NAME OF PROJECT:

FULL GOSPEL TABERNACLE CHURCH

ENGINEER:

DRAPER ADEN ASSOCIATES 930 MAIN CAMPUS DRIVE SUITE 151

RALEIGH, NC 919.827.0864

PROJECT OWNER:

FULL GOSPEL TABERNACLE INC. 465 SAXON AVE. LUMBERTON, NC 28358

CONTRACTOR:

CERTIFIED CONSTRUCTION SERVICES, INC

9820 US 301 N

LUMBERTON, NC 28358

PHONE 910.739.9887

DEED REFERENCE: ZONE CLASSIFICATION:

1508-06-4650 DB 394 PG 555

FLOOD ZONE CLASS: WATERSHED CLASSIFICATION:

RA-30 ZONE X, FIRM 3720150800J, EFF. 10/3/2006 CAPE FEAR RIVER WATERSHED

SITE ACREAGE: TAXABLE ACREAGE:

11.71 ACRES 9.64 ACRES 6.20 ACRES DISTURBED ACREAGE:

BUILT UPON AREA:

PHASE 1 - 61,665 SF (24.5%) BUILDING - 9,345 SF CONCRETE - 7,312 SF ASPHALT - 45,008 SF

PHASE 2 - 241,758 (TOTAL PROJECT) BUILDINGS - 22,800 SF INFRASTRUCTURE - 157,290 SF

PARKING:

REQUIRED: 281 PERSONS \div 4 = 70.25 PROVIDED: 94 STALLS

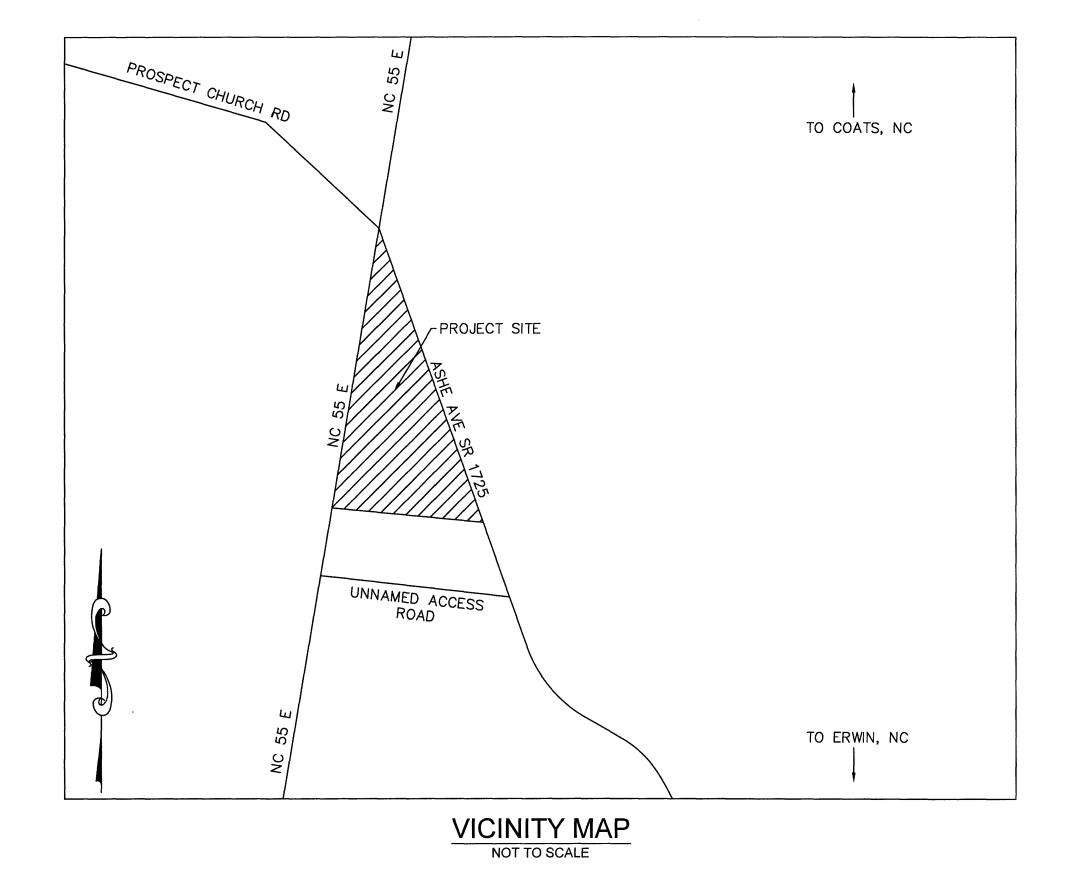
MINIMUM FRONT YARD SETBACK: 35' MINIMUM SIDE YARD SETBACK: 20'

(CORNER LOT)

WASTE REMOVAL SERVICES TO BE PROVIDED BY ROLL CAN

FULL GOSPEL TABERNACLE CHURCH

COATS, NORTH CAROLINA HARNETT COUNTY JANUARY 2019



THE DESIGN INCLUDES A NEW CHURCH WITH ADJACENT PARKING LOT AND LANDSCAPE ISLANDS. A MASTERPLAN IS INCLUDED FOR FUTURE EXPANSION AND A STORMWATER POND IS DESIGNED TO ACCOMMODATE FUTURE IMPERVIOUS AREA.

Sheet Number	Sheet Title		
C1.0	COVER		
C2.0	NOTES		
C3.0	EXISTING CONDITIONS PLAN		
C4.0	EROSION AND SEDIMENT CONTROL PLAN		
C5.0	SITE LAYOUT & UTILITY PLAN		
C5.1	MASTER PLAN		
C6.0	ROUGH GRADING PLAN		
C6.1	FINE GRADING PLAN		
C7.0	ESC DETAILS		
C7.1	ESC DETAILS 2		
C7.2	UTILITY DETAILS		
C7.3	UTILITY NOTES		
C7.4	SITE DETAILS		

Sheet List Table

AS THE OWNER OF RECORD, I HEREBY FORMALLY CONSENT TO THE PROPOSED DEVELOPMENT SHOWN ON THE SITE PLAN AND ALL REGULATION AND REQUIREMENTS OF THE HARNETT COUNTY ORDINANCES.

DATE

OWNER SIGNATURE





DRAPER ADEN ASSOCIATES REVIEW

THESE PLANS HAVE BEEN SUBJECTED TO TECHNICAL AND QUALITY REVIEWS BY:

J. AUSTIN JACKSON, E.I.T.

NAME: ANDREW MERICLE, P.E. QUALITY REVIEWER



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01/02/19 - STORM 01/18/19 - DRIVEWAY PERMIT APPLICATION 02/21/19 - DRIVEWAY

PERMIT APPLICATION RESUBMITTAL 03/29/19 - STORM WATER RESUBMITTAL 05/03/19 - HARNETT COUNTY DRB RESUBMITTAL 07/25/19 - HRW SUBMITTAL

DESIGNED BY: APM ORAWN BY: CHECKED BY:

NONE JANUARY 2019 18080144-01

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2. ALL DISTURBED AREAS SHALL BE PERMANENTLY SEEDED AND MULCHED PER THE NPDES SCHEDULE AFTER REACHING FINAL GRADE. AREAS WHICH HAVE BEEN DISTURBED AND HAVE NOT REACHED FINAL GRADE, BUT WHICH ARE TO REMAIN UNDISTURBED FOR LONGER THAN 14 DAYS ARE TO BE TEMPORARILY SEEDED AND MULCHED PER THE NPDES SCHEDULE. AS UPSTREAM AREAS ARE STABILIZED WITH PERMANENT GROUND COVER, DOWNSTREAM TEMPORARY DEVICES ARE TO BE REMOVED. CONTRACTOR SHALL FOLLOW THE STABILIZATION TIME TABLE INCLUDED IN THIS SET OF DRAWINGS.

3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PERIODICALLY INSPECT ALL SEDIMENT AND EROSION CONTROL DEVICES AND ENSURE THAT THEY ARE IN GOOD WORKING ORDER. AT A MINIMUM, ALL DEVICES SHALL BE INSPECTED DAILY AND AFTER MAJOR RAINFALL EVENTS. ANY DEVICE NEEDING REPAIRS SHALL BE REPAIRED WITHIN 24 HOURS.

THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES IF DURING THE COURSE OF CONSTRUCTION THE ENGINEER OR NODEQ INSPECTOR DETERMINES THAT THEY ARE REQUIRED.

5. SILT SHALL BE REMOVED FROM SILT FENCES WHEN THE SILT REACHES APPROXIMATELY ONE—THIRD (1/3) THE HEIGHT OF THE BARRIER.

3. THE CONTRACTOR SHALL PERIODICALLY TOP DRESS THE CONSTRUCTION ENTRANCE WITH CLEAN STONE. IF THE CONSTRUCTION ENTRANCE FAILS TO REMOVE DIRT FROM THE TIRES OF VEHICLES ENTERING A PUBLIC RIGHT-OF-WAY A WASH RACK SHALL BE INSTALLED AND THE TIRES WASHED. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ANY REQUIRED WATER FOR THE WASHING OF TIRES. DIRT TRACKED ONTO THE PUBLIC RIGHT-OF-WAY SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.

ALL EROSION AND SILTATION MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING. 8. ALL STORM AND UTILITY LINES NOT IN STREETS ARE TO BE MULCHED AND SEEDED PER THE NCDEQ SCHEDULE

AFTER BACKFILL. NO MORE THAN FIVE HUNDRED FEET OF TRENCH IS TO BE OPEN AT ONE TIME. 9. ALL TEMPORARY EARTH BERMS, DIVERSIONS, AND SILT DAMS ARE TO BE MULCHED AND SEEDED FOR VEGETATIVE COVER IMMEDIATELY AFTER GRADING. STRAW OR HAY MULCH IS REQUIRED. ADDITIONALLY ALL DIVERSION SWALES WILL BE PROTECTED AGAINST HIGH VELOCITY WITH EROSION CONTROL MEASURES AS DENOTED ON THESE PLANS. THE SAME APPLIES TO STOCKPILES ON SITE AS WELL AS SOIL (INTENTIONALLY) TRANSPORTED FROM THE PROJECT

10. ANY DISTURBED AREA NOT PAVED, SODDED, OR BUILT UPON, IS TO BE SEEDED PER THE TEMPORARY AND PERMANENT SEEDING SCHEDULE INCLUDED IN THESE DRAWINGS. MODIFY AS APPLICABLE DEPENDING ON

11. CONTRACTOR STAGING AREA(S) SHALL BE RETURNED TO BETTER THAN ORIGINAL CONDITIONS AT THE COMPLETION

12. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

13. A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO ISSUANCE OF A LAND DISTURBANCE PERMIT. THE

CONTRACTOR SHALL SCHEDULE THE MEETING WITH THE NODEQ INSPECTOR ASSIGNED TO THE PROJECT. 4. ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF NCDEQ EROSION AND SEDIMENT CONTROL MANUAL AND THE NORTH CAROLINA SEDIMENTATION POLLUTION CONTROL ACT OF 1973.

15. AS A CONDITION OF NPDES PERMIT NO. NCG 010000, PERMANENT GROUNDCOVER SHOULD BE PROVIDED FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING THE COMPLETION OF CONSTRUCTION OR DEVELOPMENT.

EROSION CONTROL NARRATIVE

THE PROJECT CONSISTS OF THE CONSTRUCTION OF A CHURCH ALONG HIGHWAY 55 IN HARNETT COUNTY. THESE CONSTRUCTION DOCUMENTS ARE FOR THE FIRST PHASE OF DEVELOPMENT WHICH WILL INCLUDE A 10,000 SQUARE FOOT CHURCH, 94 PARKING SPACES, AND A WET DETENTION BASIN THAT WILL BE SIZED TO ACCOMODATE FUTURE IMPERVIOUS AREA. A CULVERT IS PROPOSED UNDERNEATH A DRIVEWAY OFF OF HIGHWAY 55. THE POND WILL DRAIN INTO A ROADSIDE DITCH ALONG ASHE AVENUE AND CONTINUE INTO AN EXISTING CULVERT TO CROSS UNDERNEATH ASHE AVENUE. APPROXIMATELY 6.20 ACRES WILL BE DISTURBED DURING CONSTRUCTION OF THIS PHASE OF THE PROJECT. NO SIGNIFICANT CHANGES TO THE EXISTING DRAINAGE AND HYDROLOGIC PATTERNS ARE PROPOSED.

THE EXISTING SITE IS AN OPEN FIELD WITH ROW CROPS PLANTED. THE SITE IS BORDERED BY HIGHWAY 55 ON THE WEST AND ASHE AVENUE TO THE EAST. THERE ARE ROADSIDE DITCHES IN NCDOT RIGHT-OF-WAY ALONG BOTH ROADS. THE SOUTHER BORDER ABUTS RESIDENTIAL PROPERTIES.

DEVELOPMENT IMPACTS

THE DEVELOPMENT IMPACTS TO THE TOPOGRAPHY, SOILS, HYDROLOGY, AND GEOLOGY WILL BE MINOR.

SOILS
THE SITE IS A MIXTURE OF BLANEY LOAMY SAND, COXVILLE LOAM, MARLBORO SANDY LOAM, NORFOLK LOAMY SAND, AND RAINS SANDY LOAM.

I. CARE MUST BE TAKEN TO PREVENT SEDIMENT FROM BEING TRACKED ONTO ADJACENT ROADWAYS.

2. CARE MUST BE TAKEN TO PREVENT SEDIMENT FROM EXITING THE PROJECT SITE AREA. 3. CARE MUST BE TAKEN TO PREVENT SEDIMENT FROM ENTERING ANY WATERWAY.

TOPSOIL STOCKPILING IS ANTICIPATED ON-SITE.

STRUCTURAL PRACTICES CONSTRUCTION ENTRANCE CULVERT INLET PROTECTION OUTLET PROTECTION DIVERSION DITCH SEDIMENT BASIN SILT FENCE SILT FENCE OUTLETS

VEGETATIVE PRACTICES

TOPSOILING TEMPORARY SEEDING PERMANENT SEEDING MULCHING

MANAGEMENT STRATEGIES

I. THE SILT FENCE BARRIER WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES ONE-THIRD (1/3) THE

HEIGHT OF THE BARRIER. 2. CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS

3. SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING.

4. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.

5. AFTER ACHIEVING ADEQUATE STABILIZATION AND UPON APPROVAL OF THE NCDEQ INSPECTOR, THE TEMPORARY E&S CONTROLS WILL BE CLEANED UP AND REMOVED.

THE DISTURBED AREAS WILL BE PERMANENTLY STABILIZED THROUGH THE USE OF PERMANENT SEEDING, PAVEMENT, AND CULVERT OUTLET PROTECTION.

CONSTRUCTION SEQUENCE

SET UP PRE-CONSTRUCTION MEETING.

INSTALL SILT FENCE, DIVERSION DITCHES, AND OTHER PERIMETER CONTROLS.

INSTALL SEDIMENT BASIN AND DIVERT ALL RUNOFF FROM SITE INTO SEDIMENT BASIN.

CLEAR AND GRUB SITE. INSTALL PIPE CULVERT AND PROPOSED UTILITIES AS DENOTED ON PLANS.

6. BACKFILL EXCAVATED AREAS TO GRADES ON PLAN. BRING THE REST OF SITE UP TO GRADE ON PLANS AND INSTALL BUILDING

7. PAVE THE SITE AND INSTALL ALL ASSOCIATED SITE APPURTENANCES. 8. CONVERT SEDIMENT BASIN TO PERMANENT WET DETENTION POND AS SHOWN ON PLANS. CLEAN OUT ANY ACCUMULATED SEDIMENT AND ESTABLISH FINAL GRADES IN WET PONDS.

9. SEED AND MULCH DENUDED AREAS IN ACCORDANCE WITH THE NOTES AND DETAILS IN THESE PLANS AND AS INSPECTOR HAS INSTRUCTED.

10. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE VEGETATIVE COVER HAS BEEN ACHIEVED.

GENERAL NOTES

1. THIS PROJECT, AS CURRENTLY DESIGNED, MAY NOT INLCUDE ALL COMPONENTS ADDRESSED IN THE VARIOUS GENERAL NOTES. REVIEW PLANS FOR APPLICABILITY.

2. THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR THIS PROJECT FROM THE 3. ANY PERMITS WHICH MUST BE OBTAINED SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND AT HIS EXPENSE. THE CONTRACTOR SHALL BE

RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS. 4. ALL PAVING MATERIALS AND DRAINAGE STRUCTURES SHALL BE BUILT AND INSTALLED IN ACCORDANCE WITH NORTH CAROLINA DEPARTMENT

OF TRANSPORTATION STANDARDS AND SPECIFICATIONS. 5. THE LOCATION OF EXISTING SEWER, WATER OR TELEPHONE LINES, CONDUITS OR OTHER STRUCTURES ACROSS, UNDERNEATH, OR OTHERWISE ALONG THE LINE OF PROPOSED WORK ARE NOT NECESSARILY SHOWN ON THE PLANS, AND IF SHOWN ARE ONLY APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS, IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLANS. FOR ASSISTANCE IN LOCATING EXISTING

UTILITIES CALL "NC ONE CALL", DIAL 811. 6. WHERE PAVEMENT IS BEING REMOVED, THE CONTRACTOR SHALL REMOVE AGGREGATE BASE MATERIAL TO SUB-GRADE.

7. DAMAGE TO UTILITIES (INCLUDING UNDERGROUND) OR PROPERTY OF OTHERS BY CONTRACTOR DURING CONSTRUCTION SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITIONS BY CONTRACTOR AT NO COST TO OWNER.

8. EXISTING PAVEMENT AND OTHER SURFACES DISTURBED BY CONTRACTOR (WHICH ARE NOT TO BE REMOVED) SHALL BE REPAIRED TO

9. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL DITCHES, PIPES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURES IN OPERABLE CONDITION.

10. THE CONTRACTOR SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHEN WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY INSPECTORS.

ENGINEER AT LEAST 24 HOURS PRIOR TO STARTING 11. THE CONTRACTOR SHALL NOTIFY

WORK ON THIS PROJECT. 12. UNLESS OTHERWISE NOTED, ALL CONCRETE PIPE SHALL BE REINFORCED CONCRETE PIPE, CLASS III.

13. ALL EXCAVATION FOR UNDERGROUND PIPE INSTALLATION MUST COMPLY WITH OSHA STANDARDS FOR THE CONSTRUCTION INDUSTRY (29 CFR

14. VERIFY THE PROPOSED LAYOUT WITH ITS RELATIONSHIP TO THE EXISTING SITE SURVEY. ALSO VERIFY ALL DIMENSIONS. SITE CONDITIONS. AND MATERIAL SPECIFICATIONS AND NOTIFY THE OWNER AND ENGINEER OF ANY ERRORS, OMISSIONS, OR DISCREPANCIES BEFORE COMMENCING OR

PROCEEDING WITH WORK. 15. DEVIATIONS FROM, OR CHANGES TO THESE PLANS WILL NOT BE ALLOWED

16. MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO THE PLANS IF NECESSARY. THE EXISTENCE AND/OR LOCATION OF UTILITIES SHOWN ON THESE PLANS MAY BE ONLY APPROXIMATELY CORRECT. TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN HEREON AND ANY OTHER EXISTING UTILITIES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. REPAIR AT YOUR OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. IF A UTILITY IS DAMAGED DURING CONSTRUCTION, STOP WORK IMMEDIATELY AND NOTIFY THE ENGINEER AND TOWN.

