

LEGEND OF STANDARD SYMBOLS

☆ LIGHT POLE	— OH — OVERHEAD UTILITY LINE
○ GUY	— or — X — FENCE LINE
⊠ TELECOMM. APPARATUS	— — — UNDERGROUND PIPING
⊡ ELECTRIC APPARATUS	— — — APPROX WOODS LINE (TRUNK)
⊞ GAS ASSEMBLY	— GAS — GAS LINE MARKINGS
⊙ SANITARY MANHOLE	— UE — UT — UNDERGROUND LINE MARKINGS
⊕ CLEANOUT	— W — WATER LINE MARKINGS
⊖ GREASE TRAP	— — — PROPERTY LINE (P/L)
⊗ CATCH BASIN	— — — ADJOINER
⊘ DRAINAGE STRUCTURE	— R/W — R/W
⊙ YARD INLET W/ GRATE	— — — EASEMENT
⊙ YARD INLET W/ CONC CAP	— — — FENCE
⊙ HYDRANT	— OH — OH — OVERHEAD UTILITY
⊙ WATER VALVE	— — — SANITARY C/L
⊙ WATER METER	— — — RAILROAD C/L
⊙ FIRE DEPT. CONNECTION	— — — SETBACKS
⊙ POST INDICATOR VALVE	— — — PLOC
⊙ WELL	⊙ BORE HOLE
⊙ BURIED LINE MARKER	
⊙ SIGN	⊙ BOLLARD
⊙ HANDICAPPED SPACE	
⊙ TRAFFIC CONTROLLER	

NOTE - ANY UNDERGROUND LINES SHOWN ARE BASED ON SURFACE EVIDENCE. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY AND RELIABLY DEPICTED, WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT EXCAVATION MAY BE NECESSARY. THIS SURVEYOR CANNOT ACCEPT LIABILITY FOR UNDERGROUND STRUCTURE LOCATION.

ACRONYMS:

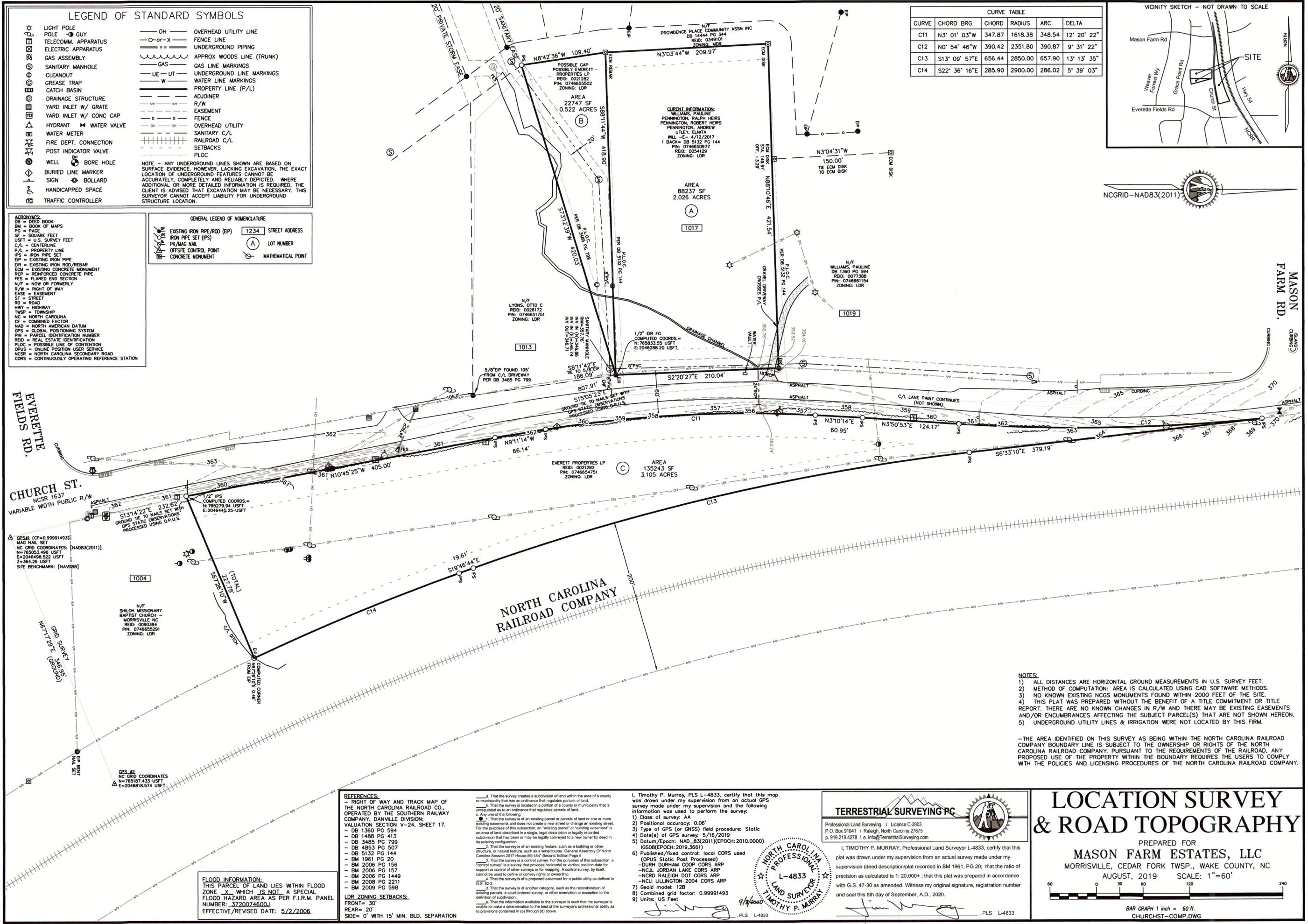
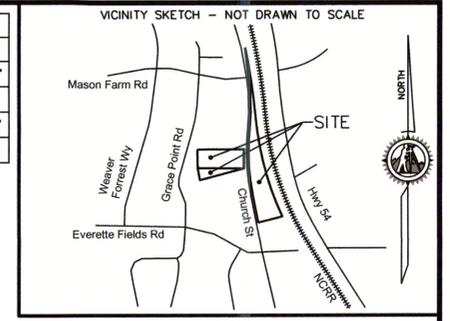
DB	= DEED BOOK
BM	= BOOK OF MAPS
PG	= PAGE
SF	= SQUARE FEET
USFT	= U.S. SURVEY FEET
C/L	= CENTERLINE
P/L	= PROPERTY LINE
IPS	= IRON PIPE SET
EP	= EXISTING IRON PIPE
ER	= EXISTING IRON ROD/REBAR
ECM	= EXISTING CONCRETE MONUMENT
RCP	= REINFORCED CONCRETE PIPE
FES	= FLARED END SECTION
N/T	= NOW OR FORMERLY
R/W	= RIGHT OF WAY
EASE	= EASEMENT
ST	= STREET
RD	= ROAD
HWY	= HIGHWAY
TWSP	= TOWNSHIP
NC	= NORTH CAROLINA
CF	= COMBINED FACTOR
NAD	= NORTH AMERICAN DATUM
GPS	= GLOBAL POSITIONING SYSTEM
PLN	= PARCEL IDENTIFICATION NUMBER
RED	= REAL ESTATE IDENTIFICATION
PLOC	= POSSIBLE LINE OF CONTENTION
OPUS	= ONLINE POSITION USER SERVICE
NCSR	= NORTH CAROLINA SECONDARY ROAD
CORS	= CONTINUOUSLY OPERATING REFERENCE STATION

GENERAL LEGEND OF NOMENCLATURE

⊠	EXISTING IRON PIPE/ROD (EP)	1234	STREET ADDRESS
⊠	IRON PIPE SET (IPS)		
⊠	PK/MAG NAIL	(A)	LOT NUMBER
⊠	OFFSITE CONTROL POINT		
⊠	CONCRETE MONUMENT		
⊠			MATHEMATICAL POINT

