PURCHASING

October 5, 2026

MEMO TO: Prospective Bidders

FROM: Kimberly Toon, Assistant Chief Financial Officer- Procurement

SUBJECT: **Addendum #3: ITB Sessoms Street Drainage Improvements**

DUE DATE AND TIME: **OCTOBER 8, 2026; 2:00 p.m.**

The Bid Documents are hereby modified by this Addendum # 3 dated October 5, 2026. To include the following:

a. Bid Form, plans to get permit, 5 of 5 Excavation and Backfilling for Utility Systems

2. The foregoing changes shall be incorporated in the Bid Documents, and a copy of Addendum #3, signed by the Bidder, must accompany the Bid to indicate the Bidder's familiarity with the changes.

a. Items attached.

Bidder Acknowledgement:
Bidder Name (Print): _____
Bidder Signature: _____
Date of Signature: _____
_____

00 41 16 Bid Form Exhibit A

Project:	Sessoms Street Drainage Improvements		**Project No.:**
Owner:	City of Fayetteville, NC		
Engineer:	WSP USA		
Offeror:			

Base Bid

Item No.	Item Description	Unit	Estimated Quantity	Unit Price	Extended Amount
Items in Base Bid (excluding Allowances) per Section 01 29 01 "Measurement and Basis for Payment"					
A-01	Mobilization (5%)	LS	1		
A-02	Construction Surveying (2%)	LS	1		
A-03	Erosion Control (5%)	LS	1		
A-04	Traffic Control (5%)	LS	1		
A-05	Clearing and Grubbing	AC	1.65		
A-06	Remove and Replace Concrete Curb and Gutter	LF	445		
A-07	Temporary Shoring	SF	2,400		
A-08	Dewatering	LS	1		
A-09	OMITTED				
A-10	OMITTED				
A-11	OMITTED				
A-12	Brace or Temporarily Relocate Utility Poles	EA	2		
B-01	Removal and Disposal of Existing Stormwater Structure	EA	14		
B-02	Removal and Disposal of Existing 15" RCP	LF	115		
B-03	Removal and Disposal of Existing 24" RCP	LF	175		
B-04	Removal and Disposal of Existing 30" RCP	LF	115		
B-05	Removal and Disposal of Existing 36" RCP	LF	1,230		
B-06	Removal and Disposal Headwall	EA	1		
B-07	Remove Existing Residential Concrete / Asphalt Pavement / Gravel Driveways and Replace with Concrete Driveways	SY	95		
B-08	Remove and Replace Street Sign	EA	5		
B-09	Remove and Reinstall Illuminated Sign	EA	1		
B-10	18" RCP, CL III	LF	60		
B-11	24" RCP, CL III	LF	28		
B-12	30" RCP, CL III	LF	305		
B-13	42" RCP, CL III	LF	2,360		
B-14	48" RCP, CL III	LF	395		
B-15	30" RCP, CL IV	LF	195		
B-16	36" RCP, CL IV	LF	225		
B-17	7'X4' Reinforced Concrete Box Culvert	LF	150		
B-18	16'X4' Reinforced Concrete Box Culvert	LF	250		
B-19	Class B Riprap with Filter Fabric	TN	345		
B-20	Seeding	AC	2.00		
B-21	Open Throat Junction Box 4'-8"x 4'-8" (6'-10' Depth)	EA	13		
B-22	Open Throat Junction Box 7'-4"x 6'-0" (6'-10' Depth)	EA	1		
B-23	4' Dia. Precast Manhole (6'-10' Depth)	EA	2		
B-24	5' Dia. Precast Manhole (6'-10' Depth)	EA	4		
B-25	5' Dia. Precast Manhole (10'-15' Depth)	EA	2		
B-26	Standard Catch Basin (0'-6' Depth)	EA	2		
B-27	24" RCP Concrete Headwall with Wing Walls	EA	1		
B-28	10'x5' Custom Junction Box (6'-10' Depth)	EA	1		
B-29	Remove and Replace 6' High Chain Link Fence	LF	60		
B-30	#57 Stone (Washed)	TN	700		
B-31	Raise Existing Inlet and Install Check Valve	EA	1		
B-32	Sod	SY	800		
B-33	Grout and Plug 24" Pipe	CY	8		
B-34	Sutton Property Tree Removal (8" - 10" DBH)	EA	4		
B-35	Precast Concrete Flared End Sections (24" DIA. FES)	EA	2		
B-36	42" RCP Concrete Headwall with Wing Walls	EA	2		
B-37	Box Culvert Headwall with Wing Walls	EA	1		
C-01	Mobilization (5%) - PWC	LS	1		
C-02	Construction Surveying (2%) - PWC	LS	1		
C-03	Traffic Control (5%) - PWC	LS	1		

Item No.	Item Description	Unit	Estimated Quantity	Unit Price	Extended Amount
C-04	Remove Abandoned Asbetos Cement Water Main	LF	300		
C-05	Remove Existing 6" Water Main	LF	450		
C-06	Remove Existing 8" Water Main	LF	380		
C-07	Remove and Replace Water Services and Meter Boxes	EA	8		
C-08	6" RJ Gate Valve	EA	1		
C-09	8" RJ Gate Valve	EA	4		
C-10	16" RJ Gate Valve	EA	2		
C-11	6" RJ Ductile Iron Water Main	LF	30		
C-12	8" RJ Ductile Iron Water Main	LF	890		
C-13	6" Water Main Lowering	EA	1		
C-14	16" Water Main Lowering	EA	1		
C-15	12" Steel Encasement Pipe	LF	20		
C-16	16" Steel Encasement Pipe	LF	110		
C-17	30" Steel Encasement Pipe	LF	36		
C-18	Connect to Existing Water Main	EA	6		
C-19	Sterilization and Testing	LS	1		
C-20	Thrust Blocking	LS	1		
C-21	Remove and Replace Concrete Curb and Gutter	LF	210		
C-22	4" 90 Mils Thermoplastic White Solid Lane Line	LF	1,400		
C-23	4" 90 Mils Thermoplastic Yellow Double Center Line	LF	1,475		
C-24	Plant Mix Bituminous Concrete Surface Course and Bituminous Concrete Base Course (Type B 25.0 C; Type I 19.0 C; Type S9.5 B; Type S9.5 C)	TN	325		
C-25	Aggregate Base Course (6-inches)	TN	850		
C-26	Milling Bituminous Pavement and Incidental Milling	SY	2,635		
C-27	OMITTED				
D-01	Remove Existing Manhole	EA	2		
D-02	4' Dia. Precast Standard Manhole (10'-15' Depth)	EA	2		
D-03	5' Dia. Precast Drop Manhole (10'-15' Depth)	EA	1		
D-04	Temporary Bypass Sewer Pumping	LS	1		
D-05	Remove and Replace Sanitary Sewer Service Lateral and Cleanout	EA	11		
D-06	Remove Existing 8" Gravity Sewer Main	LF	840		
D-07	8" RJ Ductile Iron Gravity Sewer Main	LF	840		
D-08	Connect Proposed 8" Gravity Sewer to Existing Manhole	EA	3		
D-09	Testing	LF	840		
D-10	Concrete Saddle	CY	2		
A	**Total Base Bid Items Amount (Sum of Extended Amounts for each Base Bid Line Item) in Figures: (I.E. 1,727,850.00)**				$ -
	Total Base Bid Items Amount (Sum of Extended Amounts for each Base Bid Line Item) in Writing Below: I.E. One Million Seven Hundred Twenty-Seven Thousand Eight Hundred Fifty Dollars and No Cents				
Alternates					
F-01	Open Throat Junction Box 11'-4"x 4'-8" (6'-10' Depth)	EA	6		
F-02	Open Throat Junction Box 14'-0"x 6'-0" (6'-10' Depth)	EA	1		
G	**Total Amount for Alternates (Sum of Extended Amounts for Each Alternate Line Item)**				$ -
H	**Total Base Bid and Alternate (Sum of A and G) in Figures:**				$ -
	Total Base Bid and Alternate (Sum of A and G) in Writing Below:				

BID SUBMITTED BY:

Offeror: _____

Signature: _____

Printed Name: _____

Title: _____

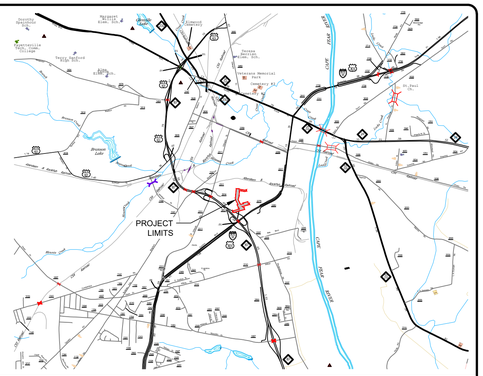
Date: _____

SESSOMS STREET DRAINAGE IMPROVEMENTS

100% ISSUED FOR PERMIT

FAYETTEVILLE, NORTH CAROLINA

11/22/2024



5 VICINITY MAP SCALE: NOT TO SCALE

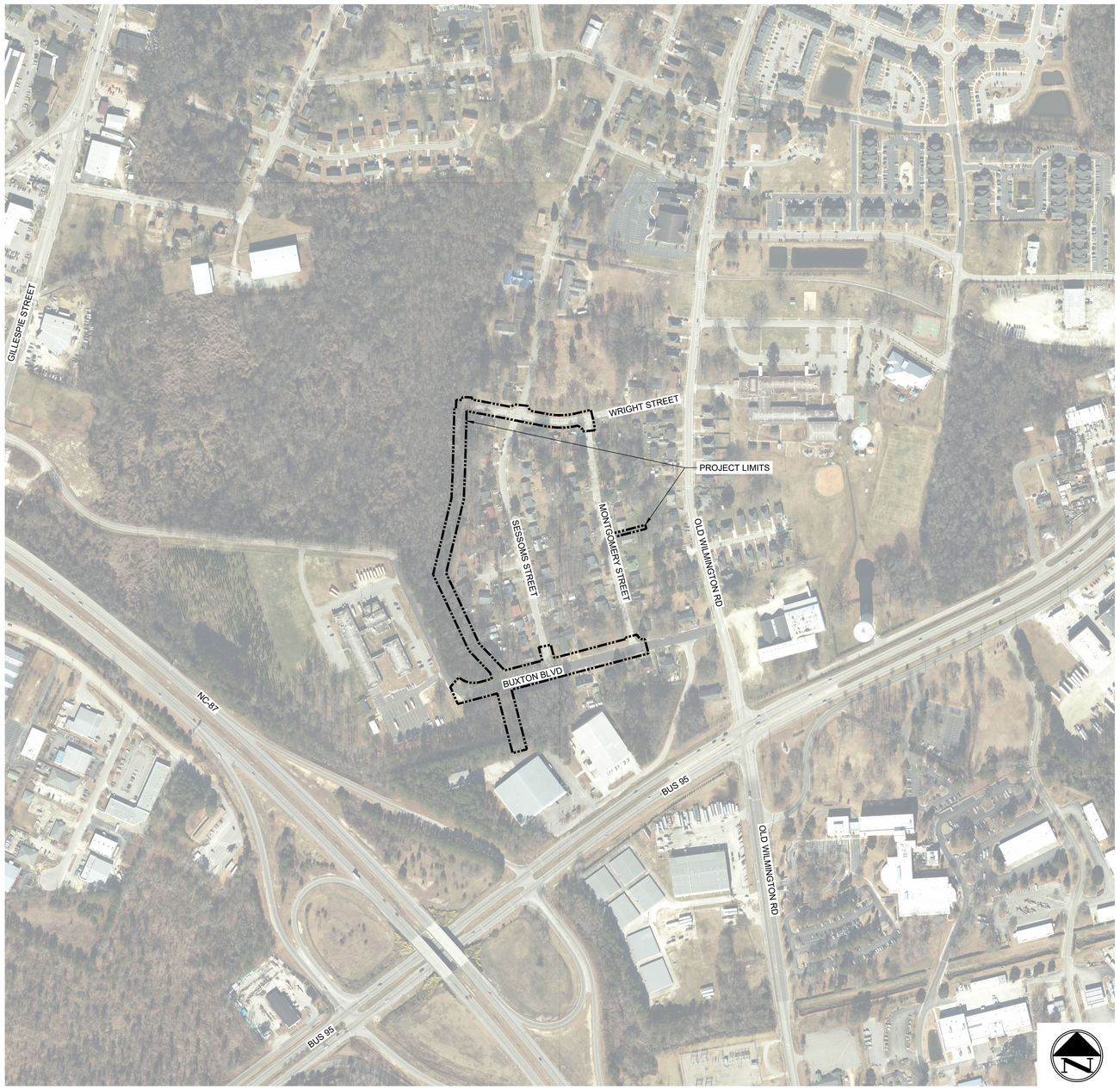
OWNER:
CITY OF FAYETTEVILLE, NC
433 HAY STREET
FAYETTEVILLE, NC 27526
CONTACTS:
ENGINEERING: BRYON REEVES, PE, CFM
PHONE: (910) 433-1656
BRYONREEVES@FAYETTEVILLENC.GOV
CONSTRUCTION MANAGEMENT: JEFF RIDDLE, PLS
PHONE: (910) 433-1661
JEFFREYRIDDLE@FAYETTEVILLENC.GOV
TRAFFIC SERVICES: PHILIP HART
PHONE: (910) 433-1660
PHILIPHART@FAYETTEVILLENC.GOV

ENGINEER:
WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
CONTACT: TONY HAUSER, PLA, PE
PHONE: (828) 252-8130
TONY.HAUSER@WSP.COM

SURVEYOR:
MCKIM & CREED, INC
243 N. FRONT STREET
WILMINGTON, NC 28401
CONTACT: MATT ROBERTS
PHONE: (910) 343-1048
MROBERTS@MCKIMCREED.COM

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

4 PROJECT INFORMATION



3 LOCATION MAP SCALE: 1" = 500'

Sheet Number	Sheet Title
C1.0	COVER
C2.0	GENERAL NOTES
S2.0	SURVEY SHEET 1 OF 3
S2.1	SURVEY SHEET 2 OF 3
S2.2	SURVEY SHEET 3 OF 3
C3.0	DEMOLITION PLAN
C3.1	DEMOLITION PLAN
C4.0	EROSION & SEDIMENT CONTROL PLAN - STAGE 1
C4.1	EROSION & SEDIMENT CONTROL PLAN - STAGE 1
C5.0	EROSION & SEDIMENT CONTROL PLAN - STAGE 2
C5.1	EROSION & SEDIMENT CONTROL PLAN - STAGE 2
C6.0	DRAINAGE IMPROVEMENTS PLAN
C6.1	DRAINAGE IMPROVEMENTS PLAN
C7.0	UTILITY PLAN
C7.1	UTILITY PLAN
C8.0	PAVING AND STRIPING PLAN
C8.1	PAVING AND STRIPING PLAN
C9.0	WRIGHT STREET PLAN & PROFILE STA. 10+00 - 16+00
C9.1	BUXTON BLVD PLAN & PROFILE STA. 10+00 - 15+50
C9.2	BUXTON BLVD PLAN & PROFILE STA. 15+50 - END
C9.3	CROSS COUNTRY PLAN & PROFILE STA. 10+00 - 16+00
C9.4	CROSS COUNTRY PLAN & PROFILE STA. 16+00 - 22+50
C9.5	CROSS COUNTRY PLAN & PROFILE STA. 22+50 - END
C9.6	SESSOMS ST., MONTGOMERY ST., WRIGHT ST. PLAN & PROFILES
C10.0	EROSION CONTROL DETAILS
C10.1	EROSION CONTROL DETAILS
C11.0	SITE DETAILS
C11.1	SITE DETAILS
C12.0	DRAINAGE DETAILS
C12.1	DRAINAGE DETAILS
C13.0	WATER UTILITY DETAILS
C13.1	WATER UTILITY DETAILS
C13.2	SEWER UTILITY DETAILS
C13.3	SEWER UTILITY DETAILS
C14.0	TRAFFIC CONTROL PLAN - STAGE 1
C14.1	TRAFFIC CONTROL PLAN - STAGE 2
C14.2	TRAFFIC CONTROL PLAN - STAGE 3
C14.3	TRAFFIC CONTROL PLAN - STAGE 4
C14.4	TRAFFIC CONTROL DETAILS

2 SHEET INDEX

CONSTRUCTION APPROVAL	
CONSTRUCTION MANAGEMENT	
ENGINEERING	
PARKS & RECREATION	
REAL ESTATE	
STREET MAINTENANCE	
TRAFFIC SERVICES	
UTILITIES - ELECTRICAL SERVICES	
UTILITIES - SEWER SERVICES	
UTILITIES - WATER SERVICES	

1 CONSTRUCTION APPROVALS

COVER

SHEET NUMBER C1.0

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG: F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/9/24
DATE

REVISIONS:

REV. #	DESCRIPTION	REV. BY	DATE
	100% ISSUED FOR BID	WSP	2024-07-09
REV. I	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. J	100% ISSUED FOR PERMIT	WSP	2024-11-22
REV. K			

DRAWN:	RAS
DESIGN:	RAS
CHECK:	DCO
APPROVED:	ALH
PROJECT NAME:	SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE:	AS SHOWN
DATE:	22 NOVEMBER 2024

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

PROJECT DESCRIPTION:

THE INTENT OF THIS PROJECT IS TO PROVIDE STORM DRAINAGE IMPROVEMENTS, AND INCLUDES SOME WATER AND SANITARY SEWER IMPROVEMENTS ALONG SESSOMS STREET, BUXTON BOULEVARD, WRIGHT STREET, AND MONTGOMERY STREET WITHIN THE CITY OF FAYETTEVILLE.

PROPOSED LIMITS OF DISTURBANCE (LOD): 3.95 ACRES

STORMWATER RUN OFF FROM THE SITE DISCHARGES TO THE CAPE FEAR RIVER (WATER SURFACE CLASSIFICATION C, STREAM INDEX 18-(26)) WHICH IS LOCATED WITHIN THE CAPE FEAR RIVER BASIN.

GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. THE CONTRACTOR SHALL PROTECT ALL MONUMENTS, IRON PINS, AND PROPERTY CORNERS DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ANY PROPERTY MARKERS DISTURBED DURING CONSTRUCTION.
3. STOCKPILES SHALL BE LOCATED UP-GRADIENT OF EROSION AND SEDIMENT CONTROL FEATURES. ADDITIONALLY, ALL STOCKPILES SHALL HAVE SILT FENCE OR COMPOST SOCK INSTALLED ON THE DOWN-GRADIENT SIDE OF THE STOCKPILE. ANY ONSITE STOCKPILING IS TO BE COORDINATED AND APPROVED BY A CITY INSPECTOR. STOCKPILES ARE REQUIRED TO BE STABILIZED WITH TEMPORARY SEEDING WITHIN 21 DAYS. IF NOT USED WITHIN 90 DAYS, THEY MUST BE STABILIZED WITH PERMANENT VEGETATION.
4. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND IS NOT LIMITED TO NORMAL WORKING HOURS.
5. THE CONTRACTOR SHALL MAINTAIN AN ON-GOING DUST CONTROL PROGRAM, INCLUDING WATERING OF DISTURBED AREAS AS NEEDED, IN ORDER TO CONFORM WITH THE LATEST STATE AND FEDERAL AIR POLLUTION REGULATIONS.
6. THE CONTRACTOR SHALL HAVE ALL REQUIRED PERMITS PRIOR TO COMMENCEMENT OF ANY WORK.
7. ACCESS SHALL BE BY PUBLIC RIGHTS-OF-WAY AND UTILITY EASEMENTS.
8. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE CONSTRUCTION STAGING AREA AT HIS EXPENSE. A TEMPORARY USE PERMIT IS REQUIRED FOR THE STAGING AREA (ZONING 433-1705).
9. 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.
10. CONTRACTOR SHALL REPAIR OR REPLACE DRIVES DISTURBED BY CONSTRUCTION TO EXISTING OR BETTER CONDITIONS.
11. 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 MUTCD TO PROVIDE CONTINUOUS TRAFFIC AWARENESS OF ROADWAY CONDITIONS.
12. WHERE CONTRACTOR CEASES WORK OPERATION FOR A 72 HOUR PERIOD OR LONGER, SUCH AS HOLIDAYS, ETC., THE FOLLOWING SHALL BE ACCOMPLISHED PRIOR TO THE WORK STOPPAGE.
    - CONTRACTOR WILL STORE ALL EQUIPMENT IN THE CONTRACTOR STAGING AREA OR OFF SITE.
    - THE CONTRACTOR SHALL SWEEP ALL STREETS, PERFORM GENERAL CLEANUP AND SHALL PERFORM MAINTENANCE ON ALL EXPOSED PATCHES.
13. CONTRACTOR SHALL SCHEDULE WORK AND MATERIAL DELIVERIES SO THAT STORED MATERIAL QUANTITIES ON THE JOB SITE SHALL BE MINIMIZED.
14. 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.
15. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITY LOCATIONS AND SIZES.
16. THE WORK IN THIS CONTRACT INCLUDES ALL WORK SHOWN ON THESE DRAWINGS, DESCRIBED IN THE SPECIFICATIONS, OR REASONABLY IMPLIED.
17. 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.
18. ALL TRENCHES SHALL BE PROPERLY BACKFILLED AT THE END OF EACH WORKDAY.

GENERAL NOTES FOR RESIDENT RELATIONS (MANDATORY):

1. THE CONTRACTOR IS ENCOURAGED TO DEVELOP GOOD RELATIONS WITH THE RESIDENTS WHICH INCLUDE THE FOLLOWING MANDATORY MINIMUM REQUREMENTS:
    - NO SPEEDING WITH EQUIPMENT AND/OR VEHICLES (25 MPH MAX.)
    - EXCEPT AS REQUIRED FOR THE WORK, DO NOT BLOCK DRIVEWAYS AT ANY TIME. RESIDENTS MUST BE NOTIFIED AT LEAST 72-HOURS IN ADVANCE OF WORK THAT MAY AFFECT THEIR PROPERTY OR ACCESS THERETO.
    - 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
2. IF THE CONTRACTOR AND/OR SUBCONTRACTORS CANNOT ADQUATELY 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.

CONSTRUCTION AND EROSION CONTROL SEQUENCE:

CONSTRUCTION AND EROSION CONTROL STAGE 1:

1. OBTAIN ALL NECESSARY PERMIT APPROVALS PRIOR TO ANY LAND DISTURBANCE ACTIVITY.
2. SCHEDULE A PRE-CONSTRUCTION MEETING WITH DEQ-DEMLR FAYETTEVILLE REGIONAL OFFICE PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY.
3. A PRE-CONSTRUCTION MEETING MUST BE HELD 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES. THE EROSION CONTROL INSPECTOR, ENGINEER, CONTRACTOR, CITY OF FAYETTEVILLE REPRESENTATIVE, PUBLIC WORKS COMMISSION REPRESENTATIVE SHALL BE IN ATTENDANCE.
4. ESTABLISH LIMITS OF DISTURBANCE AS SHOWN.
5. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCES AS SHOWN. CONTRACTOR SHALL MAINTAIN A SUFFICIENT GRAVEL ENTRANCE UNTIL CONSTRUCTION IS COMPLETED. IF DIRT/MUD GETS ON THE STREET, A WASH RACK WILL NEED TO BE INSTALLED.
6. INSTALL SILT FENCING WHILE CLEARING MINIMAL AMOUNT OF VEGETATION AS NOTED ON THE PLANS BEFORE COMMENCING ANY LAND DISTURBANCE ACTIVITY. SILT FENCE WILL BE INSTALLED INSIDE THE LIMITS OF DISTURBANCE LINE.
7. INSTALL TEMPORARY SEDIMENT TUBE INLET PROTECTION AS SHOWN ON THE DRAWINGS.
8. INSTALL TEMPORARY ROCK CHECK DAMS AS SHOWN ON THE DRAWINGS (SHEET C4.1).
9. COMMENCE CLEARING AND GRUBBING. STOCKPILE IN DESIGNATED AREA.
10. UPON COMPLETION OF CLEARING AND GRUBBING, COMMENCE DEMOLITION.

CONSTRUCTION AND EROSION CONTROL STAGE 2:

11. INSTALL IMPROVEMENTS AS SHOWN ON THE DRAWINGS WHILE MAINTAINING EROSION CONTROL MEASURES FROM STAGE 1 TO STAGE 2 AS INDICATED. THIS INCLUDES SILT FENCE, INLET PROTECTION, AND CONSTRUCTION ENTRANCES. NOTIFY THE ENGINEER AT LEAST 72 HOURS BEFORE STARTING CONSTRUCTION OF STORMWATER FACILITIES. THE ENGINEER SHALL PERIODICALLY INSPECT THE PROGRESS OF INSTALLATION AND SHALL COMPLETE A FINAL INSPECTION. THE CONTRACTOR SHALL, SECURE AND PROVIDE ALL NECESSARY TESTING MATERIALS, EQUIPMENT, PROCEDURES, AND CERTIFIED LABORATORY TEST RESULTS FOR USE WITH ENGINEERS FINAL CERTIFICATION OF COMPLETION.
12. PROVIDE TEMPORARY STABILIZATION AND SEEDING AS NECESSARY TO PREVENT EROSION DURING CONSTRUCTION.
13. PERFORM TESTING AND DISINFECTION ON NEWLY INSTALLED WATER MAINS AND SERVICES IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
12. PERFORM TESTING ON NEWLY INSTALLED SEWER MAINS AND LATERALS IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
13. UPON COMPLETION OF CONSTRUCTION IMPROVEMENTS, INSTALL INLET PROTECTION ON NEWLY INSTALLED INLETS AND ROCK PIPE INLET PROTECTION UPSTREAM OF OPEN ENDED PIPES AS SHOWN.
14. ESTABLISH PERMANENT GROUND COVER AND OVERALL SITE STABILIZATION.
15. AFTER THE SITE IS PERMANENTLY STABILIZED, CONTACT THE DEMLR EROSION CONTROL INSPECTOR PRIOR TO REMOVAL OR MODIFICATION OF EROSION CONTROL DEVICES. UPON APPROVAL, REMOVE ALL TEMPORARY MEASURES, AND PROVIDE PERMANENT SEEDING WHERE TEMPORARY MEASURES HAVE BEEN REMOVED AND GROUNDCOVER HAS NOT BEEN ESTABLISHED.
16. CONTACT DEMLR FOR A CLOSE OUT INSPECTION ONCE ALL EROSION CONTROL MEASURES HAVE BEEN REMOVED AND THE SITE HAS BEEN PERMANENTLY STABILIZED.
17. CONTRACTOR DEMOBILIZE FROM SITE.
18. THE CONTRACTOR SHALL SUPPLY THE ENGINEER WITH RECORD DRAWINGS (APPURTENANCE LOCATIONS, ELEVATIONS, SIZE, LENGTHS, AND MATERIALS) PREPARED BY A NC REGISTERED LAND SURVEYOR SUITABLE FOR PREPARATION OF FINAL RECORD DRAWINGS. SURVEY DATA SHALL BE ON NC STATE PLANE GRID (NAD83).

GENERAL EROSION CONTROL NOTES:

1. CONSTRUCTION ACTIVITIES THAT HAVE AN EROSION AND SEDIMENT CONTROL PLAN APPROVED ON OR AFTER APRIL 1, 2019 ARE REQUIRED TO FILL OUT AND SUBMIT AN ELECTRONIC NOTICE OF INTENT (E-NOI) FOR COVERAGE. ALL CONSTRUCTION ACTIVITIES ARE REQUIRED TO FOLLOW THE NEW NCGOI PERMIT REGARDLESS OF WHEN THEY WERE APPROVED.
2. 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/NCGOI. 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.
3. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING WORK UNTIL THE COMPLETION OF ACTIVITIES AND DISTURBED AREAS HAVE BEEN STABILIZED. TEMPORARY EROSION CONTROL DEVICES SHALL BE REMOVED ONCE WORK IS COMPLETE AND THE SITE IS STABILIZED.
4. SEDIMENT AND EROSION CONTROL DEVICES AND PLANTED AREAS SHALL BE INSPECTED EVERY SEVEN CALENDAR DAYS AND AFTER EACH RAINFALL OCCURRENCE THAT EXCEEDS ONE INCH IN A 24-HOUR PERIOD. DAMAGED OR INEFFECTIVE DEVICES SHALL BE REPAIRED OR REPLACED, AS NECESSARY, AS SOON AS PRACTICAL.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SATISFACTORY ESTABLISHMENT AND GROWTH OF A PERMANENT STAND OF VEGETATION FOR A PERIOD OF ONE YEAR FOLLOWING THE FINAL SEEDING. A PERMANENT STAND OF VEGETATION SHALL HAVE BARE GAPS NO GREATER THAN A HAND'S BREADTH.
6. THE OWNER OR THEIR AGENT SHALL ADHERE TO THE SELF-INSPECTION PROGRAM FOR EROSION AND SEDIMENT CONTROL (EFFECTIVE OCTOBER 1, 2010). DETAILS OF THE PROGRAM AND RECOMMENDED INSPECTION FORMS CAN BE FOUND AT THE FOLLOWING WEBSITE:
HTTPS://DEQ.NC.GOV/ABOUT/DIVISIONS/ENERGY-MINERAL-LAND-RESOURCES/EROSION-SEDIMENT-CONTROL/FORMS
7. THE OWNER'S CONTRACTOR IS RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES AND HIRING PRIVATE LOCATING SERVICES AS NEEDED TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO ANY DISTURBANCE.
8. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN SEVEN DAYS FOR PERIMETER AREAS. SLOPES STEEPER THAN 3H : 1V, AND SLOPES BETWEEN 3H : 1V AND 4H : 1V HAVING A LENGTH GREATER HAN 50 FEET; NO MORE THAN 14 DAYS FOR OTHER AREAS AFTER WORK HAS CEASED.
9. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING WORK. DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING, AS SOON AS PRACTICABLE. FILL, COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER IS ENCOUNTERED WHILE EXCAVATING, THE WATER SHALL BE PUMPED THROUGH AN APPROVED FILTER BAG PRIOR TO BEING DISCHARGED.
10. 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/NCGOI TO SUBMIT AN ELECTRONIC NOTICE OF TERMINATION (E-NOT). A $120 ANNUAL GENERAL PERMIT FEE WILL BE CHARGED UNTIL THE E-NOT HAS BEEN FILLED OUT.

STANDARDS:

ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA SEDIMENTATION POLLUTION CONTROL ACT OF 1973. CONSTRUCTION DETAILS AND SPECIFICATIONS WITHIN THIS PLAN WERE DERIVED FROM THE EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL DATED MAY, 2013, PREPARED BY THE NORTH CAROLINA SEDIMENTATION CONTROL COMMISSION, NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) AND NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE (NCAES).

DEMOLITION NOTES:

1. DEMOLITION (DEMO) SHALL REFER TO THE COMPLETE REMOVAL OF THE SPECIFIED ITEM AND ALL COMPONENTS APPURTENANT TO IT (E.G.FOOTERS, REBAR, TIE-BACKS, CONDUIT, WIRING, AND SO FORTH).
2. THE OWNER HAS FIRST RIGHT OF REFUSAL FOR ALL SALVAGEABLE ITEMS.
3. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, PROJECT SPECIFICATIONS, AND LOCAL CODES.
4. UTILITIES AND/OR MECHANICAL DEVICES THAT REQUIRE TEMPORARY SHUT-DOWN AND RELOCATION DURING DEMOLITION SHALL BE DE-ENERGIZED AND LOCKED OUT, CAPPED, DISCONNECTED, AND CAREFULLY REMOVED TO A PROTECTED LOCATION OR CONDITION. WHERE REMOVAL OF UTILITIES AND/OR MECHANICAL DEVICES MAY AFFECT OCCUPIED FACILITIES, CONTRACTOR SHALL COORDINATE THE SHUT-DOWN WITH THE UTILITY OWNER AT LEAST 48 HOURS IN ADVANCE OF THE WORK.
5. UTILITIES AND/OR MECHANICAL DEVICES THAT REQUIRE PERMANENT SHUT-DOWN SHALL BE DE-ENERGIZED AND DISCONNECTED AT THE PANEL (ELECTRICAL) OR MAIN (WATER & SEWER).
6. ALL TREES OUTSIDE THE LIMITS OF DISTURBANCE, WHETHER CLASSIFIED AS PROTECTED OR NON-PROTECTED SHALL REMAIN UNDISTURBED.
7. CARE SHALL BE EXERCISED DURING THE DEMOLITION PROCESS TO PREVENT THE RELEASE OF TOXIC SUBSTANCES (E.G. ASBESTOS, FUEL OIL, ETC.). SHOULD SUCH SUBSTANCES BE ENCOUNTERED, THE OWNER SHALL BE NOTIFIED. UPON AUTHORIZATION, THE DISPOSAL OF THE SUBJECT MATERIAL(S) SHALL CONFORM TO ALL GOVERNING CODES AND REGULATIONS. DISPOSAL SHALL BE MADE ONLY BY CONTRACTORS LICENSED TO PERFORM THIS WORK.

STORM DRAINAGE NOTES:

1. ALL BANK SIDE SLOPES SHALL BE GRADED WITH NO GREATER THAN 3:1 SLOPES.
2. ALL DISTURBED AREAS SHALL BE SMOOTHLY GRADED TO PROMOTE POSITIVE DRAINAGE AND STABILIZED WITH TOPSOIL, SEED, AND MULCH. IF SETTLEMENT OCCURS, TOPSOIL, SEEDING, AND MULCH SHALL BE REPEATED UNTIL SETTLEMENT SUBSIDES. (SEE EROSION AND SEDIMENT CONTROL DETAILS AND SPECIFICATIONS.)
3. ALL AREAS ARE TO BE GRADED SO THAT NO AREAS OF STANDING WATER OCCUR.
4. ALL SELECT AND BORROW MATERIAL SHALL MEET CRITERIA SET FORTH BY SECTIONS 1016 AND 1018 OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S STANDARDS AND SPECIFICATIONS FOR ROADS AND STRUCTURES.
5. IF DAMAGE OCCURS TO STORM PIPES TO BE INSTALLED OR MAINTAINED DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE PIPE(S).
6. EXISTING PAVING, CONCRETE, AND OTHER UNSUITABLE MATERIALS INCLUDING UNDERCUT EXCAVATION SHALL NOT BE USED AS FILL MATERIAL AND SHALL BE DISPOSED OF OUTSIDE THE PROJECT LIMITS AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITTING AND FEES FOR DISPOSAL.
7. ALL TREES, STUMPS, ROOT MAT, ETC. SHALL BE ENTIRELY REMOVED REGARDLESS OF DEPTH. BURIAL OF ORGANIC MATERIAL WITHIN THE PROJECT LIMITS IS NOT PERMITTED. CHIPPED MATERIALS MUST BE REMOVED PRIOR TO THE PLACEMENT OF EMBANKMENT OR TOPSOIL.
8. ALL STORM DRAINAGE PIPES SHALL BE CL III RCP PIPE UNLESS OTHERWISE NOTED ON THE PLANS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING OFF-SITE SPOIL AREAS FOR DISPOSAL OF EXCESS AND/OR UNSUITABLE MATERIALS AS NECESSARY. OFF-SITE SPOIL AREAS MUST BE SUBMITTED TO THE ENGINEER AND APPLICABLE REGULATORY AGENCIES PRIOR TO UTILIZATION BY THE CONTRACTOR. NO AREAS DESIGNATED AS WETLANDS WILL BE PERMITTED FOR USE AS A DISPOSAL SITE. THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER THAT NO WETLANDS WILL BE IMPACTED AS STOCKPILE AND DISPOSAL AREAS. THE ENGINEER WILL NOT CONSIDER ANY DELAYS OR MONETARY CLAIMS OF ANY NATURE RESULTING FROM THE CONTRACTOR'S FAILURE OR DIFFICULTY IN FINDING NECESSARY DISPOSAL SITES TO MEET THE TIME FRAMES AND CAPACITIES REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PLANS, PERMITS, EROSION AND SEDIMENT CONTROL MEASURES, ETC. REQUIRED BY THE APPROPRIATE REGULATORY AGENCIES FOR UTILIZING OFF-SITE SPOIL AREAS. THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED PRIOR TO UTILIZING THE OFF-SITE SPOIL AREAS. ALL COSTS FOR PROCURING AND UTILIZING THE OFF-SITE SPOIL AREAS ARE TO BE INCIDENTAL TO THE BASE BID.
10. APPROVED COVERS TO PREVENT MATERIAL FROM LEAVING THE TRUCKS MUST BE INSTALLED OVER ALL LOADED TRUCKS HAULING BORROW, EXCAVATED MATERIAL AND/OR FINE AGGREGATES TO OR FROM THE PROJECT SITES. ANY MATERIALS DELIVERED, TRANSPORTED, OR REMOVED IN UNCOVERED TRUCKS WILL BE INCORPORATED INTO THE PROJECT OR REMOVED FROM THE SITE WITH NO ADDITIONAL PAYMENT TO THE CONTRACTOR FOR FURNISHING, REMOVING, OR PLACING THE MATERIALS INVOLVED.
11. DEWATERING: THE CONTRACTOR SHALL AT ALL TIMES PROVIDE AND MAINTAIN AMPLE MEANS AND EQUIPMENT WITH WHICH TO REMOVE AND PROPERLY DISPOSE OF ANY AND ALL WATER ENTERING THE EXCAVATION OR OTHER PARTS OF THE WORK AND KEEP ALL EXCAVATIONS DRY UNTIL SUCH TIME AS PIPE LAYING AND GRADING IS COMPLETED. NO WATER SHALL BE ALLOWED TO RISE AROUND THE PIPE IN UNBACKFILLED TRENCHES NOR SHALL IT BE ALLOWED TO RISE OVER MASONRY UNTIL THE CONCRETE OR MORTAR HAS SET (MINIMUM 24 HOURS). ALL WATER PUMPED OR DRAINED FROM THE WORK SHALL BE DISPOSED OF IN SUCH A MANNER AS TO PREVENT SILTATION AND EROSION TO ADJACENT PROPERTY OR OTHER CONSTRUCTION.
12. 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 GRADE PRIOR TO PLACING THE NEW SURFACE COURSE.
13. 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.
14. 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.
15. CONTRACTOR SHALL PERFORM FIELD SURVEY AT THE END OF EACH DAY FOLLOWING INSTALLATION OF STORM PIPE TO ENSURE DESIGN SLOPES ARE MET AS INDICATED IN THE DRAWINGS. IF SLOPES ARE LESS THAN THAT PRESENTED IN THE DRAWINGS, CONTRACTOR SHALL REWORK TO MAKE SATISFACTORY.
16. RIP RAP SHALL BE INSTALLED SO THAT THE TOP OF STONE IS AT FINISHED GRADE. RIP RAP INSTALLED SUCH THAT IT OBSTRUCTS OR REDUCES THE FLOW AREA OF A CHANNEL, OPENING OF A PIPE, OR PIPE OUTFALL WILL NOT BE ACCEPTED. RIP RAP INSTALLED ON EMBANKMENTS SHALL BE POUNDED INTO THE UNDERLYING SUBGRADE OR OTHERWISE INSTALLED SO THAT IT WILL NOT BECOME DISLODGED."

