA'S CAN DO CITY

ENGINEERING & INFRASTRUCTURE DEPARTMENT

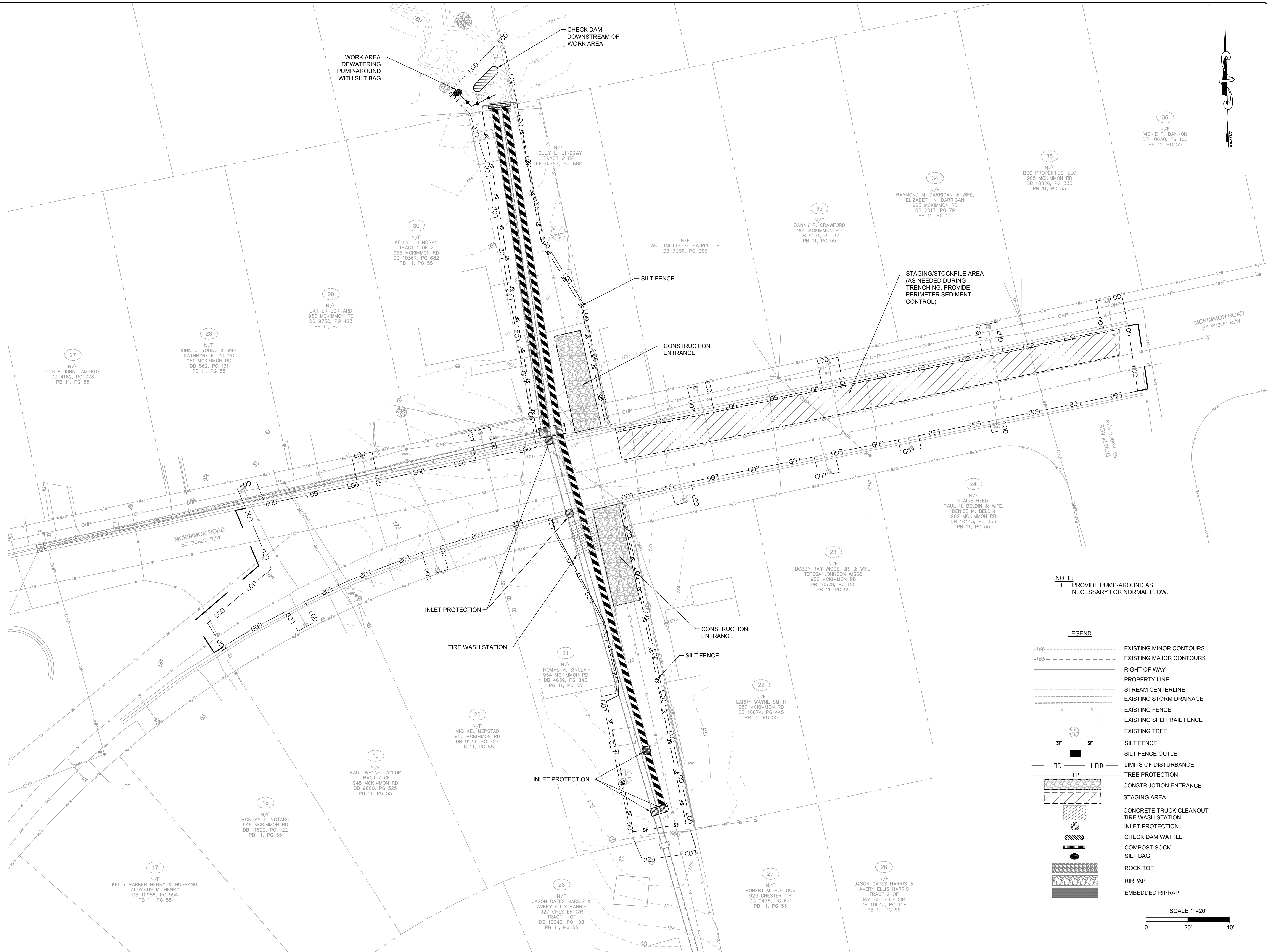
439 HAY STREET FAYETTEVILLE, NC 28301

EROSION CONTROL

PLAN TYPE
EROSION

SHEET NUMBER
C304

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NOTE:
1. PROVIDE PUMP-AROUND AS NECESSARY FOR NORMAL FLOW.

LEGEND	
-166 - - - - -	EXISTING MINOR CONTOURS
-165 - - - - -	EXISTING MAJOR CONTOURS
- - - - -	RIGHT OF WAY
- - - - -	PROPERTY LINE
- - - - -	STREAM CENTERLINE
- - - - -	EXISTING STORM DRAINAGE
- - - - -	EXISTING FENCE
- - - - -	EXISTING SPLIT RAIL FENCE
- - - - -	EXISTING TREE
SF	SILT FENCE
SF	SILT FENCE OUTLET
LDD	LIMITS OF DISTURBANCE
TP	TREE PROTECTION
	CONSTRUCTION ENTRANCE
	STAGING AREA
	CONCRETE TRUCK CLEANOUT
	TIRE WASH STATION
	INLET PROTECTION
	CHECK DAM WATTLE
	COMPOST SOCK
	SILT BAG
	ROCK TOE
	RIRPAP
	EMBEDDED RIRPAP

SCALE 1"=20'
0 20' 40'

EROSION CONTROL

EROSION

SHEET NUMBER
C305

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ENGINEERING & INFRASTRUCTURE DEPARTMENT
439 HAY STREET FAYETTEVILLE, NC 28501

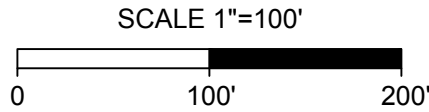
REV.	REVISIONS	DATE
1	CONSTRUCTION SET	

DRAWN : SHANE VANDERGRIFF	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNGAN	SCALE : 1"=20'
APPROVED :	DATE : 03/08/2024

PROJECT NO. 54960.001

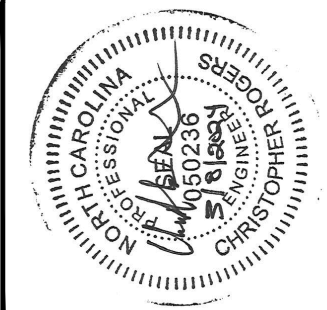
SUB-LEDGER NO.

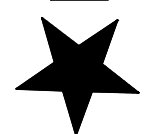
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DRAWN : SHANE VANDERGRIFT	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNGAN	SCALE : 1"=100'
APPROVED :	DATE : 03/08/2024

PROJECT NO. 54960.001
SUB-LEDGER NO. _____



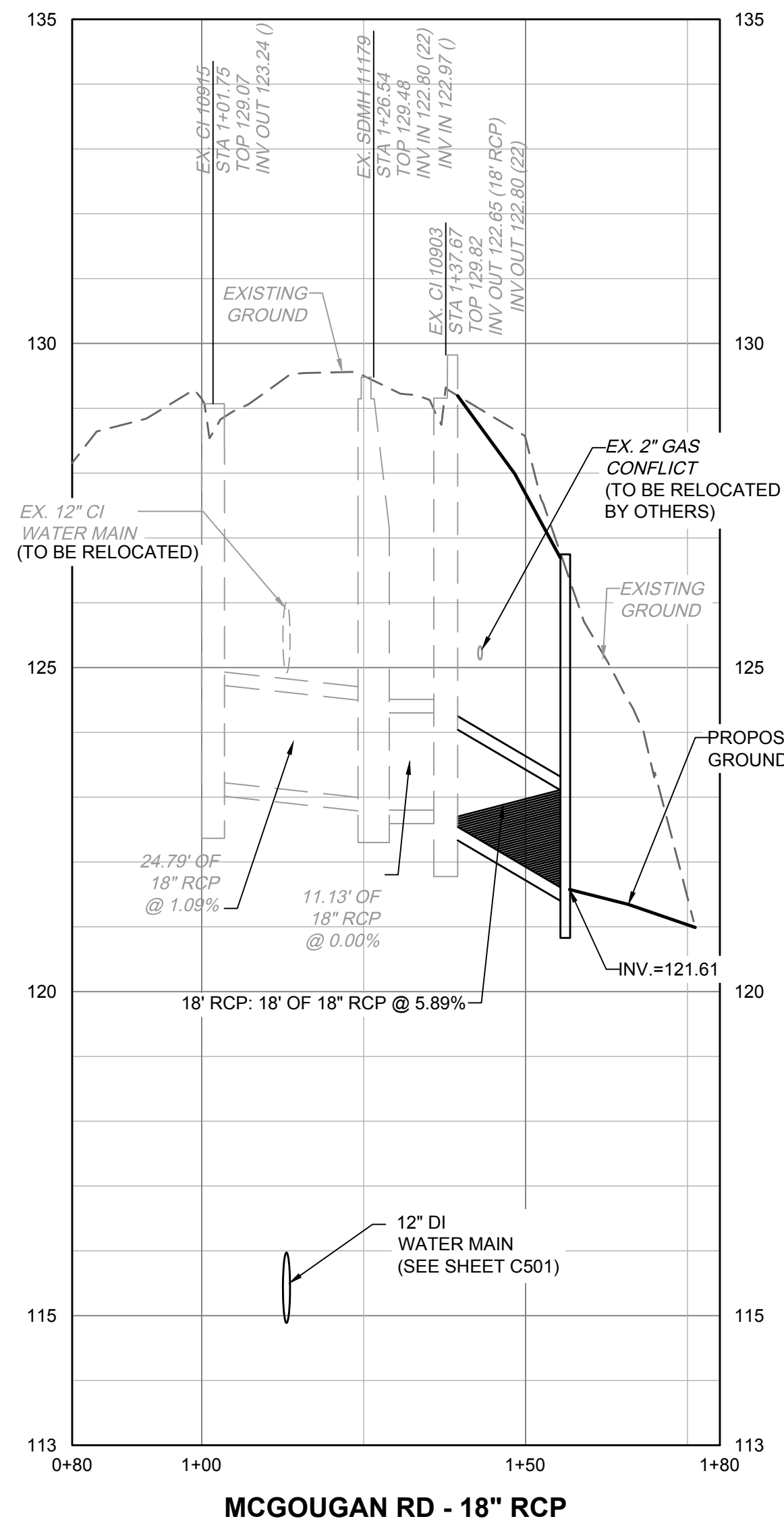
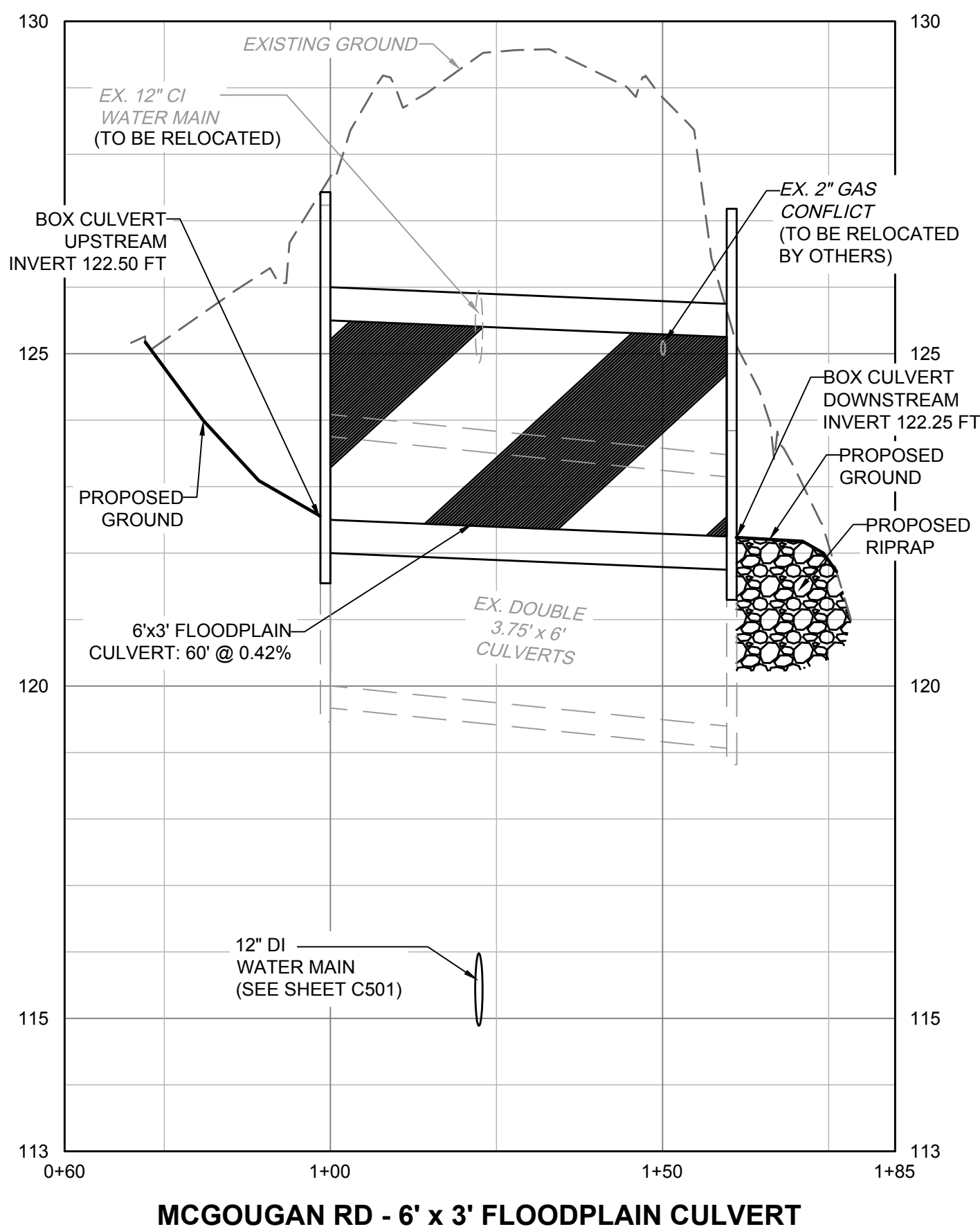
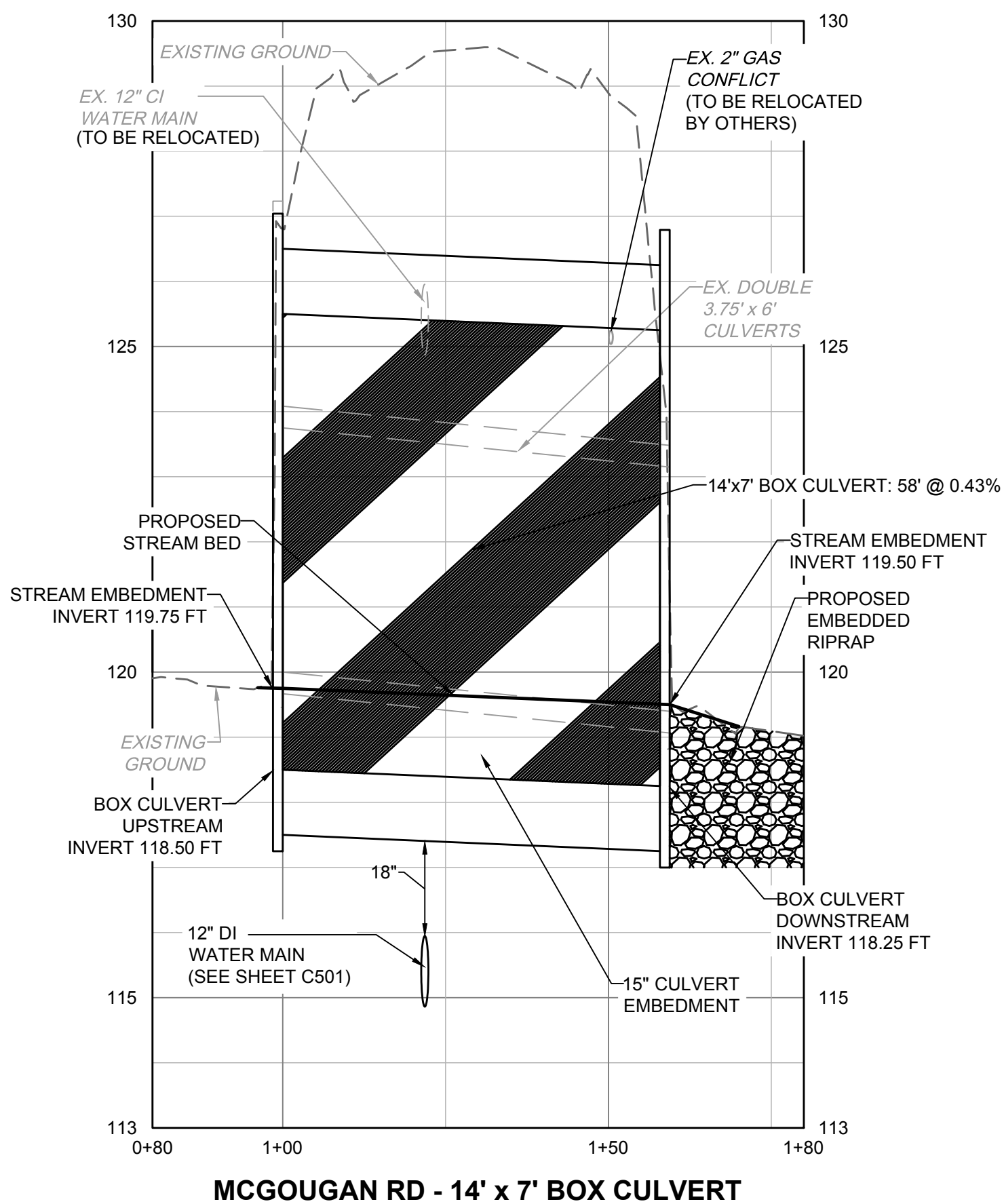
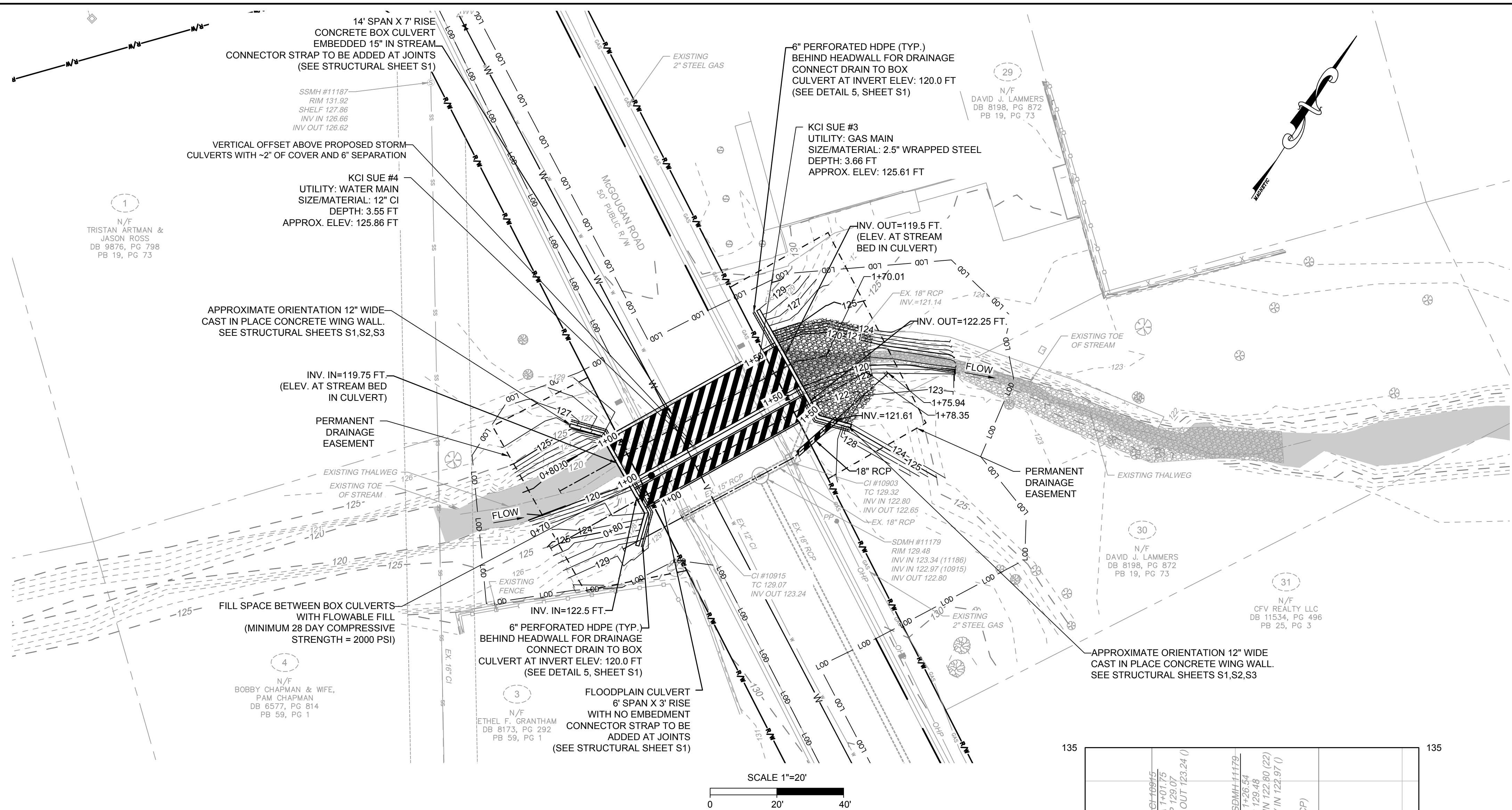
**FAYETTEVILLE!**
AMERICA'S CAN DO CITY

ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
439 HAY STREET FAYETTEVILLE, NC 28501



GRADING AND STORM DRAINAGE OVERALL PLAN VIEW	
PLAN TYPE	STORM
SHEET NUMBER	C400

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NOTE:
CONTRACTOR TO PROVIDE VIBRATION MONITORING, SHEETING,
SHORING AND BRACING DURING INSTALLATION AND REMOVAL.
CRITICAL AREAS INCLUDE CLOSE PROXIMITIES TO HOUSE FOUNDATIONS
AND EXISTING POOL. CONTRACTOR TO PROVIDE STAMPED/SEALED
DRAWINGS FOR BRACING.

LEGEND	
	EXISTING MINOR CONTOURS
	EXISTING MAJOR CONTOURS
	RIGHT OF WAY
	PROPERTY LINE
	STREAM CENTERLINE
	PERMANENT EASEMENT
	EXISTING STORM DRAINAGE
	EXISTING WATERLINE
	EXISTING SANITARY SEWER
	LIMITS OF DISTURBANCE
	EXISTING OVERHEAD POWER LINE
	EXISTING GAS
	EXISTING FENCE
	EXISTING SPLIT RAIL FENCE
	EXISTING TREE

GRADING AND
STORM DRAINAGE

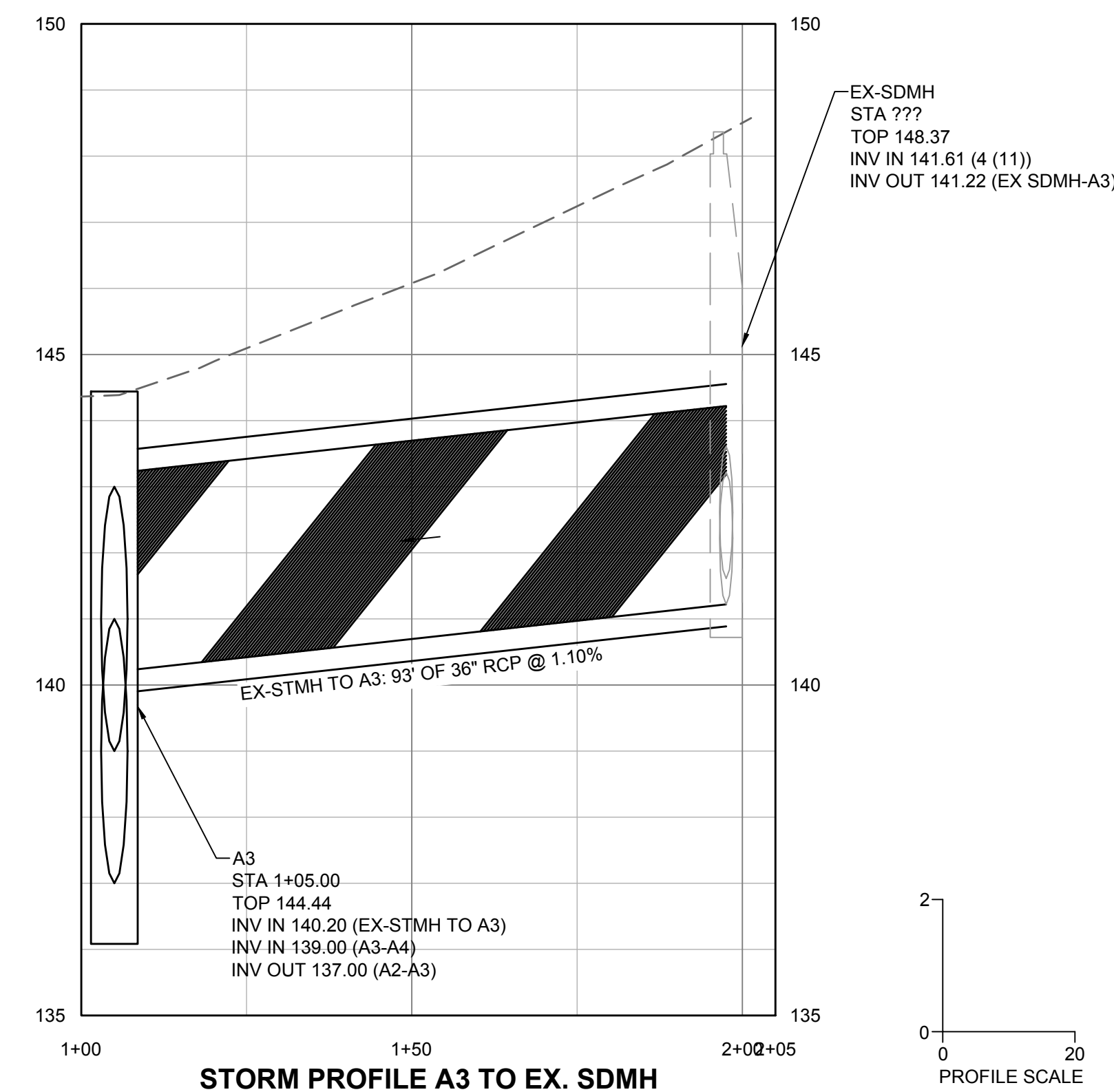
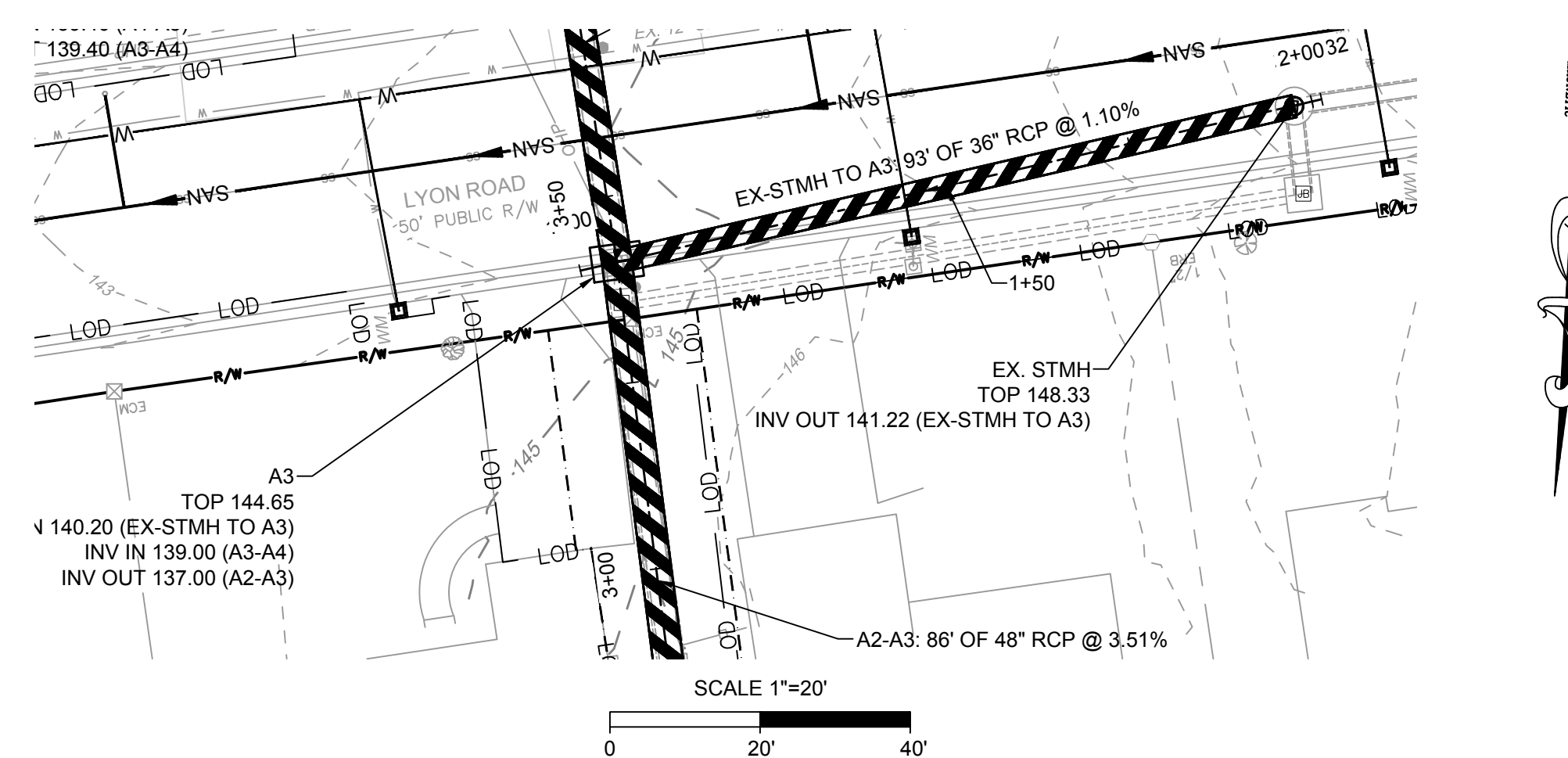
PLAN TYPE
STORM

SHEET NUMBER
C401

AMERICA'S CAN DO CITY
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
439 HAY STREET FAYETTEVILLE, NC 28501

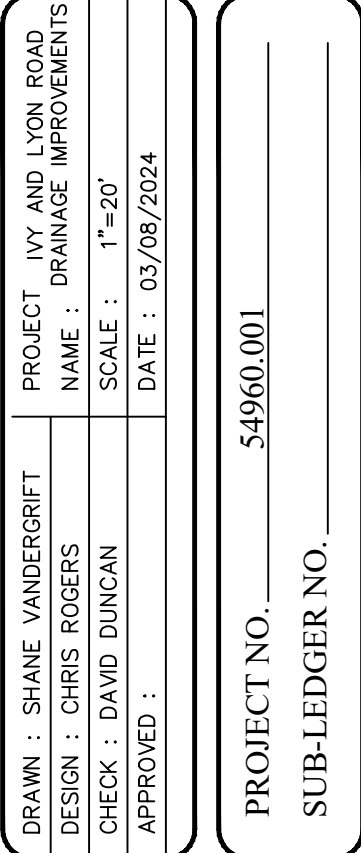
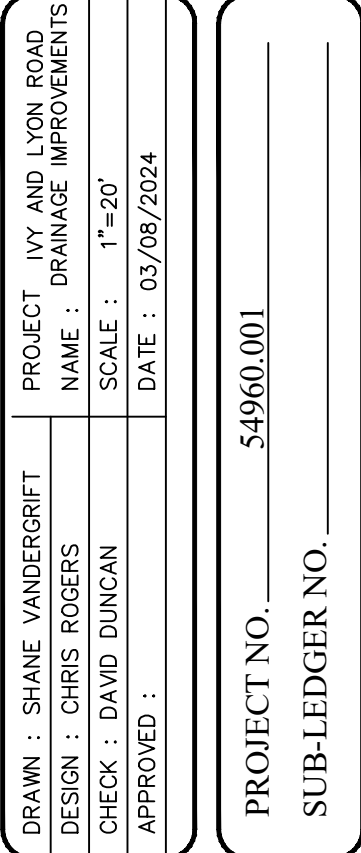
REV.	REV. #	REVISIONS	DESCRIPTION	REV. BY	DATE

PROJECT : SHANE VANDERGRIFF
DESIGN : CHRIS ROGERS
CHECK : DAVID DUNGAN
APPROVED :
PROJECT NO. : 54960.001
SUB-LEDGER NO. :
PROJECT : IVY AND LYON ROAD
NAME : DRAINAGE IMPROVEMENTS
SCALE : 1\"/>

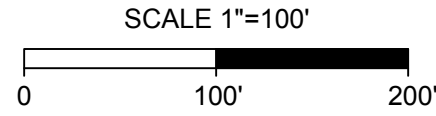
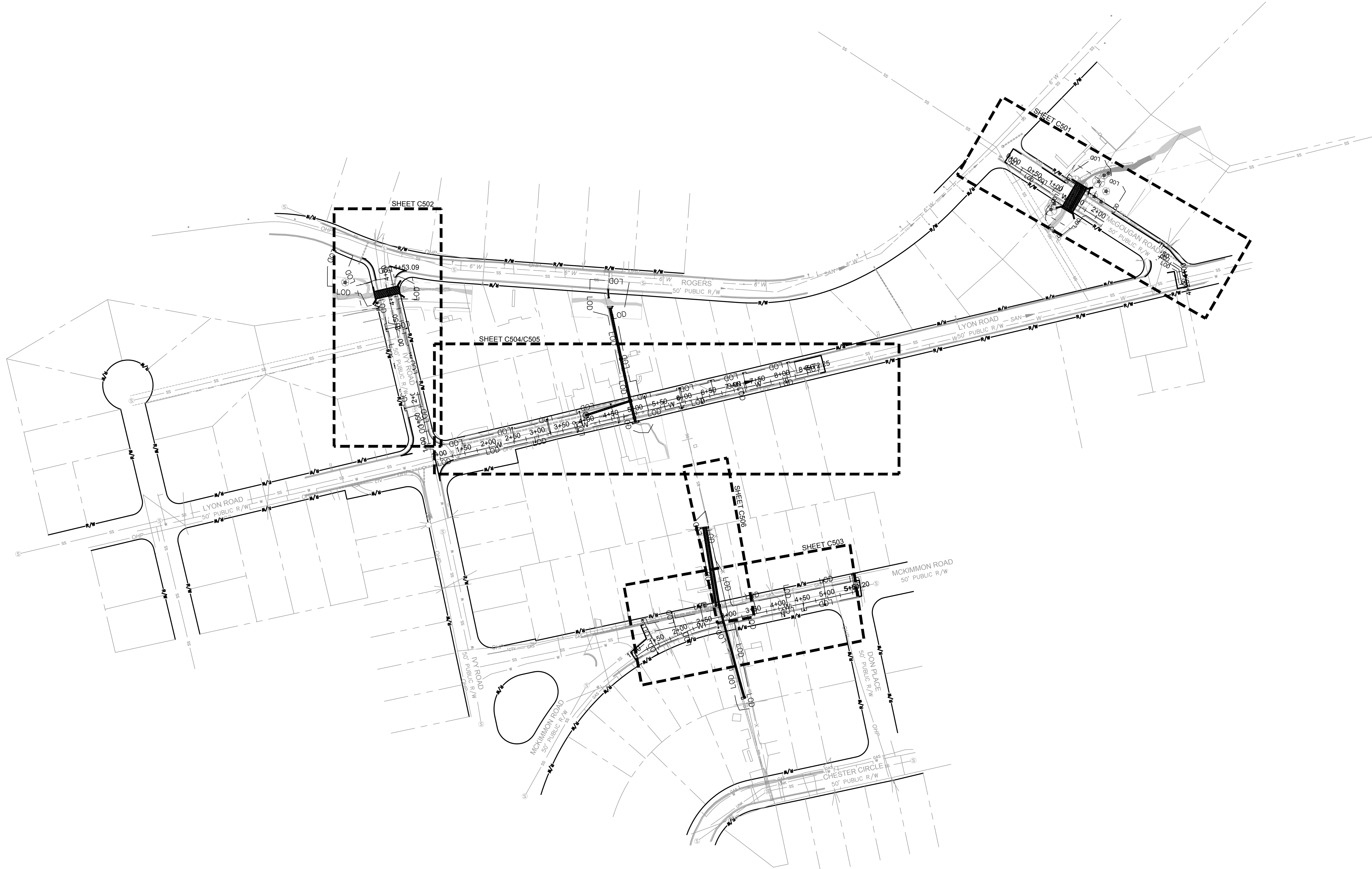


NOTE:
CONTRACTOR TO PROVIDE VIBRATION MONITORING, SHEETING,
SHORING AND BRACING DURING INSTALLATION AND REMOVAL.
CRITICAL AREAS INCLUDE CLOSE PROXIMITIES TO HOUSE FOUNDATIONS
AND EXISTING POOL. CONTRACTOR TO PROVIDE STAMPED/SEALED
DRAWINGS FOR BRACING.

	EXISTING MINOR CONTOURS
	EXISTING MAJOR CONTOURS
	RIGHT OF WAY
	PROPERTY LINE
	STREAM CENTERLINE
	PERMANENT EASEMENT
	EXISTING STORM DRAINAGE
	EXISTING WATERLINE
	EXISTING SANITARY SEWER
	LIMITS OF DISTURBANCE
	EXISTING OVERHEAD POWER LINE
	EXISTING GAS
	EXISTING FENCE
	EXISTING SPLIT RAIL FENCE
	EXISTING TREE



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SCALE 1"=100'



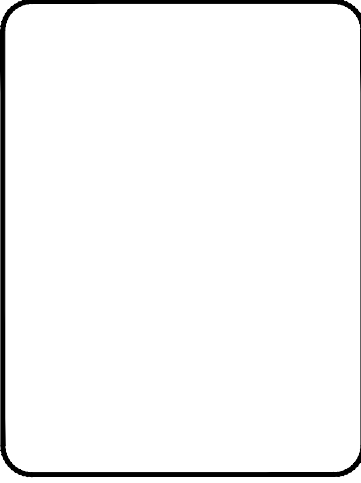
DRAWN : SHANE VANDERGRIFF	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNGAN	SCALE : 1"=100'
APPROVED :	DATE : 03/08/2024

PROJECT NO. 54960.001
SUB-LEDGER NO. _____



FAYETTEVILLE!
AMERICA'S CAN DO CITY

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

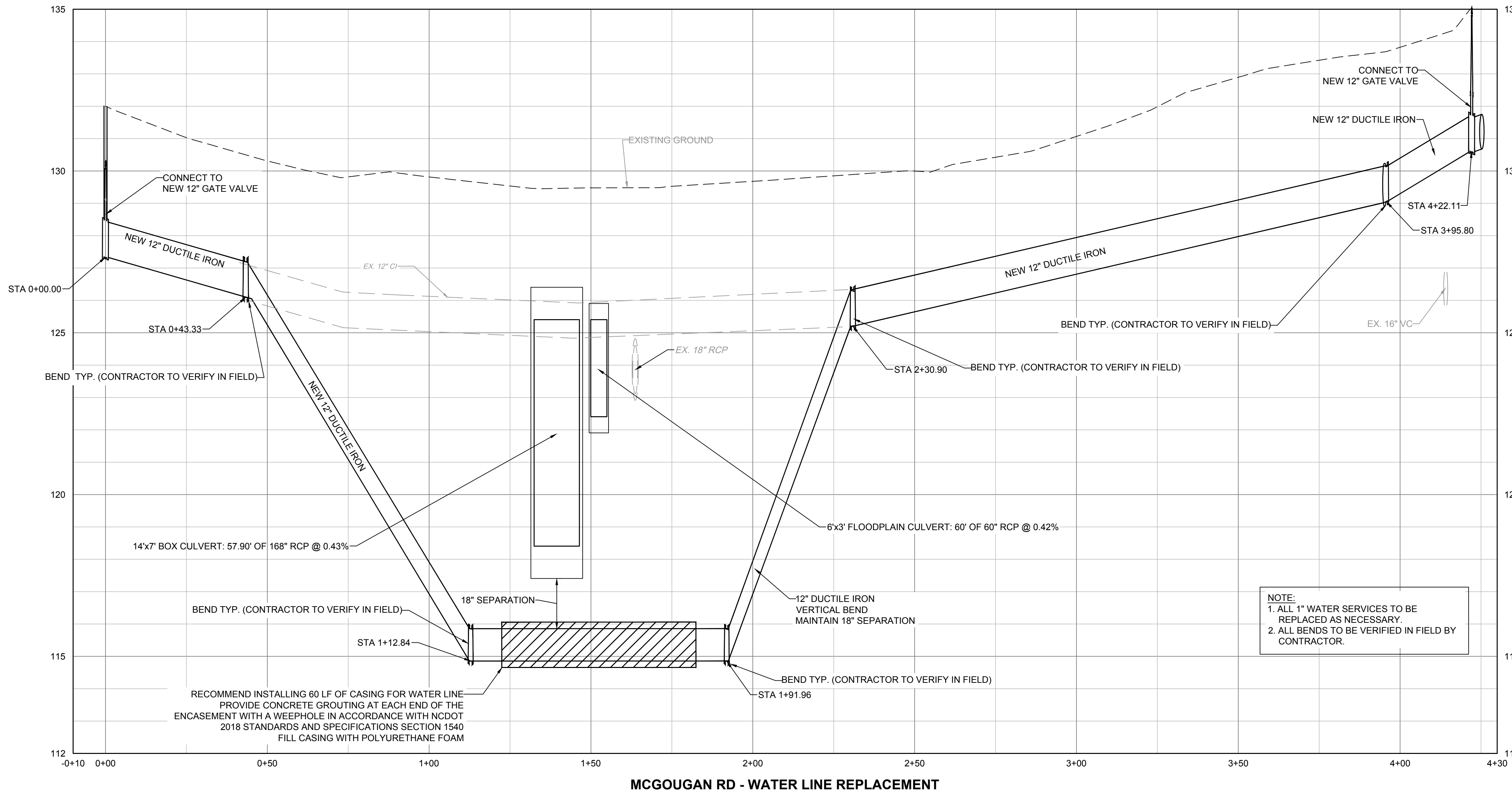
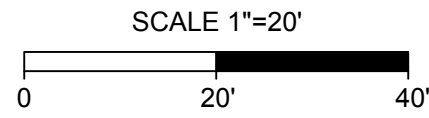
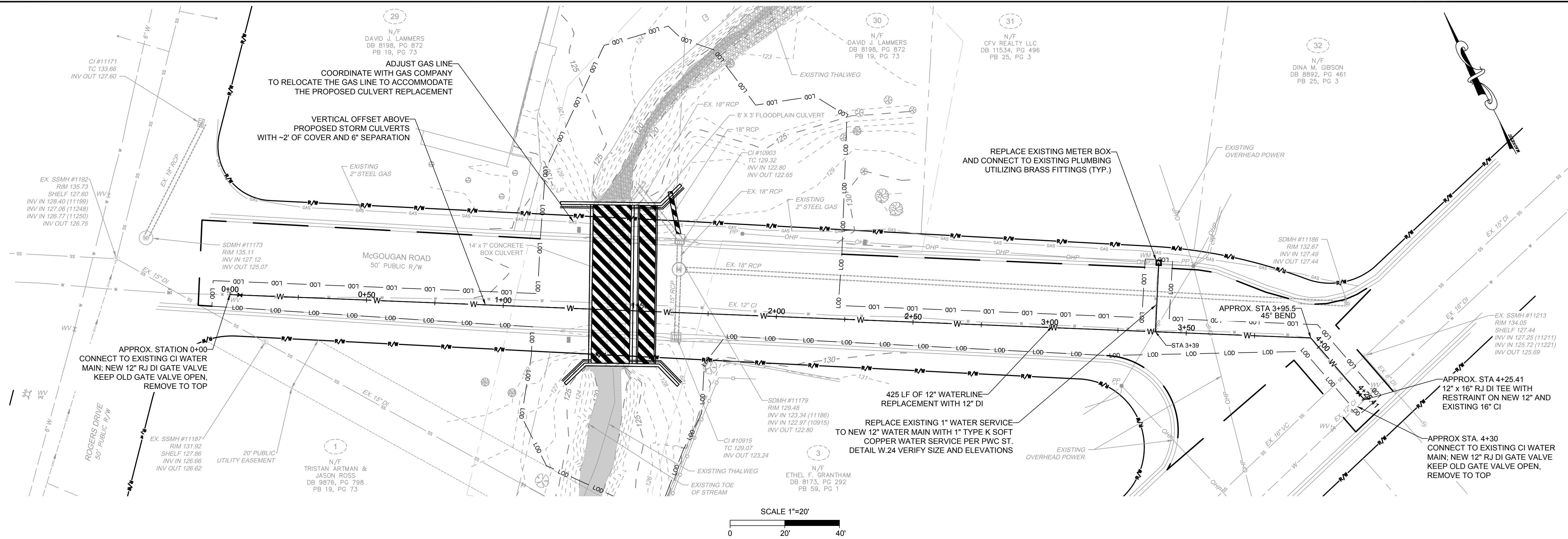


OVERALL
UTILITY REPLACEMENT

PLAN TYPE
UTILITY

SHEET NUMBER
C500

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NOTE:
1. CONTRACTOR TO PROVIDE VIBRATION MONITORING, SHEETING, SHORING AND BRACING DURING INSTALLATION AND REMOVAL
CONTRACTOR TO PROVIDE STAMPED/SEALED DRAWINGS FOR BRACING.
2. WATER SERVICES, SANITARY SEWER LATERALS AND CLEANOUT LOCATIONS AND STATIONING ARE APPROXIMATE. CONTRACTOR IS TO FIELD VERIFY.

