

TUNSTAL ENGINEERS P.C. NORRIS

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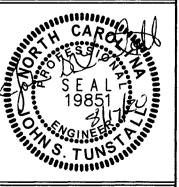
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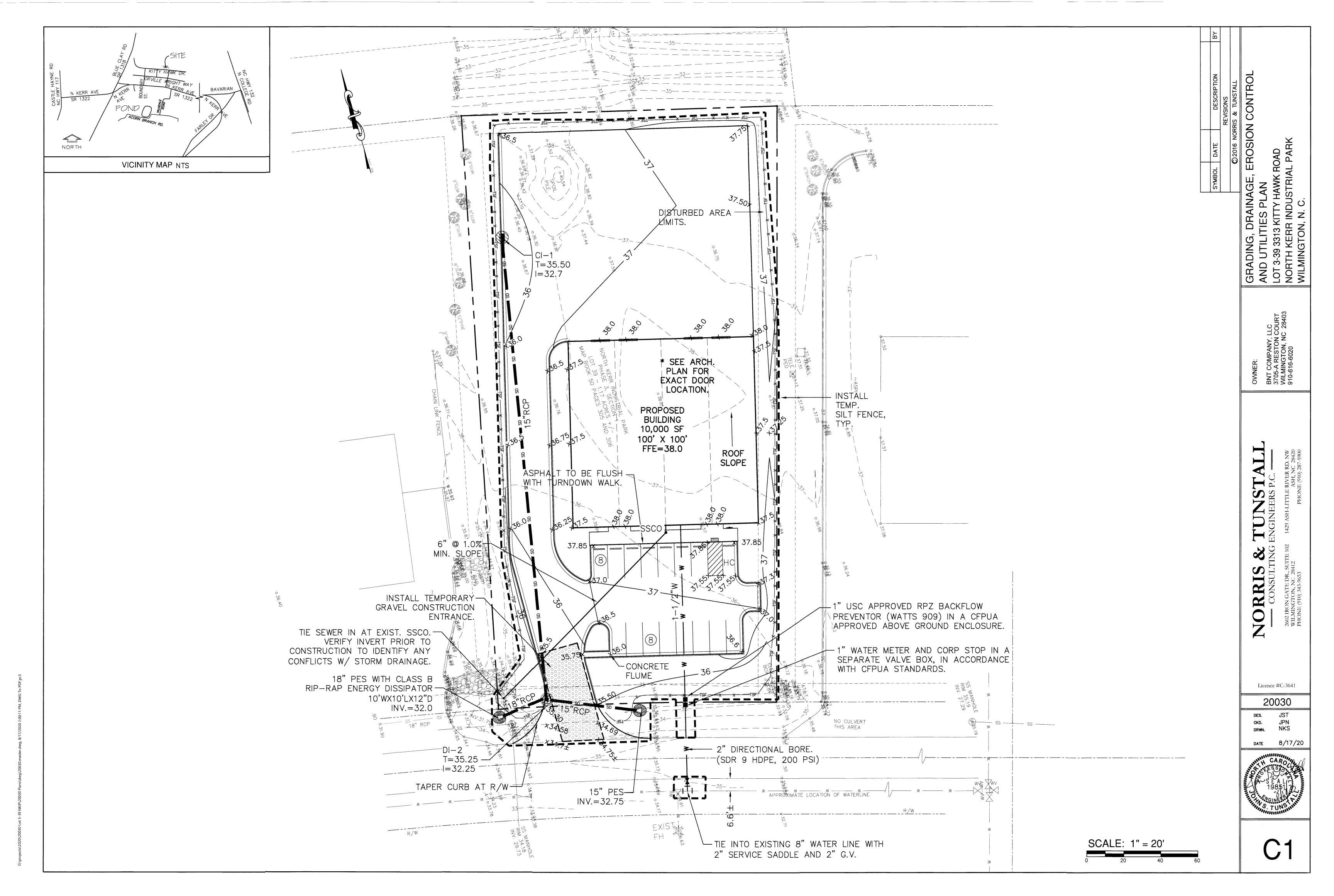
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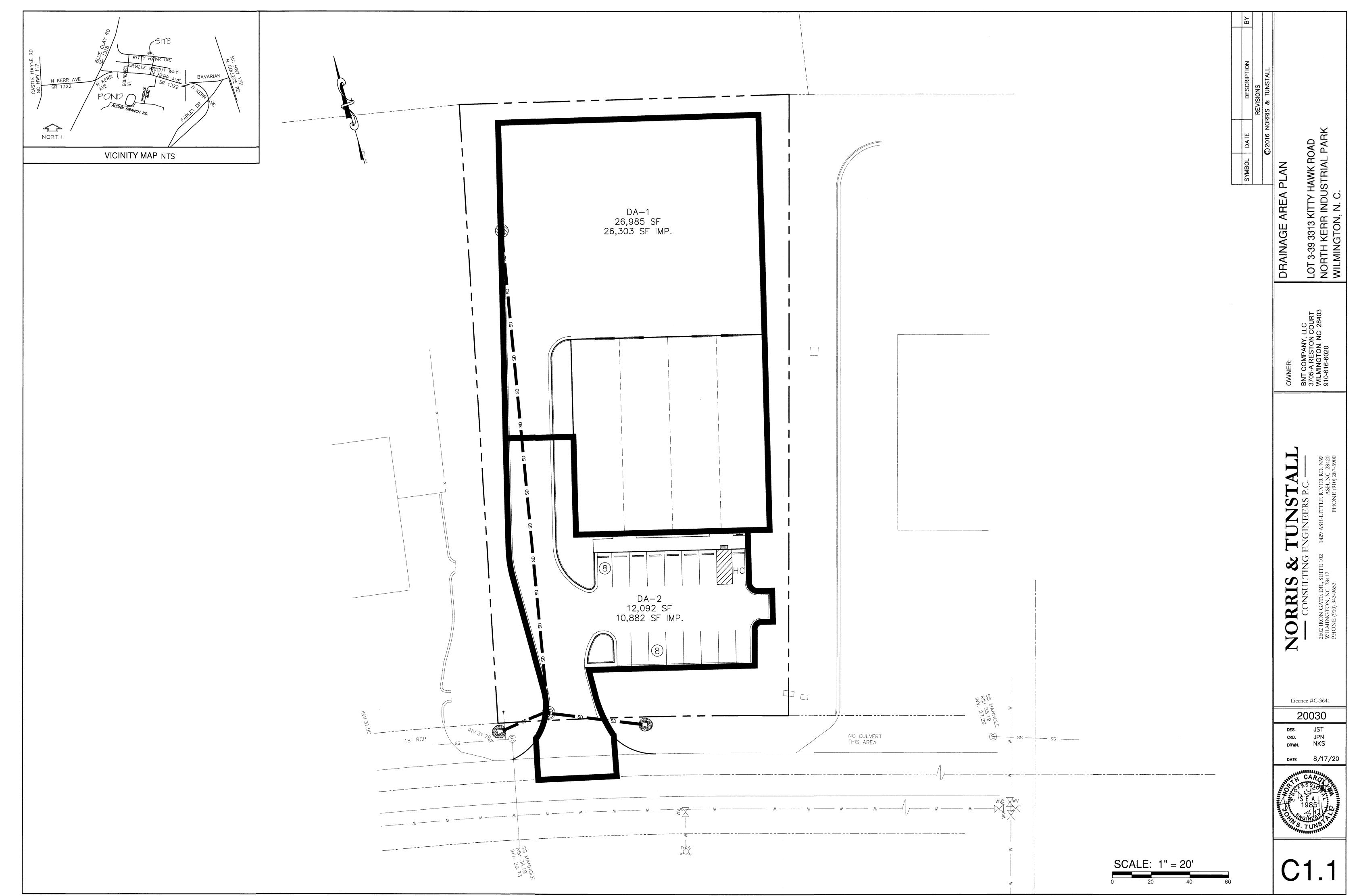
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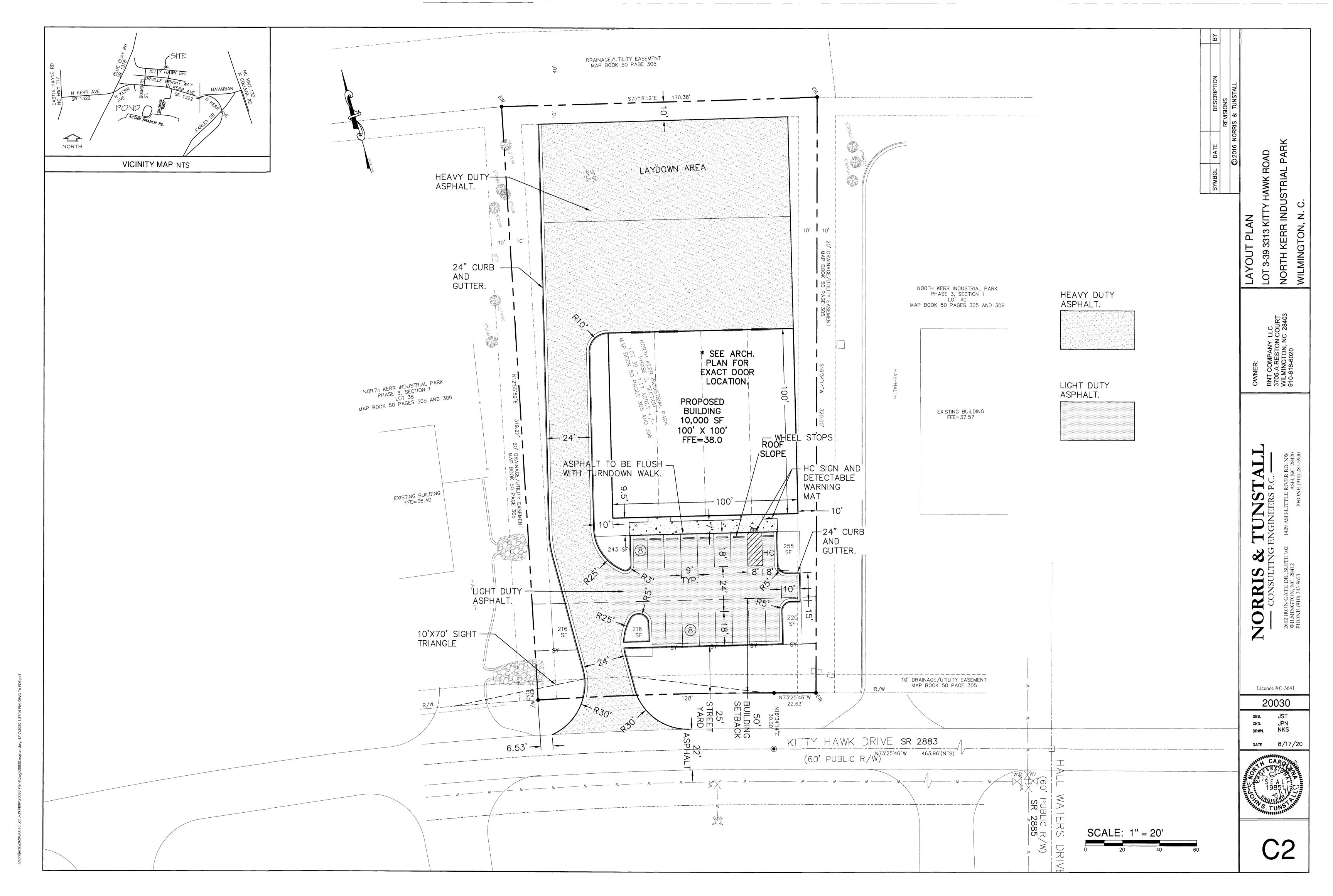
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DATE 8/17/20









CATCH BASIN DETAIL

HARDWARE CLOTH AND GRAVEL INLET PROTECTION

EROSION CONTROL NOTES AND MAINTENANCE PLAN:

ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL, BUT IN NO CASE, LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY HALF-INCH RAINFALL.

2. ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. THEY WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBJECTIONABLE MATERIAL SPILLED WASHED OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAYS.

3. SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTION, BLOCK AND GRAVEL INLET PROTECTION, ROCK DOUGHNUT INLET PROTECTION AND ROCK PIPE INLET PROTECTION WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS AS DESIGNED. DEBRIS WILL BE REMOVED FROM THE ROCK AND HARDWARE CLOTH TO ALLOW PROPER DRAINAGE. SILT SACKS WILL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND WATTLES, BEAVER DAMS, DANDY SACKS AND SOCKS ONCE A WEEK AND AFTER EVERY

4. DIVERSION DITCHES WILL BE CLEANED OUT IMMEDIATELY TO REMOVE SEDIMENT OR OBSTRUCTIONS FROM THE FLOW AREA. THE DIVERSION RIDGES WILL ALSO BE REPAIRED. SWALES MUST BE TEMPORARILY STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY ASSOCIATED WITH A SWALE.

5. SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES HALF FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL. STAKE SPACING WILL BE 6 FEET MAX. WITH THE USE OF EXTRA STRENGTH FABRIC, WITHOUT WIRE BACKING. STAKE SPACING WILL BE 8 FEET MAX. WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. IF ROCK FILTERS ARE DESIGNED AT LOW POINTS IN THE SEDIMENT FENCE, THE ROCK WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF-FULL OF SEDIMENT, NO LONGER DRAINS AS DESIGNED

6. <u>LAND QUALITY REQUIRES</u>; ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED, ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN, TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL SLOPES WILL BE STABILIZED WITHIN 21 CALENDAR DAYS. ALL OTHER AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS.

ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, ALL SLOPES STEEPER THAN 3' HORIZONTAL TO 1' VERTICAL (3:1) AND ALL HIGH QUALITY WATER (HQW) ZONES SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN SEVEN (7) CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY. ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 CALENDAR DAYS FROM THE

7. FLOCCULANTS WILL BE USED TO ADDRESS TURBIDITY ISSUES. THE PUMPS, TANKS, HOSES AND INJECT SYSTEMS WILL BE CHECKED FOR PROBLEMS OR TURBID DISCHARGES DAILY.

8. BASIN OUTLET STRUCTURES AND SKIMMERS SHALL WITHDRAW WATER

9. CONCRETE WASHOUTS SHOULD BE INSPECTED DAILY AND AFTER HEAVY RAINS. DAMAGES SHOULD BE REPAIRED PROMPTLY. IF FILLED TO OVER 75% CAPACITY WITH RAIN WATER IT SHOULD BE VACUUMED OR ALLOWED TO EVAPORATE TO AVOID OVERFLOWS. BEFORE HEAVY RAINS THE CONTAINERS LIQUID LEVEL SHOULD BE LOWERED OR THE CONTAINER COVERED TO AVOID AN OVER FLOW DURING RAIN. WHEN SOLIDS HAVE HARDENED THEY SHOULI

SITE WORK NOTES:

. THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH FIELD CONSTRUCTION CONDITIONS.

2. CONTRACTOR SHALL COORDINATE WORK WITHIN NCDOT AND LOCAL RIGHT OF WAYS WITH PROPER AUTHORITIES AND SHALL MEET ANY REQUIREMENTS AS TO TRAFFIC CONTROL AND CONNECTION TO EXISTING

3. CLEARING AND GRUBBING: REMOVE ALL TREES AS REQUIRED UNLESS OTHERWISE NOTED TO REMAIN, STUMPS, ROOTS, SHRUBBERY, ASPHALT, CONCRETE, STRUCTURES, BURIED UTILITIES, STORAGE TANKS, ETC. WITHIN LIMITS OF CONSTRUCTION.

