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ADDENDA

ADDENDUM NO. 01

DATE: **June 6, 2025**

PROJECT: **WEST ROSEMARY STREET WATER LINE REPLACEMENT**

OWASA CIP NUMBER: 275-95

OWNER: **ORANGE WATER AND SEWER AUTHORITY**

ENGINEER: **McKim & Creed, Inc.**

TO: **Prospective Bidders**

This Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated May 2025, with amendments and additions noted herein below.

Acknowledge receipt of this Addendum in the space provided in the Bid form. Failure to do so may disqualify the Bidder.

This Addendum consists of 84 pages (including this Addendum).

CLARIFICATIONS:

1. The Pre-Bid Meeting Minutes (dated May 29, 2025) and Pre-Bid Meeting Sign-In Sheet are attached and made part of the Contract Documents.

CHANGES TO THE SPECIFICATIONS

1. Add the following to Specification Section 00 41 44 Proposal – Unit Price Contract Bid Form, Article 11.01:

   The Bidder shall demonstrate the ability to complete a majority of all portions of Contract using personnel employed by the Bidder. The Bidder shall include a list of at least three (3) projects they have completed with their equipment and personnel within the past five (5) years that involves installation of a gravity sewer and water line of similar diameter. This documentation shall be included with the Bid.

2. Add the following to Specification Section 01 10 26 – Unit and Lump Sum Prices, Article C (Allowances), Part 1 (Town of Chapel Hill Engineering Fee Allowance):

   The Town of Chapel Hill may require the Contractor to secure a bond as part of the Engineering Construction Permit. If the required Performance and Payment Bond for the project is not recognized by the Town for their Engineering Construction Permit, the Contractor will be eligible for payment to secure a separate bond for the actual cost of the bond only, based on proof of payment from the boding company; plus 10% markup for coordination efforts. This allowance is to only be used if the Performance and Payment Bond for the project is not recognized by the Town of Chapel Hill as part of their bonding requirements for an Engineering Construction Permit and a separate bond must be obtained. The Town of Chapel Hill may require a 5-year warranty on all street cuts and paving restoration work. This allowance is not to be used to cover any costs associated with a 5-year street cut and paving restoration warranty and no separate payment will be made unless otherwise stated in the Contract Documents.

3. Add the attached North Carolina Department of Environmental Quality – Division of Energy, Mineral, and Land Resources – Erosion and Sedimentation Control Certificate of Plan Approval to Appendix A.2; this document was not included in the Issued for Bid specifications.

4. Add the attached North Carolina Department of Environmental Quality – Division of Energy, Mineral, and Land Resources NCG01 Certificate of Coverage to Appendix A.3; this document was not included in the Issued for Bid specifications.

5. Add the attached North Carolina Department of Environmental Quality – Pretreatment and Collection Systems Fast Track Sewer Permit to Appendix A.4; this document was not included in the Issued for Bid specifications.

6. Add the attached North Carolina Department of Transportation Right of Way Encroachment Agreement to Appendix A.5; this document was not included in the Issued for Bid specifications.

CHANGES TO THE DRAWINGS:

1. Add the following to the end of Note 24 of the General Notes on Sheet G3: "Contractor to contact Ernie Rogers (919.619.3032) prior to construction."

2. Add the attached Detail MC-16 (Addendum No.1) to Sheet D5.

-END OF DOCUMENT-



ORANGE WATER AND SEWER AUTHORITY
WEST ROSEMARY STREET WATER LINE REPLACEMENT
OWASA CIP NO. 275-95 / M&C PROJECT NO. 01519-0063

May 29, 2025 at 3:00 PM

MANDATORY PRE-BID CONFERENCE MINUTES

Safety:

OWASA's number one priority for all construction projects is safety.

Project Bid:

Sealed bids will be received by the Owner, Orange Water and Sewer Authority, in the Administrative Offices, 400 Jones Ferry Rd, Carrboro, NC 27510, until 2:00 PM local time, on **Wednesday, June 11, 2025**, for the construction of the West Rosemary Street Water Line Replacement project, CIP No. 275-95.

If Bids will be hand delivered, Bids should be checked in at the front desk so they can be time/date stamped. Bids must be time/date stamped by 2:00 PM on Wednesday, June 11th. The official time piece is the mobile phone of the OWASA Project Manager, Darren Berger. Bidders are reminded that if they are delivering bids via FedEx/UPS or USPS, bids should arrive no less than 24 hours prior to bid opening and be sent by registered mail in a separate mailing/delivery envelope plainly marked on the outside with the notation "BID ENCLOSED", and addressed to:

Darren Berger
Project Manager
Orange Water and Sewer Authority
400 Jones Ferry Road
Carrboro, North Carolina 27510

The Bid opening will occur at the Orange Water and Sewer Authority Administrative Office building. Bidders may be present at the opening of Bids, but it is not required.

Orange Water and Sewer Authority reserves the right to reject and or all Bids, including without limitation, non-conforming, non-responsive, unbalanced, or conditional Bids. Orange Water and Sewer Authority further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Orange Water and Sewer Authority may also reject the Bid of any Bidder if Orange Water and Sewer Authority believes that it would not be in the best interest of the Project to make an Award to that Bidder. Orange Water and Sewer Authority also reserves the right to waive any or all informalities not involving price, time, or changes in the Work, and to negotiate terms with the successful Bidder.

Bid Structure:

The project is a Unit Price and Lump Sum Bid based on the items and quantities listed in the Bid Form.

Project Description:

The work will generally consist of water line replacement on West Rosemary Street between the intersection of N. Merritt Mill Road and N. Columbia Street, including all associated appurtenances and restoration as described in the Specifications and as shown on the Drawings. The major work items are as follows:

- Approximately 3,100 linear feet of 12-inch restrained joint polywrapped ductile iron water line, approximately 210 linear feet of 8-inch ductile iron water main and approximately 180 linear feet of 6-inch ductile iron water line along W. Rosemary Street from Merritt Mill Road through the intersection of N. Columbia Street (NC-86).

- Replacement of 440 linear feet of existing 6-inch VCP sanitary sewer with approximately 440 linear feet of 8-inch C900 PVC sanitary sewer and an additional manhole to be installed via open cut.

- Installation of all temporary and permanent water services and interconnections, required to install complete and operable water lines meeting local requirements and requirements as described in the contract documents.

- Applicable traffic control, restoration, erosion and sediment control, permitting, and other items required to meet local requirements and requirements as described in the contract documents.

- Abandonment of approximately 1,140 linear feet of 12-inch, 8-inch and 6-inch water line AC and CI water lines and the removal of approximately 3,270 linear feet of 12-inch, 8-inch and 6-inch AC and CI water lines.

- As part of a Unit Price Alternate Bid, installation of Insertion Valve in lieu of Full Body MJxMJ Insertion Sleeve for Line Stop (Bid Item 18)

Examination of Contract Documents and Site:

Bidder shall provide written notice to Engineer of all conflicts, errors, or discrepancies in the Contract Documents.

Construction Contract Periods and Schedules:

The Work shall be Substantially Complete within **510 CONSECUTIVE CALENDAR DAYS**, after the date when the Contract Time commences to run and shall be completed and ready for final payment within **540 CONSECUTIVE CALENDAR DAYS**, of the Notice to Proceed. No interim completion dates have been established for this project. The Town of Chapel Hill has approved 7am – 7pm work hours M-F with allowable lane closures (when necessary) M-F from 8am – 5pm. NCDOT has approved weekend work hours (beginning Friday at 7pm – Monday at 6am) for water main installation and associated appurtenances within NCDOT right-of-way of the West Rosemary St/N Columbia St (NC-86) intersection. The awarded Contractor shall have a total of four (4) weekends (up to three (3) consecutive weekends, with a weekend "break" between weekends three (3) and four (4)) to complete all work (excluding Disinfection and Bacteriological Testing) within NCDOT right-of-way utilizing approved road closures as indicated in the Transportation Management Plan.

Liquidated Damages:

Description	*Number of Consecutive Calendar Days to Achieve Completion of the Work*	*Liquidated Damages (per day)*
Substantial Completion	510 days from Notice to Proceed	$1,500
Final Completion	540 days from Notice to Proceed	$1,500

Bid Package Requirements:

If Bid is sent by registered mail, air/ground special delivery, or express delivery, the sealed envelope containing the Bid, marked as indicated above, shall be enclosed in an additional sealed envelope similarly marked and addressed as follows:

BID ENCLOSED
Darren Berger
Project Manager
Orange Water and Sewer Authority
400 Jones Ferry Road
Carrboro, North Carolina 27510

Mark envelope with the Project title and Contract number in the lower left-hand corner. Bids sent by mail or express air/ground delivery and arriving after the time for opening of Bids shall not be considered as valid Bids.
If the Bidder chooses delivery of the Bid by means other than in person, neither Orange Water and Sewer Authority nor the Engineer assumes responsibility for delivery to the Bid opening.

THE FOLLOWING FORMS ARE INCLUDED IN SECTION 00 41 44 – PROPOSAL AND SHALL BE COMPLETELY FILLED OUT AND SUBMITTED WITH THE BIDS. Failure to submit all of the forms below with the Proposal may be just cause for rejection of the Proposal by the Owner.

- Proposal and Bid Form
- Addenda Acknowledgement
- Certified List of Equipment/Material Manufacturers and Subcontractors
- Certification Affidavit and Bid Certification
- Evidence of Authority to do Business in the State of North Carolina
- Bid Bond or other Bid Security
- Contractor's Affidavit of Organization and Authority
- Non-Collusion Affidavit for Contractors
- Non-Collusion Affidavit for Subcontractors
- Equal Employment Opportunity Certification
- Identification of Minority Business Participation
- State of North Carolina - Affidavit A - Listing of Good Faith Efforts Form OR Affidavit B – Intent to Perform Contract with Own Workforce.

Additional Documents to be Included with the Bid (not included in Section 00 41 44 – Proposal):

- E-Verify Affidavit
- Iran Divestment Act Certification
- Companies Boycotting Israel Divestment Act Certification Form
- Certification Regarding Conflict of Interest

<u>Method of Payment:</u>

Bidder should refer to the Section 01 10 26 – Unit and Lump Sum Prices for a description of work to be included in each payment item and how that item is to be paid.

Survey and SUE Data:

Survey of above-grade topographic features was conducted by McKim & Creed in March 2023 (). Topographic survey of additional above-grade topographic features, sanitary and storm sewer inverts, and right-of-way boundaries was performed by McKim & Creed, May 2024. Subsurface Utility Engineering (SUE) Quality Levels D and B were performed by McKim & Creed in March 2023. SUE Quality Level A was performed by Mckim & Creed in specific locations as shown on plan set in December 2023, October 2024. and July 2024.

Permits and Encroachments:

The following permits, encroachments, and work restrictions are included as part of this project

- Appendix A.1 - North Carolina Department of Environmental Quality – Division of Water Resources Public Water Supply Section – Engineering Plans and Specifications for Water Supply Systems Approval (under review- will be provided upon approval)
- Appendix A.2 - NC Division of Environmental Quality - Division of Energy, Mineral, and Land Resources - Erosion and Sedimentation Control Plan Approval with Modifications (approved…to be issued via Addendum)
- Appendix A.3 - NC Division of Environmental Quality - Division of Energy, Mineral, and Land Resources NCG01 - Certificate of Coverage (approved…to be issued via Addendum)
- Appendix A.4 – North Carolina Department of Environmental Quality – Pretreatment and Collection Systems – Fast Track Sewer Permit (has been received and will be included in Addendum No. 1) (approved…to be issued via Addendum)
- Appendix A.5 - NC Department of Transportation - Two-Party Primary Route Right-of-Way Encroachment Agreement for North Columbia St (NC-86) (has been received and will be included in Addendum 1) (approved…to be issued via Addendum)
- Appendix B – Town of Chapel Hill Review Approval
- Appendix C – Working Hour Restrictions

Traffic Control:

- Traffic control signage, cones, barricades, etc. can remain in place 24/7 so long as signage, cones, barricades, etc. are laid down or removed in areas where work will not occur the following business day and/or over the weekend.
- First Day of Class for UNC-CH Fall Semester is August 18, 2025. The Town will not allow work to occur on-site the preceding Thursday, August 14 and Friday, August 15. If possible,

the Contractor shall begin construction on, as soon after, or prior to August 18, 2025, to allow the campus community to acclimate themselves to associated traffic control and pedestrian detour impacts from construction of this project.

- Additional anticipated TOCH roadway traffic control impacts from new leadership associated with UNC-CH football consist of potential for 3-way traffic in/3-way traffic out towards/away from Kenan Stadium via Ridge Rd and Raleigh Rd before and after home football games, respectively, but only on gamedays, pending approval from Emergency Services. UNC-CH has (5) Saturday home games for Fall 2025, and (1) home game on a Monday (Labor Day), so there are no additional anticipated football related traffic control impacts on this project given approved working hours. **The Town will notify the project team of any changes/new developments.**
- Allowable lane closure hours are from 8:00am to 5:00pm, Monday through Friday.
- NCDOT has approved weekend work hours (beginning Friday at 7pm – Monday at 6am) for water main installation and associated appurtenances within NCDOT right-of-way of the West Rosemary St/N Columbia St (NC-86) intersection. The awarded Contractor shall have a total of four (4) weekends (up to three (3) consecutive weekends, with a weekend "break" between weekends three (3) and four (4)) to complete all work (excluding Disinfection and Bacteriological Testing) within NCDOT right-of-way utilizing approved road closures as indicated in the Transportation Management Plan.

<u>Miscellaneous Items:</u>

- OWASA anticipates award of Contract in July 2025.
- OWASA anticipates Notice to Proceed in August 2025.
- Contact OWASA a minimum of 72 hours prior to the start of construction.
- Contractor shall begin work within 10 consecutive calendar days of the date specified in the Notice to Proceed. Failure of the Bidder to commence the work or fail to provide the required bonds shall result in forfeit of bid security as damages to Orange Water and Sewer Authority by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which the contract is signed.
- All work shall comply with the latest OWASA, Town of Chapel Hill, and NCDOT Standards and Requirements.
- McKim & Creed will be providing Construction Administration and full-time Observation services.
- Bidders shall be familiar with all conditions and provisions in the permits.

- All underground utilities are approximate location unless otherwise noted. Contractor to verify size, depth, location and material of all existing utilities prior to the start of construction. Contractor shall contact NC One call center at 811 a minimum of 48 hours prior to digging to have buried utilities properly located. No excavation shall occur until buried utilizes have been properly located. Contractor shall be responsible for locating all buried telecommunication and electric duct banks and structures, including depth and edges of duct banks and structures, prior to start of construction. Notify Engineer and Owner immediately should a conflict arise between proposed water main location and existing duct banks, telecommunications, and buried electric structures.
- Contractor shall be responsible for determining location, depth, material, type and condition of existing utilities, including existing water main at proposed tie in locations. Prior to installation of new main line tees and taps, Contractor to verify size and material of existing services and interconnections.
- Contractor shall notify OWASA minimum of ten (10) working days prior to connecting to existing water mains. Contractor shall coordinate all abandonment, valve box removal, and tie-in activities as required with OWASA. Contractor shall not operate any valves or fire hydrants.
- OWASA has encountered pipe within the project corridor which has been found to be "out of round." Contractor shall be prepared in all locations where connections are being made to an existing water line, regardless of size or material, to make adjustments.
- Sizing, connection locations, and looping of the 8" HDPE temporary water main as shown on the plans is based on hydraulic modeling performed by Freese and Nichols in January 2025 to confirm available fire flow at existing hydrants along West Rosemary St. The model predicted results indicate the majority of fire hydrants along the West Rosemary St. project corridor will achieve flows greater than 3,000 GPM and no fire hydrant flows will be less than 2,000 GPM, which generally matches existing conditions. Any proposed changes to the temporary water line size, material or connections requested by the Contractor shall be coordinated with the Town of Chapel Hill Fire Department and the Contractor shall have hydraulic modeling performed to confirm required fire flow, and results shall be sealed be a Professional Engineer licensed in the state of North Carolina.
- Gravity sanitary sewer exists along the project corridor and sanitary sewer services are not owned by OWASA, have not been verified, and are generally shown on the plans. Sewer services on the plans are taken from record drawings and Contractor shall confirm number and location of sewer services prior to construction. Contractor may utilize a MAXADAPTOR coupling to repair sanitary sewer services as needed during construction. If Contractor damages a service line, photos, damage and repair documentation is required so OWASA will not be liable for replacing the property owner's portion of the pipe. OWASA will accept DI or

C900 PVC for sanitary sewer service lateral repair, but C900 PVC is preferred. OWASA will not be held accountable for structural damage.

- Exact number and location of existing active sanitary sewer service laterals shown to be reconnected or replaced along West Rosemary St between N. Roberson St and Mitchell Ln are unknown. Sanitary sewer services shown to be removed or replaced in this area were provided from OWASA CCTV and GIS records. Contractor to confirm number, location, diameter, and depth of active sanitary sewer services during construction. All active sanitary sewer service laterals that are not replaced shall be reinstated.
- Ten (10) Calendar days prior to temporary road closures, contractor shall notify property stakeholders and authorities having jurisdiction to coordinate traffic and community impacts, including personnel at Town of Chapel Hill, and UNC-Chapel Hill. Impacts to school bussing, town bussing, emergency vehicles, and pedestrians shall be considered and coordinated with as a part of this notification process.
- Access to residences, businesses, and UNC facilities shall be maintained at all times unless otherwise approved by OWASA. Contractor shall coordinate with Owner when crossing or impacting driveways. Contractor shall notify the Town of Chapel Hill when excavation will occur within 500 feet of a Town of Chapel Hill signalized intersection. Contractor to locate all traffic signal or detect cables prior to excavation. Contractor shall locate all traffic loops within the project area and replace any loops disturbed by construction. Contractor shall coordinate with the Town of Chapel Hill or NCDOT (as applicable for any disruption in traffic signals).
- Contractor is responsible for securing a laydown yard prior to mobilization and submitting plan for laydown area in accordance with the Contract Documents.
- Bidders are to note the project specific insurance requirements listed in section 00 52 15 – Agreement Form – Single Prime Contract.
- Bidders shall note the Allowances included in the bid form and refer to the Unit Price section of the specifications for how they apply to the Contract.
- Contractor shall note all erosion and sedimentation control measures shown on plan sheets.
- The Town has indicated they intend to waive street cut fees on this project with inclusion of a 1.5″ mill and overlay from curb to curb on Town owned roadways.

- Water line abandonment shall be performed in accordance with the latest edition of OWASA and NCDOT standards and requirements. All pipe greater than 4" in diameter which is abandoned in place shall be grout filled. Any AC pipe removed shall be handled and disposed in accordance with all federal and local laws/ordinances. Existing valves on water lines to be grout filled shall be abandoned by removing valve cover and top section(s) to a depth of 3 feet below final grade. Backfill remaining valve box sections and excavation with flowable fill.
- New water line and associated fittings shall be restrained joint ductile iron in accordance with the latest OWASA standard specifications. Bidders are reminded to review all material requirements listed in the project specifications.
- Contractor shall maintain potable water service and fire protection throughout construction unless accepted by OWASA prior to a scheduled outage. Temporary services and fire connections shall be used where expected disruptions exceed an 8 hour regular business day. Services must be restored prior to leaving the worksite at the end of each work day.
- Contractor shall notify OWASA a minimum of five (5) working days prior to connecting existing water mains to new water main. Contractor shall coordinate all abandonment, valve box removal, and tie-in activities as required with OWASA. Contractor shall not operate and valves or fire hydrants.
- Any valves, blow off assemblies, meters, meter boxes, fittings, or other appurtenances removed as part of the abandonment activities shall be returned to OWASA, unless otherwise directed by Owner's representative.
- Contractor shall obtain street cut permit from Greg Ling at the Town of Chapel Hill and complete an engineering construction permit with the Town of Chapel Hill prior to beginning construction.
- It is the Contractor's responsibility to prepare accurate record drawing information per the requirements of the specifications (red-lined drawings).
- All questions about the meaning or intent of the Bidding Documents shall be submitted in writing to the Engineer via email only to: kmattingly@mckimcreed.com. Interpretations or clarifications considered necessary by the Engineer in response to such questions will be issued by Addenda emailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. All Addenda will also be posted at least twenty-four (24) hours before Bids are opened. Questions received less than five (5) days prior to the date for the opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications shall be without legal effect.

Comments and Bidder Questions

- OWASA anticipates holding a preconstruction meeting with the awarded Contractor no later than August 2025.
- OWASA anticipates issuance of a NTP August/September 2025.
- OWASA indicated the Contractor will have several options for temporary fire protection connections.
- The Contractor will be expected to contact Dale May with the Town of Chapel Hill to obtain an Engineering Construction Permit and notify the Town regarding impacts to signalized intersections. The Contractor will be expected to coordinate with Jayson Staley with the Town of Chapel Hill for all work associated with street cuts and traffic control within Town right-of-way.
- OWASA requires only meters to be returned to OWASA after removal.

Bidder Question 1: Does the project have to be re-bid if only two (2) bidders were present at the mandatory pre-bid conference?

Engineer Response to Bidder Question 1: Per North Carolina General Statute 143-132, "No contract to which G.S. 143-129 (Procedure for letting of public contracts) applies for construction or repairs shall be awarded by any board or governing body of the State, or any subdivision thereof, unless at least three competitive bids have been received from reputable and qualified contractors regularly engaged in their respective lines of endeavor."

Bidder Question 2: What is the Engineer's Opinion of Probable Construction Cost?

Engineer Response to Bidder Question 2: The Engineer's Opinion of Probable Construction Cost is ~$7,500,000.

McKIM&CREED

ORANGE WATER AND SEWER AUTHORITY (OWASA)
WEST ROSEMARY STREET WATER LINE REPLACEMENT (OWASA CIP NO. 275-95)
PRE-BID MEETING
Thursday, May 29, 2025

SIGN-IN SHEET

Name	Organization	Phone Number	Email
Diandra Hyman	McKim & Creed, Inc.	(267) 229-4898	dhyman@mckimcreed.com
Jacob Bowes	McKim & Creed, Inc.	(919) 600-9947	jbowes@mckimcreed.com
Haydon Curry	McKim & Creed, Inc.	(919) 339-0159	hcurry@mckimcreed.com
Andrew Favaron	McKim & Creed, Inc.	(919) 601-6139	afavaron@mckimcreed.com
Darren Berger	OWASA	(919) 636-2785	dberger@owasa.org
Adam Holloway	OWASA	(919) 923-6104	aholloway@owasa.org
Tim Hogan	J.F. Wilkerson	919 501 8597	tim@jfwilkerson.com
CAMERON YULL	MOFFAT PIPE	919-295-4630	bids@moffatpipe.com
Steven Bailey	OWASA	919-537-4251	sbailey@owasa.org
Ryan Palmer	Xylem / Godwin	919-278-6931	Ryan.Palmer@xylem.com

Name	Organization	Phone Number	Email

CERTIFICATE OF PLAN APPROVAL

The posting of this certificate certifies that an erosion and sedimentation control plan has been approved for this project by the North Carolina Department of Environmental Quality in accordance with North Carolina General Statute 113A – 57 (4) and 113A – 54 (d) (4) and North Carolina Administrative Code, Title 15A, Chapter 4B.0107 (c). This certificate must be posted at the primary entrance of the job site before construction begins and until establishment of permanent groundcover as required by North Carolina Administrative Code, Title 15A, Chapter 4B.0127 (b).

W Rosemary Street Water Line Replacement
N Merritt Mill Rd N Columbia St Chapel Hill, NC 27516

5/7/2025
Date of Plan Approval

ORANG-2025-0108
Project Identifier

Certificate of Coverage Number: _____

Certificate of Coverage

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES

GENERAL PERMIT NO. NCG010000

Certificate of Coverage No. NCC251491

STORMWATER DISCHARGES

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provision of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended,

Orange Water and Sewer Authority

is hereby authorized to discharge stormwater associated with CONSTRUCTION ACTIVITIES to surface waters of North Carolina from a site located at:

W Rosemary Street Water Line Replacement
N Merritt Mill Rd
N Columbia St
Chapel Hill
Orange

in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in N.C. General Permit No. NCG010000

This Certificate of Coverage is affiliated with **E&SC Plan Project No. ORANG-2025-0108**

This Certificate of Coverage shall become effective 5/23/25.

This Certificate of Coverage shall remain in effect until rescinded or expired.

This Certificate of Coverage will expire on the anniversary of its effective date unless it is renewed by payment of the annual administration and compliance fee.

Brooklyn Broussard, Administrative Officer II
Division of Energy, Mineral, and Land resources
By the Authority of the Environmental Management Commission

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JOSH STEIN
Governor
D. REID WILSON
Secretary
RICHARD E. ROGERS, JR.
Director

NORTH CAROLINA
Environmental Quality

May 19, 2025

Todd Taylor, PE; Executive Director
Orange Water and Sewer Authority
400 Jones Ferry Road
Carrboro, NC 27510

Subject: Permit No. WQ0046340
Orange Water and Sewer Authority
West Rosemary Street Water Line Replacement
Wastewater Collection System Extension Permit
Orange County

Dear Permittee:

In accordance with your application received April 10, 2025 and additional information received on May 7, 2025, we are forwarding herewith Permit No. WQ0046340 dated May 19, 2025, to Orange Water and Sewer Authority (Permittee) for the construction and operation upon certification of the subject wastewater collection system extension. This permit shall be effective from the date of issuance until rescinded and shall be subject to the conditions and limitations as specified therein. This cover letter shall be considered a part of this permit and is therefore incorporated therein by reference.

Please pay particular attention to the Special Condition and the following Standard Conditions contained in this permit:

Condition II.1: This permit shall not be automatically transferable; a request must be made and approved.

Condition II.4: Requires that the wastewater collection facilities be properly operated and maintained in accordance with 15A NCAC 02T .0403 or any individual system-wide collection system permit issued to the Permittee.

Condition II.7: Upon completion of construction and prior to operation of these permitted facilities, the completed Engineering Certification form with checklist attached to this permit shall be submitted with the required supporting documents to the address provided on the form. **Permit modifications are required for any changes resulting in non-compliance with this permit, regulations, or the Minimum Design Criteria.** [15A NCAC 02T.0116]

It shall be the responsibility of the Permittee to ensure that the as-constructed project meets the appropriate design criteria and rules. Failure to comply may result in penalties in accordance with North Carolina General Statute §143-215.6A through §143-215.6C, construction of additional or replacement

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wastewater collection facilities, and/or referral of the North Carolina-licensed Professional Engineer to the licensing board.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within 30 days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of North Carolina General Statutes, and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made, this permit shall be final and binding.

If you need additional information concerning this matter, please contact the Raleigh Regional Office via e-mail at DEQ.DWR.RRO.FastTracks@deq.nc.gov or 919-791-4200.

Sincerely,

Signed by:
Michael Hall
372DCBCB61EE4A8...

Michael Hall, Regional Supervisor
Water Quality Regional Operations Section
Raleigh Regional Office
Division of Water Resources, NCDEQ

cc: Diandra Hyman, PE; McKim & Creed, Inc.
Darren Berger, Project Manager; OWASA
Orange County Health Department
DWR Laserfiche

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NORTH CAROLINA
Environmental Quality

WASTEWATER COLLECTION SYSTEM EXTENSION PERMIT

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules, and Regulations, permission is hereby granted to

Orange Water and Sewer Authority
Orange County

for the construction and operation of approximately 440 linear feet of 8-inch gravity sewer to replace an existing 6-inch line as part of the West Rosemary Street Water Line Replacement project, and the discharge of zero gallons per day (GPD) of collected wastewater into Orange Water and Sewer Authority's existing sewerage system, pursuant to the application received April 10, 2025, and additional information received on May 7, 2025 and in conformity with 15A NCAC 02T; the Division's Gravity Sewer Minimum Design Criteria adopted February 12, 1996 and updated in March 2008, as applicable; the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains adopted June 1, 2000 as applicable; and other supporting data subsequently filed and approved by the Department of Environmental Quality and considered a part of this permit.

This permit shall be effective from the date of issuance until rescinded and shall be subject to the specified conditions and limitations contained therein.

Signed by:
Michael Hall
372DCBCB61EE4A8...

Michael Hall, Regional Supervisor
Water Quality Regional Operations Section
Raleigh Regional Office
Division of Water Resources, NCDEQ

Permit Number: **WQ0046340**
Permit Issued: **May 19, 2025**

Docusign Envelope ID: 2CF50739-7828-42D4-82B9-96BBA179972D

SUPPLEMENT TO PERMIT COVER SHEET

Orange Water and Sewer Authority is hereby authorized to:

Construct and then operate upon certification the aforementioned wastewater collection extension. The sewage and wastewater collected by this system shall be treated in Orange Water and Sewer Authority's Mason Farm Wastewater Treatment Plant in accordance with Permit Number NC0025241.

Permitting of this project does not constitute an acceptance of any part of the project that does not meet 15A NCAC 02T; the Division's Gravity Sewer Minimum Design Criteria adopted February 12, 1996 as applicable; and the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains adopted June 1, 2000 as applicable, unless specifically mentioned herein. Division approval is based on acceptance of the certification provided by a North Carolina-licensed Professional Engineer in the application. It shall be the Permittee's responsibility to ensure that the as-constructed project meets the appropriate design criteria and rules.

Construction and operation is contingent upon compliance with the Standard Conditions and any Special Conditions identified below.

I. SPECIAL CONDITIONS

1. No flow in excess of the quantity permitted herein, zero GPD, shall be made tributary to the subject sewer system until an application for permit modification for an increase in flow or a new upstream application with flow has been submitted to and approved by the Division. [15A NCAC 02T.0304(b)]

II. STANDARD CONDITIONS

1. This permit shall not be transferable. In the event there is a desire for the wastewater collection facilities to change ownership, or there is a name change of the Permittee, a formal permit request shall be submitted to the Division accompanied by documentation from the parties involved, and other supporting materials as may be appropriate. The approval of this request shall be considered on its merits and may or may not be approved. [15A NCAC 02T.0116; G.S 143-215.1(d3)]

2. This permit shall become voidable unless the wastewater collection facilities are constructed in accordance with the conditions of this permit; 15A NCAC 02T; the Division's Gravity Sewer Minimum Design Criteria adopted February 12, 1996 as applicable; the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains adopted June 1, 2000 as applicable; and other supporting materials unless specifically mentioned herein. [15A NCAC 02T.0110]

3. This permit shall be effective only with respect to the nature and volume of wastes described in the application and other supporting data. [15A NCAC 02T .0110]

4. The wastewater collection facilities shall be properly maintained and operated at all times. The Permittee shall maintain compliance with an individual system-wide collection system permit for the operation and maintenance of these facilities as required by 15A NCAC 02T .0403. If an individual permit is not required, the following performance criteria shall be met:

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a. The sewer system shall be effectively maintained and operated at all times to prevent discharge to land or surface waters, and to prevent any contravention of groundwater standards or surface water standards.

b. A map of the sewer system shall be developed and shall be actively maintained.

c. An operation and maintenance plan including pump station inspection frequency, preventative maintenance schedule, spare parts inventory and overflow response has been developed and implemented.

d. Pump stations that are not connected to a telemetry system shall be inspected every day (i.e. 365 days per year). Pump stations that are connected to a telemetry system shall be inspected at least once per week.

e. High-priority sewer lines shall be inspected at least once per every six-months and inspections are documented.

f. A general observation of the entire sewer system shall be conducted at least once per year.

g. Overflows and bypasses shall be reported to the appropriate Division regional office in accordance with 15A NCAC 2B .0506(a), and public notice shall be provided as required by North Carolina General Statute §143-215.1C.

h. A Grease Control Program is in place as follows:

   1. For public owned collection systems, the Grease Control Program shall include at least biannual distribution of educational materials for both commercial and residential users and the legal means to require grease interceptors at existing establishments. The plan shall also include legal means for inspections of the grease interceptors, enforcement for violators and the legal means to control grease entering the system from other public and private satellite sewer systems.

   2. For privately owned collection systems, the Grease Control Program shall include at least bi-annual distribution of grease education materials to users of the collection system by the permittee or its representative.

   3. Grease education materials shall be distributed more often than required in Parts (1) and (2) of this Subparagraph if necessary to prevent grease-related sanitary sewer overflows.

i. Right-of-ways and easements shall be maintained in the full easement width for personnel and equipment accessibility.

j. Documentation shall be kept for Subparagraphs (a) through (i) of this Rule for a minimum of three years with exception of the map, which shall be maintained for the life of the system.

5. The Permittee shall report by telephone to a water resources staff member at the Raleigh Regional Office, telephone number (919) 791-4200, as soon as possible, but in no case more than 24 hours, following the occurrence or first knowledge of the occurrence of either of the following:

   a. Any process unit failure, due to known or unknown reasons, that renders the facility incapable of adequate wastewater transport, such as mechanical or electrical failures of pumps, line blockage or breakage, etc.; or
   b. Any SSO and/or spill over 1,000 gallons; or
   c. Any SSO and/or spill, regardless of volume, that reaches surface water

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Voice mail messages or faxed information is permissible, but this shall not be considered as the initial verbal report. Overflows and spills occurring outside normal business hours may also be reported to the Division of Emergency Management at telephone number (800) 858-0368 or (919) 733-3300. Persons reporting any of the above occurrences shall file a spill report by completing and submitting Part I of Form CS-SSO (or the most current Division approved form) within five days following first knowledge of the occurrence. This report must outline the actions taken or proposed to be taken to ensure that the problem does not recur. Part II of Form CS-SSO (or the most current Division approved form) can also be completed to show that the SSO was beyond control. [G.S. 143-215.1C(a1)]

6. Construction of the gravity sewers, pump stations, and force mains shall be scheduled so as not to interrupt service by the existing utilities nor result in an overflow or bypass discharge of wastewater to the surface waters of the State. [15A NCAC 02T.0108(b)]

7. Upon completion of construction and prior to operation of these permitted facilities, the completed Engineering Certification form with checklist attached to this permit shall be submitted with the required supporting documents to the address provided on the form. A complete certification is one where the form is fully executed and the supporting documents are provided as applicable. Any wastewater flow made tributary to the wastewater collection system extension prior to completion of this Engineer's Certification shall be considered a violation of the permit and shall subject the Permittee to appropriate enforcement actions.

   If the permit is issued to a private entity with an Operational Agreement, then a copy of the Articles of Incorporation, Declarations/Covenants/Restrictions, and Bylaws that have been appropriately filed with the applicable County's Register of Deeds office shall be submitted with the certification.

   A complete certification is one where the form is fully executed, and the supporting documents are provided as applicable. Supporting documentation shall include the following:

   a. One copy of the project construction record drawings (plan & profile views of sewer lines & force mains) of the wastewater collection system extension. Final record drawings should be clear on the plans or on digital media (CD or DVD disk) and are defined as the design drawings that are marked up or annotated with after construction information and show required buffers, separation distances, material changes, etc.

   b. One copy of the supporting applicable design calculations including pipe and pump sizing, velocity, pump cycle times, and level control settings, pump station buoyancy, wet well storage, surge protection, detention time in the wet well, and force main, ability to flush low points in force mains with a pump cycle, and downstream sewer capacity analysis. If a portable power source or pump is dedicated to multiple stations, an evaluation of all the pump stations' storage capacities and the rotation schedule of the portable power source or pump, include travel timeframes, shall be provided.

   c. Changes to the project that do not result in non-compliance with this permit, regulations, or the Minimum Design Criteria should be clearly identified on the record drawings, on the certification in the space provided, or in written summary form.

   Prior to Certification (Final or Partial): Permit modifications are required for any changes resulting in non-compliance with this permit (including but not limited to pipe length changes of 10% or greater, increased flow, pump station design capacity design increases of 5% or greater, and

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increases in the number/type of connections), regulations, or the Minimum Design Criteria. Requested modifications or variances to the Minimum Design Criteria will be reviewed on a case-by-case basis and each on its own merit. Please note that variances to the Minimum Design Criteria should be requested and approved during the permitting process prior to construction. After-construction requests are discouraged by the Division and may not be approved, thus requiring replacement or repair prior to certification & activation. [15A NCAC 02T .0116]

8. Gravity sewers installed greater than ten percent below the minimum required slope per the Division's Gravity Sewer Minimum Design Criteria shall not be acceptable and shall not be certified until corrected. If there is an unforeseen obstacle in the field where all viable solutions have been examined, a slope variance can be requested from the Division with firm supporting documentation. This shall be done through a permit modification with fee. Such variance requests will be evaluated on a case-by-case basis. Resolution of such request shall be evident prior to completing and submitting the construction certification. [15A NCAC 02T.0105(n)]

9. A copy of the individual permit and construction record drawings shall be maintained on file by the Permittee for the life of the wastewater collection facilities. [15A NCAC 02T .0116]

10. Failure to abide by the conditions and limitations contained in this permit; 15A NCAC 02T; the Division's Gravity Sewer Design Criteria adopted February 12, 1996 as applicable; the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Station and Force Mains adopted June 1, 2000 as applicable; and other supporting materials may subject the Permittee to an enforcement action by the Division, in accordance with North Carolina General Statutes §143-215.6A through §143-215.6C, construction of additional or replacement wastewater collection facilities, and/or referral of the North Carolina-licensed Professional Engineer to the licensing board. [15A NCAC 02T .0108(b-c)]

11. In the event that the wastewater collection facilities fail to perform satisfactorily, including the creation of nuisance conditions, the Permittee shall take immediate corrective action, including those as may be required by this Division, such as the construction of additional or replacement facilities. [15A NCAC 02T .0110; 15A NCAC 02T .0108(b)]

12. The issuance of this permit shall not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by the Division any other Federal, State, or Local government agencies which have jurisdiction or obtaining other permits which may be required by the Division or any other Federal, State, of Local government agencies. [G.S. 143-215.1(b)]

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CERTIFICATION CHECKLIST

To be completed by the certifying engineer prior to operation of the permitted sewers, per 15A NCAC 02T.0116.

Certifying Engineer: _____

Certification Review Date: _____

Project Name: _____

WQ00_____ Project County: _____

1) Has permittee information changed since the permit was issued (or last modified): change of mailing address, change of ownership, transfer from developer to HOA/POA, etc. ☐ Yes ☐ No

   - If yes, please provide either a change of ownership form or new contact information. Note that transfer of permits from the developer to the HOA/POA must occur with the first certification.

2) Have the as-built drawings have been signed, sealed, and dated by an N.C. PE? ☐ Yes ☐ No

3) Final Engineering certification? ☐ Yes ☐ No

   - **If Partial Engineering certification, provide detailed narrative including what is being certified in the current phase, what was previously certified (if applicable), and what is left to be certified.**

4) Adequate information related to sewer lines: ☐ Yes ☐ No ☐ N/A

   - Three feet minimum cover has been provided for all sewers unless ferrous pipe was installed.
   - Minimum diameters for gravity sewers are 8-inches for public lines and 6-inches for private lines.
   - Manholes have been installed: At the end of each line, at all changes in grade, size, or alignment, at all intersections, and at distances not greater than 425 feet; minimum diameter shall be 4 feet (48-inches).

5) Adequate information related to pump stations: ☐ Yes ☐ No ☐ N/A

   - Ensure power reliability option was selected per 15A NCAC 02T.0305(h).

6) Was project construction completed in accordance with all of the following: ☐ Yes ☐ No ☐ N/A

   - 15A NCAC 02T, Minimum Design Criteria (MDC) for the permitting of Gravity Sewers (latest version), and MDC for the Permitting of Pump Stations and Force Mains (latest version)?

If not, a variance approval is required in accordance with 15A NCAC 02T.0105(b), **prior to certification and operation.**

   - Contact the Central Office to discuss the variance to determine a course of action.
   - Applicant must submit two copies of the variance request form, plans, specifications, calculations, and any other pertinent information to the Central Office (one hard copy, one digital copy).
   - The central office will review the variance request, and if approvable, specific language regarding the variance will be incorporated into the permit, either via a special condition or a supplementary letter. A copy of the reissued permit with variance language or the variance letter must be maintained with the original documents.

7) Does the project contains high priority lines (15A NCAC 02T .0402(2))? ☐ Yes ☐ No

   - If yes, ensure that the permit already contains the necessary condition related to high priority lines 15A NCAC 02T.0403 (a)(5). If the permit does not include this language, the Fast Track reviewer will reissue the permit with the appropriate language.

8) Are Permit modifications are required for any changes resulting in non-compliance with this permit (including but not limited to pipe length changes of 10% or greater, change in flow, pump station design capacity design change of 5% or greater, and/or change in the number/type of connections)? ☐ Yes ☐ No

   - If yes, a permit modification request must be submitted to the appropriate Regional Office, and **a modified permit with revised certification must be issued prior to certification and operation**.

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FAST TRACK SEWER ENGINEERING CERTIFICATION

PERMITTEE: Orange Water and Sewer Authority
PERMIT #: WQ0046340
PROJECT: West Rosemary Street Water Line Replacement
ISSUE DATE: May 19, 2025

This project shall not be considered complete nor allowed to operate in accordance with Condition 7 of this permit until the Division has received this Certification and all required supporting documentation. It should be submitted in a manner that documents the Division's receipt. Send the required documentation to the Regional Supervisor, Water Quality Regional Operations Section at the address at the bottom.

Any wastewater flow made tributary to the wastewater collection system extension prior to completion of this Certification shall be considered a violation of the permit and shall subject the Permittee to appropriate enforcement actions. The Permittee is responsible for tracking all partial certifications up until a final certification is received. A Final Certification shall be a complete set of record drawings and design calculations regardless of whether partials have been submitted.

PERMITTEE'S CERTIFICATION

I, the undersigned agent for the Permittee, hereby state that this project has been constructed pursuant to the applicable standards & requirements, the Professional Engineer below has provided applicable design/construction information to the Permittee, and the Permittee is prepared to operate & maintain the wastewater collection system permitted herein or portions thereof.

_____	_____	_____
Printed Name, Title	Signature	Date

ENGINEER'S CERTIFICATION

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (☐ periodically, ☐ weekly, ☐ full time) the construction of the project name and location as referenced above for the above Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the following construction: **approximately 440 linear feet of 8-inch gravity sewer**; such that the construction was observed to be built within substantial compliance of this permit; 15A NCAC 02T; the Division of Water Resources' (Division) Gravity Sewer Minimum Design Criteria adopted February 12, 1996 as applicable; the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains adopted June 1, 2000 as applicable; and other supporting materials.

North Carolina Professional Engineer's Seal w/signature & date:

☐ **Final** ☐ **Partial (include description)**

Certification Comments/Qualifiers (attach if necessary):

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JOSH STEIN
GOVERNOR

J.R. "JOEY" HOPKINS
SECRETARY

May 15, 2025

ORANGE COUNTY

Todd Taylor
Executive Director
400 Jones Ferry Rd
Carrboro, NC 27510

SUBJECT: Encroachment Agreement –Orange Water and Sewer Authority. Replacing an Existing 12" Asbestos Cement Water Main with a New 12" Ductile Iron Water Main by Open Trenching Located on NC Hwy 86 (N Columbia St).

Dear Mr. Taylor,

Attached is Right of Way Encroachment Agreement, which has been properly executed.

The Department of Transportation does not guarantee the right of way on this road, nor will it be responsible for any claim for damages brought by any property owner by reason of the installation.

Approval is given subject to **posting a $150,000.00 Performance and Indemnity Bond with the Department of Transportation** and adhering to the attached special provisions.

If you need additional information, please advise.

Sincerely,

C. N. Edwards, Jr., P.E.
DISTRICT ENGINEER

CNE/dkw
attachments
Cc: C.N. Edwards, Jr., PE, District Engineer

E071-068-25-00218

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
DIVISION 7, DISTRICT 1
PO BOX 766
GRAHAM, NC 27253-0766

Telephone: (336) 570-6833
Fax: (336) 570-6873
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
115 EAST CRESCENT SQUARE DRIVE
GRAHAM, NC 27253

Encroachment Agreement Special Provisions
(N Columbia St)

1. A copy of the executed encroachment agreement and the approved plans stamped by NCDOT will be on the site and available for inspection by NCDOT personnel while in construction is on progress. If safety or traffic conditions warrant such an action, NCDOT reserves the right to stop all work unless evidence of approval can be shown.

2. It will be necessary for you or your contractor to notify the Graham District Office upon receipt of this letter to schedule a mandatory Preconstruction Conference, to provide your anticipated date of starting or to review any plan revisions made by the District Office prior to construction beginning on this encroachment. Please call the office at (336) 290-0250 between the hours of 8:00 a.m. and 5:00 p.m. Monday through Friday.

3. When the work has been completed, please notify the Graham District Office by letter at P.O. Box 766, Graham, North Carolina 27253-0766 in order that a final inspection can be made.

4. **WORK ZONE TRAFFIC CONTROL QUALIFICATIONS AND TRAINING PROGRAM-** Effective July 1, 2010, all flagging operations within NCDOT Right of Way required qualified and trained Work Zone Flaggers. Effective July 1, 2011, qualified and trained Work Zone Traffic Control Supervisors will be required on Significant Projects. Training for this certification will be provided by NCDOT approved training sources and/or private entities that have been pre-approved to train themselves. If you have questions, visit our web site at www.ncdot.org/doh/preconstruction/wztc/wztctrainingprogam/default.html or contact Stuart Bourne, P.E. with NCDOT Work Zone Traffic Control Unit at (919) 250-4159 or sbourne@ncdot.gov.

5. That the party of the second part agrees to provide traffic control devices, lane closures, road closures, positive protection and/or any other warning or positive protection devices necessary for the safety of road users during construction and any subsequent maintenance. This shall be performed in conformance with the latest NCDOT Roadway Standard Drawings and Standard Specifications for Road and Structures and Amendments or Supplements thereto. When there is no guidance provided in Roadway Standard Drawings or Specifications, comply with the Manual on Uniform Traffic Control Devices for Streets and Highways and Amendment or Supplement thereto. Information as to the above rules and regulations may be obtained from the Division Engineer of the party of the first part.

6. **Work requiring lane closure or restrictions will not be allowed between 7:00 am – 9:00 am and 4:00 p.m. – 7:00 p.m. Monday through Friday unless otherwise directed by the District Engineer unless otherwise shown on approved plans.**

7. **At least on lane of traffic shall remain open at all times.**

8. Any work requiring equipment or personnel within 5' of the edge of any travel lane shall require a lane closure with appropriate tapers.

9. **Any damage to roadway, structures, or associated appurtenances shall be restored to its original condition as directed by the District Engineer.**

10. Excavation material shall not be placed on the pavement. Drainage structures shall not be blocked with excavation material.

11. The encroaching party shall comply with all applicable federal, state and local environmental regulations, and shall obtain all necessary federal, state and local environmental permits, including but

not limited to, those related to sediment control, storm water, wetland, streams, endangered species, and historical sites.

12. **All excavation in the roadway shall be backfilled and paved or covered with temporary steel plating. When steel plating is used the excavation shall be backfilled and/or shored to accommodate anticipated traffic loads. A reflectorized bump warning sign (WB-1) must be installed in advance of the plate. All steel plating shall be pinned in at each corner with a smooth headed pin that does not protrude above the plate more than 0.5 inches and must extend into the paved surface at least 3 inches. The plate must be extended at least 12 inches beyond the edge of the excavation in all directions and ramped with asphalt at least 6 inches wide.**

13. **Trenching, bore pits, and other excavations within the safe recovery area shall not be left open or unprotected so as to expose motor vehicle or pedestrian traffic to unsafe conditions. The contractor shall comply with all OSHA requirements and provide a competent person on site to supervise excavations at all times.**

14. All suitable backfill material shall be compacted to 95% density in the shoulder areas, 100% density under pavement areas and in accordance with AASHTO T99 as modified by the North Carolina Department of Transportation. Note if contractor starts before weather conditions improve, then the existing material removed shall be replaced with suitable material as approved by the District Engineer so that proper compaction can be obtained. Certified compaction test results are to be submitted to the District Engineer upon request.

15. **Deep excavation adjacent to open travel lanes which exceeds a one to one (1:1) influence slope shall be supported by a protective support system designed by a professional engineer to adequately carry all dead and live loads or backfilled prior to returning traffic to normal patterns.**

16. **Excavation within 1,000 feet of a signalized intersection will require notification by the party of the second part to Dawn McPherson, Division Traffic Engineer, at telephone number (336) 487-0175. All traffic signal or detect cables must be located prior to excavation.**

17. **The encroaching party shall mill the existing pavement for the full width of the affected travel lane of 1.25 inches and resurface with asphalt surface course SF9.5A with an area extending 25 feet beyond the disturbed area.**

18. All disturbed areas shall be repaired with the following rate of seed, fertilizer and limestone in pounds per acre, and the areas properly mulched and tacked:

    25# Reliant Hard Fescue
    100# Alta or Kentucky 31 Tall Fescue
    25# Kenblue Kentucky Bluegrass
    1000# 5-10-10 Fertilizer
    4000# Limestone

McKIM&CREED

ENGINEERS
SURVEYORS
PLANNERS

May 8, 2025

M&C 01519-0063

NCDOT Highway Division 7, District 1
115 East Crescent Square Dr.
Graham, 27253

RE: Orange Water and Sewer Authority
West Rosemary Street Water Line Replacement
Two Party Right-of-Way Encroachment Agreement on Primary and Secondary System

To Whom It May Concern:

We respectfully submit this application for NCDOT Encroachment Agreement on behalf of Orange Water and Sewer Authority for the subject project. This project installs approximately 2,880 LF of 12-inch ductile iron water main, approximately 210 LF of 8-inch ductile iron water main, and approximately 180 LF of 6-inch ductile iron water main along West Rosemary Street from Merritt Mill Road through the intersection of N. Columbia St (NC-86). In addition to the installation of the new water main, this project abandons approximately 1,140 LF of 12-inch, 8-inch, and 6-inch water main and removes approximately 3,270 LF of 12-inch, 8-inch, and 6-inch water main.

