

SITE DATA

PARCEL ID: R02800-004-104-000
PIN #: 325018.41.2644.000
ZONED: R-5 (MODERATE-HIGH RESIDENTIAL)
PHASE 4-1 ACREAGE: 6.58 AC (287,047 SF)

FUTURE LAND USE PLACE TYPE: PERFORMANCE RESIDENTIAL
CAMA LAND USE CLASSIFICATION: WETLAND RESOURCE PROTECTION

DENSITY FACTOR: 8 UNITS PER ACRE
ACREAGE PH 4-1: 6.58 AC
UNITS ALLOWED: 52 UNITS
UNITS PROPOSED: 41 UNITS
BUILDING HEIGHT: 35' MAX.
BUILDING SETBACKS: 20' PERIMETER SETBACK
20' BUILDING SEPARATION

AREA DEDICATED AS PRIVATE ROAD ROW/ACCESS EASEMENT: 1.10± AC
BUILDING DATA: SEE TABLE
BUILDING LOT COVERAGE: 18.28%

OPEN SPACE REQUIRED: 0.03 AC PER UNIT SPLIT 50/50 ACTIVE/PASSIVE.
1.23 AC TOTAL (0.61 AC ACTIVE, 0.61 AC PASSIVE)
2.22± AC AVAILABLE FOR DESIGNATION
OF ACTIVE/PASSIVE OPEN SPACE. (TO BE DETERMINED)

OPEN SPACE AVAILABLE:

PARKING REQUIREMENT MULTIFAMILY
PARKING REQUIREMENT: 2.0 PER 2+BR UNIT REQUIRED
2.0 PER UNIT PROVIDED

SITE DISTURBED AREA: 8.00 AC

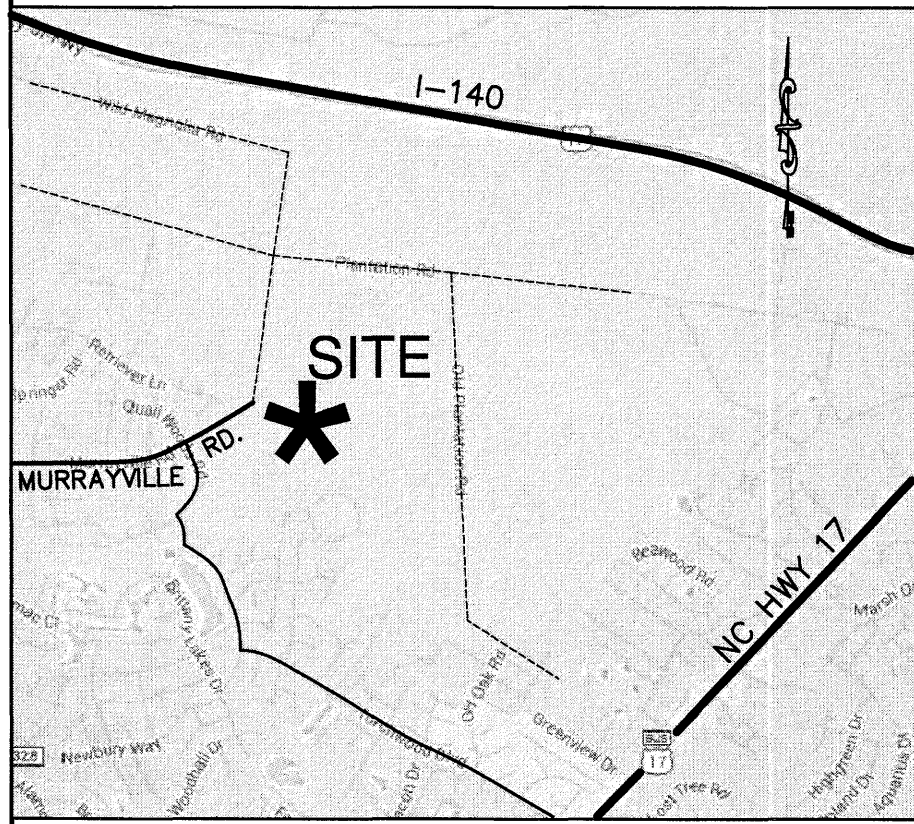
NOTES:

1. THIS MAP IS PRELIMINARY AND IS NOT FOR RECORDATION, SALES OR CONVEYANCE.
2. TOPO SHOWN IS FROM MICHAEL UNDERWOOD AND ASSOCIATES.
3. THIS PROPERTY IS NOT LOCATED WITHIN A SPECIAL 100 YR. FLOOD HAZARD AREA.
4. ALL STREETS WITHIN HANOVER RESERVE PH 4-1 PROPERTY LIMITS ARE TO BE PRIVATE WITHIN A PRIVATE ROAD ROW AND UTILITY EASEMENT AND MAINTAINED BY HOA. (DOES NOT INCLUDE MURRAYVILLE ROAD EXTENSION OR ROW).
5. SANITARY SEWER TO BE CONNECTED TO OFPUA SEWER SYSTEM.
6. WATER TO BE CONNECTED TO OFPUA WATER SYSTEM.
7. ALL COMMON AREAS (OPEN SPACE: PASSIVE AND ACTIVE) IMPROVED RECREATIONAL AREAS AND STORM WATER FACILITIES TO BE MAINTAINED BY HOMEOWNERS ASSOCIATION.
8. ALL COMMON AREAS (OPEN SPACE: ACTIVE AND PASSIVE) TO BE DEDICATED TO HOMEOWNERS ASSOCIATION.
9. ALL STREETS ARE TO BE BUILT TO NCDOT STANDARDS AND ALSO MEET THE FIRE SERVICES ACCESS ROADS REQUIREMENTS.
10. STREET LIGHTS WILL BE PLACED PER THE REQUIREMENTS OF THE ZONING ORDINANCE.
11. SIDEWALKS WILL BE PROVIDED PER THE REQUIREMENTS OF THE ZONING ORDINANCE.
12. A 10' NON-MUNICIPAL UTILITY EASEMENT IS RESERVED ALONG THE RIGHT OF WAY OF ALL ROADS.
13. 404 WETLANDS EXIST WITHIN THE PHASE 4 BOUNDARY. A WETLANDS IMPACT PERMIT IS BEING APPLIED FOR.
14. ALL DRAINAGE EASEMENTS, UTILITY EASEMENTS AND STORMWATER SWALES MUST REMAIN FREE AND CLEAR OF ALL OBSTRUCTIONS, INCLUDING FENCES.
15. NO ON STREET PARKING WILL BE ALLOWED.
16. NO SPEED CALMING DEVICES SHALL BE INSTALLED.
17. NO TREES EXIST WITHIN THE PHASE 4 BOUNDARY.
18. IF LANDSCAPING OR STREET TREES ARE TO BE INSTALLED ALONG SUBDIVISION STREETS, THEY MUST NOT INTERFERE WITH CLEAR VISUAL SIGHT DISTANCE FROM 30" TO 10" AT THE INTERSECTIONS.

BUILDING DATA PHASE I						
BUILDING	# OF BUILDINGS	FOOTPRINT (SF)	UNITS	BR/UNIT	STORIES	CONSTRUCTION TYPE
(4) UNIT BUILDING	8	5,060/40,480	4/32	3	2	-
(3) UNIT BUILDING	3	4,000/12,000	3/9	3	2	-
TOTAL	10	52,480	41			

DISCLOSURE OF PLANNED THOROUGHFARE:

"THIS SUBDIVISION CROSSES A PROPOSED THOROUGHFARE RIGHT-OF-WAY. PRESENT STATUS SHOULD BE CONFIRMED WITH N.C. DEPARTMENT OF TRANSPORTATION."



DISCLOSURE OF PRIVATE ROADS:

I (WE) THE DEVELOPERS OF SUBDIVISION LOCATED IN THE UNINCORPORATED AREA OF NEW HANOVER COUNTY UNDERSTAND THAT THE ROADS IN SAID SUBDIVISION ARE DESIGNATED PRIVATE. I UNDERSTAND THAT OWNERSHIP AND MAINTENANCE OF THE ROADS WILL BE THE RESPONSIBILITY OF THE DEVELOPER UNTIL SUCH TIME THAT THE DEVELOPER DESIGNATES THE RESPONSIBILITY TO THE PROPERTY OWNERS ASSOCIATION. RESPONSIBILITIES MUST BE ACCEPTED BY THE HOMEOWNERS ASSOCIATION AS SPECIFIED IN THE HOMEOWNER COVENANTS FOR SAID SUBDIVISION. THE PRIVATE ROADS IN SAID SUBDIVISION ARE TO BE CONSTRUCTED IN ACCORDANCE WITH SECTION 52-4 OF THE NEW HANOVER COUNTY SUBDIVISION ORDINANCE AND ALL APPLICABLE COUNTY CODES WHICH INCLUDES THE DESIGN, INSTALLATION, INSPECTION, AND APPROVAL BY A LICENSED PROFESSIONAL ENGINEER (PE) RECOGNIZED IN THE STATE OF NORTH CAROLINA PRIOR TO FINAL PLAT APPROVAL FOR ALL OR A PORTION OF THE SUBDIVISION. IF ALL OR A PORTION OF THE ROAD INFRASTRUCTURE SYSTEM WITHIN THE SUBDIVISION IS BONDED THROUGH A SURETY, PERFORMANCE BOND, OR CASH ESCROW, NO BOND SHALL BE RELEASED UNTIL ALL ROAD CONSTRUCTION IMPROVEMENTS ARE COMPLETE AND CERTIFIED BY THE PROFESSIONAL ENGINEER.

IT SHALL BE DISCLOSED TO THE PROSPECTIVE BUYER OF A LOT OR LOTS WITHIN THE SUBDIVISION THAT ROAD MAINTENANCE SHALL RUN THROUGH THE PROPERTY OWNERS ASSOCIATION IN PERPETUITY AFTER ACCEPTANCE FROM THE DEVELOPER UNTIL SUCH TIME THAT THE ROADS ARE RE-PLATED AS PUBLICALLY DESIGNATED ROADS AND TAKEN OVER FOR MAINTENANCE THROUGH THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) OR APPROPRIATE GOVERNING AUTHORITY.

DEVELOPERS NAME
DATE

Designers Plan Certification:
"I hereby certify that this plan has been prepared in accordance with the latest New Hanover County Ordinances and Storm Water Design Manual."

Signature:
Printed Name and Title: T. Jason Clark, P.E.
Date:
Registration Number: 030869

Property Owner Certification:
"I (We) hereby certify that I (we) am (are) the current owner of the property and that upon receipt of 'Authorization-To-Construct' any clearing, grading, construction or development, will be performed in accordance with this plan and that the applicable ordinances and rules of New Hanover County, the State of North Carolina and the Federal Government and its agencies which are hereby made part of this plan. As the owner, I (we) accept full responsibility for the construction and operation and maintenance of the proposed facilities. I (We) will not attempt to transfer this responsibility without the written authorization of New Hanover County."

Signature:
Printed Name and Title: William Bland, President
Hanover Development Co., Inc.
Date:

LEGEND

- PROPERTY LINE
- DISTURBED AREA LIMITS
- PROPOSED CONTOUR
- TEMPORARY SILT FENCE
- PROPOSED STORMDRAIN PIPE
- PROPOSED WATERLINE
- PROPOSED SANITARY SEWER
- PROPOSED SPOT ELEVATION FLOW LINE
- PROPOSED SPOT ELEVATION TOP OF CURB
- PROPOSED SPOT ELEVATION FINISH GRADE
- FLARED END SECTION WITH RIP-RAP ENERGY DISSIPATOR
- DROP INLET WITH INLET PROTECTION (DI)
- CURB INLET WITH INLET PROTECTION (CI)
- JUNCTION BOX WITH INLET PROTECTION (JB)
- PROPOSED FIRE HYDRANT
- EXISTING CONTOUR
- EXISTING TREE TO BE SAVED
- EXISTING TREE TO BE REMOVED
- TREE PROTECTION FENCING
- ASPHALT
- SIDEWALK
- OPEN SPACE
- MULCH PATH

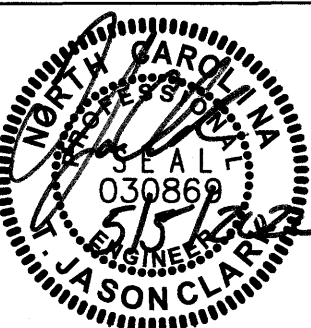
SCALE: 1" = 40'

OVERALL SITE PLAN
HANOVER RESERVE - PHASE 4-1
1308 CROOKED PINE RD.
NEW HANOVER COUNTY
WILMINGTON, N. C.

OWNER/DEVELOPER
TDRI-H, LLC
JOHN A. ELMORE MEMBER-MANAGER
P.O. BOX 381
WRIGHTSVILLE BEACH, NC 28480

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1900 EASTWOOD RD., SUITE 11
WILMINGTON, NC 28403
PHONE (910) 343-9653

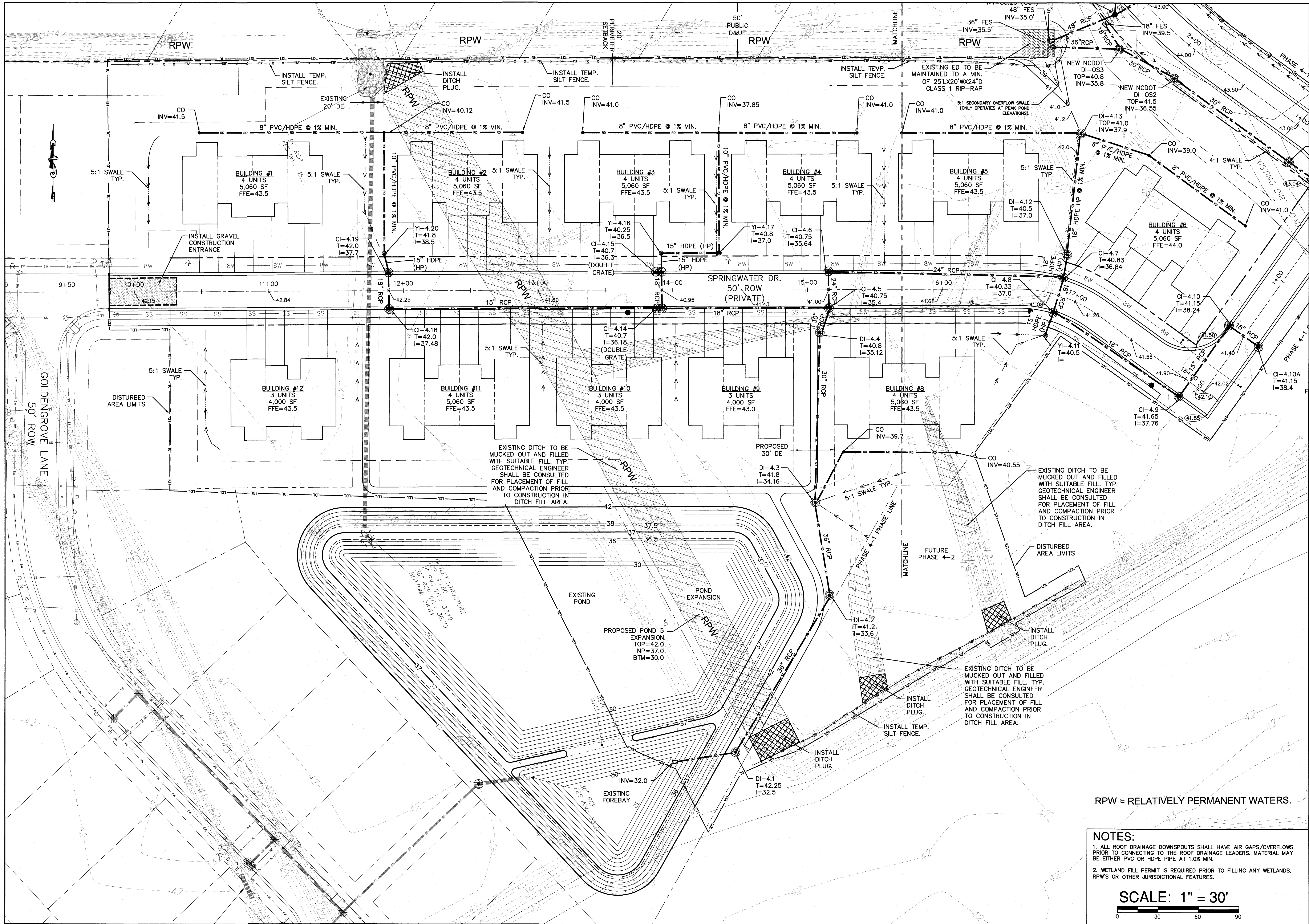
Licence #C-3641
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CHK. JPN
DRWN. NKS
DATE 5/1/20



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PRELIMINARY

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RPW = RELATIVELY PERMANENT WATERS.

NOTES:
1. ALL ROOF DRAINAGE DOWNSPOUTS SHALL HAVE AIR GAPS/OVERFLOWS PRIOR TO CONNECTING TO THE ROOF DRAINAGE LEADERS. MATERIAL MAY BE EITHER PVC OR HDPE PIPE AT 1.0% MIN.
2. WETLAND FILL PERMIT IS REQUIRED PRIOR TO FILLING ANY WETLANDS, RPW'S OR OTHER JURISDICTIONAL FEATURES.

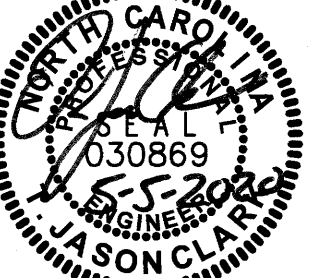
SCALE: 1" = 30'

GRADING, DRAINAGE AND EROSION CONTROL PLAN
HANOVER RESERVE - PHASE 4-1
1308 CROOKED PINE RD.
NEW HANOVER COUNTY
WILMINGTON, N. C.

OWNER/DEVELOPER
TORHL LLC
JOHN A. ELMORE MEMBER-MANAGER
P.O. BOX 981
WRIGHTSVILLE BEACH, NC 28480

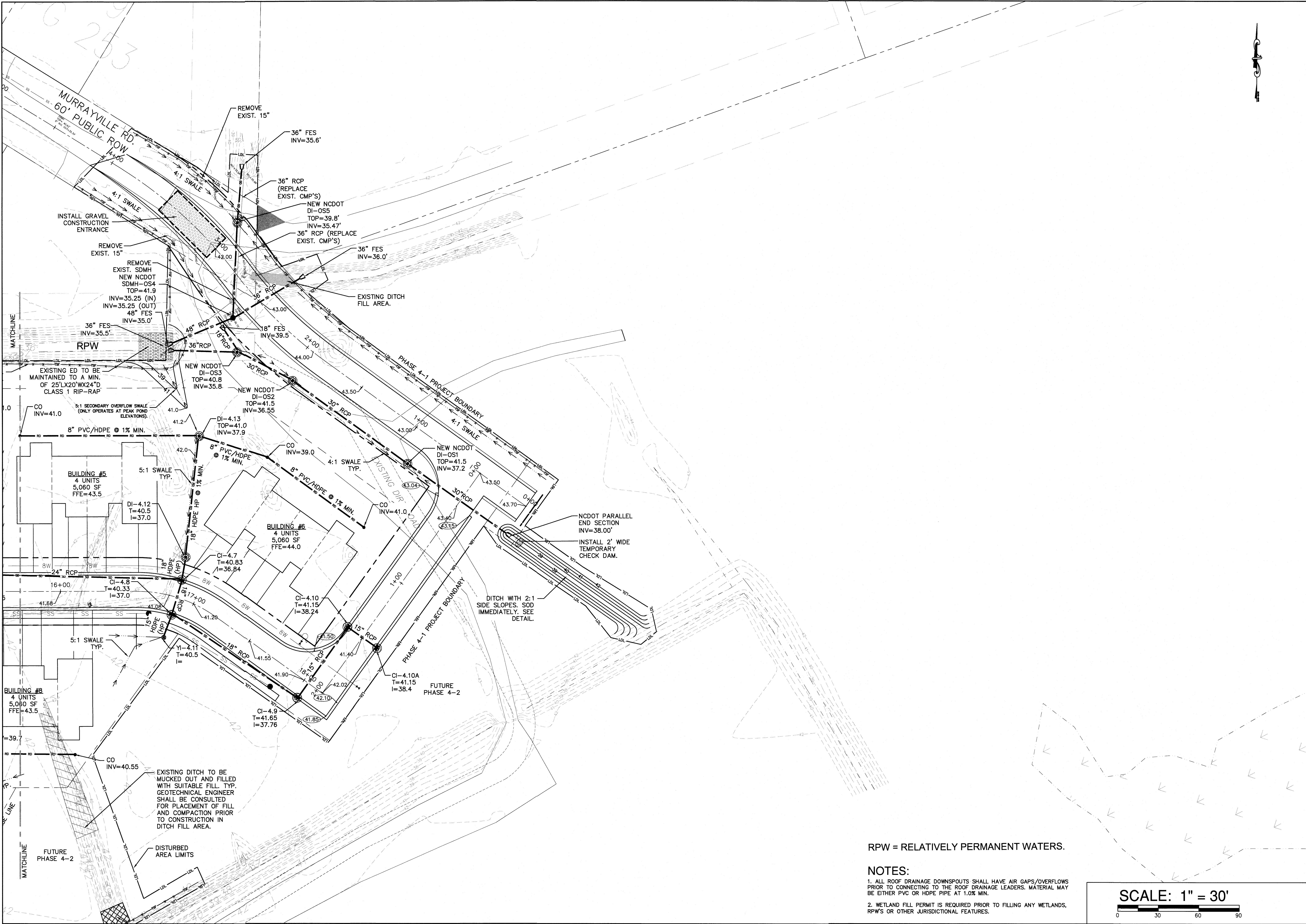
NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1090 EASTWOOD RD., SUITE 11
WILMINGTON, NC 28403
PHONE (910) 343-9653

Licence #C-3641
19094
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DRWN. NKS
DATE 5/5/20


JASON C. NORRIS

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RPW = RELATIVELY PERMANENT WATERS.

