CARRINGTON SQUARE

CONSTRUCTION PLANS

TOWN OF WAXHAW, UNION COUNTY, NORTH CAROLINA

SITE AND DEVELOPMENT DATA	
JURISDICTION	TOWN OF WAXHAW
TAX PARCEL(S):	06-162-018
SITE ADDRESS:	2913 PROVIDENCE ROAD SOUTH, WAXHAW, NC
ZONING	EXISTING ZONING CD-C3
USE CLASSIFICATION	COMMERCIAL
TOTAL AREA	8.96 ACRES
MINIMUM FRONT SETBACK	20'
MINIMUM CORNER/SIDE SETBACK	45' & 25'
MINIMUM REAR SETBACK	25'
DISTURBED AREA	6.32 ACRES (INCLUDING OFFSITE IMRPOVEMENTS)

Town of Waxhaw
Approved for Construction Only
These drawings meet the minimum criteria specified in the Town Unified Development Ordinance and are approved for construction only. This approval does not relieve the developer from obtaining approvals from other agencies having authority over the project. The developer must submit as-built drawings to the Town prior to obtaining any permits to operate or fr... ...ents.
Approved By: ABlessing Date: 8/27/2018

EAGLE ENGINEERING

2013 Van Buren Avenue
Indian Trail, NC 28079
(704) 882-4222

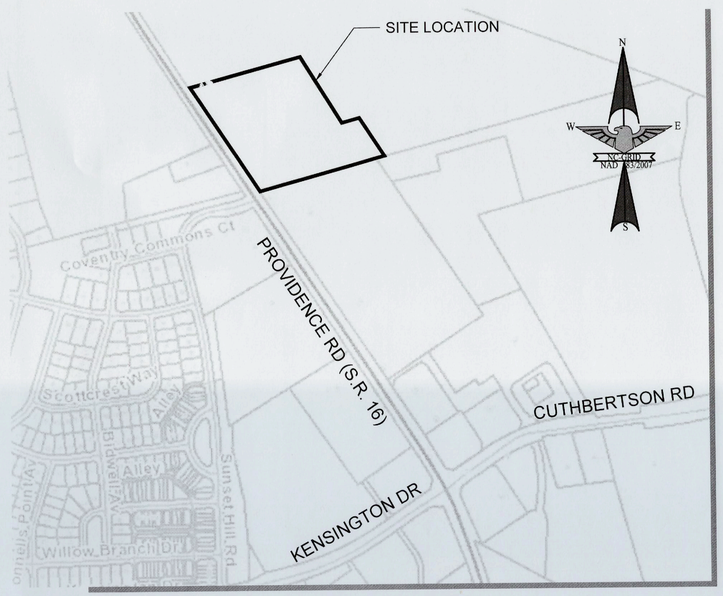
P.O. BOX 551
Alpharetta, GA 30009
(678) 339-0640

www.eagleonline.net

PROJECT ENGINEER: JOHN H. ROSS, P.E.
STREET ADDRESS: 2013A VAN BUREN AVENUE
CITY, STATE, ZIP INDIAN TRAIL, NC 28079
PHONE: 704.882.4222
FAX: 704.882.4232

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14959 JOHN HOUSTON ROSS 2-16-18

PREPARED FOR: TRIBEK PROPERTIES
STREET ADDRESS: 2820 SELWYN AVENUE SUITE 425
CITY, STATE , ZIP: CHARLOTTE, NC 28209
PHONE: (704) 333-8484
CONTACT: BLANTON HAMILTON



VICINITY MAP
SCALE: 1" = 400'

Sheet List Table	
Sheet Number	Sheet Title
C-0.0	COVER SHEET
C-1.0	EXISTING CONDITIONS
C-2.0	SITE PLAN OVERALL
C-3.0	EROSION CONTROL PLAN - PHASE 1
C-3.1	EROSION CONTROL PLAN - PHASE 2
C-3.2	EROSION CONTROL DETAILS & NOTES
C-3.3	EROSION CONTROL DETAILS & NOTES
C-3.4	STANDARDS & SPECIFICATIONS
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C-4.1	FINISH GRADING PLAN (1 of 4)
C-4.2	FINISH GRADING PLAN (2 of 4)
C-4.3	FINISH GRADING PLAN (3 of 4)
C-4.4	FINISH GRADING PLAN (4 of 4)
C-4.5	STORM DRAIN PROFILES (1 of 2)
C-4.6	STORM DRAIN PROFILES (2 of 2)
C-4.7	BMP PLAN - WET POND
C-5.0	UTILITY PLAN OVERALL
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C-6.1	SITE DETAILS - WATER AND SEWER
C-6.2	SITE DETAILS - WATER AND SEWER
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C-7.1	SUNSET HILL ROAD STRIPING PLAN
C-7.2	OFFSITE ROADWAY DETAILS
C-7.3	OFFSITE ROADWAY DETAILS
L-1.0	OVERALL PLANTING
L-1.1	PLANTING PLAN
L-1.2	PLANTING PLAN
L-1.3	PLANTING PLAN
L-1.4	PLANTING PLAN
L-1.5	PLANT LEGEND & SPECIFICATIONS
E-1.0	LIGHTING PLAN

NO.	DATE	BY	ISSUE
1	4-9-18	KEW	1st PLANCHECK REVISIONS PER TOWN & NCDOT
2	6-12-18	KEW	2nd PLANCHECK REVISIONS PER TOWN & NCDOT
3	8-1-18	KEW	3rd PLANCHECK REVISIONS PER TOWN & NCDOT
4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

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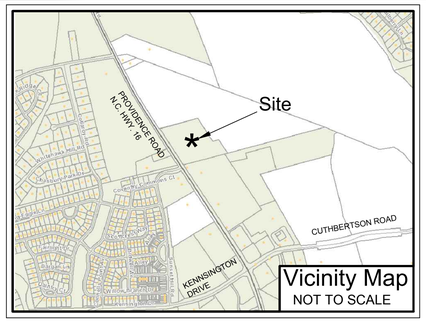
N.C. ONE-CALL CENTER
IT'S THE LAW!

EEI Project Number: 5117



SCHEDULE B, SECTION II

SCHEDULE B - SECTION II
EXCEPTIONS
TITLE POLICY NO. NCS-757906-PHX1, EFFECTIVE DATE APRIL 20, 2016

1. DEFECTS, LIENS, ENCUMBRANCES, ADVERSE CLAIMS OR OTHER MATTER, IF ANY, CREATED, FIRST APPEARING IN THE PUBLIC RECORDS OR ATTACHING SUBSEQUENT TO THE EFFECTIVE DATE HEREOF BUT PRIOR TO THE DATE THE PROPOSED INSURED ACQUIRES FOR VALUE OF RECORD THE ESTATE OR INTEREST OR MORTGAGE THEREON COVERED BY THIS COMMITMENT.

2. TAXES OR ASSESSMENTS FOR THE YEAR 2016, BUT NOT YET DUE AND PAYABLE, AND ALL SUBSEQUENT YEARS.

3. GRANT OF EASEMENT TO NORTH CAROLINA NATURAL GAS CORPORATION, A DELAWARE COPORATION RECORDED IN BOOK 927, PAGE 693, UNION COUNTY REGISTRY. **AFFECTS THE PROPERTY TO THE EXTENT SHOWN HEREON.**

4. RIGHT-OF-WAY AND EASEMENT AGREEMENT BY AND BETWEEN CUTHBERTSON RD I, LLC, A NORTH CAROLINA LIMITED LIABILITY COMPANY AND CARRINGTON - FIST COLONY, LLC, A NORTH CAROLINA LIMITED LIABILITY COMPANY RECORDED IN BOOK 4142, PAGE 13, UNION COUNTY REGISTRY. **AFFECTS THE PROPERTY TO THE EXTENT SHOWN HEREON.**

5. DEED FOR HIGHWAY RIGHT OF WAY TO CUTHBERTSON RD I, LLC RECORDED IN BOOK 4869, PAGE 193, UNION COUNTY REGISTRY. **AFFECTS THE PROPERTY TO THE EXTENT SHOWN HEREON.**

6. EASEMENTS AND ANY OTHER FACTS AS SHOWN ON PLAT RECORDED IN MAP BOOK 4, FILE 119, UNION COUNTY REGISTRY. **DOES NOT AFFECT THE SUBJECT PROPERTY**.

7. TITLE TO ANY PORTION OF THE PROPERTY LYING WITHIN THE RIGHT OF WAY OF PROVIDENCE ROAD. **A PORTION OF THE PROPERTY LIES WITHIN THE N.C.D.O.T. MAINTENANCE RIGHT OF WAY OF PROVIDENCE ROAD.**

8. RIGHTS OF PARTIES IN POSSESSION AS TENANTS ONLY, UNDER UNRECORDED LEASES(S) OR RENTAL AGREEMENT(S).

9. ENCROACHMENTS, OVERLAPS, BOUNDARY LINE DISPUTES, DEFICIENCY IN AMOUNT OF AREA, RIGHTS, EASEMENTS, DITCHES, CARTWAYS, SETBACKS, RIGHT OF PARTIES IN POSSESSION, INTEREST OR CLAIMS WHICH WOULD BE REVEALED BY A CURRENT AND ACCURATE SURVEY AND INSPECTION OF THE LAND.

LEGAL DESCRIPTION

BEGINNING AT AN EXISTING P.K. NAIL IN THE ASPHALT OF THE "REAR ACCESS DRIVE/ROADWAY TRACT" AS SHOWN IN DEED BOOK 4142, PAGE 13, UNION COUNTY REGISTRY, AND HAVING NORTH CAROLINA STATE PLANE COORDINATES OF N: 445,242.77 E: 1,472,634.16. SAID BEGINNING POINT BEING LOCATED ON THE LINE OF SARA LIGHTING, INC. PROPERTY (DEED BOOK 5213, PAGE 513).

THENCE FROM THE POINT OF BEGINNING S77°09'41"W 62.07 FEET TO A POINT IN PROVIDENCE ROAD (N.C. HIGHWAY 16), THENCE ALONG PROVIDENCE ROAD THE FOLLOWING TO COURSES: 1) N32°05'30"W 237.97 FEET TO A POINT, 2) N31°57'45"W 391.83 FEET TO A POINT BEING THE SOUTHERLY CORNER OF THE ROBERT AND CHRISTINE PFISTER PROPERTY (DEED BOOK 376, PAGE 137).

THENCE LEAVING PROVIDENCE ROAD AND WITH THE LINE OF ROBERT & CHRISTINE PFISTER THE FOLLOWING 4 COURSES: 1) N77°06'53"E CROSSING A 1/2" NEW IRON REBAR AT 41.30 FEET FOR A TOTAL DISTANCE OF 619.14 FEET TO AN EXISTING 1" IRON PIPE, 2) S32°13'38"E 391.75 FEET TO AN EXISTING 1" IRON PIPE, 3) N77°24'05"E 93.93 FEET TO AN EXISTING 1/2" EYE BOLT, 4) S32°03'59"E 238.77 FEET TO AN EXISTING 1" IRON PIPE IN THE NORTHERLY LINE OF CUTHBERTSON RD I, LLC (DEED BOOK 4142, PAGE 4).

THENCE WITH THE LINE OF THE CUTHBERTSON RD I, LLC PROPERTY AND CONTINUING WITH THE LINE OF THE AFOREMENTIONED SARA LIGHTING, INC. PROPERTY, S77°09'41"W 652.84 FEET TO THE POINT AND PLACE OF BEGINNING.

THE PROPERTY AS DESCRIBED CONTAINS 8.965 ACRES, MORE OR LESS, ALL AS SHOWN ON AN ALTA/NSPS SURVEY PREPARED BY EAGLE ENGINEERING, INC. (RUSSELL L. WHITEHURST, NC PLS L-3661) AND DATED JUNE 5, 2017.

LEGEND OF SYMBOLS & ABBREVIATIONS

EIP - EXISTING IRON PIPE
EIR - EXISTING IRON REBAR
NIR - NEW IRON REBAR
S.T. - SIGHT TRIANGLE
M.B.S. - MINIMUM BUILDING SETBACK
P.S.D.E. - PUBLIC STORM DRAINAGE EASEMENT
S.S.E. - SANITARY SEWER EASEMENT
SSMH - SANITARY SEWER MANHOLE
R/W - RIGHT OF WAY
GPUE - GENERAL PUBLIC UTILITY EASEMENT
C.P. - COMPUTED POINT
ECM - EXISTING CONCRETE MONUMENT
E.P.K. - EXISTING P.K. NAIL

- HANDICAPPED PARKING
- TRANSMISSION TOWER
- UTILITY POLE
- UNDERGROUND GASLINE
- OVERHEAD UTILITY LINE
- SANITARY SEWER LINE
- SANITARY SEWER MANHOLE
- FIRE HYDRANT
- WATER VALVE
- STORM DRAIN MANHOLE
- YARD INLET / AREA DRAIN
- RAILROAD TRACK
- MONITORING WELL
- ELECTRIC BOX/TRANSFORMER
- CATCH BASIN
- STORM DRAIN
- WATER LINE
- FENCE LINE
- ZONING LINE
- UNDERGROUND TELEPHONE

MISCELLANEOUS NOTES

AREAS COMPUTED USING COORDINATE GEOMETRY.

IRON REBARS AT ALL PROPERTY CORNERS UNLESS OTHERWISE NOTED.

DEED REFERENCE: AS SHOWN.

ALL ADJOINER PROPERTY OWNER INFORMATION IS TAKEN FROM CURRENT DEEDS AND TAX RECORDS AND ARE CONSIDERED "NOW OR FORMERLY".

RAW ERROR OF CLOSURE: 1:10,000+. BOUNDARY TRAVERSE WAS ADJUSTED USING THE LEAST SQUARES METHOD.

OTHER UNDERGROUND UTILITIES MAY EXIST BUT THEIR LOCATIONS ARE NOT KNOWN.

THIS SURVEY IS OF AN EXISTING PARCEL OR PARCELS OF LAND.

ALL DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES.

THE PROPERTY SHOWN HEREON IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON F.E.M.A. FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 3710447400J, EFFECTIVE DATE OCTOBER 16, 2008.

CONTOUR INTERVAL: 1 FOOT

ELEVATION DATUM: NAVD 88

UTILITY NOTES

THE LOCATION OF UTILITIES SHOWN HEREON ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES ONLY. THE SURVEYOR WAS NOT PROVIDED WITH UNDERGROUND PLANS TO DETERMINE THE LOCATION OF ANY SUBTERRANEAN USES. THIS SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THERE IS NO CERTAINTY OF THE ACCURACY OF THE INFORMATION AND IT SHALL BE CONSIDERED IN THE LIGHT BY THOSE USING THIS SURVEY. UTILITIES AND STRUCTURES NOT SHOWN MAY BE ENCOUNTERED. THE OWNER, HIS CONSULTANTS AND HIS CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THIS SURVEYOR IS NOT RESPONSIBLE FOR THE SUFFICIENCY OF THE UNDERGROUND UTILITY INFORMATION PROVIDED HEREON, ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

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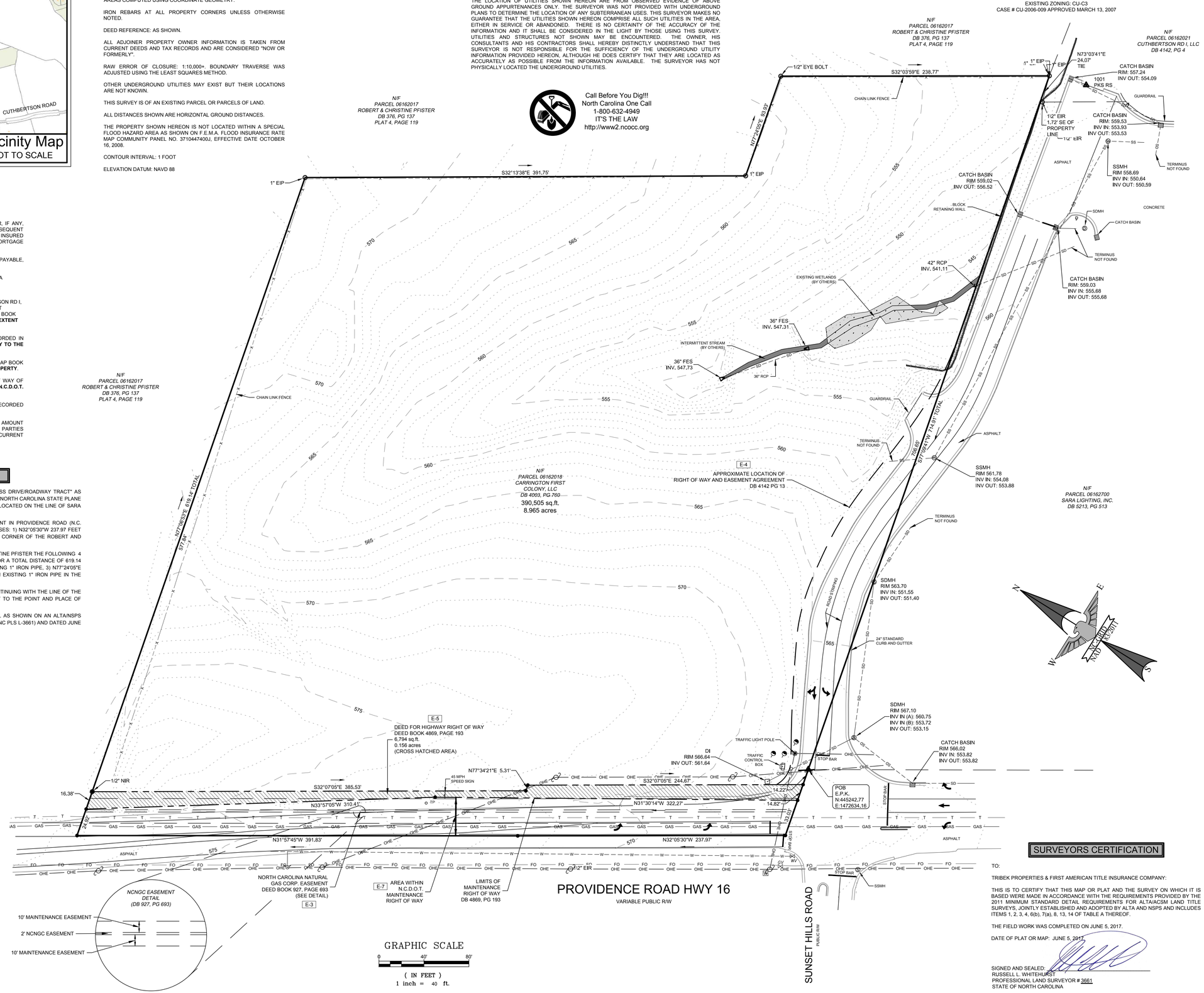
http://www2.ncocc.org

ZONING INFORMATION

EXISTING ZONING: CU-C3
CASE # CU-2006-009 APPROVED MARCH 13, 2007



SURVEYORS CERTIFICATION

TO:

TRIBEK PROPERTIES & FIRST AMERICAN TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE REQUIREMENTS PROVIDED BY THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS AND INCLUDES ITEMS 1, 2, 3, 4, 6(b), 7(a), 8, 13, 14 OF TABLE A THEREOF.

THE FIELD WORK WAS COMPLETED ON JUNE 5, 2017.

DATE OF PLAT OR MAP: JUNE 5, 2017

SIGNED AND SEALED:
RUSSELL L. WHITEHURST
PROFESSIONAL LAND SURVEYOR # 3661
STATE OF NORTH CAROLINA

EAGLE ENGINEERING
P.O. BOX 551
Alpharetta, GA 30009
(678) 339-4640
2013A Van Buren Avenue
Indian Trail, NC 28079
(704) 882-4272
www.eagleonline.net

NO.	DATE	BY	ISSUE

THE CARRINGTON FIRST COLONY, LLC PROPERTY
WAXHAW, UNION CO., N.C.

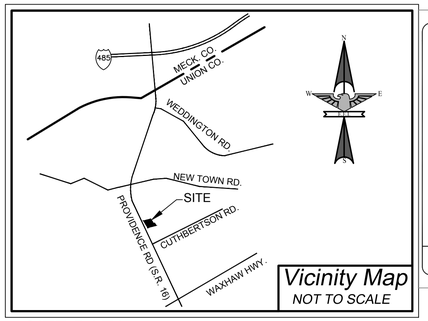
CERTIFY TO:
TRIBEK PROPERTIES
FIRST AMERICAN TITLE INSURANCE COMPANY

ALTA/NSPS SURVEY

DESIGNED BY	DRAWN BY	CHECKED BY
n/a	FMH	RLW
Scale 1" = 40'	DATE JUNE 5, 2017	JOB NUMBER 5117

NORTH CAROLINA PROFESSIONAL SEAL L-3661 LAND SURVEYOR RUSSELL L. WHITEHURST
6/9/17

Sheet
C-1.0



SITE DATA

PROPERTY OWNER:	TRIBEK PROPERTIES 2820 SELWYN AVENUE, SUITE 425 CHARLOTTE, NC 28209 CONTACT: BLANTON HAMILTON TELEPHONE: (704) 333-8484 EMAIL: bhamilton@tribek.com	DEVELOPER:	TRIBEK PROPERTIES 2820 SELWYN AVENUE, SUITE 425 CHARLOTTE, NC 28209 CONTACT: BLANTON HAMILTON TELEPHONE: (704) 333-8484 EMAIL: bhamilton@tribek.com

TOTAL SITE AREA: 8.96 AC. (GROSS, TO CL OF PROVIDENCE RD.)
8.01 AC ± (NET OF PROPOSED 50' R/W FROM CL OF PROVIDENCE RD AND RIGHT-OF-WAY DEDICATION FOR SUNSET HILL RD)

AREA COVERAGE:
IMPERVIOUS AREA
PROPOSED BUILDINGS = ±0.99 AC (12% OF NET AREA)
PROPOSED PAVEMENT / SIDEWALKS = ±3.11 AC (39% OF NET AREA)

PERVIOUS AREA
BUFFERS/LANDSCAPE/ OPEN SPACE = ±4.00 AC (51% OF NET AREA)

PROPERTY ADDRESS: 2913 PROVIDENCE ROAD SOUTH, WAXHAW, NC
EXISTING ZONING: CD-C3
TAX PARCEL NO.: 06-162-018
DEED BOOK: 4003 PAGE 760

PROPOSED USE:
PARCEL 1 (1.59 AC)
DAYCARE: ±11,727 SF

PARCEL 2 (1.14 AC)
GENERAL OFFICE: ±8,645 SF

PARCEL 3 (2.35 AC)
GROCERY STORE: ±18,850 SF

PARCEL 4 (1.37 AC)
FAST FOOD: ±3,886 SF

PARCEL 5 (1.75 AC)
BMP POND (C.O.A.)

PARKING ANALYSIS:
PARCEL 1
DAYCARE: (0.35 SPACES x 138 STUDENTS) - 20% = 39 SPACES REQUIRED
46 PROVIDED

PARCEL 2
GENERAL OFFICE: ((3.6 SPACES / 1000) x 8,645 SF) - 20%= 25 SPACES REQUIRED
31 SPACES PROVIDED

PARCEL 3
GROCERY STORE: ((6 SPACES / 1000 SF) x 18,850) - 20% = 91 SPACES REQUIRED
97 PROVIDED

PARCEL 4
FAST FOOD: ((15 SPACES / 1000 SF) x 3,607) - 20% = 43 SPACES REQUIRED
43 PROVIDED

TOTAL PARKING REQUIRED = 198
TOTAL PARKING PROVIDED = 212*
*212 TOTAL SPACES (INCLUDING 10 HANDICAP ACCESSIBLE SPACES)

TREE SAVE ANALYSIS:
TOTAL LOT AREA = 8.96 AC
TOTAL BUFFER AREA = 1.20 AC
TOTAL RIGHT-OF-WAY DEDICATION = 0.95 AC
(PROVIDENCE RD & SUNSET HILL RD)

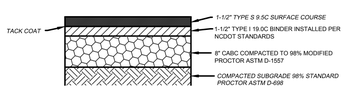
TOTAL INTERNAL AREA: 8.96 AC - 1.20 AC - 0.95 AC = 6.81 AC

TREE SAVE REQUIRED: 6.81 AC x 0.10 (10%) = 0.68 AC
0.76 AC PROVIDED

SETBACKS:
FRONT SETBACK: 20' LANDSCAPE BUFFER
REAR SETBACK: 25' CLASS "C" SETBACK
SIDE SETBACK: 45' CLASS "B" SETBACK

GENERAL NOTES

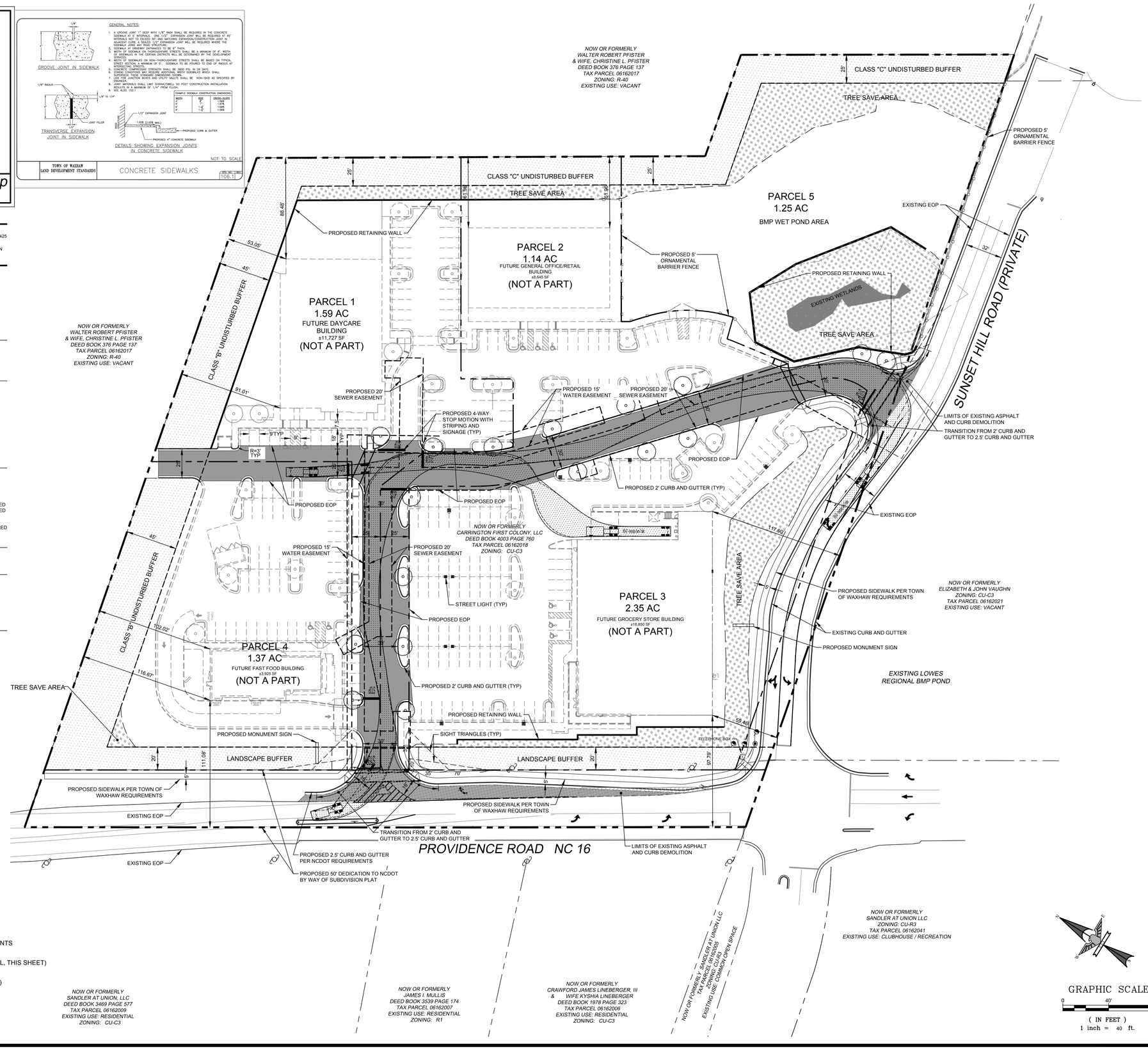
1. PROJECT IS NOT LOCATED WITHIN A FLOOD PLAIN.
2. THE FUTURE BUILDINGS AND SITE LAYOUT SHOWN AS DASHED WILL NOT BE CONSTRUCTED UNDER THIS PERMIT.
3. THE SETBACK DIMENSIONS SHOWN ARE FOR TOWN REFERENCE.
4. THE PROPOSED MONUMENT SIGNS SHALL BE PERMITTED SEPARATELY.
5. THE PAVEMENT SHOWN WITHIN THE PROPOSED DRIVE ISLE SHALL BE HEAVY DUTY, PER THE PAVEMENT SECTION DETAIL SHOWN ON THIS SHEET. OFFSITE ROADWAY IMPROVEMENTS WITHIN NCDOT RIGHT OF WAY SHALL BE PER NCDOT REQUIREMENTS.
6. 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; FERTILIZATION, PRUNING, PEST CONTROL, MULCHING, MOWING (IF ANY), PROTECTION OF THE ROOT ZONES FROM EQUIPMENT, CONSTRUCTION AND STORAGE OF MATERIALS, WATERING, AND OTHER CONTINUING MAINTENANCE OPERATIONS.
7. ACCESS BETWEEN PARCELS SHALL BE GRANTED BY WAY OF BLANKET ACCESS EASEMENT AS INDICATED ON SUBDIVISION PLAT.
8. TREE LOCATIONS ARE APPROXIMATE AND SHALL BE ADJUSTED IN THE FIELD TO AVOID CONFLICTS WITH PROPOSED UTILITIES.
9. ALL PROPOSED SIGNS WILL BE PERMITTED SEPARATELY.



ASPHALT PAVEMENT SECTION (HEAVY DUTY)

LEGEND

- PROPOSED PAVEMENT PER NCDOT REQUIREMENTS
- PROPOSED HEAVY DUTY PAVEMENT (SEE DETAIL, THIS SHEET)
- UNDISTURBED BUFFER (NOT TO BE DEVELOPED)
- TREE SAVE AREA (NOT TO BE DEVELOPED)
- PROPOSED TREE
- EXISTING PROPERTY LINE



ENGLE ENGINEERING
FIRM LICENSE # C-0873
2013A Van Buren Avenue
Indian Trail, NC 28079
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www.englelonline.net

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CARRINGTON SQUARE
TOWN OF WAXHAW, UNION COUNTY, NC
FOR THE BENEFIT OF:
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

SITE PLAN OVERALL

DESIGNED BY	KEW	DRAWN BY	KEW
CHECKED BY	JHR	DATE	12-4-2017
Scale	AS SHOWN	JOB NUMBER	5117

NORTH CAROLINA PROFESSIONAL SEAL 14969 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-2.0

CONSTRUCTION NOTES & SEQUENCE:

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT EROSION IS MINIMIZED AND THAT COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, REGULATIONS, AND ORDINANCES IS MAINTAINED THROUGHOUT EXECUTION OF THIS PROJECT.

1. CONTRACTOR TO SETUP AN ON-SITE PRE-CONSTRUCTION CONFERENCE WITH THE TOWN OF WAXHAW EROSION CONTROL INSPECTOR TO DISCUSS EROSION CONTROL MEASURES PRIOR TO BEGINNING ANY WORK. THE FINANCIALLY RESPONSIBLE PERSON IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF THE EROSION AND SEDIMENTATION CONTROLS.
2. INSTALL SILT FENCE & ASSOCIATED MEASURES ALONG PROPERTY LINES PER PLANS TO ESTABLISH PERIMETER PROTECTION.
3. AFTER PERIMETER PROTECTION MEASURES HAVE BEEN ESTABLISHED, BEGIN INSTALLATION OF THE SKIMMER BASIN AND ASSOCIATED GRADING MEASURES ONLY AS NECESSARY FOR INSTALLATION OF THESE DEVICES. AN EROSION CONTROL INSPECTION IS REQUIRED.
4. UPON COMPLETION OF SKIMMER BASIN INSTALLATION MEASURES, IMMEDIATELY SEED AND STABILIZE SEDIMENT BASIN. AN EROSION CONTROL INSPECTION IS REQUIRED.
5. ONCE INSTALLATION OF PHASE 1 EROSION CONTROL MEASURES ARE COMPLETE, CONTRACTOR IS TO CONTACT TOWN OF WAXHAW EROSION CONTROL INSPECTOR FOR AN INSPECTION.
6. AFTER TOWN OF WAXHAW INSPECTION AND APPROVAL, START CLEARING AND GRADING OF THE SITE AS NEEDED FOR ROUGH GRADING OPERATIONS. MAINTAIN EROSION CONTROL DEVICES AS NECESSARY TO PREVENT OFF SITE SEDIMENTATION.
7. ROUGH GRADE ENTIRE SITE WITH APPROVED STRUCTURAL FILL MATERIAL.
8. AS PORTIONS OF THE SITE ARE BROUGHT UP TO GRADE, THE CONTRACTOR SHALL ADJUST EROSION CONTROL MEASURE AS NECESSARY.
9. AS SITE IS BROUGHT TO FINAL GRADING, INSURE SOIL STABILIZATION MEASURES AND SEEDING SCHEDULE ARE FOLLOWED AS PER THE PLANS.
10. CONTRACTOR TO COORDINATE INSPECTION AND APPROVAL BY THE TOWN OF WAXHAW EROSION CONTROL INSPECTOR.

GROUND STABILIZATION		
SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	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 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7-DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1.	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)

*EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE." (SECTION II.B (2)(B)).

NOTE: SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITHIN 7 DAYS. SLOPES 3:1 OR FLATTER STABILIZATION SHALL BE PROVIDED WITHIN 14 DAYS.

EROSION CONTROL NOTES:

1. ALL TRAPS AND BASINS SHALL BE INSPECTED DAILY (MONDAY THROUGH FRIDAY) FOR EXCESSIVE SILT. CONTRACTOR SHALL REMOVE EXCESSIVE SILT FROM THE TRAPS IMMEDIATELY BEFORE CONSTRUCTION COMMENCES ON EACH WORKING DAY,AS NECESSARY. MAINTENANCE SHALL CONTINUE THROUGH COMPLETION OF THE PROJECT.
2. THE CONTRACTOR ENGAGED IN OR CONDUCTING THE LAND-DISTURBING ACTIVITY SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES AND FACILITIES DURING THE DEVELOPMENT OF THIS SITE AS REQUIRED BY THE APPROVED PLAN. OPERATIONS AND MAINTENANCE CONDITIONS ARE INCLUDED IN THE PLAN OUTLINING HOW THE CONTRACTOR SHALL PROVIDE FOR OPERATIONS AND MAINTENANCE DURING CONSTRUCTION.
3. WITHIN SEVEN CALENDAR DAYS FOLLOWING SOIL DISTURBANCE OR RE-DISTURBANCE, ALL PERIMETER SEDIMENT CONTROLS SHALL BE INSTALLED AND TEMPORARY STABILIZATION MEASURES SHALL BE COMPLETED ON TOPSOIL STOCKPILES.
4. AREAS AT FINAL GRADE SHALL RECEIVE PERMANENT STABILIZATION MEASURES WITHIN SEVEN CALENDAR DAYS OF REACHING FINAL GRADE.
5. THE RESPONSIBILITY FOR MAINTAINING ALL PERMANENT EROSION AND SEDIMENT CONTROL MEASURES AND FACILITIES INCLUDING MEASURES IN EASEMENTS AND NCDOT RIGHT OF WAY, AFTER SITE LAND DISTURBING ACTIVITY SHALL BE THE PERSON OR ENTITY AS LISTED ON THE FINANCIAL RESPONSIBILITY FORM FOR THE PROJECT.
6. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND /OR OFF-SITE SEDIMENTATION.
7. RUNOFF FROM BUILDING PADS AND OTHER RELATIVELY LEVEL AREAS MUST BE DIVERTED BY USE OF A TEMPORARY DIVERSION DITCH AT THE TOP OF A FILL SLOPE TOWARDS EITHER A SLOPE DRAIN OR RIP-RAP LINED CHANNEL DOWN THE FILL SLOPE. THE SLOPE DRAIN OR RIP-RAP LINED CHANNEL SHALL REMAIN IN PLACE UNTIL THE FILL SLOPE HAS BEEN ADEQUATELY STABILIZED WITH ESTABLISHED VEGETATION.
8. SILT FENCE SHALL BE A MINIMUM OF 10 FT OFF THE PROPOSED TOE OF SLOPE TO PROVIDE SPACE FOR MAINTENANCE AND SEDIMENT-STORAGE TO THE MAXIMUM EXTENT POSSIBLE.
9. GRADED SLOPES AND FILLS SHALL BE PROTECTED WITH A ROLLED EROSION CONTROL PRODUCT MEETING REQUIREMENTS OF NCDEQ "STANDARDS AND SPECIFICATIONS", SECTION 6.17, AND THE THE TOWN'S SEDIMENTATION AND EROSION CONTROL INSPECTOR; FOR ROLLED EROSION CONTROL PRODUCTS, IF COMPLETED OUTSIDE OPTIMUM GERMINATION SEASONS, WHEN UNFAVORABLE WEATHER CONDITIONS PREVENT ESTABLISHMENT OF VEGETATION GROUND COVER
10. PERSON RESPONSIBLE FOR LAND DISTURBING ACTIVITY IS TO MAKE SURE THE APPROVED EROSION CONTROL PLAN IS FOLLOWED. INSPECTION REPORTS ARE REQUIRED.
11. SILT FENCE STONE OUTLETS ARE NOT INTENDED TO FUNCTION AS A MEASURE IN LIEU OF A SEDIMENT TRAP OR BASIN, AND OFFER NO FILTRATION VALUE FOR RETENTION OF SEDIMENT. PRIMARY PURPOSE IS TO PREVENT SILT FENCE LAY DOWN FOR SMALL RETENTION AREAS. STONE OUTLETS SHOULD BE PLACED 1.0 FT. ABOVE THE LOWEST ELEVATION OF A FENCED AREA AS TO PREVENT PONDING BEHIND SILT FENCES THAT EXCEED 1.0 FT.
12. ALL MUD AND OBJECTIONABLE MATERIAL WILL BE REMOVED FROM STREETS IMMEDIATELY PER THE TOWN OF WAXHAW EROSION CONTROL ORDINANCE.
13. SELF INSPECTION IS REQUIRED ONCE A WEEK AND AFTER EVERY 1/2" RAIN EVENT. SELF INSPECTION REPORTS ARE REQUIRED TO BE KEPT ON SITE AND AVAILABLE AT ALL TIMES TO THE TOWN'S SEDIMENTATION AND EROSION CONTROL INSPECTOR.

NOTE:
ANY OFF-SITE BORROW AND WASTE REQUIRED FOR THIS PROJECT MUST COME FROM A SITE WITH AN APPROVED EROSION CONTROL PLAN, A SITE REGULATED UNDER MINING ACT OF 1971, OR A LANDFILL REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT. TRASH/DEBRIS FROM DEMOLITION ACTIVITIES OR GENERATED BY ANY ACTIVITIES ON SITE MUST BE DISPOSED OF AT A FACILITY REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT OR PER DIVISION OF SOLID WASTE MANAGEMENT OR DIVISION OF WATER RESOURCES RULES AND REGULATIONS.

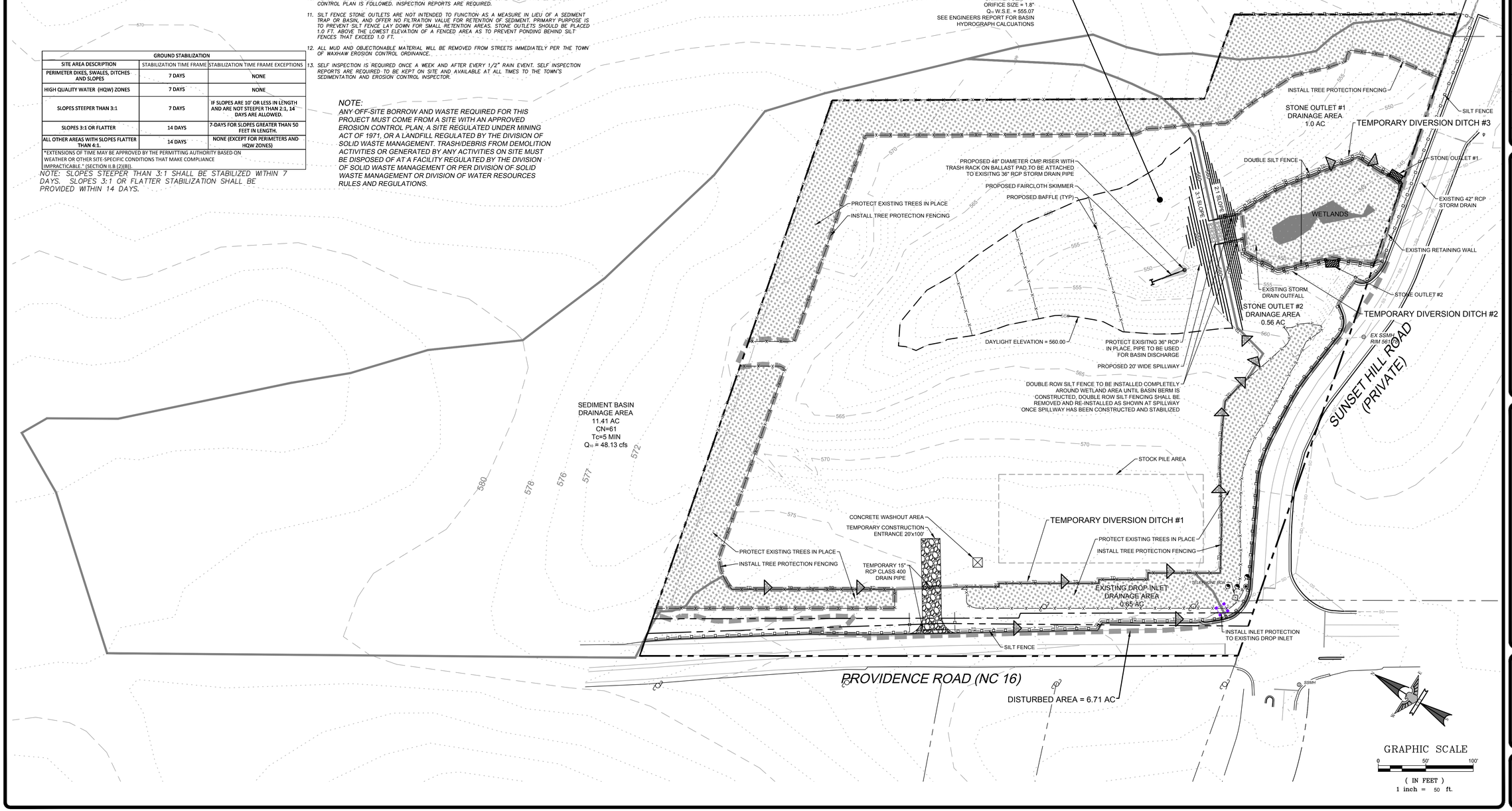
LEGEND

- ELEV — EXISTING CONTOUR
- ELEV — PROPOSED CONTOUR
- TD — TEMPORARY DIVERSION DITCH
- LIMITS OF DISTURBANCE
- DRAINAGE AREA
- PROPOSED SILT FENCE
- PROPOSED INLET PROTECTION
- PROPOSED TEMPORARY CHECK DAM
- PROPOSED TREE PROTECTION AREA

TEMPORARY DIVERSION DITCH TABLE				
DITCH No.	10-YR (CFS)	VELOCITY (FPS)	MIN WIDTH TOP WIDTH	DEPTH OF FLOW
1	1.12	3.65	1.92	0.53
2	1.06	3.45	1.92	0.51
3	1.89	4.14	2.34	0.66

ADDITIONAL EROSION CONTROL NOTES:

1. AS REQUIRED BY THE NPDES GENERAL PERMIT NCG010000, ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (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 LAND DISTURBING ACTIVITY. GROUND STABILIZATION TIMEFRAME EXEMPTIONS CAN BE FOUND IN THE NPDES GENERAL 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 DIRECTOR OF DEVELOPMENT SERVICES.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BASED UPON SPECIFIC SITE CONDITIONS.
4. CONTACT THE TOWN OF WAXHAW DEVELOPMENT SERVICES DEPARTMENT, 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 THE TOWN OF WAXHAW DEVELOPMENT SERVICES DEPARTMENT.
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. FOR PHASED EROSION CONTROL PLANS, THE CONTRACTOR SHALL MEET WITH THE EROSION CONTROL SPECIALIST PRIOR TO COMMENCING EACH PHASE OF EROSION CONTROL MEASURES.
8. SITE GRADING IS TO BE COVERED UNDER THE GENERAL STORMWATER PERMIT NCG010000. ANY LAND DISTURBING ACTIVITY > 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 IS TO KEEP STREET CLEAR OF MUD AND OTHER DEBRIS.
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 ENVIRONMENTAL 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 COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.
12. SILT SACKS WILL BE PLACED IN BASINS/INLETS ALONG ROADWAYS AFTER INITIAL ASPHALT SURFACE WORK IS COMPLETED.
13. THE FINANCIALLY RESPONSIBLE PARTY/AGENT OR THE LANDOWNER/AGENT OF A LAND DISTURBING ACTIVITY > ONE ACRE IS REQUIRED TO SELF-INSPECT THE PROJECT. A SELF INSPECTION, AS WELL AS DOCUMENTATION OF A PROJECT AFTER EACH PHASE OF THE PROJECT, IS REQUIRED.



