WAXHAW STORAGE

1152 N. BROOME ST.
TOWN OF WAXHAW, NC

SHEET INDEX:

SHEET NO. C0.0	COVER SHEET
SHEET NO. C1.0	SITE PLAN
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SHEET NO. C5.1	DETAILS
SHEET NO. C5.2	DETAILS
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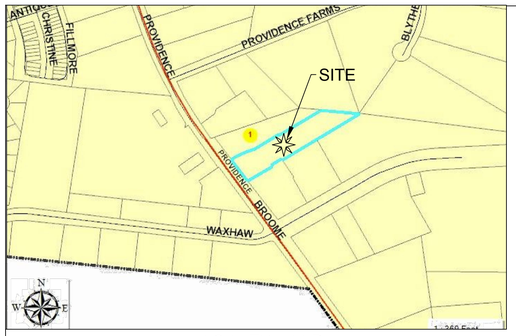
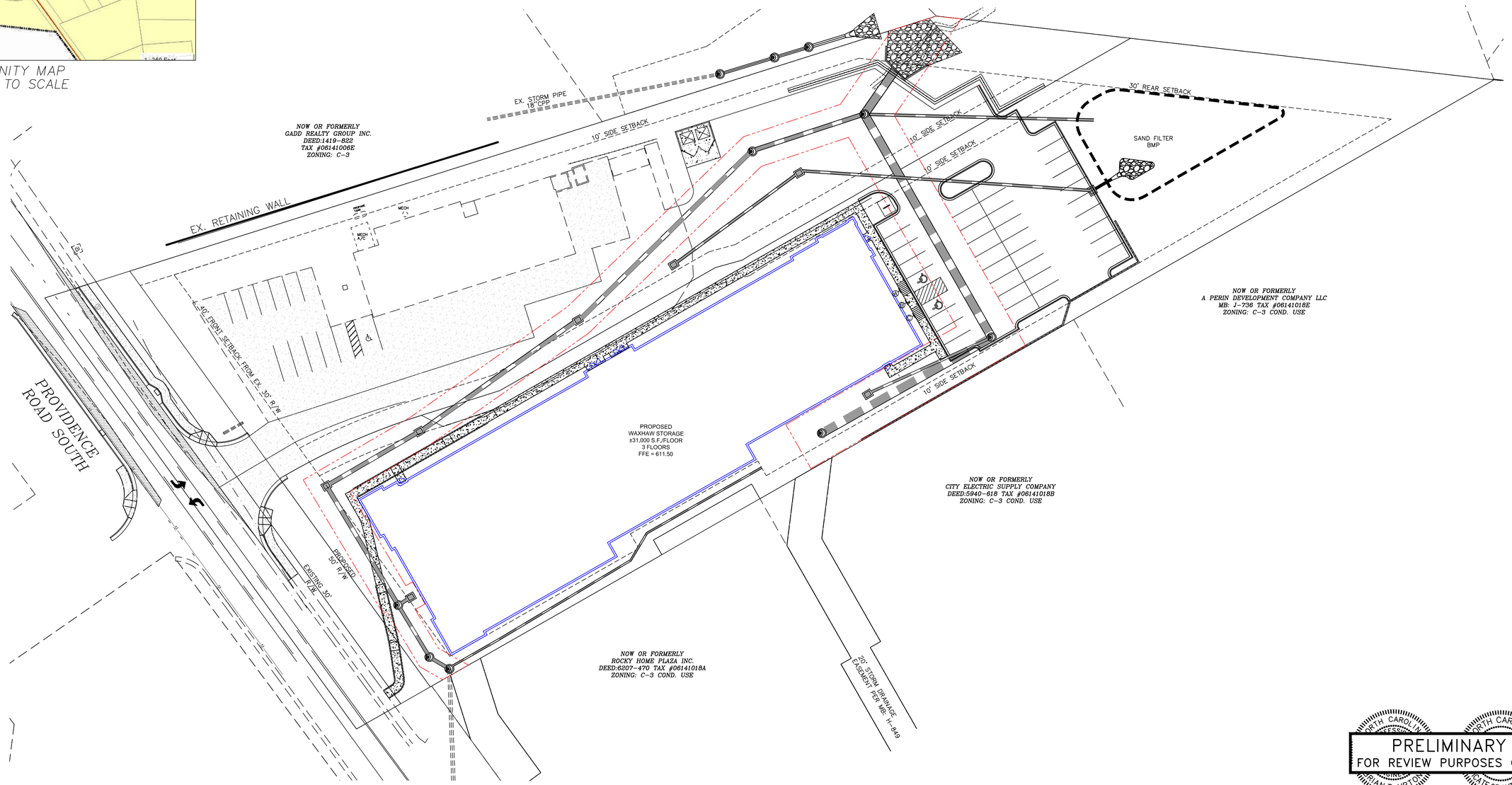


VICINITY MAP
NOT TO SCALE



PRELIMINARY
FOR REVIEW PURPOSES ONLY

ENGINEER

THE ISAACS GROUP, P.C.
8720 RED OAK BLVD SUITE 420
CHARLOTTE, NORTH CAROLINA 28217
PHONE: 704-527-3440
FAX: 704-527-8335

OWNER

WAXHAW STORAGE, LLC
1152 N. BROOME ST.
WAXHAW, NC 28173

GRAPHIC SCALE

30 0 15 30 60

1 INCH = 30 FEET

NO.	BY	DATE	REVISION

Project: WAXHAW STORAGE
1152 N. BROOME ST.
WAXHAW, NORTH CAROLINA

Title: COVER SHEET

File #: 19166-PB.DWG	Date: 09/24/19	Project Egr:	BTU
		Design By:	BTU
		Drawn By:	MPB
		Scale:	1"=30'

THE ISAACS GROUP
CIVIL ENGINEERING DESIGN AND SURVEYING

8720 RED OAK BOULEVARD, SUITE 420
CHARLOTTE, N.C. 28217
PHONE (704) 527-3440 FAX (704) 527-8335

C0.0

ZONING CODE SUMMARY

PROJECT NAME: WAXHAW STORAGE
OWNER/AGENT: WAXHAW STORAGE, LLC TAX MAP:
PLANS PREPARED BY: THE ISAACS GROUP, P.C. PHONE #: 704-527-3440
TAX PARCEL MAP: 06-141-046B
ZONING: C-3 – GEN. COMMERCIAL JURISDICTION: TOWN OF WAXHAW
PROPOSED USE: INDOOR STORAGE
LOT SIZE: 59,677/1.37 SQ. FEET/ACRES NUMBER OF UNITS/SUITES: 1

YARD REQUIREMENTS:
FRONT SETBACK: 40 FT. FROM R/W
SIDE SETBACK 10 FT.
REAR SETBACK: 30 FT.

BUILDING HEIGHT: 48'-8" FEET STORIES: 3
MAX BLDG HEIGHT: 80.0' FEET

GROSS FLOOR AREA: 93,045 SQ. FEET

ZONING INFORMATION

PARKING DATA:
REQ'D: MAX 0.25 SPACES PER 1000 SF GFA = (93,045 SF/1,000 SF) X 0.25 SPACES
MAX. ALLOWED: 24

EX. PARKING FOR HENN AUTOMOTIVE BUILDING
12 SPACES (INCLUDING 1 ACCESSIBLE SPACE)

PROP. TOTAL SPACES PROVIDED: 18 SPACES
INCLUDING 2 ACCESSIBLE SPACES (1 VAN ACCESSIBLE)
PROP. HENN AUTOMOTIVE PARKING LOCATED ON PARCEL
2 AS PART OF SHARED PARKING AGREEMENT: 23 SPACES

BUILDING NOTE

REFER TO ARCHITECTURAL PLANS
FOR ACTUAL BUILDING DIMENSIONS.

SIGN SCHEDULE

Ⓐ RESERVED PARKING–MAX PENALTY (PER LOCAL CODE) (MUTCD R7–8 & R7–8D)

Ⓑ NO PARKING: DISABLED PASSENGER LOADING SIGN (MUTCD R7–1)

Ⓒ VAN ACCESSIBLE HANDICAPPED PARKING SIGN (MUTCD R7–8, R7–8A, & R7–8D)

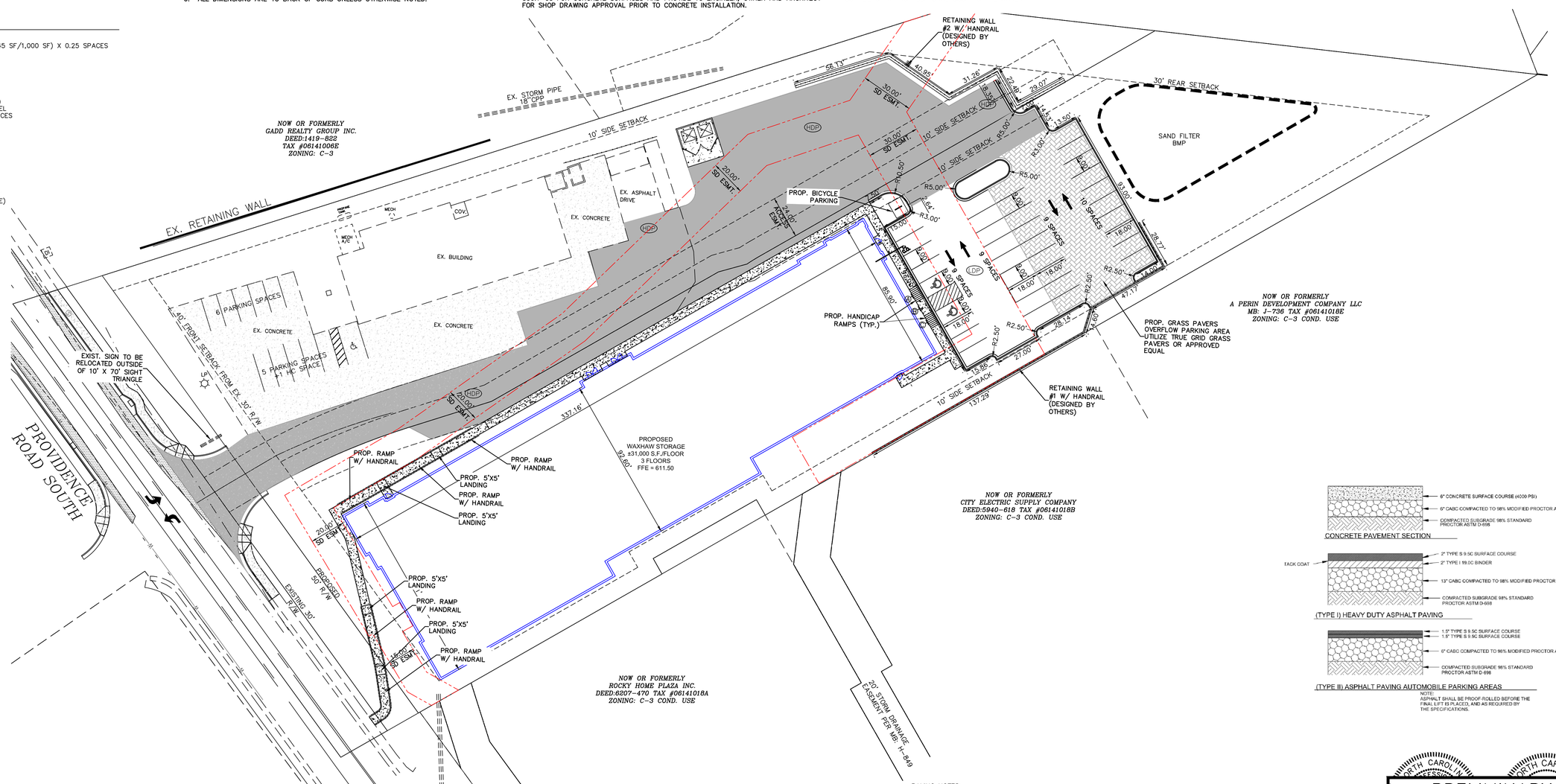
Ⓓ STOP SIGN (30"x30")

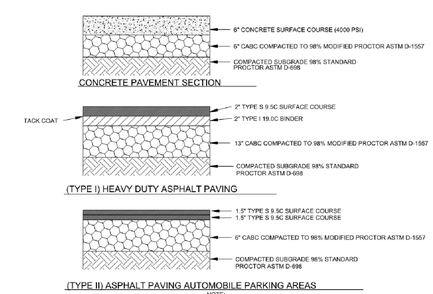
LEGEND

- PROPOSED CONCRETE SIDEWALK
- (HDP) PROPOSED HEAVY DUTY ASPHALT PAVING
- (LDP) PROPOSED LIGHT DUTY ASPHALT PAVING
- PROPOSED GRASS PAVERS

NOTES:

1. THE UTILITIES SHOWN ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THIS PLAN; THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONFLICTS BETWEEN EXISTING UTILITIES AND PROPOSED EXCAVATION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
2. PROVIDE MINIMUM OF 48 HOUR NOTICE TO OWNER OR REPRESENTATIVE PRIOR TO INTERRUPTION OF ANY EXISTING UTILITY, IF BEING UTILIZED.
3. THE CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY UTILITIES DAMAGED DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL USE EXTREME CARE WHEN WORKING NEAR ALL UNDERGROUND AND OVERHEAD UTILITIES.
5. HANDICAP SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH A.D.A STANDARDS AT H/C PARKING SPACES SHOWN.
6. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
7. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL NECESSARY PERMITS AND APPROVALS HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION. THESE PERMITS AND APPROVALS MAY INCLUDE BUT ARE NOT LIMITED TO GRADING, DEMOLITION, ZONING, BUILDING, DRIVEWAY, DETENTION, SUBDIVISION, SPECIAL USE, SEWER AND WATER.
8. ALL FILL USED FOR RAISING SITE GRADES OR FOR REPLACEMENT OF MATERIAL THAT IS UNDERCUT SHOULD BE UNIFORMLY COMPACTED IN THIN LIFTS TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698). IN ADDITION, AT LEAST THE UPPER 18 INCHES OF SUBGRADE FILL BENEATH PAVEMENTS AND FLOOR SLABS AND 24 INCHES BELOW PAVEMENTS SUBJECT TO TRUCK TRAFFIC SHOULD BE COMPACTED TO 100 PERCENT OF THE SAME SPECIFICATION. THE ABOVE COMPACTION SPECIFICATION IS A RECOMMENDATION ONLY, SPECIFIC PAVEMENT OR FLOOR SLAB DESIGNS MAY REQUIRE A DIFFERENT COMPACTION STANDARD. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SITE WORK MEASURES IN STRICT ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS IN THE PROJECT SOILS REPORT AND/OR ON-SITE RECOMMENDATIONS PROVIDED BY A QUALIFIED GEOTECHNICAL ENGINEER DURING CONSTRUCTION.
9. UNLESS SPECIFIED/DETAILED WITHIN THE CONTRACT DRAWINGS, CONTRACTOR SHALL PREPARE A CONCRETE JOINT LAYOUT PLAN IN ACCORDANCE WITH ACI 224.3R–95 OR ACI 330.1–03 FOR CONCRETE SURFACES AND PROVIDE TO ENGINEER, OWNER AND ARCHITECT FOR SHOP DRAWING APPROVAL PRIOR TO CONCRETE INSTALLATION.
10. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD DIMENSIONS AND SHALL REPORT ANY DISCREPANCIES BETWEEN THE PLANS AND ACTUAL FIELD CONDITIONS TO THE OWNER OR OWNER'S REPRESENTATIVE IMMEDIATELY.
11. CONTRACTOR SHALL PROVIDE SMOOTH TRANSITIONS FROM PROPOSED FEATURES TO EXISTING FEATURES AS NECESSARY.
12. ALL DISTURBED AREAS SHALL BE SEEDED OR SODDED AFTER FINISH GRADING IS COMPLETED UNLESS OTHERWISE NOTED. ALL NEW SEEDED OR SODDED AREAS SHALL HAVE A TOPSOIL LAYER OF 4" MINIMUM. TOP OF TOPSOIL LAYER SHALL BE PLACED 1" BELOW TOPS OF CURBS, WALKS, OR PAVEMENT ELEVATIONS WHERE TOPSOIL ABUTS THOSE AREAS.
13. CONTRACTOR SHALL SUPPLY AND PLACE STRAW MULCH WHEREVER GRASS SEED HAS BEEN PLACED.
14. CONTRACTOR SHALL REPAIR, RESURFACE, RECONSTRUCT OR REFURBISH ANY AREAS DAMAGED DURING CONSTRUCTION BY THE CONTRACTOR, HIS SUBCONTRACTORS OR SUPPLIERS AT NO ADDITIONAL COST TO THE OWNER.
17. ALL LIGHTING SHALL COMPLY WITHT THE STANDARDS SPECIFIED IN SECTION 12 OF THE TOWN OF WAXHAW U.D.O.
18. ALL USES ALLOWED BY RIGHT OR BY RIGHT WITH SUPPLEMENTAL REGULATIONS IN THE C–3 ZONING DISTRICT, SHALL BE PERMITTED BY RIGHT.
19. ALL PROPOSED SIGNS WILL BE PERMITTED SEPARATELY





