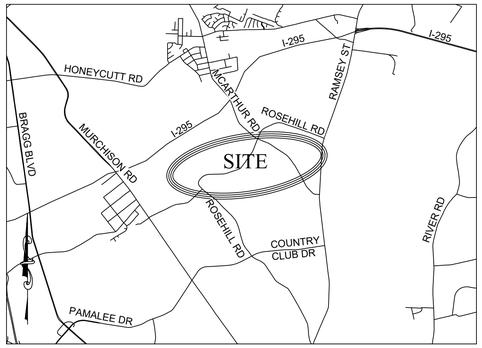

VICINITY MAP

FAYETTEVILLE NC
PUBLIC SERVICES

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PROJECT NUMBER: SRP-SW-ARP-0001

LOCATION MAP

NTS

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PROJECT CONTACTS
CITY OF FAYETTEVILLE

Engineering	Abha Dwivedy, PhD, MBA Project Manager 433 Hay Street, Fayetteville, NC 28301 (910) 433-1027 ADwivedy@ci.fay.nc.us
Construction Management	Jeff Riddle, PLS Construction Manager 339 Alexander Street, Fayetteville, NC 28301 (910) 433-1613 jriddle@ci.fay.nc.us
Traffic Services	Lee Jernigan, PE Assistant Public Services Director 339 Alexander Street, Fayetteville, NC 28301 (910) 433-1660 ljernigan@ci.fay.nc.us

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

CONSTRUCTION APPROVAL

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

ISSUED FOR CONSTRUCTION

PROJECT SCOPE

**THIS PROJECT CONSISTS OF:
STORM DRAINAGE CONVEYANCE SYSTEM IMPROVEMENTS TO EXISTING SYSTEM**

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: COVER SHEET

SHEET NUMBER 1 OF 40

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

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:34 PM

REV. #	DESCRIPTION	REV.BY DATE

REVISIONS

DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	
PROJECT	SUNBURY DRIVE
NAME :	
SCALE :	1" = 20'
DATE :	03-03-2022

PROJECT NO. 20200553.00.RA

SUB-LEDGER NO.

ABBREVIATIONS

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

LEGEND

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

EXISTING RIGHT-OF-WAY
EXISTING OVERHEAD ELECTRIC
EXISTING UNDERGROUND ELECTRIC
EXISTING FIBER OPTIC BURIED
EXISTING FENCE
EXISTING UNDERGROUND GAS
EXISTING UNDERGROUND WATER
EXISTING TELEPHONE CABLE
EXISTING CABLEVISION
EXISTING EASEMENT
EXISTING SANITARY SEWER
EXISTING TRAIN TRACKS
EXISTING STORM SEWER
EXISTING SWALE
EXISTING SANITARY SEWER MAN HOLE
EXISTING STORM SEWER MAN HOLE
EXISTING TELEPHONE MAN HOLE
EXISTING CATCH BASIN
EXISTING DROP INLET
EXISTING ELECTRICAL VAULT
EXISTING ELECTRICAL MAN HOLE
EXISTING WATER METER
EXISTING CONCRETE MONUMENT
SURVEY CONTROL MARKER
PROPERTY CORNER (EIR/ERBR/SIR/EIP/IPF)
EXISTING WATER VALVE (WITH VALVE IDENTIFICATION PER WATERLINE CONSTRUCTION SEQUENCE)
EXISTING WATER METER
EXISTING FIBER OPTIC MARKER
EXISTING SANITARY SEWER CLEAN OUT
EXISTING EDGE OF PAVEMENT
EXISTING CONCRETE/SIDEWALK
WETLANDS
EXISTING POWER POLE
EXISTING MAILBOX

EXISTING FLARED END SECTION
EXISTING HEADWALL
EXISTING GATE WATER VALVE
EXISTING GAS VALVE
EXISTING FIRE HYDRANT
EXISTING LIGHT POLE
EXISTING TREE
EXISTING SHRUB

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

SHEET NUMBER 2 OF 40
PLAN TYPE: LEGEND

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NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:35 PM

REVISIONS

REV. #	DESCRIPTION	REV.BY	DATE

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DRAWN :	BFL
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PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.

GENERAL NOTES:

EXISTING CONDITIONS AND TOPOGRAPHY MAPPING WERE PROVIDED BY STEWART INC., PERFORMED OCT 2018 TO FEB 2021. NAD83 DATUM. CONTRACTOR TO VERIFY.

LEVEL A SUBSURFACE UTILITY ENGINEERING (SUE) LOCATES (TEST HOLES) WERE PERFORMED BY STEWART INC., JUNE 2021. LOCATIONS, DEPTHS, SIZES, AND MATERIAL WERE DETERMINED DURING LEVEL A LOCATES. CONTRACTOR TO VERIFY.

ACCESS TO SITES SHALL BE BY PUBLIC RIGHT-OF-WAYS AND UTILITY EASEMENTS. OTHER ACCESS LOCATIONS REQUIRED SHALL BE SECURED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. SUPPLEMENTAL EROSION CONTROL MEASURES SHALL BE REQUIRED TO INCLUDE CONSTRUCTION ENTRANCES, SILT FENCING, RESTORATION, ETC.

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

THE CONTRACTOR IS EXPECTED AND REQUIRED TO COOPERATE WITH THE PROPERTY OWNERS AFFECTED BY THE WORK. PRIVATE AGREEMENTS WITH PROPERTY OWNERS MUST BE IN WRITING ON A FORM APPROVED BY THE ENGINEER AND A COPY SHALL BE PROVIDED TO THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES AFFECTED BY SAID AGREEMENT. THE AGREEMENT MUST SPECIFY THAT THE CITY AND THE ENGINEER SHALL BE HELD HARMLESS AGAINST ALL CLAIMS ARISING FROM THE AGREEMENT. THE OWNER DISCOURAGES PRIVATE AGREEMENTS. BEFORE FINAL ACCEPTANCE, A RELEASE FROM EACH PROPERTY OWNER THAT THE CONTRACTOR MADE AN AGREEMENT WITH SHALL BE REQUIRED. THE PROPERTY OWNER'S RELEASE IS A CONDITION OF FINAL ACCEPTANCE.

CONTRACTOR SHALL MAINTAIN A NEAT AND CLEAN JOB-SITE TO INCLUDE STAGING/STORAGE AREAS AS FOLLOWS:

- PERFORM DUST CONTROL BY WATERING DAILY OR AS DIRECTED BY THE ENGINEER.
- SWEEP STREETS A MINIMUM OF ONCE WEEKLY (FRIDAY) OR AS DIRECTED BY THE ENGINEER.
- BLADE, LEVEL AND RE-COMPACT ALL EXPOSED TRENCHES WEEKLY (OR AS DIRECTED BY THE ENGINEER) TO PRODUCE A SMOOTH "RIDE".
- PERFORM DAILY CLEAN-UP OF ALL DIRT, DEBRIS AND SCRAP MATERIALS.
- REMOVE EXCESS EQUIPMENT, MATERIALS, TOOLS, ETC. NOT NEEDED.

CONTRACTOR SHALL PROVIDE MEASURES DURING CONSTRUCTION TO SECURE THE SITE AND EXCAVATION FROM THE GENERAL PUBLIC AND COMPLY WITH ALL OSHA REGULATIONS. JOB SITE SAFETY IS THE EXCLUSIVE AND SOLE RESPONSIBILITY OF THE CONTRACTOR. OPEN EXCAVATION LEFT UNATTENDED OR OVER NIGHT IS NOT ACCEPTABLE AND SHALL BE FILLED IMMEDIATELY.

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

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

CONTRACTOR SHALL REPLACE ALL DISTURBED MAILBOXES, SIGNS, ETC. DISTURBED DURING CONSTRUCTION WITHIN 24 HOURS OF DISTURBANCE. PERMANENT ROAD SIGNAGE DISTURBED SHALL BE REPLACED IMMEDIATELY AND IF NECESSARY ROADWAY SIGNS SHALL BE TEMPORARILY INSTALLED IN A LOCATION CONSISTENT WITH THE NCMUTCD TO PROVIDE CONTINUOUS TRAFFIC AWARENESS OF ROADWAY CONDITIONS. (NO SEPARATE PAYMENT).

CONTRACTOR SHALL PROVIDE SECURITY FENCING, SECURITY GUARD, AND ANY AND ALL OTHER MEASURES CONTRACTOR DEEMS NECESSARY TO PROTECT EQUIPMENT AND MATERIALS STORED ON THE PROJECT. (NO SEPARATE PAYMENT).

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

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

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

CONTRACTOR SHALL STORE ALL MATERIALS IN THE CONTRACTOR STAGING AREA 72 HOURS PRIOR TO INCORPORATING INTO THE WORK TO REDUCE OBSTRUCTIONS TO TRAFFIC AND INCONVENIENCE TO RESIDENTS.

GENERAL NOTES FOR RESIDENT RELATIONS (MANDATORY):

THE CONTRACTOR IS REQUIRED TO DEVELOP GOOD RELATIONS WITH THE RESIDENTS WHICH INCLUDE THE FOLLOWING MANDATORY MINIMUM REQUIREMENTS:

- NO SPEEDING WITH EQUIPMENT AND/OR VEHICLES (25 MPH MAX.)
- DO NOT BLOCK DRIVEWAYS AT ANY TIME
- DO NOT LITTER AT ANY TIME
- DO NOT USE RESIDENT'S WATER WITHOUT THEIR PERMISSION (SIGNED AGREEMENT REQUIRED)
- ALL PLUMBING CODE REQUIREMENTS FOR BACK FLOW PREVENTION WILL BE ADHERED TO
- RESPOND TO RESIDENT'S COMPLAINTS WITHIN 24 HOURS
- DO NOT USE ABUSIVE LANGUAGE, PROFANITY OR CAT-CALLING
- WEAR PROPER PROTECTIVE CLOTHING (HARD HATS, PROPER SHOES, SHIRTS, ETC.) AT ALL TIMES.
- MAINTAIN PROPER SAFETY MEASURES, PARTICULARLY ALONG OPEN TRENCHES, PLACING CONES ON RAISED MANHOLES AND BACK FILLING OPEN TRENCHES IF CONSTRUCTION IS STOPPED AND THE OPEN TRENCH IS NOT MANNED.
- PERSONNEL MUST WEAR CITY APPROVED SAFETY VEST AT ALL TIMES WHILE WORKING IN THE CITY AND/OR NCDOT RIGHT-OF-WAY
- ALL TRAFFIC CONTROL FLAG PERSONS AND AT LEAST ONE PERSON ON EACH WORK CREW MUST BE FLUENT IN THE ENGLISH LANGUAGE

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

UTILITIES:

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

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

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

FOR UTILITY LOCATES CALL NORTH CAROLINA ONE-CALL @ 811.

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

THE CONTRACTOR SHALL ADJUST ALL MANHOLES, LATERALS, WATER VALVES, WATER METER BOXES AND WATER VAULTS TO FINISHED GRADE. WATER METERS, MANHOLES, AND CLEANOUTS LOCATED IN SIDEWALKS OR CONCRETE DRIVEWAYS SHALL BE INSTALLED IN ACCORDANCE WITH PWC REQUIREMENTS. NO ABOVE GROUND UTILITY BOXES, POWER POLE, OR OTHER STRUCTURES ARE TO BE LOCATED WITHIN THE SIDEWALK AREA. THE SIDEWALK AREA IS TO BE FREE OF OBSTACLES.

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

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

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

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

ALL NEW MANHOLES SHALL HAVE ANTI-CORROSION CONCRETE ADMIXTURE PRODUCT CONSHIELD INSTALLED.

MAIL BOXES:

THE CONTRACTOR SHALL RELOCATE ALL MAIL BOXES (APPROX. 16) AS REQUIRED BY SECTION 107-12 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES. COORDINATE THIS WORK WITH THE U.S. POSTAL SERVICE.

TREES, SHRUBS, AND HEDGES:

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

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

GRADING:

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

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

EROSION CONTROL:

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

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

SAWCUTS:

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

STORM DRAINAGE STRUCTURE, PIPE & GRADING NOTES:

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

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

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

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

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

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

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

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

STOCKPILING NOTE:

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

EXCESS SUITABLE SOIL EXCAVATED DURING CONSTRUCTION SHALL BE STOCKPILED FOR USE ON THE PROJECT OR DISPOSED OF OFF-SITE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL NOT BE ALLOWED TO STOCKPILE MATERIALS OR EXCESS MATERIALS IN THE STREET RIGHT-OF-WAYS AT ANY TIME UNLESS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE A SUFFICIENT AND SUITABLE STOCKPILE AREA AND LOCATION AT THE CONTRACTOR'S EXPENSE.

ORDER OF PRECEDENCE GENERAL NOTES/TECHNICAL SPECIFICATIONS/PHOTOS:

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

NCDOT ENCROACHMENT SPECIAL PROVISIONS:

CONTRACTOR TO NOTIFY MR. KEITH RIVENBARK, COUNTY MAINTENANCE ENGINEER, (910) 364-0602, A MINIMUM OF THREE (3) DAYS BEFORE CONSTRUCTION IS TO BEGIN.

AN EXECUTED COPY OF THE ENCROACHMENT AGREEMENT SHALL BE PRESENT AT THE CONSTRUCTION SITE AT ALL TIMES DURING CONSTRUCTION. THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RESERVES THE RIGHT TO STOP ALL WORK UNLESS EVIDENCE OF APPROVAL CAN BE SHOWN.

SEE THE ENCROACHMENT AGREEMENT FOR A FULL LIST OF SPECIAL PROVISIONS.

TRAFFIC CONTROL

CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS FOR WORK ZONE TRAFFIC CONTROL TO CITY TRAFFIC SERVICES DEPARTMENT (910-433-1660) FOR CITY STREETS AND TO MR. TROY BAKER (910-364-0601) FOR NCDOT STREETS. CONTRACTOR SHALL NOT PLACE ANY TRAFFIC CONTROL DEVICES WITHOUT HAVING APPROVAL FROM APPLICABLE TRANSPORTATION DEPARTMENT EITHER NCDOT OR THE CITY OF FAYETTEVILLE.

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

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

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

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

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

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

UTILITY CONSTRUCTION NOTES:

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

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

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.

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

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

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

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

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

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

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

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

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

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

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

EXIST. AND PROP. WATER AND SEWER LATERALS SERVING RESIDENCES AND BUSINESSES ARE SHOWN IN APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY ACTUAL LOCATION PRIOR TO ANY CONSTRUCTION TO ENSURE SERVICE WILL BE MAINTAINED AND PROVIDED FOR AND SHALL RECORD ON RECORD DRAWINGS. CONTRACTOR IS WARNED THAT ALL LATERALS MAY NOT BE SHOWN AND LATERALS MAY NOT BE SHOWN IN THE CORRECT LOCATION. SEWER CLEANOUTS IN PROJECT AREA WERE BURIED/NOT READILY VISIBLE AND THEREFORE NOT SURVEYED. SEWER LATERAL LOCATIONS (HORIZONTAL AND VERTICAL) AS SHOWN WERE TAKEN FROM THE UTILITY AS-BUILTS. CONTRACTOR IS TO PROTECT OR REPLACE LATERALS WHETHER SHOWN OR NOT.

ISSUED FOR CONSTRUCTION

DRAWN : BFL
DESIGN : TLM
CHECK :
APPROVED :

PROJECT NAME : SUNBURY DRIVE
SCALE : 1" = 20'
DATE : 03-03-2022

PROJECT NO. 202005530.00.RA
SUB-LEDGER NO.

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: GENERAL NOTES

SHEET NUMBER 3 OF 40

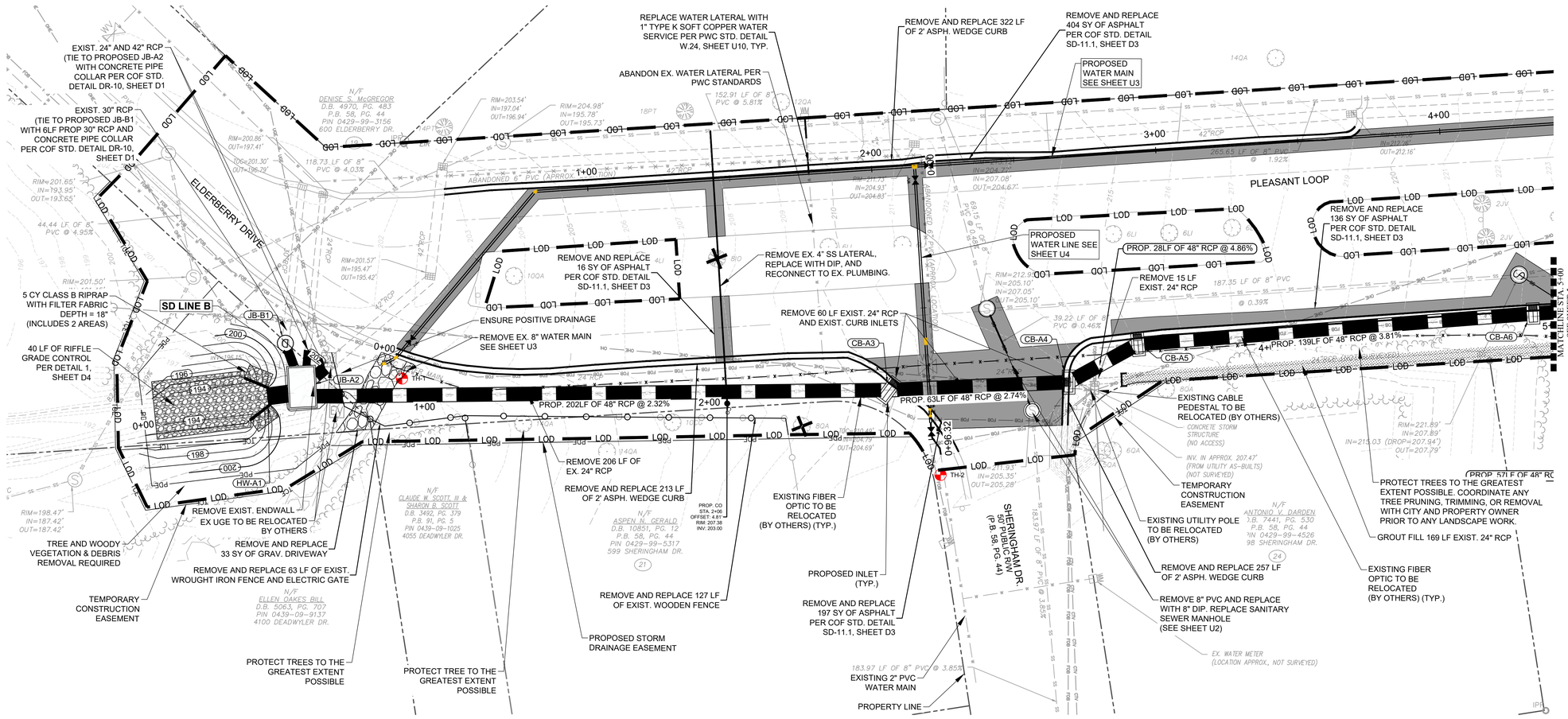
WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
WWW.WKDICKSON.COM

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

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:35 PM

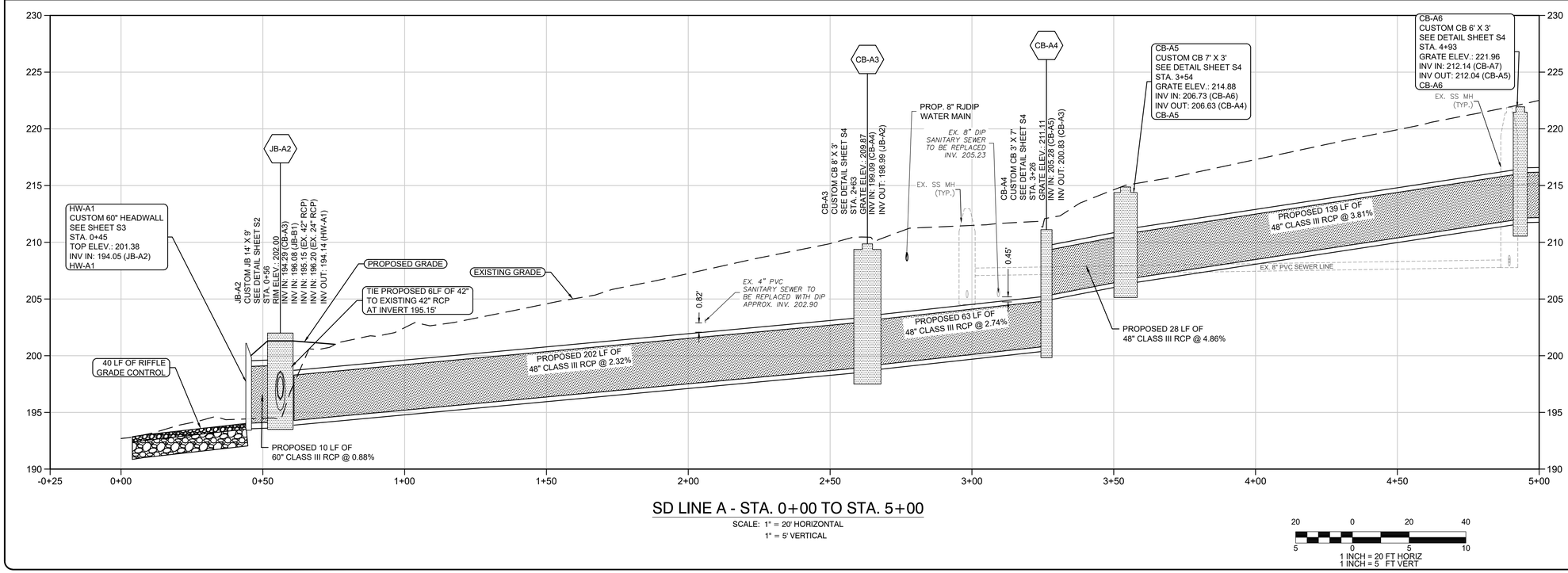
REVISIONS

REV. #	DESCRIPTION	REV. BY	DATE



NOTES:

1. CONTRACTOR TO COORDINATE WITH HOMEOWNERS TO REPLACE OR RELOCATE PRIVATE IRRIGATION AND DRAINAGE SYSTEMS. CONTRACTOR SHALL VERIFY, MARK AND RELOCATE OR REPLACE AS NECESSARY.
2. CONTRACTOR TO COORDINATE WITH LOCAL UTILITIES TO RELOCATE ALL UTILITY LINES WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO BEGINNING STORMWATER WORK.
3. ALL PIPE SLOPES COMPUTED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE BY STATION CALL. PIPE LENGTHS THEN ROUNDED TO NEAREST FOOT.
4. PROPOSED 2' ASPHALT WEDGE CURB (COF STD. SD-17, SHEET D3) SHALL TRANSITION TO PROPOSED CATCH BASIN USING COF STD DETAIL SD-4, SHEET D3.
5. CONTRACTOR TO REMOVE AND RE-INSTALL TO EXISTING CONDITIONS ANY MAILBOXES WITHIN LOD (APPROX. 16).
6. ALL PROPOSED 4" SANITARY LATERALS SHALL BE INSTALLED WITH A 2% MINIMUM SLOPE AND TO AVOID CONFLICT WITH PROPOSED STORM PIPES. INSTALLATION OF LATERALS SHALL CONFORM TO PWC STANDARD DETAILS PER DETAIL S.11.
7. ALL PROPOSED WATER SERVICE REPLACEMENT SHALL CONFORM TO PWC STANDARDS PER DETAIL W.24.
8. CONTRACTOR TO ENSURE POSITIVE DRAINAGE TO THE PROPOSED CATCH BASINS.



SD LINE A - STA. 0+00 TO STA. 5+00

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

SD LINE B - STA. 0+00 TO STA. 0+50

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

20 0 20 40
5 0 5 10
1 INCH = 20 FT HORIZ
1 INCH = 5 FT VERT

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLEASANT LOOP

PLAN TYPE: PLAN & PROFILE

SHEET NUMBER 4 OF 40

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
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FAYETTEVILLE NC
PUBLIC SERVICES
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28301

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031455 THOMAS L. MURRAY
May 15 2024 6:35 PM

REV. #	DESCRIPTION	DATE
REVISIONS	REV.BY	

PROJECT NAME: SUNBURY DRIVE
SCALE: 1" = 20'
DATE: 03-03-2022
DRAWN: BFL
DESIGN: TLM
CHECK:
APPROVED:

PROJECT NO. 20200553.00.RA

SUB-LEDGER NO.

IN ORDER TO GROUT FILL 24" RCP, REMOVE AND REPLACE CONCRETE TOP SLAB WITH MANHOLE ACCESS PER COF STD. DETAIL DR-16, SHEET D2.(MEASURE BEFORE ORDERING). GRADE AREA TO PROVIDE TOP OF SLAB LEVEL WITH SURROUNDING GRADE. ENSURE POSITIVE DRAINAGE. GRADE WORK IS INCIDENTAL TO REPLACEMENT OF TOP SLAB.

ASPH. WEDGE CURB AND PAVING QUANTITIES IN THIS AREA INCLUDED ON NEXT SHEET (TYP.)

MATCHLINE STA. 10+00 SEE SHEET 6

PROPERTY LINE

REMOVE AND REPLACE 19 SY OF CONC. DRIVEWAY PER COF STD. DETAIL SD-9, SHEET D3

REMOVE AND REPLACE EXIST. 4" PVC SANITARY SEWER AND CONNECT TO EX. PLUMBING

PROP. CO STA. 9+81 OFFSET: -18.02' RIM: 230.65 INV: 225.50

PROP. 24LF OF 18" RCP @ 0.83%

EXIST. CTV AND UGE LINES TO BE RELOCATED BY OTHERS

20LF X 20LF RECEIVING PIT

GROUT FILL 25 LF EXIST. 24" RCP

CONTRACTOR TO PROTECT OVERHEAD ELECTRIC LINES

THEORETICAL 1:1 CUT SLOPE AREA TO ACCESS RECEIVING PIT

EXIST. STORM STRUCTURE (TO REMAIN)

TRENCH STABILIZATION (SEE NOTE 9)

SD LINE C (SEE SHEET 10 FOR PROFILE)

REMOVE AND REPLACE 29 LF OF EXIST. CHAIN LINK FENCE

PROTECT EX. SANITARY SEWER

PROP. 42LF OF 18" RCP @ 0.79%

REMOVE AND REPLACE 56 LF OF 2' ASPH. WEDGE CURB

EXIST. 18" RCP (TIE TO PROPOSED JB-C2 WITH 6LF PROP 18" RCP AND CONCRETE PIPE COLLAR PER COF STD. DETAIL DR-10, SHEET D1

REMOVE 14 LF OF EX. 18" RCP

GROUT FILL 16 LF EXIST. 18" RCP

PROTECT EX. SANITARY SEWER MANHOLE AND SANITARY SEWER

PROPOSED STORM DRAINAGE EASEMENT

50LF X 20LF ENTRY PIT

THEORETICAL 1:1 CUT SLOPE AREA TO ACCESS ENTRY PIT

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED PIPE TRENCH BOUNDARY (APPROX. WIDTH 30LF)

PROP. 113LF OF 48" STEEL PIPE @ 0.50%

PROPOSED 48" STEEL PIPE TO BE INSTALLED BY TRENCHLESS METHODOLOGIES

CUT THROUGH EXIST. 24" RCP USING TRENCHLESS TECHNOLOGY

EXIST. JUNCTION BOX TO BE GROUT FILLED

TRENCH STABILIZATION (SEE NOTE 9)

ROSEHILL RD.
SR-1615
60' PUBLIC R/W
(P.B. 38, PG. 53)

NEEDHAM DR. (P.B. 38, PG. 53)

REMOVE AND REPLACE 164 SY OF CONC. SIDEWALK PER COF STD. DETAIL SD-12, SHEET D3

REMOVE EX. 4" SS LATERAL, REPLACE WITH DIP, AND RECONNECT TO EX. PLUMBING

REPLACE WATER LATERAL WITH 1" TYPE K SOFT COPPER WATER SERVICE (SEE SHEET U4)

REMOVE EX. 8" WATER MAIN SEE SHEET U3

EX FIBER TO BE RELOCATED BY OTHERS

ASPHALT WEDGE CURB QUANTITY INCLUDED ON PREVIOUS SHEET (TYP.)

REMOVE AND REPLACE 13 LF OF CONCRETE CURB

SEE SHEETS U3 AND U4 FOR PAVEMENT AND DRIVEWAY QUANTITIES FOR WATERLINE WORK WITHIN ROSEHILL RD (TYP.)

TIE EXIST. 24" RCP TO PROPOSED JB-A25 (NOT SURVEYED, INVERT APPROX, CONTRACTOR TO VERIFY)

EXIST. 24" RCP (TIE TO PROPOSED JB-A25 WITH 6LF PROP 24" RCP AND CONCRETE PIPE COLLAR PER COF STD. DETAIL DR-10, SHEET D1

PROP. 13LF OF 48" RCP @ 0.45%

PROP. 57LF OF 48" RCP @ 0.46%

EXIST. 24" RCP (TO BE GROUT FILLED)

REMOVE 45 LF EXIST. 24" RCP

REPLACE 8" PVC AND SANITARY SEWER MANHOLE (SEE SHEET U2)

RELOCATE EXIST. FIRE HYDRANT

PROPOSED STORM DRAINAGE EASEMENT

REMOVE AND REPLACE EXIST. WATER METER FOR 1" WATER LATERAL

PROP. 297LF OF 48" RCP @ 0.50%

PAVING QUANTITIES IN THIS AREA INCLUDED ON PREVIOUS SHEET (TYP.)

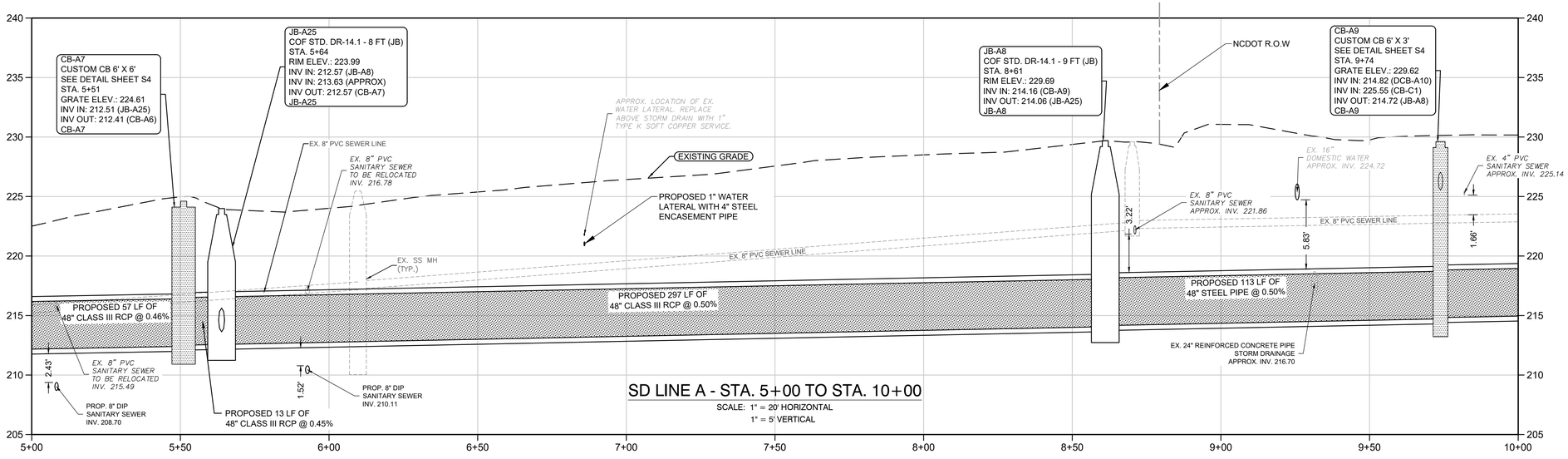
MATCHLINE STA. 5+00 SEE SHEET 4

NOTES:

1. CONTRACTOR TO COORDINATE WITH HOMEOWNERS TO REPLACE OR RELOCATE PRIVATE IRRIGATION AND DRAINAGE SYSTEMS. CONTRACTOR SHALL VERIFY, MARK AND RELOCATE OR REPLACE AS NECESSARY.
2. CONTRACTOR TO COORDINATE WITH LOCAL UTILITIES TO RELOCATE ALL UTILITY LINES WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO BEGINNING STORMWATER WORK.
3. ALL PIPE SLOPES COMPUTED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE BY STATION CALL. PIPE LENGTHS THEN ROUNDED TO NEAREST FOOT.
4. PROPOSED 2' ASPHALT WEDGE CURB (COF STD. SD-17, SHEET D3) SHALL TRANSITION TO PROPOSED CATCH BASIN USING COF STD DETAIL SD-4, SHEET D3.
5. CONTRACTOR TO REMOVE AND RE-INSTALL TO EXISTING CONDITIONS ANY MAILBOXES WITHIN LOD (APPROX. 16).
6. ALL PROPOSED 4" SANITARY LATERALS SHALL BE INSTALLED WITH A 2% MINIMUM SLOPE AND TO AVOID CONFLICT WITH PROPOSED STORM PIPES. INSTALLATION OF LATERALS SHALL CONFORM TO PWC STANDARD DETAILS PER DETAIL S.11.
7. ALL PROPOSED WATER SERVICE REPLACEMENT SHALL CONFORM TO PWC STANDARDS PER DETAIL W.24.
8. CONTRACTOR TO ENSURE POSITIVE DRAINAGE TO THE PROPOSED CATCH BASINS.
9. CONTRACTOR SHALL PROVIDE VERTICAL TRENCH STABILIZATION/SHORING AT A MINIMUM FOR CUT SLOPE AREAS STEEPER THAN 1:1.

20 0 20 40
1 INCH = 20 FT HORIZ

20 0 20 40
5 0 5 10
1 INCH = 20 FT HORIZ
1 INCH = 5 FT VERT



SD LINE A - STA. 5+00 TO STA. 10+00
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS
ROSEHILL RD. & NEEDHAM DR.

SHEET NUMBER 5 OF 40
PLAN TYPE PLAN & PROFILE

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
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FAYETTEVILLE NC
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433 HAY STREET FAYETTEVILLE, NC 28301

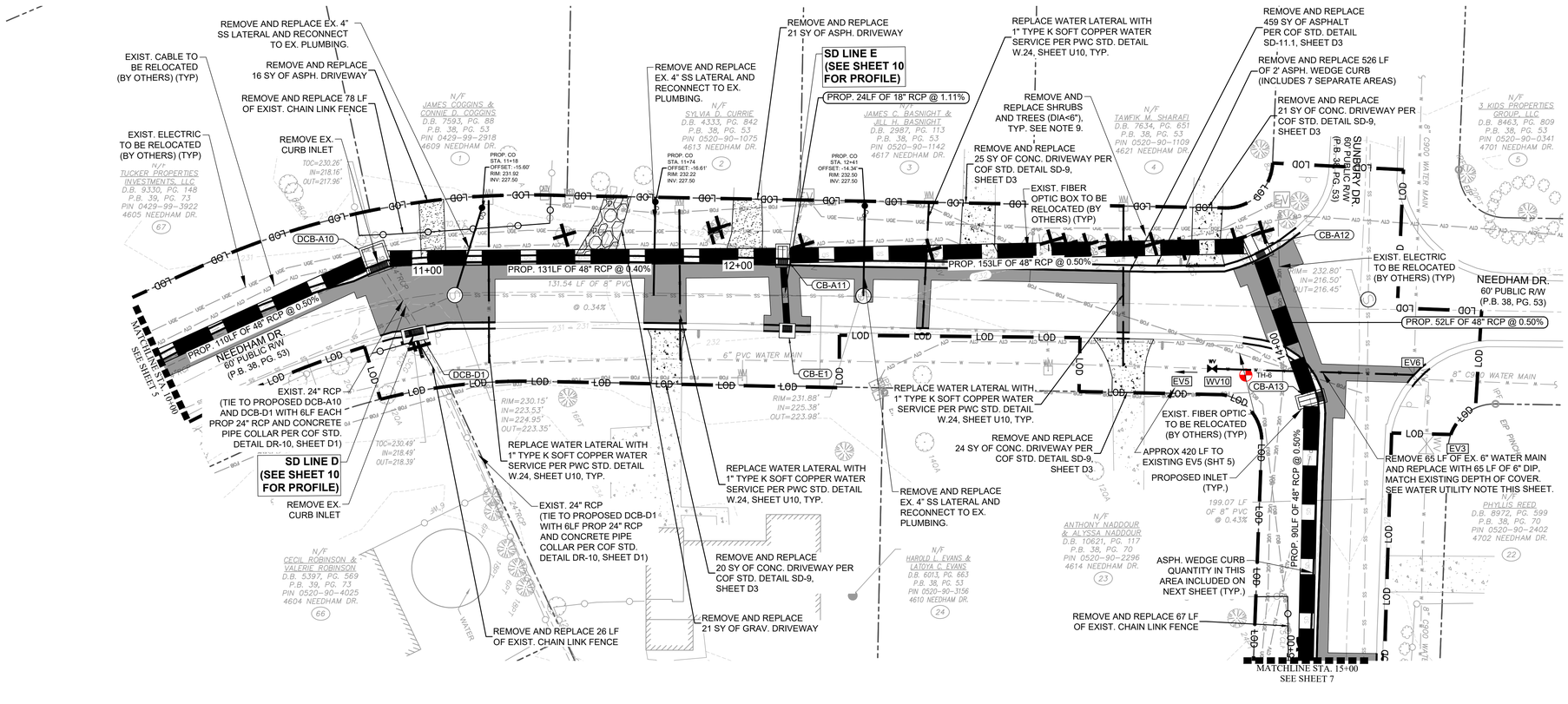
NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:35 PM

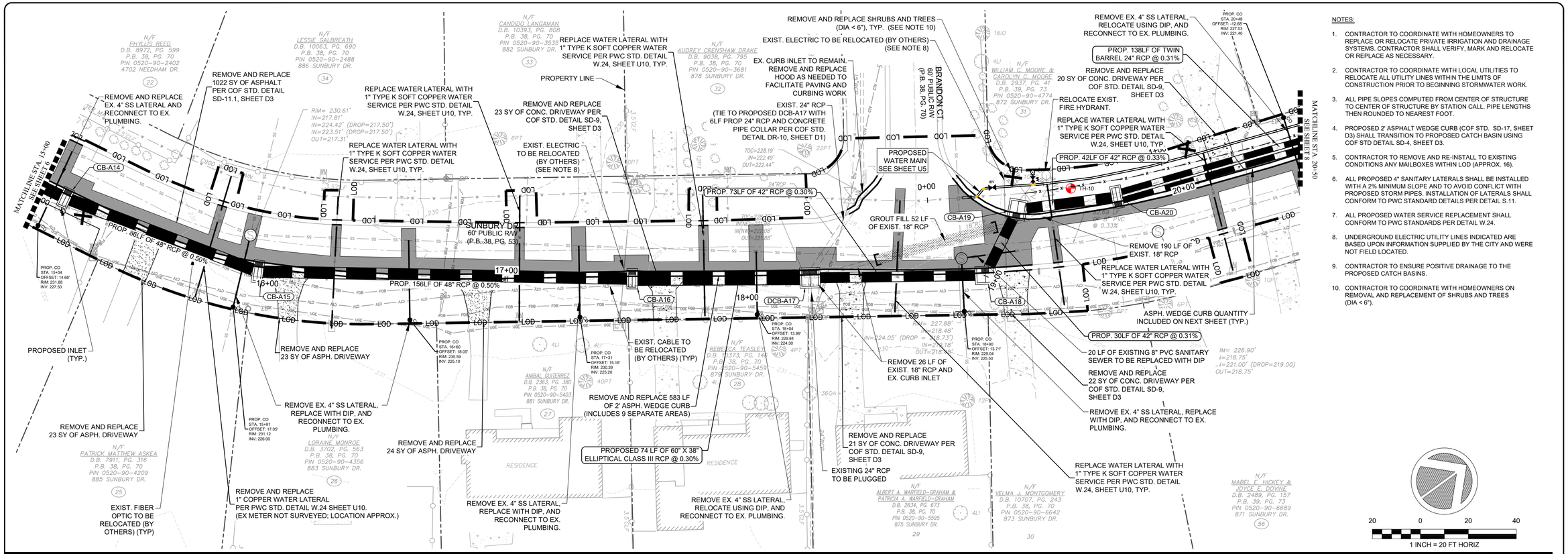
REVISIONS:

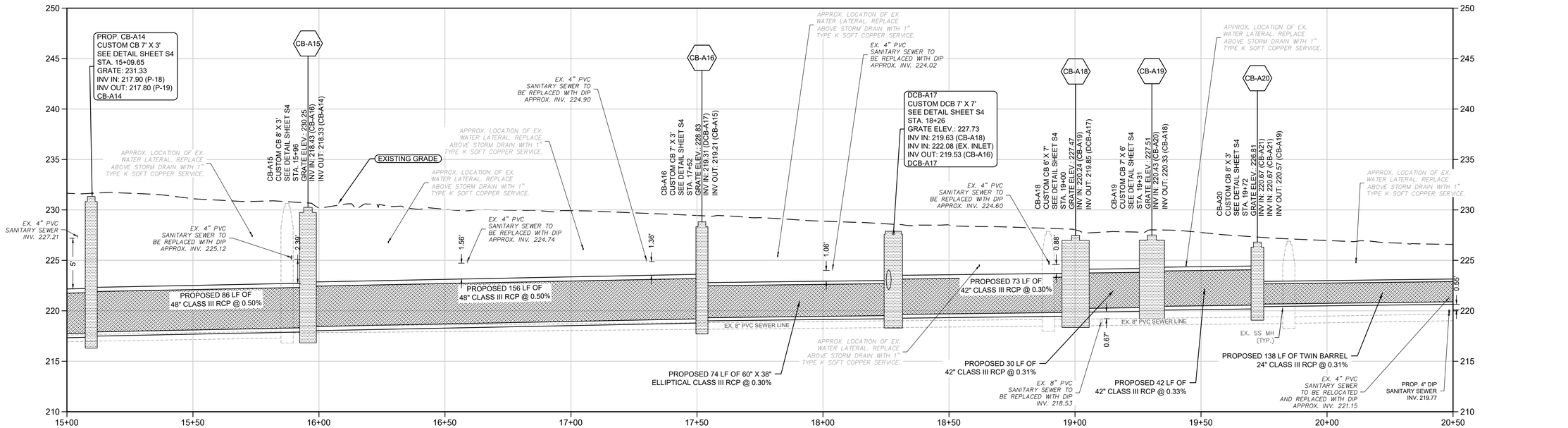
REV. #	DESCRIPTION	REV.BY	DATE

PROJECT	SUNBURY DRIVE
NAME :	
SCALE :	1" = 20'
DATE :	03-03-2022
DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	

PROJECT NO. 20200533.00.RA
SUB-LEDGER NO.


REMOVE AND REPLACE EX. 4" SS LATERAL AND RECONNECT TO EX. PLUMBING.
EXIST. CABLE TO BE RELOCATED (BY OTHERS) (TYP)
REMOVE AND REPLACE 16 SY OF ASPH. DRIVEWAY
REMOVE AND REPLACE 78 LF OF EXIST. CHAIN LINK FENCE
EXIST. ELECTRIC TO BE RELOCATED (BY OTHERS) (TYP)
REMOVE EX. CURB INLET
N/F TUCKER PROPERTIES INVESTMENTS, LLC D.B. 9330, PG. 148 P.B. 39, PG. 73 PIN 0429-99-3922 4605 NEEDHAM DR.
67
N/F JAMES COGGINS & CONNIE D. COGGINS D.B. 7593, PG. 88 P.B. 38, PG. 53 PIN 0429-99-2918 4609 NEEDHAM DR.
1
N/F SYLVIA D. CURRIE D.B. 4333, PG. 842 P.B. 38, PG. 53 PIN 0520-90-1075 4613 NEEDHAM DR.
2
N/F JAMES C. BASNIGHT & JILL H. BASNIGHT D.B. 2987, PG. 113 P.B. 38, PG. 53 PIN 0520-90-1142 4617 NEEDHAM DR.
3
N/F TAWFIK M. SHARAFI D.B. 7634, PG. 651 P.B. 38, PG. 53 PIN 0520-90-1109 4621 NEEDHAM DR.
4
N/F 3 KIDS PROPERTIES GROUP, LLC D.B. 8463, PG. 809 P.B. 38, PG. 53 PIN 0520-90-0341 4701 NEEDHAM DR.
5
N/F PHYLLIS REED D.B. 8972, PG. 599 P.B. 38, PG. 70 PIN 0520-90-2402 4702 NEEDHAM DR.
22
N/F ANTHONY NADDOUR & ALYSSA NADDOUR D.B. 10621, PG. 117 P.B. 38, PG. 70 PIN 0520-90-2296 4614 NEEDHAM DR.
23
N/F HAROLD L. EVANS & LATOYA C. EVANS D.B. 6013, PG. 663 P.B. 38, PG. 53 PIN 0520-90-3156 4610 NEEDHAM DR.
24
N/F CECIL ROBINSON & VALERIE ROBINSON D.B. 5397, PG. 569 P.B. 39, PG. 73 PIN 0520-90-4025 4604 NEEDHAM DR.
66
SD LINE E (SEE SHEET 10 FOR PROFILE)
PROP. 24LF OF 18" RCP @ 1.11%
REMOVE AND REPLACE 21 SY OF ASPH. DRIVEWAY
REMOVE AND REPLACE EX. 4" SS LATERAL AND RECONNECT TO EX. PLUMBING.
REPLACE WATER LATERAL WITH 1" TYPE K SOFT COPPER WATER SERVICE PER PWC STD. DETAIL W.24, SHEET U10, TYP.
REMOVE AND REPLACE SHRUBS AND TREES (DIA<6"), TYP. SEE NOTE 9.
REMOVE AND REPLACE 25 SY OF CONC. DRIVEWAY PER COF STD. DETAIL SD-9, SHEET D3
EXIST. FIBER OPTIC BOX TO BE RELOCATED (BY OTHERS) (TYP)
REMOVE AND REPLACE 459 SY OF ASPHALT PER COF STD. DETAIL SD-11.1, SHEET D3
REMOVE AND REPLACE 526 LF OF 2' ASPH. WEDGE CURB (INCLUDES 7 SEPARATE AREAS)
REMOVE AND REPLACE 21 SY OF CONC. DRIVEWAY PER COF STD. DETAIL SD-9, SHEET D3
SUNBURY DR. 60' PUBLIC R/W (P.B. 38, PG. 53)
PROP. CO STA. 11+18 OFFSET: -15.60' RIM: 231.92 INV: 227.50
PROP. CO STA. 11+74 OFFSET: -16.61' RIM: 232.22 INV: 227.50
PROP. CO STA. 12+41 OFFSET: -14.34' RIM: 232.50 INV: 227.50
DCB-A10
CB-A11
CB-A12
DCB-D1
CB-E1
CB-A13
EV5
EV6
EV3
WV10
TH-6
PROP. 110LF OF 48" RCP @ 0.50%
PROP. 131LF OF 48" RCP @ 0.40%
131.54 LF OF 8" PVC @ 0.34%
PROP. 153LF OF 48" RCP @ 0.50%
PROP. 52LF OF 48" RCP @ 0.50%
PROP. 90LF OF 48" RCP @ 0.50%
199.07 LF OF 8" PVC @ 0.43%
NEEDHAM DR. 60' PUBLIC R/W (P.B. 38, PG. 53)
11+00
12+00
13+00
14+00
MATCHLINE STA. 11+00 SEE SHEET 5
MATCHLINE STA. 15+00 SEE SHEET 7
EXIST. 24" RCP (TIE TO PROPOSED DCB-A10 AND DCB-D1 WITH 6LF EACH PROP 24" RCP AND CONCRETE PIPE COLLAR PER COF STD. DETAIL DR-10, SHEET D1)
SD LINE D (SEE SHEET 10 FOR PROFILE)
REMOVE EX. CURB INLET
REPLACE WATER LATERAL WITH 1" TYPE K SOFT COPPER WATER SERVICE PER PWC STD. DETAIL W.24, SHEET U10, TYP.
EXIST. 24" RCP (TIE TO PROPOSED DCB-D1 WITH 6LF PROP 24" RCP AND CONCRETE PIPE COLLAR PER COF STD. DETAIL DR-10, SHEET D1)
REMOVE AND REPLACE 20 SY OF CONC. DRIVEWAY PER COF STD. DETAIL SD-9, SHEET D3
REMOVE AND REPLACE 21 SY OF GRAV. DRIVEWAY
REMOVE AND REPLACE 26 LF OF EXIST. CHAIN LINK FENCE
REMOVE AND REPLACE EX. 4" SS LATERAL AND RECONNECT TO EX. PLUMBING.
REPLACE WATER LATERAL WITH 1" TYPE K SOFT COPPER WATER SERVICE PER PWC STD. DETAIL W.24, SHEET U10, TYP.
REMOVE AND REPLACE 24 SY OF CONC. DRIVEWAY PER COF STD. DETAIL SD-9, SHEET D3.
APPROX 420 LF TO EXISTING EV5 (SHT 5)
PROPOSED INLET (TYP.)
ASPH. WEDGE CURB QUANTITY IN THIS AREA INCLUDED ON NEXT SHEET (TYP.)
REMOVE AND REPLACE 67 LF OF EXIST. CHAIN LINK FENCE
REMOVE 65 LF OF EX. 6" WATER MAIN AND REPLACE WITH 65 LF OF 6" DIP, MATCH EXISTING DEPTH OF COVER. SEE WATER UTILITY NOTE THIS SHEET.
EXIST. ELECTRIC TO BE RELOCATED (BY OTHERS) (TYP)
RIM=232.80' IN=216.50' OUT=216.45'
RIM=230.15' IN=223.53' IN=224.95' OUT=223.35'
RIM=231.88' IN=225.38' OUT=223.98'
TOC=230.49' IN=218.49' OUT=218.39'
6" PVC WATER MAIN
8" CI WATER MAIN
EX. 8" PVC SEWER LINE
EX. 6" WATER MAIN
EX. 24" RCP
EX. 8" WATER MAIN
EX. 12" WATER MAIN
EX. 8" SEWER MAIN
EX. 6" SEWER MAIN
EX. 4" FORCE MAIN
EX. 4" SEWER FORCE MAIN
EX. 6" SEWER FORCE MAIN
EX. 8" SEWER FORCE MAIN
EX. 12" SEWER FORCE MAIN
EX. 24" SEWER FORCE MAIN
EX. 30" SEWER FORCE MAIN
EX. 36" SEWER FORCE MAIN
EX. 42" SEWER FORCE MAIN
EX. 48" SEWER FORCE MAIN
EX. 54" SEWER FORCE MAIN
EX. 60" SEWER FORCE MAIN
EX. 66" SEWER FORCE MAIN
EX.