CURVE TABLE

CURVE	CHORD BRG	CHORD	RADIUS	ARC	DELTA
C11	N3° 01' 03"W	347.87	1618.38	348.54	12° 20' 22"
C12	N0° 54' 46"W	390.42	2351.80	390.87	9° 31' 22"
C13	S13° 09' 57"E	656.44	2850.00	657.90	13° 13' 35"
C14	S22° 36' 16"E	285.90	2900.00	286.02	5° 39' 03"



NOTES:

- 1) ALL DISTANCES ARE HORIZONTAL GROUND MEASUREMENTS IN U.S. SURVEY FEET.
- 2) METHOD OF COMPUTATION: AREA IS CALCULATED USING CAD SOFTWARE METHODS.
- 3) NO KNOWN EXISTING NCS MONUMENTS FOUND WITHIN 2000 FEET OF THE SITE.
- 4) THIS PLAT WAS PREPARED WITHOUT THE BENEFIT OF A TITLE COMMITMENT OR TITLE REPORT. THERE ARE NO KNOWN CHANGES IN R/W AND THERE MAY BE EXISTING EASEMENTS AND/OR ENCUMBRANCES AFFECTING THE SUBJECT PARCEL(S) THAT ARE NOT SHOWN HEREON.
- 5) UNDERGROUND UTILITY LINES & IRRIGATION WERE NOT LOCATED BY THIS FIRM.

-THE AREA IDENTIFIED ON THIS SURVEY AS BEING WITHIN THE NORTH CAROLINA RAILROAD COMPANY BOUNDARY LINE IS SUBJECT TO THE OWNERSHIP OR RIGHTS OF THE NORTH CAROLINA RAILROAD COMPANY, PURSUANT TO THE REQUIREMENTS OF THE RAILROAD, ANY PROPOSED USE OF THE PROPERTY WITHIN THE BOUNDARY REQUIRES THE USERS TO COMPLY WITH THE POLICIES AND LICENSING PROCEDURES OF THE NORTH CAROLINA RAILROAD COMPANY.

REFERENCES:

a. That the survey creates a subdivision of land within the area of a county or municipality that has an ordinance that regulates parcels of land.

b. That the survey is located in a portion of a county or municipality that is unregulated as to an ordinance that regulates parcels of land.

c. Any one of the following:

1. That the survey is of an existing parcel or parcels of land or one or more existing easements and does not create a new street or change an existing street.
2. That the survey is of an existing feature, such as a building or other structure, or natural feature, such as a watercourse. General Assembly Of North Carolina Session 2017 House Bill 454-Second Edition Page 5
3. That the survey is a control survey. For the purposes of this subsection, a "control survey" is a survey that provides horizontal or vertical position data for support or control of other surveys or for mapping. A control survey, by itself, cannot be used to define or survey rights or ownership.
4. That the survey is of a proposed easement for a public utility as defined in G.S. 66-3.
5. That the survey is of another category, such as the recombination of existing parcels, a court-ordered survey, or other exemption or exception to the definition of subdivision.

d. That the information available to the surveyor is such that the surveyor is unable to make a determination to the best of the surveyor's professional ability as to provisions contained in (a) through (c) above.

1, Timothy P. Murray, PLS L-4833, certify that this map was drawn under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

- 1) Class of survey: AA
- 2) Positional accuracy: 0.06'
- 3) Type of GPS (or GNSS) field procedure: Static
- 4) Date(s) of GPS survey: 5/16/2019
- 5) Datum/Epoch: NAD_83(2011)(EPOCH:2010.0000) IGS08(EPOCH:2019.3661)
- 6) Published/fix control: local CORS used (OPUS Static Post Processed)
 - DURHAM DURHAM COOP CORS ARP
 - N.C.I. JORDAN LAKE CORS ARP
 - NCRD RALEIGH DOT CORS ARP
 - NCL LILLINGTON 2004 CORS ARP
- 7) Geoid model: I2B
- 8) Combined grid factor: 0.99991493
- 9) Units: US Feet

PLS L-4833

TERRESTRIAL SURVEYING PC

Professional Land Surveying / License C-3903
 P.O. Box 91041 / Raleigh, North Carolina 27675
 p.919.219.4278 / e.info@terrestrialsurveying.com

I, TIMOTHY P. MURRAY, Professional Land Surveyor L-4833, certify that this plat was drawn under my supervision from an actual survey made under my supervision (deed description/plat recorded in BM 1961, PG 20; that the ratio of precision as calculated is 1:20,000+; that this plat was prepared in accordance with G.S. 47-30 as amended. Witness my original signature, registration number and seal this 8th day of September, A.D., 2020.

PLS L-4833

LOCATION SURVEY & ROAD TOPOGRAPHY

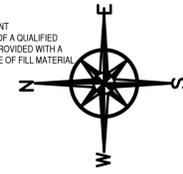
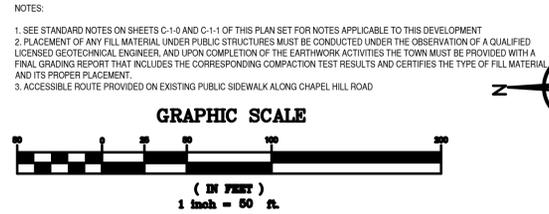
PREPARED FOR
MASON FARM ESTATES, LLC
 MORRISVILLE, CEDAR FORK TWSP., WAKE COUNTY, NC

AUGUST, 2019 SCALE: 1"=60'

BAR GRAPH 1 inch = 60 ft.
 CHURCHST-COMP.DWG

FLOOD INFORMATION:
 THIS PARCEL OF LAND LIES WITHIN FLOOD ZONE X WHICH IS NOT A SPECIAL FLOOD HAZARD AREA AS PER F.I.R.M. PANEL NUMBER: 3720074600J
 EFFECTIVE/REVISED DATE: 5/2/2006

SITE LEGEND	
PROPERTY BOUNDARY	_____
PROPERTY LINE	_____
PROPERTY SETBACK	_____
EASEMENT	_____
RIGHT-OF-WAY	_____
ROAD CENTERLINE	_____
BACK OF CURB/EDGE OF PAVT	_____
EXIST PUBLIC SIDEWALKS	_____
DRIVEWAYS/CONCRETE AREAS	_____



ALL TOWN OF CARY UTILITY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH TOWN OF CARY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT TIME OF UTILITY PERMITTING

ALL CONSTRUCTION ACTIVITY SHALL BE CONDUCTED IN ACCORDANCE WITH ACCEPTED POLICIES OF THE TOWN OF MORRISVILLE. NCDOT STANDARD SPECIFICATIONS SHALL BE USED IF TOWN STANDARDS ARE NOT SPECIFIED.

TOWN OF MORRISVILLE
PROJECT # COMBO-000507-2020

B&F
CONSULTING
2805 Tobemary Lane
Raleigh, NC 27606
Phone No. (919) 818-0180
License No. C-2149

FINAL DRAWING
FOR REVIEW
PURPOSES ONLY

Storm Drainage Summary - Mason Manor Summary of Driveway Pipes - 12/15/2021													Storm Drainage Summary Summary of Structures								
From	To	Rational C	10-year Intensity (in/hr)	Area (ac)	Q ₁₀ (cfs)	Q (cfs)	Length (ft)	Diameter (inches)	calculated DIA. (inches)	Slope (%)	Invert (From)	Invert (To)	Structure	Type	Rational C	Intensity (in/hr)	Area (ac)	Q ₁₀ (cfs)	Reference Elevation BOC/TOP	Depth (ft)	
LOT 4	LOT 3	0.80	7.09	0.19	1.1	3.9	30	18	RCP	14.1	0.50%	358.30	358.45	LOT 3	DRIVEWAY PIPE	0.80	7.09	0.19	1.1	361.50	3.1
LOT 2	LOT 1	0.80	7.09	0.49	2.8	2.8	30	18	RCP	12.4	0.50%	359.25	359.40	LOT 1	DRIVEWAY PIPE	0.80	7.09	0.49	2.8	362.50	3.1
LOT 9	LOT 9	0.80	7.09	0.36	2.0	5.8	30	18	RCP	13.3	1.50%	356.20	356.65	LOT 9	DRIVEWAY PIPE	0.80	7.09	0.36	2.0	359.80	3.2
LOT 8	LOT 8	0.80	7.09	0.32	1.8	3.7	30	18	RCP	12.7	0.80%	358.20	358.44	LOT 8	DRIVEWAY PIPE	0.80	7.09	0.32	1.8	360.50	2.1
LOT 7	LOT 7	0.80	7.09	0.24	1.3	1.9	30	18	RCP	9.9	0.80%	359.10	359.34	LOT 7	DRIVEWAY PIPE	0.80	7.09	0.24	1.3	361.20	1.9
LOT 6	LOT 5	0.80	7.09	0.10	0.6	0.6	30	18	RCP	5.3	2.00%	360.00	360.60	LOT 5	DRIVEWAY PIPE	0.80	7.09	0.10	0.6	362.50	1.9