PAVING NOTES:

1. ALL FILL USED FOR RAISING SITE GRADES OR FOR REPLACEMENT OF MATERIAL THAT IS UNDERCUT SHOULD BE UNIFORMLY COMPACTED IN THIN LIFTS TO AT LEAST 98 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698). IN ADDITION, AT LEAST THE UPPER 18 INCHES OF SUBGRADE FILL BENEATH PAVEMENTS AND FLOOR SLABS AND 24 INCHES BELOW PAVEMENTS SUBJECT TO TRUCK TRAFFIC SHOULD BE COMPACTED TO 98 PERCENT OF THE SAME SPECIFICATION. THE ABOVE COMPACTION SPECIFICATION IS A RECOMMENDATION ONLY, SPECIFIC PAVEMENT OR FLOOR SLAB DESIGNS MAY REQUIRE A DIFFERENT COMPACTION STANDARD. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SITE WORK MEASURES IN STRICT ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS IN THE PROJECT SOILS REPORT AND/OR ON–SITE RECOMMENDATIONS PROVIDED BY A QUALIFIED GEOTECHNICAL ENGINEER DURING CONSTRUCTION.

2. PAVEMENT SPECIFICATIONS LISTED ABOVE ARE RECOMMENDATIONS ONLY AND ARE SUBJECT TO CHANGE BASED UPON PROJECT CONDITIONS OR RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT. PRIOR TO COMMENCEMENT OF PAVING, THE OWNER OR CONTRACTOR SHOULD HIRE A GEOTECHNICAL ENGINEER TO PROVIDE A PAVEMENT DESIGN BASED UPON ANTICIPATED VEHICULAR TRAFFIC AND PROJECT SOIL CONDITIONS. THE ISAACS GROUP ASSUMES NO RESPONSIBILITY FOR THE ADEQUACY OF THE PAVEMENT SPECIFICATION PROVIDED ABOVE.

3. CONCRETE JOINTS SHALL BE DESIGNED PER ACI 224.3R AND/OR ACI 330. CONTRACTOR SHALL DESIGN JOINTS AND SUBMIT TO ENGINEER OR ARCHITECT FOR APPROVAL PRIOR TO CONSTRUCTION.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL — BRIAN T. UPTON — CERTIFICATE OF AUTHORIZATION

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C1.0

Plant Schedule

QTY	SYMBOL	SIZE	BOTANICAL NAME	COMMON NAME	ROOT	SPACING	COMMENT
			OVERSTORY TREES				
9	WO	2" CAL.	Quercus phellos	WILLOW OAK	B & B	AS SHOWN	8 FOOT CLEAR TRUNK
10	LE	2" CAL.	Ulmus parvifolia	LACEBARK ELM	B & B	AS SHOWN	8 FOOT CLEAR TRUNK
7	SRM	2" CAL.	Acer rubrum "Franksred'	RED SUNSET MAPLE	B & B	AS SHOWN	8 FOOT CLEAR TRUNK
			ORNAMENTAL TREES				
3	RRC	#15	Lagerstroemia 'PIILAG III' PPAF'	RED ROOSTER® CRAPE MYRTLE	CONT.	AS SHOWN	
9	NC	3" CAL.	Lagerstroemia 'NATCHEZ'	NATCHEZ CRAPE MYRTLE	B&B	AS SHOWN	SINGLE STEM
			SHRUBS				
18	DYH	# 7	Ilex vomitoria 'nana'	DWARF YAUPON HOLLY	CONT.	AS SHOWN	
17	AAA	#7	Azalea x Conlec 'Autumn angel'	AUTUMN ANGEL ENCORE AZALEA	CONT.	AS SHOWN	
15	ARA	#7	Azalea x Conlec 'Autumn royalty'	AUTUMN ROYALTY ENCORE AZALEA	CONT.	AS SHOWN	
120	DBH	#7	Ilex cornuta 'Dwarf burford'	DWARF BURFORD HOLLY	CONT.	AS SHOWN	
64	PDL	#7	Loropetalum chinenses 'Purple diamond'	PURPLE DIAMOND LOROPETALUM	CONT.	AS SHOWN	

ZONING: C-3

LANDSCAPING:

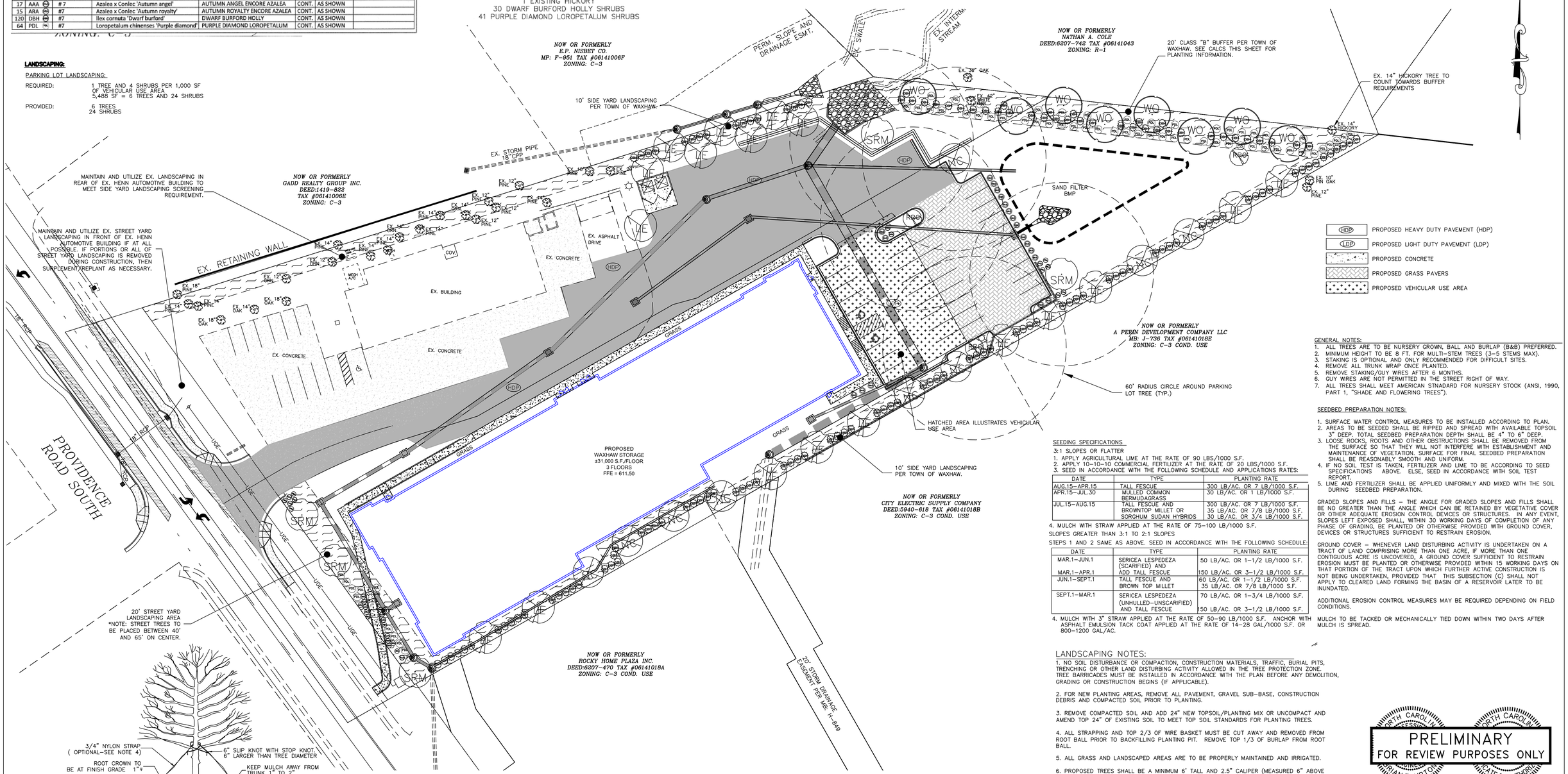
PARKING LOT LANDSCAPING:

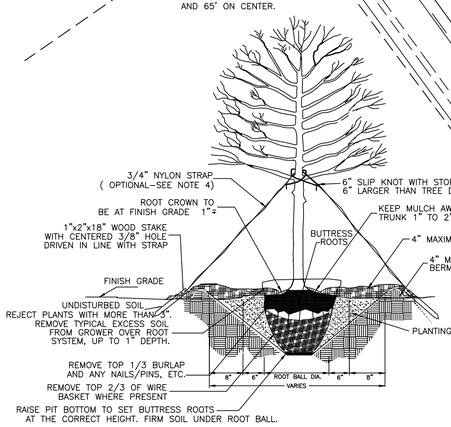
REQUIRED: 1 TREE AND 4 SHRUBS PER 1,000 SF OF VEHICULAR USE AREA
5,488 SF = 6 TREES AND 24 SHRUBS

PROVIDED: 6 TREES
24 SHRUBS

CLASS "B" BUFFER TREES CALCULATION
L.F. OF CLASS "B" BUFFER: 216.71 FT
3 TREES AND 30 SHRUBS REQUIRED PER 100 LINEAR FT.
(216.71/100) x 3 = 7 TREES REQUIRED
7 TREES PROVIDED IN BUFFER
(216.71/100) x 30 = 66 SHRUBS REQUIRED
71 SHRUBS PROVIDED IN BUFFER

CLASS "B" BUFFER TREE & SHRUB BREAKDOWN
6 LARGE MATURING WILLOW OAK
1 EXISTING HICKORY
30 DWARF BURFORD HOLLY SHRUBS
41 PURPLE DIAMOND LOROPETALUM SHRUBS





ALL TREES SHALL MEET AMERICAN STANDARD FOR NURSERY STOCK (AMSI, 1990, PART 1, "SHADE AND FLOWERING TREES")

FOR EXAMPLE: CALIPER	HEIGHT (RANGE)	MAX. HEIGHT	MIN. ROOT BALL DIA.	MIN. ROOT BALL DEPTH
2"	12-14'	16'	24"	16"
3"	14-16'	18'	32"	21"

TREE PLANTING (FOR SINGLE & MULTI-STEM TREES)

NOTES:
1. REMOVE WIRE OR NYLON TWINE FROM BALL.
2. SOAK ROOT BALL AND PLANT PIT IMMEDIATELY AFTER INSTALLATION.
3. SEE ATTACHED LANDSCAPE CONSTRUCTION STANDARDS FOR OTHER PLANTING REQUIREMENTS.
4. STAKING REQUIRED FOR LEANING TREES OR AS REQUIRED BY CONTRACT. SEE GENERAL NOTES: SEC. 04100-TREE PLANTING, PART 3 PARAGRAPH B.9.
5. MINIMUM TREE SIZE: SINGLE STEM 2" CALIPER; 8' TALL
6. MINIMUM TREE SIZE: MULTI-STEM 3-5 STEMS; 8' TALL

MACHINE IS USED, JOINT SPACING MAY BE ALTERED BY THE ENGINEER OR FORMED BY OTHER APPROVED METHODS. WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1 1/2" SHALL BE AND ADJACENT TO ALL RIGID OBJECTS. JOINTS SHALL MATCH LOCATIONS

LANDSCAPING MAINTENANCE PLAN:

"THE OWNERS OF THE PROPERTY AND THEIR AGENTS, HEIRS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE INSTALLATION, PRESERVATION, AND MAINTENANCE OF ALL PLANTING AND PHYSICAL FEATURES SHOWN ON THIS PLAN. THE OWNERS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE VEGETATION, INCLUDING BUT NOT LIMITED TO:
1. FERTILIZATION
2. PRUNING
3. PEST CONTROL
4. MULCHING
5. MOWING (IF ANY)
6. PROTECTION OF THE ROOT ZONES FROM EQUIPMENT, CONSTRUCTION AND STORAGE OF MATERIALS
7. WATERING
8. OTHER CONTINUING MAINTENANCE OPERATIONS
FAILURE TO MAINTAIN ALL PLANTINGS IN ACCORDANCE WITH THIS PLAN SHALL CONSTITUTE A VIOLATION OF THE UDO AND MAY RESULT IN FINES."

EXISTING TOPOGRAPHY NOTE:
1. EXISTING TOPOGRAPHY FOR THIS PARCEL HAS BEEN TAKEN FROM PLANS PREPARED BY YARBOROUGH-WILLIAMS & HOULE.

SEEDING SPECIFICATIONS

3:1 SLOPES OR FLATTER
1. APPLY AGRICULTURAL LIME AT THE RATE OF 90 LBS/1000 S.F.
2. APPLY 10-10-10 COMMERCIAL FERTILIZER AT THE RATE OF 20 LBS/1000 S.F.
3. SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE AND APPLICATIONS RATES:

DATE	TYPE	PLANTING RATE
AUG.15-APR.15	TALL FESCUE	300 LB/AC. OR 7 LB/1000 S.F.
APR.15-JUL.30	MULLED COMMON BERMUDAGRASS	30 LB/AC. OR 1 LB/1000 S.F.
JUL.15-AUG.15	TALL FESCUE AND BROWNTOP MILLET OR SORGHUM SUDAN HYBRIDS	300 LB/AC. OR 7 LB/1000 S.F. 35 LB/AC. OR 7/8 LB/1000 S.F. 30 LB/AC. OR 3/4 LB/1000 S.F.

4. MULCH WITH STRAW APPLIED AT THE RATE OF 75-100 LB/1000 S.F.

SLOPES GREATER THAN 3:1 TO 2:1 SLOPES

STEPS 1 AND 2 SAME AS ABOVE. SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

DATE	TYPE	PLANTING RATE
MAR.1-JUN.1	SERICEA LESPEDEZA (SCARIFIED) AND	50 LB/AC. OR 1-1/2 LB/1000 S.F.
MAR.1-APR.1	ADD TALL FESCUE	150 LB/AC. OR 3-1/2 LB/1000 S.F.
JUN.1-SEPT.1	TALL FESCUE AND BROWN TOP MILLET	60 LB/AC. OR 1-1/2 LB/1000 S.F. 35 LB/AC. OR 7/8 LB/1000 S.F.
SEPT.1-MAR.1	SERICEA LESPEDEZA (UNHULLED-UNSCARIFIED) AND TALL FESCUE	70 LB/AC. OR 1-3/4 LB/1000 S.F. 150 LB/AC. OR 3-1/2 LB/1000 S.F.