17. PROPERLY SECURE THE CONSTRUCTION AREA AT ALL TIMES AGAINST UNAUTHORIZED ENTRY AND ADEQUATELY PROTECT EQUIPMENT. MATERIALS, AND COMPLETED WORK FROM THEFT AND VANDALISM. THE OWNER IS NOT RESPONSIBLE FOR THE LOSS OF ANY MATERIAL STORED AT THE SITE.

GENERAL CONSTRUCTION AND GEOTECHNICAL NOTES

ALL CONTROLLED FILL ZONES ARE TO BE MONITORED BY A FULL TIME GEOTECHNICAL ENGINEERING SERVICES FIRM

ENGINEERED FILLS SHALL BE PROPERLY PLACED ACCORDING TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER. ALL SUMMARY REPORTS, IF AVAILABLE FROM THE GEOTECHNICAL ENGINEER REPRESENTING THE PROJECT MUST STATE HIS PROFESSIONAL OPINION ON THE SATISFACTORILY COMPLETED PHASES OF CONSTRUCTION SUCH AS; SLOPE CUTS, SUBDRAINAGE SYSTEMS, PREPARATION

OF SUBGRADES AND COMPACTION OF EARTH FILLS. 4. NO FILLS SHALL HAVE ZONES THAT EXCEED TWO (2) FEET IN ELEVATION WITHOUT CONDUCTING COMPACTION TEST AND OBTAINING RESULTS

OF 95% OR GREATER. 5. THE GEOTECHNICAL ENGINEER MUST SUBMIT A DETAILED ANALYSIS, ITEMIZING THE FIELD DENSITY TEST RESULTS. THIS REPORT SHALL BE ACCOMPANIED WITH A COPY OF THE SITE PLAN SHEET AND INDICATE THE TEST LOCATIONS AND ELEVATIONS. THE GEOTECHNICAL ENGINEER MUST PROVIDE ENOUGH DESIGNATED TESTING IN ALL FILL ZONES TO ADEQUATELY EXAMINE AND CERTIFY THE INTEGRITY OF THE

6. THE GEOTECHNICAL ENGINEER MUST SUBMIT A CERTIFIED BUILDING PAD REPORT FOR EACH FILL PAD LOCATION. THIS REPORT SHALL PROFILE THE FILL MATERIAL PLACEMENT AND PROVIDE THE COMPACTION TEST RESULTS. ALL REPORTS WILL BE ACCOMPANIED BY THE SITE PLAN, INDICATING THE TEST LOCATIONS AND ELEVATIONS.

7. NO BUILDING PADS IN FILL ZONES WILL HAVE STRATUMS EXCEEDING TWO (2) FEET IN ELEVATION WITHOUT TEST VERIFYING DENSITY.

8. THESE GEOTECHNICAL NOTES SHALL IN NO WAY LESSEN THE REQUIREMENTS OF THE SUBMITTED SOILS REPORT.

ROAD SUBGRADE

1. INSPECTION AND APPROVAL OF THE SUBGRADE WILL BE REQUIRED PRIOR TO THE PLACEMENT OF THE APPROVED PAVEMENT SECTION

2. ANY CLAY DEPOSITS IN THE TOP TWO FEET OF THE SUBGRADE MUST BE REMOVED OR ADDRESSED AS RECOMMENDED BY THE

3. SUBGRADE APPROVAL SHALL BE ACCOMPANIED BY THE SUPPORTING DOCUMENTATION VERIFYING DENSITY TEST RESULTS OF 95% OR

4. THE ENTIRE SUBGRADE WILL HAVE BEEN PROOF-ROLLED IN THE PRESENCE OF THE SITE INSPECTOR AND GEOTECHNICAL REPRESENTATIVE. PROOF-ROLLING SHALL BE A RUBBER TIRE VEHICLE SUCH AS A LOADED TEN (10) TON TRUCK OF APPROVED COMPACTION EQUIPMENT.

5. THE FINAL SUBGRADE SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER AND SITE INSPECTOR BEFORE PLACEMENT OF PAVEMENT SECTION MATERIALS.

TEMPORARY SEEDING SCHEDULE FOR LATE WINTER AND EARLY SPRING RATE (LB/ACRE) SPECIES RYE (GRAIN) 120 JAN 1 - MAY 1

SOIL AMENDMENTS FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

APPLY 4000 LB/ACRE SMALL GRAIN STRAW AND TACK WITH ASPHALT.

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

TEMPORARY SEEDING SCHEDULE FOR FALL <u>SPECIES</u> RATE (LB/ACRE)

SOIL AMENDMENTS

AUG 15 - DEC 30 RYE (GRAIN)

KOBE LESPEDEZA

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1000 LB/ACRE 10-10-10 FERTILIZER.

APPLY 4000 LB/ACRE SMALL GRAIN STRAW AND TACK WITH ASPHALT.

MAINTENANCE REPAIR AND REFERTILIZE AND RESEED DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/ACRE KOBE LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

PERMANENT SEEDING SCHEDULE FOR GRASS-LINED CHANNELS

<u>DATES</u> <u>SPECIES</u> AUG 15 — OCT 31 TALL FESCUE FEB 1 - APR 15 TALL FESCUE 200 NURSE PLANTS

PRIOR TO MAY 1 OR AFTER AUG 15, ADD 40 LB/ACRE RYE (GRAIN). SOIL AMENDMENTS FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 4,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1000 LB/ACRE 10-10-10 FERTILIZER. OPERATE TILLAGE EQUIPMENT ACROSS THE WATERWAY.

USE A ROLLED EROSION CONTROL PRODUCT TO COVER THE BOTTOM OF CHANNELS AND DITCHES AND STAPLE SECURELY. THE LINING SHOULD EXTEND ABOVE THE HIGHEST CALCULATED DEPTH OF FLOW. <u>MAINTENANCE</u>

LATE WINTER: FEB 15 - MAR 21 INSPECT AND REPAIR MULCH FREQUENTLY. REFERTILIZE IN LATE WINTER OF THE FOLLOWING YEAR. FOLLOW RECOMMENDATIONS OF SOIL TESTS OR USE 150 FALL IS BEST FOR TALL FESCUE AND LATE WINTER FOR LESPEDEZAS. LB/ACRE OF 10-10-10. MOW REGULARLY TO A HEIGHT OF 2-4 INCHES. OVERSEEDING OF KOBE LESPEDEZA OVER FALL-SEEDED TALL FESCUE IS VERY EFFECTIVE.

TEMPORARY SEEDING SCHEDULE FOR SUMMER SPECIES RATE (LB/ACRE) MAY 1 - APR 15 GERMAN MILLET

SOIL AMENDMENTS FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

APPLY 4000 LB/ACRE SMALL GRAIN STRAW AND TACK WITH ASPHALT. REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

NPDES Stormwater Discharge Permit for Construction Activities (NCGO1)

NCDENR/Division of Water Quality

NEW STABILIZATION TIMEFRAMES (Effective Aug. 3, 2011)			
	SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
	Perimeter dikes, swales, ditches, slopes	7 days	None
	High Quality Water (HQW) Zones	7 days	None
	Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
	Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
	All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

GENERAL UTILITY NOTES

PERMANENT SEEDING SCHEDULE FOR AREAS OTHER THAN CHANNELS

PRIOR TO MAY 1 OR AFTER AUG 15, ADD 40 LB/ACRE RYE (GRAIN).

AGRICULTURAL LIMESTONE AND 1000 LB/ACRE 10-10-10 FERTILIZER.

ASPHALT, ON SLOPE 3:1 OR STEEPER ANCHOR STRAW WITH NETTING.

BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY.

REFERTILIZE, RESEED AND MULCH DAMAGED AREAS IMMEDIATELY.

APPLY 4,000-5,000 LB/ACRE GRAIN STRAW. ANCHOR BY TACKING WITH

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 4,000 LB/ACRE GROUND

REFERTILIZE IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. MAY

30

AFTER AUGUST 15 USE UNSCARIFIED SERICEA SEED.

AUG 25 - SEP 15

TALL FESCUE

SERICEA LESPEDEZA

PENSACOLA BAHIAGRASS 25

KOBE LESPEDEZA

NURSE PLANTS

SEEDING DATES

3:1 AND STEEPER SLOPES SLOPES FLATTER THAN 3:1

AUG 20 - OCT 25

FEB 1 - APR 15

NONE

1. THE ENGINEER MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA; EITHER IN SERVICE OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES ARE IN THE EXACT LOCATION AS INDICATED. ALTHOUGH, HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE.

THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION SO THAT CONTRACTOR IS FAMILIAR

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AND UNDERSTANDS EXISTING CONDITIONS.

FIELD CHANGES MAY BE NECESSARY DUE TO EXISTING UTILITY LOCATIONS. THE ENGINEER SHALL BE CONTACTED BEFORE MAKING THESE CHANGES.

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REVISIONS

01/02/19 - STORM WATER REVIEW 01/18/19 - DRIVEWAY

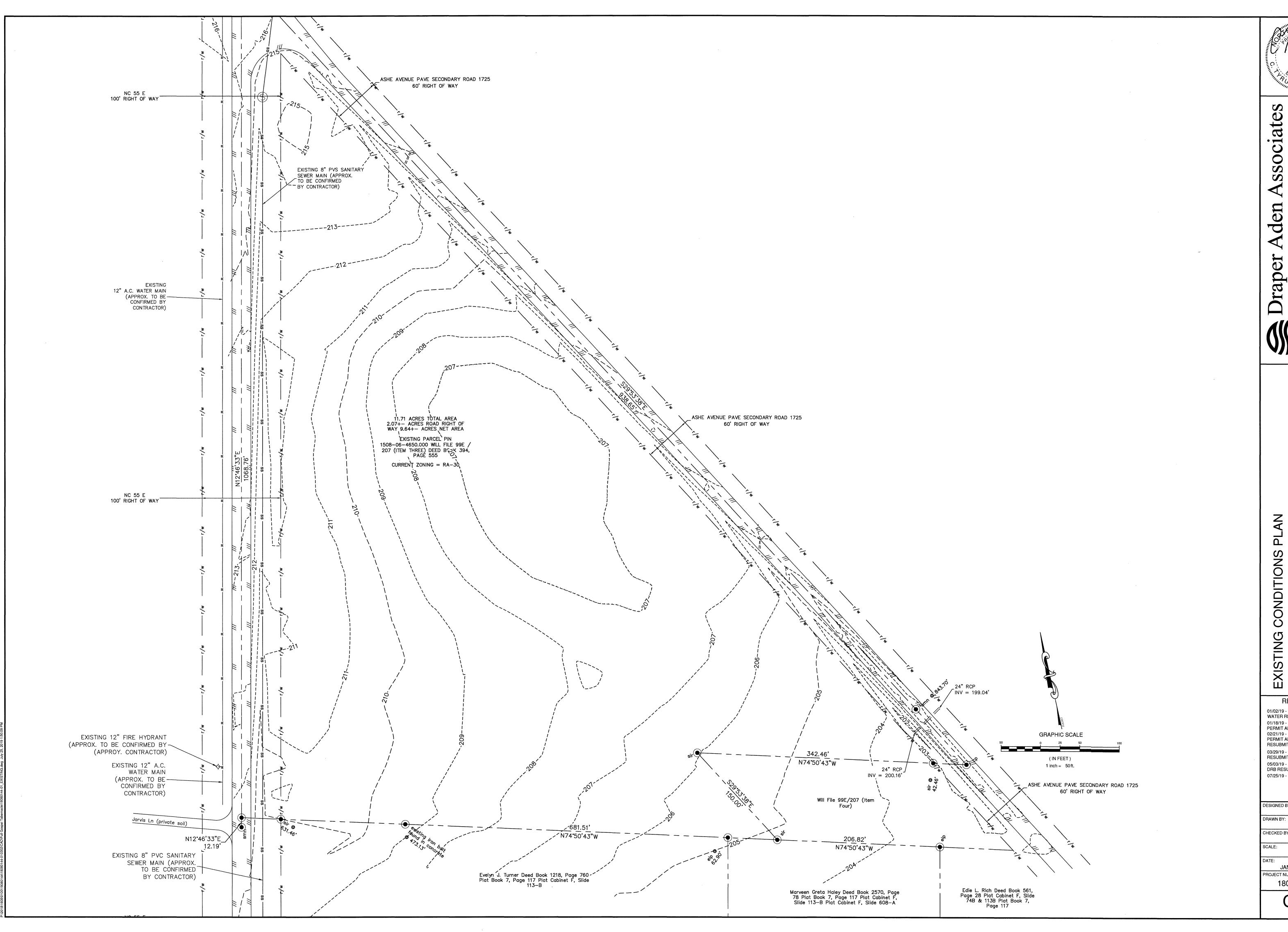
PERMIT APPLICATION 02/21/19 - DRIVEWAY PERMIT APPLICATION RESUBMITTAL 03/29/19 - STORM WATER RESUBMITTAL 05/03/19 - HARNETT COUNTY DRB RESUBMITTAL 07/25/19 - HRW SUBMITTAL

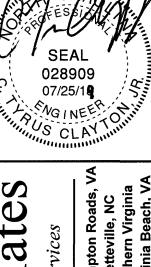
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NONE JANUARY 2019

ROJECT NUMBER

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REVISIONS

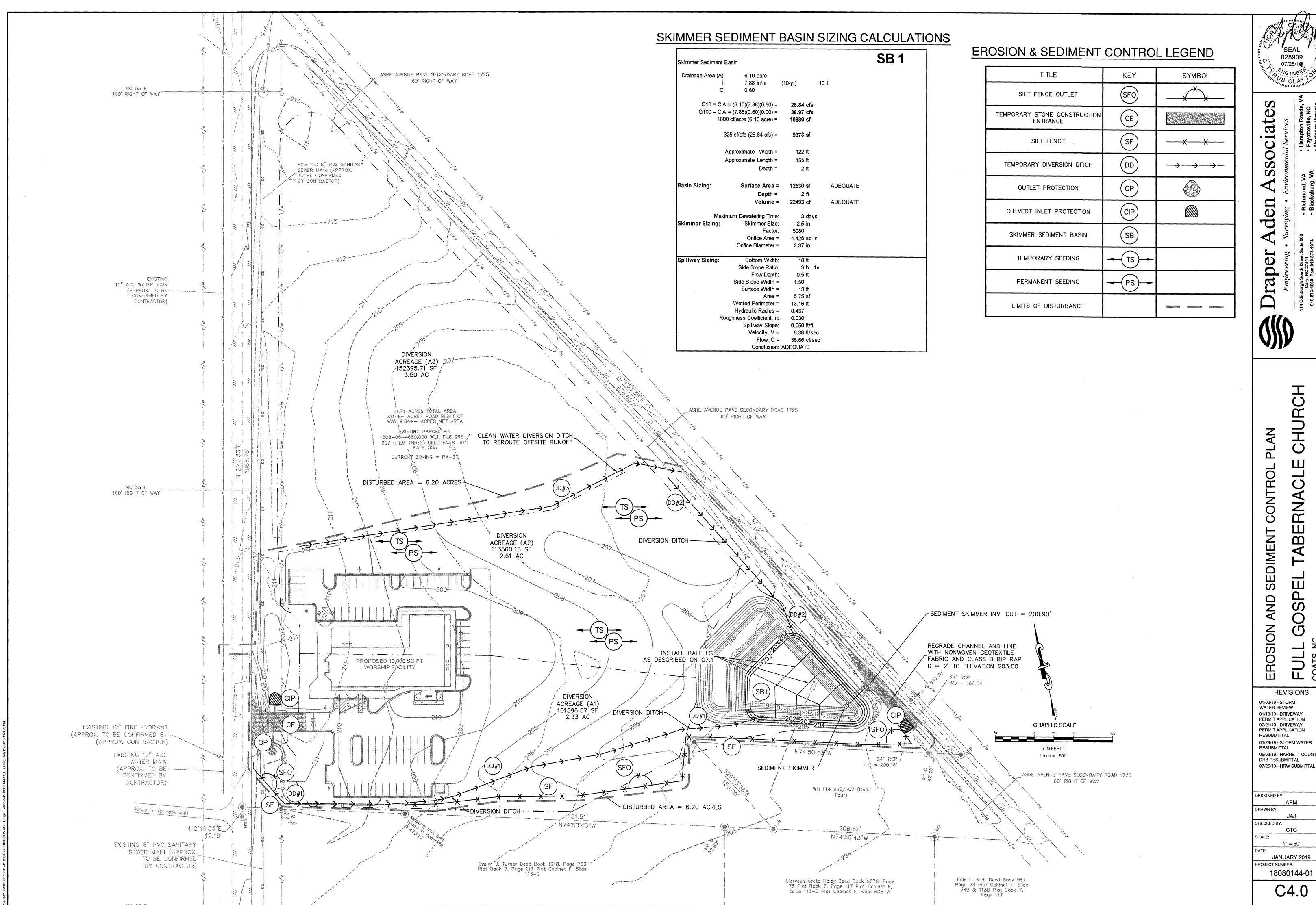
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DESIGNED BY:

DRAWN BY: CHECKED BY:

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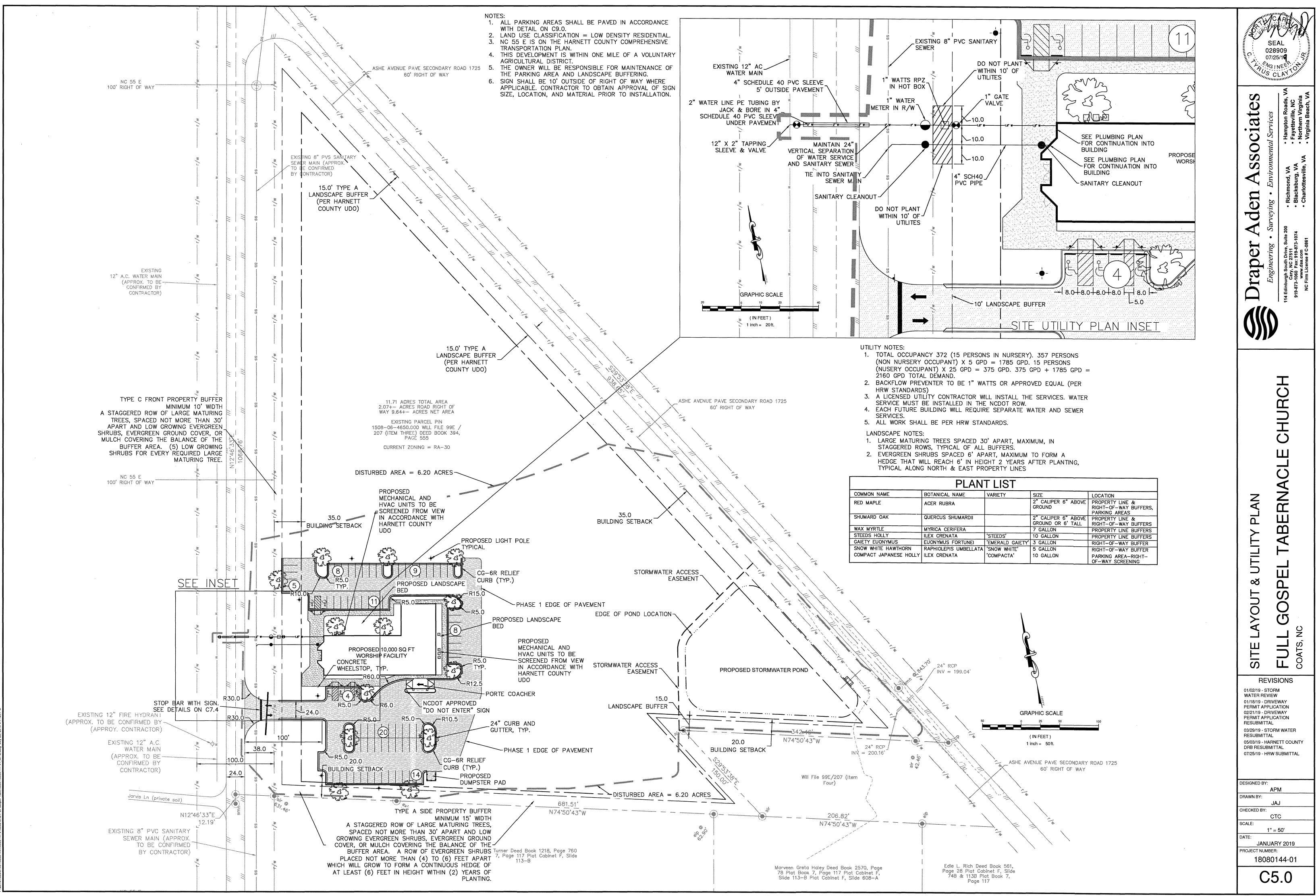
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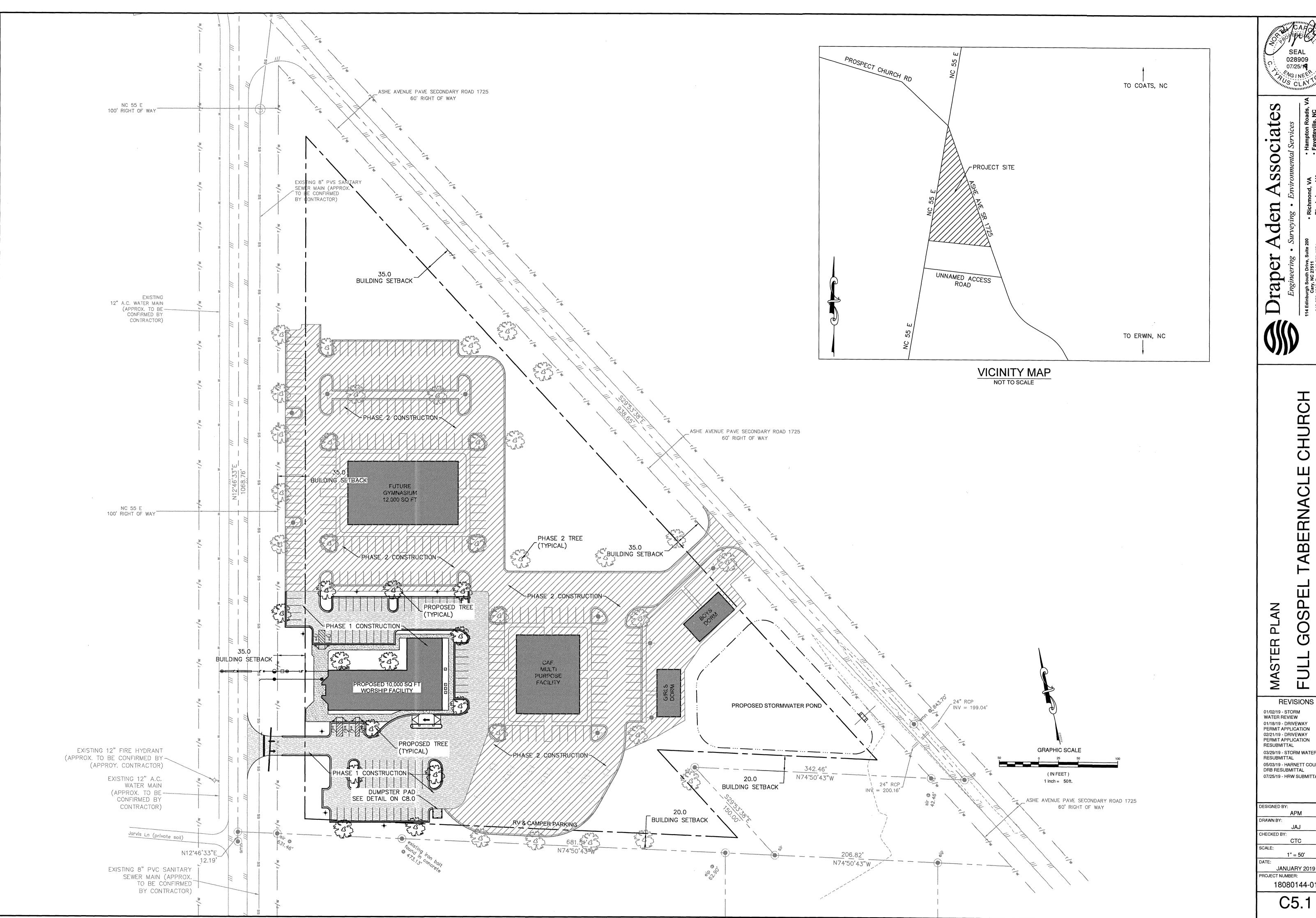
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1" = 50' JANUARY 2019 PROJECT NUMBER:

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PLAN

01/02/19 - STORM WATER REVIEW 01/18/19 - DRIVEWAY
PERMIT APPLICATION
02/21/19 - DRIVEWAY
PERMIT APPLICATION
RESUBMITTAL 03/29/19 - STORM WATER RESUBMITTAL 05/03/19 - HARNETT COUNTY DRB RESUBMITTAL 07/25/19 - HRW SUBMITTAL

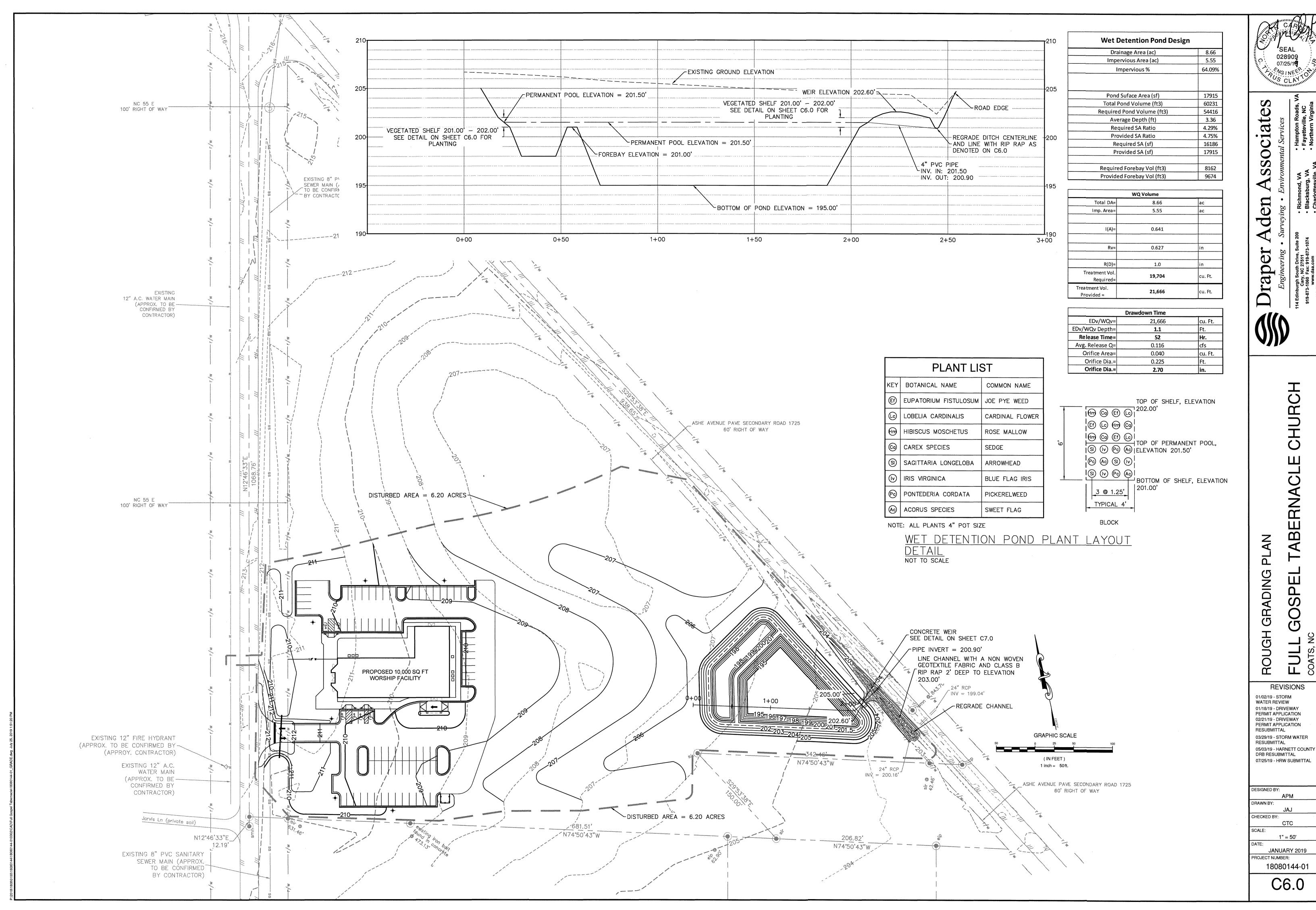
DESIGNED BY: DRAWN BY:

CHECKED BY:

1" = 50' JANUARY 2019

PROJECT NUMBER: 18080144-01

C5.1



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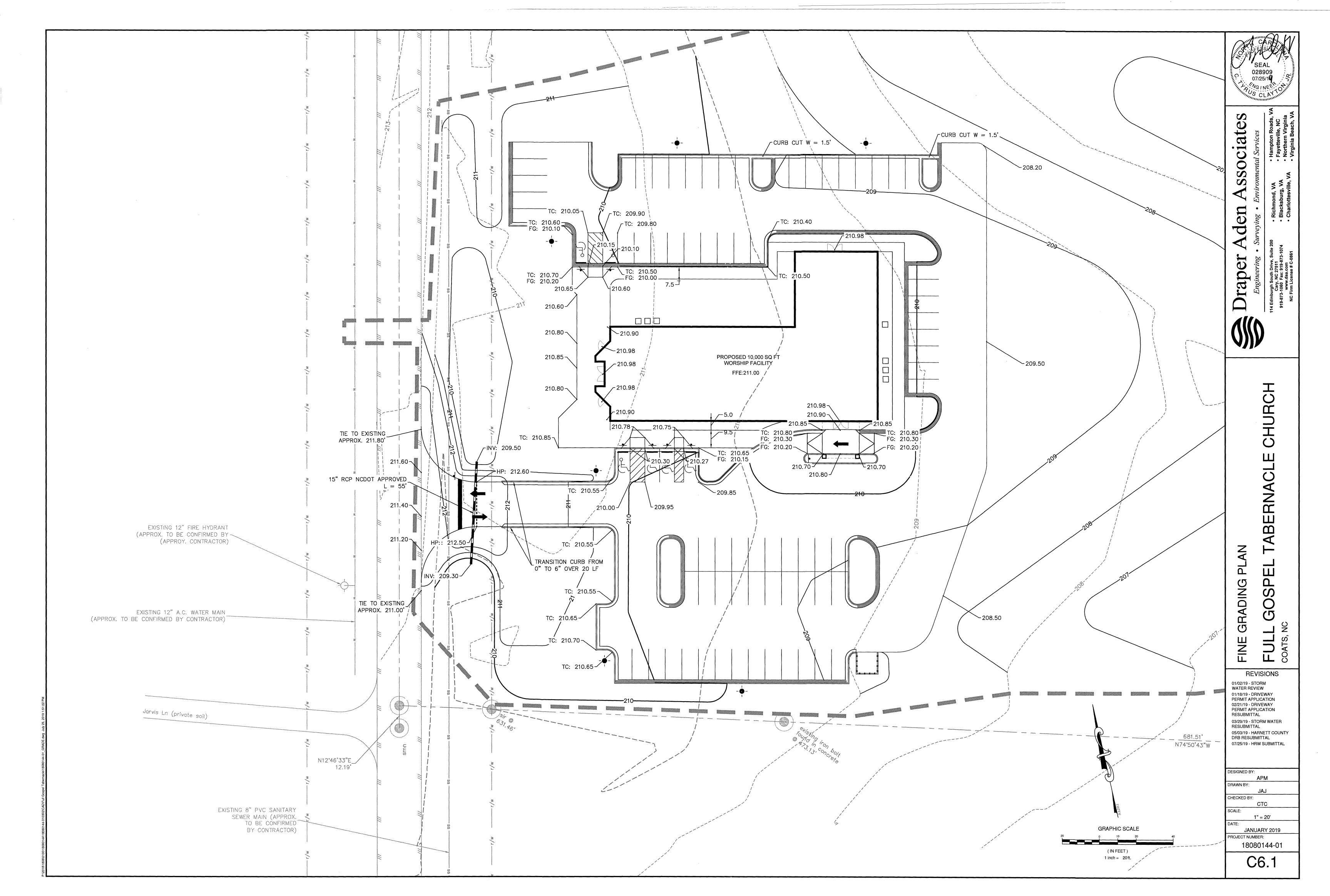
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DRB RESUBMITTAL 07/25/19 - HRW SUBMITTAL APM

1" = 50' JANUARY 2019

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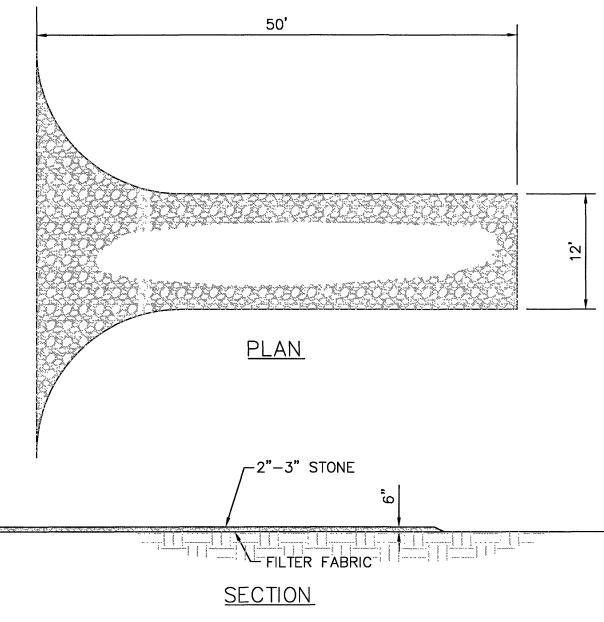


SPECIFICATIONS

- 1. REFER TO THE APPROVED EROSION CONTROL PLAN FOR LOCATION OF THE OUTLET BEFORE COMPLETING INSTALLATION OF THE SILT FENCE.
- MAINTENANCE INSPECT THE SEDIMENT FENCE OUTLET AFTER EACH SIGNIFICANT RAINFALL EVENT. REPAIR ANY EROSION AND PIPING HOLES IMMEDIATELY.
- 2. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH; A STAKE SET AT THE CLEANOUT LEVEL IS HELPFUL.
- CLEAN OR REPLACE STONE IF CLOGGED. REPLACE ANY STONE DISLODGED.
- 4. AFTER ALL SEDIMENT PRODUCING AREAS HAVE BEEN STABILIZED, INSPECTED, AND APPROVED, REMOVE THE STRUCTURE AND ALL UNSTABLE SEDIMENT. SMOOTH SITE TO BLEND WITH ADJOINING AREAS AND STABILIZE.



SEDIMENT FENCE OUTLET DETAIL



CONSTRUCTION

1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT.

2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS AND SMOOTH IT 3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET. 4. USE GEOTEXTILE FABRICS BECAUSE THEY IMPROVE STABILITY OF THE FOUNDATION IN AREAS SUBJECT

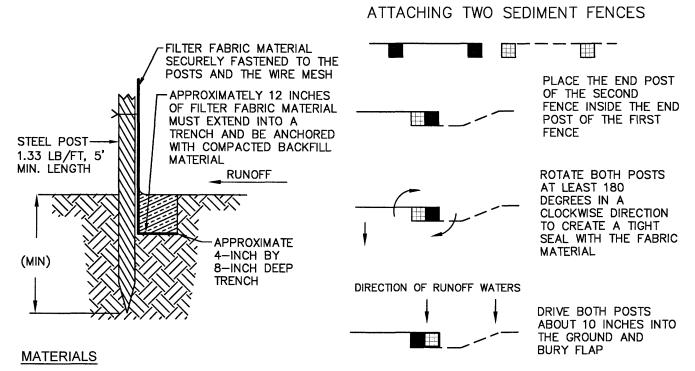
MAINTENANCE

MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE, THIS MAY PERIODIC TOPDRESSING WITH 2-3 INCH STONE. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS.



TO SEEPAGE OR HIGH WATER TABLE.





1. USE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER. WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461, WHICH IS SHOWN IN PART IN TABLE 6.62B. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120° F.

2. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.33 LB/LINEAR FT STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.

3. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.

2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.)

CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO

THE NEXT POST. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD

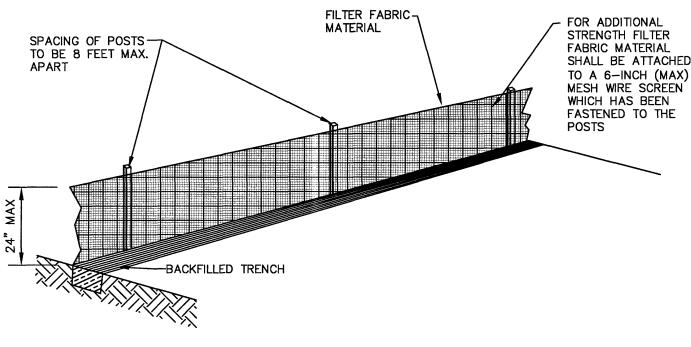
HAVE MINIMUM 50 POUND TENSILE STRENGTH. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A

MINIMUM OF 24 INCHES. 6. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.

EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER (FIGURE 6.62A).

PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH. 9. BACKFILL THE TRENCH WITH COMPACTED SOIL PLACED OVER THE FILTER FABRIC. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.

10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.



SEDIMENT FENCE INSTALLATION USING THE SLICING METHOD

INSTEAD OF EXCAVATING A TRENCH, PLACING FABRIC AND THEN BACKFILLING TRENCH. SEDIMENT FENCE MAY BE INSTALLED USING SPECIALLY DESIGNED EQUIPMENT THAT INSERTS THE FABRIC INTO A CUT SLICED IN THE GROUND WITH A DISC.