ORDER OF PRECEDENCE GENERAL NOTES/TECHNICAL SPECIFICATIONS/PHOTOS:

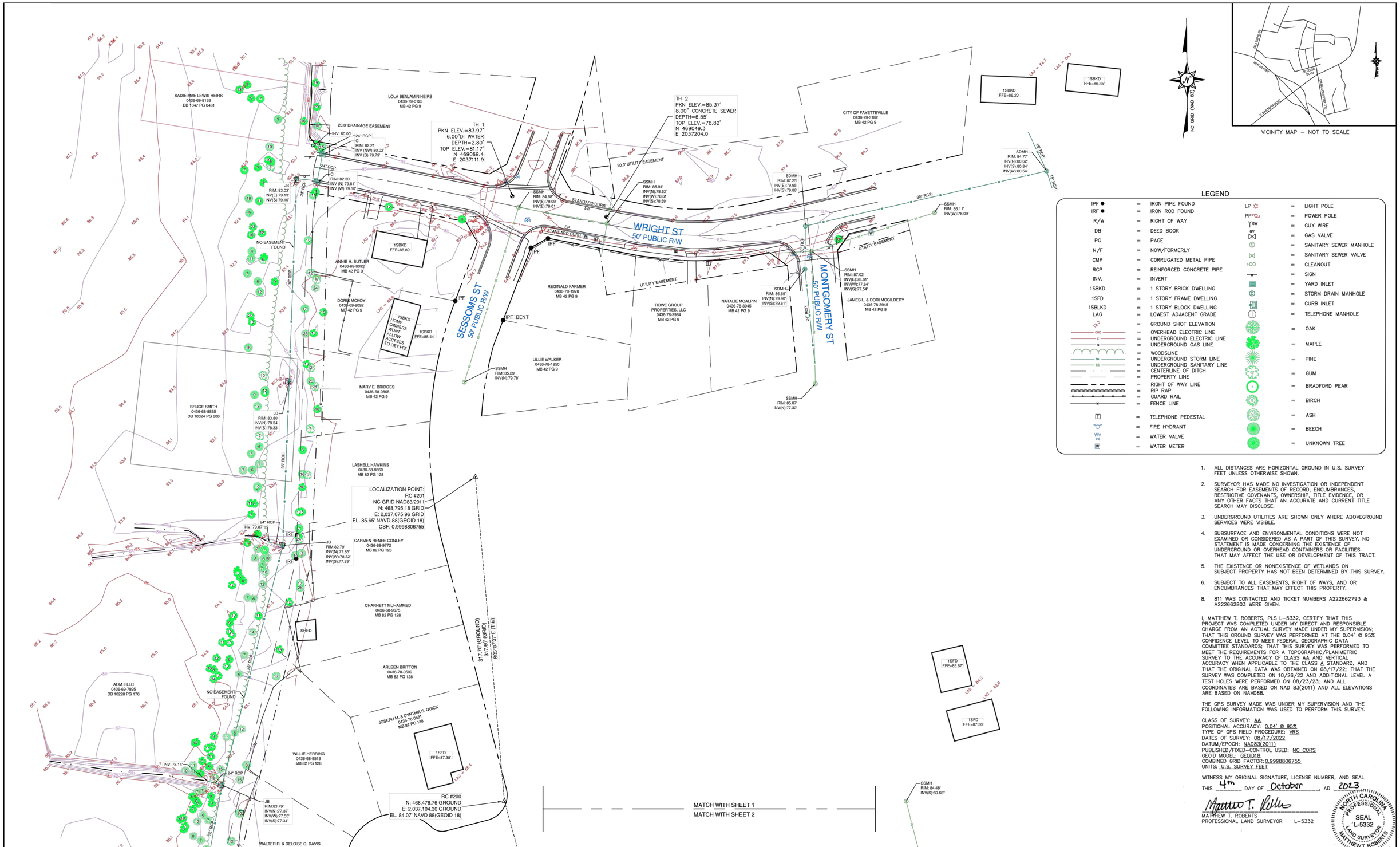
1. THE NOTES CONTAINED HEREIN ARE INTENDED TO SUPPLEMENT THE TECHNICAL SPECIFICATIONS AND PROVIDE EASY REFERENCE FOR THE CONTRACTOR. IN NO CASE SHALL THESE NOTES VOID ANY PART, SECTION OR REQUIREMENT OUTLINED IN THE TECHNICAL SPECIFICATIONS CONTAINED IN THE CONTRACT DOCUMENTS. IF CONFLICTS OCCUR BETWEEN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

TRAFFIC CONTROL

1. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS FOR WORK ZONE TRAFFIC CONTROL TO CITY TRAFFIC SERVICES DEPARTMENT (910-433-1660) FOR CITY STREETS. CONTRACTOR SHALL NOT PLACE ANY TRAFFIC CONTROL DEVICES WITHOUT HAVING APPROVAL FROM THE CITY OF FAYETTEVILLE.
2. EXCEPT AS OTHERWISE AGREED TO BY 72-HOUR ADVANCE NOTICE, CONTRACTOR SHALL ENSURE ACCESS TO ALL PROPERTIES BY PROPERTY OWNERS AT ALL TIMES.
3. 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.
4. 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.
5. 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.
6. THE CONTRACTOR SHALL NOT IMPEDE TRAFFIC AT ANY TIME UNTIL THE APPROVED TRAFFIC CONTROL DEVICES ARE IN PLACE.
7. 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 NOTES

1. ALL WATER MAINS, LATERALS AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PUBLIC WORKS COMMISSION (PWC) STANDARDS.
2. ALL SEWER MAINS, LATERALS AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
4. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE FOR ALL WATER OUTAGES.
6. CONSTRUCTION STAKING IS REQUIRED FOR 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.
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 (WATER) IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS PRIOR TO PLACING INTO SERVICE.
9. CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE PWC PROJECT COORDINATOR AND THE ENGINEER OF RECORD.
10. ALL DUCTILE IRON PIPE IN SANITARY SEWER SERVICE SHALL HAVE 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 STOP AND TURNING OFF THE CORPORATION STOP 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 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 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 ADJUST



LEGEND

IPF	=	IRON PIPE FOUND	LP	=	LIGHT POLE
IRF	=	IRON ROD FOUND	PP	=	POWER POLE
R/W	=	RIGHT OF WAY	GW	=	GUY WIRE
DB	=	DEED BOOK	GV	=	GAS VALVE
PG	=	PAGE	S	=	SANITARY SEWER MANHOLE
N/F	=	NOW/FORMERLY		=	SANITARY SEWER VALVE
CMP	=	CORRUGATED METAL PIPE	CO	=	CLEANOUT
RCP	=	REINFORCED CONCRETE PIPE		=	SIGN
INV.	=	INVERT		=	YARD INLET
1SBKD	=	1 STORY BRICK DWELLING	D	=	STORM DRAIN MANHOLE
1SFD	=	1 STORY FRAME DWELLING		=	CURB INLET
1SBLKD	=	1 STORY BLOCK DWELLING	T	=	TELEPHONE MANHOLE
LAG	=	LOWEST ADJACENT GRADE		=	OAK
12.3	=	GROUND SHOT ELEVATION		=	MAPLE
OHE	=	OVERHEAD ELECTRIC LINE		=	PINE
E	=	UNDERGROUND ELECTRIC LINE		=	GUM
G	=	UNDERGROUND GAS LINE		=	BRADFORD PEAR
	=	WOODSLINE		=	BIRCH
SD	=	UNDERGROUND STORM LINE		=	ASH
SS	=	UNDERGROUND SANITARY LINE		=	BEECH
	=	CENTERLINE OF DITCH		=	UNKNOWN TREE
	=	PROPERTY LINE			
	=	RIGHT OF WAY LINE			
	=	RIP RAP			
	=	GUARD RAIL			
	=	FENCE LINE			
T	=	TELEPHONE PEDESTAL			
	=	FIRE HYDRANT			
WV	=	WATER VALVE			
W	=	WATER METER			

1. ALL DISTANCES ARE HORIZONTAL GROUND IN U.S. SURVEY FEET UNLESS OTHERWISE SHOWN.
2. SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP, TITLE EVIDENCE, OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.
3. UNDERGROUND UTILITIES ARE SHOWN ONLY WHERE ABOVEGROUND SERVICES WERE VISIBLE.
4. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT.
5. THE EXISTENCE OR NONEXISTENCE OF WETLANDS ON SUBJECT PROPERTY HAS NOT BEEN DETERMINED BY THIS SURVEY.
6. SUBJECT TO ALL EASEMENTS, RIGHT OF WAYS, AND OR ENCUMBRANCES THAT MAY EFFECT THIS PROPERTY.
8. 811 WAS CONTACTED AND TICKET NUMBERS A222662793 & A222662803 WERE GIVEN.

I, MATTHEW T. ROBERTS, PLS L-5332, CERTIFY THAT THIS PROJECT WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION; THAT THIS GROUND SURVEY WAS PERFORMED AT THE 0.04' @ 95% CONFIDENCE LEVEL TO MEET FEDERAL GEOGRAPHIC DATA COMMITTEE STANDARDS; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS FOR A TOPOGRAPHIC/PLANIMETRIC SURVEY TO THE ACCURACY OF CLASS AA AND VERTICAL ACCURACY WHEN APPLICABLE TO THE CLASS A STANDARD, AND THAT THE ORIGINAL DATA WAS OBTAINED ON 08/17/22; THAT THE SURVEY WAS COMPLETED ON 10/26/22 AND ADDITIONAL LEVEL A TEST HOLES WERE PERFORMED ON 08/23/23; AND ALL COORDINATES ARE BASED ON NAD 83(2011) AND ALL ELEVATIONS ARE BASED ON NAVD88.

THE GPS SURVEY MADE WAS UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THIS SURVEY.

CLASS OF SURVEY: AA
POSITIONAL ACCURACY: 0.04' @ 95%
TYPE OF GPS FIELD PROCEDURE: VRS
DATES OF SURVEY: 08/17/2022
DATUM/EPOCH: NAD83(2011)
PUBLISHED/FIXED-CONTROL USED: NC CORS
GEOID MODEL: GEOID18
COMBINED GRID FACTOR: 0.9998806755
UNITS: U.S. SURVEY FEET

WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER, AND SEAL
THIS 4th DAY OF October, AD 2023

MATTHEW T. ROBERTS
PROFESSIONAL LAND SURVEYOR L-5332

NORTH CAROLINA PROFESSIONAL SEAL L-5332 LAND SURVEYOR MATTHEW T. ROBERTS

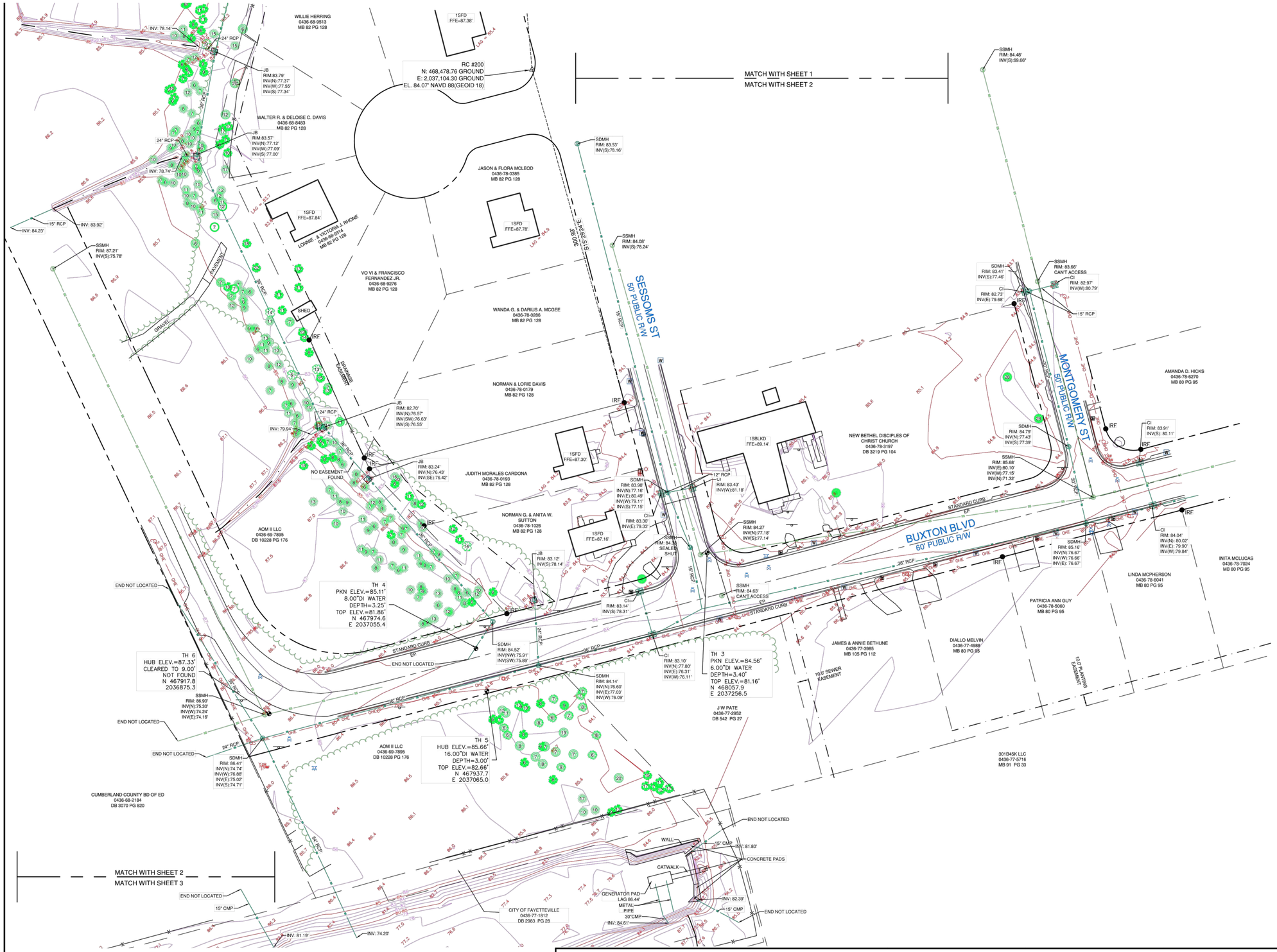
SCALE: 1" = 40'
0 20' 40' 80' 120'

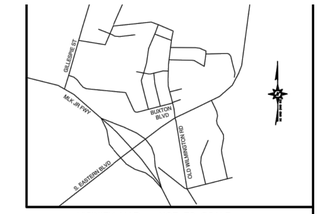
McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 343-1048
FAX: (910) 251-8282
NORTH CAROLINA FIRM LICENSE NUMBER: F-1222

TOPOGRAPHICAL SURVEY
FOR
WOOD PLC
STORM WATER SURVEY
CITY OF FAYETTEVILLE
FAYETTEVILLE, NORTH CAROLINA
OCTOBER 4,2023

JOB NUMBER:	04082-0146
SCALE:	1"=40'
CAD NUMBER:	CAD#
PLS:	MTR
PARTY CHIEF:	AM
CAD TECH:	KN
FIELD BOOK/PAGE:	FB/PG
DRAWING NUMBER:	2023-106

SHEET 1 OF 3





VICINITY MAP – NOT TO SCALE

NORTH CAROLINA PROFESSIONAL SEAL L-5332 LAND SURVEYOR MATTHEW T. ROBERTS
10/04/2023

LEGEND

IPF ●	=	IRON PIPE FOUND
IRF ●	=	IRON ROD FOUND
R/W	=	RIGHT OF WAY
DB	=	DEED BOOK
PG	=	PAGE
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	=	SANITARY SEWER VALVE
CO	=	CLEANOUT
	=	SIGN
	=	YARD INLET
D	=	STORM DRAIN MANHOLE
	=	CURB INLET
T	=	TELEPHONE MANHOLE
	=	OAK
	=	MAPLE
	=	PINE
	=	GUM
	=	BRADFORD PEAR
	=	BIRCH
	=	ASH
	=	BEECH
	=	UNKNOWN TREE

SCALE: 1" = 40'

0 20' 40' 80' 120'

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TOPOGRAPHICAL SURVEY
FOR
WOOD PLC
STORM WATER SURVEY
CITY OF FAYETTEVILLE
FAYETTEVILLE, NORTH CAROLINA
OCTOBER 4,2023

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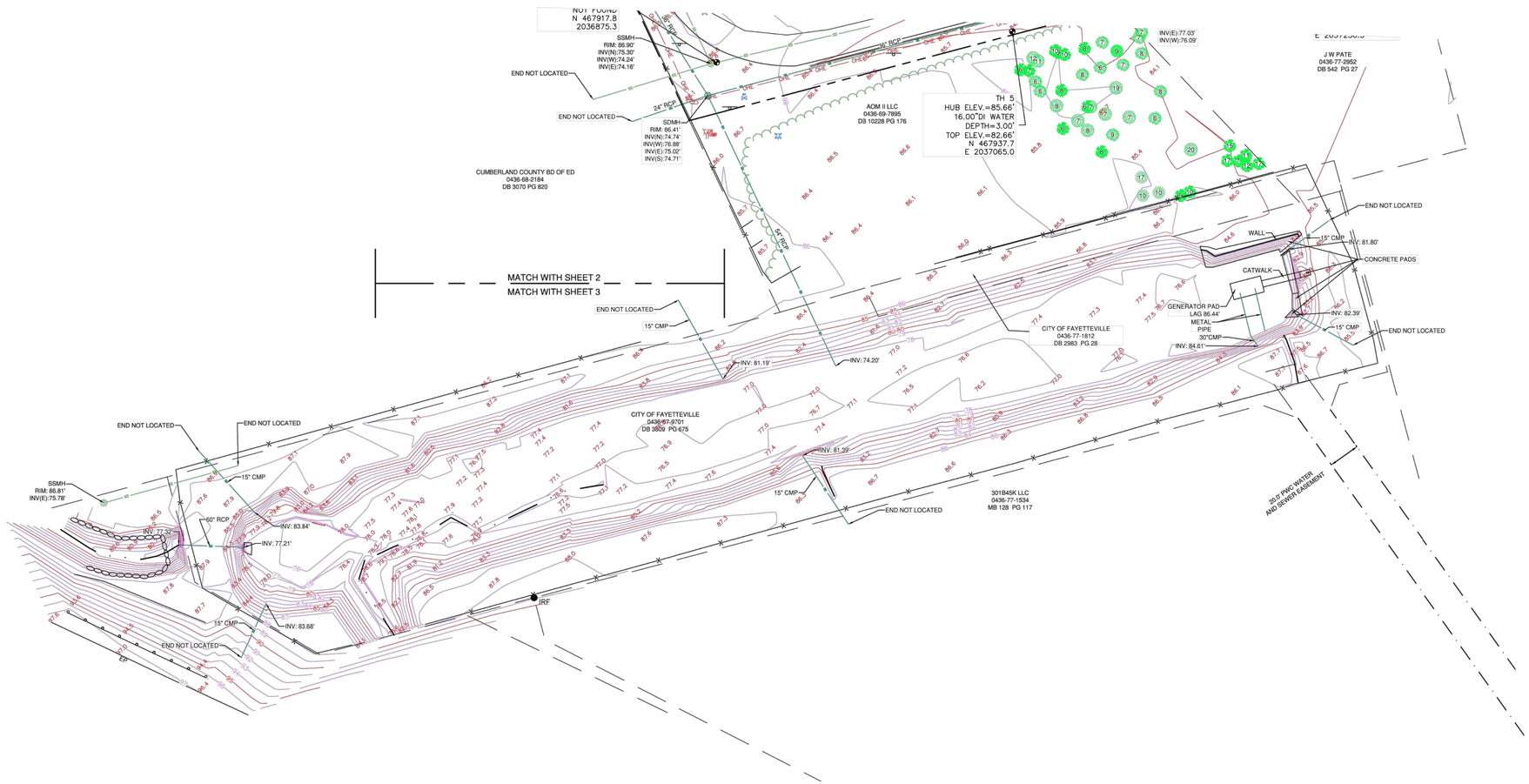

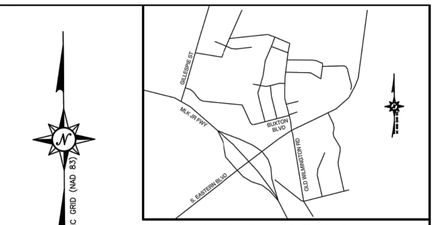

VICINITY MAP – NOT TO SCALE

NC GRID (NAD 83)

LEGEND

IPF ●	=	IRON PIPE FOUND
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1SFD	=	1 STORY FRAME DWELLING
1SBLKD	=	1 STORY BLOCK DWELLING
LAG	=	LOWEST ADJACENT GRADE
+2.3	=	GROUND SHOT ELEVATION
OHE	=	OVERHEAD ELECTRIC LINE
E	=	UNDERGROUND ELECTRIC LINE
G	=	UNDERGROUND GAS LINE
	=	WOODSLINE
SD	=	UNDERGROUND STORM LINE
SS	=	UNDERGROUND SANITARY LINE
	=	CENTERLINE OF DITCH
	=	PROPERTY LINE
	=	RIGHT OF WAY LINE
	=	RIP RAP
	=	GUARD RAIL
	=	FENCE LINE
T	=	TELEPHONE PEDESTAL
	=	FIRE HYDRANT
WV PM	=	WATER VALVE
W	=	WATER METER
LP	=	LIGHT POLE
PP	=	POWER POLE
GW	=	GUY WIRE
GV	=	GAS VALVE
S	=	SANITARY SEWER MANHOLE
	=	SANITARY SEWER VALVE
CO	=	CLEANOUT
	=	SIGN
	=	YARD INLET
D	=	STORM DRAIN MANHOLE
	=	CURB INLET
T	=	TELEPHONE MANHOLE
	=	OAK
	=	MAPLE
	=	PINE
	=	GUM
	=	BRADFORD PEAR
	=	BIRCH
	=	ASH
	=	BEECH
	=	UNKNOWN TREE

NORTH CAROLINA PROFESSIONAL SEAL L-5332 LAND SURVEYOR MATTHEW T. ROBERTS

10/04/2023

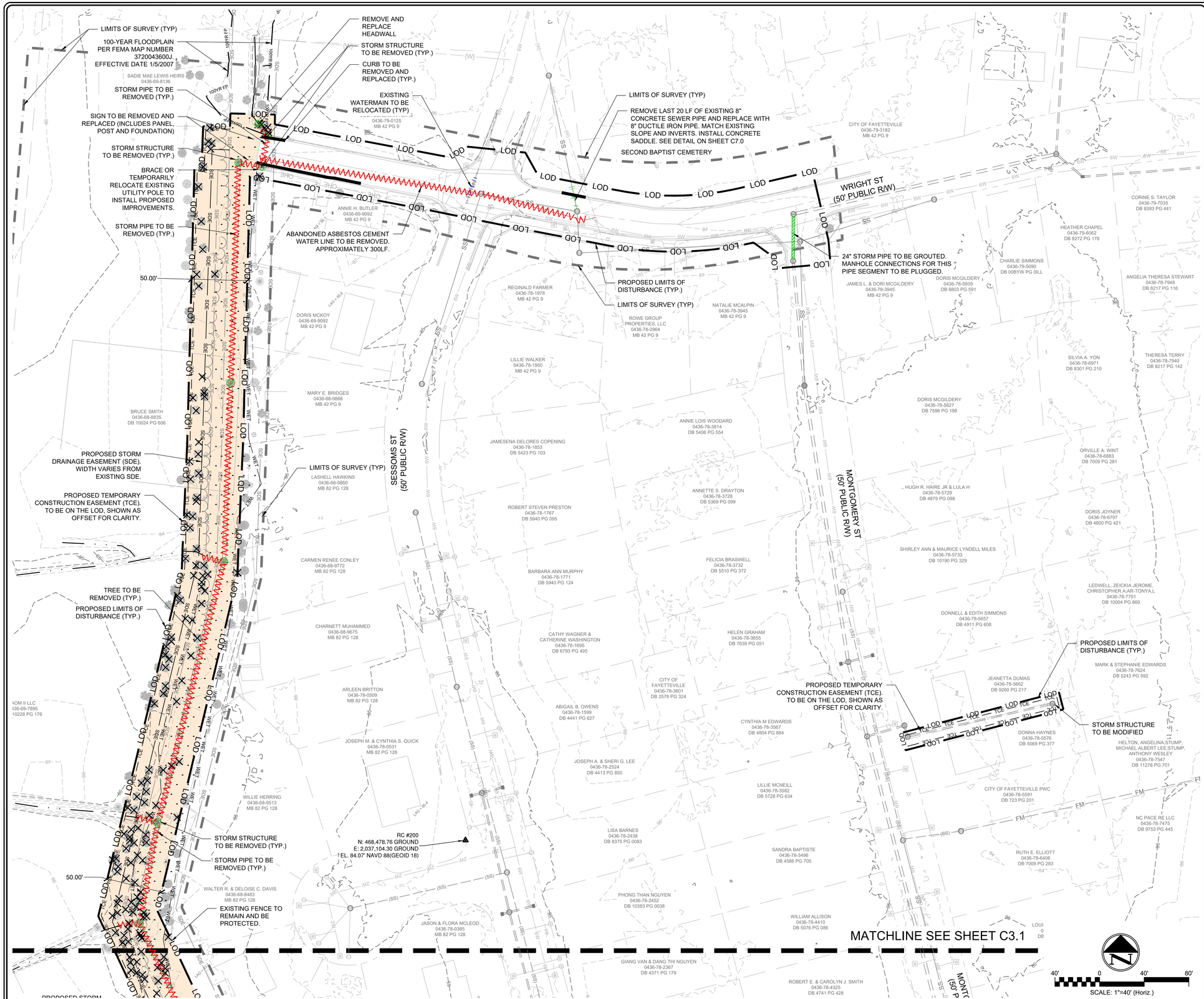
SCALE: 1" = 40'

0 20' 40' 80' 120'

McKIM&CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 343-1048
FAX: (910) 251-8282
NORTH CAROLINA FIRM LICENSE NUMBER: F-1222

TOPOGRAPHICAL SURVEY
FOR
WOOD PLC
STORM WATER SURVEY
CITY OF FAYETTEVILLE
FAYETTEVILLE, NORTH CAROLINA
OCTOBER 4,2023

JOB NUMBER:	04082-0146
SCALE:	1"=40'
CAD NUMBER:	CAD#
PLS:	MTR
PARTY CHIEF:	AM
CAD TECH:	KN
FIELD BOOK/PAGE:	FB/PG
DRAWING NUMBER:	2023-106



2 DEMOLITION PLAN

SCALE: 1" = 40'

LEGEND

- PIPE TO BE REMOVED
- WATER MAIN TO BE RELOCATED
- WATER MAIN TO BE REPLACED
- WATER LATERAL TO BE REPLACED
- SEWER MAIN TO BE RELOCATED
- SEWER MAIN TO BE REPLACED
- SEWER LATERAL TO BE REPLACED
- CURB TO BE REMOVED AND REPLACED
- PIPE TO BE GROUTED AND PLUGGED
- ASPHALT / CONCRETE TO BE REMOVED AND REPLACED
- VEGETATION REMOVAL AREA
- EXISTING STRUCTURE TO BE REMOVED
- TREE TO BE REMOVED
- 39 EXISTING MINOR CONTOURS (1')
- 40 EXISTING MAJOR CONTOURS (5')
- EXISTING UTILITY EASEMENT
- SDE EXISTING STORM DRAINAGE EASEMENT
- (W) ABANDONED ASBESTOS CEMENT PIPE
- TCE TCE TEMPORARY CONSTRUCTION EASEMENT
- SDE PROPOSED STORM DRAINAGE EASEMENT
- WET WET EXISTING WETLANDS

1 NOTES AND LEGEND

DEMOLITION PLAN

SHEET NUMBER C3.0

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28806
TEL: (828) 252-8100
LICENSURE: NC ENG F-1253

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

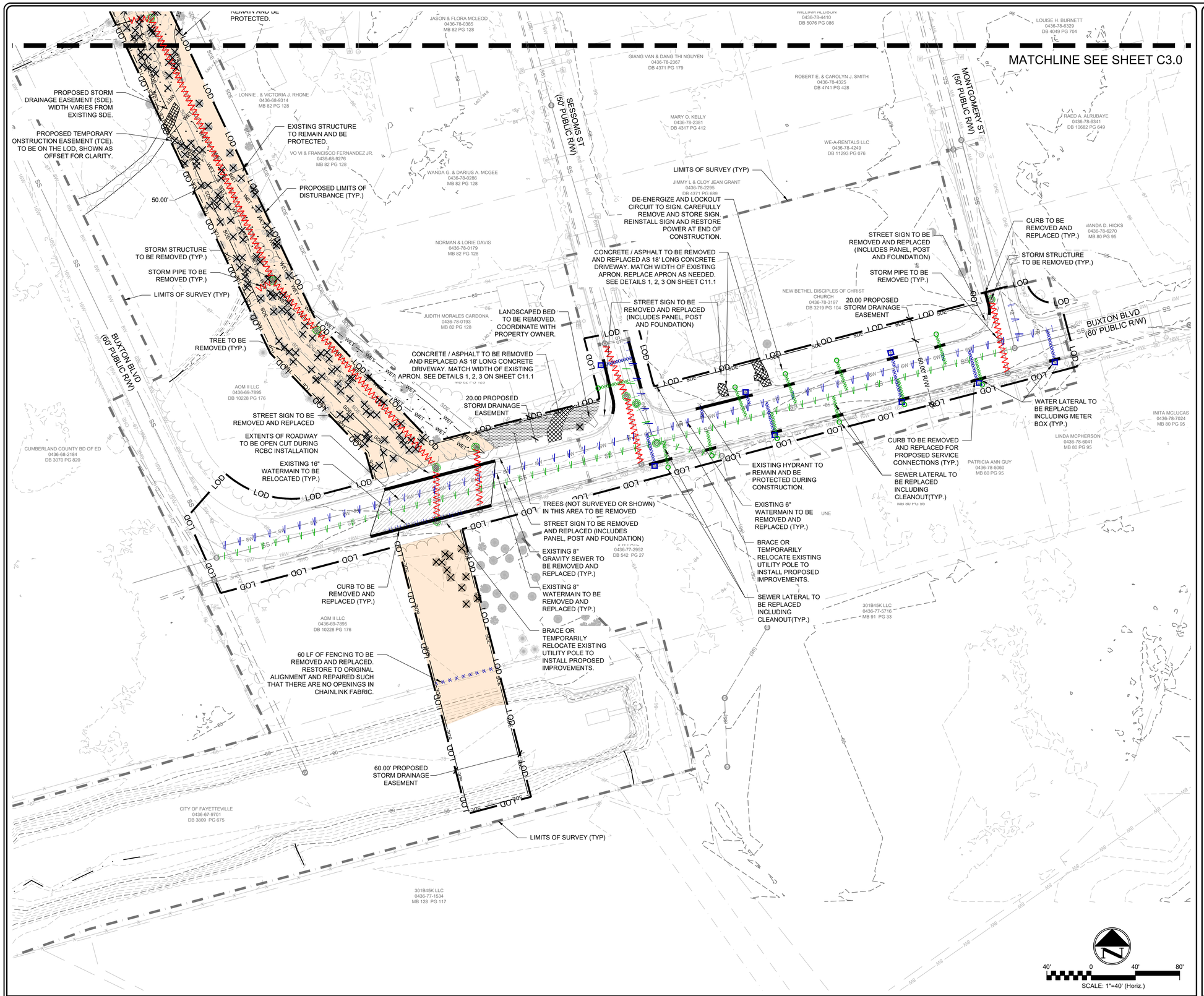
NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/5/24
DATE:

REV. #	REVISIONS DESCRIPTION	REV BY DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

DRAWN:	RAS
DESIGN:	RAS
CHECK:	DCO
APPROVED:	ALH
PROJECT NAME:	SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE:	AS SHOWN
DATE:	22 NOVEMBER 2024

PROJECT NO. 6480-22-0142

SUB-LEDGER NO.



SCALE: 1" = 40'

2 DEMOLITION PLAN

LEGEND

- PIPE TO BE REMOVED
- WATER MAIN TO BE RELOCATED
- WATER MAIN TO BE REPLACED
- WATER LATERAL TO BE REPLACED
- SEWER MAIN TO BE RELOCATED
- SEWER MAIN TO BE REPLACED
- SEWER LATERAL TO BE REPLACED
- CURB TO BE REMOVED AND REPLACED
- PIPE TO BE GROUTED AND PLUGGED
- ASPHALT / CONCRETE TO BE REMOVED AND REPLACED
- VEGETATION REMOVAL AREA
- EXISTING STRUCTURE TO BE REMOVED
- TREE TO BE REMOVED
- 39 — EXISTING MINOR CONTOURS (1')
- 40 — EXISTING MAJOR CONTOURS (5')
- EXISTING UTILITY EASEMENT
- SDE — EXISTING STORM DRAINAGE EASEMENT
- (W) — ABANDONED ASBESTOS CEMENT PIPE
- TCE — TCE — TEMPORARY CONSTRUCTION EASEMENT
- SDE — PROPOSED STORM DRAINAGE EASEMENT
- WET — WET — EXISTING WETLANDS
- EXTENTS OF ROADWAY OPEN CUT DURING STORM RCBC INSTALLATION

1 NOTES AND LEGEND

DEMOLITION PLAN

SHEET NUMBER C3.1

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28805
TEL: (828) 252-8100
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAISTER
12/5/24
DATE:
CODE:

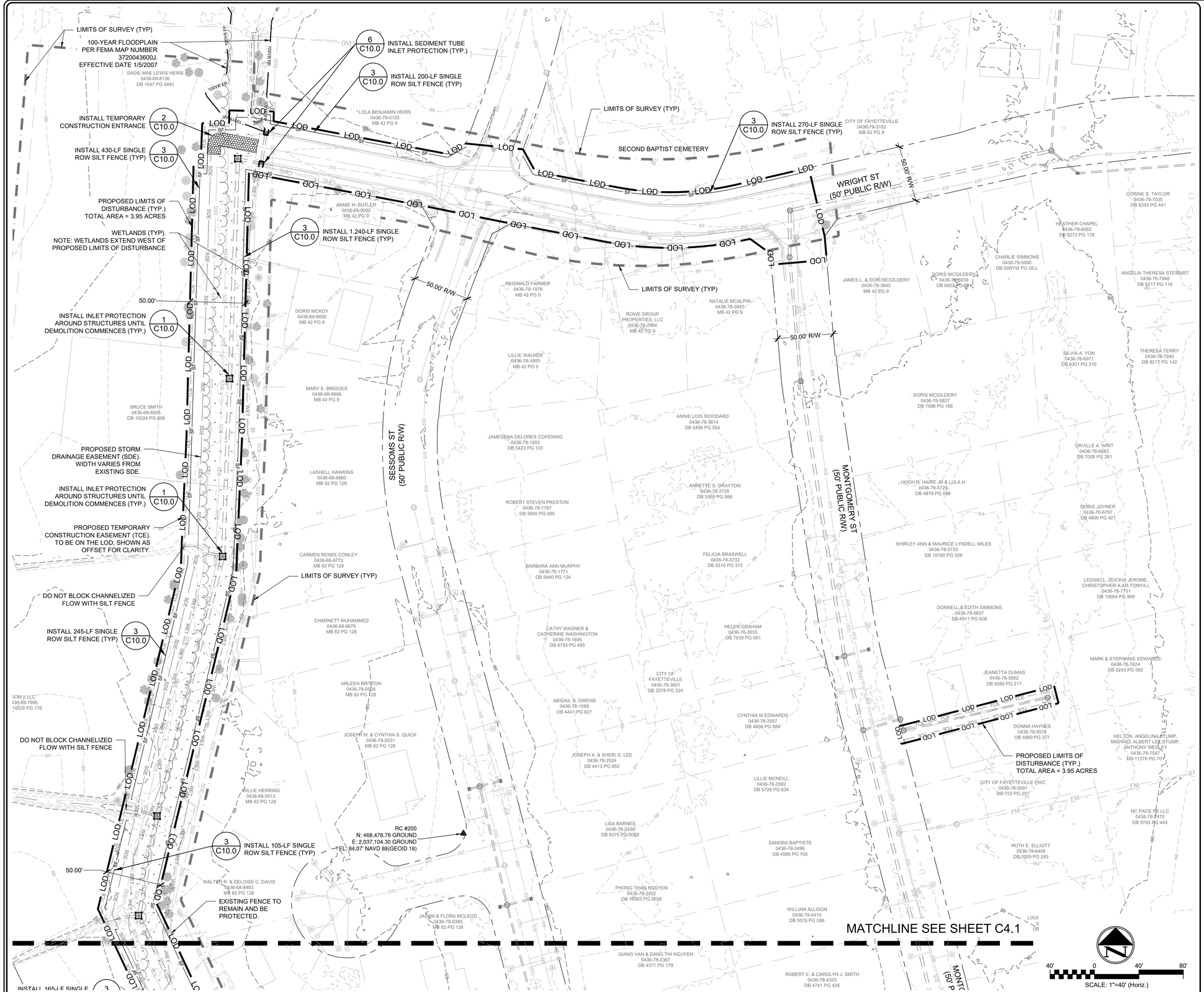
REVISIONS

REV. #	DESCRIPTION	DATE	REV.BY
REV. I	100% ISSUED FOR BID	2024-07-09	WSP
REV. J	100% ISSUED FOR PERMIT	2024-09-06	WSP
REV. K	100% ISSUED FOR PERMIT	2024-11-22	WSP

DRAWN:	RAS
DESIGN:	RAS
CHECK:	DCO
APPROVED:	ALH
PROJECT NAME:	SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE:	AS SHOWN
DATE:	22 NOVEMBER 2024

PROJECT NO. 6480-22-0142

SUB-LEDGER NO.



2 EROSION & SEDIMENT CONTROL PLAN - STAGE 1

SCALE: 1" = 40'

EROSION CONTROL LEGEND

- SF — SILT FENCE (DETAIL 3/C10.0)
- LOD — LIMITS OF DISTURBANCE
- SEDIMENT TUBE INLET PROTECTION (DETAIL 6/C10.0)
- 40 — EXISTING MAJOR CONTOUR
- 39 — EXISTING MINOR CONTOUR
- SDE — EXISTING STORM DRAINAGE EASEMENT
- SDE — PROPOSED STORM DRAINAGE EASEMENT
- TCE — TCE — TEMPORARY CONSTRUCTION EASEMENT
- CONSTRUCTION ENTRANCE (DETAIL 2/C10.0)
- RIPRAP OUTLET PROTECTION (DETAIL 3/C12.1)
- TEMPORARY INLET PROTECTION (DETAIL 1/C10.0)
- WET — WET — EXISTING WETLANDS

NOTES:

1. SILT FENCE TO BE PLACED AT LIMITS OF DISTURBANCE AND HAS BEEN SHOWN AS AN OFFSET FOR CLARITY, UNLESS OTHERWISE NOTED.
2. WETLAND DELINEATION PROVIDED BY WSP USA INC. DATED JULY 31, 2023.
3. PROPOSED WETLAND DISTURBANCE OF 0.83 ACRES WILL OCCUR DURING CONSTRUCTION. GRADES WILL BE RETURNED TO PRE-CONSTRUCTION CONDITIONS FOLLOWING CONSTRUCTION IMPROVEMENTS.
4. NO LAND DISTURBING ACTIVITIES TO TAKE PLACE IN WETLAND UNTIL WETLAND IMPACT PERMIT HAS BEEN APPROVED BY USACE.
5. SEE SHEET C2.0 FOR EROSION CONTROL NOTES.
6. SEE SHEETS C10.0 & C10.1 FOR EROSION CONTROL DEVICE MAINTENANCE NOTES AND SEEDING.
5. SEE SHEET C10.1 FOR GROUND STABILIZATION SCHEDULE.