All RCP are to be Type IV RCP unless otherwise indicated

Lot	Total Lot Area (acres)	Impervious Areas		Impervious permitted (this plan)		Impervious permitted by zoning	
		Building (sf)	Driveway & Sidewalk (sf)	(acres)	(%)	(acres)	(acres)
1	0.25	3150	700	0.09	35%	0.12	50%
2	0.22	3150	700	0.09	40%	0.11	50%
3	0.21	3150	700	0.09	43%	0.10	50%
4	0.19	2700	700	0.08	41%	0.09	50%
5	0.18	2700	991	0.08	46%	0.09	50%
6	0.18	2686	991	0.08	46%	0.09	50%
7	0.18	2775	640	0.08	42%	0.09	50%
8	0.20	2170	709	0.07	34%	0.10	50%
9	0.20	2803	640	0.08	39%	0.10	50%
TOTAL	1.82					0.74	

Notes:

- All downspouts are to be routed to SCM for each individual lot.
- Gutters and gutter hemlets are required and are a part of the SCM.
- Not all impervious on each lot will be captured in SCM due to elevation constraints

REVISIONS

NO.	DATE	DESCRIPTION
4/11/22		MORRISVILLE APPROVAL
6/17/22		WAKE CO EROSION CONTROL

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-CD-2022

PROJECT NAME
MASON MANOR

PIN 0746654751
MORRISVILLE, N.C.

DEVELOPER
STEMMA CAPITAL INC

10130 MALLARD CREEK RD
SUITE 300
CHARLOTTE, NC 28262

SHEET NAME
GRADING PLAN

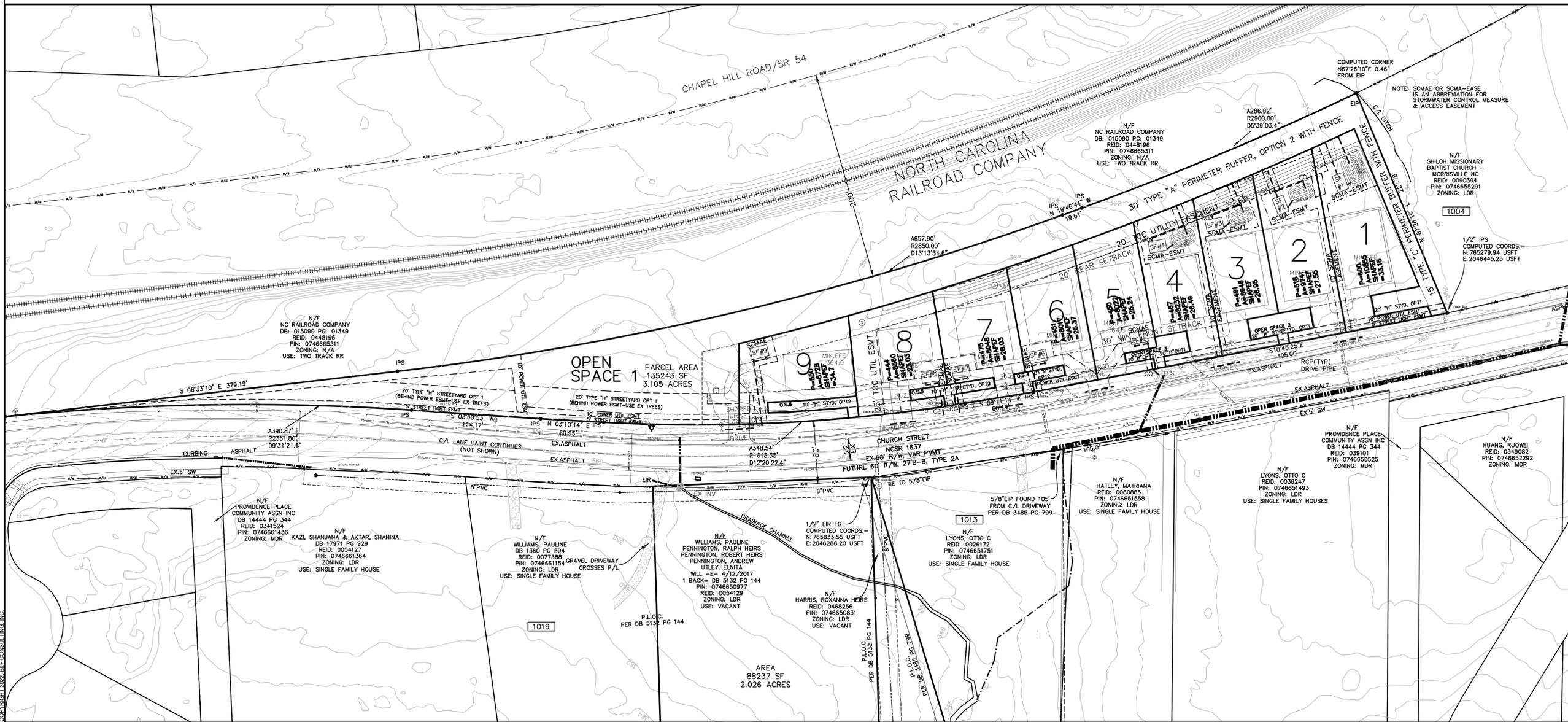
DRAWING SCALE
1"=50'