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NO.	DATE	BY	ISSUE
1	4-9-18	KEW	1st PLANCHECK REVISIONS PER TOWN & NCDOT
2	6-12-18	KEW	2nd PLANCHECK REVISIONS PER TOWN & NCDOT
3	8-1-18	KEW	3rd PLANCHECK REVISIONS PER TOWN & NCDOT
4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

CARRINGTON SQUARE
TOWN OF WAXHAW, UNION COUNTY, NC
FOR THE BENEFIT OF:
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

EROSION CONTROL PLAN - PHASE 1

DESIGNED BY	KEW	DRAWN BY	KEW	CHECKED BY	JHR
Scale	AS SHOWN	DATE	12-4-2017	JOB NUMBER	5117

NORTH CAROLINA PROFESSIONAL SEAL 14909 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

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C-3.0

CONSTRUCTION NOTES & SEQUENCE:

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT EROSION IS MINIMIZED AND THAT COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, REGULATIONS, AND ORDINANCES IS MAINTAINED THROUGHOUT EXECUTION OF THIS PROJECT.

1. CONTRACTOR TO SETUP AN ON-SITE PRE-CONSTRUCTION CONFERENCE WITH THE TOWN OF WAXHAW EROSION CONTROL INSPECTOR TO DISCUSS PHASE 2 EROSION CONTROL MEASURES PRIOR TO BEGINNING ANY WORK. THE FINANCIALLY RESPONSIBLE PERSON IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF THE EROSION AND SEDIMENTATION CONTROLS.
2. MODIFY INSTALLED SILT FENCE & ASSOCIATED MEASURES FROM PHASE 1, ALONG PROPERTY LINES PER PLAN TO ESTABLISH PERIMETER PROTECTION. MODIFY DOUBLE ROW SILT FENCE AROUND WETLANDS AS SHOWN ON THE PLAN. DOUBLE ROW SILT FENCE AROUND WETLAND SHALL BE PLACED A MINIMUM OF 5 FEET FROM THE PERIMETER OF THE WETLANDS AS SHOWN TO ALLOW THE CONSTRUCTION OF THE PROPOSED RETAINING WALL. ALL TREE PROTECTION MEASURES FROM PHASE 1 EROSION CONTROL SHALL REMAIN IN PLACE FOR THE ENTIRE DURATION OF CONSTRUCTION.
3. AFTER PERIMETER PROTECTION MEASURES HAVE BEEN ESTABLISHED AND APPROVED BY THE TOWN OF WAXHAW EROSION CONTROL INSPECTOR, BEGIN CONSTRUCTION OF PROPOSED RETAINING WALL AROUND WETLANDS. UPON COMPLETION OF RETAINING WALL AROUND THE WETLANDS, CONSTRUCT THE SKIMMER BASIN, TEMPORARY DRAINAGE PIPING, AND ONLY THE ASSOCIATED GRADING AS NECESSARY FOR INSTALLATION OF THIS DEVICE. AN EROSION CONTROL INSPECTION IS REQUIRED.
4. UPON COMPLETION OF SKIMMER BASIN INSTALLATION MEASURES, IMMEDIATELY SEED AND STABILIZE SEDIMENT BASIN. AN EROSION CONTROL INSPECTION IS REQUIRED.
5. ONCE INSTALLATION OF PHASE 2 EROSION CONTROL MEASURES ARE COMPLETE, CONTRACTOR IS TO CONTACT TOWN OF WAXHAW EROSION CONTROL INSPECTOR FOR AN INSPECTION.
6. AFTER TOWN OF WAXHAW INSPECTION AND APPROVAL, START CLEARING AND GRADING OF THE SITE AS NEEDED FOR ROUGH GRADING OPERATIONS. MAINTAIN EROSION CONTROL DEVICES AS NECESSARY TO PREVENT OFF SITE SEDIMENTATION.
7. ROUGH GRADE ENTIRE SITE WITH APPROVED STRUCTURAL FILL MATERIAL.
8. INSTALL DIVERSION STORM DRAIN PIPE AND ASSOCIATED CATCH BASINS FIRST FOLLOWED BY THE REMAINING STORM DRAIN, SEWER, AND WATER SYSTEMS PER PLAN. ALL PROPOSED CATCH BASINS SHALL BE INSTALLED WITHOUT THE HOOD TO ALLOW RUNOFF TO ENTER THE CATCH BASIN. CONTRACTOR SHALL ENSURE ALL CATCH BASIN INLET PROTECTION IS TO REMAIN IN PLACE DURING GRADING AND UTILITY CONSTRUCTION. MAINTAIN EROSION CONTROL DEVICES AS NECESSARY TO PREVENT OFF SITE SEDIMENTATION. ALL TEMPORARY DRAINAGE PIPING SHALL REMAIN IN PLACE UNTIL THE FINAL INSTALLATION OF STORM DRAIN OUTFALLS INTO PROPOSED BMP POND ARE INSTALLED.
9. AS SITE IS BROUGHT TO FINAL GRADING, INSURE SOIL STABILIZATION MEASURES AND SEEDING SCHEDULE ARE FOLLOWED AS PER THE PLANS.
10. CONTRACTOR TO COORDINATE INSPECTION AND APPROVAL BY THE TOWN OF WAXHAW EROSION CONTROL INSPECTOR.

EROSION CONTROL NOTES:

1. ALL TRAPS AND BASINS SHALL BE INSPECTED DAILY (MONDAY THROUGH FRIDAY) FOR EXCESSIVE SILT. CONTRACTOR SHALL REMOVE EXCESSIVE SILT FROM THE TRAPS IMMEDIATELY BEFORE CONSTRUCTION COMMENCES ON EACH WORKING DAY,AS NECESSARY. MAINTENANCE SHALL CONTINUE THROUGH COMPLETION OF THE PROJECT.
2. THE CONTRACTOR ENGAGED IN OR CONDUCTING THE LAND-DISTURBING ACTIVITY SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES AND FACILITIES DURING THE DEVELOPMENT OF THIS SITE AS REQUIRED BY THE APPROVED PLAN, OPERATIONS AND MAINTENANCE CONDITIONS ARE INCLUDED IN THE PLAN OUTLINING HOW THE CONTRACTOR SHALL PROVIDE FOR OPERATIONS AND MAINTENANCE DURING CONSTRUCTION.
3. WITHIN SEVEN CALENDAR DAYS FOLLOWING SOIL DISTURBANCE OR RE-DISTURBANCE, ALL PERIMETER SEDIMENT CONTROLS SHALL BE INSTALLED AND TEMPORARY STABILIZATION MEASURES SHALL BE COMPLETED ON TOPSOIL STOCKPILES.
4. AREAS AT FINAL GRADE SHALL RECEIVE PERMANENT STABILIZATION MEASURES WITHIN SEVEN CALENDAR DAYS OF REACHING FINAL GRADE.
5. THE RESPONSIBILITY FOR MAINTAINING ALL PERMANENT EROSION AND SEDIMENT CONTROL MEASURES AND FACILITIES INCLUDING MEASURES IN EASEMENTS AND NCDOT RIGHT OF WAY, AFTER SITE LAND DISTURBING ACTIVITY SHALL BE THE PERSON OR ENTITY AS LISTED ON THE FINANCIAL RESPONSIBILITY FORM FOR THE PROJECT.
6. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND /OR OFF-SITE SEDIMENTATION.
7. RUNOFF FROM BUILDING PADS AND OTHER RELATIVELY LEVEL AREAS MUST BE DIVERTED BY USE OF A TEMPORARY DIVERSION DITCH AT THE TOP OF A FILL SLOPE TOWARDS EITHER A SLOPE DRAIN OR RIP-RAP LINED CHANNEL DOWN THE FILL SLOPE. THE SLOPE DRAIN OR RIP-RAP LINED CHANNEL SHALL REMAIN IN PLACE UNTIL THE FILL SLOPE HAS BEEN ADEQUATELY STABILIZED WITH ESTABLISHED VEGETATION.
8. SILT FENCE SHALL BE A MINIMUM OF 10 FT OFF THE PROPOSED TOE OF SLOPE TO PROVIDE SPACE FOR MAINTENANCE AND SEDIMENT-STORAGE TO THE MAXIMUM EXTENT POSSIBLE.
9. GRADED SLOPES AND FILLS SHALL BE PROTECTED WITH A ROLLED EROSION CONTROL PRODUCT MEETING REQUIREMENTS OF NCDEQ "STANDARDS AND SPECIFICATIONS", SECTION 6.17, AND THE THE TOWN'S SEDIMENTATION AND EROSION CONTROL INSPECTOR; FOR ROLLED EROSION CONTROL PRODUCTS, IF COMPLETED OUTSIDE OPTIMUM GERMINATION SEASONS, WHEN UNFAVORABLE WEATHER CONDITIONS PREVENT ESTABLISHMENT OF VEGETATION GROUND COVER
10. PERSON RESPONSIBLE FOR LAND DISTURBING ACTIVITY IS TO MAKE SURE THE APPROVED EROSION CONTROL PLAN IS FOLLOWED. INSPECTION REPORTS ARE REQUIRED.
11. SILT FENCE STONE OUTLETS ARE NOT INTENDED TO FUNCTION AS A MEASURE IN LIEU OF A SEDIMENT TRAP OR BASIN, AND OFFER NO FILTRATION VALUE FOR RETENTION OF SEDIMENT. PRIMARY PURPOSE IS TO PREVENT SILT FENCE LAY DOWN FOR SMALL RETENTION AREAS. STONE OUTLETS SHOULD BE PLACED 1.0 FT. ABOVE THE LOWEST ELEVATION OF A FENCED AREA AS TO PREVENT PONDING BEHIND SILT FENCES THAT EXCEED 1.0 FT.
12. ALL MUD AND OBJECTIONABLE MATERIAL WILL BE REMOVED FROM STREETS IMMEDIATELY PER THE TOWN OF WAXHAW EROSION CONTROL ORDINANCE.
13. SELF INSPECTION IS REQUIRED ONCE A WEEK AND AFTER EVERY 1/2" RAIN EVENT. SELF INSPECTION REPORTS ARE REQUIRED TO BE KEPT ON SITE AND AVAILABLE AT ALL TIMES TO THE TOWN'S SEDIMENTATION AND EROSION CONTROL INSPECTOR.

LEGEND

- —ELEV— EXISTING CONTOUR
- —ELEV— PROPOSED CONTOUR
- —TD— TEMPORARY DIVERSION DITCH
- LIMITS OF DISTURBANCE
- DRAINAGE AREA
- PROPOSED SILT FENCE
- PROPOSED INLET PROTECTION
- PROPOSED TEMPORARY CHECK DAM
- PROPOSED TREE PROTECTION AREA

GROUND STABILIZATION		
SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	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 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7-DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1.	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)

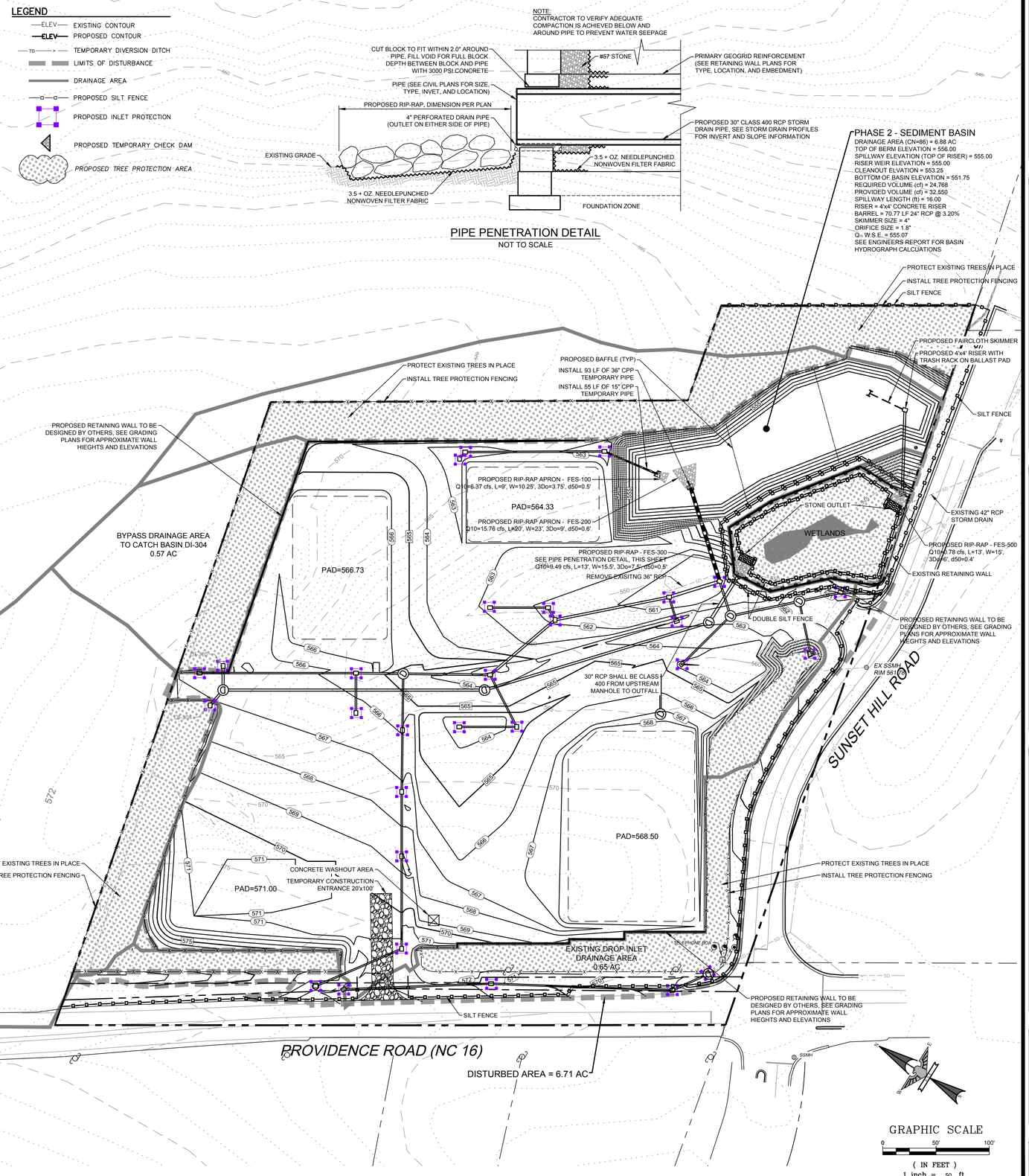
*EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE." (SECTION II.B (2)(B)).

NOTE:
SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITHIN 7 DAYS. SLOPES 3:1 OR FLATTER STABILIZATION SHALL BE PROVIDED WITHIN 14 DAYS.

NORTH AMERICAN GREEN SC250 OR APPROVED EQUAL SHALL BE INSTALLED ON SLOPES 2:1 OR GREATER AS SHOWN ON THESE PLANS.

INSTALL AMERICAN GREEN SC250 PERMANENT REINFORCEMENT MATTING OR APPROVED EQUAL

NOTE:
ANY OFF-SITE BORROW AND WASTE REQUIRED FOR THIS PROJECT MUST COME FROM A SITE WITH AN APPROVED EROSION CONTROL PLAN, A SITE REGULATED UNDER MINING ACT OF 1971, OR A LANDFILL REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT. TRASH/DEBRIS FROM DEMOLITION ACTIVITIES OR GENERATED BY ANY ACTIVITIES ON SITE MUST BE DISPOSED OF AT A FACILITY REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT OR PER DIVISION OF SOLID WASTE MANAGEMENT OR DIVISION OF WATER RESOURCES RULES AND REGULATIONS.



ADDITIONAL EROSION CONTROL NOTES:

1. AS REQUIRED BY THE NPDES GENERAL PERMIT NCG010000, ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (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 LAND DISTURBING ACTIVITY. GROUND STABILIZATION TIMEFRAME EXEMPTIONS CAN BE FOUND IN THE NPDES GENERAL 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 DIRECTOR OF DEVELOPMENT SERVICES.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BASED UPON SPECIFIC SITE CONDITIONS.
4. CONTACT THE TOWN OF WAXHAW DEVELOPMENT SERVICES DEPARTMENT, 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 THE TOWN OF WAXHAW DEVELOPMENT SERVICES DEPARTMENT.
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. FOR PHASED EROSION CONTROL PLANS, THE CONTRACTOR SHALL MEET WITH THE EROSION CONTROL SPECIALIST PRIOR TO COMMENCING EACH PHASE OF EROSION CONTROL MEASURES.
8. SITE GRADING IS TO BE COVERED UNDER THE GENERAL STORMWATER PERMIT NCG010000. ANY LAND DISTURBING ACTIVITY > 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 IS TO KEEP STREET CLEAR OF MUD AND OTHER DEBRIS.
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 ENVIRONMENTAL 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 COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.
12. SILT SACKS WILL BE PLACED IN BASINS/INLETS ALONG ROADWAYS AFTER INITIAL ASPHALT SURFACE WORK IS COMPLETED.
13. THE FINANCIALLY RESPONSIBLE PARTY/AGENT OR THE LANDOWNER/AGENT OF A LAND DISTURBING ACTIVITY > ONE ACRE IS REQUIRED TO SELF-INSPECT THE PROJECT. A SELF INSPECTION, AS WELL AS DOCUMENTATION OF A PROJECT AFTER EACH PHASE OF THE PROJECT, IS REQUIRED.

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NO.	DATE	BY	ISSUE
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CARRINGTON SQUARE
TOWN OF WAXHAW, UNION COUNTY, NC
FOR THE BENEFIT OF:
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

EROSION CONTROL PLAN - PHASE 2

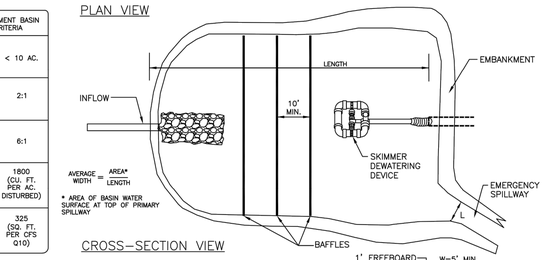
DESIGNED BY	KEW	DRAWN BY	KEW	CHECKED BY	JHR
Scale	AS SHOWN	DATE	12-4-2017	JOB NUMBER	5117

NORTH CAROLINA PROFESSIONAL SEAL 14999 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-3.1

SKIMMER SEDIMENT BASIN DESIGN CRITERIA	
DRAINAGE AREA (ACRES)	< 10 AC.
MIN. LENGTH TO WIDTH RATIO	2:1
MAX. LENGTH TO WIDTH RATIO	6:1
MIN. VOLUME REQUIRED	1800 (CU. FT. PER AC. DISTURBED)
SURFACE AREA REQUIRED	325 (SQ. FT. PER CFS Q10)

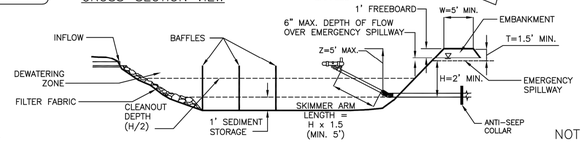
PLAN VIEW



AVERAGE WIDTH = AREA* / LENGTH

* AREA OF BASIN WATER SURFACE AT TOP OF PRIMARY SPILLWAY

CROSS-SECTION VIEW



NOTES:

1. REFER TO NCESCPDM SECTION #6.64 FOR ADDITIONAL DESIGN SPECIFICATIONS REGARDING SKIMMER SEDIMENT BASINS.
2. REFER TO STD. #524.1 FOR BAFFLE SPACING AND INSTALLATION
3. SKIMMER INVERT ELEVATION = BASIN BOTTOM + 1' MIN.
4. H = SPILLWAY ELEVATION – SKIMMER INVERT ELEVATION

NOT TO SCALE

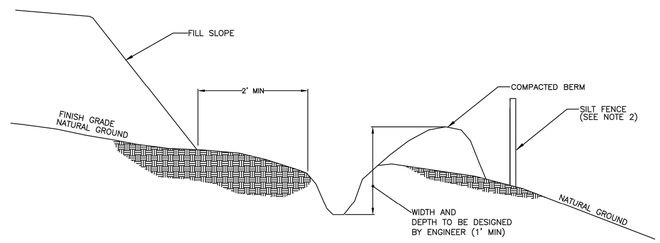
DATA BLOCK

BASIN	DRAINAGE AREA (ACRES)	DENUDED AREA (ACRES)	Q10	BASIN VOLUME REQUIRED (CUBIC FT.)	BASIN VOLUME PROVIDED (CUBIC FT.)	BASIN SURFACE AREA REQUIRED (SQ. FT.)	BASIN SURFACE AREA PROVIDED (SQ. FT.)	CLEANOUT DEPTH (FT.) H/2	H (FEET)	Z (FEET)	L (FEET)	T (FEET)	W (FEET)	SKIMMER PIPE DIAMETER	SKIMMER ORIFICE DIAMETER

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS

SKIMMER SEDIMENT BASIN

STD. NO. 502.1 REV.



NOTE:

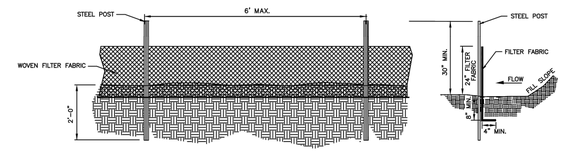
1. DITCH SHOULD HAVE LONGITUDINAL SLOPE OF 1%.
2. SILT FENCE MAY BE REQUIRED BEHIND BERM

NOT TO SCALE

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS

TEMPORARY SILT DITCH

STD. NO. 506.1 REV.



GENERAL NOTES:

1. WOVEN FILTER FABRIC BE USED WHERE SILT FENCE IS TO REMAIN FOR A PERIOD OF MORE THAN 30 DAYS.
2. STEEL POSTS SHALL BE 5'–0" IN HEIGHT AND BE OF THE SELF–FASTENER ANGLE STEEL TYPE.
3. TURN SILT FENCE UP SLOPE AT ENDS.
4. ORANGE SAFETY FENCE IS REQUIRED AT BACK OF SILT FENCE WHEN GRADING IS ADJACENT TO SWIM BUFFERS, STREAMS OR WETLANDS (REFER TO SWIM BUFFER GUIDELINES). THE COLOR ORANGE IS RESERVED FOR VISUAL IDENTIFICATION OF ENVIRONMENTALLY SENSITIVE AREAS.
5. DRAINAGE AREA CAN NOT BE GREATER THAN 1/4 ACRE PER 100 FT OF FENCE.
6. SLOPE LENGTHS CAN NOT EXCEED CRITERIA SHOWN IN TABLE 6.62A NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
7. DO NOT INSTALL SEDIMENT FENCE ACROSS STREAMS, DITCHES, WATERWAYS OR OTHER AREAS OF CONCENTRATED FLOW.

MAINTENANCE NOTES:

1. FILTER BARRIERS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROX. HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

NOT TO SCALE

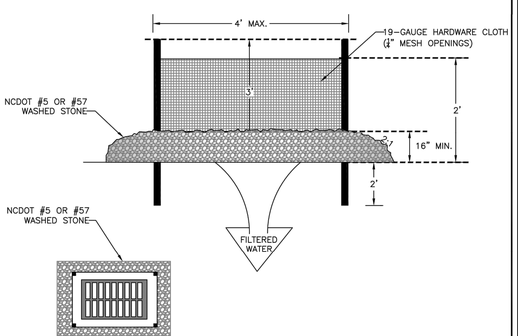
TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS

TEMPORARY SILT FENCE

STD. NO. 507.1 REV.

GENERAL NOTES:

1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5–FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2–FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NC DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
6. COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUNDCOVER.



NOT TO SCALE

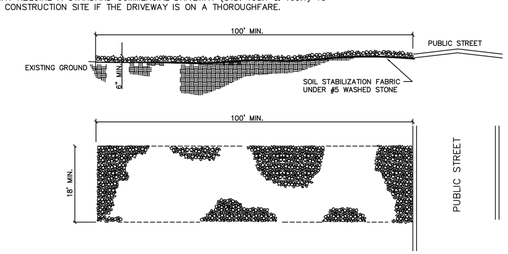
TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS

HARDWARE CLOTH AND GRAVEL INLET PROTECTION

STD. NO. 512.1 REV.

NOTES:

1. A STABILIZED ENTRANCE PAD OF #5 WASHED STONE AND RAILROAD BALLAST SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
2. FILTER FABRIC OR COMPACTED CRUSHER RUN STONE SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS MUST BE REMOVED IMMEDIATELY. ANY AGGREGATE TRACKED INTO THE ROADWAY MUST BE SWEPT BACK ONSITE ON A NIGHTLY BASIS.
5. WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN SEE STD. NO. 515.1
6. THE TOWN MAY REQUIRE A STANDARD COMMERCIAL DRIVEWAY (STD. 108.1 & 109.1) TO ACCESS THE CONSTRUCTION SITE IF THE DRIVEWAY IS ON A THOROUGHFARE.

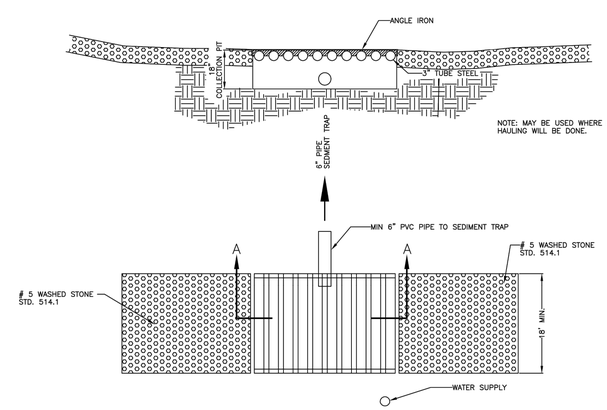


NOT TO SCALE

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS

STABILIZED CONSTRUCTION ENTRANCE

STD. NO. 514.1 REV.



NOT TO SCALE

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS

CONSTRUCTION ENTRANCE TIRE WASH

STD. NO. 515.1 REV.

EAGLE ENGINEERING
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3	8-1-18	KEW	3rd PLANCHECK REVISIONS PER TOWN & NCDOT
4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

CARRINGTON SQUARE
TOWN OF WAXHAW, UNION COUNTY, NC
FOR THE BENEFIT OF:
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

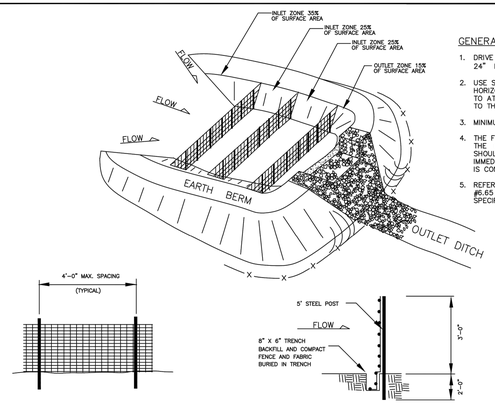
EROSION CONTROL DETAILS & NOTES

DESIGNED BY	KEW	DRAWN BY	KEW	CHECKED BY	JHR
Scale	AS SHOWN	DATE	12-4-2017	JOB NUMBER	5117

NORTH CAROLINA PROFESSIONAL SEAL 14909 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

Sheet

C–3.2



GENERAL NOTES:

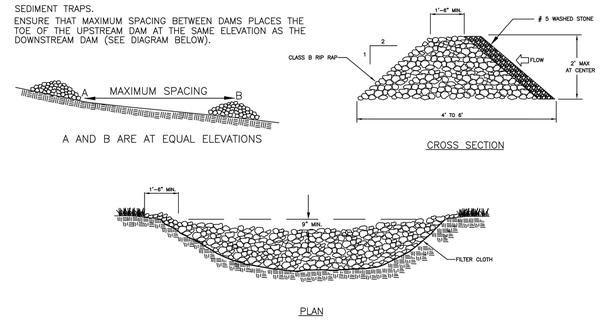
1. DRIVE 5' STEEL POST AT LEAST 24" INTO SOLID GROUND.
2. USE STAPLES 1' APART HORIZONTALLY AND VERTICALLY TO ATTACH THE FILTER FABRIC TO THE WIRE FENCE.
3. MINIMUM BAFFLE SPACING IS 10'.
4. THE FLOOR OF THE BASIN IN THE OUTLET ZONE AND BERMS SHOULD BE SEEDED IMMEDIATELY AFTER THE BASIN IS CONSTRUCTED.
5. REFER TO NCESCPGM SECTION #6.65 FOR ADDITIONAL SPECIFIATIONS.

NOT TO SCALE

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS	BAFFLE INSTALLATION	STD. NO. 524.1	REV.

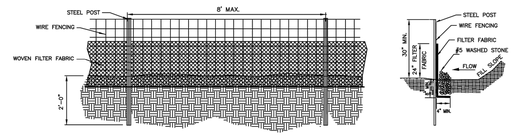
GENERAL NOTES:

1. RIPRAP SIZE TO BE DESIGNED BY ENGINEER.
2. CHECK DAMS MAY BE USED IN SLOPING DITCHES OR CHANNELS TO SLOW VELOCITY OR TO CREATE SEDIMENT TRAPS.
3. ENSURE THAT MAXIMUM SPACING BETWEEN DAMS PLACES THE TOE OF THE UPSTREAM DAM AT THE SAME ELEVATION AS THE DOWNSTREAM DAM (SEE DIAGRAM BELOW).



NOT TO SCALE

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS	TEMPORARY ROCK CHECK DAM	STD. NO. 513.1	REV.



GENERAL NOTES:

1. WIRE FENCING SHALL BE A MINIMUM OF 32" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
2. WOVEN FILTER FABRIC BE USED WHERE SILT FENCE IS TO REMAIN FOR A PERIOD OF MORE THAN 30 DAYS.
3. STEEL POSTS SHALL BE 5'-0" IN HEIGHT AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE.
4. WIRE FENCING SHALL BE AT LEAST #10 GAGE WITH A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
5. TURN SILT FENCE UP SLOPE AT ENDS.
6. WIRE MESH SHALL BE MIN. 13 GAGE WITH MAXIMUM 12" OPENINGS.
7. WIRE AND WASHED STONE IS REQUIRED TO BE SHOWN ON PLANS AT THE TOE OF SLOPES GREATER THAN 10 FEET VERTICAL (2:1 SLOPE)
8. ORANGE SAFETY FENCE IS REQUIRED AT BACK OF SILT FENCE WHEN GRADING IS ADJACENT TO SWIM BUFFERS, STREAMS OR WETLANDS (REFER TO SWIM BUFFER GUIDELINES). THE COLOR ORANGE IS RESERVED FOR VISUAL IDENTIFICATION OF ENVIRONMENTALLY SENSITIVE AREAS.
9. DRAINAGE AREA CAN NOT BE GREATER THAN 1/4 ACRE PER 100 FT OF FENCE.
10. SLOPE LENGTHS CAN NOT EXCEED CRITERIA SHOWN IN TABLE 6.62A NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
11. DO NOT INSTALL SEDIMENT FENCE ACROSS STREAMS, DITCHES, WATERWAYS OR OTHER AREAS OF CONCENTRATED FLOW.

MAINTENANCE NOTES:

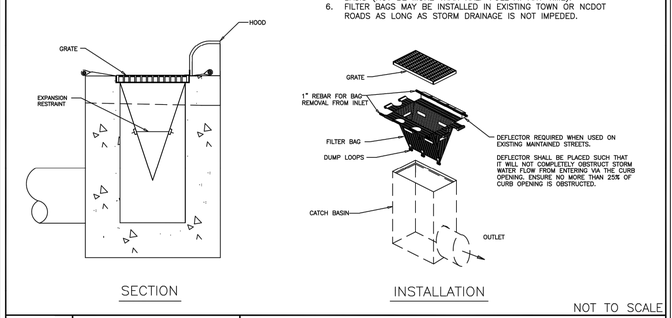
1. FILTER BARRIERS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

NOT TO SCALE

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS	HIGH HAZARD TEMPORARY SILT FENCE	STD. NO. 508.1	REV.

NOTES:

1. INLET MAINTENANCE SHALL BE DOCUMENTED IN PROJECT LOG BOOK.
2. FILTER TYPES SHALL BE APPROVED BY THE TOWN INSPECTOR PRIOR TO INSTALLATION.
3. FILTER BAGS MAY BE REMOVED WHEN SITE IS STABILIZED AT THE DIRECTION OF THE ENGINEER.
4. FILTER BAGS SHALL BE REMOVED PRIOR TO STREET ACCEPTANCE AND/OR CLOSE OUT OF GRADING PERMIT.
5. FILTER BAGS SHALL BE CLEANED OR REPLACED ON A REGULAR BASIS (NOT BE MORE THAN HALF FULL AT ANY TIME).
6. FILTER BAGS MAY BE INSTALLED IN EXISTING TOWN OR NCDOT ROADS AS LONG AS STORM DRAINAGE IS NOT IMPEDED.

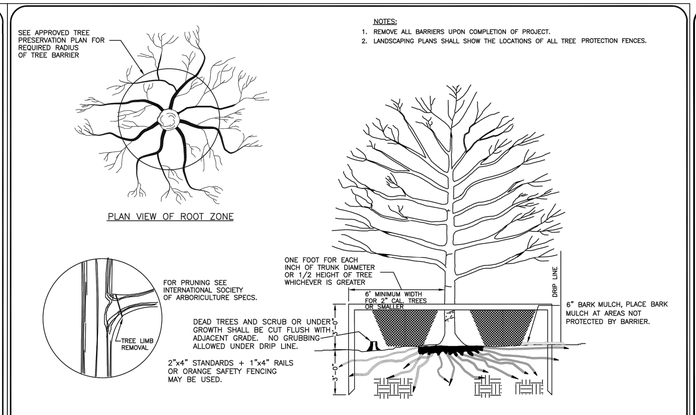


NOT TO SCALE

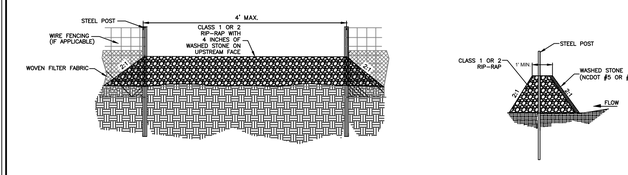
TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS	CATCH BASIN INLET PROTECTION	STD. NO. 519.1	REV.

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.



GENERAL NOTES:

1. SEDIMENT FILTER OUTLET SHALL BE 16 INCHES HIGH BUT NO TALLER THAN 18 INCHES.
2. CLASS 1 OR 2 RIP-RAP SHALL BE USED AND COVERED WITH 4 INCHES OF NCDOT #5 OR #57 WASHED STONE ON THE UPSLOPE SIDE.
3. POSTS SHALL BE NO MORE THAN 4 FEET APART.
4. SITE OUTLETS AT ANY POINT SMALL CONCENTRATED FLOWS ARE ANTICIPATED AND AT THE DIRECTION OF THE INSPECTOR.
5. ONE ACRE MAXIMUM DRAINAGE AREA PER OUTLET.

MAINTENANCE NOTES:

1. FILTER OUTLETS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
2. THE STONE SHALL BE REPLACED PROMPTLY AFTER ANY EVENT THAT HAS CLOGGED OR REMOVED IT.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OUTLET IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

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EROSION CONTROL DETAILS & NOTES

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Scale	AS SHOWN	DATE	12-4-2017	JOB NUMBER	5117

NORTH CAROLINA PROFESSIONAL SEAL 14999 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

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C-3.3

CONSTRUCTION NOTES:

I. MISCELLANEOUS

A. CURRENT EDITIONS OF THE NORTH CAROLINA DOT ROADWAY STANDARD DRAWINGS AND SPECIFICATIONS MANUAL SHALL BE CONSIDERED PART OF THESE PLANS.

B. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS SPECIFIED BY THE VARIOUS GOVERNMENTAL AGENCIES, THE ENGINEER, AND THE ARCHITECT. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, AND SHALL SCHEDULE ANY NECESSARY INSPECTIONS ACCORDING TO AGENCY INSTRUCTIONS.

C. ALL SPECIFICATIONS AND DOCUMENTS REFERRED TO IN THESE PLANS SHALL BE OF THE LATEST REVISION.

D. ALL WORK PERFORMED SHALL COMPLY WITH THE REGULATIONS AND ORDINANCES OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.

E. WORK PERFORMED UNDER THIS CONTRACT SHALL INTERFACE SMOOTHLY WITH OTHER WORK BEING PERFORMED ON SITE BY OTHER CONTRACTORS AND UTILITY COMPANIES. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE HIS ACTIVITIES, WHERE NECESSARY, WITH OTHER CONTRACTORS AND UTILITY COMPANIES.

F. THE WATER AND SANITARY SEWER FACILITIES ARE SUBJECT TO REVIEW BY **UNION COUNTY PUBLIC WORKS** AND APPROVAL. STORM DRAINAGE FACILITIES ARE SUBJECT TO THE REVIEW AND APPROVAL OF THE **THE TOWN OF WAXHAW AND NCDOT** AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN THE REQUIRED PERMITS TO PERFORM WORK IN THE PUBLIC RIGHT-OF-WAY.

G. GRADING OFF SITE WILL REQUIRE A LETTER OF PERMISSION FROM THE TOWN OF WAXHAW PRIOR TO ANY LAND DISTURBING ACTIVITIES.

H. ALL CONSTRUCTION SHALL COMPLY WITH THE LATEST EDITION OF THE **TOWN OF WAXHAW, UCPW, AND NCDOT STANDARDS.**

I. THE **TOWN OF WAXHAW RESERV**ES THE RIGHT TO INSPECT ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY, PUBLIC STORM DRAIN EASEMENTS, DETENTION AND WATER QUALITY BMP'S. THE **TOWN OF WAXHAW HAS TH**E ABILITY TO APPROVE OR REJECT ANY WORK COMPLETED OR ONGOING BY THE CONTRACTOR AT THE DEVELOPER'S EXPENSE.

II. SAFETY

A. DURING THE CONSTRUCTION AND MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS SHALL BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS PERSONNEL.

B. THE CONTRACTOR'S MAINTENANCE OF TRAFFIC PLAN MUST BE SUBMITTED AND APPROVED BY **TOWN OF WAXHAW** AND **EAGLE ENGINEERING** PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES.

C. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION.

D. CONTRACTOR SHALL PROVIDE AND MAINTAIN HIS OWN SAFETY EQUIPMENT IN ACCORDANCE WITH HIS HEALTH & SAFETY PROGRAM AND ALL OTHER APPLICABLE LEGAL AND HEALTH AND SAFETY REQUIREMENTS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR PROVIDING ITS EMPLOYEES AND SUB CONTRACTORS WITH ADEQUATE INFORMATION AND TRAINING TO ENSURE THAT ALL EMPLOYEES AND SUB CONTRACTORS AND SUB CONTRACTOR'S EMPLOYEES COMPLY WITH ALL APPLICABLE REQUIREMENTS. CONTRACTOR SHALL REMAIN IN COMPLIANCE WITH ALL OCCUPATION SAFETY AND HEALTH REGULATIONS AS WELL AS THE ENVIRONMENTAL PROTECTION LAWS. THE FOLLOWING IS NOT TO BE PERCEIVED AS THE ENTIRE SAFETY PROGRAM BUT JUST BASIC REQUIREMENTS.

E. ALL EXCAVATIONS BY THE CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF THE DEPARTMENT OF LABOR'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AND REGULATIONS. PARTICULAR ATTENTION MUST BE PAID TO THE CONSTRUCTION STANDARDS FOR EXCAVATIONS, 29 CFR PART 1926, SUBPART P.

F. THE MINIMUM STANDARDS AS SET FORTH IN THE CURRENT EDITION OF "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (U.S. DOT) SHALL BE FOLLOWED IN THE DESIGN APPLICATION, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND WORKMEN FROM HAZARDS WITHIN THE PROJECT LIMITS.

G. ALL TRAFFIC CONTROL MARKINGS AND DEVICES SHALL CONFORM TO THE PROVISIONS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION.

H. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.

I. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE UTILITY COMPANIES PRIOR TO CONSTRUCTION TO OBTAIN FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES.

J. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED BY THE CONTRACTOR CALLED FOR IN THIS CONTRACT.