LIMITS OF DISTURBANCE

AREA: 3.95 AC
LAT: 35°2'8.99"N
LONG: 78°52'34.65"W

1 NOTES AND LEGEND

EROSION & SEDIMENT CONTROL PLAN - STAGE 1

SHEET NUMBER C4.0

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28806
TEL: (828) 252-8100
LICENSURE: NC ENG F-1253

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

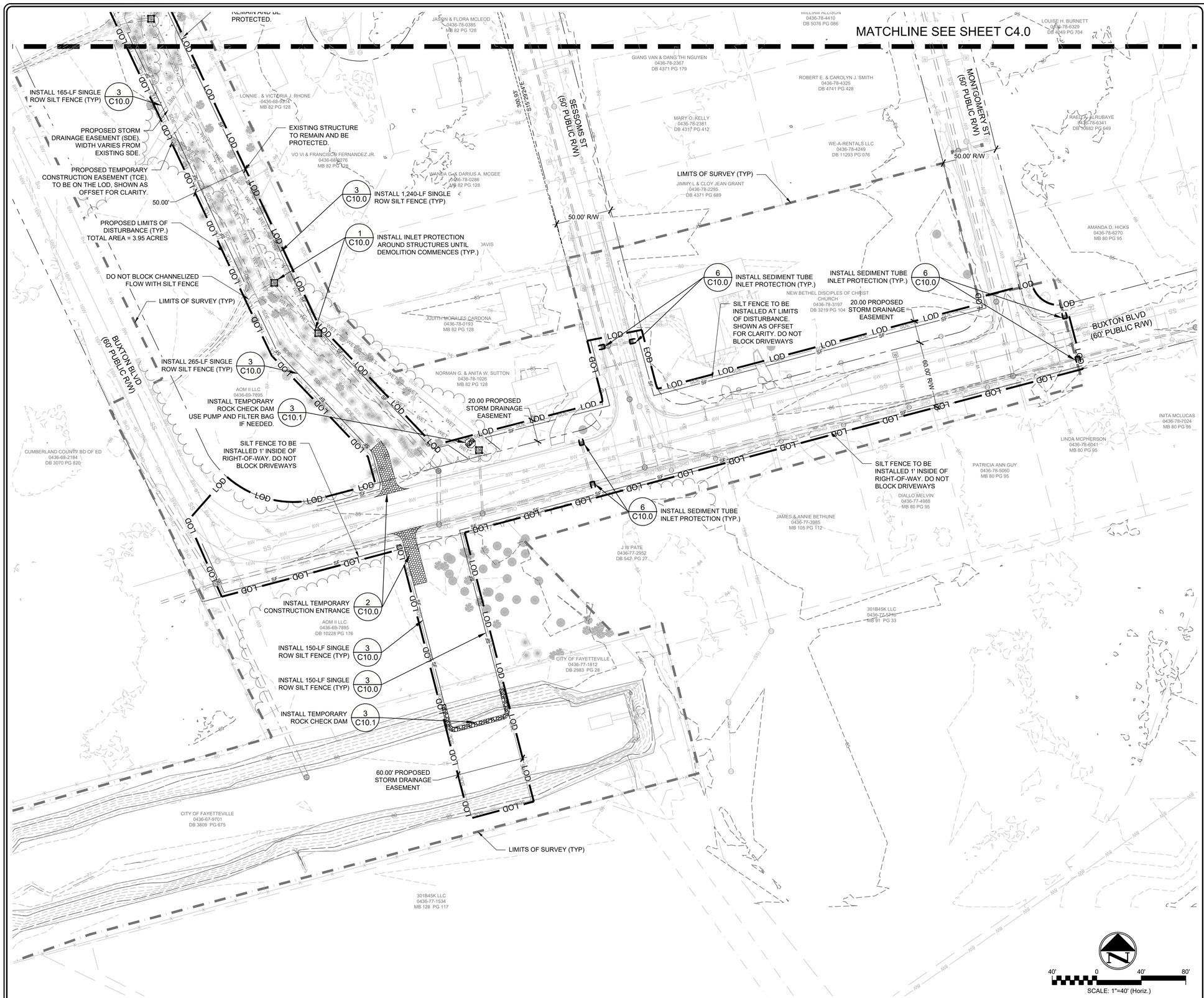
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27261 ANTHONY L. HAUSER
12/5/24
DATE:
SCALE:

REV. #	REVISIONS DESCRIPTION	REV BY DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

PROJECT NAME: SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.



2 EROSION & SEDIMENT CONTROL PLAN - STAGE 1

SCALE: 1" = 40'

EROSION CONTROL LEGEND

- SF — SILT FENCE (DETAIL 3/C10.0)
- LOD — LIMITS OF DISTURBANCE
- SEDIMENT TUBE INLET PROTECTION (DETAIL 6/C10.0)
- 40 — EXISTING MAJOR CONTOUR
- 39 — EXISTING MINOR CONTOUR
- SDE — EXISTING STORM DRAINAGE EASEMENT
- SDE — PROPOSED STORM DRAINAGE EASEMENT
- TCE — TEMPORARY CONSTRUCTION EASEMENT
- CONSTRUCTION ENTRANCE (DETAIL 2/C10.0)
- RIPRAP OUTLET PROTECTION (DETAIL 3/C12.1)
- TEMPORARY INLET PROTECTION (DETAIL 1/C10.0)
- WET — EXISTING WETLANDS

NOTES:

1. SILT FENCE TO BE PLACED AT LIMITS OF DISTURBANCE AND HAS BEEN SHOWN AS AN OFFSET FOR CLARITY, UNLESS OTHERWISE NOTED.
2. WETLAND DELINEATION PROVIDED BY WSP USA INC. DATED JULY 31, 2023.
3. PROPOSED WETLAND DISTURBANCE OF 0.83 ACRES WILL OCCUR DURING CONSTRUCTION. GRADES WILL BE RETURNED TO PRE-CONSTRUCTION CONDITIONS FOLLOWING CONSTRUCTION IMPROVEMENTS.
4. NO LAND DISTURBING ACTIVITIES TO TAKE PLACE IN WETLAND UNTIL WETLAND IMPACT PERMIT HAS BEEN APPROVED BY USACE.
5. SEE SHEET C2.0 FOR EROSION CONTROL NOTES.
6. SEE SHEETS C10.0 & C10.1 FOR EROSION CONTROL DEVICE MAINTENANCE NOTES AND SEEDING.
5. SEE SHEET C10.1 FOR GROUND STABILIZATION SCHEDULE.

LIMITS OF DISTURBANCE

AREA: 3.95 AC
LAT: 35°2'8.99"N
LONG: 78°52'34.65"W

1 NOTES AND LEGEND

EROSION & SEDIMENT CONTROL PLAN - STAGE 1

SHEET NUMBER C4.1

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8100
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/6/24
DATE

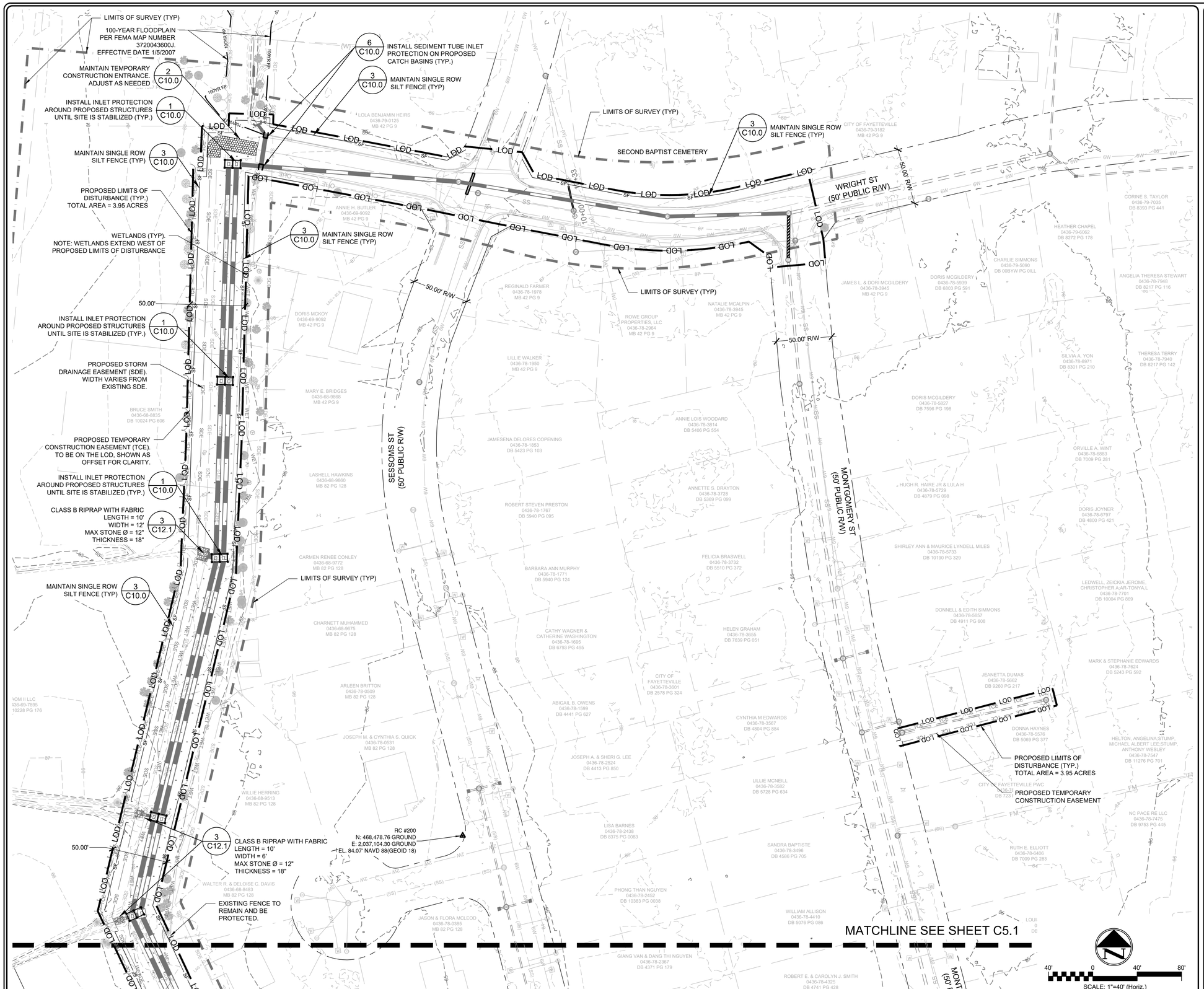
REV. #	DESCRIPTION	REV BY DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

REVISIONS

PROJECT NAME: SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.



SCALE: 1" = 40'

2 EROSION & SEDIMENT CONTROL PLAN - STAGE 2

EROSION CONTROL LEGEND

- SF — SILT FENCE (DETAIL 3/C10.0)
- LOD — LIMITS OF DISTURBANCE
- SEDIMENT TUBE INLET PROTECTION (DETAIL 6/C10.0)
- 40 — EXISTING MAJOR CONTOUR
- 39 — EXISTING MINOR CONTOUR
- SDE — EXISTING STORM DRAINAGE EASEMENT
- SDE — PROPOSED STORM DRAINAGE EASEMENT
- TCE — TCE — TEMPORARY CONSTRUCTION EASEMENT
- CONSTRUCTION ENTRANCE (DETAIL 2/C10.0)
- RIPRAP OUTLET PROTECTION (DETAIL 3/C12.1)
- TEMPORARY INLET PROTECTION (DETAIL 1/C10.0)
- WET — WET — EXISTING WETLANDS

NOTES:

1. SILT FENCE TO BE PLACED AT LIMITS OF DISTURBANCE AND HAS BEEN SHOWN AS AN OFFSET FOR CLARITY, UNLESS OTHERWISE NOTED.
2. WETLAND DELINEATION PROVIDED BY WSP USA INC. DATED JULY 31, 2023.
3. PROPOSED WETLAND DISTURBANCE OF 0.83 ACRES WILL OCCUR DURING CONSTRUCTION. GRADES WILL BE RETURNED TO PRE-CONSTRUCTION CONDITIONS FOLLOWING CONSTRUCTION IMPROVEMENTS.
4. NO LAND DISTURBING ACTIVITIES TO TAKE PLACE IN WETLAND UNTIL WETLAND IMPACT PERMIT HAS BEEN APPROVED BY USACE.
5. SEE SHEET C2.0 FOR EROSION CONTROL NOTES.
6. SEE SHEETS C10.0 & C10.1 FOR EROSION CONTROL DEVICE MAINTENANCE NOTES AND SEEDING.
5. SEE SHEET C10.1 FOR GROUND STABILIZATION SCHEDULE.

1 NOTES AND LEGEND

EROSION & SEDIMENT CONTROL PLAN - STAGE 2

SHEET NUMBER C5.0

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

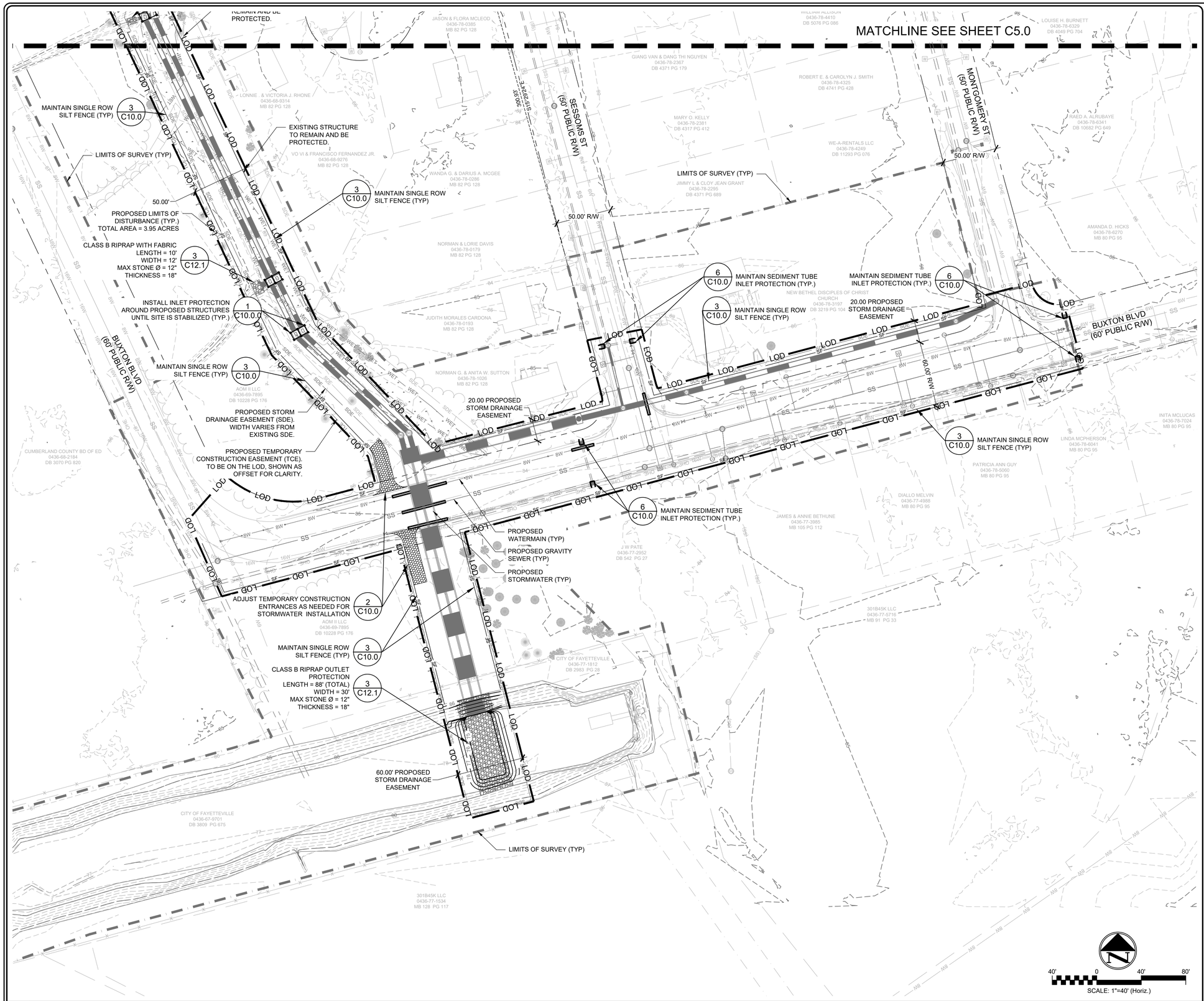
NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSEMAN
12/5/24
DATE

REVISIONS			
REV. #	DESCRIPTION	REV. BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-08-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

PROJECT NAME: SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.



2 EROSION & SEDIMENT CONTROL PLAN - STAGE 2

SCALE: 1" = 40'

EROSION CONTROL LEGEND

- SF — SILT FENCE (DETAIL 3/C10.0)
- LOD — LIMITS OF DISTURBANCE
- SEDIMENT TUBE INLET PROTECTION (DETAIL 6/C10.0)
- 40 — EXISTING MAJOR CONTOUR
- 39 — EXISTING MINOR CONTOUR
- SDE — EXISTING STORM DRAINAGE EASEMENT
- SDE — PROPOSED STORM DRAINAGE EASEMENT
- TCE — TCE — TEMPORARY CONSTRUCTION EASEMENT
- CONSTRUCTION ENTRANCE (DETAIL 2/C10.0)
- RIPRAP OUTLET PROTECTION (DETAIL 3/C12.1)
- TEMPORARY INLET PROTECTION (DETAIL 1/C10.0)
- WET — WET — EXISTING WETLANDS

NOTES:

1. SILT FENCE TO BE PLACED AT LIMITS OF DISTURBANCE AND HAS BEEN SHOWN AS AN OFFSET FOR CLARITY, UNLESS OTHERWISE NOTED.
2. WETLAND DELINEATION PROVIDED BY WSP USA INC. DATED JULY 31, 2023.
3. PROPOSED WETLAND DISTURBANCE OF 0.83 ACRES WILL OCCUR DURING CONSTRUCTION. GRADES WILL BE RETURNED TO PRE-CONSTRUCTION CONDITIONS FOLLOWING CONSTRUCTION IMPROVEMENTS.
4. NO LAND DISTURBING ACTIVITIES TO TAKE PLACE IN WETLAND UNTIL WETLAND IMPACT PERMIT HAS BEEN APPROVED BY USACE.
5. SEE SHEET C2.0 FOR EROSION CONTROL NOTES.
6. SEE SHEETS C10.0 & C10.1 FOR EROSION CONTROL DEVICE MAINTENANCE NOTES AND SEEDING.
5. SEE SHEET C10.1 FOR GROUND STABILIZATION SCHEDULE.

1 NOTES AND LEGEND

EROSION & SEDIMENT CONTROL PLAN - STAGE 2

SHEET NUMBER C5.1

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 27261 ANTHONY L. HAUSER
12/5/24
DATE

REV. #	REV. BY DATE	DESCRIPTION
REV. I	WSP 2024-07-09	100% ISSUED FOR BID
REV. J	WSP 2024-09-06	100% ISSUED FOR PERMIT
REV. K	WSP 2024-11-22	100% ISSUED FOR PERMIT

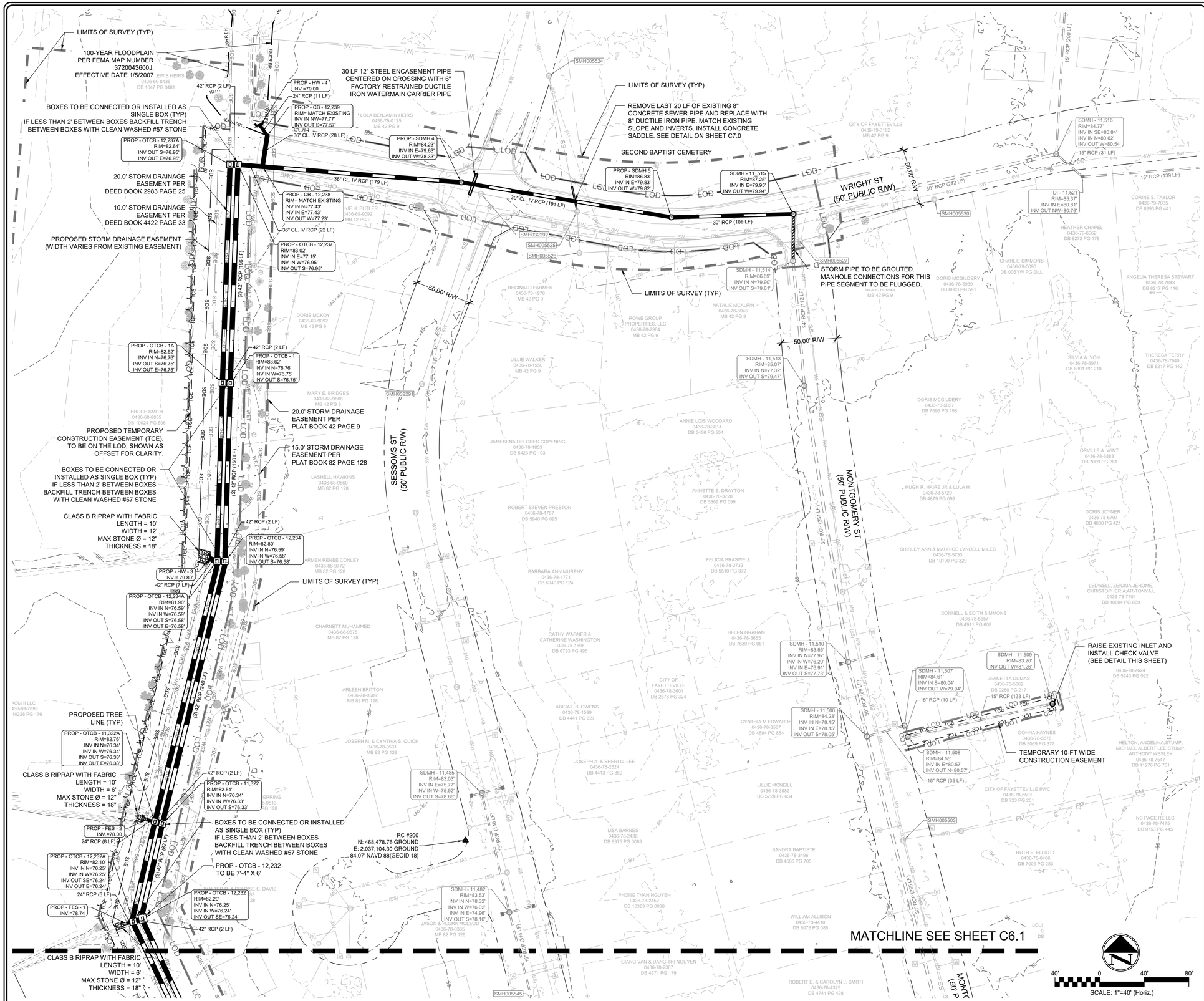
REVISIONS

DRAWN:	RAS
DESIGN:	RAS
CHECK:	DCO
APPROVED:	ALH

PROJECT NAME:	SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE:	AS SHOWN
DATE:	22 NOVEMBER 2024

PROJECT NO. 6480-22-0142

SUB-LEDGER NO. _____

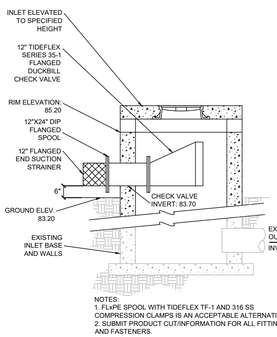


2 DRAINAGE IMPROVEMENTS PLAN

SCALE: 1" = 40'

LEGEND

- STORM DRAIN LINE
- STORM DRAIN MANHOLE (SDMH) (DETAIL 6,7&8 / C12.0)
- OPEN THROAT CATCH BASIN (OTCB) (DETAIL 9 / C12.0)
- CATCH BASIN (CB) (DETAIL 2&3 / C12.0)
- JUNCTION BOX (JB) (DETAIL 4 / C12.0)
- HEADWALL (HW) (DETAIL 8/C12.1)
- RIPRAP OUTLET PAD (DETAIL 3/C12.1)
- FLARED END SECTION (DETAIL 9/C12.1)
- 39 PROPOSED MINOR CONTOURS (1')
- 40 PROPOSED MAJOR CONTOURS (5')
- 39 EXISTING MINOR CONTOURS (1')
- 40 EXISTING MAJOR CONTOURS (5')
- EXISTING UTILITY EASEMENT
- SDE EXISTING STORM DRAINAGE EASEMENT
- SDE PROPOSED STORM DRAINAGE EASEMENT
- TCE TCE TEMPORARY CONSTRUCTION EASEMENT
- EXISTING PUBLIC RIGHT-OF-WAY



NOTES:
1. FLAPE SPOOL WITH TIDEFLEX TF-1 AND 316 SS COMPRESSION CLAMPS IS AN ACCEPTABLE ALTERNATIVE.
2. SUBMIT PRODUCT CUT/INFORMATION FOR ALL FITTINGS AND FASTENERS.

RAISE EXISTING INLET AND INSTALL CHECK VALVE DETAIL

SCALE: NTS

1 NOTES AND LEGEND

DRAINAGE IMPROVEMENTS PLAN

SHEET NUMBER C6.0

PLAN TYPE

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

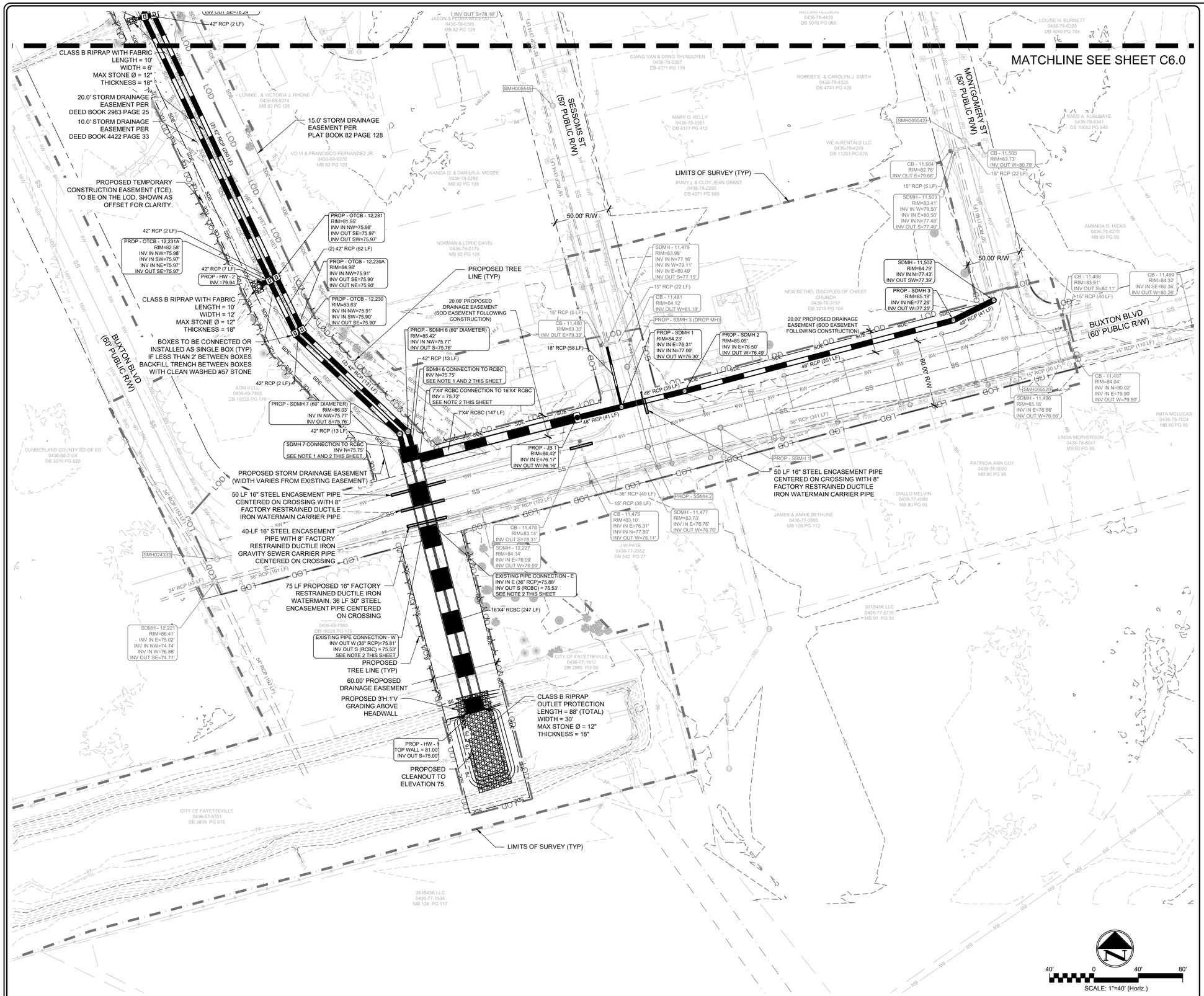
NORTH CAROLINA PROFESSIONAL SEAL 22261 ENGINEER ANTHONY L. HAISER
12/5/24
DATE

REVISIONS			
REV. #	DESCRIPTION	REV. BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

PROJECT NAME: SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.



SCALE: 1" = 40'

2 DRAINAGE IMPROVEMENTS PLAN

LEGEND

- STORM DRAIN LINE
- STORM DRAIN MANHOLE (SDMH) (DETAIL 6,7&8 / C12.0)
- OPEN THROAT CATCH BASIN (OTCB) (DETAIL 9 / C12.0)
- CATCH BASIN (CB) (DETAIL 2&3 / C12.0)
- JUNCTION BOX (JB) (DETAIL 4 / C12.0)
- HEADWALL (HW) (DETAIL 8/C12.1)
- RIPRAP OUTLET PAD (DETAIL 3/C12.1)
- FLARED END SECTION (DETAIL 9/C12.1)
- 39 — PROPOSED MINOR CONTOURS (1')
- 40 — PROPOSED MAJOR CONTOURS (5')
- 39 — EXISTING MINOR CONTOURS (1')
- 40 — EXISTING MAJOR CONTOURS (5')
- EXISTING UTILITY EASEMENT
- SDE — EXISTING STORM DRAINAGE EASEMENT
- SDE — PROPOSED STORM DRAINAGE EASEMENT
- TCE — TCE — TEMPORARY CONSTRUCTION EASEMENT
- EXISTING PUBLIC RIGHT-OF-WAY

NOTES:

1. PRECAST END WALL WITH OPENINGS FOR INSTALLING 42" RCP'S.
2. ALL CONNECTIONS TO HAVE WATERTIGHT SEALS USING NONSHRINK HYDRAULIC GROUT.

1 NOTES AND LEGEND

DRAINAGE IMPROVEMENTS PLAN

SHEET NUMBER C6.1

PLAN TYPE

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28805
TEL: (828) 252-8100
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27261 ANTHONY L. HAUSER
12/9/24
DATE:

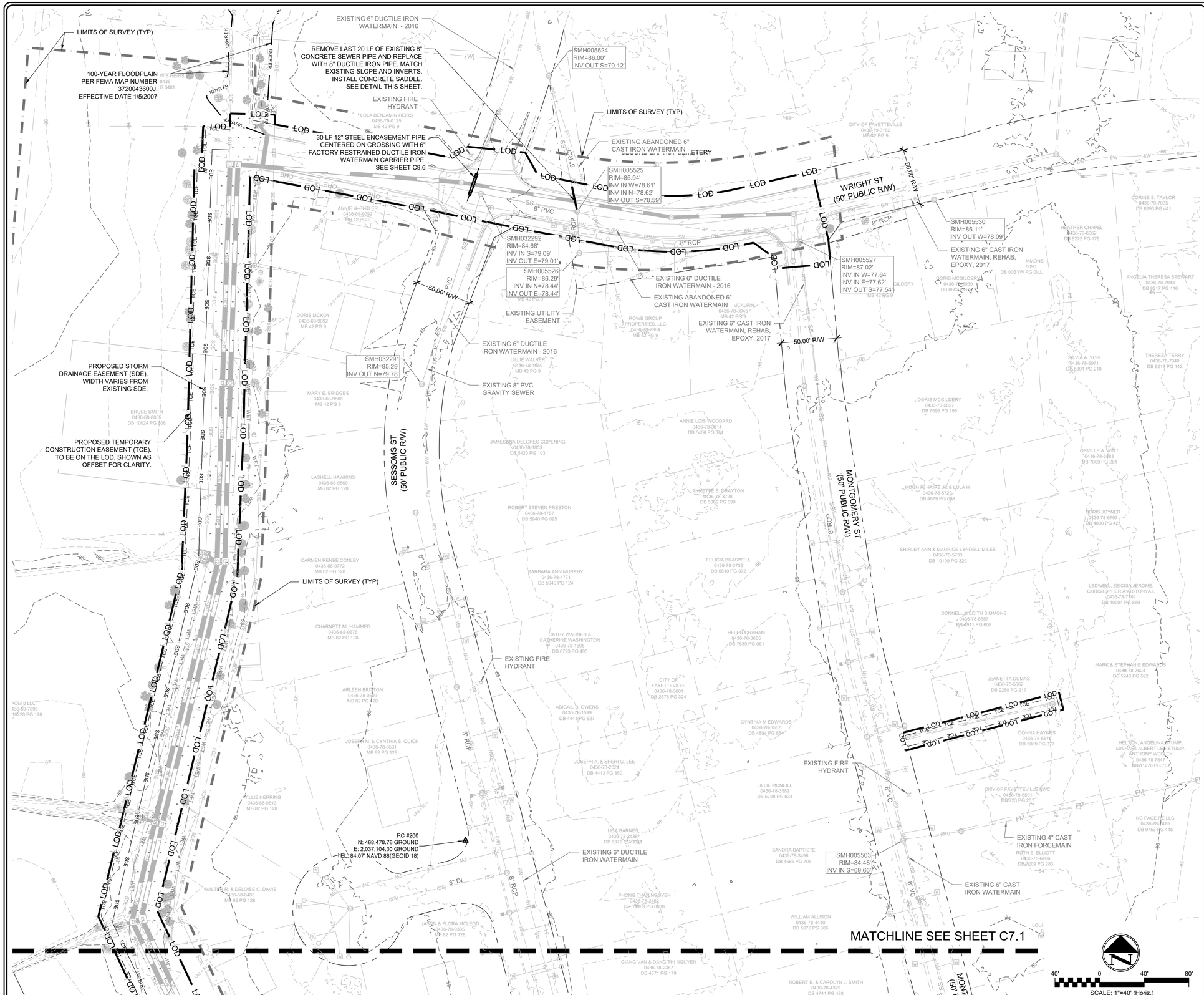
REVISIONS

REV. #	DESCRIPTION	REV BY DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

DRAWN:	RAS
DESIGN:	RAS
CHECK:	DCO
APPROVED:	ALH
PROJECT NAME:	SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE:	AS SHOWN
DATE:	22 NOVEMBER 2024

PROJECT NO. 6480-22-0142

SUB-LEDGER NO. _____



SCALE: 1" = 40'

2 UTILITY PLAN

LEGEND

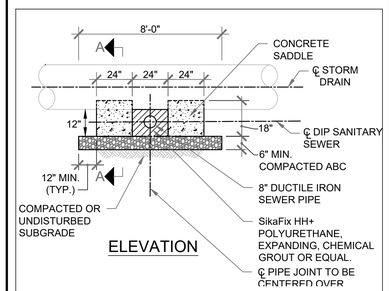
6W 6W	EXISTING 6" WATERMAIN
8W 8W	EXISTING 8" WATERMAIN
16W 16W	EXISTING 16" WATERMAIN
6W 6W	PROPOSED 6" WATERMAIN
8W 8W	PROPOSED 8" WATERMAIN
16W 16W	PROPOSED 16" WATERMAIN
	PROPOSED WATER LATERAL
	PROPOSED WATER VALVE
	PROPOSED REDUCER
	PROPOSED TEE
	PROPOSED BEND
SS	EXISTING SANITARY SEWER (GRAVITY)
(SS)	EXISTING GIS SANITARY SEWER (GRAVITY)
SS	PROPOSED SANITARY SEWER (GRAVITY)
	PROPOSED SEWER LATERAL
	PROPOSED SANITARY SEWER MANHOLE

GENERAL NOTES:

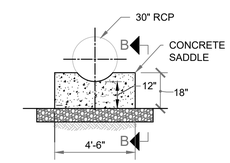
1. REFER TO SHEET C2.0 FOR UTILITY NOTES.
2. REFER TO SHEETS C12.0 / C12.1 FOR STANDARD WATER UTILITY NOTES AND DETAILS.
3. REFER TO SHEET C12.2 / C12.3 FOR STANDARD SEWER UTILITY NOTES AND DETAILS.
4. EXISTING WATER MAINS AND SERVICES SHOWN PROVIDED BY FAYETTEVILLE PUBLIC WORKS COMMISSION GIS DEPARTMENT AND SHALL BE FIELD LOCATED PRIOR TO CONSTRUCTION.
5. EXISTING SEWER LATERALS SHOWN PROVIDED BY FAYETTEVILLE PUBLIC WORKS COMMISSION GIS DEPARTMENT AND SHALL BE FIELD LOCATED PRIOR TO CONSTRUCTION.
6. REFER TO SHEETS C9.0 AND C9.6 FOR WRIGHT STREET STATIONING AND PROFILE.

ABBREVIATIONS

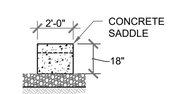
CI = CAST IRON
DI = DUCTILE IRON
PVC = POLYVINYL CHLORIDE
RCP = REINFORCED CONCRETE PIPE
VC = VITRIFIED CLAY



ELEVATION



SECTION A-A



SECTION B-B

CONCRETE SADDLE NOTES:

1. CONCRETE SADDLE SHALL BE MIN. 2500 PSI CONCRETE AT 28 DAYS, (NCDOT CLASS B), PLACED IN ACCORDANCE WITH NCDOT SPEC. SECTION 825.
2. CHEMICAL GROUT SHALL BE INSTALLED FOR THE FULL VOLUME OF THE SPACE BETWEEN THE TWO SADDLES (12"X48").
3. REFER TO STORM PIPE BEDDING DETAIL 1, SHEET C12.0.
4. 8' SECTION OF 30" RCP AND 18' SECTION OF 8" DIP SHALL BE CENTERED OVER EACH OTHER. NO JOINTS WILL BE PERMITTED WITHIN 5' OF THE CONCRETE SADDLES.

CONCRETE SADDLE DETAIL
SCALE: NTS

1 NOTES AND LEGEND

UTILITY PLAN

SHEET NUMBER C7.0

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 27261 ANTHONY L. HAUSMAN
12/5/24
DATE
CODE

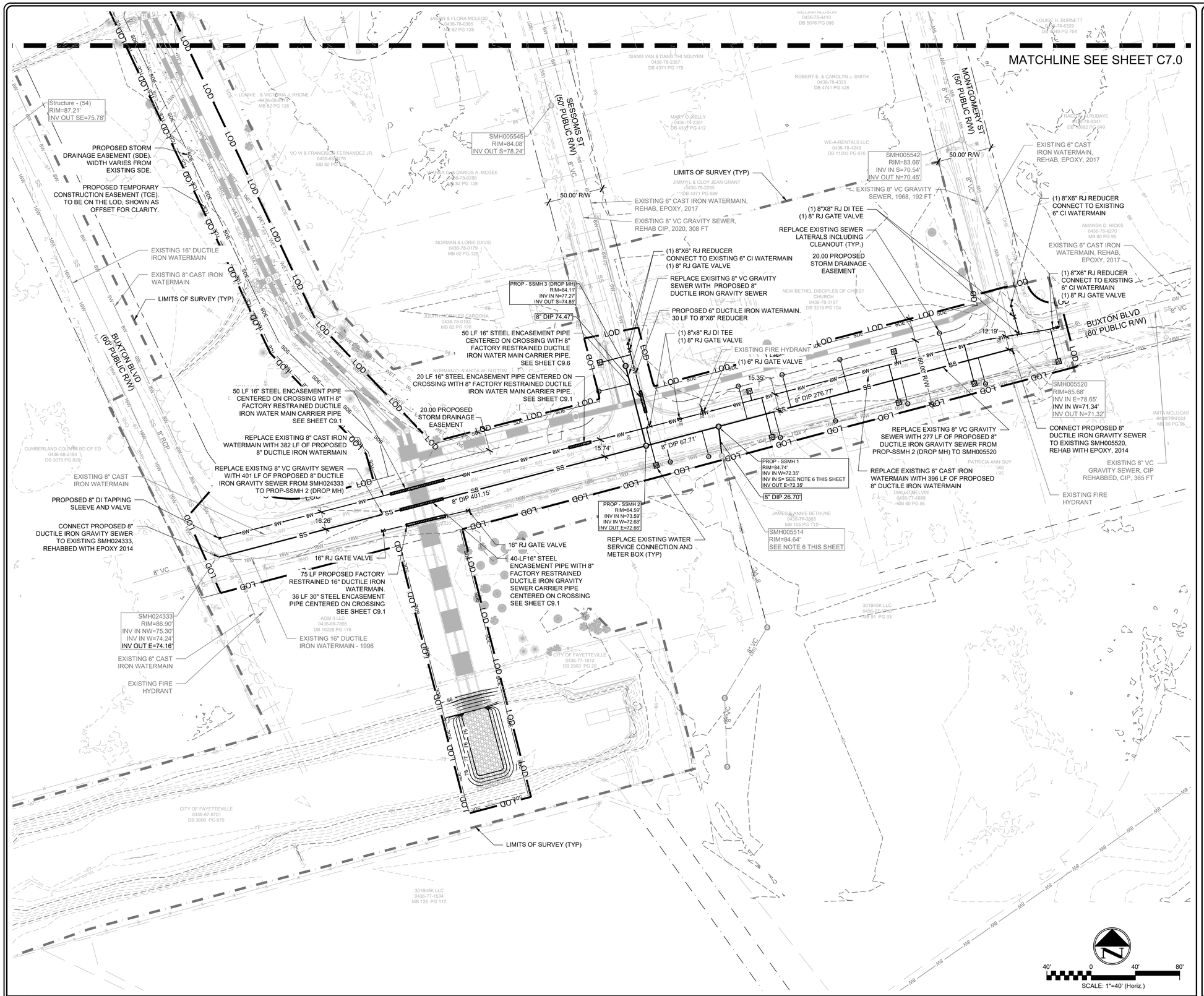
REVISIONS

REV. #	DESCRIPTION	REV. BY DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-08-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

PROJECT NAME: SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6490-22-0142
SUB-LEDGER NO.