PLAN SET
CONCURRENT PLANS

DATE
1-26-2026

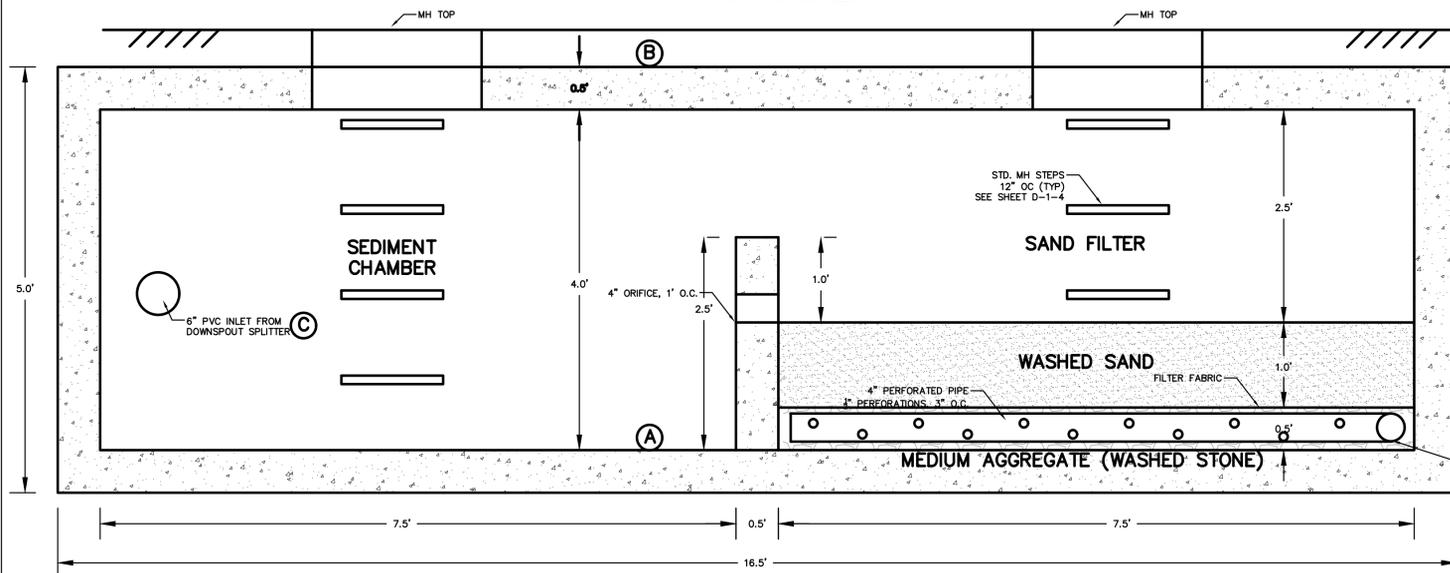
SHEET NUMBER
C-3-0

OLD PROJECT #: COMBO-000507-2020



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SAND FILTER/SEDIMENT CHAMBER COMBINATION
(15.5'x10.0'x4.0' INTERNAL DIMENSIONS)
LOTS 1-4 (TYPICAL)
NOT TO SCALE

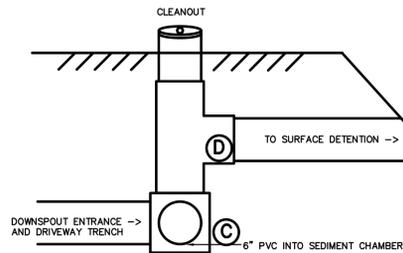


SCHEMATIC SAND FILTER AND DETENTION ARRANGEMENT FOR GENERAL INFORMATION PURPOSES

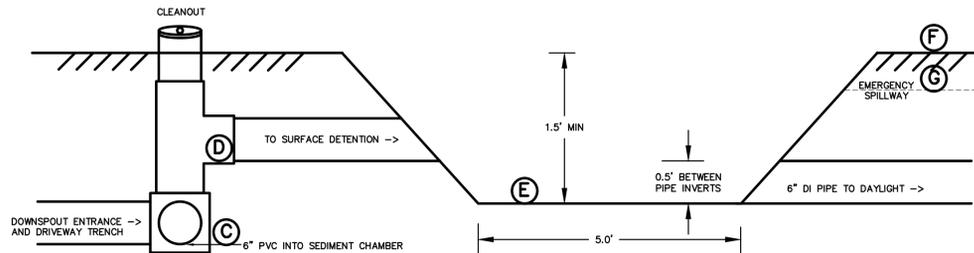
ELEVATION A IS THE SAND FILTER/SEDIMENT CHAMBER BOX INVERT ELEVATION
 ELEVATION B IS THE SAND FILTER/SEDIMENT CHAMBER BOX TOP ELEVATION
 ELEVATION C IS THE FLOW SPLITTER INVERT ELEVATION TO THE SAND FILTER
 ELEVATION D IS THE FLOW SPLITTER INVERT ELEVATION TO THE DETENTION
 ELEVATION E IS THE SURFACE DETENTION INVERT
 ELEVATION F IS THE SURFACE DETENTION TOP OF DAM
 ELEVATION G IS THE SURFACE DETENTION EMERGENCY SPILLWAY

SAND FILTER WILL TREAT THE 1.25" STORM FROM ROOF SURFACES

DOWNSPOUT SPLITTER CLEANOUT
LOTS 1-4 (TYPICAL)
NOT TO SCALE



SURFACE DETENTION SCHEMATIC
LOTS 1-4 (TYPICAL)
NOT TO SCALE



NOTES:
 1. SEE STANDARD NOTES ON SHEETS C-1.0 AND C-1.1 OF THIS PLAN SET FOR NOTES APPLICABLE TO THIS DEVELOPMENT

Peak Discharges due to Project - Analysis Point A (Railroad)

Return Period (years)	Peak Discharge Pre-Development (cfs)	Peak Discharge Post-Development NO SCMs (cfs)	Peak Discharge Post-Development WITH SCMs (cfs)
1	2.6	2.7	2.3
2	3.1	3.1	2.6
10	5.6	5.6	4.6
25	7.0	6.9	5.7
100	9.0	9.0	7.4

Peak Discharges due to Project - Analysis Point B (Church Street - south)

Return Period (years)	Peak Discharge Pre-Development (cfs)	Peak Discharge Post-Development NO SCMs (cfs)	Peak Discharge Post-Development WITH SCMs (cfs)
1	0.3	0.4	0.3
2	0.4	0.4	0.3
10	0.7	0.7	0.5
25	0.8	0.8	0.7
100	1.1	1.1	1.1

Peak Discharges due to Project - Analysis Point C (Church Street - north)

Return Period (years)	Peak Discharge Pre-Development (cfs)	Peak Discharge Post-Development NO SCMs (cfs)	Peak Discharge Post-Development WITH SCMs (cfs)
1	2.4	2.4	2.3
2	2.8	2.8	2.4
10	5.1	4.9	4.3
25	6.3	6	5.3
100	8.3	7.9	7.6

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TOWN OF MORRISVILLE
 PROJECT # COMBO-000507-2020

B&F
 CONSULTING
 2805 Tobemary Lane
 Raleigh, NC 27606
 Phone No. (919) 818-0180
 License No. C-2149

FINAL DRAWING FOR REVIEW PURPOSES ONLY

Lot	Minimum FFE	Discharge Point	Sand Filter		Flow Splitter Elev		Surface Detention		
			Invert	Top ⁽¹⁾	To Sand Filter	To Detention	Invert	Top-of-Dam	Emergency Spillway
			A	B	C	D	E	F	G
1	365.0	359.0	359.30	363.8	361.0	363.00	361.50	363.00	362.8
2	365.0	358.0	358.30	362.8	360.0	362.00	361.00	362.50	362.3
3	364.5	358.0	358.30	362.8	360.0	362.00	361.00	362.50	362.3
4	364.5	359.0	359.30	363.8	361.0	363.00	360.50	362.00	361.8

Notes (1) Elevation is with 6" top slab for sand filter
 Other surface detention elevations are possible; may adjust in field

REVISIONS

NO.	DATE	DESCRIPTION
4/11/22		MORRISVILLE APPROVAL
6/17/22		WAKE CO EROSION CONTROL

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-CD-2022

PROJECT NAME
MASON MANOR

PIN 0746654751
 MORRISVILLE, N.C.

DEVELOPER
STEMMA CAPITAL INC

10130 MALLARD CREEK RD
 SUITE 300
 CHARLOTTE, NC 28262

SHEET NAME
SCM STRUCTURE PLAN DETAILS

DRAWING SCALE
 N.T.S.