4. MULCH WITH 3" STRAW APPLIED AT THE RATE OF 50-90 LB/1000 S.F. ANCHOR WITH ASPHALT EMULSION TACK COAT APPLIED AT THE RATE OF 14-28 GAL/1000 S.F. OR 800-1200 GAL/AC.

LANDSCAPING NOTES:

1. NO SOIL DISTURBANCE OR COMPACTION, CONSTRUCTION MATERIALS, TRAFFIC, BURIAL PITS, TRENCHING OR OTHER LAND DISTURBING ACTIVITY ALLOWED IN THE TREE PROTECTION ZONE. TREE BARRICADES MUST BE INSTALLED IN ACCORDANCE WITH THE PLAN BEFORE ANY DEMOLITION, GRADING OR CONSTRUCTION BEGINS (IF APPLICABLE).

2. FOR NEW PLANTING AREAS, REMOVE ALL PAVEMENT, GRAVEL SUB-BASE, CONSTRUCTION DEBRIS AND COMPACTED SOIL PRIOR TO PLANTING.

3. REMOVE COMPACTED SOIL AND ADD 24" NEW TOPSOIL/PLANTING MIX OR UNCOMPACT AND AMEND TOP 24" OF EXISTING SOIL TO MEET TOP SOIL STANDARDS FOR PLANTING TREES.

4. ALL STRAPPING AND TOP 2/3 OF WIRE BASKET MUST BE CUT AWAY AND REMOVED FROM ROOT BALL PRIOR TO BACKFILLING PLANTING PIT. REMOVE TOP 1/3 OF BURLAP FROM ROOT BALL.

5. ALL GRASS AND LANDSCAPED AREAS ARE TO BE PROPERLY MAINTAINED AND IRRIGATED.

6. PROPOSED TREES SHALL BE A MINIMUM 6' TALL AND 2.5" CALIPER (MEASURED 6" ABOVE GROUND) UPON PLANTING AND SHALL REACH A MINIMUM MATURE HEIGHT OF 35'.

7. BLACK PLASTIC EDGING SHALL SEPARATE ALL SHRUB BEDS.
(PROVIDE RADIUSES ON EDGING IN LIEU OF HARD SHARP ANGLES AT CORNERS)

INTERIOR PLANTING REQUIREMENTS
SCREENING SHALL BE PROVIDED ALONG THE PARKING LOT THROUGH SHRUBS
LARGE MATURING TREES SHALL LINE THE PARKING LOT (MAX. 40' ON CENTER)
EACH SECTION OF PARKING SHALL BE ENCLOSED BY A LARGE MATURING TREE

GENERAL NOTES:
1. ALL TREES ARE TO BE NURSERY GROWN, BALL AND BURLAP (B&B) PREFERRED.
2. MINIMUM HEIGHT TO BE 8 FT. FOR MULTI-STEM TREES (3-5 STEMS MAX).
3. STAKING IS OPTIONAL AND ONLY RECOMMENDED FOR DIFFICULT SITES.
4. REMOVE ALL TRUNK WRAP ONCE PLANTED.
5. REMOVE STAKING/GUY WIRES AFTER 6 MONTHS.
6. GUY WIRES ARE NOT PERMITTED IN THE STREET RIGHT OF WAY.
7. ALL TREES SHALL MEET AMERICAN STNADARD FOR NURSERY STOCK (ANSI, 1990, PART 1, "SHADE AND FLOWERING TREES").

SEEDBED PREPARATION NOTES:

1. SURFACE WATER CONTROL MEASURES TO BE INSTALLED ACCORDING TO PLAN.
2. AREAS TO BE SEEDED SHALL BE RIPPED AND SPREAD WITH AVAILABLE TOPSOIL 3" DEEP. TOTAL SEEDBED PREPARATION DEPTH SHALL BE 4" TO 6" DEEP.
3. LOOSE ROCKS, ROOTS AND OTHER OBSTRUCTIONS SHALL BE REMOVED FROM THE SURFACE SO THAT THEY WILL NOT INTERFERE WITH ESTABLISHMENT AND MAINTENANCE OF VEGETATION. SURFACE FOR FINAL SEEDBED PREPARATION SHALL BE REASONABLY SMOOTH AND UNIFORM.
4. IF NO SOIL TEST IS TAKEN, FERTILIZER AND LIME TO BE ACCORDING TO SEED SPECIFICATIONS ABOVE. ELSE, SEED IN ACCORDANCE WITH SOIL TEST REPORT.
5. LIME AND FERTILIZER SHALL BE APPLIED UNIFORMLY AND MIXED WITH THE SOIL DURING SEEDBED PREPARATION.

GRADED SLOPES AND FILLS - THE ANGLE FOR GRADED SLOPES AND FILLS SHALL BE NO GREATER THAN THE ANGLE WHICH CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION CONTROL DEVICES OR STRUCTURES. IN ANY EVENT, SLOPES LEFT EXPOSED SHALL, WITHIN 30 WORKING DAYS OF COMPLETION OF ANY PHASE OF GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH GROUND COVER, DEVICES OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

GROUND COVER - WHENEVER LAND DISTURBING ACTIVITY IS UNDERTAKEN ON A TRACT OF LAND COMPRISING MORE THAN ONE ACRE, IF MORE THAN ONE CONTIGUOUS ACRE IS UNCOVERED, A GROUND COVER SUFFICIENT TO RESTRAIN EROSION MUST BE PLANTED OR OTHERWISE PROVIDED WITHIN 15 WORKING DAYS ON THAT PORTION OF THE TRACT UPON WHICH FURTHER ACTIVE CONSTRUCTION IS NOT BEING UNDERTAKEN, PROVIDED THAT THIS SUBSECTION (C) SHALL NOT APPLY TO CLEARED LAND FORMING THE BASIN OF A RESERVOIR LATER TO BE INUNDATED.

ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DEPENDING ON FIELD CONDITIONS.

MULCH TO BE TACKED OR MECHANICALLY TIED DOWN WITHIN TWO DAYS AFTER MULCH IS SPREAD.

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C1.1

GENERAL NOTES

1. THE ENGINEER HAS MADE ALL POSSIBLE ATTEMPTS TO LOCATE EXISTING UTILITIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION AND TO NOTE ANY CONFLICTS. ANY DAMAGE TO UTILITIES INCURRED DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR AND IS TO BE REPAIRED AT THE CONTRACTOR'S EXPENSE. NC ONE CALL TELEPHONE NUMBER IS 1-800-632-4949.

2. MINIMUM SEPARATION DISTANCES FOR SANITARY SEWER LINES FROM:

A. WATER LINES – 18" VERTICAL OR 10' HORIZONTAL

B. STORM SEWERS – 12" VERTICAL

3. D.I.P WITH MECHANICAL JOINT ENDS MAY BE SUBSTITUTED WHERE SEPARATION DISTANCES BETWEEN THE SANITARY SEWER LINE AND WATER LINE OR STORM SEWER CANNOT BE MAINTAINED. PIPE MUST BE LAID SUCH THAT FULL SECTIONS OF PIPE AREA CENTERED ON THE CROSSING POINT AND EXTEND A DISTANCE OF 10' ON EACH SIDE OF THE POINT OF CROSSING.

4. PAVEMENT PATCHING AND RESURFACING MUST BE COMPLETED WITHIN 5 DAYS AFTER COMPLETION OF TRENCHING ACTIVITIES. SMALL PATCH AREAS CAN BE MAINTAINED WITH TEMPORARY PAVEMENT PATCHING OR CABC STONE UNTIL PERMANENT PATCHING IS COMPLETE.

5. ALL UTILITIES TO BE IN ACCORDANCE WITH UNION COUNTY PUBLIC WORKS REQUIREMENTS AND TECHNICAL SPECIFICATIONS.

6. ALL FITTINGS AND VALVES SHALL BE RESTRAINED JOINT.

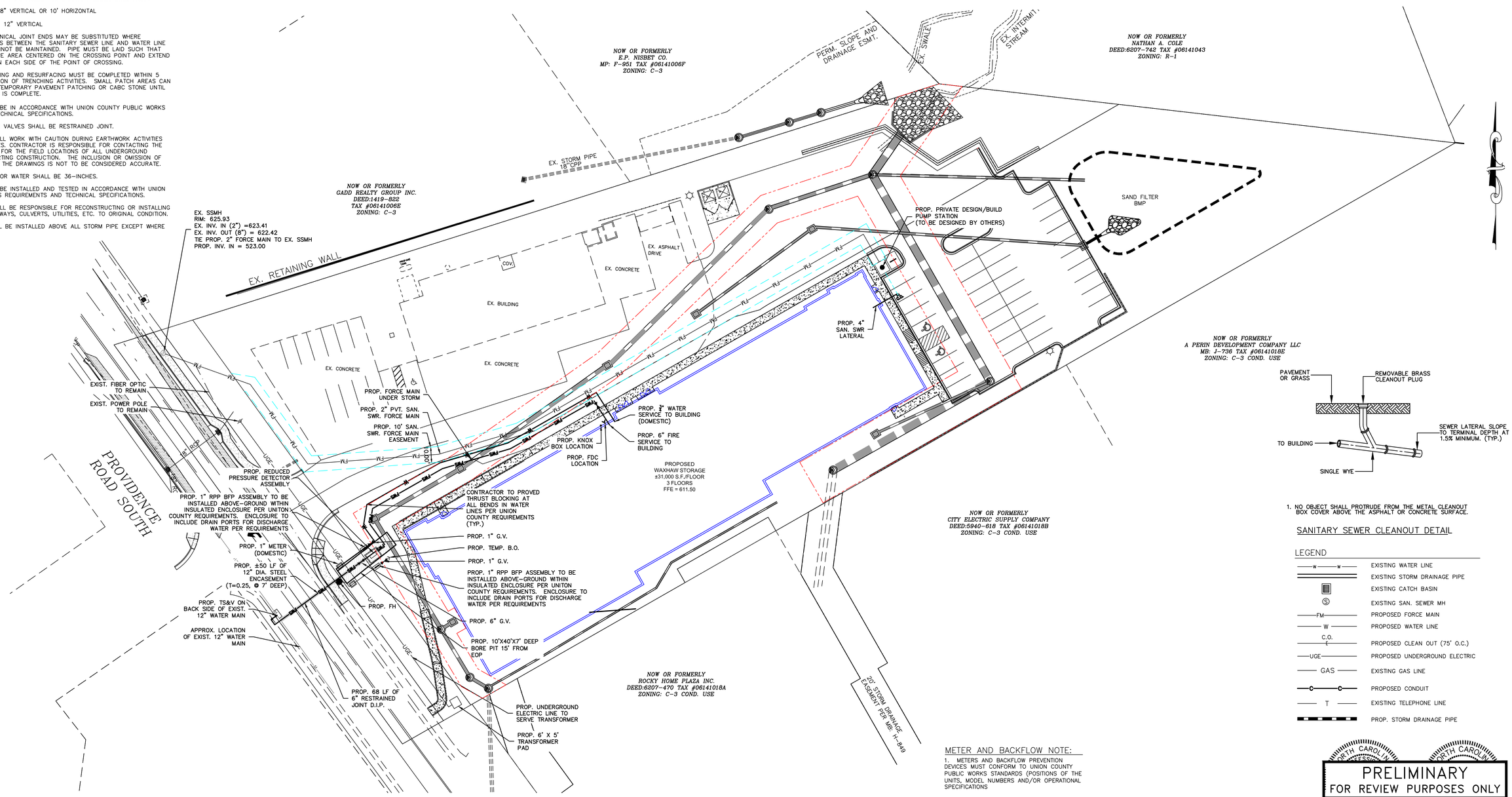
7. CONTRACTOR SHALL WORK WITH CAUTION DURING EARTHWORK ACTIVITIES NEAR EXISTING UTILITIES. CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE AGENCY FOR THE FIELD LOCATIONS OF ALL UNDERGROUND UTILITIES BEFORE STARTING CONSTRUCTION. THE INCLUSION OR OMISSION OF UTILITY LOCATIONS ON THE DRAWINGS IS NOT TO BE CONSIDERED ACCURATE.

8. MINIMUM COVER FOR WATER SHALL BE 36-INCHES.

9. ALL UTILITIES TO BE INSTALLED AND TESTED IN ACCORDANCE WITH UNION COUNTY PUBLIC WORKS REQUIREMENTS AND TECHNICAL SPECIFICATIONS.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR RECONSTRUCTING OR INSTALLING ALL MAILBOXES, DRIVEWAYS, CULVERTS, UTILITIES, ETC. TO ORIGINAL CONDITION.

11. WATER LINE SHALL BE INSTALLED ABOVE ALL STORM PIPE EXCEPT WHERE NOTED.



1. NO OBJECT SHALL PROTRUDE FROM THE METAL CLEANOUT BOX COVER ABOVE THE ASPHALT OR CONCRETE SURFACE.

SANITARY SEWER CLEANOUT DETAIL

LEGEND

—W—W—	EXISTING WATER LINE
	EXISTING STORM DRAINAGE PIPE
	EXISTING CATCH BASIN
Ⓢ	EXISTING SAN. SEWER MH
—FM—	PROPOSED FORCE MAIN
—W—	PROPOSED WATER LINE
C.O.	PROPOSED CLEAN OUT (75' O.C.)
—UGE—	PROPOSED UNDERGROUND ELECTRIC
—GAS—	EXISTING GAS LINE
	PROPOSED CONDUIT
—T—	EXISTING TELEPHONE LINE
	PROP. STORM DRAINAGE PIPE

PRELIMINARY
FOR REVIEW PURPOSES ONLY

SIDEWALK NOTES:

1. SIDEWALK CROSS-SLOPE SHALL NOT EXCEED 2% AND THE RUNNING SLOPE ALONG THE TRAVEL PATH SHALL NOT EXCEED 5% EXCEPT AT DESIGNATED RAMPS.
2. CROSS-SLOPES SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO POURING CONCRETE FOR THE SIDEWALKS.
3. IF AFOREMENTIONED SLOPES CAN NOT BE ATTAINED, THE ENGINEER SHOULD BE NOTIFIED PRIOR TO SIDEWALK INSTALLATION.
4. IF RAMPS EXCEED 6' IN LENGTH WITHOUT A LANDING AREA OR THE RUNNING SLOPE ALONG THE TRAVEL PATH EXCEEDS 5%, HANDRAILS MAY BE REQUIRED. VERIFY WITH ENGINEER OR LOCAL INSPECTOR.

ADA NOTES:

1. SLOPES IN THE HC PARKING SPACE/ACCESS AISLE AREA SHALL NOT EXCEED 2% IN ANY DIRECTION INCLUDING IN THE DIAGONAL.
2. LANDINGS OUTSIDE ALL DOORS SHALL B SIZED PER THE NORTH CAROLINA BUILDING CODE(NCBC), BE AT THE SAME ELEVATION AS THE FFE, AND SHALL HAVE A MAX. 2% SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL.

DRAINAGE NOTES:

1. REVERSE CURB AND GUTTER TO BE USED IN AREAS NOT CHANNELING STORM WATER RUNOFF.
2. THE PROPOSED CONTOURS WITHIN PAVED AREAS ARE GRAPHICAL REPRESENTATIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR GRADING UNIFORMLY BETWEEN SPOT ELEVATIONS.
3. CONTRACTOR TO GRADE ALL AREAS WITHIN PROJECT TO DRAIN STORM WATER. CARE SHALL BE TAKEN TO ENSURE THAT ALL AREAS WITHIN PARKING LOTS AND LANDSCAPED ISLANDS SHALL NOT HOLD WATER UPON PROJECT COMPLETION.
4. MIN. SLOPE ON ALL ASPHALT TO BE 1.5%.
5. MIN. SLOPE ON CURB AND GUTTER CARRYING STORM WATER TO BE 0.5%.
6. MIN. SLOPE ON REVERSE CURB AND GUTTER TO BE 0.0%.
7. HDPE IS AN ACCEPTABLE SUBSTITUTE FOR RCP.