SCALE: 1" = 40'

2 UTILITY PLAN

LEGEND

- EXISTING 6" WATERMAIN
- EXISTING 8" WATERMAIN
- EXISTING 16" WATERMAIN
- PROPOSED 6" WATERMAIN
- PROPOSED 8" WATERMAIN
- PROPOSED 16" WATERMAIN
- PROPOSED WATER LATERAL
- PROPOSED WATER VALVE
- PROPOSED REDUCER
- PROPOSED TEE
- PROPOSED BEND
- PROPOSED WATER METER BOX
- EXISTING SANITARY SEWER (GRAVITY)
- EXISTING GIS SANITARY SEWER (GRAVITY)
- PROPOSED SANITARY SEWER (GRAVITY)
- PROPOSED SEWER LATERAL
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER CLEANOUT

GENERAL NOTES:

1. REFER TO SHEET C2.0 FOR UTILITY NOTES.
2. REFER TO SHEETS C12.0 / C12.1 FOR STANDARD WATER UTILITY NOTES AND DETAILS.
3. REFER TO SHEET C12.2 / C12.3 FOR STANDARD SEWER UTILITY NOTES AND DETAILS.
4. EXISTING WATER MAINS AND SERVICES SHOWN PROVIDED BY FAYETTEVILLE PUBLIC WORKS COMMISSION GIS DEPARTMENT AND SHALL BE FIELD LOCATED PRIOR TO CONSTRUCTION.
5. EXISTING SEWER LATERALS SHOWN PROVIDED BY FAYETTEVILLE PUBLIC WORKS COMMISSION GIS DEPARTMENT AND SHALL BE FIELD LOCATED PRIOR TO CONSTRUCTION.
6. EXISTING 8-INCH VC SEWER INVERT SHALL BE FIELD SURVEYED AND COMMUNICATED WITH ENGINEER AND FAYETTEVILLE PWC 72-HOURS PRIOR TO CONSTRUCTION OF SEWER IMPROVEMENTS.
7. CONTRACTOR SHALL SUBMIT UTILITY PHASING PLAN INDICATING MEANS AND METHODS TO PUBLIC WORKS COMMISSION AND ENGINEER FOR APPROVAL. SUBMITTAL SHALL INCLUDE HOW EXISTING SEWER LATERALS AND CLEANOUTS WILL BE MANAGED AND IDENTIFIED DURING CONSTRUCTION OF PROPOSED SEWER IMPROVEMENTS. SUBMITTAL SHALL ALSO INCLUDE HOW WATER SERVICES WILL BE MANAGED AND IDENTIFIED DURING CONSTRUCTION OF PROPOSED WATER IMPROVEMENTS.
8. REFER TO SHEETS C9.1 AND C9.2 FOR BUXTON BLVD STATIONING AND PROFILE.
9. REFER TO SHEET C9.6 FOR SESSOMS STREET AND MONTGOMERY STREET STATIONING AND PROFILES.
10. ALL SEWER PIPE INSTALLATION MUST BE AS-BUILT SURVEYED IMMEDIATELY AFTER INITIAL BACKFILL TO CONFIRM THAT THE CONSTRUCTED PIPE SLOPES ARE IN ACCORDANCE WITH THE DESIGN.

ABBREVIATIONS

CI = CAST IRON
DI = DUCTILE IRON
PVC = POLYVINYL CHLORIDE
RCP = REINFORCED CONCRETE PIPE
RJ = RESTRAINED JOINT
VC = VITRIFIED CLAY

1 NOTES AND LEGEND

UTILITY PLAN

SHEET NUMBER C7.1

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28805
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
Anthony L. Hauser
12/5/24
DATE

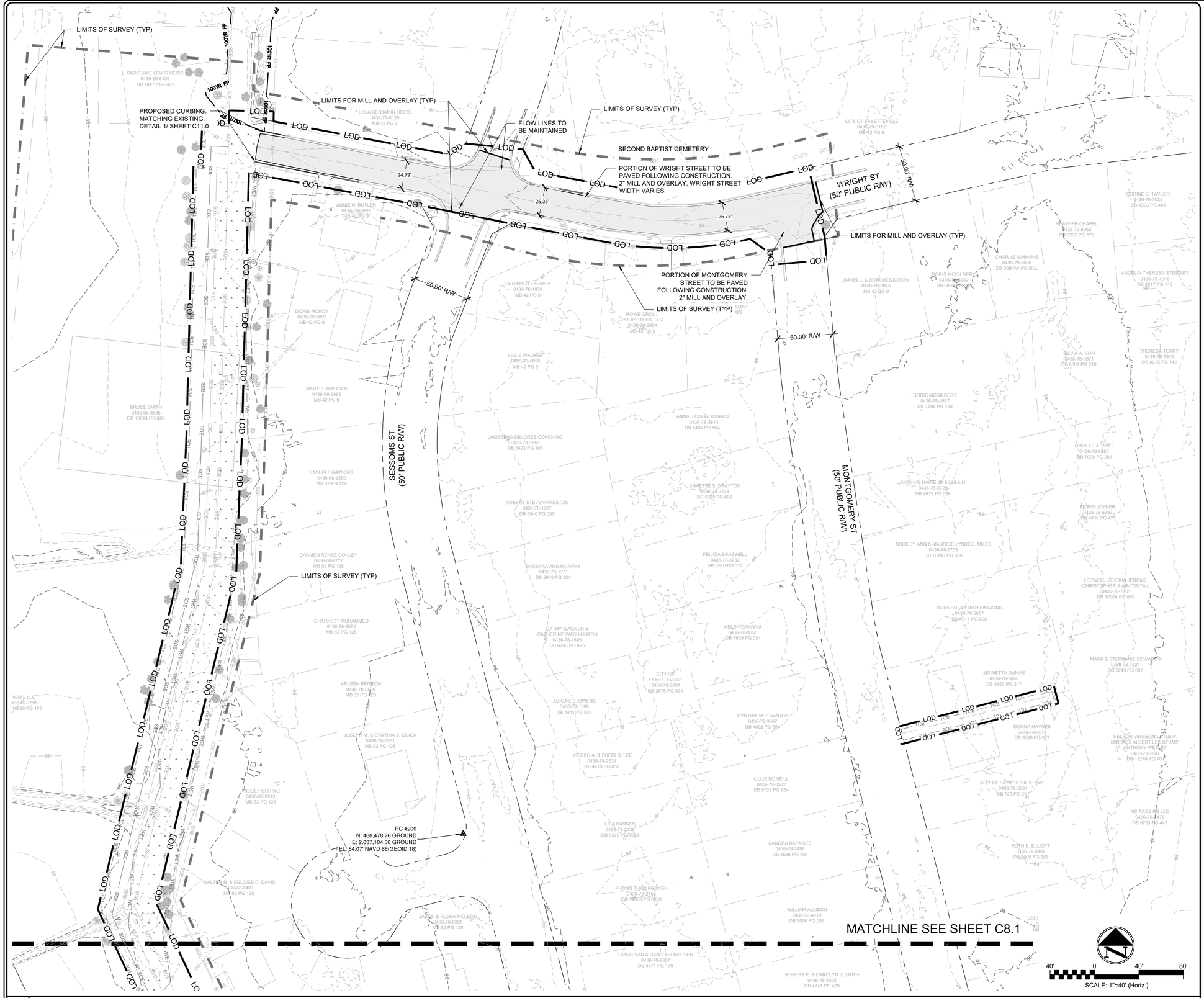
REVISIONS

REV. #	DESCRIPTION	REV. BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

PROJECT NAME: SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.



2 PAVING AND STRIPING PLAN

SCALE: 1" = 40'

LEGEND

PROPOSED PAVING

PROPOSED CURBING

GENERAL NOTE

1. NO EXISTING PAVEMENT MARKINGS ON WRIGHT STREET, MONTGOMERY STREET OR SESSOMS STREET.
2. NO PAVEMENT MARKINGS ARE PROPOSED FOLLOWING THE PAVING ON WRIGHT STREET.
3. SEE DETAIL 6/ C11.0 FOR TYPICAL ROAD SECTION.
4. SEE DEMOLITION SHEET C3.0 AND C3.1 FOR CURBING TO BE REPLACED. IF ADDITIONAL CURBING IS BROKEN OR DAMAGED DURING CONSTRUCTION, IT SHALL BE REPLACED AND MATCH EXISTING.
5. RAISE OR LOWER CATCH BASINS, MANHOLES, DROP INLETS, METER BOXES, VALVE BOXES, ETC. WITHIN THE PAVING LIMITS TO MATCH THE PROPOSED ADJACENT PAVEMENT ELEVATIONS.

1 NOTES AND LEGEND

PAVING AND STRIPING PLAN

SHEET NUMBER C8.0

PLAN TYPE

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

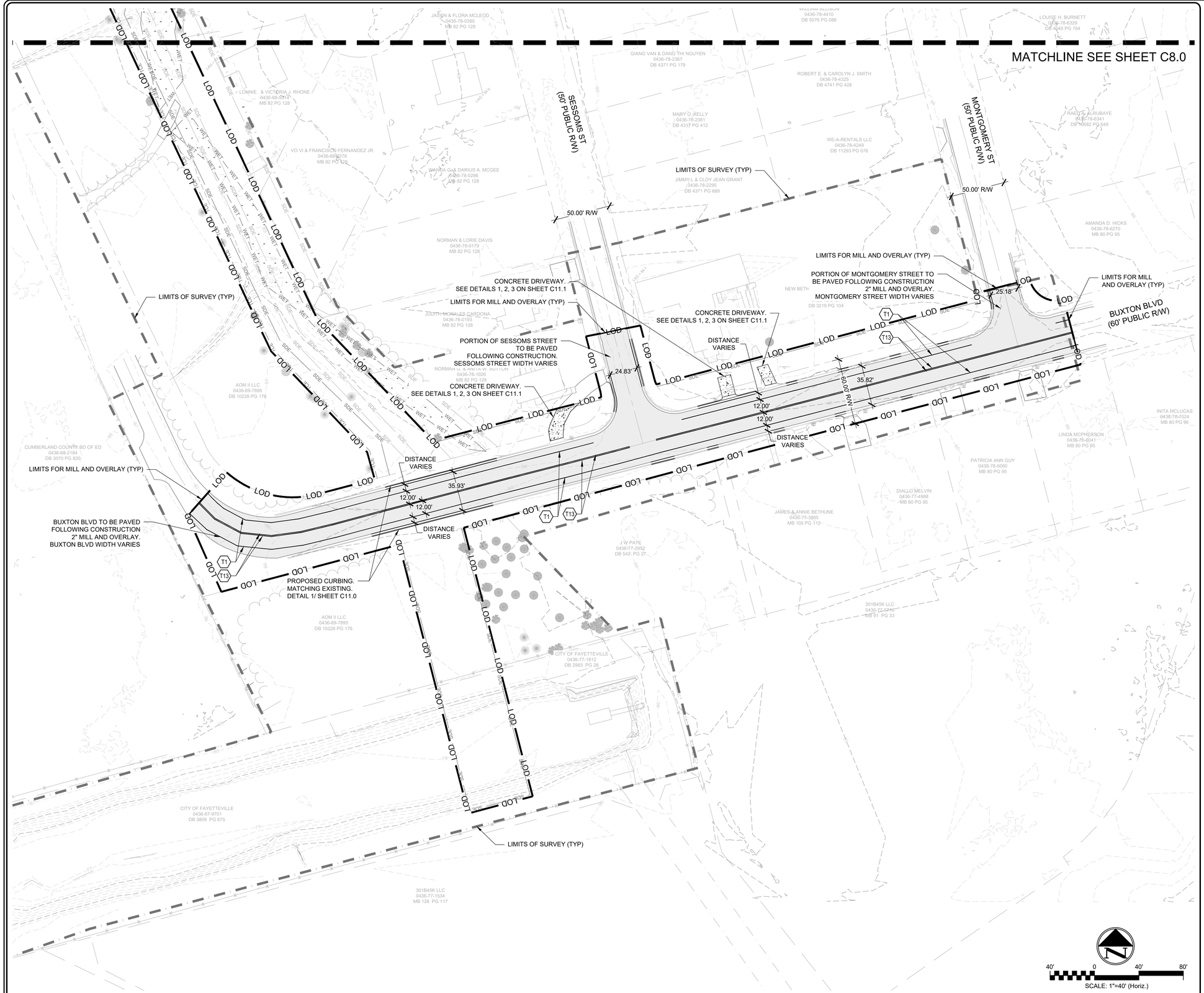
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27261 ANTHONY L. HAUSER
12/5/24
DATE

REVISIONS		
REV. #	DESCRIPTION	REV.BY DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

PROJECT: SESSOMS STREET DRAINAGE IMPROVEMENTS
NAME:
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.



SCALE: 1" = 40'

2 PAVING AND STRIPING PLAN

LEGEND

- PROPOSED PAVING
- T1 — WHITE EDGELINE (4", 90 MIL)
- T13 — YELLOW DOUBLE CENTER (4", 90 MIL)
- PROPOSED CURBING

GENERAL NOTE

1. NO EXISTING PAVEMENT MARKINGS ON MONTGOMERY STREET OR SESSOMS STREET.
2. PROPOSED PAVEMENT MARKINGS ON BUXTON BOULEVARD TO MATCH EXISTING.
3. SEE DETAIL 6/ C11.0 FOR TYPICAL ROAD SECTION.
4. SEE DEMOLITION SHEET C3.0 AND C3.1 FOR CURBING TO BE REPLACED. IF ADDITIONAL CURBING IS BROKEN OR DAMAGED DURING CONSTRUCTION, IT SHALL BE REPLACED AND MATCH EXISTING.
5. RAISE OR LOWER CATCH BASINS, MANHOLES, DROP INLETS, METER BOXES, VALVE BOXES, ETC. WITHIN THE PAVING LIMITS TO MATCH THE PROPOSED ADJACENT PAVEMENT ELEVATIONS.

1 NOTES AND LEGEND

PAVING AND STRIPING PLAN

SHEET NUMBER C8.1

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG: F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/6/24
DATE

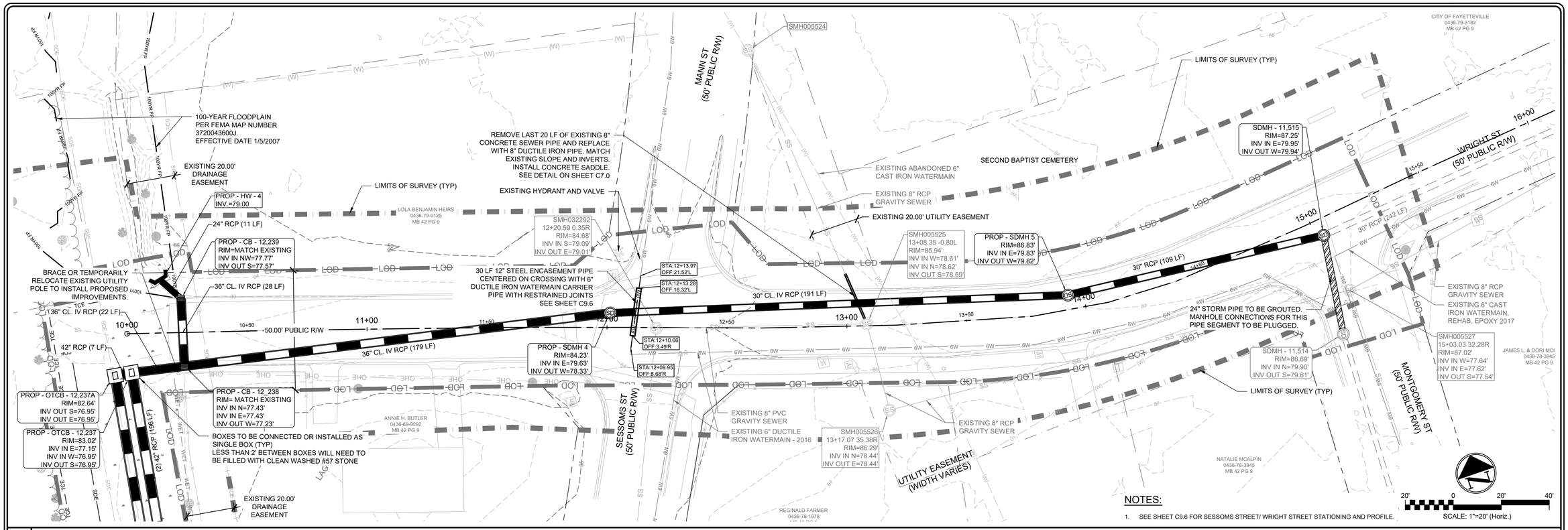
REV. #	DESCRIPTION	REV BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

REVISIONS

DRAWN:	RAS
DESIGN:	RAS
CHECK:	DCO
APPROVED:	ALH

PROJECT NAME:	SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE:	AS SHOWN
DATE:	22 NOVEMBER 2024

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

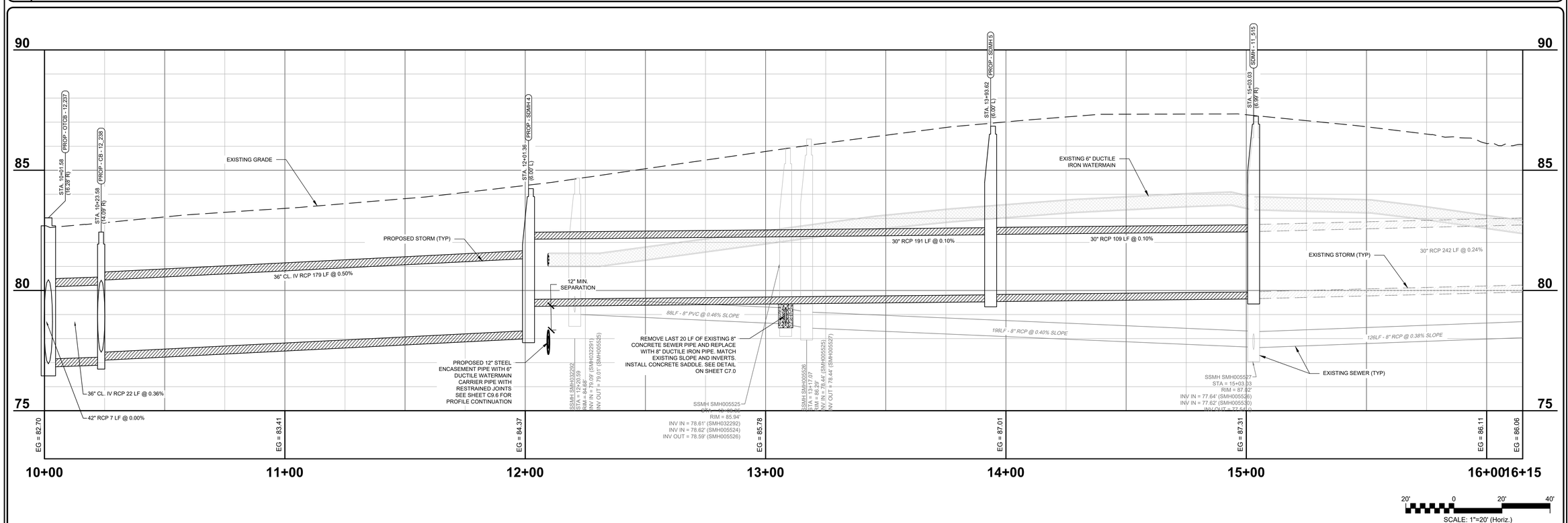


NOTES:

1. SEE SHEET C9.6 FOR SESSOMS STREET/ WRIGHT STREET STATIONING AND PROFILE.

1 WRIGHT STREET DRAINAGE IMPROVEMENTS PLAN

SCALE: 1" = 20'



2 WRIGHT STREET DRAINAGE IMPROVEMENTS PROFILE

HORIZ. SCALE: 1" = 20' VERT. SCALE: 1" = 2'

WRIGHT STREET PLAN & PROFILE STA. 10+00 - 16+00

SHEET NUMBER C9.0

PLAN TYPE

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8100
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/6/24

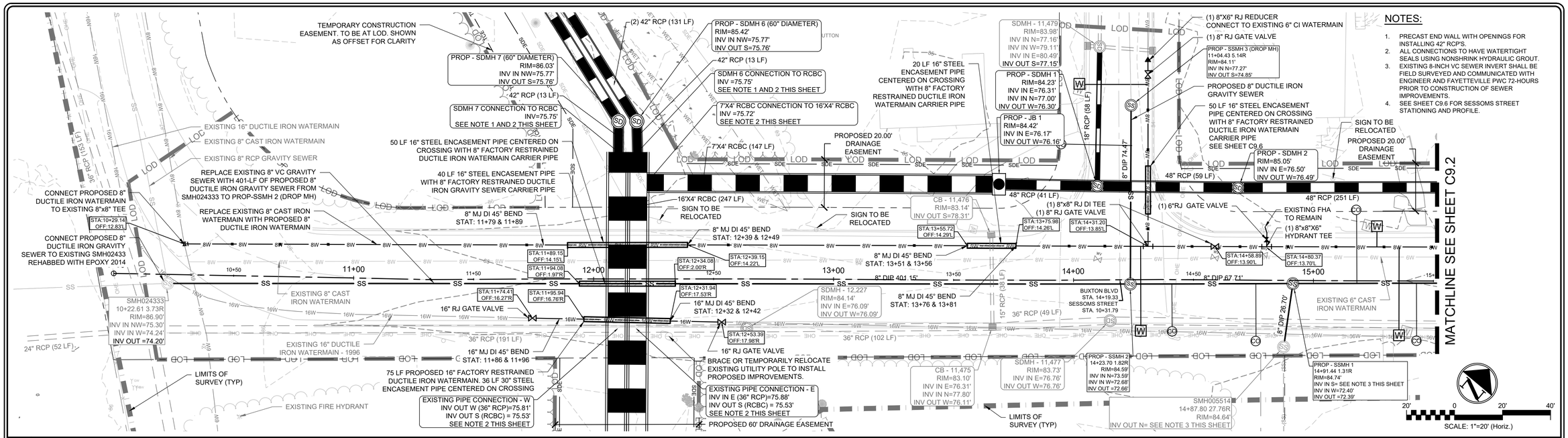
DATE:

REVISIONS		
REV. #	DESCRIPTION	REV BY DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

PROJECT NAME: SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

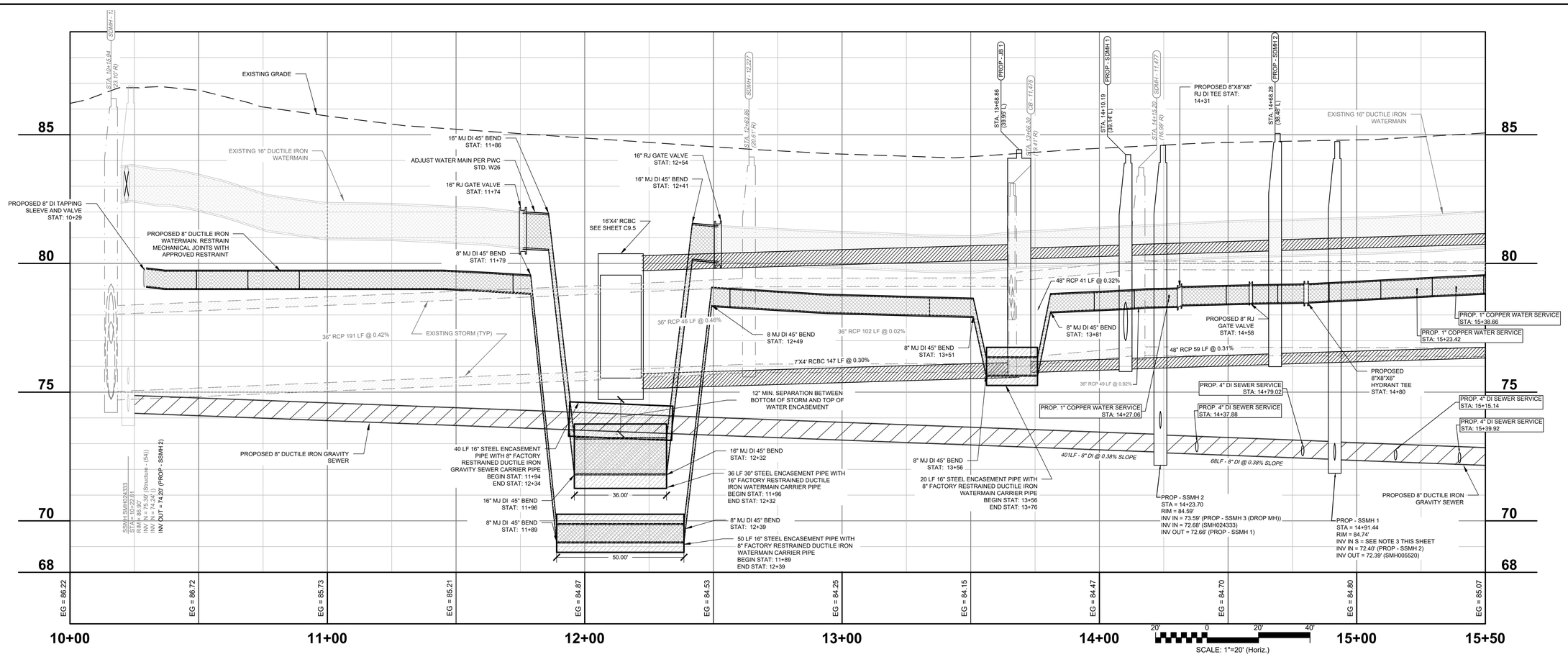


NOTES:

1. PRECAST END WALL WITH OPENINGS FOR INSTALLING 42" RCP'S.
2. ALL CONNECTIONS TO HAVE WATERTIGHT SEALS USING NONSHRINK HYDRAULIC GROUT.
3. EXISTING 8-INCH VC SEWER INVERT SHALL BE FIELD SURVEYED AND COMMUNICATED WITH ENGINEER AND FAYETTEVILLE PWC 72-HOURS PRIOR TO CONSTRUCTION OF SEWER IMPROVEMENTS.
4. SEE SHEET C9.6 FOR SESSOMS STREET STATIONING AND PROFILE.

1 BUXTON BLVD DRAINAGE IMPROVEMENTS PLAN

SCALE: 1" = 20'



2 BUXTON BLVD DRAINAGE IMPROVEMENTS PROFILE

HORIZ. SCALE: 1" = 20' VERT. SCALE: 1" = 2'

BUXTON BLVD PLAN & PROFILE
STA. 10+00 - 15+50

SHEET NUMBER C9.1

PLAN TYPE

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

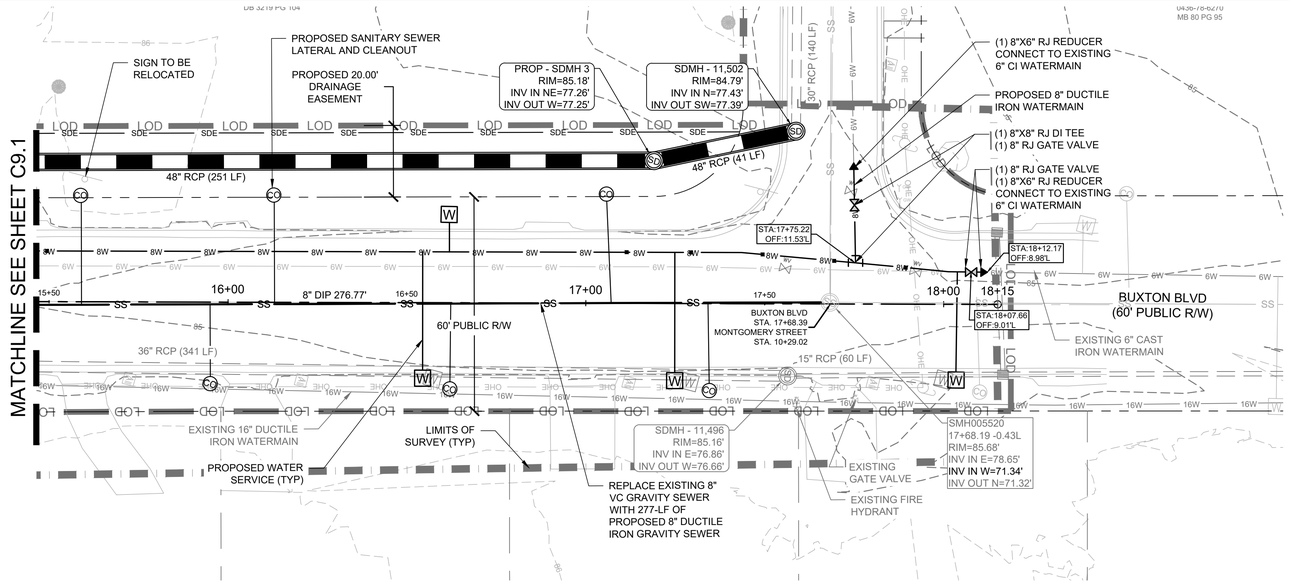
NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/5/24
DATE

REVISIONS			
REV. #	DESCRIPTION	REV BY DATE	
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

PROJECT NAME: SESSOMS STREET SIDEWALKS IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

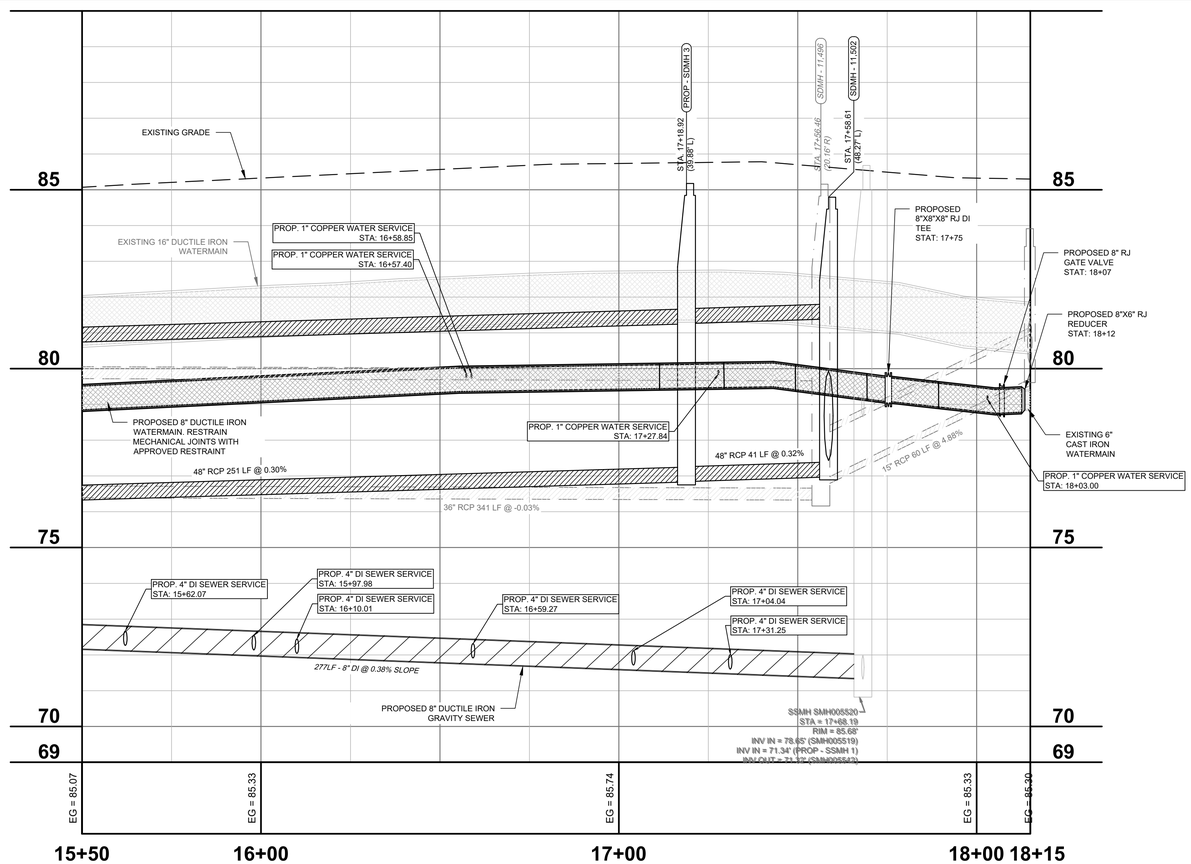


NOTES:

1. SEE SHEET C9.6 FOR MONTGOMERY STREET STATIONING AND PROFILE.

1 BUXTON BLVD DRAINAGE IMPROVEMENTS PLAN

SCALE: 1" = 20'



2 BUXTON BLVD DRAINAGE IMPROVEMENTS PROFILE

HORIZ. SCALE: 1" = 20' VERT. SCALE: 1" = 2'

BUXTON BLVD PLAN & PROFILE
STA. 15+50 - END

SHEET NUMBER C9.2

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/5/24
DATE:

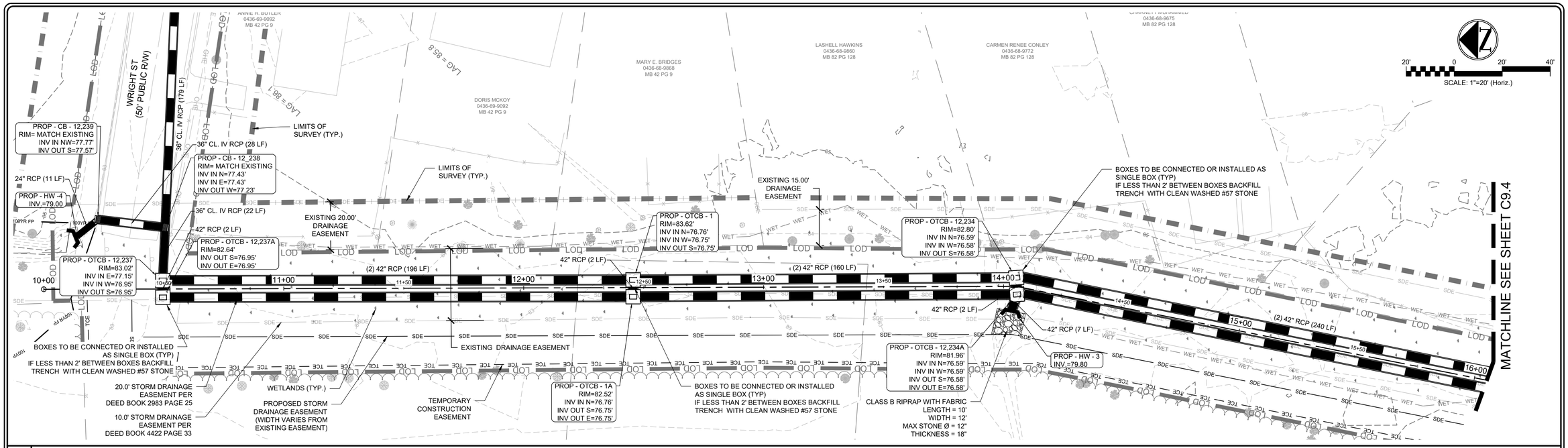
REVISIONS

REV. #	DESCRIPTION	REV. BY DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

PROJECT: SESSIONS STREET DRAINAGE IMPROVEMENTS
NAME: AS SHOWN
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

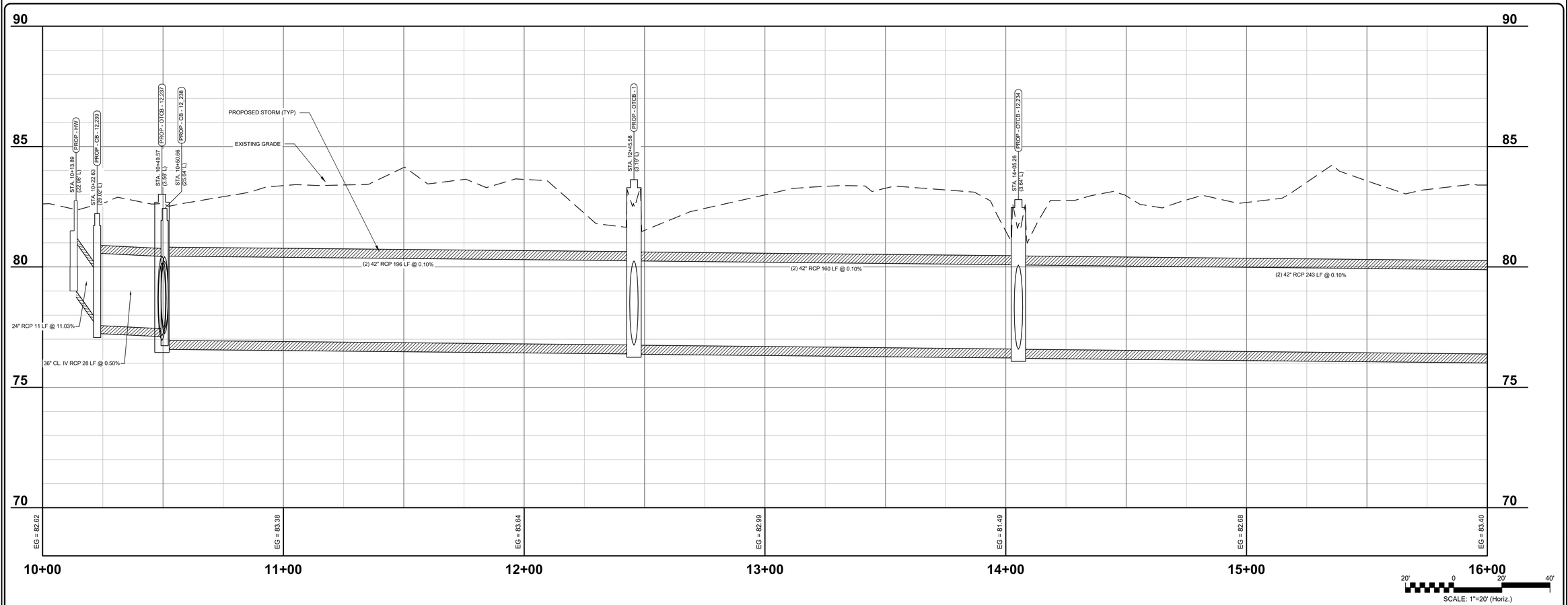
DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.