LEGEND	
-166-	EXISTING MINOR CONTOURS
-165-	EXISTING MAJOR CONTOURS
---	RIGHT OF WAY
---	PROPERTY LINE
---	STREAM CENTERLINE
---	EXISTING STORM DRAINAGE
---	EXISTING WATERLINE
---	EXISTING SANITARY SEWER
---	EXISTING OVERHEAD POWER LINE
---	EXISTING GAS
X	EXISTING FENCE
---	EXISTING SPLIT RAIL FENCE
---	EXISTING TREE
W	PROPOSED WATERLINE REPLACEMENT
SAN	PROPOSED SEWER REPLACEMENT
LDD	LIMITS OF DISTURBANCE

UTILITY REPLACEMENT

UTILITY

PLAN TYPE

UTILITY

SHEET NUMBER

C501

FAYETTEVILLE!

AMERICA'S CAN DO CITY

ENGINEERING DIVISION

ENGINEERING & INFRASTRUCTURE DEPARTMENT

433 HAY STREET FAYETTEVILLE, NC 28501

REV.

REV. #

REVISIONS

DESCRIPTION

REV. BY

DATE

DRAWN : SHANE VANDERGRIFF

DESIGN : CHRIS ROGERS

CHECK : DAVID DUNGAN

APPROVED :

PROJECT : IVY AND LYON ROAD DRAINAGE IMPROVEMENTS

NAME : DRANE IMPROVEMENTS

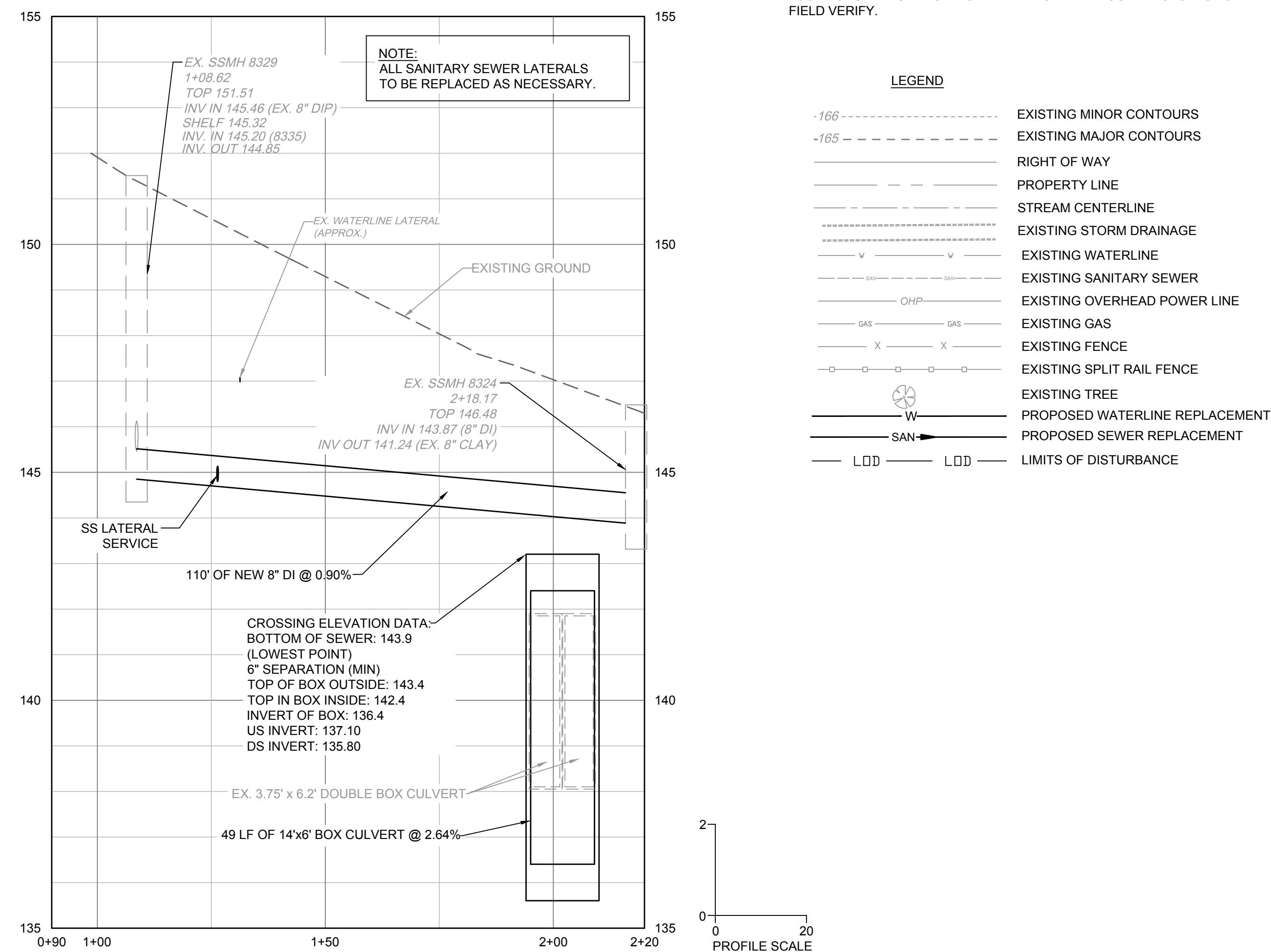
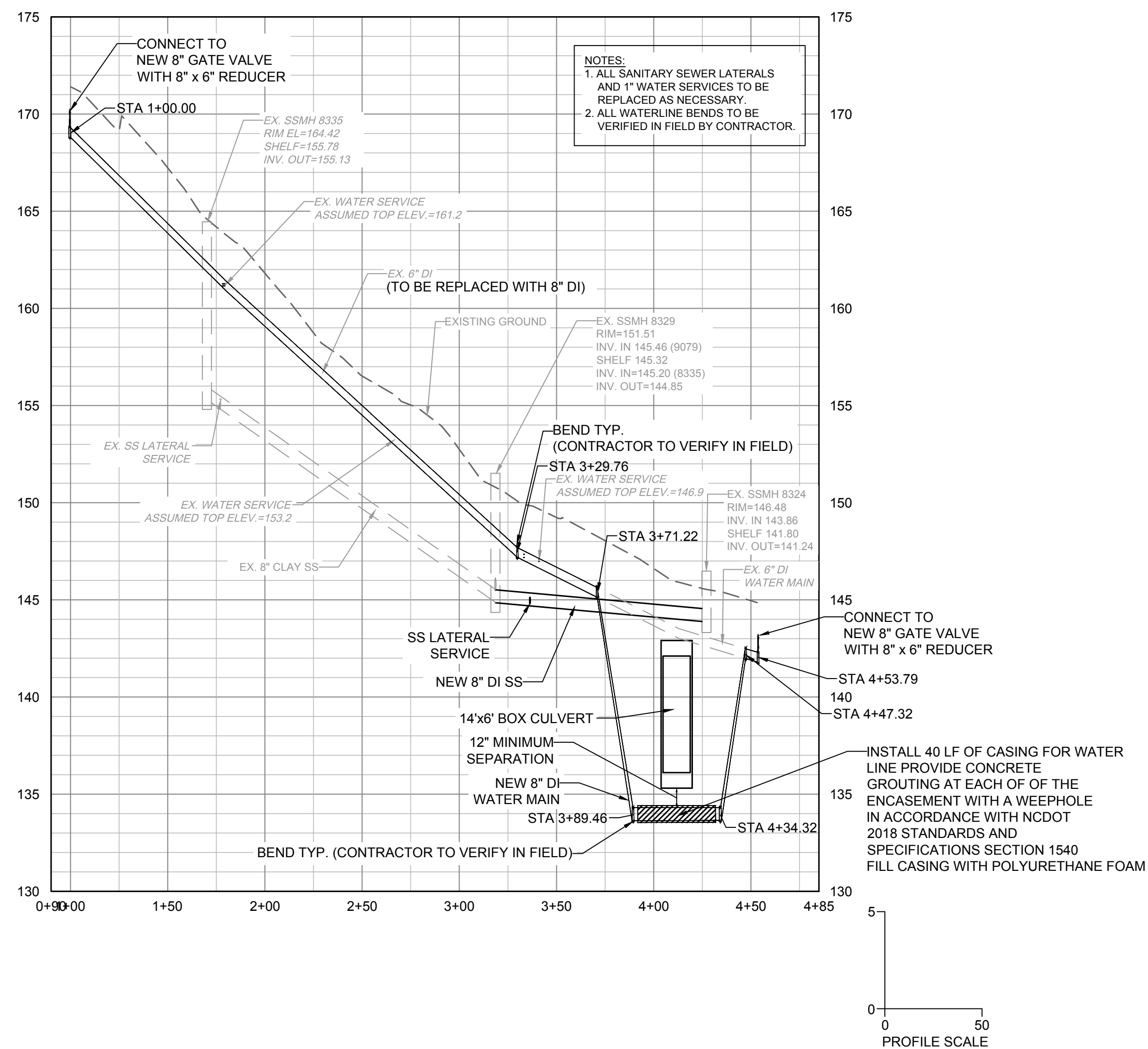
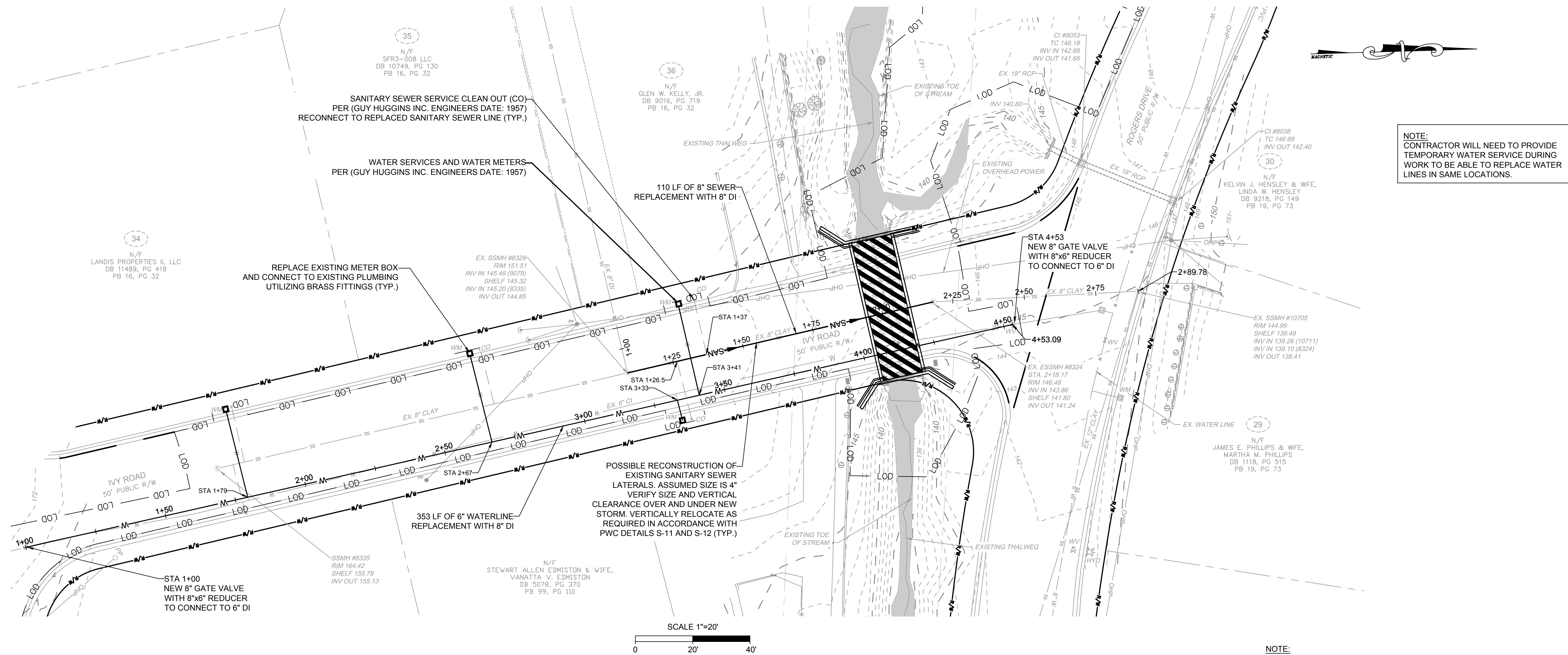
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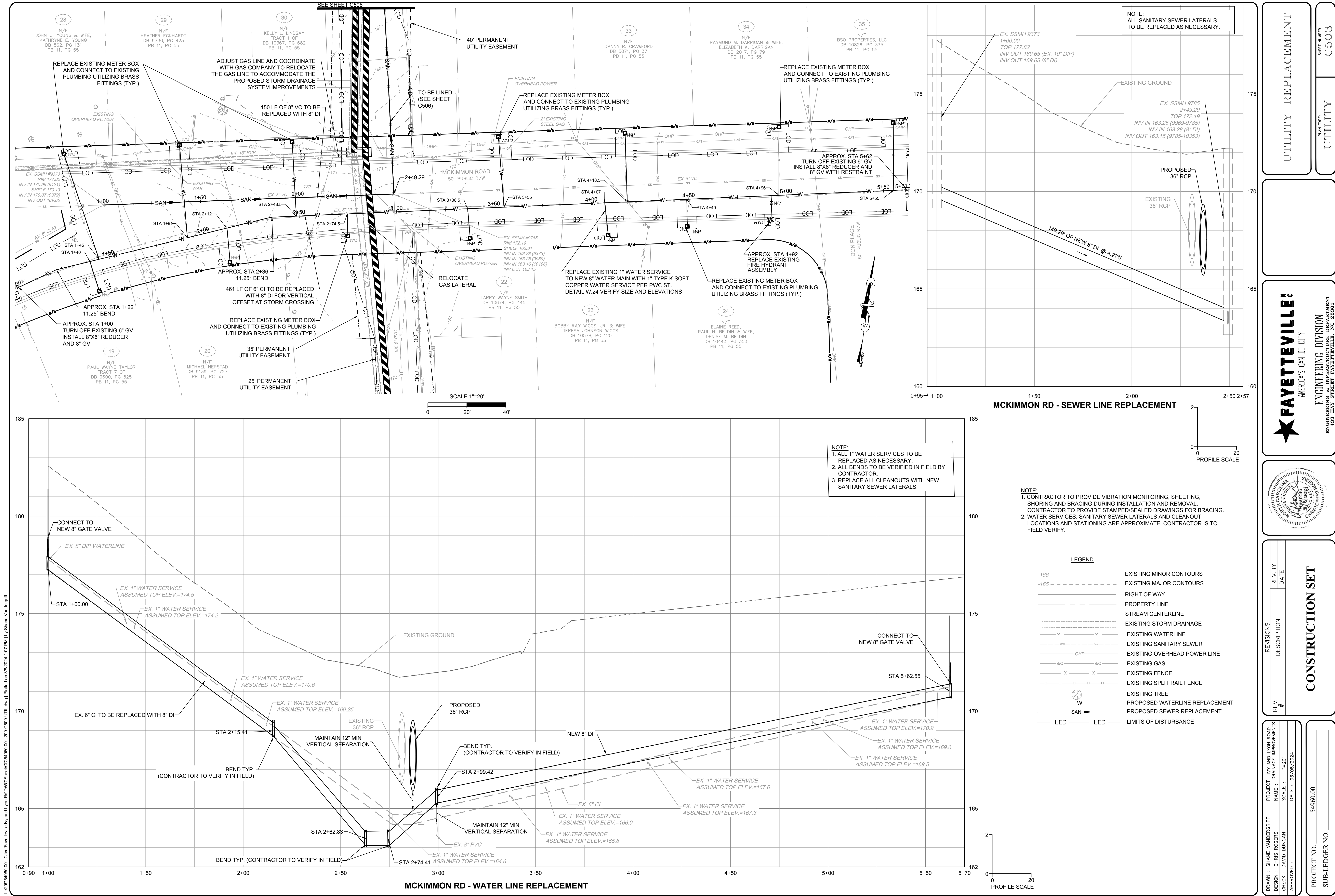
DATE : 03/08/2024

PROJECT NO. : 54960.001

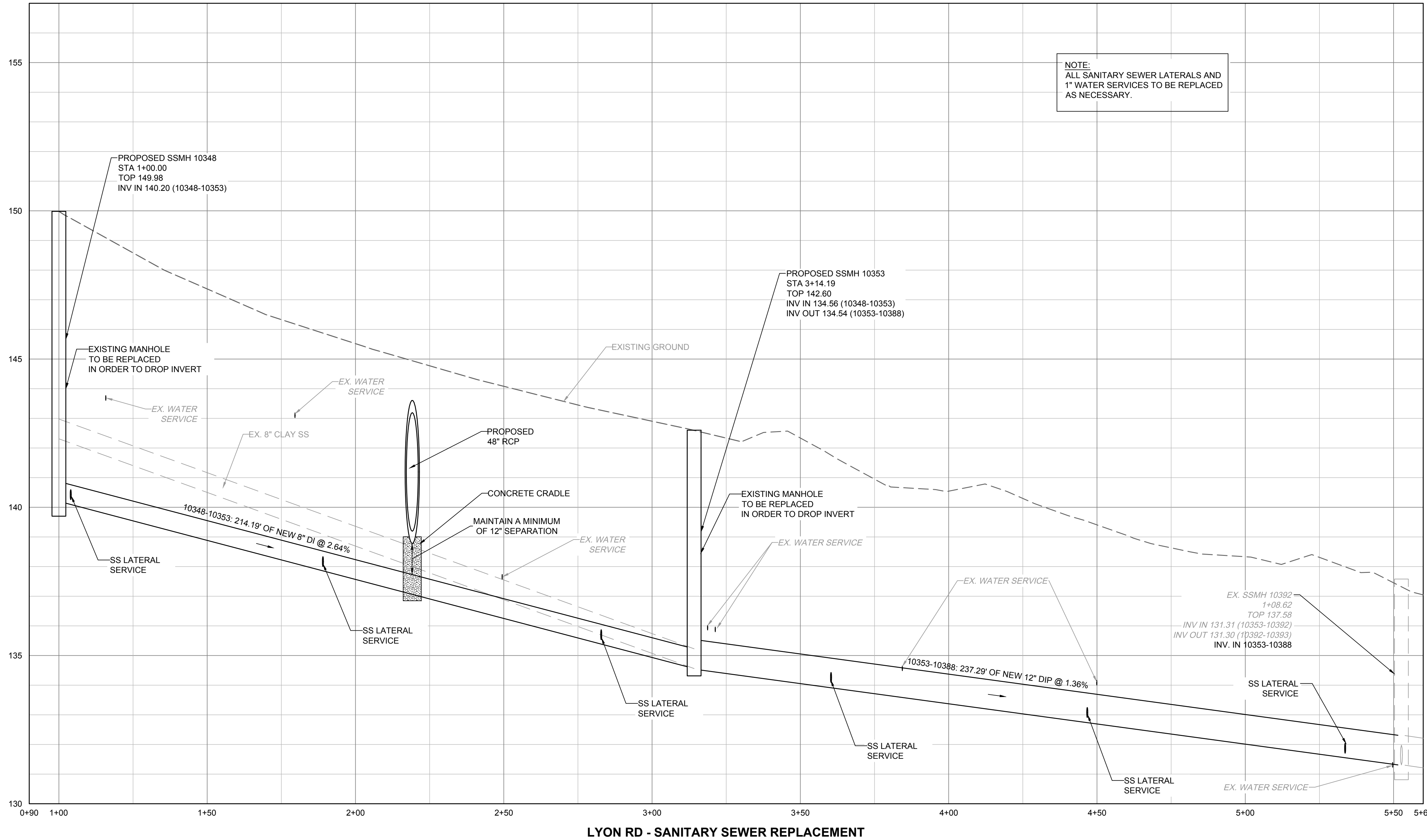
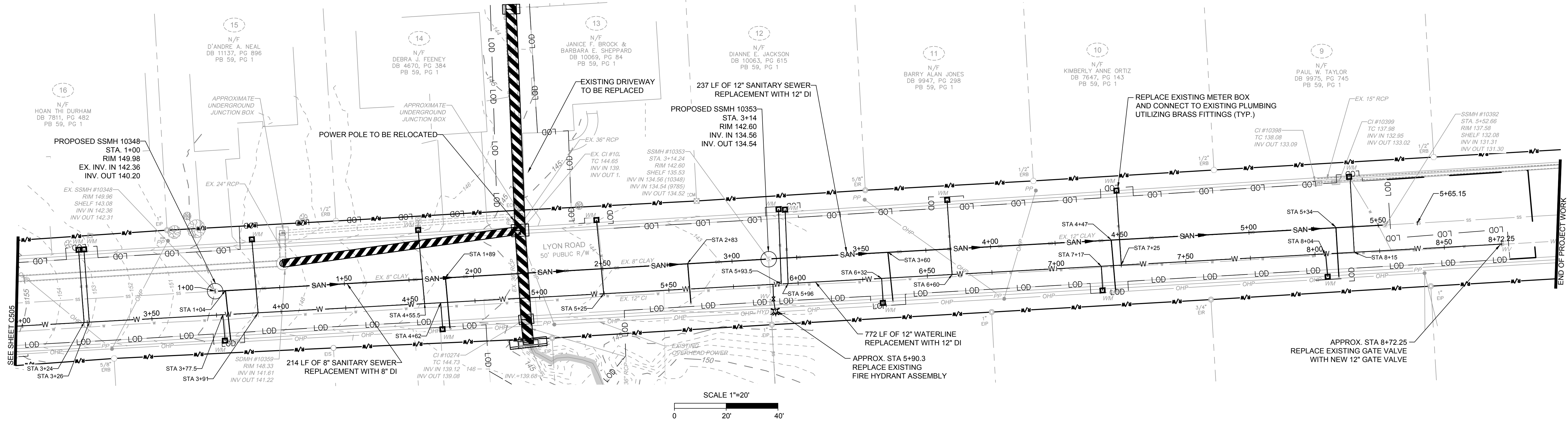
SUB-LEDGER NO. :

CONSTRUCTION SET





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NOTE:
1. CONTRACTOR TO PROVIDE VIBRATION MONITORING, SHEETING, SHORING AND BRACING DURING INSTALLATION AND REMOVAL.
2. CONTRACTOR TO PROVIDE STAMPED/SEALED DRAWINGS FOR BRACING.
3. WATER SERVICES, SANITARY SEWER LATERALS AND CLEANOUT LOCATIONS AND STATIONING ARE APPROXIMATE. CONTRACTOR IS TO FIELD VERIFY.

LEGEND	
-166-----	EXISTING MINOR CONTOURS
-165-----	EXISTING MAJOR CONTOURS
-----	RIGHT OF WAY
-----	PROPERTY LINE
-----	STREAM CENTERLINE
-----	EXISTING STORM DRAINAGE
-----	EXISTING WATERLINE
-----	EXISTING SANITARY SEWER
-----	EXISTING OVERHEAD POWER LINE
-----	EXISTING GAS
-----	EXISTING FENCE
-----	EXISTING SPLIT RAIL FENCE
-----	EXISTING TREE
-----	PROPOSED WATERLINE REPLACEMENT
-----	PROPOSED SEWER REPLACEMENT
-----	LIMITS OF DISTURBANCE

UTILITY REPLACEMENT

PLAN TYPE: UTILITY

SHEET NUMBER: C504

AMERICA'S CAN DO CITY

ENGINEERING DIVISION

ENGINEERING & INFRASTRUCTURE DEPARTMENT

433 HAY STREET FAYETTEVILLE, NC 28301

REVISIONS

REV.	#	DESCRIPTION	REV. BY	DATE

CONSTRUCTION SET

DRAWN : SHANE VANDERGRIFF

DESIGN : CHRIS ROGERS

CHECK : DAVID DUNCAN

APPROVED :

PROJECT : IVY AND LYON ROAD

NAME : DRAINAGE IMPROVEMENTS

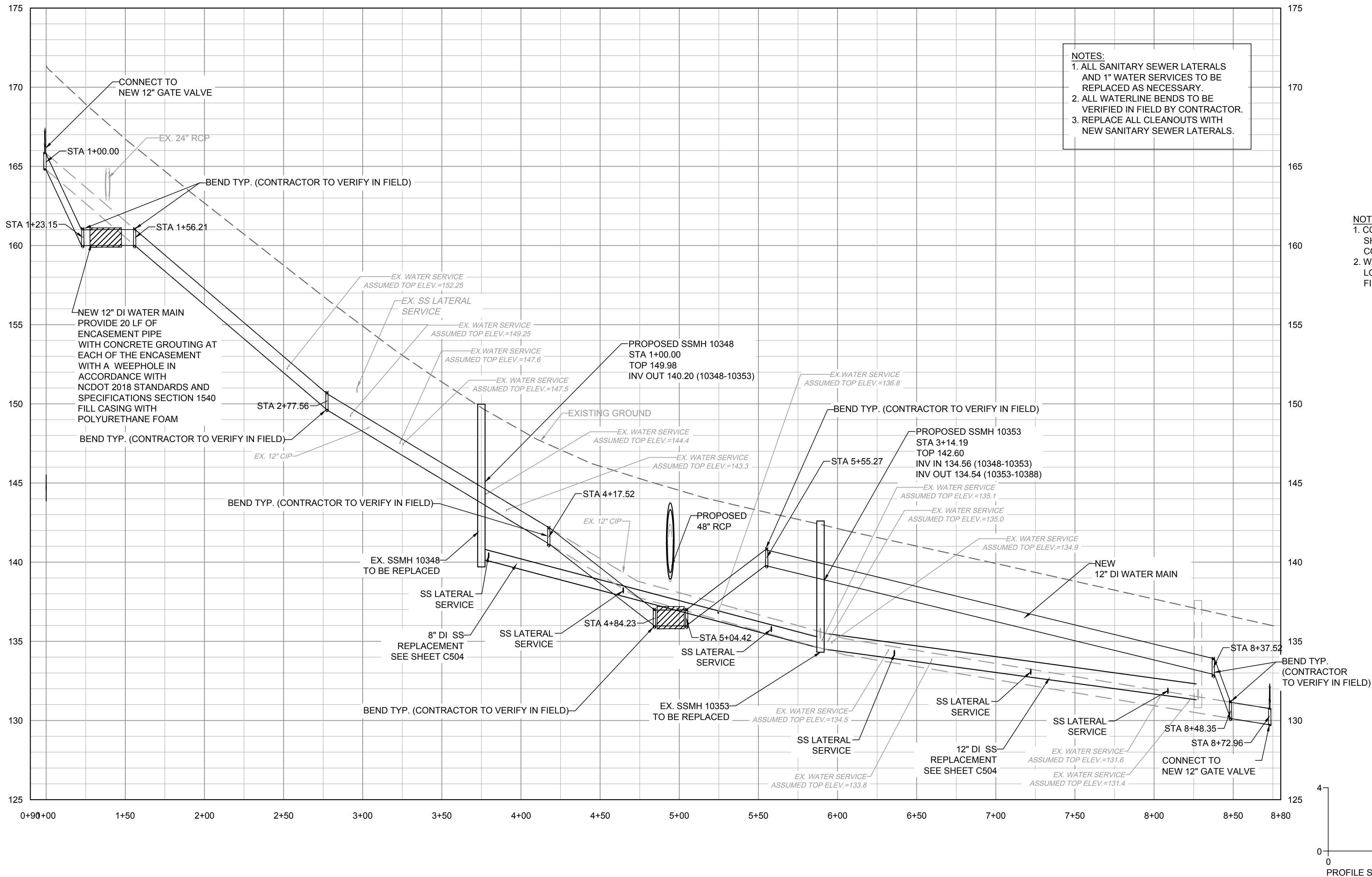
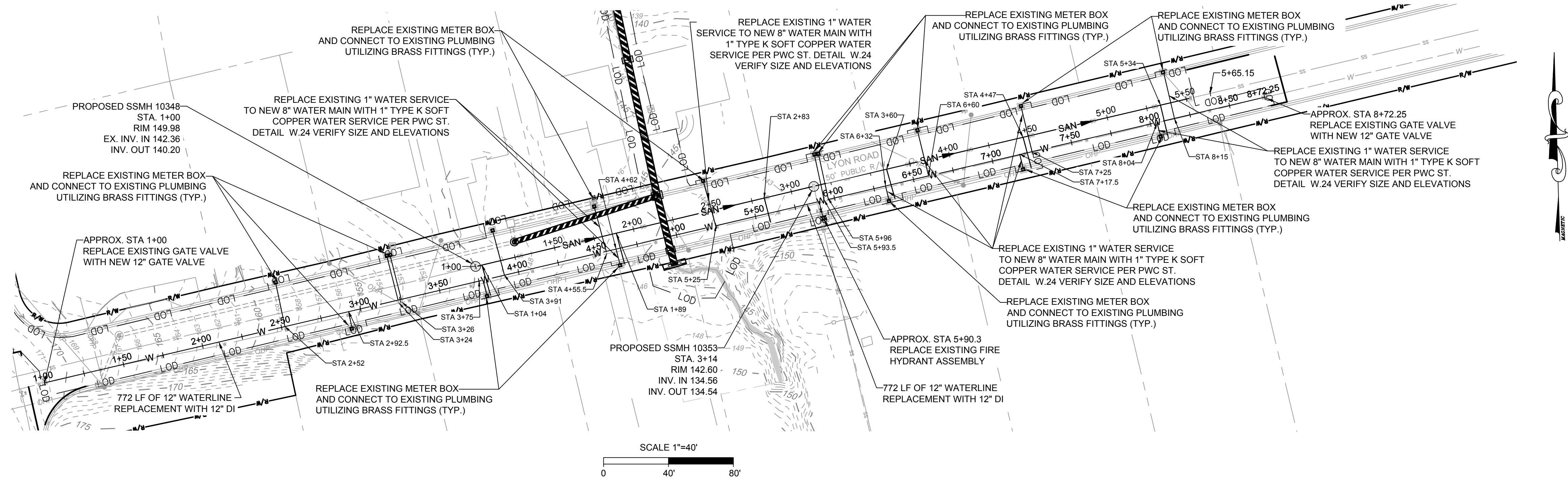
SCALE : 1"=20'

DATE : 03/08/2024

PROJECT NO. : 54960.001

SUB-LEDGER NO. :

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UTILITY REPLACEMENT

PLAN TYPE: UTILITY

SHEET NUMBER: C505

FAYETTEVILLE!
AMERICA'S CAN DO CITY

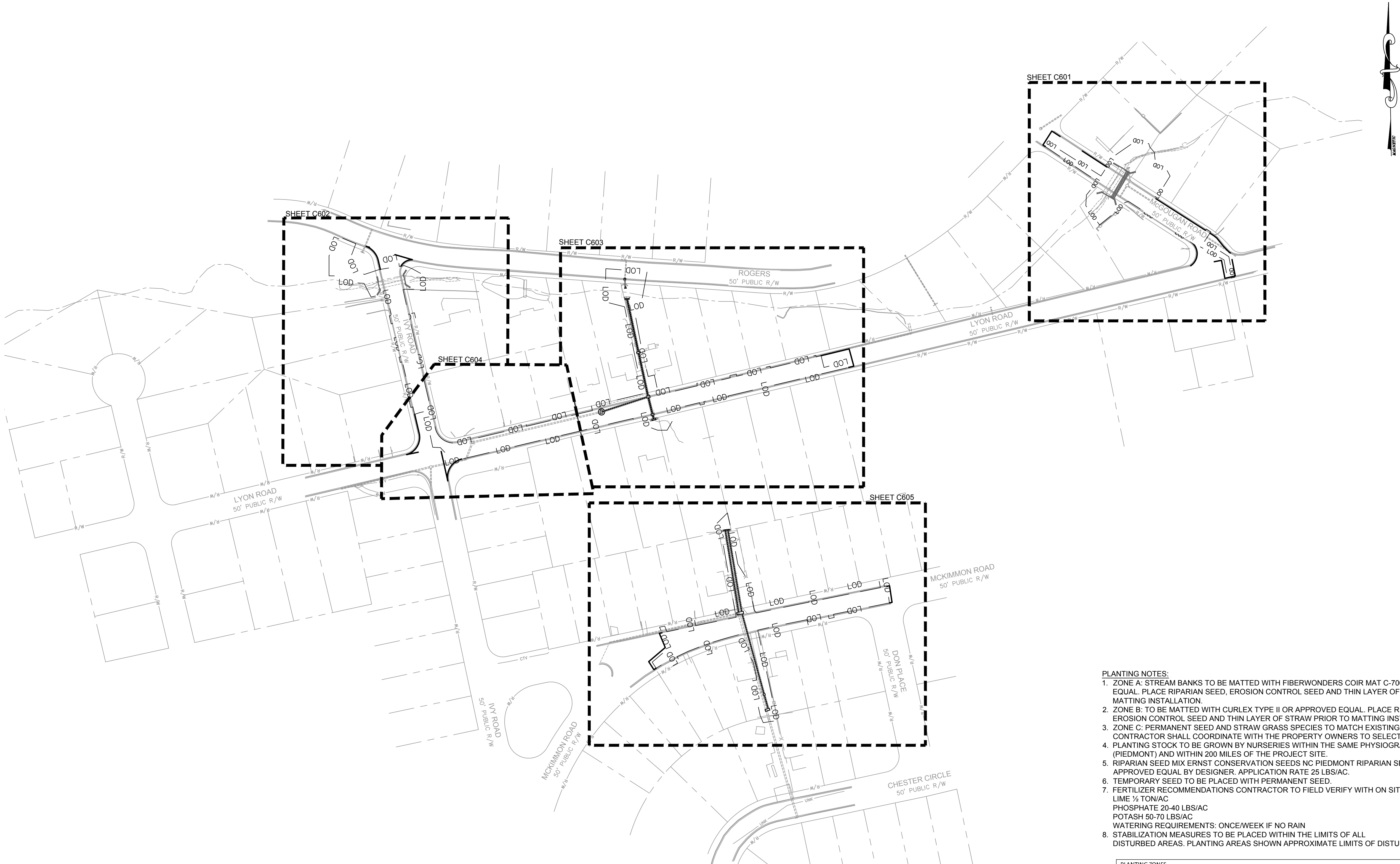
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
439 HAY STREET FAYETTEVILLE, NC 28301



REVISIONS		REV. #	DESCRIPTION	REV. BY	DATE
CONSTRUCTION SET					

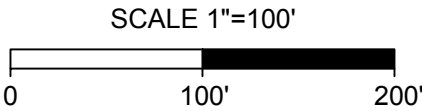
DRAWN : SHANE VANDERGRIFF	PROJECT : IVY AND LYON ROAD DRAINAGE IMPROVEMENTS
DESIGN : CHRIS ROGERS	NAME : DR
CHECK : DAVID DUNGAN	SCALE : 1"=40'
APPROVED :	DATE : 03/08/2024
PROJECT NO. : 54960.001	SUB-LEDGER NO. :

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- PLANTING NOTES:**
1. ZONE A: STREAM BANKS TO BE MATTED WITH FIBERWONDERS COIR MAT C-700 OR APPROVED EQUAL. PLACE RIPARIAN SEED, EROSION CONTROL SEED AND THIN LAYER OF STRAW PRIOR TO MATTING INSTALLATION.
 2. ZONE B: TO BE MATTED WITH CURLEX TYPE II OR APPROVED EQUAL. PLACE RIPARIAN SEED EROSION CONTROL SEED AND THIN LAYER OF STRAW PRIOR TO MATTING INSTALLATION.
 3. ZONE C: PERMANENT SEED AND STRAW GRASS SPECIES TO MATCH EXISTING LAWN TURF. CONTRACTOR SHALL COORDINATE WITH THE PROPERTY OWNERS TO SELECT APPROVED SEED.
 4. PLANTING STOCK TO BE GROWN BY NURSERIES WITHIN THE SAME PHYSIOGRAPHIC REGION (PIEDMONT) AND WITHIN 200 MILES OF THE PROJECT SITE.
 5. RIPARIAN SEED MIX ERNST CONSERVATION SEEDS NC PIEDMONT RIPARIAN SEED MIX OR APPROVED EQUAL BY DESIGNER. APPLICATION RATE 25 LBS/AC.
 6. TEMPORARY SEED TO BE PLACED WITH PERMANENT SEED.
 7. FERTILIZER RECOMMENDATIONS CONTRACTOR TO FIELD VERIFY WITH ON SITE SOIL CONDITIONS:
LIME ½ TON/AC
PHOSPHATE 20-40 LBS/AC
POTASH 50-70 LBS/AC
 8. WATERING REQUIREMENTS: ONCE/WEEK IF NO RAIN
 8. STABILIZATION MEASURES TO BE PLACED WITHIN THE LIMITS OF ALL DISTURBED AREAS. PLANTING AREAS SHOWN APPROXIMATE LIMITS OF DISTURBANCE.

PLANTING ZONES				
ZONE	RIPARIAN SEED (SY)	STRAW MULCH(SY)	CURLEX TYPE II (SY)	C700 MATTING (SY)
A	760			760
B	1235		1235	
C		1305		
Totals	1995	1305	1235	760



DRAWN : SHANE VANDERGRIFF
DESIGN : CHRIS ROGERS
CHECK : DAVID DUNGAN
APPROVED :
PROJECT : SHANE VANDERGRIFF
NAME : DRAINAGE IMPROVEMENTS
SCALE : 1"=100'
DATE : 03/08/2024

PROJECT NO. 54960.001
SUB-LEDGER NO. _____

REVISIONS		REV.	BY
DESCRIPTION		#	DATE

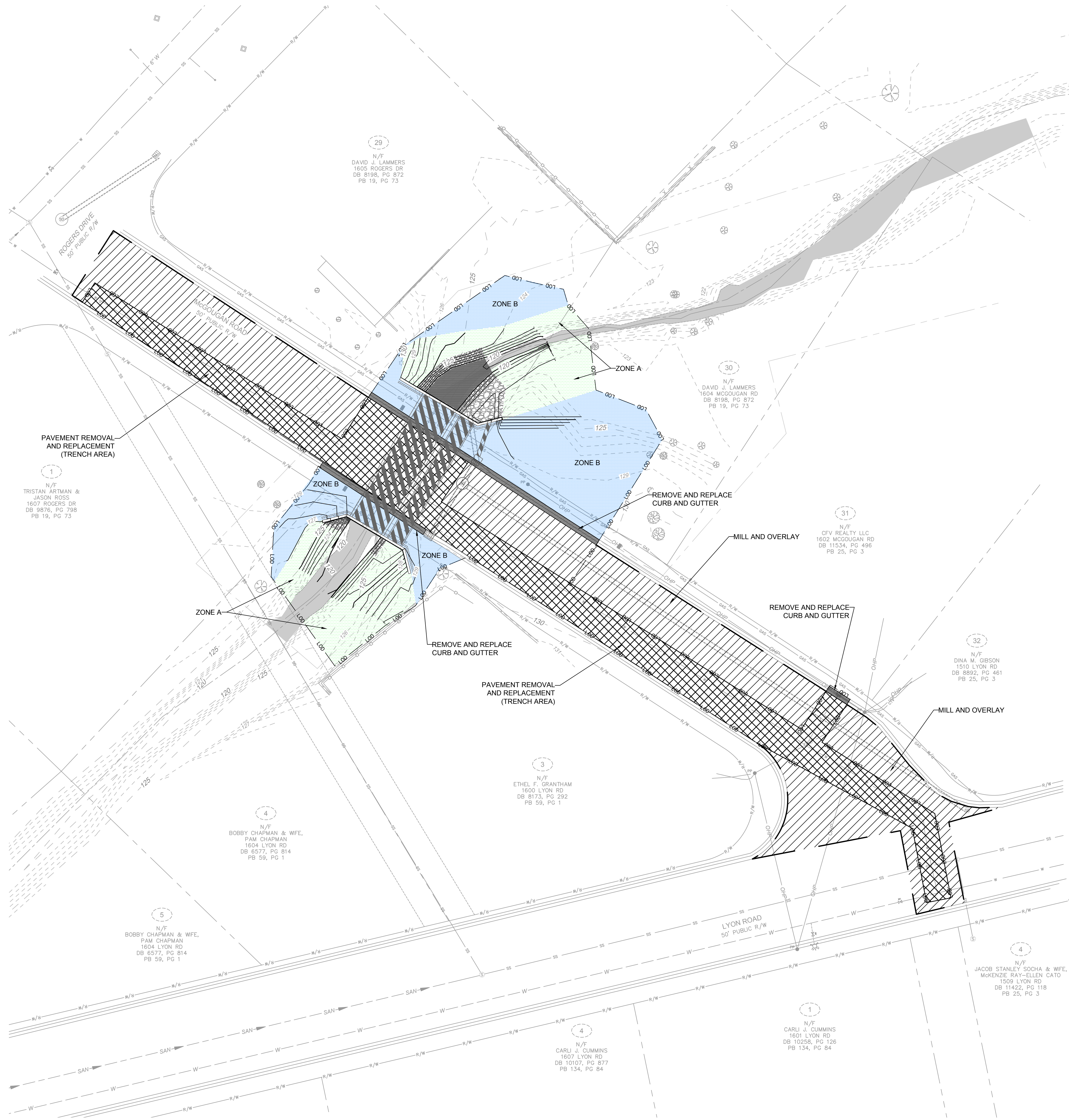
CONSTRUCTION SET



FAYETTEVILLE:
AMERICA'S CAN DO CITY
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
439 HAY STREET FAYETTEVILLE, NC 28501

OVERALL
SITE FINISHING PLAN
PLAN TYPE: SITE
SHEET NUMBER: C600

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- PLANTING NOTES:**
1. ZONE A: STREAM BANKS TO BE MATTED WITH FIBERWONDERS COIR MAT C-700 OR APPROVED EQUAL. PLACE RIPARIAN SEED, EROSION CONTROL SEED AND THIN LAYER OF STRAW PRIOR TO MATTING INSTALLATION.
 2. ZONE B: TO BE MATTED WITH CURLEX TYPE II OR APPROVED EQUAL. PLACE RIPARIAN SEED EROSION CONTROL SEED AND THIN LAYER OF STRAW PRIOR TO MATTING INSTALLATION.
 3. ZONE C: PERMANENT SEED AND STRAW GRASS SPECIES TO MATCH EXISTING LAWN TURF. CONTRACTOR SHALL COORDINATE WITH THE PROPERTY OWNERS TO SELECT APPROVED SEED.
 4. PLANTING STOCK TO BE GROWN BY NURSERIES WITHIN THE SAME PHYSIOGRAPHIC REGION (PIEDMONT) AND WITHIN 200 MILES OF THE PROJECT SITE.
 5. RIPARIAN SEED MIX ERNST CONSERVATION SEEDS NC PIEDMONT RIPARIAN SEED MIX OR APPROVED EQUAL BY DESIGNER. APPLICATION RATE 25 LBS/AC.
 6. TEMPORARY SEED TO BE PLACED WITH PERMANENT SEED.
 7. FERTILIZER RECOMMENDATIONS CONTRACTOR TO FIELD VERIFY WITH ON SITE SOIL CONDITIONS:
LIME 1/4 TON/AC
PHOSPHATE 20-40 LBS/AC
POTASH 50-70 LBS/AC
WATERING REQUIREMENTS: ONCE/WEEK IF NO RAIN
 8. STABILIZATION MEASURES TO BE PLACED WITHIN THE LIMITS OF ALL DISTURBED AREAS. PLANTING AREAS SHOWN APPROXIMATE LIMITS OF DISTURBANCE.

PLANTING ZONES				
ZONE	RIPARIAN SEED (SY)	STRAW MULCH(SY)	CURLEX TYPE II	C700 MATTING (SY)
A	362			362
B	575		575	
Totals	937	0	575	362

LEGEND	
-166-----	EXISTING MINOR CONTOURS
-165-----	EXISTING MAJOR CONTOURS
-----	RIGHT OF WAY
-----	PROPERTY LINE
-----	STREAM CENTERLINE
-----	EXISTING STORM DRAINAGE
X X	EXISTING FENCE
o o	EXISTING SPLIT RAIL FENCE
o	EXISTING TREE
---	LIMITS OF CONSTRUCTION
---	LIMITS OF DISTURBANCE
[Pattern]	PAVEMENT REMOVAL AND REPLACEMENT
[Pattern]	MILL AND OVERLAY
[Pattern]	CURB AND GUTTER REMOVAL AND REPLACEMENT
[Pattern]	CONCRETE SIDEWALK/DRIVEWAY REPLACEMENT
[Pattern]	GRAVEL DRIVEWAY REPLACEMENT
[Pattern]	ZONE A PLANTING
[Pattern]	ZONE B PLANTING
[Pattern]	ZONE C PLANTING
[Pattern]	ROCK TOE
[Pattern]	RIPRAP
[Pattern]	EMBEDDED RIPRAP

SCALE 1"=20'

REVISIONS

REV. #

DESCRIPTION

REV. BY

DATE

PROJECT

IVY AND LYON ROAD

NAME : DRAINAGE IMPROVEMENTS

SCALE : 1"=20'

DATE : 03/08/2024

DRAWN : SHANE VANDERGRIFF

DESIGN : CHRIS ROGERS

CHECK : DAVID DUNCAN

APPROVED :

CONSTRUCTION SET

PROJECT NO. 54960.001

SUB-LEDGER NO.

AMERICA'S CAN DO CITY

FAYETTEVILLE!