4. STRIPPING: BEFORE EXCAVATING OR FILLING, REMOVE ALL TOPSOIL. WOOD, LEAVES, AND ANY OTHER UNSUITABLE MATERIAL.

5. MUCKING: REMOVE ANY SOFT, ORGANIC SILT MATERIALS AND EXISTING BURIED CONSTRUCTION DEBRIS AS REQUIRED AND FILL TO SUBGRADE ELEVATIONS WITH A CLEAN SELECT-FILL COMPACTED AS SPECIFIED. 6. DISPOSAL: CLEARED, GRUBBED, STRIPPED OR EXCAVATED SPOIL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH

ALL APPLICABLE LOCAL AND STATE CODES. '. BORROW MATERIAL: THE CONTRACTOR SHALL FURNISH BORROW MATERIAL REQUIRED FROM OFF SITE AND OBTAIN ALL REQUIRED

PERMITS ASSOCIATED WITH BORROW OPERATIONS.

8. FILL AND COMPACTION: AFTER STRIPPING THOSE AREAS DESIGNATED TO RECEIVE FILL SHOULD BE PROOFROLLED. THE TOP 8" OF SUBGRADE SHALL BE COMPACTED TO AT LEAST 98% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT. ANY AREA WHICH PUMPS OR RUTS EXCESSIVELY SHOULD BE UNDERCUT AND REPLACED WITH A CLEAN, SILTY OR CLAYEY SAND HAVING A UNIFIED SOIL CLASSIFICATION OF SP, SM, OR SC. FILL MATERIAL 5" OUTSIDE OF BUILDING AREAS SHALL THEN BE PLACED IN LAYERS NOT TO EXCEED 8" AND COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) WITH THE UPPER 12 INCHES OF SUBGRADE BEING COMPACTED TO 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. FILL MATERIALS WITHIN BUILDING AREAS TO A LINE OUTSIDE THE BUILDING AREAS SHALL BE PLACED IN LAYERS NOT TO EXCEED 8" AND COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) WITH THE UPPER 12 INCHES OF SUBGRADE BEING COMPACTED IN 6 INCH LAYERS TO 100% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. IN AREAS WHERE NO STRUCTURAL FILL IS TO BE PLACED THE UPPER 12 INCHES OF IN-PLACE SUBGRADE SHOULD BE COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. IF THE MATERIAL IS TOO DRY TO COMPACT TO THE REQUIRED DENSITY EACH LAYER SHALL BE WETTED IN ACCORDANCE WITH COMPACTION REQUIREMENTS, IF THE MATERIAL IS TOO WET TO SECURE PROPER COMPACTION, IT SHALL BE HARROWED REPEATEDLY OR OTHERWISE AERATED WITH SUITABLE EQUIPMENT UNTIL OPTIMUM MOISTURE CONTENT IS OBTAINED. FILL SHALL BE PLACED IN SUCH A

10. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION.

TO CONSTRUCT HIS WORK.

MANNER THAT THE SURFACE WILL DRAIN READILY AT ALL TIMES. SEE

9. LAYOUT: THE CONTRACTOR SHALL PROVIDE ALL LAYOUT REQUIRED

STRUCTURAL NOTES AND SOILS REPORT FOR ADDITIONAL REQUIREMENTS.

. EXISTING BOUNDARY AND TOPOGRAPHIC INFORMATION FROM SURVEY BY MICHAEL UNDERWOOD AND ASSOCIATES, PA AND PROVIDED BY 12. THE CONTRACTOR SHALL VERIFY DIMENSIONS AT JOBSITE.

13. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF RELOCATION OR DISCONNECTION OF ALL EXISTING UTILITIES WITH APPLICABLE AGENCIES AND AUTHORITIES.

14. ALL PAVEMENT AND BASE MATERIALS AND WORKMANSHIP SHALL CONFORM TO NCDOT STANDARDS.

15. WATER AND SEWER SERVICES SHALL BE INSTALLED TO MEET LOCAL AND STATE PLUMBING CODES. METER AND TAPS SHALL MEET ALL LOCAL

16. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE.

17. SEE SOILS REPORT FOR ADDITIONAL REQUIREMENTS.

III, FACTORY MIXED, QUICK DRYING, NON-BLEEDING.

18. CONTRACTOR SHALL NOTE THAT EARTHWORK QUANTITIES ARE HIS RESPONSIBILITY. PLANS DO NOT REPRESENT A BALANCED EARTHWORK

19. REINF. CONC. PIPE SHALL BE CLASS III W/RUBBER GASKETED JOINT OR "RAM NECK". INSTALL PER MANUFACTURER'S REQUIREMENTS.

20. USE WHITE LANE MARKING PAINT FOR ALL PAVEMENT MARKINGS. PAINT SHALL BE A CHLORINATED RUBBER ALKYD, FS TT-P-115, TYPE

21. REFER TO THE PLUMBING DRAWINGS FOR LOCATION AND INVERTS OF NEW WASTE, WATER AND ROOF DRAIN LINES.

> CALL 811 (3) WORKING DAYS BEFORE YOU DIG.

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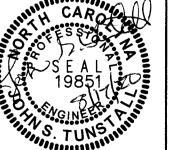
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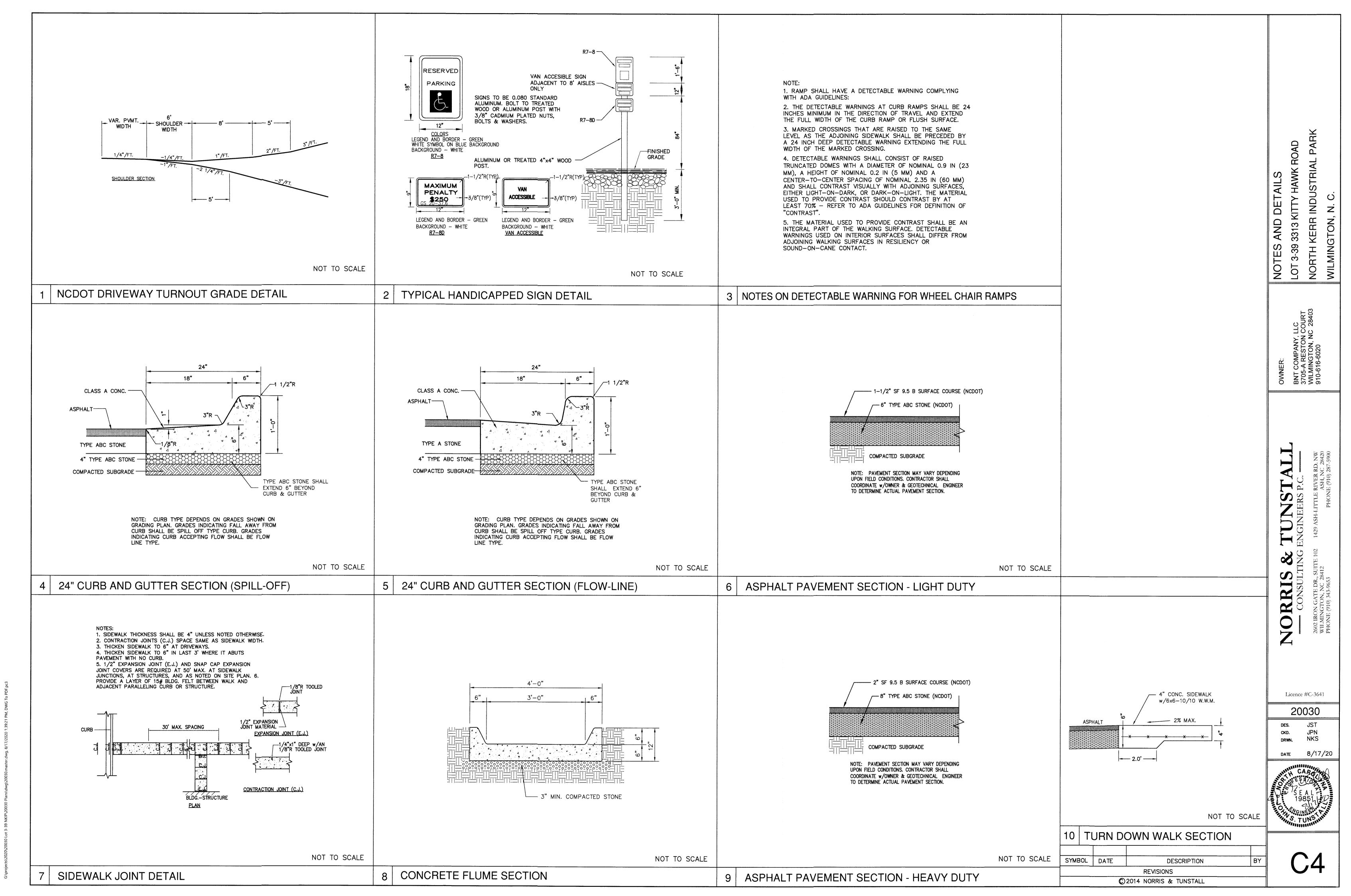
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8/17/20 DATE

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DESCRIPTION SYMBOL DATE **REVISIONS** © 2014 NORRIS & TUNSTALL



were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include: Daily rainfall amounts. If no daily rain gauge observations are made during weekend of 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 a "zero." The permittee may use another rain-monitoring device approved by the Division.				
(1) Rain gauge maintained in good working order	Daily					
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.				
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.				
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: Actions taken to clean up or stabilize the sediment that has left the site limits, Description, evidence, and date of corrective actions taken, and 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 of this permit.				
(6) Ground stabilization measures	After each phase of grading	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				

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

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 documented in the manner described:

Item to Document	Documentation Requirements			
(a) Each E&SC Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC Plan.	Initial and date each E&SC Measure on a copy of the approved E&SC Plan or complete, date and sign an inspection report that lists each E&SC Measure shown on the approved E&SC Plan. This documentation is required upon the initial installation of the E&SC Measures or if the E&SC Measures are modified after initial installation.			
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate completion of the construction phase.			
(c) Ground cover is located and installed in accordance with the approved E&SC Plan.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.			
(d) The maintenance and repair requirements for all E&SC Measures have been performed.	Complete, date and sign an inspection report.			
(e) Corrective actions have been taken to E&SC Measures.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection			

. Additional Documentation

In addition to the E&SC Plan documents above, the following items shall be kept on the

corrective action.

report to indicate the completion of the

and available for agency 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 30 days. 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.

c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

SELF-INSPECTION, RECORDKEEPING AND 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).

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.

(b) Anticipated bypasses and unanticipated bypasses.

(c) 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 Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Reporting Timeframes (After Discovery) and Other Requirements

(a) Visible sediment deposition in a stream or wetland	 Within 24 hours, an oral or electronic notification. Within 7 calendar days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of	Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and

hazardous location of the spill or release substances per Item 1(b)-(c) above (c) Anticipated A report at least ten days before the date of the bypass, if possible. bypasses [40 CFR The report shall include an evaluation of the anticipated quality and 122.41(m)(3)]

· Within 24 hours, an oral or electronic notification (d) Unanticipated bypasses [40 CFR Within 7 calendar days, a report that includes an evaluation of the 122.41(m)(3)] quality and effect of the bypass (e) Noncompliance • Within 24 hours, an oral or electronic notification with the conditions • Within 7 calendar days, a report that contains a description of the of this permit that noncompliance, and its causes: the period of noncompliance. may endanger

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(I)(6). Division staff may waive the requirement for a written report on a case-by-case basis

EFFECTIVE: 04/01/19

SEEDING MIXTURE 1.15 PENSACOLA BAHIAGRASS 5 SERICEA LESPEDEZA 0.69 KOBE LESPEDEZA 0.23 1. FROM SEPT. 1 THRU MAR. 1, USE UNSCARIFIED SERICEA SEED. 2. ON POORLY DRAINED SITES OMIT SERICEA AND INCREASE KOBE TO 3. WHERÉ A NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND INCREASE KOBE TO 40 lbs/acre. NURSE PLANTS: BETWEEN APR. 15 AND AUG. 15, ADD 10 lbs/acre GERMAN MILLET OR 15 lbs/acre SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG. 15 ADD 25 lbs/acre RYE (GRAIN). BEST POSSIBLE FEB 15-MAR. 20 FEB.15-APR. 30 SEPT. 1-SEPT. 30 SEPT. 1-OCT. 31 APPLY LIME AND FERTILIZE ACCORDING TO SOIL TESTS, OR APPLY 3,000-5,000 lbs/acre (68.9-114.8 lbs/1,000 sf) GROUND AGRICULTURAL LIMESTONE (USE THE LOWER RATE ON SANDY SOILS) AND 1,000 lbs/dcre (22.9 lbs/1,000 sf) APPLY 4,000 lb/gcre (91.8 lbs/1,000 sf) GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKING WITH ASPHALT. NETTING, OR ROVING OR BY CRIMPING WITH A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING F GROWTH IS LESS THAN FULLY ADEQUATE, REFERTILIZE IN THE SECOND YEAR, ACCORDING TO SOIL TESTS OR TOPDRESS WITH 500 lbs/acre (11.5 lbs/1,000 sf) 10-10-10 FERTILIZER. MOW AS NEEDED WHEN SERICEA IS OMITTED FROM THE MIXTURE. RESEED, FERTILIZE, AND MULCH DAMAGED AREAS IMMEDIATELY. SEEDING MIXTURE SPECIES RAT PENSACOLA BAHIAGRASS 0.69 SERICEA LESPEDEZA COMMON BERMUDA 0.23 0.23 GERMAN MILLET SEEDING NOTES:

1. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA.

2. USE COMMON BERMUDAGRASS ONLY ON ISOLATED SITES WHERE IT CANNOT BECOME A PEST. BERMUDAGRASS MAY BE REPLACED WITH 5 lbs/gcre

SEEDING DATES: APRIL 1-JULY 1

SOIL AMENDMENTS: APPLY LIME AND FERTILIZE ACCORDING TO SOIL TESTS, OR APPLY 3,000 Ibs/acre (68.9 lbs/1,000 sf) GROUND AGRICULTURAL LIMESTONE AND 500 lbs/acre (11.5 lbs/1,000 sf) 10-10-10 FERTILIZER.

APPLY 4,000 lb/acre (91.8 lbs/1,000 sf) GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR ROVING OR BY CRIMPING WITH A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING

REFERTILIZE THE FOLLOWING APRIL WITH 50 lbs/acre (1.15 lbs/1.000 sf) NITROGEN. REPEAT AS GROWTH REQUIRES. MAY BE MOWED ONLY ONCE A YEAR. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND MOW AS OFTEN AS

ONSITE CONCRETE WASHOUT

STRUCTURE WITH LINER

SEEDING MIXTURE <u>SPECIES</u> SEEDING DATES: MOUNTAINS - AUG. 15 - DEC. 15

COASTAL PLAIN AND PIEDMONT - AUG. 15 - DEC. 15 SOIL AMENDMENTS: FOLLOW SOIL TEST OR APPLY 2,000 Ib/acre GROUND AGRICULTURAL LIMESTONE AND 1,000 lb/acre 10-10-10 FERTILIZER. APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

REPAIR AND REFERTILIZE DAMAGE AREAS IMMEDIATELY. TOP DRESS 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.