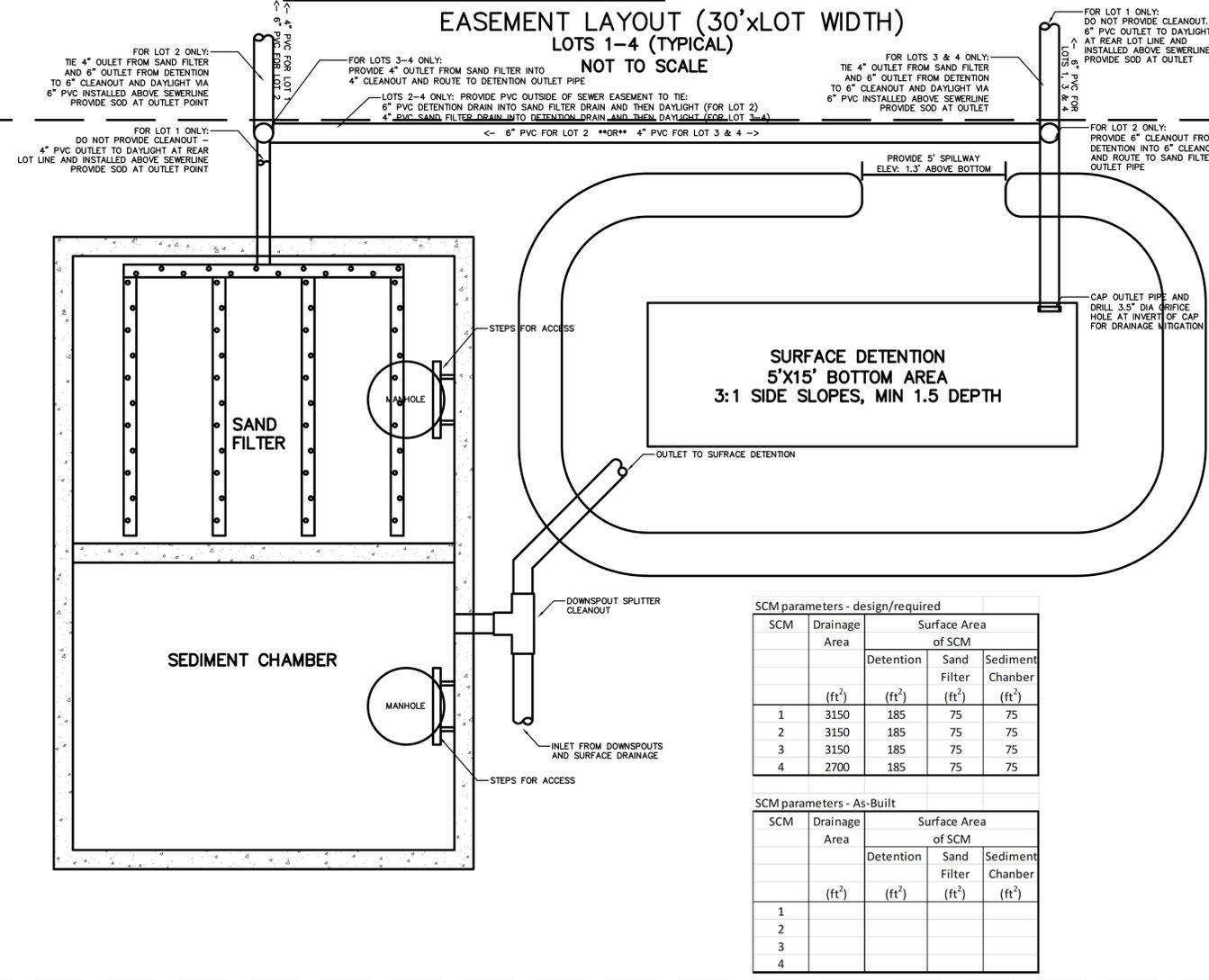
PLAN SET
 CONCURRENT PLANS

DATE
 1-26-2026

SHEET NUMBER
C-3-1

OLD PROJECT #: COMBO-000507-2020

EASEMENT LAYOUT (30'xLOT WIDTH)
LOTS 1-4 (TYPICAL)
NOT TO SCALE



Design/ Required Stormwater Routings for various return periods for the SCMs

SCM ID	1-year event				2-year event				10-year event				25-year event				100-year event			
	In (cfs)	Out (cfs)	Elev	FB	In (cfs)	Out (cfs)	Elev	FB	In (cfs)	Out (cfs)	Elev	FB	In (cfs)	Out (cfs)	Elev	FB	In (cfs)	Out (cfs)	Elev	FB
SCM 1	0.30	0.20	362.11	0.89	0.33	0.22	362.17	0.83	0.52	0.29	362.53	0.47	0.62	0.32	362.71	0.29	0.77	0.60	362.88	0.12
SCM 2	0.30	0.20	361.61	0.89	0.33	0.22	361.67	0.83	0.52	0.29	362.03	0.47	0.62	0.32	362.21	0.29	0.77	0.60	362.38	0.12
SCM 3	0.30	0.20	361.61	0.89	0.33	0.22	361.67	0.83	0.52	0.29	362.03	0.47	0.62	0.32	362.21	0.29	0.77	0.60	362.38	0.12
SCM 4	0.26	0.18	361.02	0.98	0.29	0.2	361.08	0.92	0.45	0.26	361.39	0.61	0.53	0.32	361.55	0.45	0.66	0.33	361.79	0.21

NOTE: In is the peak inflow for the n-year event; Out is the peak outflow for the n-year event; Elev is the peak elevation for the n-year event and FB is FreeBoard

As-Built Stormwater Routings for various return periods for the SCMs

SCM ID	1-year event				2-year event				10-year event				25-year event				100-year event				
	In (cfs)	Out (cfs)	Elev	FB	In (cfs)	Out (cfs)	Elev	FB	In (cfs)	Out (cfs)	Elev	FB	In (cfs)	Out (cfs)	Elev	FB	In (cfs)	Out (cfs)	Elev	FB	
SCM 1																					
SCM 2																					
SCM 3																					
SCM 4																					

NOTE: In is the peak inflow for the n-year event; Out is the peak outflow for the n-year event; Elev is the peak elevation for the n-year event and FB is FreeBoard

SCM parameters - design/required

SCM	Drainage Area (ft ²)	Surface Area of SCM		
		Detention (ft ²)	Sand Filter (ft ²)	Sediment Chamber (ft ²)
1	3150	185	75	75
2	3150	185	75	75
3	3150	185	75	75
4	2700	185	75	75

SCM parameters - As-Built

SCM	Drainage Area (ft ²)	Surface Area of SCM		
		Detention (ft ²)	Sand Filter (ft ²)	Sediment Chamber (ft ²)
1				
2				
3				
4				

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SITE LEGEND

PROPERTY BOUNDARY	---
PROPERTY LINE	---
PROPERTY SETBACK	---
EASEMENT	---
RIGHT-OF-WAY	---
ROAD CENTERLINE	---
BACK OF CURBEDGE OF P.V.M.T.	---
EXIST PUBLIC SIDEWALKS	---
DRIVEWAYS/CONCRETE AREAS	---

NOTES:

- SEE STANDARD NOTES ON SHEETS C-1-0 AND C-1-1 OF THIS PLAN SET FOR NOTES APPLICABLE TO THIS DEVELOPMENT
- ALL TOWN OF CARY UTILITY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH TOWN OF CARY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT TIME OF UTILITY PERMITTING.
- THIS DESIGN MEETS ALL CURRENT TOWN OF CARY STANDARD SPECIFICATIONS AND DETAILS EXCEPT WHERE SPECIFICALLY NOTED BELOW:
N/A - PLAN MEETS TOWN OF CARY STANDARDS PER STAFF REVIEW
- APPROVED AND PERMITTING FOR HIS UTILITY PLAN COVERS PUBLIC INFRASTRUCTURE ONLY. WHILE PRIVATE UTILITY LINES MAY BE SHOWN HEREON FOR REFERENCE, THEY ARE ALLOWED ONLY AFTER OBTAINING A SEPARATE PERMIT FOR PRIVATE UTILITIES.
- THE CONTRACTOR SHALL CONFIRM THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO BEGINNING CONSTRUCTION AND NOTIFY THE OWNER OR ENGINEER OF ANY DISCREPANCIES. BEGINNING CONSTRUCTION PRIOR TO LOCATING UTILITIES WITHIN THE LIMITS OF CONSTRUCTION AND NOTIFYING THE OWNER OR ENGINEER OF ANY DISCREPANCIES SHALL CAUSE THE CONTRACTOR TO ASSUME FULL RESPONSIBILITY FOR ANY SUBSEQUENT MODIFICATIONS OF THEIR WORK.
- CONTRACTOR TO RELOCATE EXISTING FIBER OPTIC COMMUNICATION CABLE AT ROAD EDGE FOR WIDENING AND CURB AND GUTTER AS NECESSARY FOR INSTALLATION OF HARDSCAPE AND STORM DRAINAGE.