- NOTES:
1. ALL ROOF DRAINAGE DOWNSPOUTS SHALL HAVE AIR GAPS/OVERFLOWS PRIOR TO CONNECTING TO THE ROOF DRAINAGE LEADERS. MATERIAL MAY BE EITHER PVC OR HDPE PIPE AT 1.0% MIN.
 2. WETLAND FILL PERMIT IS REQUIRED PRIOR TO FILLING ANY WETLANDS, RPWS OR OTHER JURISDICTIONAL FEATURES.

SCALE: 1" = 30'



GRADING, DRAINAGE AND EROSION CONTROL PLAN
HANOVER RESERVE - PHASE 4-1
1308 CROOKED PINE RD.
NEW HANOVER COUNTY
WILMINGTON, N. C.

OWNER/DEVELOPER
TORHL, LLC
JOHN A. ELMORE, MEMBER-MANAGER
P.O. BOX 381
WRIGHTSVILLE BEACH, NC 28480

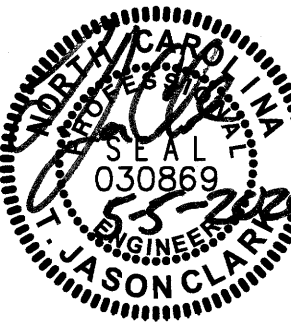
NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1429 ASHLITTLE RIVER RD. NW
WILMINGTON, NC 28405
PHONE (910) 343-9633

Licence #C-3641

19094

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DRWN. NKS

DATE 5/5/20



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DRAINAGE AREA PLAN
HANOVER RESERVE - PHASE 4-1
1308 CROOKED PINE RD.
NEW HANOVER COUNTY
WILMINGTON, N. C.

OWNER/DEVELOPER
TDR-HL, LLC
JOHN A. ELMORE MEMBER-MANAGER
P.O. BOX 381
WRIGHTSVILLE BEACH, NC 28480

NORRIS & TUNSTALL
— CONSULTING ENGINEERS P.C. —

1900 EASTWOOD RD., SUITE 11
WILLIAMINGTON, NC 28403
PHONE (910) 343-9653

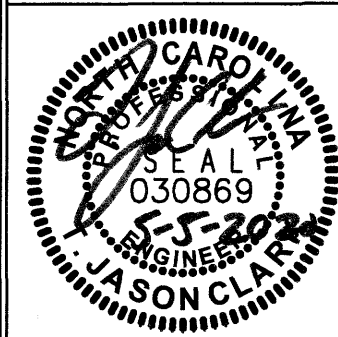
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ASH, NC 28420
PHONE (910) 287-5900

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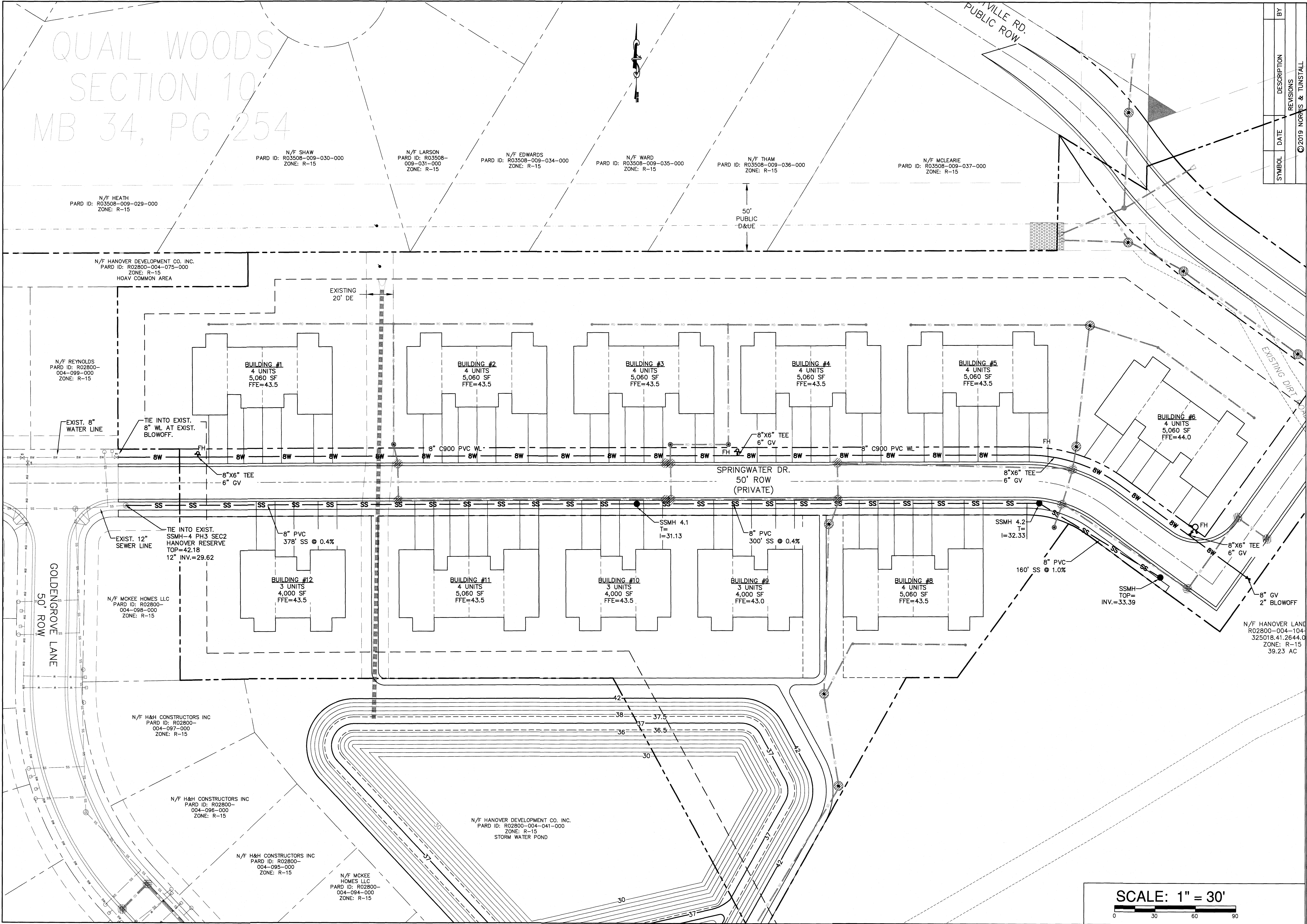
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SCALE: 1" = 50'



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SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	
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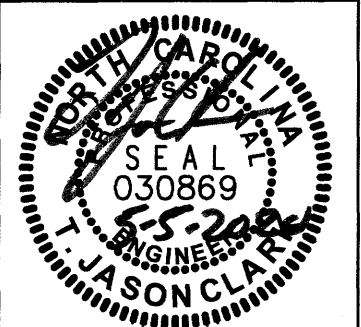
UTILITY PLAN
HANOVER RESERVE - PHASE 4-1
1308 CROOKED PINE RD.
NEW HANOVER COUNTY
WILMINGTON, N. C.

OWNER/DEVELOPER
TDR-HL, LLC
JOHN A. ELMORE MEMBER-MANAGER
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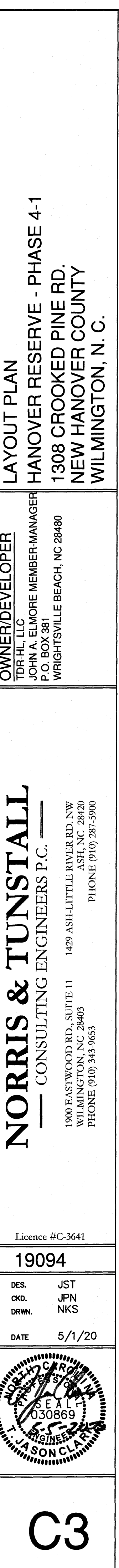
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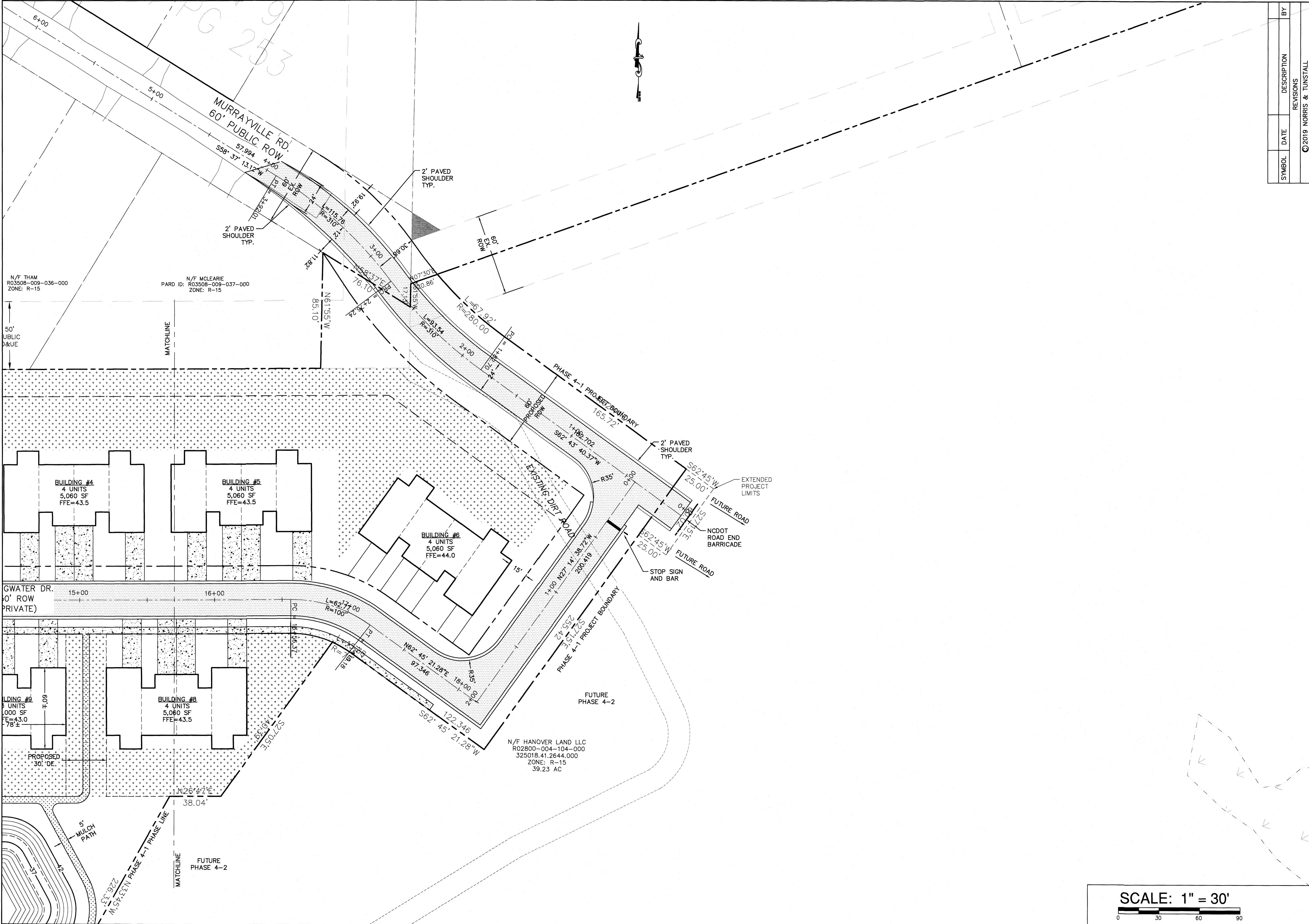


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SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	

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LAYOUT PLAN

HANOVER RESERVE - PHASE 4-1

1308 CROOKED PINE RD.

NEW HANOVER COUNTY

WILMINGTON, N. C.

OWNER/DEVELOPER

TDR-HL, LLC

JOHN A. ELMORE MEMBER-MANAGER

P.O. BOX 381

WRIGHTSVILLE BEACH, NC 28480

NORRIS & TUNSTALL

CONSULTING ENGINEERS P.C.

