- 4. Zone C Between the edge of pavement and bottom of side ditch (or 10 feet from edge of pavement when there is no side ditch) above the theoretical 1:1 slope from the edge of pavement to the bottom of the nearest excavation wall
- a. All Traffic Ways 98% Standard Proctor Density (ASTM D698)
- b. Non-Traffic Ways 95% Standard Proctor Density (ASTM D698)
- 5. Zone D Between the centerline of side ditch (or 10 feet from edge of pavement when there is no side ditch)
- a. All Traffic Ways 98% Standard Proctor Density (ASTM D698)
- b. Non-Traffic Ways 95% Standard Proctor Density (ASTM D698)
- D. Compaction Requirements Adjacent to Buildings, Structures, and Utilities
- 1. 98% Standard Proctor Density (ASTM D698)
- E. Moisture Control
- 1. Moisten and/or dry backfill materials as necessary to adjust moisture content to within two (2) percent of optimum moisture content and achieve the required density and structural stability.
- F. Disposal of Excess And/or Unsuitable Materials
 - Dispose of excess and/or unsuitable excavated materials not required for fill or backfill at an approved off-site disposal site provided by the CONTRACTOR.
- 40. Relation of sewer force main lines to water mains.
 - A. Lateral separation of sewer force main lines and water mains.
 - 1. Sewer force main lines shall be laid at least ten (10) feet laterally from existing water mains, unless local conditions or barriers prevent a ten (10) foot lateral separation.
 - a. If a sewer force main line cannot be laid with a ten (10) foot lateral separation with respect to water mains, the sewer force main line shall be laid within a separate trench with the elevation of the top of the sewer force main line at least eighteen (18) inches below the bottom of the water main.
 - B. Crossing a sewer force main line under a water main.
 - 1. Whenever it is necessary for a sewer force main line to cross under a water main, the sewer force main line shall be laid at such an elevation that the top of the sewer force main line is at least eighteen (18) inches below the bottom of the water main, unless local conditions or barriers prevent an eighteen (18) inch vertical separation. If an eighteen (18) inch separation can not be achieved, both the water main and sewer force main shall be constructed of ferrous materials and with joints that are equivalent to water main standards for a distance of ten (10) feet on each side of the point of crossing.
 - C. Crossing of a sewer force main line over a water main.
 - Whenever it is necessary for a sewer force main line to cross over a water main, both the sewer force main and the water main shall be constructed of ferrous materials and with joints equivalent to water main standards for a distance of ten (10) feet on each side of the point of crossing. A section of sewer force main line shall be centered at the point of crossing.
- 41. Deactivation and detachment of existing force mains.
 - A. The detachment from OWNER'S sewer system of all existing lines being replaced by new lines, the break, removal and replacement of pavement caused by the detachment, and any fittings necessary to sever, plug, and/or stop any sewerage leakage of the existing system shall be included in the UNIT PRICE of the pipe.
 - B. Force mains to be severed and plugged are shown on PLANS. These lines are shown based upon the best known evidence with respect to their size, location, and type of material. CONTRACTOR shall predetermine and field verify the exact size, type, and location of the existing sewer force main line as applicable to insure minimum interruption of service.
- 42. Existing force main lines shall remain active until replaced by a new force main line. Temporary measures, at CONTRACTOR'S expense, may be used to insure service remains active.
- 43. Interruption of service.
 - A. Detachments or tie-ins.
 - 1. CONTRACTOR shall notify OWNER, all affected users, and the ENGINEER prior to interruption of service.
 - 2. If interruption of service will last greater than two (2) hours, the CONTRACTOR shall preschedule the work with OWNER at a mutually agreeable time that would impose a minimum inconvenience on the affected users.