1 CROSS COUNTRY DRAINAGE IMPROVEMENTS PLAN

SCALE: 1" = 20'



2 CROSS COUNTRY DRAINAGE IMPROVEMENTS PROFILE

HORIZ. SCALE: 1" = 20' VERT. SCALE: 1" = 2'

CROSS COUNTRY PLAN & PROFILE STA. 10+00 - 16+00

SHEET NUMBER C9.3

PLAN TYPE

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
11/6/24
SEAL DATE

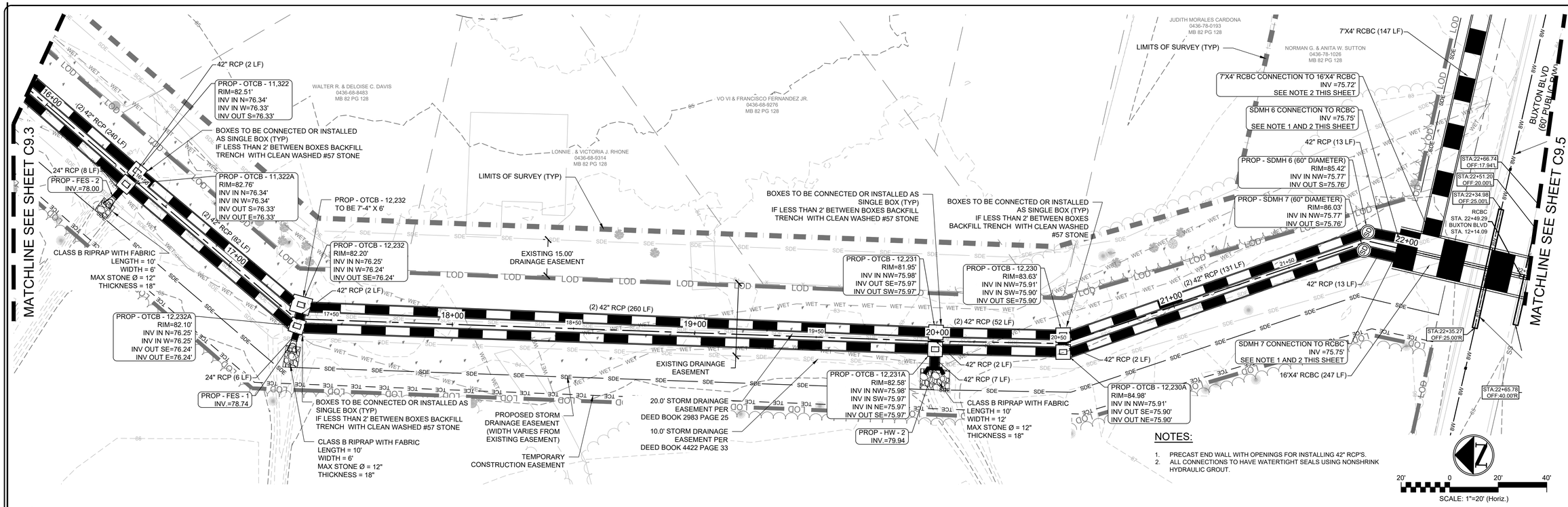
REVISIONS

REV. #	DESCRIPTION	REV BY DATE
	100% ISSUED FOR BID	WSP 2024-07-09
REV. I	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. J	100% ISSUED FOR PERMIT	WSP 2024-11-22
REV. K		

PROJECT NAME: SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

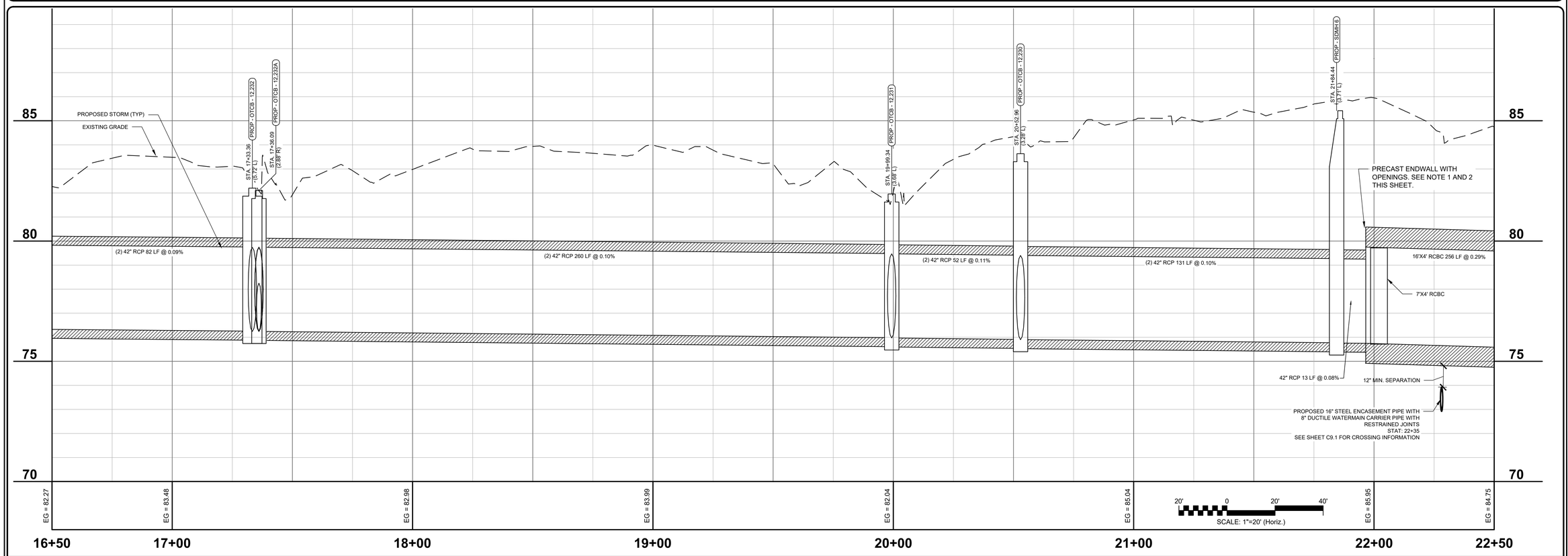


NOTES:

1. PRECAST END WALL WITH OPENINGS FOR INSTALLING 42" RCP'S.
2. ALL CONNECTIONS TO HAVE WATERTIGHT SEALS USING NONSHRINK HYDRAULIC GROUT.

1 CROSS COUNTRY DRAINAGE IMPROVEMENTS PLAN

SCALE: 1" = 20'



2 CROSS COUNTRY DRAINAGE IMPROVEMENTS PROFILE

HORIZ. SCALE: 1" = 20' VERT. SCALE: 1" = 2'

CROSS COUNTRY PLAN & PROFILE STA. 16+00 - 22+50

SHEET NUMBER C9.4

PLAN TYPE

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28806
TEL: (828) 252-8100
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/5/24
DATE

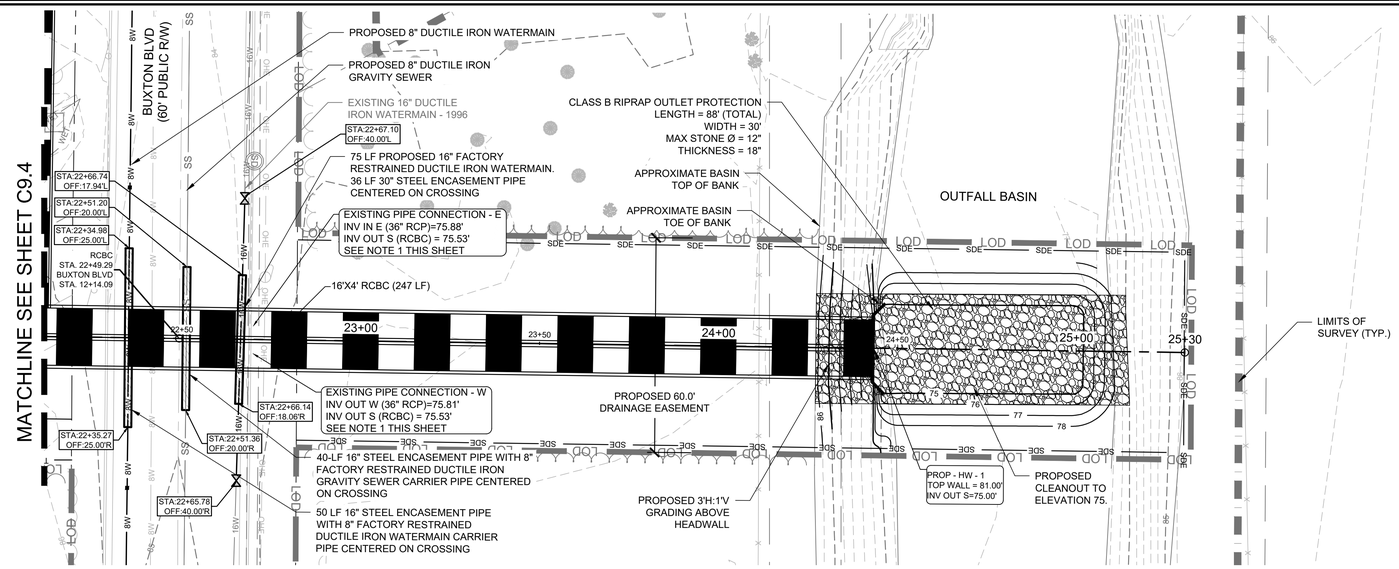
REVISIONS

REV. #	DESCRIPTION	REV. BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

PROJECT NAME: SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.



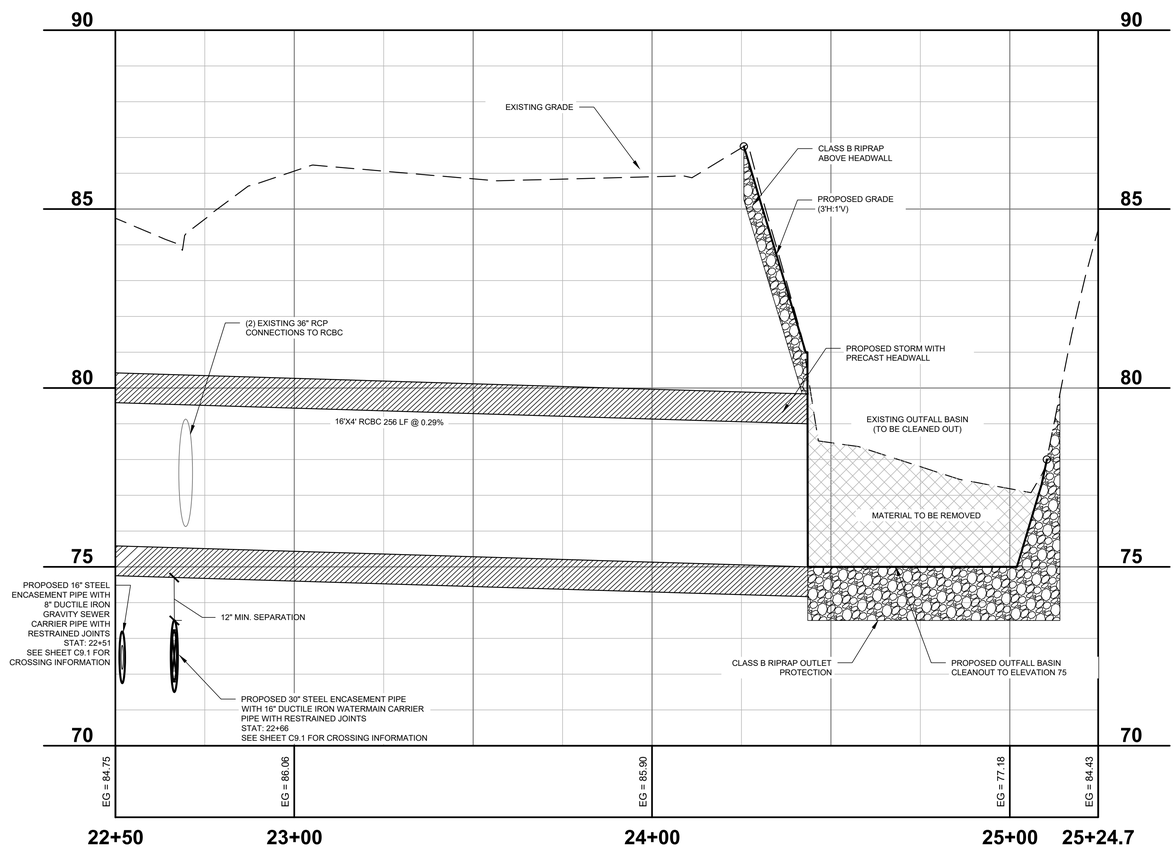
NOTES:

1. ALL CONNECTIONS TO HAVE WATERTIGHT SEALS USING NONSHRINK HYDRAULIC GROUT.
2. SEE SHEET C9.1 FOR BUXTON BLVD STATIONING AND PROFILE.

20' 0 20' 40'
SCALE: 1"=20' (Horiz.)

1 BUXTON BLVD DRAINAGE IMPROVEMENTS PLAN

SCALE: 1" = 20'



20' 0 20' 40'
SCALE: 1"=20' (Horiz.)

2 BUXTON BLVD DRAINAGE IMPROVEMENTS PROFILE

HORIZ. SCALE: 1" = 20' VERT. SCALE: 1" = 2'

CROSS COUNTRY PLAN & PROFILE STA. 22+50 - END

SHEET NUMBER C9.5

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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433 HAY STREET, FAYETTEVILLE, NC 28301

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/6/24
DATE

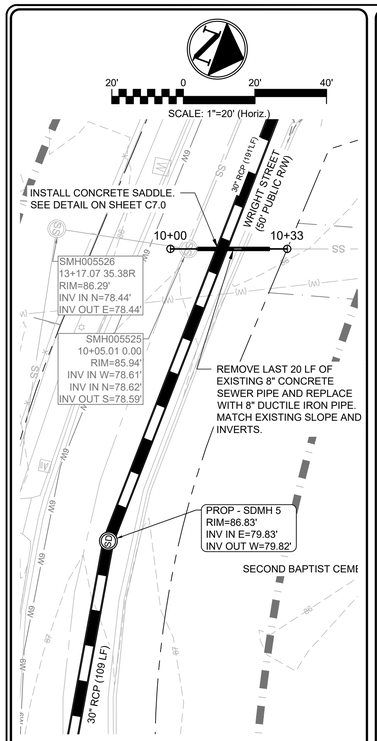
REVISIONS

REV. #	DESCRIPTION	REV. BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

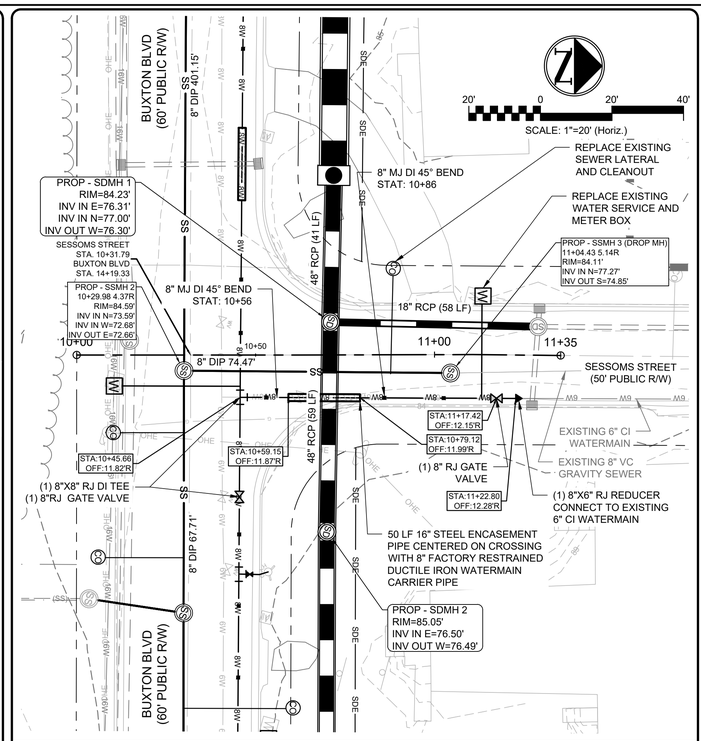
PROJECT NAME: SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

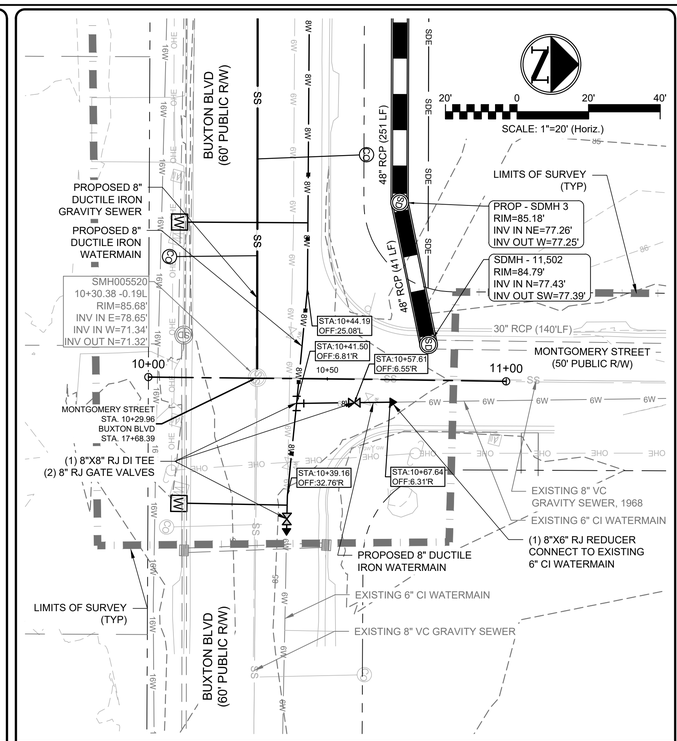
PROJECT NO. 6480-22-0142
SUB-LEDGER NO.



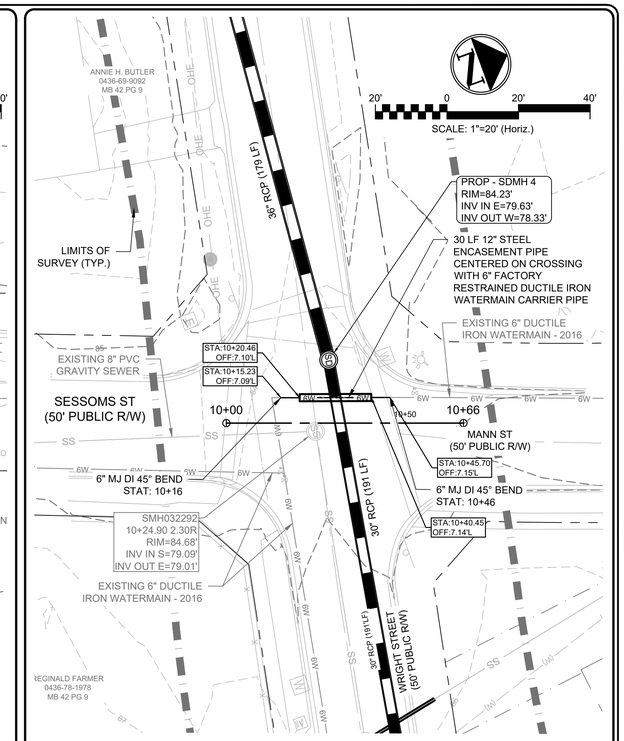
4 WRIGHT - PLAN SCALE: 1" = 20'



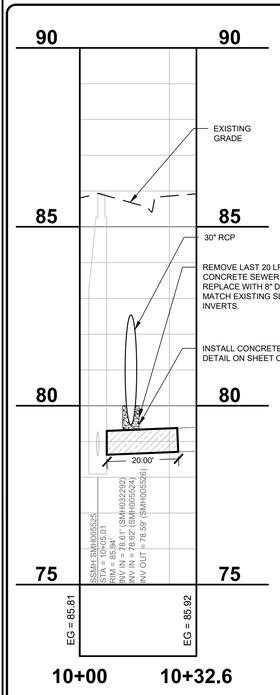
3 SESSOMS ST SOUTH - PLAN SCALE: 1" = 20'



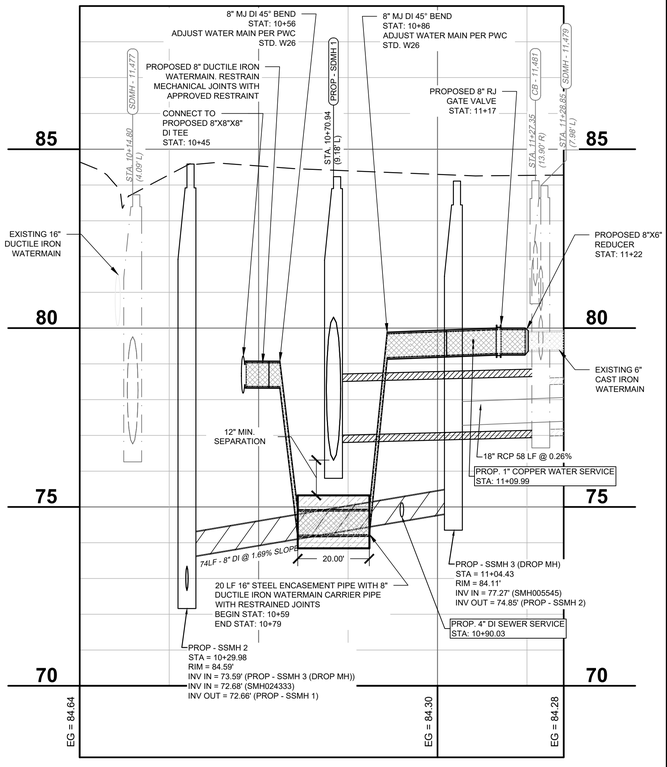
2 MONTGOMERY ST SOUTH - PLAN SCALE: 1" = 20'



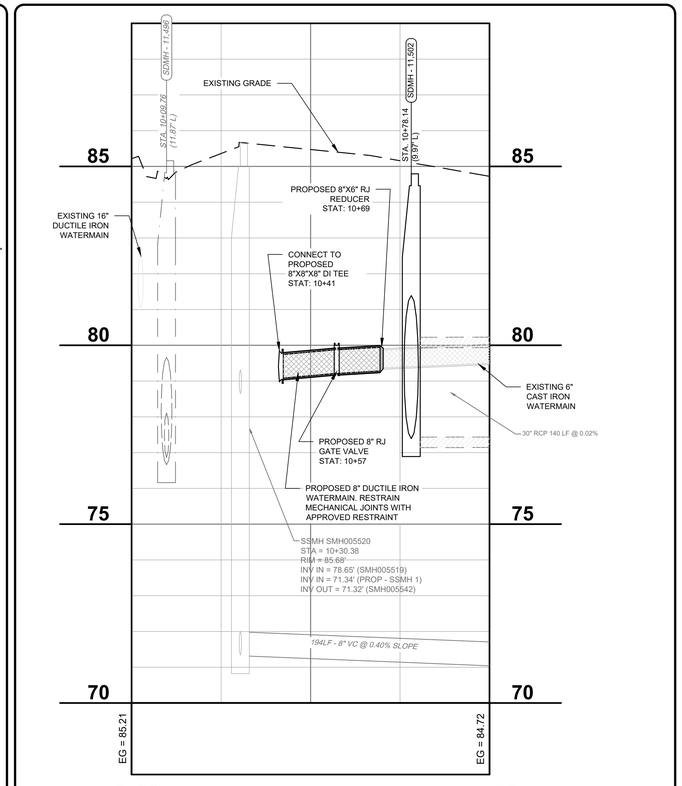
1 WRIGHT STREET / SESSOMS ST - PLAN SCALE: 1" = 20'



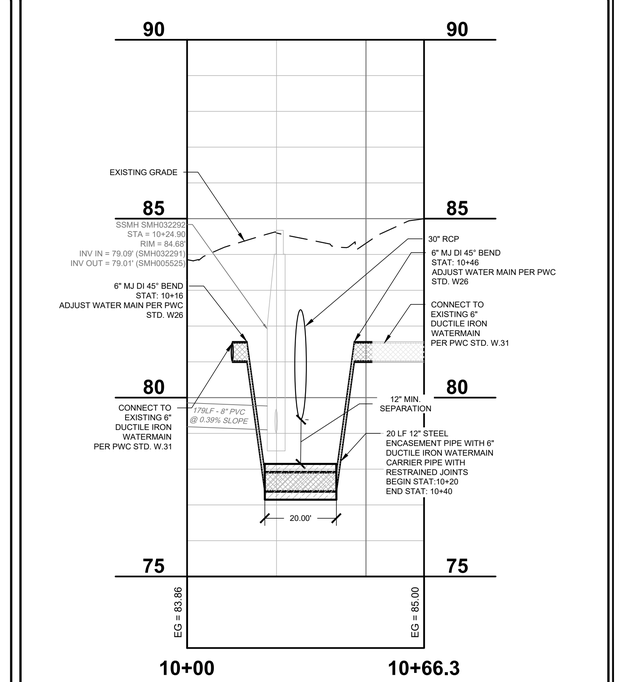
4 WRIGHT - PROFILE SCALE: 1" = 20'



3 SESSOMS ST SOUTH - PROFILE HORIZ. SCALE: 1" = 20' VERT. SCALE: 1" = 2'



2 MONTGOMERY SOUTH - PROFILE HORIZ. SCALE: 1" = 20' VERT. SCALE: 1" = 2'



NOTES:
1. REFER TO SHEET C9.0 FOR WRIGHT STREET STATIONING AND PROFILE.
2. REFER TO SHEETS C9.1 AND C9.2 FOR BUXTON BLVD STATIONING AND PROFILE.

SCALE: 1"=20' (Horiz.)

1 PROFILE HORIZ. SCALE: 1" = 20' VERT. SCALE: 1" = 2'

SESSOMS ST., MONTGOMERY ST., WRIGHT ST. PLAN & PROFILES

SHEET NUMBER C9.6

PLAN TYPE

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28806
TEL: (828) 252-8100
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 27261 ANTHONY L. HAUSER
12/5/24

DATE

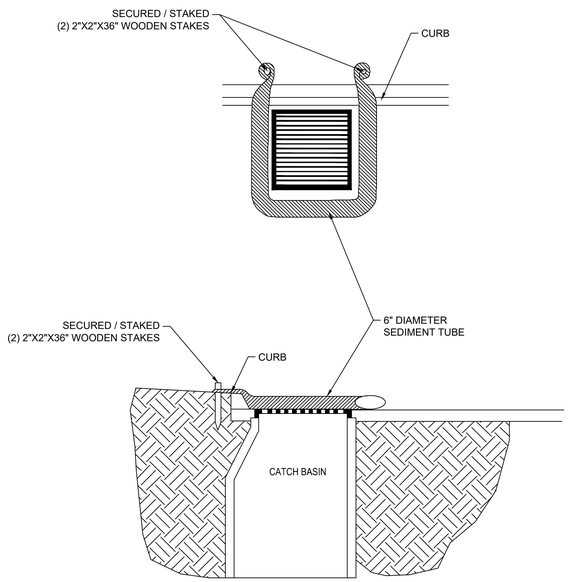
REVISIONS

REV. #	DESCRIPTION	REV.BY DATE
REV. 1	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

PROJECT: SESSOMS STREET DRAINAGE IMPROVEMENTS
NAME:
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.



INSPECTION AND MAINTENANCE NOTES

1. ALL EROSION AND SEDIMENTATION CONTROL DEVICES AND PLANTED AREAS SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND AFTER EACH RAINFALL OCCURRENCE THAT EXCEEDS ONE (1) INCH WITHIN A 24-HOUR PERIOD. DAMAGED OR INEFFECTIVE DEVICES SHALL BE REPAIRED OR REPLACED, AS NECESSARY, AS SOON AS PRACTICAL.
2. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES 1/3 THE HEIGHT OF THE DEVICE.
3. INLET TUBES MAY BE TEMPORARILY MOVED DURING CONSTRUCTION AS NEEDED.
4. REPLACE INLET TUBES DAMAGED DURING INSTALLATION AS DIRECTED BY THE INSPECTOR.

6 TEMPORARY INLET PROTECTION - SEDIMENT TUBE

	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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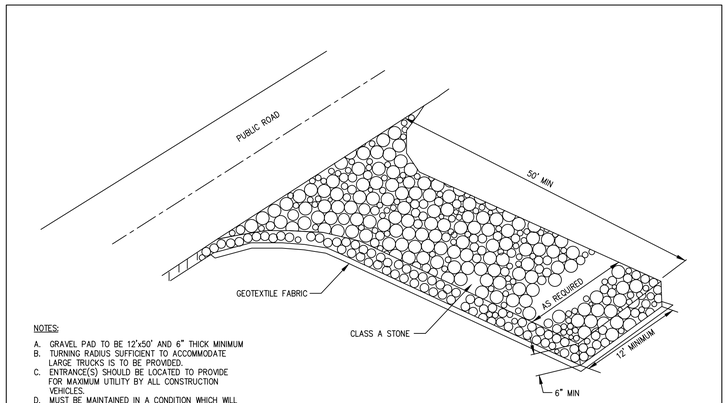
PERMANENT SEEDING SCHEDULE

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

EC-7

4 PERMANENT SEEDING SCHEDULE



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 STABLIZED. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTTENANCE MUST BE PROVIDED.

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GRAVEL CONSTRUCTION ENTRANCE/EXIT

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

EC-2

2 GRAVEL CONSTRUCTION ENTRANCE / EXIT

EROSION CONTROL DETAILS

SHEET NUMBER: C10.0

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
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LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/5/24
DATE:

REVISIONS		
REV. #	DESCRIPTION	REV BY DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

PROJECT NAME:	SESSIONS STREET DRAINAGE IMPROVEMENTS
SCALE:	AS SHOWN
DATE:	22 NOVEMBER 2024
DRAWN:	RAS
DESIGN:	RAS
CHECK:	DCO
APPROVED:	ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

Eearly summer season / fall/winter season

	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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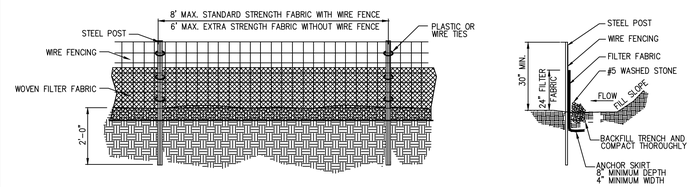
TEMPORARY SEEDING SCHEDULE (SEASONAL)

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

EC-8

5 TEMPORARY SEEDING SCHEDULE



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 SWIM 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

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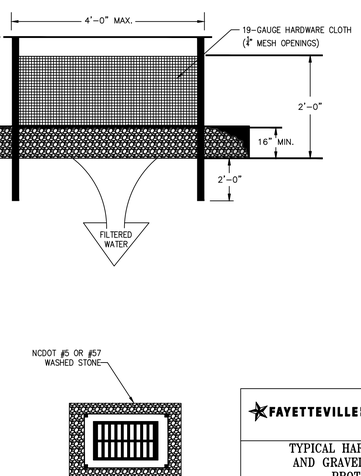
Review Date: 26 JAN 21

EC-5

3 TEMPORARY SILT FENCE



GENERAL NOTES:

1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5–FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2–FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NC DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
6. COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUNDCOVER.

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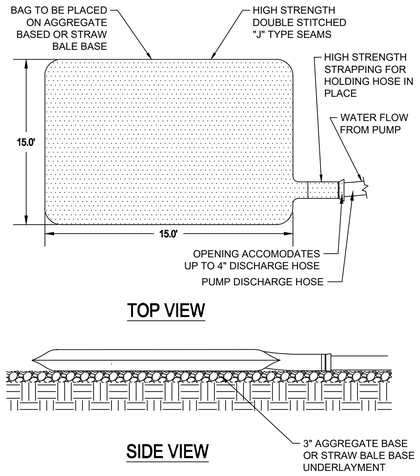
TYPICAL HARDWARE CLOTH AND GRAVEL DROP INLET PROTECTION

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

EC-1.3

1 TEMPORARY INLET PROTECTION



DEWATERING/FILTER BAG MATERIALS SPECIFICATIONS:

THE DEWATERING/FILTER BAG SHALL BE MADE OF NON-WOVEN GEOTEXTILE WITH A MINIMUM SURFACE AREA OF 225 SQUARE FEET PER SIDE. ALL STRUCTURAL SEAMS SHALL BE SEWN WITH A DOUBLE STITCH USING A DOUBLE NEEDLE MACHINE WITH HIGH STRENGTH THREAD. THE SEAM STRENGTH SHALL WITHSTAND 100LB/IN USING ASTM D-4884 TEST METHOD. THE DEWATERING/FILTER BAG SHALL HAVE A NOZZLE LARGE ENOUGH TO ACCOMMODATE A FOUR INCH DISCHARGE HOSE. THE NOZZLE SHALL BE SEALED TIGHTLY AROUND THE DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE TO PREVENT UNTREATED WATER FROM ESCAPING. THE GEOTEXTILE FABRIC SHALL BE A NON-WOVEN FABRIC WITH THE FOLLOWING PROPERTIES:

WEIGHT	ASTM D-3776	10 OZ/YD
GRAB TENSILE	ASTM D-4632	270 LBS
PUNCTURE	ASTM D-4833	150 LBS
FLOW RATE	ASTM D-4491	70 GAL/MIN/SQ FT
PERMITIVITY	ASTM D-4991	1/1.3 SEC
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	100

4 FILTER BAG DETAIL

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
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case 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.

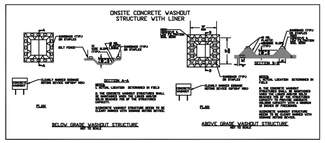
PORTABLE TOILETS

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.

NORTH CAROLINA *Environmental Quality*



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.

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

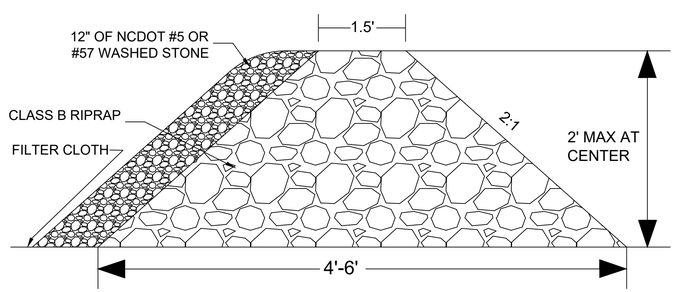
1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

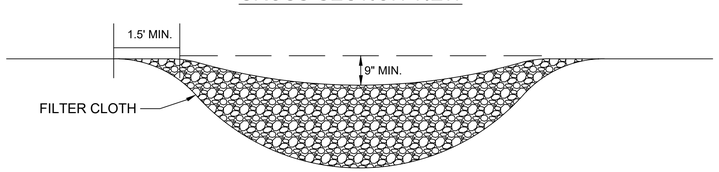
NCG01 GROUND STABILIZATION AND MATERIALS HANDLING — EFFECTIVE: 04/01/19

2 NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

NOTES:
1. Place stone on a filter fabric foundation.
2. The center stone section must be at least 9 inches below natural ground level where the dam abuts the channel banks.
3. Extend stone at least 1.5 feet beyond the ditch bank to keep water from cutting around the ends of the check dam.
4. Set spacing between dams to assure that the elevation at the top of the lower dam is the same as the toe elevation of the upper dam.
5. Protect the channel after the lowest check dam from heavy flow that could cause erosion.
6. Make sure the channel reach above the most upstream dam is stable.
7. Ensure that other areas of the channel, such as culvert entrances below the check dams, are not subject to damage or blockage from displaced stones.
8. Riprap and filter fabric should be keyed in to prevent under cutting.
9. Ends of check dams may need to be turned uphill to prevent bypass and better conform to site conditions.
10. Do not place check dams in intermittent or perennial streams.

MAINTENANCE:
1. Inspect check dams and channels at least weekly and after each rainfall of 1.0 inch or greater. Clean out sediment, straw, limbs or other debris that could clog the channel when needed.
2. Anticipate submergence and deposition above the check dam and erosion from high flows around the edges of the dam. Correct all damage immediately. If significant erosion occurs between dams, additional measures can be taken such as, installing a protective riprap liner in that portion of the channel.
3. Remove sediment accumulated behind the dams as needed to prevent damage to channel vegetation, allow the channel to drain through the stone check dam, and prevent large flows from carrying sediment over the dam. Add stones to the dams as needed to maintain design height and cross section.





3 ROCK CHECK DAM

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, compaction 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.

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.