K. ALL UNDERGROUND UTILITIES MUST BE IN PLACE AND TESTED OR INSPECTED PRIOR TO BASE AND PAVEMENT CONSTRUCTION.

III. SITE PLAN AND COORDINATE GEOMETRY

A. PRELIMINARY ARCHITECTURAL BUILDING, AND PLUMBING PLANS **HAVE NOT** BEEN RECEIVED BY EEI.

B. SITE PLAN PREPARED BY EEI.

C. STRUCTURAL PLANS **HAVE NOT** BEEN RECEIVED BY EEI.

D. ELECTRICAL, MECHANICAL, AND FIRE SAFETY PLANS **HAVE NOT** BEEN RECEIVED BY EEI.

E. BOUNDARY SURVEY & TOPOGRAPHIC SURVEY PREPARED BY **EAGLE ENGINEERING, INC.**

F. ALL POINTS AND MONUMENTS SHALL BE SURVEYED UPON MOBILIZATION TO VERIFY THEIR ACCURACY. ANY DISCREPANCIES DISCOVERED MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING.

G. MONUMENTS AND OTHER SURVEY CONTROL POINTS SHALL BE PROTECTED FROM DAMAGE AND DISTURBANCE. IF ANY CONTROL POINTS ARE DAMAGED OR DISTURBED, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER AND REPLACE THE CONTROL POINTS TO THEIR ORIGINAL CONDITION AT HIS OWN EXPENSE.

H. ALL ELEVATIONS REFER TO THE NATIONAL GEODETIC VERTICAL DATUM.

I. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING THIS WORK PRIOR TO CONSTRUCTION.

J. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH OWNER'S ENGINEER WITH COMPLETE "AS-BUILT" INFORMATION CERTIFIED BY A REGISTERED LAND SURVEYOR. THIS "AS-BUILT INFORMATION SHALL BE PRODUCED ON AUTOCAD VERSION 12, OR LATER, AND UPON COMPLETION, THE CONTRACTOR SHALL FURNISH EAGLE ENGINEERING WITH DISKS OF ALL DRAWINGS, ONE SET OF REPRODUCIBLE MYLARS, AND FIVE SETS OF BLUEPRINTS. THE "AS-BUILT" INFORMATION SHALL CLEARLY AND ACCURATELY REPRESENT ALL CONSTRUCTED ITEMS INCLUDING, BUT NOT LIMITED TO:
1. ELEVATIONS OF ALL STORM SEWER AND SANITARY SEWER STRUCTURE BOTTOMS, TOPS, AND INVERTS.
2. FIELD MEASURED LENGTHS OF PIPES FOR ALL INSTALLED UTILITIES, CONDUITS, SLEEVES, ETC.
3. LOCATIONS OF ALL STRUCTURES, PIPES, CONDUITS, SLEEVES, ETC.
4. CALCULATED SLOPE OF ALL SANITARY SEWER AND STORM SEWER LINES.
5. HORIZONTAL AND VERTICAL CONTROL OF ALL WATER MAIN FITTINGS AND APPURTENANCES, AND HORIZONTAL AND VERTICAL CONTROL ON THE TOP OF WATER MAINS AT ALL CROSSINGS, AND A MINIMUM OF EVERY 200 LINEAR FEET OF PIPE.
6. HORIZONTAL AND VERTICAL CONTROL OF ALL TOP OF BANKS, TOE OF SLOPES, ALL GRADE BREAKS, BUILDINGS, PONDS, ETC.

K. ALL DIMENSIONS SHOWN ON PLAN ARE TO FACE OF BUILDING, EDGE OF PAVEMENT, CENTERLINE OF STRUCTURE, OR END OF PIPE UNLESS NOTED OTHERWISE.

IV. CLEARING/DEMOLITION

A. THE CONTRACTOR SHALL CLEAR AND GRUB ONLY THOSE PORTIONS OF THE SITE NECESSARY FOR CONSTRUCTION. DISTURBED AREAS WILL BE SEEDED, MULCHED, SODDED OR PLANTED WITH OTHER APPROVED LANDSCAPE MATERIAL IMMEDIATELY FOLLOWING CONSTRUCTION.

B. THE TOP 6" OF GROUND REMOVED DURING CLEARING AND GRUBBING SHALL BE STOCKPILED AT A SITE DESIGNATED BY THE OWNER OR THE OWNER'S ENGINEER TO BE USED FOR LANDSCAPING PURPOSES, UNLESS OTHERWISE DIRECTED BY THE OWNER OR THE OWNER'S ENGINEER. REMAINING EARTHWORK THAT RESULTS FROM CLEARING AND GRUBBING OR SITE EXCAVATION IS TO BE UTILIZED ON-SITE IF REQUIRED, PROVIDED THAT THE MATERIAL IS DEEMED SUITABLE FOR CONSTRUCTION BY THE OWNER'S SOILS TESTING COMPANY. EXCESS MATERIAL IS TO BE EITHER STOCKPILED ON THE SITE AS DIRECTED BY THE OWNER OR OWNER'S ENGINEER, OR REMOVED FROM THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING EXCESS EARTHWORK FROM THE SITE.

C. ALL CONSTRUCTION DEBRIS AND OTHER WASTE MATERIALS SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH APPLICABLE REGULATORY AGENCY REQUIREMENTS OR AS DIRECTED BY THE OWNER OR THE OWNER'S ENGINEER.

V. PAVING AND GRADING

A. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS) IS TO BE EXCAVATED IN ACCORDANCE WITH THESE PLANS OR AS DIRECTED BY THE OWNER, THE OWNER'S ENGINEER, OR OWNER'S SOIL TESTING COMPANY. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER OR THE OWNER'S ENGINEER. EXCAVATED AREAS TO BE BACKFILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING OR SHORING AS NECESSARY. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.

C. ALL NECESSARY FILL AND EMBANKMENT THAT IS PLACED DURING CONSTRUCTION SHALL CONSIST OF MATERIAL SPECIFIED BY THE OWNER'S SOIL TESTING COMPANY OR ENGINEER AND BE PLACED AND COMPACTED ACCORDING TO THESE PLANS OR THE REFERENCED SOILS REPORT.

D. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADE UNLESS OTHERWISE NOTED ON DRAWINGS.

E. CONTRACTOR SHALL PROVIDE EROSION CONTROL AND SEDIMENTATION BARRIER (SILT FENCE OR OTHER MEASURES) TO PREVENT SILTATION OF ADJACENT PROPERTY, STREETS, STORM SEWERS AND WATERWAYS.

F. IF WIND EROSION BECOMES SIGNIFICANT DURING CONSTRUCTION, THE CONTRACTOR SHALL STABILIZE THE AFFECTED AREA USING SPRINKLING, IRRIGATION OR OTHER ACCEPTABLE METHODS.

G. THE CONTRACTOR WILL STABILIZE BY SEED AND MULCH, SOD OR OTHER APPROVED MATERIALS AS REQUIRED BY ANY DISTURBED AREAS WITHIN ONE WEEK FOLLOWING CONSTRUCTION OF THE UTILITY SYSTEMS AND PAVEMENT AREAS. CONTRACTOR SHALL MAINTAIN SUCH AREAS UNTIL FINAL ACCEPTANCE BY OWNER.

H. ENGINEERED FILL MATERIAL SHALL NOT CONTAIN ROCKS OR HARD LUMPS GREATER THAN 3 INCHES IN MAXIMUM DIMENSIONS AND SHALL BE FREE OF VEGETATION, ORGANIC MATTER, DEBRIS, RUBBLE, AND OTHER UNSUITABLE MATERIALS. SHALL BE NON-EXPANSIVE MATERIALS

I. IMPORTED SOILS FOR USE AS ENGINEERED FILL AND SHALL NOT CONTAIN ROCKS OR HARD LUMPS GREATER THAN 3 INCHES IN MAXIMUM DIMENSIONS AND SHALL BE FREE OF VEGETATION, ORGANIC MATTER, DEBRIS, RUBBLE, AND OTHER UNSUITABLE MATERIALS.

J. AGGREGATE BASE MATERIAL SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS.

SEIVE SIZE (PER ASTM D422)	% PASSING BY WEIGHT
1 INCH	100
3/4"	90 - 100
NO. 8	35 - 55
NO. 200	0 - 8

K. ALL AREAS TO RECEIVE FILL, AND AREAS OF STRUCTURES AND PAVEMENTS, SHALL BE STRIPPED OF VEGETATION, ORGANIC MATTER, DEBRIS, RUBBLE, AND OTHER UNSUITABLE MATERIALS. STRIPPED SOILS SHALL NOT BE USED IN ENGINEERED FILL, BUT MAY BE USED IN LANDSCAPE AREAS. ENGINEERED FILL MATERIAL SHALL BE COMPACTED TO AT LEAST THE FOLLOWING

* PERCENTAGES OF MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT, PER ASTM D-698 (STANDARD PROCTOR):

ENGINEERED FILL MATERIAL	MINIMUM % COMPACTION	MOISTURE CONTENT RANGE
NATIVE SOIL	92%	OPTIMUM TO OPTIMUM PLUS 3%
ENGINEERED FILL UNDER STRUCTURES AND BEHIND RETAINING WALLS	98%	OPTIMUM TO OPTIMUM PLUS 3%
ENGINEERED FILL UNDER PAVEMENT AREAS	100%	OPTIMUM PLUS OR MINUS 2%
FILL IN LANDSCAPE AREAS	92%	2 TO 5% ABOVE OPTIMUM

AGGREGATE BASE MATERIAL OR IMPORTED GRANULAR SOIL IN BUILDING AND PAVED AREAS SHALL BE COMPACTED TO AT LEAST THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT, PER ASTM D-698 MODIFIED OR AASHTO EQUIVALENT.

MATERIAL	COMPACTION	RANGE
AGGREGATE BASE MATERIAL OR IMPORTED GRANULAR SOIL IN BUILDING AND PAVEMENT AREAS	100%	OPTIMUM PLUS OR MINUS 2%

L. IF SUB GRADE SOILS EXHIBIT PUMPING DURING COMPACTION, THE AREA SHALL BE ALLOWED TO DRY UNTIL THE SOILS BECOME WORKABLE WITHOUT PUMPING. THE MOISTURE CONTENT OF THE SOILS SHALL BE ADJUSTED TO PREVENT PUMPING.

M. EXPOSURE TO THE ENVIRONMENT MAY REDUCE THE STRENGTH OF SOILS IN FOOTING, FLOOR SLAB, AND PAVED AREAS. IF THIS OCCURS, THE SOFTENED SOILS SHALL BE REMOVED AND REWORKED IMMEDIATELY PRIOR TO CONCRETE PLACEMENT. IF RAINFALL IS EXPECTED AT A TIME WHEN BEARING SOILS IN FOOTING AREAS ARE EXPOSED, A 2 TO 4 INCH THICK LAYER OF LEAN CONCRETE MAY BE PLACED IN SUCH AREAS. THE SITE SHALL BE GRADED TO TRANSPORT SURFACE RUNOFF AWAY FROM THE STRUCTURES AND PAVED AREAS. WATER SHALL NOT BE ALLOWED TO ACCUMULATE (POND) AROUND BUILDING PERIMETERS OR ON PAVED AREAS.

N. GENERAL ROCK EXCAVATION: ROCK SHALL BE DEFINED AS ANY MATERIAL WHICH CANNOT BE EXCAVATED WITH A SINGLE - TOOTH RIPPER DRAWN BY A CRAWLER TRACTOR HAVING A MINIMUM DRAW BAR PULL RATED AT NOT LESS THAN 56,000 POUNDS (CATERPILLAR D8K OR EQUIVALENT). THE VOLUME OF ROCK EXCAVATION SHALL BE DETERMINED BY A LICENSED SURVEYOR BY THE AVERAGE END AREA METHOD. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A SCALED PLAN WITH SUFFICIENT ELEVATION POINTS TO ACCURATELY DEFINE THE VOLUME OF ROCK EXCAVATED. THE DEPTH OF ROCK SHALL BE DEFINED AS FROM TOP OF ROCK TO THE CONTRACT SPECIFIED ELEVATION FOR EXCAVATION. CONTRACTOR SHALL BE COMPENSATED FOR ROCK EXCAVATION AS DEFINED HEREIN IN ACCORDANCE WITH CONTRACT UNIT PRICES.

VI. DRAINAGE:

A. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE PIPE UNLESS OTHERWISE NOTED ON PLANS. ALL DRAINAGE STRUCTURES SHALL BE IN ACCORDANCE WITH NCDOT STANDARDS UNLESS OTHERWISE NOTED.

B. PIPE LENGTHS SHOWN ARE APPROXIMATE AND TO CENTER OF DRAINAGE STRUCTURE OR TO THE END OF THE PIPE. CONTRACTOR SHALL VERIFY ALL QUANTITIES PRIOR TO SUBMITTAL OF BID.

C. ALL DRAINAGE STRUCTURE GRATES AND COVERS SHALL BE AS PER NCDOT STANDARDS UNLESS OTHERWISE NOTED.

D. ALL STORM DRAINAGE PIPING SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER PRIOR TO THE PLACEMENT OF BACKFILL. CONTRACTOR TO NOTIFY THE ENGINEER 48 HOURS IN ADVANCE TO SCHEDULE INSPECTIONS.

E. THE CONTRACTOR SHALL MAINTAIN AND PROTECT FROM MUD, DIRT, DEBRIS, ETC. THE STORM DRAINAGE SYSTEM UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE CONTRACTOR MAY BE REQUIRED TO RECLEAN PIPES AND INLETS FOR THESE PURPOSES.

VII. EROSION/TURBIDITY CONTROL

A. THE INSTALLATION OF TEMPORARY EROSION CONTROL BARRIERS SHALL BE COORDINATED WITH THE CONSTRUCTION OF THE PERMANENT EROSION CONTROL FEATURES TO THE EXTENT NECESSARY TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS CONTROL OF EROSION AND WATER POLLUTION THROUGHOUT THE LIFE OF THE CONSTRUCTION PHASE.

B. THE TYPE OF EROSION CONTROL BARRIERS USED SHALL BE GOVERNED BY THE NATURE OF THE CONSTRUCTION OPERATION AND SOIL TYPE THAT WILL BE EXPOSED. SILTY AND CLAYEY MATERIAL USUALLY REQUIRE SOLID SEDIMENT BARRIERS TO PREVENT TURBID WATER DISCHARGE, WHILE SANDY MATERIAL MAY NEED ONLY SILT SILT FENCE TO PREVENT EROSION. FLOATING TURBIDITY CURTAINS SHALL BE USED IN OPEN WATER SITUATIONS. DIVERSION DITCHES OR SWALES MAY BE REQUIRED TO PREVENT TURBID STORM WATER RUNOFF FROM BEING DISCHARGED TO WETLANDS OR OTHER WATER BODIES. IT MAY BE NECESSARY TO EMPLOY A COMBINATION OF BARRIERS, DITCHES AND OTHER EROSION/TURBIDITY CONTROL MEASURES IF CONDITIONS WARRANT.

C. CONSTRUCTION OPERATIONS IN OR ADJACENT TO WETLANDS SHALL BE RESTRICTED TO THOSE AREAS IDENTIFIED IN THE PLANS AND IN THE SPECIFICATIONS.

D. EXCEPT AS NECESSARY FOR CONSTRUCTION, EXCAVATED MATERIAL SHALL NOT BE DEPOSITED IN WETLANDS OR IN A POSITION CLOSE ENOUGH THERETO TO BE WASHED AWAY BY HIGH WATER OR RUNOFF. AUTHORIZATION FROM THE APPROPRIATE PERMITTING AUTHORITY IS REQUIRED TO BE SUBMITTED TO THE TOWN OF WAXHAW PRIOR TO WORKING IN THE WETLANDS.

E. THE CONTRACTOR SHALL SCHEDULE HIS OPERATIONS SUCH THAT THE AREA OF UNPROTECTED ERODIBLE EARTH EXPOSED AT ANY ONE TIME IS NOT LARGER THAN THE MINIMUM AREA NECESSARY FOR EFFICIENT CONSTRUCTION OPERATIONS, AND THE DURATION OF EXPOSED, UNCOMPLETED CONSTRUCTION TO THE ELEMENTS SHALL BE AS SHORT AS PRACTICABLE. CLEARING AND GRUBBING SHALL BE SO SCHEDULED AND PERFORMED THAT GRADING OPERATIONS CAN FOLLOW IMMEDIATELY THEREAFTER, AND GRADING OPERATIONS SHALL BE SCHEDULED AND PERFORMED THAT PERMANENT EROSION CONTROL FEATURES CAN FOLLOW IMMEDIATELY THEREAFTER IF CONDITIONS ON THE PROJECT PERMIT.

F. THE CONTRACTOR SHALL PROVIDE ROUTINE MAINTENANCE OF PERMANENT AND TEMPORARY EROSION CONTROL FEATURES UNTIL THE PROJECT IS COMPLETE AND ALL DISTURBED SOILS ARE STABILIZED. MAINTENANCE MUST INCLUDE ALL RECOMMENDED BY SELF INSPECTION AND TOWN OF WAXHAW INSPECTION.

NPDES NOTE:

REGULATIONS ADOPTED BY THE US ENVIRONMENTAL PROTECTION AGENCY (US EPA) AND BY THE NORTH CAROLINA DIVISION OF WATER QUALITY REQUIRE THAT A NATURAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT BE OBTAINED FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITH LAND DISTURBANCE OF 1 ACRE OR MORE.

CONTRACTOR SHALL CHECK EROSION CONTROL MEASURES WEEKLY AND/OR AFTER A 1/2" OR MORE RAIN. CONTRACTOR SHALL KEEP RECORDS OF EVERY INSPECTION.

EROSION CONTROL NOTES:

1. CONTRACTOR SHALL STABILIZE EXPOSED GROUND AS SOON AS INDIVIDUAL AREAS ARE COMPLETED.
2. CONTRACTOR SHALL NOT REMOVE ANY BASIN UNTIL ALL SEDIMENT-PRODUCING AREAS UPSTREAM HAVE BEEN PERMANENTLY STABILIZED AND REMOVAL IS APPROVED BY TOWN OF WAXHAW EROSION CONTROL INSPECTOR.
3. STABILIZATION IS THE BEST FORM OF EROSION CONTROL. TEMPORARY SEEDING IS NECESSARY TO ACHIEVE EROSION CONTROL ON LARGE DENUDED AREAS AND ESPECIALLY WHEN SPECIFICALLY REQUIRED AS PART OF THE CONSTRUCTION SEQUENCE SHOWN ON THE PLAN. ALL GRADED SLOPES MUST BE SEEDED AND MULCHED WITHIN **14** CALENDAR DAYS (**7** CALENDAR DAYS FOR SLOPES STEEPER THAN **3:1**).
4. ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY LOCAL AUTHORITY.
5. NO SLOPES SHALL EXCEED 2:1. FILL SLOPES GREATER THAN 10' REQUIRE ADEQUATE TERRACING.
6. GROUNDCOVER ON EXPOSED SLOPES SHOULD BE COMPLETED WITHIN **14** CALENDAR DAYS.
7. ALL SILT FENCE SHALL HAVE WIRE AND WASHED STONE.
8. A FILTER BERM SHALL BE PLACED TEMPORARILY AT THE END OF ALL FES UNTIL RIP RAP APRONS ARE INSTALLED.
9. ON-SITE BURIAL PITS REQUIRE AN ON-SITE DEMOLITION LANDFILL PERMIT FROM THE ZONING ADMINISTRATOR.
10. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE TOWN OF WAXHAW'S EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
11. GRADING MORE THAN ONE ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF THE TOWN OF WAXHAW AND NORTH CAROLINA LAW, AND IS SUBJECT TO A FINE.
12. A GRADING PLAN MUST BE SUBMITTED FOR ANY LOT GRADING THAT WAS NOT PREVIOUSLY APPROVED.
13. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM AFFECTED PROPERTY OWNERS AND APPROVED BY THE TOWN OF WAXHAW.
14. ALL STD. NUMBERS REFER TO THE **NCDEQ** STANDARDS MANUAL UNLESS OTHERWISE NOTED.
15. STEEL POST WITH WIRE FENCE BACKING SHOULD BE USED, BURIED OR DRIVEN TO A DEPTH OF 18" IN THE GROUND. PREFABRICATED SILT FENCE IS NOT ACCEPTABLE ON THIS PROJECT.
16. SEDIMENT TRAP AND BASINS SLOPES SHALL BE SEEDED IMMEDIATE AFTER CONSTRUCTION TO PROMOTE STABLE SLOPES AS SOON AS POSSIBLE.
17. WHERE TEMPORARY DIVERSIONS ENTER SEDIMENT TRAPS AND BASINS, TEMPORARY SLOPE DRAINS MAY BE NECESSARY BASED ON FIELD CONDITIONS.

MAINTENANCE PLAN:

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNATED.
2. THE SEDIMENT BASIN WILL BE CLEANED OUT WHEN THE LEVEL OF SEDIMENT REACHES 2.0 FT. BELOW THE TOP OF THE RISER. GRAVEL WILL BE CLEANED OR REPLACED TO ALLOW SEDIMENT POOL TO DRAIN PROPERLY AT ALL TIMES.
3. SEDIMENT WILL BE REMOVED FROM THE SEDIMENT TRAP AND BLOCK AND GRAVEL INLET PROTECTION DEVICE TO ALLOW SEDIMENT POOL TO DRAIN PROPERLY AT ALL TIMES.
4. SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES ABOUT 0.5 FT DEEP AT THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
5. ALL SEEDED AREAS WILL BE FERTILIZED, RE-SEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.

G.S. 113A-57(2), THE ANGLE FOR GRADED SLOPES AND FILLS SHALL BE NO GREATER THAN THE ANGLE THAT CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION-CONTROL DEVISES OR STRUCTURES. IN ANY EVENT, SLOPES LEFT EXPOSED SHALL, WITHIN **14** CALENDAR DAYS OF COMPLETION OF ANY PHASE OF GRADING, BE PLANTED OR OTHERWISE BE PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

G.S. 113A-57(3), PROVISIONS FOR A PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION MUST BE ACCOMPLISHED WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT, WHICHEVER PERIOD IS SHORTER.

TEMPORARY SEEDING REQUIREMENTS PER NCDEQ EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL

TABLE 6.10A
TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	120
ANNUAL LESPEDEZA (KOBE IN PIEDMONT AND COASTAL PLAIN, KOREAN IN MOUNTAINS)	50

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

SEEDING DATES

MOUNTAINS	ABOVE 2500 FEET: FEB. 15 - MAY 15 BELOW 2500 FEET: FEB. 1- MAY 1
PIEDMONT	JAN. 1 - MAY 1
COASTAL PLAIN	DEC. 1 - APR. 15

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

MULCH
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

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

TABLE 6.10B
TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
GERMAN MILLET	40

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

SEEDING DATES

MOUNTAINS	MAY 15 - AUG. 15
PIEDMONT	MAY 1 - AUG. 15
COASTAL PLAIN	APR. 15 - AUG. 15

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

MULCH
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

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

TABLE 6.10C
TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	120

SEEDING DATES

MOUNTAINS	AUG. 15 - DEC. 15
COASTAL PLAIN AND PIEDMONT	AUG. 15 - DEC. 30

SOIL AMENDMENTS
FOLLOW SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.

MULCH
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE
REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTENT TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/ACRE KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

PERMANENT SEEDING REQUIREMENTS PER NCDEQ EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL

TABLE 6.11K
PERMANENT SEEDING FOR STEEP SLOPES OR POOR SOILS; LOW MAINTENANCE

SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
TALL FESCUE	100
SERICEA LESPEDEZA	30
KOBE LESPEDEZA	10

SEEDING NOTES
1. IN EASTERN PIEDMONT ADD 25 LB/ACRE PENSACOLA BAHIAGRASS OR 10 LB/ACRE COMMON BERMUDAGRASS. USE COMMON BERMUDAGRASS ONLY WHERE IT IS UN-LIKELY TO BECOME A PEST
2. AFTER AUG. 15 USE UNSCARIFIED SERICEA SEED
3. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND SUBSTITUTE 40 LB/ACRE BAHIAGRASS OR 15 LB/ACRE BERMUDAGRASS.
4. TO EXTEND SPRING SEEDING DATES INTO JUNE, ADD 15 LB/ACRE HULLED BER-MUDAGRASS. HOWEVER, IT IS PREFERABLE TO SEED TEMPORARY COVER AND SEED FESCUE IN SEPT.

NURSE PLANTS
BETWEEN MAY 1 AND AUG. 15, ADD 10 LB/ACRE GERMAN MILLET OR 15 LB/ACRE SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG. 15 AND 40 LB/ACRE RYE (GRAIN)

SEEDING DATES

	BEST	POSSIBLE
FALL:	AUG. 25 - SEPT. 15	AUG. 20 - OCT. 25
LATE WINTER:	FEB. 15 - MAR. 21	FEB. 1 - APR. 15

FALL IS BEST FOR TALL FESCUE AND LATE WINTER LESPEDEZAS. OVERSEEDING OF KOBE LESPEDEZA OVER FALL-SEEDED TALL FESCUE IS VERY EFFECTIVE. USE UNHULLED BERMUDAGRASS SEED IN FALL.

SOIL AMENDMENTS
APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 4,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.

MULCH
APPLY 4,000-5000 LB/ACRE GRAIN STRAW, OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCHING MATERIAL. ANCHOR MULCH BY TACKING WITH ASPHALT, ROVING, OR NETTING. NETTING IS THE PREFERRED ANCHORING METHOD ON STEEP SLOPES.

MAINTENANCE
REFERTILIZE IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. MAY BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY. RESEED, FERTILIZE AND MULCH DAMAGED AREAS IMMEDIATELY.

NOTES

DE-WATERING: THE CONTRACTOR SHALL AT ALL TIMES PROVIDE AND MAINTAIN AMPLE MEANS AND EQUIPMENT WITH WHICH TO REMOVE AND PROPERLY DISPOSE OF ANY AND ALL WATER ENTERING THE EXCAVATION OR OTHER PARTS OF THE WORK AND KEEP ALL EXCAVATIONS DRY UNTIL SUCH TIME AS PIPE LAYING AND GRADING IS COMPLETED AND STRUCTURES TO BE BUILT THEREIN ARE COMPLETED.

NO WATER SHALL BE ALLOWED TO RISE AROUND THE PIPE IN UNBACKFILLED TRENCHES NOR SHALL IT BE ALLOWED TO RISE OVER MASONRY UNTIL THE CONCRETE OR MORTAR HAS SET (MINIMUM 24 HOURS). ALL WATER PUMPED OR DRAINED FROM THE WORK SHALL BE DISPOSED OF IN SUCH A MANNER AS TO PREVENT SILTATION AND EROSION TO ADJACENT PROPERTY OR OTHER CONSTRUCTION.

VIII. PROTECTION OF EXISTING UTILITIES

THE CONTRACTOR SHALL CONTACT THE APPROPRIATE AGENCY FOR THE EXACT FIELD LOCATIONS OF ALL WATER, SEWER, ELECTRIC, TELEPHONE, TELEVISION AND ANY OTHER UNDERGROUND AND OVERHEAD UTILITY BEFORE STARTING CONSTRUCTION. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATION ON THE CONTRACT DRAWINGS IS NOT TO BE CONSIDERED AS THE NON-EXISTANCE OF OR A DEFINITE LOCATION OF EXISTING UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF WORK.

THE FOLLOWING LISTING OF UTILITY COMPANIES (WHICH MAY OR MAY NOT BE COMPLETE) MAY HAVE EXISTING UNDERGROUND OR OVERHEAD UTILITIES IN THE CONTRACT VICINITY.

UTILITY PROVIDERS		
WATER & SEWER	UNION COUNTY PUBLIC WORKS	704-296-4210
ELECTRIC	DUKE POWER CORP.	704-821-2105
NATURAL GAS	PIEDMONT NATURAL GAS	704-507-1912

IX. SANITARY SEWER AND WATER DISTRIBUTION

A. SANITARY SEWERS AND STORM SEWERS SHOULD ALWAYS CROSS UNDER WATER MAINS. SANITARY SEWERS AND STORM SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE.

B. WHERE SANITARY SEWERS AND STORM SEWERS MUST CROSS A WATER MAIN WITH LESS THAN 18 INCHES VERTICAL DISTANCE, BOTH THE SEWER AND THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. (DIP IS NOT REQUIRED FOR STORM SEWERS IF IT IS NOT AVAILABLE IN THE SIZE PROPOSED). SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE LEAK FREE AND MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT THE CROSSING.

C. ALL CROSSINGS SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING (PIPES CENTERED ON THE CROSSING).

D. WHERE A NEW PIPE CONFLICTS WITH AN EXISTING PIPE, THE NEW PIPE SHALL BE CONSTRUCTED OF DIP AND THE CROSSING SHALL BE ARRANGED TO MEET THE REQUIREMENTS ABOVE.

E. A MINIMUM 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS.

F. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10-FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

G. WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 INCHES IN PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SEWER OR THE FORCE MAIN SHALL BE CONSTRUCTED OF DIP (IF AVAILABLE IN THE SIZE PROPOSED) WITH A MINIMUM VERTICAL SEPARATION OF 6 INCHES. THE WATER MAIN SHOULD ALWAYS BE ABOVE THE SEWER. JOINTS ON THE WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM THE JOINTS ON THE SEWER OR FORCE MAIN(STAGGERED JOINTS).

H. ALL SANITARY SEWER MAINS, LATERALS AND FORCE MAINS SHALL HAVE A MINIMUM OF 36 INCHES OF COVER.

I. ALL ON SITE P.V.C. GRAVITY SANITARY SEWER PIPE SHALL BE MADE OF MATERIAL HAVING A CELL CLASSIFICATION OF 12454 B, 12454 C OR 13354 B AS DEFINED IN ASTM D-1784 AND CONFORM TO THE REQUIREMENTS OF SDR 26. ELASTOMERIC GASKET JOINTS SHALL BE UTILIZED.

J. ALL ON SITE DUCTILE IRON PIPE SHALL BE CLASS 52 AND SHALL RECEIVE INTERIOR AND EXTERIOR BITUMINOUS COATING IN ACCORDANCE WITH ANSI A 21.6, A 21.8, OR A 21.51.

K. SANITARY SERVICE CONNECTION LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE.

L. ALL SANITARY SEWER WORK SHALL CONFORM TO **UNION COUNTY** STANDARDS AND SPECIFICATIONS, **UNION COUNTY WATER & SEWER EXTENSION POLICY** & TO **UNION COUNTY** WATER & SEWER EXTENSION ORDINANCE.

M. PRIOR TO COMMENCING WORK WHICH REQUIRES CONNECTING NEW SANITARY SEWER LINES TO EXISTING LINES OR APPURTENANCES, THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES NEAR THE POINT OF CONNECTION AND NOTIFY OWNER'S ENGINEER OF ANY CONFLICTS OR DISCREPANCIES WITH DESIGN INFORMATION SHOWN IN THESE PLANS. CONTRACTOR SHALL NOTIFY ENGINEER AND **UNION COUNTY PUBLIC WORKS** INSPECTOR AT LEAST 48 HOURS IN ADVANCE OF SCHEDULED WORK.

N. ALL GRAVITY SEWER PIPING SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER AND **UNION COUNTY PUBLIC WORKS** PRIOR TO PLACEMENT OF AND PAVING AND AGAIN PRIOR TO OBTAINING CERTIFICATE OF OCCUPANCY. CONTRACTOR TO NOTIFY THE ENGINEER AND **UNION COUNTY PUBLIC WORKS** 48 HOURS IN ADVANCE TO SCHEDULE INSPECTIONS.

O. THE CONTRACTOR SHALL PERFORM ALL NECESSARY TESTING IN ACCORDANCE WITH **UNION COUNTY PUBLIC WORKS** STANDARDS. SAID TESTS ARE TO BE CERTIFIED BY THE ENGINEER OF RECORD AND SUBMITTED TO THE REGULATORY AGENCY FOR APPROVAL. COORDINATION OF TESTING AND NOTIFICATION OF ALL PARTIES IS THE CONTRACTOR'S RESPONSIBILITY.

P. ALL WATER MAINS SHALL HAVE A MINIMUM OF 36 INCHES OF COVER.

Q. ALL WATER SYSTEM WORK SHALL CONFORM TO **UNION COUNTY** STANDARDS AND SPECIFICATIONS, **UNION COUNTY WATER AND SEWER EXTENSION POLICY & TO UNION COUNTY WATER & SEWER** EXTENSION ORDINANCE.

R. ALL ON SITE PVC WATER MAINS 4 INCHES THROUGH 12 INCHES SHALL BE IN ACCORDANCE WITH AWWA C-900 AND SHALL BE CLASS 150 DR 18. ALL ON-SITE PVC WATER MAINS 2" TO 3" SHALL BE CLASS 1120 AND MEET REQUIREMENTS OF SDR 21 IN ACCORDANCE WITH ASTM D-2241. WATER MAINS SMALLER THAN 1 1/2" SHALL BE CLASS 1120 OR 1220 SCHEDULE 80 AND MEET REQUIREMENTS OF ASTM D-1785.

S. PVC PIPE FOR FIRE PROTECTION AWWA C900 CLASS 200 WITH AN SDR OF 14 OR LESS

T. ALL DUCTILE IRON PIPE SHALL CONFORM TO THE REQUIREMENTS OF ANSI STANDARD A21.51, MINIMUM CLASS 50. JOINTS FOR DUCTILE IRON PIPE SHALL BE MECHANICAL OR PUSH-ON JOINTS. PIPE SHALL HAVE AN EXTERIOR BITUMINOUS COATING IN ACCORDANCE WITH ANSI A21.51. PIPE INTERIOR SHALL HAVE A CEMENT MORTAR LINING WITH AN ASPHALTIC SEAL COAT CONFORMING TO AWWA/ANSI C104/A21.4. THE WEIGHT AND CLASS DESIGNATION SHALL BE PAINTED IN WHITE ON THE EXTERIOR SURFACE OF ALL PIPES AND FITTINGS. MANUFACTURER'S CODE OR SERIAL NUMBER SHALL BE PROVIDED ON THE BELL OF EACH PIPE JOINT.

U. ALL DUCTILE FITTINGS SHALL BE MECHANICAL JOINT WITH A MINIMUM PRESSURE RATING OF 250 PSI AND SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA STANDARD A21.10/C110. ALL FITTINGS SHALL BE COATED AND LINED AS SPECIFIED ABOVE FOR DUCTILE IRON PIPE.

V. CONTRACTOR SHALL INSTALL TEMPORARY BLOWOFFS AT THE END OF WATER SERVICE LATERALS TO BUILDINGS TO ASSURE ADEQUATE FLUSHING AND DISINFECTION.

W. THRUST BLOCKING SHALL BE PROVIDED AT ALL FITTINGS AND HYDRANTS IN ACCORDANCE WITH **UNION COUNTY PUBLIC WORKS**.

X. POINTS OF CONNECTION OF THE EXTERNAL WATER LINES ARE TO COINCIDE WITH THE BUILDING PLUMBING AS SHOWN ON THE BUILDING PLUMBING PLANS. CONNECTION LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE.

Y. FIRE LINES TO BUILDINGS SHALL BE INSTALLED BY A CONTRACTOR DULY LICENSED BY THE STATE FIRE MARSHALL'S OFFICE. CONTRACTOR TO VERIFY REQUIREMENTS PRIOR TO CONSTRUCTION.

Z. ALL COMPONENTS OF THE WATER SYSTEM, INCLUDING FITTINGS, HYDRANTS, CONNECTIONS, AND VALVES SHALL REMAIN UNCOVERED UNTIL PROPERLY INSPECTED AND ACCEPTED BY THE OWNER'S ENGINEER AND THE **UNION COUNTY PUBLIC WORKS**. PRESSURE TESTS SHALL BE IN ACCORDANCE WITH **UNION COUNTY PUBLIC WORKS** SPECIFICATIONS. CONTRACTOR TO NOTIFY OWNER'S ENGINEER AND **UNION COUNTY PUBLIC WORKS** INSPECTORS 48 HOURS IN ADVANCE OF PERFORMING TESTS.

AA. DISINFECTION: SHALL CONFORM TO AWWA C651. ALL NEW WATER MAINS SHALL BE DISINFECTED AFTER THEY HAVE BEEN PRESSURE TESTED. THE MAIN SHALL BE THOROUGHLY FLUSHED AT A RATE OF 2 FEET PER SECOND WITH CLEAN WATER AFTER WHICH A CHLORINE SOLUTION OF 50 PARTS PER MILLION SHALL BE INDUCED. THE CHLORINE SOLUTION SHALL REMAIN IN THE LINES FOR A MINIMUM OF 24 HOURS. THE LINES SHALL AGAIN BE FLUSHED AT A RATE OF 2 FEET PER SECOND WITH CLEAN WATER UNTIL THE CHLORINE RESIDUAL IS REDUCED TO THAT OF THE SUPPORTING SYSTEM. SAMPLES SHALL BE THEN COLLECTED AND TESTED FOR COLIFORM BACTERIA. ANALYSIS SHALL BE BY A STATE CERTIFIED LABORATORY USING THE MULTIPLE TUBE FEREMENTATION METHOD. ONE SAMPLE SHALL BE COLLECTED FROM EACH DEAD END SEGMENT OF THE PIPELINES INSTALLED. IF BACTERIA OF ANY TIME IS FOUND, THE TEST SHALL BE REPEATED UNTIL THE LINES ARE CLEAN.

BB. WATER MAIN SHALL HAVE 14 GA. BLUE COATED TRACER WIRE ON ALL SERVICES AND MAINS BURIED OVER THE WATER MAIN.

CC. FIRE HYDRANTS SHALL BE PLACED A MINIMUM DISTANCE OF 6' BOC AND HAVE A CLEAR SPACE OF 3' FROM ANY PERMANENT STRUCTURES.

DD. WATER VALVES SHALL COMPLY WITH APPROPRIATE AWWA STANDARDS.
1. GATE VALVES 2-INCHES: SHALL CONFORM TO ANSI/AWWA A21.11/C111 FOR CAST IRON BODIED, BRONZE MOUNTED, PARALLEL DOUBLE DISC, NON RISING STEM VALVES. VALVES SHALL BE RATED AT 200 PSIG WORKING PRESSURE AND 400 PSIG TEST PRESSURE. END CONNECTIONS SHALL BE STANDARD FEMALE IRON PIPE THREADS OR ANSI/AWWA A21.11/C111 MECHANICAL JOINTS FOR BURIED LOCATIONS ADN ANSI B16.1 FLANGES FOR EXPOSED LOCATIONS. VALVE OPERATOR SHALL BE A 2 INCH SQUARE NUT FOR BURIED LOCATIONS AND STANDARD HANDWHEEL FOR EXPOSED LOCATIONS. ALL VALVES SHALL BE OPEN LEFT.
2. GATE VALVES 6-INCHES THROUGH 16-INCHES: SHALL CONFORM TO AWWA C509 FOR BRONZE MOUNTED, RESILIENT SEATED, CAST IRON BODIED GATE VALVES. VALVE BODY SHALL BE RATED FOR 200 PSIG WORKING PRESSURE AND 400 PSIG TEST PRESSURE. PROVIDE VALVE WITH SOLID WEDGE, NON RISING STEM CONSTRUCTION. VALVES SHALL EBE SEALED RUBBER "O" RING SEALS BOTH ABOVE AND BELOW THE THRUST RING. VALVES STEMS SHALL BE OF BRONZE. INTERIOR OF THE VALVES SHALL BE COATED IN ACCORDANCE WITH AWWA C550. END CONNECTIONS SHALL CONFORM TO ANSI/AWWA AS2.22/C111 MECHANICAL JOINTS FOR BURIED LOCATIONS AND ANSI B16.1 FLANGES FOR EXPOSED LOCATIONS. VALVE OPERATORS SHALL BE 2 INCH SQUARE NUTS FOR BURIED LOCATIONS OR STANDARD HANDWHEEL FOR EXPOSED LOCATIONS. ALL VALVES SHALL BE OPEN LEFT. IN LINE VALVES TO BE INSTALLED EVERY 2000 FEET OR EVERY OTHER HYDRANT.

EE. WATER MAINS SHALL BE SUBJECT TO BOTH A PRESSURE TEST AND A LEAKAGE TEST. THE CONTRACTOR MAY BE BILLED FOR THE AMOUNT OF WATER USED.
1. PRESSURE TEST: SHALL CONFORM TO AWWA STANDARD C605 FOR PVC PIPE AND AWWA C600 FOR DUCTILE IRON. THE TEST PRESSURE SHALL BE 200 PSIG AND THE DURATION OF THE TEST SHALL BE NOT LESS THAN 2 HOURS OR MORE THAN 24 HOURS. THE DURATION OF THE TEST WILL BE DETERMINED BY THE COUNTY ENGINEER AS THE TEST PROGRESSES. PRESSURE SHALL NOT BE ALLOWED TO VARY MORE THAN 5 PSIG DURING THE TEST.
2. LEAKAGE TEST: SHALL BE CONDUCTED ALONG WITH THE PRESSURE TEST. LEAKAGE WILL BE DEFINED AS THE AMOUNT OF WATER THAT MUST BE SUPPLIED TO THE NEWLY LAID LINES TO MAINTAIN THE TEST PRESSURE WITHIN A 5 PSIG RANGE OVER A SPECIFIED PERIOD OF TIME. ALLOWABLE LEAKAGE WILL BE COMPUTED BY THE FOLLOWING FORMULA:

$$L = (S)\ (D)\ (\text{SQRT } P)\ /\ 148{,}000$$

WHERE:
- L = ALLOWABLE LEAKAGE IN GALLONS PER HOUR
- S = LENGTH OF PIPE TESTED, IN FEET
- D = NOMINAL DIAMETER OF PIPE IN INCHES
- P = TEST PRESSURE IN PSIG

BUT NOT MORE THAN: 12.1 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER 24 HOURS BASED ON 200 PSI TEST PRESSURE.