- 44. Daily Cleanup and Maintenance of Ingress and Egress
 - A. All excavation, pipelaying, and backfilling activities shall be completed not later than 5:00 p.m. each work day. Incidental stone, grading, provisions for temporary drainage, and cleanup after each day's construction activities shall be completed immediately following completion of excavation, pipelaying, and backfilling operations each day. The CONTRACTOR shall not leave or abandon the work site until all daily cleanup, provisions for temporary drainage, and provisions for convenient ingress and egress have been completed.
 - B. Maintenance of all disturbed areas shall be provided on a daily basis as required to provide drainage and convenient ingress and egress to all properties, minimize threats for injuries associated with vehicular and/or pedestrian traffic, and maintain all unpaved areas in a manner acceptable for normal lawn care activities by adjoining residents and/or property owners.
 - C. The CONTRACTOR shall initiate and continuously pursue until completion all specific cleanup, cleanup maintenance, and/or repair activities requested by the ENGINEER within four (4) hours of the ENGINEER's request. The ENGINEER may request such activities based upon his observations, citizen complaints, directions from regulatory agencies, and items brought to the ENGINEER's attention by others.
 - D. The cost for providing temporary drainage, satisfactory ingress and egress, cleanup, and maintenance of disturbed areas shall be included within the price for the WORK. No additional payment shall be provided for these activities.
 - E. Failure by the CONTRACTOR to adequately provide and maintain satisfactory conditions for drainage and/or ingress and egress, correct specific cleanup, cleanup maintenance, and/or repair activities requested by the ENGINEER may result in the employment by the OWNER of an outside party to accomplish these activities. The OWNER may employ an outside party at any time the CONTRACTOR is not on the project site and unsatisfactory conditions exist regarding drainage, ingress, egress, safety, or cleanup.
 - F. Payment for all costs incurred by the OWNER relating to the employment of an outside party shall be reimbursed to the OWNER on a monthly basis by the CONTRACTOR. Failure to reimburse the OWNER shall result in the OWNER deducting payment for these costs from payments to the CONTRACTOR.
 - G. The CONTRACTOR should expect these provisions relative to daily cleanup and maintenance of ingress and egress to be strictly and rigorously enforced throughout the CONTRACT period.
- CONTRACTOR shall, at its own expense, strictly adhere to all pertinent safety standards, rules, and OSHA regulations required or recommended by governmental or quasi-governmental authorities having jurisdiction. By submitting a BID for this CONTRACT, CONTRACTOR acknowledges that it has its own OSHA compliant safety program for all WORK covered by or performed under this CONTRACT. The CONTRACTOR by submitting a BID for this CONTRACT further acknowledges that OSHA Safety Regulations require the CONTRACTOR to keep a trained "competent person" on the job. A "competent person" is a trained individual who is employed by the CONTRACTOR and is capable of identifying existing and predictable hazards or working conditions that are hazardous, unsanitary, or dangerous to employees and has the authority to take prompt corrective measures to eliminate or control any hazard or unsafe conditions. The CONTRACTOR agrees to keep as many "competent persons" on site as necessary to maintain safe working conditions at all times. In addition to keeping as many "competent persons" on site at all times workers are in trenches and other types of excavation, the CONTRACTOR also agrees to conduct its own frequent and regular inspections of all WORK covered by or performed under this CONTRACT at the PROJECT site to verify compliance with the CONTRACTOR'S safety program and all applicable safety standards, rules, and OSHA regulations. The CONTRACTOR and the OWNER acknowledge and agree that neither the OWNER nor the ENGINEER has any control, responsibility, or authority over the CONTRACTOR or the CONTRACTOR'S employees or SUBCONTRACTOR'S with regard to the safety and health conditions relating to or arising out of the CONTRACTOR'S work or the performance of any work covered by this CONTRACT. The PROJECT OBSERVER is an employee of the ENGINEER and is not a trained "competent person". The CONTRACTOR has the sole responsibility and authority for ensuring that any and all hazardous conditions relating to or arising out of the CONTRACTOR'S work are identified and corrected. With regard to the CONTRACTOR'S work or any WORK covered by or performed under this CONTRACT, the OWNER is not the controlling employer or controlling entity for the purpose of detecting hazardous conditions or ensuring that hazardous conditions are corrected.
- 46. Record Drawing Access
- A. The CONTRACTOR shall install vertical PVC pipe at locations as specified herein to be used for access to the installed force mains for collection of record drawing information. Collection of record drawing information shall be by the ENGINEER. Compensation for the vertical PVC pipe and the installation thereof shall be included within the UNIT PRICE of the pipe.
- B. The CONTRACTOR shall place a minimum four (4) inch diameter PVC pipe vertically at all locations where transitions in materials occur (ends of casings, transitions from DI to PVC, transitions from Push-On Joint to Restrained Joint, fittings, etc.). The vertical PVC pipe shall rest on top of the center of the pipe and shall extend a minimum of eighteen (18) inches above the land surface. The vertical PVC pipe shall be installed plumb to the ground. The lower end of the vertical PVC pipe shall be capped. The lower one foot portion of the vertical PVC pipe shall contain a minimum of five (5) each 1/4" diameter holes. The CONTRACTOR shall record on the exposed portion of the vertical PVC pipe the distance in hundredths of a foot from the top of the force main to the invert of the force main. The vertical PVC pipe shall be kept open and clean of debris. Immediately after installation, the vertical PVC pipe shall be capped with duct tape to prevent debris entering the vertical PVC pipe. A sufficient number of vertical PVC pipes shall be installed so that the spacing between vertical PVC pipe shall not exceed two hundred (200) feet.