NORTH CAROLINA *Environmental Quality*

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

1 NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EROSION CONTROL DETAILS

SHEET NUMBER: C10.1

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8100
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
DATE: 12/6/24
DATE:

REVISIONS

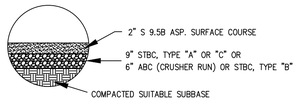
REV. #	REV. BY DESCRIPTION	DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

PROJECT: SESSIONS STREET DRAINAGE IMPROVEMENTS
NAME: RAS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

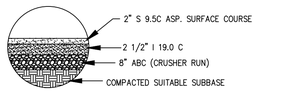
DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

TYPICAL RESIDENTIAL CROSS SECTION



TYPICAL LIGHT & HEAVY COMMERCIAL CROSS SECTION



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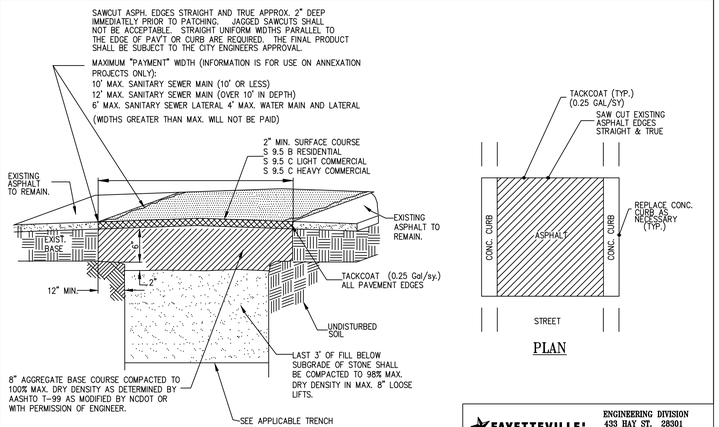
TYPICAL CROSS SECTIONS FOR ALL CITY PAVEMENT

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

SD-16.2

6 TYPICAL CROSS SECTION FOR ALL CITY PAVEMENT



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: 26 JAN 21
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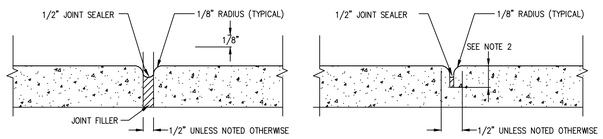
Review Date: 26 JAN 21

SD-11.1

4 TYPICAL TEMPORARY SAWCUT AND PAVEMENT PATCH (2 OF 3)



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

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

SD-3

2 CONTRACTION AND EXPANSION JOINTS

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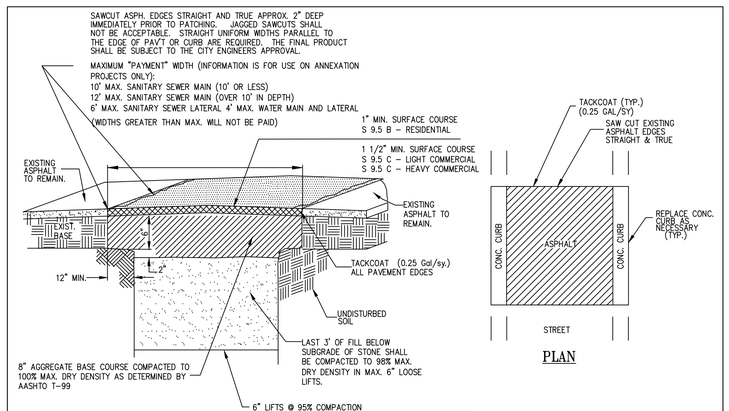
NOTES FOR TYPICAL PERMANENT AND TEMPORARY SAWCUT AND PAVEMENT PATCH
PAGE 3 OF 3

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

SD-11.2

5 TYPICAL TEMPORARY SAWCUT AND PAVEMENT PATCH (3 OF 3)



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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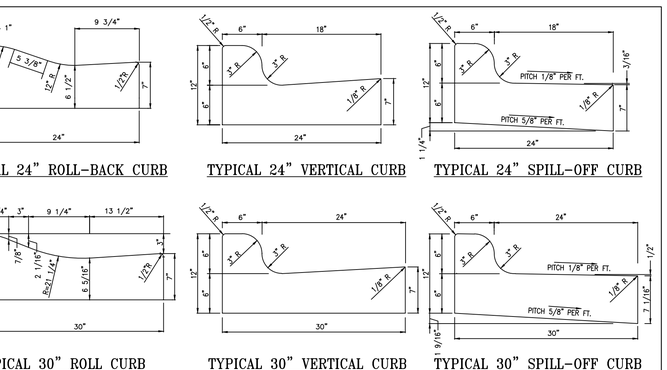
TYPICAL TEMPORARY SAWCUT AND PAVEMENT PATCH
PAGE 1 OF 3

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

SD-11

3 TYPICAL TEMPORARY SAWCUT AND PAVEMENT PATCH (1 OF 3)



NOTES

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

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24" AND 30" CURB DETAILS

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

SD-1

1 24" AND 30" CURB DETAILS

SITE DETAILS

SHEET NUMBER: C11.0

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 27261 ANTHONY L. HAUSER
12-10-24
DATE:

REVISIONS		
REV. #	DESCRIPTION	REV BY DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

PROJECT NAME: SESSIONS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

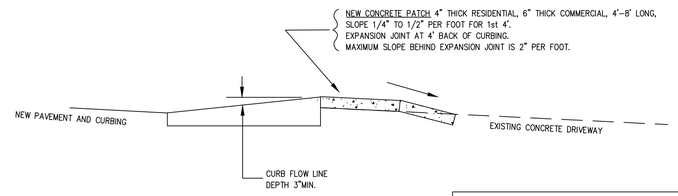
DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

(CONCRETE PATCH FOR DRIVEWAY DOWNHILL FROM NEW ASPHALT CURBING)

1st CHECK AND MAKE SURE CURB HEIGHT IS 3" MINIMUM

DETERMINE SAWCUT LOCATION: 1st CHECK SLOPE FROM BACK OF CURBING TO TO 4' BACK OF CURBING,
IF DIFFERENCE IS 1" TO 2"(1/4" TO 1/2" PER FOOT) CUT AND FORM AT 4' BEHIND BACK OF CURBING.
IF SLOPE IS TOO FLAT OR STEEP, CONSULT INSPECTOR TO DETERMINE SAWCUT.



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433 HAY ST. 28301
(910) 433-1656
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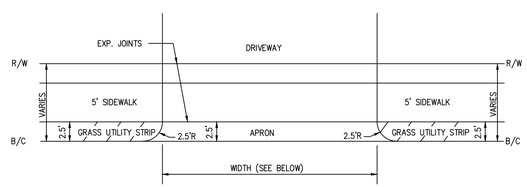
DRIVEWAY CONNECTIONS TO
OVERLAID OR
RAISED CURBING (DOWNHILL DRIVEWAY)
PAGE 2 OF 2

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

SD-6.1

2 DRIVEWAY CONNECTIONS TO OVERLAID OR RAISED CURB (DOWNHILL)

TYPICAL RESIDENTIAL DRIVEWAY APRON



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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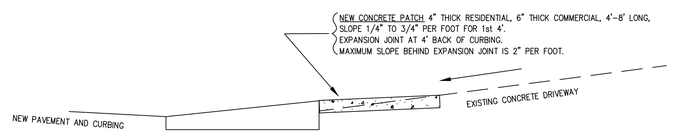
SD-9

3 TYPICAL RESIDENTIAL DRIVEWAY ARPON

(CONCRETE PATCH FOR DRIVEWAY UPHILL FROM NEW ASPHALT CURBING)

DETERMINE SAWCUT LOCATION: CHECK SLOPE FROM BACK OF CURBING TO 4' BACK OF CURBING,
IF DIFFERENCE IS 1" TO 3"(1/4" TO 3/4" PER FOOT) CUT AND FORM AT 4' BEHIND BACK OF CURBING.
IF SLOPE IS TOO FLAT OR STEEP, CONSULT INSPECTOR TO DETERMINE SAWCUT.



NOTE:

UPHILL DRIVEWAYS: ASPHALT CURB HEIGHT CAN BE LOWERED TO REDUCE PATCHING NEED. FOR FURTHER INFORMATION ON DRIVEWAY CONNECTIONS, CONTACT CONSTRUCTION MANAGEMENT AT (910) 433-1661.

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DRIVEWAY CONNECTIONS TO
OVERLAID OR
RAISED CURBING (UPHILL DRIVEWAY)
PAGE 1 OF 2

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

SD-6

1 DRIVEWAY CONNECTIONS TO OVERLAID OR RAISED CURB (UPHILL)

SITE DETAILS

SHEET NUMBER: C11.1

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1338 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27261 ANTHONY L. HAUSER
12/5/24
DATE:
VOID:

REVISIONS

REV. #	DESCRIPTION	REV. BY DATE
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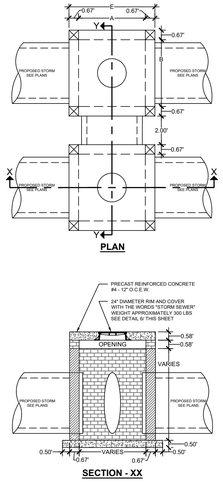
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

PROJECT NAME: SESSIONS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.



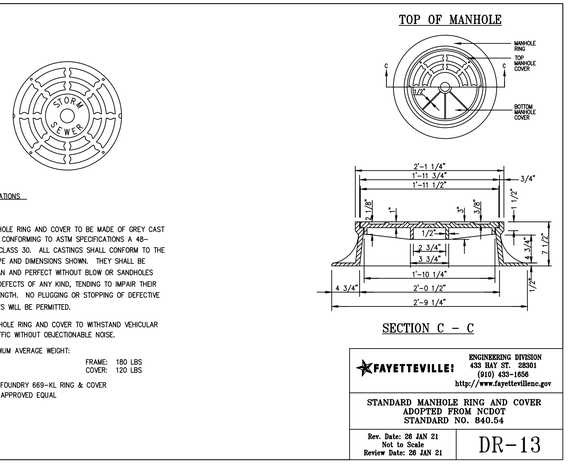
GENERAL NOTES:

1. CONCRETE BASES TO BE CLASS "A" (3,000 PSI) PLACED 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" TO 6' - 0" FROM TOP OF WALL, AND 8" WALL FOR THE REMAINING 6' - 0".
8. ALL JUNCTION BOXES OVER 3' - 6" IN DEPTH SHALL BE PROVIDED WITH STEPS 12" TO 16" ON CENTER.
9. INVERTS SHALL BE SHAPED TO FORM A SMOOTH, REGULAR SURFACE, SLOPED TO PREVENT SEDIMENTATION.
10. ALL CONNECTIONS TO HAVE WATERTIGHT SEALS.

DIMENSIONS AND QUANTITIES FOR BRICK JUNCTION BOXES

DIM'S OF BOX AND PIPE				REINFORCEMENT BARS		COVER DIMENSIONS		CUBIC YARDS			DEDUCTIONS FOR ONE PIPE CU. YDS.	
PIPE	SPAN	WIDTH	HEIGHT					CONC.	BRICK MASONRY			
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
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

9 OPEN THROAT JUNCTION BOX



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

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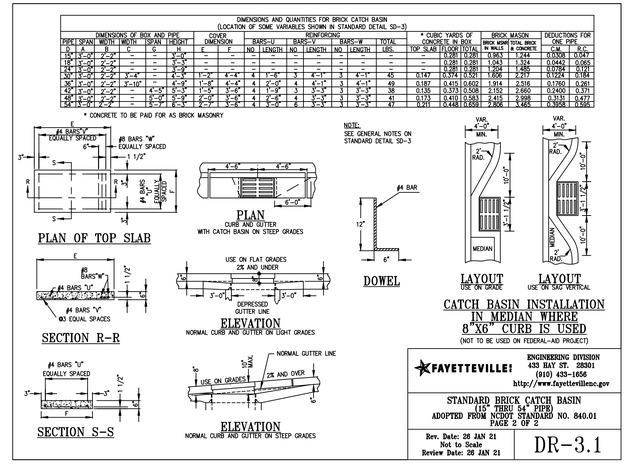
STANDARD MANHOLE RING AND COVER ADOPTED FROM NCDOT STANDARD NO. 840.54

Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 — DR-13

6 STANDARD MANHOLE RING AND COVER



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

DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		REINFORCING BARS-U			REINFORCING BARS-V			REINFORCING BARS-W TOTAL		* CUBIC YARDS OF CONCRETE IN BOX		BRICK MASON. IN WALLS	BRICK MASONRY TOTAL BRICK & CONCRETE	DEDUCTIONS FOR ONE PIPE	
D	A	B	C	G	H	E	F	NO.	LENGTH	NO.	NO.	LENGTH	NO.	LENGTH	LBS.	TOP SLAB	FLOOR	IN WALLS	& CONCRETE	C.S.	R.C.
15"	3'-0"	2'-2"	–	–	3'-0"	–	–	–	–	–	–	–	–	–	–	–	0.281	0.281	0.963	1.244	0.0308	0.0471
18"	4'-0"	2'-9"	–	–	3'-3"	–	–	–	–	–	–	–	–	–	–	–	0.281	0.281	1.043	1.324	0.0442	0.065
24"	5'-0"	3'-3"	–	–	3'-9"	–	–	–	–	–	–	–	–	–	–	–	0.281	0.281	1.204	1.485	0.0784	0.121
30"	5'-0"	3'-3"	3'-4"	–	4'-3"	1'-2"	4'-4"	4	1'-8"	3	4	1'-1"	3	4'-1"	45	0.147	0.374	0.521	1.696	2.217	0.1224	0.184
36"	5'-0"	3'-3"	3'-10"	–	4'-9"	1'-8"	4'-4"	4	2'-0"	4	4	1'-1"	3	4'-1"	49	0.187	0.415	0.602	1.914	2.516	0.1760	0.261
42"	5'-0"	3'-3"	–	3'-0"	5'-3"	2'-0"	4'-4"	4	2'-8"	4	4	1'-1"	3	5'-3"	38	0.135	0.373	0.508	2.152	2.660	0.2400	0.371
48"	5'-0"	3'-3"	–	3'-0"	5'-9"	2'-0"	5'-0"	4	2'-8"	4	4	1'-3"	3	5'-3"	41	0.173	0.410	0.583	2.415	2.998	0.3131	0.477
54"	5'-0"	3'-3"	–	3'-0"	6'-3"	2'-2"	5'-8"	4	3'-0"	4	5	1'-6"	3	6'-3"	47	0.201	0.448	0.649	2.806	3.455	0.3958	0.595

* CONCRETE TO BE PAID FOR AS BRICK MASONRY

NOTE: SEE GENERAL NOTES ON STANDARD DETAIL SD-3

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

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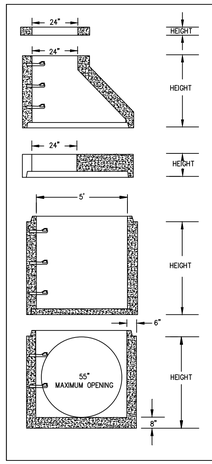
STANDARD BRICK CATCH BASIN (15" THRU 54" PIPE) ADOPTED FROM NCDOT STANDARD NO. 840.01 PAGE 2 OF 2

Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 — DR-3.1

3 STANDARD BRICK CATCH BASIN (15" THRU 54" PIPE) PAGE 2 OF 2



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	RISER	
GRADING RING			1.00' 12"	1290
			1.33' 16"	1716
			2.67' 32"	3444
.33'	4"	150	4.00' 48"	5160
.50'	6"	235		
			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
ECCENTRIC CONE				
4.00'	48"	4360		
FLAT TOP				
1.00'	12"	2825		

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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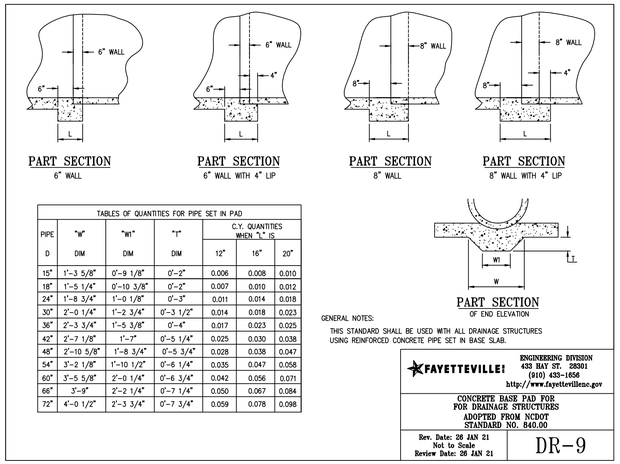
5-FOOT DIAMETER PRECAST REINFORCED CONCRETE MANHOLE SECTIONS

Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 — DR-14.1

8 5-FOOT DIAMETER PRECAST REINFORCED CONCRETE MANHOLE



TABLES OF QUANTITIES FOR PIPE SET IN PAD

PIPE D	"W" DIM	"W1" DIM	"T" DIM	C.Y. QUANTITIES WHEN "L" IS 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

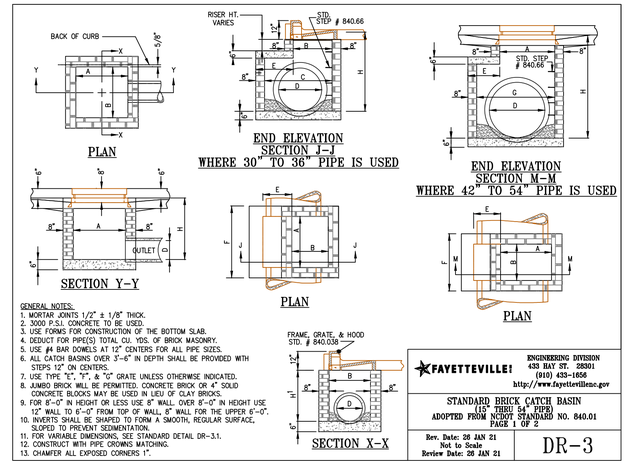
GENERAL NOTES:
THIS STANDARD SHALL BE USED WITH ALL DRAINAGE STRUCTURES USING REINFORCED CONCRETE PIPE SET IN BASE SLAB.

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

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

Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 — DR-9

5 CONCRETE BASE PAD FOR DRAINAGE STRUCTURES



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".

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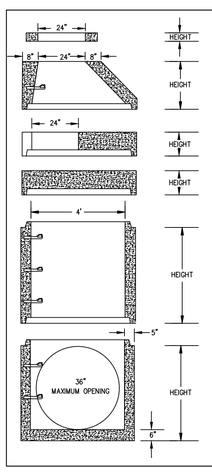
STANDARD BRICK CATCH BASIN (15" THRU 54" PIPE) ADOPTED FROM NCDOT STANDARD NO. 840.01 PAGE 1 OF 2

Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 — DR-3

2 STANDARD BRICK CATCH BASIN (15" THRU 54" PIPE) PAGE 1 OF 2



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			SOLID FLAT TOP	
.33'	4"	150	CUSTOM VENT OR METER OPENINGS PLACED PER CUSTOMER REQUEST. FLAT TOPS MEET H-20 LOADING.	
.50'	6"	235	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
ECCENTRIC CONE				
2.00'	24"	1695		
3.00'	36"	2550		
4.00'	48"	3400		
FLAT TOP			REGULAR MONOLITHIC BASE WITH 6" BASE INCLUDED IN HEIGHT SHOWN.	
1.00'	12"	1700	2.67'	32" 3250
			4.00'	48" 4400
			5.33'	60" 5265

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

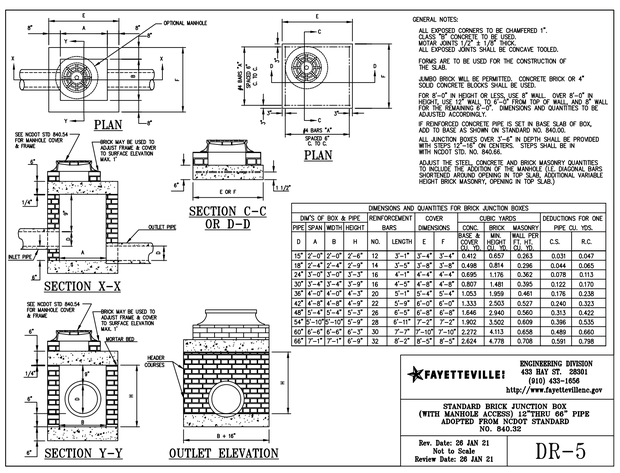
NOTES:
1. PRECAST MANHOLES MAY BE USED WITH PRIOR APPROVAL FROM THE CITY ENGINEER.
2. PRECAST MANHOLES ARE NOT PERMITTED INSIDE RIGHT-OF-WAY OR EASEMENTS.

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

4-FOOT DIAMETER PRECAST REINFORCED CONCRETE MANHOLE SECTIONS

Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 — DR-14

7 4-FOOT DIAMETER PRECAST REINFORCED CONCRETE MANHOLE



GENERAL NOTES:
ALL EXPOSED CORNERS TO BE CHAMFERED 1".
CLASS "B" CONCRETE TO BE USED.
MORTAR JOINTS 1/2" ± 1/8" THICK.
ALL EXPOSED JOINTS SHALL BE CONCAVE TOOLED.
FORMS ARE TO BE USED FOR THE CONSTRUCTION OF THE SLAB.
JUMBO BRICK WILL BE PERMITTED. CONCRETE BRICK OR 4" SOLID CONCRETE BLOCKS SHALL BE USED.
FOR 8'-0" IN HEIGHT OR LESS, USE 8" WALL. OVER 8'-0" IN HEIGHT, USE 12" WALL TO 6'-0" FROM TOP OF WALL, AND 8" WALL FOR THE REMAINING 6'-0". DIMENSIONS AND QUANTITIES TO BE ADJUSTED ACCORDINGLY.
IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.
ALL JUNCTION BOXES OVER 3'-6" IN DEPTH SHALL BE PROVIDED WITH STEPS 12"-16" ON CENTERS. STEPS SHALL BE IN WITH NCDOT STD. NO. 840.66.
ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.)

DIMENSIONS AND QUANTITIES FOR BRICK JUNCTION BOXES

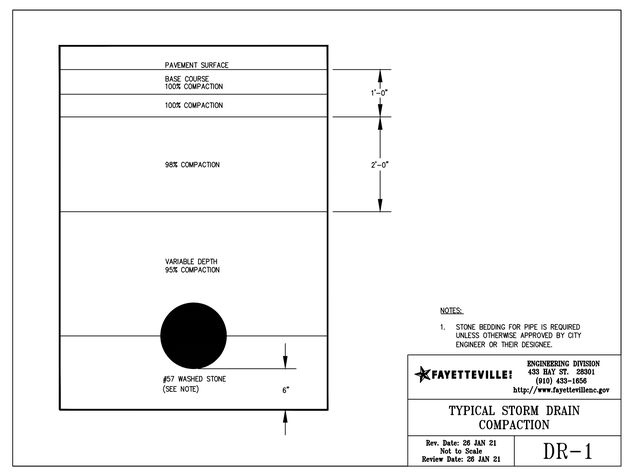
DIM'S OF BOX & PIPE				REINFORCEMENT BARS		COVER DIMENSIONS		CUBIC YARDS			DEDUCTIONS FOR ONE PIPE CU. YDS.	
PIPE	SPAN	WIDTH	HEIGHT					CONC.	BRICK MASONRY			
D	A	B	H	NO.	LENGTH	E	F	BASE & COVER CU. YD.	MIN. HEIGHT CU. YD.	WALL PER FT. HT. CU. YD.	C.S.	R.C.
15"	2'-0"	2'-0"	2'-6"	12	3'-1"	3'-4"	3'-4"	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	0.353	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'-4"	6'-4"	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

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

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

Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 — DR-5

4 STANDARD BRICK CATCH BASIN WITH MANHOLE (12" THRU 68" PIPE)



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

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

TYPICAL STORM DRAIN COMPACTION

Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 — DR-1

1 TYPICAL STORM DRAIN COMPACTION

DRAINAGE DETAILS

SHEET NUMBER: C12.0

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28806
TEL: (828) 252-8100
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27261 ANTHONY L. HAUSER — DATE: 12/15/24

REV. #	DESCRIPTION	REV. BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-08-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

REVISIONS

PROJECT NAME: SESSIONS STREET SIDEWALK IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6490-22-0142
SUB-LEDGER NO.

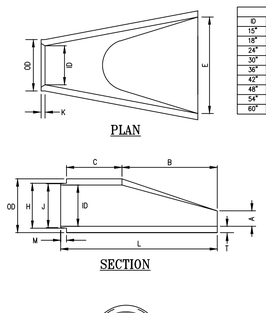


TABLE OF DIMENSIONS												
ID	T	OD	A	B	C	E	H	J	K	M	L	WT.
15"	2-1/4"	19-1/2"	7"	22-1/4"	47-1/2"	30"	17"	16-1/2"	2"	2"	74-3/4"	1038
18"	2-1/2"	23"	9"	27"	47-3/4"	36"	20-1/4"	19-1/2"	2"	2"	74-3/4"	1426
24"	3"	30"	9"	43"	37"	47-3/4"	26-3/4"	26-1/4"	2-13/16"	2-3/4"	80"	2137
30"	3-1/2"	37"	12"	54-1/2"	22-1/2"	60"	33-1/2"	32-1/2"	3"	2-15/16"	77"	2990
36"	4"	44"	16"	60"	37-1/2"	71"	39-3/4"	39"	3-3/4"	3-3/4"	97-1/2"	3960
42"	4-1/2"	51"	22-1/4"	61-3/8"	37"	77-1/4"	46-1/8"	45-1/8"	4-1/4"	4-1/4"	98-3/8"	5160
48"	5"	58"	25-1/4"	70-1/4"	29"	83-1/2"	52-1/2"	51-3/4"	4-1/4"	4-1/4"	99-1/4"	6480
54"	5-1/2"	65-1/4"	26"	65"	39-1/2"	89-3/4"	58-1/4"	57-1/2"	4-1/4"	4-1/4"	104-1/2"	9370
60"	6"	72-1/4"	28-1/2"	57-1/2"	46"	96"	64-3/4"	64"	4-3/4"	4-3/4"	103-1/2"	11650

GENERAL NOTES:

1. REFER TO NCDOT STANDARD SPECIFICATIONS AND DRAWINGS FOR MATERIALS AND INSTALLATION.
2. CONCRETE SHALL BE MINIMUM 3500 P.S.I.

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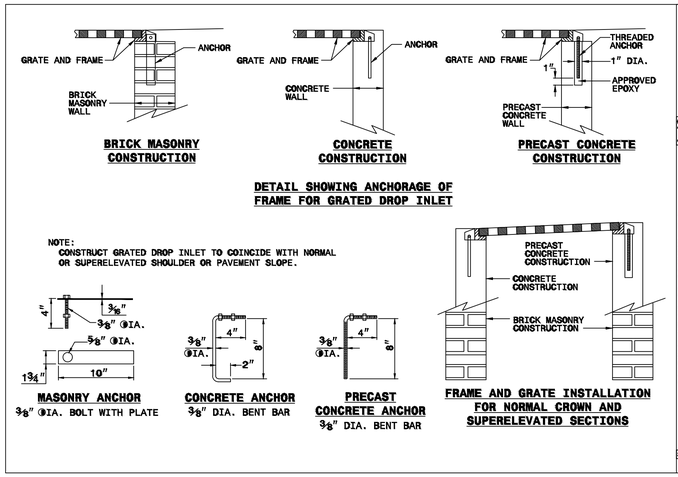
REINFORCED PRECAST CONCRETE FLARED END SECTIONS

Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 DR-23

9 PRECAST CONCRETE FLARED END SECTION

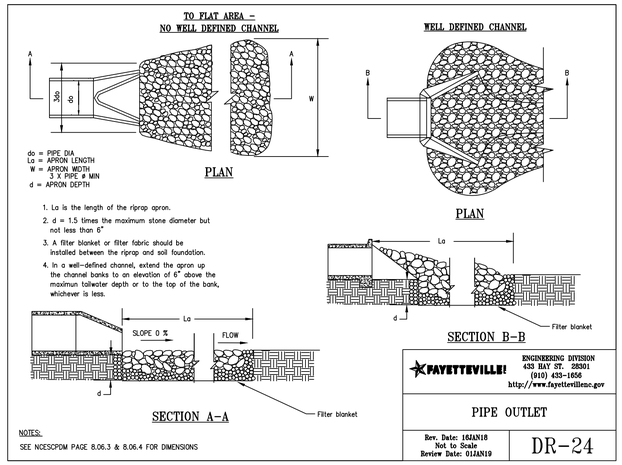


1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR ANCHORAGE FOR FRAMES BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1 840.25

6 ANCHORAGE FOR FRAMES



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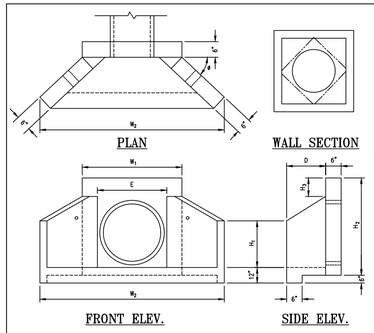
PIPE OUTLET

Rev. Date: 16JAN18 Not to Scale Review Date: 01JAN19 DR-24

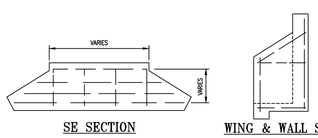
3 RIPRAP OUTLET PAD



HEADWALL DIMENSIONS FOR CONCRETE PIPE											
PIPE SIZE ID.	HOLE SIZE	REINF.	W1	W2	H1	H2	H3	D	E	#	WT.
12",15"	18",21"	#4	5'-2"	5'-5"	1'-3"	3'-1"	13"	1'-3"	1'-8"	40'	1600
18"	27"	#4	5'-8"	6'-1"	1'-6"	3'-7"	13"	1'-6"	2'-3"	40'	2100
21",24"	33"	#5	6'-3"	7'-2"	2'-0"	4'-3"	13"	1'-10"	2'-9"	40'	2850
27",30"	39"	#5	6'-8"	8'-4"	2'-4"	4'-9"	13"	2'-2"	3'-3"	40'	3700
36"	48"	#6	5'-8"	10'-10"	3'-3"	5'-9"	13"	2'-11"	4'-4"	40'	5600
42",48"	56",63"	#6	6'-7"	12'-6"	3'-8"	6'-8"	13"	3'-4"	5'-3"	40'	7500
54",60"	72",81"	#6	8'-6"	13'-4"	4'-5"	8'-0"	15"	3'-4"	7'-5"	30'	10000
66",72"	90"	#6	8'-9"	13'-4"	4'-5"	9'-0"	27"	3'-4"	7'-5"	30'	10000

GENERAL NOTES:

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

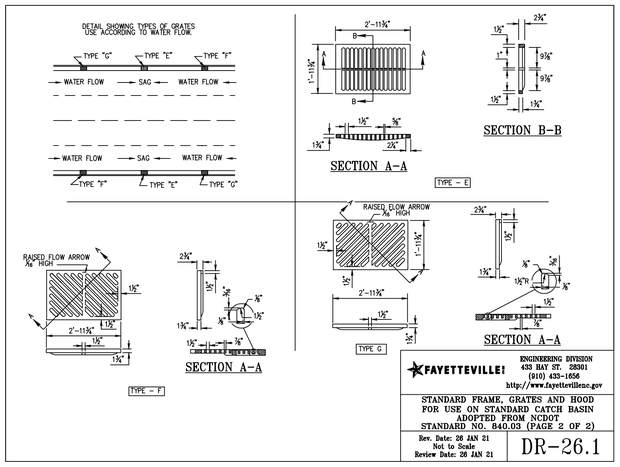


FAYETTEVILLE! ENGINEERING DIVISION 433 HAY ST. 28301 (910) 433-1656 http://www.fayettevillenc.gov

PRECAST CONCRETE HEADWALL SYSTEM 12" THRU 72" PIPE

Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 DR-18

8 PRECAST CONCRETE HEADWALL



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

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

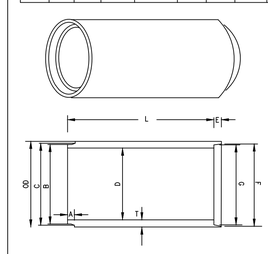
Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 DR-26.1

5 STANDARD FRAME, GRATES AND HOOD (2 OF 2)

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

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

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



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

MODIFIED TONGUE AND GROOVE

8 FOOT LENGTH

MORTAR OF FLEXIBLE PLASTIC TYPE JOINT

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

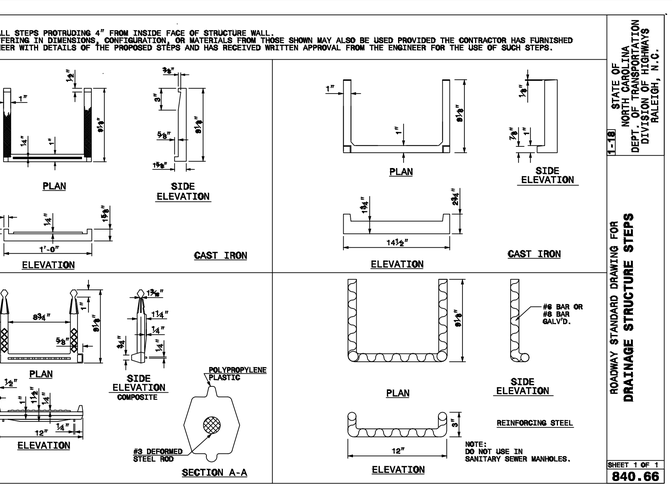
LIFT HOLES STANDARD ON 36" AS ALLOWED PER ASTM SPECIFICATIONS

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

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

Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 DR-19.1

2 REINFORCED CONCRETE STORM DRAIN (42" THRU 72" PIPE)

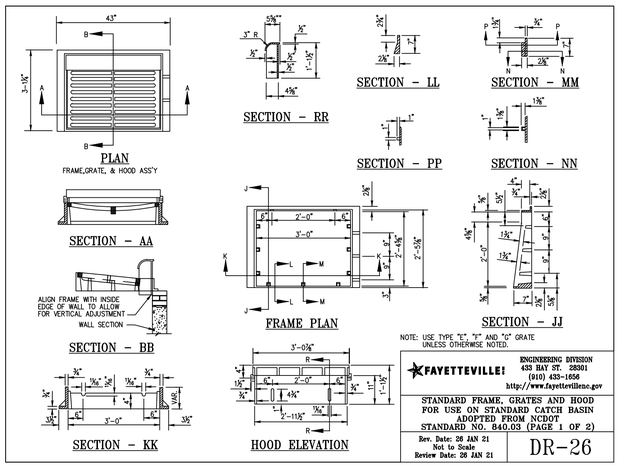


1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR DRAINAGE STRUCTURE STEPS

SHEET 1 OF 1 840.66

7 DRAINAGE STRUCTURE STEPS



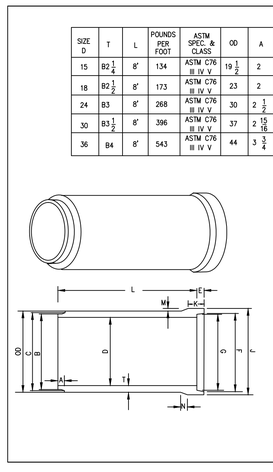
FAYETTEVILLE! ENGINEERING DIVISION 433 HAY ST. 28301 (910) 433-1656 http://www.fayettevillenc.gov

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

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

4 STANDARD FRAME, GRATES AND HOOD (1 OF 2)

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	SR VN–KN
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 1/32	5 1/4	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.

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

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

Rev. Date: 26 JAN 21 Not to Scale Review Date: 26 JAN 21 DR-19

1 REINFORCED CONCRETE STORM DRAIN (15" THRU 36" PIPE)

DRAINAGE DETAILS

SHEET NUMBER C12.1

PLAN TYPE

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28805
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

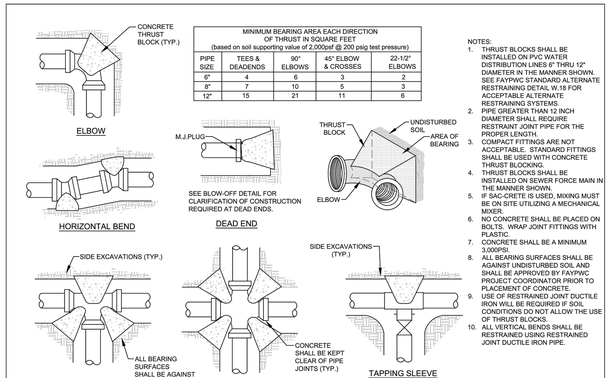
NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/5/24

REVISIONS		
REV. #	DESCRIPTION	REV. BY / DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

PROJECT: SESSIONS STREET SIDEWALK IMPROVEMENTS
NAME: AS SHOWN
SCALE:
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.



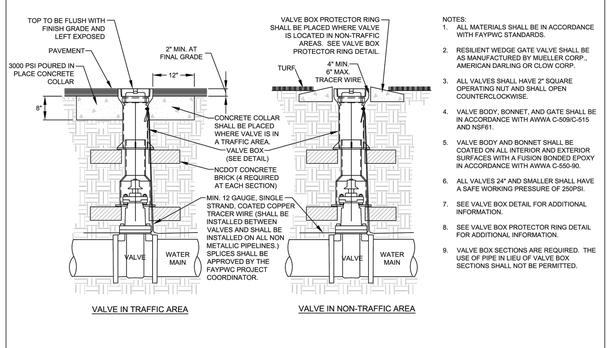
MINIMUM BEARING AREA EACH DIRECTION OF THRUST IN SQUARE FEET (based on soil supporting value of 2,000psf @ 200 psig test pressure)				
PIPE SIZE	TEES & DEADENDS	90° ELBOWS	45° ELBOW & CROSSES	22-1/2° ELBOWS
6"	4	6	3	2
8"	7	10	5	3
12"	15	21	11	6

NOTES:
1. THRUST BLOCKS SHALL BE INSTALLED ON PVC WATER DISTRIBUTION LINES 8" 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. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. W.17	DWG. BY: FAYPWC		1	09/05	REVISED TABLE
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	02/07	ADDED NOTES 9 AND 10
				3	07/13	ADDED TAPPING SLEEVE AND VALVE DETAIL

W17-THRUSTBLOCK.dwg

9 CONCRETE THRUST BLOCK DETAIL



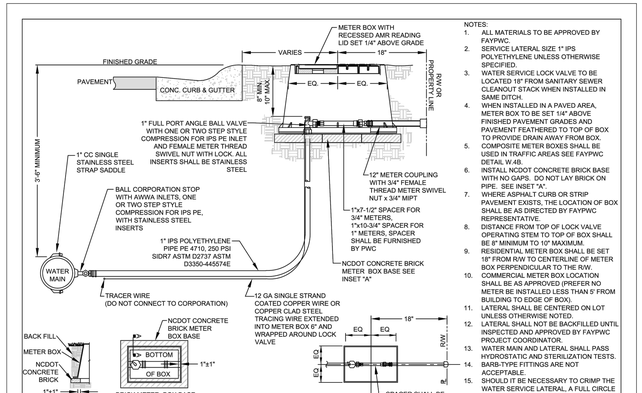
VALVE IN TRAFFIC AREA — VALVE IN NON-TRAFFIC AREA

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. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. W.6	DWG. BY: FAYPWC		1	6/06	ADDED NOTE NO. 9
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	7/09	CLARIFIED NOTES

W6-GATEVALVE.dwg

6 GATE VALVE

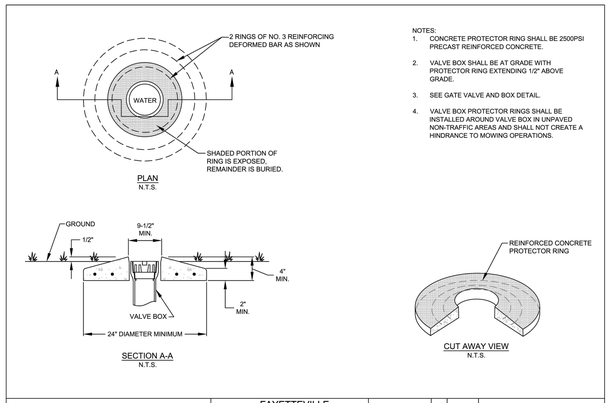


NOTES:
1. ALL MATERIALS TO BE APPROVED BY FAYPWC.
2. SERVICE LATERAL SIZE 1" IPS POLYETHYLENE UNLESS OTHERWISE SPECIFIED.
3. WATER SERVICE LOCK VALVE TO BE LOCATED 18" FROM SANITARY SEWER CLEANOUT STACK WHEN INSTALLED IN SAME DITCH.
4. WHEN INSTALLED IN A PAVED AREA, METER BOX TO BE SET 1/4" ABOVE FINISHED 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 R/W.
10. COMMERCIAL METER BOX LOCATION SHALL BE AS APPROVED (PREFER NO METER BE INSTALLED LESS THAN 5' 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. BARB-TYPE FITTINGS ARE NOT ACCEPTABLE.
15. SHOULD IT BE NECESSARY TO CRIMP THE WATER SERVICE LATERAL, A FULL CIRCLE REPAIR CLAMP SHALL BE PLACED ON THE CRIMPED AREA.

1" WATER SERVICE LATERAL N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. W.2	DWG. BY: FAYPWC		1	07/06	RESIZED METER COUPLING
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	07/13	REVISED NOTE RE: TRACER WIRE
				3	07/17	REVISED NOTES

W2-WLAT.dwg

3 1" WATER SERVICE LATERAL

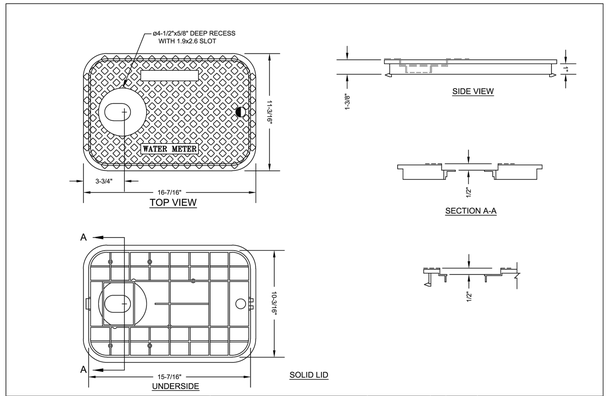


NOTES:
1. CONCRETE PROTECTOR RING SHALL BE 2500PSI PRECAST REINFORCED CONCRETE.
2. VALVE BOX SHALL BE AT GRADE WITH PROTECTOR RING EXTENDING 1/2" ABOVE GRADE.
3. SEE GATE VALVE AND BOX DETAIL.
4. VALVE BOX PROTECTOR RINGS SHALL BE INSTALLED AROUND VALVE BOX IN UNPAVED NON-TRAFFIC AREAS AND SHALL NOT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

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

W8-CONC-PROTECTOR-RING.dwg

8 VALVE BOX PROTECTOR RING



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

W4-1IN-METERBOX.dwg

5 1-INCH METER BOX LID

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 AND A HALF (2.5) FEET OF COVER MUST BE MAINTAINED OVER THE WATER MAIN AND A MINIMUM OF 12-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND THE STORM DRAINAGE LINE. WHERE A WATER MAIN CROSSES UNDER A STORM DRAINAGE LINE THE MINIMUM OF TWELVE (12) INCHES OF VERTICAL SEPARATION SHALL BE MAINTAINED AND THE WATER MAIN SHALL BE DUCTILE IRON FOR A DISTANCE OF 10-FEET ON EACH SIDE OF THE CROSSING.

