

WAKE FOREST PUBLIC SAFETY WAREHOUSE 1412 Forestville Road, Wake Forest, NC 27587 IDT PROJECT # 1005126 ARCHITECTURAL **DESIGN REVIEW** Proposed Buildings = One Story, 6,991sf enclosed + 255sf canopy = 7,246 under roof AR-23-24 **DESIGN TEAM** SHEET INDEX: Cover Sheet T-1 BRICK MASONRY WALL ROOM NUMBER **ARCHITECT:** T-2 Code Summary Sheet Civil: CMU WALL DATUM INDICATOR Stephen T. Baxter, Architect PLLC Cover Site Cover Sheet **Erosion Control Details** C0.1 General Notes C8.1 **Erosion Control Details** STUD WALL 8133 Holly Forest Road C1.0 C8.2 Erosion Control Details Existing Conditions Plan Wake Forest, North Carolina 27587 FIRE EXTINGUISHER C8.3 Erosion Control Details C2.0 Demolition Plan Ph.: (919) 819-1536; STBaxter.ARCH@outlook.com (100A) - DOOR NUMBER C8.4 NCG01-Erosion Control Details C2.1 Tree Protection Plan C8.5 NCG01-Erosion Control Details **CIVIL ENGINEER:** C3.0 Site Plan (c) WALL HUNG WATER CLOSET C4.0 Erosion Control Plan, Phase I C9.0 Utility Details C4.1 Erosion Control Plan, Phase II C9.1 Utility Details Kimley-Horn C5.0 Utility Details Grading & Drainage Plan C9.2 421 Favetteville Street. Suite 600 SECTION No. WATER CLOSET C5.1 Roadway Storm Profile C10.0 Storm Details Raleigh, NC 27601 C10.1 C6.0 Utility Plan Storm Details Ph.: (919) 653-2990 C7.0 C10.2 Site Details Storm Details HI-I O F W C SECTION INDICATOR

SYN	IBO	LS
<u> </u>		

DETAIL No DETAIL INDICATOR

GRID / COLUMN LINE REVISION INDICATOR INTERIOR ELEVATION INDICATORS SHEET No

(ELEC. WATER COOLER) WALL-MOUNTED LAVATORY COUNTER-MOUNT LAVATORY NORTH INDICATOR SLOPE INDICATOR

STRUCTURAL ENGINEER:

Hayes Structural Consulting & Design 1991 Eddie Howard Road Willow Springs, NC 27592 Ph.: (919) 210-3480

PM&E ENGINEER:

Kilian Engineering 115-C Young Street Henderson, North Carolina 27536 Ph.: (252) 438-8778; Fax: (252) 438-8741

C7.1 Site Details L1.0 Landscape Plan Wet Pond Landscape Plan Site Details C7.2 L1.1 C7.3 ADA Ramp Site Details L2.0 Landscape Details LT1.0 Photometric Lighting Plan Architectural: A-1 Floor Plan A-2 Roof Plan & Reflected Ceiling Plan A-3 **Building Elevations** Color Building Elevations A-3a A-3b Color 3-D Renderings A-3c Building Materials A-4 **Building Section & Wall Sections** A-5 Wall Sections A-6 Wall Sections A-7 Wall Sections & Casework Elevation A-8 Enlarged Plan & Details Structural: S-0 Standard Structural Notes S-1 Foundation Plan S-2 First Floor Framing Plan S-3 Roof Framing Plan SD-1 Structural Details Plumbina P-1 Plumbing Schedules, Notes, & Details P-2 Plumbing Supply Plan P-3 Plumbing Waste Plan P-4 Plumbing Risers Mechanical: M-1 Mechanical Schedule & Notes M-2 Mechanical Plan M-3 Mechanical Details G-1 Gas Schedule, Notes, & Plan G-2 Gas Riser & Detail Electrical: E-1 Electrical Schedule, Notes, & Riser E-2 Electrical Power Plan E-3 Electrical Lighting Plan E-4 Electrical Details Fire Alarm: FA-1 Fire Alarm Schedule, Notes, & Details FA-2 Fire Alarm Plan Fire Protection: FP-1 General Notes, Symbols, & Design Summary FP-2 Site Utility Plan FP-3 Piping Plans FP-4 Reflected Ceiling Plans & Section

STEPHEN T. BAXTER ARCHNECT, PLLC

8133 Holly Forest Road Wake Forest, North Carolina 27587 Phone: (919) 819–1536

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2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS	Primary Occupancy Classification(s): Storage - S-1 Busniess N/A N/A N/A N/A	FIRE PROTECTION REQUIREMENTS	LIFE SAFETY SYSTEM REQUIREMENTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)	Accessory Occup ancy Classification(s):	BUILDING ELEMENT FIRE RATING DETAIL # DESIGN # SHEET # FOR SHEET # SEPARATION REQD PROVIDED AND FOR RATED FOR	Emergency Lighting: Yes
(Reproduce the following data on the building plans sheet 1 or 2)	Special Uses (Table 509): Special Uses (Chapter 4 – List Code Sections):	DISTANCE (W/* SHEET # RATED PENETRATION RATED (FEET) REDUCTION ASSEMBLY JOINTS	Fire Alarm: Yes
Name of Project: Welco Forest Public Sofet: Warehouse	Special Provisions: (Chapter 5 – List Code Sections):	Structural Frame, including columns, girders,	Carbon Monoxide Detection: Y es
Address: Zip Code 27587	Yes	trusses Bearing Watts	
Owner/Authorized Agent: Mickey Rochelle Phone # (919) 435-9455 E-Mail mrochelle@wakeforestnc.com Owned By: City	$\begin{array}{rcl} Actual Area of Occupancy A & + & Actual Area of Occupancy B \\ Allowable Area of Occupancy A & & Allowable Area of Occupancy B \\ \end{array} \leq 1$	Exterior 0	LIFE SAFE TY PLAN REQUIREMENTS
Code Enforcement Jurisdiction: City	+ + = ≤1.00	East	Fire and/or sm oke rated wall locations (Chapter 7)
	STORY DESCRIPTION AND (A) (B) (C) (D)	West South	Assumed and real property line locations (if not on the site plan)
CONTACT: Stephen T. Bax ter, Architect PLLC DESIGNER FIRM NAME LICEN SE # TELEPHONE # E-MAIL	NO. USE BLDGAREA PER TABLE 506.2 ⁴ AREA FOR FRONT AGE ALLOWABLE AREA PER STORY (ACTUAL) AREA INCREASE ^{1.5} STORY OR UNLIMITED ^{2.3}	Interior Nonbearing Walls and	 Extends wan opening area with respect to distance to assumed property times (705.8) Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.
Architectural Stephen T. Baxter, Arch. Stephen Baxter 8812 (919) 819-1536 Civil ()	1 S-1 6060 36,000 36,000	Partitions Exterior walls 0	 Occupant loads for each area Exit access travel distances (1017)
Electrical <u>Kilian Engineering</u> <u>Michael Kilian</u> 17304 (252) 438-8778 Fire Alarm Kilian Engineering Michael Kilian 17304 (252) 438-8778	1 Business 931 36,000 36,000	North	Comm on path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
Plum bing Kilian Engineering Michael Kilian 17304 (252) 438-8778 Mechanical Kilian Engineering Michael Kilian 17304 (252) 438-8778		West	 Dead end lengths (1020.4) Clear exit widths for each exit door
Sprinkler-Standpipe Crawford Sprinkler	 a. Perimeter which fronts a public way or open space having 20 feet minimum width = (F) 	South Interior walls and partitions	 Maximum calculated occupant load capacity each exit door can accommodate based Actual accument load for each exit door.
Retaining Walls >5' High ()	b. Total Building Perimeter = (P) c. Ratio $(F/P) = (F/P)$	Floor Construction	A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure
("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)	d. W = Minimum width of public way =(W) e. Percent of frontage increase $I_f = 100 [F/P - 0.25] \times W/30 =(\%)$	and joists 0	 Decation of doors with panic hardware (1010.1.10)
2018 NC BUILDING CODE: New Building	 ² Unlimited area applicable under conditions of Section 507. ³ Maximum Building Area = total number of stories in the building x D (maximum3 stories) (506.2). 	Floor Ceiling Assembly Columns Supporting Floors	Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
2018 NC EXISTING BUILDING CODE : N/A N/A N/A CONSTRUCTED: (4-4)	⁴ The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1.	Roof Construction, including supporting beams and joists	Location of doors equipped with hold-open devices
RENOVATED: (date) CORRENT OCCUPANCY(S) (Ch 3): RENOVATED: (date) PROPOSED OCCUPANCY(S) (Ch 3):	⁵ Frontage increase is based on the unsprinklered area value in Table 506.2.	Roof Ceiling Assembly 2 1 T-2 Cak'd Columns Supporting Roof	Location of emergency escape windows (1030) The square footage of each fire area (202)
OCCUPANCY CATE GORY (Table 1604.5): Current: II Proposed: II	ALLOWARIE HEICHT	Shaft Enclosures - Exit	The square footage of each sm oke compartment for Occupancy Classification I-2 (40
BASIC BUILDING DATA		Shaft Enclosures - Other	Note any code exceptions of table notes that may have been unitzed regarding the iter
Construction Type: <u>V-B</u> Sprinkler: Ves NEPA 13	Building Height in Feet (Table 504.3) 60 26	Corridor Separation Construction Occupancy/Fire Barrier Separation 2 1 T-2 U-309	ACCESSIBLE DWELLING UNITS
Standpipes: No	Building Height in Stories (Table 504.4) 2 1	Party/Fire Wall Separation Smoke Barrier Separation	(SECTION 1107)
Primary Fire District: <u>No</u> Flood Hazard Area: <u>No</u> Special Inspections Required: No	¹ Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.	Smoke Partition Image: Comparison of the state of the st	- UNITS UNITS UNITS UNITS UNITS UNITS UNITS UNITS
special inspections Required. No		Sleeping Unit Separation	REQUIRED PROVIDED REQUIRED PROVIDED REQUIRED PROVIDED
Gross Building Area Table FLOOR FXISTING (SO FT) NEW (SO FT) SUB-TOTAL		* Indicate section number permitting reduction	
3rd Floor			ACCESSIBLE PARKING
Zer Floor Mezzanine		FIRE SEPARATION DISTANCE DEGREE OF OPENINGS ALLOWABLE AREA ACTUAL SHOWN ON PLAN	(SECTION 1106)
1st Floor 6,991 Basement		(FEET) FROM PROPERTY LINES PROTECTION (%) (%) (TABLE 705.8)	AREA REQUIRED PROVIDED REGULAR WITH VAN SPACES WITH
TOTAL 6,991			J ACCESS AISLE 132" ACCESS 8' ACC AISLE AISLE AISLE
			Front 5 15 2
			TOTAL
	2018 A DRENDLY B	-	
ENERGY SUMMARY	BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS		
The following data shall be considered minimum and any special attribute required to meet the energy code shall	STRUCTURAL DE SIGN (PROVIDE ON THE STRUCTURAL SHEET SIE APPLICABLE)		
If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the	DESIGN LOADS:		
proposed design.	Importance Factors: Wind (I _w) Select one		
E xisting building envelope complies with code: Select one	Seismic (I_E) Select one Seismic (I_E)		*
Exempt Building: Select one Provide code or statutory reference:	Live Loads: Roof psf		CLEAR EXIT
Climate Zone: 4A	Floor pst		$\begin{array}{rcl} MAX. CAP. &= 160\\ ACT. CAP &= 15 \end{array}$
Method of Compliance: <u>Select one</u> (If "Other" specify source here)	Ground Snow Load		*
THE RM AL ENVELOPE (Prescriptive method only)	Wine SEE STILL		
Roof/ceiling Assembly (each assembly)	DRAWINGS		×
Description of assembly. <u>Shingles on wood truss w/insulation under roof deck</u>	SEISMIC DE S		
R-Value of insulation: R-42	Provide the following Seismic Design Parameters:		STORAGE
U-Value of skylight:	Spectral Response Acceleration S _s %g S ₁ %g		
total square footage of skylights in each assembly.	Site Classification (ASCE 7) Select one Data Source: Select one		
Exterior Walls (each assembly) Description of assembly: Masonry veneer w/ air space over wood framing w/ batt insulation	Basic structural system Select one Analysis Procedure: Select one		
U-V alue of total assembly: R-Value of insulation: R-20	Architectural, Mechanical, Components anchored? <u>Select one</u>		
Openings (windows or doors with glazing) U-Value of assembly: 045 storefront 050 OH doors	LATE RAL DE SIGN CONTROL: Select one		
Solar heat gain coefficient: 0.25 min	SOIL BEARING CAPACITIES:		
Door R-Values:	Pile size, type, and capacity		
Walls below grade (each assembly)			
U-V alue of total assembly:		Design No. U309	
R-Value of insulation:		Bearing Wall Rating—1 HR.	
Floors over unconditioned space (each assembly) Description of assembly:		Finish Rating—27 Min.	
U-V alue of total assembly: R-Value of insulation:		(3)	BUSINESS AREA
Floors slab on grade		24" 0.C	BARRIER.
Description of assem bly. <u>Unheated conc. slab on grade w/ perim eter insulation</u>			CALC'D.HORIZ.
U-V alue of total assembly: R-V alue of insulation: R-15 vert.			1-HOUR FIRE L
Honzontal/vertical requirement:			D2/T2. CLEAR EXIT
	ROOF TRUSS BOTTOM	2 (1 3 -2 x 4's Firestopped	MAX. CAP. = 160
	CHORD.	1. Wood Studs—Nom 2 by 4 in., spaced 24 in. OC effectively firestopped. 2. Wallboard, Gynsum*—5/8 in thick 4 ft wide pailed to stude and	ACT. CAP. = 10
	CHANNELS @ 24" O.C.	bearing plates with 6d cement coated nails 1-7/8 in. long, 0.0915 in.	
		American Gypsum Co.—Type AG-C.	
		Boral Gypsum Inc.—Type BG-C or DDN1. Continental Gypsum Company.—Types CG5-5, CG6-6, CG0, 0, CG, C	
		CGTC-C.	OCCUPANCY (
		Lafarge Gypsum, A Div. of Lafarge Corp.—Types LGFC6, LGFC-C.	S-1 AREA =
	2-LAYERS §" GYP. BOARD TYPE X PER	National Gypsum Co., Charlotte, NC—Types FSW, FSW-G. Pabco Gypsum Co.—Type C or PG-C	BUSINESS AR TOTAL BUILDI
	NCSBC TABLE	Republic Gypsum Co.—Type RG-C.	S-1 OCCUPA
	1-HOUR RATED FIRE	Temple-Inland Forest Products Corp.—Type TG-C.	BUSINESS OC
	BARRIER.	 Joints and Nailheads—Wallboard joints covered with paper tape and joint compound. Nailheads covered with joint compound. Gypsum plaster 	TOTAL OCCOT
		not more than 1/8 in. thick may be applied over the wallboard in addition to the specified joint treatment	
		4. Batts and Blankets*—(Not Shown)—Optional glass fiber insulation.	
		Certainteed Corp. Johns Manville International Inc.	
		Owens-Corning Fiberglas Corp.	
		Dearing the OL Classification Marking	
	2 CALC'D HORIZ. FIRE BARRIER DETAIL	<u>VERT. FIRE BARRIER DETAIL</u>	(D4 LIFE SAFETY PLAN
	T-2 SCALE: NONE	T-2 SCALE: NONE	T-2 SCALE: NONE

AND/OR SPACE DESIGNATION COL COL COLOR (CPU) COLOR (CPU) COLOR (CPU) COLOR (CPU) COLORATION CATUAL WDTH (SECTION 1005.1) sal # of Occupants 931 100 10 n/a 2.0" n/a 31 sal # of Occupants Image: Section 100.1) 10 n/a 2.0" n/a 31 sal # of Occupants Image: Section 100.2) Image: Section 101.2) image: Section 100.2.1) Image: Section 100.2.1) Minimum width of exit passage: way (Section 101.2). Image: Section 102.2) Image: Section 102.2.1) Image: Section 102.2.1) Minimum width of exit passage: way (Section 102.2.1) Image: Section 102.5.1 Image: Section 102.5.1 Space Area - SF Occupant Exit	AND/OR SPACE DESIGNATIONCOCOLATE WIDTH (III)AREA! SQ.FT.AREA! PER OCCU- PANTNUMBER OF OCCU- PANTSEGRESS WIDTH PER OCCUPANT (TABLE 1005.1)REQUIRED WIDTH (SECTION 1005.1) (a+b) x cACTUAL WID SHOWN ON P16,06030020n/a.2"n/a4.0"n/a16,06030020n/a.2"n/a4.0"n/a101010n/a.2"n/a2.0"n/a				
PANT FAND STAIR LEVEL S	PANT FANTS STAIR LEVEL STAIR LEVEL STAIR 1 6,060 300 20 n/a .2" n/a 4.0" n/a 1siness 931 100 10 n/a .2" n/a 2.0" n/a				
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usiness 931 100 10 n/a 2" n/a 2.0" n/a 3 int = of Occupants	usiness 931 100 10 n/a .2" n/a 2.0" n/a				
Image: Second					
See Table 1004.1.1 to determine whether net or gross area is applicable. Image: Comparise of the total required (Section 1008.1.1) Minimum starway width (Section 1009.1); min. corridor width (Section 1017.2); min. door width (Section 1008.1.1) Minimum starway width (Section 1001.2) Minimum starway width (Section 1021.2) The loss of 1 means of egress shall not reduce the available capacity to less than 50 percent of the total required (Section 1005.1) Assembly occupancies (Section 1025) Assembly voccupancies (Section 1025) MELY OC CUPANCY INFORMATION THIS SECTION FOR AS SEMBLY USE AREA(S) Space Area - SF Occupant Exit Exit Exit Description					
See Table 1004.1.1 to determine whether net or gross area is applicable. Image: Construct of the total required (Section 1008.1.1) Minimum strivery width (Section 1009.1); min. corridor width (Section 1017.2); min. door width (Section 1008.1.1) Minimum strivery width (Section 1009.1); min. corridor width (Section 1017.2); min. door width (Section 1008.1.1) Minimum width of exit passage way (Section 1021.2) The loss of 1 means of egress shall not reduce the available capacity to less than 50 percent of the total required (Section 1005.1) ASSE MBLY OCCUPANCY INFORMATION THIS SECTION FOR AS SEMBLY USE AREA(S) Space Area - SF Occupant Docupant Exit Exit Exit Description Load Factor Load Width Quantity —					
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Space Description Area - SF Load Factor Occupant Load Factor Exit Load Exit Width Exit Quantity	THIS SECTION FOR AS SEMBLY USE AREA(S)				
Description Load Factor Load Width Quantity	Space Area - SF Occupant Occupant Exit Exit				
USE WATERCLOSETS URINALS LAVATORIES SHOWERS/ DRINKING FOUNTAR USE WATERCLOSETS URINALS LAVATORIES SHOWERS/ DRINKING FOUNTAR USE WATERCLOSETS URINALS LAVATORIES SHOWERS/ DRINKING FOUNTAR S-1 Occ Load 10 10 10 20 Regular Acces S-1 Occ Load 10 10 10 10 20 0 Ratio 1:100 1:100 1:100 1:100 1:1,000 0 Fixtures Required 1 1 1 1 1 1 Fixtures Required 1 1 1 1 1 1 1 Fixtures Required 1 1 1 1 1 1 1 1 Fixtures Required 1 1 1 1 1 1 1 Fixtures Required 1 1 1 1 1 1 1	Description Load Factor Load Width Quantity				
TOTAL					
TOTAL					
PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)USEWATERCLOSETSURINALSLAVATORIESSHOWERS/ TUBSDRINKING FOUNTA REGULARS-1 Occ Load1010101020Ratio1:1001:1001:1001:1001:1,000Fixtures Required11111Business Occ Load555510Ratio1:251:251:401:401:100Fixtures Required11111Fixtures Required11111Fixtures Required11111Fixtures Required11111Fixtures Required11111Fixtures Provided11111	101AL				
(TABLE 2902.1) USE WATERCLOSETS URINALS LAVATORIES SHOWERS/ DRINKING FOUNTA MALE FEMALE MALE FEMALE MALE FEMALE TUBS DRINKING FOUNTA S-1 Occ Load 10 10 10 10 20 1:1,000 <td>PLUMBING FIXTURE REQUIREMENTS</td>	PLUMBING FIXTURE REQUIREMENTS				
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	(TABLE 2902.1)				
MALE FEMALE MALE FEMALE TUBS REGULAR Access S-1 Occ Load 10 10 10 10 20 11 10 20 11 10 11 10 11 10 11 10 11 10 11	USE WATERCLOSETS URINALS LAVATORIES SHOWERS/ DRINKING FOU				
Image: Section of the sectio	MALE FEMALE MALE FEMALE TUBS REGULAR A				
Fixtures Required 1 1 1 1 1 Business Occ Load 5 5 5 5 10 Ratio 1:25 1:25 1:40 1:40 1:100 Fixtures Required 1 1 1 1 1 Fixtures Required 1 1 1 1 1 Fixtures Required 1 1 1 1 1 Fixtures Provided 1 1 1 1 1 1	Ratio 1:100 1:100 1:100 1:100 1:100 1:100				
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	Fixtures Provided I I I I I				
	OPPOTAT A PROPAGATA				
OR OTHER ARRONALS OF	SPECIAL APPROVALS				
SPE CIAL APPROVALS	pecial approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, ICC, etc., describe below				
SPE CIAL APPROVALS	Land and - the summer of the second				
SPE CIAL APPROVALS pecial approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, ICC, etc., describe below)					





Sealed Date: 07/19/24 Consultants



FINAL CONSTRUCTION PLANS FOR: TOWN OF WAKE FOREST PUBLIC SAFETY WAREHOUSE

INFRASTRUCTURE INSPECTION TABLE				
TOWN OF WAKE FOREST ENGINEERING				
INEAR FOOTAGE OF PUBLIC STREETS	570 LF			
INEAR FOOTAGE OF PUBLIC MULTIUSE PATHS	284 LF			
INEAR FOOTAGE OF CURB AND GUTTER	488 LF			
INEAR FOOTAGE OF 15" RCP STORM PIPE	464 LF			
INEAR FOOTAGE OF 18" RCP STORM PIPE	400 LF			
NUMBER OF STORMWATER CONTROL MEASURES (SCM'S)	1			
CITY OF RALEIGH PUBLIC UTILITIES				
INEAR FOOTAGE OF PUBLIC WATER MAIN (BY SIZE)	0 LF			
INEAR FOOTAGE OF PUBLIC SEWER MAIN (BY SIZE)	0 LF			
INEAR FOOTAGE OF PRIVATE WATER MAIN (BY SIZE)	0 LF			
INEAR FOOTAGE OF PRIVATE SEWER MAIN (BY SIZE)	0 LF			
NUMBER OF WATER STUBS/TIES (EXCLUDING SERVICES)	0			
NUMBER OF WATER METER(S) FOR DOMESTIC (BY SIZE)	(1) 1-1/2" METER			

PROJECT CONTACTS

OWNER: TOWN OF WAKE FOREST

919-435-9455

919-653-5841

919-653-2990

SURVEYOR: KCI ASSOCIATES OF N.C.

919-783-9214

919-861-9838

GEOTECHNICAL ENGINEER: ECS SOUTHEAST, LLP

LANDSCAPE ARCHITECT: KIMLEY-HORN AND ASSOCIATES, INC.

301 S. BROOKS STREET

CONTACT: MICKEY ROCHELLE

(1) 4" SERVICE

WAKE FOREST, NORTH CAROLINA 27587

MROCHELLE@WAKEFORESTNC.GOV

421 FAYETTEVILLE STREET. SUITE 600

MELISSA.BRAND@KIMLEY-HORN.COM

421 FAYETTEVILLE STREET, SUITE 600

JOHN.KUZENSKI@KIMLEY-HORN.COM

RALEIGH, NORTH CAROLINA 27601

CONTACT: JOHN KUZENSKI, P.E.

4505 FALLS OF NEUSE, FLOOR 4

ROB.BAUMGARTNER@KCI.COM

4505 FALLS OF NEUSE, FLOOR 4

CONTACT: BLAKE A. HASH, E.I.

BHASH@ESCLIMITED.COM

RALEIGH, NORTH CAROLINA 27607

RALEIGH, NORTH CAROLINA 27607 CONTACT: ROB BAUMGARTNER, PLS

RALEIGH, NORTH CAROLINA 27601

CONTACT: MELISSA BRAND, PLA

ENGINEER: KIMLEY-HORN AND ASSOCIATES, INC.

NUMBER OF WATER METER(S) FOR IRRIGATION (BY SIZE)

NUMBER OF SEWER SERVICES (BY SIZE)

	SHEET LIST TABLE
SHEET NUMBER	SHEET TITLE
C0.0	COVER SHEET
C0.1	GENERAL NOTES
C1.0	EXISTING CONDITIONS PLAN
C2.0	DEMOLITION PLAN
C2.1	TREE PROTECTION PLAN
C3.0	SITE PLAN
C4.0	EROSION CONTROL PLAN PHASE 1
C4.1	EROSION CONTROL PLAN PHASE 2
C5.0	GRADING AND DRAINAGE PLAN
C5.1	ROADWAY STORM PROFILE
C6.0	UTILITY PLAN
C7.0	SITE DETAILS
C7.1	SITE DETAILS
C7.2	SITE DETAILS
C7.3	ADA RAMP SITE DETAILS
C8.0	EROSION CONTROL DETAILS
C8.1	EROSION CONTROL DETAILS
C8.2	EROSION CONTROL DETAILS
C8.3	EROSION CONTROL DETAILS
C8.4	NCG01 - EROSION CONTROL DETAILS
C8.5	NCG01 - EROSION CONTROL DETAILS
C9.0	UTILITY DETAILS
C9.1	UTILITY DETAILS
C9.2	UTILITY DETAILS
C10.0	STORM DETAILS
C10.1	STORM DETAILS
C10.2	SCM DETAILS
L1.0	LANDSCAPE PLAN
L1.1	WET POND LANDSCAPE PLAN
L2.0	LANDSCAPE DETAILS
LT1.0	PHOTOMETRIC LIGHTING PLAN
RW-000	COVER SHEET
RW-100	WALL NO. 1 PLAN AND PARAMETERS
RW-101	WALL NO. 1 PROFILE
RW-200	GENERAL SPECIFICATIONS
RW-300	MSE WALL SPECIFICATIONS
RW-301	MSE WALL DETAILS
RW-302	MSE WALL DETAILS CONTINUED

PREPARED IN THE OFFICE OF: Kimley»Horn 421 FAYETTEVILLE STREET, SUITE 600, RALEIGH, NC 27601 PHONE: (919) 835-1494 FAX: (919) 653-5847 WWW.KIMLEY-HORN.COM

CASE #SP-23-20 LOCATION: 1412 FORESTVILLE ROAD TOWN OF WAKE FOREST WAKE COUNTY, NORTH CAROLINA

A DEVELOPMENT BY:



TOWN of WAKE FOREST 301 S. BROOKS STREET WAKE FOREST, NORTH CAROLINA 27587 PH: (919) 773-4420

GENERAL NOTES:

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2. PLEASE CONTACT THE TOWN OF V	
	TO SCHEDULE A PRE-CONSTRUCTION MEETING
 CONTACT THE NORTH CAROLINA (AT 1-800-632-4949. 	ERMITS FOR THIS PLAN. ONE CALL CENTER PRIOR TO DOING ANY DIGGING
I. ALL PUBLIC FACILITIES, INCLUDING UT TO BE CONSTRUCTED ON ALL STREETS STANDARDS. SUCH FACILITIES APPROVI	ILITIES, SIDEWALKS, AND HANDICAP RAMPS, ARE AS SPECIFIED BY TOWN OF WAKE FOREST ED BY THE TOWN OF WAKE FOREST SHALL BE
INSTALLED AS APPROVED, UNLESS A CH FOREST. II. EXECUTION OF THESE CONSTRUCTIO	HANGE IS APPROVED BY THE TOWN OF WAKE
TOWN OF WAKE FOREST IN NO WAY LIM ENGINEER OF RECORD WITH REGARDS LOCAL STANDARDS AND/OR CONDITION	IITS THE RESPONSIBILITY OF THE OWNER AND TO COMPLIANCE WITH ALL FEDERAL, STATE, AND S.
III. OWNER HEREBY CERTIFIES AND AGR REQUIRED BY THE TOWN OF WAKE FOR NONCOMPLIANCE WITH TOWN STANDAR CONSTRUCTION PLANS, INCLUDING RES	REES TO TAKE SUCH ACTION AS MAY BE EST TO CORRECT ANY ERRORS, OMISSIONS, OR RDS AND/OR CONDITIONS DESCRIBED IN THESE
CONSTRUCTION PLANS WITH THE APPR	OPRIATE CORRECTIONS AND/OR REVISIONS.
OWNER	DATE

lic Works/Engineering

se plans have been electronically approved for construction the Town of Wake Forest Planning Department. This approval not be altered once issued.

eigh Water Review Officer



Know w Ca



	SCALE: 1"=500'-0"
SI	
SITE ADDRESS	1412 FORESTVILLE RD
SITE PIN	1749557642
EXISTING ZONING	CU-NB, NEIGHBORHOOD BUSINESS
EXISTING ZONING OVERLAY	RZ-07-05
EXISTING USE	OFFICE/SERVICE/CIVIC
PROPOSED USE	OFFICE/SERVICE/CIVIC
SITE AREA	3.98 AC (173,457 SF)
EXISTING BUILDING AREA	7487 SF
PROPOSED ADDITIONAL BUILDING AREA	7000 SF WITH POTENTIAL FUTURE EXPANSION TO 9100 SF
SETBACKS	PRINCIPAL BUILDING: FRONT* - 20' STREET SIDE/SECONDARY FRONT - 20' LOT SIDE - 15' REAR - 20' ACCESSORY STRUCTURE: SIDE - 10' REAR - 10'
	*PARKING IN FRONT SETBACK NOT PERMITTED
NUMBER OF STORMWATER CONTROL MEASURES	1 WET POND
LAND COVER	IMPERVIOUS (EXISTING): 0.80 AC PERVIOUS (EXISTING): 3.18 AC PERCENT IMPERVIOUS (EXISTING): 20.10% IMPERVIOUS (PROPOSED): 1.38 AC PERVIOUS (PROPOSED): 2.39 AC PERCENT IMPERVIOUS (PROPOSED): 36.59%
LANDSCAPE BUFFERS	NORTH: TYPE B (25') EAST: STREET YARD (20') SOUTH: TYPE B (25') WEST: TYPE B (25')
PARKING REQUIRED	PER TOWN OF WAKE FOREST UDO SECTION 9.4, INDOOR STORAGE/WAREHOUSING REQUIRES 1 AUTO SPACE PER 1,500 SF OF FLOOR AREA 7,000 SF + 2,100 SF FOR FUTURE EXPANSION = 9,100 SF; 6 SPACES REQUIRED FOR BUILD OUT
PARKING PROVIDED	15 SPACES PROPOSED FOR NEW STRUCTURE
BIKE RACKS REQUIRED	2 PER 50 PARKING SPACES
BIKE RACKS PROVIDED	2
FEMA	THE SITE DOES NOT CONTAIN ANY SPECIAL FLOOD HAZARD AREAS

These plans have been electronically approved for construction the Town of Wake Forest Public Works and Engineering partments. This approval may not be altered once issued.

Y OF RALEIGH – PLANS AUTHORIZED FOR CONSTRUCTION ctronic Approval: This approval is being issued electronically. approval is valid upon the signature of a City of Raleigh view Officer below. The City will retain a copy of the approved ns. Any work authorized by this approval must proceed in ordance with the plans kept on file with the City. This ctronic approval may not be edited once issued. Any

dification of this approval once issued will invalidate this

y of Raleigh Development Approval:

REVISIONS

	10	11/15/2024	ISSUED FOR BID		DPM
	8	04/29/2024	NCDOT 3 PARTY ENCROACHMENT 1ST	SUBMITTAL	ASA
		05/30/2024	ISSUED FOR CD APPROVAL		ASA
	6	03/27/2024 REVISED PER 2ND ROUND TOWN REVIEW		EW COMMENTS	ASA
	5	02/15/2024	REVISED PER 1ST ROUND NCDEQ REV	IEW COMMENTS	ASA
hat's below.	NO.	DATE	DESCRIPTION		BY
	This c preser only f prepar withou and A and A Copyri	document, toge nted herein, as for the specific red. Reuse of a t written author ssociates, Inc. s ssociates, Inc. ght Kimley-Horn	ther with the concepts and designs an instrument of services, is intended purpose and client for which it was and improper reliance on this document rization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn	SEAL:	11/15/24
	DA	TE:		JOB NUMBER:	
RIZATION: F-1012	11	/15/20)24	0113110	66

GENERAL NOTES:	STANDARD UTILITY NOTES
DEPARTMENT OF TRANSPORTATION (NCDOT) ROAD AND BRIDGE SPECIFICATIONS, THE NORTH CAROLINA STANDARDS, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK, THE NORTH CAROLINA EROSION	1. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH WAKE FOREST AND CITY OF RALEIGH DESIGN STANDARDS & SPECIFICATIONS
AND SEDIMENT CONTROL REGULATIONS, THE WAKE FOREST DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT, AND GENERAL DESIGN STANDARDS. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT SHALL GOVERN.	 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
ALL UTILITIES TO BE DEDICATED TO THE WAKE FOREST MUNICIPAL WATER AND/OR SANITARY SEWER SYSTEM SHALL BE CONSTRUCTED AND TESTED TO CONFORM TO STATE OF NORTH CAROLINA/STATE BOARD OF HEALTH WATERWORKS AND/OR SEWAGE REGULATIONS AND THE WAKE FOREST DESIGN AND CONSTRUCTION STANDARDS AND	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 LITUITIES SHALL BE
2. THE TERM "CONTRACTOR" AS REFERENCED HERE-IN SHALL ALSO INCLUDE THE SUBCONTRACTOR OR PRINCIPAL TRADE CONTRACTOR, UNDER CONTRACT TO THE GENERAL CONTRACTOR TO PROVIDE LABOR, MATERIALS, AND/OR	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
3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL JOBSITE SAFETY, INCLUDING BUT NOT LIMITED TO TRENCH SAFETY, DURING ALL PHASES OF CONSTRUCTION.	C) WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATER MAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
 4. THE LOCATION AND SIZE OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING AND PROTECTING ALL PUBLIC OR PRIVATE UTILITIES (SHOWN OR NOT SHOWN) WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE NORTH CAROLINA 811 UTILITIES LOCATION SERVICE (NC811) AT 1-800-632-4949 FOR PROPER IDENTIFICATION OF EXISTING UTILITIES WITHIN THE SITE. 	 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 WATER MAIN & 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. F) ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18"MIN. VERTICAL SEPARATION REQUIRED.
5. THE CONTRACTOR SHALL SALVAGE AND PROTECT ALL EXISTING POWER POLES, SIGNS, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC. DURING ALL CONSTRUCTION PHASES. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.	3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE WAKE FOREST PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.
6. TRAFFIC CONTROL WITHIN ALL VEHICULAR AREAS IS THE RESPONSIBILITY OF THE CONTRACTOR, SHALL BE IN CONFORMANCE WITH THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES," AND AS FURTHER DIRECTED BY CITY AND STATE INSPECTORS.	4. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE WAKE FOREST PUBLIC UTILITIES DEPARTMENT.
7. ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS, SPECIFICATIONS, AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OF AMBIGUITIES. WORK DONE BY	5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCE MAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK. 8. CONSTRUCTION STAKEOUT FOR THIS PROJECT SHALL BE PER A DIGITAL (CAD) FILE PROVIDED BY THE ENGINEER.	6. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & 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
THE CONTRACTOR SHALL NOTIFY THE LEAD ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES FOUND BETWEEN THE DIGITAL FILE AND THE CRITICAL STAKING DIMENSIONS SHOWN ON THIS PLAN. ANY MODIFICATIONS MADE BY OTHERS TO THE DIGITAL FILE PROVIDED BY THE ENGINEER SHALL RENDER IT VOID.	7. INSTALL 2" WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'x2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. <u>NOTE:</u> IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.
9. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE THE MEETING WITH THE WAKE FOREST ENGINEERING DIVISION AND THE OWNER.	8. INSTALL 4" PVC SEWER SERVICES @ 2.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
10. CONTRACTOR IS RESPONSIBLE FOR VERIFYING OR OBTAINING ALL REQUIRED PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION.	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
WIRE UTILITY STRUCTURES SHALL BE ADJUSTED TO MATCH PROPOSED FINISHED ELEVATIONS AND SLOPES.	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
13. EXISTING INFORMATION SHOWN TAKEN FROM LAND TITLE SURVEY TITLED: "ALTA/NSPS LAND TITLE SURVEY" IN TOWN OF WAKE FOREST, WAKE COUNTY, NORTH CAROLINA DATED MAY 1, 2022 PROVIDED BY KCI ASSOCIATES OF NC.	11. NCDOT ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS &
14. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NC DOT AND WAKE FOREST STANDARDS, SPECIFICATIONS, & DETAILS IF APPLICABLE.	SERVICE TAPS) WITHIN STATE ROW PRIOR TO CONSTRUCTION. 12. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD
GRADING	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
$\frac{9}{2}$ 1. OBTAIN AND POST THE WAKE FOREST LAND DISTURBANCE PERMIT ONSITE PRIOR TO COMMENCING WORK ON SITE.	WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT.
INSTALLED PRIOR TO COMMENCING CONSTRUCTION.	13. THE STATE OF NORTH CAROLINA AND WAKE FOREST PUBLIC WORKS DEPT. SHALL BE NOTIFIED IN WRITING PRIOR TO UTILITY INSTALLATION AND FOR SCHEDULING INSPECTIONS.
4. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS	14. IRAFFIC CONTROLS FOR ANY UTILITY WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE IN COMPLIANCE WITH STANDARDS OF THE NORTH CAROLINA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
AND SHALL BE WATERED, FERTILIZED, RESEEDED, AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF GRASS.	CONTAINED IN THE WAKE FOREST PUBLIC UTILITIES DEPARTMENT HANDBOOK COVERING SUCH ITEMS SHALL APPLY.
5. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, AND AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL USE SILT FENCES (OR OTHER METHODS APPROVED BY THE ENGINEER, WAKE FOREST, AND NCDENR). AS REQUIRED TO	16. IF CITY OF RALEIGH WATER AND SANITARY SEWER PERMITS ARE REQUIRED, CONTRACTOR IS RESPONSIBLE FOR ALL PERMIT FEES.
PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, OR LOCAL EROSION, CONSERVATION, AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS OR OTHER GROWTH TO PREVENT EROSION.	17. LOCATIONS AND SIZES OF EXISTING WATER AND SEWER LINES SHOWN ON THESE PLANS WITHIN THE PROPERTY LIMITS OF THE SITE ARE ASSUMED BASED ON SURVEY OF SURFACE FEATURES (MANHOLES, VALVES, VAULTS, METERS, ETC.) PREPARED BY KCI ASSOCIATES OF NC. IT IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE SIZE, MATERIAL, AND HORIZONTAL AND VERTICAL LOCATION OF THE EXISTING UTILITIES PRIOR TO COMMENCING WORK. ANY DEVIATIONS FROM WHAT IS INDICATED ON THESE PLANS SHALL BE REPORTED
PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS AND REPORT. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE CERTIFIED MATERIAL TESTING AGENCY PRIOR TO PLACEMENT.	TO THE THE DEVELOPER AND ENGINEER, IN WRITING, IMMEDIATELY. 18. CONTRACTOR SHALL PROVIDE A MEANS TO KEEP ALL NEW PIPING ISOLATED FROM EXISTING PIPING UNTIL ALL NEW PIPING HAS BEEN TESTED, AND ACCEPTED FOR SERVICE
7. GRADING CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS.	19. EXISTING UTILITIES SHALL BE PROTECTED DURING ALL CONSTRUCTION.
 8. ALL MATERIALS USED FOR BACKFILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS, OR ANY OTHER NON-COMPATIBLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE. 9. MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE. BACKFILL AROUND DRAINAGE STRUCTURES. OR 	20. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE UTILITIES. ALL PUBLIC PIPE, STRUCTURES, AND FITTINGS SHALL BE INSPECTED BY THE WAKE FOREST INSPECTOR PRIOR TO BEING COVERED. THE INSPECTOR MUST ALSO BE PRESENT DURING DISINFECTION AND PRESSURE TESTING OF ALL MAINS. THE CONTRACTOR'S BID PRICE SHALL INCLUDE ALL INSPECTOR FOR THE INSPECTOR FOR THE INSPECTION AND PRESSURE TESTING OF ALL MAINS.
IN UTILITY TRENCHES FOR ANY OTHER DEPRESSION REQUIRING FILL OR BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AS SET OUT IN ASTM STANDARD D-698. THE CONTRACTOR SHALL, PRIOR TO ANY OPERATIONS INVOLVING FILLING OR BACKFILLING, SUBMIT THE RESULTS OF THE PROCTOR TEST TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTED IS REPRESENTATIVE OF THE	21. UTILITY WORK SHALL BE INSPECTED AND ACCEPTED BY WAKE FOREST PRIOR TO PLACING INTO SERVICE.
MATERIALS TO BE USED ON THE PROJECT. TESTS SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND THE CERTIFICATIONS MADE BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY.	 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING "AS-BUILT" PLANS, PER WAKE FOREST REQUIREMENTS, TO THE ENGINEER SHOWING THE LOCATION OF WATER AND SEWER SERVICES AND ANY
10. ALL DEMOLITION, DEBRIS, AND OTHER EXCESS MATERIAL SHALL BE HAULED OFF—SITE AND LEGALLY DISPOSED OF	DEVIATIONS FROM PLANS MADE DURING CONSTRUCTION. THE ENGINEER WILL PROVIDE THESE RECORD PLANS TO THE WAKE FOREST ENGINEERING DEPARTMENT.
11. NO TREE WITHIN THE TREE PROTECTION AREA SHALL BE REMOVED OR DAMAGED. 12. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE	WATER
FINAL SITE INSPECTION PRIOR TO THE PROJECT ACCEPTANCE IS SCHEDULED. FENCING SHALL BE REMOVED PRIOR TO FINAL SITE INSPECTION FOR THE CO.	1. WATERLINES, LARGER THAN 2 SHALL BE DUCTLE IKON PIPE MEETING THE REQUIREMENTS OF ANSI-AWWA CIST PRESSURE CLASS 350. WATERLINES 3/4" TO 2" SHALL BE TYPE "K" SOFT COPPER.
13. REFERENCE GEOTECHNICAL REPORT FOR PAVING SUB GRADE INFORMATION.	2. ALL UNDERGROUND UTILITIES AND FIRE HIDRANTS MOST BE FUNCTIONALLY APPROVED FROM TO STRUCTURAL CONSTRUCTION. 3. NATIONAL STANDARD THREADS SHALL BE INSTALLED ON FIRE HYDRANTS
UNLESS OTHERWISE NOTED (ADD 6 FOR TOP OF CURB). $\frac{10}{2}$ 15. PROPOSED CONTOURS AND GUTTER GRADIENTS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND ROADWAY PROFILES /SUPERELEVATIONS ARE TO BE USED IN CASE OF DISCREPANCY	 ALL FIRE HYDRANTS AND FDC CONNECTIONS TO HAVE STORZ TYPE CONNECTION PER WAKE FOREST FIRE DEPARTMENT STANDARDS.
16. REFER TO SITE PLAN AND FINAL PLAT FOR HORIZONTAL DIMENSIONS.	BACKFLOW PREVENTION: 1. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPARTMENT
 17. WHERE FILL IS TO BE PLACED ON EXISTING SLOPES STEEPER THAN 4:1, CONTRACTOR SHALL EXCAVATE BENCHES WITH A MAXIMUM DEPTH OF 3'. 	CONNECTION POINTS OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS REQUIRED BACKFLOW PREVENTER.
18. THE CONTRACTOR SHALL COORDINATE WITH THE GEOTECHNICAL ENGINEER FOR APPROPRIATE SLOPE STABILIZATION ON ALL SLOPES STEEPER THAN 3:1.	 EACH BACKFLOW PREVENTER ASSEMBLY IS REQUIRED TO BE TESTED BY AN APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM INTO SERVICE. CONTRACTOR SHALL PERFORM TESTING IN ACCORDANCE WITH THE WAKE FOREST ENGINEERING DEPARTMENT.
CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR BLASTING ROCK IF BLAST ROCK IS ENCOUNTERED. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL BLASTING AND SAFETY REQUIREMENTS.	CONSTRUCTION NOTES
$\frac{1}{2}$ 20. SILT FENCE SHALL BE PLACED AROUND ALL TEMPORART SUIL STOCKFILES A MINIMUM OF 3 FROM TOE OF SLOPE. 21. VERTICAL DATUM IS BASED ON NAVD 88.	1. THE CONTRACTOR SHALL CONDUCT THE WORK IN A SAFE MANNER AND WITH A MINIMUM AMOUNT OF INCONVENIENCE TO TRAFFIC.
	2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SHALL ADHERE TO THE PROVISIONS OF THE MUTCD (MOST CURRENT EDITION).
 STANDARDS AND SPECIFICATIONS. SANITARY SEWER MAINS SHALL BE SDR−35 PVC PIPE AS SPECIFIED IN THESE PLANS AND CORPUD STANDARDS AND SPECIFICATIONS. SANITARY SEWER SERVICES SHALL BE SCHEDULE 40 PVC. 	 PRIOR TO CONSTRUCTION BEGINNING, ALL SIGNAGE AND TRAFFIC CONTROL SHALL BE IN PLACE. THE CONTRACTOR SHALL HAVE A COMPLETE SET OF CONTRACT DOCUMENTS AS WELL AS ALL APPROVALS AND EASEMENTS ON THE HOD SITE AT ALL TIMES.
2. CLEANOUT SYMBOLS SHOWN ON THESE PLANS REPRESENT LOCATION OF SURFACE ACCESS POINT. CONTRACTOR	EASEMENTS ON THE JUD STE AT ALL TIMES. 5. THE CONTRACTOR SHALL REPAIR ALL DRIVEWAYS, DRIVEWAY PIPES, CURB AND GUTTER, SIDEWALKS AND STREET TO EXISTING CONDITION OR RETTER
3. ALL MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CORPUD STANDARDS. MANHOLE DIAMETER SHALL	FINE GRADING NOTES:
4. SANITARY SEWER CLEAN-OUTS LOCATED IN PAVEMENT AREAS SHALL BE HEAVY-DUTY TRAFFIC BEARING CASTINGS.	1. SIDEWALKS TO HAVE A MAXIMUM 2% CROSS SLOPE AND A MAXIMUM 5% LONGITUDINAL SLOPE.
5. ALL SEWER MAINS IN TRAFFIC AREAS SHALL HAVE MINIMUM COVER OF 5' MEASURED FROM FINISHED GRADE TO PIPE CROWN UNLESS DUCTILE IRON PIPE IS PROVIDED IN CLASS 1 BEDDING WHERE A MINIMUM COVER SHALL BE 3'.	2. PEDESTRIAN CROSSWALKS TO HAVE MAXIMUM 2% CROSS SLOPE AND MAXIMUM 5% LONGITUDINAL SLOPE WITHIN STRIPED AREA.
6. SEWER MANHOLES LOCATED IN NON-PAVED AREAS SHALL HAVE RIM ELEVATION A MINIMUM OF 1' ABOVE FINISHED GRADE.	 ADA FARMING AREAS AND ACCESSIBLE AREAS TO HAVE A MAXIMUM 2% SLOPE IN ALL DIRECTIONS. SIDEWALK INTERSECTIONS AND RAMP LANDINGS TO HAVE A MAXIMUM 2% SLOPE IN ALL DIRECTIONS.
	5. THE PURPOSE OF THIS PLAN IS TO CONVEY DESIGN INTENT. CONTRACTOR TO VERIFY ALL DIMENSIONS AND SLOPES TO ENSURE POSITIVE DRAINAGE IN THE FIELD AND IS RESPONSIBLE FOR ALL COORDINATION WITH THE TOWN AND NCDOT INSPECTORS.

- ING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE EPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS AIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18"ABOVE HE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE OM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.
- POSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE NSTALLED TO WATERLINE SPECIFICATIONS IORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER
- LESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER. MIN. VERTICAL SEPARATION AT ALL WATER MAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN CAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6"MIN.
- IDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18"MIN. VERTICAL
- IELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE EST PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.
- MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES TRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A NOTICE TO THE WAKE FOREST PUBLIC UTILITIES DEPARTMENT.
- ER IS REQUIRED ON ALL WATER MAINS & SEWER FORCE MAINS. 4.0' MINIMUM COVER IS
- PER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT DEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC ENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR
- SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'x2' WATERLINE EASEMENT CENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE TION TO PROVIDE ADEQUATE FLOW & PRESSURE.
- EWER SERVICES @ 2.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT VERY 75 LINEAR FEET MAXIMUM.
- ING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT
- AL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR PARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO
- MENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & THIN STATE ROW PRIOR TO CONSTRUCTION.
- ON CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD ED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY E) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE TURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM,
- RTH CAROLINA AND WAKE FOREST PUBLIC WORKS DEPT. SHALL BE NOTIFIED IN WRITING PRIOR LATION AND FOR SCHEDULING INSPECTIONS.
- FOR ANY UTILITY WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE IN COMPLIANCE WITH NORTH CAROLINA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. ITEM IS NOT COVERED BY THESE PLANS, THEN THE STANDARDS AND SPECIFICATIONS
- WAKE FOREST PUBLIC UTILITIES DEPARTMENT HANDBOOK COVERING SUCH ITEMS SHALL
- WATER AND SANITARY SEWER PERMITS ARE REQUIRED, CONTRACTOR IS RESPONSIBLE FOR
- IZES OF EXISTING WATER AND SEWER LINES SHOWN ON THESE PLANS WITHIN THE PROPERTY ARE ASSUMED BASED ON SURVEY OF SURFACE FEATURES (MANHOLES, VALVES, VAULTS, PARED BY KCI ASSOCIATES OF NC. IT IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR THE SIZE, MATERIAL, AND HORIZONTAL AND VERTICAL LOCATION OF THE EXISTING UTILITIES CING WORK. ANY DEVIATIONS FROM WHAT IS INDICATED ON THESE PLANS SHALL BE REPORTED LOPER AND ENGINEER, IN WRITING, IMMEDIATELY.
- PROVIDE A MEANS TO KEEP ALL NEW PIPING ISOLATED FROM EXISTING PIPING UNTIL ALL BEEN TESTED, AND ACCEPTED FOR SERVICE.
- SHALL BE PROTECTED DURING ALL CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE THE UTILITIES. ALL PUBLIC PIPE, STRUCTURES, AND FITTINGS SHALL BE INSPECTED BY THE PECTOR PRIOR TO BEING COVERED. THE INSPECTOR MUST ALSO BE PRESENT DURING PRESSURE TESTING OF ALL MAINS. THE CONTRACTOR'S BID PRICE SHALL INCLUDE ALL
- ALL BE INSPECTED AND ACCEPTED BY WAKE FOREST PRIOR TO PLACING INTO SERVICE.
- MINIMUM 3' CLEAR DISTANCE AROUND ALL FIRE HYDRANTS.
- SHALL BE RESPONSIBLE FOR PROVIDING "AS-BUILT" PLANS, PER WAKE FOREST THE ENGINEER SHOWING THE LOCATION OF WATER AND SEWER SERVICES AND ANY
- PLANS MADE DURING CONSTRUCTION. THE ENGINEER WILL PROVIDE THESE RECORD PLANS TO ENGINEERING DEPARTMENT.
- UTILITIES AND FIRE HYDRANTS MUST BE FUNCTIONALLY APPROVED PRIOR TO STRUCTURAL

6. CONTRACTOR TO ENSURE A SMOOTH GRADE IS MAINTAINED ALONG ALL NEW CURB AND GUTTER AND SHALL

ENSURE POSITIVE DRAINAGE ACROSS ALL PAVED AREAS.

- 350. WATERLINES 3/4" TO 2" SHALL BE TYPE "K" SOFT COPPER.

- THAN 2" SHALL BE DUCTILE IRON PIPE MEETING THE REQUIREMENTS OF ANSI-AWWA C151

- 19. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO

- SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE M FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE. 20. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
- 21. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE PRIOR
- DISCHARGE TO RECEIVING OUTLET. 22. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF
- EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY. 23. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED BY CONTRACTOR ONCE STABILIZATION SUFFICIENT GROUND COVER HAS BEEN ESTABLISHED OR AS DIRECTED BY THE ENGINEER. WAKE FOREST
- INSPECTOR'S FINAL APPROVAL IS REQUIRED. 24. STABILIZATION MEASURES SHALL BE APPLIED TO STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS
- IMMEDIATELY AFTER INSTALLATION.
- 25. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DEPENDING UPON FIELD CONDITIONS.
- 26. LIMITS OF GRADING SHOWN ON THE PLAN ARE MAXIMUM LIMITS FOR EROSION CONTROL PURPOSES ONLY. SURVEYOR TO DETERMINE ACTUAL LIMIT.
- 27. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE WAKE FOREST
- EROSION CONTROL ORDINANCE, AND IS SUBJECT TO A FINE. 28. GRADING MORE THAN 12,000 SF WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF THE
- FOREST EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
- EROSION PERMIT NOTES: 1. A LAND DISTURBING (E&SC) PERMIT IS REQUIRED FOR PROJECTS OVER 0.50 ACRE.
- IF MULTIPLE LOTS WITH LAND DISTURBANCE OVER 0.50 ACRE TOTAL ARE EITHER CONTIGUOUS OR NON-CONTIGUOUS IN THE SAME SUBDIVISION, BY THE SAME BUILDER/OWNER, A LAND DISTURBING PERMIT REQUIRED.
- THE COST OF THE PLAN REVIEW AND PERMIT IS \$500/ACRE ROUNDED UP (1.1 ACRES = 2 ACRES @ \$500/ACRE = \$1.000. THE FEE IS DUE AT TIME OF PLAN SUBMITTAL. DEVELOPER IS RESPONSIBLE FOR INFORMING BUILDER OF EXSC PERMIT REQUIREMENTS ON INDIVIDUAL LOTS.
- 2. DISCLAIMER: TOWN OF WAKE FOREST FEES AND CHARGES ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEA
- CALL 919-435-9443 TO CONFIRM CURRENT FEES AND CHARGES.
- 3. IF ADDITIONAL ACREAGE IS ADDED TO AN EXISTING PERMIT REVISED FORMS, PLANS, AND ADDITIONAL FEES BE SUBMITTED.
- 4. IF OWNERSHIP OF A PROPERTY HAS CHANGED A REVISED FRO MUST BE SUBMITTED.

- 5. IF A PROPERTY IS TAKEN OVER BY THE BANK, THE BANK SHALL CONTACT THE TOWN AND REPAIR ALL ER CONTROL MEASURES TO TOWN/NCDENR STANDARDS. THEY SHALL ALSO SUBMIT A NEW FRO FORM.
- 6. IF A PROJECT IS NOT COMPLETE WITHIN TWO YEARS, THE PLANS MUST BE RENEWED AT \$250/ACRE. A RE SET OF PLANS MAY BE SUBMITTED IF ACREAGE HAS ALREADY BEEN DEVELOPED AND A CERTIFICATE OF OCCUPANCY HAS BEEN ISSUED.

