



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

July 6, 2023

TKC CCCXV, LLC
4500 Cameron Valley Pkwy, Suite 400
Charlotte, NC 28211

Steve Ward, Director
Harnett Regional Water
PO Box 1119
Lillington NC 27546

SUBJECT: Encroachment Agreement on SR 2288 in Harnett County (E062-043-23-00462).

Dear Sir:

Attached is an approved R/W form 16.6 and plans for the installation of approximately 113 LF of 8" DIP water main crossing Brightwater Drive to serve the proposed CFVH Harnett MOB in Harnett County as shown on the attached plans.

This encroachment is approved subject to the following:

Pre-Construction

Contact Offices & Outside Agency issues/contacts/info

1. Approval may be rescinded upon failure to follow any of the provisions in this permit and may be considered a violation of the encroachment agreement.
2. The Encroaching party or their contractor shall provide the following notices prior to construction activity within the NCDOT Right of Way:
 - a. Three (3) business days advance phone call Mr. Earl Locklear, Assistant District Engineer at telephone (910) 364-0601 or email to elocklear@ncdot.gov to the District Engineer's office.

Failure to provide these notifications prior to beginning construction is subject to the Division Engineer's discretion to cease construction activity for this encroachment. NCDOT reserves the right to cease any construction or maintenance work associated with this installation by the encroaching party until the construction or maintenance meets the satisfaction of the Division Engineer or their representative.

3. Prior to beginning work, it is the requirement of the Encroaching Party to contact the appropriate Utility Companies involved and make arrangements to adjust or relocate any utilities that conflict with the proposed work.
4. It shall be the responsibility of the encroaching party to determine the location of utilities within the encroachment area. NCGS § 87-115 through § 87-130 of the Underground Utility Safety and Damage Prevention Act requires underground utilities to be located by calling 811

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
DIVISION SIX / DISTRICT TWO
POST OFFICE BOX 1150
FAYETTEVILLE, NC 28302

Telephone: (910) 364-0601
Fax: (910) 437-2529
Customer Service: 1-877-368-4968

Location:
600 SOUTHERN AVENUE
FAYETTEVILLE, NC 28306

Website: www.ncdot.gov

prior to construction. The encroaching party shall be responsible for notifying other utility owners and providing protection and safeguards to prevent damage or interruption to existing facilities and maintain access to them.

5. The encroaching party shall notify the appropriate municipal office prior to beginning any work within the municipality's limits of jurisdiction.
6. Excavation within 1000 feet of a signalized intersection will require notification by the encroaching party to the Division Traffic Engineer at telephone number (910) 364-0606 no less than one week prior to beginning work. All traffic signal or detection cables must be located prior to excavation. Cost to replace or repair NCDOT signs, signals, pavement markings or associated equipment and facilities shall be the responsibility of the encroaching party.
7. This agreement does not authorize installations within nor encroachment onto railroad rights of way. Permits for installations within railroad right of way must be obtained from the railroad and are the responsibility of the encroaching party.
8. At the option of the District Engineer, a preconstruction meeting including representatives of NCDOT, the encroaching party, contractors and municipality, if applicable, shall be required. A pre-construction conference held between a municipality (or other facility owner) and a contractor without the presence of NCDOT personnel with subsequent construction commencing may be subject to NCDOT personnel ceasing any work on NCDOT right-of-way related to this encroachment until such meeting is held. Contact the District office to schedule.
9. At the discretion of the District Engineer, a NOTIFICATION FOR UTILITY / NON-UTILITY ENCROACHMENT WITHIN NCDOT R/W form (See corresponding attachment) with the scheduled pre-construction meeting and associated construction schedule details must be completed and submitted to the District Engineer's office a minimum of one week prior to construction.
10. At the discretion of the District Engineer, the encroaching party (not the utility contractor) shall make arrangements to have a qualified inspector, under the supervision of a Professional Engineer registered in North Carolina, on site at all times during construction. The registered Professional Engineer shall be required to submit a signed and PE sealed certification that the utility was installed in accordance with the encroachment agreement.

11. An NCDOT inspector shall be on site during any boring operations beneath all state maintained roadways. Utility installation beneath state maintained roadways performed without the presence of the required NCDOT inspector will be subject to removal and the direction to cease any construction or maintenance work associated with any associated encroachment agreement(s).

Legal & Right-of-Way Issues

12. This approval and associated plans and supporting documents shall not be interpreted to allow any design change or change in the intent of the design by the Owner, Design Engineer, or any of their representatives. Any revisions or changes to these approved plans or intent for construction must be obtained in writing from the Division Engineer's office or their representative prior to construction or during construction, if an issue arises during construction to warrant changes.
13. NCDOT does not guarantee the right of way on this road, nor will it be responsible for any claim for damages brought about by any property owner by reason of this installation. It is the responsibility of the encroaching party to verify the right of way.
14. Encroaching party shall be responsible for obtaining all necessary permanent and/or temporary construction, drainage, utility and/or sight distance easements.

15. All Right of Way and easements necessary for construction and maintenance shall be dedicated to NCDOT with proof of dedication furnished to the District Engineer prior to beginning work.
16. No commercial advertising shall be allowed within NCDOT Right of Way.
17. The encroaching party shall obtain proper approval from all affected pole owners prior to attachment to any pole.
18. The installation within the Control of Access fence shall not adversely affect the design, construction, maintenance, stability, traffic safety or operation of the controlled access highway, and the utility must be serviced without access from the through-traffic roadways or ramps.
19. The release of the bond is subject to a final inspection by NCDOT. Contact the District office to schedule a Final Inspection and to request release of the bond.

Work Zone Traffic

20. Traffic control shall be coordinated with the District Engineer and the Division Traffic Engineer, Mr. Frank West at telephone (910) 364-0606, prior to construction.
21. WORK ZONE TRAFFIC CONTROL QUALIFICATIONS AND TRAINING PROGRAM

All personnel performing any activity inside the highway right of way are required to be familiar with the NCDOT Maintenance / Utility Traffic Control Guidelines (MUTCG). No specific training course or test is required for qualification in the Maintenance /Utility Traffic Control Guidelines (MUTCG).

All flagging, spotting, or operating Automated Flagger Assist Devices (AFAD) inside the highway right of way requires qualified and trained Work Zone Flaggers. Training for this certification is provided by NCDOT approved training resources and by private entities that have been pre-approved to train themselves.

All personnel involved with the installation of Work Zone Traffic Control devices inside the highway right of way are required to be qualified and trained Work Zone Installers. Training for this certification is provided by NCDOT approved training resources and by private entities that have been pre-approved to train themselves.

All personnel in charge of overseeing work zone Temporary Traffic Control operations and installations inside the highway right of way are required to be qualified and trained Work Zone Supervisors. Training for this certification is provided by NCDOT approved training resources and by private entities that have been pre-approved to train themselves.

For questions and/or additional information regarding this training program please refer to <https://connect.ncdot.gov/projects/WZTC/Pages/Training.aspx> or call the NCDOT Work Zone Traffic Control Section (919) 814-5000.
22. The party of the second part shall employ traffic control measures that are in accordance with the prevailing federal, state, local, and NCDOT policies, standards, and procedures. These policies, standards, and procedures include, but are not limited to the following:
 - a. Manual on Uniform Traffic Control Devices (MUTCD) – North Carolina has adopted the MUTCD to provide basic principles and guidelines for traffic control device design, application, installation, and maintenance. North Carolina uses the MUTCD as a minimum requirement where higher supplemental standards specific to North Carolina are not established. Use fundamental principles and best practices of MUTCD (Part 6, Temporary Traffic Control).
 - b. NCDOT Maintenance / Utility Traffic Control Guidelines – This document enhances the fundamental principles and best practices established in MUTCD Part 6, Temporary