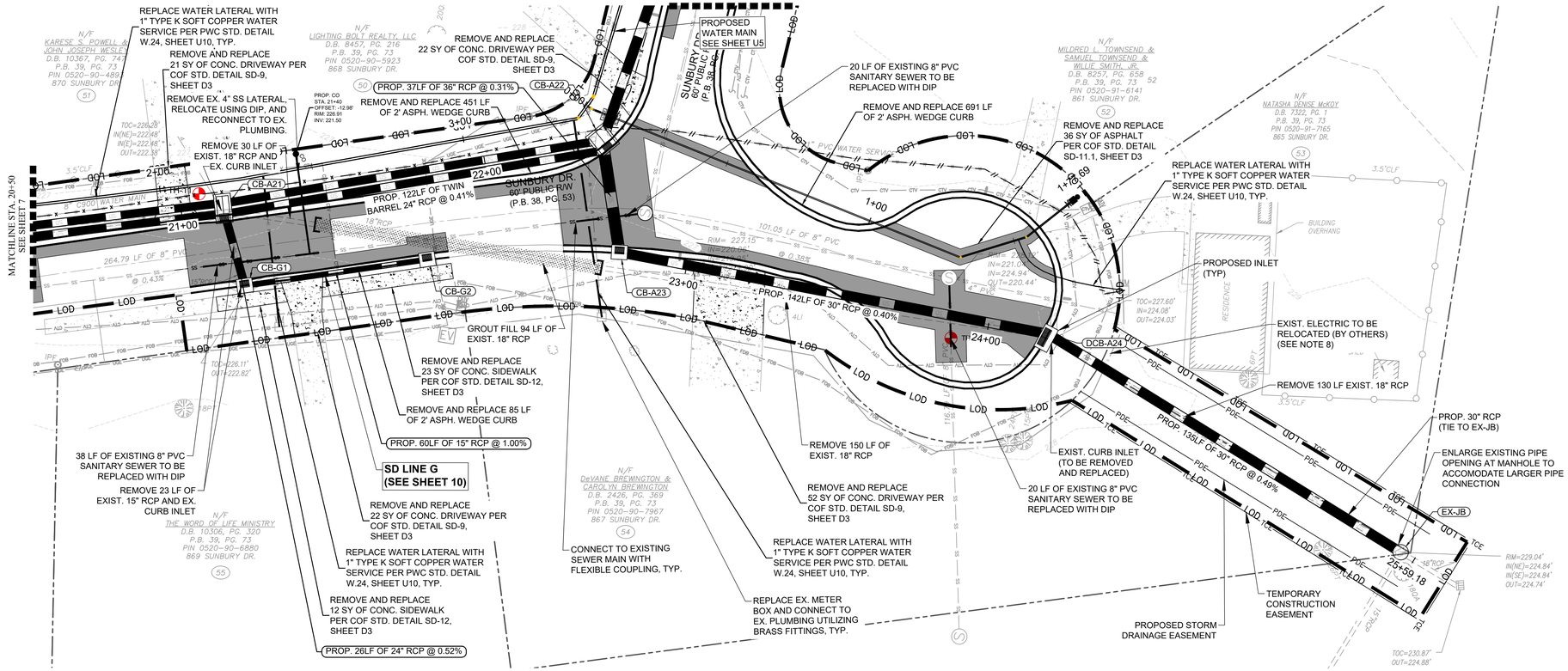




SD LINE A - STA. 15+00 TO STA. 20+50

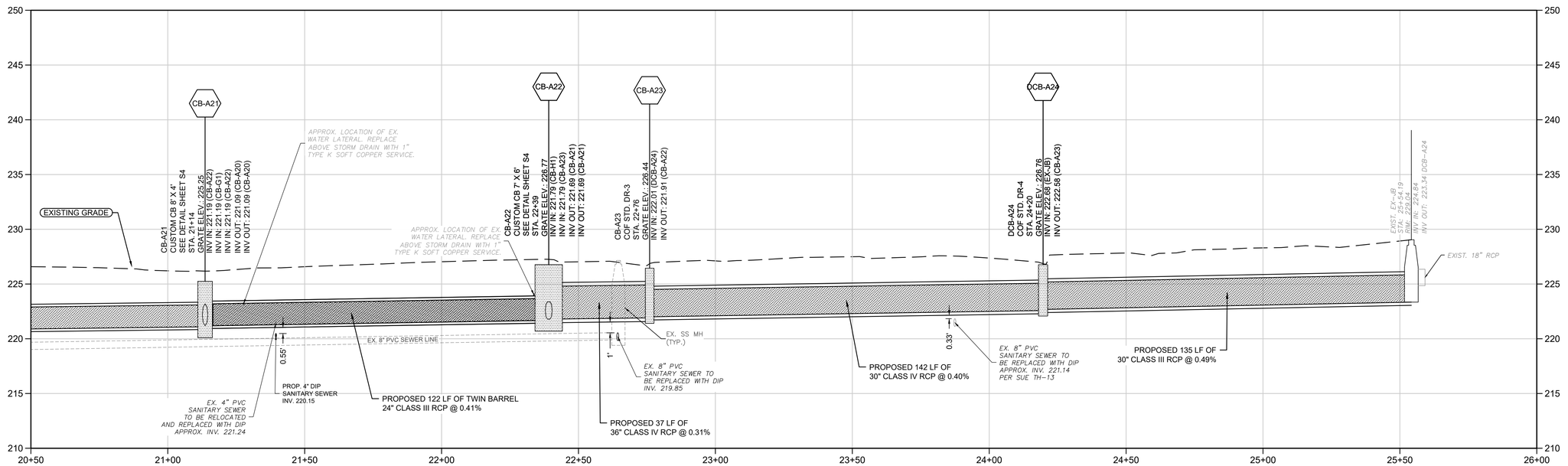
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

1 INCH = 20 FT HORIZ
1 INCH = 5 FT VERT



NOTES:

1. CONTRACTOR TO COORDINATE WITH HOMEOWNERS TO REPLACE OR RELOCATE PRIVATE IRRIGATION AND DRAINAGE SYSTEMS. CONTRACTOR SHALL VERIFY, MARK AND RELOCATE OR REPLACE AS NECESSARY.
2. CONTRACTOR TO COORDINATE WITH LOCAL UTILITIES TO RELOCATE ALL UTILITY LINES WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO BEGINNING STORMWATER WORK.
3. ALL PIPE SLOPES COMPUTED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE BY STATION CALL. PIPE LENGTHS THEN ROUNDED TO NEAREST FOOT.
4. PROPOSED 2' ASPHALT WEDGE CURB (COF STD. SD-17, SHEET D3) SHALL TRANSITION TO PROPOSED CATCH BASIN USING COF STD DETAIL SD-4, SHEET D3.
5. CONTRACTOR TO REMOVE AND RE-INSTALL TO EXISTING CONDITIONS ANY MAILBOXES WITHIN LOD (APPROX. 16).
6. ALL PROPOSED 4" SANITARY LATERALS SHALL BE INSTALLED WITH A 2% MINIMUM SLOPE AND TO AVOID CONFLICT WITH PROPOSED STORM PIPES. INSTALLATION OF LATERALS SHALL CONFORM TO PWC STANDARD DETAILS PER DETAIL S.11.
7. ALL PROPOSED WATER SERVICE REPLACEMENT SHALL CONFORM TO PWC STANDARDS PER DETAIL W.24.
8. UNDERGROUND ELECTRIC UTILITY LINES INDICATED ARE BASED UPON INFORMATION SUPPLIED BY THE CITY AND WERE NOT FIELD LOCATED.
9. CONTRACTOR TO ENSURE POSITIVE DRAINAGE TO THE PROPOSED CATCH BASINS.



SD LINE A - STA. 20+50 TO STA. 25+57.52

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS
SUNBURY DR. TO CUL-DE-SAC

PLAN TYPE: PLAN & PROFILE
SHEET NUMBER: 8 OF 40

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ENGINEERING & INFRASTRUCTURE DEPARTMENT
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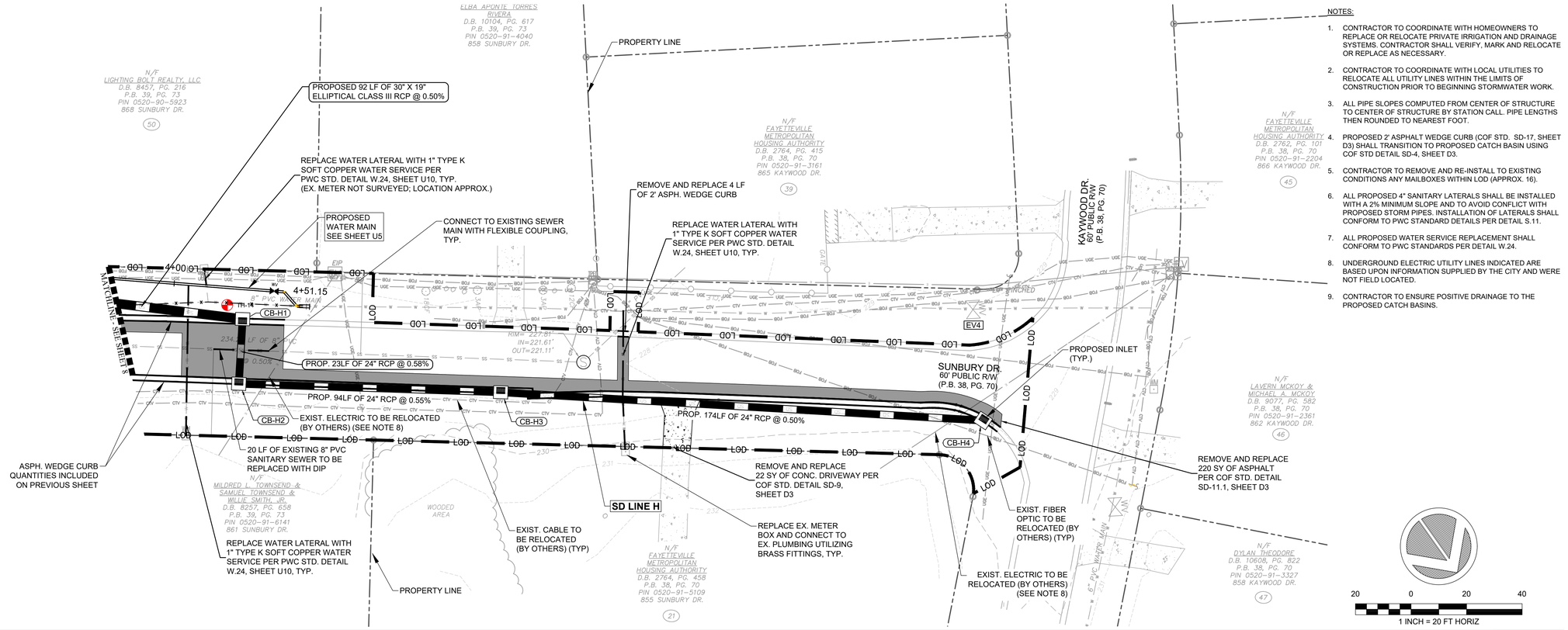
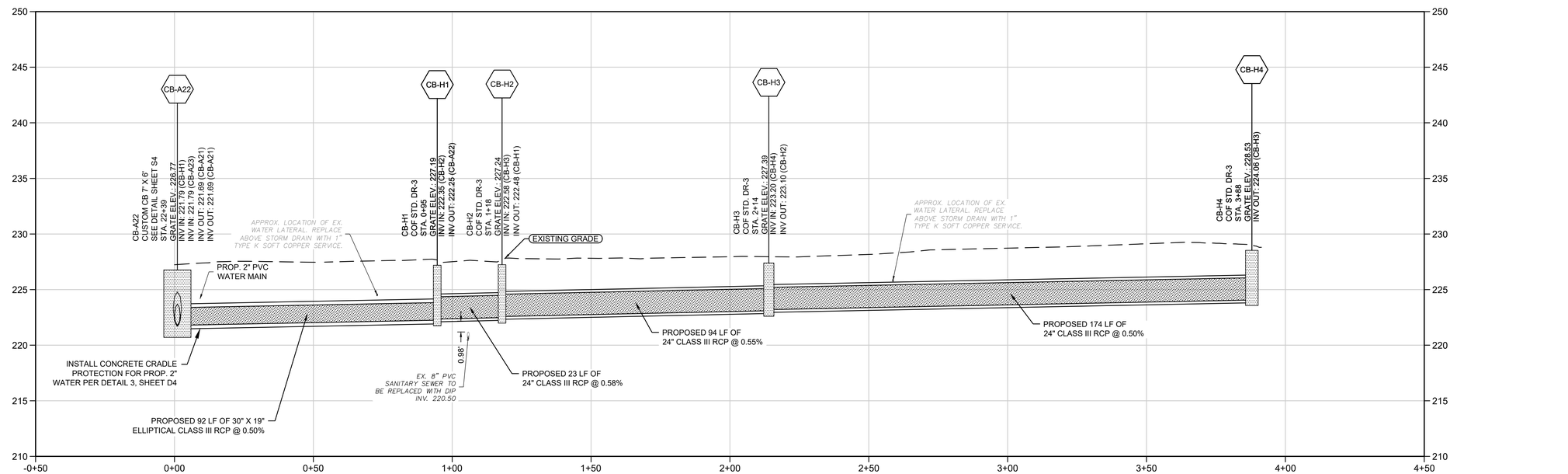
NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:36 PM

REV. #	REVISIONS DESCRIPTION	REV.BY DATE

DRAWN :	BFL	PROJECT	SUNBURY DRIVE
DESIGN :	TLM	NAME :	
CHECK :		SCALE :	1" = 20'
APPROVED :		DATE :	03-03-2022

PROJECT NO. 20200533.00.RA
SUB-LEDGER NO.





SD LINE H - STA. 0+00 TO STA. 3+86

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

SUNBURY DR. NW SPUR

PLAN TYPE: PLAN & PROFILE

SHEET NUMBER 9 OF 40

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NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:36 PM

REV. #	REVISIONS: DESCRIPTION	REV.BY DATE

		PROJECT	SUNBURY DRIVE
DRAWN :	BFL	NAME :	
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APPROVED :			

PROJECT NO. 20200533.00.RA
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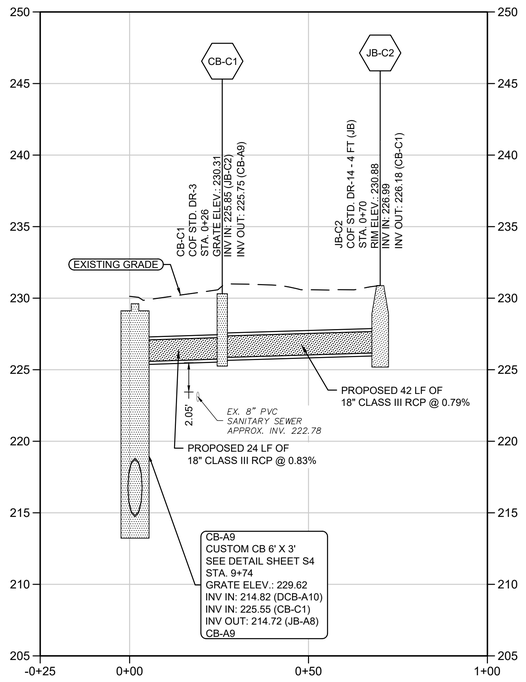
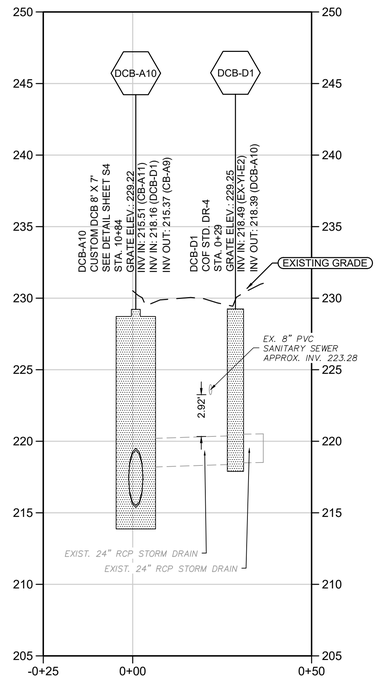


SD LINE C - STA. 0+00 TO STA. 0+70 (SHEET 5)

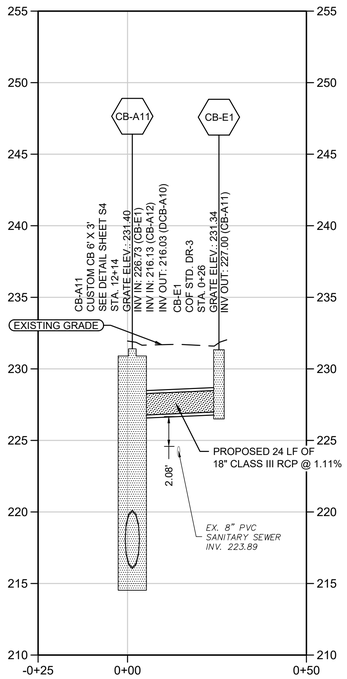
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL



SD LINE D - STA. 0+00 TO STA. 0+27 (SHEET 6)

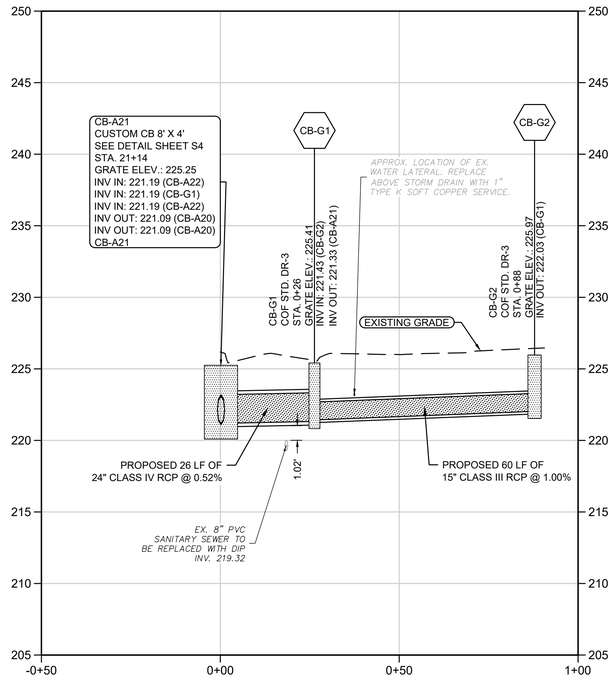
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

20 0 20 40
5 0 5 10
1 INCH = 20 FT HORIZ
1 INCH = 5 FT VERT



SD LINE E - STA. 0+00 TO STA. 0+27 (SHEET 6)

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL



SD LINE G - STA. 0+00 TO STA. 0+88 (SHEET 8)

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

20 0 20 40
5 0 5 10
1 INCH = 20 FT HORIZ
1 INCH = 5 FT VERT

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

STORM PROFILES

PLAN TYPE: PLAN SHEET

SHEET NUMBER: 10 OF 40

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NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:36 PM

REVISIONS:			
REV. #	DESCRIPTION	REV.BY	DATE

DRAWN :	BFL	PROJECT	SUNBURY DRIVE
DESIGN :	TLM	NAME :	
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APPROVED :		DATE :	03-03-2022

PROJECT NO. 20200533.00.RA

SUB-LEDGER NO. _____

EROSION CONTROL NOTES:

1. REFER TO GENERAL NOTES ON SHEET 3.

2. DISTURBED AREAS:
   STORM DRAINAGE IMPROVEMENTS
   TOTAL = 4.55 AC

3. ALL AREAS DISTURBED BY THE CONTRACTOR SHALL BE SEEDED PER THE VEGETATIVE PLAN.

4. REVIEW CONSTRUCTION SEQUENCE FOR ADDITIONAL EROSION CONTROL REQUIREMENTS.

5. CONSTRUCTION ACCESS AREAS SHOWN ARE TO GUIDE CONTRACTOR DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH ENGINEER IF ALTERNATIVE CONSTRUCTION ACCESS ROUTES WILL IMPROVE EFFICIENCY OF CONSTRUCTION.

EROSION CONTROL:

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

LEGEND

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

VEGETATIVE PLAN:

1. EROSION CONTROL MEASURES SHALL BE PROPERLY MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED. THE CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT THE END OF EACH WORKING DAY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
2. DISTURBED AREAS NOT AT FINAL GRADE AND LEFT IDLE SHALL BE TEMPORARILY VEGETATED PER THE GROUND STABILIZATION TABLE SHOWN ON SHEET EC2. SEEDING SHALL BE IN ACCORDANCE WITH SEEDING DETAILS ON SHEET EC5.
3. AFTER THE PERMANENT CESSATION OF CONSTRUCTION ACTIVITIES, ANY AREAS WITH TEMPORARY GROUND STABILIZATION SHALL BE CONVERTED TO PERMANENT GROUND STABILIZATION WITH SOD TO MATCH EXISTING GRASS TYPE AS RECOMMENDED AS SOON AS PRACTICABLE BUT IN NO CASE LONGER THAN 90 CALENDAR DAYS AFTER THE LAST LAND DISTURBING ACTIVITY.
4. ONCE PERMANENT VEGETATION AND EROSION CONTROL MEASURES ARE ESTABLISHED, THE CONTRACTOR SHALL SCHEDULE A FINAL INSPECTION IN ORDER TO CLOSE OUT THE PROJECT. AFTER APPROVAL, ALL REMAINING TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED.

MAINTENANCE PLAN:

THE CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES FOR CORRECT OPERATION AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF A RAIN EVENT GREATER THAN OR EQUAL TO 1.0 INCHES OF PRECIPITATION DURING ANY 24-HOUR PERIOD. ANY REQUIRED REPAIRS WILL BE MADE IMMEDIATELY BY THE CONTRACTOR TO MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES AS DESIGNED. INSPECTIONS BY THE CONTRACTOR MUST BE MADE AND LOGGED ON THE REQUIRED FORM. ALSO PER NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT, A RAIN GAUGE MUST BE INSTALLED ON AND KEPT ONSITE.

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

CONSTRUCTION SEQUENCE:

1. EROSION AND SEDIMENT CONTROL (E&SC) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES OCCUR. THE COC CAN BE OBTAINED BY FILLING OUT THE ELECTRONIC NOTICE OF INTENT (E-NOI) FORM AT DEQ.NC.GOV/NCG01. PLEASE NOTE, THE E-NOI FORM MAY ONLY BE FILLED OUT ONCE THE PLANS HAVE BEEN APPROVED. A COPY OF THE E&SC PERMIT, THE COC, AND A HARD COPY OF THE PLAN MUST BE KEPT ON SITE, PREFERABLY IN A PERMITS BOX, AND ACCESSIBLE DURING INSPECTION.
2. PLEASE NOTE THAT ANY CONSTRUCTION ACTIVITIES THAT HAVE AN ES&C PLAN APPROVED ON OR AFTER APRIL 1, 2019 ARE REQUIRED TO FILL OUT AND SUBMIT AN ELECTRONIC NOTICE OF INTENT (E-NOI) FORM. ALL CONSTRUCTION ACTIVITIES ARE REQUIRED TO FOLLOW THE NEW NCG01 PERMIT REGARDLESS OF WHEN THEY ARE APPROVED.
3. THE CITY OF FAYETTEVILLE SHALL CONDUCT THE PRE-CONSTRUCTION MEETING INCLUDING THE ENGINEER, THE CONTRACTOR'S SUPERINTENDENT, THE PROJECT INSPECTOR AND OTHER AFFECTED PARTIES. CALL THE CITY OF FAYETTEVILLE ENGINEERING DIVISION (910) 433-1656 TO SCHEDULE THE MEETING. A MINIMUM 24-HOUR NOTICE IS REQUIRED. NO PERSON MAY INITIATE A LAND DISTURBANCE ACTIVITY BEFORE NOTIFYING THE CITY OF THE DATE OF THE LAND DISTURBING ACTIVITY. COORDINATE WITH THE CITY ON NOTIFYING NCDEQ PER ITEM #4 BELOW.
4. CALL FAYETTEVILLE REGIONAL OFFICE LAND QUALITY SECTION AT 910-433-3300 TO SCHEDULE PRE-CON AND FOR NOTIFICATION OF PROJECT START UP.
5. A RAIN GAUGE WILL BE INSTALLED ON SITE & COPIES OF PLAN APPROVED BY NCDEQ, PLAN APPROVAL LETTER WITH ANY MODIFICATIONS OR PERFORMANCE RESERVATIONS, ANY 401/404 DOCUMENTATION, & A MINIMUM OF THE PAST 30 DAYS OF SELF-INSPECTION REPORTS WILL BE KEPT ON SITE UNTIL PROJECT IS CLOSED OUT BY DEMLR.
6. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE MAINTAINED UNTIL ALL UPGRADE DRAINAGE AREAS HAVE BEEN STABILIZED WITH THE ESTABLISHMENT OF PERMANENT VEGETATION.
7. TO FACILITATE IN CLEANUP OF PAVED SURFACES, A LAYER OF SAND, SCREENINGS OR FINES WILL BE PLACED BEFORE DEPOSITION OF ANY EXCAVATED MATERIAL OR USE BY EQUIPMENT/VEHICLES ASSOCIATED WITH THE PROJECT.
8. AT THE BEGINNING OF THE WORK, INSTALL AND STABILIZE THE GRAVEL CONSTRUCTION ENTRANCES/EXIT PATHS AT THE LOCATION OF THE WORK SITE. THE CONSTRUCTION ENTRANCES/EXIT PATHS SHALL BE INSTALLED AS SHOWN ON THE PLANS AND DETAILS OR AS DIRECTED BY THE PROJECT INSPECTOR.
9. AFTER ESTABLISHMENT OF THE GRAVEL CONSTRUCTION ENTRANCE/EXIT, ALL PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CLEARING AND GRUBBING/CONSTRUCTION INCLUDING SILT FENCE, SILT FENCE OUTLETS, TREE PROTECTION FENCE, CHECK DAMS, AND CONSTRUCTION FENCE. INSTALL INLET PROTECTION ON ALL INLETS WITHIN LIMITS OF DISTURBANCE. ONLY CLEAR/DISTURB THE MINIMUM AREAS NECESSARY TO INSTALL THE EROSION CONTROL MEASURES.
10. PRIOR TO CLEARING AND GRUBBING/CONSTRUCTION, THE CONTRACTOR SHALL REQUEST AN ON-SITE INSPECTION FROM THE PROJECT INSPECTOR. ONLY WITH PROJECT INSPECTOR APPROVAL, GRUBBING/CONSTRUCTION MAY BEGIN.
11. INSTALL RIFFLE GRADE CONTROL AND CLOSED STORM DRAINAGE SYSTEM WITH INLET PROTECTION, WATER SYSTEM AND SEWER SYSTEM. IN GENERAL, CONSTRUCTION WILL PROCEED FROM THE DOWNSTREAM TO THE UPSTREAM DIRECTION.
12. DURING EXCAVATION, DE-WATERING SHALL BE CONDUCTED AS NEEDED. DE-WATERING SHALL BE COMPLETED THROUGH USE OF PUMPS. WATER SHALL BE PUMPED AND OR DIRECTED TO EITHER SEDIMENT BASINS OR TO AN APPROVED SILT BAG PLACED INSIDE THE LIMITS OF CONSTRUCTION.
13. PERFORM GRADING AND UTILITY CONSTRUCTION OPERATIONS IN A MANNER AND SEQUENCE SO AS TO REDUCE UNNECESSARY DISTURBANCE OF SURFACE COVER AND TO MINIMIZE INTERRUPTIONS OF WATER AND SEWER SERVICE. PROVIDE TEMPORARY STABILIZATION OF DISTURBED AREAS PER SEEDING PLAN.
14. INSTALL CONCRETE WASHOUTS.
15. CONTRACTOR SHALL COMPLETE REMAINING WORK ITEMS INCLUDING UTILITIES, SIDEWALK, DRIVEWAY, CURB, PAVEMENT REPLACEMENT, MILL AND OVERLAY, FINAL GRADING, PLANTINGS, AND STABILIZATION.
16. WHEN THE PROJECT IS COMPLETE, THE PERMITTEE SHALL CONTACT DEMLR TO CLOSE OUT THE E&SC PLAN. AFTER DEMLR INFORMS THE PERMITTEE OF THE PROJECT CLOSE OUT, VIA INSPECTION REPORT, THE PERMITTEE SHALL VISIT DEQ.NC.GOV/NCG01 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.
17. ONLY WITH PROJECT INSPECTOR APPROVAL, REMOVE REMAINING EROSION CONTROL MEASURES.
18. ALL GROUND COVER TO BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR IN CRITICAL AREAS, AT THE END OF EACH DAY.
19. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. CONTRACTOR SHALL REMOVE ALL TEMPORARY CONTROL DEVICES ONCE CONSTRUCTION IS COMPLETE, THE SITE IS STABILIZED, AND ONLY WITH PROJECT INSPECTOR APPROVAL.

EROSION CONTROL PLAN INDEX

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: EROSION CONTROL
SHEET NUMBER: EC1 OF 40

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NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:37 PM

REVISIONS			
REV. #	DESCRIPTION	REV. BY	DATE

ISSUED FOR CONSTRUCTION

DRAWN :	BFL	PROJECT NAME :	SUNBURY DRIVE
DESIGN :	TLM	SCALE :	1" = 20'
CHECK :		DATE :	03-03-2022
APPROVED :			

PROJECT NO. 202005530.00.RA
SUB-LEDGER NO.

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

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

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

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

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

GROUND STABILIZATION SPECIFICATION

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

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

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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 inlets to 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 CLEARING 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.

PORTABLE 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 attainable, 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. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe 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.

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 wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

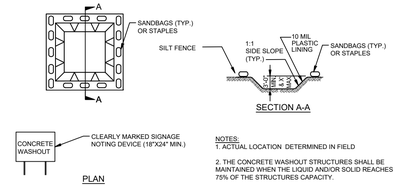
HAZARDOUS AND TOXIC WASTE

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.

CONCRETE WASHOUTS

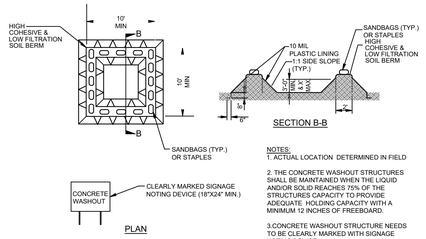
1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place 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 two 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 could 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 leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE



NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING | EFFECTIVE: 04/01/19

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet 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 have been met:

(a) The E&SC 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&SC 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)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

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

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

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC 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&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC 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&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC 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&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

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

3. 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 110.3 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) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours,*** an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible.*** The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***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(l)(7)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING | EFFECTIVE: 04/01/19

ISSUED FOR CONSTRUCTION

DRAWN : BFL
DESIGN : TLM
CHECK :
APPROVED :

PROJECT : SUNBURY DRIVE
NAME :
SCALE : 1" = 20'
DATE : 03-03-2022

PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.

REVISIONS

REV. #	DESCRIPTION	REV.BY	DATE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031455 THOMAS L. MURRAY
May 15 2024 6:37 PM

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: EROSION CONTROL

SHEET NUMBER EC2 OF 40

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
WWW.WKDICKSON.COM

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

NOTE:

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

40 0 40 80

1 INCH = 40 FT HORIZ

LEGEND

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

PROPOSED SILT SACK INLET PROTECTION PER DETAIL 3, SHEET EC5

TREE PROTECTION FENCE (IF ABLE TO PROTECT TREES) PER DETAIL 1, SHEET EC6

PLEASANT LOOP

PROPOSED CONCRETE WASHOUT PER DETAIL 2, SHEET EC6

PROPOSED CHECK DAM PER COF STD. DETAIL EC-6, SHEET EC5

PROPOSED SILT FENCE PER COF STD. DETAIL EC-5, SHEET EC5

PROPOSED SILT FENCE OUTLET PER DETAIL 1, SHEET EC5

SHERINGHAM DR. 50' PUBLIC R/W (P.B. 58, PG. 44)

PROPOSED SILT FENCE OUTLET

PROPOSED TEMPORARY EROSION CONTROL ENTRANCE PER COF STD. DETAIL EC-2, SHEET EC5

PROPOSED SILT FENCE OUTLET PER DETAIL 1, SHEET EC5

ROSEHILL RD. 60' PUBLIC R/W (P.B. 38, PG. 55)

PROPOSED CHECK DAM PER COF STD. DETAIL EC-6, SHEET EC5

REMOVE TREE (TYP.)

PROPOSED SILT SACK INLET PROTECTION PER DETAIL 3, SHEET EC5

MATCHLINE SEE SHEET EC4

NEEDHAM DR. 60' PUBLIC R/W (P.B. 38, PG. 55)

PROPOSED ROCK PIPE INLET PROTECTION PER DETAIL 2, SHEET EC5

PROPOSED SILT FENCE PER COF STD. DETAIL EC-5

PROPOSED TEMPORARY EROSION CONTROL ENTRANCE PER COF STD. DETAIL EC-2, SHEET EC5

PROPOSED CONCRETE WASHOUT PER DETAIL 2, SHEET EC6

ISSUED FOR CONSTRUCTION

DRAWN : BFL
DESIGN : TLM
CHECK :
APPROVED :

PROJECT
NAME : SUNBURY DRIVE
SCALE : 1" = 20'
DATE : 03-03-2022

PROJECT NO. 20200553.00.RA

SUB-LEDGER NO.

REVISIONS

REV. #	DESCRIPTION	REV. BY	DATE

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NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY

May 15 2024 6:37 PM

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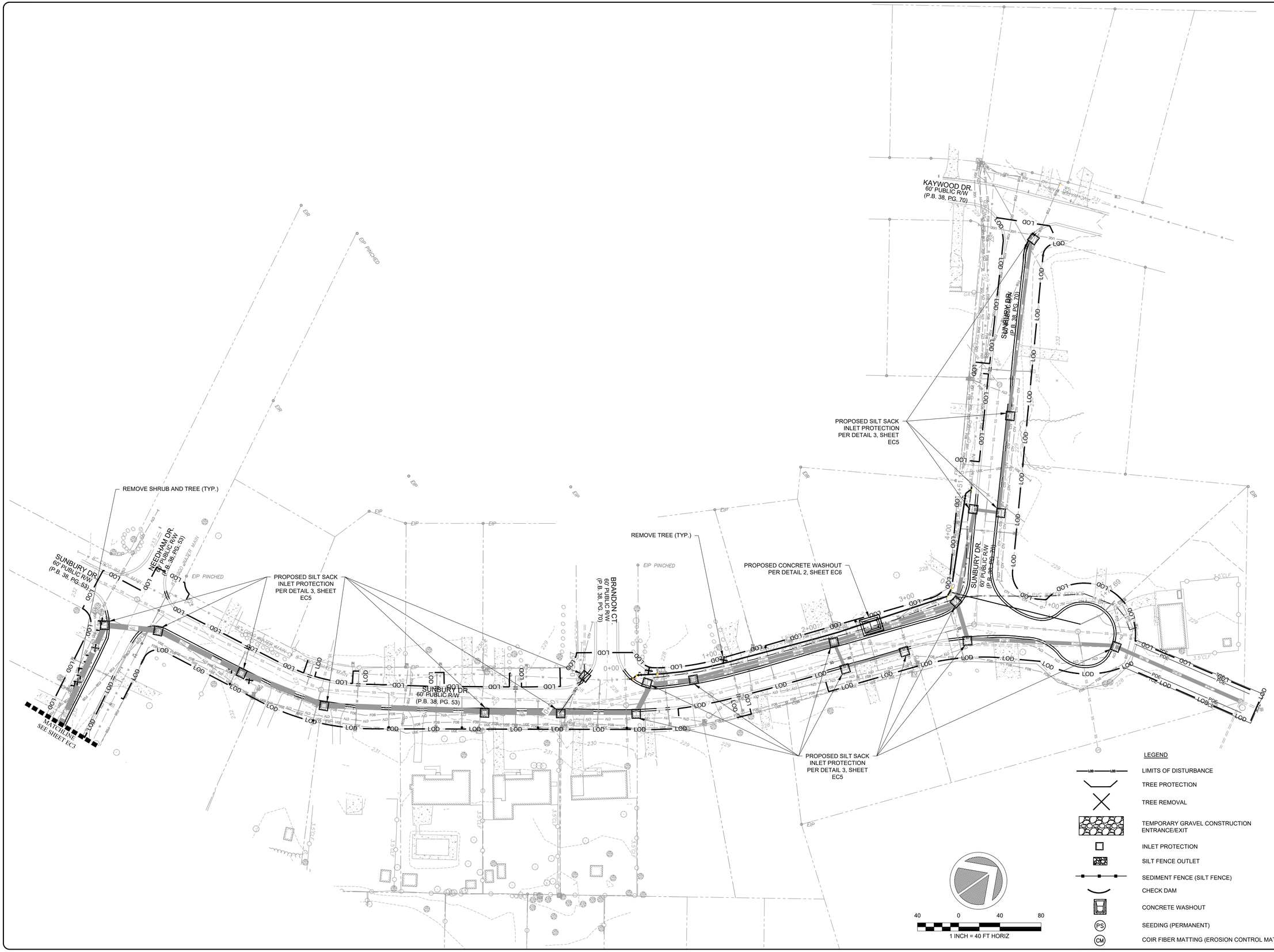
PUBLIC SERVICES
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28301

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: EROSION CONTROL

SHEET NUMBER EC3 OF 40



ISSUED FOR CONSTRUCTION

DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	

PROJECT
NAME : SUNBURY DRIVE
SCALE : 1" = 20'
DATE : 03-03-2022

PROJECT NO. 20200553.00.RA

SUB-LEDGER NO.

REV. #	DESCRIPTION	REV.BY	DATE

REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031455 THOMAS L. MURRAY
May 15 2024 6:38 PM

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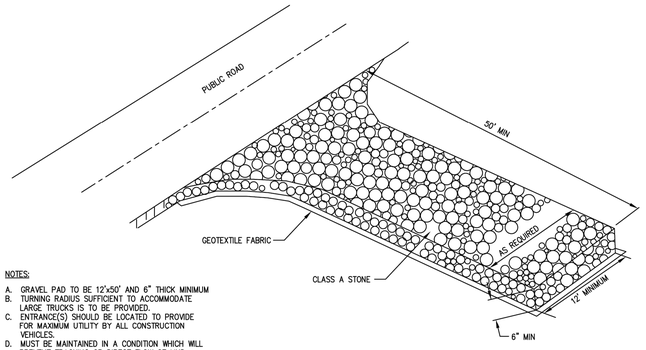
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28301

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: EROSION CONTROL

SHEET NUMBER EC4 OF 40



NOTES:

A. GRAVEL PAD TO BE 12'x50' AND 6" THICK MINIMUM
B. TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS IS TO BE PROVIDED.
C. ENTRANCE(S) SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES.
D. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE WILL BE NECESSARY, KEEP SOME HANDY.
E. ANY MATERIAL WHICH STILL MAKES IT ONTO THE ROAD MUST BE CLEANED UP IMMEDIATELY.
F. GEOTEXTILE FABRICS SHALL BE USED BENEATH STONE TO IMPROVE STABILITY OF THE FOUNDATION.
G. APPLICABLE AT ALL POINTS OF INGRESS & EGRESS UNTIL SITE IS STABILIZED. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE MUST BE PROVIDED.

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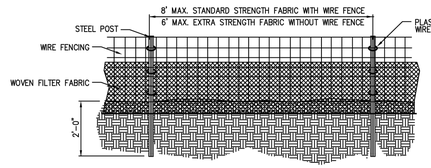
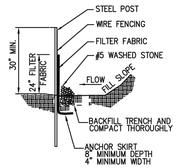
GRAVEL CONSTRUCTION ENTRANCE/EXIT

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

EC-2





GENERAL NOTES:

1. FILTER FABRIC FENCE SHALL BE A MINIMUM OF 32" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
2. WOVEN FILTER FABRIC BE USED WHERE SILT FENCE IS TO REMAIN FOR A PERIOD OF MORE THAN 30 DAYS.
3. STEEL POSTS SHALL BE 5'-0" IN HEIGHT AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE.
4. WIRE FENCING SHALL BE AT LEAST #10 GAGE WITH A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
5. TURN SILT FENCE UP SLOPE AT ENDS.
6. WIRE MESH SHALL BE MIN. 13 GAGE WITH MAXIMUM 12" OPENINGS.
7. WIRE AND WASHED STONE IS REQUIRED TO BE SHOWN ON PLANS AT THE TOE OF SLOPES GREATER THAN 10 FEET VERTICAL (2:1 SLOPE)
8. ORANGE SAFETY FENCE IS REQUIRED AT BACK OF SILT FENCE WHEN GRADING IS ADJACENT TO SWM BUFFERS, STREAMS OR WETLANDS THE COLOR ORANGE IS RESERVED FOR VISUAL IDENTIFICATION OF ENVIRONMENTALLY SENSITIVE AREAS.
9. DRAINAGE AREA CAN NOT BE GREATER THAN 1/4 ACRE PER 100 FT OF FENCE.
10. SLOPE LENGTHS CAN NOT EXCEED CRITERIA SHOWN IN TABLE 6.62A NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
11. DO NOT INSTALL SEDIMENT FENCE ACROSS STREAMS, DITCHES, WATERWAYS OR OTHER AREAS OF CONCENTRATED FLOW.

MAINTENANCE NOTES:

1. FILTER BARRIERS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

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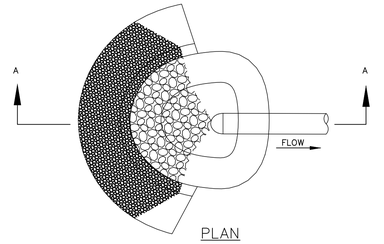
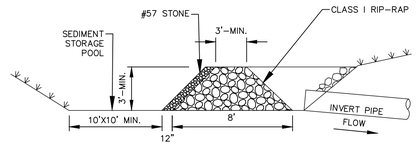
HIGH HAZARD TEMPORARY SILT FENCE

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

EC-5



PLAN

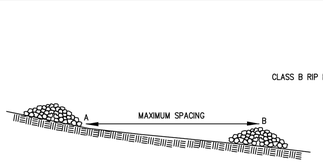


SECTION A-A

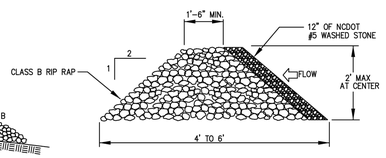
MAINTENANCE:

INSPECT ROCK PIPE INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING. CHECK THE STRUCTURE FOR DAMAGE. ANY RIPRAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY. AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND PROVIDE PERMANENT GROUND COVER.

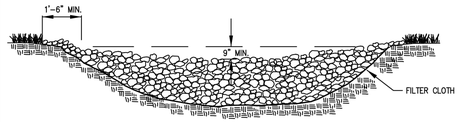
2 / EC5 — ROCK PIPE INLET PROTECTION
NTS



A AND B ARE AT EQUAL ELEVATIONS



CROSS SECTION



PLAN

GENERAL NOTES:

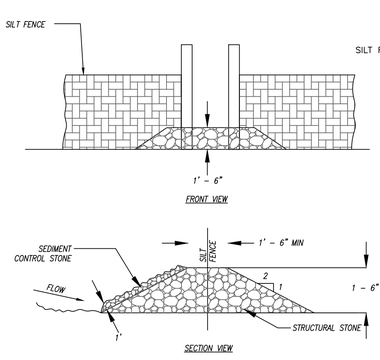
1. RIPRAP SIZE TO BE CLASS B RIPRAP
2. CHECK DAMS MAY BE USED IN SLOPING DITCHES OR CHANNELS TO SLOW VELOCITY OR TO CREATE SEDIMENT TRAPS.
3. ENSURE THAT MAXIMUM SPACING BETWEEN DAMS PLACES THE TOE OF THE UPSTREAM DAM AT THE SAME ELEVATION AS THE DOWNSTREAM DAM (SEE DIAGRAM BELOW).
4. REFER TO NCESCPDM SECTION #6.83 FOR ADDITIONAL SPECIFICATIONS.