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NO.	DATE	BY	ISSUE
1	4-9-18	KEW	1st PLANCHECK REVISIONS PER TOWN & NCDOT
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3	8-1-18	KEW	3rd PLANCHECK REVISIONS PER TOWN & NCDOT
4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

CARRINGTON SQUARE
TOWN OF WAXHAW, UNION COUNTY, NC

FOR THE BENEFIT OF:
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

STANDARDS & SPECIFICATIONS

DESIGNED BY	DRAWN BY	CHECKED BY
KEW	KEW	JHR

Scale	DATE	JOB NUMBER
AS SHOWN	12-4-2017	5117

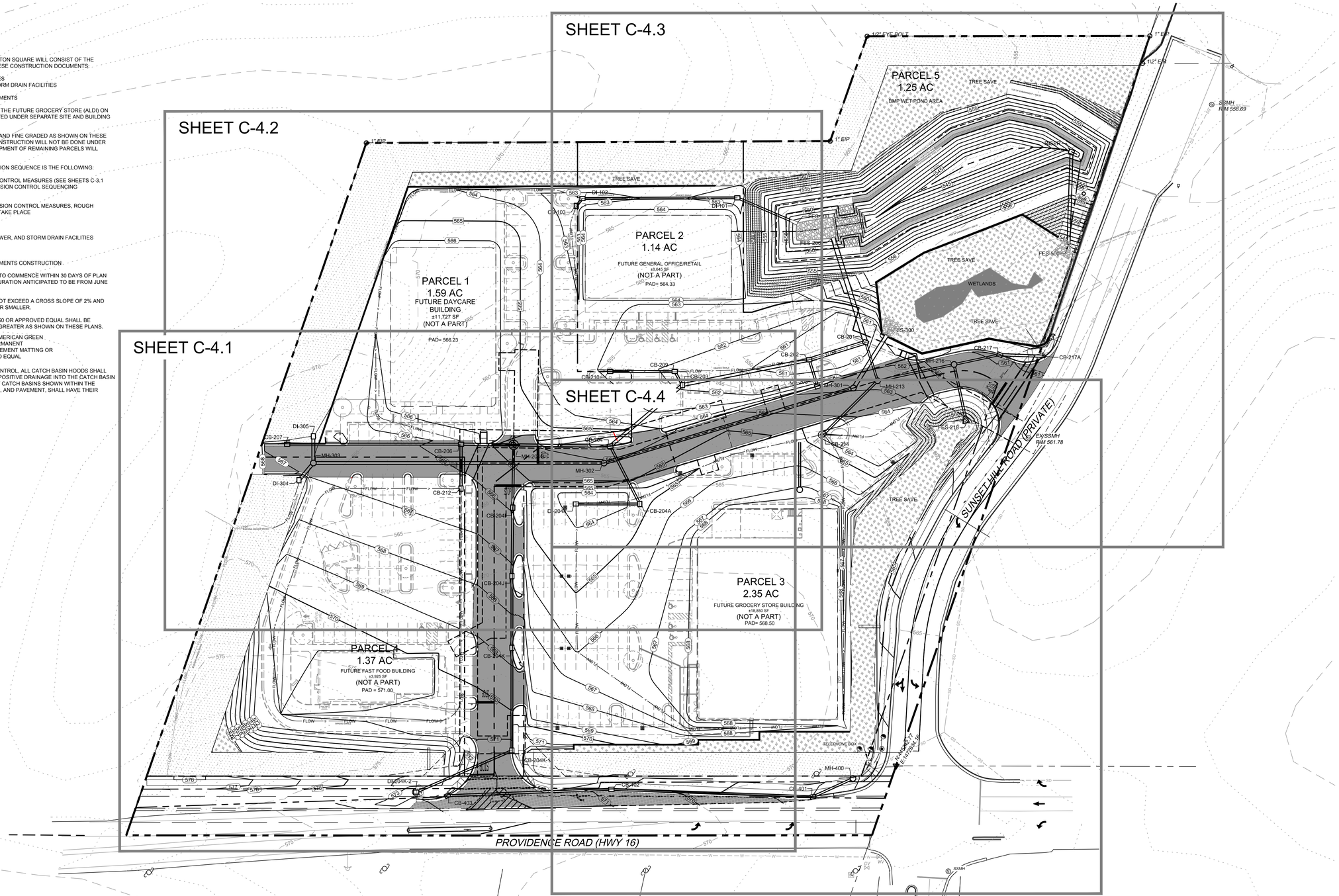
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14959 JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-3.4

GENERAL NOTES:

1. CONSTRUCTION FOR CARRINGTON SQUARE WILL CONSIST OF THE FOLLOWING AS SHOWN ON THESE CONSTRUCTION DOCUMENTS:
   - EROSION CONTROL MEASURES
   - ALL WATER, SEWER, AND STORM DRAIN FACILITIES
   - BMP POND CONSTRUCTION
   - OFFSITE ROADWAY IMPROVEMENTS
2. THE SITE IMPROVEMENTS FOR THE FUTURE GROCERY STORE (ALDI) ON PARCEL 3 WILL BE CONSTRUCTED UNDER SEPARATE SITE AND BUILDING PERMIT.
3. ALL PARCELS WILL BE ROUGH AND FINE GRADED AS SHOWN ON THESE GRADING PLANS. BUILDING CONSTRUCTION WILL NOT BE DONE UNDER THIS PERMIT. FUTURE DEVELOPMENT OF REMAINING PARCELS WILL REQUIRE A SEPARATE PERMIT.
4. THE ANTICIPATED CONSTRUCTION SEQUENCE IS THE FOLLOWING:
   - INSTALLATION OF EROSION CONTROL MEASURES (SEE SHEETS C-3.1 AND C-3.2 FOR FURTHER EROSION CONTROL SEQUENCING INFORMATION).
   - UPON STABILIZATION OF EROSION CONTROL MEASURES, ROUGH GRADING OPERATIONS WILL TAKE PLACE
   - BMP POND CONSTRUCTION
   - INSTALLATION OF WATER, SEWER, AND STORM DRAIN FACILITIES
   - PAVEMENT INSTALLATION
   - OFFSITE ROADWAY IMPROVEMENTS CONSTRUCTION
6. CONSTRUCTION ANTICIPATED TO COMMENCE WITHIN 30 DAYS OF PLAN APPROVAL. CONSTRUCTION DURATION ANTICIPATED TO BE FROM JUNE 2018 TO DECEMBER 2019.
7. ACCESSIBLE ROUTES SHALL NOT EXCEED A CROSS SLOPE OF 2% AND LONGITUDINAL SLOPE OF 5% OR SMALLER.
8. NORTH AMERICAN GREEN SC250 OR APPROVED EQUAL SHALL BE INSTALLED ON SLOPES 2:1 OR GREATER AS SHOWN ON THESE PLANS.

   INSTALL AMERICAN GREEN SC250 PERMANENT REINFORCEMENT MATTING OR APPROVED EQUAL
9. PER THE PHASE 2 EROSION CONTROL, ALL CATCH BASIN HOODS SHALL NOT BE INSTALLED TO ALLOW POSITIVE DRAINAGE INTO THE CATCH BASIN DURING CONSTRUCTION. ONLY CATCH BASINS SHOWN WITHIN THE PROPOSED CURB AND GUTTER, AND PAVEMENT, SHALL HAVE THEIR HOODS INSTALLED.



GRAPHIC SCALE

0 40' 80'

(IN FEET)
1 inch = 40 ft.

ENGLE ENGINEERING
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4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

CARRINGTON SQUARE

TOWN OF WAXHAW, UNION COUNTY, NC

FOR THE BENEFIT OF:

TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

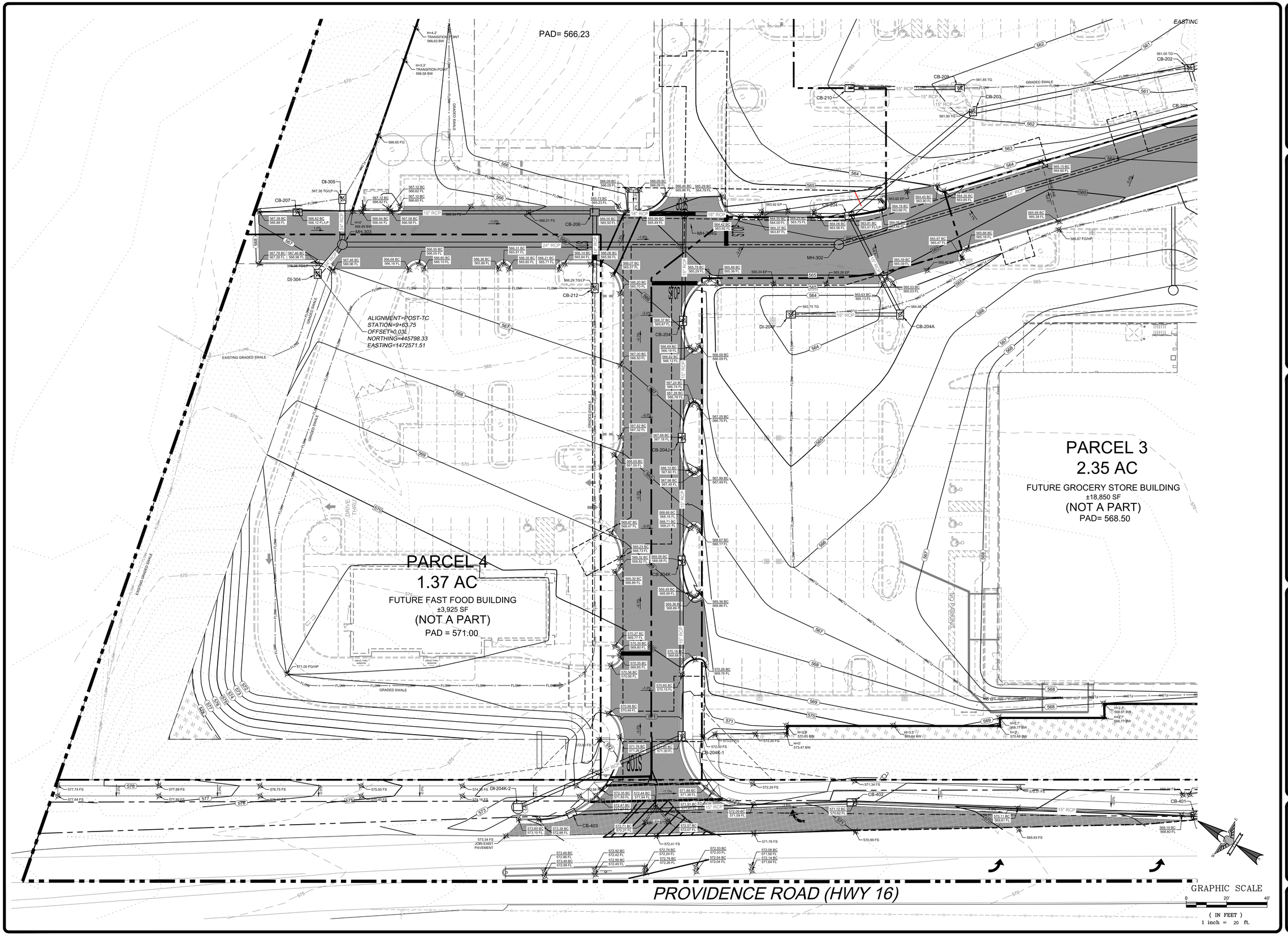
GRADING PLAN OVERALL

DESIGNED BY	KEW	DRAWN BY	KEW
CHECKED BY	JHR		
Scale	AS SHOWN	DATE	12-4-2017
JOB NUMBER	5117		

NORTH CAROLINA PROFESSIONAL SEAL 14909 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

Sheet

C-4.0



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CARRINGTON SQUARE

TOWN OF WAXHAW, UNION COUNTY, NC

FOR THE BENEFIT OF:

TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

FINISH GRADING PLAN (1 OF 4)

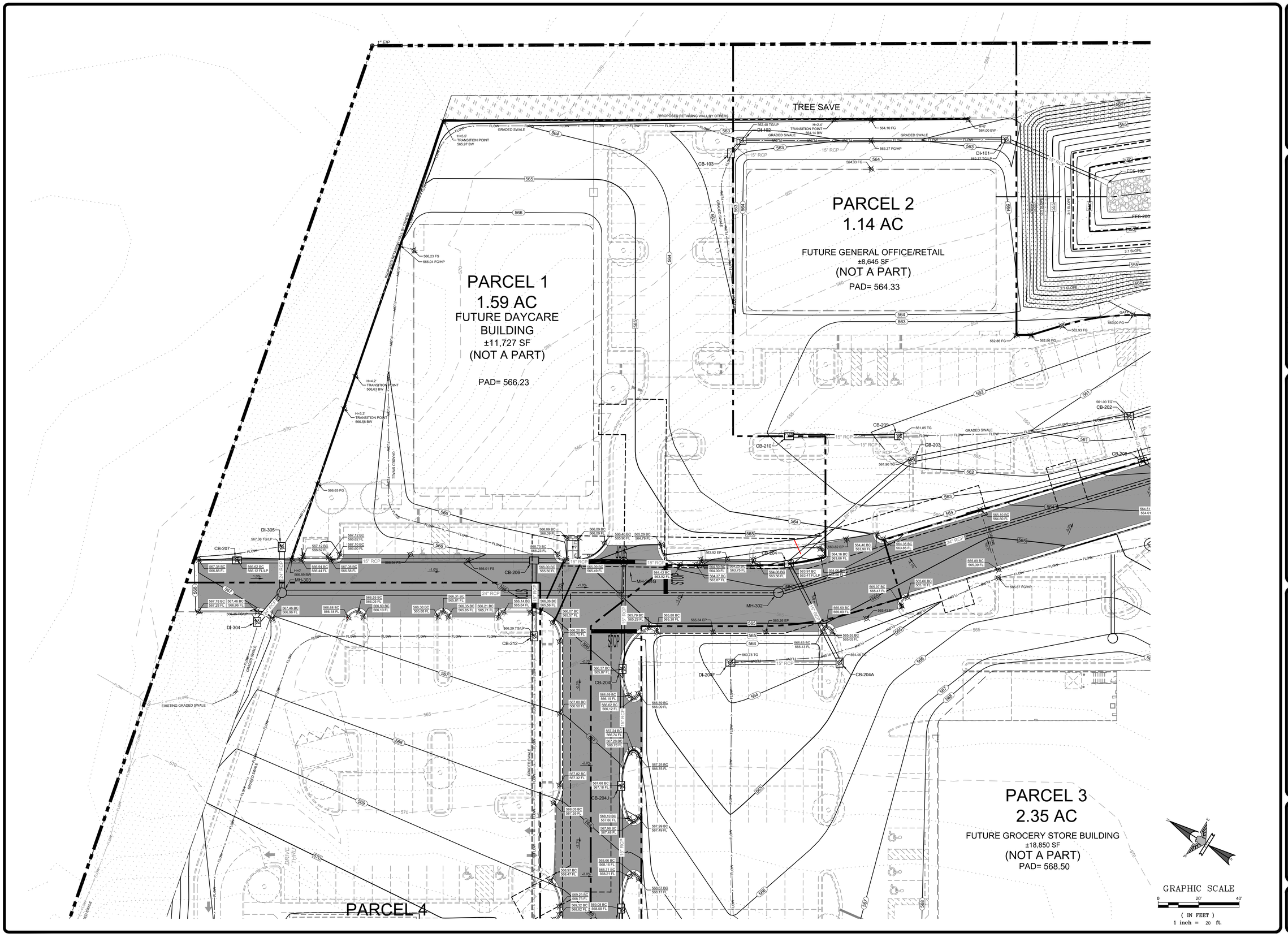
DESIGNED BY	KEW	DRAWN BY	KEW
CHECKED BY	JHR	DATE	12-4-2017
Scale	AS SHOWN	JOB NUMBER	5117

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14996 JOHNNY HOUSTON ROSS

2-16-18

Sheet

C-4.1



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CARRINGTON SQUARE

TOWN OF WAXHAW, UNION COUNTY, NC

FOR THE BENEFIT OF:

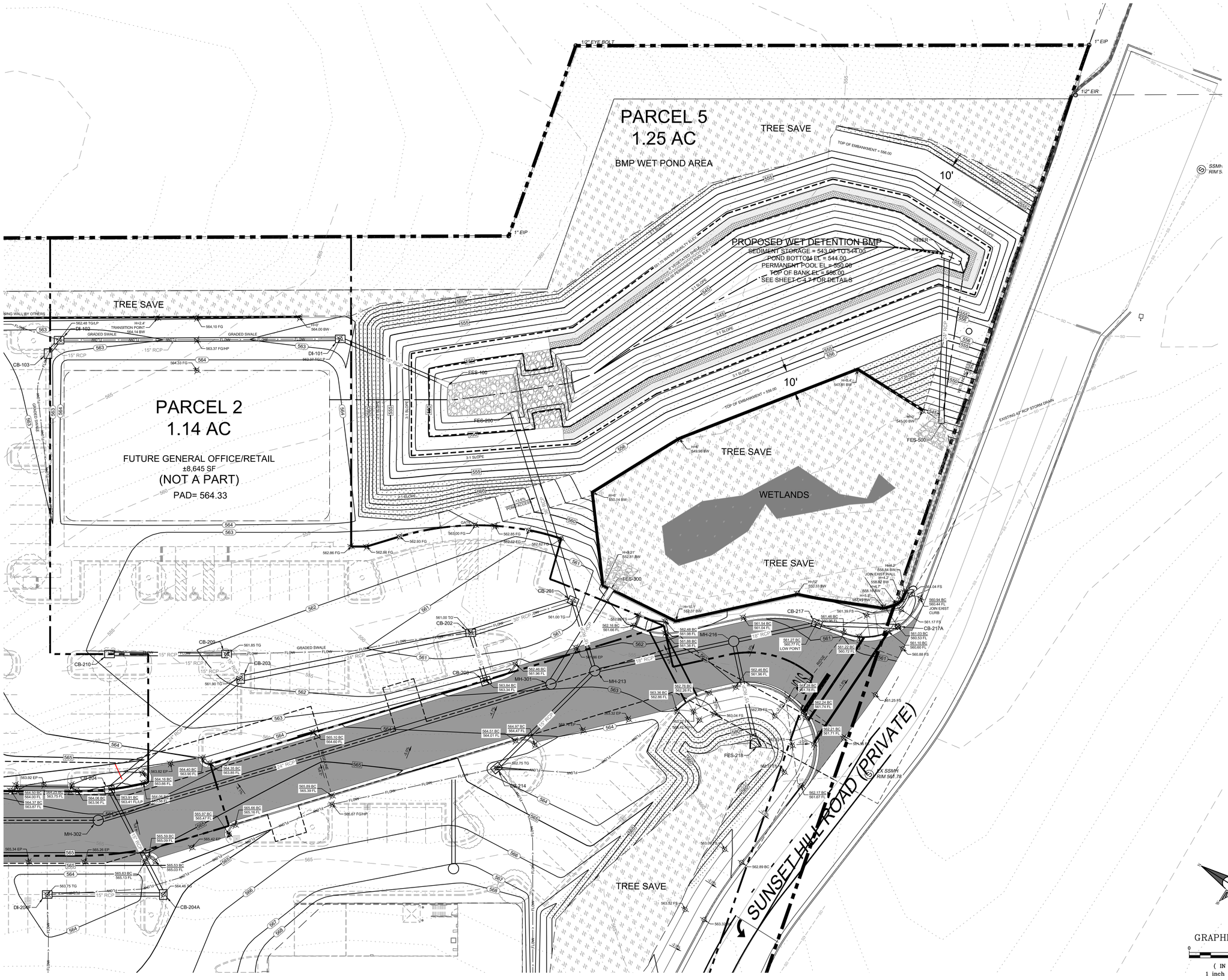
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

FINISH GRADING PLAN
(2 OF 4)

DESIGNED BY	KEW	CHECKED BY	JHR
DRAWN BY	KEW	JOB NUMBER:	5117
DATE	12-4-2017		
Scale	AS SHOWN		

NORTH CAROLINA PROFESSIONAL SEAL 14909 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-4.2



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CARRINGTON SQUARE
TOWN OF WAXHAW, UNION COUNTY, NC

FOR THE BENEFIT OF:
TRIBEK PROPERTIES
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FINISH GRADING PLAN
(3 OF 4)

DESIGNED BY	KEW	CHECKED BY	JHR
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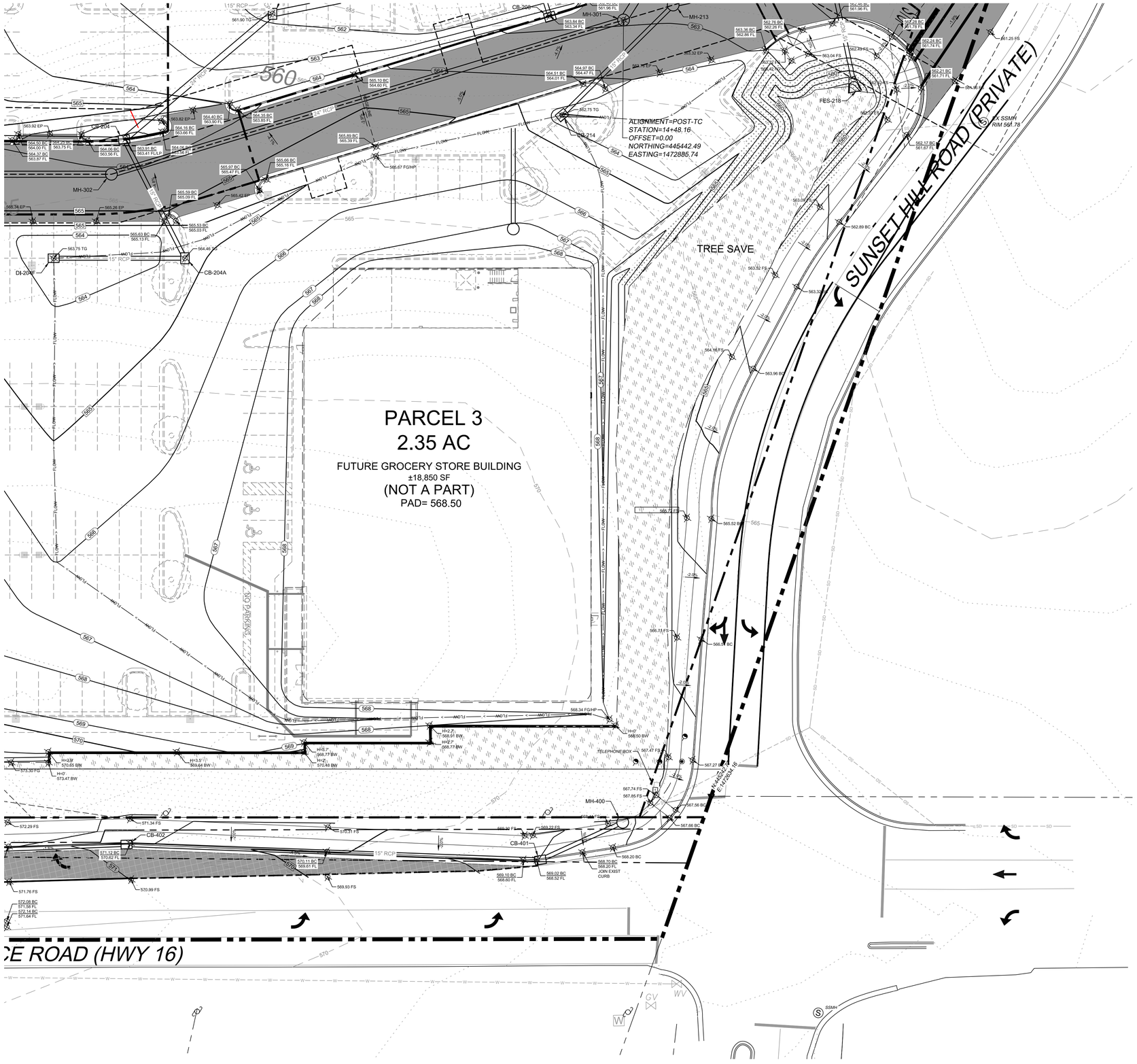
Scale	AS SHOWN	DATE	12-4-2017

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14509 LOWANY HOUSTON ROSS
2-16-18

Sheet
C-4.3



GRAPHIC SCALE

0 20' 40'

(IN FEET)
1 inch = 20 ft.

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CARRINGTON SQUARE

TOWN OF WAXHAW, UNION COUNTY, NC

FOR THE BENEFIT OF:

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FINISH GRADING PLAN
(4 OF 4)

DESIGNED BY	KEW	DRAWN BY	KEW
CHECKED BY	JHR	DATE	12-4-2017
Scale	AS SHOWN	JOB NUMBER	5117

NORTH CAROLINA PROFESSIONAL SEAL 14998 ENGINEER JOHNNY HOUSTON ROSS

2-16-18

Sheet

C-4.4

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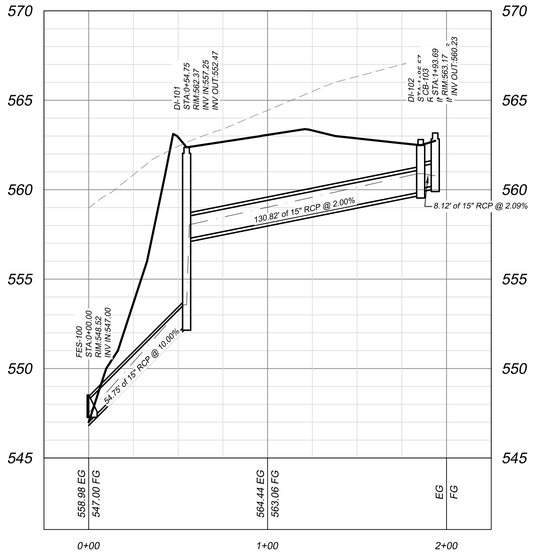

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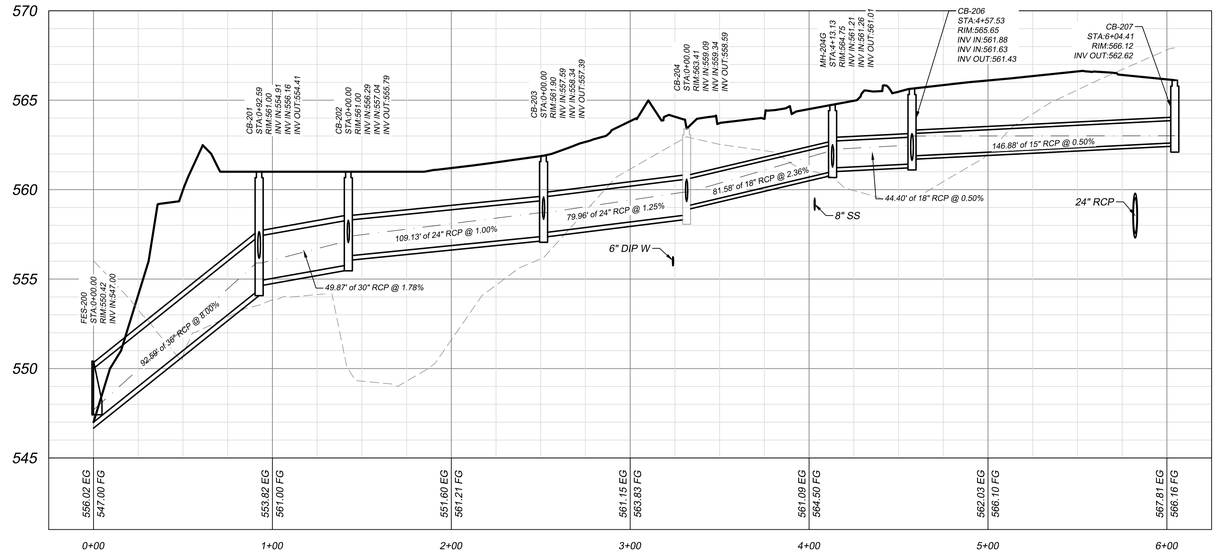

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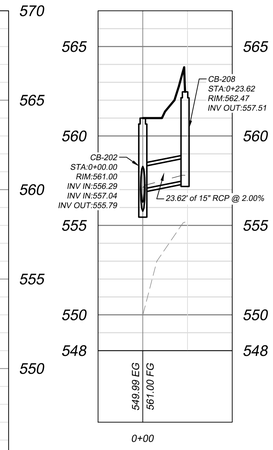

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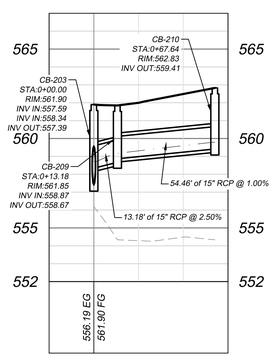

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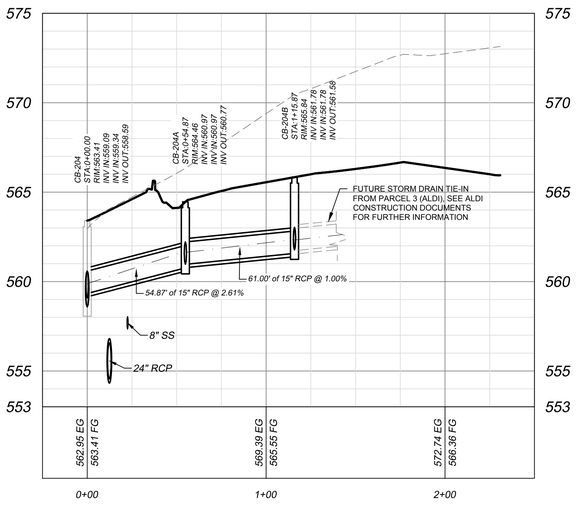

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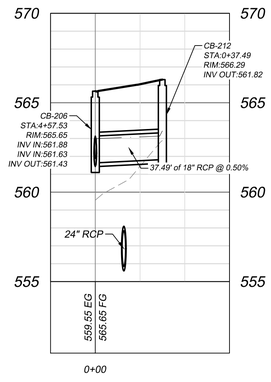

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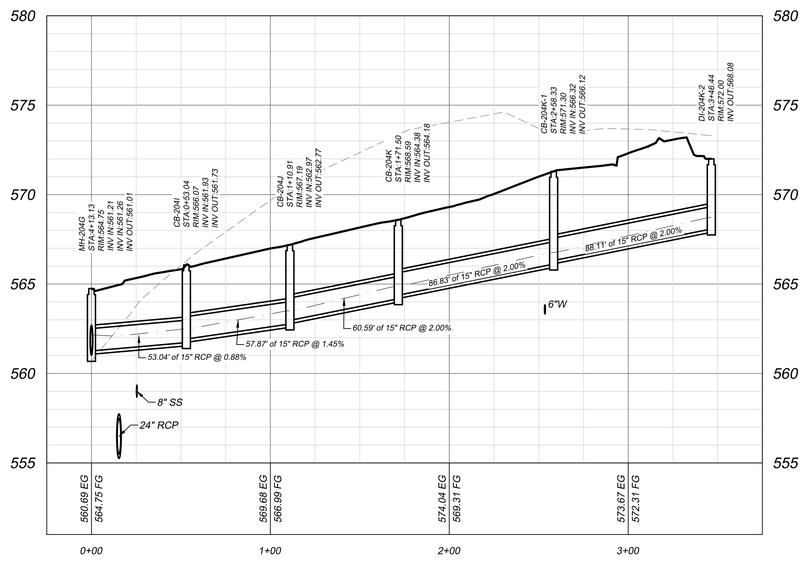

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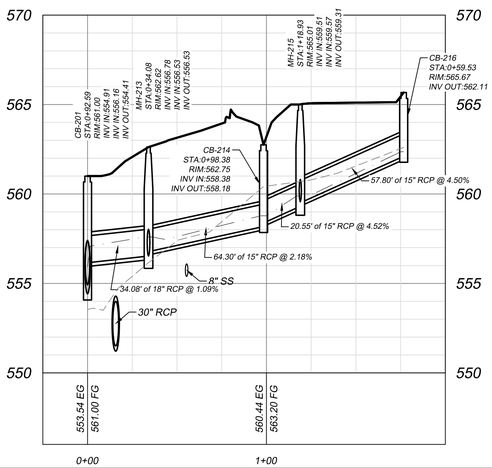

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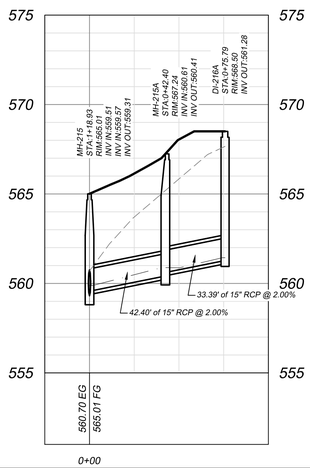

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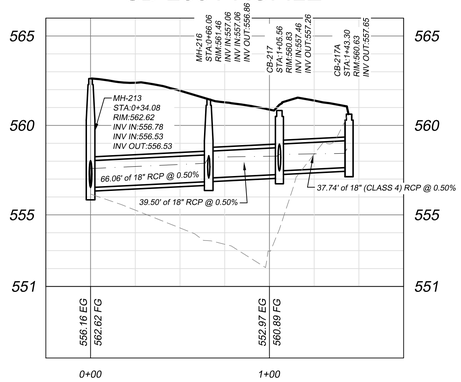

VERTICAL SCALE
(IN FEET)
1 inch = 4 ft.

GRAPHIC SCALE
0 40' 80'
(IN FEET)
1 inch = 40 ft.

EAGLE ENGINEERING
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4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

CARRINGTON SQUARE

TOWN OF WAXHAW, UNION COUNTY, NC

FOR THE BENEFIT OF:

TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

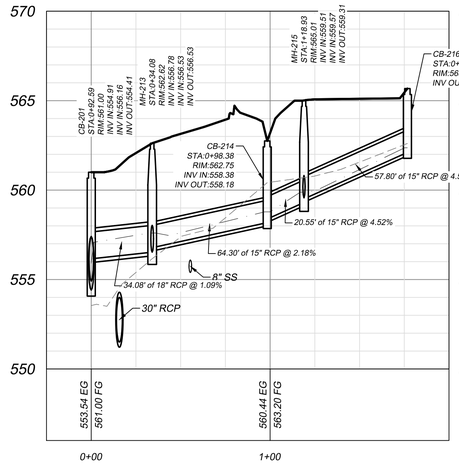
STORM DRAIN PROFILES (1 OF 2)

DESIGNED BY	DRAWN BY	CHECKED BY
KEW	KEW	JHR
Scale AS SHOWN	DATE 12-4-2017	JOB NUMBER 5117

NORTH CAROLINA PROFESSIONAL SEAL 14969 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-4.5

SD-205 PROFILE



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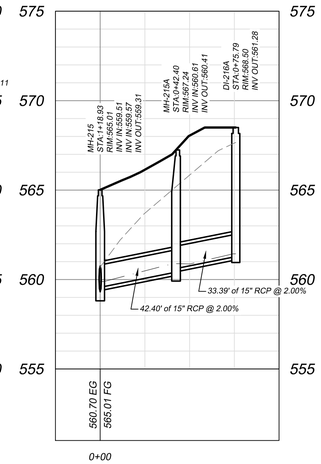

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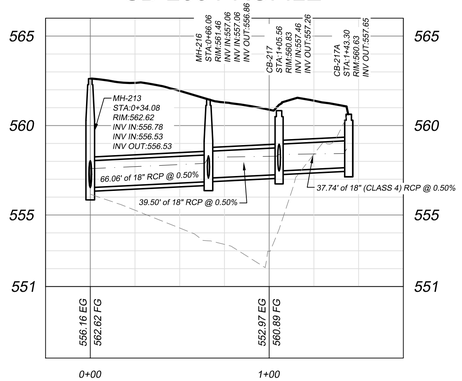

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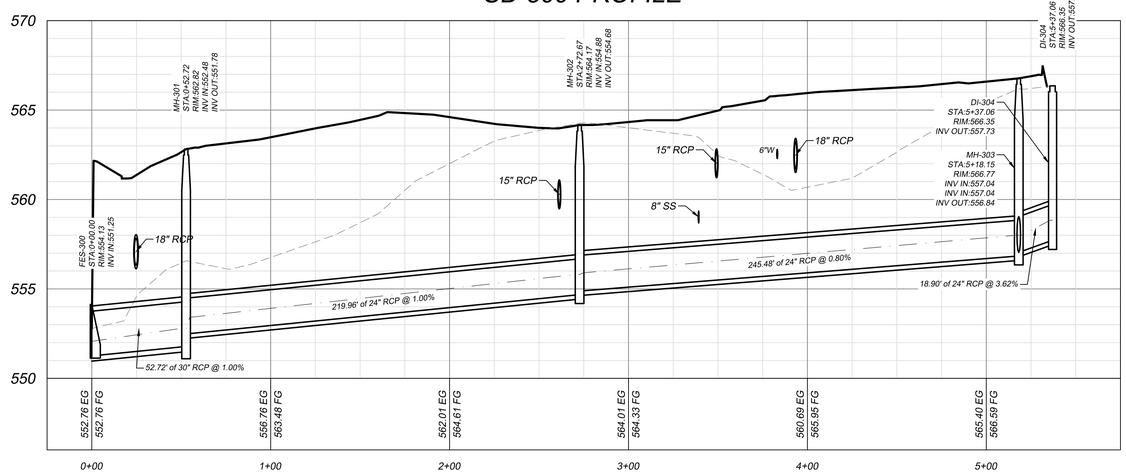

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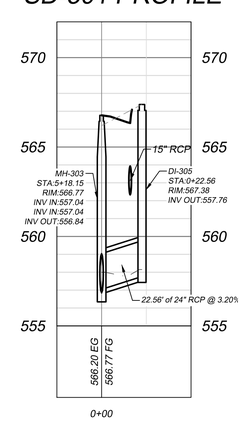

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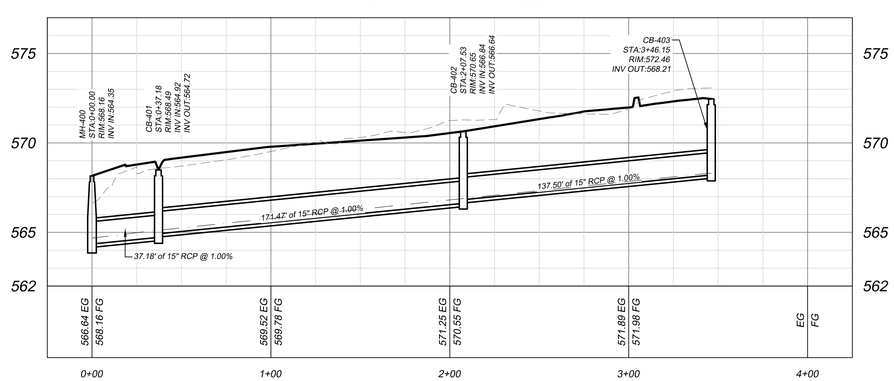

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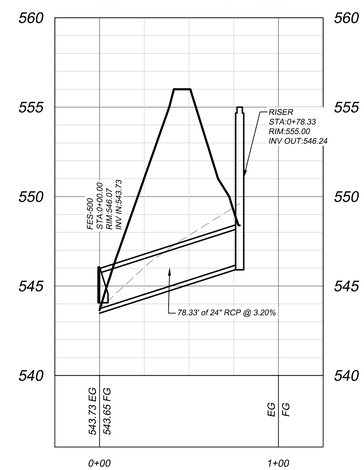

VERTICAL SCALE
(IN FEET)
1 inch = 4 ft.

GRAPHIC SCALE
0 40' 80'
(IN FEET)
1 inch = 40 ft.