- Traffic Control, incorporating NCDOT-specific standards and details. It also covers important safety knowledge for a wide range of work zone job responsibilities.
23. If the Traffic Control Supervisor determines that portable concrete barrier (PCB) is required to shield a hazard within the clear zone, then PCB shall be designed and sealed by a licensed North Carolina Professional Engineer. PCB plans and design calculations shall be submitted to the District Engineer for review and approval prior to installation.
 24. Ingress and egress shall be maintained to all businesses and dwellings affected by the project. Special attention shall be paid to police, EMS and fire stations, fire hydrants, secondary schools, and hospitals.
 25. Traffic shall be maintained at all times. All lanes of traffic are to be open during the hours of 7:00 A.M. to 9:00 A.M. and from 4:00 P.M. to 6:00 P.M. Monday through Friday, during any time of inclement weather, **or as directed by the District Engineer**. No lane of traffic shall be closed on holidays, special events, or as directed by the engineer. Any violation of these hours will result in ceasing any further construction by the Encroaching Party or their contractor.
 26. Nighttime and weekend operations will NOT be allowed unless written approval is received from the District Engineer. If nighttime or weekend work is allowed or required, all signs must be retro-reflective, and a work zone lighting plan must be submitted for approval prior to construction.
 27. Two-way traffic shall be maintained at all times unless designated by the District Engineer. Traffic shall not be rerouted or detoured without the prior written approval from the District Engineer. No utility work will be allowed on state holidays from 7:00 PM the night before through 9:00 AM the day prior to, following or during local events without prior approval from the District Engineer. If the construction is within 1000 feet of a school location or on a designated bus route, the construction shall be coordinated with the school start and end times to avoid traffic delays.
 28. Work requiring lane or shoulder closures shall not be performed on both sides of the road simultaneously within the same area.
 29. Any work requiring equipment or personnel within 5 feet of the edge of any travel lane of an undivided facility and within 10 feet of the edge of any travel lane of a divided facility shall require a lane closure with appropriate tapers per current *NCDOT Roadway Standard Drawings* or *MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES*.
 30. At the discretion of the District Engineer, a traffic control plan shall be developed and submitted under the seal and signature of a Licensed North Carolina Professional Engineer prior to construction. The plan shall be specific to the site and adequately detailed. Issues such as the close proximity to intersections shall be addressed.
 31. Temporary and final pavement markings are the responsibility of the encroaching party. Final pavement markings and sign plans shall be submitted with the encroachment request to the Division Traffic Engineer prior to construction. Final pavement markings shall be thermoplastic unless otherwise directed by the Division Traffic Engineer or District Engineer.
 32. Any pavement markings that are damaged or obliterated shall be restored by the encroaching party at no expense to NCDOT.
 33. Sidewalk closures shall be installed as necessary. Pedestrian traffic shall be detoured around these closures and shall be signed appropriately and in accordance with The American with Disabilities Act Accessibility Guidelines. The encroaching party must adhere to the guidelines for accommodating pedestrians in encroachment work zones as described in the NCDOT Pedestrian Work Zone Accommodations Training found at <https://www.youtube.com/watch?v=A0uYa5IW3dg&feature=youtu.be>

Roadside Environmental

34. 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, stormwater, wetland, streams, endangered species and historical sites. Additional information can be obtained by contacting the NCDOT Roadside Environmental Engineer regarding the North Carolina Natural Heritage Program or the United States Fish and Wildlife Services. Contact the Division Roadside Environmental Engineer's Office at (910) 364-0603.
35. When surface area in excess of one acre will be disturbed, the Encroacher shall submit a Sediment and Erosion Control Plan which has been approved by the appropriate regulatory agency or authority prior to beginning any work on the Right of Way. Failure to provide this information shall be grounds for suspension of operations. Proper temporary and permanent measures shall be used to control erosion and sedimentation in accordance with the approved sediment and erosion control plan.
36. The Verification of Compliance with Environmental Regulations (VCER-1) form is required for all non-utility encroachment agreements or any utility encroachments when land disturbance within NCDOT right of way exceeds 1 acre. The VCER-1 form must be PE sealed by a NC registered professional engineer who has verified that all appropriate environmental permits (if applicable) have been obtained and all applicable environmental regulations have been followed.
37. All erosion control devices and measures shall be constructed, installed, maintained, and removed by the Encroacher in accordance with all applicable Federal, State, and Local laws, regulations, ordinances, and policies. Permanent vegetation shall be established on all disturbed areas in accordance with the recommendations of the Division Roadside Environmental Engineer. All areas disturbed (shoulders, ditches, removed accesses, etc.) shall be graded and seeded in accordance with the latest *NCDOT Standards Specifications for Roads and Structures* and within 15 calendar days with an approved NCDOT seed mixture (all lawn type areas shall be maintained and reseeded as such). Seeding rates per acre shall be applied according to the Division Roadside Environmental Engineer. Any plant or vegetation in the NCDOT planted sites that is destroyed or damaged as a result of this encroachment shall be replaced with plants of like kind or similar shape.
38. No trees within NCDOT shall be cut without authorization from the Division Roadside Environmental Engineer. An inventory of trees measuring greater than 4 caliper inches (measured 6" above the ground) is required when trees within C/A right of way will be impacted by the encroachment installation. Mitigation is required and will be determined by the Division Roadside Environmental Engineer's Office.
39. Prior to installation, the Encroaching Party shall contact the District Engineer to discuss any environmental issues associated with the installation to address concerns related to the root system of trees impacted by boring or non-utility construction of sidewalk, roadway widening, etc.
40. The applicant is responsible for identifying project impacts to waters of the United States (wetlands, intermittent streams, perennial streams and ponds) located within the NCDOT right-of-way. The discharge of dredged or fill material into waters of the United States requires authorization from the United States Army Corps of Engineers (USACE) and certification from the North Carolina Division of Water Quality (NCDWQ). The applicant is required to obtain pertinent permits or certification from these regulatory agencies if construction of the project impacts waters of the United States within the NCDOT right-of-way. The applicant is responsible for complying with any river or stream Riparian Buffer Rule as regulated by the NCDWQ. The Rule regulates activity within a 50-foot buffer along perennial streams, intermittent streams and ponds. Additional information can be obtained by contacting the NCDWQ or the USACE.

41. The contractor shall not begin the construction until after the traffic control and erosion control devices have been installed to the satisfaction of the Division Engineer or their agent.
42. The contractor shall perform all monitoring and record keeping and any required maintenance of erosion and sediment control measures to maintain compliance with stormwater regulations.

STIP (or Division Managed) Projects

43. Any encroachment determined to be in conflict with the construction of any State Transportation Improvement Project (STIP) shall be removed and/or relocated at the encroaching party's expense.

Construction

General

44. An executed copy of the encroachment agreement, provisions and approved plans shall be present at the construction site at all times. If safety or traffic conditions warrant such an action, NCDOT reserves the right to further limit, restrict or suspend operations within the right of way.
45. The Encroaching Party and/or their Contractor shall comply with all OSHA requirements. If OSHA visits the work area associated with this encroachment, the District Office shall be notified by the encroaching party immediately if any violations are cited.
46. Any REVISIONS marked in RED on the attached non-PE sealed plans shall be incorporated into and made part of the approved encroachment agreement.
47. All disturbed areas are to be fully restored to current NCDOT minimum roadway standards or as directed by the Division Engineer or their representative. Disturbed areas within NCDOT Right-of-Way include, but not limited to, any excavation areas, pavement removal, drainage or other features.
48. The encroaching party shall notify the Division Engineer or their representative immediately in the event any drainage structure is blocked, disturbed or damaged. All drainage structures disturbed, damaged or blocked shall be restored to its original condition as directed by the Division Engineer or their representative.
49. A minimum of 5 feet clearance is required for utility installations beneath or near drainage pipes, headwalls, and a minimum of two-foot clearance below the flowline of streams. If directional drilling, a minimum ten-foot clearance distance is required from drainage structures and a minimum of 5 feet below flowline of streams.
50. At points where the utility is placed under existing storm drainage, the trench will be backfilled with excavatable flowable fill up to the outside diameter of the existing pipe.
51. Unless specified otherwise, during non-working hours, equipment shall be located away from the job site or parked as close to the right of way line as possible and be properly barricaded in order not to have any equipment obstruction within the Clear Recovery Area. Also, during non-working hours, no parking or material storage shall be allowed along the shoulders of any state-maintained roadway.
52. No access to the job site, parking or material storage shall be allowed along or from the **Control of Access Roadway**.
53. Guardrail removed or damaged during construction shall be replaced or repaired to its original condition, meeting current NCDOT standards or as directed by the Division Engineer or their representative.
54. The resetting of the Control of Access fence shall be in accordance with the applicable NCDOT standard and as directed by the Division Engineer or their representative.

55. Right of Way monuments disturbed during construction shall be referenced by a registered Land Surveyor and reset after construction.
56. All traffic signs moved during construction shall be reinstalled as soon as possible to the satisfaction of the Division Engineer or their representative.
57. Any utility markers, cabinets, pedestals, meter bases and services for meter reading required shall be as close to the Right of Way line as possible. If it is not feasible to install at or near Right of Way line, then written approval shall be obtained from NCDOT prior to installation.
58. Detection tape, where required by NCGS § 87-115 through § 87-130 of the Underground Utility Safety and Damage Prevention Act, shall be buried in the trench approximately 1 foot above the installed facility. Where conduit is installed in the right of way and is not of ferrous material, locating tape or detection wire shall be installed with the conduit.
59. All driveways disturbed during construction shall be returned to a state comparable with the condition of the driveways prior to construction.
60. Any proposed driveway connections onto NCDOT roadways will require an approved driveway permit. The approval of this encroachment agreement does not constitute approval of any proposed driveway connections. For further information, contact Mr. Troy L. Baker, Senior Assistant District Engineer at (910) 364-0601.
61. Conformance with driveway permit review should be required in conjunction with this encroachment agreement. In the event there is a conflict between the driveway permit and the encroachment agreement, the District Engineer should resolve the conflict and notify the parties involved.
62. If the approved method of construction is unsuccessful and other means are required, prior approval must be obtained through the District Engineer before construction may continue.