1900 EASTWOOD RD., SUITE 11

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PHONE (910) 345-5655

1429 ASH LITTLE RIVER RD. NW

ASH, NC 28420

PHONE (910) 287-5500

Licence #C-3641

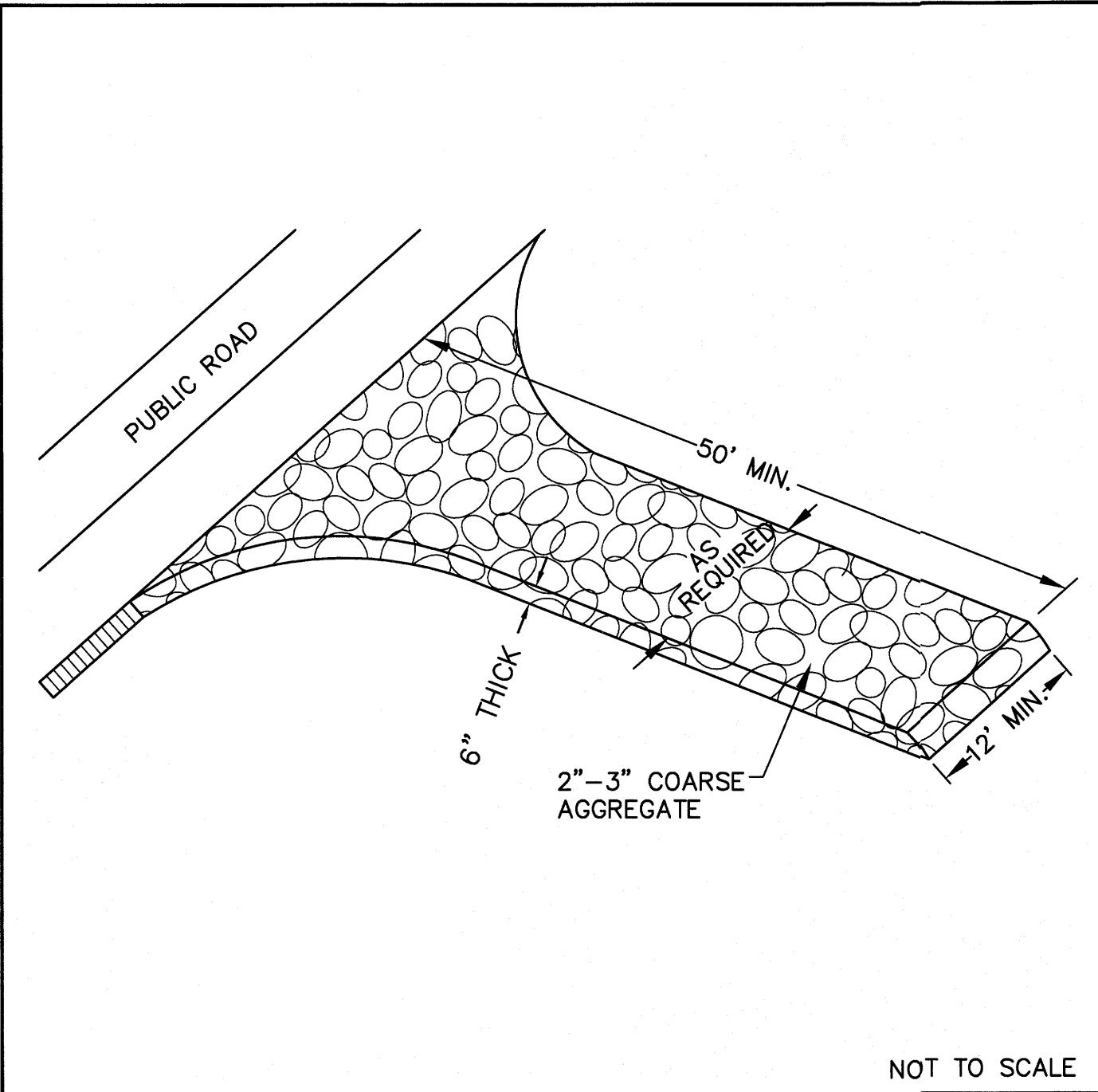
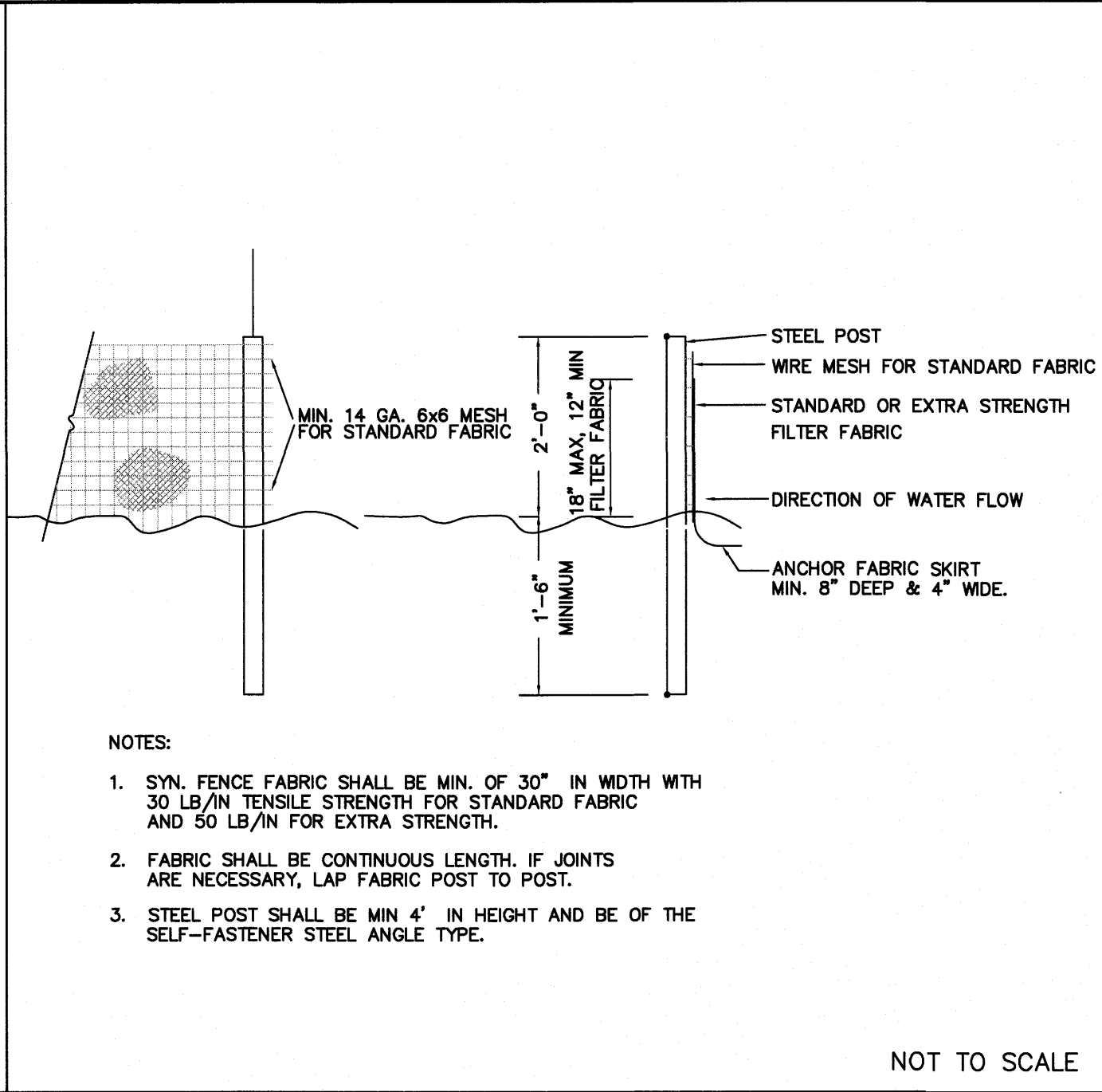
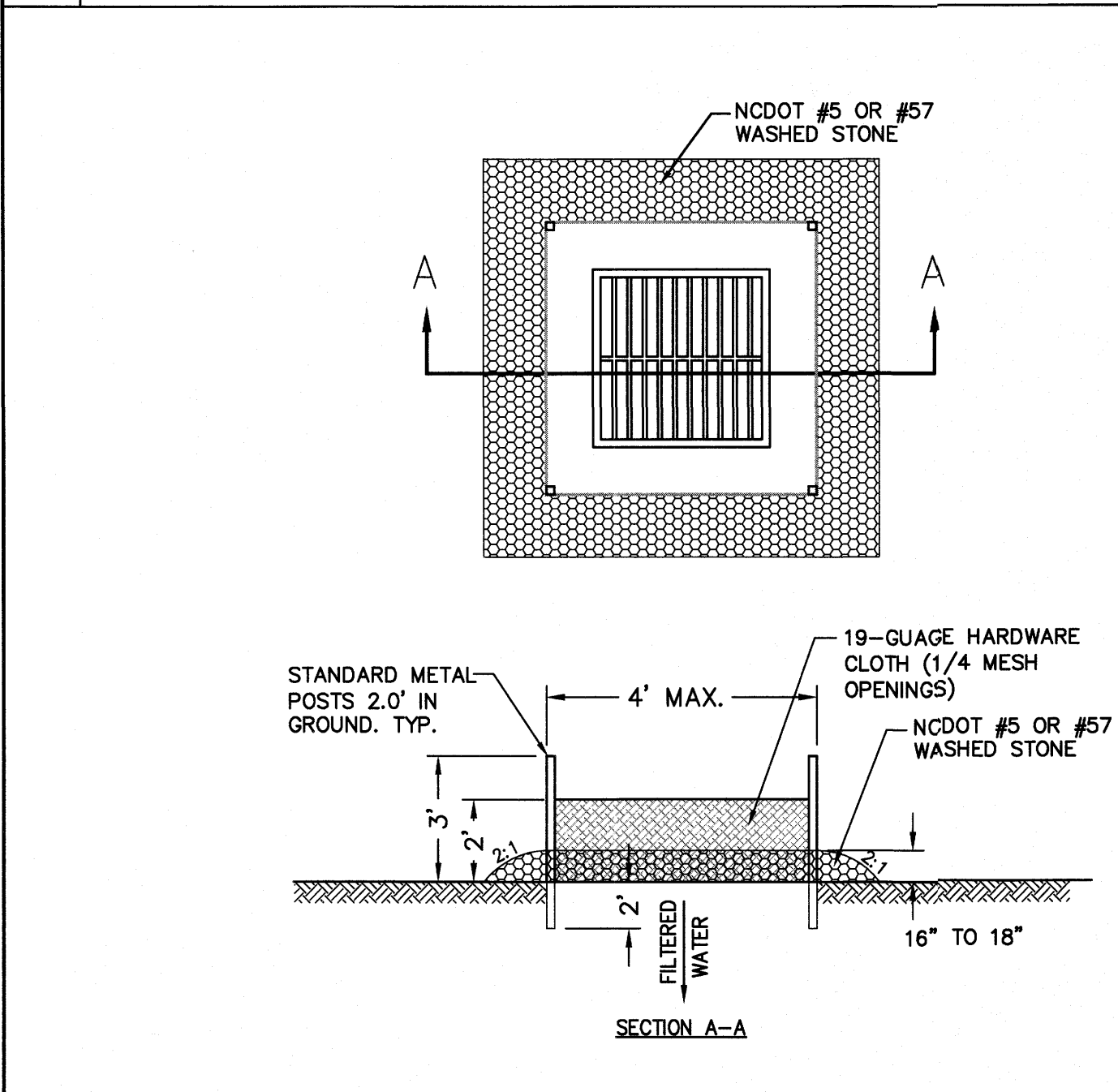
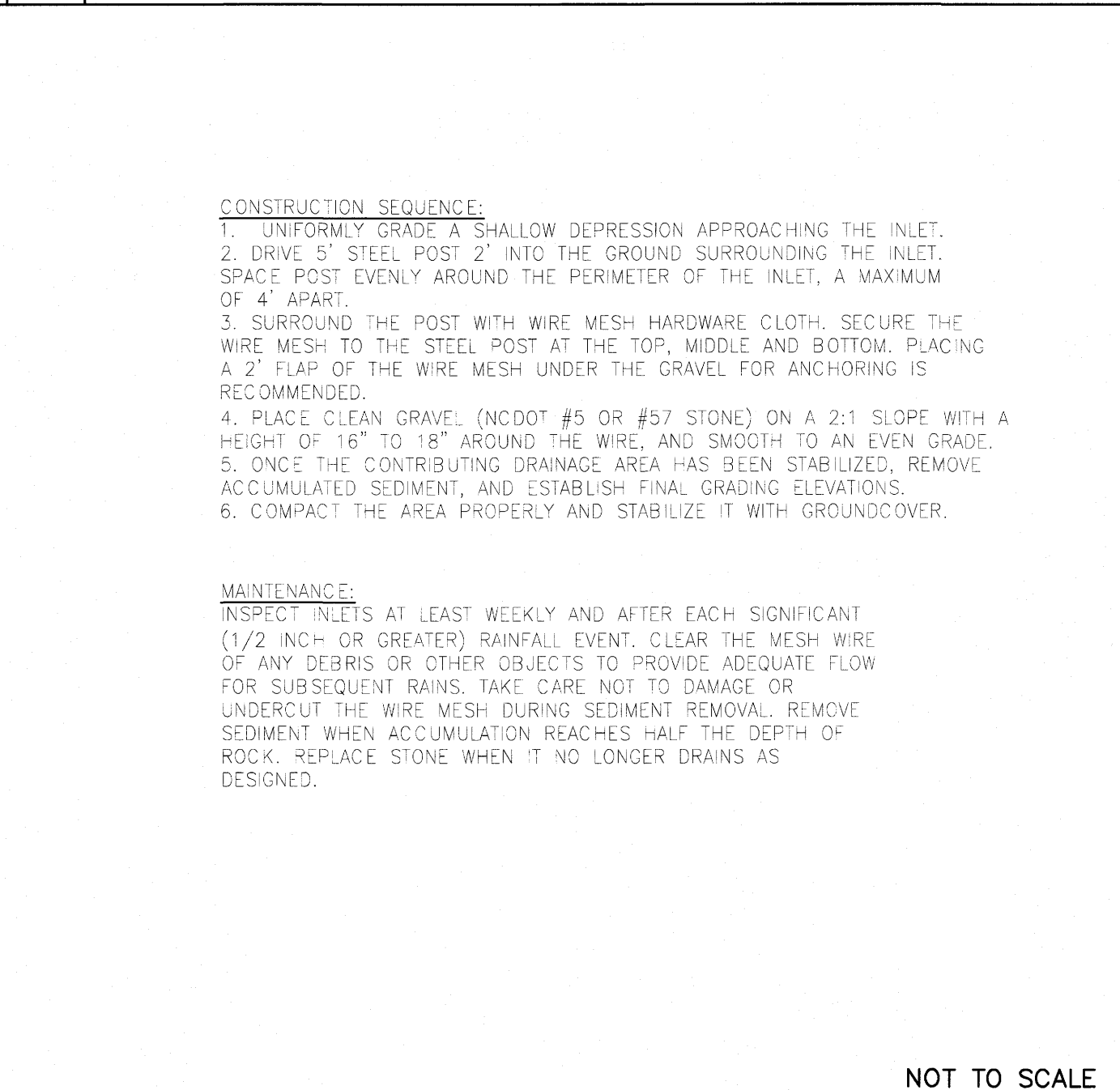
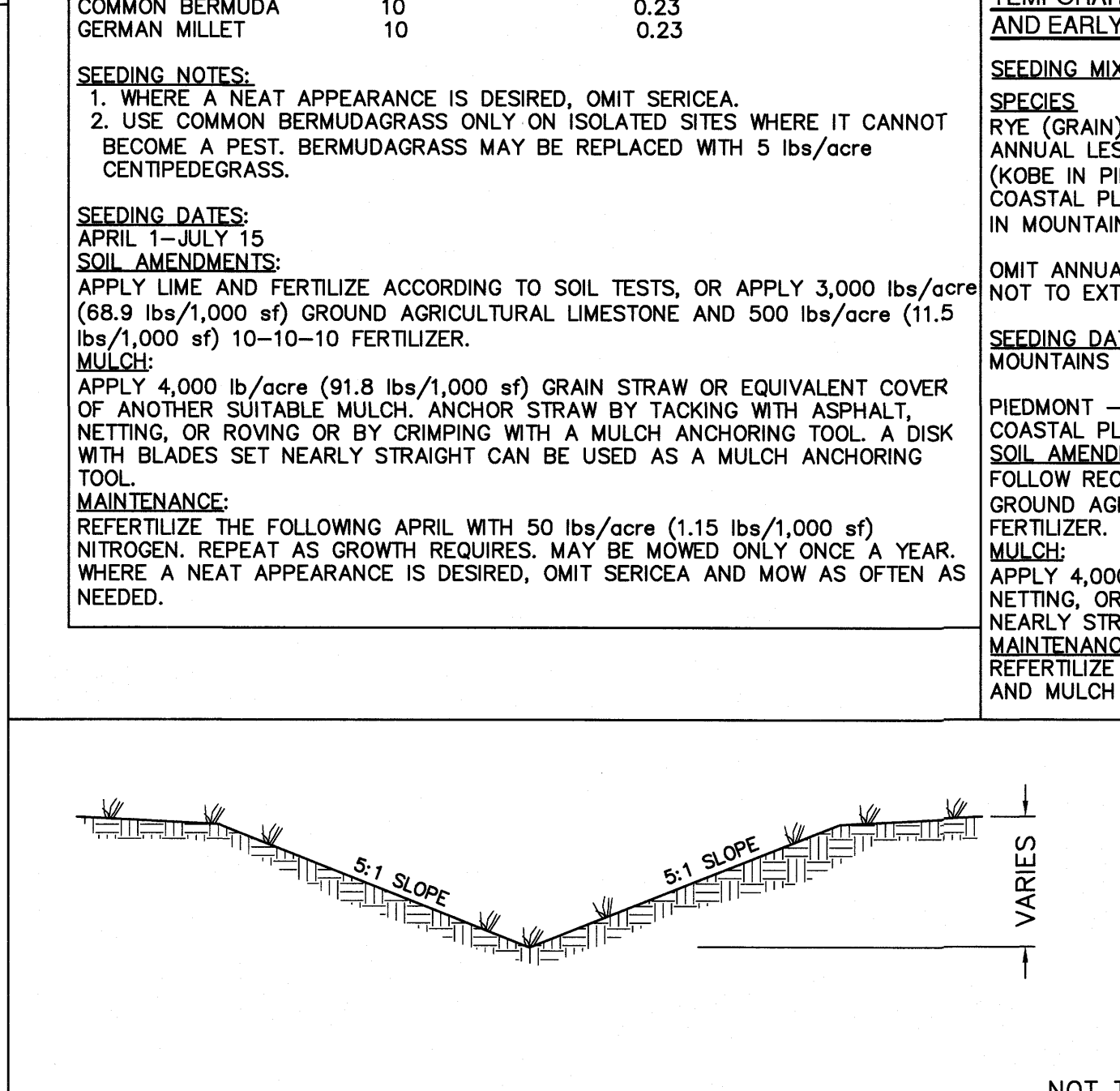
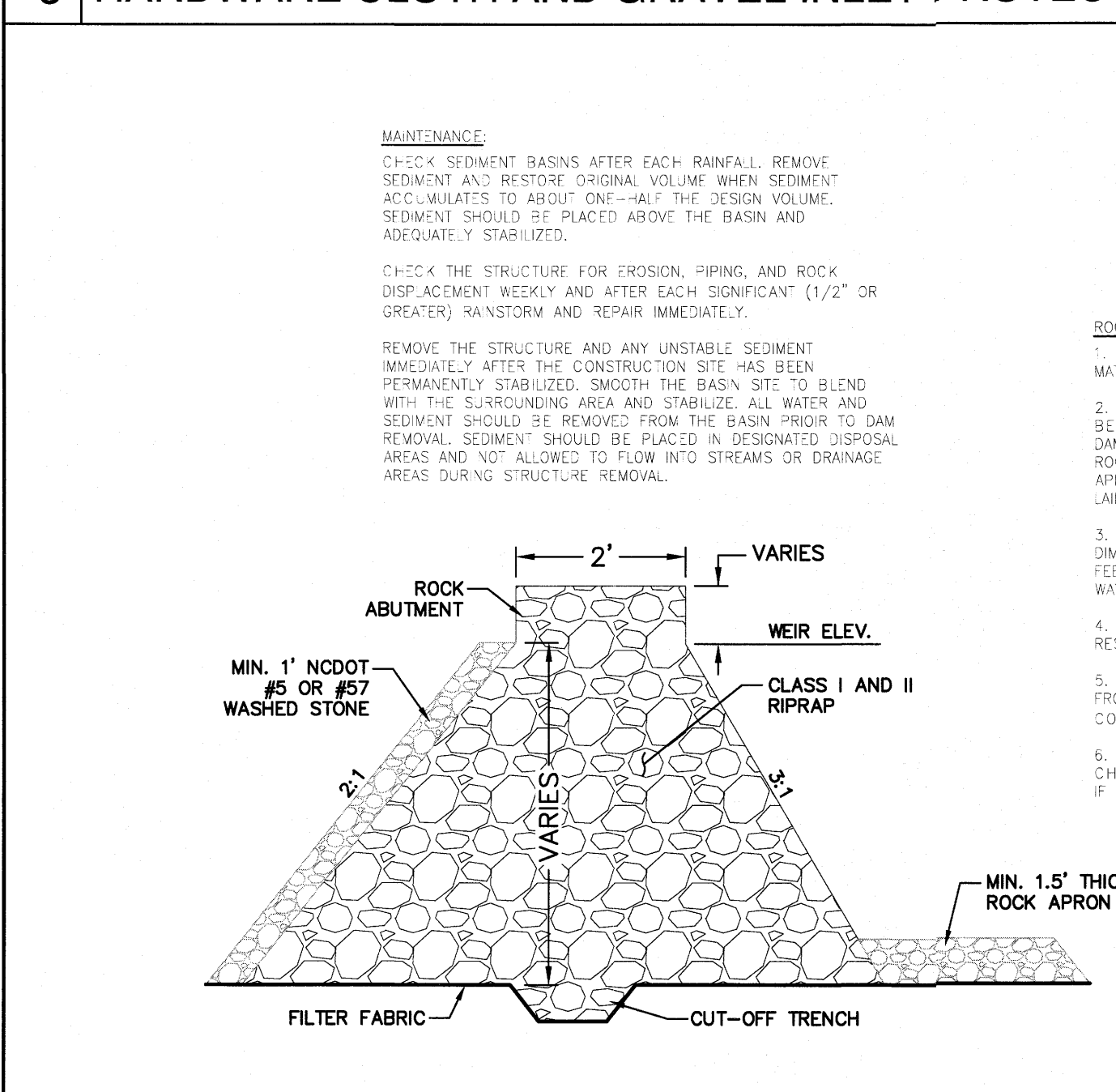

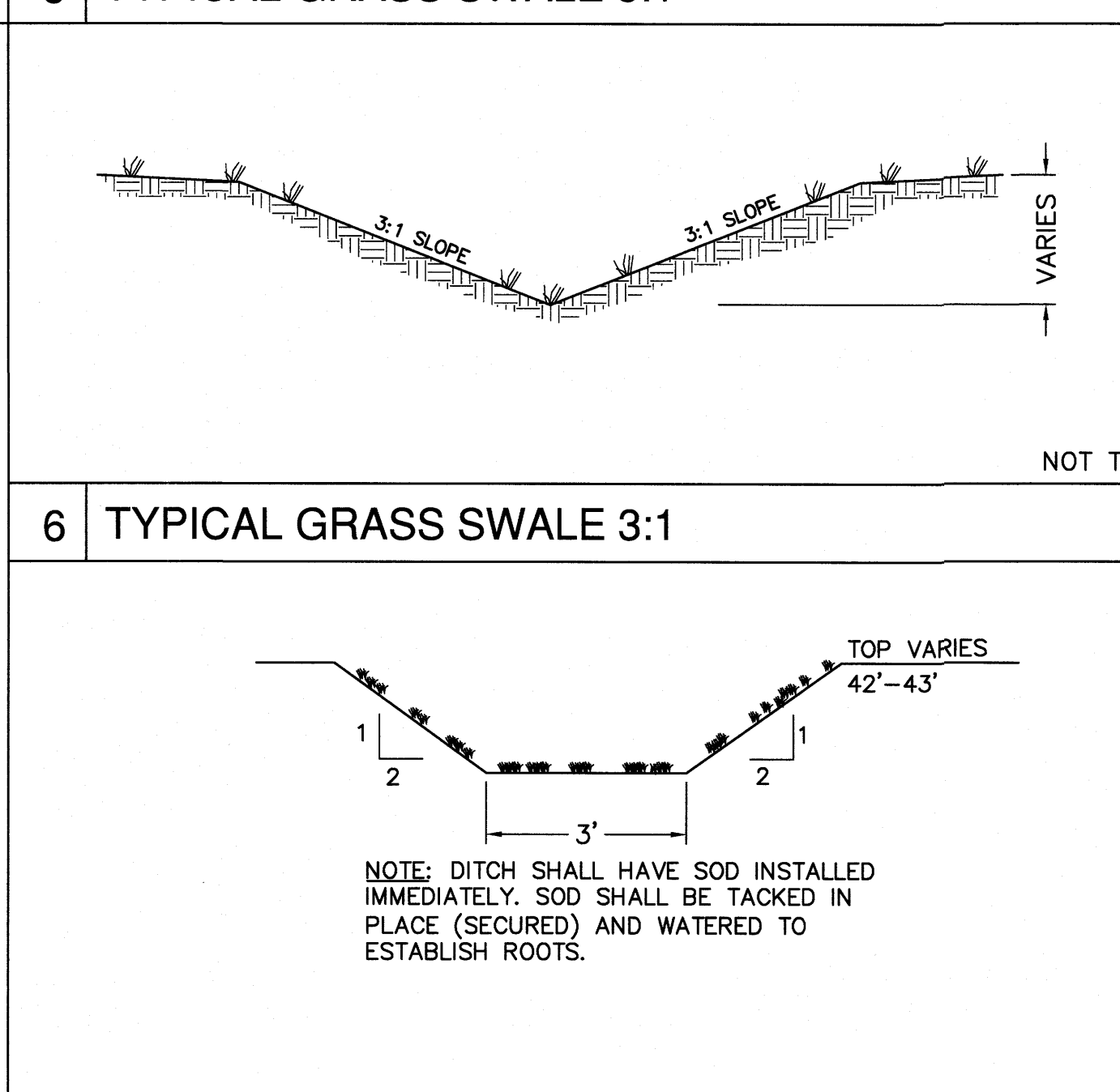
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DES. JST
CHKD. JPN
DRWN. NKS