Included in this submittal are copies of the following documentation:

- One (1) signed Two Party Right of Way Encroachment Agreement (Form 16.1)
- One (1) Project Summary
- One (1) copy of applicable Plan Sheets
- One (1) copy of applicable Technical Specificatoins sections.
- One (1) Verification of Compliance with Environmental Regulations (Form VCER-1)
- One (1) NCDEQ Letter of Approval

Please do not hesitate to contact me at dhyman@mckimcreed.com should you have any questions or concerns. We appreciate your time and consideration regarding this matter.

Sincerely,

McKIM & CREED, INC.

Diandra Hyman, P.E.
Senior Project Manager

E071-068-25-00218

4300 Edwards Mill Rd.
Suite 200
Raleigh, NC 27612

919.233.8091

www.mckimcreed.com

Project Summary and NCDOT Road Impacts

The West Rosemary Street Water Line Replacement project involves the installation of approximately 3,270 linear feet (LF) of water main, of which approximately 220 LF is located within NCDOT right-of-way. The project will include an NCDOT roadway crossing of North Columbia Street (NC-86).

The detailed descriptions for quantities and impacts to NCDOT roadways for the subject project are listed below. More information can be found on the attached plan sheets dated September 2024.

- One (1) open cut crossing of approximately 100 LF across North Columbia Street (NC-86) with 12-inch DIP.
- One (1) open cut connection of approximately 75 LF within North Columbia Street (NC-86) with 12-inch DIP.
- One (1) open cut connection of approximately 45 LF within North Columbia Street (NC-86) with 12-inch DIP.

VERIFICATION OF COMPLIANCE WITH ENVIRONMENTAL REGULATIONS

(Check Appropriate Box)

5

☐ Permits from the N.C. Department of Environmental Quality and the U.S. Army Corp of Engineers are not required for this project. However, all applicable federal and state regulations have been followed.

☒ The required permits from the N.C. Department of Environmental Quality and the U.S. Army Corp of Engineers have been obtained for this project. Copies of the permits are attached.

☒ All applicable NPDES Stormwater Permit requirements have been or will be met for this project.

☒ The project is in compliance with all applicable sedimentation and erosion control laws and regulations.

Project Name: West Rosemary Street Water Line Replacement

Township: Chapel Hill County: Orange

Project Engineer: Diandra Hyman, McKim & Creed Phone Number (919) 233-8091

Project Contact: Diandra Hyman, McKim & Creed

Applicant's Name: Darren Berger, Orange Water and Sewer Authority P.E. Seal

Date Submitted: May 8, 2025

NORTH CAROLINA PROFESSIONAL SEAL 045554 ENGINEER DIANDRA L. HYMAN 5/8/25

Form VCER-1
June 2016

JOSH STEIN
Governor
D. REID WILSON
Secretary
WILLIAM E. TOBY VINSON, JR
Director

NORTH CAROLINA
Environmental Quality

05-07-2025

LETTER OF APPROVAL WITH MODIFICATIONS

Orange Water and Sewer Authority
400 Jones Ferry Rd
Carrboro, NC 27510

RE: Project Name: W Rosemary Street Water Line Replacement
Permit Number: ORANG-2025-0108
Acres Approved: 2.74
County: Orange
City: Chapel Hill
Address: N Merritt Mill Rd
River Basin: Cape Fear
Stream Classification: WS-V: Water Supply V
Plan Type: New Plan

Dear Orange Water and Sewer Authority,

This office has reviewed the subject erosion and sedimentation control plan. We hereby issue this Letter of Approval. Any modifications required for approval are listed below and in the body of the email that accompanied this attached letter. The enclosed Certificate of Approval must be posted at the job site. This plan approval shall expire three (3) years following the date of approval, if no land-disturbing activity has been undertaken, as is required by Title 15A NCAC 4B .0129.

As of April 1, 2019, all new construction activities not explicitly exempt are required to complete and submit an electronic Notice of Intent (eNOI) form requesting a Certificate of Coverage (COC) under the NCG010000 Construction General Permit. After the form is reviewed and found to be complete, you will receive a link with payment instructions for the annual permit fee. After the fee is processed, you will receive the COC. As the Financially Responsible Party shown on the FRO form submitted for this project, you MUST obtain the COC prior to commencement of any land disturbing activity. The eNOI form may be accessed at deq.nc.gov/NCG01.

Please direct questions about the eNOI form to the Stormwater Program staff in the Raleigh central office. If the owner/operator of this project changes in the future, the new responsible party must obtain a new COC.

Title 15A NCAC 4B .0118(a) and the NCG01 permit require that the following documentation be kept on file at the job site:

1. The approved E&SC plan as well as any approved deviation.
2. The NCG01 permit and the COC, once it is received.
3. Records of inspections made during the previous 12 months.

Also, this letter gives the notice required by G.S. 113A-61.1(a) of our right of periodic inspection to ensure compliance with the approved plan.

North Carolina's Sedimentation Pollution Control Act is performance-oriented, requiring protection of existing natural resources and adjoining properties. If, following the commencement of this project, the erosion and sedimentation control plan is inadequate to meet the requirements of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statute 113A-51 through 66), this office may require revisions to the plan and implementation of the revisions to ensure compliance with the Act.

Acceptance and approval of this plan is conditioned upon your compliance with Federal and State water quality laws, regulations, and rules. In addition, local city or county ordinances or rules may also apply to this land-disturbing activity. This approval does not supersede any other permit or approval.

Please note that this approval is based in part on the accuracy of the information provided in the Financial Responsibility Form and on the plan, which you provided. You are requested to file an amended form if there is any change in the information included on the form.

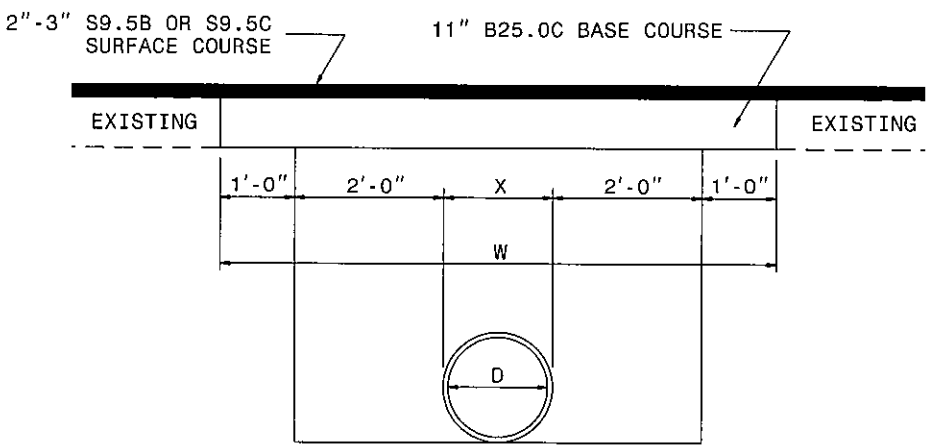
Your cooperation is appreciated.

Sincerely,

Graham Parrish, PE,
Express Engineer
Land Quality Section

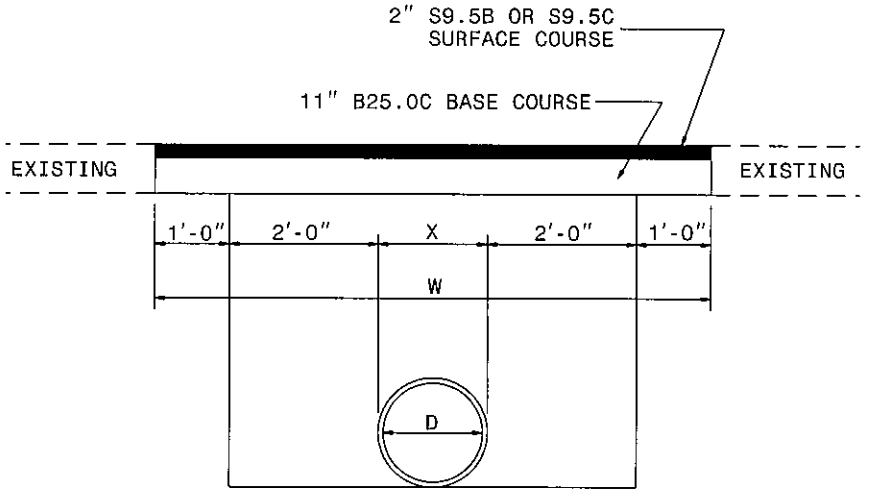
Required Modifications for Approval:

1. Provide construction details and maintenance requirements for dewatering pump and silt bags to be used for dewatering of work areas. Floating intake should be used where possible. The construction specifications are to include the fabric specifications and pumping rate. Silt bag should be continuously monitored while in use, add this requirement to the erosion control construction sequence or notes.



PAVEMENT REPAIRS ON ROADS TO BE RESURFACED
(PIPE IS PLACED UNDER EXISTING PAVEMENT)

D	X	W
12"	1'-4"	7'-4"
15"	1'-7"	7'-7"
18"	1'-10"	7'-10"
24"	2'-6"	8'-6"
30"	3'-1"	9'-1"
36"	3'-8"	9'-8"
42"	4'-5"	10'-5"
48"	5'-0"	11'-0"



PAVEMENT REPAIRS ON ROADS NOT TO BE RESURFACED
(PIPE IS TO BE PLACED UNDER EXISTING PAVEMENT)

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

1-24

ROADWAY STANDARD DRAWING FOR

PAVEMENT REPAIRS

FOR SUPERPAVE MIX TYPES

SHEET 1 OF 1

654.01

ROUTE NC-86 (N. Columbia Street) PROJECT West Rosemary St. Water Line Replacement COUNTY OF Orange

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

-AND-

Orange Water and Sewer Authority
400 Jones Ferry Road
Carrboro, NC 27510

RIGHT OF WAY ENCROACHMENT AGREEMENT
PRIMARY AND SECONDARY HIGHWAYS

THIS AGREEMENT, made and entered into this the ____ day of April 20 25 by and between the Department of Transportation, party of the first part; and Orange Water and Sewer Authority party of the second part,

W I T N E S S E T H

THAT WHEREAS, the party of the second part desires to encroach on the right of way of the public road designated as Route(s) NC-86 (N. Columbia Street), located in Chapel Hill, NC

with the construction and/or erection of: replacement of a buried 12-inch asbestos cement water main with a 12-inch ductile iron water main within the NCDOT Right of Way along street listed herein.
See submitted design drawings for more information.

WHEREAS, it is to the material advantage of the party of the second part to effect this encroachment, and the party of the first part in the exercise of authority conferred upon it by statute, is willing to permit the encroachment within the limits of the right of way as indicated, subject to the conditions of this agreement;

NOW, THEREFORE, IT IS AGREED that the party of the first part hereby grants to the party of the second part the right and privilege to make this encroachment as shown on attached plan sheet(s), specifications and special provisions which are made a part hereof upon the following conditions, to wit:

That the installation, operation, and maintenance of the above described facility will be accomplished in accordance with the party of the first part's latest UTILITIES ACCOMMODATIONS MANUAL, and such revisions and amendments thereto as may be in effect at the date of this agreement. Information as to these policies and procedures may be obtained from the Division Engineer or State Utilities Manager of the party of the first part.

That the said party of the second part binds and obligates himself to install and maintain the encroaching facility in such safe and proper condition that it will not interfere with or endanger travel upon said highway, nor obstruct nor interfere with the proper maintenance thereof, to reimburse the party of the first part for the cost incurred for any repairs or maintenance to its roadways and structures necessary due to the installation and existence of the facilities of the party of the second part, and if at any time the party of the first part shall require the removal of or changes in the location of the said facilities, that the said party of the second part binds himself, his successors and assigns, to promptly remove or alter the said facilities, in order to conform to the said requirement, without any cost to the party of the first part.

That the party of the second part agrees to provide during construction and any subsequent maintenance proper signs, signal lights, flagmen and other warning devices for the protection of traffic in conformance with the latest Manual on Uniform Traffic Control Devices for Streets and Highways and Amendments or Supplements thereto. Information as to the above rules and regulations may be obtained from the Division Engineer of the party of the first part.

That the party of the second part hereby agrees to indemnify and save harmless the party of the first part from all damages and claims for damage that may arise by reason of the installation and maintenance of this encroachment.

That the party of the second part agrees to restore all areas disturbed during installation and maintenance to the satisfaction of the Division Engineer of the party of the first part. The party of the second part agrees to exercise every reasonable precaution during construction and maintenance to prevent eroding of soil; silting or pollution of rivers, streams, lakes, reservoirs, other water impoundments, ground surfaces or other property; or pollution of the air. There shall be compliance with applicable rules and regulations of the North Carolina Division of Environmental Management, North Carolina Sedimentation Control Commission, and with ordinances and regulations of various counties, municipalities and other official agencies relating to pollution prevention and control. When any installation or maintenance operation disturbs the ground surface and existing ground cover, the party of the second part agrees to remove and replace the sod or otherwise reestablish the grass cover to meet the satisfaction of the Division Engineer of the party of the first part.

That the party of the second part agrees to assume the actual cost of any inspection of the work considered to be necessary by the Division Engineer of the party of the first part.

That the party of the second part agrees to have available at the construction site, at all times during construction, a copy of this agreement showing evidence of approval by the party of the first part. The party of the first part reserves the right to stop all work unless evidence of approval can be shown.

Provided the work contained in this agreement is being performed on a completed highway open to traffic; the party of the second part agrees to give written notice to the Division Engineer of the party of the first part when all work contained herein has been completed. Unless specifically requested by the party of the first part, written notice of completion of work on highway projects under construction will not be required.

That in the case of noncompliance with the terms of this agreement by the party of the second part, the party of the first part reserves the right to stop all work until the facility has been brought into compliance or removed from the right of way at no cost to the party of the first part.

That it is agreed by both parties that this agreement shall become void if actual construction of the work contemplated herein is not begun within one (1) year from the date of authorization by the party of the first part unless written waiver is secured by the party of the second part from the party of the first part.

During the performance of this contract, the second party, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor"), agrees as follows:

a. Compliance with Regulations: The contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the U. S. Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

b. Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials

and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

c. Solicitations for Subcontracts, including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

d. Information and Reports: The contractor shall provide all information and reports required by the Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Department of Transportation or the Federal Highway Administration to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the Department of Transportation, or the Federal Highway Administration as appropriate, and shall set forth what efforts it has made to obtain the information.

e. Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the Department of Transportation shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to,

(1) withholding of payments to the contractor under the contract until the contractor complies, and/or
(2) cancellation, termination or suspension of the contract, in whole or in part.

f. Incorporation of Provisions: The contractor shall include the provisions of paragraphs "a" through "f" in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the Department of Transportation or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Department of Transportation to enter into such litigation to protect the interests of the State, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

R/W (161) : Party of the Second Part certifies that this agreement is true and accurate copy of the form R/W (161) incorporating all revisions to date.

IN WITNESS WHEREOF, each of the parties to this agreement has caused the same to be executed the day and year first above written.

DEPARTMENT OF TRANSPORTATION

BY: _____
DIVISION ENGINEER

ATTEST OR WITNESS:

Andrea Orbich
ANDREA ORBICH
EXECUTIVE ASSISTANT

Todd Taylor, Executive Director

10/16/24

400 Jones Ferry Rd, Carrboro, NC 27510

Second Party

INSTRUCTIONS

When the applicant is a corporation or a municipality, this agreement must have the corporate seal and be attested by the corporation secretary or by the empowered city official, unless a waiver of corporate seal and attestation by the secretary or by the empowered City official is on file in the Raleigh office of the State Utilities Manager. In the space provided in this agreement for execution, the name of the corporation or municipality shall be typed above the name, and title of all persons signing the agreement should be typed directly below their signature.

When the applicant is not a corporation, then his signature must be witnessed by one person. The address should be included in this agreement and the names of all persons signing the agreement should be typed directly below their signature.

This agreement must be accompanied, in the form of an attachment, by plans or drawings showing the following applicable information:

1. All roadways and ramps.
2. Right of way lines and where applicable, the control of access lines.
3. Location of the existing and/or proposed encroachment.
4. Length, size and type of encroachment.
5. Method of installation.
6. Dimensions showing the distance from the encroachment to edge of pavement, shoulders, etc.
7. Location by highway survey station number. If station number cannot be obtained, location should be shown by distance from some identifiable point, such as a bridge, road, intersection, etc. (To assist in preparation of the encroachment plan, the Department's roadway plans may be seen at the various Highway Division Offices, or at the Raleigh office.)
8. Drainage structures or bridges if affected by encroachment (show vertical and horizontal dimensions from encroachment to nearest part of structure).
9. Method of attachment to drainage structures or bridges.
10. Manhole design.
11. On underground utilities, the depth of bury under all traveled lanes, shoulders, ditches, sidewalks, etc.
12. Length, size and type of encasement where required.
13. On underground crossings, notation as to method of crossing - boring and jacking, open cut, etc.
14. Location of vents.

GENERAL REQUIREMENTS

1. Any attachment to a bridge or other drainage structure must be approved by the State Utilities Manager in Raleigh prior to submission of encroachment agreement to the Division Engineer.
2. All crossings should be as near as possible normal to the centerline of the highway.
3. Minimum vertical clearances of overhead wires and cables above all roadways must conform to clearances set out in the National Electric Safety Code.
4. Encasements shall extend from ditch line to ditch line in cut sections and 5' beyond toe of slopes in fill sections.
5. All vents should be extended to the right of way line or as otherwise required by the Department.
6. All pipe encasements as to material and strength shall meet the standards and specifications of the Department.
7. Any special provisions or specifications as to the performance of the work or the method of construction that may be required by the Department must be shown on a separate sheet attached to encroachment agreement provided that such information cannot be shown on plans or drawings.
8. The Department's Division Engineer should be given notice by the applicant prior to actual starting of installation included in this agreement.

WEST ROSEMARY STREET WATER LINE REPLACEMENT

PROJECT NO. 01519-0063

APRIL 2025

FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
APPROVED
MAY 15, 2025
N.C. DEPT OF TRANSPORTATION
DIVISION OF HIGHWAYS- 7TH DIV.
DISTRICT 1 – GRAHAM
ENCROACHMENT



STATE MAP NOT TO SCALE

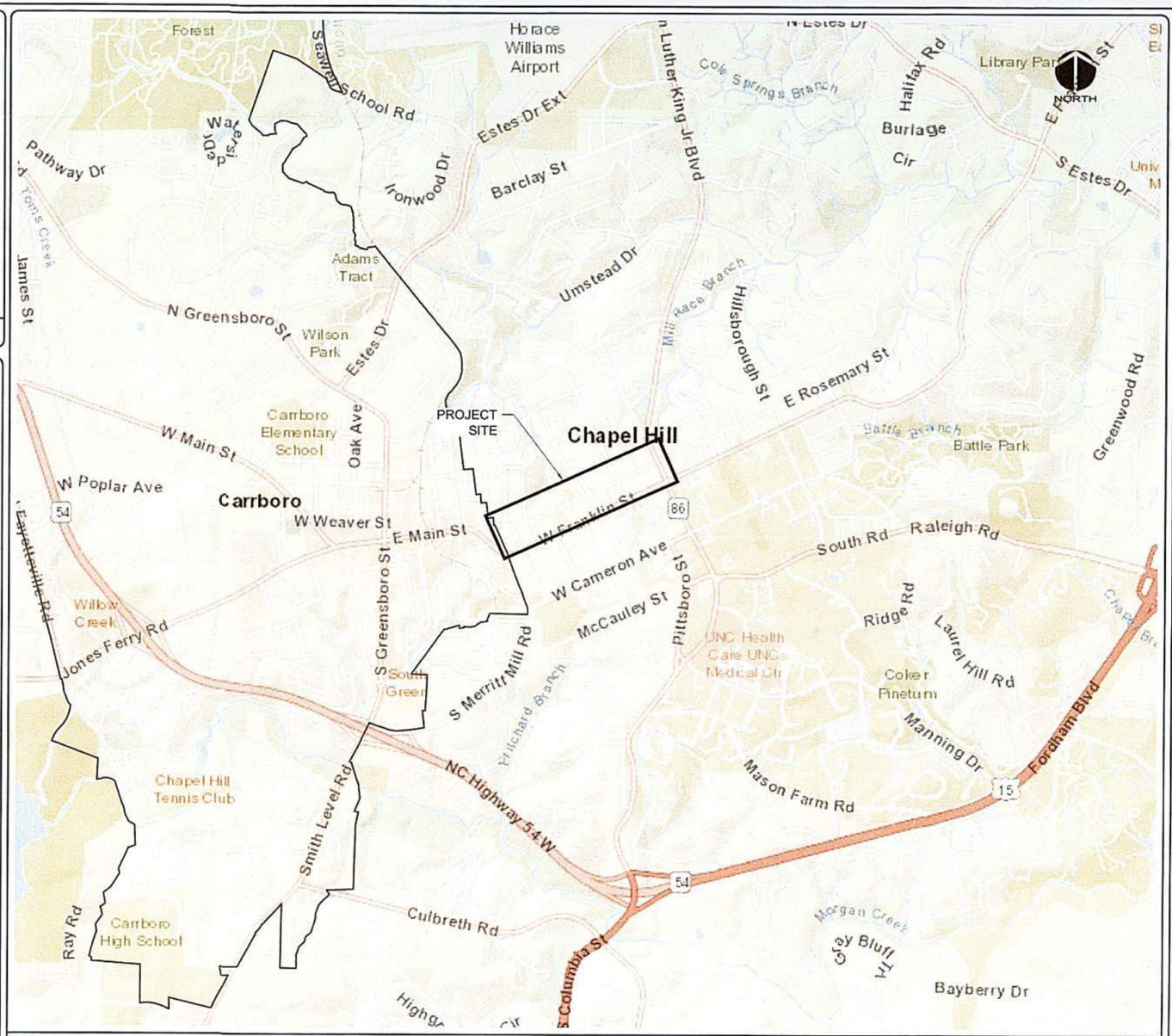
PROJECT NAME: WEST ROSEMARY STREET WATER LINE REPLACEMENT

OWNER/DEVELOPER:
ORANGE WATER AND SEWER AUTHORITY
400 JONES FERRY RD
CARRBORO, NC 27510
DARREN BERGER
EMAIL: dberger@owasa.org
OFFICE: (919) 537-4240

OWASA

McKIM & CREED
4300 Edwards Mill Road, Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031
NC License# F-1222
www.mckimcreed.com

PROJECT INFORMATION



VICINITY MAP SCALE: 1" = 1000'

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

SHEET INDEX

PROJECT NO. 01519-0063 WEST ROSEMARY STREET WATER LINE REPLACEMENT

SUBMITTAL DATE: APRIL 2025

E071-068-25-00218

1 ABBREVIATIONS

1SFD	1 STORY FRAMED DWELLING
1SBKBUS	1 STORY BRICK BUSINESS
A	AIR
AC	ASBESTOS CEMENT
AL OR ALUM	ALUMINUM
ASPH	ASPHALT
ARV	AIR RELEASE VALVE
BC	BACK OF CURB
BFV	BUTTERFLY VALVE
BK	BRICK
BO	BOLLARD
BOV	BLOW OFF VALVE
BV	BALL VALVE
CATV	CABLE TELEVISION
CB	CATCH BASIN
C&G	CURB AND GUTTER
CHN	CHAIN
CI	CURB INLET
C/L ℄	CENTERLINE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
CON	CONCENTRIC
CONC	CONCRETE
CPLG	COUPLING
CPP	CORRUGATED PLASTIC PIPE
CPR	COPPER
CS	COMPOST SOCK
CSF	COMBO SILT / TREE PROTECTION FENCE
CW/TD	CLEAN WATER TEMPORARY DIVERSION
CV	CHECK VALVE
D	DRAIN
DI	DROP INLET / DUCTILE IRON
DIP	DUCTILE IRON PIPE
D/W	DRIVE WAY
DUCT	DUCT BANK
DWG	DRAWING
EL OR ELEV	ELEVATION
EOG	EDGE OF GRAVEL
EOI	END OF INFORMATION
EP, EOP	EDGE OF PAVEMENT
EX	EXISTING
EXP	EXPANSION
LP	LIGHT POLE
LT	LIGHT
FCA	FLANGE COUPLING ADAPTER
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTOR
FH	FIRE HYDRANT
FHA	FIRE HYDRANT ASSEMBLY
FLG	FLANGE
FLR	FLOOR
FM	FORCE MAIN
FRP	FIBERGLASS REINFORCED PIPE
FO	FIBER OPTIC
GL	GUTTER LINE
GM	GAS METER
GRAV	GRAVEL
GTS	GAS TEST STATION
GV	GAS VALVE
GW	GUY WIRE
HB	HOT BOX
HDPE	HIGH-DENSITY POLYETHYLENE
HP	HIGH POINT
HWL	HIGH WATER LEVEL
INV	INVERT ELEVATION
IPF	IRON POST FOUND
JB	JUNCTION BOX
JT	JOINT
LF	LINEAR FEET
LOD	LIMITS OF DISTURBANCE
LP	LIGHT POLE
LSA	LANDSCAPE AREA
LWL	LOW WATER LEVEL
MB	MAIL BOX
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MTL	METAL
MJ	MECHANICAL JOINT
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NIC	NOT IN CONTRACT
NWL	NORMAL WATER LEVEL
OHE/OE	OVER HEAD ELECTRIC
O/F	OVERFLOW
OU	OVER HEAD UTILITIES
PE	PLAIN END
PIV	POST INDICATOR VALVE
POLY	POLYMER
PP	POWER POLE
PRV	PRESSURE REDUCING VALVE
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PW	POTABLE WATER
RCP	REINFORCED CONCRETE PIPE
REC	PER RECORD
RED	REDUCER
RFCA	RESTRAINED FLANGE COUPLING ADAPTER
RJ	RESTRAINED JOINT
RK	ROCK
R/W, ROW	RIGHT OF WAY
S	SIGN
SDMH	STORM DRAIN MANHOLE
SF	SILT FENCE
SS	SANITARY SEWER
S.S.	STAINLESS STEEL
SSF	SUPER / HIGH HAZARD SILT FENCE
SSMH	SANITARY SEWER MANHOLE
STA	STATION
SUE	SUBSURFACE UTILITY ENGINEERING
S/W	SIDE WALK
SVC	SERVICE
TBM	TEMPORARY BENCH MARK
TC	TERRA COTTA
TLP	TRAFFIC LIGHT POLE
TOB	TOP OF BANK
TOC	TOP OF CONCRETE
TH	TEST HOLE
TPF	TREE PROTECTION FENCE
TSBOX	TRAFFIC SIGNAL BOX
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UNK	UNKNOWN
VAR	VARIABLE
VCP	VITRIFIED CLAY PIPE
WD	WOOD
WL	WATER LINE
WM	WATER METER
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
XP	CROSS LIGHT POLE
YI	YARD INLET

2 EXISTING SYMBOL LEGEND

DESCRIPTION	SYMBOL
11.25° HORIZONTAL BEND	
22.50° HORIZONTAL BEND	
45° HORIZONTAL BEND	
90° HORIZONTAL BEND	
AC UNIT	AC
BENCH MARK	
TEMP. BENCH MARK	
BLOW OFF VALVE	
BOLLARD	BO
TEST BORE HOLE LOCATION	B-#
CABLE TV PEDISTAL	C
CATCH BASIN	
CLEAN OUT	CO
CONCRETE MONUMENT FOUND	CMF
CONTROL POINT	
CROSS	
CURB INLET	
ELECTRIC BOX	E
ELECTRIC MANHOLE	(E)
END OF INFORMATION	
FLAG POLE	FP
GAS METER	GM
GUY POLE	
GUY WIRE	
HANDHOLE	HH
HYDRANT	
IRON POST FOUND	IPF
IRON ROD FOUND	IPF
LIGHT POLE	LP
MAIL BOX	MB
MONITOR WELL	
POWER POLE	PP
WATER MANHOLE	W
PK FOUND	PKF
RAIL ROAD SPIKE	RRSPIKE
SANITARY SEWER MANHOLE	
SHRUB	
SIGN	
STORM DRAIN MANHOLE	
TAPPING SLEEVE AND VALVE	
TEE	
TELEPHONE MANHOLE	T
TELEPHONE PEDESTAL	T
TRAFFIC SIGNAL BOX	
TRANSFORMER	
DECIDUOUS TREE	
PINE TREE	
UTILITY POLE	
VALVE	
WATER METER	
WATER WELL	W
YARD HYDRANT	

3 EXISTING LINE LEGEND

DESCRIPTION	LINETYPE
UNDERGROUND CABLE TV	TV
UNDERGROUND PER RECORD CABLE TV	TV(R)
UNDERGROUND ELECTRIC	E
PER RECORD UNDERGROUND ELECTRIC	E(R)
UDERGROUND FIBER OPTIC	FO
PER RECORD UNDERGROUND FIBER OPTIC	FO(R)
SANITARY SEWER FORCEMAIN	FM
PER RECORD SANITARY SEWER FORCE MAIN	FM(R)
UNDERGROUND GAS	G
UNDERGROUND PER RECORD GAS	G(R)
OVER HEAD UTILITIES	OU
RECLAIMED WATER LINE	R
PER RECORD RECLAIMED WATER LINE	R(R)
GRAVITY SANITARY SEWER	SS
PER RECORD GRAVITY SANITARY SEWER	SS(R)
STORM DRAINAGE	
UNDERGROUND TELEPHONE	T
UNDERGROUND PER RECORD TELEPHONE	T(R)
UNDERGROUND UNKNOWN	U
WATER LINE	W
PER RECORD WATER LINE	W(R)
FENCE	
GUARD RAIL	
BACK OF CURB	
EASEMENT	
EDGE OF GRAVEL	
EDGE OF PAVEMENT	
PROPERTY LINE	
RIGHT OF WAY	
ROAD CENTER LINE	
100 YEAR FLOODPLAIN	100FP
DITCH ℄	
MAJOR CONTOUR	
MINOR CONTOUR	
RIPARIAN BUFFER ZONE 1	Z1
RIPARIAN BUFFER ZONE 2	Z2
TOP OF BANK	
TREELINE	
WATERCOURSE ℄	
WETLAND BOUNDARY	

4 PROPOSED SYMBOL LEGEND

DESCRIPTION	SYMBOL
11.25° HORIZONTAL BEND	
22.50° HORIZONTAL BEND	
45° HORIZONTAL BEND	
90° HORIZONTAL BEND	
VERTICAL BEND	
AIR RELEASE VALVE	A
VALVE	
BLOWOFF VALVE	
HYDRANT	
YARD HYDRANT	
CROSS	
TEE	
TAPPING SLEEVE AND VALVE	
REDUCER	
CAP/PLUG	
POTABLE WATER SERVICE METER	
RECLAIMED WATER SERVICE METER	
EXISTING UTILITY SERVICE RECONNECTION	
CONCENTRIC SANITARY SEWER MANHOLE	
ECCENTRIC SANITARY SEWER MANHOLE	
FLAT TOP SANITARY SEWER MANHOLE	
CLEAN OUT	
ARC FILTER	
CHECK DAM	
INLET PROTECTION	
PIPE INLET PROTECTION	
SILT FENCE OUTLET	
WATTLE	

5 PROPOSED LINE LEGEND

DESCRIPTION	LINETYPE
PERMANENT EASEMENT	
TEMPORARY EASEMENT	
SANITARY SEWER FORCE MAIN	FM
RECLAIMED WATER LINE	R
GRAVITY SANITARY SEWER	SS
WATER LINE	W
TO BE ABANDONED	
DIVERSION DITCH	
LIMITS OF DISTURBANCE/CLEARING LIMITS	LOD
COMBINATION SILT FENCE/TREE PROTECTION	CSF
TEMPORARY SILT FENCE	SF
TEMPORARY SUPER SILT FENCE	SSF
TEMPORARY TREE PROTECTION FENCE	TPF
COMPOST SOCK	CS
PERMANENT FENCE	
GUARD RAIL	

6 PROFILE LINE LEGEND

DESCRIPTION	LINETYPE
EXISTING GRADE PAVEMENT PROFILE	
EXISTING GRADE GROUND PROFILE	
PROPOSED GRADE PROFILE	
THEORETICAL 1:1 SLOPE	
WETLAND CROSSING	

7 AREA LEGEND

WETLANDS	
RIP-RAP	
TEMP. SLOPE STABILIZATION	
STRAW WITH NET LINER	

8 GENERAL NOTES

1. GRAVITY SANITARY SEWER EXISTS ALONG THE PROJECT COORIDOR AND SANITARY SEWER SERVICES ARE NOT OWNED BY OWASA, HAVE NOT BEEN VERIFIED AND ARE GENERALLY NOT SHOWN ON THE PLANS. SEWER SERVICES SHOWN ON THE PLANS ARE TAKEN FROM RECORD DRAWINGS AND CONTRACTOR SHALL CONFIRM NUMBER AND LOCATION OF SEWER SERVICES PRIOR TO CONSTRUCTION. CONTRACTOR MAY UTILIZE A MAXADAPTOR COUPLING TO REPAIR SANITARY SEWER SERVICES AS NEEDED DURING CONSTRUCTION. IF CONTRACTOR DAMAGES A SERVICE LINE, PHOTOS, DAMAGE AND REPAIR DOCUMENTATION IS REQUIRED SO OWASA WILL NOT BE LIABLE FOR REPLACING PROPERTY OWNER'S PORTION OF PIPE. OWASA WILL ACCEPT DI OR PVC C900 FOR REPAIRS WITH A PREFERENCE OF PVC C900. OWASA WILL NOT BE HELD ACCOUNTABLE FOR SSTRUCTURAL DAMAGE.
2. ALL UNDERGROUND UTILITIES ARE APPROXIMATE LOCATION UNLESS OTHERWISE NOTED. CONTRACTOR TO VERIFY SIZE, DEPTH, LCOATION AND MATERIAL OF ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL CONTACT 'N.C. ONE CALL CENTER' AT 811 A MIN 48 HOURS PRIOR TO DIGGING TO HAVE BURIED UTILITIES PROPERLY LOCATED. NO EXCAVATION SHALL OCCUR UNTIL BURIED UTILITIES HAVE BEEN PROPERLY LOCATED. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL BURIED TELECOMMUNICATION AND ELECTRIC DUCT BANKS AND STRUCTURES, INCLUDING DEEPTH AND EDGES OF DUCT BANKS AND STRUCTURES, PRIOR TO START OF CONSTRUCTION. NOTIFY ENGINEER AND OWNER IMMEDIATELY SHOULD A CONFLICT ARISE BETWEEN PROPOSED WATER MAIN LOCATION AND EXISTING DUCT BANKS, TELECOMMUNICATIONS, AND BURIED ELECTRIC STRUCTURES.
3. UNDERGROUND UTILITIES INDICATED ON THE PLANS HAVE BEEN TAKEN FROM INFORMATION I MADE AVAILABLE FROM SUE DATA. THIS INFORMATION MAY NOT BE INCLUSIVE OF ALL EXISTING UNDERGROUND UTILITIES AND CABLES, AND ADDITIONAL UNDERGROUND UTILITIES AND CABLES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. UTILITIES MARKED AS (R) HAVE BEEN TAKEN FROM UTILITY RECORDS AND NOT LOCATED USING SUE QLB OR SURVEY METHODS. CONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. THE OWNER WILL WORK WITH THE CONTRACTOR TO REVISE THE ALIGNMENT OR PROFILE WHERE POSSIBLE. CONTRACTOR SHALL RELOCATE EXISTING UTILITIES AS REQUIRED FOR NEW WORK. NO ADDITIONAL COMPENSATION SHALL BE PAID.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING LOCATION, DEPTH, MATERIAL TYPE, AND CONDITION OF EXISTING UTILITIES, INCLUDING EXISTING WATER MAIN AT PROPOSED TIE IN LOCATIONS. PRIOR TO INSTALLATION OF NEW MAIN LINE TEES AND TAPS, CONTRACTOR TO VERIFY SIZE AND MATERIAL OF ALL EXISTING SERVICES AND INTERCONNECTIONS.
5. WORK MUST COMPLY WITH THE LATEST EDITION OF OWASA, TOWN OF CHAPEL HILL AND NCDOT STANDARDS AND REQUIREMENTS.
6. CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION OF 18" FROM SANITARY SEWER (WATER LINE BELOW), 12" FROM STORM SEWER AND 12" FROM OTHER UTILITIES UNLESS OTHERWISE NOTED. DETAILED REQUIREMENTS AND EXCEPTIONS ARE LISTED IN SPECIFICIATION SECTION 02510.
7. CONTRACTOR SHALL INSTALL THE WATER LINE WITH A MINIMUM OF 42" OF COVER PER OWASA'S STANDARDS AS STATED IN SPECIFICATION SECTION 02510 UNLESS OTHERWISE NOTED. ACTUAL FIELD CONDITIONS MAY NECESSITATE A DEVIATION FROM THIS STANDARD. ANY PROPOSED DEVIATION SHALL BE APPROVED BY THE OWNER/ENGINEER PRIOR TO INSTALLATION. IN NO CASE SHALL THE DEVIATION VIOLATE DWG MINIMUM COVER REQUIREMENTS.
8. OWASA HAS ENCOUNTERED PIPE WITHIN THE PROJECT CORRIDOR WHICH HAS BEEN FOUND TO BE OUT OF ROUND. THE CONTRACTOR SHALL BE PREPARED IN ALL LOCATIONS WHERE CONNECTIONS ARE BEING MADE TO AN EXISTING WATER LINE, REGARDLESS OF SIZE OR MATERIAL TO MAKE ADJUSTMENTS.
9. ACCESS TO ALL RESIDENCES, BUSINESSES, AND UNC FACILITIES SHALL BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE APPROVED BY OWASA. CONTRACTOR SHALL COORDINATE WITH OWNER WHEN CROSSING OR IMPACTING DRIVEWAYS.
10. ALL GRAVEL, CONCRETE, BRICK, AND PAVED DRIVEWAYS, CURB AND GUTTER, SIDEWALKS, PARKING LOTS, SIGNS, MAIL BOXES, HEADWALLS, DRAINAGE PIPES, ETC. DISTURBED DURING CONSTRUCTION SHALL BE REPLACED WITH LIKE MATERIAL.
11. CONTACT OWASA A MINIMUM OF 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
12. THE ALLOWABLE HOURS OF CONSTRUCTION ARE FROM 7:00 AM TO 7:00 PM, MONDAY THROUGH FRIDAY OR AS SPECIFIED BY OWASA REQUIREMENTS. ALLOWABLE LANE CLOSURE HOURS ARE AS OUTLINED IN THE CONTRACT DOCUMENTS.
13. (10) CALENDAR DAYS PRIOR TO TEMPORARY ROAD CLOSURES, CONTRACTOR TO NOTIFY PROPER STAKEHOLDERS AND AUTHORITIES HAVING JURISDICTION TO COORDINATE TRAFFIC AND COMMUNITY IMPACTS, INCLUDING PERSONNEL AT TOWN OF CHAPEL HILL AND UNC-CHAPEL HILL. IMPACTS TO SCHOOL BUSSING, TOWN BUSSING, EMERGENCY VEHICLES, AND PEDESTRIANS SHALL BE CONSIDERED AND COORDINATED WITH AS A PART OF THIS NOTIFICATION PROCESS.
14. REMOVING, HANDLING, AND DISPOSAL OF ASBESTOS CEMENT (AC) PIPE SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE EPA AND OSHA REGULATIONS AND APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS. DOCUMENTATION AND PAPERWORK AS WELL AS CHAIN OF CUSTODY ARE TO BE PROVIDED TO OWASA. AC PIPE ENCOUNTERED OR DAMAGED DURING "IN-PLACE" INSTALLATION OF THE NEW WATER MAIN SHALL BE REMOVED. UNDAMAGED AC PIPE REMAINING IN PLACE SHALL BE PROPERLY ABANDONED AND GROUT FILLED.
15. SIZING, CONNECTION LOCATIONS, AND LOOPING OF THE 8" HDPE TEMPORARY WATER MAIN ARE SHOWN ON THE PLANS IS BASED ON HYDRAULIC MODELING PERFORMED BY FREESE AND NICHOLS IN JANUARY 2026 TO CONFIRM AVAILABLE FIRE FLOW AT EXISTING HYDRANTS ALONG WEST ROSEMARY ST. THE MODEL PREDICTED RESULTS INDICATE THAT THE MAJORITY OF FIRE HYDRANTS ALONG THE W. ROSEMARY PROJECT CORRIDOR WILL ACHIEVE FLOWS GREATER THAN 3,000 GPM AND NO FIRE HYDRANT FLOWS WILL BE LESS THAN 2,000 GPM WHICH GENERALLY MATCHES EXISTING CONDITIONS. ANY PROPOSED CHANGES TO THE TEMPORARY WATER LINE SIZE, MATERIAL OR CONNECTIONS REQUESTED BY THE CONTRACTOR SHALL BE COORDINATED WITH THE TOWN OF CHAPEL HILL FIRE DEPARTMENT AND THE CONTRACTOR SHALL HAVE HYDRAULIC MODELING I PERFORMED TO CONFIRM REQUIRED FIRE FLOW AND RESULTS SHALL BE SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA.
16. EXISTING VALVES ON WATER LINES TO BE GROUT FILLED SHALL BE ABANDONED BY REMOVING VALVE COVER AND TOP SECTION(S) TO A DEPTH OF 3 FEET BELOW FINAL GRADE. BACKFILL REMAINING VALVE BOX SECTIONS AND EXCAVATION WITH FLOWABLE FILL.
17. NEW WATER LINE AND ASSOCIATED FITTINGS SHALL BE RESTRAINED JOINT DUCTILE IRON IN ACCORDANCE WITH THE LATEST OWASA STANDARD SPECIFICATIONS.
18. CONTRACTOR SHALL MAINTAIN POTABLE WATER SERVICE AND FIRE PROTECTION THROUGHOUT CONSTRUCTION UNLESS ACCEPTED BY OWASA PRIOR TO A SCHEDULED OUTAGE. TEMPORARY SERVICES AND FIRE CONNECTIONS SHALL BE USED WHERE EXPECTED DISRUPTIONS EXCEED AN 8 HOUR REGULAR BUSINESS DAY. SERVICES MUST BE RESTORED PRIOR TO LEAVING THE WORKSITE AT THE END OF EACH WORK DAY.
19. CONTRACTOR SHALL PROTECT ALL TREES IN THE VICINITY OF CONSTRUCTION. ANY TREE TRIMMING SHALL BE COORDINATED WITH OWASA. COORDINATE ANY TREE TRIMMING IMPACTING UNC-OWNED OR TOWN OF CHAPEL HILL-OWNED PROPERTY WITH A UNC OR TOWN OF CHAPEL HILL ARBORIST RESPECTIVELY.
20. CONTRACTOR SHALL NOTIFY OWASA MINIMUM OF 10 WORKING DAYS PRIOR TO CONNECTING EXISTING WATER MAINS TO NEW WATER MAIN. CONTRACTOR SHALL COORDINATE ALL ABANDONMENT, VALVE BOX REMOVAL, AND TIE-IN ACTIVITIES AS REQUIRED WITH OWASA. CONTRACTOR SHALL NOT OPERATE ANY VALVES OR FIRE HYDRANTS.
21. ANY VALVES, BLOW OFF ASSEMBLIES, METERS, FITTINGS, OR OTHER APPURTENANCES REMOVED AS PART OF THE ABANDONMENT ACTIITIES SHALL BE RETURNED TO OWASA, UNLESS OTHERWISE DIRECTED BY OWNER'S REPRESENTATIVE.
22. EXISTING WATER METER BOXES AND WATER METERS TO BE REMOVED, ARE TO BE RETURNED TO OWASA. RESTORE LOCATIONS TO LIKE OR BETTER THAN EXISTING CONDITIONS, AS NECESSARY.
23. IF SIGNAL OPERATION ADJUSTMENTS ARE NECESSARY DURING CONSTRUCTION, YOU MAY CONTACT THE TOWN OF CHAPEL HILL.
24. CONTRACTOR SHALL OBTAIN A STREET CUT PERMIT FROM THE TOWN OF CHAPEL HILL AND COMPLETE AN ENGINEERING CONSTRUCTION PERMIT WITH THE TOWN OF CHAPEL HILL PRIOR TO BEGINNING CONSTRUCTION.
25. CONTRACTOR SHALL NOTIFY THE TOWN OF CHAPEL HILL WHEN EXCAVATION WILL OCCUR WITHIN 500 FEET OF A TOWN OF CHAPEL HILL SIGNALIZED INTERSECTION. CONTRACTOR TO LOCATE ALL TRAFFIC SIGNAL OR DETECT CABLES PRIOR TO EXCAVATION.
26. CONTRACTOR SHALL LOCATE ALL TRAFFIC LOOPS WITHIN THE PROJECT AREA AND REPLACE ANY LOOPS DISTURBED BY CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE TOWN OF CHAPEL HILL OR NCDOT (AS APPLICABLE FOR ANY DISRUPTION IN TRAFFIC SIGNALS.
27. CONTRACTOR SHALL KEEP ALL ASBESTOS PIPES WETTED WHERE CUTS OR TAPS ARE PLANNED TO MINIMIZE ASBESTOS DUST DURING CUTTING OPERATIONS. ALL CUT ASBESTOS PIPE SECTIONS, CORES, OR COUPONS SHALL BE REMOVED AND PROPERLY DISPOSED OF. THE TRENCH AREA WHERE ASBESTOS PIPE HAS BEEN CUT SHALL BE KEPT WETTED BY CONTRACTOR UNTIL THE TRENCH HAS BEEN BACKFILLED.
28. CONTRACTOR SHALL PROVIDE APPROPRIATE PIPE TO ALL PERSONNEL INVOLVED IN OPERATIONS INVOLVING CUTTING AC PIPE.