SEEDING MIXTURE

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

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/gcre

GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER. APPLY 4,000 Ib/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT,

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.

SEEDING MIXTURE

RATE (lb/acre)

RYE (GRAIN) ANNUAL LEŚPEDEZA (KOBE IN PIEDMONT AND COASTAL PLAIN, KOREAN IN MOUNTAINS)

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

ABOVE 2,500 FEET: FEB. 15 - MAY 15

BELOW 2,500 FEET: FEB. 1 - MAY 1 PIEDMONT -JAN. 1 - MAY 1 COASTAL PLAIN -DEC. 1 - APRIL 15 SOIL AMENDMENTS:

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT,

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.

. Documentation that the required ground stabilization

measures have been provided within the required

timeframe or an assurance that they will be provided as

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

NORTH CAROLINA # Environmental Quality

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

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 echniques in the table below

- Temporary Stabilization Temporary grass seed covered with straw or _____ Permanent grass seed covered with straw or other mulches and tackifiers other mulches and tackifiers Hydroseeding Geotextile fabrics such as permanent soil Rolled erosion control products with or reinforcement matting
- without temporary grass seed Hydroseeding Appropriately applied straw or other mulch Shrubs or other permanent plantings covered Plastic sheeting 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 FLOCCULAN

or surrounded by secondary containment structures.

- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the NC DWR List of Approved PAMS/Flocculants.
- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures. Apply flocculants at the concentrations specified in the NC DWR List of Approved PAMS/Flocculants and in accordance with the manufacturer's instructions.
- Provide ponding area for containment of treated Stormwater before discharging Store flocculants in leak-proof containers that are kept under storm-resistant cover

EQUIPMENT AND VEHICLE MAINTENANCE

Maintain vehicles and equipment to prevent discharge of fluids. Provide drip pans under any stored equipment. Identify leaks and repair as soon as feasible, or remove leaking equipment from the

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).

Remove leaking vehicles and construction equipment from service until the problem has been corrected.

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

- Never bury or burn waste. Place litter and debris in approved waste containers. Provide a sufficient number and size of waste containers (e.g dumpster, trash
- receptacle) on site to contain construction and domestic wastes Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available 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. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WAST

- Do not dump paint and other liquid waste into storm drains, streams or wetlands. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area. Containment must be labeled, sized and placed appropriately for the needs of site. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

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.

Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas. 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 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

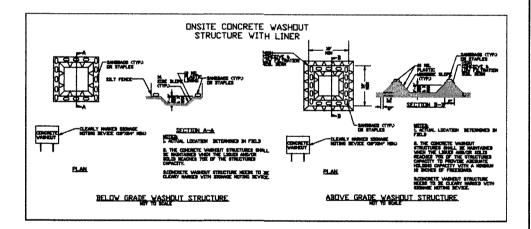
Protect stockpile with silt fence installed along toe of slope with a minimum offset of

as vegetative, physical or chemical coverage techniques that will restrain accelerated

five feet from the toe of stockpile Provide stable stone access point when feasible. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined

erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA 🌌 Environmental Quality



CONCRETE WASHOUTS

health or the

environment[40]

- Do not discharge concrete or cement slurry from the site. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- 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
- 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. 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. 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 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. 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. 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.
- . 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.

IERBICIDES, PESTICIDES AND RODENTICIDES

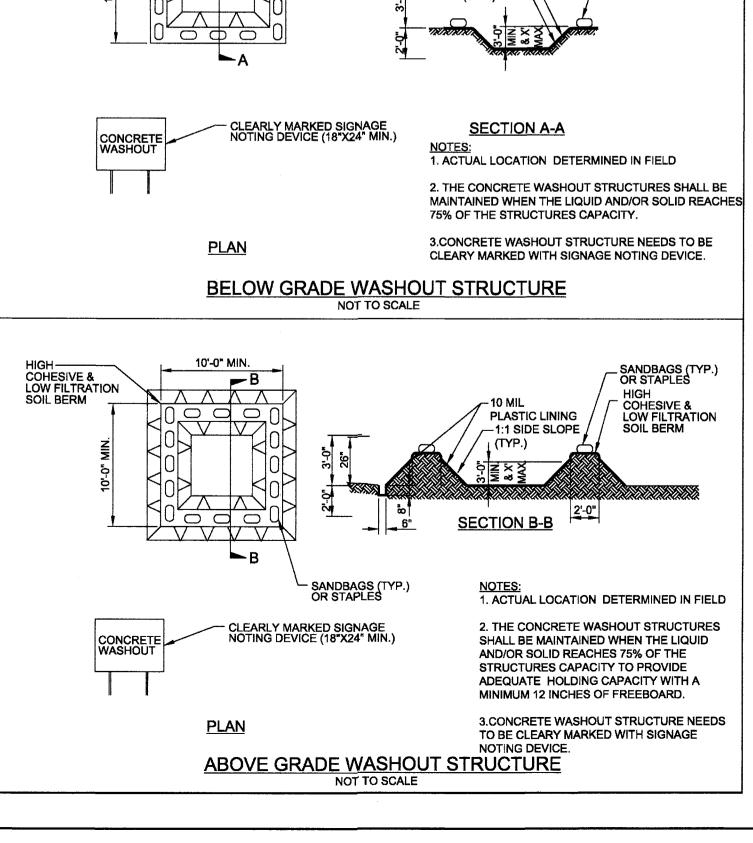
- Store and apply herbicides, pesticides and rodenticides in accordance with label Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of
- accidental poisoning. Do not store herbicides, pesticides 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.

HAZARDOUS AND TOXIC WASTE

4. Do not stockpile these materials onsite.

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

1. ACTUAL LOCATION DETERMINED IN FIELD 75% OF THE STRUCTURES CAPACITY. BELOW GRADE WASHOUT STRUCTURE NOT TO SCALE AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE MINIMUM 12 INCHES OF FREEBOARD. NOTING DEVICE.



DESCRIPTION **REVISIONS** © 2020 NORRIS & TUNSTALL

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

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Licence #C-3641

ROAD

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DETAILS

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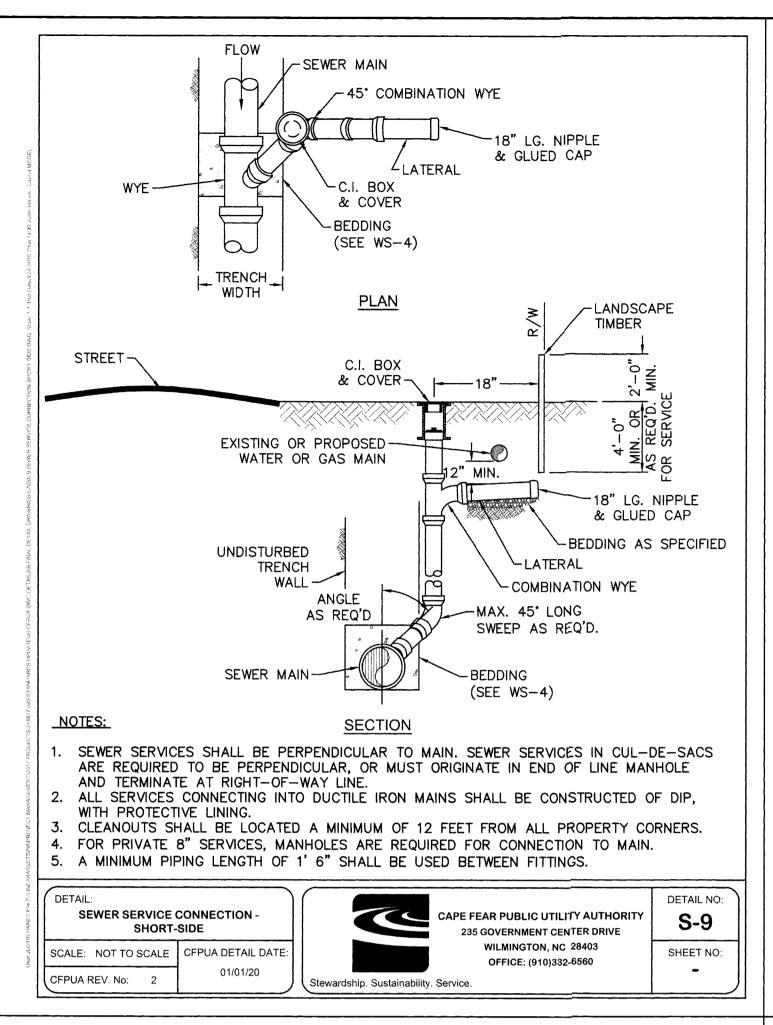
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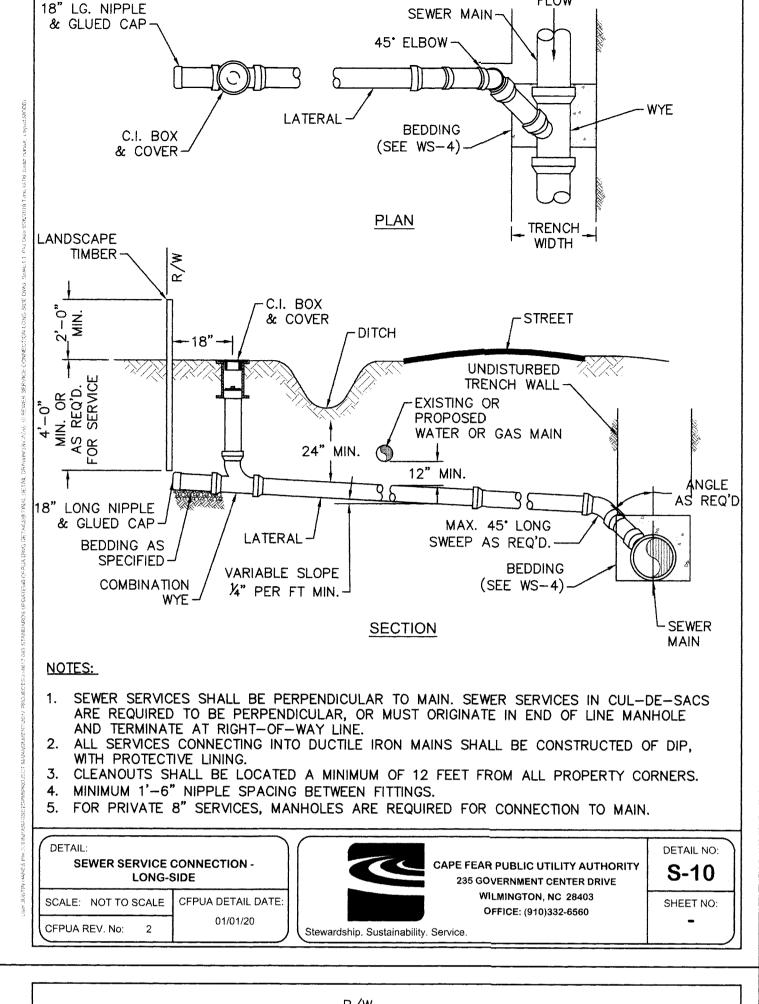
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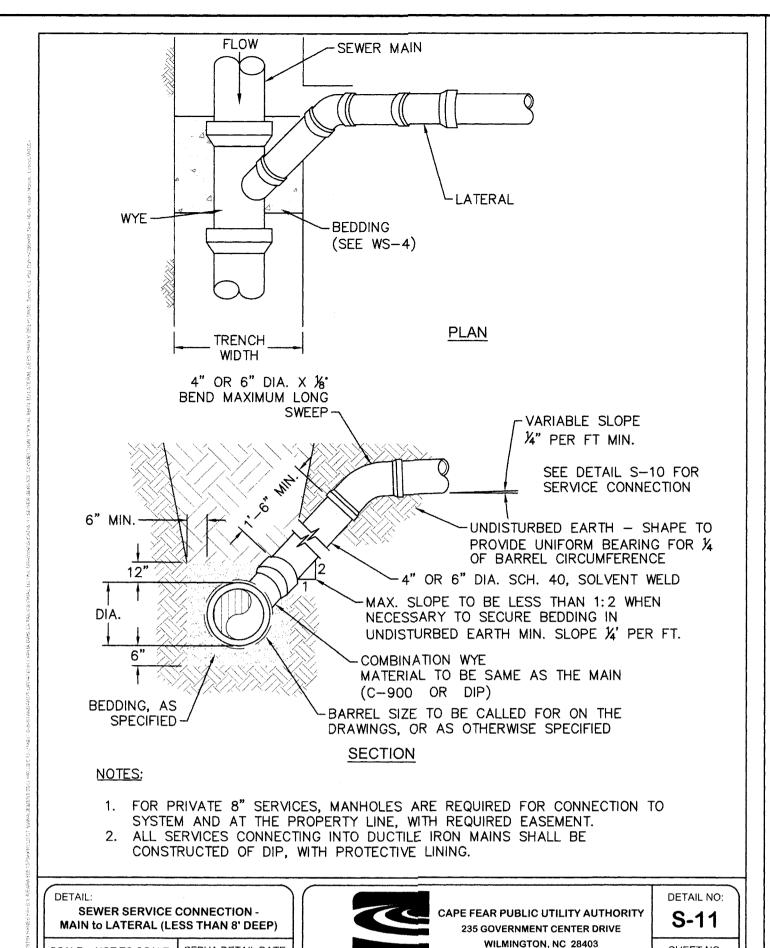
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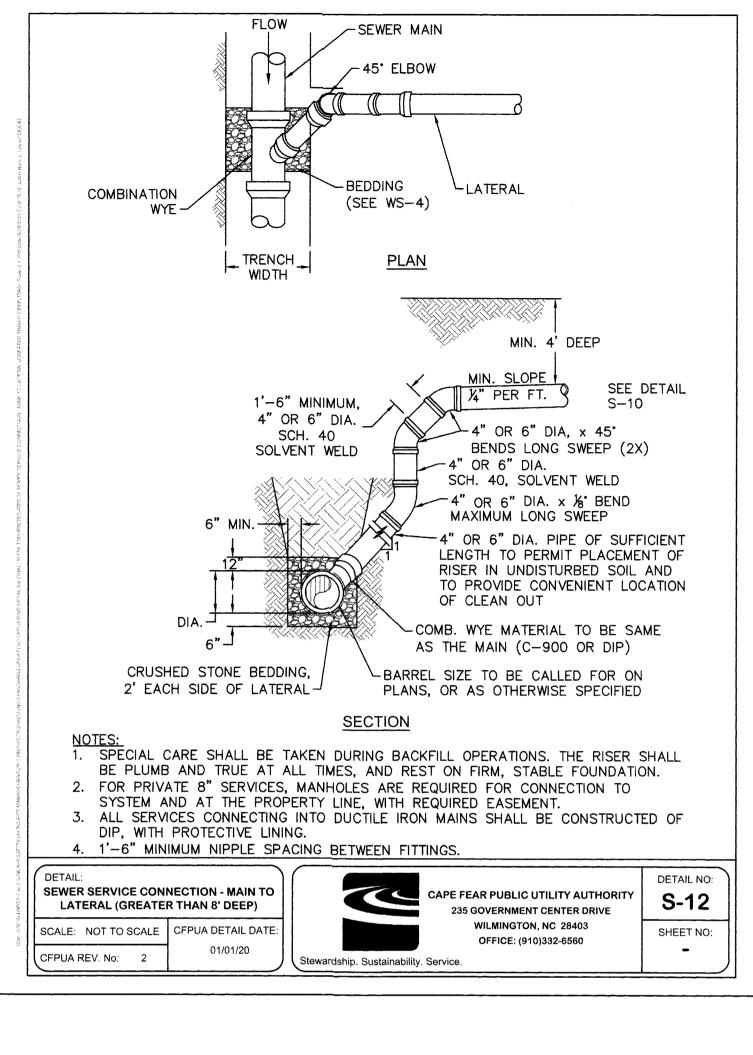
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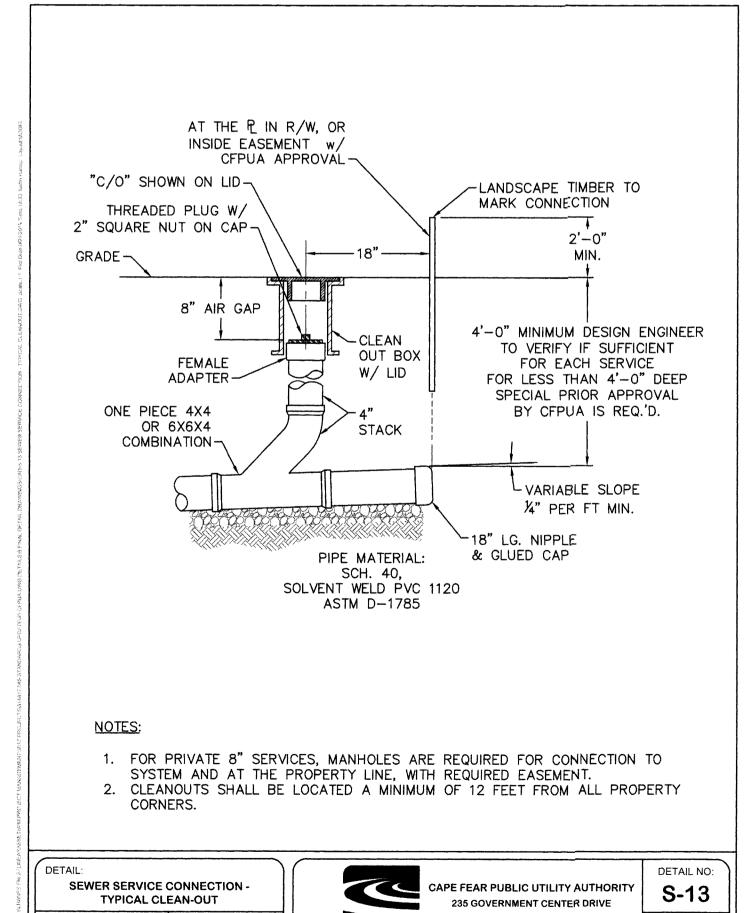