Engineering

63. All traffic control, asphalt mixes, structures, construction, workmanship and construction methods, and materials shall be in compliance with the most-recent versions of the following resources: *ASTM Standards, Manual on Uniform Traffic Control Devices, NCDOT Utilities Accommodations Manual, NCDOT Standard Specifications for Roads and Structures, NCDOT Roadway Standard Drawings, NCDOT Asphalt Quality Management System manual, and the approved plans.*
64. Prior approval for any blasting must be obtained from the Division Engineer or their representative.
65. Regulator stations, metering stations, cathodic test stations, and anode beds are not permitted within NCDOT right of way. Header wires are permitted.
66. Non-Utility Communication and Data Transmission installations (ground mounted type or Small Cell pole-mounted type) must adhere to guidelines in the Utilities Accommodations Manual and, when located within municipal jurisdictions, are subject to review and approval by municipal ordinances and any additional municipal approval for proximity to historic districts and landmarks. All wiring and related telecommunications work shall conform to the latest regulations by the Federal Communications Commission.
67. All wiring and related electrical work shall conform to the latest edition of the National Electrical Safety Code.

Location within R/W

- 68. The utility shall be installed within five (5) feet or closer to the right of way line.**
69. All utility access points, such as manholes, vaults, handholes, splice boxes and junction boxes shall be located as close to the right of way line as possible and shall not be placed in the

ditch line, side slopes of the ditches or in the pavement. All manholes, handholes, splice boxes, junction boxes and vaults and covers shall be flush with the ground when located within the vehicle clear zone. Slack loops for telecommunications in industry standard housing units shall be buried a minimum of 18 inches when buried or meet minimum NCDOT vertical and horizontal clearances when installed aurally.

70. Fire Hydrants shall be of the breakaway type. Hydrants shall be placed near the right of way line. In curb and gutter sections with written approval from the District, the hydrants may be placed at 6' behind the back of the curb or minimum 2' back of sidewalk.
71. Luminaire and/or utility poles and guy wires shall be set as close to the Right of Way line as practical and outside the Clear Zone in accordance with the latest version of the AASHTO Roadside Design Guide (See corresponding attachment) or made breakaway in accordance with the requirements of NCHRP Report 350. Any relocation of the utility poles from the original design due to Clear Zone requirements shall require a re-submittal for the utility design.
72. Luminaire and/or utility poles shall be set a minimum of 5'-6" behind face of any guardrail or otherwise sufficiently protected. However, standard placement may be reduced to 3'-6" behind face of guardrail when posts are spaced 3'-1 1/2", or where speed limit is less than 55 MPH.
73. Any cabinets, pedestals, vents or any other aboveground utility appurtenances installed as part of the underground system extending more than four (4) inches above the ground shall be of breakaway type, located at or near the right of way line, outside the clear zone, outside sight distance triangles and shall not interfere with ADA requirements.
74. Hot box (aka ASSE 1060) or Safe-T-Cover type enclosures covering utility main pipe joints, backflow preventers, valves, vent pipes, cross connections, pumps, grinders, irrigation assemblies, transformers, generators, and other similar large appurtenances shall be located outside sight distance triangles and off of the NCDOT Right-of-Way.
75. Sprinkler heads shall be located a minimum of 10 feet from the edge of pavement, edge of shoulder, or back of curb whichever is greater and shall be directed so that water does not spray or drain on the roadway surface, sidewalk, or passing vehicles at any time. Upon completion of the installation and prior to activation of the system, the Encroacher shall contact the District Engineer to schedule a test of the system to verify the spray pattern. Sprinkler systems shall not be operated during periods of high wind or freezing weather, or to the extent that the subgrade adjacent to the pavement structure becomes saturated. NCDOT reserves the right to require immediate termination and removal of any sprinkler system which in its judgement and opinion adversely affects safety, maintenance, or operation of the roadway.

Excavation

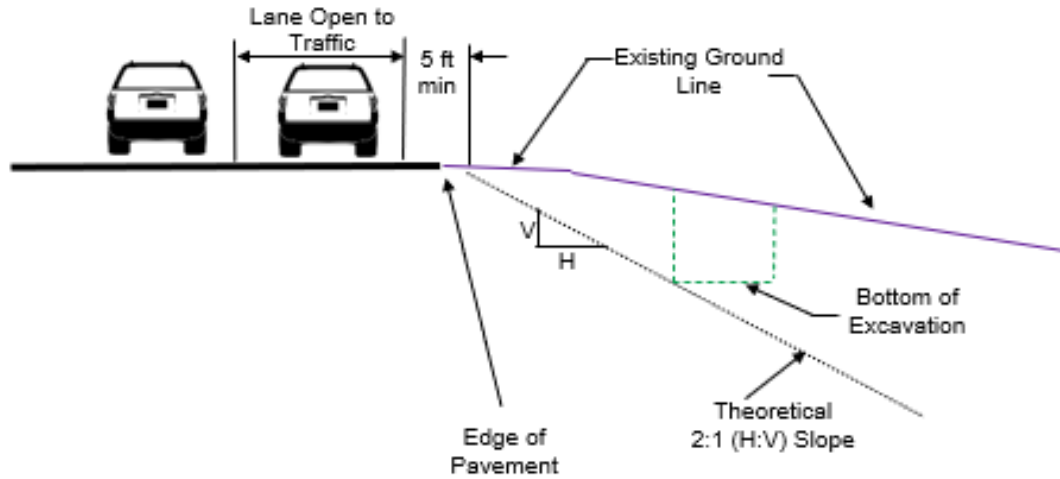
76. Excavation material shall not be placed on pavement.
77. It is the responsibility of the encroaching party or their contractor to prevent any mud/dirt from tracking onto the roadway. Any dirt which may collect on the roadway pavement from equipment and/or truck traffic on site shall be immediately removed to avoid any unsafe traffic conditions.
78. The utility shall be installed within 5 feet of the right of way line and outside the 5-foot minimum from travel lane plus theoretical 2:1 slope from the edge of pavement to the bottom of the nearest excavation wall for temporary shoring. Temporary shoring is required when a theoretical 2:1 slope from the bottom of excavation will intersect the existing ground line less than 5 feet from the outside edge of an open travel lane as shown in the figure below or when a theoretical 2:1 slope from the bottom of excavation will intersect any existing structure, support, utility, property, etc. to be protected.

Encroachment Agreement (E062-043-23-00462)

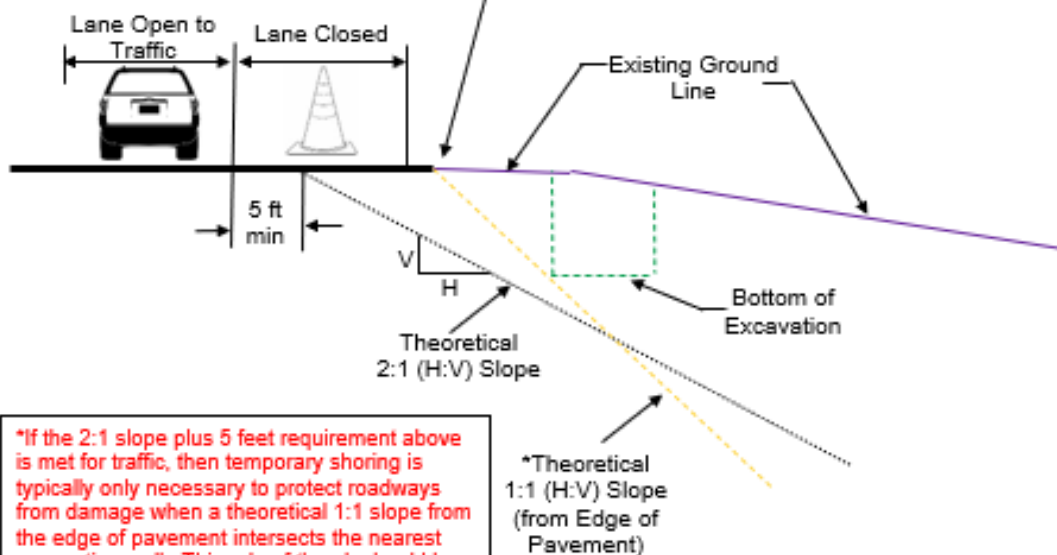
Harnett County

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Traffic in Outside Lane



Traffic Shifted (Outside Lane Closure)