		<u> </u>
EROSION CONTROL NOTES 1. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS	PAVING/CURBING 1. IF NOT SPECIFIED ON THE PLAN, WHERE PROPOSED CURB AND GUTTER TIES TO EXISTING CURB OR CURB AND GUTTER, A TRANSITION OF 10' SHALL BE MADE TO CONFORM TO THE EXISTING HEIGHTS AND SHAPES.	24 DPN 24 AS, 24 AS, 24 AS, 24 AS, 24 AS, 24 AS, 24 AS, 24 AS,
OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK. 2. THE CONTRACTOR SHALL INSTALL AND MAINTAIN THROUGHOUT THE PROJECT CONSTRUCTION ALL EROSION CONTROL MEASURES SHOWN WITHIN THESE PLANS IN ACCORDANCE WITH APPLICABLE NORTH CAROLINA	2. BEFORE ANY EARTHWORK IS DONE, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF PAVEMENT AND OTHER ITEMS ESTABLISHED IN THE PLANS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK.	1/15/ 14/29/ 15/30/ 15/28/ 12/15/ 12/12/ DATE
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (NCDENR) AND WAKE FOREST EROSION AND SEDIMENT CONTROL REGULATIONS.	3. ALL PAVEMENT SUB GRADES (EVEN WHEN ROCK IS ENCOUNTERED) SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES AND COMPACTED TO A MINIMUM DENSITY OF 98 PERCENT OF ASTM D-698 DENSITY AT OPTIMUM MOISTURE CONTENT UNLESS OTHERWISE SHOWN IN THE CONSTRUCTION DOCUMENTS OF AS DIRECTED BY THE	MENTS C MENTS
 4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO CLEARING AND/OR LAND 	CERTIFIED MATERIALS TESTING AGENT. FILL SHALL BE PLACED AND COMPACTED IN MAXIMUM 8" LIFTS. 4. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS AND MISCELLANEOUS STRIPING AS SHOWN	AL EW COM EW COM
DISTURBANCE. 5. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE MAINTAINED ON THE	ON THE PLANS. UNLESS SPECIFIED ON THE PLAN, ALL ROADWAY PAVEMENT MARKINGS SHALL BE THERMOPLASTIC AND ADHERE TO NODOT STANDARDS.	R BID MENT 1S APPROVI WN REVI MN REVI MN REVI
 6. THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES TO MINIMIZE EROSION. THE CONTRACTOR SHALL MAINTAIN CLOSE CONTACT WITH THE NCDENR 	PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.	JED FOR CROACH OR CD JND TO JND NCE UND TO UND TO UND TO
EROSION CONTROL INSPECTOR SO THAT PERIODIC INSPECTIONS CAN BE PERFORMED AT APPROPRIATE STAGES OF CONSTRUCTION.	 ALL CURB JOINTS SHALL EXTEND THROUGH THE CURB. MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS IS 1.5 FEET. ALL JOINTS SHALL BE SEALED WITH JOINT SEALANT. TESTING OF MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE RAVING IMPROVEMENTS SHALL BE REREORMED. 	ISSI ARTY EN SSUED F SSUED F 2ND RC 2ND RC 1ST ROU 1ST ROU 1ST ROU
 AFFROVAL OF THIS PEAK IS NOT AN ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS WIEN HELD CONTROL MEASURES ARE INSTALLED PRIOR TO OFF-SITE GRADING. 8 PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS 	BY AN APPROVED AGENCY FOR TESTING MATERIALS. THE TESTING LABORATORY AND THE PAYMENT OF SUCH TESTING SERVICES SHALL BE MADE BY THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY THAT THE CERTIFIED MATERIAL TESTING AGENT HAS PERFORMED THE WORK AND THAT THE WORK CONSTRUCTED DOES MEET THE REQUIREMENTS OF THE CITY'S SPECIFICATIONS AND/OR THE PROJECT SPECIFICATIONS, WHICHEVER IS MORE	NCDOT 3 P/ II II VISED PER VISED PER EVISED PER
(INCLUDING, BUT NOT LIMITED TO OFF-SITE BORROW OR WASTE AREAS, STAGING OR STORAGE AREAS), THE CONTRACTOR SHALL PREPARE AND SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND TO THE WAKE FOREST FOR APPROVAL. CONTRACTOR SHALL PAY ALL FEES REQUIRED AND SHALL INSTALL NECESSARY MEASURES AT NO SEPARATE PAYMENT. THE CONTRACTOR SHALL PROVIDE THE OWNER AND THE ENGINEER A COPY OF THE AMENDED PERMIT.	8. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES ON PUBLIC STREETS SHALL CONFORM TO MUTCD, NCDOT, AND WAKE FOREST STANDARDS.	100 100 100 100 100 100 100 100
 EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY, AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RESEEDED AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF GRASS. 	 THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF CURB INLETS AND GRATE INLETS AND ALL UTILITIES CROSSING THE STORM SEWER. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE 	NC. 27601 350 102
10. STABILIZATION IS THE BEST FORM OF EROSION CONTROL. ALL DISTURBED AREAS WHICH ARE NOT OTHERWISE STABILIZED SHALL BE TOP SOILED AND SEEDED, TEMPORARILY OR PERMANENTLY IN ACCORDANCE WITH THE NORTH CAROLINA SEDIMENT CONTROL REGULATIONS. PERMANENT SEEDING AND GRASS ESTABLISHMENT IS REQUIRED PRIOR TO PROJECT COMPLETION AND ACCEPTANCE.	INSTALLATION OF THE STORM SEWER. 3. THE WAKE FOREST INSPECTOR SHALL INSPECT ALL "PUBLIC" CONSTRUCTION. THE CONTRACTOR'S PRICE SHALL INCLUDE ALL INSPECTION FEES.	DCIATES, 1 POCIATES, 1 RALEIGH, 9-677-20 INSE #F-C
11. CONTRACTOR TO ENSURE THAT SEDIMENT LADEN RUNOFF DOES NOT LEAVE SITE LIMITS OR ENTER PROTECTED AREAS. ANY SEDIMENT DEPOSITED BEYOND DISTURBED AREA WITHIN SITE LIMITS SHALL BE REMOVED.	4. ALL RCP STORM SEWER MAINS AND LATERALS SHALL BE MINIMUM CLASS III REINFORCED CONCRETE PIPE. 5. ALL PVC PIPE USED IN DRAINAGE SYSTEM SHALL BE MINIMUM SDR-35 OR APPROVED EQUAL.	D ASS(E 600, AX: 91 IC LICE
12. ROLLED EROSION CONTROL PRODUCTS (RECP'S) SHOULD BE USED TO AID PERMANENT VEGETATED STABILIZATION OF SLOPES 2:1 OR GREATER AND WITH MORE THAN 10' OF VERTICAL RELIEF. RECP'S SHOULD ALSO BE USED WHEN MULCH CANNOT BE ADEQUATELY TACKED AND WHERE IMMEDIATE GROUND COVER IS REQUIRED TO PREVENT EROSION DAMAGE.	 ALL PVC TO RCP CONNECTIONS SHALL BE CONSTRUCTED WITH CONCRETE COLLARS. THE LOCATIONS OF STORM SEWER STRUCTURES SHOWN ON THESE PLANS (AND PROVIDED IN ASSOCIATED CAD FILES) ARE APPROXIMATE. THE CONTRACTOR SHALL STAKE ALL CURB INLET STRUCTURES SUCH THAT INLET TOPOLOGY AND HERE APPROXIMATE. THE CONTRACTOR SHALL STAKE ALL CURB INLET STRUCTURES SUCH THAT INLET TOPOLOGY AND HERE APPROXIMATE. THE CONTRACTOR SHALL STAKE ALL CURB INLET STRUCTURES SUCH THAT INLET 	HORN AN HORN AN 7-2000 F.
13. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 21 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.	STORM SEWERS TIE TO EXISTING STRUCTURES, PIPES, ETC., THE CONTRACTOR SHALL FIELD ADJUST PROPOSED STORM SEWERS TO MATCH THE LOCATIONS OF THESE EXISTING FEATURES.	KIMLEY- LE STR 919–67 EY-HOF
14. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.	 RIM ELEVATIONS FOR STORM CATCH BASINS ARE MEASURED TO THE GUTTER FLOW LINE. <u>TRAFFIC CONTROL NOTES</u> WITHIN A 245' X 10' SIGHT DISTANCE TRIANGLE PER SECTION 9.8.K OF THE WAKE FOREST UDO, NO 	© 2024 AYETTEVIL PHONE: WWW.KIML
15. WHEN A CRUSHED STONE CONSTRUCTION ENTRANCE HAS BEEN COVERED WITH SOIL OR HAS BEEN PUSHED INTO THE SOIL BY CONSTRUCTION TRAFFIC, IT SHALL BE REPLACED WITH A DEPTH OF STONE EQUAL TO THAT OF THE ORIGINAL APPLICATION.	OBSTRUCTION SHALL BE LOCATED IN WHOLE OR PART BETWEEN (2) FEET AND (8) FEET IN HEIGHT ABOVE THE CURB LINE ELEVATION OR THE NEAREST TRAVELED WAY, IF NO CURBING EXISTS. OBSTRUCTIONS INCLUDE, BUT ARE NOT LIMITED TO, ANY BERM, FOLIAGE, FENCE, WALL, SIGN, PARKED VEHICLE OR OTHER OBJECT.	421 F
16. TEMPORARY CONSTRUCTION ENTRANCES SHALL BE REQUIRED AT ALL CONSTRUCTION STAGING AREA ENTRANCES AND ALL CONSTRUCTION ACCESS LOCATIONS INTO NON-PAVED AREAS. TWO TO THREE INCH STONE SHALL BE	2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL WAKE FOREST AND/OR N.C.D.O.T. STANDARDS AND SPECIFICATIONS.	
17. ALL DRAINAGE INLETS SHALL BE PROTECTED FROM SILTATION. INEFFECTIVE PROTECTION DEVICES SHALL BE IMMEDIATELY REPLACED AND THE INLET CLEANED. FLUSHING IS NOT AN ACCEPTABLE METHOD OF CLEANING.	TRAFFIC CONTROL SIGNS AND STANDARDS.	
18. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE	<u>RETAINING WALL NOTES</u> 1. STRUCTURAL AND SUBSURFACE DRAINAGE DESIGN FOR RETAINING WALLS ARE NOT ADDRESSED IN CIVIL PLANS BY KIMLEY-HORN AND ASSOCIATES, REFER TO RETAINING WALL SHEETS IN THIS PLAN SET.	
PROJECT SITE. 19. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE	2. BOTTOM OF WALL ("BW") GRADES SHOWN ON THESE PLANS REPRESENT FINISHED GROUND ADJACENT TO WALL. TOP OF WALL ("TW") ELEVATIONS ASSUME FINISHED GROUND ADJACENT TO WALL. REFER TO RETAINING WALL	
FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE. 20. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND	 RETAINING WALLS WITH ELEVATION DROP EXCEEDING 2'-6" IN HEIGHT SHALL HAVE GUARDRAILS OR FENCING FOR FALL PROTECTION. 	
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IKE	E SU	RVEY 7	TABLE	
FID	DBH	LABEL	COMMON NAME	CRZ RADIUS
0	10	T12	Shumard Oak	15
1	11.5	T10	Pin Oak	17.25
2	16.5	T9	Northern Pin Oak	24.75
3	38	T5	Eastern Red Cedar	57
4	20	T5	Eastern Red Cedar	30
5	8	T5	Eastern Red Cedar	12
6	9.5	T5	Eastern Red Cedar	14.25
7	16.5	T5	Eastern Red Cedar	24.75
8	9	T5	Eastern Red Cedar	13.5
9	12	T5	Eastern Red Cedar	18
10	12	T14	Japanese Zelkova	18
11	10	T13	Winged Elm	15
12	9	T5	Eastern Red Cedar	13.5
13	14	T6	Loblolly Pine	21
14	50	T6	Loblolly Pine	75
15	22	T7	Black Cherry	33
16	11.5	T4	Persimmon	17.25
17	16	T5	Eastern Red Cedar	24
18	16.5	T5	Eastern Red Cedar	24.75
19	15	T7	Black Cherry	22.5
20	15	T8	Bradford Pear	22.5
21	60	T7	Black Cherry	90
22	14	T6	Loblolly Pine	21
23	12	T14	Japanese Zelkova	18
24	9	T2	Silver Maple	13.5
25	11	T14	Japanese Zelkova	16.5
26	14	T6	Loblolly Pine	21
27	N/A	T15	Dead/Dying	
28	N/A	T15	Dead/Dying	
29	11	T12	Shumard Oak	16.5
30	37	T1	Box Elder	55.5
31	18.5	T6	Loblolly Pine	27.75
32	18	T6	Loblolly Pine	27
33	19.5	T6	Loblolly Pine	29.25
34	18	T6	Loblolly Pine	27
35	9.5	T2	Silver Maple	14.25
36	12.5	T6	Loblolly Pine	18.75
37	13.5	T6	Loblolly Pine	20.25
38	13.5	T6	Loblolly Pine	20.25
39	11	T14	Japanese Zelkova	16.5
40	39	T5	Eastern Red Cedar	58.5
41	40	T6	Loblolly Pine	60
42	43	17	Black Cherry	64.5
43	43.5	T11	Willow Oak	65.25
44	21	T15	Dead/Dying	31.5
45	9	T2	Silver Maple	13.5
46	16	T6	Lobiolly Pine	24
47	12.5	16	Lobiolly Pine	18.75
48	8	114	Japanese Zelkova	12
49	8.5	114	Japanese Zelkova	12.75
50	11	114	Japanese Zelkova	16.5
51	9	T14	Japanese Zelkova	13.5
52	8.5	12	Silver Maple	12.75
53	10.5	112	Shumard Oak	15.75
54	15	16	Lobiolly Pine	22.5
55	16	16	Lobiolly Pine	24
56	13	16	Lobiolly Pine	19.5

DBH - DIAMETER AT BREAST HEIGHT

ΈΥ L	EGEND		
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HOLE		GAS VALVE FIBER MARKER	₩.
LE	EBOX EHH ^{HH} □ ☆ ℃	SIGN LARGE ROCK HANDICAP TREE SYMBOLS + SIZE SHRUB/BUSH WOODSLINE FENCE	
NS MANHOLE LE HOLE	بد میر میرو © © © © ©	STORM DRAIN PIPE SANITARY SEWER PIPE GAS LINE POWER LINE TELEPHONE LINE IRRIGATION LINE UNKNOWN UTILITY OVERHEAD WIRE TV FIBER OPTIC LINE	SD SD SS - T T T T - - -
LE D		TELEPHONE FIBER OPTIC LINE FIBER OPTIC LINE WATER LINE CHILLED WATER LINE CABLE TV LINE	IFO IFO FO FO W W CW CW



EXISTING TREE KEY

LABEL	COMMON NAME
T1	BOX ELDER
T2	SILVER MAPLE
T3	MOCKERNUT HICKORY
T4	PERSIMMON
T5	EASTERN RED CEDAR
T6	LOBLOLLY PINE
T7	BLACK CHERRY
T8	BRADFORD PEAR
T9	NORTHERN PIN OAK
T10	PIN OAK
T11	WILLOW OAK
T12	SHUMARD OAK
T13	WINGED ELM
T14	JAPANESE ZELKOVA
T15	DEAD/DYING

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CITY OF RALEIGH – PLANS AUTHORIZED FOR CONSTRUCTION

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KCI ASSOCIATES OF N.C., 4505 FALLS OF NEUSE

RD, FLOOR 4, RALEIGH, NC 27607, 919-783-9214,

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by the Town of Wake Forest Public Works and Engineering

Public Works/Engineering

Planning

approval.

may not be altered once issued.

City of Raleigh Development Approval:

Raleigh Water Review Officer

DATED 3/23/23.

Departments. This approval may not be altered once issued.





DEMOLITION LEGEND CLEARING LIMITS -/-/-/ DEMOLISH SITE ITEM ----/// DEMOLISH UNDERGROUND UTILITY ABANDON UTILITY IN PLACE DEMOLISH SITE ITEM/ TREE TO BE REMOVED BUILDINGS TO BE REMOVED SIDEWALK/PAVEMENT TO BE REMOVED TREE PROTECTION FENCE

DEMOLITION NOTES:

- 1. THE CONTRACTOR SHALL COORDINATE ALL REMOVAL EFFORTS WITH THE OWNER. COORDINATION ITEMS ARE ANTICIPATED TO INCLUDE SITE ACCESS, TRAFFIC CONTROL, MAINTENANCE OF ACCESS AND UTILITIES FOR EXISTING BUILDINGS TO REMAIN, AND EROSION CONTROL.
- 2. ALL FEATURES MARKED TO BE ABANDONED IN PLACE SHALL REMAIN IN EXISTING CONDITION UNLESS REMOVED THROUGH EFFORTS FOR OTHER FEATURES. 3. SPECIAL CARE SHALL BE TAKEN TO PROTECT AND MAINTAIN ALL EXISTING
- FEATURES NOT MARKED FOR REMOVAL. IN THE EVENT OF ANY IMPACT TO SUCH FEATURES, THE CONTRACTOR SHALL PERFORM REPAIR AND/OR RESTORATION TO ORIGINAL CONDITION AS OF START OF WORK.
- 4. WHERE PAVEMENT REMOVAL AREAS ABUT OTHER PAVEMENT AREAS TO REMAIN, THE EXISTING PAVEMENT SHALL BE SAW CUT TO PROVIDE A BOUNDARY WHICH IS STRAIGHT AND CLEAN IN APPEARANCE.
- 5. ALL SANITARY SEWER MAIN FEATURES WILL GENERALLY BE PROTECTED IN PLACE UNLESS SPECIFICALLY MARKED FOR REMOVAL.
- 6. THE CONTRACTOR SHALL PROPERLY AND LEGALLY DISPOSE OF ALL DEMOLITION DEBRIS OFF OF THE CONSTRUCTION SITE.
- 7. REFER TO SITE PLAN FOR SITE FEATURES WITHIN DEMOLISHED AREA. 8. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY ON UTILITY RELOCATIONS
- PRIOR TO CONSTRUCTION.
- 9. ADJUST ALL UTILITY RIM ELEVATIONS TO PROPOSED GRADES.



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Raleigh Water Review Officer

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SURVE	EY TABLE			EXISTING TREE SPECIES KEY	24 D 24 A 24 A 24 A 24 A 24 A 24 A 24 A 224 A 224 A
LABEL	COMMON NAME	CRZ RADIUS	N FEET STATUS	LABEL COMMON NAME	/15/ /29/ /28/ /15/ /12/ DATE
T12 T10	Shumard Oak Pin Oak	15 17.25	REMOVED REMOVED	T2 SILVER MAPLE	05 11 02 03 04
T9 T5	Northern Pin Oak Eastern Red Cedar	24.75 57	REMAIN REMAIN	T4 PERSIMMON T5 EASTERN RED CEDAR	IITTAL IMENT MENT
T5 T5	Eastern Red Cedar Eastern Red Cedar	30 12	REMAIN REMAIN	T6 LOBLOLLY PINE T7 BLACK CHERRY	SUBM W COM
T5 T5	Eastern Red Cedar Eastern Red Cedar	14.25 24.75	REMAIN REMAIN	T8 BRADFORD PEAR T9 NORTHERN PIN OAK) T 1ST ROVAL REVIEV REVIE REVIE
T5 T5	Eastern Red Cedar Eastern Red Cedar	13.5	REMAIN	T10 PIN OAK T11 WILLOW OAK	APPF APPF APPF APPF APPF APPF APPF APPF
T14 T12	Japanese Zelkova	18	REMAIN	T12 SHUMARD OAK T13 WINGED ELM	ED FO ROACH IND TO UND TO VID NC VISIC
T5	Eastern Red Cedar	15 13.5	REMAIN	T15 DEAD/DYING	ENCI ED FO ROUN ROUN ROUN
T6 T6	Loblolly Pine Loblolly Pine	21 75	REMAIN REMAIN		ARTY PARTY ISSUE R 2NC R 1ST R 1ST R 1ST
T7 T4	Black Cherry Persimmon	33 17.25	REMAIN		D PEI
T5	Eastern Red Cedar	24 24 75	REMAIN		NCDO EVISE REVISE
13 17	Black Cherry	22.5	REMAIN		
18 17	Black Cherry	90	REMAIN		
T14	Japanese Zelkova	18	REMAIN		7601
T2 T14	Silver Maple Japanese Zelkova	13.5 16.5	REMAIN REMAIN		05 05 05 05 05 05 05 05 05 05 05 05 05 0
T6 T15	Loblolly Pine Dead/Dying	21	REMAIN REMAIN		S, IN 2H, N 205
T15 T12	Dead/Dying Shumard Oak	16.5	REMAIN REMOVED		ALEIC - 677 SE ##
T1 T6	Box Elder	55.5	REMOVED		0, R. 19-
T6	Lobiolly Pine	27	REMOVED		VC L NC L NC L
T6	Lobiolly Pine Lobiolly Pine	29.25	REMOVED		N AN SUIT SUIT SUIT OUC
T2 T6	Silver Maple Loblolly Pine	14.25 18.75	REMAIN REMAIN		HOR HOR 7-20 RN.CC
T6 T6	Loblolly Pine Loblolly Pine	20.25 20.25	REMAIN REMAIN		ILEY- STR STR -HOF
T14 T5	Japanese Zelkova Fastern Red Cedar	16.5	REMAIN		
T6	Lobiolly Pine	60 60	REMAIN		2022 ETTEN IONE: W.KIN
T11	Willow Oak	65.25	REMAIN		PH PH WW
T2	Dead/Dying Silver Maple	31.5 13.5	REMOVED		421
T6 T6	Loblolly Pine Loblolly Pine	24 18.75	REMOVED REMOVED		
T14 T14	Japanese Zelkova Japanese Zelkova	12 12.75	REMOVED REMAIN		
T14 T14	Japanese Zelkova	16.5 13.5	REMAIN		
T2 T12	Silver Maple	12.75	REMOVED		
T6	Loblolly Pine	22.5	REMOVED		
T6	Lobiolly Pine	19.5	REMOVED		
ITIFIER R AT BREAST HEIG ROOT ZONE	SHT				LING CAROL
	GEN	ERAL LAND	SCAPE REQUIREN		NO
REES SHALL BE PRE	ESERVED WHEN				The Man Branne
MEN TREES THAT A	ARE REMOVED, DIE NITHIN 5 YEARS OF	5 MAXIMUM SPECIMEN TREES	5 SPECIMEN TREES * 4 REPLACEMENT TREES = 20	20 REPLACEMENT CANOPY TREES PROVIDED, REFER TO SHEET L1.0 FOR 8.4.3.D	N. M. S.
I COMPLETION SH	ALL BE REPLACED /ALUE PER UDO	REMOVED OR IMPACTED	REPLACEMENT CANOPY TREE REQUIRED	S MORE INFORMATION	05/30/24
SECTION 8.4.3.E)				+ ≤ B B X
	IG, EXCAVATION, SOIL (COMPACTION, OR CH	ANGES OF THE EXISTING GRAD		0066 202 202 202
E, EVERY EFFORT	SHOULD BE MADE TO N	MINIMIZE THE DISTUR	HE REMOVAL OF UNDERBRUSH BANCE.	VEGETATION	PRC 311 311 AS AS BY BY
GE OF CONSTRUC BUILDINGS, INCLU	TION OR OTHER VEHIC	LES AND/OR EQUIPM TS, OR OTHER HEAV	IENT, SITE CONSTRUCTION MAT Y OBJECTS IS PROHIBITED WITH	ERIALS, IN DELINEATED	<pre><ha 011 05/3 3GNEL signel awn e Eckel</ha </pre>
AREAS AND TREE	PROTECTION ZONES.	AKE FOREST PLANNI	IG DIRECTOR PRIOR TO ANY DE		DES C/ O CHE
CTIVITIES, SUCH A	S THE ERECTION OF SO SAVE AREAS OR TREE F	CAFFOLDING, VEHICL PROTECTION ZONES.	E MOVEMENT, TRENCHING, OR SUCH ACTIVITIES SHALL BE SU	EXCAVATION, BJECT TO	
IVE MEASURES THE ST UDO.	HE PLANNING DIRECTO	R DETERMINES APPI	ROPRIATE IN ACCORDANCE WIT	H THE TOWN OF	7
IEN TREES WITH IN TIONS.	MPACTED CRITICAL RO	OT ZONES MUST BE	MITIGATED FOR. SEE SHEET L1.) FOR MITIGATION	Ō
					Ĕ
PROTE	CTION LE	EGEND]		
LOD	LIMITS OF	DISTURBANCE	1		
—TPF——	TREE PROT	TECTION FENCE			
\bigcirc	CRITICAL R	ROOT ZONE (CRZ)			' O -
	CRITICAL R OF SPECIM	ROOT ZONE IEN TREES			Ř
T6:13.5"	EXISTING T	REE	by the Depa	plans have been electronically approved for construction • Town of Wake Forest Public Works and Engineering tments. This approval may not be altered once issued.	Ω
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	EXISTING T BE REMOVE	REE TO ED	These by the	plans have been electronically approved for construction Town of Wake Forest Planning Department. This approval of the altered once issued	
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		I SCALE IN EET	-T	ication of this approval once issued will invalidate this val.	
			60	т каleign Development Approval:	M Z Z M
			Ralei	h Water Review Officer	
			<u>SUF</u> ALL INF	EXISTING TOPOGRAPHICAL AND BOUNDARY	
			KCI KCI	ARTIAL TOPOGRAPHIC SURVEY PREPARED BY ASSOCIATES OF N.C., 4505 FALLS OF NEUSE	SHEET NUMBER
				ED 3/23/23.	C2.1
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				DPA	ASA	ASA	ASA	ASA	PUA PUA
		TE DATA TABLE		/24	/24	/24	/24	/24	L 7 4
	SITE ADDRESS	1412 FORESTVILLE RD		/15	F/29	5/30	5/28	2/15	DAT
	SITE PIN	1749557642	⊢		0	0		1 <u>S</u> 02	
D GUTTER	EXISTING ZONING	CU-NB, NEIGHBORHOOD BUSINESS			IITTAL		AMEN ⁻	MMEN.	
ND GUTTER	EXISTING ZONING OVERLAY	RZ-07-05			SUBN		V CON		
NT	EXISTING USE	OFFICE/SERVICE/CIVIC			1ST	OVAL	REVIEV	REVIE/	ר אור א
GMARKING CCESSIBLE)	PROPOSED USE	OFFICE/SERVICE/CIVIC		RID R	HMENT	APPR	NWC	DEQ F	
INT ARROWS	SITE AREA	3.98 AC (173,457 SF)		D FOI	ROACH	R CD	ND TO		
	EXISTING BUILDING AREA	7487 SF		ISSUE	ENCF	D FOF	ROU	NUOA	RE
MP	PROPOSED ADDITIONAL BUILDING AREA	7000 SF WITH POTENTIAL FUTURE EXPANSION TO 9100 SF			3 PARTY	ISSUE	PER 2ND	PER 1ST PFR 1ST	- - - - -
	DISTURBED AREA	3.00 AC (130,680 SF)			DOT		ISED	SED I	וארע
	SETBACKS	PRINCIPAL BUILDING: FRONT* - 20' STREET SIDE/SECONDARY FRONT - 20' LOT SIDE - 15' REAR - 20' ACCESSORY STRUCTURE: SIDE - 10' REAR - 10'		10		7	TES, INC. 6 REV	77-2050 4 REV	#F-0102 T 1''L'
ETE	NUMBER OF STORMWATER CONTROL MEASURES	1 WET POND				8	ASSOCIA	000, 77L	LICENSE
	LAND COVER	IMPERVIOUS (EXISTING): 0.80 AC PERVIOUS (EXISTING): 3.18 AC PERCENT IMPERVIOUS (EXISTING): 20.10% IMPERVIOUS (PROPOSED): 1.38 AC PERVIOUS (PROPOSED): 2.39 AC PERCENT IMPERVIOUS (PROPOSED): 36.59%					4 KIMLEY-HORN AND	019-677-2000 FAX	ALEY-HORN.COM NC
	LANDSCAPE BUFFERS	NORTH: TYPE B (25') EAST: STREET YARD (20') SOUTH: TYPE B (25') WEST: TYPE B (25')		7:2	2		0 202	PHONE	WWW.KIN
	PARKING REQUIRED	PER TOWN OF WAKE FOREST UDO SECTION 9.4, INDOOR STORAGE/WAREHOUSING REQUIRES 1 AUTO SPACE PER 1,500 SF OF FLOOR AREA 7,000 SF + 2,100 SF FOR FUTURE EXPANSION = 9,100 SF; 6 SPACES REQUIRED FOR BUILD OUT							
	PARKING PROVIDED	15 SPACES PROPOSED FOR NEW STRUCTURE							
	BIKE RACKS REQUIRED	2 PER 50 PARKING SPACES							
	BIKE RACKS PROVIDED	2							
	FEMA	THE SITE DOES NOT CONTAIN ANY SPECIAL FLOOD HAZARD AREAS	┢						
	NOTES/ASSUMPTIONS:			110°	NH.	CA,	2011	ALLER PLANE	

1. RIGHT OF WAY DEDICATION WILL BE REQUIRED ALONG FORESTVILLE ROAD PER TOWN COMPREHENSIVE TRANSPORTATION PLAN. ROAD CLASSIFIED AS 4A-FOUR LANE DIVIDED WITH 10' MULTI-USE PATH. FEE IN LIEU WILL BE PROVIDED FOR PORTIONS OF ROADWAY WIDENING BEYOND PROPERTY LINES TO AVOID OFF-SITE EASEMENTS ON ADJACENT PROPERTIES AS DISCUSSED WITH TOWN STAFF ON

2. CURRENT ZONING IS CU-NB, RZ-07-05. PROPOSED REDEVELOPMENT ASSUMED TO BE BY RIGHT AND NOT SUBJECT TO DISCRETIONARY ENTITLEMENT REVIEW.

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Public Works/Engineering

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Planning

CITY OF RALEIGH – PLANS AUTHORIZED FOR CONSTRUCTION Electronic Approval: This approval is being issued electronically. This approval is valid 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 of this approval once issued will invalidate this approval.

City of Raleigh Development Approval:

Raleigh Water Review Officer

SURVEY NOTE: ALL EXISTING TOPOGRAPHICAL AND BOUNDARY INFORMATION WAS PROVIDED WITHIN A BOUNDARY & PARTIAL TOPOGRAPHIC SURVEY PREPARED BY KCI ASSOCIATES OF N.C., 4505 FALLS OF NEUSE RD, FLOOR 4, RALEIGH, NC 27607, 919-783-9214, DATED 3/23/23.



LIMITS OF DISTURBANCE: 3.00 AC

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PHASE 1 EROSION CONTROL SEQUENCE

1. EROSION AND SEDIMENT CONTROL (E&SC) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITY (INLCUDING TIMBERING AND DEMOLITION) CAN OCCUR. CONTACT THE DEMLR RLAEIGH REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO COMMENCING THE LAND-DISTURBING ACTIVITY AT (919) 791-4200

2. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCES, PERIMETER SILT FENCE, AND TREE PROTECTION FENCE SURROUNDING THE SITE AND SKIMMER BASIN. MAKE INITIAL AREA OF DISTURBANCE LIMITED ONLY TO INSTALLATION OF PERIMETER CONTROLS AND SKIMMER BASIN.

3. INSTALL ALL REMAINING PHASE 1 TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES - DIVERSION DITCHES AND ROCK CHECK DAMS. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED, MULCH, AND ANCHOR BASIN AND TEMPORARY DIVERSION DITCHES IMMEDIATELY AFTER INSTALLATION.

5. AFTER APPROVAL OF LAND DISTURBANCE SITE INSPECTION, COMMENCE PERMITTED LAND DISTURBING ACTIVITY, CLEARING, GRADING, AND DEMOLITION OF SITE, MAINTAINING EROSION CONTROL MEASURES AS NECESSARY. EROSION CONTROL MEASURES SHALL BE RESTORED TO ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO 50% OF DESIGN DEPTH.

6. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED, IF NEEDED, AT LEAST ONCE PER WEEK AND AFTER EVERY RAINFALL EVENT.

8. CONSTRUCTION STOCKPILE/STAGING AREAS MAY BE FIELD ADJUSTED PROVIDED MEASURES ARE AT LEAST 50' FROM STORM DRAINS, TEMPORARY DIVERSIONS, BASINS AND SURFACE WATER BODIES.

EROSION CONTROL SEQUENCE NOTES:

1. PRIOR TO SCHEDULING THE PRECONSTRUCTION MEETING, THE NCG010000 CERTIFICATE OF COVERAGE MUST BE OBTAINED BY THE PERMITTEE, WHEN APPLICABLE. A COPY OF THE COC MUST BE SUBMITTED TO THE TOWN.

2. AFTER THE PRECONSTRUCTION MEETING IS HELD, THE CONTRACTOR CAN INSTALL INITIAL EROSION CONTROL MEASURES ONLY. THIS INCLUDES BUT IS NOT LIMITED TO CONSTRUCTION ENTRANCE, SILT FENCE, PERIMETER DIVERSION DITCH, CHECK DAMS (ROCK OR WADDLE TYPE), TREE PROTECTION FENCE, EXISTING INLET PROTECTION, SKIMMER SEDIMENT BASINS, AND SEDIMENT TRAPS. CLEAR ONLY AS NECESSARY TO INSTALL THESE MEASURES.

3. CONTRACTOR IS RESPONSIBLE FOR E&SC WEEKLY INSTALLATION AND MAINTENANCE LOG INCLUDING DATES OF TEMPORARY/PERMANENT GROUND COVER. A RAIN GAGE, COPY OF NCDEQ SIGNED PLANS ONSITE, REVISED SIGNED PLANS, NPDES LOG, AND CONSTRUCTION BOX MUST BE PRESENT AND EASILY

4. ONCE MEASURES ARE INSTALLED, CONTRACTOR/FRO TO CALL NCDEQ FOR AN INITIAL INSPECTION. IF SITE PASSES INSPECTION, A CERTIFICATE OF COMPLIANCE WILL BE ISSUED. CONTRACTOR CAN NOW BEGIN CLEARING, GRUBBING, AND GRADING.

5. CONTRACTOR TO MAINTAIN ACCESS ROAD FOR EMERGENCIES AT ALL TIMES.

6. PHASE PROJECT TO LEAVE AS LITTLE GROUND OPEN AS POSSIBLE

7. TEMPORARILY SEED, STRAW, AND TACK OR HYDROSEED WITHIN 14 DAYS OF ANY PHASE OF GRADING, INCLUDING SLOPES, SEED BASINS AND DITCHES IMMEDIATELY AFTER CONSTRUCTION

8. PRIOR TO REMOVAL OF TEMPORARY MEASURES, NCDEQ MUST APPROVE REMOVAL. ALL AREAS ABOVE TEMPORARY MEASURE MUST HAVE 85% GROUND

9. THE NCDEQ CONSTRUCTION INSPECTOR WILL EVALUATE THE SITE AT LEAST ONCE A MONTH. A COPY OF THE INSPECTION FORM WILL BE EMAILED TO THE FRO. THE WEEKLY EROSION LOG AND NPDES LOG MUST BE ONSITE AND AVAILABLE FOR REVIEW. 10. IF THE SITE IS FOUND OUT OF COMPLIANCE A NOTICE OF VIOLATION WILL BE ISSUED GIVING THE CONTRACTOR/FRO A NUMBER OF WORKING DAYS DETERMINED BY NCDEQ TO REMEDY THE PROBLEM. IF THE SITUATION IS NOT RESOLVED WITHIN THE TIME PERIOD A FINE MAY BE ISSUED.

11. NCDEQ MAY ISSUE A FINE UP TO \$5,000 PER DAY. PER VIOLATION FOR ANY PERSON IN VIOLATION OF ANY PORTION OF ARTICLE 113A OF THE

12. CALL NCDEQ UPON COMPLETION FOR A FINAL EROSION INSPECTION. A PUNCHLIST MAY BE GENERATED ADDRESSING ANY REMAINING ITEMS. THERE MUST BE 85% GROUNDCOVER ON THE ENTIRE SITE PRIOR TO A CERTIFICATE OF OCCUPANCY. IF THE SITE IS FOUND TO BE IN COMPLIANCE AN EROSION CERTIFICATE OF COMPLETION WILL BE ISSUED. AFTER THE COMPLETION OF THE PROJECT, SUBMIT A NOTICE OF TERMINATION TO END COVERAGE UNDER

I. SKIMMER BASINS REQUIRED FOR DRAINAGE AREAS OVER 5 ACRES II. CONSTRUCTION ENTRANCE 50 FOOT MINIMUM WITH WOVEN 20# TENSILE STRENGTH FABRIC UNDERNEATH

III. SILT FENCE-METAL POSTS WITH WIRE SPACED AT 6 FEET IV. HARDWARE CLOTH OUTLETS (SPECIAL SEDIMENT CONTROL FENCE)

V. TREE PROTECTION FENCE WITH "DO NOT ENTER TREE PROTECTION AREA" SIGN IN ENGLISH AND SPANISH (THIS IS REQUIRED AROUND THE PERIMETER OF THE PROPERTY, AT BUFFER ZONES, AND IN TREE SAVE AREAS).

DURING THE DEVELOPMENT OF A SITE, THE DEVELOPER SHALL INSTALL AND MAINTAIN ALL TEMPORARY AND PERMANENT STORMWATER CONTROL MEASURES AS REQUIRED BY THE APPROVED PLAN OR ANY PROVISION OF THIS ARTICLE, THE ACT OR ANY ORDER ADOPTED PURSUANT TO THIS ARTICLE OR THE ACT. AFTER SITE DEVELOPMENT, THE DEVELOPER SHALL INSTALL AND/OR MAINTAIN ALL NECESSARY PERMANENT STORMWATER CONTROL MEASURES SPECIFIED IN THE APPROVED PLAN, EXCEPT THOSE MEASURES INSTALLED WITHIN A ROAD OR STREET RIGHT-OF-WAY OR EASEMENT ACCEPTED FOR MAINTENANCE BY A GOVERNMENTAL AGENCY. CONVEYANCE OF THE PROPERTY SHALL NOT TERMINATE THE ORIGINAL DEVELOPER'S OBLIGATIONS UNDER THIS ARTICLE UNTIL SUCH TIME AS A REPLACEMENT PERMIT IS APPROVED BY THE COUNTY ENGINEER, OR DESIGNEE. THE ORIGINAL DEVELOPER SHALL INCLUDE IN THE DEED CONVEYING THE PROPERTY NOTICE OF THE EXISTENCE OF THE STORMWATER CONTROL MEASURES AND THE PURCHASER'S OBLIGATIONS TO MAINTAIN AND INSPECT THEM AND TO OBTAIN A PERMIT AND OTHERWISE COMPLY WITH THE TERMS OF THIS ARTICLE. REFER TO THE EROSION CONTROL DETAILS SHEET FOR ADDITIONAL MAINTENANCE NOTES. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:

NSPECT CONSTRUCTION ROADS AND PARKING AREAS PERIODICALLY FOR CONDITION OF SURFACE. TOP DRESS WITH NEW GRAVEL AS NEEDED. CHECK ROAD DITCHES AND OTHER SEEDED AREAS FOR EROSION AND SEDIMENTATION AFTER RUNOFF-PRODUCING RAINS. MAINTAIN ALL VEGETATION IN A HEALTHY, VIGOROUS CONDITION. SEDIMENT PRODUCING AREAS SHOULD BE TREATED IMMEDIATELY.

INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT IMMEDIATELY. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

INSPECT SEDIMENT FENCE GRAVEL OUTLETS AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN. ANY RIP RAP DISPLACED MUST BE REPLACED IMMEDIATELY.



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Public Works/Engineering

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Planning

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City of Raleigh Development Approval:

Raleigh Water Review Officer

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	CON ROL FLAN	SCALE AS SHUWN	IR OCHAN ENE	© 2024 KIMLEY-HORN AND ASSOCIATES, INC.	6 REVISED PER 2ND ROUND TOWN REVIEW COMMENTS	03/28/24 ASA
		DESIGNED BY SRH		421 FAYETTEVILLE STREET, SUITE 600, RALEIGH, NC 27601	5 REVISED PER 1ST ROUND NCDEQ REVIEW COMMENTS	02/15/24 ASA
OWN OF WAKE FOREST	PHASE 1	DRAWN BY SRH	1/15/	WWW.KIMLEY-HORN.COM NC LICENSE #F-0102	4 REVISED PER 1ST ROUND TOWN REVIEW COMMENTS	02/12/24 ASA
KE FOREST NORTH CAROLINA		снескер ву ЈДК	/24		No. REVISIONS	DATE BY
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	NOTE: SEE SHEETS C8.0-C8.3 FOR EROSION	CONTROL DETAILS.	ΡM	SA	SA	SA	SA
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NON CONTROL SEQUENCE		DESIGNATED AREAS TO BE STABILIZED WITHIN 7 DAYS			-	AND AS	TE GUU FAX· (

PHASE 2 EROSION CONTROL SEQUENCE

1. ONCE PHASE 1 EROSION CONTROL MEASURES ARE IN PLACE AND HAVE BEEN APPROVED BY NCDEQ, WORK CAN BEGIN ON PHASE 2.

2. CONTINUE SITE GRADING, MAINTAIN CONSTRUCTION ENTRANCES, SILT FENCE, INLET PROTECTION, DIVERSION DITCHES, AND SKIMMER BASINS.

4. EXCAVATE AND ENLARGE SKIMMER BASIN TO WET POND LIMITS BASED ON PROPOSED GRADES AND ADJUST BAFFLES AS SHOWN ON PLANS.

5. DIVERSION DITCH #2 SHALL BE INSTALLED UPSTREAM OF THE RETAINING WALL PRIOR TO THE START OF THE WALL CONSTRUCTION TO PRECLUDE SEDIMENT RUNOFF FROM IMPACTING THE WALL. CONSTRUCT RETAINING WALL PER WALL DESIGNER PLANS AND PLACE FILL BEHIND RETAINING WALL TO SET PARKING LOT ROUGH

GRADES AND BUILDING PAD ELEVATION. INSTALL MATTING AT THE BOTTOM SLOPE OF THE RETAINING WALL TO STABILIZE THE DOWNSTREAM AREAS. 6. INSTALL WATER CONNECTION TO FORESTVILLE ROAD. WATER TAP TO BE INSTALLED PRIOR TO CONSTRUCTION OF REMAINDER OF WATER SYSTEM.

7. INSTALL STORM DRAINS AND WATER AND SEWER AS SHOWN ON PLANS.

8. CONSTRUCT DRIVE AISLES/PAVING AREAS, INSTALL CURB AND GUTTER AND PAVING STONE, BASE AND BINDER COURSE TO STABILIZE PARKING LOT AND DRIVE

9. CONSTRUCT ROADWAY WIDENING AND MULTI-USE PATH AS SHOWN ON THE PLANS.

11. PROVIDE GROUND COVER ON DESIGNATED AREAS AND SLOPES GREATER THAN OR EQUAL TO 3:1 WITHIN 7 DAYS FOLLOWING COMPLETION OF GRADING. PROVIDE GROUND COVER TO ALL OTHER AREAS WITHIN 14 DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING OR INACTIVITY.

12. CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL DEVICES EVERY SEVEN (7) CALENDAR DAYS AND AFTER EVERY RAINFALL EVENT. DAMAGED OR INEFFECTIVE DEVICES SHALL BE REPLACED IMMEDIATELY.

13. COORDINATE WITH EROSION CONTROL INSPECTOR PRIOR TO REMOVAL OR RELOCATION OF ANY EROSION CONTROL MEASURE. ALL RIPRAP SHALL BE REPLENISHED AS NECESSARY AND FREE OF SEDIMENT.

15. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NCDEQ EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, U.S. DEPARTMENT OF AGRICULTURE, AND TOWN OF WAKE FOREST EROSION CONTROL SEQUENCE.

1. PRIOR TO SCHEDULING THE PRECONSTRUCTION MEETING, THE EROSION AND SEDIMENT CONTROL SURETY MUST BE SUBMITTED TO NCDEQ. THE NCG010000 CERTIFICATE OF COVERAGE MUST BE OBTAINED BY THE PERMITTEE, WHEN APPLICABLE. A COPY OF THE COC MUST BE SUBMITTED TO THE TOWN.

AFTER THE PRECONSTRUCTION MEETING IS HELD, THE CONTRACTOR CAN INSTALL INITIAL EROSION CONTROL MEASURES ONLY. THIS INCLUDES BUT IS NOT LIMITED TO CONSTRUCTION ENTRANCE, SILT FENCE, PERIMETER DIVERSION DITCH, CHECK DAMS (ROCK OR WADDLE TYPE), TREE PROTECTION FENCE, EXISTING INLET PROTECTION, SKIMMER SEDIMENT BASINS, AND SEDIMENT TRAPS. CLEAR ONLY AS NECESSARY TO INSTALL THESE MEASURES.

3. CONTRACTOR IS RESPONSIBLE FOR E&SC WEEKLY INSTALLATION AND MAINTENANCE LOG INCLUDING DATES OF TEMPORARY/PERMANENT GROUND COVER, A RAIN GAGE, COPY OF NCDEQ SIGNED PLANS ONSITE, REVISED SIGNED PLANS, NPDES LOG, AND CONSTRUCTION BOX MUST BE PRESENT AND EASILY ACCESSIBLE ONSITE. 4. ONCE MEASURES ARE INSTALLED, CONTRACTOR/FRO TO CALL NCDEQ FOR AN INITIAL INSPECTION. IF SITE PASSES INSPECTION, A CERTIFICATE OF COMPLIANCE WILL BE ISSUED. CONTRACTOR CAN NOW BEGIN CLEARING, GRUBBING, AND GRADING.

5. CONTRACTOR TO MAINTAIN ACCESS ROAD FOR EMERGENCIES AT ALL TIMES.

6. PHASE PROJECT TO LEAVE AS LITTLE GROUND OPEN AS POSSIBLE

7. TEMPORARILY SEED, STRAW, AND TACK OR HYDROSEED WITHIN 14 DAYS OF ANY PHASE OF GRADING, INCLUDING SLOPES. SEED BASINS AND DITCHES IMMEDIATELY

8. PRIOR TO REMOVAL OF TEMPORARY MEASURES, NCDEQ MUST APPROVE REMOVAL. ALL AREAS ABOVE TEMPORARY MEASURE MUST HAVE 85% GROUND COVER. 9. THE NCDEQ CONSTRUCTION INSPECTOR WILL EVALUATE THE SITE AT LEAST ONCE A MONTH. A COPY OF THE INSPECTION FORM WILL BE EMAILED TO THE FRO. THE WEEKLY EROSION LOG AND NPDES LOG MUST BE ONSITE AND AVAILABLE FOR REVIEW.

10. IF THE SITE IS FOUND OUT OF COMPLIANCE A NOTICE OF VIOLATION WILL BE ISSUED GIVING THE CONTRACTOR/FRO A NUMBER OF WORKING DAYS DETERMINED BY NCDEQ TO REMEDY THE PROBLEM. IF THE SITUATION IS NOT RESOLVED WITHIN THE TIME PERIOD A FINE MAY BE ISSUED.

11. NCDEQ MAY ISSUE A FINE UP TO \$5,000 PER DAY. PER VIOLATION FOR ANY PERSON IN VIOLATION OF ANY PORTION OF ARTICLE 113A OF THE SEDIMENTATION

12. WHEN THE PROJECT IS COMPLETE, THE PERMITTEE SHALL CONTACT DEMLR TO CLOSE OUT THE E&SC PLAN AND, SUBMIT A NOTICE OF TERMINATION TO END COVERAGE UNDER THE NCG010000 PERMIT.

DURING THE DEVELOPMENT OF A SITE, THE DEVELOPER SHALL INSTALL AND MAINTAIN ALL TEMPORARY AND PERMANENT STORMWATER CONTROL MEASURES AS REQUIRED BY THE APPROVED PLAN OR ANY PROVISION OF THIS ARTICLE, THE ACT OR ANY ORDER ADOPTED PURSUANT TO THIS ARTICLE OR THE ACT. AFTER SITE DEVELOPMENT, THE DEVELOPER SHALL INSTALL AND/OR MAINTAIN ALL NECESSARY PERMANENT STORMWATER CONTROL MEASURES SPECIFIED IN THE APPROVED PLAN, EXCEPT THOSE MEASURES INSTALLED WITHIN A ROAD OR STREET RIGHT-OF-WAY OR EASEMENT ACCEPTED FOR MAINTENANCE BY A GOVERNMENTAL AGENCY. CONVEYANCE OF THE PROPERTY SHALL NOT TERMINATE THE ORIGINAL DEVELOPER'S OBLIGATIONS UNDER THIS ARTICLE UNTIL SUCH TIME AS A REPLACEMENT PERMIT IS APPROVED BY THE COUNTY ENGINEER, OR DESIGNEE. THE ORIGINAL DEVELOPER SHALL INCLUDE IN THE DEED CONVEYING THE PROPERTY NOTICE OF THE EXISTENCE OF THE STORMWATER CONTROL MEASURES AND THE PURCHASER'S OBLIGATIONS TO MAINTAIN AND INSPECT THEM AND TO OBTAIN A PERMIT AND OTHERWISE COMPLY WITH THE TERMS OF THIS ARTICLE. REFER TO THE EROSION CONTROL DETAILS SHEET FOR ADDITIONAL MAINTENANCE

INSPECT CONSTRUCTION ROADS AND PARKING AREAS PERIODICALLY FOR CONDITION OF SURFACE. TOP DRESS WITH NEW GRAVEL AS NEEDED. CHECK ROAD DITCHES AND OTHER SEEDED AREAS FOR EROSION AND SEDIMENTATION AFTER RUNOFF-PRODUCING RAINS. MAINTAIN ALL VEGETATION IN A HEALTHY, VIGOROUS CONDITION. SEDIMENT PRODUCING AREAS SHOULD BE TREATED IMMEDIATELY.

INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT IMMEDIATELY. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

INSPECT SEDIMENT FENCE GRAVEL OUTLETS AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN. ANY RIP RAP DISPLACED MUST BE REPLACED

NSPECT THE BARRIER OF AFTER EACH RAIN AND MAKE REPAIRS AS NEEDED. REMOVE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND ANY UNSTABLE SOIL, AND EITHER SALVAGE OR DISPOSE OF IT PROPERLY. BRING THE DISTURBED AREA TO PROPER GRADE, THEN SMOOTH AND COMPACT IT. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET.





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GRADING AND D	RAINAGE LEGEND
	PROPERTY LINE
TCE	TEMPORARY CONSTRUCTION EASEMENT
	STORM DRAIN (≥ 12 INCH)
	STORM DRAIN (< 12 INCH)
RD	ROOF DRAIN
	UNDER DRAIN
	CURB AND GUTTER
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CL	CLEARING LIMITS
805	EXISTING CONTOUR
	ON-SITE PROPOSED CONTOUR
	OFF-SITE ROADWAY PROPOSED CONTOUR
₹ <u>826.00</u>	SPOT ELEVATION
	CATCH BASIN (CB)
(SD)	MANHOLE (SDMH)
•	CLEANOUT (SDCO)
•	DROP INLET (DI)
П	AREA DRAIN (AD)
	CONTROL STRUCTURE (CS)
	FLARED END SECTION (FES)
	CONCRETE HEADWALL (HW)
	RIP-RAP APRON
	FLOW ARROW
TW	TOP OF WALL (GRADE ELEV.)
BW	BOTTOM OF WALL (GRADE ELEV.)
TP	TOP OF PAVEMENT (GRADE ELEV.)
TC	TOP OF CURB (GRADE ELEV.)
TC/TP	FLUSH CURB (GRADE ELEV.)
WT	WATER TIGHT JOINTS (WT)
FFE	FINISHED FLOOR ELEVATION
GFE	GARAGE FLOOR ELEVATION

GRADING AND DRAINAGE NOTES:

- 1. SIDEWALKS TO HAVE A MAXIMUM 2% CROSS SLOPE AND A MAXIMUM 5% LONGITUDINAL SLOPE.
- 2. PEDESTRIAN CROSSWALKS TO HAVE MAXIMUM 2% CROSS SLOPE AND MAXIMUM 5%
- LONGITUDINAL SLOPE WITHIN STRIPED AREA AND PATH OF TRAVEL. 3. ADA PARKING ACCESSIBLE AREAS TO HAVE A MAXIMUM 2% SLOPE IN ALL DIRECTIONS.
- THE ADA RAMPS AND LANDINGS SHALL COMPLY WITH CITY, STATE, AND FEDERAL, INCLUSIVE OF PROWAG, REGULATIONS WITH THE MOST RESTRICTIVE REQUIRED.
 SIDEWALK INTERSECTIONS, RAMP LANDINGS, AND STAIR LANDINGS TO HAVE MAXIMUM 2%
- SLOPE IN ALL DIRECTIONS.
 ALL GRADE SPOTS TAKEN FROM CURB FLOW LINE UNLESS OTHERWISE NOTED.
- ALL GRADE SPOTS TAKEN FROM CORD FLOW LINE ONCESS OTHERWISE NOTED.
 CONTRACTOR TO CONSTRUCT ADA PARKING TO ADA COMPLIANT GRADES AND FEATHER LIMITS OF PAVEMENT TO ACHIEVE A SMOOTH TRANSITION AND POSITIVE DRAINAGE TO
- ADJACENT PAVEMENT AND CURB AREAS.
 8. THE PURPOSE OF THIS PLAN IS TO CONVEY DESIGN INTENT. CONTRACTOR TO VERIFY ALL DIMENSIONS AND SLOPES TO ENSURE POSITIVE DRAINAGE IN THE FIELD AND IS RESPONSIBLE FOR ALL COORDINATION WITH THE TOWN AND THE NCDOT.

LIMITS OF DISTURBANCE: 3.00 AC



Public Works/Engineering

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approval. City of Raleigh Development Approval:

Raleigh Water Review Officer

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	- PROPERTY LINE
	- WATER LINE
FW	- FIRE LINE
	- SANITARY SEWER LINE
Е	- ELECTRIC
FO	- FIBER OPTIC
G	– GAS
P	- POWER
T	- TELECOMMUNICATION
TV	- CABLE
	PROPOSED LIGHT POLE
	EXISTING LIGHT POLE
Μ	WATER METER
M	GATE VALVE
E S	POINT OF CONNECTION
	BACKFLOW PREVENTOR
다 고 고 고 고 다 日 日	PIPE TEE/BENDS
►	REDUCER
₩	FIRE HYDRANT (FH)
\checkmark	FIRE DEPARTMENT CONNECTION (FDC)
•	SANITARY SEWER CLEANOUT (SSCO)
S	SANITARY SEWER MANHOLE (SSMH)
ĕ	SANITARY SEWER GREASE TRAP





These plans have been electronically approved for construction by the Town of Wake Forest Public Works and Engineering Departments. This approval may not be altered once issued.