ENGLE ENGINEERING
FIRM LICENSE # C-0873
2013A Van Buren Avenue
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P.O. BOX 551
Alpharetta, GA 30009
(678) 339-0640
www.engleonline.net

NO.	DATE	BY	ISSUE
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2	6-12-18	KEW	2nd PLANCHECK REVISIONS PER TOWN & NCDOT
3	8-1-18	KEW	3rd PLANCHECK REVISIONS PER TOWN & NCDOT
4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

CARRINGTON SQUARE

TOWN OF WAXHAW, UNION COUNTY, NC

FOR THE BENEFIT OF:

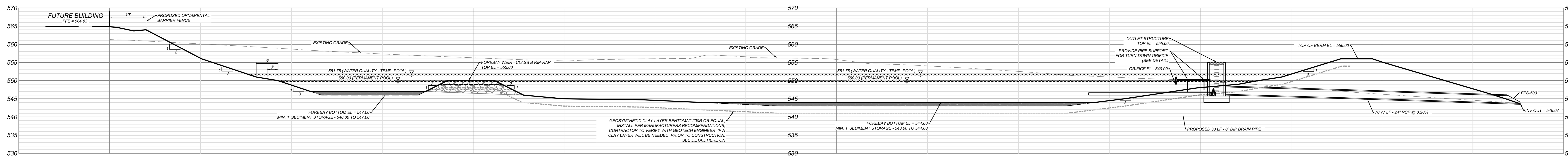
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

STORM DRAIN PROFILES (2 OF 2)

DESIGNED BY	KEW	DRAWN BY	KEW
Scale	AS SHOWN	DATE	12-4-2017
CHECKED BY	JHR	JOB NUMBER	5117

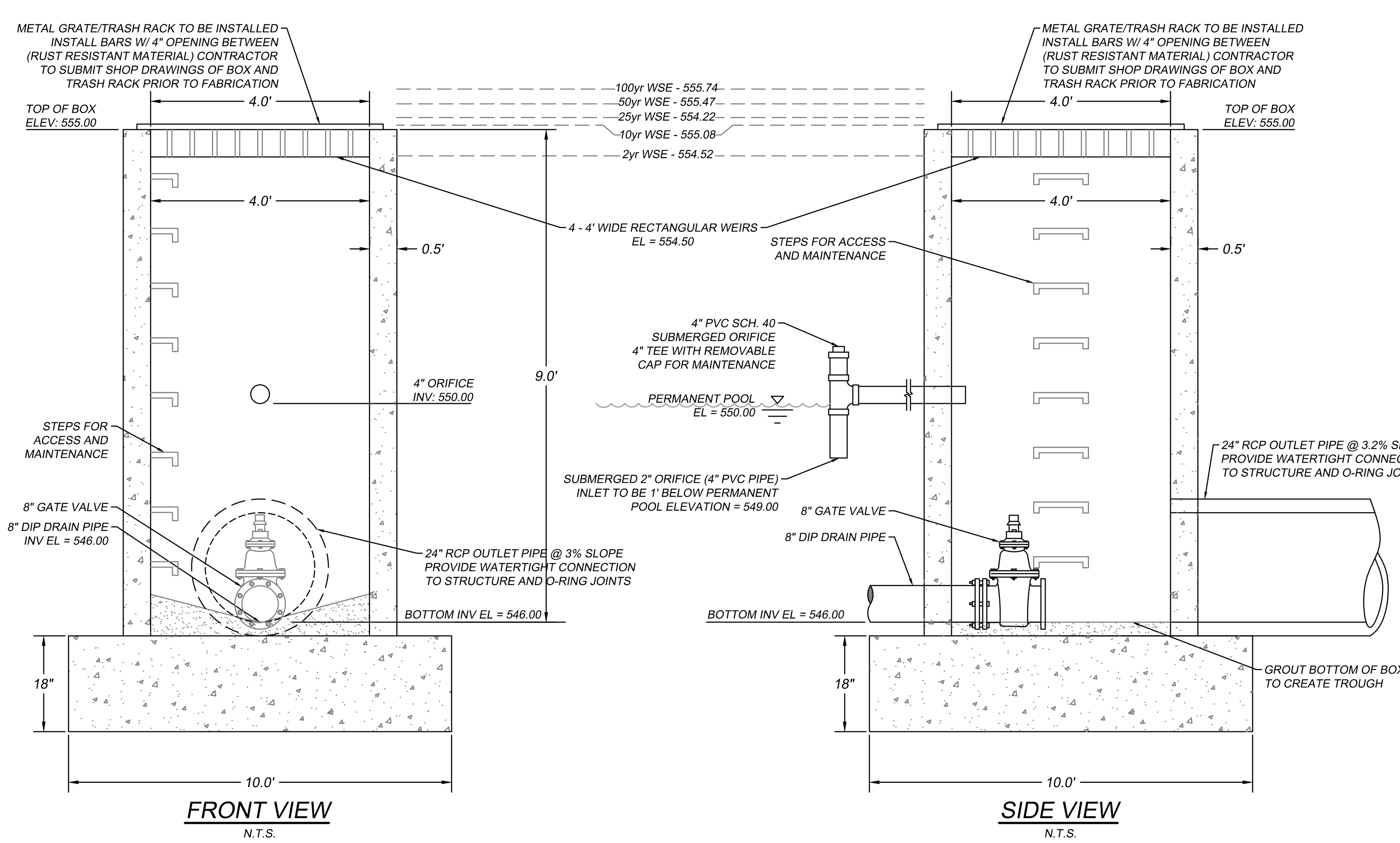
NORTH CAROLINA PROFESSIONAL SEAL 14999 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-4.6



BMP WET POND CROSS SECTION DETAIL

SCALE: 1"=20'



BMP OUTLET STRUCTURE DETAIL

NOT TO SCALE

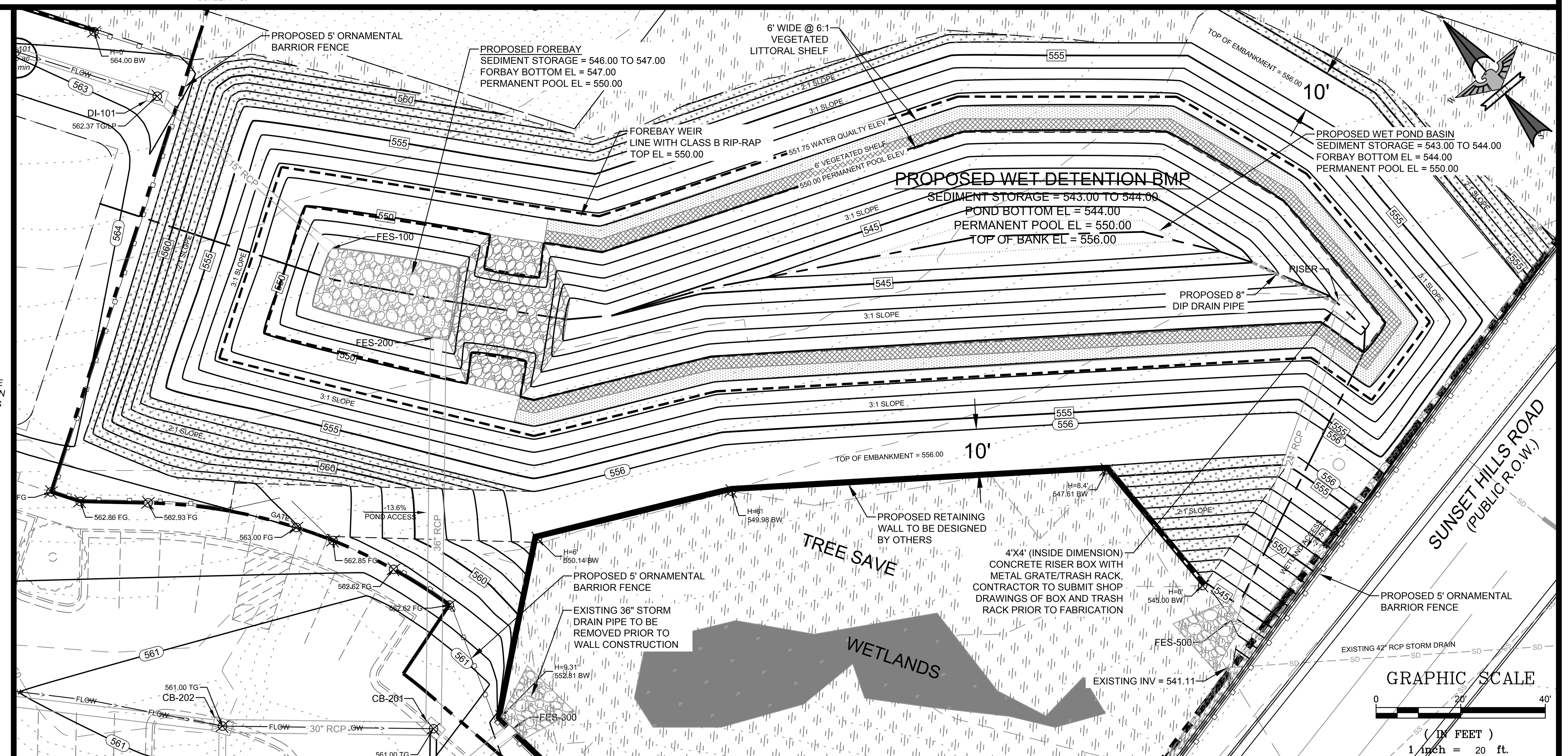


Table 10-6, continued
Sample Operation and Maintenance Provisions for Wet Detention Basins

BMP element:	Potential problems:	How to remediate the problem:
The vegetated shelf	Best professional practices show that pruning is needed to maintain optimal plant health.	Prune according to best professional practices
	Plants are dead, diseased or dying.	Determine the source of the problem: soils, hydrology, disease, etc. Remedy the problem and replace plants. Provide a one-time fertilizer application to establish the ground cover if a soil test indicates it is necessary.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticide is used, wipe it on the plants rather than spraying.
The main treatment area	Sediment has accumulated to a depth greater than the original design sediment storage depth.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the BMP.
	Algal growth covers over 50% of the area.	Consult a professional to remove and control the algal growth.
	Cattails, phragmites or other invasive plants cover 50% of the basin surface.	Remove the plants by wiping them with pesticide (do not spray).
The embankment	Shrubs have started to grow on the embankment.	Remove shrubs immediately.
	Evidence of muskrat or beaver activity is present.	Use traps to remove muskrats and consult a professional to remove beavers.
	A tree has started to grow on the embankment.	Consult a dam safety specialist to remove the tree.
	An annual inspection by an appropriate professional shows that the embankment needs repair.	Make all needed repairs.
The outlet device	Clogging has occurred.	Clean out the outlet device. Dispose of the sediment off-site.
	The outlet device is damaged	Repair or replace the outlet device.
The receiving water	Erosion or other signs of damage have occurred at the outlet.	Contact the local NC Division of Water Quality Regional Office, or the 401 Oversight Unit at 919-733-1786.

Table 10-6
Sample Operation and Maintenance Provisions for Wet Detention Basins

BMP element:	Potential problems:	How to remediate the problem:
The entire BMP	Trash/debris is present.	Remove the trash/debris.
The perimeter of the wet detention basin	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, and then plant a ground cover and water until it is established. Provide lime and a one-time fertilizer application.
	Vegetation is too short or too long.	Maintain vegetation at a height of approximately six inches.
The inlet device: pipe or swale	The pipe is clogged.	Unclog the pipe. Dispose of the sediment off-site.
	The pipe is cracked or otherwise damaged.	Replace the pipe.
	Erosion is occurring in the swale.	Regrade the swale if necessary to smooth it over and provide erosion control devices such as reinforced turf matting or riprap to avoid future problems with erosion.
The forebay	Sediment has accumulated to a depth greater than the original design depth for sediment storage.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the BMP.
	Erosion has occurred.	Provide additional erosion protection such as reinforced turf matting or riprap if needed to prevent future erosion problems.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticide is used, wipe it on the plants rather than spraying.

SHALLOW WATER
0"–6" BELOW NORMAL POOL
PLANT REQ. 50 PLANTS/200 S.F.

SHALLOW LAND
0"–12" ABOVE NORMAL POOL
PLANT REQ. 50 PLANTS/200 S.F.

TOPS OF BERMS EXTERIOR SLOPES OF CONTAINMENT BERMS SHALL BE PLANTED WITH CENTIPEDE GRASS

MINIMUM PLANTING REQUIREMENTS (PER NCDENR BMP MANUAL)
50 PLANTS PER 200 SF OF VEGETATED SHELF REQUIRED

AREA OF VEGETATED (LITTORAL) SHELF: 2,660 SF

MINIMUM NUMBER OF PLANTS: 665 PLANTS

USE THREE SPECIES EACH OF SHALLOW WATER EMERGENT, AND SHALLOW LAND HERBACEOUS PLANTS: 222 OF EA. SPECIES

PLANTS SHOULD BE SPACED APPROXIMATELY 24" – 36" ON CENTER AND SHOULD YIELD COVER IN APPROXIMATELY 1 – 2 YEARS.

THESE ENGINEERING DESIGN PROVISION ARE BASED PROVISIONS AND GUIDELINES BY THE NORTH CAROLINA DIVISION OF WATER QUALITY STORMWATER BMP DESIGN MANUAL.

**REF: NCDENR STORMWATER BMP MANUAL CHAPTER 6 (LANDSCAPE AND SOIL COMPOSITION SPECIFICATIONS) P.6–1 – 6–12*

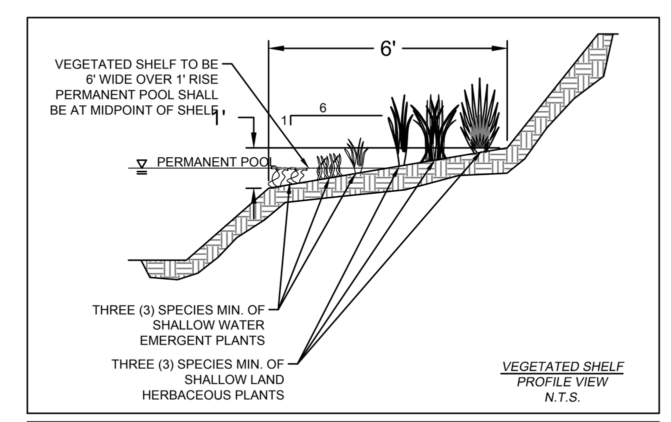
TABLE 9-1 STORMWATER WETLAND PLANT RECOMMENDATIONS
(FROM NCDENR BMP MANUAL)

SHALLOW WATER
(HERBACEOUS PLANTS)

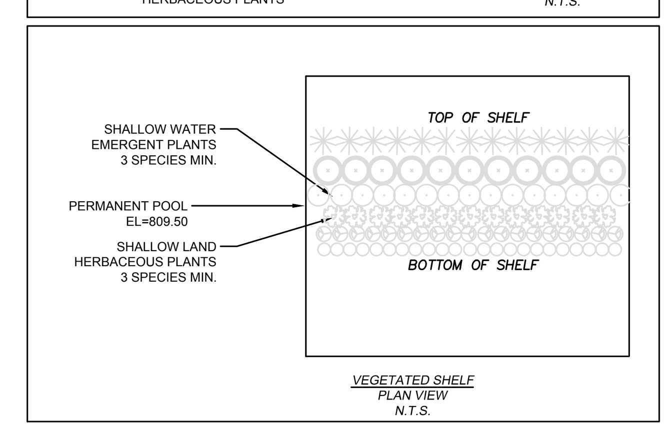
BOTANICAL NAME	COMMON NAME
ACORUS SUBCORDATUM	SWEETFLAG
ALISMA SUBCORDATUM	WATER PLANTAIN
HYDROLEA QUADRIVALVIS	WATERPOD
IRIS VIRGINICA	BLUE FLAG IRIS
JUNCUS EFFUSUS VAR. PYLAEI	SOFT RUSH OR SOLUTUS
PELTANDRA VIRGINICA	ARROW ARUM
PONTEDERIA CORDATA	PICKERELWEED
SAGITTARIA LATIFOLIA	DUCK POTATO
SAGITTARIA LANCIFOLIA	BULLTONGUE
SAURURUS CERNUUS	LIZARD'S TAIL
SCHOENOPLECTUS TABERNAEMONTANI	SOFT STEM BULRUSH
SCHOENOPLECTUS AMERICANUS	THREE–SQUARE BULRUSH
SCHOENOPLECTUS PUNGENS	VAR. PUNGENS
SCIRPUS CYPERINUS	WOOLGRASS
ZIZANIOPSIS MILIACEA	GIANT CUTGRASS

SHALLOW LAND
(HERBACEOUS PLANTS)

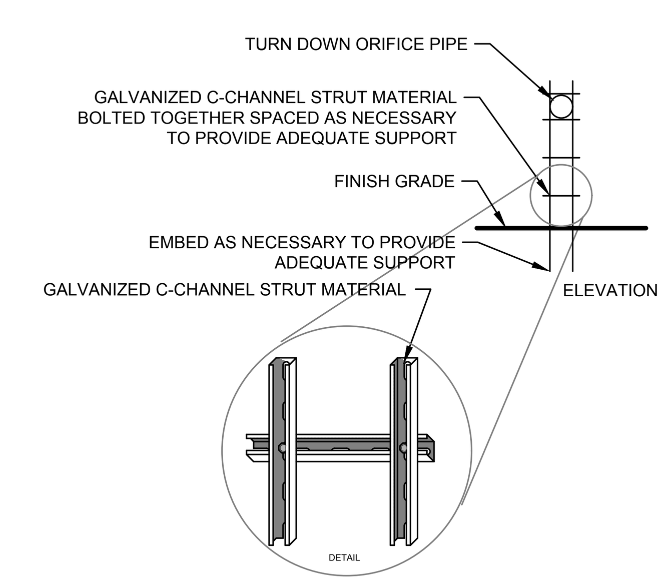
BOTANICAL NAME	COMMON NAME
ASCLEPIAS INCARNATA	SWAMP MILKWEED
CAREX TENERA	QUILL SEDGE
CHELONE GLABRA	WHITE TURTLEHEAD
EUPATORIADELPHUS DUBIUS	DWARF JOE PYE WEED
EUPATORIADELPHUS FISTULOSUS	JOE PYE WEED
EUPATORIADELPHUS MACULATUS	SPOTTED TRUMPETWEED
HIBISCUS COCCINEUS	SCARLET ROSE MALLOW
HIBISCUS LAEVIS	HALBERDLEAF ROSEMALLOW
KOSTELETZKYA VIRGINICA	SEASHORE MALLOW
LOBELIA CARDINALIS	CARDINAL FLOWER
LOBELIA ELONGATA	LONGLEAF LOBELIA
LOBELIA SIPHILITICA	GREAT BLUE LOBELIA
RHYNCHOSPORA COLORATA	STARRUSH WHITETOP
SACCHARUM BALDWINII	NARROW PLUMEGRASS



VEGETATED SHELF
PROFILE VIEW
N.T.S.



VEGETATED SHELF
PLAN VIEW
N.T.S.



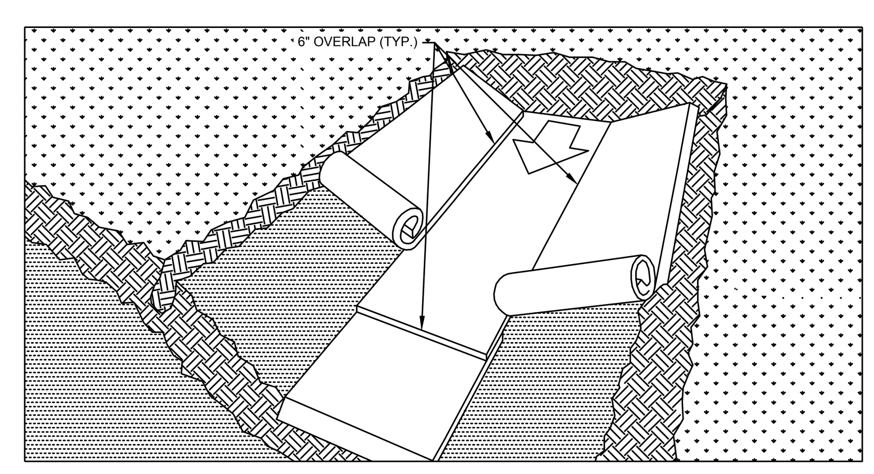
ORIFICE SUPPORT DETAIL

N.T.S.

WET DETENTION POND NOTES:

1. PER NCDENR STORMWATER BMP MANUAL, "WHEN A WET DETENTION POND IS TO BE LOCATED IN HIGHLY PERMEABLE SOILS LIKE GRAVELLY SANDS OR FRACTURED BEDROCK, OR WHEN THE PERMANENT POOL ELEVATION PROPOSED IS GREATER THAN SIX (6) INCHES ABOVE THE SHWT, THEN A LINER MAY BE NECESSARY TO SUSTAIN A PERMANENT POOL OF WATER. A LINER SHOULD BE CONSTRUCTED OR COMPACTED SUCH THAT THE INFILTRATION RATE IS NO MORE THAN 0.01 IN/HR." THE CONTRACTOR SHALL VERIFY WITH THE GEOTECH ENGINEERING IF A CLAY LAYER WILL BE NEEDED PRIOR TO CONSTRUCTION.

2. ENGINEER OF RECORD MUST PROVIDE WRITTEN CERTIFICATION THAT HE INSPECTED THE FACILITY DURING CONSTRUCTION, THAT THE BMP WAS BUILT ACCORDING TO THE APPROVED PLANS, AND THAT THE SYSTEM COMPLIES WITH THE REQUIREMENTS OF THE RULES.



NON-REINFORCED GCL

BENTOMAT 200R is a needle-punched GCL consisting of a layer of Volclay sodium bentonite encapsulated between light-weight non-woven and woven geotextiles. This GCL is an excellent cost-effective alternative to compacted clay as the low-permeability liner under a geomembrane in applications with slopes up to 10H: 1V, or where high internal shear strength is not critical.

BENTOMAT® 200R
CERTIFIED PROPERTIES

MATERIAL PROPERTY	TEST METHOD	TEST FREQUENCY	REQUIRED VALUES
Bentonite Swell Index[1]	ASTM D 5890	1 per 50 tonnes	24 mL/2g min.
Bentonite Fluid Loss[1]	ASTM D 5891	1 per 50 tonnes	18 mL max
Bentonite Mass/Area[2]	ASTM D 5993	40,000 ft² (4,000 m²)	0.75 lb/ft² (3.6 kg/m²) min.
GCL Tensile Strength[3]	ASTM D 6768	200,000 ft² (20,000 m²)	30 lb/in (53 N/cm) MARV
GCL Peel Strength[3]	ASTM D 6496	40,000 ft² (4,000 m²)	1 lb/in (1.75 N/cm) min.
GCL Index Flux[4]	ASTM D 5887	Weekly	1×10^{-8} m³/m²/sec max.
GCL Hydraulic Conductivity[4]	ASTM D 5887	Weekly	5×10^{-9} cm/sec max.
GCL Hydrated Internal Shear Strength[5]	ASTM D 5321 ASTM D 6243	Periodic	150 psf (7.2 kPa) typical

Bentomat 200R is a needle-punched GCL consisting of a layer of sodium bentonite between woven and nonwoven geotextiles, which are needlepunched together.

Bentomat 200R is a needle-punched GCL consisting of a layer of sodium bentonite between woven and nonwoven geotextiles, which are needlepunched together.

Notes
1 ~~Bentonite property tests performed at a bentonite processing facility before shipment to CETCO's GCL production facilities.~~
2 Bentonite mass/area reported at 0 percent moisture content.
3 All tensile strength testing is performed in the machine direction using ASTM D 6768. All peel strength testing is performed using ASTM D 6496. Upon request, tensile and peel results can be reported per modified ASTM D 4632 using 4 inch grips.
4 Index flux and permeability testing with deaired distilled/deionized water at 80 psi (551kPa) cell pressure, 77 psi (531 kPa) headwater pressure and 75 psi (517 kPa) tailwater pressure. Reported value is equivalent to 925 gal/acre/day. Actual flux values vary with field condition pressures. The last 20 weekly values prior the end of the production date of the supplied GCL may be provided.
5 Peak value measured at 200 psf (10 kPa) normal stress for a specimen hydrated for 48 hours. Site-specific materials, GCL products, and test conditions must be used to verify internal and interface strength of the proposed design.

CETCO has developed an edge enhancement system that eliminates the need to use additional granular sodium bentonite within the overlap area of the seams. We call this edge enhancement, SUPERGROOVE™, and it comes standard on both longitudinal edges of BENTOMAT® 200R. It should be noted that SUPERGROOVE™ does not appear on the end-of-roll overlaps and recommend the continued use of supplemental bentonite for all end-of-roll seams.

BENTOMAT 200R LINER (IF NEEDED)

NOT TO SCALE

EAGLE ENGINEERING
FIRM LICENSE # C-0873
2013A Van Buren Avenue
Indian Trail, NC 28079
(704) 882-4222
P.O. BOX 551
Alpharetta, GA 30009
(678) 339-0640
www.eagleonline.net

NO.	DATE	BY	ISSUE
1	4-9-18	KEW	1st PLANCHECK REVISIONS PER TOWN & NCDOT
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3	8-1-18	KEW	3rd PLANCHECK REVISIONS PER TOWN & NCDOT
4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

CARRINGTON SQUARE

TOWN OF WAXHAW, UNION COUNTY, NC

FOR THE BENEFIT OF:
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

BMP PLAN - WET POND

DESIGNED BY: KEW	DRAWN BY: KEW	CHECKED BY: JHR	
Scale: AS SHOWN	DATE: 12-4-2017	JOB NUMBER: 5117	

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14959 JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-4.7

UCPW NOTES:

VERIFICATION HAS BEEN MADE BY EAGLE ENGINEERING THAT EACH LOT IS CAPABLE OF HAVING GRAVITY SEWER SERVICE TO THE CENTER OF THE LOT AT THE FRONT SETBACK.

ENGINEER VERIFIES DESIGN HAS BEEN BASED ON GROUND SURVEY.

FOR PARCELS WITH EXISTING STRUCTURE, CLEARLY IDENTIFY PREVIOUS AND EXISTING WATER AND SEWER SEVICES (WELL, SEPTIC, OR COUNTY WATER/SEWER) ON PLANS. IF WELL AND/OR SEPTIC ARE EXISTING, THEN CONTACT TRACI COLLEY (704-283-3717) WITH ENVIRONMENTAL HELATH FOR THEIR SEQUENCE OF EVENTS AND OTHER PERTINENT INFORMATION.

NOTES TO THE ENGINEER:
ANY CHANGES MADE TO THE PLANS FOR OTHER DISCIPLINES (STORMWATER, EROSION, TREES, LANDSCAPING, ETC.) MUST BE SHOWN AND IDENTIFIED BY REVISION # AND CLOUDING. FAILURE TO DO SO WILL DELAY THE APPROVAL OF THIS PROJECT.

EXECUTE DOT ENCROACHMENTS AT TIME OF PERMITTING.

PROVIDE TO US A COPY OF THE DRIVEWAY PERMIT IF DIFFERENT THAN THE ENGINEERING PLANS.

ESTIMATED CONSUMPTIONS	
WATER	
DAYCARE	5000 GALLONS PER DAY
GROCERY STORE	2451 GALLONS PER DAY
GENERAL OFFICE	625 GALLONS PER DAY
RESTAURANT	3120 GALLONS PER DAY
IRRIGATION	7764 GALLONS PER DAY
TOTAL	18960 GALLONS PER DAY
SEWER	
DAYCARE	5000 GALLONS PER DAY
GROCERY STORE	2451 GALLONS PER DAY
GENERAL OFFICE	625 GALLONS PER DAY
RESTAURANT	3120 GALLONS PER DAY
TOTAL	11196 GALLONS PER DAY

ESTIMATED CONSUMPTIONS CALCULATIONS

WATER

DAYCARE (WATER METER SIZE = 1")
200 PEOPLE x 25 GPD = ~5,000 GPD

GROCERY STORE (WATER METER SIZE = 1 $\frac{1}{2}$")
18,850 SF x (130 GAL / 1000 SF) = ~2,451 GPD

GENERAL OFFICE (WATER METER SIZE = $\frac{3}{4}$")
(25 GAL x 5 EMPLOYEES @ 1 SHIFT = ~125 GPD) x 5 SUITES = ~625 GPD

RESTAURANT (WATER METER SIZE = 1")
(40 GAL / SEAT) / DAY x 78 SEATS = ~3,120 GPD

IRRIGATION (WATER METER SIZE = 1 $\frac{1}{2}$")
ASSUMES $\frac{1}{2}$" WATERINGS WEEKLY ACROSS ±4.00 ACRES OF OPEN SPACE
(174,240 SF)(0.0417)(7.48 GAL) / 7 DAYS = ~7,764 GPD

SEWER

DAYCARE (SEWER LATERAL SIZE = 4")
200 PEOPLE x 25 GPD = ~5,000 GPD

GROCERY STORE (SEWER LATERAL SIZE = 6")
18,850 SF x (130 GAL / 1000 SF) = ~2,451 GPD

GENERAL OFFICE (SEWER LATERAL SIZE = 4")
(25 GAL x 5 EMPLOYEES @ 1 SHIFT = ~125 GPD) x 5 SUITES = ~625 GPD

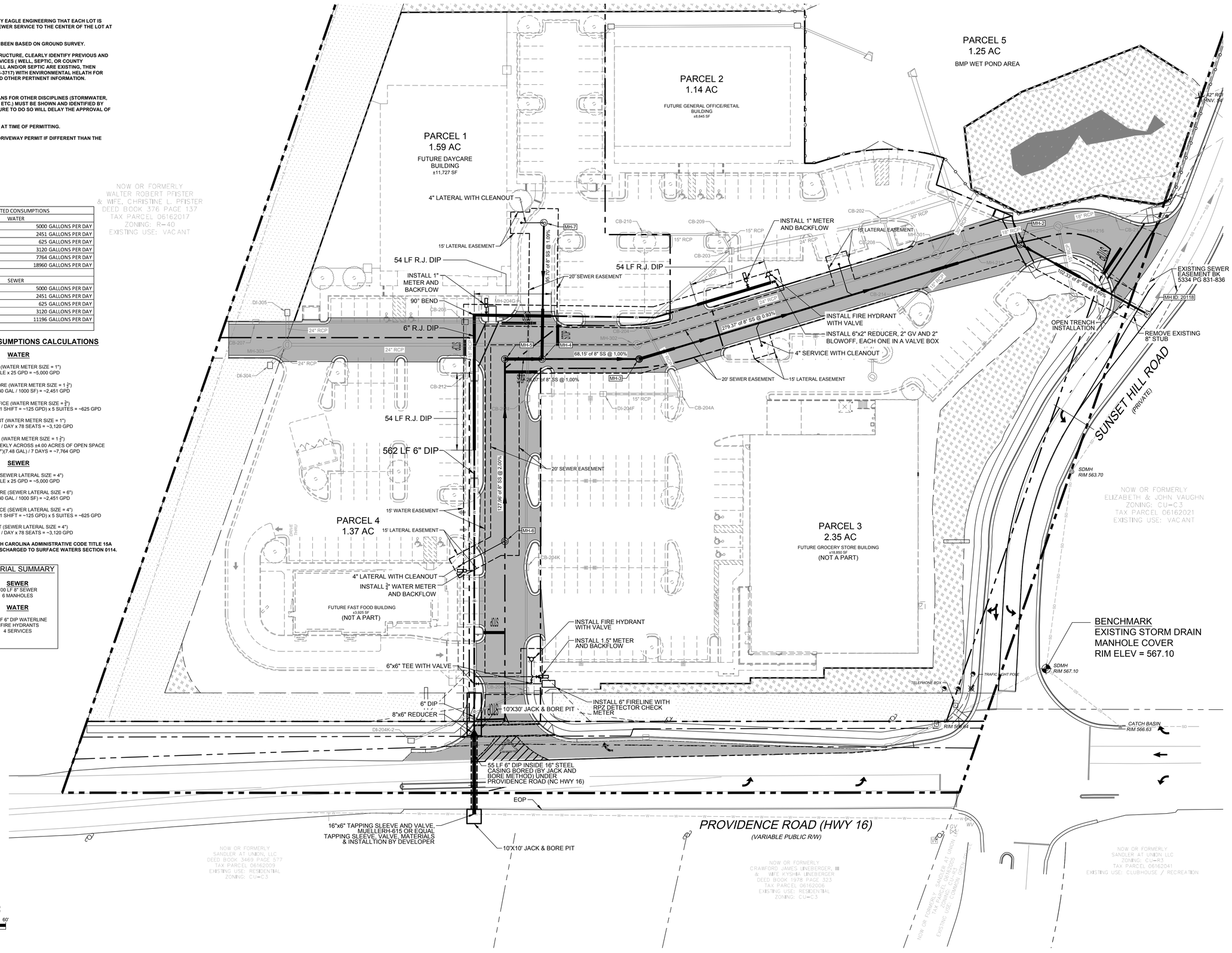
RESTAURANT (SEWER LATERAL SIZE = 4")
(40 GAL / SEAT) / DAY x 78 SEATS = ~3,120 GPD

ALL RATES BASED UPON NORTH CAROLINA ADMINISTRATIVE CODE TITLE 15A SUBCHAPTER 2T - WASTE NOT DISCHARGED TO SURFACE WATERS SECTION 0114.

MATERIAL SUMMARY

SEWER
700 LF 8" SEWER
6 MANHOLES

WATER
562 LF 6" DIP WATERLINE
2 FIRE HYDRANTS
4 SERVICES



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CARRINGTON SQUARE
TOWN OF WAXHAW, UNION COUNTY, NC
FOR THE BENEFIT OF:
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

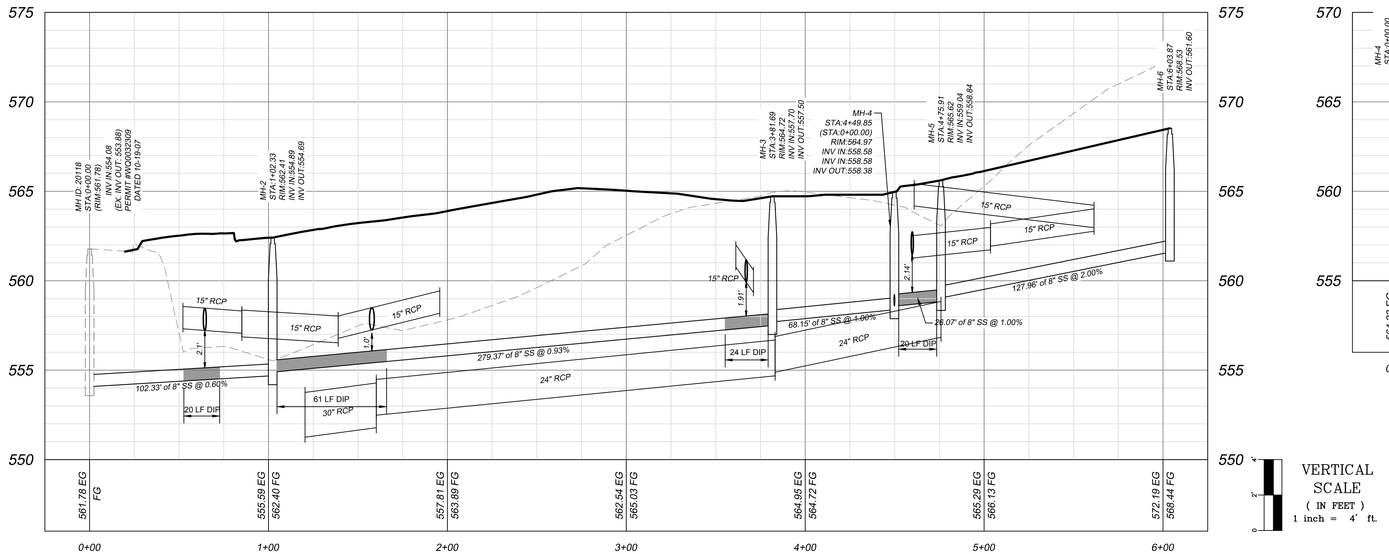
UTILITY PLAN OVERALL

DESIGNED BY	KEW	DRAWN BY	KEW
		CHECKED BY	JHR
Scale	AS SHOWN	DATE	12-4-2017
		JOB NUMBER	5117

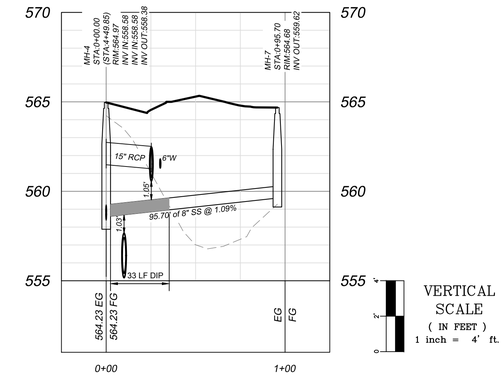
NORTH CAROLINA PROFESSIONAL SEAL 14969 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

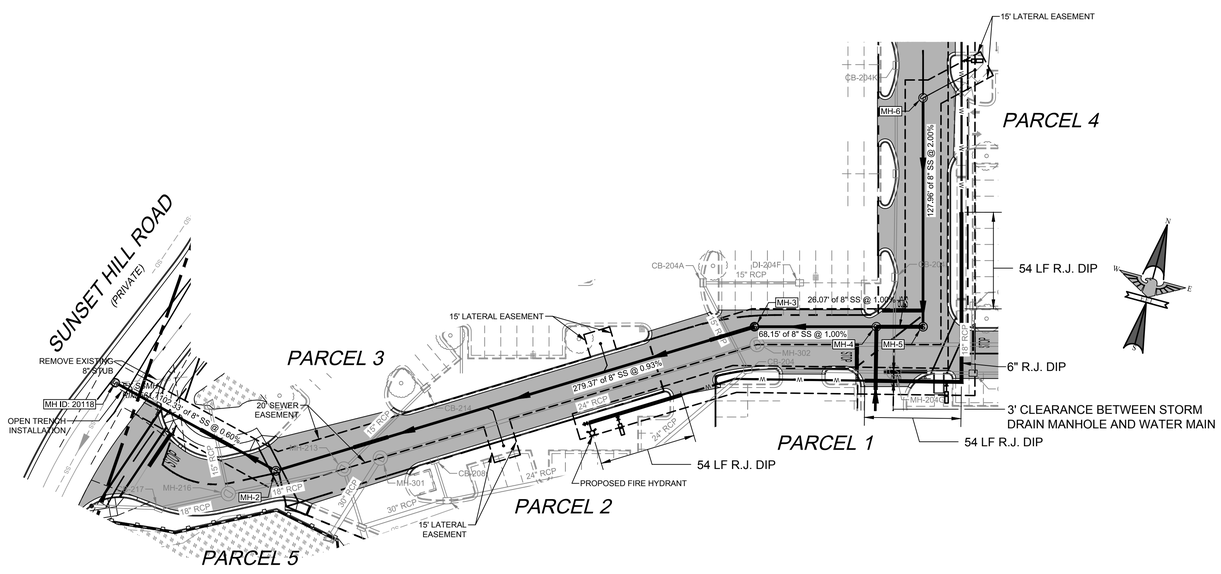
Sheet
C-5.0

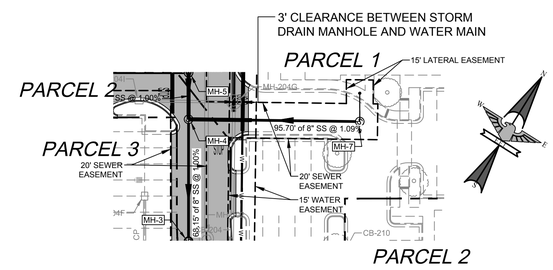
SANITARY SEWER-1 PROFILE



SANITARY SEWER-2 PROFILE







GRAPHIC SCALE
0 40' 80'
(IN FEET)
1 inch = 40 ft.

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4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

CARRINGTON SQUARE

TOWN OF WAXHAW, UNION COUNTY, NC

FOR THE BENEFIT OF:

TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

UTILITY PLAN & PROFILE

DESIGNED BY	KEW	CHECKED BY	JHR
DRAWN BY	KEW	JOB NUMBER	5117
DATE	12-4-2017		
Scale	AS SHOWN		

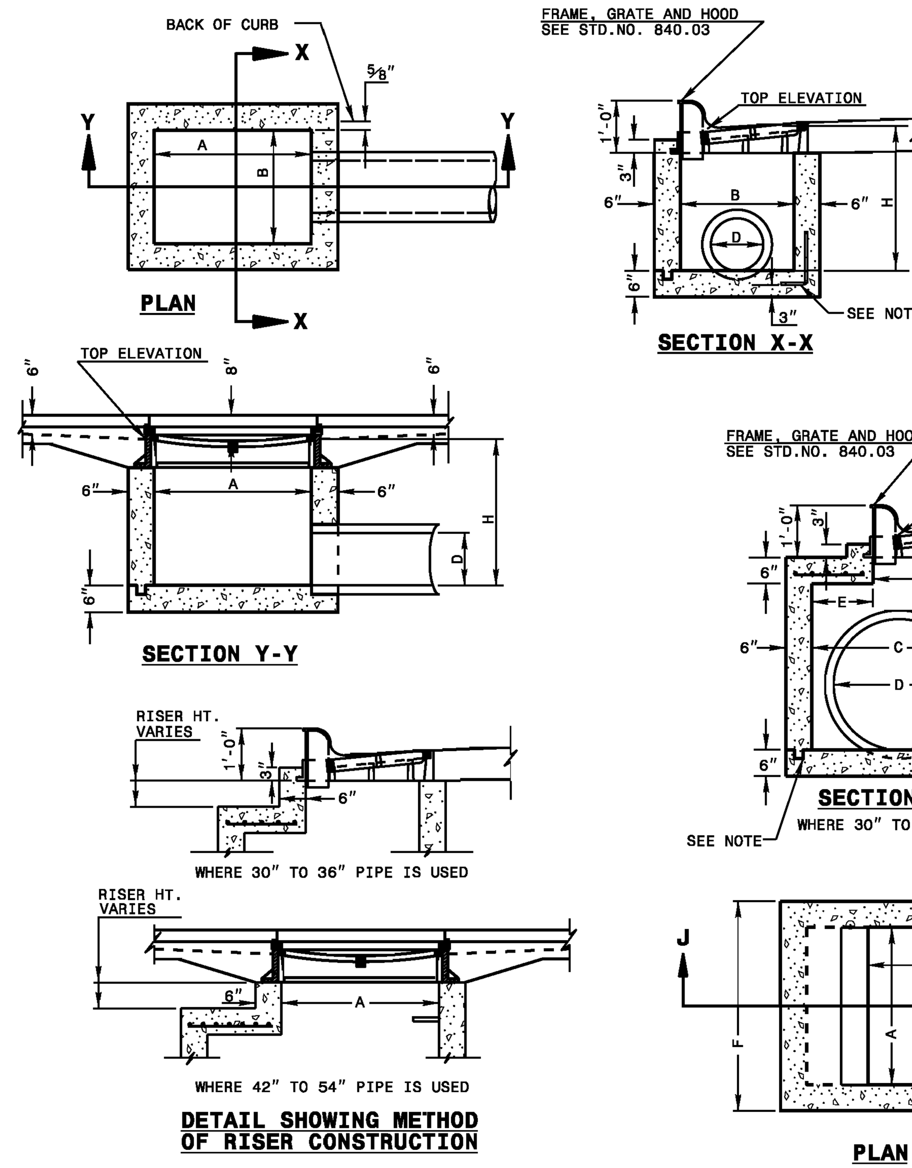
NORTH CAROLINA PROFESSIONAL SEAL 14069 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-5.1

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. — 1-12

ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

SHEET 1 OF 2 — 840.02



GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

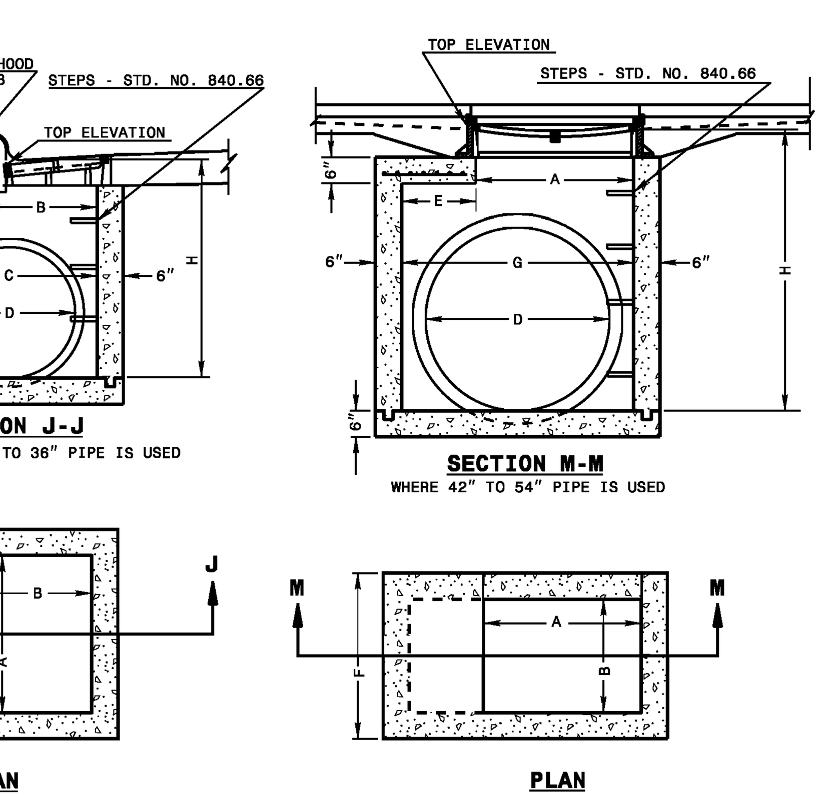
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

CONSTRUCT WITH PIPE CROWNS MATCHING.

CHAMFER ALL EXPOSED CORNERS 1".