***If the 2:1 slope plus 5 feet requirement above is met for traffic, then temporary shoring is typically only necessary to protect roadways from damage when a theoretical 1:1 slope from the edge of pavement intersects the nearest excavation wall. This rule of thumb should be used with caution and does not apply to all subsurface conditions, surcharge loadings and excavation geometries. Additional guidance provided below.**

***Theoretical 1:1 (H:V) Slope (from Edge of Pavement)**

If the 2:1 slope plus 5 feet requirement above is met for traffic, then temporary shoring is typically only necessary to protect roadways from damage when a theoretical 1:1 slope from the edge of pavement intersects the nearest excavation wall. This rule of thumb should be used with caution and does not apply to all subsurface conditions, surcharge loadings and excavation geometries. Situations where this 1:1 slope is not recommended include groundwater depth is above bottom of excavation or excavation is deeper than 10 feet or in [Type B or C soils as defined by OSHA Technical Manual](#). Temporary shoring may be avoided by locating trenches, bore pits, and other excavations far enough away from the open travel lane, edge of pavement and any existing structure, support, utility, property, etc. to be protected.

Temporary shoring shall be designed and constructed in accordance with current NCDOT Standard Temporary Shoring provisions (refer to

<https://connect.ncdot.gov/resources/Specifications/Pages/2018-Specifications-and-Special-Provisions.aspx> and see SP11 R002

- a. Temporary excavation shoring, such as sheet piling, shall be installed. The design of the shoring shall include the effects of traffic loads. The shoring system shall be designed and sealed by a licensed North Carolina Professional Engineer. Shoring plans and design calculations shall be submitted to the Division Engineer for review and approval prior to construction. (See NCDOT *Utilities Accommodations Manual* for more information on requirements for shoring plans, design calculations, and subsurface investigation report.) **Trench boxes shall not be accepted as temporary shoring and will not be approved for use in instances where shoring is required to protect the highway, drainage structure, and/or supporting pavement or structure foundation.**
 - b. All trench excavation inside the limits of the theoretical two-to-one slope plus 5 feet requirement, as defined by the policy, shall be completely backfilled and compacted at the end of each construction day. No portion of the trench shall be left open overnight. Any excavation that is not backfilled by the end of the workday must address any safety and traveling public concerns including accommodations for bicycles, pedestrians and persons with disabilities.
 - c. The trench backfill material shall meet the Statewide Borrow Criteria. The trench shall be backfilled in accordance with Section 300-7 of the latest *NCDOT Standard Specifications for Roads and Structures*, which basically requires the backfill material to be placed in layers not to exceed 6 inches loose and compacted to at least 95% of the density obtained by compacting a sample in accordance with AASHTO T99 as modified by DOT.
 - d. At the discretion of the Division Engineer, a qualified NCDOT inspector shall be on the site at all times during construction. The encroaching party shall reimburse NCDOT for the cost of providing the inspector. If NCDOT cannot supply an inspector, the encroaching party (not the utility contractor) should make arrangements to have a qualified inspector, under the supervision of a licensed North Carolina Professional Engineer, on the site at all times. The Professional Registered Engineer shall certify that the utility was installed in accordance with the encroachment agreement and that the backfill material meets the Statewide Borrow Criteria.
 - e. The length of parallel excavation shall be limited to the length necessary to install and backfill one joint of pipe at a time, not to exceed twenty-five (25) feet.
79. All material to a depth of 8 inches below the finished surface of the subgrade shall be compacted to a density equal to at least 100% of that obtained by compacting a sample of the material in accordance with AASHTO T99 as modified by the Department. The subgrade shall be compacted at a moisture content which is approximately that required to produce the maximum density indicated by the above test method. The contractor shall dry or add moisture to the subgrade when required to provide a uniformly compacted and acceptable subgrade. The option to backfill any trenches with dirt or either #57 stone or #78 stone with consolidation with a plate tamp and without a conventional density test may be pursued with the written consent of the District Engineer. If this option is exercised, then roadway ABC stone and asphalt repair as required will also be specified by the District Engineer.

Directional bore

80. Boring equipment will be provided of a type and size to facilitate boring in the local geologic conditions and shall be able to facilitate the encroachment work.
81. When Horizontal Directional Drilling (HDD) is used, the following stipulations apply:
 - a. Use drilling fluids as appropriate for the type soils but use of water alone is prohibited. Pump drilling fluids only while drilling or reaming. Directional boring

using jetting with a Bentonite (or equivalent material) slurry is recommended. Monitor flow rates to match the amount leaving the bore hole and do not increase pressure or flow to free stuck drill heads, reamers or piping. Open cutting to retrieve stuck drill heads is not allowed without prior permission from the District Engineer.

- b. The minimum depth shall adhere to the table below for transverse (under non-controlled access, partial controlled access, or limited controlled access roadway) installations and refers to maximum diameter of hole drilled and not the dimension of the carrier or encasement pipe.

<u>Diameter of Drilled Hole</u> <u>(Backream)</u>	<u>Minimum Depth of Cover</u>
2" to 6"	5 feet
>6" to 15"	12 times hole diameter (e.g. 6-inch hole means 6 feet minimum depth)
>15" to 36"	15 feet or greater

- c. Under fully controlled access roadway installations, the minimum depth for transverse crossings shall be 15 feet under any pavement (ramps or thru lanes)
- d. An overbore (backream diameter) shall not be more than 1.5 times the outside diameter of the pipe or encasement under any highway for pipes 12 inches in diameter or less. For pipes with outer diameter larger than 12 inches, the overbore may be no larger than outer diameter of pipe plus 6 inches. An overbore exceeding 1.5 times greater than the outside diameter of the pipe or encasement may be considered if the encroachment agreement includes a statement signed and sealed by a licensed North Carolina Professional Engineer indicating that an overbore in excess of 1.5 times the outside diameter of the pipe or encasement will appropriately arch and no damage will be done to the pavement or sub-grade.
- e. Directional boring is allowed beneath embankment material in naturally occurring soil.
- f. Any parallel installation utilizing the directional boring method shall be made at a minimum depth of three (3') feet (cover) below the ground surface and outside the theoretical 1:1 slope from the existing edge of pavement except where the parallel installation crosses a paved roadway.
- g. All directional bores shall maintain ten (10) feet minimum (clear) distance from the nearest part of any structure, including but not limited to bridges, footings, pipe culverts or box culverts. Directional bores are not allowed beneath bridge footings, culvert wingwall footings, slope protection or retaining walls.
- h. The tip of the drill string shall have a cutter head.
- i. Detection wire shall be installed with non-ferrous material.
- j. HDPE pipe installed by directional boring shall not be connected to existing pipe or fittings for one (1) week from the time of installation to allow tensional stresses to relax.

Aerial clearances

- 82. Vertical clearance of overhead power and communication lines shall meet the National Electrical Safety Code requirements except the minimum vertical clearance shall be 18' for crossings over NCDOT roadways (24' over Fully Controlled Access roadways) and 16' for parallel installations.
- 83. In relation to the bridge, the utility line shall be located with minimum clearances as indicated on the attachment for NCDOT **Required Clearances for Aerial Installations by Encroachment Near Bridge Structures.**

Pavement Detail and Repair

84. The paving of this roadway shall be in accordance with the latest version of the NCDOT Standard Specifications, Sections 610, 1012 and 1020. The Contractor shall follow all procedures of the Quality Management System (QMS) for asphalt pavement - Maintenance Version (see <https://connect.ncdot.gov/resources/Materials/MaterialsResources/2018%20QMS%20Asphalt%20Manual.pdf>). The Contractor must adhere to all testing requirements and quality control requirements specified. The Contractor shall contact the NCDOT Division QA Supervisor prior to producing plant mix and make the Supervisor aware that the mix is being produced for a future NCDOT road. Contact the District Engineer to determine the NCDOT Division QA Supervisor. Only NCDOT approved mix designs will be acceptable. A Quality Control Plan shall be submitted (as Directed by the District Engineer) to the District Engineer's Office prior to asphalt production utilizing form QMS-MV1. Failing mixes and/or densities are subject to penalties including monetary payments or removal and replacement. To minimize traffic queuing in construction areas, the possibility of traffic detours may be considered when working on high traffic routes even if traffic control is used. The District Engineer may require traffic detours.