Public Works/Engineering

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City of Raleigh Development Approval:

Raleigh Water Review Officer

SURVEY NOTE: ALL EXISTING TOPOGRAPHICAL AND BOUNDARY INFORMATION WAS PROVIDED WITHIN A BOUNDARY & PARTIAL TOPOGRAPHIC SURVEY PREPARED BY KCI ASSOCIATES OF N.C., 4505 FALLS OF NEUSE RD, FLOOR 4, RALEIGH, NC 27607, 919-783-9214, DATED 3/23/23.



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City of Raleigh Development Approval:

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irected by the engineer. Curb ramps shall be d as directed by the engineer where existing ions, not less than 2 feet of full height curb	
in a rough non-skid type surface. sign standards. en would be established by bisecting the CC/ANSI all7 Commentary. Fig. C406.6 &	
Manual of Uniform Traffic Control Devices th Carolina Supplement to the MUTCD. d dome placement. sair entrainment requirements. No site mix or	
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City of Raleigh Development Approval:

GENERAL NOTES:

1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE BASIN AREA SHALL BE CLEARED.

2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVERSIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE BEING CONSTRUCTED. SPILLWAYS SHOULD NOT BE CONSTRUCTED THROUGH FILL SECTIONS.

3. CONSTRUCTION OPERATION SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION IS MINIMIZED. 4. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.

5. SHAPE THE BASIN TO THE SPECIFIED DIMENSIONS. PREVENT THE SKIMMING DEVICE FROM SETTLING INTO THE MUD BY EXCAVATING A SHALLOW PIT UNDER THE SKIMMER OR PROVIDING A LOW SUPPORT UNDER THE SKIMMER OF STONE OR TIMBER.

6. STORAGE AREA IS SHOWN AS RECTANGULAR FOR ILLUSTRATIVE PURPOSES ONLY, AND MAY BE CONSTRUCTED IN ANY SHAPE PROVIDED THE MINIMUM STORAGE VOLUME REQUIREMENT IS MET. THE BASIN SHOULD ALSO BE ORIENTED SUCH THAT THE FILTER AND THE MAIN FLOW OF WATER AND SEDIMENT ARE ON OPPOSITE ENDS ON THE LONGER BASIN DIMENSIONS. 7. REQUIRED STORAGE IS 1800 CUBIC FEET OF STORAGE VOLUME PER DENUDED ACRE. RECOMMENDED STORAGE IS 1800 CUBIC FEET OF STORAGE PER ACRE OF DRAINAGE AREA.

9. LAY THE ASSEMBLED SKIMMER ON THE BOTTOM OF THE BASIN WITH THE FLEXIBLE JOINT AT THE INLET OF THE BARREL PIPE. ATTACH THE FLEXIBLE JOINT TO THE BARREL PIPE AND POSITION THE SKIMMER OVER THE EXCAVATED PIT OR SUPPORT. BE SURE TO ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN. THIS WILL BE USED TO PULL THE SKIMMER TO THE SIDE FOR MAINTENANCE.

10. THE LENGTH OF THE STONE OUTLET (SPILLWAY) IS TO BE BASED ON A 10 YEAR STORM.

11. WHENEVER TOPOGRAPHY ALLOWS, THE BASIN LENGTH SHOULD BE TWICE (2X) THE BASIN WIDTH, TO ALLOW FOR SETTLING. BAFFLES SHOULD BE PROVIDED IN THE BASIN WHERE THE LENGTH IS LESS THAN TWICE THE WIDTH. 12. SAFETY FENCING 3' HIGH SHOULD BE PLACED AROUND ALL SEDIMENT BASINS.

13. FOR DESIGN OF RISER TYPE SEDIMENT BASINS, REFER TO THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

14. THE BASIN SHALL BE INSPECTED AFTER EACH RAIN MADE AS NECESSARY. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.

15. IMPERMEABLE LINER WILL BE INSTALLED ON THE SPILLWAY.

CONSTRUCTION SPECIFICATIONS:

1. CLEAR, GRUB, AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER AND STOCKPILE OR DISPOSE OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW BASIN AS NEEDED.

2. ENSURE THAT FILL MATERIAL FOR THE EMBANKMENT IS FREE OF ROOTS, WOODY VEGETATION, ORGANIC MATTER, AND OTHER OBJECTIONABLE MATERIAL. PLACE THE FILL IN LIFTS NOT TO EXCEED 9 INCHES, AND MACHINE COMPACT IT. OVER FILL THE EMBANKMENT 6 INCHES TO ALLOW FOR SETTLEMENT.

3. SHAPE THE BASIN TO THE SPECIFIED DIMENSIONS. PREVENT THE SKIMMING DEVICE FROM SETTLING INTO THE MUD BY EXCAVATING A SHALLOW PIT UNDER THE SKIMMER OR PROVIDING A LOW SUPPORT UNDER THE SKIMMER OF STONE OR

4. PLACE THE BARREL (TYPICALLY 4-INCH SCHEDULE 40 PVC PIPE) ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL. DO NOT USE PERVIOUS MATERIAL SUCH AS SAND, GRAVEL, OR CRUSHED STONE AS BACKFILL AROUND THE PIPE. PLACE THE FILL MATERIAL AROUND THE PIPE SPILLWAY IN 4-INCH LAYERS AND COMPACT IT UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. CARE MUST BE TAKEN NOT TO RAISE THE PIPE FROM THE FIRM CONTACT WITH ITS FOUNDATION WHEN COMPACTING UNDER THE PIPE HAUNCHES.

5. PLACE A MINIMUM DEPTH OF 2 FEET OF COMPACTED BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT. IN NO CASE SHOULD THE PIPE CONDUIT BE INSTALLED BY CUTTING A TRENCH THROUGH THE DAM AFTER THE EMBANKMENT IS COMPLETE.

6. ASSEMBLE THE SKIMMER FOLLOWING THE MANUFACTURER'S INSTRUCTIONS, OR AS DESIGNED.

7. LAY THE ASSEMBLED SKIMMER ON THE BOTTOM OF THE BASIN WITH THE FLEXIBLE JOINT AT THE INLET OF THE BARREL PIPE. ATTACH THE FLEXIBLE JOINT TO THE BARREL PIPE AND POSITION THE SKIMMER OVER THE EXCAVATED PIT OR SUPPORT. BE SURE TO ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN. THIS WILL BE USED TO PULL THE SKIMMER TO THE SIDE FOR MAINTENANCE.

8. EARTHEN SPILLWAYS-INSTALL THE SPILLWAY IN UNDISTURBED SOIL TO THE GREATEST EXTENT POSSIBLE. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRADE, DESIGN WIDTH, AND ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE SPILLWAY. THE SPILLWAY SHOULD BE LINED WITH LAMINATED PLASTIC OR IMPERMEABLE GEOTEXTILE FABRIC. THE FABRIC MUST BE WIDE AND LONG ENOUGH TO COVER THE BOTTOM AND SIDES AND EXTEND ONTO THE TOP OF THE DAM FOR ANCHORING IN A TRENCH. THE EDGES MAY BE SECURED WITH 8—INCH STAPLES OR PINS. THE FABRIC MUST BE LONG ENOUGH TO EXTEND DOWN THE SLOPE AND EXIT ONTO STABLE GROUND. THE WIDTH OF THE FABRIC MUST BE ONE PIECE, NOT JOINED OR SPLICED; OTHERWISE WATER CAN GET UNDER THE FABRIC. IF THE LENGTH OF THE FABRIC IS INSUFFICIENT FOR THE ENTIRE LENGTH OF THE SPILLWAY, MULTIPLE SECTIONS, SPANNING THE COMPLETE WIDTH, MAY BE USED. THE UPPER SECTION(S) SHOULD OVERLAP THE LOWER SECTION(S) SO THAT WATER CANNOT FLOW UNDER THE FABRIC. SECURE THE UPPER EDGE AND SIDES OF THE FABRIC IN A TRENCH WITH STAPLES OR PINS. (ADAPTED FROM "A MANUAL FOR DESIGNING, INSTALLING AND MAINTAINING SKIMMER SEDIMENT BASINS." FEBRUARY 1999, J. W. FAIRCLOTH &

9. INLETS-DISCHARGE WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION. USE TEMPORARY SLOPE DRAINS OR DIVERSIONS WITH OUTLET PROTECTION TO DIVERT SEDIMENT LADEN WATER TO THE UPPER END OF THE POOL AREA TO IMPROVE BASIN TRAP EFFICIENCY (REFERENCES: RUNOFF CONTROL MEASURES AND OUTLET PROTECTION).

10. EROSION CONTROL-CONSTRUCT THE STRUCTURE SO THAT THE DISTURBED AREA IS MINIMIZED. DIVERT SURFACE WATER AWAY FROM BARE AREAS. COMPLETE THE EMBANKMENT BEFORE THE AREA IS CLEARED. STABILIZE THE EMERGENCY SPILLWAY EMBANKMENT AND ALL OTHER DISTURBED AREAS ABOVE THE CREST OF THE PRINCIPAL SPILLWAY IMMEDIATELY AFTER CONSTRUCTION (REFERENCES: SURFACE STABILIZATION).

11. INSTALL POROUS BAFFLES AS SPECIFIED IN PRACTICE 6.65, POROUS BAFFLES, OF THE NCDEQ EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

12. AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND STABILIZE PROPERLY (REFERENCES: SURFACE STABILIZATION).

INSPECT SKIMMER SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER

OR THE FIRST CELL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER. 2. REPAIR THE BAFFLES IF THEY ARE DAMAGED. RE-ANCHOR THE BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND

3. IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS.

4. IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER. CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER AND POOL AREAS.

5. FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.

> (XX)KHA DETAIL NO: 01.401.R02

WARNING SIGN

TREE PROTECTION FENCE N.T.S.

GUTTERBUDDY® SPECIFICATIONS FOR CURB GUTTER STORM DRAINS

1.0 DESCRIPTION

1.1 THIS WORK SHALL CONSIST OF FURNISHING, PLACING, MAIN THE GUTTERBUDDY® SEDIMENT CONTROL DEVICE AS DIRECTED SHOWN ON THE CONTRACT DRAWINGS. THE GUTTERBUDDY® SE IS DISTRIBUTED BY THE BMP STORE.

2.0 MATERIALS 2.1 GUTTERBUDDY®

THE GUTTERBUDDY® SHALL BE SYNTHETIC FILTER MANUFACTU SYNTHETIC FIBERS.

2.1.1 THE GUTTERBUDDY® WILL BE MANUFACTURED TO E ARE AVAILABLE IN 4', 6', 8', 10', 12', 14' AND 16' LENG TWENTY-FOUR (24) INCHES LONGER THAN THE CURB INL ALLOW FOR SUFFICIENT LENGTH TO COVER THE INLET WIT BEYOND THE INLET ON BOTH ENDS.

3.0 CONSTRUCTION SEQUENCE

3.1 GENERAL

3.1.1 INSTALL THE GUTTERBUDDY® IN FRONT OF THE CUI END OF THE GUTTERBUDDY® SHOULD OVERLAP THE CUR

3.1.2 THE GUTTERBUDDY® SHOULD BE CLEANED IF A VIS SILT AND DEBRIS BUILD UP AROUND THE GUTTERBUDDY®

3.1.3 TO REMOVE THE GUTTERBUDDY®, LIFT OUT OF THE 3.1.4 THE GUTTERBUDDY® IS REUSABLE. ONCE THE CONS COMPLETE AND IT IS NO LONGER NEEDED FOR SEDIMENT AND STORE OUT OF THE SUNLIGHT UNTIL NEEDED ON TH 3.1.5 PONDING IS LIKELY IF SEDIMENT IS NOT REMOVED F GUTTERBUDDY® SHOULD BE ON A REGULAR BASIS AND RAIN EVENTS.

4.0 BASIS OF PAYMENT

4.1 THE PAYMENT FOR ANY GUTTERBUDDY® USED DURING TH INCLUDED IN THE BID OF THE OVERALL EROSION AND SEDIMEN PRICED BY THE LINEAR FOOT.

<u>NOTE</u>

INSTALL ROCK AND GRAVEL AROUND GUTTER BUDDY TO PREC RUNOFF FROM FLOWING UNDERNEATH INLET PROTECTION.

CURB INLET SILT PROTECTION N.T.S. KHA DETAIL

PLASTIC OR WRE TILES MIN. 12–1/2 GA. INTERMEDIATE WRES GRADE ORANGE, UV RESISTANT HIGH-TENSILE STRENGTH POLY BARRICADE FABRIC (TYP.) 40" ECTION AREA OT ENTER E PROTECCION ES - NO ENTRE SIGN DETAIL 9.	DIES TREE PROTECTION FENCING MUST BE INSTALLED AT A MINIMUM RADIUS OF THE CRITICAL ROOT ZONE (CR2) OF TREES. (CR2 DEFINED AS RADIUS x 1.25' (FT) PER INCH AT DBH FROM TRUNK OF TREE. IF CONSTRUCTION OCCURS WITHIN THE CR2 AT LEAST 12" OF MULCH AND/OR LOGGING MATTS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE. THE TREE PROTECTION FENCING MUST NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT. THERE WILL BE ZERO TOLERANCE FOR STORING OR PARKING VEHICLES, SUPPLIES, OR EQUIPMENT UNDER PROTECTED TREES. IMPACT PROTECTION DEVICES MUST BE REMOVED AFTER CONSTRUCTION. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS SHOWN. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT. SHOULD THE FABRIC OF A PROTECTION FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INFFFECTIVE, CONTRACTOR SHALL REPLACE IT PROMPTLY. KHA DETAIL NO: 01.304.R01	HIDIN10Issued for BID11/15/24DPM310Issued for BID11/15/24ASA37Issued for Capproval04/29/24ASA00, RALEIGH, NC276015REVISED PER 2ND ROUND TOWN REVIEW COMMENTS05/30/24ASA100, RALEIGH, NC276015REVISED PER 1ST ROUND TOWN REVIEW COMMENTS05/30/24ASA100, RALEIGH, NC276015REVISED PER 1ST ROUND TOWN REVIEW COMMENTS03/28/24ASA100, RALEIGH, NC270017ISSUED PER 1ST ROUND NCDEQ REVIEW COMMENTS02/15/24ASA1010-677-20504REVISED PER 1ST ROUND TOWN REVIEW COMMENTS02/15/24ASA1010-677-20504REVISIONS02/12/24ASA1010-677-20504REVISIONSDATEBY
INLET		© 2024 KIMLEY-HORN AND 421 FAYETTEVILLE STREET, SUITE 6 PHONE: 919–677–2000 FAX. WWW.KIMLEY-HORN.COM NC
INTAINING AND REMOVING D BY THE ENGINEER AND AS SEDIMENT CONTROL SYSTEM		CAROUNT CARO
BE 9" IN DIAMETER AND GTHS AND A MINIMUM OF LET OPENING. THIS WILL ITH TWELVE (12) INCHES JRB INLET OPENING. EACH RB INLET APPROXIMATELY SUAL INSPECTION SHOWS ®. E OPENING.		KHA PROJECT 011311066 DATE 05/30/2024 SCALE AS SHOWN BESIGNED BY SRH DESIGNED BY SRH DRAWN BY SRH CHECKED BY JDK
T CONTROL, REMOVE, CLEAN HE NEXT PROJECT. REGULARLY. INSPECTION OF IMMEDIATELY AFTER MAJOR HE CONSTRUCTION IS TO BE INT CONTROL PLAN AND		EROSION CONTROL DETAILS
NO: 01.204.R01	These plans have been electronically approved for construction by the Town of Wake Forest Public Works and Engineering Departments. This approval may not be altered once issued. Public Works/Engineering These plans have been electronically approved for construction by the Town of Wake Forest Planning Department. This approval may not be altered once issued. Planning CITY OF RALEIGH – PLANS AUTHORIZED FOR CONSTRUCTION Electronic Approval: This approval is being issued electronically. This approval is valid 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 plan kept on file with the City. This electronic approval may not be edited once issued. Any modification of this approval once issued will invalidate this approval. City of Raleigh Development Approval: Raleigh Water Review Officer	PUBLIC SAFETY PUBLIC SAFETY NAREHOUSE REPARED FOR PREPARED FOR MAKE FOREST NORTH CAROLINA

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City of Raleigh Development Approval:

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

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

	Re	equired Ground Stab	ilization Timeframes
Si	te Area Description	Stabilize within thi many calendar days after ceasing land disturbance	s Timeframe variations
(a)	Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b)	High Quality Water (HQW) Zones	7	None
(c)	Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d)	Slopes 3:1 to 4:1	14	 -7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e)	Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope
rou ract ctiv urfa	: After the permanent nd stabilization shall b icable but in no case l ity. Temporary groun ce stable against acce	cessation of constru- e converted to permonger than 90 calend d stabilization shall b lerated erosion until	uction activities, any areas with temporary nanent ground stabilization as soon as dar days after the last land disturbing be maintained in a manner to render the I permanent ground stabilization is achieved
tabi echi	UND STABILIZATION S lize the ground suffici niques in the table be	ently so that rain wil ow:	I not dislodge the soil. Use one of the
	Temporary Stab	ilization	Permanent Stabilization
• To o • H • R	emporary grass seed cove ther mulches and tackifie ydroseeding olled erosion control proc	ered with straw or rs ducts with or	Permanent grass seed covered with straw or other mulches and tackifiers Geotextile fabrics such as permanent soil reinforcement matting

without temporary grass seed nyaroseeding Shrubs or other permanent plantings covered Appropriately applied straw or other mulch Plastic sheeting with mulch Uniform and evenly distributed ground cover sufficient to restrain erosion Structural methods such as concrete, asphalt or retaining walls Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

Select flocculants that are appropriate for the soils being exposed during construction, selecting from the NC DWR List of Approved PAMS/Flocculants. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.

Apply flocculants at the concentrations specified in the NC DWR List of Approved PAMS/Flocculants and in accordance with the manufacturer's instructions.

Provide ponding area for containment of treated Stormwater before discharging offsite.

Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

- Never bury or burn waste. Place litter and debris in approved waste containers. 2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
- 3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland. 5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers. Anchor all lightweight items in waste containers during times of high winds. 7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
 - Dispose waste off-site at an approved disposal facility.
 - On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

- Do not dump paint and other liquid waste into storm drains, streams or wetlands. 2. 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. 5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

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

EARTHEN STOCKPILE MANAGEMENT

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

accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification of this approval once issued will invalidate this

SHEET NUMBER

C8.4

City of Raleigh Development Approval:

ECTION A: SEL elf-inspections	F-INSPECTION are required duri	ng normal business hours in accordance with the table
elow. When a ersonnel to be which it is safe to reater than 1.0 erformed upor vere delayed sh	dverse weather of in jeopardy, the i to perform the ins inch occurs outsi the commencem nall be noted in the	r site conditions would cause the safety of the inspection nspection may be delayed until the next business day on pection. In addition, when a storm event of equal to or de of normal business hours, the self-inspection shall be nent of the next business day. Any time when inspections e Inspection Record.
Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un- attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device
(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, Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDCs)	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 as oil sheen, floating or suspended solids or discoloration, Indication of visible sediment leaving the site, Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	 If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	 If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: Description, evidence and date of corrective actions taken, and Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	 The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

PART II, SECTION G, ITEM (4) DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

- (a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
- (b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
- (c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
- (d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
- (e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
- (f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPC

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

ON B: RECORDKEEPING

C Plan Documentation

approved E&SC plan as well as any approved deviation shall be kept on the site. The roved E&SC plan must be kept up-to-date throughout the coverage under this permit. following items pertaining to the E&SC plan shall be kept on site and available for ection at all times during normal business hours.

Item to Document	Documentation Requirements
ach E&SC measure has been installed does not significantly deviate from the ions, dimensions and relative elevations 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.
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.
Fround cover is located and installed cordance with the approved E&SC	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.
The maintenance and repair irements for all E&SC measures been performed.	Complete, date and sign an inspection report.
Corrective actions have been taken &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.

tional Documentation to be Kept on Site

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

This General Permit as well as the Certificate of Coverage, after it is received.

Records of inspections made during the previous twelve months. 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.

mentation to be Retained for Three Years

ata used to complete the e-NOI and all inspection records shall be maintained for a period ree years after project completion and made available upon request. [40 CFR 122.41]

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ECTION C: REPORTIN	NG		
. Occurrences that N	Aust be Reported		ST SL /AL /IEW C /IEW C
Permittees shall rep	port the following occurrences:		BID PROV N REV S S
(a) Visible sedimer	nt deposition in a stream or wetland.		FOR ACHMI D TOW NCDE TOWN SION
(b) Oil spills if:			SUED NCRO, FOR OUND OUND OUND
They are 25 a	zallons or more.		IS SUED SUED SUED ST R(1ST R
 They are less 	than 25 gallons but cannot be cleaned up within 24 hours.		3 PAF IS PER 1
They cause s	heen on surface waters (regardless of volume), or		CDOT ISED VISED
They are with	nin 100 feet of surface waters (regardless of volume).		NO NO REV.
(c) Releases of haz of the Clean W (Ref: 40 CFR 30	ardous substances in excess of reportable quantities under Section 311 ater Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA 02.4) or G.S. 143-215.85.		INC. NC 27601 050 0102
(d) Anticipated by	passes and unanticipated bypasses.		CIATES, RALEIGH, -677-2 ISE #F-C
			ASSO(00, F 919 LICEN
(e) Noncompliance environment.	e with the conditions of this permit that may endanger health or the		IORN AND T, SUITE 6 -2000 FAX. COM NC
. Reporting Timefram	nes and Other Requirements		EY-H STREE 677- FORN-
After a permittee b	ecomes aware of an occurrence that must be reported, he shall contact		KIMLE LE S 919- EY-F
the appropriate Div other requirements reported to the De 858-0368.	vision regional office within the timeframes and in accordance with the s listed below. Occurrences outside normal business hours may also be partment's Environmental Emergency Center personnel at (800)		421 FAYETTEVIL PHONE: 9 WWW.KIML
Occurrence	Reporting Timeframes (After Discovery) and Other Requirements		
(a) Visible sediment	Within 24 hours, an oral or electronic notification.		
deposition in a stream or wetland	 Within 7 calendar days, a report that contains a description of the sediment and actions taken to address the cause of the deposition 		
stream or wettand	Division staff may waive the requirement for a written report on a		
	case-by-case basis.		
	 If the stream is named on the <u>NC 303(d) list</u> 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 notification		CAROUNT CARO
release of	shall include information about the date, time, nature, volume and		CONCESSION PAR
hazardous substances per Item	location of the spill or release.		(4328 Auer W
1(b)-(c) above			O NOINE STAT
(c) Anticipated	A report at least ten days before the date of the bypass, if possible. The report shall include an evoluation of the patieipated evolution and		/////RIMIN 11/15/24
122.41(m)(3)]	effect of the bypass.		
(d) Unanticipated	Within 24 hours, an oral or electronic notification.		JECT JECT SHOV SF
122.41(m)(3)]	 Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass. 		PR0 3110 AS AS BY BY BY
(e) Noncompliance	Within 24 hours, an oral or electronic notification.		(HA 011. 5/3 5/3 wwn Elener
with the conditions	Within 7 calendar days, a report that contains a description of the poppognalization and its causes: the period of poppognalization		DES SC/
may endanger	including exact dates and times, and if the noncompliance has not		
health or the	been corrected, the anticipated time noncompliance is expected to		
CFR 122.41(I)(7)]	prevent reoccurrence of the noncompliance. [40 CFR 122.41(I)(6).		
	 Division staff may waive the requirement for a written report on a 		
	case-by-case basis.		
	NORTH CAROLINA Environmental Quality		NC RC
ORTING	EFFECTIVE: 04/01/19		
		These plans have been electronically and south the state of the	
		by the Town of Wake Forest Public Works and Engineering Departments. This approval may not be altered once issued.	
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		These plans have been electronically approved for construction	
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		CITY OF RALEIGH – PLANS AUTHORIZED FOR CONSTRUCTION	
		Electronic Approval: This approval is being issued electronically. This approval is valid upon the signature of a City of Baleigh	
		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 of this approval once issued will have listed to the	
		approval.	
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Raleigh Water Review Officer

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NTITY TABLE	City of Raleigh Development Approval:	
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DETAIL	Revision Date: Feb., 2015	Sheet #: 1 of 1	TOWN of WAKE FOREST	HOLES (OPENINGS) FORMULA	Revision Date: Feb., 2015	Sheet #: 1 of 1		

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NOTES: 1. TO BE CONSTRUCTED OF WELL-GRADED, CLEAN SAND MEETING THE "FINE CONCRETE AGGREGATE" REQUIREMENTS (ASTM C-33). 2. TO BE FIELD INSPECTED BY GEOTECHNICAL ENGINEER. (2) 3" PERFORATED SCHEDULE 40

IN #78 STONE BED **CROSS SECTION B-B** FILTER-DRAINAGE DIAPHRAGM NOT TO SCALE; DIMENSIONS BASED ON PART 628 CHAPTER 45 OF THE NATIONAL ENGINEERING HANDBOOK

- 3. FILL TO SPRINGLINE WITH CONCRETE
- 4. WRAP PIPE JOINTS WITH A NONWOVEN GEOTEXTILE
- 5. CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
- 6. THE CONCRETE FOR THE CRADLE SHALL BE CONSOLIDATED PRIMARILY BY INTERNAL VIBRATION, AND SHALL BE FINISHED "ROUGH" SO AS TO ACHIEVE A MORE ADEQUATE BOND BETWEEN THE CONCRETE IN THE CRADLE AND THE FIRST LIFT OF STRUCTURAL FILL.

<u>ET POND LINER NOTES (</u> SOIL USED TO CONSTRUCT THE LINER SHALL CONSIST OF CLAYEY SAND (SC), SILT (ML, MH), OR CLAY (CL, CH). 2. THE CONTRACTOR SHALL SUBMIT 50-POUND BULK SAMPLES OF DIFFERENT PROPOSED

- LINER SOILS TO THE GEOTECHNICAL ENGINEER FOR LABORATORY TESTING AT LEAST 2 WEEKS PRIOR TO ITS PLACEMENT.
- 3. SOIL LINER MATERIAL SHALL BE PLACED IN LOOSE LIFTS NO MORE THAN 8 INCHES THICK. SOIL LINEAR MATERIAL SHALL BE COMPACTED WITH A SHEEPSFOOT ROLLER TO AT LEAST 93% OF ITS STANDARD PROCTOR MAXIMUM DRY UNIT WEIGHT AT A MINIMUM OF 2% WET OF THE SOIL'S OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.

BERM NOTES 1. BERM MATERIAL SHALL BE PLACED IN HORIZONTAL LOOSE LIFTS NO MORE THAN 8 INCHES THICK BENCHED INTO EXISTING SLOPING GROUND SURFACE.

- BERM MATERIAL SHALL BE COMPACTED TO AT LEAST 95% OF ITS STANDARD PROCTOR MAXIMUM DRY UNIT WEIGHT BETWEEN -3% AND +3% OF THE SOIL'S OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.
- THE CONTRACTOR SHALL OVER-BUILD THE LIFTS OF BERM MATERIAL TO OBTAIN THE SPECIFIED COMPACTION ON THE FINAL SLOPE FACE, THEN EXCAVATE BACK TO ACHIEVE THE FINAL SLOPE FACE GRADES.

L NAME	COMMON NAME	CONT.	<u>CAL.</u>	<u>HEIGHT</u>	
GERIANUM 'STREETWISE'	STREETWISE® TRIDENT MAPLE	B&B	3" CAL.	16` HT. MIN.	
AROLINIANA	AMERICAN HORNBEAM MULTI-TRUNK	B&B	2" CAL.	12` HT. MIN.	
NNAH`	HOLLY SAVANNAH	B&B	2" CAL.	8` HT. MIN.	
RANDIFLORA 'BRACKENS BROWN BEAUTY'	BRACKEN'S BEAUTY SOUTHERN MAGNOLIA	B&B	2" CAL.	8` HT. MIN.	
SOULANGEANA	SAUCER MAGNOLIA MULTI-TRUNK	B&B	2" CAL.	8` HT. MIN.	
HELLOS 'HIGHTOWER'	HIGHTOWER WILLOW OAK	B&B	3" CAL.	16` HT. MIN.	
/IFOLIA 'ALLEE'	ALLEE® LACEBARK ELM	B&B	3" CAL.	16` HT. MIN.	
L NAME	COMMON NAME	CONT.	<u>HEIGHT</u>		
ANDIFLORA 'RADIANCE'	RADIANCE GLOSSY ABELIA	3 GAL.	18" HT.		
'AUTUMN SPIRIT'	AUTUMN SPIRIT CAMELLIA	3 GAL	24" HT.		
ASANQUA 'GREEN 01-006'	OCTOBER MAGIC® CARPET™ CAMELLIA	3 GAL.	18" HT.		
XUS HARRINGTONIA 'DUKE GARDENS'	DUKE GARDENS PLUM YEW	3 GAL	18" HT.		
ASMINOIDES `FROSTPROOF`	FROSTPROOF GARDENIA	3 GAL	24" HT.		
\'NIGRA'	NIGRA INKBERRY HOLLY	3 GAL	24" HT.		
JM CHINENSE 'CRIMSON FIRE' TM	CRIMSON FIRE FRINGE FLOWER	3 GAL	18" HT.		
X BURKWOODII	BURKWOOD OSMANTHUS	3 GAL	24" HT.		
'NANTUKET'	NANTUCKET VIBURNUM	3 GAL	24" HT <u>.</u>		
L NAME	COMMON NAME	<u>SIZE</u>			<u>SPACING</u>
ACTYLON 'TIF 419'	TIF 419 BERMUDAGRASS	SOD			
CARI 'BIG BLUE'	BIG BLUE LILYTURF	1 GAL			24" o.c.
GIA CAPILLARIS	PINK MUHLY GRASS	1 GAL			30" o.c.
ALOPECUROIDES 'HAMELN'	HAMELN FOUNTAIN GRASS	1 GAL			24" o.c.
СН	STONE MULCH	-			

GENERAL LANDSCAPE REQUIREMENTS

			•		
	LOCATION	MEASUREMENT	TOTAL QUANTITY REQUIRED	TOTAL QUANTITY PROVIDED	UDO SECTION
ERY	SITE	173,4S7 SF OF TOTAL PARCEL AREA	173,457 SF/ 5,000 * 2 = 70 CANOPY TREES REQUIRED	48 EXISTING TREE CREDITS 22 CANOPY TREES PROVIDED	8.3.1
	NORTH	369 LF	369 LF / 100 * 2 = 8 EVERGREEN TREES REQUIRED 369 LF / 100 * 2 = 8 CANOPY TREES REQUIRED 369 LF / 100 * 2 = 8 UNDERSTORY TREES REQUIRED 369 LF / 100 * 24 = 89 SHRUBS REQUIRED	8 EVERGREEN TREES PROVIDED 8 CANOPY TREES PROVIDED 8 UNDERSTORY TREES PROVIDED 89 SHRUBS PROVIDED	
_BE 2 Tory Eet.	WEST	399 LF	399 LF / 100 * 2 = 8 EVERGREEN TREES REQUIRED 399 LF / 100 * 2 = 8 CANOPY TREES REQUIRED 399 LF / 100 * 2 = 8 UNDERSTORY TREES REQUIRED 399 LF / 100 * 24 = 96 SHRUBS REQUIRED	8 EVERGREEN TREES PROVIDED 8 CANOPY TREES PROVIDED 8 UNDERSTORY TREES PROVIDED 96 SHRUBS PROVIDED	8.5.3.B
	SOUTH	367 LF	367 LF / 100 * 2 = 8 EVERGREEN TREES REQUIRED 367 LF / 100 * 2 = 8 CANOPY TREES REQUIRED 367 LF / 100 * 2 = 8 UNDERSTORY TREES REQUIRED 367 LF / 100 * 24 = 89 SHRUBS REQUIRED	8 EVERGREEN TREES PROVIDED 25 EXISTING CANOPY TREES TO FULFILL REQUIREMENT 8 UNDERSTORY TREES PROVIDED 90 SHRUBS PROVIDED	
OF 1 EET ATED	FORESTVILLE ROAD	301 LF (EXCLUDING 98 LF OF DRIVEWAY)	301 LF / 3S = 9 UNDERSTORY TREES REQUIRED	9 UNDERSTORY TREES PROVIDED (UNDERSTORY TREES USED DUE TO POWER LINES)	8.6.1.B.2
IGHT En Eet E a	FORESTVILLE ROAD	214 LF	214 LF / S = 43 EVERGREEN SHRUBS REQUIRED	69 EVERGREEN SHRUBS PROVIDED	8.7.1.C
N DIE RS OF CED O	SITE	S MAXIMUM SPECIMEN TREES REMOVED OR IMPACTED	S SPECIMEN TREES * 4 REPLACEMENT TREES = 20 REPLACEMENT CANOPY TREES REQUIRED	20 REPLACEMENT CANOPY TREES PROVIDED	8.4.3.D
THE ALL ES, 2 D TO C ARE	FORESTVILLE ROAD	301 LF (EXCLUDING 98 LF OF DRIVEWAY)	301 LF / 100 * 2 = 6 EVERGREEN TREES REQUIRED 301 LF / 100 * 2 = 6 CANOPY TREES REQUIRED 301 LF / 100 * 2 = 6 UN DERSTORY TREES REQUIRED 301 LF / 100 * 24 = 89 SHRUBS REQUIRED	6 EVERGREEN TREES PROVIDED (INCLUDING 1 EXISTING EASTERN RED CEDAR) 12 UNDERSTORY TREES PROVIDED (UNDERSTORY TREES USED DUE TO POWER LINES) 89 SHRUBS PROVIDED	8.S.2.B
				These plans have been electronically appr by the Town of Wake Forest Public Works Departments. This approval may not be al	oved for constructi and Engineering tered once issued.
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				These plans have been electronically appr by the Town of Wake Forest Planning Dep	oved for constructi artment. This appr

Planning

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City of Raleigh Development Approval:

Raleigh Water Review Officer

SURVEY NOTE: ALL EXISTING TOPOGRAPHICAL AND BOUNDARY INFORMATION WAS PROVIDED WITHIN A BOUNDARY & PARTIAL TOPOGRAPHIC SURVEY PREPARED BY KCI ASSOCIATES OF N.C., 4505 FALLS OF NEUSE RD, FLOOR 4, RALEIGH, NC 27607, 919-783-9214, DATED 3/23/23.

		KHA PROJECT	Thunning the					
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		DATE	H Company Com			8 NCDOT	I 3 PARTY ENCROACHMENT 1ST SUBMITTAL	L 04/29/24 ASA
			19 SA			7	ISSUED FOR CD APPROVAL	05/30/24 ASA
		SCALE AS SHUWN	KA	© 2024 KIMLEY-HORN AND	D ASSOCIATES, INC.	6 REVISED) PER 2ND ROUND TOWN REVIEW COMMENT	TS 03/28/24 ASA
ŀ	FLAN	DESIGNED BY TBH	The service of the se	421 FAYETTEVILLE STREET, SUITE	00, RALEIGH, NC 27601	5 REVISED) PER 1ST ROUND NCDEQ REVIEW COMMENT	TS 02/15/24 ASA
<u>ה</u> היו		DRAWN BY TBH	08 108	WWW.KIMLEY-HORN.COM NO	r. sis-0//-2000 Ic License #F-0102	4 REVISED	D PER 1ST ROUND TOWN REVIEW COMMENT	IS 02/12/24 ASA
OLINA		снескер ву МКВ	/24		~	No.	REVISIONS	DATE BY

<u>SYMBOL</u>	CODE	<u>QTY</u>	BOTANICAL NAME	COMMON NAME	CONT.	<u>SPACING</u>
	<u>)</u>					
	DA	133	DULICHIUM ARUNDINACEUM	THREEWAY SEDGE	4"	18" o.c.
	OA	84	ORONTIUM AQUATICUM	GOLDENCLUB	4"	24" o.c.
+ + + + + + + + + + + + + +	PC	170	PONTEDERIA CORDATA	PICKEREL WEED	4"	18" o.c.
	PV	204	PELTANDRA VIRGINICA	ARROW ARUM	4"	18" o.c.
	SL	44	SAGITTARIA LATIFOLIA	BROADLEAF ARROWHEAD	4"	30" o.c.

PLANT SCHEDULE - WET POND

0 6 Kim ⊚≚ CAROL NDSCAO SA KA TBH TBH DA DA DR DE Ц POND く Z Ú 4 S Ц 2 Z \vdash ШM \triangleleft PUBLIC SAFETY WAREHOUSE PREPARED FOR TOWN OF WAKE FOREST TOWN SHEET NUMBER L1.1

GRAPHIC SCALE IN FEET NORTH 20 10

These plans have been electronically approved for construction by the Town of Wake Forest Public Works and Engineering Departments. This approval may not be altered once issued.

Public Works/Engineering

These plans have been electronically approved for construction by the Town of Wake Forest Planning Department. This approval may not be altered once issued.

Planning

CITY OF RALEIGH – PLANS AUTHORIZED FOR CONSTRUCTION Electronic Approval: This approval is being issued electronically. This approval is valid 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 of this approval once issued will invalidate this approval.

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GENERAL LANDSCAPE NOTES: 1. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL, FR 2. ALL PLANTS MUST BE CONTAINER GROWN OR BALLED AN 3. ALL TREES MUST HAVE A STRAIGHT TRUNK AND FULL HEA 4. ALL PLANTS ARE SUBJECT TO THE APPROVAL OF THE LAN 5. ALL TREES MUST BE GUYED OR STAKED AS SHOWN IN TH	EE OF PESTS AND DISEASE. D BURLAPPED AS INDICATED IN THE PLANT LIST. DED AND MEET ALL REQUIREMENTS SPECIFIED. DSCAPE ARCHITECT BEFORE, DURING, AND AFTER INSTALLATION. E DETAILS.	5T SUBMITTAL 11/15/24 DPM 5T SUBMITTAL 04/29/24 ASA AL 05/30/24 ASA EW COMMENTS 03/28/24 ASA IEW COMMENTS 03/28/24 ASA IEW COMMENTS 03/28/24 ASA EW COMMENTS 03/15/24 ASA EW COMMENTS 02/115/24 ASA EW COMMENTS 02/12/24 ASA
 ALL TREES LOCATED WITHIN VEHICLE SIGHT TRIANGLES S PROJECTED CURB LINE ELEVATION) PER ANSI Z60.1 STAN PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE F AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE C AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPU CONSTRUCTION. CONTRACTOR IS ALSO RESPONSIBLE FC 	HALL BE BRANCHED A MINIMUM OF 8' (MEASURED FROM ADJACENT DARDS FOR HEIGHT OF BRANCHING - STREET TREES. RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL F THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY RTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE LANDSCAPE R COORDINATING ALL UTILITY ADJUSTMENTS WITH FINAL FINISH	JED FOR BID CROACHMENT 1S OR CD APPROV/ UND TOWN REVI UND NCDEQ REV UND TOWN REVI
 GRADE. ALL UTILITIES SHALL SIT FLUSH WITH FINISH GRA THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL OWORK. ANY DISCREPANCIES BETWEEN QUANTITIES ON P PROJECT LANDSCAPE ARCHITECT AND ANY FIELD ADJUST 	DES (BOTH PAVED AND LANDSCAPED SURFACES). QUANTITIES SHOWN ON THE LANDSCAPE PLANS BEFORE PRICING THE LAN AND PLANT LIST SHALL BE BROUGHT TO THE ATTENTION OF THE MENTS OR QUANTITY ADJUSTMENTS MUST BE AUTHORIZED PRIOR TO	PARTY ENC ISSUED FO ISSUED FO R 2ND RO R 1ST ROU CR 1ST ROU
 ORDERING AND PLANTING. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAIN SPRAYING, MULCHING, WEEDING, FERTILIZING, ETC.) OF T THE CONTRACTOR SHALL COMPLETELY WARRANTY ALL P DATE OF SUBSTANTIAL COMPLETION. THE CONTRACTOR OF THE WARRANTE DEFINION. THE CONTRACTOR 	ING ALL PLANTING (INCLUDING BUT NOT LIMITED TO: WATERING, HE PLANTING AREAS AND LAWN UNTIL SUBSTANTIAL COMPLETION. LANT MATERIAL FOR A PERIOD OF ONE (1) YEAR BEGINNING ON THE SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE OR AT THE END	0 8 NCDOT 3 7 7 6 REVISED PE 5 REVISED PE 4 REVISED PE 0.
 THE LANDSCAPE ARCHITECT SHALL APPROVE THE STAKIN CONTRACTOR SHALL CONTACT THE PROJECT LANDSCAPI STAKING. 	IG LOCATION OF ALL PLANT MATERIAL PRIOR TO INSTALLATION. E ARCHITECT A MINIMUM OF ONE (1) WEEK IN ADVANCE TO SCHEDULE	
2. ANY PLANT MATERIAL WHICH DIES, TURNS BROWN, OR DE BE PROMPTLY REMOVED FROM THE SITE AND REPLACED ALL PLANT SCHEDULE SPECIFICATIONS.	FOLIATES (PRIOR TO SUBSTANTIAL COMPLETION OF THE WORK) SHALL WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE MEETING	NC. 2760
 STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NO SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FO ALL PLANTING BEDS ARE TO BE COMPLETELY COVERED V 	JRSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND DR PLANT MATERIAL. /ITH DOUBLE SHREDDED HARDWOOD MULCH IN DARK BROWN OR	ATES, II LEIGH, 677-20 E #F-0
 CURRENT TOWN OF WAKE FOREST STANDARD TO A DEPT DISTURBED MUST BE MULCHED TO MATCH EXISTING MULCHED LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN O ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE UTILITY LINES AND ADJACENT TO THE WORK AREA. THE C LINES DURING THE CONSTRUCTION PERIOD 	H OF THREE (3) INCHES. ANY EXISTING LANDSCAPE BEDS THAT ARE CH FOUND WITHIN LANDSCAPE BED. N THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITY	AND ASSOCI TE 600, RA FAX: 919- NC LICENS
 SAFE, CLEARLY MARKED PEDESTRIAN AND VEHICULAR AC THROUGHOUT THE CONSTRUCTION PROCESS. ALL PLANT MATERIAL QUANTITIES SHOWN ARE APPROXIM 	CESS TO ALL ADJACENT PROPERTIES MUST BE MAINTAINED	-HORN REET, SU RN.COM
ALL FLANT WATERIAL QUANTITIES SHOWN ARE APPROXIM COVERAGE OF ALL PLANTING BEDS AT SPACING SHOWN. THE TOP OF ALL ROOT BALLS SHALL BEAR THE SAME REL CROWING CONDITIONS	ATIONSHIP TO FINISHED GRADE, AS BORN TO PREVIOUS GRADE AND	KIMLEY LE STF 919-67 .EY-HO
GROWING CONDITIONS. 19. ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE	SCARIFIED PRIOR TO BACKFILLING.	C 2024 (ETTEVIL HONE: WW.KIML
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLI SPACING FOR TREE AND THE TOWN OF WAKE FOREST UN MATERIAL PER THIS PLAN WILL JEOPARDIZE ISSUANCE OF RESPONSIBLE FOR SCHEDULING INSPECTIONS OF PLANT	NG TREES AND SHRUBS THAT WILL MEET BOTH MINIMUM SIZE AND IFIED DEVELOPMENT ORDINANCE (UDO). FAILURE TO INSTALL PLANT FINAL CERTIFICATE OF OCCUPANCY. CONTRACTOR SHALL BE MATERIAL.	21 FAYION WW
21. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE COD IS TO CLEAN THE ENTIRE SITE OF ALL CONSTRUCTION DE	ES & ORDINANCES REGARDING LANDSCAPING. GENERAL CONTRACTOR BRIS PRIOR TO FINAL INSPECTION.	4
 THE CONTRACTOR SHALL INSTALL NON-WOVEN PERMEAE TO PREVENT WEED GROWTH. THE CONTRACTOR SHALL INFORM THE PROJECT LANDSC. 	LE GEOTEXTILE UNDER PLANTING BED MULCH IN ALL LANDSCAPE BEDS	
THE RECOMMENDATIONS FOUND WITHIN THE SOILS ANAL ORNAMENTAL GRASSES SHALL BE AMENDED TO A DEPTH DEPTH OF 2" MINIMUM.	YSIS. AREAS TO RECEIVE TREES, SHRUBS, GROUNDCOVERS, AND / OR OF 6" MINIMUM. AREAS TO RECEIVE SOD SHALL BE AMENDED TO A	KHA PROJECT 011311066 DATE 05/30/2024 scale AS SHOWN DESIGNED BY TBH DRAWN BY TBH CHECKED BY MKB
	These plans have been electronically approved for construction by the Town of Wake Forest Public Works and Engineering Departments. This approval may not be altered once issued.	LANDSCAPE DETAILS
	Public Works/Engineering These plans have been electronically approved for construction by the Town of Wake Forest Planning Department. This approval may not be altered once issued. Planning CITY OF RALEIGH – PLANS AUTHORIZED FOR CONSTRUCTION Electronic Approval: This approval is being issued electronically. This approval is valid 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 of this approval once issued will invalidate this approval	LIC SAFETY REHOUSE PREPARED FOR OF WAKE FOREST NORTH CAROLINA

DATED 3/23/23.

L2.0

SITE LEGEND

EX **C** A +X.X PROPERTY LINE EXISTING LIGHT POLE AND FIXTURE PROPOSED LIGHT POLE AND FIXTURE CALCULATION POINT (FOOT-CANDLES)

NOTES/ASSUMPTIONS:

- EXISTING LUMINAIRE LOCATIONS DETERMINED BY SITE VISIT AND MODELED AT 0.8LLF TO ESTIMATE AMOUNT OF LIGHT PRESENT ON SITE .
 PROPOSED LUMINAIRE TO MATCH EXISTING ON SITE, HOWEVER MOUNTING STYLE
- HAS BEEN MODIFIED PER CURRENT WAKE EMC STANDARDS. REFER TO LUMINAIRE SCHEDULE FOR MORE INFORMATION.
- LIGHTING DESIGN COMPLETED TO BE IN COMPLIANCE WITH TOWN OF WAKE FOREST JURISDICTIONAL STANDARDS AND IES RECOMMENDATIONS.

Autobahn Series ATBM Roadway

Features:

Applications: Residential streets Parking lots High speed roadways

nigii speeu roauways

STANDARDS

Color temperatures of \leq 3000K must be specified for International Dark-Sky Association certification. Rated for -40°C to 40°C ambient

CSA Certified to U.S. and Canadian standards Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Roadway Lighting ATBM

OPTICAL

Same Light: Performance is comparable to 150W – 250W HPS White Light: Correlated color temperature - 4000K, 70 CRI minimum, 3000K,

70 CRI minimum or optional 5000K, 70 CRI minimum.

IP66 rated borosilicate glass optics ensure longevity and minimize dirt depreciation. Unique IP66 rated LED light engines provide 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available distributions are Type II, III, IV, & V roadway distributions.

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an expected 40-60% over comparable HID luminaires.

Robust Surge Protection: Standard surge protection is 20kV/10kA "Extreme Level" per ANSI C136.2. An optional MOV pack provides 10kV/5kA "Enhanced Level.

MECHANICAL

Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing and door are polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber (operated per ASTM B117).

Mast arm mount is adjustable for arms from 1-1/4'' to 2'' (1-5/8'' to 2-3/8'' 0.D.) diameter. The 2 – bolt and optional 4 bolt clamping mechanism provide 3G vibration rating per ANSI C136.31.

The Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 pin photocontrol receptacle is standard, with the Acuity designed ANSI standard 7 pin receptacle optionally available.

Premium solid state locking-style photocontrol – PCSS (10 year rated life) Extreme long life solid state locking-style photocontrol – PCL1 (20 year rated life). Extreme long life solid state locking-style photocontrol with on demand remote on/off control -

PCCC (15 year rated life). Optional onboard Adjustable Output module allows the light output and input wattage to be

modified to meet site specific requirements, and also can allow a single fixture to be flexibly applied in many different applications.

ATBM Note: Specifications subject to change without notice.

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GRAPHIC SCALE IN FEET 0 15 30 60

TOWN OF WAKE FOREST PUBLIC SAFETY WAREHOUSE MECHANICALLY STABILIZED EARTH WALL WAKE FOREST, NORTH CAROLINA

GENERAL NOTES

- 1. CONSTRUCTION OF THE RETAINING WALLS SHOWN ON PERFORMED UNDER
- WALL ALIGNMENT ON THE INDIVIDUAL WALL PLAN AND PARAMETER SHEETS IS ASSUMED AS FACE OF WALL AT THE LOWER GROUND SURFACE ELEVATION. AN APPROXIMATE 7 DEGREE BATTER SHOULD BE ANTICIPATED FOR THE TOP OF THE WALL ALIGNMENT.
- 4. THESE PLANS SHALL NOT BE SCALED OR USED FOR LOCATION OF PAVEMENTS. STRUCTURES OR RETAINING WALLS. THE CONTRACTOR SHALL PROVIDE LAYOUT AND COORDINATION AS NEEDED BY THE WALL CONTRACTOR.
- 5. SHOULD UTILITY PENETRATIONS THROUGH OR BELOW THE WALLS NOT SHOWN ON THESE PLANS BE PROPOSED, THE ECS EOR SHALL BE NOTIFIED.

SHEET	TITLE	REVISION	REVISION	REVISION	REVISION
RW-000	COVER SHEET				
RW-100	WALL NO. 1 PLAN AND PARAMETERS				
RW-101	WALL NO. 1 PROFILE				
RW-200	GENERAL SPECIFICATIONS				
RW-300	MSE WALL SPECIFICATIONS				
RW-301	MSE WALL DETAILS				
RW-302	MSE WALL DETAILS CONTINUED				
	EVED BY: ISSUED DATE: 7/16/2024 ECS PROJECT NO. 06-25219-A				PJM

1. CONSTRUCTION OF THE RETAINING WALLS SHOWN ON THI OWNERS INDEPENDENT TESTING AGENCY (ITA).	S PLAN SHALL BE PERFORMED UNDER THE OBSERVATION OF THE	
2. IF THE ELEVATION, LOCATION, SURCHARGE LOADING , OR THAT DEPICTED ON THESE PLANS, ECS SHALL BE NOTIFIED MADE, IF NECESSARY. NO MATERIAL SUBSTITUTIONS ARE	GRADING SURROUNDING THE RETAINING WALL CHANGES FROM O SO THAT MODIFICATIONS TO THE GEOTECHNICAL DESIGN CAN BE PERMITTED WITHOUT WRITTEN APPROVAL BY THE ECS EOR.	
3. UTILITIES WITHIN THE REINFORCED AND RETAINED ZONE A REAR BASE OF THE REINFORCED ZONE SHALL BE INSTALL	AND UTILITIES WITHIN A 1:1 (H:V) ZONE OF INFLUENCE FROM THE ED SIMULTANEOUSLY WITH THE RETAINING WALL BACKFILL.	
4. UTILITIES AT TOE OF AND UNDERNEATH RETAINING WALL S	SHALL BE INSTALLED PRIOR TO RETAINING WALL CONSTRUCTION.	/
5. CONTRACTOR TO BENCH OR SHORE TEMPORARY EXCAVA	TION AS NECESSARY, IN COMPLIANCE WITH LOCAL CODE, TO	
RETAINING WALL NO. 1 DESIGN PARAMETERS		
WALL GEOMETRY		5
BACK BATTER OF FACE: MINIMUM BLOCK EMBEDMENT:	7° 2.0 ft	
WALL SURCHARGE LOADS BUILDING SLAB LIVE LOAD (PSF): TRAFFIC LIVE LOAD (PSF): OVERTURNING LOAD (KLF) FOOTING LOAD (IF PRESENT) (PSF)	0 250 0 0	
MINIMUM FACTORS OF SAFETY		
F.S. AGAINST SLIDING: F.S. AGAINST OVERTURNING:	1.5 2.0	/
F.S. AGAINST BEARING CAPACITY FAILURE: F.S. AGAINST GLOBAL INSTABILITY:	2.0 1.5	
SOIL WITHIN REINFORCED ZONE	1.5	
DENSITY (PCF): PHI (DEG):	115 28°	
COHESION (PSF):	0	
SOIL WITHIN RETAINED ZONE DENSITY (PCF):	115	
PHI (DEG): COHESION (PSF):	28° 0	
FOUNDATION SOIL	445	
PHI (DEG):	28° 50	
ALLOWABLE BEARING PRESSURE:	SU SEE WALL PROFILE GRADED AGGREGATE	
	(TAMPED NO. 57 STONE)	
GEOGRID DATA GEOGRID TYPE:	GRIDLOK 270	/
COVERAGE OF GEOGRIDS (%): CREEP REDUCTION FACTOR:	100 1.54	/
DURABILITY REDUCTION FACTOR: INSTALLATION DAMAGE REDUCTION FACTOR:	1.10	
SAND / SILT / CLAY COARSE AGGREGATE	1.14 1.34	/
	MIRAFI 140N OR APPROVED EQUIVALENT	
MODULAR BLOCK DATA MODULAR BLOCK SYSTEM:	RIDGEROCK RETAINING WALL SYSTEM	
	UNITS AND CORRESPONDING CAP UNITS	
NOTES		
 UNLESS OTHERWISE NOTED, THE DESIGN IS BASED ON SO OF SM OR COARSER AND A FRICTION ANGLE OF 28° OR HIG SHALL HAVE FINES CONTENT OF LESS THAN 35 PERCENT F PLASTICITY INDEX OF LESS THAN 6. THE OWNER'S ITA SHA PARAMETERS SHOWN ON THESE PLANS PRIOR TO THE STA DEEMED NECESSARY BY THE ITA, DIRECT SHEAR TESTING 	ILS HAVING A UNIFIED SOIL CLASSIFICATION SYSTEM DESIGNATION GHER FOR THE REINFORCED BACKFILL SOILS. REINFORCED FILL PASSING THE NO. 200 SIEVE, A LIQUID LIMIT OF LESS THAN 30 AND A LL CONFIRM THE SOIL PROPERTIES AND SHEAR STRENGTH ART OF WALL CONSTRUCTION. WHEN SHEAR STRENGTH TESTING IS SHALL BE PERFORMED.	
2. BLOCK AND/OR GEOGRID SUBSTITUTIONS SHALL NOT BE P	PERMITTED.	
3. WALL ALIGNMENT ON SITE PLAN IS ASSUMED AS FACE OF	WALL AT THE LOWER GROUND SURFACE ELEVATION.	A A
4. GRID LENGTHS CAN BE FOUND ON PROFILE SHEETS.		//
5. BORING LOCATIONS SHOWN SHOULD BE CONSIDERED APP		
6. THE DESIGN REFLECTED ON THESE DRAWINGS IS INTENDE REINFORCED EARTH SYSTEM, SOME LATERAL AND VERTIC/ THE EFFECTS OF THE WALL MOVEMENTS CAN BE REDUCED PERMANENT CONSTRUCTION WITHIN CLOSE PROXIMITY TO BE INCORPORATED INTO THE CONSTRUCTION SCHEDULE.	AL MOVEMENT MAY OCCUR ABOVE AND BEHIND THE WALLS. AL MOVEMENT MAY OCCUR ABOVE AND BEHIND THE WALLS.), BUT NOT ELIMINATED, BY DELAYING THE INSTALLATION OF) THE WALLS A MINIMUM DELAY OF TWO WEEKS SHALL THEREFORE	
		
	10	SCALE: 1" = 10' 0
		10

GENERAL NOTES

	APPROXIMATE LOCATION OF PROPOSED STRUCTURE CB-07 - SEE CIVIL PLANS			
	3	TW 279.57		
BW 267.90	BW 269.23	BW 269.90	BW 270.57	APPROXIMATE LOCATION PROPOSED 15" RCP PIPE SEE CIVIL PLANS
BOW 73	34.67'			
		GGL = 10'		
		q = 1,500 psf		
0.00.73				
			1+00	

NOTES:

- 1. REFER TO SHEET RW-301 AND RW-302 FOR MSE WALL DETAILS.
- 2. GEOGRID REINFORCEMENT LENGTH MEASURED FROM FACE OF BLOCK.
- 3. REINFORCED ZONE FILL SHALL EXTEND NOT LESS THAN 4' BEYOND THE ENDS OF GEOGRID.
- 4. ACTUAL BLOCK PATTERN MAY VARY IN FIELD.
- 5. EMBEDMENT SHOWN BASED ON BLOCK COURSES REQUIRED BELOW FINAL PROPOSED GROUND SURFACE ELEVATION AT BOTTOM OF WALL.
- 6. WHERE GRID IS OVERLAIN BY ASPHALT, INCREASE THE TOP LAYER OF GRID BY 4 FEET.
- 7. LEVELING PAD NOT SHOWN FOR CLARITY.
- 8. GRID SHALL BE PROVIDED A MINIMUM OF EVERY TWO COURSES.
- 9. UTILITIES SHOWN ARE APPROXIMATE. SEE CIVIL DRAWINGS.
- 10. BACKFILL UTILITY EXCAVATION WITH APPROVED STRUCTURAL FILL PER THE GEOTECHNICAL REPORT.