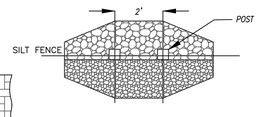
Fayetteville North Carolina
ENGINEERING DIVISION
433 HAY ST. 28301
(910) 433-1656
http://www.fayettevillenc.gov

TEMPORARY ROCK CHECK DAM

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

EC-6





TOP VIEW

NOTE:
STRUCTURAL STONE SHALL BE CLASS B RIP RAP STONE FOR EROSION CONTROL PURPOSES.

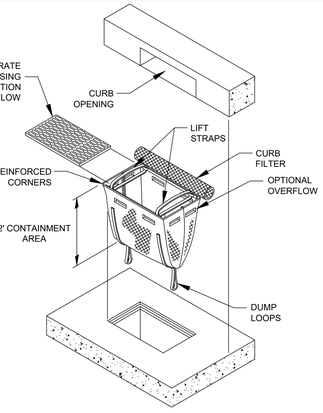
SEDIMENT CONTROL STONE IN STONE OUTLETS SHALL BE NO. 5 OR NO. 57 STONE.

LOCATIONS OF STONE OUTLETS HAVE BEEN INDICATED AT MAJOR LOW LYING AREAS. CONTRACTOR SHALL INSTALL OUTLETS AS SHOWN ON PLANS OR DIRECTED BY THE ENGINEER.

MAINTENANCE:
INSPECT THE SILT FENCE OUTFALL AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR ANY DAMAGE IMMEDIATELY. ADD STONES AS NEEDED TO MAINTAIN THE DESIGN HEIGHT AND CROSS-SECTION OF THE OVERFLOW DAM.

1 / EC5 — SILT FENCE OUTLET
NTS

SILT BAG CURB INLET FILTER
NOT TO SCALE



SILT SACK
NOT TO SCALE

3 / EC5 — TEMPORARY INLET PROTECTION
NOT TO SCALE

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

STABILIZATION TIMEFRAMES

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

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PERMANENT SEEDING SCHEDULE

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

EC-7

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

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TEMPORARY SEEDING SCHEDULE (SEASONAL)

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

EC-8

TEMPORARY SEEDING AND MULCHING FOR STREAM BANK STABILIZATION

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

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: EROSION CONTROL

SHEET NUMBER: EC5 OF 40

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
WWW.WKDICKSON.COM

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

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:39 PM

REV. #	DESCRIPTION	REV.BY DATE

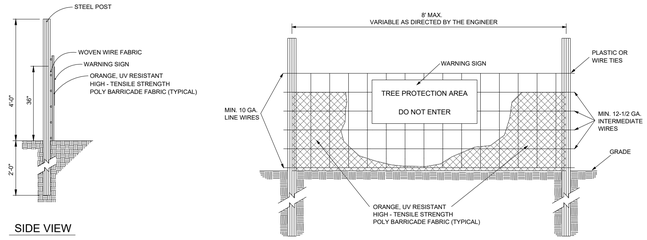
REVISIONS

ISSUED FOR CONSTRUCTION

PROJECT	SUNBURY DRIVE
NAME :	
SCALE :	1" = 20'
DATE :	03-03-2022
DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	

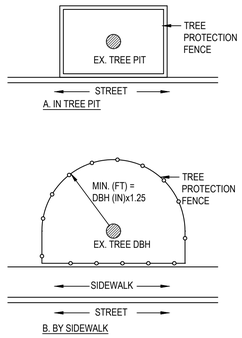
PROJECT NO. 20200553.00.RA

SUB-LEDGER NO.

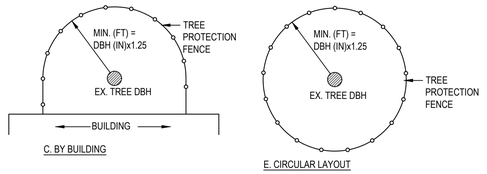


NOTES:

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



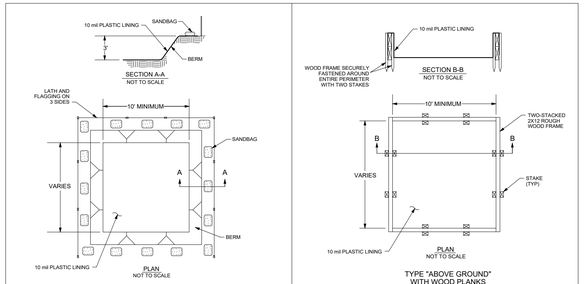
TREE PROTECTION FENCE LAYOUT



NOTES:

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

1 EC6 TEMPORARY TREE PROTECTION FENCE
NOT TO SCALE



NOTES:

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

2 EC6 CONCRETE WASHOUT
NOT TO SCALE

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: EROSION CONTROL

SHEET NUMBER EC6 OF 40

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
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FAYETTEVILLE NC
PUBLIC SERVICES
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28301

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY

May 15 2024 6:39 PM

REVISIONS		
REV. #	DESCRIPTION	REV.BY DATE

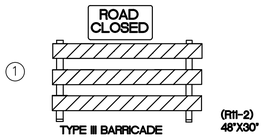
ISSUED FOR CONSTRUCTION

DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	

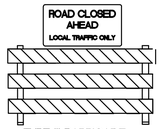
PROJECT	SUNBURY DRIVE
NAME :	
SCALE :	1" = 20'
DATE :	03-03-2022

PROJECT NO. 20200553.00.RA

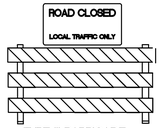
SUB-LEDGER NO.



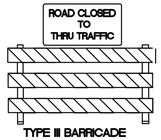
1 (R11-2) 48"X30"
TYPE III BARRICADE



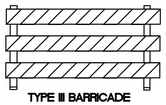
2 (R11-3A) 60"X30"
TYPE III BARRICADE



3 (R11-3A) 60"X30"
TYPE III BARRICADE

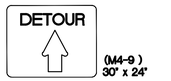


4 (R11-4) 60"X30"
TYPE III BARRICADE

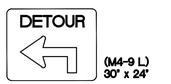


5
TYPE III BARRICADE

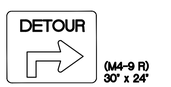
6 (M4-8 A) 48"x 18"



7 (M4-9) 30" x 24"



8 (M4-9 L) 30" x 24"

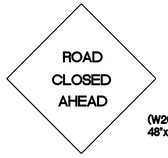


9 (M4-9 R) 30" x 24"

10 (W20-1) 48"x 48"

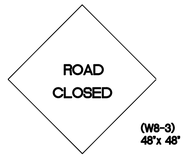
11 (M4-10 L) 36" x 12"

12 (M4-10 R) 36" x 12"

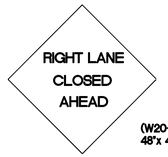


13 (W20-3) 48"x 48"

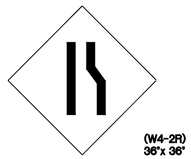
15 (W21-4) 30"x 30"



16 (W9-3) 48"x 48"

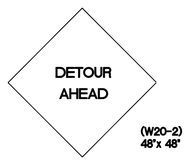


17 (W20-5R) 48"x 48"



18 (W4-2R) 36"x 36"

19 (W20-7A) 48"x 48"

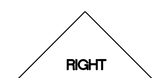


20 (W20-2) 48"x 48"

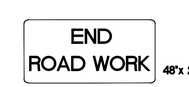
21 (SP-4R) 42" x 12"

22 (SP-4L) 42" x 12"

23



24 (W21-5A) 48"x 48"



25 48"x 24"

FAYETTEVILLE NC
PUBLIC SERVICES

Traffic Control Plans of Proposed

SUNBURY DRIVE DRAINAGE IMPROVEMENTS

GENERAL NOTES

ALL TRAFFIC CONTROL DEVICES AND PROCEDURES SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, THE NCDOT ROADWAY STANDARD DRAWINGS AND THE CURRENT EDITION OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

ADAPT THE TRAFFIC CONTROL PLANS, WHEN DIRECTED BY THE ENGINEER OR PROJECT INSPECTOR, TO MEET FIELD CONDITIONS TO PROVIDE SAFE AND EFFICIENT TRAFFIC MOVEMENT. CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL DEVICES.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER OR PROJECT INSPECTOR.

A) THE CONTRACTOR SHALL BE REQUIRED TO FURNISH, INSTALL, RELOCATE, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES, SIGNS, BARRICADES, WARNING AND/OR CHANNELIZING DEVICES FOR WORK SITES AND DETOUR ROUTES AS SHOWN IN TRAFFIC CONTROL PLANS UNLESS OTHERWISE SPECIFIED WITHIN THE TRAFFIC CONTROL PLANS. THE LOCATION AND POSITIONING OF THESE BARRICADES, SIGNS, ETC. SHALL BE APPROVED AND INSPECTED BY THE PROJECT INSPECTOR.

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

C) THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH THE PROJECT INSPECTOR PRIOR TO BEGINNING ANY WORK THAT WILL REQUIRE THE PLACEMENT OF SIGNS OR OTHER TRAFFIC CONTROL DEVICES BY THE CONTRACTOR. ALL INFORMATION MUST BE IN WRITING TO THE ENGINEER REGARDING THE TRAFFIC CONTROL PLAN. THE CONTRACTOR IS TO NOTIFY THE ENGINEER 10 WORKING DAYS IN ADVANCE OF ANY ROAD CLOSURE.

D) THE CONTRACTOR SHALL MARK ALL HAZARDS WITHIN THE LIMITS OF THE PROJECT WITH WELL-MAINTAINED SIGNS, BARRICADES, WARNING AND/OR CHANNELIZING DEVICES. ON CONNECTING ROADS, ALL BARRICADES, SIGNS, WARNING, AND/OR CHANNELIZING DEVICES SHALL BE MOVED, SUPPLEMENTED, CHANGED, OR REMOVED AS REQUIRED DURING THE PROGRESS OF CONSTRUCTION AS APPROVED BY THE ENGINEER.

E) THE CONTRACTOR SHALL PROVIDE PROPERTY OWNERS AND TENANTS ACCESS TO THEIR PROPERTY THROUGHOUT THE PROJECT, INCLUDING INGRESS AND EGRESS FOR BUSINESSES.

F) TRAFFIC CONTROL PLANS (TCP) FOR THIS PROJECT CONSIST OF SEVERAL TYPICAL DRAWINGS AND STANDARDS SHOWING TRAFFIC CONTROL DEVICES TO BE USED WHERE VARIOUS TYPES OF CONSTRUCTION ACTIVITIES ARE OCCURRING ON THE PROJECT. THESE DRAWINGS ARE FOR TYPICAL SITUATIONS AND SHOULD BE ADAPTED TO THE ACTUAL FIELD CONDITIONS. UNFORESEEN FIELD SITUATIONS MAY PREVENT THE USE OF THE PRESCRIBED TYPICAL DRAWING OR STANDARD EXACTLY AS SHOWN. THE CONTRACTOR, AT THE DIRECTION OF THE ENGINEER, SHALL MOVE, SUPPLEMENT, CHANGE, AND/OR REMOVE THE TRAFFIC CONTROL DEVICES ASSOCIATED WITH THESE TYPICAL DRAWINGS AND/OR STANDARD DRAWINGS TO ENSURE THAT THE MOTORIST CAN PASS THROUGH THE CONSTRUCTION AREA IN A SAFE AND EFFICIENT MANNER.

G) CONSTRUCTION PHASING MAY DICTATE THAT TWO OR MORE TYPICAL DRAWINGS OR STANDARDS BE USED IN ONE AREA OF CONSTRUCTION. CHANNELIZING DEVICES ASSOCIATED WITH THESE TYPICALS SHALL BE MOVED, SUPPLEMENTED, CHANGED, OR REMOVED AS REQUIRED BY THE CONSTRUCTION PHASING OF THE PLANS. THE LOCATION AND POSITIONING OF THESE DEVICES SHALL BE APPROVED BY THE ENGINEER TO ENSURE THAT THE MOTORIST DOES NOT RECEIVE FALSE INFORMATION WHEN TWO OR MORE TYPICALS AND/OR ROADWAY STANDARD DRAWINGS OVERLAP.

H) TEMPORARY OPERATIONAL SIGNS ARE GENERALLY MOUNTED ON PORTABLE SUPPORTS. THESE ARE NORMALLY USED FOR SHORT-TERM OPERATIONS TO WARN AND GUIDE TRAFFIC THROUGH OR AROUND CONSTRUCTION AREAS WITHIN A CONSTRUCTION ZONE. OPERATIONAL SIGNS SHALL BE INSTALLED PRIOR TO THE START OF OPERATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SIGNS SHALL BE MAINTAINED IN PROPER POSITION AND KEPT CLEAN AND LEGIBLE AT ALL TIMES. INSTALL SAND BAG BALLAST, OR OTHER APPROVED DEVICES TO PREVENT MOVEMENT OF SIGNS BY WIND OR PASSING VEHICLES AS NEEDED, SIGNS SHALL BE REMOVED WHEN NOT APPLICABLE. THE BOTTOM OF THE SIGN SHALL BE A MINIMUM OF 1 FOOT ABOVE THE PAVEMENT SURFACE.

I) WORK ON THE PROJECT OR ANY SEPARATE ACTIVITY THEREIN SHALL NOT START UNTIL ALL OF THE REQUIRED SIGNS, BARRICADES, WARNING, AND/OR CHANNELIZING DEVICES ARE INSTALLED, INSPECTED AND APPROVED BY THE PROJECT INSPECTOR AND PERMITS HAVE BEEN ACQUIRED.

J) ANY EXISTING PAVEMENT MARKINGS DETERMINED BY THE ENGINEER TO BE MISLEADING OR IN CONFLICT WITH THE TRAFFIC CONTROL PLAN SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR PRIOR TO PROCEEDING WITH ANY CONSTRUCTION ACTIVITY.

K) ALL TEMPORARY PAVEMENT MARKINGS APPLIED BY THE CONTRACTOR SHALL BE IN PAINT UNLESS OTHERWISE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS.

L) THE CONTRACTOR MUST BE PREPARED TO PROVIDE FLAGGERS DURING CONSTRUCTION ACTIVITY. FLAGGERS ARE TO BE INCIDENTAL TO TRAFFIC CONTROL.

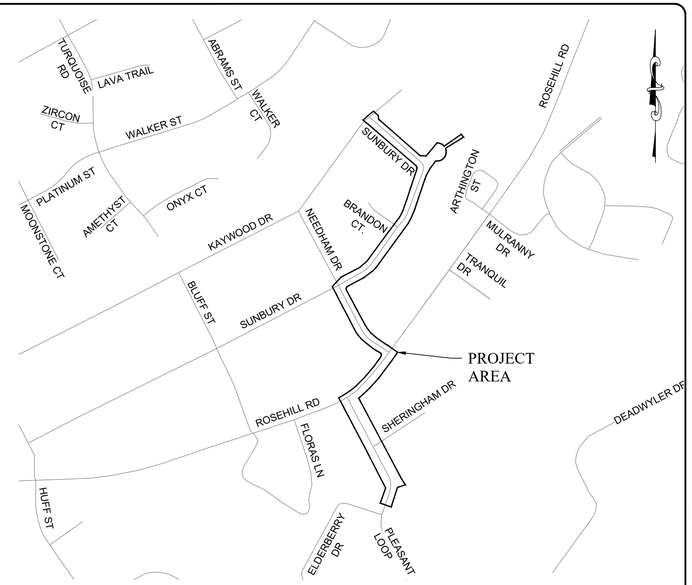
M) FLAGGERS' ATTIRE SHALL INCLUDE A FLUORESCENT ORANGE VEST, SHIRT, OR JACKET WORN AS THE OUTER LAYER OF CLOTHING. THE FLAGGER SHALL BE EQUIPPED WITH A STOP/SLOW PADDLE (SEE MUTCD, PART VI, SECTION 6E, PAGE 6E-1). RED FLAGS WILL BE ACCEPTABLE IN LIEU OF THE PADDLE IN EMERGENCY SITUATIONS ONLY. FLAGGERS, PROPERLY EQUIPPED AND INSTRUCTED, WILL BE PROVIDED BY THE CONTRACTORS AND STATIONED AT THE LOCATIONS SPECIFIED OR AS DIRECTED BY THE ENGINEER. A FLUORESCENT ORANGE CAP MAY BE REQUIRED.

N) DO NOT WORK SIMULTANEOUSLY, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.

O) ENSURE ALL NECESSARY SIGNING AND DEVICES ARE IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

P) ONCE THE CONTRACTOR STARTS A PHASE, WORK SHALL CONTINUE IN A CONTINUOUS MANNER UNTIL COMPLETE.

Q) CONTRACTOR SHALL COORDINATE/NOTIFY PWC & CITY TRAFFIC SERVICES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AS TO WHICH STREETS WILL BE UNDER CONSTRUCTION IMPEDING TRAFFIC FLOW THE FOLLOWING DAY.



VICINITY MAP
NTS

TRAFFIC CONTROL NOTES

1. PROJECT NOTES ARE NOT INTENDED TO BE USED AS GENERAL NOTES FOR THE PROJECT. THEY ARE TO BE USED AT SPECIFIC LOCATIONS AS REQUIRED BY THE DETAILS OF THE TRAFFIC CONTROL PLANS.
2. TRAFFIC CONTROL DEVICES SHALL BE LOCATED NO CLOSER THAN 5 FT. TO A TRENCH AT EXISTING GRADE, MEASURED FROM THE SIDE FACING TRAFFIC.
3. MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES SHALL BE 20 FT. IN TANGENT AREAS, 20 FT. IN TAPERS, AND 10 FT. IN RADII UNLESS OTHERWISE INDICATED ON THE PLANS.
4. WHEN USING TYPE III BARRICADES WITH "ROAD CLOSED" SIGN ATTACHED, BARRICADES SHALL BE OF SUFFICIENT LENGTH TO CLOSE ROADWAY.
5. WHEN USING TYPE III BARRICADES WITH "ROAD CLOSED TO THRU TRAFFIC" SIGN ATTACHED, BARRICADES SHALL BE OF SUFFICIENT LENGTH TO CLOSE 1/2 ROADWAY. CONTRACTOR SHOULD BE AWARE THAT WHEN THE CONSTRUCTION AREA IS IN OR NEAR A VERTICAL CREST OR HORIZONTAL CURVE, THE WORK AREA SHALL BE EXTENDED SO THAT LANE CLOSURE BEGINS IN ADVANCE OF THE CURVE AND MINIMUM STOPPING SIGHT DISTANCE IS MET.
6. WHEN TRAFFIC PROCEEDS THROUGH OR ADJACENT TO CONSTRUCTION ACTIVITY OR A WORK ZONE, FLAGGER(S) AND FLAGGER SYMBOL SIGN(S) (W20-7A) SHALL BE USED AS DIRECTED BY THE PROJECT INSPECTOR TO SLOW AND/OR STOP TRAFFIC AND DIRECT IT THROUGH THE WORK AREA. SIGN W20-7A SHALL NOT BE DISPLAYED EXCEPT WHEN FLAGGER IS PRESENT.
7. THE CONTRACTOR SHALL MAINTAIN A SMOOTH TRANSITION FROM EXISTING PAVEMENT TO PROPOSED PAVING OPERATION.
8. INSTALL ADVANCE WARNING DEVICES FOR FULL LANE CLOSURE.
9. CONTRACTOR SHALL SUPPLY AND INSTALL ALL TEMPORARY PAVEMENT MARKINGS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
10. THE CONTRACTOR SHALL FOLLOW THE PHASING AS DESCRIBED HEREIN. THE CONTRACTOR SHALL COMPLETE THE REQUIREMENTS OF EACH CONSTRUCTION PHASE IN SEQUENCE. WHEN A CONSTRUCTION PHASE IS DIVIDED INTO STEPS, THE CONTRACTOR SHALL COMPLETE THE REQUIREMENTS OF EACH STEP IN SEQUENCE. (EXAMPLE: THE REQUIREMENTS OF PHASE I SHALL BE COMPLETED BEFORE PROCEEDING TO PHASE II; THE REQUIREMENTS OF STEP 1 OF PHASE I SHALL BE COMPLETED BEFORE PROCEEDING TO STEP 2 OF PHASE I). ALL WORK DESCRIBED IN THE PROJECT PHASING SHALL BE PERFORMED BY THE CONTRACTOR, EXCEPT WHERE IT IS SPECIFIED FOR CERTAIN WORK TO BE PERFORMED BY OTHERS. THE CONTRACTOR MAY FOLLOW ANOTHER CONSTRUCTION SEQUENCE PROVIDED THE PLAN HAS BEEN APPROVED IN WRITING PRIOR TO IMPLEMENTING THE PLAN.
11. AT NIGHT AND DURING PERIODS OF CONSTRUCTION INACTIVITY, THE DIFFERENCE IN ELEVATION BETWEEN LANES SHALL NOT EXCEED 1 INCH.
12. FLAGGER(S) AND FLAGGER AHEAD SYMBOL SIGN(S) W20-7A MAY BE REQUIRED TO DIRECT TRAFFIC THROUGH CONSTRUCTION ZONE DURING PAVEMENT DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
13. THE CONTRACTOR SHALL REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
14. THE CONTRACTOR SHALL REPLACE ANY EXISTING PAVEMENT MARKINGS WHICH HAVE BEEN OBLITERATED BY CONSTRUCTION ACTIVITIES AT THE END OF THE PROJECT CONSTRUCTION.
15. IF AN OPEN TRENCH OR A DIFFERENCE IN GRADE BETWEEN LANES GREATER THAN 1 INCH IS TO REMAIN OVERNIGHT, BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE OR USE TRAFFIC BEARING STEEL PLATES.
16. INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL BUSINESSES AND DWELLINGS AFFECTED BY THE PROJECT. SPECIAL ATTENTION SHALL BE PAID TO FIRE HYDRANTS.
17. PROTECTION OF PIT DURING EXCAVATION AND AT ALL TIMES WHILE IT IS OPEN SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
18. TRAFFIC CONTROL IN ACCORDANCE WITH NCDOT REQUIREMENTS AND MUTCD MUST BE ADHERED TO WHILE EXCAVATING THE PIT AND REMOVING ALL SHORING AND BACKFILLING.

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

SHEET NUMBER TC1 OF 40

PLAN TYPE: TRAFFIC CONTROL

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031455 THOMAS L. MURRAY
May 15 2024 6:42 PM

REV. #	DESCRIPTION	REV. BY	DATE

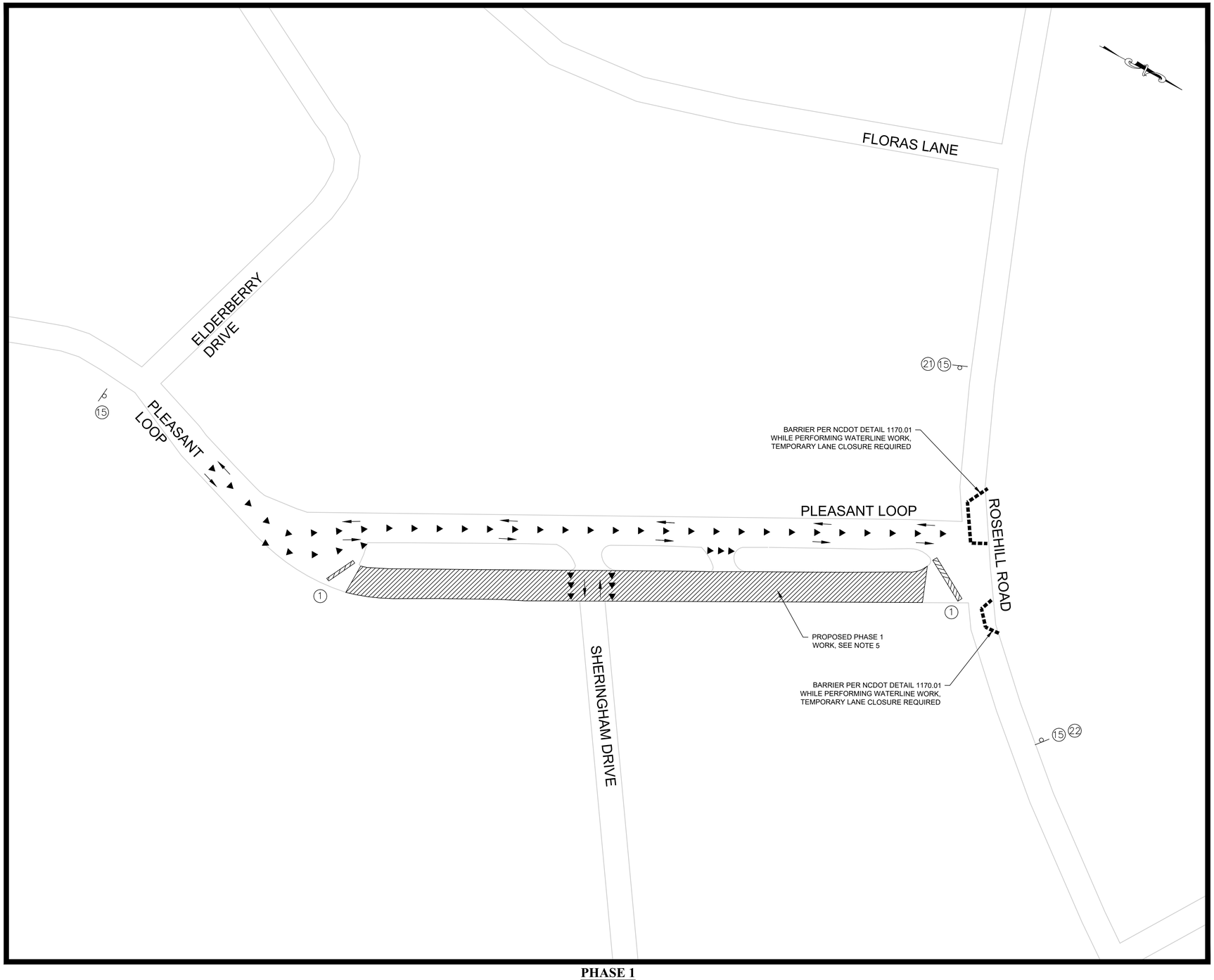
REVISIONS

ISSUED FOR CONSTRUCTION

DRAWN :	BTL
DESIGN :	TLM
CHECK :	
APPROVED :	
PROJECT NAME :	SUNBURY DRIVE
SCALE :	1" = 20'
DATE :	03-03-2022

PROJECT NO. 20200553.00.RA

SUB-LEDGER NO.



PHASE 1
PLEASANT LOOP NORTH BOUND LANE CLOSURE

TRAFFIC CONTROL NOTES

1. REFER TO TRAFFIC CONTROL NOTES AND SIGN LEGEND ON SHEET TC1.
2. DIAGRAM SHOWN FOR REPRESENTATIONAL PURPOSES ONLY. REFER TO SHEET TC5 FOR FOR SIGN SPACING AND FURTHER INFORMATION.
3. ALL DETOUR SIGNS FOR PHASE 2 ROAD CLOSURE TO INCLUDE SIGN "NEEDHAM DRIVE".
4. ALL DETOUR SIGNS FOR PHASE 3 ROAD CLOSURE TO INCLUDE SIGN "SUNBURY DRIVE".
5. UNLESS OTHERWISE INDICATED, CONTRACTOR SHALL MAINTAIN ACCESS FOR PROPERTY OWNERS AT ALL TIMES.
6. DURING PHASE 1 WORK, ACCESS TO SHERINGHAM DRIVE SHALL BE MAINTAINED AT ALL TIMES AND INTERRUPTIONS SHALL BE MINIMIZED TO THE MAXIMUM EXTENT POSSIBLE.
7. DURING PHASE 2 WORK, BARRIER SHALL BE PROVIDED WHILE PERFORMING WORK IN INTERSECTION OF NEEDHAM DRIVE AND ROSEHILL ROAD. ONCE WORK IS COMPLETED IN INTERSECTION AREA, AND ONLY WITH APPROVAL OF INSPECTOR, BARRIER SHALL BE REMOVED AND REPLACED WITH TYPE III BARRICADE.

PHASE 1 DESCRIPTION OF WORK

PHASE 1 OF WORK EXTENDS ALONG PLEASANT LOOP FROM SOUTH OF INTERSECTION WITH SHERINGHAM DRIVE TO INTERSECTION WITH ROSEHILL ROAD. WORK INCLUDES INSTALLATION OF DRAINAGE SYSTEM REPLACEMENT, WATER LINE REPLACEMENT, SANITARY SEWER REPLACEMENT, AND PAVEMENT REPLACEMENT.

LEGEND

TRAFFIC CONTROL DEVICES

- PHASE WORK AREA
- TYPE III BARRICADE
- BARRIER, NCDOT DETAIL 1170.01, SHEET TC5
- DETOUR ROUTE (ARROWS INDICATE DIRECTION OF TRAVEL)
- DRUM
- CONE
- FLAGGER
- STATIONARY OR PORTABLE SIGN

40 0 40 80
SCALE: 1" = 40'

ISSUED FOR CONSTRUCTION

DRAWN : BFL
DESIGN : TLM
CHECK :
APPROVED :

PROJECT
NAME : SUNBURY DRIVE
SCALE : 1" = 20'
DATE : 03-03-2022

PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.

REVISIONS

REV. #	DESCRIPTION	REV.BY	DATE

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:43 PM

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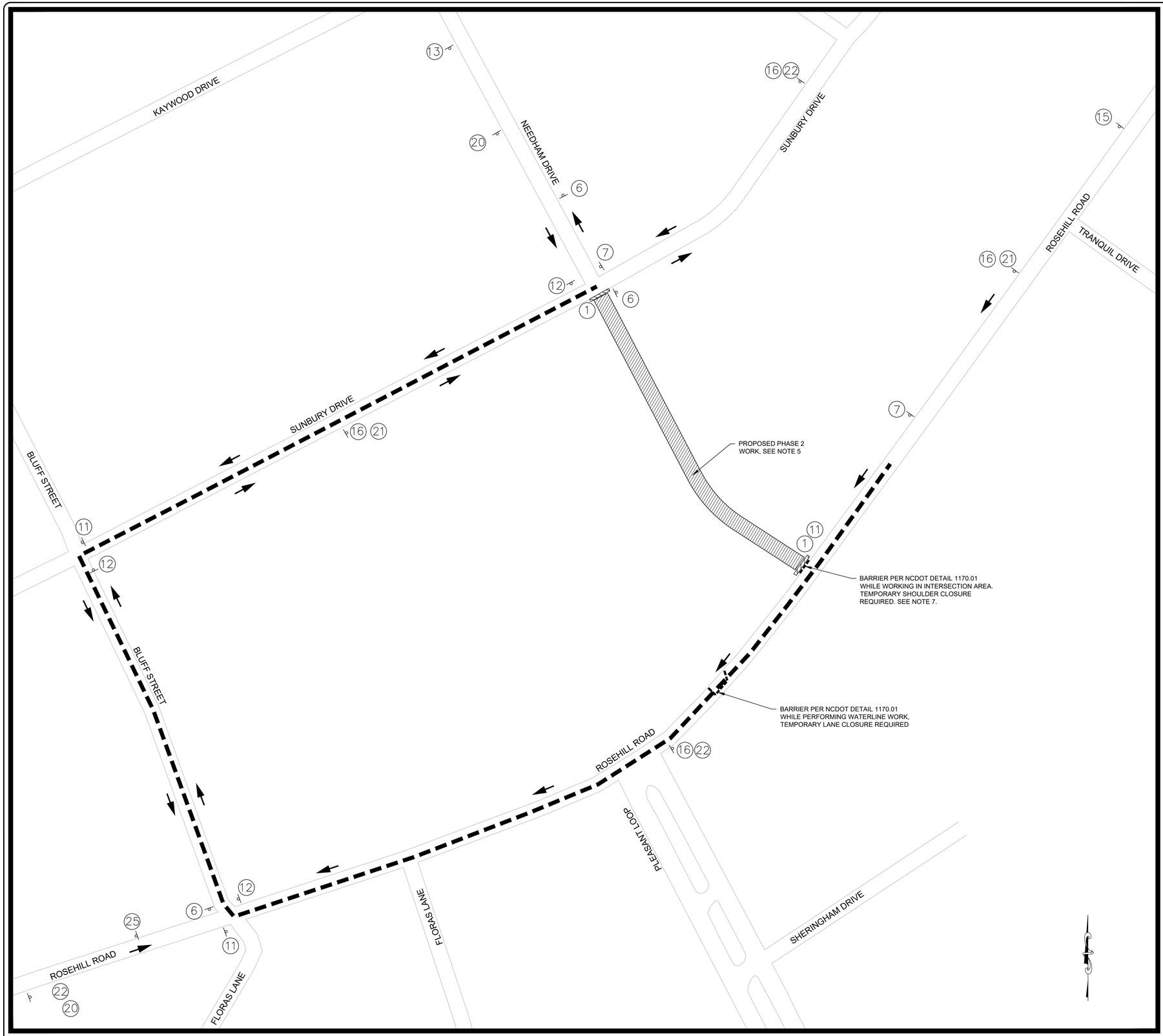
SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: TRAFFIC CONTROL - PHASE 1

SHEET NUMBER TC2 OF 40



PHASE 2
NEEDHAM DRIVE ROAD CLOSURE

TRAFFIC CONTROL NOTES

1. REFER TO TRAFFIC CONTROL NOTES AND SIGN LEGEND ON SHEET TC1.
2. DIAGRAM SHOWN FOR REPRESENTATIONAL PURPOSES ONLY. REFER TO SHEET TC5 FOR FOR SIGN SPACING AND FURTHER INFORMATION.
3. ALL DETOUR SIGNS FOR PHASE 2 ROAD CLOSURE TO INCLUDE SIGN "NEEDHAM DRIVE".
4. ALL DETOUR SIGNS FOR PHASE 3 ROAD CLOSURE TO INCLUDE SIGN "SUNBURY DRIVE".
5. UNLESS OTHERWISE INDICATED, CONTRACTOR SHALL MAINTAIN ACCESS FOR PROPERTY OWNERS AT ALL TIMES.
6. DURING PHASE 1 WORK, ACCESS TO SHERINGHAM DRIVE SHALL BE MAINTAINED AT ALL TIMES AND INTERRUPTIONS SHALL BE MINIMIZED TO THE MAXIMUM EXTENT POSSIBLE.
7. DURING PHASE 2 WORK, BARRIER SHALL BE PROVIDED WHILE PERFORMING WORK IN INTERSECTION OF NEEDHAM DRIVE AND ROSEHILL ROAD. ONCE WORK IS COMPLETED IN INTERSECTION AREA, AND ONLY WITH APPROVAL OF INSPECTOR, BARRIER SHALL BE REMOVED AND REPLACED WITH TYPE III BARRICADE.

PHASE 2 DESCRIPTION OF WORK

PHASE 2 OF WORK EXTENDS ALONG NEEDHAM DRIVE FROM INTERSECTION WITH ROSEHILL ROAD TO INTERSECTION WITH SUNBURY DRIVE. WORK INCLUDES INSTALLATION OF DRAINAGE SYSTEM REPLACEMENT, WATER LINE REPLACEMENT, SANITARY SEWER REPLACEMENT, AND PAVEMENT REPLACEMENT.

LEGEND

TRAFFIC CONTROL DEVICES

- PHASE WORK AREA
- TYPE III BARRICADE
- BARRIER, NCDOT DETAIL 1170.01, SHEET TC5
- DETOUR ROUTE (ARROWS INDICATE DIRECTION OF TRAVEL)
- DRUM
- CONE
- FLAGGER
- STATIONARY OR PORTABLE SIGN

60 0 60 120
SCALE: 1" = 60'

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: TRAFFIC CONTROL - PHASE 2
SHEET NUMBER: TC3 OF 40

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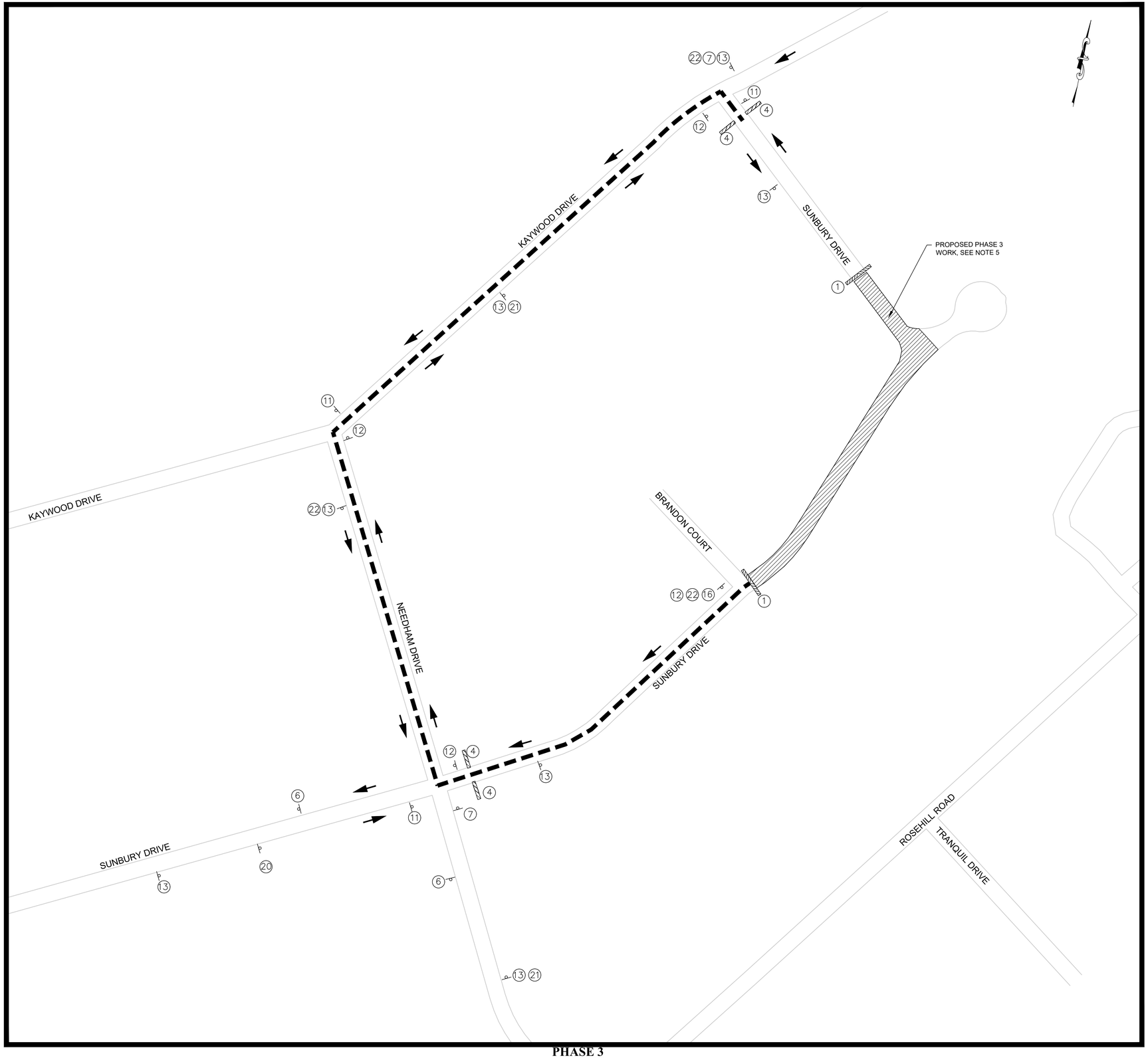
NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:43 PM

REV. #	DESCRIPTION	REV.BY DATE

DRAWN :	BFL	PROJECT	SUNBURY DRIVE
DESIGN :	TLM	NAME :	
CHECK :		SCALE :	1" = 20'
APPROVED :		DATE :	03-03-2022

PROJECT NO. 202200553.00.RA
SUB-LEDGER NO.



PHASE 3
SUNBURY DRIVE ROAD CLOSURE

TRAFFIC CONTROL NOTES

1. REFER TO TRAFFIC CONTROL NOTES AND SIGN LEGEND ON SHEET TC1.
2. DIAGRAM SHOWN FOR REPRESENTATIONAL PURPOSES ONLY. REFER TO SHEET TC5 FOR FOR SIGN SPACING AND FURTHER INFORMATION.
3. ALL DETOUR SIGNS FOR PHASE 2 ROAD CLOSURE TO INCLUDE SIGN "NEEDHAM DRIVE".
4. ALL DETOUR SIGNS FOR PHASE 3 ROAD CLOSURE TO INCLUDE SIGN "SUNBURY DRIVE".
5. UNLESS OTHERWISE INDICATED, CONTRACTOR SHALL MAINTAIN ACCESS FOR PROPERTY OWNERS AT ALL TIMES.
6. DURING PHASE 1 WORK, ACCESS TO SHERINGHAM DRIVE SHALL BE MAINTAINED AT ALL TIMES AND INTERRUPTIONS SHALL BE MINIMIZED TO THE MAXIMUM EXTENT POSSIBLE.
7. DURING PHASE 2 WORK, BARRIER SHALL BE PROVIDED WHILE PERFORMING WORK IN INTERSECTION OF NEEDHAM DRIVE AND ROSEHILL ROAD. ONCE WORK IS COMPLETED IN INTERSECTION AREA, AND ONLY WITH APPROVAL OF INSPECTOR, BARRIER SHALL BE REMOVED AND REPLACED WITH TYPE III BARRICADE.

PHASE 3 DESCRIPTION OF WORK

PHASE 3 OF WORK EXTENDS ALONG SUNBURY DRIVE FROM INTERSECTION WITH BRANDON COURT TO JUST WEST OF SUNBURY DRIVE CUL-DE-SAC. WORK INCLUDES INSTALLATION OF DRAINAGE SYSTEM REPLACEMENT, WATER LINE REPLACEMENT, SANITARY SEWER REPLACEMENT, AND PAVEMENT REPLACEMENT.

LEGEND

TRAFFIC CONTROL DEVICES

- PHASE WORK AREA
- TYPE III BARRICADE
- BARRIER, NCDOT DETAIL 1170.01, SHEET TC5
- DETOUR ROUTE (ARROWS INDICATE DIRECTION OF TRAVEL)
- DRUM
- CONE
- FLAGGER
- STATIONARY OR PORTABLE SIGN

60 0 60 120
SCALE: 1" = 60'

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: TRAFFIC CONTROL - PHASE 3

SHEET NUMBER: TC4 OF 40

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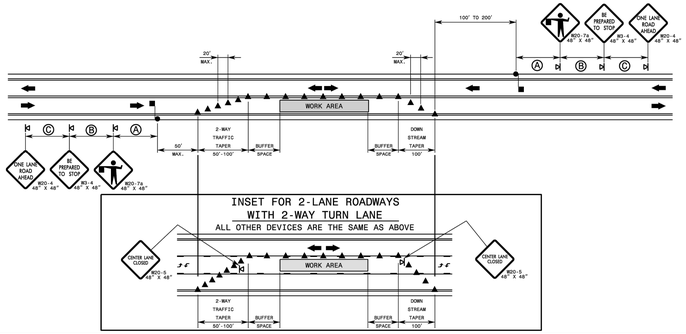
NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:44 PM

REV. #	DESCRIPTION	REV.BY DATE

REVISIONS

DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	
PROJECT NAME :	SUNBURY DRIVE
SCALE :	1" = 20'
DATE :	03-03-2022

PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.



GENERAL NOTES FOR FLAGGING OPERATIONS

1- REFER TO RSD. 1101.11, SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.

2- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.

3- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.

4- PLACE CONES THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.

5- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO RSD. 1101.11, SHEET 2).

6- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.

7- DRUMS OR SKINNY DRUMS MAY BE USED IN LIEU OF CONES. REFER TO RSD. 1180.01 FOR SKINNY DRUM REQUIREMENTS.

8- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH PORTABLE AHEAD SIGNS (W20-7a) SPACED APPROXIMATELY 1000' APART ALONG THE LANE CLOSURE. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND USE LAW ENFORCEMENT.

9- REFER TO THE CURRENT MUTCD FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.

10- DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

11- IF VEHICLE QUEUES WILL REACH WITHIN 15' OF EITHER SIDE OF ACTIVE RAILROAD TRACKS, PROVIDE A UNIFORMED LAW ENFORCEMENT OFFICER OR FLAGGER TO PREVENT VEHICLES FROM STOPPING WITHIN THE GRADE CROSSING. PROVIDE OFFICER OR FLAGGER EVEN IF AUTOMATIC WARNING MEASURES ALREADY EXIST.

GENERAL NOTES FOR PILOT CAR OPERATIONS

1- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.

2- IF ROADWAY WIDTH IS LESS THAN 22 FEET (EOP TO EOP), CONES MAY NOT BE REQUIRED ALONG WORK AREA, AND AT THE DISCRETION OF THE ENGINEER, CONES MAY BE OMITTED ALONG THE WORK AREA IF USING A PILOT CAR.

3- CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS.

4- MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A CONSPICUOUS POSITION ON THE REAR OF THE PILOT VEHICLE.

5- DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.

6- ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE LIMITS ABOUT METHODS OF SAFE EGRESS AND INGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

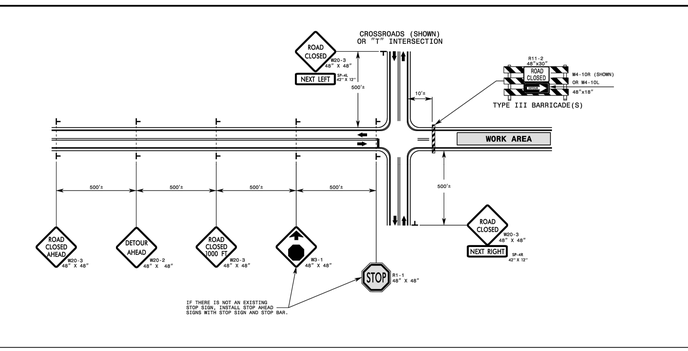
LEGEND
- FLAGGER
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

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

1-18

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

SHEET 1 OF 14
1101.02



GENERAL NOTES

1- IF NECESSARY USE THIS RSD. FOR CROSS-ROADS AS SHOWN OR FOR "T" INTERSECTIONS ON 2-LANE, 2-WAY AND MULTILANE UNDIVIDED AND DIVIDED ROADWAYS.

2- INSTALLATION OF DETOUR ROUTING PANELS, TEMPORARY ROUTE MARKERS, DESTINATION SIGNS, AND ANY NECESSARY MODIFICATIONS TO EXISTING OR PROPOSED REGULATORY OR WARNING SIGNS WILL BE MADE BY OTHERS (STATE OR CITY FORCES) UNLESS OTHERWISE DESIGNATED IN THE PLANS. A MINIMUM 30 CALENDAR DAY NOTICE IS REQUIRED TO BE PROVIDED TO STATE FORCES BEFORE A ROADWAY IS CLOSED TO TRAFFIC SUCH THAT THE NECESSARY PROVISIONS CAN BE MADE TO INSTALL DETOUR ROUTE SIGNS, AND TO INFORM LOCAL EMERGENCY AND LAW ENFORCEMENT PERSONNEL, SCHOOLS, OR ANY OTHER PARTIES AFFECTED BY THE ROAD CLOSURE.