9 SUE QLA TEST HOLE DATA

TH-1 (DEC. 2023)
TELEPHONE DUCT BANK
ROUGH POUR CONC.
DEPTH=2.40'
TOP ELEV.=470.03'

TH-1A (DEC. 2023)
12" AC WATER
CHIS X ELEV=475.79'
DEPTH=3.25'
TOP ELEV=472.54'

TH-1B (DEC. 2023)
12" AC WATER
PKN ELEV.=472.86'
DEPTH=4.25'
TOP ELEV.=468.61'

TH-2 (OCT. 2024)
6" AC WATER
PKN ELEV.=470.98'
DEPTH=2.84'
ELEV.=468.14'

TH-3 (DEC. 2023)
TELEPHONE DUCT BANK
ROUGH POUR CONC.
PKN ELEV.=457.17'
WIDTH=3.92'
DEPTH TOP=2.32'
DEPTH BOTTOM=2.95'
TOP ELEV.=454.85'
BOTTOM ELEV.=454.22'

TH-3A (DEC. 2023)
TELEPHONE DUCT BANK
ROUGH POUR CONC.
DEPTH TOP=4.95'
TOP ELEV.=452.03'

TH-3B (DEC. 2023)
12" AC WATER
CHISX ELEV.=453.16'
DEPTH TOP=3.85'
TOP ELEV.=449.33'

TH-3C (DEC. 2023)
12" AC WATER
PKN ELEV.=445.90'
DEPTH TOP=5.60'
TOP ELEV.=440.30'

TH-3D (DEC. 2023)
12" AC WATER
PKN ELEV.=469.94'
DEPTH TOP=4.97'
TOP ELEV.=464.41'

TH-3E (DEC. 2023)
TELEPHONE DUCT BANK
ROUGH POUR CONC.
PKN ELEV. 475.99'
DEPTH TOP = 0.75'
TOP ELEV.=475.24'

TH-3F (DEC. 2023)
TELEPHONE DUCT BANK
ROUGH POUR CONC.
PKN ELEV.=475.87'
DEPTH TOP=0.78'
DEPTH BOTTOM=1.25'
TOP ELEV.=475.09'
BOTTOM ELEV.=474.62'

TH-4 (OCT. 2024)
8" AC WATER
PKN ELEV.=471.83'
DEPTH=3.50'
ELEV.=468.33

TH-5 (OCT. 2024)
6" CIP WATER
PKN ELEV.=473.84'
DEPTH=2.31'
TOP ELEV.=471.53

TH-6 (DEC. 2023)
4" STEEL GAS
PKN ELEV.=478.60'
DEPTH=180'
ELEV.=476.80'

TH-6 (OCT. 2024)
6" CIP WATER
PKN ELEV.=475.12'
DEPTH=2.62'
TOP ELEV.=472.50

TH-7 (DEC. 2023)
4" CONDUITS (3)
PKN ELEV.=480.07'
TOP DEPTH=2.20'
BOTTOM DEPTH=2.60'
TOP ELEV.=477.87'
BOTTOM ELEV.=477.47'

TH-7 (OCT. 2024)
8" AC WATER
PKN ELEV.=475.15'
DEPTH=3.41'
TOP ELEV.=471.74

TH-8 (DEC. 2023)
4" CONDUITS (3)
PKN ELEV.=480.38'
TOP DEPTH=5.80'
BOTTOM DEPTH=6.20'
TOP ELEV.=474.58'
BOTTOM ELEV.=474.18'

TH-9 (DEC. 2023)
4" STEEL GAS
PKN ELEV.=479.70'
TOP DEPTH=3.20'
TOP ELEV.=476.50'

TH-9A (DEC. 2023)
12" AC WATER
PKN ELEV.=479.70'
TOP DEPTH=4.90'
TOP ELEV.=474.80'

TH-9 (OCT. 2024)
12" AC WATER
PKN ELEV.=463.64'
DEPTH=4.01'
TOP ELEV.=459.63'

TH-10 (DEC. 2023)
TELEPHONE DUCT BANK
PKN ELEV.=474.42'
DEPTH TOP=2.26'
TOP ELEV.=472.16

TH-10A (DEC. 2023)
TELEPHONE DUCT BANK
PKN ELEV.=474.21
DEPTH TOP=1.69'
TOP ELEV.= 472.52'

TH-10B (DEC. 2023)
4" STEEL UNKNOWN
PKN ELEV.= 474.21'
DEPTH TOP=1.15'
TOP ELEV.=473.06'

TH-10 (OCT. 2024)
12" AC WATER
PKN ELEV.=479.42'
DEPTH=5.0'
TOP ELEV.=474.42'

TH-11 (JULY 2024)
12" AC WATER
PKN ELEV.=473.51'
DEPTH TOP=3.53'
TOP ELEV.=469.62'

TH-12A (JULY 2024)
TELEPHONE DUCT BANK
ROUGH POUR CONC.
PKN ELEV.=472.85'
DEPTH TOP= 1.97'
DEPTH BOTTOM=3.46'
TOP ELEV.=470.88'
BOTTOM ELEV.=469.39'

TH-12B (JULY 2024)
TELEPHONE DUCT BANK
ROUGH POUR CONC.
PKN ELEV.=472.79'
DEPTH TOP=1.94'
TOP ELEV.=470.85'

TH-12 (OCT. 2024)
12" AC WATER
PKN ELEV.=483.53'
DEPTH=5.08'
TOP ELEV.=478.45'

TH-13 (JULY 2024)
12" AC WATER
PKN ELEV.= 447.04
DEPTH TOP=4.04'
TOP ELEV.=443.00'

TH-13 (OCT. 2024)
6" CIP WATER
PKN ELEV.=467.5'
DEPTH=3.62'
TOP ELEV.=463.88'

TH-14 (JULY 2024)
12" AC WATER LIN
PKN ELEV.=474.79'
TOP DEPTH=4.28'
TOP ELEV.=470.59'

TH-15 (JULY 2024)
2.5" YELLOW PVC GAS
PKN ELEV.= 469.63'
TOP DEPTH=3.13'
TOP ELEV.=466.50'

TH-16 (JULY 2024)
12" AC WATER
PKN ELEV.=479.69'
TOP DEPTH=4.39'
TOP ELEV.=475.30'

TH-17 (JULY 2024)
12" AC WATER
PKN ELEV.=445.80'
TOP DEPTH=5.46'
TOP ELEV.=440.34'

TH-18 (JULY 2024)
12" AC WATER
PKN ELEV.=445.64'
TOP DEPTH=5.49'
TOP ELEV.=440.15'

TH-1 (EAST MAIN)
PKN SET=472.08'
12" DI WATER
TOP DEPTH=3.14'
TOP ELEV=468.94'

TH-2 (EAST MAIN)
PKN SET=472.06'
6" DI WATER
TOP DEPTH=2.79'
TOP ELEV=469.27'

TH-3 (EAST MAIN)
PKN SET=464.46'
6" DI WATER
TOP DEPTH=3.09'
TOP ELEV=461.37'

TH-4 (EAST MAIN)
PKN SET=464.52'
CLEARED TO 6.00'

TH-5 (EAST MAIN)
PKN SET=457.80'
6" DI WATER
TOP DEPTH=2.84'
TOP ELEV=454.96'

TH-6 (EAST MAIN)
PKN SET=472.01'
1" STEEL UNKNOWN UTILITY
TOP DEPTH=1.49'
TOP ELEV=470.52'

TH-7 (EAST MAIN)
PKN SET=464.43'
CLEARED TO 10.00'

TH-8 (EAST MAIN)
RIM WATER VALVE=455.59'
TOP DEPTH=3.39'
TOP 452.20' TOP VALVE NUT
RIM WATER VALVE=455.59'
TOP DEPTH=4.39
TOP ELEV=451.20' TOP PIPE

REV NO	DESCRIPTION	DATE
F	FINAL DESIGN – ISSUED FOR BID – NOT FOR CONSTRUCTION	04/28/25
E	FINAL DESIGN – ISSUED FOR PERMITTING – NOT FOR CONSTRUCTION	04/09/25
D	90% DESIGN – UPDATED PER OWASA'S COMMENTS – NOT FOR CONSTRUCTION	9/27/24
C	90% DESIGN – NOT FOR CONSTRUCTION	7/19/24
B	60% DESIGN – NOT FOR CONSTRUCTION	4/09/24
A	UPDATED FOR FINAL TECHNICAL MEMORANDUM SUBMITTAL	7/13/23

REVISIONS

NORTH CAROLINA PROFESSIONAL SEAL 045954 ENGINEER DANDRA L. HYMAN 9/28/25

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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

GENERAL

LEGEND AND GENERAL NOTES

PROJ. START DATE:	2023. AUG.
MCE PROJ. #	01519-0063
DRAWN	CNT
DESIGNED	KAR
CHECKED	BRL
PROJ. MGR.	DLH

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

G2
DRAWING NUMBER
F
REVISION

STATUS: FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION



PROJECT LOCATION

HORIZ. SCALE: 1"=200'

100' 0 100' 200'

SCALE: 1"=100' (Horiz.)

REV NO	DESCRIPTION	DATE
F	FINAL DESIGN – ISSUED FOR BID – NOT FOR CONSTRUCTION	04/28/25
E	FINAL DESIGN – ISSUED FOR PERMITTING – NOT FOR CONSTRUCTION	04/09/25
D	90% DESIGN – UPDATED PER OWASA'S COMMENTS – NOT FOR CONSTRUCTION	9/27/24
C	90% DESIGN – NOT FOR CONSTRUCTION	7/19/24
B	50% DESIGN – NOT FOR CONSTRUCTION	4/08/24
A	UPDATED FOR FINAL TECHNICAL MEMORANDUM SUBMITTAL	7/12/23

REVISIONS

NORTH CAROLINA PROFESSIONAL SEAL 042556 ENGINEER DEANDRA L. HYMAN

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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

GENERAL

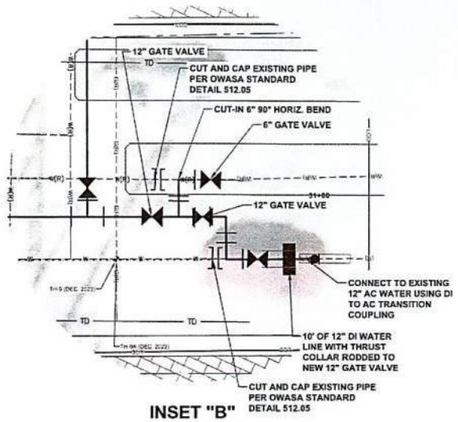
SHEET INDEX MAP

PROJ. START DATE:	2023, AUG.
MCE PROJ. #	01519-0063
DRAWN	CNT
DESIGNED	KAR
CHECKED	BRL
PROJ. MGR	DLH

SCALE
HORIZONTAL: 1"=200'
VERTICAL: N/A

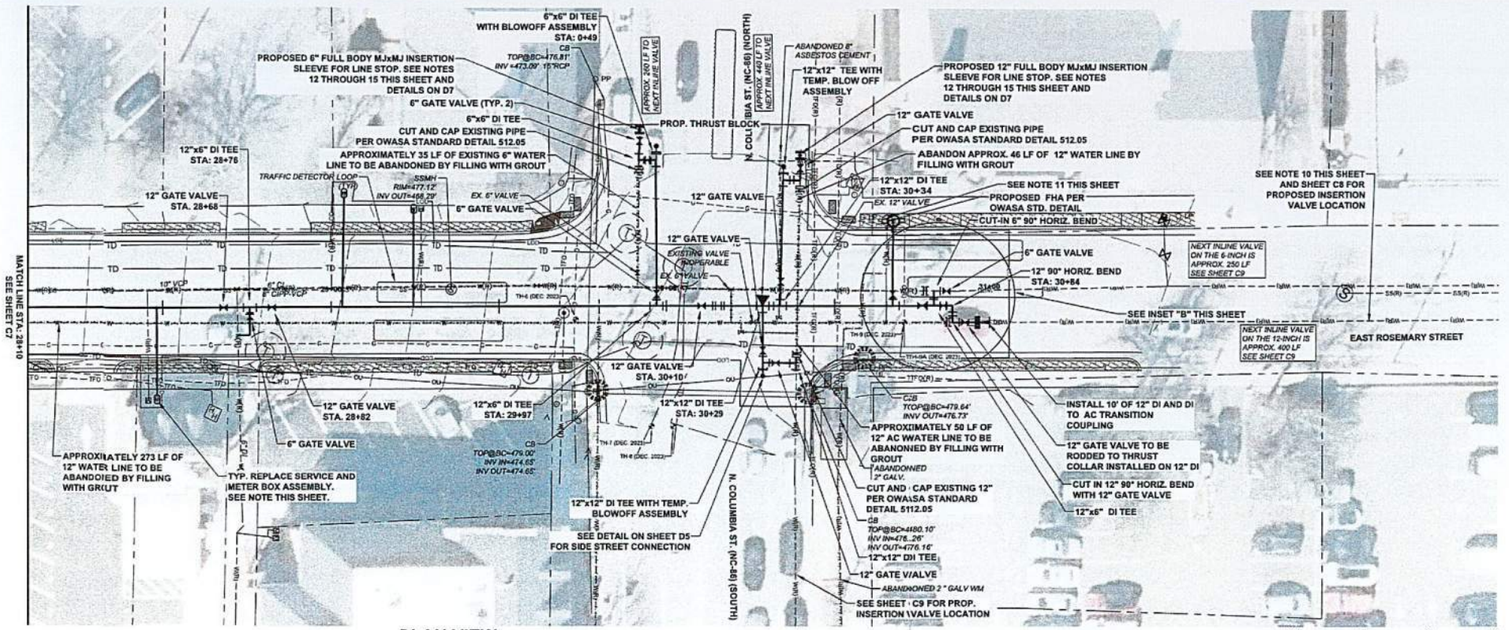
G3
DRAWING NUMBER
F
REVISION

STATUS: FINAL DESIGN-ISSUED FOR BID - NOT FOR CONSTRUCTION



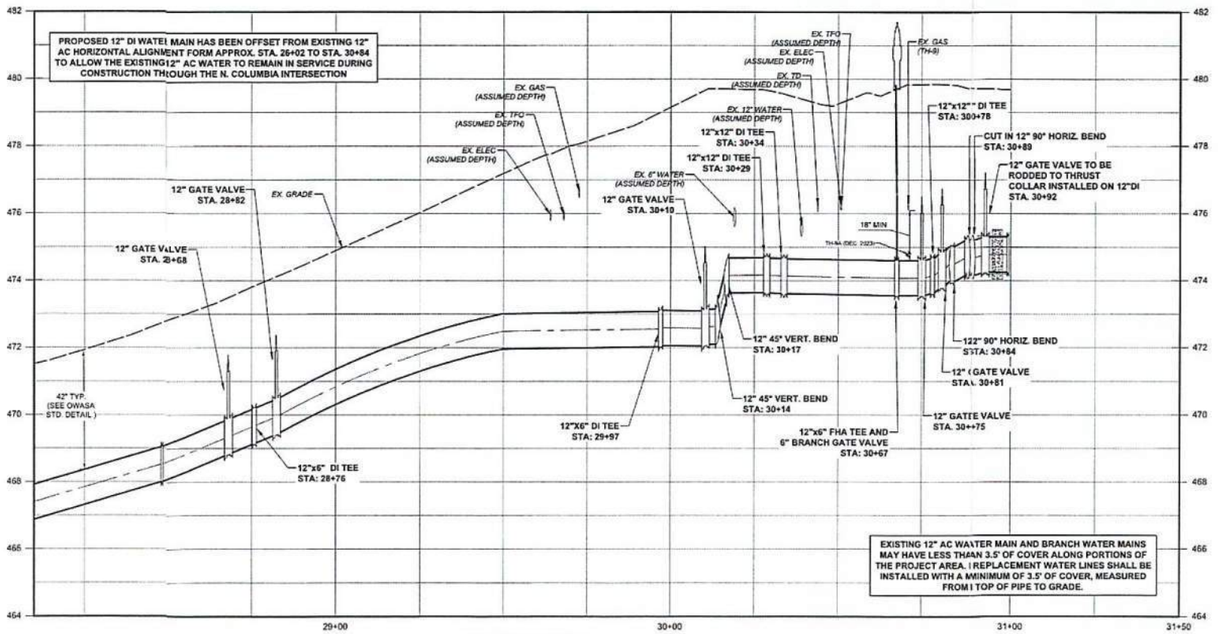
INSET "B"

HORIZ. SCALE: N.T.S.
SEE NOTE 10 THIS SHEET AND SHEET C-9



PLAN VIEW

HORIZ. SCALE: 1"=20'



PROFILE VIEW

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

SUE QLA TEST HOLE DATA:

TH-6 (DEC. 2023)
4" STEEL GAS
PKN ELEV.=478.60'
DEPTH=1.80'
ELEV.=476.80'

TH-7 (DEC. 2023)
4" CONDUITS (3)
PKN ELEV =480.07'
TOP DEPTH=2.20'
BOTTOM DEPTH=2.60'
TOP ELEV.=477.87'
BOTTOM ELEV =477.47'

TH-8 (DEC. 2023)
4" CONDUITS (3)
PKN ELEV =480.38'
TOP DEPTH=5.80'
BOTTOM DEPTH=6.20'
TOP ELEV.=474.58'
BOTTOM ELEV =474.18'

TH-9 (DEC. 2023)
4" STEEL GAS
PKN ELEV.=479.70'
TOP DEPTH =3.20'
TOP ELEV.=476.50'

TH-9A (DEC. 2023)
12" AC WATER
PKN ELEV.=479.70'
TOP DEPTH=4.90'
TOP ELEV.=474.80'

TH-10 (OCT. 2024)
12" AC WATER LINE
PKN ELEV =479.42'
TOP DEPTH=5'
TOP ELEV.=474.42'

TH-16
12" AC WATER
PKN ELEV.=479.69
TOP DEPTH=4.39'
TOP ELEV.475.30'

SHEET C8 NOTES:

1. TH-7, TH-8, AND TH-9 HAVE BEEN PROJECTED TO THE PROPOSED WATER LINE. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.
2. EXISTING 4-INCH STEEL GAS MAIN IS CATHODICALLY PROTECTED BY GALVANIZED SACRIFICIAL ANODES ALONG THE ENTIRETY OF THE PROJECT LIMITS. DOMINION GAS HAS CONFIRMED THE ANODES CAN BE ASSUMED TO BE WITHIN A 5' OFFSET FROM THE GAS MAIN. CONTRACTOR SHALL REPLACE ANY IMPACTED ANODES DURING CONSTRUCTION AT NO ADDITIONAL COST TO OWASA.
3. PROPOSED 12" DI WATER LINE SHALL BE IN THE SAME HORIZONTAL ALIGNMENT AS THE EXISTING 12" AC WATER LINE UNLESS OTHERWISE NOTED ON THE PLANS.
4. THE EXISTING 12" AC WATER LINE HORIZONTAL AND VERTICAL LOCATIONS ARE ONLY CONFIRMED WHERE SUE LEVEL A TEST HOLES WERE COMPLETED AND SHOWN ON THE PLANS. ALL LOCATIONS OUTSIDE OF THE SUE LEVEL A TEST HOLES HAVE NOT BEEN CONFIRMED. THE CONTRACTOR SHALL POTHOLE THE EXISTING 12-INCH AC WATER MAIN EVERY 50 FT AHEAD OF CONSTRUCTION TO CONFIRM HORIZONTAL AND VERTICAL ALIGNMENT.
5. CUSTOMER SERVICE TO BE MAINTAINED THROUGHOUT CONSTRUCTION WITH MINIMUM SHUTDOWN FOR SWITCHOVER TO TEMPORARY AND PERMANENT SERVICE. SERVICES AND METER BOX ASSEMBLIES TO BE REPLACED ADJACENT TO EXISTING WITH SIMILAR SIZE. EXISTING METER TO BE RELOCATED TO NEW METER BOX ASSEMBLY FOLLOWING TESTING TO PLACE BACK INTO SERVICE.
6. CONTRACTOR TO FIELD VERIFY ALL SERVICES AND CONNECTIONS TO EXISTING MAIN AND PROVIDE TEMPORARY CONNECTIONS TO ALL CUSTOMERS. CONTRACTOR TO SUBMIT TEMPORARY CONNECTION PLAN TO OWNER/ENGINEER AS A PART OF THE TEMPORARY WATER PLAN.
7. ALL PERMANENT SERVICE LINES AND BRANCH LINES SHALL BE MADE FROM NEW MATERIAL. MATERIAL USED FOR TEMPORARY RELOCATIONS AND TEMPORARY SERVICES SHALL NOT BE REUSED FOR PERMANENT CONNECTIONS.
8. CONTRACTOR SHALL VERIFY THE SIZE OF EACH WATER SERVICE CONNECTION AND PROVIDE A NEW SERVICE OF AT LEAST THE SAME SIZE AS THE EXISTING. ALL NEW SERVICES SHALL MEET THE CURRENT OWASA STANDARDS FOR MATERIAL, SIZE, METER VAULT DIMENSIONS, ETC. ANY MODIFICATIONS TO OWASA STANDARDS DUE TO FIELD CONDITIONS SHALL BE REQUESTED IN WRITING FROM OWASA/ENGINEER A MINIMUM OF 10 DAYS PRIOR TO CONSTRUCTION.
9. CONSTRUCTION THROUGH N. COLUMBIA STREET SHALL BE COMPLETED IN TWO PHASES TO ALLOW HALF OF THE INTERSECTION TO REMAIN OPEN AT ALL TIMES. REFER TO TRAFFIC MANAGEMENT PLANS FOR DETAILS.
10. CONTRACTOR TO CONFIRM DEPTH OF EXISTING 12" AC WATER LINE IN WEST ROSEMARY STREET AT LOCATION SHOWN ON C9 TO DETERMINE FEASIBILITY OF INSTALLING AN INSERTION VALVE TO ELIMINATE A FULL SHUT DOWN.
11. EXISTING FIRE HYDRANTS SHALL BE CONNECTED TO TEMPORARY WATER MAIN DURING CONSTRUCTION AND SHALL BE REMOVED AFTER NEW WATER LINE AND FIRE HYDRANTS ARE PUT INTO OPERATION. REMOVED FIRE HYDRANTS SHALL BE RETURNED TO OWASA

2' 0' 2' 4'
SCALE: 1"=2' (Vert.)

REV NO	DESCRIPTION	DATE
F	FINAL DESIGN – ISSUED FOR BID – NOT FOR CONSTRUCTION	04/08/25
E	FINAL DESIGN – ISSUED FOR PERMITTING – NOT FOR CONSTRUCTION	04/08/25
D	90% DESIGN – UPDATED PER OWASA'S COMMENTS – NOT FOR CONSTRUCTION	8/27/24
C	90% DESIGN – NOT FOR CONSTRUCTION	7/19/24
B	90% DESIGN – NOT FOR CONSTRUCTION	4/09/24
A	UPDATED FOR FINAL TECHNICAL MEMORANDUM SUBMITTAL	7/12/23

REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045554 4/28/25 DANDRA L. HITMAN

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NC License# F-1222
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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

CIVIL

STA. 28+10 - STA. 30+99

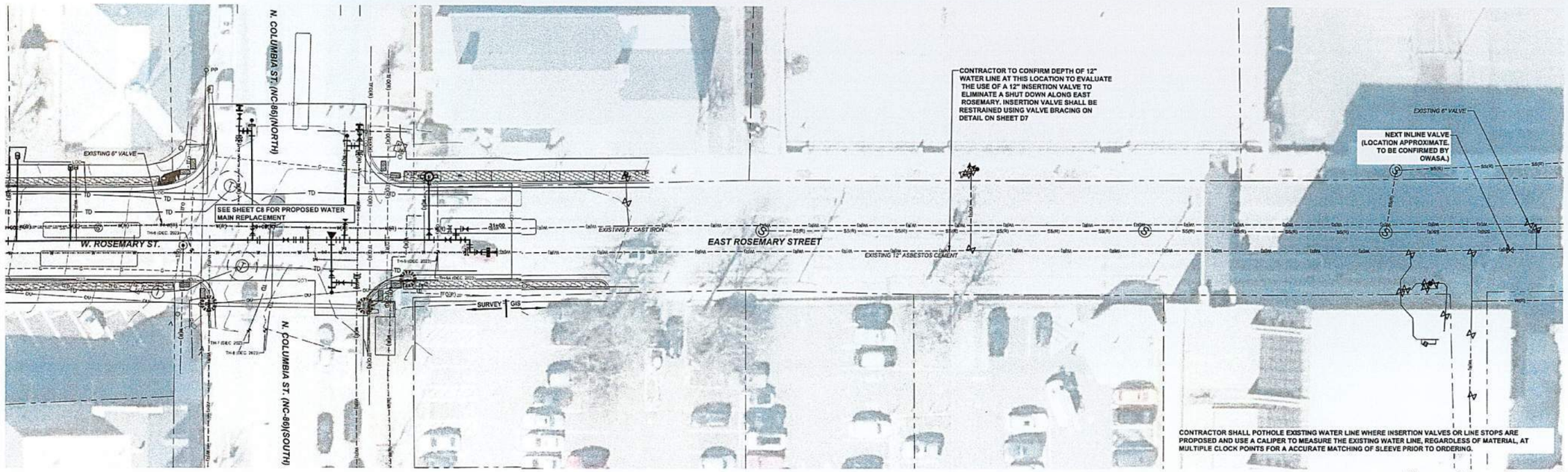
PROJ. START DATE:	2023, AUG.
MCE PROJ. #	01519-0063
DRAWN:	CNT
DESIGNED	KAR
CHECKED	BRL
PROJ. MGR.	DLH

SCALE: HORIZONTAL: 1"=20' VERTICAL: 1"=2'

C8 DRAWING NUMBER

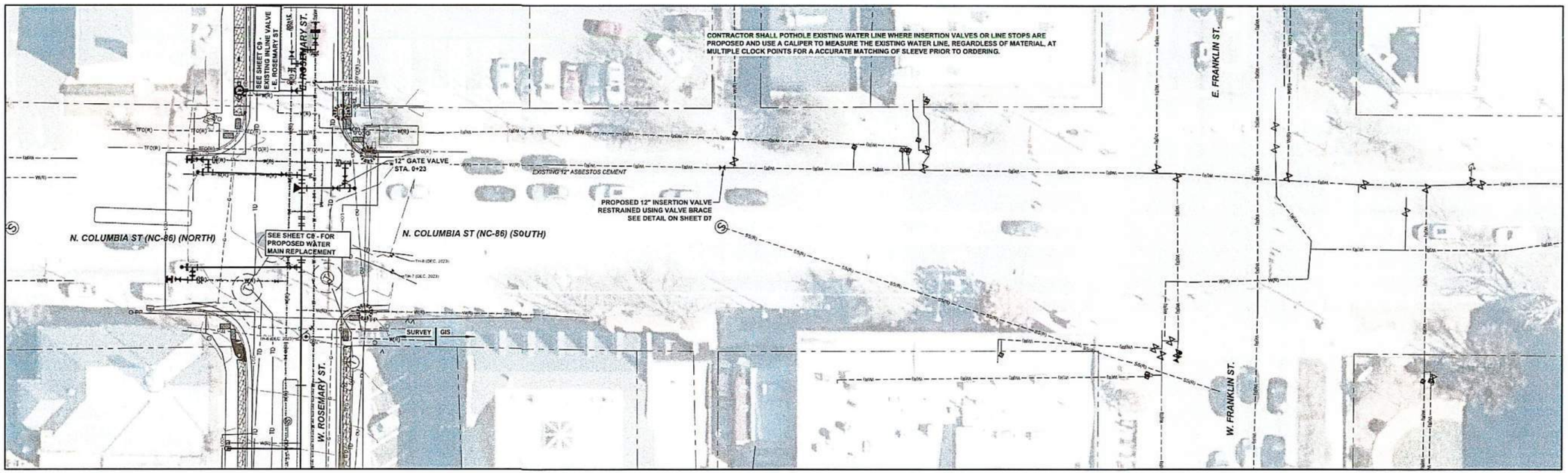
F REVISION

STATUS: FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION



EXISTING INLINE VALVE - E. ROSEMARY ST. PLAN VIEW

HORIZ. SCALE: 1"=20'



PROPOSED INSERTION VALVE - N. COLUMBIA ST (SOUTH) PLAN VIEW

HORIZ. SCALE: 1"=20'

REV.NO.	DESCRIPTION	DATE
F	FINAL DESIGN – ISSUED FOR BID – NOT FOR CONSTRUCTION	04/28/25
E	FINAL DESIGN – ISSUED FOR PERMITTING – NOT FOR CONSTRUCTION	04/08/25
D	90% DESIGN – UPDATED PER OWASA'S COMMENTS – NOT FOR CONSTRUCTION	9/27/24
C	90% DESIGN – NOT FOR CONSTRUCTION	7/19/24
B	50% DESIGN – NOT FOR CONSTRUCTION	4/08/24
A	UPDATED FOR FINAL TECHNICAL MEMORANDUM SUBMITTAL	7/11/23

REVISIONS

NORTH CAROLINA PROFESSIONAL SEAL 045954 ENGINEER SANDRA L. HYMAN 9/28/25

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INSERTION VALVE AND INLINE VALVE PLAN VIEWS

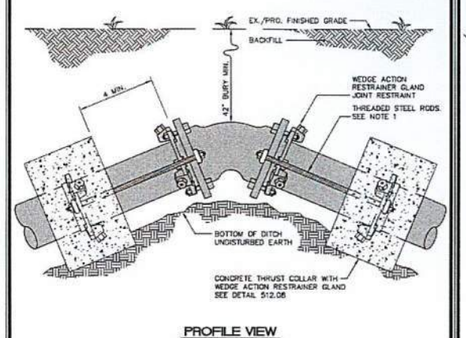
PROJ. START DATE:	2023, AUG.
MCE PROJ. #	01519-0063
DRAWN	CNT
DESIGNED	KAR
CHECKED	BRL
PROJ. MGR.	DLH

SCALE: HORIZONTAL: 1"=20' VERTICAL: 1"=2'

C9 — DRAWING NUMBER — F — REVISION

STATUS: FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:03 PM



PROFILE VIEW

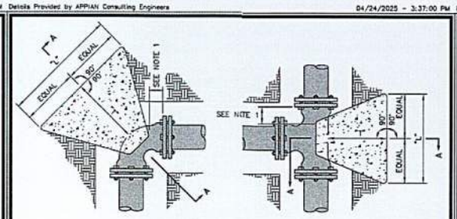
NOTES:
1. If 42" bury depth is not maintained or located in high pressure zone,
   a minimum of (2) 3/4" dia. rods to be used for pipe thru 24" dia. per joint –
   a minimum of (2) 1" dia. rods to be used for pipe 30" & 36" dia. per joint –
   a minimum of (2) 1 1/4" dia. rods to be used for pipe 42" & 48" dia. per joint.
   (See detail 512.09)

OWASA Quality Service Since 1977
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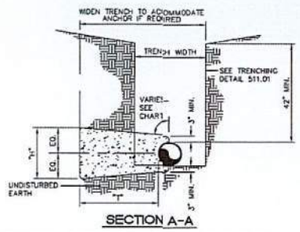
STANDARD VERTICAL BEND DETAIL

SCALE:	DETAIL #
Not To Scale	±512.01
REVISION DATE: January 1, 2025	SHEET # 1 of 4

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:00 PM



FOR ALL BEND FITTINGS FOR TEE FITTING



SECTION A-A

NOTES:
1. Concrete blocking is to be formed to ensure accessibility to fittings and poured against undisturbed earth.
2. Fittings are to be completely wrapped with plastic, prior to pouring concrete.
3. Concrete to be minimum 3,000 psi. @ 28 days.

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BLOCKING DETAIL for HORIZONTAL BENDS AND TEE

SCALE:	DETAIL #
Not To Scale	±512.02
REVISION DATE: January 1, 2025	SHEET # 1 of 4

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:00 PM

TEST PRESSURE = 150 P.S.I.

PIPE SIZE	TYPE FITTING	DIMENSIONS (Ft.) "L"	"M"	"T"	VOLUME, CONCRETE CU. YD.
<4 INCHES	11 1/4°	---	---	---	---
	22 1/2°	1.00	1.00	1.50	0.06
	45°	1.00	1.00	1.50	0.06
	90°	1.00	1.00	2.50	0.09
	TEE / PLUG	1.00	1.00	2.00	0.07
4 INCHES	11 1/4°	1.00	1.00	2.50	0.09
	22 1/2°	1.00	1.00	2.50	0.09
	45°	1.00	1.00	2.50	0.09
	90°	1.50	1.50	2.50	0.15
	TEE / PLUG	1.50	1.50	2.00	0.12
6 INCHES	11 1/4°	1.50	1.50	2.50	0.15
	22 1/2°	1.50	1.50	2.50	0.15
	45°	1.50	1.50	2.50	0.15
	90°	2.00	2.00	3.00	0.28
	TEE / PLUG	2.00	2.00	2.50	0.23
8 INCHES	11 1/4°	2.00	2.00	2.50	0.23
	22 1/2°	2.00	2.00	2.50	0.23
	45°	2.00	2.00	2.75	0.25
	90°	3.00	2.00	3.00	0.39
	TEE / PLUG	3.00	2.00	2.50	0.32
12 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	2.00	2.00	3.00	0.28
	45°	3.00	2.50	3.00	0.47
	90°	4.50	3.00	3.50	0.84
	TEE / PLUG	4.50	3.00	3.00	0.81
16 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	3.00	2.00	3.00	0.39
	45°	4.00	3.00	3.50	0.84
	90°	6.50	3.50	3.50	1.54
	TEE / PLUG	6.50	3.50	3.00	1.32

CHART NOTES:
1. If blocking excavation is in lightly compacted fill areas, or in areas where boulders or stumps have been removed, blocking size must be re-sized for the specific location/circumstance by a NC licensed Professional Engineer.
2. Blocking sizes shown in these tables assume the following:
   a. Blocking is constructed in residual soils as shown in detail
   b. Soil bearing pressure = 2000 psf
   c. Velocity of flow = 15 fps
3. This detail not applicable to reducing bends.
4. Neither the weight of the concrete blocking nor friction between concrete blocking and soil was added into blocking sizes computation. Therefore, blocking size is conservative.

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BLOCKING DETAIL for HORIZONTAL BENDS AND TEE

SCALE:	DETAIL #
Not To Scale	±512.02
REVISION DATE: January 1, 2025	SHEET # 2 of 4

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:00 PM

TEEST PRESSURE = 200 P.S.I.

PIPE SIZE	TYPE FITTING	DIMENSIONS (Ft.) "L"	"M"	"T"	VOLUME, CONCRETE CU. YD.
<4 INCHES	11 1/4°	1.00	1.00	1.00	0.04
	22 1/2°	1.00	1.00	1.50	0.06
	45°	1.00	1.00	1.50	0.06
	90°	1.00	1.00	2.50	0.09
	TEE / PLUG	1.00	1.00	2.00	0.07
4 INCHES	11 1/4°	1.00	1.00	2.50	0.09
	22 1/2°	1.00	1.00	2.50	0.09
	45°	1.50	1.50	2.50	0.15
	90°	1.50	1.50	2.50	0.15
	TEE / PLUG	1.50	1.50	2.00	0.12
6 INCHES	11 1/4°	1.50	1.50	2.50	0.15
	22 1/2°	1.50	1.50	2.50	0.15
	45°	1.50	1.50	2.50	0.15
	90°	2.50	2.00	3.00	0.33
	TEE / PLUG	2.50	2.00	2.50	0.28
8 INCHES	11 1/4°	2.00	2.00	2.50	0.23
	22 1/2°	2.00	2.00	2.50	0.23
	45°	2.00	2.00	2.50	0.23
	90°	4.00	2.00	3.00	0.50
	TEE / PLUG	4.00	2.00	2.50	0.42
12 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	3.00	2.00	3.00	0.39
	45°	4.00	2.50	3.00	0.61
	90°	5.50	3.00	3.50	1.13
	TEE / PLUG	5.50	3.00	3.00	0.97
16 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	4.00	2.00	3.00	0.50
	45°	5.50	3.00	3.50	1.13
	90°	7.50	4.00	3.50	2.01
	TEE / PLUG	7.50	4.00	3.00	1.72

CHART NOTES:
1. If blocking excavation is in lightly compacted fill areas, or in areas where boulders or stumps have been removed, blocking size must be re-sized for the specific location/circumstance by a NC licensed Professional Engineer.
2. Blocking sizes shown in these tables assume the following:
   a. Blocking is constructed in residual soils as shown in detail
   b. Soil bearing pressure = 2000 psf
   c. Velocity of flow = 15 fps
3. This detail not applicable to reducing bends.
4. Neither the weight of the concrete blocking nor friction between concrete blocking and soil was added into blocking sizes computation. Therefore, blocking size is conservative.

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BLOCKING DETAIL for HORIZONTAL BENDS AND TEE

SCALE:	DETAIL #
Not To Scale	±512.02
REVISION DATE: January 1, 2025	SHEET # 3 of 4

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:00 PM

TEST PRESSURE = 250 P.S.I.

PIPE SIZE	TYPE FITTING	DIMENSIONS (Ft.) "L"	"M"	"T"	VOLUME, CONCRETE CU. YD.
<4 INCHES	11 1/4°	1.00	1.00	1.00	0.04
	22 1/2°	1.00	1.00	1.50	0.06
	45°	1.00	1.00	1.50	0.06
	90°	1.50	1.50	2.50	0.15
	TEE / PLUG	1.50	1.50	2.00	0.12
4 INCHES	11 1/4°	1.00	1.00	2.50	0.09
	22 1/2°	1.00	1.00	2.50	0.09
	45°	1.50	1.50	2.50	0.15
	90°	2.00	2.00	2.50	0.23
	TEE / PLUG	2.00	2.00	2.00	0.19
6 INCHES	11 1/4°	1.50	1.50	2.50	0.15
	22 1/2°	1.50	1.50	2.50	0.15
	45°	2.00	1.50	2.50	0.19
	90°	3.00	2.00	3.00	0.39
	TEE / PLUG	3.00	2.00	2.50	0.32
8 INCHES	11 1/4°	2.00	2.00	2.50	0.23
	22 1/2°	2.00	2.00	2.50	0.23
	45°	2.50	2.00	2.50	0.28
	90°	4.00	2.50	3.00	0.61
	TEE / PLUG	4.00	2.50	2.50	0.51
12 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	3.50	2.00	3.00	0.44
	45°	4.50	2.75	3.00	0.74
	90°	6.00	3.50	3.50	1.43
	TEE / PLUG	6.00	3.50	3.00	1.22
16 INCHES	11 1/4°	2.00	2.00	3.00	0.33
	22 1/2°	4.00	2.50	3.00	0.61
	45°	6.00	3.50	3.50	1.43
	90°	8.00	4.50	4.00	2.74
	TEE / PLUG	8.00	4.50	3.50	2.40

CHART NOTES:
1. If blocking excavation is in lightly compacted fill areas, or in areas where boulders or stumps have been removed, blocking size must be re-sized for the specific location/circumstance by a NC licensed Professional Engineer.
2. Blocking sizes shown in these tables assume the following:
   a. Blocking is constructed in residual soils as shown in detail
   b. Soil bearing pressure = 2000 psf
   c. Velocity of flow = 15 fps
3. This detail not applicable to reducing bends.
4. Neither the weight of the concrete blocking nor friction between concrete blocking and soil was added into blocking sizes computation. Therefore, blocking size is conservative.

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BLOCKING DETAIL for HORIZONTAL BENDS AND TEE

SCALE:	DETAIL #
Not To Scale	±512.02
REVISION DATE: January 1, 2025	SHEET # 4 of 4

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:00 PM

PLAN VIEW

SECTION A-A

NOTES:
1. Concrete blocking is to be formed to ensure accessibility to fittings and poured against undisturbed earth.
2. Fittings are to be completely wrapped with plastic, prior to pouring concrete.
3. Concrete to be minimum 3,000 psi. @ 28 days.
4. Taps onto in-service mains by OWASA personnel only.

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4" to 12" STANDARD TAPPING SLEEVE and VALVE ASSEMBLY

SCALE:	DETAIL #
Not To Scale	±512.04
REVISION DATE: January 1, 2025	SHEET # 1 of 2

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:01 PM

NOTES:
1. Concrete blocking is to be formed to ensure accessibility to fittings.
2. Fittings attached to in service lines are to be completely wrapped with plastic, prior to pouring concrete.
3. Concrete to be minimum 3,000 psi. @ 28 days.
4. Backfill with No. 57 stone compacted in face or with flowable fill concrete (50 psi minimum/ 150 psi maximum).
5. Remove or fill pipes with flowable fill concrete (50 psi minimum/ 150 psi maximum) in accordance with the following criteria:
   a. Pipes larger than 24-inches diameter,
   b. Pipes located within roadway section and meeting one of the following conditions:
      i. pipes that are 12-inches diameter up to and including pipes that are 24-inches diameter and are buried less than 20 feet below finished grade.
      ii. pipes that are 6-inches diameter up to 12-inches diameter that are not cast iron, ductile iron, PVC, or HDPE and are buried less than 12 feet below finished grade.
   c. Pipes located below groundwater table that could become a conduit for water movement.

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LINE ABANDONMENT DETAIL FOR PAVED AREAS

SCALE:	DETAIL #
Not To Scale	±512.05
REVISION DATE: January 1, 2025	SHEET # 1 of 2

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:02 PM

PART	MANUFACTURER MODEL / Cat. No.
SADDLE	FORD / 101S SERIES OR 202B SERIES MUELLER / BR1B OR BR2B
CORP. STOP	FORD / FB00 SERIES MUELLER / H-15000 SERIES

NOTES:
1. All bronze saddle (Single or double strap for 3/4" and 1")
2. If 2 taps are made on each side of the main there shall be a minimum of 18" horizontal separation. Multiple taps on the same side shall have a minimum 18" horizontal separation and staggered a minimum of 1" vertically to prevent damage to the main.

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STANDARD 3/4" and 1" WATER TAPPING DETAIL

SCALE:	DETAIL #
Not To Scale	±512.06
REVISION DATE: January 1, 2025	SHEET # 1 of 2

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:02 PM

TOP SECTION VIEW

ELEVATION VIEW SIDE SECTION VIEW

NOTES:
1. Concrete shall 3000 P.S.I.
2. Reinforcing bars shall be deformed bars, and tied together.
3. Trench bottom width in vicinity of thrust block(s) Installation shall be the minimum width for placement of pipe (Max trench width = pipe O.D.+2 Ft.)
4. Backfill and compact in 6" layers.
5. Place thrust collar on one full joint of pipe.
6. Last joint of pipe with thrust collar to be mechanical joint pipe.
7. Place wedge action restrainer gland joint restraint 4 feet from plug end of pipe.

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THRUST COLLAR & BLOCKING with WEDGE ACTION RESTRAINER GLAND

SCALE:	DETAIL #
Not To Scale	±512.08
REVISION DATE: January 1, 2025	SHEET # 1 of 2

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:00 PM

▲ A MEG-A-LUG SERIES 1100 or FORD WEDGE ACTION RESTRAINER GLAND UFR SERIES 1400 MECHANICAL JOINT RESTRAINT SHALL BE PLACED ON DIP and PVC. CONCRETE & REINFORCEMENT STEEL SHALL ALSO BE AS SHOWN ON SHEET 1 of 2.

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THRUST COLLAR & BLOCKING with WEDGE ACTION RESTRAINER GLAND

SCALE:	DETAIL #
Not To Scale	±512.08
REVISION DATE: January 1, 2025	SHEET # 2 of 2

REV. NO	DESCRIPTION	DATE
F	FINAL DESIGN – ISSUED FOR BID – NOT FOR CONSTRUCTION	04/28/25
E	FINAL DESIGN – ISSUED FOR PERMITTING – NOT FOR CONSTRUCTION	04/08/25
D	90% DESIGN – UPDATED PER OWASA'S COMMENTS – NOT FOR CONSTRUCTION	9/27/24
C	90% DESIGN – NOT FOR CONSTRUCTION	7/19/24
B	50% DESIGN – NOT FOR CONSTRUCTION	4/09/24
A	UPDATED FOR FINAL TECHNICAL MEMORANDUM SUBMITTAL	7/12/23

REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045554 9/22/25 ENGINEER DEBORA L. HYMAN

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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

DETAILS

OWASA STANDARD DETAILS

PROJ START DATE:	2023, AUG.
MCE PROJ. #	01519-0063
DRAWN	CNT
DESIGNED	KAR
CHECKED	BRL
PROJ. MGR.	DLH

SCALE: HORIZONTAL: N/A VERTICAL: N/A

D1 DRAWING NUMBER

F REVISION

STATUS: FINAL DESIGN-ISSUED FOR BID - NOT FOR CONSTRUCTION

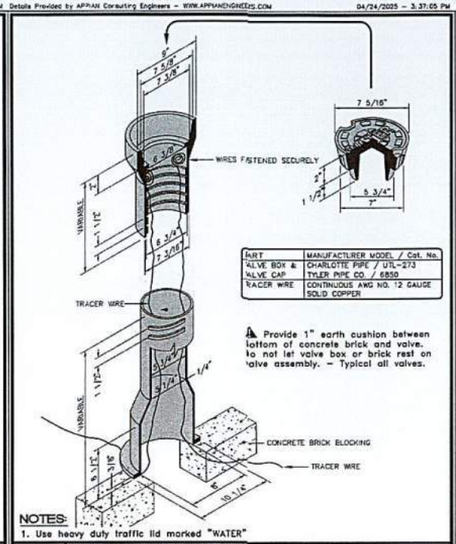
Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:08 PM

TIE ROD ANCHORS DATUM		
PIPE SIZE (INCHES)	ROD DIAMETER	NUMBER OF A307 RODS REQUIRED
TEST PRESSURE = 150 PSI		
6	3/4"	2
8	3/4"	2
10	3/4"	2
12	3/4"	4
16	3/4"	6
20	3/4"	8
24	3/4"	8
30	1"	10
TEST PRESSURE = 200 PSI		
6	3/4"	2
8	3/4"	2
10	3/4"	4
12	3/4"	6
16	3/4"	8
20	3/4"	12
24	3/4"	14
30	1"	14
TEST PRESSURE = 250 PSI		
6	3/4"	4
8	3/4"	4
10	3/4"	4
12	3/4"	6
16	3/4"	12
20	3/4"	14
24	3/4"	16
30	1"	20

ASTM A307 CADIUM COATED TIE RODS

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TIE ROD ANCHORS DATUM CHART — SCALE: Not To Scale — DETAIL # ≥ 512.09 — REVISION DATE: January 1, 2025 — SHEET # 1 of 1



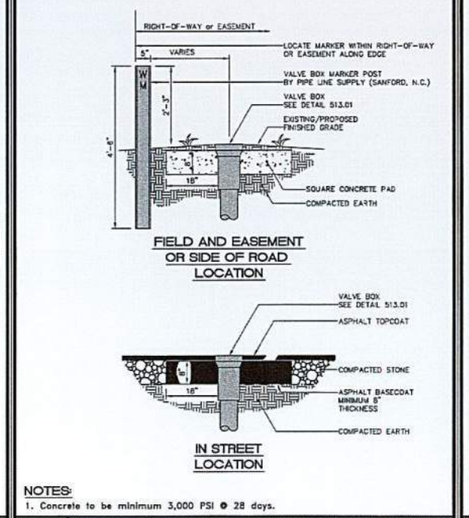
PART	MANUFACTURER MODEL / Cat. No.
VALVE BOX & VALVE CAP	CHARLOTTE PIPE / U1L-273 TYLER PIPE CO. / 6850
TRACER WIRE	CONTINUOUS AWG NO. 12 GAUGE SOLID COPPER

⚠ Provide 1" earth cushion between bottom of concrete brick and valve. Do not let valve box or brick rest on valve assembly. – Typical all valves.

NOTES:
1. Use heavy duty traffic lid marked "WATER"

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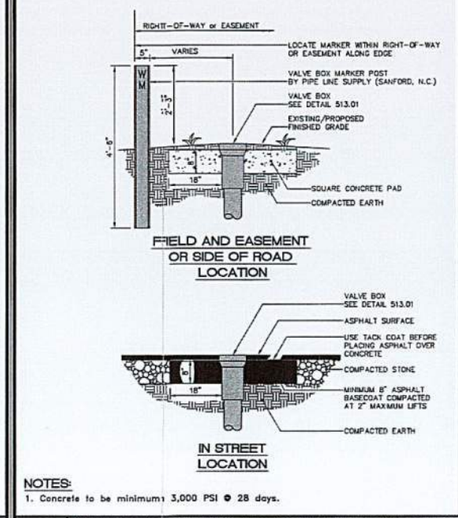
STANDARD SCREW VALVE BOX DETAIL — SCALE: Not To Scale — DETAIL # ≥ 513.011 — REVISION DATE: January 1, 2022 — SHEET # 1 of 1



NOTES:
1. Concrete to be minimum 3,000 PSI @ 28 days.

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VALVE BOX STABILIZING PAD DETAILS — SCALE: Not To Scale — DETAIL # ≥ 513.032 — REVISION DATE: January 1, 2025 — SHEET # 1 of 1

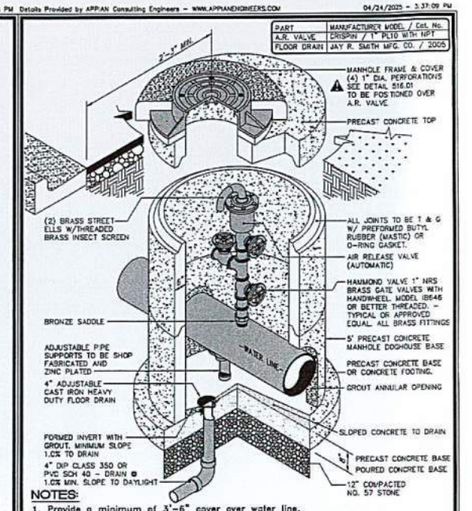


NOTES:
1. Concrete to be minimum 3,000 PSI @ 28 days.

OWASA Quality Service Since 1977 — 400 Jones Ferry Road, PO Box 366, Carrboro, NC 27510-0366 — ORANGE WATER AND SEWER AUTHORITY — Voice (919) 968-4421, FAX (919) 968-4464 — USE WITH THE OWASA STANDARD SPECIFICATIONS ONLY — www.owasa.org

VALVE BOX STABILIZING PAD DETAIL - TOWN & PRIVATE ROADS — SCALE: Not To Scale — DETAIL # ≥ 513.052 — REVISION DATE: January 1, 2025 — SHEET # 1 of 1

PART	MANUFACTURER MODEL / Cat. No.
A.R. VALVE	CRISPIN / 1" FLIG WITH NPT
FLOOR DRAIN	JAY R. SMITH MFG. CO. / 2005



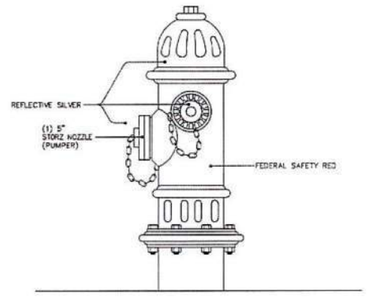
NOTES:
1. Provide a minimum of 3'–6" cover over water line.
2. Do not exceed allowable direct tap specified by pipe manufacturer, otherwise, use single strap bronze service saddle. See detail 512.06
3. Cone section may be substituted for flat top according to depth.