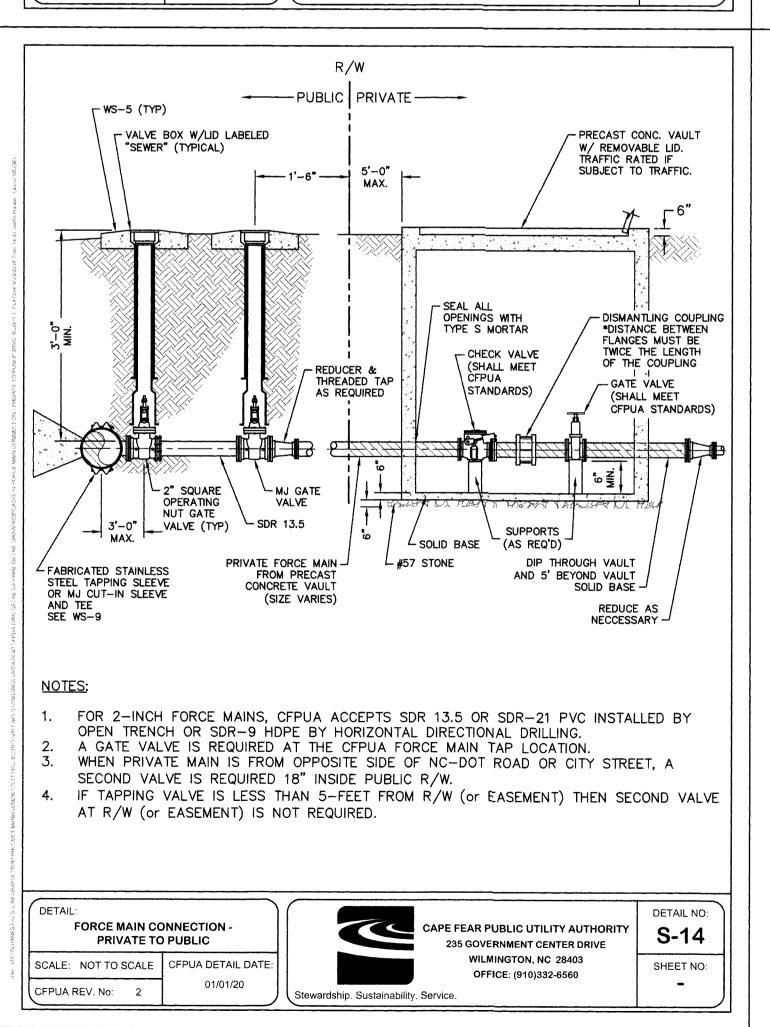


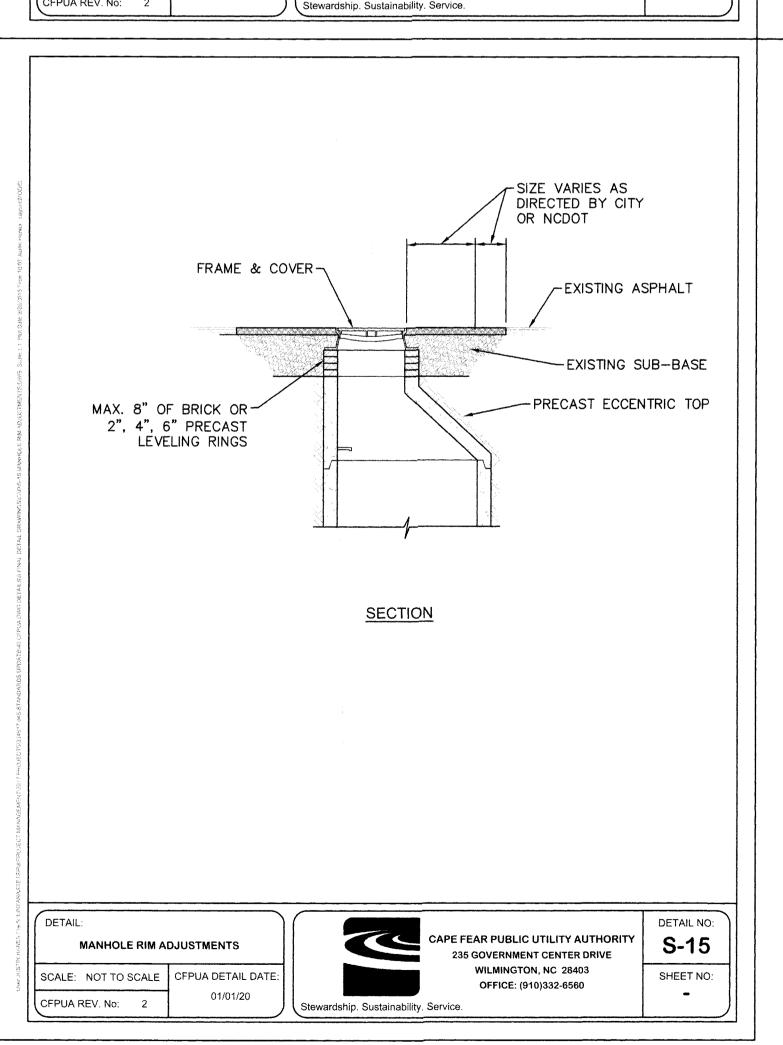


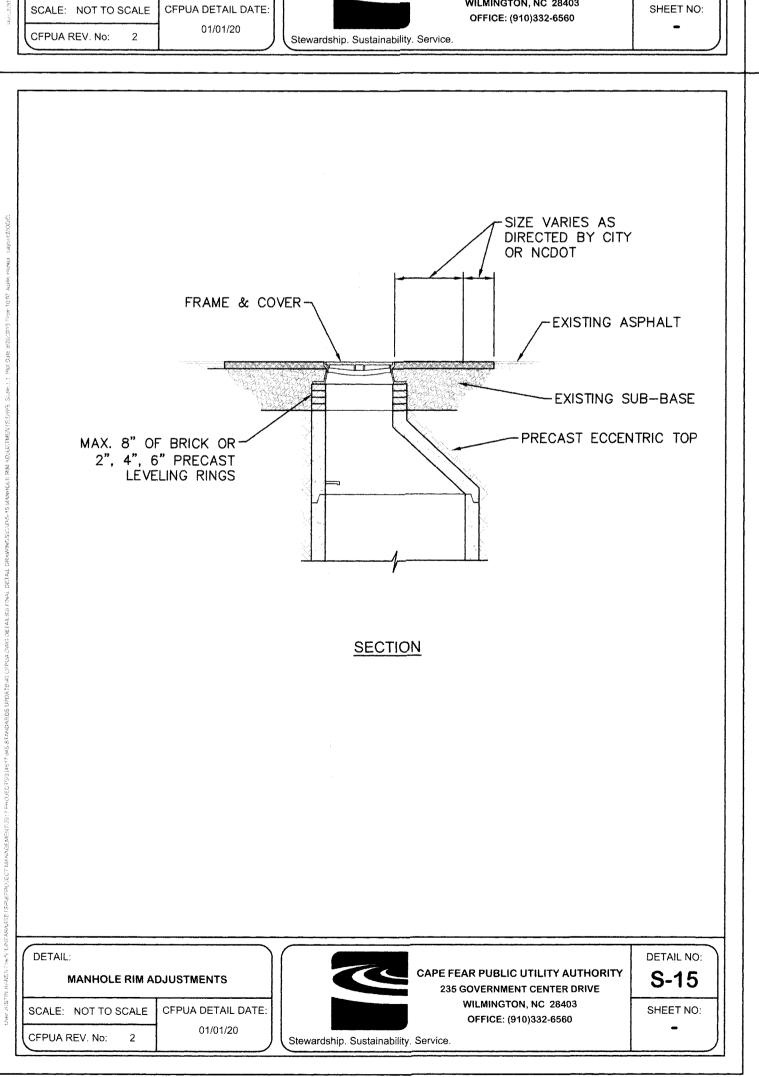


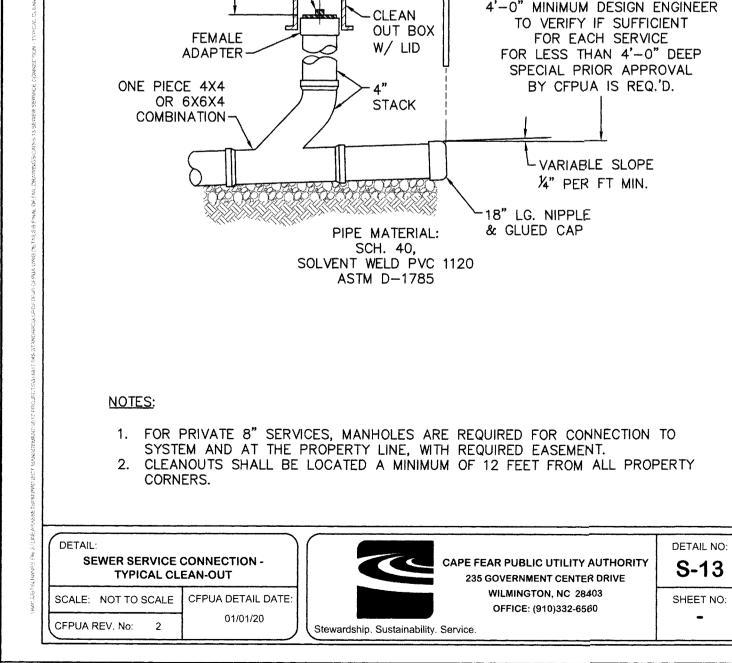


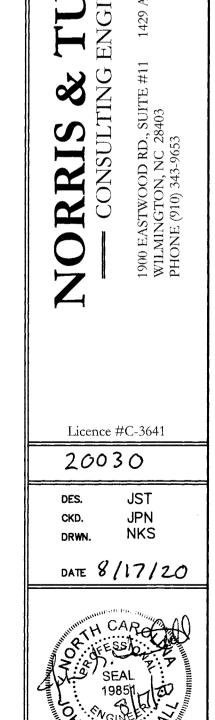












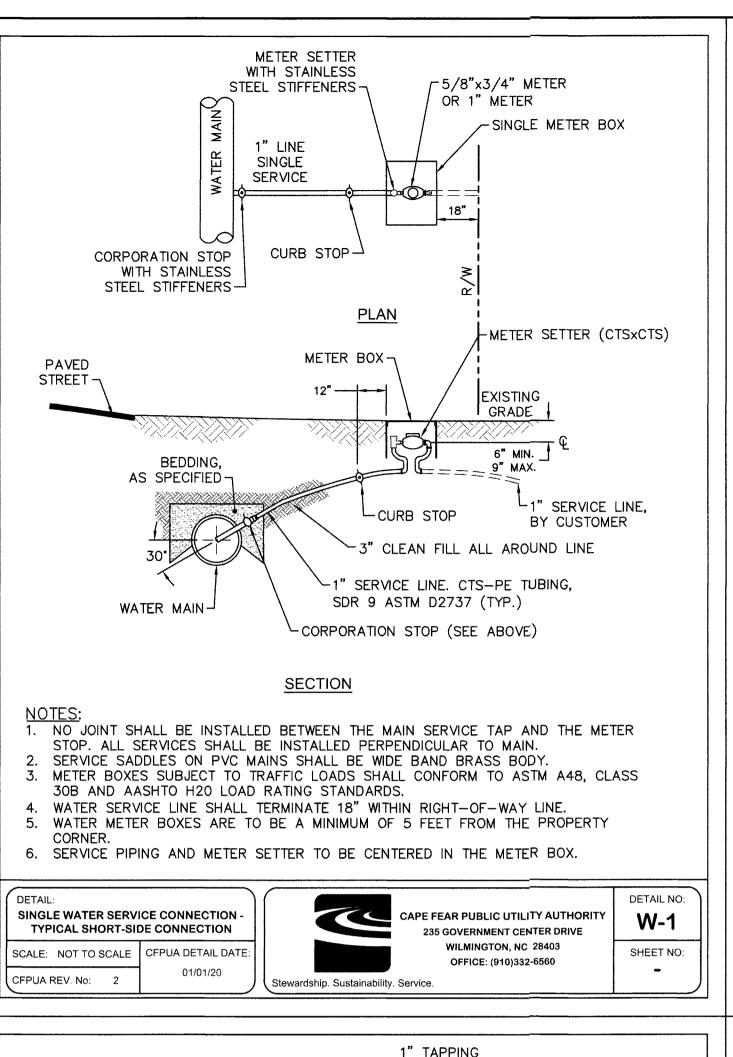
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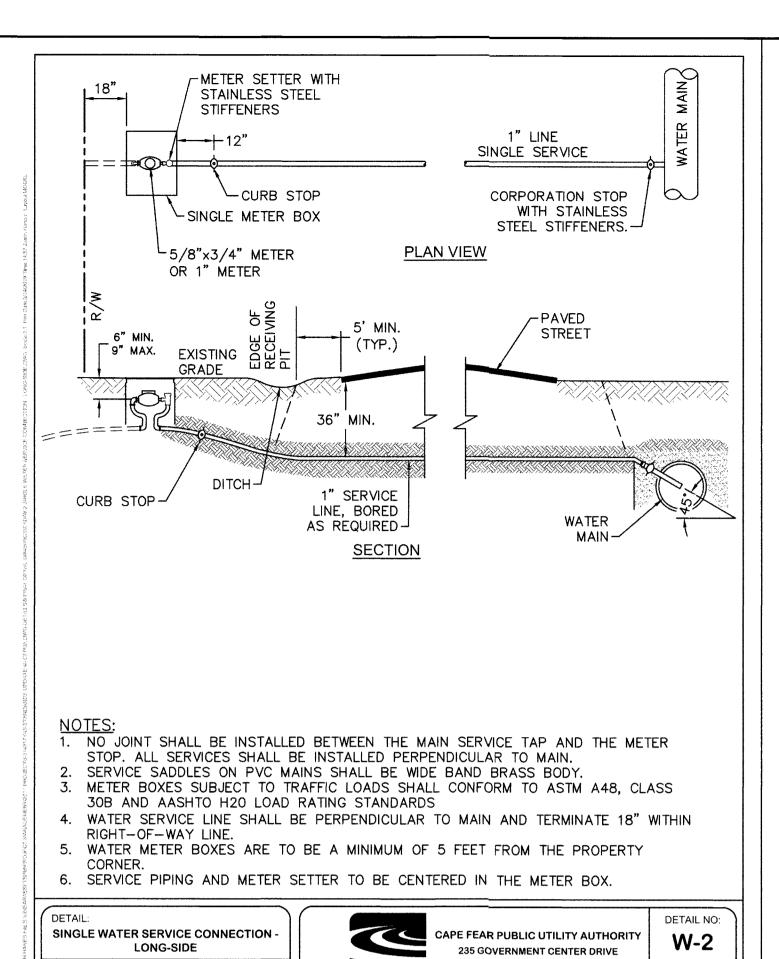
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WILMINGTON, NC 28403

OFFICE: (910)332-6560

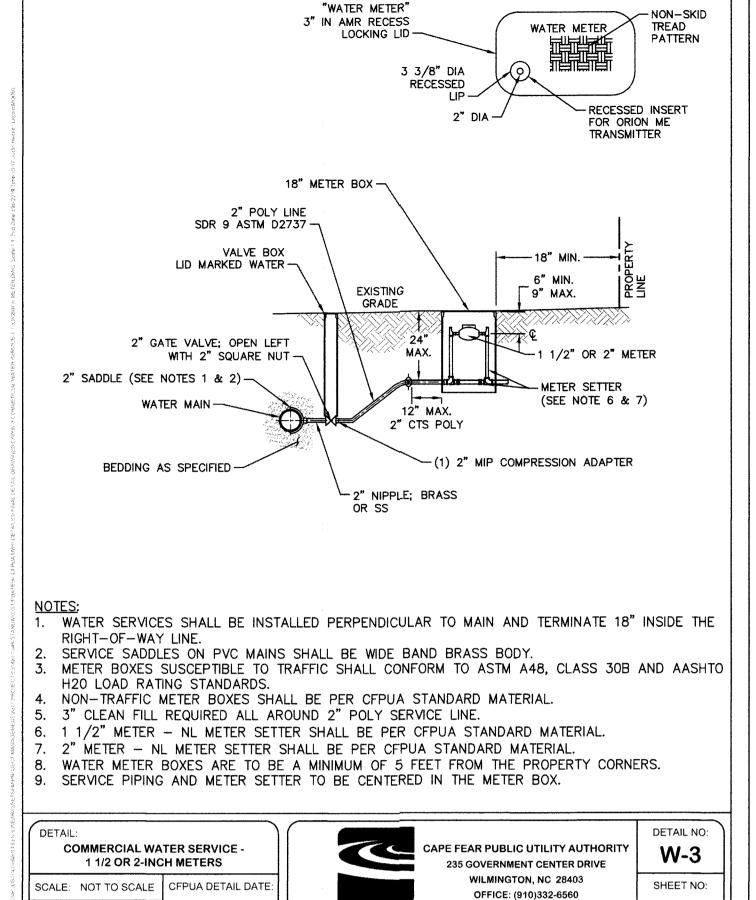
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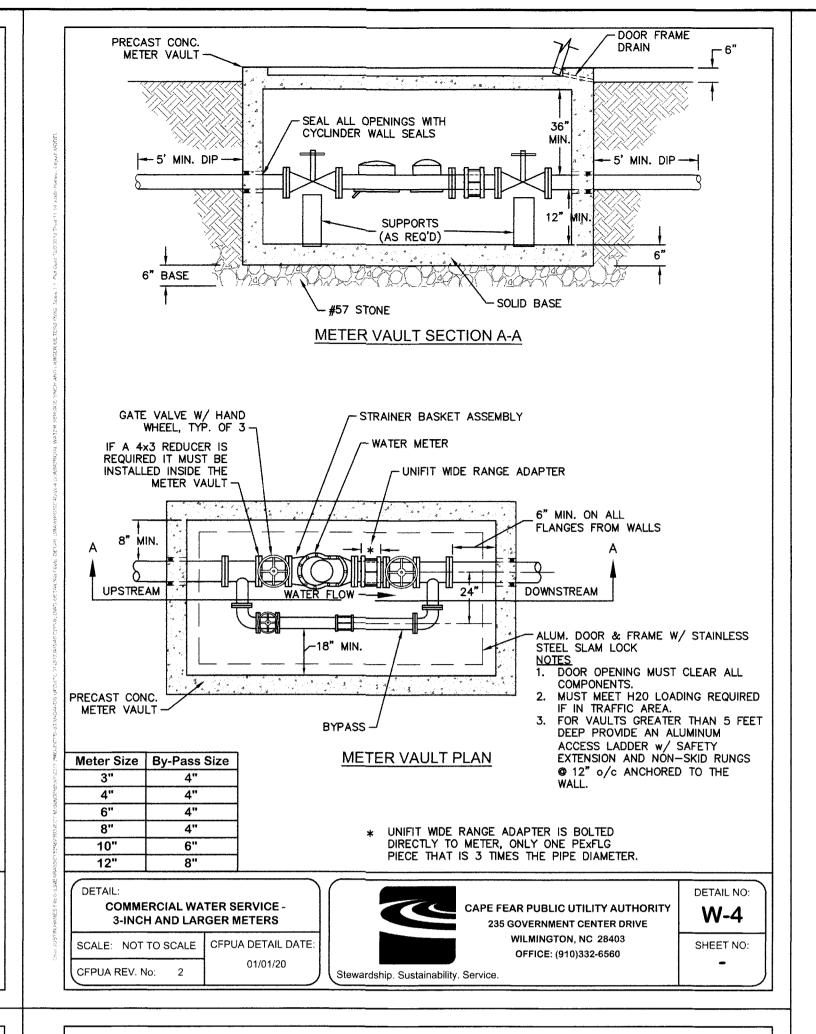
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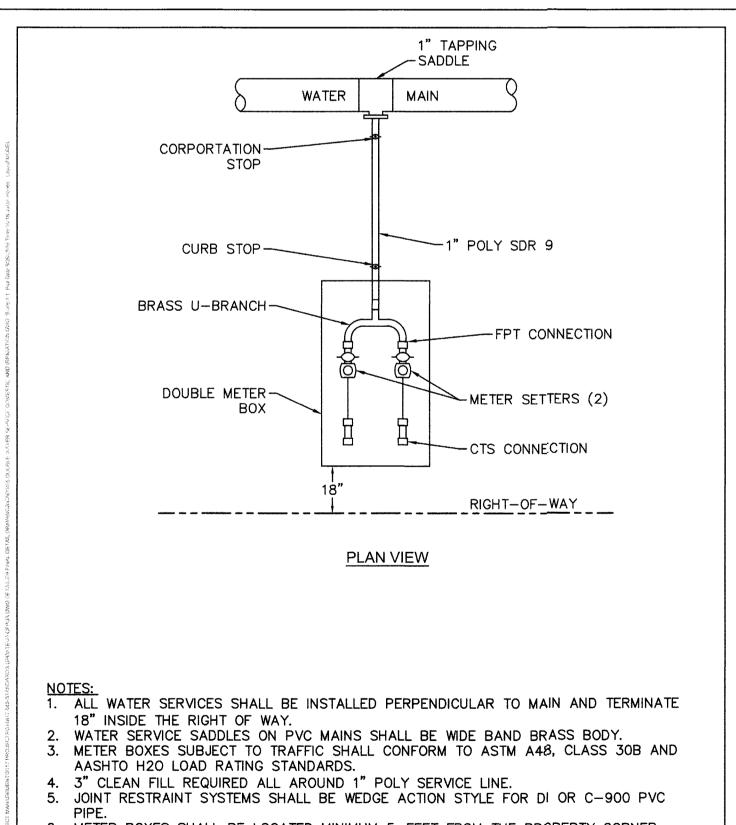
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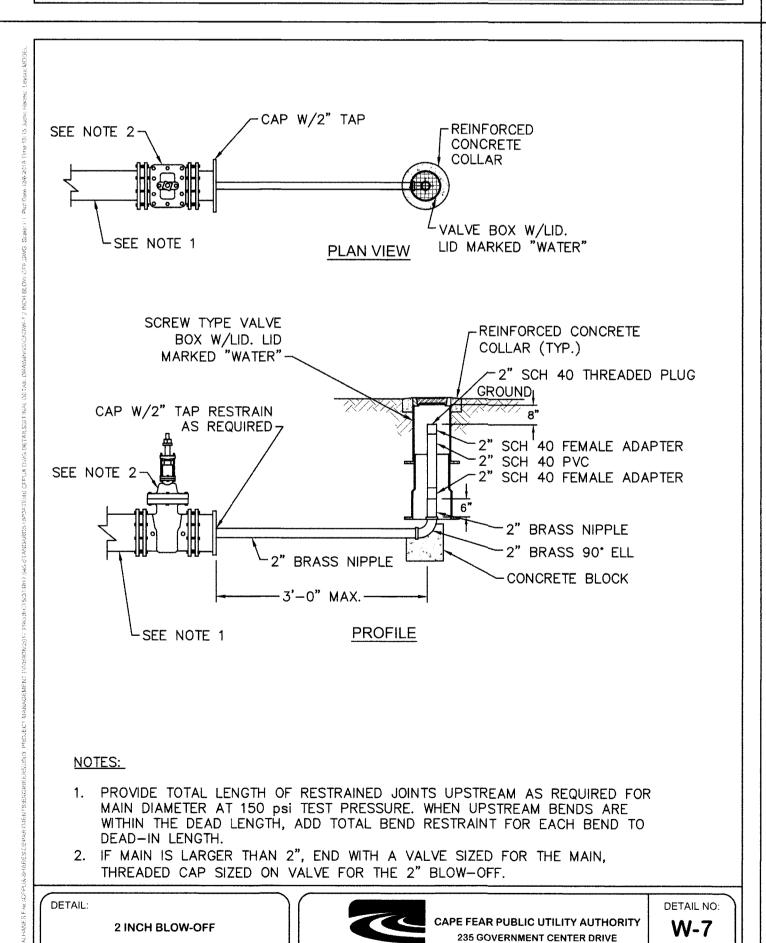


Stewardship. Sustainability. Service.

FLUSH COVER BLACK







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Stewardship, Sustainability, Service.