85. When paving beyond utility installation is involved or as directed by the Engineer, a Roadway certification report sealed by a Professional Engineer shall be submitted to the District Engineer's office indicating the following:

- Pavement thickness by type
- Pavement density, core and/or test locations
- Base thickness
- Base density
- Subgrade density

Test frequency and method shall be in conformance with the NCDOT *Materials and Tests Manual*. Test must be performed by a Certified Technician including name and Certification number on report.

86. "Potholing" pavement cores to expose existing utilities shall be made with an 18" diameter keyhole pavement core. Pavement core locations shall not be placed in the wheel path whenever possible. Vacuum excavation shall be utilized to expose underground utilities. Pavement cores shall be repaired within the same working day. The pavement core shall be retained and reused to fill the core hole.

The excavation shall be backfilled and compacted with select material to the bottom of the existing pavement structure or as indicated by the District Engineer. The retained core shall be placed in the hole and secured with a waterproof, mechanical joint. If the pavement core is damaged and cannot be re-used, the core may be replaced with the surface mix, S9.5B. The asphalt patch shall match the thickness of the existing asphalt or four inches, whichever is greater. All materials must be listed on the NCDOT Approved Products List (APL) found at: <https://apps.ncdot.gov/vendor/approvedproducts/>.

87. All open cuts (if permitted) on primary routes will require full depth patching with 5.0" of B 25.0 B (ACBC) Asphalt Concrete Base Course, 3.0" of I 19.0 B (ACIC) Asphalt Concrete Intermediate Course and 2.0" of S 9.5 B (ACSC) Asphalt Concrete Surface Course the same day as cut is made. It will also be required to mill the existing pavement surface at a depth of 2.0" and a width of 1.0' on each side of the cut to key in the patch with the existing pavement surface in accordance with the attached detail.

88. All open cuts (if permitted) on secondary routes will require full depth patching with 4.0" of B 25.0 C (ACBC) Asphalt Concrete Base Course and 3.0" of S 9.5 C (ACSC) Asphalt Concrete Surface Course the same day as cut is made. It will also be required to mill the existing pavement surface at a depth of 1.5" and a width of 1.0' on each side of the cut to key in the patch with the existing pavement surface in accordance with the attached detail.

89. Eight inches of ABC will be used as the base. Compaction test shall be performed at the location of every open cut that crosses NCDOT roadways. The owner will be required to have an approved laboratory furnish the District Office a copy of the test results.
90. Pavement cuts shall be repaired the same day the cuts are made unless an asphalt patch cannot be accomplished the same day due to material availability or time restrictions. When the asphalt patch is not feasible, the following apply:
- a. The pavement cut shall be filled to the surface with ABC stone or Flowable Fill per NCDOT's Standards and Specifications.
 - b. Once the cut is filled, a minimum ¾-inch steel plate shall be placed and pinned to prevent moving. Plates shall be designed large enough to span a minimum of 1-foot on all sides on the pavement cut.
 - c. When flowable fill is used, it shall cure for 24 hours prior to any asphalt material placement. Flowable fill bleed water shall not be present during paving operations. Paving shall not cause damage (shoving, distortion, pumping, etc.) to the flowable fill.
 - d. Install and leave "BUMP" signs according to MUTCD until the steel plate has been removed. Once the flowable fill has cured, remove the steel plate, and mill/fill according to the directions of the District Engineer.
 - e. All pavement cuts must be sealed with NCDOT approved sealant to prevent future pavement separation or cracking.
91. Any pavement damaged because of settlement of the pavement or damaged by equipment used to perform encroachment work, shall be re-surfaced to the satisfaction of the District Engineer. This may include the removal of pavement and a 50' mechanical overlay. All pavement work and pavement markings (temporary and final) are the responsibility of the Encroaching Party.
92. All concrete installed within NCDOT rights of way shall be constructed in accordance with the latest NCDOT **Standard Specifications for Roads and Structures** and **Roadway Standard Drawings** and Amendments or Supplementals thereto. All concrete shall be an approved NCDOT Class B mix. All materials testing results shall be provided to the District Engineer upon completion of the project.
93. All concrete sidewalk installed within NCDOT rights of way shall be constructed in accordance with the latest NCDOT **Standard Specifications for Roads and Structures** and **Roadway Standard Drawings** (Std. Dwg. No. 846.01 and 848.01) and Amendments or Supplementals thereto. All concrete shall be an approved NCDOT Class B mix. All materials testing results shall be provided to the District Engineer upon completion of the project.
94. All ADA compliant curb ramps shall be constructed in accordance with the latest NCDOT **Standard Specifications for Roads and Structures** and **Roadway Standard Drawings** (Std. Dwg. No. 848.06) and Amendments or Supplementals thereto including but not limited to the Alternate Curb Ramp Designs (Curb Ramp Details - Parallel Ramps). All concrete shall be an approved NCDOT Class B mix. All materials testing results shall be provided to the District Engineer upon completion of the project.
95. All 30" curb and gutter within NCDOT rights of way shall be constructed with Class B concrete in accordance with Section 846 of the latest NCDOT **Standard Specifications for Roads and Structures** and **Roadway Standard Drawings** (Std. Dwg. No. 846.01) and Amendment or Supplemental thereto or as directed by the engineer. All concrete testing results shall be provided to the District Engineer's office at time of project completion.

Post Construction

Close out/ Inspection

96. The Encroaching party shall notify the District Engineer's office within 2 business days after construction is complete. The District Engineer may perform a construction inspection. Any deficiencies may be noted and reported to the encroaching party to make immediate repairs or resolve any issues to restore the right-of-way to a similar condition prior to construction, including pavement, signage, traffic signals, pavement markings, drainage, structures/pipes, or other highway design features.
97. At the discretion of the District Engineer, a final inspection report may be provided to the encroaching party upon satisfactory completion of the work.
98. A written acknowledgement of the completed work by the District Engineer's office begins the one-year warranty period associated with the performance bond.
- 99. A copy of the "as-built" plan shall be submitted to the District Engineer's office in a PDF format and in a current ESRI GIS format within 4 weeks of construction along with an executed Certification Memo shall be submitted to the District Office (online encroachment database). The As-Built drawing(s) shall depict the horizontal and vertical locations of all utilities and associated appurtenances.**
100. A copy (in PDF format) of the completed ground water analysis shall be given to the District Engineer, including detailed drawings of the "as-built" wells showing location, depth and water level in well.

If further information or assistance is needed in reference to this project, please feel free to call Mr. Lee R. Hines, Jr. (Richie), PE, District Engineer at (910) 364-0601.

Sincerely,

H. L. "Drew" Cox, PE

H.L. "Drew" Cox, PE
Division Engineer

CLP

HLC:ecl

cc: <https://connect.ncdot.gov/site/Permits/Pages/All-Submissions.aspx>

DEPARTMENT OF TRANSPORTATION

THREE PARTY RIGHT OF WAY
ENCROACHMENT AGREEMENT ON
PRIMARY AND SECONDARY SYSTEM

-AND-

TKC CCCXV, LLC
4500 Cameron Valley Pkwy, Suite 400. Charlotte, NC 28211

-AND-

Harnett Regional Water
700 McKinney Parkway. Lillington, NC 27546

THIS AGREEMENT, made and entered into this the 7th day of July, 20 23, by and between the Department of Transportation, party of the first part; and TKC CCCXV, LLC party of the second part; and Harnett Regional Water party of the third part,

WITNESSETH

THAT WHEREAS, the party of the second part desires to encroach on the right of way of the public road designated as Route(s) S.R. 2288 (Brightwater Dr.), located +/- 1,230 ft NE from the intersection of Brightwater Dr. (SR 2288) & W. Cornelius Harnett Blvd. (US 401)

with the construction and/or erection of: +/- 113 LF of 8" D.I.P. water main crossing Brightwater Dr.

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 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.

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.

That when title to the subject that constitutes the aforesaid encroachment passes from the party of the second part and vests in the party of the third part, the party of the third part agrees to assume all responsibilities and rights and to perform all obligations as agreed to herein by the party of the second part.

R/W (166) : Party of the Second Part certifies that this agreement is true and accurate copy of the form R/W (166) 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: H. L. "Drew" Cox, PE
DIVISION ENGINEER CLP

WITNESS:

JDB

Jay Banks

E-L
TKC CCCXV, LLC

Eric Larson - Manager

Second Party

WITNESS:

Margaret Appas
clerk to the Board

Steve Ward

Third Party





1927 S. Tryon St., Suite 106
Charlotte, North Carolina 28203
M 704.905.0530 | D 704.780.4972
jbanks@civilbanks.com | www.civilbanks.com

NCDOT WATER MAIN ENCROACHMENT REQUEST

May 31, 2023

RE: **CFVH Harnett MOB** – Water main encroachment in Brightwater Dr. S.R. 2288

Please find enclosed plans and encroachment application for proposed work within Brightwater Dr. (S.R. 2288) Right-of-Way located in **Harnett County**. The purpose of this encroachment is for installation of an 8" DIP water main that will become part of the Harnett Regional Water public infrastructure.