INSTALLATION SPECIFICATIONS

1. THE BASE OF BOTH END POSTS SHOULD BE AT LEAST ONE FOOT HIGHER THAN THE MIDDLE OF THE FENCE. CHECK WITH A LEVEL IF NECESSARY.

2. INSTALL POSTS 4 FEET APART IN CRITICAL AREAS AND 6 FEET APART ON STANDARD APPLICATIONS.

3. INSTALL POSTS 2 FEET DEEP ON THE DOWNSTREAM SIDE OF THE SILT FENCE, AND AS CLOSE AS POSSIBLE TO THE FABRIC, ENABLING POSTS TO SUPPORT THE FABRIC

FROM UPSTREAM WATER PRESSURE. 4. INSTALL POSTS WITH THE NIPPLES FACING AWAY FROM THE SILT FABRIC.

5. ATTACH THE FABRIC TO EACH POST WITH THREE TIES, ALL SPACED WITHIN THE TOP 8 INCHES OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1 INCH VERTICALLY APART. ALSO, EACH TIE SHOULD BE POSITIONED TO HANG ON A POST NIPPLE WHEN TIGHTENED TO PREVENT SAGGING.

6. WRAP APPROXIMATELY 6 INCHES OF FABRIC AROUND THE END POSTS AND SECURE

NO MORE THAN 24 INCHES OF A 36 INCH FABRIC IS ALLOWED ABOVE GROUND LEVEL

8. THE INSTALLATION SHOULD BE CHECKED AND CORRECTED FOR ANY DEVIATIONS BEFORE COMPACTION

9. COMPACTION IS VITALLY IMPORTANT FOR EFFECTIVE RESULTS. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE FABRIC WITH THE FRONT WHEEL OF THE TRACTOR, SKID STEER, OR ROLLER EXERTING AT LEAST 60 POUNDS PER SQUARE INCH. COMPACT THE UPSTREAM SIDE FIRST, AND THEN EACH SIDE TWICE FOR A TOTAL OF 4 TRIPS.

MAINTENANCE

1. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL.

2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR

3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE

VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. 4. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING

THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA

- 3d_o(MIN. W=d₀+0.4L₀(MIN.) PLAN VIEW 0% SLOPE ___ SECTION A-A -FILTER CLOTH KEY IN 6"-9"; RECOMMENDED FOR ENTIRE PERIMETER

MAXIMUM TAILWATER CONDITION

<u>SPECIFICATIONS</u>

1. ENSURE THAT THE SUBGRADE FOR THE FILTER AND RIPRAP FOLLOWS THE REQUIRED LINES AND GRADES SHOWN IN THE PLAN. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL. LOW AREAS IN THE SUBGRADE ON UNDISTURBED SOIL MAY ALSO BE FILLED BY INCREASING THE RIPRAP THICKNESS.

2. THE RIPRAP AND GRAVEL FILTER MUST CONFORM TO THE SPECIFIED GRADING LIMITS SHOWN ON THE

3. FILTER CLOTH, WHEN USED, MUST MEET DESIGN REQUIREMENTS AND BE PROPERLY PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION. REPAIR ANY DAMAGE BY REMOVING THE RIPRAP AND PLACING ANOTHER PIECE OF FILTER CLOTH OVER THE DAMAGED AREA. ALL CONNECTING JOINTS SHOULD OVERLAP A MINIMUM OF 1 FT. IF THE DAMAGE IS EXTENSIVE, REPLACE THE ENTIRE FILTER

RIPRAP MAY BE PLACED BY EQUIPMENT, BUT TAKE CARE TO AVOID DAMAGING THE FILTER. 5. THE MINIMUM THICKNESS OF THE RIPRAP SHOULD BE 1.5 TIMES THE MAXIMUM STONE DIAMETER. RIPRAP MAY BE FIELD STONE OR ROUGH QUARRY STONE. IT SHOULD BE HARD, ANGULAR, HIGHLY

WEATHER-RESISTANT AND WELL GRADED. CONSTRUCT THE APRON ON ZERO GRADE WITH NO OVERFALL AT THE END. MAKE THE TOP OF THE RIPRAP AT THE DOWNSTREAM END LEVEL WITH THE RECEIVING AREA OR SLIGHTLY BELOW IT.

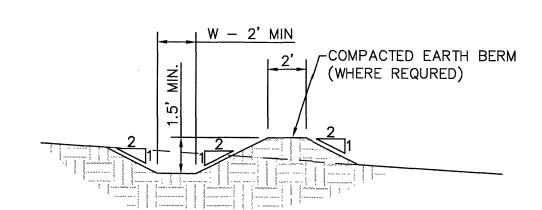
8. ENSURE THAT THE APRON IS PROPERLY ALIGNED WITH THE RECEIVING STREAM AND PREFERABLY STRAIGHT THROUGHOUT ITS LENGTH. IF A CURVE IS NEEDED TO FIT SITE CONDITIONS, PLACE IT IN THE UPPER SECTION OF THE APRON.IMMEDIATELY AFTER CONSTRUCTION, STABILIZE ALL DISTURBED

AREAS WITH VEGETATION. 9. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE. 10. La IS THE LENGTH OF THE RIPRAP APRON AS SHOWN ON TABLE 11. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

12. CLASS B RIP RAP

1. INSPECT RIP-RAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIP-RAP HAS TAKEN PLACE. OR IF STONES HAVE BEEN DISLODGED. PROMPTLY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

> **OUTLET PROTECTION DETAIL** NOT TO SCALE



SLOPES TO BE STABILIZED WITHIN 7 DAYS. DITCHES TO BE LINED WITH EROSION CONTROL BLANKETS RATED FOR 5 FT/SEC VELOCITY - NORTH AMERICAN GREEN S75 OR EQUAL.

1. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS OR OTHER OBJECTIONABLE MATERIAL.

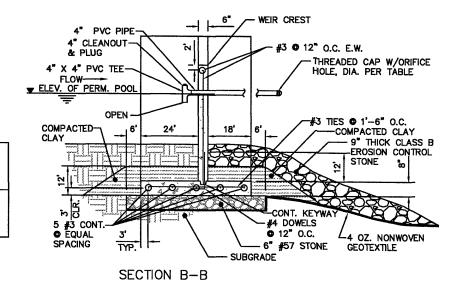
- 2. ENSURE THAT THE MINIMUM CONSTRUCTED CROSS SECTION MEETS ALL DESIGN REQUIREMENTS.
- 3. ENSURE THAT THE TOP OF THE DIKE IS NOT LOWER AT ANY POINT THAN THE DESIGN ELEVATION PLUS THE SPECIFIED SETTLEMENT.
- 4. PROVIDE SUFFICIENT ROOM AROUND DIVERSIONS TO PERMIT MACHINE REGRADING AND CLEANOUT.
- 5. VEGETATE THE RIDGE IMMEDIATELY AFTER CONSTRUCTION, UNLESS IT WILL REMAIN IN PLACE LESS THAN 30 WORKING DAYS.

MAINTENANCE

1. INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.

TEMPORARY DIVERSION DITCH/BERM DETAIL NOT TO SCALE

PLAN LIMITS OF FILL --LIMITS OF FILL TOP OF FOOTING



SECTION A-A

- 4 OZ. NONWOVEN

IF WEIR IS PRECAST, ENGINEER MUST APPROVE

TOP OF WEIR

202.60

LENGTH

10FT

POOL/ORIFICE ORIFICE SIZE

2.70"

POND

CONCRETE POND WEIR DETAIL **NOT TO SCALE**

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REVISIONS

01/02/19 - STORM WATER REVIEW 01/18/19 - DRIVEWAY PERMIT APPLICATION 02/21/19 - DRIVEWAY PERMIT APPLICATION

RESUBMITTAL 03/29/19 - STORM WATER RESUBMITTAL 05/03/19 - HARNETT COUNTY DRB RESUBMITTAL

07/25/19 - HRW SUBMITTAL

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SCALE: NOT TO SCALE JANUARY 2019

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SEDIMENT FENCE DETAIL

MAKE ANY REQUIRED REPAIRS IMMEDIATELY. BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

HAS BEEN PROPERLY STABILIZED.

CONSTRUCTION

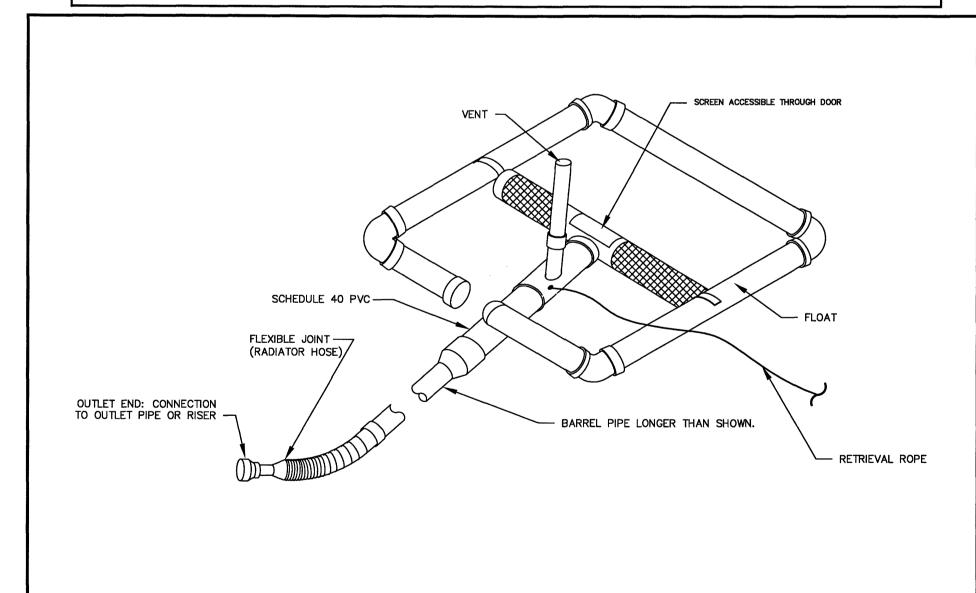
- 1. GRADE THE BASIN SO THAT THE BOTTOM IS LEVEL FRONT TO BACK AND SIDE TO SIDE.
- 2. INSTALL POSTS ACROSS THE WIDTH OF THE BASIN.
- 3. STEEL POSTS SHOULD BE DRIVEN TO A DEPTH OF 24 INCHES, SPACED A MAXIMUM OF 4 FEET APART, AND INSTALLED UP THE SIDES OF THE BASIN AS WELL. THE TOP OF THE FABRIC SHOULD BE 6 INCHES HIGHER THAN THE CREST OF THE SPILLWAY. TOPS OF BAFFLES SHOULD BE 2 INCHES LOWER THAN THE TOP OF THE BERMS.
- 4. INSTALL AT LEAST THREE ROWS OF BAFFLES BETWEEN THE INLET AND OUTLET DISCHARGE POINT. BASINS LESS THAN 20 FEET IN LENGTH MAY USE 2 BAFFLES.
- 5. WHEN USING POSTS, ADD A SUPPORT WIRE OR ROPE ACROSS THE TOP OF THE MEASURE TO PREVENT
- 6. WRAP COIR BLANKET OVER THE TOP WIRE. ATTACH FABRIC TO A ROPE AND A SUPPORT STRUCTURE WITH ZIP TIES, WIRE OR STAPLES.
- 7. THE BOTTOM AND SIDES OF THE FABRIC SHOULD BE ANCHORED IN A TRENCH OR PINNED WITH 8-INCH EROSION CONTROL MATTING STAPLES.
- 8. DO NOT SPLICE THE FABRIC, BUT USE A CONTINUOUS PIECE ACROSS THE BASIN.

1. INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS

- IMMEDIATELY. 2. BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
- 3. REMOVE SEDIMENT DEPOSITS WEN IT REACHES HALF FULL TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEX RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED
- 4. AFTER CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE AND STABILIZE IT

POROUS BAFFLE DETAILS

NOT TO SCALE



STANDARD SKIMMER DETAIL

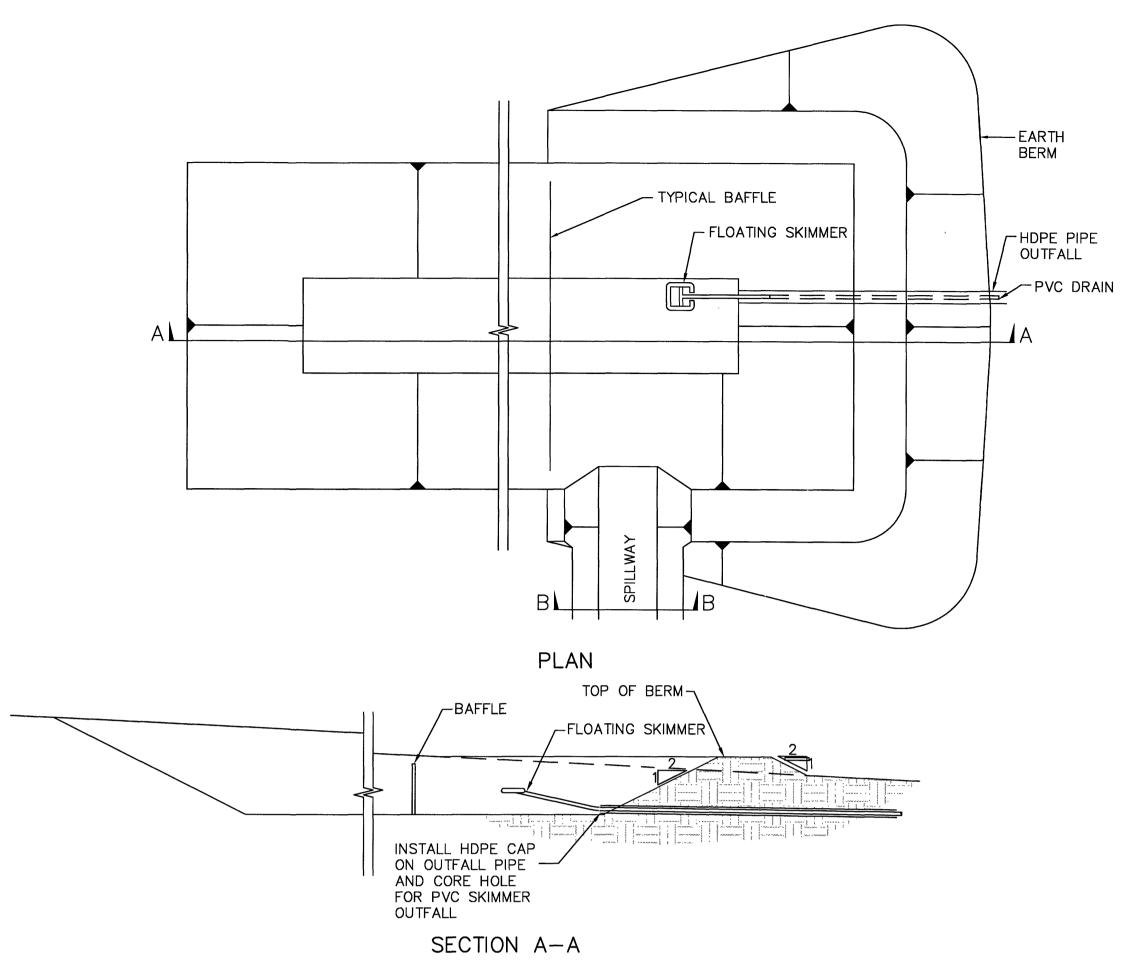
NOT TO SCALE

MAINTENANCE:

IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS. IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER

NOTES:

- . SKIMMER IS TO BE A SURFACE DEWATERING DEVICE SUCH AS BMP SKIMMER OR APPROVED DEVICE.
- 2. SKIMMER SHOULD RISE TO LEVEL OF WEIR HEIGHT IN TEMPORARY BASIN OR TO RISER INLET.
- 3. ROPE ATTACHED TO SKIMMER TO HELP KEEP CLEAN.



DIMENSIONS | SPILLWAY | SKIMMER | ORIFICE TOP WIDTH WIDTH SIZE (IN) 122 155 10 2.5 SECTION B-B NOTE: SEDIMENT BASIN IS TRIANGULAR IN SHAPE, WIDTH AND

LAYOUT.

I. SITE PREPARATIONS - CLEAR, GRUB, AND STRIP TOPSOIL FROM AREAS UNDER THE EMBANKMENT TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. DELAY CLEARING THE POOL AREA UNTIL THE DAM IS COMPLETE AND THEN REMOVE BRUSH, TREES, AND OTHER OBJECTIONABLE MATERIALS TO FACILITATE SEDIMENT CLEANOUT. STOCKPILE ALL TOPSOIL OR SOIL CONTAINING ORGANIC MATTER FOR USE ON THE OUTER SHELL OF THE EMBANKMENT TO FACILITATE VEGETATIVE ESTABLISHMENT. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW THE BASIN AS NEEDED.

LENGTH DIMENSIONS ARE APPROXIMATE. SEE C4.0 FOR BASIN

DIAMETER

(IN)

- 2. CUT-OFF TRENCH EXCAVATE A CUT-OFF TRENCH ALONG THE CENTER LINE OF THE EARTH FILL EMBANKMENT. CUT THE TRENCH TO STABLE SOIL MATERIAL, BUT IN NO CASE MAKE IT LESS THAN 2 FEET DEEP. THE CUT-OFF TRENCH MUST EXTEND INTO BOTH ABUTMENTS TO AT LEAST THE ELEVATION OF THE RISER CREST, OR THE SPILLWAY CREST IF THERE IS NO RISER. MAKE THE MINIMUM BOTTOM WIDTH WIDE ENOUGH TO PERMIT OPERATION OF EXCAVATION AND COMPACTION EQUIPMENT. BUT IN NO CASE LESS THAN 2 FEET, MAKE SIDE SLOPES OF THE TRENCH NO STEEPER THAN 1:1. COMPACTION REQUIREMENTS ARE THE SAME AS THOSE FOR THE EMBANKMENT, KEEP THE TRENCH DRY DURING BACKFILLING AND COMPACTION OPERATIONS.
- 3. EMBANKMENT TAKE FILL MATERIAL FROM THE APPROVED AREAS SHOWN ON THE PLANS. IT SHOULD BE CLEAN MINERAL SOIL, FREE OF ROOTS, WOODY VEGETATION, ROCKS, AND OTHER OBJECTIONABLE MATERIAL. SCARIFY AREAS ON WHICH FILL IS TO BE PLACED BEFORE PLACING FILL. THE FILL MATERIAL MUST CONTAIN SUFFICIENT MOISTURE SO IT CAN BE FORMED BY HAND INTO A BALL WITHOUT CRUMBLING. IF WATER CAN BE SQUEEZED OUT OF THE BALL IT IS TOO WET FOR PROPER COMPACTION. PLACE FILL MATERIAL IN 6 TO 8 INCH CONTINUOUS LAYERS OVER THE ENTIRE LENGTH OF THE FILL AREA AND COMPACT IT. COMPACTION MAY BE OBTAINED BY ROUTING THE CONSTRUCTION HAULING EQUIPMENT OVER THE FILL TO THAT THE ENTIRE SURFACE OF EACH LAYER IS TRAVERSED BY AT LEAST ON WHEEL OR TREAD TRACK OF HEAVY EQUIPMENT, OR A COMPACTOR MAY BE USED. CONSTRUCT THE EMBANKMENT TO AN ELEVATION 10 PERCENT HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLING.
- 4. CONDUIT SPILLWAYS SECURELY ATTACH THE RISER TO THE BARREL OR BARREL STUB TO MAKE A WATERTIGHT STRUCTURAL CONNECTION. SECURE ALL CONNECTIONS BETWEEN BARREL SECTIONS BY APPROVED WATERTIGHT ASSEMBLIES. PLACE THE BARREL AND RISER ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL. DO NO USE PERVIOUS MATERIAL SUCH AS SAND, GRAVEL, OR CRUSHED STONE AS BACKFILL AROUND THE PIPE OR ANTI-SEEP COLLARS. PLACE THE FILL MATERIAL AROUND THE PIPE SPILLWAY IN 4-INCH LAYERS, AND COMPACT IT UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. CARE MUST BE TAKEN NOT TO RAISE THE PIPE FROM FIRM CONTACT WITH ITS FOUNDATION WHEN COMPACTING UNDER THE PIPE HAUNCHES.