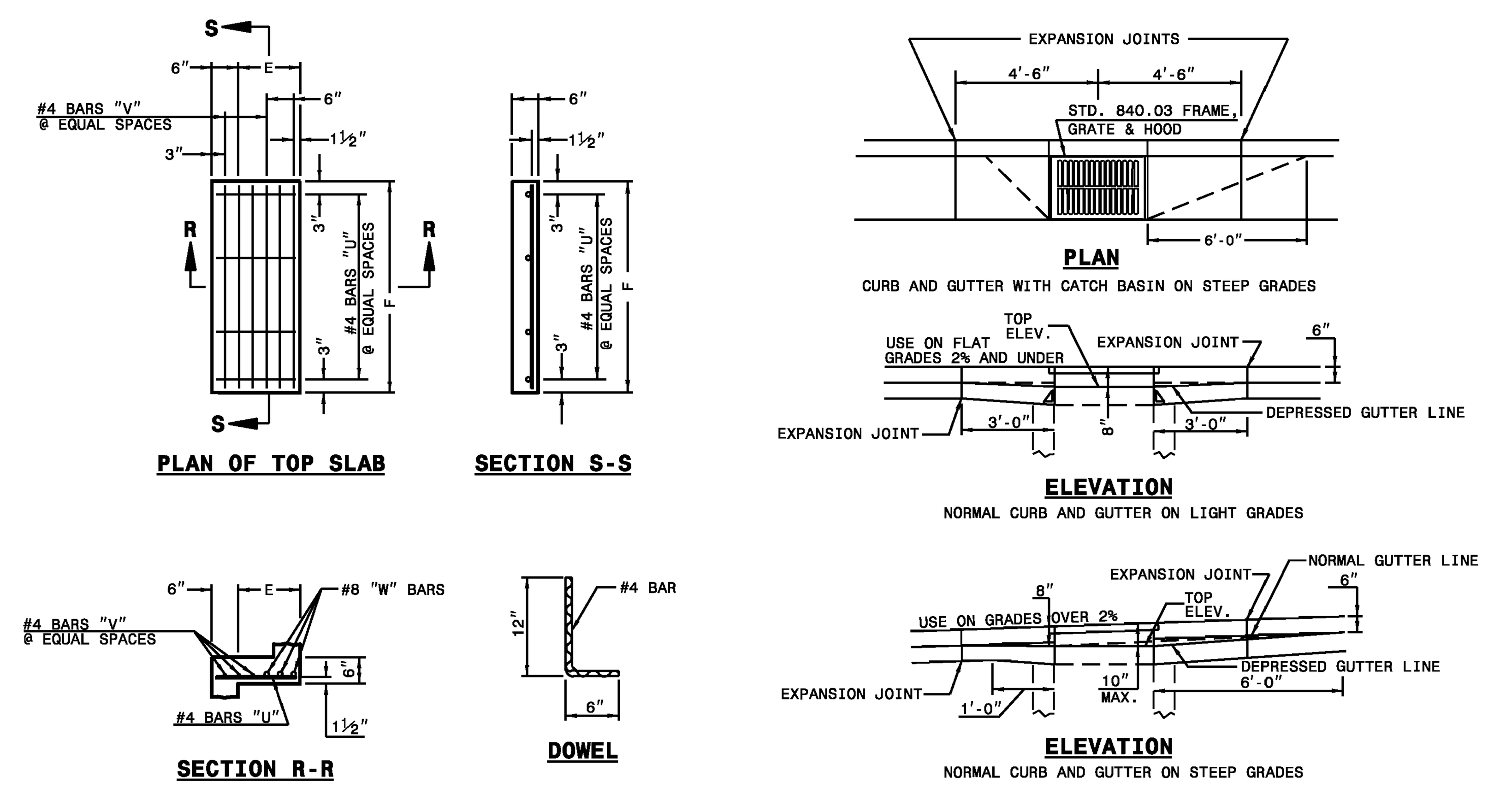
DRAWING NOT TO SCALE.



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. — 1-12

ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

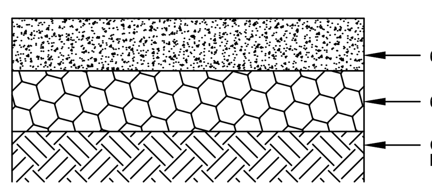
SHEET 2 OF 2 — 840.02



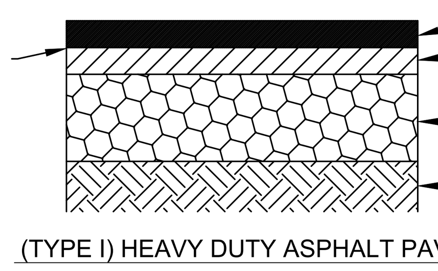
MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

PIPE D	SPAN A	WIDTH B	WIDTH C	SPAN G	MIN. HEIGHT H	COVER DIMENSION E	COVER DIMENSION F	BARS-U NO.	BARS-U LENGTH	BARS-V NO.	BARS-V LENGTH	BARS-W NO.	BARS-W LENGTH	TOTAL LBS.	CU.YDS. CONC. IN BOX TOP SLAB	BOTTOM SLAB	TOT. CONC. FOR MINIMUM HEIGHT, H	DEDUCTIONS ONE PIPE C.M.	R.C.
12"	3'-0"	2'-2"	--	--	2'-9"	--	--	--	--	--	--	--	--	--	--	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"			3'-0"											0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"			3'-3"											0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"			3'-9"											0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"		4'-3"	1'-2"	4'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.123	0.321	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"		4'-9"	1'-8"	4'-0"	4	1'-11"	3	3'-9"	3	3'-9"	43	0.161	0.358	1.714	0.132	0.178
42"	3'-0"	2'-2"		4'-5"	5'-3"	1'-5"	3'-2"	4	1'-8"	2	2'-11"	3	2'-11"	32	0.112	0.318	1.738	0.180	0.243
48"	3'-0"	2'-2"		5'-0"	5'-9"	2'-0"	3'-2"	4	2'-3"	3	2'-11"	3	2'-11"	35	0.145	0.352	2.052	0.235	0.317
54"	3'-0"	2'-2"		5'-7"	6'-3"	2'-7"	3'-2"	4	2'-10"	5	2'-11"	3	2'-11"	41	0.180	0.386	2.387	0.297	0.401

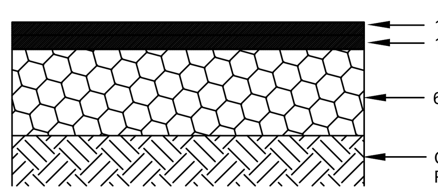
* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT



CONCRETE PAVEMENT SECTION



(TYPE I) HEAVY DUTY ASPHALT PAVING



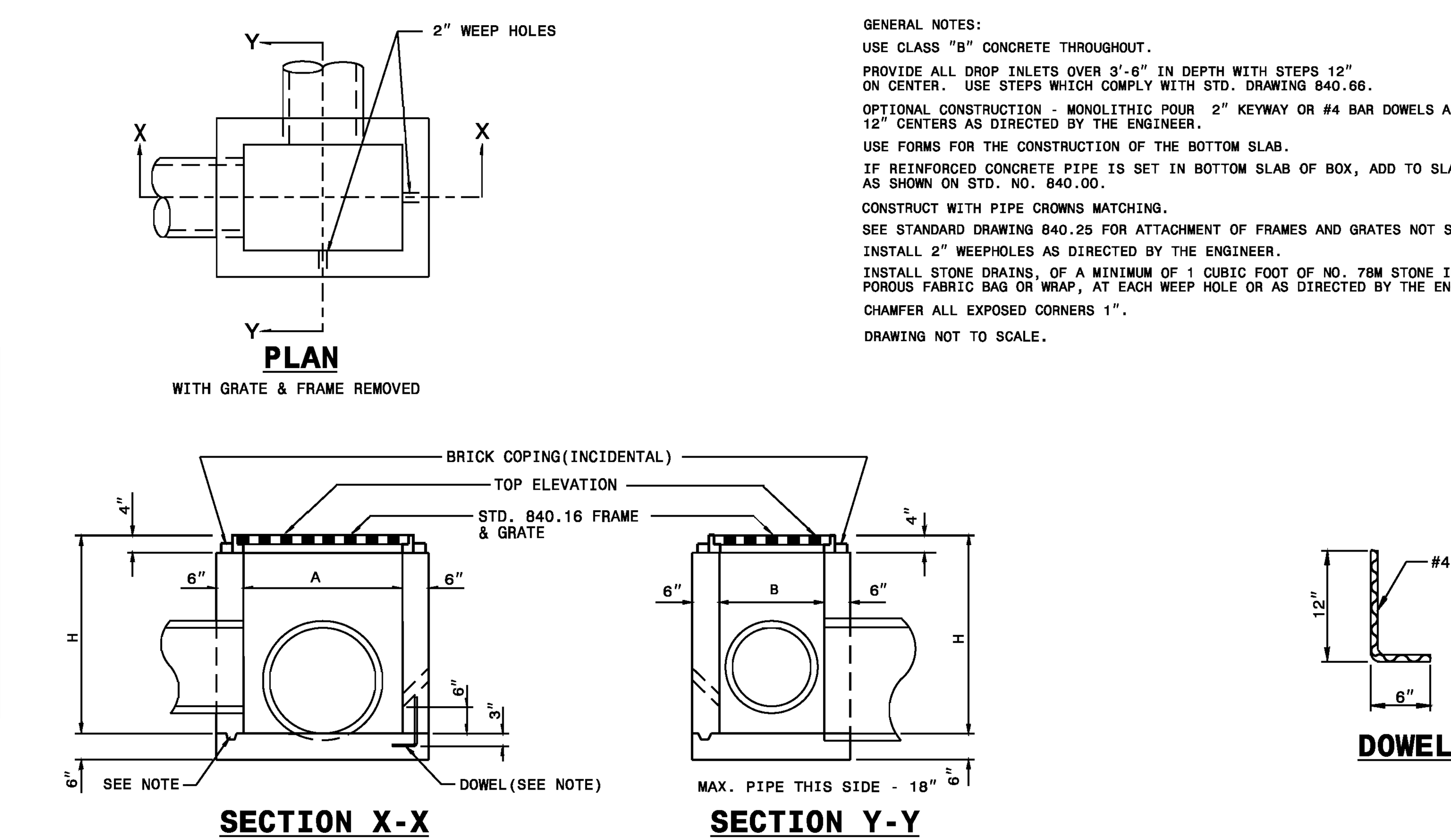
(TYPE II) ASPHALT PAVING AUTOMOBILE PARKING AREAS

NOTE:
ASPHALT SHALL BE PROOF-ROLLED BEFORE THE FINAL LIFT IS PLACED, AND AS REQUIRED BY THE SPECIFICATIONS.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. — 1-12

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

SHEET 1 OF 1 — 840.14



GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

CONSTRUCT WITH PIPE CROWNS MATCHING.

SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)

PIPE D	SPAN A	WIDTH B	MIN. HEIGHT H	CUBIC YARDS CONC. IN BOX BOTTOM SLAB	WALL PER FT. HT.	TOTAL CONCRETE FOR MINIMUM HEIGHT, H	DEDUCTIONS FOR ONE PIPE C.M.	R.C.
12"	3'-0"	2'-0"	2'-0"	0.222	0.222	0.592	0.015	0.026
15"	/	/	2'-3"	/	/	0.648	0.023	0.036
18"	/	/	2'-6"	/	/	0.703	0.033	0.049
24"	/	/	3'-0"	/	/	0.814	0.059	0.085
30"	3'-0"	2'-0"	3'-6"	0.222	0.222	0.925	0.092	0.127

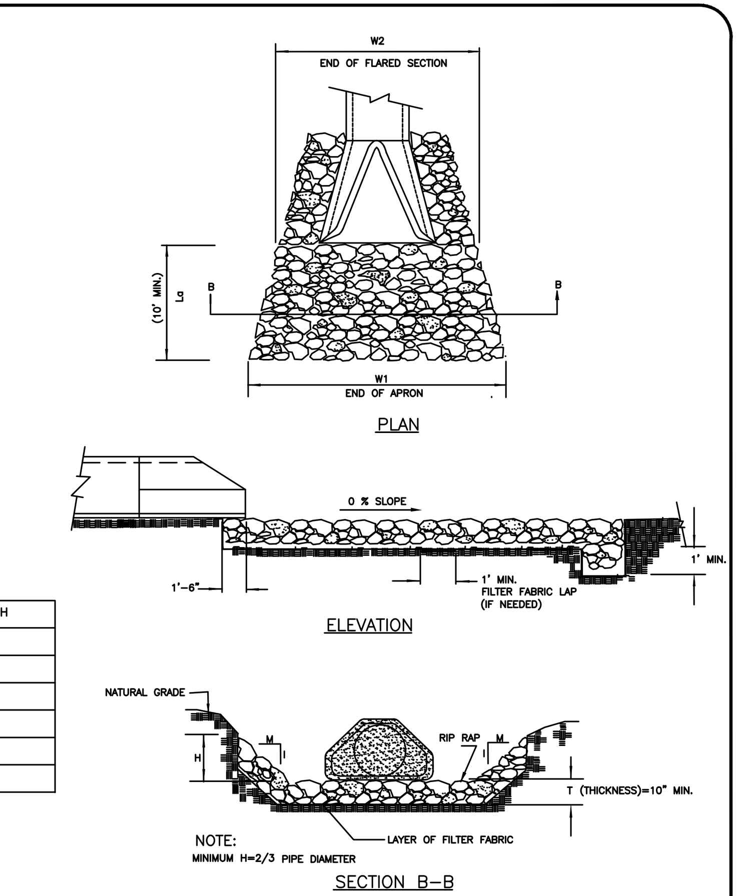
NOTES:

1. CLASS OR MEDIAN SIZE OF RIPRAP AND LENGTH, WIDTH AND DEPTH OF APRON TO BE DESIGNED BY THE ENGINEER.
2. REFER TO THE TOWN OF WAXHAW STORM WATER DESIGN MANUAL FOR RIPRAP APRON DESIGN STANDARDS.
3. RIPRAP SHOULD EXTEND UP BOTH SIDES OF THE APRON AND AROUND THE END OF THE PIPE OR CULVERT AT THE DISCHARGE OUTLET AT A MAXIMUM SLOPE OF 2:1 AND A HEIGHT NOT LESS THAN TWO THIRDS THE PIPE DIAMETER OR CULVERT HEIGHT.
4. THERE SHALL BE NO OVERFLOW FROM THE END OF THE APRON TO THE SURFACE OF THE RECEIVING CHANNEL. THE AREA TO BE PAVED OR RIPRAPPED SHALL BE UNDERCUT SO THAT THE INVERT OF THE APRON SHALL BE AT THE SAME GRADE (FLUSH) WITH THE SURFACE OF THE RECEIVING CHANNEL. THE APRON SHALL HAVE A CUTOFF OR TOE WALL AT THE DOWNSTREAM END.
5. THE WIDTH OF THE END OF THE APRON SHALL BE EQUAL TO THE BOTTOM WIDTH OF THE RECEIVING CHANNEL. MAXIMUM TAPER TO RECEIVING CHANNEL 5:1
6. ALL SUBGRADE FOR STRUCTURE TO BE COMPACTED TO 95% OR GREATER.
7. THE PLACING OF FILL, EITHER LOOSE OR COMPACTED IN THE RECEIVING CHANNEL SHALL NOT BE ALLOWED.
8. NO BENDS OR CURVES IN THE HORIZONTAL ALIGNMENT OF THE APRON WILL BE PERMITTED.
9. FILTER FABRIC SHALL BE INSTALLED ON COMPACTED SUBGRADE PRIOR TO PLACEMENT OF RIP RAP.
10. ANY DISTURBED AREA FROM END OF APRON TO RECIEVING CHANNEL MUST BE STABILIZED.

USE USDA NOMOGRAPH FROM NC SEDIMENT AND EROSION CONTROL MANUAL OR THE TOWN OF WAXHAW STORM WATER DESIGN MANUAL FOR DESIGN DATA.

OUTLET	La	W1	W2	*T	H

* d50 (see fig 8.06 a&b "NC SEDIMENT AND EROSION CONTROL MANUAL"
dmax = 1.5 x d50
T = 1.5 X dmax.
T(min.)=10"



TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS

RIPRAP APRON AT PIPE OUTFALLS OTHER THAN AT SWIM

STD. NO. 306.1 REV.

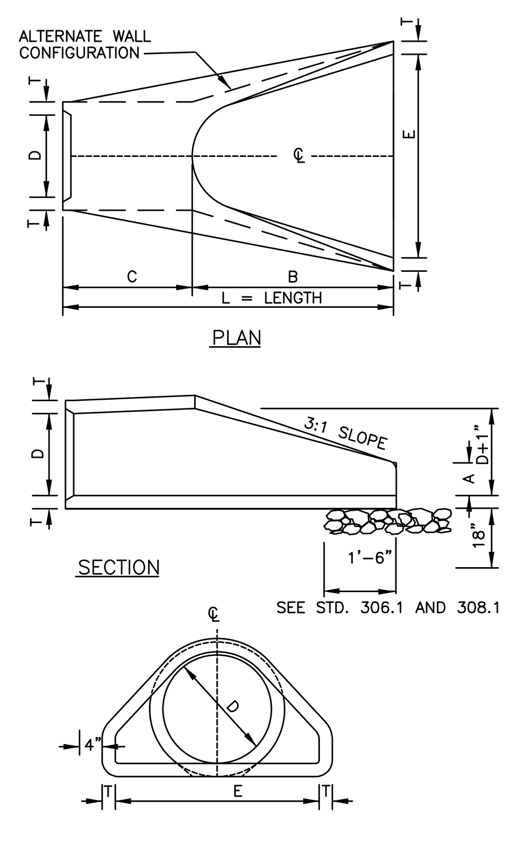


TABLE OF DIMENSIONS

D	T	A	B	C	E	L	WT.
12"	2-1/4"	4"	2'-0"	4'-1"	2'-0"	6'-1"	730
15"	2-1/4"	6"	2'-3"	3'-10"	2'-0"	6'-1"	730
18"	2-1/2"	9"	2'-3"	3'-10"	3'-0"	6'-1"	1190
24"	3"	10"	3'-8"	2'-6"	4'-0"	6'-2"	1770
30"	3-1/2"	1'-0"	4'-6"	1'-8"	5'-0"	6'-2"	2380
36"	4"	1'-3"	5'-3"	2'-11"	6'-0"	8'-2"	5320
42"	4-1/2"	1'-9"	5'-3"	2'-11"	6'-6"	8'-2"	5920
48"	5"	2'-0"	6'-0"	2'-2"	7'-0"	8'-2"	7470
54"	5-1/2"	2'-3"	5'-6"	2'-10"	7'-6"	8'-4"	8810
60"	6"	2'-6"	5'-0"	3'-3"	8'-0"	8'-3"	11180
66"	6-1/2"	3'-0"	6'-0"	2'-3"	8'-6"	8'-3"	12530
72"	7"	3'-0"	6'-6"	1'-9"	9'-0"	8'-3"	13980

GENERAL NOTES:

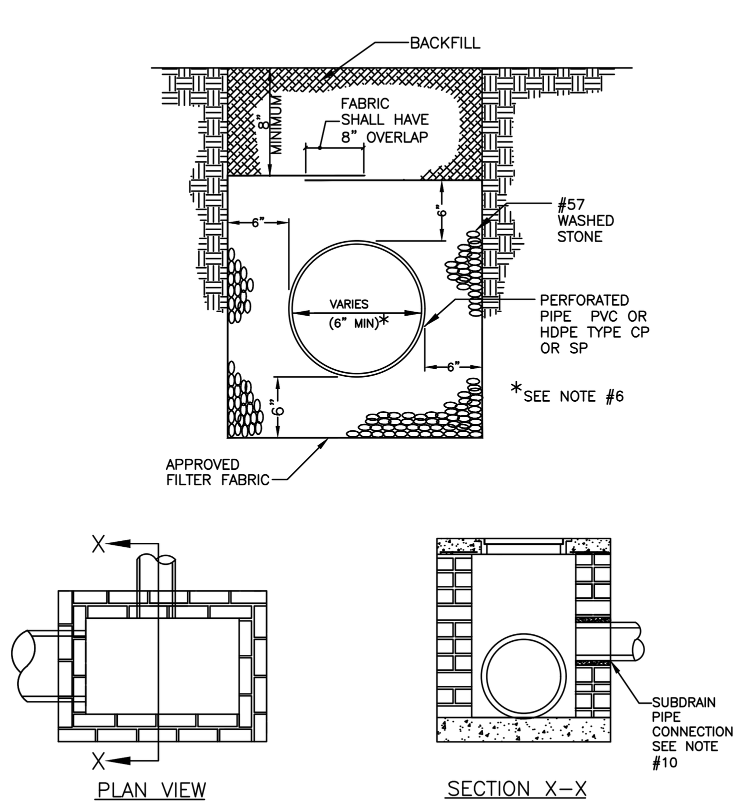
1. SEE FORMER NCDOT STANDARD 310.01 FOR DETAILS.
2. REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF REINFORCED CONCRETE PIPE OF LIKE DIAMETER PER AASHTO M170, TABLE 2, WALL B.
3. ALL CONCRETE TO BE 3600 P.S.I COMPRESSIVE STRENGTH.
4. PROVIDE TONGUE OR SPIGOT JOINT AT INLET END SECTION.
5. PROVIDE GROOVE OR BELL JOINT AT OUTLET END SECTION.
6. THE DIMENSIONS FOR END SECTIONS SHALL SUBSTANTIALLY AGREE WITH THE TABLE. MINOR VARIATIONS WILL BE PERMITTED BASED ON THE MANUFACTURER'S STANDARD FORMS AND TEMPLATES.
7. NOT TO BE USED IN NCDOT MAINTAINED RIGHT OF WAY.

NOT TO SCALE

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS

FLARED END SECTION 12" THRU 72" PIPE

STD. NO. 307.1 REV.



CONNECTION AT DRAINAGE STRUCTURE

NOTE: STRUCTURE SHOWN FOR REPRESENTATION PURPOSES ONLY.

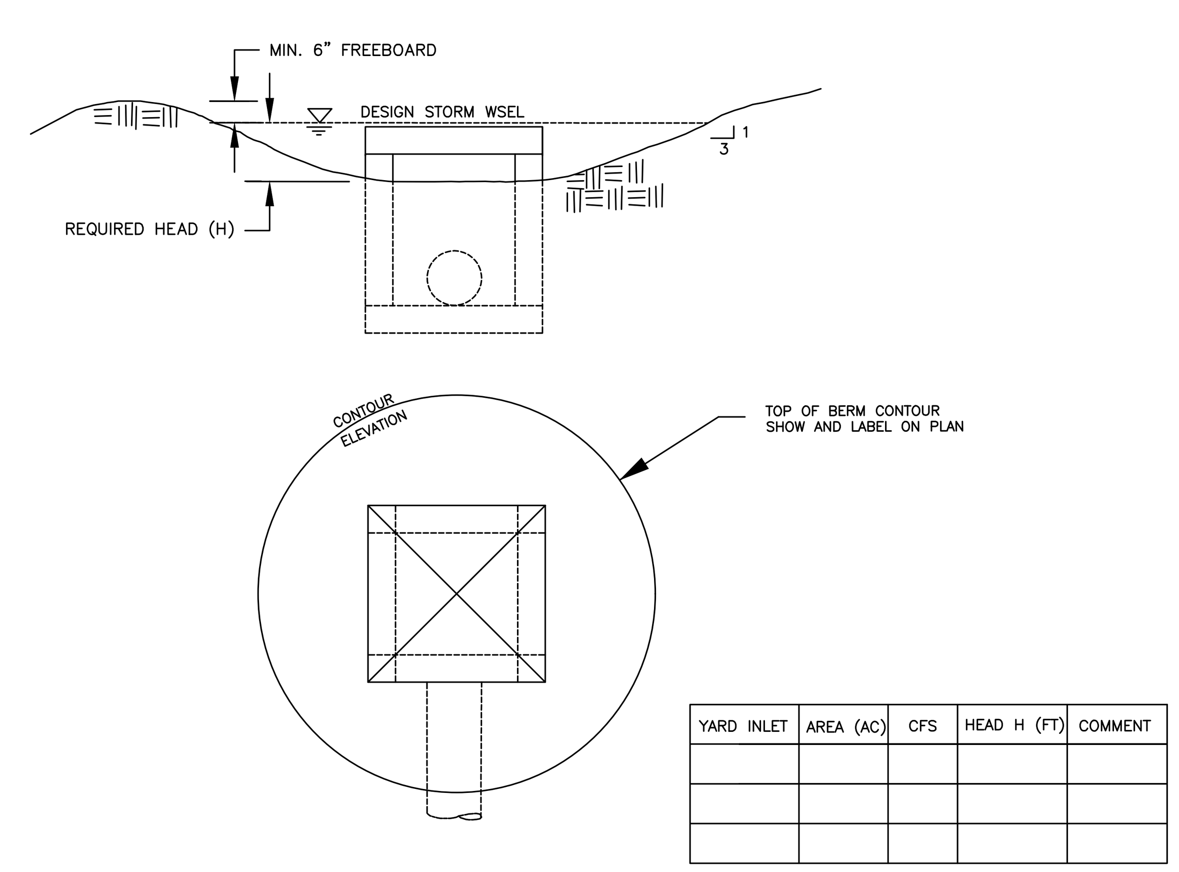
NOTES:

1. A MINIMUM OF 6" FROM OUTSIDE DIAMETER OF PIPE TO SIDE OF TRENCH MUST BE ALLOWED FOR WASHED STONE. THE METHOD OF COMPACTING BACKFILL MATERIAL IS SUBJECT TO APPROVAL BY THE TOWN ENGINEER. AN APPROVED FILTER FABRIC SHALL BE PLACED AROUND STONE AND OVERLAPPED 8" AT TOP WITHIN STREET RIGHT OF WAY.
2. SUBDRAIN IS TO BE A MINIMUM 6" DIAMETER PERFORATED PIPE; USE SCHEDULE 40 PVC PER ASTM D1785 OR HDPE PER AASHTO M252, TYPE CP (SINGLE-WALL, CORRUGATED) OR TYPE SP (DOUBLE-WALL, SMOOTH INTERIOR).
3. OUTLET PIPE FROM SUBDRAIN SHALL BE NON-PERFORATED UNDER PAVEMENT (INCLUDING SIDEWALKS AND DRIVEWAYS). SEE SITE PLAN FOR SLOPE OF SUBDRAIN AND TIE IN TO STORM DRAINAGE.
4. THE OUTLET PIPES SHALL BE SCHEDULE 40 (MIN.) PVC PER ASTM D2665 OR HDPE PER AASHTO M252, TYPE S (DOUBLE WALL, SMOOTH INTERIOR) UNDER ROADWAYS.
5. FILTER FABRIC SHALL BE AN APPROVED, TYPE 2 WATER PERMEABLE, SYNTHETIC FABRIC.
6. A MINIMUM 4" DIAMETER SUBDRAIN MAY BE USED IN PLANTING AREAS.
7. CLEAN-OUTS ARE RECOMMENDED AT ALL PIPE INTERSECTIONS AND AT A 100' MAXIMUM SEPARATION.
8. SUBDRAIN INVERTS AT CATCH BASINS SHOULD BE INSTALLED ABOVE THE BOTTOM TO AVOID SURCHARGE OF SUBDRAIN SYSTEM.
9. ALL SUBDRAINS WILL TIE INTO A STANDARD DRAINAGE STRUCTURE OR DAYLIGHT TO THE SURFACE WHERE APPROPRIATE, AND NOT DIRECTLY INTO A PIPE.
10. ONLY REMOVE NECESSARY MASONRY UNITS TO INSTALL PIPE INTO BASIN WALL. PRECAST STRUCTURES WILL BE CORE DRILLED 2 INCHES LARGER THAN PIPE DIAMETER TO PROVIDE FOR INSTALLATION OF PIPE IN WALL.
11. ALL PIPE IN STORM DRAIN STRUCTURE SHALL BE STRUCK EVEN WITH THE INSIDE WALL, GROUTED AND BRUSHED SMOOTH.
12. PIPE INSTALLATION PER SECTION 300 NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
13. SUBDRAINS WILL BE INSTALLED AT A DRAINAGE STRUCTURE AND THIS CONNECTION WILL NEED TO BE INSPECTED BY TOWN STAFF PRIOR TO BACKFILLING.
14. SCHEDULE 40 PVC (NON-PERFORATED) SHALL BE USED TO MAKE THE CONNECTION TO THE STORM DRAINAGE SYSTEM. CONNECTION WILL BE WITHIN THE RIGHT-OF-WAY UNLESS OTHERWISE APPROVED BY THE TOWN ENGINEER.
15. PREFABRICATED DRAINAGE MAY BE USED WITH APPROVAL OF TOWN ENGINEER
16. MAXIMUM OF TWO SUBDRAIN PENETRATIONS PER WALL OF DRAINAGE STRUCTURE.

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS

SUBDRAIN DETAIL

STD. NO. 312.1 REV.



YARD INLET	AREA (AC)	CFS	HEAD H (FT)	COMMENT

NOT TO SCALE

TOWN OF WAXHAW LAND DEVELOPMENT STANDARDS

GRADING AT DROP INLET

STD. NO. 316.1 REV.

EAGLE ENGINEERING
FIRM LICENSE # C-0873
2013A Van Buren Avenue
Indian Trail, NC 28079
(704) 882-4222
P.O. BOX 551
Alpharetta, GA 30009
(678) 339-0640
www.eagleonline.net

NO.	DATE	BY	ISSUE
1	4-9-18	KEW	1st PLANCHECK REVISIONS PER TOWN & NCDOT
2	6-12-18	KEW	2nd PLANCHECK REVISIONS PER TOWN & NCDOT
3	8-1-18	KEW	3rd PLANCHECK REVISIONS PER TOWN & NCDOT
4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

CARRINGTON SQUARE

TOWN OF WAXHAW, UNION COUNTY, NC

FOR THE BENEFIT OF:

TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

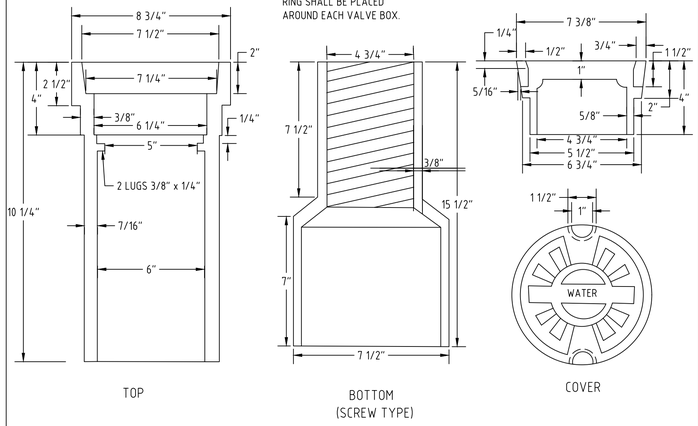
SITE DETAILS - STORM

DESIGNED BY KEW | DRAWN BY KEW | CHECKED BY JHR
Scale AS SHOWN | DATE 12-4-2017 | JOB NUMBER 5117

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14959 JOHNNY HOUSTON ROSS 2-16-18

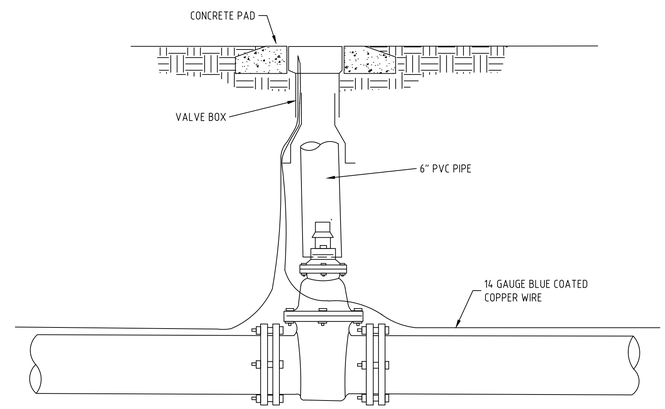
Sheet C-6.0

NOTE:
A 27" DIAMETER PRE-CAST RING SHALL BE PLACED AROUND EACH VALVE BOX.



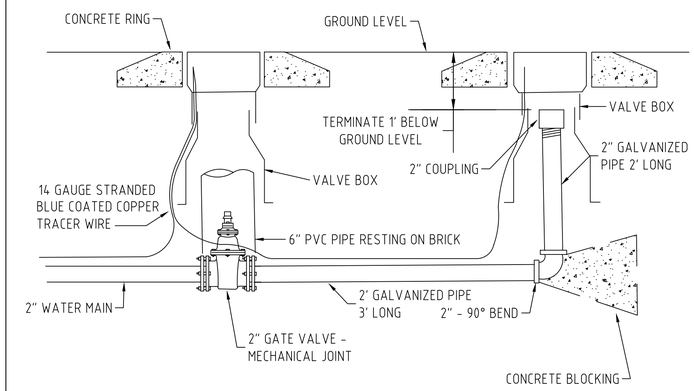
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
VALVE BOX
SCALE: N.T.S.
DATE: 11-17-06
1



UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
VALVE BOX INSTALLATION
SCALE: N.T.S.
DATE: 10-4-11
1A

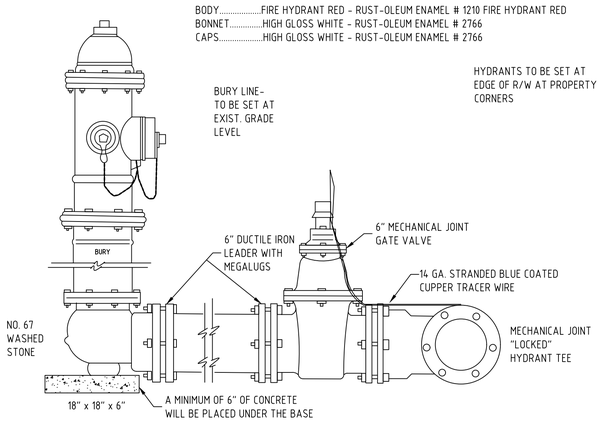


UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
2" BLOW-OFF
SCALE: N.T.S.
DATE: 10-4-11
2

PAINT COLORS

BODY.....FIRE HYDRANT RED - RUST-OLEUM ENAMEL # 1210 FIRE HYDRANT RED
BONNET.....HIGH GLOSS WHITE - RUST-OLEUM ENAMEL # 2766
CAPS.....HIGH GLOSS WHITE - RUST-OLEUM ENAMEL # 2766



UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

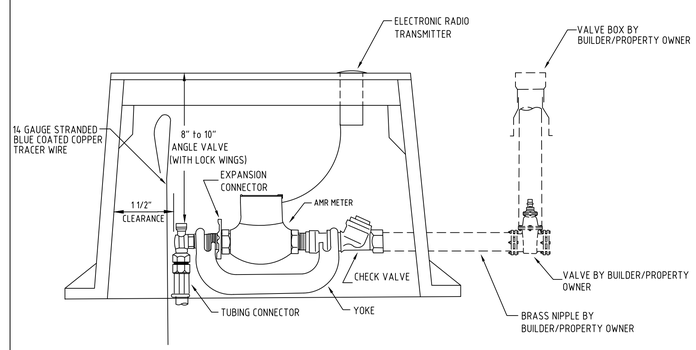
STANDARD DETAIL
FIRE HYDRANT INSTALLATION
SCALE: N.T.S.
DATE: 1-2-14
3

GENERAL NOTES:

1) METER BOX LID TO HAVE AMR LOCATOR (ALLIANCE 1200 OR EQUAL FOR 50W ERT, STANDARD LID FOR 60W ERT)

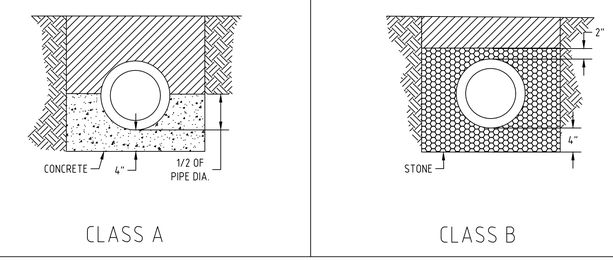
2) BUILDER/PROPERTY OWNER O INSTALL NIPPLE, VALVE AND VALVE BOX BEFORE METER WILL BE SET.

3) METER AND ERT BY UNION COUNTY @ PREVAILING RATE



UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
METER INSTALLATION FOR AMR METERS
SCALE: N.T.S.
DATE: 1-2-14
6



NOTES:
ALL CONCRETE = 3000 PSI
ALL STONE = N.C.D.O.T. NO. 67

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
PIPE BEDDING
SCALE: N.T.S.
DATE: 11-17-06
8

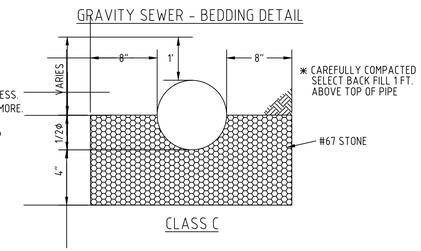
GRAVITY SEWER - BEDDING DETAIL

NOTES:

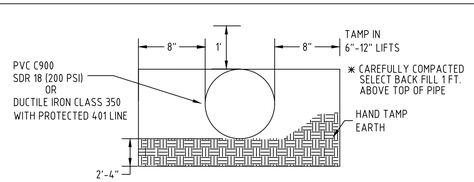
FOR PVC -- USE SDR 35 FOR 10 FT. OR LESS.
USE SDR 26 FOR 10 FT. OR MORE.

USE DUCTILE IRON - IF UNDER 3 FT. DEEP OR OVER 18 FT. DEEP.

* NO STONES LARGER THAN # 67 STONE SHALL BE USED IN SELECT BACKFILL



CLASS C



FORCE MAIN

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
SEWER BEDDING
SCALE: N.T.S.
DATE: 12-16-13
8A

EAGLE ENGINEERING
FIRM LICENSE # C-0873
P.O. BOX 551
Alpharetta, GA. 30009
(678) 339-0840
www.eagleonline.net
20134 Van Buren Avenue
Indian Trail, NC 28079
(704) 882-4222

NO.	DATE	BY	ISSUE
1	4-9-18	KEW	1st PLANCHECK REVISIONS PER TOWN & NCDOT
2	6-21-18	KEW	2nd PLANCHECK REVISIONS PER TOWN & NCDOT
3	8-1-18	KEW	3rd PLANCHECK REVISIONS PER TOWN & NCDOT
4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

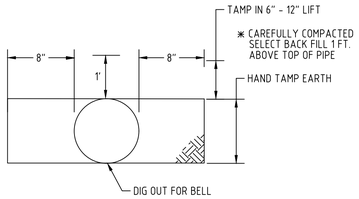
CARRINGTON SQUARE
TOWN OF WAXHAW, UNION COUNTY, NC
FOR THE BENEFIT OF:
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

SITE DETAILS - WATER AND SEWER

DESIGNED BY	KEW	DRAWN BY	KEW	CHECKED BY	JHR
Scale	AS SHOWN	DATE	12-4-2017	JOB NUMBER	5117

NORTH CAROLINA PROFESSIONAL SEAL 14909 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-6.1



NOTES:
MINIMUM COVER IS 36"
2" PVC SDR 21 (200 PSI)
6"-8" PVC SDR 18
12" OR LARGER DIP

✱ NO STONES LARGER THAN # 67 STONE SHALL BE USED IN SELECT BACKFILL

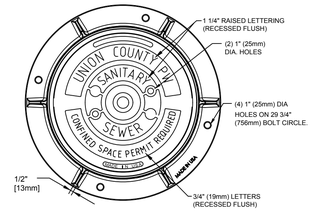
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

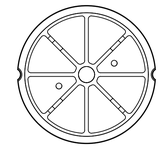
STANDARD DETAIL

WATER TRENCH

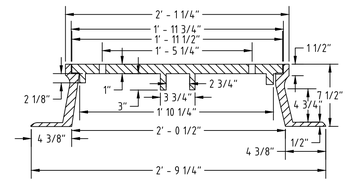
SCALE: N.T.S.
DATE: 1-14-10

8B





BOTTOM VIEW



(U.S. FOUNDRY - 669, VULCAN - 1384 OR EQUAL)

NOTES:

1. ALL CASTINGS TO BE FREE FROM SAND HOLES. NO PLUGGING ALLOWED.
2. MACHINE ALL CONTACT SURFACES BETWEEN RING AND COVER.
3. PROVIDE TWO VENT HOLES IN COVER, 1" DIA. TAPERED TO 1-1/8" ON REVERSE SIDE.
4. MINIMUM WEIGHTS: COVER - 120 LBS. RING - 190 LBS.
5. ALL MANHOLE RINGS OUT OF ROAD RIGHT OF WAY SHALL BE BOLTED INTO MANHOLE WITH 5/8" DIAMETER KWIK BOLT STUD ANCHOR SYSTEM. HILTI BRAND OR APPROVED EQUAL.

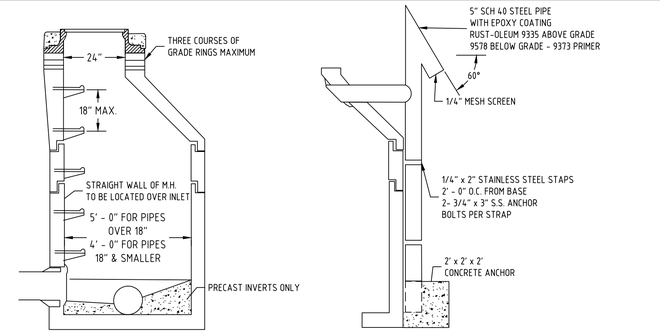
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

RING & COVER

SCALE: N.T.S.
DATE: 9-9-11

9



GENERAL NOTES:

(1) 1 ROLL OF MASTIC AND A 6" EXTERNAL JOINT/SEAM WRAP INSTALLED ON EACH MANHOLE SECTION

(2) MANHOLE VACUUM TESTING - AFTER EACH MANHOLE IS INSTALLED AND ALL PIPES ARE CONNECTED, BUT BEFORE BACKFILLING, THE MANHOLE SHALL BE VACUUM TESTED. ALL PIPES ENTERING THE MANHOLE SHALL BE PLUGGED AND BRACED. THE CONTRACTOR SHALL FURNISH ALL MATERALS, LABOR AND EQUIPMENT NECESSARY TO PERFORM THE TESTING. A VACUUM OF 10 INCHES OF MERCURY SHALL BE CREATED ON THE INSIDE OF THE MANHOLE. AT THE VACUUM OF 10 INCHES OF MERCURY, THE PUMP SHALL BE STOPPED AND THE TIME SHALL BE MEASURED FOR THE VACUUM TO DROP 9 INCHES. FAILURE OF THE TEST SHALL BE ANY AMOUNT OF TIME LESS THAN THE FOLLOWING.

4 FT. DIAMETER MANHOLE = 60 SECONDS
5 FT. DIAMETER MANHOLE = 75 SECONDS
6 FT. DIAMETER MANHOLE = 90 SECONDS
7 FT. DIAMETER MANHOLE = 105 SECONDS
8 FT. DIAMETER MANHOLE = 120 SECONDS
10 FT. DIAMETER MANHOLE = 150 SECONDS

UPON TEST FAILURE, THE CONTRACTOR SHALL REPAIR ALL LEAKS AND RETEST THE MANHOLE UNTIL THE TEST HAS PASSED.

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

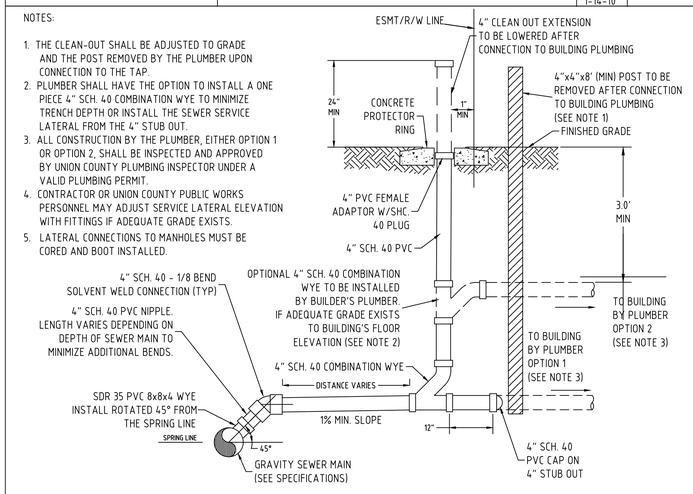
MANHOLE

SCALE: N.T.S.
DATE: 7-31-14

10

NOTES:

1. THE CLEAN-OUT SHALL BE ADJUSTED TO GRADE AND THE POST REMOVED BY THE PLUMBER UPON CONNECTION TO THE TAP.
2. PLUMBER SHALL HAVE THE OPTION TO INSTALL A ONE PIECE 4" SCH. 40 COMBINATION WYE TO MINIMIZE TRENCH DEPTH OR INSTALL THE SEWER SERVICE LATERAL FROM THE 4" STUB OUT.
3. ALL CONSTRUCTION BY THE PLUMBER, EITHER OPTION 1 OR OPTION 2, SHALL BE INSPECTED AND APPROVED BY UNION COUNTY PLUMBING INSPECTOR UNDER A VALID PLUMBING PERMIT.
4. CONTRACTOR OR UNION COUNTY PUBLIC WORKS PERSONNEL MAY ADJUST SERVICE LATERAL ELEVATION WITH FITTINGS IF ADEQUATE GRADE EXISTS.
5. LATERAL CONNECTIONS TO MANHOLES MUST BE CORED AND BOOT INSTALLED.