BW = BOTTOM OF WALL (EXCLUDES LEVELING PAD)

q = REQUIRED ALLOWABLE BEARING PRESSURE

----- = GROUND SURFACE (AT TOP AND BOTTOM OF WALL)

7/16/2024
1.0 GENERAL

- 1. THE CONSTRUCTION OF THE WALLS SHOWN ON THESE PLANS SHALL BE MONITORED AND TESTED BY THE OWNER'S INDEPENDENT TESTING AGENCY (ITA) ON A FULL TIME BASIS TO CONFIRM THAT THE CONSTRUCTION IS IN ACCORDANCE WITH THE INTENT OF THE DESIGN.
- 2. IF THE ELEVATION, LOCATION, SURCHARGE LOADING, OR GRADING SURROUNDING THE WALL CHANGES FROM THOSE DEPICTED ON THESE PLANS, ECS SHALL BE NOTIFIED SO THAT MODIFICATIONS TO THE GEOTECHNICAL DESIGN CAN BE MADE, IF NECESSARY.
- 3. BASEMAP CAD FILE PROVIDED BY KIMLEY-HORN BY EMAIL ON 06/17/2024. TOPOGRAPHIC AND ELEVATION DATA SHOWN IS NOT VERIFIED AS CORRECT BY ECS. USERS OF THIS DATA SHALL DO SO AT THEIR OWN RISK.
- 4. THE FINAL GRADES SURROUNDING THE WALL SHALL NOT BE MODIFIED WITHOUT NOTIFYING THE ENGINEER. ANY MODIFICATION TO THE GRADES BELOW OR ABOVE THE WALL MAY POSE CONSIDERABLE RISK TO THE PERFORMANCE/STABILITY OF THE WALLS.
- 5. WHERE DISCREPANCIES ARE NOTED WITHIN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SUCH DISCREPANCIES IN WRITING.
- 6. THESE PLANS SHALL NOT BE SCALED OR USED FOR LOCATION OF PAVEMENTS, STRUCTURES OR RETAINING WALLS. THE CONTRACTOR SHALL PROVIDE LAYOUT AND COORDINATION AS NEEDED BY THE WALL CONTRACTOR.
- 7. BLOCKS, DRAINAGE AGGREGATE, REINFORCED FILL, AND RETAINED FILL SHALL BE BROUGHT UP SIMULTANEOUSLY. NONE OF THESE ITEMS SHOULD LEAD ANOTHER BY MORE THAN ONE COURSE HEIGHT.
- 8. THE GEOGRID REINFORCEMENT SHALL NOT BE CUT OR AUGERED THROUGH UNLESS OTHERWISE NOTED. WHERE THE GEOGRID MUST BE CUT FOR INSTALLATION OF FENCE POSTS OR GUARD RAILS, THE GEOGRID REMOVAL MUST BE LIMITED, PERFORMED WITH CARE, AND SHALL OCCUR DURING WALL CONSTRUCTION.
- 10. NO PLANTING EXCAVATIONS GREATER THAN 9 INCHES SHALL BE COMPLETED WITHIN THE REINFORCED ZONE. NO GRID SHALL BE CUT TO ACCOMMODATE PLANTING.
- 11. UTILITIES MUST BE INSTALLED CONCURRENT WITH WALL CONSTRUCTION. GEOGRID SHALL NOT BE CUT TO FACILITATE UTILITY CONSTRUCTION. THE LOCATIONS AND ELEVATIONS OF ALL UTILITIES SHALL BE ACCURATELY LOCATED PRIOR TO AND DURING WALL CONSTRUCTION TO ENSURE THE WALL CONSTRUCTION IS IN STRICT CONFORMANCE WITH THESE DRAWINGS.
- 12. IRRIGATION LINES SHALL NOT BE PLACED WITHIN THE REINFORCED ZONE OR RETAINED ZONE OF WALLS. PLACEMENT OF IRRIGATION LINES WITHIN CLOSE PROXIMITY OF THE WALLS MAY RESULT IN POOR WALL PERFORMANCE.
- 13. ALL SEALED UTILITIES/PIPES WITHIN THE REINFORCED ZONE OR RETAINED ZONE SHALL BE PRESSURE TESTED AFTR INSTALLATION AND PRIOR TO CONSTRUCTION OF THE SUBSEQUENT WALL COURSE.
- A. RESPONSIBILITY FOR CONSTRUCTION COMPLIANCE
- 1. THE CONTRACTOR MUST PROVIDE FOR THE CONSTRUCTION OF THE WALL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, PLANS AND SPECIFICATIONS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR THE VERIFICATION OF LINE, GRADE AND OTHER PHYSICAL FEATURES.
- 2. ENSURE WALL IS ALONG THE PROPER ALIGNMENT, AND WITHIN APPROPRIATE PROPERTY BOUNDARIES, AND CONSTRUCTION EASEMENTS.
- 3. CONTRACTOR IS SOLELY RESPONSIBLE FOR QUALITY OF THE WORK. INSPECTION, MONITORING, AND WALL TESTING BY THE OWNER. THEIR DESIGNATED REPRESENTATIVE, OR ECS ARE SOLELY AT THE DISCRETION OF THE OWNER, AND IN NO WAY RELIEVE THE CONTRACTOR OF SOLE RESPONSIBILITY FOR MAINTAINING A QUALITY CONTROL PLAN.
- 4. CONTRACTOR SHALL CONTACT 811 A MINIMUM OF THREE (3) DAYS PRIOR TO START OF WORK.
- 5. THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, AND MATERIALS TO CONSTRUCT THE PROJECT IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER. DURING THE COURSE OF THE CONSTRUCTION. ALTERNATIVES TO, OR CHANGES IN, THE PLANS AND SPECIFICATIONS MUST BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF WORK.
- 6. APPROXIMATE FIELD LOCATION OF EXISTING UTILITIES, FOUNDATIONS AND OTHER STRUCTURES IDENTIFIED TO THE ENGINEER ARE SHOWN ON THESE DRAWINGS. THE ENGINEER IS NOT RESPONSIBLE FOR FIELD VERIFYING THESE LOCATIONS AND DAMAGE TO IDENTIFIED AND UNIDENTIFIED UTILITIES AND FOUNDATION. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF ALL UTILITIES WITH IN 50 FEET BEHIND AND IN FRONT OF WALLS.
- 7. WALL HEIGHTS SHOWN ARE BASED ON INFORMATION AVAILABLE AT THE TIME OF DESIGN. IF THE ACTUAL WALL HEIGHTS ARE MORE THAN ONE COURSE GREATER THAN THE WALL HEIGHTS SHOWN ON THE DRAWINGS, THE WALL CONTRACTOR SHALL IMMEDIATELY INFORM THE ENGINEER OR HIS REPRESENTATIVE WHO WILL DETERMINE IF ADDITIONAL WALL MODIFICATIONS ARE REQUIRED.
- 8. THE CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS, GRADES AND DIMENSIONS AT THE SITE PRIOR TO WALL CONSTRUCTION. IF THE WALL CONTRACTOR DISCOVERS ANY ERRORS. OMISSIONS OR DISCREPANCIES. HE SHALL CONTACT THE ENGINEER PRIOR TO CONTINUING WALL CONSTRUCTION. THE ENGINEER WILL THEN ISSUE THE INSTRUCTIONS AS HOW TO PROCEED.
- 9. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SAFETY AND UNDER NO CIRCUMSTANCES SHALL THE ENGINEER BE RESPONSIBLE FOR CONSTRUCTION SITE SAFETY.
- 10. CONSTRUCTION OPERATIONS BEHIND AND IN FRONT OF PREVIOUSLY CONSTRUCTED PORTIONS FOR WALLS SHALL BE RESTRICTED TO PREVENT DAMAGE TO EXISTING WALLS. ONLY LIGHT COMPACTION EQUIPMENT SHALL BE USED WITHIN 5 FEET BEHIND WALL TO PREVENT EXCESSIVE LATERAL STRESS ON CONSTRUCTED PORTIONS OF THE WALLS.

- B. CLEARING AND SUBGRADE PREPARATION
- 1. CLEARING AND STRIPPING LIMITS SHALL BE EXTENDED TO THE LIMITS SHOWN ON THE CIVIL DRAWINGS AND TO A MINIMUM OF 1 FOOT IN FRONT OF THE RETAINING WALLS AND 2 FEET BEHIND THE REINFORCED ZONE.
- 2. ALL EXISTING TOPSOIL, ROOTMAT, AND ANY OTHER SOFT OR UNSUITABLE MATERIALS SHALL BE REMOVED FROM THE CLEARING AND STRIPPING LIMITS.
- 3. PRIOR TO INITIATION OF RETAINING WALL CONSTRUCTION, THE STRIPPED AREA SHALL BE OBSERVED BY THE OWNER'S ITA TO DETERMINE THE EXTENT OF ANY REQUIRED REMEDIAL WORK. THESE MAY INCLUDE BUT ARE NOT LIMITED TO PROOFROLLING WITH A HEAVY RUBBER TIRED VEHICLE HAVING A SINGLE-AXLE WEIGHT OF AT LEAST 20,000 POUNDS, PORTABLE OR ELECTRONIC CONE PENETRATION TESTING AND OTHER METHODS DETERMINED APPROPRIATE BY THE OWNER'S ITA. PROOFROLLING SHALL INCLUDE MULTIPLE PASSES IN PERPENDICULAR DIRECTIONS OVER THE EXPOSED SUBGRADE.
- 4. CONSTRUCTION PHASE DEWATERING MAY BE NECESSARY TO SATISFACTORILY COMPLETE THESE SUBGRADE PREPARATION ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING SATISFACTORY CONSTRUCTION PHASE DEWATERING.
- C. EXCAVATION SUPPORT AND SLOPES
- 1. TEMPORARY SLOPES SHALL BE NO STEEPER THAN 11/2H:1V AND PURSUANT TO OSHA.
- 2. THE DRAWINGS DO NOT PROVIDE A TEMPORARY EXCACATION SUPPORT SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY EXCAVATION SUPPORT SYSTEMS REQUIRED TO CONSTRUCT THE RETAINING WALL SHOWN ON THESE DRAWINGS AND ENSURING THAT SUCH SYSTEMS ARE IN STRICT ACCORDANCE WITH CURRENT OSHA REQUIREMENTS.
- 3. EXCAVATIONS SHALL BE CONSTRUCTED AND BRACED IN ACCORDANCE WITH CURRENT OSHA REQUIREMENTS. EXCAVATION AND SITE SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 4. THE CONTRACTOR SHALL NOT STOCKPILE EXCAVATED MATERIALS OR EQUIPMENT IMMEDIATELY ADJACENT TO THE EXCAVATION WALLS OR SLOPES. ALL SUCH MATERIALS SHALL BE KEPT BACK FORM THE TOP OF THE EXCAVATION A MINIMUM DISTANCE EQUAL TO THE EXCAVATION DEPTH. WHERE EQUIPMENT OR MATERIALS MUST BE PLACED IMMEDIATELY ADJACENT TO THE EXCAVATION WALLS, THE EXCAVATION WALLS SHALL BE DESIGNED FOR THE ANTICIPATED SURCHARGE LOADING, OR ADDITIONAL BRACING MUST BE PROVIDED TO SUPPORT THE ANTICIPATED SURCHARGE LOADING.
- 5. SLOPES BELOW WALLS SHALL BE VEGETATED PROMPTLY AFTER WALL CONSTRUCTION.
- 6. SLOPE EVALUATIONS FOR TRIAL SURFACES INITIATING AND TERMINATING BELOW THE WALL TOE AND INITIATING ABOVE AND TERMINATING ABOVE THE TOP OF WALL ARE THE RESPONSIBILITY OF THE GER.
- D. DEWATERING AND SITE DRAINAGE
- 1. THE CONTRACTOR SHALL PROVIDE SUMP PIT AND PUMPING OPERATIONS AS REQUIRED FOR DEWATERING THE RETAINING WALL AREA WHERE NEEDED.
- 2. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ADEQUATE SITE DRAINAGE DURING SITE PREPARATION, EARTHWORK OPERATION, INCLUDING PROVIDING FOR DRAINAGE OF SURFACE WATER AWAY FROM THE CONSTRUCTION AREAS, AND ENHANCEMENT OF NATURAL DRAINAGE PATHS WITHOUT INTERRUPTING ITS PATTERN.
- SOUND ENGINEERING PRACTICE AND CURRENT STATE, COUNTY AND MUNICIPAL REQUIREMENTS.
- 4. PROVIDE AND MAINTAIN POSITIVE DRAINAGE FROM BACK OF WALL AT ALL TIMES DURING CONSTRUCTION.
- 5. THE DESIGN ASSUMES PERMANENT EROSION CONTROL MEASURES WILL BE IMPLEMENTED AT THE TOP AND BOTTOM OF THE WALL IMMEDIATELY UPON COMPLETION OF WALL CONSTRUCTION. THESE EROSION CONTROL MEASURES SHOULD BE SPECIFIED BY THE PROJECT CIVIL ENGINEER, IMPLEMENTED BY THE GENERAL CONTRACTOR, AND SHOULD BE MAINTAINED BY THE OWNER. FAILURE TO IMPLEMENT AND MAINTAIN PERMANENT EROSION CONTROL MEASURES MAY RESULT IN DAMAGE OF THE MSE WALL.
- OF 262 FEET. CONTINUED MAINTENANCE (SUCH AS THE REMOVAL OF DEBRIS, SEDIMENT, ETC.) MUST BE PROVIDED SO THAT PHREATIC SURFACES DO NOT DEVELOP HIGHER THAN ANTICIPATED.
- 7. THE WALL DOES NOT ACCOUNT FOR RAPID DRAWDOWN CONDITIONS. PONDS MUST BE DESIGNED TO PREVENT RAPID EMPYING.

3. ALL EROSION AND SEDIMENTATION CONTROL SHALL BE CONTROLLED IN ACCORDANCE WITH

6. THE SITE DETENTION POND IS DESIGNED AS A "WET POND" WITH A NORMAL POOL ELEVATION

IN RTHORY OF	SEAL 52956 VGINEER ES RACV	NA CONTRACT
ECS SOUTHEAST, LLC 1812 CENTER PARK DRIVE STE D CHARLOTTE, NC 28217 (704) 626-6152 TPHONE1	(704) 357-0023 [FAX] NC REGISTERED ENGINEERING FIRM # F-1078	ONE MISSION"
		"ONE FIRM. (
PUBLIC SAFETY WAREHOUSE	RETAINING WALLS	WAKE FOREST, NORTH CAROLINA
GENERAL SPECIFICATIONS		KIMLEY-HORN
ECS	REVISION	5
ENGINEER	DR	AFTING P.JM
SCALE	AS	SHOWN
PROJECT NO.	06:	25219-A
		RW-200
27.16	7	/16/2024

1.0 MSE WALL DESIGN CRITERIA

- 1. CONSTRUCT MSE WALL IN ACCORDANCE WITH THESE DRAWINGS.
- 2. THE DESIGN OF THE MSE WALL FOR THIS PROJECT CONTEMPLATES INTERNAL STABILITY, EXTERNAL STABILITY, COMPOUND AND GLOBAL STABILITY.
- 3. THE MSE WALL HAS BEEN DESIGNED FOR FACTORS OF SAFETY FOR PERMANENT LOADING CONDITIONS OF 1.5 FOR INTERNAL STABILITY, 1.5 FOR DIRECT SLIDING, 2.0 FOR OVERTURNING, 1.3 FOR COMPOUND INTERNAL STABILITY, AND 1.5 FOR LONG TERM GLOBAL STABILITY.
- 4. THE MSE WALLS ARE DESIGNED FOR PERMANENT SURCHARGE LOADING TO ACCOUNT FOR TRAFFIC AND FOUNDATION LOADS. SEE WALL PARAMETER SHEETS FOR INDIVIDUAL WALL LOADINGS.
- 5. TEMPORARY 250 PSF SURCHARGE LOADS ABOVE THE WALL DURING CONSTRUCTION HAVE BEEN ANTICIPATED. IN LEVEL AREAS, THE SURCHARGE HAS BEEN APPLIED 2 FEET FROM THE REAR OF THE WALL BLOCK. IN AREAS WITH A CREST SLOPE, THE SURCHARGE HAS BEEN APPLIED AT THE TOP OF THE CREST. IF EQUIPMENT OR MATERIAL STORAGE ABOVE THE WALL IS ANTICIPATED TO BE ABOVE 250 PSF OR CLOSER TO THE WALL THAN AS NOTED ABOVE, THE SURCHARGE LOADING SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.
- 6. THE DESIGN REFLECTED ON THESE DRAWINGS IS INTENDED FOR THE CONSTRUCTION OF PERMANENT WALLS. AS WITH ANY REINFORCED EARTH SYSTEM, SOME LATERAL AND VERTICAL MOVEMENT MAY OCCUR ABOVE AND BEHIND THE WALLS. THE EFFECTS OF THE WALL MOVEMENTS CAN BE REDUCED, BUT NOT ELIMINATED, BY DELAYING THE INSTALLATION OF PERMANENT CONSTRUCTION WITHIN CLOSE PROXIMITY TO THE WALLS. A MINIMUM TWO WEEK DELAY SHALL THEREFOR BE INCLUDED IN THE CONSTRUCTION SCHEDULE.
- 7. SOIL PARAMETERS USED IN THE DESIGN OF THE WALLS ARE BASED ON THE REPORT OF GEOTECHNICAL SUBSURFACE EXPLORATION BY ECS SOUTHEAST, LLP (PROJECT # 06:25219, DATED OCTOBER 24, 2023).
- 8. GROUNDWATER IS NOT EXPECTED WITHIN THE EXCAVATION FOR THE WALLS. HOWEVER, WEEP DRAINS SHALL BE INSTALLED AS SHOWN ON THESE DRAWINGS. IF GROUNDWATER IS ENCOUNTERED, THE DESIGN ENGINEER MUST BE NOTIFIED TO MODIFY DESIGN IF REQUIRED.

A. CODES

- 1. THE MSE WALL HAS BEEN DESIGNED IN ACCORDANCE WITH NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA) RECOMMENDATIONS.
- 2. MSE WALLS HAVE BEEN DESIGNED IN GENERAL COMPLIANCE WITH THE 2018 NORTH CAROLINA BUILDING CODE.

2.0 MATERIALS

- 1. MSE WALL FACING UNITS SHALL CONSIST OF RIDGEROCK II FACING UNITS. ALL RETAINING WALL FACING UNITS SHALL BE IN STRICT ACCORDANCE WITH THE LATEST SPECIFICATIONS FURNISHED BY THE MANUFACTURER.
- 2. GEOGRID REINFORCEMENT SHALL CONSIST OF GRIDLOK 270 BY RIDGEROCK RETAINING WALL SYSTEMS. ALL GEOGRID SHALL BE IN STRICT ACCORDANCE WITH THE LATEST SPECIFICATIONS FURNISHED BY THE MANUFACTURER. NO GEOGRID REINFORCEMENT SUBSTITUTIONS SHALL BE PERMITTED.
- 3. GEOTEXTILES SHALL CONSIST OF MIRAFI 140N BY TENCATE. ALL GEOTEXTILES SHALL BE IN STRICT ACCORDANCE WITH THE LATEST SPECIFICATIONS FURNISHED BY TENCATE.
- 4. CRUSHED STONE SHALL CONSIST OF NCDOT NO. 57 STONE CRUSHED AGGREGATE. CONTRACTOR SHALL SUBMIT A MATERIAL SOURCE AND GRADATION TO THE ENGINEER.
- 5. LEVELING PAD SHALL BE CONSTRUCTED OF CRUSHED STONE.
- 6. REINFORCED FILL SHALL CONSIST OF SOILS HAVING A UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) DESIGNATION OF SM OR COARSER AND SHALL BE FREE OF ORGANIC MATTER AND COBBLES GREATER THAN 3 INCHES IN MAXIMUM DIMENSION, CONTAIN LESS THAN 35 PERCENT MATERIAL PASSING THE 200 SIEVE, OR DEBRIS, AND HAVE MAXIMUM LIQUID LIMIT AND PLASTICITY INDEX OF 30 AND 6, RESPECTIVELY. FURTHERMORE, THE REINFORCED AND RETAINED FILL ZONES SHALL CONSIST OF MATERIALS THAT MEET OR EXCEED THE SHEAR STRENGTH REQUIREMENTS OF THE DESIGN PARAMETERS. THE OWNER'S ITA SHALL CONFIRM THE SOIL PROPERTIES AND SHEAR STRENGTH PARAMETERS SHOWN ON THESE PLANS PRIOR TO THE START OF WALL CONSTRUCTION. WHEN SHEAR STRENGTH TESTING IS DEEMED NECESSARY BY THE ITA, DIRECT SHEAR TESTING SHALL BE PERFORMED. CONTRACTOR SHALL SUBMIT MATERIAL SOURCES. GRADATIONS AND SHEAR STRENGTH TEST RESULTS TO THE ENGINEER.
- 7. UNACCEPTABLE FILL MATERIAL INCLUDE TOPSOIL, ORGANIC MATERIALS (OH, OL), PLASTIC SILTS AND CLAYS (CL, CH, ML AND MH), AND SOILS NOT MEETING THE CRITERIA OF THE PREVIOUS PARAGRAPH.
- 8. ON SITE SOILS MAY BE USED AS FILL MATERIALS IN THE RETAINED FILL ZONE PROVIDED THE MATERIALS MEET REQUIREMENTS OF THESE SPECIFICATIONS.
- 9. DRAINAGE PIPES SHALL CONSIST OF 4" CORRUGATED HDPE PIPE.
- 10. ALL MATERIALS SHALL BE STORED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

3.0 FOUNDATIONS

- 1. THE MSE WALL FOUNDATION SUBGRADE SOILS SHA THE CLEARING AND SUBGRADE PREPARATION SECT
- 2. THE BEARING CAPACITY OF THE SUBGRADE SUPPO BLOCKS AND REINFORCED FILL ZONE, SHALL BE VER VALUES SHOWN ON THESE DRAWINGS AT THE TIME AT A MINIMUM FREQUENCY OF 25 FEET ON CENTER.
- 3. THE REQUIRED EMBEDMENT DEPTH FOR EACH SEC DETAILS AND WALL PROFILE.
- 4. FOUNDATIONS SUBGRADE SOILS NOT MEETING THE BE IMPROVED AS DIRECTED IN THE FIELD BY THE EN
- 4.0 COMPACTIVE EFFORT AND FILL PLACEMENT
- NO. 57 STONE TAMP AND COMPACT WITH A SMOOT COMPACTOR.
- 2. REINFORCED FILL ZONE THIS ZONE SHALL BE COM THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH TO NOT LESS THAN 5 FEET BEYOND THE ENDS OF CONSISTS OF CRUSHED STONE, THE CRUSHED STO PLATE WALK BEHIND VIBRATORY PLATE COMPACT
- 3. RETAINED FILL ZONE THIS ZONE SHALL BE COMPA MAXIMUM DRY DENSITY IN ACCORDANCE WITH AST
- 4. FILL MATERIALS SHALL NOT BE PLACED WHEN WET, SUCH SOILS SHALL BE REMOVED PRIOR TO CONTIN
- 5. FILL MATERIALS SHALL NOT CONTAIN FROZEN MATE SUCH MATERIALS SHALL BE REMOVED PRIOR TO CO
- 6. FILL SOILS SHOULD BE PLACED IN LIFTS NOT EXCEE
- 7. AT THE TIME OF COMPACTION, FILL SOILS SHALL BE MOISTURE CONTENT AS DETERMINED IN ACCORDAI METHOD.
- 8. ALL FILL AND BACKFILL OPERATIONS SHALL BE OBS OWNER'S ITA TO DETERMINE IF MINIMUM PLACEMEN BEING MET AND THAT METIRALS MEETING OR EXCER ARE USED.
- 9. IN-PLACE DENSITY TESTS SHALL BE PERFORMED O MINIMUM OF 1 TEST PER LIFT PER 1,000 SQUARE FE OF THE TESTS SHOULD BE CLEARLY IDENTIFIED AT
- 10. GRANULAR SOILS (UNIFIED SOIL CLASSIFICATION SI WITH VIBRATORY COMPACTION EQUIPMENT.
- 11. CARE SHOULD BE EXERCISED REGARDING THE USE TO THE WALL. LIGHTER HAND OPERATED COMPACT
- 12. THE FILL AREA SHALL BE GRADED AT THE END OF DRAINAGE OF SURFACE WATER ASSOCIATED WITH

5.0 CONSTRUCTION SEQUENCE

A. GENERAL

- 1. CONTRACTOR WILL COORDINATE AND SEQUENCE WORK IN SUCH A MANNER AS TO MINIMIZE DISTURBANCE OF PREVIOUSLY CONSTRUCTED WALLS.
- 2. FINISH GRADE IN ACCORDANCE WITH THE CIVIL AND LANDSCAPE DRAWINGS.
- B. CONSTRUCTION SEQUENCE MECHANICALLY STABILIZED EARTH WALL.

ALL BE PREPARED IN ACCORDANCE WITH TION OF THESE SPECIFICATIONS.	STEP 1 - EXCAVATION AND LEVELING PAD	STEP 4 - PLACE CONNE
	a. WALL LAYOUT AND GENERAL EXCAVATION	
ERIFIED TO BE EQUAL TO OR GREATER THAN E OF CONSTRUCTION BY THE OWNER'S ITA	1. SURVEY STAKE WALL LOCATION AND GENERAL EXCAVATION LIMITS FOR WALL CONSTRUCTION.	a. INSTAL
τ.	2. PERFORM GENERAL EXCAVATION FOR WALL AS REQUIRED.	E
CTION OF WALL IS SPECIFIED ON THE	b. LEVELING PAD CONSTRUCTION	2. 1
E MINIMUM BEARING REQUIREMENTS SHALL	1. STAKE WALL LOCATION FOR LEVELING PAD EXCAVATION.	3. 0
INGINEER.	2. EXCAVATE TRENCH TO CREATE THE MINIMUM LEVELING PAD THICKNESS AND TO THE MINIMUM WIDTH SHOWN.	4. F
TH PLATE WALK-BEHIND VIBRATORY PLATE	3. PLACE, LEVEL AND COMPACT LEVELING PAD MATERIAL FOR RETAINING WALL UNITS.	E
	STEP 2 - INSTALLING FIRST COURSE OF BLOCK UNITS	b. FILL PL
HPACTED TO A MINIMUM OF 95 PERCENT OF 1 ASTM D-698 STANDARD PROCTOR METHOD, THE GEOGRID. WHERE REINFORCED FILL	a. SETTING FIRST COURSE OF BLOCK UNITS	1. F ר
ONE SHALL BE COMPACTED WITH A SMOOTH OR OR SMOOTH DRUM VIBRATORY ROLLER.	1. CHECK LEVELING PAD ELEVATIONS AND SMOOTH LEVELING PAD SURFACE.	F
ACTED TO A MINIMUM OF 95 PERCENT OF THE IM D-698 STANDARD PROCTOR METHOD.	 STAKE AND STRING LINE THE WALL LOCATION PAYING CLOSE ATTENTION TO EXACT LOCATION OF CURVES, CORNERS, AND VERTICAL AND HORIZONTAL STEPS. STRING LINE MUST BE ALONG THE MOLDED FACE (BACK) OF THE BLOCK UNIT, AND NOT ALONG THE BROKEN BLOCK FINISH SURFACE. 	2. F 3. C 1
, FROZEN OR FROST HEAVED SOILS. ALL NUATION OF FILL OPERATIONS.	3. INSTALL FIRST COURSE OF BLOCKS, CHECKING LEVEL AS PLACED.	4. F
ERIALS AT THE TIME OF PLACEMENT. ALL ONTINUATION OF FILL OPERATIONS.	b. BACKFILLING FIRST COURSE OF BLOCK UNITS	v 5. F
EDING 6 INCHES IN LOOSE THICKNESS	1. RECHECK WALL LOCATION.	
E WITHIN 2 PERCENT OF THE OPTIMUM	 USE NO. 57 STONE TO FILL ANY OPENINGS IN AND BETWEEN BLOCK UNITS AS REQUIRED. 	STEP 5 - CAPPII
NCE WITH THE STANDARD PROCTOR	3. CAREFULLY PLACE CRUSHED STONE MATERIAL BEHIND AND UP TO THE HEIGHT OF THE BLOCK UNIT TO CREATE WALL FACE DRAIN.	1. II F
SERVED ON A FULL-TIME BASIS BY THE INT AND COMPACTION REQUIREMENTS ARE	4. PLACE AND COMPACT THE REINFORCED FILL SOIL.	2. F
LEDING THE SPECIFICATION REQUIREMENTS	5. PLACE AND COMPACT FILL SOILS IN FRONT OF BLOCK UNIT.	3. F
N EACH LIFT OF FILL PLACED WITH A	6. PLACE AND COMPACT RETAINED FILL SOILS.	4. F
THE TIME OF FILL PLACEMENT.	STEP 3 - PLACEMENT AND BACKFILLING OF BLOCK UNITS WITHOUT GEOGRID REINFORCEMENT	6.0 QUALITY AS
M, SC OR COARSER) SHALL BE COMPACTED	a. INSTALLING SUCCESSIVE COURSE OF BLOCK UNITS	1. ENSURE
E OF RELATIVELY HEAVY MACHINERY CLOSE TION WITHIN 5 FEET OF THE WALL	 ENSURE THAT DRAINAGE AGGREGATE IS LEVEL WITH, OR SLIGHTLY BELOW TOP OF BLOCK UNIT BELOW. 	PROPER
	2. THOROUGHLY CLEAN DEBRIS AND AGGREGATE OFF OF TOP OF BLOCK UNITS.	
PRECIPITATION AWAY FROM IT.	3. PLACE NEXT COURSE OF BLOCK AND PUSH UNITS FORWARD AS FAR AS POSSIBLE TO ESTABLISH PROPER SETBACK CONSISTENT WITH SETBACK SHOWN ON THE DETAILS	

2. USE NO. 57 STONE TO FILL ANY OPENINGS IN AND BETWEEN BLOCK UNITS AS REQUIRED.

AND IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

- 3. CAREFULLY PLACE AGGREGATE DRAIN MATERIAL BEHIND AND UP TO THE HEIGHT OF THE BLOCK UNIT TO CREATE WALL FACE DRAIN.
- 4. PLACE GEOTEXTILE AS SHOWN.

b. FILL PLACEMENT AND COMPACTION

1. RECHECK WALL LOCATION.

- 5. PLACE AND COMPACT THE REINFORCED FILL SOIL.
- 6. PLACE AND COMPACT FILL SOILS IN FRONT OF BLOCK UNIT TO ELEVATIONS SHOWN ON THE DRAWINGS.
- 7. PLACE AND COMPACT RETAINED FILL SOILS.

MENT AND BACKFILLING OF BLOCK UNITS WITH GEOGRID REINFORCEMENT ECTION

LLING SUCCESSIVE COURSE OF BLOCK UNITS

ENSURE THAT NO. 57 STONE IS LEVEL WITH OR SLIGHTLY BELOW TOP OF BLOCK UNIT BELOW.

THOROUGHLY CLEAN DEBRIS AND NO. 57 STONE OFF OF TOP OF BLOCK UNITS.

CUT GEOGRID TO DESIGN LENGTH SHOWN ON PLANS AND INSTALL WITH MACHINE STRENGTH DIRECTION PERPENDICULAR TO THE WALL FACE. PLACE GEOGRID TO FACE OF BLOCKS AS SHOWN ON DETAILS.

PLACE NEXT COURSE OF BLOCK ON GEOGRID AND PUSH UNITS FORWARD TO ESTABLISH PROPER SETBACK, CONSISTENT WITH SETBACK SHOWN ON DETAILS AND IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

ACEMENT AND COMPACTION

PULL GEOGRID TIGHT USING UNIFORM TENSION SO THAT THERE ARE NO WRINKLES IN THE GEOGRID. HOLD OR STAKE IN PLACE TO MAINTAIN TENSION THROUGHOUT FILL PLACEMENT PROCESS.

PLACE NO. 57 STONE IN AND BETWEEN BLOCK UNITS AS REQUIRED.

CAREFULLY PLACE AGGREGATE DRAIN MATERIAL BEHIND AND UP TO THE HEIGHT OF THE BLOCK UNIT TO CREATE WALL FACE DRAIN.

PLACE AND COMPACT REINFORCED FILL STONE BEHIND WALL WORKING FROM THE NALL BACK TOWARDS THE FREE END OF THE GEOGRID.

PLACE AND COMPACT RETAINED FILL SOILS.

ONTINUE CONSTRUCTION OF THE WALL TO FULL HEIGHT USING STEPS 3 AND 4.

NG AND GRADING

NSTALL CAP/CAPING UNIT AND SECURE IN PLACE PER MANUFACTURER'S RECOMMENDATIONS.

PLACE AND COMPACT FINAL BACKFILL.

ROUGH GRADE FOR POSITIVE DRAINAGE AWAY FROM THE WALL FACE.

FINAL GRADING AND RESTORATION PER CIVIL DRAWINGS.

SURANCE / INSPECTION

THE WALLS ARE ALONG THE PROPER ALIGNMENT, AND WITHIN APPROPRIATE RTY BOUNDARIES, AND CONSTRUCTION EASEMENTS.

SEAL 52956 NGINEER MES RACINE					
ECS SOUTHEAST, LLC 1812 CENTER PARK DRIVE STE D CHARLOTTE, NC 28217 (704) 525-5152 [PHONE]	(704) 357-0023 [FAX] NC REGISTERED ENGINEERING FIRM # F-1078		ONE MISSION"		
	3		"ONE FIRM. (
PUBLIC SAFETY WAREHOUSE	RETAINING WALLS		WAKE FOREST, NORTH CAROLINA		
MSE WALL SPECIFICATIONS	REVISION		NIMLEY-HORN		
ENGINEER	DF	RAFT	ING		
JPR SCALE PROJECT NO. SHEET	AS 06:	PJI SH 252 RV	0WN 219-A 7-300		

7/16/2024





WAKE FOREST PUBLIC SAFETY WAREHOUSE **OFFSITE ROADWAY IMPROVEMENTS** SP-23-20 LOCATION: FORESTVILLE RD (SR-2049) APPROX. 3330'



STANDARDS ON NCDOT MAINTAINED STREETS

NORTH OF BURLINGTON MILLS RD (SR-2045) TO APPROX. 3900' NORTH OF BURLINGTON MILLS RD (SR-2045).

These plans have been electronically approved for construction by the Town of Wake Forest Public Works and Engineering Departments. This approval may not be altered once issued.

These plans have been electronically approved for construction by the Town of Wake Forest Planning Department. This approval

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION Electronic Approval: This approval is being issued electronically. This approval is valid 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 of this approval once issued will invalidate this

INDEX OF SHEETS

SHEET NUMBER	DESCRIPTION
R0.00	COVER SHEET
R0.01	GENERAL NOTES
R0.02	CONVENTIONAL SYMBOLS
R1.00	TYPICAL SECTIONS
R1.01	DETAILS
R1.02	EXISTING CONDITIONS
R2.00	PLAN VIEW
R2.01	PROFILE
R3.00	TRAFFIC CONTROL PLAN
R4.00	PAVEMENT MARKINGS AND S
R5.00 THRU R5.02	EROSION CONTROL PLAN
R6.00 THRU R6.03	CROSS SECTIONS



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IGNING PLANS

GENERAL NOTES	
1. WORK IN THIS PROJECT SHALL CONFORM TO THESE PLANS, THE LATEST EDITIONS OF THE CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) ROAD AND BRIDGE SPECIFICATIONS, NCDOT ROAD AND BRIDGE STANDARDS, THE NORTH CAROLINA EROSION AND SEDIMENT CO HANDBOOK, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, TOWN WAKE FOREST SPECIFICATIONS, AND GENERAL DESIGN STANDARDS. IN THE EVENT OF CON BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT S GOVERN UNLESS OTHERWISE NOTED IN THESE PLANS.	NORTH THE NTROL OF NFLICT SHALL
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL JOBSITE SAFETY, INCLUDING E LIMITED TO TRENCH SAFETY, DURING ALL PHASES OF CONSTRUCTION.	BUT NOT
3. THE LOCATION AND SIZE OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING AND PROTEC ALL PUBLIC OR PRIVATE UTILITIES (SHOWN OR NOT SHOWN) WHICH LIE IN OR ADJACENT T CONSTRUCTION SITE. AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE NORTH CAROLINA ONE-CAP UTILITIES LOCATION SERVICE (ULOCO) AT 1-800-632-4949 FOR PROPER IDENTIFICATION EXISTING UTILITIES WITHIN THE SITE.	CTING TO THE LL DF
4. THE CONTRACTOR SHALL SALVAGE AND PROTECT ALL EXISTING POWER POLES, SIGNS, MAN TELEPHONE RISERS, WATER VALVES, ETC. DURING ALL CONSTRUCTION PHASES. THE CON SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRU	NHOLES, IRACTOR CTION.
5. TRAFFIC CONTROL ON PUBLIC STREETS IS THE RESPONSIBILITY OF THE CONTRACTOR AND BE IN CONFORMANCE WITH THE TRAFFIC CONTROL PLAN, THE "MANUAL OF UNIFORM TRAF CONTROL DEVICES," AND AS FURTHER DIRECTED BY THE CITY AND STATE INSPECTORS.	SHALL FIC
6. ALL MANUFACTURERS' PRODUCTS SPECIFIED IN THESE PLANS OR USED AS APPROVED	
7. ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND SITE CONE OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS S INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVE SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRA RISK.	DITIONS SUCH RY OF ACTOR'S
8. CONSTRUCTION STAKEOUT FOR THIS PROJECT SHALL BE PROVIDED BY THE CONTRACTOR.	
9. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCT THE CONTRACTOR SHALL ARRANGE THE MEETING WITH NCDOT AND TOWN OF WAKE FORES	TION. T.
10. CONTRACTOR IS RESPONSIBLE FOR VERIFYING OR OBTAINING ALL REQUIRED PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION. NCDOT ENCROACHMENTS SHALL BE OF BY THE ENGINEER.	BTAINED
11. THE FRAMES AND COVERS OF ALL EXISTING AND PROPOSED DRAINAGE, SANITARY SEWER, MAIN, GAS, AND WIRE UTILITY STRUCTURES SHALL BE ADJUSTED TO MATCH PROPOSED FINE ELEVATIONS AND SLOPES.	WATER NISHED
12. ROADWAYS MUST BE CAPABLE OF SUPPORTING FIRE APPARATUS DURING CONSTRUCTION.	
SPECIFICATIONS, DETAILS AND ENCROACHMENT AGREEMENTS.	
14. NO CHANGES TO ANY ASPECT OF THIS ROADWAY PLAN, INCLUDING BUT NOT LIMITED TO, LANDSCAPING, GRADING, BUILDING ELEVATIONS, LIGHTING, OR UTILITIES WILL BE MADE WITH THE APPROVAL OF NCDOT.	IOUT
15. ALL TREE PROTECTION FENCING SHALL BE MAINTAINED UNTIL ALL SITE WORK IS COMPLETE FENCING SHALL BE REMOVED PRIOR TO THE FINAL SITE INSPECTION FOR THE CERTIFICATE OCCUPANCY (CO).	ED. THE OF
6. CONTRACTOR TO ENSURE THAT ALL STREETS WITHIN THE LIMITS OF THE PROJECT AND IN OF THE PROJECT ARE KEPT CLEAN AT ALL TIMES OR A WASH STATION WILL BE REQUIRED	FRONT).
17. LIMITS OF OFFSITE IMPROVEMENTS NOT WITHIN FLOODPLAIN.	
nded only for	
e UTILITY NOTES	
1. WATER VALVE BOXES THAT ARE ENCOUNTERED WITHIN THE PROJECT LIMITS ARE TO BE	
2. WATER METER BOXES THAT ARE ENCOUNTERED WITHIN THE PROJECT LIMITS OUTSIDE THE PROPOSED PAVEMENT SECTION ARE TO BE RAISED OR LOWERED TO MATCH THE ADJACE FINISHED WORK.	- N T
3. WATER METER BOXES THAT ARE ENCOUNTERED WITHIN THE PROPOSED PAVEMENT SECTION ARE TO BE RELOCATED OUT OF THE PROPOSED PAVEMENT.	N

GRADING

- 1. THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AND EXISTING PAVEMENT AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.
- 2. REFER TO EROSION CONTROL SHEETS FOR CLEARING LIMITS AND TEMPORARY EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
- 3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY, AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RESEEDED, AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF GRASS.
- 4. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, AND AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. IN ADDITION TO THE MEASURES SHOWN IN THESE PLANS, THE CONTRACTOR SHALL USE INTERIM SILT FENCES, DIVERSION DITCHES, BERMS, OR OTHER METHODS AS REQUIRED TO DIRECT DRAINAGE AS SHOWN ON THESE PLANS, TO BEST UTILIZE THE EROSION CONTROL DEVICES IN PLACE, AND TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL EROSION, CONSERVATION, AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS OR OTHER GROWTH TO PREVENT EROSION.
- 5. GRADING CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS.
- 6. ALL MATERIALS USED FOR BACKFILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS, OR ANY OTHER NON-COMPATIBLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.
- /. ALL GRADING / SOIL COMPACTION OPERATIONS WITHIN THE LIMITS OF STATE RIGHT OF WAYS SHALL ADHERE TO NCDOT REQUIREMENTS, IN ACCORDANCE WITH AASHTO T99 AS MODIFIED BY THE DEPARTMENT. COPIES OF THESE MODIFIED TESTING PROCEDURES ARE AVAILABLE UPON REQUEST FROM THE DEPARTMENT'S MATERIALS AND TESTS UNIT.
- 8. ALL DEMOLITION DEBRIS AND OTHER EXCESS MATERIAL SHALL BE HAULED OFF-SITE AS DIRECTED BY THE OWNER AND PROPERLY DISPOSED OF.
- 9. PROPOSED CONTOURS AND GUTTER GRADIENTS ARE APPROXIMATE. PROPOSED ROADWAY PROFILES/SUPERELEVATIONS ARE TO BE USED IN CASE OF DISCREPANCY.
- 10. REFER TO ROADWAY PLAN FOR HORIZONTAL DIMENSIONS.
- 11. WHERE FILL IS TO BE PLACED ON EXISTING SLOPES STEEPER THAN 4:1, CONTRACTOR SHALL EXCAVATE BENCHES WITH A MAXIMUM DEPTH OF 3'.
- 12. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR BLASTING ROCK IF BLAST ROCK IS ENCOUNTERED. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL BLASTING AND SAFETY REQUIREMENTS.
- 13. TREE PROTECTION FENCING SHALL BE INSTALLED AND INSPECTED BEFORE THE GRADING PERMIT IS ISSUED.
- 14. CROSS SLOPES AND ELEVATIONS SHOWN ON CROSS SECTIONS ARE APPROXIMATE. PROPOSED PAVEMENT CROSS SLOPES ARE TO BE BASED ON EXISTING CROSS SLOPE DETERMINED IN FIELD. IF FIELD CONDITIONS VARY FROM THOSE SHOWN ON PLANS, NOTIFY ENGINEER IMMEDIATELY.

- TO EARTHWORK.
- PLACEMENT.

- SECTIONS.

PAVING/CURBING

1. WHERE PROPOSED CURB AND GUTTER TIES TO EXISTING CURB OR CURB AND GUTTER, A TRANSITION OF 10' SHALL BE MADE TO CONFORM TO THE EXISTING HEIGHTS AND SHAPES.

2. BEFORE ANY EARTHWORK IS DONE, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF PAVEMENT AND OTHER ITEMS ESTABLISHED IN THE PLANS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED

3. ALL PAVEMENT SUB GRADES SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES AND COMPACTED TO A MINIMUM DENSITY OF 100 PERCENT OF ASTM D-1557 DENSITY AT OPTIMUM MOISTURE CONTENT UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION PLANS OR AS DIRECTED BY THE GEOTECHICAL ENGINEER. FILL SHALL BE PLACED AND COMPACTED IN MAXIMUM 8" LIFTS. IN AREAS WHERE ROCK IS ENCOUNTERED AT FINAL SUB GRADE ELEVATION, THE EXPOSED ROCK SHALL BE TOPPED WITH A LEVELING COURSE OF SANDY CLAY OR CLAYEY SAND (P.I. BETWEEN 4 AND 15) AS NEEDED TO PROVIDE A SMOOTH SURFACE FOR PAVING.

4. THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND MOISTURE CONDITION ALL FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO

5. ALL CURB JOINTS SHALL EXTEND THROUGH THE CURB. MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS IS 1.5 FEET. ALL JOINTS SHALL BE SEALED WITH JOINT SEALANT.

6. TESTING OF MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE PAVING IMPROVEMENTS SHALL BE PERFORMED BY AN APPROVED AGENCY FOR TESTING MATERIALS. THE NOMINATION OF THE TESTING LABORATORY AND THE PAYMENT OF SUCH TESTING SERVICES SHALL BE MADE BY THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SHOW BY STANDARD TESTING PROCEDURES THAT THE WORK CONSTRUCTED DOES MEET THE REQUIREMENTS OF THE NCDOT SPECIFICATIONS.

7. ALL REINFORCING STEEL SHALL BE NEW DOMESTIC BILLET STEEL CONFORMING TO ASTM A-615, GRADE 60, AND SHALL BE SUPPORTED BY BAR CHAIRS.

^{8.} All Signs, pavement markings, and other traffic control devices on public streets SHALL CONFORM TO MUTCD, AND NCDOT STANDARDS.

^{9.} All handicap ramping, striping, and pavement markings shall conform to ada REQUIREMENTS AND THE "NORTH CAROLINA STATE BUILDING CODE, VOL 1-C ACCESSIBILITY CODE." ALL RAMPS SHALL COMPLY WITH THE LATEST NCDOT STANDARDS. WHEELCHAIR RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS.

10. CONTRACTOR SHALL SAWCUT & REMOVE ANY THE EXISTING PAVEMENT WHEN THE EXISTING PAVEMENT IS BEING WIDENED OR WHERE NEW CURB AND GUTTER IS PROPOSED.

11. ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. 225.04 & 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL

		DATE BY
		REVISIONS
	 SOO MORRIS STREET, SUITE 200, DURHAM, NC 27701 BHONE: (919) 682-3583 WWW.KIMLEY-HORN.COM 	NO
	KHA PROJECT 011311066 DATE 9/13/2024 SCALE AS SHOWN DESIGNED BY DJD DESIGNED BY DJD DRAWN BY JTW	CHECKED BY TDW 7
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n val	WAKE FOREST PUBLIC SAFETY WAREHOUSE PREPARED FOR TOWN OF WAKE FOREST	WAKE
	SHEET NUMBER	

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PROPOSED BOUNDARY INFORMATION				
BEARING DISTANCE	PROPOSED PROPERTY LINE			
	PROPOSED ROW			
ESMT	PROPOSED EASEMENT			
<u></u>	PROPOSED SETBACK			
<u>00'</u> BUFFER	PROPOSED BUFFER			
UE	PROPOSED UTILITY EASEMENT			
SDE	PROPOSED STORM EASEMENT			
TCE	PROPOSED TCE EASEMENT			
SUE	PROPOSED SIDEWALK EASEMENT			
SUE	PROPOSED SIDEWALK/UTILITY EASEMENT			
CE	PROPOSED CONSERVATION EASEMENT			
LODLOD	PROPOSED LIMITS OF DISTURBANCE			
SSE	PROPOSED SANITARY SEWER EASEMENT			
WLE WLE	PROPOSED WATER LINE EASEMENT			
OUE OUE	PROPOSED OVERHEAD UTILITY EASEMENT			
UUE UUE	PROPOSED UNDERGROUND UTILITY EASEMENT			

PROPOSED TOPO INFORMATION
B-100? PROPOSED BORING
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C C PROPOSED CUT LIMITS
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PROPOSED UTILITY	INFORMATION
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	UNDERGROUND ELECTRIC
FO	PROPOSED FIBER OPTIC
GAS GAS GAS GAS GAS GAS GAS	PROPOSED GAS
UT	PROPOSED TELEPHONE
CO NQ414'12"₩ MH 328.11	PROPOSED SANITARY
FES CB/DI/JB	PROPOSED STORM
	PROPOSED STORM UNDER DR.
→→→→→→→→→→→→→→→→→→→→→→→→→→→→→→→→→→→→→	PROPOSED DOMESTIC WATER
	PROPOSED IRRIGATION
SOFT DIE BR 1 WOTHES" SS TOP DEPTHESO" SS BOT DEPTHESO" SS BOT DEPTHESO"	PROPOSED SOFT DIG
45.9'	PU-TXT

PROPOSED STRUCTURAL INFORMATION			
	PROPOSED STRUCTURE		
	PROPOSED BUILDING HATCH		
57.4'	PS-TXT		

PROPOSED PAVE	EMENT INFORMATION
<u>234+00 N22*58'12*W</u> 652.23'	PROPOSED CENTERLINE
	PROPOSED CURB
	PROPOSED EDGE OF PAVEMENT
	PROPOSED SIDEWALK/CONC
	PROPOSED DRIVEWAY
<	PROPOSED FENCE
	PROPOSED RETAINING WALL
	PROPOSED SIGNAL CONDUIT
	PROPOSED SAWCUT PAVEMENT
	PROPOSED GRAVEL ROAD
	PROPOSED PAVEMENT HATCH
	PROPOSED CONCRETE HATCH
	PROPOSED PAVEMENT REMOVAL HATCH
	PROPOSED GRAVEL HATCH
	PROPOSED MILL AND OVERLAY
	PROPOSED LIMITS OF OVERLAY
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	PROPOSED GUIDE RAIL
	PROPOSED FUTURE SYMBOLOGY
	PROPOSED SIGNAGE
45.0'	PP-TEXT

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	KHA PROJECT 011311066	DATE	9/13/2024	SCALE AS SHOW	DESIGNED BY D.	DRAWN BY JT	снескер ву TD
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Planning CITY OF RALEIGH – PLANS AUTHORIZED FOR CONSTRUCTION

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	PAVEMENT SCHEDULE
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3.0" OF ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH OR LESS THAN 1.5" IN DEPTH.
D1)	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 4" IN DEPTH OR LESS THAN 2.5" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LB PER SQ. YARD IN ONE LIFT.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 5.0" IN DEPTH OR LESS THAN 3.0" IN DEPTH.
(J1)	6" AGGREGATE BASE COURSE
J2	10" AGGREGATE BASE COURSE
R1)	2' - 6" CONCRETE CURB AND GUTTER
(S1)	PROPOSED 4" CONCRETE SIDEWALK - 2.00% MAX CROSS SLOPE
T	COMPACTED EARTH MATERIAL
U	EXISTING PAVEMENT
(V1)	MILL APPROX. 1.5" AND REPLACE WITH 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD.
W	VARIABLE DEPTH ASPHALT OVERLAY (SEE DETAIL 2)

NOTES:

1) PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.

2) REFER TO PLAN SHEETS FOR VARIABLE WIDTHS







-L- STA 15+53.81 TO STA -L- STA 17+50.00

> EXISTING

GROUND

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VALVE ASSEMBLY													
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SHEET NUMBER

R1.01











PAVEMENT MARKINGS AND MARKERS

S) INSTALL PAVEMENT MARKINGS AS SHOWN ON PLAN SHEETS.

T) REFER TO SECTION 1205 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2018 FOR APPLICATION TIMES AND TEMPERATURE CONDITIONS FOR PAVEMENT MARKINGS.

U) PLACE AT LEAST TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE ON NEW ASPHALT PAVEMENT. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.

V) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

W) REPLACE ANY PAVEMENT MARKINGS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION. X) PLACE AT LEAST TWO APPLICATIONS OF PAINT ON NEW ASPHALT WITH TEMPORARY TRAFFIC PATTERNS WHICH WILL REMAIN IN PLACE OVER THREE (3) MONTHS. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.

Y) CONTRACTOR SHALL MAINTAIN ALL TEMPORARY PAINT PAVEMENT MARKINGS UNTIL COMPLETION OF THERMOPLASTIC PAVEMENT MARKING INSTALLATION.

Z) BEFORE SHIFTING TRAFFIC TO NEW LOCATIONS, CONTRACTOR SHALL REMOVE ANY MARKINGS WHICH CONFLICT WITH THE NEW TRAFFIC PATTERN(S).

AA) CHANGES TO THE TRAFFIC CONTROL REQUIRE APPROVAL FROM TOWN OF WAKE FOREST AND NCDOT PRIOR TO COMMENCING FIELD OPERATIONS.

PEDESTRIAN AND BICYCLIST SAFETY

BB) PEDESTRIAN AND BICYCLIST SAFETY MUST BE MAINTAINED AT ALL TIMES BY ADEQUATE PROJECT LIMITS. FENCING, AND SIGNAGE.

MISCELLANEOUS

CC) POLICE MAY BE USED TO MAINTAIN TRAFFIC THROUGH INTERSECTIONS

DD) STOCKPILE EXISTING SIGNS FOR USE WHEN NEEDED IN TEMPORARY LOCATIONS DURING CONSTRUCTION. EE) ACCESS SHALL BE MAINTAINED TO ALL RESIDENCES, MAILBOXES, AND BUSINESSES AT ALL TIMES.

FF) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) AND RESPECTIVELY IN ADVANCE OF THE UNEVEN ARÉAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

ADVANCE WARNING SIGNS

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.

- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.

- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS. THIS SIGNING APPLICATION IS OPTIONAL MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.

- ADVANCE WARNING SIGN SPACING IS RECOMMENDED TO BE THE FOLLOWING:

FORESTVILLE RD - 500' BEFORE CONSTRUCTION LIMITS

- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED

- USE 3 LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3 LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B) MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3 LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.

- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.

- DO NOT BACK BRACE SIGN SUPPORTS.

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICE UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS.

STD. NO.	TITLE
101.01	WORK ZONE WARNING SIGNS
101.02	TEMPORARY LANE CLOSURES
101.04	TEMPORARY SHOULDER CLOSURES
101.11	TRAFFIC CONTROL DESIGN TABLES
110.01	STATIONARY WORK ZONE SIGNS
110.02	PORTABLE WORK ZONE SIGNS
115.01	FLASHING ARROW BOARDS
130.01	DRUMS
135.01	CONES
145.01	BARRICADES
150.01	FLAGGING DEVICES
180.01	SKINNY DRUM
205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
205.02	PAVEMENT MARKINGS - DIVIDED AND UNDIVIDED ROADWAYS
205.04	PAVEMENT MARKINGS - INTERSECTIONS
205.05	PAVEMENT MARKINGS - TURN LANES
205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
205.13	PAVEMENT MARKINGS - NEW INTERCHANGES AND INTERSECTIONS
250.01	PAVEMENT MARKER SPACING
251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
253.01	SNOWPLOWABLE RAISED PAVEMENT MARKERS







CONSTRUCTION SEQUENCE

- CONSTRUCTION SPECIFICATIONS
- 1. REQUEST PRECONSTRUCTION MEETING;
- 2. OBTAIN GRADING PERMIT;
- 3. INSTALL ALL EROSION CONTROL MEASURES AS SHOWN;
- 4. OBTAIN CERTIFICATE OF COMPLIANCE THROUGH ON SITE INSPECTION BY EROSION CONTROL OFFICER;
- 5. PROCEED WITH GRADING:
- 6. CLEAN SEDIMENT BASINS WHEN ONE-HALF FULL;
- 7. SEED AND MULCH DENUDED AREA WITHIN 15 DAYS OR DURATION SHOWN ON GROUND STABILIZATION REQUIREMENTS, WHICHEVER IS SHORTER, AFTER ANY PHASE OF GRADING;
- 8. MAINTAIN SOIL EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED;
- 9. REQUEST FINAL APPROVAL BY EROSION CONTROL OFFICER;
- 10. REMOVE SOIL EROSION CONTROL MEASURES AND STABLIZE THESE AREAS.

MAINTENANCE

FOLLOW THE CONSTRUCTION SEQUENCE THROUGHOUT PROJECT DEVELOPMENT. WHEN CHANGES IN CONSTRUCTION ACTIVITIES ARE NEEDED, AMEND THE SEQUENCE SCHEDULE IN ADVANCE TO MAINTAIN MANAGEMENT CONTROL.

NOTIFICATION OF LAND RESOURCES SEDIMENT AND EROSION CONTROL SELF-INSPECTION PROGRAM:

THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010. THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE APPROVED PLAN. THE INSPECTIONS MUST BE CONDUCTED AFTER EACH PHASE OF THE PROJECT, AND CONTINUE UNTIL PERMANENT GROUND COVER IS ESTABLISHED IN ACCORDANCE WITH NCGS 113A-54.1 AND 15A NCAC 4B.0131. THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FROM HTTP://PORTAL.NCDENR.ORG/WEB/LR/EROSION. IF YOU HAVE QUESTIONS OR CANNOT ACCESS THE FORM, PLEASE CONTACT NCDENR DIVISION OF LAND RESOURCES AT (919) 791-4200.

MAINTENANCE PLAN

- 1. THE CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL PRACTICES FOR STABILITY AND OPERATION WITHIN 24 HOURS FOLLOWING EVERY RUNOFF PRODUCING 0.5" RAINFALL (IN A 24 HOUR PERIOD) BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY BY THE CONTRACTOR TO MAINTAIN ALL PRACTICES AS DESIGNED. ALSO PER NATION POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT, A RAIN GAUGE MUST BE INSTALLED ON SITE. THE RAIN GUAGE MUST BE KEPT ONSITE AND INSPECTIONS BY THE CONTRACTOR MUST BE MADE AND LOGGED AFTER EVERY HALF INCH OF RAINFALL AND ONCE A WEEK.
- 2. THE CONTRACTOR SHALL REMOVE SEDIMENT FROM SEDIMENT WHEN STORAGE CAPACTIY HAS BEEN APPROXIMATELY 50% FILLED. SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
- 3. THE CONTRACTOR SHALL REMOVE SEDIMENT FROM BEHIND SILT FENCE WHEN IT BECOMES 0.5 FEET DEEP AT THE FENCE. SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
- 4. THE CONTRACTOR SHALL FERTILIZE, RESEED AS NECESSARY, AND MULCH ALL SEEDED AREAS ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
- 5. THE CONTRACTOR MUST INSPECT ALL OUTLETS WHERE STORMWATER RUNOFF LEAVES THE SITE AND EVALUATE THE EFFECT ON NEARBY STREAMS OR WETLANDS. CORRECTIVE ACTION MUST BE TAKEN IF SEDIMENT IS DEPOSITED OFF SITE OR INTO STREAM OR WETLAND, OR CAUSES A VISIBLE INCREASE IN TURBIDITY OF ANY WATERBODY.
- 6. THE CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES OR OTHER AREAS WITHIN THE TIMEFRAME SPECIFIED IN THE STABILIZATION TABLE OR SOONER OF COMPLETION OF ANY PHASE OF GRADING.

GROUND STABILIZATION REQUIREMENTS

CONTRACTOR SHALL STABILIZE (TEMPORARY OR PERMANENT) ALL DISTURBED AREAS WITHIN 7 OR 14 DAYS OF TERMINATION OF GRADING OPERATIONS PER THE FOLLOWING GUIDELINES:

- PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS
- HIGH QUALITY WATER ZONES	7 DAYS
- SLOPES 2:1 OR STEEPER	7 DAYS
- SLOPES BETWEEN 2:1 AND 3:1 GREATER THAN 10' IN LENGTH	7 DAYS
- SLOPES BETWEEN 2:1 AND 3:1 LESS THAN 10' IN LENGTH	14 DAYS
- SLOPES BETWEEN 3:1 AND 4:1 LESS THAN 50' IN LENGTH	14 DAYS
- SLOPES BETWEEN 3:1 AND 4:1 GREATER THAN 50' IN LENGTH	7 DAYS
- SLOPES FLATTER THAN 4:1	14 DAYS

LAND GRADING (6.02)

CONSTRUCTION SPECIFICATIONS

- 1. CONSTRUCT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL PRACTICES AND MEASURES IN ACCORDANCE WITH THE APPROVED SEDIMENTATION CONTROL PLAN AND CONSTRUCTION SCHEDULE.
- 2. REMOVE GOOD TOPSOIL FROM AREAS TO BE GRADED AND FILLED, AND PRESERVE IT FOR USE IN FINISHING THE GRADING OF ALL CRITICAL AREAS.
- 3. SCARIFY AREAS TO BE TOPSOILED TO A MINIMUM DEPTH OF 2 INCHES BEFORE PLACING TOPSOIL.
- 4. CLEAR AND GRUB AREAS TO BE FILLED TO REMOVE TREES, VEGETATION, ROOTS, OROTHER OBJECTIONABLE MATERIAL THAT WOULD AFFECT THE PLANNED STABILITY OF THE FILL.
- 5. ENSURE THAT FILL MATERIAL IS FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS. AND OTHER MATERIALS INAPPROPRIATE FOR CONSTRUCTING STABLE FILLS.
- 6. PLACE ALL FILL IN LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS, AND COMPACT THE LAYERS AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, OR OTHER RELATED PROBLEMS.
- 7. DO NOT INCORPORATE FROZEN MATERIAL OR SOFT OR HIGHLY COMPRESSIBLE MATERIALS INTO FILL SLOPES.
- 8. DO NOT PLACE FILL ON A FROZEN FOUNDATION, DUE TO POSSIBLE SUBSIDENCE AND SLIPPAGE.
- 9. KEEP DIVERSIONS AND OTHER WATER CONVEYANCE MEASURES FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
- 10. HANDLE SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH APPROVED METHODS.
- 11. PERMANENTLY STABILIZE ALL GRADED AREAS IMMEDIATELY AFTER FINAL GRADING IS COMPLETED ON EACH AREA IN THE GRADING PLAN. APPLY TEMPORARY STABILIZATION MEASURES ON ALL GRADED AREAS WHEN WORK IS TO BE INTERRUPTED OR DELAYED FOR 15 WORKING DAYS OR LONGER.
- 12. SHOW TOPSOIL STOCKPILES, BORROW AREAS, AND SPOIL AREAS ON THE PLANS, AND MAKE SURE THEY ARE ADEQUATELY PROTECTED FROM EROSION. INCLUDE FINAL STABILIZATION OF THESE AREAS IN THE PLAN.

MAINTENANCE

PERIODICALLY CHECK ALL GRADED AREAS AND THE SUPPORTING EROSION AND SEDIMENTATION CONTROL PRACTICES. ESPECIALLY AFTER HEAVY RAINFALLS. PROMPTLY REMOVE ALL SEDIMENT FROM DIVERSION AND OTHER WATER-DISPOSAL PRACTICES. IF WASHOUTS OR BREAKS OCCUR, REPAIR THEM IMMEDIATELY, PROMPT MAINTENANCE OF SMALL ERODED AREAS BEFORE THEY BECOME SIGNIFICANT GULLIES IS AN ESSENTIAL PART OF AN EFFECTIVE EROSION AND SEDIMENTATION CONTROL PLAN.

SEEDING AND MULCHING

THE KINDS OF SEED AND FERTILIZER, AND THE RATES OF APPLICATION OF SEED, FERTILIZER, AND LIMESTONE C) SEED: SHALL BE AS STATED BELOW. DURING PERIODS OF OVERLAPPING DATES, THE KIND OF SEED TO BE USED SHALL BE DETERMINED BY THE ENGINEER.

TE	TYPE	PLANTING RATE
R 1 - AUG 31	TALL FESCUE	50 LBS/ ACRE
	CENTIPEDE	5 LBS / ACRE
	HULLED COMMON BERMUDA GRASS	25 LBS/ ACRE
	FERTILIZER	500 LBS/ ACRE
	LIMESTONE	4000 LBS/ ACRE
PT 1 -FEB 28	TALL FESCUE	50 LBS/ ACRE
	CENTIPEDE	5 LBS/ ACRE
	UNHULLED COMMON BERMUDAGRASS	35 LBS/ ACRE
	FERTILIZER	500 LBS/ ACRE
	LIMESTONE	4000 LBS/ ACRE
	SLOPES (2:1 AND STEEPER) AND WASTE & BORROW LOG	CATIONS
N 1 - DEC 31	TALL FESCUE	75 LBS/ ACRE

JAN 1 - DEC 31

TALL FESCUE
UNHULLED COMMON BERMUDAGRASS
FERTILIZER
LIMESTONE

ADVENTURE	ADVENTURE II	AMIGO	ANTHEM
APACHE	APACHE II	ARID	AUSTIN
BROOKSTONE	BONANZA	BONANZA II	CHAPEL HILL
CHESAPEAKE	CHIEFTAIN	CORONADO	CROSSFIRE II
DEBUTANTE	DUSTER	FALCON	FALCON II
FINELAWN PETITE	FINELAWN	FINELAWN I	GENESIS
GRANDE	GUARDIAN	HAWK	HOUNDDOG
JAGUAR	JAGUAR III	KENTUCKY 31	KITTY
MONARCH	MONTAUK	MUSTANG	OLYMPIC
PACER	PHOENIX	PIXIE	PYRAMID
REBEL	REBEL JR	REBEL II	RENEGADE
SAFARI	SHENANDOAH	TEMPO	TITAN
TOMAHAWK	TRAILBLAZER	TRIBUTE	VEGAS
WOLFPACK	WRANGLE		

SEEDING AND MULCHING

ON CUT AND FILL SLOPES 2:1 OR STEEPER, ADD 30# (23KG) SERICEA LESPEFEZA JANUARY 1 - DECEMBER 31

FERTILIZER SHALL BE 10-20-20 ANALYSIS. UPON WRITTEN APPROVAL OF THE ENGINEER, A DIFFERENT ANALYSIS OF FERTILIZER MAY BE USED PROVIDED THE 1-2-2 RATIO IS MAINTAINED AND THE RATE OF APPLICATION ADJUSTED TO PROVIDE THE SAME AMOUNT OF PLANT FLOOD AS A 10-20-20 ANALYSIS.

SEEDBED PREPARATION

THE CONTRACTOR SHALL CUT AND SATISFACTORILY DISPOSE OF WEEDS OR OTHER UNACCEPTABLE GROWTH DURING THE APPLICATION OF ASPHALT BINDING MATERIAL, OR OTHER APPROVED BINDING MATERIAL ON THE AREAS TO BE SEEDED. UNEVEN AND ROUGH AREAS OUTSIDE OF THE GRADED SECTION, SUCH AS CROP MAY CAUSE DAMAGE, ADEQUATE PRECAUTIONS SHALL BE TAKEN TO PREVENT DAMAGE TO TRAFFIC, ROWS, FARM CONTOURS, DITCHES, AND DITCH SPOIL BANKS, FENCE LINE AND HEDGEROW SOIL ACCUMULATIONS, AND OTHER MINOR IRREGULARITIES WHICH CANNOT BE OBLITERATED BY NORMAL SEEDBED PREPARATION OPERATIONS, SHALL BE SHAPED AND SMOOTHED AS DIRECTED BY THE ENGINEER TO PROVIDE FOR MORE EFFECTIVE SEEDING AND FOR EASE OF SUBSEQUENT MOWING OPERATIONS.

THE SOIL SHALL THEN BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF NOT LESS THAN 5 INCHES EXCEPT AS OTHERWISE PROVIDED BELOW OR OTHERWISE DIRECTED BY THE ENGINEER. CLODS SHALL BE BROKEN AND THE TOP 2 TO 3 INCHES OF SOIL SHALL BE WORKED INTO AN ACCEPTABLE SEEDBED BY THE USE OF SOIL PULVERIZERS, DRAGS, OR HARROWS; OR BY OTHER METHODS APPROVED BY THE ENGINEER, ALL ROCK AND DEBRIS 3 INCHES OR LARGER SHALL BE REMOVED ON MEDIAN. SHOULDER, AND DITCH CUT OR FILL SLOPES WHICH ARE 3:1 OR FLATTER, PRIOR TO THE APPLICATION OF SEED AND FERTILIZER.

ON CUT SLOPES THAT ARE 2:1 AND STEEPER, BOTH THE DEPTH OF PREPARATION AND THE DEGREE OF SMOOTHNESS OF THE SEEDBED MAY BE REDUCED AS PERMITTED BY THE ENGINEER, BUT IN ALL CASES THE SLOPE SURFACE SHALL BE SCARIFIED, GROOVED, TRENCHED, OR PUNCTURED SO AS TO PROVIDE POCKETS, RIDGES, OR TRENCHES IN WHICH THE SEEDING MATERIALS CAN LODGE. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE REQUIRED SEED BED. IT MAY BE NECESSARY TO SEED THESE SECTIONS WITH A HYDRO-SEEDED.

ON CUT SLOPES THAT ARE EITHER 2:1 OR STEEPER, THE ENGINEER MAY PERMIT THE PREPARATION OF A PARTIAL OR COMPLETE SEEDBED DURING THE GRADING OF THE SLOPE. IF AT THE TIME OF SEEDING AND MULCHING OPERATIONS SUCH PREPARATION IS STILL IN A CONDITION ACCEPTABLE TO THE ENGINEER, ADDITIONAL SEEDBED PREPARATION MAY BE REDUCED OR ELIMINATED.

SEEDBED PREPARATION WITHIN 2 FEET OF THE EDGE OF ANY PAVEMENT SHALL BE LIMITED TO A DEPTH OF 2 TO 3 INCHES.

THE PREPARATION OF SEEDBEDS SHALL NOT BE DONE WHEN THE SOIL IS FROZEN, EXTREMELY WET, OR WHEN MIXING. THE ENGINEER DETERMINES THAT IT IS AN OTHERWISE UNFAVORABLE WORKING CONDITION.

APPLYING AND COVERING LIMESTONE, FERTILIZER, AND SEED

A) GENERAL:

SEASONAL LIMITATION FOR SEEDING OPERATIONS; THE KINDS OF GRADES OF FERTILIZERS; THE KINDS OF SEED; AND THE RATES OF APPLICATION OF LIMESTONE, FERTILIZER, AND SEED SHALL BE AS STATED IN THE SPECIAL PROVISIONS.

EQUIPMENT TO BE USED FOR THE APPLICATION, COVERING, OR COMPACTION OF LIMESTONE, FERTILIZER, AND SAND MAY BE NEEDED TO PROTECT THE FILTER CLOTH. SEED SHALL HAVE BEEN APPROVED BY THE ENGINEER BEFORE BEING USED ON THE PROJECT. APPROVAL MAY BE REVOKED AT ANY TIME IF EQUIPMENT IS NOT MAINTAINED IN SATISFACTORY WORKING CONDITION, OR IF THE EQUIPMENT OPERATION DAMAGES THE SEED.

LIMESTONE, FERTILIZER, AND SEED SHALL BE APPLIED WITHIN 24 HOURS AFTER COMPLETION OF SEEDBED PREPARATION UNLESS OTHERWISE PERMITTED BY THE ENGINEER, BUT NO LIMESTONE OR FERILIZER SHALL BE OPERATION. DO NOT PLACE RIPRAP BY DUMPING THROUGH CHUTES OR OTHER METHODS THAT CAU DISTRIBUTED AND NO SEED SHALL BE SOWN WHEN THE ENGINEER DETERMINES THE WEATHER AND SOIL CONDITIONS ARE UNFAVORABLE FOR SUCH OPERATIONS.

DURING THE APPLICATION OF FERTILIZER, ADEQUATE PRECAUTIONS SHALL BE TAKEN TO PREVENT DAMAGE TO THE FINISHED SLOPE SHOULD BE FREE OF POCKETS OF SMALL STONE OR CLUSTERS OF LARGE STON TRAFFIC, STRUCTURES, GUARDRAILS, TRAFFIC CONTROL DEVICES, OR ANY OTHER APPURTENANCES. THE CONTRACTOR SHALL EITHER PROVIDE ADEQUATE DRAINAGE COVERING OR CHANGE METHODS OF APPLICATION AS REQUIRED TO AVOID SUCH DAMAGE. WHEN SUCH DAMAGE OCCURS THE CONTRACTOR SHALL REPAIR IT, INCLUDING ANY CLEANING THAT MAY BE NECESSARY.

APPLYING AND COVERING LIMESTONE, FERTILIZER, AND SEED

B) LIMESTONE AND FERTILIZER:

LIMESTONE MAY BE APPLIED AS A PART OF THE SEEDBED PREPARATION, PROVIDED IT IS IMMEDIATELY WORKED INTO THE SOIL. IF NOT SO APPLIED, LIMESTONE AND FERTILIZER SHALL BE DISTRIBUTED UNIFORMLY OVER THE PREPARED SEEDBED AT THE SPECIFIED RATE OF APPLICATION AND THEN HARROWED, RAKED, OR OTHERWISE THOROUGHLY WORKED OR MIXED INTO THE SEEDBED.

IF LIQUID FERTILIZER IS USED, STORAGE CONTAINERS FOR THE LIQUID FERTILIZER SHALL BE LOCATED ON THE PROJECT AND SHALL BE EQUIPPED FOR AGITATION OF THE LIQUID PRIOR TO ITS USE. THE STORAGE CONTAINERS SHALL BE EQUIPPED WITH APPROVED MEASURING OR METERING DEVICES WHICH WILL ENABLE THE ENGINEER TO RECORD AT ANY TIME THE AMOUNT OF LIQUID THAT HAS BEEN REMOVED FROM THE CONTAINER. APPLICATION EQUIPMENT FOR LIQUID FERTILIZER, OTHER THAN A HYDRAULIC SEEDER, SHALL BE CALIBRATED TO ENSURE THAT THE REQUIRED RATE OF FERTILIZER IS APPLIED UNIFORMLY.

VEGETATIVE PLAN (NCDENR 6.11)

75 LBS/ ACRE 35 LBS/ ACRE 500 LBS/ ACRE 4000 LBS/ ACRE

APPROVED TALL FESCUE CULTIVARS

SEED SHALL BE DISTRIBUTED UNIFORMLY OVER THE SEEDBED AT THE REQUIRED RATE OF APPLICATI IMMEDIATELY HARROWED, DRAGGED, RAKED, OR OTHERWISE WORKED SO AS TO OVER THE SEED WITH A LAYER OF SOIL. THE DEPTH OF COVERING SHALL BE AS DIRECTED BY THE ENGINEER. IF 2 KINI SEED ARE TO BE USED WHICH REQUIRE DIFFERENT DEPTHS OF COVERING, THEY SHALL BE SOWN SE

WHEN A COMBINATION SEED AND FERTILIZER DRILL IS USED, FERTILIZER MAY BE DRILLED IN WITH TH AFTER LIMESTONE HAS BEEN APPLIED AND WORKED INTO THE SOIL. IF 2 KINDS OF SEED ARE BEING U WHICH REQUIRE DIFFERENT DEPTH OF COVERING, THE SEEDING REQUIRING THE LIGHTER COVERING BE SOWN BROADCAST OR WITH A SPECIAL ATTACHMENT TO THE DRILL, OR DRILLED LIGHTLY FOLLOW INITIAL DRILLING OPERATION.

WHEN A HYDRAULIC SEEDER IS USED FOR APPLICATION OF SEED AND FERTILIZER, THE SEED SHALL REMAIN IN WATER CONTAINING FERTILIZER FOR MORE THAN 30 MINUTES PRIOR TO APPLICATION UNL OTHERWISE PERMITTED BY THE ENGINEER.

IMMEDIATELY AFTER SEED HAS BEEN PROPERLY COVERED THE SEEDBED SHALL BE COMPACTED IN MANNER AND DEGREE APPROVED BY THE ENGINEER.

MULCHING A) GENERAL:

ALL SEEDED AREAS SHALL BE MULCHED UNLESS OTHERWISE INDICATED IN THE SPECIAL PROVISION DIRECTED BY THE ENGINEER.

GRAIN STRAW MAY BE USED AS MULCH AT ANY TIME OF YEAR. IF PERMISSIONS TO USE MATERIAL OTI GRAIN STRAW IS REQUESTED BY THE CONTRACTOR AND THE USE OF SUCH MATERIAL IS APPROVED ENGINEER, THE SEASONAL LIMITATIONS, THE METHODS AND RATES OF APPLICATION, THE TYPE OF BI MATERIAL, OR OTHER CONDITIONS GOVERNING THE USE OF SUCH MATERIAL WILL BE ESTABLISHED B ENGINEER AT THE TIME OF APPROVAL.

B) APPLYING MULCH:

MULCH SHALL BE APPLIED WITHIN 24 HOURS AFTER COMPLETION OF SEEDING UNLESS OTHERWISE I BY THE ENGINEER. CARE SHALL BE EXERCISED TO PREVENT DISPLACEMENT OF SOIL OR SEED OR O DAMAGE TO THE SEEDED AREA DURING THE MULCHING OPERATIONS. MULCH SHALL BE UNIFORMLY HAND OR BY APPROVED MECHANICAL SPREADERS OR BLOWERS THAT WILL PROVIDE AN ACCEPTABI APPLICATION. AN ACCEPTABLE APPLICATION WILL BE THAT WHICH WILL ALLOW SOME SUNLIGHT TO F AND AIR TO CIRCULATE BUT WILL ALSO PARTIALLY SHADE THE GROUND, REDUCE EROSION, AND CON SOIL MOISTURE.

C) HOLDING MULCH:

MULCH SHALL BE HELD IN PLACE BY APPLYING A SUFFICIENT AMOUNT OF ASPHALT OR OTHER APPRC BINDING MATERIAL TO ASSURE THAT THE MULCH IS PROPERLY HELD IN PLACE. THE RATE AND METHO APPLICATION OF BINDING MATERIAL SHALL MEET THE APPROVAL OF THE ENGINEER. WHERE THE BINI MATERIAL IS NOT APPLIED DIRECTLY WITH THE MULCH IT SHALL BE APPLIED IMMEDIATELY FOLLOWIN MULCH APPLICATION.

STRUCTURES, GUARDAILS, TRAFFIC CONTROL DEVICES, OR ANY OTHER APPURTENANCES. THE CONT SHALL EITHER PROVIDE ADEQUATE COVERING OR CHANGE METHODS OF APPLICATION AS REQUIRED SUCH DAMAGE. WHEN SUCH DAMAGE OCCURS THE CONTRACTOR SHALL REPAIR IT, INCLUDING ANY THAT MAY BE NECESSARY.

THE CONTRACTOR SHALL TAKE SUFFICIENT PRECAUTIONS TO PREVENT MULCH FROM ENTERING DRA STRUCTURES THROUGH DISPLACEMENT BY WIND, WATER, OR OTHER CAUSES AND SHALL PROMPTLY ANY BLOCKAGE TO DRAINAGE FACILITIES THAT MAY OCCUR.

<u>RIP RAP (6.15)</u>

CONSTRUCTION SPECIFICATIONS

SUBGRADE PREPARATION - PREPARE THE SUBGRADE FOR RIPRAP AND FILTER TO THE REQUIRED LIN GRADES SHOWN ON THE PLANS. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY APPROXIMATING THAT OF THE SURROUNDING UNDISTURBED MATERIAL OR OVERFILL DEPRESSIONS REMOVE BRUSH, TREES, STUMPS AND OTHER OBJECTIONAL MATERIAL. CUT THE SUBGRADE SUFFICI THAT THE FINISHED GRADE OF THE RIPRAP WILL BE AT THE ELEVATION OF THE SURROUNDING AREA. SHOULD BE EXCAVATED SUFFICIENTLY TO ALLOW PLACEMENT OF THE RIPRAP IN A MANNER SUCH TH FINISHED INSIDE DIMENSIONS AND GRADE OF THE RIPRAP MEET DESIGN SPECIFICATIONS.

SAND AND GRAVEL FILTER BLANKET - PLACE THE FILTER BLANKET IMMEDIATELY AFTER THE GROUND FOUNDATION IS PREPARED. FOR GRAVEL, SPREAD FILTER STONE IN A UNIFORM LAYER TO THE SPEC DEPTH. WHERE MORE THAN ONE LAYER OF FILTER MATERIAL IS USED, SPREAD THE LAYERS WITH MI

SYNTHETIC FILTER FABRIC - PLACE THE CLOTH FILTER DIRECTLY ON THE PREPARED FOUNDATION. ON EDGES BY AT LEAST 12 INCHES, AND SPACE ANCHOR PINS EVERY 3 FT ALONG THE OVERLAP. BURY UPSTREAM END OF THE CLOTH A MINIMUM OF 12 INCHES BELOW GROUND AND WHERE NECESSARY. LOWER END OF THE CLOTH OR OVERLAP WITH THE NEXT SECTION AS REQUIRED. TAKE CARE NOT T THE CLOTH WHEN PLACING RIPRAP. IF DAMAGE OCCURS REMOVE THE RIPRAP AND REPAIR THE SHEE ANOTHER LAYER OF FILTER MATERIAL WITH A MINIMUM OVERLAP OF 12 INCHES AROUND THE DAMAG IF EXTENSIVE DAMAGE IS SUSPECTED, REMOVE AND REPLACE THE ENTIRE SHEET.

WHERE LARGE STONES ARE USED OR MACHINE PLACEMENT IS DIFFICULT, A 4-INCH LAYER OF FINE (

STONE PLACEMENT - PLACEMENT OF RIPRAP SHOULD FOLLOW IMMEDIATELY AFTER PLACEMENT OF PLACE RIPRAP SO THAT IF FORMS A DENSE, WELL-GRADED MASS OF STONE WITH A MINIMUM OF VOID DESIRED DISBRIBUTION OF STONES THROUGHOUT THE MASS MAY BE OBTAINED BY SELECTIVE LOAD QUARRY AND CONTROLLED DUMPING DURING FINAL PLACEMENT. PLACE RIPRAP TO ITS FULL THICKI SEGREGATION OF STONE SIZES. TAKE CARE NOT TO DISLODGE THE UNDERLYING BASE OR FILTER W PLACING THE STONES.

PLACING MAY BE NECESSARY TO ACHIEVE THE PROPER DISTRIBUTION OF STONE SIZES TO PRODUCE RELATIVELY SMOOTH, UNIFORM SURFACE. THE FINISHED GRADE OF THE RIPRAP SHOULD BLEND WIT SURROUNDING AREA. NO OVERFALL OR PROTRUSION OF RIPRAP SHOULD BE APPARENT.

MAINTENANCE

INSPECT CHANNELS AT REGULAR INTERVALS AS WELL AS AFTER MAJOR RAINS, AND MAKE REPAIRS GIVE SPECIAL ATTENTION TO THE OUTLET AND INLET SECTIONS AND OTHER POINTS WHERE CONCEN FLOW ENTERS. CAREFULLY CHECK STABILITY AT ROAD CROSSINGS AND LOOK FOR INDICATIONS OF SCOUR HOLES, OR BANK FAILURES. MAKE REPAIRS IMMEDIATELY. MAINTAIN ALL VEGETATION ADJAC CHANNEL IN A HEALTHY, VIGOROUS CONDITION TO PROTECT THE AREA FROM EROSION AND SCOUR I OUT-OF-BANK CONTROL OF WEED AND BRUSH GROWTH MAY BE NEEDED IN SOME LOCATIONS.

					× H
	TOPSOILIN	G (6.04)			DATE
	CONSTRUCTION SPECIFICATIONS				
ION, AND DS OF	DETERMINE WHETHER THE QUALITY AND QUANTITY HANDLING. QUALITY TOPSOIL HAS THE FOLLOWING	OF AVAILABLE TOPSOIL JUSTIFIES SELECTIVE CHARACTERISTICS:			
EPARATELY.	TEXTURE - LOAM, SANDY LOAM, AND SILT LOAM ARE CLAY LOAM, AND LOAMY SAND ARE FAIR. DO NOT US BEAT OR MUCK AS TORSON	BEST; SANDY CLAY LOAM, SILTY CLAY LOAM, SE HEAVY CLAY AND ORGANIC SOILS SUCH AS			NS
G MAY WING THE	ORGANIC MATTER CONTENT - (SOMETIMES REFERRI GREATER THAN 1.5% BY WEIGHT.	ED TO AS "HUMIC MATTER") SHOULD BE			REVISIO
NOT _ESS	ACIDITY - PH SHOULD BE GREATER THAN 3.6 BEFORI THAN 6.0.	E LIMING, AND LIMING IS REQUIRED IF IT IS LESS			-
THE	SOLUBLE SALTS - SHOULD BE LESS THAN 500 PPM.				
	THE DEPTH OF MATERIAL MEETING THE ABOVE QUA SOIL FACTORS SUCH AS ROCK FRAGMENTS, SLOPE,	LIFICATIONS SHOULD BE AT LEAST 2 INCHES. DEPTH TO WATER TABLE, AND LAYER			No.
SOR	GENERALLY, THE UPPER PART OF THE SOIL, WHICH DESIRABLE; HOWEVER, MATERIAL EXCAVATED FROM	SPREADING OF TOPSOIL. IS RICHEST IN ORGANIC MATTER, IS MOST M DEEPER LAYERS MAY BE WORTH STORING IF	u.	с. 7701 М	
HER THAN BY THE INDING	ORGANIC SOILS SUCH AS MUCKS AND PEATS DO NO IDENTIFIED BY THEIR EXTREMELY LIGHT WEIGHT WH	T MAKE GOOD TOPSOIL. THEY CAN BE IEN DRY.	lor	MATES, IN M, NC 27 -HORN.CC	
3Y THE	STRIPPING			ASSOC DURHA (IMLEY- 02	
PERMITTED THER SPREAD BY E PENETRATE	STRIP TOPSOIL ONLY FROM THOSE AREAS THAT WIL ROADBUILDING, OR COMPACTION BY EQUIPMENT. A BUT DEPTH VARIES DEPENDING ON THE SITE. DETE CORES AT SEVERAL LOCATIONS WITHIN EACH AREA VARIES ALONG A GRADIENT FROM HILLTOP TO TOE (DIVERSIONS, AND OTHER CONTROLS INTO PLACE BE	L BE DISTURBED BY EXCAVATION, FILLING, 4 TO 6-INCH STRIPPING DEPTH IS COMMON, RMINE DEPTH OF STRIPPING BY TAKING SOIL TO BE STRIPPED. TOPSOIL DEPTH GENERALLY OF THE SLOPE. PUT SEDIMENT BASINS, FORE STRIPPING.	ley»	MLEY-HORN AND REET, SUITE 200, 882-3583 WWW.K NC FIRM #F-010	
ISERVE	STOCKPILING	ID NATURAL DRAINAGEWAYS AVOIDING	J	24 KIN IS STR 919) 6	
	TRAFFIC ROUTES. ON LARGE SITES, RESPREADING TOPSOIL IS STOCKPILED IN SMALL PILES LOCATED N STOCKPILE AREAS USED SHALL BE STABILIZED WITH	IS EASIER AND MORE ECONOMICAL WHEN IEAR AREAS WHERE THEY WILL BE USED. ALL I SILT FENCE AND SEEDED.	Kir	© 20 300 MORR PHONE: (
DING IG THE	SEDIMENT BARRIERS - USE SEDIMENT FENCES OR C RETAIN SEDIMENT.	THER BARRIERS WHERE NECESSARY TO		ן א	
_S WHICH	GRASS-LINED CH	ANNELS (6.30)	NINITH	GAROL MAR	
TRACTOR TO AVOID CLEANING	CONSTRUCTION SPECIFICATIONS REMOVE ALL TREES, BRUSH, STUMPS, AND OTH FOUNDATION AREA AND DISPOSE OF PROPERLY 	ER OBJECTIONABLE MATERIAL FROM THE		Stating w. 4	- - -
AINAGE Y REMOVE	2. EXCAVATE THE CHANNEL AND SHAPE IT TO NEA PLANS PLUS A 0.2-FT OVERCUT AROUND THE CH DURING SEEDBED PREPARATIONS AND SOD BUI	T LINES AND DIMENSIONS SHOWN ON THE IANNEL PERIMETER TO ALLOW FOR BULKING LDUP.	THE AND EL	INEE 10 000000000000000000000000000000000	
	3. REMOVE AND PROPERLY DISPOSE OF ALL EXCE THE CHANNEL FREELY.	ESS SOIL SO THAT SURFACE WATER MAY ENTER	ECT 56 24	DUD WTU	MUL
	 THE PROCEDURE USED TO ESTABLISH GRASS IN SEVERITY OF THE CONDITIONS AND SELECTION MULCH OR A TEMPORARY LINER SUFFICIENT TO THE ESTABLISHMENT PERIOD. 	N THE CHANNEL WILL DEPEND UPON THE OF SPECIES. PROTECT THE CHANNEL WITH WITHSTAND ANTICIPATED VELOCITIES DURING	HA PROJE 01131106 DATE 9/13/20	LE AS SI IGNED BY WN BY	CKED BY
NES AND	MAINTENANCE		⊻ 0,	SCA DES DRA	CHE
WITH RIPRAP. IENTLY DEEP . CHANNELS HAT THE	DURING THE ESTABLISHMENT PERIOD, CHECK GRAS AFTER GRASS IS ESTABLISHED, PERIODICALLY CHEC HEAVY RAINFALL EVENT. IMMEDIATELY MAKE REPAI CHECK THE CHANNEL OUTLET AND ALL ROAD CROSS OF PIPING OR SCOUR HOLES. REMOVE ALL SIGNIFIC	S-LINED CHANNELS AFTER EVERY RAINFALL. CK THE CHANNEL; CHECK IT AFTER EVERY RS. IT IS PARTICULARLY IMPORTANT TO SINGS FOR BANK STABILITY AND EVIDENCE CANT SEDIMENT ACCUMULATIONS TO	OL		
) CIFIED INIMAL	CONDITION AT ALL TIMES, SINCE IT IS THE PRIMARY	EROSION PROTECTION FOR THE CHANNEL.	NTR	S	
VERLAP THE THE BURY THE TO DAMAGE ET BY ADDING GED AREA.			SION CO	DETAIL	
GRAVEL OR)	
THE FILTER. DS. THE DING AT THE NESS IN ONE JSE			Ë		
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PROMPTLY.	T k	These plans have been electronically approved for construction by the Town of Wake Forest Public Works and Engineering Departments, This approval may not be altered once issued.			
PIPING, CENT TO THE DURING	Ē	<i>Nick</i> Note 10/28/2024 Public Works/Engineering	ES ⁻	RED F	
	T L G	These plans have been electronically approved for construction by the Town of Wake Forest Planning Department. This approval hav not be altered once issued. predy to approve approved by the second s			
	F	Planning			
	E T F r	Electronic Approval: This approval is being issued electronically. This approval is valid 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	WAF SAF		
	a e r a	accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any nodification of this approval once issued will invalidate this approval.		Ē.	WAKI
	C T T	City of Raleigh Development Approval:	SHEET R	NUMBER 5.01	



		BLOCK AND G	RAVEL INLET
		I. Use block and gravel inlet protection when inlet is at existing pavement locations.	
		2. Use block & gravel device or acceptable alternative over grate drain boloc	
		CONSTRUCTION SPECIFICATIONS	
MINIMUM 12 ¹ / ₂ GAUGE		I. Lay one block on each side of the structure on its side	
INTERMEDIATE WIRES		should be excavated at least 2 inches below the crest of the storm	
GRADE		drain. Place the bottom row of blocks against the edge of the storm drain for lateral support and to avoid washouts when overflow occurs. If needed, give lateral support to subsequent rows	
		by placing 2x4 wood studs through block openings.	
		2. Carefully fit hardware cloth or comparable wire mesh with 1/2-inch openings over all block openings to hold gravel in place.	
		3. Use clean gravel, fto $\frac{1}{2}$ -inch diameter, placed 2 inches below the top of the block on a 2:1 slope or flatter	
		and smooth it to an even grade. Use DOT #57 washed stone.	
		4. The structure shall be inspected after each rain and repairs made as needed.	
		5. Sediment shall be removed and the trap restored to its original	
		dimensions when the sediment has accumulated to ½the design depth of the trap. Removed sediment shall be deposited in a	TEMPORARY SE POOL
* FOR REPAIR OF SILT FENCE USE REINFORCED SILT FENCE	FAILURES OUTLET DETAIL	suitable area and in such a manner that it will not erode. 6. Structures shall be removed and the area stabilized	¥
		when the remaining drainage area has been properly stabilized.	' M/N. 2' MAX.
		7. No. 57 stone shall be paid for at the contract unit price per ton "Sediment Control Stone".	
			·! ▲
			SEDIMENT
	ATION		
	F LLINA PORTA IGHW V.C.		
	CARO CARO SANSF SH, N		
	STA STA F TF ION 0		
	1-2 4 DEP		
ON CONTROL STONE E.			
57 STONE FOR SEDIMENT			
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SHEET 1 OF 1 1633.01





These plans have been electronically approved for construction by the Town of Wake Forest Public Works and Engineering Departments. This approval may not be altered once issued. 10/28/2024

Public Works/Engineering

These plans have been electronically approved for construction by the Town of Wake Forest Planning Department. This approval may not be altered only issued. Latrick Rold 30/2024

Planning

CITY OF RALEIGH – PLANS AUTHORIZED FOR CONSTRUCTION Electronic Approval: This approval is being issued electronically. This approval is valid 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 of this approval once issued will invalidate this approval.

City of Raleigh Development Approval:

Raleigh Water Review Officer

Docusign Envelope ID: 9AA3E061-CCAF-4336-B6A6-4AD831D8B2B9



						285 280 275			REVISIONS
80	90		110		130	295 290		Photon Associates, INC.	0, DURHAM, NC 27701 W.KIMLEY-HORN.COM -0102 No.
80	90	100	110	120	130	285 280 275 140		E 2024 KIMLEY-HORN AN	2015 300 MORRIS STREET, SUITE 201 PHONE: (919) 682–3583 WW NC FIRM #F-
						295 290 285		KHA PROJECT 011311066 DATE 9/13/2024 Scale AS SHOWN	DESIGNED BY DJD DRAWN BY JTW CHECKED BY TDW CHECKED BY TDW
80	90	100	110	120	130	280 275 140 290 285		CROSS SECTIONS	
80	90 Thes by th Depa	100 ee plans have been ele ne Town of Wake Fore artments. This approv	110 ctronically approve st Public Works and al may not be altered	120 d for construction d Engineering ed once issued.	130 CITY OF RALEIG Electronic Appro This approval is Partice of the second	280 275 275 270 140 H – PLANS AUTHORIZED oval: This approval is beir valid upon the signature below The Circuit	FOR CONSTRUCTION ng issued electronically. of a City of Raleigh	VAKE FOREST PUBLIC 3 AFETY WAREHOUSE	WN OF WAKE FOREST
	Publ Thes by th may Plan	ic Works/Engineering the plans have been eleme to Town of Wake Fore not be altered once is preidy thruck Reudy 30/20 ning	ctronically approve st Planning Departr sued. 10/ 24	d for construction nent. This approval	Keview Officer plans. Any work accordance with electronic appro- modification of approval. City of Raleigh I Raleigh Water F	pelow. The City will retain authorized by this appro- h the plans kept on file wi oval may not be edited or this approval once issued Development Approval: Review Officer	n a copy of the approved oval must proceed in ith the City. This nce issued. Any I will invalidate this	SHEET NU R6.0	MBER D















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Raleigh Water Review Officer

	ROOM	FLC	OR	BA	BASE		LS		CEILING		
NO.	NAME	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	HEIGHT	REMARKS
100	CORRIDOR	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	2X2	FACT.	9'-0"	-
101	OFFICE	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	2X2	FACT.	9'-0"	
102	CLOSET	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	2X2	FACT.	9'-0"	
103	OFFICE	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	2X2	FACT.	9'-0"	
104	CLOSET	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	2X2	FACT.	9'-0"	
105	UNISEX TOILET ROOM	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	2X2	FACT.	9'-0"	
06	CUSTODIAL CLOSET	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	2X2	FACT.	9'-0"	
107	BREAK AREA	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	2X2	FACT.	9'-0"	
801	IT CLOSET	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	2X2	FACT.	9'-0"	
109	UNIFORM ROOM	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	GYP. BD	PAINT	16'-0"	
10	EQUIPMENT ROOM	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	GYP. BD	PAINT	16'-0"	
111	VEHICLE BAYS	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	GYP. BD	PAINT	16'-0"	
112	PROPERTY EVIDENCE RM	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	GYP. BD	PAINT	16'-0"	
113	RISER & COMPRESSOR RM	CONC.	SEALED	VINYL	FACT.	GYP. BD	PAINT	GYP. BD	PAINT	16'-0"	

01. FACT. INDICATED IN SCHEDULE STANDS FOR FACTORY FINISH AS SELECTED BY OWNER.

02. CONC. INDICATED IN SCHEDULE STANDS FOR CONCRETE.

03, SEALED INDICATED IN SCHEDULE STANDS FOR INDUSTRIAL GRADE SEAL COATING.

04. GYP. BD. INDICATED IN SCHEDULE STANDS FOR 5/8" GYPSUM WALL BOARD. TYPE X AT FIRE RATED APPLICATIONS.

05. PAINT INDICATED IN SCHEDULE STANDS FOR 1-COAT PRIMER AND 2-COATS FINISH PAINT.

06. 2X2 INDICATED IN SCHEDULE STANDS FOR 24" X 24" ACOUSTIC CEILING TILE AND SUSPENSION GRID.

	DOOR SCHEDULE													
DOOR FRAME														
NO.	TYP.	WIDTH	HEIGHT	THICK.	CONST.	MAT.	FINISH	MAT.	FINISH	DETAIL #	HDWRE	SIGNAGE	THRESHOLD	REMARKS
100	A	3'-0"	7'-0"	1-3/4"	STFT	ALUM	FACT	ALUM	PAINT	I	HW-5		ALUM.	
101	С	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	НМ	PAINT		HW-2	"OFFICE"		
102	С	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	НМ	PAINT	II	HW-3			
103	С	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	НМ	PAINT	II	HW-2	"OFFICE"		
104	С	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	НМ	PAINT	II	HW-3			
105	С	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	НМ	PAINT	II	HW-1	"UNISEX"		
106	С	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	НМ	PAINT		HW-1	"CUSTODIAL"		
107	С	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	НМ	PAINT	II	HW-4	"VEHICLE BAYS"		60-MIN RATED
108	С	3'-0"	7'-0"	1-3/4"	SC	WOOD	PAINT	НМ	PAINT	II	HW-3	"IT CLOSET"		
109	В	3'-0"	7'-0"	1-3/4"	НМ	НМ	PAINT	НМ	PAINT	II	HW-3	"UNIFORM ROOM"		
110	В	3'-0"	7'-0"	1-3/4"	НМ	НМ	PAINT	НМ	PAINT	II	HW-3	"EQUIPMENT ROOM"		
111A	A	3'-0"	7'-0"	1-3/4"	STFT	ALUM	FACT	ALUM	PAINT	I	HW-6		ALUM.	
111B	D	12'-0"	14'-0"	_	_	STEEL	PAINT	STEEL	GALV.		HW-7			
111C	D	12'-0"	14'-0"	-	_	STEEL	PAINT	STEEL	GALV.		HW-7			
111D	D	12'-0"	14'-0"	-	_	STEEL	PAINT	STEEL	GALV.		HW-7			
111E	D	12'-0"	14'-0"	-	_	STEEL	PAINT	STEEL	GALV.		HW-7			
111F	D	12'-0"	14'-0"	_	_	STEEL	PAINT	STEEL	GALV.		HW-7			
111G	A	3'-0"	7'-0"	1-3/4"	STFT	ALUM	FACT	ALUM	PAINT	1	HW-6		ALUM.	
112	В	3'-0"	7'-0"	1-3/4"	НМ	НМ	PAINT	НМ	PAINT		HW-3	"POLICE STORAGE"		
113	A	3'-0"	7'-0"	1-3/4"	STFT	ALUM	FACT	ALUM	PAINT	1	HW-6		ALUM.	
01. ALI 02. FA 03. SC 04. HW 05. AL 06. AL <u>HARDWA</u> HW-1 HW-2 HW-3 HW-4 HW-5 HW-6 HW-7	DOOR SCHEDULE NOTES: 01. ALL DOOR HARDWARE SHALL BE ADA COMPLIANT W/ LEVER TYPE HANDLES. 02. FACT. INDICATED IN SCHEDULE STANDS FOR FACTORY. 03. SC INDICATED IN SCHEDULE STANDS FOR SOLID CORE. 04. HM INDICATED IN SCHEDULE STANDS FOR HOLLOW METAL. 05. ALL RATED DOORS TO HAVE SMOKE SEALS PER CODE, IF APPLICABLE. 06. ALL DOOR LOCKS TO ACCEPT ICC CORES BY "BEST". HARDWARE SCHEDULE: HW-1 3 HINGES, PRIVACY LATCH, SILENCERS, WALL BUMPER HW-2 3 HINGES, OFFICE LATCH, SILENCERS, WALL BUMPER HW-4 3 HINGES, POSSAGE LATCH, SILENCERS, WALL BUMPER HW-4 3 HINGES, PUSH/PULL, DEADBOLT, CLOSER, SMOKE SEALS, WALL BUMPER, 60 MINUTE RATED HW-5 3 HINGES, EXT. PASSAGE LATCH, DEADBOLT, CLOSER, WEATHERSTRIP, THRESHOLD HW-6 3 HINGES, AND HARDWARE FOR MANUAL OPERATION													
<u> </u>	DOOR TYPES: TEMPERED GLASS A ALUMINUM STOREFRONT B B C C C C C D OVERHEAD DOOR C D OVERHEAD DOOR C C C C C C C C C C C C C													











GLAZING CALCULATIONS:							
PRINCIPAL FRONT	TRANSPARENCY AREA = 437.	63 SF.	50% GLAZING A	AREA REQ'D	= 218.82 SF.	56.07% GLAZING (GLAZING ABOVE	AREA PROV'D = TRANSPARENCY
RIGHT SIDE	TRANSPARENCY AREA = 311.9	98 SF.	40% GLAZING A	AREA REQ'D	= 124.79 SF.	43.38% GLAZING (GLAZING ABOVE	AREA PROV'D = THE TRANSPARI
LEFT SIDE	TRANSPARENCY AREA = 311.9	98 SF	40% GLAZING A	AREA REQ'D	= 124.79 SF.	49% GLAZING AR (GLAZING ABOVE	EA PROV'D = 15 THE TRANSPARI
REAR	TRANSPARENCY AREA = 437 .	63 SF.	ANY % GLAZINO	G AREA REQ'	D.	43.42% GLAZING (GLAZING ABOVE	AREA PROV'D = THE TRANSPARI
FACADE INFORMATION:							
FINISHED FLOOR ELEVATION = $280.0'$ ONE STORY OVERALL BUILDING HEIGHT = $26'-0''$ UPPER PARAPET WALL = $26'-0''$ GABLE ROOF PEAK = $25'-9''$							
BUILDING DESIGN ELEMEN	ITS:						
THE VERTICAL ORIENTATION OF WINDOWS AT A 2:1 RATIO HAS BEEN MET WITH SOLDIER COURSE LINTELS OVER WINDOWS LOCATED IN THE BRICK LOCATED IN A TOWER ELEMENT WITH SCORED BLOCK DIFFERENT FROM THE REST OF THE BUILDING, ADJACENT TO STOREFRONT WINDOWS WITH A FEET DEEP CANOPY OFFERS SHELTER ACROSS THE TOWER ELEMENT TO THE PEDESTRIAN SIDEWALK. BESIDES THE DIFFERENTIATION OF MATERIA TWO LEVEL EIFS RELIEF THAT IS VISIBLE FROM THE FRONT, RIGHT SIDE, AND LEFT SIDE OF THE BUILDING.							
FACADE MATERIALS:							
PRINCIPAL FRONT NET F	ACADE AREA = 1,851.0 SF	FRONT FAC	CADE BRICK/CM CADE EIFS REQ	1U/STONE RE D = 15% MA	EQ'D = 50% MIN. AX.	FRONT FACADE E FRONT FACADE E	BRICK/CMU/STON EIFS PROV'D = 5
RIGHT SIDE NET FACADE	AREA = 1,459.82 SF	RIGHT FAC RIGHT FAC	ADE BRICK/CM ADE EIFS REQ'I	U/STONE RE D = 25% MA	Q'D = 25% MIN. X.	RIGHT FACADE B RIGHT FACADE E	RICK/CMU/STON IFS PROV'D = 0
LEFT SIDE NET FACADE ,	AREA = 1,665.73 SF	LEFT FACA LEFT FACA	DE BRICK/CMU DE EIFS REQ'D	/STONE REQ = 25% MAX	2'D = 25% MIN. K.	LEFT FACADE BR LEFT FACADE EIF	ICK/CMU/STONE S PROV'D = 51
REAR NET FACADE AREA	x = 1,584.0 SF	REAR FACA REAR FACA	ADE BRICK/CMU ADE EIFS REQ'E	J/STONE = .) = 25% MAX	ANY% X.	REAR FACADE BI REAR FACADE EI	RICK/CMU/STONE FS PROV'D = 0

SEE EXTERIOR FINISH IMAGES ON SHEET A-3C FOR ACCURATE COLOR REPRESENTATION.