15. **WATER OUTAGES:** THE CONTRACTOR SHALL SCHEDULE A COORDINATION MEETING WITH THE FAYPWC 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 TO PROCEED WITH THE OUTAGE, AND THAT ALL EQUIPMENT, MATERIALS, TOOLS, AND ALL OTHER INCIDENTALS ARE ON THE PROJECT SITE AND FUNCTIONAL, 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 FAYPWC PROJECT COORDINATOR.

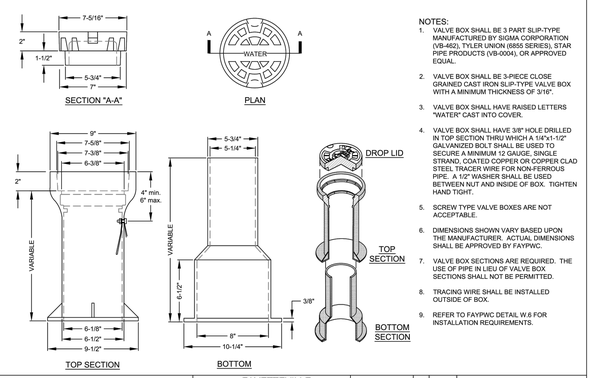
SHOULD THE CONTRACTOR FAIL TO COMPLETE THE WORK WITHIN THE ALLOTTED TIME, THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL ASSESS A PENALTY OF $500 PER 15-MINUTE INTERVAL OR ANY PORTION THEREOF UNTIL WATER SERVICE IS RESTORED. THIS PENALTY WILL BE DEDUCTED FROM THE CONTRACTOR'S PAY APPLICATION OR BE BILLED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

ONCE THE WATER OUTAGE NOTIFICATIONS HAVE BEEN ISSUED, A FOLLOW-UP COORDINATION MEETING WITH THE FAYPWC 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 FUNCTIONAL. 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.

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

W1-WATER-UTILITY-NOTES.dwg

2 WATER UTILITY NOTES (2 OF 2)

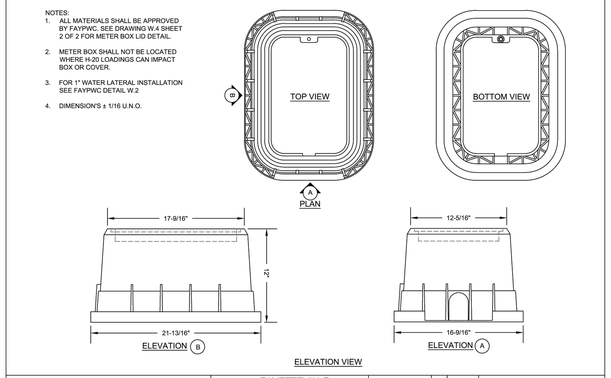


NOTES:
1. VALVE BOX SHALL BE 3 PART SLIP-TYPE MANUFACTURED BY SIGMA CORPORATION (VB-462), TYLER UNION (6850 SERIES), STAR PIPE PRODUCTS (VB-0004), OR APPROVED EQUAL.
2. VALVE BOX SHALL BE 3-PIECE CLOSE GRAINED CAST IRON SLIP-TYPE VALVE BOX WITH A MINIMUM THICKNESS OF 3/16".
3. VALVE BOX SHALL HAVE RAISED 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. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. W.7	DWG. BY: FAYPWC		1	07/09	ADDED NOTES 7, 8, AND CLARIFIED NOTES
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	01/14	REVISED NOTES 1, 4, 6

W7-VALVEBOX.dwg

7 VALVE BOX



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.

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

W4-1IN-METERBOX.dwg

4 1-INCH METER BOX

1. ALL WATER MAINS, LATERALS AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYPWC 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 FAYPWC WATER AND SEWER UTILITY INSTALLATIONS. CUT SHEETS, SIGNED AND SEALED BY A NC PLS, SHALL BE PROVIDED TO THE FAYPWC WATER RESOURCES ENGINEERING DEPARTMENT AND THE CONTRACTOR IN ADVANCE OF CONSTRUCTION FOR FAYPWC WATER AND SEWER UTILITIES.
5. 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.
6. ALL NEW WATER AND SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE TESTED AND/OR DISINFECTED IN ACCORDANCE WITH FAYPWC STANDARDS PRIOR TO PLACING INTO SERVICE.
7. CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYPWC 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 FAYPWC PROJECT COORDINATOR. THE CONTRACTOR SHALL INITIATE IMMEDIATE REPAIRS IN ACCORDANCE WITH FAYPWC STANDARDS. CONTRACTOR SHALL NOT OPERATE FAYPWC WATER MAIN VALVES WITHOUT FAYPWC APPROVAL AND SHALL COORDINATE ALL VALVE CLOSINGS WITH FAYPWC.
9. THE CONTRACTOR SHALL NOT USE HOUSE HOSE BIBBS OR ANY OTHER METHOD OF BLOW OFF WHICH ALLOWS DOMESTIC WATER CONTAINING SEDIMENTS OR HIGH LEVELS OF CHLORINE TO PASS THRU RESIDENTS METERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES RESULTING FROM ALLOWING "DIRTY" WATER TO ENTER RESIDENTS PLUMBING SYSTEM, SUCH AS WATER HEATERS, STAINED CLOTHING, CLOGGED 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 FAYPWC.
    B. TRANSFER EXISTING METER TO NEW METER BOX AND TIE NEW WATER LATERAL TO EXISTING DOMESTIC SERVICE UTILIZING BRASS FITTINGS. SAME METER SHALL NOT 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 FAYPWC 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 FAYPWC REQUIREMENTS.
13. ALL WORK ON FAYPWC 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 FAYPWC WATER UTILITIES. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH FAYPWC 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.

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

W1-WATER-UTILITY-NOTES.dwg

1 WATER UTILITY NOTES (1 OF 2)

WATER UTILITY DETAILS

SHEET NUMBER: C13.0

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8100
LICENSURE: NC ENG: F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/6/24
DATE:

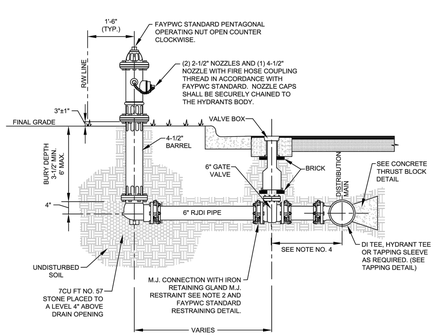
REVISIONS

REV. #	DESCRIPTION	REV. BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

PROJECT NAME: SESSOMS STREET SIDEWALK IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

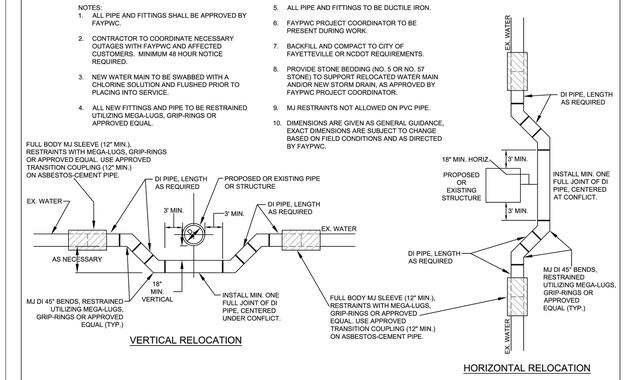


FIRE HYDRANT AND VALVE INSTALLATION N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 2	DWG. NO. W.13	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	FWC	1	08/25/23	REVISED NOTES 16 AND 17
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.			2	07/01/09	REVISED NOTE NO. 2, REMOVED NOTE NO. 3 AND ALTERED RESTRAINT DETAIL
					3	07/01/16	REVISED NOTES

W13-FHCC.dwg

6 FIRE HYDRANT AND VALVE INSTALLATION

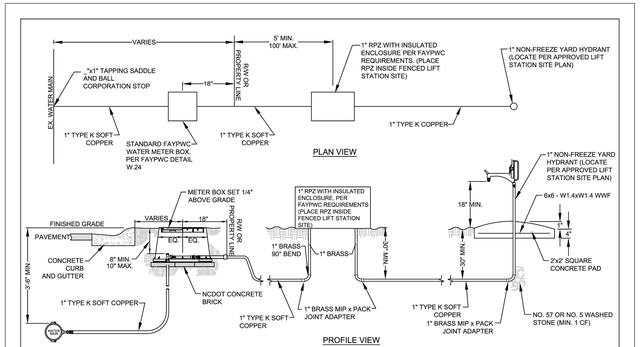
NOTES:
1. ALL PIPE AND FITTINGS SHALL BE APPROVED BY FAYPWC.
2. CONTRACTOR TO COORDINATE NECESSARY OUTAGES WITH FAYPWC AND AFFECTED CUSTOMERS. MINIMUM 48 HOUR NOTICE REQUIRED.
3. NEW WATER MAIN TO BE SWABBED WITH A CHLORINE SOLUTION AND FLUSHED PRIOR TO PLACING INTO SERVICE.
4. ALL NEW FITTINGS AND PIPE 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.



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

W26-PIPE-RELOCATION-DETAIL.dwg

3 PIPE RELOCATION DETAIL



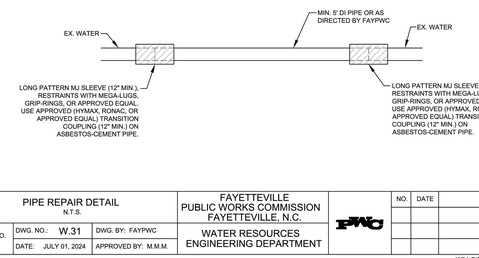
NOTES:
1. INSTALLATION SHALL BE IN ACCORDANCE WITH FAYPWC STANDARDS.
2. LATERAL SHALL BE INSPECTED AND APPROVED BY FAYPWC PROJECT COORDINATOR PRIOR TO BACKFILL.
3. REFER TO APPROVED LIFT STATION SITE PLAN FOR EXACT LOCATIONS.

YARD HYDRANT INSTALLATION N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. W.27	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	FWC	1	07/17	REVISED NOTES
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.					

W27-YARD-HYDRANT-INSTALLATION.dwg

8 YARD HYDRANT INSTALLATION

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.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO.: W.31	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	FWC			
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.					

W31-PIPE-REPAIR-DETAIL.dwg

5 PIPE REPAIR DETAIL

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.

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.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. W.19	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	FWC	1	01/01/17	REVISED NOTES
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.			2	07/01/13	REVISED NOTE RE: TRACER WIRE

W19-WATER-BEDDING.dwg

2 WATER MAIN BEDDING DETAIL

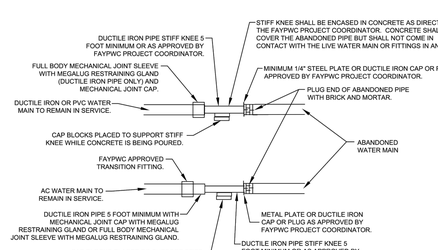
NOTES:
1. FIRE HYDRANT SHALL BE MODELS MANUFACTURED BY MUELLER CO. (CENTURIAN), AMERICAN VALVE AND HYDRANT CO. (MODEL MARK 73), CLOW MEDALLION OR APPROVED EQUAL.
2. ALL VALVES AND HYDRANTS SHALL HAVE M.J. CONNECTIONS WITH IRON RETAINING GLAND M.J. RESTRAINT.
3. HYDRANT VALVE SHALL BE PLACED AS CLOSE 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 FAYPWC 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 (GAS SERVICES, GSE, 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 A117204 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.		NO.	DATE	REVISION
SHEET NO. 2 OF 2	DWG. NO. W.13	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	FWC	1	08/25/23	REVISED NOTES 16 AND 17
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.			2	07/01/09	REVISED NOTE NO. 2, REMOVED NOTE NO. 3 AND ALTERED RESTRAINT DETAIL
					3	07/01/16	REVISED NOTES

W13-FHCC.dwg

7 FIRE HYDRANT AND VALVE INSTALLATION

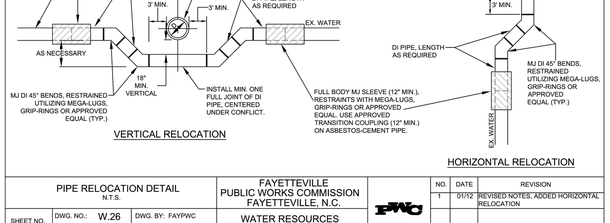
NOTES:
1. KILL OUT SHALL BE DONE A MINIMUM OF 5 FEET FROM ANY FITTING ON THE EXISTING WATER MAIN THAT IS TO REMAIN IN SERVICE.
2. IRON PIPE SHALL BE 4" DIAMETER FOR MAINS 12" OR LESS. UTILIZE 8" PIPE OR LARGER AS DIRECTED BY THE FAYPWC PROJECT COORDINATOR FOR ALL MAINS LARGER THAN 12".
3. ALLOW CONCRETE 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.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. W.22	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	FWC			
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.					

W22-WATERMAIN-KILLOUT.dwg

4 WATER MAIN KILL-OUT

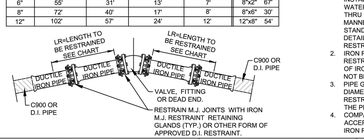


IRON RETAINING GLAND M.J. RESTRAINT			
NOMINAL PIPE SIZE	WEDGES QUANTITY	BOLTS QUANTITY	PRESS RATING
6"	3	6	350
8"	4	6	350
12"	8	8	350

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

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'	6"x2" 67'
8"	72'	40'	17'	8'	8"x6" 30'
12"	102'	57'	24'	12'	12"x8" 54'



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.		NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. W.18	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	FWC	1	11/16/07	REVISED TABLE, ADDED NOTE 8
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.					

W18-RESTRAINT-DETAIL.dwg

1 ALTERNATE RESTRAINT DETAIL (DUCTILE IRON PIPE ONLY)

WATER UTILITY DETAILS

SHEET NUMBER C13.1

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1338 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28805
TEL: (828) 252-8130
LICENSURE: NC ENG. F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER
12/6/24
DATE

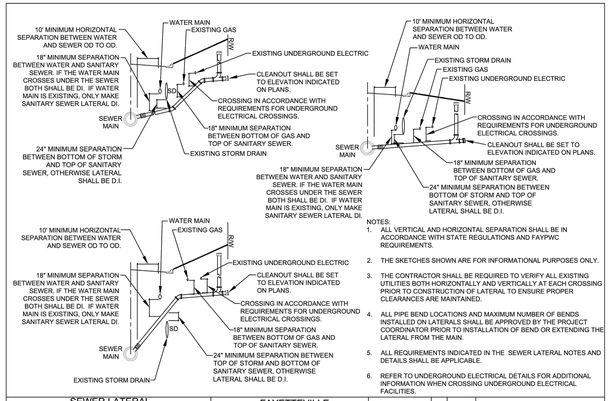
REVISIONS

REV. #	DESCRIPTION	REV. BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

PROJECT: SESSOMS STREET DESIGN & IMPROVEMENTS
NAME: RAS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

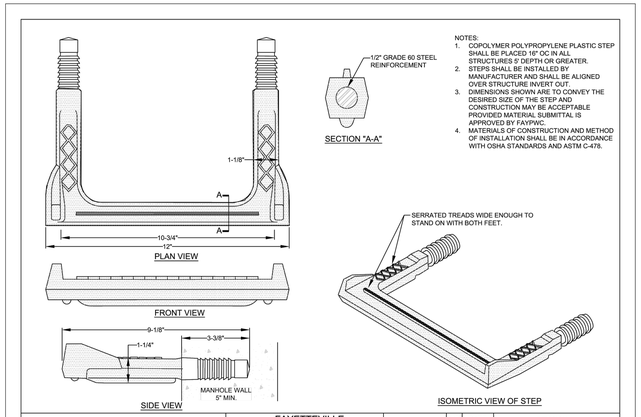


NOTES:
1. ALL VERTICAL AND HORIZONTAL SEPARATION SHALL BE IN ACCORDANCE WITH STATE REGULATIONS AND FAYPWC REQUIREMENTS.
2. THE SKETCHES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY.
3. THE CONTRACTOR SHALL BE REQUIRED TO VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY AT EACH CROSSING PRIOR 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.		NO.	DATE	REVISION	
SHEET NO. 1 OF 1	DWG. NO. S.12	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	1	11/06	ADDED NOTE ON DI LATERALS	
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	03/10	ADDED LATERAL AND WM SEPARATION	
				3	11/23	REVISED/CLARIFIED NOTES	

S12-UTIL-CONFLICT.dwg

9 SEWER LATERAL UTILITY CONFLICT SEPARATION REQUIREMENTS



NOTES:
1. COPOLYMER POLYPROPYLENE PLASTIC STEP SHALL BE PLACED 18" 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.

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

S8-STEP.dwg

6 STRUCTURE STEP

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		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION	
SHEET NO. 2 OF 2	DWG. NO. S.2	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	1	07/13	REVISED NOTES 9, 10, 11, 15. CONVERTED TO S.2 SHEET 2 OF 2	
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	01/01/19	REVISED NOTES 10, 18	
				3	01/01/24	REVISED NOTES 5, 7, 16.	

S2-STANDARD-MANHOLE.dwg

3 STANDARD MANHOLE (2 OF 2)

SEWER LATERAL NOTES

1. HOLE IN SANITARY SEWER MAIN MUST BE CUT WITH SHELL CUTTER NO HAMMER TAPS ALLOWED.
2. LATERAL SHALL CONFORM TO ASTM SPECS. D-3034 SDR-26 UNLESS OTHERWISE INDICATED AS DI.
3. ALL PIPE AND FITTINGS SHALL BE 4" OR 6" UNLESS OTHERWISE SPECIFIED.
4. ALL DI PIPE SHALL HAVE AN INTERIOR LINING OF CERAMIC EPOXY (PROTECTO 401). THE ENTIRE DI LATERAL SHALL BE COMPRISED OF DI PIPE AND MECHANICAL JOINT FITTINGS.
5. ALL CONNECTIONS SHALL HAVE RUBBER GASKET SEALS INSTALLED.
6. SANITARY SEWER LATERAL CLEANOUT STACK SHALL BE LOCATED 18" FROM WATER LATERAL, LOCK VALVE WHEN IN THE SAME DITCH.
7. INSTALLATION OTHER THAN AS SHOWN MUST BE APPROVED BY THE FAYPWC.
8. CONNECTIONS TO THE TOP OF MAIN SHALL NOT BE ALLOWED, UNLESS OTHERWISE APPROVED BY THE FAYPWC PROJECT COORDINATOR.
9. THE DESIGN ENGINEER SHALL DETERMINE THE SLOPE AND DEPTH OF THE LATERAL BASED ON THE TOPOGRAPHY OF THE LOT.
10. LATERAL SHALL CONFORM TO 2% MINIMUM SLOPE FOR 4" OR 1% MINIMUM SLOPE FOR 6". THE MAXIMUM LENGTH OF A SEWER LATERAL SHALL BE 60 FEET, UNLESS OTHERWISE APPROVED BY FAYPWC.
11. SEE INTERIOR DROP STRUCTURE OR SLIDE, MORTAR SLIDE AND SHELF DETAIL FOR VERTICAL DROPS OF MAINS AND LATERALS.
12. LATERALS LESS THAN 3' IN DEPTH OR GREATER THAN 20' DEPTH SHALL UTILIZE DUCTILE IRON PIPE AND FITTINGS WITH CERAMIC EPOXY (PROTECTO 401), OR WHEN SEPARATION REQUIREMENTS CANNOT BE MET.
13. ENTIRE SEWER LATERAL ASSEMBLY SHALL BE AIR TESTED CONCURRENTLY WITH SEWER MAIN.
14. INDIVIDUAL LATERALS SHALL BE CLEANED AND FLUSHED PRIOR TO FLUSHING SANITARY SEWER MAINS.
15. LATERAL SHALL NOT BE BACK-FILLED UNTIL INSPECTED BY THE FAYPWC PROJECT COORDINATOR.
16. WYE CONNECTIONS SHALL NOT BE USED TO TIE LATERALS INTO A MANHOLE.
17. IF BENDS ARE APPROVED BY THE PROJECT COORDINATOR, STONE BEDDING IS REQUIRED TO BE INSTALLED FROM UNDISTURBED (SEE DETAIL S.12) SOIL TO BOTTOM OF BEND.
18. PVC COMBINATION SHALL BE A MOLDED WYE AND BEND, GASKETED, SDR-26, AS MANUFACTURED BY HARCO, GPK, OR APPROVED EQUAL.
19. 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.
20. ALL LATERALS (4" AND 6") SHALL UTILIZE A 4" RISER (STACK).
21. REFER TO DETAIL S.12 FOR SEPARATION REQUIREMENTS.
22. FOR SINGLE FAMILY RESIDENTIAL LOTS, CLEANOUT SHALL BE LOCATED 18" FROM RIGHT-OF-WAY OR EASEMENT. FOR ALL NON-SINGLE FAMILY LOTS, CLEANOUT SHALL BE NO CLOSER THAN 10' TO FRONT OF BUILDING, UNLESS OTHERWISE APPROVED BY FAYPWC.

THE FOLLOWING TABLE SUMMARIZES THE MATERIALS TO BE UTILIZED FOR SEWER MAIN TO LATERAL CONNECTIONS:

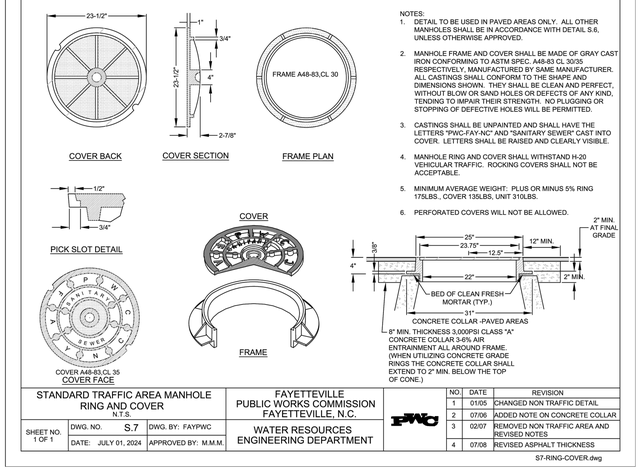
	PVC Main	DI Main
DI Lateral	DI fitting or approved saddle	MJ fitting or approved saddle
PVC Lateral	PVC fitting or approved saddle	MJ fitting with transition gasket or approved saddle

NOTE: REFER TO FAYPWC TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.

SEWER LATERAL NOTES (4-INCH AND 6-INCH)		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION	
SHEET NO. 1 OF 1	DWG. NO. S.11	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	3	01/13	REVISED NOTES AND ADDED TABLE	
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		4	01/15	REVISED NOTE 22, TABLE	
				5	07/18	REVISED NOTES 6, 9	

S11-RESSLAT-NOTES.dwg

8 SEWER LATERAL NOTES (4-INCH AND 6-INCH)

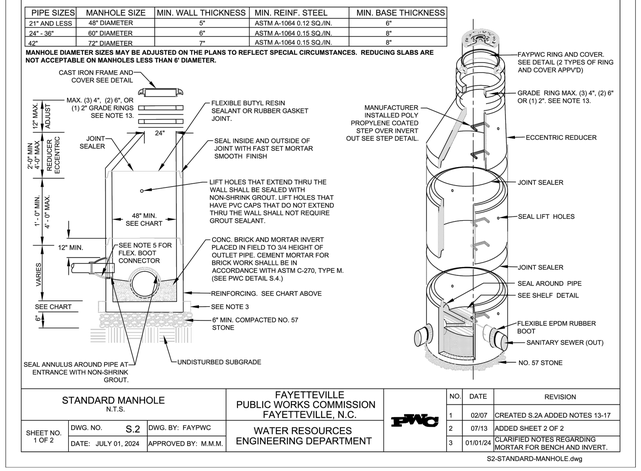


NOTES:
1. DETAIL TO BE USED IN PAVED AREAS ONLY. ALL OTHER MANHOLES SHALL BE IN ACCORDANCE WITH DETAIL S.6, UNLESS OTHERWISE APPROVED.
2. MANHOLE FRAME AND COVER SHALL BE MADE OF GRAY CAST IRON CONFORMING TO ASTM SPEC. A48-83 CL 30/35 RESPECTIVELY, MANUFACTURED BY SAME MANUFACTURER. ALL CASTINGS SHALL 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.

STANDARD TRAFFIC AREA MANHOLE RING AND COVER N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION	
SHEET NO. 1 OF 1	DWG. NO. S.7	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	1	01/05	CHANGED NON TRAFFIC DETAIL	
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	07/06	ADDED NOTE ON CONCRETE COLLAR	
				3	02/07	REMOVED NON TRAFFIC AREA AND REVISED NOTES	
				4	07/08	REVISED ASPHALT THICKNESS	

S7-RING-COVER.dwg

5 STANDARD TRAFFIC AREA MAHOLE RING AND COVER



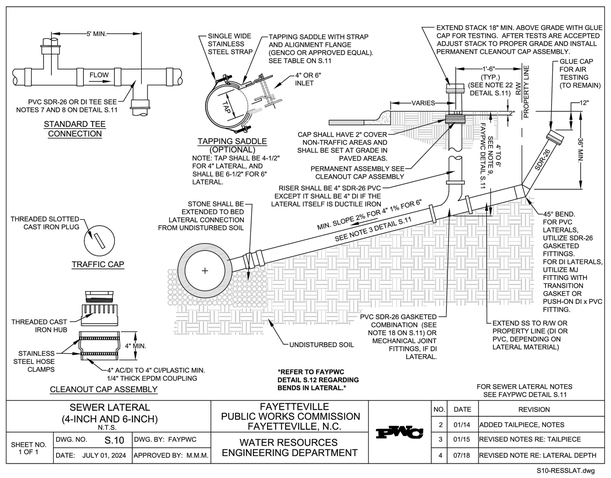
PIPE SIZES	MANHOLE SIZE	MIN. WALL THICKNESS	MIN. REINF. STEEL	MIN. BASE THICKNESS
21" AND LESS	48" DIAMETER	5"	ASTM A-1064 0.12 SQ./IN.	6"
24" - 36"	60" DIAMETER	6"	ASTM A-1064 0.15 SQ./IN.	8"
42"	72" DIAMETER	7"	ASTM A-1064 0.15 SQ./IN.	8"

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

STANDARD MANHOLE N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION	
SHEET NO. 1 OF 2	DWG. NO. S.2	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	1	02/07	CREATED S.2A ADDED NOTES 13-17	
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	07/13	ADDED SHEET 2 OF 2	
				3	01/01/24	CLARIFIED NOTES REGARDING MORTAR FOR BENCH AND INVERT.	

S2-STANDARD-MANHOLE.dwg

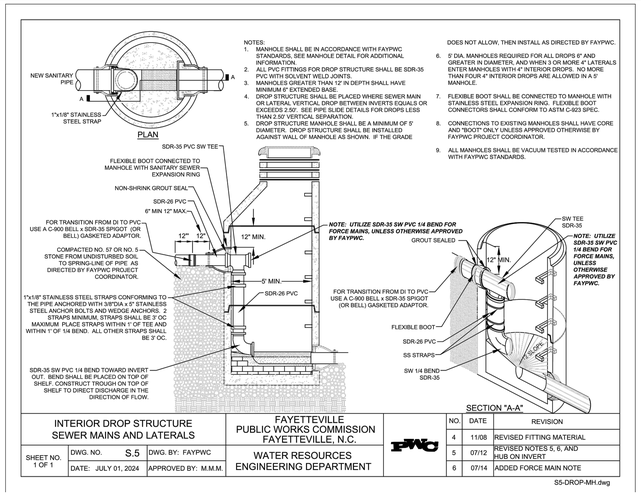
2 STANDARD MANHOLE (1 OF 2)



SEWER LATERAL (4-INCH AND 6-INCH) N.T.S.		FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C.		NO.	DATE	REVISION	
SHEET NO. 1 OF 1	DWG. NO. S.10	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	2	01/14	ADDED TAILPIECE, NOTES	
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		3	01/15	REVISED NOTES RE: TAILPIECE	
				4	07/18	REVISED NOTE RE: LATERAL DEPTH	

S10-RESSLAT.dwg

7 SEWER LATERAL (4-INCH AND 6-INCH)



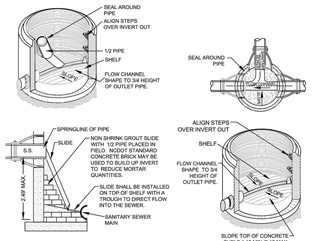
NOTES:
1. MANHOLE SHALL BE IN ACCORDANCE WITH FAYPWC STANDARDS, SEE MANHOLE DETAIL FOR ADDITIONAL INFORMATION.
2. ALL PVC FITTINGS FOR DROP STRUCTURE SHALL BE SDR-35 PVC WITH SOLVENT WELD JOINTS.
3. MANHOLES GREATER THAN 12' IN DEPTH SHALL HAVE MINIMUM 6" EXTENDED BASE.
4. DROP STRUCTURE SHALL BE PLACED 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. FLEXIBLE BOOT SHALL BE CONNECTED TO MANHOLE WITH STAINLESS STEEL EXPANSION RING. FLEXIBLE BOOT CONNECTORS SHALL CONFORM TO ASTM C-923 SPEC.
8. CONNECTIONS TO EXISTING MANHOLES SHALL HAVE CORE AND "BOOT" ONLY UNLESS APPROVED OTHERWISE BY FAYPWC PROJECT COORDINATOR.
9. 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.		NO.	DATE	REVISION	
SHEET NO. 1 OF 1	DWG. NO. S.5	DWG. BY: FAYPWC	WATER RESOURCES ENGINEERING DEPARTMENT	4	11/08	REVISED FITTING MATERIAL	
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		5	07/12	REVISED NOTES 5, 6, AND HUB ON INVERT	
				6	07/14	ADDED FORCE MAIN NOTE	

S5-DROP-MH.dwg

4 INTERIOR DROP STRUCTURE SEWER MAINS AND LATERALS

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 PLS, 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 COORD



PIPE SLIDE DETAIL
N.T.S.

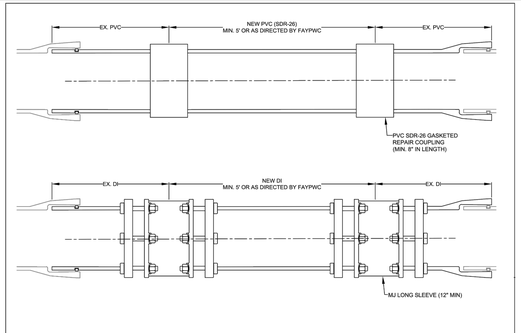
SHELF DETAIL
N.T.S.

NOTES:
1. PIPE SLIDE REQUIRED WHERE VERTICAL SEPARATION BETWEEN PIPE INVERTS IS LESS THAN 2.5'. FOR LATERAL INVERTS AT OR WITHIN FOUR (4) INCHES OF THE SHELF, CONSTRUCT BENCH AND INVERT AS DIRECTED BY THE FAYPWC PROJECT COORDINATOR.
2. INTERIOR DROP STRUCTURE REQUIRED WHERE VERTICAL SEPARATION BETWEEN INVERTS EQUALS OR EXCEEDS 2.50'. FOR INTERIOR DROP STRUCTURE SEE FAYPWC DETAIL S.5.
3. VERIFY SLIDE INSTALLATION WITH PROJECT COORDINATOR PRIOR TO CONSTRUCTION.
4. MANHOLE AND CONNECTIONS SHALL BE IN ACCORDANCE WITH FAYPWC REQUIREMENTS.
5. BRICK USED FOR INVERT AND SHELF CONSTRUCTION SHALL BE NCDOT STANDARD CONCRETE BRICK.
6. MINIMUM SHELF WIDTH OF 12" IN DEPTH SHALL HAVE MINIMUM 6" EXTENDED BASE.
7. THE MINIMUM SLOPE ACROSS THE INVERT OF THE MANHOLE SHALL BE 1% UNLESS OTHERWISE APPROVED BY FAYPWC.
8. DROP AND/OR SLIDE REQUIREMENTS SHALL APPLY TO ALL LATERALS ENTERING MANHOLES AS OUTLINED IN NOTES 1, 2, AND 3. 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 INVERT OF THE LATERAL SHALL BE A MINIMUM OF 1' ABOVE THE SHELF.
9. NO MORE THAN 5 LATERALS SHALL ENTER A 5' DIAMETER TERMINAL MANHOLE.
10. USE OF TEE-WYES ON LATERALS IS NOT ALLOWED.

PIPE SLIDE AND SHELF DETAILS N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. S.4	DWG. BY: FAYPWC		1	01/05	ADDED NOTE 8
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	02/07	REVISED NOTE 5, SLIDE DETAIL, ADDED NOTES 10, 11,12
				3	01/18	DELETED MORTAR SLIDE, REVISED NOTES

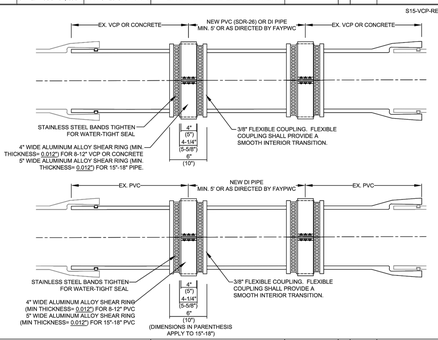
S4-PSLIDE.dwg

8 PIPE SLIDE AND SHELF DETAILS



GRAVITY SANITARY SEWER PIPE REPAIR N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 3 OF 3	DWG. NO. S.15	DWG. BY: FAYPWC		1	01/05	REVISED REPLACEMENT PIPE
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	07/11	REVISED NOTES, REPAIRS

S15-VCP-REPAIR.dwg



GRAVITY SANITARY SEWER PIPE REPAIR N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 2 OF 3	DWG. NO. S.15	DWG. BY: FAYPWC		1	01/05	REVISED REPLACEMENT PIPE
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	07/11	REVISED NOTES

S15-VCP-REPAIR.dwg

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 N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 1 OF 3	DWG. NO. S.15	DWG. BY: FAYPWC		1	01/05	REVISED REPLACEMENT PIPE
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	07/11	REVISED NOTES

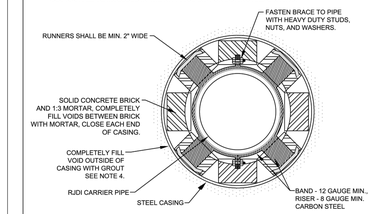
S15-VCP-REPAIR.dwg

7 GRAVITY SANITARY SEWER PIPE REPAIR

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"	0.250"	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.



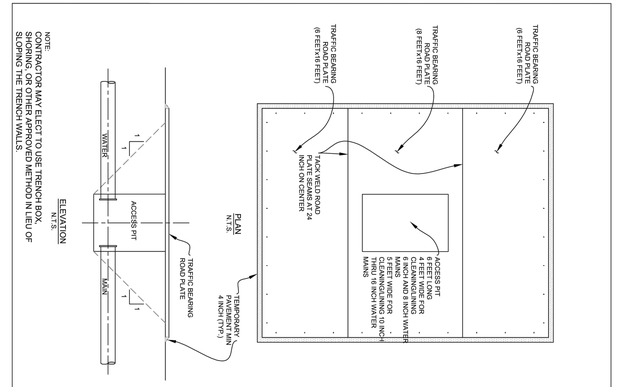
SECTION "A-A" CARBON STEEL CARRIER PIPE BRACE

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. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 2 OF 2	DWG. NO. M.6	DWG. BY: FAYPWC		1	02/11/04	ADDED 6" CARRIER PIPE TO BORE SIZING CHART
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	07/10	REVISED NOTES, SIZING CHART

M6-BORE-ROAD-RAIL.dwg

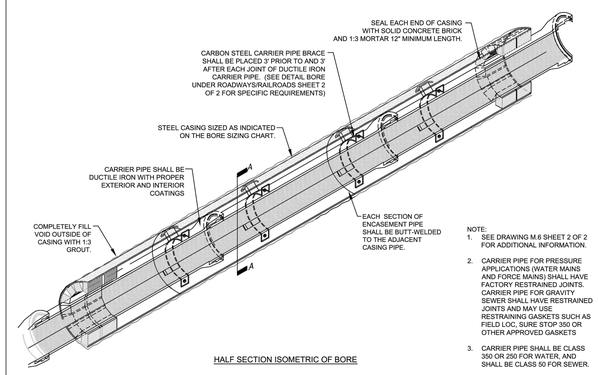
6 ENCASEMENT AND CARRIER PIPE DETAILS



ACCESS PIT IN PUBLIC STREET WITH TRAFFIC BEARING ROAD PLATES N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 1 OF 2	DWG. NO. M.16	DWG. BY: FAYPWC				
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.				

M16-ACCESS-PIT.dwg

3 ACCESS PIT IN PUBLIC STREETS WITH TRAFFIC BEARING ROAD PLATES



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. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 1 OF 2	DWG. NO. M.6	DWG. BY: FAYPWC		1	01/05	ADDED NOTES 2 AND 3
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	10/09	CLARIFIED RESTRAINT REQUIREMENTS

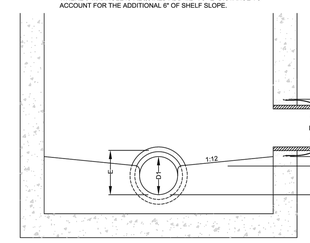
M6-BORE-ROAD-RAIL.dwg

5 ENCASEMENT AND CARRIER PIPE DETAILS

TO FIND "E" ENTER CHART AT LEFT WITH EFFLUENT PIPE SIZE AND ENTER PIPE AT TOP WITH INFLUENT PIPE SIZE. "E" DISTANCE IS POINT OF CONVERGENCE OF COLUMN AND R/W.

		D2					
		4"	6"	8"	12"	15"	18"	24"
D1	8	9.00	9.50	10.00	-	-	-	-
	12	11.00	11.50	12.00	13.00	-	-	-
	15	14.25	14.75	15.25	16.25	17.00	-	-
	18	16.50	17.00	17.50	18.50	19.25	20.00	-
	24	21.00	21.50	22.00	23.00	23.75	24.50"	26.00

WHERE 5' MANHOLE IS REQUIRED ADD 1/2" TO "E" DISTANCE TO ACCOUNT FOR THE ADDITIONAL 6" OF SHELF SLOPE.



MAIN OR LATERAL MIN. SLOPE
4" @ 2.00% MIN.
6" @ 0.67% MIN./MAIN
6" @ 1.00% MIN./LATERAL
8" @ 0.40% MIN.
12" @ 0.22% MIN.
15" @ 0.15% MIN.
18" @ 0.12% MIN.

NOTES:
1. SEE FAYPWC STANDARD MANHOLE AND PIPE SLIDE, MORTAR SLIDE, AND SHELF DETAILS FOR ADDITIONAL INFORMATION.
2. THE "E" DISTANCES INDICATED ARE FOR CONNECTION TO AN EXISTING OUTFALL AND ARE THE MINIMUM DISTANCE ALLOWABLE.
3. WHERE SANITARY SEWER OUTFALLS AND MAINS ARE BEING CONSTRUCTED THE TOP OF THE EFFLUENT PIPE AND THE TOP OF THE INFLUENT PIPE SHALL BE AT THE SAME ELEVATION UNLESS CONDITIONS ARE PROHIBITIVE TO THIS PRACTICE.