DATE 5/1/20



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				<p>PERMANENT SEEDING RECOMMENDATIONS FOR FALL AND EARLY SPRING</p> <table><tr><th>SEEDING MIXTURE SPECIES</th><th>RATE (lb/acre)</th><th>(lb/1000 sf)</th></tr><tr><td>TALL FESCUE</td><td>80</td><td>1.84</td></tr><tr><td>PENSACOLA BAHIAGRASS</td><td>50</td><td>1.15</td></tr><tr><td>SERICEA LESPEDEZA</td><td>30</td><td>0.69</td></tr><tr><td>KOBE LESPEDEZA</td><td>10</td><td>0.23</td></tr></table> <p>SEEDING NOTES:</p> <ol style="list-style-type: none">FROM SEPT. 1 THRU MAR. 1, USE UNSCARIFIED SERICEA SEED.ON POORLY DRAINED SITES OMIT SERICEA AND INCREASE KOBE TO 30 lbs/acre.WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND INCREASE KOBE TO 40 lbs/acre. <p>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).</p> <p>SEEDING DATES: BEST: FEB 15-MAR. 20, SEPT. 1-SEPT. 30. POSSIBLE: FEB.15-APR. 30, SEPT. 1-OCT. 31.</p> <p>SOIL AMENDMENTS: 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/acre (22.9 lbs/1,000 sf) 10-10-10 FERTILIZER.</p> <p>MULCH: 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 TOOL.</p> <p>MAINTENANCE: IF 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.</p> <p>PERMANENT SEEDING RECOMMENDATIONS FOR LATE SPRING AND EARLY SUMMER</p> <table><tr><th>SEEDING MIXTURE SPECIES</th><th>RATE (lb/acre)</th><th>(lb/1000 sf)</th></tr><tr><td>PENSACOLA BAHIAGRASS</td><td>50</td><td>1.15</td></tr><tr><td>SERICEA LESPEDEZA</td><td>30</td><td>0.69</td></tr><tr><td>COMMON BERMUDA</td><td>10</td><td>0.23</td></tr><tr><td>GERMAN MILLET</td><td>10</td><td>0.23</td></tr></table> <p>SEEDING NOTES:</p> <ol style="list-style-type: none">WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA.USE COMMON BERMUDAGRASS ONLY ON ISOLATED SITES WHERE IT CANNOT BECOME A PEST. BERMUDAGRASS MAY BE REPLACED WITH 5 lbs/acre CENTIPEDEGRASS. <p>SEEDING DATES: APRIL 1-JULY 15.</p> <p>SOIL AMENDMENTS: APPLY LIME AND FERTILIZE ACCORDING TO SOIL TESTS, OR APPLY 3,000 lbs/acre (68.9 lbs/1,000 sf) GROUND AGRICULTURAL LIMESTONE AND 500 lbs/acre (11.5 lbs/1,000 sf) 10-10-10 FERTILIZER.</p> <p>MULCH: 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 TOOL.</p> <p>MAINTENANCE: 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 NEEDED.</p> <p>TEMPORARY SEEDING RECOMMENDATIONS FOR FALL</p> <table><tr><th>SEEDING MIXTURE SPECIES</th><th>RATE (lb/acre)</th><th>(lb/1000 sf)</th></tr><tr><td>RYE (GRAIN)</td><td>120</td><td>2.75</td></tr></table> <p>SEEDING DATES: MOUNTAINS - AUG. 15 - DEC. 15. COASTAL PLAIN AND PIEDMONT - AUG. 15 - DEC. 15.</p> <p>SOIL AMENDMENTS: FOLLOW SOIL TEST OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 1,000 lb/acre 10-10-10 FERTILIZER.</p> <p>MULCH: 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.</p> <p>MAINTENANCE: 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.</p> <p>TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER</p> <table><tr><th>SEEDING MIXTURE SPECIES</th><th>RATE (lb/acre)</th><th>(lb/1000 sf)</th></tr><tr><td>GERMAN MILLET</td><td>40</td><td>0.92</td></tr></table> <p>IN THE PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 lb/acre.</p> <p>SEEDING DATES: MOUNTAINS - MAY 15 - AUG. 15. PIEDMONT - MAY 1 - AUG. 15. COASTAL PLAIN - APR. 15 - AUG. 15.</p> <p>SOIL AMENDMENTS: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER.</p> <p>MULCH: 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.</p> <p>MAINTENANCE: REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.</p> <p>TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING</p> <table><tr><th>SEEDING MIXTURE SPECIES</th><th>RATE (lb/acre)</th><th>(lb/1000 sf)</th></tr><tr><td>RYE (GRAIN)</td><td>120</td><td>2.75</td></tr><tr><td>ANNUAL LESPEDEZA (KOBE IN PIEDMONT AND COASTAL PLAIN, KOREAN IN MOUNTAINS)</td><td>50</td><td>1.15</td></tr></table> <p>OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.</p> <p>SEEDING DATES: MOUNTAINS - 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.</p> <p>SOIL AMENDMENTS: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER.</p> <p>MULCH: 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.</p> <p>MAINTENANCE: REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. 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3	HARDWARE CLOTH AND GRAVEL INLET PROTECTION	5	TYPICAL GRASS SWALE 5:1	NOT TO SCALE																																																				
<p>MAINTENANCE:</p> <p>CHECK SEDIMENT BASINS AFTER EACH RAINFALL. REMOVE SEDIMENT AND RESTORE ORIGINAL VOLUME WHEN SEDIMENT ACCUMULATES TO ABOUT ONE-HALF THE DESIGN VOLUME. SEDIMENT SHOULD BE PLACED ABOVE THE BASIN AND ADEQUATELY STABILIZED.</p> <p>CHECK THE STRUCTURE FOR PROSION, PIPING, AND ROCK DISPLACEMENT WEEKLY AND AFTER EACH SIGNIFICANT (1/2" OR GREATER) RAINSTORM AND REPAIR IMMEDIATELY.</p> <p>REMOVE THE STRUCTURE AND ANY UNSTABLE SEDIMENT IMMEDIATELY AFTER THE CONSTRUCTION SITE HAS BEEN PERMANENTLY STABILIZED. SMOOTH THE BASIN SITE TO BLEND WITH THE SURROUNDING AREA AND STABILIZE. ALL WATER AND SEDIMENT SHOULD BE REMOVED FROM THE BASIN PRIOR TO DAM REMOVAL. SEDIMENT SHOULD BE PLACED IN DESIGNATED DISPOSAL AREAS AND NOT ALLOWED TO FLOW INTO STREAMS OR DRAINAGE AREAS DURING STRUCTURE REMOVAL.</p> <p>ROCK DAM NOTES:</p> <ol style="list-style-type: none">CLEAR THE AREAS UNDER THE EMBANKMENT AND STRIP OF ROOTS AND OTHER OBJECTIONABLE MATERIAL. DELAY CLEANING THE RESERVOIR AREA UNTIL THE DAM IS IN PLACE.COVER THE FOUNDATION AREA INCLUDING THE ABUTMENTS WITH EXTRA-STRENGTH FILTER FABRIC BEFORE BACKFILLING WITH ROCK. IF A CUTOFF TRENCH IS REQUIRED, EXCAVATE AT CENTERLINE OF DAM, EXTENDING ALL THE WAY UP THE EARTH ABUTMENTS. APPLY FILTER FABRIC UNDER THE ROCKFILL EMBANKMENT FROM THE UPSTREAM EDGE OF THE DAM TO THE DOWNSTREAM EDGE OF THE APRON. OVERLAP FILL MATERIAL A MINIMUM OF 1 FOOT AT ALL JOINTS, WITH THE UPSTREAM STRIP Laid OVER THE DOWNSTREAM STRIP.CONSTRUCT THE EMBANKMENT WITH WELL-GRADED ROCK AND GRAVEL TO THE SIZE AND DIMENSIONS SHOWN ON THE DRAWINGS. IT IS IMPORTANT THAT ROCK ABUTMENTS BE AT LEAST 2 FEET HIGHER THAN THE SPILLWAY CREST AND AT LEAST 1 FOOT HIGHER THAN THE DAM. ALL THE WAY TO THE DOWNSTREAM TOE, TO PREVENT SCOUR AND EROSION AT THE ABUTMENTS.SEDIMENT-LADEN WATER FROM THE CONSTRUCTION SITE SHOULD BE DIVERTED INTO THE BASIN RESERVOIR AT THE FURTHEST AREA FROM THE DAM.CONSTRUCT THE ROCK DAM BEFORE THE BASIN AREA IS CLEARED TO MINIMIZE SEDIMENT YIELD FROM CONSTRUCTION OF THE BASIN. IMMEDIATELY STABILIZE ALL AREAS DISTURBED DURING THE CONSTRUCTION OF THE DAM EXCEPT THE SEDIMENT POOL (REFERENCE SURFACE STABILIZATION).SAFETY - SEDIMENT BASINS SHOULD BE CONSIDERED DANGEROUS BECAUSE THEY ATTRACT CHILDREN. STEEP SIDE SLOPES SHOULD BE AVOIDED. FENCES WITH WARNING SIGNS MAY BE NEEDED IF TRESPASSING IS LIKELY. ALL STATE AND LOCAL REQUIREMENTS MUST BE FOLLOWED. 																																																								
4	TEMPORARY ROCK DAM DETAIL	7	DITCH SECTION DETAIL	8	TEMPORARY DITCH PLUG																																																			

NOTES:

1. SYN. FENCE FABRIC SHALL BE MIN. OF 30" IN WIDTH WITH 30 LB/IN TENSILE STRENGTH FOR STANDARD FABRIC AND 50 LB/IN FOR EXTRA STRENGTH.

2. FABRIC SHALL BE CONTINUOUS LENGTH. IF JOINTS ARE NECESSARY, LAP FABRIC POST TO POST.

3. STEEL POST SHALL BE MIN 4' IN HEIGHT AND BE OF THE SELF-FASTENER STEEL ANGLE TYPE.

NOT TO SCALE

CONSTRUCTION SEQUENCE:

1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.

2. DRIVE 5" STEEL POST 2' INTO THE GROUND SURROUNDING THE INLET. SPACE POST EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4' APART.

3. SURROUND THE POST WITH WIRE MESH, HARDWARE CLOTH, SECURE THE WIRE MESH TO THE STEEL POST AT THE TOP, MIDDLE AND BOTTOM. PLACING A 2' FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.

4. PLACE CLEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16" TO 18" AROUND THE WIRE AND SMOOTH TO AN EVEN GRADE.

5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.

6. COMPACT THE AREA PROPERLY AND STABILIZE IT WITH GROUNDCOVER.

MAINTENANCE:

INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REMOVE SEDIMENT WHEN ACCUMULATION REACHES HALF THE DEPTH OF ROCK. REPLACE STONE WHEN IT NO LONGER DRAINS AS DESIGNED.

NOT TO SCALE

GENERAL NOTES FOR TEMP. PLUG DETAIL:

1. BUILD RIDGE HIGHER THAN DESIGN AND COMPACT WITH WHEELS OF CONSTRUCTION EQUIPMENT. COMPACTED RIDGE MUST AT OR ABOVE DESIGN GRADE AT ALL POINTS.

2. LEAVE SUFFICIENT AREA TO PERMIT CLEAN OUT AND REGRADING.

3. CONSTRUCT SILT FENCE ON DOWNSTREAM SIDE OF BERM.

NOT TO SCALE

NOTES:

1. 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 RAIN EVENT.

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 OR IS DAMAGED.

6. SEDIMENT WILL BE REMOVED FROM SEDIMENT TRAPS WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. THE ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS OR WHEN THE ROCK IS DISLODGED. BAFFLES WILL BE REPAIRED OR REPLACED IF THEY COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE. FLOATING SKIMMERS WILL BE INSPECTED AND KEPT CLEAN WEEKLY.

7. SEDIMENT WILL BE REMOVED FROM THE SEDIMENT BASIN WHEN THE DESIGN STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. THE ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS OR IF THE ROCK IS DISLODGED. BAFFLES WILL BE REPAIRED OR REPLACED IF THEY COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED FROM BAFFLES WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE. FLOATING SKIMMERS WILL BE INSPECTED WEEKLY AND WILL BE KEPT CLEAN.

8. LAND QUALITY REQUIRES:

ALL SEEDED AREAS WILL BE FERTILIZED, RESEED 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.

WATER QUALITY REQUIRES:

ALL SEEDED AREAS WILL BE FERTILIZED, RESEED 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 LAST LAND-DISTURBING ACTIVITY.

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

10. BASIN OUTLET STRUCTURES AND SKIMMERS SHALL WITHDRAW WATER FROM THE SURFACE.

11. 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 SHOULD BE REMOVED AND RECYCLED.

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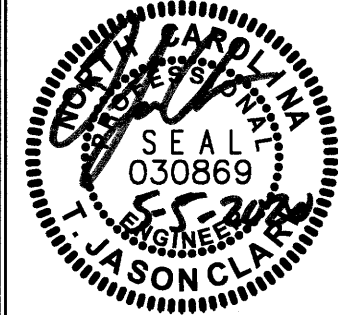
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NOTES AND DETAILS
HANOVER RESERVE - PHASE 4-1
1308 CROOKED PINE RD.
NEW HANOVER COUNTY
WILMINGTON, N. C.

OWNER/DEVELOPER
TOR-HL, LLC
JOHN A. ELMORE MEMBER-MANAGER
P.O. BOX 981
WRIGHTSVILLE BEACH, NC 28480

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1000 EASTWOOD RD., SUITE 11
WILMINGTON, NC 28405
PHONE (910) 343-9663

Licence #C-3641
19094
DES. JST
CHK. JPN
DRWN. NKS
DATE 5/1/20



C4

PRELIMINARY

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

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

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION	
Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:	
Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none">Temporary grass seed covered with straw or other mulches and tackifiersHydroseedingRollled erosion control products with or without temporary grass seedAppropriately applied straw or other mulchPlastic sheeting	<ul style="list-style-type: none">Permanent grass seed covered with straw or other mulches and tackifiersGeotextile fabrics such as permanent soil reinforcement mattingHydroseedingShrubs or other permanent plantings covered with mulchUniform and evenly distributed ground cover sufficient to restrain erosionStructural methods such as concrete, asphalt or retaining wallsRollled erosion control products with grass seed

- POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**
- 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 offsite.
 - Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

- 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 project.
 - 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 WASTE**
- 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 available.
 - Protect stockpile with silt fence installed along toe of slope with a minimum offset of 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 as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

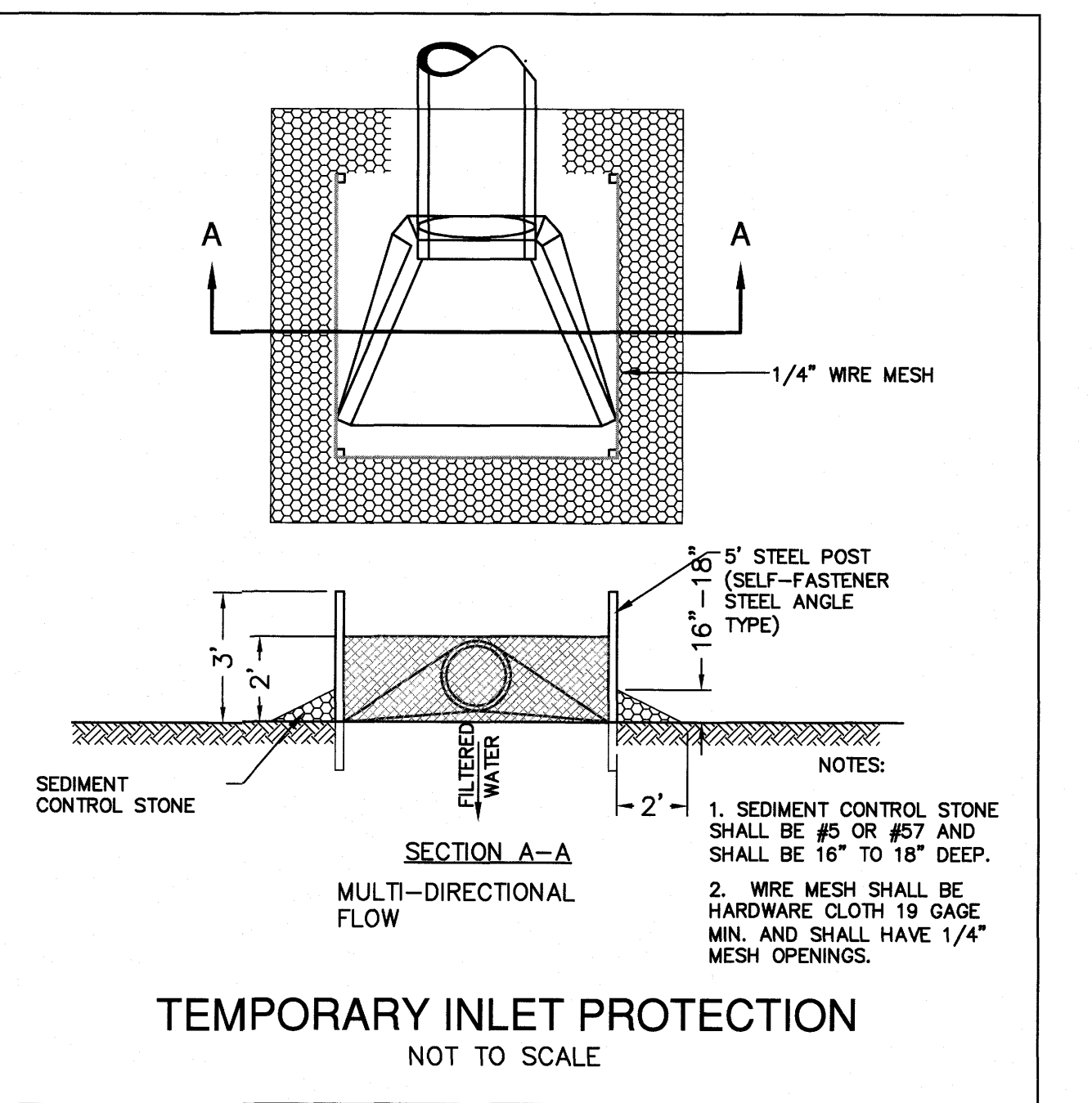
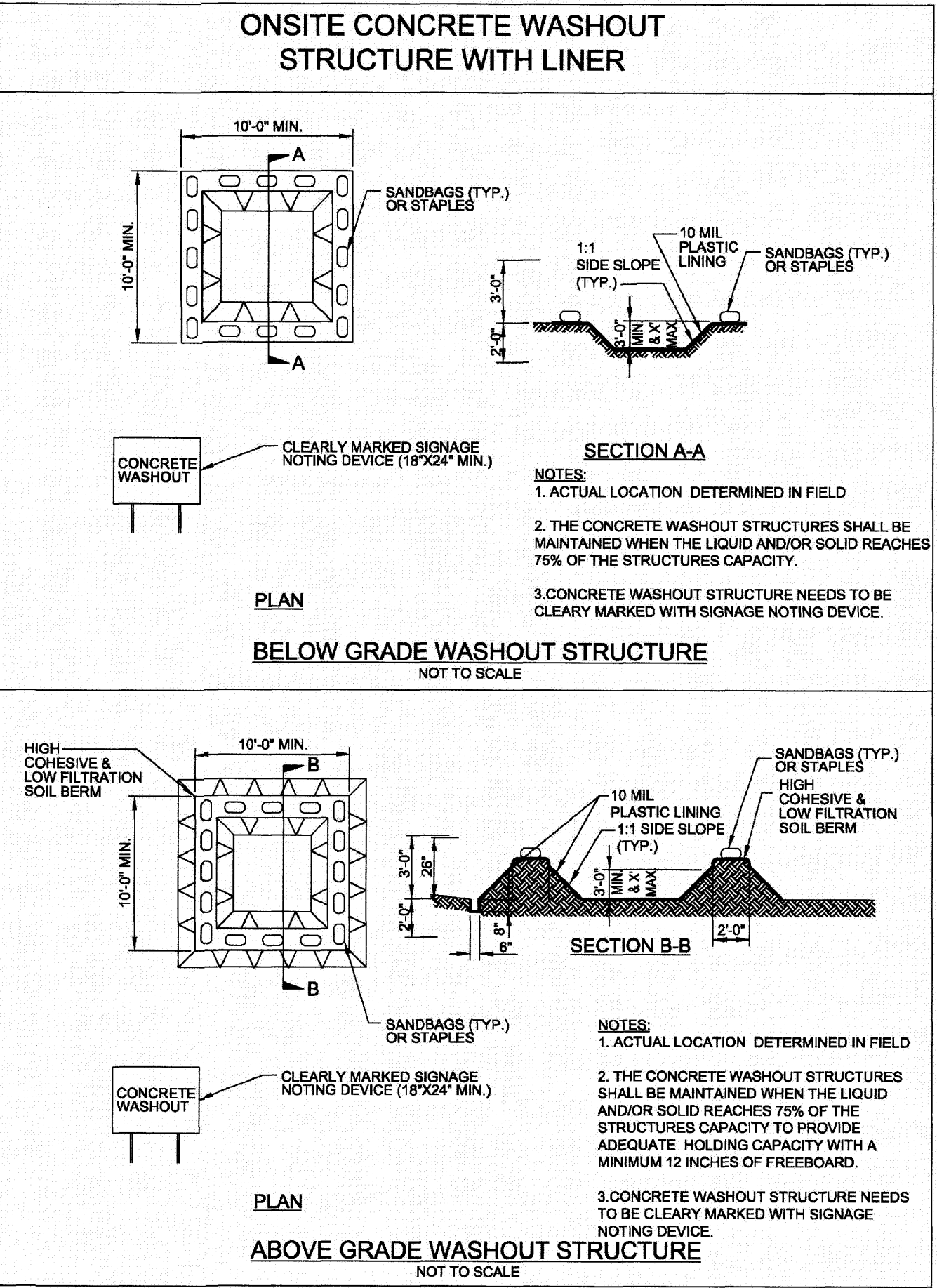
PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING		
SECTION A: SELF-INSPECTION		
Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.		
Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken, 7. Indication of visible sediment leaving the site.
(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, grease, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item 2(a)(5) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover), 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

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

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING	
SECTION B: RECORDKEEPING	
1. E&SC Plan Documentation The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be 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 report to indicate the completion of the corrective action.
2. Additional Documentation In addition to the E&SC Plan documents above, the following items shall be kept on the site 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]	

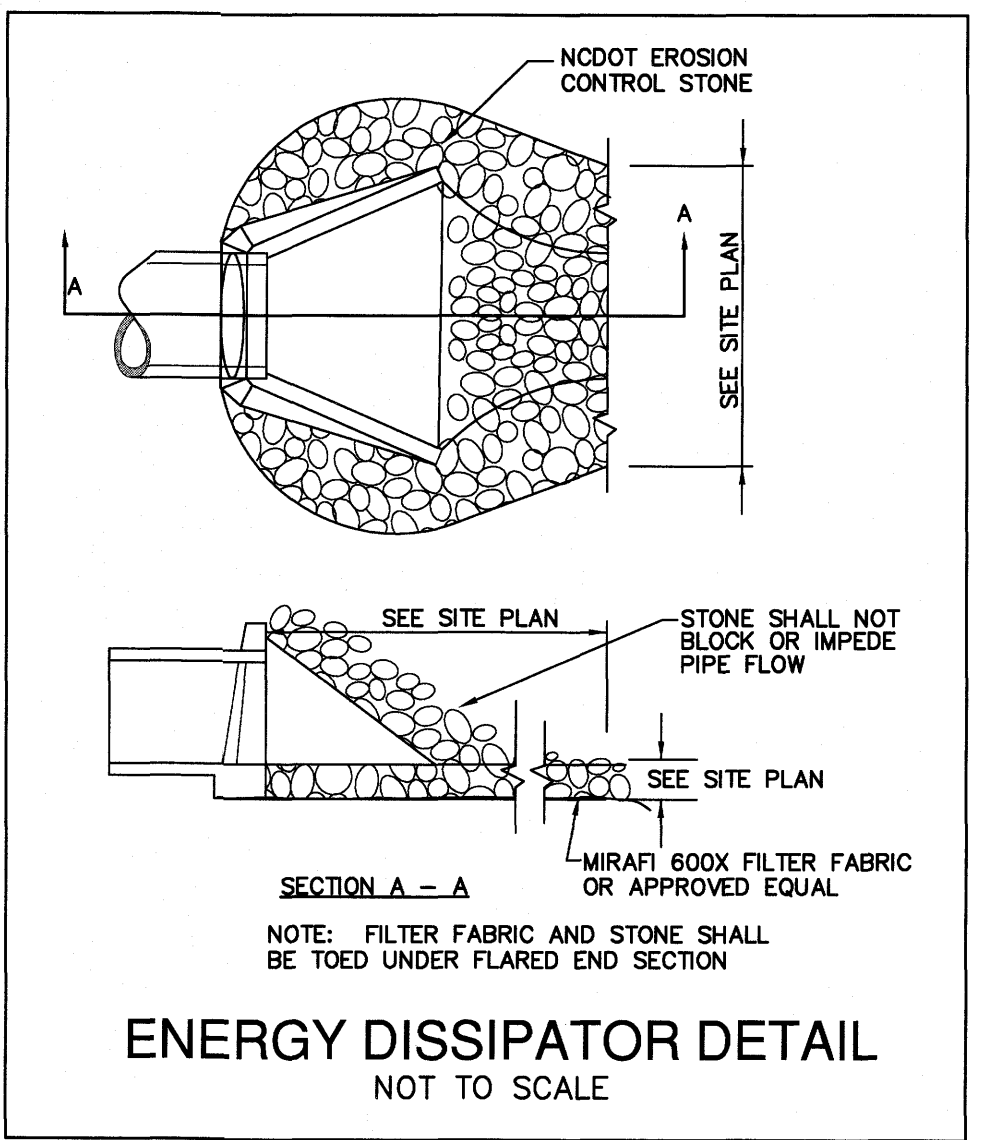
PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING	
SECTION C: REPORTING	
1. Occurrences that must be reported Permittees shall report the following occurrences: (a) Visible sediment deposition in a stream or wetland. (b) Oil spills if: <ul style="list-style-type: none">They are 25 gallons or more,They are less than 25 gallons but cannot be cleaned up within 24 hours,They cause sheen on surface waters (regardless of volume), orThey are within 100 feet of surface waters (regardless of volume).	
(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 145-215.85.	
(d) Anticipated bypasses and unanticipated bypasses.	
(e) Noncompliance with the conditions of this permit that may endanger health or the environment.	
2. Reporting Timeframes and Other Requirements After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.	
Occurrence	Reporting Timeframes (after Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none">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 permittees may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	<ul style="list-style-type: none">Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(i)(3)]	<ul style="list-style-type: none">A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(i)(3)]	<ul style="list-style-type: none">Within 24 hours, an oral or electronic notification.Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(i)(7)]	<ul style="list-style-type: none">Within 24 hours, an oral or electronic notification.Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue, and steps taken or planned to reduce, eliminate, and prevent recurrence 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.

