

Admininstrative Site Plan South Main - Commercial

Town of Rolesville
Wake County, North Carolina
Case # SP22-06
Rezoning Case # MA22-07

DESCRIPTION

SITE DATA: PEDESTRAIN AMENITIES - 4 REQUIRED SITE ADDRESS: 503 SOUTH MAIN 1758784708 PATIO SEATING IN SITE AREA 1.80 AC (78,408 SF) PUBLIC ART MURAL AREA FROM ADJACENT PARCEL .23 AC (10,197 SF) PAVERS IN OPEN A ADJACENT PARCEL PIN: 1758.08-78-5571 POCKET PARK - ACT TOTAL SITE AREA 2.03 AC (88,427 SF) IMPERVIOUS PROPOSED 1.19 ACRES (51,836 SF) IMPERVIOUS PERCENT (%) WATERSHED: LOWER NEUSE 0302020107 LATITUDE: 35.916120 LONGITUDE: -78 468430 **ZONING DISTRICT** COMMERCIAL **FUTURE LAND USE** 4421 SF (5%) OPEN SPACE SIZE REQ'D: OPEN SPACE SIZE PROVIDED: ACTIVE OPEN AREA 2 = 1900 SF **BUILDING SETBACKS** 20' (FRONT) 15' (SIDE) 35' (REAR) BUILDING COMMERCIAL (SF) 13,500 9,675 BUILDING RESIDENTIAL (SF) 35' BUILDING HEIGHT (MAX) BUILDING HEIGHT (PROVIDED) PARKING SUMMARY: RESIDENTIAL UPPER STORY: MIN 1 / UNIT 11/1 = 11 SPACES' COMMERCIAL: MIN 2.5 SPACE / 1000 SF 13,500 / 1000 * 2.5 = 34 SPACES' PARKING MIN REQUIRED: 45 SPACES PARKING PROVIDED: 64 SPACES **BIKE PARKING (REQUIRED)** 1 PER BLDG **BIKE PARKING (PROVIDED)**

87,654 SF (2.01 ACRES)

	NEW LEGEN	ND EXISTING
DRAINAGE STRUCTURE		
SANITARY SEWER MANHOLE	<u>—</u> §	<u> </u>
SANITARY SEWER CLEANOUT	C.O.	
WATER VALVE	\otimes	\otimes
FIRE HYDRANT	***	₹
OVERHEAD UTILITY LINE	OH	— — — XOH— — — —
UNDERGROUND ELECTRIC LINE	——— E ———	— — XE — — — —
UNDERGROUND TELECOM/DATA LINE	TD	— — — XTD — — — —
FIBER OPTIC CABLE	FO	— — — XFO — — — —
GAS LINE	G	— — — — XG — — — —
STORM DRAINAGE PIPE	SD	— — — XSD — — — —
SANITARY SEWER LINE	SS	— — — — XSS — — — —
WATER LINE	W	
SURFACE ELEVATION CONTOUR	100	400
SURFACE SPOT ELEVATION	356.44	x 356.44
CLEARING LIMIT/TREE LINE	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
LIMIT OF DISTURBANCE		
ELECTRICAL TRANSFORMER PAD	Т	T

TOWNHOME PARKING (NUMBER)

TOTAL DENUDED AREA

NODEN ADEA 4	SHEET	DESCRIPTION
N OPEN AREA 1 AL ON WALL CREEK RD SIDE OF THE BUILDING		Cover Sheet
AREA 1 ACTIVE AREA 2		Existing Conditions Survey
	C1	Existing Conditions & Demolition Plan
	C2	Demo and Erosion SS Extension
	C3	Site Plan
	C4	Grading Plan
	C5	Utility Plan
	C6	Utility Plan and Profile
	LS1	Preservation Plan
	LS2	Landscape Plan
	LS3	Landscape Details
	SL1	Site Lighting Plan
	SL2	Site Lighting Fixtures
	D1	Standard Site Details
	D-2	Site and Stormwater Details
	D-3	BMP Device Detail
	D-4	Water and Sanitary Sewer Details
	EC1	Phase 1 - Erosion Control Plan
	EC2	Phase 2 - Erosion Control Plan
	EC3	Phase 3 - Erosion Control Plan
	EC4	Phase 4 - Erosion Control Plan

Know what's below.

Call before you dig.

(Or call: 1-800-632-4949)

SHEET

PUBLIC IMPROVEMENT QUANTITIES

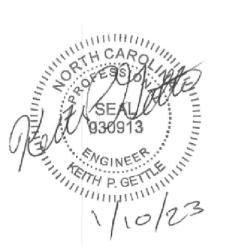
Erosion Control Details

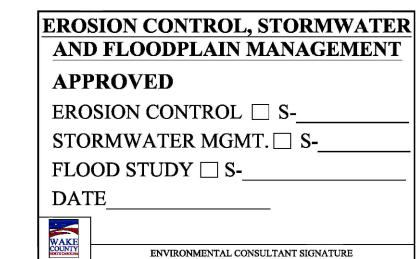
Erosion Control Details

NCGO1 Requirements

Architectural Plans and Elevations

PHASE NUMBER(S)	PHASE 1
NUMBER OF LOT (Ś)	1
LOT NUMBERS BY PHASE	1
NUMBER OF UNITS	9 MAX
LIVABLE OF UNITS	11 UNITS
OPEN SPACE (YES/NO)	YES
NUMBER OF OPEN SPACE LOTS	0
PUBLIC WATER (LF)	0
PUBLIC 8" PVC SEWER	389 LF
WATER SERVICE STUBS	2
WATER SERVICE ABANDONED	2
SEWER SERVICE STUBS (NEW)	1
SEWER SERVICE REMOVED	0





GENERAL NOTES

1. BOUNDARY AND TOPO INFORMATION TAKEN FROM CAWTHORNE, MOSS & PANCIERA, P.C., SURVEYING, TITLED TOPOGRAPHIC SURVEY FOR TOY STORAGE LLC, DATED MARCH 3 2022

2. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES & SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS ACTIVITIES. CALL UTILITY LOCATOR SERVICE AT LEAST 48 HOURS PRIOR TO DIGGING.

3. ALL CONSTRUCTION WILL BE IN STRICT CONFORMANCE TO THE TOWN OF ROLESVILLE, CITY OF RALEIGH, WAKE COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.

4. NO CHANGES MAY BE MADE TO THE APPROVED DRAWINGS WITHOUT WRITTEN PERMISSION FROM THE ISSUING AUTHORITY.

PROJECT INFORMATION:

PROJECT: SOUTH MAIN - COMMERCIAL

OWNER / DEVELOPER: TOY STORAGE, LLC

2700 GRESHAM LAKE RD. RALEIGH, NC 27615

PHONE: (919) 604-0505
CONTACT: ALLEN MASSEY
EMAIL: STORIT@AOL.COM

ENGINEER: KEITH P. GETTLE, PE
GETTLE ENGINEERING AND DESIGN, PLLC

LICENSE: P-2538
3616 WAXWING CT.
WAKE FOREST, NC 27587

PHONE: (919) 210-3934
EMAIL: KPGETTLE@GMAIL.COM

9

333 SOUTH WHITE STREET

CAWTHORNE MOSS AND PANCIERA P.C.

WAKE FOREST NORTH CAROLINA 27588

(919) 556- 3148

PROJECT ADDRESS: 503 SOUTH MAIN STREET, ROLESVILLE NC

PIN: 17587847
ZONING: GC
EXIST USE: VACANT

SURVEYOR:

PHONE:

OVERLAY: NONE
FLOOD ZONE: NO FLOOD HAZARDS AREAS PER FEMA FIRM 3720175800K

IMPERVIOUS: EXISTING: 4195 SF (.1 ACRES)

SITE PERMITTING APPROVAL

Water and Sewer Permits (If applicable)

and Federal Rules and Regulations.

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #**

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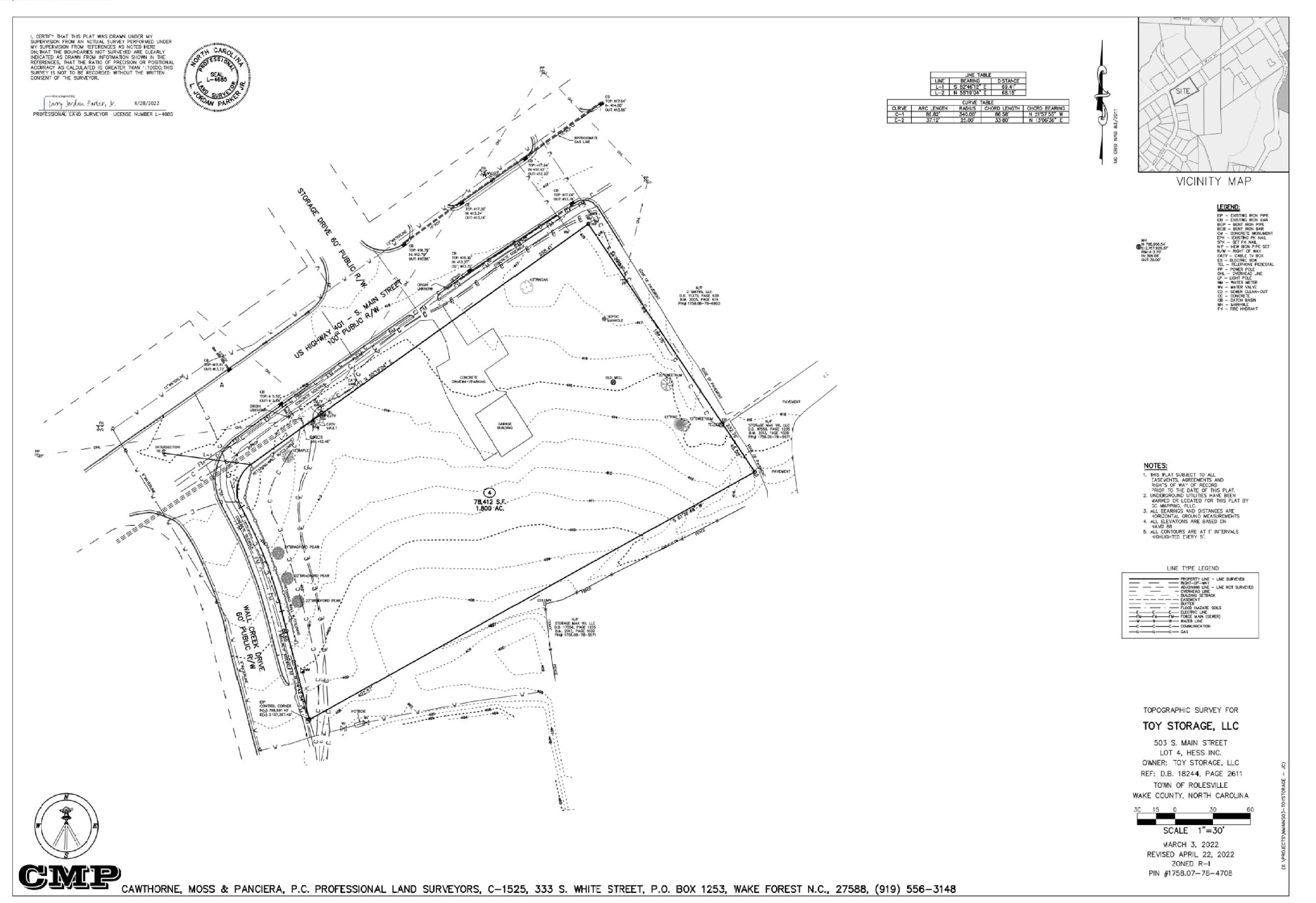
CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization below is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law. All Construction must be in accordance with all Local, State,

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval

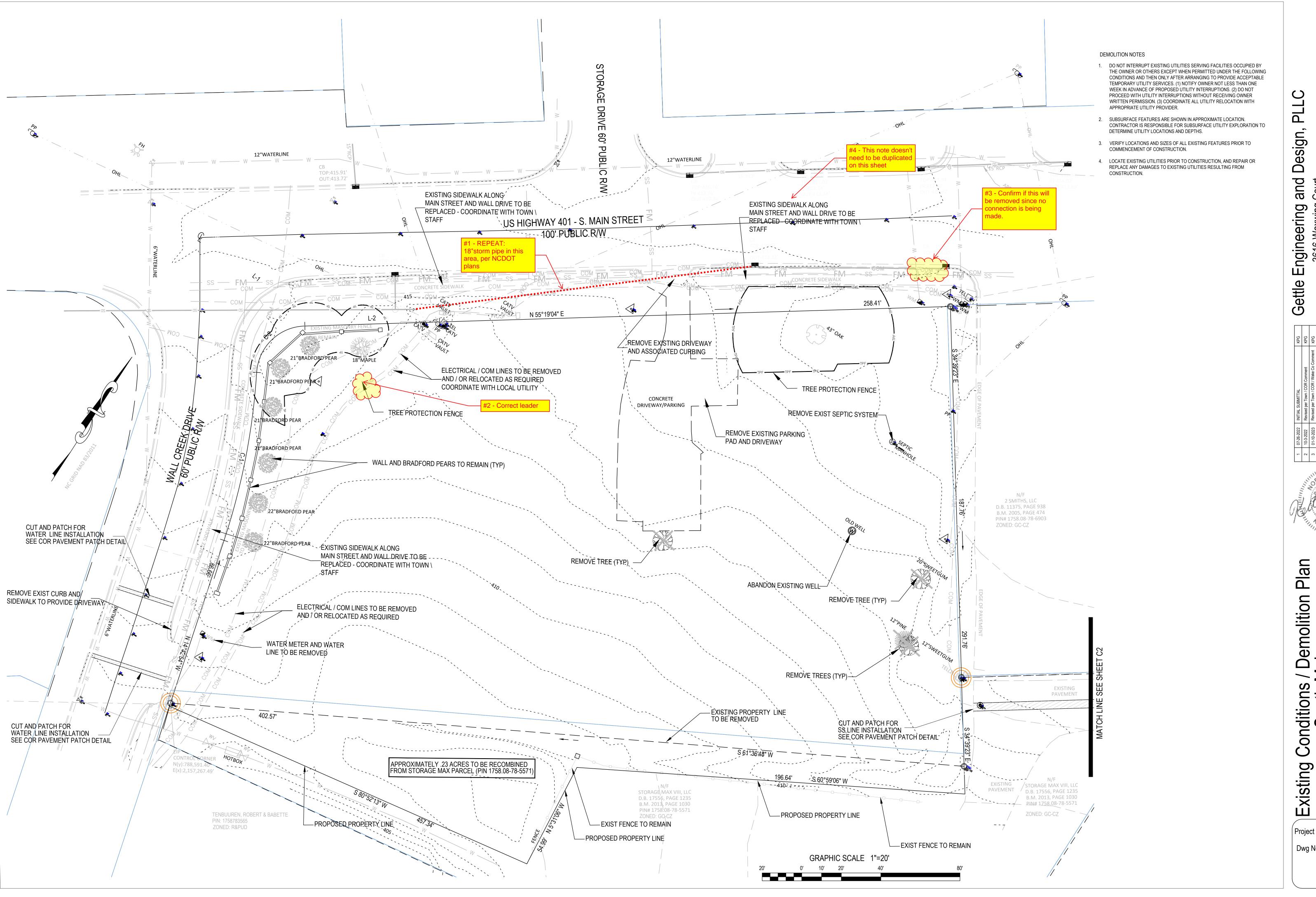
City of Raleigh Review Officer



Survey Conditions Existing

PLLC

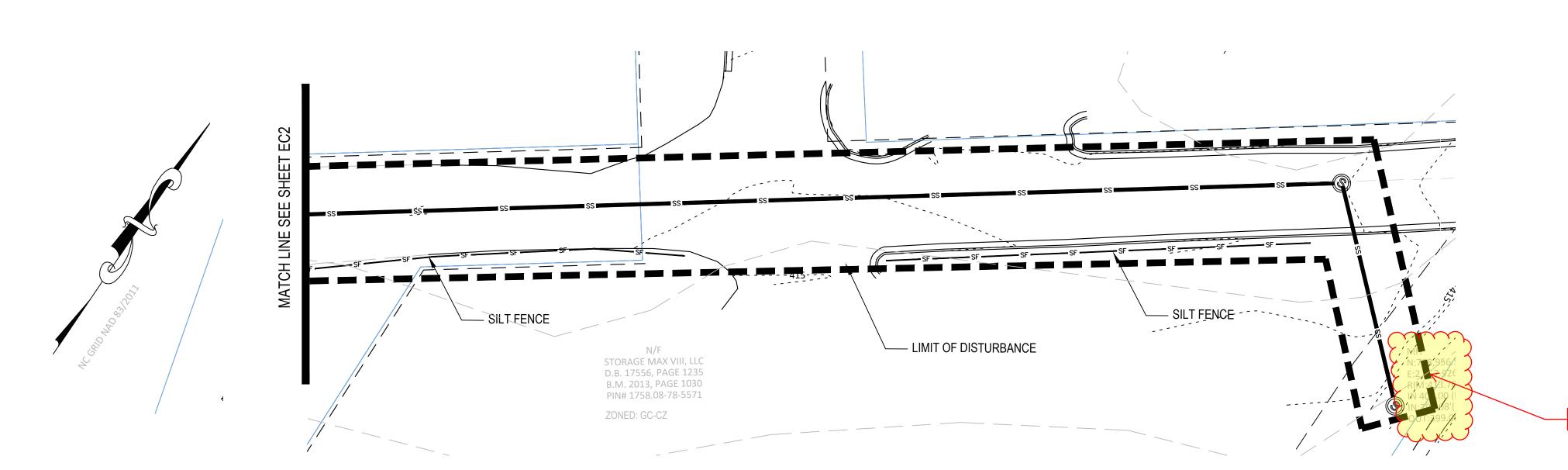
Gettle Engineering and Design, P
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538



Engineering a 3616 Waxwing (

isting Conditions / Demolition Pl South Main 503 South Main Street Rolesville, Wake County, North Carolina

GRAPHIC SCALE 1"=20'



SS Extension - Erosion Control

GRAPHIC SCALE 1"=20'
0' 10' 20' 40' 80

DEMOLITION NOTES

- 1. DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE OWNER OR OTHERS EXCEPT WHEN PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE ACCEPTABLE TEMPORARY UTILITY SERVICES. (1) NOTIFY OWNER NOT LESS THAN ONE WEEK IN ADVANCE OF PROPOSED UTILITY INTERRUPTIONS. (2) DO NOT PROCEED WITH UTILITY INTERRUPTIONS WITHOUT RECEIVING OWNER WRITTEN PERMISSION. (3) COORDINATE ALL UTILITY RELOCATION WITH APPROPRIATE UTILITY PROVIDER.
- 2. SUBSURFACE FEATURES ARE SHOWN IN APPROXIMATE LOCATION. CONTRACTOR IS RESPONSIBLE FOR SUBSURFACE UTILITY EXPLORATION TO DETERMINE UTILITY LOCATIONS AND DEPTHS.
- VERIFY LOCATIONS AND SIZES OF ALL EXISTING FEATURES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- 4. LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION, AND REPAIR OR REPLACE ANY DAMAGES TO EXISTING UTILITIES RESULTING FROM CONSTRUCTION.