ENGINEERING DIVISION

ENGINEERING & INFRASTRUCTURE DEPARTMENT

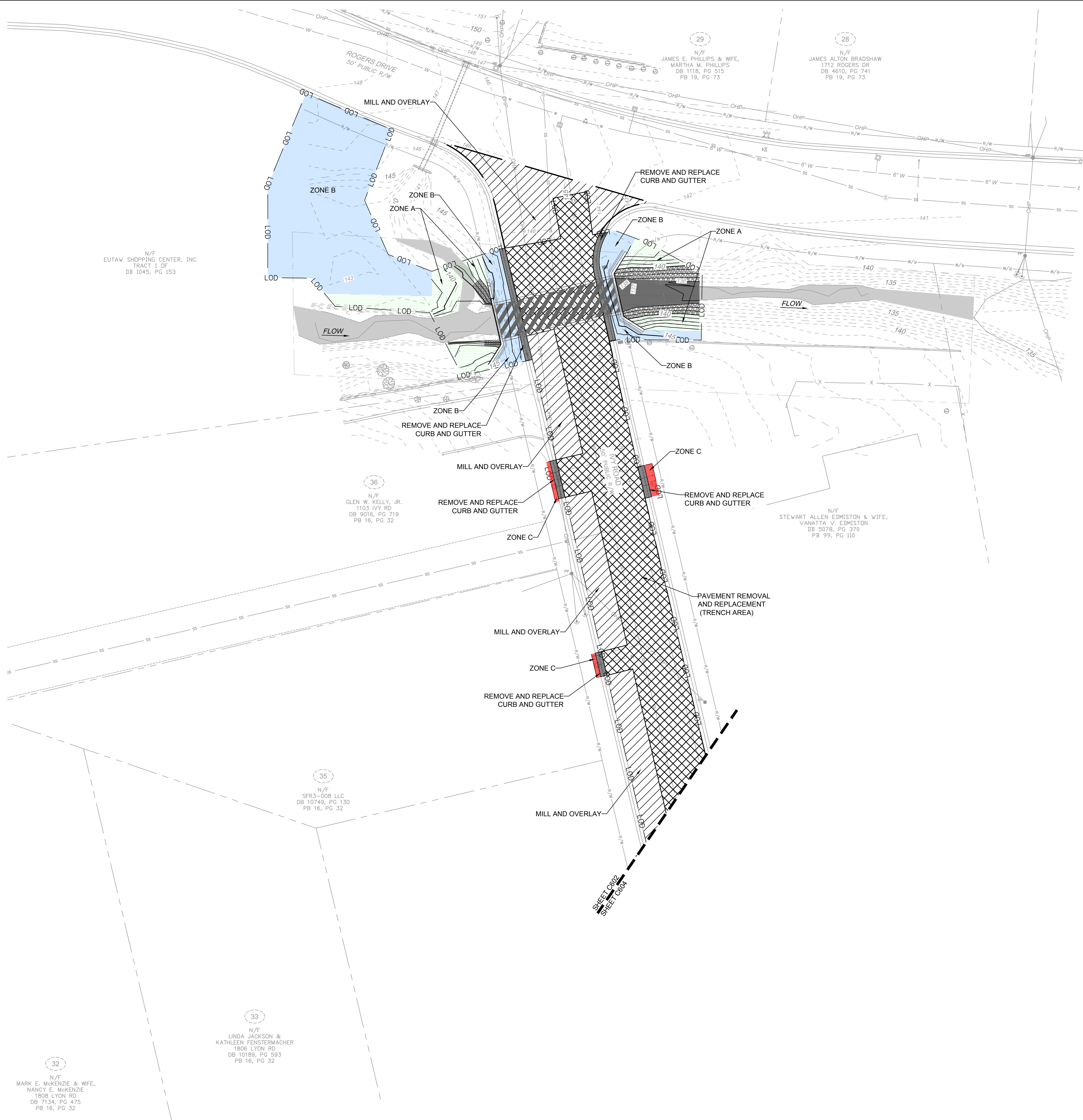
439 HAY STREET FAYETTEVILLE, NC 28501

SITE FINISHING

PLAN TYPE SITE

SHEET NUMBER C601

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- PLANTING NOTES:
1. ZONE A: STREAM BANKS TO BE MATTED WITH FIBERWONDERS COIR MAT C-700 OR APPROVED EQUAL. PLACE RIPARIAN SEED, EROSION CONTROL SEED AND THIN LAYER OF STRAW PRIOR TO MATTING INSTALLATION.
 2. ZONE B: TO BE MATTED WITH CURLEX TYPE II OR APPROVED EQUAL. PLACE RIPARIAN SEED EROSION CONTROL SEED AND THIN LAYER OF STRAW PRIOR TO MATTING INSTALLATION.
 3. ZONE C: PERMANENT SEED AND STRAW GRASS SPECIES TO MATCH EXISTING LAWN TURF. CONTRACTOR SHALL COORDINATE WITH THE PROPERTY OWNERS TO SELECT APPROVED SEED.
 4. PLANTING STOCK TO BE GROWN BY NURSERIES WITHIN THE SAME PHYSIOGRAPHIC REGION (PIEDMONT) AND WITHIN 200 MILES OF THE PROJECT SITE.
 5. RIPARIAN SEED MIX ERNST CONSERVATION SEEDS NC PIEDMONT RIPARIAN SEED MIX OR APPROVED EQUAL BY DESIGNER. APPLICATION RATE 25 LBS/AC.
 6. TEMPORARY SEED TO BE PLACED WITH PERMANENT SEED.
 7. FERTILIZER RECOMMENDATIONS CONTRACTOR TO FIELD VERIFY WITH ON SITE SOIL CONDITIONS:
LIME 1/4 TON/AC
PHOSPHATE 20-40 LBS/AC
POTASH 50-70 LBS/AC
WATERING REQUIREMENTS: ONCE/WEEK IF NO RAIN
 8. STABILIZATION MEASURES TO BE PLACED WITHIN THE LIMITS OF ALL DISTURBED AREAS. PLANTING AREAS SHOWN APPROXIMATE LIMITS OF DISTURBANCE.

PLANTING ZONES				
ZONE	RIPARIAN SEED (SY)	STRAW MULCH(SY)	CURLEX TYPE II (SY)	C700 MATTING (SY)
A	125			125
B	462		462	
C		8		
Totals	587	8	462	125

LEGEND

- 166 - - - - - EXISTING MINOR CONTOURS
- 165 - - - - - EXISTING MAJOR CONTOURS
- RIGHT OF WAY
- PROPERTY LINE
- STREAM CENTERLINE
- EXISTING STORM DRAINAGE
- X X X X EXISTING FENCE
- o o o o EXISTING SPLIT RAIL FENCE
- o o o o EXISTING TREE
- LIMITS OF CONSTRUCTION
- LOD LOD LIMITS OF DISTURBANCE
- [Hatched Box] PAVEMENT REMOVAL AND REPLACEMENT
- [Diagonal Lines Box] MILL AND OVERLAY
- [Solid Grey Box] CURB AND GUTTER REMOVAL AND REPLACEMENT
- [Dotted Box] CONCRETE SIDEWALK/DRIVEWAY REPLACEMENT
- [Stippled Box] GRAVEL DRIVEWAY REPLACEMENT
- [Green Box] ZONE A PLANTING
- [Blue Box] ZONE B PLANTING
- [Red Box] ZONE C PLANTING
- [Rock Pattern Box] ROCK TOE
- [Riprap Pattern Box] RIPRAP
- [Embedded Riprap Box] EMBEDDED RIPRAP

SCALE 1"=20'

0 20' 40'

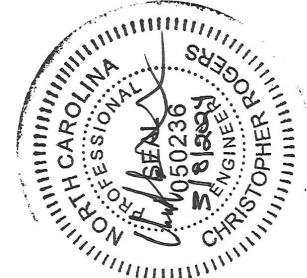
SITE FINISHING

PLAN TYPE: SITE

SHEET NUMBER: C602

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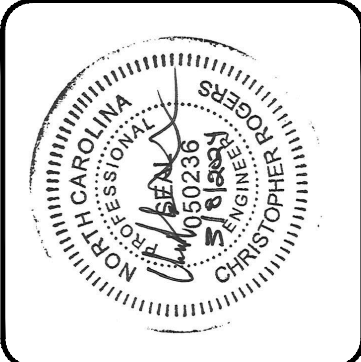
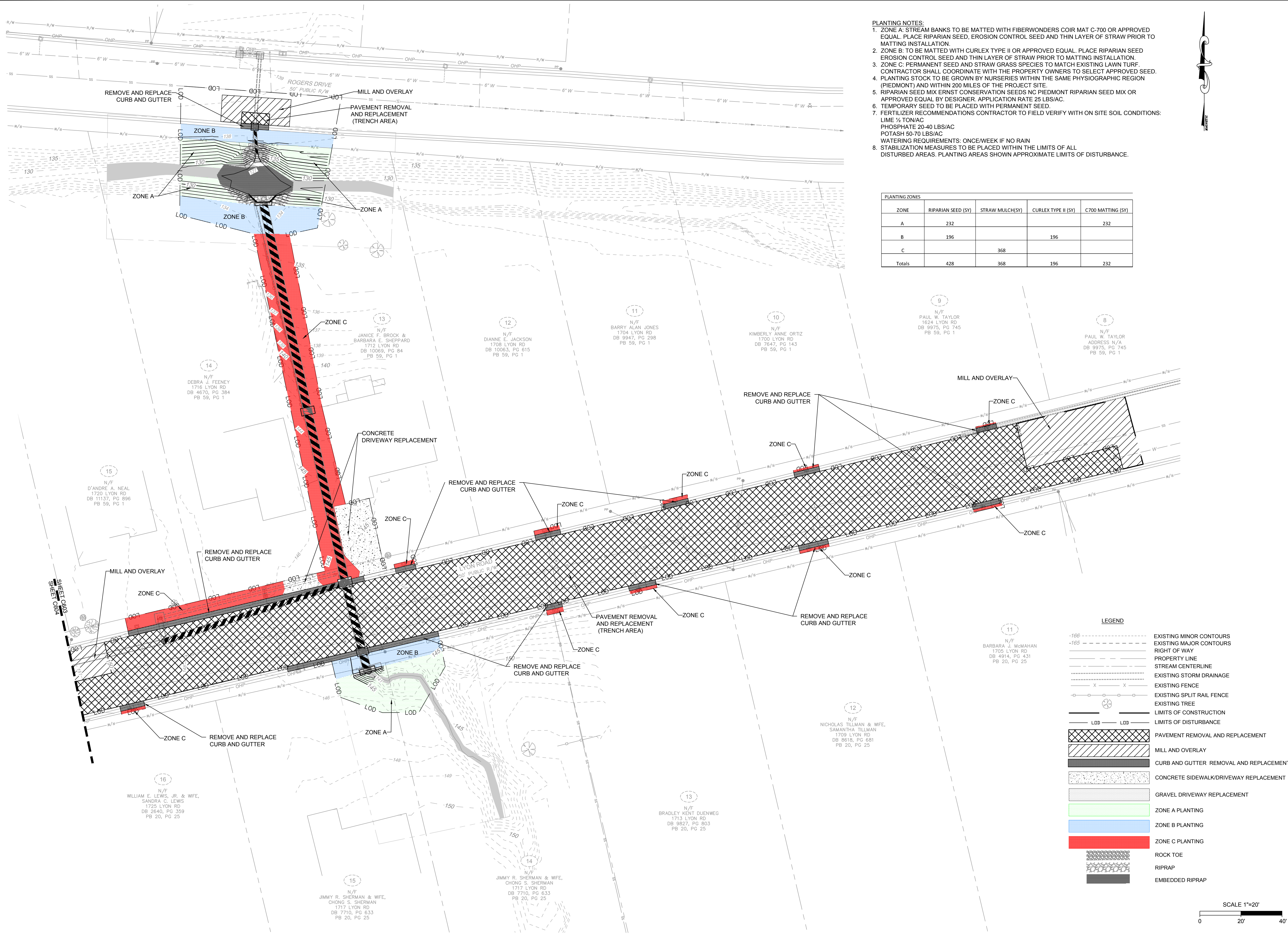
CONSTRUCTION SET

REV. #	REVISIONS	DESCRIPTION	REV. BY	DATE

DRAWN : SHANE VANDERGRIFF	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNGAN	SCALE : 1"=20'
APPROVED :	DATE : 03/08/2024

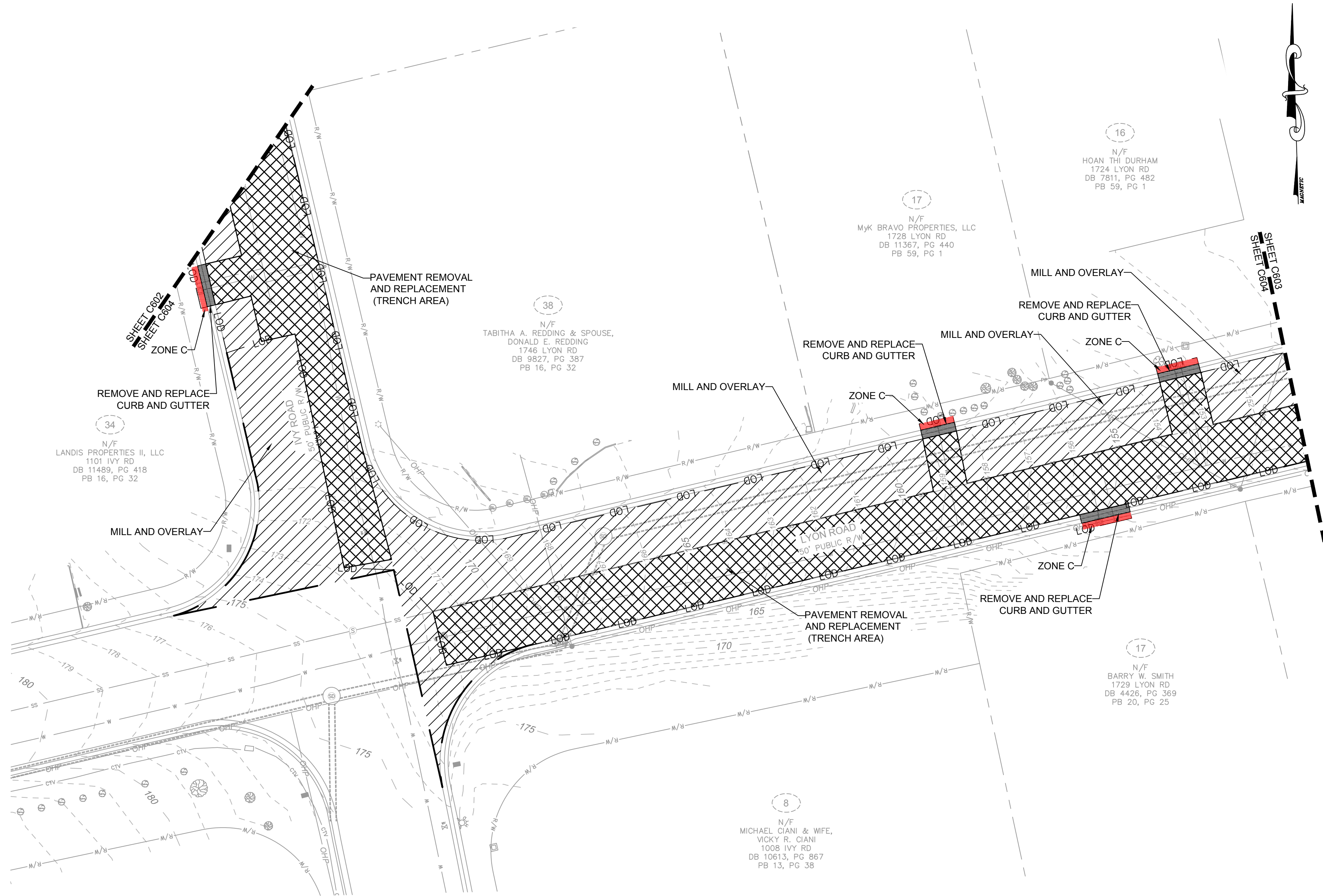
PROJECT NO. 54960.001
SUB-LEDGER NO. _____

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REVISIONS		
REV. #	DESCRIPTION	REV. BY DATE
CONSTRUCTION SET		

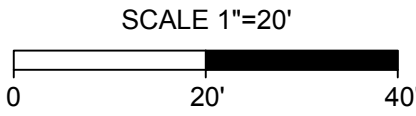
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- PLANTING NOTES:
1. ZONE A: STREAM BANKS TO BE MATTED WITH FIBERWONDERS COIR MAT C-700 OR APPROVED EQUAL. PLACE RIPARIAN SEED, EROSION CONTROL SEED AND THIN LAYER OF STRAW PRIOR TO MATTING INSTALLATION.
 2. ZONE B: TO BE MATTED WITH CURLEX TYPE II OR APPROVED EQUAL. PLACE RIPARIAN SEED EROSION CONTROL SEED AND THIN LAYER OF STRAW PRIOR TO MATTING INSTALLATION.
 3. ZONE C: PERMANENT SEED AND STRAW GRASS SPECIES TO MATCH EXISTING LAWN TURF. CONTRACTOR SHALL COORDINATE WITH THE PROPERTY OWNERS TO SELECT APPROVED SEED.
 4. PLANTING STOCK TO BE GROWN BY NURSERIES WITHIN THE SAME PHYSIOGRAPHIC REGION (PIEDMONT) AND WITHIN 200 MILES OF THE PROJECT SITE.
 5. RIPARIAN SEED MIX ERNST CONSERVATION SEEDS NC PIEDMONT RIPARIAN SEED MIX OR APPROVED EQUAL BY DESIGNER. APPLICATION RATE 25 LBS/AC.
 6. TEMPORARY SEED TO BE PLACED WITH PERMANENT SEED.
 7. FERTILIZER RECOMMENDATIONS CONTRACTOR TO FIELD VERIFY WITH ON SITE SOIL CONDITIONS: LIME 1/2 TON/AC
PHOSPHATE 20-40 LBS/AC
POTASH 50-70 LBS/AC
WATERING REQUIREMENTS: ONCE/WEEK IF NO RAIN
 8. STABILIZATION MEASURES TO BE PLACED WITHIN THE LIMITS OF ALL DISTURBED AREAS. PLANTING AREAS SHOWN APPROXIMATE LIMITS OF DISTURBANCE.

PLANTING ZONES				
ZONE	RIPARIAN SEED (SY)	STRAW MULCH(SY)	CURLEX TYPE II (SY)	C700 MATTING (SY)
C		11		
Totals	0	11	0	0

LEGEND		
-166-----	EXISTING MINOR CONTOURS	
-165-----	EXISTING MAJOR CONTOURS	
-----	RIGHT OF WAY	
-----	PROPERTY LINE	
-----	STREAM CENTERLINE	
-----	EXISTING STORM DRAINAGE	
-----	EXISTING FENCE	
-----	EXISTING SPLIT RAIL FENCE	
-----	EXISTING TREE	
-----	LIMITS OF CONSTRUCTION	
-----	LIMITS OF DISTURBANCE	
-----	PAVEMENT REMOVAL AND REPLACEMENT	
-----	MILL AND OVERLAY	
-----	CURB AND GUTTER REMOVAL AND REPLACEMENT	
-----	CONCRETE SIDEWALK/DRIVEWAY REPLACEMENT	
-----	GRAVEL DRIVEWAY REPLACEMENT	
-----	ZONE A PLANTING	
-----	ZONE B PLANTING	
-----	ZONE C PLANTING	
-----	ROCK TOE	
-----	RIPRAP	
-----	EMBEDDED RIPRAP	



DRAWN : SHANE VANDERGRIFF
DESIGN : CHRIS ROGERS
CHECK : DAVID DUNCAN
APPROVED :
PROJECT : SHANE VANDERGRIFF
NAME : DRAINAGE IMPROVEMENTS
SCALE : 1"=20'
DATE : 03/08/2024

REVISIONS
REV. # DESCRIPTION REV. BY DATE

CONSTRUCTION SET

PROJECT NO. 54960.001
SUB-LEDGER NO.



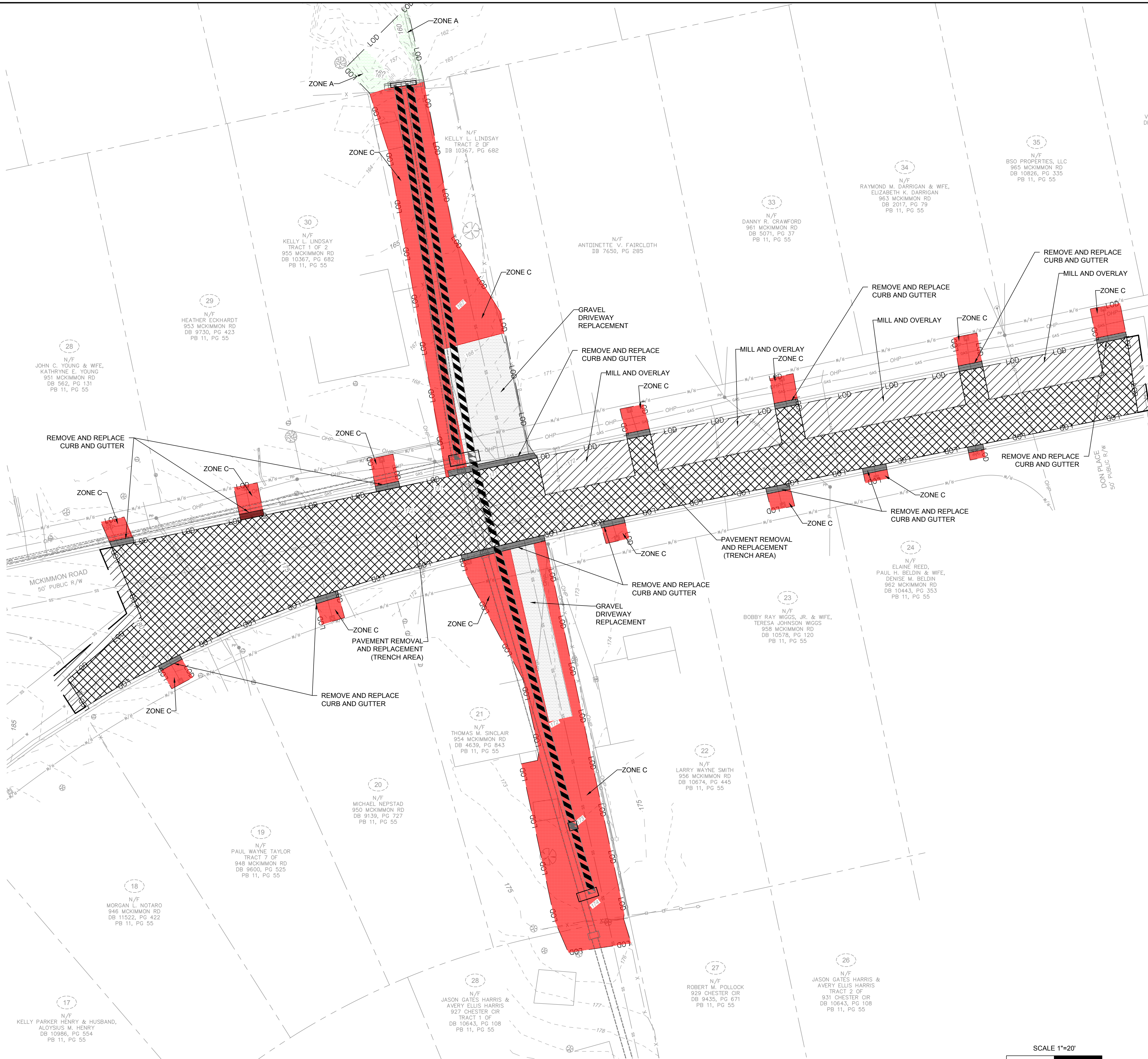
FAYETTEVILLE:
AMERICA'S CAN DO CITY
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
439 HAY STREET FAYETTEVILLE, NC 28501

SITE FINISHING

PLAN TYPE
SITE

SHEET NUMBER
C604

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- PLANTING NOTES:**
1. ZONE A: STREAM BANKS TO BE MATTED WITH FIBERWONDERS COIR MAT C-700 OR APPROVED EQUAL. PLACE RIPARIAN SEED, EROSION CONTROL SEED AND THIN LAYER OF STRAW PRIOR TO MATTING INSTALLATION.
 2. ZONE B: TO BE MATTED WITH CURLEX TYPE II OR APPROVED EQUAL. PLACE RIPARIAN SEED EROSION CONTROL SEED AND THIN LAYER OF STRAW PRIOR TO MATTING INSTALLATION.
 3. ZONE C: PERMANENT SEED AND STRAW GRASS SPECIES TO MATCH EXISTING LAWN TURF. CONTRACTOR SHALL COORDINATE WITH THE PROPERTY OWNERS TO SELECT APPROVED SEED.
 4. PLANTING STOCK TO BE GROWN BY NURSERIES WITHIN THE SAME PHYSIOGRAPHIC REGION (PIEDMONT) AND WITHIN 200 MILES OF THE PROJECT SITE.
 5. RIPARIAN SEED MIX ERNST CONSERVATION SEEDS NC PIEDMONT RIPARIAN SEED MIX OR APPROVED EQUAL BY DESIGNER. APPLICATION RATE 25 LBS/AC.
 6. TEMPORARY SEED TO BE PLACED WITH PERMANENT SEED.
 7. FERTILIZER RECOMMENDATIONS CONTRACTOR TO FIELD VERIFY WITH ON SITE SOIL CONDITIONS: LIME ½ TON/AC PHOSPHATE 20-40 LBS/AC POTASH 50-70 LBS/AC WATERING REQUIREMENTS: ONCE/WEEK IF NO RAIN
 8. STABILIZATION MEASURES TO BE PLACED WITHIN THE LIMITS OF ALL DISTURBED AREAS. PLANTING AREAS SHOWN APPROXIMATE LIMITS OF DISTURBANCE.

PLANTING ZONES				
ZONE	RIPARIAN SEED (SY)	STRAW MULCH(SY)	CURLEX TYPE II (SY)	C700 MATTING (SY)
A	38			38
C		918		
Totals	38	918	0	38

LEGEND

- 166 - - - - - EXISTING MINOR CONTOURS
- 165 - - - - - EXISTING MAJOR CONTOURS
- RIGHT OF WAY
- PROPERTY LINE
- STREAM CENTERLINE
- EXISTING STORM DRAINAGE
- X - X - EXISTING FENCE
- O - O - EXISTING SPLIT RAIL FENCE
- * - EXISTING TREE
- LIMITS OF CONSTRUCTION
- LIMITS OF DISTURBANCE
- [Cross-hatch] PAVEMENT REMOVAL AND REPLACEMENT
- [Diagonal hatch] MILL AND OVERLAY
- [Solid black] CURB AND GUTTER REMOVAL AND REPLACEMENT
- [Dotted] CONCRETE SIDEWALK/DRIVEWAY REPLACEMENT
- [Stippled] GRAVEL DRIVEWAY REPLACEMENT
- [Green] ZONE A PLANTING
- [Blue] ZONE B PLANTING
- [Red] ZONE C PLANTING
- [Stippled] ROCK TOE
- [Diagonal hatch] RIPRAP
- [Solid black] EMBEDDED RIPRAP

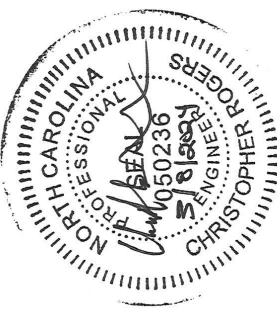
SCALE 1"=20'

SITE FINISHING

SHEET NUMBER
C605

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AMERICA'S CAN DO CITY

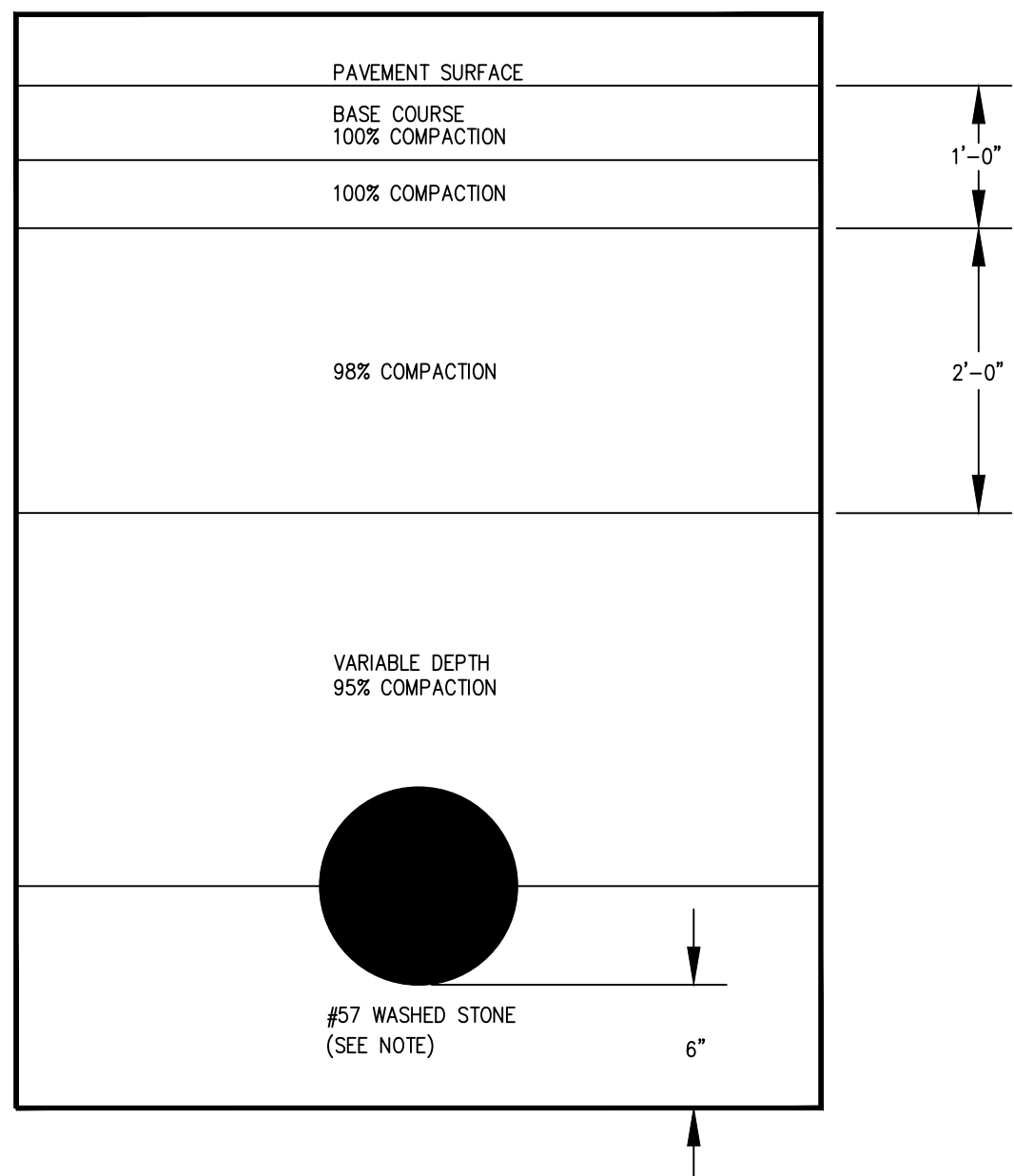
ENGINEERING DIVISION
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439 HAY STREET FAYETTEVILLE, NC 28501



CONSTRUCTION SET

DRAWN : SHANE VANDERGRIFT
PROJECT : IVY AND LYON ROAD
NAME : DRAINAGE IMPROVEMENTS
CHECK : CHRIS ROGERS
SCALE : 1"=20'
DATE : 03/08/2024
APPROVED :

PROJECT NO. 54960.001
SUB-LEDGER NO.



NOTES:

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

FAYETTEVILLE!

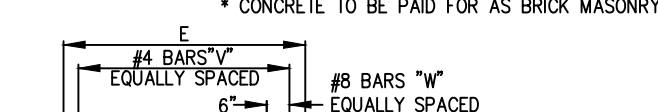
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(910) 433-1656
<http://www.fayettevilenc.gov>

TYPICAL STORM DRAIN COMPACTION

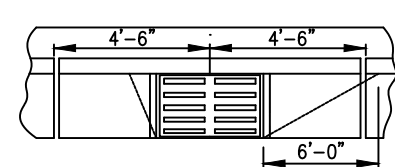
Rev. Date: 26 JAN 21
Not to Scale
Review Date: 26 JAN 21

DR-1

DIMENSIONS AND QUANTITIES FOR BRICK CATCH BASIN (LOCATION OF SOME VARIABLES SHOWN IN STANDARD DETAIL SD-3)									
* CUBIC YARDS OF CONCRETE IN BOX									
BRICK MASONRY TOTAL BRICK C.M. IN WALLS & CONCRETE C.M. IN WALLS & CONCRETE									
DEDUCTIONS FOR ONE PIPE									
PIPE SPAN	WIDTH	WIDTH	SPAN	HEIGHT	COVER	NO.	LENGTH	NO.	LENGTH
D	A	B	C	H	E	F	NO.	LENGTH	NO.
15"	2'-0"	2'-0"	2'-0"	2'-0"	1'-0"	1'-0"	12	3'-1"	3'-4"
18"	2'-4"	2'-4"	2'-4"	2'-4"	1'-0"	1'-0"	14	3'-5"	3'-8"
24"	3'-0"	3'-0"	3'-0"	3'-0"	1'-0"	1'-0"	16	4'-1"	4'-4"
30"	3'-4"	3'-4"	3'-4"	3'-4"	1'-0"	1'-0"	16	4'-5"	4'-8"
36"	4'-0"	4'-0"	4'-0"	4'-0"	1'-0"	1'-0"	20	5'-1"	5'-4"
42"	4'-8"	4'-8"	4'-8"	4'-8"	1'-0"	1'-0"	22	5'-9"	6'-2"
48"	5'-4"	5'-4"	5'-4"	5'-4"	1'-0"	1'-0"	26	6'-5"	6'-8"
54"	5'-10"	5'-10"	5'-10"	5'-10"	1'-0"	1'-0"	28	6'-11"	7'-2"
60"	6'-6"	6'-6"	6'-6"	6'-6"	1'-0"	1'-0"	30	7'-7"	7'-10"
66"	7'-1"	7'-1"	7'-1"	7'-1"	1'-0"	1'-0"	32	8'-2"	8'-5"

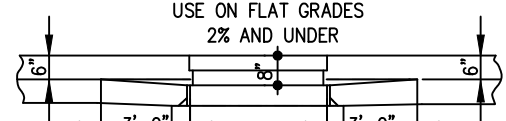


PLAN OF TOP SLAB



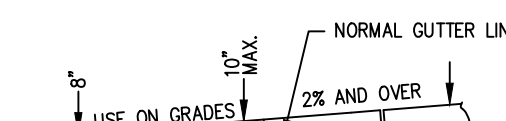
PLAN

CURB AND GUTTER WITH CATCH BASIN ON STEEP GRADES



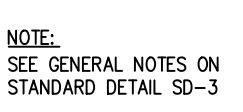
ELEVATION

NORMAL CURB AND GUTTER ON FLAT GRADES



ELEVATION

NORMAL CURB AND GUTTER ON STEEP GRADES

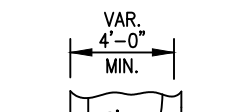


SECTION R-R

#4 BARS "Y" EQUALLY SPACED

SECTION S-S

#4 BARS "Y" EQUALLY SPACED



SECTION R-R

#4 BARS "Y" EQUALLY SPACED

SECTION S-S

#4 BARS "Y" EQUALLY SPACED

SECTION R-R

#4 BARS "Y" EQUALLY SPACED

SECTION S-S

#4 BARS "Y" EQUALLY SPACED

SECTION R-R

#4 BARS "Y" EQUALLY SPACED

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#4 BARS "Y" EQUALLY SPACED

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SECTION R-R

#4 BARS "Y" EQUALLY SPACED

SECTION S-S

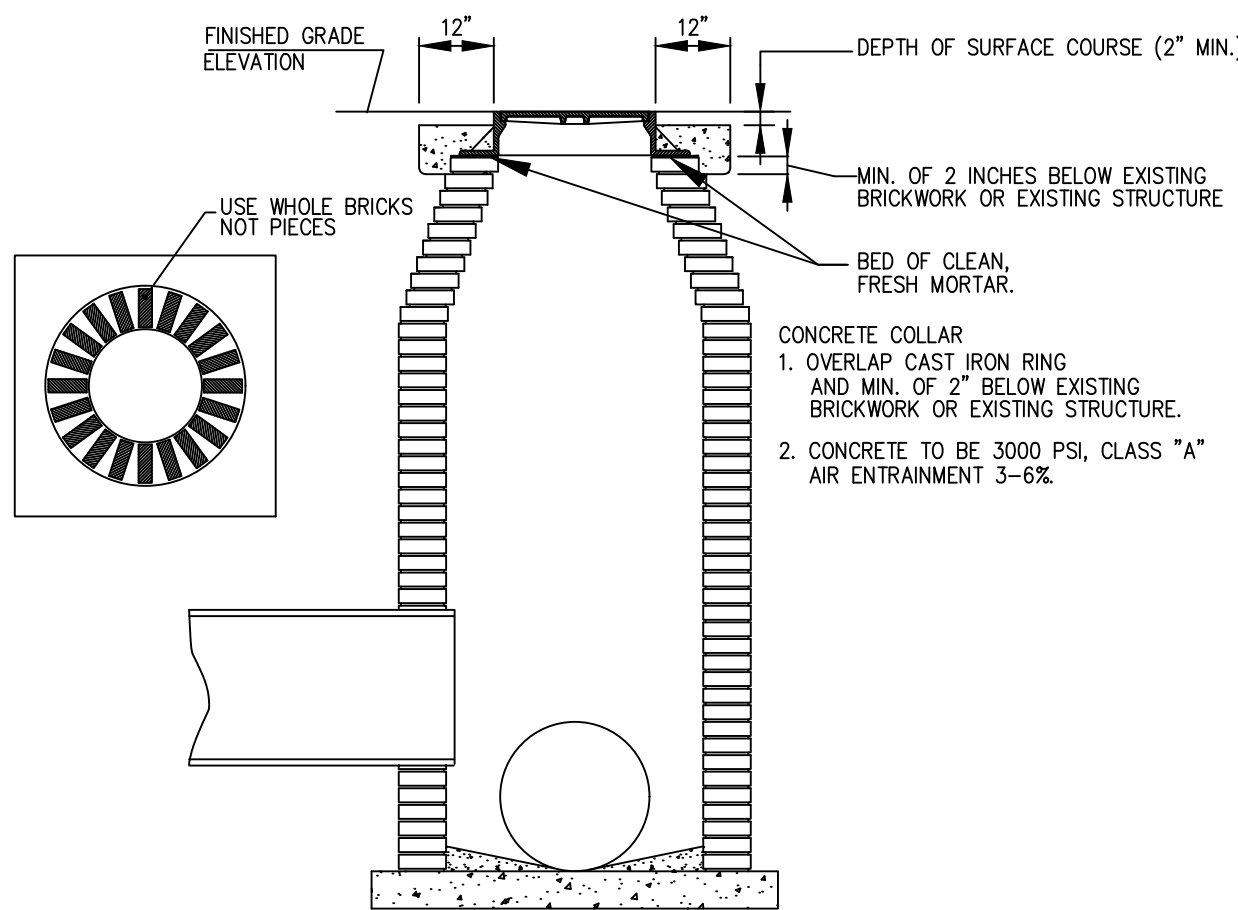
#4 BARS "Y" EQUALLY SPACED

SECTION R-R

#4 BARS "Y" EQUALLY SPACED

NOTES:

- EXCAVATE ALL MATERIAL FROM AROUND CASTING TO A WIDTH OF 12" AND TO A DEPTH OF AT LEAST 2" BELOW EXISTING BRICKWORK OR EXISTING STRUCTURE. REMOVE AND DISPOSE OF ALL LOOSE MATERIAL.
- DETERMINING THE CASTING ADJUSTMENT: THE HEIGHT OF CASTING ADJUSTMENT SHALL BE DETERMINED BY THE USE OF A STRING LINE. THE STRING LINE IS TO BE PULLED ACROSS CASTING AND FOR AT LEAST 10FT ON EACH SIDE OF CASTING PARALLEL TO CURB. HOLD STRING AT A HEIGHT OF ADJUSTMENT. EXAMPLE: 1" ABOVE EXISTING PAVEMENT FOR RESURFACING AND/OR 2" ABOVE SAND/CLAY OR STONE BASE. THEN STRING IS PULLED PERPENDICULAR ACROSS CASTING FROM EDGE OF PAVEMENT AT CURB TO CENTERLINE OF STREET. THE STRING SHALL BE SET AT SAME ADJUSTMENT HEIGHT. EVERY EFFORT SHALL BE TAKEN TO ENSURE THAT THE SURFACE COURSE AND CASTING SHALL PROVIDE AS SMOOTH A RIDE AS POSSIBLE.
- ADJUSTMENT OF CASTING BY RAISING: ALL BRICKS ARE TO BE PLACED IN "SPOKE" PATTERN AND LAID IN A BED OF CLEAN FRESH MORTAR. THEN CONTRACTOR IS TO ENSURE ALL BRICKS ARE SET FIRM TO ELIMINATE MOVEMENT OF CASTING.
- ADJUSTMENT OF CASTING BY LOWERING: ALL BRICKS AND CONCRETE ARE TO BE CUT AWAY, LEAVING A SMOOTH SURFACE. A CAP OF CLEAN FRESH MORTAR SHALL BE APPLIED TO SURFACE AS A SETTING BED FOR CASTING.
- THE CASTING IS THEN PLACED BACK ON BRICKS AND CARE SHALL BE TAKEN TO ENSURE THAT IT IS SET ON BED OF CLEAN FRESH MORTAR TO ELIMINATE MOVEMENT. MORTAR SHALL MEET REQUIREMENTS OF NCDOT STANDARD SPECIFICATIONS SECTION 1040-9 FOR MORTAR AND SECTION 1014-1 FOR MORTAR SAND.
- THE EXCAVATED AREA SHALL THEN BE BACKFILLED WITH 3000 PSI PORTLAND CEMENT CONCRETE LEVEL TO EXISTING SURFACE. THE TOP OF CONCRETE SHALL THEN BE STRUCK SMOOTH WITH EXISTING SURFACE. A FINISH SURFACE TOLERANCE SHALL NOT VARY MORE THAN 1/4" IN ANY DIRECTION.
- ALL ADJUSTMENTS SHALL THEN BE PROTECTED FOR AT LEAST 72 HOURS BEFORE THE PLACEMENT OF ANY SURFACING MATERIAL. A FINISH SURFACE TOLERANCE SHALL NOT VARY MORE THAN 1/4" IN ANY DIRECTION.



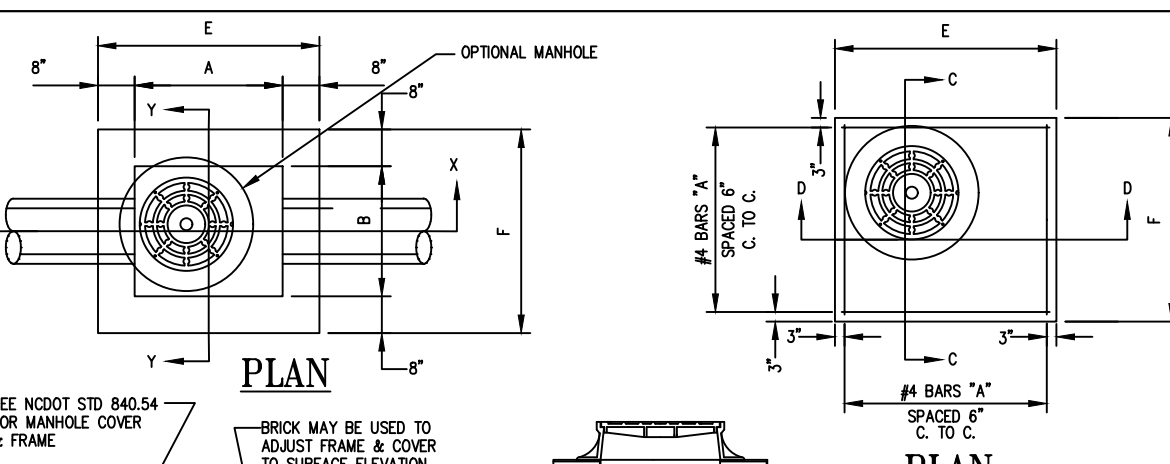
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433 HAY ST. 28301
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STANDARD DETAIL MANHOLE ADJUSTMENT CONCRETE COLLAR (NEW AND EXISTING MANHOLES)

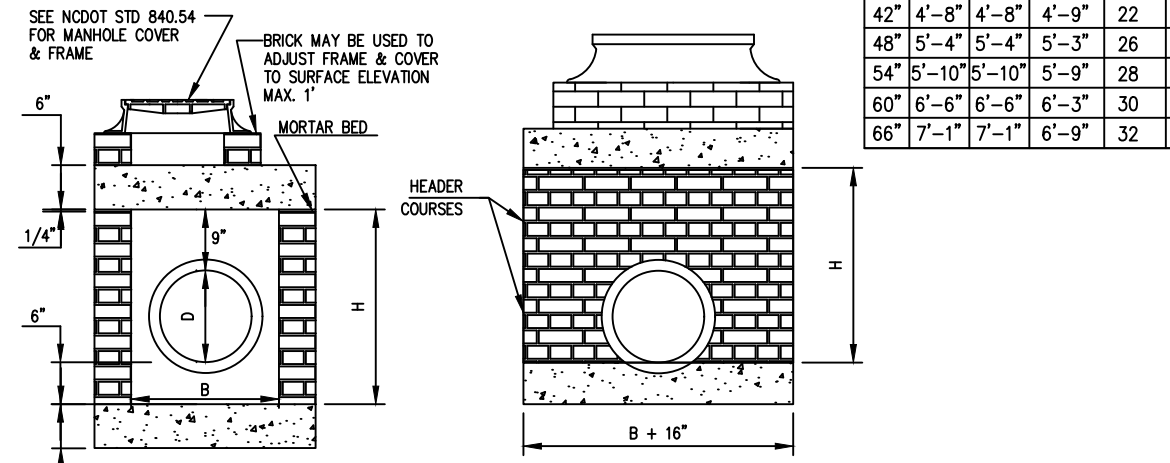
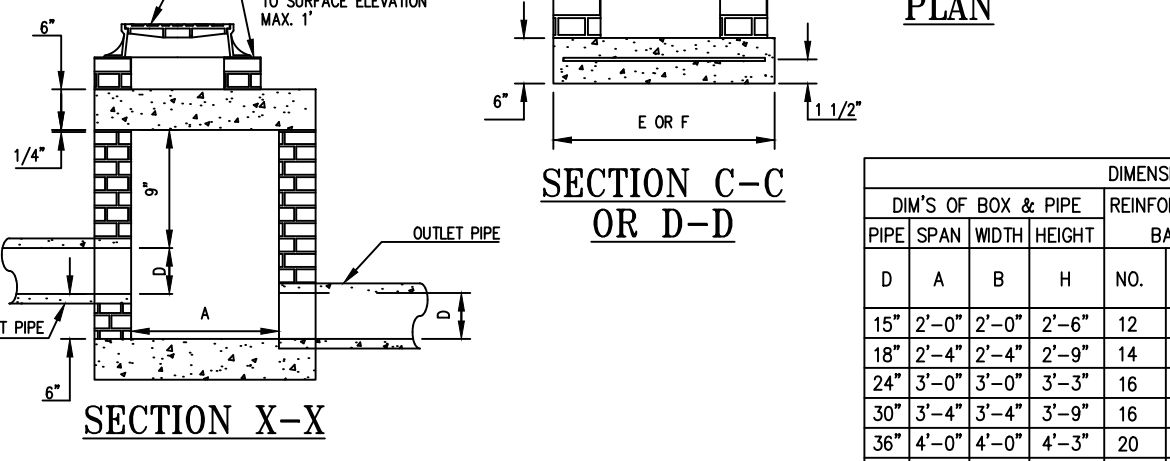
Rev. Date: 26 JAN 21
Not to Scale
Review Date: 26 JAN 21

DR-2



GENERAL NOTES:

- ALL EXPOSED CORNERS TO BE CHAMFERED 1". CLASS "B" CONCRETE TO BE USED.
- MORTAR JOINTS 1/2" ± 1/8" THICK.
- ALL EXPOSED JOINTS SHALL BE CONCAVE TOOLED.
- FORMS ARE TO BE USED FOR THE CONSTRUCTION OF THE SLAB.
- JUNDO BRICK WILL BE PERMITTED. CONCRETE BRICK OR 4" SOLID CONCRETE BLOCKS SHALL BE USED.
- FOR 8'-0" IN HEIGHT OR LESS, USE 8" WALL. OVER 8'-0" IN HEIGHT, USE 12" WALL. 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-31.
- CONSTRUCT WITH PIPE CORNERS MATCHING.
- CHAMFER ALL EXPOSED CORNERS 1".