WITH LINER, NO GRAVEL APPROACH



SITE WORK NOTES:

- THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH FIELD CONSTRUCTION CONDITIONS.
- CONTRACTOR SHALL COORDINATE WORK WITH NCDOT AND LOCAL RIGHT OF WAYS WITH PROPER AUTHORITIES AND SHALL MEET ANY REQUIREMENTS AS TO TRAFFIC CONTROL AND CONNECTION TO EXISTING STREETS.
- 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.
- STRIPPING: BEFORE EXCAVATING OR FILLING, REMOVE ALL TOPSOIL, WOOD, LEAVES, AND ANY OTHER UNSUITABLE MATERIAL.
- 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.
- 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.
- FILL AND COMPACTION: AFTER STRIPPING THOSE AREAS DESIGNATED TO RECEIVE FILL SHOULD BE PROOFOFROD. 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 98% 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 MANNER THAT THE SURFACE WILL DRAIN READILY AT ALL TIMES. SEE STRUCTURAL NOTES AND SOILS REPORT FOR ADDITIONAL REQUIREMENTS.
- LAYOUT: THE CONTRACTOR SHALL PROVIDE ALL LAYOUT REQUIRED TO CONSTRUCT HIS WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION.
- EXISTING BOUNDARY AND TOPOGRAPHIC INFORMATION FROM SURVEY BY BATEMAN CIVIL SURVEY AND MICHAEL UNDERWOOD AND ASSOC. PA. AND PROVIDED BY OWNER.
- THE CONTRACTOR SHALL VERIFY DIMENSIONS AT JOBSITE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF RELOCATION OR DISCONNECTION OF ALL EXISTING UTILITIES WITH APPLICABLE AGENCIES AND AUTHORITIES.
- ALL PAVEMENT AND BASE MATERIALS AND WORKMANSHIP SHALL CONFORM TO NCDOT STANDARDS.
- WATER AND SEWER SERVICES SHALL BE INSTALLED TO MEET LOCAL AND STATE PLUMBING CODES. METER AND TAPS SHALL MEET ALL LOCAL REQUIREMENTS.
- ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE.
- SEE SOILS REPORT FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR SHALL NOTE THAT EARTHWORK QUANTITIES ARE HIS RESPONSIBILITY. PLANS DO NOT REPRESENT A BALANCED EARTHWORK CONDITION.
- REINFC. CONC. PIPE SHALL BE CLASS III W/RUBBER GASKETED JOINT OR "RAM NECK". INSTALL PER MANUFACTURER'S REQUIREMENTS.
- USE WHITE LANE MARKING PAINT FOR ALL PAVEMENT MARKINGS. PAINT SHALL BE A CHLORINATED RUBBER ALKYL, FS TT-P-115, TYPE III, FACTORY MIXED, QUICK DRYING, NON-BLEEDING.
- REFER TO THE PLUMBING DRAWINGS FOR LOCATION AND INVERTS OF NEW WASTE, WATER AND ROOF DRAIN LINES.



NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

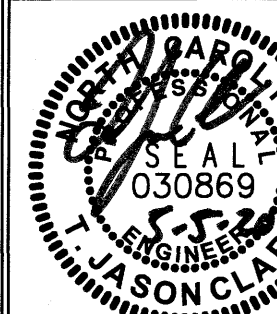
NOTES AND DETAILS
HANOVER RESERVE - PHASE 4-1
1308 CROOKED PINE RD.
NEW HANOVER COUNTY
WILMINGTON, N. C.

OWNER/DEVELOPER
TDR-HL, LLC
JOHN A. ELMORE MEMBER-MANAGER
P.O. BOX 381
WRIGHTSVILLE BEACH, NC 28480

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
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WILMINGTON, NC 28403
PHONE (910) 343-9653

Licence #C-3641

19094
DES. JPN
CHK. JST
DRWN. NKS
DATE 5/1/20



C4.1

1	ROAD SECTION 50' ROW	2	ASPHALT PAVEMENT SECTION	3	SIDEWALK JOINT DETAIL
4	CATCH BASIN DETAIL	5	DROP INLET DETAIL	6	24" VALLEY CURB SECTION (SPILL-OFF)
8	YARD INLET DETAIL	9	NCDOT PAVEMENT SECTION	10	MURRAYVILLE ROAD ROW EXTENSION

NOTES:
1. SIDEWALK THICKNESS SHALL BE 4" UNLESS NOTED OTHERWISE.
2. CONTRACTION JOINTS (C.J.) SPACE SAME AS SIDEWALK WIDTH.
3. THICKEN SIDEWALK TO 6" AT DRIVEWAYS.
4. THICKEN SIDEWALK TO 6" IN LAST 3' WHERE IT ABUTS PAVEMENT WITH NO CURB.
5. 1/2" EXPANSION JOINT (E.J.) AND SNAP CAP EXPANSION JOINT COVERS ARE REQUIRED AT 50' MAX. AT SIDEWALK JUNCTIONS, AT STRUCTURES, AND AS NOTED ON SITE PLAN. 6. PROVIDE A LAYER OF 15# BLDG. FELT BETWEEN WALK AND ADJACENT PARALLELING CURB OR STRUCTURE.

1-1/2" SF 9.5 A NCDOT ASPHALT

6" TYPE ABC STONE (NCDOT)

COMPACTED SUBGRADE

NOTES:
1. PAVEMENT SECTION MAY VARY DEPENDING UPON FIELD CONDITIONS. CONTRACTOR SHALL COORDINATE w/OWNER & GEOTECHNICAL ENGINEER TO DETERMINE ACTUAL PAVEMENT SECTION.
2. PAVEMENT SECTION AND MATERIALS SHALL MEET NCDOT MINIMUM STANDARDS FOR SUBDIVISION ROADS.

NOT TO SCALE

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1/8"R TOOLED JOINT

1/2" EXPANSION JOINT MATERIAL

1/4"x1" DEEP w/AN 1/8"R TOOLED JOINT

CONTRACTION JOINT (C.J.)

BLDG.-STRUCTURE PLAN

NOTES:
1. PAVEMENT SECTION AND MATERIALS SHALL MEET NCDOT MINIMUM STANDARDS FOR SUBDIVISION ROADS.

NOT TO SCALE

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CKD. JPN
DRWN. INKS

DATE 5/1/20

SEAL

030805

1522

ENGINEER

CLARENCE J. JASON

C4.2

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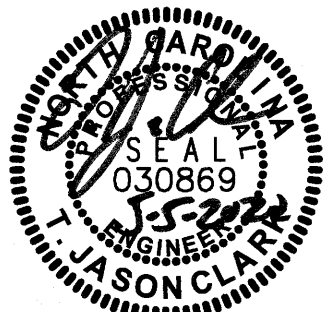
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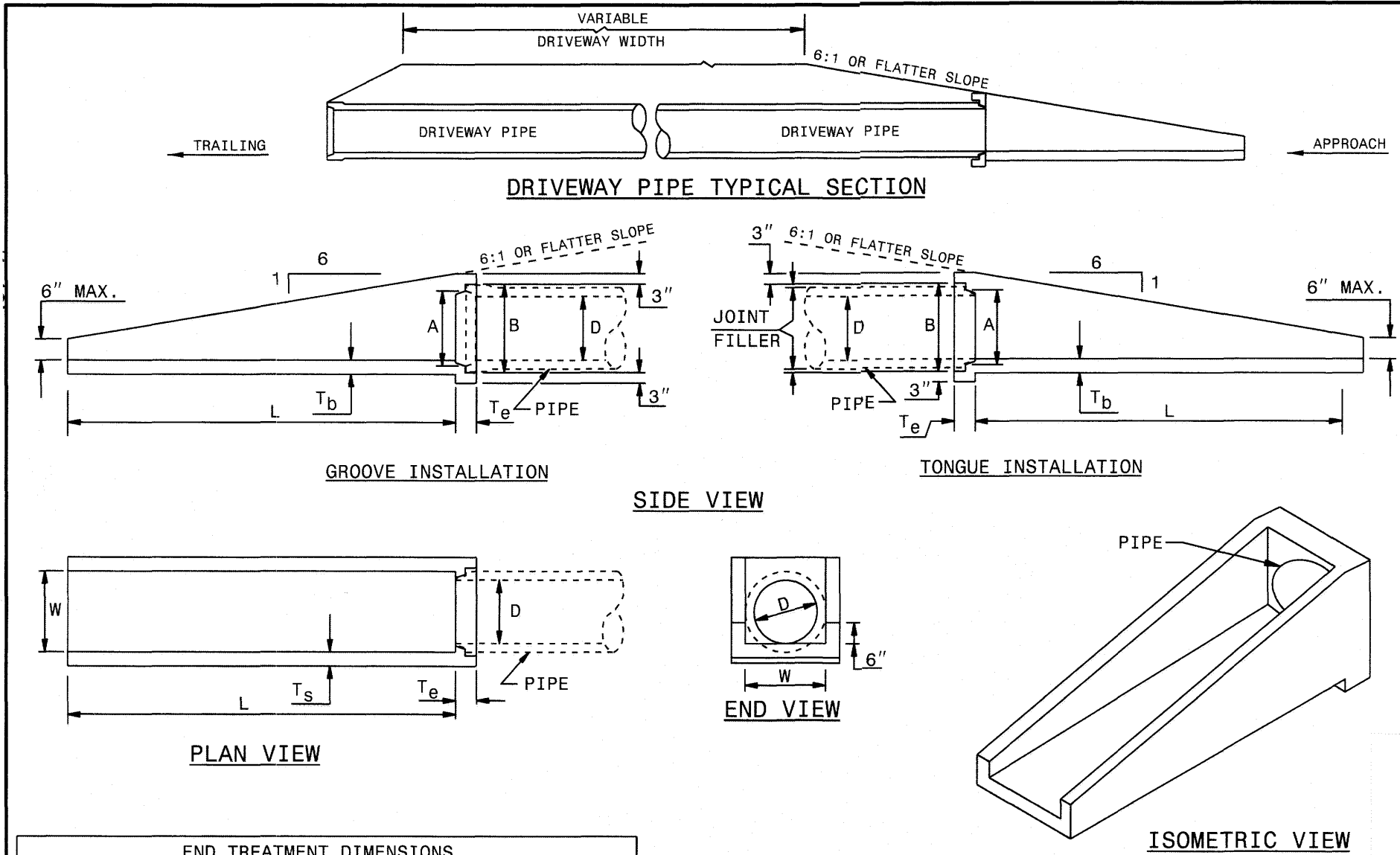
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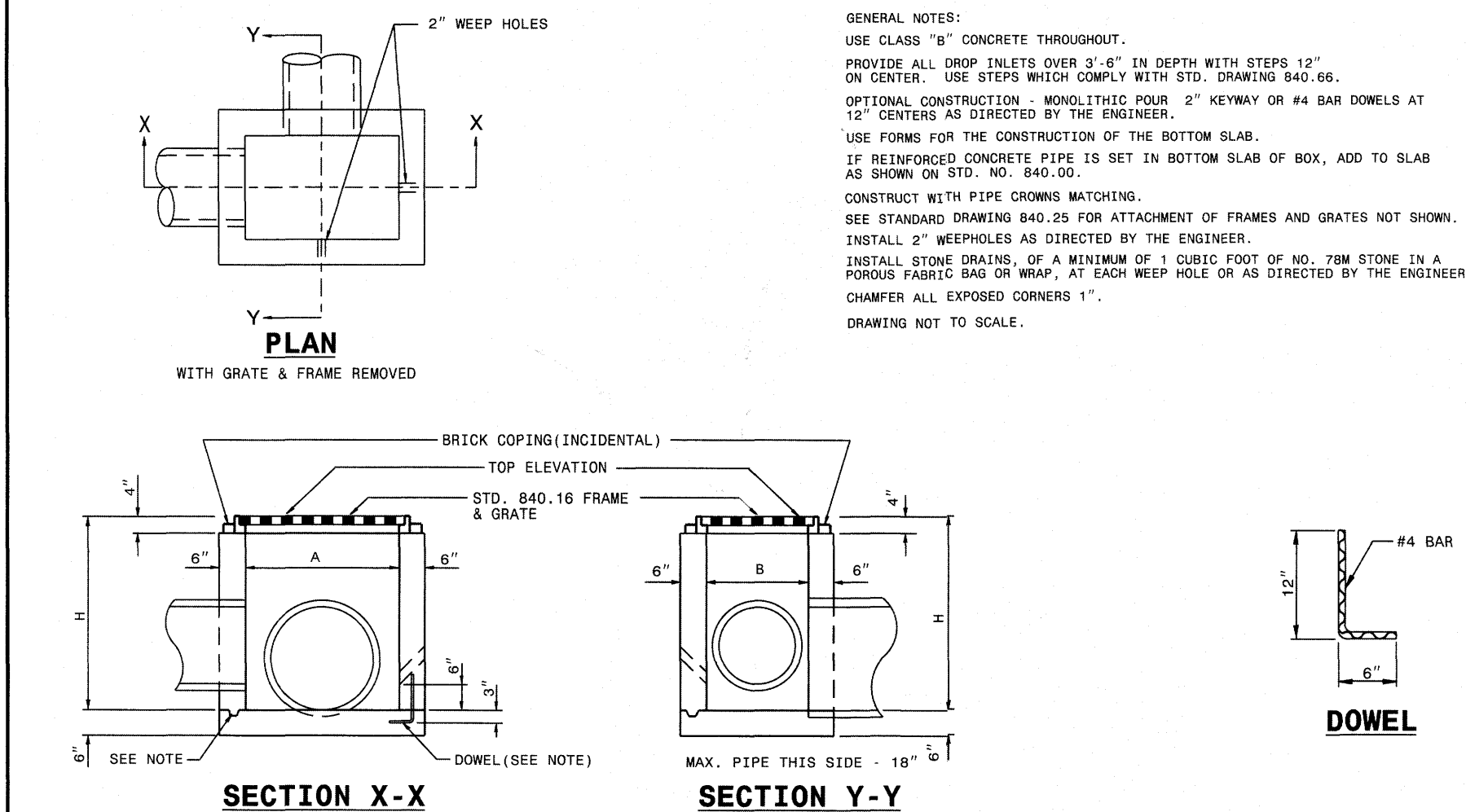
C4.2

PRELIMINARY



END TREATMENT DIMENSIONS							
D	L	W	T _s	T _b	T _e	A	B
15"	7'-6"	19"	4"	4"	6"	179 1/4"	207 1/8"
18"	9'-0"	23"	4"	4"	6"	211 1/4"	25"
24"	12'-6"	30"	4"	4"	6"	277 1/8"	32"

- NOTES:
1. CONSTRUCT PIPE END SECTION USING #4 REBAR SPACED 9" EACH WAY AND MEET ALL REQUIREMENTS OF STD. SPEC. 310.
 2. CHAMFER ALL EXPOSED CORNERS 3/4".



DIMENSIONS AND QUANTITIES FOR DROP INLET (BASED ON MIN. HEIGHT, H)									
DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONC. IN BOX			DEDUCTIONS FOR ONE PIPE		
D	A	B	H	BOTTOM SLAB	WALL PER FT. HT.	CONCRETE DOWEL	C.M.	R.C.	
12"	3'-0"	2'-0"	2'-0"	0.222	0.222	0.592	0.015	0.026	
15"			2'-3"			0.648	0.023	0.036	
18"			2'-6"			0.703	0.033	0.049	
24"			3'-0"			0.814	0.059	0.085	
30"	3'-0"	2'-0"	3'-6"	0.222	0.222	0.925	0.092	0.127	

GENERAL NOTES

USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.

USE ASTM A615 GRADE 60 REINFORCING STEEL. USE ASTM A1064 WELDED WIRE FABRIC (WWF).

FABRICATE, ASSEMBLE AND DESIGN PRECAST MANHOLE COMPONENTS ACCORDANCE WITH AASHTO M199.

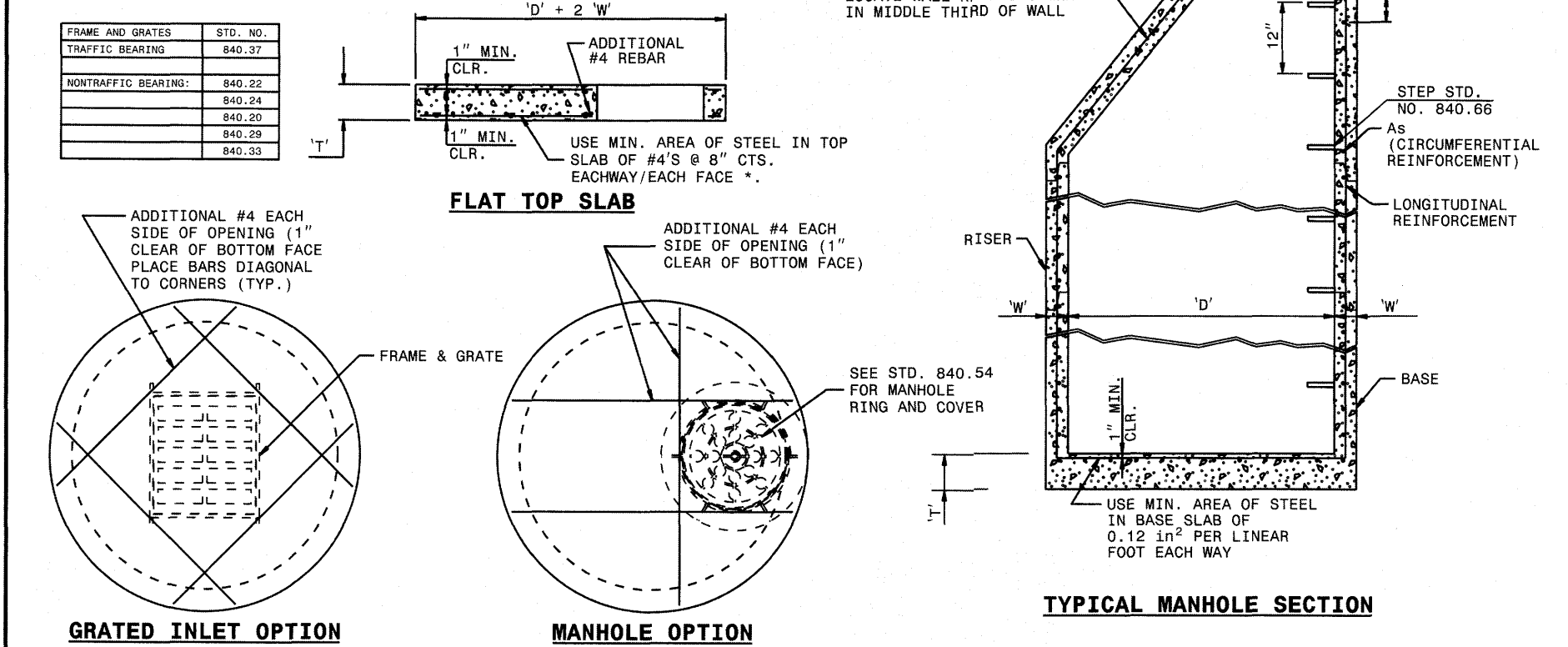
ASSEMBLE RISER AND GRADE RINGS WITH THE STEPS SPACED 12" FROM THE TOP TO THE BOTTOM OF THE MANHOLE.