NOTE

#5 - Text cut off

1. SEE SHEET C6 FOR UTILITY NOTES.

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City of Raleigh Development Approval

City of Raleigh Review Officer

Gettle Engineering and Design, PLLC 3616 Waxwing Court, Wake Forest, North Carolina 27587 (919) 210-3934 Firm License P-2538

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 07-26-2022
 INITIAL SUBMITTAL
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 2
 10-3-2022
 Revised per Town / COR / Wake Co Comment
 KPG

 3
 01-10-2023
 Revised per Town / COR / Wake Co Comment
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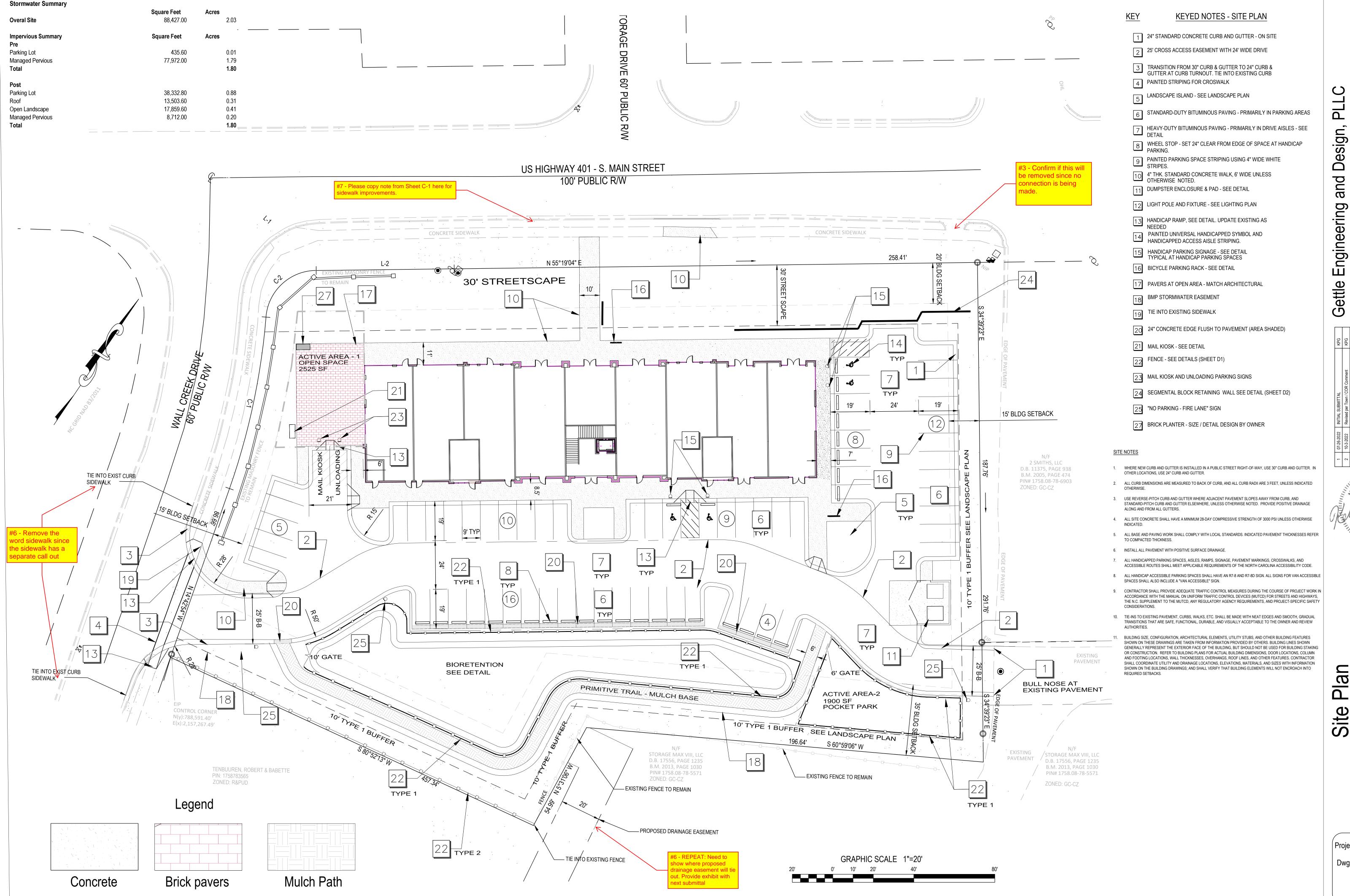
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no & Erosion SS Extension South Main

Project No. 22003

No.



Design,

Engineering a 3616 Waxwing (ake Forest, North Ca 210-3934 Firm

27. Se |

South South Wake Co

GENERAL GRADING AND STORM DRAINAGE SPECIFICATIONS

EXISTING CONDITIONS

INFORMATION ABOUT EXISTING UNDERGROUND FACILITIES AND SUBSURFACE CONDITIONS INDICATED ON THESE DRAWINGS IS NOT BASED ON AN EXHAUSTIVE INVESTIGATION OF SUCH FACILITIES OR CONDITIONS. AND THE ENGINEER MAKES NO WARRANTY TO ANY PARTY REGARDING THEM. EXISTING UTILITY LINE LOCATIONS SHOWN SHOULD BE CONSIDERED APPROXIMATE, AND ACTUAL UTILITIES AND CONDITIONS MAY DIFFER FROM THOSE INDICATED. IF DIFFERING UTILITIES OR CONDITIONS EXIST. THEY MAY BE ENCOUNTERED DURING THE COURSE OF THE PROJECT WORK, AND MAY IMPACT THE PROJECT SCOPE AND TIME REQUIREMENTS.

PROTECTION AND SAFETY

- PRIOR TO BEGINNING WORK, AND AS NEEDED DURING THE COURSE OF PROJECT WORK, CONTRACTOR SHALL NOTIFY ALL APPLICABLE UTILITY LOCATION SERVICES AND UTILITY PROVIDERS TO REASONABLY VERIFY THE LOCATION OF ALL KNOWN OR SUSPECTED UTILITIES, IN ACCORDANCE WITH STATE REGULATIONS. CONTRACTOR IS ADVISED THAT SOME UTILITY PROVIDERS DO NOT SUBSCRIBE TO ONE-CALL SERVICES, AND MUST BE CONTACTED SEPARATELY. CONTRACTOR SHALL PROVIDE ADEQUATE MEANS AND METHODS FOR PROTECTION OF ALL EXISTING UTILITIES AND SITE FEATURES WHICH ARE INTENDED TO REMAIN IN SERVICE OR IN
- CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL MEASURES DURING THE COURSE OF PROJECT WORK IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS, THE N.C. SUPPLEMENT TO THE MUTCD, ANY REGULATORY AGENCY REQUIREMENTS, AND PROJECT-SPECIFIC SAFETY CONSIDERATIONS. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY PROGRAMS AND MEASURES ON THE PROJECT SITE OR OTHERWISE RELATING TO THE PROJECT WORK, AND SHALL COMPLY WITH ALL

ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE STANDARDS AND REQUIREMENTS OF THE CITY OF RALEIGH, TOWN OF ROLESVILLE, WAKE COUNTY SEDIMENTATION AND EROSION CONTROL OFFICE, AND THE N.C. STATE BUILDING CODES.

- NOTIFY THE ENGINEER AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING OR RESUMING ANY STORM DRAINAGE OR STORMWATER IMPOUNDMENT BASIN WORK.
- NOTIFY THE APPLICABLE LOCAL GOVERNMENT AUTHORITIES IN ACCORDANCE WITH THEIR REQUIREMENTS PRIOR TO BEGINNING ANY WORK. NOTIFY THE GEOTECHNICAL ENGINEER AND TESTING SERVICE AT LEAST TWO BUSINESS DAYS PRIOR

TO BEGINNING OR RESUMING ANY GRADING OR STORMWATER IMPOUNDMENT BASIN WORK.

- * ALL EARTHWORK OPERATIONS, INCLUDING TOPSOIL STRIPPING, STOCKPILING, EXCAVATION, FILLING, COMPACTING, TRENCHING, BACKFILLING, RETAINING WALLS, AND FINE-GRADING, SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER, WHO SHALL VERIFY THE SUITABILITY OF SOIL MATERIALS, MONITOR EARTHWORK ACTIVITIES, DIRECT AND OBSERVE PROOFROLLING, AND PROVIDE COMPACTION AND STABILITY TESTING DURING THE PROGRESS OF THE WORK.
- NO SOIL SHALL BE PLACED IN A PERMANENT LOCATION UNLESS IT HAS BEEN APPROVED BY THE GEOTECHNICAL ENGINEER FOR THE INTENDED USE AND LOCATION.
- PRIOR TO PLACEMENT OF ANY FILL, THE SUBGRADE OR PREVIOUS LIFT OF FILL SHALL BE SUCCESSFULLY TESTED OR OTHERWISE APPROVED, AND DETERMINED TO BE READY FOR SUBSEQUENT WORK
- PRIOR TO PLACEMENT OF ANY AGGREGATE, PAVING, SLABS, STRUCTURES, FOOTINGS, PIPING, OR OTHER WORK, SUBGRADES AND OTHER BEARING SURFACES SHALL BE SUCCESSFULLY TESTED OR OTHERWISE APPROVED, AND DETERMINED TO BE READY FOR SUBSEQUENT WORK. CONTRACTOR SHALL ALLOW AND PARTICIPATE IN SOIL TESTING ACTIVITIES, INCLUDING ACTIVE COORDINATION WITH THE GEOTECHNICAL ENGINEER AND FURNISHING PROOFROLLING EQUIPMENT, MATERIALS, AND MANPOWER AS NEEDED.

CLEARING & GRUBBING

- * ALL VEGETATIVE MATERIAL DISLOCATED BY CLEARING AND GRUBBING ACTIVITIES SHALL BE COMPLETELY REMOVED FROM THE PROJECT SITE AND LEGALLY DISPOSED. NO ONSITE BURNING OF CLEARING WASTE SHALL OCCUR.
- * ALL PAVEMENT, CURB, PIPE, STRUCTURES AND OTHER PHYSICAL SITE FEATURES THAT ARE INDICATED OR REQUIRED TO BE REMOVED SHALL BE LEGALLY DISPOSED IN AN OFFSITE LOCATION.
- STRUCTURAL FILL IS DEFINED AS SOIL CLASSIFIED AS SM, SC, ML, AND CL, FREE OF VEGETATIVE MATTER, DEBRIS OR OTHER UNSUITABLE MATTER, FREE OF ROCKS LARGER THAN 3 INCHES IN ANY DIMENSION, CAPABLE OF BEING COMPACTED TO THE REQUIRED DENSITY, AND WHICH HAS BEEN APPROVED FOR USE BY THE GEOTECHNICAL ENGINEER.
- OTHER SOIL NOT MEETING THE DEFINITION FOR STRUCTURAL FILL MAY BE APPROVED BY THE GEOTECHNICAL ENGINEER FOR USE UNDER LIMITED CONDITIONS OR IN LIMITED AREAS. STRUCTURAL FILL SHALL GENERALLY BE PLACED AND COMPACTED WHEN THE SOIL'S MOISTURE CONTENT IS WITHIN 4 PERCENTAGE POINTS OF THE SOIL'S OPTIMUM MOISTURE CONTENT, IN LIFTS NOT TO EXCEED 8 INCHES LOOSE THICKNESS. THE IN-PLACE COMPACTED DENSITY SHALL BE AT LEAST 90 PCF. TIGHTER SPECIFICATIONS MAY BE REQUIRED FOR CERTAIN AREAS, SOIL TYPES, OR COMPACTION
- STRUCTURAL ZONES SHALL INCLUDE ALL AREAS SUBJECT TO DIRECT BEARING PRESSURE PLUS 10 FEET HORIZONTAL PLUS A 1:1 DOWNWARD SLOPE IN ANY AREAS OF FILL. ALL SOIL UNDER PAVEMENTS, BUILDINGS, AND WALKWAYS, OR IN STRUCTURAL ZONES ASSOCIATED WITH THESE AREAS SHALL BE APPROVED IN-SITU SOIL OR STRUCTURAL FILL, COMPACTED TO AT LEAST 95% OF THE SOIL'S MAXIMUM DRY DENSITY (MDD) PER ASTM D-698. TIGHTER REQUIREMENTS MAY APPLY
- IN THE BUILDING AREA, THE REQUIRED DENSITY OF FILL SHALL BE 100% MDD, EXCEPT THE TOP 12 INCHES OF FILL SHALL BE AT LEAST 98% MDD. WHERE THE BUILDING WILL BE PLACED ON IN-SITU SOIL, THE SOIL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER AND COMPACTED TO AT LEAST 98%
- ALL EXCESS OR UNSUITABLE SOIL SHALL BE LEGALLY DISPOSED IN AN OFFSITE OR APPROVED ONSITE
- WHERE LANDSCAPED OR YARD AREAS ABUT EXTERIOR BUILDING WALLS, FINISHED GROUND ELEVATIONS ADJACENT TO THE WALL SHALL BE AT LEAST 3 INCHES BELOW THE FINISHED FLOOR ELEVATION, AND SHALL SLOPE AWAY FROM THE BUILDING WITH POSITIVE DRAINAGE.

TRENCHING AND BACKFILLING

WHERE ROCK OR OTHER HARD MATERIAL OCCURS AT THE DESIGNED TRENCH BOTTOM, OVEREXCAVATE TRENCH DEPTH 6 INCHES AND REPLACE OVEREXCAVATION MATERIAL WITH #67 STONE BEDDING. WHERE THE DESIGNED TRENCH BOTTOM CONSISTS OF UNSTABLE BEARING SOIL, UNDERCUT TRENCH BOTTOM AND REPLACE UNDERCUT MATERIAL IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

BACKFILL SOIL SHALL BE STRUCTURAL FILL, PLACED AND COMPACTED IN ACCORDANCE WITH REQUIREMENTS FOR THE SPECIFIC AREA OF WORK, WITHOUT DAMAGING OR DISPLACING PIPE OR

STORM DRAINAGE SYSTEM

- * STORM DRAINAGE STRUCTURES SHALL CONFORM TO ROLESVILLE AND NCDOT STANDARDS, AND MAY BE CONSTRUCTED OF EITHER SOLID MASONRY OR PRE-CAST CONCRETE. "KNOCK-OUT" TYPE PRE-CAST STRUCTURES SHALL NOT BE USED WHERE THE DESIGNED PIPE CONFIGURATION WOULD REQUIRE REMOVAL OF STRUCTURAL CORNERS OR ALTERATION OF DESIGNED PIPE ENTRY ANGLES.
- STORM DRAINAGE PIPE LENGTHS SHOWN ARE APPROXIMATE, AS MEASURED FROM THE CENTER OF DRAINAGE STRUCTURES, AND TO THE END OF ANY FLARED END SECTION (FES), AS APPLICABLE.
- CONTRACTOR SHALL VERIFY AND COORDINATE EXACT POSITIONING OF STORM DRAINAGE PIPING AND STRUCTURES, AND SHALL MAKE ADJUSTMENTS AS NEEDED TO PROVIDE PROPER CONNECTIONS, STRUCTURE LOCATIONS, ORIENTATIONS, DIMENSIONS, ELEVATIONS, FRAME PLACEMENT, AND SURFACE DRAINAGE. REFER TO STORM DRAINAGE STRUCTURE DETAILS FOR DIMENSIONS, OFFSETS, CLEARANCES, SETBACKS FROM CURB, AND OTHER REQUIREMENTS. MODIFY STRUCTURES AS NEEDED TO ACCOMMODATE LARGE-DIAMETER PIPING, MULTIPLE PIPE PENETRATIONS, AND PIPE CONNECTION ANGLES. STORM DRAINAGE PIPING SHALL BE REINFORCED CONCRETE PIPE (RCP), CLASS III, CONFORMING TO ASTM C76, UNLESS OTHERWISE SPECIFIED. ALL JOINTS SHALL BE FULLY SEALED USING PREFORMED FLEXIBLE BUTYL RUBBER SEALING COMPOUND.

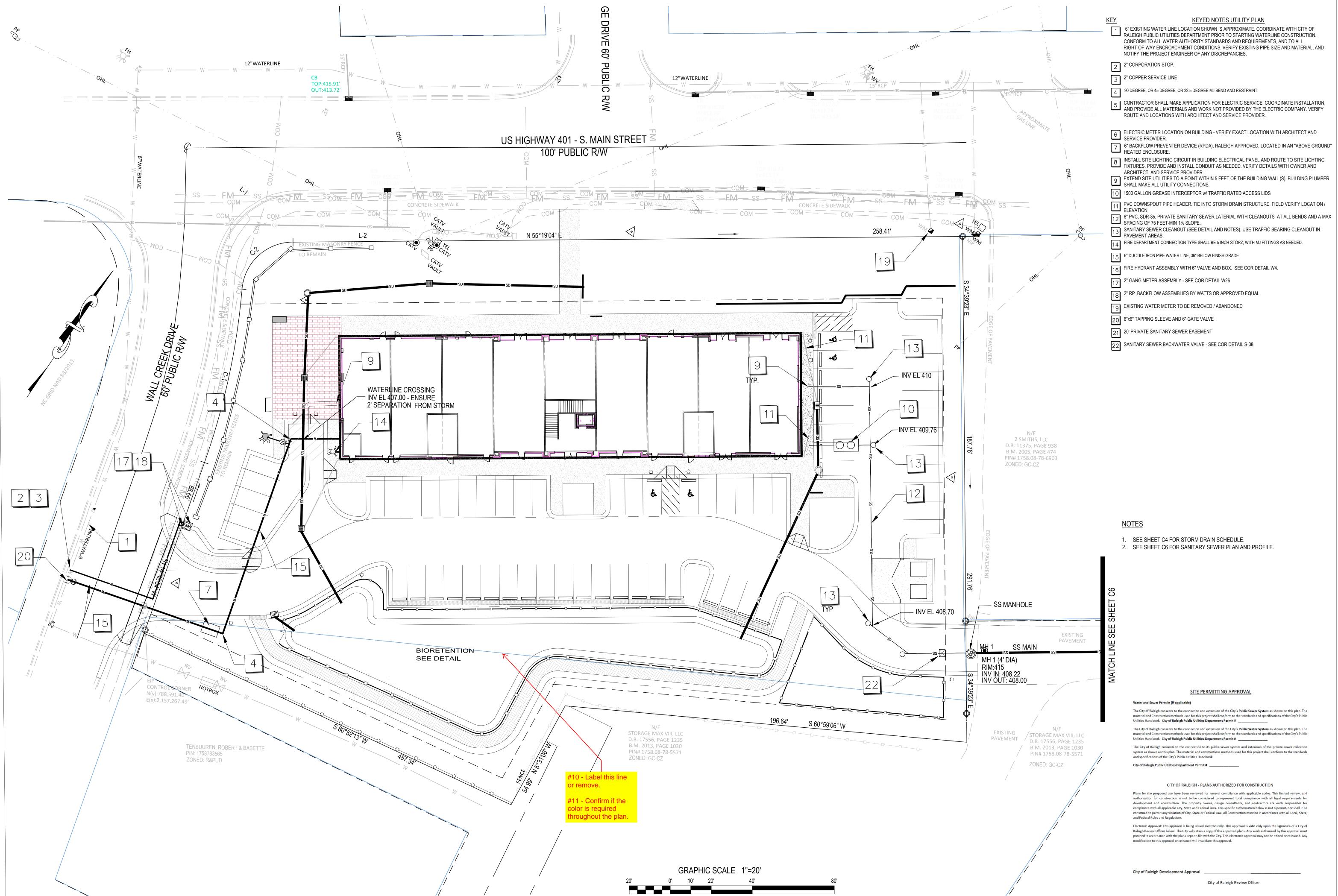
SURFACE DRAINAGE

ALL SPOT ELEVATIONS SHOWN ARE FINISHED SURFACE ELEVATIONS. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER ELEVATION CONTOURS. ALL ELEVATIONS SHOWN ON CURB AND GUTTER REFER TO TOP OF CURB, UNLESS OTHERWISE INDICATED ALL FINISHED PAVEMENT AND YARD SURFACES SHALL BE FINE-GRADED AND FINISHED TO HAVE POSITIVE SURFACE DRAINAGE TO A FREE-FLOWING DRAINAGE OUTLET, WITH NO IRREGULARITIES OR DEPRESSIONS THAT WOULD CAUSE UNINTENDED WATER PONDING. USE REVERSE-PITCH CURB AND GUTTER WHERE ADJACENT PAVEMENT SLOPES AWAY FROM CURB. AND STANDARD-PITCH CURB AND GUTTER ELSEWHERE. UNLESS OTHERWISE NOTED. PROVIDE POSITIVE DRAINAGE ALONG AND FROM ALL GUTTERS. TIE-INS TO EXISTING PAVEMENT, CURBS, WALKS, ETC. SHALL BE MADE WITH NEAT EDGES AND SMOOTH, GRADUAL TRANSITIONS THAT ARE SAFE, FUNCTIONAL, DURABLE, AND VISUALLY

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Engineering (3616 Waxwing (ake Forest, North Ca210-3934 Firm

Utility Plan South Main 503 South Main Streesville, Wake County, North

UTILITY SPECIFICATIONS

EXISTING CONDITIONS

INFORMATION ABOUT EXISTING UNDERGROUND FACILITIES AND SUBSURFACE CONDITIONS INDICATED ON THESE DRAWINGS IS NOT BASED ON AN EXHAUSTIVE INVESTIGATION OF SUCH FACILITIES OR CONDITIONS, AND THE ENGINEER MAKES NO WARRANTY TO ANY PARTY REGARDING THEM. EXISTING UTILITY LINE LOCATIONS SHOWN SHOULD BE CONSIDERED APPROXIMATE, AND ACTUAL UTILITIES AND CONDITIONS MAY DIFFER FROM THOSE INDICATED. IF DIFFERING UTILITIES OR CONDITIONS EXIST, THEY MAY BE ENCOUNTERED DURING THE COURSE OF THE PROJECT WORK, AND MAY IMPACT THE PROJECT SCOPE AND TIME REQUIREMENTS.