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1" AIR RELEASE VALVE & MANHOLE (PIPE 2" to 12") — SCALE: Not To Scale — DETAIL # ≥ 514.01 — REVISION DATE: January 1, 2025 — SHEET # 1 of 1

* IF DRAIN CANNOT CONNECT TO DAYLIGHT OR STORM DRAINAGE AT SPECIFIED SLOPE, INCREASE BEDDING TO 12" MIN. NO 57 STONE AND DRAIN TO STONE BEDDING.

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:05 PM

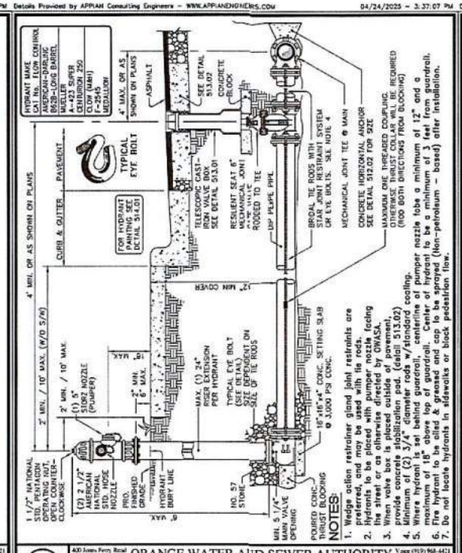


NOTES:
1. Use sherwin–williams industrial enamel or equal.
2. Paint colors are applicable to the following locations:
   a. Town of Carrboro
   b. Town of Chapel Hill
   c. Durham County
   d. Orange County
   e. University of North Carolina
3. Privately owned hydrants shall not be the same color as OWASA hydrants.

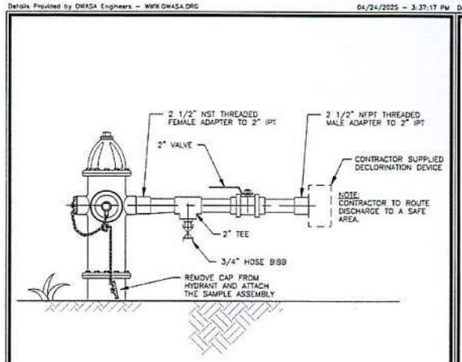
OWASA Quality Service Since 1977 — 400 Jones Ferry Road, PO Box 366, Carrboro, NC 27510-0366 — ORANGE WATER AND SEWER AUTHORITY — Voice (919) 968-4421, FAX (919) 968-4464 — USE WITH THE OWASA STANDARD SPECIFICATIONS ONLY — www.owasa.org

FIRE HYDRANT PAINTING SPECIFICATIONS — SCALE: Not To Scale — DETAIL # ≥ 514.05 — REVISION DATE: January 1, 2024 — SHEET # 1 of 1

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:07 PM


HYDRANT MAKE
CAT No. (FLOW CONTROL)
AMERICAN-DARLING B62B-LONG BARREL
MUELLER A-423 SUPER CENTURION 250
CLOW (MRK) F-2545
MEDALLION
4' MAX. OR AS SHOWN ON PLANS
ASPHALT
CURB & GUTTER
PAVEMENT
TYPICAL EYE BOLT
SEE DETAIL 513.02 CONCRETE BLOCK
FOR HYDRANT PAINTING DETAIL 514.05
CAST-IRON VALVE BOX SEE DETAIL 513.01
RESILIENT SEAT 6" MECHANICAL JOINT GATE VALVE
DIP PIPE
BRIDAL TEE RODS WITH STAR JOINT RESTRAINT SYSTEM OR EYE BOLTS. SEE NOTE 4
MECHANICAL JOINT TEE @ MAIN
CONCRETE HORIZONTAL ANCHOR SEE DETAIL 512.02 FOR SIZE
MAXIMUM ONE THREADED COUPLING ABOVE GROUND PERMITTED (NOD BOTH DIRECTIONS FROM BLOCKING)
12" MIN COVER
2' MIN. / 10' MAX. (W/D 5/8)
2' MIN. / 10' MAX.
(2) 2 1/2" NATIONAL STD. HOSE NOZZLE
5" STORZ NOZZLE (PUMPER)
1.5' MIN.
1.5' MAX.
MAX. (3) 24" RISER EXTENSION PER HYDRANT
TYPICAL EYE BOLT SIZE DEPENDENT ON SIZE OF TIE RODS
1.5' MIN.
1.5' MAX.
1.5' MIN.
1.5' MAX.
1.5' MIN.
1.5' MAX.

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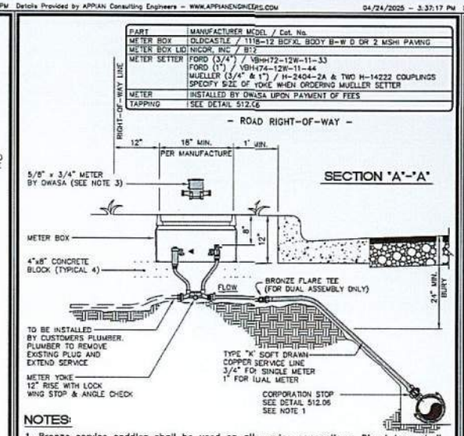
2" SAMPLING CONNECTION ON FIRE HYDRANT

NOTE:
ALL PIPING, VALVES AND FITTINGS SHALL BE IN ACCORDANCE WITH OWASA SPECIFICATIONS.

ORANGE WATER AND SEWER AUTHORITY
PURITY SAMPLING CONNECTION DETAILS - ON FIRE HYDRANT
SCALE: Not To Scale | DETAIL #: ⇕514.08
REVISION DATE: January 1, 2025 | SHEET #: 1 of 1

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:17 PM

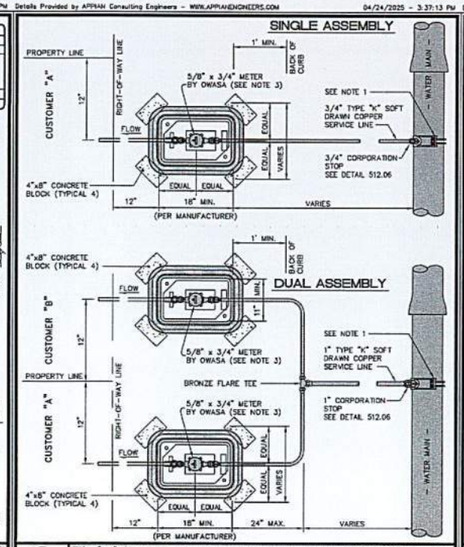
PART	MANUFACTURER MODEL / Cat. No.
METER BOX	OLDCASTLE / 1118-12 BOFXL BODY B-W D OR 2 MSHI PAVING
METER BOX LID	NICOR, INC / B12
METER SETTER	FORD (3/4") / VBHH72-12W-11-33 FORD (1") / VBHH74-12W-11-44 MUELLER (3/4" & 1") / H-2404-2A & TWO H-14222 COUPLINGS SPECIFY SIZE OF YOKE WHEN ORDERING MUELLER SETTER
METER	INSTALLED BY OWASA UPON PAYMENT OF FEES
TAPPING	SEE DETAIL 512.06



NOTES:
1. Bronze service saddles shall be used on all service connections. Direct taps shall be made only as directed by an OWASA representative. See tapping detail 512.06.
2. Omitted
3. If installation is for stub-out meter, meter should be purchased from OWASA. (At applicants expense)
4. Meter must be level across meter connections.
5. Substitution requires approval by OWASA's Director of Engineering.
6. When Required, Reduced Pressure Principle Back Flow Prevention Assembly (RPZ) to be installed 5' behind meter box in accordance with OWASA's Cross-Connection Control Manual.

ORANGE WATER AND SEWER AUTHORITY
3/4" SINGLE & 1" DUAL SERVICE INSTALLATION
SCALE: Not To Scale | DETAIL #: ⇕515.01
REVISION DATE: January 1, 2025 | SHEET #: 1 of 2

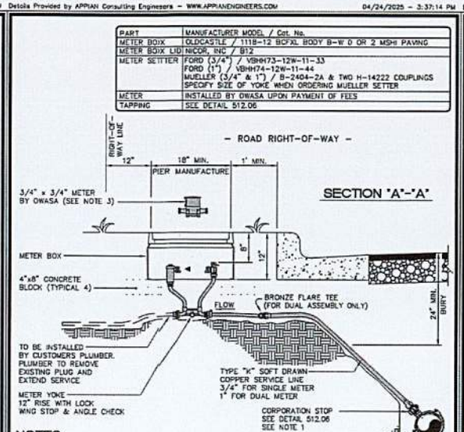
Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:13 PM



ORANGE WATER AND SEWER AUTHORITY
3/4" SINGLE & 1" DUAL SERVICE INSTALLATION
SCALE: Not To Scale | DETAIL #: ⇕515.01
REVISION DATE: January 1, 2025 | SHEET #: 2 of 2

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:14 PM

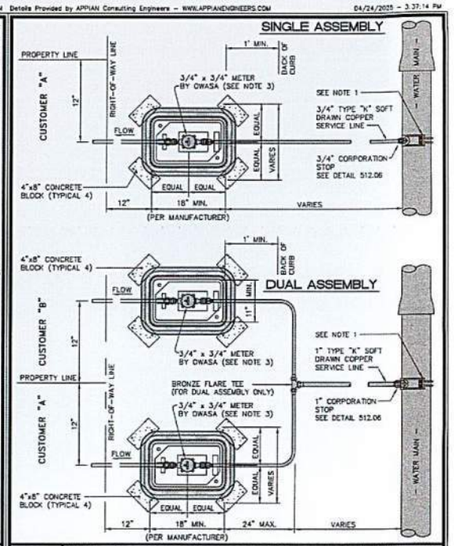
PART	MANUFACTURER MODEL / Cat. No.
METER BOX	OLDCASTLE / 1118-12 BOFXL BODY B-W D OR 2 MSHI PAVING
METER BOX LID	NICOR, INC / B12
METER SETTER	FORD (3/4") / VBHH73-12W-11-33 FORD (1") / VBHH74-12W-11-44 MUELLER (3/4" & 1") / B-2404-2A & TWO H-14222 COUPLINGS SPECIFY SIZE OF YOKE WHEN ORDERING MUELLER SETTER
METER	INSTALLED BY OWASA UPON PAYMENT OF FEES
TAPPING	SEE DETAIL 512.06



NOTES:
1. Bronze service saddles shall be used on all service connections. Direct taps shall be made only as directed by an OWASA representative. See tapping detail 512.06.
2. Omitted
3. If installation is for stub-out meter, meter should be purchased from OWASA. (At applicants expense)
4. Meter must be level across meter connections.
5. Substitution requires approval by OWASA's Director of Engineering.
6. When Required, Reduced Pressure Principle Back Flow Prevention Assembly (RPZ) to be installed 5' behind meter box in accordance with OWASA's Cross-Connection Control Manual.

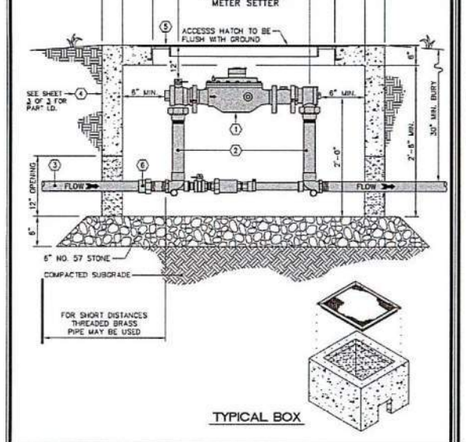
ORANGE WATER AND SEWER AUTHORITY
3/4" SINGLE & 1" DUAL COMBINED DOMESTIC AND FIRE PROTECTION SERVICE INSTALLATION
SCALE: Not To Scale | DETAIL #: ⇕515.02
REVISION DATE: January 1, 2025 | SHEET #: 1 of 2

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:14 PM

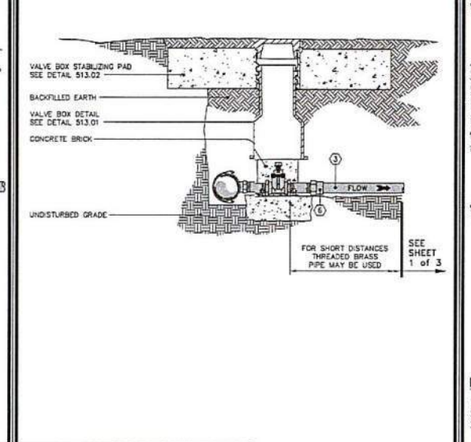


ORANGE WATER AND SEWER AUTHORITY
3/4" SINGLE & 1" DUAL COMBINED DOMESTIC AND FIRE PROTECTION SERVICE INSTALLATION
SCALE: Not To Scale | DETAIL #: ⇕515.02
REVISION DATE: January 1, 2025 | SHEET #: 2 of 2

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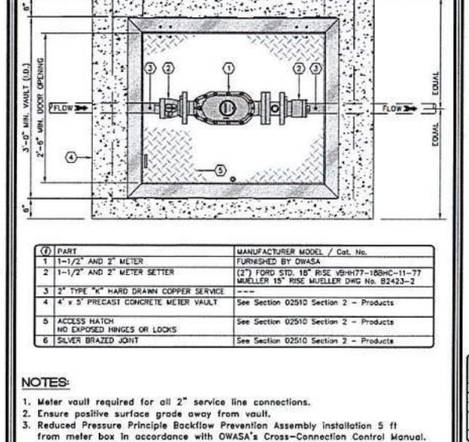


Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:12 PM



ORANGE WATER AND SEWER AUTHORITY
STANDARD 2" METER VAULT
SCALE: Not To Scale | DETAIL #: ⇕515.04
REVISION DATE: January 1, 2025 | SHEET #: 1 of 3

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:12 PM

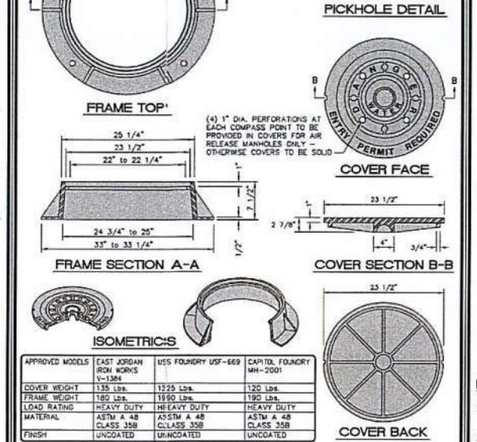


ⓘ	PART	MANUFACTURER MODEL / Cat. No.
1	1-1/2" AND 2" METER	FURNISHED BY OWASA
2	1-1/2" AND 2" METER SETTER	(2") FORD STD. 15° RISE VBHH77-15BHC-11-77 MUELLER 15° RISE MUELLER DWG No. B2423-2
3	2" TYPE "K" HARD DRAWN COPPER SERVICE	----
4	4' x 5' PRECAST CONCRETE METER VAULT	See Section 02510 Section 2 – Products
5	ACCESS HATCH NO EXPOSED HINGES OR LOCKS	See Section 02510 Section 2 – Products
6	SILVER BRAZED JOINT	See Section 02510 Section 2 – Products

NOTES:
1. Meter vault required for all 2" service line connections.
2. Ensure positive surface grade away from vault.
3. Reduced Pressure Principle Backflow Prevention Assembly installation 5 ft from meter box in accordance with OWASA's Cross-Connection Control Manual.

ORANGE WATER AND SEWER AUTHORITY
STANDARD 1-1/2" AND 2" METER VAULT
SCALE: Not To Scale | DETAIL #: ⇕515.04
REVISION DATE: January 1, 2025 | SHEET #: 3 of 3

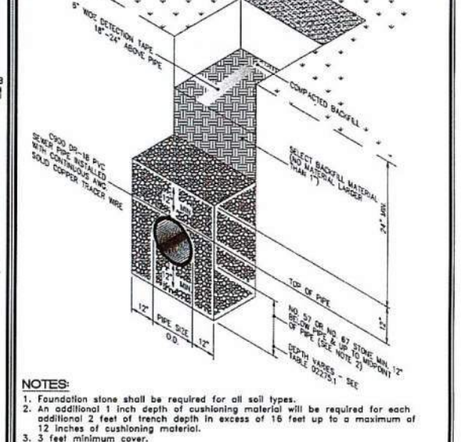
Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:15 PM



APPROVED MODELS	EAST JORDAN IRON WORKS V-1364	U.S. FOUNDRY USF-669	CAPITOL FOUNDRY MH-2001
COVER WEIGHT	135 Lbs.	122.5 Lbs.	120 Lbs.
FRAME WEIGHT	180 Lbs.	189.0 Lbs.	190 Lbs.
LOAD RATING	HEAVY DUTY	HEAVY DUTY	HEAVY DUTY
MATERIAL	ASTM A 48 CLASS 35B	ASTM A 48 CLASS 35B	ASTM A 48 CLASS 35B
FINISH	UNCOATED	UNCOATED	UNCOATED

ORANGE WATER AND SEWER AUTHORITY
STANDARD WATER MANHOLE FRAME and COVER
SCALE: Not To Scale | DETAIL #: ⇕516.01
REVISION DATE: January 1, 2025 | SHEET #: 1 of 1

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:16 PM



NOTES:
1. Foundation stone shall be required for all soil types.
2. An additional 1 inch depth of cushioning material will be required for each additional 2 feet of trench depth in excess of 16 feet up to a maximum of 12 inches of cushioning material.
3. 3 feet minimum cover.

ORANGE WATER AND SEWER AUTHORITY
PVC SANITARY SEWER BEDDING DETAIL
SCALE: Not To Scale | DETAIL #: ⇕531.01
REVISION DATE: January 1, 2025 | SHEET #: 2 of 2

REV NO.	DESCRIPTION	DATE
F	FINAL DESIGN – ISSUED FOR BID – NOT FOR CONSTRUCTION	04/28/25
E	FINAL DESIGN – ISSUED FOR PERMITTING – NOT FOR CONSTRUCTION	04/08/25
D	90% DESIGN – UPDATED PER OWASA'S COMMENTS – NOT FOR CONSTRUCTION	9/27/24
C	90% DESIGN – NOT FOR CONSTRUCTION	7/19/24
B	90% DESIGN – NOT FOR CONSTRUCTION	4/09/24
A	UPDATED FOR FINAL TECHNICAL MEMORANDUM SUBMITTAL	7/12/23

REVISIONS

NINTH CAROLINA PROFESSIONAL SEAL 045554 ENGINEER SANDRA L. HYMAN 4/28/25

McKIM&CREED
4300 Edwards Mill Road, Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031
NC Licensed# F-1222
www.mckimcreed.com

OWASA

WEST ROSEMARY STREET
WATER LINE REPLACEMENT

DETAILS
OWASA STANDARD DETAILS

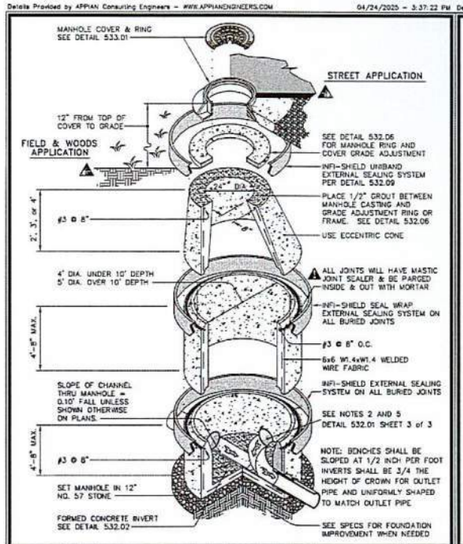
PROJ START DATE:	2023. AUG.
MCE PROJ #:	91519-0063
DRAWN:	CNT
DESIGNED:	KAR
CHECKED:	BRL
PROJ. MGR:	DLH

SCALE
HORIZONTAL:
VERTICAL: N/A

D3
DRAWING NUMBER
F
REVISION

STATUS: FINAL DESIGN-ISSUED FOR BID - NOT FOR CONSTRUCTION

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:22 PM



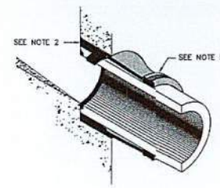
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STANDARD ECCENTRIC CONE MANHOLE DETAIL

SCALE: Not To Scale	DETAIL #: 532.01
REVISION DATE: January 1, 2025	SHEET # 1 of 1

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:22 PM

PART	MANUFACTURER MODEL / Cat. No.
SLEEVE BOOTS	KOR-N-SEAL or PSX



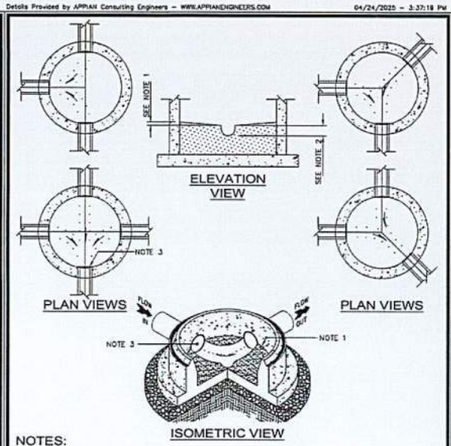
NOTES:
1. Concrete strength to be 4,000 PSI minimum.
2. Pipes will be grouted inside and out.
3. Joints will have mastic joint sealer and be parged inside and out with mortar.
4. Reinforcement design to conform to the requirements of ASTM C478.
5. Flexible sleeve boots cast in place or installed with stainless steal expander rings as manufactured by Kor-N-Seal or PSX shall be used for pipe connections. Boots shall be secured to pipe using (2) stainless steel bands. Precast inverts will not be accepted, unless otherwise directed by OWASA's Inspectors.

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STANDARD ECCENTRIC MANHOLE DETAIL

SCALE: Not To Scale	DETAIL #: 532.01
REVISION DATE: January 1, 2025	SHEET # 3 of 3

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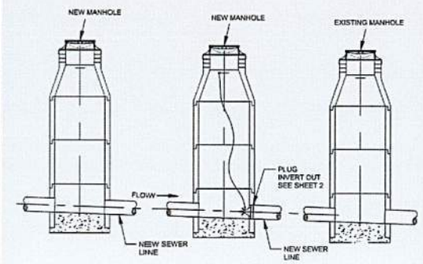
NOTES:
1. Benches shall be sloped at 1/2 inch per foot (4%).
2. Inverts shall be 3/4 the height of crown for outlet pipe and uniformly shaped to match outlet pipe.
3. Inverts can be shaped onsite or be preformed in a monolithic pour. No field adjustments or shaping is allowed for performed inverts.
4. Radius of invert must have enough room to be able to insert air plugs and TV equipment.
5. Service line entries to have cast in place troughs.

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STANDARD SEWER INVERT PLANS FOR MANHOLE

SCALE: Not To Scale	DETAIL #: 532.02
REVISION DATE: Jan 1, 2025	SHEET # 1 of 1

Details Provided by OWASA Engineers – WWW.OWASA.ORG 04/24/2025 – 3:37:20 PM



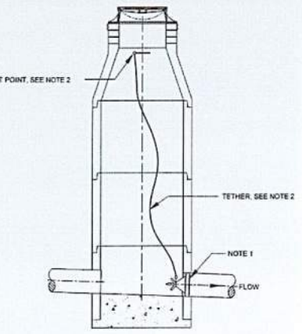
NOTES:
1. PRIOR TO OWASA ACCEPTANCE, ALL NEW SEWER LINES SHALL BE ISOLATED FROM EXISTING PARTS OF THE SYSTEM BY MEANS OF A MECHANICAL PLUG. SEE SHEET 2 FOR PLUGGING DETAILS.

OWASA Quality Service Since 1977 — 400 Jones Ferry Road, PO Box 366, Carrboro, NC 27510-0366 — ORANGE WATER AND SEWER AUTHORITY — Voice (919) 968-4421, FAX (919) 968-4564, www.owasa.org — USE WITH THE OWASA STANDARD SPECIFICATIONS ONLY

SANITARY SEWER MANHOLE PLUGGING DETAIL

SCALE: Not To Scale	DETAIL #: 532.04
REVISION DATE: January 1, 2025	SHEET # 1 of 2

Details Provided by OWASA Engineers – WWW.OWASA.ORG 01/10/2024 – 11:35:35 AM



NOTES:
1. PIPE PLUG SHALL BE A "CHERNE" IRON-GRIP BY-PASS STYLE MECHANICAL PLUG OR APPROVED EQUAL.
2. PIPE PLUG SHALL BE TETHERED TO THE MANHOLE TOP STEP OR OTHER PERMANENT ANCHOR POINT WITH A CORROSION AND ABRASION RESISTANT STAINLESS STEEL CABLE. ATTACHED TO THE CABLE SHALL BE A CORROSION RESISTANT METAL TAG WITH THE PLUG OWNERS NAME, ADDRESS AND 24-HOUR CONTACT INFORMATION.

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SANITARY SEWER MANHOLE PLUGGING DETAIL

SCALE: Not To Scale	DETAIL #: 532.04
REVISION DATE: Jan 1, 2025	SHEET # 2 of 2

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:22 PM

NOTES:
1. Mortar seal inside & out on brick course.
2. Install Infi-Shield Uni-Band as manufactured by Sealing Systems, Inc. per detail 532.09.

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MANHOLE RING AND COVER GRADE ADJUSTMENT

SCALE: Not To Scale	DETAIL #: 532.06
REVISION DATE: January 1, 2025	SHEET # 1 of 3

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:22 PM

NOTE:
⚠ PLACE 1/2" PARGE COAT ON INTERIOR OF MANHOLE FROM HALF DEPTH OF THE IRON CASTING TO A DEPTH OF 2" BELOW THE TOP OF THE CONE SECTION

NOTES:
1. Mortar seal inside & out on brick course.
2. Install Infi-Shield Uni-Band as manufactured by Sealing Systems, Inc. per detail 532.09.

OWASA Quality Service Since 1977 — 400 Jones Ferry Road, PO Box 366, Carrboro, NC 27510-0366 — ORANGE WATER AND SEWER AUTHORITY — Voice (919) 968-4421, FAX (919) 968-4564, www.owasa.org — USE WITH THE OWASA STANDARD SPECIFICATIONS ONLY

MANHOLE RING AND COVER GRADE ADJUSTMENT

SCALE: Not To Scale	DETAIL #: 532.06
REVISION DATE: January 1, 2025	SHEET # 2 of 3

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:22 PM

NOTE:
⚠ PLACE 1/2" PARGE COAT ON INTERIOR OF MANHOLE FROM HALF DEPTH OF THE IRON CASTING TO A DEPTH OF 2" BELOW THE TOP OF THE CONE SECTION

NOTES:
1. Install Infi-Shield Uni-Band as manufactured by Sealing Systems, Inc. per detail 532.09.

OWASA Quality Service Since 1977 — 400 Jones Ferry Road, PO Box 366, Carrboro, NC 27510-0366 — ORANGE WATER AND SEWER AUTHORITY — Voice (919) 968-4421, FAX (919) 968-4564, www.owasa.org — USE WITH THE OWASA STANDARD SPECIFICATIONS ONLY

MANHOLE RING AND COVER GRADE ADJUSTMENT

SCALE: Not To Scale	DETAIL #: 532.06
REVISION DATE: January 1, 2025	SHEET # 3 of 3

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:21 PM

NOTES:
1. When the rim & cover of a manhole or a valve box extends more than 1" above an unfinished road surface, a temporary layer of asphaltic concrete feathering shall be required to provide a smooth transition from 1" below the edge of the rim & cover to the unfinished road surface. A 12 to 1 slope ratio shall be used. The exposed sides of the valve box and/or manhole cover shall be painted bright orange or as specified by OWASA Inspector.
2. Prior to final paving contractor shall remove feathering, completely, & apply asphalt tack coat to binder to insure proper asphalt adhesion.

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STRUCTURE PROTECTION UNFINISHED ROAD GRADE

SCALE: Not To Scale	DETAIL #: 532.07
REVISION DATE: January 1, 2025	SHEET # 1 of 1

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:23 PM

INSTALLATION NOTES:
1. Clean casting frame, riser rings and cone section. Spray primer to areas where attaching non-hardening butyl mastic.
2. Install the Infi-shield External Seal on the outside surface of the adjustment ring area covering all grade rings. Remove protective tape and fold back on to the structure.
3. Using a rubber hammer, tap the sealing surface area.
4. Ensure lid and casting is clean. Attach inspection tab to manhole lid and backfill.
5. Contact Sealing Systems Inc. for additional installation instructions ✪ 800-478-2054.

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INFI-SHIELD EXTERNAL SEALING DETAIL

SCALE: Not To Scale	DETAIL #: 532.09
REVISION DATE: January 1, 2025	SHEET # 1 of 1

REV NO	DESCRIPTION	DATE
F	FINAL DESIGN – ISSUED FOR BID – NOT FOR CONSTRUCTION	04/25/25
E	FINAL DESIGN – ISSUED FOR PERMITTING – NOT FOR CONSTRUCTION	04/08/25
D	80% DESIGN – UPDATED PER OWASA'S COMMENTS – NOT FOR CONSTRUCTION	9/27/24
C	80% DESIGN – NOT FOR CONSTRUCTION	7/19/24
B	80% DESIGN – NOT FOR CONSTRUCTION	4/09/24
A	UPDATED FOR FINAL TECHNICAL MEMORANDUM SUBMITTAL	7/12/23

REVISIONS

NORTH CAROLINA PROFESSIONAL SEAL 045554 ENGINEER DEANDRA L. HYMAN 4/28/25

McKIM&CREED
4300 Edwards Mill Road, Suite 200
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Phone: (919) 233-8091, Fax: (919) 233-8031
NC License# F-1222
www.mckimcreed.com

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

DETAILS

OWASA STANDARD DETAILS

PROJ. START DATE	2023, AUG.
MCE PROJ. #	01519-0063
DRAWN	CNT
DESIGNED	KAR
CHECKED	BRL
PROJ. MGR.	DLH

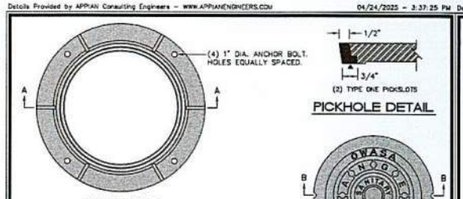
SCALE: HORIZONTAL: N/A; VERTICAL: N/A

DRAWING NUMBER: D4

REVISION: F

STATUS: FINAL DESIGN-ISSUED FOR BID - NOT FOR CONSTRUCTION

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:25 PM

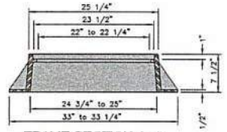


FRAME TOP

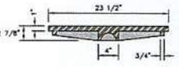
PICKHOLE DETAIL



COVER FACE



FRAME SECTION A-A



COVER SECTION B-B

ISOMETRICS





COVER BACK

APPROVED MODELS	EAST JORDAN IRON WORKS V-1384	US FOUNDRY USF-669	CAPITOL FOUNDRY MH-2001
COVER WEIGHT	135 Lbs.	125 Lbs.	120 Lbs.
FRAME WEIGHT	180 Lbs.	190 Lbs.	190 Lbs.
LOAD RATING	HEAVY DUTY	HEAVY DUTY	HEAVY DUTY
MATERIAL	ASTM A 48 CLASS 35B	ASTM A 48 CLASS 35B	ASTM A 48 CLASS 35B
FINISH	UNCOATED	UNCOATED	UNCOATED

OWASA Quality Service Since 1977

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USE WITH THE OWASA STANDARD SPECIFICATIONS ONLY

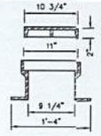
SANITARY SEWER MANHOLE FRAME and COVER

SCALE: Not To Scale | DETAIL #: 2.5.3.3.031

REVISION DATE: January 1, 2023 | SHEET #: 1 of 2

Details Provided by APPIAN Consulting Engineers – WWW.APPIANENGINEERS.COM 04/24/2025 – 3:37:24 PM

US FOUNDRY 7610 FC or CAPITOL FOUNDRY VB-9 BY-PASS VALVE BOX ITEM NUMBER VB-S*5	
MATERIAL SPECIFICATION	COATING
GRAY IRON ASTM A48 CLASS 30	BITUMEN

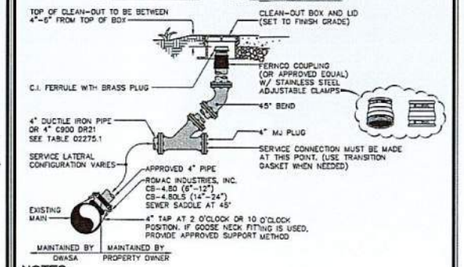


PROFILE



PLAN VIEW

⚠ TURF APPLICATION ⚠ PAVED APPLICATION



NOTES:

1. This detail depicts a typical layout. Variations may be approved.
2. Service saddles may be used only on existing sewer mains. Tees / Wyes shall be used for new construction.
3. PVC may be used when installed at depths provided in Table 02275.1.

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USE WITH THE OWASA STANDARD SPECIFICATIONS ONLY

4" SEWER TAP and STUB-OUT PAVED APPLICATION CLEAN OUT

SCALE: Not To Scale | DETAIL #: 2.5.4.031

REVISION DATE: January 1, 2023 | SHEET #: 1 of 1

REV. NO.	DESCRIPTION	DATE
F	FINAL DESIGN – ISSUED FOR BID – NOT FOR CONSTRUCTION	04/25/25
E	FINAL DESIGN – ISSUED FOR PERMITTING – NOT FOR CONSTRUCTION	04/08/25
D	90% DESIGN – UPDATED PER OWASA'S COMMENTS – NOT FOR CONSTRUCTION	9/27/24
C	90% DESIGN – NOT FOR CONSTRUCTION	7/19/24
B	50% DESIGN – NOT FOR CONSTRUCTION	4/08/24
A	UPDATED FOR FINAL TECHNICAL MEMORANDUM SUBMITTAL	7/12/23

REVISIONS

NORTH CAROLINA PROFESSIONAL 045354 ENGINEER DINORA L. HYMAN 4/23/25

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NC License# F-1222
www.mckimcreed.com

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

DETAILS

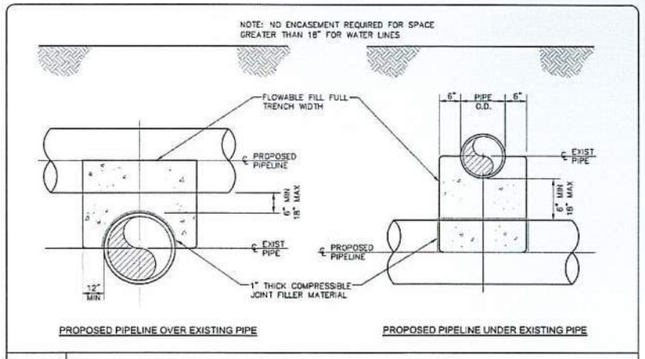
OWASA STANDARD DETAILS

PROJ. START DATE:	2023, AUG.
MCE PROJ. #	01519-0063
DRAWN	CNT
DESIGNED	KAR
CHECKED	BRL
PROJ. MGR	DLH

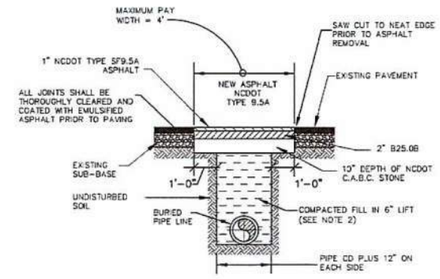
SCALE: HORIZONTAL: N/A VERTICAL: N/A

D5 (DRAWING NUMBER) F (REVISION)

STATUS: FINAL DESIGN-ISSUED FOR BID - NOT FOR CONSTRUCTION

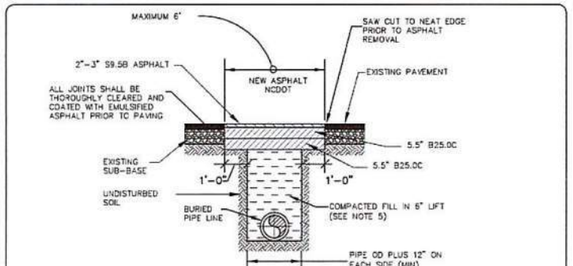


MC-01 CONCRETE CRADLE FOR WATER LINE CROSSINGS N.T.S.



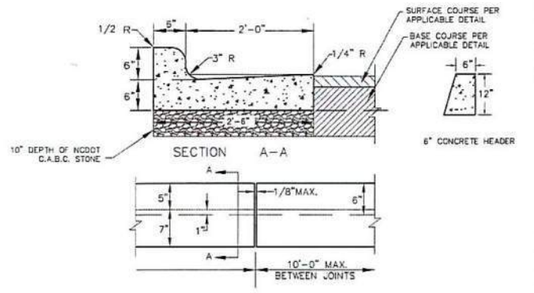
1. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE PREFERABLY A MACHINE SAW CUT.
2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED IN NCDOT.
3. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN THE THICKNESS SHOWN ABOVE.
4. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY TO ACHIEVE A SMOOTH LEVEL PATH.
5. ALL PAVEMENT SHALL BE REPAIRED WITHIN THE SAME WEEK IT IS CUT.
6. IN AREAS WHERE THE ASPHALT REPAIR PATCH WILL BE MILLED AND OVERLAID WITHIN 60 DAYS, THE SURFACE COURSE MAY BE DELETED AND THE ENTIRE REQUIRED ASPHALT THICKNESS BE INSTALLED WITH THE SPECIFIED BASE COURSE.

MC-02 ASPHALT REPAIR (TOWN OF CHAPEL HILL ROADS) N.T.S.



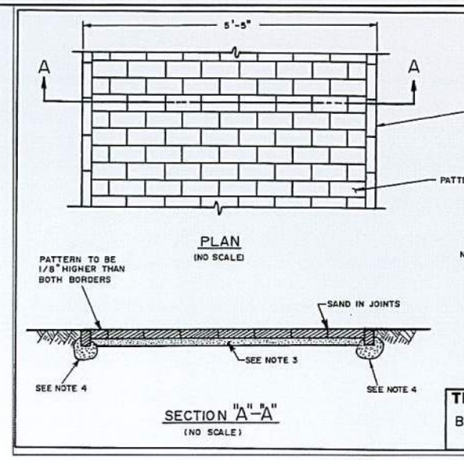
1. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE PREFERABLY A MACHINE SAW CUT.
2. MILL THE EXISTING PAVEMENT FOR FULL WIDTH OF THE AFFECTED TRAVEL LANE AT A DEPTH OF 1.25 INCHES AND RESURFACE AS SHOWN ABOVE WITH AN AREA EXTENDING 25 FEET BEYOND THE DISTURBED AREA.
3. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN THE THICKNESS SHOWN ABOVE.
4. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY TO ACHIEVE A SMOOTH LEVEL PATH.
5. ALL PAVEMENT SHALL BE REPAIRED WITHIN THE SAME WEEK IT IS CUT.
6. IN NCDOT ROADWAYS, SELECT BACKFILL (ABC STONE) SHALL BE USED IN LIEU OF THE EXCAVATED MATERIAL. EXCAVATED MATERIAL SHALL BE HAULED OFF SITE AND DISPOSED OF IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. SELECT BACKFILL SHALL BE COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT. COMPACT TOP 12" OF TRENCH IN 6" LIFTS TO 100% PROCTOR, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. ALL DISTURBED AREAS SHALL BE REPAIRED WITH THE FOLLOWING RATE OF SEED, FERTILIZER AND LIMESTONE IN POUNDS PER ACRE, AND THE AREAS PROPERLY MULCHED AND "TACKED". 25 LBS RELIANT HARD FESCUE, 100 LBS ALTA OR KENTUCKY 31 TALL FESCUE, 25 LBS KENBLUE KENTUCKY BLUEGRASS, 1000 LBS 5-10-10 FERTILIZER, 4000 LBS LIMESTONE.
8. REFER TO NCDOT ENCROACHMENT AGREEMENT SPECIAL PROVISIONS FOR ADDITIONAL GUIDELINES WITHIN NCDOT.

MC-03 ASPHALT REPAIR DETAIL (NCDOT ROADS) N.T.S.



NOTES:
1. IN DESIGNATED AREAS WHERE CURB IS TO BE REMOVED / REPLACED, CONTRACTOR SHALL REMOVE CURB AFTER SAWING WITH A CONCRETE SAW TO A MINIMUM DEPTH OF 1 1/2" IN GUTTER AND SAWED PERPENDICULAR TO THE CURB AT THE ENDS OF THE FASH PROVIDED THE GUTTER IS IN GOOD CONDITION, AND CUTTING THE CURB IN SUCH A MANNER IS PERMITTED BY THE INSPECTOR OF PUBLIC WORKS.
2. WHERE THE SAWED JOINT WILL LEAVE A SECTION OF CURB AND GUTTER LESS THAT FIVE (5') LINEAR FEET THE ENTIRE SECTION OF CURB MUST BE REMOVED TO THE NEAREST JOINT.
3. CONTRACTOR SHALL RECONSTRUCT CONCRETE CURB AS INDICATED HEREIN TO MATCH DIMENSIONS OF THE EXISTING CURB / GUTTER SECTION.

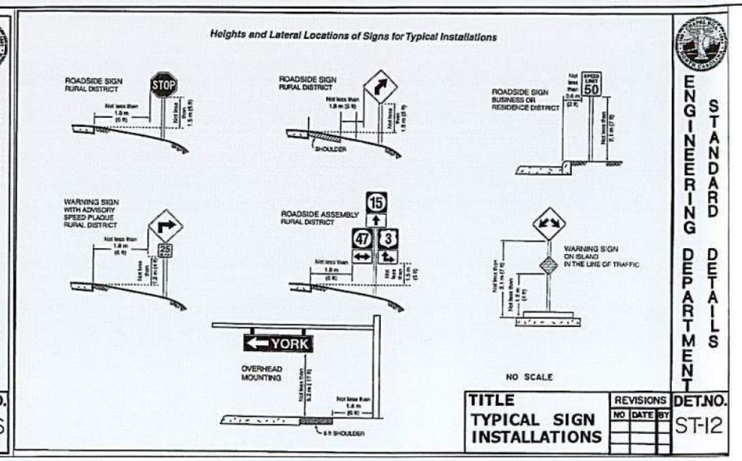
MC-04 CURB & GUTTER REPAIR (NCDOT ROADS) N.T.S.



NOTES:
1. TRIANGLE BRICK COMPANY #1630P PAVER (OR EQUAL) TYPICAL. CONCRETE PAVERS MAY BE APPROVED AS AN ALTERNATIVE.
2. 1/4" PER FOOT SLOPE TO STREET.
3. 1½" SAND, COMPACTED – MECHANICALLY COMPACTED.
4. RUNNING COURSE SET WITH PORTLAND CEMENT MORTAR BETWEEN & BELOW OR WITH CURB.

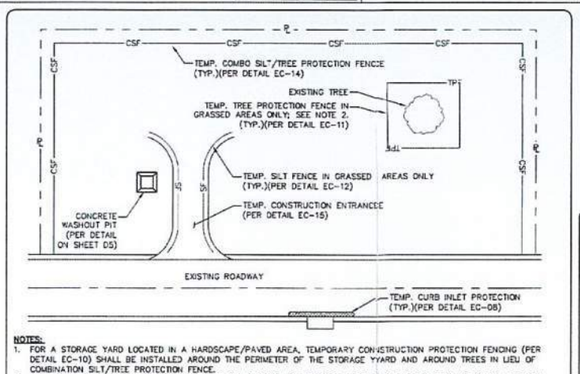
ENGINEERING DEPARTMENT STANDARD DETAILS

TITLE	REVISIONS NO	DATE	BY	DET.NO.
BRICK SIDEWALK				ST-6



ENGINEERING DEPARTMENT STANDARD DETAILS

TITLE	REVISIONS NO	DATE	BY	DET.NO.
TYPICAL SIGN INSTALLATIONS				ST-12



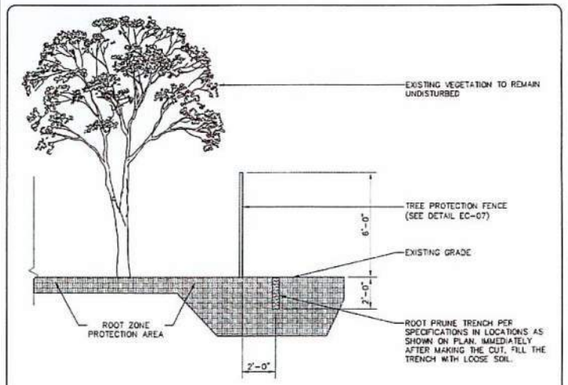
NOTES:
1. FOR A STORAGE YARD LOCATED IN A HARDSCAPE/PAVED AREA, TEMPORARY CONSTRUCTION PROTECTION FENCING (PER DETAIL EC-10) SHALL BE INSTALLED AROUND THE PERIMETER OF THE STORAGE YARD AND AROUND TREES IN LIEU OF COMBINATION SILT/TREE PROTECTION FENCE.
2. CONTRACTOR SHALL NOTIFY OWASA OF PROPOSED LOCATION OF STORAGE YARD AND SECURE STORAGE YARD LOCATION FROM PROPERTY OWNER PRIOR TO MOBILIZATION. CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPROVAL FOR ANY STORAGE YARD(S) LOCATED ON UNC PROPERTY PRIOR TO MOBILIZATION. STORAGEE YARD SHALL NOT BE OCCUPIED UNTIL PROPER EROSION AND SEDIMENTATION CONTROL DEVICES ARE INSTALLED AND ACCEPTED BY THE ENGINEER AND UNC. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE PROPER LIGHTING, SECURITY AND OTHER TEMPORARY PROTECTION MEASURES AT THE STORAGE YARD AT NO ADDITIONAL EXPENSE TO OWASA.
3. PRIOR TO MOBILIZATION AND START OF CONSTRUCTION, CONTRACTOR TO PROVIDE: TO THE ENGINEER A SKETCH OF THE SECURED LAYDOWN YARD INCLUDING THE PROPOSED EROSION AND SEDIMENTATION CONTROL DEVICES, IN ACCORDANCE WITH THE SUBMITTAL PROVISIONS CONTAINED IN THE CONTRACT DOCUMENTS.
4. AS PART OF THE DEMOBILIZATION AND FINAL COMPLETION CERTIFICATION, CONTRACTOR TO PROVIDE GENERAL CLEANUP, REPAIR OF ALL HARDSCAPE TO LIKE OR BETTER CONDITIONS, REGRADING AND SEEEDING, AND REMOVAL OF ALL EROSION AND SEDIMENTATION CONTROL DEVICES, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND SECURE A STORAGE YARD(S) PRIOR TO MOBILIZATION. CONTRACTOR SHALL OBTAIN A SEPARATE EROSION AND SEDIMENTATION CONTROL PERMIT FROM NCDEQ SHOULD TWO OR MORE STORAGE YARDS BE REQUIRED FOR THE PROJECT.
6. LIMITS OF STORAGE YARD(S) SHALL BE LOCATED A MINIMUM OF 50 FEET AWAY FROM STORM DRAIN INLETS, TEMPORARY DIVERSIONS, CHANNELS, AND SURFACE WATER BODIES.
7. THE PERMITS/RECORD BOX AND RAIN GAUGE SHALL BE KEPT AT THE ENTRANCE TO THE CONTRACTOR'S STORAGE YARD.

MC-06 CONTRACTOR STORAGE YARD DETAIL N.T.S.

SURFACE RESTORATION REQUIREMENTS

DESCRIPTION	TYPE BACKFILL	N/A	FINAL SURFACE
GRAVEL DRIVEWAYS	COMPACT GRANULAR MATERIALS 6" LAYERS	N/A	MATCH EXISTING, BUT AT LEAST 6" ABC AGGREGATE
ASPHALT DRIVEWAYS	COMPACT GRANULAR MATERIALS. 6" LAYERS	6" ABC AGGREGATE	2" MINIMUM ASPHALT CONCRETE OR MATCH EXISTING CONDITIONS.
CONCRETE DRIVEWAYS	COMPACT GRANULAR MATERIALS. 6" LAYERS	6" ABC AGGREGATE	3,000 PSI CONCRETE, 6" (MIN.) IN NCDOT R.O.W., OTHERWISE MATCH EXISTING THICKNESS, SURFACE FINISH TO MATCH EXISTING.

MC-05 DRIVEWAY REPLACEMENT SCHEDULE N.T.S.