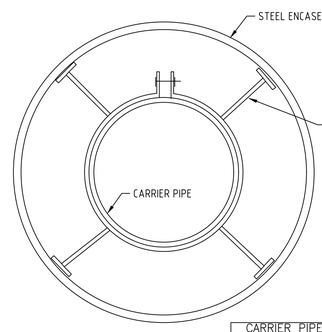
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

SEWER LATERAL

SCALE: N.T.S.
DATE: 2-19-14

11



SPIDER SUPPORT AND SPACER AVAILABLE FROM SPIDER MANUFACTURING, INC. INSTALL PER UNION COUNTY INSPECTOR AND PER MANUFACTURERS SPECIFICATIONS.

CONTRACTOR RESPONSIBLE FOR INSPECTING MATERIALS AND WELDS TO INSURE ALL SPIDERS WILL FUNCTION PROPERLY.

CARRIER PIPE	CASING PIPE I.D.	WALL THICKNESS
4"	8"	0.188"
6"	12"	0.188
8"	16"	0.250"
10"	16"	0.250"
12"	20"	0.281"
16"	24"	0.344"
24"	30"	0.406"
30"	42"	0.500"
36"	48"	0.500"

NOTES:

1. NO PIPE SHALL BE SUPPORTED BY BELL.
2. END SECTIONS LESS THAN 4' MAY BE UNSUPPORTED.
3. WALL THICKNESS AS PER TABLE UNLESS OTHERWISE SHOWN ON PLAN.
4. MASONRY SEAL AT ENDS -- 2" x 4" WEEP HOLE AT LOW END
5. ALL PRESSURE PIPES TO HAVE TRACING WIRE IN ALL CASING BORES.

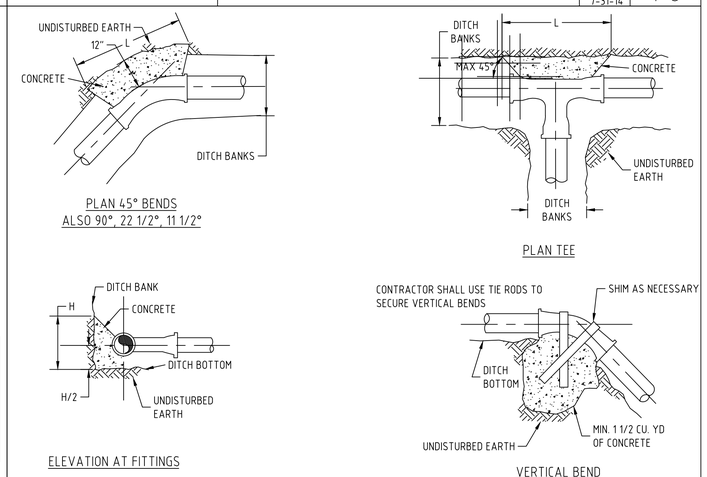
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

PIPE ENCASEMENT

SCALE: N.T.S.
DATE: 11-17-06

14



UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL

THRUST BLOCK

SCALE: N.T.S.
DATE: 11-17-06

16

EAGLE ENGINEERING
FIRM LICENSE # C-0873
20134 Van Buren Avenue
Indian Trail, NC 28079
(704) 882-4222
P.O. BOX 551
Alpharetta, GA 30009
(678) 339-0840
www.eagleonline.net

NO.	DATE	BY	ISSUE
1	4-9-18	KEW	1st PLANCHECK REVISIONS PER TOWN & NCDOT
2	6-13-18	KEW	2nd PLANCHECK REVISIONS PER TOWN & NCDOT
3	8-1-18	KEW	3rd PLANCHECK REVISIONS PER TOWN & NCDOT
4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

CARRINGTON SQUARE

TOWN OF WAXHAW, UNION COUNTY, NC

FOR THE BENEFIT OF:

TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

SITE DETAILS - WATER AND SEWER

DESIGNED BY	KEW	CHECKED BY	JHR
DRAWN BY	KEW	JOB NUMBER	5117
DATE	12-4-2017		
Scale	AS SHOWN		

NORTH CAROLINA PROFESSIONAL SEAL 14809 ENGINEER JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-6.2

ANCHORAGE SCHEDULE											
	11 1/4º BEND		22 1/2º BEND		45º BEND		90º BEND		TEE		TEST PRESSURE
PIPE SIZE	L	H	L	H	L	H	L	H	L	H	(P.S.I.)
6"	1'3"	1'0"	2'3"	1'0"	2'6"	1'6"	2'9"	1'6"	2'0"	1'6"	200
	1'6"	1'3"	2'3"	1'6"	3'0"	1'6"	4'0"	1'6"	3'0"	1'6"	300
8"	1'6"	1'6"	2'6"	1'9"	3'0"	2'0"	3'9"	2'0"	2'6"	2'0"	200
	2'0"	1'6"	3'0"	2'0"	3'9"	2'3"	4'6"	2'6"	3'6"	2'3"	300
12"	2'6"	1'9"	4'0"	2'3"	4'3"	3'0"	5'0"	3'3"	4'0"	3'0"	200
	3'6"	2'0"	5'3"	2'6"	6'0"	3'3"	7'0"	3'6"	5'0"	3'6"	300
14"	3'0"	1'0"	4'0"	3'0"	4'6"	3'9"	6'0"	3'9"	4'6"	3'6"	200
	4'0"	2'6"	5'3"	3'6"	6'0"	4'3"	6'6"	5'0"	5'0"	5'0"	300
16"	3'0"	2'9"	4'6"	3'6"	5'0"	4'6"	7'0"	4'3"	5'0"	4'0"	200
	4'0"	3'0"	6'3"	3'9"	6'5"	5'3"	8'0"	5'3"	7'6"	4'0"	300

THRUST BLOCK DIMENSIONS BASED ON SOIL BEARING CAPACITY OF 2000 P.S.F. AND A WATER TEST PRESSURE OF 150 P.S.I. SIZES OF THRUST BLOCKS MAY BE REVISED BY THE ENGINEER WHERE BEARING CAPACITY OF SOIL VARIES.

PROVIDE TAR PAPER JOINT BETWEEN CONCRETE THRUST BLOCK AND PORTION OF PIPE BEING ANCHORED.

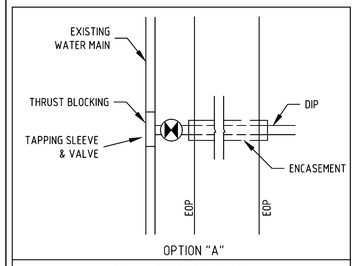
ALL CONCRETE THRUST BLOCKS SHALL BE 2500 P.S.I. CONCRETE.

MAXIMUM VERTICAL DEFLECTION SHALL BE 22 1/2°.

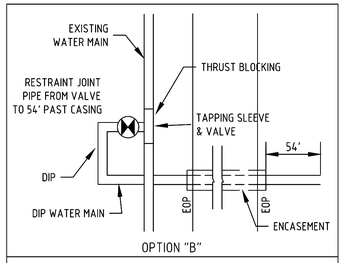
JOINTS SHALL REMAIN FREE OF CONCRETE FOR INSPECTION, REPAIR OR REPLACEMENT OF JOINTS.

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
THRUST BLOCK SPECIFICATIONS
SCALE: N/A
DATE: 11-17-06
17



TIE IN - DUCTILE IRON DETAIL

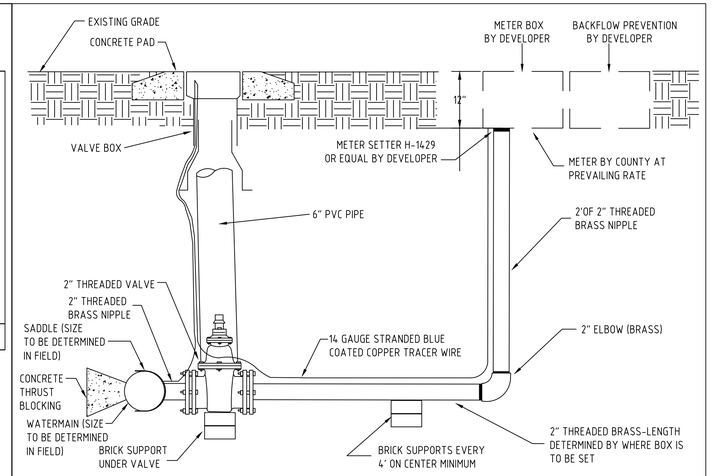


TIE IN - DI, RESTRAINT JOINT DETAIL

NOTE:
OPTION "A" OR "B" WILL BE REQUIRED, DEPENDING ON THE AMOUNT OF SPACE AVAILABLE, TO BE FIELD VERIFIED

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
TAPPING SLEEVE
SCALE: N.T.S.
DATE: 11-17-06
18

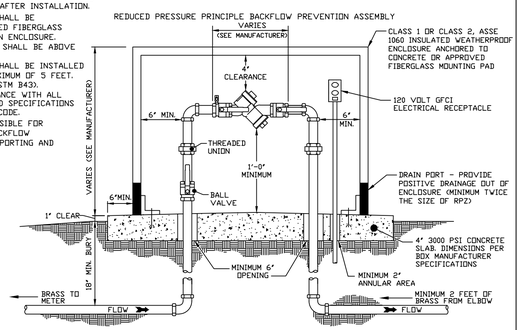


UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
2" SHORTSIDE SERVICE FOR 1 1/2" OR 2" METERS
SCALE: N.T.S.
DATE: 5-22-13
19

GENERAL NOTES

(1) RPZ SHALL BE INSTALLED FOR CUSTOMER APPLICATIONS APPROVED BY UNION COUNTY PUBLIC WORKS.
(2) REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1013 & AWWA C511 (FEBCO 825Y, WILKINS MODEL 975XL, HERSEY MODEL FRPII OR EQUAL).
(3) OWNER SHALL PROVIDE WRITTEN CERTIFICATION TO THE COUNTY THAT THE RPZ HAS BEEN TESTED BY A CERTIFIED BACKFLOW PREVENTION TECHNICIAN AFTER INSTALLATION.
(4) BACKFLOW PREVENTION ASSEMBLY SHALL BE CENTERED ON CONCRETE OR APPROVED FIBERGLASS MOUNTING PAD AND CENTERED WITHIN ENCLOSURE.
(5) REDUCER PRESSURE ZONE ASSEMBLY SHALL BE ABOVE GROUND ONLY.
(6) BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED OUTSIDE OF THE RIGHT OF WAY, MAXIMUM OF 5 FEET.
(7) PIPE MATERIAL SHALL BE BRASS (ASTM B43).
(8) INSTALLATION SHALL BE IN COMPLIANCE WITH ALL APPLICABLE COUNTY ORDINANCES AND SPECIFICATIONS IN ADDITION TO THE N.C. PLUMBING CODE.
(9) PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF BACKFLOW ASSEMBLY AND COMPLIANCE WITH REPORTING AND TESTING REQUIREMENTS.



UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
REDUCED PRESSURE ZONE ASSEMBLY (3/4" - 2")
SCALE: N.T.S.
DATE: 12-13-13
24A

NOTES:

1) INSTALLATION, MATERIALS AND DEVICES SHALL CONFORM TO UNION COUNTY PUBLIC WORKS SPECIFICATIONS AND REQUIREMENTS.

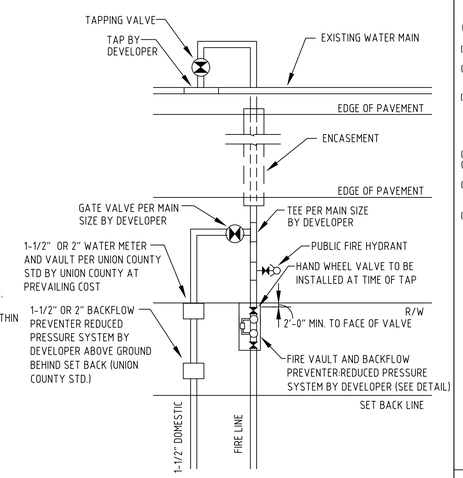
2) ALL PIPE TO BE RESTRAINT JOINT DIP FROM TAP TO BACKFLOW AND/OR FIRE VAULT.THE 1-1/2 & 2 INCH PIPE SHALL BE BRASS TO THE BACKFLOW. ALTERNATE (3 INCH VALVE AND RESTRAINT JOINT DIP IN LIEU OF BRASS)

3) FEES MUST BE PAID PRIOR TO INSTALLATION.

4) NO PVC PIPE SHALL BE USED WITHIN 5 FEET EACH END OF BACKFLOW PREVENTER.

5) 3 INCH & LARGER: CONTRACTOR INSTALLS APPROPIATE DIP LINE THROUGH VAULT AND SUPPLIES VAULT. UNION COUNTY WILL INSTALL METER AND BYPASS AT PREVAILING COSTS. CONTRACTOR TO INSTALL APPROPRIATE SIZE RPZ.

6) FIRE DEPARTMENT CONNECTION (FDC) MUST BE WITHIN 100 FT MAX OF PUBLIC HYDRANT PER FIRE CODE.

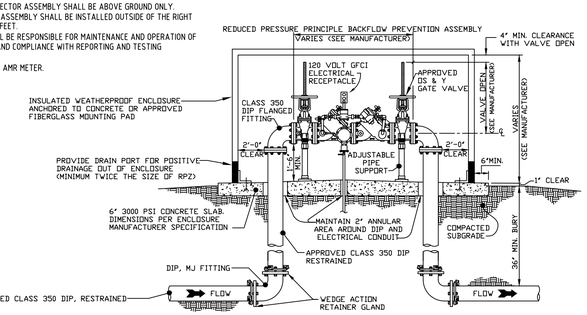


UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
WATER CONNECTION
SCALE: N.T.S.
DATE: 10-17-08
22

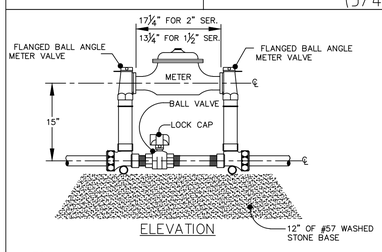
GENERAL NOTES:

(1) RPDVA SHALL BE INSTALLED FOR CUSTOMER APPLICATIONS APPROVED BY UNION COUNTY PUBLIC WORKS.
(2) REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1047 & AWWA C511 (1) FEBCO 826YD, (2) WILKINS MODEL 375ADA, (3) AMES SERIES 5000 CIV. OR EQUAL
(3) OWNER SHALL PROVIDE WRITTEN CERTIFICATION TO THE COUNTY THAT THE RPDVA HAS BEEN TESTED BY A CERTIFIED BACKFLOW PREVENTION TECHNICIAN AFTER INSTALLATION.
(4) COUNTY APPROVED 3"-10" RPDVA INCLUDES SHUTOFF VALVES AS PART OF THE ASSEMBLY. SHUT OFF VALVES SHALL BE OS&Y RESILIENT SEAT GATE VALVES WITH HANDWHEEL OPERATORS AND SHALL CONFORM TO AWWA C500 LATEST EDITION. RPDVA SHALL BE SUPPORTED AT CENTER WITH A MASONRY PEDESTAL ADEQUATE TO MAINTAIN THE WEIGHT OF THE STRUCTURE AND PLUS AN ADDITIONAL 1,000 POUND LOAD.
(5) REDUCED PRESSURE DETECTOR ASSEMBLY SHALL BE ABOVE GROUND ONLY.
(6) BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED OUTSIDE OF THE RIGHT OF WAY, MAXIMUM OF 5 FEET.
(7) PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF BACKFLOW ASSEMBLY AND COMPLIANCE WITH REPORTING AND TESTING REQUIREMENTS.
(8) 3/4" BYPASS DETECTOR AMR METER.

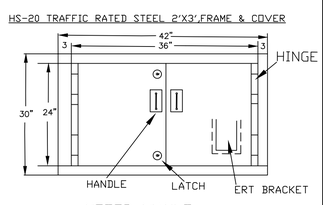


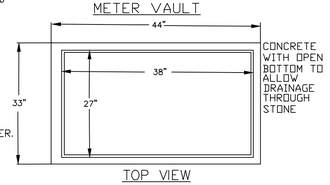
UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
REDUCED PRESSURE DETECTOR ASSEMBLY
SCALE: N.T.S.
DATE: 1-2-14
24B



ELEVATION



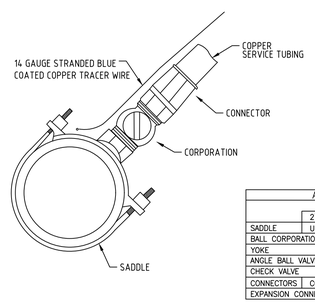


TOP VIEW

NOTES:
1) PIPING TO BE BRASS AND COPPER TUBING. METER INLET AND OUTLET TO BE EQUIPPED WITH FLANGED BALL ANGLE METER.
2) CUSTOM SETTERS SHALL BE EQUIPPED WITH STANDARD LOW BYPASS WITH BALL VALVE AND PADLOCK WINGS
3) CUSTOM SETTERS SHALL BE AS MANFACTURED BY MUELLER, FORD, ANY MCDONALD, OR APPROVED EQUAL.
4) CUSTOM SETTER SHALL BE INSTALLED SUCH THAT METER REGISTER IS LOCATED 5 TO 8 INCHES BELOW METER BOX COVER.
5) METER BY COUNTY @ PREVAILING RATE

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
STANDARD 1 $\frac{1}{2}$" & 2" METER INSTALLATION & VAULT
SCALE: N.T.S.
DATE: 6-13-14
29



APPROVED SERVICE HARDWARE			
		MUELLER	FORD
	2"PVC	H-13420	S70
SADDLE	UP TO 8"	SEE NOTE	FC 101
BALL CORPORATION		B-25008	FB1000G
YOKE		H-5020	Y 502
ANGLE BALL VALVE		B-24273	BA94-323WG
CHECK VALVE		H-14247-A	HHS91-323
CONNECTORS	COPPER	STYLE 110	GRIP JOINT
EXPANSION CONNECTION			EC 23

NOTE:
ROMAC 101N SHALL REPLACE MUELLER FOR PIPE DIAMETER UP TO 8"

SMITH BLAIR 317, FORD FC 202 OR ROMAC 202N SHALL REPLACE MUELLER FOR PIPE DIA. 12" AND UP

UNION COUNTY PUBLIC WORKS DEPARTMENT
UNION COUNTY, N.C.

STANDARD DETAIL
SERVICE CONNECTION
SCALE: N.T.S.
DATE: 10-4-11
5

EAGLE ENGINEERING
FIRM LICENSE # C-0873
P.O. BOX 551
Alpharetta, GA. 30009
(678) 339-0840
20134 Van Buren Avenue
Indian Trail, NC 28079
(704) 882-4222
www.eagleonline.net

NO.	DATE	BY	ISSUE
1	4-9-18	KEW	1st PLANCHECK REVISIONS PER TOWN & NCDOT
2	6-13-18	KEW	2nd PLANCHECK REVISIONS PER TOWN & NCDOT
3	8-1-18	KEW	3rd PLANCHECK REVISIONS PER TOWN & NCDOT
4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

CARRINGTON SQUARE
TOWN OF WAXHAW, UNION COUNTY, NC
FOR THE BENEFIT OF:
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

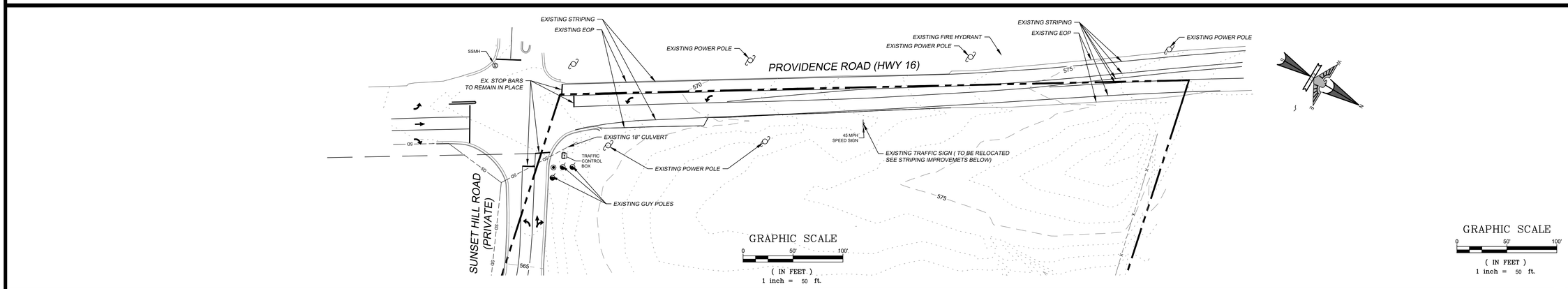
SITE DETAILS - WATER AND SEWER

DESIGNED BY	KEW	DRAWN BY	KEW	CHECKED BY	JHR
Scale	AS SHOWN	DATE	12-4-2017	JOB NUMBER	5117

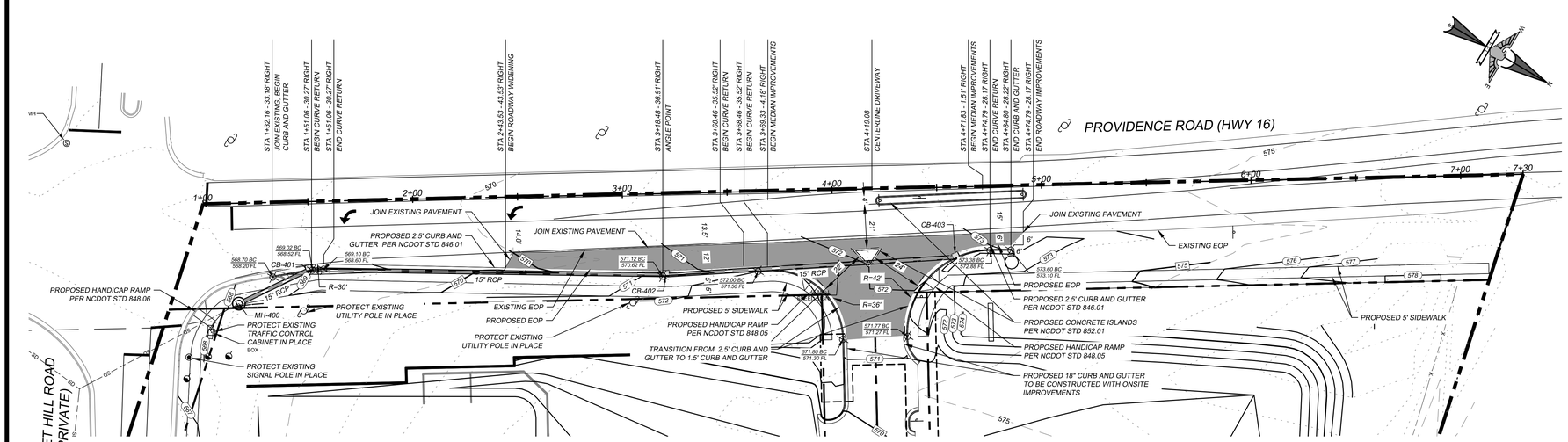
NORTH CAROLINA PROFESSIONAL SEAL 14969 ENGINEER JOHNSON HOUSTON ROSS
2-16-18

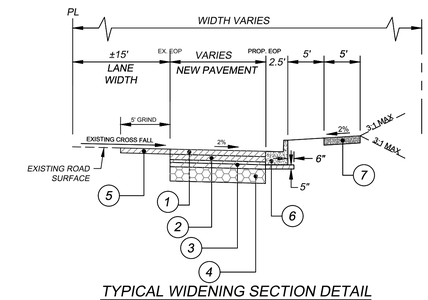
Sheet
C-6.3

EXISTING CONDITIONS



PROPOSED ROADWAY WIDENING AND STRIPING





TYPICAL WIDENING SECTION DETAIL

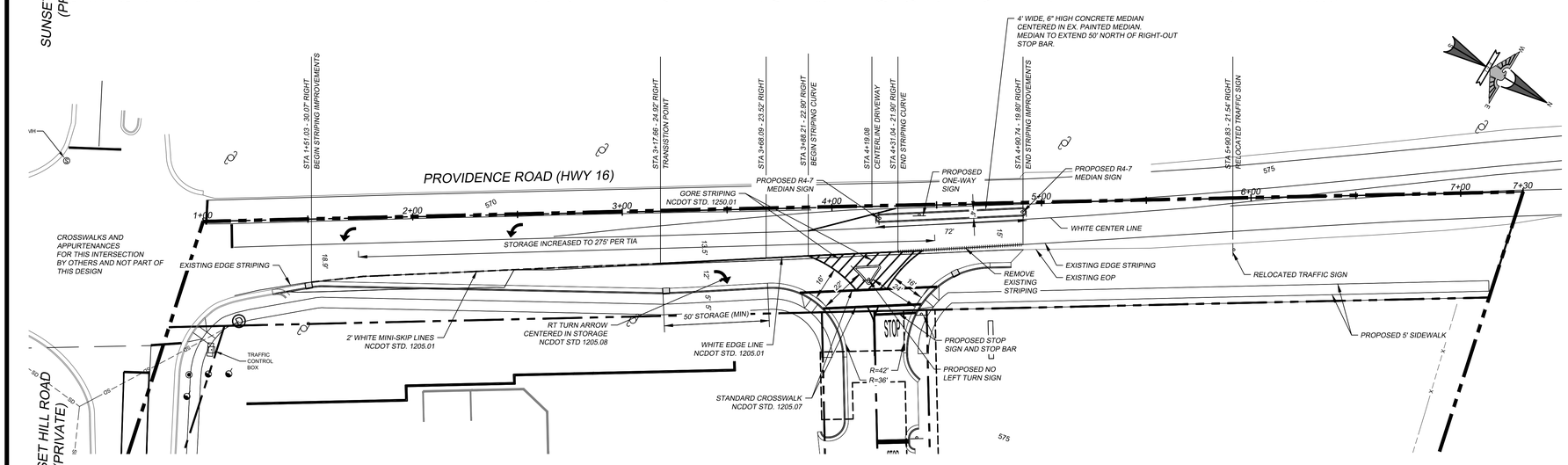
(NOT TO SCALE)

TYPICAL WIDENING SECTION DETAIL NOTES:

1. 1.5" ASPHALT CONCRETE SURFACE COURSE , TYPE S9.5C
2. WITH CURB & GUTTER: 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I-19.0C
   WITHOUT CURB & GUTTER: 3" ASPHALT CONCRTE INTERMEDIAT COURSE, TYPE I-19.0C
   AS PER NCDOT HOT MIX ASPHALT QUALITY MANAGEMENT SYSTEM MANUAL.
3. 8" ASPHALT CONCRETE BASE COURSE B-25.0C IN 2 LIFTS, FIRST 5" LIFT EXTENDING 6" BEHIND CURB, SECOND LIFT- 3"
4. COMPACTED SUBGRADE
5. GRIND 5' WIDTH, CONSTRUCT 1.5" ASPHALT OVERLAY, TYPE S-9.5C
6. PROPOSED 6" CURB AND 2' GUTTER WITH 5" B25.0B OR C BASE PER NCDOT STANDARD 846.01 (WHERE SHOWN ON PLAN)
7. PROPOSED 5' CONCRETE SIDEWALK PER NCDOT STANDARD 848.01 (WHERE SHOWN ON PLAN)

NOTE:

1. ALL PER NCDOT HMA QMS MANUAL AND NCDOT SPECIFICATIONS.
2. THE ABOVE PAVEMENT SPECIFICATIONS EXCEED THE MINIMUM STANDARDS REQUIRED BY THE N.C.D.O.T., HOWEVER, THE ENGINEER HAS NOT PERFORMED DETAILED ANALYSIS OF SOILS IN THE AREA AND THIS DESIGN IS NOT A WARRANTEE. THE ENGINEER ACCEPTS NO RESPONSIBILITY FOR PAVEMENT FAILURES AND NO GUARANTEES ARE GIVEN.
3. PATCHING AND LEVELING MAY BE REQUIRED PRIOR TO RESURFACING THE ROAD.
4. ALL FIXED OBJECTS THAT ARE NOT CONSIDERED BREAKAWAY MUST BE REMOVED FROM CLEAR RECOVER ZONE (18'-20' FROM EDGE OF FUTURE PAVEMENT).
5. THIS PLAN SHEET DUPLICATES THE NCDOT APPROVED PLANS.



STRIPING NOTES

1. CONSTRUCT PAVEMENT SYMBOL PER NCDOT STANDARD 1205.08
2. CONSTRUCT TURN LANE STRIPING PER NCDOT STANDARD 1205.05
3. CONSTRUCT CROSS WALK STRIPING PER NCDOT STANDARD 1205.07

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

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NO.	DATE	BY	ISSUE
1	4-9-18	KEW	1st PLANCHECK REVISIONS PER TOWN & NCDOT
2	6-12-18	KEW	2nd PLANCHECK REVISIONS PER TOWN & NCDOT
3	8-1-18	KEW	3rd PLANCHECK REVISIONS PER TOWN & NCDOT
4	8-21-18	KEW	4th PLANCHECK REVISIONS PER TOWN & NCDOT

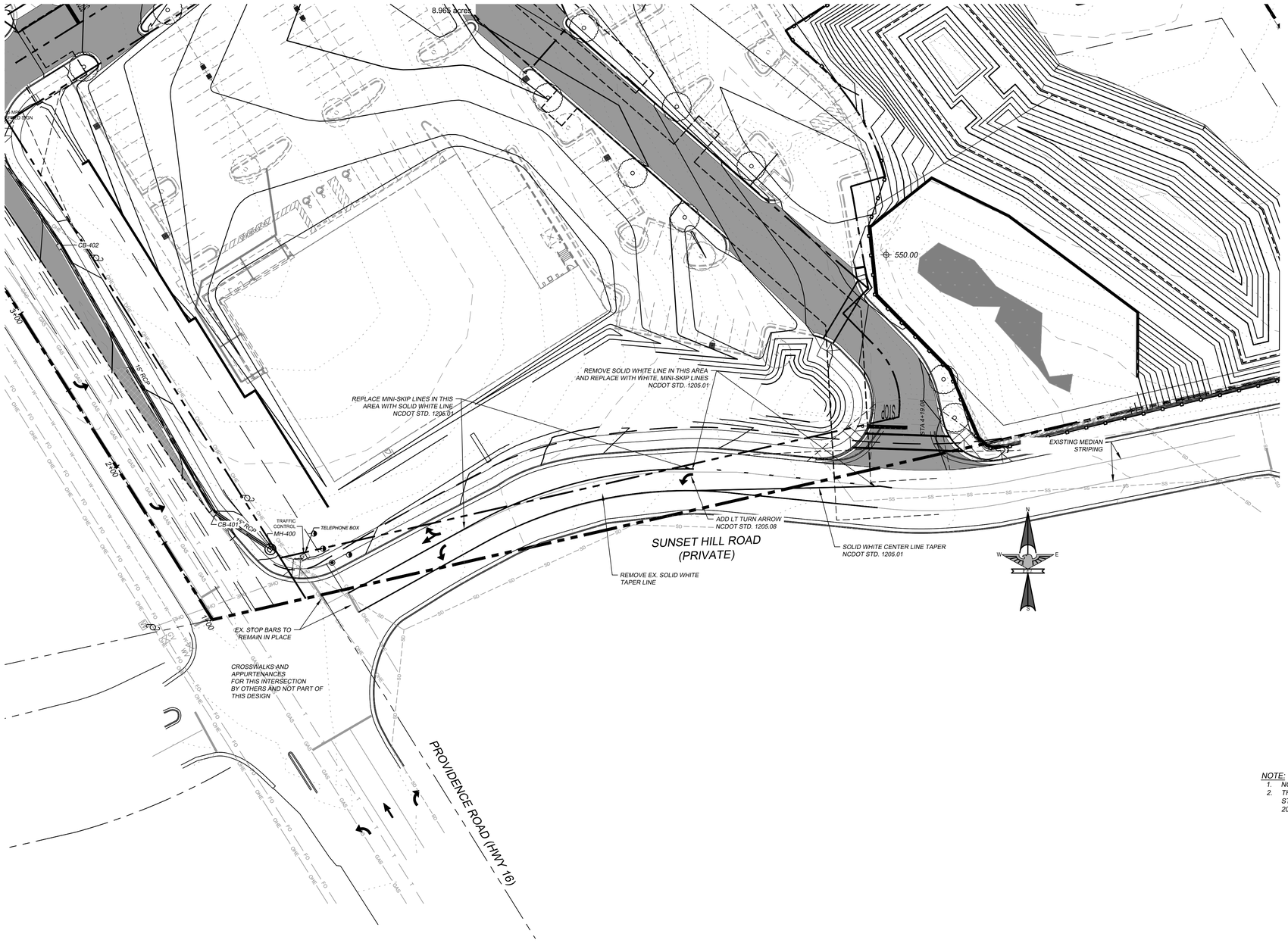
CARRINGTON SQUARE
TOWN OF WAXHAW, UNION COUNTY, NC
FOR THE BENEFIT OF:
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

OFFSITE ROADWAY IMPROVEMENTS

DESIGNED BY	KEW	DRAWN BY	KEW	CHECKED BY	JHR
Scale	AS SHOWN	DATE	12-4-2017	JOB NUMBER	5117

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14959 JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-7.0



NOTE:
1. NO POSTED SPEED LIMIT 35 MPH USED
2. THE PURPOSE OF THIS PLAN IS TO INCREASE THE VEHICLE STORAGE OF SUNSET HILL ROAD'S LEFT TURN LANE TO 200', ACCORDING TO RECOMMENDATIONS ON THE TIA.

GRAPHIC SCALE

0 30' 60'

(IN FEET)
1 inch = 30 ft.

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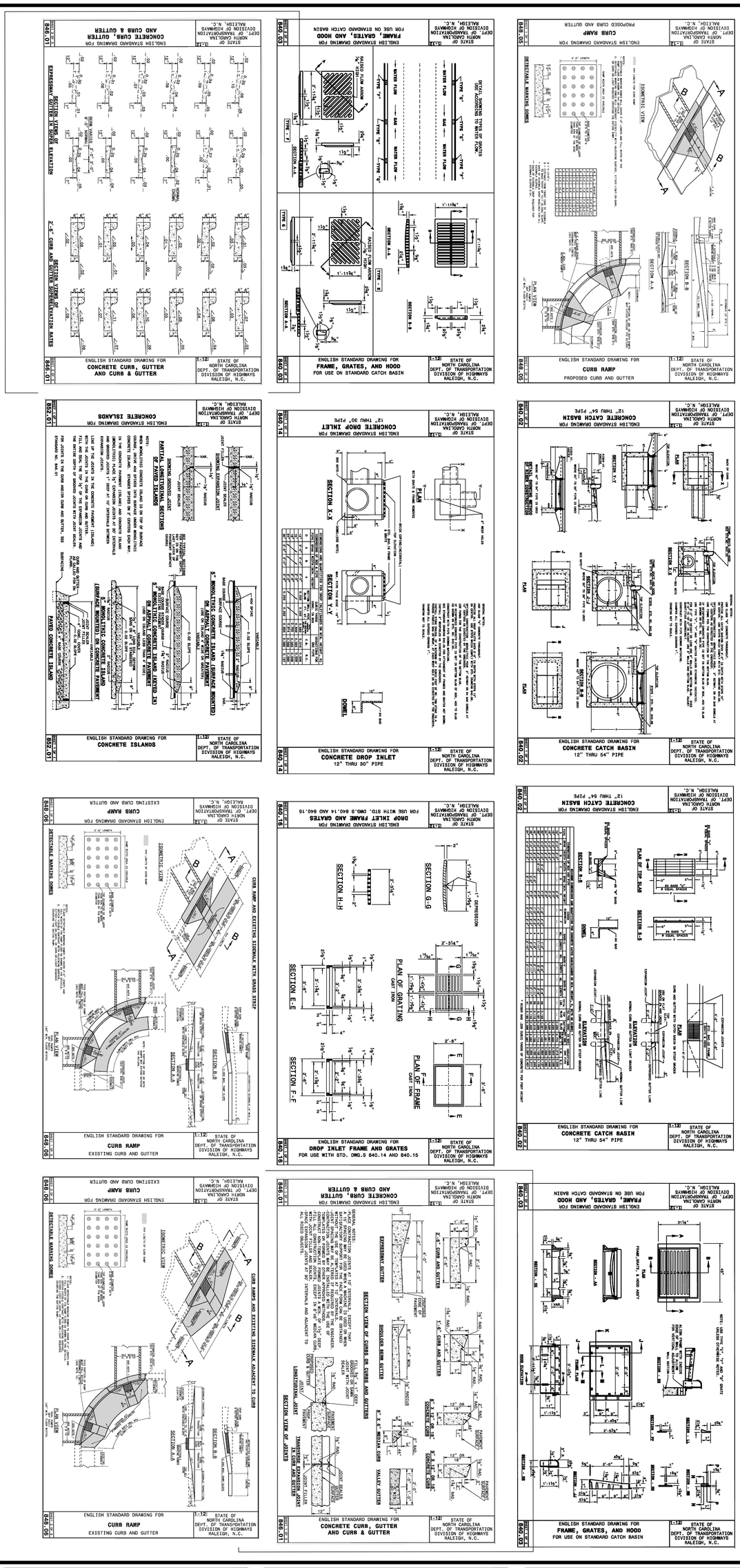
SUNSET HILL ROAD STRIPING PLAN

DESIGNED BY	KEW	DRAWN BY	KEW
CHECKED BY	JHR	DATE	12-4-2017
Scale	AS SHOWN	JOB NUMBER	5117

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14569 JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-7.1



OFFSITE ROADWAY DETAILS

DESIGNED BY	DRAWN BY	CHECKED BY
KEW	KEW	JHR
Scale AS SHOWN	DATE 12-4-2017	JOB NUMBER 5117

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER HOUSTON ROSSO 2-16-18

Sheet C-7.2

CARRINGTON SQUARE

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OFFSITE ROADWAY DETAILS

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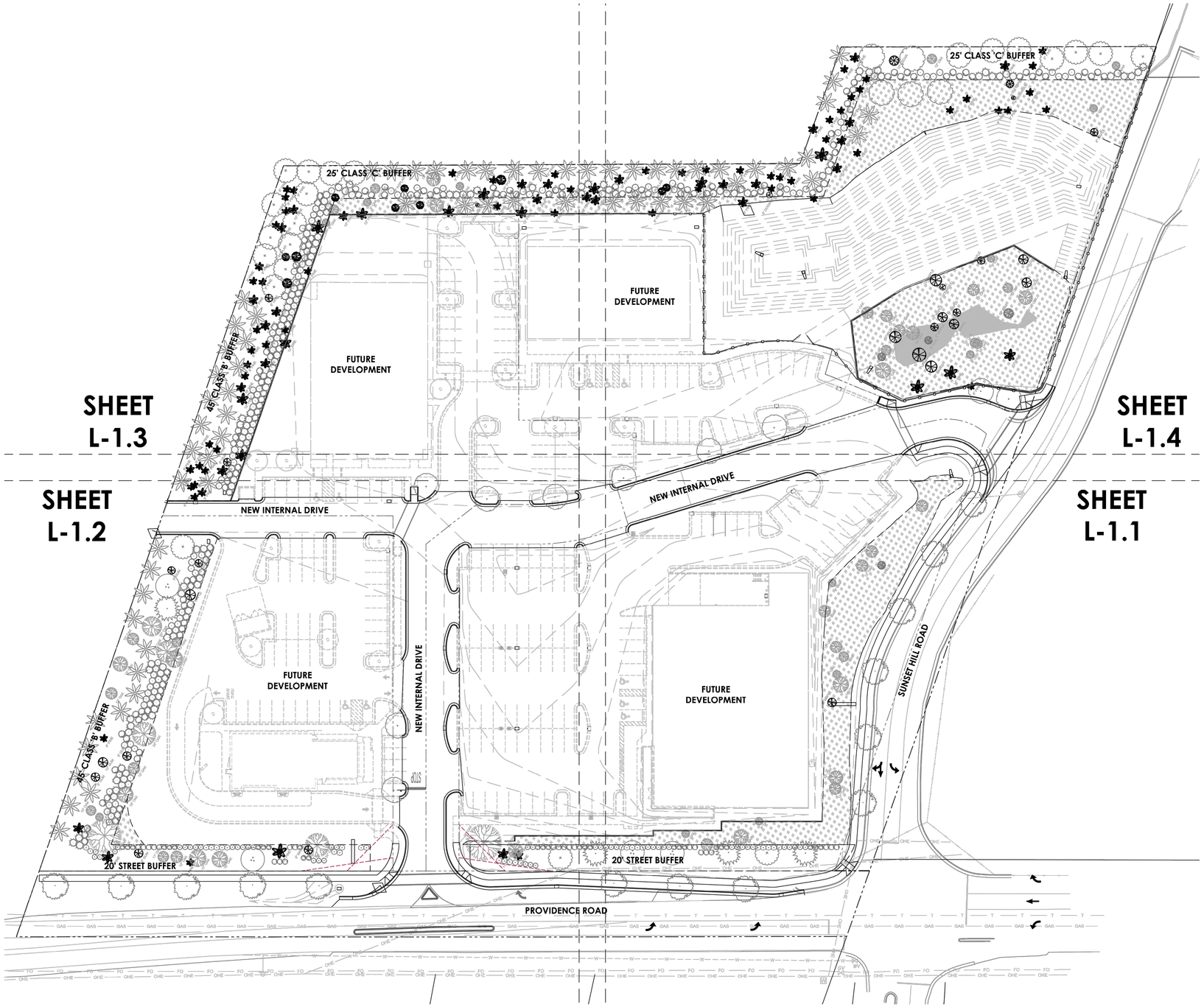
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 14069 JOHNNY HOUSTON ROSS
2-16-18

Sheet
C-7.3



NOTES:

1. SEE SHEETS L-1.5 FOR KEYED PLANT LEGEND AND SPECIES. SEE SHEETS L1.1-L1.4 FOR DETAILED PLANT SPECIES AND LOCATIONS.
2. CONTRACTOR TO VERIFY PLANT TOTALS. IF THERE IS A CONFLICT IN PLANT TOTALS BETWEEN QUANTITIES SHOWN IN THE PLANT LEGEND AND THOSE INDICTED ON THE PLANS, THE PLANT LEGEND QUANTITIES AND SUMMARY QUANTITIES SHALL TAKE PRECEDENCE.
3. PLANTS SHALL ONLY BE PLANTED FROM OCTOBER 1 - MAY 15 UNLESS ALTERNATIVE DATES ARE ALLOWED.
4. SEE CIVIL ENGINEERING DRAWINGS FOR LOCATIONS OF SITE DEVELOPMENT ELEMENTS, UTILITIES, TREE PRESERVATION AREAS, BUFFER YARDS, AND/OR OTHER REQUIRED AREAS AND EASEMENTS.
5. THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON THE PLANS, AND WHERE SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL ON HIS OWN INITIATIVE AND AT NO ADDITIONAL COST TO THE OWNER, HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE, OTHER OBSTRUCTIONS, OR FROM ANY DELAY DUE TO REMOVAL OR REARRANGEMENT OF SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO UNDERGROUND STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NON-SUBSCRIBING UTILITIES. THE CONTRACTOR SHALL CONTACT ***NORTH CAROLINA ONE CALL*** AT ***811*** FOR ASSISTANCE IN LOCATING UTILITIES.
6. ALL DISTURBED AREAS THAT ARE NOT PLANT BEDS SHALL BE GRASS SEED.
7. THE LANDSCAPE CONTRACTOR SHALL PERFORM FINISH GRADING TO ENSURE A SMOOTH TRANSITION BETWEEN PLANT BEDS AND LAWN AREAS.
8. ALL PLANTING AND LANDSCAPE WORK SHALL BE IN ACCORDANCE WITH CURRENT TOWN STANDARDS.