PRIOR TO BEGINNING WORK, AND AS NEEDED DURING THE COURSE OF PROJECT WORK, CONTRACTOR SHALL NOTIFY ALL APPLICABLE UTILITY LOCATION SERVICES AND UTILITY PROVIDERS TO REASONABLY VERIFY THE LOCATION OF ALL KNOWN OR SUSPECTED UTILITIES, IN ACCORDANCE WITH STATE REGULATIONS. CONTRACTOR IS ADVISED THAT SOME UTILITY PROVIDERS DO NOT SUBSCRIBE TO ONE-CALL SERVICES, AND MUST BE CONTACTED SEPARATELY.

- CONTRACTOR SHALL PROVIDE ADEQUATE MEANS AND METHODS FOR PROTECTION OF ALL EXISTING
- UTILITIES AND SITE FEATURES WHICH ARE INTENDED TO REMAIN IN SERVICE OR IN PLACE. CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL MEASURES DURING THE COURSE OF PROJECT WORK IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS. THE N.C. SUPPLEMENT TO THE MUTCD, ANY REGULATORY AGENCY
- CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY PROGRAMS AND MEASURES ON THE PROJECT SITE OR OTHERWISE RELATING TO THE PROJECT WORK, AND SHALL COMPLY WITH ALL SAFETY CODES AND REGULATIONS APPLICABLE THERETO, FOR THE PROTECTION OF WORKERS, VISITORS, AND THE GENERAL PUBLIC.

REQUIREMENTS, AND PROJECT-SPECIFIC SAFETY CONSIDERATIONS.

- ALL WATER SYSTEM AND SANITARY SEWER WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING: REQUIREMENTS OF THE CITY OF RALEIGH, INCLUDING THE LATEST EDITION OF CONSTRUCTION STANDARDS AND SPECIFICATIONS, CONSTRUCTION DETAILS, POLICIES AND PROCEDURES, AND FIELD
- DIRECTIVES BY THE UTILITY INSPECTOR. REGULATIONS OF NCDENR-DIVISION OF WATER QUALITY, INCLUDING NCAC 2T REGULATIONS AND MINIMUM DESIGN CRITERIA FOR THE PERMITTING OF GRAVITY SEWERS.
- REGULATIONS OF NCDENR-PUBLIC WATER SUPPLY, RULES GOVERNING PUBLIC WATER SYSTEMS.
- 4 STREET RIGHT-OF-WAY ENCROACHMENT PERMIT REQUIREMENTS, AS APPLICABLE. OSHA REQUIREMENTS RELATED TO SAFETY.

6 REQUIREMENTS OF THE N.C PLUMBING CODE.

- NOTIFY THE ENGINEER AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING OR RESUMING WATERLINE OR SANITARY SEWER WORK. THE ENGINEER MUST OBSERVE CONNECTIONS, INSTALLATION, BACKFILLING, AND TESTING WORK, IN ORDER TO PROVIDE NECESSARY PROJECT CERTIFICATIONS AND CLOSE-OUT DOCUMENTS
- NOTIFY THE APPLICABLE UTILITY AND ROADWAY AUTHORITIES IN ACCORDANCE WITH THEIR REQUIREMENTS PRIOR TO BEGINNING UTILITY WORK.
- NOTIFY THE GEOTECHNICAL ENGINEER AND TESTING SERVICE AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING OR RESUMING TRENCHING OR BACKFILLING WORK.

WHERE ROCK OR OTHER HARD MATERIAL OCCURS AT THE DESIGNED TRENCH BOTTOM, OVEREXCAVATE TRENCH DEPTH 6 INCHES AND REPLACE OVEREXCAVATION MATERIAL WITH #67 STONE

- WHERE THE DESIGNED TRENCH BOTTOM CONSISTS OF UNSUITABLE BEARING SOIL, UNDERCUT TRENCH BOTTOM AND REPLACE UNDERCUT MATERIAL IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S
- BACKFILL SOIL SHALL BE SUITABLE MATERIAL AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER. BACKFILL SOIL SHALL BE PLACED IN LOOSE LIFTS OF 8 INCH MAXIMUM THICKNESS AND COMPACTED TO 98% OF THE SOIL'S MAXIMUM DRY DENSITY, WITHOUT DAMAGING OR DISPLACING PIPE. INSTALL MARKING TAPE OR TRACER WIRE OVER UTILITY LINES AS REQUIRED BY THE LOCAL UTILITY

PIPING, FITTINGS, GASKETS, AND OTHER MATERIALS SHALL BE KEPT CLEAN WHILE BEING STORED AND DURING CONSTRUCTION ACTIVITIES. PIPE BUNDLES SHALL BE STORED ON FLAT SURFACES WITH UNIFORM SUPPORT, AND PROTECTED FROM PROLONGED EXPOSURE TO SUNLIGHT WITH A COVERING ALLOWING AIR FLOW UNDERNEATH. GASKETS SHALL NOT BE EXPOSED TO OIL, GREASE, OZONE, EXCESSIVE HEAT OR DIRECT SUNLIGHT. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR STORAGE AND HANDLING OF ALL MATERIALS.

PROVIDE ALL WATER SYSTEM MATERIALS IN ACCORDANCE WITH LOCAL WATER AUTHORITY REQUIREMENTS

- INSTALL WATERLINES TO PROVIDE 36" COVER TO FINISHED GRADE, UNLESS OTHERWISE SHOWN OR APPROVED BY THE ENGINEER AND INSPECTOR.
- ALL WATERLINE BENDS, CROSSES, TEES, AND ENDS SHALL BE RESTRAINED USING CONCRETE BLOCKING OR A MECHANICAL JOINT WEDGE-ACTION RESTRAINT SYSTEM RATED FOR 350 PSI.
- DO NOT OPERATE WATER SYSTEM VALVES WITHOUT PERMISSION OF THE WATER AUTHORITY. CONTRACTOR SHALL COORDINATE EXACT FIRE HYDRANT, WATER METER, AND BACKFLOW PREVENTER LOCATIONS WITH WATER AUTHORITY INSPECTOR PRIOR TO INSTALLATION.

BACKFLOW PREVENTION

BACKFLOW PREVENTER ASSEMBLIES AND ENCLOSURES SHALL CONFORM TO ALL LOCAL WATER AUTHORITY REQUIREMENTS, AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL PROVIDE INITIAL TESTING AND CERTIFICATIONS AS REQUIRED FOR ACCEPTANCE.

WATER MAINS SHALL BE INSTALLED AND MADE OPERATIONAL AS SOON AS PRACTICAL TO PROVIDE ACTIVE FIRE HYDRANT SERVICE DURING BUILDING CONSTRUCTION. COORDINATE TYPE AND LOCATION OF HYDRANTS, FIRE DEPARTMENT CONNECTIONS, AND OTHER FIRE

PROTECTION SYSTEM COMPONENTS WITH LOCAL FIRE CODE OFFICIAL PRIOR TO INSTALLATION.

UTILITY SPECIFICATIONS (cont.)

SANITARY SEWER

* SANITARY SEWER MAIN PIPING SHALL BE DUCTILE IRON PIPE PER AWWA C151, PRESSURE CLASS 350, WITH INTERIOR EPOXY LINING AND EXTERIOR BITUMINOUS SEAL. JOINTS SHALL BE PUSH-ON TYPE WITH RUBBER GASKETS PER AWWA C111. SANITARY SEWER MAIN PIPING SHALL BE PVC PIPE PER ASTM D3034, SDR 35. JOINTS SHALL BE

- PUSH-ON TYPE WITH RUBBER GASKETS PER ASTM F477.
- SANITARY SEWER MAINS SHALL BE INSTALLED WITH 36 INCHES MINIMUM COVER TO FINISHED GRADE, EXCEPT AS OTHERWISE SPECIFIED. SANITARY SEWER SERVICE LINES AND CLEANOUTS SHALL BE INSTALLED IN ACCORDANCE WITH THE N.C. PLUMBING CODE, AND HAVE 24 INCHES MINIMUM COVER TO FINISHED GRADE. SERVICE LINES
- SHALL MAINTAIN MAXIMUM SERVICE DEPTH USING A 2.1% SLOPE UNLESS OTHERWISE SPECIFIED. SERVICE PIPE AND FITTINGS WITHIN PUBLIC STREET RIGHTS-OF-WAY SHALL BE CAST IRON WITH GASKETED JOINTS, AND IN OTHER AREAS SHALL BE SCHEDULE 40 PVC WITH SOLVENT WELDED JOINTS, EXCEPT ALL CLEANOUTS SHALL BE FITTED WITH THREADED BRONZE PLUGS.
- SERVICE LINE CLEANOUTS IN VEHICULAR AREAS SHALL BE TRAFFIC BEARING CLEANOUTS.

FOR CONNECTIONS TO EXISTING UTILITY AND DRAINAGE LINES, CONTRACTOR SHALL VERIFY EXISTING PIPE SIZE AND MATERIAL, AND PROVIDE APPROPRIATE CONNECTION FITTINGS.

ANY CONNECTION TO EXISTING UTILITES, OR ANY UTILITY SERVICE INTERRUPTION, SHALL BE FIRST COORDINATED WITH THE GOVERNING UTILITY AUTHORITY, AND PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THAT AUTHORITY.

THE GEOTECHNICAL ENGINEER SHALL PROVIDE MATERIAL AND DENSITY TESTING DURING THE COURSE OF THE WORK. PRIOR TO PLACEMENT OF ANY BASE OR PAVEMENT, CONTRACTOR SHALL

- PROVIDE PROOF-ROLLING OF ALL TRENCH AREAS TO THE SATISFACTION OF THE GEOTECHNICAL PRIOR TO ANY SANITARY SEWER OR WATER SYSTEM IMPROVEMENTS BEING PLACED INTO SERVICE: 1 CONTRACTOR SHALL SUCCESSFULLY TEST ALL WATER MAINS FOR WATER LEAKAGE AND WATER
- QUALITY IN ACCORDANCE WITH CITY OF RALIEGH AND NCDENR REQUIREMENTS. 2 CONTRACTOR SHALL SUCCESSFULLY TEST ALL SANITARY SEWER MAINS FOR DEFLECTION AND LEAKAGE, AND TEST ALL SANITARY MANHOLES FOR LEAKAGE, IN ACCORDANCE WITH CITY OF RALEIGH AND NCDENR REQUIREMENTS.
- 3 CONTRACTOR SHALL PERFORM VIDEO INSPECTION OF INSTALLED SANITARY SEWER MAINS AND PROVIDE DOCUMENTATION PER LOCAL REQUIREMENTS.
- 4 CONTRACTOR SHALL PROVIDE TO ENGINEER A SET OF MARKED UP DRAWINGS SHOWING UTILITY CHANGES, DIMENSIONAL ADJUSTMENTS, DISCOVERED SUBSURFACE UTILITIES, AND OTHER AS-BUILT
- 5 CONTRACTOR SHALL PROVIDE DOCUMENTATION OF ALL TESTING RESULTS TO ENGINEER. ALL IMPROVEMENTS SHALL PASS FINAL INSPECTION BY ENGINEER AND THE UTILITY AUTHORITY.
- 7 ENGINEER SHALL SUBMIT ALL CERTIFICATIONS AND OTHER CLOSE-OUT DOCUMENTS TO APPLICABLE LOCAL AND STATE AUTHORITIES.

CONTRACTOR SHALL PROVIDE PRIMARY COORDINATION WITH UTILITY SERVICE PROVIDERS FOR BUILDING UTILITY SERVICES. THIS WORK SHALL INCLUDE MAKING APPLICATIONS FOR SERVICE, COORDINATING AND SCHEDULING WORK BY OTHERS, VERIFYING ROUTINGS AND EQUIPMENT

LOCATIONS, FURNISHING AND INSTALLING CONDUIT AND PADS, AND RELATED WORK AS NEEDED. CONTRACTOR SHALL PROVIDE PROPER RESTORATION AND CLEAN-UP OF ALL AREAS DISTURBED BY UTILITY CONSTRUCTION.

CITY OF RALEIGH UTILITY NOTES:

1.ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: COR PUD HANDBOOK, CURRENT EDITION)

2.UTILITY SEPARATION REQUIREMENTS: a) A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL

b) WHEN INSTALLING WATER &/OR SEWER MAINS. THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER

c) WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS

d) 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER

e) MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS: MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & S-49)

f) ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED 3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION

4. ONTRACTOR SHALL MAINTAIN CONTINUOUS WATER TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT 5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS. 4' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.

6. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISITNG WATER AND SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE. 7. INSTALL $\frac{3}{4}$ " COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'x2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. (NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW AND PRESSURE). 8. INSTALL 4" PVC SEWER SERVICES AT 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE AND SPACED EVERY 75 LINEAR FEET MAXIMUM.

9. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE. 10. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.

11. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS AND SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.

12. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS AND INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE CORPUD FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONTACT TIM BEASLEY AT (919)996-2334 OR TIMOTHY.BEASLEY@RALEIGHNC.GOV FOR MORE INFORMATION. 13. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST.~THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT (919) 212-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION

<u>NOTES</u>

SEE SHEET C5 FOR UTILITY PLAN.

ATTENTION CONTRACTORS sewer, and/or reuse, as approved in these plans, is responsible for contacting the Public Works Department at (919) 996-2409, and the Public Utilities Department at (919) 996-4540 at least

Failure to notify both City Departments in advance of beginning construction, will result in the issuance of monetary fines, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.

twenty four hours prior to beginning any of their construction.

Failure to call for Inspection, Install a Downstream Plug, have Permitted Plans on the Jobsite, or any other Violation of City of Raleigh Standards will result in a Fine and Possible Exclusion from future work in the City of Raleigh.

SITE PERMITTING APPROVAL

Water and Sewer Permits (If applicable)

The City of Raleigh consents to the connection and extension of the City's Public Sewer System as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public

The City of Raleigh consents to the connection and extension of the City's Public Water System as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. City of Raleigh Public Utilities Department Permit #

The City of Raleigh consents to the connection to its public sewer system and extension of the private sewer collection system as shown on this plan. The material and constructions methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh Public Utilities Department Permit #

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization below is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law. All Construction must be in accordance with all Local, State, and Federal Rules and Regulations.

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval

City of Raleigh Review Officer

Sewer anitary South South Wake Co rofile and Plan

Д

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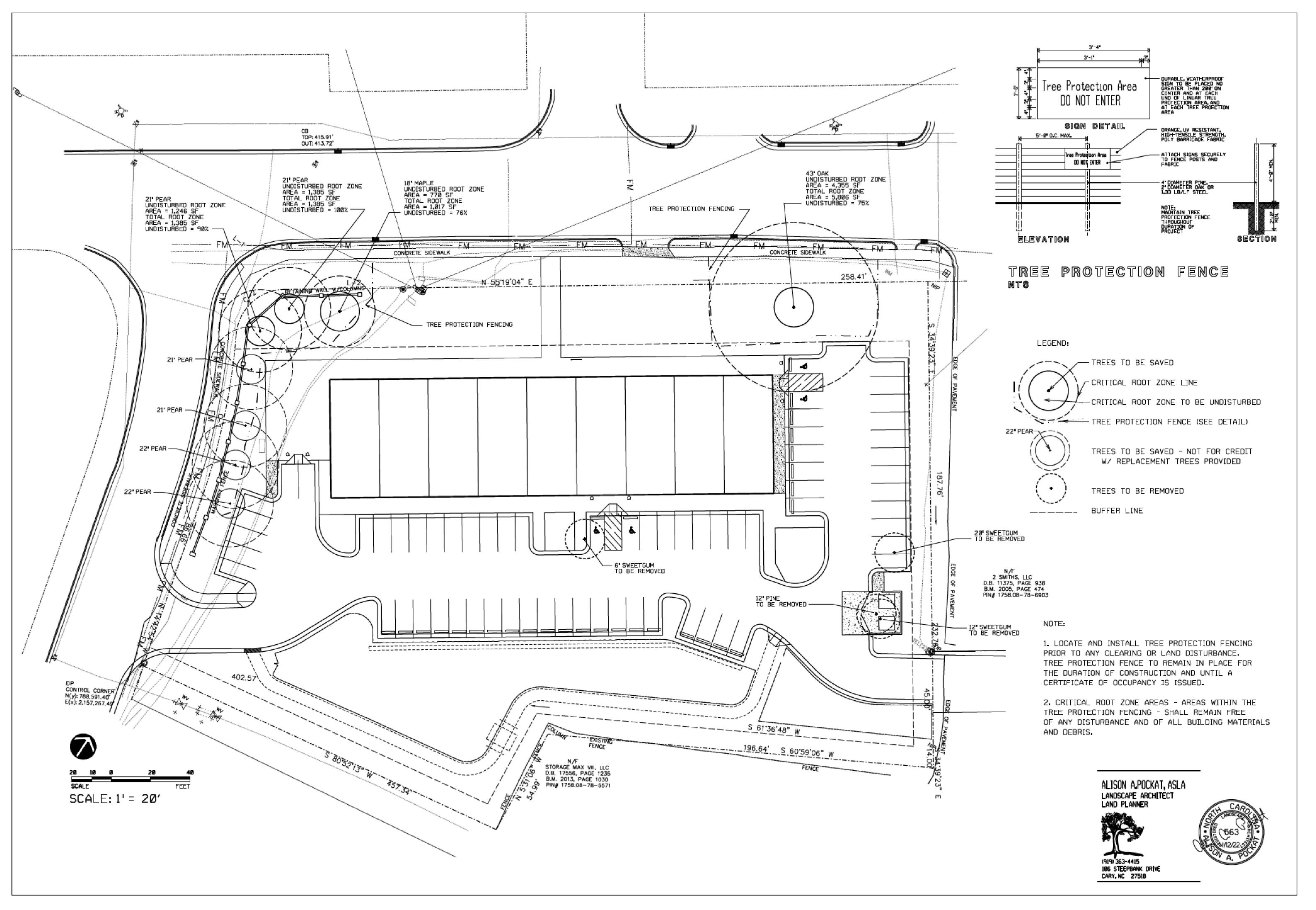
and

Engineering

ettle

(7)

3616 V Forest, -3934



Gettle Engineering and Design, PLLC
3616 Waxwing Court,
Wake Forest, North Carolina 27587
(919) 210-3934 Firm License P-2538

 1
 07-26-2022
 INITIAL SUBMITTAL
 KPG

 2
 10-3-2022
 Revised per Town / COR Comment
 KPG

 3
 01-10-2023
 Revised per Town / COR / Wake Co Comment
 KPG

 4
 DATE
 COMMENT
 BY

 5
 DATE
 COMMENT
 BY

 6
 DATE
 COMMENT
 BY

 8
 Date
 Comment
 BY

Preservation Plan
South Main

Design,

PROPOSED PLANT MATERIAL

-COUNT WITHIN CLUSTER

SEEDED AREA - SEE PLANT NOTES

EXISTING PLANT MATERIAL TO REMAIN

TREE PROTECTION FENCE LOCATION

ALISON A POCKAT, ASLA

LANDSCAPE ARCHITECT LAND PLANNER

(919) 363-4415

CARY, NC 27518

106 Steepbank Drive

— PLANT KEY

Gettle Engineering and E 3616 Waxwing Court, Wake Forest, North Carolina 2 (919) 210-3934 Firm License
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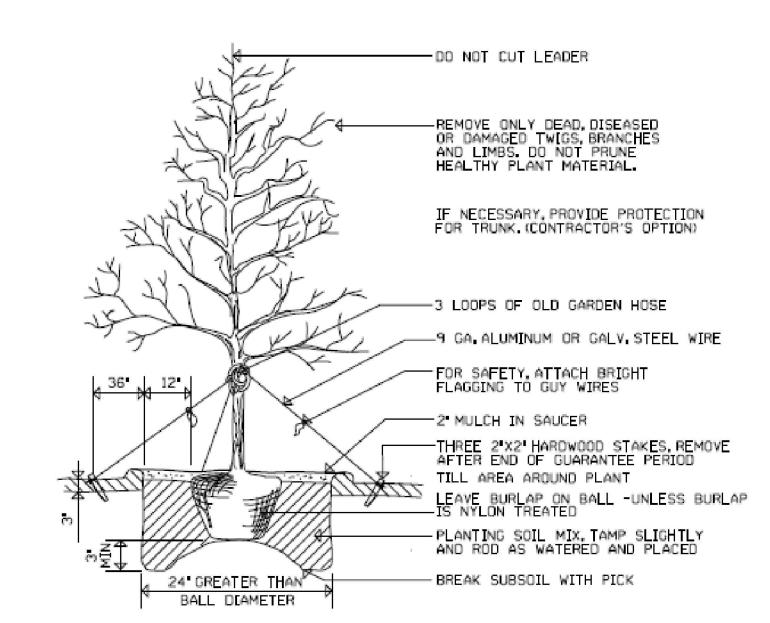
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Project No. 22003 (J)

503 South Mair Rolesville, Wake County, outh dsc an

Dwg No.