NOTES:
1. CONTRACTOR SHALL AVOID PHYSICAL CONTACT WITH TREES. TREE PROTECTION FENCING SHALL BE INSTALLED AS INDICATED ON PLANS.
2. CANOPY PRUNING – THE CONTRACTOR SHALL NOT REMOVE OR PRUNE ANY LANDSCAPE MATERIALS WITHOUT PRIOR CONSENT FROM THE TOWN OF CHAPEL HILL URBAN FORESTER. THE CONTRACTOR SHALL SCHEDULE A SITE VISIT w/URBAN FORESTER TO INSPECT AND DOCUMENT CONDITION OF TREES AND TO IDENTIFY PRUNING OF CANOPIES THAT WILL BE NEEDED FOR SAFE ACCESS BY EQUIPMENT. CONTRACTOR SHALL TRIM TREE CANOPIES TO ALLOW SAFE PASSAGE OF CONSTRUCTION EQUIPMENT AND MINIMIZING POTENTIAL FOR DAMAGE FROM EXHAUST. ALL TREE WORK SHALL BE BY AN ARBORIST CERTIFIED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE, BONDED, AND INSURED. ALL WORK SHALL BE ACCORDING TO THE LATEST STANDARDS SET FORTH IN THE ANSI A300 PUBLICATION "PRUNING STANDARDS FOR SHADE TREES", PUBLISHED BY THE NATIONAL ARBORIST ASSOCIATION. REQUEST FOR ANY TREE REMOVAL SHALL BE TWO WEEKS IN ADVANCE. ANY INADVERTENT INJURY TO TREES SHALL BE CARED FOR BY A CERTIFIED ARBORIST AND PAID FOR BY THE CONTRACTOR.
3. ROOT PRUNING – IF PLANS REQUIRE GRADING OR DIGGING IN THE ROOT ZONE OF PROTECTED TREES, ROOT PRUNE THE TREE TO AVOID THE RIPPING OF ROOTS WITH DIGGING EQUIPMENT. ANY ROOTS LARGER THAN 1/2" THAT ARE DAMAGED DUE TO CUT GRADING OR TRENCHING OPERATIONS MUST BE STUBBED CLEANLY. NO ROOT TREATMENT SHALL BE APPLIED. ANY ROOTS ENCOUNTERED 4" OR GREATER REQUIRE INSPECTION BY THE TOWN OF CHAPEL HILL URBAN FORESTER PRIOR TO CLOSING TRENCH.
4. ANY HANDSAWS USED FOR SHEARING ROOTS SHALL BE NEW AND UNUSED OR OTHERWISE SANITARY.
5. WHEN TRENCHING WITHIN THE DRIP LINE OF TREES, TRENCHING OPERATIONS SHOULD BE COMPLETED AND BACK FILLED WITHIN ANY DRIP ZONE AT THE END OF EACH CURRENT WORK DAY.
6. THE TOWN OF CHAPEL HILL RESERVES THE RIGHT TO REQUIRE TREE REMOVAL IF WARRANTED BY UNSAFE OR OTHER UNFORESEEN CONDITIONS. PAYMENT FOR THE TREE REMOVAL AT THE TOWN'S REQUEST WILL BE NEGOTIATED WITH OWASA UNDER THE ALLOWANCE UNIT PRICE ITEM.

MC-07 TREE PRUNING DETAIL N.T.S.

REV NO	DESCRIPTION	DATE
F	FINAL DESIGN – ISSUED FOR BID – NOT FOR CONSTRUCTION	04/28/25
E	FINAL DESIGN – ISSUED FOR PERMITTING – NOT FOR CONSTRUCTION	04/08/25
D	90% DESIGN – UPDATED PER OWASA'S COMMENTS – NOT FOR CONSTRUCTION	9/27/24
C	90% DESIGN – NOT FOR CONSTRUCTION	7/19/24
B	50% DESIGN – NOT FOR CONSTRUCTION	4/09/24
A	UPDATED FOR FINAL TECHNICAL MEMORANDUM SUBMITTAL	7/12/23

REVISIONS

NORTH CAROLINA PROFESSIONAL SEAL 045554 ENGINEER LYMAN DILANDRA L. HYMAN

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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

DETAILS

MISCELLANEOUS DETAILS

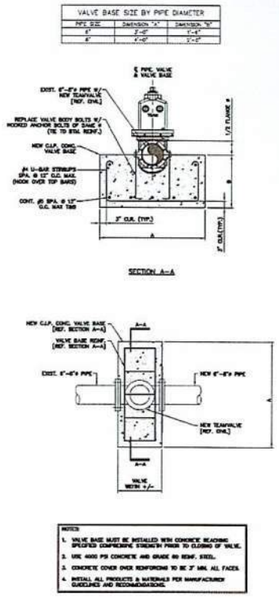
PROJ START DATE:	2023. AUG.
MCE PROJ. #	01519-0063
DRAWN	CNT
DESIGNED	KAR
CHECKED	BRL
PROJ MGR.	DLH

SCALE: HORIZONTAL: N/A; VERTICAL: N/A

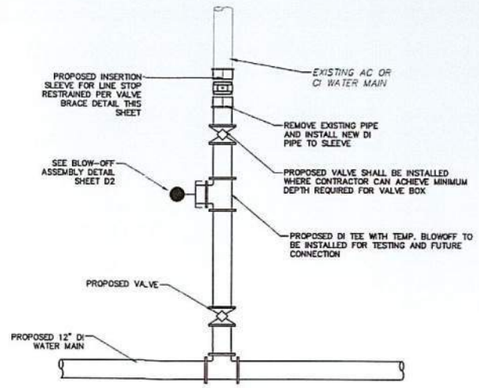
D6 DRAWING NUMBER

F REVISION

STATUS: FINAL DESIGN-ISSUED FOR BID - NOT FOR CONSTRUCTION

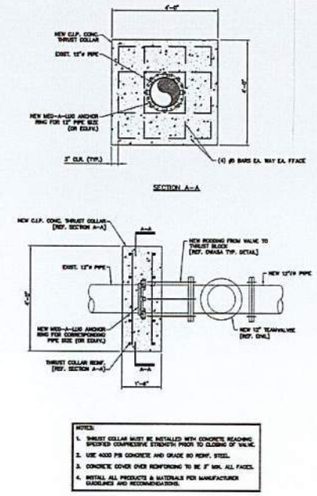


MC-08 6"-8" INSERT VALVE RESTRAINT DETAIL N.T.S.



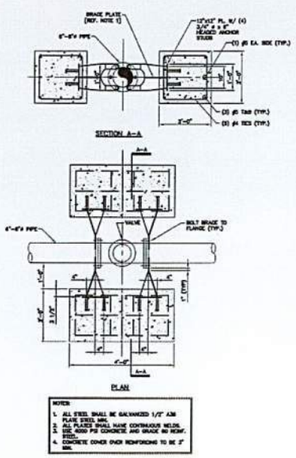
NOTES:
1. INSERTION VALVE MAY BE USED IN LIEU OF LINE STOP IF REQUIRED DEPTH IS AVAILABLE.
2. THRUST COLLAR MAY ONLY BE USED IF VALVE BRACING IS NOT FEASIBLE AND APPROVED BY OWASA.

MC-09 ACTIVE SIDE CONNECTION DETAIL N.T.S.

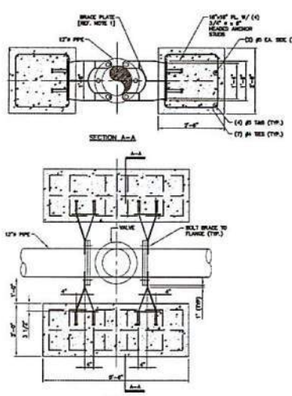


NOTES:
1. THRUST COLLAR MUST BE INSTALLED WITH CONCRETE REACHING SPECIFIED COMPRESSIVE STRENGTH PRIOR TO CLOSING OF VALVE.
2. USE 4000 PSI CONCRETE AND GRADE 60 REINF. STEEL.
3. CONCRETE COVER OVER REINFORCING TO BE 3" MIN. ALL FACES.
4. INSTALL ALL PRODUCTS & MATERIALS PER MANUFACTURER GUIDELINES AND RECOMMENDATIONS.

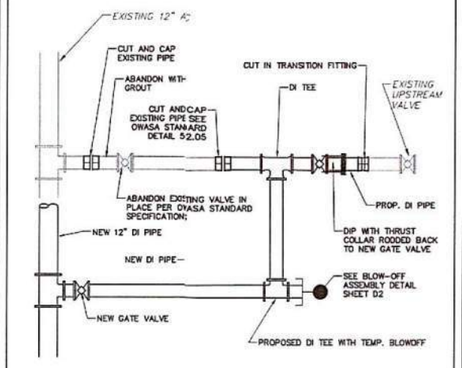
MC-10 12" VALVE RESTRAINT THRUST COLLAR DETAIL N.T.S.



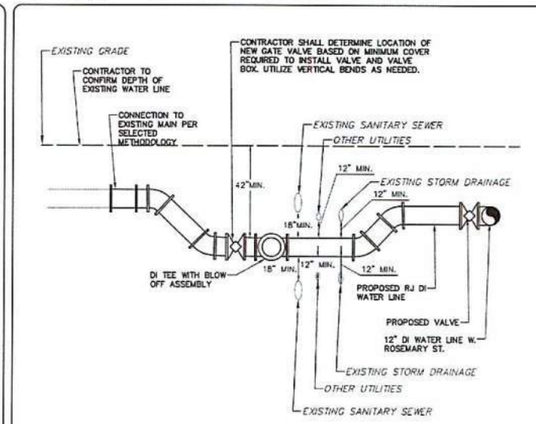
MC-11 ALTERNATE 6"-8" INSERTION VALVE BRACE DETAIL N.T.S.



MC-12 ALTERNATE 12" INSERTION VALVE BRACE N.T.S.

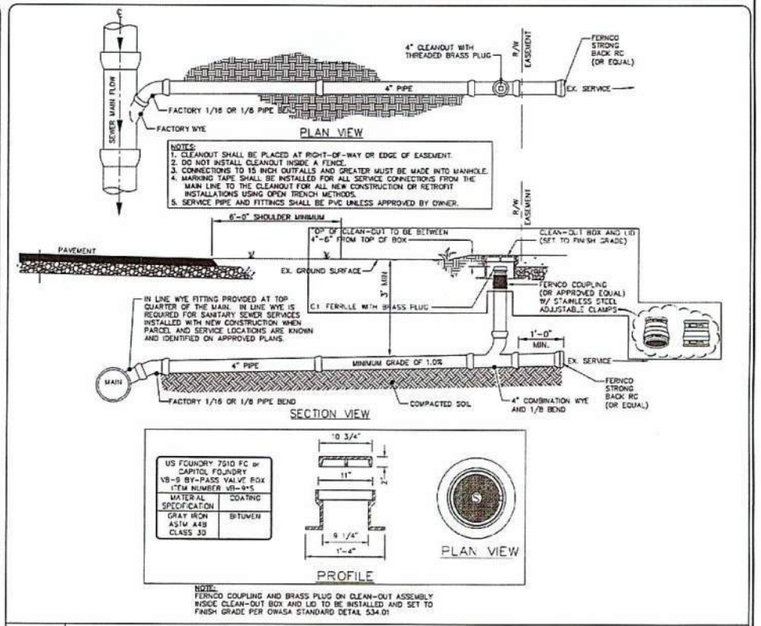


MC-13 CUT-IN SIDE CONNECTION DETAIL N.T.S.



NOTES:
1. PROFILE DETAIL IS FOR REFERENCE ONLY AND TO INDICATE MINIMUM SEPARATION FROM EXISTING UTILITIES AND IS APPLICABLE REGARDLESS OF HOW CONNECTION IS MADE.
2. CONTRACTOR SHALL DETERMINE LOCATION ON NEW GATE VALVE AND DI TEE BASED ON ABILITY TO MEET MINIMUM DEPTH FOR VALVE BOX.
3. CONTRACTOR SHALL UTILIZE VERTICAL BENDS TO ACHIEVE MINIMUM COVER OF 3.5' AND TO AVOID UTILITY CONFLICTS WITH MINIMUM SEPARATION AS DEPICTED IN DETAIL ABOVE.

MC-14 TYPICAL SIDE STREET WATER LINE PROFILE N.T.S.



MC-15 STANDARD 4" SANITARY SEWER SERVICE WITH WYE CONNECTION N.T.S.

REV. NO.	DESCRIPTION	DATE
F	FINAL DESIGN – ISSUED FOR BID – NOT FOR CONSTRUCTION	04/28/25
E	FINAL DESIGN – ISSUED FOR PERMITTING – NOT FOR CONSTRUCTION	04/09/25
D	90% DESIGN – UPDATED PER OWASA'S COMMENTS – NOT FOR CONSTRUCTION	9/27/24
C	90% DESIGN – NOT FOR CONSTRUCTION	7/19/24
B	50% DESIGN – NOT FOR CONSTRUCTION	4/08/24
A	UPDATED FOR FINAL TECHNICAL MEMORANDUM SUBMITTAL	7/12/23

REVISIONS

NORTH CAROLINA PROFESSIONAL SEAL 055466 ENGINEER ISAAC C. DOWLESS 04/29/2025

DETAILS: MC-08, MC-10, MC-11, MC-12

NORTH CAROLINA PROFESSIONAL SEAL 045554 ENGINEER DINDRA L. HYMAN 4/28/25

DETAILS: MC-09, MC-13, MC-14, MC-15

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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

DETAILS

MISCELLANEOUS DETAILS

PROJ. START DATE:	2023, AUG.
MCE PROJ. #	01519-0063
DRAWN:	CNT
DESIGNED	KAR
CHECKED	BRL
PROJ. MGR.	DLH

SCALE: HORIZONTAL: N/A; VERTICAL: N/A

DRAWING NUMBER: D7

REVISION: F

STATUS: FINAL DESIGN-ISSUED FOR BID - NOT FOR CONSTRUCTION

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

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 at site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

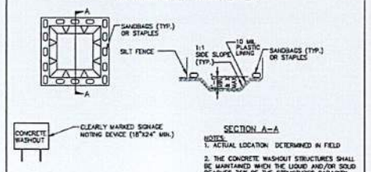
PORTABLE TOILETS

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.

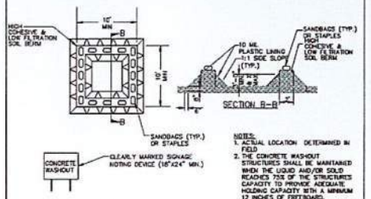
EARTHEN STOCKPILE MANAGEMENT

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.

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE



ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

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

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 measures. 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.
(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	6. Description, evidence, and date of corrective action(s) taken If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits. 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

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

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installations.
(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 impairment conditions.
(b) Oil spills and release of hazardous substances per Item 3(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 BASSINS 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.

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

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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

DETAILS

NCG01 NOTES AND DETAILS

PROJ. START DATE:	2023. AUG.
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SCALE: HORIZONTAL: N/A; VERTICAL: N/A

D8 (DRAWING NUMBER) F (REVISION)

STATUS: FINAL DESIGN-ISSUED FOR BID - NOT FOR CONSTRUCTION

EC-01 EROSION CONTROL CONSTRUCTION SEQUENCE

N.T.S.

1. THE INTENT OF THE CONSTRUCTION SEQUENCE IS TO PROVIDE THE CONTRACTOR WITH A GENERAL GUIDE FOR CONSTRUCTION PURPOSES. THIS SEQUENCE IS NOT INTENDED TO OUTLINE ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.
2. CONTRACTOR SHALL ARRANGE PRE-CONSTRUCTION MEETING WITH THE OWNER'S REPRESENTATIVE, ENGINEER, PRIOR TO ANY LAND DISTURBING ACTIVITY ON SITE.
3. EROSION AND SEDIMENT CONTROL (E&SC) PERMIT AND CERTIFICATE OF COVERAGE MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES OCCUR. THE COC CAN BE OBTAINED BY FILLING OUT THE ELECTRONIC NOTICE OF INTENT (e-NOI) FORM AT DEQ.NC.GOV/NCG01. PLEASE NOTE, THE e-NOI FORM MAY ONLY BE FILLED OUT ONCE THE PLANS HAVE BEEN APPROVED. A COPY OF THE E&SC PERMIT, THE COC, AND A HARD COPY OF THE PLAN MUST BE KEPT ON SITE, PREFERABLY IN A PERMITS BOX, AND ACCESSIBLE DURING INSPECTION.
4. WHEN THE PROJECT IS COMPLETE, THE PERMITTEES SHALL CONTACT DEMLR TO CLOSE OUT THE E&SC PLAN. AFTER DEMLR INFORMS THE PERMITTEE OF THE PROJECT CLOSE OUT, VIA INSPECTION REPORT, THE PERMITTEE SHALL VISIT DEQ.NC.GOV/NCG01 TO SUBMIT AN ELECTRONIC NOTICE OF TERMINATION (e-NOT). A $120 ANNUAL GENERAL PERMIT FEE WILL BE CHARGED UNTIL THE e-NOT HAS BEEN FILLED OUT.
5. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NORTH CAROLINA EROSION AND SEDIMENTATION CONTROL PLANNING AND DESIGN MANUAL.
6. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER RAINFALL EVENTS. NEEDED REPAIRS SHALL BE MADE IMMEDIATELY.
7. IF IT IS DETERMINED DURING CONSTRUCTION THAT ANY SEDIMENT IS LEAVING THE SITE, DESPITE PROPER IMPLEMENTATION AND MAINTENANCE, THE CONTRACTOR IS OBLIGATED TO TAKE ADDITIONAL CORRECTIVE ACTION. CONTACT OWNER'S REPRESENTATIVE AND ENGINEER WITH ANY ADDITIONAL MEASURES NEEDED.
8. CONTRACTOR SHALL ESTABLISH GROUNDCOVER ON DISTURBED AREAS WITHIN DAYS SPECIFIED BY THE NPDES GENERAL PERMIT STABILIZATION REQUIREMENTS AFTER COMPLETION OF ANY PHASE OF GRADING. SEEDING SHALL BE IN ACCORDANCE WITH EC-5 AND EC-6 ON THIS SHEET.
9. MAINTAIN A COPY OF THE LETTER OF PLAN APPROVAL ON SITE FOR SEDIMENTATION AND EROSION CONTROL FROM NCDEQ-LAND QUALITY SECTION AS WELL AS THE PREVIOUS 30 DAYS OF SELF INSPECTION RECORDS, RAIN GAUGE, APPROVAL CERTIFICATE/LETTER, APPROVED PLAN, NPDES PERMIT, AND ANY 401/404 DOCUMENTATION. THESE ITEMS SHOULD BE LOCATED NEAR THE MAIN CONSTRUCTION ENTRANCE. COORDINATE WITH THE INSPECTOR IF AN ALTERNATIVE LOCATION IS PREFERRED. ADDITIONAL INFORMATION AND A LINK TO THE NCG01 COMBINED SELF-MONITORING FORM CAN BE FOUND AT: HTTPS://DEQ.NC.GOV/ABOUT/DIVISIONS/ENERGY-MINERAL-LAND-RESOURCES/ENERGY-MINERAL-LAND-PERMITS/STORMWATER-PERMITS/CONSTRUCTION-SW.
10. CONTRACTOR TO POST ANY NECCESSARY GRADING PERMIT PROMINENTLY ON SITE AT ALL TIMES.
11. CONTRACTOR TO VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES TO AVOID CONFLICT DURING INSTALLATION OF EROSION CONTROL MEASURES. STORM SEWER PIPES AND UNDERGROUND UTILITY LINES. CONTRACTOR IS TO CALL 1-800-632-4949 FOR "NC ONE CALL" OR "811" TO HAVE EXISTING UTILITIES LOCATED.
12. CONTRACTOR TO HAVE A PROFESSIONAL LAND SURVEYOR FLAG PROPERTY LINES, EASEMENTS, STREAM BUFFERS, TREE PROTECTION AREAS AND LIMITS OF DISTURBANCE PRIOR TO LAND DISTURBING ACTIVITIES.
13. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES AS SHOWN AND DETAILED IN THESE PLANS. CONTRACTOR TO PHASE THE OVERALL EROSION CONTROL BASED ON INSTALLATION OF THE WATER LINE. CONTRACTOR TO COORDINATE THE EROSION CONTROL INSTALLATION WITH OWASA AND NCDEQ.
14. TEMPORARY INLET PROTECTION TO BE INSTALLED AS SHOWN ON THE PLANS. THESE DEVICES ARE TO REMAIN IN PLACE UNTIL THE SITE HAS BEEN STABILIZED AND APPROVAL FOR REMOVAL HAS BEEN GIVEN.
15. INSTALL INLET PROTECTION AS SHOWN ON PLANS WHEN CONTRACTOR IS WORKING IN THESE AREAS. THE DEVICES ARE TO REMAIN IN PLACE UNTIL THE AREA IS STABILIZED AND APPROVAL FOR REMOVAL HAS BEEN GIVEN BY NCDEQ-LAND QUALITY SECTION AND ENGINEER.
16. OPEN TRENCH, INSTALL AND BACKFILL TRENCH DAILY. WHEN BACKFILLING THESE AREAS, STABILIZATION SHALL BE INSTALLED PER APPLICABLE DETAIL.
17. CONTRACTOR IS TO DEWATER THE OPENED TRENCH DAILY AS NEEDED BUT AT A MINIMUM AFTER EVERY RAINFALL EVENT.
18. SPOIL PLACEMENT SHALL BE ON THE UPSTREAM SIDE OF THE TRENCH ONLY. ANY ADDITIONAL EXCAVATED MATERIAL IS TO HAULED OFF AND DISPOSED OF IN AN APPROVED LANDFILL AT THE CONTRACTORS EXPENSE.
19. ANY DEWATERING ON THE PROJECT SHALL BE DONE THOUGH A SILT BAG.
20. STABILIZE SITE AS TRENCH IS RESTORED TO ORIGINAL GRADE WITH VEGETATION AND/OR PAVING AS SHOWN ON PLANS. THIS STABILIZATION IS TO BE COMPLETED DAILY.
21. PERFORM SEEDING AND MULCHING AS REQUIRED IN ACCORDANCE WITH THE EROSION CONTROL (EC) DETAILS AND TECHNICAL SPECIFICATIONS.
22. REMOVE TEMPORARY CONSTRUCTION ENTRANCES WHEN WORK IS COMPLETE IN AN AREA AND BRING AREAS BACK TO ORIGINAL GRADES AS REQUIRED.
23. ONCE ALL GROUNDCOVER HAS BEEN ESABLISHED IN A SPECIFIC AREA, THE CONTRACTOR SHALL CONTACT NCDEQ-LAND QUALITY SECTION AND ENGINEER FOR SITE INSPECTION BEFORE REMOVING ANY TEMPORARY EROSION CONTROL MEASURES.
24. ONCE AREA HAS BEEN APPROVED FOR REMOVAL OF EROSION AND SEDIMENTATION MEASURES, CONTRACTOR SHALL REMOVE THESE MEASURES AND INSTALL PERMANENT SEEDING PER DETAIL EC-7.
25. AFTER THE ENTIRE SITE IS COMPLETELY STABILIZED, CONTRACTOR SHALL REQUEST PERMISSION FROM NCDEQ-LAND QUALITY SECTION AND ENGINEER TO REMOVE ALL TEMPORARY MEASURES. ONCE APPROVAL IS GIVEN, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION AS REQUIRED AND ON ANY RESULTING BARE AREAS. REPAIR ANY AREAS DISTURBED DURING REMOVAL.
26. EROSION AND SEDIMENT CONTROL (E&SC) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES OCCUR.
27. CONTRACTOR TO CONTACT DEMLR RALEIGH REGIONAL OFFICE AT (919) 791-4200 AT LEAST 48 HOURS PRIOR TO COMMENCING LAND DISTURBING ACTIVITY.
28. SELF-INSPECTIONS FOR EROSION AND SEDIMENTATION CONTROL MEASURES ARE TO BE PERFORMED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF EVERY RAIN EVENT OF GREATER THAN 1 INCH. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN MEASURES AS DESIGNED. ALL ESC MEASURES SHALL BE MAINTAINED AS SPECIFIED IN THE CONSTRUCTION DETAILS ON THIS PLAN. A RAIN GAUGE SHALL BE INSTALLED AT THE PROJECT SITE FOR MONITORING.
29. TO FACILITATE IN CLEANUP OF PAVED SURFACES, A LAYER OF SAND, SCREENINGS, OR FINES WILL BE PLACED BEFORE DEPOSITION OF ANY EXCAVATED MATERIAL OR USE BY EQUIPMENT/VEHICLES ASSOCIATED WITH THE PROJECT.
30. WITHIN THE LIMITS OF DISTURBANCE SHOWN, STOCKPILED MATERIALS OR STAGING AREAS, CONCRETE WASHOUTS, AND DEDICATED AREAS FOR DEMOLITION, CONSTRUCTION, AND OTHER WASTES SHALL BE LOCATED A MINIMUM OF 50 FEET AWAY FROM STORM INLETS, TEMPORARY DIVERSION DITCHES, CHANNELS, AND SURFACE WATER BODIES.

EC-02 EROSION CONTROL GENERAL NOTES

N.T.S.

1. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NORTH CAROLINA EROSION AND SEDIMENTATION CONTROL PLANNING AND DESIGN MANUAL.
2. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER RAINFALL EVENTS. NEEDED REPAIRS SHALL BE MADE IMMEDIATELY.
3. ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY NEED TO BE INSTALLED IF DEEMED NECESSARY BY EITHER THE ENGINEER OR ENVIRONMENTAL INSPECTOR.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE MAINTAINED UNTIL ALL UPGRADE DRAINAGE AREAS HAVE BEEN STABILIZED WITH THE ESTABLISHMENT OF PERMANENT VEGETATION.
5. DUST ON SITE SHALL BE MINIMIZED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION IS STRICTLY PROHIBITED.
6. IF THE MAJORITY OF MUD OR DIRT IS NOT REMOVED FROM CONSTRUCTION TRAFFIC BY CONSTRUCTION ENTRANCES, CONTRACTOR SHALL CONSTRUCT VEHICLE WASH AREAS AT CONSTRUCTION TRAFFIC EXIT POINTS. MUD AND DIRT SHALL BE INTERCEPTED AND TRAPPED BEFORE WASH WATER IS ALLOWED TO BE DISCHARGED OFFSITE. RINSE-OFF WILL NOT BE ALLOWED OUTSIDE THE PROJECT CONSTRUCTION LIMITS.
7. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT REACHES 1-FOOT DEEP.
8. MAXIMUM GRADED SLOPE SHALL NOT EXCEED 3:1.
9. NO CONCRETE OR CEMENT SLURRY SHALL BE DISCHARGED FROM THE SITE. ANY HARDENED CONCRETE RESIDUE WILL BE DISPOSED OF, OR RECYCLED OFF SITE, IN ACCORDANCE WITH LOCAL AND STATE SOLID WASTE REGULATIONS.
10. ALL SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT PER THE STABILIZATION TIMEFRAMES DETAILED IN THESE PLANS. REFER TO EROSION CONTROL DETAILS FOR ADDITIONAL REQUIREMENTS.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A PERMIT FOR ANY BORROW AND/OR SPOIL AREAS OR DISTURBED AREAS NOT SHOWN ON THESE PLANS. THIS SHALL INCLUDE ALL COST ASSOCIATED WITH OBTAINING PERMIT.
12. CONTRACTOR SHALL FOLLOW EROSION CONTROL CONSTRUCTION SEQUENCE UNLESS GIVEN WRITTEN APPROVAL FROM ENGINEER FOR VARIANCE.
13. LIMITS OF DISTURBANCE SHALL BE PHASED THROUGHOUT THE PROJECT SITE. CONTRACTOR TO COORDINATE THE DISTURBANCE LENGTH WITH OWASA AND NCDEQ.
14. TOTAL DISTURBED AREA IS 2.74 ACRES.
15. UTILIZE SILT FENCE J-HOOKS AT SILT FENCE OUTLET LOCATIONS IN WHICH THE RUNOFF FLOW DIRECTION IS PARALLEL TO THE OUTLET. THIS WILL HELP PREVENT OUTLET BYPASS AND REDUCE RUNOFF ALONG THE SILT FENCE.
16. PLACE A LAYER OF SAND, SCREENINGS OR FINES ON PAVED SURFACES PRIOR TO DEPOSITION OF EXCAVATED MATERIALS. THESE AREAS ARE TO BE WITHIN THE PERMITTED LIMITS OF DISTURBANCE.

EC-03 SOIL STOCKPILE MAINTENANCE REQUIREMENTS

N.T.S.

1. EXCAVATED MATERIAL FROM TRENCHES ARE TO BE PLACED ON THE UPSTREAM SIDE OF THE TRENCH. NO ADDITIONAL "STOCKPILE" AREAS ARE TO BE UTILIZED OUTSIDE OF THE EXISTING LIMITS OF DISTURBANCE.
2. SEEDING OR COVERING OF STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEYED IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDER THE PLASTIC.
3. THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE(S) ARE IN USE.
4. STOCKPILE HEIGHT SHALL NOT EXCEED 10 FEE TALL.
5. STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.

EC-04 SEEDBED PREPARATION

N.T.S.

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, WHERE REQUIRED.
2. RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL.
5. CONTINUE TILLAGE UNTIL A WELL – PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
6. SEE EC-06 FOR PERMANENT SEEDING SCHEDULE.
7. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
8. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
9. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
10. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

EC-05 TEMPORARY SEEDING SCHEDULE

N.T.S.

RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING
SEEDING MIXTURE:

SPECIES:	RATE (lb/acre):
RYE (GRAIN)	120
ANNUAL LESPEDEZA (KOBE IN PIEDMONT & COASTAL PLAIN, KOREAN IN MOUNTAINS)	50

OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE

SEEDING DATES:

MOUNTAINS	(ABOVE 2,500'):	FEB. 15 – MAY 15
	(BELOW 2,500'):	FEB. 1 – MAY 1
PIEDMONT:		JAN. 1 – MAY 1
COASTAL PLAIN:		DEC. 1 – APR. 15

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 1000 lb/acre 10-10-10 FERTILIZER.

MULCH:
APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT (min. 400 gal/acre), NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

RECOMMENDATIONS FOR FALL
SEEDING MIXTURE:

SPECIES:	RATE (lb/acre):
RYE (GRAIN)	120

SEEDING DATES:

MOUNTAINS:	AUG. 15 – DEC. 15
COASTAL PLAIN AND PIEDMONT:	AUG. 15 – DEC. 30

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 1000 lb/acre 10-10-10 FERTILIZER

MULCH:
APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT (min. 400 gal/acre), NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL. IF CRIMPING IS TO BE USED, INSTALL 1/2 OF THE MULCH, THEN CRIMP, AND INTSALL THE OTHER 1/2 OF MULCH ON TOP.

MAINTENANCE:
REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 lb/acre OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 lb/acre KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

RECOMMENDATIONS FOR SUMMER
SEEDING MIXTURE:

SPECIES:	RATE (lb/acre):
GERMAN MILLET	40

IN THE PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 lb/acre.

SEEDING DATES:

MOUNTAINS	MAY 15 – AUG. 15
PIEDMONT:	MAY 1 – AUG. 15
COASTAL PLAIN:	APR. 15 – AUG. 15

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 1000 lb/acre 10-10-10 FERTILIZER

MULCH:
APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT (min. 400 gal/acre), NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL. IF CRIMPING IS TO BE USED, INSTALL 1/2 OF THE MULCH, THEN CRIMP, AND INTALL THE OTHER 1/2 OF MULCH ON TOP.

MAINTENANCE:
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

EC-06 PERMANENT SEEDING SCHEDULE

N.T.S.

RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING
SEEDING MIXTURE:

SPECIES:	RATE (lb/acre):
TALL FESCUE	300
KOBE LESPEDEZA	40

NURSE PLANTS:
BETWEEN MAY 1 AND AUG. 15, ADD 10 lb/acre GERMAN MILLET OR 15 lb/acre SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG. 15, ADD 40 lb/ac RYE (GRAIN)

SEEDING DATES:

	BEST:	POSSIBLE:
FALL	AUG. 15 – SEPT. 15	AUG. 20 – OCT. 25
LATE WINTER:	FEB. 15 – MAR. 21	FEB. 1 – APR. 15.

FALL IS BEST FOR TALL FESCUE AND LATER WINTER FOR LESPEDEZAS. OVERSEEDING OF DOBE LESPEDEZA OVER FALL-SEEDED TALL FESCUE IS VERY EFFECTIVE.

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 1000 lb/acre 10-10-10 FERTILIZER

MULCH:
APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT (min. 400 gal/acre), NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL. *

MAINTENANCE:
REFERTILIZE IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. MAY BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY. RESEED, FERTILIZE AND MULCH DAMAGED AREAS IMMEDIATELY.

RECOMMENDATIONS FOR GRASS-LINED CHANNELS
SEEDING MIXTURE:

SPECIES	RATE (lb/acre)
TALL FESCUE	300

NURSE PLANTS:
BETWEEN MAY 1 AND AUG. 15, ADD 10 lb/acre SUDANGRASS OR 15 lb/acre GERMAN MILLET. PRIOR TO MAY 1 OR AFTER AUG. 15, ADD 40 lb/ac RYE (GRAIN)

SEEDING DATES:

BEST:	AUG. 25 – OCT.
POSSIBLE:	FEB. – APR. 15

AVOID SEEDING FROM NOV. TO JAN. IF SEEDING MUST BE DONE AT THIS TIME, ADD 40 lb/acre RYE GRAIN AND USE A CHANNEL LINING THAT OFFERS MAXIMUM PROTECTION

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 4,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 1,000 lb/acre 10-10-10 FERTILIZER

MULCH:
USE ROLLED EROSION CONTROL PRODUCT TO COVER THE BOTTOM OF THE CHANNELS AND DITCHES, AND STAPLE SECURELY. THE LINING SHOULD EXTEND TO THE TOP OF BANK. ON CHANNEL SIDE SLOPES ABOVE THIS HEIGHT, AND IN DRAINAGES NOT REQUIRING TEMPORARY LININGS, APPLY 4,000 lb/acre GRAIN STRAW, AND ANCHOR STRAW BY STAPLING NETTING OVER THE TOP.

MULCH AND ANCHORING MATERIALS MUST NOT BE ALLOWED TO WASH DOWN SLOPES WHERE THEY CAN CLOG DRAINAGE DEVICES.

MAINTENANCE:
INSPECT AND REPAIR MULCH FREQUENTLY. REFERTILIZE IN LATE WINTER OF THE FOLLOWING YEAR; USE SOIL TESTS OR APPLY 150 lb/acre 10-10-10. MOW REGULARLY TO A HEIGHT OF 2-4 INCHES.

RECOMMENDATIONS FOR RIPARIAN BUFFERS AND WETLANDS
SEEDING MIXTURE:
RECOMMENDED APPLICATION RATE: 20-25 LBS. PER ACRE

SPECIES	COMMON NAME	PERCENT
ELYMUS VIRGINICUS	VIRGINIA WILD RYE	15
PANICUM VIRGATUM	SWITCHGRASS	15
AGROSTIS STOLONIFERA	CREEPING BENTGRASS	10
RUDBECKIA HIRTA	BLACK-EYED SUSAN	10
COREOPSIS LANCOLATA	COREOPSIS	10
PANICUM CLANDESTINUM	DEER TONGUE	10
ANDROPOGON GERARDI	BIG BLUESTEM	5
JUNCUS EFUSUS	SOFT RUSH	5
ECHINOCHLOA MURICATA	AWNED BARNYARD GRASS	5
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	5
SORGHASTRUM NUTANS	INDIAN GRASS	5
TRIPSACUM DACTYLOIDES	GAMMA	5

AS SPECIFIED BY MELLOW MARSH IN SILER CITY OR APPROVED EQUAL.

SEEDING DATES:
BEST: MAR. 1 – MAY 1
POSSSIBLE: OCT. – FEB.

NO SEEDING FROM JUNE TO SEPTEMBER.

SOIL AMENDMENTS:
CONTRACTOR TO WORK COMPOST INTO THE SOILS SURFACE AT A MINIMUM OF 2 INCHES.
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 1,500 lb/acre GROUND AGRICULTURAL LIMESTONE.

MAINTENANCE:
INSPECT AND REPAIR MULCH FREQUENTLY. MOWING IN AUGUST – SEPTEMBER ONLY TO HELP DISPERSE SEEDS.

NOTES:
1. SSEE NCDENR'S EROSION AND SEDIMENT CONTROL PLANNING DESIGN MANUAL SECTION 6.11 FOR ADDITIONAL PERMANENT SEEDING OPTIONS.
2. IIF CRIMPING IS TO BE USED, INSTALL 1/2 OF THE MULCH, THEN CCRIMP, AND INSTALL THE OTHER 1/2 OF MULCH ON TOP.
3. CCONTRACTOR SHALL NOT USE LESPEDEZA CUNEATA (SERECIA LLESPEDEZA) OR ANY OTHER NON-NATIVE LESPEDEZA SPECIES IN SEED MIXTURES IN DISTURBED AREAS ON UNC PROPERTIES.

REV. NO	DESCRIPTION	DATE
F	FINAL DESIGN – ISSUED FOR BID – NOT FOR CONSTRUCTION	04/25/25
E	FINAL DESIGN – ISSUED FOR PERMITTING – NOT FOR CONSTRUCTION	04/08/25
D	90% DESIGN – UPDATED PER OWASA'S COMMENTS – NOT FOR CONSTRUCTION	9/27/24
C	90% DESIGN – NOT FOR CONSTRUCTION	7/19/24
B	50% DESIGN – NOT FOR CONSTRUCTION	4/08/24
A	UPDATED FOR FINAL TECHNICAL MEMORANDUM SUBMITTAL	7/12/23

REVISIONS

NORTH CAROLINA PROFESSIONALLY SEALED 045554 9/26/25 ENGINEER DIANDRA L. HYMAN

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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

DETAILS

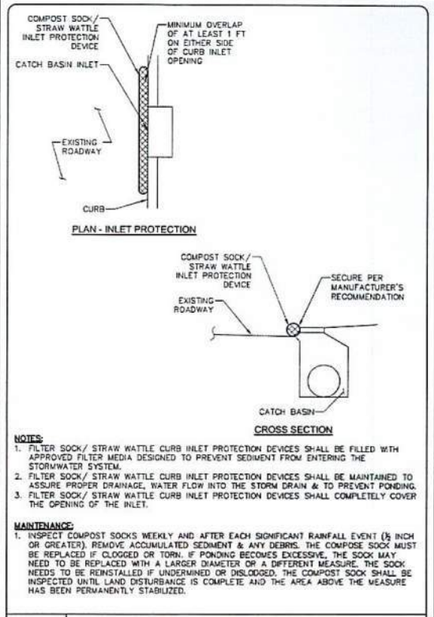
EROSION AND SEDIMENT CONTROL DETAILS

PROJ. START DATE:	2023. AUG.
MCE PROJ. #	01519-0063
DRAWN:	CNT
DESIGNED	KAR
CHECKED	BRL
PROJ. MGR	DLH

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

D9
DRAWING NUMBER
F
REVISION

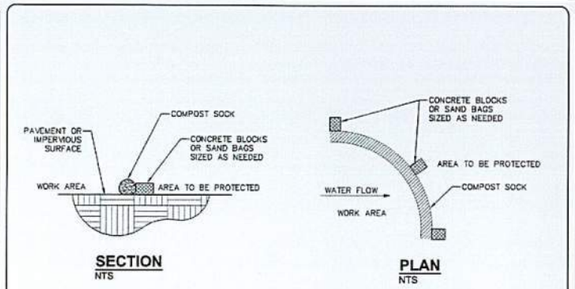
STATUS: FINAL DESIGN-ISSUED FOR BID - NOT FOR CONSTRUCTION



NOTES:
1. FILTER SOCK/ STRAW WATTLE CURB INLET PROTECTION DEVICES SHALL BE FILLED WITH APPROVED FILTER MEDIA DESIGNED TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM.
2. FILTER SOCK/ STRAW WATTLE CURB INLET PROTECTION DEVICES SHALL BE MAINTAINED TO ASSURE PROPER DRAINAGE, WATER FLOW INTO THE STORM DRAIN & TO PREVENT PONDING.
3. FILTER SOCK/ STRAW WATTLE CURB INLET PROTECTION DEVICES SHALL COMPLETELY COVER THE OPENING OF THE INLET.

MAINTENANCE:
1. INSPECT COMPOST SOCKS WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT (½ INCH OR GREATER). REMOVE ACCUMULATED SEDIMENT & ANY DEBRIS. THE COMPOSE SOCK MUST BE REPLACED IF CLOGGED OR TORN. IF PONDING BECOMES EXCESSIVE, THE SOCK MAY NEED TO BE REPLACED WITH A LARGER DIAMETER OR A DIFFERENT MEASURE. THE SOCK NEEDS TO BE REINSTALLED IF UNDERMINED OR DISLODGED. THE COMPOST SOCK SHALL BE INSPECTED UNTIL LAND DISTURBANCE IS COMPLETE AND THE AREA ABOVE THE MEASURE HAS BEEN PERMANENTLY STABILIZED.

EC-07 TEMP. CURB INLET PROTECTION N.T.S.

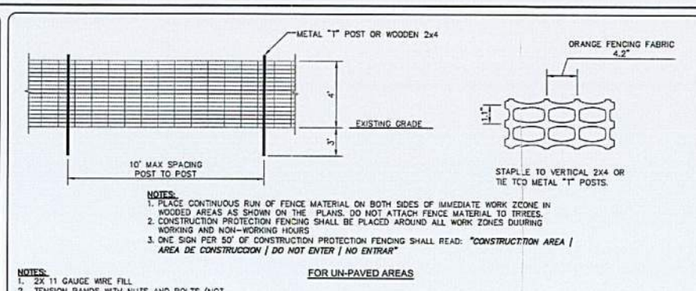


NOTES:
1. USE A MINIMUM 8 INCH DIAMETER COMPOST SOCK.
2. INSTALL COMPOST SOCK SO FLOW WILL NOT WASH AROUND SOCK.

CONSTRUCTION SPECIFICATIONS:
1. COMPOST SOCKS SHOULD BE LOCATED AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN.
2. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND OTHER DEBRIS GREATER THAN ONE INCHE THAT MAY INTERFERE WITH PROPER FUNCTION OF THE COMPOST SOCK.
3. FILL SOCK UNIFORMLY WITH COMPOST TO THE DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
4. HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE SOCK TO HOLD IT IN PLACE DURING RUNOFF EVENTS.

MAINTENANCE:
1. INSPECT COMPOST SOCKS WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL (1/2 INCH OR GREATER) REMOVE ACCUMULATED SEDIMENT AND ANY DEBRIS.
2. THE COMPOST SOCK MUST BE REPLACED IF CLOGGED OR TORN.
3. IF PONDING BECOMES EXCESSIVE, THE SOCK MAY NEED TO BE REPLACED WITH A LARGER DIAMETER OR A DIFFERENCE MEASURE.
4. THE SOCK NEEDS TO BE REINSTALLED IF UNDERMINED OR DISLODGED.
5. THE COMPOST SOCK SHALL BE INSPECTED UNTIL LAND DISTURBANCE IS COMPLETE AND THE AREA ABOVE THE MEASURE HAS BEEN PERMANENTLY STABILIZED.

EC-08 COMPOST SOCK N.T.S.

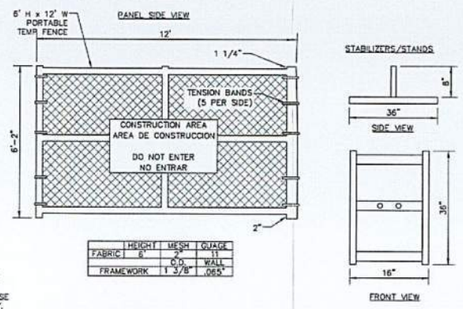


NOTES:
1. PLACE CONTINUOUS RUN OF FENCE MATERIAL ON BOTH SIDES OF IMMEDIATE WORK ZONE IN WOODED AREAS AS SHOWN ON THE PLANS. DO NOT ATTACH FENCE MATERIAL TO TRREES.
2. CONSTRUCTION PROTECTION FENCING SHALL BE PLACED AROUND ALL WORK ZONES DUURING WORKING AND NON-WORKING HOURS
3. ONE SIGN PER 50' OF CONSTRUCTION PROTECTION FENCING SHALL READ: *"CONSTRUCTION AREA / AREA DE CONSTRUCCION / DO NOT ENTER / NO ENTRAR"*

NOTES:
1. 2X 11 GAUGE WIRE FILL
2. TENSION BANDS WITH NUTS AND BOLTS (NOT PRESS CLIPS)
3. WIRE TIES EVERY 12 INCHES
4. LOCATE PORTABLE CONSTRUCTION FENCING AT LOCATIONS AS SHOWN ON THE DRAWINGS.
5. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
6. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
7. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS (MIN.) OR AS DIRECTED BY OWNER.
8. PLACE A SIGN AT EACH END OF LINEAR PROTECTION AREA AND 50' ON CENTER THEREAFTER.
9. FOR PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
10. ATTACH SIGNS SECURELY TO FENCE.
11. MAINTAIN PROTECTION FENCE THROUGHOUT DURATION OF WORK BEING COMPLETED AT SITE.
12. ADDITIONAL SIGNS MAY BE REQUIRED BY OWNER BASED ON ACTUAL FIELD CONDITIONS.
13. PORTABLE PROTECTION FENCING IS REQUIRED FOR STAGING AREAS AND FOR ALL ACTIVE AREAS OF CONSTRUCTION/TRENCHING FOR PEDESTRIAN SAFETY.

MAINTENANCE:
1. INSPECT FENCE AT LEAST ONCE A WEEK. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

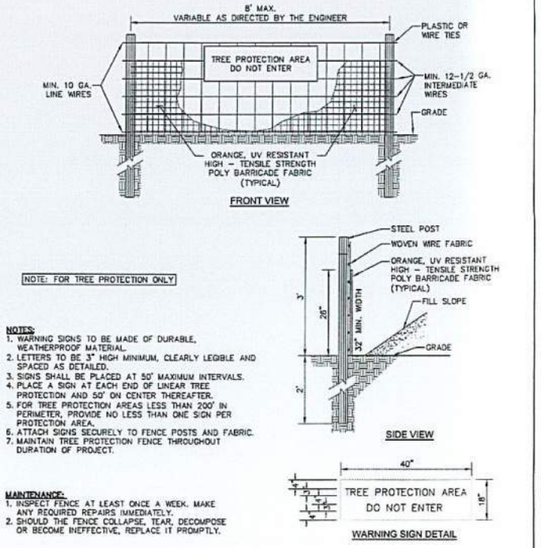
FOR UN-PAVED AREAS



	HEIGHT	MESH	GUAGE
FABRIC	6'	2" O.C.	11 WALL
FRAMEWORK	1 3/8"		.065"

FOR PAVED AREAS

EC-09 TEMP. CONSTRUCTION PROTECTION FENCE N.T.S.

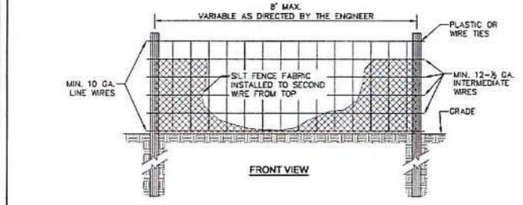


NOTE: FOR TREE PROTECTION ONLY

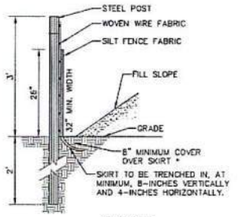
NOTES:
1. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
2. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS.
4. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
5. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
7. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.

MAINTENANCE:
1. INSPECT FENCE AT LEAST ONCE A WEEK. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

EC-10 TEMP. TREE PROTECTION FENCE N.T.S.



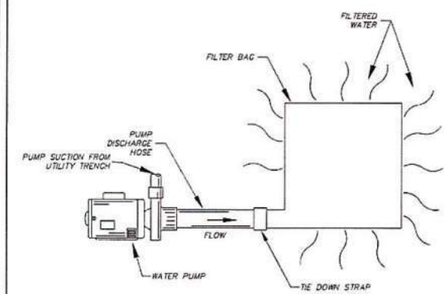
* FOR REPAIR OF SILT FENCE FAILURES, USE No. 57 WASHED STONE.



CONSTRUCTION SPECIFICATIONS:
1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW
2. USE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461, WHICH IS SHOWN IN PART IN TABLE 6.62B OF THE EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
3. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120° F.
4. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.25 LB/LINEAR FT MINIMUM STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.
5. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

MAINTENANCE:
1. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
4. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

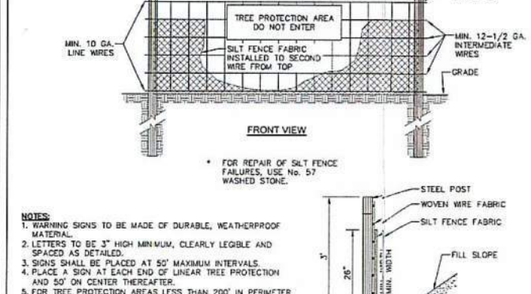
EC-11 TEMPORARY SILT FENCE N.T.S.