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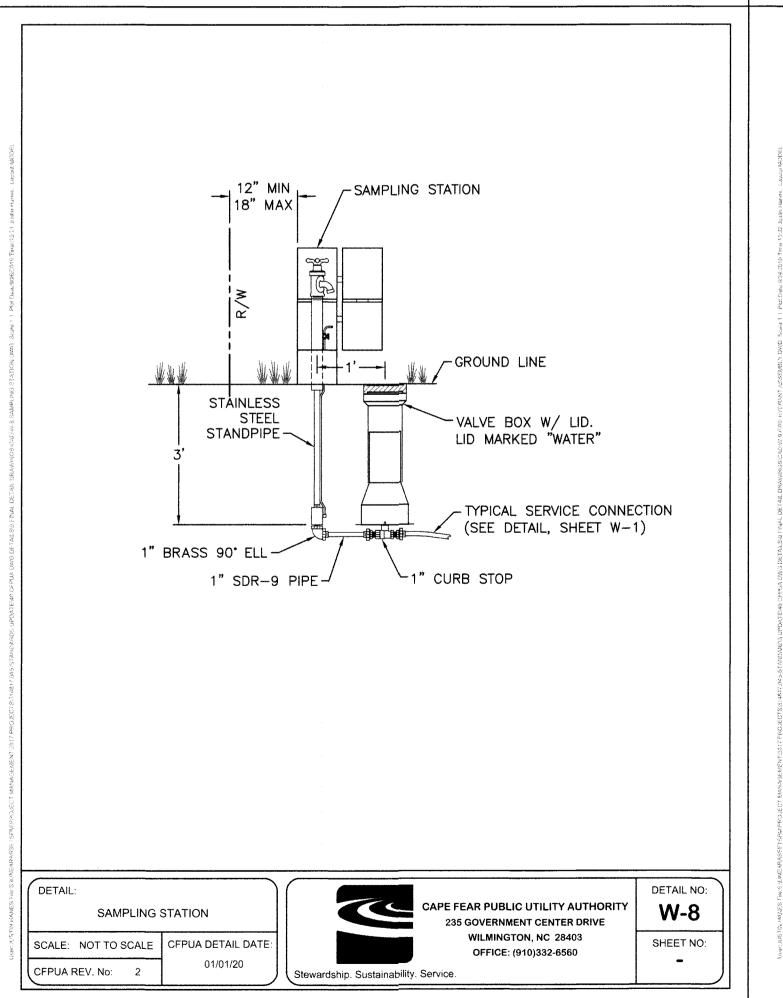
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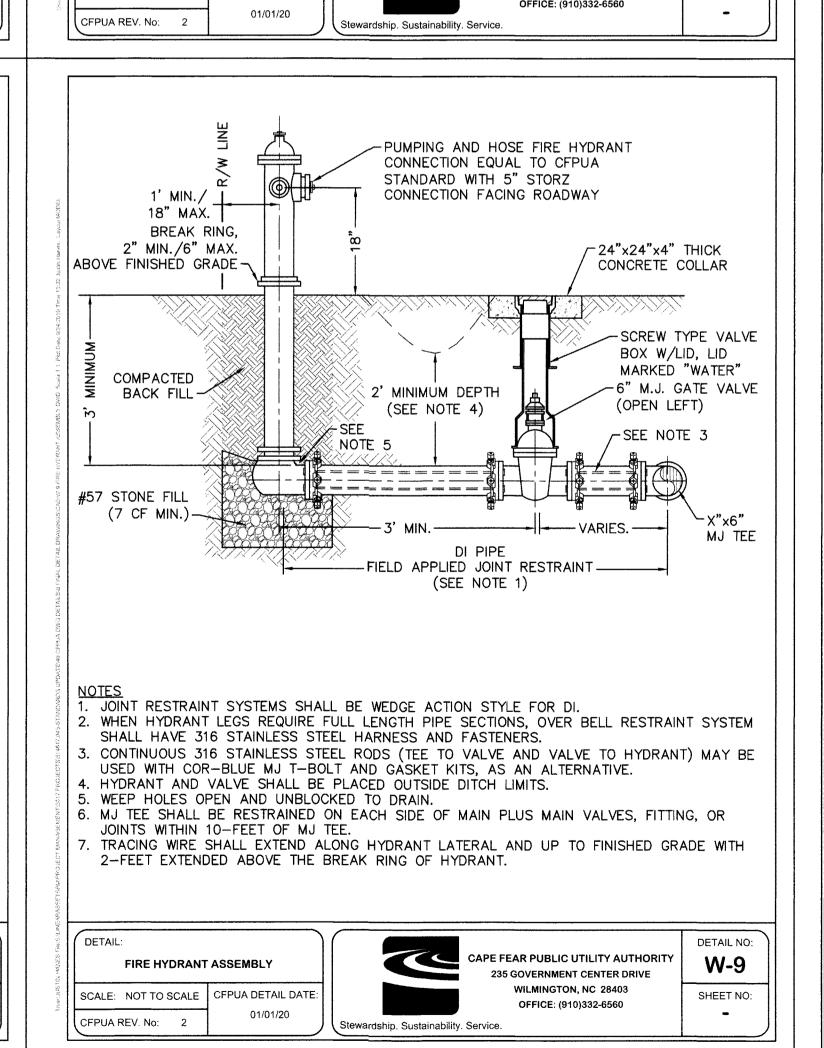
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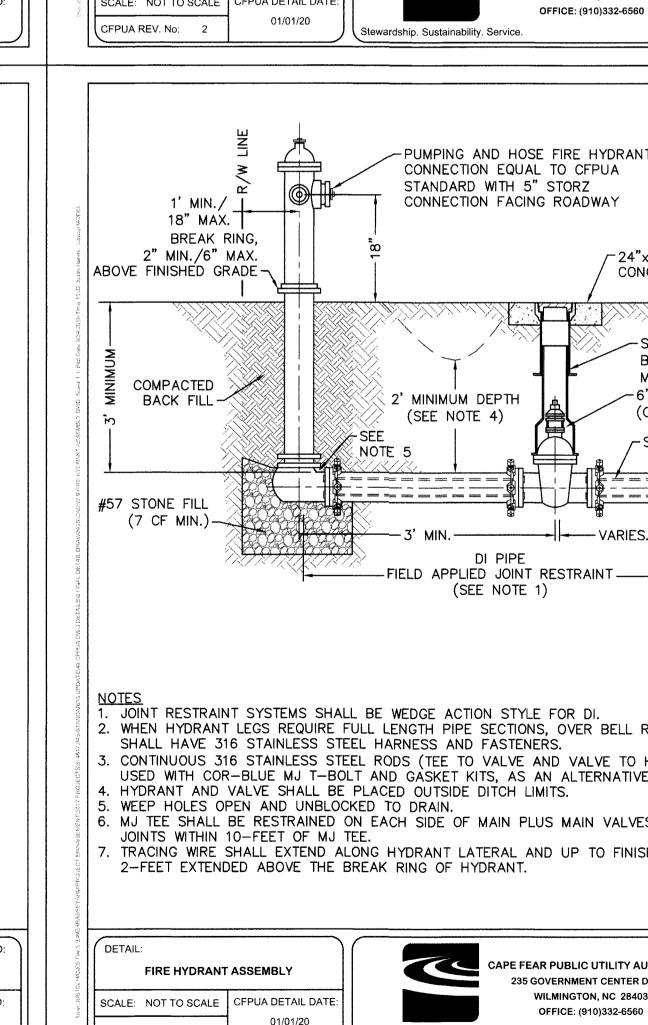
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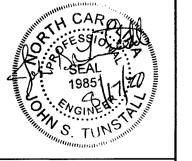
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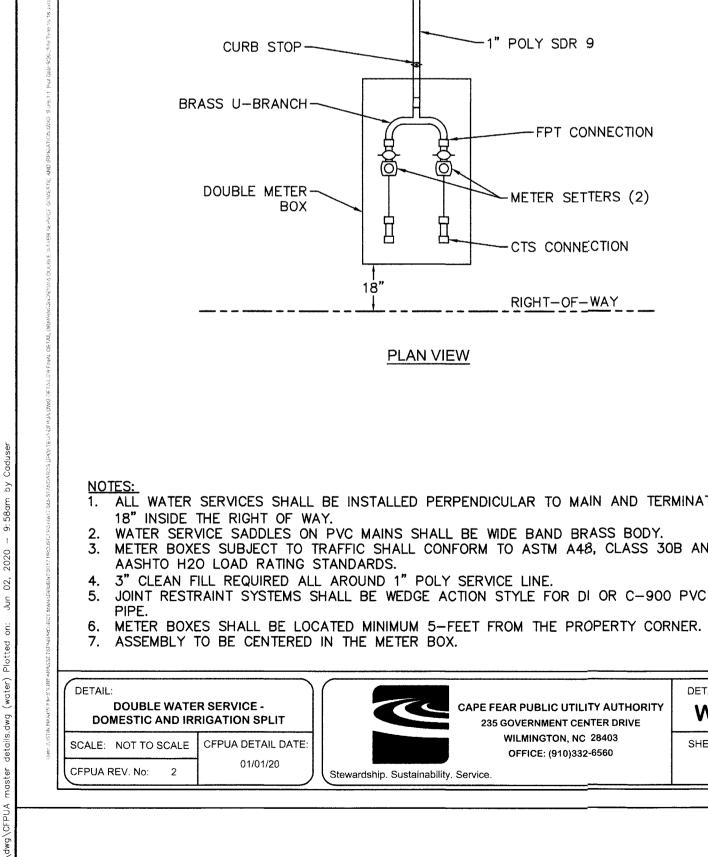
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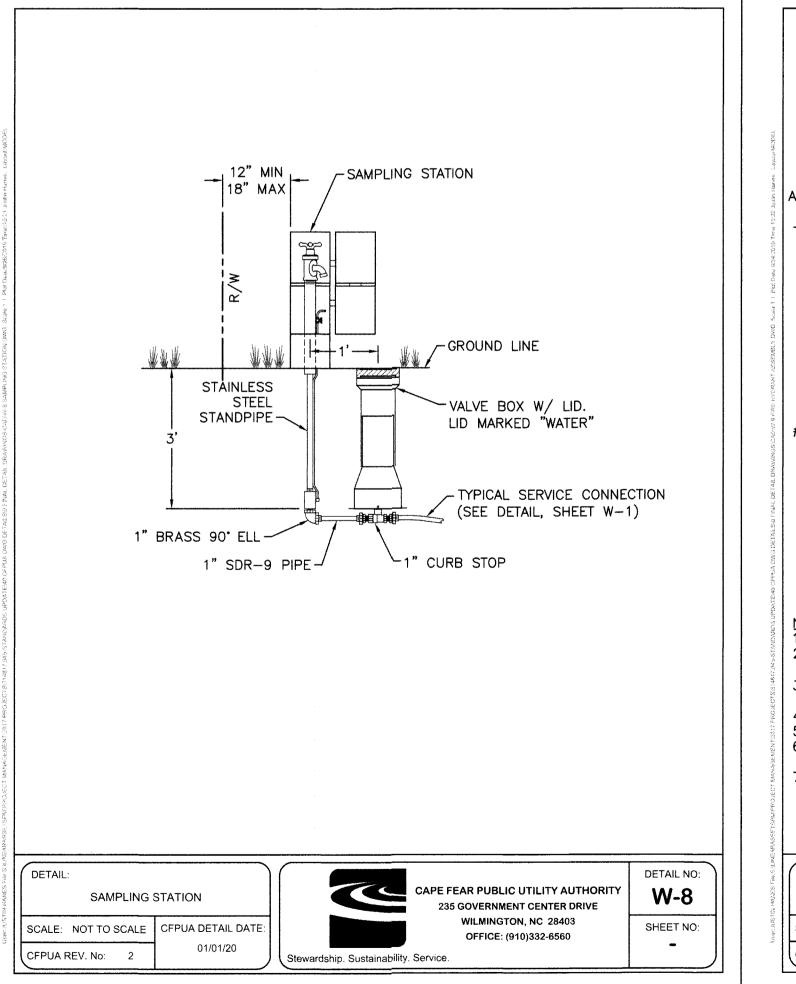
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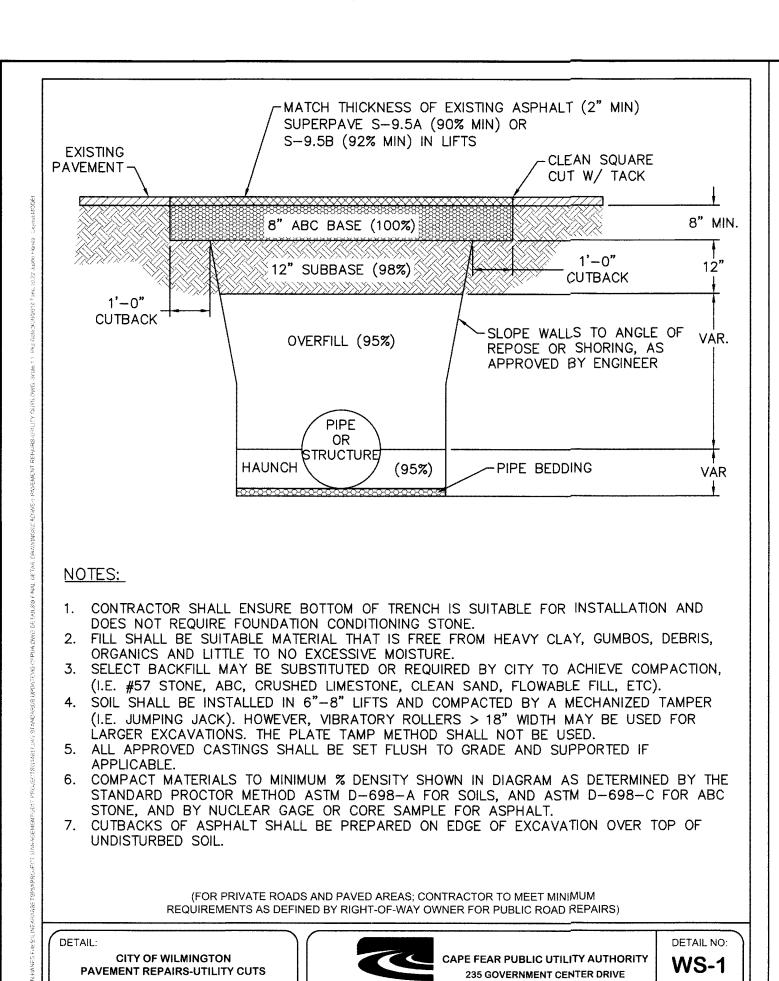