KEY SHADE TREES LS NS OC	13 12 10	PLANT NAME LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA', FRUITLESS SWEETGUM NYSSA SYLVATICA, BLACK GUM QUERCUS COCCINEA, SCARLET OAK	SIZE 2.5'CAL, 8-10'HT 2.5'CAL, 8-10'HT 2.5'CAL, 8-10'HT	ON / CENTER SPACING 20' 20' 20'	PLANTING 6.2.2.2.B STREET X			6.2.4.5.B.3 MITIGATION X
UNDERSTORY TREES								
CC CV IO JV	4 4 3 3	CERCIS CANADENSIS, EASTERN REDBUD CHIONANTHUS VIRGINICUS, FRINGE TREE ILEX OPACA 'TINGA', TINGA AMERICAN HOLLY JUNIPERUS VIRGINIANA, EASTERN RED CEDAR	#10, 8'HT #10, 8'HT 8'HT, B&B 8'HT, B&B	15' 15' 15' 15'	x x	X X X	X X X	
SHRUBS								
HF IF IG IV LP MC RG VO	64 44 89 19 43 50 32 70	HYPERICUM FRONDOSUM 'SUNBURST', ST JOHN'S WORT ILLICIUM FLORIDANUM 'MISS SCARLET', ANISE ILEX GLABRA 'SHAMROCK', SHAMROCK INKBERRY ITEA VIRGINICA 'LITTLE HENRY', SWEETSPIRE LEUCOTHOE POPULIFOLIA, FLORIDA LEUCOTHOE MYRICA CERIFERA, WAX MYRTLE RHUS X 'GROW LOW', GROW LOW SUMAC VIBURNUM OBOVATUM 'MRS SCHILLER'S DELIGHT', VIBURNUM	#03, 15-18"HT #03, 18-24"HT #03, 24-30"HT #03, 15-18"HT #03, 24-30"HT #03, 24-30"HT #03, 15-18"HT #03, 15-24"HT	3' 4' 3' 5' 5' 5' 4'		X X X X X	X X X X	
GRASSES								
MU	28	MUHLENBERGIA CAPILLARIS, PINK MUHLY GRASS	#Ø3	3′				



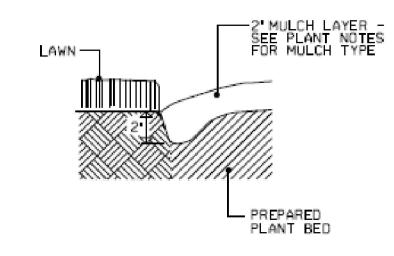
NOTE: GUYING IS REQUIRED ONLY ON TREES OVER 10' HIGH.
SET TREE AT IT'S ORIGINAL GRADE. COLLAR LINE MUST MATCH THE NEW SOIL LINE.

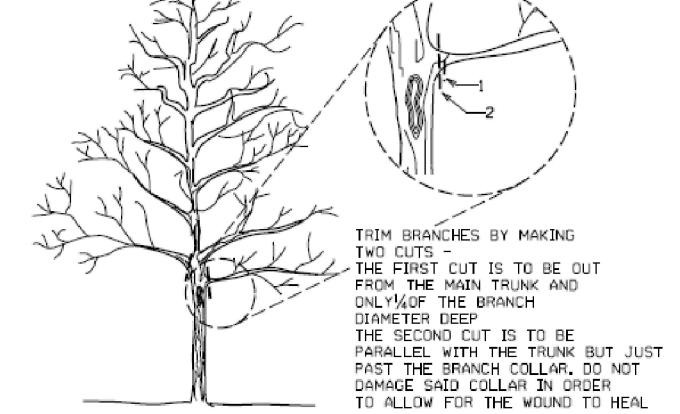
TREE PLANTING DETAIL

SEEDED AREAS

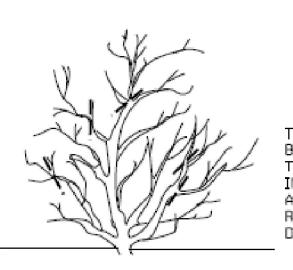
ERNMX 306 - NC PIEDMONT UPL MEADOW MIX - 1 LB PANICUM RIGIDULUM - REDTOP PANIC GRASS - 2 LB

1. SEED LISTED ON THE PLAN CAN BE OBTAINED THROUGH ERNST SOUTHERN NATIVE SEEDS www.ernstseed.com - PHONE NUMBER 1-800-873-3321.





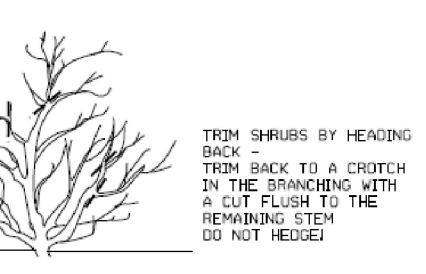
TREE PRUNING NTS



SHRUB PRUNING



LAWN/BED EDGING



SHRUB PLANTING DETAIL NTS

TWICE BALL DIAMETER (MIN.)

TO A MAX. OF 24" PLUS BALL DIAMETER

2" MULCH IN SAUCER-

PLANTING SOIL MIX, MOISTEN TAMP SLIGHTLY, AND ROD AS PLACED

NOTES FOR THE ENHANCED PROTECTION OF THE 42'OAK

- 1. PLACE TREE PROTECTION FENCING AS SHOWN ON PLAN.
- 2. MULCH THE AREA WITHIN THE TREE PROTECTION FENCING WITH 1 3' OF WOOD OR BARK CHIPS, SELECTION TO BE MADE BASED ON THE MATERIAL BEING LIGHT WEIGHT BUT ABLE TO ACT AS A MOISTURE BARRIER.
- 3. PROVIDE SUPPLEMENTAL IRRIGATION AS NEEDED DURING THE DURATION OF CONSTRUCTION DURING DRY PERIODS, ENSURE THAT IRRIGATION IS NOT EXCESSIVE TO THE POINT OF CREATING EXCESSIVE WET AREAS AROUND THE TREE. A GOOD OPTION FOR THIS WATERING IS THE USE OF 'LEAKY PIPE'.
- 4. OBTAIN A SOIL TEST FROM A SOIL SAMPLE TAKEN FROM THE AREA WITHIN THE TREE PROTECTION FENCING. FERTILIZE IN THE SPRING PRIOR TO LEAF OUT AND IN THE FALL AS PER THE RECOMMENDATIONS FROM THE SOIL TEST FOR NUTRIENT AND PH REQUIREMENTS.
- 5. ENSURE THAT NO FOOT OR VEHICLE TRAFFIC IS ALLOWED WITHIN THE TREE PROTECTION FENCING AREA AND THE NOTHING IS DUMPED IN THIS AREA.

-DO NOT THIN BRANCHES OR FOLIAGE, REMOVE ONLY PLANT PARTS THAT ARE DEAD, DISEASED OR DAMAGED.

FINISHED GRADE - SAME AS INVERT OF SAUCER

-LEAVE BURLAP ON BALL UNLESS BURLAP IS NYLON TREATED

6. PRUNE AND LIMBS THAT GET DAMAGED DURING THE CONSTRUCTION. USE A CERTIFIED ARBORIST TO PROVIDE THIS PRUNING.

MAINTENANCE NOTES:

 PROVIDE A HALF INCH ANNUAL APPLICATION OF YARD WASTE COMPOST TO ALL LAWN AND BEDDED AREAS IN THE EARLY SPRING. RAKE OUT EVENLY BUT DO NOT TILL IN. FERTILIZE GRASS IN EARLY FALL WITH A RATIO OF 4-3-1 OR MULTIPLES THEREOF.

2. REFURBISH MULCH TWICE PER YEAR - SPRING AND FALL. DO NOT EXCEED 2" OF MULCH AND COMPOST COMBINED AT ANY ONE TIME.

3. HAND WEED UNLESS WEED NUMBERS BECOME EXCESSIVE. TREAT EXCESSIVE BROADLEAF WEEDS WITH AN APPLICATION OF 2,4-D AS DIRECTED ON PACKAGE. TREAT EXCESSIVE WEED GRASS PROBLEMS WITH ROUNDUP.

4. MINOR PEST INFESTATIONS CAN GO UNTREATED. EXCESSIVE INSECT AND GRUB INFESTATIONS NEED TO BE TREATED AS DIAGNOSED WITH AN APPROPRIATE PESTICIDE. EXCESSIVE FUNGAL INFESTATIONS NEED TO BE TREATED IN TWO TO THREE SUCESSIVE TREATMENTS OVER A PERCOD OF TWO TO THREE WEEKS WITH AN APPROPRIATE FUNGICIDE.

5. PRUNING / TRIMMING OF SHRUBS SHOULD BE DONE IN EARLY SPRING JUST PRIOR TO LEAFFING OUT. HEAD LIMBS WITH EXCESSIVE HEIGHT - REMOVE LIMB BACK TO THE CROTCH IN THE MAIN STEM. DO NOT HEDGEL

6. MOWING OF LAWN GRASS SHOULD BE DONE AS NEEDED TO KEEP NEAT AND PASSABLE, MOW TO A HEIGHT OF 2.5 - 3'.

7. MOW ORNAMENTAL GRASSES AND SEEDING AREAS - MUHLY GRASS, PANIC GRASS, ERNMX 306 - ANNUALLY IN LATE FALL OR EARLY SPRING TO A HEIGHT OF 8" TO KEEP DOWN WEED TREES...

> ALISON A POCKAT, ASLA LANDSCAPE ARCHITECT LAND PLANNER

(919) 363-4415 106 STEEPBANK DRIVE CARY, NC 27518



Project No. 22003 Dwg No.

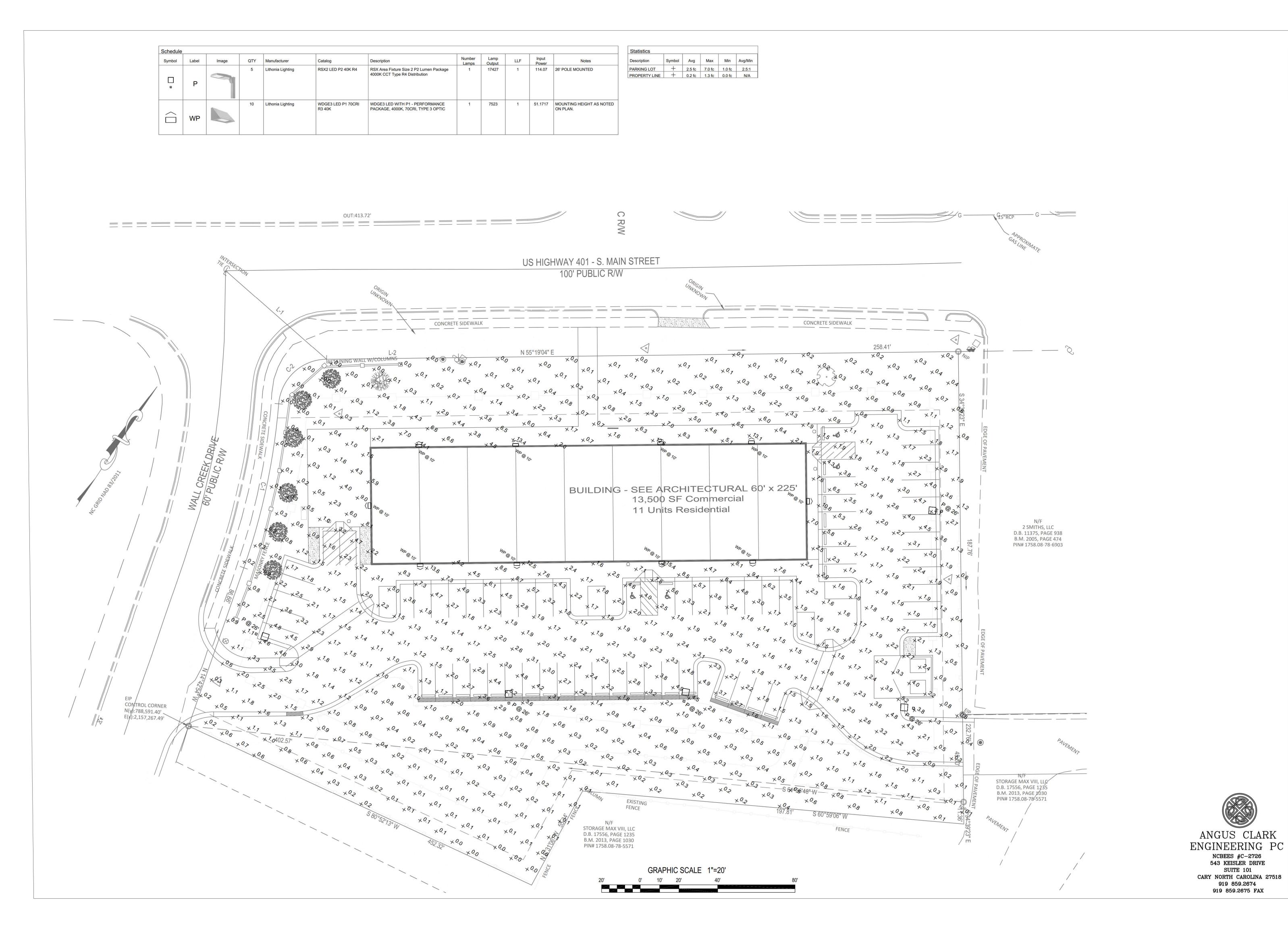
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Design,

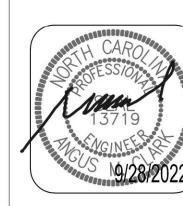
and

Gettle

Engineering a 3616 Waxwing (ake Forest, North Ca 210-3934 Firm



Gettle Engineering and Design, PLLC 3616 Waxwing Court, Wake Forest, North Carolina 27587 (919) 210-3934 Firm License P-2538





Plan Site

Project No. XXXXX



RSX2 House side shield (includes 2 shields)

RSX2HSAFRR (FINISH) U RSX2 House side shields for AFR rotated optics (includes 2 shields

RSXSCB (FINISH) U RSX Surface conduit box (specify finish, for use with WBA, WBA not included) Photocell -SSL twist-lock (120-277V) ¹⁹

RSXRPA (FINISH) U RSX Universal round pole adaptor plate (specify finish) RSXWBA (FINISH) U RSX WBA wall bracket (specify finish) 1

RSX2EGS (FINISH) U External glare shield (specify finish)

RSX2EGFV (FINISH) U External glare full visor (specify finish)

DLL347F 1.5 CUL JU Photocell -SSL twist-lock (347V) 19

DLL480F 1.5 CUL JU Photocell -SSL twist-lock (480V) 19

Click here to visit Accessories.

HANDHOLE ORIENTATION

RSX POLE DRILLING

RSX STANDARD ARM & ADJUSTABLE ARM

Top of Pole

Template #8

DSHORT SBK U Shorting cap 19

NOGITIME. OF CUS INSTERIOR LISTED

are available.

Introduction The new RSX LED Area family delivers maximum value by providing significant energy savings, long

life and outstanding photometric performance at an affordable price. The RSX2 delivers 11,000 to 31,000 lumens allowing it to replace 250W to 1000W HID The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted

on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable

integral slipfitter and other mounting configurations

EXAMPLE: RSX2 LED P6 40K R3 MVOLT SPA DDBXD

lit the Tab key or mouse over the page to see all interactive elements.

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes

in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless

controls, the WDGE family provides additional energy savings and code compliance.

WDGE3 has been designed to deliver up to

lighting from pole mounted luminaires.

4,500

12,000

20,000

EXAMPLE: WDGE3 LED P3 40K 70CRI R3 MVOLT SRM DDBXD

12,000 lumens through a precision refractive lens

with wide distribution, perfect for augmenting the

6,000

22,000

Shipped separately

DDBXD Dark bronze

DNAXD Natural aluminum

DDBTXD Textured dark bronze

DNATXD Textured natural aluminum

available with emergency battery backup or sensors/controls

Rev. 03/01/22

DBLBXD Textured black

DWHGXD Textured white

1 347V and 480V not available with E15WH and E20WC.
2 PE not available in 480V and with 4 Not qualified for DLC. Not

DSSTXD Textured sandstone

DBLXD Black

DWHXD White

DSSXD Sandstone

AWS 3/8inch Architectural wall spacer

PBBW Surface-mounted back box (top, left,

is no junction box available.

right conduit entry). Use when there

RSX2 LED					
Series	Performance Package	Color Temperature	Distribution	Voltage Mo	ounting
RSX2 LED	P1 P2 P3 P4 P5 P6	30K 3000K 40K 4000K 50K 5000K	R2 Type 2 Wide R3 Type 3 Wide R3S Type 3 Short R4 Type 4 Wide R4S Type 4 Short R5 Type 5 Wide 1 R5S Type 5 Short 1 AFR Automotive Front Row Right Rotated AFR190 Automotive Front Row	XVOLT (277V-480V) ⁴ (use specific voltage for options as noted) IS 120 ³ 277 ⁵ W/ 208 ³ 347 ⁵ W/ 240 ³ 480 ⁵ AA	PA Round pole mounting (3.2" min. dia. RND pole for 2, 3, 4 at 90°, 3.0" min. dia. RND pole for 1 at 90°, 2 at 180°, 3 at 120°) Mast arm adaptor (fits 2-3/8" OD horizontal tenon)

Options				Finish	
Shipped	Installed	Shipped I	installed	DDBXD	Dark Bronze
HS	House-side shield ⁷	*Standal	one and Networked Sensors/Controls (factory default settings, see table page 9)	DBLXD	Black
PE	Photocontrol, button style 8,9	NLTAIR2	nLight AIR generation 2 13,15,16	DNAXD	Natural Aluminum
PEX	Photocontrol external threaded, adjustable 9,10	PIRHN	Networked, Bi-Level motion/ambient sensor (for use with NLTAIR2) 13,16,17	DWHXD	White
PER7	Seven-wire twist-lock receptacle only (no controls)9,11,12,13	BAA	Buy America(n) Act Compliant	DDBTXD	Textured Dark Bronze
CE34	Conduit entry 3/4" NPT (Qty 2)			DBLBXD	Textured Black
SF	Single fuse (120, 277, 347) 5	*Note: PIR	RHN with nLight Air can be used as a standalone dimming sensor with out-of-box	DNATXD	Textured Natural Aluminum
DF	Double fuse (208, 240, 480) ⁵		r as a wireless networked solution. See factory default settings table. Sensor coverage	DWHGXD	Textured White

1,200

1,200

7,500

12,000

R3 Type 3

R4 Type 4

RFT Forward Throw

circuits with external dusk to dawn switching.

NLTAIR2 PIR nLightAIR Wireless enabled bi-level motion/ambient sensor for 8–15' mounting heights.

NLTAIR2 PIRH nLightAIR Wireless enabled bi-level motion/ambient sensor for 15-30' mounting heights.

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for dusk to dawn operation.

Networked Sensors/Controls

See page 4 for out of box functionality

Bottom conduit entry for back box

(PBBW). Total of 4 entry points.

Accessories

WDGEAWS DDBXD WDGE 3/8inch Architectural Wall Spacer (specify finish) WDGE3PBBW DDBXD U WDGE3 surface-mounted back box (specify finish)

SPD10KV 10kV Surge pack

BAA Buy America(n) Act Compliant

LITHONIA LIGHTING.

2,000

2,000

8,500

16,000

MVOLT

347¹

480¹

Held adjustable output ³ /13	Shipped	Shipped Separately (requires some field					
0–10V dimming extend out back of housing for external control (control ordered separate) 9,13	EGS	External glare shield 6					
Dual switching 9,14	EGFV	External glare full visor (360° arou					
,	BS	Bird spikes 18					

around light aperture) 7 Lithonia RSX2 Area LED Rev. 06/16/22 Page 1 of 9 One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.acuitybrands.com © 2011-2022 Acuity Brands Lighting, Inc. All rights reserved.

Introduction

3,000

10,000

18,000

SRM Surface mounting bracket

Washer bracket (dry/

damp locations only)

ICW Indirect Canopy/Ceiling

LITHONIA LIGHTING COMMERCIAL OUTDOOR

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NOTES

Any Type 5 distribution, is not available with WBA.

MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).

HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).

XVOLT driver operates on any line voltage from 347-480V (50/60 Hz).

XVOLT driver operates on any line voltage from 277V-480V (50/60 Hz). XVOLT not available with fusing (SF or DF) and not available with PE or PEX.

Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.

Maximum tilt is 90° above horizontal.

It may be ordered as an accessory.

Requires MVOLT or 347V.

Not available in combination with other light sensing control options (following options cannot be combined: PE, PEX, PER7, FAO, DMG, DS, PIRHN), Exception: PE or PEX and FAO can be combined).

External Glare Shield

Accessories including bullhorns, cross arms and other adpaters are available under the accessories tab at Lithonia's Outdoor Poles and Arms product page.

Round Tenon Mount - Pole Top Slipfitters

RPA, AARP RPA, AARP

Drill/Side Location by Configuration Type

RSX2 - Luminaire EPA

SPA - Square Pole Adaptor

Lithonia RSX2 Area LED Rev. 06/16/22 Page 2 of 9

Twistlock photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included. Dimming leads capped for future use.

For units with option PER7, the mounting must be restricted to +/- 45° from horizontal aim per ANSI C136.10-2010.

Two or more of the following options cannot be combined including DMG, DS, PER7, FAO and PIRHN.

Diving, US, YEKY, FACJ and PIRHN.

DS only available on performance package P5 and P6.

Must be ordered with PIRHN.

Requires MVOLT or HVOLT.

Must be ordered with NLTAIR2. For additional information on PIRHN visit here.

18 Must be ordered with fixture for factory pre-drilling.

19 Requires luminaire to be specified with PER7 option. Ordered and shipped as a separate line item from Acuity Brands Controls.

External 360 Full Visor

AS3-5 190 AS3-5 280 AS3-5 290 AS3-5 320 AS3-5 390 AS3-5 490 AST25-190 AST25-280 AST25-290 AST25-320 AST25-390 AST25-490

AST35-280 AST35-290 AST35-320

 Head Location
 Side B
 Side B & D
 Side B & C
 Round Pole Only
 Side B, C & D
 Side A, B, C & D

#8 Drill Nomenclature DM19AS DM28AS DM29AS DM32AS DM39AS DM49AS

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Lumen Output

								40										
Performance Package P1 P2																		
		R2	7,037	136	1	0	1	7,649	148	2	0	1	7,649	148	2	0		
D1	52W	R3	6,922	134	1	0	2	7,524	145	1	0	2	7,524	145	1	0	Γ	
ΥI	52W	R4	7,133	138	1	0	2	7,753	150	1	0	2	7,753	150	1	0	Γ	
	59W	RFT	6,985	135	1	0	2	7,592	147	1	0	2	7,592	147	1	0	Ī	
		R2	7,968	135	2	0	1	8,661	147	2	0	1	8,661	147	2	0	Γ	
DO		R3	7,838	133	1	0	2	8,519	144	1	0	2	8,519	144	1	0	Γ	
PZ		39W	R4	8,077	137	1	0	2	8,779	149	1	0	2	8,779	149	1	0	Ī
		RFT	7,909	134	1	0	2	8,597	146	2	0	2	8,597	146	2	0	Γ	
		R2	9,404	132	2	0	1	10,221	143	2	0	1	10,221	143	2	0	Ī	
D2	71W	R3	9,250	130	2	0	2	10,054	141	2	0	2	10,054	141	2	0	Ī	
P3	/ IW	R4	9,532	134	2	0	2	10,361	145	2	0	2	10,361	145	2	0	Ī	
		RFT	9,334	131	2	0	2	10,146	142	2	0	2	10,146	142	2	0	Ī	
		R2	11,380	129	2	0	1	12,369	140	2	0	1	12,369	140	2	0	Γ	
D4	0014	R3	11,194	127	2	0	2	12,167	138	2	0	2	12,167	138	2	0	T	
P4	88W	R4	11,535	131	2	0	2	12,538	142	2	0	2	12,538	142	2	0	T	
		RFT	11,295	128	2	0	2	12,277	139	2	0	2	12,277	139	2	0	Ť	

Electrical Load

40°C

LITHONIA LIGHTING.

104°F

Performance	System Watts	Current (A)									
Package	System wates										
P1	52W	0.437	0.246	0.213	0.186	0.150	0.110				
P2	59W	0.498	0.287	0.251	0.220	0.175	0.126				
P3	71W	0.598	0.344	0.300	0.262	0.210	0.152				
P4	88W	0.727	0.424	0.373	0.333	0.260	0.190				

0.97

Lumen Out Mode (400	tput in Eme OK, 70 CRI	ergency)
	Dist. Type	Lumens
	R2	3,185
F15WH	R3	3,133
EIDWH	R4	3,229
	RFT	3,162
·	R2	3,669
F20WC	R3	3,609
EZUWC	R4	3,719

ctors to de	•	re (LAT) Multipliers on output for average ambient	Projected LED Lumen N Data references the extrapolated perfambient, based on 10,000 hours of LE IESNA TM-21-11).			atforms noted i M-80-08 and pr	in a 25°C ojected po
		Lumen Multiplier	To calculate LLF, use the lumen mainte operating hours below. For other lume	nance factor	that corresponds	to the desired	number o
o°C	32°F	1.05					100
0°C	50°F	1.03	Operating Hours	0	25,000	50,000	100,0
)°C	68°F	1.01	Lumen Maintenance Factor	1.0	>0.98	>0.97	>0.9
c	77°F	1.00					
c	86°F	0.99					



ANGUS CLARK ENGINEERING PC NCBEES #C-2726 543 KEISLER DRIVE SUITE 101 CARY NORTH CAROLINA 27518 919 859.2674 919 859.2675 FAX

Lighting Fixtures
South Main
South Main Street
Wake County, North Carolina 503 Rolesville, V Site

PLLC

Design,

and

Gettle

Engineering and 3616 Waxwing (ake Forest, North Cale 210-3934 Firm

27587 se P-2

Project No. XXXXX

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Lumen Multiplier for 80CRI

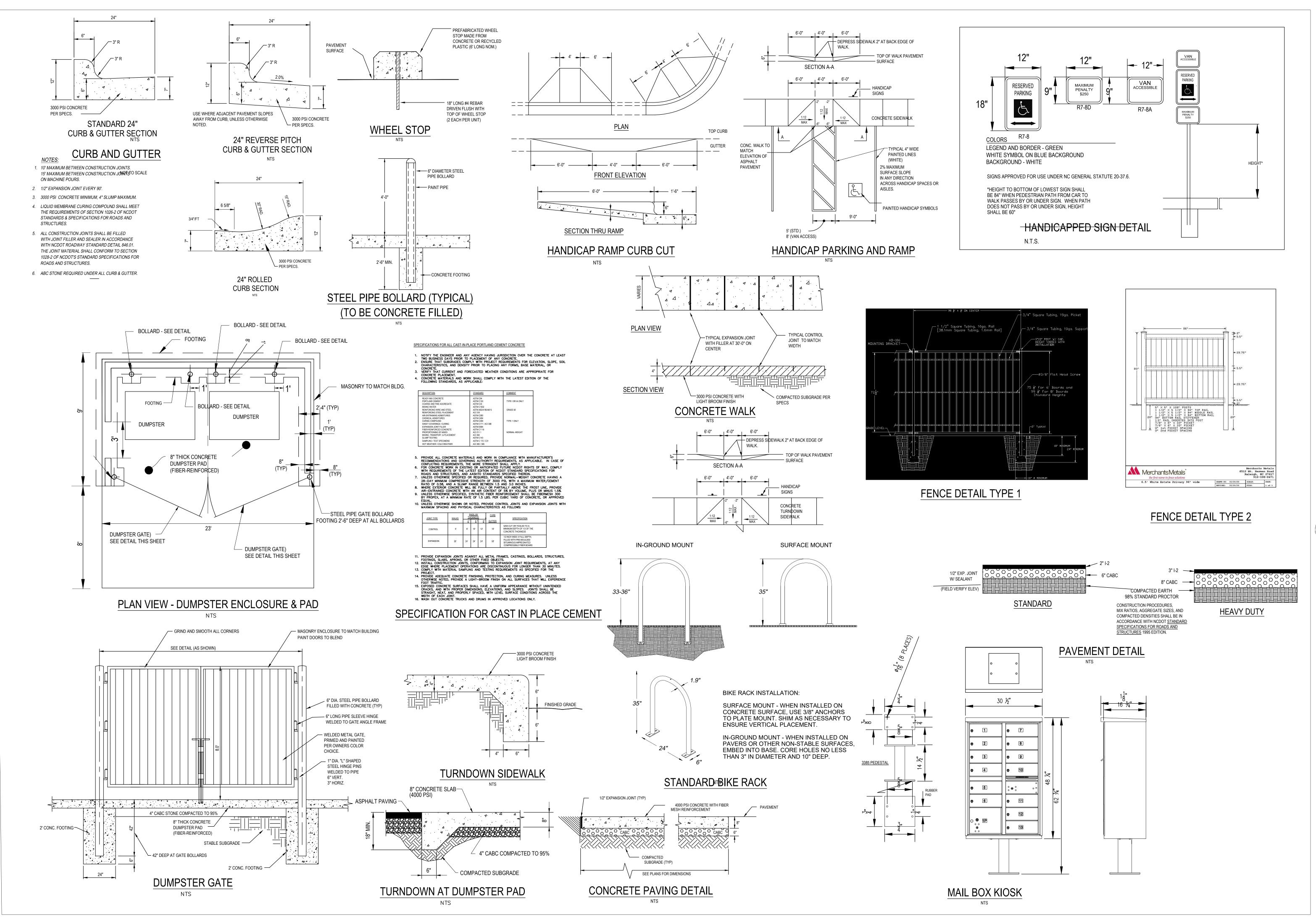
30K 40K

50K

0.891

0.906

0.906



Gettle Engineering and Design, PLLC

ment KPG

lake © Comment KPG

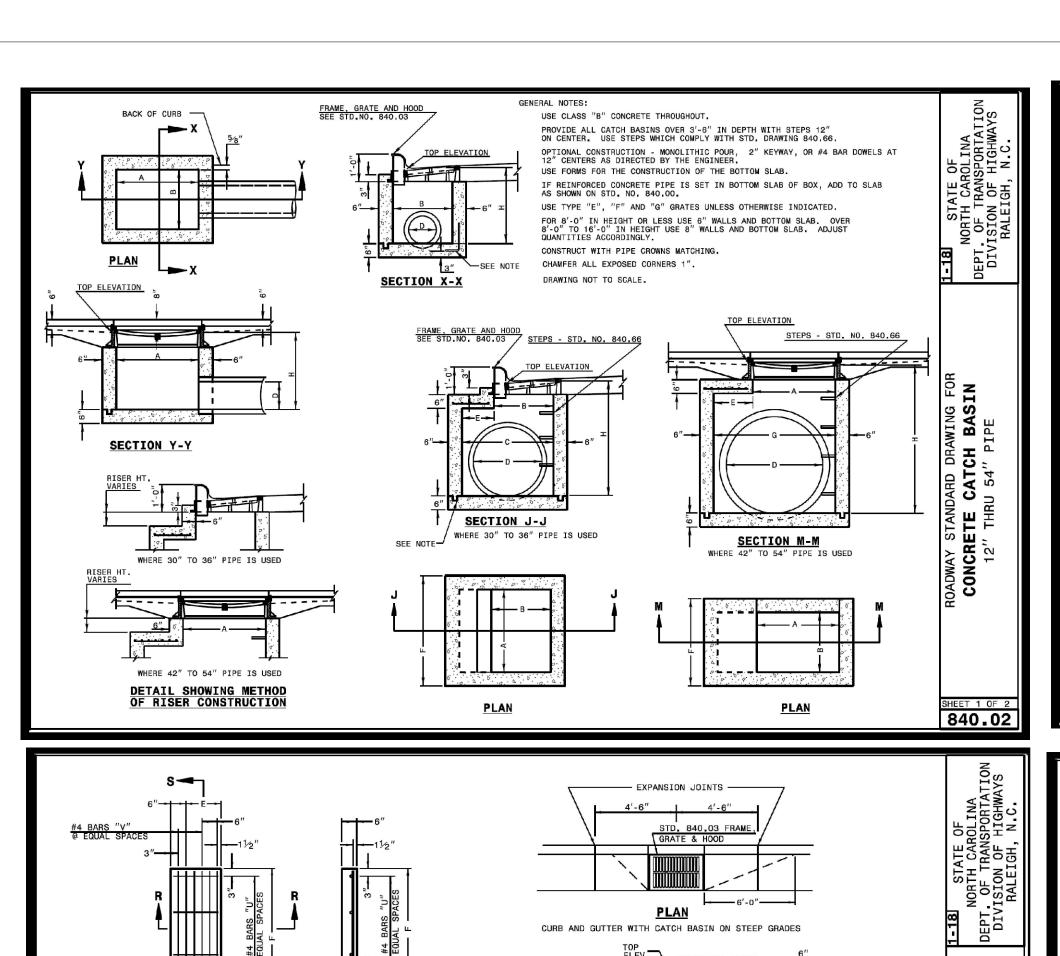
BY

Wake Forest, North Ca

BY

(919) 210-3934 Firm

Standard Site Details South Main 503 South Main Street



PLAN OF TOP SLAB

SECTION R-R

SECTION S-S

 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

DEPRESSED GUTTER LINE

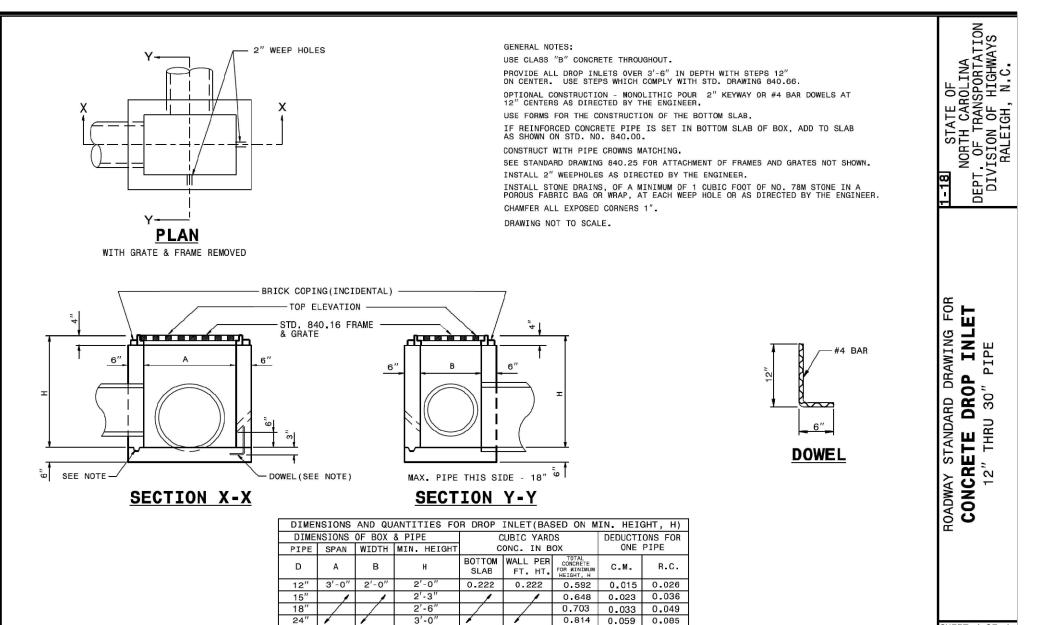
840.02

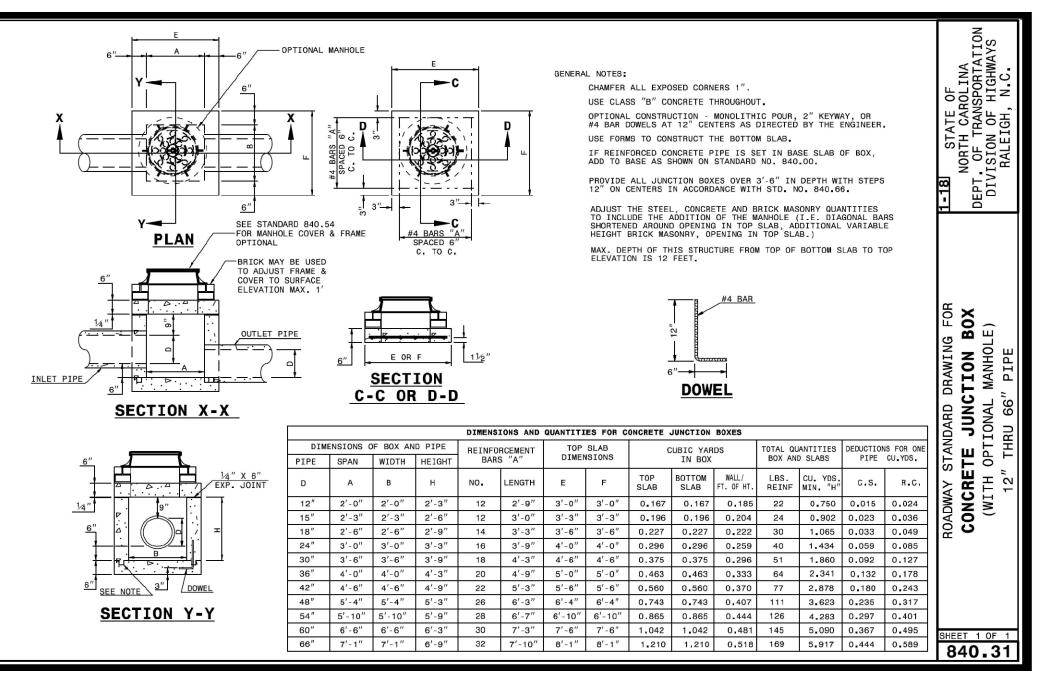
ELEVATION NORMAL CURB AND GUTTER ON LIGHT GRADES

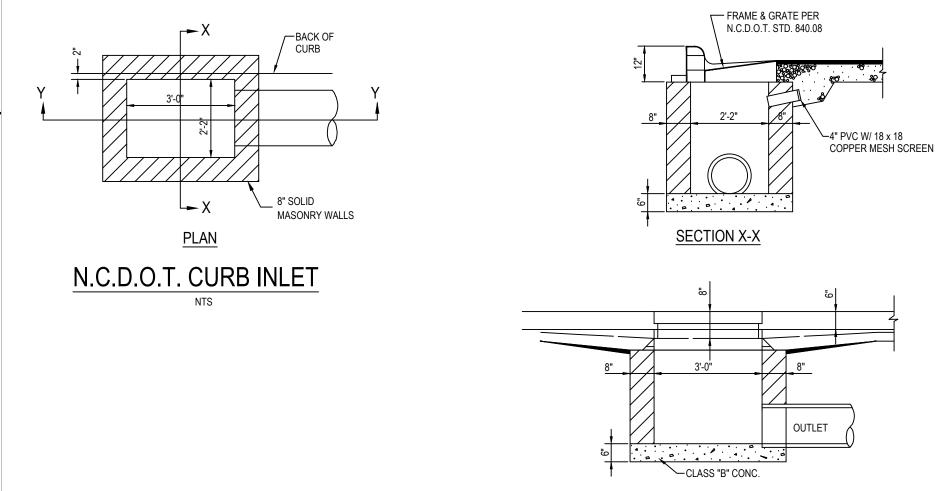
ELEVATION

NORMAL CURB AND GUTTER ON STEEP GRADES

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

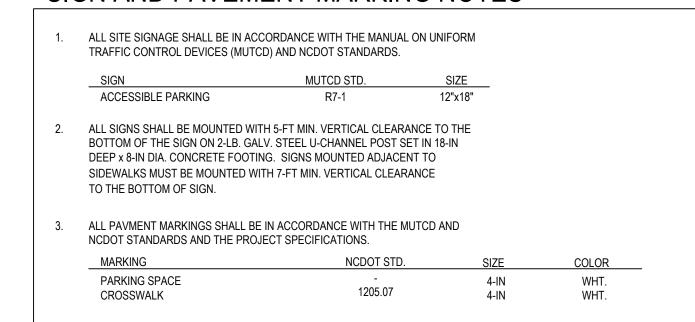




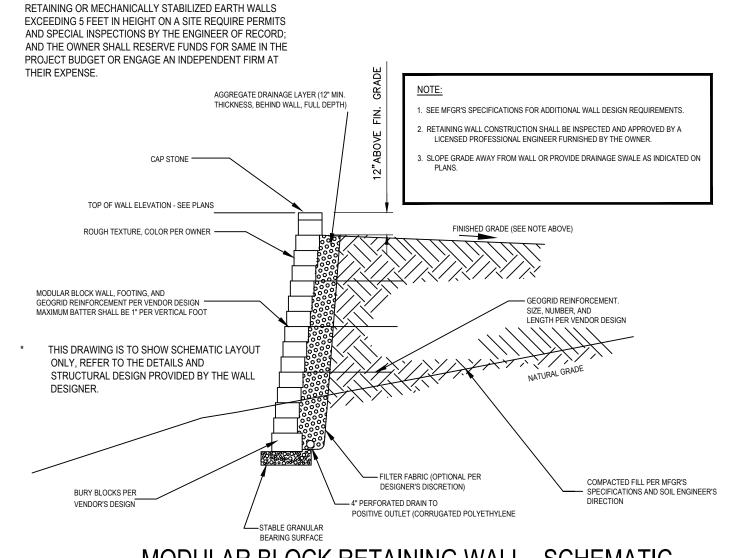


SIGN AND PAVEMENT MARKING NOTES

840.14



SECTION Y-Y



MODULAR BLOCK RETAINING WALL - SCHEMATIC

d Stormwater Details South Main 3 South Main Street Wake County, North Carolina and Site