WHERE THE MANHOLE IS EXPOSED TO ROAD TRAFFIC, CONSTRUCT THE TOP OF THE MANHOLE FLUSH WITH THE GROUND AND A MINIMUM OF 9" ABOVE THE GROUND AT OTHER LOCATIONS.

LIMIT DEPTH OF FILL TO 30'-0" FROM FINISH GRADE TO TOP OF BOTTOM SLAB.

THE MIN. SLAB THICKNESS "T" IS THE DIMENSION OF THE THINNEST PORTION OF THE TOP/BOTTOM SLAB.

* TOP MAT OF REINFORCEMENT MAY BE NEGLECTED IF TOP SLAB HAS A DISTINGUISHABLE TOP AND BOTTOM.



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

ENGLISH STANDARD DRAWING FOR
PARALLEL PIPE END SECTION
PRECAST CONCRETE SECTION FOR 15" TO 24" PIPE

PAVEMENT MARKINGS
HI-VISIBILITY CROSSWALKS
NO-TRACK MARKING GUIDANCE

SHEET 1 OF 1
310.02

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

ENGLISH STANDARD DRAWING FOR
CONCRETE DROP INLET
12" THRU 30" PIPE

PAVEMENT MARKINGS
INTERSECTIONS

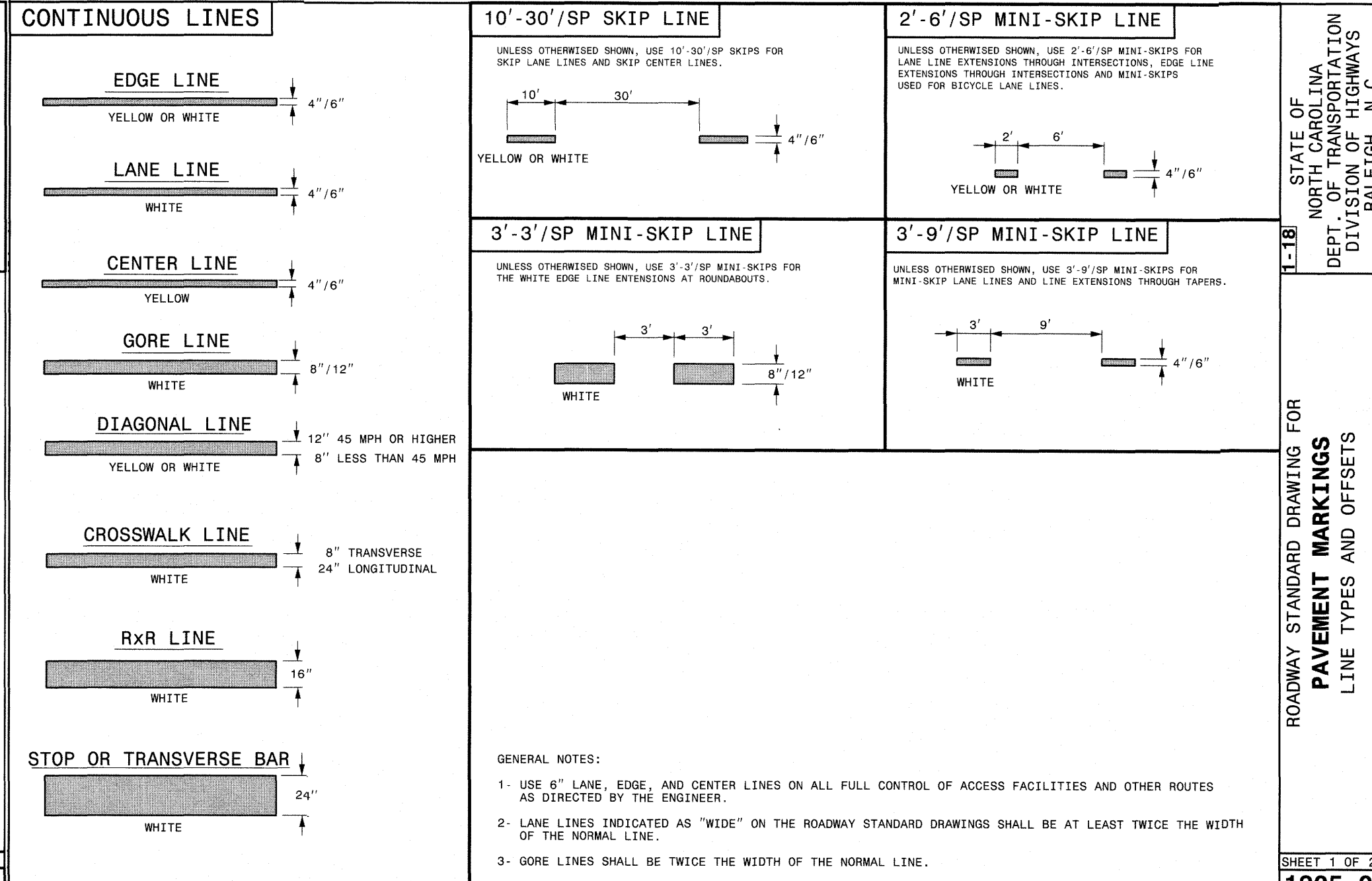
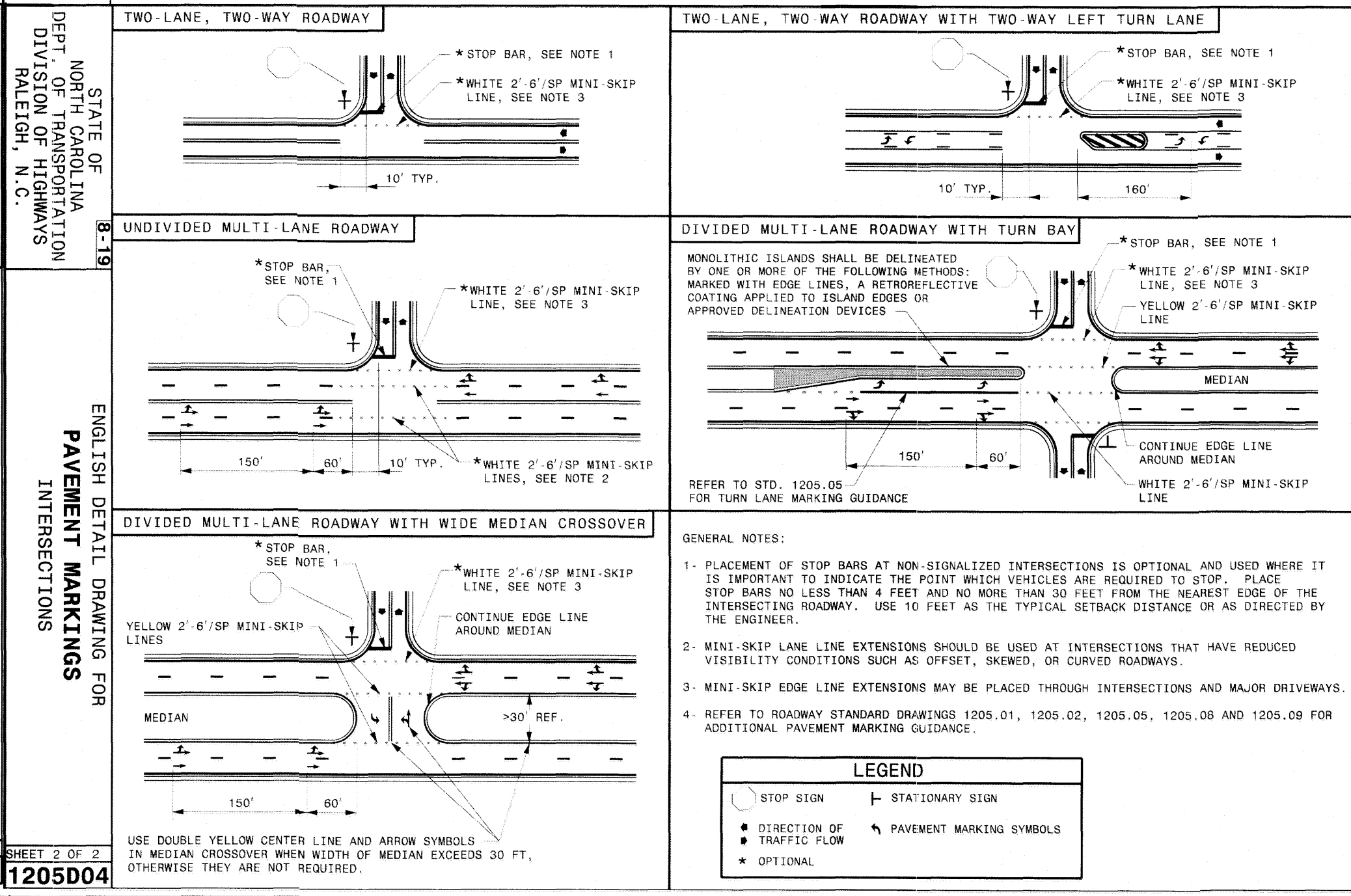
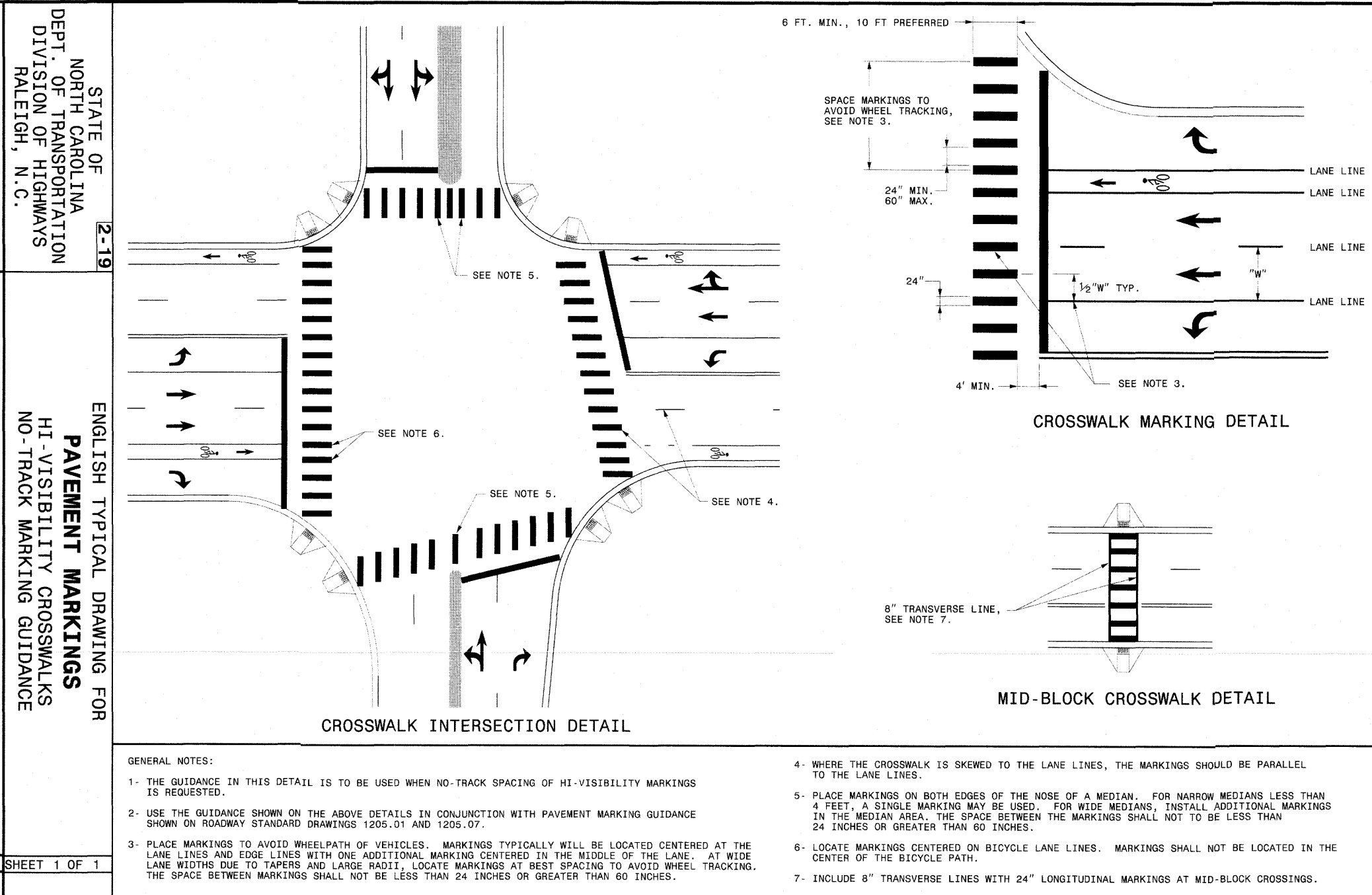
SHEET 1 OF 1
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STATE OF NORTH CAROLINA
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
PRECAST MANHOLE 4', 5', AND 6' DIAMETER
12" THRU 48" PIPE

PAVEMENT MARKINGS
LINE TYPES AND OFFSETS

SHEET 1 OF 1
840.52



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

ENGLISH TYPICAL DRAWING FOR
PAVEMENT MARKINGS
HI-VISIBILITY CROSSWALKS
NO-TRACK MARKING GUIDANCE

SHEET 1 OF 1

STATE OF NORTH CAROLINA
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RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
PAVEMENT MARKINGS
INTERSECTIONS