GRAPHIC SCALE
1" = 80' (IN FEET)

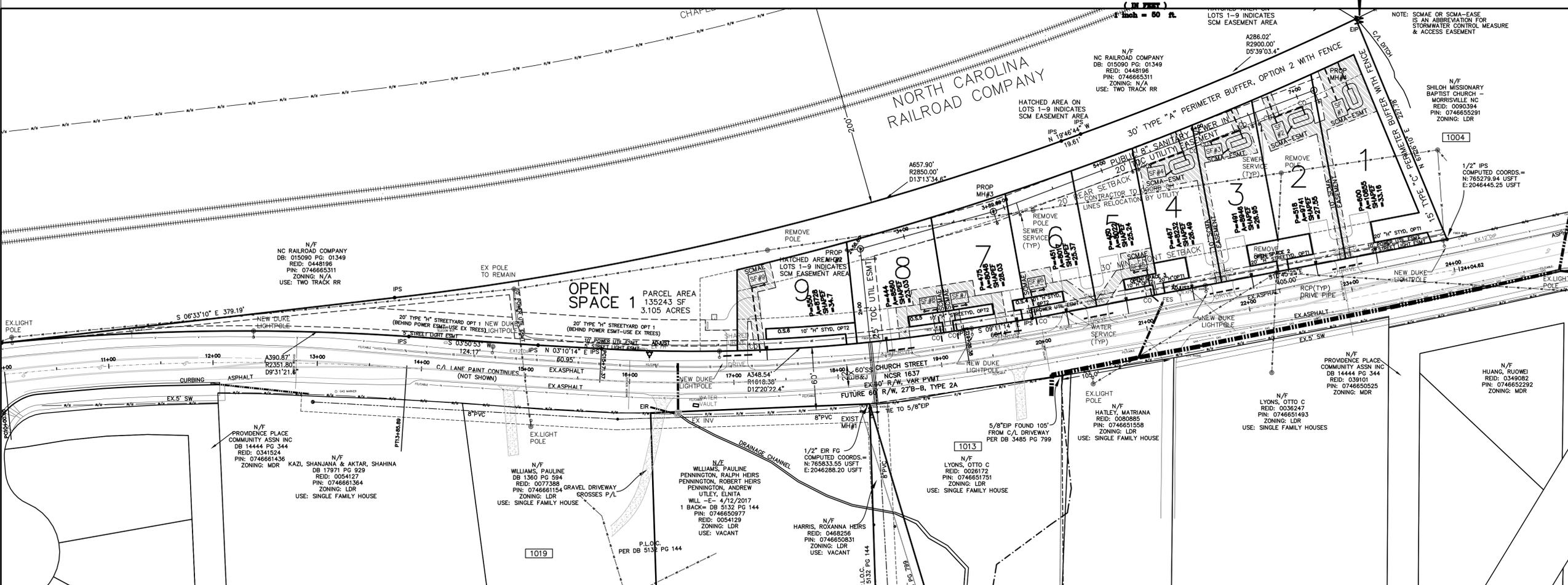
ALL TOWN OF CARY UTILITY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH TOWN OF CARY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT TIME OF UTILITY PERMITTING.

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TOWN OF MORRISVILLE
PROJECT # COMBO-000507-2020

B&F
CONSULTING
2805 Tobemary Lane
Raleigh, NC 27606
Phone No. (919) 818-0180
License No. C-2149

FINAL DRAWING FOR REVIEW PURPOSES ONLY



REVISIONS

NO.	DATE	DESCRIPTION
1	4/11/22	MORRISVILLE APPROVAL
2	6/17/22	WAKE CO EROSION CONTROL

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-CD-2022

PROJECT NAME
MASON MANOR

PIN 0746654751
MORRISVILLE, N.C.

DEVELOPER
STEMMA CAPITAL INC

10130 MALLARD CREEK RD
SUITE 300
CHARLOTTE, NC 28262

SHEET NAME
PUBLIC SEWER EXTENSION PROFILE

DRAWING SCALE
1"=50'

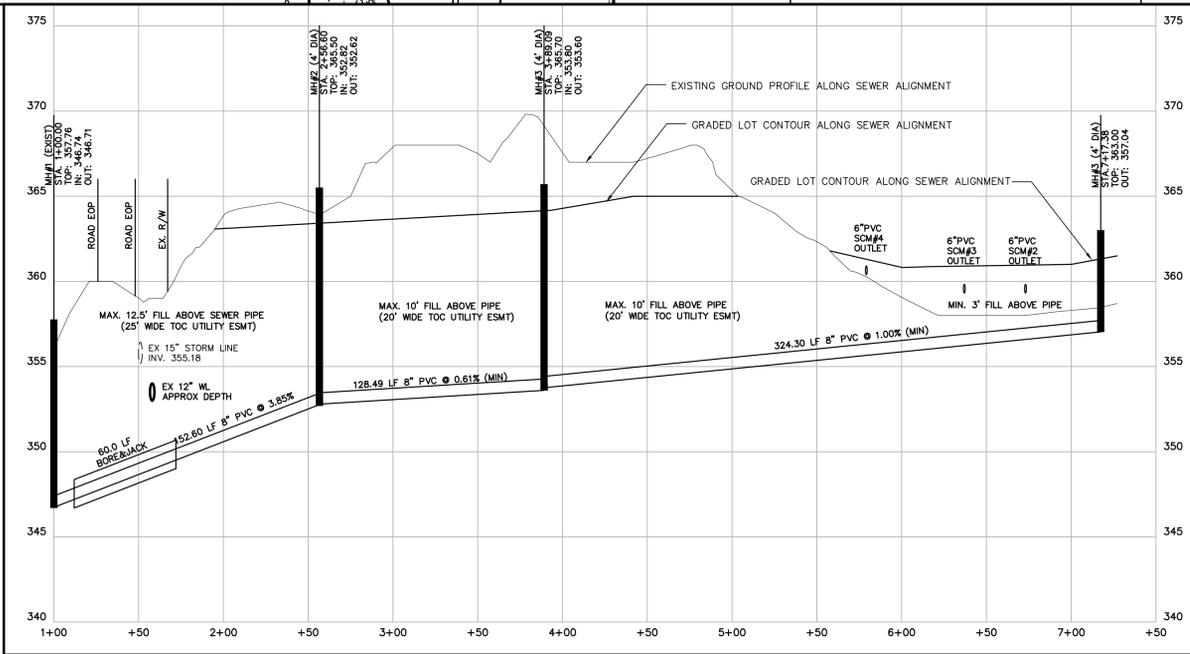
PLAN SET
CONCURRENT PLANS

DATE
1-26-2026

SHEET NUMBER

C-4-1

OLD PROJECT #: COMBO-000507-2020



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SITE LEGEND	
PROPERTY BOUNDARY	---
PROPERTY LINE	---
PROPERTY SETBACK	---
EASEMENT	---
RIGHT-OF-WAY	---
ROAD CENTERLINE	---
BACK OF CURB/EDGE OF PAVT	---
EXIST PUBLIC SIDEWALKS	---
DRIVEWAYS/CONCRETE AREAS	---

NOTES:

- SEE STANDARD NOTES ON SHEETS C-1-0 AND C-1-1 OF THIS PLAN SET FOR NOTES APPLICABLE TO THIS DEVELOPMENT
- PLACEMENT OF ANY FILL MATERIAL UNDER PUBLIC STRUCTURES MUST BE CONDUCTED UNDER THE OBSERVATION OF A QUALIFIED LICENSED GEOTECHNICAL ENGINEER, AND UPON COMPLETION OF THE EARTHWORK ACTIVITIES THE TOWN MUST BE PROVIDED WITH A FINAL GRADING REPORT THAT INCLUDES THE CORRESPONDING COMPACTION TEST RESULTS AND CERTIFIES THE TYPE OF FILL MATERIAL AND ITS PROPER PLACEMENT.
- ACCESSIBLE ROUTE PROVIDED ON EXISTING PUBLIC SIDEWALK ALONG CHAPEL HILL ROAD
- THE CONTRACTOR SHALL CONFIRM THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO BEGINNING CONSTRUCTION AND NOTIFY THE OWNER OR ENGINEER OF ANY DISCREPANCIES. BEGINNING CONSTRUCTION SHALL CAUSE THE CONTRACTOR TO ASSUME FULL RESPONSIBILITY FOR ANY SUBSEQUENT MODIFICATIONS OF THEIR WORK.
- CONTRACTOR TO RELOCATE EXISTING FIBER OPTIC/COMMUNICATION CABLE AT ROAD EDGE FOR WIDENING AND CURB AND GUTTER AS NECESSARY FOR INSTALLATION OF HARDSCAPE AND STORM DRAINAGE