Project No. 22003

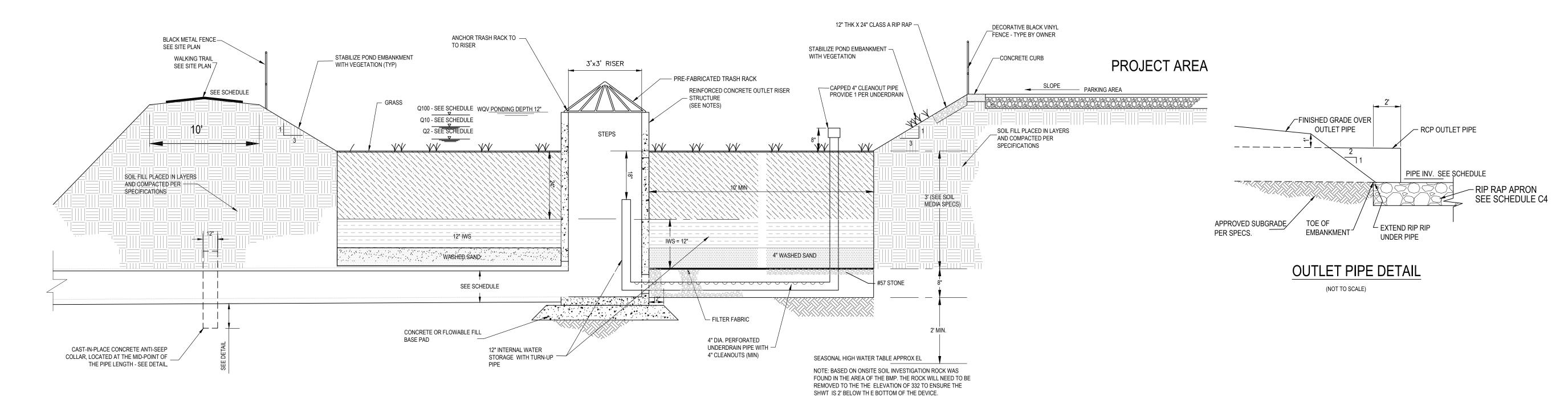
Design,

and

ettle

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Engineering a 3616 Waxwing (ake Forest, North Ca 210-3934 Firm



BIORETENTION SECTION

BIORETENTION FACILITY OPERATION AND MAINTENANCE:

- * WATERING: WATERING SHOULD NOT BE REQUIRED AFTER GRASS IS ESTABLISHED. HOWEVER, WATERING MAY BE REQUIRED DURING PROLONGED DRY PERIODS.
- * EROSION CONTROL: INSPECT FLOW ENTRANCES, PONDING AREA, AND SURFACE OVERFLOW AREAS PERIODICALLY. REPLACE MATERIAL WHERE EROSION HAS OCCURRED. IF SEDIMENT IS DEPOSITED, DETERMINE THE SOURCE, REMOVE EXCESS DEPOSITS, AND CORRECT THE PROBLEM.
- * VEGETATION: ROUTINE MAINTENANCE WILL BE NECESSARY TO ENSURE THAT THE GRASS IS HEALTHY AND TO REMOVE ANY
- * NUTRIENTS AND PESTICIDES: NUTRIENTS AND PESTICIDES SHOULD NOT BE REQUIRED. IF NECESSARY, USE SPARINGLY.
- * SOIL MEDIA: THE SOIL MEDIA SHOULD NOT NEED REPLACING. IF PROBLEMS OCCUR IN THE SOIL MEDIA, CONSULT A SOIL

BIORETENTION FACILITY NOTES:

- * A 2.5 -FOOT DEEP, HOMOGENOUS SOIL MIXTURE OF 85 TO 88 PERCENT CONSTRUCTION SAND, 8 TO 12 PERCENT FINES (SILT AND CLAY), AND 3 TO 5 PERCENT ORGANIC MATTER SHALL BE USED. SOIL MEDIA SHOULD BE SENT TO THE NCDA LABS TO BE ANALYZED. P-INDEX FOR THESE SOIL MEDIA SHOULD RANGE BETWEEN 10 AND 30. THE INFILTRATION RATE OF THE SOIL SHALL BE BETWEEN 3.85 AND 6 IN/HR. SOIL CHARACTERISTICS SHALL BE VERIFIED BY A GEOTECHNICAL ENGINEER.
- * THE BIORETENTION FACILITY SHALL BE PLANTED WITH GRASS. GRASS SHALL BE SODDED AND SHALL NOT BE GROWN IN AN IMPERMEABLE LAYER SUCH AS CLAY. HYBRID BERMUDA, CENTIPEDE, OR FESCUE/BLUEGRASS ARE RECOMMENDED.
- * ALL CONSTRUCTION, MONITORING, AND MAINTENANCE GUIDELINES IN THE NCDWQ STORM WATER BMP MANUAL SHALL BE FOLLOWED.

BIORETENTION GENERAL NOTES:

OUTLET STRUCTURE AND PIPING

 THE RISER STRUCTURE SHALL CONSIST OF PRECAST CONCRETE BASE AND RISER SECTIONS OF THE TYPE AND DIMENSIONS SHOWN. SQUARE OR RECTANGULAR SECTIONS SHALL BE SOLID-WALL CATCH BASIN TYPE STRUCTURES, AND APPROVED FOR USE BY NCDOT. ALL RISER JOINTS SHALL BE SEALED WATERTIGHT USING FLEXIBLE BUTYL RUBBER JOINT MATERIAL, RUBBER GASKETS, OR OTHER SUITABLE MATERIAL. ALL PIPE CONNECTIONS TO THE RISER SHALL BE MADE WITH A WATER TIGHT FLEXIBLE CONNECTOR BOOT PER ASTM C923.

CONCRETE

 CONCRETE WORK SHALL CONFORM TO PROJECT CONCRETE SPECIFICATIONS.

FLOWABLE FILL

 FLOWABLE FILL SHALL CONSIST OF A MIXTURE OF PORTLAND CEMENT, AGGREGATE NOT GREATER THAN 3/8 INCH DIAMETER, WATER, AND OTHER APPROVED COMPONENTS, WITH A MINIMUM PH OF 4.0, AND A 28-DAY COMPRESSIVE STRENGTH OF AT LEAST 150 PSI. THE MIXTURE SHALL BE SUFFICIENTLY FLOWABLE TO BE SELF-LEVELING, FILLING ALL VOIDS UNDER THE PIPE AND PIPE HAUNCHES WITHOUT REQUIRING VIBRATION.

FINAL SURFACE STABILIZATION

• STABILIZE ALL SURFACES OF THE EMBANKMENT, SPILLWAY. SLOPES, SPOIL AND BORROW AREAS THAT ARE NOT COVERED BY OTHER SPECIFIED MATERIALS WITH GRASS IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

BIORETENTION NOTES (CONT):

 ALL DRAINAGE AREAS TO A BIORETENTION FACILITY ARE TO BE STABILIZED PRIOR TO INSTALLATION OF AMENDED SOILS, MULCH OR PLANTINGS.

BIORETENTION PLANTING SOIL MEDIA SPECIFICATIONS:

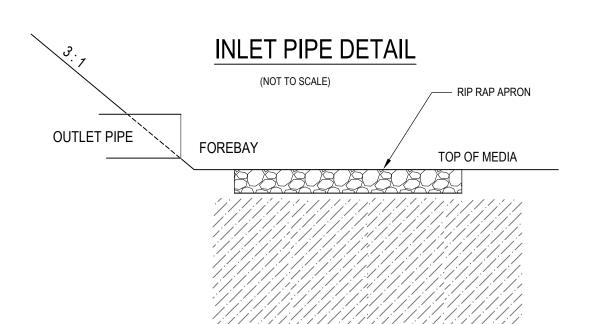
- THE PLANTING SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN ONE-HALF INCH IN DIAMETER. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, JOHNSON GRASS, QUACK GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADA THISTLE, OR OTHER NOXIOUS WEEDS.
- PLANTING MIX FOR BIORETENTION CELL UNIFORM SOIL MIXTURE FREE OF STUMPS, STONES, OR LARGE ROOTS, CONTAINING THE FOLLOWING TYPES AND RATIOS (BY WEIGHT) OF COMPONENTS:

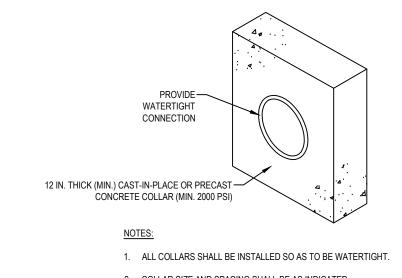
85-88%% SAND (ASTM C-33) 8%-10% FINE SOIL MATERIAL (INCLUDES BOTH SILT OR CLAY) 3%-5% ORGANICS / PINE BARK MULCH

 SOIL SHALL HAVE A HYDRAULIC CONDUCTIVITY OF BETWEEN 1 IN/HR AND 6 IN/HR, WITH A 2 IN/HR RATE BEING OPTIMAL.

PHOSPHOROUS INDEX SHALL BE BETWEEN 10 AND 30

- GRADING CLEARING, STRIPPING, EXCAVATION, FILLING, TRENCHING, BACKFILLING, COMPACTION, AND FINE-GRADING WORK SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF PROJECT SPECIFICATIONS.
- UNDERDRAIN GRAVEL CLEAN, HARD, ANGULAR GRAVEL CONFORMING TO NCDOT DESIGNATION # 57 OR # 8 AS APPROPRIATE.
- GEOFILTER FABRIC NON-WOVEN, NEEDLE-PUNCHED GEOTEXTILE WITH 135 LBS. PUNCTURE STRENGTH (ASTM D-4833); 220 LBS. TENSILE STRENGTH (ASTM D-4632); AND APPARENT OPENING SIZE OF U.S. STD. #80 SIEVE (ASTM D-4751).
- UNDERDRAIN PIPING NOMINAL 6" DIAMETER SCHEDULE 40 PVC. WITH 3/8" DIAMETER PERFORATIONS SPACED EQUALLY AROUND THE FULL PIPE PERIMETER. CLEANOUT PIPE AND FITTINGS SHALL BE SOLVENT-WELDED SCHEDULE 40 PVC PER THE DETAIL SHOWN AND EXTEND AT LEAST 8" ABOVE THE MULCH LAYER. MINIMUM 1 CLEANOUT PER 1000 SQUARE FEET OF SURFACE AREA OF THE DEVICE.





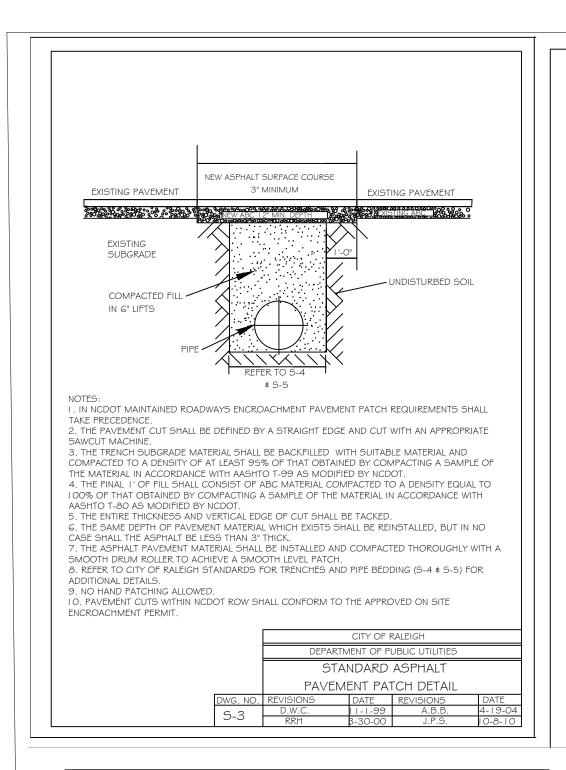
2. COLLAR SIZE AND SPACING SHALL BE AS INDICATED.

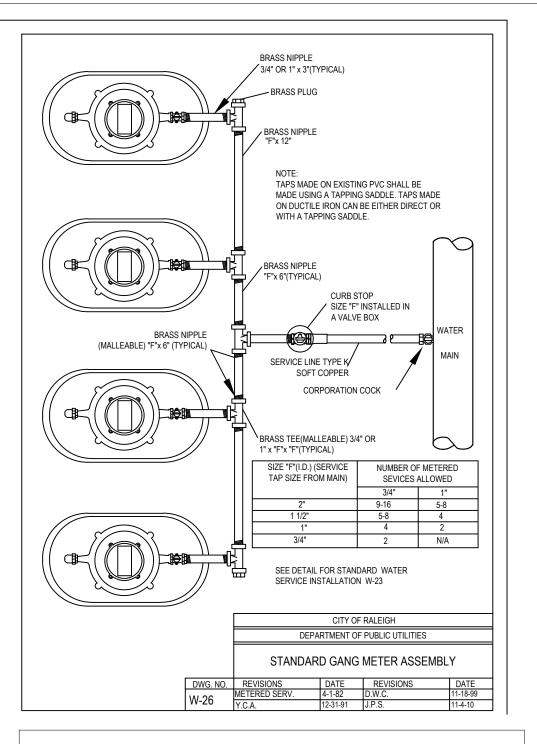
CONCRETE ANTI- SEEP COLLAR DETAIL (NOT TO SCALE)

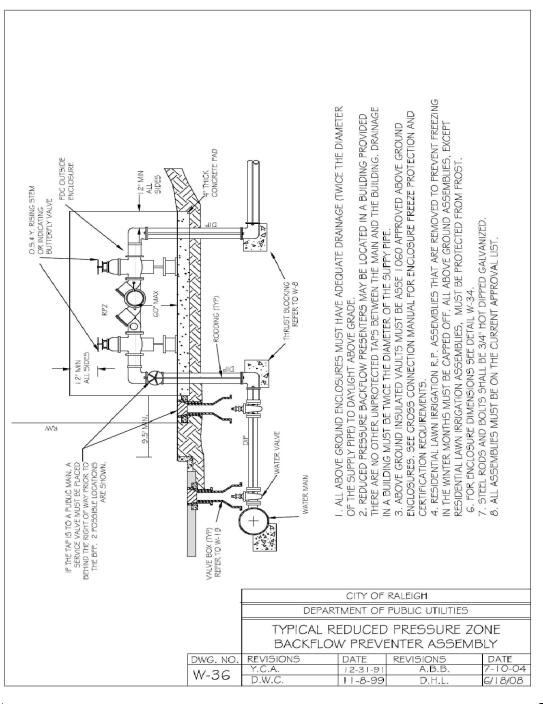
BMP Schedule		
BMP (Elevations)	Bio	
Top of Dam	410.15	
Spillway	n/a	
Top of Riser	410.00	
Bottom Riser (invert)	407.20	
Drawdown Orifice	n/a	
Orifice Invert	n/a	
Perm Pool or Media Surface	409.00	
Forebay Bottom	n/a	
Main Pond Bottom	n/a	
Discharge Pipe (Dia)	18"	
8" Drain Pipe	n/a	
Discharge Pipe Length (feet)	25.00	
Discharge Pipe Invert Out	407.00	
Q2 Elevation	409.54	
Q10 Elevation	409.68	

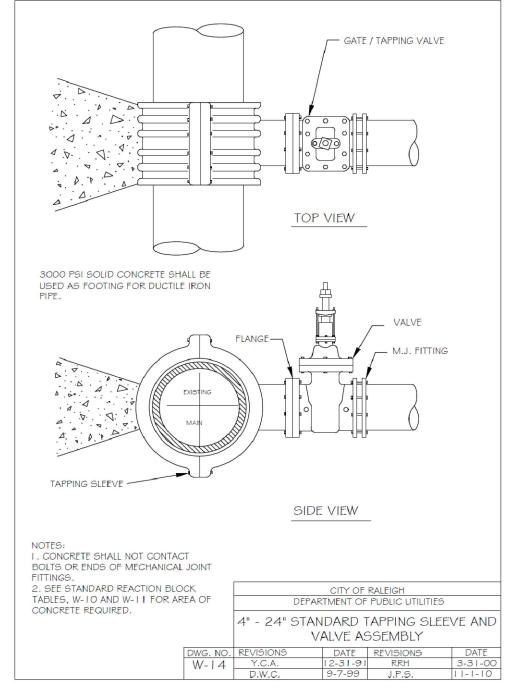
Q100 Elevation

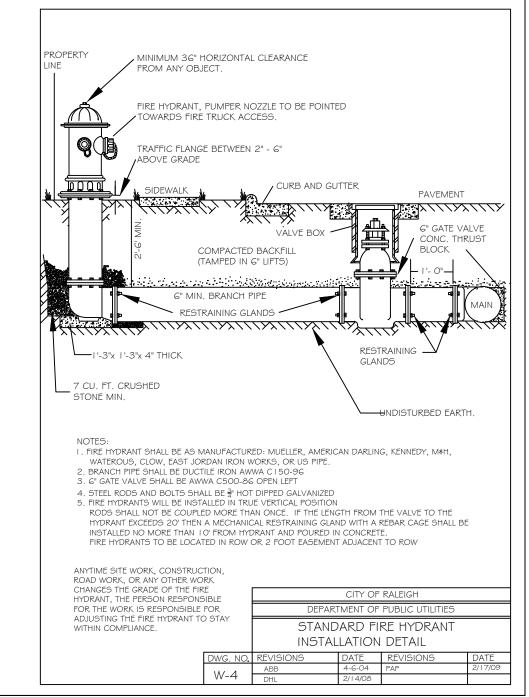
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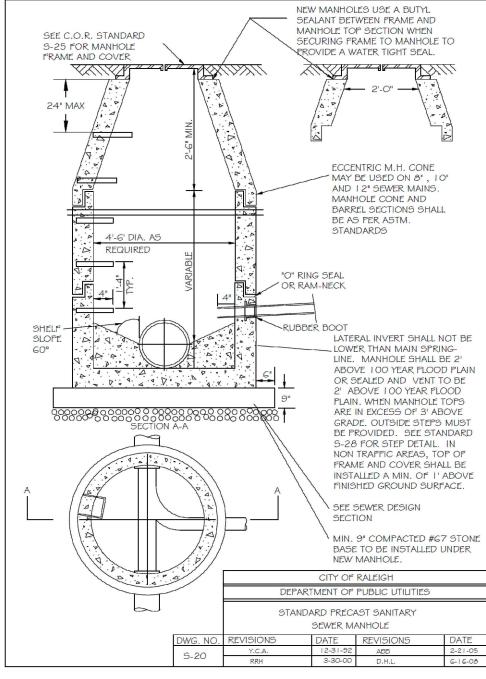