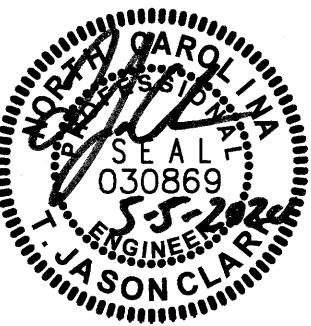
SHEET 2 OF 2
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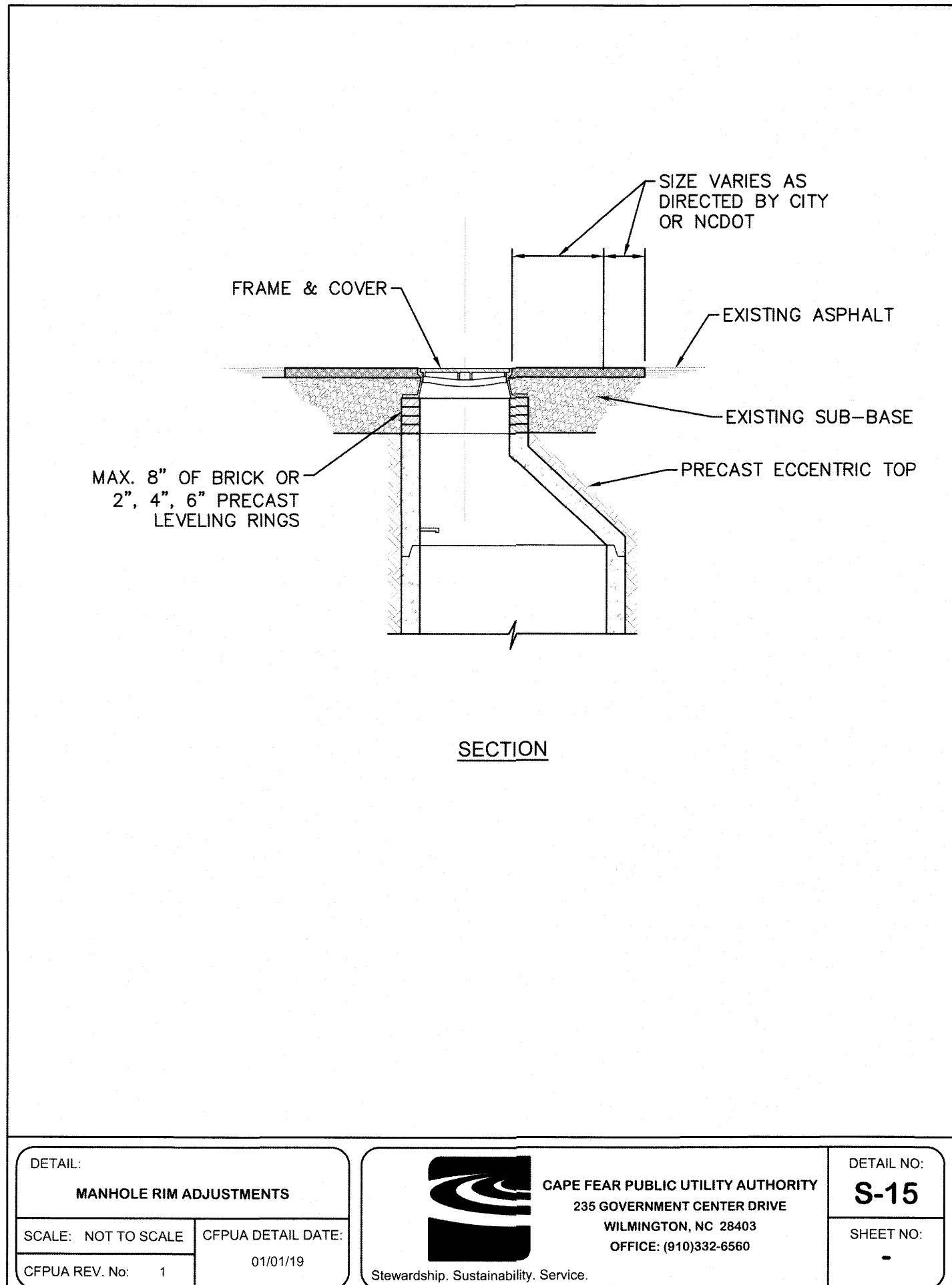
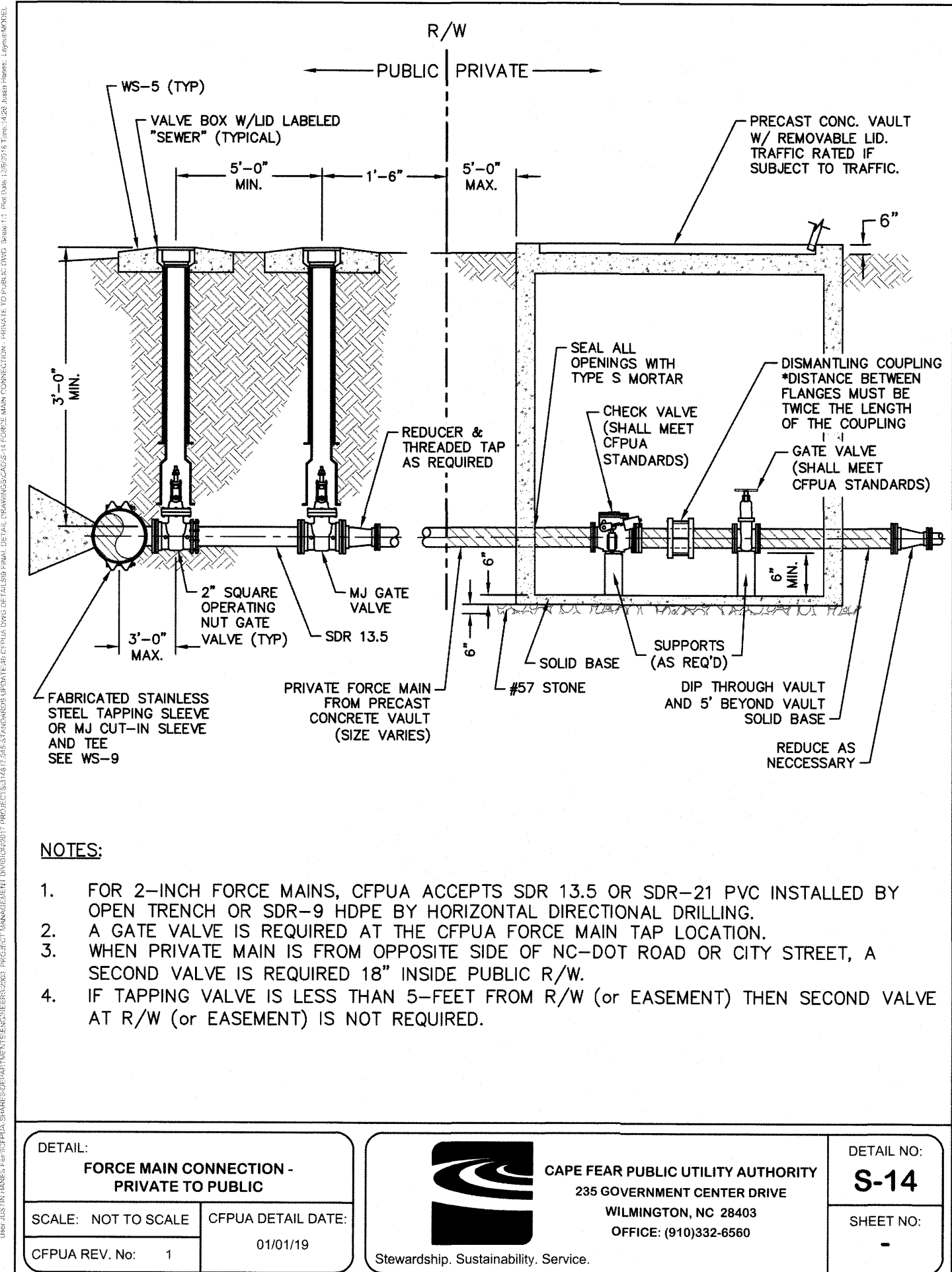
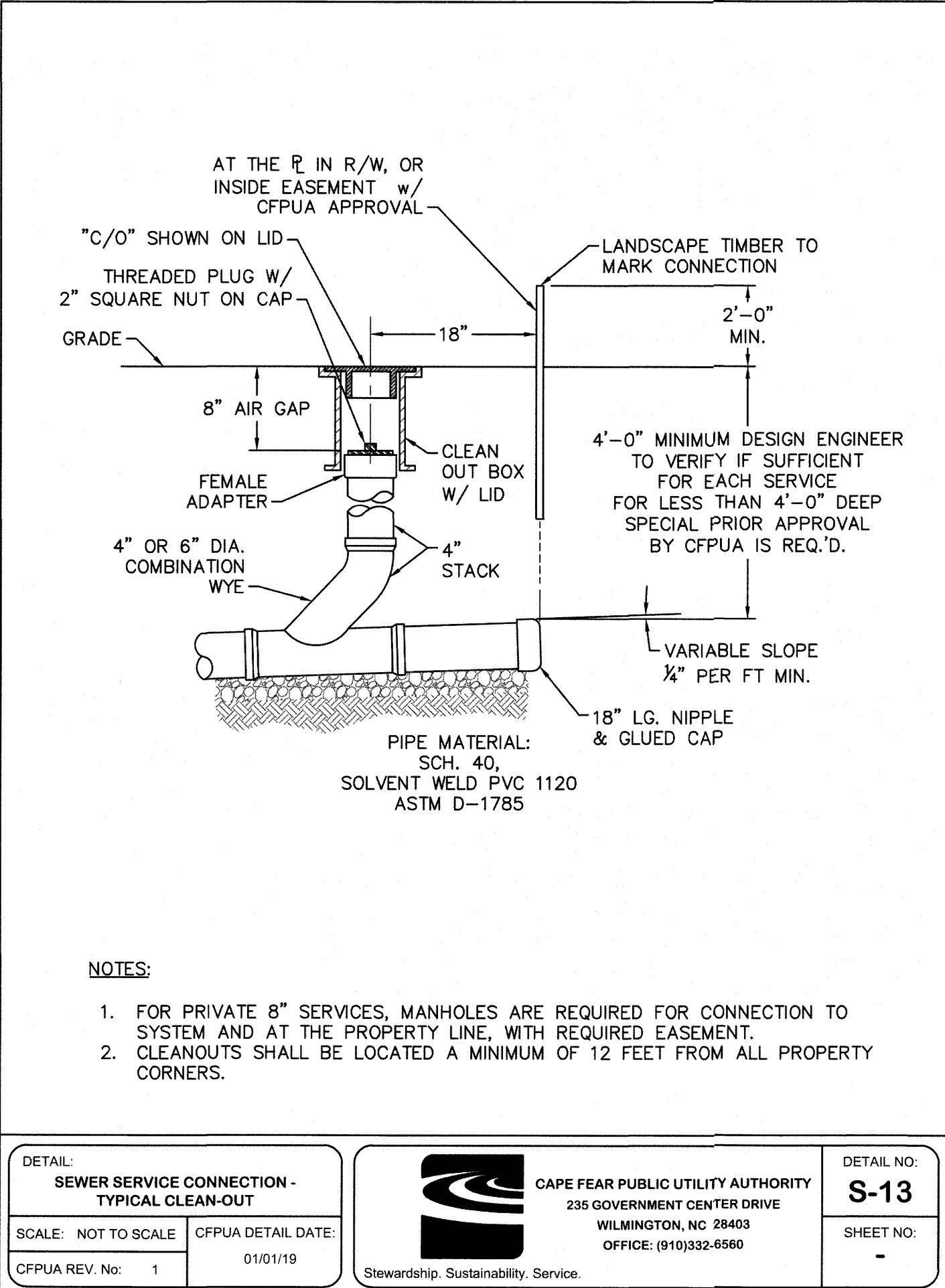
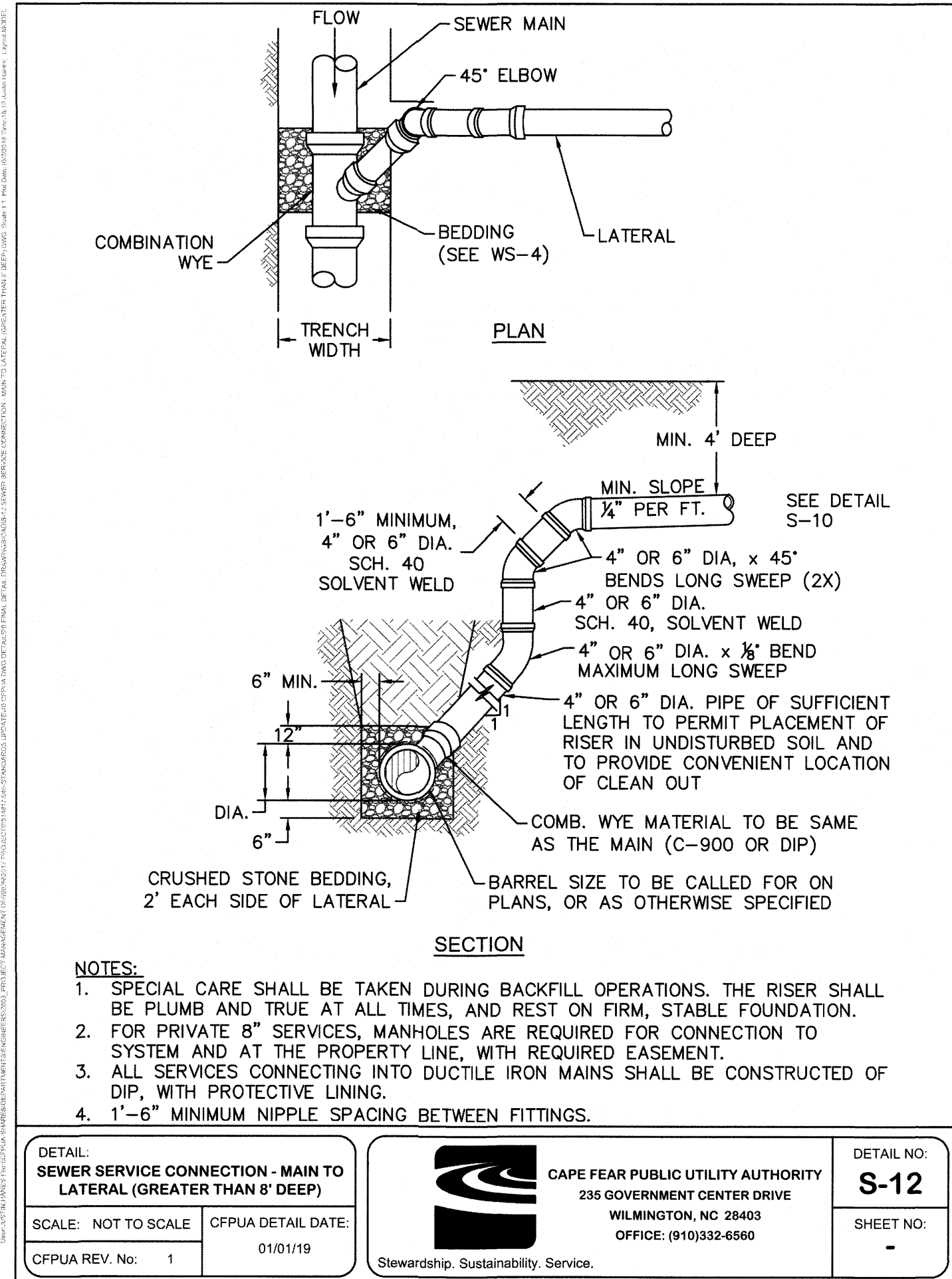
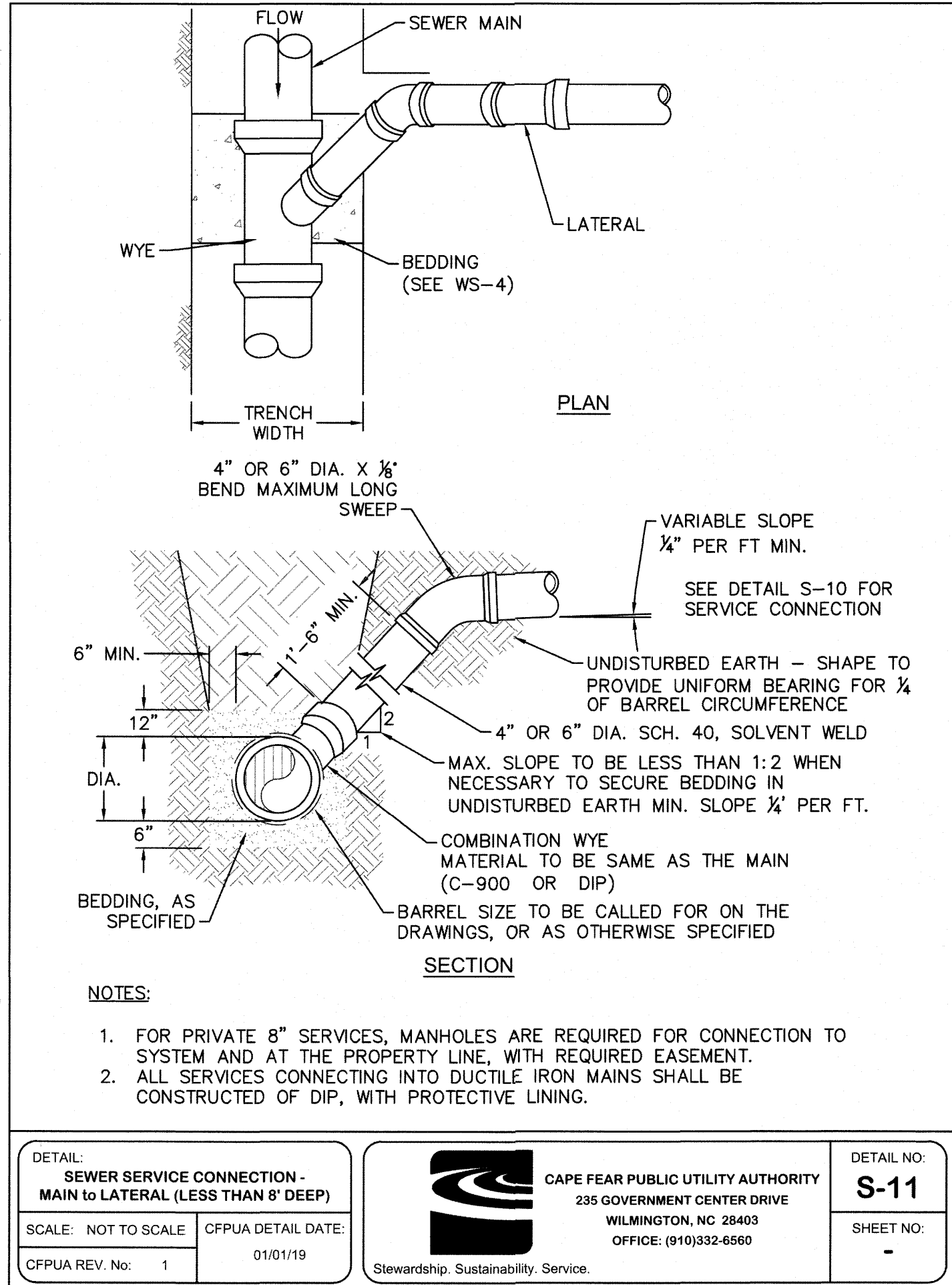
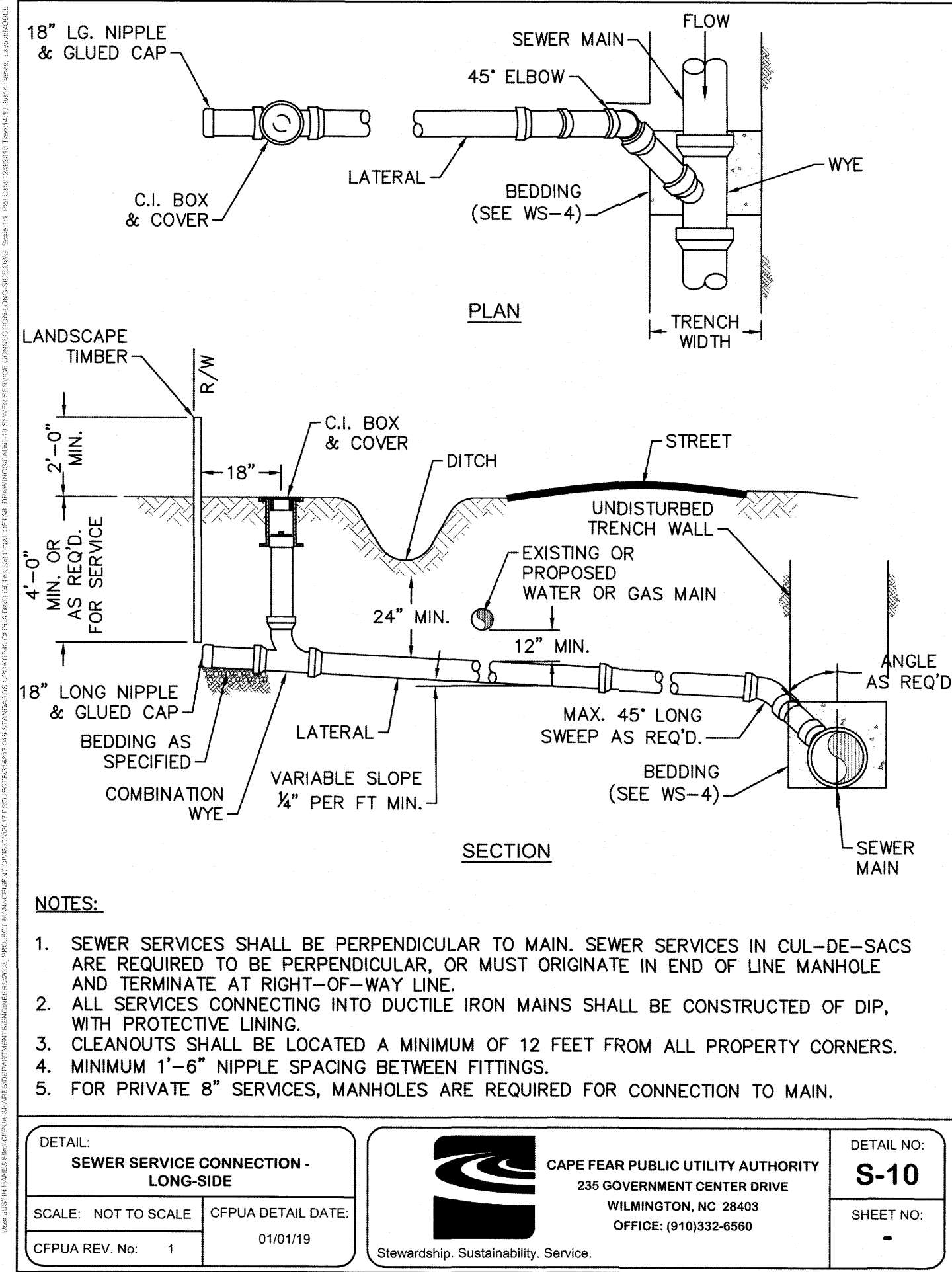
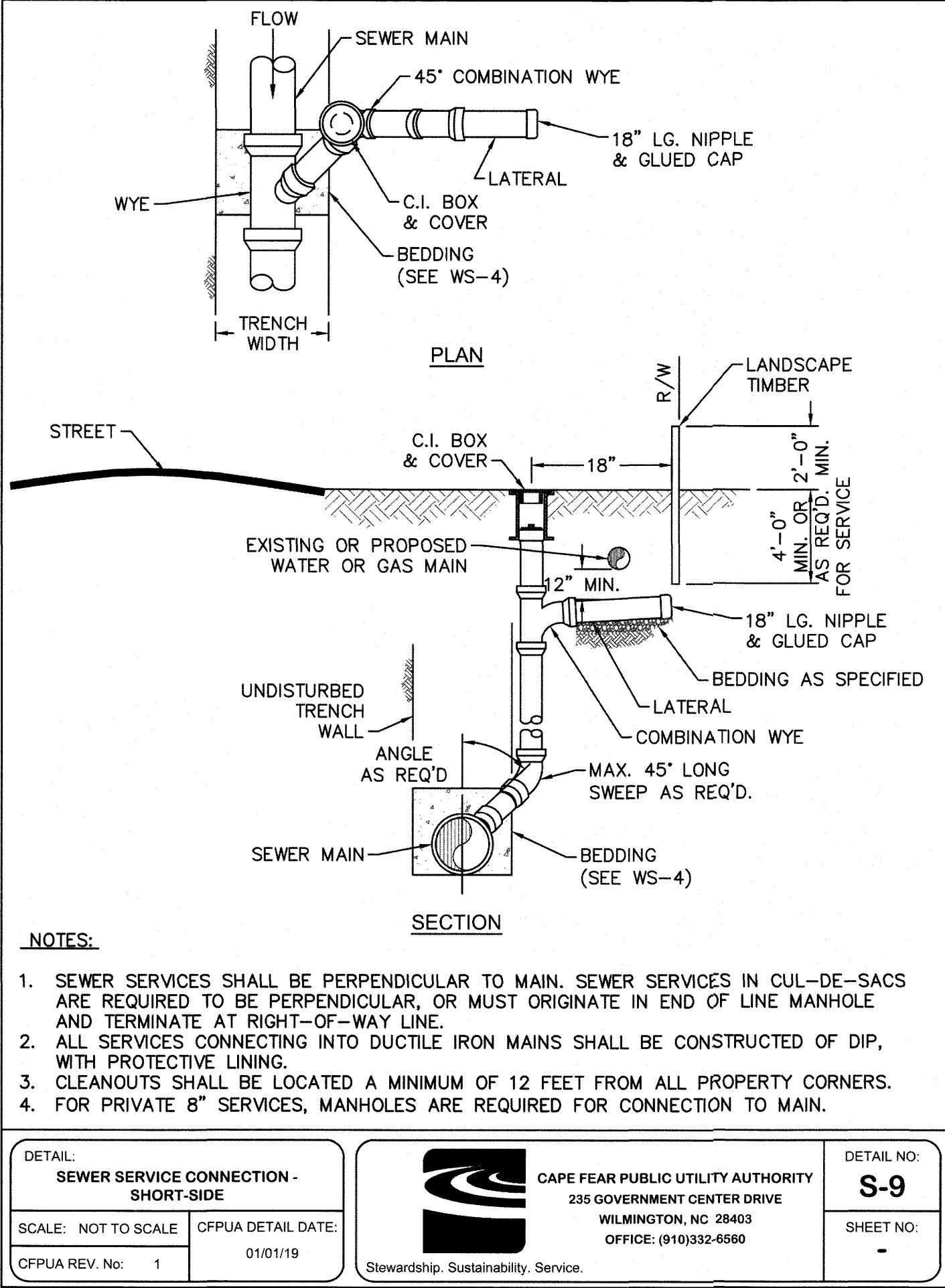
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DATE 5/1/20



C4.3

PRELIMINARY

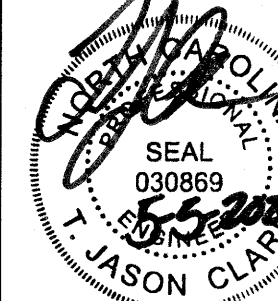


UTILITY DETAILS - SEWER
CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403

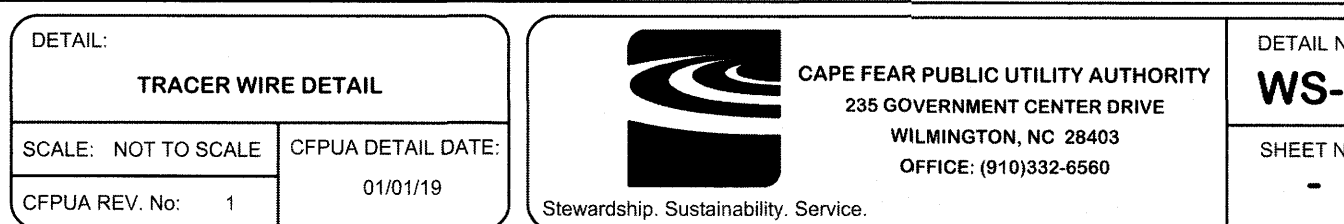
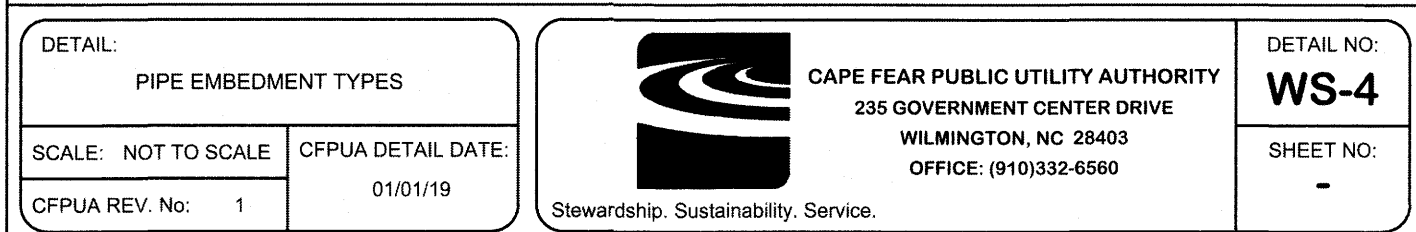
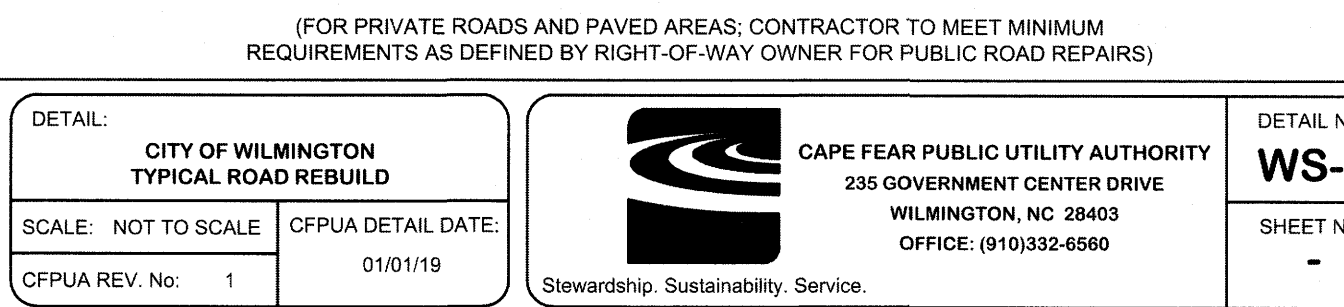
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NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1900 EASTWOOD RD., SUITE #11
WILMINGTON, NC 28403
PHONE (910) 343-9653