3- INSTALL SIGNS BEFORE BARRICADES WHEN CLOSING THE ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING THE ROADWAY TO TRAFFIC. INSTALL/REMOVE SIGNS AND BARRICADES WITHIN THE SAME CALENDAR DAY.

4- POSITION BARRICADES SUCH THAT THE STRIPES ARE SLOPED DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING.

5- USE PORTABLE SIGNS IF ROAD CLOSURE IS TO BE IMPLEMENTED FOR LESS THAN THREE DAYS, OR FOR EMERGENCIES. IN THIS CASE, NO STOP BAR IS NECESSARY.

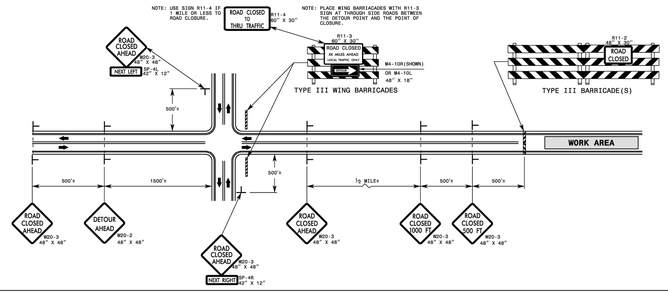
LEGEND
- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW

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

1-18

ROADWAY STANDARD DRAWING FOR
TEMPORARY ROAD CLOSURES
CLOSURE AT DETOUR POINT

SHEET 2 OF 9
1101.03



GENERAL NOTES

1- IF NECESSARY USE THIS RSD. FOR 2-LANE, 2-WAY, AND MULTILANE DIVIDED AND UNDIVIDED ROADWAYS.

2- INSTALLATION OF DETOUR ROUTING PANELS, TEMPORARY ROUTE MARKERS, DESTINATION SIGNS, AND ANY NECESSARY MODIFICATIONS TO EXISTING OR PROPOSED REGULATORY OR WARNING SIGNS WILL BE MADE BY OTHERS (STATE OR CITY FORCES) UNLESS OTHERWISE DESIGNATED IN THE PLANS. PROVIDE A MINIMUM 30 CALENDAR DAY NOTICE TO STATE FORCES BEFORE A ROADWAY IS CLOSED TO TRAFFIC SUCH THAT THE NECESSARY PROVISIONS CAN BE MADE TO INSTALL DETOUR ROUTE SIGNS, INFORM LOCAL EMERGENCY AND LAW ENFORCEMENT PERSONNEL, SCHOOLS, OR ANY OTHER PARTIES AFFECTED BY THE ROAD CLOSURE.

3- INSTALL SIGNS BEFORE THE BARRICADES WHEN CLOSING THE ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING THE ROADWAY TO TRAFFIC. INSTALL/REMOVE SIGNS AND BARRICADES WITHIN THE SAME CALENDAR DAY.

4- USE ADDITIONAL TYPE III BARRICADES IN STAGGERED LOCATIONS SUPPLEMENTED WITH SIGN R11-4 "ROAD CLOSED TO THRU TRAFFIC" IN THE EVENT THAT TRAFFIC MUST BE MAINTAINED BEYOND THE DETOUR POINT.

5- DO NOT DISPLAY FRACTIONS OR DECIMALS ON SIGN R11-3 "ROAD CLOSED XX MILES AHEAD".

6- POSITION WING BARRICADES ON THE SHOULDERS AND SLOPE THE STRIPES DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING.

7- USE PORTABLE SIGNS IF ROAD CLOSURE IS TO BE IMPLEMENTED FOR LESS THAN THREE DAYS, OR FOR EMERGENCIES.

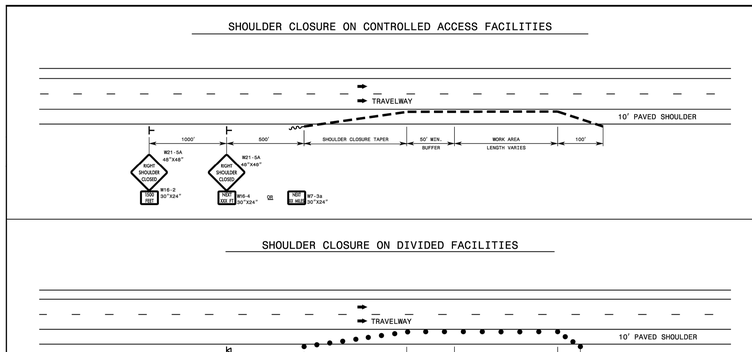
LEGEND
- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW

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

1-18

ROADWAY STANDARD DRAWING FOR
TEMPORARY ROAD CLOSURES
CLOSURE BEYOND DETOUR POINT

SHEET 1 OF 9
1101.03



GENERAL NOTES

1- PLACE SHOULDER CLOSURE SIGNS ON THE SAME SIDE AS THE SHOULDER THAT IS CLOSED.

2- PLACE DRUMS IN THE SHOULDER TAPER AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. THE MAXIMUM SPACING OF DRUMS ALONG THE WORK AREA IS EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.

3- USE STATIONARY SIGNS FOR OPERATIONS IN EFFECT LONGER THAN 3 DAYS.

4- REFER TO RSD. 1101.11, SHEETS 1, 3 & 4, FOR "L" DISTANCE, BARRIER FLARE RATES, AND SIGN SPACING.

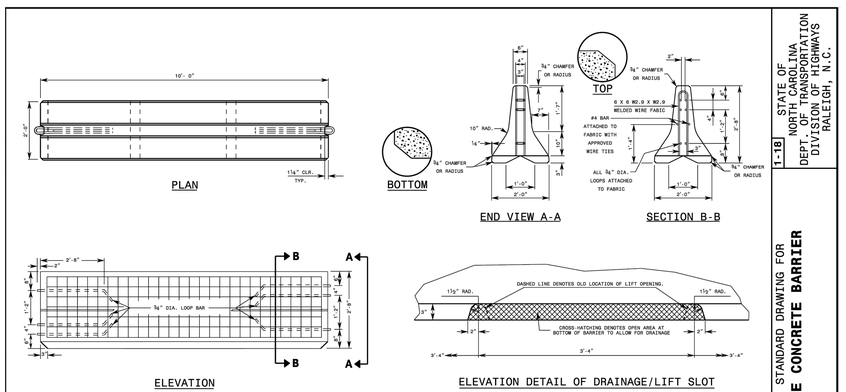
LEGEND
- DRUM
- STATIONARY SIGN
- PORTABLE SIGN
- PORTABLE CONCRETE BARRIER
- DIRECTION OF TRAFFIC FLOW
- TEMPORARY CRASH CUSHION

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

1-18

ROADWAY STANDARD DRAWING FOR
TEMPORARY SHOULDER CLOSURES

SHEET 1 OF 1
1101.04



GENERAL NOTES

1- THE DRAINAGE/LIFT SLOT SHOWN IS A MODIFICATION OF THE LIFT OPENINGS. ALL OTHER DESIGN CRITERIA SUCH AS REINFORCEMENT BARS ETC. ARE THE SAME AS SHOWN ON THE STANDARD DRAWING.

2- BARRIER WITH DRAINAGE/LIFT SLOT IS INTENDED TO BE USED IN AREAS WHERE ROADWAY SURFACE WATER RUNOFF CAUSES EXCESS PUDDLING ADJACENT TO THE TEMPORARY BARRIER. INSTALL THE BARRIER AS SHOWN IN THE PLANS, OR AS DIRECTED BY THE ENGINEER.

3- DRAINAGE/SLOT CAN BE USED WITH ANCHORED "PORTABLE CONCRETE BARRIER".

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

1-18

ROADWAY STANDARD DRAWING FOR
PORTABLE CONCRETE BARRIER

SHEET 1 OF 4
1170.01

PORTABLE CONCRETE BARRIER ADDITIONAL NOTES

1. BARRIER IS REQUIRED; HOWEVER, BARRIER DOES NOT HAVE TO BE CONCRETE, BUT DOES NEED TO PROVIDE PROTECTION OF WORKERS FROM INJURY CAUSED BY VEHICLES TRAVELING ALONG ROAD. COORDINATE TYPE, CONFIGURATION, AND LOCATION OF BARRIER WITH NCDOT INSPECTOR PRIOR TO ORDERING AND INSTALLATION.

2. REPAIR DAMAGE TO ROADS CAUSED BY INSTALLATION, USE, AND REMOVAL OF BARRIERS TO SATISFACTION OF NCDOT INSPECTOR.

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

SHEET NUMBER
TC5 OF 40

PLAN TYPE:
TRAFFIC CONTROL - DETAILS

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
WWW.WKDICKSON.COM

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

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:44 PM

REVISIONS:

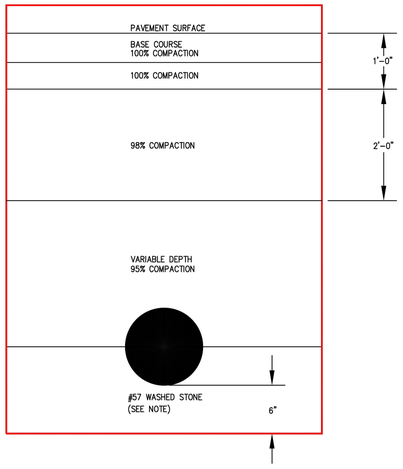
REV. #	DESCRIPTION	REV.BY DATE

ISSUED FOR CONSTRUCTION

PROJECT :	SUNBURY DRIVE
DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	
NAME :	
SCALE :	1" = 20'
DATE :	03-03-2022

PROJECT NO. 20200533.00.RA

SUB-LEDGER NO.



NOTES:

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

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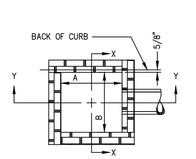
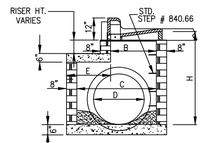
TYPICAL STORM DRAIN COMPACTION

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

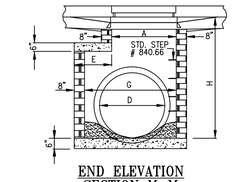
DR-1



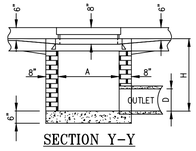
PLAN



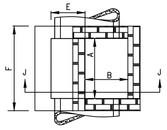
END ELEVATION
SECTION J-J
WHERE 30" TO 36" PIPE IS USED



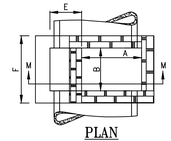
END ELEVATION
SECTION M-M
WHERE 42" TO 54" PIPE IS USED



SECTION Y-Y

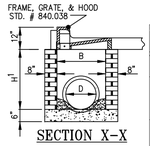


PLAN



PLAN

GENERAL NOTES:
1. MORTAR JOINTS 1/2" ± 1/8" THICK.
2. 3000 P.S.I. CONCRETE TO BE USED.
3. USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB.
4. DEDUCT FOR PIPE(S) TOTAL CU. YDS. OF BRICK MASONRY.
5. USE #4 BAR DOWELS AT 12" CENTERS FOR ALL PIPE SIZES.
6. ALL CATCH BASINS OVER 3'-6" IN DEPTH SHALL BE PROVIDED WITH STEPS 12" ON CENTERS.
7. USE TYPE "E", "F", & "G" GRATE UNLESS OTHERWISE INDICATED.
8. JUMBO BRICK WILL BE PERMITTED. CONCRETE BRICK OR 4" SOLID CONCRETE BLOCKS MAY BE USED IN LIEU OF CLAY BRICKS.
9. 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".
10. INVERTS SHALL BE SHAPED TO FORM A SMOOTH, REGULAR SURFACE, SLOPED TO PREVENT SEDIMENTATION.
11. FOR VARIABLE DIMENSIONS, SEE STANDARD DETAIL DR-3.1.
12. CONSTRUCT WITH PIPE CROWNS MATCHING.
13. CHAMFER ALL EXPOSED CORNERS 1".



SECTION X-X

Fayetteville North Carolina
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STANDARD BRICK CATCH BASIN
(15" THRU 54" PIPE)
ADOPTED FROM NCDOT STANDARD NO. 840.01
PAGE 1 OF 2

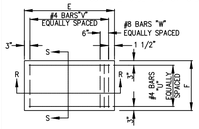
Rev. Date: 08JUN20
Not to Scale
Review Date: 08JUN20

DR-3

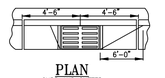
DIMENSIONS AND QUANTITIES FOR BRICK CATCH BASIN
(LOCATION OF SOME VARIABLES SHOWN IN STANDARD DETAIL SD-3)

DIMENSIONS OF BOX AND PIPE						REINFORCING							* CUBIC YARDS OF CONCRETE IN BOX			BRICK MASON		DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	WIDTH	SPAN	HEIGHT	COVER DIMENSION		BARS-U		BARS-V		BARS-W		TOTAL				BRICK MORTAR IN WALLS	TOTAL BRICK & CONCRETE		
D	A	B	C	G	H	F	F	NO	LENGTH	NO	LENGTH	NO	LENGTH	LBS.	TOP SLAB	FLOOR	TOTAL			C.M.	R.C.
15"	3'-0"	2'-2"	–	–	3'-0"	–	–	–	–	–	–	–	–	–	–	0.281	0.281	0.963	1.244	0.0308	0.047
18"	3'-0"	2'-2"	–	–	3'-3"	–	–	–	–	–	–	–	–	–	–	0.281	0.281	1.043	1.324	0.0442	0.065
24"	3'-0"	2'-2"	–	–	3'-9"	–	–	–	–	–	–	–	–	–	–	0.281	0.281	1.204	1.485	0.0784	0.121
30"	3'-0"	2'-2"	–	4'-4"	4'-3"	1'-2"	4'-4"	4	1'-6"	3	4'-1"	3	4'-1"	45	0.147	0.374	0.521	1.606	2.217	0.1224	0.184
36"	3'-0"	2'-2"	3'-10"	–	4'-9"	1'-8"	4'-4"	4	2'-0"	4	4'-1"	3	4'-1"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
42"	3'-0"	2'-2"	–	4'-8"	5'-3"	1'-5"	3'-6"	4	1'-9"	3	3'-3"	3	3'-3"	38	0.135	0.373	0.508	2.152	2.660	0.2400	0.371
48"	3'-0"	2'-2"	–	5'-0"	5'-9"	2'-0"	3'-6"	4	2'-6"	4	3'-3"	3	3'-3"	41	0.173	0.410	0.583	2.415	2.998	0.3131	0.477
54"	3'-0"	2'-2"	–	5'-6"	6'-3"	2'-7"	3'-6"	4	3'-0"	6	3'-3"	3	3'-3"	47	0.211	0.448	0.659	2.806	3.465	0.3958	0.599

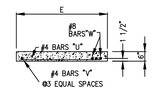
* CONCRETE TO BE PAID FOR AS BRICK MASONRY



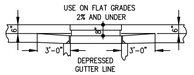
PLAN OF TOP SLAB



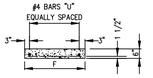
PLAN
CURB AND GUTTER
WITH CATCH BASIN ON STEEP GRADES



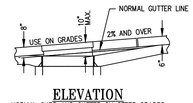
SECTION R-R



ELEVATION
NORMAL CURB AND GUTTER ON LIGHT GRADES

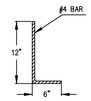


SECTION S-S

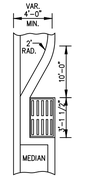


ELEVATION
NORMAL CURB AND GUTTER ON STEEP GRADES

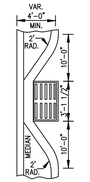
NOTE:
SEE GENERAL NOTES ON STANDARD DETAIL SD-3



DOWEL



LAYOUT
USE ON GRADE



LAYOUT
USE ON SAG VERTICAL

CATCH BASIN INSTALLATION
IN MEDIAN WHERE
8"X6" CURB IS USED
(NOT TO BE USED ON FEDERAL-AID PROJECT)

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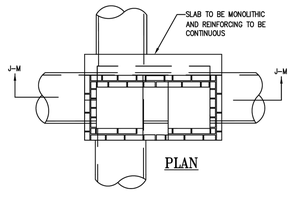
STANDARD BRICK CATCH BASIN
(15" THRU 54" PIPE)
ADOPTED FROM NCDOT STANDARD NO. 840.01
PAGE 2 OF 2

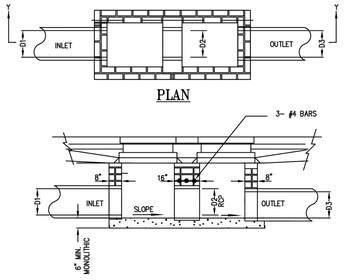
Rev. Date: 08JUN20
Not to Scale
Review Date: 08JUN20

DR-3.1

GENERAL NOTES:
1. INSTALLATION REQUIRES A MINIMUM OF ONE 4'-0" LONG SECTION OF REINFORCED CONCRETE PIPE BETWEEN CATCH BASINS.
2. SEE NCDOT STANDARD 840.01 FOR DETAILS BASED ON PIPE SIZE PER CROSS SECTION.
3. CONSTRUCT TWO SINGLE BASINS PER NCDOT STANDARD WITH DOUBLE INTERIOR WALL.
4. ALL CONCRETE TO BE 3000 P.S.I COMPRESSIVE STRENGTH.
5. BASE SLAB SHALL BE MONOLITHIC.
6. SEE CITY OF FAYETTEVILLE STANDARDS SD-4 AND SD-5 FOR PLACEMENT OF CATCH BASIN.
7. PIPE SECTION D2 CONNECTING CATCH BASINS SHALL HAVE A MINIMUM DIAMETER SAME AS OF OUTLET PIPE D3.
8. ALL REINFORCING STEEL SHOWN ON NCDOT STANDARDS IS TO BE PROVIDED AS CONTINUOUS MEMBERS. (NO LAPS, USED AS A SINGLE CONTINUOUS BAR IN THE SLAB)



PLAN



SECTION Y-Y 15" to 24"

SECTION J-J 30" TO 36" PIPE

Fayetteville North Carolina
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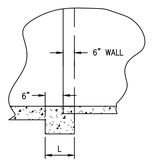
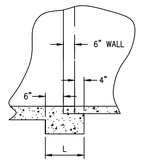
TYPICAL BRICK DOUBLE CATCH BASIN 15" THRU 36" PIPE

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

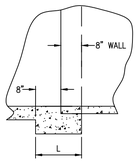
DR-4



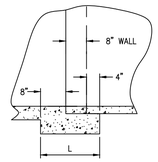
PART SECTION
6" WALL



PART SECTION
6" WALL WITH 4" LIP



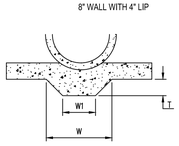
PART SECTION
8" WALL



PART SECTION
8" WALL WITH 4" LIP

TABLES OF QUANTITIES FOR PIPE SET IN PAD

PIPE	"W"	"W1"	"T"	C.Y. QUANTITIES WHEN "L" IS		
D	DIM	DIM	DIM	12"	16"	20"
15"	1'-3 5/8"	0'-9 1/8"	0'-2"	0.006	0.008	0.010
18"	1'-5 1/4"	0'-10 3/8"	0'-2"	0.007	0.010	0.012
24"	1'-8 3/4"	1'-0 1/8"	0'-3"	0.011	0.014	0.018
30"	2'-0 1/4"	1'-2 3/4"	0'-3 1/2"	0.014	0.018	0.023
36"	2'-3 3/4"	1'-5 3/8"	0'-4"	0.017	0.023	0.025
42"	2'-7 1/8"	1'-7"	0'-5 1/4"	0.025	0.030	0.038
48"	2'-10 5/8"	1'-8 3/4"	0'-5 3/4"	0.028	0.038	0.047
54"	3'-2 1/8"	1'-10 1/2"	0'-6 1/4"	0.035	0.047	0.058
60"	3'-5 5/8"	2'-0 1/4"	0'-6 3/4"	0.042	0.056	0.071
66"	3'-9"	2'-2 1/4"	0'-7 1/4"	0.050	0.067	0.084
72"	4'-0 1/2"	2'-3 3/4"	0'-7 3/4"	0.059	0.078	0.098



PART SECTION
OF END ELEVATION

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

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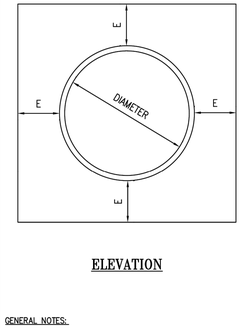
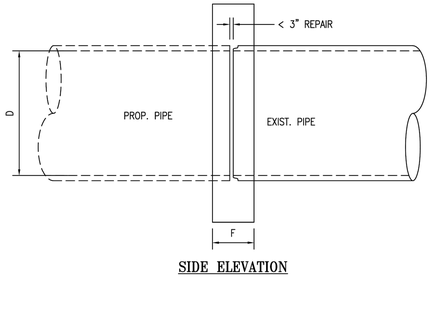
CONCRETE BASE PAD FOR
FOR DRAINAGE STRUCTURES
ADOPTED FROM NCDOT
STANDARD NO. 840.00

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

DR-9



ELEVATION



SIDE ELEVATION

GENERAL NOTES:

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

D	E	F	CU. YD.
15"	8"	12"+	.03990
18"	8"	12"+	0.4465
24"	12"	12"+	0.5526
30"	12"	12"+	0.6560
36"	12"	12"+	0.7640
42"	12"	12"+	0.8856
48"	12"	12"+	1.0126
54"	18"	18"+	2.5793
60"	18"	18"+	2.8506
66"	18"	18"+	3.1307
72"	18"	18"+	3.4176

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CONCRETE PIPE COLLAR FOR
FOR REPAIRING STORM DRAINS
ADOPTED FROM NCDOT
STANDARD NO. 840.00

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

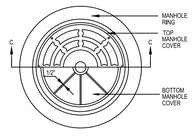
DR-10

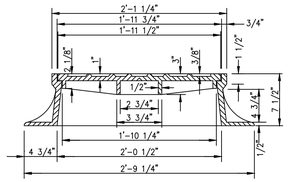
SPECIFICATIONS

1. 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.
2. MANHOLE RING AND COVER TO WITHSTAND VEHICULAR TRAFFIC WITHOUT OBJECTIONABLE NOISE.
3. MINIMUM AVERAGE WEIGHT:
   FRAME: 180 LBS
   COVER: 120 LBS

   US FOUNDRY 669-KL RING & COVER OR APPROVED EQUAL

TOP OF MANHOLE





SECTION C - C

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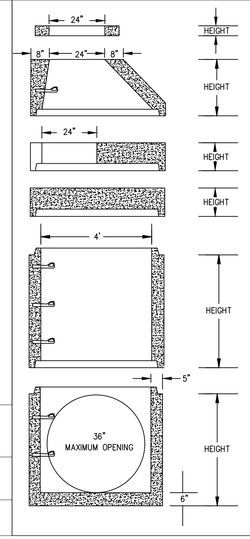
STANDARD MANHOLE RING AND COVER
ADOPTED FROM NCDOT
STANDARD NO. 840.54

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

DR-13



FUQUAY VARINA PLANT SPECIFICATIONS:
ASTM C 478 – LATEST
AASHTO M 199 – LATEST
WITH AASHTO M-198B PREFORMED PLASTIC OR ASTM C-443 RUBBER GASKET JOINTS. REINFORCED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS.

HEIGHT

FEET	INCHES	WEIGHT POUNDS
GRADING RING		
.33'	4"	150
.50'	6"	235
ECCENTRIC CONE		
2.00'	24"	1695
3.00'	36"	2550
4.00'	48"	3400

FLAT TOP

FLAT TOPS ARE AVAILABLE IN ECCENTRIC (AS SHOWN) AND CONCENTRIC UNITS. FLAT TOPS MEET H-20 LOADING.

1.00'	12"	1700

SOLID FLAT TOP

CUSTOM VENT OR METER OPENINGS PLACED PER CUSTOMER REQUEST. FLAT TOPS MEET H-20 LOADING.

1.00'	12"	2000

RISER

1.00'	12"	865
1.33'	16"	1150
2.67'	32"	2310
4.00'	48"	3460
5.33'	64"	4610

REGULAR MONOLITHIC BASE

WITH 6" BASE INCLUDED IN HEIGHT SHOWN.

2.67'	32"	3250
4.00'	48"	4400
5.33'	60"	5265

NOTES:
1. PRECAST MANHOLES MAY BE USED WITH PRIOR APPROVAL FROM THE CITY ENGINEER.
2. PRECAST MANHOLES ARE NOT PERMITTED INSIDE RIGHT-OF-WAY OR EASEMENTS.

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4-FOOT DIAMETER PRECAST REINFORCED CONCRETE MANHOLE SECTIONS

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

DR-14

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

SHEET NUMBER
D1 OF 40

PLAN TYPE:
DETAILS

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
WWW.WKDICKSON.COM

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

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:45 PM

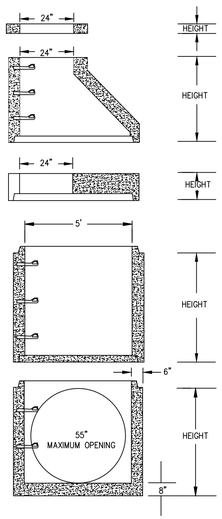
REVISIONS

REV. #	DESCRIPTION	REV.BY	DATE

ISSUED FOR CONSTRUCTION

DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	
PROJECT	SUNBURY DRIVE
NAME :	
SCALE :	1" = 20'
DATE :	03-03-2022

PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.



FUQUAY VARINA PLANT SPECIFICATIONS:

ASTM C 478 – LATEST
AASHTO M 199 – LATEST

WITH AASHTO M-198B PREFORMED PLASTIC OR ASTM C-443 RUBBER GASKET JOINTS. REINFORCED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS.

HEIGHT FEET	HEIGHT INCHES	WEIGHT POUNDS
GRADING RING		
.33'	4"	150
.50'	6"	235
ECCENTRIC CONE		
4.00'	48"	4360
FLAT TOP		
1.00'	12"	2825

RISER		
1.00'	12"	1290
1.33'	16"	1716
2.67'	32"	3444
4.00'	48"	5160
REGULAR MONOLITHIC BASE WITH 8" BASE INCLUDED IN HEIGHT SHOWN.		
2.67'	32"	5394
3.00'	36"	5820
3.33'	40"	6245
3.67'	44"	6684
4.00'	48"	7110
4.33'	52"	7535
4.67'	56"	7974
5.00'	60"	8400
5.33'	64"	8825
5.67'	68"	9264
6.00'	72"	9690
6.33'	76"	10115
6.67'	80"	10554

FLAT TOPS ARE AVAILABLE IN ECCENTRIC (AS SHOWN) AND CONCENTRIC UNITS. FLAT TOPS MEET H-20 LOADING.

NOTES:
1. PRECAST MANHOLES MAY BE USED WITH PRIOR APPROVAL FROM THE CITY ENGINEER.
2. PRECAST MANHOLES ARE NOT PERMITTED INSIDE RIGHT-OF-WAY OR EASEMENTS.

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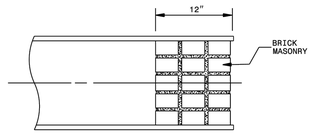
5-FOOT DIAMETER PRECAST REINFORCED CONCRETE MANHOLE SECTIONS

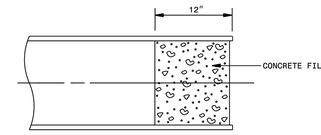
Rev. Date: 16JAN18
Not to Scale
Review Date: 01JAN19

DR-14.1

NOTES:
1. 8' DIA. AND 5' DIA. MANHOLES SHALL HAVE EXTENDED BASES EXTENDING OUTWARD APPROX. 1' BEYOND OUTSIDE EDGE OF MANHOLE STRUCTURE WALL. EXTENDED BASE SLAB THICKNESS AND EXTENSION BEYOND OUTSIDE WALL LENGTH SHALL BE DESIGNED BY PRECAST MANUFACTURER AND SHOWN ON SEALED SHOP DRAWINGS.
2. ALL MANHOLES WILL REQUIRE SHOP DRAWINGS SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER (PE).



SECTION OF MASONRY PIPE PLUG



SECTION OF CONCRETE PIPE PLUG

QUANTITIES	
PIPE SIZE	CUBIC YARDS
12"	0.029
15"	0.045
18"	0.065
24"	0.116
30"	0.182
36"	0.262
42"	0.356
48"	0.465
54"	0.589
60"	0.727
66"	0.880

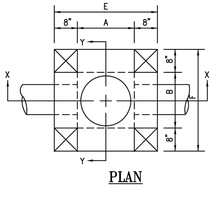
NOTE:
EITHER BRICK MASONRY OR CONCRETE MAY BE USED.
CONCRETE BRICK MAY BE USED IN LIEU OF CLAY BRICK. JUMBO BRICK WILL BE PERMITTED.

NOTE:
USE PAY LIMITS (C.Y.) FOR PIPE PLUGS 12" IN THICKNESS ONLY.

1-18 STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIV. OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
CONCRETE AND BRICK PIPE PLUG

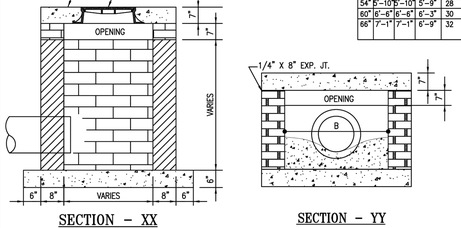
SHEET 1 OF 1
840.71



PLAN

GENERAL NOTES:
1. CONCRETE BASES TO BE CLASS "A" (3000 P.S.I.) PLACES ON A FIRM FOUNDATION.
2. FORMS ARE TO BE USED FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
3. ALL MORTAR JOINTS ARE TO BE 1/2" +/- 1/8".
4. ALL EXPOSED JOINTS SHALL BE CONCAVE TOOLED.
5. CEMENT MORTAR SHALL BE ASTM C-270, TYPE "M".
6. JUMBO BRICK WILL BE PERMITTED. CONCRETE BRICK OR 4" SOLID CONCRETE BLOCKS MAY BE USED IN LIEU OF CLAY BRICK.
7. FOR 8'-0" IN HEIGHT OR LESS USE 8" WALL; OVER 8'-0" IN HEIGHT USE 12" WALL TO 6'-0" FORM TOP OF WALL, AND 8" WALL FOR THE REMAINING 6'-0". STEPS 12" TO 16" ON CENTERS.
8. ALL JUNCTION BOXES OVER 3'-6" IN DEPTH SHALL BE PROVIDED WITH
9. INVERTS SHALL BE SHAPED TO FORM A SMOOTH, REGULAR SURFACE, SLOPED TO PREVENT SEDIMENTATION.

DIMENSIONS AND QUANTITIES FOR BRICK JUNCTION BOXES													
DIM'S OF BOX & PIPE				REINFORCEMENT		COVER		CUBIC YARDS				DEDUCTIONS FOR ONE	
PIPE SPAN		WIDTH	HEIGHT	BARS		DIMENSIONS		CONC.	BRICK MASONRY			PIPE CU. YDS.	
D	A	B	H	NO.	LENGTH	E	F	BASE & COVER CU. YD.	MIN. HEIGHT CU. YD.	WALL PER FT. HT. CU. YD.		C.S.	R.C.
15"	2'-0"	2'-0"	2'-6"	12		3'-1"	3'-4"	3'-4"	0.412	0.657	0.263	0.031	0.047
18"	2'-4"	2'-4"	2'-9"	14		3'-5"	3'-8"	3'-8"	0.498	0.814	0.296	0.044	0.065
24"	3'-0"	3'-0"	3'-3"	16		4'-1"	4'-4"	4'-4"	0.695	1.176	0.362	0.078	0.113
30"	3'-4"	3'-4"	3'-9"	16		4'-5"	4'-8"	4'-8"	0.807	1.481	0.395	0.122	0.170
36"	4'-0"	4'-0"	4'-3"	20		5'-1"	5'-4"	5'-4"	1.053	1.959	0.461	0.176	0.238
42"	4'-8"	4'-8"	4'-9"	22		5'-9"	6'-0"	6'-0"	1.333	2.503	0.527	0.240	0.323
48"	5'-4"	5'-4"	5'-3"	26		6'-5"	6'-8"	6'-8"	1.646	2.940	0.560	0.313	0.422
54"	5'-10"	5'-10"	5'-9"	28		6'-11"	7'-2"	7'-2"	1.902	3.502	0.609	0.396	0.535
60"	6'-6"	6'-6"	6'-3"	30		7'-7"	7'-10"	7'-10"	2.272	4.113	0.658	0.489	0.660
66"	7'-1"	7'-1"	6'-9"	32		8'-2"	8'-5"	8'-5"	2.624	4.778	0.708	0.591	0.798



SECTION – XX

SECTION – YY

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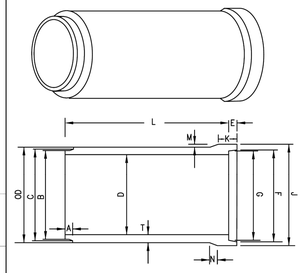
OPEN THROAT JUNCTION BOX

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

DR-16

SIZE D	T	L	POUNDS PER FOOT	ASTM SPEC. & CLASS	OD	A	B	C	E	F	G	J	K	M	N	PLANT
15	B2 1/4	8'	134	ASTM C76 III IV V	19 1/2	2	16 15/16	17 1/4	2	17 3/4	17	21 3/8	4 1/2	7/16	1 1/4	SR VN-KN
18	B2 1/2	8'	173	ASTM C76 III IV V	23	2	20	20 3/4	2	21 1/4	20 1/2	23 1/2	6 1/2	3/4	1 1/4	SR VN-KN
24	B3	8'	268	ASTM C76 III IV V	30	2 1/2	26 3/16	26 7/8	2 13/16	27 3/4	27	31 1/32	4 1/4	1/2	1 1/2	VN-KN SR
30	B3 1/2	8'	396	ASTM C76 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	3/4	1 1/2	SR-K
36	B4	8'	543	ASTM C76 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 11/16	SR-K



A MINIMUM OF 6" OF #57 WASHED STONE IS REQUIRED FOR ALL PIPE INSTALLATION. SEE CITY 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.	

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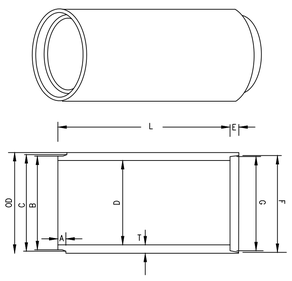
REINFORCED CONCRETE SEWER, STORM DRAIN AND CULVERT
15" THRU 36" PIPE

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

DR-19

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 5/32	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 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

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REINFORCED CONCRETE SEWER, STORM DRAIN AND CULVERT
42" THRU 72" PIPE

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

DR-19.1

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

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.	

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

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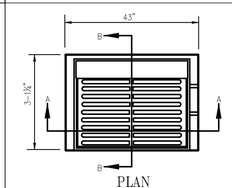
MINIMUM SLOPE & COVER FOR STORM DRAIN AND CULVERT PIPE

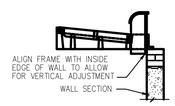
Rev. Date: 16JAN18
Not to Scale
Review Date: 01JAN19

DR-19.2

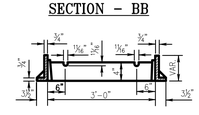


PLAN
FRAME,GRATE, & HOOD ASS'Y

SECTION – AA



SECTION – BB



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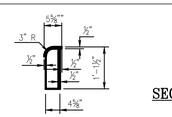

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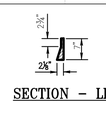

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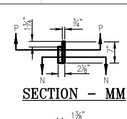
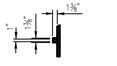


SECTION – MM

SECTION – PP



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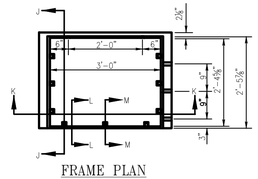
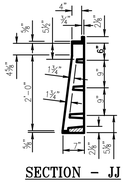
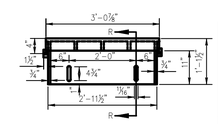


FRAME PLAN



SECTION – JJ

NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.



HOOD ELEVATION

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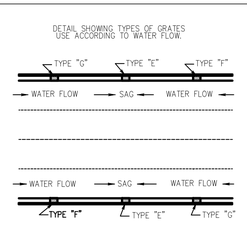
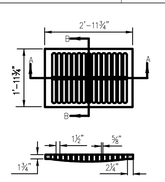
STANDARD FRAME, GRATES AND HOOD FOR USE ON STANDARD CATCH BASIN ADOPTED FROM NCDOT
STANDARD NO. 840.03 (PAGE 1 OF 2)

Rev. Date: 25JUN18
Not to Scale
Review Date: 01JAN19

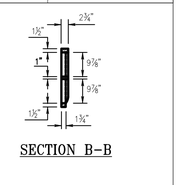
DR-26

DETAIL SHOWING TYPES OF GRATES USE ACCORDING TO WATER FLOW.





SECTION A-A



SECTION B-B

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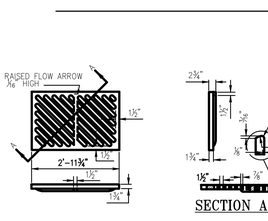

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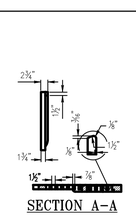

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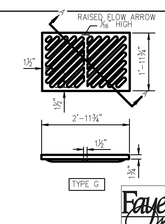
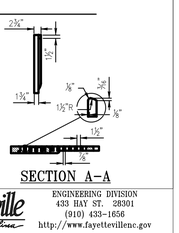


TYPE G



SECTION A-A

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STANDARD FRAME, GRATES AND HOOD FOR USE ON STANDARD CATCH BASIN ADOPTED FROM NCDOT
STANDARD NO. 840.03 (PAGE 2 OF 2)

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

DR-26.1

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: DETAILS

SHEET NUMBER: D2 OF 40

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
WWW.WKDICKSON.COM

FAYETTEVILLE N C
PUBLIC SERVICES
ENGINEERING DIVISION
ENGINEERING & INSPECTIONS DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28301

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031455 THOMAS L. MURRAY
May 15 2024 6:45 PM

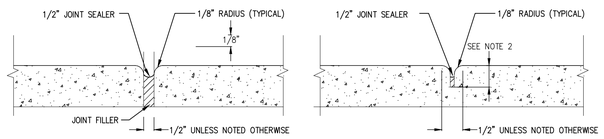
REVISIONS

REV. #	DESCRIPTION	REV.BY	DATE

ISSUED FOR CONSTRUCTION

PROJECT NAME :	SUNBURY DRIVE
DESIGN :	BFL
DRAWN :	TLM
CHECK :	
APPROVED :	
SCALE :	1" = 20'
DATE :	03-03-2022

PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.



EXPANSION JOINT

CONTRACTION JOINT

NOTES:

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

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CONTRACTION AND EXPANSION JOINT

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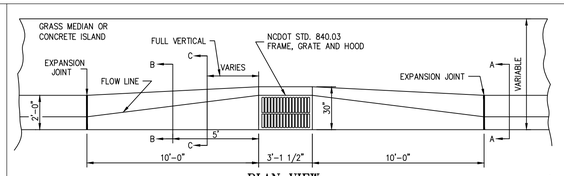
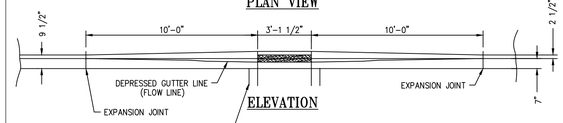
Not to Scale
Review Date: 01JAN19

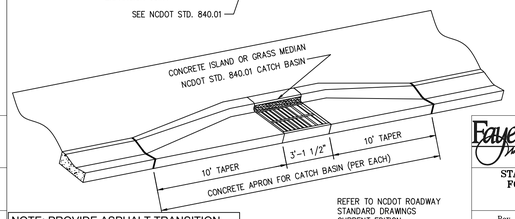
SD-3



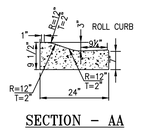
PLAN VIEW



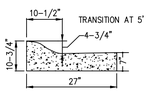
ELEVATION



NOTE: PROVIDE ASPHALT TRANSITION TO CATCH BASIN (NOT CONCRETE).



SECTION - AA



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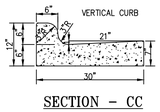

SECTION - CC

REFER TO NCDOT ROADWAY STANDARD DRAWINGS CURRENT EDITION

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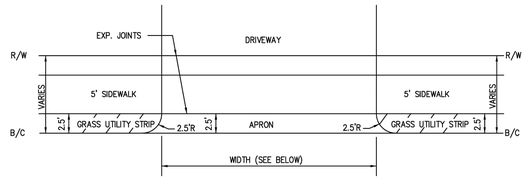
STANDARD CATCH BASIN TRANSITION FOR 24" ROLL CURB AND GUTTER ADOPTED FROM NCDOT STANDARD NO. 852.05

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

SD-4



DRIVEWAY APRON
12'(MIN) WIDTH
20'(MAX) WIDTH (DOUBLE)
4" THICK(MIN) CONCRETE

NOTE: DISTANCE FROM B/C TO R/W VARIES ON DIFFERENT STREETS.

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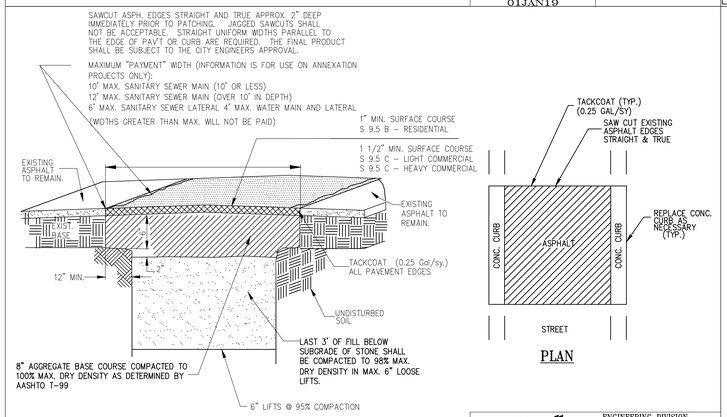
TYPICAL RESIDENTIAL DRIVEWAY APRON

Rev. Date: 01MAY18
Not to Scale
Review Date: 01JAN19

SD-9



ISOMETRIC

PLAN

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

SEE ADDITIONAL NOTES ON DETAIL SD-11.2

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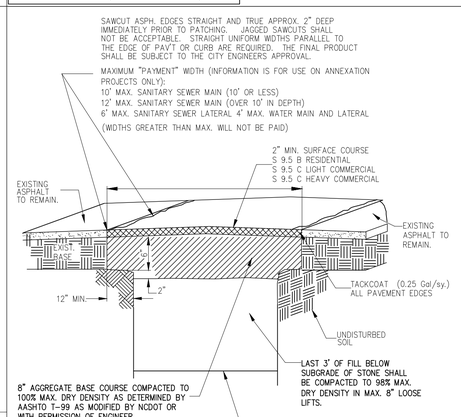
TYPICAL TEMPORARY SAWCUT AND PAVEMENT PATCH
PAGE 1 OF 3

Rev. Date: 01MAY18
Not to Scale
Review Date: 01JAN19

SD-11



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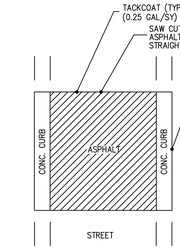

PLAN

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

SEE ADDITIONAL NOTES ON DETAIL SD-11.2

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TYPICAL PERMANENT SAWCUT AND PAVEMENT PATCH
PAGE 2 OF 3

Rev. Date: 01MAY18
Not to Scale
Review Date: 01JAN19

SD-11.1

NOTES:

1. CONTRACTOR SHALL PATCH PAVEMENT TO THE SAME PAVEMENT CROSS SECTION AS EXISTED PRIOR TO REMOVING PAVEMENT. THE STREET CROWN SHALL BE RESTORED. PATCH SHALL MATCH EXISTING PAVEMENT WITHIN .02' WHEN CHECKED WITH A 10' STRAIGHT EDGE. ADJUST PAVER AS REQUIRED. PATCH PAVING MAY OCCUR PRIOR TO PULLING MANDREL THRU SS PROVIDED DENSITY TEST OF TRENCH BACKFILL MEET THE REQUIRED DENSITY AND ENGINEER APPROVES PATCHING STREET PRIOR TO MANDREL TESTING SANITARY SEWER MAIN.
2. WHERE PATCH OF CURBING OCCURS CONTRACTOR SHALL MATCH EXISTING CURB GRADES WITHIN 0.02 FEET. PATCHES THAT ARE ABOVE THE CURB GRADE LINE WILL NOT BE ACCEPTABLE AND SHALL BE REMOVED AND REPATCHED AT NO EXPENSE TO THE OWNER. CURB PATCH SHALL BE THE SAME SHAPE/TEMPLATE AS THE EXISTING CURB.
3. CONTRACTOR SHALL BE REQUIRED TO PROVIDE TRAFFIC CONTROL AND DEVICES AS REQUIRED BY THE MUTCD OR N.C. SUPPLEMENT. WORK CAN NOT PROCEED UNTIL THE MEASURES ARE IN PLACE. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT NEW PAVEMENT FROM TRAFFIC AND OTHER SOURCES OF DAMAGE UNTIL ASPHALT HAS SUFFICIENTLY COOLED TO PREVENT DAMAGE FROM SURFACE DEFLECTIONS.
4. CONTRACTOR SHALL SAWCUT EXIST. PAVEMENT STRAIGHT AND TRUE PRIOR TO REMOVING ASPHALT FOR UTILITY INSTALLATION. THE ENGINEER MAY APPROVE THE USE OF A MILLING MACHINE FOR REMOVAL OF THE EXISTING PAVEMENT WITHIN TRENCH LIMITS. WHERE MILLING IS APPROVED THE CONTRACTOR SHALL PLACE AND COMPACT MILLINGS IN MILLED AREA TO PROVIDE AN INTERIM TRAFFIC SURFACE. MILLING WHERE APPROVED BY ENGINEER IS AN ALTERNATE TO CUTTING ASPHALT AND DISPOSING OFF-SITE.
- 5. AFTER UTILITY IS INSTALLED AND TESTED AND THE EXCESS BASE MATERIAL REMOVED (APPROX. 2") CONTRACTOR SHALL AGAIN SAWCUT EXISTING PAVEMENT STRAIGHT AND TRUE IMMEDIATELY PRIOR TO PAVNG AS NOTED ABOVE.
6. MILLING OPERATIONS SHALL BE LIMITED TO 1800 FEET PER MAIN LINE CREW NOT TO EXCEED 3000 FEET IN TOTAL OF DISTURBED ROADWAY FOR THE ENTIRE PROJECT AT ONE TIME WHERE. CONTRACTOR SHALL PATCH PAVE DISTURBED AREA OF ROADWAY PRIOR TO DISTURBING ADDITIONAL ROADWAY.
7. AT NO TIME SHALL THE TRENCH BE LEFT UNATTENDED WITH A VERTICAL DROP GREATER THAN 1 INCH FROM ASPHALT SURFACE TO TOP OF BACKFILLED TRENCH.
8. IF PAVEMENT SETTLEMENT OCCURS WITHIN WARRANTY PERIOD (SEE PROJECT SPECIFICATIONS), THE CONTRACTOR SHALL REPATCH AT NO ADDITIONAL EXPENSE TO THE OWNER.
- 9. NCDOT WILL REQUIRE FULL DEPTH ASPHALT PATCH TO MATCH EXISTING ASPHALT THICKNESS ON STATE MAINTAINED ROADS. NCDOT REQUIRES PATCH PAVING SAME DAY AS REMOVAL.
10. TEST FOR DENSITY OF COMPACTION MAY BE MADE AT THE OPTION OF THE ENGINEER AND DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE ENGINEER MAY HAVE COMPACTION TEST PERFORMED AFTER THE BACKFILL IS COMPLETE. CONTRACTOR SHALL BE REQUIRED TO EXCAVATE TO VARIOUS ELEVATIONS FOR DENSITY TESTING EXCAVATION, BACKFILL AND RECOMPACTION SHALL BE PERFORMED AT NO ADDITIONAL COSTS TO THE OWNER.