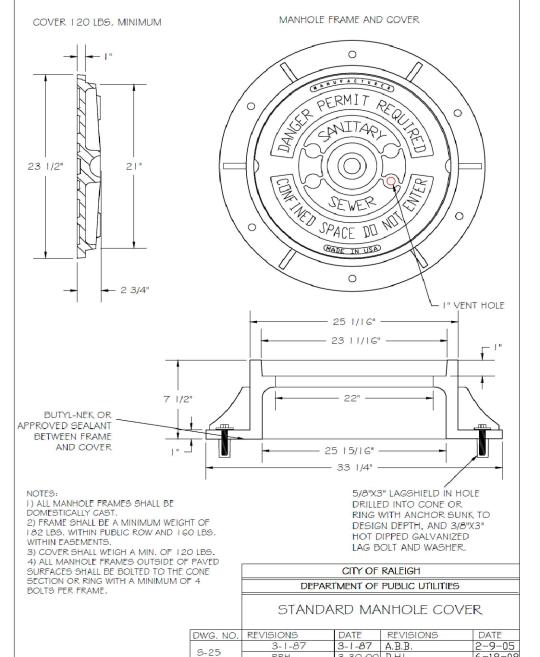


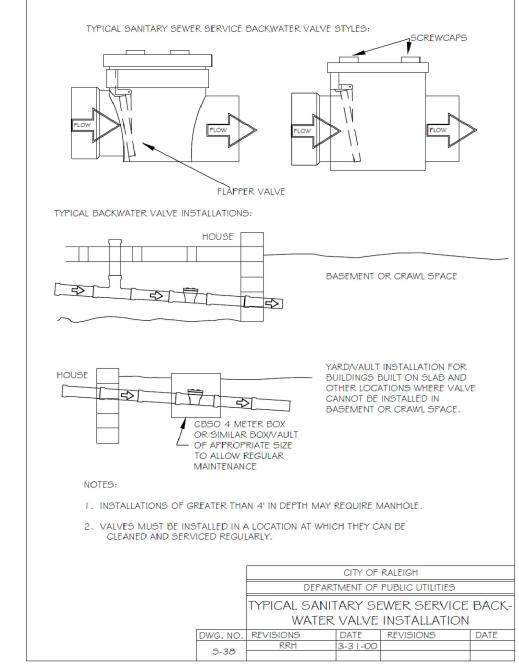


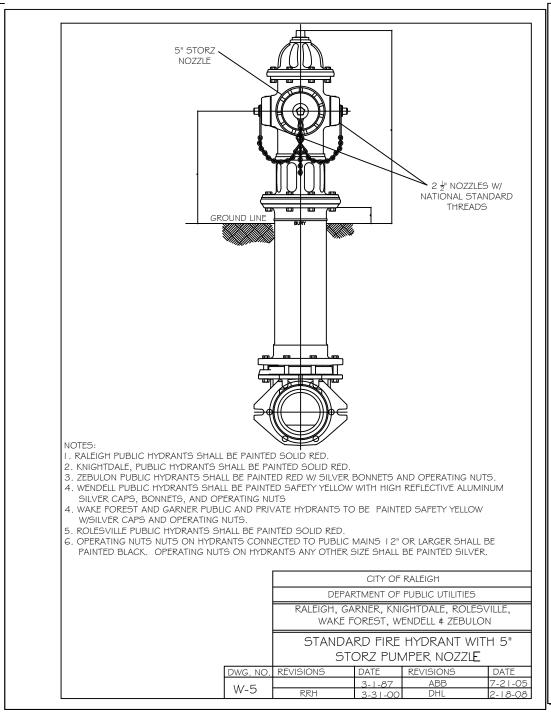


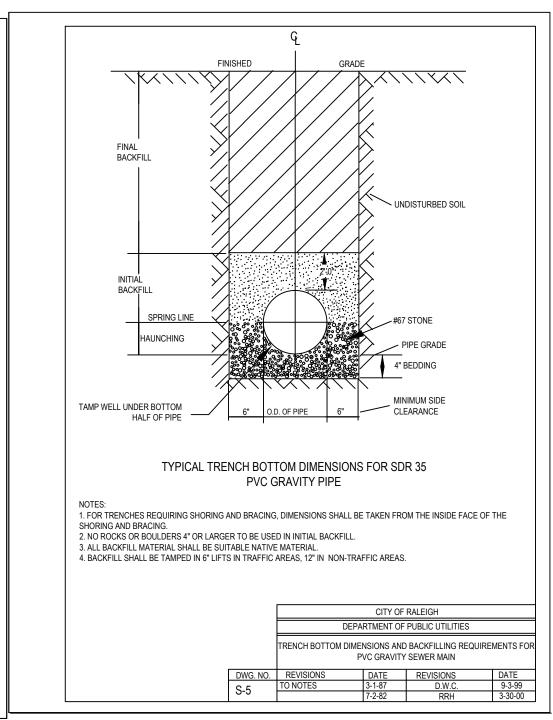


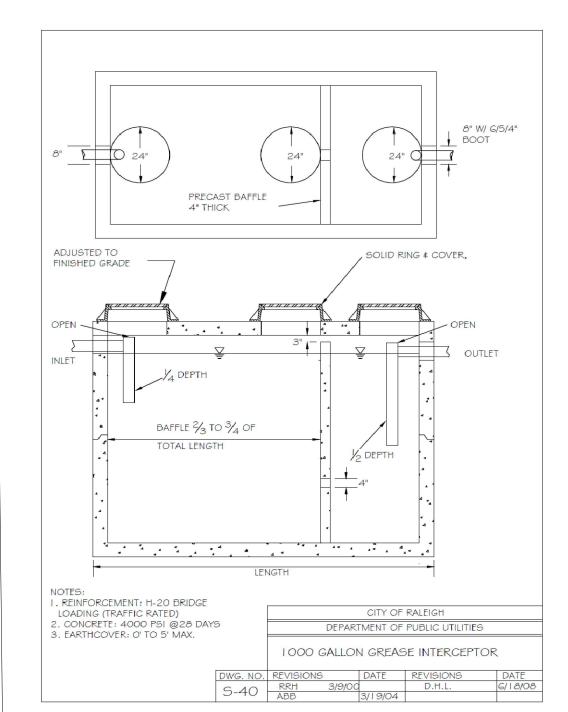


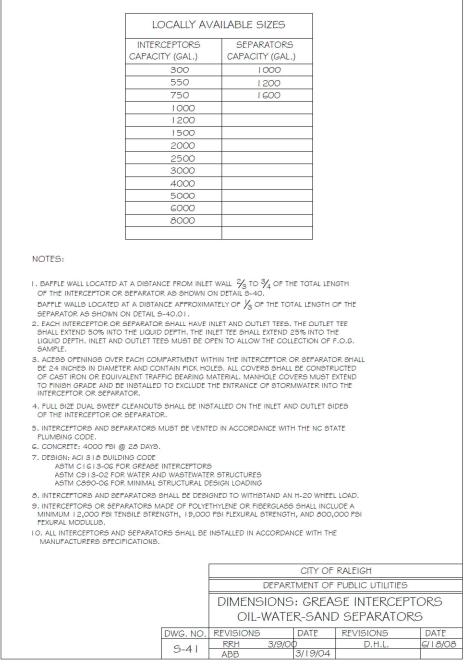


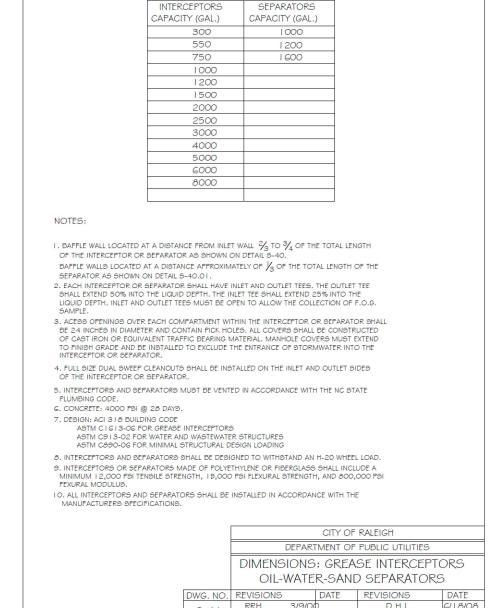












SITE PERMITTING APPROVAL

Water and Sewer Permits (If applicable)

The City of Raleigh consents to the connection and extension of the City's Public Sewer System as shown on this plan. The $material \ and \ Construction \ methods \ used \ for \ this \ project \ shall \ conform \ to \ the \ standards \ and \ specifications \ of \ the \ City's \ Public$ Utilities Handbook. City of Raleigh Public Utilities Department Permit # ____ The City of Raleigh consents to the connection and extension of the City's Public Water System as shown on this plan. The

material and Construction methods used for this project shall conform to the standards and specifications of the City's Public

Utilities Handbook. City of Raleigh Public Utilities Department Permit # The City of Raleigh consents to the connection to its public sewer system and extension of the private sewer collection system as shown on this plan. The material and constructions methods used for this project shall conform to the standards

and specifications of the City's Public Utilities Handbook.

City of Raleigh Public Utilities Department Permit #

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization below is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law. All Construction must be in accordance with all Local, State, and Federal Rules and Regulations.

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval

City of Raleigh Review Officer

PLL Design, Engineering and 3616 W Forest, 3934 ettle Ū

EROSION CONTROL CONSTRUCTION SEQUENCE -PAHSE 1

- 1. SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL WATERSHED MANAGER. OBTAIN A LAND DISTURBING
- 2. INSTALL TREE PRETECTION FENCE.
- 3. INSTALL EROSION CONTROL MEASURES INCLUDING GRAVEL CONSTRUCTION ENTRANCE /EXIT, SEDIMENT TRAPPING MEASURES, STABILIZATION AT PIPE OUTLETS, AND OTHER MEASURES AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
- 4. CONTACT THE WAKE COUNTY ENVIRONMENTAL CONSULTANT, JEEEVAN NEUPANE (919) 819-8907, FOR AN ONSITE INSPECTION TO OBTAIN A CERTIFICATE OF COMPLIANCE
- 5. BEGIN CLEARING AND GRUBBING. PERFORM ROUGH GRADING, INSTALLING AND MAINTAINING TEMPORARY DIVERSIONS AS NECESSARY. SEED AND MULCH PERIMETER SLOPES AS SOON AS POSSIBLE.
- 6. STABILIZE DISTURBED AREAS WITHIN 14 WORKING DAYS AFTER COMPLETION OF ANY PHASE OF GRADING. STABILIZATION CONSISTS OF EITHER TEMPORARY MULCHING OR PERMANENT VEGETATION ON AREAS THAT ARE NOT PAVED.
- 7. REGULARLY INSPECT AND MAINTAIN THE EROSION CONTROL DEVICES SO THEY CONTINUE TO FUNCTION PROPERLY.
- 8. KEEP MUD AND DEBRIS OFF THE PUBLIC STREETS AT ALL TIMES. IF MUD OR DEBRIS IS TRACKED FROM THE SITE, USE A SHOVEL AND BROOM TO REMOVE IT IMMEDIATELY. IF MUD AND DEBRIS ARE NOT KEPT OFF THE STREET, ENFORCEMENT ACTION (REVOKING THE GRADING PERMIT AND/OR STOP WORK ORDER) MAY BE TAKEN.
- 9. IF IT IS DETERMINED DURING THE COURSE OF CONSTRUCTION THAT SIGNIFICANT SEDIMENT IS LEAVING THE SITE DESPITE PROPER IMPLEMENTATION AND MAINTENANCE OF THE APPROVED EROSION CONTROL PLAN, THE PERSON RESPONSIBLE FOR THE LAND-DISTURBING ACTIVITY IS OBLIGATED TO TAKE ADDITIONAL PROTECTIVE ACTION.
- 10. CONTINUE TO PHASE 2 EROSION CONTROL ACTIVITIES.

STOCKPILE DESIGN CRITERIA

- STOCKPILING MATERIALS ADJACENT TO A DITCH, DRAINAGEWAY, WATERCOURSE, WETLAND, STREAM BUFFER, OR OTHER BODY OF WATER SHALL BE AVOIDED UNLESS AN ALTERNATIVE LOCATION IS DEMONSTRATED TO BE UNAVAILABLE.
- 2. A 25-FOOT TEMPORARY MAINTENANCE AND ACCESS EASEMENT SHALL BE SHOWN AROUND ALL PROPOSED STOCKPILES (EROSION CONTROL MEASURES SURROUNDING THE STOCKPILE SHALL BE SHOWN AT THE OUTER LIMIT OF THIS EASEMENT).
- 3. STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES.
- 4. STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.
- 5. STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.
- 6. STOCKPILING MATERIALS ADJACENT TO A DITCH, DRAINAGEWAY, WATERCOURSE, WETLAND, STREAM BUFFER, OR OTHER BODY OF WATER SHALL BE AVOIDED UNLESS AN ALTERNATIVE LOCATION IS DEMONSTRATED TO BE UNAVAILABLE.
- 7. ANY CONCENTRATED FLOW LIKELY TO AFFECT THE STOCKPILE SHALL BE DIVERTED TO AN APPROVED BMP.
- 8. OFF-SITE SPOIL OR BORROW AREAS MUST BE IN COMPLIANCE WITH WAKE COUNTY UDO AND STATE REGULATIONS. ALL SPOIL AREAS OVER AN ACRE ARE REQUIRED TO HAVE AN APPROVED SEDIMENT CONTROL PLAN. DEVELOPER/CONTRACTOR SHALL NOTIFY WAKE COUNTY OF ANY OFFSITE DISPOSAL OF SOIL, PRIOR TO DISPOSAL. FILL OF FEMA FLOODWAYS AND ON-ENCROACHMENT AREAS ARE PROHIBITED EXCEPT AS OTHERWISE PROVIDED BY SUBSECTION 14-19-2 OF THE WAKE COUNTY UNIFIED DEVELOPMENT ORDINANCE (CERTIFICATIONS AND PERMITS REQUIRED).
- 9. SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEYED IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
- 10. IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
- 11. THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
- 12. ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

GENERAL NOTES:

- 1. INSTALL POLYACRYLAMIDE IMPREGNATED STRAW WATTLES (ie: TERRA TUBES) DIRECTLY BELOW STORM WATER OUTFALL. PLACE EROSION CONTROL LINER UNDERNEATH A SERIES OF WATTLES (SEE DETAIL)
- 2. SURROUND THE SKIMMER WITH A BAFFLE AND "KEY" BOTH ENDS INTO THE SIDE OF THE BASIN. INSTALL A TARP UNDERNEATH THE SKIMMER, COVERING THE ENTIRE AREA AROUND THE SKIMMER. PROVIDE A 6"-8" BLOCK TO PLACED UNDER THE SKIMMER ALLOWING THE DEVICE TO REST ON AFTER DEWATERING.
- 3. INSTALL STANDARD GRAVEL YARD INLET PROTECTION UNTIL CURB IS INSTALLED. INSTALL STANDARD GRAVEL BAG CURB INLET PROTECTION AT ALL CURB INLETS.

DRAINAGE AREA TO BASIN = 79,558 SF (1.83 AC)

TOTAL DENUDED AREA 94,016 SF (2.16 AC)

Control Pla Erosion

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Wake I (919) 210-

Project No. 22003

South Main 503 South Main Street Rolesville, Wake County, North Carolina

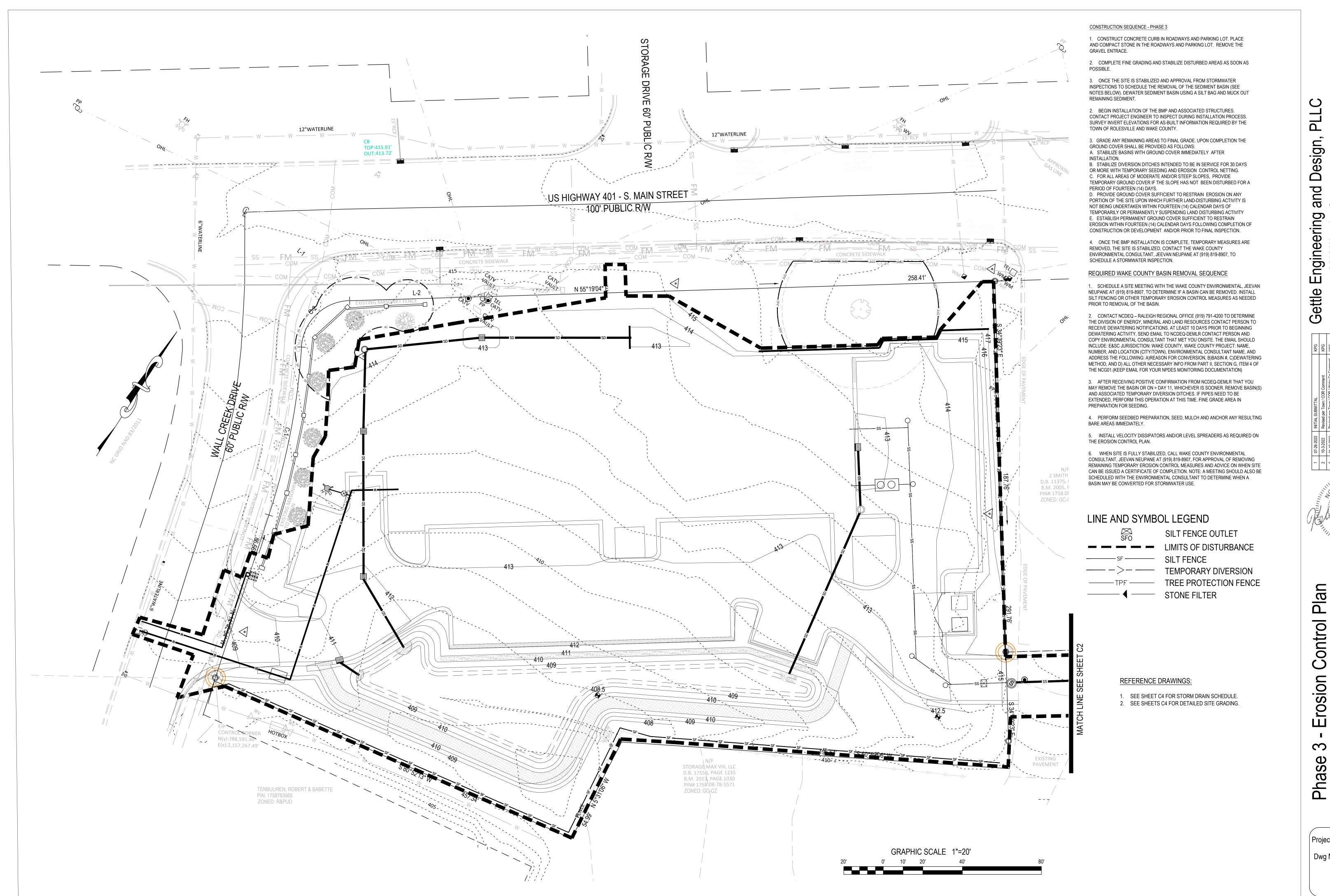
- 1. INSTALL THE STORM DRAINAGE SYSTEM AND INLET PROTECTION,
- PROTECTING PIPE OPENINGS AND UNCOVERED STRUCTURES AS SHOWN.
- 2. INSTALL SANITARY SEWER SYSTEM AND WATER LINE PIPING PER UTILITY PLAN. ENSURE EXISTING UTILITES ARE PROTECTED DURING CONSTRUCTION
- COMPLETION OF ANY PHASE OF GRADING. STABILIZATION CONSISTS OF EITHER TEMPORARY MULCHING OR PERMANENT VEGETATION ON AREAS THAT ARE NOT
- DEBRIS IS TRACKED FROM THE SITE, USE A SHOVEL AND BROOM TO REMOVE IT IMMEDIATELY. IF MUD AND DEBRIS ARE NOT KEPT OFF THE STREET, ENFORCEMENT ACTION (REVOKING THE GRADING PERMIT AND/OR STOP WORK
- SIGNIFICANT SEDIMENT IS LEAVING THE SITE DESPITE PROPER IMPLEMENTATION AND MAINTENANCE OF THE APPROVED EROSION CONTROL PLAN, THE PERSON RESPONSIBLE FOR THE LAND DISTURBING ACTIVITY IS OBLIGATED TO TAKE

Phase 2 - Erosion Control Plan South Main 503 South Main Street Rolesville, Wake County, North Carolina Phase

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Plan Control South Main Wake County, 3 Phase