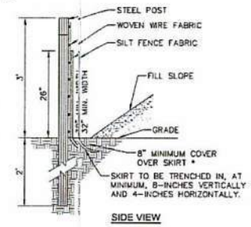
NOTES:
1. *PUMP AND FILTER BAG ARE NOT ANTICIPATED TO BE NEEDED, HOWEVER SHOULD BE USED TO DEWATER THE TRENCH IF REQUIRED AFTER A WET WEATHER EVENT.*
2. *LAY BAG AGAINST CURB AND GUTTER IF POSSIBLE OTHERWISE LAY PLASTIC ON GROUND WHERE BAG WILL SIT AND ALONG DISCHARGE PATH.*
3. *PLACE BAG ON LEVEL GRAVEL PAD TO ENSURE MAXIMUM DRAINAGE AND ALLOW EQUIPMENT TO PICK UP AND HAUL OFF SITE.*
4. *PROP BAG UP AT SLIGHT ANGLE SO WATER DOES NOT CREATE A POOL WHEN DRAINING.*
5. *CONTRACTOR SHALL RETURN AREA TO EXISTING CONDITIONS AFTER BAGS ARE NO LONGER NEEDED.*
6. *CONTRACTOR SHALL DETERMINE PUMP SELECTION AND PIPING LAYOUT.*

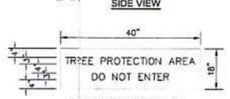
FILTER BAG DETAIL
NTS

EC-12 FILTER BAG DETAIL N.T.S.



* FOR REPAIR OF SILT FENCE FAILURES, USE No. 57 WASHED STONE.





CONSTRUCTION SPECIFICATIONS:
1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW
2. USE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461, WHICH IS SHOWN IN PART IN TABLE 6.62B OF THE EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
3. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120° F.
4. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.25 LB/LINEAR FT MINIMUM STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.
5. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.
6. SEE N.C. STATE DENR PRACTICE & SPECIFICATION SEDIMENTS FENCE SECTION. FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATIONS (HOWEVER FLOW SHALL NOT RUN PARALLEL WITH THE FENCE) AND DESIGN CRITERIA.
7. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
8. FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATIONS.
9. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.
10. SEE N.C. STATE DENR PRACTICE & SPECIFICATION SEDIMENTS FENCE SECTION. FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATIONS.
11. SEE N.C. STATE DENR PRACTICE & SPECIFICATION SEDIMENTS FENCE SECTION. (HOWEVER FLOW SHALL NOT RUN PARALLEL WITH THE FENCE)

MAINTENANCE:
1. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
4. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING TTHE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

EC-13 TEMP. COMBO SILT/TREE PROTECTION FENCE N.T.S.

REV.NO.	DESCRIPTION	DATE
F	FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION	04/28/25
E	FINAL DESIGN - ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION	04/09/25
D	90% DESIGN - UPDATED PER OWASA'S COMMENTS - NOT FOR CONSTRUCTION	9/27/24
C	90% DESIGN - NOT FOR CONSTRUCTION	7/19/24
B	50% DESIGN - NOT FOR CONSTRUCTION	4/08/24
A	UPDATED FOR FINAL TECHNICAL MEMORANDUM SUBMITTAL	7/13/23

REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048554 DIANDRA L. NYMAN 4/28/25

McKIM&CREED
4300 Edwards Mill Road, Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031
NC Licensed F-1222
www.mckimcreed.com

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

DETAILS

EROSION AND SEDIMENT CONTROL DETAILS

PROJ. START DATE:	2023. AUG.
MCE PROJ. #	01519-0063
DRAWN	CNT
DESIGNED	KAR
CHECKED	BRL
PROJ. MGR.	DLH

SCALE: HORIZONTAL: N/A; VERTICAL: N/A

D10 (DRAWING NUMBER) F (REVISION)

STATUS: FINAL DESIGN - ISSUED FOR BID - NOT FOR CONSTRUCTION

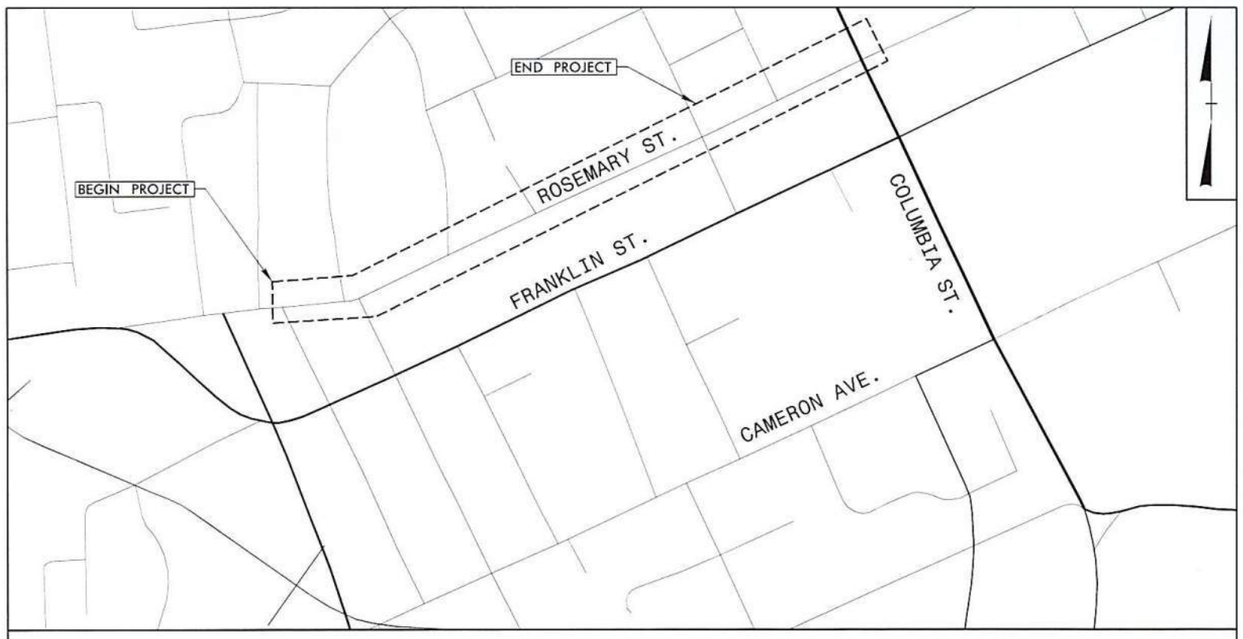
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TRANSPORTATION MANAGEMENT PLAN

ORANGE COUNTY

LOCATION: ROSEMARY STREET FROM MERRITT MILL ROAD TO COLUMBIA STREET





VICINITY MAP

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-2	ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-3A-3B	GENERAL NOTES
TMP-4A-4B	TRANSPORTATION MANAGEMENT STRATEGIES AND PHASING PLANS
TMP-5	AREA 1 DETAILS AND PEDESTRIAN DETOURS
TMP-6	AREA 2 DETAILS AND PEDESTRIAN DETOURS
TMP-7-8	AREA 3 DETAILS AND PEDESTRIAN DETOURS
TMP-9	AREA 4 DETAILS AND PEDESTRIAN DETOURS
TMP-10-11	AREA 5 DETAILS AND PEDESTRIAN DETOURS
TMP-12-13	AREA 6 DETAILS AND PEDESTRIAN DETOURS
TMP-14-15	AREA 7 DETAILS AND PEDESTRIAN DETOURS
TMP-16-17	AREA 8 DETAILS AND PEDESTRIAN DETOURS
TMP-18	AREA 1 VEHICLE DETOUR ROUTE
TMP-19	AREA 2 VEHICLE DETOUR ROUTE
TMP-20	AREA 3 VEHICLE DETOUR ROUTE
TMP-21	AREA 4 VEHICLE DETOUR ROUTE
TMP-22	AREA 5 VEHICLE DETOUR ROUTE
TMP-23	AREA 6 VEHICLE DETOUR ROUTE
TMP-24	AREA 7 VEHICLE DETOUR ROUTE
TMP-25	AREA 8 VEHICLE DETOUR ROUTE
TMP-26	BUS ROUTE DETOUR - AREAS 2 THRU 8
TMP-27	AREA 3 - APARTMENTS' ACCESS DETAIL
TMP-28	AREAS 4 & 5 - APARTMENTS' ACCESS DETAIL

REV.NO.	DESCRIPTION	DATE
--	--	--

REVISIONS

NC CERTIFICATION NUMBER 049277 ENGINEER ZACHARY M. EDWARDS SEAL 049277 4/28/2025

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

TITLE SHEET

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #:	24254
DRAWN:	CNM
DESIGNED:	MML
CHECKED:	ZME
PROJ. MGR.:	ZME

SCALE: HORIZONTAL: N/A VERTICAL: N/A

DRAWING NUMBER: TMP-1

REVISION: -

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

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ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - 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:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1145.01	BARRICADES - TYPE III
1150.01	FLAGGERS
1180.01	SKINNY DRUMS

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- TEMPORARY SIDEWALK

SIGNALS

EXISTING PROPOSED TEMPORARY (TEMP)

PAVEMENT MARKINGS

——EXISTING LINES
——TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN
- WATER-FILLED BARRIERS

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

REVNS	DESCRIPTION	DATE
--	--	--

REVISIONS

NORTH CAROLINA PROFESSIONAL SEAL 042784 ENGINEER ZACHARY M. EDWARDS
4/28/2025

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 330 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

ROADWAY STANDARD DRAWINGS & LEGEND

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE: HORIZONTAL: N/A VERTICAL: N/A

TMP-2 (DRAWING NUMBER)

- (REVISION)

STATUS: **100% DESIGN NOT FOR CONSTRUCTION**

Docusign Envelope ID: 3F33C86F-B566-4823-AEF4-C8BE469253CB

GENERAL NOTES

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.

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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
NORTH COLUMBIA STREET	MONDAY-FRIDAY 7AM-7PM
ALL OTHER ROADS	7PM-7AM

SEE NCDOT TIME RESTRICTIONS ON SPECIAL PROVISIONS FOR NORTH COLUMBIA ST.

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME
ALL ROADS

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 7:00 A.M. DECEMBER 31st TO 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY,SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 7:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 7:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. TUESDAY AND 7:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
9. FOR MAJOR CHAPEL HILL SPORTING EVENTS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE SPORTING EVENT AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE SPORTING EVENT.
10. FOR CHAPEL HILLS EXAM WEEK, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE EXAM WEEK AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE EXAM WEEK.

C) 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

D) 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.

E) 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.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 5 FT OF AN OPEN TRAVEL LANE ON AN UNDIVIDED FACILITY, 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 WITHIN 10 FT OF AN OPEN TRAVEL LANE ON A DIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

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

H) 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.

I) DO NOT INSTALL MORE THAN TWO SIMULTANEOUS LANE CLOSURE IN ANY ONE DIRECTION.

J) PROVIDE A MINIMUM OF 200FT BETWEEN LANE CLOSURES, MEASURED FROM THE END OF ONE CLOSURE TO THE FIRST SIGN OF THE NEXT LANE CLOSURE.

PAVEMENT EDGE DROP OFF REQUIREMENTS

K) 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 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

   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, AT NO EXPENSE TO THE DEPARTMENT.

TRAFFIC PATTERN ALTERATIONS

M) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

REV NO	DESCRIPTION	DATE
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REVISIONS

NORTH CAROLINA PROFESSIONAL SEAL 049161 ENGINEER Anthony M. Edwards
4/28/2025

PLANS PREPARED BY:
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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

GENERAL NOTES

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

TMP-3A
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-
REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

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GENERAL NOTES CONT.

SIGNING

N) 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.

O) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

P) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLSOURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

R) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 200 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

S) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE/RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

TRAFFIC CONTROL DEVICES

U) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

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

PAVEMENT MARKINGS AND MARKERS

W) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

X) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

Y) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

Z) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 200 FT AND 500 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

AA) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

REV.NO.	DESCRIPTION	DATE
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REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049254 — Zachary M. Esposito — ENGINEER — 4/28/2025

PLANS PREPARED BY:

DRMP — ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

GENERAL NOTES

PROJ. START DATE:	APRIL 2025
DRMP PROJ.#:	24254
DRAWN:	CNM
DESIGNED:	MML
CHECKED:	ZME
PROJ. MGR.:	ZME

SCALE — HORIZONTAL: N/A — VERTICAL: N/A

DRAWING NUMBER: TMP-3B

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TRANSPORTATION MANAGEMENT STRATEGIES

THE FOLLOWING LISTED WORK ZONE STRATEGIES ARE RECOMMENDED FOR INCLUSION WITHIN THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

TRAFFIC MANAGEMENT STRATEGIES:
- -FULL ROADWAY CLOSURES
- -LANE SHIFTS OR CLOSURES
- -SHOULDER CLOSURES
- -WEEKEND WORK
- -WORK HOUR RESTRICTIONS FOR PEAK TRAVEL
- -PEDESTRIAN / BICYCLE ACCOMODATIONS
- -OFF-SITE DETOURS / USE OF ALTERNATIVE ROUTES

CORRIDOR / NETWORK MANAGEMENT STRATEGIES:
- -PARKING RESTRICTIONS

CONTRACTING & INNOVATIVE CONSTRUCTION STRATEGIES:
- -INTERMEDIATE CONTRACT TIMES / LIQUIDATED DAMAGES

GENERAL TRAFFIC CONTROL NOTES

BEFORE BEGINNING ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES (RSD 1101.01). FIELD VERIFY LOCATIONS WITH THE ENGINEER PRIOR TO INSTALLATION.

MAINTAIN VEHICULAR ACCESS TO ALL RESIDENCES, SCHOOLS, BUS STOPS, EMERGENCY SERVICES, AND BUSINESSES DURING THE LIFE OF THE CONTRACT, PRIOR TO INCORPORATION, OBTAIN WRITTEN APPROVAL FROM THE ENGINEER ON METHOD TO MAINTAIN ACCESS.

THE ROSEMARY WATERLINE IMPROVEMENTS WILL BE CONSTRUCTED DURING THE DAY USING SIMPLE DETOURS, TEMPORARY TRAFFIC PATTERNS WILL BE DESIGNATED BY TRAFFIC CONTROL DEVICES AND SIGNING. TEMPORARY LANE AND SHOULDER CLOSURES WILL BE USED AS NECESSARY TO COMPLETE CONSTRUCTION. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE WORK IMPACTING THE INTERSECTIONS VEHICULAR AND PEDESTRIAN TRAFFIC WITH CITY PERSONNEL.

THE COLUMBIA WATERLINE IMPROVEMENTS WILL BE CONSTRUCTED DURING THE WEEKEND USING LANE CLOSURES AND SHIFTS, TEMPORARY TRAFFIC PATTERNS WILL BE DESIGNATED BY TRAFFIC CONTROL DEVICES AND SIGNING. TEMPORARY LANE AND SHOULDER CLOSURES WILL BE USED AS NECESSARY TO COMPLETE CONSTRUCTION. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE WORK IMPACTING THE INTERSECTION VEHICULAR AND PEDESTRIAN TRAFFIC WITH BOTH THE CITY AND NCDOT PERSONNEL.

AS CONTRACTOR FINISHES CONSTRUCTION FOR DRIVEWAYS, THEY SHALL REDUCE DOWN THE OVERALL CONSTRUCTION LIMITS, THUS REDUCING THE OVERALL AMOUNT OF CLOSURE REQUIRED. AT THE END OF EACH WORK PERIOD, SIDEWALK BARRICADES AND DRUMS SHALL BE ADJUSTED TO ALLOW AS MUCH PEDESTIRAN ACCESS AS POSSIBLE.

TRAFFIC CONTROL NOTE 1:
FOR THE DURATION OF CONSTRUCTION, ENSURE ALL DRIVEWAY ACCESS IS MAINTAINED.

TRAFFIC CONTROL NOTE 2:
AS CONTRACTOR FINISHES SEGMENTS OF CONSTRUCTION, THEY SHALL REDUCE DOWN THE OVERALL CONSTRUCTION LIMITS, THUS REDUCING THE TIME OF IMPACT TO HOMES AND BUSINESSES.

TRAFFIC CONTROL NOTE 3:
2 WEEKS PRIOR TO ANY CONSTRUCTION, CONTRACTOR SHALL INSTALL CMS BOARDS TO NOTIFY TRAFFIC OF UPCOMING ROAD CLOSURE.

MESSAGE 1	MESSAGE 2
NOTICE	FROM
ROSEMARY	XX/XX -
ST CLSD	XX/XX

TRAFFIC CONTROL NOTE 4:
OWASA TO COORDINATE WITH PARKING LOT OWNERS TO ENSURE IMPACTED RESIDENTS AND PATRONS CAN UTILIZE THEIR PROPERTY. OWASA WILL GIVE DURATION AND TIME REQUIRED FOR PARKING TO BE RESERVED.

TRAFFIC CONTROL NOTE 5:
CONSTRUCT ALL TEMPORARY SIDEWALKS PER TOWN OF CHAPEL HILL MINIMUM STANDARDS. SEE TOWN OF CHAPEL HILL STANDARD DETAIL T-8.01 FOR ADDITIONAL INFORMATION.

PHASING PLAN

AREA 1

INSTALL WORK ZONE ADVANCE WARNING SIGNS (RSD 1101.01).

INSTALL DETOUR SIGNAGE FOR ROSEMARY STREET. ONCE INSTALLED, COVER AND BAG SIGNAGE UNTIL SHIFTING INTO AREA I LONG TERM TRAFFIC PATTERN. SEE TMP-18 FOR DETOUR SIGNAGE.

BEHIND BARRICADES AND AWAY FROM TRAFFIC, UNBAG DETOUR SIGNAGE, SHIFT INTO THE AREA 1 LONG TERM TRAFFIC PATTERN, AND BEGIN CONSTRUCTION ALONG ROSEMARY STREET FROM:

-L- STA. 0+00 +/- TO STA. 5+65 +/-

SPECIAL ACCESS NOTE 1:
DUE TO WATERLINE PROJECT, 516 W ROSEMARY STREET PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, RESIDENTS CAN ACCESS VIA TEMPORARY SIDEWALK AND ST. JOSEPH CHRISTIAN METHODIST CHURCH PARKING LOT (510 W ROSEMARY ST.). CONTRACTOR TO INSTALL TEMPORARY SIDEWALK FOR RESIDENT ACCESS. SEE TMP-5 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 2:
DUE TO WATERLINE PROJECT, 512 W ROSEMARY STREET PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND ST. JOSEPH CHRISTIAN METHODIST CHURCH PARKING LOT (510 W ROSEMARY ST.). SEE TMP-5 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 3:
DUE TO WATERLINE PROJECT, BRANDWEIN'S CATERING PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND CARRBORRO MUNICIPAL PARKING LOT (208 SUNSET DR.). SEE TMP-5 FOR MORE INFORMATION.

AREA 2

MAINTAIN NECESSARY ADVANCE WORK ZONE SIGNS, AS NEEDED (RSD 1101.01).

REARRANGE DETOUR SIGNAGE FOR ROSEMARY STREET AS SHOWN ON TMP-19. ONCE REARRANGED, SHIFT INTO AREA 2 LONG TERM TRAFFIC PATTERN.

BEHIND BARRICADES AND AWAY FROM TRAFFIC, COMPLETE AREA 2 IMPROVEMENTS ALONG:

-L- STA. 5+65 +/- TO STA. 10+10 +/-

SPECIAL ACCESS NOTE 1:
DUE TO WATERLINE PROJECT, MAMA DIP'S KITCHEN PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND FIRST BAPTIST CHURCH PARKING LOT (106 N ROBERSON ST.). SEE TMP-6 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 2:
DUE TO WATERLINE PROJECT, TIENDA HISPANA PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND FIRST BAPTIST CHURCH PARKING LOT (106 N ROBERSON ST.). SEE TMP-6 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 3:
DUE TO WATERLINE PROJECT, 406 W ROSEMARY STREET PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND TATE REALTY & CONSTRUCTION CO. PARKING LOT (350 W ROSEMARY ST.). SEE TMP-6 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 4:
DUE TO WATERLINE PROJECT, NIGHTLIGHT PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND FIRST BAPTIST CHURCH PARKING LOT (106 N ROBERSON ST.). SEE TMP-6 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 5:
DUE TO WATERLINE PROJECT, NORTHSIDE DISTRICT PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND FIRST BAPTIST CHURCH PARKING LOT (106 N ROBERSON ST.). SEE TMP-6 FOR MORE INFORMATION.

REV.NO.	DESCRIPTION	DATE
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REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047001 JEANNIE M. ESPOSITO
4/28/2025

PLANS PREPARED BY:
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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

TRANSPORTATION MANAGEMENT STRATEGIES & PHASING PLAN

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE: HORIZONTAL: N/A; VERTICAL: N/A

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PHASING PLAN (CONT.)

AREA 3

MAINTAIN NECESSARY ADVANCE WORK ZONE SIGNS, AS NEEDED (RSD 1101.01).

REARRANGE DETOUR SIGNAGE FOR ROSEMARY STREET AS SHOWN ON TMP-20. ONCE REARRANGED, SHIFT INTO AREA 3 LONG TERM TRAFFIC PATTERN.

BEHIND BARRICADES AND AWAY FROM TRAFFIC, COMPLETE AREA 3 IMPROVEMENTS ALONG:

-L- STA. 10+10 +/- TO STA. 16+00 +/-

SPECIAL ACCESS NOTE 1:
DUE TO WATERLINE PROJECT, SHORTBREAD LOFTS PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND THE FOLLOWING PARKING LOTS: LOT 1 (113 ROBERSON ST.), LOT 2 (106 MALLETTE ST.), AND FIRST BAPTIST CHURCH (106 N ROBERSON ST.). SEE TMP-27 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 2:
DUE TO WATERLINE PROJECT, KEY FOOD MART PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND TATE REALTY & CONSTRUCTION CO. PARKING LOT (350 W ROSEMARY ST.). SEE TMP-7 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 3:
DUE TO WATERLINE PROJECT, THE EDITION ON ROSEMARY PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND THE FOLLOWING PARKING LOTS: LOT 1 (113 ROBERSON ST.), LOT 2 (106 MALLETTE ST.), AND FIRST BAPTIST CHURCH (106 N ROBERSON ST.). SEE TMP-27 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 4:
DUE TO WATERLINE PROJECT, THE WAREHOUSE PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND THE FOLLOWING PARKING LOTS: LOT 2 (106 MALLETTE ST.) AND UNIVERSITY BAPTIST CHURCH (100 S COLUMBIA ST.). SEE TMP-27 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 5:
DUE TO WATERLINE PROJECT, 210 W ROSEMARY STREET PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND TATE REALTY & CONSTRUCTION CO. PARKING LOT (350 W ROSEMARY ST.). SEE TMP-7 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 6:
DUE TO WATERLINE PROJECT, 206 W ROSEMARY STREET PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND TATE REALTY & CONSTRUCTION CO. PARKING LOT (350 W ROSEMARY ST.). SEE TMP-7 FOR MORE INFORMATION.

AREA 4

MAINTAIN NECESSARY ADVANCE WORK ZONE SIGNS, AS NEEDED (RSD 1101.01).

REARRANGE DETOUR SIGNAGE FOR ROSEMARY STREET AS SHOWN ON TMP-21. ONCE REARRANGED, SHIFT INTO AREA 4 LONG TERM TRAFFIC PATTERN.

BEHIND BARRICADES AND AWAY FROM TRAFFIC, COMPLETE AREA 4 IMPROVEMENTS ALONG:

-L- STA. 17+00 +/- TO STA. 22+45 +/-

SPECIAL ACCESS NOTE 1:
DUE TO WATERLINE PROJECT, THE FOUNTAINS PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND THE FOLLOWING PARKING LOTS: LOT 2 (106 MALLETTE ST.) AND LOT 4 (100 W ROSEMARY ST.). SEE TMP-28 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 2:
DUE TO WATERLINE PROJECT, UNC DEVELOPMENT OFFICE PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND PARKING LOT 2 (106 MALLETTE ST.). SEE TMP-9 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 3:
DUE TO WATERLINE PROJECT, 311 W ROSEMARY STREET PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND PARKING LOT 2 (106 MALLETTE ST.). SEE TMP-9 FOR MORE INFORMATION.

AREA 5

MAINTAIN NECESSARY ADVANCE WORK ZONE SIGNS, AS NEEDED (RSD 1101.01).

REARRANGE DETOUR SIGNAGE FOR ROSEMARY STREET AS SHOWN ON TMP-22. ONCE REARRANGED, SHIFT INTO AREA 5 LONG TERM TRAFFIC PATTERN.

BEHIND BARRICADES AND AWAY FROM TRAFFIC, COMPLETE AREA 5 IMPROVEMENTS ALONG:

-L- STA. 22+80 +/- TO STA. 26+05 +/-

SPECIAL ACCESS NOTE 1:
DUE TO WATERLINE PROJECT, 140 WEST FRANKLIN PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND THE FOLLOWING PARKING LOTS: UNIVERSITY BAPTIST CHURCH (100 S COLUMBIA ST.) AND LOT 4 (100 W ROSEMARY ST.). SEE TMP-28 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 2:
CONTRACTOR SHALL NOT CONSTRUCT DURING LA RESIDENCE'S BUSINESS HOURS. ALLOWABLE CONSTRUCTION HOURS ARE MONDAY THROUGH WEDNESDAY.

SPECIAL ACCESS NOTE 3:
DUE TO WATERLINE PROJECT, 203 W ROSEMARY STREET PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND PARKING LOT 3 (108 W ROSEMARY ST.). SEE TMP-11 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 4:
DUE TO WATERLINE PROJECT, 131 W ROSEMARY STREET PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND PARKING LOT 3 (108 W ROSEMARY ST.). SEE TMP-11 FOR MORE INFORMATION.

AREA 6

MAINTAIN NECESSARY ADVANCE WORK ZONE SIGNS, AS NEEDED (RSD 1101.01).

REARRANGE DETOUR SIGNAGE FOR ROSEMARY STREET AS SHOWN ON TMP-23. ONCE REARRANGED, SHIFT INTO AREA 6 LONG TERM TRAFFIC PATTERN.

BEHIND BARRICADES AND AWAY FROM TRAFFIC, COMPLETE AREA 6 IMPROVEMENTS ALONG:

-L- STA. 26+20 +/- TO STA. 30+10 +/-

SPECIAL ACCESS NOTE 1:
CONTRACTOR SHALL NOT CONSTRUCT DURING INVESTOR TITLE INSURANCE COMPANY'S ANNEX BUSINESS HOURS. ALLOWABLE CONSTRUCTION HOURS ARE MONDAY THROUGH FRIDAY 12AM-8AM AND 5PM-12AM, AND SATURDAY THROUGH SUNDAY.

SPECIAL ACCESS NOTE 2:
DUE TO WATERLINE PROJECT, WADE'S HAIR STUDIO PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA TEMPORARY SIDEWALK AND UNIVERSITY BAPTIST CHURCH PARKING LOT (100 S COLUMBIA ST.). CONTRACTOR TO INSTALL TEMPORARY SIDEWALK FOR RESIDENT ACCESS. SEE TMP-13 FOR MORE INFORMATION.

SPECIAL ACCESS NOTE 3:
CONTRACTOR SHALL NOT CONSTRUCT DURING HE'S NOT HERE'S BUSINESS HOURS. ALLOWABLE CONSTRUCTION HOURS ARE MONDAY THROUGH FRIDAY 12AM-4PM, SATURDAY 2AM-12PM, AND SUNDAY 2AM-4PM.

SPECIAL ACCESS NOTE 4:
DUE TO WATERLINE PROJECT, INVESTORS TITLE INSURANCE COMPANY PARKING IS IMPACTED AND NORMAL ACCESS IN OBSTRUCTED. IN ORDER TO MAINTAIN SOME ACCESS, PEDESTRIANS CAN ACCESS VIA SIDEWALKS AND UNIVERSITY BAPTIST CHURCH PARKING LOT (100 S COLUMBIA ST.). SEE TMP-13 FOR MORE INFORMATION.

REVNS	DESCRIPTION	DATE
**	**	**

REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047100 JEREMY M. ESPOSITO
4/28/2025

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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

TRANSPORTATION MANAGEMENT STRATEGIES & PHASING PLAN

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
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SCALE
HORIZONTAL: N/A
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PHASING PLAN (CONT.)

AREA 7

MAINTAIN NECESSARY ADVANCE WORK ZONE SIGNS, AS NEEDED (RSD 1101.01).

REARRANGE DETOUR SIGNAGE FOR ROSEMARY STREET AS SHOWN ON TMP-24. ONCE REARRANGED, SHIFT INTO AREA 7 LONG TERM TRAFFIC PATTERN.

BEHIND BARRICADES AND AWAY FROM TRAFFIC, COMPLETE AREA 7 IMPROVEMENTS ALONG:

-L- STA. 30+10 +/- TO STA. 30+30 +/-

CONSTRUCTION NOTE:
CONTRACTOR TO ENSURE AREA 7 IS BUILT DURING APPROVED WEEKEND CONSTRUCTION HOURS ONLY. CONTRACTOR SHALL HAVE SIXTY (60) CONSECUTIVE HOURS TO COMPLETE AREA 7 ONCE WORK HAS BEGUN (FRIDAY 7PM TO MONDAY 6AM). SEE TMP-3A AND ICT'S FOR MORE DETAILS ON CONSTRUCTION HOURS / TIMELINE AND LIQUIDATED DAMAGES.

AREA 8

MAINTAIN NECESSARY ADVANCE WORK ZONE SIGNS, AS NEEDED (RSD 1101.01).

REARRANGE DETOUR SIGNAGE FOR ROSEMARY STREET AS SHOWN ON TMP-25. ONCE REARRANGED, SHIFT INTO AREA 8 LONG TERM TRAFFIC PATTERN.

BEHIND BARRICADES AND AWAY FROM TRAFFIC, COMPLETE AREA 8 IMPROVEMENTS ALONG:

-L- STA. 30+30 +/- TO STA. 31+18 +/-

AT THE END OF EACH WEEKEND, CONTRACTOR TO REMOVE ALL TRAFFIC CONTROL DEVICES AND ALLOW NORMAL TRAFFIC PATTERNS.

CONSTRUCTION NOTE:
CONTRACTOR TO ENSURE AREA 8 IS BUILT DURING APPROVED WEEKEND CONSTRUCTION HOURS ONLY. CONTRACTOR SHALL HAVE SIXTY (60) CONSECUTIVE HOURS TO COMPLETE AREA 8 ONCE WORK HAS BEGUN (FRIDAY 7PM TO MONDAY 6AM). THE CONTRACTOR SHALL HAVE THREE (3) CONSECUTIVE WEEKENDS TO COMPLETE ALL WORK. AFTER THE THIRD CONSECUTIVE WEEKEND, THE CONTRACTOR MUST SHALL UTILIZE ONLY SIMPLE LANE CLOSURES AND FLAGGERS TO COMPLETE THE REMAINING WORK. NO COMPLEX LANE CLOSURES LANE CLOSURES SHALL BE ALLOWED BEYOND THIS POINT. SEE TMP-3A AND ICT'S FOR MORE DETAILS ON CONSTRUCTION HOURS / TIMELINE AND LIQUIDATED DAMAGES.

DISINFECTION AND BACTERIOLOGICLAL TESTING

MAINTAIN NECESSARY ADVANCE WORK ZONE SIGNS, AS NEEDED (RSD 1101.01).

IMMEDIATELY AFTER COMPLETING AREA 8, BEGIN DISINFECTION AND BACTERIOLOGICAL TESTING PHASE. DURING DISINFECTION AND BACTERIOLOGICAL TESTING PHASE, CONTRACTOR SHALL USE FLAGGERS AND LANE CLOSURES, AS NEEDED, TO COMPLETE THE WORK. ONLY ONE LANE CLOSURE IS ALLOWED IN EACH DIRECTION ALONG COLUMBIA STREET. AT END OF EACH WORK DAY, CONTRACTOR TO REMOVE ALL TRAFFIC CONTROL DEVICES AND ALLOW NORMAL TRAFFIC PATTERNS.

AWAY FROM TRAFFIC, USING FLAGGERS AND DRUMS AS NEEDED, FINISH ANY REMAINING CONSTRUCTION AND REPLACE ANY DAMAGED PAVEMENT MARKINGS. REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES AND ALLOW NORMAL TRAFFIC OPERATION.

REV.NO.	DESCRIPTION	DATE
--	--	--

REVISIONS

4/28/2025

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

TRANSPORTATION MANAGEMENT STRATEGIES & PHASING PLAN

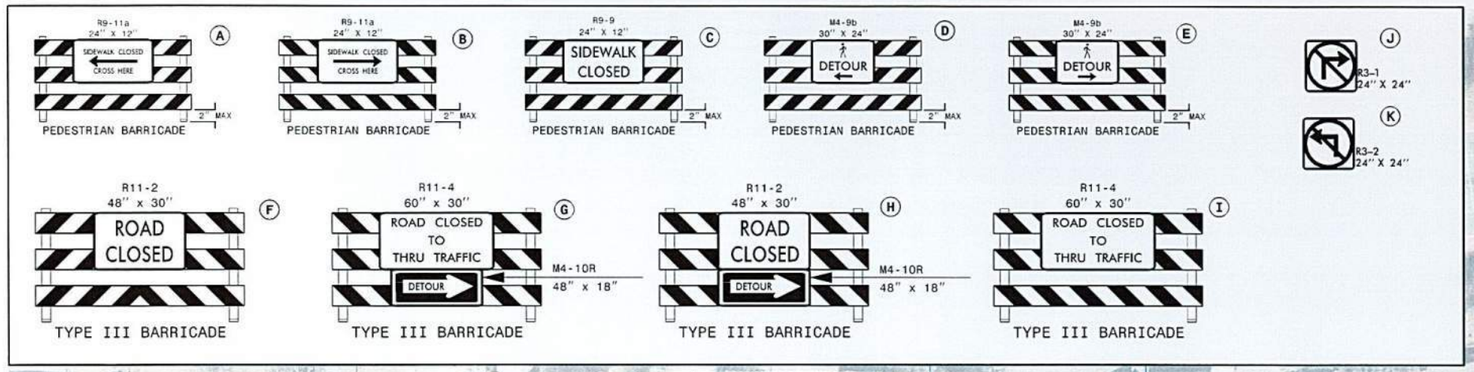
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DRMP PROJ. #	24254
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DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

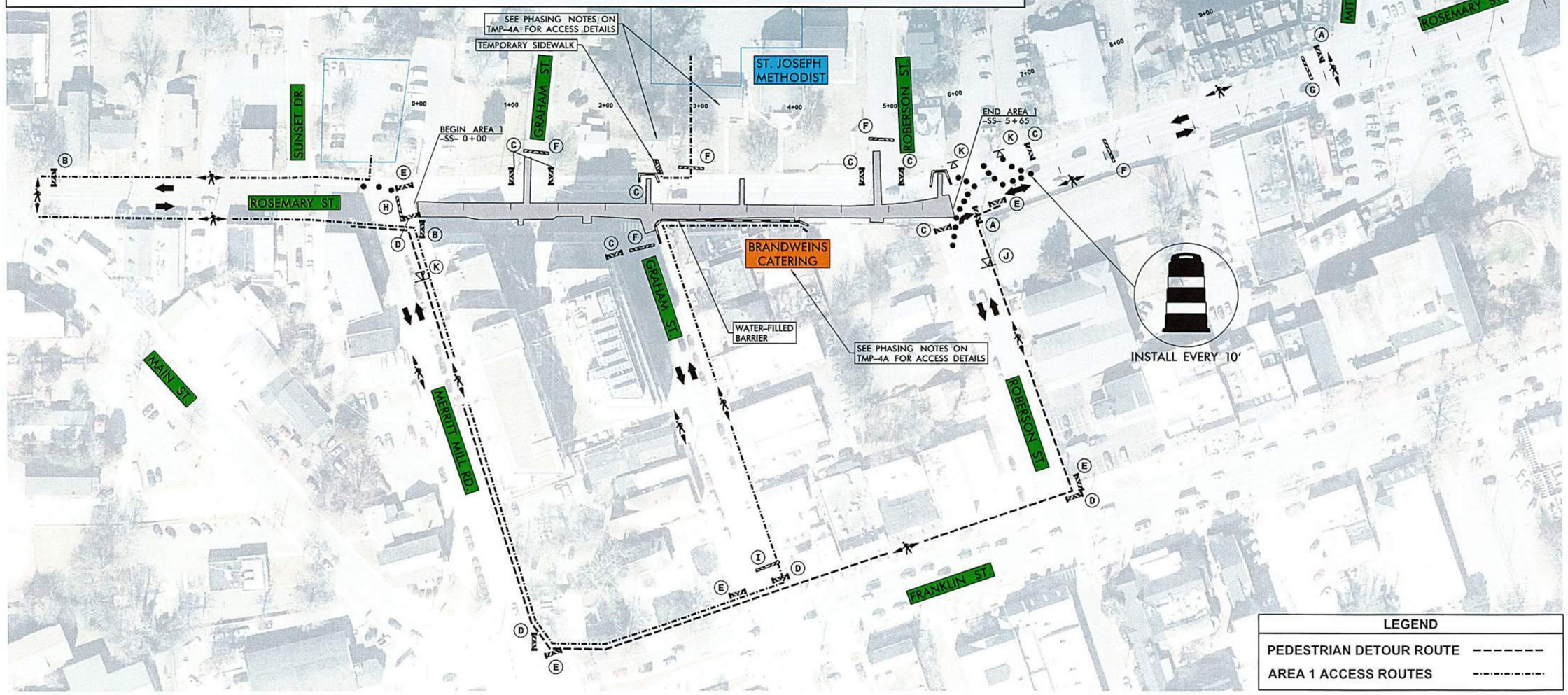
SCALE
HORIZONTAL: N/A
VERTICAL: N/A

TMP-4C
DRAWING NUMBER
-
REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B866-4803-AEF4-C9BE469263CB





LEGEND	
PEDESTRIAN DETOUR ROUTE	- - - - - - -
AREA 1 ACCESS ROUTES	-·-·-·-·-·-

REV NO	DESCRIPTION	DATE
--	--	--

REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049111 ZACHARY M. ESPOSITO 4/28/2025

PLANS PREPARED BY:

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DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 1 DETAIL AND PEDESTRIAN DETOUR

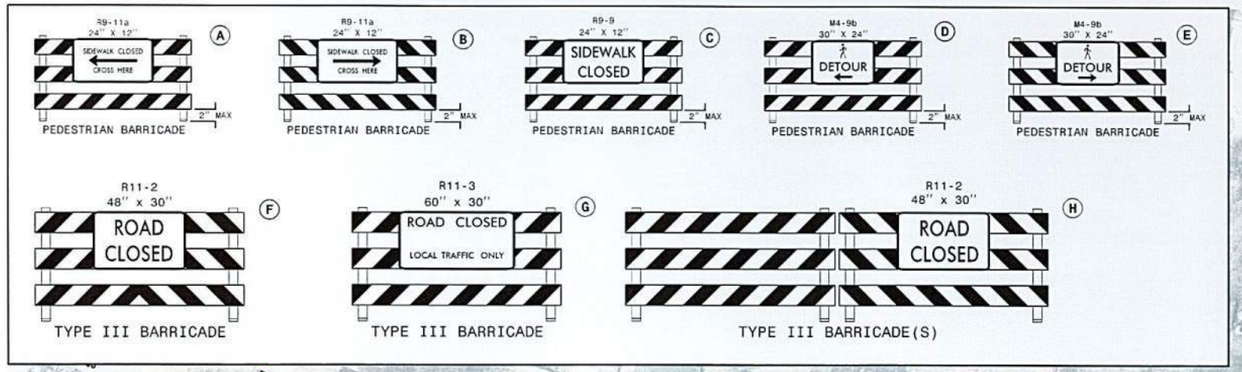
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DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

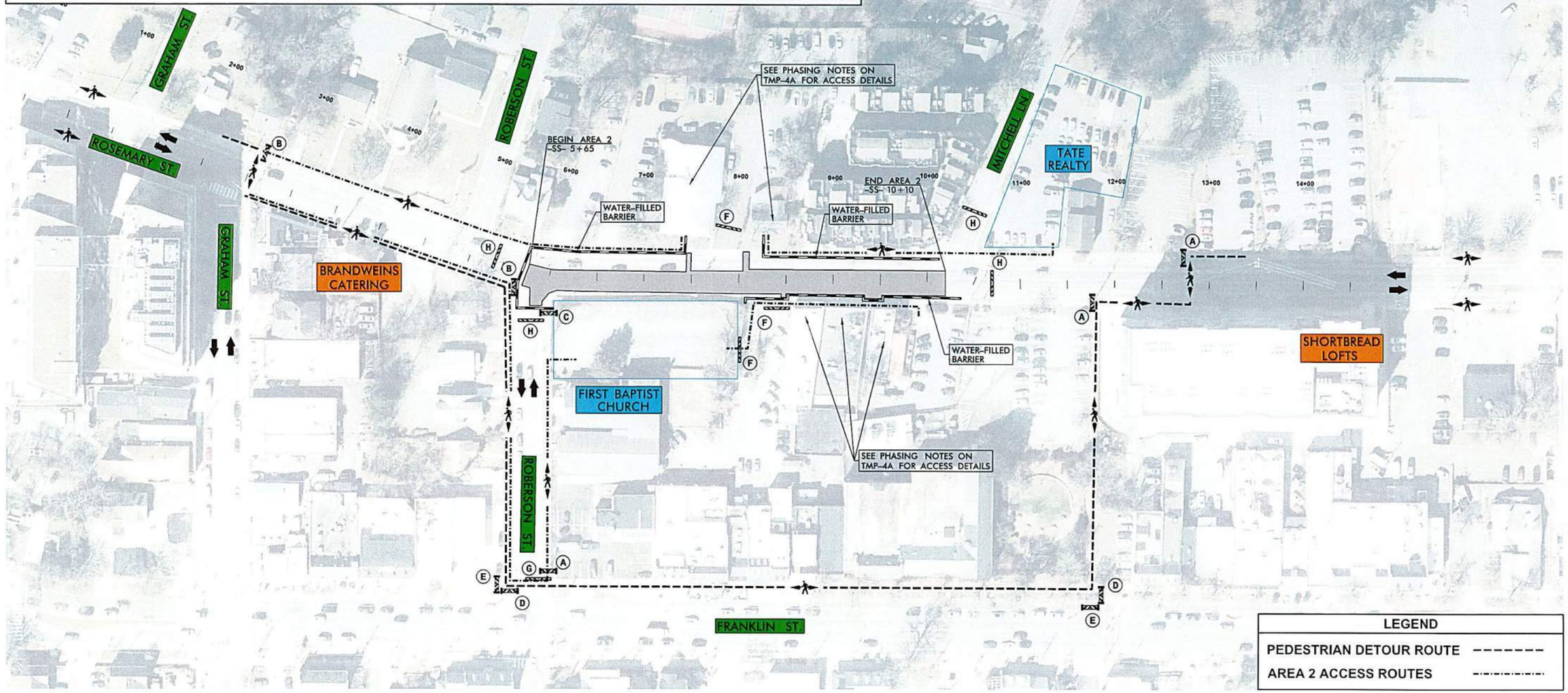
SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

TMP-5
DRAWING NUMBER
-
REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B865-4803-AEF4-C9BE469283CB





REV.NO.	DESCRIPTION	DATE
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REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL JACQUELYN M. ESPOSITO 4/18/2025

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 2 DETAIL AND PEDESTRIAN DETOUR

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

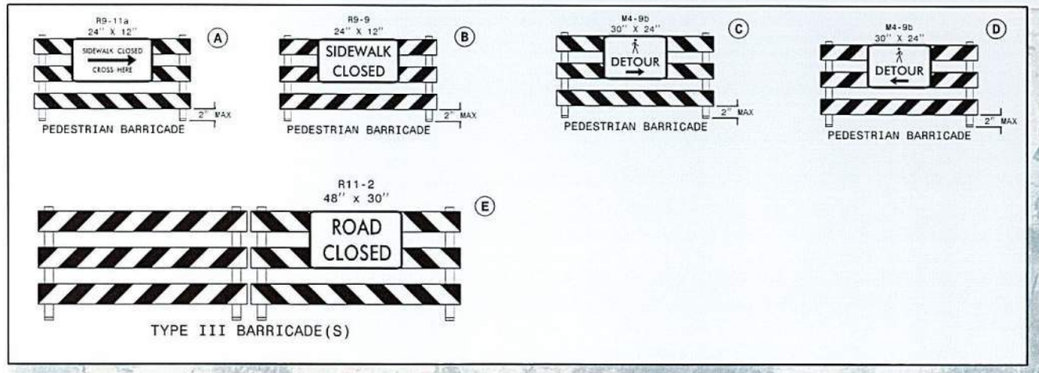
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HORIZONTAL: 1"=50'
VERTICAL: N/A

DRAWING NUMBER: TMP-6

REVISION: -

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B865-4803-AEF4-C4BE469283CB



LEGEND	
PEDESTRIAN DETOUR ROUTE	--------
AREA 3 ACCESS ROUTES	-·-·-·-·-

REV. NO.	DESCRIPTION	DATE
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REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049161 GREGORY M. ESPOSITO
4/28/2025

PLANS PREPARED BY:

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ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
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SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 3 DETAIL AND PEDESTRIAN DETOUR

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

TMP-7
DRAWING NUMBER
-
REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B565-4803-AEF4-C8BE469283CB

R9-11a
24" x 12"
SIDEWALK CLOSED
CROSS HERE
(A)
2" MAX
PEDESTRIAN BARRICADE

M4-9b
30" x 24"
DETOUR
(B)
2" MAX
PEDESTRIAN BARRICADE

M4-9b
30" x 24"
DETOUR
(C)
2" MAX
PEDESTRIAN BARRICADE

R11-4
60" x 30"
ROAD CLOSED
TO
THRU TRAFFIC
DETOUR
(D)
M4-10L
48" x 18"
TYPE III BARRICADE

MATCHLINE STA. 18+00
SEE TMP-7

SEE TMP-27 AND PHASING NOTES ON TMP-4B FOR ACCESS DETAILS

THE WAREHOUSE

ROSEMARY ST.

CHURCH ST.

UNC DEVELOPMENT OFFICE

FRANKLIN ST.

PRITCHARD AVE.

140 WEST FRANKLIN

HE'S NOT HERE

COLUMBIA ST.