PLACE A MINIMUM OF 2 FEET OF COMPACTED BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT. ANCHOR THE RISER IN PLACE BY CONCRETE OR OTHER SATISFACTORY MEANS TO PREVENT FLOTATION. IN NO CASE SHOULD THE PIPE CONDUIT BE INSTALLED BY CUTTING A TRENCH THROUGH THE DAM AFTER THE EMBANKMENT IS COMPLETE.

- 5. EMERGENCY SPILLWAY INSTALL THE EMERGENCY SPILLWAY IN UNDISTURBED SOIL. THE ACHIEVEMENT OF PLANNED ELEVATIONS. GRADE. DESIGN WIDTH, AND ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE EMERGENCY SPILLWAY.
- 6. INLETS DISCHARGE WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION. USE DIVERSIONS WITH OUTLET PROTECTION TO DIVERT SEDIMENT-LADEN WATER TO THE UPPER END OF THE POOL TO IMPROVE BASIN TRAP EFFICIENCY.
- 7. EROSION CONTROL CONSTRUCT THE STRUCTURE SO THAT THE DISTURBED AREA IS MINIMIZED. DIVERT SURFACE WATER AWAY FROM BARE AREAS. COMPLETE THE EMBANKMENT BEFORE THE AREA IS CLEARED. STABILIZE THE EMERGENCY SPILLWAY EMBANKMENT AND ALL OTHER DISTURBED AREAS ABOVE THE CREST OF THE PRINCIPAL SPILLWAY IMMEDIATELY AFTER CONSTRUCTION.

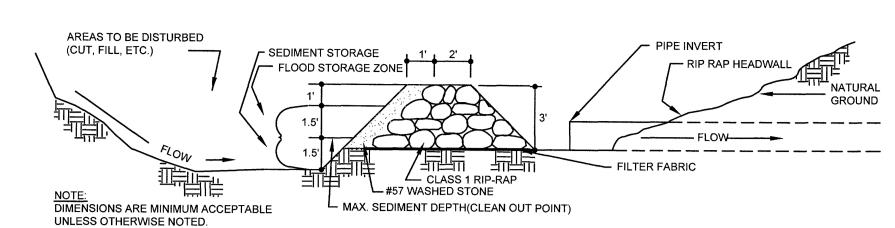
INSPECT TEMPORARY SEDIMENT BASINS AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN IT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH. PLACE REMOVED SEDIMENT IN AREAS WITH SEDIMENT CONTROLS.

CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA.



CLEAR SKIMMER ORIFICE IF IT BECOMES CLOGGED.

TEMPORARY SKIMMER SEDIMENT BASIN DETAIL NOT TO SCALE



- 1. CLEAR THE AREA OF ALL DEBRIS THAT MIGHT HINDER EXCAVATION AND DISPOSAL OF SPOIL. 2. INSTALL THE CLASS B OR CLASS 1 RIPRAP IN A SEMI-CIRCLE AROUND THE PIPE INLET. THE STONE SHOULD BE BUILT UP HIGHER ON EACH END WHERE IT TIES INTO THE EMBANKMENT. THE MINIMUM CREST WIDTH OF THE SHOULD BE 3 FEET, WITH A MINIMUM BOTTOM WIDTH OF 11 FEET. THE MINIMUM HEIGHT SHOULD BE 2 FEET, BUT ALSO 1 FOOT LOWER THAN THE SHOULDER OF THE EMBANKMENT OR DIVERSIONS.
- 3. A 1 FOOT THICK LAYER OF NCDOT #5 OR #57 SHOULD BE PLACED ON THE OUTSIDE
- OUTSIDE SLOPE OF THE RIPRAP. 4. THE SEDIMENT STORAGE AREA SHOULD BE EXCAVATED AROUND THE OUTSIDE OF THE STONE HORSESHOE 18 INCHES BELOW NATURAL GRADE.
- 5. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, FILL DEPRESSION AND ESTABLISH FINAL GRADING ELEVATION, COMPACT AREA PROPERLY AND STABILIZE WITH GROUND COVER.

MAINTENANCE

INSPECT ROCK PIPE INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING.

CHECK THE STRUCTURE FOR DAMAGE. ANY RIRAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY.

AFTER THE SEDIMEN-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCRE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND PROVIDE PERMANENT GROUND COVER.



ROCK DOUGHNUT CULVERT INLET PROTECTION

NOT TO SCALE

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01/02/19 - STORM WATER REVIEW 01/18/19 - DRIVEWAY PERMIT APPLICATION 02/21/19 - DRIVEWAY PERMIT APPLICATION RESUBMITTAL

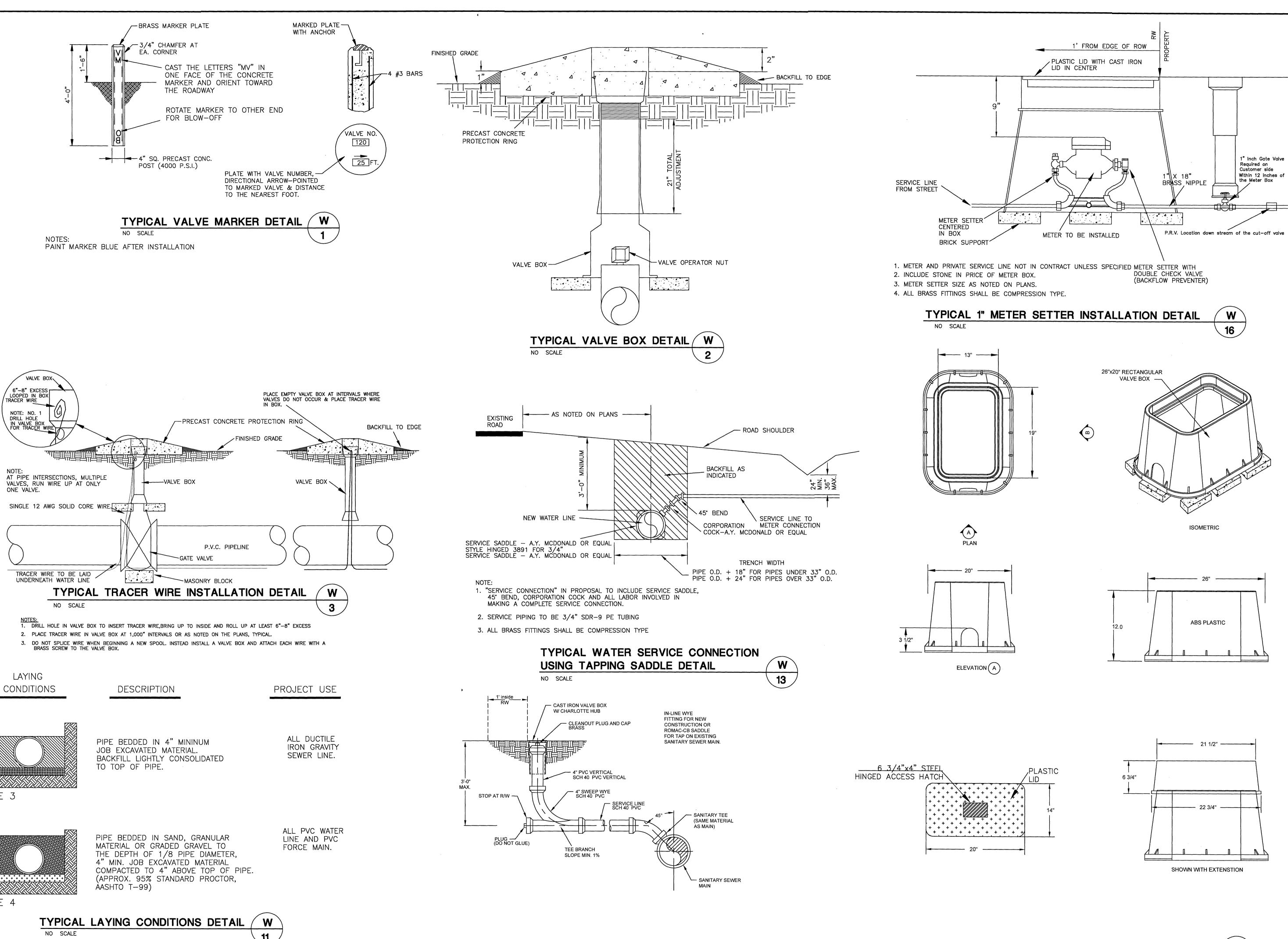
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DESIGNED BY:

RAWN BY CHECKED BY:

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JANUARY 2019 ROJECT NUMBER 18080144-01



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REVISIONS

01/02/19 - STORM WATER REVIEW 01/18/19 - DRIVEWAY PERMIT APPLICATION 02/21/19 - DRIVEWAY PERMIT APPLICATION RESUBMITTAL

03/29/19 - STORM WATER RESUBMITTAL 05/03/19 - HARNETT COUNTY DRB RESUBMITTAL 07/25/19 - HRW SUBMITTAL

DESIGNED BY: PRAWN BY: CHECKED BY: CTC

NOT TO SCALE JANUARY 2019

18080144-01

NOTE: TYPES 1,2, AND 5 ARE NOT SHOWN FOR BREVITY

TYPE 3

TYPE 4

TYPICAL SEWER SERVICE CONNECTION DETAIL

TYPICAL METER BOX DETAIL FOR 1" SERVICE

C7.2

(REVISION 6 - JUNE 2016)

THE FOLLOWING UTILITY NOTES SHOULD BE ADDED TO THE COVERSHEET OF UTILITY PLANS FOR PROJECTS LOCATED IN HARNETT COUNTY:

- A. THE FIRE MARSHAL'S OFFICE SHALL APPROVE ALL HYDRANT TYPES AND LOCATIONS IN NEW SUBDIVISIONS. HOWEVER, HARNETT COUNTY DEPARTMENT OF PUBLIC UTILITIES (HRW) PREFERS THE CONTRACTORS TO INSTALL ONE OF THE FOLLOWING
- 1. MUELLER SUPER CENTURION 250 A-423 MODEL WITH A 51/4" MAIN VALVE OPENING THREE WAY (TWO HOSE NOZZLES AND ONE PUMPER NOZZLE); 2. AMERICAN DARLING - MARK B-84-B MODEL WITH A 51/4" MAIN VALVE OPENING
- THREE WAY (TWO HOSE NOZZLES AND ONE PUMPER NOZZLE); 3. WATEROUS - PACER B-67-250 MODEL WITH A 5¼" MAIN VALVE OPENING THREE WAY (TWO HOSE NOZZLES AND ONE PUMPER NOZZLE) OR APPROVED EQUAL FOR STANDARDIZATION.
- B. FIRE HYDRANTS ARE INSTALLED AT CERTAIN ELEVATIONS. ANY GRADE CHANGE IN THE VICINITY OF ANY FIRE HYDRANT WHICH IMPEDES ITS OPERATION SHALL BECOME THE RESPONSIBILITY OF THE UTILITY CONTRACTOR FOR CORRECTION. CORRECTIONS WILL BE MONITORED BY THE HRW UTILITY CONSTRUCTION INSPECTOR AND THE HARNETT COUNTY FIRE MARSHAL.
- THE PROFESSIONAL ENGINEER (PE) SHALL OBTAIN AND PROVIDE THE NCDENR "AUTHORIZATION TO CONSTRUCT" PERMIT TO THE UTILITY CONTRACTOR BEFORE THE CONSTRUCTION OF THE WATER LINE SHALL BEGIN. THE UTILITY CONTRACTOR MUST POST A COPY OF THE NCDENR "AUTHORIZATION TO CONSTRUCT" PERMIT ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES - DIVISION OF ENVIRONMENTAL HEALTH, PUBLIC WATER SUPPLY SECTION (NCDENR- DEH, PWSS) ON SITE PRIOR TO THE START OF CONSTRUCTION THE PERMIT MUST BE MAINTAINED ON SITE THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS OF THE PROPOSED WATER LINES THAT WILL SERVE THIS
- D. THE UTILITY CONTRACTOR SHALL NOTIFY HARNETT COUNTY DEPARTMENT OF PUBLIC UTILITIES (HRW) AND THE PROFESSIONAL ENGINEER (PE) AT LEAST TWO DAYS PRIOR TO CONSTRUCTION COMMENCING. THE UTILITY CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH MR. ALAN MOSS, HRW UTILITY CONSTRUCTION INSPECTOR AT LEAST TWO (2) DAYS BEFORE CONSTRUCTION WILL BEGIN AND THE UTILITY CONTRACTOR MUST COORDINATE WITH HRW FOR REGULAR INSPECTION VISITATIONS AND ACCEPTANCE OF THE WATER SYSTEM(S) CONSTRUCTION WORK SHALL BE PERFORMED ONLY DURING THE NORMAL WORKING HOURS OF HRW WHICH IS 8:00 AM - 5:00 PM MONDAY THROUGH FRIDAY. HOLIDAY AND WEEKEND WORK IS NOT PERMITTED BY HRW.
- THE PROFESSIONAL ENGINEER (PE) SHALL PROVIDE HRW AND THE UTILITY CONTRACTOR WITH A SET OF NCDENR APPROVED PLANS MARKED "RELEASED FOR CONSTRUCTION" AT LEAST TWO DAYS PRIOR TO CONSTRUCTION COMMENCING. THE REGISTERED LAND SURVEYOR (RLS) SHOULD STAKE OUT ALL LOT CORNERS AND THE GRADE STAKES FOR THE PROPOSED FINISH GRADE FOR EACH STREET BEFORE THE UTILITY CONTRACTOR BEGINS CONSTRUCTION OF THE WATER LINE(S). THE GRADE STAKES SHOULD BE SET WITH A CONSISTENT OFFSET FROM THE STREET CENTERLINE SO AS NOT TO INTERFERE WITH THE STREET GRADING AND UTILITY
- THE UTILITY CONTRACTOR SHALL PROVIDE THE HRW UTILITY CONSTRUCTION INSPECTOR WITH MATERIAL SUBMITTALS AND SHOP DRAWINGS FOR ALL PROJECT MATERIALS PRIOR TO THE CONSTRUCTION OF ANY WATER LINE EXTENSION(S), AND ASSOCIATED WATER SERVICES IN HARNETT COUNTY. THE MATERIALS TO BE USED ON THE PROJECT MUST MEET THE ESTABLISHED SPECIFICATIONS OF HRW AND BE APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION. ALL SUBSTANDARD MATERIALS OR MATERIALS NOT APPROVED FOR USE IN HARNETT COUNTY FOUND ON THE PROJECT SITE MUST BE REMOVED IMMEDIATELY WHEN NOTIFIED BY THE HRW UTILITY CONSTRUCTION INSPECTOR
- THE WATER MAIN(S), FIRE HYDRANTS, SERVICE LINES, METER SETTERS AND ALL ASSOCIATED APPURTENANCES SHALL BE CONSTRUCTED IN STRICT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE HARNETT COUNTY DEPARTMENT OF PUBLIC UTILITIES (HRW). THE UTILITY CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE THE NEWLY INSTALLED WATER MAIN(S), WATER SERVICE LINES AND ALL ASSOCIATED METER SETTERS AND METER BOXES FOR OTHER UTILITY COMPANIES AND THEIR CONTRACTORS UNTIL THE NEW WATER MAIN(S) HAVE BEEN APPROVED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES - DIVISION OF ENVIRONMENTAL HEALTH, PUBLIC WATER SUPPLY SECTION (NCDENR-DEH, PWSS)AND ACCEPTED BY HRW.
- PRIOR TO ACCEPTANCE, ALL SERVICES WILL BE INSPECTED TO INSURE THAT THEY ARE INSTALLED AT THE PROPER DEPTH. ALL METER BOXES MUST BE FLUSH WITH THE GROUND LEVEL AT FINISH GRADE AND THE METER SETTERS MUST BE A MINIMUM OF 8" BELOW THE METER BOX LID. METER SETTERS SHALL BE CENTERED IN THE METER BOX AND SUPPORTED BY BRICK, BLOCK OR STONE.
- THE UTILITY CONTRACTOR SHALL PROVIDE THE PROFESSIONAL ENGINEER (PE) AND HRW UTILITY CONSTRUCTION INSPECTOR WITH A SET OF RED LINE DRAWINGS IDENTIFYING THE COMPLETE WATER SYSTEM INSTALLED FOR EACH PROJECT. THE RED LINE DRAWINGS SHOULD IDENTIFY THE MATERIALS, PIPE SIZES AND APPROXIMATE DEPTHS OF THE WATER LINES AS WELL AS THE GATE VALVES, FIRE HYDRANTS, METER SETTERS, BLOW OFF ASSEMBLIES AND ALL ASSOCIATED APPURTENANCES FOR ALL WATER LINE(S) CONSTRUCTED IN HARNETT COUNTY. THE RED LINE DRAWINGS SHOULD CLEARLY IDENTIFY ANY DEVIATIONS FROM THE NCDENR APPROVED PLANS. ALL CHANGE ORDERS MUST BE APPROVED BY HRW AND THE PROFESSIONAL ENGINEER (PE) IN WRITING AND PROPERLY DOCUMENTED IN THE RED LINE FIELD DRAWINGS.
- POTABLE WATER MAINS CROSSING OTHER UTILITIES AND NON-POTABLE WATER LINES (SANITARY SEWER, STORM SEWER, RCP, ETC.) SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWENTY-FOUR (24") INCHES BETWEEN THE POTABLE WATER MAIN AND ALL OTHER UTILITIES. NCDOT REQUIRES THE NEW WATER MAINS TO BE INSTALLED UNDER THE STORM WATER LINES. THE POTABLE WATER MAIN SHALL BE INSTALLED WITH TWENTY-FOUR (24") INCHES OF VERTICAL SEPARATION AND WITH DUCTILE IRON PIPE WHEN DESIGNED TO BE PLACED UNDER A NON- POTABLE WATER LINE SUCH AS SANITARY SEWER OR STORM SEWER LINES. IF THESE SEPARATIONS CANNOT BE MAINTAINED THEN THE WATER MAIN SHALL BE INSTALLED WITH DUCTILE IRON PIPE. BOTH THE POTABLE WATER MAIN AND THE NON-POTABLE WATER LINE MUST BE CAST IRON OR DUCTILE IRON PIPE (DIP) IF THE STATE MINIMUM SEPARATIONS CANNOT BE MAINTAINED. THE DUCTILE IRON PIPE MUST BE LAID SO THE MECHANICAL JOINTS ARE AT LEAST (10') FEET FROM THE POINT WHERE THE POTABLE WATER MAIN CROSSES THE NON-POTABLE WATER LINE.
- POTABLE WATER MAINS INSTALLED PARALLEL TO NON-POTABLE WATER LINES (SANITARY SEWER, STORM SEWER, RCP, ETC.) SHALL BE LAID TO PROVIDE A MINIMUM HORIZONTAL DISTANCE OF TEN (10') FEET BETWEEN THE POTABLE WATER MAIN AND SANITARY SEWER MAINS, SEWER LATERALS AND SERVICES. THE HORIZONTAL SEPARATION BETWEEN THE POTABLE WATER MAIN AND ANY OTHER UTILITY OR STORM SEWER SHALL NOT BE LESS THAN FIVE (5') FEET. THE POTABLE WATER MAIN MUST BE DUCTILE IRON PIPE IF THIS HORIZONTAL SEPARATION OF TEN (10') FEET CANNOT BE MAINTAINED. THE DUCTILE IRON PIPE SHALL EXTEND AT LEAST TEN (10') FEET BEYOND THE POINT WHERE THE MINIMUM REQUIRED HORIZONTAL SEPARATION OF TEN (10') FEET CAN BE RE-ESTABLISHED.
- METER SETTERS SHALL BE INSTALLED IN PAIRS ON EVERY OTHER LOT LINE WHERE POSSIBLE TO LEAVE ADEQUATE SPACE FOR OTHER UTILITIES TO BE INSTALLED AT A LATER TIME. THE METER SETTERS SHALL BE INSTALLED AT LEAST ONE (1') FOOT INSIDE THE RIGHT-OF-WAY AND AT LEAST THREE (3') TO FIVE (5') FEET FROM THE PROPERTY LINE BETWEEN THE LOTS.
- HRW REQUIRES THAT METER BOXES FOR 3/4" SERVICES SHALL BE 12" WIDE X 17" LONG ABS PLASTIC BOXES AT LEAST 18" IN HEIGHT WITH CAST IRON LIDS/COVERS. METER BOXES FOR 1" SERVICES SHALL BE 17" WIDE X 21" LONG ABS PLASTIC BOXES AT LEAST 18" IN HEIGHT WITH PLASTIC LIDS AND CAST IRON FLIP COVERS IN THE CENTER OF THE LIDS. METER BOXES FOR 2" SERVICES SHALL BE 20" WIDE X 32" LONG ABS PLASTIC BOXES AT LEAST 20" IN HEIGHT WITH PLASTIC LIDS AND CAST IRON FLIP COVERS IN THE CENTER OF THE LIDS.
- MASTER METERS MUST BE INSTALLED IN CONCRETE VAULTS SIZED FOR THE METER ASSEMBLY AND ASSOCIATED APPURTENANCES SO AS TO PROVIDE AT LEAST EIGHTEEN (18") INCHES OF CLEARANCE BETWEEN THE BOTTOM OF THE CONCRETE VAULT AND THE BOTTOM OF THE METER SETTER. THE MASTER METER MUST BE PROVIDED TEST PORTS IF THE METER IS NOT EQUIPPED WITH TEST PORTS FROM THE MANUFACTURER IN ACCORDANCE WITH THE HRW ESTABLISHED STANDARD