- -- NOTES 5 & 9 APPLY TO PERMANENT PAVEMENT PATCHES ONLY.

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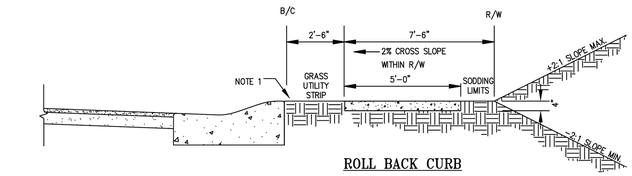
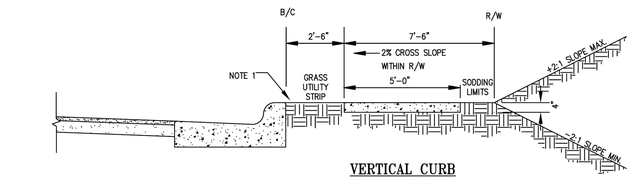
NOTES FOR TYPICAL PERMANENT AND TEMPORARY SAWCUT AND PAVEMENT PATCH
PAGE 3 OF 3

Rev. Date: 01MAR18
Not to Scale
Review Date: 01JAN19

SD-11.2



ROLL BACK CURB



VERTICAL CURB

NOTES:

1. VERTICAL CURB - GRASS UTILITY STRIP MAY BE REMOVED UPON APPROVAL OF THE CITY ENGINEER. IF NO GRASS UTILITY STRIP, INSTALL 1/2" EXPANSION JOINT MATERIAL BETWEEN BACK OF CURB AND SIDEWALK.
2. SEE DETAIL SD-3 CONTRACTION AND EXPANSION JOINT.
3. SEE DETAIL SD-9 TYPICAL RESIDENTIAL DRIVEWAY APRON AND DETAIL SD-9.1 TYPICAL COMMERCIAL DRIVEWAY APRON.
4. SODDING LIMITS INCLUDE THE GRASS UTILITY STRIP BETWEEN THE BACK OF CURB AND THE SIDEWALK AS WELL AS 2'6" BEYOND THE SIDEWALK.
5. SEE TECHNICAL SPECIFICATION SECTION 00455, PART 3, SUB-SECTION 3.02, SUB-PART F.

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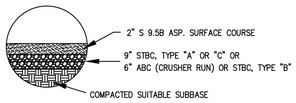
TYPICAL SIDEWALK SECTION & SODDING LIMTS

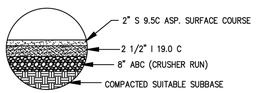
Rev. Date: 31OCT18
Not to Scale
Review Date: 01JAN19

SD-12

TYPICAL RESIDENTIAL CROSS SECTION



TYPICAL LIGHT & HEAVY COMMERCIAL CROSS SECTION



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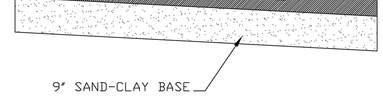
TYPICAL CROSS SECTIONS FOR ALL CITY PAVEMENT

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

SD-16.2



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CIVIL ENGINEERING DIVISION
433 HAY ST. 28301
(910) 433-1656

ASPHALT WEDGE CURBING

CAD FILE : ASPWDGCRB

SD-17

DATE 3/4/2009 DRAWN BY CSA
SCALE N.T.S. CK'D BY JPB

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

SHEET NUMBER D3 OF 40
PLAN TYPE DETAILS

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
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FAYETTEVILLE N C
PUBLIC SERVICES
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28301

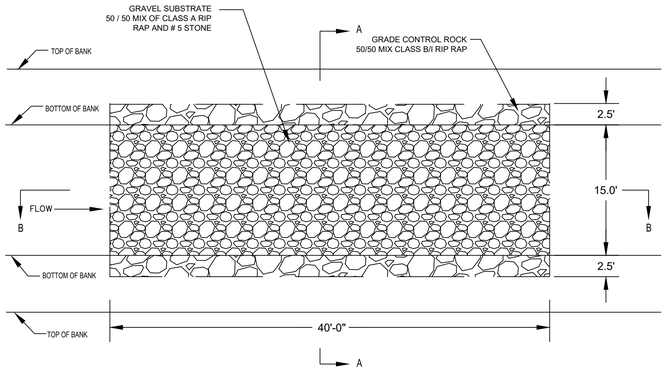
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031455 THOMAS L. MURRAY
May 15 2024 6:46 PM

REVISIONS
REV. # | DESCRIPTION | REV.BY | DATE

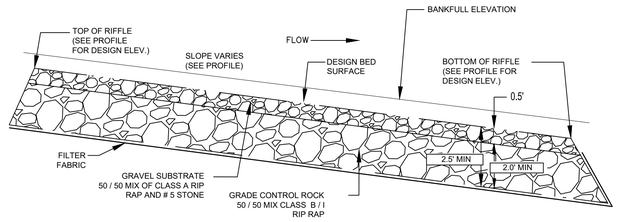
ISSUED FOR CONSTRUCTION

PROJECT SUNBURY DRIVE
NAME :
SCALE : 1" = 20'
DATE : 03-03-2022
DRAWN : BFL
DESIGN : TLM
CHECK :
APPROVED :

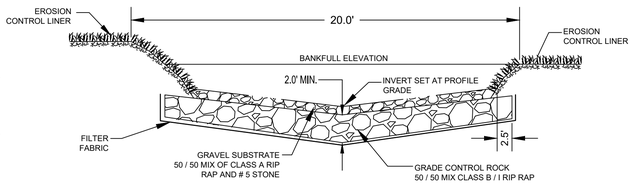
PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.



RIFFLE GRADE CONTROL - PLAN VIEW



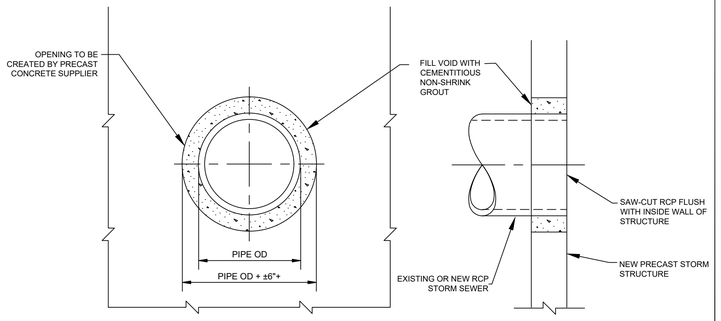
RIFFLE GRADE CONTROL - PROFILE B-B



RIFFLE GRADE CONTROL - SECTION A-A

1 / D4 RIFFLE GRADE CONTROL

NOT TO SCALE



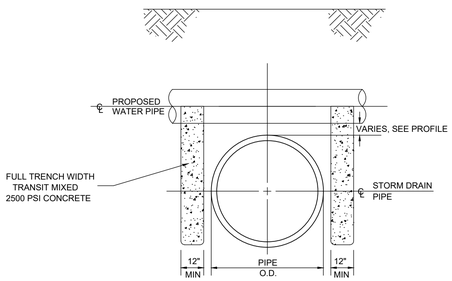
SECTION 1

NOTE

1. PROVIDE 6" MINIMUM CLEARANCE BETWEEN STRUCTURE JOINTS AND PIPE OPENING.

2 / D4 EXISTING AND PROPOSED PIPE TIE IN TO PRECAST CONCRETE STRUCTURE

NOT TO SCALE



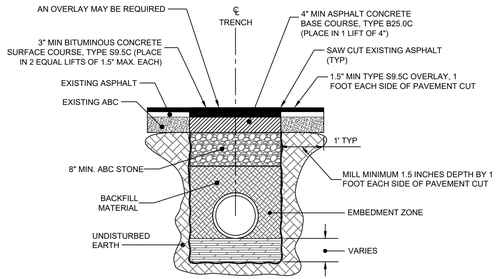
PROPOSED WATER PIPELINE OVER STORM DRAIN

NOTE:

1. PROPOSED LENGTH OF CONCRETE CRADLE SHALL EXTEND AND BE MEASURED ALONG THE STORM DRAIN PIPE (BELOW PIPE) FOR A MINIMUM LENGTH OF THE ABOVE PIPE'S OUTSIDE DIAMETER PLUS 12-INCHES EACH SIDE.

3 / D4 CONCRETE CRADLE PROTECTION FOR WATER/STORM DRAIN CROSSING

NOT TO SCALE



NOTES:

1. DETAIL AS SHOWN IS APPROPRIATE FOR NCDOT MAINTAINED ROADS.
2. ALL FILL AREAS/BACKFILL SHALL BE COMPACTED TO 95% DENSITY IN ACCORDANCE WITH AASHTO T99 AS MODIFIED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION. ALL MATERIAL TO A DEPTH OF 8-INCHES BELOW THE PAVEMENT SUBGRADE (ABC STONE) SHALL BE COMPACTED TO A DENSITY EQUAL TO AT LEAST 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T99 AS MODIFIED BY THE DEPARTMENT.
3. 8" MIN. AGGREGATE BASE COURSE (ABC STONE) WILL BE USED AS THE BASE. IT SHALL BE COMPACTED TO 100% MAX. DRY DENSITY AS DETERMINED BY AASHTO T99 AS MODIFIED BY NCDOT. COMPACTION TESTS SHALL BE PERFORMED AT THE LOCATION OF EVERY OPEN CUT THAT CROSSES NCDOT ROADWAYS. THE OWNER WILL BE REQUIRED TO HAVE AN APPROVED LABORATORY FURNISH THE DISTRICT OFFICE A COPY OF THE TEST RESULTS. USE OF FLOWABLE FILL MAY BE ALLOWED ONLY IF APPROVED BY NCDOT, COORDINATE WITH NCDOT.
4. THE ENTIRE THICKNESS/VERTICAL EDGE SHALL BE TACKED.
5. THE PAVEMENT SHALL BE DEFINED BY A STRAIGHT EDGE, PREFERABLY A MACHINED SAW CUT.
6. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY TO ACHIEVE A SMOOTH LEVEL PATCH.
7. CONSTRUCTION REQUIRES LANE CLOSURE. CONTRACTOR SHALL BE RESPONSIBLE FOR A TRAFFIC CONTROL PLAN SUBMITTAL. REFERENCE TRAFFIC CONTROL PLANS.
8. THE CONTRACTOR SHALL CONDUCT A CONFERENCE CALL WITH NCDOT PRIOR TO CONSTRUCTION TO DISCUSS CONSTRUCTION SEQUENCE AND PERMITTED TIME OF OPEN BORE PITS.
9. IF AN ASPHALT PATCH CAN NOT BE ACCOMPLISHED THE SAME DAY DUE TO MATERIAL AVAILABILITY OR TIME RESTRICTIONS, THE CUT SHALL BE COMPLETELY FILLED TO THE SURFACE WITH ABC STONE OR FLOWABLE FILL PER NCDOT STANDARDS AND SPECIFICATIONS. ONCE THE CUT IS FILLED, A MINIMUM 3/4-INCH STEEL PLATE SHALL BE PLACED AND PINNED TO PREVENT MOVEMENT. PLATES SHALL BE DESIGNED LARGE ENOUGH TO SPAN A MINIMUM OF 1-FOOT ON ALL SIDES ON THE PAVEMENT CUT. THE PROPER ASPHALT REPAIR SHALL BE DONE WITHIN 48-HOURS OF THE INITIAL CUT OR DAMAGES AS ENFORCEABLE THROUGH NCDOT'S ENCROACHMENT APPROVAL MAY BE ASSESSED TO CONTRACTOR BY THE DISTRICT ENGINEER'S OFFICE.
10. FLOWABLE FILL IF USE ALLOWED BY NCDOT SHALL CURE FOR 24-HOURS PRIOR TO ANY ASPHALT MATERIAL PLACEMENT. FLOWABLE FILL BLEED WATER SHALL NOT BE PRESENT DURING PAVING OPERATIONS. PAVING SHALL NOT CAUSE DAMAGE TO THE FLOWABLE FILL.
11. SEE FPWC DETAIL W.19 FOR WATER MAIN BEDDING.

4 / D4 NCDOT PAVEMENT REPAIR DETAIL

NOT TO SCALE

ISSUED FOR CONSTRUCTION

DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	
PROJECT NAME :	SUNBURY DRIVE
SCALE :	1" = 20'
DATE :	03-03-2022

PROJECT NO. 20200533.00.RA

SUB-LEDGER NO.

REVISIONS:

REV. #	DESCRIPTION	REV.BY DATE

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY

May 15 2024 6:47 PM

WK DICKSON
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433 HAY STREET FAYETTEVILLE, NC 28301

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: DETAILS

SHEET NUMBER: D4 OF 40

STRUCTURE TABLE: STORM				
STRUCTURE ID	GRATE/RIM/TOP	INV. IN	INV. OUT	STRUCTURE DIMENSIONS
CB-A3	209.87'	199.09' (48" NW)	198.99' (48" SE)	DEPTH: 11.38 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 8' X 3' SEE DETAIL SHEET S4
CB-A4	211.11'	205.28' (48" NW)	200.83' (48" SE)	DEPTH: 10.78 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 3' X 7' SEE DETAIL SHEET S4
CB-A5	214.88'	206.73' (48" NW)	206.63' (48" SE)	DEPTH: 8.75 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 7' X 3' SEE DETAIL SHEET S4
CB-A6	221.96'	212.14' (48" NW)	212.04' (48" SE)	DEPTH: 10.42 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 6' X 3' SEE DETAIL SHEET S4
CB-A7	224.61'	212.51' (48" NE)	212.41' (48" SE)	DEPTH: 12.70 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 6' X 6' SEE DETAIL SHEET S4
CB-A9	229.62'	214.82' (48" NW) 225.55' (18" NE)	214.72' (48" SE)	DEPTH: 15.40 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 6' X 3' SEE DETAIL SHEET S4
CB-A11	231.40'	226.73' (18" NE) 216.13' (48" NW)	216.03' (48" SE)	DEPTH: 15.87 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 6' X 3' SEE DETAIL SHEET S4
CB-A12	232.07'	216.99' (48" NE)	216.89' (48" SE)	DEPTH: 15.68 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 8' X 6' SEE DETAIL SHEET S4
CB-A13	231.96'	217.35' (48" NE)	217.25' (48" SW)	DEPTH: 15.21 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 8' X 3' SEE DETAIL SHEET S4
CB-A14	231.33'	217.90' (48" NE)	217.80' (48" SW)	DEPTH: 14.03 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 7' X 3' SEE DETAIL SHEET S4
CB-A15	230.25'	218.43' (48" NE)	218.33' (48" SW)	DEPTH: 12.42 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 8' X 3' SEE DETAIL SHEET S4
CB-A16	228.83'	219.31' (60" NE)	219.21' (48" SW)	DEPTH: 10.12 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 7' X 3' SEE DETAIL SHEET S4

STRUCTURE TABLE: STORM				
STRUCTURE ID	GRATE/RIM/TOP	INV. IN	INV. OUT	STRUCTURE DIMENSIONS
CB-A18	227.47'	220.24' (42" NW)	219.85' (42" SW)	DEPTH: 8.12 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 6' X 7' SEE DETAIL SHEET S4
CB-A19	227.51'	220.43' (42" NE)	220.33' (42" SE)	DEPTH: 7.68 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 7' X 6' SEE DETAIL SHEET S4
CB-A20	226.81'	220.67' (24" N) 220.67' (24" N)	220.57' (42" SW)	DEPTH: 6.74 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 8' X 3' SEE DETAIL SHEET S4
CB-A21	225.25'	221.19' (24" N) 221.19' (24" E) 221.19' (24" N)	221.09' (24" S) 221.09' (24" S)	DEPTH: 4.66 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 8' X 4' SEE DETAIL SHEET S4
CB-A22	226.77'	221.79' (30" NW) 221.79' (36" E)	221.69' (24" S) 221.69' (24" S)	DEPTH: 5.58 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM CB 7' X 6' SEE DETAIL SHEET S4
CB-A23	226.44'	222.01' (30" NE)	221.91' (36" W)	DEPTH: 4.53 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-3
CB-C1	230.31'	225.85' (18" SE)	225.75' (18" SW)	DEPTH: 4.56 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-3
CB-E1	231.34'		227.00' (18" SW)	DEPTH: 4.34 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-3
CB-G1	225.41'	221.43' (15" N)	221.33' (24" W)	DEPTH: 4.08 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-3
CB-G2	225.97'		222.03' (15" S)	DEPTH: 3.94 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-3
CB-H1	227.19'	222.35' (24" NE)	222.25' (30" SE)	DEPTH: 4.94 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-3
CB-H2	227.24'	222.58' (24" NW)	222.48' (24" SW)	DEPTH: 4.76 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-3

STRUCTURE TABLE: STORM				
STRUCTURE ID	GRATE/RIM/TOP	INV. IN	INV. OUT	STRUCTURE DIMENSIONS
CB-H3	227.39'	223.20' (24" NW)	223.10' (24" SE)	DEPTH: 4.29 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-3
CB-H4	228.53'		224.06' (24" SE)	DEPTH: 4.47 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-3
DCB-A10	229.22'	215.51' (48" NW) 218.16' (24" NE)	215.37' (48" SE)	DEPTH: 14.35 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM DCB 8' X 7' SEE DETAIL SHEET S4
DCB-A17	227.73'	219.63' (42" NE) 222.08' (24" N)	219.53' (60" SW)	DEPTH: 8.70 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM DCB 7' X 7' SEE DETAIL SHEET S4
DCB-A24	226.76'	222.68' (30" NE)	222.58' (30" SW)	DEPTH: 4.18 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-4
DCB-D1	229.25'	218.49' (24" NE)	218.39' (24" SW)	DEPTH: 10.86 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-4
HW-A1	201.38'	194.05' (60" NW)		DEPTH: 7.33 (TOP OF WALL TO INVERT) DETAIL AND INNER STRUCTURE DIMENSIONS: HEADWALL SEE DETAIL SHEET S3
JB-A2	202.00'	194.29' (48" NW) 196.08' (30" SW) 195.15' (42" NW) 196.20' (24" W)	194.14' (60" SE)	DEPTH: 8.50 DETAIL AND INNER STRUCTURE DIMENSIONS: CUSTOM JB 14' X 9' SEE DETAIL SHEET S2
JB-A8	229.69'	214.16' (48" NW)	214.06' (48" SW)	DEPTH: 16.13 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-14.1 - 9 FT (JB)
JB-A25	223.99'	212.57' (48" NE) 213.63' (24" NW)	212.57' (48" SW)	DEPTH: 11.92 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-14.1 - 8 FT (JB)
JB-B1	201.69'	196.28' (30" W)	196.13' (30" NE)	DEPTH: 6.06 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-14.1 - 5 FT (JB)
JB-C2	230.88'	226.99' (18" NE)	226.18' (18" NW)	DEPTH: 5.20 DETAIL AND INNER STRUCTURE DIMENSIONS: COF STD. DR-14 - 4 FT (JB)

NOTE:

1. CUSTOM CB AND DCB INNER STRUCTURE DIMENSIONS SHOWN ARE DIMENSIONS 'A' X DIMENSION 'B' TO CORRESPOND TO DETAIL 1, SHEET S4.

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: STRUCTURAL DETAILS

SHEET NUMBER: S1 OF 40

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

NORTH CAROLINA
PROFESSIONAL
SEAL
031455
ENGINEER
THOMAS L. MURRAY
May 15 2024 6:47 PM

REVISIONS

REV. #	DESCRIPTION	REV.BY	DATE

ISSUED FOR CONSTRUCTION

DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	

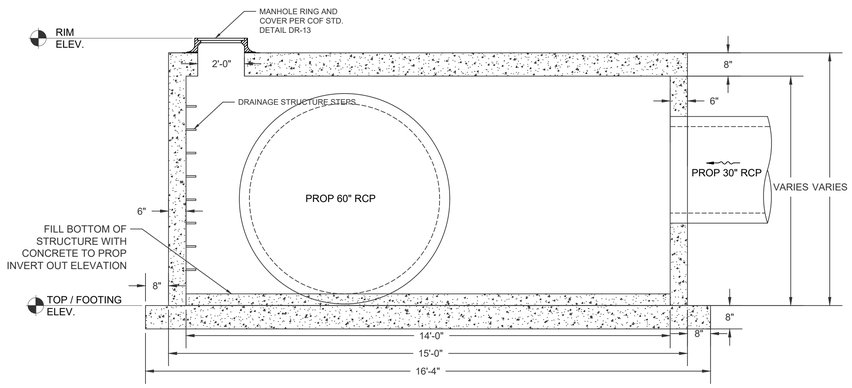
PROJECT
NAME : SUNBURY DRIVE
SCALE : 1" = 20'
DATE : 03-03-2022

PROJECT NO. 20200553.00.RA

SUB-LEDGER NO.

NOTES:

1. REFER TO STORM DRAIN PROFILES FOR PIPE INVERT ELEVATIONS AND STRUCTURE TOP/RIM ELEVATIONS. FOOTING ELEVATIONS VARY DEPENDING ON PIPE THICKNESS AND STRUCTURE VERTICAL DIMENSIONS.
2. THE DESIGN TO INCLUDE REQUIRED REINFORCING, DETAILS, AND SHOP DRAWINGS FOR CUSTOM STRUCTURES (TRAFFIC RATED IF IN ROADWAY PAVEMENT AREAS) SHALL BE PROVIDED BY THE PRECAST MANUFACTURER. THE DESIGN CALCULATIONS AND SHOP DRAWINGS ARE SUBJECT TO APPROVAL BY THE ENGINEER.
3. LOCATIONS OF PREFABRICATED HOLES SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL FIELD MEASURE AND SUPPLY THE PRECAST MANUFACTURER EXACT LOCATIONS FOR FINAL SHOP DRAWINGS.
4. STRUCTURE WALL THICKNESS, TOP SLAB AND BOTTOM SLAB/FOOTING FOUNDATION DIMENSIONS, AND STRUCTURE VERTICAL DIMENSIONS ARE APPROXIMATE. FINAL WALL THICKNESS, SLAB/FOOTING DIMENSIONS, AND STRUCTURE VERTICAL DIMENSIONS ARE TO BE DETERMINED BY PRECAST MANUFACTURER. INSIDE HORIZONTAL DIMENSIONS SHALL NOT BE CHANGED UNLESS APPROVED BY THE ENGINEER.
5. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER THAT INDICATES THE PRECAST STRUCTURE MEETS OR EXCEEDS THE DESIGN PARAMETERS SHOWN ON THESE STRUCTURAL SHEETS. THE CONTRACTOR MUST SUBMIT ANTI-FLOTATION CALCULATIONS WITH THIS SHOP DRAWING SUBMITTAL.



SECTION B-B
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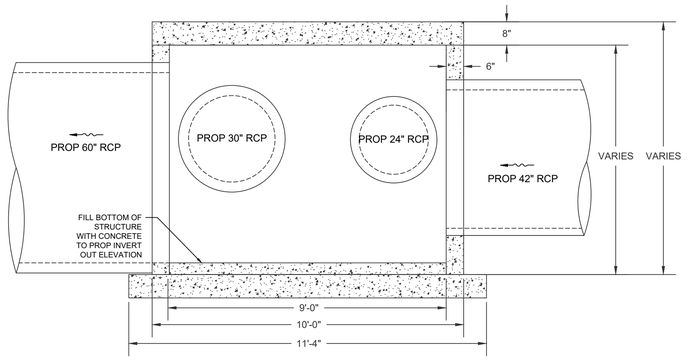

SECTION A-A
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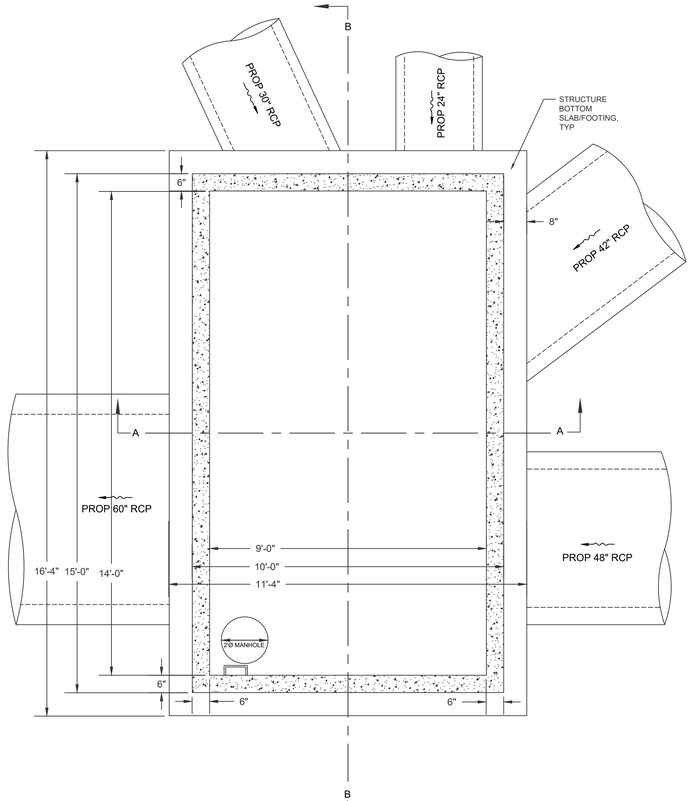

PLAN VIEW
(NOT TO SCALE)

1/S2 CUSTOM 14' X 9' PRECAST CONCRETE JUNCTION BOX (JB) STRUCTURE
NOT TO SCALE

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

SHEET NUMBER S2 OF 40
PLAN TYPE STRUCTURAL DETAILS

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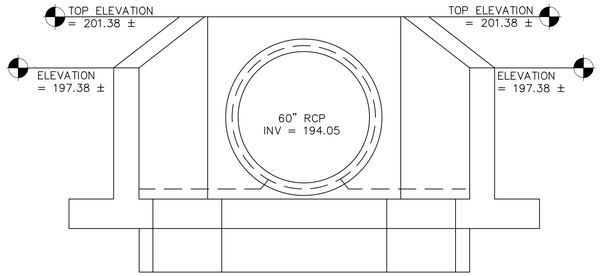
FAYETTEVILLE NC
PUBLIC SERVICES
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
433 HAY STREET FAYETTEVILLE, NC 28301

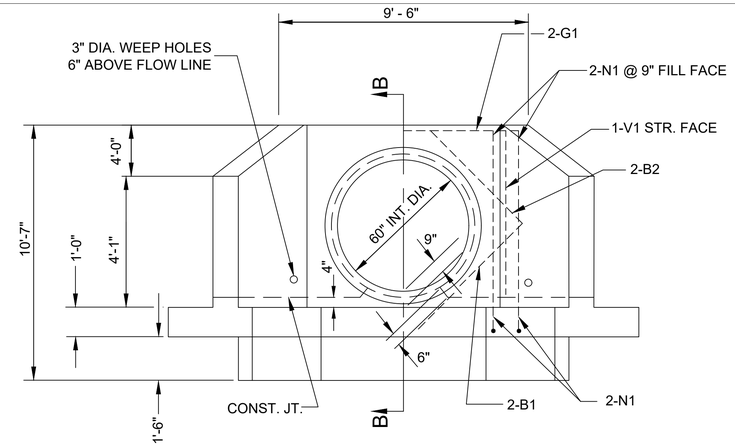
NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:48 PM

REV. #	REVISIONS DESCRIPTION	REV.BY DATE

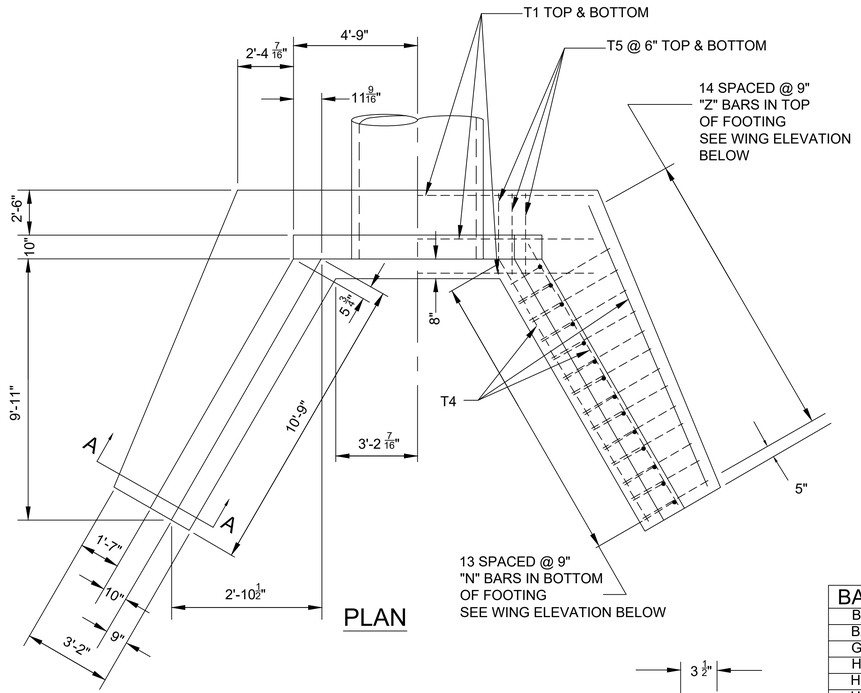
DRAWN :	BFL	PROJECT	SUNBURY DRIVE
DESIGN :	TLM	NAME :	
CHECK :		SCALE :	1" = 20'
APPROVED :		DATE :	03-03-2022

PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.

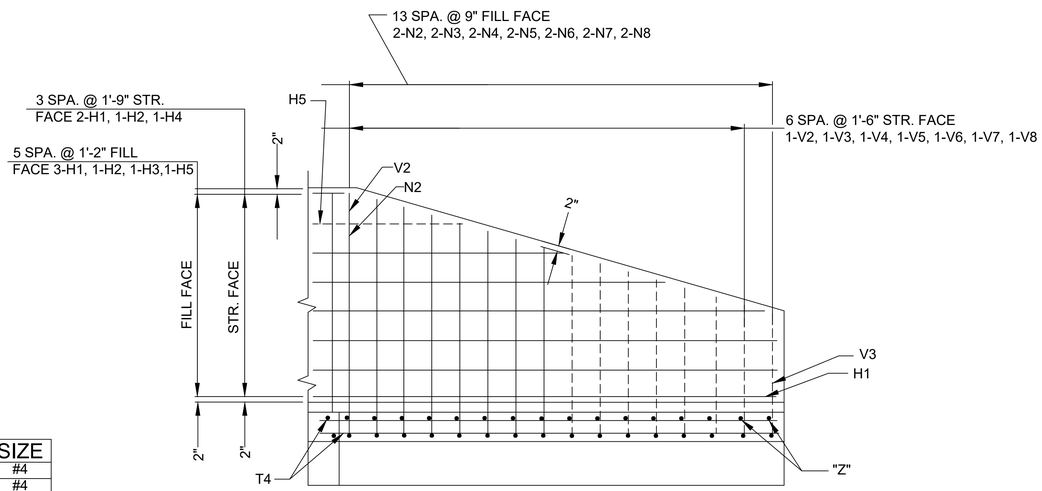




ELEVATION



PLAN



WING ELEVATION

BAR	SIZE
B1	#4
B2	#4
G1	#7
H1	#4
H2	#4
H3	#4
H4	#4
H5	#4
N1	#5
N2	#4
N3	#4
N4	#4
N5	#4
N6	#4
N7	#4
N8	#4
T1	#4
T4	#4
T5	#4
T5	#4
V1	#4
V2	#4
V3	#4
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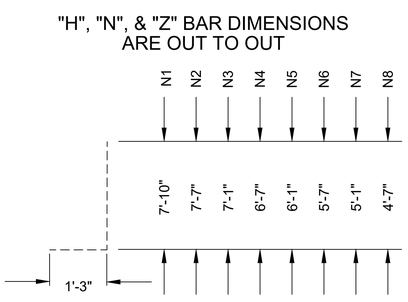
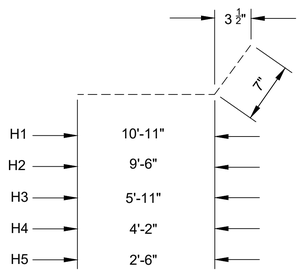
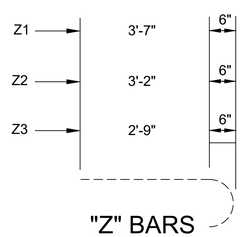
V6	#4
V7	#4
V8	#4
Z1	#6
Z2	#5
Z3	#4



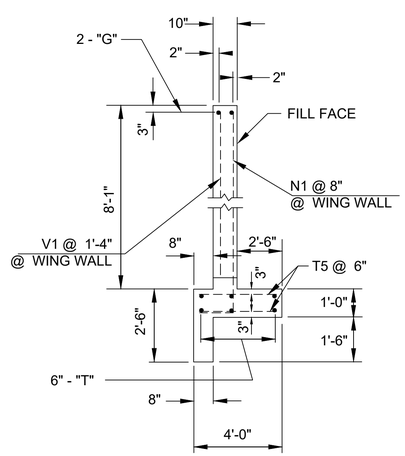
"N" BARS



"H" BARS

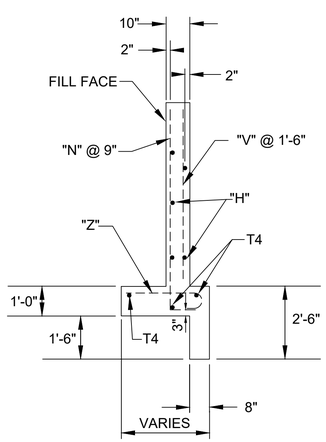


"Z" BARS



SECTION B-B

PIPE NOT SHOWN



SECTION A-A

1 / S3 CUSTOM 60" HEADWALL

NOT TO SCALE

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: STRUCTURAL DETAILS

SHEET NUMBER: S3 OF 40

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

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:48 PM

REV.#	DESCRIPTION	REV.BY DATE
	REVISIONS:	

DRAWN :	BFL	PROJECT	SUNBURY DRIVE
DESIGN :	TLM	NAME :	
CHECK :		SCALE :	1" = 20'
APPROVED :		DATE :	03-03-2022

PROJECT NO. 20200533.00.RA
SUB-LEDGER NO.

NOTES:

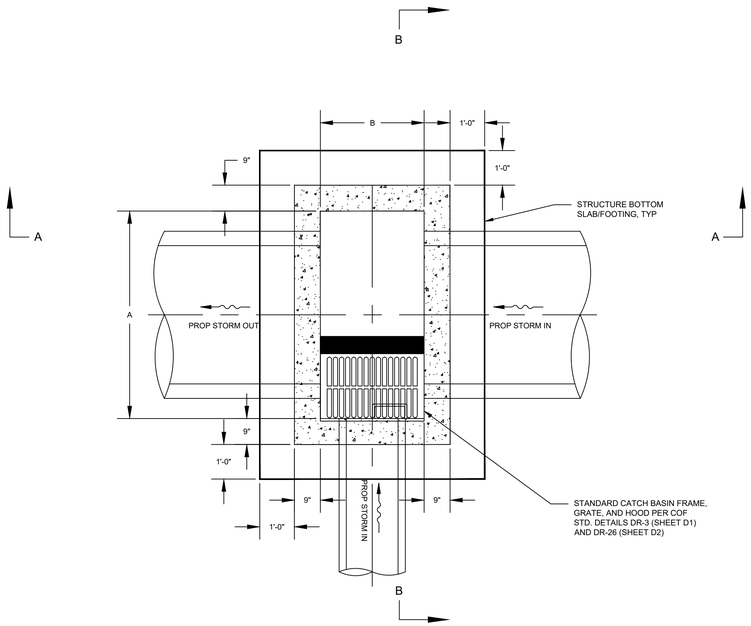
1. REFER TO STORM DRAIN PROFILES FOR PIPE INVERT ELEVATIONS AND STRUCTURE TOP/RIM ELEVATIONS. FOOTING ELEVATIONS VARY DEPENDING ON PIPE THICKNESS AND STRUCTURE VERTICAL DIMENSIONS.

2. THE DESIGN TO INCLUDE REQUIRED REINFORCING, DETAILS, AND SHOP DRAWINGS FOR CUSTOM STRUCTURES (TRAFFIC RATED IF IN ROADWAY PAVEMENT AREAS) SHALL BE PROVIDED BY THE PRECAST MANUFACTURER. THE DESIGN CALCULATIONS AND SHOP DRAWINGS ARE SUBJECT TO APPROVAL BY THE ENGINEER.

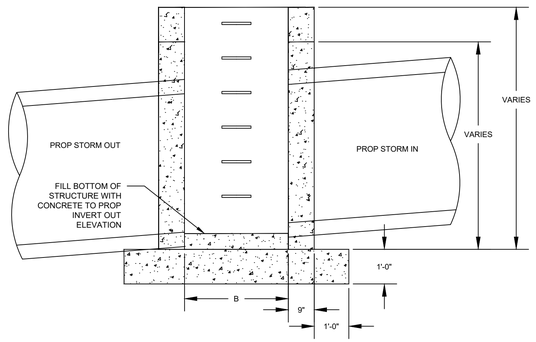
3. LOCATIONS OF PREFABRICATED HOLES SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL FIELD MEASURE AND SUPPLY THE PRECAST MANUFACTURER EXACT LOCATIONS FOR FINAL SHOP DRAWINGS.

4. STRUCTURE WALL THICKNESS, TOP SLAB AND BOTTOM SLAB/FOOTING FOUNDATION DIMENSIONS, AND STRUCTURE VERTICAL DIMENSIONS ARE APPROXIMATE. FINAL WALL THICKNESS, SLAB/FOOTING DIMENSIONS, AND STRUCTURE VERTICAL DIMENSIONS ARE TO BE DETERMINED BY PRECAST MANUFACTURER. INSIDE HORIZONTAL DIMENSIONS SHALL NOT BE CHANGED UNLESS APPROVED BY THE ENGINEER.

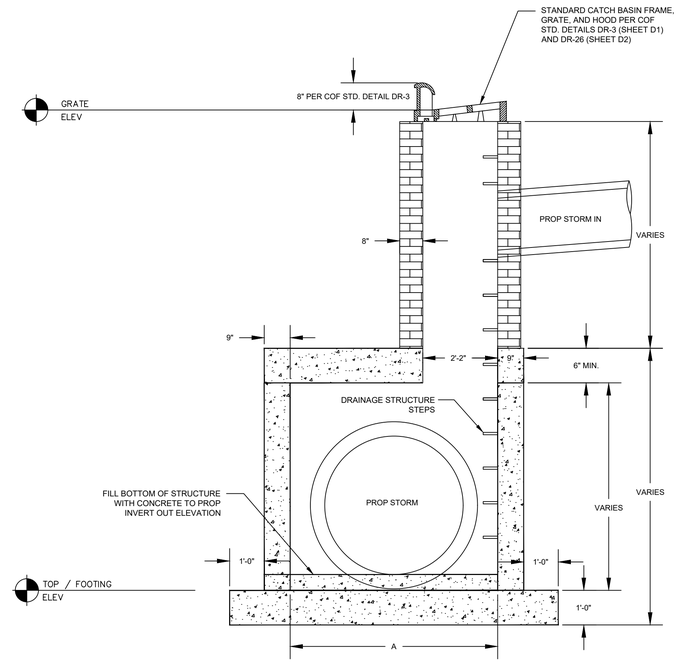
5. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER THAT INDICATES THE PRECAST STRUCTURE MEETS OR EXCEEDS THE DESIGN PARAMETERS SHOWN ON THESE STRUCTURAL SHEETS. THE CONTRACTOR MUST SUBMIT ANTI-FLOTATION CALCULATIONS WITH THIS SHOP DRAWING SUBMITTAL.



PLAN VIEW
(NOT TO SCALE)



SECTION A-A
(NOT TO SCALE)



SECTION B-B
(NOT TO SCALE)

NOTE: REFER TO SHEET S1 STORM STRUCTURE TABLE FOR STRUCTURE DIMENSIONS A AND B.

1 / S4 CUSTOM PRECAST CONCRETE CATCH BASIN (CB) / DOUBLE CATCH BASIN (DCB) STRUCTURE

NOT TO SCALE

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: STRUCTURAL DETAILS

SHEET NUMBER: S4 OF 40

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
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FAYETTEVILLE NC
PUBLIC SERVICES
ENGINEERING DIVISION
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433 HAY STREET FAYETTEVILLE, NC 28301

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
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ISSUED FOR CONSTRUCTION

DRAWN :	BFL
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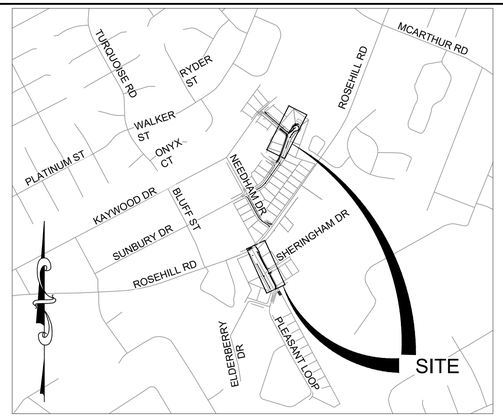
APPROVED :	
PROJECT NAME :	SUNBURY DRIVE
SCALE :	1" = 20'
DATE :	03-03-2022

PROJECT NO. 202005533.00.RA
SUB-LEDGER NO.



VICINITY MAP

NTS

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE ALL WATER AND SEWER INTERRUPTIONS WITH THE FAYETTEVILLE PUBLIC WORKS COMMISSION.
2. CONTRACTOR SHALL VERIFY SIZE, LOCATION, AND MATERIAL OF EXISTING UTILITIES PRIOR TO ORDERING ANY MATERIALS FOR PROPOSED CONSTRUCTION. ANY DISCREPANCIES FROM THE PLANS SHALL BE COMMUNICATED IMMEDIATELY TO THE CITY.
3. CONTRACTOR TO MAINTAIN ALL WATER SERVICE CONNECTIONS. ALL PROPOSED WATER SERVICE REPLACEMENTS SHALL CONFORM TO PWC STANDARDS PER DETAIL W.24. EXISTING WATER METERS ARE TO BE REUSED. REPLACE SERVICE LATERALS FROM MAIN UP TO THE METER SETTER. WATER METER BOXES SHALL BE REPLACED.
4. THE CONTRACTOR SHALL INSTALL ALL REQUIRED TEMPORARY AND PROPOSED THRUST BLOCKING AT EACH REQUIRED LOCATION (BENDS, TEES, END OF MAINS, PLUGS, ETC.) FOR BOTH INTERIM AND FINAL CONDITIONS FOR THE PROPOSED WATER SYSTEM.
5. EXISTING WATER LINES TO BE ABANDONED, SHALL BE CUT AND PLUGGED PER PWC DETAIL W.22 AND SHALL BE GROUT FILLED AS WELL.
6. ELEVATIONS OF SANITARY LATERALS AND WATER SERVICE LATERALS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY ELEVATIONS TO BE RECONNECTED.
7. ALL CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE CITY OF FAYETTEVILLE & PWC STANDARDS AND SPECIFICATIONS.
8. UTILITY LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR.
9. EXISTING VALVES NOT SHOWN IN PROJECT AREA HAVE NOT BEEN SURVEYED AND ARE BASED ON GIS LOCATION. CONTRACTOR SHALL COORDINATE WITH PWC FOR EXACT LOCATION.
10. CONTRACTOR SHALL REMOVE AND DISPOSE OF ANY ABANDONED UTILITIES IN CONFLICT WITH PROPOSED INFRASTRUCTURE.

PWC 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 72 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 BLOCK AND MORTAR.
14. ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE IN ACCORDANCE WITH PWC REQUIREMENTS.

UTILITY NOTES:

1. WATER SERVICES
   A. CONTRACTOR SHALL VERIFY EXISTING WATER SERVICES SHOWN (OR NOT SHOWN).
   B. CONTRACTOR SHALL REINSTATE ALL ACTIVE SERVICES WITH NEW LATERALS TIED TO THE WATER MAIN.
   C. CONTRACTOR SHALL COORDINATE WITH PWC PROJECT COORDINATOR REGARDING CONDITION OF WATER METER SETTER, TAIL PIECES, ETC. AND ANY NONCOMPLIANT MATERIALS. PWC PROJECT COORDINATOR WILL INSTRUCT CONTRACTOR TO REPLACE SUBSTANDARD METER SETTERS AND NONCOMPLIANT MATERIALS WITH CURRENT STANDARDS.
2. PRIOR TO INITIATING ANY WORK, CONTRACTOR SHALL COORDINATE WITH PWC PROJECT COORDINATOR TO HAVE DESIGNATED WATER VALVES INSPECTED TO ENSURE OPERABILITY.
   A. IF FOUND OPERABLE, CONTRACTOR SHALL PROVIDE PWC PROJECT COORDINATOR A MINIMUM OF 72 HOURS NOTIFICATION OF WHEN DESIGNATED VALVES NEED TO BE PERMANENTLY CLOSED. PRIOR TO PERMANENT VALVE CLOSURE, CONTRACTOR SHALL RESTRAIN VALVES WITH THRUST COLLARS. CONTRACTOR SHALL FOLLOW CONSTRUCTION SEQUENCE. COORDINATE ALL WORK WITH PWC.
   B. IF FOUND INOPERABLE, CONTRACTOR SHALL PERFORM ISOLATION FOLLOWING THE ABOVE INTENT WITH LINE STOPS. COORDINATE ALL WORK WITH PWC.
3. FINAL MILL AND OVERLAY LIMITS SHALL BE COORDINATED WITH PWC PROJECT COORDINATOR AND CITY OF FAYETTEVILLE INSPECTOR PRIOR TO PERFORMING WORK.
4. WATER MAIN ABANDONMENT WILL BE PERFORMED BY SERVICE INTERRUPTION. CONTRACTOR SHALL COORDINATE WITH PWC A MINIMUM OF 72 HOURS SO PWC CAN INSPECT AND SCHEDULE SERVICE INTERRUPTION. ABANDONMENT OF WATER MAIN SHALL BE COORDINATED AND WELL PLANNED WITH DRAINAGE WORK AND NEW WATER MAIN CONSTRUCTION TO MINIMIZE INTERRUPTION OF WATER SERVICE.
5. CONTRACTOR SHALL COORDINATE WITH PWC PROJECT COORDINATOR PRIOR TO BEGINNING WORK REGARDING PROPERTY OWNER NOTIFICATIONS. IN GENERAL, PWC INTENDS TO PROVIDE THE REQUIRED NOTIFICATIONS TO THE CONTRACTOR AND THE CONTRACTOR SHALL BE REQUIRED TO DISTRIBUTE THEM APPROPRIATELY.