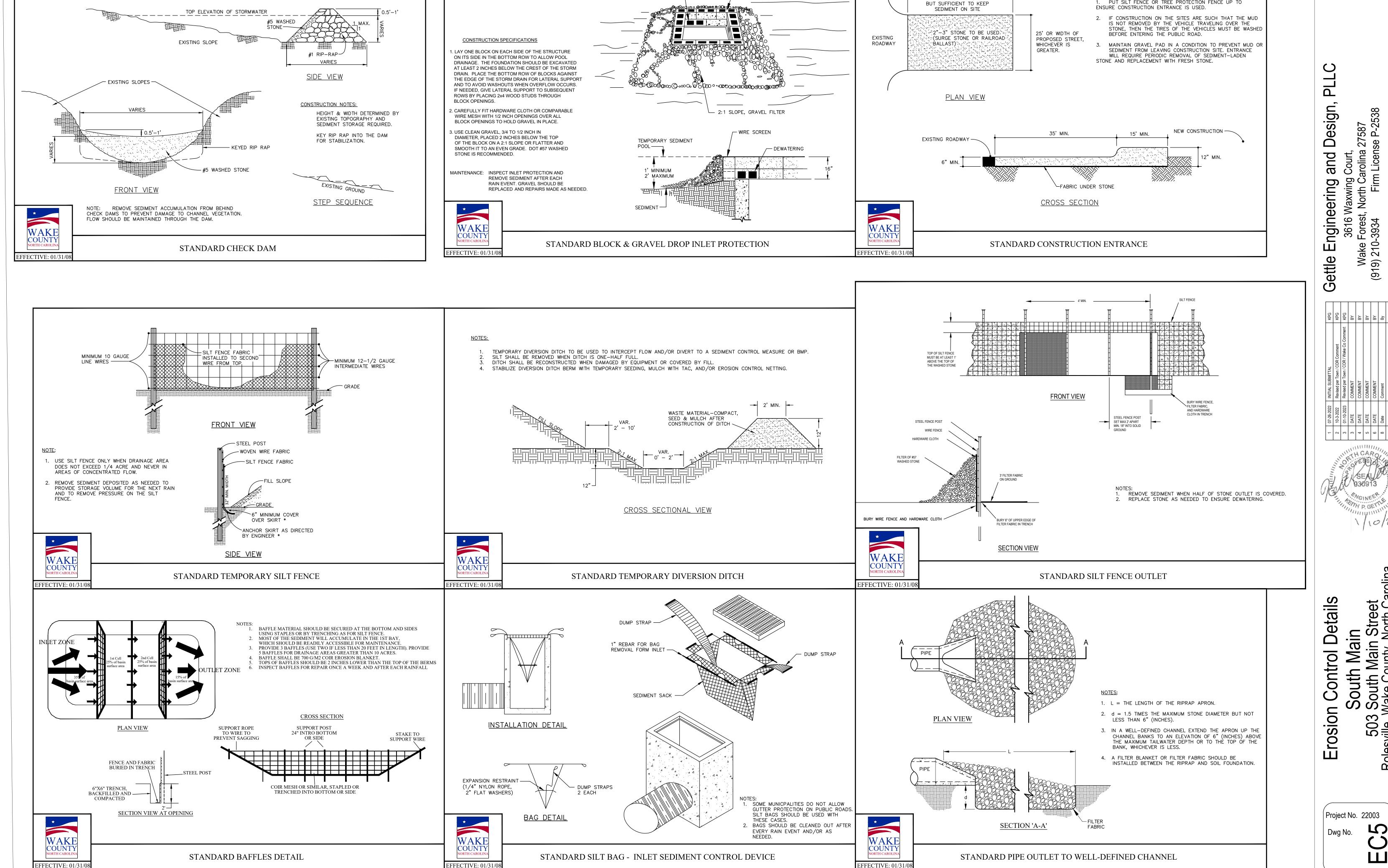
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Control Plan 4 Phase

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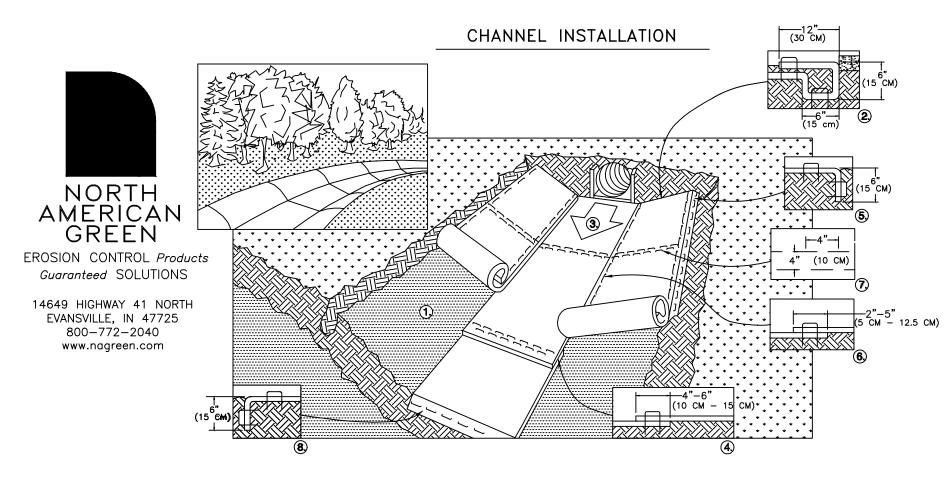
─ DEWATERING

- CONCRETE BLOCK

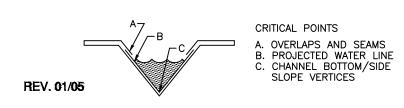
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1. PUT SILT FENCE OR TREE PROTECTION FENCE UP TO

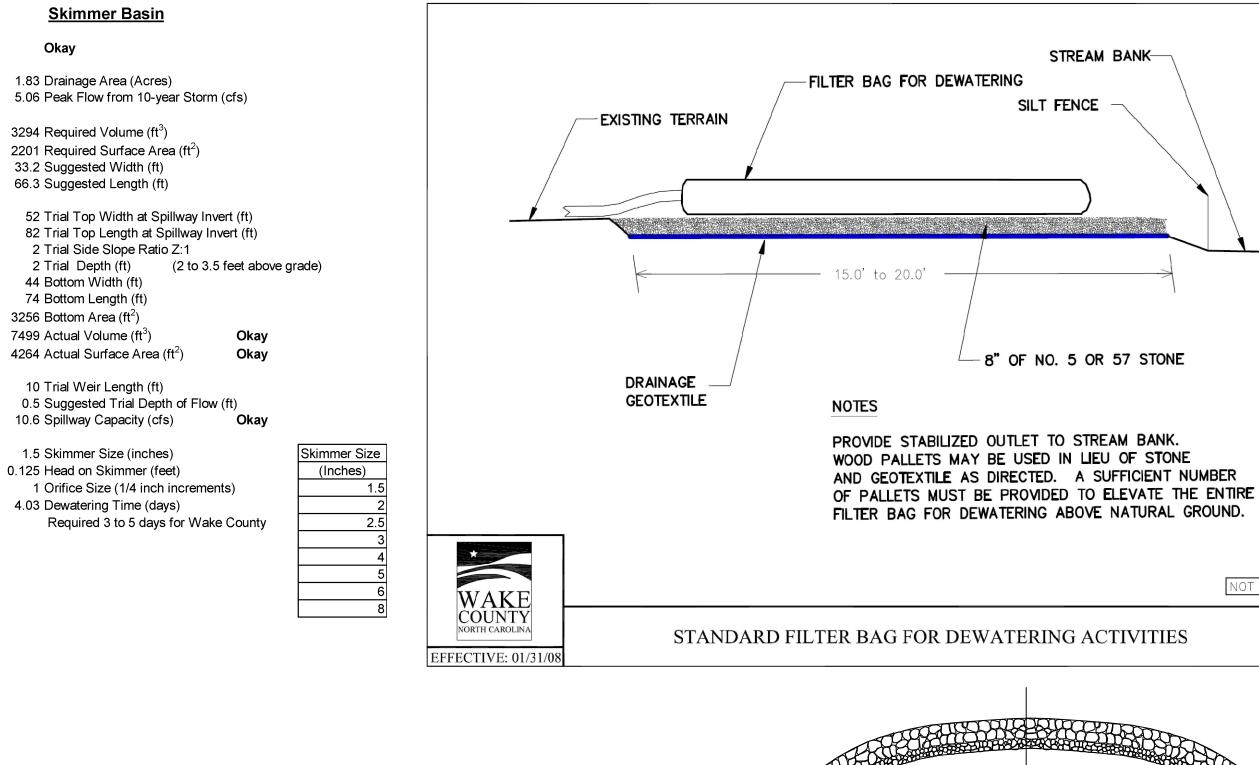
Details South Main South Main Wake County, N Control



- 1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN. 2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP'S IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECP'S EXTENDED BEYOND THE UP—SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMAPCT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM)
- 3. ROLL CENTER RECP'S IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN. 4. PLACE CONSECUTIVE RECP'S END OVER END (SHINGLE STYLE) WITH A 4" - 6" (10 CM -15 CM) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM)
- APART AND 4" (10 CM) ON CENTER TO SECURE RECP's. 5. FULL LENGTH EDGE OF RECP's AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM)
- DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. 6. ADJACENT RECP'S MUST BE OVERLAPPED APPROXIMATELY 2" - 5" (5 CM -12.5 CM) (DEPENDING ON RECP'S TYPE) AND STAPLED.
- 7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9 M 12 M) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
- 8. THE TERMINAL END OF THE RECP'S MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
- NOTE: * IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP'S.



* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE. ** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.



NOT TO SCALE STANDARD FILTER BAG FOR DEWATERING ACTIVITIES



6' (1.8m) — 3.3' (1.0m) 3' (0.9m) 6' (1.8m) STAPLES (2 / BALE) - 1.6' (0.5m) 0.7 STAPLES PER SQ. YD. (0.8 STAPLES PER SQ. M) WOOD OR METAL 3.3' (1.0m) STAKES 1.15 STAPLES PER SQ. YD. (1.35 STAPLES PER SQ. M) STAPLES PER SQ. YD. (2.0 STAPLES PER SQ. M)

REV. 01/05

4' (1.2m) ()

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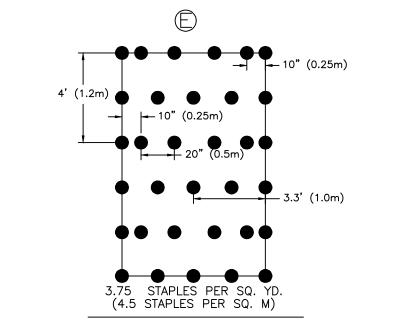
3.4 STAPLES PER SQ. YD

(4.1 STAPLES PER SQ. M)

--| 20" (0.5m)

3.3' (1.0m)

BINDING WIRE



 $\stackrel{/}{-}$ 10 MIL PLASTIC LINING STAKE (TYP.) - STRAW BALES - 10 MIL PLASTIC LINING

10 MIL PLASTIC LINING

NATIVE MATERIAL

(OPTIONAL)

SECTION "B-B"

STONE FILTER CHECK DAM

TEMPORARY CONCRETE WASHOUT AREA

STAPLES — (2 / BALE)

___ STRAW BALES

-STAKES

WOOD OR METAL

SEEDING

SEEDBED PREPARATION:

- 1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL THREE INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE. 2. RIP THE ENTIRE AREA TO SIX INCHES DEEP. 3. REMOVE ALL LOOSE ROCK, ROOTS AND OTHER OBSTRUCTIONS, LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM. 4. APPLY AGRICULTURAL LIME, FERTILIZER AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE MIXTURE BELOW).
- 5. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED FOUR TO SIX INCHES DEEP. 6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING. 7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH. 8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF
- STAND SHOULD BE MORE THAN 60% DAMAGED, RE-ESTABLISH FOLLOWING THE ORIGINAL LIME, FERTILIZER AND SEEDING 9. CONSULT ENGINEER OR LANDSCAPE ARCHITECT ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS

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MIXTURE:

MULCH:

AGRICULTURAL LIMESTONE: 2 TONS/ACRE (3 TONS/ACRE IN CLAY SOILS) 1,000 LBS/ACRE - 10-10-10 SUPERPHOSPHATE 500 LBS/ACRE - 20% ANALYSIS 2 TONS/ACRE - SMALL GRAIN STRAW ASPHALT EMULSION AT 300 GALS/ACRE

SEEDING SCHEDULE

FOR SHOULDERS, SIDE DITCHES, SLOPES (MAX 3:1):

DATE I YPE
AUG 15 - NOV 1 TALL FESCUE NOV 1 - MAR 1 TALL FESCUE & ABRUZZI RYE 300 LBS/ACRE MAR 1 - APR 15 TALL FESCUE 300 LBS/ACRE APR 15-JUN 30 HULLED COMMON BERMUDAGRASS 25 LBS/ACRE

JUL 1- AUG 15 TALL FESCUE AND BROWNTOP MILLET 125 LBS/ACRE (TALL FESCUE); OR SORGHUM-SUDAN HYBRIDS*** 35 LBS/ACRE (BROWNTOP MILLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)

FOR SHOULDERS, SIDE DITCHES, SLOPES (3:1 TO 2:1):

<u>DATE</u> <u>TYPE</u> <u>PLANTING RATE</u>
MAR 1 - JUN 1 SERICEA LESPEDEZA (SCARIFIED) AND 50 LBS/ACRE (SERICEA LESPEDEZA); USE THE FOLLOWING COMBINATIONS:

120 LBS/ACRE BERMUDAGRASS

TALL FESCUE AND BROWNTOP MULLET 120 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MULLET); OR SORGHUM-SUDAN HYBRIDS***

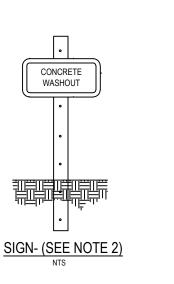
SERICEA LESPEDEZA (UNHULLED - 70 LBS/ACRE (SERICEA LESPEDEZA); UNSCARIFIED) AND TALL FESCUE 120 LBS/ACRE (TALL FESCUE) NOV 1 - MAR 1AND ABRUZZI RYE 25 LBS/ACRE

CONSULT ENGINEER OR LANDSCAPE ARCHITECT FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDED AREAS. THE ABOVE VEGETATION RATES ARE THOSE THAT DO WELL UNDER LOCAL CONDITIONS; OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE

*** TEMPORARY: RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW MORE THAN 12" IN HEIGHT BEFORE MOWING; OTHERWISE, FESCUE MAY BE SHADED OUT.

CONCRETE WASH OUT AREA NOTES:

- ACTUAL LAYOUT DETERMINED IN THE FIELD SEE EC1 PLAN FOR LOCATION.
- 2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE FACILITY.
- 3. LOCATE THE WASHOUT AREA AT LEAST 50-FEET FROM SENSITIVE AREAS SUCH AS STORM DRAINS, OPEN DITCHES OR WATER BODIES, INCLUDING WETLANDS.
- 4. THE PLASTIC LINING MATERIAL SHOULD BE A MIN OF 10 MIL. POLYETHLENE MATERIAL AND FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT MAY COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
- WHEN THE FACILITY IS NO LONGER REQUIRED THE HARDENED CONCRETE, SLURRIES AND LIQUIDS SHALL BE PROPERLY DISPOSED OF OFF-SITE. MATERIAL USED TO CONSTRUCT THE FACILITY SHALL BE PROPERLY DISPOSED OF OFF-SITE. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY FACILITY SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.



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etails

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

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

Temporary and Permanent Groundcover*

Temporary and Termanent Groundcover			
STABILIZATION TIMEFRAMES (Effective Aug. 3, 2011)			
<u>s</u>	ITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Per	imeter dikes, swales, ditches, slopes	7 days	None
High	h Quality Water (HQW) Zones	7 days	None
Slo	pes 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,
Sio	pes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All	other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

*-For Falls Lake watershed, in disturbed areas where grading activities are incomplete, provide temporary groundcover no later than seven (7) days for slopes steeper than 3:1; ten (10) days for slopes equal to or flatter than 3:1; fourteen (14) days for areas with no slope.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

remporary Stabilization	Permanent Stabilization
Temporary grass seed covered with straw or	Permanent grass seed covered with straw or
other mulches and tackifiers	other mulches and tackifiers
Hydroseeding	Geotextile fabrics such as permanent soil
Rolled erosion control products with or without	reinforcement matting
temporary grass seed	Hydroseeding
Appropriately applied straw or other mulch	Shrubs or other permanent plantings covered
Plastic sheeting	with mulch
	Uniform and evenly distributed ground cover
	sufficient to restrain erosion
	Structural methods such as concrete, asphalt

or retaining walls

POLYACRYLAMIDES (PAMS) AND FLOCCULANT

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



EQUIPMENT AND VEHICLE MAINTENANCE

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment. . Identify leaks and repair as soon as feasible, or remove leaking equipment from the
- Collect all spent fluids, store in separate containers and properly dispose as
- hazardous waste (recycle when possible).
- Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

Remove leaking vehicles and construction equipment from service until the problem

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

- Never bury or burn waste. Place litter and debris in approved waste containers. 2. Provide a sufficient number of waste containers on site to manage the quantity of
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- 4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- 5. Cover waste containers at the end of each workday and before storm events. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds. 7. Empty waste containers as needed to prevent overflow.

Dispose waste off-site at an approved disposal facility.

PAINT AND OTHER LIQUID WASTE

waste produced.

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

- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place
- on a gravel pad and surround with sand bags. Provide staking or anchoring of portable toilets during periods of high winds or in high
- Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

CCHCRETE NOTING DEVICE (1972)4" MIN.) 3,CONCRETE WASHOUT STRUCTURE NEEDS TO B CLEARY MARKED WITH SIGNAGE NOTING DEVICE

CONCRETE WASHOUTS

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

HERBICIDES, PESTICIDES AND RODENTICIDES

Store and apply herbicides, pesticides and rodenticides in accordance with label

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

HAZARDOUS AND TOXIC WASTE

- Create designated hazardous waste collection areas on-site.
- Place hazardous waste containers under cover or in secondary containment.

3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

| EFFECTIVE: 03/01/19

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

SELF-INSPECTION, RECORDKEEPING AND REPORTING

Inspect	Frequency (during normal business hours)	Inspection records must include [40 CFR 122.41]:		
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfainformation is available, record the cumulative rameasurement for those un-attended days (and this will determine if a site inspection is needed). Days on which in rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring deviapproved by the Division.		
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	 Identification of the measures inspected, Date and time of the inspection, Name of the person performing the inspection, Indication of whether the measures were operating properly, Description of maintenance needs for the measure, Corrective actions taken, and Date of actions taken. 		
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	 Identification of the discharge outfalls inspected, Date and time of the inspection, Name of the person performing the inspection, Evidence of indicators of stormwater pollution such a oil sheen, floating or suspended solids or discoloratio Indication of visible sediment leaving the site, Actions taken to correct/prevent sedimentation, and Date of actions taken. 		
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment the has left the site limits, 2. Date of actions taken, and 3. An explanation as to the actions taken to control future releases.		
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidit from the construction activity, then a record of the following shall be made: 1. Evidence and actions taken to reduce sediment contributions, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit of this permit.		

SELF-INSPECTION, RECORDKEEPING AND REPORTING

Documentation Requirements

SECTION B: RECORDKEEPING 1. E&SC Plan Documentation

Item to Document

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be documented in the manner

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

2. Additional Documentation

In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This general permit as well as the certificate of coverage, after it is received.

(b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

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

SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:

- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours, They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).
- (a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref. 40 CFR 110,3 and 40 CFR 117,3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
- (b) Anticipated bypasses and unanticipated bypasses.
- (c) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

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

	Occurrence	R	eporting Timeframes (After Discovery) and Other Requirements
	(a) Visible	٠	Within 24 hours, an oral or electronic notification.
	sediment	•	Within 7 calendar days, a report that contains a description of the
	deposition in a		sediment and actions taken to address the cause of the deposition.
	stream or wetland		Division staff may waive the requirement for a written report on a
			case-by-case basis.
		٠	If the stream is named on the NC 303(d) list as impaired for sediment-
			related causes, the permittee may be required to perform additional
			monitoring, inspections or apply more stringent practices if staff
			determine that additional requirements are needed to assure
			compliance with the federal or state impaired-waters conditions.
	(b) Oil spills and	•	Within 24 hours, an oral or electronic notification. The
	release of		notification shall include information about the date, time, nature,
	hazardous		volume and location of the spill or release.
	substances per		
	Item 1(b)-(c)		
	above		
	(c) Anticipated	•	is repart to the tender contract of the appropriate
	bypasses [40 CFR		possible. The report shall include an evaluation of the anticipated
	122.41(m)(3)]		quality and effect of the bypass.
	(d) Unanticipated	•	Within 24 hours, an oral or electronic notification.
	bypasses [40 CFR	•	Within 7 calendar days, a report that includes an evaluation of
	122.41(m)(3)]		the quality and effect of the bypass.
	(e) Noncompliance	•	Within 24 hours, an oral or electronic notification.
	with the	•	Within 7 calendar days, a report that contains a description of the
	conditions of this		noncompliance, and its causes; the period of noncompliance,
	permit that may		including exact dates and times, and if the noncompliance has not

CFR 122.41(I)(7)] • Division staff may waive the requirement for a written report on a

case-by-case basis.

been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(I)(6).



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