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No.	Revision	Date
Н	For Permitting & Construction	07/19/2024
G	Design Development	07/15/2024
F	Planning Resubmittal	03/11/2024
E	Add Sprinkler Riser	01/31/2024
D	Planning Submittal	12/08/2023
C	Schematic Design	10/31/2023
В	Schematic Design	10/04/2023
A	Schematic Design	09/08/2023
File	Name:	Drawn By
Clier T₀ W P W 14	nt/ Project wn of Wake Forest /AKE FOREST UBLIC SAFETY /AREHOUSE 12 Forestville Rd., Wake Fo	pr es t, NC
She BU	IS	
Proj	iect No.	Scale

Revision





STANDING SEAM METAL ROOF FLAT PANEL, DOUBLE LOCK SEAMS COLOR: SANDSTONE



SENERGY FINE, ULTRA-WHITE EIFS PARAPET TRIM



LEE BRICK #450



OLDCASTLE APG ESCELON #4305 SINGLE SCORE SPLIT FACE CMU



CANYON STONE BUCKTOWN HERITAGE



8133 Holly Forest Road Wake Forest, North Carolina 27587 Phone: (919) 819—1536

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1	Permit Review Response	10/09/2024				
No.	Revision	Date				
Н	For Permitting & Construction	07/19/2024				
G	Design Development	07/15/2024				
F	Planning Resubmittal	03/11/2024				
Е	Add Sprinkler Riser	01/31/2024				
D	Planning Submittal	12/08/2023				
C	Schematic Design	10/31/2023				
В	Schematic Design	10/04/2023				
A	Schematic Design	09/08/2023				
No.	Issued	Date				
23026	A-3.dwg	STB				
File	Name:	Drawn By				
Client / Project						
Town of Wake Forest WAKE FOREST PUBLIC SAFETY WAREHOUSE						
Ŵ		reat NC				
W 14	AREHOUSE 12 Forestville Rd., Wake Fo	rest, NC				
W 14 She BU	AREHOUSE 12 Forestville Rd., Wake Fo et Title IILDING MATERIALS	rest, NC				

AS NOTED Drawing No. A-3c Project No. 23026 evision

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(A3) (A-4) 26'-0" A.F.F. TOP OF MASONRY BRICK TIES 16" O.C. VERT. & HORIZ .-(TYP.) SCORED SPLIT FACE CMU VENEER AT PARAPET WALLS.----16'-0" A.F.F. TRUSS BEARING VAPOR BARRIER & EXTERIOR SHEATHING ON 6" WOOD STUDS PER STRUCTURAL DRAWINGS W/ R-20 BATT INSULATION (TYP.) (A4)A-4 INSTALL THRU WALL BOLTS PER MANUFACTURER'S INSTRUCTIONS & -SOLID BLOCKING. PRE-FINISHED ALUMINUM CANOPY W/ OVERHEAD SUPPORTS. 10'-0" A.F.F. WINDOW HEAD BOTTOM OF CANOPY CONT. THRU-WALL FLASHING W/ OPEN HEAD WEEPS @ 32". O.C. (TYP.) STOREFRONT SYSTEM W/ 1" INSULATED -CLEAR GLASS. SILL FLASHING W/ HEMMED EDGE, MATCH COLOR OF STOREFRONT (TYP.)-CMU SILL BLOCK BELOW WINDOWS .-2'-8" WINDOW SILL CONT. SUBSILL FLASHING W/ OPEN HEAD WEEPS @ 32" O.C. (TYP.)-CONT. THRU-WALL FLASHING W/ OPEN HEAD WEEPS @ 32" O.C. (TYP.) -R-15 RIGID PERIMETER -INSULATION BOARD, TYP. 0'-0" FINISHED FLOOR SEE STRUCTURAL DRAWINGS FOR FOUNDATION DESIGN. 4" DRAIN TILE IN STONE BED. SLOPE TO DAYLIGHT. — D1 EAST PARAPET WALL SECTION A-4 / SCALE: 3/4"=1'-0"





STANDING SEAM METAL ROOFING OVER			STANDING SEAM ME
SHEATHING PER STRUCTURAL DRAWINGS.			SHEATHING PER ST
R-42 BATT ATTIC INSULATION BELOW			R—42 BATT ATTIC ROOF DECK.
PRE-FINISHED ALUM DRIP EDGE. PAINTED 1X PVC FASCIA.			PRE–FINISHED ALU PAINTED 1X PVC F
16'-0" A.F.F. TRUSS BEARING	2'-0"		16'-0" A.F.F. TRUSS BEARING
6" SEAMLESS ALUM GUTTERS &			6" SEAMLESS ALUN DOWNSPOUTS.
VENTED VINYL SOFFIT.			VENTED VINYL SOF
PAINTED 1X PVC TRIM.			PAINTED 1X PVC T
BRICK TIES 16" O.C. VERT. & HORIZ.	/		BRICK TIES 16" O.
BRICK VENEER.			(TYP.) BRICK VENEER
VAPOR BARRIER & EXTERIOR SHEATHING ON 6" WOOD STUDS PER STRUCTURAL			VAPOR BARRIER & ON 6" WOOD STUE DRAWINGS W/ R-2 (TYP.)
10'-0" WINDOW HEAD			10'-0" WINDOW HEAD
CONT. THRU–WALL FLASHING W/ OPEN HEAD WEEPS @ 32" O.C. (TYP.)			CONT. THRU—WALL W/ OPEN HEAD WE O.C. (TYP.)
STOREFRONT SYSTEM W/ 1" INSULATED			STOREFRONT SYSTE CLEAR GLASS. CONT. SILL FLASHI
FORMED HEMMED EDGE. CONT. SUBSILL FLASHING W/ OPEN			FORMED HEMMED E CONT. SUBSILL FLA HEAD WEEPS @ 32
2'-0" WINDOW SILL			STONE FACING ACC 2'-0" WINDOW SILL
CONT. THRU-WALL FLASHING W/ OPEN HEAD WEEPS @ 32" O.C. (TYP.)			CONT. THRU-WALL HEAD WEEPS @ 32
R-15 RIGID PERIMETER			R-15 RIGID PERIMI INSULATION BOARD,
FINISHED FLOOR			U – U FINISHED FLOOR SEE STRUCTURAL F
FOUNDATION DESIGN. 4" DRAIN TILE IN STONE BED.			FOUNDATION DESIG
SLUPE IU DAYLIGHI.			SLOPE TO DAYLIGH









STB

1) GENERAL STRUCTURAL NOTES:		3.6) FOOTINGS SUPPORTING FOUNDATION WALLS SHALL HAVE A MINIMUM PROJECTION OF 2" AT ALL SIDES.
		MAXIMUM FOOTING PROJECTION AT FOUNDATION WALLS SHALL NOT EXCEED THE THICKNESS OF THE FOOTING.
1.1) THE DESIGN PROFESSIONAL WHOSE SEAL APPEARS ON THESE DRAWINGS	S IS THE STRUCTURAL ENGINEER OF	3.7) WOOD SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WITH 1/2" DIA ANCHOR BOLTS WITH MINIMUM
RECORD (SER) FOR THIS PROJECT. THE SER BEARS RESPONSIBILITY FOR	R THE STRUCTURAL COMPONENTS	7" EMBEDMENT INTO CONCRETE OR SOLID-GROUTED MASONRY SPACED A MAXIMUM OF 6'-0" O.C. UNLESS
INCLUDING RAFTERS, HIPS, VALLEYS, RIDGES, CEILING AND FLOOR JOIST	S, LOAD-BEARING WALLS, BEAMS AND	NOTED OTHERWISE. PROVIDE A MINIMUM OF TWO ANCHOR BOLTS PER PLATE SECTION AND ONE ANCHOR
HEADERS, COLUMNS AND POSTS, CANTILEVERS, PIERS, GIRDERS, AND FO	OOTINGS.	BULT WITHIN 12 OF EACH CURNER UNLESS NUTED UTHERWISE. ANCHOR BULTS SHALL BE LUCATED WITHIN
1.2) THE SER DOES NOT CERTIFY THE DIMENSIONAL ACCURACY OF THE ARC	HITECTURAL DRAWINGS, INCLUDING	THE MIDDLE THIRD OF THE SILL PLATE.
THE ROOF. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW	THE ARCHITECTURAL AND	5.6) FOUNDATION WALLS MAT DE STEPPED AND FRAMED WITH CRIPPLE WALLS WHERE GRADE PERMITS (SEE NOTE 7.14 FOR WALL FRAMING REQUIREMENTS)
STRUCTURAL DRAWINGS PRIOR TO CONSTRUCTION AND NOTIFY THE SER	OF ANY DISCREPANCIES AND/OR	7.14 FOR WALL FRAMING REQUIREMENTS).
INCOMPLETE INFORMATION.		SITE CONDITIONS
1.3) THE SER IS NOT RESPONSIBLE FOR I-JOIST AND/OR FLOOR AND ROOF	TRUSS DESIGN AND LAYOUT. FLOOR	3.10) THE SITE SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS. THE GRADE SHALL
AND RUOF IRUSSES ARE TO BE DESIGNED BY A PROFESSIONAL ENGINE	LICENSED IN THE STATE OF	FALL A MINIMUM OF 6" WITHIN THE FIRST TEN FEET.
TO CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REAL	TEW FINAL TRUSS DRAWINGS FRIOR	3.11) CRAWI SPACES SHALL BE GRADED LEVEL AND CLEAR OF ALL DEBRIS. CRAWI SPACE GRADE SHALL BE LINED
1 4) THE SER IS NOT RESPONSIBLE FOR VERIFICATION OF ASSUMED FIELD CO	ONDITIONS IT IS THE RESPONSIBILITY	WITH MINIMUM 6 MIL APPROVED VAPOR BARRIER WITH ALL JOINTS LAPPED MINIMUM 12" AND SEALED.
OF THE CONTRACTOR TO VERIFY ASSUMED FIELD CONDITIONS ARE MET	OR EXCEEDED PRIOR TO	PROVIDE A MINIMUM ACCESS OPENING MEASURING 18" BY 24".
CONSTRUCTION AND NOTIFY THE SER OF ANY DISCREPANCIES.		
1.5) THE STRUCTURE IS ONLY STABLE IN ITS COMPLETED FORM. THE CONTR	ACTOR SHOULD PROVIDE ALL	4) CONCRETE NOTES
REQUIRED TEMPORARY BRACING DURING CONSTRUCTION TO STABILIZE T	HE STRUCTURE.	
1.6) THE SER DOES NOT BEAR RESPONSIBILITY FOR THE CONSTRUCTION MEA	ANS, METHODS, TECHNIQUES,	4.5) INTERIOR SLABS ON GRADE EXCEPT FOR GARAGE FLOORS AND FOOTINGS SHALL HAVE A MINIMUM
SEQUENCES, PROCEDURES, NOR SAFETY PRECAUTIONS IN CONNECTION	MITH THE CONSTRUCTION OF THIS	COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS. FOUNDATION WALLS, GARAGE SLABS ON GRADE, AND
STRUCTURE. THE SER WILL NOT BE HELD RESPONSIBLE FOR THE CONTR	(ACTOR'S FAILURE TO CARRY OUT	EXTERIOR SLABS ON GRADE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.		ALL CONCRETE SHALL BE CAST IN PLACE.
I.7) ANT ERRORS DUE TO FAILURE TO FULLOW THE ABOVE PROCEDURES SH	ALL NUT BE THE RESPONSIBILITY OF	4.6) CONCRETE SHALL BE PROPORTIONED, MIXED, AND PLACED IN ACCORDANCE WITH THE LATEST EDITIONS OF
ARE PROMPTLY DISTRIBUTED TO THE SUBCONTRACTORS	ANT REVISIONS ISSUED DT THE SER	ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND AC1 301 "SPECIFICATIONS FOR
1.8) THE SER DOES NOT PERFORM FENESTRATION OR VENTING CALCULATION	S OR ANY OTHER CALCULATIONS	STRUCTURAL CONCRETE FOR BUILDINGS".
THAT ARE NOT DIRECTLY RELATED TO THE STRUCTURAL DESIGN. IT IS	THE RESPONSIBILITY OF THE	4.7) ALL CONCRETE EXPOSED TO FREEZE/THAW CYCLES SHALL BE AIR ENTRAINED WITH TOTAL AIR VOLUME NOT
ARCHITECTURAL DESIGNER AND/OR CONTRACTOR TO PROVIDE ANY REQ	UIRED CALCULATIONS OUTSIDE OF THE	LESS THAN 5% OR MORE THAN 7%.
SCOPE OF THE STRUCTURAL DESIGN.		4.8) CUNCRETE SLABS ON GRADE SHALL BE MINIMUM 4" THICK AND REINFORCED WITH POLYPROPYLENE FIBERS
		UK 6X6 WELDED WIRE FABRIC (WWF). POLYPROPYLENE FIBERS SHALL BE APPLIED AT A MINIMUM RATE OF
2) DESIGN SPECIFICATIONS:		I.D LED PER CUBIC TARD. WWF SHALL BE PLACED AT THE MID-DEPTH OF THE SLAB.
		4.9) CUNURETE SLABS ON GRADE SHALL BE PLACED ON MINIMUM 4 THICK GRANULAR FILL COMPACIED TO MINIMUM 65% OF THE MAYIMUM DRY DENISITY INTEDIOD SLADS ADE TO DE DLACED ON A MINIMUM 6 MIL
2.1) BUILDING CODES:		VAPOR BARRIER PLACED ON TOP OF THE GRANIII AR FILL
– 2018 NORTH CAROLINA BUILDING CODE (NCBC)		4.10) $\frac{3}{7}$ to 1" deep control joints (saw-cut or todied) are to be placed in slaps on crade within 4
- ASCE/SEI 7-10 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER	STRUCTURES"	TO 12 HOURS OF CONCRETE FINISHING CONTROL JOINTS ARE TO BE SPACED 8'-0" TO 12'-0" O C
2.2) DESIGN LIVE LOADS:		4 11) ALL CAST-IN-PLACE CONCRETE WALLS SHALL CONFORM TO SECTION 1807 OF THE 2018 NCBC AND /OR ACL
– ROOF	20 PSF	318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AS MODIFIED IN SECTION 1905 OF THE
- UNINHABITABLE ATTICS WITHOUT STORAGE	10 PSF	2018 NCBC.
- UNINHABITABLE ATTICS WITH LIMITED STORAGE	20 PSF	
- HABITABLE ATTICS AND ATTICS SERVED WITH FIXED STAIRS	30 PSF	5) MASONRY NOTES
- CLASSROUMS		
- OFFICES $- ASSEMBLY AREAS$	100 PSF	5.1) CONCRETE MASONRY SHALL CONFORM TO ASTM C90 ALL BRICK SHALL CONFORM TO ASTM C62 ALL
– LOBBIES AND FIRST FLOOR CORRIDORS	100 PSF	MASONRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.
- PUBLIC DECKS AND BALCONIES	100 PSF	5.2) ALL MORTAR SHALL BE TYPE "S". GROUT AND MORTAR SHALL CONFORM TO ASTM C270 AND SHALL HAVE A
- PUBLIC STAIRS, EXITS, AND FIRE ESCAPES	100 PSF	MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI AT 28 DAYS.
2.3) DESIGN DEAD LOADS:		5.3) ALL MASONRY WALLS SHALL CONFORM TO SECTION 1807 OF THE 2018 NCBC, NCMA TR68-A "CONSTRUCTION
- ROOF TRUSSES	20 PSF (10 PSF TC, 10 PSF BC)	USING CONCRETE MASONRY", AND/OR ACE 530/ASCE 5/TMS 402 "BUILDING CODE REQUIREMENTS FOR
– SOLID SAWN RAFTERS AND JOISTS	10 PSF	MASONRY STRUCTURES".
- I-JOISTS	12 PSF	5.4) THE UNSUPPORTED HEIGHT OF UNGROUTED HOLLOW MASONRY PIERS SHALL NOT EXCEED FOUR TIMES THEIR
- FLOOR IRUSSES	15 PSF (10 PSF IC, 5 PSF BC)	LEAST DIMENSION. THE UNSUPPORTED HEIGHT OF SOLID OR SOLID-GROUTED MASONRY PIERS SHALL NOT
- WUUD FRAMED WALLS RRICK MASONRY AND NATURAL STONE VENEER	10 PSF 40 PSF	EXCEED TEN TIMES THEIR LEAST DIMENSION.
- CERAMIC THE ELOORING	40 FSF 10 PSF	5.5) EACH CRAWL SPACE PIER SHALL BEAR WITHIN THE MIDDLE THIRD OF TIS RESPECTIVE FOOTING AND EACH
- NATURAL STONE TILE FLOORING	32 PSF	GIRDER SHALL BEAR WITHIN THE MIDDLE THIRD OF THE PIERS. PILASTERS SHALL BE BONDED TO THE
– NORMAL WEIGHT CONCRETE	145 PCF	5.6) THE TOP COURSE OF MASONRY SHALL BE GROUTED SOLID ALL CELLS CONTAINING REINFORCING STEEL OR
2.4) DESIGN SNOW LOADS:		EMBEDDED ITEMS SHALL BE GROUTED SOLID.
- GROUND SNOW LOAD	20 PSF	5.7) HORIZONTAL WALL JOINT REINFORCEMENT SHALL BE STANDARD 9 GAUGE GALVANIZED LADDER OR TRUSS
2.5) DESIGN LATERAL LOADS AND CRITERIA:		TYPE SPACED AT 16" O.C. MAXIMUM, UNLESS NOTED OTHERWISE ON THE DRAWINGS, AND SHALL CONFORM
- ULIIMAIL WIND SPEED	115 MPH	TO ASTM A951. LAP HORIZONTAL REINFORCEMENT MINIMUM 6" FOR CONTINUOUS WALL APPLICATIONS.
- WIND EXPOSURE CATEGORY	B	
- SEISMIC DESIGN CATEGORT - SEISMIC SITE CLASS	D	6) REINFORCING STEEL NOTES:
2.6) DESIGN SOIL LOADS:		
- SOIL BEARING CAPACITY	2000 PSF (MINIMUM, ASSUMED)	6.1) WELDED WIRE FABRIC SHALL CONFORM TO ASTM 185. CONCRETE REINFORCING STEEL SHALL CONFORM TO
– LATERAL SOIL PRESSURE	45 PCF (MAXIMUM, ASSUMED)	ASTM 615, GRADE 60. REINFORCING STEEL WITHIN FOOTINGS SHALL MAINTAIN MINIMUM 3" CONCRETE COVER
2.7) DESIGN DEFLECTION LIMITS:	· · · /	AND REINFORCING STEEL WITHIN SLABS SHALL MAINTAIN MINIMUM 1 🖥 CONCRETE COVER. CONCRETE COVFR
LIVE LOAD	TOTAL LOAD	FOR #5 AND SMALLER REINFORCING BARS WITHIN CONCRETE WALLS SHALL BE MINIMUM 1 1/2" AND CONCRETE
– ROOF TRUSSES L/360	L/240	COVER FOR #6 AND LARGER REINFORCING BARS WITHIN CONCRETE WALLS SHALL BE MINIMUM 2".
– SOLID SAWN RAFTERS AND CEILING JOISTS L/240	L/180	6.2) LAP REINFORCING STEEL, AS REQUIRED, A MINIMUM OF 48 TIMES THE BAR DIAMETER (18" FOR #3 BARS, 24"
– I–JOISTS AND FLOOR TRUSSES L/480	L/240	FOR #4 BARS, 30" FOR #5 BARS, 36" FOR #6 BARS, ETC.).
– SOLID SAWN FLOOR JOISTS L/360	L/240	
– BEAMS AND HEADERS L/360	L/240	7) WOOD FRAMING NOTES:
- FRAMING SUPPORTING CERAMIC TILE	L/360	$\frac{1}{1} \frac{1}{1000} \frac$
- FRAMING SUPPORTING NATURAL STONE TILE	$L/720$ ($\frac{7}{32}$ MAX)	
- LINTELS AND FRAMING SUPPORTING BRICK OR MASONRY	$L/600 \left(\frac{9}{32}\right)^{\circ} MAX$	#2 WITH THE FOLLOWING MINIMUM DESIGN VALUES:
		- SPF #2: Fb=875 PSI. Fv=1.35 PSI. F=1.400 000 PSI
<u>3) fouting and foundation notes:</u>		- SYP #2: Fb=750 PSI, Fv=175 PSI, E=1,400,000 PSI
		7.2) ENGINEERED LUMBER BEAMS SHALL HAVE THE FOLLOWING MINIMUM DESIGN VALUES:
3.1) FOUNDATIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER	18 OF THE 2018 NCBC.	– LAMINATED STRAND LUMBER (LSL): Fb=2,325 PSI, Fv=310 PSI, E=1,550,000 PSI
3.2) VERIFICATION OF THE ASSUMED SOIL BEARING CAPACITY IS THE RESPON	VSIBILITY OF THE CONTRACTOR.	- LAMINATED VENEER LUMBER (LVL): Fb=2,600 PSI, Fv=285 PSI, E=2,000,000 PSI
CUNCRETE FOUTINGS SHALL NOT BE PLACED UNTIL THE SOIL BEARING	JAPACITY HAS BEEN VERTIED BY A	- PARALLEL STRAND LUMBER (PSL): Fb=2,900 PSI, Fv=290 PSI, E=2,000,000 PSI
CAPACITY NOT RE MET OR IF ANY OTHER ADVERSE SON CONDITION IS	FNCOUNTERED	7.3) ENGINEERED LUMBER COLUMNS SHALL HAVE THE FOLLOWING MINIMUM DESIGN VALUES:
3.3) THE BOTTOM OF ALL FOOTINGS SHALL EXTEND A MINIMUM OF 12" RELO	JW GRADE OR BELOW THE FROST LINE	- LAMINATED STRAND LUMBER (LSL): Fb=1,700 PSI, Fc=710 PSI, E=1,300,000 PSI
FOR THE CONSTRUCTION LOCATION. WHICHEVER IS GREATER.	LANDE COURSE HIE HIVOT LINE	- LAMINA IED VENEER LUMBER (LVL): Fb=2,600 PSI, Fc=750 PSI, E=2,000,000 PSI
3.4) ANY COMPACTED FILL SHALL BE PLACED UNDER THE DIRECTION OF A (QUALIFIED GEOTECHNICAL ENGINEER.	- PARALLEL STRAND LUMBER (PSL): $fb=2,400$ PSI, $fc=545$ PSI, $E=1,800,000$ PSI
THE RESULTING SOIL SHALL BE COMPACTED TO A MINIMUM OF 95% OF	THE MAXIMUM DRY DENSITY.	7.4) WUUD IN CUNTACT WITH THE GROUND, CONCRETE, OR MASONRY SHALL BE PRESSURE TREATED IN
3.5) FOOTINGS SHALL BE FREE OF VEGETATION, TOPSOIL, AND FOREIGN MAT	ERIAL. NO CONCRETE SHALL BE	ACCORDANCE WITH AWPA STANDARD C-IS. ALL UTHER MUISTURE EXPUSED LUMBER SHALL BE IREATED IN ACCORDANCE WITH AWPA STANDARD C-2 OR SHALL RE A NATURALLY DURARTE DECAY RESISTANT WOOD AS
PLACED AGAINST ANY SUBGRADE CONTAINING WATER, ICE, FROST, OR L	_OOSE MATERIAL.	DEFINED IN SECTION 202 OF THE 2018 NCBC.
		7.5) NAILS SHALL BE COMMON WIRE NAILS LINLESS NOTED OTHERWISE AND SHALL CONFORM TO ASTM F1667-05

RS FOR	
THAN	AF
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NOTE

(4) (5) (6)	(2) (3) (3)
BEARING WALLS SHALL BE BASED	ON THE FOLLOWING
2x4 @ 16" O.C. OF 2x4 @ 12" O.C. OF	R 2x6 @ 24" O.C. R 2x6 @ 16" O.C.
2x4 @ 12" O.C. OF 2x6 @ 12" O.C. 2D WITH 76" APA RATED OSB EXPO 12" O.C. IN PANEL FIELD UNLESS A RATED OSB EXPOSURE 1 ATTACH ND 12" O.C. IN PANEL FIELD UNLE AT MATCHES OR EXCEEDS THE FR PA RATED TONGUE AND GROOVE OF LONG PANEL EDGES AND 12" O.C. A SPAN RATING THAT MATCHES OF	R 2x6 @ 16" O.C. SURE 1 ATTACHED WITH 8d NOTED OTHERWISE. HED TO ROOF FRAMING WITH SSS NOTED OTHERWISE. AMING SPACING. DSB EXPOSURE 1 ATTACHED TO IN PANEL FIELD UNLESS DR EXCEEDS THE FRAMING
TO THE BAND AT THE BOTTOM AN 2) H2.5A HURRICANE TIES, OR (1) FOR MASONRY OR CONCRETE FOU ABU POST BASE FOR THE SPECIFIE	ND BEAM AT THE TOP WITH (1) SECTION OF CS16 COIL INDATIONS, SECURE POSTS AT ED POST SIZE.
OLLOWING SPECIFICATIONS: ASTM A992 ASTM A36 ASTM A36 ASTM A36 ASTM A500, GRADE B ASTM A53, GRADE B, TYPE E BOTTOM FLANGE TO EACH SUPPO	OR S RT AS FOLLOWS UNLESS
HAMETER x 4" LONG LAG SCREWS HAMETER x 4" LONG SST TITEN HD HAMETER x 4" LONG SST TITEN HD HAMETER BOLTS OR $\frac{3}{16}$ " CONTINUOU OF STEEL BEAMS w/ (2) ROWS OF ERWISE.	0 (OR EQUAL) SCREW ANCHORS 0 (OR EQUAL) SCREW ANCHORS IS FILLET WELD 12 DIAMETER CARRIAGE BOLTS 01 O.C. STAGGERED

9) SUPPORT OF MASONRY OR NATURAL STONE VENEER:

9.1) VENEER ABOVE OPENINGS SHALL BE SUPPORTED BY STEEL ANGLES AS FOLLOWS UNLESS NOTED OTHERWISE:

R SPAN:	SIZE OF STEEL ANGLE:	
) 3'-0"	L3x3x ¹ / ₄	
)" UP TO 6'-0"	$L5 \times 3\frac{1}{2} \times \frac{5}{16}$ (LONG LEG VERTICAL)	
)" UP TO 8'-0"	L6x4x ⁵ ₁₆ (LONG LEG VERTICAL)	

- 9.2) VENEER ABOVE OPENINGS WITH A CLEAR SPAN EXCEEDING 8'-0" SHALL BE SUPPORTED BY AN L6x4x $\frac{5}{16}$ STEEL ANGLE FASTENED TO THE HEADER WITH (2) ROWS OF $\frac{1}{2}$ " DIAMETER x 3" LONG LAG SCREWS @ 16" O.C. UNLESS NOTED OTHERWISE.
- 9.3) STEEL ANGLES SHALL BE EMBEDDED MINIMUM 4" INTO THE VENEER AT EACH SIDE OF THE OPENING. 9.4) VENEER ABOVE ROOF LINES SHALL BE SUPPORTED BY AN $16x4x_{fb}^{5}$ STEEL ANGLE FASTENED TO (3) 2x10 BLOCKING w/ (2) ROWS OF $\frac{1}{2}$ " DIAMETER x 4" LONG LAG SCREWS @ 16" O.C. UNLESS NOTED OTHERWISE.
- BLOCKING TO BE FASTENED TO WALL STUDS AT EACH END WITH (4) 10d TOE NAILS PER PLY. FOR ROOF SLOPES EXCEEDING 7:12, WELD $3^{"}x_{4}^{"}$ STEEL PLATE STOPS @ 24" O.C. TO STEEL ANGLE.

- 7.6) BOLTS SHALL CONFORM TO ASTM A307 UNLESS NOTED OTHERWISE. INSTALL STANDARD STEEL WASHEF THE NUT AND BOLT HEAD WHEN BOLTING WOOD MEMBERS. HOLES FOR BOLTS SHALL BE $\frac{1}{16}$ " LARGER T THE BOLT DIAMETER UNLESS NOTED OTHERWISE. 7.7) LAG SCREWS SHALL CONFORM TO ANSI/ASME B18.2.1. INSTALL STANDARD STEEL WASHERS FOR THE S
 - HEAD. PILOT HOLES SHALL BE USED FOR LAG SCREW INSTALLATION AND SHALL BE BORED ACCORDING NDS SPECIFICATIONS. 7.8) INDIVIDUAL STUDS BUILT UP TO FORM A COLUMN SHALL BE FASTENED WITH (2) ROWS OF 10d NAILS @
 - O.C. STAGGERED. BLOCKING MATCHING OR EXCEEDING THE WIDTH OF THE STUD COLUMN SHALL BE INS AT ALL FLOOR LEVELS TO ENSURE PROPER LOAD TRANSFER THROUGH THE STRUCTURE.
 - 7.9) MULTI-PLY SOLID SAWN BEAMS AND HEADERS SHALL BE FASTENED WITH (2) ROWS OF 10d NAILS @ 1 O.C. STAGGERED FOR 2x8 AND SMALLER OR (3) ROWS OF 10d NAILS @ 16" O.C. STAGGERED FOR 2x10 LARGER. APPLY NAILING FROM BOTH FACES FOR (3) OR MORE PLIES.
 - 7.10) MULTI-PLY ENGINEERED LUMBER BEAMS AND HEADERS SHALL BE FASTENED PER THE MANUFACTURER SPECIFICATIONS UNLESS NOTED OTHERWISE.
 - 7.11) BEAMS PERPENDICULAR TO THE SUPPORTING WALL SHALL BEAR THE FULL WIDTH OF THE WALL UNLESS NOTED OTHERWISE AND SHALL BE SUPPORTED BY A COLUMN OF BUILT UP STUDS THAT MATCHES OR
 - EXCEEDS THE WIDTH OF THE BEAM (NOT LESS THAN TWO STUDS). 7.12) BEAMS PARALLEL TO THE SUPPORTING WALL SHALL BEAR THE WIDTH OF THE SPECIFIED STUD COLUMN THE END OF THE WALL (BEARING SHALL NOT BE LESS THAN 3" TO BEAR OVER TWO STUDS UNLESS N OTHERWISE).
 - 7.13) HEADERS SHALL BE SUPPORTED BY JACK STUDS AND KING STUDS BASED ON THE FOLLOWING CONDITIONS UNLESS NOTED OTHERWISE:

CIEAR SDANI		# OF KING STUDS (FYTERIOR).	# OF KINIC STUDS (INITERIOR).
$\begin{array}{c} \text{LIP TO 3'-0''} \end{array}$	(1)	# OF KING STODS (LATERION). (1)	# OF KING STODS (INTERIOR). (1)
>3'-0" TO 6'-0"	(2)	(1) (2)	(1)
>6'-0" TO 9'-0"	(2)	(3)	(2)
>9'-0" TO 12'-0"	(3)	(4)	(2)
>12'-0" TO 15'-0"	(3)	(5)	(3)
>15'-0" TO 18'-0"	(4)	(6)	(3)

7.14) STUD SPACING FOR EXTERIOR AND INTERIOR CONDITIONS UNLESS NOTED OTHERWISE: - SUPPORTING UP TO ONE STORY ABOVE:

UP TO 1	10'-1 <u>1</u> " IN HEIGHT	2x4	0	16"	0.C.
>10'-1	12" UP TO 12'-1 12"	2x4	0	12"	0.C.
TING LIP -	TO TWO STORIES AROVE				

- SUPPORTING	UP	TO TWO STORIES ABOVE:	
UP	TO	10'-1 <u>1</u> " IN HEIGHT	2x4 @ 1

- > 10'-1 ½" UP TO 12'-1 ½"
- 7.15) ALL EXTERIOR WALLS TO BE FULLY SHEATHED NAILS @ 6" O.C. ALONG PANEL EDGES AND
- 7.16) ROOF SHEATHING SHALL BE MINIMUM $\frac{7}{16}$ APA MING WITH ISE.
- 8d NAILS @ 6" O.C. ALONG PANEL EDGES AN SHEATHING SHALL HAVE A SPAN RATING THAT
- TTACHED TO 7.17) FLOOR SHEATHING SHALL BE MINIMUM $\frac{23}{32}$ " AP FLOOR FRAMING WITH 8d NAILS @ 6" O.C. AL NLESS NOTED OTHERWISE. SHEATHING SHALL HAVE RAMING SPACING.
- 7.18) EXTERIOR WOOD POSTS SHALL BE SECURED TOP WITH (1) SIMPSON STRONG-TIE H6 HURRICANE TIE, (2) COIL POSTS AT STRAPPING WITH MINIMUM 9" END LENGTHS. THE BOTTOM WITH A SIMPSON STRONG-TIE

8) STEEL FRAMING NOTES:

8.1) STEEL FRAMING SHALL CONFORM TO THE FOLL

W SHAPES	ASTM A992
CHANNELS AND ANGLES	ASTM A36
PLATES AND BARS	ASTM A36

LUILO				NO HW	100	
HOLLOW	STRUCTURAL	SECTIONS	(HSS)	ASTM	A500,	GRA
DIDEC				MIZA	153	

- PIPES 8.2) STEEL BEAMS SHALL BE ANCHORED AT THE E VLESS NOTED OTHERWISE:
 - (2) $\frac{1}{2}$ " DIA - WOOD FRAMING
 - (2) $\frac{1}{2}$ " DIA
 - CONCRETE - MASONRY (GROUTED SOLID) (2) $\frac{1}{2}$ " DIA REW ANCHORS
 - (2) $\frac{1}{2}$ " DIA – STEEL COLUMN
- 8.3) ATTACH A 2x NAILER TO THE TOP FLANGE (
- @ 48" O.C. STAGGERED UNLESS NOTED OTHER 8.4) FLITCH BEAMS SHALL BE BOLTED WITH (2) ROWS OF $\frac{1}{2}$ " DIAMETER BOLTS @ 16" O.C. STAGGERED.

SHALL BE SPRUCE-PINE-FIR (SPF) #2 OR SOUTHERN YELLOW PINE (SYP)

- CLEAR UP TO >3'-0"

- >6'-0" UP TO 8'-0"

- (LVL): Fb=2,600 PSI, Fc=750 PSI, E=2,000,000 PSI
- (PSL): Fb=2,400 PSI, Fc=545 PSI, E=1,800,000 PSI
- IDARD C-15. ALL OTHER MOISTURE EXPOSED LUMBER SHALL BE TREATED IN IDARD C-2 OR SHALL BE A NATURALLY DURABLE DECAY RESISTANT WOOD AS
- 7.5) NAILS SHALL BE COMMON WIRE NAILS UNLESS NOTED OTHERWISE AND SHALL CONFORM TO ASTM F1667-05.

- 75 PSI, E=1,400,000 PSI
- HALL HAVE THE FOLLOWING MINIMUM DESIGN VALUES:
- R (LSL): Fb=2,325 PSI, Fv=310 PSI, E=1,550,000 PSI
- (LVL): Fb=2,600 PSI, Fv=285 PSI, E=2,000,000 PSI
- (PSL): Fb=2,900 PSI, Fv=290 PSI, E=2,000,000 PSI
- SHALL HAVE THE FOLLOWING MINIMUM DESIGN VALUES:
- R (LSL): Fb=1,700 PSI, Fc=710 PSI, E=1,300,000 PSI

- ROUND, CONCRETE, OR MASONRY SHALL BE PRESSURE TREATED IN
- THE 2018 NCBC.

		<u>Common ab</u>	<u>BREVIAT</u>	ONS	
F AI F AI CH AI CH AI CH AI CH AI CH CH CH CH CH CH CH CH CH CH	BOVE FINISHED FLOOF LTERNATE RCHITECTURAL EARING OTTOM AST-IN-PLACE LEAR ONCRETE MASONRY L ONCRETE MASONRY L ONCRETE ONNECTION ONTINUOUS OUBLE IAMETER OUBLE JOIST OUBLE JOIST OUBLE STUD POCKET ACH QUAL LOOR OUNDATION OUNDATION OOTING AUGE OT-DIPPED GALVANIZ EADER ANGER ORIZONTAL ISULATED CONCRETE IFORMATION OUNDS AMINATED STRAND LU	R INIT ED FORMS	MAX MFR MIN NTS O.C. PCF PLF PSF PSI PSL PT QJ REINF SER SF SJ SP SPEC(S) SPF SST SYP TJ TSP TJ TRPL TSP TYP UNO VERT W/ WWF	MAXIMUM MANUFACTURER MINIMUM NOT TO SCALE ON CENTER POUNDS PER CUBIN POUNDS PER LINEA POUNDS PER SQUA POUNDS PER SQUA POUNDS PER SQUA PARALLEL STRAND PRESSURE TREATEN QUADRUPLE JOIST REINFORCE STRUCTURAL ENGIN SQUARE FEET SINGLE JOIST SPACE (SPACING) SPECIFICATION(S) SPRUCE-PINE-FIR SIMPSON STRONG- SOUTHERN YELLOW TRIPLE JOIST TRIPLE TRIPLE STUD POCK TYPICAL UNLESS NOTED OTH VERTICAL WITH WELDED WIRE FABR	C FOOT R FOOT JARE FOOT JARE FOOT RE INCH LUMBER D HEER OF RECORD TIE PINE ET HERWISE
_ L/	AMINATED VENEER LU		XJ END	EXTRA JOIST	
■(#)	(#) DENOTES NU	MBER OF STUDS. (2) ST	UDS REQUIREE	IF NOT SPECIFIED	R OR FOUNDATION
•	OFFSET POINT LC BLOCKING AS SPI	AD FROM ABOVE TO BE ECIFIED	SUPPORTED	BY GIRDER, BEAM, H	IEADER, JOIST, OR
	BEARING WALL				
===	OFFSET BEARING	WALL ABOVE			
	BEAM, GIRDER, O	R HEADER AS SPECIFIED	l		
	JOIST, RAFTER, C	R TRUSS AS SPECIFIED			
	MECHANICAL FAS	TENER (REFER TO SCHE	DULE BELOW)		
	FULL HEIGHT MAS	SONRY OR NATURAL STO	NE VENEER		
	MASONRY OR NA	TURAL STONE VENEER W	/ATERTABLE B	ELOW	
	PLUMBING OR AP	PLIANCES ABOVE (FOR I	REFERENCE OF	NLY, REFER TO PME	PLANS)
	SOLID GROUTED N	MASONRY			
===	ROOF SUPPORT E	BELOW			
	FULL HEIGHT BRI	CK VENEER BELOW ROOF	-		
MEC	CHANICAL FA	<u>STENERS</u>	ALLOWA	BLE I-JOIST	SUBSTITUTIONS
AM SIZE:		FASTENER:	SPECIFIED	SERIES: EQUIVA	LENT SERIES:
-2x6 OR ((2) - 2x8	LUS26-2	TJI 110	BCI 45	00s 1.8
-PLY LSL	OR LVL OR LVL	HUS1.81/10 HHUS410	TJI 210	BCI 50 20PLUS	00s 1.8, BLI 40, LPI 5, NI-40x
-PLY LSL -PLY LSL	OR LVL OR LVL	HHUS5.50/10 HHUS7.25/10	TJI 230	BCI 60	00s 1.8, LPI 32PLUS
TES:			TJI 360	BCI 60 NI-60	s 2.0, BLI 60, LPI 36,
— М В. О	ECHANICAL FASTENEF ASED ON THIS SCHEE THERWISE.	RS TO BE INSTALLED DULE UNLESS NOTED	TJI 560	BCI 90 NI-80	s 2.0, BLI 80, LPI 56,
- A SI F/ C. - A W H	LL SPECIFIED MECHAN IMPSON STRONG-TIE ASTENERS WITH EQUIY APACITY MAY BE SUE LL MECHANICAL FAST ITH PRESSURE TREAT OT-DIPPED GALVANIZ ORROSIVE RESISTANT	VICAL FASTENERS ARE BRAND. OTHER BRAND VALENT OR BETTER BSTITUTED. ENERS IN CONTACT ED LUMBER SHALL BE ED OR EQUIVALENT COATING.	NOTES: - -	MAINTAIN SPECIFIEI AND SPACING. JOISTS NOT LISTED BE SUBSTITUTED P EXCEED THE PROPI	D JOIST DEPTH, DIRECTION, IN THIS SCHEDULE MAY ROVIDED THEY MEET OR ERTIES OF THOSE LISTED.

TOWN OF WAKE FOREST PUBLIC SAFETY WAREHOUSE MAYES STRUCTURAL 1412 FORESTVILLE RD., WAKE FOREST, NC NC FIRM LICENSE NO.: P-2854 1412 FORESTVILLE RD., WAKE FOREST, NC NC FIRM LICENSE NO.: P-2854 1412 FORESTVILLE RD., WAKE FOREST, NC S2CH@HAYESSTRUCTURAL.COM (919) 210-3480	Digitally by Zacha Hayes, PE Date: 202 16:20:13	signed ry H. 4.07.19 -04'00'
TOWN OF WAKE FOREST PUBLIC SAFETY WAREHOUSE 1412 FORESTVILLE RD., WAKE FOREST, NC	HAYES STRUCTURAL Consulting & Design, PLLC	NC FIRM LICENSE NO.: P-2854 1991 EDDIE HOWARD ROAD WILLOW SPRING, NC 27592 ZACH@HAYESSTRUCTURAL.COM (919) 210-3480
	TOWN OF WAKE FOREST PUBLIC SAFETY WAREHOUSE	1412 FORESTVILLE RD., WAKE FOREST, NC



	STEM WALL FOUNDATION NOTES		
1.	THE BOTTOM OF ALL FOOTINGS SHALL EXTEND A MINIMUM OF 12" BELOW GRADE OR BELOW THE		
 FROST LINE, WHICHEVER IS GREATER. ALL FOOTINGS TO BE EXCAVATED TO FIRM SOIL WITH A MINIMUM REQUIRED BEARING CAPACITY OF 2,000 PSF. CONSULT THE SER SHOULD THE SOIL 			
_	BEARING CAPACITY NOT BE MET OR IF ANY OTHER ADVERSE SOIL CONDITION IS ENCOUNTERED.		
SOLID WITH CONCRETE OR MORTAR USING THE LOW LIFT GROUTING METHOD.			
4. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.			
	LEGEND		
-	PLUMBING ABOVE (FOR REFERENCE ONLY,		

4" LEDGE FOR VENEER

4	ROHIBITED.
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Digitally signed by Zachary H. Hayes, PE Date: 2024.07.24 06:21:56 -04'00' TURAL HAYES STRUC Consulting & Desig 7 SNC ш S ETY WAREHOUS Ś ш FOR AKE \geq RD Ш ш OF SAFI TOWN (PUBLIC S/ FORE \sim 4 PROJECT NO.: 24-STBA-004 DATE: JULY 24, 2024 (REVISED) 11x17 PRINT SCALE: $\frac{3}{32}$ " = 1'-0" (UNO) 24x36 PRINT SCALE: $\frac{3}{16}$ " = 1'-0" (UNO) SHEET: STEM WALL FOUNDATION PLAN S-1







	FIR	ST FLOOR FRAMING NOTES:
TWEEN END OF HDR W/ KING STUDS	 SOLID SAW SYP #2. ALL LOAD SUPPORTE STUDS PER ALL EXTER APA RATE ATTACHED EDGES AN REFER TO ADDITIONA 	IN FRAMING LUMBER TO BE SPF #2 OR BEARING HEADERS TO BE (3) 2x10 D BY (2) JACK STUDS AND (2) KING R END UNO. NOR WALLS TO BE SHEATHED WITH $\frac{7}{16}$ D OSB EXPOSURE 1 WITH BLOCKED JOINTS WITH 8d NAILS @ 6" O.C. ALONG PANEL D IN PANEL FIELD. NOTES AND DETAIL SHEETS FOR L STRUCTURAL INFORMATION.
	SUPPORT STONE	<u>OF MASONRY OR NATURAL</u> VENEER ABOVE OPENINGS
	CLEAR SPAN:	SIZE OF STEEL ANGLE:
	UP TO 3'	3x3x 1
	>3' TO 6'	$5x3\frac{1}{2}x\frac{5}{16}$ (LONG LEG VERTICAL)
OF TRUSSES BY DR 2x6 RAFTERS AND IOISTS @ 24" O.C. MAX	>6' TO 8'	$6x4x\frac{5}{16}$ (LONG LEG VERTICAL)
		STEEL ANGLE NOTES:
(BTM AT 10'-0" A.F.F.)	1. VENEER ABO EXCEEDING 8 STEEL ANGLE OF 12" DIAME UNLESS NOTI 2. STEEL ANGLE THE VENEER	VE OPENINGS WITH A CLEAR SPAN $i'-0$ " SHALL BE SUPPORTED BY A $6 \times 4 \times \frac{5}{16}$ E FASTENED TO THE HEADER WITH (2) ROWS TER BY 4" LONG LAG SCREWS © 16" O.C. ED OTHERWISE. ES SHALL BE EMBEDDED MINIMUM 4" INTO AT EACH SIDE OF THE OPENING.
		<u>LEGEND</u>
	■(#)	STUD COLUMN AT POINT LOADS THAT REQUIRES SOLID BLOCKING TO FOUNDATION. (#) DENOTES NUMBER OF STUDS. (2) STUDS REQUIRED IF NOT SPECIFIED.
		BEARING WALL
9 16" O.C. (TYP HT AND LEFT		BEAM, GIRDER, OR HEADER AS SPECIFIED
SOUTH) WALLS)		JOIST, RAFTER, OR TRUSS AS SPECIFIED
	77777777	FULL-HEIGHT VENEER

WOOD ROOF TRUSSES BY ____OTHERS OR 2x6 RAFTERS AND CEILING JOISTS @ 24" O.C. MAX

(3) 2x10 (BTM AT 10'-0" A.F.F.)





ROOF FRAMING NOTES: SOLID SAWN FRAMING LUMBER TO BE SPF #2 OR SYP #2. ROOF SHEATHING TO BE ⁷/₁₆" MINIMUM APA RATED OSB EXPOSURE 1 ATTACHED TO ROOF FRAMING WITH 8d NAILS @ 6" O.C. ALONG PANEL EDGES AND 12" O.C. IN PANEL FIELD UNO. SHEATHING SHALL HAVE A SPAN RATING THAT MATCHES OR EXCEEDS THE FRAMING SPACING. TIE ROOF TRUSSES TO FRAMING AT EACH SUPPORT WITH (1) SST H10A HURRICANE TIE OR (2) SST H2.5A HURRICANE TIES UNO BY TRUSS DRAWINGS. VENEER ABOVE ROOF LINES SHALL BE SUPPORTED 4. VENEER ABOVE ROOF LINES SHALL BE SUPPORTED BY AN L6x4x $\frac{5}{16}$ LLV STEEL ANGLE FASTENED TO (3) 2x10 BLOCKING W/ (2) ROWS OF $\frac{1}{2}$ DIAMETER BY 4" LONG LAG SCREWS @ 16" O.C. BLOCKING TO BE FASTENED TO WALL STUDS AT EACH END WITH (4)

FASTENED TO WALL STODS AT EACH END WITH (4)
10d TOE NAILS PER PLY.
5. REFER TO PME PLANS FOR LOCATIONS AND WEIGHTS OF AIR HANDLER UNITS IN ATTIC.
6. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

<u>LEGEND</u> ------ BEAM, GIRDER, OR HEADER AS SPECIFIED RAFTER OR TRUSS AS SPECIFIED

====	ROOF SUPPORT BELOW
	FULL-HEIGHT VENEER BELOW ROOF

WOOD ROOF TRUSSES BY OTHERS OR 2x6 RAFTERS AND CEILING JOISTS @ 24" O.C. MAX

L6x4x 5 LLV STEEL ANGLE TO SUPPORT VENEER ABOVE BUMP-OUT ROOF. REFER TO ROOF FRAMING NOTE 4 FOR ADDITIONAL INFORMATION

WOOD ROOF TRUSSES BY OTHERS OR 2x6 RAFTERS AND CEILING JOISTS @ 24" O.C. MAX

L6x4x靠 LLV STEEL ANGLE TO SUPPORT VENEER ABOVE BUMP-OUT ROOF. REFER TO ROOF FRAMING NOTE 4 FOR ADDITIONAL INFORMATION

Digitally s by Zacha Hayes, PE Date: 202	L 24 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		
HAYES STRUCTURAL Consulting & Design, PLLC	NC FIRM LICENSE NO.: P-2854 1991 EDDIE HOWARD ROAD WILLOW SPRING, NC 27592 ZACH@HAYESSTRUCTURAL.COM (919) 210-3480		
TOWN OF WAKE FOREST PUBLIC SAFETY WAREHOUSE	1412 FORESTVILLE RD., WAKE FOREST, NC		
PROJECT NO.: 2 DATE: JULY 11x17 PRINT SCALE: 24x36 PRINT SCALE: SHEET: ROOF FR	PROJECT NO.: 24-STBA-004 DATE: JULY 19, 2024 11x17 PRINT SCALE: $\frac{3}{32}$ " = 1'-0" (UNO) 24x36 PRINT SCALE: $\frac{3}{16}$ " = 1'-0" (UNO) SHEET: ROOF FRAMING PLAN		






		ρτα	DRAINAGE ET	THRE LINTTS		WATER SUPP		PE LINITS		-	SYMBOI	FTYTURF	ΜΔΝΙΙΓΔΥΤΙΙΡΕΡ	PLUMBING FIXTURE SCHEDULE	ни	
		un	EACH	TOTAL	CW	HW (CW & HW	HW TOTAL	TOTAL	F	P1H	ADA FLUSH VALVE		FLOOR MOUNTED, VITREOUS CHINA, 1.28 GPF LOW CONSUMPTION SIPHON JET FLUSHING TOILET COMPLYING WITH ASME 112 19 2 TOILET SHALL BE FLONGATED FRONT BOWL PROVIDE SC534 OPEN FRONT SEATLESS		
WATER CLOSET (FLUSH VALVE)	PUBLIC PUBLIC	2	4. 00 1. 00	8. 00 3. 00	10.00	0.00	10. 00	0.00	20. 00 6. 00				KDHLER	CDVER. SLOAN CROWN 111-1. 28 FLUSHOMETER OR EQUAL BY ZURN OR TOTO. TOP OF SEAT SHALL BE 17-19 INCHES AFF FOR ADA.	-	
DRINKING FOUNTAIN	PUBLIC	1	0. 50	0. 50	0. 25	0. 00	0. 25	0. 00	0. 25	F	P2	WALL MOUNT LAVATORY	TOTO LT307.4 DR EQUAL BY AMERICAN STANDARD DR	VITREDUS CHINA LAVATDRY WITH BACKSPLASH COMPLYING WITH ASME 112. 19. 2. TOP OF RIM SHALL BE 34 INCHES AFF FOR ADA. PROVIDE WITH LAV-GUARD PROTECTORS FOR SUPPLY AND DRAIN LINES. PROVIDE JR	1/2″	
MDP SINK EMERGENCY FLOOR DRAIN	PUBLIC PUBLIC	1	2, 00 0, 00	2. 00 0. 00	2, 25	2. 25 0. 00	3. 00 0. 00	2. 25 0. 00	3. 00 0. 00	F	P3		KUHLER WATTS LFMMV OR EQUAL BY	SMITH U/UU (CLINCEALED AKMS) WITH 19° AKMS UBUU (WALL SUPPLIKT PLATE). USE MUEN 8430 FAUCET. ASSE STANDARD 1069 OR 1070 APPROVED WITH 1/2 INCH FEMALE NPT INLET AND OUTLET CONNECTIONS, BRASS	1/2	
											P4			CARTRIDGE DESIGN.	1/2	
DEMAND FIXTURE	GPM	QTY	TOTAL GPM			1	otal DFU	13, 5	5	 - F	P5	SINK SINGLE BOWL	ELKAY DR STERN WILLIAMS	APRON FOR ADA COMPLIANCE AS NECESSARY TOP MOUNTED 18 GA STAINLESS STEEL, MAX BOWL DEPTH 6 INCHES FOR WHEEL CHAIR ACCESSIBLITY-USE	-	
KITCHEN DISHWASHER	0	0	0, 00			TOT	'AL WFSUs GPM	6. 8 11. 80	29. 3 42. 00	F	P6	MDP SINK	BY FRANKE OR MOEN FIAT MSB2424 OR EQUAL BY	DELTA FAUCET SET 340-WF OR EQUAL BY MOEN OR KOHLER. DUTSIDE DIMENSIONS OF 24 X24 X10. 10 INCH HIGH WALLS WITH NOT LESS THAN 1 INCH WIDE. STAINLESS	1/2	_
						DTHER FIXTU	ires' gpm	0.00	0. 00				FLORESTONE OR STERN WILLIAMS	STEEL DRAIN BODY DESIGNED TO PROVIDE FOR A CAULK CONNECTION OR QDC-3 JOINT TO A 3 INCH DRAIN PIPE, INCLUDE A COMBINATION DOME STRAINER AND LINT BASKET OF STAINLESS STEEL, PROVIDE 830-AA	1/2″	
						1	otal GPM	11. 80	42.00		P7	FXPANSION TANK	AMTRAL ST-5 AR FOLIAL BY	HODK AND 3/4 INCH HOSE THREAD ON SPOUT.		_
MINIMIN DITI DING DOATH STZ	- ^*									F	P8	FREEZEPROOF HOSE	WATTS OR BELL & GOSSETT WODDFORD MODEL 68 OR EQUAL	THE MODEL 68 IS A ASSE 1053 LISTED HYDRANT, WITH A ASSE 1052 DOUBLE CHECK BACKFLOW PREVENTER,	-	_
MINIMUM WATER LINE SIZE	1 1/2'											BIBB	BY ZURN DR MIFAB	COMES WITH A CHROME PLATED BRASS HEAD WITH STAINLESS STEEL COVER, IT DRAINS AUTOMATICALLY EVEN WITH A ATTACHED HOSE, HAS A ONE PIECE PLUNGER WHICH CONTROLS DRAIN AND FLOW FUNCTION, WORKS WITH PRESSURES UP TO 125 PSI, AND A MAX TEMPERATURE OF 120 DEGREES, TEE KEY FOR HYDRANT DOOR AND LOCK, EASIER TO INSTALL THAN STANDARD RECESSED BOX HYDRANT, WALL CLAMP IS INCLUDED, HEAD COVER FLORS DOWN AND DUT DE THE WAY FOR UNDESTRUCTED HYDRANT USE	-	
AL	LL REQUIRED VAL	VES NOT S	HOWN.		0 606 1 9					F	Р9	INTERIOR HOSE BIB	BB WOODFORD MODEL 26 OR EQUAL BY 71IPN OR MITAB	PROVIDE CHECK VALVE AND ANTI-SIPHON PROTECTION IF NOT INTEGRAL TO UNIT		
IN	NSTALL FULL OPEN	VALVES PE	R 2018 NC PLU	ABING CODE 60	06.2 AND 606	.2.1				F	P10	WATER HAMMER ARRESTOR	ZURN Z1700 SERIES DR EQUAL BY WATTS DR SIDUX CHIEF	INSTALL ON BRANCH LINES PER MFG'S INSTRUCTIONS. PROVIDE ACCESS PANEL WHERE NECESSARY WHERE LOCATED ABOVE HARD CEILINGS OR WITHIN WALLS.	-	
										F	P11	FLOOR DRAIN	WATTS FD-200-A DR EQUAL BY ZURN DR JR SMITH	DN GRADE EPDXY CDATED CAST IRDN FLODR DRAIN WITH ANCHOR FLANGE, WEEP HOLES, ADJUSTABLE ROUND NICKEL BRONZE STRAINER, AND NO HUB DUTLET. PROVIDE TRAP PRIMER CONNECTION OPTION IF NOTED.	-	
FIXTURE MANUFACTURE	R	ł	PLUMBING FIXT	RE SCHEDULE FITTIN	NG			HW	CW WAS	STE F	FCD	Floor Cleanout	ZURN, WATTS, JR SMITH	EPDXY CDATED CAST IRDN FLOOR CLEANDUT WITH RDUND ADJUSTABLE GASKETED NICKEL BRONZE TOP, REMOVABLE GAS TIGHT GASKETED BRASS CLEANDUT PLUG, AND NO HUB INLET.	-	
S WATER RINNAI / CU160 ATER		? TANKLES	s gas water hi	ATER(S). 15	-160 BTU/HR	. 97% EFFIC	IENCY	3/4	' 3/4 ' -	-	WCD	WALL CLEANDUT	ZURN, WATTS, DR JR SMITH	CAST IRDN CLEANDUT FERRULE WITH THREADED BRASS CDUNTERSUNK CLEANDUT PLUG, STAINLESS STEEL ACCESS CDVER, AND VANDAL PROOF STAINLESS STEEL SCREW	-	
I											AAV	AIR ADMITTANCE VALVE	STUDOR REDIVENT OR APPROVED EQUAL	ANSI/ASSE 1051 LISTED. NSF STANDARD 14. PROVIDE PVC OR ABS CONNECTOR AS NECESSARY. CONNECT VALVE TO PIPING PER MANUFACTURER. INSTALL IN THE VERTICAL, UPRIGHT POSITION AFTER ROUGH-IN AND DESCRIPTION FOR THE AVERT AND A THE ADDRESS OF A DESCRIPTION OF A DESCRIPTI	-	
														TEMPERED HOT		
			Sy: F R	stem I atings - 1 T Ra	No. W & 2 Hr. (ating - 0	/-L-10 (See Item Hr.	1)							TEMPERED HOT		
			Sy: FR	stem I atings - 1 T Ra	No. W & 2 Hr. (ating - 0	/-L-10 (See Item Hr.)88 11)	<u>(1B)</u>						THERMOSTATIC MIXING VALUE DE	Τ.Α.ΙΙ	
			Sys FR A 2	stem I atings - 1 T Ra	No. W & 2 Hr. (ating - 0	/-L-10 (See Item Hr.	1)	IB							TAIL	
	3		Sys FR	stem I atings - 1 T Ra	No. W & 2 Hr. (ating - 0	/-L-10 (See Item Hr.	1)	IB 2					EXISTING HOT	TEMPERED HOT COLD SINK USED INTERCED HOT USED INTERCED USED INTERCED DEDEED INTERCED INSTALLATION INSTRUCTIONS. MAINTAIN MANUFACTURER'S REQUIRED USED INSTALLATION INSTRUCTIONS. MAINTAIN MANUFACTURER'S REQUIRED INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. MAINTAIN MANUFACTURER'S REQUIRED USED INSTALLATION INSTRUCTION WHERE APPLICABLE. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTION WHERE APPLICABLE. USED INSTALLATION INSTRUCTION WHERE APPLICABLE.	EX EX	

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GENERAL PLUMBING NOTES:

ADMINISTRATIVE: 1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS: PC - PLUMBING CONTRACTOR, EC - ELECTRICAL CONTRACTOR, MC – MECHANICAL CONTRACTOR, GC – GENERAL CONTRACTOR,

- FASC FIRE ALARM SYSTEM CONTRACTOR. 2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE PLUMBING CONTRACTOR SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS
- AND THE GENERAL CONTRACTOR. 3. THE PC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATIONAL
- SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS. 4. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED AT AN APPROVED LOCATION. PC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE PC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
- 5. ALL MATERIALS USED SHALL BE NEW AND FREE OF DEFECTS. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED AT NO EXPENSE TO THE OWNER. ALL MATERIALS AND EQUIPMENT SHALL BEAR APPROVAL FROM UL OR AN APPROVED THIRD PARTY AGENCY. WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN, IT IS TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. PRODUCTS DETERMINED TO BE EQUAL BY
- THE ENGINEER WILL BE ACCEPTED. 6. THE PLUMBING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE 2018 NORTH CAROLINA PLUMBING CODE AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
- 7. THE PC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
- 8. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
- 9. THESE PLANS ARE DIAGRAMMATIC. THE PC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, FIXTURES, PIPING, ETC, TO ACCOMMODATE PLANNED AND ENCOUNTERED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE PC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER. THE PC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. TO AVOID POTENTIAL CONFLICTS, COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION. ALL
- UNDERGROUND UTILITIES SHALL BE LOCATED PRIOR TO ANY DIGGING. 10. TRENCHING, COMPACTION, AND BACKFILL SHALL BE BY PC AND SHALL BE IN ACCORDANCE WITH SECTION 306 OF THE NC PLUMBING CODE. UNDERGROUND LINES SHALL BE LOCATED SUCH THAT THEY DO NOT ENDANGER FOOTINGS OR FOUNDATION WALLS.
- 11. THE PC SHALL PROVIDE FIRESTOPPING AT ALL PENETRATIONS OF RATED FLOOR/CEILING ASSEMBLIES AND RATED WALL ASSEMBLIES TO PRESERVE OR RESTORE THE FIRE RESISTANCE RATING. SEAL ALL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING
- PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THE PROJECT. 12. SYSTEM TESTING SHALL BE PERFORMED BY PLUMBING CONTRACTOR IN ACCORDANCE WITH NORTH CAROLINA PLUMBING CODE, SECTIONS
- 312.2, 312.3, AND 312.5. 13. PC SHALL DISINFECT THE ENTIRE DOMESTIC WATER PIPING SYSTEM IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S
- SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS. 14. AT THE COMPLETION OF WORK AND PRIOR TO ACCEPTANCE BY OWNER. THE PC SHALL CLEAN ALL EXPOSED FIXTURES, MATERIALS,
- AND EQUIPMENT UNDER THIS CONTRACT. 15. PC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE

CONSTRUCTION PHASE OF THE PROJECT.