GENERAL CONSTRUCTION SEQUENCE:
REFER TO WATER RELOCATION SHEETS FOR DETAILED WATER LINE CONSTRUCTION SEQUENCE.

INSTALL THE PLEASANT LOOP AND SHERINGHAM DRIVE PROPOSED WATER MAIN RELOCATION. NEXT INSTALL THE DEEPER PROPOSED SEWER UTILITIES. THEN INSTALL THE SUNBURY DRIVE PROPOSED WATER MAIN RELOCATIONS. THEN INSTALL REMAINING PROPOSED UTILITIES/STORM DRAIN SYSTEM WITH PRIORITY GIVEN TO INSTALL DEEPER UTILITIES/STORM DRAIN SYSTEM BEFORE SHALLOWER UTILITIES/STORM DRAIN SYSTEM INSTALLATION.

A MAJORITY OF THE NEW STORM DRAIN SYSTEM INSTALLATION WILL REQUIRE THE EXISTING SEWER AND WATER SYSTEMS TO BE REMOVED AND REPLACED PRIOR TO THE NEW STORM DRAIN SYSTEM INSTALLATION.

SEWER SYSTEM GENERAL CONSTRUCTION SEQUENCE:
THE FOLLOWING SEQUENCE IS RECOMMENDED TO FACILITATE THE SEWER SYSTEM CONSTRUCTION. CONTRACTOR SHALL PROVIDE A SANITARY SEWER BYPASS PUMPING PLAN SEALED BY A PROFESSIONAL ENGINEER.

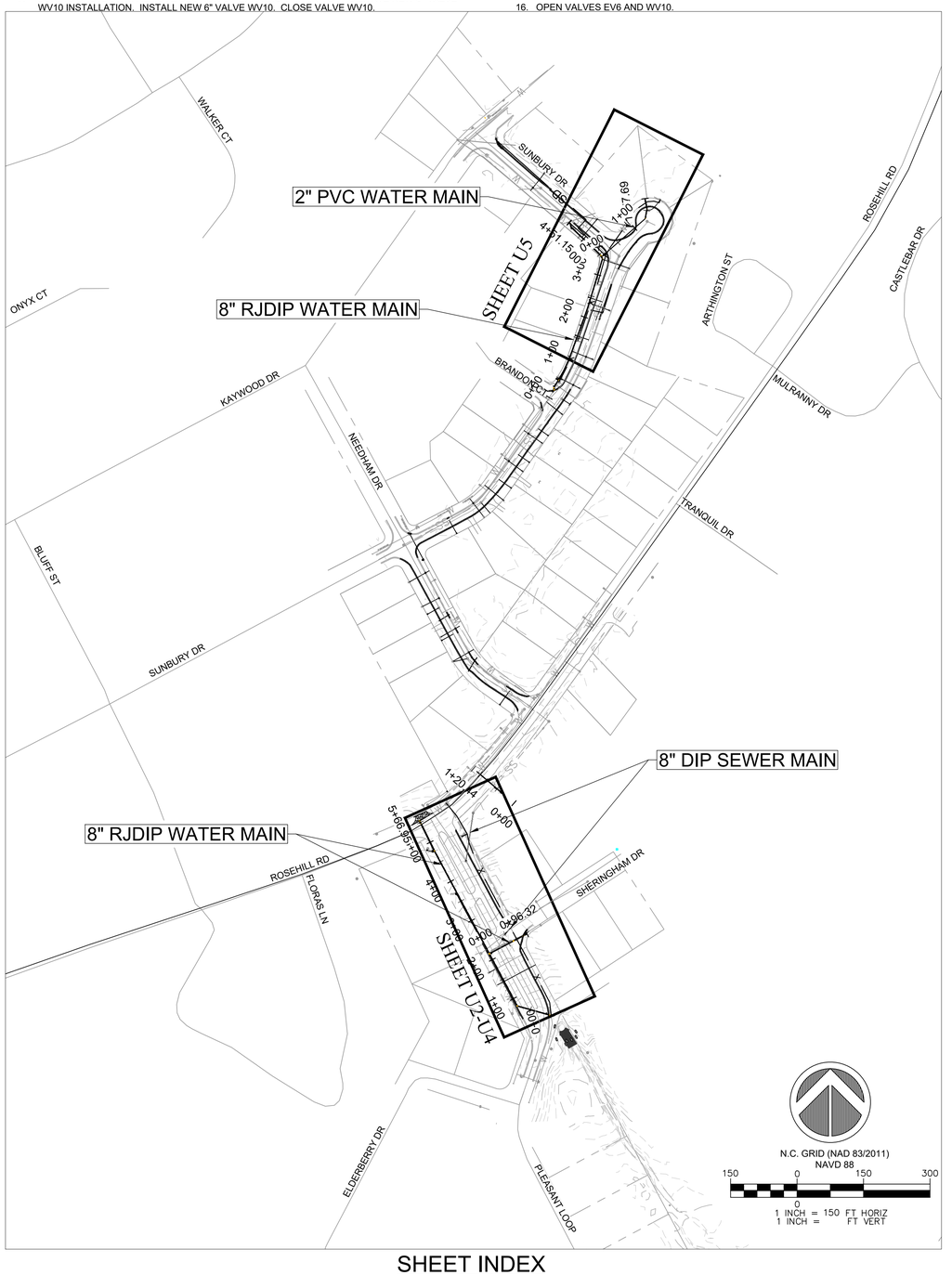
1. THE CONTRACTOR SHALL HAVE ALL BYPASS PUMPING OPERATION, SYSTEM COMPONENTS AND APPURTENANCES ON SITE AND IN PLACE, AS PER THE SANITARY SEWER BYPASS PLAN SUBMITTED TO AND APPROVED BY THE PWC PROJECT COORDINATOR, PRIOR TO BEGINNING WORK ON THE PROPOSED SEWER SYSTEM.
2. CONTRACTOR SHALL SIZE BYPASS PUMPS TO CONVEY A MINIMUM OF 550 GPM FOR ALL 8-INCH SEWER LINES.
3. THE CONTRACTOR SHALL INSTALL REQUIRED TRAFFIC CONTROL AND EROSION CONTROL.
4. ONCE THE TEMPORARY BYPASS PIPING HAS BEEN INSTALLED AND APPROVED BY THE PWC INSPECTOR, THE CONTRACTOR MAY BEGIN THE SEWER CONSTRUCTION.
5. SEWER BYPASS PUMPING SHALL CONTINUE UNINTERRUPTED DURING ALL CONSTRUCTION ACTIVITIES AND UNTIL APPROVAL IS GIVEN FROM PWC INSPECTOR TO REESTABLISH FLOWS IN THE SANITARY SEWER SYSTEM.
6. BYPASS PUMPING OPERATIONS SHALL BE CONDUCTED IN ACCORDANCE WITH PWC STANDARDS.
7. INSTALL PROPOSED SANITARY SEWER LINES AND OR PROPOSED MANHOLES BEGINNING AT PROJECT LOWEST ELEVATION POINT AND PROCEEDING UPSLOPE.
8. ONCE THE PROPOSED SEWER LINE AND OR MANHOLE HAVE BEEN COMPLETED, TESTED, AND APPROVED BY THE PWC INSPECTOR, AND WITH PRIOR APPROVAL OF THE PWC INSPECTOR, THE BYPASS PIPING AND PUMPS SHALL BE REMOVED AND RELOCATED WHERE REQUIRED TO FACILITATE THE NEXT UPSLOPE SECTION OF PROPOSED SEWER LINE AND OR MANHOLE CONSTRUCTION.
9. CONTINUE SEWER SYSTEM CONSTRUCTION UTILIZING BYPASS PUMPING UNTIL PROJECT IS COMPLETE, TESTED, AND APPROVED BY THE PWC INSPECTOR.

WATER LINE CONSTRUCTION SEQUENCE (SHEET U3-U4):

1. EXISTING VALVES NOT SHOWN IN PROJECT AREA HAVE NOT BEEN SURVEYED AND ARE BASED ON GIS LOCATION. CONTRACTOR SHALL COORDINATE WITH PWC FOR EXACT LOCATION.
2. THROUGHOUT THE PROJECT, EXISTING WATER SHALL REMAIN IN SERVICE TO THE GREATEST EXTENT POSSIBLE, AND SHALL TYPICALLY ONLY BE INTERRUPTED DURING CONNECTION TO THE EXISTING SYSTEM.
3. COORDINATE WITH NCDOT AND PWC INSPECTORS PRIOR TO ANY WATER UTILITY WORK.
4. INSTALL 8" RJDIP, 6" RJDIP, 2" PVC, VALVES, BENDS, AND TEES FROM WV1 TO BORE ENTRY PIT AND CONTINUE TO WV5. INSTALL TEMPORARY BLOW-OFF, PLUG AND FLUSHING TAP.
5. INSTALL TRAFFIC CONTROL MEASURES TO INCLUDE BARRIER PROTECTION AROUND BORE RECEIVING PIT AND WORK AREA AROUND EXISTING VALVE EV2. SEE TRAFFIC CONTROL PLAN.
6. EXCAVATE BORE ENTRY AND RECEIVING PITS. INSTALL 16" STEEL ENCASEMENT BY BORE AND JACK METHOD. INSTALL 8" RJDIP. CONNECT 8" WATER MAIN TO EXISTING 16" MAIN USING TAPPING SLEEVE AND VALVE (WV3).
7. CLOSE VALVES WV1, WV3, WV5, AND FIRE HYDRANT VALVE. ENSURE VALVES WV2 AND WV4 REMAIN OPEN. EXISTING WATER SHALL REMAIN AND NOT BE DISTURBED OR REMOVED UNTIL NEW WATER MAIN HAS BEEN FULLY TESTED AND ACCEPTED BY PWC AND PLACED INTO SERVICE.
8. CLEAN, PRESSURE TEST, AND DISINFECT NEW WATERLINE PER PWC STANDARDS.
9. BACKFILL AND COMPACT BORE ENTRY AND RECEIVING PITS. PERMANENTLY STABILIZE DISTURBED AREAS. INSTALL PERMANENT PAVEMENT PATCH AND CONCRETE DRIVEWAY REPLACEMENT.
10. COORDINATE SHUTDOWN OF EXISTING 8" WATER MAIN TO FACILITATE CONNECTION OF THE EXISTING 8" MAIN TO THE NEW 8" MAIN, CONNECTION OF THE EXISTING 2" MAIN TO THE NEW 2" MAIN, AND CONNECTIONS OF THE EXISTING WATER SERVICES.
11. ISOLATE EXISTING 8" MAIN WITHIN PROJECT AREA BY CLOSING EXISTING VALVE EV2. EXISTING VALVE EV2 IS TO BE ABANDONED AND SHALL BE CLOSED PERMANENTLY.
12. RELIEVE LINE PRESSURE OF ISOLATED EXISTING MAIN AND NEW MAIN.
13. DURING SHUTDOWN: REMOVE SECTION OF EXISTING 8" MAIN AND 2" MAIN TO FACILITATE NEW CONNECTIONS AND EXISTING VALVE EV2 ABANDONMENT AND WATER MAIN KILL-OUT. INSTALL REMAINDER OF 8" RJDIP AND 2" PVC, AND CONNECT NEW 8" MAIN TO EXISTING 8" MAIN AND NEW 2" MAIN TO EXISTING 2" MAIN. RELOCATE FIRE HYDRANT TO NEW MAIN. INSTALL NEW WATER SERVICES FROM WATER MAIN TO EXISTING WATER METER.
14. PERFORM DISINFECTION PROCEDURES.
15. OPEN VALVES WV1, WV3, AND WV5. ENSURE VALVES WV2 AND WV4 REMAIN OPEN.
16. INSTALL STORM DRAIN REPLACEMENT SYSTEM WHILE REMOVING EXISTING STORM DRAIN SYSTEM AND EXISTING WATER MAIN WITHIN STORM DRAIN TRENCH. EXISTING WATER MAIN NOT WITHIN THE STORM DRAIN TRENCH SHALL BE ABANDONED IN PLACE.
17. WHEN STORM DRAIN INSTALLATION WORK CROSSES BELOW THE WATER MAIN, PROTECT AND SUPPORT THE WATER MAIN.

WATER LINE CONSTRUCTION SEQUENCE (SHEET 6):

1. COORDINATE WITH PWC INSPECTOR PRIOR TO ANY WATER UTILITY WORK.
2. EXISTING VALVES EV5 AND EV6 HAVE BEEN SURVEYED AND ARE SHOWN ON SHEET 5 AND SHEET 6.
3. THROUGHOUT THE PROJECT, EXISTING WATER SHALL REMAIN IN SERVICE TO THE GREATEST EXTENT POSSIBLE, AND SHALL TYPICALLY ONLY BE INTERRUPTED DURING CONNECTION TO THE EXISTING SYSTEM.
4. COORDINATE SHUTDOWN OF EXISTING 6" WATER MAIN TO FACILITATE INSTALLATION OF NEW 6" VALVE WV10.
5. ISOLATE EXISTING 6" MAIN WITHIN PROJECT AREA BY CLOSING EXISTING VALVE EV5 (REFER TO SHEET 5) AND EV6.
6. RELIEVE LINE PRESSURE OF ISOLATED EXISTING MAIN.
7. DURING SHUTDOWN: REMOVE SECTION OF EXISTING 6" MAIN TO FACILITATE NEW 6" VALVE WV10 INSTALLATION. INSTALL NEW 6" VALVE WV10. CLOSE VALVE WV10.
8. PERFORM DISINFECTION PROCEDURES.
9. ONLY OPEN VALVE EV5. ENSURE VALVE EV6 AND WV10 REMAIN CLOSED.
10. INSTALL STORM DRAIN REPLACEMENT SYSTEM WHILE REMOVING EXISTING WATER MAIN WITHIN STORM DRAIN TRENCH.
11. INSTALL 6" RJDIP FROM EV6 TO A POINT JUST PRIOR TO WV10. INSTALL TEMPORARY BLOW-OFF, PLUG AND FLUSHING TAP.
12. CLEAN, PRESSURE TEST, AND DISINFECT NEW WATERLINE PER PWC STANDARDS.
13. RELIEVE LINE PRESSURE OF NEW MAIN TO FACILITATE CONNECTION OF THE EXISTING 6" MAIN TO THE NEW 6" MAIN.
14. INSTALL REMAINDER OF 6" RJDIP, AND CONNECT EXISTING 6" MAIN TO NEW 6" MAIN AT WV10.
15. PERFORM DISINFECTION PROCEDURES.
16. OPEN VALVES EV6 AND WV10.



SHEET INDEX

1" = 150'

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

SHEET NUMBER U1 OF 40

PLAN TYPE: UTILITY COVER & SHEET INDEX

WK DICKSON
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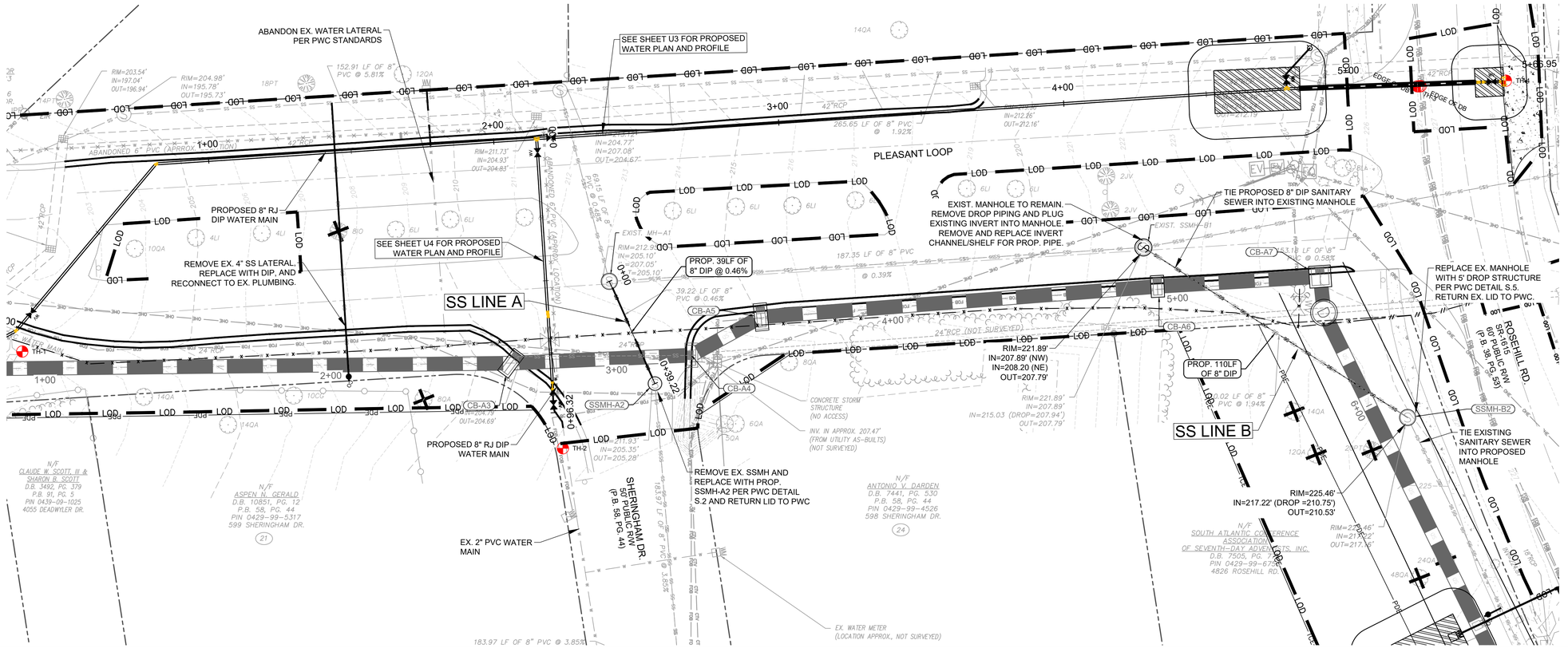
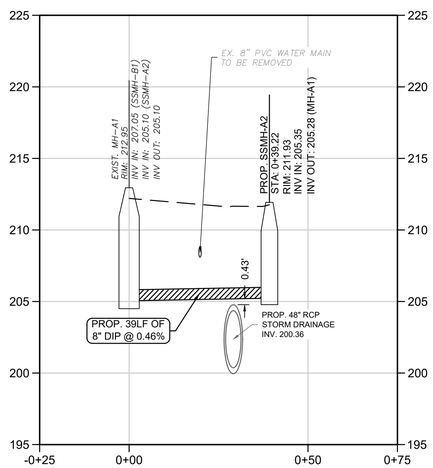


KEY MAP
NTS

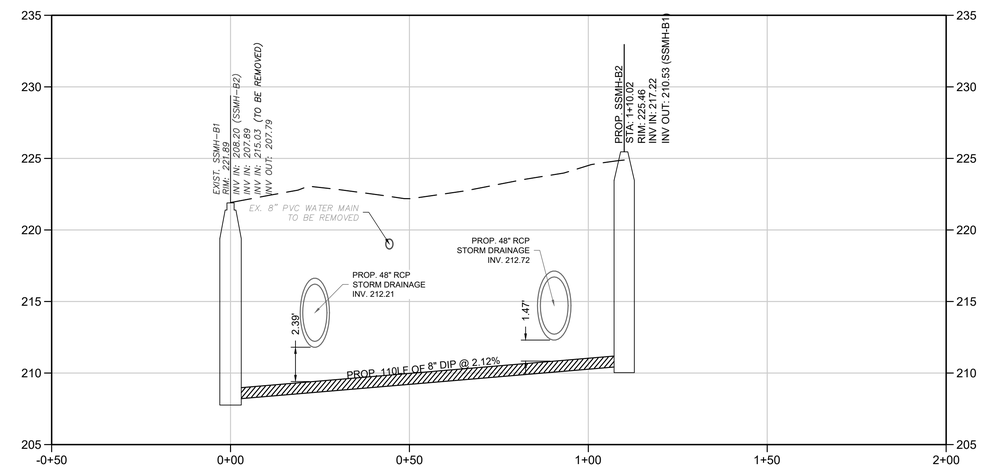
NOTES:

1. CONTRACTOR TO COORDINATE WITH HOMEOWNERS TO REPLACE OR RELOCATE PRIVATE IRRIGATION AND DRAINAGE SYSTEMS. CONTRACTOR SHALL VERIFY, MARK AND RELOCATE OR REPLACE AS NECESSARY.
2. CONTRACTOR TO COORDINATE WITH LOCAL UTILITIES TO RELOCATE ALL UTILITY LINES WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO BEGINNING STORMWATER WORK.
3. ALL PIPE SLOPES COMPUTED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE BY STATION CALL. PIPE LENGTHS THEN ROUNDED TO NEAREST FOOT.
4. ALL PROPOSED 4" SANITARY LATERALS SHALL BE INSTALLED WITH A 2% MINIMUM SLOPE AND TO AVOID CONFLICT WITH PROPOSED STORM PIPES. INSTALLATION OF LATERALS SHALL CONFORM TO PWC STANDARD DETAILS PER DETAIL S.11.
5. ALL PROPOSED WATER SERVICE REPLACEMENT SHALL CONFORM TO PWC STANDARDS PER DETAIL W.24.

20 0 20 40
1 INCH = 20 FT HORIZ



SS LINE A - STA. 0+00 TO STA. 0+39.22
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL



SS LINE B - STA. 0+00 TO STA. 1+10.02
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

GENERAL CONSTRUCTION SEQUENCE:
REFER TO WATER RELOCATION SHEETS FOR DETAILED WATER LINE CONSTRUCTION SEQUENCE.

INSTALL THE PLEASANT LOOP AND SHERINGHAM DRIVE PROPOSED WATER MAIN RELOCATION. NEXT INSTALL THE DEEPER PROPOSED SEWER UTILITIES. THEN INSTALL THE SUNBURY DRIVE PROPOSED WATER MAIN RELOCATIONS. THEN INSTALL REMAINING PROPOSED UTILITIES/STORM DRAIN SYSTEM WITH PRIORITY GIVEN TO INSTALL DEEPER UTILITIES/STORM DRAIN SYSTEM BEFORE SHALLOWER UTILITIES/STORM DRAIN SYSTEM INSTALLATION.

A MAJORITY OF THE NEW STORM DRAIN SYSTEM INSTALLATION WILL REQUIRE THE EXISTING SEWER AND WATER SYSTEMS TO BE REMOVED AND REPLACED PRIOR TO THE NEW STORM DRAIN SYSTEM INSTALLATION.

SEWER SYSTEM GENERAL CONSTRUCTION SEQUENCE:
THE FOLLOWING SEQUENCE IS RECOMMENDED TO FACILITATE THE SEWER SYSTEM CONSTRUCTION. CONTRACTOR SHALL PROVIDE A SANITARY SEWER BYPASS PUMPING PLAN SEALED BY A PROFESSIONAL ENGINEER.

1. THE CONTRACTOR SHALL HAVE ALL BYPASS PUMPING OPERATION, SYSTEM COMPONENTS AND APPURTENANCES ON SITE AND IN PLACE, AS PER THE SANITARY SEWER BYPASS PLAN SUBMITTED TO AND APPROVED BY THE PWC PROJECT COORDINATOR, PRIOR TO BEGINNING WORK ON THE PROPOSED SEWER SYSTEM.
2. CONTRACTOR SHALL SIZE BYPASS PUMPS TO CONVEY A MINIMUM OF 550 GPM FOR ALL 8-INCH SEWER LINES.
3. THE CONTRACTOR SHALL INSTALL REQUIRED TRAFFIC CONTROL AND EROSION CONTROL.
4. ONCE THE TEMPORARY BYPASS PIPING HAS BEEN INSTALLED AND APPROVED BY THE PWC INSPECTOR, THE CONTRACTOR MAY BEGIN THE SEWER CONSTRUCTION.
5. SEWER BYPASS PUMPING SHALL CONTINUE UNINTERRUPTED DURING ALL CONSTRUCTION ACTIVATES AND UNTIL APPROVAL IS GIVEN FROM PWC INSPECTOR TO REESTABLISH FLOWS IN THE SANITARY SEWER SYSTEM.
6. BYPASS PUMPING OPERATIONS SHALL BE CONDUCTED IN ACCORDANCE WITH PWC STANDARDS.
7. INSTALL PROPOSED SANITARY SEWER LINES AND OR PROPOSED MANHOLES BEGINNING AT PROJECT LOWEST ELEVATION POINT AND PROCEEDING UPSLOPE.
8. ONCE THE PROPOSED SEWER LINE AND OR MANHOLE HAVE BEEN COMPLETED, TESTED, AND APPROVED BY THE PWC INSPECTOR, AND WITH PRIOR APPROVAL OF THE PWC INSPECTOR, THE BYPASS PIPING AND PUMPS SHALL BE REMOVED AND RELOCATED WHERE REQUIRED TO FACILITATE THE NEXT UPSLOPE SECTION OF PROPOSED SEWER LINE AND OR MANHOLE CONSTRUCTION.
9. CONTINUE SEWER SYSTEM CONSTRUCTION UTILIZING BYPASS PUMPING UNTIL PROJECT IS COMPLETE, TESTED, AND APPROVED BY THE PWC INSPECTOR.

20 0 20 40
5 0 5 10
1 INCH = 20 FT HORIZ
1 INCH = 5 FT VERT

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS
PLEASANT LOOP &
SHERINGHAM DR.

SHEET NUMBER: U2 OF 40
PLAN TYPE: SEWER RELOCATIONS

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
WWW.WKDICKSON.COM

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

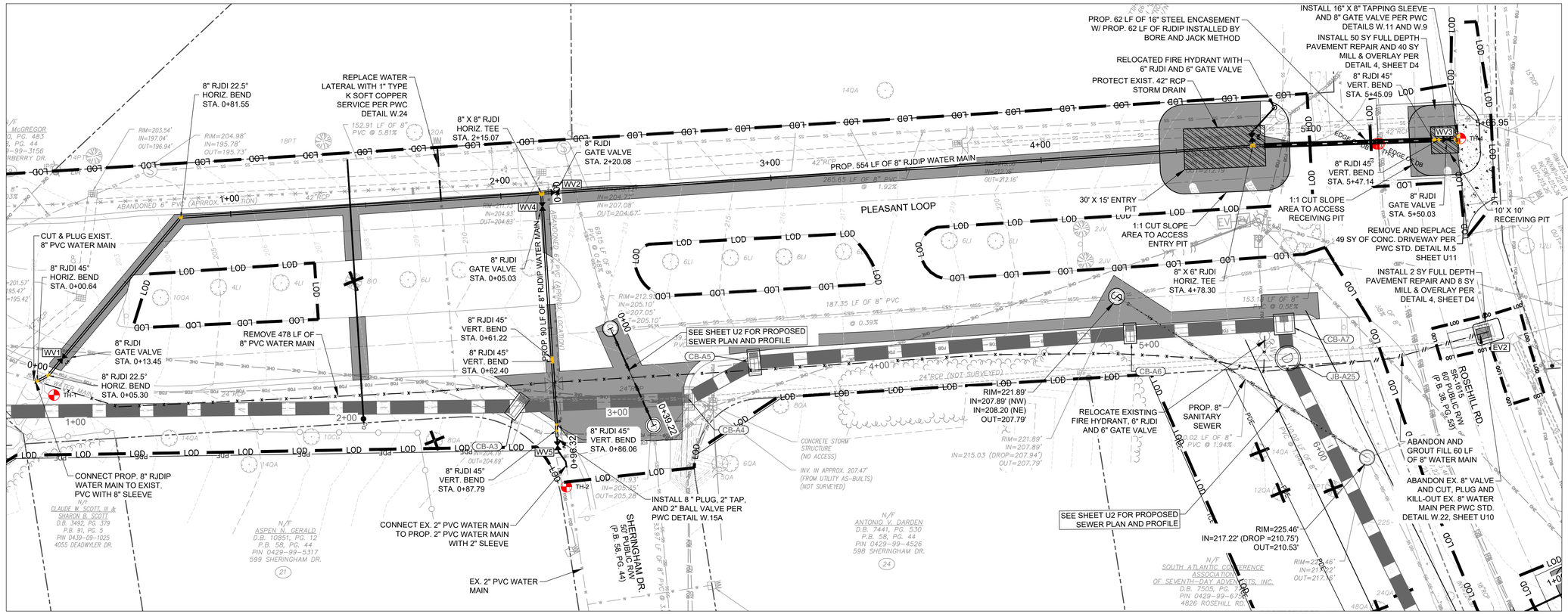
NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:50 PM

REVISIONS:

REV. #	DESCRIPTION	REV.BY DATE

DRAWN :	BFL	PROJECT	SUNBURY DRIVE
DESIGN :	TLM	NAME :	
CHECK :		SCALE :	1" = 20'
APPROVED :		DATE :	03-03-2022

PROJECT NO. 20200533.00.RA
SUB-LEDGER NO.

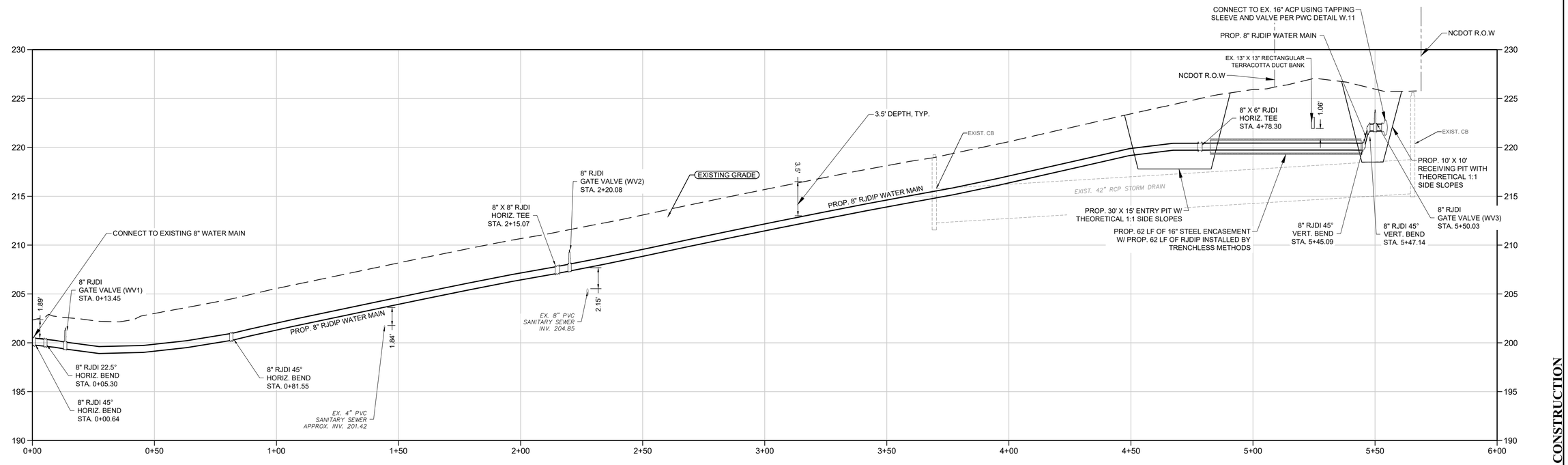


NOTES:

1. CONTRACTOR TO COORDINATE WITH HOMEOWNERS TO REPLACE OR RELOCATE PRIVATE IRRIGATION AND DRAINAGE SYSTEMS. CONTRACTOR SHALL VERIFY, MARK AND RELOCATE OR REPLACE AS NECESSARY.
2. CONTRACTOR TO COORDINATE WITH LOCAL UTILITIES TO RELOCATE ALL UTILITY LINES WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO BEGINNING STORMWATER WORK.
3. ALL PROPOSED 4" SANITARY LATERALS SHALL BE INSTALLED WITH A 2% MINIMUM SLOPE AND TO AVOID CONFLICT WITH PROPOSED STORM PIPES. INSTALLATION OF LATERALS SHALL CONFORM TO PWC STANDARD DETAILS PER DETAIL S.11.
4. ALL PROPOSED WATER SERVICE REPLACEMENT SHALL CONFORM TO PWC STANDARDS PER DETAIL W.24.

NOTE:

REFER TO SHEET U1 FOR WATER LINE CONSTRUCTION SEQUENCE.



C-WATER-PLEASANT LOOP RELO

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

20 0 20 40
5 0 5 10
1 INCH = 20 FT HORIZ
1 INCH = 5 FT VERT

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS
PLEASANT LOOP & SHERINGHAM DR.

SHEET NUMBER U3 OF 40

PLAN TYPE: WATER RELOCATIONS

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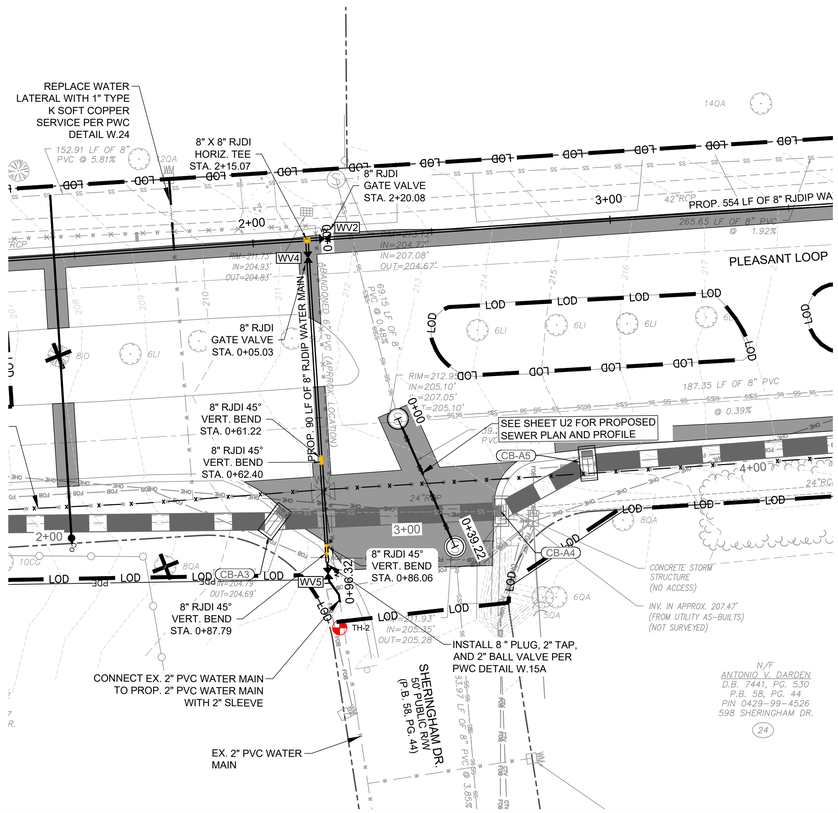
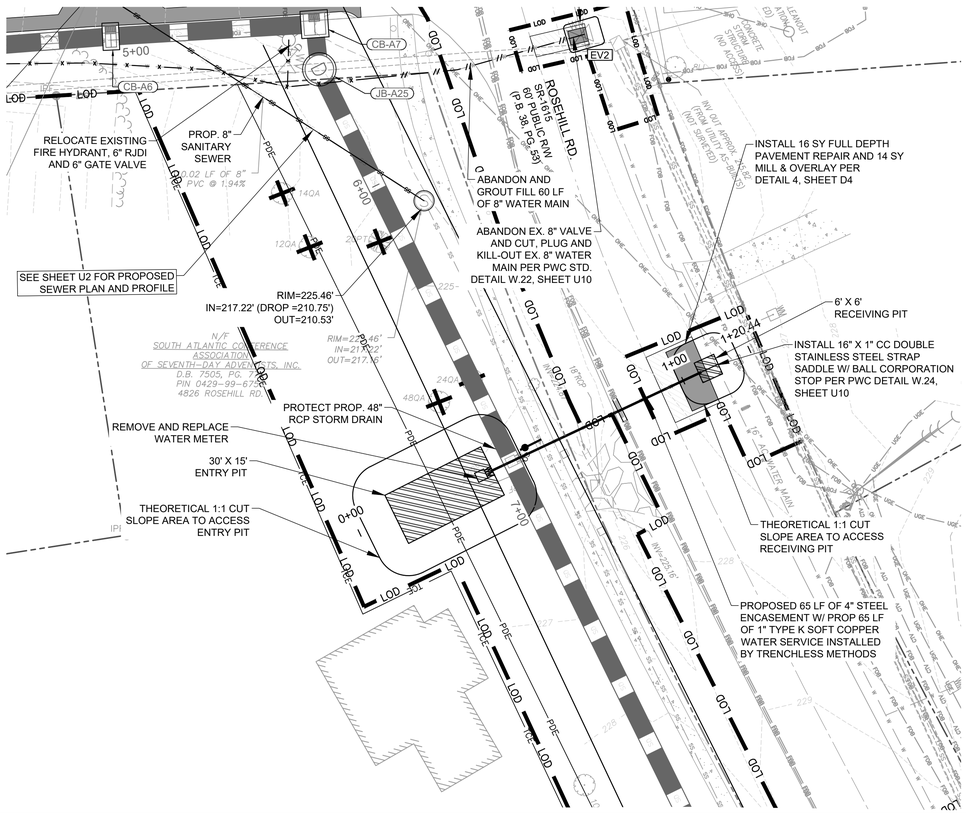
NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:50 PM

REV. #	REVISIONS: DESCRIPTION	REV.BY DATE

DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	
PROJECT NAME :	SUNBURY DRIVE
SCALE :	1" = 20'
DATE :	03-03-2022

PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.





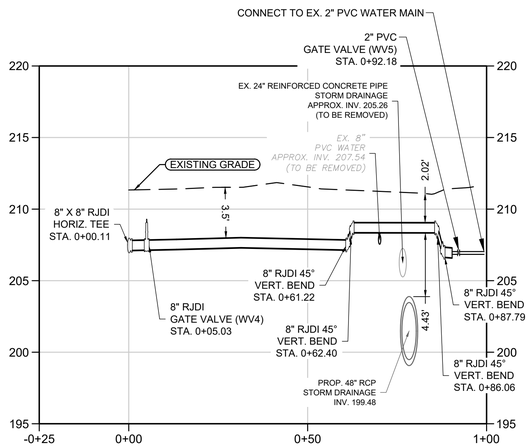
NOTES:

1. CONTRACTOR TO COORDINATE WITH HOMEOWNERS TO REPLACE OR RELOCATE PRIVATE IRRIGATION AND DRAINAGE SYSTEMS. CONTRACTOR SHALL VERIFY, MARK AND RELOCATE OR REPLACE AS NECESSARY.
2. CONTRACTOR TO COORDINATE WITH LOCAL UTILITIES TO RELOCATE ALL UTILITY LINES WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO BEGINNING STORMWATER WORK.
3. ALL PROPOSED 4" SANITARY LATERALS SHALL BE INSTALLED WITH A 2% MINIMUM SLOPE AND TO AVOID CONFLICT WITH PROPOSED STORM PIPES. INSTALLATION OF LATERALS SHALL CONFORM TO PWC STANDARD DETAILS PER DETAIL S.11.
4. ALL PROPOSED WATER SERVICE REPLACEMENT SHALL CONFORM TO PWC STANDARDS PER DETAIL W.24.

NOTE:

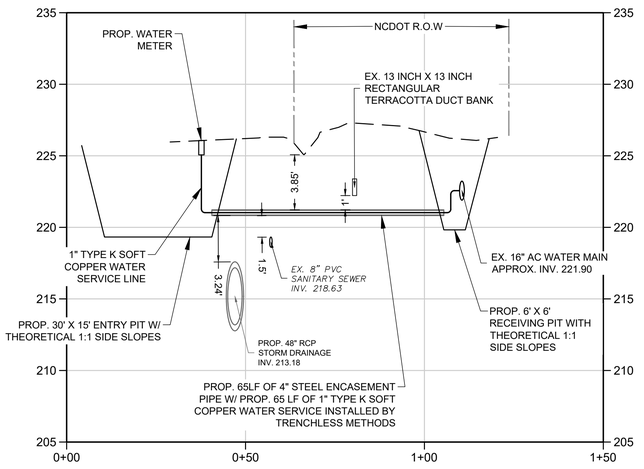
REFER TO SHEET U1 FOR SHERINGHAM WATER LINE CONSTRUCTION SEQUENCE.

20 0 20 40
1 INCH = 20 FT HORIZ



C-WATER-SHERINGHAM RELO

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL



C-WATER-ROSEHILL LATERAL

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

WATER LINE CONSTRUCTION SEQUENCE (SHEET U4):

1. INSTALL STORM DRAIN REPLACEMENT SYSTEM.
2. COORDINATE WITH NCDOT AND PWC INSPECTORS PRIOR TO ANY WATER UTILITY WORK.
3. INSTALL TRAFFIC CONTROL MEASURES TO INCLUDE BARRIER PROTECTION AROUND RECEIVING PIT. SEE TRAFFIC CONTROL PLAN.
4. EXCAVATE BORE ENTRY AND RECEIVING PITS. INSTALL 4" STEEL ENCASEMENT BY BORE AND JACK METHOD. INSTALL 1" TYPE K SOFT COPPER SERVICE AND WATER METER. CONNECT 1" WATER LATERAL TO EXISTING 16" MAIN USING SERVICE SADDLE WITH BALL CORPORATION STOP.
5. CLEAN, PRESSURE TEST, AND DISINFECT NEW WATER LATERAL PER PWC STANDARDS. ONLY AFTER FULLY TESTED AND ACCEPTED BY PWC, PLACE WATER LATERAL INTO SERVICE.
6. BACKFILL AND COMPACT BORE ENTRY AND RECEIVING PITS. PERMANENTLY STABILIZE DISTURBED AREAS. INSTALL PERMANENT PAVEMENT PATCH.

20 0 20 40
5 0 5 10
1 INCH = 20 FT HORIZ
1 INCH = 5 FT VERT

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS
SHERINGHAM DR. & ROSEHILL RD.

SHEET NUMBER U4 OF 40

PLAN TYPE: WATER RELOCATIONS

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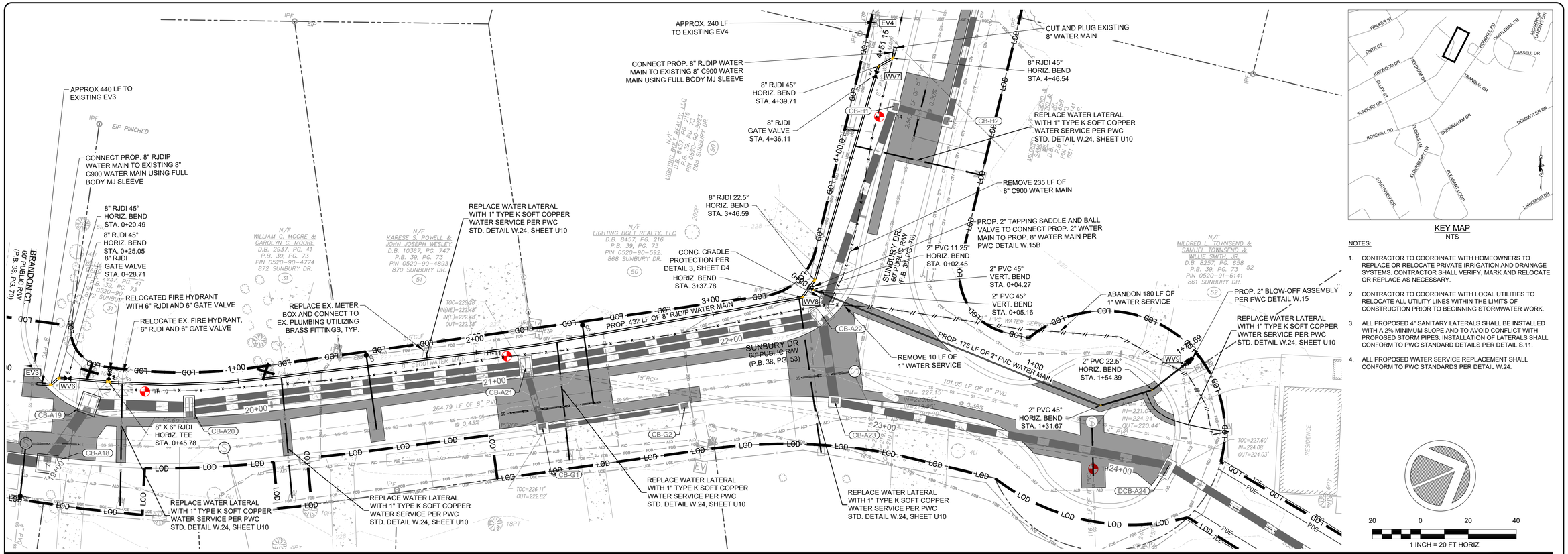
NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:51 PM

REV. #	DESCRIPTION	REV.BY DATE

REVISIONS

DRAWN :	BFL	PROJECT	SUNBURY DRIVE
DESIGN :	TLM	NAME :	
CHECK :		SCALE :	1" = 20'
APPROVED :		DATE :	03-03-2022

PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.



KEY MAP
NTS

NOTES:

1. CONTRACTOR TO COORDINATE WITH HOMEOWNERS TO REPLACE OR RELOCATE PRIVATE IRRIGATION AND DRAINAGE SYSTEMS. CONTRACTOR SHALL VERIFY, MARK AND RELOCATE OR REPLACE AS NECESSARY.
2. CONTRACTOR TO COORDINATE WITH LOCAL UTILITIES TO RELOCATE ALL UTILITY LINES WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO BEGINNING STORMWATER WORK.
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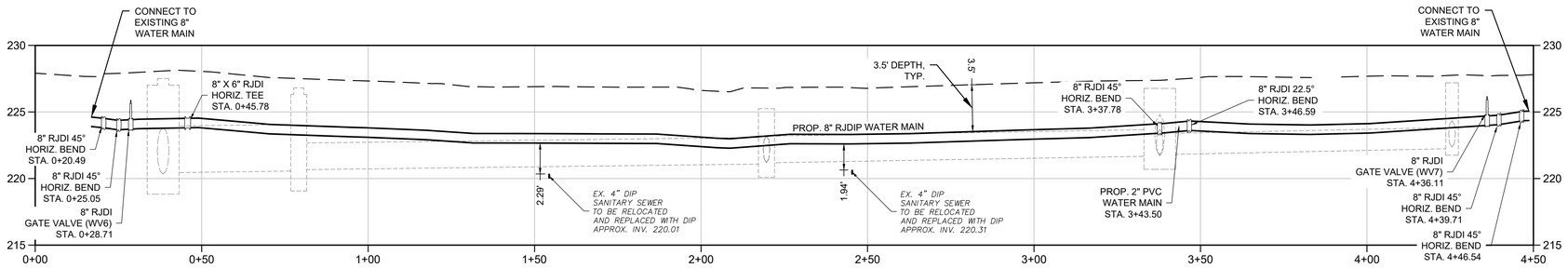
4. ALL PROPOSED WATER SERVICE REPLACEMENT SHALL CONFORM TO PWC STANDARDS PER DETAIL W.24.