METER AND BACKFLOW NOTE:

1. METERS AND BACKFLOW PREVENTION DEVICES MUST CONFORM TO UNION COUNTY PUBLIC WORKS STANDARDS (POSITIONS OF THE UNITS, MODEL NUMBERS AND/OR OPERATIONAL SPECIFICATIONS

PLUMBING NOTE:

REFER TO PLUMBING PLANS FOR EXACT UTILITY CONNECTIONS @ BUILDING.

CROSSING NOTE:

ALL GAS, TELEPHONE, AND ELECTRIC LINES SHALL HAVE A MINIMUM OF 2 FEET OF VERTICAL CLEARANCE WHERE THEY CROSS WATER, STORM AND SANITARY SEWER LINES.

CONDUIT NOTE:

GENERAL CONTRACTOR SHALL PROVIDE ALL CONDUIT LINES FOR UTILITY SERVICES.

NOTE:

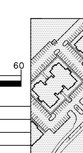
CONTRACTOR TO COORDINATE ELECTRICAL & TELEPHONE SERVICE WITH LOCAL PROVIDERS

EXISTING TOPOGRAPHY NOTE:

1. EXISTING TOPOGRAPHY FOR THIS PARCEL HAS BEEN TAKEN FROM PLANS PREPARED BY YARBOROUGH-WILLIAMS & HOULE.

GRAPHIC SCALE
30 0 15 30 60
1 INCH = 30 FEET

NO.	BY	DATE	REVISION



Project: WAXHAW STORAGE
1152 N. BROOME ST.
WAXHAW, NORTH CAROLINA

Title: UTILITY PLAN

File #: 19166-PB.DWG | Date: 09/24/19 | Project Egr: BTU | Design By: BTU | Drawn By: MPB | Scale: 1"=30'

THE ISAACS GROUP
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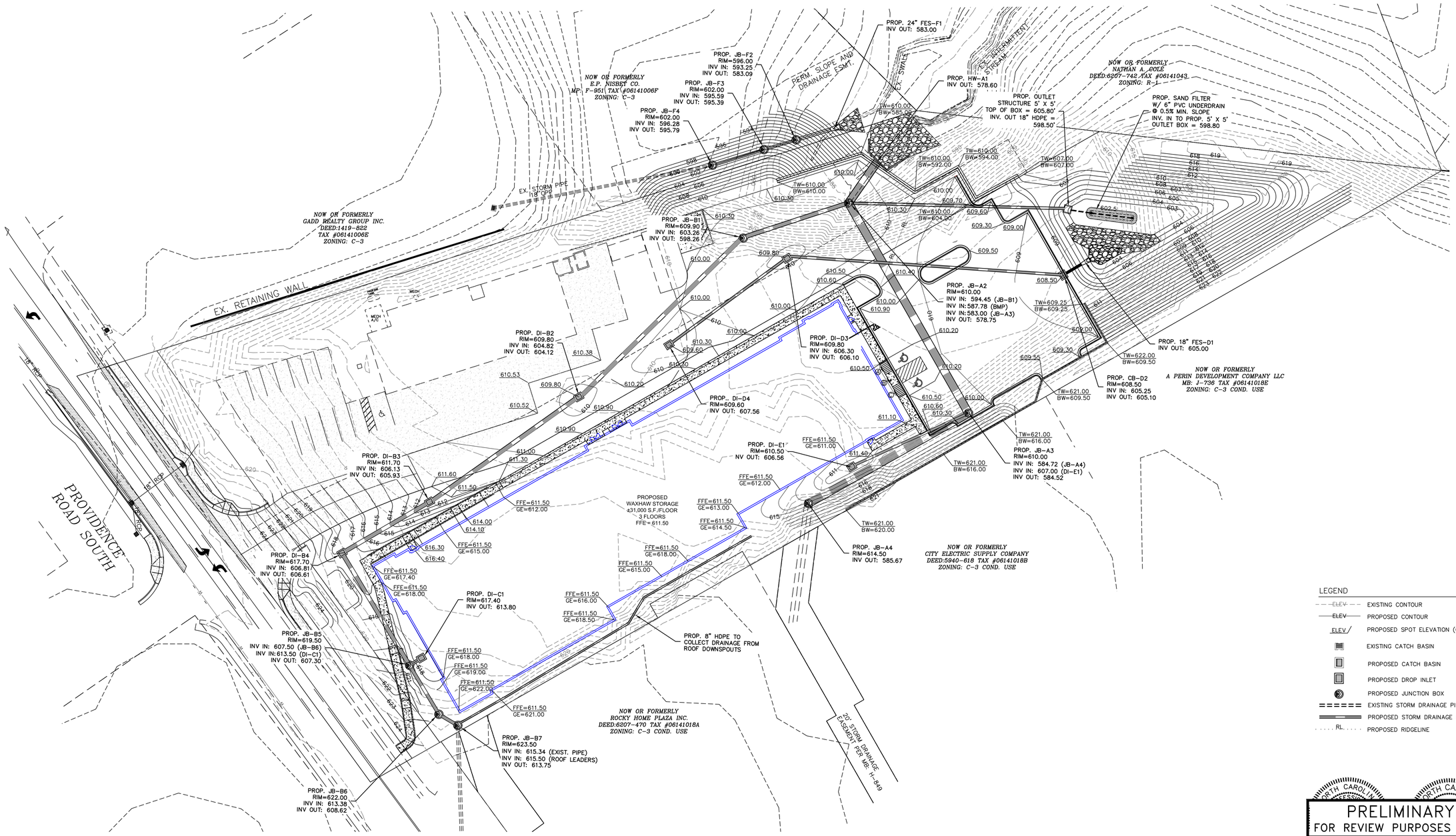

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION (ON ASPHALT)
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- PROPOSED DROP INLET
- PROPOSED JUNCTION BOX
- EXISTING STORM DRAINAGE PIPE
- PROPOSED STORM DRAINAGE PIPE
- PROPOSED RIDGELINE

PRELIMINARY
FOR REVIEW PURPOSES ONLY

SIDEWALK NOTES:

1. SIDEWALK CROSS-SLOPE SHALL NOT EXCEED 2% AND THE RUNNING SLOPE ALONG THE TRAVEL PATH SHALL NOT EXCEED 5% EXCEPT AT DESIGNATED RAMPS.
2. CROSS-SLOPES SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO POURING CONCRETE FOR THE SIDEWALKS.
3. IF AFOREMENTIONED SLOPES CAN NOT BE ATTAINED, THE ENGINEER SHOULD BE NOTIFIED PRIOR TO SIDEWALK INSTALLATION.
4. IF RAMPS EXCEED 6' IN LENGTH WITHOUT A LANDING AREA OR THE RUNNING SLOPE ALONG THE TRAVEL PATH EXCEEDS 5%, HANDRAILS MAY BE REQUIRED. VERIFY WITH ENGINEER OR LOCAL INSPECTOR.

ADA NOTES:

1. SLOPES IN THE HC PARKING SPACE/ACCESS AISLE AREA SHALL NOT EXCEED 2% IN ANY DIRECTION INCLUDING IN THE DIAGONAL.
2. LANDINGS OUTSIDE ALL DOORS SHALL BE SIZED PER THE NORTH CAROLINA BUILDING CODE(NCBC), BE AT THE SAME ELEVATION AS THE FFE, AND SHALL HAVE A MAX. 2% SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL.

DRAINAGE NOTES:

1. REVERSE CURB AND GUTTER TO BE USED IN AREAS NOT CHANNELING STORM WATER RUNOFF.
2. THE PROPOSED CONTOURS WITHIN PAVED AREAS ARE GRAPHICAL REPRESENTATIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR GRADING UNIFORMLY BETWEEN SPOT ELEVATIONS.
3. CONTRACTOR TO GRADE ALL AREAS WITHIN PROJECT TO DRAIN STORM WATER. CARE SHALL BE TAKEN TO ENSURE THAT ALL AREAS WITHIN PARKING LOTS AND LANDSCAPED ISLANDS SHALL NOT HOLD WATER UPON PROJECT COMPLETION.
4. MIN. SLOPE ON ALL ASPHALT TO BE 1.5%.
5. MIN. SLOPE ON CURB AND GUTTER CARRYING STORM WATER TO BE 0.5%.
6. MIN. SLOPE ON REVERSE CURB AND GUTTER TO BE 0.0%.
7. HDPE IS AN ACCEPTABLE SUBSTITUTE FOR RCP.

EXISTING TOPOGRAPHY NOTE:

1. EXISTING TOPOGRAPHY FOR THIS PARCEL HAS BEEN TAKEN FROM PLANS PREPARED BY YARBOROUGH-WILLIAMS & HOULE.

GRAPHIC SCALE
30 0 15 30 60
1 INCH = 30 FEET

NO.	BY	DATE	REVISION

Project: WAXHAW STORAGE
1152 N. BROOME ST.
WAXHAW, NORTH CAROLINA

Title: GRADING PLAN

File #: 19166-PB.DWG | Date: 09/24/19 | Project Egr: BTU
Design By: BTU
Drawn By: MPB
Scale: 1"=30'

THE ISAACS GROUP
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CHARLOTTE, N.C. 28217
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LAND DEVELOPMENT NOTES:

1. COORDINATE ALL CURB AND STREET GRADES IN INTERSECTION WITH INSPECTOR.
2. IN ROLLING AND HILLY TERRAINS, SWEEPING OF THE STONE BASE AND/OR APPLICATION OF A TACK COAT MAY BE REQUIRED NEAR INTERSECTIONS. THESE REQUIREMENTS WILL BE ESTABLISHED BY THE INSPECTOR AND BASED ON FIELD CONDITIONS.
3. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS.
4. SUBSURFACE DRAINAGE FACILITIES MAY BE REQUIRED IN THE STREET RIGHT-OF-WAY IF DEEMED NECESSARY BY THE INSPECTOR.
5. THE PURPOSE OF THE STORM DRAINAGE EASEMENT (SDE) IS TO PROVIDE STORM WATER CONVEYANCE AND ANY STRUCTURES AND/OR OBSTRUCTION TO STORM WATER FLOW IS PROHIBITED. THE TOWN OF WAXHAW WILL BE RESPONSIBLE FOR STORM DRAINAGE EASEMENTS WHICH PROVIDE STORM WATER CONVEYANCE FROM THE PUBLIC RIGHT-OF-WAY. THE TOWN OF WAXHAW DOES NOT MAINTAIN DRAINAGE BEYOND THE PUBLIC STREET RIGHT OF WAY.
6. BACKFILL MATERIAL MUST BE APPROVED BY THE TOWN OF WAXHAW INSPECTOR PRIOR TO PLACEMENT OF THE MATERIAL WITHIN THE PUBLIC STREET RIGHT-OF-WAY.*IF PUBLIC WORKS AGREE TO HAVE THE PIPE INSTALLED THERE SHALL BE AN APPROVED BEDDING DETAIL AND A THIRD PARTY INSPECTOR SHALL VERIFY COMPACTION AND SUPPLY WRITTEN EVIDENCE OF COMPACTION RESULTS.
7. THE DEVELOPER SHALL MAINTAIN EACH STREAM, CREEK, OR BACKWASH CHANNEL IN AN UNOBSTRUCTED STATE AND SHALL REMOVE FROM THE CHANNEL AND BANKS OF THE STREAM ALL DEBRIS, LOGS, TIMBER, JUNK AND OTHER ACCUMULATIONS.
8. ANY BUILDING WITHIN THE 100+1 BUILDING RESTRICTION FLOODLINE IS SUBJECT TO THE RESTRICTIONS OF THE ORDINANCE IN THE GOVERNING JURISDICTION.
9. PRIOR TO CO, SURVEYOR SEALED AS-BUILT DRAWINGS OF UNDERGROUND DETENTION SYSTEMS MUST BE PROVIDED.
10. NON-STANDARD ITEMS (IE: PAVERS, IRRIGATION SYSTEMS, ETC.) IN THE RIGHT-OF-WAY REQUIRE A RIGHT-OF-WAY ENCROACHMENT AGREEMENT WITH THE (COUNTY/NORTH CAROLINA DEPARTMENT OF TRANSPORTATION) BEFORE INSTALLATION.

TOPO NOTE:

1. THE TOPO PROVIDED BY THE PE CAN ONLY BE IN SUPPORT OF THE PE's PROJECT AND CANNOT BE ISSUED TO BE RELIED UPON BY OTHERS. THE PE WILL BE TAKING RESPONSIBILITY FOR THE TOPO AS IT IMPACTS THE PROJECT UNDER THE PE LICENSE.

GENERAL NOTES:

1. THIS MAP IS NOT A CERTIFIED SURVEY. BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY AVIO IMAGE, THE ISAACS GROUP AND UNION COUNTY GIS.
2. THE UTILITIES SHOWN ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THIS PLAN; THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONFLICTS BETWEEN EXISTING UTILITIES AND PROPOSED EXCAVATION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
3. PROVIDE MINIMUM OF 48 HOURS NOTICE TO OWNER OR REPRESENTATIVE PRIOR TO INTERRUPTION OF ANY EXISTING UTILITY, IF BEING UTILIZED.
4. THE CONTRACTOR SHALL USE EXTREME CARE WHEN WORKING NEAR ALL UNDERGROUND AND OVERHEAD UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY UTILITIES DAMAGED DURING CONSTRUCTION.
5. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL NECESSARY PERMITS AND APPROVALS HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION. THESE PERMITS AND APPROVALS MAY INCLUDE BUT ARE NOT LIMITED TO GRADING, DEMOLITION, ZONING, BUILDING, DRIVEWAY, DETENTION, SUBDIVISION, SPECIAL USE, SEWER AND WATER.
6. ALL HANDICAP RAMPS, PARKING SPACES, ETC. TO MEET ALL A.D.A. CODES.
7. ALL DRIVEWAYS SHALL BE BUILT IN ACCORDANCE WITH THE TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS AND NCDOT STANDARDS.
8. ALL DESIGN, CONSTRUCTION AND CONSTRUCTION MATERIALS SHALL CONFORM TO TOWN OF WAXHAW, NCDOT AND UNION COUNTY PUBLIC WORKS SPECIFICATIONS.
9. UPON FINAL APPROVAL OF THE PLANS BY TOWN OF WAXHAW, A TOWN OF WAXHAW PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO START OF CONSTRUCTION.
10. THE CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY UTILITIES DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR LOCATION & PROTECTION OF EXISTING ABOVE AND BELOW GROUND UTILITIES AND STRUCTURES. ANY AND ALL MAINS OR INDIVIDUAL SERVICES ADDITIONAL EXPENSE TO THE UTILITY OWNER. ANY AND ALL MAINS OR INDIVIDUAL SERVICES PRESENTLY NOT IN SERVICE AND WHICH ARE TO BE REPLACED DURING THE COURSE OF CONSTRUCTION MAY BE REMOVED AND LEGALLY DISPOSED OF IF DAMAGED DURING CONSTRUCTION.
11. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
12. PUBLIC ROADWAY CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE MOST CURRENT EDITION OF THE NCDOT STANDARDS AND PROCEDURES MANUAL.
13. ANY UTILITIES, MECHANICAL EQUIPMENT, DUMPSTER, STORAGE, ETC. SHALL BE SCREENED FROM PUBLIC VIEW.