Anticipated project start is +/- 1 week after receipt of NCDOT encroachment approval or June 30th - whichever is later. Approval of all other site related permits is expected mid-June. Contact information is below and NCDEQ Erosion Control Plan approval letter attached.

Please do not hesitate to call and/or email if any information is missing or needs clarification.

Regards,

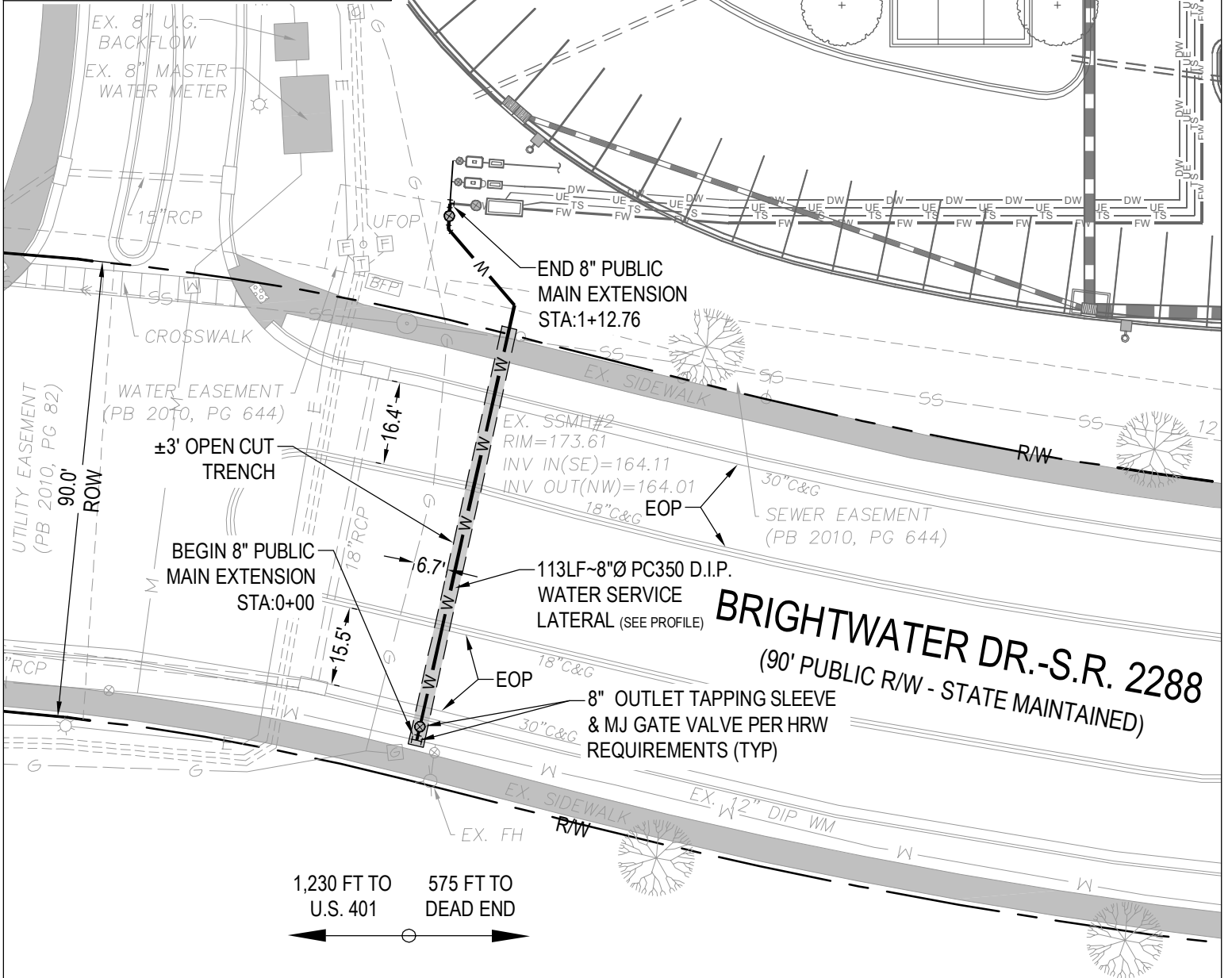
Jay D. Banks, PE

Banks Engineering c/o Jay Banks
1927 S. Tryon St. Suite 106
Charlotte, NC 28203
M: 704.905.0530
jbanks@civilbanks.com

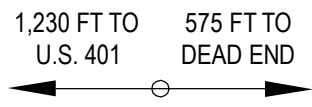


VICINITY MAP

UTILITY LEGEND		
FH	G.V.	B.V.
W	W	STUB
PROPOSED PUBLIC WATER		



BRIGHTWATER DR.-S.R. 2288
(90' PUBLIC R/W - STATE MAINTAINED)



NOTES:

- CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH NCDOT, HARNETT REGIONAL WATER (HRW) & NCDEQ STANDARDS & SPECIFICATIONS.
- BOUNDARY SURVEY INFORMATION PREPARED BY CHANDLER SURVEYING DATED 11.29.21
- ALL UTILITY LOCATIONS ARE APPROXIMATE AND THE CONTRACTOR IS FULLY RESPONSIBLE FOR ACQUIRING BOTH HORIZONTAL & VERTICAL LOCATIONS OF EXISTING UTILITIES FROM THE APPROPRIATE PARTIES PRIOR TO CONSTRUCTION.
- TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH NCDOT GUIDELINES PER THE MUTCD.
- ALL SHORING SHALL BE IN ACCORDANCE WITH OSHA TRENCHING STANDARDS PART 1926, SUBPART P, AS AMENDED TO DATE.
- RIGHT-OF-WAY WIDTH IS 90' FOR BRIGHTWATER DR.
- ALL BACKFILL SHALL BE STRUCTURAL BACKFILL AND SHALL BE INSTALLED PER THE TESTING REQUIREMENTS OUTLINED IN THE 2018 NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- INSTALLATION & BACKFILL OF STRUCTURAL FILL SHALL BE UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL GEOTECHNICAL ENGINEER.
- TESTING REPORTS SHALL BE SIGNED/SEALED BY A NC REGISTERED PROFESSIONAL GEOTECHNICAL ENGINEER AND FURNISHED TO NCDOT.
- WHEN CURB / GUTTER AND/OR SIDEWALK REMOVAL IS REQUIRED TO FACILITATE INSTALLATION, C&G / SIDEWALK WILL BE REPLACED TO NEXT JOINT ON EITHER SIDE OF REMOVAL AREA.
- CONTRACTOR SHALL COMPLY WITH SPECIAL PROVISIONS REQUIRED BY NCDOT.
- CONTRACTOR SHALL COORDINATE WITH NCDOT INSPECTOR 48 HOURS PRIOR TO UTILITY INSTALLATION.
- NO EXCAVATION WITHIN THE CLEAR RECOVERY ZONE SHALL BE LEFT OPEN OVERNIGHT.
- PROJECT SITE IS LOCATED IN HARNETT COUNTY, NC.