DIMENSIONS AND QUANTITIES FOR BRICK JUNCTION BOXES									
* CUBIC YARDS OF CONCRETE IN BOX									
BRICK MASONRY TOTAL BRICK C.M. IN WALLS & CONCRETE C.M. IN WALLS & CONCRETE									
DEDUCTIONS FOR ONE PIPE									
PIPE SPAN	WIDTH	WIDTH	SPAN	HEIGHT	COVER	NO.	LENGTH	NO.	LENGTH
D	A	B	C	H	E	F	NO.	LENGTH	NO.
15"	2'-0"	2'-0"	2'-0"	2'-0"	1'-0"	1'-0"	12	3'-1"	3'-4"
18"	2'-4"	2'-4"	2'-4"	2'-4"	1'-0"	1'-0"	14	3'-5"	3'-8"
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30"	3'-4"	3'-4"	3'-4"	3'-4"	1'-0"	1'-0"	16	4'-5"	4'-8"
36"	4'-0"	4'-0"	4'-0"	4'-0"	1'-0"	1'-0"	20	5'-1"	5'-4"
42"	4'-8"	4'-8"	4'-8"	4'-8"	1'-0"	1'-0"	22	5'-9"	6'-2"
48"	5'-4"	5'-4"	5'-4"	5'-4"	1'-0"	1'-0"	26	6'-5"	6'-8"
54"	5'-10"	5'-10"	5'-10"	5'-10"	1'-0"	1'-0"	28	6'-11"	7'-2"
60"	6'-6"	6'-6"	6'-6"	6'-6"	1'-0"	1'-0"	30	7'-7"	7'-10"
66"	7'-1"	7'-1"	7'-1"	7'-1"	1'-0"	1'-0"	32	8'-2"	8'-5"

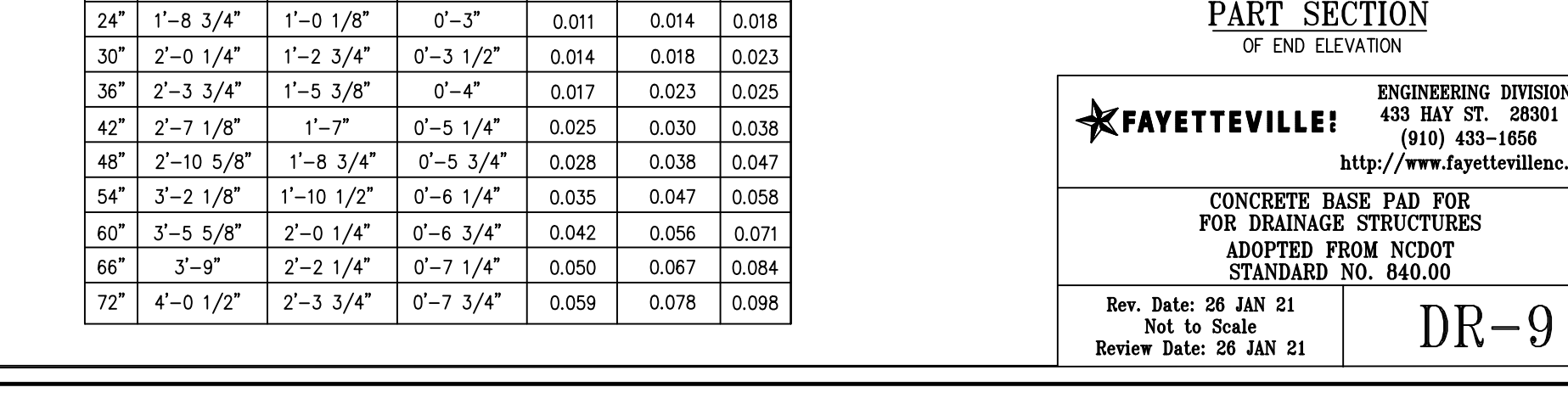
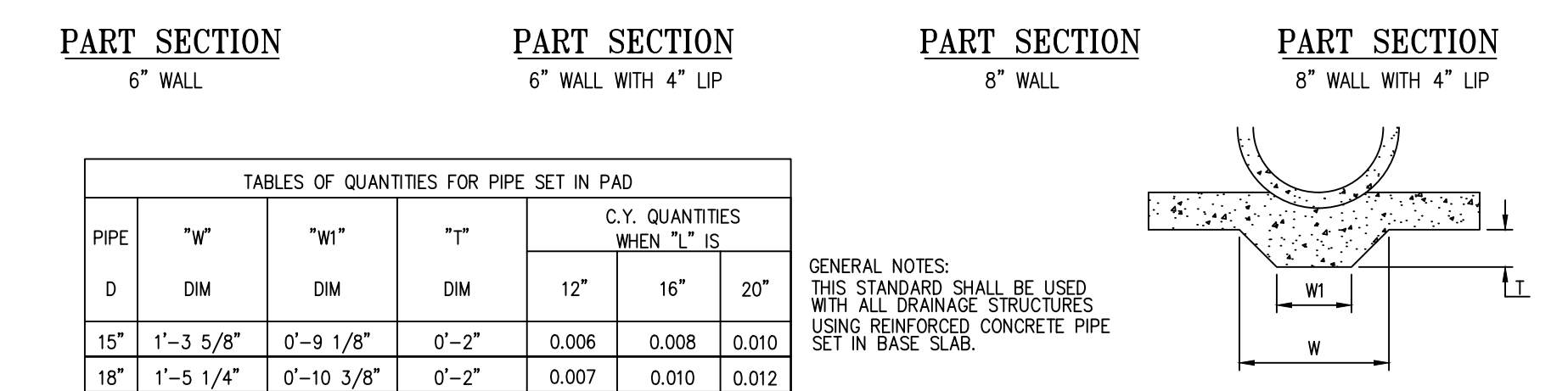
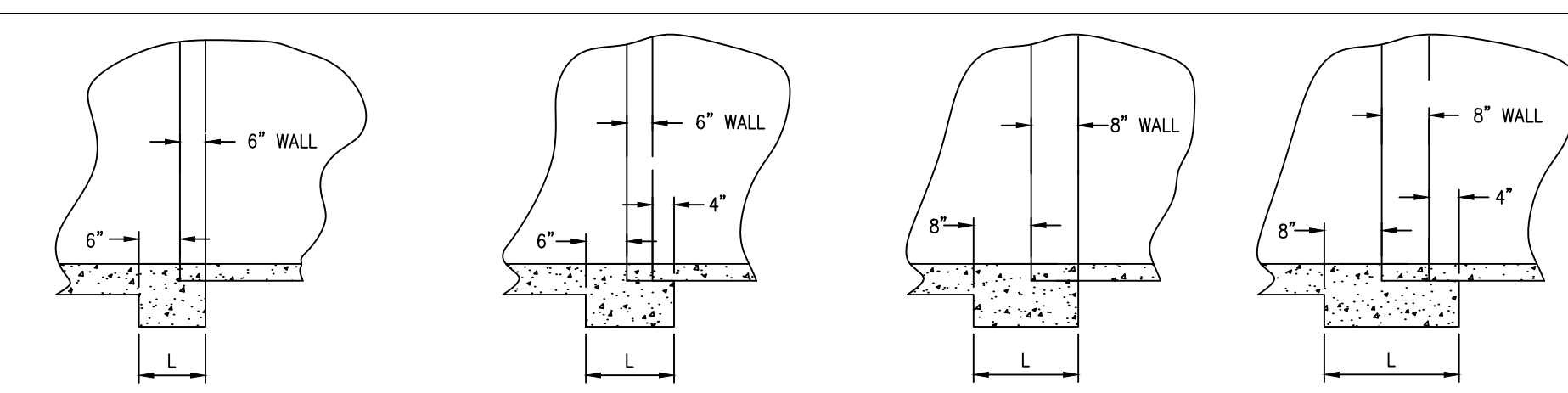
FAYETTEVILLE!

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433 HAY ST. 28301
(910) 433-1656
<http://www.fayettevilenc.gov>

STANDARD BRICK JUNCTION BOX (WITH MANHOLE ACCESS) 12" THRU 66" PIPE ADOPTED FROM NCDOT STANDARD NO. 840.32

Rev. Date: 26 JAN 21
Not to Scale
Review Date: 26 JAN 21

DR-5



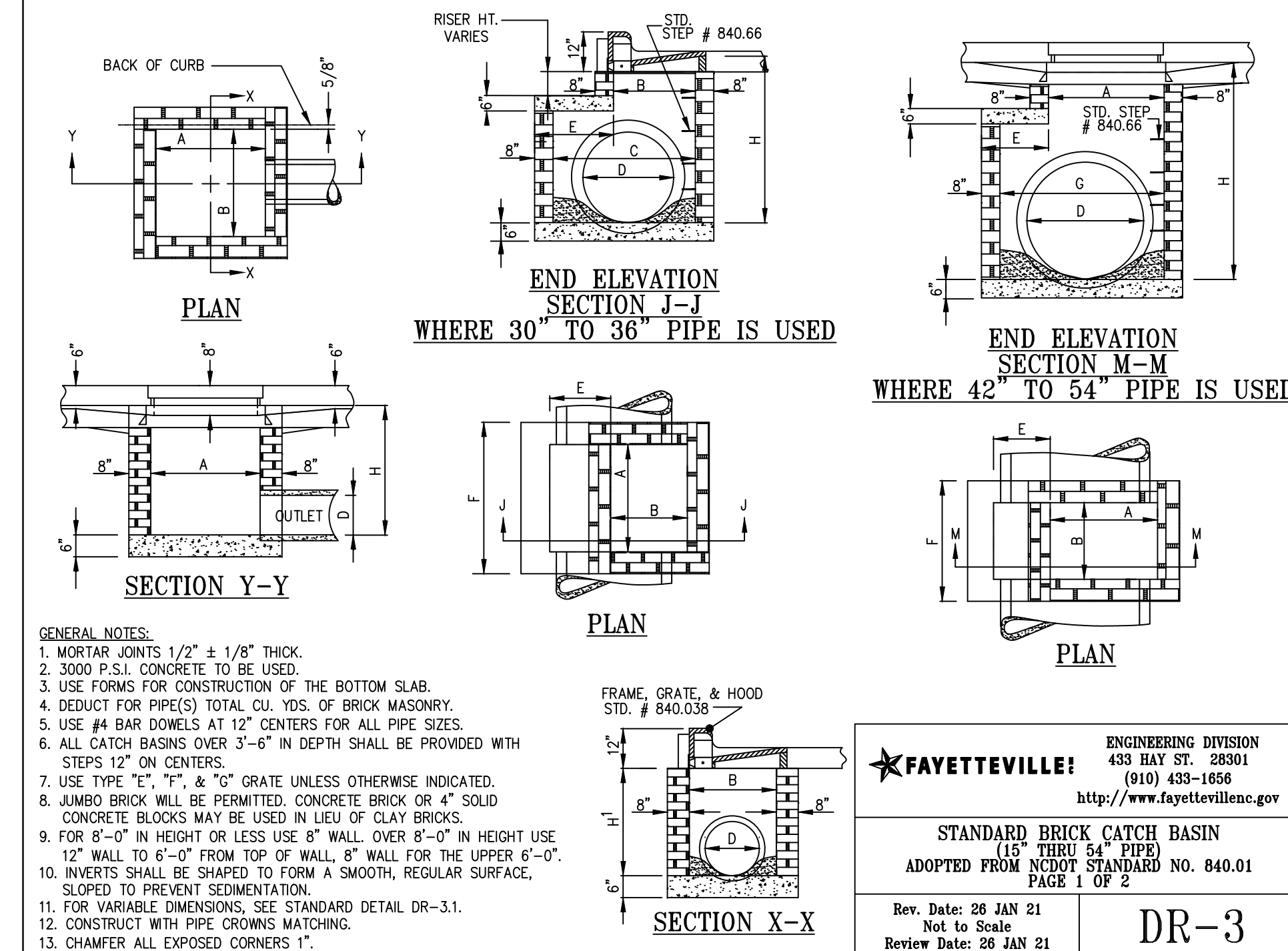
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433 HAY ST. 28301
(910) 433-1656
<http://www.fayettevilenc.gov>

CONCRETE BASE PAD FOR FOR DRAINAGE STRUCTURES ADOPTED FROM NCDOT STANDARD NO. 840.00

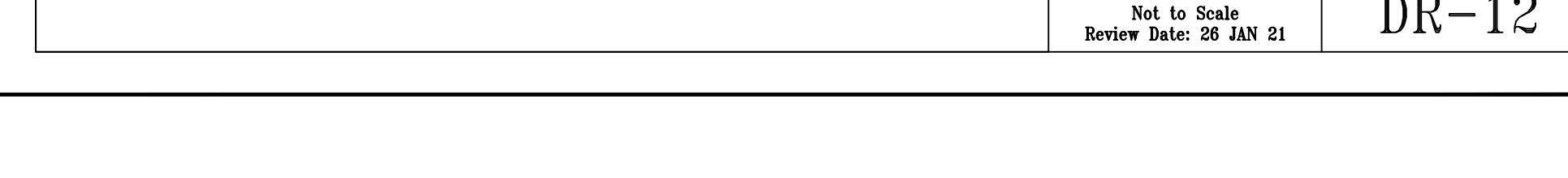
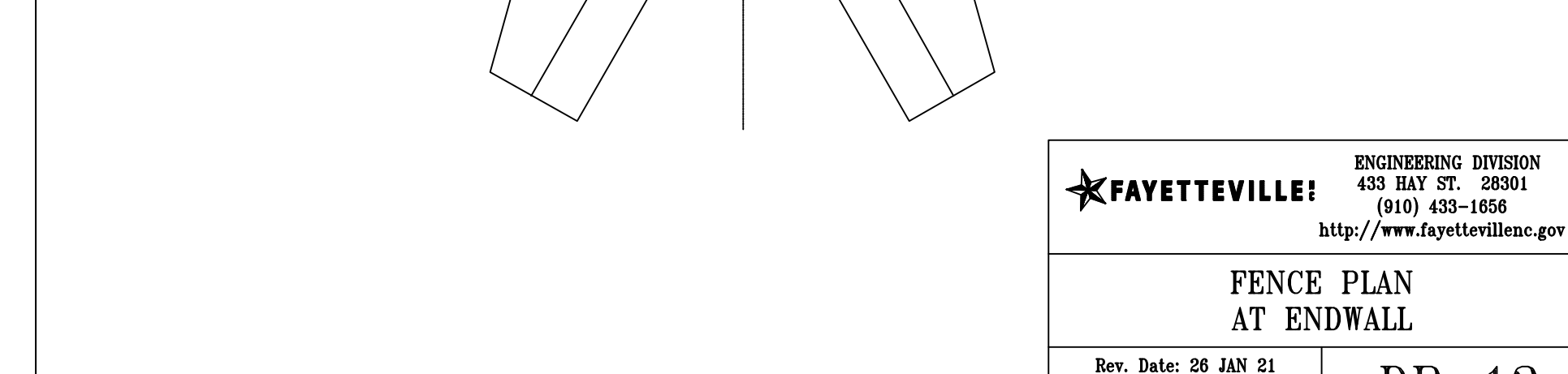
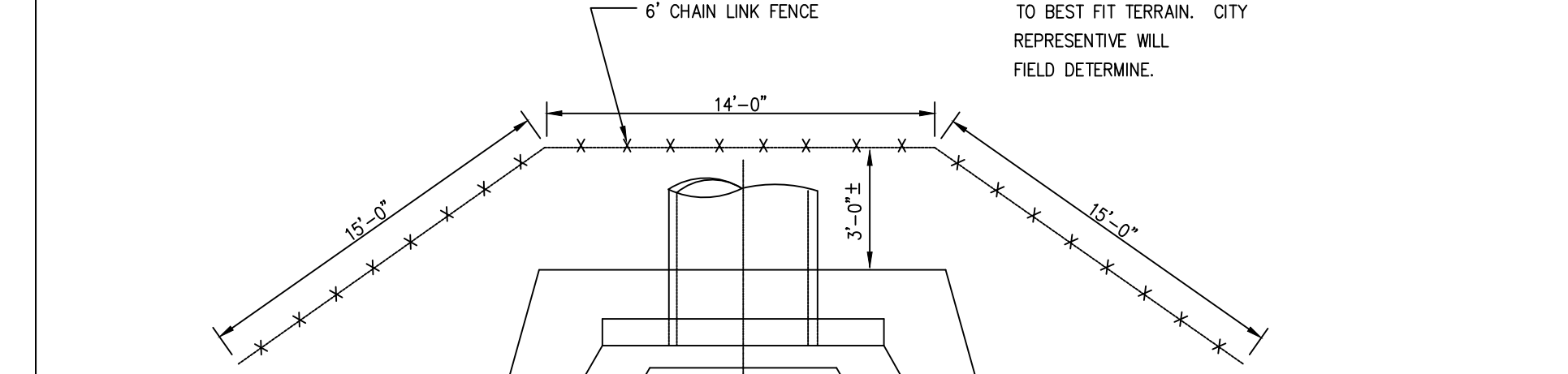
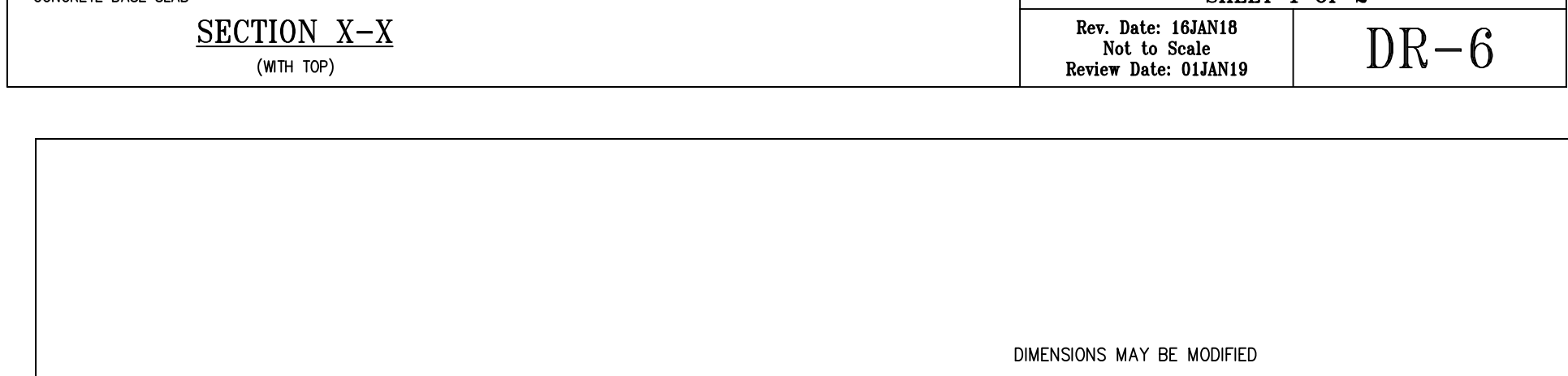
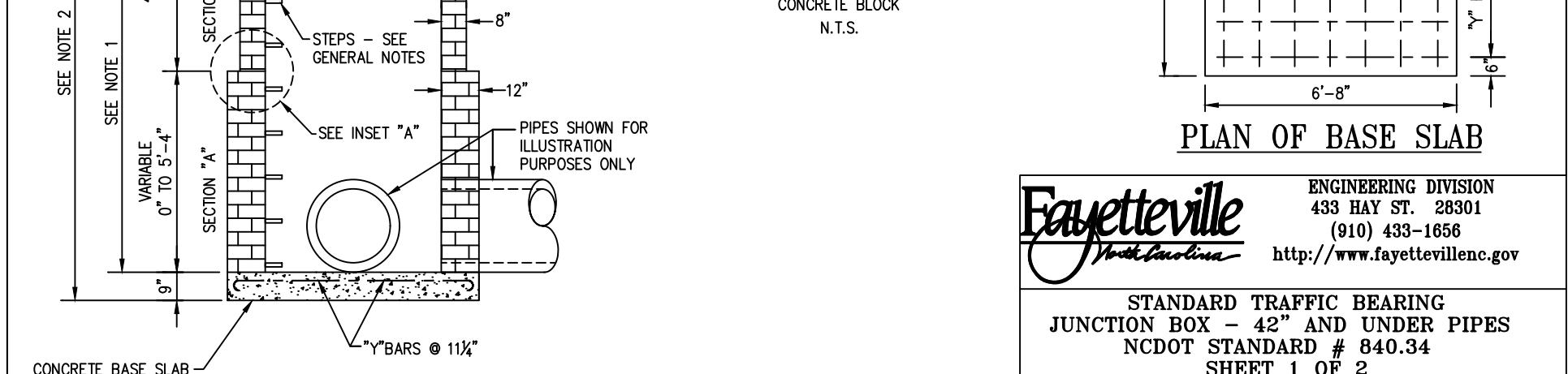
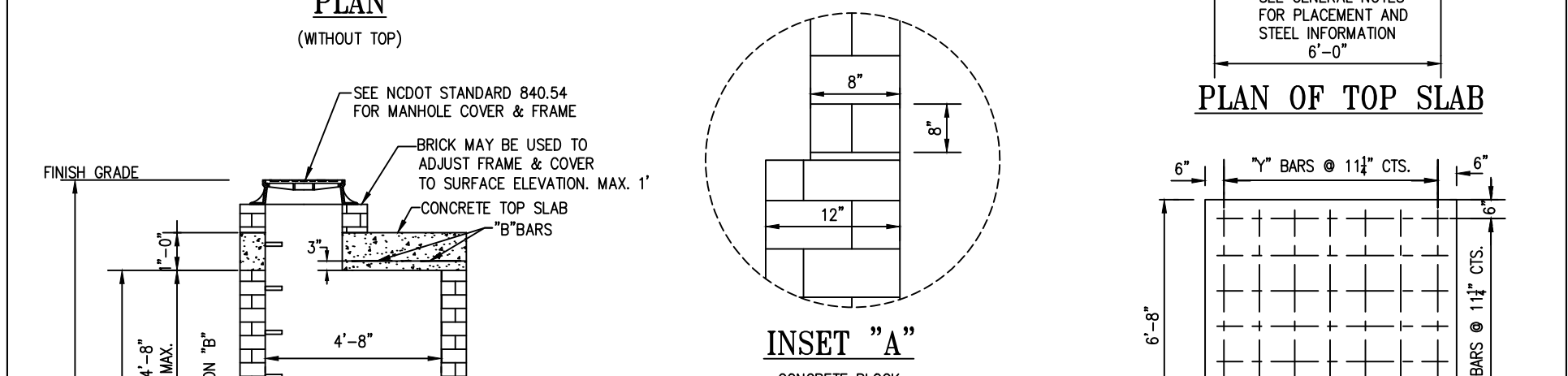
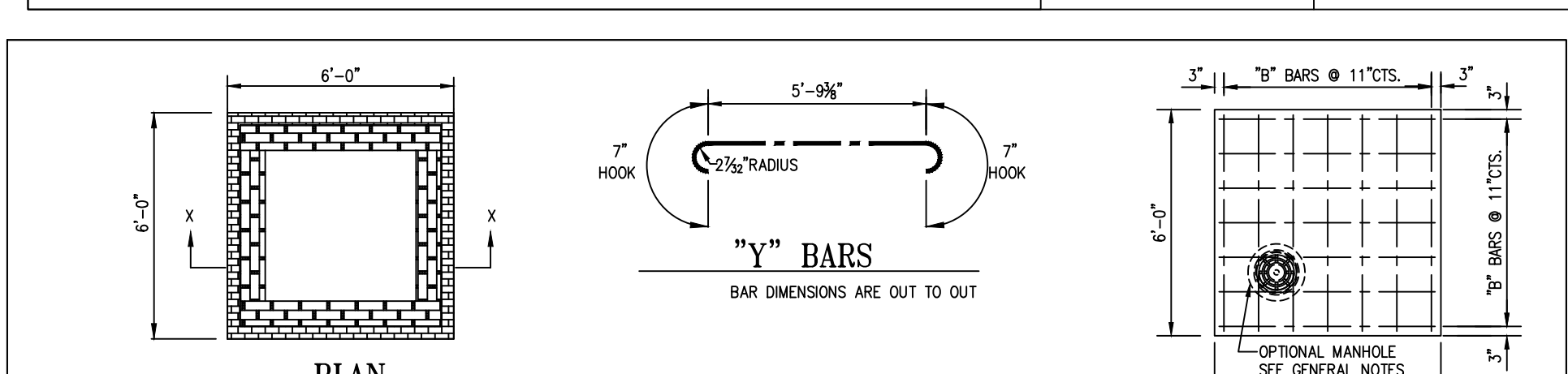
Rev. Date: 26 JAN 21
Not to Scale
Review Date: 26 JAN 21

DR-9

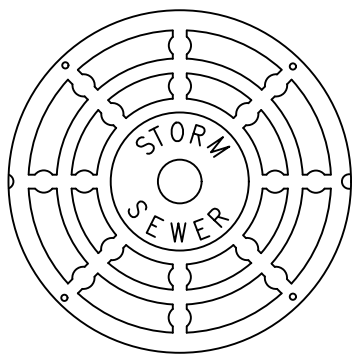


GENERAL NOTES:

- MORTAR JOINTS 1/2" ± 1/8" THICK.
- 3000 P.S.I. CONCRETE TO BE USED.
- USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB.
- DEDUCT FOR PIPE(S) TOTAL CU. YDS. OF BRICK MASONRY.
- USE #4 BAR DOWELS AT 12" CENTERS FOR ALL PIPE SIZES.
- ALL CATCH BASINS OVER 3'-6" IN DEPTH SHALL BE PROVIDED WITH STEPS 12" ON CENTERS.
- USE TYPE "T", "Y", & "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-31.
- CONSTRUCT WITH PIPE CORNERS MATCHING.
- CHAMFER ALL EXPOSED CORNERS 1".

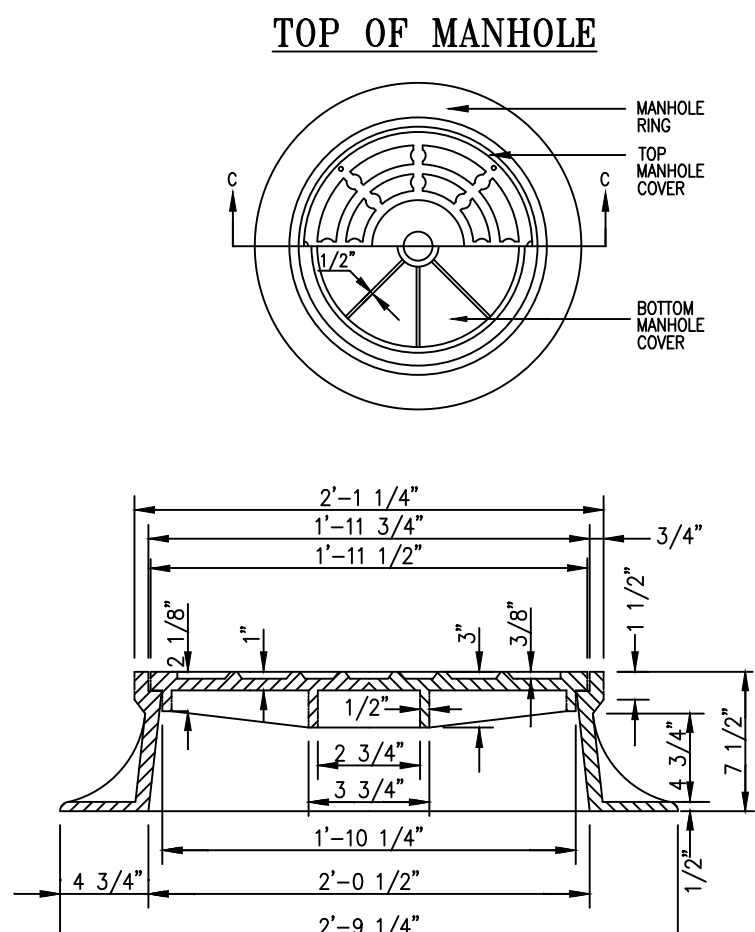


FAYETTEVILLE!



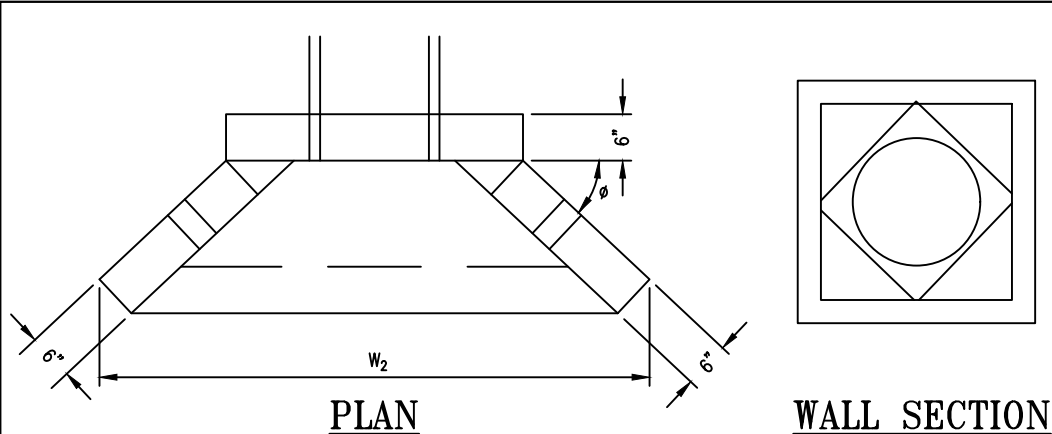
SPECIFICATIONS

- 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
US FOUNDRY 669-KL RING & COVER
OR APPROVED EQUAL



SECTION C - C

FAYETTEVILLE!	ENGINEERING DIVISION 433 HAY ST. 28301 (910) 433-1656 http://www.fayettevillenc.gov
STANDARD MANHOLE RING AND COVER ADOPTED FROM NCDOT STANDARD NO. 840.54	
Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21	DR-13



WALL SECTION

HEADWALL DIMENSIONS FOR CONCRETE PIPE													
PIPE SIZE D	HOLE SIZE H	REF.	W1	W2	H1	H2	H3	D	E	#	WT.		
12"15"	18"21"	#4	3'-2"	5'-5"	1'-3"	3'-1"	12"	1'-3"	1'-9"	40'	1600		
18"	21"	#4	3'-8"	6'-1"	1'-9"	3'-7"	12"	1'-4"	2'-5"	40'	2100		
24"34"	33"	#6	4'-5"	7'-2"	2'-0"	4'-3"	12"	1'-10"	2'-9"	40'	2850		
30"	39"	#6	4'-8"	8'-4"	2'-4"	4'-9"	12"	2'-2"	3'-5"	40'	3700		
36"	48"	#8	5'-8"	10'-10"	3'-3"	5'-9"	12"	2'-11"	4'-4"	40'	5600		
42"48"	56"63"	#8	6'-7"	12'-6"	3'-8"	6'-8"	12"	3'-4"	5'-3"	40'	7500		
54"60"	72"81"	#8	8'-9"	13'-4"	4'-5"	8'-2"	15"	3'-4"	7'-5"	50'	10000		
66"72"	81"	#8	8'-9"	13'-4"	4'-5"	8'-2"	27"	3'-4"	7'-5"	50'	10000		

GENERAL NOTES:

- ALL CONCRETE TO BE 4000 PSI MIN.
- REINFORCEMENT STEEL SHALL MEET ASTM 615 GRADE 60 WITH 2" MIN. CLEARANCE.
- CHAMFER ALL EXPOSED EDGES 3/4".
- PRECAST HEADWALL UNIT SHALL BE CAREFULLY POSITIONED ON THE PREPARED FOUNDATION AND PIPE INSERTED INTO HEADWALL OR HEADWALL SLID OVER PIPE AND CHECKED FOR ALIGNMENT.
- PIPE SHALL BE GROUDED INTO HEADWALL WITH CONVENTIONAL MATERIAL BY CONTRACTOR. BONDING AGENT MAY BE USED IF REQD.
- CARE SHALL BE TAKEN DURING BACKFILLING AND COMPACTION TO PREVENT DAMAGE AND MAINTAIN ALIGNMENT. MINOR DAMAGE TO THE UNIT MAY BE REPAIRED BY CONTRACTOR WHEN PERMITTED BY ENGINEER.
- REINFORCEMENT VARIES WITH SIZE OF UNIT.
- VARIOUS HOLE SIZE AND SHAPES AVAILABLE BY SPECIAL ORDER.
- ALL DIMENSIONS ARE NOMINAL.

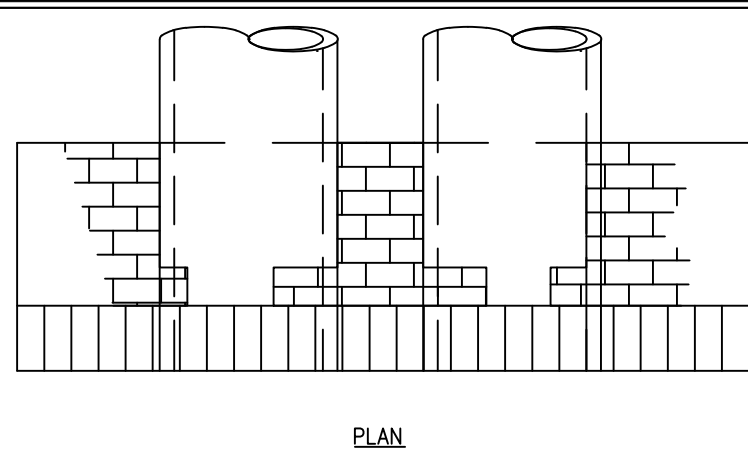
FAYETTEVILLE!	ENGINEERING DIVISION 433 HAY ST. 28301 (910) 433-1656 http://www.fayettevillenc.gov
PRECAST CONCRETE HEADWALL SYSTEM 12" THRU 72" PIPE	
Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21	DR-18

SIZE D	IN.	MIN. SLOPE (FT)		CLEARANCE DIST. (FT)	
		RCP	CMP	RCP	CMP
15		0.00325	0.01107	2.4	2.3
18		0.00255	0.00868	2.7	2.6
24		0.00174	0.00592	3.3	3.1
30		0.00129	0.00439	3.8	3.6
36		0.00101	0.00345	4.3	4.1
42		0.00082	0.00281	4.9	4.6
48		0.00069	0.00235	5.4	5.1

NOTES:

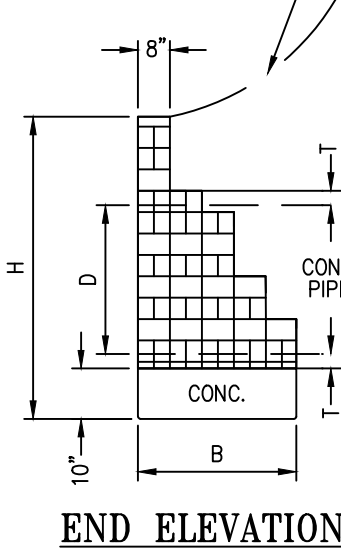
- THE MAXIMUM PIPE VELOCITY SHALL NOT EXCEED 20 FT PER SEC., BUT SHALL NOT CAUSE SCOUR OR OTHER EROSION PROBLEMS IN THE RECEIVING CHANNEL.
- SLOPES REQUIRED TO MAINTAIN MINIMUM VELOCITY OF 3 FT PER SEC. AT FULL FLOW.
- THE MINIMUM SIZE STORM DRAIN PIPE SHALL BE 15 IN.
- ALL STORM DRAINAGE PIPE USED WITHIN CITY RIGHT-OF-WAY SHALL BE REINFORCED CONCRETE PIPE (RCP). ALL RCP SHALL BE CLASS III OR HIGHER.
- CLEARANCE DISTANCE IS DETERMINED FROM THE PIPE INVERT ELEVATION UP.
- A MINIMUM OF 6" OF #57 WASHED STONE IS REQUIRED FOR ALL PIPE INSTALLATION. SEE CITY OF FAYETTEVILLE STANDARD DETAIL DR-1.

FAYETTEVILLE!	ENGINEERING DIVISION 433 HAY ST. 28301 (910) 433-1656 http://www.fayettevillenc.gov
MINIMUM SLOPE & COVER FOR STORM DRAIN AND CULVERT PIPE	
Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21	DR-19.2



TYPICAL SECTION
THRU WALL

SLOPE AS INDICATED ON PLANS

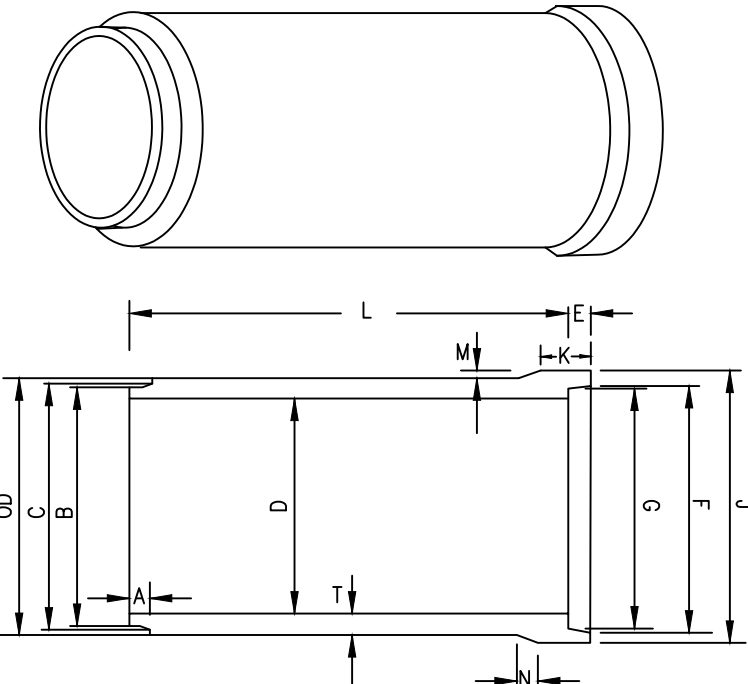


END ELEVATION

ELEVATION

FAYETTEVILLE!	ENGINEERING DIVISION 433 HAY ST. 28301 (910) 433-1656 http://www.fayettevillenc.gov
STANDARD MASONRY ENDWALL FOR SINGLE & DOUBLE PIPE CULVERTS (15"-48"PIPE)90° SKEW; NCDOT STD 838.11 PAGE 1 OF 2	
Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21	DR-15

SIZE D	T	L	POUNDS PER FOOT	ASTM SPEC. & CLASS	OD	A	B	C	E	F	G	J	K	M	N	PLANT
15	B2 1/2	8'	134	ASTM C78 III IV V	19 1/2	2	16 15/16	17 1/4	2	17 3/4	17	21 3/8	4 1/2	7 1/16	1 1/4	SR VN-KN
18	B2 1/2	8'	173	ASTM C78 III IV V	23	2	20	20 3/4	2	21 1/4	20 1/2	23 1/2	6 1/2	3 1/4	1 1/4	SR VN-KN
24	B3	8'	268	ASTM C78 III IV V	30	2 1/2	26 3/16	26 7/8	2 13/16	27 3/4	27	31 3/2	4 1/2	1 1/2	1 1/2	SR VN-KN
30	B3 1/2	8'	396	ASTM C78 III IV V	37	2 15/16	32 1/16	33 1/8	3	34 1/32	33 1/32	38 1/2	5 1/2	3 1/4	1 1/2	SR-K
36	B4	8'	543	ASTM C78 III IV V	44	3 3/4	39 1/4	39 29/32	3 13/16	40 19/32	40 5/16	46 1/2	6	1 1/4	2 1/16	SR-K



A MINIMUM OF 6" OF #57 WASHED STONE IS REQUIRED FOR ALL PIPE INSTALLATION. SEE CITY OF FAYETTEVILLE STANDARD DETAIL DR-1.

MODIFIED TONGUE
AND GROOVE

8 FOOT LENGTH

MORTAR OF FLEXIBLE
PLASTIC TYPE JOINT

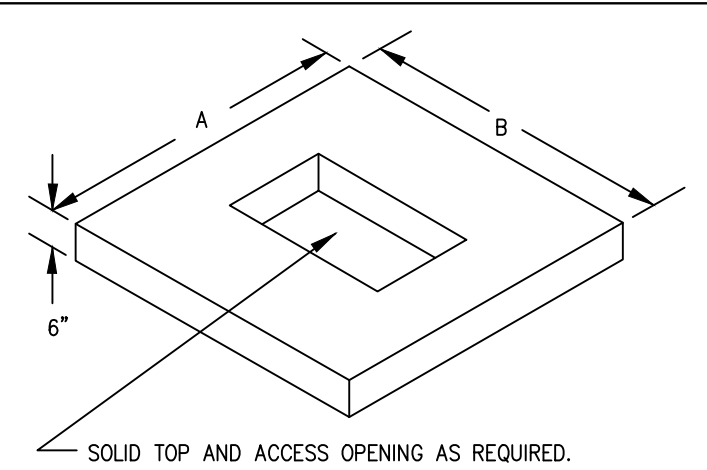
SPECIFICATIONS:
ASTM C 76-LATEST
NCDOT
REINFORCED IN ACCORDANCE
WITH APPLICABLE SPECIFICATIONS

LIFT HOLES STANDARD ON 36"
AS ALLOWED PER ASTM
SPECIFICATIONS

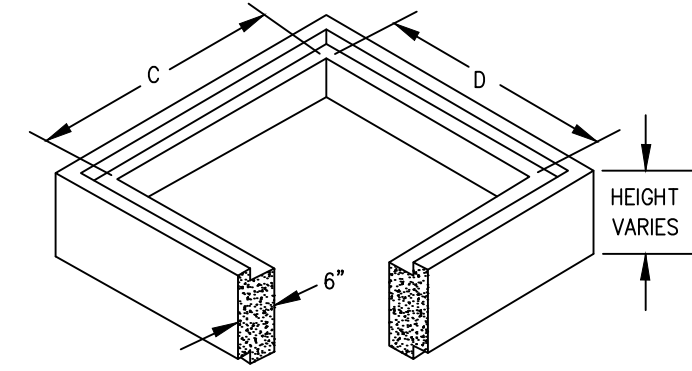
MINIMUM FILL UNDER ROADWAYS	
PIPE CLASS	MINIMUM FILL
CLASS III	2'
CLASS IV	1'
CLASS V	1'

FILL HEIGHT IS MEASURED FROM THE
TOP OF THE PIPE TO THE BOTTOM
OF THE PAVEMENT STRUCTURE.

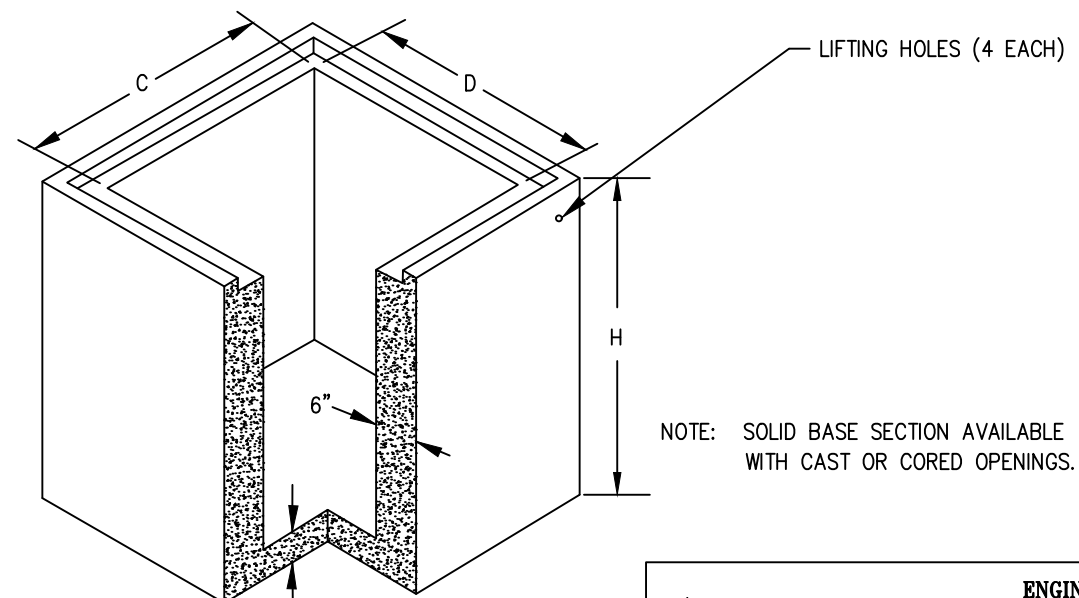
FAYETTEVILLE!	ENGINEERING DIVISION 433 HAY ST. 28301 (910) 433-1656 http://www.fayettevillenc.gov
REINFORCED CONCRETE SEWER, STORM DRAIN AND CULVERT 15" THRU 36" PIPE	
Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21	DR-19



SOLID TOP AND ACCESS OPENING AS REQUIRED.