<u>materials:</u>

- 1. ALL OVERHEAD DOMESTIC WATER PIPING SHALL BE TYPE L COPPER WITH 95/5 LEAD FREE SOLDER, AND ALL BELOW GRADE WATER PIPING SHALL BE TYPE K COPPER WITH NO JOINTS. ALL PIPING SHALL HAVE MANUFACTURER'S NAME AND THE APPLICABLE STANDARD TO WHICH IT WAS MANUFACTURED CLEARLY MARKED ON EACH LENGTH. PIPING SHALL COMPLY WITH ASTM B-88. USE BRAZED JOINTS ON ALL COPPER PIPING 1-1/2 INCH AND LARGER. CPVC PIPING (ASTM D 2846 OR ASTM F 441) WITH APPROVED FITTINGS (ASTM D 2846, ASTM F 438, OR ASTM F 439) MAY ALSO BE USED WHERE NOT LOCATED IN PLENUMS. ALL PLASTIC PIPE, FITTINGS, AND COMPONENTS SHALL BE THIRD PARTY CERTIFIED AS CONFORMING TO NSF 14. ALL PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, USED IN THE WATER DISTRIBUTION SYSTEM SHALL HAVE A MAXIMUM LEAD CONTENT OF .25-PERCENT AND SHALL CONFORM TO NSF 61. HOT water distribution pipe and tubing shall have a minimum PRESSURE RATING OF 100 PSI AT 180°F. COLD WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 160 PSI AT 73.4°F. DO NOT INSTALL PEX OR CPVC PIPING IN RETURN AIR PLENUMS.
- 2. BALL VALVES SHALL HAVE BRASS BODY, FULL PORT, CHROME PLATED BALL, WITH TEFLON SEATS, 150 PSI WSP, AND COMPLY WITH MSS SP-110. GATE VALVES SHALL HAVE BRONZE BODY, CLASS 150, AND COMPLY WITH MSS SP-80, TYPE 2 STANDARD. VALVE BODY SHALL BE ASTM B 62, BRONZE WITH INTEGRAL SEAT AND UNION RING BONNET. ENDS SHALL BE THREADED OR SOLDER WITH COPPER-SILICON BRONZE STEM AND SOLID-WEDGE BRONZE DISC. INSTALL VALVES IN LOCATIONS THAT PERMIT EASY ACCESS WITHOUT DAMAGE TO BUILDING OR FINISHED MATERIALS; PROVIDE ACCESS DOORS IF REQUIRED. VALVES SHALL BE BY NIBCO, WATTS, OR STOCKHAM.
- 3. COLD WATER LINES SHALL BE INSULATED WITH 1/2 INCH THICK FIBROUS GLASS INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. HOT WATER LINES UP TO 2 INCHES DIAMETER SHALL HAVE 1 INCH THICK INSULATION CONFORMING TO THE SAME STANDARD. PIPING LARGER THAN 2 INCHES SHALL RECEIVE 1-1/2 INCH THICK INSULATION. CLOSED CELL RUBBER INSULATION MEETING THE SMOKE AND FLAME RATINGS ABOVE MAY BE SUBSTITUTED FOR FIBROUS GLASS TYPE IF SO DESIRED. INSULATION INSTALLED ON PIPING OPERATING BELOW AMBIENT TEMPERATURES MUST HAVE A CONTINUOUS VAPOR RETARDER. ALL JOINTS, SEAMS AND FITTINGS MUST BE SEALED. ON SYSTEMS OPERATING ABOVE AMBIENT, THE BUTT JOINTS SHOULD NOT BE SEALED. ON COLD SURFACES WHERE A VAPOR SEAL MUST BE MAINTAINED, INSULATION SHALL BE APPLIED WITH A CONTINUOUS, UNBROKEN MOISTURE AND VAPOR RETARDER. ALL HANGERS, SUPPORTS, ANCHORS, OR OTHER PROJECTIONS SECURED TO COLD SURFACES SHALL BE INSULATED AND VAPOR SEALED TO PREVENT CONDENSATION. ALL PIPE INSULATION SHALL BE CONTINUOUS THROUGH WALLS, CEILING OR FLOOR OPENINGS, OR SLEEVES EXCEPT WHERE FIRESTOP OR FIRESAFING MATERIALS ARE REQUIRED. INSULATION SHALL HAVE A FACTORY APPLIED ALL-SERVICE JACKET WITH SELF-SEALING LAP. WHITE-KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED WITH GLASS FIBERS; CONFORMING TO ASTM C 1136 TYPE 1; VAPOR RETARDER; WITH A SELF-SEALING ADHESIVE. VERIFY THAT PIPING HAS BEEN TESTED, SURFACES ARE CLEAN AND DRY. AND ALL FOREIGN MATERIALS ARE REMOVED BEFORE APPLYING INSULATION MATERIALS. INSULATION SHALL BE BY KNAUF, ARMACELL, JOHNS-MANVILLE, OR OWENS-CORNING.

4. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578 91. ALL INSULATION SHALL BE LOW-EMITTING WITH NOT GREATER THAN 0.05 PPM FORMALDEHYDE EMISSIONS. THE MAXIMUM

FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED. 5. FAUCETS AND FIXTURE FITTINGS SHALL CONFORM TO ASME A112.18.1. FAUCETS AND FIXTURE FITTINGS THAT SUPPLY DRINKING WATER FOR HUMAN CONSUMPTION SHALL CONFORM TO THE REQUIREMENTS OF NSF 61, SECTION 9. FIXTURE FITTINGS, FAUCETS, AND DIVERTERS SHALL BE INSTALLED AND ADJUSTED SO THAT THE FLOW OF HOT WATER FROM THE FITTINGS CORRESPONDS TO THE LEFT HAND SIDE

- OF THE FIXTURE FITTING. 6. BACKFLOW PREVENTION SHALL BE IN ACCORDANCE WITH SECTION 608.13 OF THE NC PLUMBING CODE AND THE LOCAL AUTHORITY HAVING JURISDICTION. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTERS SHALL CONFORM TO ASSE 1013 OR AWWA C511. THE RELIEF OPENING SHALL DISCHARGE BY AIR GAP. AIR GAPS SHALL COMPLY WITH ASME A112.1.1 AND AIR GAP FITTINGS WITH ASME A112.1.3. ACCESS TO BACKFLOW PREVENTERS SHALL BE PROVIDED AS SPECIFIED BY THE INSTALLATION INSTRUCTIONS OF THE APPROVED
- MANUFACTURER. 7. FOR BELOW GRADE SANITARY WASTE PIPING, PC SHALL USE SERVICE WEIGHT CAST IRON PIPE WITH COMPRESSION JOINTS (ASTM A 74). USE MINIMUM 2 INCH SIZE UNDERGROUND. SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE PIPE FITTINGS (ASTM D 3311) MAY ALSO BE USED. DO NOT USE PVC PIPE FOR APPLICATIONS WHERE THE WASTE WATER TEMPERATURE EQUALS OR EXCEEDS 140°F OR IF THE BUILDING HEIGHT EXCEEDS 75 FEET.
- 8. FOR ABOVE GRADE SANITARY WASTE AND VENT PIPING, USE SERVICE WEIGHT CAST IRON NO-HUB TYPE WITH COUPLINGS (CISPI 301). SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE FITTINGS (ASTM D 3311) MAY BE USED IF PERMITTED BY LOCAL CODE, EXCEPT IN BUILDINGS EXCEEDING 75 FEET IN HEIGHT. DO NOT INSTALL PVC IN RETURN AIR PLENUMS. ALL VENT AND BRANCH VENT PIPES SHALL BE SO GRADED AND CONNECTED AS TO DRAIN BACK TO THE DRAINAGE PIPE BY GRAVITY. BRANCH VENTS EXCEEDING 40 FEET IN DEVELOPED LENGTH SHALL BE INCREASED BY ONE NOMINAL SIZE FOR THE ENTIRE DEVELOPED LENGTH OF THE PIPE.
- 9. PC SHALL PROVIDE ALL WATER HEATERS (WATTAGE/INPUT AND CAPACITY AS NOTED IN SCHEDULE). ALL WATER HEATERS SHALL BE THIRD PARTY CERTIFIED; PROVIDE PANS FOR WATER HEATERS IN ACCORDANCE WITH 504.7 OF THE NC PLUMBING CODE. ELECTRICAL CONNECTIONS SHALL BE BY ELECTRICAL CONTRACTOR, PC SHALL COORDINATE WITH EC ON ELECTRICAL CHARACTERISTICS OF THE Equipment provided.

METHODS:

- 1. EXTEND DOMESTIC WATER PIPE FROM FIVE (5) FEET OUTSIDE THE Building into the building as indicated on the plans and INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO ALL FIXTURES AND EQUIPMENT REQUIRING THE SAME. WATER SERVICE PIPE AND THE BUILDING SEWER SHALL BE SEPARATED BY 5 FEET OF UNDISTURBED OR COMPACTED EARTH IN ACCORDANCE WITH 603.2. PROVIDE ALL FITTINGS, VALVES, AND OTHER ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION. ALL DOMESTIC WATER PIPING SHALL BE CONCEALED IN FINISHED AREAS. ANY OPEN ENDS SHALL BE PROTECTED UNTIL FINAL CONNECTIONS ARE MADE.
- 2. ABOVE GRADE DOMESTIC WATER PIPING SHALL BE SLOPED AT A MINIMUM OF 1/32 INCH PER FOOT AND ARRANGED TO DRAIN AT LOW POINTS. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT. ROUTE PIPING IN AN ORDERLY MANNER-PARALLEL OR PERPENDICULAR TO WALLS WHEN POSSIBLE-AND MAINTAIN GRADIENT. EACH SUPPLY BRANCH LINE SERVING MORE THAN ONE FIXTURE SHALL HAVE A SHUTOFF VALVE INSTALLED TO ISOLATE ALL FIXTURES AND PIECES OF EQUIPMENT SUPPLIED BY THE BRANCH LINE. THE SHUTOFF VALVE SHALL BE LABELED AND LOCATED AS CLOSE TO THE CONNECTION TO THE SUPPLY MAIN AND RISER AS POSSIBLE. PROVIDE A FULL-OPEN VALVE ON THE BASE OF EVERY WATER RISER PIPE AND ON THE TOP OF EVERY WATER DOWN-FEED PIPE. PROVIDE VALVE HANDLE EXTENSIONS AS NECESSARY FOR INSULATION.
- 3. IT SHALL BE THE RESPONSIBILITY OF THE PC TO SUSPEND AND SUPPORT ALL PIPING SYSTEMS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALLY ACCEPTED PIPE HANGERS AND SUSPENSION EQUIPMENT. ALL FIXTURES, DEVICES, ANI EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE FIXTURE OR EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT AND PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING. USE STEEL HANGERS FOR STEEL AND PLASTIC PIPE AND COPPER OR COPPER-PLATED HANGERS FOR COPPER PIPE. PROVIDE PROTECTION FOR COPPER PIPING IN CONTACT WITH DISSIMILAR METALS. WHERE COPPER PIPING IS SUPPORTED ON HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH OTHER METALS. IN GENERAL, HANGERS SHALL BE CLEVIS TYPE, STANDARD WEIGHT. FOR PIPING, HANGER SPACING SHALL BE IN ACCORDANCE WITH TABLE 308.5 OF THE NC PLUMBING CODE. HANGERS AND ACCESSORIES SHALL BE GRINNEL, MASON, OR B-LINE. 4. SLEEVE ALL PIPES PASSING THROUGH PARTITIONS, WALLS, AND FLOORS. SLEEVES IN FLOORS AND INTERIOR WALLS OF POURED IN PLACE CONCRETE, BRICK, TILE, OR MASONRY SHALL BE SCHEDULE 40 STEEL PIPE. MACHINE CUT. SLEEVES IN GYPSUM BOARD WALLS SHALL BE 22 GAUGE, ROLLED GALVANIZED SHEET METAL. TACK WELD ON THE LONGITUDINAL SEAM. PROVIDE SLEEVES WHERE PIPES PASS THROUGH FLOORS AND WALLS ABOVE AND BELOW CEILINGS. PROVIDE SPLIT PIPE SLEEVES IN NEW WALLS BUILT UP AROUND EXISTING PIPES. TACK WELD SPLIT SLEEVES TOGETHER. SLEEVES IN WALLS SHALL BE INSTALLED FLUSH WITH THE WALL. SLEEVES IN FLOORS SHALL EXTEND 3/4 INCH ABOVE THE FLOOR-EXCEPT THEY SHALL BE FLUSH FOR 2 HOUR RATED FLOORS-AND SHALL BE FLUSH WITH THE STRUCTURE BELOW. EACH SLEEVE SHALL HAVE AN INSIDE DIAMETER 1 INCH
- LARGER THAN THE OUTSIDE DIAMETER OF THE COVERING OF EACH COVERED PIPE TO ALLOW CONTINUOUS INSULATION-BUT NOT LESS THAN TWO PIPE SIZES LARGER THAN EACH UNCOVERED. ANNULAR SPACES BETWEEN SLEEVES AND PIPES SHALL BE FILLED OR CAULKED IN AN APPROVED MANNER. 5. THE TOP OF WATER PIPES INSTALLED BELOW GRADE OUTSIDE THE
- BUILDING SHALL BE BELOW THE FROST LINE OR A MINIMUM OF 12 INCHES BELOW FINISHED GRADE WHICHEVER IS GREATER. WATER PIPING INSTALLED IN A WALL EXPOSED TO THE EXTERIOR SHALL BE LOCATED ON THE HEATED SIDE OF THE WALL INSULATION. WATER PIPING INSTALLED IN AN UNCONDITIONED UTILITY ROOM OR UNCONDITIONED ATTIC SHALL BE INSULATED TO A MINIMUM OF R6.5 DETERMINED IN ACCORDANCE WITH ASTM C 177. 6. HOT WATER PROVIDED TO PUBLIC HAND-WASHING
- FACILITIES/LAVATORIES SHALL BE TEMPERED WATER DELIVERED THROUGH AN APPROVED WATER-TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070 OR CSA B125.3.
- 7. INSULATE ALL EXPOSED WASTE AND SUPPLY PIPING UNDER LAVATORIES, SINKS, AND ELECTRIC WATER COOLERS WITH THE HANDI-LAV GUARD INSULATION KIT BY TRUEBRO OR EQUAL.
- 8. THE PC SHALL INSTALL WATER HAMMER ARRESTORS ON BRANCH LINES WITH QUICK CLOSING VALVES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 9. THE PC SHALL PROVIDE CHECK VALVES AT ALL FIXTURES WITH
- THREADED OUTLETS AS REQUIRED BY CODE. TRAP PRIMERS SHALL BE PROVIDED AS SHOWN ON THE PLANS OR AS REQUIRED. 10. ADJUST STOPS AND VALVES FOR INTENDED FLOW RATE TO FIXTURES
- WITHOUT SPLASHING, NOISE, OR OVERFLOW. 11. BEFORE COMMENCING WORK, CHECK INVERT ELEVATIONS REQUIRED FOR SEWER CONNECTIONS, CONFIRM INVERTS, AND VERIFY THESE CAN BE PROPERLY CONNECTED TO WITH SLOPE FOR DRAINAGE AND COVER TO AVOID FREEZING. ONCE INVERTS AND FALL HAVE BEEN ESTABLISHED. EXTEND SANITARY SEWER PIPING TO 5 FEET OUTSIDE THE BUILDING AND INSTALL ALL DRAINS, STACKS, VENTS, FLOOR

- DRAINS, AND CLEANOUTS NECESSARY FOR A COMPLETE INSTALLATION. 12. ALL SANITARY SEWER PIPING IS BELOW GRADE OR WITHIN WALLS UNLESS OTHERWISE NOTED. ALL SANITARY VENT PIPING IS ABOVE THE CEILING OR WITHIN WALLS UNLESS OTHERWISE NOTED. SOIL AND
- WASTE PIPING SHALL BE INSTALLED TO PROVIDE PROTECTION AGAINST FREEZING PER 305.4.1. WASTE AND SOIL LINES LEAVING THE BUILDING MUST HAVE A MINIMUM COVER OF 3 INCHES. 13. SOIL AND WASTE LINES 2-1/2 INCHES AND SMALLER SHALL BE
- SLOPED AT 1/4 INCH PER FOOT MINIMUM. SOIL AND WASTE LINES 3 INCHES TO 6 INCHES IN DIAMETER SHALL BE SLOPED AT 1/8 INCH per foot minimum. 14. FOR WATER CLOSET WASTE CONNECTIONS, A 4 INCH BY 3 INCH
- CLOSET BEND SHALL BE ACCEPTABLE. WHERE A 3 INCH BEND IS UTILIZED ON WATER CLOSETS, A 4 INCH BY 3 INCH FLANGE SHALL BE INSTALLED TO RECEIVE THE FIXTURE HORN.
- 15. HORIZONTAL DRAIN PIPES SHALL HAVE CLEANOUTS IN ACCORDANCE WITH 708.10. EXTEND CLEANOUTS TO FINISHED FLOOR OR WALL SURFACE. LUBRICATE THREADED CLEANOUT PLUGS WITH A MIXTURE OF GRAPHITE AND LINSEED OIL. ENSURE CLEARANCE AT ALL CLEANOUTS FOR RODDING OF DRAINAGE SYSTEM. INSTALL FLOOR CLEANOUTS AT AN ELEVATION TO ACCOMMODATE FINISHED FLOOR. EVERY CLEANOUT SHALL BE INSTALLED TO ALLOW CLEANING IN THE DIRECTION OF FLOW OF THE DRAINAGE PIPE OR AT RIGHT ANGLES THERETO. CLEANOUTS ON 6 INCH AND SMALLER PIPES SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 18 INCHES FOR RODDING.
- 16. DRAINAGE PIPING FOR FUTURE FIXTURES SHALL TERMINATE WITH AN APPROVED CAP OR PLUG.
- 17. AIR ADMITTANCE VALVES SHALL BE INSTALLED AFTER THE DWV TESTING REQUIRED BY SECTIONS 312.2 AND 312.3. PROVIDE ACCESS TO ALL AIR ADMITTANCE VALVES PER CODE. INSTALLATION OF ALL AIR ADMITTANCE VALVES SHALL CONFORM TO SECTION 918 OF THE NC PLUMBING CODE. AIR ADMITTANCE VALVES SHALL CONFORM TO ASSE 1050 OR 1051.
- 18. THE PC SHALL PROVIDE UNIONS FOR DISASSEMBLY AND SERVICE OF ALL FIXTURES AND OTHER RELEVANT PLUMBING FOUIPMENT, UNIONS Shall be ground-joint with brass seat. Provide insulating UNIONS AT EACH JUNCTION OF DISSIMILAR MATERIALS.
- 19. THE PC SHALL ACCURATELY ROUGH-IN ALL FIXTURES ACCORDING TO MANUFACTURER'S INSTALLATION DIMENSIONS AND INSTRUCTIONS. OFFSET ADAPTERS AND FLEXIBLE CONNECTORS ARE NOT ACCEPTABLE. FLUSH HANDLES SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREAS FOR ADA COMPLIANCE. INSTALL EACH FIXTURE WITH TRAP EASILY REMOVABLE FOR SERVICING AND CLEANING. SEAL FIXTURES TO WALL AND FLOOR SURFACES WITH SEALANT. SOLIDLY ATTACH WATER CLOSETS TO FLOOR WITH LAG SCREWS. SEAL ALL SELF-RIMMING LAVATORIES AND SINKS (VITREOUS CHINA AND STAINLESS STEEL) WITH A COMMERCIAL GRADE PLUMBER'S PUTTY OR ACRYLIC LATEX CAULK APPLIED TO THE UNDERSIDE OF THE FIXTURE RIM IN A GENEROUS AMOUNT SO THAT WHEN FIXTURE IS SET, SEALANT SHALL OOZE OUT.
- 20. ALL VENT THRU THE ROOF (VTR) PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PC SHALL PROVIDE FLASHING MATERIAL REQUIRED FOR VTRS. JOINTS AT THE ROOF AND AROUND VENT PIPES SHALL BE MADE WATER TIGHT BY THE USE OF LEAD, COPPER, GALVANIZED STEEL, ALUMINUM, OR OTHER APPROVED FLASHINGS OR FLASHING MATERIAL. MAINTAIN MINIMUM 10 FEET FROM ALL OUTSIDE AIR INTAKES.
- 21. INSTALL FULL OPEN VALVES PER NC PLUMBING CODE 606.1 ON THE MAIN WATER LINE INTO THE BUILDING. INSTALL CUT OFF VALVES PER NC PC 606.2.



8133 Holly Forest Road Wake Forest, North Carolina 27587 Phone: (919) 819-1536

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No. Revision	<u>10/8/24 -</u> Date
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No. Issued	
Checked By: JH	
KE PROJECT NO.: 240118 Drawn E	By: DC
Client/Project Town of Wake Forest	
WAKE FOREST	
PUBLIC SAFETY	
WAREHOUSE	
1412 Forestville Rd. Wake Fore Sheet Title	st, NC
PLUMBING SCHEDULE NOT	FS &
Project No.	Scale
23026	AS NOTED
Revision D	rawing No.
_	P-1
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STEPHEN T. BAXTER
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PLUMBING SUPPLY RISER SCALE: NTS

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		KE PROJECT NO.: 240118 Client/Project Town of Wake Forest	B Drawn By: DC
LINETYPE LEGEND		WAKE FOREST PUBLIC SAFETY WAREHOUSE	
COLD WATER SUPPLY		1412 Forestville Rd. W Sheet Title	ake Forest, NC
		LINUDIING KIJEKJ	
		Project No. 23026	Scale AS NOTED
PLUMBING WASTE PLAN	SCALE: 1/4"=1'-0" 3	Revision -	Drawing No. P—4

UFFICE AREA MECHANICAL SYSTEM, SERVICE SYSTEMS, AND EQUIPMENT	
METHOD OF COMPLIANCE THERMAL ZONE	PRESCRIPTIVE ZONE 4A
<u>EXTERIOR DESIGN CONDITIONS</u> HEATING DESIGN DRY BULB CODLING DESIGN DRY BULB CODLING DESIGN WET BULB	23. 1° F 91. 7° F 75. 6° F
<u>INTERIOR DESIGN CONDITIONS</u> HEATING DESIGN DRY BULB COOLING DESIGN DRY BULB COOLING RELATIVE HUMIDITY	70° F 75° F 50%
HEATING LOAD:	23,000 BTU/H
<u>SENSIBLE COOLING LOAD:</u> LATENT COOLING LOAD:	31,000 BTU/H 4,500 BTU/H
<u>(ECHANICAL SPACING CONDITIONING SYSTEM:</u> UNITARY DESCRIPTION OF UNIT(S) OFFICE AREA 3 TON SPLIT S BOILER TOTAL BOILER OUTPUT CHILLER TOTAL CHILLER CAPACITY	AIR COOLED DX System heat pump N/A N/A N/A N/A
QUIPMENT EFFICIENCIES:	SEE SCHEDULES
QUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS);	SEE SCHEDULES
PPE ROOM	
MECHANICAL STSTEM, SERVICE STSTEMS, AND EQUIPMENT	
THERMAL ZONE	ZONE 4A
EXTERIOR DESIGN CONDITIONS HEATING DESIGN DRY BULB COOLING DESIGN DRY BULB COOLING DESIGN WET BULB	23. 1°F 91. 7°F 75. 6°F
INTERIOR DESIGN CONDITIONS HEATING DESIGN DRY BULB CODLING DESIGN DRY BULB CODLING RELATIVE HUMIDITY	70° F 75° F 50%
HEATING LOAD:	8,000 BTU/H
<u>SENSIBLE COOLING LOAD:</u> LATENT COOLING LOAD:	5,000 BTU/H 3,500 BTU/H
MECHANICAL SPACING CONDITIONING SYSTEM: UNITARY DESCRIPTION OF UNIT(S) PPE ROOM . 75 TON MI BOILER TOTAL BOILER OUTPUT CHILLER TOTAL CHILLER CAPACITY	AIR COOLED NI SPLIT HEAT P N/A N/A N/A N/A N/A
EQUIPMENT EFFICIENCIES:	SEE SCHEDULI
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS);	SEE SCHEDULE
<u>EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS):</u> <u>DESIGNER STATEMENT:</u> TO THE BEST OF MY KNOWLEDGE, THE MECHANICAL DESIGN FOR T COMPLIES WITH MECHANICAL AND EQUIPMENT REQUIREMENTS OF T CAROLINA STATE BUILDING CODE AND 2018 NORTH CAROLINA ENE CODE.	SEE SCHEDUL HIS BUILDING HE 2018 NDRTH RGY CONSERVATIE

								DS	Resi	dent	ial Spl	lit Sc	hedu	ıle F	or O	ffice	Area											
	Residental Products are rated in Net MB																											
ProjectName:	(2) Weight (each) with factory installed option									d options																		
			Sup	ply Air	Blower		Cooling					Heating Electrical																
				Airflow	(cfm)				Temper	r <mark>ature (°</mark> F)		Capaci	ity MBH ¹			Refrig-	Tem	p (°F)	Applied Electric Heat	н	leat Pum	np Ratin	gs			Max	
Tag #	Model Num ber	Brand	SA	~	ESP (IWG)	Ent. Air			Lvg. Air		OD Am h	Total	al Sone		SEER erai	erant	Ent DB I		k W		MDU	Con	LISDE	Voltage	MCA	Fuse	Weight	
			34	UA		DB	WB	DB	WB	DP		Total	Sens.				ent. DB	LVg. DB	NVV	00	MDH	Cop	INFE	,	,			
HP-1	THE36B32S	York	1200			77.1	64.0	57.3	53.9	51.4	95	36.2	25.7	12	14.5	R410A	60.0	87.7		47.00	35.90	3.90	8.55	208/230-3-60	15.8	25	200.0	
AH-1	JHETB36DBCS2N1	York	1200	105	0.6	77.1	64.0	57.3	53.9	51.4	95	36.2	25.7	12	14.5	R410A	60.0	83.2	8.80					230-3-60	32.4	35	100.0	
ł	HEAT PUMP																											
1 07																												

PROVIDE CONCRETE PAD FOR UNIT TO SIT ON PROVIDE HAIL GUARDS FOR COIL

CONSULT MANUFACTURER ON LINE SET LENGTHS EXCEEDING 60FT

OR EQUAL BY CARRIER, LENNOX, OR TRANE

ANY EQUIPMENT SUBSTITUTIONS MUST EQUAL OR EXCEED EFFICIENCIES LISTED (RATINGS PER ARI) 6. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES

AIR HANDLER

1. PROVIDE HEAT STRIP OUTDOOR TEMPERATURE LOCKOUT TO PREVENT SUPPLEMENTAL HEAT OPERATION IN RESPONSE TO THE

THERMOSTAT BEING CHANGED TO A WARMER SETTING. SET NO LOWER THAN 35°F AND NO HIGHER THAN 40°F REPLACE ALL FILTERS AT PROJECT'S COMPLETION

PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH NIGHT-TIME SET BACK

CONSULT MANUFACTURER ON LINE SET LENGTHS EXCEEDING 60FT HEATER RATED AT 208V

DR EQUAL BY CARRIER, LENNDX, DR TRANE

ANY EQUIPMENT SUBSTITUTIONS MUST EQUAL OR EXCEED EFFICIENCIES LISTED (RATINGS PER ARI) 8. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES

		Vent	ilation Calculation (For U	nit OFFICE)					
Room N	ame(s)	Zone Type	Area (sq.ft.)	Rp	Ra	Default Occupancy	Pz	Ez	Airflow to Zone (cfm)
OFFICE		Office Space	559	5	0.06	5	2.80	0.8	800
CORR	IDOR	Corridors	310	0	0.06	0	0.00	0.8	300
BATHR	NOOM	N/A	161	0	0	0	0.00	0.8	100
		N/A	0	0	0	0	0.00	0.8	0
		N/A	0	0	0	0	0.00	0.8	0
			Maximum Zp:	0.0775					
K-12 School?	No		Ev:	1					
			Actual System Population:	8					
Uncorrected Intake	92	cfm							
Outdoor Air Intake	92	cfm							
Percent of Unit Air	8%								

	PPE ROOM												
	DUCTLESS SPLIT SYSTEM HEAT PUMP SCHEDULE												
MARK	RK DUTSIDE UNIT MFG / MDDEL # INSIDE UNIT MDDEL # NDM CAPACITY SUPPLY AIR HEATING TOT COOLING LINE SIZE VOLT/PH SEER HSPF MCA MDCP												
	TEINS CFM MBH MBH GAS LIQ AMPS									AMPS	AMPS		
MS-1	DAIKIN / RXO9BXVJU	WALL MOUNT -FTX09BXVJU	. 75	200	13	10. 2	3/8″	1/4″	208/230V / 1Ø	20. 0	10	12. 35	15. 0
1.	1. PROVIDE ROOF PAD FOR UNIT TO SIT ON 2. PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH NIGHT-TIME SET BACK												

MINI SPLIT RATED AT 208V

ANY EQUIPMENT SUBSTITUTIONS MUST EQUAL OR EXCEED EFFICIENCIES LISTED (RATINGS PER ARI) MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES

PROVIDE ALL ACCESSORIES NEEDED FOR A COMPLETE INSTALLATION.

INFRARED GAS HEATER SCHEDULE										
MARK	MFG / MODEL # INPUT VOLT FLA MOCP									
		MBH		AMPS	AMPS					
IGH-1,2	SPACE-RAY NXS85-20	85. 0	120	2.6	20. 0					
IGH-3	SPACE-RAY NXS50-15	50. 0	120	2.6	20. 0					

PROVIDE ALL ACCESSORIES NEEDED FOR A COMPLETE INSTALLATION. INSTALL AND VENT PER MANUFACTURES INSTALLATION MANUEL.

MOUNT AT 14' AFF TO BOTTOM OF HEATER.

REGISTER & GRILLE SCHEDULE										
MARK	MFG	MODEL #	SIZE	MOUNTING	DESC					
WL-1. 2. 3	GREENHECK	MODEL WD-320	12X12	WALL	BACKDRAFT DAMPER, VER					

1. OR EQUAL BY PRICE, METAL-AIRE, CARNES, TITUS OR NAILOR.

SPRING LOADED OPEN UPON NEGATIVE PRESSURE.

PROVIDE WITH ALL ACCESSORIES FOR A COMPLETE JOB.

	EXHAUST FAN SCHEDULE										
Mark	MFG / MODEL #	ESP (in WG)	CFM	VOLT/PH	FLA	SD					
EF-1, 2	GREENHECK SP-B110	CEILING	0. 40	96	120/1	1. 14	2.				
EF-3-4	GREENHECK SP-A200	CEILING	0. 40	179	120/1	0. 43	3.				
1. PR BA	1. PROVIDE WITH PITCHED ROOF CURB & CAP FOR FLAT OR SLOPED ROOF, OR HODDED WALL WIT BACKDRAFT DAMPER CAP AS APPLICABLE.										

PROVIDE WITH SQUARE TO ROUND DUCT ADAPTER AS NECESSARY

or equal by loren cook or pennbarry or twin city 4. PROVIDE RADIATION DAMPER.

EXHAUST FAN SCHEDULE										
MARK	MFG / MODEL #	TYPE	ESP (in WG)	BHP	RPM	CFM				
EF-5, 6	GREENHECK SE1-8-DGEX	WALL	. 125	. 007	1050	311				
1. OR EQUAL BY LOREN COOK OR PENNBARRY OR TWIN CITY										

FAN TO INTERLOCK WITH POWER INTAKE LOUVERS.

PROVIDE ALL ACCESSORIES NEEDED FOR A COMPLETE INSTALLATION. (HODD, BIRD SCREEN)

REGISTER & GRILLE SCHEDULE

MARK	MFG	MODEL #	SIZE	MOUNTING	DESCRIPTIO	
A	HART & COOLEY	HVS	24X24	LAY-IN	4-WAY DIFFUSER, BRIGHT WHITE	
B	HART & COOLEY	SV	24X3. 5	SURFACE	SINGLE DEFLECTION DIFFUSER	
R	HART & COOLEY	94AT	24X24	LAY-IN	STEEL, LAY IN, RETURN GRILLE	
RR	HART & COOLEY	SV	24X3. 5	SURFACE	SINGLE DEFLECTION DIFFUSER	
 DR EQUAL BY PRICE, METAL-AIRE, CARNES, TITUS DR NAILDR. PROVIDE WITH FOIL LINED, MOLDED INSULATION BLANKET. (FOR USE WITH HVS DR 1 DIFFUSERS DNLY) 					AILDR. T. (FDR USE WITH HVS DR TBAR 1	









GENERAL MECHANICAL NOTES:

ADMINISTRATIVE: 1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS: PC – PLUMBING CONTRACTOR, EC – ELECTRICAL CONTRACTOR, MC - MECHANICAL CONTRACTOR, GC - GENERAL CONTRACTOR, FASC – FIRE ALARM SYSTEM CONTRACTOR, AHJ – AUTHORITY HAVING

JURISDICTION. 2. "PROVIDE" MEANS TO FURNISH AND INSTALL. MC SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND GENERAL CONTRACTOR AS SHOWN ON THE PLANS OR NECESSARY FOR A COMPLETE INSTALLATION.

3. THE MC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATING SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS. 4. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND

UNLOADED BY THE CONTRACTOR AT AN APPROVED LOCATION. THE MC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS, ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE MC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE 5. THE MC SHALL INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH

THE 2018 NORTH CAROLINA MECHANICAL AND BUILDING CODES AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE MC SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.

6. THE MC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT. 7. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.

8. THE MC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE MC SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE MC SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION. 9. ALL MECHANICAL MATERIALS SHALL BE NEW AND FREE OF DEFECT AND LISTED AND LABELED BY UL OR AN APPROVED THIRD PARTY AGENCY. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED BY THE MC WITHOUT ADDITIONAL COST TO THE OWNER, WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN.

THE CITED EXAMPLE IS INTENDED TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. SUCH EXAMPLES ARE USED TO CONVEY A GENERAL STYLE, TYPE, CHARACTER, AND QUALITY OF THE PRODUCT DESIRED; PRODUCTS DETERMINED TO BE EQUAL BY THE ENGINEER WILL BF ACCEPTED.

10. THESE PLANS ARE DIAGRAMMATIC. THE MC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, DUCTS, REGISTERS, GRILLES, ETC, TO ACCOMMODATE PLANNED AND ENCOUNTERED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE MC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS

AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER. 11. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL BE

RESPONSIBLE FOR ALL CONTROL WIRING. 12. IT IS THE MC'S RESPONSIBILITY TO VERIFY THAT ITEMS FURNISHED FOR THIS CONTRACT WILL FIT IN THE SPACE AVAILABLE. THE MC SHALL MAKE FIELD MEASUREMENTS AS NECESSARY TO DETERMINE SPACE REQUIREMENTS. IF THE MC MUST ALTER EQUIPMENT DUE TO SPACE CONSIDERATIONS, THE MC SHALL PROVIDE sizes and shapes that fit the intent of these drawings and

SPECIFICATIONS. 13. MC SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR REGARDING THE ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT BEING PROVIDED. 14. MAINTAIN CLEARANCES FOR ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS FOR SERVICEABILITY. ALL ROOFTOP EQUIPMENT MUST BE A

MINIMUM OF 10 FEET FROM ROOF EDGE. 15. MC SHALL FURNISH A BOUND SET OF OPERATING AND MAINTENANCE

INSTRUCTIONS FOR ALL EQUIPMENT TO THE OWNER UPON COMPLETION OF THE PROJECT. MC SHALL PROVIDE ALL DOCUMENTATION TO THE OWNER AS NECESSARY TO SUBMIT FOR FACTORY WARRANTIES

16. CONTRACTOR SHALL PROTECT ALL HVAC EQUIPMENT FROM CONSTRUCTION AND SHEET ROCK DUST DURING CONSTRUCTION. ALL FILTERS SHALL BE REPLACED WITH NEW AT THE COMPLETION OF THE PROJECT. 17. IF A ROOF PENETRATION IS REQUIRED AND THE ROOF IS UNDER WARRANTY, USE

THE AUTHORIZED ROOFER. PROVIDE DOCUMENTATION. 18. ALL PIPING. WIRING. CONDUIT. INSULATION. EQUIPMENT. SUPPORTS. ETC. SHALL BE SUITABLE FOR INSTALLATION IN A RETURN PLENUM AS NECESSARY. COORDINATE

WITH OTHER TRADES ON LOCATIONS OF ALL PLENUMS. 19. MC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION

PHASE OF THE PROJECT.

THE MC SHALL PROVIDE ALL DX UNITARY HEATING AND COOLING EQUIPMENT AS SCHEDULED ON THE DRAWINGS. AIR-COOLED SPLIT SYSTEM HEAT PUMPS AND AIR-CONDITIONERS SHALL BE BY TRANE, CARRIER, OR YORK. THE MC SHALL PROVIDE FACTORY AND FIELD INSTALLED ACCESSORIES AS SCHEDULED OR AS NECESSARY FOR A COMPLETE AND OPERATIONAL HVAC SYSTEM.

2. THE MC SHALL PROVIDE ALL EXHAUST AND SUPPLY FANS AS SCHEDULED. FANS SHALL BE BY GREENHECK, LOREN COOK, TWIN CITY, OR PENNBARRY. 3. DUCTWORK IS SHOWN WITH FREE AREA DIMENSIONS. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT STANDARD, 2 INCH S.P.

4. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578. ALL INSULATION SHALL HAVE FORMALDEHYDE EMISSIONS NOT GREATER THAN 0.05 PPM. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE

JURISDICTION IN WHICH THE BUILDING IS LOCATED. 5. MASTIC USED TO SEAL DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A-95 OR UL 181B-98. MAINTAIN AMBIENT TEMPERATURES AND CONDITIONS REQUIRED BY MANUFACTURER OF ADHESIVES, MASTICS, AND INSULATION CEMENTS. DO NOT INSTALL DUCT SEALANT WHEN TEMPERATURES ARE LESS THAT THOSE RECOMMENDED BY THE SEALANT MANUFACTURER.

6. ALL ADHESIVES AND SEALANTS SHALL HAVE VOC CONTENT BELOW 20 GRAMS PER LITER AND WHICH MEET THE REQUIREMENTS OF THE MANUFACTURER OF THE PRODUCTS BEING ADHERED OR INVOLVED. ADHESIVES AND SEALANTS SHALL CONTAIN NO HEAVY METALS OR FORMALDEHYDE.

FACTORY-MADE AIR DUCTS AND CONNECTORS SHALL COMPLY WITH UL 181-96. 8. FLEXIBLE DUCT SHALL BE UL LISTED CLASS 0 OR CLASS 1, INSULATED, AND COMPLY WITH UL 181. FLEXIBLE DUCT SHALL BE FACTORY FORMED, COMPOSED OF SPIRAL WOUND CORROSION RESISTANT WIRE BONDED TO AN INNER FABRIC LINER. DUCT SHALL BE FACTORY INSULATED WITH A FOIL VAPOR BARRIER JACKET. CONNECT TO RIGID DUCT WITH SPIN-IN FITTING AND DAMPER. FLEXIBLE DUCTS AND AIR CONNECTORS SHALL NOT PASS THROUGH ANY FIRE RESISTANCE RATED ASSEMBLY.

9. THE MC SHALL PROVIDE ALL DIFFUSERS GRILLES, LOUVERS, AND OTHER AIR DISTRIBUTION OUTLETS AND INLETS. LOUVERS, GRILLES, AND DIFFUSERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR LAY-IN CEILINGS, INSTALL SUPPORT FROM THE STRUCTURE FOR EACH DIFFUSER OR DAMPER. AIR DISTRIBUTION OUTLETS AND INLETS SHALL

BE BY HART & COOLEY, PRICE, METAL-AIRE, NAILOR, OR CARNES. 10. AIR FILTERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 605 OF THE 2018 NC MECHANICAL CODE.

11. THE MC SHALL PROVIDE ALL REFRIGERATION PIPING. ALL PIPE AND FITTINGS SHALL BE TYPE ACR HARD COPPER TUBING WITH SWEAT FITTINGS. REFRIGERATION LINES SHALL BE RUN NEATLY. WHERE A GROUP OF LINES ARE RUN, TRAPEZE HANGERS MAY BE USED. DO NOT USE CHAIN OR WIRE HANGERS. WRAP TUBING WITH RUBBER TAPE AT EACH CLAMP OR HANGER. FOR COVERED PIPES, HANGERS SHALL FIT AROUND THE OUTSIDE OF THE COVERING WITH 12 GAUGE GALVANIZED STEEL SHIELDS OF A LENGTH EQUAL TO THE OUTSIDE DIAMETER OF THE INSULATION AND COVERING 3/4 OF THE CIRCUMFERENCE OF THE INSULATION. SAGS SHALL NOT BE PERMISSIBLE. HORIZONTAL LINES SHALL PITCH DOWN NOT LESS THAN 1 INCH IN 40 FEET. INSULATE WITH 1 INCH CLOSED CELL ARMAFLEX TYPE INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50. ALL JOINTS AND SPLICES IN INSULATION SHALL BE TAPED AND AIR TIGHT. SOLDER REFRIGERATION LINES USING 15 PERCENT

SILVER SOLDER AND EVACUATE LINES TO 300 MICRONS. PROVIDE MOISTURE INDICATING SIGHT GLASS AND FILTER DRYER IN LIQUID LINE. PROVIDE OIL TRAPS AND DOUBLE RISERS IN REFRIGERANT SUCTION AND HOT GAS LINES WHERE REQUIRED TO PREVENT OIL SLUGGING AT THE COMPRESSOR AND INSURE PROPER LUBRICATION, MC SHALL BE RESPONSIBLE FOR SEALING LINE SET PENETRATIONS OF ANY RATED ASSEMBLIES IN ACCORDANCE WITH A SYSTEM LISTED IN THE UL DIRECTORY FOR THE SPECIFIC ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR A LIST OF ALL UL FIRE RATED ASSEMBLIES.

<u>Methods:</u>

- 1. INSULATE DUCTWORK WITH FIBERGLASS DUCT WRAP; INSTALLED R-VALUE SHALL BE A MINIMUM R-6. COVERINGS AND LININGS, INCLUDING ADHESIVES WHEN USED. SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. ALL NEW DUCTWORK SHALL RECEIVE INSULATION ON THE OUTSIDE. INSTALL DUCT WRAP INSULATION WITH FACING OUTSIDE SO THAT TAPE FLAP OVERLAPS INSULATION AND FACING OF ADJACENT PIECE OF DUCT WRAP. INSULATION SHALL BE TIGHTLY BUTTED. FOR RECTANGULAR DUCTS, INSTALL SO INSULATION IS NOT EXCESSIVELY COMPRESSED AT DUCT CORNERS. STAPLE SEAMS APPROXIMATELY 6 INCHES ON CENTER WITH OUTWARD CLINCHING STAPLES. SEAL SEAMS WITH PRESSURE SENSITIVE TAPE MATCHING THE FACING. FOR RECTANGULAR DUCTS 24 INCHES IN WIDTH OR GREATER, SECURE DUCT WRAP TO THE BOTTOM OF THE DUCT WITH MECHANICAL FASTENERS SPACED 18 INCHES ON CENTER TO PREVENT SAGGING OF INSULATION. ADJACENT SECTIONS OF DUCT WRAP SHALL BE TIGHTLY BUTTED WITH THE 2 INCH TAPE FLAP OVERLAPPING. ALL TEARS, PUNCTURES, ETC. OF THE DUCT WRAP INSULATION SHALL BE SEALED WITH TAPE OR MASTIC TO PROVIDE A VAPOR TIGHT SYSTEM. INSULATION SHALL BE BY KNAUF INSULATION, OWENS CORNING CORP, OR CERTAINTEED CORPORATION.
- 2. VERIFY THAT DUCTS HAVE BEEN TESTED BEFORE APPLYING INSULATION MATERIALS. VERIFY THAT DUCT SURFACES ARE CLEAN, DRY AND FREE OF FOREIGN MATERIAL PRIOR TO INSULATING. DUCT COVERINGS SHALL NOT PENETRATE A WALL OR FLOOR REQUIRED TO HAVE A FIRE-RESISTANCE RATING OR REQUIRED TO BE FIRE BLOCKFD.
- 3. WHERE DUCTS ARE CONNECTED TO EXTERIOR WALL LOUVERS AND DUCT OUTLET IS SMALLER THAN LOUVER FRAME, PROVIDE BLANK-OUT PANELS SEALING LOUVER AREA AROUND DUCT. USE SAME MATERIAL AS DUCT, PAINTED BLACK ON EXTERIOR SIDE: SEAL TO LOUVER FRAME AND DUCT.
- 4. PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AT FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS.
- 5. CONSTRUCT T'S, BENDS, AND ELBOWS WITH RADII OF NOT LESS THAN 1-1/2 TIMES THE WIDTH OF THE DUCT ON CENTERLINE. WHERE NOT POSSIBLE AND WHERE RECTANGULAR ELBOWS MUST BE USED, PROVIDE TURNING VANES.
- 6. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE; MAXIMUM OF 30 DEGREES DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM.
- 7. IT SHALL BE THE RESPONSIBILITY OF THE MC TO SUSPEND AND SUPPORT ALL EQUIPMENT, DUCTWORK, DIFFUSERS, AND OTHER MATERIALS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALLY ACCEPTED HANGERS AND SUSPENSION EQUIPMENT. ALL HVAC EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT OR PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING
- 8. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA AT INTERVALS NOT Exceeding 10 Feet. Ducts 36 inches or larger shall have trapeze type HANGERS SUSPENDED WITH THREADED ROD. SUPPORT DUCTS FROM BAR JOISTS, GIRDERS, OR BEAMS.
- 9. CHECK LOCATIONS OF AIR OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY, AND LIGHTING ARRANGEMENT. COORDINATE WITH SPRINKLER CONTRACTOR IF APPLICABLE.
- 10. PROVIDE BALANCING DAMPERS AT POINTS ON SUPPLY WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AS REQUIRED FOR AIR BALANCING, INSTALL MINIMUM 2 DUCT WIDTHS FROM DUCT TAKE-OFF. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER OR REGISTER ASSEMBLY. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO PROVIDE DESIGN SUPPLY, RETURN, AND EXHAUST AIR QUANTITIES AT SITE ALTITUDE.
- 11. MC SHALL INSTALL FIRE DAMPERS AT EACH PENETRATION OF A RATED WALL AS INDICATED ON THE DRAWINGS OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. FIRE DAMPERS SHALL BE UL LABELED (UL 555), CURTAIN TYPE, WITH INTEGRAL FACTORY SLEEVE AND BLADES LOCATED OUTSIDE THE AIR STREAM. INSTALLATION OF ALL FIRE DAMPERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SECTION 607 OF THE 2018 NC MECHANICAL CODE. PROVIDE ACCESS PANELS FOR TESTING AND SERVICE AS NECESSARY, MC SHALL PROVIDE RADIATION DAMPERS AND THERMAL BLANKETS FOR ALL PENETRATIONS OF RATED CEILING ASSEMBLIES. RADIATION DAMPERS SHALL BE UL LABELED (UL 555C) AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIC INSTALLATION INSTRUCTIONS. FIRE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, AND CEILING RADIATION DAMPERS SHALL BE BY RUSKIN, NAILOR, OR LLOYD INDUSTRIES.
- 12. MC SHALL INSTALL PROGRAMMABLE THERMOSTATS AS SHOWN ON THE PLANS. THERMOSTAT SHALL BE MOUNTED AT 48 INCHES AFF. THERMOSTATS SHALL MEET THE REQUIREMENTS OF SECTION C403.2.4 OF THE 2018 NORTH CAROLINA ENERGY CONSERVATION CODE.
- 13. FRESH AIR INTAKES SHALL BE INSTALLED ON ALL UNITS AS SHOWN ON DRAWINGS. MAINTAIN 10 FEET OF DISTANCE BETWEEN FRESH AIR INTAKES AND ALL EXHAUST TERMINATIONS AND PLUMBING VENT THRU ROOFS.
- 14. MC SHALL INSTALL ALL EXHAUST FANS AND VENT TO THE BUILDING'S EXTERIOR. EC SHALL SWITCH FANS WITH LIGHTS OR ON SEPARATE SWITCH AS SHOWN. 15. P-TRAPS MUST BE INSTALLED ON ALL UNITS. MC SHALL INSTALL AUXILIARY DRAIN
- PANS UNDER OVERHEAD AIR HANDLERS AND AN AUTOMATIC CUT-OFF FLOAT SWITCH FOR EACH. P-TRAPS AND CONDENSATE LINES SHALL BE 1 INCH. P-TRAPS AND CONDENSATE LINES MAY BE PVC WHERE NOT LOCATED IN PLENUMS; OTHERWISE, THEY SHALL BE TYPE M COPPER. CONDENSATE SHALL BE ROUTED TO DAYLIGHT OR STORM DRAIN.
- 16. INSTALL BACKDRAFT DAMPERS ON FRESH AIR AND EXHAUST DUCTS WHERE THEY PENETRATE THE THERMAL ENVELOPE PER NORTH CAROLINA ENERGY CONSERVATION CODE C402.5.5



8133 Holly Forest Road Wake Forest, North Carolina 27587 Phone: (919) 819-1536

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<u>-1</u> <u>-NO CHANGES</u> No. Revision	<u>10/8/24 -</u> Date
1 ISSUED FOR PERMITS	7/24/24
140. 155060	Date
Checked By: JH KE PROJECT NO.: 24011	8 Drawn By: DC
Client /Project	
Town of Wake Forest	
WAKE FOREST	
PUBLIC SAFETY	,
WAREHOUSE	
1412 Forestville Rd. \	Wake Forest, NC
Sheet Title	
MECHANICAL SCHE	DULE & NOTES
Project No.	Scale
23026	AS NOTED
Revision	

M-1



CFD(R)2, CFD(R)3 & CFD(R)3.5 Ceiling Fire Damper



UL Classified Radiation Dampers

APPLICATION

protection.

UL Fire Rated Floor/Ceiling Assemblies and Roof/Ceiling Assemblies require specially tested and classified Ceiling Dampers (also called Ceiling Fire Dampers or Radiation Dampers) to provide fire and heat protection where HVAC components penetrate the ceiling membrane. Standard, 1 1/2 and 3 hr. primary fire dampers DO NOT provide the necessary

Ruskin CFD(R)2 and CFD(R)3 are UL Classified to provide protection to HVAC penetrations of up to 324 sq. in. (2090) maximum opening size through UL fire rated assemblies with fire resistance ratings of 3 hours or less. Penetrations larger than 324 sq. in. (2090) and up to 576 sq. in. (3716) require model CFD4. The quantity and frequency of permissible HVAC ceiling penetrations are described in the UL Fire Resistance Directory.

WOOD TRUSS CEILING APPLICATION The Ruskin CFD7, CFDR7T and CFD7T series ceiling fire dampers are designed for wood construction floor/ceiling or roof/ceiling assemblies. Standard CFD2, 3 and 3.5 does not have the same fire resistance rating for wood construction and should not be used.

STANDARI	O CONSTRUCTION

	Galvanized steel (in gauges required by UL listing R8039). See chart below for sizing details					
	Damper Model	Frame Style	B Dimension or D Dimension	Frame Depth		
		Standard	All sizes	3" (76)		
Frame	CFD2 CFD3 CFD3.5	Extended	4" to 10" (102 to 254) 11" to 14" (279 to 356) 15" to 24" (381 to 607)	6 3/8" (162) 8 3/16" (208) 11 3/16" (284)		
		Standard	All sizes	3 5/8" (92)		
	CFDR2 CFDR3 CFD(R)3.5	Extended	5" to 10" (127 to 254) 11" to 14" (279 to 356) 15" to 20" (381 to 508)	6 3/4" (171) 6 3/4" (171) 11 3/4" (298)		
Blade	Galvanized steel (in gauges required by UL listing R8039).					
Fusible Link 165°F (74°C) is standard. 212°F (100°C) is a cost.		212°F (100°C) is available	e at no additiona			
Minimum Size (Damper Size)	CFD2/CFD3 – 5"w x 4"h (127 x 102). CFDR2 – 12" (305) diameter. CFDR3/3.5 – 5" (127) diameter.					
Maximum Size (Damper Size)	CFD3 - 70 s CFD2 - 324 than 24" (60 CFDR2 - 20 CFDR3/3.5	sq. in. (452) m sq. in. (2090))7).)" (508) diame – 10" (254) dia	aximum.) with height or width dimer :ter. ameter.	nsions not greate		



CONSTRUCTION DETAILS

UL Classification testing for ceiling fire dampers measures the heat transmitted through, and temperatures above, ceiling penetrations with ceiling dampers. Smaller dampers meet these criteria without thermal insulation, but larger dampers require insulation to provide acceptable performance.