PAVEMENT MARKING NOTES:

A. PAVEMENT MARKING MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH CURRENT NCDOT SPECIFICATIONS.

PARKING LINES AND MARKINGS

A. ALLOW ASPHALT PAVING TO CURE AND SWEEP CLEAN PRIOR TO PAINTING.
B. PROVIDE PAINTED LINES AND MARKINGS FOR ASPHALT PAVING AS FOLLOWS:
   1. PARKING SPACES FOR AUTOMOBILES IN PARKING AREAS.
   2. HANDICAP SYMBOL AT EACH HANDICAP PARKING SPACE.
C. LINES AND MARKINGS SHALL BE WHITE AND NON-REFLECTIVE.
D. LINES SHALL BE 4" WIDE, UNIFORM, STRAIGHT, EVENLY SPACED AND ACCURATELY ALIGNED, WITH SHARPLY DEFINED EDGES.
E. APPLY LINES AT A WET FILM THICKNESS OF .015" (15 MILS) BY MEANS OF CONVENTIONAL TRAFFIC LINE STRIPING EQUIPMENT. USE TEMPLATES OR EMPLOY SKILLED SIGN PERSONNEL FOR HANDICAP SPACE MARKINGS TO BE PROVIDED AT EACH HANDICAP PARKING SPACE.

CLEANING

A. CLEAN UP DEBRIS GENERATED BY PAVING OPERATIONS ON A DAILY BASIS.
B. REMOVE FROM SITE AT COMPLETION OF PAVING WORK ALL REMAINING DEBRIS, EXCESS MATERIAL, AND WASTE CREATED BY PAVING.

PROTECTION

A. DO NOT PERMIT VEHICULAR TRAFFIC ON NEWLY COMPLETED ASPHALT SURFACES FOR AT LEAST TWELVE HOURS AFTER PLACING.
B. PROTECT PAVING FROM DAMAGE BY CONSTRUCTION EQUIPMENT AND/OR SUBSEQUENT CONSTRUCTION OPERATIONS. PERMIT ONLY RUBBER-WHEELED VEHICLES ON PAVEMENT.
C. AFTER APPLICATION OF LINES AND MARKINGS, BARRICADE AREAS UNTIL PAINT HAS THOROUGHLY DRIED.

DRAINAGE NOTES:

1. REVERSE CURB AND GUTTER TO BE USED IN AREAS NOT CHANNELING STORM WATER RUNOFF.
2. THE PROPOSED CONTOURS WITHIN PAVED AREAS ARE GRAPHICAL REPRESENTATIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR GRADING UNIFORMLY BETWEEN SPOT ELEVATIONS.
3. CONTRACTOR TO GRADE ALL AREAS WITHIN PROJECT TO DRAIN STORM WATER. CARE SHALL BE TAKEN TO ENSURE THAT ALL AREAS WITHIN PAVED AND LANDSCAPED ISLANDS SHALL NOT HOLD WATER UPON PROJECT COMPLETION.
4. MIN. SLOPE ON ALL ASPHALT TO BE 1.5%.
5. MIN. SLOPE ON CURB AND GUTTER CARRYING STORM WATER TO BE 0.5%.
6. MIN. SLOPE ON REVERSE CURB AND GUTTER TO BE 0.0%.
7. ALL STORM PIPE TO BE CLASS III RCP UNLESS OTHERWISE SPECIFIED AND STAMPED BY NCDOT. USE OF HDPE PIPE WILL REQUIRE APPROVAL BY ENGINEER PRIOR TO INSTALLATION.
8. ALL DRAINAGE STRUCTURES TO BE PER NCDOT STANDARDS AND TOWN OF WAHAW.
9. NCDOT DOES NOT ACCEPT MAINTENANCE RESPONSIBILITY FOR STORM DRAINAGE EASEMENT OUTSIDE OF THE ROAD RIGHT-OF-WAY.

COMPACTION NOTE:

(THE FOLLOWING COMPACTION SHALL BE PROVIDED FOR BOTH STATE AND COUNTY MAINTAINED ROADS.)

1. COMPACT ALL MATERIAL TO A DEPTH OF 8 INCHES BELOW THE FINISHED SURFACE OF THE SUBGRADE TO A DENSITY EQUAL TO AT LEAST 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T99 AS MODIFIED BY THE DEPARTMENT. COMPACT THE SUBGRADE AT A MOISTURE CONTENT WHICH IS APPROXIMATELY THAT REQUIRED TO PRODUCE THE MAXIMUM DENSITY INDICATED BY THE ABOVE TEST METHOD. THE CONTRACTOR SHALL DRY OR ADD MOISTURE TO THE SUBGRADE WHEN REQUIRED TO PROVIDE A UNIFORMLY COMPACTED AND ACCEPTABLE SUBGRADE. ALL OTHER FILL AREAS/BACKFILL SHALL BE COMPACTED TO 95% DENSITY IN ACCORDANCE WITH AASHTO T99 AS MODIFIED BY THE NCDOT.

2. STRUCTURAL FILL IN LOTS SHOULD BE PLACED IN THIN (8 TO 12 INCHES) LIFTS AND COMPACTED TO A MIN. OF 95% OF THE SOIL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698) OR 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557) AT NEAR OPTIMUM MOISTURE CONTENT. THE UPPER 1 FOOT OF STRUCTURAL FILL WITHIN THE BUILDING PAD AREA SHOULD BE COMPACTED TO A MINIMUM OF 95% OF THE SOIL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698) AT NEAR OPTIMUM MOISTURE CONTENT. SOME MANIPULATION OF THE MOISTURE CONTENT (SUCH AS WETTING, DRYING) MAY BE REQUIRED DURING THE FILLING OPERATION TO OBTAIN THE REQUIRED DEGREE OF COMPACTION. THE MANIPULATION OF THE MOISTURE CONTENT IS HIGHLY DEPENDENT ON WEATHER CONDITIONS AND SITE DRAINAGE CONDITIONS. THEREFORE, THE GRADING CONTRACTOR SHOULD BE PREPARED TO BOTH DRY AND WET THE FILL MATERIALS TO OBTAIN THE SPECIFIED COMPACTION DURING GRADING. SUFFICIENT DENSITY TESTS SHALL BE PERFORMED BY AN INDEPENDENT GEOTECHNICAL FIRM TO CONFIRM THE REQUIRED COMPACTION OF THE FILL MATERIAL.

3. GRADING CONTRACTOR SHALL REFER TO GEOTECHNICAL REPORT FOR ANY GRADING AND UNDERCUTTING RECOMMENDATIONS.

GRADING NOTES:

1. THE UTILITIES AND THE LOCATIONS THEREOF, SHOWN ON THE DRAWING, REPRESENT THE DESIGNER'S UNDERSTANDING OF EXISTING UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL VERIFY THE SIZE, LOCATION, INVERTS, DEPTHS, AND EXISTENCE OF ALL UTILITIES (ELECTRICAL, MECHANICAL, WATER,TELEPHONE, GAS, ETC.) WITHIN THE CONSTRUCTION AREA WITH THE OWNER AND/OR THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING ANY EXCAVATION. THE OMISSION OF OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NON-EXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. THE DESIGN ENGINEER SHALL BE NOTIFIED WHEN FIELD LOCATED INFORMATION CONFLICTS WITH THE PROPOSED DESIGN. ANY NECESSITATING CHANGES, OR ADDITIONAL WORK SHALL BE APPROVED BY THE OWNER/ENGINEER PRIOR TO CONSTRUCTION.
3. APPROVAL OF THIS PLAN IS NOT AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, CONTRACTOR MUST HAVE WRITTEN PERMISSION FROM THE OWNER(S) BEFORE PROCEEDING.
4. ALL CONSTRUCTION AND CONSTRUCTION MATERIALS SHALL CONFORM TO TOWN OF WAXHAW OR NCDOT STANDARDS, RESPECTIVELY.
5. CONTRACTOR TO PROVIDE ALL EROSION CONTROL MEASURES PER TOWN OF WAXHAW STANDARDS.
6. TOP SOIL TO BE STRIPPED AND COMPACTED IN AREA DESIGNATED BY ENGINEER. ANY UNSUITABLE MATERIALS ON SITE ARE TO BE QUALIFIED BY A GEO-TECHNICAL ENGINEER PRIOR TO REMOVING. CONTRACTOR MUST NOTIFY OWNER OR OWNER REPRESENTATIVE IN CASE UNSUITABLE MATERIAL IS UNCOVERED.
7. CONTRACTOR TO COORDINATE WITH GEO-TECHNICAL ENGINEER ANY SUBSURFACE DRAINAGE SYSTEMS TO BE INSTALLED.
8. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF TOWN OF WAXHAW AND NCDEQ EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
9. GRADING MORE THAN ONE ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF TOWN OF WAXHAW AND NCDEQ EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
10. THE OWNER SHALL ARRANGE FOR AN INDEPENDENT GEO-TECHNICAL ENGINEER TO PROVIDE INSPECTION SERVICES TO MONITOR COMPACTION OF FILL PLACED ON SITE.
11. THE BMP'S ARE TO BE BUILT AFTER 99% OF THE PROJECT IS STABILIZED.
12. BORROW MATERIAL SHALL BE CLASSIFIED AS ML, MH, SC, SM, CL OR CH SOILS ACCORDING TO THE UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487) OR ANY MIXTURE OF THESE SOILS,
13. BORROW MATERIALS SHALL HAVE A LIQUID LIMIT (LL) BETWEEN 40 AND 60 AND A PLASTICITY INDEX (PI) BETWEEN 15 AND 30 (ASTM D4318).
14. MATERIALS SHALL BE FREE OF TOPSOIL, ORGANIC MATERIAL, ROOTS, STUMPS, BRUSH, ROCKS LARGER THAN 3I INCHES, SUBSOIL, DEBRIS, VEGETATION, AND OTHER FOREIGN MATTER.
15. ALL MATERIAL CLODS WILL BE BROKEN DOWN WITH TILLERS AND/OR DISCS TO PROVIDE A HOMOGENEOUS SOIL THAT IS FREE OF CLAY CLODS GREATER THAN 3 INCHES IN DIAMETER.
16. STEP 1: SUBGRADE PREPARATION

    -COMPACT SUB-GRADE TO DENSITY REQUIREMENTS FOR SUBSEQUENT FILL MATERIALS.

    -CUT OUT SOFT AREAS OF SUB-GRADE NOT CAPABLE OF COMPACTION IN PLACE.

    -SCARIFY SUB-GRADE SURFACE TO DEPTH OF 6 INCHES.

    -PROOF ROLL SUB-GRADE TO IDENTIFY SOFT SPOTS; FILL AND COMPACT TO DENSITY EQUAL TO OR GREATER THAN REQUIREMENTS FOR SUBSEQUENT FILL MATERIAL.

18. STEP 2: BMP SEEPAGE KEY PLACEMENT

    -SEEPAGE KEY TRENCH WILL BE LOCATED BETWEEN EMBANKMENT ABUTMENTS.

    -SEEPAGE KEY SHALL EXTEND TO A MINIMUM DEPTH OF 4 FEET OR AS REQUIRED THROUGH GEO-TECHNICAL SEEPAGE ANALYSIS. A MINIMUM BOTTOM TRENCH WIDTH SHALL BE 10 FEET AND THE TRENCH SIDEWALLS SHALL BE SLOPED OR BENCHED TO PROMOTE STABILITY AND BONDING BETWEEN THE SIDEWALL SOILS AND SEEPAGE KEY FILL.

19. STEP 3: EMBANKMENT FILL PLACEMENT

    -EMBANKMENT FILL SHALL BE CONSTRUCTED AT 3(HORIZONTAL):1(VERTICAL) OR AS SHOWN ON THE DRAWINGS. DEMONSTRATION OF APPROPRIATE SAFETY FACTORS AGAINST FAILURE THROUGH GEO-TECHNICAL ANALYSIS MAY BE REQUIRED FOR SLOPES STEEPER THAN 3(HORIZONTAL):1(VERTICAL).

    -FILL SOILS SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 8 INCHES IN THICKNESS AND BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE SOILS STANDARD PROCTOR (ASTM D698) MAXIMUM DRY DENSITY, OR AS SPECIFIED ON THE DRAWINGS.

    -COMPACTED MOISTURE CONTENT SHALL BE BETWEEN 3 PERCENT BELOW AND 3 PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT FOR ALL FILL PLACED, OR AS OTHERWISE APPROVED BY ENGINEER.

    -FILL SOILS SHOULD BE PLACED IN CONTINUOUS, HORIZONTAL LAYERS FROM ABUTMENT TO ABUTMENT. EXISTING SLOPES GREATER THAN 4(HORIZONTAL):1(VERTICAL) SHALL BE BENCHED TO PROMOTE BONDING OF NEWLY PLACED FILL WITH EXISTING SOILS. BENCHING SHALL BE PERFORMED AT MAXIMUM OF 2 FEET VERTICAL INTERVALS AND SHALL EXTEND A MINIMUM OF 4 FEET HORIZONTALLY OR AS SPECIFIED ON DRAWINGS.

    -WITHIN THE UPPER 12 INCHES OF THE EMBANKMENT, FILL SOILS SHOULD BE COMPACTED TO 100% OF ITS STANDARD PROCTOR (ASTM D698) MAXIMUM DRY DENSITY.

    -FILL AGAINST SUPPORTED STRUCTURES. DO NOT FILL AGAINST UNSUPPORTED STRUCTURES.

    -PLACE FILL SIMULTANEOUSLY ON EACH SIDE OF UNSUPPORTED STRUCTURES UNTIL SUPPORTS ARE IN PLACE.

    -PLACE A MINIMUM OF SIX INCHES OF TOPSOIL ACROSS DAM EMBANKMENT TO PROMOTE VEGETATIVE GROWTH.

20. STEP 4: OUTLET PIPE FILL PLACEMENT

    -FILL OF THE CULVERTS SHALL BE PLACED AND COMPACTED IN 6INCH THICK LOOSE LIFTS AROUND THE DROP INLETS AND UP TO 2 FEET ABOVE THE CULVERTS.

    -COMPACTION SHALL BE PERFORMED BY HAND TAMPERS OR SMALL HAND OPERATED COMPACTORS.

    -COMPACTION SHALL BE AT A MINIMUM 95 PERCENT OF THE STANDARD PROCTOR (ASTM D698) MAXIMUM DRY DENSITY. COMPACTED MOISTURE CONTENT SHALL BE BETWEEN 3 PERCENT BELOW AND 3 PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT FOR ALL FILL PLACED, OR AS OTHERWISE APPROVED BY ENGINEER.

    -ADDITIONAL COMPACTION OF LIFTS 2 FEET OR GREATER ABOVE CULVERTS SHALL CONFORM TO THE EMBANKMENT FILL PLACEMENT SECTION OF THIS SPECIFICATION.

21. STEP 5: FIELD QUALITY CONTROL

    -LABORATORY TESTING
    - PERFORM LABORATORY MATERIAL TESTS IN ACCORDANCE WITH ASTM D422, ASTM D698, ASTM D2216, AND ASTM D4318.
    - TEST AT A FREQUENCY OF EVERY 500 CUBIC YARDS OF EMBANKMENT FILL MATERIAL PLACED, WHEN MATERIALS USING FOR EMBANKMENT FILL CHANGE, AND/OR AS DIRECTED BY THE ENGINEER.
    - SAMPLE SIZE SHALL BE 50-LB.