GRAPHIC SCALE



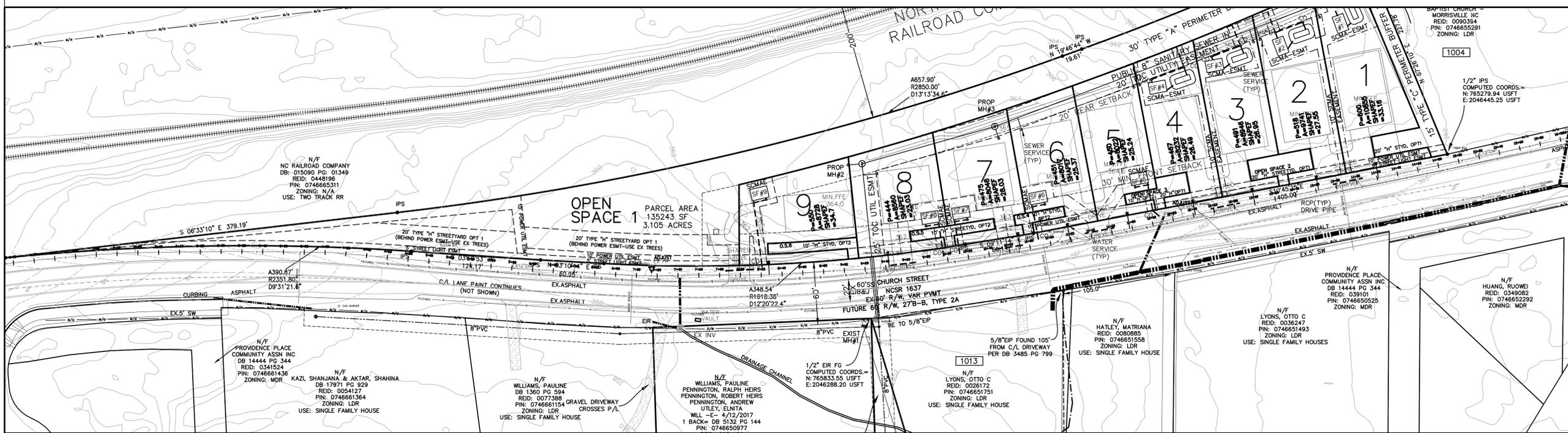
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TOWN OF MORRISVILLE
PROJECT # COMBO-000507-2020

B&F
CONSULTING
2805 Toberrary Lane
Raleigh, NC 27606
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License No. C-2149

FINAL DRAWING
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REVISIONS

NO.	DATE	DESCRIPTION
1	4/11/22	MORRISVILLE APPROVAL
2	6/17/22	WAKE CO EROSION CONTROL

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-CD-2022

PROJECT NAME

**MASON
MANOR**

PIN 0746654751
MORRISVILLE, N.C.

DEVELOPER

**STEMMA
CAPITAL INC**

10130 MALLARD CREEK RD
SUITE 300
CHARLOTTE, NC 28262

SHEET NAME

**PUBLIC WATERLINE
EXISTING PROFILE**

DRAWING SCALE
1"=50'

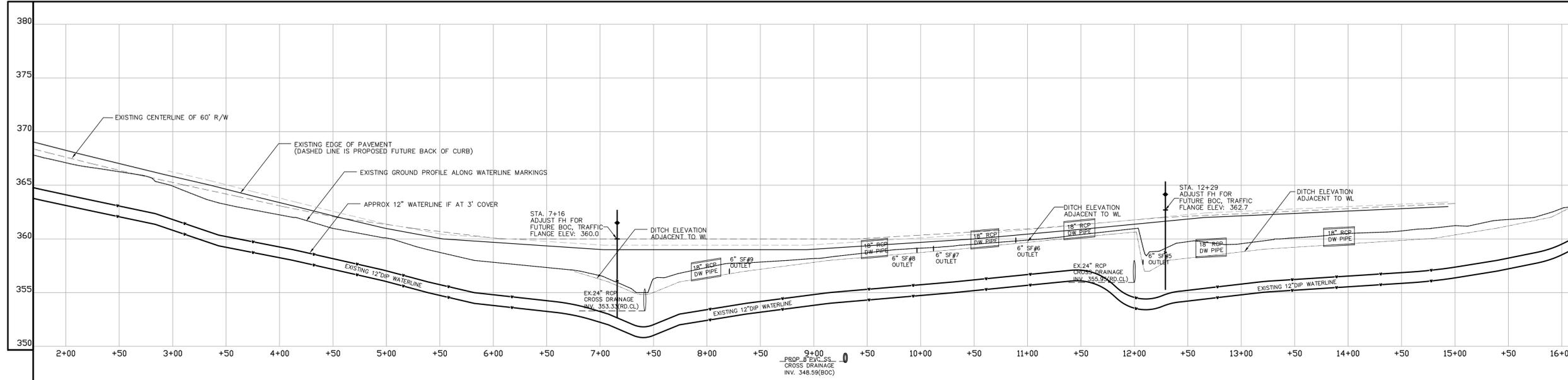
PLAN SET
CONCURRENT PLANS

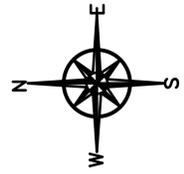
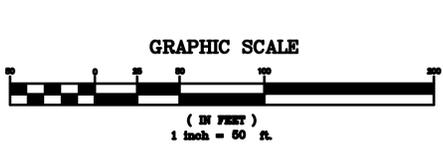
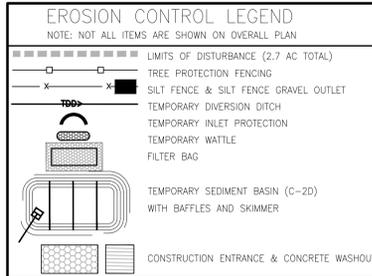
DATE
1-26-2026

SHEET NUMBER

C-4-2

OLD PROJECT #: COMBO-000507-2020





NOTES:

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- PLACEMENT OF ANY FILL MATERIAL UNDER PUBLIC STRUCTURES MUST BE CONDUCTED UNDER THE OBSERVATION OF A QUALIFIED LICENSED GEOTECHNICAL ENGINEER, AND UPON COMPLETION OF THE EARTHWORK ACTIVITIES THE TOWN MUST BE PROVIDED WITH A FINAL GRADING REPORT THAT INCLUDES THE CORRESPONDING COMPACTION TEST RESULTS AND CERTIFIES THE TYPE OF FILL MATERIAL AND ITS PROPER PLACEMENT.
- REFERENCE SHEET D-1.2 FOR EROSION CONTROL DETAILS.
- ALL PLANTINGS BEYOND THE LIMITS OF DISTURBANCE SHALL USE NON-MECHANICAL METHODS OF PLANTING TO MINIMIZE DISTURBANCE AND LIMIT ANY OFF SITE SEDIMENTATION. PLANTING AREAS SHALL BE MULCHED ATOP ALL DISTURBED AREAS IMMEDIATELY AFTER PLANTING PRIOR TO LEAVING THE SITE EACH DAY. MOVEABLE WATTLES MAY BE UTILIZED AS NEEDED TO KEEP EROSION FROM LEAVING THE PLANTING AREA.
- FOLLOW PLAN SHOWN IN D-1.2 FOR INDIVIDUAL LOT EROSION CONTROL.
- ALL DITCHES TO BE GRASS LINED.
- CONTRACTOR TO CONTACT ENGINEER AND WAKE COUNTY EROSION CONTROL OFFICER IF PROPOSED SEDIMENT CONTROL MEASURES CANNOT BE INSTALLED AS SHOWN PER APPROVED PLAN.
- IF A STOCKPILE IS LOCATED ELSEWHERE ON SITE, IT MUST BE A MINIMUM 50' FROM ANY BASIN OR DITCHES AND SURROUNDED BY SILT FENCE. NOTIFY ENGINEER AND WAKE COUNTY EROSION CONTROL OF ANY MODIFICATIONS.
- REFERENCE SHEET D-1.0 FOR CONSTRUCTION SEQUENCE FOR EROSION AND SEDIMENT CONTROL.