- SPECIFICATIONS AND DETAILS. DUCTILE IRON PIPE MUST BE USED FOR THE MASTER METER VAULT PIPING AND VALVE VAULT PIPING. THE UTILITY CONTRACTOR MUST PROVIDE SHOP DRAWINGS FOR THE METER VAULTS TO HRW PRIOR TO ORDERING
- O. THE UTILITY CONTRACTOR WILL INSTALL POLYETHYLENE SDR-9 WATER SERVICE LINES THAT CROSS UNDER THE PAVEMENT INSIDE A SCHEDULE 40 PVC CONDUIT TO ALLOW FOR REMOVAL AND REPLACEMENT IN THE FUTURE. TWO (2) INDEPENDENT 3/4" WATER SERVICE LINES MAY BE INSTALLED INSIDE ONE (1) - TWO (2") INCH SCHEDULE 40 PVC CONDUIT OR TWO (2) INDEPENDENT 1" WATER SERVICE LINES MAY BE INSTALLED INSIDE ONE THREE (3") INCH SCHEDULE 40 PVC CONDUIT, BUT EACH WATER SERVICE SHALL BE TAPPED DIRECTLY TO THE WATER MAIN. SPLIT SERVICES ARE NOT ALLOWED BY HRW.
- P. THE WATER MAIN(S), FIRE HYDRANTS, GATE VALVES, SERVICE LINES, METER SETTERS AND ASSOCIATED APPURTENANCES MUST BE RATED FOR 200 PSI AND HYDROSTATICALLY PRESSURE TESTED TO 200 PSI. THE HYDROSTATIC PRESSURE TEST(S) MUST BE WITNESSED BY THE HRW UTILITY CONSTRUCTION INSPECTOR. THE UTILITY CONTRACTOR MUST NOTIFY HRW WHEN THEY ARE READY TO BEGIN FILLING IN LINES AND COORDINATE WITH HARNETT COUNTY TO WITNESS ALL PRESSURE TESTING.
- Q. THE UTILITY CONTRACTOR SHALL CONDUCT A PNEUMATIC PRESSURE TEST USING COMPRESSED AIR OR OTHER INERT GAS ON THE STAINLESS STEEL TAPPING SLEEVE(S) PRIOR TO MAKING THE TAP ON THE EXISTING WATER MAIN. THIS PNEUMATIC PRESSURE TEST MUST BE WITNESSED BY THE HRW UTILITY CONSTRUCTION INSPECTOR. THE UTILITY CONTRACTOR SHALL USE ROMAC BRAND STAINLESS STEEL TAPPING SLEEVE(S) OR APPROVED EQUAL FOR ALL TAPS MADE IN HARNETT COUNTY. ALL NEW WATER LINE EXTENSIONS MUST BEGIN WITH A RESILIENT WEDGE TYPE GATE VALVE SIZED EQUAL TO THE DIAMETER OF THE NEW WATER LINE EXTENSION IN ORDER TO PROVIDE A MEANS OF ISOLATION BETWEEN HARNETT COUNTY'S EXISTING WATER MAINS AND THE NEW WATER LINE EXTENSIONS UNDER CONSTRUCTION.
- R. ALL WATER MAINS WILL BE CONSTRUCTED WITH SDR-21 PVC PIPE OR CLASS 50 DUCTILE IRON PIPE RATED FOR AT LEAST 200 PSI OR GREATER. ALL PIPES MUST BE PROTECTED DURING LOADING, TRANSPORT, UNLOADING, STAGING, AND INSTALLATION. PVC PIPE MUST BE PROTECTED FROM EXTENDED EXPOSURE TO SUNLIGHT PRIOR TO INSTALLATION.
- ALL WATER MAINS WILL BE FLUSHED AND DISINFECTED IN STRICT ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE HARNETT COUNTY DEPARTMENT OF PUBLIC UTILITIES. ALL WATER SAMPLES COLLECTED FOR BACTERIA TESTING WILL BE COLLECTED BY THE HRW UTILITY CONSTRUCTION INSPECTOR AND TESTED IN THE HRW LABORATORY.
- T. ALL FITTINGS LARGER THAN TWO (2") INCHES DIAMETER SHALL BE DUCTILE IRON. HRW REQUIRES THAT MECHANICAL JOINTS BE ASSEMBLED WITH GRIP RINGS AS "MEGALUG" FITTINGS ARE NOT APPROVED BY HARNETT COUNTY FOR PIPE SIZES SMALLER THAN TWELVE INCHES (12") DIAMETER. PVC PIPE USED FOR WATER MAINS SHALL BE CONNECTED BY SLIP JOINT OR MECHANICAL JOINT WITH GRIP RINGS. GLUED PIPE JOINTS ARE NOT ALLOWED ON PVC PIPE USED FOR WATER MAINS IN HARNETT COUNTY.
- U. HRW REQUIRES THAT THE UTILITY CONTRACTOR INSTALL TRACER WIRE IN THE TRENCH WITH ALL WATER LINES. THE TRACER WIRE SHALL BE 12 GA. INSULATED, SOLID COPPER CONDUCTOR AND IT SHALL BE TERMINATED AT THE TOP OF THE VALVE BOXES OR MANHOLES. NO SPLICED WIRE CONNECTIONS SHALL BE MADE UNDERGROUND ON TRACER WIRE INSTALLED IN HARNETT COUNTY. THE TRACER WIRE MAY BE SECURED WITH DUCT TAPE TO THE TOP OF THE PIPE BEFORE
- V. THE UTILITY CONTRACTOR WILL PROVIDE PROFESSIONAL ENGINEER (PE) AND THE HRW UTILITY CONSTRUCTION INSPECTOR WITH A SET OF RED LINE FIELD DRAWINGS TO IDENTIFY THE INSTALLED LOCATIONS OF THE WATER LINE(S) AND ALL ASSOCIATED SERVICES. ALL CHANGE ORDERS MUST BE PRE-APPROVED BY HRW AND THE PROFESSIONAL ENGINEER (PE) IN WRITING AND PROPERLY DOCUMENTED IN THE RED LINE FIELD DRAWINGS.
- W. THE UTILITY CONTRACTOR SHALL SPOT DIG TO EXPOSE EACH UTILITY PIPE OR LINE WHICH MAY CONFLICT WITH CONSTRUCTION OF PROPOSED WATER LINE EXTENSIONS WELL IN ADVANCE TO VERIFY LOCATIONS OF THE EXISTING UTILITIES. THE UTILITY CONTRACTOR SHALL PROVIDE BOTH HORIZONTAL AND VERTICAL CLEARANCES TO THE PROFESSIONAL ENGINEER (PE) TO ALLOW THE PE TO ADJUST THE WATER LINE DESIGN IN ORDER TO AVOID CONFLICTS WITH EXISTING UNDERGROUND UTILITIES. THE UTILITY CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNER AND BE RESPONSIBLE FOR TEMPORARY RELOCATION AND/OR SECURING EXISTING UTILITY POLES, PIPES, WIRES, CABLES, SIGNS AND /OR UTILITIES INCLUDING SERVICES IN ACCORDANCE WITH THE UTILITY OWNER REOUIREMENTS DURING WATER LINE INSTALLATION. GRADING AND STREET CONSTRUCTION.
- X. PRIOR TO THE COMMENCEMENT OF ANY WORK WITHIN ESTABLISHED UTILITY EASEMENTS OR NCDOT RIGHT-OF-WAYS THE UTILITY CONTRACTOR IS REQUIRED TO HAVE A SIGNED NCDOT ENCROACHMENT AGREEMENT POSTED ON SITE AND NOTIFY ALL CONCERNED UTILITY COMPANIES IN ACCORDANCE WITH G.S. 87-102. THE UTILITY CONTRACTOR MUST CALL THE NC ONE CALL CENTER AT 811 OR
- **16.** 632-4949 TO VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. EXISTING UTILITIES SHOWN IN THESE PLANS ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED OR VERIFIED BY THE P.E. (I.E. TELEPHONE, CABLE, WATER, SEWER, ELECTRICAL POWER, FIBER OPTIC, NATURAL GAS, ETC.). THE UTILITY CONTRACTOR WILL BE RESPONSIBLE TO REPAIR ANY AND ALL DAMAGES TO THE SATISFACTION OF THE RELATED UTILITY COMPANY.
- THE UTILITY CONTRACTOR SHALL PROVIDE HRW WITH AT LEAST ONE (1) FIRE HYDRANT WRENCH AND ONE (1) BREAK-AWAY FLANGE KIT FOR EVERY SUBDIVISION WITH FIRE HYDRANTS DEVELOPED IN HARNETT COUNTY. THESE ITEMS MUST BE PROVIDED TO HRW BEFORE THE FINAL INSPECTION WILL BE SCHEDULED BY THE HRW UTILITY CONSTRUCTION INSPECTOR. IN ADDITION, THE UTILITY CONTRACTOR SHALL INSTALL A 4" X 4" CONCRETE VALVE MARKER AT THE EDGE OF THE RIGHT-OF-WAY TO IDENTIFY THE LOCATION OF EACH GATE VALVE INSTALLED IN THE NEW WATER SYSTEM WITH THE EXCEPTION OF THE FIRE HYDRANT ISOLATION VALVES. THE CONTRACTOR SHALL MEASURE THE DISTANCE FROM THE CENTER OF THE CONCRETE MARKER TO THE CENTER OF THE VALVE BOX. THIS DISTANCE (IN LINEAR FEET) SHALL BE STAMPED ON THE BRASS PLATE LOCATED ON THE TOP OF THE CONCRETE VALVE MARKER. IN LIEU OF INSTALLING THE CONCRETE VALVE MARKERS, THE UTILITY CONTRACTOR MAY PROVIDE AT LEAST TWO MEASUREMENTS FROM TWO INDEPENDENT PERMANENT ABOVE GROUND STRUCTURES TO THE PROFESSIONAL ENGINEER (PE) IN THE RED LINE DRAWINGS TO IDENTIFY THE VALVE LOCATIONS. THE PROFESSIONAL ENGINEER (PE) MUST INCLUDE THESE MEASUREMENTS IN THE AS-BUILT RECORD DRAWINGS
- SUBMITTED TO HRW. Z. THE UTILITY CONTRACTOR WILL BE RESPONSIBLE FOR ANY AND ALL REPAIRS DUE TO LEAKAGE DAMAGE FROM POOR WORKMANSHIP DURING THE ONE YEAR WARRANTY PERIOD ONCE THE WATER SYSTEM IMPROVEMENTS HAVE BEEN ACCEPTED BY HARNETT COUNTY. HARNETT COUNTY WILL PROVIDE MAINTENANCE AND REPAIRS WHEN REQUESTED AND BILL THE DEVELOPER AND/OR UTILITY CONTRACTOR IF NECESSARY DUE TO LACK OF RESPONSE WITHIN 48 HOURS OF NOTIFICATION OF WARRANTY WORK. THE UTILITY CONTRACTOR WILL BE RESPONSIBLE FOR ANY AND ALL REPAIRS DUE TO DAMAGES RESULTING FROM FAILURE TO LOCATE THE NEW WATER LINES AND ASSOCIATED APPURTENANCES FOR OTHER UTILITIES AND THEIR CONTRACTORS UNTIL THE WATER LINES HAVE BEEN APPROVED BY NCDENR AND ACCEPTED BY HRW. THE FINAL INSPECTION OF WATER SYSTEM IMPROVEMENTS CANNOT BE SCHEDULED WITH HRW UNTIL THE STREETS HAVE BEEN PAVED; THE RIGHTS-OF-WAY AND UTILITY EASEMENTS HAVE BEEN SEEDED AND STABILIZED WITH AN ADEQUATE STAND OF GRASS IN PLACE TO PREVENT EROSION ISSUES ON SITE.
- AA. THE ENGINEER OF RECORD IS RESPONSIBLE TO INSURE THAT CONSTRUCTION IS, AT ALL TIMES, IN COMPLIANCE WITH ACCEPTED SANITARY ENGINEERING PRACTICES AND APPROVED PLANS AND SPECIFICATIONS. NO FIELD CHANGES TO THE APPROVED PLANS ARE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL BY HRW. A COPY OF EACH ENGINEER'S FIELD REPORT IS TO BE SUBMITTED TO HRW AS EACH SUCH INSPECTION IS MADE ON SYSTEM IMPROVEMENTS OR TESTING IS PERFORMED BY THE CONTRACTOR. WATER AND SEWER INFRASTRUCTURE MUST PASS ALL TESTS REQUIRED BY HRW SPECIFICATIONS AND THOSE OF ALL APPLICABLE REGULATORY AGENCIES. THESE TESTS INCLUDE, BUT ARE NOT LIMITED TO: AIR TEST, VACUUM TEST, MANDREL TEST, VISUAL TEST, PRESSURE TEST, BACTERIOLOGICAL TEST, ETC. A HRW INSPECTOR MUST BE PRESENT DURING TESTING AND ALL TEST RESULTS SHALL BE SUBMITTED TO HRW. ALL TESTS MUST BE SATISFIED BEFORE THE FINAL INSPECTION WILL BE SCHEDULED WITH THE HRW INSPECTOR. THE ENGINEER OF

RECORD MUST REQUEST IN WRITING TO SCHEDULE THE FINAL INSPECTION ONCE ALL CONSTRUCTION IS COMPLETE. THE DEVELOPER'S ENGINEER OF RECORD AND THE HRW UTILITY CONSTRUCTION INSPECTOR SHALL PREPARE A WRITTEN PUNCH LIST OF ANY DEFECTS OR DEFICIENCIES NOTED DURING THE FINAL INSPECTION, SHOULD ANY EXIST. UPON COMPLETION OF THE PUNCH LIST, THE DEVELOPER'S ENGINEER OF RECORD WILL SCHEDULE ANOTHER INSPECTION. IN THE EVENT THE NUMBER OF INSPECTIONS PERFORMED BY THE HRW EXCEEDS TWO. ADDITIONAL FEES MAY BE ACCESSED TO THE DEVELOPER.