- C. Record drawing information for horizontal directional drilling shall be obtained by the CONTRACTOR as follows:
- 1. CONTRACTOR shall track the depth, pitch, and position of the drill head as it is advanced while drilling the pilot hole. CONTRACTOR shall mark the tracked path and depth below ground surface as tracking proceeds.
- 2. At ten (10) feet intervals, CONTRACTOR shall place flags, wooden stakes, or provide other means approved by the ENGINEER to permit field location of the path and recordation of the alignment and depth upon completion of drilling operations. Accurately record entry and exit locations.
- CONTRACTOR shall provide the datum location for the bore log and provide station and offset measurements from the roadway centerline if practical. Record the measurements and provide one (1) copy of the record drawing to the ENGINEER. Provide one (1) copy of the bore log to the ENGINEER.
- D. Record drawing information shall be collected by the ENGINEER at force main intervals not to exceed five thousand (5000) feet.
- E. Record drawing information will be used to verify:
- 1. Installation compliance with CONTRACT requirements, and
- 2. Final pay quantities.
- F. After record drawing information has been obtained, the CONTRACTOR, upon authorization by the ENGINEER, shall remove the vertical PVC pipe. CONTRACTOR shall backfill hole and compact.
- 47. Contractor Certified Record Drawings
 - A. The CONTRACTOR shall provide Contractor Certified Record Drawings to the ENGINEER of all force main construction WORK. Record Drawings shall be developed based upon field measurements of "as-built" conditions. All deviations (horizontal and vertical) from PLAN requirements shall be clearly illustrated by a single line "strike through" of the original criteria and the as-built condition written above or beside the "strike through."
 - CONTRACTOR's submission and ENGINEER's approval of Record Drawings are required before the CONTRACTOR will be considered substantially complete.
 - C. Record Drawings shall contain the following certification by the CONTRACTOR:

Contractor's Recor	rd Drawing Certification	
l,	, being duly authorized by the Board of Dire	ector
(Individual)		

(Contractor) as shown on these PLANS, do hereby certify that these Record Drawings are made from field measurements of "as-built" facilities and are true and accurate to the best of my knowledge and belief.

, the prime contractor for the PROJECT

Attest:

Corporation Secretary

<u>Engineer's Disclosure</u>

These "Record Drawings" were prepared from marked up drawings supplied by the CONTRACTOR and have not been field verified by the ENGINEER.

Engineer's Name, P.E.

Seal

PROJECT REFERENCE NO. SHEET NO.

B-4926

DESIGNED BY: JWM

DRAWN BY: MW

CHECKED BY: DEG

APPROVED BY: JWM

REVISED:

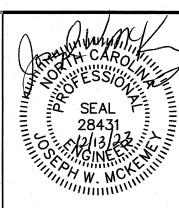
SHEET NO.

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UTILITY CONSTRUCTION

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MAI REVIEW OFFICER APPROVAL

MAI REVIEW OFFICER

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