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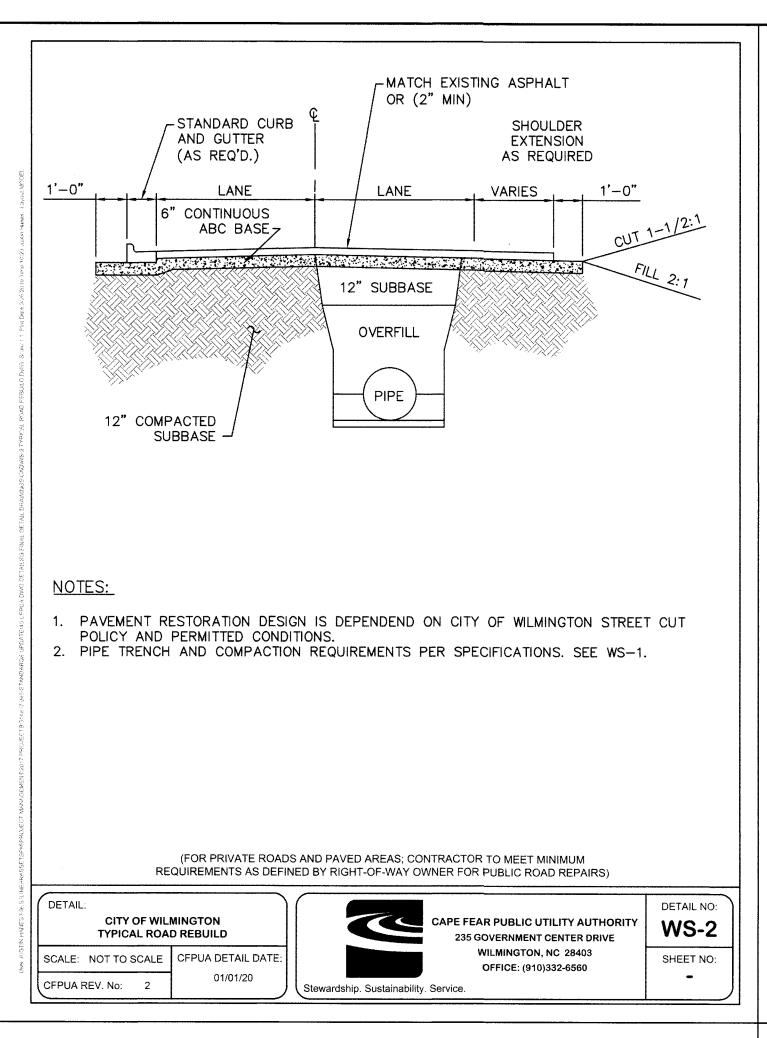
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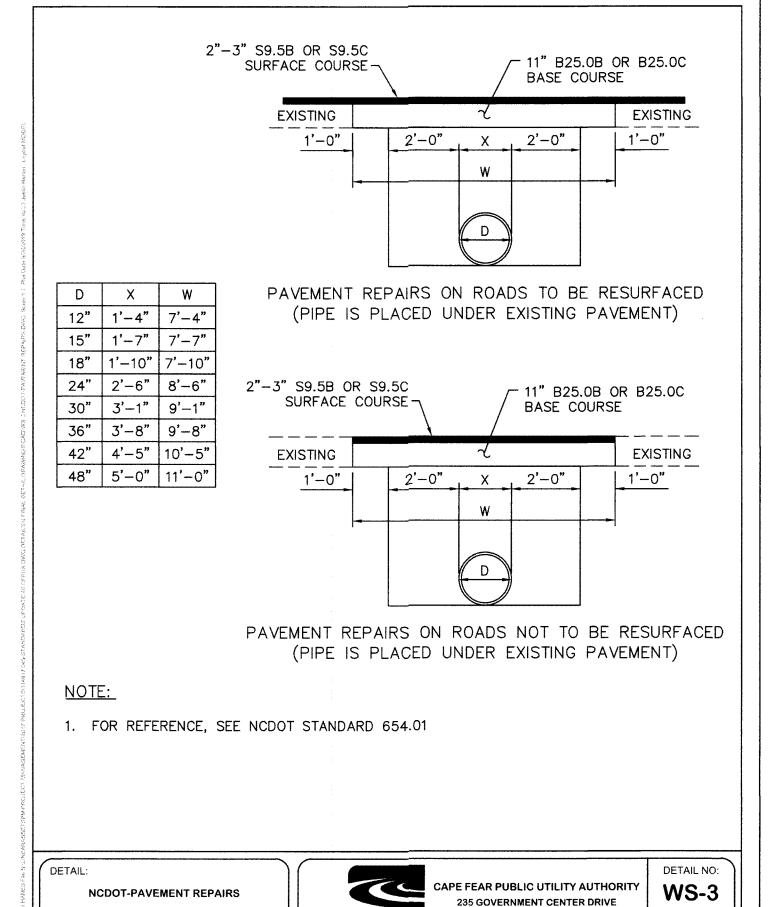
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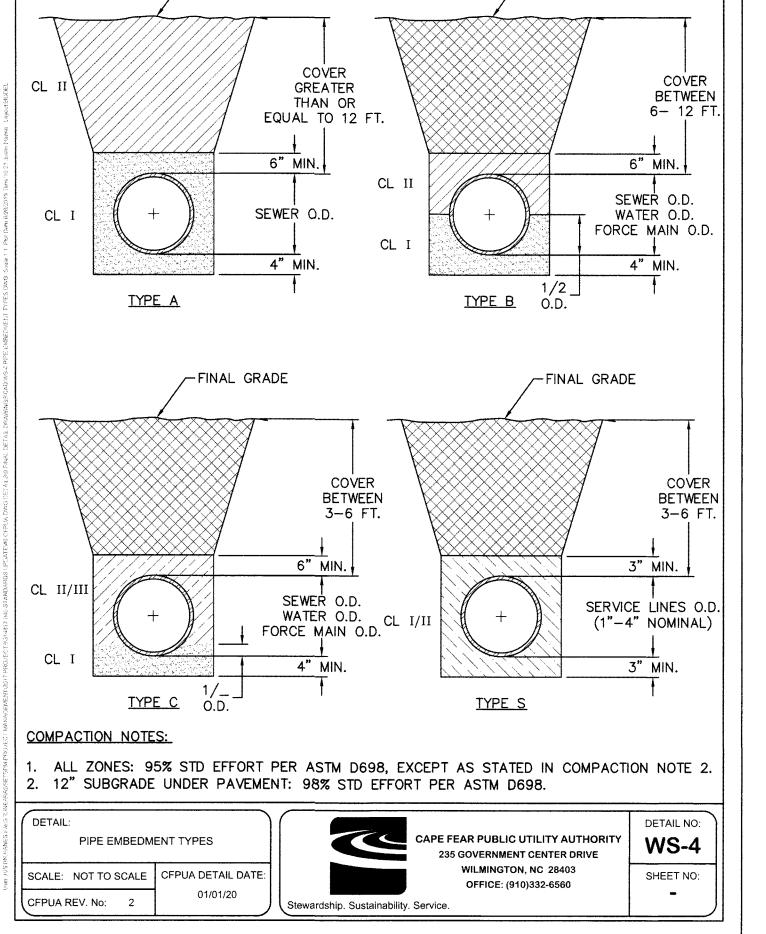
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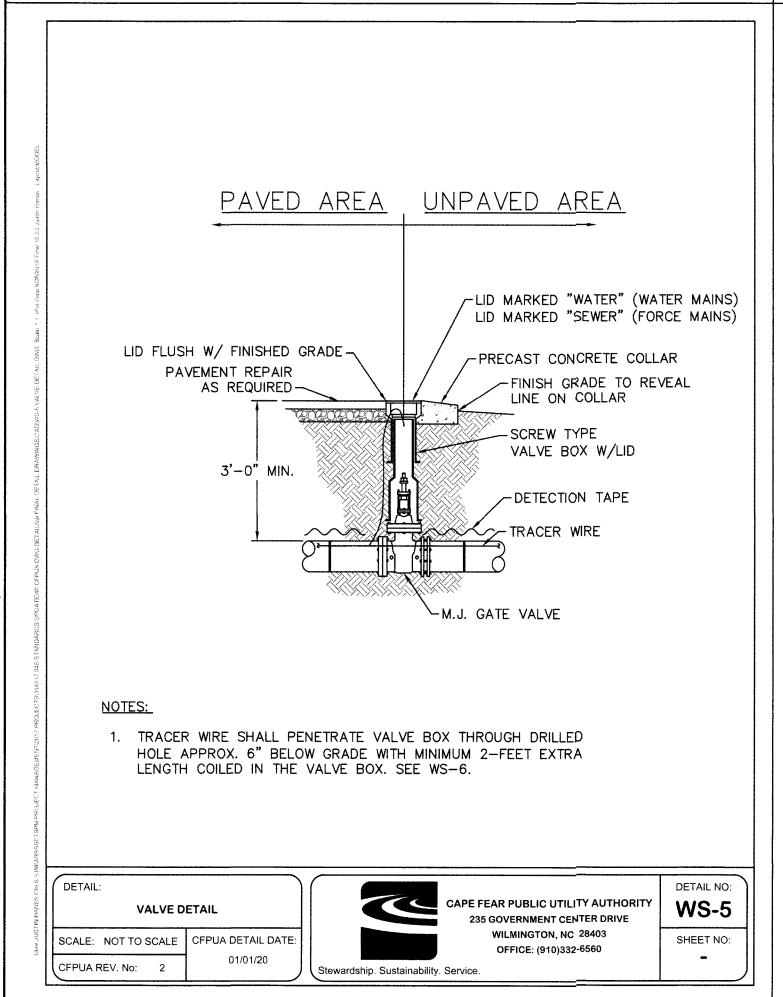
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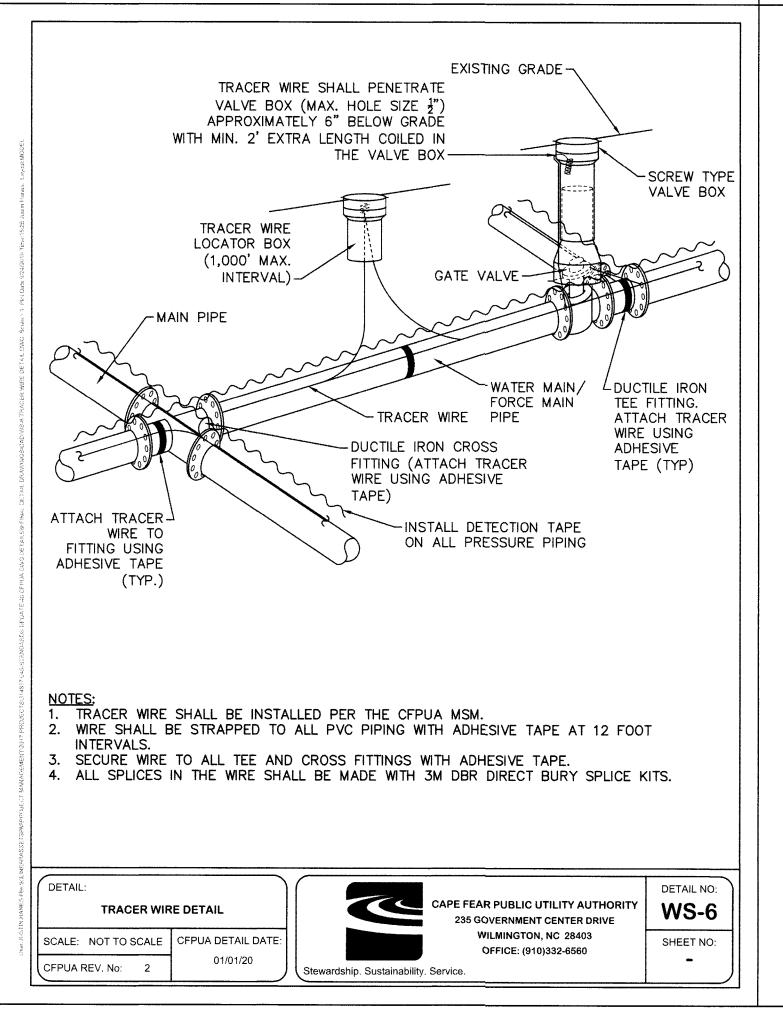
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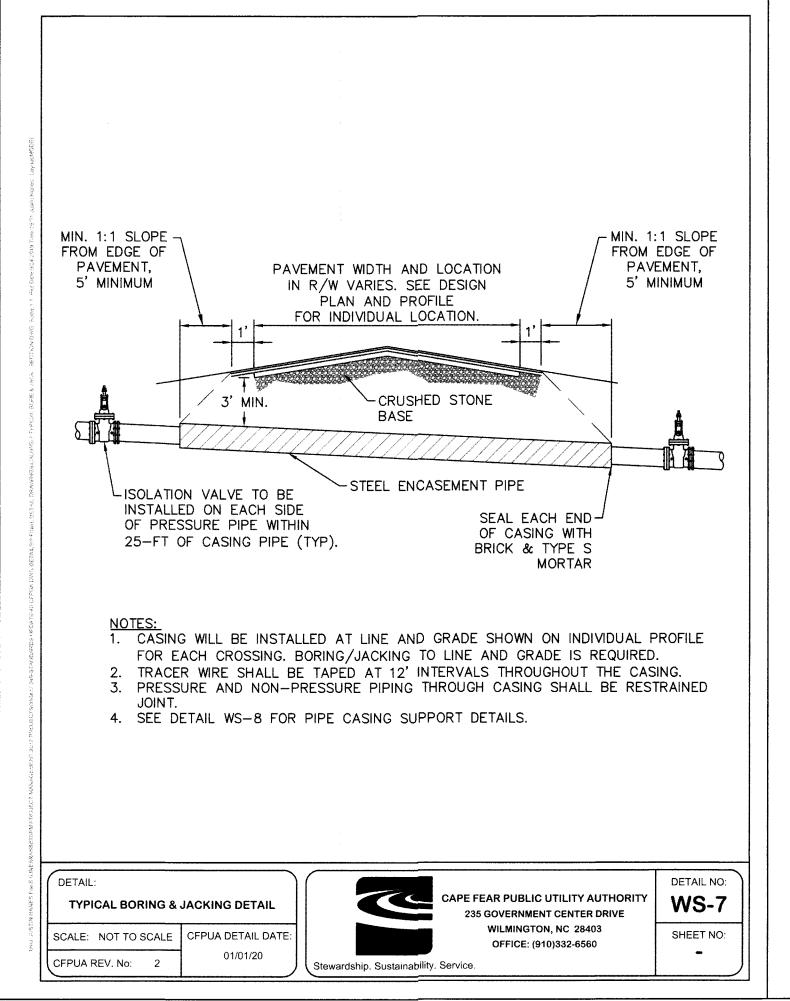
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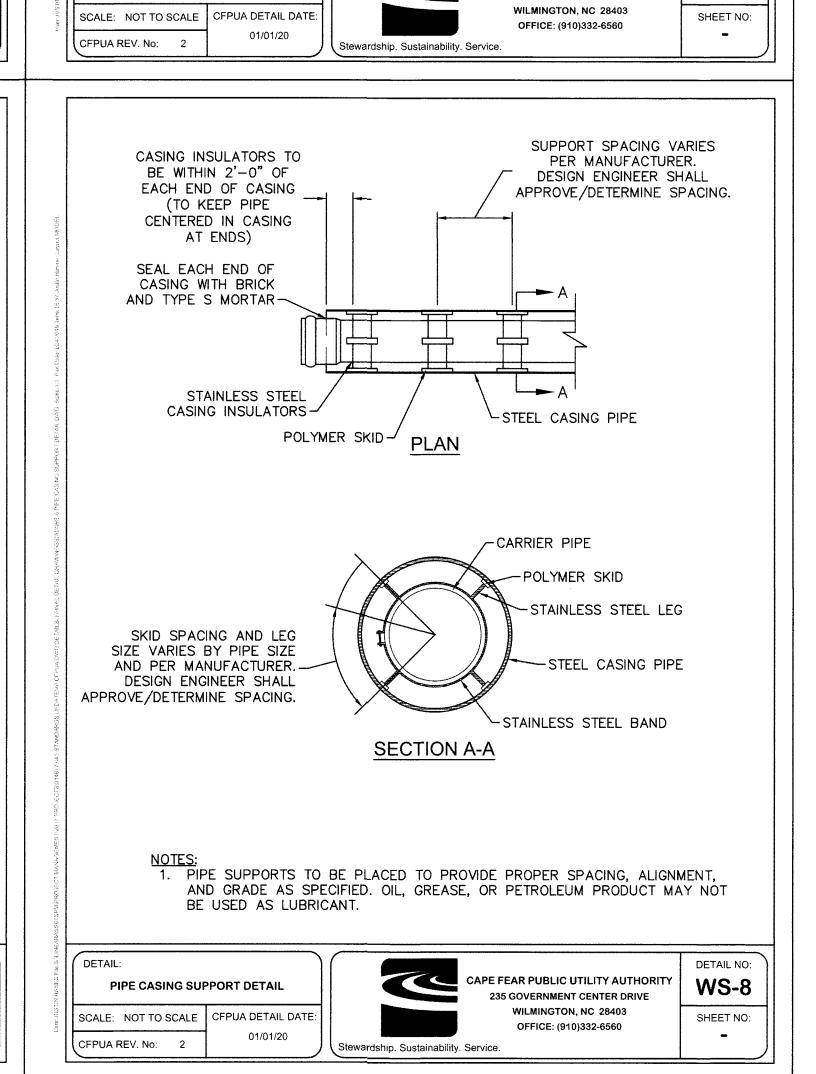