RISE HEIGHT
8"
1'-4"
2'-8"
HEIGHT
VARIES



LIFTING HOLES (4 EACH)

NOTES:

- CONCRETE 4000 PSI MINIMUM.
- REINFORCING STEEL ASTM A-615 GRADE 60.
- MEETS N.C.D.O.T. APPROVAL TO 10' DEPTH.
- SOLID BOXES MEET H-20 LOADING TO 15' DEPTH.
- PRECAST BOXES APPROVED FOR N.C.D.O.T. STANDARDS: 840.01, 840.02, 840.04, 840.05, 840.11, 840.12, 840.14, 840.15, 840.17, 840.18, 840.19, 840.26, 840.27, 840.28, 840.31, 840.32, AND 840.41.
- ANY MODIFICATION TO BOX MAY NULLIFY H-20 LOADING ABILITY.
- NO WAFFLE BOXES ALLOWED IN CITY RIGHT OF WAY OR EASEMENTS.

FAYETTEVILLE!	ENGINEERING DIVISION 433 HAY ST. 28301 (910) 433-1656 http://www.fayettevillenc.gov
PRECAST CONCRETE SOLID BOX PAGE 1 OF 2	
Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21	DR-20

DIMENSIONS AND QUANTITIES																							
USING CONCRETE PIPE												USING CORRUGATED METAL PIPE											
COMMON DIMS.						DOUBLE PIPE						COMMON DIMS.						DOUBLE PIPE					
D	H	B	G	T	L	BRICK YD ³	CONC YD ³	M	L	BRICK YD ³	CONC YD ³	D	H	B	G	L	L	BRICK YD ³	CONC YD ³	M	L	BRICK YD ³	CONC YD ³
15"	2'-5"	1'-8"	2'-10"	1 7/8"	5'-8"	0.441	0.291	2'-2"	7'-10"	0.555	0.403	15"	2'-3"	1'-4"	2'-9"	5'-6"	5'-6"	0.384	0.226	1'-11"	7'-5"	0.482	0.305
18"	2'-8"	1'-8"	3'-2"	2"	6'-4"	0.562	0.326	2'-7"	8'-11"	0.722	0.459	18"	2'-5"	1'-8"	3'-0"	6'-0"	6'-0"	0.478	0.309	2'-3"	8'-3"	0.605	0.424
24"	3'-2"	2'-0"	4'-1"	3"	8'-2"	1.008	0.504	3'-5"	11'-7"	1.285	0.715	24"	2'-11"	1'-8"	3'-9"	7'-6"	7'-6"	0.749	0.386	3'-0"	10'-6"	0.954	0.540
30"	3'-8"	2'-4"	4'-8"	3 1/2"	9'-4"	1.391	0.672	4'-3"	13'-7"	1.820	0.978	30"	3'-4"	2'-0"	4'-5"	8'-10"	8'-10"	1.090	0.545	3'-9"	12'-7"	1.359	0.777
36"	4'-3"	2'-4"	5'-5"	4"	10'-10"	1.895	0.780	5'-0"	15'-10"	2.462	1.140	36"	3'-9"	2'-4"	5'-0"	10'-0"	10'-0"	1.503	0.720	4'-6"	14'-6"	1.965	1.044
42"	4'-11"	2'-8"	6'-4"	5 1/4"	12'-8"	2.867	1.043	5'-10"	18'-6"	3.729	1.523	42"	4'-5"	2'-8"	6'-0"	12'-0"	12'-0"	2.373	0.988	5'-3"	17'-3"	3.062	1.420
48"	5'-7"	3'-0"	7'-3"	5 3/4"	14'-8"	4.032	1.343	6'-8"	21'-2"	5.184	1.960	48"	4'-11"	2'-8"	6'-9"	13'-6"	13'-6"	3.102	1.111	6'-0"	19'-6"	4.002	1.806

GENERAL NOTES:

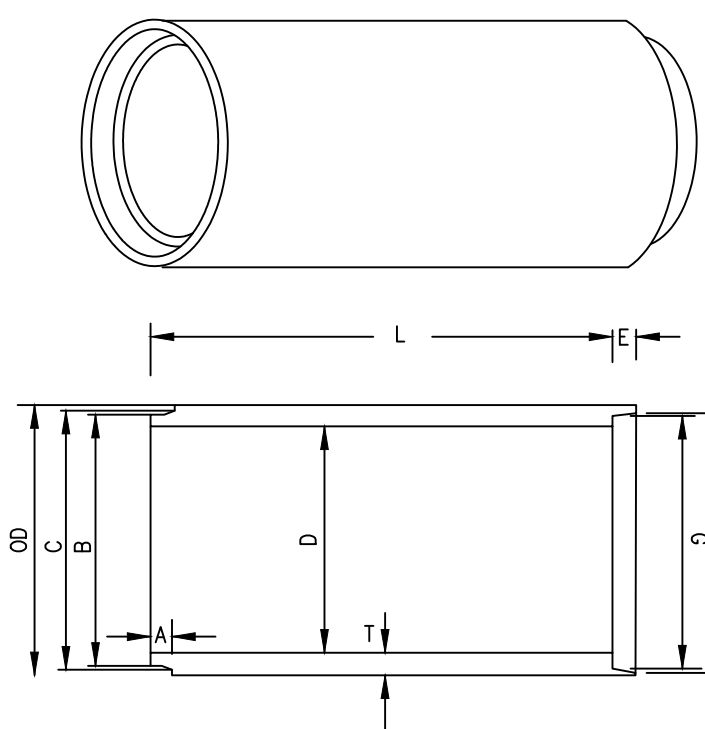
- ALL MORTAR JOINTS ARE 1/2" ± 1/8"
- BRICKWORK SHALL BE BONDED WITH FULL HEADERS EVERY THREE COURSES.
- ALL EXPOSED JOINTS SHALL BE CONCAVE TOOLED.
- WALL THICKNESS (T) SHOWN IS NOT TO BE INTERPRETED TO MEAN THE THICKNESS ACCEPTABLE, BUT IS USED ONLY IN COMPUTING ENDWALL DIMENSIONS AND QUANTITIES.
- FORMS ARE TO BE USED FOR THE CONSTRUCTION OF THE BASE.
- CLASS "A" CONCRETE SHALL BE USED.
- CONCRETE BRICK MAY BE USED IN LIEU OF CLAY BRICK.
- JUMBO BRICK WILL BE PERMITTED.

FAYETTEVILLE!	ENGINEERING DIVISION 433 HAY ST. 28301 (910) 433-1656 http://www.fayettevillenc.gov
STANDARD MASONRY ENDWALL FOR SINGLE & DOUBLE PIPE CULVERTS (15"-48"PIPE)90° SKEW; NCDOT STD 838.11 PAGE 2 OF 2	
Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21	DR-15.1

SIZE D	T	L	POUNDS PER FOOT	ASTM SPEC. & CLASS	OD	A	B	C	E	F	G	PLANT
42	C5 1/4	8'	807	ASTM C76 III IV V	52 1/2	4 1/4	45 15/32	46 17/32	4 5/16	47 3/16	46 7/8	SR
48	C5 3/4	8'	1018	ASTM C76 III IV V	59 1/2	4 1/4	51 3/4	52 1/2	4 5/16	53 3/16	52 7/8	SR
54	C6 1/4	8'	1228	ASTM C76 III IV V	66 1/2	4 1/4	57 1/2	58 1/4	4 5/16	58 19/32	58 19/32	SR
60	C6 3/4	8'	1488	ASTM C76 III IV V	73 1/2	4 3/4	63 15/16	64 25/32	4 13/16	65 3/32	65 7/8	SR
66	C7 1/4	8'/12'	1791	ASTM C76 III IV V	80 1/2	5	71	71 11/16	5 1/16	71 7/8	71 19/32	SR
72	C7 3/4	8'/12'	2052	ASTM C76 III IV V	87 1/2	5	77 9/32	77 15/16	5 1/16	78 1/8	77 7/8	SR

MINIMUM FILL UNDER ROADWAYS	
PIPE CLASS	MINIMUM FILL
CLASS III	2'
CLASS IV	1'
CLASS V	1'

FILL HEIGHT IS MEASURED FROM THE
TOP OF THE PIPE TO THE BOTTOM
OF THE PAVEMENT STRUCTURE.



A MINIMUM OF 6" OF #57 WASHED STONE IS REQUIRED FOR ALL PIPE INSTALLATION. SEE CITY OF FAYETTEVILLE STANDARD DETAIL DR-1.

MODIFIED TONGUE
AND GROOVE

8 FOOT LENGTH

MORTAR OF FLEXIBLE
PLASTIC TYPE JOINT

SPECIFICATIONS:
ASTM C 76-LATEST
NCDOT
REINFORCED IN ACCORDANCE
WITH APPLICABLE SPECIFICATIONS

LIFT HOLES STANDARD ON 36"
AS ALLOWED PER ASTM
SPECIFICATIONS

FAYETTEVILLE!	ENGINEERING DIVISION 433 HAY ST. 28301 (910) 433-1656 http://www.fayettevillenc.gov
REINFORCED CONCRETE SEWER, STORM DRAIN AND CULVERT 42" THRU 72" PIPE	
Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21	DR-19.1

BOX SIZE	DIMENSIONS						BASE SECTION MAX. PIPE DIA.	
	A	B	C	D	E	F	WALL	WALL
24"x24"	36"	36"	24"	24"	6"	6"	36"	
24"x44"	36"	56"	24"	44"	6"	6"	2'-6"	12"
26"x36"	36"	48"	26"	36"	6"	6"	3'-6"	18"
30"x48"	42"	60"	30"	48"	6"	6"	4'-6"	18"
30"x60"	42"	72"	30"	60"	6"	6"	5'-6"	18"
36"x36"	48"	48"	36"	36"	6"	6"	2'-6"	12"
48"x48"	60"	60"	48"	48"	10"	10"	3'-6"	18"
60"x60"	72"	72"	60"	60"	10"	10"	4'-6"	18"

FAYETTEVILLE!	ENGINEERING DIVISION 433 HAY ST. 28301 (910) 433-1656 http://www.fayettevillenc.gov
PRECAST CONCRETE SOLID BOX PAGE 2 OF 2	
Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21	DR-20.1

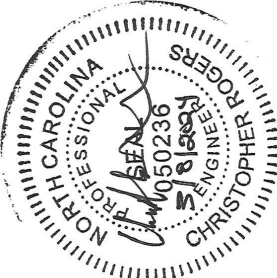
DETAILS

DETAILS

SHEET NUMBER
C702

FAYETTEVILLE!

AMERICA'S CAN DO CITY
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28301



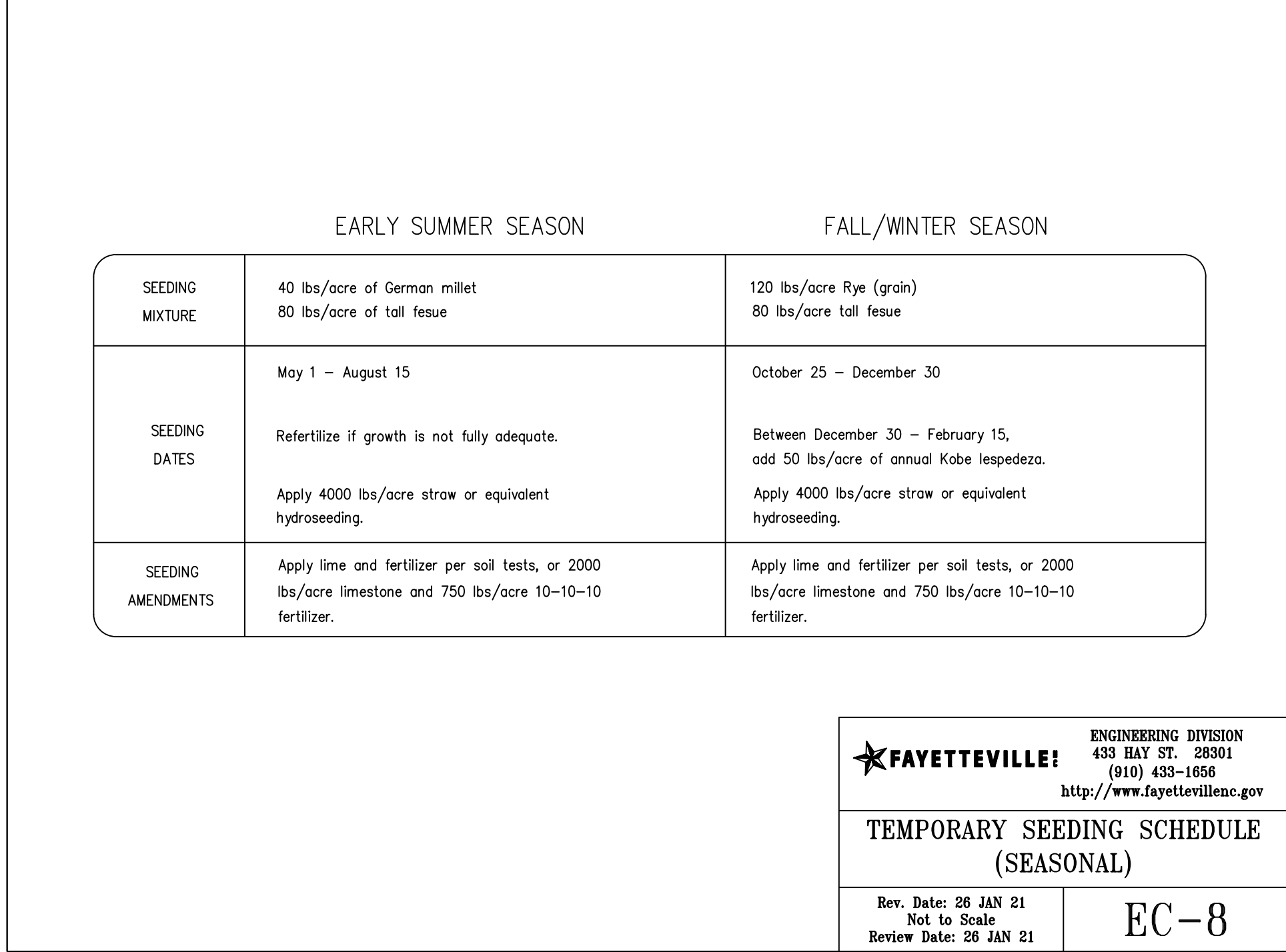
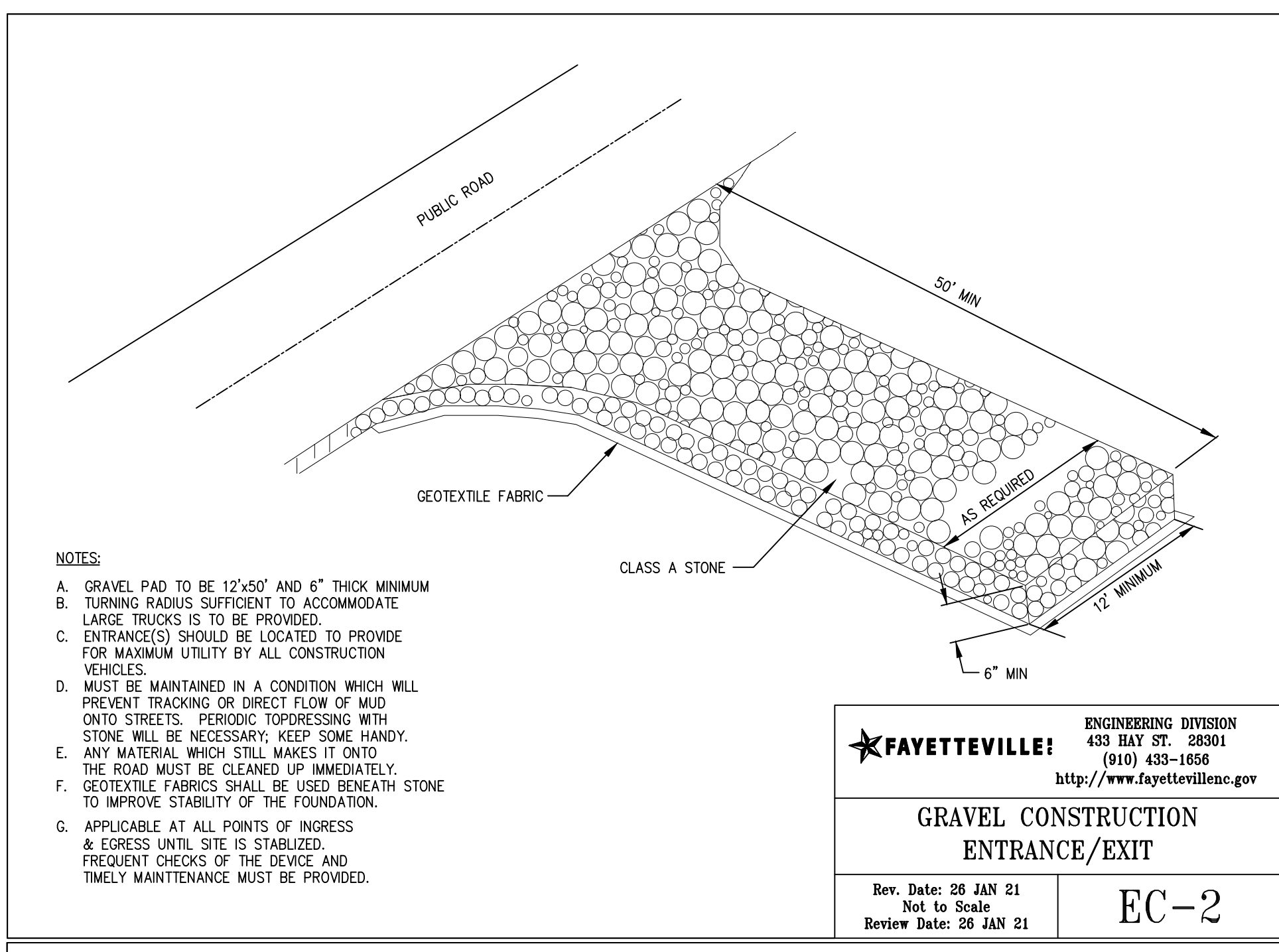
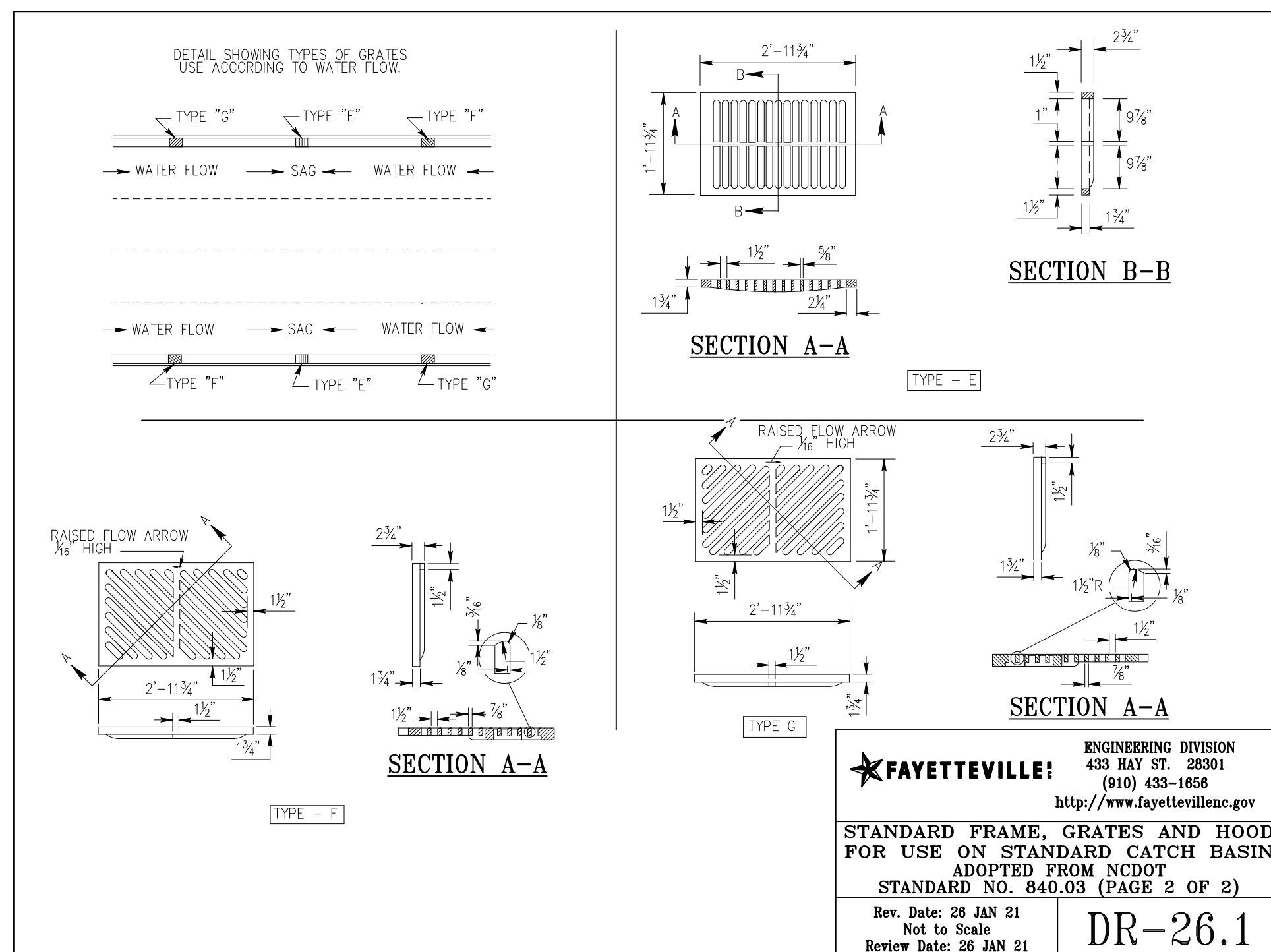
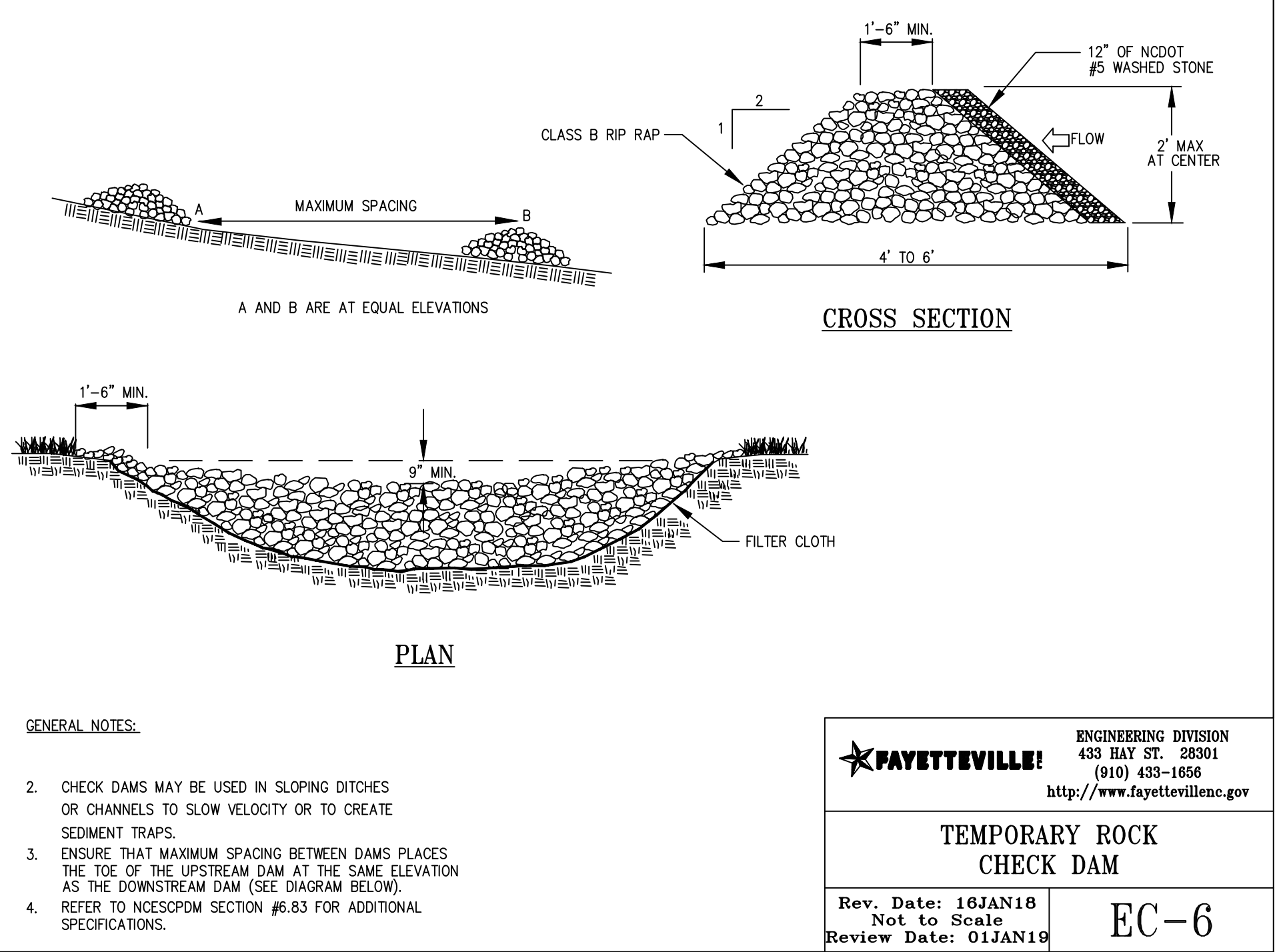
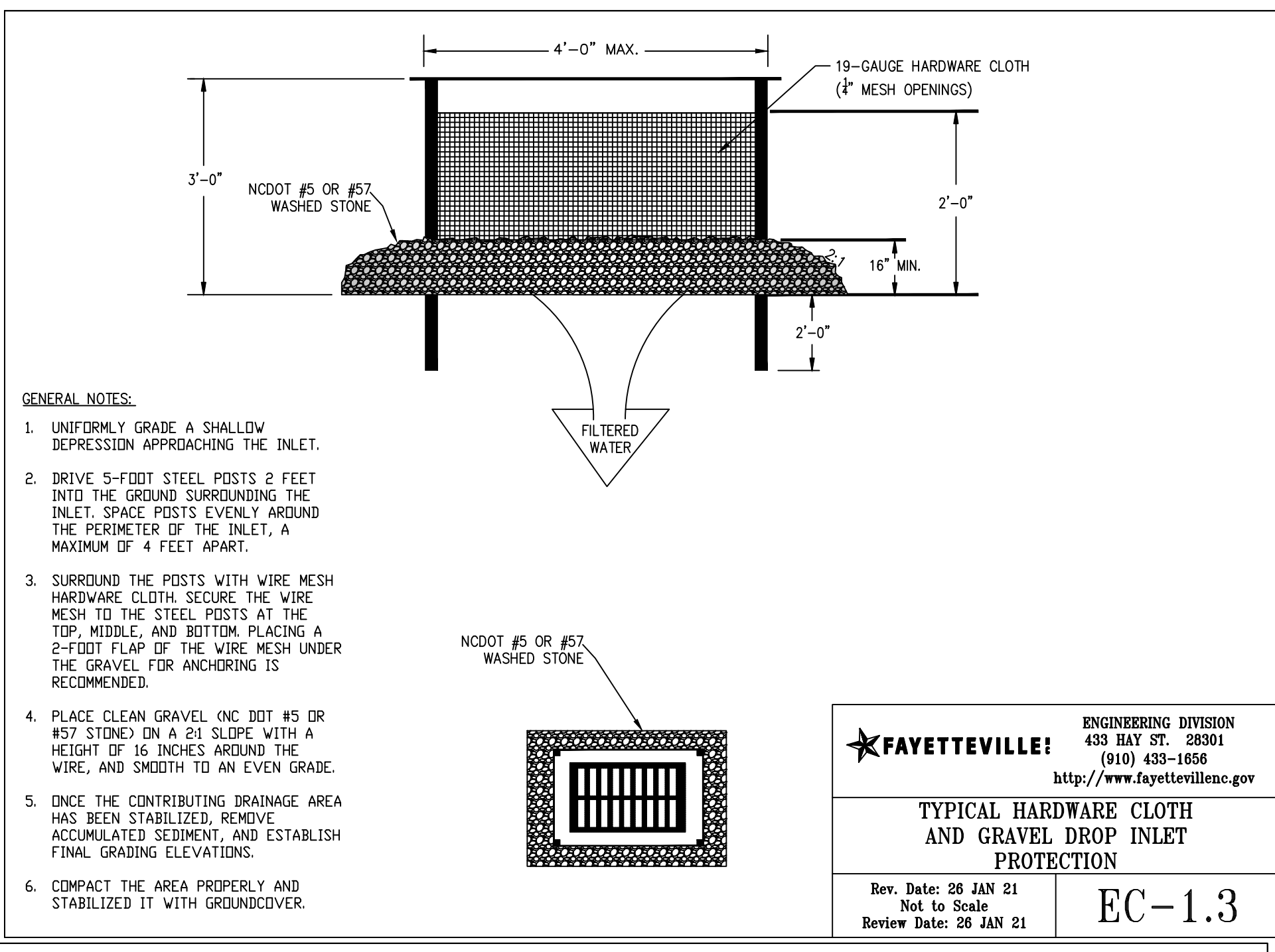
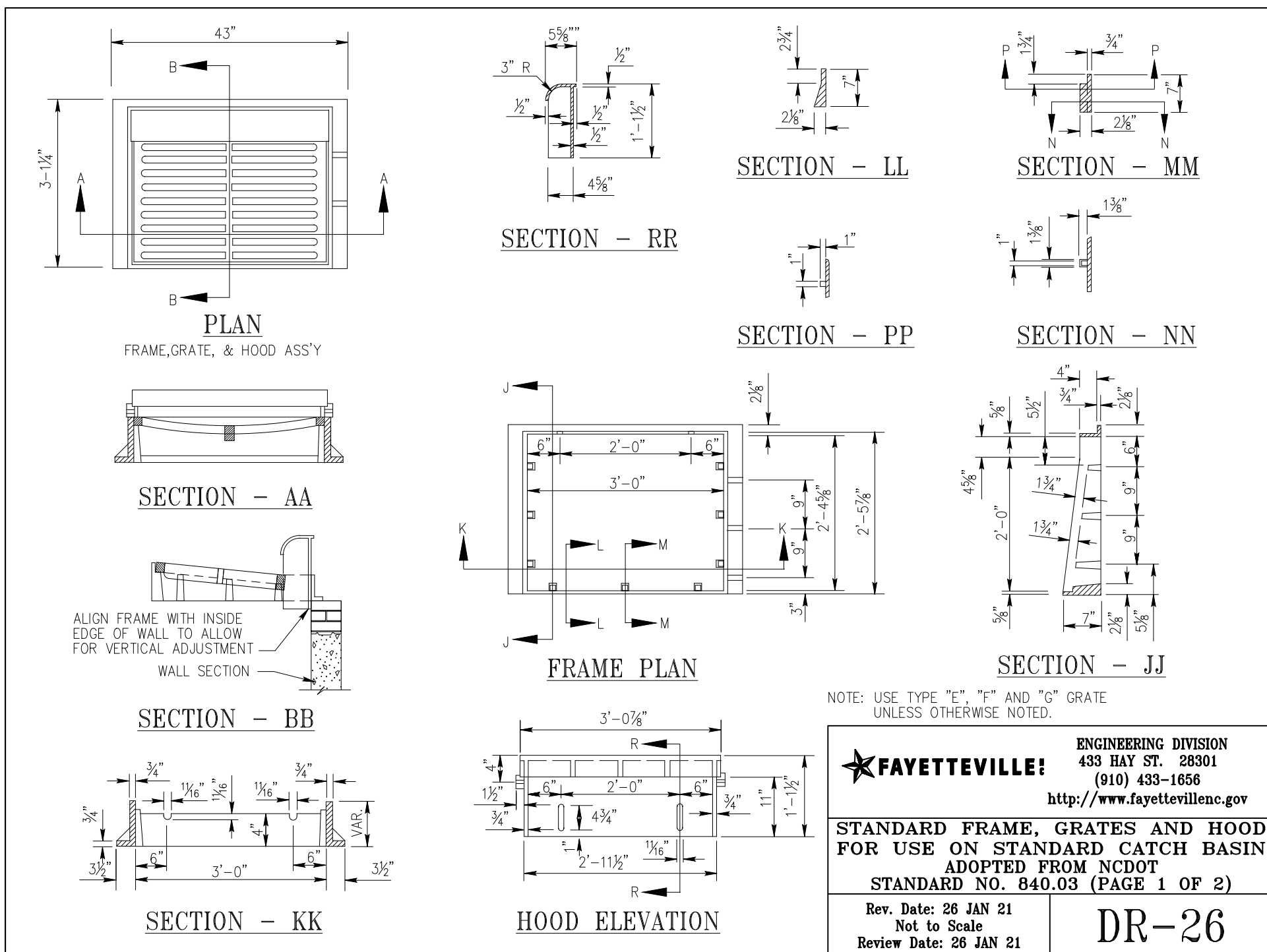
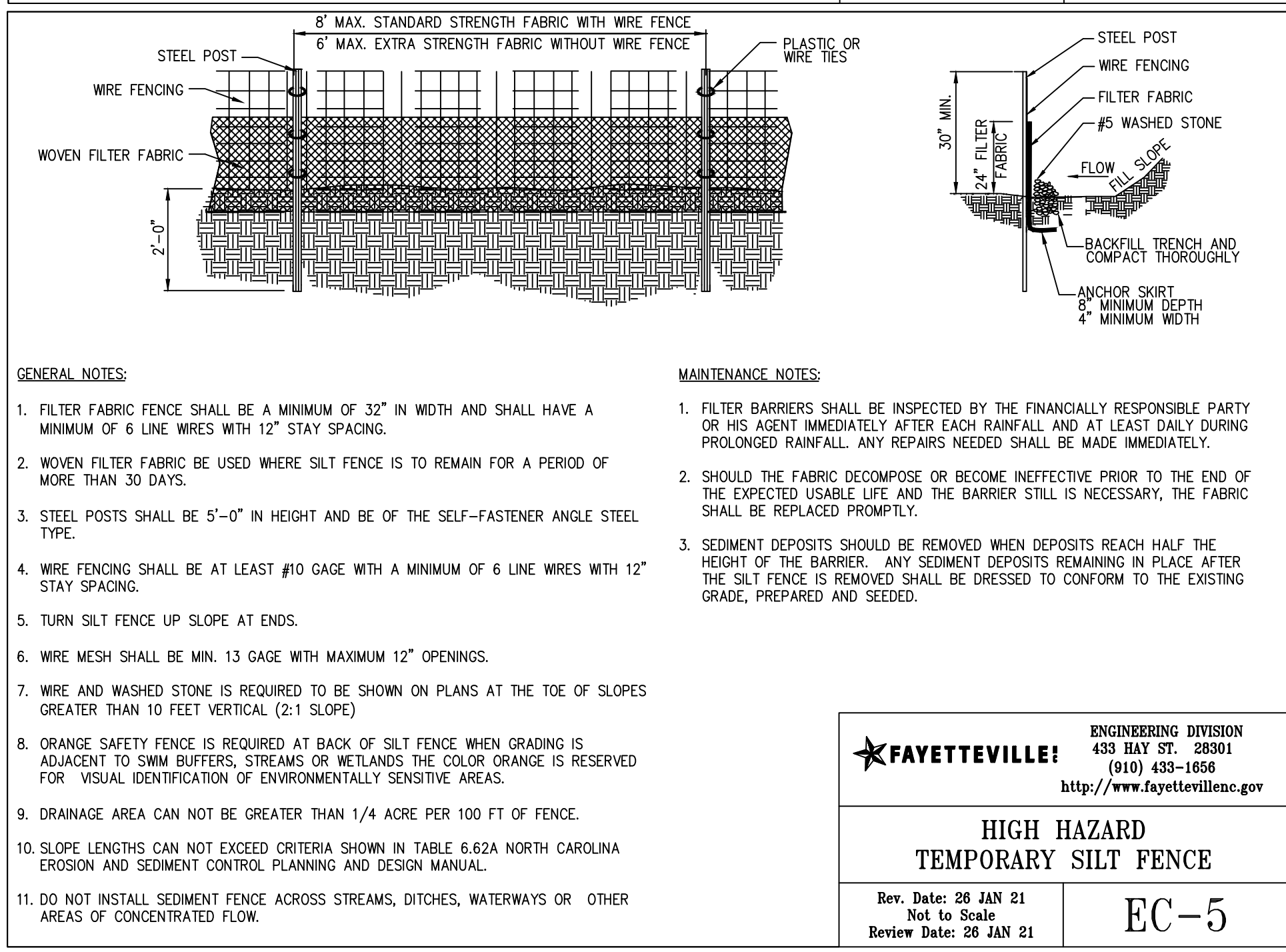
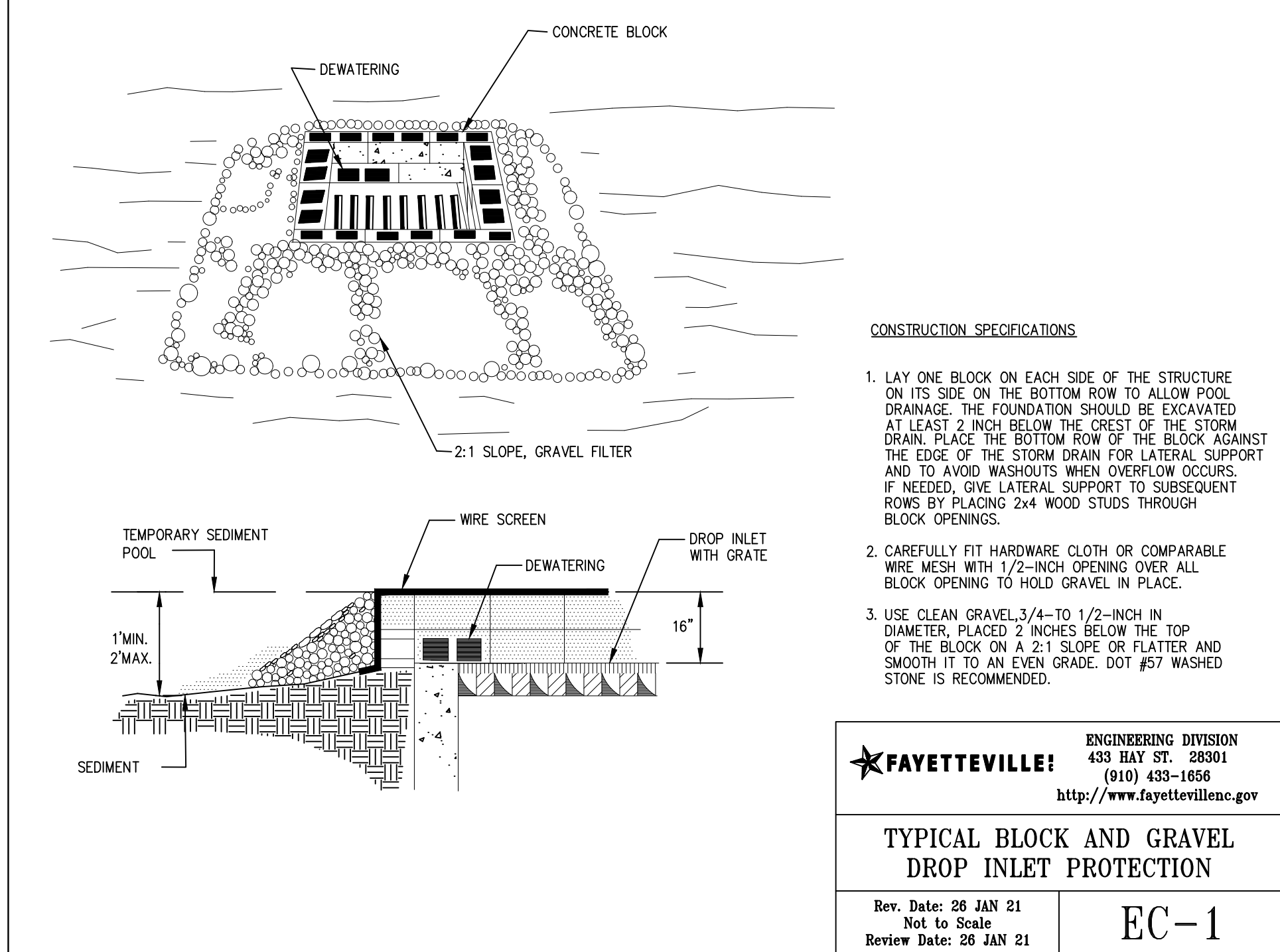
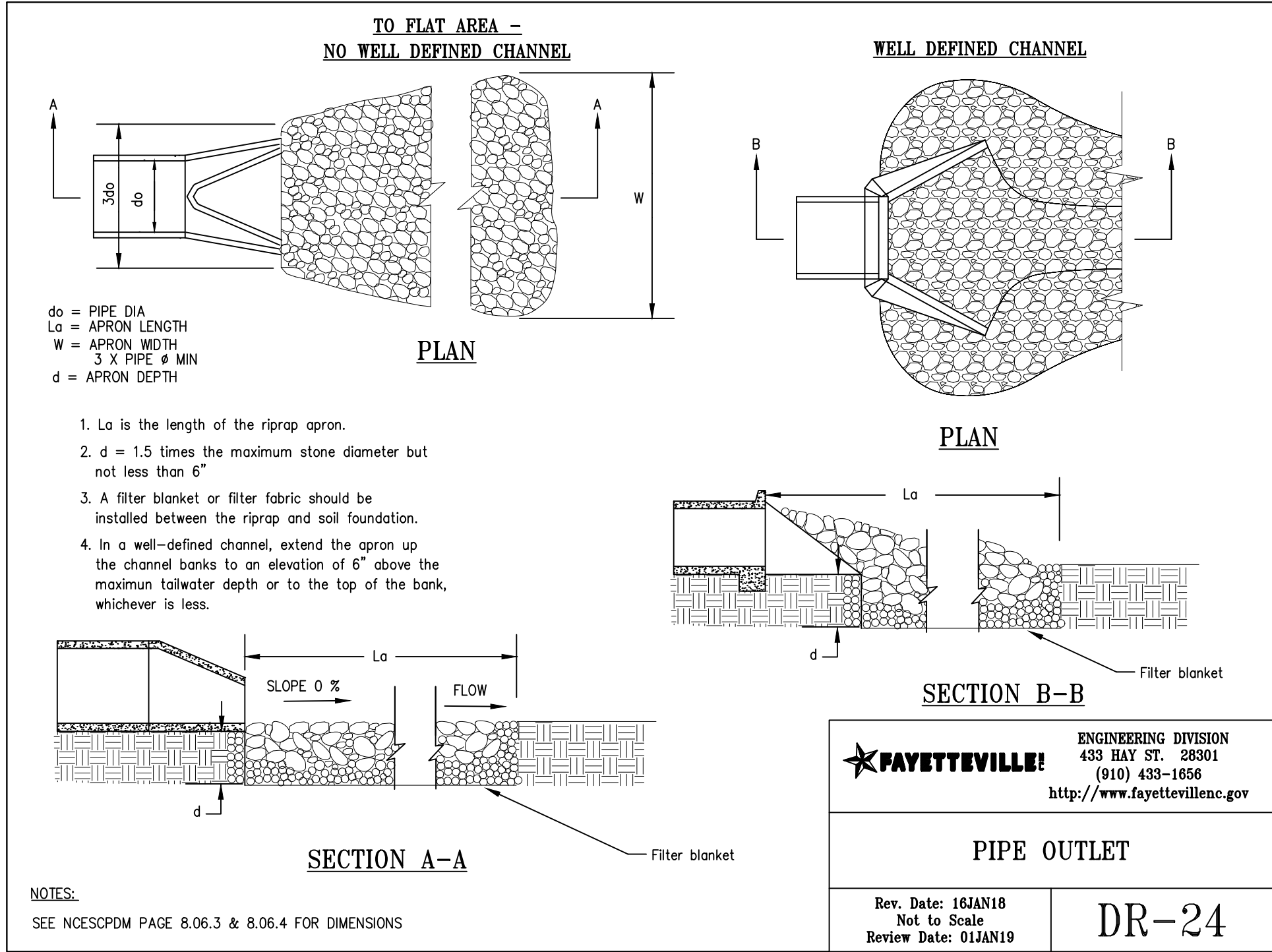
CONSTRUCTION SET

REVISIONS
REV. #

PROJECT : SHANE VANDERGRIFF
DESIGN : CHRIS ROGERS
CHECK : DAVID DUNGAN
APPROVED :

PROJECT NO. : 54960.001
SUB-LEDGER NO. : _____

L:\2019\4960.001-Chief\Fayetteville Ivy and Lyon RD\DWG\Sheet\CD\54960.001-209-C700\NTDT.dwg [Plotted on 3/6/2024 1:12 PM] by Shane Vandergrift



DETAILS

DETAILS

SHEET NUMBER
C703

REVISIONS

REV. #	DESCRIPTION	REV. BY	DATE

PROJECT IVY AND LYON ROAD
DESIGN : CHRIS ROGERS
CHECK : DAVID DUNCAN
APPROVED :
DATE : 03/08/2024

CONSTRUCTION SET

PROJECT NO. 54960.001

SUB-LEDGER NO. _____

FAYETTEVILLE!