SANITARY SEWER

- A. THE PROFESSIONAL ENGINEER (PE) SHALL OBTAIN AND SUPPLY A COPY OF THE SEWER PERMIT FOR THE CONSTRUCTION AND OPERATION OF THE WASTEWATER COLLECTION SYSTEM TO THE UTILITY CONTRACTOR BEFORE THE CONSTRUCTION OF THE SANITARY SEWER LINE, SEWER LIFT STATION AND ASSOCIATED FORCE MAIN SHALL BEGIN. THE UTILITY CONTRACTOR MUST POST A COPY OF THE SEWER PERMIT ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES - DIVISION OF WATER QUALITY (NCDENR-DWQ) ON SITE PRIOR TO THE START OF CONSTRUCTION. THE PERMIT MUST BE MAINTAINED ON SITE DURING THE CONSTRUCTION OF THE SEWER SYSTEM IMPROVEMENTS.
- THE UTILITY CONTRACTOR SHALL NOTIFY HARNETT COUNTY DEPARTMENT OF PUBLIC UTILITIES (HRW) AND THE PROFESSIONAL ENGINEER (PE) AT LEAST TWO DAYS PRIOR TO CONSTRUCTION COMMENCING. THE UTILITY CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH MR. ALAN MOSS, HRW UTILITY CONSTRUCTION INSPECTOR AT LEAST TWO (2) DAYS BEFORE CONSTRUCTION WILL BEGIN AND THE UTILITY CONTRACTOR MUST COORDINATE WITH HRW FOR REGULAR INSPECTION VISITATIONS AND ACCEPTANCE OF THE WASTEWATER SYSTEM(S). CONSTRUCTION WORK SHALL BE PERFORMED ONLY DURING THE NORMAL WORKING HOURS OF HRW WHICH IS 8:00 AM - 5:00 PM MONDAY THROUGH FRIDAY. HOLIDAY AND WEEKEND WORK IS NOT PERMITTED BY HRW.
- C. THE PROFESSIONAL ENGINEER (PE) SHALL PROVIDE HRW WITH A SET OF NCDENR APPROVED PLANS MARKED "RELEASED FOR CONSTRUCTION" AT LEAST TWO DAYS PRIOR TO CONSTRUCTION COMMENCING. HRW WILL STAMP THE APPROVED PLANS AS "RELEASED FOR CONSTRUCTION" AND PROVIDE COPIES TO THE UTILITY CONTRACTOR. THE REGISTERED LAND SURVEYOR (RLS) SHALL STAKE OUT ALL LOT CORNERS AND ESTABLISH GRADE STAKES FOR THE PROPOSED FINISH GRADE FOR EACH STREET AND SEWER LINE BEFORE THE UTILITY CONTRACTOR BEGINS CONSTRUCTION OR INSTALLATION OF THE MANHOLES, SANITARY SEWER GRAVITY LINE(S), SEWER LIFT STATIONS AND/OR SANITARY SEWER FORCE MAIN(S). THE GRADE STAKES SHOULD BE SET WITH A CONSISTENT OFFSET FROM THE STREET CENTERLINE SO AS NOT TO INTERFERE WITH THE STREET GRADING OR UTILITY
- D. THE UTILITY CONTRACTOR SHALL PROVIDE THE HRW UTILITY CONSTRUCTION INSPECTOR WITH MATERIAL SUBMITTALS AND SHOP DRAWINGS FOR ALL PROJECT MATERIALS PRIOR TO THE CONSTRUCTION OF ANY GRAVITY SEWER LINE(S), MANHOLE(S), SEWER LIFT STATION(S) AND ASSOCIATED FORCE MAIN(S) IN HARNETT COUNTY. THE MATERIALS TO BE USED ON THE PROJECT MUST MEET THE ESTABLISHED SPECIFICATIONS OF HRW AND BE APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION. ALL SUBSTANDARD MATERIALS OR MATERIALS NOT APPROVED FOR USE IN HARNETT COUNTY FOUND ON THE PROJECT SITE MUST BE REMOVED IMMEDIATELY WHEN NOTIFIED BY THE HRW UTILITY CONSTRUCTION INSPECTOR.
- E. THE SANITARY SEWER LATERAL CONNECTIONS SHOULD BE INSTALLED 90° (PERPENDICULAR) TO THE SANITARY SEWER GRAVITY LINES WITH SCHEDULE 40 PVC PIPE. HRW REQUIRES THE UTILITY CONTRACTOR TO PROVIDE THE PROFESSIONAL ENGINEER (PE) WITH ACCURATE MEASUREMENTS FOR LOCATING SANITARY SEWER SERVICE LATERAL AND ASSOCIATED EACH SANITARY SEWER CLEAN-OUT. THESE MEASUREMENTS SHOULD BE TAKEN FROM THE NEAREST DOWNSTREAM MANHOLE UP ALONG THE SANITARY SEWER MAIN TO THE IN-LINE WYE FITTING (OR TAPPING SADDLE) AND THEN ANOTHER MEASUREMENT FROM THE IN-LINE WYE FITTING (OR TAPPING SADDLE) TO THE 4" X 4" LONG SWEEP COMBINATION WYE FITTING AT THE BOTTOM OF THE SEWER CLEAN-OUT STACK. THESE FIELD MEASUREMENTS MUST BE PROVIDED TO THE PROFESSIONAL ENGINEER (PE) IN THE RED LINE DRAWINGS FROM THE UTILITY CONTRACTOR FOR PROPER DOCUMENTATION IN THE AS-BUILT RECORD DRAWINGS SUBMITTED TO
- F. THE UTILITY CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE THE NEWLY INSTALLED SANITARY SEWER GRAVITY LINE(S), SANITARY SEWER FORCE MAIN(S), SANITARY SEWER SERVICE LATERAL(S) AND ALL ASSOCIATED SEWER CLEAN-OUT(S) IN THE PROPOSED SANITARY SEWER SYSTEM FOR OTHER UTILITY COMPANIES AND THEIR CONTRACTORS UNTIL THE NEW SANITARY SEWER LINE(S) AND ASSOCIATED APPURTENANCES HAVE BEEN APPROVED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES - DIVISION OF WATER QUALITY (NCDENR-DWQ) AND ACCEPTED BY HRW. ALL NEW SANITARY SEWER LINES MUST HAVE AT LEAST THREE (3 FT.) FEET OF COVER AND EXTEND UNDER ALL EXISTING WATER MAIN AND STORM WATER LINES WITH A LEAST 24" OF VERTICAL. CLEARANCE BELOW THE BOTTOM OF THE EXISTING WATER MAIN AND STORM WATER LINES.
- G. THE SANITARY SEWER GRAVITY LINE(S), MANHOLE(S), SANITARY SEWER SERVICE LATERAL(S) AND ASSOCIATED CLEAN-OUT(S) SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE HARNETT COUNTY DEPARTMENT OF PUBLIC UTILITIES. THE SANITARY SEWER GRAVITY LINE(S) MUST PNEUMATICALLY PRESSURE TESTED WITH COMPRESSED AIR AT 5 PSI AND THE SANITARY SEWER FORCE MAIN(S) MUST HYDROSTATICALLY PRESSURE TESTED WITH WATER OR AIR AT 200 PSI. SANITARY SEWER MANHOLES MUST BE VACUUM TESTED TO 10 INCHES OF MERCURY AND CANNOT DROP BELOW 9 INCHES IN 60 SECONDS FOR 4 FT. DIAMETER MANHOLES, 75 SECONDS FOR 5 FT. DIAMETER MANHOLES. ALL TESTS MENTIONED ABOVE MUST BE WITNESSED BY THE HRW UTILITY CONSTRUCTION INSPECTOR AND ENGINEER.
- H. PRIOR TO ACCEPTANCE, ALL SEWER SERVICE LATERALS WILL BE INSPECTED TO INSURE THAT THEY ARE INSTALLED AT THE PROPER DEPTH. ALL SEWER CLEAN-OUTS MUST BE INSTALLED SO THE 4" X 4" LONG SWEEP COMBINATION WYE IS AT LEAST THREE (3') FEET BUT NO MORE THAN FOUR (4') FEET BELOW THE FINISH GRADE UNLESS OTHERWISE APPROVED IN WRITING BY HRW. THE SEWER CLEANOUTS SHALL HAVE A FOUR (4") SCHEDULE 40 PVC PIPE STUBBED UP FROM BOTH ENDS OF THE 4" X 4" LONG SWEEP COMBINATION WYE TO BE AT LEAST TWO (2') FEET ABOVE THE FINISH GRADE AND COVER EACH END WITH A FOUR (4") INCH TEMPORARY CAP TO KEEP OUT DIRT, SAND, ROCKS, WATER AND CONSTRUCTION DEBRIS. THE VERTICAL STACK ON EACH CLEAN-OUT MUST BE PROVIDED WITH A CONCRETE DONUT FOR PROTECTION.
- ONCE THE SANITARY SEWER GRAVITY LINE(S) HAVE BEEN INSTALLED, PNEUMATICALLY PRESSURE TESTED AND IN PLACE FOR AT LEAST 30 DAYS, THE UTILITY CONTRACTOR MUST CONTACT THE HRW UTILITY CONSTRUCTION INSPECTOR TO WITNESS THE MANDREL TEST ON EACH PVC SANITARY SEWER GRAVITY LINE. THE UTILITY CONTRACTOR WILL NOTIFY HRW TO SCHEDULE THE MANDREL TESTING. THE MANDREL AND PROVING RING MUST BE SUPPLIED BY THE UTILITY CONTRACTOR. CLOSED CIRCUIT VIDEO CAMERA INSPECTIONS (AT THE UTILITY CONTRACTOR'S EXPENSE) MAY BE REQUIRED BY THE HRW UTILITY CONSTRUCTION INSPECTOR IF THE MANDREL AND MIRROR TAMPING TESTING CANNOT BE COMPLETED WITH SATISFACTORY RESULTS. THE SANITARY SEWER LINES SHOULD BE FLUSHED CLEAN USING A SEWER BALL OF THE PROPER DIAMETER BEFORE ANY MANDREL TESTING CAN BE PERFORMED. THE UTILITY CONTRACTOR IS RESPONSIBLE TO REMOVE ALL DIRT, SAND, SILT, GRAVEL, MUD AND DEBRIS FROM THE NEWLY CONSTRUCTED SEWER LINES EXERCISING CARE TO KEEP THE HARNETT COUNTY'S EXISTING SANITARY SEWER SYSTEMS CLEAN. SANITARY SEWER FORCE MAIN(S) SHALL BE PRESSURE TESTED TO 200 PSI FOR AT LEAST 2 HOURS LIKE WATER LINES.
- THE UTILITY CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE THE NEWLY INSTALLED SANITARY SEWER SYSTEM(S) FOR OTHER UTILITY COMPANIES AND THEIR CONTRACTORS UNTIL THE NEW SANITARY SEWER SYSTEM(S) HAVE BEEN APPROVED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES - DIVISION OF WATER QUALITY (NCDENR-DWQ)AND ACCEPTED BY HRW.
- HRW REQUIRES THAT THE UTILITY CONTRACTOR INSTALL TRACER WIRE IN THE TRENCH WITH ALL SANITARY SEWER FORCE MAINS. THE TRACER WIRE SHALL BE 12 GA. INSULATED, SOLID COPPER CONDUCTOR AND IT SHALL BE TERMINATED AT THE TOP OF THE VALVE BOXES OR MANHOLES. NO SPLICED WIRE CONNECTIONS SHALL BE MADE UNDERGROUND ON TRACER WIRE INSTALLED IN HARNETT COUNTY. THE TRACER WIRE MAY BE SECURED WITH DUCT TAPE TO THE TOP OF THE PIPE BEFORE BACKFILLING. THE TRACER WIRE IS NOT REOUIRED FOR THE GRAVITY

SEWER LINE(S) BETWEEN MANHOLES.

- L. THE UTILITY CONTRACTOR SHALL PROVIDE THE PROFESSIONAL ENGINEER (PE) AND HRW UTILITY CONSTRUCTION INSPECTOR WITH A SET OF RED LINE DRAWINGS IDENTIFYING THE COMPLETE SEWER SYSTEM INSTALLED FOR EACH PROJECT. THE RED LINE DRAWINGS SHOULD IDENTIFY THE MATERIALS, PIPE SIZES AND APPROXIMATE DEPTHS OF THE SEWER LINES AS WELL AS THE INSTALLED LOCATIONS OF THE MANHOLE(S), SANITARY SEWER GRAVITY LINE(S), SANITARY SEWER SERVICE LATERALS, CLEAN-OUTS, SEWER LIFT STATION(S) AND ASSOCIATED FORCE MAIN(S). THE RED LINE DRAWINGS SHOULD CLEARLY IDENTIFY ANY DEVIATIONS FROM THE NCDENR APPROVED PLANS. ALL CHANGE ORDERS MUST BE APPROVED BY HRW AND THE PROFESSIONAL ENGINEER (PE) IN WRITING AND PROPERLY DOCUMENTED IN THE RED LINE FIELD DRAWINGS.
- M. PRIOR TO THE COMMENCEMENT OF ANY WORK WITHIN ESTABLISHED UTILITY EASEMENTS OR NCDOT RIGHT-OF-WAYS THE UTILITY CONTRACTOR IS REQUIRED TO NOTIFY ALL CONCERNED UTILITY COMPANIES IN ACCORDANCE WITH G.S. 87-102. THE UTILITY CONTRACTOR MUST CALL THE NC ONE CALL CENTER AT 811 OR (800) 632-4949 TO VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. EXISTING UTILITIES SHOWN IN THESE PLANS ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED BY THE P.E. (I.E. TELEPHONE, CABLE, WATER, SEWER, ELECTRICAL POWER, FIBER OPTIC, NATURAL GAS, ETC.).
- N. THE UTILITY CONTRACTOR SHALL SPOT DIG TO EXPOSE EACH EXISTING UTILITY PIPE OR LINE WHICH MAY CONFLICT WITH CONSTRUCTION OF PROPOSED SANITARY SEWER LINE EXTENSIONS WELL IN ADVANCE TO VERIFY LOCATIONS OF THE EXISTING UTILITIES. THE UTILITY CONTRACTOR SHALL PROVIDE BOTH HORIZONTAL AND VERTICAL CLEARANCES TO THE PROFESSIONAL ENGINEER (PE) TO ALLOW THE PE TO ADJUST THE SANITARY SEWER LINE DESIGN IN ORDER TO AVOID CONFLICTS WITH EXISTING UNDERGROUND UTILITIES. THE UTILITY CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNER AND BE RESPONSIBLE FOR TEMPORARY RELOCATION OF EXISTING UTILITIES AND/OR SECURING EXISTING UTILITY POLES, PIPES, WIRES, CABLES, SIGNS AND/OR UTILITIES INCLUDING SERVICES IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS DURING SANITARY SEWER LINE INSTALLATION, GRADING AND STREET CONSTRUCTION.
- O. WHEN MAKING A TAP ON AN EXISTING SEWER FORCE MAIN, THE UTILITY CONTRACTOR MUST HAVE A PERMIT FROM THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES - DIVISION OF WATER QUALITY (NCDENR-DWQ) PRIOR TO BEGIN THE TAP WORK. THE UTILITY CONTRACTOR SHALL CONDUCT A PNEUMATIC PRESSURE TEST USING COMPRESSED AIR OR OTHER INERT GAS ON THE STAINLESS STEEL TAPPING SLEEVE AND GATE VALVE PRIOR TO MAKING THE TAP ON AN EXISTING SANITARY SEWER FORCE MAIN. THIS PNEUMATIC PRESSURE TEST MUST BE WITNESSED BY THE HRW UTILITY CONSTRUCTION INSPECTOR. THE UTILITY CONTRACTOR SHALL USE ROMAC BRAND STAINLESS STEEL TAPPING SLEEVE(S) OR APPROVED EQUAL FOR ALL TAPS MADE ON SANITARY SEWER FORCE MAINS IN HARNETT COUNTY. THE UTILITY CONTRACTOR SHALL USE ROMAC BRAND STYLE "CB" SEWER SADDLES WITH STAINLESS STEEL BANDS OR APPROVED EQUAL FOR ALL TAPS MADE ON EXISTING SANITARY SEWER GRAVITY LINES IN HARNETT COUNTY.
- THE UTILITY CONTRACTOR SHALL PROVIDE A GREASE TRAP FOR EACH SANITARY SEWER SERVICE LATERAL THAT WILL BE CONNECTED TO A RESTAURANT, FOOD PROCESSING FACILITY AND ANY OTHER COMMERCIAL OR INDUSTRIAL FACILITY AS REQUIRED BY THE HARNETT COUNTY FAT, OIL & GREASE ORDINANCE. THE GREASE TRAP MUST BE RATED FOR A MINIMUM CAPACITY OF AT LEAST 1,000 GALLONS UNLESS OTHERWISE APPROVED IN WRITING BY THE HRW PRE-TREATMENT COORDINATOR. GARBAGE DISPOSALS SHOULD NOT BE INSTALLED IN HOMES AND BUSINESSES THAT DISCHARGE WASTEWATER TO THE HARNETT COUNTY SANITARY SEWER SYSTEM AS THEY ARE NOT APPROVED BY HRW.
- EACH SEWER LIFT STATION MUST BE PROVIDED WITH THREE PHASE POWER (AT LEAST 480 VOLTS) AND CONSTRUCTED TO MEET THE MINIMUM REQUIREMENTS OF THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE (NEC) AND HARNETT COUNTY STANDARD SPECIFICATIONS AND DETAILS. IF THREE PHASE POWER IS NOT AVAILABLE FROM THE POWER COMPANY OTHER ARRANGEMENTS MUST BE APPROVED BY HRW ENGINEERING PRIOR TO THE START OF CONSTRUCTION
- WHERE A NEW SANITARY SEWER FORCE MAIN IS CONNECTED TO AN EXISTING MANHOLE IN THE HARNETT COUNTY SEWER COLLECTIONS SYSTEM, THE UTILITY CONTRACTOR MUST PROVIDE A PROTECTIVE COATING (COAL TAR EPOXY) FOR THE INTERIOR SURFACES OF THE MANHOLE TO PROTECT IT AGAINST CORROSION, EROSION AND DETERIORATION FROM THE RELEASE OF SEWER GASES SUCH AS METHANE AND HYDROGEN SULFIDE.
- S. THE SEWER LIFT STATION DESIGN AND ASSOCIATED EQUIPMENT MUST MEET OR EXCEED THE MINIMUM REQUIREMENTS FOR HARNETT COUNTY SEWER LIFT STATIONS 2009 EDITION. EACH SANITARY SEWER LIFT STATION MUST BE CONSTRUCTED WITH AN ALL-WEATHER ACCESS ROAD THAT IS AT LEAST 20 FEET WIDE. THE LIFT STATION SITE MUST BE COVERED WITH WEED BLOCKING MATERIAL AND AT LEAST SIX (6") INCHES OF # 57 STONE (CRUSH AND RUN)
- T. ONCE A SEWER LIFT STATION HAS BEEN INSTALLED. THE UTILITY CONTRACTOR IS RESPONSIBLE TO SCHEDULE A DRAW DOWN TEST WITH HRW ENGINEERING AND COLLECTIONS STAFF, THE PROFESSIONAL ENGINEER (PE), THE ELECTRICIAN, THE ORIGINAL EQUIPMENT MANUFACTURER'S (OEM) REPRESENTATIVES [FOR BOTH THE PUMPS AND THE GENERATOR]. THIS DRAW DOWN TEST MUST BE COMPLETED WITH POWER SUPPLIED FROM THE ELECTRICAL UTILITY COMPANY AND WITH POWER SUPPLIED BY THE EMERGENCY GENERATOR WITH SATISFACTORY RESULTS BEFORE FINAL INSPECTIONS ARE CONDUCTED BY THE HRW UTILITY CONSTRUCTION
- ONCE THE UTILITY CONTRACTOR COMPLETES THE INSTALLATION OF A SEWER LIFT STATION. THE PROFESSIONAL ENGINEER (PE) MUST SUBMIT THE SEWER PERMIT CERTIFICATION AND AS-BUILT RECORD DRAWINGS TO THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES - DIVISION OF WATER OUALITY (NCDENR-DWO) AND HRW FOR FINAL APPROVAL. THE UTILITY CONTRACTOR MUST SUPPLY HRW ENGINEERING STAFF WITH THREE ORIGINAL OPERATION & MAINTENANCE (O&M) MANUALS ALONG WITH THE ASSOCIATED PUMP CURVES AND ELECTRICAL SCHEMATICS FOR THE ASSOCIATED SEWER LIFT STATION EQUIPMENT INCLUDING ALL WARRANTY INFORMATION AND DOCUMENTATION.
- ONCE THE UTILITY CONTRACTOR COMPLETES THE INSTALLATION OF A SEWER LIFT STATION. THE DEVELOPER MUST PAY HRW THE ESTABLISHED SYSTEM CONTROL AND DATA ACQUISITION (SCADA) FEES BEFORE THE SCADA SYSTEM WILL BE INSTALLED AT THE NEW SEWER LIFT STATION. THE SCADA SYSTEM MUST BE INSTALLED AND OPERATIONAL BEFORE THE UTILITIES MAY BE ACCEPTED BY HRW AND PLACED INTO OPERATION.