    -IN PLACE COMPACTION AND NATURAL MOISTURE CONTENT TESTS:
    - PERFORM IN PLACE COMPACTION TESTS IN ACCORDANCE WITH ASTM D1556, ASTM D2922, OR ASTM D2937 AND NATURAL MOISTURE CONTENT TEST IN ACCORDANCE WITH ASTM D2216.
    - FREQUENCY OF COMPACTION/NATURAL MOISTURE CONTENT TESTS:
    - EMBANKMENT FILL: EACH LIFT AT A MINIMUM FREQUENCY OF 1 PER 2,500 SQ. FT.
    - PIPE INSTALLATION: EACH LIFT AT A MINIMUM FREQUENCY OF 1 PER 30 LF OF PIPE.

    -WHEN TESTS INDICATE WORK DOES NOT MEET SPECIFIED REQUIREMENTS, REMOVE WORK, REPLACE AND RETEST.

22. EMBANKMENT SPECIFICATIONS MAY BE MODIFIED BASED ON SITE-SPECIFIC GEO-TECHNICAL INVESTIGATION AND ENGINEERING DESIGN.

SITE PREPARATION:

PRIOR TO CONSTRUCTION, THE PROPOSED CONSTRUCTION AREA SHOULD BE STRIPPED OF TOPSOIL, ORGANIC MATERIAL, EXISTING UNDOCUMENTED FILL AND OTHER SOFT OR UNSUITABLE MATERIAL. UPON COMPLETION OF STRIPPING OPERATIONS, THE EXPOSED SUBGRADE IN AREAS TO RECEIVE FILL SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR PNEUMATIC-TIRED VEHICLE HAVING A LOADED WEIGHT OF APPROXIMATELY 25 TONS. AFTER EXCAVATION, THE EXPOSED SUBGRADES IN CUT AREAS SHOULD BE SIMILARLY PROOFROLLED.

PROOFROLLING OPERATIONS SHOULD BE PERFORMED UNDER THE OBSERVATION OF A GEOTECHNICAL ENGINEER OR HIS AUTHORIZED REPRESENTATIVE. THE PROOFROLLING SHOULD CONSIST OF TWO (2) COMPLETE PASSES OF THE EXPOSED AREAS, WITH EACH PASS BEING IN A DIRECTION PERPENDICULAR TO THE PRECEDING ONE. ANY AREAS WHICH DEFLECT, RUT OR PUMP DURING THE PROOFROLLING, AND FAIL TO BE REMEDIED WITH SUCCESSIVE PASSES, SHOULD BE UNDERCUT TO SUITABLE SOILS AND BACKFILLED WITH COMPACTED FILL.

THE ABILITY TO DRY WET SOILS, AND THEREFORE THE ABILITY TO USE THEM FOR FILL, WILL LIKELY BE ENHANCED IF EARTHWORK IS PERFORMED DURING SUMMER OR EARLY FALL. IF EARTHWORK IS PERFORMED DURING WINTER OR AFTER APPRECIABLE RAINFALL THEN SUBGRADES MAY BE UNSTABLE DUE TO WET SOIL CONDITIONS, WHICH COULD INCREASE THE AMOUNT OF UNDERCUTTING REQUIRED. DRYING OF WET SOILS, IF ENCOUNTERED, MAY BE ACCOMPLISHED BY SPREADING AND DISCING OR BY OTHER MECHANICAL OR CHEMICAL MEANS.

IF EXCAVATIONS IN PORTIONS OF THE SITE ENCOUNTER VERY DENSE SOILS, PARTIALLY WEATHERED ROCK, OR BORINGS AND/OR ADDITIONAL TESTING SHOULD UNDER OWNER'S APPROVAL BE PERFORMED TO FURTHER IDENTIFY DEPTH TO PARTIALLY WEATHERED ROCK AND ROCK.

EXISTING ISOLATED BOULDERS IN THE SOIL MATRIX OR ERRATIC ROCK CONDITIONS CAN SOMETIMES REMAIN UNDETECTED DURING FIELD EXPLORATION. IT IS RECOMMENDED THAT EQUIPMENT CAPABLE OF HEAVY EXCAVATION BE USED DURING GRADING ACTIVITIES. STORM WATER PIPING PLANS SHOULD TAKE INTO ACCOUNT THE EXISTENCE OF DENSE MATERIALS AND ROCK PRIOR TO CONSTRUCTION.

PARTIALLY WEATHERED ROCK CAN SOMETIMES BE EXCAVATED WITHOUT BLASTING. IN MASS EXCAVATION FOR GENERAL SITE WORK, DENSE SOILS AND PARTIALLY WEATHERED ROCK CAN USUALLY BE REMOVED BY RIPPING WITH A SINGLE-TOOTH RIPPER ATTACHED TO A LARGE CRAWLER TRACTOR OR BY BREAKING IT OUT WITH A LARGE FRONT-END LOADER. SUBSURFACE MATERIALS WITH A STANDARD PENETRATION RESISTANCE VALUE OF 50/6, 50/5, AND 50/4 INCHES OF PENETRATION CAN LIKELY BE LOOSENED AND RIPPED AS NOTED ABOVE.

IN CONFINED EXCAVATIONS SUCH AS FOUNDATIONS, UTILITY TRENCHES, ELEVATOR PITS, ETC., REMOVAL OF PARTIALLY WEATHERED ROCK MAY REQUIRE USE OF HEAVY DUTY BACKHOES (SUCH AS A JOHN DEER 120C OR EQUIVALENT EXCAVATOR EQUIPPED WITH ROCK TEETH), PNEUMATIC SPADES, OR LIGHT BLASTING. THE EASE OF EXCAVATION DEPENDS ON THE QUALITY OF GRADING EQUIPMENT, SKILL OF THE EQUIPMENT OPERATORS AND GEOLOGIC STRUCTURE OF THE MATERIAL ITSELF, SUCH AS THE DIRECTION OF BEDDING, PLANES OF WEAKNESS AND SPACING BETWEEN DISCONTINUITIES. THEREFORE, A CONSERVATIVE APPROACH CONCERNING BUDGET ESTIMATES FOR UTILITY AND STORM WATER POND EXCAVATIONS IS RECOMMENDED. SUBSURFACE MATERIAL THAT EXHIBITED A STANDARD PENETRATION RESISTANCE VALUE OF 50/3, 50/2, AND 50/1 INCHES OF PENETRATION OR LESS WILL LIKELY REQUIRE BLASTING FOR REMOVAL.

RIP ROCK: ANY MATERIAL THAT CANNOT BE REMOVED BY SCRAPERS, LOADERS, PANS, DOZERS, OR GRADERS; AND REQUIRES THE USE OF A SINGLE-TOOTH RIPPER MOUNTED ON A CRAWLER TRACTOR HAVING A MINIMUM DRAW BAR PULL RATED AT NOT LESS THAN 56,000 POUNDS.

BLAST ROCK: ANY MATERIAL WHICH CANNOT BE EXCAVATED WITH A SINGLE-TOOTH RIPPER MOUNTED ON A CRAWLER TRACTOR HAVING A MINIMUM DRAW BAR PULL RATED AT NOT LESS THAN 56,000 POUNDS (CATERPILLAR 0-8 OR EQUIVALENT) OR BY A CATERPILLAR 977 FRONT-END LOADER OR EQUIVALENT; AND OCCUPYING AN ORIGINAL VOLUME OF AT LEAST ONE (1) CUBIC YARD.

BLAST ROCK: ANY MATERIAL WHICH CANNOT BE EXCAVATED WITH A BACKHOE HAVING A BUCKET CURLING FORCE RATED AT NOT LESS THAN 25,700 POUNDS (CATERPILLAR MODEL 225 OR EQUIVALENT), AND OCCUPYING AN ORIGINAL VOLUME OF AT LEAST ONE-HALF (1/2) CUBIC YARD.

BLASTING SHOULD ONLY BE CONDUCTED WHERE RIPPING CANNOT EXCAVATE MATERIALS. WE RECOMMEND THAT EXCAVATABLE SOILS BE REMOVED FIRST WITH CONVENTIONAL GRADING EQUIPMENT (SCRAPERS AND LOADERS). WE DO NOT RECOMMEND LEAVING SOIL OVERBURDEN IN PLACE DURING BLASTING BECAUSE DETERMINATION OF BLAST ROCK QUANTITIES BECOMES VERY DIFFICULT AND COSTS ARE GENERALLY GREATER. IN ADDITION, RESIDUAL SOIL OVERBURDEN WILL INCREASE THE CONFINING PRESSURE OF THE ROCK AND REDUCE THE EFFECTIVENESS OF BLAST CHARGES. LOOSE FILL OR BLASTING MATS CAN BE PLACED OVER THE BLAST AREA TO CONTROL FLY-ROCK. REMOVAL OF ROCK BY BLASTING IS VERY EXPENSIVE. HENCE, CONTROL OF QUANTITIES IS IMPORTANT. WE RECOMMEND A GEOTECHNICAL ENGINEER BE RETAINED TO PROVIDE ASSISTANCE FOR DETERMINING OR QUALIFYING THE BLAST ROCK QUANTITIES.

EROSION CONTROL NOTES:

1. AS REQUIRED BY THE NPDES GENERAL PERMIT NCG010000, ALL DIKES SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERICAL (3:1) SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 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 DISTURBING ACTIVITY. GROUND STABILIZATION TIMEFRAME EXEMPTIONS CAN BE FOUND IN THE NPDES GEMERAL PERMIT NCG010000 UNDER SECTION 2.B GROUND STABILIZATION.
2. NO LAND DISTURBING ACTIVITY, EXCEPT THAT WHICH IS REQUIRED TO INSTALL EROSION CONTROL MEASURES, MAY COMMENCE PRIOR TO APPROVAL BY THE EROSION CONTROL INSPECTOR.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BASED UPON SPECIFIC SITE CONDITIONS.
4. CONTACT THE TOWN OF WAXHAW EROSION CONTROL INSPECTOR, AT 704-843-2195 FOR A PRE-CONSTRUCTION MEETING PRIOR TO ANY LAND DISTURBING ACTIVITY.
5. REMOVE ALL TEMPORARY EROSION CONTROL DEVICES AND STRUCTURES ONLY AFTER SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN OBTAINED FROM SEDIMENTATION AND EROSION CONTROL INSPECTOR.
6. ALL EROSION CONTROL DESIGNS SHALL BE IN ACCORDANCE WITH THE TOWN OF WAXHAW ENGINEERING, STANDARDS AND PROCEDURES MANUAL, AND THE NCDEQ EROSION AND SEDIMENTATION CONTROL PLANNING AND DESIGN MANUAL, LATEST EDITION.
7. ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY A REPRESENTATIVE OF NCDEQ.
8. SITE GRADING IS TO BE COVERED UNDER THE GENERAL STORMWATER PERMIT NCG010000 ANY LAND DISTURBING > 1 ACRE REQUIRES COMPLIANCE WITH ALL CONDITIONS OF THIS GENERAL PERMIT UNDER THE NPDES. ANY NONCOMPLIANCE IS A VIOLATION OF THE CLEAN WATER ACT AND MAY REQUIRE ENFORCEMENT BY NCDEQ.
9. CONTRACTOR TO REMOVE ALL MUD AND OBJECTIONABLE MATERIAL FROM STREET IMMEDIATELY. AGGREGATE MUST BE SWEPT BACK INTO SITE AT END OF EACH DAY.
10. THE PROFESSIONAL ENGINEER REGISTERED WITH THE STATE OF NORTH CAROLINA WHO PREPARED THE EROSION CONTROL PLAN IS SOLELY RESPONSIBLE FOR IDENTIFICATION AND LOCATION OF ALL ENVIRONTMENTAL WETLANDS, PERENNIAL AND INTERMITTENT STREAMS AND BUFFERS SHOWN ON THE PLANS.
11. THE TOWN OF WAXHAW IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND ELEVATIONS, WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE. THE TOWN OF WAXHAW , THROUGH THE APPROVAL OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY FOR THE COMPETENESS AND/OR ACCURACY OF THIS DOCUMENT.
12. SILT SACKS WILL BE PLACED IN BASINS/INLET ALONG ROADWAYS PRIOR TO COMMENCING WORK.
13. THE FINANCIALLY RESPONSIBLE PARTY/AGENT OR THE LANDOWNER/AGENT OF A LAND DISTURBING ACTIVITY>ONE ACRE IS REQUIRED TO SELF INSPECT THE PROJECT. THE SITE SHALL BE INSPECTED ONCE A WEEK AND AFTER EVERY 0.5" RAIN EVENT. A SELF INSPECTION REPORTS WILL BE KEPT ON SITE AND AVAILABLE TO THE SEDIMENTATION AND EROSION CONTROL INSPECTOR AT ALL TIME .
14. TOTAL DISTURBED AREA = 0.98 ACRES
15. NO CONSTRUCTION ACTIVITY OF ANY TYPE, EXCEPT INSTALLATION OF EROSION CONTROLS, CAN TAKE PLACE PRIOR TO THE EROSION CONTROL INSPECTION BE COMPLETED AND APPROVED.
16. NO CONCRETE WASHOUTS OR ANY SIMILAR TYPE USE MAY BE LOCATED WITH FIFTY (50') OF A CATCH BASIN, DRAINAGE INLET OR ANY OTHER SIMILAR STRUCTURE.

STABILIZATION TIME FRAMES

SITE AREA DESCRIPTION	STABILIZATION	TIME FRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND 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 DAYSARE ALLOWED
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAT 50' IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES

EROSION CONTROL CONSTRUCTION SEQUENCE:

1. OBTAIN PLAN APPROVAL FROM THE TOWN OF WAXHAW.
2. FLAG THE LIMITS OF CLEARING.
3. HOLD PRE-CONSTRUCTION CONFERENCE WITH TOWN OF WAXHAW INSPECTOR AT LEAST ONE WEEK PRIOR TO COMMENCEMENT OF CONSTRUCTION TO DISCUSS INSTALLATION OF EROSION CONTROL MEASURES.
4. INSTALL TEMPORARY CONSTRUCTION ENTRANCE, SILT FENCE AND SEDIMENT BASINS TO THE LINES AND GRADES SHOWN ON PLANS, CLEARING OR DEMOLISHING ONLY AS NECESSARY TO INSTALL THESE DEVICES.
5. SEDIMENT TRAPS AND BASINS NEED TO BE STABILIZED IMMEDIATELY AFTER INSTALLATION.
6. INSTALL DIVERSION DITCHES AROUND SITE TO DIRECT RUNOFF TO SEDIMENT BASINS.

6a. PHASE 1 DIVERSION DITCHES WILL REQUIRE DAILY ADJUSTMENT AS CUTTING AND FILLING GRADING OPERATIONS CHANGE THE DRAINAGE PATTERNS OF THE SITE. THE CONTRACTOR MUST MAINTAIN THE DIVERSION DITCHES SO POSITIVE DRAINAGE IS PROVIDED TO SEDIMENT BASIN AT ALL TIMES DURING GRADING OPERATIONS.

7. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSPECTED ONCE A WEEK AND AFTER EVERY 0.5" RAIN EVENT. NEEDED REPAIRS WILL BE MADE IMMEDIATELY.
8. ALL INLET PROTECTION DEVICES SHALL BE MAINTAINED UNTIL COMPLETION OF ALL CATCH BASIN STRUCTURES. THESE DEVICES SHALL REMAIN IN PLACE UNTIL ALL PROPOSED STORM PIPES ARE FLUSHED CLEAN FROM BEGINNING TO END.
9. CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF ALL SEDIMENT BASINS DURING INSTALLATION OF ALL PROPOSED STORM AND SEWER LINES.
10. STABILIZE SITE PER THE SEEDING SCHEDULE UPON COMPLETION OF GRADING.
11. AFTER SITE IS STABILIZED WITH VEGETATION, REMOVE ALL EROSION CONTROL DEVICES AFTER APPROVAL HAS BEEN GRANTED BY A REPRESENTATIVE OF THE TOWN OF WAXHAW. ALLOW NATURAL SHEET FLOW PER THE ORIGINAL TOPOGRAPHY. IMMEDIATELY SEED ALL AREAS DISTURBED WITH PERMANENT VEGETATION FOLLOWING THE REMOVAL OF TEMPORARY SEDIMENTATION AND EROSION CONTROL MEASURES.
12. UPON APPROVAL BY THE TOWN OF WAXHAW, PROPOSED SEDIMENT BASINS MAY BE CONVERTED TO BMP'S FOLLOWING COMPLETION OF STORM DRAINAGE AND ROAD PAVING.