19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 31+07

LEGEND

PEDESTRIAN DETOUR ROUTE --------

AREA 3 ACCESS ROUTES -·-·-·-·-·-

REV NO.	DESCRIPTION	DATE
--	--	--

REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047437 ENGINEER ZENNETH M. EDWARDS 4/28/2025

PLANS PREPARED BY:

DRMP

DRMP INC.
8210 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

OWASA

WEST ROSEMARY STREET
WATER LINE REPLACEMENT

AREA 3 DETAIL
AND PEDESTRIAN DETOUR

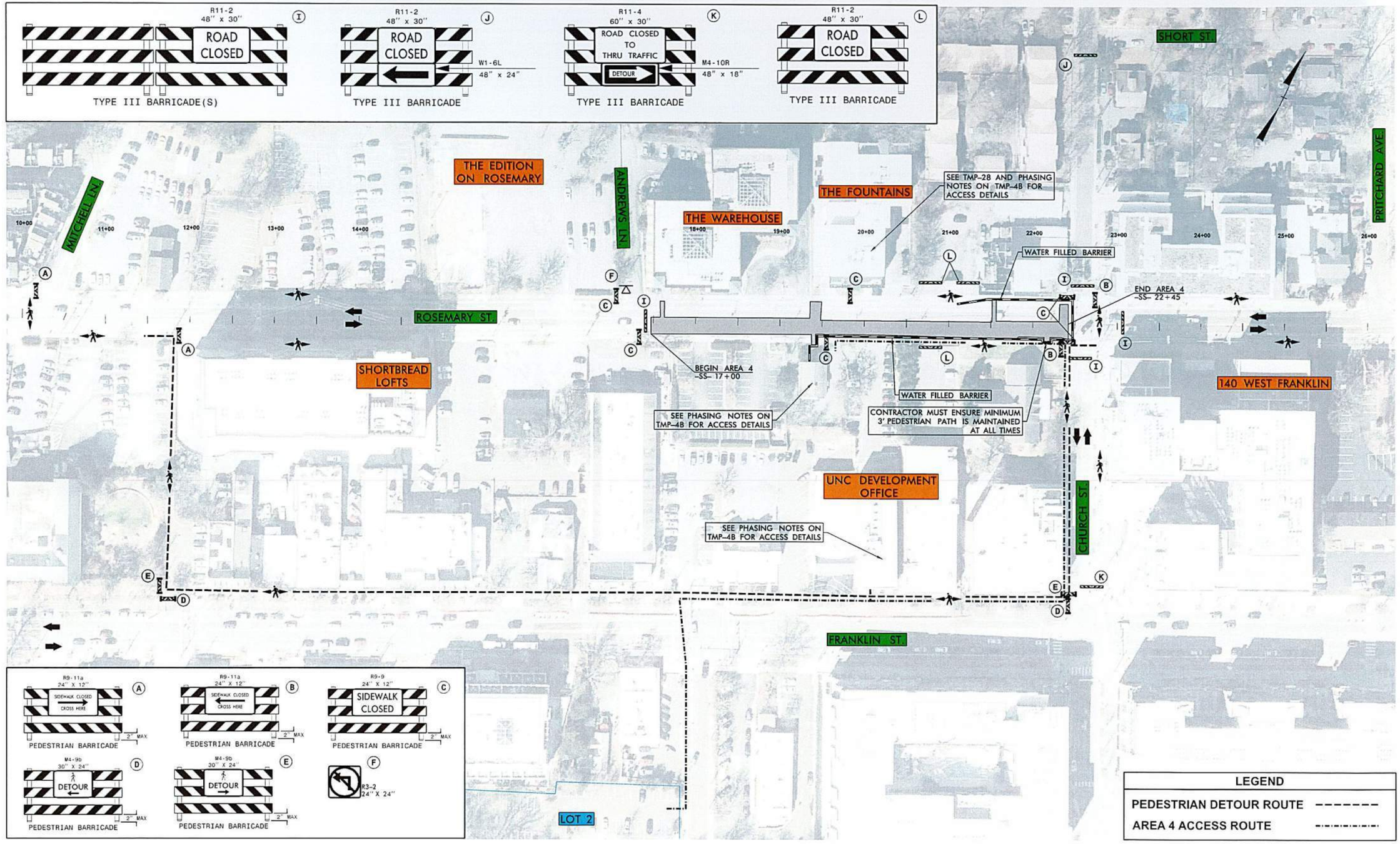
PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

TMP-8
DRAWING NUMBER
-
REVISION

STATUS: 100% DESIGN
NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F23C86F-B865-4803-AEF4-C9BE469283CB



REV NO.	DESCRIPTION	DATE
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REVISIONS

4/28/2025

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SUITE 220 CHARLOTTE, NC 28262
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OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 4 DETAIL AND PEDESTRIAN DETOUR

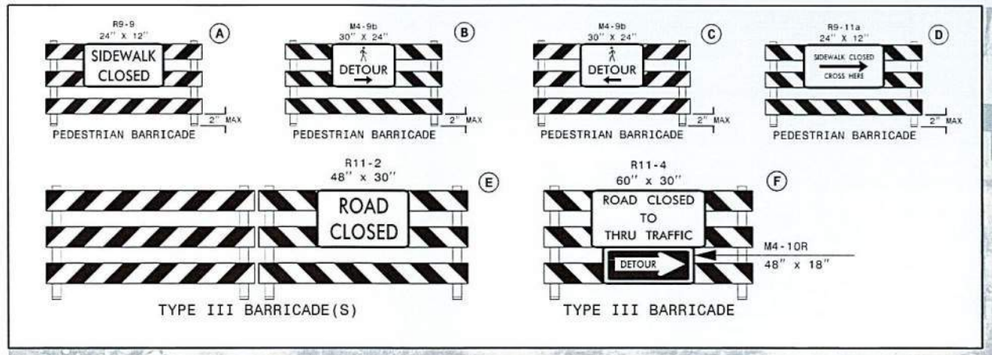
PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

TMP-9
DRAWING NUMBER
-
REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B566-4B03-AEF4-C9BE469283CB



LEGEND	
PEDESTRIAN DETOUR ROUTE	--------

REVNO	DESCRIPTION	DATE
**	**	**

REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049161 Zachary M. Edwards 4/28/2025

PLANS PREPARED BY:

DRMP ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 5 DETAIL AND PEDESTRIAN DETOUR

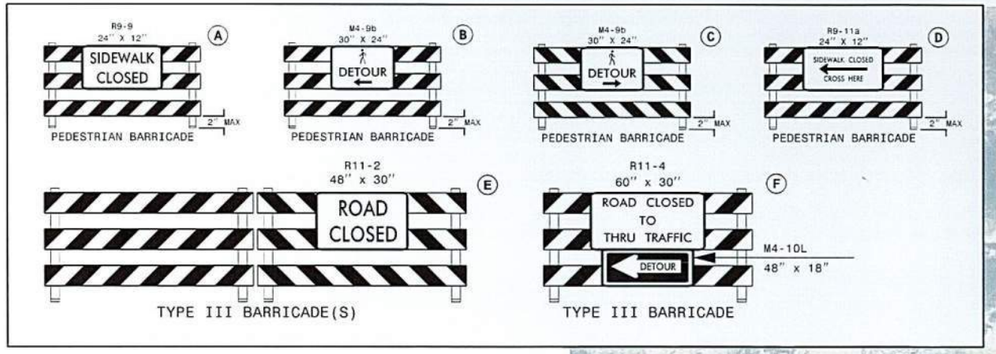
PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

TMP-10
DRAWING NUMBER
-
REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B566-4803-AEF4-C9BE469283CB



REVISIONS		
NO.	DESCRIPTION	DATE
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 4 — JEFFREY M. ESSNER — 4/28/2025

PLANS PREPARED BY:

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DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 5 DETAIL AND PEDESTRIAN DETOUR

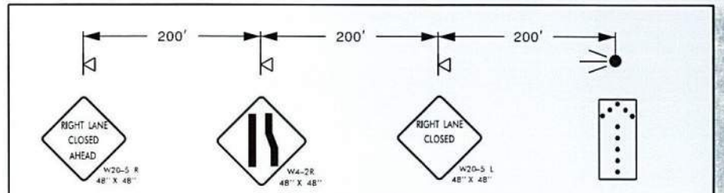
PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

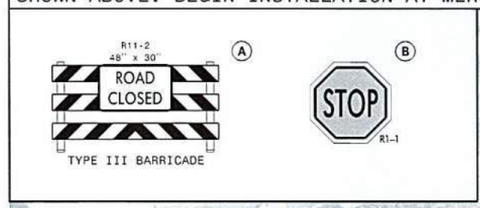
TMP-11
DRAWING NUMBER
-
REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B666-4803-AEF4-C9BE469253CB



INSTALL ADVANCED WARNING SIGNS ALONG M.L.K. JR BLVD. AS SHOWN ABOVE. BEGIN INSTALLATION AT MERGE TAPER.



REV.NO.	DESCRIPTION	DATE
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REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041701 TRAFFIC DEVICES JEANNETTE M. ESPOSITO

4/28/2025

PLANS PREPARED BY:

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DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4200

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 6 DETAIL AND PEDESTRIAN DETOUR

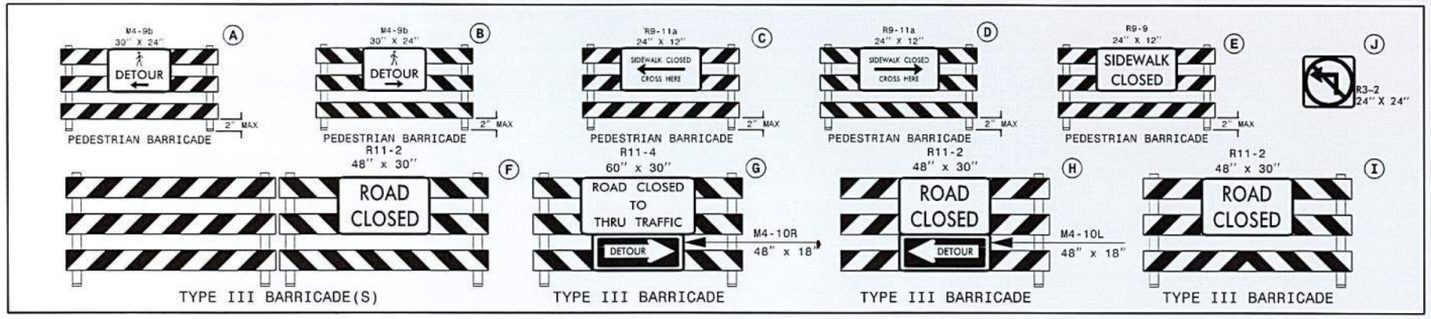
PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

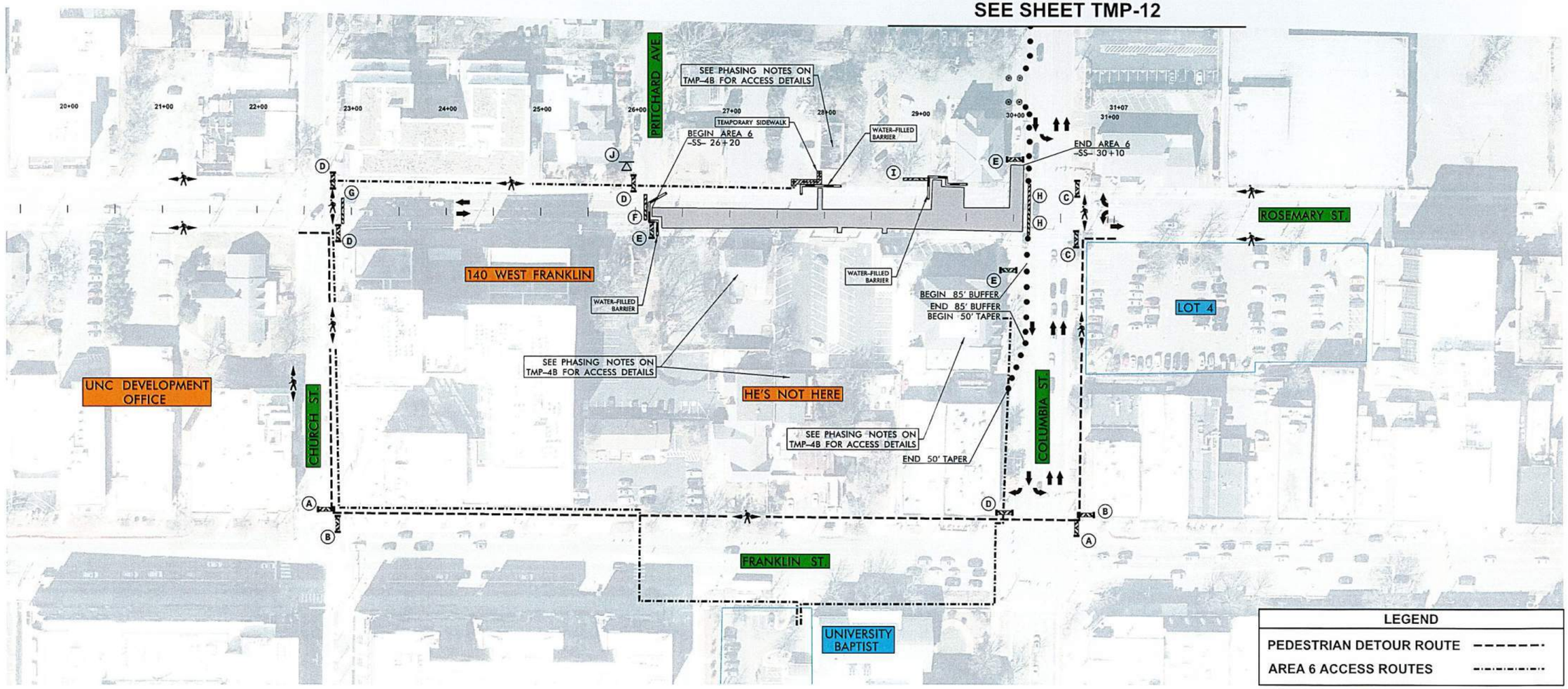
TMP-12
DRAWING NUMBER
-
REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B866-4803-AEF4-C9BE469283CB



MATCHLINE
SEE SHEET TMP-12



REVNO	DESCRIPTION	DATE
--	--	--

REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049201 ENGINEER JEREMY M. EDWARDS
4/28/2025

PLANS PREPARED BY:
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SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 6 DETAIL AND PEDESTRIAN DETOUR

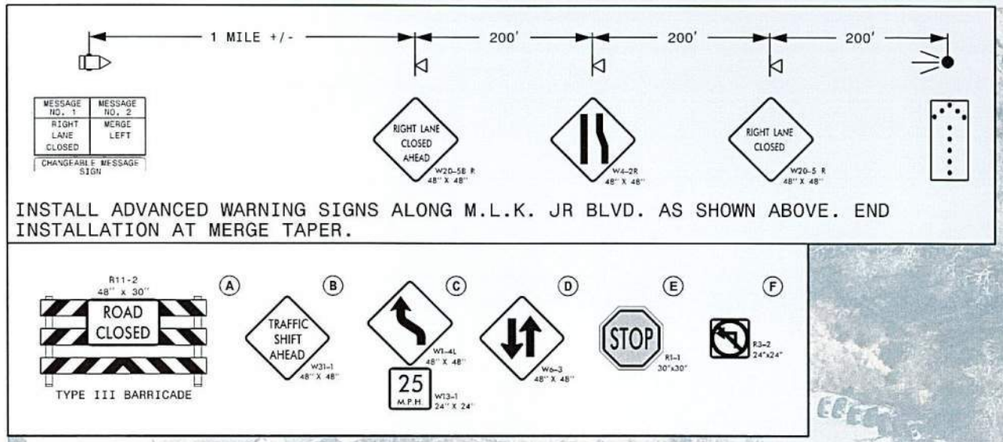
PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

TMP-13
DRAWING NUMBER
-
REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C66F-B866-4803-AEF4-C9BE469283CB



INSTALL ADVANCED WARNING SIGNS ALONG M.L.K. JR BLVD. AS SHOWN ABOVE. END INSTALLATION AT MERGE TAPER.

CONTRACTOR TO ENSURE AREA 7 IS BUILT DURING APPROVED WEEKEND CONSTRUCTION HOURS ONLY. CONTRACTOR SHALL HAVE SIXTY (60) CONSECUTIVE HOURS TO COMPLETE AREA 7 ONCE WORK HAS BEGUN. SEE TMP-3A AND ICT'S FOR MORE DETAILS ON CONSTRUCTION HOURS / TIMELINE AND LIQUIDATED DAMAGES. AT THE END OF EACH WEEKEND, CONTRACTOR TO REPLACE DAMAGED PAVEMENT AND ENSURE TRAFFIC CAN TRAVERSE IMPACTED AREA PRIOR TO REMOVING ALL TRAFFIC CONTROL DEVICES.

REV NO.	DESCRIPTION	DATE
**	**	**

REVISIONS

4/28/2025

PLANS PREPARED BY:

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DRMP, INC.
8216 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 7 DETAIL AND PEDESTRIAN DETOUR

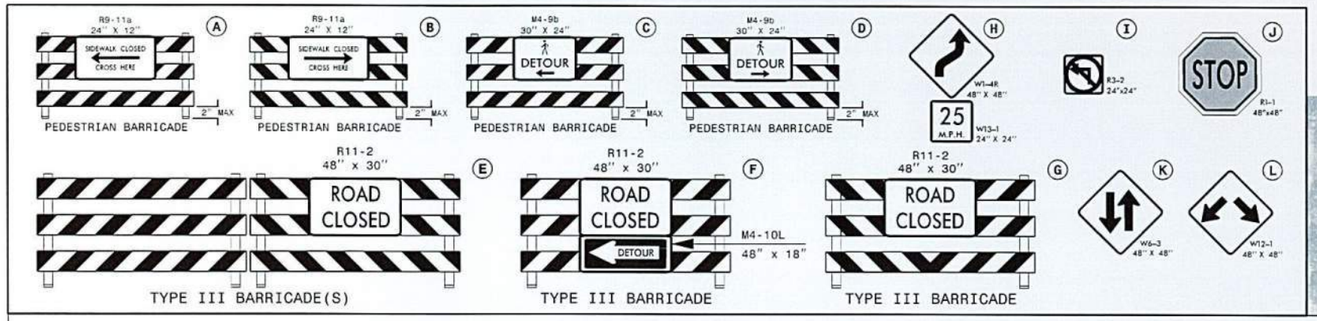
PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

TMP-14
DRAWING NUMBER
-
REVISION

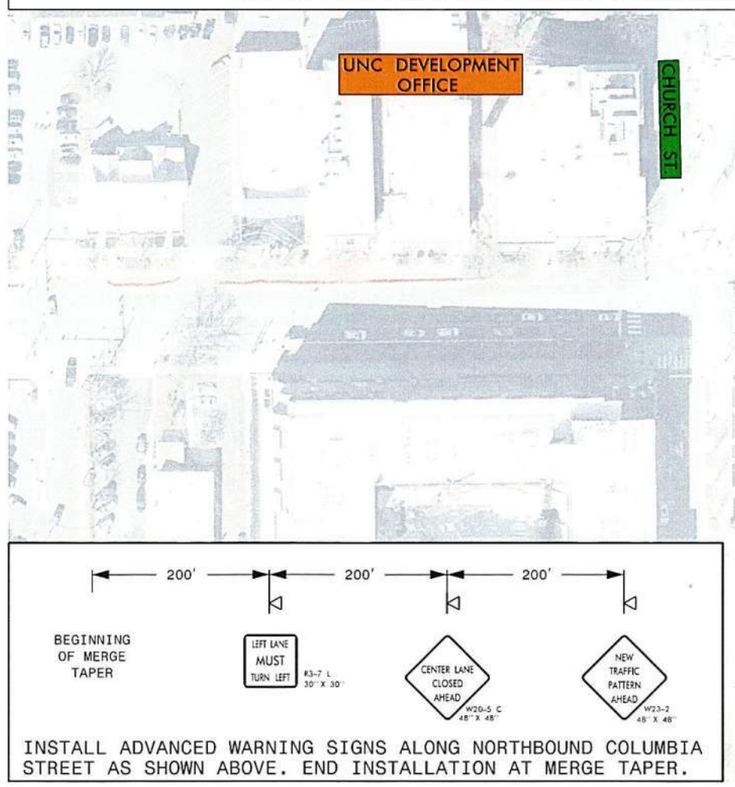
STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B866-4803-AEF4-C9BE46926ECB



CONTRACTOR TO ENSURE AREA 7 IS BUILT DURING APPROVED WEEKEND CONSTRUCTION HOURS ONLY. CONTRACTOR SHALL HAVE SIXTY (60) CONSECUTIVE HOURS TO COMPLETE AREA 7 ONCE WORK HAS BEGUN. SEE TMP-3A AND ICT'S FOR MORE DETAILS ON CONSTRUCTION HOURS / TIMELINE AND LIQUIDATED DAMAGES. AT THE END OF EACH WEEKEND, CONTRACTOR TO REPLACE DAMAGED PAVEMENT AND ENSURE TRAFFIC CAN TRAVERSE IMPACTED AREA PRIOR TO REMOVING ALL TRAFFIC CONTROL DEVICES.

SIGNAL NOTE 1:	CONTRACTOR TO TRIP THE EXISTING SIGNAL AT THE INTERSECTION OF ROSEMARY STREET AND COLUMBIA STREET TO FLASH FOR THE DURATION OF THIS PHASE. CONTRACTOR TO REMOVE ALL TRAFFIC CONTROL DEVICES AT THE END OF THE WEEKEND.
SIGNAL NOTE 2:	SIGNAL AT THE INTERSECTION OF FRANKLIN STREET AND COLUMBIA STREET TO OPERATE UNDER NORMAL CONDITIONS.



INSTALL ADVANCED WARNING SIGNS ALONG NORTHBOUND COLUMBIA STREET AS SHOWN ABOVE. END INSTALLATION AT MERGE TAPER.

REV NO.	DESCRIPTION	DATE
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REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049100 JANUARY M. ESPINOZA
4/28/2025

PLANS PREPARED BY:
DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR., SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 7 DETAIL AND PEDESTRIAN DETOUR

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

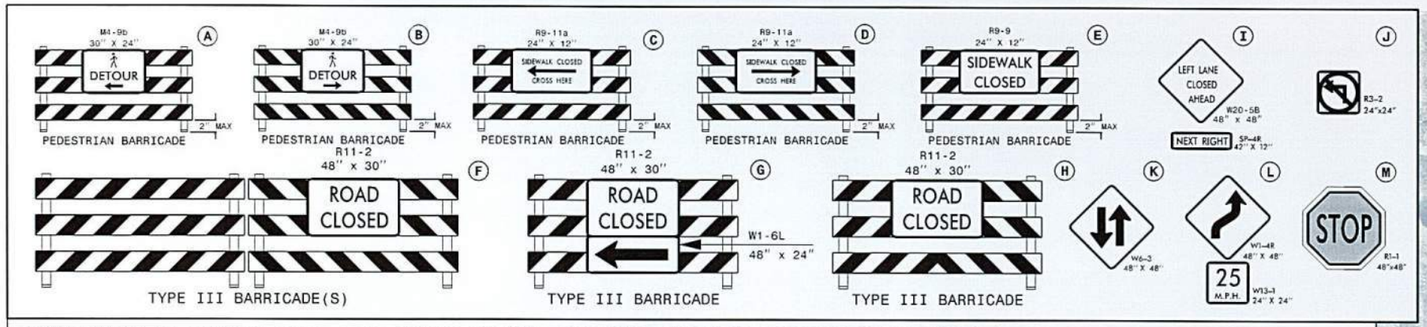
SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A

DRAWING NUMBER: TMP-15

REVISION: -

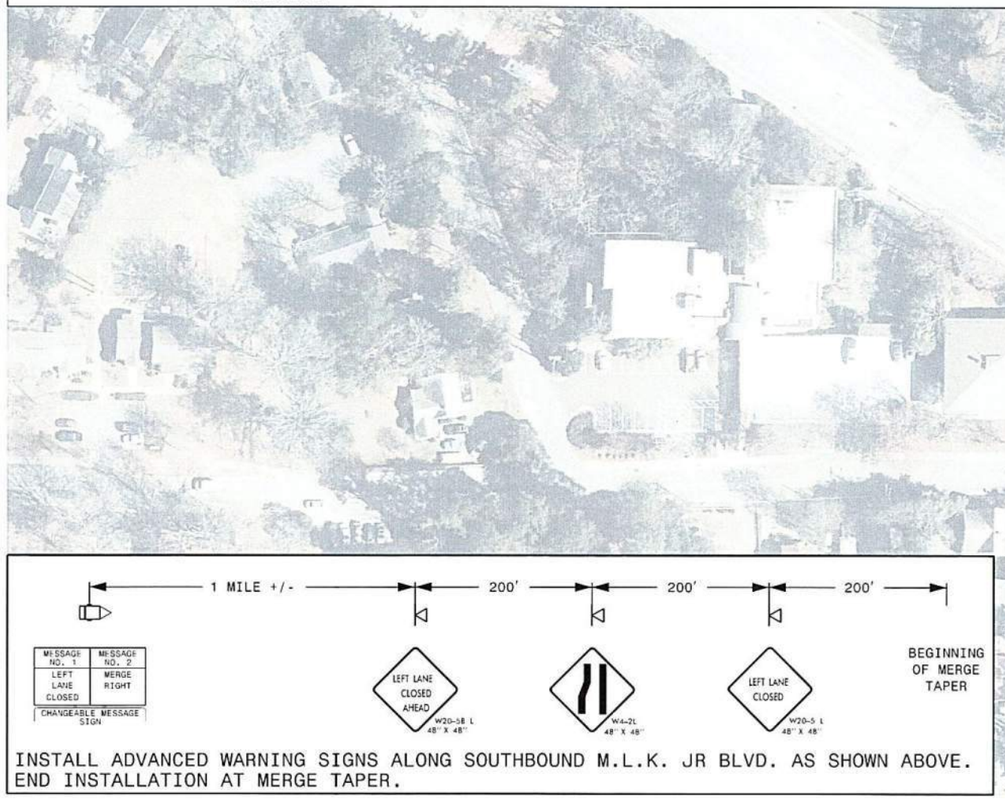
STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B866-4803-AEF4-C9BE469263CE



CONTRACTOR TO ENSURE AREA 8 IS BUILT DURING APPROVED WEEKEND CONSTRUCTION HOURS ONLY. CONTRACTOR SHALL HAVE SIXTY (60) CONSECUTIVE HOURS TO COMPLETE AREA 8 ONCE WORK HAS BEGUN (FRIDAY 7PM TO MONDAY 6AM). THE CONTRACTOR SHALL HAVE THREE (3) CONSECUTIVE WEEKENDS TO COMPLETE ALL WORK. AFTER THE THIRD CONSECUTIVE WEEKEND, THE CONTRACTOR MUST SHALL UTILIZE ONLY SIMPLE LANE CLOSURES AND FLAGGERS TO COMPLETE THE REMAINING WORK. NO COMPLEX LANE CLOSURES LANE CLOSURES SHALL BE ALLOWED BEYOND THIS POINT. SEE TMP-3A AND ICT'S FOR MORE DETAILS ON CONSTRUCTION HOURS / TIMELINE AND LIQUIDATED DAMAGES.

SIGNAL NOTE : CONTRACTOR TO TRIP THE EXISTING SIGNAL AT THE INTERSECTION OF ROSEMARY STREET AND COLUMBIA STREET TO FLASH FOR THE DURATION OF THIS PHASE. CONTRACTOR TO REMOVE ALL TRAFFIC CONTROL DEVICES AT THE END OF THE WEEKEND.



INSTALL ADVANCED WARNING SIGNS ALONG SOUTHBOUND M.L.K. JR BLVD. AS SHOWN ABOVE. END INSTALLATION AT MERGE TAPER.

LEGEND

PEDESTRIAN DETOUR ROUTE -------

REVNS.	DESCRIPTION	DATE
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REVISIONS

4/28/2025

PLANS PREPARED BY:

DRMP

ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 8 DETAIL AND PEDESTRIAN DETOUR

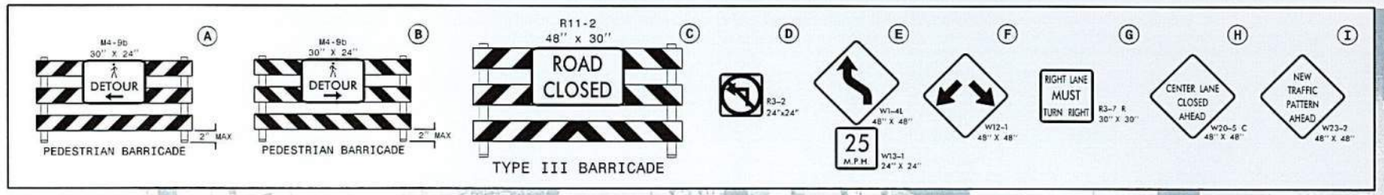
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DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

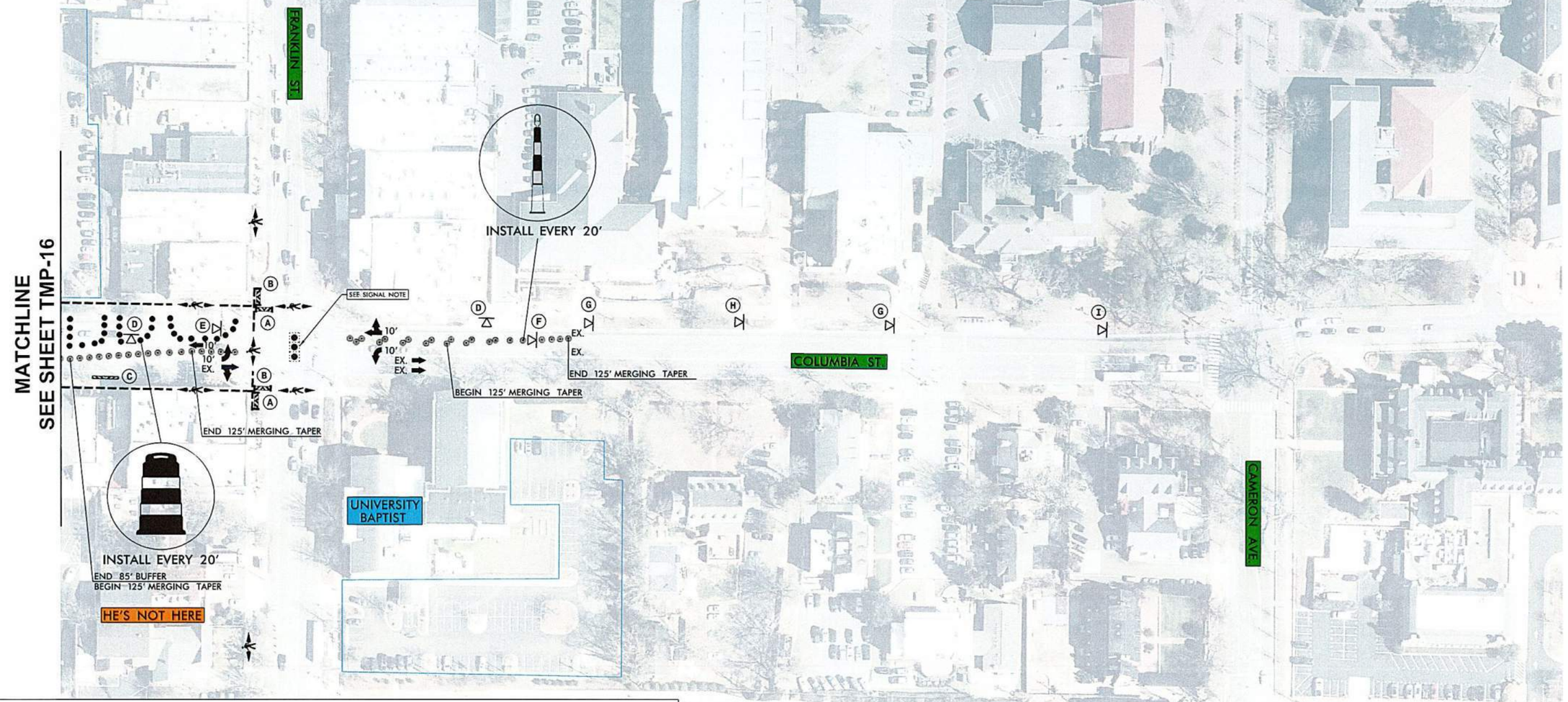
SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

TMP-16
DRAWING NUMBER
-
REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B866-4803-AEF4-C9BE46F263CE





SIGNAL NOTE: SIGNAL AT THE INTERSECTION OF FRANKLIN STREET AND COLUMBIA STREET TO OPERATE UNDER NORMAL CONDITIONS.

CONTRACTOR TO ENSURE AREA 8 IS BUILT DURING APPROVED WEEKEND CONSTRUCTION HOURS ONLY. CONTRACTOR SHALL HAVE SIXTY (60) CONSECUTIVE HOURS TO COMPLETE AREA 8 ONCE WORK HAS BEGUN (FRIDAY 7PM TO MONDAY 6AM). THE CONTRACTOR SHALL HAVE THREE (3) CONSECUTIVE WEEKENDS TO COMPLETE ALL WORK. AFTER THE THIRD CONSECUTIVE WEEKEND, THE CONTRACTOR MUST SHALL UTILIZE ONLY SIMPLE LANE CLOSURES AND FLAGGERS TO COMPLETE THE REMAINING WORK. NO COMPLEX LANE CLOSURES LANE CLOSURES SHALL BE ALLOWED BEYOND THIS POINT. SEE TMP-3A AND ICT'S FOR MORE DETAILS ON CONSTRUCTION HOURS / TIMELINE AND LIQUIDATED DAMAGES.

LEGEND	
PEDESTRIAN DETOUR ROUTE	-------

REVISIONS			
NO.	DESCRIPTION	DATE	
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047182 JEFFREY M. ESPOSITO
4/28/2025

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8216 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 8 DETAIL AND PEDESTRIAN DETOUR

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

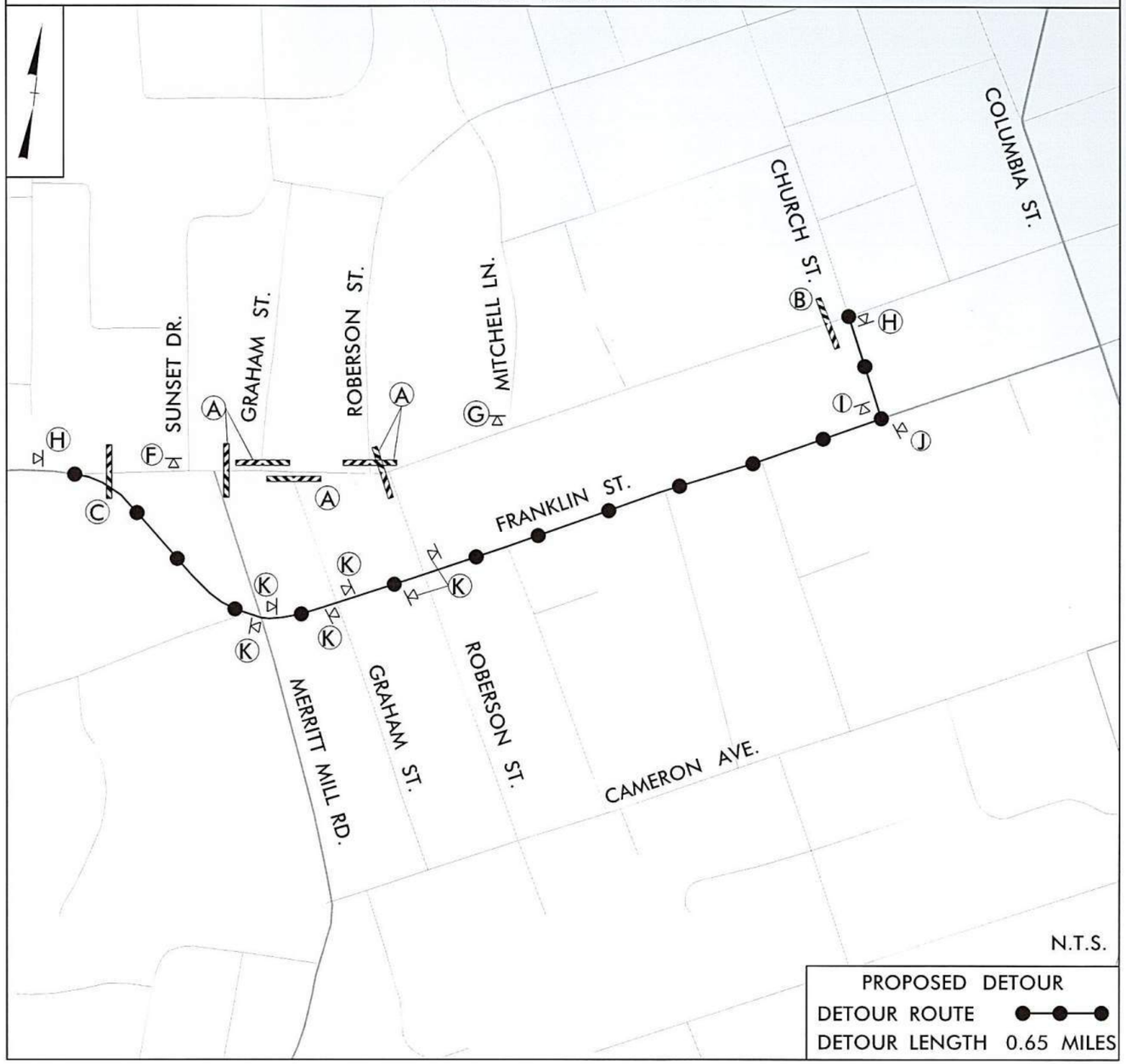
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VERTICAL: N/A

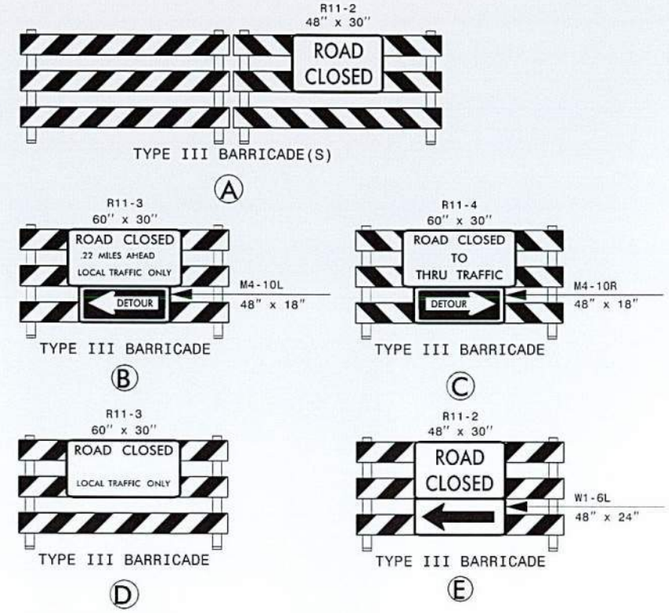
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DRAWING NUMBER
-
REVISION

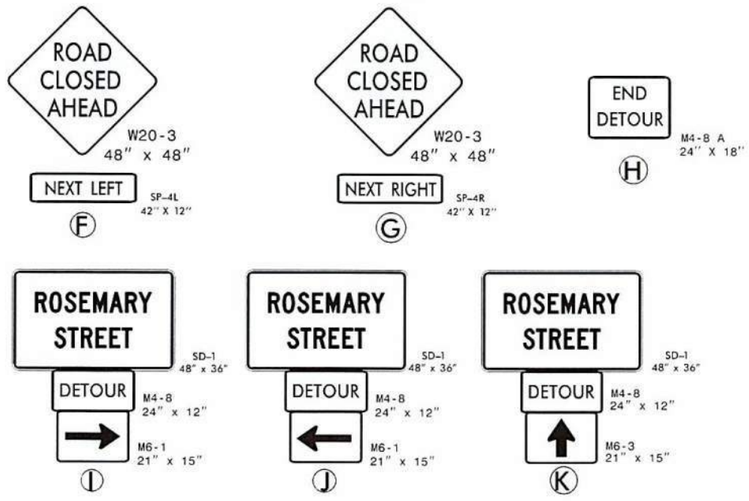
STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B866-4803-AEF4-C9BE469283CB

ROSEMARY STREET DETOUR







REV NO.	DESCRIPTION	DATE
--	--	--
	REVISIONS	

4/28/2025

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET
WATER LINE REPLACEMENT

AREA 1 DETOUR ROUTE

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

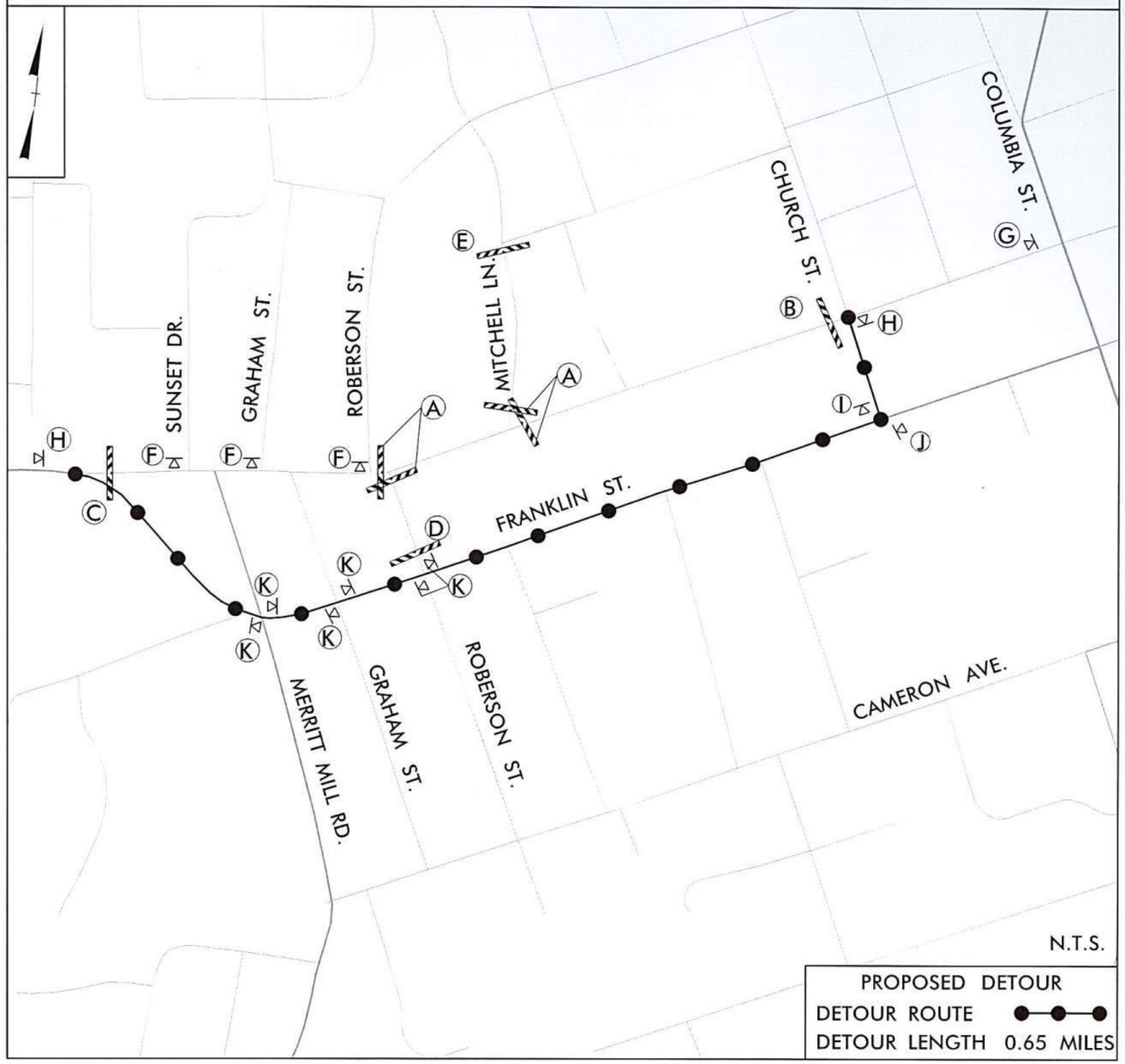
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VERTICAL: N/A

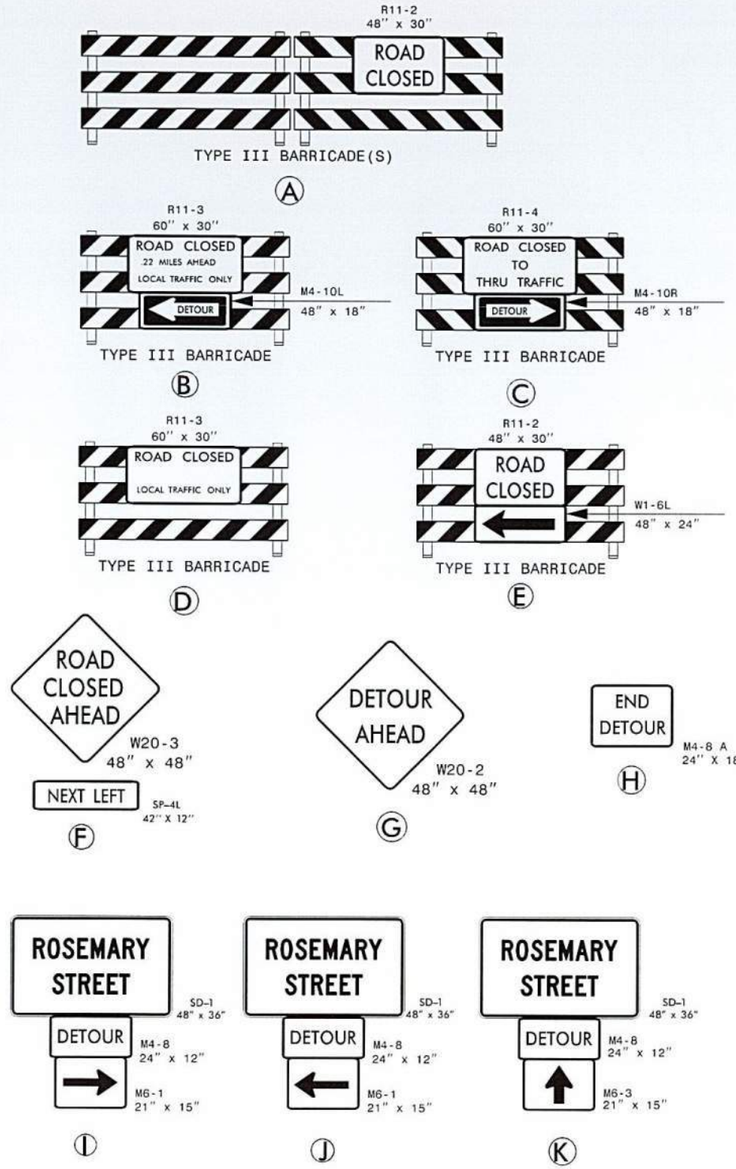
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DRAWING NUMBER
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REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B866-4803-AEF4-C9BE469263C8

ROSEMARY STREET DETOUR





REVNO	DESCRIPTION	DATE
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REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 050700 JEFFREY M. EDWARDS
4/28/2025

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 2 DETOUR ROUTE

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

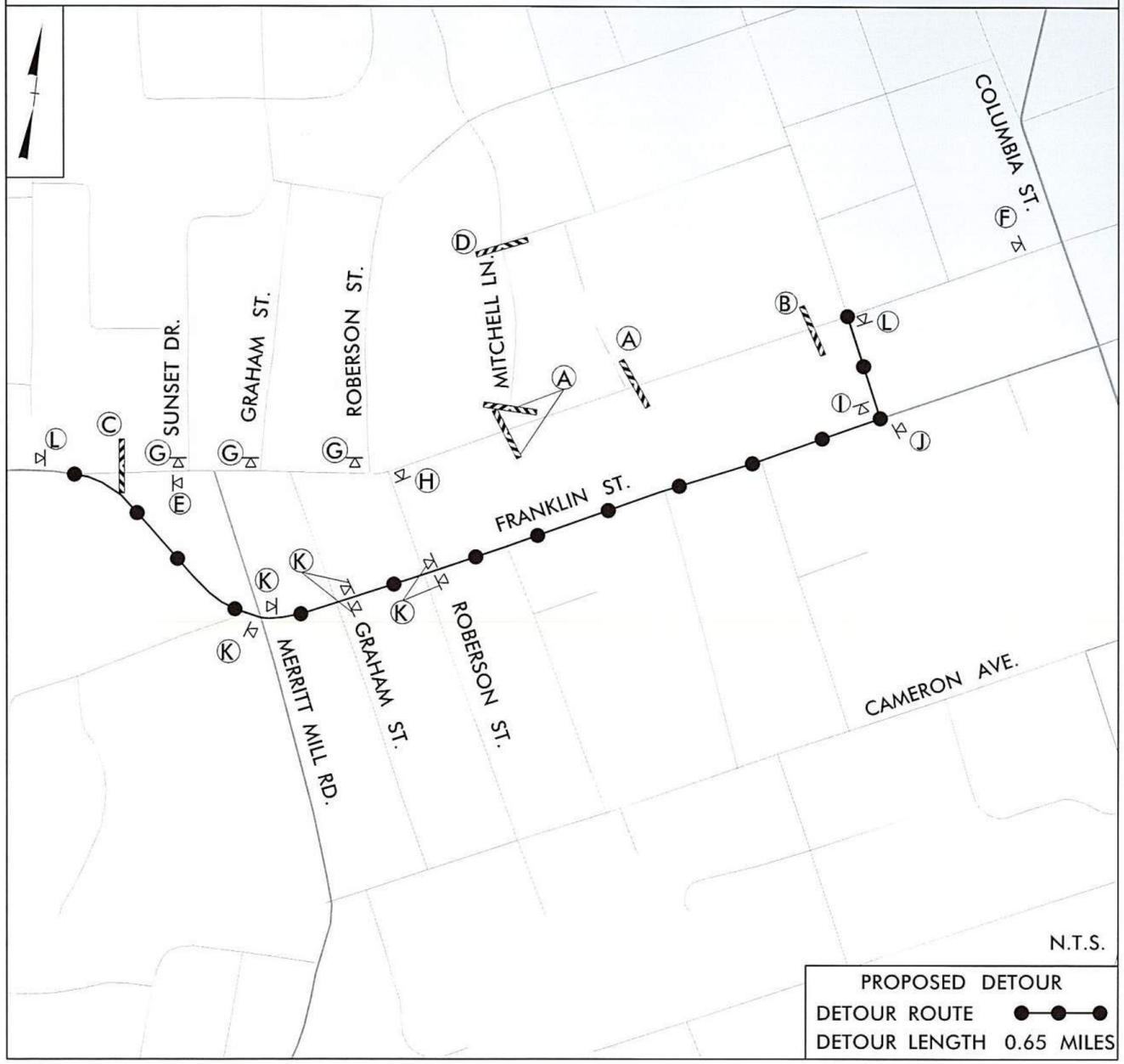
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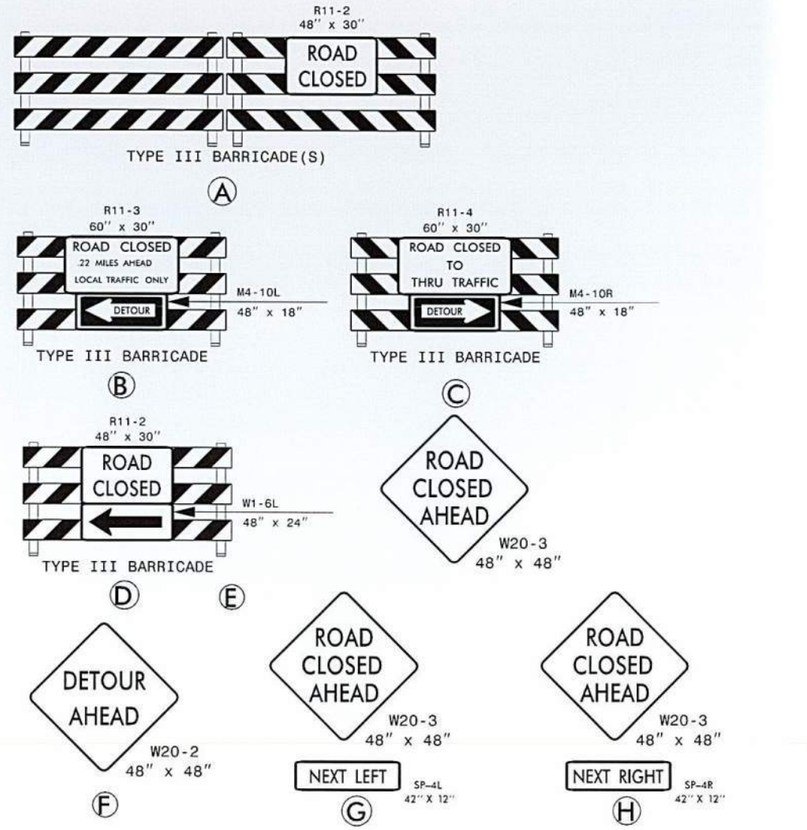
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DRAWING NUMBER
-
REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33286F-B866-4803-AEF4-C9BE469263CB