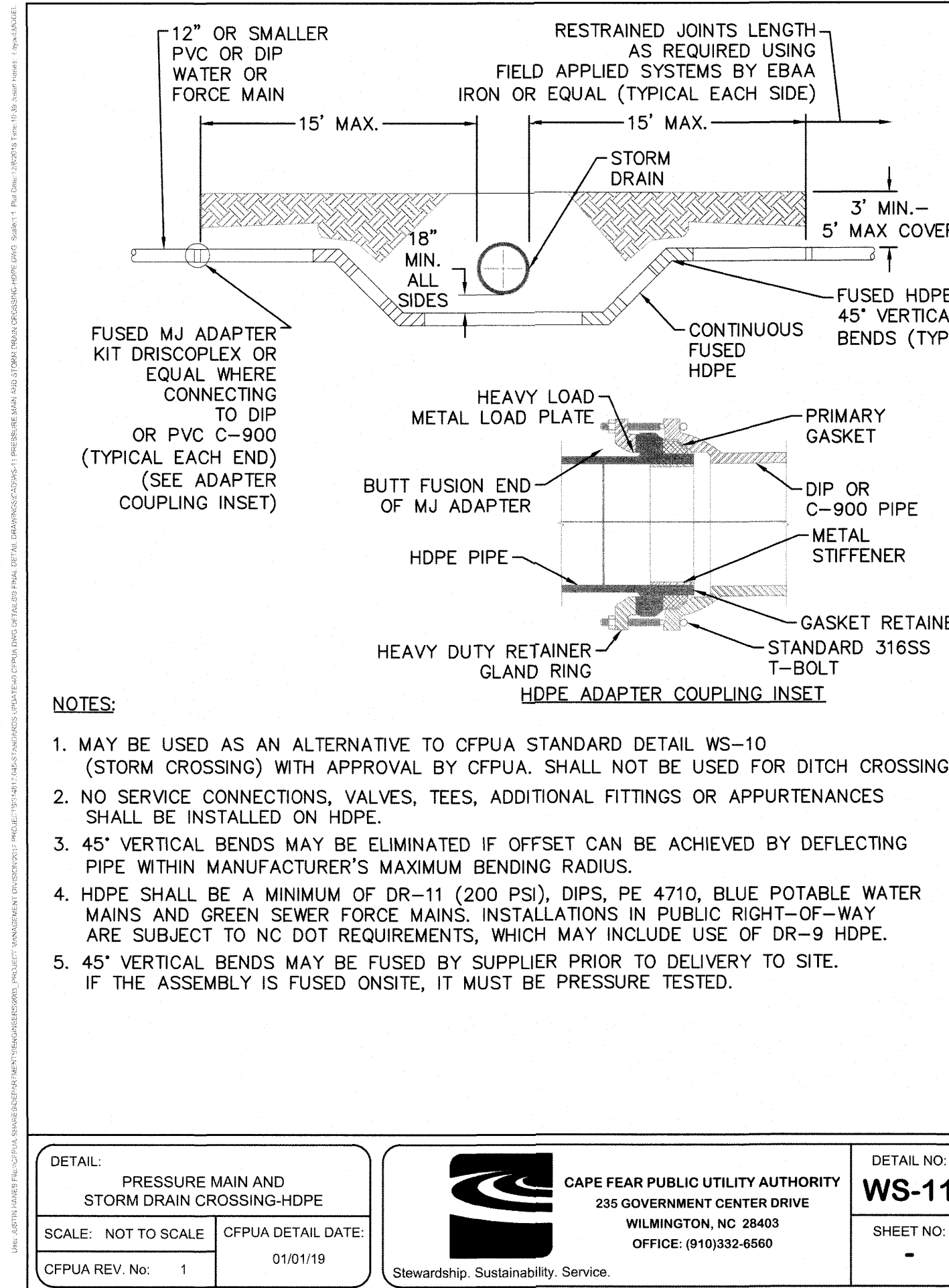
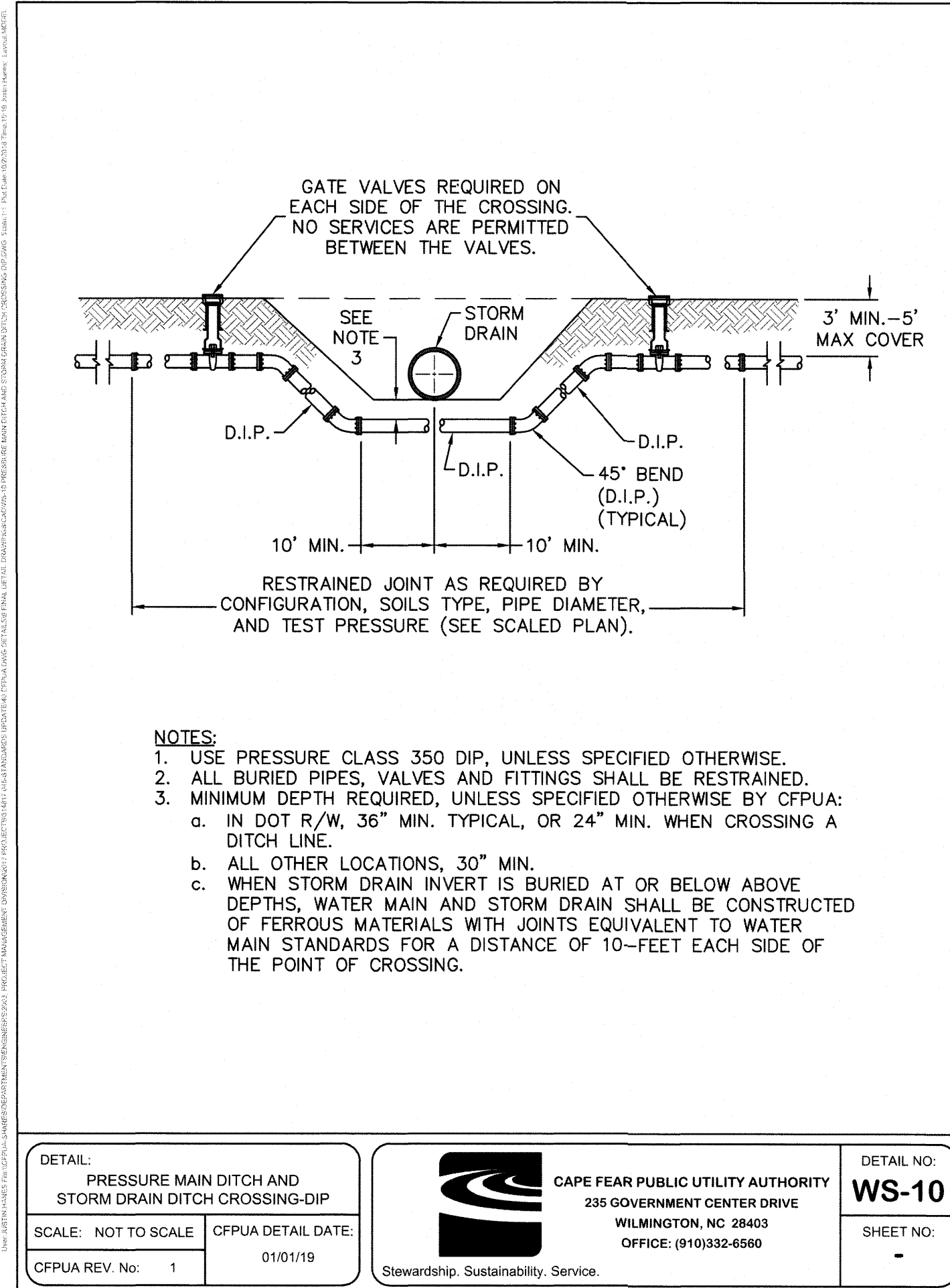
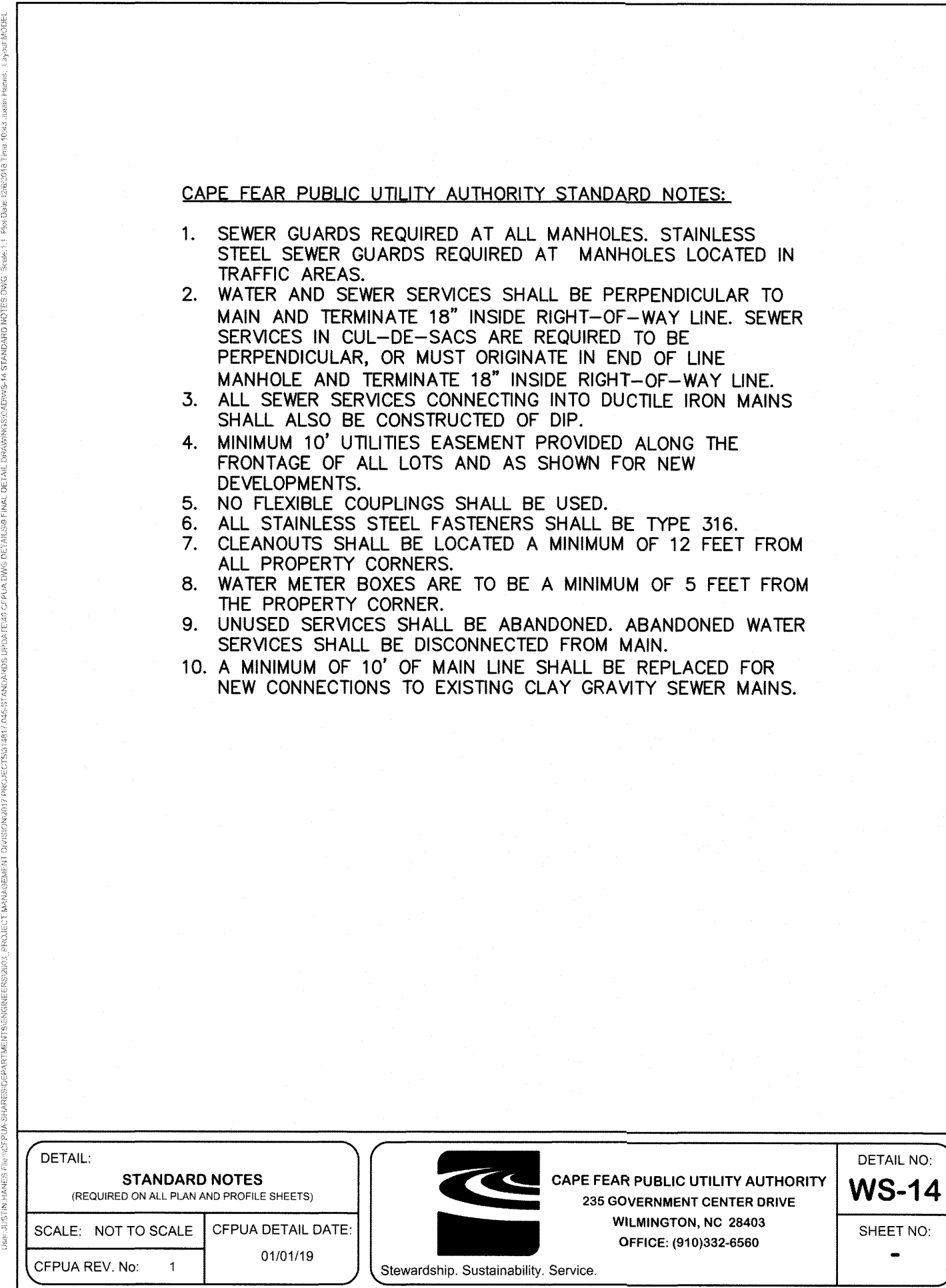
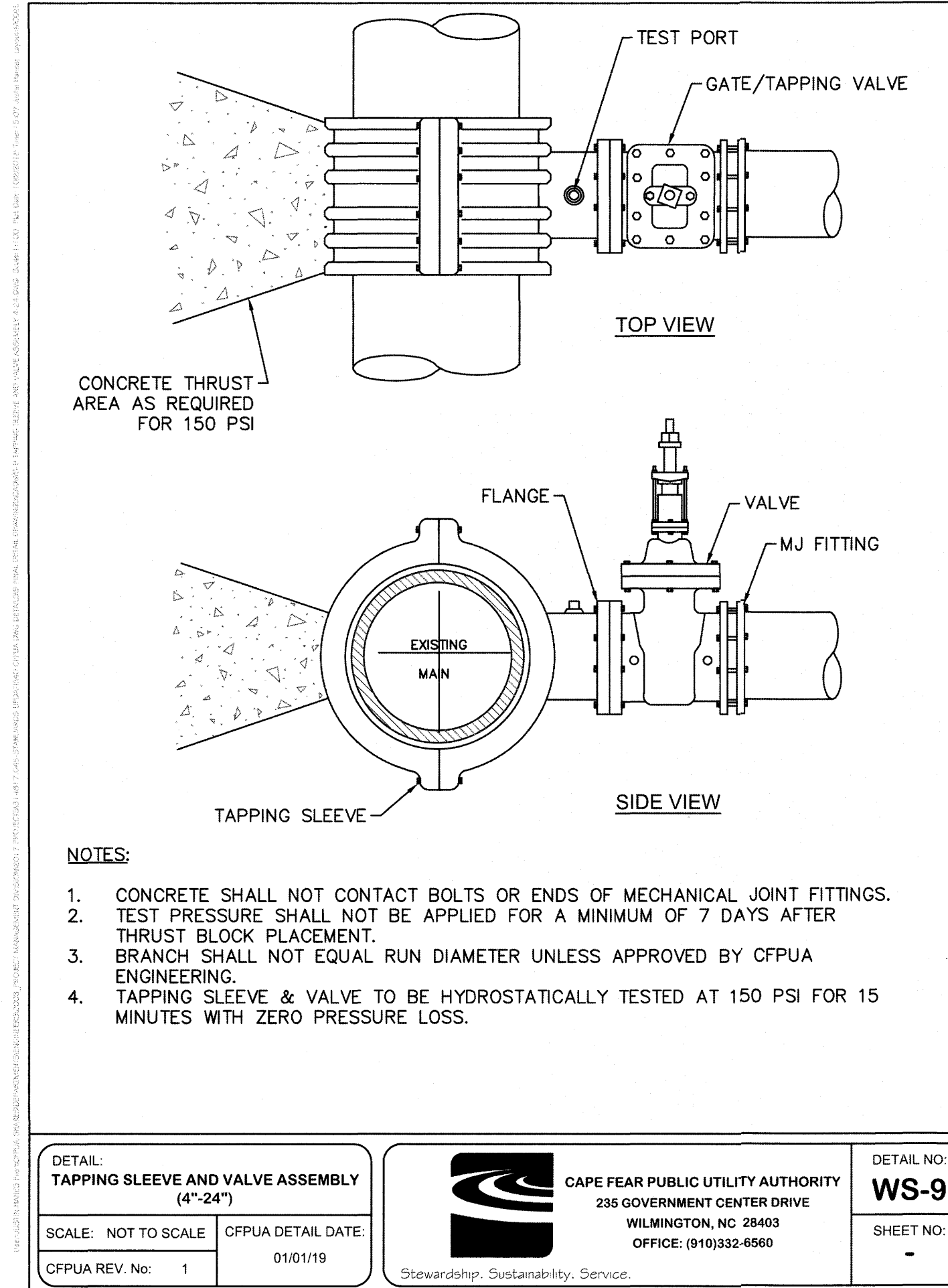
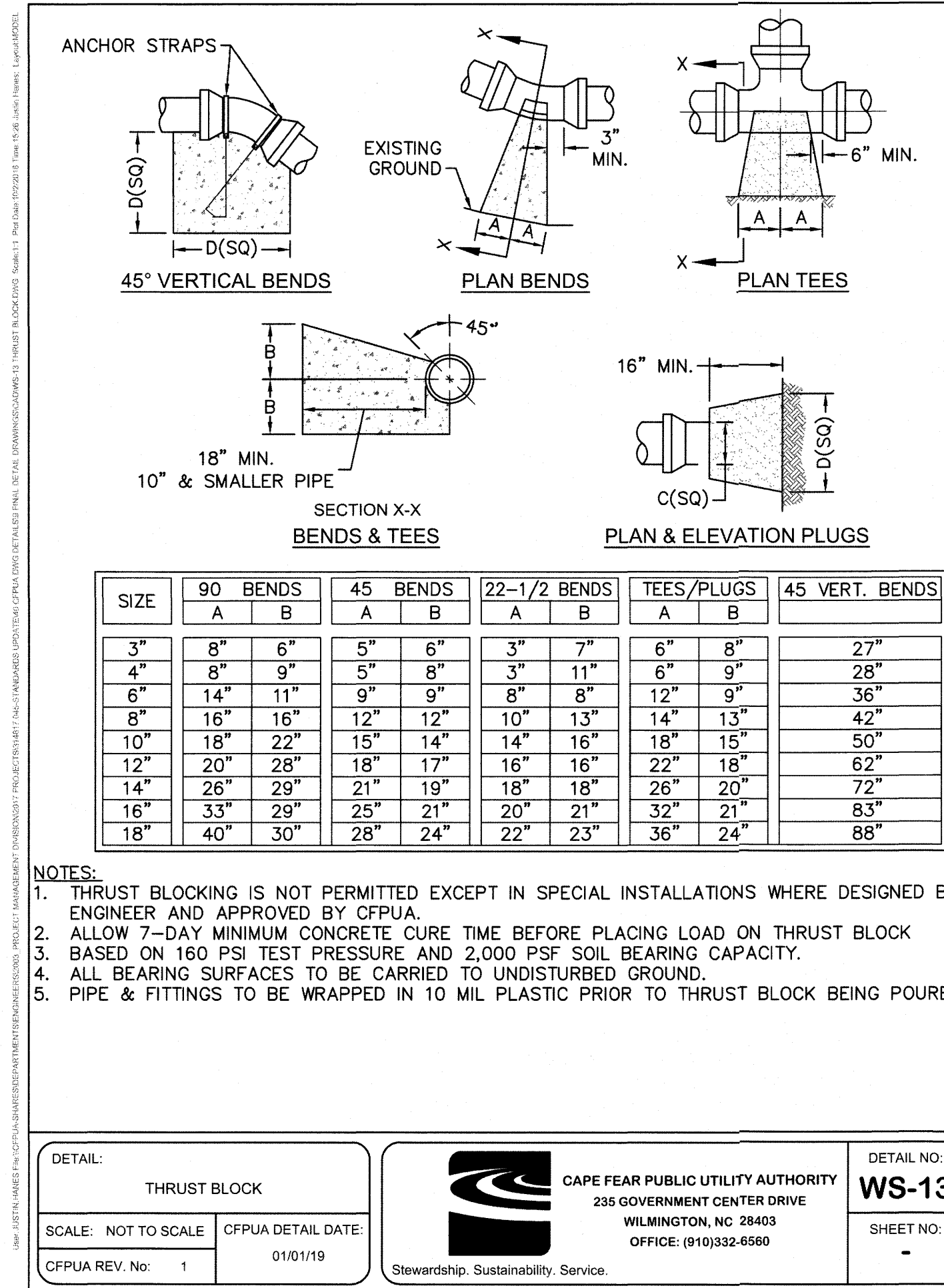
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DATE 5-5-20



SS2



WS1



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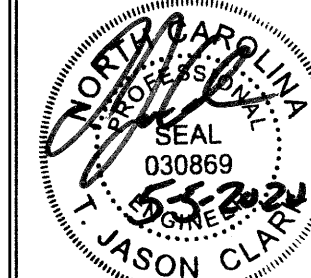
1429 ASH-LITTLE RIVER RD. NW
ASH, NC 28420
PHONE: (910) 267-5900

Licence #C-3641

19094

DES. JST
CKD. JPN
DRWN. NKS

DATE 5.5.20



WS2

UTILITY DETAILS
TYPICAL WATER AND SEWER
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