LANDSCAPING NOTES:

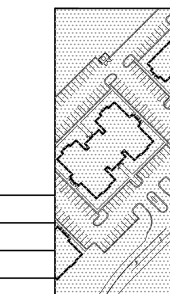
1. REFER TO SECTION 9.8 OF THE TOWN OF WAXHAW UNIFIED DEVELOPMENT ORDINANCE REGARDING LANDSCAPING REQUIREMENTS.
2. NO SOIL DISTURBANCE OR COMPACTION, CONSTRUCTION MATERIALS, TRAFFIC, BURIAL PITS, TRENCHING OR OTHER LAND DISTURBING ACTIVITY ALLOWED IN THE TREE PROTECTION ZONE. A BARRIER MUST BE ERECTED AROUND THE DRIPLINE OF ALL SUCH TREES SUFFICIENT TO PUT ON NOTICE ALL CONSTRUCTION PERSONNEL THAT ANY DISTURBANCE OF THE AREA WITHIN THE DRIPLINE OF SUCH TREES IS PROHIBITED. THE REQUIRED TREE BARRIER MUST BE SHOWN ON CONSTRUCTION PLANS. TREE BARRICADES MUST BE INSTALLED IN ACCORDANCE WITH THE PLAN BEFORE ANY DEMOLITION, GRADING OR CONSTRUCTION BEGINS (IF APPLICABLE).
3. FOR NEW PLANTING AREAS, REMOVE ALL PAVEMENT, GRAVEL SUB-BASE, CONSTRUCTION DEBRIS AND COMPACTED SOIL PRIOR TO PLANTING.
4. ALL STRAPPING AND TOP 2/3 OF WIRE BASKET MUST BE CUT AWAY AND REMOVED FROM ROOT BALL PRIORTO BACKFILLING PLANTING PIT. REMOVE TOP 1/3 OF BURLAP FROM ROOT BALL.
5. ORDINANCE REQUIRED TREES MUST BE MAINTAINED IN TREE FORM & ALLOWED TO GROW TO THEIR NATURAL HEIGHT/FORM, (NO TOPPING OR ROUNDING OVER). ALL TREES SHALL BE SINGLE-STEMMED.
6. LARGE MATURING TREES MAY NOT BE PLANTED ADJACENT TO OVERHEAD DISTRIBUTION POWER LINES. IF TREES CONFLICT WITH POWER LINES, CALL URBAN FORESTER TO RESOLVE BEFORE PLANTING.
7. PROPOSED STREET TREES SHALL BE A MINIMUM 8' TALL AND 2-1/2" CALIPER (MEASURED 12" ABOVE GROUND) AT PLANTING.
8. ALL SHRUBS TO BE A MINIMUM HEIGHT OF 24" WITH A MINIMUM SPREAD OF 24" AT PLANTING AND SHALL HAVE A MAXIMUM SPACING OF 5' ON CENTER.
9. TREES SHALL NOT BE PLANTED IN PERMANENT DRAINAGE EASEMENTS OR WITHIN TEN (10) FEET OF A MASONRY DRAINAGE STRUCTURE.
10. FOR TREE SPECIES, SEE TOWN OF WAXHAW APPROVED TREE LISTS.

BEFORE YOU DIG
STOP
CALL 1-800-632-4949
N.C. ONE-CALL CENTER
IT'S THE LAW

NORTH CAROLINA ... BRIAN T. UPTON
NORTH CAROLINA ... CERTIFICATE OF AUTHORIZATION

PRELIMINARY
FOR REVIEW PURPOSES ONLY

NO.	BY	DATE	REVISION



Project: WAXHAW STORAGE
1152 N. BROOME ST.
WAXHAW, NORTH CAROLINA

Title: NOTES

File #: 19166-PB.DWG	Date: 09/24/19	Project Egr: BTU
		Design By: BTU
		Drawn By: MPB
		Scale: NTS

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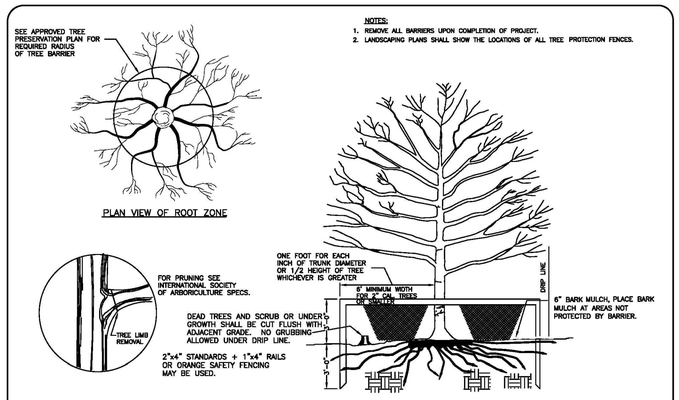


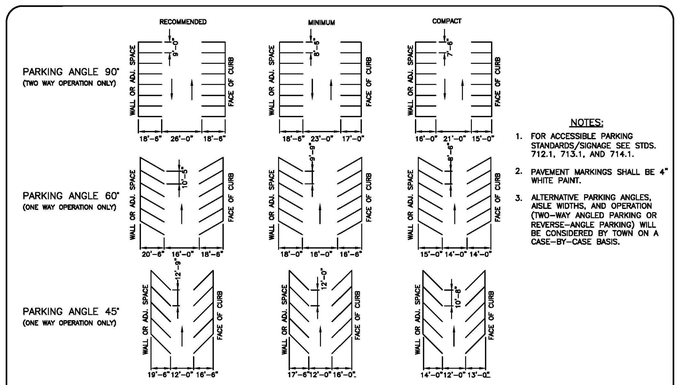
NOTES:

1. REMOVE ALL BARRIERS UPON COMPLETION OF PROJECT.
2. LANDSCAPING PLANS SHALL SHOW THE LOCATIONS OF ALL TREE PROTECTION FENCES.

TOWN OF WAXHAW
LAND DEVELOPMENT STANDARDS

TREE PROTECTION DETAIL

STD. NO. 601.1 | REV.



NOTES:

1. FOR ACCESSIBLE PARKING STANDARDS/SIGNAGE, SEE STDS. 712.1, 713.1, AND 714.1.
2. PAVEMENT MARKINGS SHALL BE 4" WHITE PAINT.
3. ALTERNATIVE PARKING ANGLES, AISLE WIDTHS, AND OPERATION (TWO-WAY ANGLED PARKING OR REVERSE-ANGLE PARKING) WILL BE CONSIDERED BY TOWN ON A CASE-BY-CASE BASIS.

NOT TO SCALE

TOWN OF WAXHAW
LAND DEVELOPMENT STANDARDS

PARKING STANDARDS

STD. NO. 710.1 | REV.

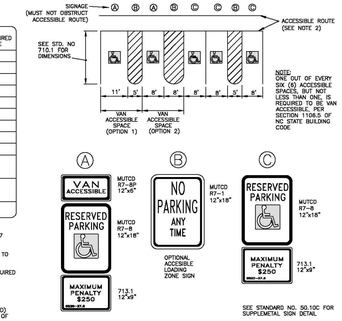
ACCESSIBLE PARKING REQUIREMENTS

TOTAL PARKING SPACES PROVIDED	MINIMUM NUMBER OF ACCESSIBLE SPACES SPACES REQUIRED	MINIMUM NUMBER OF ACCESSIBLE SPACES REQUIRED TO BE VAN ACCESSIBLE
1 TO 25	1	1
26 TO 50	2	1
51 TO 75	3	1
76 TO 100	4	1
101 TO 150	5	1
151 TO 200	6	1
201 TO 300	7	2
301 TO 400	8	2
401 TO 500	9	2
501 TO 1000	2% OF TOTAL	1 IN EVERY 6 ACCESSIBLE SPACES
1001 AND OVER	20 PLUS 1 FOR EACH 100 OVER 1000	1 IN EVERY 8 ACCESSIBLE SPACES
REFERENCE: SECTION 1106 OF NC BUILDING CODE		

NOTES:

1. ALL 12"x18" ACCESSIBLE SIGNS (R7-8 & R7-1) SHALL BE MOUNTED AT 7 FEET FROM GRADE TO BOTTOM EDGE OF SIGN FACE (MUTCD). MOUNTING HEIGHT CAN BE REDUCED TO 5 FEET IF PLACED IN AN AREA BETWEEN SIDEWALK AND BUILDING FACE IN WHICH PEDESTRIANS ARE NOT EXPECTED TO USE.
2. IF ACCESSIBLE ROUTE IS A RAISED SIDEWALK AREA, THEN RAMPS ARE REQUIRED AT LOADING ZONE AREA. MAINTAIN MIN. 4' WIDE CONTINUOUS PASSAGE.
3. VERTICAL CLEARANCE FOR VANS MUST BE GREATER THAN 98-INCHES.
4. THIS DETAIL IS TO PROVIDE GENERAL GUIDANCE FOR PARKING LAYOUT AND DESIGN. REFER TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) U.S. DEPARTMENT OF TRANSPORTATION AND NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SUPPLEMENT AND NC BUILDING CODE FOR ADDITIONAL INFORMATION.

PARKING SPACE PAVEMENT MARKINGS



NOTE:
ONE OUT OF EVERY SIX (6) ACCESSIBLE SPACES, BUT NOT LESS THAN ONE, IS REQUIRED TO BE VAN ACCESSIBLE, PER SECTION 1108.5 OF NC STATE BUILDING CODE

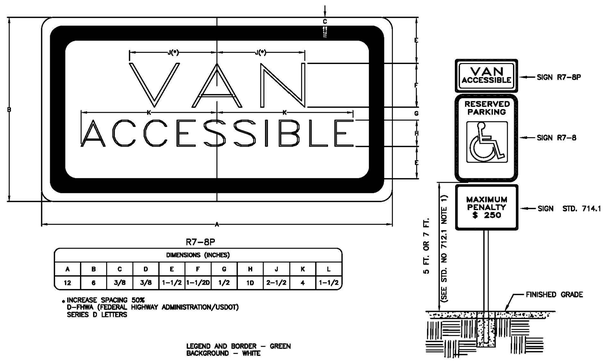
SEE STANDARD NO. 50.10C FOR SUPPLEMETAL SIGN DETAIL.

NOT TO SCALE

TOWN OF WAXHAW
LAND DEVELOPMENT STANDARDS

ACCESSIBLE PARKING AND SIGNAGE STANDARDS

STD. NO. 712.1 | REV.



R7-8P

DIMENSIONS (INCHES)										
A	B	C	D	E	F	G	H	J	K	L
12	6	3/8	3/8	1-1/2	1-1/20	1/2	10	2-1/2	4	1-1/2

* INCREASE SPACING 50%
D-FHWA (FEDERAL HIGHWAY ADMINISTRATION/USDOT) SERIES D LETTERS

LEGEND AND BORDER – GREEN
BACKGROUND – WHITE

NOT TO SCALE

TOWN OF WAXHAW
LAND DEVELOPMENT STANDARDS

SUPPLEMENTAL VAN ACCESSIBLE SIGN (R7-8P)

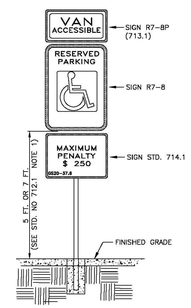
STD. NO. 713.1 | REV.

NOTE:
SUPPLEMENTAL VAN ACCESSIBLE SIGN (R7-8P) USED IF THERE IS ONLY ONE REQUIRED ACCESSIBLE PARKING SPACE (MUST BE VAN ACCESSIBLE) AND AT EACH ADDITIONAL REQUIRED VAN ACCESSIBLE SPACE. (SEE STD. NO. 713.1)

LEGEND AND BORDER – GREEN
BACKGROUND – WHITE

SIGN APPROVED FOR USE UNDER GENERAL STATUTE 20-37.6

THIS PENALTY SIGN IS REQUIRED TO ACCOMPANY ALL R7-8 PARKING SIGNS ERECTED AFTER DECEMBER 31,1990

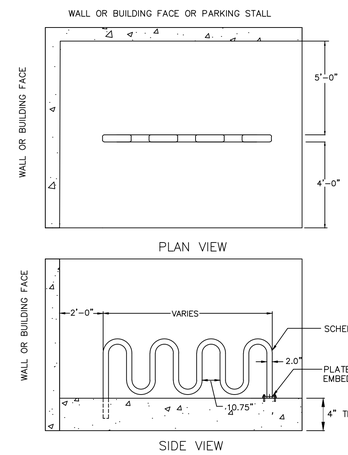


NOT TO SCALE

TOWN OF WAXHAW
LAND DEVELOPMENT STANDARDS

SUPPLEMENTAL ACCESSIBLE PENALTY SIGN

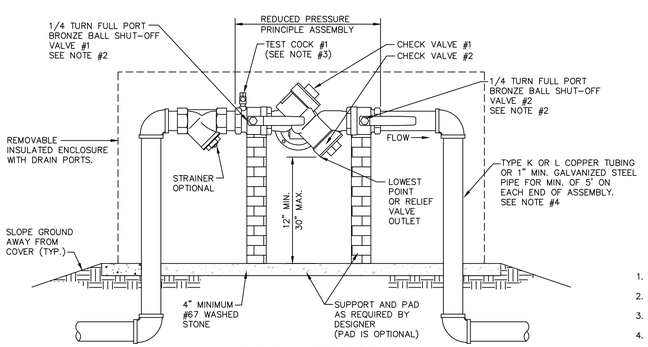
STD. NO. 714.1 | REV.



NOTES:

1. BIKE RACKS SHOULD BE INSTALLED AS PER MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.
2. ALTERNATIVE BIKE RACKS OR LOCKERS MAY BE USED BUT ARE SUBJECT TO APPROVAL BY THE TOWN ENGINEER.
3. ALL DIMENSIONS SHOWN ARE MINIMUM.
4. PLACEMENT SHOULD BE CANE DETECTABLE AND PLACED OUTSIDE PEDESTRIAN ACCESS ROUTE.

WAVE RACK FOR BICYCLE PARKING
NOT TO SCALE: STD. 717.1

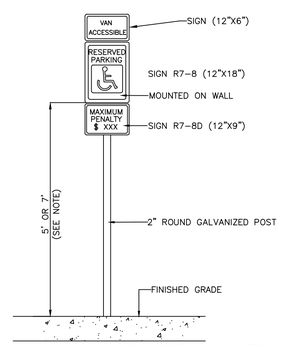


BACKFLOW PREVENTION STANDARD DETAIL

REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP) 3/4"-2" ABOVE GROUND

NOTES:

1. REDUCED PRESSURE PRINCIPLE ASSEMBLIES (RP) MUST CONFORM TO COUNTY SPECIFICATIONS. REFER TO COUNTY APPROVED LIST OF BPA'S.
2. COUNTY APPROVED RP INCLUDES SHUT-OFF VALVES #1 AND #2 AS PART OF THE ASSEMBLY. NO SUBSTITUTIONS SHALL BE PERMITTED.
3. TEST COCK #1 SHALL BE UPSTREAM OF SHUT-OFF VALVE #1 AND IS PART OF THE APPROVED ASSEMBLY.
4. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN COUNTY STANDARDS & SPECIFICATIONS.
5. INSULATED ENCLOSURE SHALL BE AS SPECIFIED IN COUNTY ENCLOSURE INFORMATION.
6. ALL LOCATIONS FOR BPA'S REQUIRE COUNTY APPROVAL.
7. NO TAPS, BRANCHES, FH'S OR OTHER ACCESSORIES ARE PERMITTED ON THE PIPING BETWEEN THE BPA & METER.