AMERICA'S CAN DO CITY

ENGINEERING DIVISION

ENGINEERING & INFRASTRUCTURE DEPARTMENT

433 HAY STREET FAYETTEVILLE, NC 28301

SHANE VANDERGRIFF

DRAINAGE IMPROVEMENTS

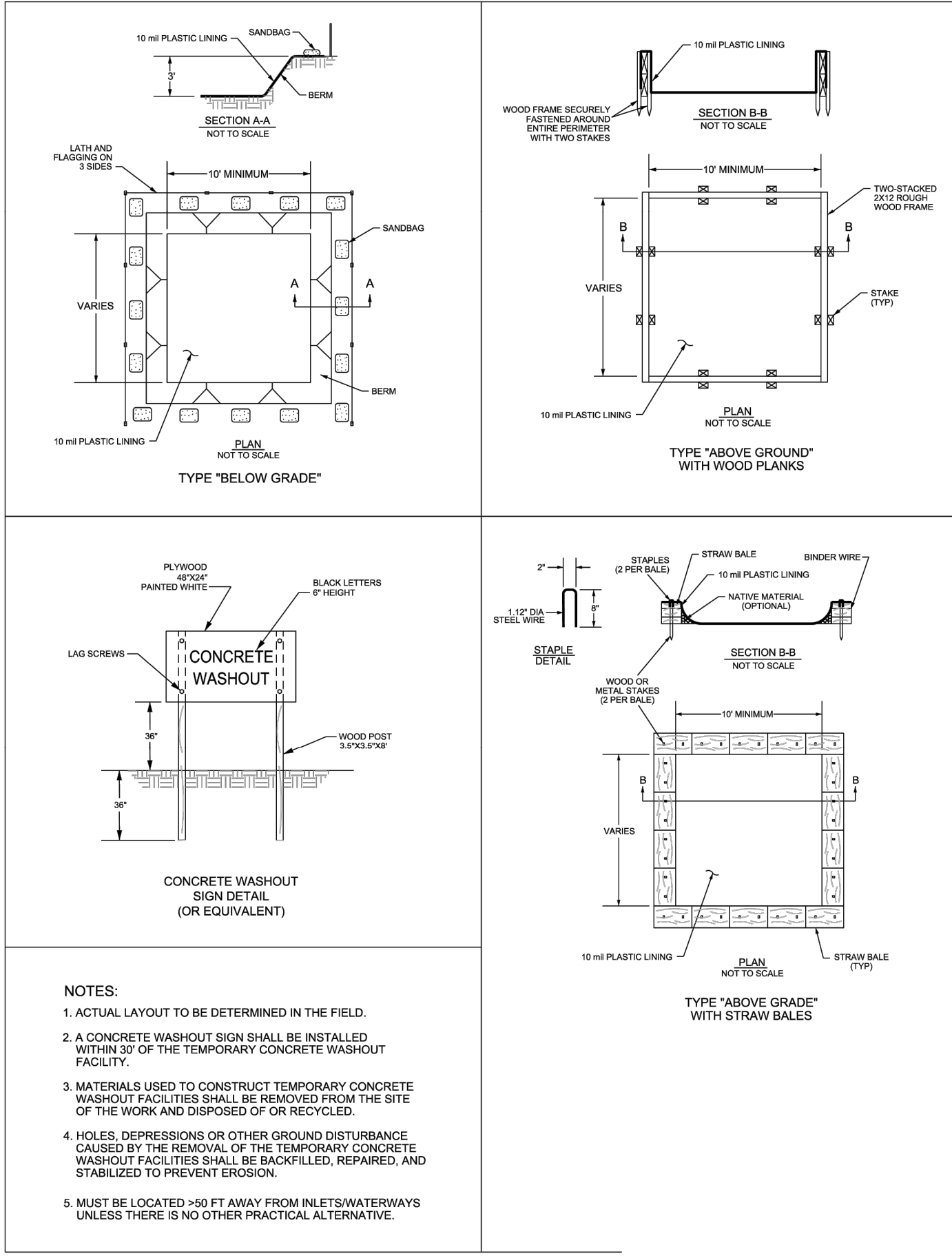
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DATE : 03/08/2024

PROJECT NO. 54960.001

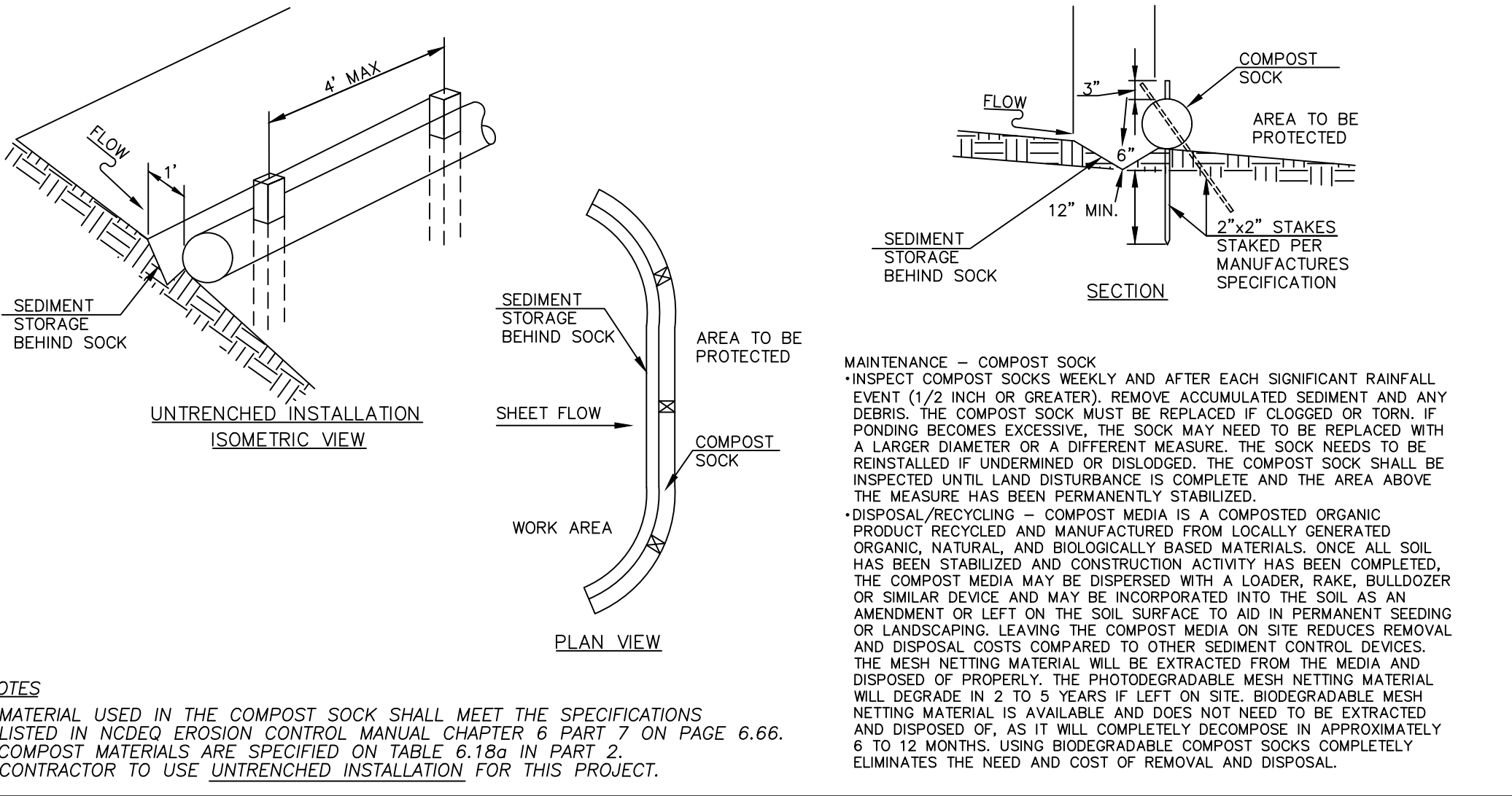
SUB-LEDGER NO. _____

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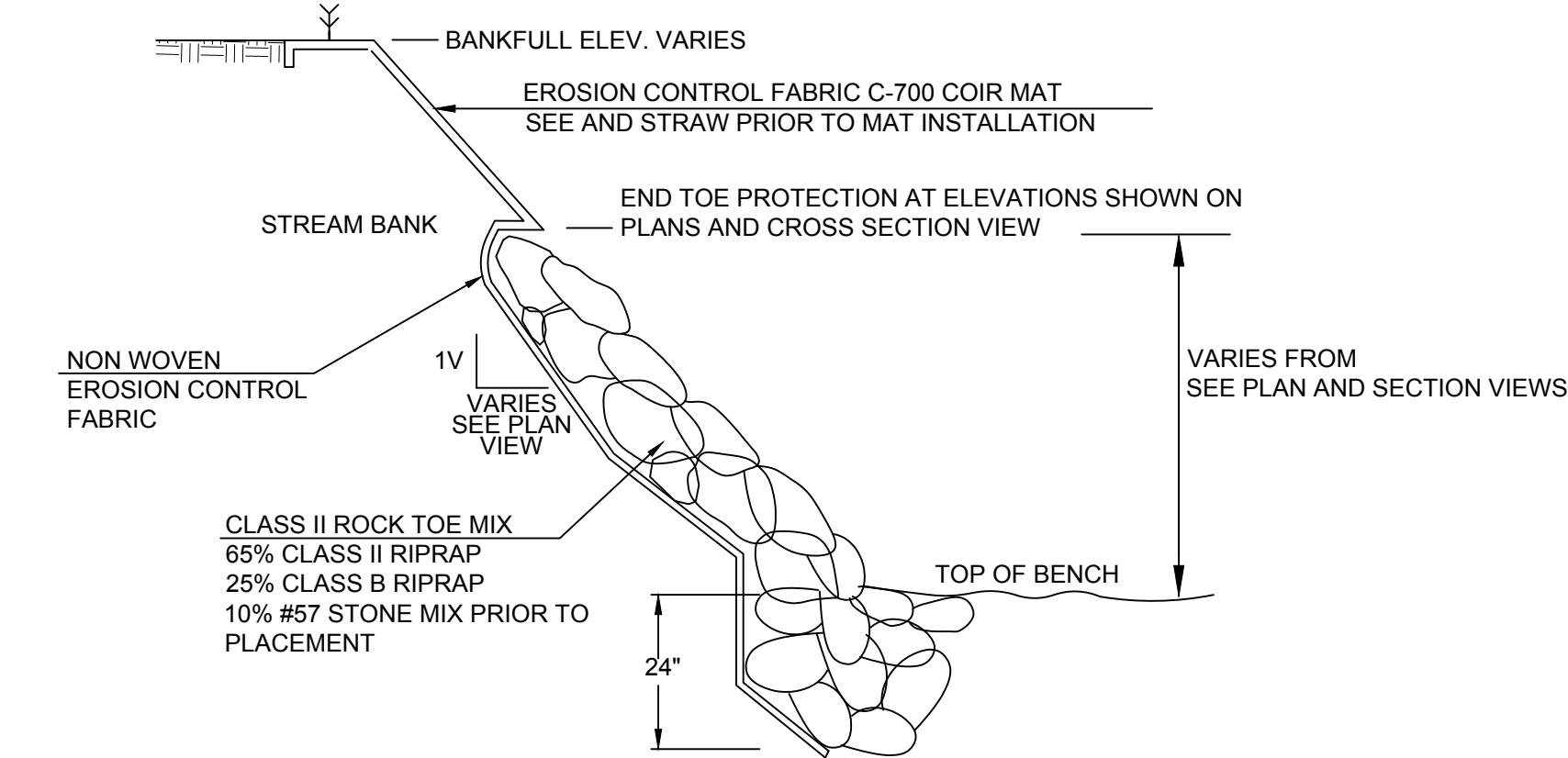
CONCRETE TRUCK WASHOUT

No Scale



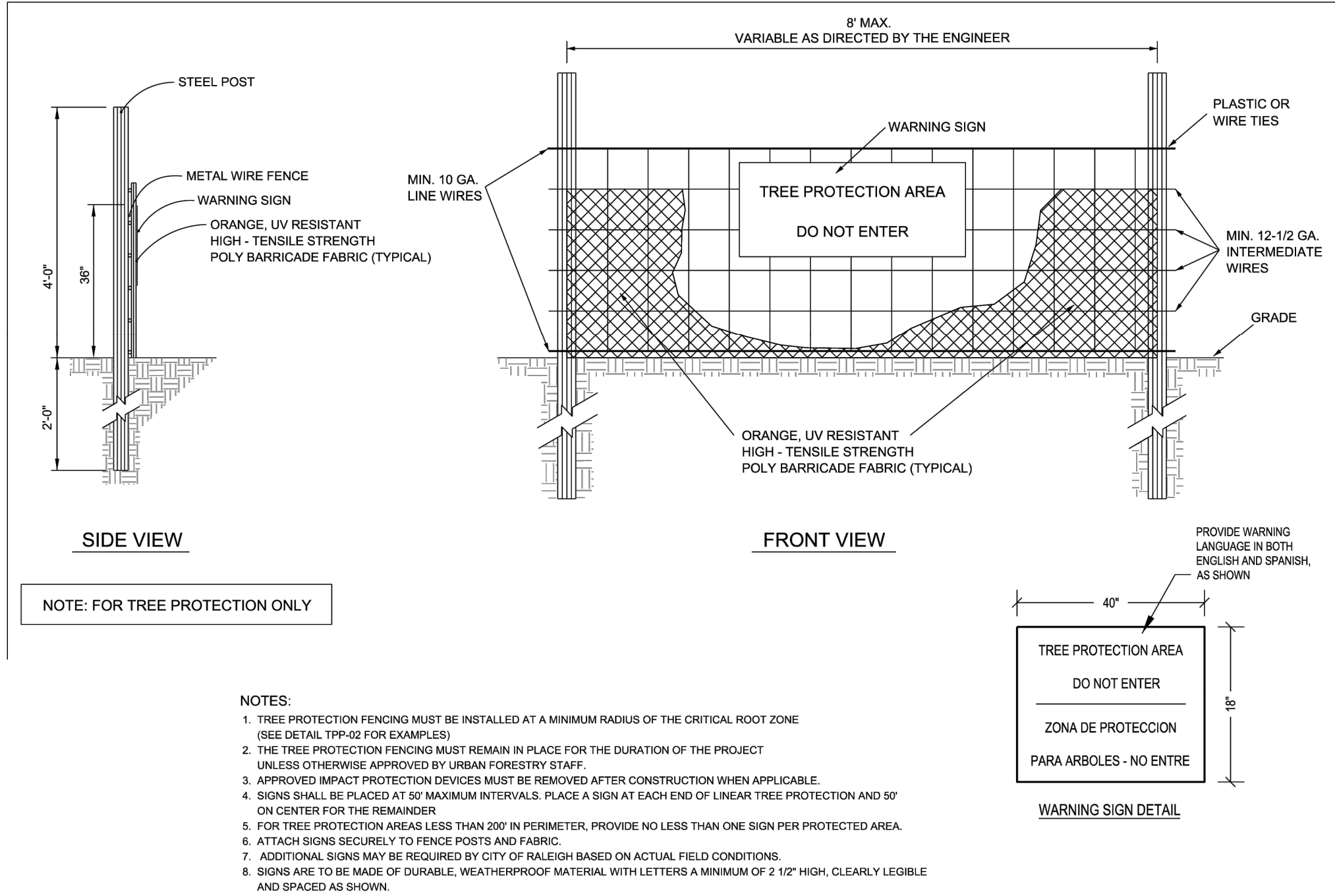
COMPOST SOCK

No Scale



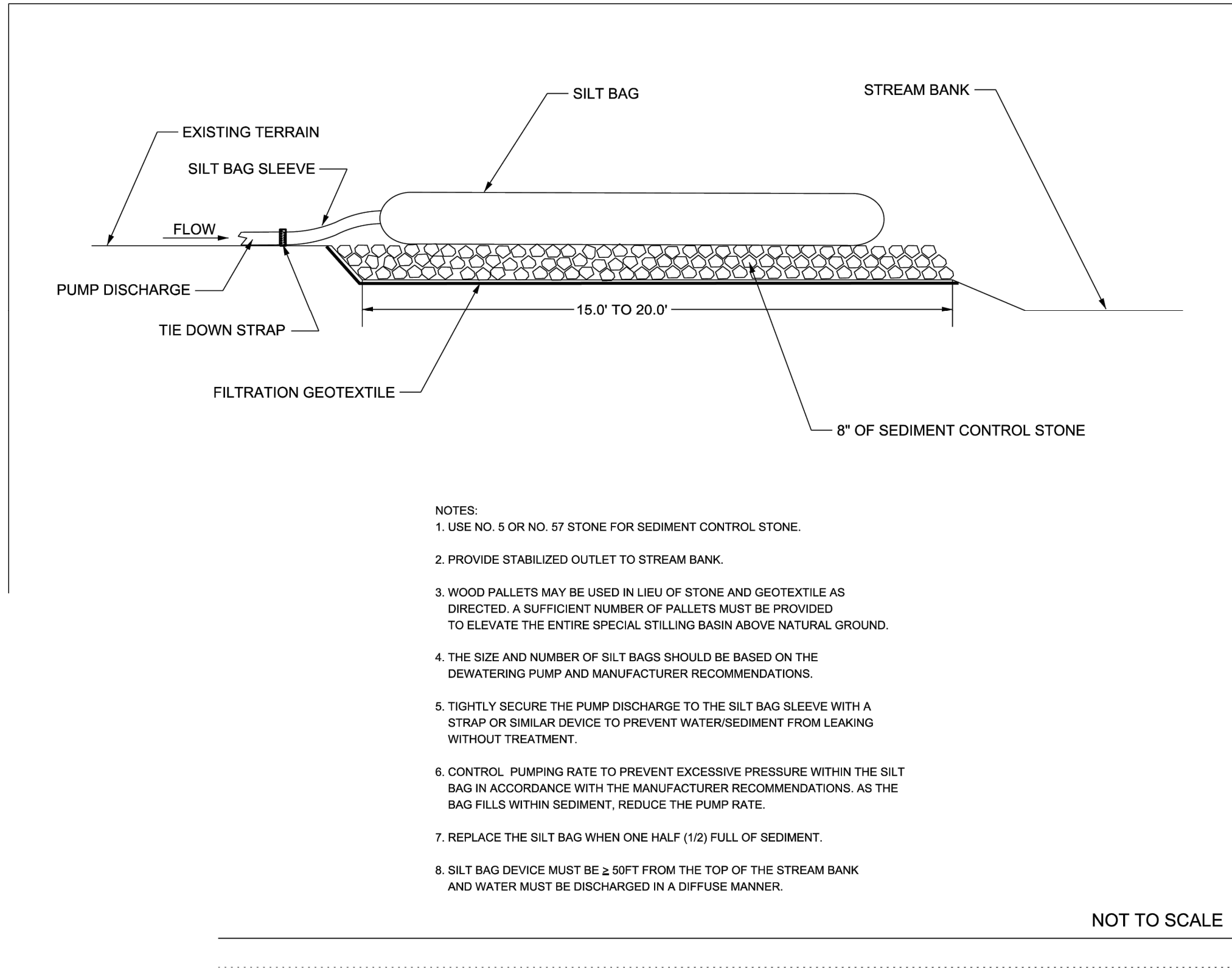
ROCK TOE PROTECTION

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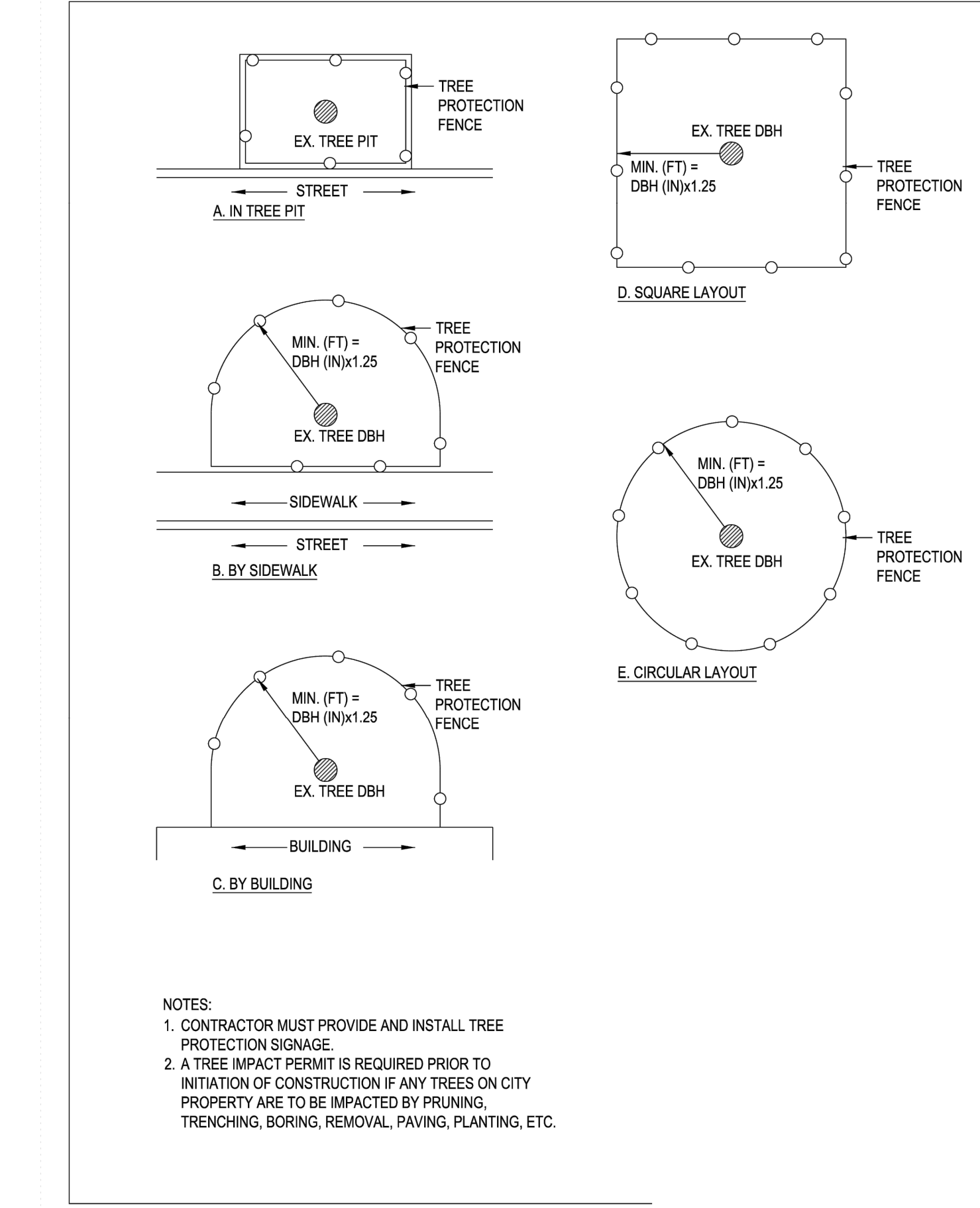
TREE PROTECTION

No Scale



SILT BAG

No Scale



TREE PROTECTION

No Scale

Table 6.10a Temporary Seeding Specifications for Winter and Early Spring			
Seeding Mixture Species		Rate (lb/acre)	
Rye Grain		30	
Seeding Dates			
Mountains >2500 ft.	15-Feb to	15-May	
<2500 ft.	1-Feb to	1-May	
Piedmont	1-Jan to	1-May	
Coastal Plain	1-Dec to	15-Apr	
Soil Amendments			
Follow recommendations of soil tests or apply 2 ton/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer			
Mulch			
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting or a mulch anchoring tool. Use 400 gallons of tack per acre or straw covered with pinned netting.			
Maintenance			
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or damage.			

Table 6.10a Temporary Seeding Specifications for Summer			
Seeding Mixture Species		Rate (lb/acre)	
German Millet		15	
In the Piedmont and Mountains, a small-stemmed sundangrass may be substituted at a rate of 50lb/acre.			
Seeding Dates			
Mountains	15-May to	15-Aug	
Piedmont	1-May to	15-Aug	
Coastal Plain	15-Apr to	15-Aug	
Soil Amendments			
Follow recommendations of soil tests or apply 2 ton/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer			
Mulch			
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting or a mulch anchoring tool. Use 400 gallons of tack per acre or straw covered with pinned netting.			
Maintenance			
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or damage.			

Table 6.10a Temporary Seeding Specifications for Fall			
Seeding Mixture Species		Rate (lb/acre)	
Rye Grain		30	
In the Piedmont and Mountains, a small-stemmed sundangrass may be substituted at a rate of 50lb/acre.			
Seeding Dates			
Mountains	15-Aug to	15-Dec	
Coastal Plain and Piedmont	15-Aug to	30-Dec	
Soil Amendments			
Follow recommendations of soil tests or apply 2 ton/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer			
Mulch			
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting or a mulch anchoring tool. Use 400 gallons of tack per acre or straw covered with pinned netting.			
Maintenance			
Repair and refertilize damaged areas immediately. Topdress with 50lb/acre of nitrogen in March. If it is necessary to extent temporary cover beyond June 15, overseed with 50lb/acre Kobe (Piedmont and Coastal Plain) late February or early March			

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Maintenance			
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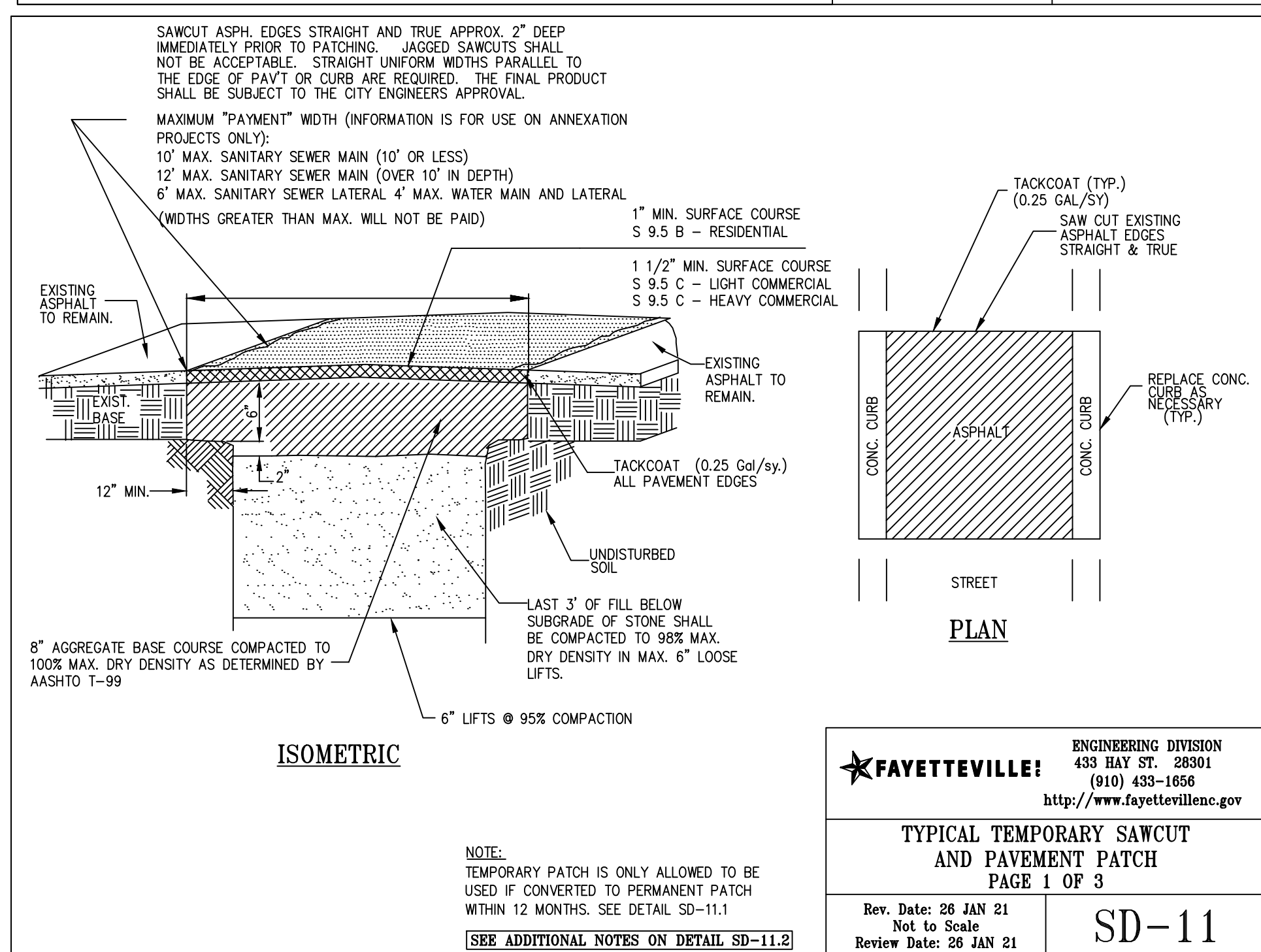
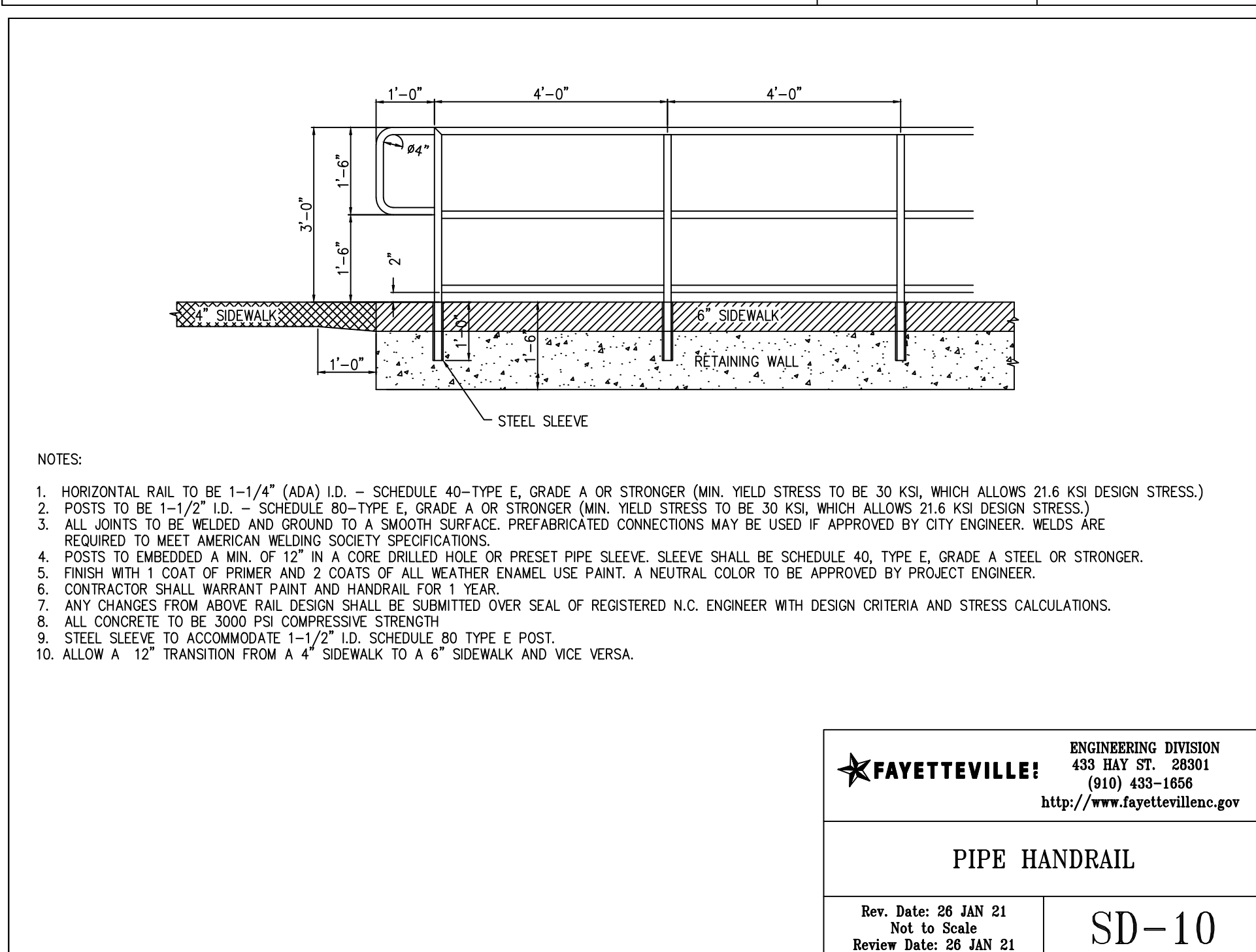
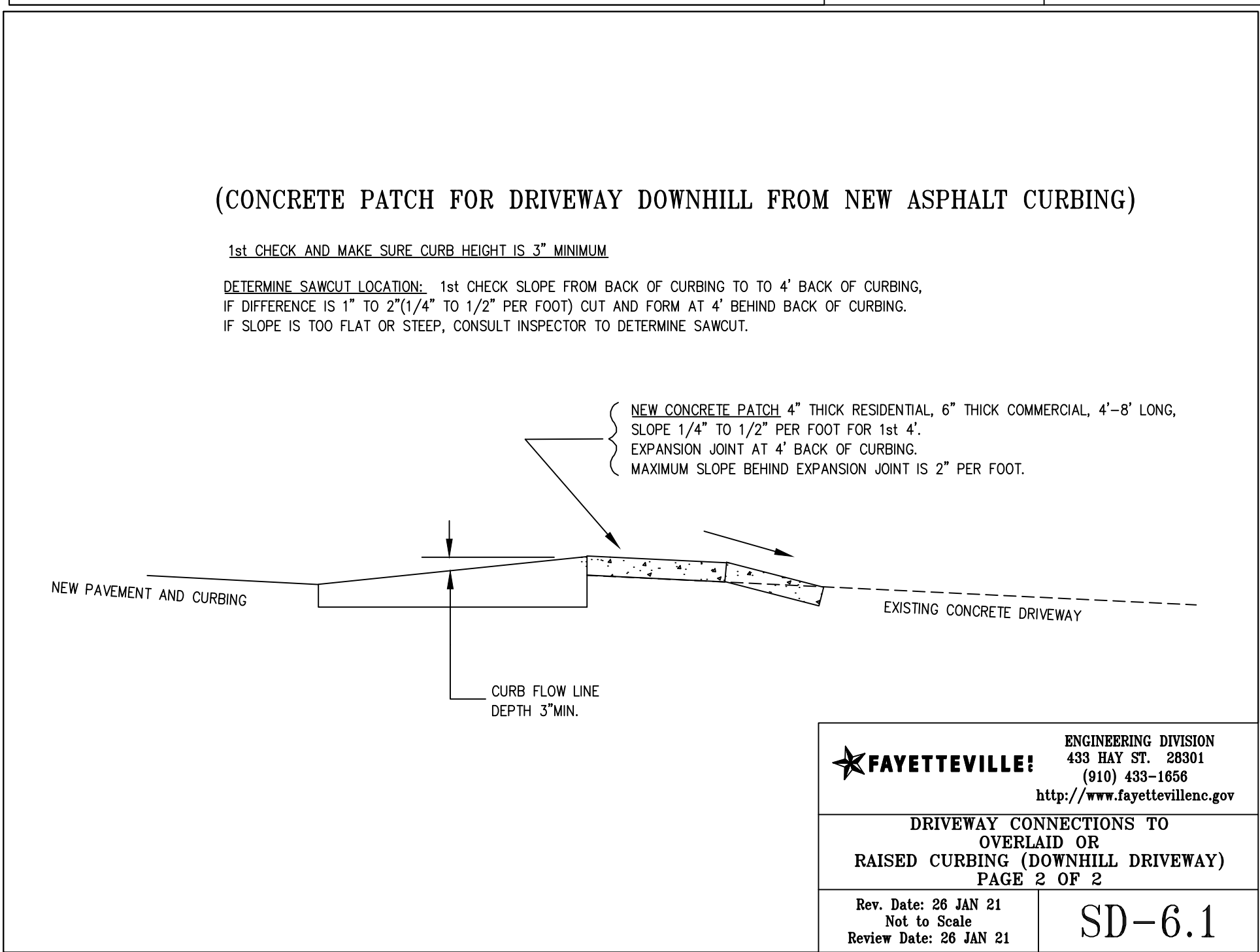
Table 6.10a Temporary Seeding Specifications for Fall			
Seeding Mixture Species		Rate (lb/acre)	
Rye Grain		30	
In the Piedmont and Mountains, a small-stemmed sundangrass may be substituted at a rate of 50lb/acre.			
Seeding Dates			
Mountains	15-Aug to	15-Dec	
Coastal Plain and Piedmont	15-Aug to	30-Dec	
Soil Amendments			
Follow recommendations of soil tests or apply 2 ton/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer			
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Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting or a mulch anchoring tool. Use 400 gallons of tack per acre or straw covered with pinned netting.			
Maintenance			
Repair and refertilize damaged areas immediately. Topdress with 50lb/acre of nitrogen in March. If it is necessary to extent temporary cover beyond June 15, overseed with 50lb/acre Kobe (Piedmont and Coastal Plain) late February or early March			

PLANTING NOTES:

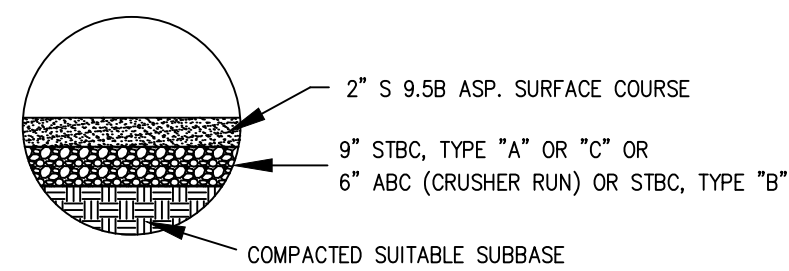
1. STREAM BANKS TO BE MATTED WITH COIR MAT C-700 OR APPROVED EQUAL. PLACE RIPARIAN SEED, EROSION CONTROL SEED AND THIN LAYER OF STRAW PRIOR TO MATTING INSTALLATION IN.
2. PLANTING STOCK TO BE GROWN BY NURSERIES WITHIN THE SAME PHYSIOGRAPHIC REGION (PIEDMONT) AND WITHIN 200 MILES OF THE PROJECT SITE.
3. RIPARIAN ERNST SEED MIX OR APPROVED EQUAL BY DESIGNER. APPLICATION RATE 25 LBS/AC.
4. TEMPORARY SEED TO BE PLACED WITH PERMANENT SEED. FERTILIZER RECOMMENDATIONS CONTRACTOR TO FIELD VERIFY WITH ON SITE SOIL CONDITIONS:
LIME 1/2 TON/AC
PHOSPHATE 20-40 LBS/AC
POTASH 50-70 LBS/AC
WATERING REQUIREMENTS ONCE/WEEK IF NO RAIN
5. STABILIZATION MEASURES TO BE PLACED WITHIN THE LIMITS OF ALL DISTURBED AREAS. PLANTING AREAS SHOWN APPROXIMATE LIMITS OF DISTURBANCE.

SEEDING SPECIFICATIONS

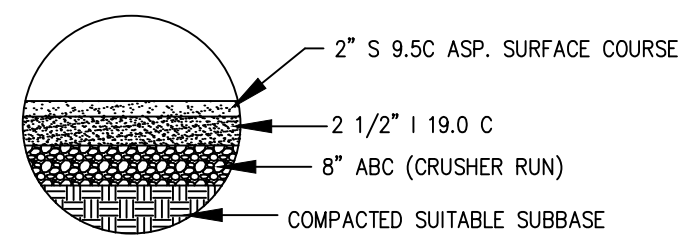
No Scale



TYPICAL RESIDENTIAL CROSS SECTION



TYPICAL LIGHT & HEAVY COMMERCIAL CROSS SECTION



FAYETTEVILLE! ENGINEERING DIVISION
433 HAY ST. 28301
(910) 433-1656
http://www.fayettevillenc.gov

TYPICAL CROSS SECTIONS FOR
ALL CITY PAVEMENT

Rev. Date: 26 JAN 21
Not to Scale
Review Date: 26 JAN 21

SD-16.2

- NOTES:
1. PRECAST REINFORCED CONCRETE: MANHOLES SHALL BE IN ACCORDANCE WITH ASTM C-478.
 2. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000PSI.
 3. MANHOLES GREATER THAN 12" DEPTH SHALL HAVE MINIMUM 8" EXTENDED BASE.
 4. FLEXIBLE BUTYL RESIN JOINT SEALANT SHALL BE IN ACCORDANCE WITH ASTM C990. RUBBER GASKET JOINTS SHALL BE IN ACCORDANCE WITH ASTM C-443.
 5. FLEXIBLE EPDM RUBBER BOOT CONNECTORS SHALL BE IN ACCORDANCE WITH ASTM C923. INSTALLED BY MANUFACTURER WITH STAINLESS STEEL COMPRESSION RING AND TAKEUP CLAMP. THE FLEXIBLE BOOT CONNECTOR SHALL BE TIGHTENED ON THE MAIN BY MEANS OF A SINGLE STAINLESS STEEL PIPE CLAMP.
 6. CONNECTIONS TO EXISTING MANHOLES SHALL BE BY CORING MANHOLE AND FIELD INSTALLING A FLEXIBLE EPDM RUBBER BOOT CONNECTOR. DO NOT ALLOW DEBRIS TO ENTER SYSTEM.
 7. MORTAR USED FOR SEALING JOINTS AND LIFT HOLES SHALL BE QUICK SETTING. NON-SHRINK GROUT MIXED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. MORTAR USED TO CONSTRUCT INVERTS AND SHELF SHALL BE IN ACCORDANCE WITH ASTM C-270, TYPE M, IN ACCORDANCE WITH PWG SPECIFICATION SECTION 03301.
 8. MANHOLE STEPS SHALL BE IN ACCORDANCE WITH ASTM C478 AND OSHA REGULATIONS, ALIGN STEPS WITH INVERT OUT.
 9. PRECAST INVERTS ARE NOT ALLOWED.
 10. VERTICAL DROPS BETWEEN THE INFLOW PIPES AND OUTFLOW PIPES SHALL REQUIRE THE FOLLOWING:
A. GREATER THAN 2.5' SEE PIPE SLIDE DETAIL.
B. LESS THAN 2.5' SEE PIPE SLIDE DETAIL.
 11. AN ECCENTRIC CONE SHALL BE UTILIZED ON ALL MANHOLES, UNLESS OTHERWISE APPROVED BY FAYPWC.
 12. INVERT ON PLANS IS TO MANHOLE CENTERLINE.
 13. GRADE RINGS SHALL NOT BE USED FOR ABOVE GRADE ADJUSTMENTS (IE: OUTFALL AREAS). USE OF GRADE RINGS ARE ALLOWABLE IN YARD AREAS AND PAVEMENT, WHERE THE RING AND COVER ARE AT GROUND LEVEL, GRADE RINGS CAN BE

EITHER CONCRETE OR HDPE. HDPE GRADE RINGS SHALL MEET THE REQUIREMENTS OF ASTM 4796 FOR MATERIAL, QUALITY, AND PERFORMANCE. HDPE GRADE RINGS SHALL BE MANUFACTURED BY LADTECH, INC. OR APPROVED EQUAL.

14. THE MINIMUM SLOPE ACROSS THE INVERT OF THE MANHOLE SHALL BE 1%, UNLESS OTHERWISE APPROVED BY FAYPWC. STANDING WATER IN INVERT OF MANHOLE IS NOT ACCEPTABLE.

15. THE EXTERIOR MANHOLE RISER JOINTS, INCLUDING THE JOINT AT THE CONE, SHALL BE SEALED ON THE OUTSIDE BY AN APPROVED JOINT WRAP. THE WRAP SHALL BE IN ACCORDANCE WITH FAYPWC SPECIFICATIONS.

16. MANHOLE BOOT FOR 4-INCH LATERALS, SHOULD IT BE NECESSARY TO INSTALL A 4-INCH LATERAL INTO A MANHOLE, THE RUBBER BOOT THAT THE LATERAL IS INSERTED INTO SHALL BE SECURELY FASTENED TO THE CORE HOLE BY UTILIZING A STAINLESS STEEL BAND THAT IS TIGHTENED USING A JACK OR A TORQUE WRENCH (DIRECT DRIVE). BOTH STANDARD SEE AND STEP DOWN BOOTS ARE ALLOWED. THE TORQUE WRENCH SHALL BE SUPPLIED BY THE MANUFACTURER. NO OTHER TYPE BANDS OR METHOD OF SECURING THE BOOT TO THE MANHOLE SHALL BE ACCEPTED.

FOR FOUR (4) INCH SDR 26 LATERALS, THE PIPE OUTSIDE DIAMETER RANGE OF THE BOOT SHALL BE 3.5-INCHES TO 4.35-INCHES.

FOR FOUR (4) INCH DUCTILE IRON LATERALS, THE PIPE OUTSIDE DIAMETER RANGE OF THE BOOT SHALL EITHER BE .68 FOR 4" OR 4.45-INCHES TO .68-INCHES.

IN ALL CASES, THE BOOT SHALL BE TIGHTENED ON THE LATERAL BY MEANS OF A SINGLE STAINLESS STEEL PIPE CLAMP.

THE LATERAL INVERT SHALL BE AT THE TOP OF THE SHELF.

17. 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, 5' DIAMETER MANHOLES SHALL BE USED IF THE ABOVE CONDITIONS ARE NOT MET.