ENGINEERING
BANKS

1927 S. TRYON ST.
SUITE 106
CHARLOTTE, NC 28203
T: 704.780.4972
NC License #P-1370
© 2023



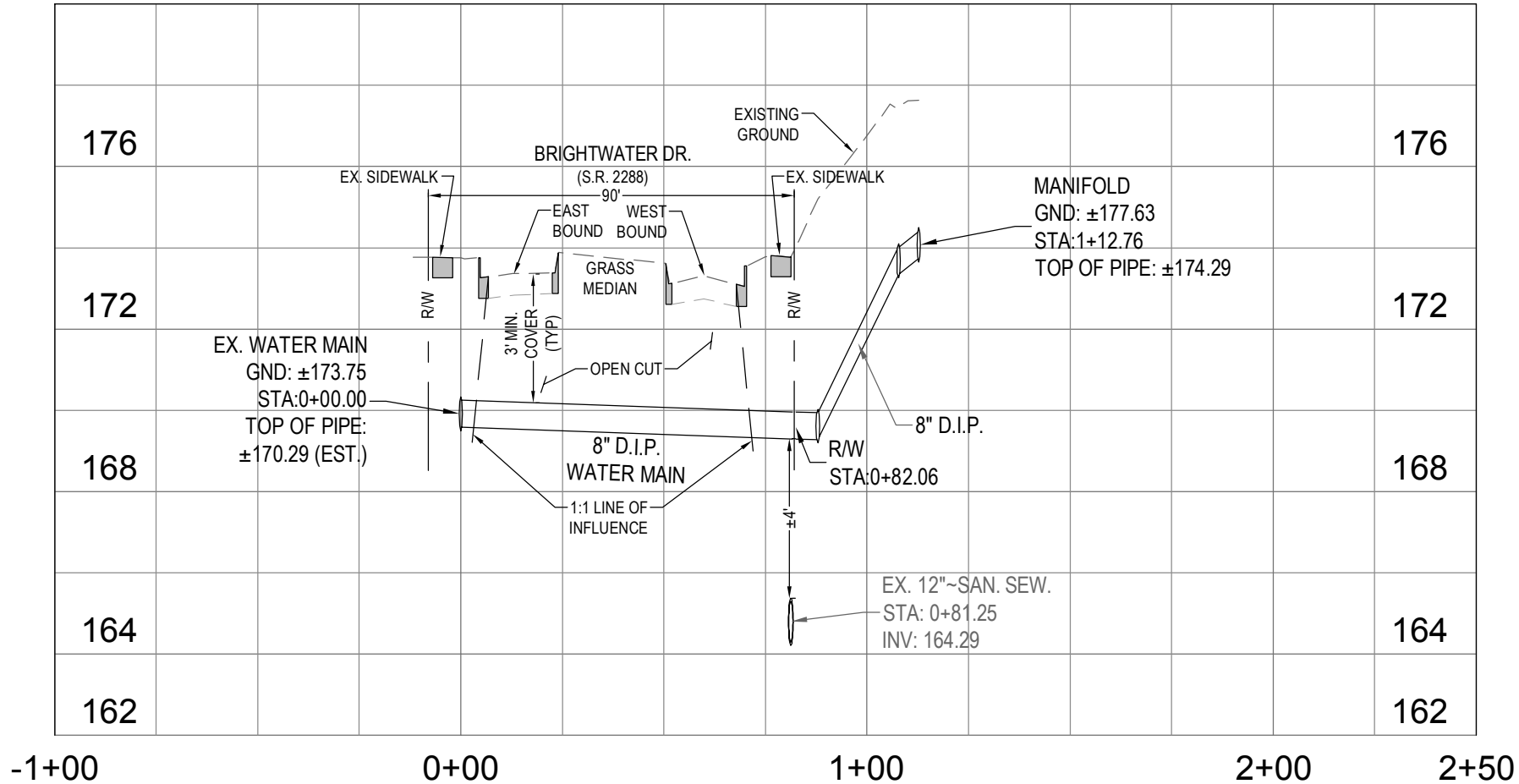
<p>HARNETT REGIONAL WATER Lillington, NC Harnett County</p>		<p>NCDOT ENCROACHMENT MAP FOR 8" WATER LINE 225 BRIGHTWATER DR. (S.R. 2288) LILLINGTON, NC 27546</p>	
<p>Job No. _____ File No. _____</p> <p>Scales: 1" = 20'</p> <p>PLAN PROFILE: Hor. N/A, Vert. N/A</p> <p>As Built: _____ Date: _____</p>		<p>PLAN VIEW</p>	
JC	-	-	JDB
Surveyed By	Designed By	Drawn By	Project-Engr
			Approved By
No.	Date	By	Revision
			05.30.23
			Sheet 1 Of 5

BRIGHTWATER PUBLIC WATER MAIN CROSSING PROFILE

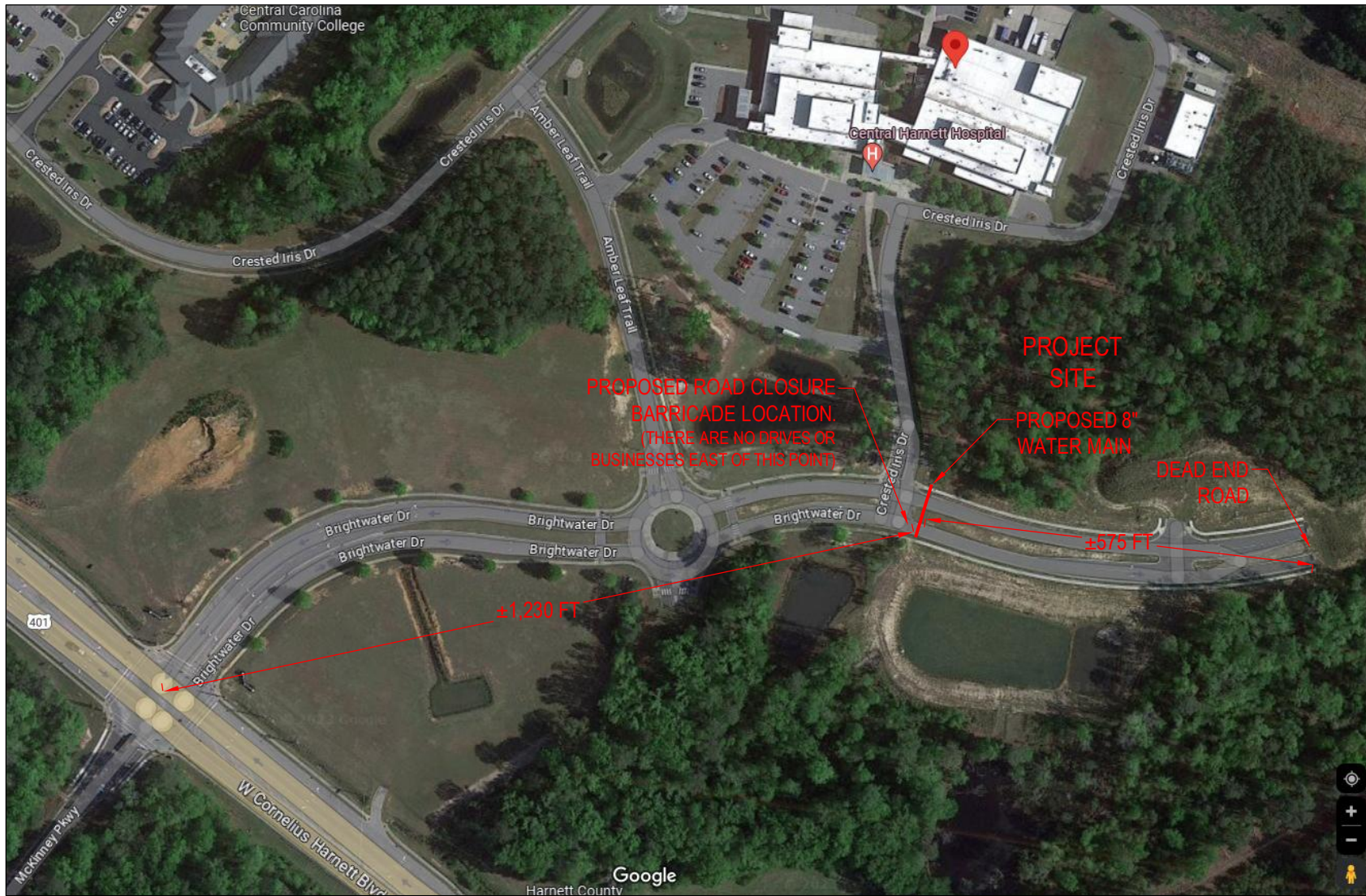
180

DESIGN SPEED = 40 MPH

180



		HARNETT REGIONAL WATER Lillington, NC Harnett County	
Job No. _____ File No. _____ Scales _____ N/A		NCDOT ENCROACHMENT MAP FOR 8" WATER LINE 225 BRIGHTWATER DR. (S.R. 2288) LILLINGTON, NC 27546	
PLAN _____ PROFILE Hor. 1"=40' Vert. 1"=4'		PROFILE VIEW	
As Built _____ Date _____		Surveyed By: JC Designed By: - Drawn By: - Project-Eng: JDB Approved By: _____ Date: 05.30.23	
No. _____ Date _____ By _____		Revision _____ Sheet 2 Of 5	