HANDICAPPED SIGN DETAIL

SIGNAGE NOTE:

CONTRACTOR TO COORDINATE FINAL SIGN LOCATIONS WITH OWNER PRIOR TO INSTALLATION

SIGNAGE TO BE PERMITTED SEPARATELY

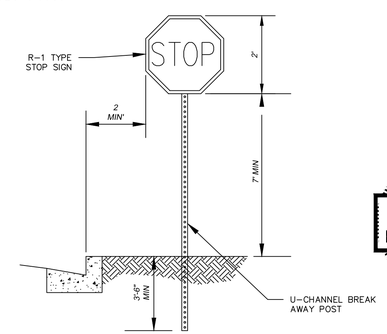
R7-8D

SIGN APPROVED FOR USE UNDER GENERAL STATUTE 20-37.6
R7-8D PENALTY SIGNS ARE REQUIRED TO ACCOMPANY ALL R7-8 PARKING SIGNS ERECTED AFTER DECEMBER 31,1990.

NOTES:

ALL HANDICAPPED SIGNS (R7-8) SHALL BE MOUNTED AT 7 FEET FROM GRADE TO BOTTOM EDGE OF SIGN FACE (MUTCD). MOUNTING HEIGHT CAN BE REDUCED TO 5 FEET IF PLACED BETWEEN SIDEWALK AND BUILDING FACE OR OUTSIDE OF PEDESTRIAN AREAS.

(MUTCD) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES



STOP SIGN DETAIL
NTS

PRELIMINARY
FOR REVIEW PURPOSES ONLY
NORTH CAROLINA
BRIAN T. UPTON
CERTIFICATE OF AUTHORIZATION

GRAPHIC SCALE
20 0 10 20 40
1 INCH = 20 FEET

NO.	BY	DATE	REVISION

Project: WAXHAW STORAGE
1152 N. BROOME ST.
WAXHAW, NORTH CAROLINA

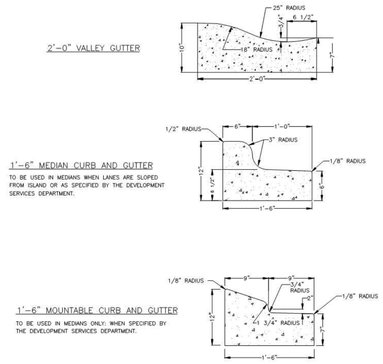
Title: DETAILS

File #: 19166-PB.DWG | Date: 09/24/19 | Project Egr: BTU | Design By: BTU | Drawn By: MPB | Scale: NTS

THE ISAACS GROUP
CIVIL ENGINEERING DESIGN AND SURVEYING

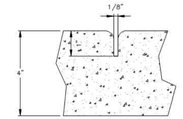
8720 RED OAK BOULEVARD, SUITE 420
CHARLOTTE, N.C. 28217
PHONE (704) 527-3440 FAX (704) 527-8335

C5.1

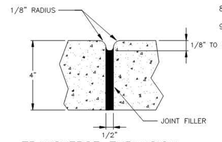


NOT TO SCALE

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS	CURB AND GUTTER	STD. NO. 101.1	REV.



GROOVE JOINT IN SIDEWALK



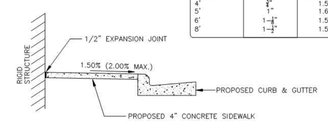
TRANSVERSE EXPANSION JOINT IN SIDEWALK

GENERAL NOTES:

1. A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS NOT TO EXCEED 50' AND MATCHING EXPANSION/CONSTRUCTION JOINT IN ADJACENT CURB. A SEALED 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.
2. SIDEWALK AT DRIVEWAY ENTRANCES TO BE 6" THICK.
3. WIDTH OF SIDEWALK ON THOROUGHFARE STREETS SHALL BE A MINIMUM OF 6'. WIDTH OF SIDEWALKS IN THE CERTAIN DISTRICTS WILL BE DETERMINED BY THE DEVELOPMENT SERVICES.
4. WIDTH OF SIDEWALKS ON NON-THOROUGHFARE STREETS SHALL BE BASED ON TYPICAL STREET SECTION, A MINIMUM OF 5'. SIDEWALK TO BE POURED TO END OF RADIUS AT INTERSECTING STREETS.
5. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 PSI. IN 28 DAYS.
6. ZONING CONDITIONS MAY REQUIRE ADDITIONAL WIDTH SIDEWALKS WHICH SHALL SUPERSEDE THESE STANDARD DIMENSIONS SHOWN.
7. LIDS FOR JUNCTION BOXES AND UTILITY VAULTS SHALL BE NON-SKID AS SPECIFIED BY ENGINEER.
8. JOINT MATERIALS SHALL LIMIT SHRINK/SWELL SO POST CONSTRUCTION INSTALLATION RESULTS IN A MAXIMUM OF 1/4" FROM FLUSH.
9. SEE ALSO 102.1

EXAMPLE SIDEWALK CONSTRUCTION DIMENSIONS:

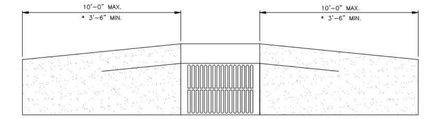
WIDTH	RISE	CROSS-SLOPE
4'	2"	1.56%
5'	1"	1.67%
6'	1-1/4"	1.56%
8'	1-3/4"	1.56%



DETAILS SHOWING EXPANSION JOINTS IN CONCRETE SIDEWALK

NOT TO SCALE

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS	CONCRETE SIDEWALKS	STD. NO. 106.1	REV.

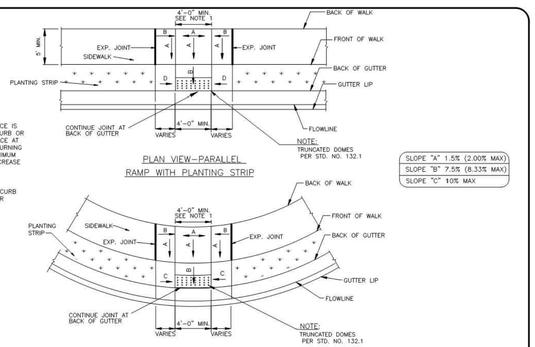


PLAN

NOTE:
* TRANSITION FROM 2'-6" STANDARD CURB TO VALLEY CURB AT A DRAINAGE INLET ONLY.
SEE STANDARD 104.1 FOR CROSS SECTION GEOMETRY.

NOT TO SCALE

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS	CATCH BASIN FRAME IN VALLEY GUTTER	STD. NO. 121.1	REV.



PLAN VIEW-PARALLEL RAMP WITH PLANTING STRIP

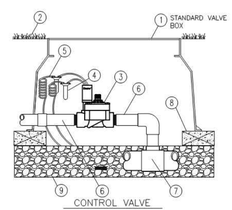
NOTES:

1. IF TURNING SPACE IS CONFINED BY CURB OR VERTICAL SURFACE AT BACK OF THE TURNING SPACE, THE MINIMUM WIDTH MUST INCREASE TO 5'-0" MIN.
2. ENSURE FLUSH CONDITIONS AT CURB RAMP TO GUTTER TRANSITION.

PLAN VIEW-DIAGONAL RAMP WITH PLANTING STRIP

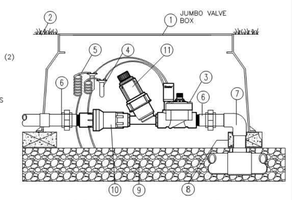
NOT TO SCALE

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS	ACCESSIBLE RAMP STANDARD 2'-0" VALLEY GUTTER	STD. NO. 127.1	REV.



CONTROL VALVE

2 FINISH GRADE
3 CONTROL VALVE WITH FLOW CONTROL
4 WATERPROOF CONNECTORS (2)
5 18-24" COILED WIRE
6 SCH 80 T.O.E. NIPPLE
7 MAIN LINE PIPE & FITTINGS
8 BRICK SUPPORTS (4)
9 3/4" MINUS WASHED GRAVEL, MIN. 3" DEPTH
10 PRESSURE REGULATOR
11 FILTER

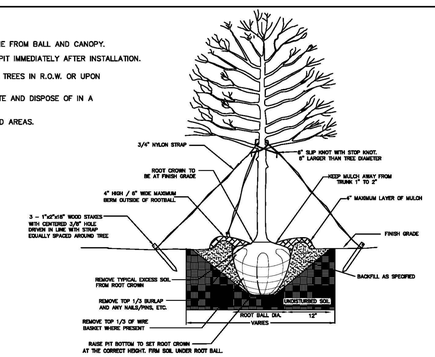


DRIP IRRIGATION W/ PRESSURE REGULATOR AND FILTER

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS	TYPICAL VALVE AND VALVE BOX INSTALLATION	STD. NO. 606.1	REV.

NOTES:

1. REMOVE WIRE AND NYLON TWINE FROM BALL AND CANOPY.
2. SOAK ROOT BALL AND PLANT PIT IMMEDIATELY AFTER INSTALLATION.
3. STAKING IS REQUIRED FOR ALL TREES IN R.O.W. OR UPON REQUEST OF ARBORIST.
4. REMOVE EXCESS SOIL FROM SITE AND DISPOSE OF IN A LEGAL MANNER.
5. RESEED UNMULCHED, DISTURBED AREAS.



ALL TREES SHALL MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2004)

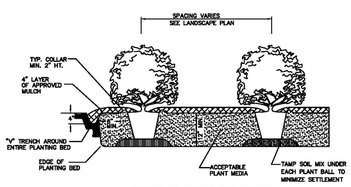
FOR EXAMPLE:	CALIPER	HEIGHT (RANGE)	MAX. HEIGHT	MIN. ROOT BALL DIA.	MIN. ROOT BALL DEPTH
	2"	12-14'	16'	24"	16"
	3"	14-16'	18'	32"	21"

NOT TO SCALE

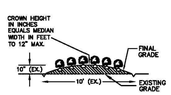
TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS	TREE PLANTING (FOR SINGLE AND MULTI-STEM TREES)	STD. NO. 600.1	REV.

NOTES:

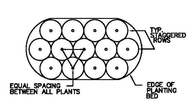
1. SCARIFY ROOT MASS OF CONTAINERIZED PLANT MATERIAL.
2. INSTALL CONTAINERIZED PLANTS AT FINISHED GRADE
3. TAMP PLANTING MIX FIRMLY AS PIT IS FILLED AROUND EACH PLANT BALL.
4. OMIT COLLAR AROUND EACH SHRUB WHEN IRRIGATION SYSTEM IS PRESENT.
5. SOAK EACH PLANT BALL AND PIT IMMEDIATELY AFTER INSTALLATION.



TYPICAL PLANTING BED DETAIL



TYPICAL BED CROWNING

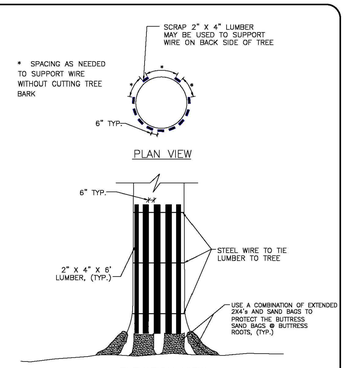


TYPICAL PLANTING BED PLAN

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS	SHRUB PLANTING BED	STD. NO. 610.1	REV.

NOTES:

1. THIS TREE BUMPER DETAIL SHALL BE USED WHEN WORKING WITHIN 10' OF AN EXISTING TREE TO BE PROTECTED.
2. ALL TREES SHALL BE SAVED UNLESS NOTED OTHERWISE ON THE PLANS OR DIRECTED BY THE ENGINEER.
3. LUMBER, WIRE, AND SANDBAGS MAY BE REUSED AT OTHER TREES.
4. THE INTENT OF THIS DETAIL IS TO PROTECT EXISTING TREES FROM DAMAGE DURING CONSTRUCTION ESPECIALLY FROM BACKHOE ARM SWING. AN ALTERNATE APPROACH MAY BE USED IF APPROVED IN WRITING BY THE ENGINEER AFTER CONSULTATION WITH THE ARBORIST OR HIS DULY AUTHORIZED REPRESENTATIVE.



TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS	TEMPORARY TREE PROTECTION DETAIL	STD. NO. 617.1	REV.

PRELIMINARY
FOR REVIEW PURPOSES ONLY

NO.	BY	DATE	REVISION

Project: WAXHAW STORAGE
1152 N. BROOME ST.
WAXHAW, NORTH CAROLINA

Title: DETAILS

File #: 19166-PB.DWG | Date: 09/24/19 | Project Egr: BTU | Design By: BTU | Drawn By: MPB | Scale: NTS

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C5.2

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
(d) Slopes 3:1 to 4:1	14	-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 -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -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
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. 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

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. 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.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

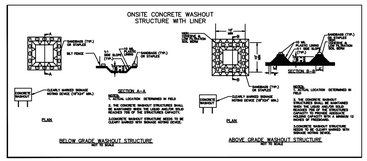
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled,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

PORTABLE TOILETS

1. 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.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. 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

1. 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.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. 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.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

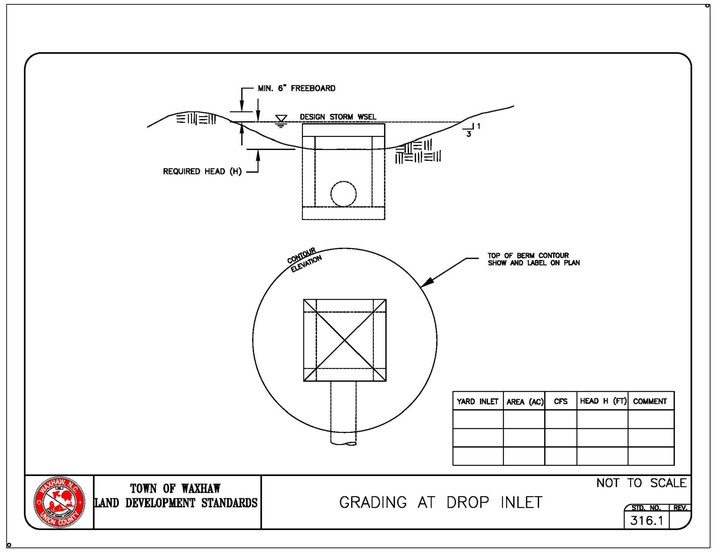
1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

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

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 un-attended 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.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 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) of this permit 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:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(b) Anticipated bypasses and unanticipated bypasses.

(c) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***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(m)(3)]	• ***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(m)(3)]	• ***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(l)(7)]	• ***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 reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL
PRELIMINARY
FOR REVIEW PURPOSES ONLY
BRIAN T. UPTON
CERTIFICATE OF AUTHORIZATION

NO.	BY	DATE	REVISION

Project: WAXHAW STORAGE
1152 N. BROOME ST.
WAXHAW, NORTH CAROLINA

Title: DETAILS

File #: 19166-PB.DWG | Date: 09/24/19 | Project Egr: BTU | Design By: BTU | Drawn By: MPB | Scale: NTS

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