MH CONNECTION DESIGN GUIDE N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. S.18	DWG. BY: FAYPWC				
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.				

S18-PENETRATION-DETAIL.dwg

2 MH CONNECTION DESIGN GUIDE

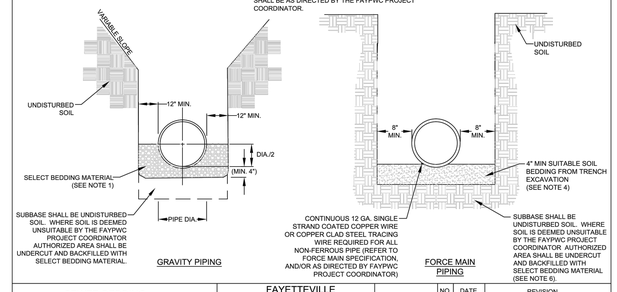
MINIMUM LENGTH OF BURIED PIPE BETWEEN CLOSED VALVE AND EXCAVATION FOR RESTRAINT BASED ON MINIMUM TYPE 2 BEDDING IN SILT SOIL		
Diameter (inches)	Depth of Cover (feet)	Length (feet)
16	3 - 3.99	221
16	4 - 5.99	173
16	6 - 7.99	120
16	8 - 9.99	92
16	>= 10	75
12	3 - 3.99	174
12	4 - 5.99	135
12	6 - 7.99	93
12	8 - 9.99	71
12	>= 10	57
10	3 - 3.99	149
10	4 - 5.99	115
10	6 - 7.99	79
10	8 - 9.99	60
10	>= 10	49
8	3 - 3.99	123
8	4 - 5.99	95
8	6 - 7.99	65
8	8 - 9.99	49
8	>= 10	40
6	3 - 3.99	95
6	4 - 5.99	73
6	6 - 7.99	50
6	8 - 9.99	38
6	>= 10	31

ACCESS PIT IN PUBLIC STREET WITH TRAFFIC BEARING ROAD PLATES N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 2 OF 2	DWG. NO. M.16	DWG. BY: FAYPWC				
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.				

M16-ACCESS-PIT.dwg

4 ACCESS PIT IN PUBLIC STREETS WITH TRAFFIC BEARING ROAD PLATES

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.



SEWER BEDDING N.T.S.			FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. WATER RESOURCES ENGINEERING DEPARTMENT	NO.	DATE	REVISION
SHEET NO. 1 OF 1	DWG. NO. S.13	DWG. BY: FAYPWC		1	01/01/05	REVISED NOTES
	DATE: JULY 01, 2024	APPROVED BY: M.M.M.		2	01/01/16	REVISED NOTES

S13-SEWER-BEDDING.dwg

1 SEWER BEDDING

SEWER UTILITY DETAILS

SHEET NUMBER: C13.3

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG: F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 27261 ANTHONY L. HAUSER
DATE: 11/6/24

REVISIONS		
REV. #	DESCRIPTION	REV.BY DATE
REV. I	100% ISSUED FOR BID	WSP 2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP 2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP 2024-11-22

PROJECT NAME: SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

Docusign Envelope ID: BDF33EF9-6D35-497B-858D-CF32E2C4AE33

SCALE: 1" = 100'

2 TRAFFIC CONTROL PLAN - STAGE 1

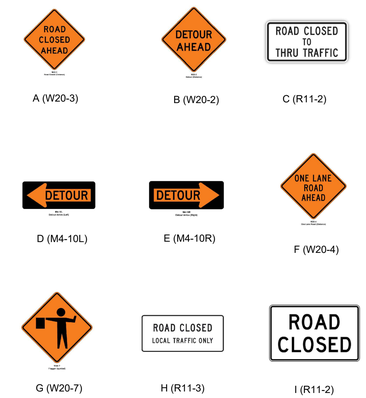
LEGEND

- TYPE III BARRICADE
- DRUM
- SKINNY DRUM
- FLAGGER
- PORTABLE SIGN
- STATIONARY SIGN
- WORK AREA
- DETOUR ROUTE

GENERAL NOTE

1. REFER TO SHEET C14.4 FOR TRAFFIC CONTROL NOTES.
2. TRAFFIC CONTROL STAGE 1 TYPICAL FOR OPEN CUT INSTALLATION OF BOX CULVERT ACROSS BUXTON BOULEVARD.
3. COORDINATE WITH HOMEOWNERS PRIOR TO BEGINNING WORK THAT MAY EFFECT INGRESS / EGRESS TO PROPERTIES. ENSURE ANY INGRESS / EGRESS POINTS AT DRIVEWAYS HAVE MEANS FOR CROSSING (I.E. STEEL PLATE).
4. TRAFFIC CONTROL PLAN MAY BE FIELD ADJUSTED BASED ON THE DAILY DEFINED WORKING AREA.

KEYNOTE SIGN LEGEND



A (W20-3) B (W20-2) C (R11-2)

D (M4-10L) E (M4-10R) F (W20-4)

G (W20-7) H (R11-3) I (R11-2)

1 NOTES AND LEGEND

TRAFFIC CONTROL PLAN - STAGE 1

SHEET NUMBER: C14.0

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 014509 W. RICHARD WOOD
ECS-01
DATE: 12/13/2024

REV. #	REVISIONS DESCRIPTION	REV BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

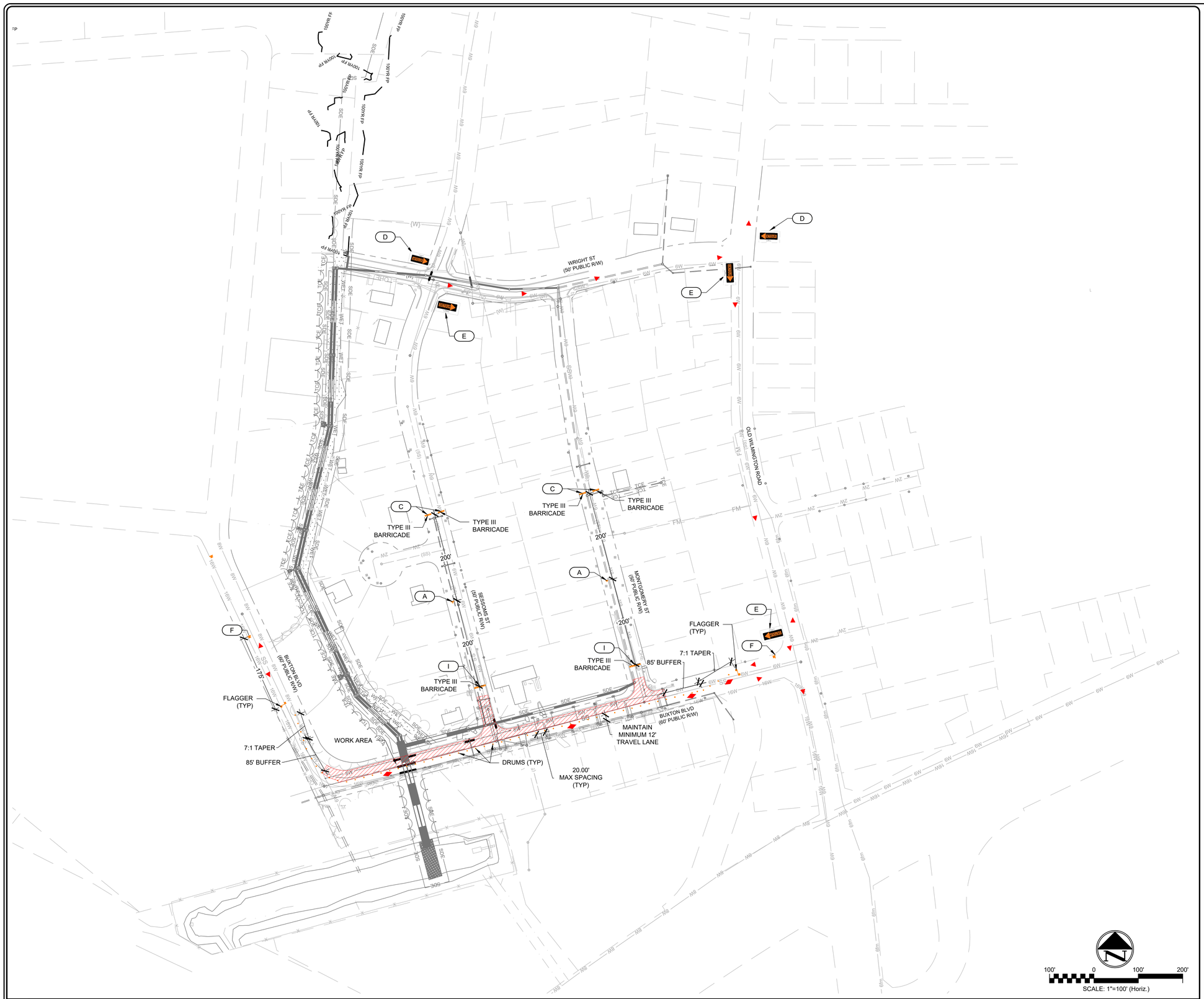
DRAWN:	RAS
DESIGN:	RAS
CHECK:	DCO
APPROVED:	ALH

PROJECT NAME:	SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE:	AS SHOWN
DATE:	22 NOVEMBER 2024

PROJECT NO. 6480-22-0142

SUB-LEDGER NO. _____

Docusign Envelope ID: BDF33EF9-6D35-497B-858D-CF32E2C4AE33



2 TRAFFIC CONTROL PLAN - STAGE 2

SCALE: 1" = 100'

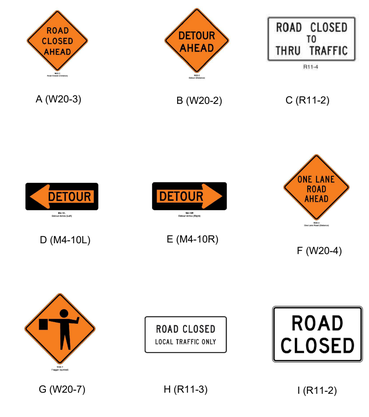
LEGEND

- TYPE III BARRICADE
- DRUM
- SKINNY DRUM
- FLAGGER
- PORTABLE SIGN
- STATIONARY SIGN
- WORK AREA
- DETOUR ROUTE

GENERAL NOTE

1. REFER TO SHEET C14.4 FOR TRAFFIC CONTROL NOTES.
2. TRAFFIC CONTROL STAGE 2 TYPICAL FOR UTILITY INSTALLATION WITHIN BUXTON BOULEVARD.
3. COORDINATE WITH HOMEOWNERS PRIOR TO BEGINNING WORK THAT MAY EFFECT INGRESS / EGRESS TO PROPERTIES. ENSURE ANY INGRESS / EGRESS POINTS AT DRIVEWAYS HAVE MEANS FOR CROSSING (I.E. STEEL PLATE).
4. TRAFFIC CONTROL PLAN MAY BE FIELD ADJUSTED BASED ON THE DAILY DEFINED WORKING AREA.

KEYNOTE SIGN LEGEND



A (W20-3) B (W20-2) C (R11-2)

D (M4-10L) E (M4-10R) F (W20-4)

G (W20-7) H (R11-3) I (R11-2)

1 NOTES AND LEGEND

TRAFFIC CONTROL PLAN - STAGE 2

SHEET NUMBER: C14.1

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28805
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 014509 ALEXANDRA L. HOOD
DocuSigned by: 12/13/2024

DATE

REVISIONS:

REV. #	DESCRIPTION	REV BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

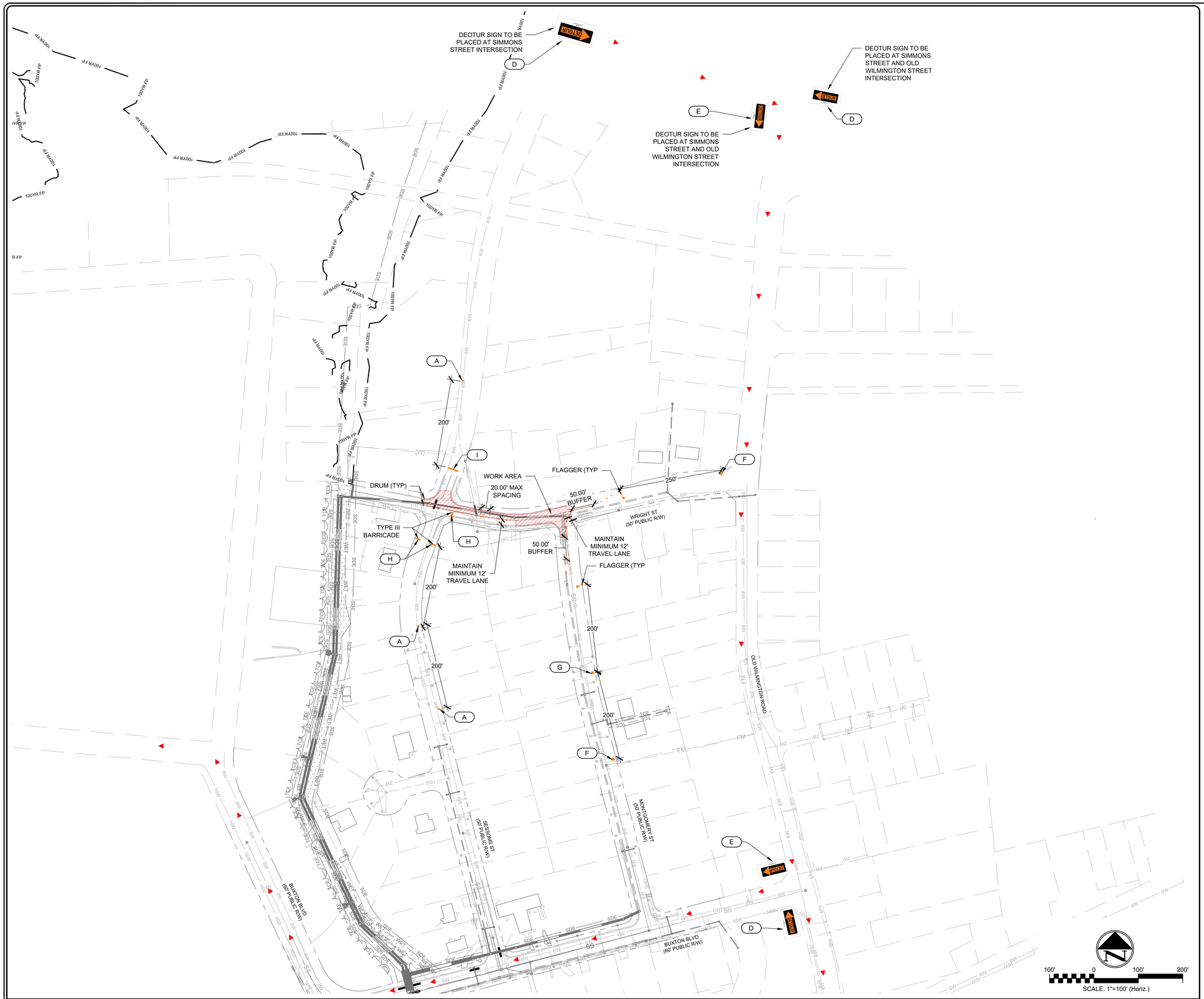
DRAWN:	RAS
DESIGN:	RAS
CHECK:	DCO
APPROVED:	ALH

PROJECT NAME:	SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE:	AS SHOWN
DATE:	22 NOVEMBER 2024

PROJECT NO. 6480-22-0142

SUB-LEDGER NO. _____

Docusign Envelope ID: BDF33EF9-6D35-497B-858D-CF32E2C4AE33



2 TRAFFIC CONTROL PLAN - STAGE 3

SCALE: 1" = 100'

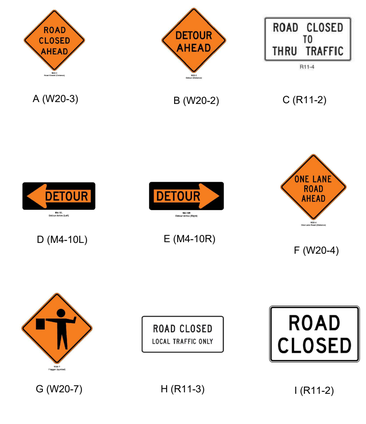
LEGEND

- TYPE III BARRICADE
- DRUM
- SKINNY DRUM
- FLAGGER
- PORTABLE SIGN
- STATIONARY SIGN
- WORK AREA
- DETOUR ROUTE

GENERAL NOTE

1. REFER TO SHEET C14.4 FOR TRAFFIC CONTROL NOTES.
2. TRAFFIC CONTROL STAGE 3 TYPICAL FOR UTILITY AND STORMWATER INSTALLATION WITHIN WRIGHT STREET.
3. COORDINATE WITH HOMEOWNERS PRIOR TO BEGINNING WORK THAT MAY EFFECT INGRESS / EGRESS TO PROPERTIES. ENSURE ANY INGRESS / EGRESS POINTS AT DRIVEWAYS HAVE MEANS FOR CROSSING (I.E. STEEL PLATE).
4. TRAFFIC CONTROL PLAN MAY BE FIELD ADJUSTED BASED ON THE DAILY DEFINED WORKING AREA.

KEYNOTE SIGN LEGEND



1 NOTES AND LEGEND

TRAFFIC CONTROL PLAN - STAGE 3

SHEET NUMBER: C14.2

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 014509 ENGINEER DAVID C. COOD
DOCUSIGNED BY:
12/13/2024
DATE

REVISIONS:

REV. #	DESCRIPTION	REV BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

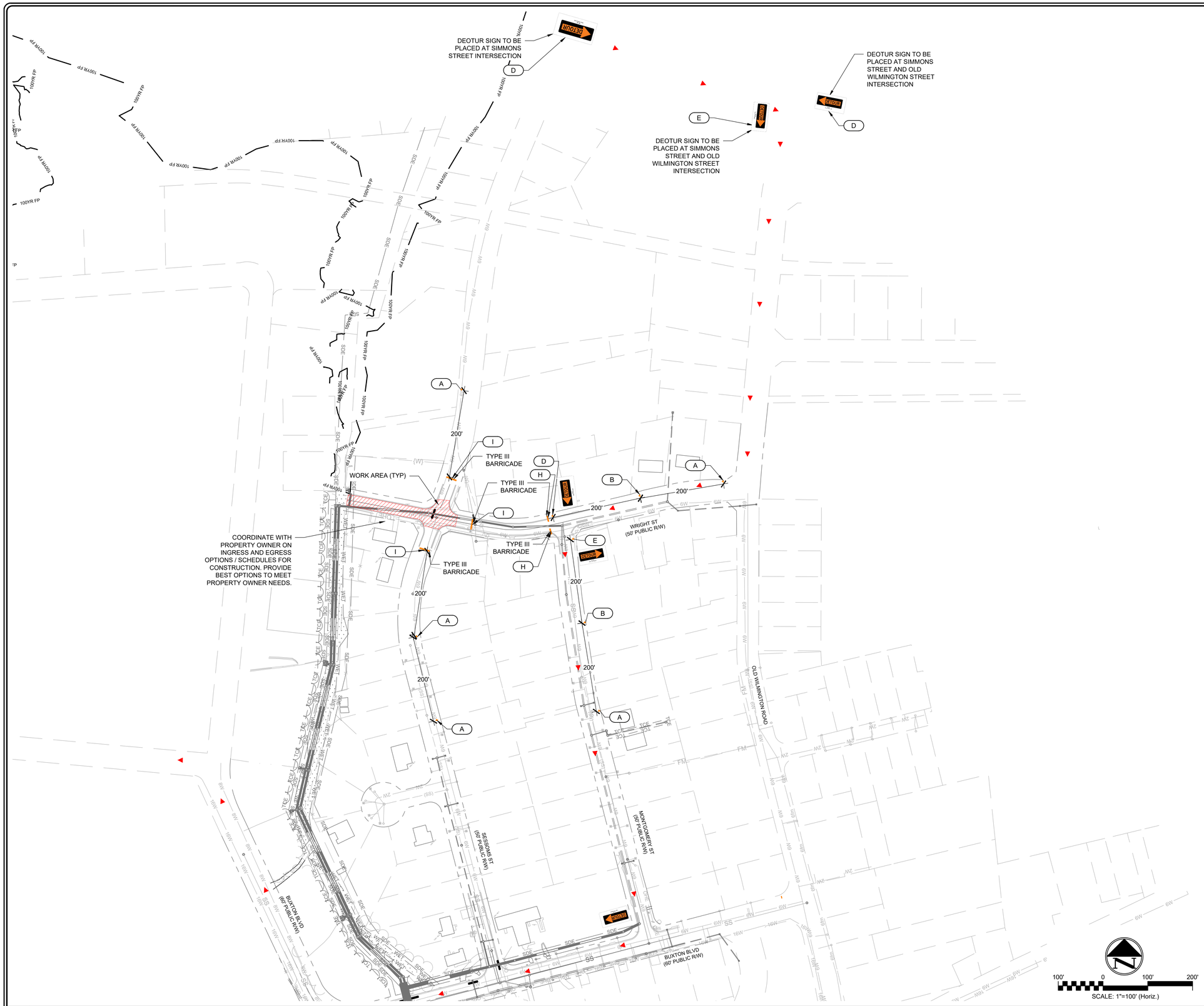
PROJECT NAME:	SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE:	AS SHOWN
DATE:	22 NOVEMBER 2024

DRAWN:	RAS
DESIGN:	RAS
CHECK:	DCO
APPROVED:	ALH

PROJECT NO. 6480-22-0142

SUB-LEDGER NO.

Docusign Envelope ID: BDF33EF9-6D35-497B-858D-CF32E2C4AE33



SCALE: 1" = 100'

2 TRAFFIC CONTROL PLAN - STAGE 4

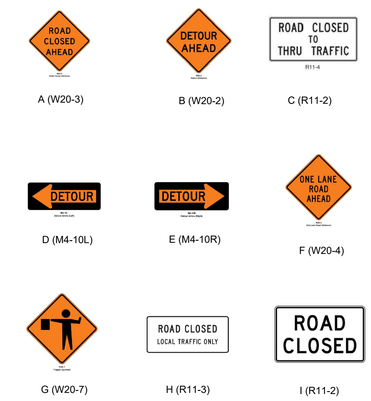
LEGEND

- TYPE III BARRICADE
- DRUM
- SKINNY DRUM
- FLAGGER
- PORTABLE SIGN
- STATIONARY SIGN
- WORK AREA
- DETOUR ROUTE

GENERAL NOTE

1. REFER TO SHEET C14.4 FOR TRAFFIC CONTROL NOTES.
2. TRAFFIC CONTROL STAGE 4 TYPICAL FOR UTILITY AND STORMWATER INSTALLATION WITHIN WRIGHT STREET AND SESSOMS STREET INTERSECTION.
3. COORDINATE WITH HOMEOWNERS PRIOR TO BEGINNING WORK THAT MAY EFFECT INGRESS / EGRESS TO PROPERTIES. ENSURE ANY INGRESS / EGRESS POINTS AT DRIVEWAYS HAVE MEANS FOR CROSSING (I.E. STEEL PLATE).
4. TRAFFIC CONTROL PLAN MAY BE FIELD ADJUSTED BASED ON DAILY DEFINED WORKING AREA.

KEYNOTE SIGN LEGEND



A (W20-3) B (W20-2) C (R11-2)

D (M4-10L) E (M4-10R) F (W20-4)

G (W20-7) H (R11-3) I (R11-2)

1 NOTES AND LEGEND

TRAFFIC CONTROL PLAN - STAGE 4

SHEET NUMBER: C14.3

PLAN TYPE:

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NC 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 014509 ENGINEER S. HOOD
DATE: 12/13/2024

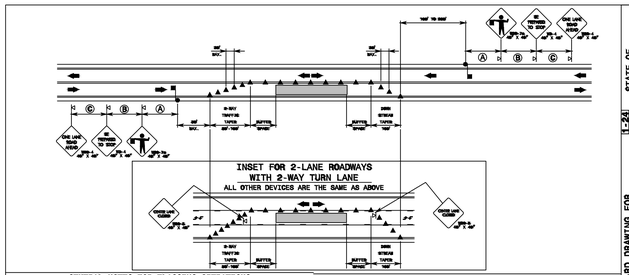
REVISIONS			
REV. #	DESCRIPTION	REV BY	DATE
REV. I	100% ISSUED FOR BID	WSP	2024-07-09
REV. J	100% ISSUED FOR PERMIT	WSP	2024-09-06
REV. K	100% ISSUED FOR PERMIT	WSP	2024-11-22

PROJECT NAME: SESSOMS STREET DRAINAGE IMPROVEMENTS
SCALE: AS SHOWN
DATE: 22 NOVEMBER 2024

DRAWN: RAS
DESIGN: RAS
CHECK: DCO
APPROVED: ALH

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

Docusign Envelope ID: BDF33EF9-6D35-497B-858D-CF32E2C4AE33



GENERAL NOTES FOR FLAGGING OPERATIONS

1- REFER TO RDD. 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- FOR POSTED SPEED LIMITS BELOW 45 MPH, CHANNELIZING DEVICE SPACING SHALL BE 20 FEET ALONG TAPER AREAS, BUFFER AREA AND ALONG LANE CLOSURE. DEVICE SPACING SHALL BE 40 FEET IN THE TAPERS AND THE SHIFTS AND 80 FEET IN THE TANGENTS.
5- PAVEMENT MARKINGS MUST BE VISIBLE FOR THE DISTANCE SHOWN ON THE SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (SEE RDD. 1101.11, SHEET 3).
6- DO NOT STOP ALL DIRECTIONS OF TRAFFIC FOR MORE THAN 5 MINUTES AT A TIME.
7- CONES OR SPECIAL DRUMS MAY BE USED IN LIEU OF CONES. REFER TO RDD. 1180.01 FOR SKINNY DRUM REQUIREMENTS.
8- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE; PLACE FLAGGERS FAR ENOUGH UPSTREAM OF THE INTERSECTION SO THE FLAGGER (RDD-7A) CAN SEE APPROACHING TRAFFIC AND STOP TRAFFIC BEFORE IT ENTERS THE INTERSECTION; 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 1MF OF EITHER SIDE OF ACTIVE RAILROAD TRACKS, PROVIDE A STAMPED LOG DOCUMENTING ACTIVITY ON FLAGGER TO ENSURE PROPER FLAGGER ATTENTION WITHIN THE BRACK DISTANCE. PROVIDE OFFICER OR FLAGGER EVEN IF AUTOMATIC WARNING MECHANICS ALREADY EXIST.
12- THIS DETAIL IS APPLICABLE FOR OPERATIONS TO PLACE FOR 72 HOURS OR LESS. FOR LONGER DURATION OPERATIONS, SIGNING AND PAVEMENT MARKINGS MUST BE ALTERED.

GENERAL NOTES FOR PILOT CAR OPERATIONS

1- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.
2- IF ROADWAY WIDTH IS LESS THAN 22 FEET FROM TO EDGE, CONES MAY NOT BE REQUIRED. ALONG WORK AREA, AT THE DISCRETION OF THE ENGINEER, CONES MAY BE SKITTED ALONG THE WORK AREA IF USING A PILOT CAR.
3- CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS.
4- MOUNT SIGN SDR-4 "PILOT CAR FOLLOW ME" AT A CONSPICUOUS POSITION ON THE REAR OF THE PILOT VEHICLE.
5- UNLESS APPROVED BY THE ENGINEER, DO NOT INSTALL WORK ZONE ON A HILL OR CURVE TO PROVIDE SIGHT DISTANCE FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
6- ADVISE MERCHANTS AND BUSINESSES WITHIN THE LANE CLOSURE THAT FLAGGER STOPS WILL BE LONGER AND ADVISE THEM TO ANTICIPATE DELIVERIES 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.

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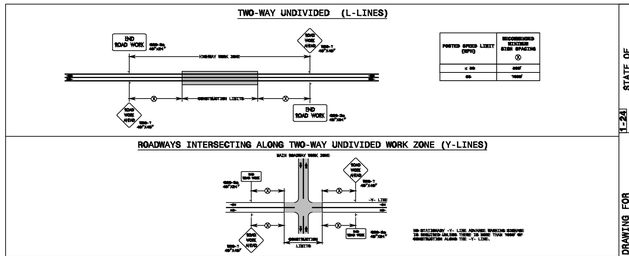
ROADWAY STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY-1 LANE CLOSED

SHEET 1 OF 19
1101.02

6 TEMPORARY LANE CLOSURES



POSTED SPEED LIMIT (MPH)	RECOMMENDED SIGN SPACING X
< 55	500'
55	1000'

GENERAL NOTES

1- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK UNLESS COVERED.
2- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT LONGER THAN 72 CONSECUTIVE HOURS.
3- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS NECESSARY OR AS DIRECTED.
4- ERECT SIGNS PER RDD 1170.01. PAVMENT FOR WOOD POSTS, SLB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATIONS FOR WORK ZONE SIGNS.
5- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH RDD. 1170.01.
6- DO NOT BACK BRACE SIGN SUPPORTS.

LEGEND
- STATIONARY SIGN
- DIRECTION OF TRAFFIC FLOW

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

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ROADWAY STANDARD DRAWING FOR
WORK ZONE ADVANCE WARNING SIGNS FOR TWO-WAY UNDIVIDED FACILITIES

SHEET 3 OF 3
1101.01

5 WORK ZONE ADVANCE WARNING SIGNS

DESIGN SPEED (MPH)	MINIMUM SIGHT DISTANCE STOPPING SIGHT DISTANCE (FEET)	MINIMUM LONGITUDINAL BUFFER SPACE (FEET)
30	200	120
40	305	155
50	425	250
60	570	405
70	730	540
		*

GENERAL NOTES

1- TABLES ARE BASED ON THE AASHTO GREEN BOOK "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". MINIMUM SIGHT DISTANCE VALUES ARE FOR PASSENGER CAR VEHICLES ON WET AND LEVEL ROADWAYS. CONSULT THE AASHTO GREEN BOOK TO MAKE FINAL DETERMINATION OF STOPPING SIGHT DISTANCE REQUIREMENTS.
2- BUFFER SPACE TABLE IS BASED ON THE BRAKING DISTANCE PORTION OF STOPPING SIGHT DISTANCE FOR WET AND LEVEL PAVEMENTS.
3- USE OF STOPPING SIGHT DISTANCE IN TRAFFIC CONTROL PLAN APPLICATIONS INCLUDES PROVIDING SIGHT DISTANCE FOR TRAFFIC APPROACHING A LANE CLOSURE. PROVIDE 2-LANE, 2-WAY ROADWAYS STOPPING SIGHT DISTANCE TO THE FLAGGER. FOR LANE CLOSURES ON MULTILANE ROADWAYS PROVIDE STOPPING SIGHT DISTANCE TO THE BEGINNING OF THE LANE CLOSURE MERGE TAPER, OR FLASHING ARROW BOARD. EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED.

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ROADWAY STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
BUFFER SPACE & SIGHT DISTANCE

SHEET 2 OF 4
1101.11

3 BUFFER SPACE AND SIGHT DISTANCE

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER OR NCDOT.

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 NCDOT.

PROJECT NOTES

A. DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

B. REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.

C. WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

D. WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

E. WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITH THE CLOSED TRAVEL LANE.

F. DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

G. BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER.

H. DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 350 FEET IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

SIGNING

I. INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

J. ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

K. INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 100 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

L. NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

TRAFFIC CONTROL DEVICES

M. SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED, REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.

N. PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

O. PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS, CONES OR SKINNY DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES REMAIN CLOSED TO TRAFFIC.

P. ONLY UNIFORMED POLICE OFFICERS SHALL DIRECT TRAFFIC THROUGH SIGNALIZED INTERSECTIONS. THE TRAFFIC SIGNAL MAY BE PUT INTO FLASHING OPERATION OR MAY REMAIN IN NORMAL OPERATION AT THE DISCRETION OF THE OFFICER.

OFFICERS SHALL BE PROPERLY ATTIRED AND SHALL DIRECT TRAFFIC WITH HAND MOTIONS. FLASHLIGHTS WITH RED CONES SHOULD BE USED AT NIGHT. OFFICERS MAY ALSO USE A WHISTLE TO SIGNAL WHEN THEY ARE CHANGING THE DIRECTION OF THE RIGHT OF WAY.

STANDARDS

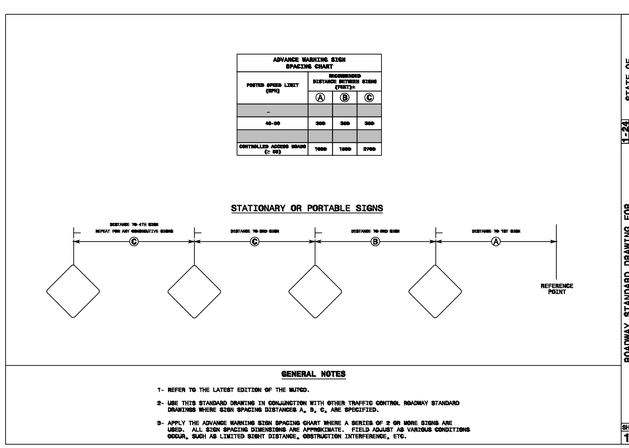
THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH - N. C. DEPARTMENT OF TRANSPORTATION -RALEIGH, N. C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

- 903.10 - GROUND MOUNTED SIGN SUPPORTS
- 904.10 - ORIENTATION OF GROUND MOUNTED SIGNS
- 940.50 - MOUNTING OF TYPE "D", "E", AND "F" SIGNS ON "U" CHANNEL POSTS
- 1101.01 - WORK ZONE WARNING SIGNS
- 1101.02 - TEMPORARY LANE CLOSURES
- 1101.04 - TEMPORARY SHOULDER CLOSURES
- 1101.11 - TRAFFIC CONTROL DESIGN TABLES
- 1110.01 - STATIONARY WORK ZONE SIGNS
- 1110.02 - PORTABLE WORK ZONE SIGNS
- 1130.01 - DRUMS
- 1135.01 - CONES
- 1150.01 - FLAGGING DEVICES
- 1180.01 - SKINNY - DRUM

TEMPORARY LANE CLOSURE VALUES	
MINIMUM "L"	125'
SIGHT STOPPING DISTANCE	200'
BUFFER	85'
WARNING SIGN SPACING	200'

*NEIGHBORHOOD CURRENT POSTED SPEED LIMIT IS 25 MPH.

1 GENERAL NOTES



ADVANCE WARNING SIGN SPACING CHART			
POSTED SPEED LIMIT (MPH)	RECOMMENDED DISTANCE BETWEEN SIGNS (FEET)		
	A	B	C
-			
45-55	500	500	500
CONTINUED ACCESS BEYOND (C: 2X)	1000	1000	2000

GENERAL NOTES

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

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

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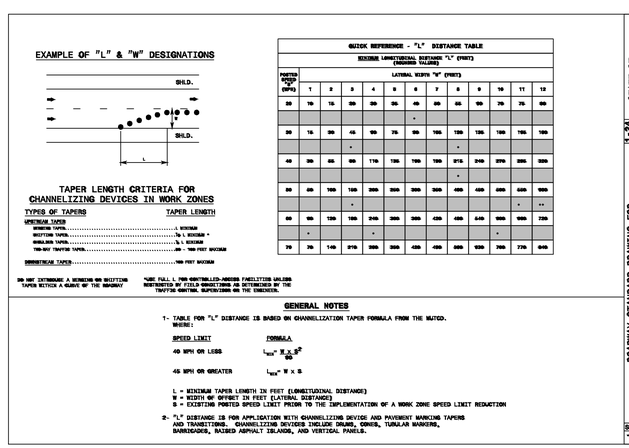
ROADWAY STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
SPACING OF TEMPORARY SIGNS IN SERIES

SHEET 4 OF 4
1101.11

4 SIGNAGE OF TEMPORARY SIGNS IN STREETS



QUICK REFERENCE - "L" DISTANCE TABLE												
MINIMUM LONGITUDINAL DISTANCE "L" (FEET) (ROUNDED VALUES)												
POSTED SPEED LIMIT (MPH)	LATERAL WIDTH "W" (FEET)											
	1	2	3	4	5	6	7	8	9	10	11	12
20	10	15	20	30	35	40	50	55	60	70	75	80
						*						
30	15	30	45	60	75	90	105	120	135	150	165	180
			*					*				
40	30	55	80	110	135	160	190	215	240	270	295	320
								*				
50	55	105	155	205	255	305	355	405	455	505	555	605
			*							*	**	
60	90	220	330	440	550	660	770	880	990	1100	1210	1320
	*			*					*			
70	75	140	210	280	350	420	490	560	630	700	770	840

GENERAL NOTES

1- TABLE FOR "L" DISTANCE IS BASED ON CHANNELIZATION TAPER FORMULA FROM THE MUTCD.
WHERE:

SPEED LIMIT	FORMULA
40 MPH OR LESS	$L_{min} = \frac{W \times S^2}{60}$
45 MPH OR GREATER	$L_{min} = W \times S$

L = MINIMUM TAPER LENGTH IN FEET (LONGITUDINAL DISTANCE)
W = WIDTH OF OFFSET IN FEET (LATERAL DISTANCE)
S = EXISTING POSTED SPEED LIMIT PRIOR TO THE IMPLEMENTATION OF A WORK ZONE SPEED LIMIT REDUCTION

2- "L" DISTANCE IS FOR APPLICATION WITH CHANNELIZING DEVICE AND PAVEMENT MARKING TAPERS AND TRANSITIONS. CHANNELIZING DEVICES INCLUDE DRUMS, CONES, TUBULAR MARKING, BARRICADES, RAISED ASPHALT ISLANDS, AND VERTICAL PANELS.

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

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ROADWAY STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
"L" DISTANCE & CHANNELIZING DEVICE TAPER CRITERIA

SHEET 1 OF 4
1101.11

2 "L" DISTANCE AND CHANNELIZING

TRAFFIC CONTROL DETAILS

SHEET NUMBER C14.4

PLAN TYPE

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
1308 PATTON AVENUE, SUITE C
ASHEVILLE, NORTH CAROLINA 28806
TEL: (828) 252-8130
LICENSURE: NC ENG F-1253

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

NORTH CAROLINA PROFESSIONAL SEAL 014509 ENGINEER WILLIAM S. HOOPER SCS0001 DATE 12/13/2024

REVISIONS			
REV. #	DESCRIPTION	DATE	REV. BY
REV. I	100% ISSUED FOR BID	2024-07-09	WSP
REV. J	100% ISSUED FOR PERMIT	2024-09-06	WSP
REV. K	100% ISSUED FOR PERMIT	2024-11-22	WSP

DRAWN:	RAS
DESIGN:	RAS
CHECK:	DCO
APPROVED:	ALH

PROJECT	SESSOMS STREET DRAINAGE IMPROVEMENTS
NAME:	
SCALE:	AS SHOWN
DATE:	22 NOVEMBER 2024

PROJECT NO. 6480-22-0142
SUB-LEDGER NO.

accordance with the responsible agency's requirements. Deficiencies shall be corrected by the Contractor without additional cost to PWC.

FINISHED EXCAVATION

All areas covered by the project shall be uniformly graded to the established elevations and approved cross sections. Ditches shall be graded to permit proper drainage. Newly graded areas shall be protected from traffic and/or from erosion, and any settlement or washing prior to acceptance shall be repaired and the required grades re-established. Ditches and drains along the subgrade shall be maintained to drain at all times. The finished subgrade shall be protected and maintained by the Contractor. The storage or stockpiling of materials on the finished subgrade shall not be permitted. No base course or pavement shall be laid until the subgrade has been checked and approved. All work shall be conducted in accordance with the environmental protection requirements of the Contract.