ROSEMARY STREET DETOUR





REV NO	DESCRIPTION	DATE
**	**	**

REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 050700 ZACHARY M. ESPOSITO
4/28/2025

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET
WATER LINE REPLACEMENT

AREA 3 DETOUR ROUTE

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

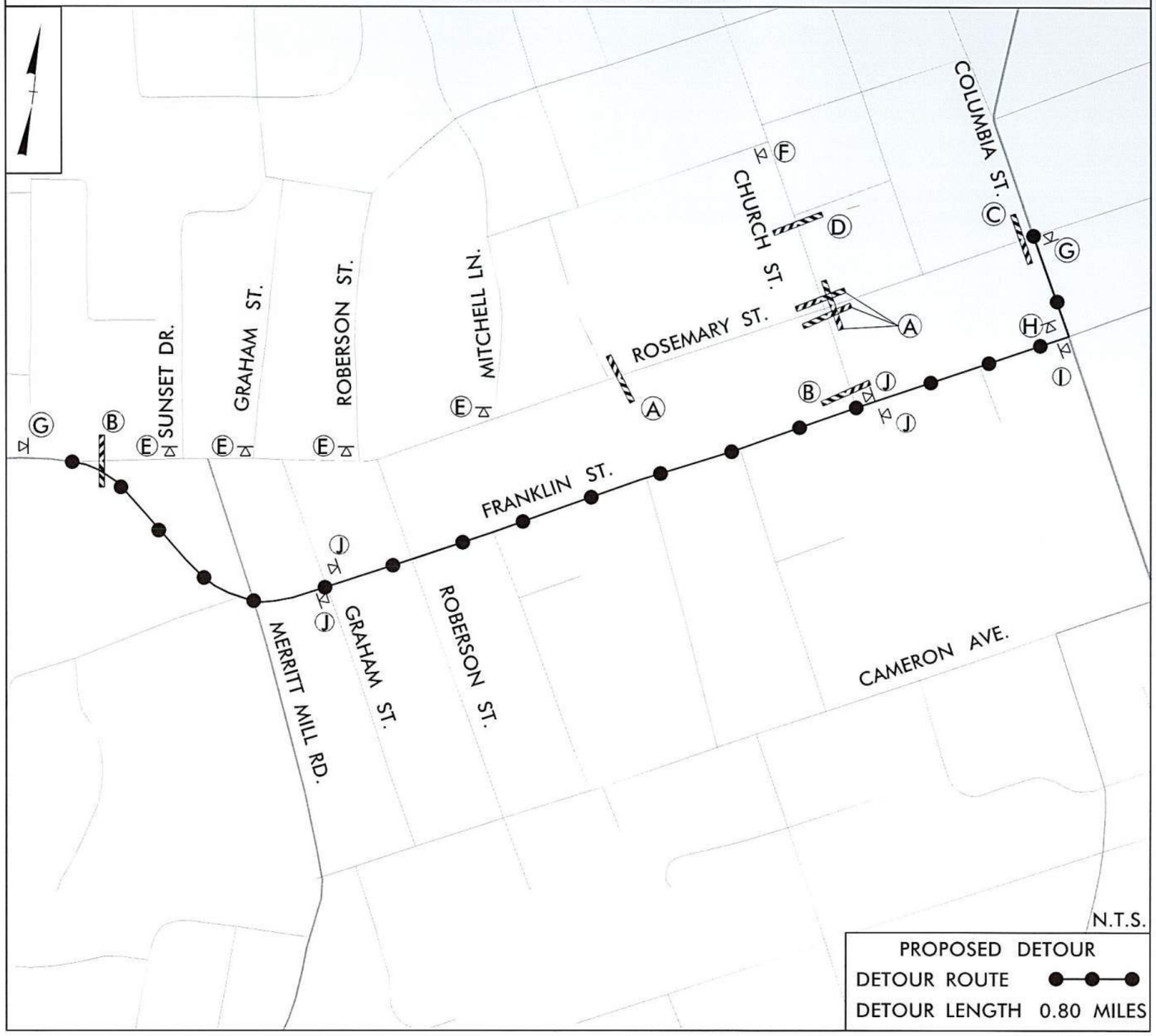
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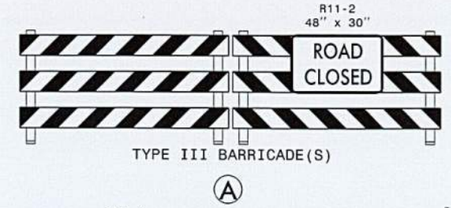
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REVISION: -

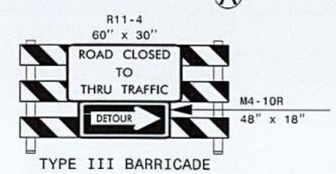
STATUS: **100% DESIGN NOT FOR CONSTRUCTION**

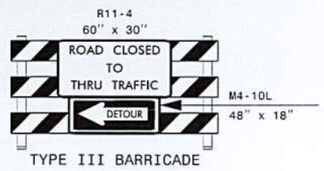
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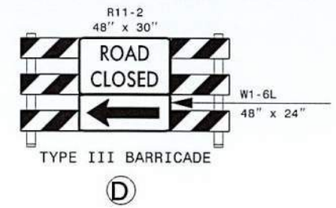
ROSEMARY STREET DETOUR





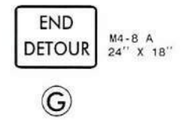


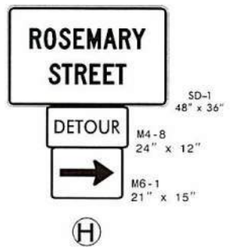


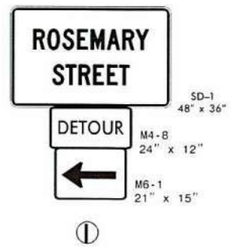


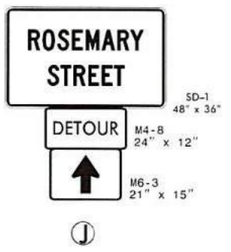












REV NO.	DESCRIPTION	DATE
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REVISIONS

4/28/2025

PLANS PREPARED BY:

DRMP

ENGINEERS · SURVEYORS · PLANNERS · SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 4 DETOUR ROUTE

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

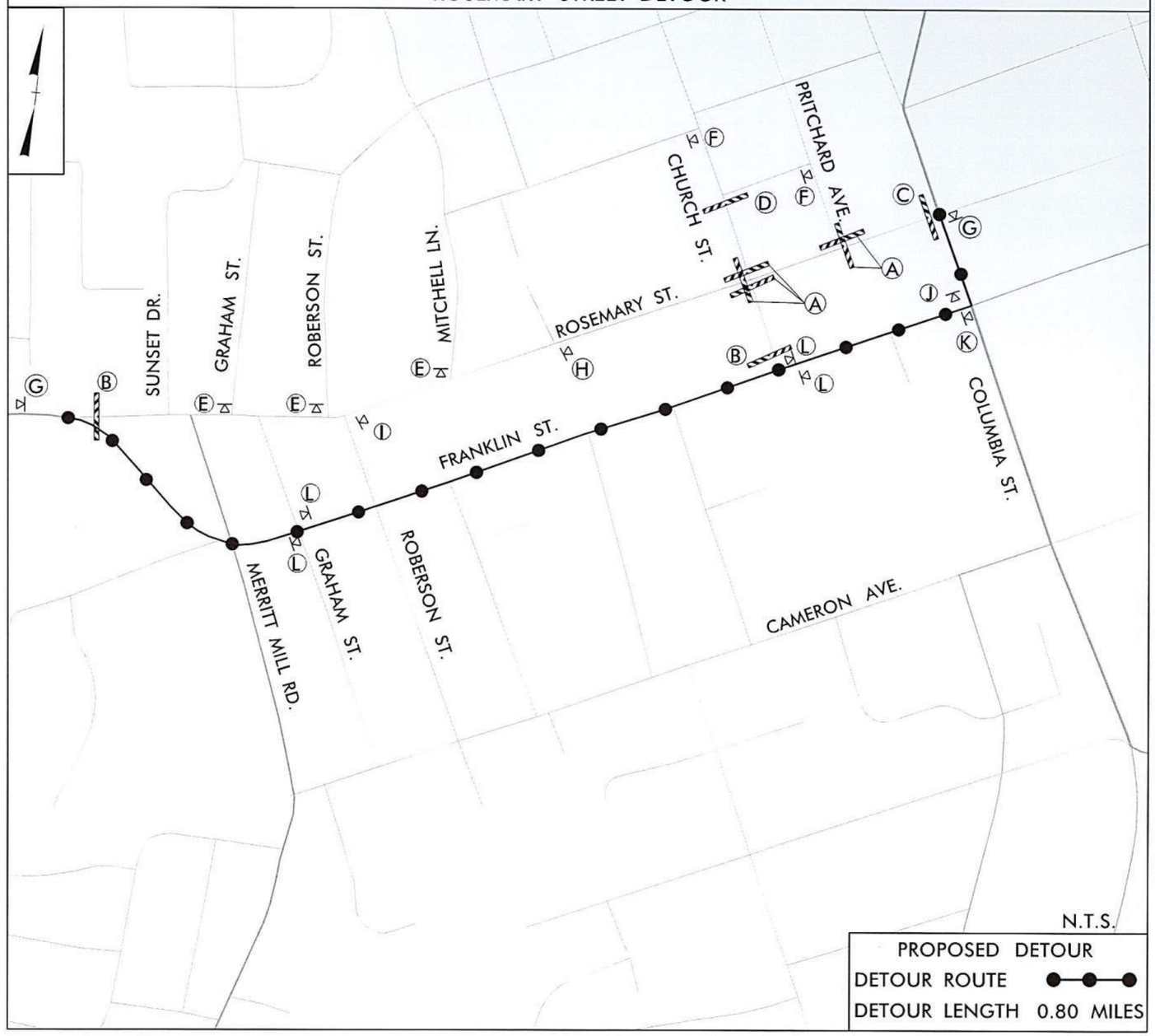
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HORIZONTAL: N/A
VERTICAL: N/A

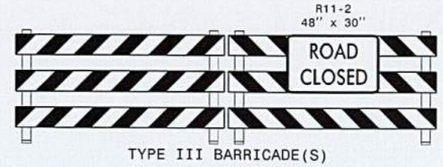
TMP-21
DRAWING NUMBER
-
REVISION

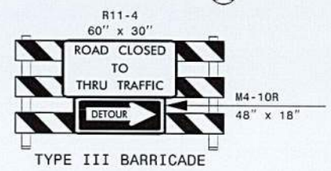
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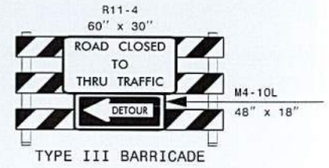
Docusign Envelope ID: 3F33C86F-B866-4803-AEF4-C9BE469253CB

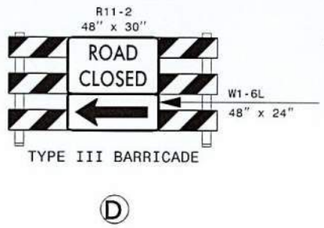
ROSEMARY STREET DETOUR









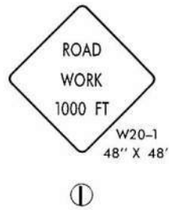


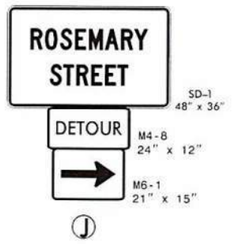


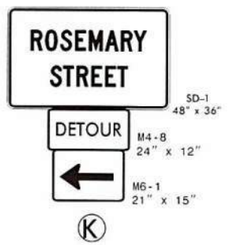


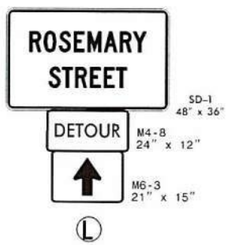












REV NO	DESCRIPTION	DATE
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REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049701 JEREMY V. EDWARDS
4/28/2025

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 540-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 5 DETOUR ROUTE

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

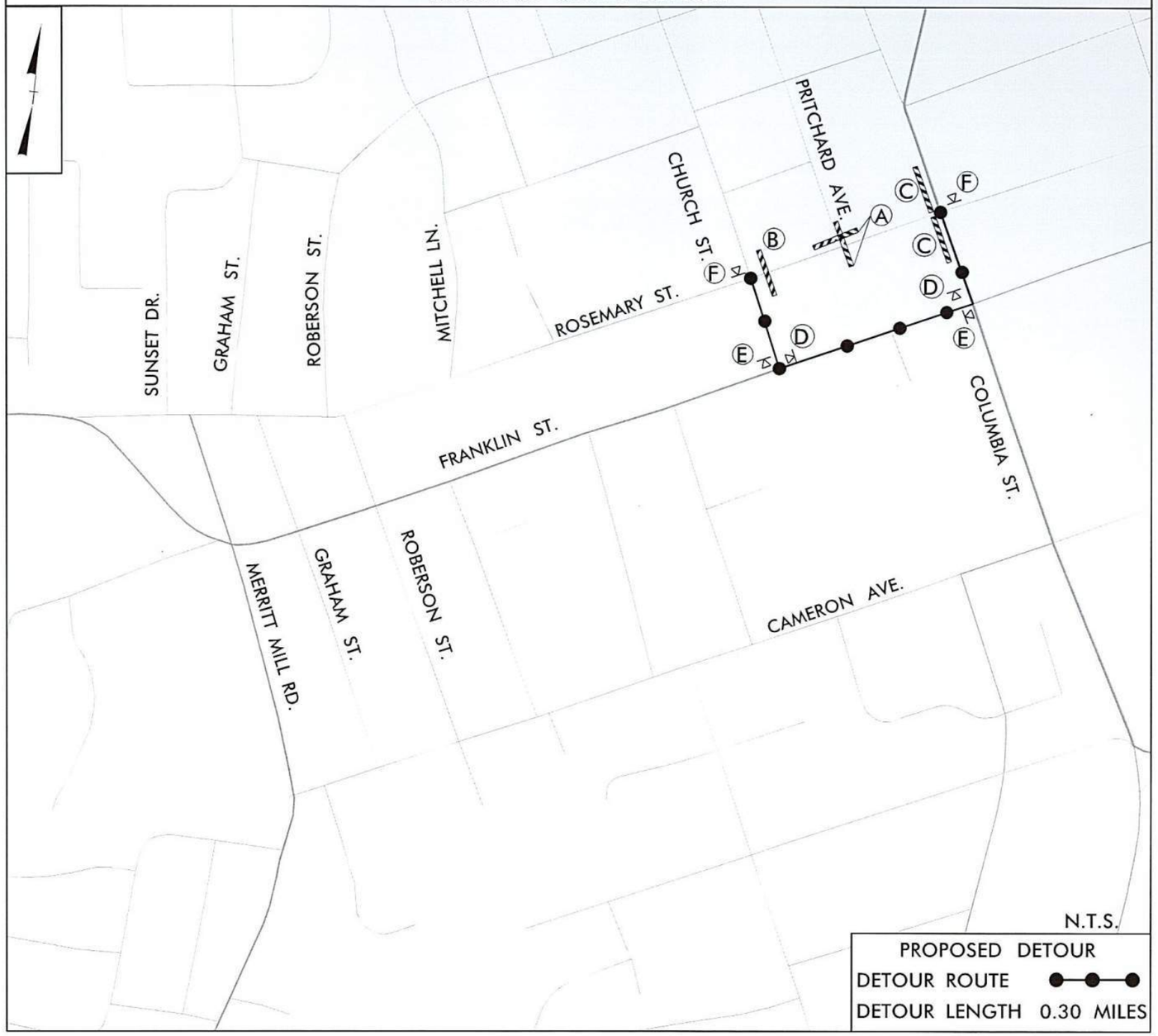
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HORIZONTAL: N/A
VERTICAL: N/A

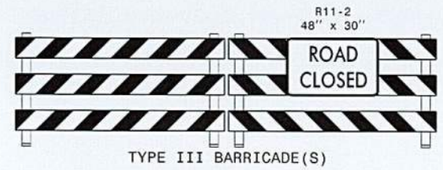
TMP-22
DRAWING NUMBER
-
REVISION

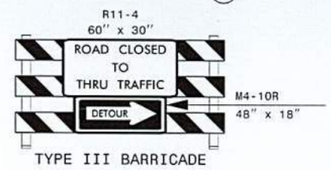
STATUS: 100% DESIGN NOT FOR CONSTRUCTION

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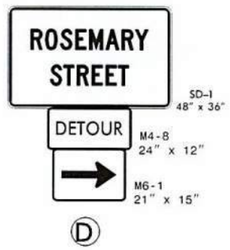
ROSEMARY STREET DETOUR

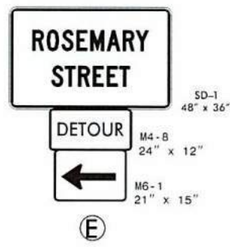


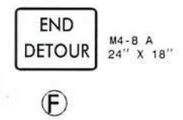












REVNO	DESCRIPTION	DATE
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REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040700 ZACHARY M. EPPERLY
4/28/2025

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4200

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 6 DETOUR ROUTE

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

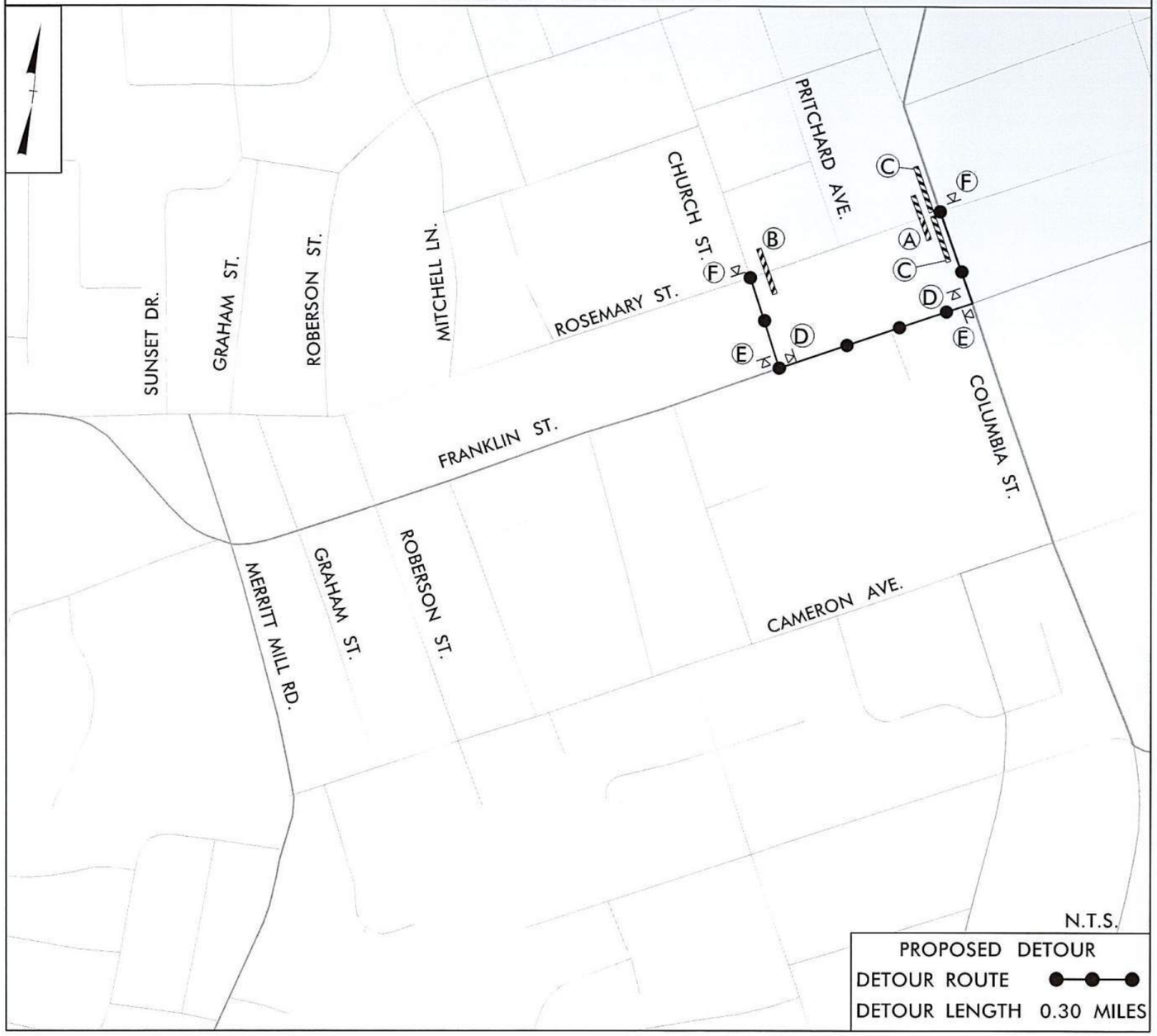
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VERTICAL: N/A

TMP-23
DRAWING NUMBER
-
REVISION

STATUS: **100% DESIGN NOT FOR CONSTRUCTION**

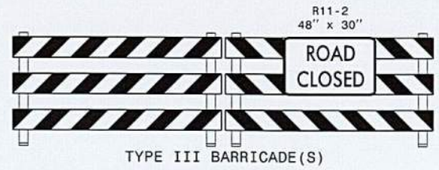
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ROSEMARY STREET DETOUR



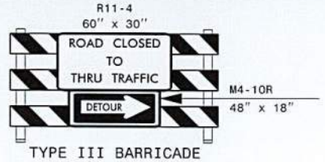
N.T.S.

PROPOSED DETOUR
DETOUR ROUTE
DETOUR LENGTH 0.30 MILES



TYPE III BARRICADE(S)

Ⓐ



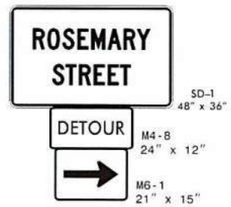
TYPE III BARRICADE

Ⓑ

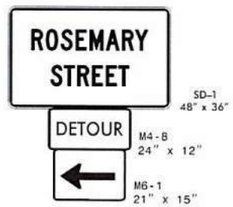


TYPE III BARRICADE

Ⓒ



Ⓓ



Ⓔ



Ⓕ

REVNO	DESCRIPTION	DATE
--	--	--

REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 55670 JEREMY M. EDMISTON
4/28/2025

PLANS PREPARED BY:
DRMP
ENGINEERS · SURVEYORS · PLANNERS · SCIENTISTS
DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 540-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 7 DETOUR ROUTE

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

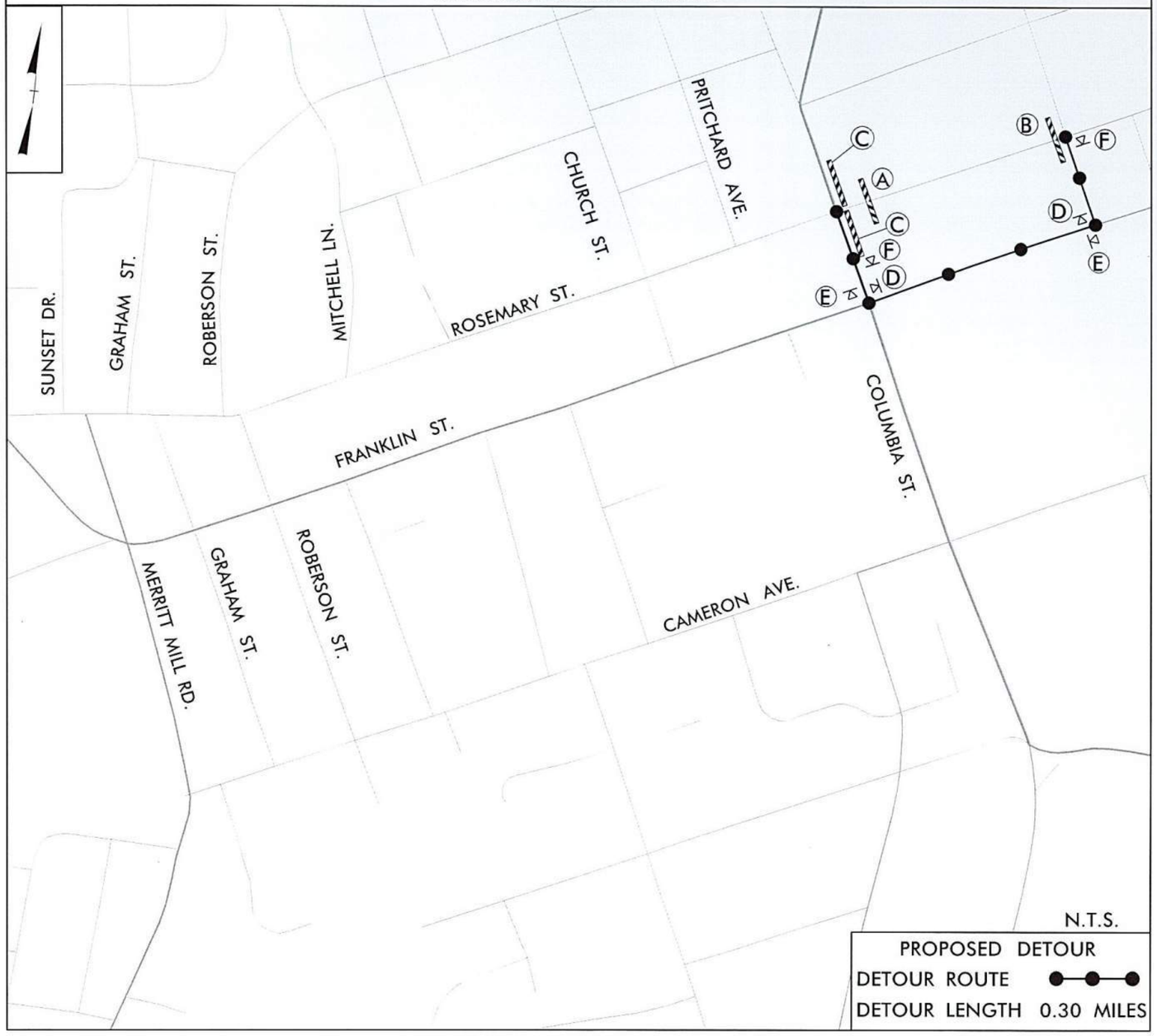
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VERTICAL: N/A

TMP-24
DRAWING NUMBER
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REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

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ROSEMARY STREET DETOUR

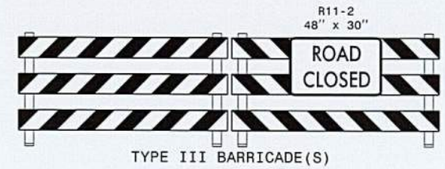


N.T.S.

PROPOSED DETOUR

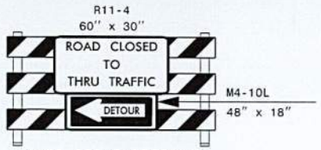
DETOUR ROUTE

DETOUR LENGTH 0.30 MILES



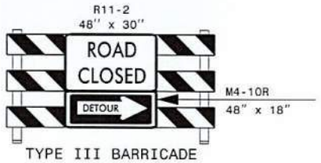
TYPE III BARRICADE(S)

Ⓐ



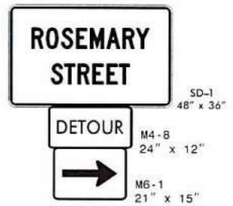
TYPE III BARRICADE

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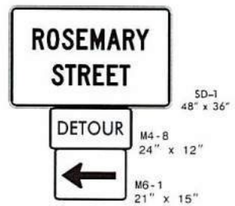


TYPE III BARRICADE

Ⓒ



Ⓓ



Ⓔ



Ⓕ

REVNO	DESCRIPTION	DATE
--	--	--

REVISIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049700 JEREMY M. ESPOSITO

4/28/2025

PLANS PREPARED BY:

DRMP ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. P-1524 (704) 549-4200

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 8 DETOUR ROUTE

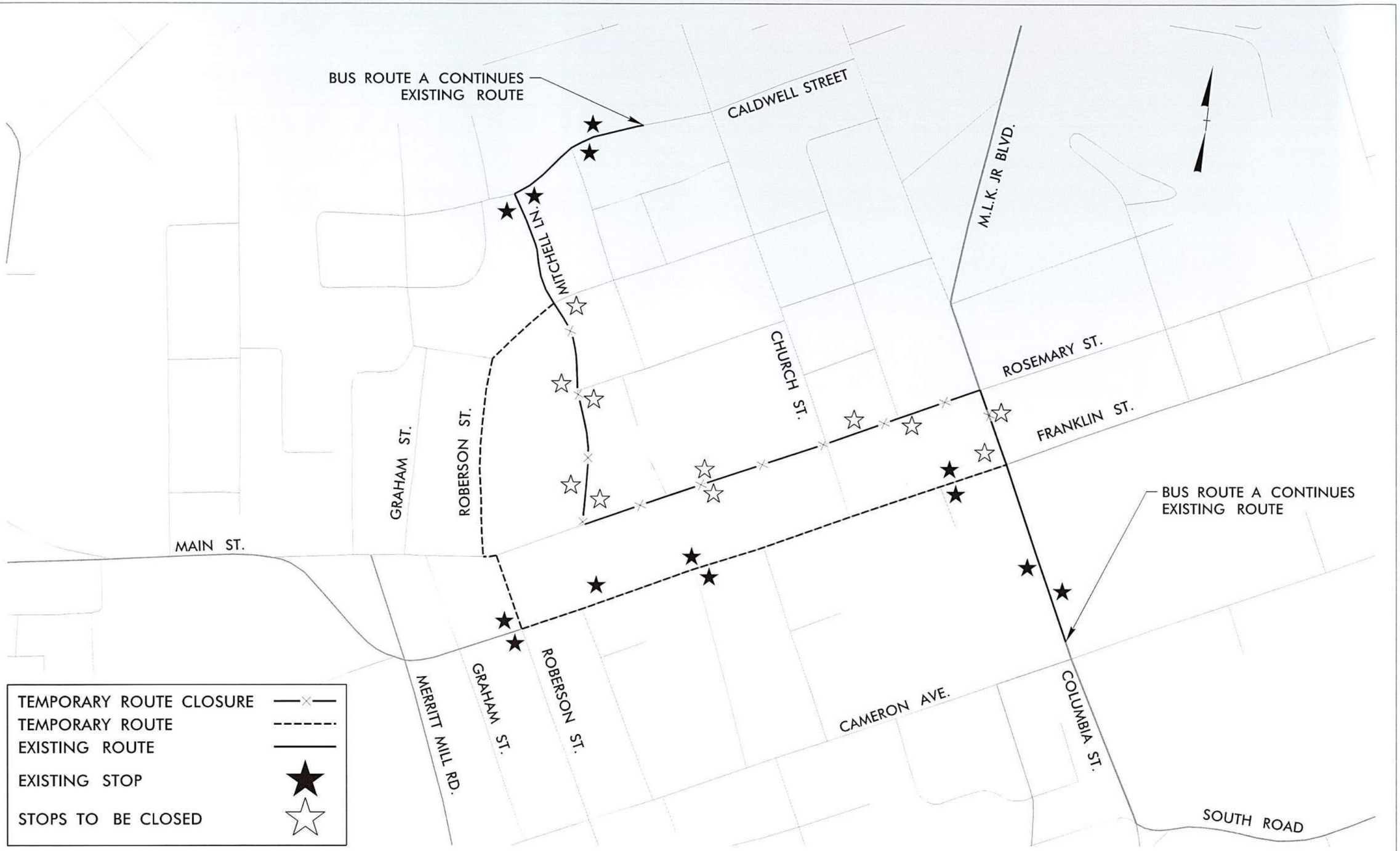
PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE: HORIZONTAL: N/A VERTICAL: N/A

TMP-25 (DRAWING NUMBER) - (REVISION)

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B866-4803-AEF4-C9BE46B2B3CB



REV NO.	DESCRIPTION	DATE
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REVISIONS

4/28/2025

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4200

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

BUS ROUTE A DETOUR - AREAS 2 THRU 8

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

DRAWING NUMBER: TMP-26

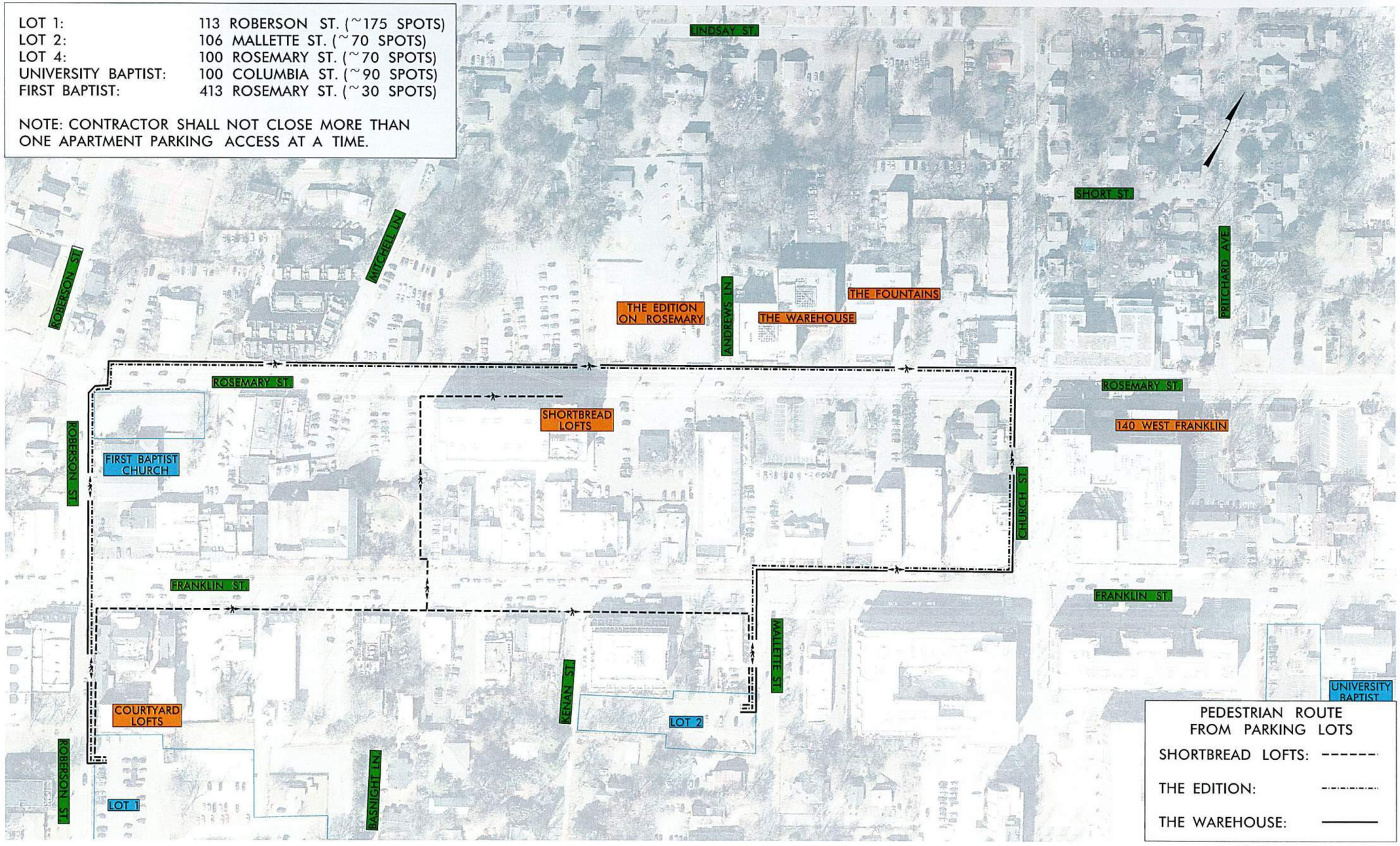
REVISION: -

STATUS: 100% DESIGN
NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B666-4803-AEF4-C9BE469283CB

LOT 1:	113 ROBERSON ST. (~175 SPOTS)
LOT 2:	106 MALLETTE ST. (~70 SPOTS)
LOT 4:	100 ROSEMARY ST. (~70 SPOTS)
UNIVERSITY BAPTIST:	100 COLUMBIA ST. (~90 SPOTS)
FIRST BAPTIST:	413 ROSEMARY ST. (~30 SPOTS)

NOTE: CONTRACTOR SHALL NOT CLOSE MORE THAN ONE APARTMENT PARKING ACCESS AT A TIME.



REV NO.	DESCRIPTION	DATE
--	--	--

REVISIONS

NORTH CAROLINA PROFESSIONAL SEAL 049722 ENGINEER JOSEPH M. ESPOSITO
4/28/2025

PLANS PREPARED BY:

DRMP ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.,
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREA 3 - APARTMENTS' ACCESS DETAIL

PROJ. START DATE:	APRIL 2025
DRMP PROJ.#	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

SCALE: HORIZONTAL: 1"=75' VERTICAL: N/A

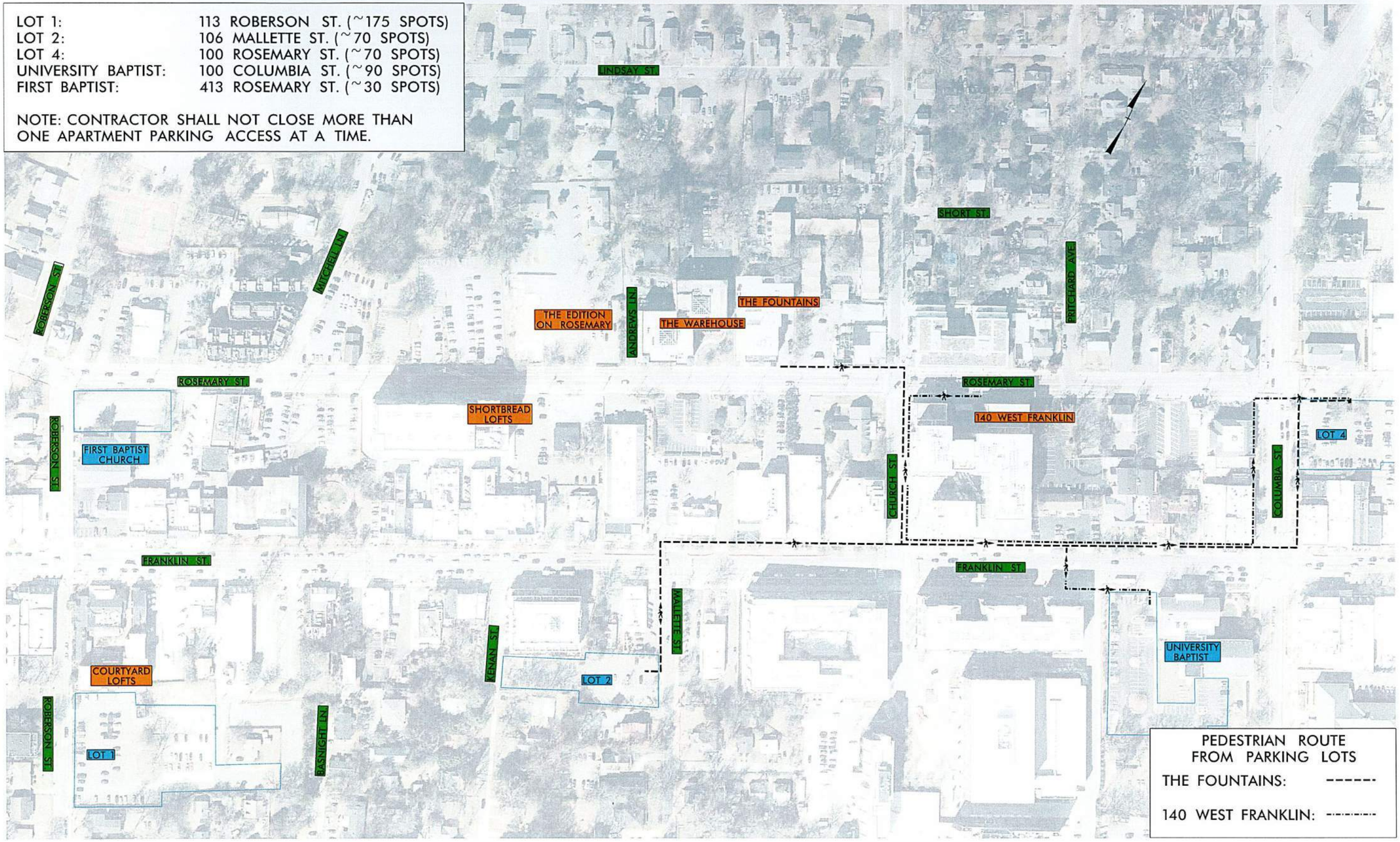
TMP-27 (DRAWING NUMBER) - (REVISION)

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

Docusign Envelope ID: 3F33C86F-B566-4803-AEF4-C9BE469283CB

LOT 1:	113 ROBERSON ST. (~175 SPOTS)
LOT 2:	106 MALLETTE ST. (~70 SPOTS)
LOT 4:	100 ROSEMARY ST. (~70 SPOTS)
UNIVERSITY BAPTIST:	100 COLUMBIA ST. (~90 SPOTS)
FIRST BAPTIST:	413 ROSEMARY ST. (~30 SPOTS)

NOTE: CONTRACTOR SHALL NOT CLOSE MORE THAN ONE APARTMENT PARKING ACCESS AT A TIME.



REV NO	DESCRIPTION	DATE
--	--	--

REVISIONS

NORTH CAROLINA PROFESSIONAL SEAL 049162 ENGINEER JEREMY M. EDWARDS
4/28/2025

PLANS PREPARED BY:

DRMP
ENGINEERS · SURVEYORS · PLANNERS · SCIENTISTS

DRMP, INC.
5210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220 CHARLOTTE, NC 28262
NC LICENSE NO. F-1524 (704) 549-4260

OWASA

WEST ROSEMARY STREET WATER LINE REPLACEMENT

AREAS 4 & 5- APARTMENTS' ACCESS DETAIL

PROJ. START DATE:	APRIL 2025
DRMP PROJ. #	24254
DRAWN	CNM
DESIGNED	MML
CHECKED	ZME
PROJ. MGR.	ZME

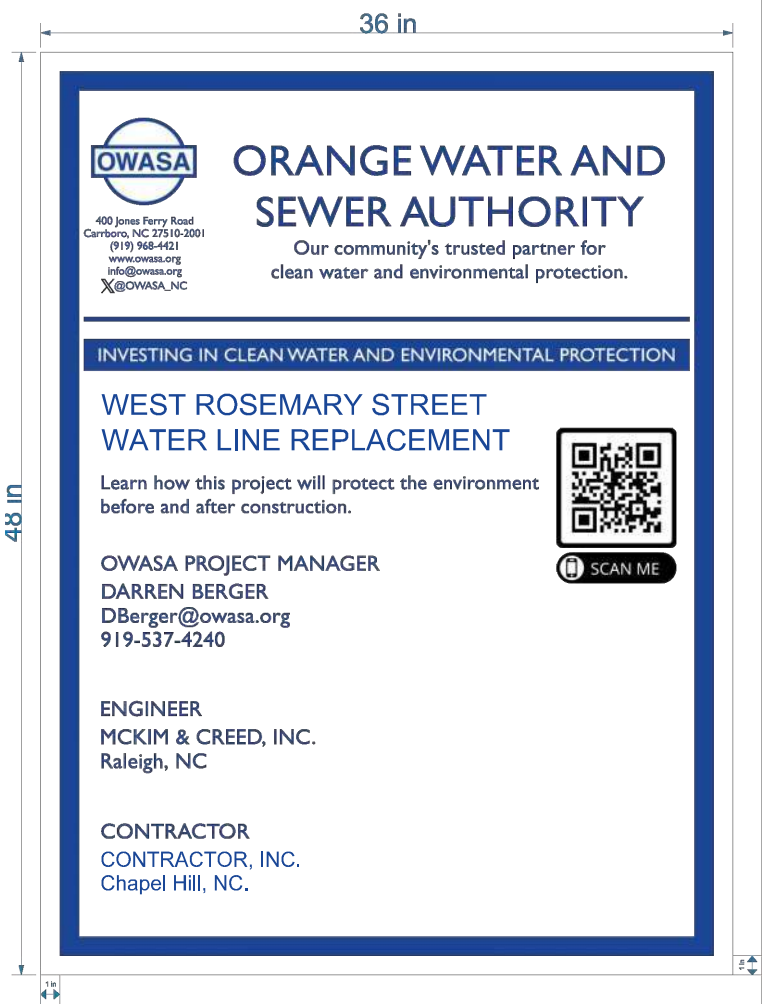
SCALE
HORIZONTAL: 1"=65'
VERTICAL: N/A

TMP-28
DRAWING NUMBER
-
REVISION

STATUS: 100% DESIGN NOT FOR CONSTRUCTION

I:\01519\0063\ENG\80-DRAWINGS\86-DESIGN\CIVIREF\CD.01-015190063-W_ROSEMARY_DETAILS.DWG 06/03/2025 16:34:29 CODIE TONDRE

Qty.1 Single Sided Sign
Mounts to .125" Aluminum Composite Material
Rated for Outdoor Use w/ UV Lamination



1. ALL SIGN LAYOUT AND LETTERING DETAILS MUST BE SUBMITTED FOR OWASA APPROVAL.
2. THE SIGN MUST MEET REQUIREMENTS OF TOWN OF CHAPEL HILL OR TOWN OF CHAPEL HILL ORDINANCES AND PERMITS, IF APPLICABLE.
3. THE FIELD OF THE SIGN SHALL CONSIST OF A 3 BY 4 FOOT SHEET OF GRADE B-B MEDIUM DENSITY OVERLAID EXTERIOR PLYWOOD.
4. UNLESS OTHERWISE APPROVED BY OWASA, THE SIGN SHALL BE MOUNTED WITH 4" x 4" POSTS, USING B OR BETTER SOUTHERN PINE, PRESSURE-PRESERVATIVE TREATED IN ACCORDANCE WITH AWPA C1 AND AWPA C2, WITH ALUMINUM OR GALVANIZED STEEL SCREWS. MOUNTING POSTS SHALL BE BURIED TO A MINIMUM DEPTH OF 3 FEET.
5. COMPUTER-CUT VINYL DECAL BE USED.
6. IF DIRECTED BY OWASA, AN EXTERIOR/OUTDOOR BROCHURE HOLDER SHALL BE MOUNTED ON SIGN OR MOUNTING POST.

MC-16 OWASA PROJECT SIGN DETAIL

N.T.S.

MCKIM&CREED
4300 Edwards Mill Road, Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031
NC License# F-1222
www.mckimcreed.com

WEST ROSEMARY STREET WATER LINE REPLACEMENT

DETAILS

OWASA PROJECT SIGN DETAIL ADDENDUM NO.1

PROJ. START DATE:	2023, AUG.
MCE PROJ. #	01519-0063
DRAWN	CNT
DESIGNED	KAR
CHECKED	BRL
PROJ. MGR.	DLH

ADD#1
DRAWING NUMBER
N/A
REVISION

STATUS:
ADDENDUM #1