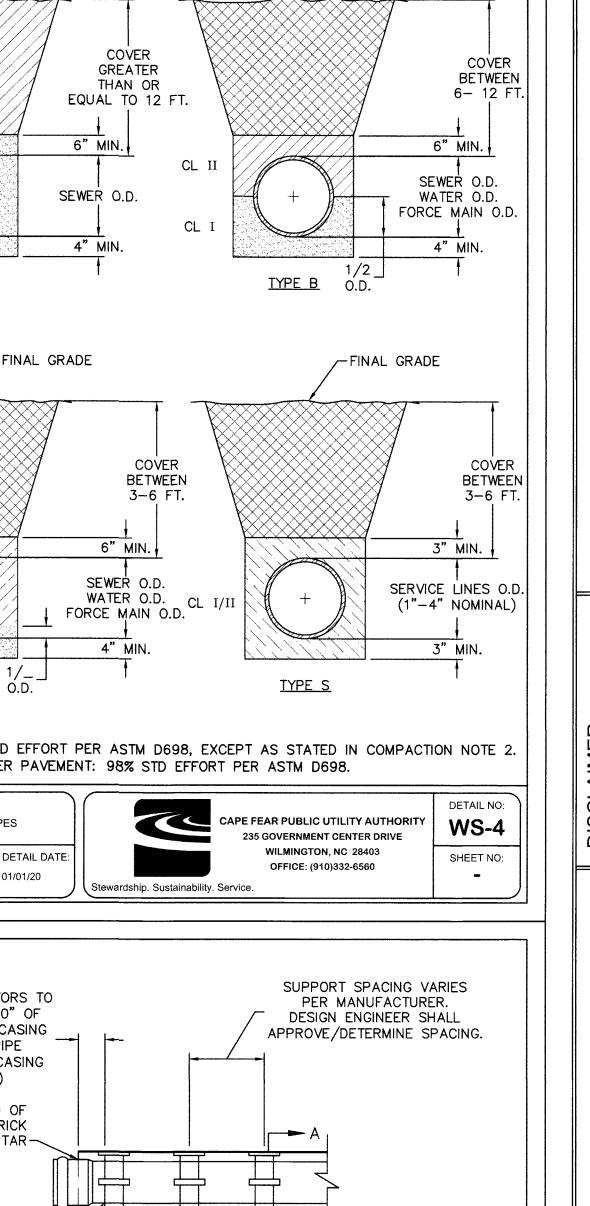
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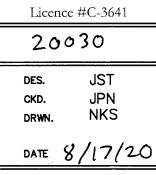