20 0 20 40
1 INCH = 20 FT HORIZ



C-WATER-SUNBURY RELO

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

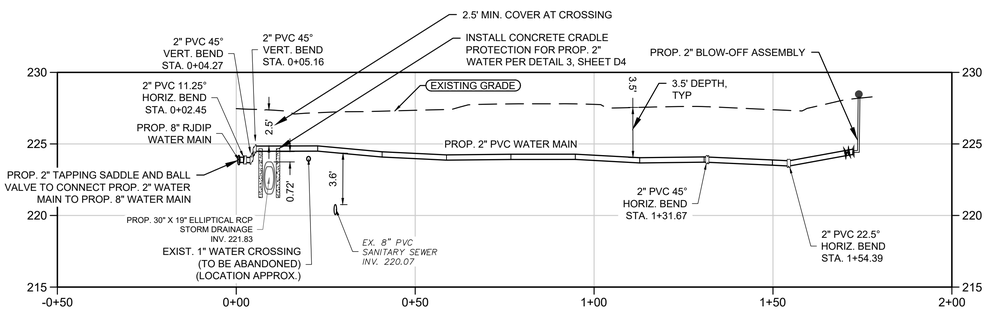
GENERAL CONSTRUCTION SEQUENCE:
REFER TO DETAILED WATER LINE CONSTRUCTION SEQUENCE THIS SHEET.

INSTALL THE PLEASANT LOOP AND SHERINGHAM DRIVE PROPOSED WATER MAIN RELOCATION. NEXT INSTALL THE DEEPER PROPOSED SEWER UTILITIES. THEN INSTALL THE SUNBURY DRIVE PROPOSED WATER MAIN RELOCATIONS. THEN INSTALL REMAINING PROPOSED UTILITIES/STORM DRAIN SYSTEM WITH PRIORITY GIVEN TO INSTALL DEEPER UTILITIES/STORM DRAIN SYSTEM BEFORE SHALLOWER UTILITIES/STORM DRAIN SYSTEM INSTALLATION.

A MAJORITY OF THE NEW STORM DRAIN SYSTEM INSTALLATION WILL REQUIRE THE EXISTING SEWER AND WATER SYSTEMS TO BE REMOVED AND REPLACED PRIOR TO THE NEW STORM DRAIN SYSTEM INSTALLATION.

WATER LINE CONSTRUCTION SEQUENCE (SHEET U5):

1. COORDINATE WITH PWC INSPECTOR PRIOR TO ANY WATER UTILITY WORK.
2. EXISTING VALVES EV3 AND EV4 HAVE BEEN SURVEYED AND ARE SHOWN ON SHEET 6 AND SHEET 9.
3. THROUGHOUT THE PROJECT, EXISTING WATER SHALL REMAIN IN SERVICE TO THE GREATEST EXTENT POSSIBLE, AND SHALL TYPICALLY ONLY BE INTERRUPTED DURING CONNECTION TO THE EXISTING SYSTEM.
4. INSTALL 8" RJDIP, 6" RJDIP, 2" PVC, VALVES, BENDS, BLOW-OFF ASSEMBLY, AND TEE FROM WV6 TO WV7 AND CONTINUE TO WV9. INSTALL TEMPORARY BLOW-OFF (IF NEEDED), PLUG AND FLUSHING TAP. CLOSE VALVES WV6-WV7, WV9, AND FIRE HYDRANT VALVE. ENSURE VALVE WV8 REMAINS OPEN. EXISTING WATER SHALL REMAIN AND NOT BE DISTURBED OR REMOVED UNTIL NEW WATER MAIN HAS BEEN FULLY TESTED AND ACCEPTED BY PWC AND PLACED INTO SERVICE.
5. CLEAN, PRESSURE TEST, AND DISINFECT NEW WATERLINE PER PWC STANDARDS.
6. COORDINATE SHUTDOWN OF EXISTING 8" WATER MAIN TO FACILITATE CONNECTION OF THE EXISTING 8" MAIN TO THE NEW 8" MAIN AND CONNECTIONS OF THE EXISTING WATER SERVICES.
7. ISOLATE EXISTING 8" MAIN WITHIN PROJECT AREA BY CLOSING EXISTING VALVE EV3 AND EV4.
8. RELIEVE LINE PRESSURE OF ISOLATED EXISTING MAIN AND NEW MAIN.
9. DURING SHUTDOWN: REMOVE SECTION OF EXISTING 8" MAIN TO FACILITATE NEW CONNECTIONS. INSTALL REMAINDER OF 8" RJDIP, AND CONNECT NEW 8" MAIN TO EXISTING 8" MAIN. RELOCATE FIRE HYDRANT TO NEW MAIN. CONNECT NEW WATER SERVICES TO EXISTING WATER SERVICES (TEMPORARY).
10. PERFORM DISINFECTION PROCEDURES.
11. OPEN VALVES EV3-EV4 AND WV6-WV7. ENSURE VALVE WV8 REMAINS OPEN. ENSURE VALVE WV9 (BLOW -OFF) REMAINS CLOSED.
12. INSTALL STORM DRAIN REPLACEMENT SYSTEM WHILE REMOVING EXISTING STORM DRAIN SYSTEM AND EXISTING WATER MAIN WITHIN STORM DRAIN TRENCH. EXISTING WATER MAIN NOT WITHIN THE STORM DRAIN TRENCH SHALL BE ABANDONED IN PLACE.
13. AS STORM DRAIN INSTALLATION WORK PROGRESSES AND CROSSES THE WATER SERVICES, REMOVE EXISTING WATER SERVICE WITHIN STORM DRAIN TRENCH AREA, INSTALL REPLACEMENT STORM DRAIN PIPE, AND THEN INSTALL NEW WATER SERVICE FROM WATER MAIN TO EXISTING WATER METER.
14. WHEN STORM DRAIN INSTALLATION WORK CROSSES BELOW THE WATER MAIN, PROTECT AND SUPPORT THE WATER MAIN.



C-WATER-CUL-DE-SAC

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

20 0 20 40
5 0 5 10
1 INCH = 20 FT HORIZ
1 INCH = 5 FT VERT

ISSUED FOR CONSTRUCTION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS
SUNBURY DR. TO CUL-DE-SAC
SHEET NUMBER U5 OF 40
PLAN TYPE: WATER RELOCATIONS

WK DICKSON
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NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:51 PM

REVISIONS		
REV. #	DESCRIPTION	REV.BY DATE

PROJECT	SUNBURY DRIVE		
NAME :		SCALE :	1" = 20'
DATE :	03-03-2022		
DRAWN :	BFL		
DESIGN :	TLM		
CHECK :			
APPROVED :			

PROJECT NO. 20200533.00.RA
SUB-LEDGER NO.

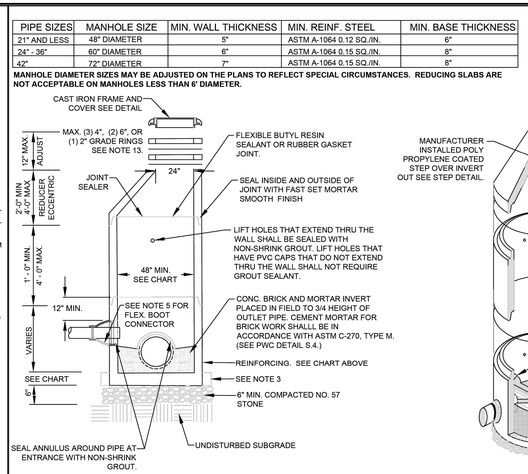
1. ALL SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE FAYPWC STANDARDS.
2. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. CONSTRUCTION STAKING IS REQUIRED FOR ALL FAYPWC WATER AND SEWER UTILITY INSTALLATIONS.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

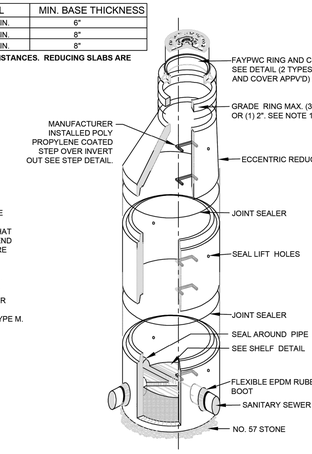
GENERAL NOTES SANITARY SEWER UTILITY			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. S.1	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

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

PIPE SIZES	MANHOLE SIZE	MIN. WALL THICKNESS	MIN. REINF. STEEL	MIN. BASE THICKNESS
21" AND LESS	48" DIAMETER	5"	ASTM A-1064 0.12 SQ./IN.	6"
24" - 36"	60" DIAMETER	6"	ASTM A-1064 0.15 SQ./IN.	8"
42"	72" DIAMETER	7"	ASTM A-1064 0.15 SQ./IN.	8"

MANHOLE DIAMETER SIZES MAY BE ADJUSTED ON THE PLANS TO REFLECT SPECIAL CIRCUMSTANCES. REDUCING SLABS ARE NOT ACCEPTABLE ON MANHOLES LESS THAN 6' DIAMETER.





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 6" 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 TAKE-UP 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 PWC 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 DROP STRUCTURE DETAIL (MIN. 5' DIAMETER MH REQUIRED).
    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 SIZE 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 4.25-INCHES.

    FOR FOUR (4) INCH DUCTILE IRON LATERALS, THE PIPE OUTSIDE DIAMETER RANGE OF THE BOOT SHALL EITHER BE AS FOR VC OR 4.25-INCHES TO 4.81-INCHES.

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

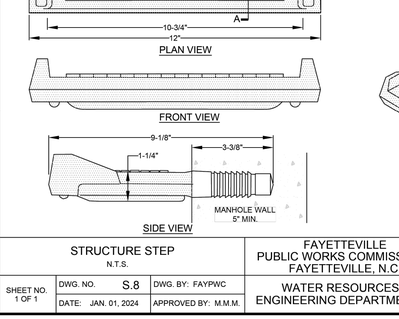
    THE LATERAL INVERT SHALL BE AT THE TOP O F THE SHELF.
17. NO MORE THAN 4, FOUR-INCH LATERALS OR 3, SIX-INCH LATERALS SHALL ENTER A 4' DIAMETER TERMINAL MANHOLE. NO MORE THAN (2 LATERALS (REGARDLESS OF SIZE) SHALL ENTER ALL OTHER 4' DIAMETER MANHOLES. ALL LATERALS SHALL HAVE AN INDIVIDUAL TROUGH. 5' DIAMETER MANHOLES SHALL BE USED IF THE ABOVE CONDITIONS ARE NOT MET.
18. NO MORE THAN 5 LATERALS SHALL ENTER A 5' 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 N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 2	DWG. NO. S.2	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

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.

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

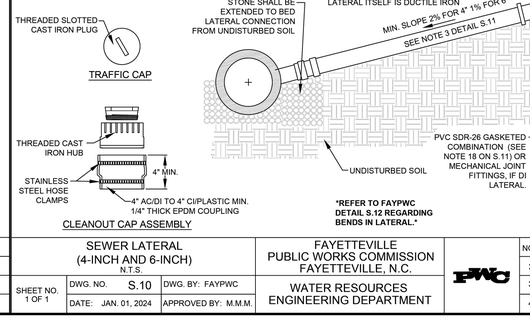
NO.	DATE	REVISION
1	07/13	REVISED NOTES 9, 10, 11, 15. CONVERTED TO S.2 SHEET 2 OF 2
2	01/01/19	REVISED NOTES 10, 18
3	01/01/24	REVISED NOTES 5, 7, 16.



NOTES:
1. MANHOLE SHALL BE IN ACCORDANCE WITH FAYPWC STANDARDS, SEE MANHOLE DETAIL FOR ADDITIONAL INFORMATION.
2. ALL PVC FITTINGS FOR DROP STRUCTURE SHALL BE SDR-35 PVC WITH SOLVENT WELD JOINTS.
3. MANHOLES GREATER THAN 12' IN DEPTH SHALL HAVE MINIMUM 6" EXTENDED BASE.
4. DROP STRUCTURE SHALL BE PLACED WHERE SEWER MAIN OR LATERAL VERTICAL DROP BETWEEN INVERTS EQUALS OR EXCEEDS 2.50'. SEE PIPE SLIDE DETAILS FOR DROPS LESS THAN 2.50' VERTICAL SEPARATION.
5. DROP STRUCTURE MANHOLE SHALL BE A MINIMUM OF 5' DIAMETER. DROP STRUCTURE SHALL BE INSTALLED AGAINST WALL OF MANHOLE AS SHOWN. IF THE GRADE DOES NOT ALLOW, THEN INSTALL AS DIRECTED BY FAYPWC.
6. 5' DIA. MANHOLES REQUIRED FOR ALL DROPS 6" AND GREATER IN DIAMETER, AND WHEN 3 OR MORE 4" LATERALS ENTER MANHOLES WITH 4" INTERIOR DROPS. NO MORE THAN FOUR 4" INTERIOR DROPS ARE ALLOWED IN A 5' MANHOLE
7. 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. THE LATERAL INVERT SHALL BE AT THE TOP OF THE SHELF.
8. NO MORE THAN 5 LATERALS SHALL ENTER A 5' DIAMETER TERMINAL MANHOLE.
9. FLEXIBLE BOOT SHALL BE CONNECTED TO MANHOLE WITH STAINLESS STEEL EXPANSION RING. FLEXIBLE BOOT CONNECTORS SHALL CONFORM TO ASTM C-923 SPEC.
10. CONNECTIONS TO EXISTING MANHOLES SHALL HAVE CORE AND "BOOT" ONLY UNLESS APPROVED OTHERWISE BY FAYPWC PROJECT COORDINATOR.
11. ALL MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH FAYPWC STANDARDS.

INTERIOR DROP STRUCTURE SEWER MAINS AND LATERALS			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. S.5	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

NO.	DATE	REVISION
4	11/08	REVISED FITTING MATERIAL
5	07/12	REVISED NOTES 5, 6, AND HUB ON INVERT
6	07/14	ADDED FORCE MAIN NOTE



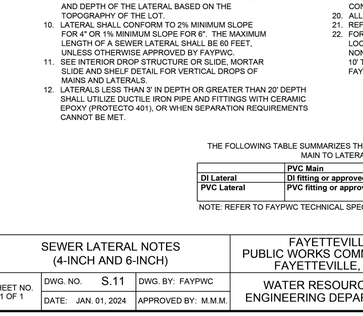
STANDARD NON-TRAFFIC AREA MANHOLE RING AND COVER WITH WIPER GASKET AND CAM LOCK N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. S.6	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

NO.	DATE	REVISION
1	07/09	REVISED NOTES ON FRAME SECTION/REVISED NOTE 3
2	07/17	ADDED NOTE ON WEDGE CAM LOCKS
3	01/18	UPDATED NOTES 7 AND 8

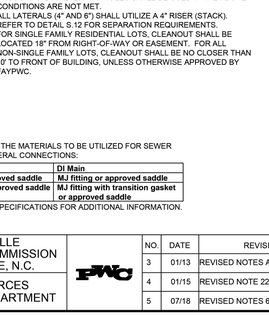
NOTES:
1. MANHOLE FRAME AND COVER TO BE MADE OF GRAY CAST IRON CONFORMING TO ASTM SPEC. A48-83, CLASS 35, MANUFACTURED BY SAME MANUFACTURER. ALL CASTINGS SHALL CONFORM TO THE SHAPE AND DIMENSIONS SHOWN. ALL CASTINGS SHALL BE CLEAN AND FREE FROM DEFECTS.
2. CASTINGS SHALL BE UNPAINTED AND SHALL HAVE THE LETTERS "PWC-FAY-NC" AND "SANITARY SEWER" CAST INTO COVER. LETTERS SHALL BE RAISED AND CLEARLY VISIBLE.
3. MANHOLE RING AND COVER SHALL WITHSTAND H-20 VEHICULAR TRAFFIC.
4. MINIMUM AVERAGE WEIGHT: PLUS OR MINUS 5% RING 155LBS., COVER 160LBS., UNIT 315LBS.
5. PERFORATED COVERS WILL NOT BE ALLOWED.
6. SUPPLY SOCKET FOR TURNING CAM LOCK MECHANISM. ONE SOCKET PER PROJECT.
7. USE OF GRADE RINGS ARE NOT ALLOWED, UNLESS APPROVED BY THE FAYPWC PROJECT COORDINATOR. FOR MANHOLES OUTSIDE OF YARD OR LANDSCAPE AREAS, THE USE OF GRADE RINGS ARE NOT ALLOWED.
8. FOR MANHOLES IN YARD OR LANDSCAPED AREAS, THE RING AND COVER SHALL BE SET TO FINISHED GRADE. THE USE OF GRADE RINGS ARE ALLOWED TO SET THE MANHOLE TO FINISHED GRADE. FOR GRADE RINGS 4" OR LESS, THE RING AND COVER SHALL BE ANCHORED TO THE CONE USING 5/8" DIAMETER STAINLESS STEEL BOLTS WITH WEDGE ANCHORS. FOR GRADE RINGS OVER 4", THE RING AND COVER SHALL BE ANCHORED TO THE GRADE RING, USING 5/8" DIAMETER x 5-1/2" STAINLESS STEEL BOLTS WITH WEDGE ANCHORS.
9. FOR OUTFALL AREAS, THE RING AND COVER SHALL BE SET A MINIMUM OF 18" ABOVE FINISHED GRADE, UNLESS OTHERWISE APPROVED.
10. THIS DETAIL IS TO BE USED ON ALL MANHOLES LOCATED OUTSIDE OF PAVED AREAS, UNLESS OTHERWISE APPROVED.
11. REFER TO FAYPWC STANDARD DETAIL S.17 FOR INSTALLATION OF VENT STACK.

STANDARD TRAFFIC AREA MANHOLE RING AND COVER N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. S.7	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

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

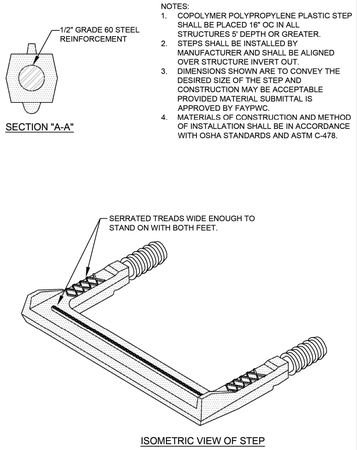


NOTES:
1. DETAIL TO BE USED IN PAVED AREAS ONLY. ALL OTHER MANHOLES SHALL BE IN ACCORDANCE WITH DETAIL S.6, UNLESS OTHERWISE APPROVED.
2. MANHOLE FRAME AND COVER SHALL BE MADE OF GRAY CAST IRON CONFORMING TO ASTM SPEC. A48-83 CL 30/35 RESPECTIVELY, MANUFACTURED BY SAME MANUFACTURER. ALL CASTINGS SHALL CONFORM TO THE SHAPE AND DIMENSIONS SHOWN. THEY SHALL BE CLEAN AND PERFECT, WITHOUT BLOW OR SAND HOLES OR DEFECTS OF ANY KIND, TENDING TO IMPAIR THEIR STRENGTH. NO PLUGGING OR STOPPING OF DEFECTIVE HOLES WILL BE PERMITTED.
3. CASTINGS SHALL BE UNPAINTED AND SHALL HAVE THE LETTERS "PWC-FAY-NC" AND "SANITARY SEWER" CAST INTO COVER. LETTERS SHALL BE RAISED AND CLEARLY VISIBLE.
4. MANHOLE RING AND COVER SHALL WITHSTAND H-20 VEHICULAR TRAFFIC. ROCKING COVERS SHALL NOT BE ACCEPTABLE.
5. MINIMUM AVERAGE WEIGHT: PLUS OR MINUS 5% RING 175LBS., COVER 135LBS, UNIT 310LBS.
6. PERFORATED COVERS WILL NOT BE ALLOWED.



STRUCTURE STEP N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. S.8	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

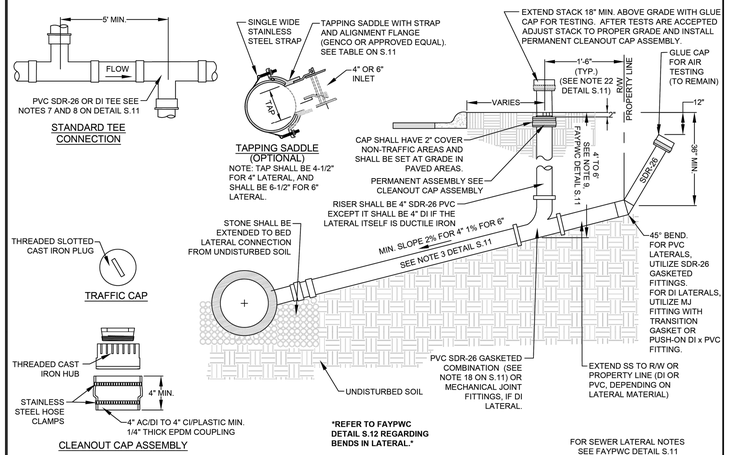
NO.	DATE	REVISION

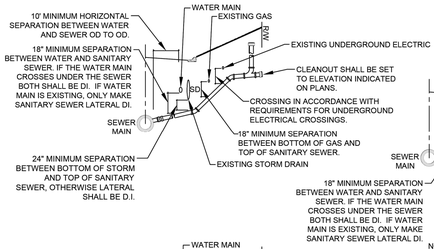


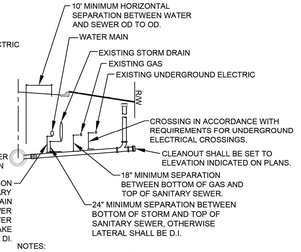
NOTES:
1. COPOLYMER POLYPROPYLENE PLASTIC STEP SHALL BE PLACED 16" OC IN ALL STRUCTURES 5' DEPTH OR GREATER.
2. STEPS SHALL BE INSTALLED BY MANUFACTURER AND SHALL BE ALIGNED OVER STRUCTURE INVERT OUT.
3. DIMENSIONS SHOWN ARE TO CONVEY THE DESIRED SIZE OF THE STEP AND CONSTRUCTION MAY BE ACCEPTABLE PROVIDED MATERIAL SUBMITTAL IS APPROVED BY FAYPWC.
4. MATERIALS OF CONSTRUCTION AND METHOD OF INSTALLATION SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND ASTM C-478.

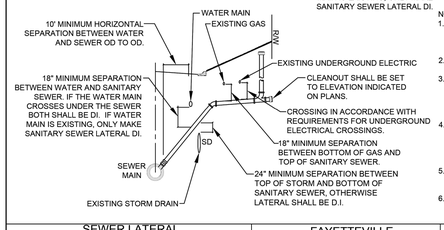
SEWER LATERAL (4-INCH AND 6-INCH) N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. S.10	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

NO.	DATE	REVISION
2	01/14	ADDED TAILPIECE, NOTES
3	01/15	REVISED NOTES RE: TAILPIECE
4	07/18	REVISED NOTE RE: LATERAL DEPTH


5' MIN.
FLOW
PVC SDR-26 OR DI TEE SEE NOTES 7 AND 8 ON DETAIL S.11
STANDARD TEE CONNECTION
SINGLE WIDE STAINLESS STEEL STRAP
TAPPING SADDLE WITH STRAP AND ALIGNMENT FLANGE (GENCO OR APPROVED EQUAL). SEE TABLE ON S.11
4" OR 6" INLET
TAPPING SADDLE (OPTIONAL)
NOTE: TAP SHALL BE 4-1/2" FOR 4" LATERAL, AND SHALL BE 6-1/2" FOR 6" LATERAL.
EXTEND STACK 18" MIN. ABOVE GRADE WITH GLUE CAP FOR TESTING. AFTER TESTS ARE ACCEPTED ADJUST STACK TO PROPER GRADE AND INSTALL PERMANENT CLEANOUT CAP ASSEMBLY.
1'-6" (TYP.) (SEE NOTE 22 DETAIL S.11)
ANY PROPERTY LINE
GLUE CAP FOR AIR TESTING (TO REMAIN)
VARIES
12"
36" MIN.
CAP SHALL HAVE 2" COVER NON-TRAFFIC AREAS AND SHALL BE SET AT GRADE IN PAVED AREAS.
PERMANENT ASSEMBLY SEE CLEANOUT CAP ASSEMBLY
FAYPWC DETAIL S.11
4' TO 6' DIA.
SDR-26
RISER SHALL BE 4" SDR-26 PVC EXCEPT IT SHALL BE 4" DI IF THE LATERAL ITSELF IS DUCTILE IRON
MIN. SLOPE 2% FOR 4" 1% FOR 6"
SEE NOTE 3 DETAIL S.11
STONE SHALL BE EXTENDED TO BED LATERAL CONNECTION FROM UNDISTURBED SOIL
45° BEND. FOR PVC LATERALS, UTILIZE SDR-26 GASKETED FITTINGS. FOR DI LATERALS, UTILIZE MJ FIT





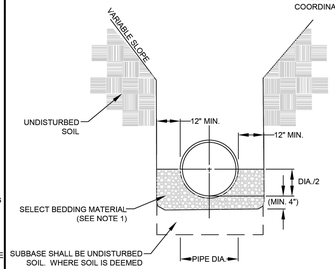


NOTES:
1. ALL VERTICAL AND HORIZONTAL SEPARATION SHALL BE IN ACCORDANCE WITH STATE REGULATIONS AND FAYPWC REQUIREMENTS.
2. THE SKETCHES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY.
3. THE CONTRACTOR SHALL BE REQUIRED TO VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY AT EACH CROSSING PRIOR TO CONSTRUCTION OF LATERAL TO ENSURE PROPER CLEARANCES ARE MAINTAINED.
4. ALL PIPE BEND LOCATIONS AND MAXIMUM NUMBER OF BENDS INSTALLED ON LATERALS SHALL BE APPROVED BY THE PROJECT COORDINATOR PRIOR TO INSTALLATION OF BEND OR EXTENDING THE LATERAL FROM THE MAIN.
5. ALL REQUIREMENTS INDICATED IN THE SEWER LATERAL NOTES AND DETAILS SHALL BE APPLICABLE.
6. REFER TO UNDERGROUND ELECTRICAL DETAILS FOR ADDITIONAL INFORMATION WHEN CROSSING UNDERGROUND ELECTRICAL FACILITIES.

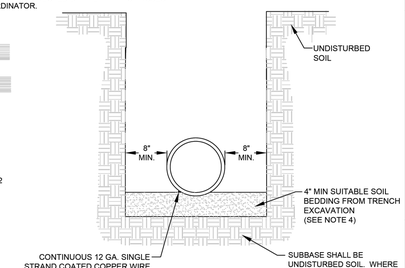
SEWER LATERAL UTILITY CONFLICT SEPARATION REQUIREMENTS N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
SHEET NO. 1 OF 1	DWG. NO. S.12	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	

NO.	DATE	REVISION
1	11/06	ADDED NOTE ON DI LATERALS
2	03/10	ADDED LATERAL AND WM SEPARATION
3	11/23	REVISED/CLARIFIED NOTES

NOTES:
1. THE SELECT BEDDING MATERIAL SHALL BE WELL GRADED CRUSHED ROCK (NO. 5 OR NO. 57 STONE) FOR THE FULL WIDTH OF THE TRENCH.
2. SELECT BEDDING MATERIAL SHALL EXTEND TO UNDISTURBED TRENCH WALLS.
3. SELECT BEDDING MATERIAL SHALL BE PROPERLY PLACED TO THE SPRING LINE OF THE PIPE FOR ITS ENTIRE LENGTH.
4. SUITABLE SOIL BEDDING IS DEFINED AS "NATIVE" SOIL EXCAVATED FROM THE TRENCH, FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH.
5. SUITABLE BEDDING MATERIAL SHALL EXTEND TO UNDISTURBED TRENCH WALLS.
6. IF GROUND CONDITIONS WARRANT, IT MAY BE NECESSARY TO BED DUCTILE IRON FORCE MAINS IN SELECT BEDDING MATERIAL (NO. 5 OR NO. 57 STONE) TO THE SPRINGLINE OF THE PIPE. SUCH INSTALLATION SHALL BE AS DIRECTED BY THE FAYPWC PROJECT COORDINATOR.



GRAVITY PIPING



FORCE MAIN PIPING

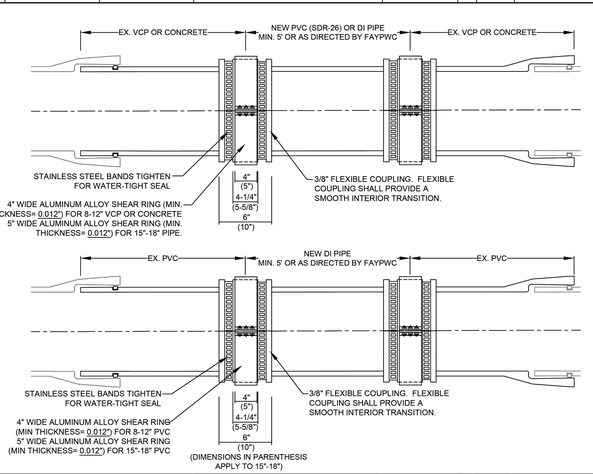
SEWER BEDDING N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
SHEET NO. 1 OF 1	DWG. NO. S.13	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	

NO.	DATE	REVISION
1	01/01/05	REVISED NOTES
2	01/01/16	REVISED NOTES

NOTES:
1. SANITARY SEWER REPAIR SHALL BE APPROVED BY FAYPWC PRIOR TO MAKING THE REPAIR. IF THE REPAIR IS WITHIN 20' OF AN EXISTING MANHOLE, THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND RELAY PIPE TO NEAREST MANHOLE, UNLESS OTHERWISE DIRECTED BY FAYPWC.
2. ALL MATERIALS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE FAYETTEVILLE PUBLIC WORKS COMMISSION.
3. CONTRACTOR SHALL PROVIDE ALL NECESSARY PUMPS, HEADER PIPE, PUMPING EQUIPMENT, ETC. PRIOR TO BEGINNING CONSTRUCTION. DUPLICATE SEWAGE HANDLING PUMPS, PIPING, ETC. SHALL BE ON-SITE AND AVAILABLE FOR IMMEDIATE USE SHOULD PRIMARY PUMP OR FORCE MAIN FAIL. INSURE PUMPS, HEADER PIPING, ETC. ARE PROPERLY SIZED AND OPERATIONAL BEFORE BEGINNING WORK.
4. PIPE REPAIR SHALL EXHIBIT STRAIGHT HORIZONTAL ALIGNMENT AND INVERT SHALL BE THE SAME AS THE EXISTING PIPE SLOPE. DEFLECTIONS OF HORIZONTAL AND VERTICAL ALIGNMENT ARE NOT ACCEPTABLE.
5. PIPE SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH FAYPWC STANDARD SPECIFICATION.
6. REPLACEMENT PIPE SHALL BE PROPERLY BEDDED IN ACCORDANCE WITH FAYPWC STANDARD DETAIL S.13.
7. THERE SHALL BE NO MORE THAN 1/4" SPACE BETWEEN THE EXISTING SEWER MAIN AND THE REPLACEMENT PIPE AT EACH END.
8. DAMAGED SECTION SHALL BE CUT OUT WITHOUT DAMAGING THE PIPE TO REMAIN.
9. DI SEWER PIPE AND FITTINGS SHALL HAVE AN INTERIOR COATING OF PROTECTO 401 OR APPROVED EQUAL.
10. DI PIPE SHALL BE UTILIZED WHEN STATE MINIMUM SEPARATION REQUIREMENTS CANNOT BE MET OR AS DIRECTED BY FAYPWC.
11. PIPE REPAIRS ON MATERIALS OTHER THAN SHOWN, SHALL BE AS DIRECTED BY FAYPWC.
12. THE MINIMUM LENGTH OF REPAIR SHALL BE 5 FEET, UNLESS OTHERWISE DIRECTED BY FAYPWC.

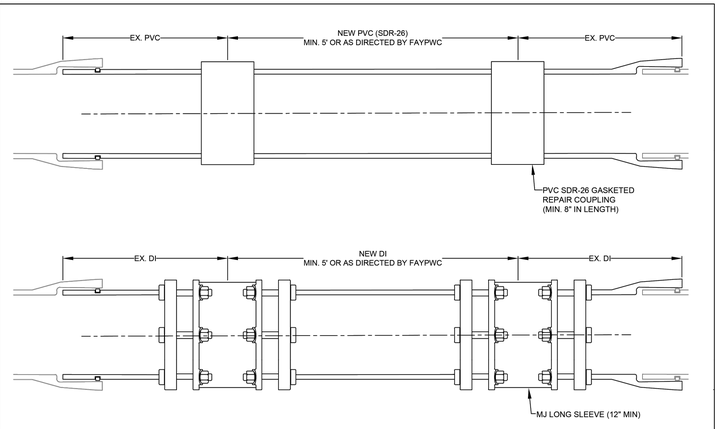
GRAVITY SANITARY SEWER PIPE REPAIR			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
SHEET NO. 1 OF 3	DWG. NO. S.15	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	

NO.	DATE	REVISION
1	01/05	REVISED REPLACEMENT PIPE
2	07/11	REVISED NOTES



GRAVITY SANITARY SEWER PIPE REPAIR N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
SHEET NO. 2 OF 3	DWG. NO. S.15	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	

NO.	DATE	REVISION
1	01/05	REVISED REPLACEMENT PIPE
2	07/11	REVISED NOTES



GRAVITY SANITARY SEWER PIPE REPAIR N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
SHEET NO. 3 OF 3	DWG. NO. S.15	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	

NO.	DATE	REVISION
1	01/05	REVISED REPLACEMENT PIPE
2	07/11	REVISED NOTES, REPAIRS

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

SHEET NUMBER U7 OF 40

PLAN TYPE UTILITY DETAILS

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
WWW.WKDICKSON.COM

FAYETTEVILLE NC
PUBLIC SERVICES
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
6252 HAY STREET FAYETTEVILLE, NC 28301

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:52 PM

REV.#	DESCRIPTION	DATE	REV.BY
	REVISIONS		

ISSUED FOR CONSTRUCTION

PROJECT	SUNBURY DRIVE
NAME :	
SCALE :	1" = 20'
DATE :	03-03-2022
DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	

PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.

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 PLS, 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 RESIDENT'S METERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES RESULTING FROM ALLOWING "DIRTY" WATER TO ENTER RESIDENT'S PLUMBING SYSTEM, SUCH AS WATER HEATERS, STAINED CLOTHING, CLOGGED SCREENS, ETC.
10. TRANSFER OF WATER SERVICES SHALL BE ACCOMPLISHED AS FOLLOWS:
    A. INSTALL, TEST AND STERILIZE NEW MAIN AND LATERALS. LATERALS SHALL BE INSTALLED 18" INSIDE RIGHT-OF-WAY UNLESS OTHERWISE DIRECTED BY PWC.
    B. TRANSFER EXISTING METER TO NEW METER BOX AND TIE NEW WATER LATERAL TO EXISTING DOMESTIC SERVICE UTILIZING BRASS FITTINGS. SAME METER NUMBER SHALL BE INSTALLED ON SAME ADDRESS AND/OR CUSTOMER. BLOW OFF SERVICE AT HOSE 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 10-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, A MINIMUM OF 18-INCHES OF SEPARATION SHALL BE PROVIDED. BOTH THE WATER MAIN AND THE SEWER MAIN/LATERAL SHALL BE CONSTRUCTED OF DUCTILE IRON MATERIAL AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10-FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
    D. **CROSSING STORM DRAINAGE LINES:** 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 AN 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 10-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 CONTINGENCY PLANS, AND ANY OTHER ITEMS NECESSARY TO ENSURE THAT THE FAYETTEVILLE PUBLIC WORKS COMMISSION HAS CONFIDENCE THAT THE WORK CAN BE ACCOMPLISHED WITHIN THE GIVEN TIME PERIOD. SHOULD, FOR ANY REASON, THE FAYETTEVILLE PUBLIC WORKS COMMISSION DEEM THAT THE CONTRACTOR IS NOT PREPARED FOR THE PROPOSED OUTAGE, THE OUTAGE NOTIFICATIONS 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 THE 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 CONTRACTOR'S PAY APPLICATION OR BE BILLED DIRECTLY TO THE CONTRACTOR. THE PENALTY MAY BE WAIVED FOR CIRCUMSTANCES BEYOND THE CONTRACTORS CONTROL, AS DEEMED 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.

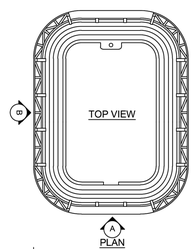
WATER UTILITY NOTES			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 2	DWG. NO. W.1	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

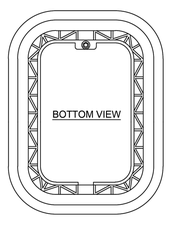
NO.	DATE	REVISION
1	01/01/18	ADDED NOTES 6, 8
2	06/01/21	ADDED NOTES 1-7 AND RENUMBERED
3	11/23	REVISED NOTES 10, 14

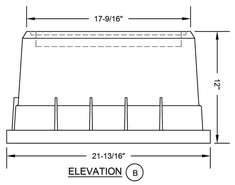
WATER UTILITY NOTES			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 2 OF 2	DWG. NO. W.1	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

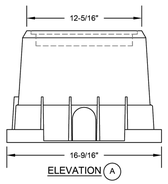
NO.	DATE	REVISION
1	01/01/18	ADDED NOTES 6, 8
2	06/01/21	ADDED NOTES 1-7 AND RENUMBERED
3	11/23	REVISED NOTES 10, 14

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





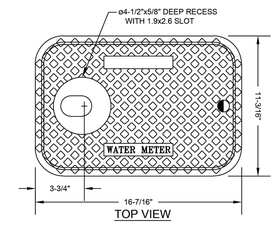


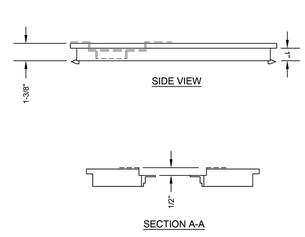


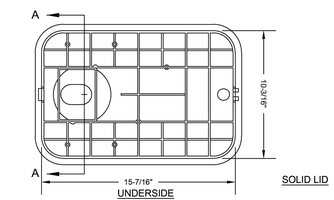
ELEVATION VIEW

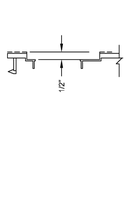
1-INCH METER BOX DETAILS N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 2	DWG. NO. W.4	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

NO.	DATE	REVISION
1	03/10	CHANGED BOX DIMENSIONS



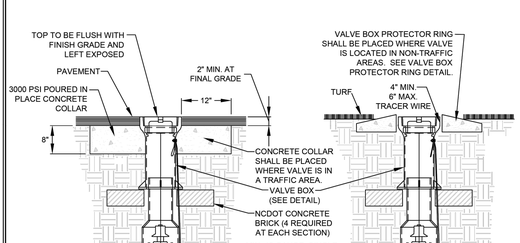






1-INCH METER BOX LID N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 2 OF 2	DWG. NO. W.4	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

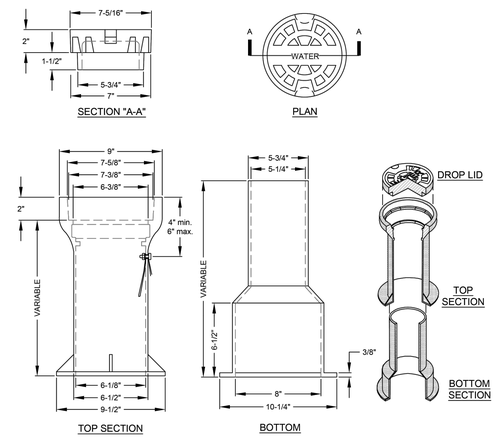
NO.	DATE	REVISION
1	07/07	REVISED LID
1	03/10	CHANGED BOX AND LID DIMENSIONS
2	01/15	REVISED LID



NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH FAYPWC STANDARDS.
2. RESILIENT WEDGE GATE VALVE SHALL BE AS MANUFACTURED BY MUELLER CORP., AMERICAN DARLING OR CLOW CORP.
3. ALL VALVES SHALL HAVE 2" SQUARE OPERATING NUT AND SHALL OPEN COUNTERCLOCKWISE.
4. VALVE BODY, BONNET, AND GATE SHALL BE IN ACCORDANCE WITH AWWA C-509/C-515 AND NSF61.
5. VALVE BODY AND BONNET SHALL BE COATED ON ALL INTERIOR AND EXTERIOR SURFACES WITH A FUSION BONDED EPOXY IN ACCORDANCE WITH AWWA C-550-90.
6. ALL VALVES 24" AND SMALLER SHALL HAVE A SAFE WORKING PRESSURE OF 250PSI.
7. SEE VALVE BOX DETAIL FOR ADDITIONAL INFORMATION.
8. SEE VALVE BOX PROTECTOR RING DETAIL FOR ADDITIONAL INFORMATION.
9. VALVE BOX SECTIONS ARE REQUIRED. THE USE OF PIPE IN LIEU OF VALVE BOX SECTIONS SHALL NOT BE PERMITTED.

GATE VALVE N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. W.6	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

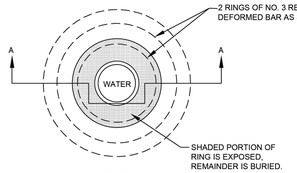
NO.	DATE	REVISION
1	6/06	ADDED NOTE NO. 9
2	7/09	CLARIFIED NOTES

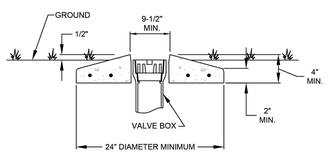


NOTES:
1. VALVE BOX SHALL BE 3 PART SLIP-TYPE MANUFACTURED BY SIGMA CORPORATION (VB-462), TYLER UNION (6855 SERIES), STAR PIPE PRODUCTS (VB-0004), OR APPROVED EQUAL.
2. VALVE BOX SHALL BE 3-PIECE CLOSE GRAINED CAST IRON SLIP-TYPE VALVE BOX WITH A MINIMUM THICKNESS OF 3/16".
3. VALVE BOX SHALL HAVE RAISED LETTERS "WATER" CAST INTO COVER.
4. VALVE BOX SHALL HAVE 3/8" HOLE DRILLED IN TOP SECTION THRU WHICH A 1/4"x1-1/2" GALVANIZED BOLT 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.
5. SCREW TYPE VALVE BOXES ARE NOT ACCEPTABLE.
6. DIMENSIONS SHOWN VARY BASED UPON THE MANUFACTURER. ACTUAL DIMENSIONS SHALL BE APPROVED BY FAYPWC.
7. VALVE BOX SECTIONS ARE REQUIRED. THE USE OF PIPE IN LIEU OF VALVE BOX SECTIONS SHALL NOT BE PERMITTED.
8. TRACING WIRE SHALL BE INSTALLED OUTSIDE OF BOX.
9. REFER TO FAYPWC DETAIL W.6 FOR INSTALLATION REQUIREMENTS.

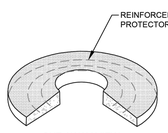
VALVE BOX N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. W.7	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

NO.	DATE	REVISION
1	07/09	ADDED NOTES 7, 8, AND CLARIFIED NOTES
2	01/14	REVISED NOTES 1, 4, 6



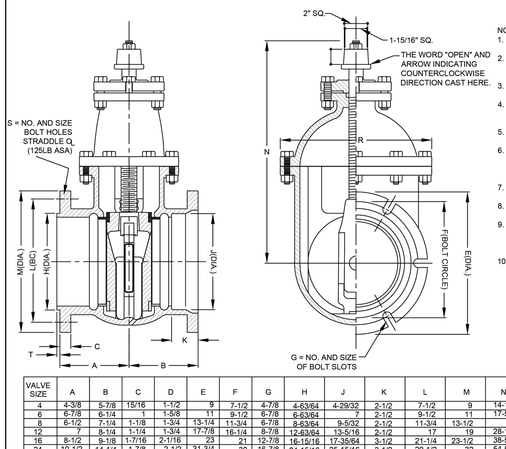


NOTES:
1. CONCRETE PROTECTOR RING SHALL BE 2500PSI PRECAST REINFORCED CONCRETE.
2. VALVE BOX SHALL BE AT GRADE WITH PROTECTOR RING EXTENDING 1/2" ABOVE GRADE.
3. SEE GATE VALVE AND BOX DETAIL.
4. VALVE BOX PROTECTOR RINGS SHALL BE INSTALLED AROUND VALVE BOX IN UNPAVED NON-TRAFFIC AREAS AND SHALL NOT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



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

NO.	DATE	REVISION



VALVE SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S	T	TURNS TO OPEN	WEIGHT W/ACC
4	4-3/8	5-7/8	15/16	1-1/2	9	7-1/2	4-7/8	4-63/64	4-29/32	2-1/2	7-1/2	9	14-1/8	9	8-3/4	1/4	14	118
6	6-7/8	6-1/4	1	1-5/8	11	9-1/2	6-7/8	6-63/64	7	2-1/2	9-1/2	11	17-5/8	11-3/4	8-7/8	1/4	21	175
8	6-1/2	7-1/4	1-1/8	1-3/4	13-1/4	11-3/4	6-7/8	8-63/64	9-5/32	2-1/2	11-3/4	13-1/2	21	14-1/4	8-7/8	1/4	28	274
12	7	8-1/4	1-1/4	1-3/4	17-7/8	16-1/4	8-7/8	12-63/64	13-5/16	2-1/2	17	19	28-1/4	19-1/8	12-1	1/4	39	570
16	8-1/2	9-1/8	1-7/16	2-1/16	23	21	12-7/8	16-15/16	17-35/64	3-1/2	21-1/4	23-1/2	38-5/8	26-1/8	16-1 1/8	1/4	55	1140
24	10-1/2	14-1/4	1-7/8	2-1/2	31-3/4	30	16-7/8	24-15/16	25-15/16	3-1/2	29-1/2	32	54-5/8	37-5/8	20-1 3/8	5/16	79	3225

NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH FAYPWC STANDARDS.
2. RAISED MALE FACE SHALL BE REQUIRED TO PROVIDE FOR PROPER ALIGNMENT OF THE TAPPING SLEEVE.
3. ALL VALVES SHALL HAVE 2" SQUARE OPERATING NUT AND SHALL OPEN COUNTERCLOCKWISE.
4. RESILIENT WEDGE GATE VALVE SHALL BE AS MANUFACTURED BY MUELLER CORP., AMERICAN DARLING, CLOW CORP., OR APPROVED EQUAL.
5. VALVE BODY, BONNET, AND GATE SHALL BE IN ACCORDANCE WITH AWWA C-509/C-515 AND NSF61.
6. VALVE BODY AND BONNET SHALL BE COATED ON ALL INTERIOR AND EXTERIOR SURFACES WITH A FUSION BONDED EPOXY IN ACCORDANCE WITH AWWA C-550-90.
7. ALL VALVES 24" AND SMALLER SHALL HAVE A SAFE WORKING PRESSURE OF 250PSI.
8. SEE TAPPING SLEEVE (DETAIL W.10 OR W.11) FOR ADDITIONAL INFORMATION.
9. DIMENSIONS SHOWN ARE FOR REFERENCE AND MAY VARY BASED UPON MANUFACTURER. VALVES SHALL BE SIMILAR IN NATURE TO THAT SHOWN AND SHALL NOT DEVIATE IN ESSENTIAL DETAILS.
10. ALL TAPPING SLEEVES SHALL BE HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH FAYPWC SPECIFICATIONS. TEST SHALL BE WITNESSED AND APPROVED BY FAYPWC PROJECT COORDINATOR PRIOR TO BEGINNING TAPPING PROCESS.