18. NO MORE THAN 5 LATERALS SHALL ENTER A 6' DIAMETER MANHOLE.

19. USE OF TEE-WYES ON LATERALS IS NOT ALLOWED.

20. ALL MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH FAYPWC STANDARDS.

STANDARD MANHOLE				FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.			
SHEET NO. 2 OF 2	DWG. NO.	S.2	DWG. BY: FAYPWC	FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE
	DATE:	JAN. 01, 2024	APPROVED BY: M.M.M.				

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.			
NO.	DATE	REVISION	FAYPWC
1	07/13	REVISED NOTES 9, 10, 11, 15, CONVERTED TO S.2 SHEET 2 OF 2	
2	01/01/19	REVISED NOTES 10, 18	
3	01/01/24	REVISED NOTES 5, 7, 16.	

S2-STANDARD-MANHOLE.dwg

COVER BACK COVER SECTION FRAME PLAN

PICK SLOT DETAIL COVER FRAME

COVER A48-83 CL 35 COVER FACE

STANDARD TRAFFIC AREA MANHOLE RING AND COVER N.T.S.

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.

WATER RESOURCES ENGINEERING DEPARTMENT

NO. DATE REVISION

1	01/05	CHANGED NON TRAFFIC DETAIL
2	07/06	ADDED NOTE ON CONCRETE COLLAR
3	02/07	REMOVED NON TRAFFIC AREA AND REVISED NOTES
4	07/08	REVISED ASPHALT THICKNESS

ST-RING-COVER.dwg

GENERAL NOTES SANITARY SEWER UTILITY

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.

WATER RESOURCES ENGINEERING DEPARTMENT

NO. DATE REVISION

1	01/18	ADDED NOTES 5, 8
2	06/21	ADDED NOTES 1-8 AND RENUMBERED
3	11/23	REVISED NOTE 15

S1-SEWER-NOTES.dwg

PIPE SLIDE AND SHELF DETAILS N.T.S.

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.

WATER RESOURCES ENGINEERING DEPARTMENT

NO. DATE REVISION

1	01/05	ADDED NOTE 8
2	02/07	REVISED NOTE 8, SLIDE DETAIL, ADDED NOTES 10, 11, 12
3	01/18	DELETED MORTAR SLIDE, REVISED NOTES

S4-SLIDE.dwg

STRUCTURE STEP N.T.S.

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.

WATER RESOURCES ENGINEERING DEPARTMENT

NO. DATE REVISION

1	01/05	CHANGED NON TRAFFIC DETAIL
2	07/06	ADDED NOTE ON CONCRETE COLLAR
3	02/07	REMOVED NON TRAFFIC AREA AND REVISED NOTES
4	07/08	REVISED ASPHALT THICKNESS

S7-RING-COVER.dwg

STANDARD MANHOLE N.T.S.

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.

WATER RESOURCES ENGINEERING DEPARTMENT

NO. DATE REVISION

1	02/07	CREATED S.2A ADDED NOTES 13-17
2	07/13	ADDED SHEET 2 OF 2
3	01/01/24	CLARIFIED NOTES REGARDING MORTAR FOR BENCH AND INVERT.

S2-STANDARD-MANHOLE.dwg

INTERIOR DROP STRUCTURE SEWER MAINS AND LATERALS

FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.

WATER RESOURCES ENGINEERING DEPARTMENT

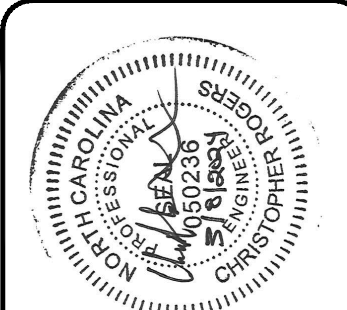
NO. DATE REVISION

1	11/08	REVISED FITTING MATERIAL
5	07/12	REVISED NOTES 5, 6, AND HUB ON INVERT
6	07/14	ADDED FORCE MAIN NOTE

S5-DROP-MH.dwg

FAYETTEVILLE! AMERICA'S CAN DO CITY

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



REVISIONS

REV. #	DESCRIPTION	REV. BY	DATE

CONSTRUCTION SET

PROJECT NO. 54960.001

SUB-LEDGER NO. _____

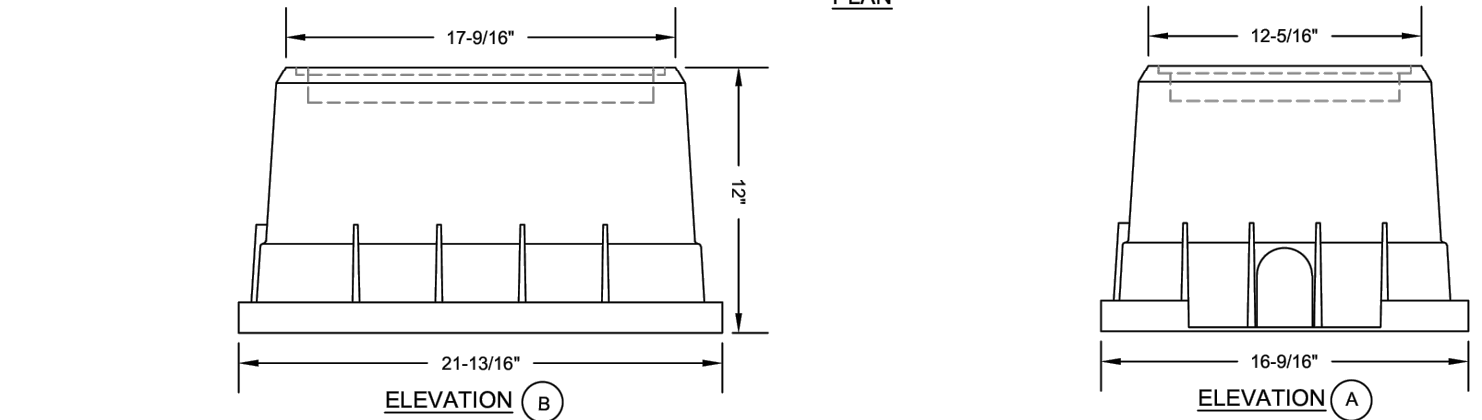
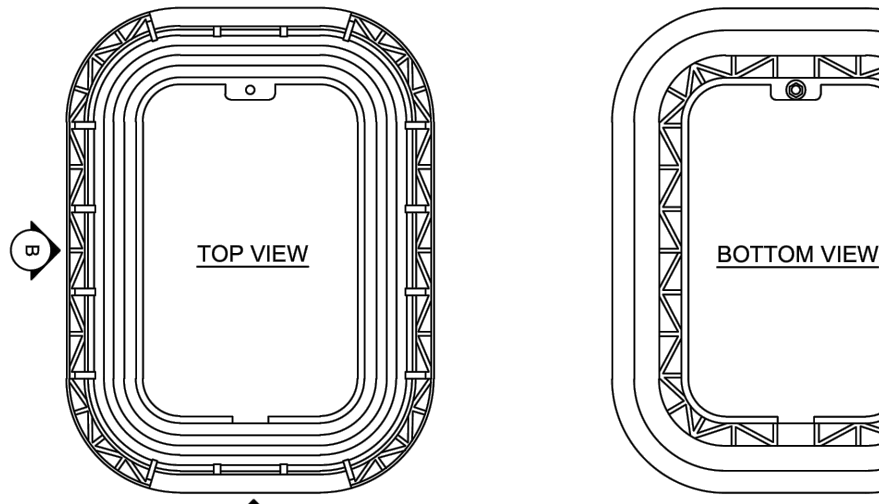
DRAWN : SHANE VANDERGRIFF
DESIGN : CHRIS ROGERS
CHECK : DAVID DUNGAN
APPROVED : _____

PROJECT : IVY AND LYON ROAD
NAME : DRAINAGE IMPROVEMENTS
SCALE : N.T.S.
DATE : 03/08/2024

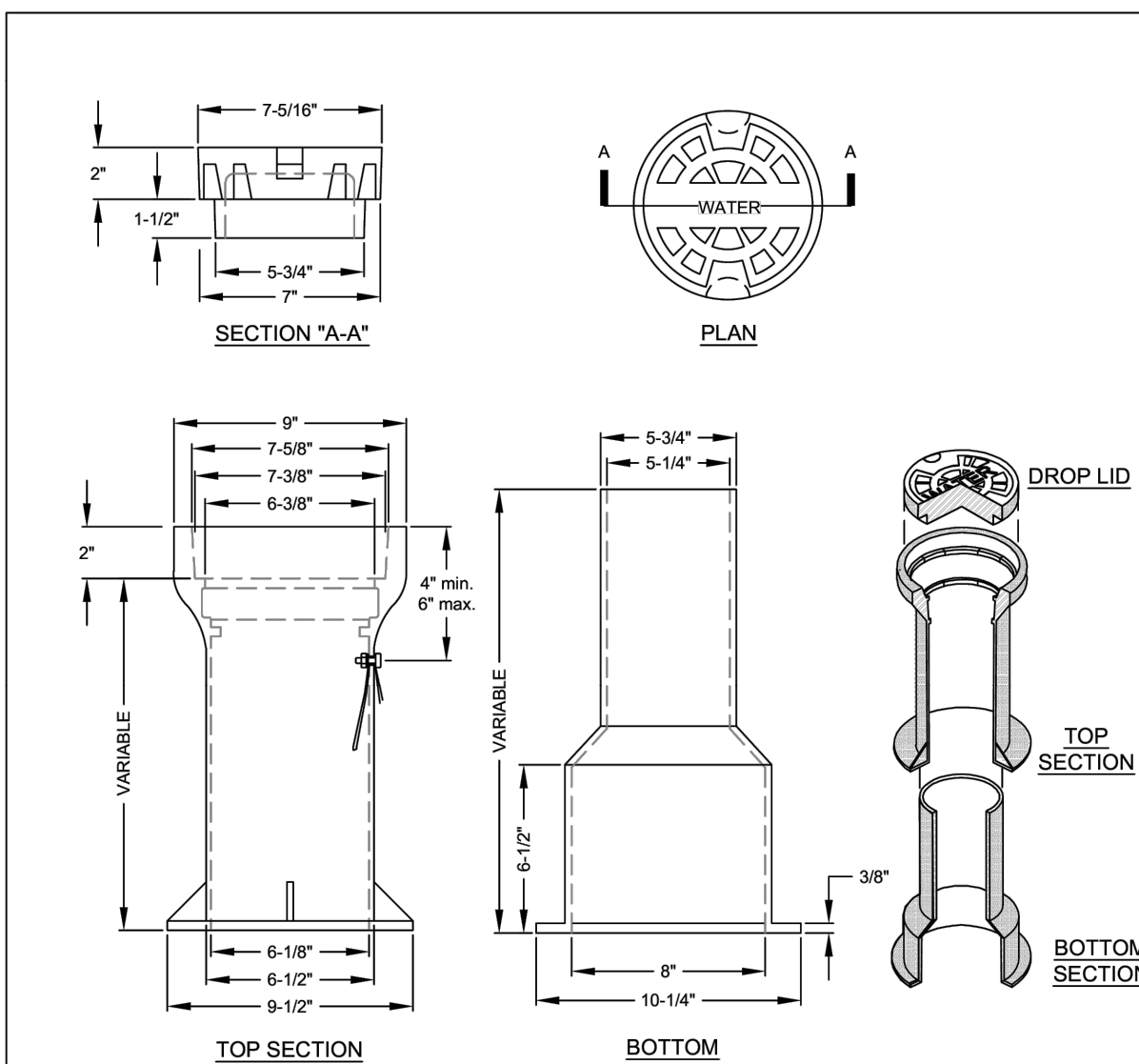
1. ALL WATER MAINS, LATERALS AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
2. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE FOR ALL WATER OUTAGES.
4. CONSTRUCTION STAKING IS REQUIRED FOR ALL PWC WATER AND SEWER UTILITY INSTALLATIONS. CUT SHEETS, SIGNED AND SEALED BY A NC P.E., SHALL BE PROVIDED TO THE PWC WATER RESOURCES ENGINEERING DEPARTMENT AND THE CONTRACTOR IN ADVANCE OF CONSTRUCTION FOR PWC WATER AND SEWER UTILITIES.
5. 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 CONTRACTOR POSSESSES ON SITE A SIGNED AND SEALED CUT SHEET FROM THE PROFESSIONAL LAND SURVEYOR.
6. 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.
7. CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE PWC PROJECT COORDINATOR.
8. CONTRACTOR SHALL REPAIR ALL WATER LATERALS AND MAINS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL REPORT IMMEDIATELY ALL WATER MAIN AND LATERAL BREAKS TO THE PWC PROJECT COORDINATOR. THE CONTRACTOR SHALL INITIATE IMMEDIATE REPAIRS IN ACCORDANCE WITH PWC STANDARDS. CONTRACTOR SHALL NOT OPERATE PWC WATER MAIN VALVES WITHOUT PWC APPROVAL AND SHALL COORDINATE ALL VALVE CLOSINGS WITH PWC.
9. THE CONTRACTOR SHALL NOT USE HOUSE HOSE BIBBS OR ANY OTHER METHOD OF BLOW OFF WHICH ALLOWS DOMESTIC WATER CONTAINING SEDIMENTS OR HIGH LEVELS OF CHLORINE TO PASS THRU RESIDENTS METERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES RESULTING FROM ALLOWING "DIRTY" WATER TO ENTER RESIDENTS PLUMBING SYSTEM, SUCH AS WATER HEATERS, STAINED CLOTHING, CLOGGED SINKS, ETC.
10. TRANSFER OF WATER SERVICES SHALL BE ACCOMPLISHED AS FOLLOWS:
A. INSTALL, TEST AND STERILIZE NEW MAINS AND LATERALS. LATERALS SHALL BE INSTALLED BY INSIDE RIGHT OF WAY UNLESS OTHERWISE DIRECTED BY PWC.
B. TRANSFER EXISTING METER TO NEW METER BOX AND THE NEW WATER LATERAL TO EXISTING DOMESTIC SERVICE. UTILIZE BRASS FITTINGS. SAME METER NUMBER SHALL BE INSTALLED ON SAME ADDRESS AND/OR CUSTOMER. BLOW OFF SERVICE AT ROSE BIBB ON HOUSE ONLY AFTER METER HAS BEEN TRANSFERRED.
C. AFTER ALL SERVICES ARE TRANSFERRED TO THE NEW SYSTEM, SHUT OFF VALVE ON EXISTING SYSTEM AND ABANDON EXISTING MAINS IN ACCORDANCE WITH PWC REQUIREMENTS.
D. CONTRACTOR SHALL SUPPLY NEW METER BOXES AND DISPOSE OF EXISTING METER BOXES.
11. 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.
12. ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE, IN ACCORDANCE WITH PWC REQUIREMENTS.
13. ALL WORK ON PWC WATER UTILITIES (MAINS, LATERALS, ETC) SHALL BE PERFORMED BY A LICENSED UTILITY CONTRACTOR. THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL OBSERVE AND APPROVE ALL WORK ON PWC WATER UTILITIES. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH PWC REQUIREMENTS.
14. SEPARATION REQUIREMENTS:
A. LATERAL SEPARATION OF SEWERS AND WATER MAINS: WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWER MAIN LATERAL, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 15' FOOT LATERAL SEPARATION, IN WHICH CASE:
I. THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAIN LATERAL, OR
II. 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.
B. 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.
C. CROSSING WATER MAIN UNDER A SEWER: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER MAIN LATERAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES RESULTING FROM ALLOWING "DIRTY" WATER TO ENTER RESIDENTS PLUMBING SYSTEM, SUCH AS WATER HEATERS, STAINED CLOTHING, CLOGGED SINKS, ETC.

WATER UTILITY NOTES			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 2	DWG. NO. W.1	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT		1	01/01/18	ADDED NOTES 6, 8
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.			2	06/01/21	ADDED NOTES 1-7 AND RENUMBERED
					3	11/23	REVISED NOTES 10, 14
W1-WATER-UTILITY-NOTES.dwg							

- NOTES:
- ALL MATERIALS SHALL BE APPROVED BY FAYPWC. SEE DRAWING W.4 SHEET 2 OF 2 FOR METER BOX LID DETAIL.
 - METER BOX SHALL NOT BE LOCATED WHERE H-20 LOADINGS CAN IMPACT BOX OR COVER.
 - FOR 1" WATER LATERAL INSTALLATION SEE FAYPWC DETAIL W.2.
 - DIMENSIONS ± 1/16 IN. O.D.



1-INCH METER BOX DETAILS N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.			NO.	DATE	REVISION
SHEET NO 1 OF 2	DWG. NO. W.4	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT			1	03/10	CHANGED BOX DIMENSIONS
	DATE: JAN 01, 2024	APPROVED BY: M.M.M.						
	W4-1IN-METERBOX.dwg							



- NOTES:
- VALVE BOX SHALL BE 3 PART SLIP-TYPE MANUFACTURED BY SIGMA CORPORATION (VB-460), TYLER UNION (8800 SERIES), STAR PIPE PRODUCTS (VB-0004), OR APPROVED EQUAL.
 - VALVE BOX SHALL BE 3-PIECE CLOSE GRAINED CAST IRON SLIP-TYPE VALVE BOX WITH A MINIMUM THICKNESS OF 3/16".
 - VALVE BOX SHALL HAVE RAISED LETTERS "WATER" CAST INTO COVER.
 - VALVE BOX SHALL HAVE 3/8" HOLE DRILLED IN TOP SECTION THRU WHICH A 1/4"x1-1/2" GALVANIZED ROD SHALL BE USED TO SECURE A MINIMUM 12 GAUGE, SINGLE STRAND, COATED COPPER OR COPPER CLAD STEEL TRACER WIRE FOR NON-FERROUS PIPE. A 1/2" WASHER SHALL BE USED BETWEEN NUT AND INSIDE OF BOX. TIGHTEN HAND TIGHT.
 - SCREW TYPE VALVE BOXES ARE NOT ACCEPTABLE.
 - DIMENSIONS SHOWN VARY BASED UPON THE MANUFACTURER. ACTUAL DIMENSIONS SHALL BE APPROVED BY FAYPWC.
 - VALVE BOX SECTIONS ARE REQUIRED. THE USE OF PIPE IN LIEU OF VALVE BOX SECTIONS SHALL NOT BE PERMITTED.
 - TRACING WIRE SHALL BE INSTALLED OUTSIDE OF BOX.
 - REFER TO FAYPWC DETAIL W.6 FOR INSTALLATION REQUIREMENTS.

VALVE BOX N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. W.7	DWG. BY: FAYPWC	ADDED NOTES 7, 8, AND CLARIFIED NOTES				
	WATER RESOURCES ENGINEERING DEPARTMENT		REVISED NOTES 1, 4, 6				
DATE: JAN. 01, 2024		APPROVED BY: M.M.M.	W7-VALVEBOX.dwg				

- D. CROSSING STORM DRAINAGE LINE: A MINIMUM OF 12-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN A WATER LINE CROSSING OVER A STORM DRAINAGE LINE UNLESS DUCTILE IRON PIPE IS USED. IN ADDITION, THREE AND A HALF (3.5) FEET OF COVER MUST BE MAINTAINED OVER THE WATER MAIN OR IT SHALL BE DUCTILE IRON. IF DUCTILE IRON PIPE IS USED THEN TWO AND A HALF (2.5) FEET OF COVER MUST BE MAINTAINED OVER THE WATER MAIN AND A MINIMUM OF 12-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND THE STORM DRAINAGE LINE. WHERE A WATER MAIN CROSSES UNDER A STORM DRAINAGE LINE THE MINIMUM OF TWELVE (12) INCHES OF VERTICAL SEPARATION SHALL BE MAINTAINED AND THE WATER MAIN SHALL BE DUCTILE IRON FOR A DISTANCE OF 15 FEET ON EACH SIDE OF THE CROSSING.

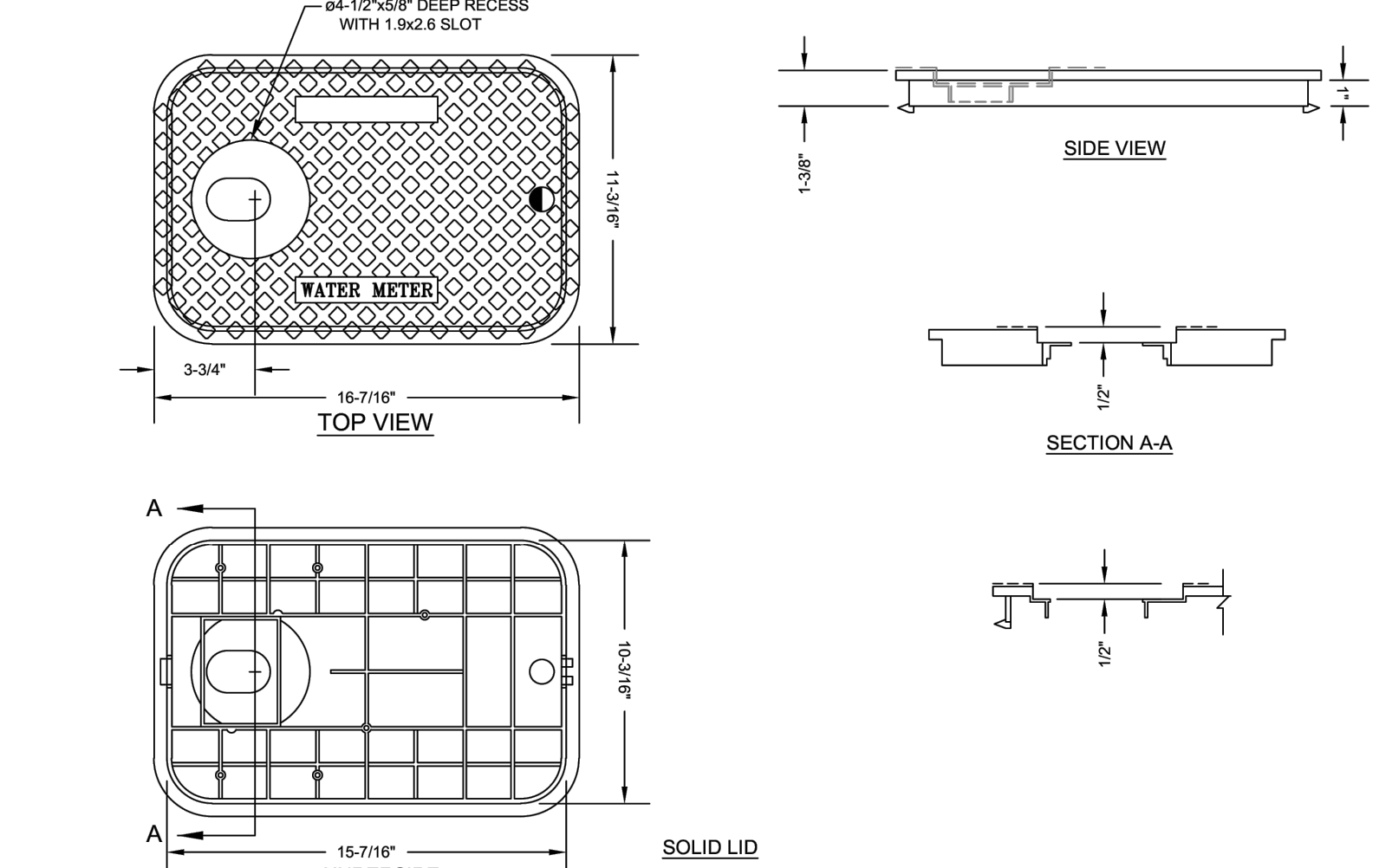
15. WATER OUTAGES: THE CONTRACTOR SHALL SCHEDULE A COORDINATION MEETING WITH THE PWC PROJECT COORDINATOR AND PROJECT ENGINEER A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO ANY PLANNED WATER OUTAGE. THE COORDINATION MEETING SHALL BE CONDUCTED PRIOR TO ANY NOTICES BEING ISSUED. ADDITIONALLY, THE CONTRACTOR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

ONCE THE WATER OUTAGE NOTIFICATIONS HAVE BEEN ISSUED, A FOLLOW-UP COORDINATION MEETING WITH THE PWC PROJECT COORDINATOR AND PROJECT ENGINEER SHALL BE HELD A MINIMUM OF 24 HOURS PRIOR TO THE SCHEDULED PURPOSE OF THIS MEETING IS TO VERIFY THAT THE CONTRACTOR IS PREPARED TO PROCEED WITH THE OUTAGE, AND THAT ALL EQUIPMENT, MATERIALS, TOOLS, AND ALL OTHER INCIDENTALS ARE ON THE PROJECT SITE AND FUNCTIONING. IF FOR ANY REASON THE FAYETTEVILLE PUBLIC WORKS COMMISSION DEEMS THAT THE CONTRACTOR IS NOT PREPARED, THE OUTAGE SHALL BE POSTPONED AND ALL CUSTOMERS IMMEDIATELY NOTIFIED OF THE CANCELLATION. THE OUTAGE SHALL BE POSTPONED A MINIMUM OF TWO (2) WEEKS. NO ADDITIONAL CONTRACT TIME WILL BE GRANTED FOR THIS DELAY. SHOULD THE CONTRACT TIME EXPIRE WITHIN THAT TWO (2) WEEK PERIOD, THE FAYETTEVILLE PUBLIC WORKS COMMISSION RESERVES THE RIGHT TO ASSESS LIQUIDATED DAMAGES, AS OUTLINED IN THESE CONTRACT DOCUMENTS.

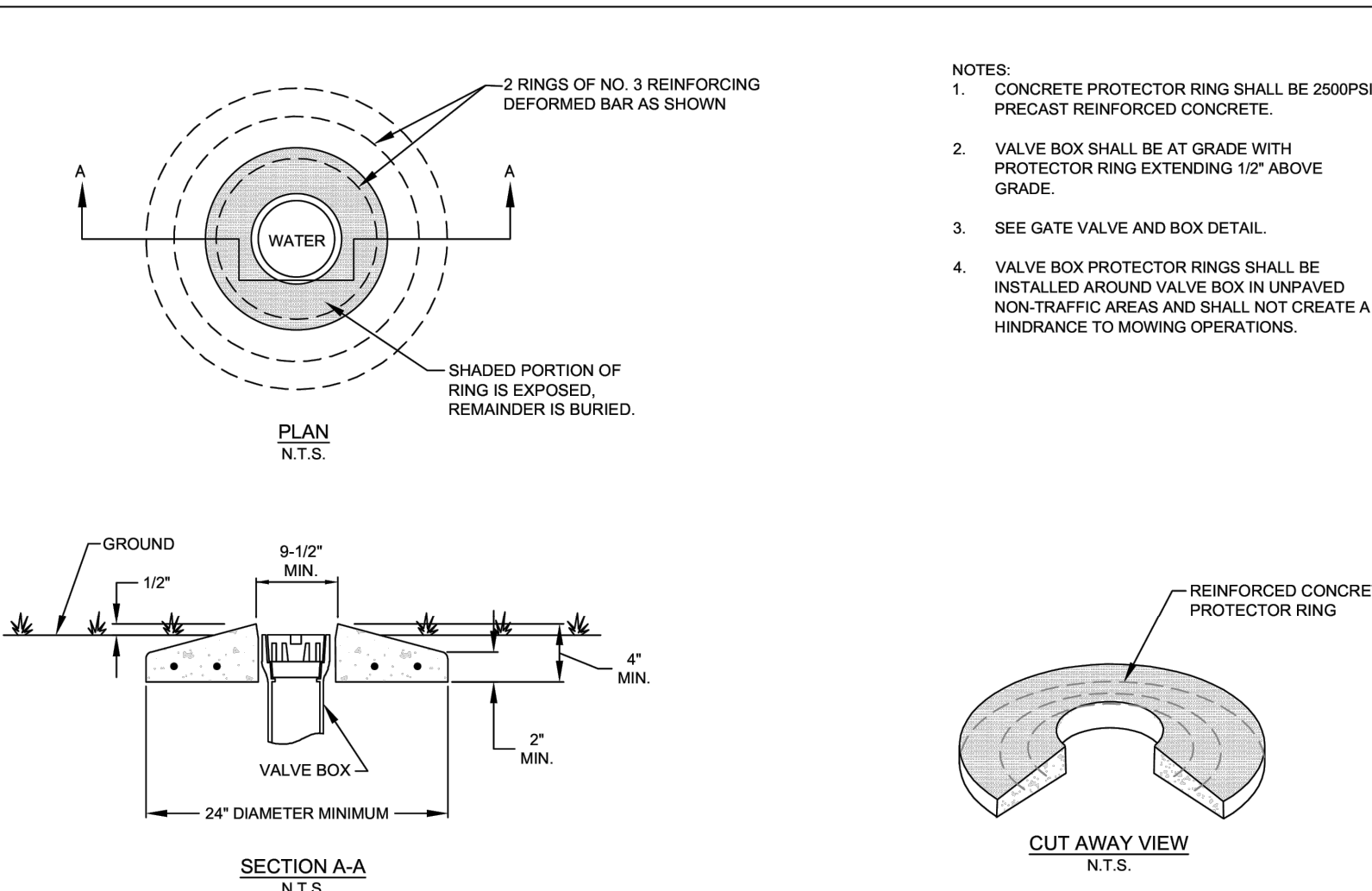
THE CONTRACTOR SHALL COMPLETE THE REQUIRED WORK AND RESTORE WATER SERVICE WITHIN THE GIVEN TIME PERIOD FOR THE OUTAGE. IF THE FAYPWC PROJECT COORDINATOR DETERMINES THAT THE CONTRACTOR WILL NOT RESTORE WATER SERVICE WITHIN THE APPROVED TIMEFRAME, THE FAYPWC PROJECT COORDINATOR WILL DIRECT THE CONTRACTOR ON HOW TO RESTORE WATER SERVICE. THE CONTRACTOR SHALL ADHERE TO ALL INSTRUCTIONS GIVEN BY THE PWC PROJECT COORDINATOR.

SHOULD THE CONTRACTOR FAIL TO COMPLETE THE WORK WITHIN THE ALLOTTED TIME, THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL ASSESS A PENALTY OF \$500 PER 15-MINUTE INTERVAL, OR ANY PORTION THEREOF, UNTIL WATER SERVICE IS RESTORED. THIS PENALTY WILL BE DEDUCTED FROM THE CONTRACTORS PAY APPLICATION OR BE BILLED DIRECTLY TO THE CONTRACTOR. THE PENALTY MAY BE WAIVED FOR CIRCUMSTANCES BEYOND THE CONTRACTORS CONTROL, AS DETERMINED BY THE FAYETTEVILLE PUBLIC WORKS COMMISSION. THE PWC PROJECT COORDINATOR AND/OR PROJECT ENGINEER RESERVE THE RIGHT TO CANCEL OR POSTPONE THE OUTAGE AT ANY GIVEN TIME, IF DEEMED NECESSARY.

WATER UTILITY NOTES		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. OF 2	DWG. NO. W.1	WATER RESOURCES ENGINEERING DEPARTMENT		1	01/01/18	ADDED NOTES 6, 8
	DATE: JAN. 01, 2024			2	06/01/21	ADDED NOTES 1-7 AND RENUMBERED
	APPROVED BY: M.M.M.			3	11/23	REVISED NOTES 10, 14

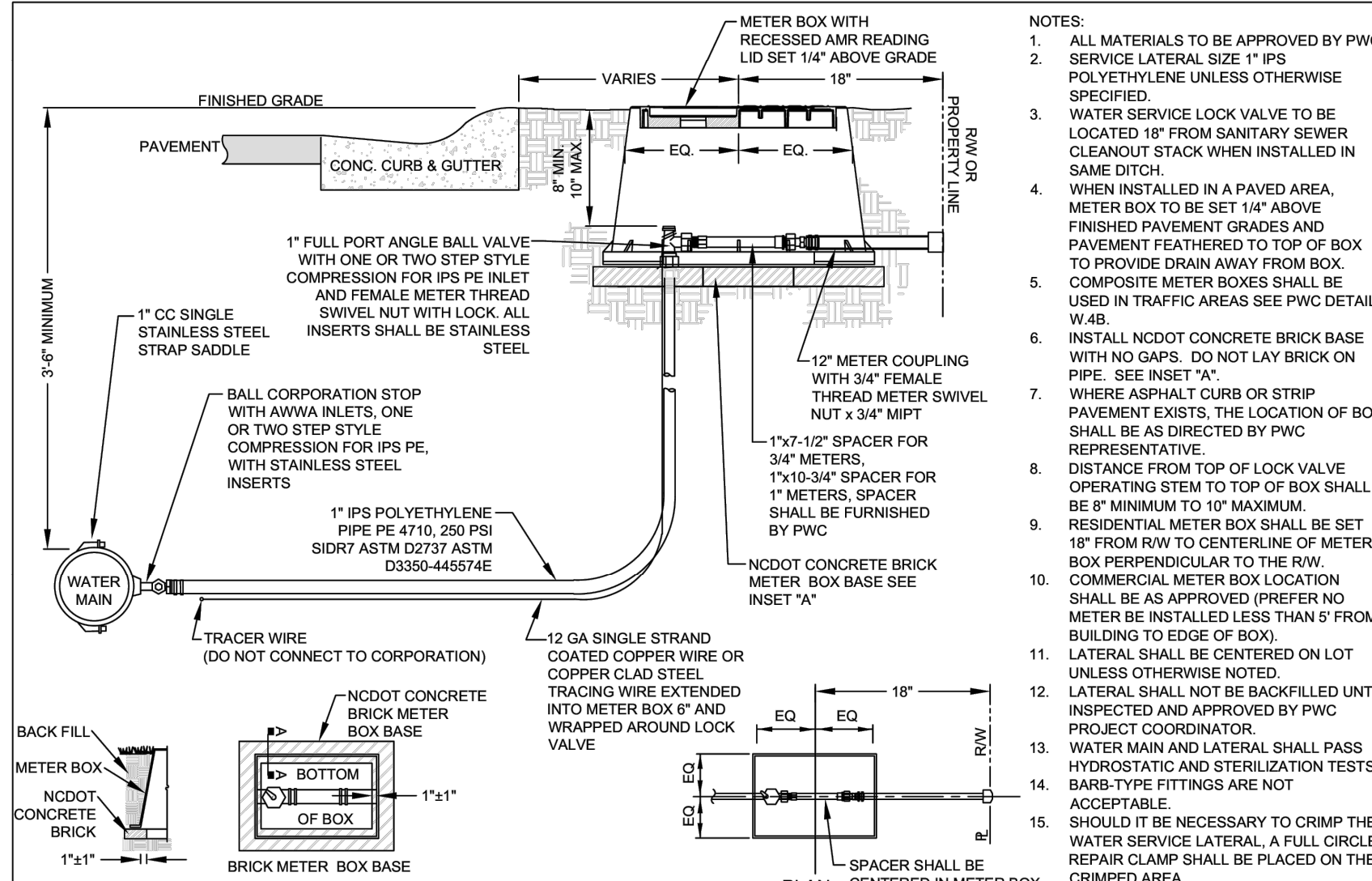


1-INCH METER BOX LID N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.			NO.	DATE	REVISION
SHEET NO. OF 2	DWG. NO. W.4	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT			1	07/07	REVISED LID
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.				1	03/10	CHANGED BOX AND LID DIMENSION
						2	01/15	REVISED LID
W4-1IN-METERBOX.dwg								

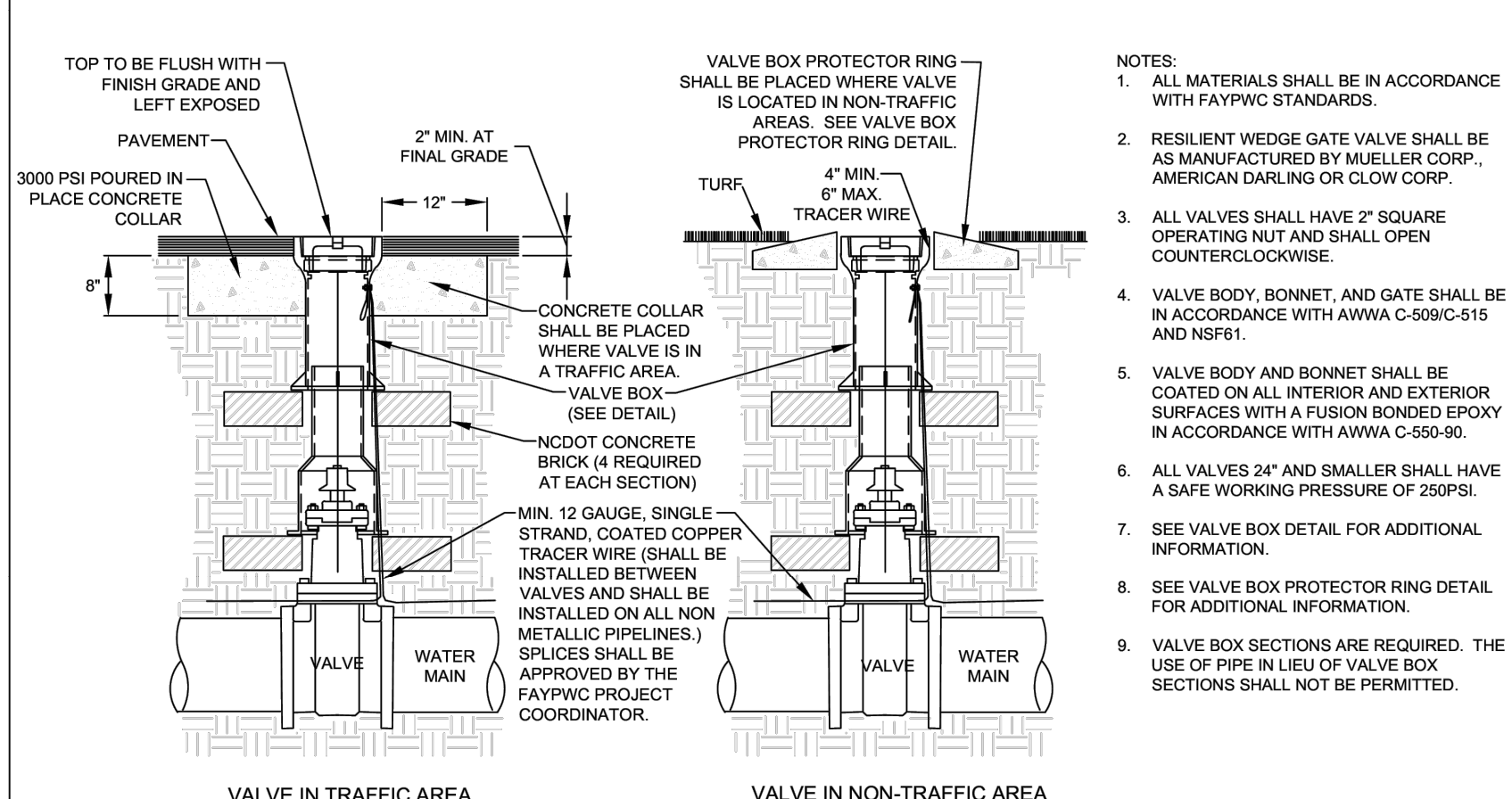


- NOTES:
- CONCRETE PROTECTOR RING SHALL BE 2500PSI PRECAST REINFORCED CONCRETE.
 - VALVE BOX SHALL BE AT GRADE WITH PROTECTOR RING EXTENDING 1/2" ABOVE GRADE.
 - SEE GATE VALVE AND BOX DETAIL.
 - VALVE BOX PROTECTOR RINGS SHALL BE INSTALLED AROUND VALVE BOX IN UNPAVED NON-TRAFFIC AREAS AND SHALL NOT CREATE A HINDRANCE TO MOWING OPERATIONS.