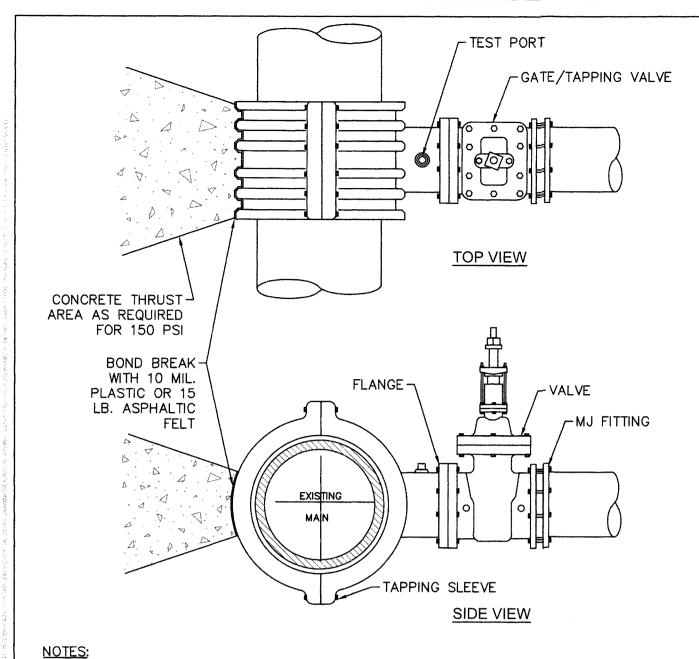
-FINAL GRADE



SEWER ITY AUTHOF DRIVE







- CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS. PIPE & FITTING TO BE WRAPPED IN 10 MIL. PLASTIC OR 15 LB. ASPHALTIC FELT
- PRIOR TO THRUST BLOCK BEING POURED. TEST PRESSURE SHALL NOT BE APPLIED FOR A MINIMUM OF 7 DAYS AFTER
- THRUST BLOCK PLACEMENT. 4. BRANCH SHALL NOT EQUAL RUN DIAMETER UNLESS APPROVED BY CFPUA ENGINEERING.

TAPPING SLEEVE AND VALVE ASSEMBLY (4"-24") SCALE: NOT TO SCALE | CFPUA DETAIL DATE CFPUA REV. No: 2



CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 tewardship, Sustainability, Service

WS-9 SHEET NO:

PRESSURE MAIN DITCH AND STORM DRAIN DITCH CROSSING-DIP SCALE: NOT TO SCALE | CFPUA DETAIL DATE: CFPUA REV. No:

CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 Stewardship, Sustainability, Service

WS-10

SHEET NO:

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

1. ALL PROPOSED ADDITIONS TO THE CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) WATER DISTRIBUTION AND SANITARY SEWER COLLECTION SYSTEMS, AS SHOWN AND SPECIFIED HEREIN, SHALL BE DESIGNED AND CONSTRUCTED TO CONFORM TO STATE RULES AND THE CFPUA'S MINIMUM TECHNICAL STANDARDS. THE CFPUA MINIMUM TECHNICAL STANDARDS ARE CONTAINED IN THE CURRENT DESIGN GUIDANCE MANUAL, MATERIAL SPECIFICATION MANUAL, TECHNICAL SPECIFICATIONS

2. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.

PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE.

SHALL ALSO BE CONSTRUCTED OF DIP. 5. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE

DEVELOPMENTS.

8. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 6 FEET FROM

ALL PROPERTY CORNERS. 9. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM

SERVICES SHALL BE DISCONNECTED FROM MAIN.

12. A MINIMUM OF 20' OF MAIN LINE, 10' UPSTREAM AND 10' DOWNSTREAM SHALL BE REPLACED FOR NEW CUT IN MANHOLES ON EXISTING CLAY GRAVITY SEWER MAINS

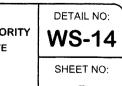
BETWEEN EDGES OF CORE HOLES. CORING THE MANHOLE CONE IS NOT PERMITTED

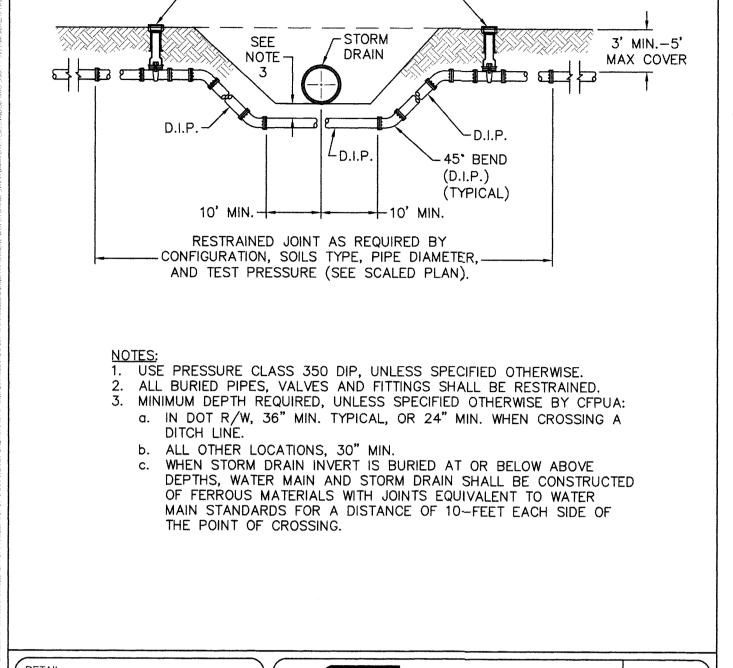
MAXIMUM OF FIVE (5) FEET BELOW FINISHED GRADE. DEPTHS GREATER THAN FIVE (5) FEET MUST BE APPROVED BY CFPUA. 15. ALL MANHOLE MAIN LINE AND SERVICE PIPING TO BE

INSTALLED AT A MINIMUM OF CROWN TO CROWN OF THE LARGEST DIAMETER PIPE.

STANDARD NOTES (REQUIRED ON ALL PLAN AND PROFILE SHEETS) SCALE: NOT TO SCALE | CFPUA DETAIL DATE: CFPUA REV. No:



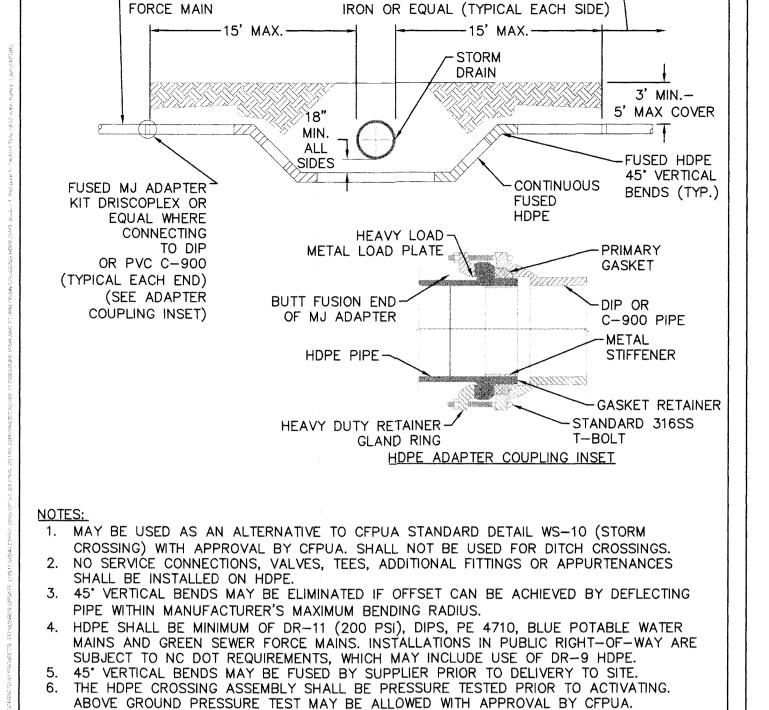




GATE VALVES REQUIRED ON EACH SIDE OF THE CROSSING.

NO SERVICES ARE PERMITTED

BETWEEN THE VALVES.



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T12" OR SMALLER

PVC OR DIP

WATER OR

PRESSURE MAIN AND

STORM DRAIN CROSSING-HDPE

SCALE: NOT TO SCALE | CFPUA DETAIL DATE

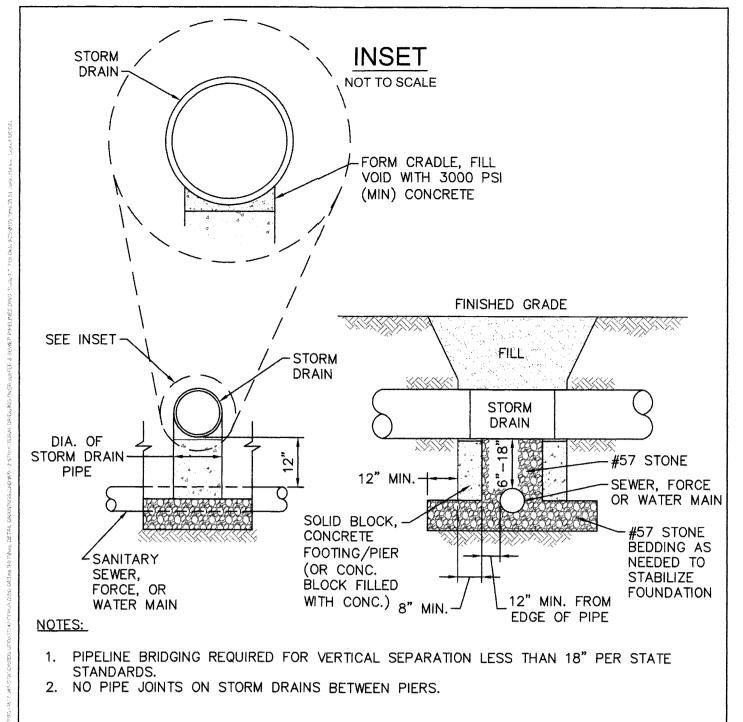
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01/01/20

RESTRAINED JOINTS LENGTH-

FIELD APPLIED SYSTEMS BY EBAA

AS REQUIRED USING



STRUCTURAL BRIDGING OVER WATER & SEWER PIPELINES SCALE: NOT TO SCALE | CFPUA DETAIL DATE: CFPUA REV. No: 2

DETAIL NO:

SHEET NO:

CAPE FEAR PUBLIC UTILITY AUTHORITY

235 GOVERNMENT CENTER DRIVE

WILMINGTON, NC 28403

OFFICE: (910)332-6560



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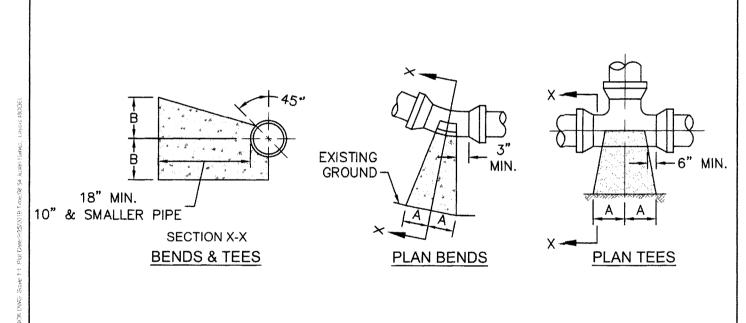
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Licence #C-3641 20030

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DATE 8/17/20





SIZE	90 E	BENDS B	45 E	BENDS B	22-1/2 A	BENDS B	TEES/	PLUGS B	45 VERT. BENDS
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
6"	8" 14"	9" 11"	5" 9"	8" 9"	3" 8"	11" 8"	6" 12"	9" 9"	28" 36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	28"	18"	17"	16"	16"	22"	18"	62"
14	26"	29"	21"	19"	18"	18"	26"	20"	72"
16"	33"	29"	25"	21"	20"	21"	32"	21"	83"
18"	40"	30"	28"	24"	22"	23"	36"	24"	88"

ALLOW 7-DAY MINIMUM CONCRETE CURE TIME BEFORE PLACING LOAD ON THRUST BLOCK BASED ON 160 PSI TEST PRESSURE AND 2,000 PSF SOIL BEARING CAPACITY. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.

DETAIL: THRUST BLOCK SCALE: NOT TO SCALE | CFPUA DETAIL DATE: CFPUA REV. No: 2

DETAIL NO: CAPE FEAR PUBLIC UTILITY AUTHORITY WS-13 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 Stewardship, Sustainability, Service,

FOR CONSTRUCTION, AND STANDARD DRAWING DETAILS.

3. WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE

4. ALL SEWER SERVICES CONNECTING INTO DUCTILE IRON MAINS

FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW

6. NO FLEXIBLE COUPLINGS SHALL BE USED. 7. ALL STAINLESS STEEL FASTENERS SHALL BE TYPE 316.

THE PROPERTY CORNER. 10. UNUSED SERVICES SHALL BE ABANDONED. ABANDONED WATER

11. A MINIMUM OF 10' OF MAIN LINE, 5' UPSTREAM AND 5' DOWNSTREAM SHALL BE REPLACED FOR NEW SEWER SERVICE CONNECTIONS TO EXISTING CLAY GRAVITY SEWER MAINS.

13. PROVIDE A MINIMUM DISTANCE OF SIX (6) INCHES BETWEEN EDGE OF MANHOLE CORE HOLES AND MANHOLE BARREL JOINTS. PROVIDE A MINIMUM DISTANCE OF SIX (6) INCHES

14. WATER MAIN AND FORCE MAIN PIPE INSTALLED BY OPEN CUT SHALL BE BURIED AT A MINIMUM OF THREE (3) FEET AND A

CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560

NOTES:

1. THRUST BLOCKING IS NOT PERMITTED EXCEPT IN SPECIAL INSTALLATIONS WHERE DESIGNED BY 5. PIPE & FITTINGS TO BE WRAPPED IN 10 MIL PLASTIC PRIOR TO THRUST BLOCK BEING POURED.