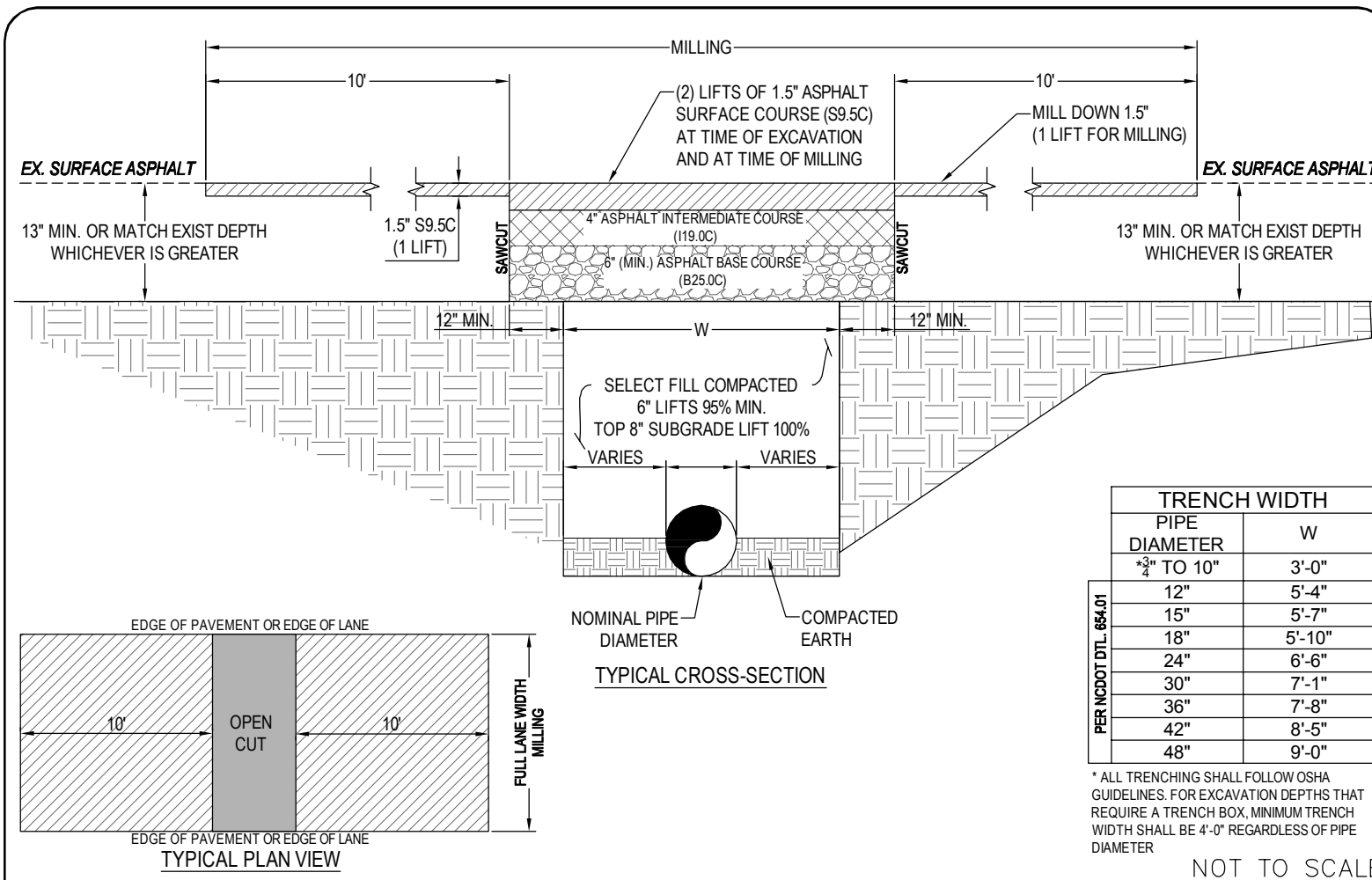
HARNETT REGIONAL WATER
Lillington, NC
Harnett County

NCDOT ENCROACHMENT MAP FOR 8" WATER LINE
225 BRIGHTWATER DR. (S.R. 2288)
LILLINGTON, NC 27546

AERIAL

No.	Date	By	Revision
-	-	-	-

Job No.	File No.	NCDOT ENCROACHMENT MAP FOR 8" WATER LINE 225 BRIGHTWATER DR. (S.R. 2288) LILLINGTON, NC 27546			
Scales					
PLAN	N/A		AERIAL		
PROFILE	Hor.	N/A			
	Vert.	N/A			
As Built	Date		JC	JDB	05.30.23
Surveyed By	Designed By	Drawn By	Project-Engr	Approved By	Date
					3
					5



TRENCH WIDTH	
PIPE DIAMETER	W
* $\frac{3}{4}$ " TO 10"	3'-0"
12"	5'-4"
15"	5'-7"
18"	5'-10"
24"	6'-6"
30"	7'-1"
36"	7'-8"
42"	8'-5"
48"	9'-0"

* ALL TRENCHING SHALL FOLLOW OSHA GUIDELINES. FOR EXCAVATION DEPTHS THAT REQUIRE A TRENCH BOX, MINIMUM TRENCH WIDTH SHALL BE 4'-0" REGARDLESS OF PIPE DIAMETER

NOT TO SCALE

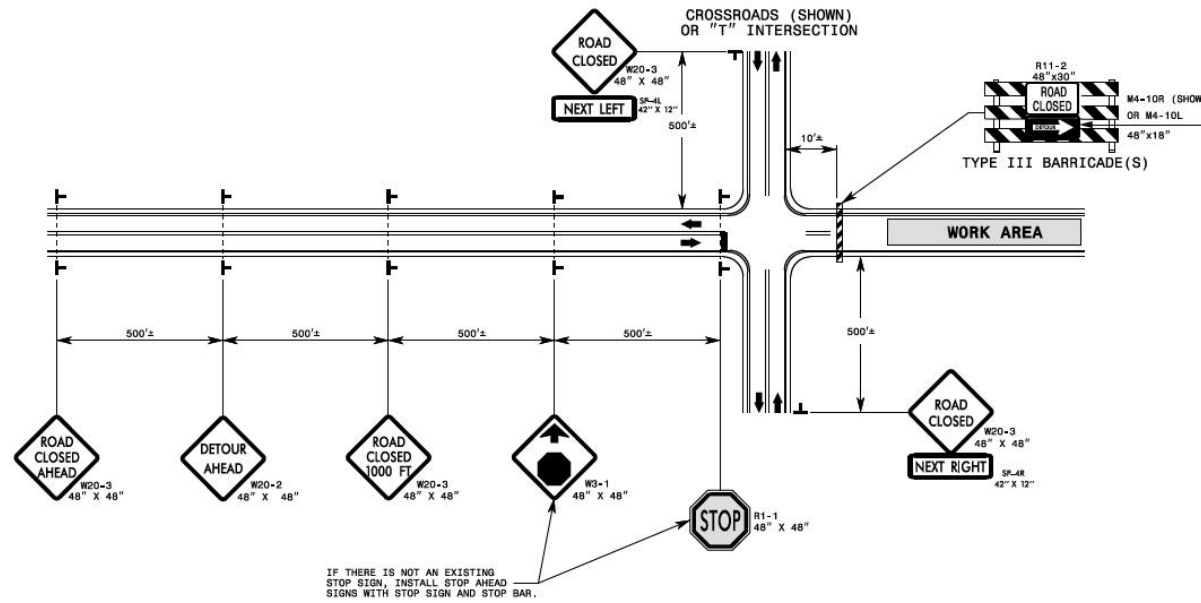
TRENCH / PAVEMENT REPAIR DETAIL
WITHIN PUBLIC ROADWAYS



HARNETT REGIONAL WATER
Lillington, NC
Harnett County

Job No. _____	File No. _____	NCDOT ENCROACHMENT MAP FOR 8" WATER LINE 225 BRIGHTWATER DR. (S.R. 2288) LILLINGTON, NC 27546					
Scales _____							
PLAN _____	N/A	PAVEMENT REPAIR DETAIL					
PROFILE _____	N/A						
Hor. _____	N/A						
Vert. _____	N/A						
As Built _____	Date _____						
JC _____	-	-	JDB _____	-	05.30.23	Sheet	Of
Surveyed By	Designed By	Drawn By	Project-Engr	Approved By	Date	4	5

-	-	-	-
No.	Date	By	Revision



IF THERE IS NOT AN EXISTING STOP SIGN, INSTALL STOP AHEAD SIGNS WITH STOP SIGN AND STOP BAR.

GENERAL NOTES

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

LEGEND	
▬	STATIONARY SIGN
←	DIRECTION OF TRAFFIC FLOW

1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
 ROADWAY STANDARD DRAWING FOR
TEMPORARY ROAD CLOSURES
 CLOSURE AT DETOUR POINT
 SHEET 2 OF 9
1101.03



		HARNETT REGIONAL WATER Lillington, NC Harnett County	
Job No. _____ File No. _____ Scales _____		NCDOT ENCROACHMENT MAP FOR 8" WATER LINE 225 BRIGHTWATER DR. (S.R. 2288) LILLINGTON, NC 27546	
PLAN _____ N/A PROFILE Hor. _____ N/A Vert. _____ N/A		TRAFFIC CONTROL	
As Built _____ Date _____		Surveyed By: JC Designed By: - Drawn By: - Project-Engr: JDB Approved By: _____ Date: 05.30.23	
No. _____ Date _____ By _____		Revision: _____ Sheet Of: 5 of 5	