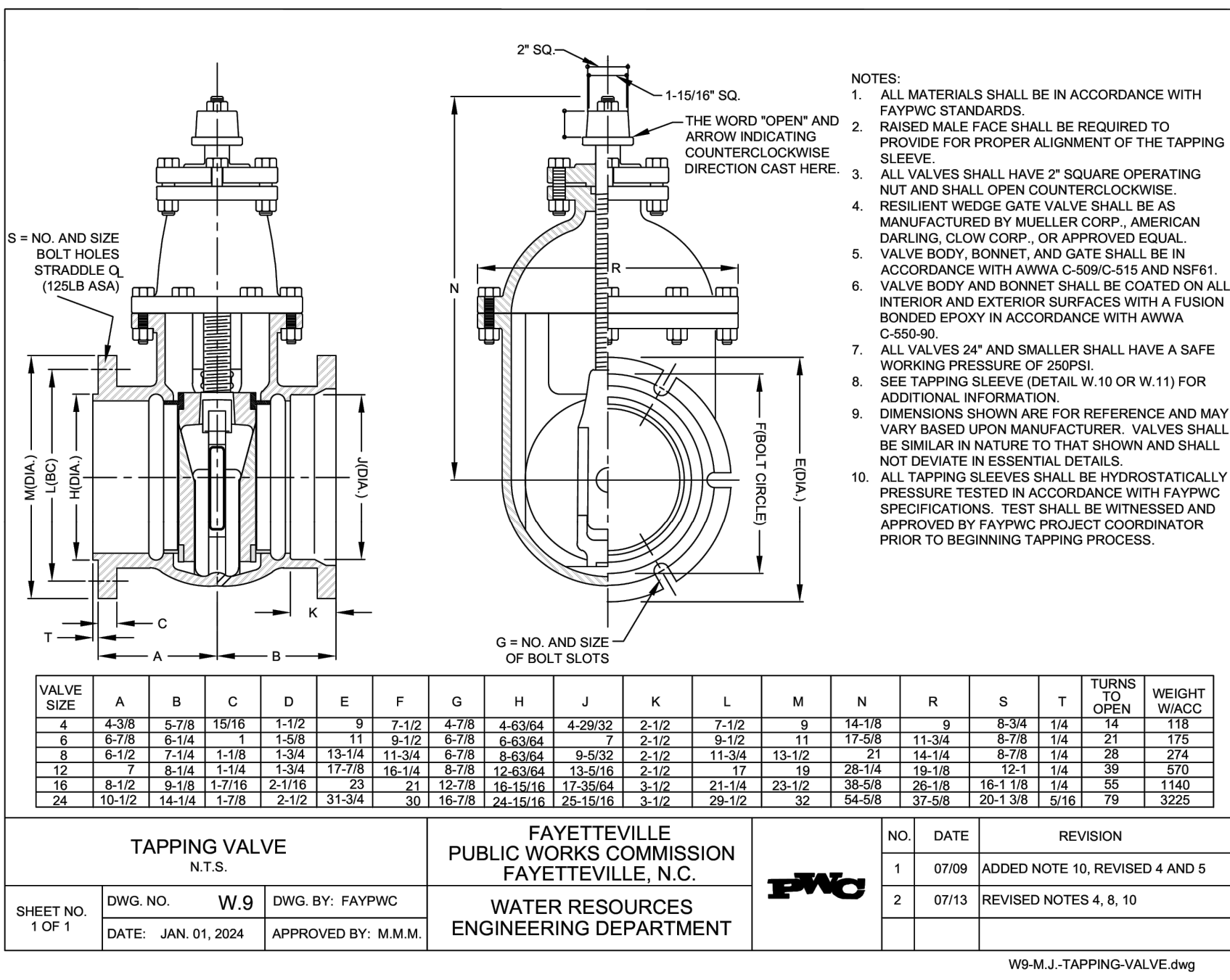
VALVE BOX PROTECTOR RING N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.			NO. DATE		REVISION	
SHEET NO. OF 1	DWG. NO. W.8	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT						
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.							
W8-CONC-PROTECTOR-RING.dwg									



SECTION "A-A"		INSET "A"		PLAN		CENTERED IN METER BOX		GROUP OF NOTES	
1" WATER SERVICE LATERAL N.T.S.				FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.			NO.	DATE	REVISION
SHEET NO. 1 OF 1				WATER RESOURCES ENGINEERING DEPARTMENT			1	07/06	RESIZED METER COUPLING
							2	07/13	REVISED NOTE RE TRACER WIRE
							3	07/17	REVISED NOTES

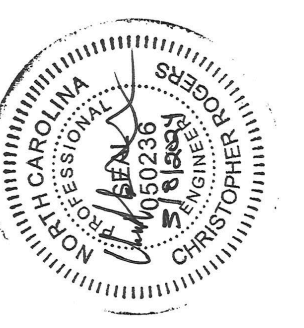


GATE VALVE N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. W.6	DWG. BY: FAYPWC	1		6/06	ADDED NOTE NO. 9	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	2		7/09	CLARIFIED NOTES	
W6-GATEVALVE.dwg							



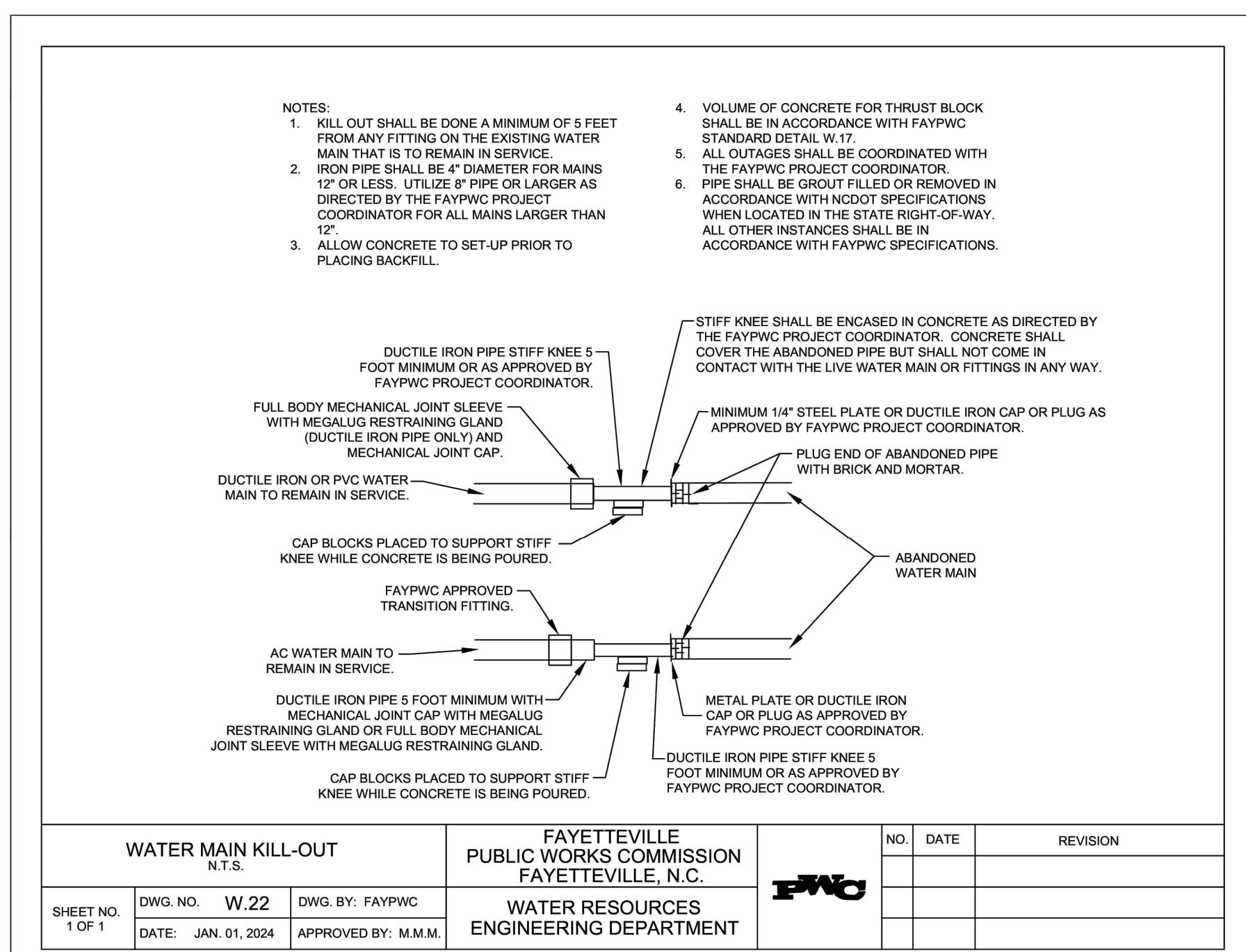
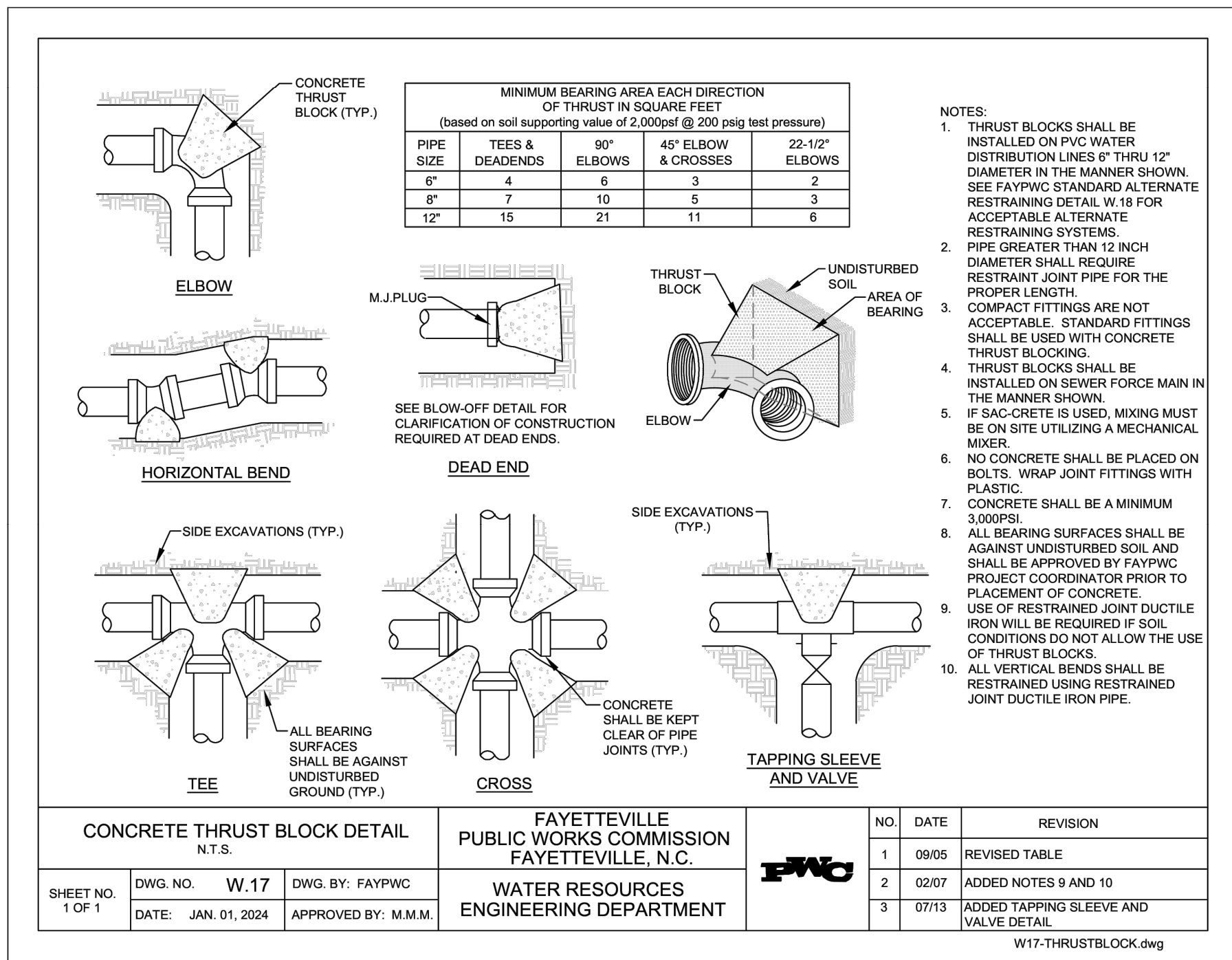
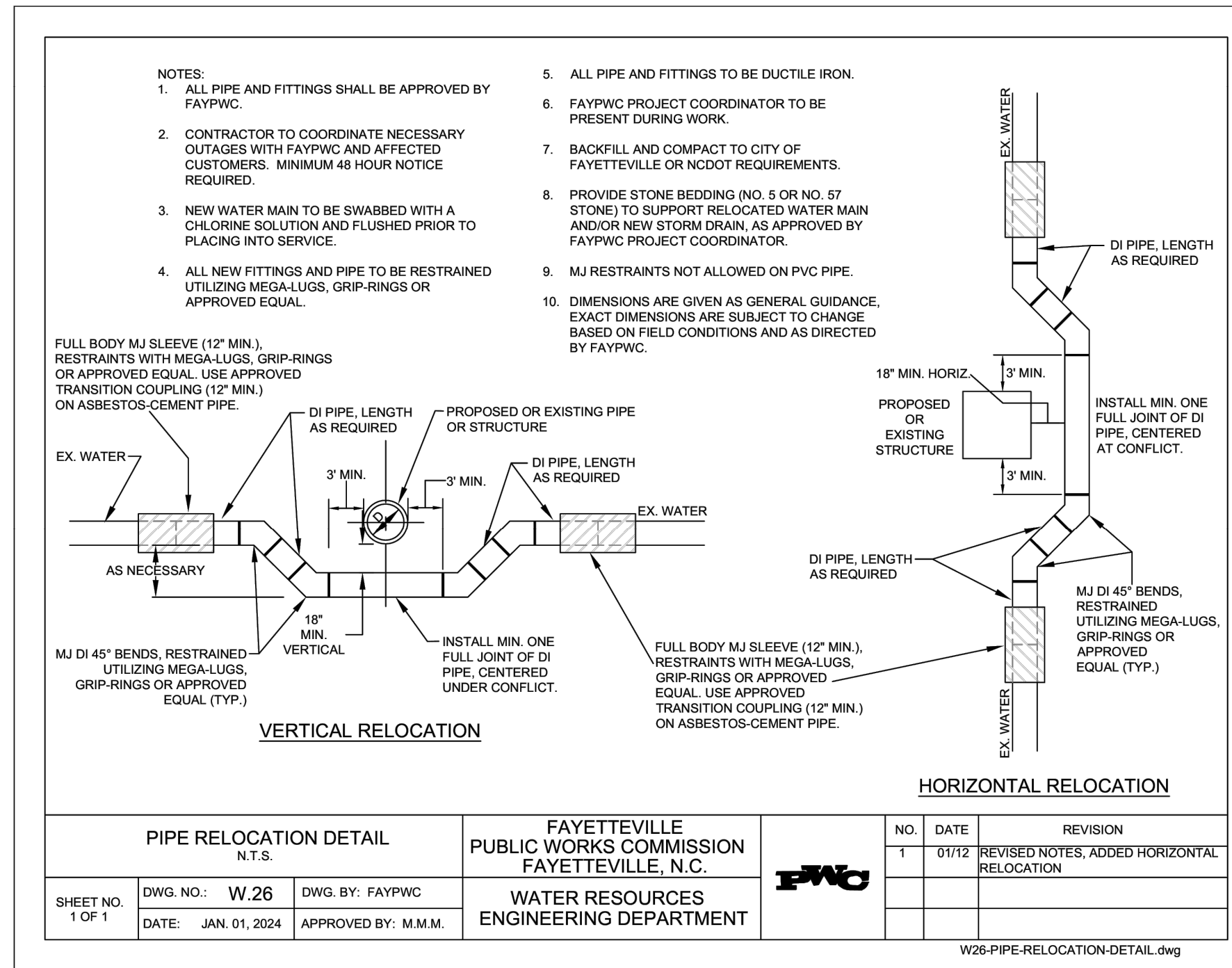
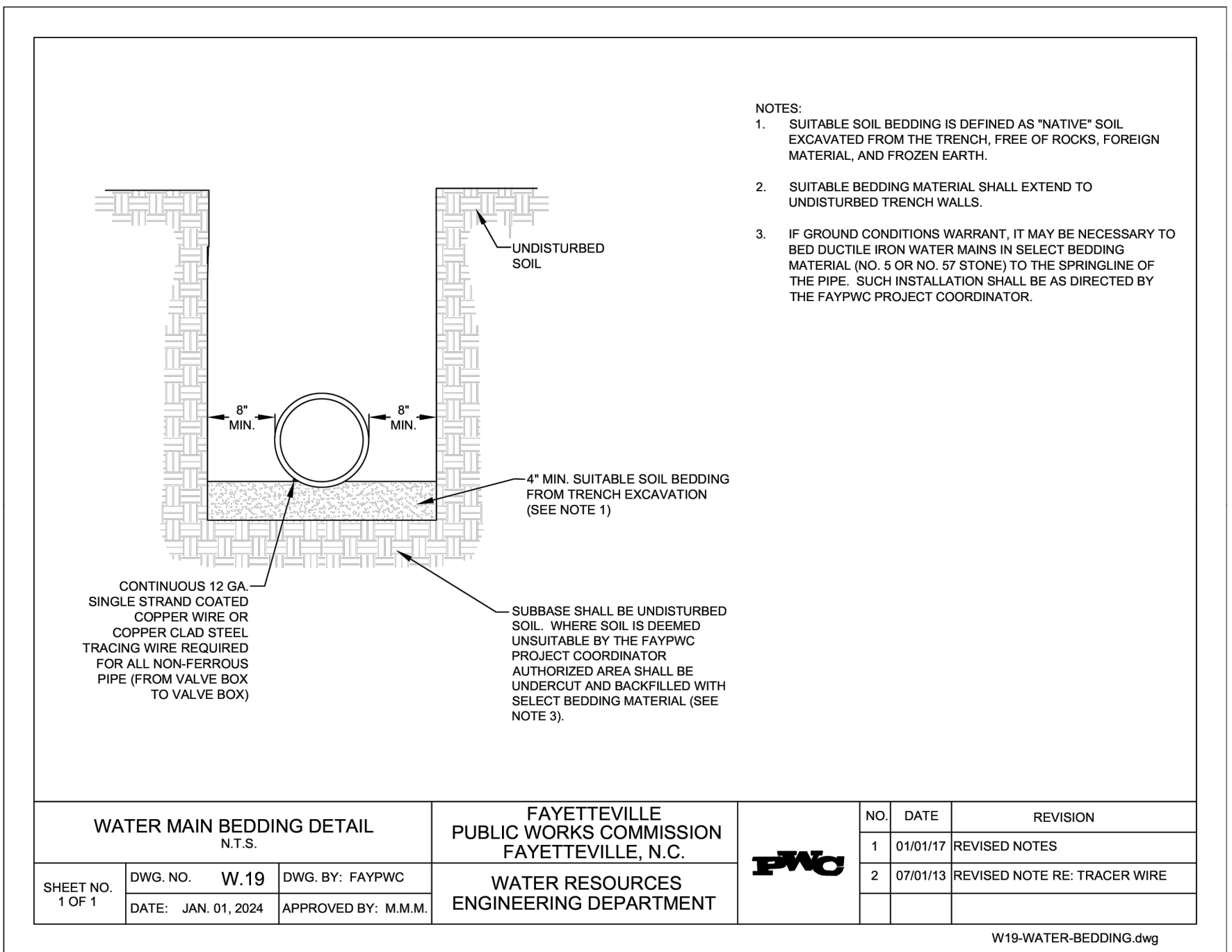
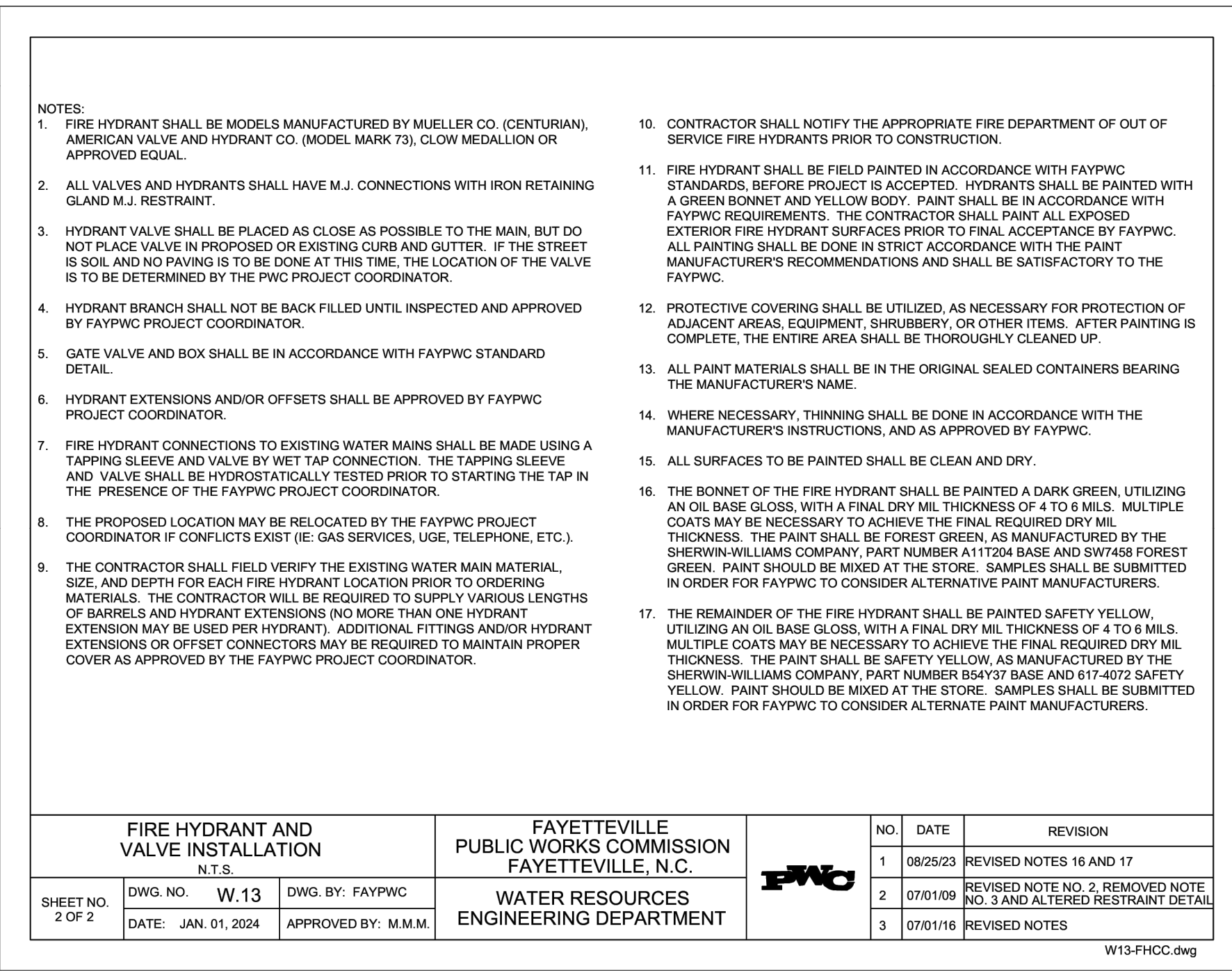
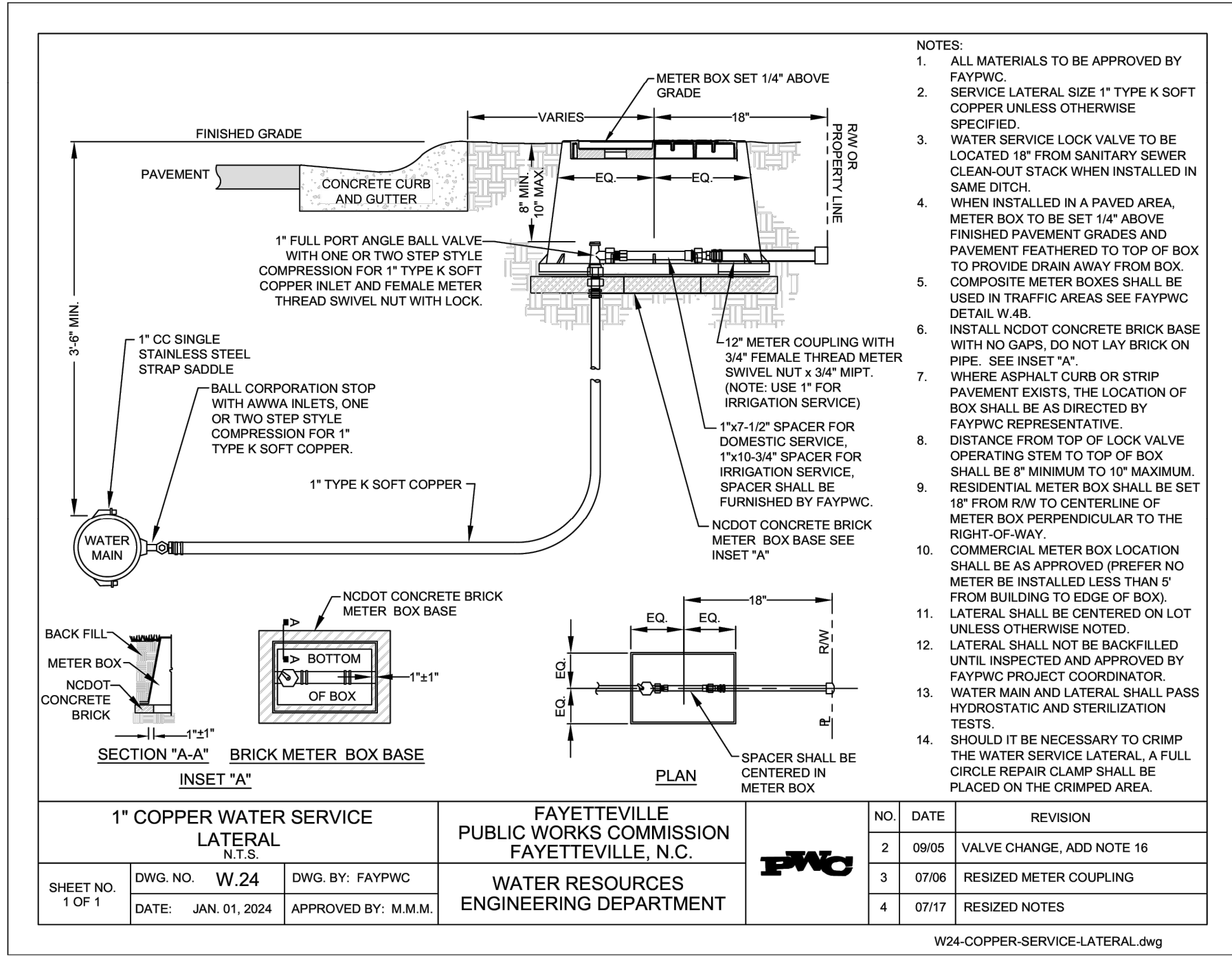
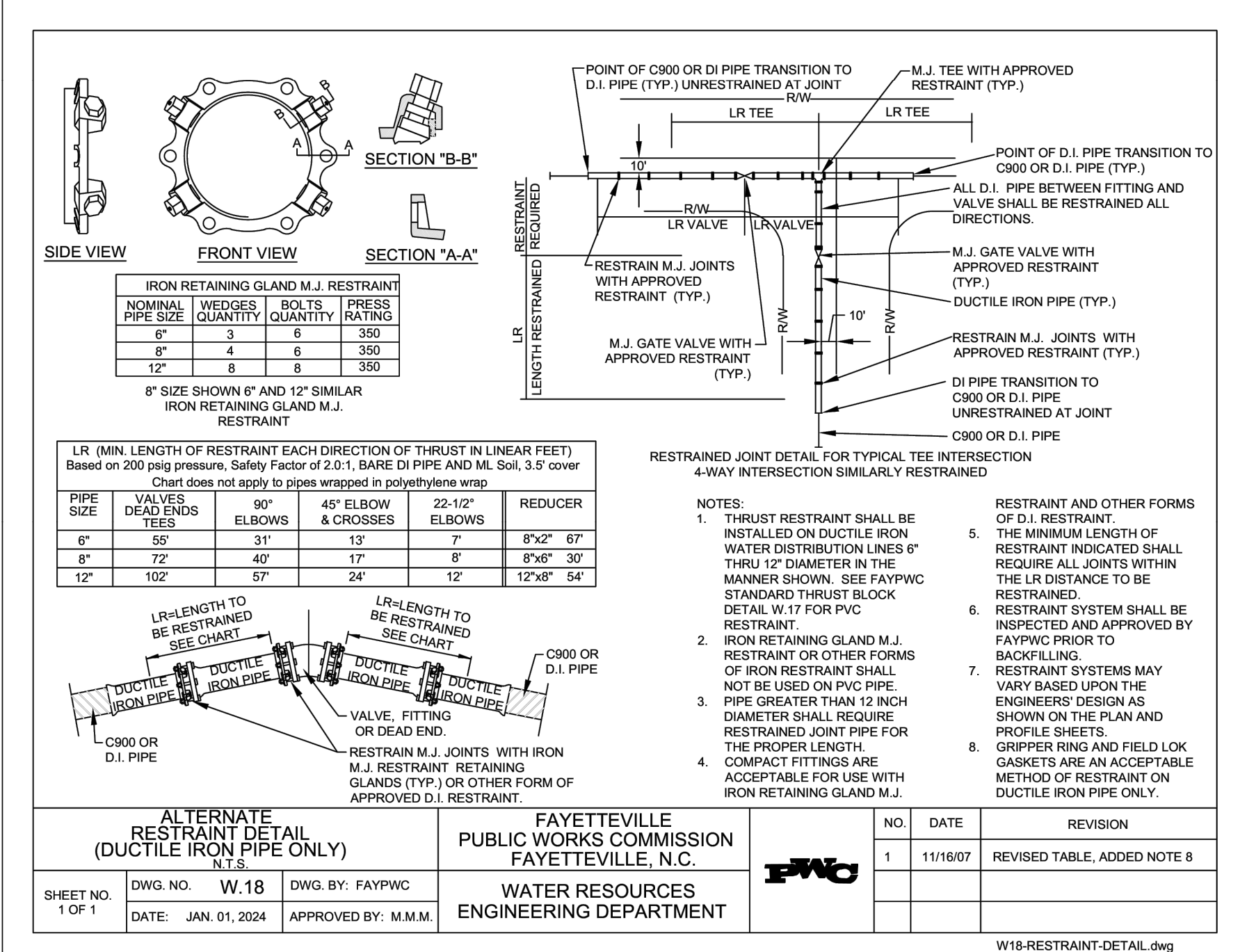
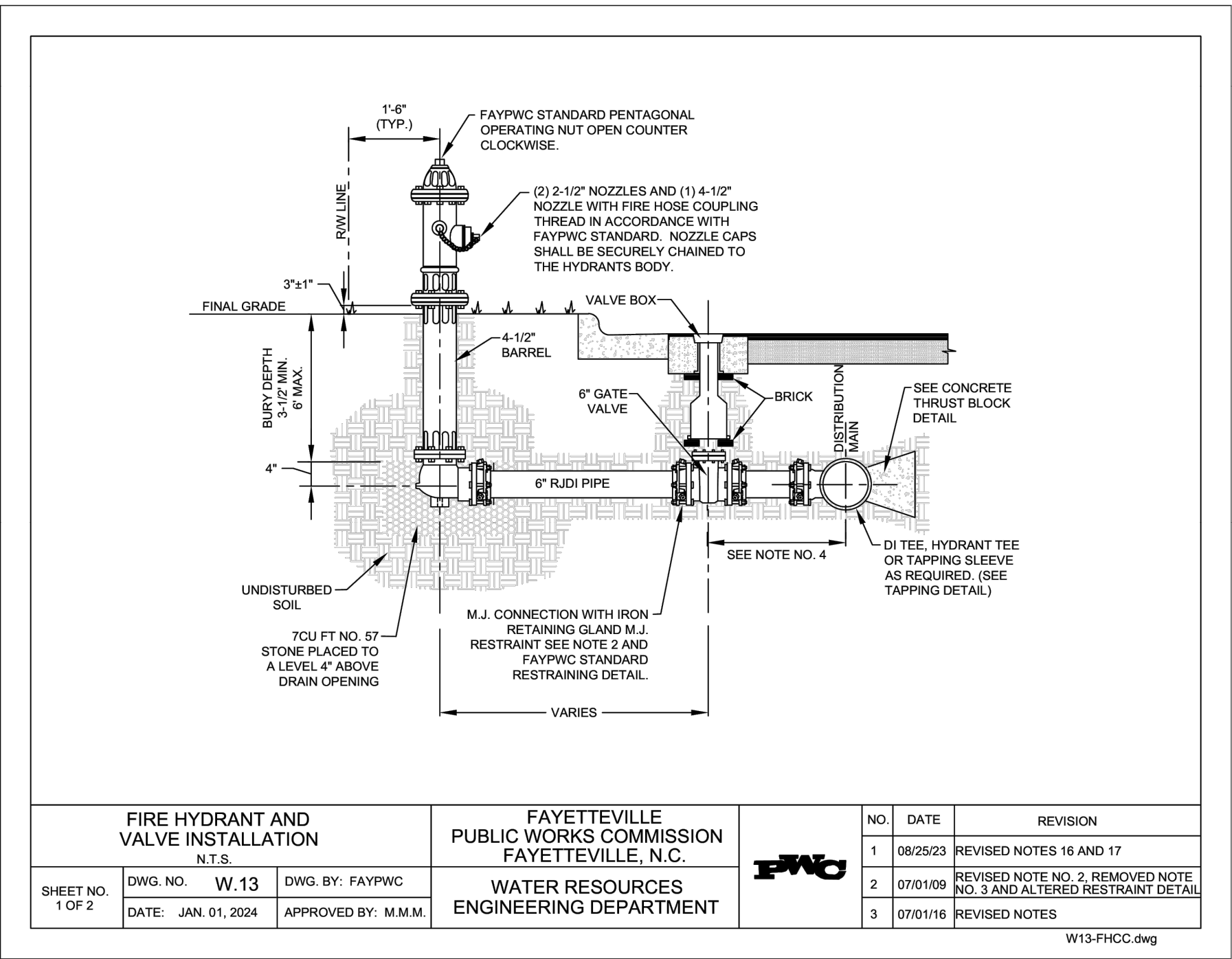
TAPPING VALVE N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.			NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO.	W.9	DWG. BY:	FAYFWC		1	07/09	ADDED NOTE 10, REVISED 4 AND 5
	DATE: JAN. 01, 2024		APPROVED BY: M.M.M.			2	07/13	REVISED NOTES 4, 8, 10
W9-M.J.-TAPPING-VALVE.dwg								

FAYETTEVILLE!
AMERICA'S CAN DO CITY
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
439 HAY STREET FAYETTEVILLE, NC 28301



REVISIONS
REV. # DESCRIPTION
DATE

DRAWN : SHANE VANDERGRIET
DESIGN : CHRIS ROGERS
CHECK : DAVID DUNGAN
APPROVED :
PROJECT NO. 54960.001
SUB-LEDGER NO.
CONSTRUCTION SET



DETAILS

PLAN TYPE: DETAILS

SHEET NUMBER: C709

FAYETTEVILLE!

AMERICA'S CAN DO CITY

ENGINEERING DIVISION

ENGINEERING & INFRASTRUCTURE DEPARTMENT

439 HAY STREET FAYETTEVILLE, NC 28301

REVISIONS

REV. #

DESCRIPTION

PROJECT: IVY AND LYON ROAD

DESIGN: CHRIS ROGERS

CHECK: DAVID DUNGAN

APPROVED:

NAME: DRAINAGE IMPROVEMENTS

SCALE: N.T.S.

DATE: 03/08/2024

CONSTRUCTION SET

PROJECT NO. 54960.001

SUB-LEDGER NO. _____

NOTES

1. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

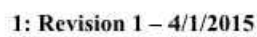
3. Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.
4. Pedestrian traffic signal displays controlling closed crosswalks should be covered or deactivated.
5. Temporary markings should be considered for operations exceeding three days in duration.

6. Only the TTC devices related to pedestrians are shown. Other devices, such as lane closure signing or ROAD NARROWS (W5-1) signs, may be used to control vehicular traffic.

7. For nighttime closures, Type A Flashing warning lights may be used on barricades supporting signs and closing sidewalks.
8. In order to maintain the systematic use of the fluorescent yellow-green background for pedestrian, bicycle, and school warning signs in a jurisdiction, the fluorescent yellow-green background for pedestrian, bicycle, and school warning signs may be used in TTC zones.

9. All sidewalk closures shall be closed with Type 3 Barricades.

10. Refer to Sections 3B-16 through 3B-18 of the 2009 MUTCD and the Virginia Supplement to the MUTCD for crosswalk lines, yield lines and other related TTC devices that may be used to control vehicular traffic at midblock crosswalks.



Typical Traffic Control
Work Beyond the Shoulder Operation
(Figure TTC-1.1)
NOTES

Guidance:

1. The minimum distance between the sign and work vehicle should be 1300'-1500' on Limited Access highways, and on all other roadways 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limited is 45 mph or less.

Option:

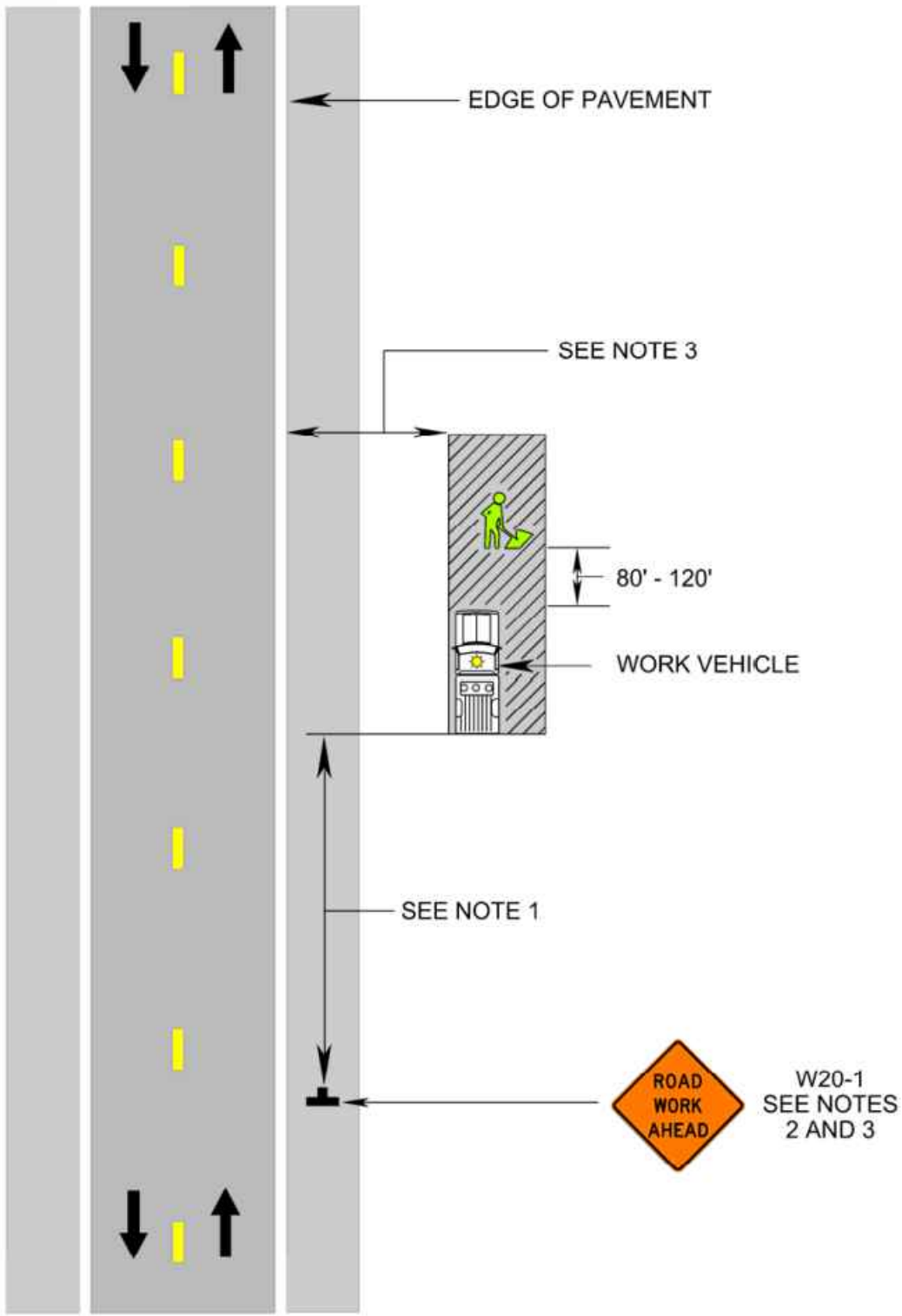
2. The ROAD WORK AHEAD (W20-1) sign may be replaced with other appropriate signs such as the SHOULDER WORK (W21-5) sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.
3. The ROAD WORK AHEAD sign may be omitted where the work space is behind a barrier, more than 4 feet behind vertical curb (Standard CG-2 and CG-6) on urban roadways, or outside of the clear zone for all other roadways. For clear zone values see Page A-4 of Appendix A.
4. For short-term, short duration or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity amber rotating, flashing, or oscillating lights is used.

Standard:

5. Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or oscillating lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, or oscillating lights.
6. If the work space is in the median of a divided highway, an advance warning sign shall also be placed on the left side of the directional roadway.

1: Revision 1 - 4/1/2015

Work Beyond the Shoulder Operation
(Figure TTC-1.1)



Typical Traffic Control
Street Closure Operation with Detour
(Figure TTC-34.1)
NOTES

Guidance:

1. This plan should be used for streets without posted route numbers.
2. On multi-lane streets, Detour signs with an Advance Turn Arrow should be used in advance of a turn.
3. Sign spacing distance should be 225'-275' where the posted speed limit is 30 to 35 mph, and 100'-200' where the posted speed is 25 mph or less.
4. If the road is opened for a significant distance beyond the intersection and/or there are significant origin/destination points beyond the intersection, the ROAD CLOSED (R11-2) and Detour Arrow (M4-10) signs on Type 3 Barricades should be located at the corners of intersecting closed roadway or the traveled way.

Option:

5. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
6. Flashing warning lights may be used on Type 3 Barricades.
7. Detour signs may be located on the far side of intersections. A Detour sign with an advance arrow may be used in advance of a turn.
8. A Street Name (M4-VP1a) plaque may be mounted with the Detour sign. The Street Name plaque may be either white on green or black on orange.

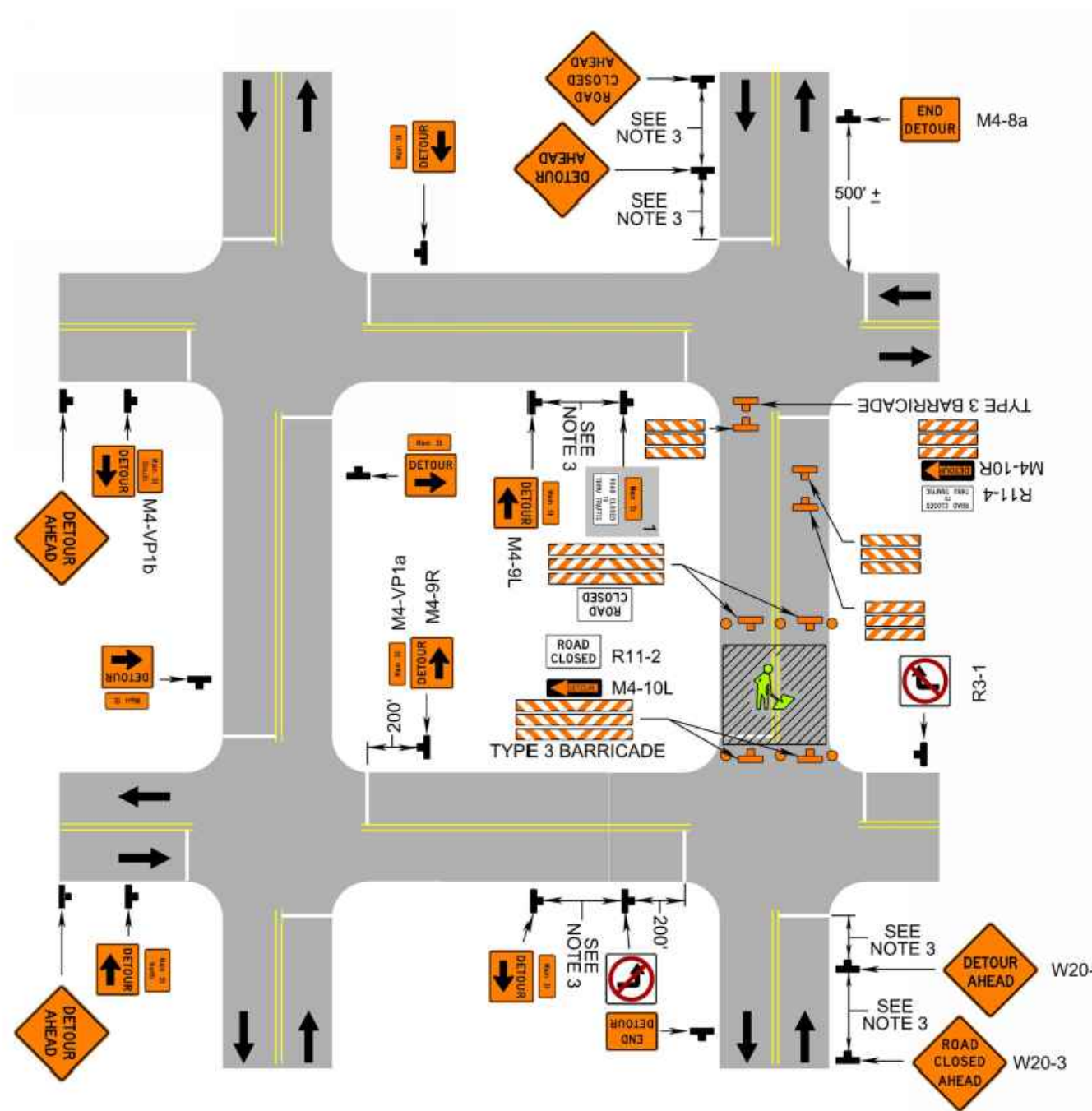
Standard:

9. When used, the Street Name plaque shall be placed above the Detour sign.

Support:

10. See Chapter 6I for additional information on incident management traffic control.

Street Closure Operation with Detour
(Figure TTC-34.1)



1: Revision 1 - 4/1/2015

Typical Traffic Control
Sidewalk Closure and Bypass Sidewalk Operation
(Figure TTC-35.0)
NOTES

Standard:

1. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

Guidance:

2. Where high speeds are anticipated, a temporary traffic barrier and, if necessary, a crash cushion should be used to separate the temporary sidewalks from vehicular traffic.
3. Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.
4. Temporary markings should be considered for operations exceeding three days in duration.

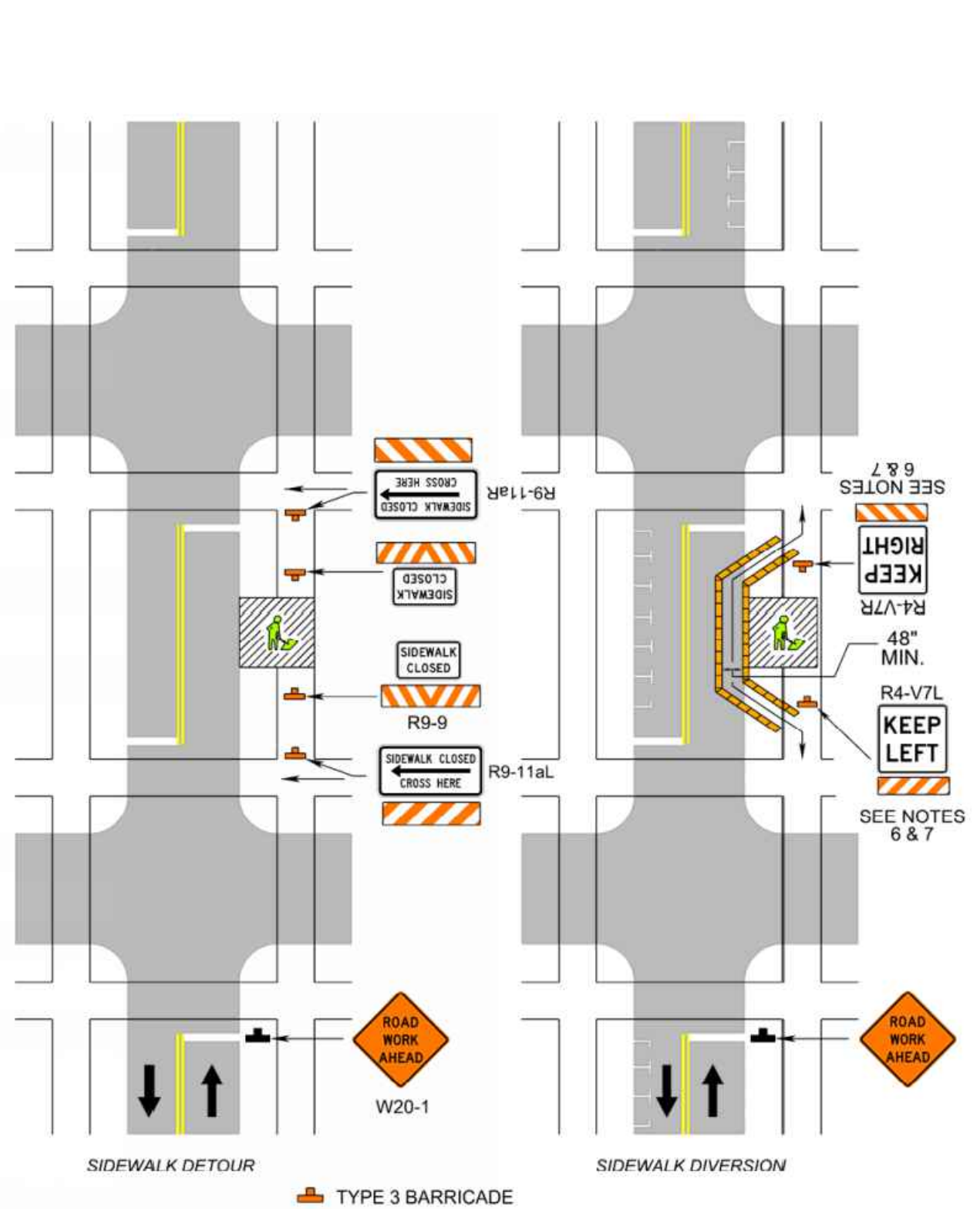
Option:

5. Only the TTC devices related to pedestrians are shown. Other devices, such as lane closure signing or ROAD NARROWS (W5-1) signs, may be used to control vehicular traffic.
6. For nighttime closures, Type A Flashing warning lights may be used on barricades that support signs and close sidewalks.
7. Signs, such as KEEP RIGHT (R4-V7R) and KEEP LEFT (R4-V7L), may be placed along a temporary sidewalk to guide or direct pedestrians.

Standard:

8. All sidewalk closures shall be closed with Type 3 Barricades.

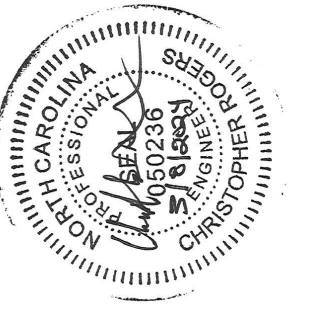
Sidewalk Closure and Bypass Sidewalk Operation
(Figure TTC-35.0)



DETAILS

DETAILS

SHEET NUMBER
C711



REVISIONS		REV. #	DESCRIPTION	REV. BY	DATE
CONSTRUCTION SET					

DRAWN : SHANE VANDERGRIFF	PROJECT : IVY AND LYON ROAD
DESIGN : CHRIS ROGERS	NAME : DRAINAGE IMPROVEMENTS
CHECK : DAVID DUNCAN	SCALE : NTS
APPROVED :	DATE : 03/08/2024
PROJECT NO. 54960.001	
SUB-LEDGER NO. _____	