SHALL BE CONTACTED BEFORE MAKING THESE CHANGES.

TRENCH AT LEAST 24" ABOVE THE SEWER.

WATER LINE TO BE INSTALLED A MINIMUM OF 3 FEET BELOW GRADE.

FIRE HYDRANT VALVE AND ALL VALVE BOXES SHALL HAVE CONCRETE DONUT INSTALLED AT GRADE.

2. THE ENGINEER MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA; EITHER IN SERVICE

ALTHOUGH, HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE

OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES ARE IN THE EXACT LOCATION AS INDICATED.

THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION SO THAT CONTRACTOR IS FAMILIAR AND UNDERSTANDS EXISTING CONDITIONS.

WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWERS UNLESS LOCAL CONDITIONS OR BARRIERS

7. WHERE A WATER MAIN CROSSES OVER A SEWER, MAINTAIN AT LEAST 24" VERTICAL SEPARATION BETWEEN THE PIPES. IF AN 24" VERTICAL

THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FT ON EACH SIDE OF THE POINT OF CROSSING.

FIELD CHANGES MAY BE NECESSARY DUE TO EXISTING UTILITY LOCATIONS. THE ENGINEER AND HARNETT COUNTY DEPARTMENT OF PUBLIC UTILITIES

PREVENT A 10-FOOT LATERAL SEPARATION, IN WHICH CASE A VERTICAL SEPARATION OF AT LEAST 24" SHALL BE MAINTAINED BY EITHER LAYING THE

WATER MAIN IN A SEPARATE TRENCH WITH THE BOTTOM AT LEAST 24" ABOVE THE SEWER OR LAYING THE WATER MAIN ON A BENCH IN THE SAME

SEPARATION IS NOT POSSIBLE, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS (DIP) AND WITH JOINTS

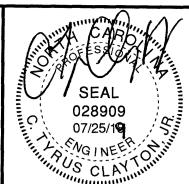
8. WHERE A WATER MAIN CROSSES UNDER A SEWER, MAINTAIN AT LEAST 24" VERTICAL SEPARATION BETWEEN THE PIPES. BOTH THE WATER MAIN AND

DISTANCE OF 10 FT ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.

SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS (DIP) AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A

GENERAL UTILITY NOTES

- W. HRW REQUIRES THE UTILITY CONTRACTOR TO PROVIDE ALL NECESSARY EQUIPMENT AND DEVICES FOR THE TESTING AND INSPECTION OF THE SANITARY SEWER SYSTEM. THE EQUIPMENT AND DEVICES MAY INCLUDE BUT NOT LIMITED TO LAMPING WITH MIRRORS, MANDRELS, SEWER BALLS, PLUGS, AIR COMPRESSORS AND ASSOCIATED COMPRESSED AIR LINES. IF THE HRW UTILITY CONSTRUCTION INSPECTOR DEEMS THAT A CLOSED CIRCUIT VIDEO CAMERA INSPECTION OF THE NEWLY CONSTRUCTED SEWER SYSTEM IS NECESSARY, THEN ALL COSTS FOR THE CLOSED CIRCUIT CAMERA INSPECTION WILL BE THE RESPONSIBILITY OF THE UTILITY CONTRACTOR. ALL CLOSED CIRCUIT VIDEO CAMERA INSPECTIONS MUST BE RECORDED ON VHS TAPES THAT WILL RELEASED TO HRW FOR RECORD KEEPING, REVIEW AND APPROVAL OF THE SEWER SYSTEM.
- X. ANY USE OF SEWER PLUGS TO TEMPORARILY BLOCK HARNETT COUNTY'S EXISTING SANITARY SEWER LINES MUST BE COORDINATED WITH THE HRW COLLECTIONS SUPERVISOR AT LEAST TWO (2) DAYS IN ADVANCE OF INSTALLING THE PLUGS. THE SEWER PLUGS MUST BE REMOVED AS SOON AS POSSIBLE ONCE THE NEW SANITARY SEWER LINES HAVE BEEN INSPECTED, PRESSURE TESTED, MANDREL TESTED, APPROVED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES - DIVISION OF WATER QUALITY (NCDENR-DWQ) AND ACCEPTED BY HRW TO ALLOW THE SEWER TO FLOW AS DESIGNED IN HARNETT COUNTY'S EXISTING SANITARY SEWER LINES OR WHEN SO ORDERED BY THE HRW COLLECTIONS SUPERVISOR TO LIMIT INTERRUPTIONS TO THE NORMAL FLOW OF THE SANITARY SEWER COLLECTION SYSTEM(S). THE UTILITY CONTRACTOR MUST PROVIDE THE PUMPS HOSES AND NECESSARY CONNECTORS FOR A TEMPORARY PUMP AROUND SETUP IF REQUIRED BY THE HRW COLLECTIONS SUPERVISOR. MR RANDOLPH CLEGG, HRW COLLECTIONS SUPERVISOR MAY BE CONTACTED BETWEEN 8:00 AM AND 5:00 PM MONDAY THROUGH FRIDAY AT (910) 893-7575 EXTENSION
- Y. THE UTILITY CONTRACTOR WILL BE RESPONSIBLE FOR ANY AND ALL REPAIRS DUE TO LEAKAGE OR DAMAGE RESULTING FROM POOR WORKMANSHIP DURING THE ONE (1) YEAR WARRANTY PERIOD ONCE THE SEWER SYSTEM IMPROVEMENTS HAVE BEEN APPROVED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES - DIVISION OF WATER QUALITY (NCDENR-DWQ) AND ACCEPTED BY HRW. THE UTILITY CONTRACTOR WILL BE RESPONSIBLE FOR ANY AND ALL REPAIRS DUE TO DAMAGES RESULTING FROM FAILURE TO LOCATE THE NEW SANITARY SEWER LINES AND ASSOCIATED APPURTENANCES FOR OTHER UTILITIES AND THEIR CONTRACTORS UNTIL THE SANITARY SEWER LINES HAVE BEEN APPROVED BY NCDENR AND ACCEPTED BY HRW. HRW WILL PROVIDE MAINTENANCE AND WARRANTY REPAIRS IF NECESSARY DUE TO LACK OF RESPONSE WITHIN 48 HOURS OF NOTIFICATION OF WARRANTY WORK. HRW WILL INVOICE THE DEVELOPER AND/OR UTILITY CONTRACTOR FOR MATERIALS AND LABOR IN SUCH CASES.
- Z. IN DEVELOPMENTS AND PROJECTS THAT REQUIRE UTILITY EASEMENTS TO BE ESTABLISHED FOR FUTURE HRW RIGHT-OF-WAY, THE REGISTERED LAND SURVEYOR (RLS) MUST PROVIDE THE HRW RIGHT-OF-WAY AGENT WITH AN OFFICIAL COPY OF THE RECORDED PLAT AND LEGAL DESCRIPTION OF THE SAID EASEMENT AS RECORDED WITH THE HARNETT COUNTY REGISTER OF DEEDS. THE RECORDED DOCUMENTS MUST BE PROVIDED TO THE HRW RIGHT-OF-WAY AGENT BEFORE THE UTILITY IMPROVEMENTS WITHIN THE SAID EASEMENT CAN BE PLACED INTO OPERATION. ANY AND ALL EASEMENTS THAT MUST BE OBTAINED FROM ADJOINING PROPERTY OWNERS MUST BE PROVIDED TO HRW BY THE DEVELOPER AT NO COST TO HARNETT COUNTY. THE FINAL INSPECTION OF ALL SANITARY SEWER SYSTEM IMPROVEMENTS CANNOT BE SCHEDULED WITH HRW UNTIL THE STREETS HAVE BEEN PAVED; THE RIGHTS-OF-WAY AND UTILITY EASEMENTS HAVE BEEN SEEDED AND STABILIZED WITH AN ADEQUATE STAND OF GRASS IN PLACE TO PREVENT
- AA. THE ENGINEER OF RECORD IS RESPONSIBLE TO INSURE THAT CONSTRUCTION IS, AT ALL TIMES, IN COMPLIANCE WITH ACCEPTED SANITARY ENGINEERING PRACTICES AND APPROVED PLANS AND SPECIFICATIONS. NO FIELD CHANGES TO THE APPROVED PLANS ARE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL BY HRW. A COPY OF EACH ENGINEER'S FIELD REPORT IS TO BE SUBMITTED TO HRW AS EACH SUCH INSPECTION IS MADE ON SYSTEM IMPROVEMENTS OR TESTING IS PERFORMED BY THE CONTRACTOR. WATER AND SEWER INFRASTRUCTURE MUST PASS ALL TESTS REQUIRED BY HRW SPECIFICATIONS AND THOSE OF ALL APPLICABLE REGULATORY AGENCIES. THESE TESTS INCLUDE, BUT ARE NOT LIMITED TO: AIR TEST, VACUUM TEST, MANDREL TEST, VISUAL TEST, PRESSURE TEST, BACTERIOLOGICAL TEST, ETC. A HRW INSPECTOR MUST BE PRESENT DURING TESTING AND ALL TEST RESULTS SHALL BE SUBMITTED TO HRW. ALL TESTS MUST BE SATISFIED BEFORE THE FINAL INSPECTION WILL BE SCHEDULED WITH THE HRW INSPECTOR. THE ENGINEER OF RECORD MUST REQUEST IN WRITING TO SCHEDULE THE FINAL INSPECTION ONCE ALL CONSTRUCTION IS COMPLETE. THE DEVELOPER'S ENGINEER OF RECORD AND THE HRW UTILITY CONSTRUCTION INSPECTOR SHALL PREPARE A WRITTEN PUNCH LIST OF ANY DEFECTS OR DEFICIENCIES NOTED DURING THE FINAL INSPECTION, SHOULD ANY EXIST. UPON COMPLETION OF THE PUNCH LIST, THE DEVELOPER'S ENGINEER OF RECORD WILL SCHEDULE ANOTHER INSPECTION. IN THE EVENT THE NUMBER OF INSPECTIONS PERFORMED BY THE HRW EXCEEDS TWO, ADDITIONAL FEES MAY BE ACCESSED TO THE DEVELOPER.



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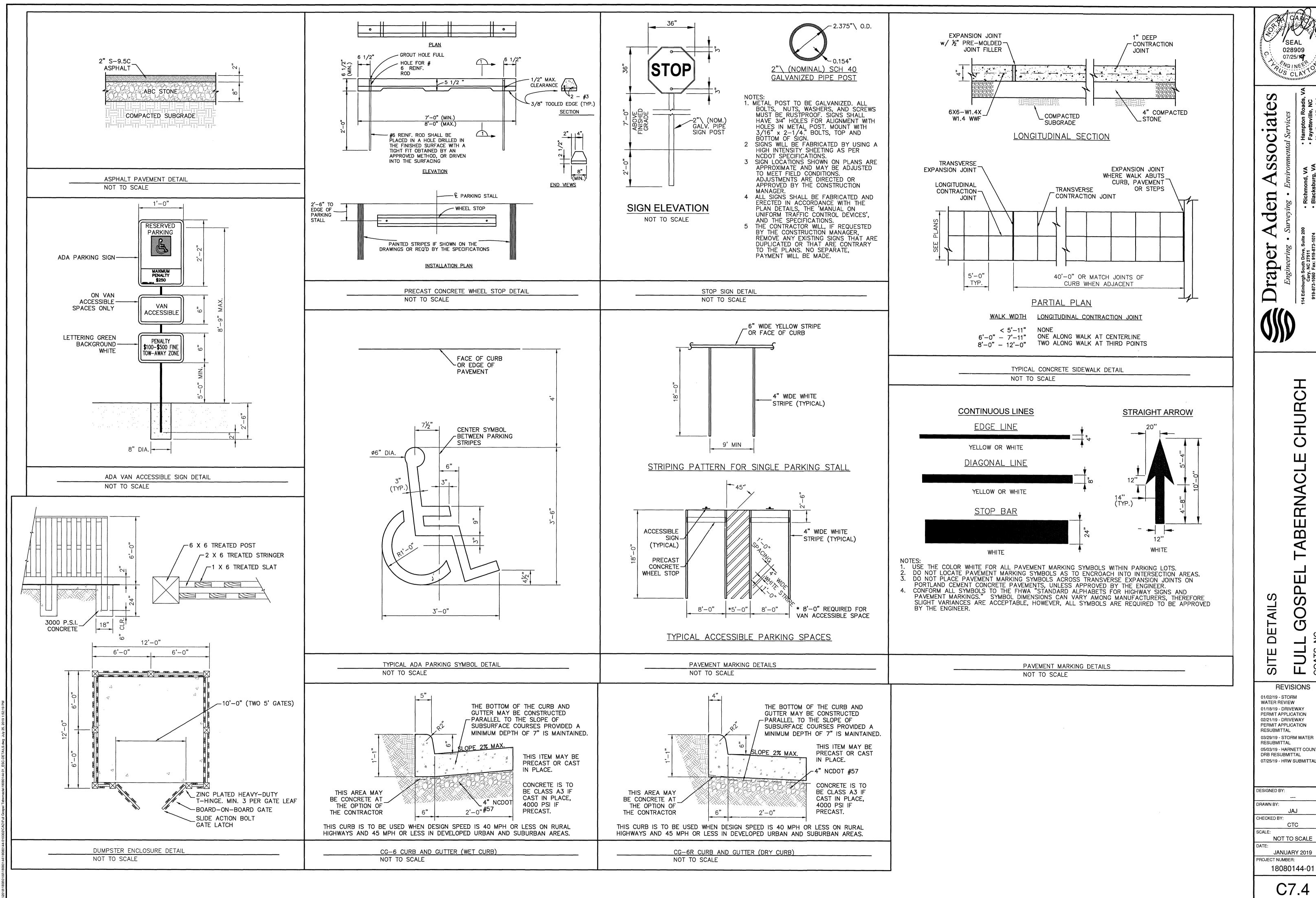
01/02/19 - STORM WATER REVIEW 01/18/19 - DRIVEWAY PERMIT APPLICATION 02/21/19 - DRIVEWAY PERMIT APPLICATION

RESUBMITTAL 03/29/19 - STORM WATER RESUBMITTAL 05/03/19 - HARNETT COUNTY DRB RESUBMITTAL 07/25/19 - HRW SUBMITTAL

ESIGNED BY: PRAWN BY: CHECKED BY:

NOT TO SCALE JANUARY 2019

OJECT NUMBER: 18080144-01





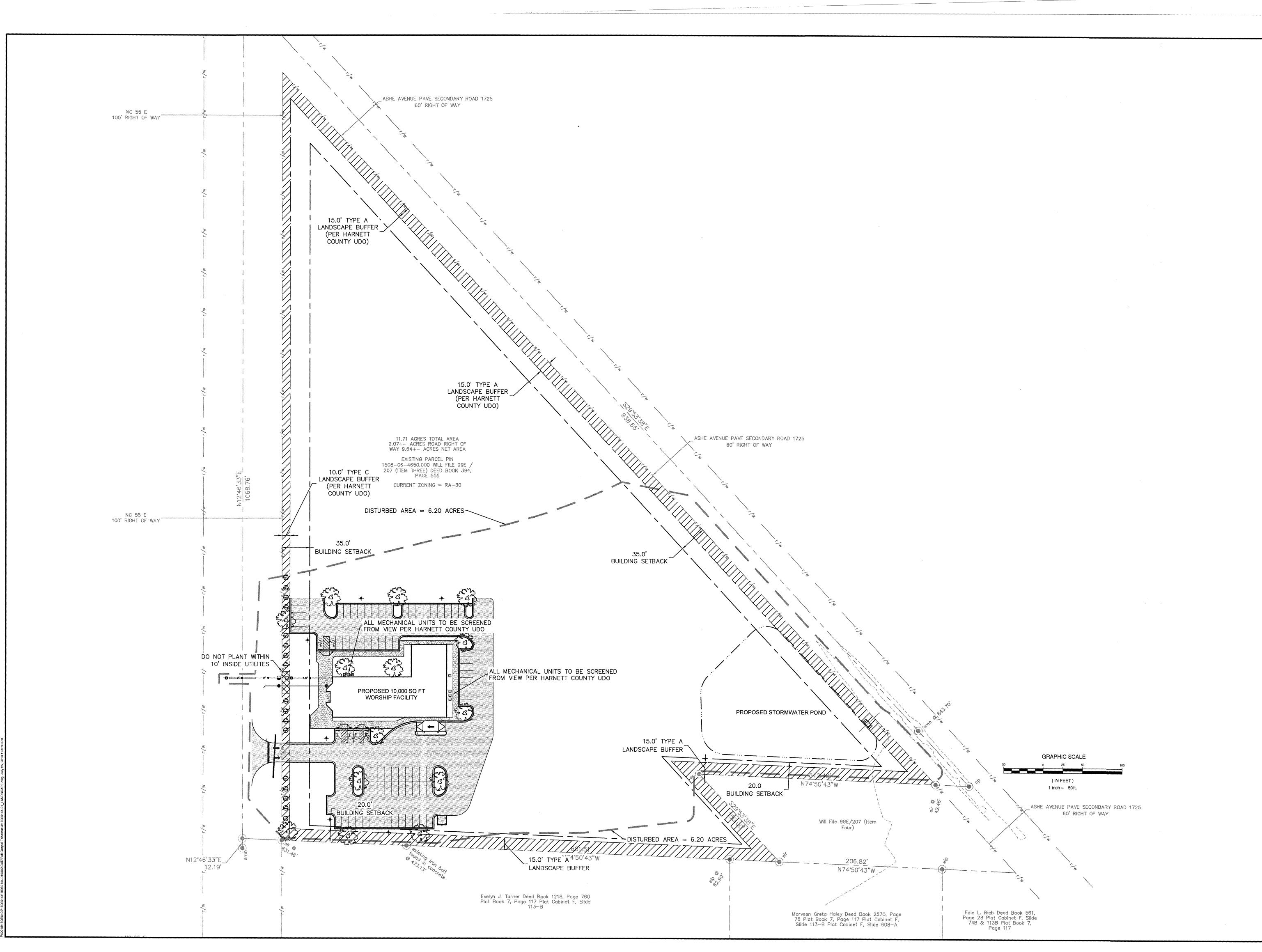
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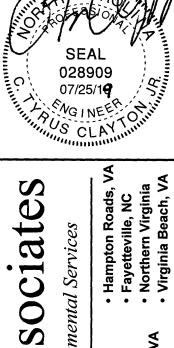
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LANDSCAPE PLAN

FULL GOSPEL TABERNACLE CHURCH

COATS, NC

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PERMIT APPLICATION

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DESIGNED BY:

APM

DRAWN BY:

JAJ

CHECKED BY:
CTC
SCALE:

1" = 50'

DATE:

JANUARY 2019

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18080144-01