CFD3 Rectangular dampers with area up to 70 square inches (452) meet UL criteria without blade insulation. CFD2 Rectangular dampers with area above 70 square inches (452) to 324 square inches (2090) are provided with blade insulation.

CFDR3 Round dampers 10" (254) diameter and under meet UL criteria without blade insulation.

CFDR2 Round dampers above 10" (254) diameter through 20" (508) diameter are provided with blade insulation

Dimensions shown in parentheses () indicate millimeters.

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Model CFD(R)2, CFD(R)3 and CFD(R)3.5 meets the requirements for fire/radiation dampers established by:
> National Fire Protection Association NFPA Standards 80, 90A, 92A, 92B, and 101.
ICC International Building Codes.

ICC International Building Codes. CSFM California State Fire Marshal Listing (3225-0245:0101) **UL CLASSIFIED & ULC LISTED**

UL555C Classification R8039

VA Volume Adjust to balance airflow.

Spec CFD(R)2 & 3-520/ Replaces CFD(R)2 & 3-1008

OPTIONS



ALL STATED SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION

Page 1

STIFFEN BLADE AS REQUIRED NOTE



<u>General Gas line Piping Notes</u>

- 1. THE GAS PIPING CONTRACTOR (GPC) SHALL PROVIDE ALL MATERIALS AND LABOR AS REQUIRED
- FOR A COMPLETE AND OPERATING SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS. 2. THE GPC SHALL INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE 2018 NORTH CAROLINA FUEL GAS CODE AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE MORE STRINGENT SHALL BE USED. THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ENGINEER IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
- THE GPC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
 DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
- DO NOT SCALE THESE DRAWINGS—REFER TO ARCHITECTORAL STREETS FOR DIMENSIONS.
 THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS.
- THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL INSTALL HIGH PRESSURE REGULATORS AT EACH PIECE OF EQUIPMENT AS NECESSARY.
- 8. INSTALL A DRIP LEG IN GAS LINE AT EACH POINT WHERE CONDENSATE COULD COLLECT. ALL DRIP LEGS SHALL BE READILY ACCESSIBLE FOR CLEANING OR EMPTYING.
- PIPING SHALL BE SCHEDULE 40 STEEL OR WROUGHT IRON AND COMPLY WITH ANSI/ASME B36.10, ASTM A 53, OR ASTM A 106.
 ALL PIPES AND FITTINGS SHALL BE NEW, FREE OF DEFECTS, AND RATED FOR THE APPLICATION.
- 10. ALL PIPES AND FITTINGS SHALL BE NEW, FREE OF DEFECTS, AND KATED FOR THE APP 11. ALL PIPING SHALL BE INSTALLED SO AS NOT TO BE SUBJECT TO PHYSICAL DAMAGE.
- PVC VENT PIPING SHALL NOT BE INSTALLED INDOORS.
 THE TYPE OF PIPING JOINT USED SHALL BE SUITABLE FOR THE PRESSURE-TEMPERATURE CONDITIONS AND SHALL BE SELECTED CONSIDERING JOINT TIGHTNESS AND MECHANICAL STRENGTH UNDER THE SERVICE CONDITIONS.
- PIPE JOINTS SHALL BE THREADED, FLANGED, BRAZED, OR WELDED.
 FLEXIBILITY SHALL BE PROVIDED BY THE USE OF BENDS, LOOPS, OFFSETS, OR COUPLINGS OF THE SLIP TYPE. PROVISIONS SHALL BE MADE TO ABSORB THERMAL CHANGES BY THE USE OF EXPANSION JOINTS OF THE BELLOWS TYPE OR BY THE USE OF 'BALL' OR 'SWIVEL' JOINTS. DO NOT USE EXPANSION JOINTS OF THE SLIP TYPE INSIDE THE BUILDING. PIPE ALIGNMENT GUIDES SHALL BE USED WITH EXPANSION JOINTS PER THE MFG.
- ALL GAS PIPING SHALL BE LABELED TO INDICATE THE PRESSURE.
 PIPE HANGERS AND SUPPORTS SHALL CONFORM TO ANSI/MSS SP-58.
- BENDS SHALL BE MADE ONLY WITH BENDING TOOLS AND PROCEDURES INTENDED FOR THAT PURPOSE. DO NOT BEND PIPE THROUGH AN ARC OF MORE THAN 90°. ALL BENDS SHALL BE SMOOTH AND FREE OF CRACKS, BUCKLING, OR OTHER EVIDENCE OF DAMAGE.
- INSTALL GAS SHUTOFF VALVES UPSTREAM OF EACH GAS REGULATOR. VALVES SHALL BE READILY ACCESSIBLE AND NOT SUBJECT TO PHYSICAL DAMAGE.
 WHERE A SEDIMENT TRAP IS NOT INCORPORATED AS PART OF THE APPLIANCE, A SEDIMENT TRAP
- SHALL BE INSTALLED DOWNSTREAM OF THE APPLIANCE SHUTOFF VALVE AS CLOSE TO THE INLET OF THE APPLIANCE AS PRACTICAL.
- 21. PRIOR TO ACCEPTANCE BY THE OWNER, ALL GAS PIPING INSTALLATIONS SHALL BE INSPECTED AND PRESSURE TESTED IN ACCORDANCE WITH SECTION 406 OF THE NC FUEL GAS CODE.

	GAS LINE SIZING VERIFICATION TABLE					
PE	PER 2018 NC FUEL GAS CDDE TABLE 402. 4(2)					
SECTION	gas load	LINE SIZE	CAPACITY	PRESSURE		
SECTION	MBTU/H	INCHES	CFH	IN WG		
A-B	380	1 1/4″	400	7 '		
B-C	220	1 1/4″	400	7 ″		
D-E	85	3/4″	104	7'		
C-D	135	1'	195	7'		
C-G	85	3/4″	104	7″		
D-F	50	3/4″	104	7'		
B-H	160	1'	195	7'		
TOTAL DEVELOPED LENGTH 100'						





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IGH—3 50,000 BTU

GAS RISER - SCALE:NTS

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STEPHEN T. BAXTER

ARCHNECT, PLLC

1412 Forestville Rd. Wake Forest, NC Sheet Title GAS RISER & DETAIL

Project No.

23026





-i					
- BKR	LOAD	СКТ			
20/1	OFFICE 101 RECPT.	2			
20/1*	GFCI WATER COOLER RECPT.	4			
20/1	GFCI C-TOP RECPT.	6			
20/1	PHENE BD. RECPT.	8			
20/1	UNIFORM RM. 109 RECPT.	10			
20/1	SPARE	12			
20/1	VEHICLE BAY RECPT.	14			
20/1	VEHICLE BAY RECPT.	16			
20/1	VEHICLE BAY RECPT. CLG.	18			
20/1	VEHICLE BAY RECPT. CLG.	20			
20/1	PROPERTY EVIDENCE RM RECPT.	22			
20/1	EF-5	24			
20/1	VEHICLE BAY LIGHTS	26			
20/1	DFFICE LIGHTS	28			
20/1	PPE RM. & UNIFORM RM. LIGHTS	30			
20/1	EF-6	32			
20/1	FIRE ALARM CONTROL PANEL	34			
20/1	WH-1	36			
	SPARE	38			
	SPARE	40			
	SPARE	42			
120V, 3P, 4W					
IC					
1					

208	208Y/120V, 3P, 4W			
	load kva	nec Reference	NOTES/CALCULATIONS	
	8. 34	220. 12	6956SF X 1.2 VA/SF	
	9. 99	220. 44		
	0. 84	220. 44		
	20. 00		BASED EN MCA	
	0, 36	422. 13	STORAGE TANK <120 GAL @ 125%	
	1. 20	220. 14(F)		

CA	MOCP	DISC	AWG	EGC	COND
8	15	15	#12	#12	3/4 ″
2.4	35	60	#8	# 10	1″
i. 8	25	30	#10	# 10	3/4 ″
5	15	15	#12	#12	1/2 ″

	ELECTRICAL DES	IGNER' S STATEMENT	
<u>ELEC</u> PRESCRIP	<u>CTRICAL SYSTEM AND EQU</u> TIVE _X_ PERFORMANC	<u>IPMENT METHOD OF COM</u> Ce Energy Cost	PLIANCE BUDGET
LIGHTING SCHEDULE	1		
LAMP TYPE REQUIRE	D IN FIXTURE:		SEE LIGHTING LEGEND
NUMBER OF LAMPS P	ER FIXTURE:		SEE LIGHTING LEGEND
BALLAST TYPE USED	IN FIXTURE:		SEE LIGHTING LEGEND
NUMBER OF BALLAST	S IN FIXTURE:		SEE LIGHTING LEGEND
TOTAL WATTAGE PER	FIXTURE:		SEE LIGHTING LEGEND
TOTAL INTERIOR WA	TTAGE SPECIFIED VS	WATTS SPECIFIED	WATTS ALLOWED × 90%
ALLOWED:		2624. 0	4131. 86
DCCUPANCY	AREA (sf)	ALLOWANCE (W/sf)	WATTAGE ALLOWED
STORAGE	6956	0. 66	4590. 96
TOTAL	6956		4590. 96
Equipment Schedul Motor Horsepover: Number of Phases: Minimum Efficienc Motor Type: N/A Number of Poles:	es with motors (not us N/A N/A Y: N/A N/A	SED FOR MECHANICAL SY	(STEMS)
DESIGNER STATEMEN BUILDING COMPLIES	T: To the best of my h with the 2018 North (KNDWLEDGE AND BELIEF, CARDLINA ENERGY CONSE	THE DESIGN DF THIS RVATION CODE.
For the additional	PRESCRIPTIVE REQUIREMENT	REQUIRED BY C406 OF 2	2018 NORTH CAROLINA

2624 W SPECIFIED <= 4131 W



GENERAL ELECTRICAL NOTES:

- 1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS: PC - PLUMBING CONTRACTOR, EC - ELECTRICAL CONTRACTOR, MC – MECHANICAL CONTRACTOR, GC – GENERAL CONTRACTOR, FASC - FIRE ALARM SYSTEM CONTRACTOR, AHJ - AUTHORITY HAVING JURISDICTION.
- "PROVIDE" MEANS TO FURNISH AND INSTALL. THE ELECTRICAL CONTRACTOR SHALL ALSO INSTALL MATERIALS AND EQUIPMENT FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR AS REQUIRED.
- 3. EC SHALL PROVIDE LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY AND REASONABLY INCIDENTAL TO INSURE A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. MINOR ITEMS, ACCESSORIES, AND DEVICES REASONABLY INFERABLE AS NECESSARY FOR THE COMPLETION AND PROPER OPERATION OF ANY ELECTRICAL SYSTEM SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- WORKMANSHIP SHALL BE IN ACCORDANCE WITH NECA 1 "STANDARD PRACTICE FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING. 5. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND
- UNLOADED BY THE ELECTRICAL CONTRACTOR AT AN APPROVED LOCATION. THE ELECTRICAL CONTRACTOR SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE ELECTRICAL CONTRACTOR UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
- 6. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
- 7. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS. 8. TRADE NAMES AND MANUFACTURERS ARE SPECIFIED TO ESTABLISH A
- QUALITY STANDARD. SUBSTITUTIONS SHALL BE PERMITTED IF APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. ALL LISTED MODEL NUMBERS SHALL BE VERIFIED WITH THE MANUFACTURER FOR PROPER APPLICATION OF FOUIPMENT.
- THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE ELECTRICAL CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
- GROUNDING AND BONDING SHALL BE PER NEC ARTICLE 250. THE RACEWAY SYSTEM SHALL NOT BE RELIED UPON FOR GROUNDING CONTINUITY. A GREEN EQUIPMENT GROUNDING CONDUCTOR. SIZED PER NEC TABLE 250-122, SHALL BE RUN IN ALL POWER RACEWAYS. FOR NON-ISOLATED GROUND CIRCUITS PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. FOR ISOLATED GROUND CIRCUITS, PROVIDE ONE NEUTRAL AND ONE ISOLATED GROUND WIRE FOR EACH CIRCUIT; IN ADDITION, PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. MAIN BONDING JUMPERS AND SYSTEM BONDING JUMPERS SHALL BE INSTALLED IN ACCORDANCE WITH 250.28 OF THE NEC. FOR BUILDINGS OR STRUCTURES SUPPLIED BY FEEDERS OR BRANCH CIRCUITS, GROUNDING AND BONDING SHALL BE IN ACCORDANCE WITH 250.32. SEPARATELY DERIVED AC SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH 250.30. RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS; ADDITIONAL
- GROUNDING ELECTRODES SHALL BE INSTALLED PER 250.54 AS NECESSARY. 11. THE ELECTRICAL CONTRACTOR SHALL ALSO COORDINATE WITH THE GENERAL CONTRACTOR REGARDING THE BONDING OF THE FOOTING REBAR, SO THAT IT WILL BE IN PLACE AND READY AT TIME OF FOOTING INSPECTION.
- 12. ALL MATERIALS AND EQUIPMENT SHALL COMPLY WITH THE UNDERWRITERS' LABORATORIES, INC. STANDARDS OR HAVE UL APPROVAL, OR BEAR UL RE-EXAMINATION LISTING WHERE SUCH APPROVAL HAS BEEN ESTABLISHED FOR THE TYPE OF DEVICE IN QUESTION.
- 13. CONDUCTORS, FUSES, CIRCUIT BREAKERS, AND DISCONNECT SWITCHES SHOWN ON THESE PLANS HAVE BEEN SIZED FOR THE SPECIFIED EQUIPMENT. BEFORE ORDERING ELECTRICAL EQUIPMENT, THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS ON THE SITE AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES SHOULD CONDUCTOR, CIRCUIT BREAKER. OR FUSE SIZES REQUIRE CHANGE.
- 14. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE THE FOLLOWING MATERIALS ARE RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT: LIGHT FIXTURES, INCLUDING PROPER DISPOSAL OF BALLASTS, FLUORESCENT LIGHT BULBS, AND TRANSFORMERS, WIRING AND ELECTRICAL EQUIPMENT, AND INSULATION. WASTE MATERIALS CONTAINING LEAD, ASBESTOS, PCBs (FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH FEDERAL AND STATE LAWS AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
- 15. ALL WORK SHALL CONFORM TO 2020 NATIONAL ELECTRIC CODE, 2018 STATE BUILDING CODE, AND ALL APPLICABLE LOCAL CODES.
- 1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY DISCONNECTS, SWITCHES, RECEPTACLES, TERMINALS, ETC, UNDER THE ELECTRICAL BID AND SHALL INCLUDE ALL NECESSARY CIRCUITS AND CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS, UNLESS NOTED OTHERWISE BY OTHER DISCIPLINES.
- 2. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SERVICE ENTRANCE EQUIPMENT, SUB PANELS, AND OTHER ELECTRICAL DISTRIBUTION EQUIPMENT AS NECESSARY FOR A COMPLETE INSTALLATION. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH UTILITY REGARDING SERVICE AND METERING DETAILS. PRIOR TO ORDERING EQUIPMENT, THE ELECTRICAL CONTRACTOR SHALL OBTAIN THE AVAILABLE FAULT CURRENT OR TRANSFORMER SIZE AND IMPEDANCE FROM THE UTILITY AND CONTACT THE ENGINEER IF THE VALUE EXCEEDS THE EQUIPMENT SPECIFIED. PANEL BOARDS AND SWITCH BOARDS SHALL BE SQUARE D, CUTLER-HAMMER, SIEMENS, OR GE. BUSES SHALL BE COPPER UNLESS OTHERWISE APPROVED BY THE ENGINEER. RECESSED PANEL BOARDS SHALL BE INSTALLED FLUSH WITH THE WALL FINISH. METER BASES SHALL COMPLY WITH THE UTILITY'S SPECIFICATIONS AND SHALL BE MOUNTED AT A HEIGHT APPROVED BY THE UTILITY. ALL EQUIPMENT IDENTIFIED FOR SERVICE ENTRANCE USE SHALL BE SO LABELED AND UL LISTED FOR SUCH USE. ELECTRICAL CONTRACTOR SHALL INSTALL ALL ELECTRICAL EQUIPMENT WITH CLEARANCES PER NEC 110.26. ELECTRICIAN SHALL PERMANENTLY LABEL EQUIPMENT PER NEC 110.24.
- 3. ENCLOSED SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE BY SQUARE D. EATON, OR GE. ENCLOSED SWITCHES SHALL HAVE A HANDLE LOCKABLE IN THE OFF POSITION AND SHALL HAVE A HANDLE INTERLOCKED TO PREVENT OPENING THE FRONT COVER WHILE IN THE ON POSITION. ENCLOSED SWITCHES OF THE FUSIBLE TYPE SHALL BE FUSED IN ACCORDANCE WITH NAMEPLATE DATA WITH DUAL ELEMENT TYPE FUSES BY BUSSMAN, LITTELFUSE, OR MERSEN.
- 4. OCCUPANCY SENSORS SHALL BE BY WATTSTOPPER, LUTRON, LEVITON, SENSOR SWITCH, HUBBELL, OR APPROVED EQUAL. 5. CIRCUIT BREAKERS SHALL BE MOLDED-CASE, THERMAL MAGNETIC TYPE
- WITH QUICK-MAKE, QUICK-BREAK MECHANISM, COMMON TRIP ON MULTI-POLE BREAKERS, AND UL LISTED FOR BOTH COPPER AND ALUMINUM CONDUCTORS. CIRCUIT BREAKERS IN PANELS SHALL BE SERIES RATED WITH THE MAIN BREAKER, FULLY RATED FOR THE SYSTEM, OR SERIES RATED WITH THE BREAKER FEEDING THE PANEL FROM THE FACTORY.
- 6. ALL WIRE, CONNECTORS, TERMINALS, AND LUGS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. WHERE CONDUCTORS ARE RUN IN PARALLEL, LUGS SHALL BE LISTED FOR PARALLEL CONDUCTORS. PUSH WIRE CONNECTORS ARE NOT ALLOWED FOR BUILDING WIRE. PUSH CONNECTORS ARE ONLY ALLOWED, WHEN APPROVED, AS PART OF MANUFACTURED LISTED PRODUCTS. ALL WIRE SHALL BE INSTALLED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
- 7. THE INSULATION TYPE FOR INTERIOR WIRING SHALL BE DUAL RATED THHN/THWN OR XHHW; ALL WIRING INSTALLED BELOW GRADE OR IN MOIST OR WET LOCATIONS SHALL HAVE TYPE THWN OR XHHW INSULATION. INSULATION VOLTAGE RATING SHALL BE 600 VOLTS AND A MINIMUM TEMPERATURE RATING OF 75°C. CONDUCTORS SHALL BE SOLID OR STRANDED COPPER FOR #10 AWG AND #12 AWG, AND STRANDED COPPER FOR #8 AWG AND LARGER SIZES. ALL WIRING AND CABLE SHALL BE UL LISTED. ALL TERMINATIONS AND DEVICES SHALL BE RATED FOR USE WITH 75°C CONDUCTORS. FINAL CONNECTIONS TO ALL MOTORS AND EQUIPMENT SUBJECT TO VIBRATION OR MOVEMENT SHALL BE MADE WITH STRANDED COPPER CONDUCTORS. CONDUCTORS SHALL BE BY CERRO WIRE, INC. INDUSTRIAL WIRE & CABLE, INC, ENCORE WIRE CORPORATION, OR SOUTHWIRE COMPANY.

- 8. JOINTS IN SOLID CONDUCTORS SHALL BE SPLICED USING IDEAL "WIRE NUTS", 3M "SCOTCH LOCK", OR T&B "PIGGY" CONNECTORS IN JUNCTION BOXES, OUTLET BOXES, AND LIGHTING FIXTURES. JOINTS IN STRANDED CONDUCTORS SHALL BE SPLICED BY APPROVED MECHANICAL CONNECTORS AND GUM RUBBER TAPE OR FRICTION TAPE. SOLDERLESS MECHANICAL CONNECTORS FOR SPLICES AND TAPS, PROVIDED WITH UL APPROVED INSULATING COVERS, MAY BE USED INSTEAD OF MECHANICAL CONNECTORS PLUS TAPE. IN ALL CASES, CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND NO SPLICING SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES, TROUGHS, OR GUTTERS. WHERE CONCENTRIC, ECCENTRIC, OR OVERSIZED KNOCKOUTS ARE ENCOUNTERED, A GROUNDING TYPE INSULATED BUSHING SHALL BE PROVIDED.
- 9. ALL LUMINAIRES SHALL BE LISTED. LUMINAIRES IN WET OR DAMP LOCATIONS SHALL BE MARKED AS SUITABLE FOR THE RESPECTIVE USE. EMERGENCY LIGHTING SHALL BE INSTALLED AS SHOWN. FINAL LOCATIONS OF ALL EXIT AND EMERGENCY LIGHTS SHALL BE VERIFIED WITH THE BUILDING INSPECTOR PRIOR TO INSTALLATION. ALL FLUORESCENT FIXTURES SHALL HAVE ELECTRONIC BALLASTS MEETING ANSI C82.11 FOR ELECTRONIC BALLAST PERFORMANCE. ALL BALLASTS SHALL BE UL LISTED AND MEET FEDERAL AND STATE EFFICIENCY REQUIREMENTS.
- 10. ALL CONDUIT, FITTINGS, COUPLINGS, AND SUPPORTS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. CONDUIT FITTINGS AND COUPLINGS SHALL BE BY APPLETON, RACO, OR O-Z/GEDNEY. COUPLINGS SHALL BE THREADED, SET-SCREW, OR COMPRESSION TYPE. INDENTER OR CRIMP TYPE ARE NOT PERMITTED. CONDUIT FITTINGS AT ALL ELECTRICAL BOXES INCLUDING PULL, JUNCTION, AND OUTLET BOXES, SHALL HAVE INSULATED THROATS TO PREVENT INSULATION SCORING. DIE CAST FITTINGS ARE NOT PFRMITTED
- 11. EMT SHALL BE MANUFACTURED IN ACCORDANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE-AMERICAN NATIONAL STANDARD FOR STEEL FLECTRICAL METALLIC TUBING (FMT), ANSI C80.3 AND UL 797. RIGID METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR ELECTRICAL RIGID STEEL CONDUIT (ERSC). ANSI C80.1 AND UL 6. INTERMEDIATE METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI-AMERICAN NATIONAL STANDARD FOR INTERMEDIATE METAL CONDUIT ANSI C80.6 AND UL 1242.
- 12. METAL CONDUIT SHALL BE BY ALLIED TUBING & CONDUIT, BECK MANUFACTURING, INC, OR WHEATLAND TUBE COMPANY. FLEXIBLE METAL CONDUIT, LIQUID-TIGHT FLEXIBLE METAL CONDUIT, AND NONMETALLIC CONDUIT SHALL BE BY AFC CABLE SYSTEMS, INC, ELECTRI-FLEX COMPANY, OR INTERNATIONAL METAL HOSE.

- 1. EC SHALL REVIEW THE MECHANICAL PLANS TO ESTABLISH POINTS OF CONNECTION AND THE EXTENT OF THE ELECTRICAL WORK TO BE PROVIDED IN THE CONTRACT.
- ALL CIRCUIT BREAKERS FEEDING HVAC EQUIPMENT SHALL BE HACR BREAKERS. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG IN 3/4 in CONDUIT. EACH MULTI-WIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE SOURCE PER NEC 210.4(B). GROUP ALL CONDUCTORS OF EACH MULTI-WIRE BRANCH CIRCUIT PER 210.4(D) WITH WIRE TIES OR SIMILAR MEANS. DO NOT EXCEED THREE HOMERUNS PER CONDUIT. DO NOT INSTALL ISOLATED GROUND AND NON-ISOLATED GROUND CIRCUITS IN THE SAME CONDUIT. INSTALL CONDUCTORS OF DIFFERENT VOLTAGES IN SEPARATE CONDUITS.
- COLOR CODE CONDUCTORS PER NEC. FEEDERS SHALL BE IDENTIFIED IN ACCORDANCE WITH NEC 215.12. USE BLACK, RED, AND BLUE FOR PHASES A, B, AND C RESPECTIVELY ON 208Y/120 VOLT THREE-PHASE Y SYSTEMS AND WHITE FOR THE NEUTRAL. ISOLATED GROUND WIRES SHALL BE GREEN WITH YELLOW BANDS OR STRIPES; THIS IDENTIFICATION SHALL BE MADE AT EACH POINT WHERE A CONNECTION IS MADE. COLORS SHALL BE FACTORY APPLIED FOR CONDUCTORS #6 AWG AND SMALLER. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE GREEN IN COLOR AND MINIMUM #12 AWG. THE EC SHALL PROVIDE PLENUM RATED CABLE FOR ANY ELECTRICAL. TELEPHONE, COMMUNICATION, OR OTHER CABLE THAT ENTERS CEILING RETURN PLENUMS.
- ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING. COORDINATE LIGHTING LAYOUT WITH CEILING GRID. MECHANICAL EQUIPMENT, DUCTWORK AND SPRINKLER HEADS AS NECESSARY SEE REFLECTED CEILING PLAN FOR DETAILS. FLUORESCENT FIXTURES UTILIZING DOUBLE-ENDED LAMPS MUST HAVE A DISCONNECTING MEANS COMPLYING WITH NEC 410.130(G).
- 5. MOUNT LIGHT SWITCHES AT 48 in AFF. MULTIPLE SWITCHES AT SAME LOCATION SHALL BE UNDER ONE WALL PLATE. VERIFY WALL PLATE COLOR AND MATERIAL WITH THE ARCHITECT/OWNER. INSTALL SWITCHES WITH off POSITION DOWN. ALL SWITCHES SHALL BE HEAVY DUTY, IVORY PLASTIC WITH TOGGLE HANDLE, RATED 120-277V AC, AND COMPLYING WITH NEMA WD 6 AND WD 1. SWITCHES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. PROVIDE BOX DEVICE PARTITION/DIVIDERS FOR MULTI-GANG BOXES FOR COMPLIANCE WITH NEC 404 8(B)
- 6. ELECTRICAL CONTRACTOR SHALL PROVIDE FIRE-STOPPING AT ALL ELECTRICAL PENETRATIONS OF RATED FLOORS AND WALLS TO PRESERVE OR RESTORE THE FIRE-RESISTANCE RATING. SEAL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THIS PROJECT.
- ELECTRICAL CONTRACTOR SHALL PROVIDE GFCI RECEPTACLES IN KITCHENS, RESTROOMS, OUTDOORS, AND IN SHOP AREAS AS REQUIRED BY NEC. REFRIGERATORS AND WATER COOLERS MUST HAVE A DEDICATED GFCI BREAKER. EACH OUTDOOR HVAC UNIT MUST HAVE A GFCI RECEPTACLE WITHIN 25 FEET FOR SERVICING. GFCI RECEPTACLES SHALL CONFORM TO UL 943 CLASS A AND UL 498 STANDARDS. RECEPTACLES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. ALL RECEPTACLES SHALL BE 125V RATED, HEAVY DUTY, AND COMPLY WITH NEMA WD 6 AND WD 1.
- LOCATIONS AND HEIGHTS OF ALL WALL-MOUNTED DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION. CONCEAL ALL CONDUIT EXCEPT IN MECHANICAL ROOMS OR UNFINISHED AREAS AS NOTED. USE EMT CONDUIT FOR ALL BRANCH CIRCUITS AND FEEDERS INSIDE THE BUILDING. TYPE MC CABLE AND TYPE AC CABLE MAY BE INSTALLED WITHIN WALLS IF ALL NEUTRAL WIRES, ISOLATED GROUND WIRES, AND EQUIPMENT GROUND WIRES AS LISTED ABOVE ARE CONTAINED IN THE CABLE. FLEXIBLE CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SHALL BE MADE USING WEATHERPROOF FLEXIBLE CONDUIT. FOR LAY-IN LIGHT FIXTURES, USE MAXIMUM OF SIX (6) FEET OF FLEXIBLE MC CABLE (OR THE FLEXIBLE CONDUIT PROVIDED BY THE FIXTURE
- MANUFACTURER). SCHEDULE 40 PVC CONDUIT MAY BE USED FOR THE SECONDARY UNDERGROUND SERVICE, UNDERGROUND TELEPHONE SERVICE, AND BRANCH AND FEEDER CIRCUITS UNDER SLAB OR EXTERIOR TO THE BUILDING. EXPOSED EXTERIOR CONDUIT SHALL BE SCHEDULE 80 PVC. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED WITH UNDERGROUND LINE MARKING TAPE 6-8 in BELOW GRADE DIRECTLY ABOVE THE RACEWAY. PROVIDE PULL WIRE IN EMPTY CONDUITS. UPSIZE CONDUIT FROM MINIMUM SIZE AS NECESSARY FOR LONGER PULLS. UNDERGROUND RACEWAYS THAT STUB INTO THE BOTTOM OF SWITCHBOARDS, OUTDOOR TRANSFORMERS, GENERATORS, ETC., SHALL RISE AT LEAST 2 in ABOVE THE FINISHED SLAB TO PREVENT WATER FROM DRAINING INTO THE RACEWAYS. RACEWAYS THAT PENETRATE EXTERIOR WALLS OR INTERIOR PARTITIONS SEPARATING SPACES THAT WILL BE AT SIGNIFICANTLY DIFFERENT TEMPERATURES SHALL BE SEALED IN ACCORDANCE WITH 300.5(G), 300.7(A), AND 300.50(E) OF THE NEC. ROUTE CONDUIT IN AND UNDER SLAB FROM POINT-TO-POINT. ROUTE EXPOSED CONDUIT AND CONDUIT INSTALLED ABOVE ACCESSIBLE CEILINGS PARALLEL AND PERPENDICULAR TO WALLS. COMPLETELY AND THOROUGHLY SWAB ALL RACEWAYS BEFORE INSTALLING WIRE. PULL ALL CONDUCTORS INTO EACH RACEWAY AT ONE TIME. USE A SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE #4 AWG AND LARGER.
- 10. CABLES, RACEWAYS, OR BOXES, INSTALLED IN EXPOSED OR CONCEALED LOCATIONS UNDER METAL-CORRUGATED SHEET ROOF DECKING. SHALL BE INSTALLED AND SUPPORTED SO THERE IS NOT LESS THAN 1-1/2 in MEASURED FROM THE LOWEST SURFACE OF THE ROOF DECKING TO THE TOP OF THE CABLE, RACEWAY, OR BOX. A CABLE, RACEWAY, OR BOX SHALL NOT BE INSTALLED IN CONCEALED LOCATIONS IN
- METAL-CORRUGATED, SHEET DECKING-TYPE ROOF, SEE NEC 300.4(E). . THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL OUTLET. JUNCTION. PULL BOXES, FITTINGS, AND SUPPORTS. ALL OUTLET AND JUNCTION BOXES SHALL BE GALVANIZED STEEL TYPE BY APPLETON, STEEL CITY, OR RACO. EXTERIOR BOXES SHALL BE TYPE FS. VAPORTITE BOXES SHALL BE TYPE

GS. WHERE SURFACE MOUNTED BOXES ARE USED, THOSE BOXES AND THEIR FACEPLATES SHALL HAVE ROUNDED CORNERS. BOXES INSTALLED IN FLOORS SHALL BE RATED FOR THE APPLICATION. MOUNT JUNCTION AND OUTLET BOXES FLUSH WITH FINISH SURFACES UNLESS OTHERWISE NOTED. where mounting heights are given, they shall be measured from THE FINISHED FLOOR TO THE CENTER OF THE BOX. ALL BOXES SHALL BE SIZED PER NEC ARTICLE 314. ALL OUTLET AND JUNCTION BOXES SHALL HAVE A COVER PLATE, PROVIDED BY THE ELECTRICAL CONTRACTOR. OUTLET BOXES IN RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE 714.3.2 (MAXIMUM BOX SIZE IS 16 SQUARE in AND MAXIMUM OF SIX (6) BOXES PER 100 SQUARE FEET). INSTALL OUTLET BOXES IN RATED WALLS SUCH THAT OPENINGS OCCUR IN ONE SIDE ONLY WITHIN ANY GIVEN STUD SPACE. ALL CLEARANCES BETWEEN THE OUTLET BOX AND THE GYPSUM BOARD SHALL BE FILLED WITH JOINT COMPOUND OR OTHER APPROVED FIRE STOP MATERIAL. FLUSH MOUNTED JUNCTION BOXES IN ADJACENT ROOMS SHALL NOT BE MOUNTED BACK-TO-BACK. SURFACE MOUNTED FIXTURES SHALL BE FED THROUGH FLUSH MOUNTED 4X4 OCTAGONAL OR SQUARE BOXES.

- 12. ALL CONDUIT, BOXES, AND ELECTRICAL EQUIPMENT SHALL BE FIRMLY AND SECURELY FASTENED TO OR SUPPORTED FROM THE BUILDING STRUCTURAL MEMBERS OR EMBEDDED IN CONCRETE OR MASONRY. ELECTRICAL SUPPORTS SHALL NOT BE ATTACHED TO DUCTWORK, PIPING, OR THEIR SUPPORTS. HANGERS SHALL BE CATALOG ITEMS COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE. FOR METAL ROOF DECK INSTALLATIONS 1 in EMT CONDUIT MAXIMUM AND 4 in JUNCTION BOXES MAXIMUM MAY BE SUPPORTED BY DECKING. THE SUSPENDED CEILING SYSTEM SHALL NOT BE USED FOR THE SUPPORT OF ELECTRICAL RACEWAY SYSTEMS OR SUPPORT OF COMMUNICATIONS OR DATA SYSTEMS WIRING. CONTRACTOR SHALL COMPLY WITH 1613 OF THE NORTH CAROLINA GENERAL CONSTRUCTION BUILDING CODE
- 13. WHERE CONDUCTORS ARE RUN IN PARALLEL, THE EC SHALL COMPLY WITH NEC 310.4.
- 14. PROVIDE AN UNDERGROUND PVC CONDUIT SYSTEM FOR TELEPHONE SERVICE WITH PULL WIRES. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH TELEPHONE UTILITY REGARDING ADDITIONAL FACILITIES REQUIRED FOR THE SERVICE INSTALLATION.
- 15. INSTALL ONE (1) 3/4 in FIRE RETARDANT TREATED PLYWOOD BACKBOARD WHERE INDICATED ON THE DRAWINGS FOR THE USE BY THE TELEPHONE SYSTEM. PROVIDE A 120 VOLT RECEPTACLE ADJACENT TO THE TELEPHONE BOARD. GROUND ALL TELEPHONE AND COMMUNICATIONS CIRCUITS PER NEC
- 16. ALL TELEPHONE AND COMMUNICATIONS OUTLETS AND RACEWAYS ARE ROUGH-INS ONLY. EACH TELEPHONE AND COMMUNICATIONS OUTLET SHALL BE A 4 in SQUARE BY 2-1/8 in DEEP BOX WITH 3/4 in KNOCK-OUTS AND A 3/4 in CONDUIT STUBBED FROM THE OUTLET BOX TO ABOVE THE CEILING. PROVIDE A NON-METALLIC INSULATING BUSHING ON ALL CONDUITS STUBBED ABOVE THE CEILING. PROVIDE A BLANK COVER PLATE ON ALL OUTLET BOXES.
- 17. ELECTRICAL CONTRACTOR SHALL INSTALL DISCONNECT SWITCHES IN SIGHT OF ALL HARDWIRED EQUIPMENT AND APPLIANCES OR PROVIDE BREAKERS CAPABLE OF BEING LOCKED IN THE OPEN POSITION PER NEC 422.31. FOR MOTOR DRIVEN APPLIANCES, PROVIDE A DISCONNECTING MEANS PER NEC 422.31 AND 430 PART IX. WHERE AN INDIVIDUAL DISCONNECT SWITCH. CIRCUIT BREAKER, STARTER, ETC, IS SHOWN ON THE PLANS ADJACENT TO ITS LOAD AND NOT LOCATED ON A WALL, PROVIDE NECESSARY MATERIALS AND LABOR TO SUPPORT THE DEVICE.
- 18. ELECTRICAL CONTRACTOR SHALL FIELD IDENTIFY ALL SWITCH BOARD, PANEL BOARDS, CONTROL PANELS, METER SOCKETS, ETC., TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRICAL ARC FLASH HAZARDS PER 110.16 OF
- 19. ELECTRICAL CONTRACTOR SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT, SWITCHES, PANELS, ETC. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC, BLACK FRONT, AND BACK WITH WHITE CORE, WHITE ENGRAVED LETTERS (1/4 in MINIMUM) ETCHED INTO THE WHITE CORE. ELECTRICAL CONTRACTOR SHALL PROVIDE A TYPE WRITTEN DIRECTORY CARD THAT ACCURATELY IDENTIFIES CIRCUITS INSIDE EACH PANEL. HANDWRITTEN LABELS ARE NOT ACCEPTABLE.
- 20. IN ACCORDANCE WITH SECTION F510 OF THE NC FIRE PREVENTION CODE. TESTING WILL BE REQUIRED TO DETERMINE SATISFACTORY FIRST RESPONDER RADIO SIGNAL STRENGTH INSIDE EACH BUILDINGS ON SITE. TESTING WILL NEED TO EITHER BE COMPLETED BY A COUNTY FIRE INSPECTOR (OBTAIN BY REQUESTING A COURTESY INSPECTION) OR A CERTIFIED 3RD PARTY. TESTING SHALL TAKE PLACE AT BOTH 80% PROJECT COMPLETION AND AGAIN AT 100% COMPLETION IF UNACCEPTABLE SIGNAL DEGRADATION I PRESENT AT EITHER 80% OR 100% INSPECTION, THEN AN ACCEPTABLE BOOSTER SYSTEM SHALL BE ADDED TO THE BUILDING DESIGN AT THAT



8133 Holly Forest Road Wake Forest, North Carolina 27587 Phone: (919) 819-1536

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No. Revision	0/0/24 Date
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1 ISSUED FOR PERMITS	7/24/24
No. Issued	Date
Checked By: JH	
KE PROJECT NO.: 240118 Drawn I	By: DC
Client/Project	
Town of Wake Forest	
WARE FUREST	
WARFHOUSE	
MANLHOUSE	
1412 Forestville Rd. Wake Fore	st. NC
Sheet Title	<u>,</u>
ELECTRICAL SCHEDULE. NO	TES &
RISER	••
NJEN	
Project No.	Scale
23026	AS NOTED
Revision D	rawing No.
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7/24/24 Date

Scale



	LIGHTING DEVICE LEGEND				
SYMBOL	DESCRIPTION	REMARKS			
\$	SINGLE POLE WALL SWITCH	HEAVY DUTY, AC DNLY, COMMERCIAL GRADE GENERAL USE SNAP SWITCH COMPLYING WITH NEMA WD 6 AND WD 1. IVORY PLASTIC BODY WITH TOGGLE HANDLE. 120-277V, 20A. MEET FEDERAL SPECIFICATION W-S-896.			
\$∎	Wall mounted occupancy sensor	WATTSTOPPER DW-100 LINE VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC AND INFRARED.			
\$ _{LV}	LDW VOLTAGE SWITCH	WATTSOPPER LVS-1 LOW VOLTAGE MOMENTARY CONTROL SWITCH.			
	CEILING DCCUPANCY SENSOR	WATTSTOPPER, WT-2255 LOW VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC, 90 LINEAR FT COVERAGE.			
P	POWER PACK	WATTSTOPPER, BZ-150 LOW VOLTAGE POWER PACK FOR CEILING PACK SENSORS.			
\mathbb{X}	exhaust fan	VENT FAN, 120V, CFM AS NOTED MC TO PROVIDE AND VENT, EC TO WIRE.			

	LIGHT FIXTURE SCHEDULE													
MADIZ	DESCRIPTION			LAMPS			INPUT				NUDE1			
MAKK	DESCRIPTION	LUUVER/LENS	TYPE	WATTAGE	CCT		WATTAGE		KEMAKAS	MrG	MUDEL			
A	2X2 LED TROFFER	-	LED	40	3500K	120	40	LAY-IN	2, 4	RAB	EZPANFA-2X2			
B	4' LED WRAPAROUND	-	LED	50	4000K	120	50	SURFACE	2	RAB	GUS17-4 50W			
C	HIGH BAY LED	-	LED	95	4000K	120	95	SUSPEND	2	RAB	ARBAY-2-95-N-			
DE	EXTERIOR OVAL LED EMERGENCY LIGHT	POLYCARBONATE	LED	6	-	120	12	SURFACE	1, 2, 3	EELP	DEM-LED-BR-ACEM			
EXH	LED EXIT/COMBO W/ BATTERY BACKUP	ACRYLIC	LED	N/A	N/A	120	3	VARIES	1, 2	LITHONIA	LHQM-S-W-1-R-120/277-N-SD			
EX	LED EXIT SIGN W/ BATTERY BACKUP	ACRYLIC	LED	N/A	N/A	120	1	VARIES	1, 2	LITHONIA	LQM-S-W-1-R-120/277-EL-N-SD			
EM	DUAL HEAD EMERGENCY FIXTURE	ACRYLIC	LED	N/A	N/A	120	2	VARIES	1, 2	LITHONIA	ELM2L-SDRT			
	1. FIXTURE SHALL HAVE BATTERY BACKUF	P FOR 90 MINUTE ILLUMINATIO	N											
	2 OR FOLIAL BY CURRENT COOPER CO													

OR EQUAL BY CURRENT, COOPER, COLUMBIA OR MOBERN
 WITH PHOTO CELL
 SET CORRIDOR LIGHTS TO 25W ALL OTHERS TO 30W.

VERIFY ALL FIXTURE COLORS WITH OWNER OR ARCHITECT PRIOR TO PURCHASE.



ELECTRICAL LIGHTING PLAN SCALE: 1/4"=1'-0"





TABLE 110. 26(A)(1) WDRKING SPACE											
ναι τάςε τα ςραιινή ναντιλί	MINIMUM CLEAR DISTANCE (FEET)										
VELINGE TE GREOND, NEMINAL	CONDITON 1	2	3								
0-150	3	3	3								
151-600	3	3-1/2	4								

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Towr	n of Wake Forest	
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NĂ	REHOUSE	
412	2 Forestville Rd. Wake Fo	rest, NC
Shaa	at Title	

FIRE ALARM GENERAL NOTES

- 1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS: PC - PLUMBING CONTRACTOR, EC - ELECTRICAL CONTRACTOR, MC – MECHANICAL CONTRACTOR, GC – GENERAL CONTRACTOR, FASC – FIRE ALARM SYSTEM CONTRACTOR.
- 2. "PROVIDE" MEANS TO FURNISH AND INSTALL.
- 3. THE FIRE ALARM SYSTEM CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, ETC, AS NECESSARY FOR A COMPLETE AND OPERATIONAL FIRE ALARM SYSTEM.
- 4. THESE DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL MINOR DETAILS AND EXACT LOCATIONS. THE FASC SHALL ALLOW FOR ADJUSTMENTS TO ACCOMMODATE INTERFERENCES BOTH PLANNED AND ENCOUNTERED AND SHALL INCLUDE SUCH CONTINGENCIES IN THEIR
- 5. THE SUCCESSFUL FIRE ALARM BIDDER SHALL PROVIDE CONSTRUCTION DOCUMENTS TO THE AUTHORITY HAVING JURISDICTION FOR APPROVAL INCLUDING ALARM CONTROLS AND TROUBLE SIGNALING EQUIPMENT, ANNUNCIATION, POWER CONNECTIONS, BATTERY CALCULATIONS, VOLTAGE DROP CALCULATIONS, CONDUCTOR TYPES AND SIZES, LOCATIONS OF INITIATING AND NOTIFICATION APPLIANCES, AND MANUFACTURERS, MODEL NUMBERS, AND LISTING INFORMATION FOR
- ALL EQUIPMENT, DEVICES AND MATERIALS. 6. ALL WORK SHALL BE IN ACCORDANCE WITH NFPA 72 AND APPLICABLE SECTIONS OF NFPA 70 AND 13.
- 7. CONDUIT, CONDUCTORS, BOXES, AND HANGERS SHALL BE THE SAME AS THOSE SPECIFIED IN THE ELECTRICAL SYSTEM.
- 8. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BEAR UL LABEL OR EQUIVALENT WHERE APPLICABLE.
- 9. THE FIRE ALARM SYSTEM SHALL BE OF THE ADDRESSABLE TYPE WITH EACH INITIATING DEVICE REPORTING INDIVIDUALLY TO THE FIRE ALARM CONTROL PANEL. ONLY THE MANUFACTURER OR AN AUTHORIZED DISTRIBUTOR WHO STOCKS SPARE COMPONENTS FOR THE ENTIRE SYSTEM SHALL CONNECT, PROGRAM, OR TEST THE ADDRESSABLE FIRE ALARM SYSTEM. ALL TECHNICIANS PERFORMING SUCH WORK SHALL BE TRAINED AND INDIVIDUALLY CERTIFIED BY THE MANUFACTURER FOR THE MODEL OF SYSTEM BEING INSTALLED. COPIES OF THEIR CERTIFICATION SHALL BE AVAILABLE UPON REQUEST. THE MANUFACTURER OR AUTHORIZED DISTRIBUTOR SHALL STORE THE COMPLETE PROGRAMMING FOR THE ADDRESSABLE SYSTEM ON A COMPUTER DISK OR DISKETTE OR OTHER MEDIA AND ARCHIVE APPROPRIATELY. A COPY OF THE PROGRAM SHALL BE MADE AVAILABLE TO THE OWNER WHEN THE SYSTEM IS COMMISSIONED. THE MANUFACTURER OR AUTHORIZED DISTRIBUTOR SHALL MAINTAIN SOFTWARE VERSION RECORDS ON THE SYSTEM INSTALLED AND PROVIDE FREE UPGRADES IF THE MANUFACTURER RELEASES A NEW VERSION OF THE SOFTWARE DURING THE WARRANTY PERIOD. PROVIDE A SYSTEM FUNCTION MATRIX THAT GIVES THE FIRE ALARM CONTROL PANEL RESPONSE FOR EACH INITIATING DEVICE.
- 10. THE SYSTEM SHALL BE NOMINAL 24VDC, NON-CODED, AND SUPERVISED (INCLUDING CONTROL CIRCUITS). ALL EQUIPMENT SUPPLIED MUST BE LISTED FOR ITS PARTICULAR USE AND INSTALLED IN ACCORDANCE WITH ANY INSTRUCTIONS APPLICABLE TO ITS LISTING. 11. THE SYSTEM SHALL BE ELECTRICALLY SUPERVISED FOR OPEN OR GROUND FAULT CONDITIONS IN DETECTION, ALARM, AND CONTROL CIRCUITS. THE REMOVAL OF ANY DETECTION DEVICE, ALARM APPLIANCE, PLUG-IN RELAY, SYSTEM MODULE, OR STANDBY BATTERY CONNECTION SHALL ALSO ACTIVATE A TROUBLE SIGNAL. THE FIRE ALARM SIGNAL SHALL OVERRIDE TROUBLE SIGNALS, BUT THE PRE-ALARM TROUBLE SIGNAL SHALL REAPPEAR WHEN THE PANEL IS
- RESET 12. PROVIDE EACH SIGNALING LINE CIRCUIT WITH A MINIMUM OF 20 PERCENT SPARE ADDRESSES FOR FUTURE USE. 13. THE CONNECTIONS BETWEEN INDIVIDUAL ADDRESSABLE MODULES AND
- THEIR CONTACT TYPE INITIATING DEVICES MUST BE SUPERVISED. 14. THE FIRE ALARM CONTROL PANEL (FACP) POWER SUPPLY MUST HAVE A CONTINUOUS RATING ADEQUATE TO POWER ALL DEVICES AND FUNCTIONS IN FULL ALARM CONTINUOUSLY. BATTERIES MUST MEET THE APPROPRIATE NFPA CAPACITY REQUIREMENTS. THE FACP SHALL INCLUDE AN ALARM SILENCE SWITCH AND SHALL BE EQUIPPED WITH

THE SUBSEQUENT ALARM RESOUND FEATURE. THE ALARM SILENCING

AND RESET FEATURE SHALL NOT REVERSE AIR HANDLING UNITS SHUTDOWN. A SUPERVISED "HVAC SYSTEM SHUTDOWN" SWITCH MUST BE PROVIDED IN THE FACP WITH ITS "NORMAL" POSITION INDICATED. 15. ALL CONNECTIONS MADE AT THE FACP MUST BE BY THE MANUFACTURER'S AUTHORIZED FACTORY TRAINED PERSONNEL (NOT

THE ELECTRICAL CONTRACTOR). 16. PERMANENT WIRE MARKERS SHALL BE USED TO IDENTIFY ALL CONNECTIONS AND TERMINATIONS FOR EACH CIRCUIT. ALL FIRE ALARM JUNCTION BOXES SHALL BE SPRAYED RED AND LABELED "FIRE ALARM." TERMINAL BLOCKS SHALL BE PROVIDED IN ALL JUNCTION BOXES WHERE CONNECTIONS ARE MADE. IDENTIFICATION AT SPLICES SHALL INDICATE WHICH CONDUCTOR LEADS TO THE FACP.

17. THE FOLLOWING COLOR SCHEME SHALL BE USED FOR SYSTEM CONDUCTORS

	MDUGIURS.	
17.1.	INITIATING CIRCUITS (OTHER THAN SMOKE)	RED & WHITE
17.2.	INITIATING CIRCUITS (SMOKE DETECTION)	VIOLET & GRAY
17.3.	NOTIFICATION APPLIANCE CIRCUITS	BLUE & BLACK
17.4.	AIR HANDLING SHUT DOWN CIRCUITS	YELLOW
17.5.	DOOR CONTROL CIRCUITS	ORANGE
17.6.	ELEVATOR CIRCUITS	BROWN

- 18. LOW VOLTAGE WIRING SHALL NOT BE INSTALLED IN ANY RACEWAY CONTAINING POWER OR LINE VOLTAGE CONTROL WIRING. WITHIN THE FACP, ANY AC CONTROL WIRING SHALL BE PROPERLY SEPARATED FROM OTHER CIRCUITS AND THE ENCLOSURE SHALL BE LABELED TO ALERT SERVICE PERSONNEL TO THE HAZARD.
- 19. DEVICES SHALL BE INSTALLED AS INDICATED ON THE PLANS AND AS DETAILED. WHENEVER POSSIBLE, DEVICES SHOULD BE CENTERED ON SPACES OR LOCATED ABOVE OTHER OUTLETS. SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN THREE (3) FEET OF AN HVAC SUPPLY OR RETURN. INSTALL WALL MOUNTED SMOKE DETECTORS A MAXIMUM OF TWELVE (12) INCHES FROM CEILING.
- 20. PROVIDE A PERMANENT MARKER ON EACH DEVICE INSTALLED INDICATING THE DEVICE NUMBER AND ADDRESSABLE LOOP NUMBER. PROVIDE THE SAME INFORMATION INSIDE THE BOX FOR EACH DEVICE. 21. ALL HVAC EQUIPMENT SHALL SHUTDOWN UPON ACTIVATION OF ANY FIRE ALARM DEVICE.
- 22. WATER FLOW SWITCHES, VALVE TAMPER SWITCHES, AND PRESSURE SWITCHES SHALL BE PROVIDED AND INSTALLED BY THE SPRINKLER CONTRACTOR, CONNECTED BY THE ELECTRICAL CONTRACTOR, AND SUPERVISED BY THE FACP.
- 23. TESTING SHALL INCLUDE ALL TESTS REQUIRED FOR THE ELECTRICAL SYSTEMS IN ADDITION TO TESTING AND CERTIFICATION BY THE FIRE ALARM SYSTEM SUPPLIER. PROVIDE INSTRUCTION MANUALS TO OWNER PERSONNEL.
- 24. FASC SHALL VERIFY THAT ALL VISIBLE NOTIFICATION DEVICES ARE SYNCHRONIZED PER NFPA 72. 25. VERIFY DECIBEL LEVELS ARE MINIMUM 60 DBA AND MAXIMUM 120
- DBA THROUGHOUT THE ZONE; ADJUST DEVICES AS NECESSARY. MAINTAIN MINIMUM 100 DBA IN EQUIPMENT AND MECHANICAL ROOMS. 26. DEVICES MUST MEET SURVIVABILITY REQUIREMENTS OF THE NFPA AS
- APPLICABLE 27. THE AUDIBLE ALARM NOTIFICATION APPLIANCES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 DECIBELS (dBA) ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIABLE SPACE WITHIN THE BUILDING.
- 28. IN ACCORDANCE WITH SECTION F510 OF THE NC FIRE PREVENTION CODE, TESTING WILL BE REQUIRED TO DETERMINE SATISFACTORY FIRST RESPONDER RADIO SIGNAL STRENGTH INSIDE EACH BUILDINGS ON SITE. TESTING WILL NEED TO EITHER BE COMPLETED BY A COUNTY FIRE INSPECTOR (OBTAIN BY REQUESTING A COURTESY INSPECTION) OR A CERTIFIED 3RD PARTY. TESTING SHALL TAKE PLACE AT BOTH 80% PROJECT COMPLETION AND AGAIN AT 100% COMPLETION. IF UNACCEPTABLE SIGNAL DEGRADATION IS PRESENT AT EITHER 80% OR 100% INSPECTION, THEN AN ACCEPTABLE BOOSTER SYSTEM SHALL BE ADDED TO THE BUILDING DESIGN AT THAT TIME.

FIRE ALARM SYSTEM								SYSTEM OUTPUTS																					
INPUT/OUTPUT MATRIX								F	FACP ANNUNCIATION						Т	NOTIFICATION REQUIRED F					D FIRE SAFETY	CONTRO							
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1	FIRE ALARM SYSTEM AC POWER FAILURE													•						•							1]	
2	FIRE ALARM SYSTEM LOW BATTERY												•														2		
3	OPEN CIRCUIT												•														3		
4	GROUND FAULT												•														4		
5	NOTIFICATION APPLIANCE CIRCUIT SHORT																										5		
6	BUILDING MANUAL PULL STATIONS	•	•						•					•						•							6		
7	CORRIDOR SMOKE DETECTORS	•	•						•	•				•	•						•						7	4	
8	AREA SMOKE DETECTORS	•						•		•				•					•	•	•	•		•			8	4	
9	HVAC AIR DUCT SMOKE DETECTORS	-	-									•		_						_	•						9	4	
10								•		•	•			•					•	•		•		•	_		10	4	
11	HOOD OR ROOM FIRE SUPPRESSION SYSTEM ALARM	-	-			_			-	•	•	-		•	•				•	•	•		-				11	4	
12				•								•											-				12	4	
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WIRE	REQUIREMENT	<u>rs</u>
NAC CIRCUITS -	16/2, SOLID), FPLP WIRE
DATA CIRCUITS -	18/2, SOLII	D, FPLP WIRE



GENERAL	FIRE	ALARM	NOTES	8	SCHEDULES

FA-1

AS NOTED Drawing No.

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