TAPPING VALVE N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. W.9	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

NO.	DATE	REVISION
1	07/09	ADDED NOTE 10, REVISED 4 AND 5
2	07/13	REVISED NOTES 4, 8, 10

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

PLAN TYPE: UTILITY DETAILS
SHEET NUMBER: U8 OF 40

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
WWW.WKDICKSON.COM

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

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:53 PM

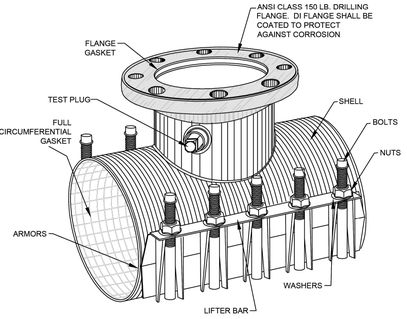
REVISIONS			
REV. #	DESCRIPTION	DATE	REV.BY

ISSUED FOR CONSTRUCTION

PROJECT NAME :	SUNBURY DRIVE
SCALE :	1" = 20'
DATE :	03-03-2022
DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	

PROJECT NO. 20200533.00.RA
SUB-LEDGER NO.

NOMINAL PIPE SIZE (INCH)	BRANCH SIZE	APPROX. WT. LBS.
4"	3",4"	28,30
6"	3",4",6"	36,38,45
8"	3",4",6",8"	42,44,48,66
10"	3",4",6",8",10"	45,48,55,70,80,
12"	3",4",6",8",10",12"	50,52,60,81,96,143
16"	3",4",6",8",10",12"	78,80,85,100,115,172
24"	3",4",6",8",10",12"	85,87,90,100,145,230

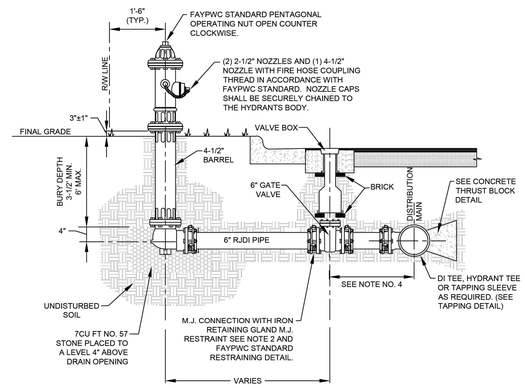


NOTES:

1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH FAYPWC STANDARDS.
2. TAPPING SLEEVES SHALL BE AS MANUFACTURED BY ROMAC, SMITH-BLAIR, OR APPROVED EQUAL.
3. STAINLESS STEEL TAPPING SLEEVE MAY BE UTILIZED FOR ALL TAPPING OF MAINS UP TO AND INCLUDING 24" DIAMETER WITH 12" OR LESS BRANCH. BRANCH GREATER THAN 12" SHALL REQUIRE FULL BODY D.I. M.J. TAPPING SLEEVE (SEE DETAIL W.10).
4. SHELL AND LUGS SHALL BE STAINLESS STEEL PER ASTM A 240, TYPE 304 AND 304L.
5. BOLTS SHALL BE 5/8" UNC ROLLED THREAD, STAINLESS STEEL PER ASTM A 193 TYPE 304 4" NOM. PIPE SIZE SHALL HAVE MINIMUM 1/2" BOLTS.
6. NUTS SHALL BE HEAVY HEX STAINLESS STEEL PER ASTM A-194, TYPE 304.
7. WASHERS SHALL BE STEEL AND PLASTIC LUBRICATING WASHER.
8. GASKETS SHALL BE VIRGIN SBR PER ASTM D 2000 MAA 610, COMPOUNDED FOR WATER AND SEWER SERVICE.
9. FLANGE SHALL BE DUCTILE IRON PER ASTM 536, GRADE 65-45-12, OR STAINLESS STEEL PER ASTM A-240, TYPE 304.
10. DIMENSIONS SHOWN ARE FOR REFERENCE AND MAY VARY BASED UPON MANUFACTURER. SLEEVES SHALL BE SIMILAR IN NATURE TO THAT SHOWN AND SHALL NOT DEVIATE IN ESSENTIAL DETAILS.
11. PIPE SURFACES SHALL BE CLEANED THOROUGHLY TO PERMIT A GOOD SEAL PRIOR TO INSTALLATION.
12. ALL TAPPING SLEEVES SHALL BE HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH FAYPWC SPECIFICATIONS. TEST SHALL BE WITNESSED AND APPROVED BY FAYPWC PROJECT COORDINATOR PRIOR TO BEGINNING TAPPING PROCESS.
13. THE NUMBER OF BOLTS, NUTS AND WASHERS SHOWN ARE FOR ILLUSTRATION ONLY, ACTUAL QUANTITY SHALL BE AS RECOMMENDED BY THE SLEEVE MANUFACTURER FOR THE REQUIRED SERVICE.
14. SEE DETAILS W.9 AND W.17 FOR ADDITIONAL REQUIREMENTS.

STAINLESS STEEL TAPPING SLEEVE N.T.S.	FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. W.11	DWG. BY: FAYPWC
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.
	WATER RESOURCES ENGINEERING DEPARTMENT	

NO.	DATE	REVISION
1	07/09	ADDED NOTES 2, 12, AND CLARIFIED NOTES
2	07/13	REVISED NOTES 3, 12, 14



FIRE HYDRANT AND VALVE INSTALLATION N.T.S.	FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 2	DWG. NO. W.13	DWG. BY: FAYPWC
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.
	WATER RESOURCES ENGINEERING DEPARTMENT	

NO.	DATE	REVISION
1	08/25/23	REVISED NOTES 16 AND 17
2	07/01/09	REVISED NOTE NO. 2, REMOVED NOTE NO. 3 AND ALTERED RESTRAINT DETAIL
3	07/01/16	REVISED NOTES

NOTES:

1. FIRE HYDRANT SHALL BE MODELS MANUFACTURED BY MUELLER CO. (CENTURIAN), AMERICAN VALVE AND HYDRANT CO. (MODEL MARK 73), CLOW MEDALLION OR APPROVED EQUAL.
2. ALL VALVES AND HYDRANTS SHALL HAVE M.J. CONNECTIONS WITH IRON RETAINING GLAND M.J. RESTRAINT.
3. HYDRANT VALVE SHALL BE PLACED AS CLOSE AS POSSIBLE TO THE MAIN, BUT DO NOT PLACE VALVE IN PROPOSED OR EXISTING CURB AND GUTTER. IF THE STREET IS SOIL AND NO PAVING IS TO BE DONE AT THIS TIME, THE LOCATION OF THE VALVE IS TO BE DETERMINED BY THE PWC PROJECT COORDINATOR.
4. HYDRANT BRANCH SHALL NOT BE BACK FILLED UNTIL INSPECTED AND APPROVED BY FAYPWC PROJECT COORDINATOR.
5. GATE VALVE AND BOX SHALL BE IN ACCORDANCE WITH FAYPWC STANDARD DETAIL.
6. HYDRANT EXTENSIONS AND/OR OFFSETS SHALL BE APPROVED BY FAYPWC PROJECT COORDINATOR.
7. FIRE HYDRANT CONNECTIONS TO EXISTING WATER MAINS SHALL BE MADE USING A TAPPING SLEEVE AND VALVE BY WET TAP CONNECTION. THE TAPPING SLEEVE AND VALVE SHALL BE HYDROSTATICALLY TESTED PRIOR TO STARTING THE TAP IN THE PRESENCE OF THE FAYPWC PROJECT COORDINATOR.
8. THE PROPOSED LOCATION MAY BE RELOCATED BY THE FAYPWC PROJECT COORDINATOR IF CONFLICTS EXIST (IE: GAS SERVICES, UGE, TELEPHONE, ETC.).
9. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING WATER MAIN MATERIAL, SIZE, AND DEPTH FOR EACH FIRE HYDRANT LOCATION PRIOR TO ORDERING MATERIALS. THE CONTRACTOR WILL BE REQUIRED TO SUPPLY VARIOUS LENGTHS OF BARRELS AND HYDRANT EXTENSIONS (NO MORE THAN ONE HYDRANT EXTENSION MAY BE USED PER HYDRANT). ADDITIONAL FITTINGS AND/OR HYDRANT EXTENSIONS OR OFFSET CONNECTORS MAY BE REQUIRED TO MAINTAIN PROPER COVER AS APPROVED BY THE FAYPWC PROJECT COORDINATOR.
10. CONTRACTOR SHALL NOTIFY THE APPROPRIATE FIRE DEPARTMENT OF OUT OF SERVICE FIRE HYDRANTS PRIOR TO CONSTRUCTION.
11. FIRE HYDRANT SHALL BE FIELD PAINTED IN ACCORDANCE WITH FAYPWC STANDARDS, BEFORE PROJECT IS ACCEPTED. HYDRANTS SHALL BE PAINTED WITH A GREEN BONNET AND YELLOW BODY. PAINT SHALL BE IN ACCORDANCE WITH FAYPWC REQUIREMENTS. THE CONTRACTOR SHALL PAINT ALL EXPOSED EXTERIOR FIRE HYDRANT SURFACES PRIOR TO FINAL ACCEPTANCE BY FAYPWC. ALL PAINTING SHALL BE DONE IN STRICT ACCORDANCE WITH THE PAINT MANUFACTURER'S RECOMMENDATIONS AND SHALL BE SATISFACTORY TO THE FAYPWC.
12. PROTECTIVE COVERING SHALL BE UTILIZED, AS NECESSARY FOR PROTECTION OF ADJACENT AREAS, EQUIPMENT, SHRUBBERY, OR OTHER ITEMS. AFTER PAINTING IS COMPLETE, THE ENTIRE AREA SHALL BE THOROUGHLY CLEANED UP.
13. ALL PAINT MATERIALS SHALL BE IN THE ORIGINAL SEALED CONTAINERS BEARING THE MANUFACTURER'S NAME.
14. WHERE NECESSARY, THINNING SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, AND AS APPROVED BY FAYPWC.
15. ALL SURFACES TO BE PAINTED SHALL BE CLEAN AND DRY.
16. THE BONNET OF THE FIRE HYDRANT SHALL BE PAINTED A DARK GREEN, UTILIZING AN OIL BASE GLOSS, WITH A FINAL DRY MIL THICKNESS OF 4 TO 6 MILS. MULTIPLE COATS MAY BE NECESSARY TO ACHIEVE THE FINAL REQUIRED DRY MIL THICKNESS. THE PAINT SHALL BE FOREST GREEN, AS MANUFACTURED BY THE SHERWIN-WILLIAMS COMPANY, PART NUMBER A111T204 BASE AND SW7458 FOREST GREEN. PAINT SHOULD BE MIXED AT THE STORE. SAMPLES SHALL BE SUBMITTED IN ORDER FOR FAYPWC TO CONSIDER ALTERNATIVE PAINT MANUFACTURERS.
17. THE REMAINDER OF THE FIRE HYDRANT SHALL BE PAINTED SAFETY YELLOW, UTILIZING AN OIL BASE GLOSS, WITH A FINAL DRY MIL THICKNESS OF 4 TO 6 MILS. MULTIPLE COATS MAY BE NECESSARY TO ACHIEVE THE FINAL REQUIRED DRY MIL THICKNESS. THE PAINT SHALL BE SAFETY YELLOW, AS MANUFACTURED BY THE SHERWIN-WILLIAMS COMPANY, PART NUMBER B54Y37 BASE AND 617-4072 SAFETY YELLOW. PAINT SHOULD BE MIXED AT THE STORE. SAMPLES SHALL BE SUBMITTED IN ORDER FOR FAYPWC TO CONSIDER ALTERNATE PAINT MANUFACTURERS.

FIRE HYDRANT AND VALVE INSTALLATION N.T.S.	FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 2 OF 2	DWG. NO. W.13	DWG. BY: FAYPWC
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.
	WATER RESOURCES ENGINEERING DEPARTMENT	

NO.	DATE	REVISION
1	08/25/23	REVISED NOTES 16 AND 17
2	07/01/09	REVISED NOTE NO. 2, REMOVED NOTE NO. 3 AND ALTERED RESTRAINT DETAIL
3	07/01/16	REVISED NOTES

NOTES:

1. ALL MATERIAL SHALL BE APPROVED BY FAYPWC.
2. WHEN INSTALLED IN A PAVED AREA METER BOX SHALL BE SET 1/4" ABOVE FINISHED PAVEMENT GRADE AND PAVEMENT FEATHERED TO TOP OF BOX. COMPOSITE METER BOX (FAYPWC DETAIL W.4B) SHALL BE USED IN PAVED AREAS.
3. METER BOX SHALL BE IN ACCORDANCE WITH FAYPWC DETAILS. PROVIDE SOLID METER BOX LID.
4. BLOW-OFF ASSEMBLY NOT TO BE RE-USED UNLESS APPROVED BY FAYPWC.
5. REMOVE ENTIRE ASSEMBLY FROM BELL OF WATER MAIN PIPE WHEN EXTENDING THE MAIN.
6. CENTER 2" SDR-21 PIPE IN METER BOX.
7. INSTALLATION SHALL BE INSPECTED AND APPROVED BY FAYPWC PROJECT COORDINATOR PRIOR TO BACKFILL.
8. CONTRACTOR SHALL INSTALL TRACING WIRE INTO THE BOX. A MINIMUM OF 2' OF WIRE SHALL BE IN BOX.
9. VALVE BOX TO BE INSTALLED IN ACCORDANCE WITH FAYPWC DETAIL W.7.

2" BLOW OFF N.T.S.	FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. W.15	DWG. BY: FAYPWC
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.
	WATER RESOURCES ENGINEERING DEPARTMENT	

NO.	DATE	REVISION
1	08/06	CHANGED FITTINGS TO SCHED 80
2	11/06	REVISED CONFIGURATION
3	07/17	REVISED NOTES

2" MAIN LINE VALVE

VARIABLE SIZE MAIN LINE TAPPED 2"

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

2" VALVE INSTALLATION N.T.S.	FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. W.15A	DWG. BY: FAYPWC
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.
	WATER RESOURCES ENGINEERING DEPARTMENT	

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

2" WET TAP N.T.S.	FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. W.15B	DWG. BY: FAYPWC
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.
	WATER RESOURCES ENGINEERING DEPARTMENT	

NO.	DATE	REVISION
1	06/06	ADDED NOTE ON CONCRETE COLLAR
2	01/07	REVISED VALVE LOCATION
3	07/17	REVISED NOTES

ELBOW

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

NOTES:

1. THRUST BLOCKS SHALL BE INSTALLED ON PVC WATER DISTRIBUTION LINES 6" THRU 12" DIAMETER IN THE MANNER SHOWN. SEE FAYPWC STANDARD ALTERNATE RESTRAINING DETAIL W.18 FOR ACCEPTABLE ALTERNATE RESTRAINING SYSTEMS.
2. PIPE GREATER THAN 12 INCH DIAMETER SHALL REQUIRE RESTRAINT JOINT PIPE FOR THE PROPER LENGTH.
3. COMPACT FITTINGS ARE NOT ACCEPTABLE. STANDARD FITTINGS SHALL BE USED WITH CONCRETE THRUST BLOCKING.
4. THRUST BLOCKS SHALL BE INSTALLED ON SEWER FORCE MAIN IN THE MANNER SHOWN.
5. IF SAC-CRETE IS USED, MIXING MUST BE ON SITE UTILIZING A MECHANICAL MIXER.
6. NO CONCRETE SHALL BE PLACED ON BOLTS. WRAP JOINT FITTINGS WITH PLASTIC.
7. CONCRETE SHALL BE A MINIMUM 3,000PSI.
8. ALL BEARING SURFACES SHALL BE AGAINST UNDISTURBED SOIL AND SHALL BE APPROVED BY FAYPWC PROJECT COORDINATOR PRIOR TO PLACEMENT OF CONCRETE.
9. USE OF RESTRAINED JOINT DUCTILE IRON WILL BE REQUIRED IF SOIL CONDITIONS DO NOT ALLOW THE USE OF THRUST BLOCKS.
10. ALL VERTICAL BENDS SHALL BE RESTRAINED USING RESTRAINED JOINT DUCTILE IRON PIPE.

CONCRETE THRUST BLOCK DETAIL N.T.S.	FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. W.17	DWG. BY: FAYPWC
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.
	WATER RESOURCES ENGINEERING DEPARTMENT	

NO.	DATE	REVISION
1	09/05	REVISED TABLE
2	02/07	ADDED NOTES 9 AND 10
3	07/13	ADDED TAPPING SLEEVE AND VALVE DETAIL

IRON RETAINING GLAND M.J. RESTRAINT			
NOMINAL PIPE SIZE	WEDGES QUANTITY	BOLTS QUANTITY	PRESS RATING
6"	3	6	350
8"	4	6	350
12"	8	8	350

8" SIZE SHOWN 6" AND 12" SIMILAR IRON RETAINING GLAND M.J. RESTRAINT

RESTRAINED JOINT DETAIL FOR TYPICAL TEE INTERSECTION 4-WAY INTERSECTION SIMILARLY RESTRAINED

LR (MIN. LENGTH OF RESTRAINT EACH DIRECTION OF THRUST IN LINEAR FEET) Based on 200 psig pressure, Safety Factor of 2.0:1, BARE DI PIPE AND ML Soil, 3.5' cover Chart does not apply to pipes wrapped in polyethylene wrap

PIPE SIZE	VALVES DEAD ENDS TEES	90° ELBOWS	45° ELBOW & CROSSES	22-1/2° ELBOWS	REDUCER
6"	55'	31'	13'	7'	8"x2" 67'
8"	72'	40'	17'	8'	8"x6" 30'
12"	102'	57'	24'	12'	12"x8" 54'

NOTES:

1. THRUST RESTRAINT SHALL BE INSTALLED ON DUCTILE IRON WATER DISTRIBUTION LINES 6" THRU 12" DIAMETER IN THE MANNER SHOWN. SEE FAYPWC STANDARD THRUST BLOCK DETAIL W.17 FOR PVC RESTRAINT.
2. IRON RETAINING GLAND M.J. RESTRAINT OR OTHER FORMS OF IRON RESTRAINT SHALL NOT BE USED ON PVC PIPE.
3. PIPE GREATER THAN 12 INCH DIAMETER SHALL REQUIRE RESTRAINED JOINT PIPE FOR THE PROPER LENGTH.
4. COMPACT FITTINGS ARE ACCEPTABLE FOR USE WITH IRON RETAINING GLAND M.J. RESTRAINT AND OTHER FORMS OF D.I. RESTRAINT.
5. THE MINIMUM LENGTH OF RESTRAINT INDICATED SHALL REQUIRE ALL JOINTS WITHIN THE LR DISTANCE TO BE RESTRAINED.
6. RESTRAINT SYSTEM SHALL BE INSPECTED AND APPROVED BY FAYPWC PRIOR TO BACKFILLING.
7. RESTRAINT SYSTEMS MAY VARY BASED UPON THE ENGINEERS' DESIGN AS SHOWN ON THE PLAN AND PROFILE SHEETS.
8. GRIPPER RING AND FIELD LOK GASKETS ARE AN ACCEPTABLE METHOD OF RESTRAINT ON DUCTILE IRON PIPE ONLY.

ALTERNATE RESTRAINT DETAIL (DUCTILE IRON PIPE ONLY) N.T.S.	FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. W.18	DWG. BY: FAYPWC
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.
	WATER RESOURCES ENGINEERING DEPARTMENT	

NO.	DATE	REVISION
1	11/16/07	REVISED TABLE, ADDED NOTE 8

NOTES:

1. SUITABLE SOIL BEDDING IS DEFINED AS "NATIVE" SOIL EXCAVATED FROM THE TRENCH, FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH.
2. SUITABLE BEDDING MATERIAL SHALL EXTEND TO UNDISTURBED TRENCH WALLS.
3. IF GROUND CONDITIONS WARRANT, IT MAY BE NECESSARY TO BED DUCTILE IRON WATER MAINS IN SELECT BEDDING MATERIAL (NO. 5 OR NO. 57 STONE) TO THE SPRINGLINE OF THE PIPE. SUCH INSTALLATION SHALL BE AS DIRECTED BY THE FAYPWC PROJECT COORDINATOR.

WATER MAIN BEDDING DETAIL N.T.S.	FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. W.19	DWG. BY: FAYPWC
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.
	WATER RESOURCES ENGINEERING DEPARTMENT	

NO.	DATE	REVISION
1	01/01/17	REVISED NOTES
2	07/01/13	REVISED NOTE RE: TRACER WIRE

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

SHEET NUMBER
U9 OF 40

PLAN TYPE
UTILITY DETAILS

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
WWW.WKDICKSON.COM

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

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MUNROW
May 15 2024 6:53 PM

REV.: #	REVISIONS DESCRIPTION	REV. BY	DATE

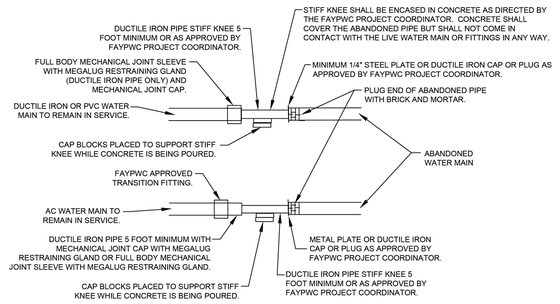
ISSUED FOR CONSTRUCTION

DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	

PROJECT	
NAME :	SUNBURY DRIVE
SCALE :	1" = 20'
DATE :	03-03-2022

PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.

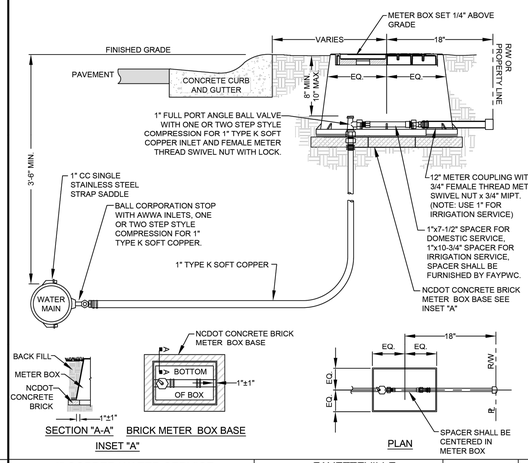
NOTES:
1. KILL OUT SHALL BE DONE A MINIMUM OF 5 FEET FROM ANY FITTING ON THE EXISTING WATER MAIN THAT IS TO REMAIN IN SERVICE.
2. IRON PIPE SHALL BE 4" DIAMETER FOR MAINS 12" OR LESS. UTILIZE 8" PIPE OR LARGER AS DIRECTED BY THE FAYPWC PROJECT COORDINATOR FOR ALL MAINS LARGER THAN 12".
3. ALLOW CONCRETE TO SET-UP PRIOR TO PLACING BACKFILL.
4. VOLUME OF CONCRETE FOR THRUST BLOCK SHALL BE IN ACCORDANCE WITH FAYPWC STANDARD DETAIL W.17.
5. ALL OUTAGES SHALL BE COORDINATED WITH THE FAYPWC PROJECT COORDINATOR.
6. PIPE SHALL BE GROUT FILLED OR REMOVED IN ACCORDANCE WITH NCDOT SPECIFICATIONS WHEN LOCATED IN THE STATE RIGHT-OF-WAY. ALL OTHER INSTANCES SHALL BE IN ACCORDANCE WITH FAYPWC SPECIFICATIONS.



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

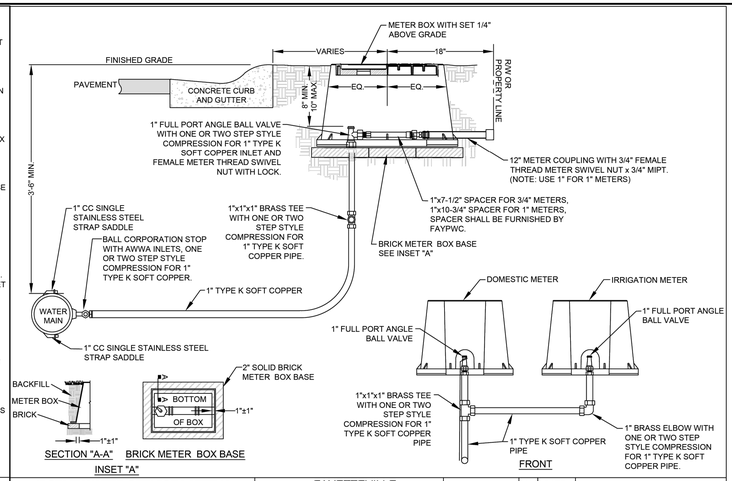
NO.	DATE	REVISION

NOTES:
1. ALL MATERIALS TO BE APPROVED BY FAYPWC.
2. SERVICE LATERAL SIZE 1" TYPE K SOFT COPPER UNLESS OTHERWISE SPECIFIED.
3. WATER SERVICE LOCK VALVE TO BE LOCATED 18" FROM SANITARY SEWER CLEAN-OUT STACK WHEN INSTALLED IN SAME DITCH.
4. WHEN INSTALLED IN A PAVED AREA, METER BOX TO BE SET 1/4" ABOVE FINISHED PAVEMENT GRADES AND PAVEMENT FEATHERED TO TOP OF BOX TO PROVIDE DRAIN AWAY FROM BOX.
5. COMPOSITE METER BOXES SHALL BE USED IN TRAFFIC AREAS SEE FAYPWC DETAIL W.4B.
6. INSTALL NCDOT CONCRETE BRICK BASE WITH NO GAPS, DO NOT LAY BRICK ON PIPE. SEE INSET "A".
7. WHERE ASPHALT CURB OR STRIP PAVEMENT EXISTS, THE LOCATION OF BOX SHALL BE AS DIRECTED BY FAYPWC REPRESENTATIVE.
8. DISTANCE FROM TOP OF LOCK VALVE OPERATING STEM TO TOP OF BOX SHALL BE 8" MINIMUM TO 10" MAXIMUM.
9. RESIDENTIAL METER BOX SHALL BE SET 18" FROM R/W TO CENTERLINE OF METER BOX PERPENDICULAR TO THE RIGHT-OF-WAY.
10. COMMERCIAL METER BOX LOCATION SHALL BE AS APPROVED (PREFER NO METER BE INSTALLED LESS THAN 6' FROM BUILDING TO EDGE OF BOX).
11. LATERAL SHALL BE CENTERED ON LOT UNLESS OTHERWISE NOTED.
12. LATERAL SHALL NOT BE BACKFILLED UNTIL INSPECTED AND APPROVED BY FAYPWC PROJECT COORDINATOR.
13. WATER MAIN AND LATERAL SHALL PASS HYDROSTATIC AND STERILIZATION TESTS.
14. SHOULD IT BE NECESSARY TO CRIMP THE WATER SERVICE LATERAL, A FULL CIRCLE REPAIR CLAMP SHALL BE PLACED ON THE CRIMPED AREA.



1" COPPER WATER SERVICE LATERAL N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO. W.24	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

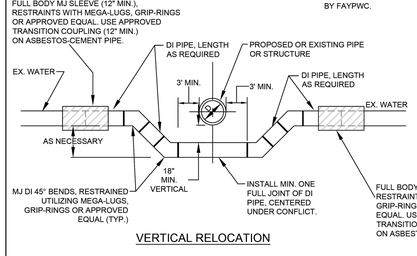
NO.	DATE	REVISION
2	09/05	VALVE CHANGE, ADD NOTE 16
3	07/06	RESIZED METER COUPLING
4	07/17	RESIZED NOTES



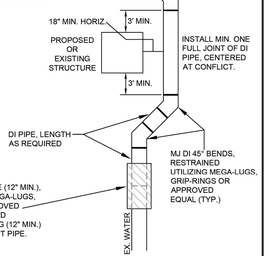
1" SPLIT WATER SERVICE LATERAL FOR TYPE K SOFT COPPER PIPE N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 2	DWG. NO. W.25	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

NO.	DATE	REVISION
1	05/05	VALVE CHANGE
2	09/05	VALVE CHANGE, ADD NOTE 17
3	07/06	ADDED FRONT VIEW AND MOVED NOTES TO SHEET 2

NOTES:
1. ALL PIPE AND FITTINGS SHALL BE APPROVED BY FAYPWC.
2. CONTRACTOR TO COORDINATE NECESSARY OUTAGES WITH FAYPWC AND AFFECTED CUSTOMERS. MINIMUM 48 HOUR NOTICE REQUIRED.
3. NEW WATER MAIN TO BE SWABBED WITH A CHLORINE SOLUTION AND FLUSHED PRIOR TO PLACING INTO SERVICE.
4. ALL NEW FITTINGS AND PIPE TO BE RESTRAINED UTILIZING MEGA-LUGS, GRIP-RINGS OR APPROVED EQUAL.
5. ALL PIPE AND FITTINGS TO BE DUCTILE IRON.
6. FAYPWC PROJECT COORDINATOR TO BE PRESENT DURING WORK.
7. BACKFILL AND COMPACT TO CITY OF FAYETTEVILLE OR NCDOT REQUIREMENTS.
8. PROVIDE STONE BEDDING (NO. 5 OR NO. 57 STONE) TO SUPPORT RELOCATED WATER MAIN AND/OR NEW STORM DRAIN, AS APPROVED BY FAYPWC PROJECT COORDINATOR.
9. MJ RESTRAINTS NOT ALLOWED ON PVC PIPE.
10. DIMENSIONS ARE GIVEN AS GENERAL GUIDANCE, EXACT DIMENSIONS ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS AND AS DIRECTED BY FAYPWC.



VERTICAL RELOCATION

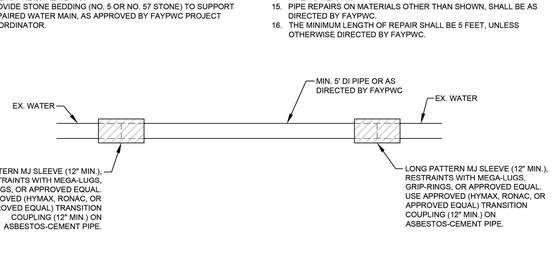


HORIZONTAL RELOCATION

PIPE RELOCATION DETAIL N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO.: W.26	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

NO.	DATE	REVISION
1	01/12	REVISED NOTES, ADDED HORIZONTAL RELOCATION

NOTES:
1. ALL PIPE AND FITTINGS SHALL BE APPROVED BY FAYPWC.
2. CONTRACTOR TO COORDINATE NECESSARY OUTAGES WITH FAYPWC AND AFFECTED CUSTOMERS. MINIMUM 48 HOUR NOTICE REQUIRED.
3. NEW WATER MAIN TO BE SWABBED WITH A CHLORINE SOLUTION AND FLUSHED PRIOR TO PLACING INTO SERVICE.
4. ALL NEW FITTINGS AND PIPE TO BE RESTRAINED UTILIZING MEGA-LUGS, GRIP-RINGS, OR APPROVED EQUAL.
5. ALL PIPES TO BE DUCTILE IRON.
6. FAYPWC PROJECT COORDINATOR TO BE PRESENT DURING WORK.
7. BACKFILL AND COMPACT IN ACCORDANCE WITH THE APPLICABLE AGENCY REQUIREMENTS.
8. PROVIDE STONE BEDDING (NO. 5 OR NO. 57 STONE) TO SUPPORT REPAIRED WATER MAIN, AS APPROVED BY FAYPWC PROJECT COORDINATOR.
9. MJ RESTRAINTS ARE NOT ALLOWED ON PVC PIPE.
10. DIMENSIONS ARE GIVEN AS GENERAL GUIDANCE, EXACT DIMENSIONS ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS AND AS DIRECTED BY FAYPWC.
11. ALL MATERIALS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF FAYPWC.
12. PIPE REPAIR SHALL EXHIBIT STRAIGHT HORIZONTAL AND VERTICAL ALIGNMENT. DEFLECTIONS OF HORIZONTAL AND VERTICAL ALIGNMENT ARE NOT ACCEPTABLE.
13. THERE SHALL BE NO MORE THAN 1/4" SPACE BETWEEN THE EXISTING WATER MAIN AND THE REPLACEMENT PIPE AT EACH END.
14. DAMAGED SECTION SHALL BE CUT OUT WITHOUT DAMAGING THE PIPE TO REMAIN.
15. PIPE REPAIRS ON MATERIALS OTHER THAN SHOWN, SHALL BE AS DIRECTED BY FAYPWC.
16. THE MINIMUM LENGTH OF REPAIR SHALL BE 5 FEET, UNLESS OTHERWISE DIRECTED BY FAYPWC.



PIPE REPAIR DETAIL N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.	PWC
SHEET NO. 1 OF 1	DWG. NO.: W.31	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.		

NO.	DATE	REVISION

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

SHEET NUMBER U10 OF 40

PLAN TYPE UTILITY DETAILS

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
WWW.WKDICKSON.COM

FAYETTEVILLE NC
PUBLIC SERVICES
ENGINEERING DIVISION
ENGINEERING & INFRASTRUCTURE DEPARTMENT
4555 HAY STREET FAYETTEVILLE, NC 28301

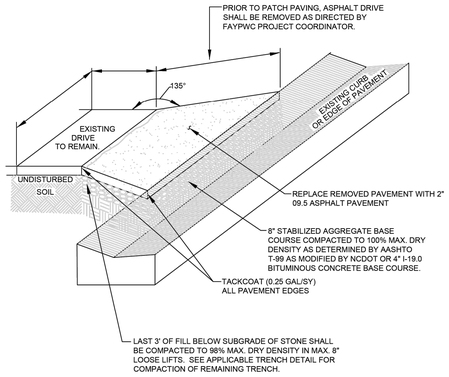
NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURPHY
May 15 2024 6:54 PM

REVISIONS			
REV. #	DESCRIPTION	REV.BY	DATE

ISSUED FOR CONSTRUCTION

DRAWN :	BFL
DESIGN :	TLM
CHECK :	
APPROVED :	
PROJECT	SUNBURY DRIVE
NAME :	
SCALE :	1" = 20'
DATE :	03-03-2022

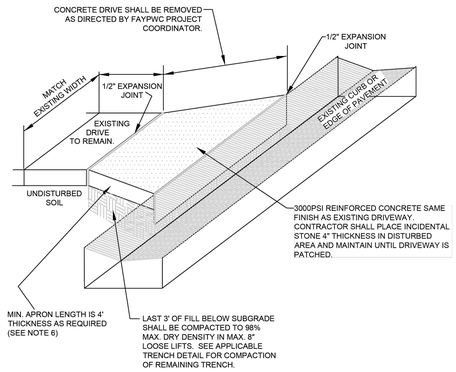
PROJECT NO. 20200553.00.RA
SUB-LEDGER NO.



NOTES:
1. CONTRACTOR SHALL PATCH PAVEMENT TO THE SAME PAVEMENT PROFILE AND SHAPE AS EXISTED PRIOR TO REMOVING PAVEMENT.
2. CONTRACTOR SHALL BE REQUIRED TO PROVIDE TRAFFIC CONTROL AND DEVICES AS REQUIRED BY THE M.U.T.C.D. OR NC SUPPLEMENT. WORK CANNOT PROCEED UNTIL THE MEASURES ARE IN PLACE. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT NEW PAVEMENT FROM TRAFFIC AND OTHER SOURCES OF DAMAGE UNTIL ASPHALT HAS SUFFICIENTLY COOLED TO PREVENT DAMAGE.
3. CONTRACTOR SHALL SAWCUT EXISTING PAVEMENT STRAIGHT AND TRUE IMMEDIATELY PRIOR TO PAVING. THE FINAL PRODUCT SHALL BE SUBJECT TO THE OWNERS APPROVAL
4. UNDER NO CIRCUMSTANCES SHALL THE DISTURBED AREA EXTEND BEYOND THE RIGHT-OF-WAY AND/OR THE EASEMENT LIMITS.

ASPHALT DRIVEWAY/ PARKING LOT PATCH N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
SHEET NO. 1 OF 1	DWG. NO. M.4	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	

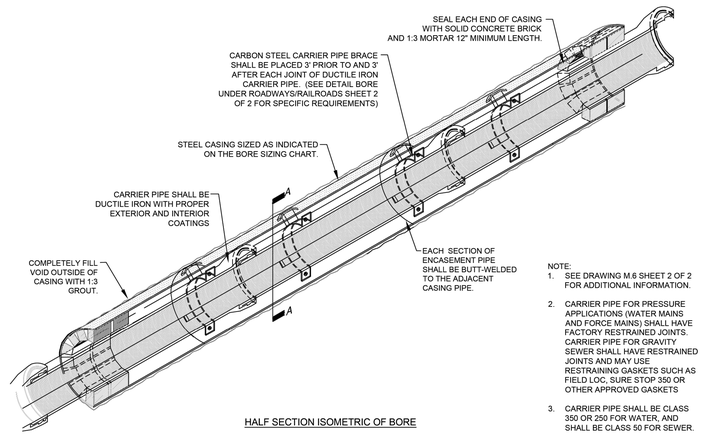
NO.	DATE	REVISION
1	08/10	REVISED, DELETED NOTES



NOTES:
1. CONTRACTOR SHALL REPLACE PAVEMENT TO THE SAME CROSS SECTION AS EXISTED PRIOR TO REMOVAL.
2. CONTRACTOR SHALL BE REQUIRED TO PROVIDE TRAFFIC CONTROL AND DEVICES AS REQUIRED BY THE M.U.T.C.D. OR NC SUPPLEMENT. WORK CANNOT PROCEED UNTIL THE MEASURES ARE IN PLACE. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT NEW PAVEMENT FROM TRAFFIC AND OTHER SOURCES OF DAMAGE.
3. UNDER NO CIRCUMSTANCES SHALL THE DISTURBED AREA EXTEND BEYOND THE RIGHT-OF-WAY AND/OR THE EASEMENT LIMITS. UNLESS OTHERWISE APPROVED BY THE FAYPWC PROJECT COORDINATOR.
4. THE FINAL PRODUCT SHALL BE SUBJECT TO THE OWNER'S APPROVAL.
5. SAWCUT CONCRETE DRIVE STRAIGHT AND TRUE. JAGGED SAWCUTS SHALL NOT BE ACCEPTABLE. SAWCUTS SHALL BE STRAIGHT UNIFORM WIDTHS PERPENDICULAR TO THE DRIVEWAY.
6. MINIMUM RESIDENTIAL CONCRETE DRIVEWAY THICKNESS SHALL BE 5". MINIMUM COMMERCIAL CONCRETE DRIVEWAY THICKNESS SHALL BE 7".
7. CONTRACTOR SHALL CONTACT THE CITY OF FAYETTEVILLE'S CONSTRUCTION MANAGEMENT DEPARTMENT AT (910) 433-1656 A MINIMUM OF 24 HOURS IN ADVANCE FOR AN INSPECTION OF THE CONCRETE FORMS.
8. PROVIDE EXPANSION JOINT(S) AS REQUIRED BY THE CITY OF FAYETTEVILLE FOR FUTURE SIDEWALK PLACEMENT.
9. CURING COMPOUND SHALL BE UTILIZED, AS SPECIFIED BY THE CITY OF FAYETTEVILLE.
10. NEW EXPANSION JOINTS SHALL BE PLACED 4 TO 10 FEET FROM EXISTING EXPANSION JOINTS, AS SPECIFIED BY THE FAYPWC PROJECT COORDINATOR.
11. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF FAYETTEVILLE REQUIREMENTS.

CONCRETE DRIVEWAY PATCH N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
SHEET NO. 1 OF 1	DWG. NO. M.5	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	

NO.	DATE	REVISION



HALF SECTION ISOMETRIC OF BORE

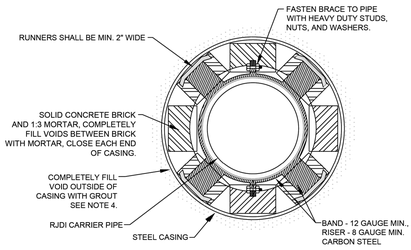
NOTE:
1. SEE DRAWING M.6 SHEET 2 OF 2 FOR ADDITIONAL INFORMATION.
2. CARRIER PIPE FOR PRESSURE APPLICATIONS (WATER MAINS AND FORCE MAINS) SHALL HAVE FACTORY RESTRAINED JOINTS. CARRIER PIPE FOR GRAVITY SEWER SHALL HAVE RESTRAINED JOINTS AND MAY USE RESTRAINING GASKETS SUCH AS FIELD LOC, SURE STOP 350 OR OTHER APPROVED GASKETS
3. CARRIER PIPE SHALL BE CLASS 350 OR 250 FOR WATER, AND SHALL BE CLASS 50 FOR SEWER.

BORE UNDER ROADWAYS/RAILROADS N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
SHEET NO. 1 OF 2	DWG. NO. M.6	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	

NO.	DATE	REVISION
1	01/05	ADDED NOTES 2 AND 3
2	10/09	CLARIFIED RESTRAINT REQUIREMENTS

BORE SIZING CHART*			
CARRIER PIPE SIZE	MIN. CASING SIZE	ROADWAYS MIN. WALL THICKNESS	RAILROADS MIN. WALL THICKNESS
4"	10"	0.188"	0.188"
6"	12"	0.25"	0.281"
8"	16"	0.25"	0.281"
12"	24"	0.25"	0.375"
16"	30"	0.312"	0.469"
18"	30"	0.312"	0.469"
24"	36"	0.375"	0.532"
30"	42"	0.500"	0.625"
36"	48"	0.500"	0.688"

*CONTRACTOR MAY SUBSTITUTE A LARGER SIZE CASING PIPE HAVING THE MINIMUM WALL THICKNESS SHOWN FOR SEWER MAINS. ALL ADDITIONAL COSTS SHALL BE INCLUDED IN THE NIT PRICE BID FOR BORING AND JACKING.

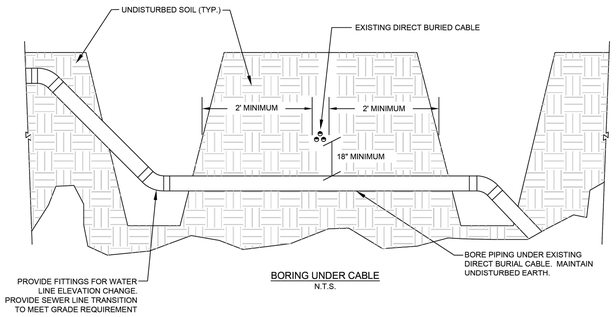


SECTION "A-A" CARBON STEEL CARRIER PIPE BRACE

NOTES:
1. INSTALLATION SHALL BE DRY BORE AND JACKING OF SMOOTH WALL STEEL PIPE. JETTING OR WET BORING WITH WATER SHALL NOT BE ALLOWED.
2. SEE BORE SIZING CHART FOR CARRIER PIPE SIZE AND STEEL CASING SIZE, MINIMUM DIAMETER, AND WALL THICKNESS.
3. CASING PIPE SHALL BE IN ACCORDANCE WITH ASTM A-53, GRADE B WITH A MINIMUM YIELD STRENGTH OF 35,000PSI.
4. EACH END OF ENCASEMENT TO BE PLUGGED WITH BRICK. ALL VOIDS OUTSIDE THE CASING PIPE SHALL BE COMPLETELY FILLED WITH 1:3 PORTLAND CEMENT GROUT AT SUFFICIENT PRESSURE TO INSURE NO SETTLEMENT OF ROADWAY/RAILROAD. METHOD OF GROUTING SHALL BE AS APPROVED BY THE PERMITTING AGENCY.
5. IT IS RECOMMENDED THAT THE BORE BE ACCOMPLISHED BEFORE PIPE CONSTRUCTION BEGINS.
6. THE BORING SHALL BE PERFORMED FROM "UPSTREAM" TO "DOWNSTREAM" DIRECTION MAINTAINING THE CRITICAL DOWNSTREAM INVERT ELEVATION. SHOULD THE BORE NOT BE ON GRADE, A REVISED PLAN SHALL BE SUBMITTED TO FAYPWC FOR APPROVAL.
7. THE BORING OPERATION SHALL BE CONDUCTED IN A MANNER THAT THE FLOW OF TRAFFIC IS NOT IMPEDED OR IN SUCH A MANNER SO AS NOT TO CREATE A HAZARD.
8. IF AN OBSTRUCTION IS ENCOUNTERED DURING THE BORING OPERATION, THE AUGER SHALL BE WITHDRAWN, THE EXCESS CASING PIPE CUT-OFF, CAPPED AND THE INTERIOR AND EXTERIOR VOIDS SHALL BE COMPLETELY FILLED WITH 1:3 PORTLAND CEMENT GROUT UNDER PRESSURE. NO SEPARATE PAYMENT FOR UNSUCCESSFUL BORES.
9. CONTRACTOR SHALL FIELD ADJUST AND INSTALL PROPER PIPE BRACES TO ACCOMPLISH GRADE AND INVERTS AS SHOWN ON THE DRAWINGS.
10. A MANUAL CONTROL STEERING HEAD OR OTHER GUIDANCE SYSTEM IS RECOMMENDED FOR BORES 30" DIAMETER AND/OR LARGER AND FOR BORES EXCEEDING 100' IN LENGTH OR AS SPECIFIED.
11. SUBCONTRACTORS SHALL ADHERE TO ALL PERMIT REQUIREMENTS AND SHALL PROVIDE APPROVED INSURANCE CERTIFICATES AS REQUIRED.
12. CONTRACTOR SHALL EXECUTE AND PERFORM ALL REQUIREMENTS AND CONDITIONS STIPULATED BY THE PERMITTING AGENCY.
13. SEE DRAWING M.6 SHEET 1 OF 2 FOR ADDITIONAL INFORMATION.
14. CARRIER PIPE FOR PRESSURE APPLICATIONS (WATER MAINS AND FORCE MAINS) SHALL HAVE FACTORY RESTRAINED JOINTS. CARRIER PIPE FOR GRAVITY SEWER SHALL HAVE RESTRAINED JOINTS AND MAY USE RESTRAINING GASKETS SUCH AS FIELD LOK, SURE STOP 350 OR OTHER APPROVED GASKETS.

BORE UNDER ROADWAYS/RAILROADS N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
SHEET NO. 2 OF 2	DWG. NO. M.6	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	

NO.	DATE	REVISION
1	02/11/04	ADDED 6" CARRIER PIPE TO BORE SIZING CHART
2	07/10	REVISED NOTES, SIZING CHART



BORING UNDER CABLE
N.T.S.

BORING UNDER ELECTRIC CABLE DETAIL N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.
SHEET NO. 1 OF 1	DWG. NO. M.11	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT
	DATE: JAN. 01, 2024	APPROVED BY: M.M.M.	

NO.	DATE	REVISION
1	07/23/03	RENUMBERED SHEET

SUNBURY DRIVE
DRAINAGE IMPROVEMENTS

SHEET NUMBER U11 OF 40

PLAN TYPE UTILITY DETAILS

WK DICKSON
community infrastructure consultants
720 CORPORATE CENTER DRIVE
RALEIGH, NC 27607
(919)-782-0495
WWW.WKDICKSON.COM

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

NORTH CAROLINA PROFESSIONAL SEAL 031455 ENGINEER THOMAS L. MURRAY
May 15 2024 6:55 PM

REVISIONS

REV. #	DESCRIPTION	REV BY	DATE

ISSUED FOR CONSTRUCTION

DRAWN :	BFL	PROJECT	SUNBURY DRIVE
DESIGN :	TLM	NAME :	
CHECK :		SCALE :	1" = 20'
APPROVED :		DATE :	03-03-2022

PROJECT NO. 20200553.00.RA

SUB-LEDGER NO.