REQUIRED LANDSCAPE SUMMARY

BUFFER AND SCREENING REQUIREMENTS - PER SECTION 9.8 OF TOWN OF WAXHAW U.D.O.

20' LANDSCAPE BUFFER (WEST) SCREEN PLANTING ALONG PUBLIC STREET REQUIREMENTS:
STREET BUFFER = 485 LINEAR FEET - PLANTINGS REQUIRED:
REQUIRED TREES @ 3 PER 100' = 15 TREES
REQUIRED SHRUBS @ 1 PER 4' O.C. = 122 SHRUBS

STREET BUFFER PLANTINGS PROVIDED:

EXISTING TREES:	15 TREES EXISTING
NEW TREES:	8 TREES PROVIDED
TOTAL TREES:	23 TREES PROVIDED
NEW SHRUBS:	122 SHRUBS PROVIDED

45' CLASS 'B' LANDSCAPE BUFFER (NORTH) REQUIREMENTS:
CLASS 'B' BUFFER = 540 LINEAR FEET - PLANTINGS REQUIRED:
REQUIRED TREES @ 6 PER 100' = 33 TREES
REQUIRED SHRUBS @ 40 PER 100' = 216 SHRUBS

BUFFER PLANTINGS PROVIDED:

EXISTING TREES:	63 TREES EXISTING
NEW TREES:	3 TREES PROVIDED
TOTAL TREES:	63 TREES PROVIDED
NEW SHRUBS:	216 SHRUBS PROVIDED

25' CLASS 'C' LANDSCAPE BUFFER (EAST) REQUIREMENTS:
CLASS 'C' BUFFER = 725 LINEAR FEET - PLANTINGS REQUIRED:
REQUIRED TREES @ 3 PER 100' = 22 TREES
REQUIRED SHRUBS @ 20 PER 100' = 145 SHRUBS

BUFFER PLANTINGS PROVIDED:

EXISTING TREES:	44 TREES EXISTING
NEW TREES:	0 TREES PROVIDED
TOTAL TREES:	55 TREES PROVIDED
NEW SHRUBS:	145 SHRUBS PROVIDED

2

NOTE: ALL SHRUBS SPECIFIED FOR BUFFERS SHALL AT LEAST MEET THE CODE REQUIRED MINIMUM 5'-6' IN HEIGHT AT MATURITY. SOME SPECIES MAY GROW LARGER THAN THE MINIMUM REQUIRED.

STREET TREE REQUIREMENTS:
STREET TREES ARE REQUIRED AT 40'-65' ON CENTER. ALL STREET TREES TO BE SMALL MATURING.

STREET TREES PROVIDED:
NEW TREES = 14 STREET TREES PROVIDED - SMALL MATURING

2

TREE PLANTING MITIGATION REQUIREMENTS PER UDO SECTION 9.21-10:
TREES TO BE REMOVED IN PROTECTED AREAS AND MITIGATED: 1
CANOPY TREES 8" - 12" = 15 TREES TO BE REMOVED AND MITIGATED

MITIGATED TREES PROVIDED:
CANOPY TREES: 15 REMOVED TREES X 6 = 84 - 2" CAL. TREES PROVIDED

TREE PRESERVATION PROTECTION PER UDO SECTION 9.21:
SEE SHEET C-3.0, EROSION CONTROL PLAN FOR TREE PROTECTION MEASURES.

TOWN NOTES (SEE ADDITIONAL NOTES SHEET L1.5):
LANDSCAPE 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."

IRRIGATION NOTES:

1. ALL LANDSCAPED AREAS, UNLESS OTHERWISE INDICATED BY THE OWNER, ARE TO BE IRRIGATED WITH COMPLETE HEAD TO HEAD COVERAGE.
2. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR IRRIGATION DESIGN FOR REVIEW AND APPROVAL BY ARCHITECT/OWNER.
3. A WATER CONSERVING SYSTEM IS MANDATORY.
4. A SEPARATE IRRIGATION METER IS REQUIRED FOR ALL IRRIGATION SYSTEMS.
5. UNLESS OTHERWISE INDICATED ON THE CIVIL ENGINEERING PLANS, THE METER AND MAIN IRRIGATION LINE SHALL BE 2".
6. CONTRACTOR TO COORDINATE IRRIGATION SLEEVE LOCATIONS WITH THE GENERAL CONTRACTOR/PROJECT MANAGER

40' 20' 0 40' 80'
SCALE 1"=40'-0"

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North Carolina 811 www.nc811.org

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NO	DATE	BY	ISSUE
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2	06/06/2018	GRF	TOWN STAFF COMMENTS

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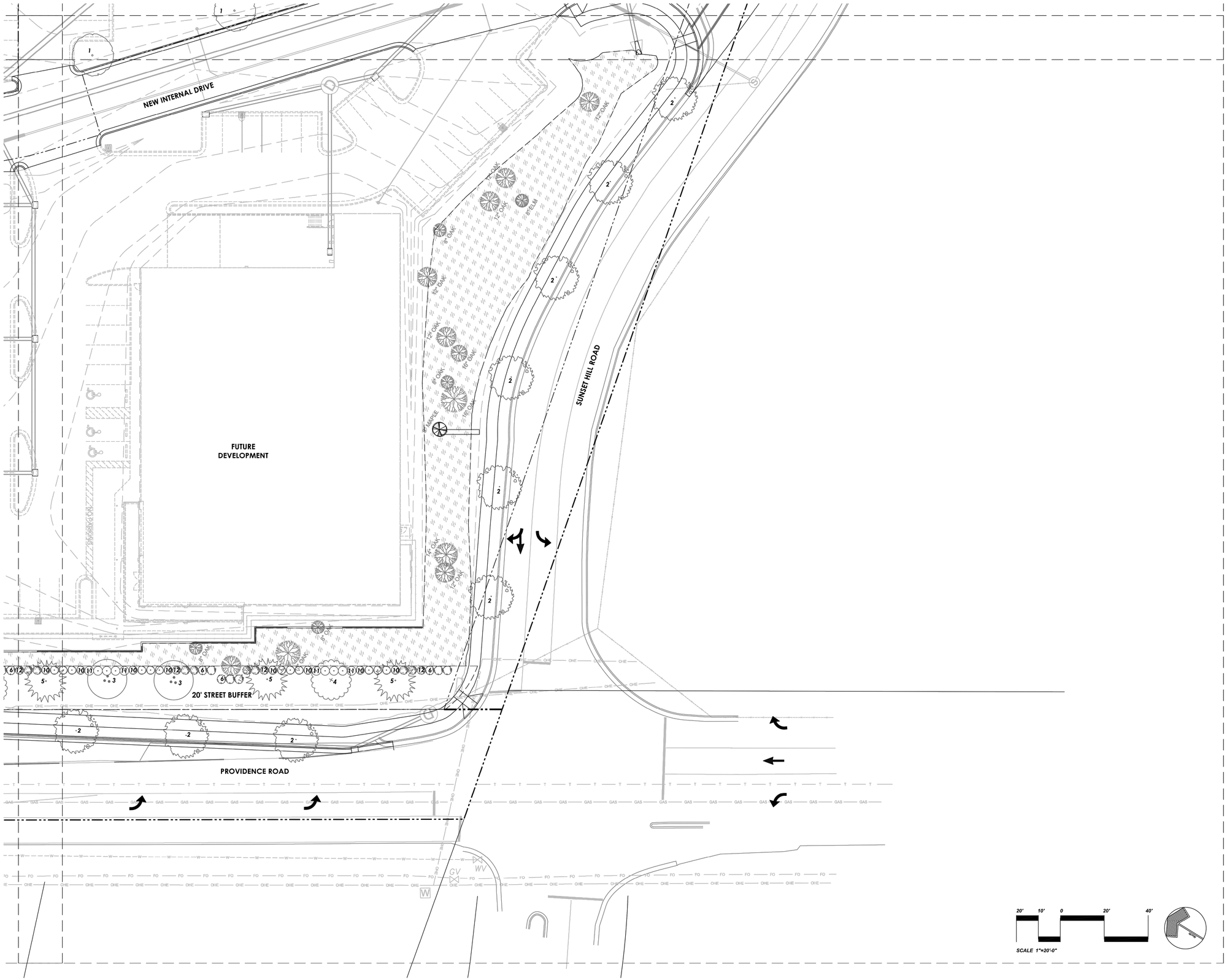
OVERALL PLANTING

DESIGNED BY	GRF	CHECKED BY	GRF
DRAWN BY	GRF	JOB NUMBER	5117
DATE	12-22-2017		
Scale	AS SHOWN		

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. 707 GARY R. FANCHER

Sheet
L-1.0



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PLANTING PLAN

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Sheet

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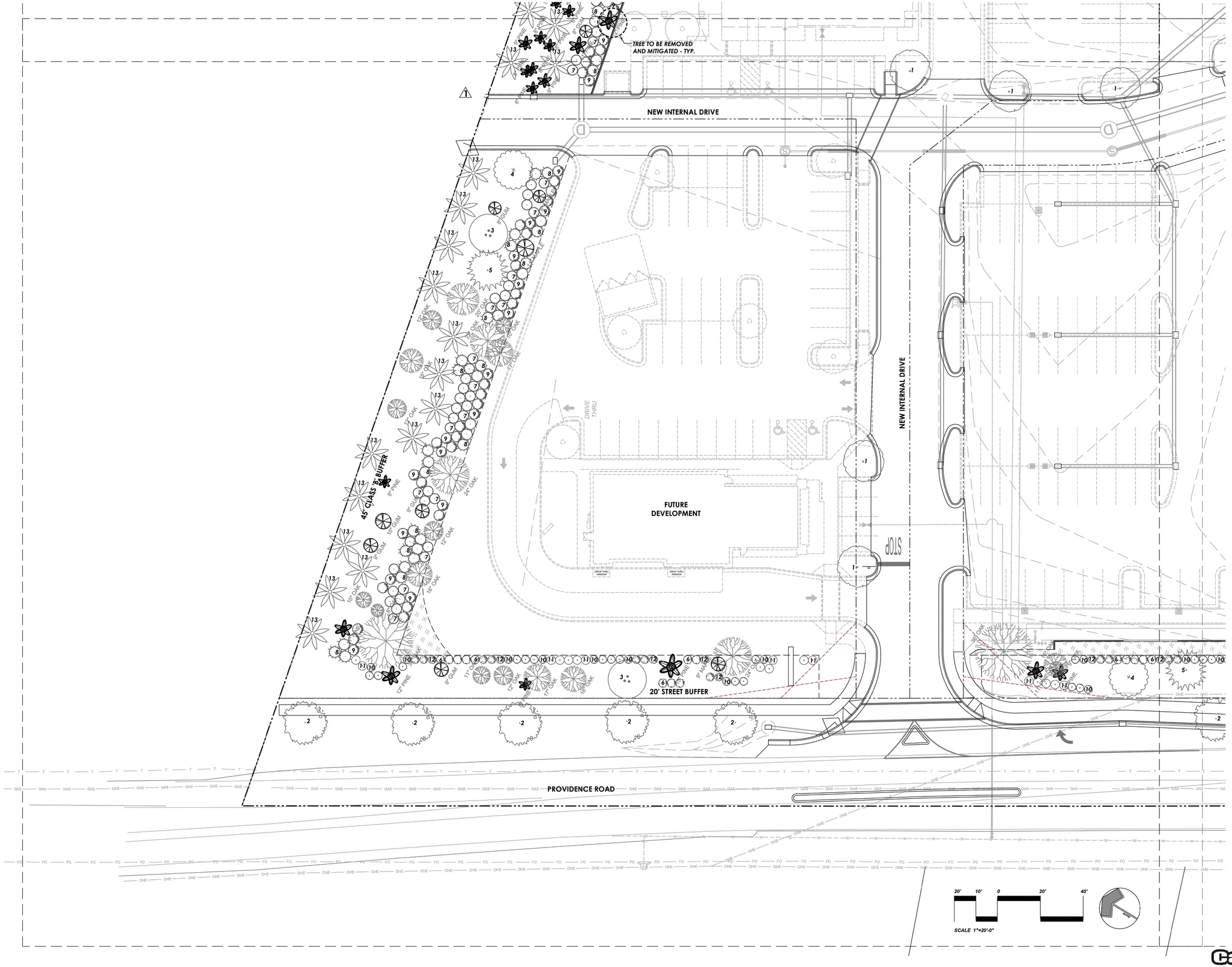

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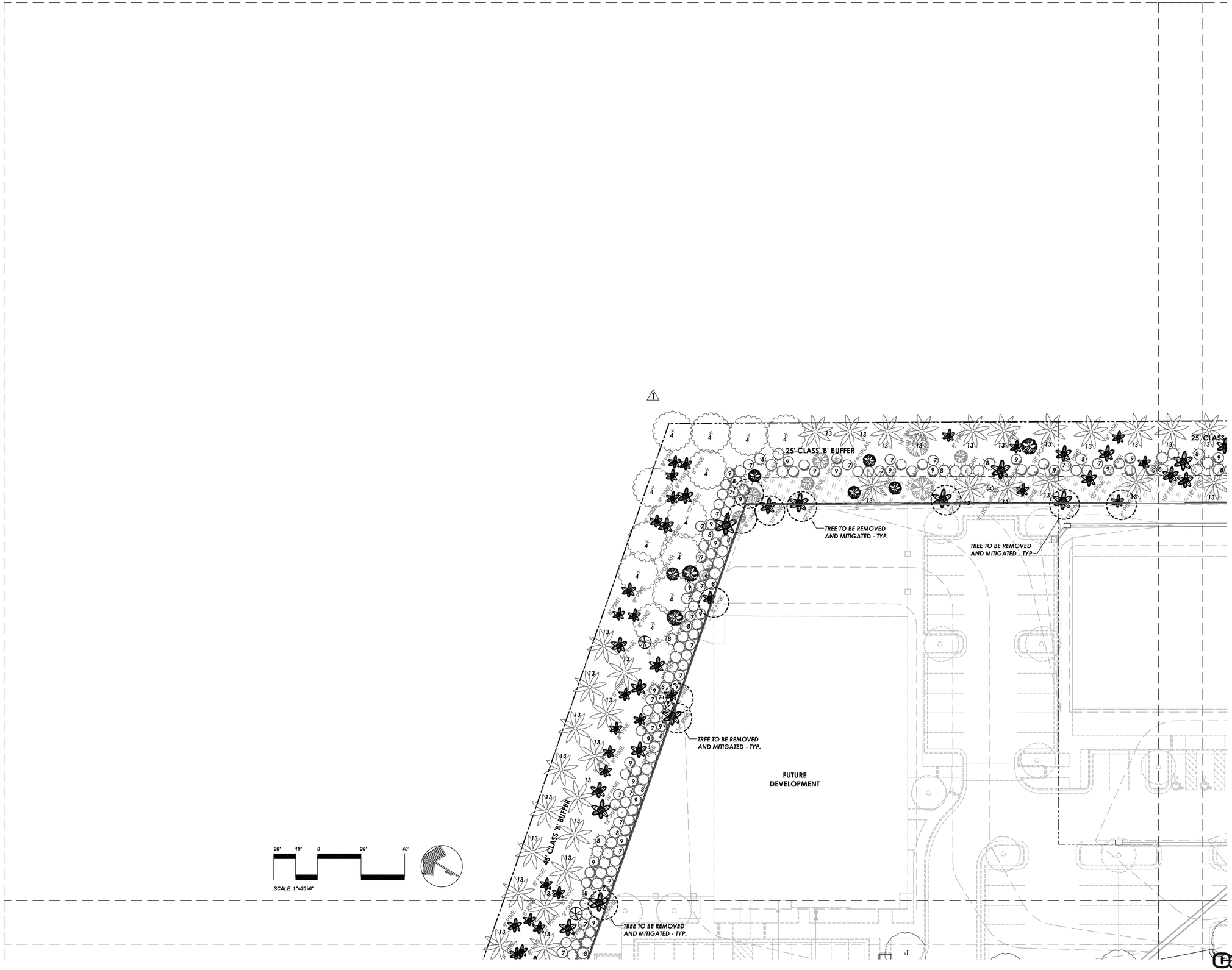
NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. 707 GARY R. FANKHANEL

Sheet
L-1.2



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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. 707 GARY R. FANKHAUSER

Sheet
L-1.3

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. 707 GARY R. FANKHAUSER

Sheet
L-1.4

PLANTING SPECIFICATIONS

1. PLANT MATERIAL

A. FURNISH NURSERY-GROWN PLANTS INDICATED IN PLANT LEGEND SHOWN ON DRAWINGS AND COMPLYING WITH ANSI Z60.1 - 2014, *AMERICAN STANDARD FOR NURSERY STOCK*.

B. ANNUALS: PROVIDE HEALTHY, DISEASE-FREE PLANTS OF SPECIES AND VARIETY SHOWN OR LISTED, WITH WELL-ESTABLISHED ROOT SYSTEMS. PROVIDE ONLY PLANTS THAT ARE ACCLIMATED TO OUTDOOR CONDITIONS BEFORE DELIVERY.

C. CONTRACTOR SHALL PROVIDE A ONE YEAR WARRANTY FROM FINAL ACCEPTANCE ON ALL PLANTS UNLESS APPROVED OTHERWISE BY THE OWNER.

2. SOIL AMENDMENTS AS REQUIRED FROM SOILS REPORT/TESTING

A. LIME: ASTM C 602, AGRICULTURAL LIMING MATERIAL CONTAINING A MINIMUM OF 80 PERCENT CALCIUM CARBONATE EQUIVALENT.

B. SULFUR: GRANULAR, BIODEGRADABLE, AND CONTAINING A MINIMUM OF 90 PERCENT SULFUR.

C. IRON SULFATE: GRANULATED FERROUS SULFATE CONTAINING A MINIMUM OF 20 PERCENT IRON AND 10 PERCENT SULFUR.

D. ALUMINUM SULFATE: COMMERCIAL GRADE, UNADULTERATED.

E. PERLITE: HORTICULTURAL PERLITE, SOIL AMENDMENT GRADE.

F. AGRICULTURAL GYPSUM: MINIMUM 90 PERCENT CALCIUM SULFATE.

G. SAND: CLEAN, WASHED, NATURAL OR MANUFACTURED, AND FREE OF TOXIC MATERIALS.

H. COMPOST: WELL-COMPOSTED, STABLE, AND WEED-FREE ORGANIC MATTER, PH RANGE OF 5.5 TO 8; MOISTURE CONTENT 35 TO 55 PERCENT BY WEIGHT; 100 PERCENT PASSING THROUGH 3/4-INCH SIEVE.

I. SPHAGNUM PEAT: PARTIALLY DECOMPOSED SPHAGNUM PEAT MOSS, FINELY DIVIDED OR GRANULAR TEXTURE, WITH A PH RANGE OF 3.4 TO 4.8.

J. MANURE: WELL-ROTTED, UNLEACHED, STABLE OR CATTLE MANURE CONTAINING NOT MORE THAN 25 PERCENT BY VOLUME OF STRAW, SAWDUST, OR OTHER BEDDING MATERIALS; FREE OF TOXIC SUBSTANCES, STONES, STICKS, SOIL, WEED SEED, DEBRIS, AND MATERIAL HARMFUL TO PLANT GROWTH.

3. FERTILIZERS

A. BONEMEAL: COMMERCIAL, RAW OR STEAMED, FINELY GROUND; A MINIMUM OF 1 PERCENT NITROGEN AND 10 PERCENT PHOSPHORIC ACID.

B. SUPERPHOSPHATE: COMMERCIAL, PHOSPHATE MIXTURE, SOLUBLE; A MINIMUM OF 20 PERCENT AVAILABLE PHOSPHORIC ACID.

C. COMMERCIAL FERTILIZER: COMMERCIAL-GRADE COMPLETE FERTILIZER OF NEUTRAL CHARACTER, CONSISTING OF FAST- AND SLOW-RELEASE NITROGEN.

D. SLOW-RELEASE FERTILIZER: GRANULAR OR PELLETED FERTILIZER.

4. PLANTING MIX

A. PLANTING MIX: SHALL BE NATURAL, FERTILE, AGRICULTURAL TOPSOIL, CAPABLE OF SUSTAINING VIGOROUS PLANT GROWTH, WITH PH RANGE OF 5.5 TO 7. IT MAY BE DEVELOPED BY AMENDING THE EXISTING SOIL, OR REMOVING THE EXISTING SOIL AND REPLACING WITH NEW SOIL. IT SHALL BE FREE OF ROOTS, PLANTS, SOD, STONES, CLODS, CLAY LUMPS, POCKETS OF COARSE SAND, CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, BUILDING DEBRIS, AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH. PLANTING MIX SHALL NOT BE USED WHILE IN A FROZEN OR MUDDY CONDITION. UNLESS OTHERWISE SPECIFIED, THE PLANTING MIX SHALL CONTAIN THE FOLLOWING PERCENTAGES:

- CLAY: MIN. 10% - MAX. 30% (RED CLAY WELL PULVERIZED); CLAY SHALL BE STERILE.
- SILT: MIN. 30% - MAX. 50%
- COARSE SAND: MIN. 30% - MAX. 45% (1.0mm TO 0.5mm DIA., AND FREE OF ROCK)
- ORGANIC MAT.: MIN. 5% (COMPOST/HUMUS SUCH AS SAWDUST OR LEAF MOLD THAT IS DECOMPOSED)
- ELEMENTS: CALCIUM 55% - 80%; MAGNESIUM 10% - 30%; POTASSIUM 5% - 8%

B. CONTRACTOR TO PROVIDE SOILS TEST/ANALYSIS INDICATING ABOVE REQUIREMENTS.

5. MULCHES

A. PINE STRAW MULCH FOR ALL PLANT BEDS UNLESS OTHERWISE INDICATED.

B. ALL PLANT BEDS AND TREE RINGS SHALL BE MULCHED.

6. PLANT BED ESTABLISHMENT

A. LAYOUT PLANT BEDS AS INDICATED ON THE PLANTING PLAN AND REMOVE UNNECESSARY MATERIAL TO A MINIMUM DEPTH OF 18 INCHES.

B. LOOSEN SUBGRADE OF PLANTING BEDS TO A MINIMUM DEPTH OF 6 INCHES. REMOVE STONES LARGER THAN 1 INCH IN ANY DIMENSION AND STICKS, ROOTS, RUBBISH, AND OTHER EXTRANEOUS MATTER AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.

C. SPREAD PLANTING MIX (SEE 4 ABOVE) TO A DEPTH OF 18 INCHES BUT NOT LESS THAN REQUIRED TO MEET FINISH GRADES AFTER NATURAL SETTLEMENT. DO NOT SPREAD IF PLANTING MIX OR SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET.

D. FINISH GRADING: GRADE PLANTING BEDS TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. ROLL AND RAKE, REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES.

7. EXCAVATION FOR TREES AND SHRUBS

A. PLANTING PITS AND TRENCHES: EXCAVATE CIRCULAR PLANTING PITS WITH SIDES SLOPING INWARD AT A 45-DEGREE ANGLE. EXCAVATIONS WITH VERTICAL SIDES ARE NOT ACCEPTABLE. TRIM PERIMETER OF BOTTOM LEAVING CENTER AREA OF BOTTOM RAISED SLIGHTLY TO SUPPORT ROOT BALL AND ASSIST IN DRAINAGE AWAY FROM CENTER. DO NOT FURTHER DISTURB BASE. ENSURE THAT ROOT BALL WILL SIT ON UNDISTURBED BASE SOIL TO PREVENT SETTLING. SCARIFY SIDES OF PLANTING PIT SMEARED OR SMOOTHED DURING EXCAVATION.

B. EXCAVATE APPROXIMATELY THREE TIMES AS WIDE AS BALL DIAMETER.

C. DO NOT EXCAVATE DEEPER THAN DEPTH OF THE ROOT BALL, MEASURED FROM THE ROOT FLARE TO THE BOTTOM OF THE ROOT BALL.

D. SUBSOIL AND TOPSOIL REMOVED FROM EXCAVATIONS MAY NOT BE USED SOLELY AS PLANTING MIX (SEE NOTE 4 ABOVE).

8. TREE, SHRUB, AND VINE PLANTING

A. BEFORE PLANTING, VERIFY THAT ROOT FLARE IS VISIBLE AT TOP OF ROOT BALL ACCORDING TO ANSI Z60.1.

B. REMOVE STEM GIRDLING ROOTS AND KINKED ROOTS. REMOVE INJURED ROOTS BY CUTTING CLEANLY; DO NOT BREAK.

C. SET STOCK PLUMB AND IN CENTER OF PLANTING PIT OR TRENCH WITH ROOT FLARE 1 INCH ABOVE ADJACENT FINISH GRADES.

D. USE PLANTING SOIL FOR BACKFILL.

E. BALLED AND BURLAPPED: AFTER PLACING SOME BACKFILL AROUND ROOT BALL TO STABILIZE PLANT, CAREFULLY CUT AND REMOVE BURLAP, ROPE, AND WIRE BASKETS FROM TOPS OF ROOT BALLS AND FROM SIDES, BUT DO NOT REMOVE FROM UNDER ROOT BALLS. REMOVE PALLETS, IF ANY, BEFORE SETTING. DO NOT USE PLANTING STOCK IF ROOT BALL IS CRACKED OR BROKEN BEFORE OR DURING PLANTING OPERATION.

F. CONTAINER-GROWN: CAREFULLY REMOVE ROOT BALL FROM CONTAINER WITHOUT DAMAGING ROOT BALL OR PLANT.

G. BACKFILL AROUND ROOT BALL IN LAYERS, TAMPING TO SETTLE SOIL AND ELIMINATE VOIDS AND AIR POCKETS. WHEN PLANTING PIT IS APPROXIMATELY ONE-HALF FILLED, WATER THOROUGHLY BEFORE PLACING REMAINDER OF BACKFILL. REPEAT WATERING UNTIL NO MORE WATER IS ABSORBED.

H. CONTINUE BACKFILLING PROCESS. WATER AGAIN AFTER PLACING AND TAMPING FINAL LAYER OF SOIL.

I. WHEN PLANTING ON SLOPES, SET THE PLANT SO THE ROOT FLARE ON THE UPHILL SIDE IS FLUSH WITH THE SURROUNDING SOIL ON THE SLOPE; THE EDGE OF THE ROOT BALL ON THE DOWNHILL SIDE WILL BE ABOVE THE SURROUNDING SOIL. APPLY ENOUGH SOIL TO COVER THE DOWNHILL SIDE OF THE ROOT BALL.

J. PRUNE/REMOVE ONLY DEAD, DYING, OR BROKEN BRANCHES. DO NOT PRUNE FOR SHAPE. PRUNE TO RETAIN NATURAL CHARACTER.

K. PRUNE, THIN, AND SHAPE TREES, SHRUBS, AND VINES ACCORDING TO STANDARD PROFESSIONAL HORTICULTURAL AND ARBORICULTURAL PRACTICES FOR NEWLY PLANTED PLANTS. UNLESS OTHERWISE INDICATED BY LANDSCAPE ARCHITECT, DO NOT CUT TREE LEADERS.

9. GROUND COVER, PERENNIAL, AND ANNUAL PLANTING

A. SET OUT AND SPACE GROUND COVER, PERENNIALS, AND/OR ANNUALS AS INDICATED IN EVEN ROWS WITH TRIANGULAR SPACING.

B. USE PLANTING MIX FOR BACKFILL.

C. DIG HOLES LARGE ENOUGH TO ALLOW SPREADING OF ROOTS.

D. WORK SOIL AROUND ROOTS TO ELIMINATE AIR POCKETS AND LEAVE A SLIGHT SAUCER INDENTATION AROUND PLANTS TO HOLD WATER.

E. WATER THOROUGHLY AFTER PLANTING, TAKING CARE NOT TO COVER PLANT CROWNS WITH WET SOIL.

F. PROTECT PLANTS FROM HOT SUN AND WIND; REMOVE PROTECTION IF PLANTS SHOW EVIDENCE OF RECOVERY FROM TRANSPLANTING SHOCK.

10. PLANT AND PLANT BED MULCHING

A. MULCH BACKFILLED SURFACES OF PLANTING BEDS AND OTHER AREAS INDICATED.

B. TREES AND TREE-FORM SHRUBS IN TURF AREAS: APPLY ORGANIC MULCH RING OF 3-INCH AVERAGE THICKNESS, WITH MINIMUM 36-INCH RADIUS AROUND TRUNKS OR STEMS. DO NOT PLACE MULCH WITHIN 3 INCHES OF TRUNKS OR STEMS.

C. ORGANIC MULCH IN PLANT BEDS: APPLY 3-INCH AVERAGE THICKNESS OF MULCH OVER ENTIRE SURFACE OF PLANT BED, AND FINISH LEVEL WITH ADJACENT FINISH GRADES. DO NOT PLACE MULCH WITHIN 2 INCHES OF TRUNKS OR STEMS.

11. PLANT MAINTENANCE

A. MAINTAIN PLANTINGS BY PRUNING, CULTIVATING, WATERING, WEEDING, FERTILIZING, MULCHING; RESTORING PLANTING SAUCERS, RESETTING TO PROPER GRADES OR VERTICAL POSITION, AND PERFORMING OTHER OPERATIONS AS REQUIRED TO ESTABLISH HEALTHY, VIABLE PLANTINGS. SPRAY OR TREAT AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE.

B. SET IRRIGATION SYSTEM FOR ZONE DURATION APPLICABLE FOR NEWLY PLANTED PLANTS IF APPLICABLE.

C. FILL IN AS NECESSARY SOIL SUBSIDENCE THAT MAY OCCUR BECAUSE OF SETTLING OR OTHER PROCESSES. REPLACE MULCH MATERIALS DAMAGED OR LOST IN AREAS OF SUBSIDENCE.

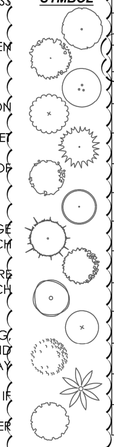
D. APPLY TREATMENTS AS REQUIRED TO KEEP PLANT MATERIALS, PLANTED AREAS, AND SOILS FREE OF PESTS AND PATHOGENS OR DISEASE. USE PRACTICES TO MINIMIZE THE USE OF PESTICIDES AND REDUCE HAZARDS.

E. APPLY PESTICIDES AND OTHER CHEMICAL PRODUCTS AND BIOLOGICAL CONTROL AGENTS IN ACCORDANCE WITH AUTHORITIES HAVING JURISDICTION AND MANUFACTURER'S WRITTEN RECOMMENDATIONS. COORDINATE APPLICATIONS WITH OWNER'S OPERATIONS AND OTHERS IN PROXIMITY TO THE WORK. NOTIFY OWNER BEFORE EACH APPLICATION IS PERFORMED.

F. PROTECT PLANTS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS AND OPERATIONS OF OTHER CONTRACTORS AND TRADES. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR, OR REPLACE DAMAGED PLANTINGS.

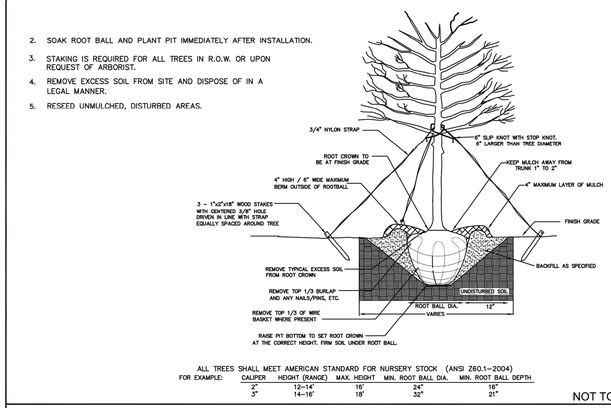
Plant Legend

SYMBOL



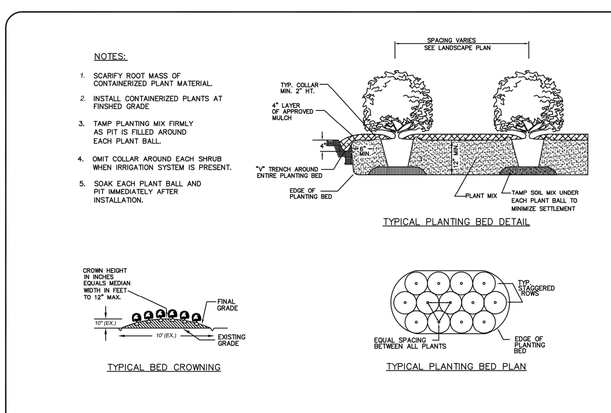
KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QUANTITY
1	Ulmus parvifolia 'Bosque'	Bosque Lacebark Elm	2" cal.	As Shown	10
2	Lagerstroemia indica 'Natchez'	Natchez Crape Myrtle	2" cal.	50' o.c.	14
3	Betula nigra	River Birch	2" cal.	As Shown	4
4	Quercus lyrata	Overcup Oak	2" cal.	As Shown	21
5	Cryptomeria japonica	Japanese Cryptomeria	2" cal.	As Shown	4
6	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	36" height	5' o.c.	23
7	Pittosporum tobira	Japanese Mock Orange	30" height	5' o.c.	106
8	Ilex crenata 'Steeds'	Steeds Upright Holly	30" height	5' o.c.	107
9	Loropetalum chinense 'Zhuzhou Fuchsia'	Zhuzhou Fuchsia Loropetalum	30" height	5' o.c.	148
10	Loropetalum chinense 'Purple Diamond'	Purple Diamond Loropetalum	18" height	4' o.c.	45
11	Distylium 'Emerald Heights'	Emerald Heights Distylium	18" height	4' o.c.	27
12	Osmanthus heterophyllus 'Variegatus'	Variegated False Holly	18" height	4' o.c.	27
13	Pinus taeda	Loblolly Pine	2" cal.	As Shown	66
14	Acer saccharum	Sugar Maple	2" cal.	As Shown	6

NOTE: EXISTING TREES SHOWN ON PLAN AS: 24" OAK, ETC.



TREE PLANTING

(FOR SINGLE AND MULTI-STEM TREES)



SHRUB PLANTING BED

ENGLE ENGINEERING
FIRM LICENSE # C-0871
2013A Van Buren Avenue
Indian Trail, NC 28079
(704) 882-4222
P.O. BOX 551
Alpharetta, GA 30009
(678) 339-0640
www.engleonline.net

NO	DATE	BY	ISSUE
1	04/02/2018	GRF	TOWN COMMENTS
2	06/06/2018	GRF	TOWN STAFF COMMENTS

CARRINGTON SQUARE
TOWN OF WAXHAW, UNION COUNTY, NC
FOR THE BENEFIT OF:
TRIBEK PROPERTIES
2820 SELWYN AVENUE #425
CHARLOTTE, NC 28209

PLANT LEGEND AND SPECIFICATIONS

DESIGNED BY	GRF	DRAWN BY	GRF	CHECKED BY	GRF
Scale	AS SHOWN	DATE	12-4-2017	JOB NUMBER	5117

VIZ, PLLC
Urban Design + Land Planning + Landscape Architecture
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Cornelius, NC 28031
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gary@viz.design

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. 707 GARY R. FANKHAUSER

NORTH CAROLINA LANDSCAPE ARCHITECTURE REGISTRATION BOARD C-415 VIZ, PLLC

North Carolina 811 www.nc811.org

Sheet

L-1.5

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Lumens/Lamp	LLF	Total Watts	Description
	4	L21	SINGLE	3819	1.000	168	XSPW-A-0-3-30K-C-U-CS-P
	6	L23	SINGLE	N.A.	1.000	252	AL-42WLED-UD-CG-120-30K
	6	L31	SINGLE	11648	1.000	516	OSQ-A-NM-4ME-B-57K-UL-CS + OSQ-DACS DIRECT ARM
	2	L32b	BACK-BACK	11648	1.000	344	OSQ-A-NM-4ME-B-57K-UL-CS + OSQ-DACS DIRECT ARM

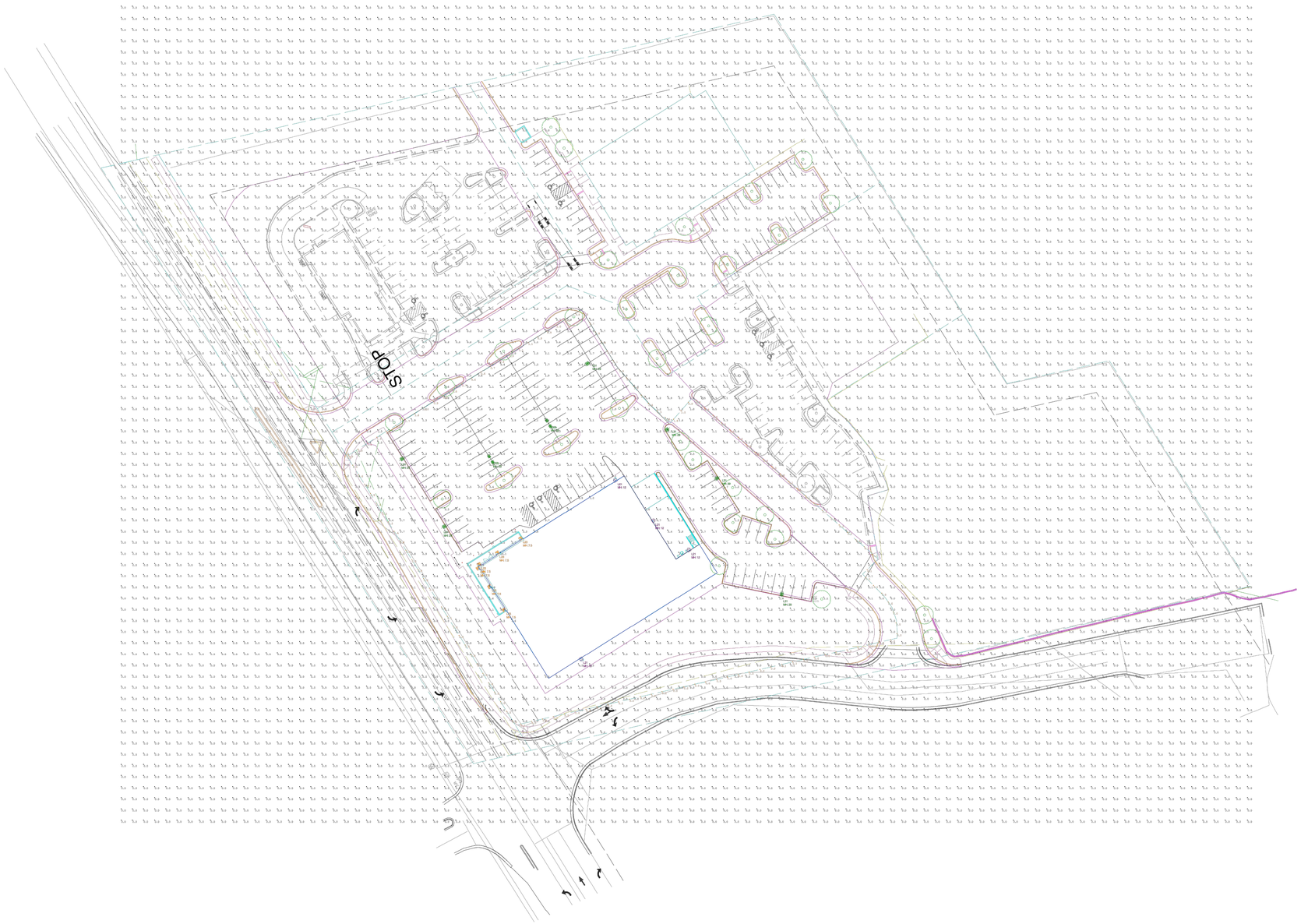
Footcandles calculated using predicted lumen values after 50K hours of operation					
Label	Avg	Max	Min	Avg/Min	Max/Min
PROPERTY LINE	0.41	1.8	0.0	N.A.	N.A.
PARKING	2.11	6.7	0.5	4.22	13.40

NATIONAL ACCOUNT PRICING, PLEASE CALL MIKE KREINER AT CREE LIGHTING:
224-250-1561 OR MIKE.KREINER@CREE.COM

Additional Required Equipment:
(6) - CL-SSP-4011-25-D1-PS - (25' x 4" Steel Square Pole 11ga, Single)
(2) - CL-SSP-4011-25-D2-PS - (25' x 4" Steel Square Pole 11ga, 2@180°)

Proposed Poles Meets 100MPH Sustained Winds.

ADDITIONAL EQUIPMENT
(10) OSQ-DAXX (DIRECT ARM MOUNT)



0 100 200

"DLC V4 is in effect as of April 1, 2017,
which impacts the rebate eligibility of many LED products.
If you require DLC-qualified fixtures,
please reference https://www.designlights.org/search/
for updated qualified product listings.
Email rebates@cree.com<mailto:rebates@cree.com> for assistance."

CREE™

1200 92nd Street - Sturtevant, WI 53177
www.cree.com - (800) 236-6800

Project Name: ALDI - WAXHOW, NC | SR-27325

Date:11/21/2017 | Scale: 1"=50' | Footcandles calculated at grade

Filename: V:\Common\AppEng\NAT\ALD-171121WHNCCB.AGI | Layout by: CHRIS BOSANEC

Illumination results shown on this lighting design are based on project parameters provided to Cree, Inc. used in conjunction with luminaire test procedures conducted under laboratory conditions. Actual project conditions differing from these design parameters may affect field results. The customer is responsible for verifying dimensional accuracy along with compliance with any applicable electrical, lighting, or energy code.