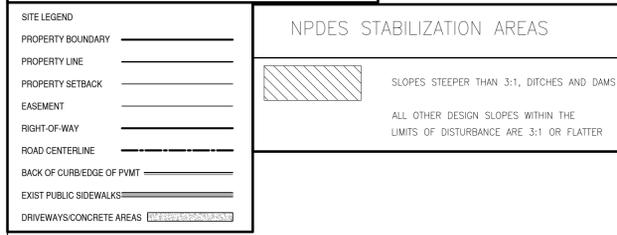
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TOWN OF MORRISVILLE
PROJECT # COMBO-000507-2020

B&F
CONSULTING
2805 Tobermory Lane
Raleigh, NC 27606
Phone No. (919) 818-0180
License No. C-2149

FINAL DRAWING
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PURPOSES ONLY



Temporary Sediment Control - Mason Manor

Sediment Control	Drainage Area (acres)	Q ₁₀ (cfs)	Required		Provided		Spilway (ft)	Skimmer Diameter (inches)	Skimmer Orifice (inches)	Dewatering Time (days)
			Surface Area (ft ²)	Volume (ft ³)	Surface Area (ft ²)	Volume (ft ³)				
Skimmer Basin	2.30	8.2	3547	4140	3570	6167	10	1.5	1.25	3.2

Temporary Storm Drainage Summary - Mason Manor

Construction Entrance Pipe - 12/15/2021

From	To	Rational C	10-year Intensity (in/hr)	Area (ac)	Q ₁₀ (cfs)	Q (cfs)	Length (ft)	Diameter (inches)	calculated DIA. (inches)	Slope (%)	Invert (From)	Invert (To)	
DS	US	0.60	7.09	0.56	2.4	2.4	30	18	RCP	11.7	0.50%	361.30	361.45

Storm Drainage Summary

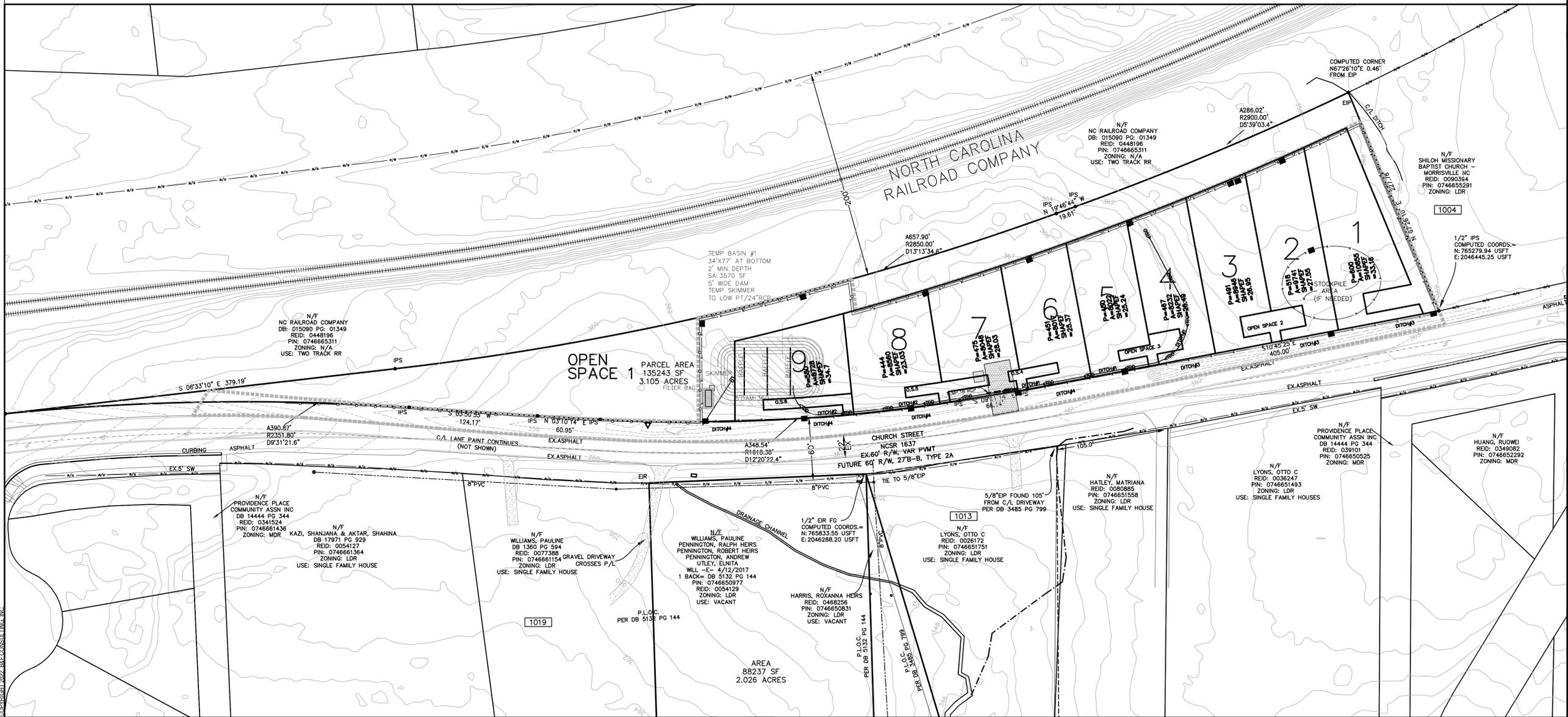
Summary of Structures

Structure	Type	Rational C	10-year Intensity (in/hr)	Area (ac)	Q ₁₀ (cfs)	Reference Elevation BOC/TOP	Depth (ft)
US	CONST. ENTR. PIPE	0.60	7.09	0.56	2.4	363.00	1.6

Ditch Lining Calculations
Project: Mason Manor Ditch Lining
Date: May 25, 2022

Prepared by: B&F Consulting, Inc.
2805 Tobermory Lane, Raleigh, NC 27606
Phone: 919-389-8102, NC License C-2149

Location	Ditch ID in NAG	Shape	Bottom Width	Depth	Drainage Area (ac)	Mannings N	10-yr Intensity (in/hr)	Q (cfs)	Slope max %	ECMDS Results (see attached)
TDD at construction entrance pipe	1	∨	12"	24"	0.6	0.079	7.09	0.3	1.0%	No lining required (grass lined only)
TDD at entrance to temporary basin	2	∨	12"	24"	0.8	0.077	7.09	0.4	1.0%	No lining required (grass lined only)
Permanent Swale, at 24" existing pipe (lot 4/5)	3	∨	12"	36"	1.3	0.066	7.09	0.6	1.5%	No lining required (grass lined only)
Permanent Swale, at 24" existing pipe (Open Sp)	4	∨	12"	36"	3.0	0.059	7.09	1.2	1.5%	No lining required (grass lined only)



REVISIONS

NO.	DATE	DESCRIPTION
4/11/22	MORRISVILLE APPROVAL	
6/17/22	WAKE CO EROSION CONTROL	

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-CD-2022

PROJECT NAME
MASON MANOR

PIN 0746654751
MORRISVILLE, N.C.

DEVELOPER
STEMMA CAPITAL INC

10130 MALLARD CREEK RD
SUITE 300
CHARLOTTE, NC 28262

SHEET NAME
INITIAL EROSION CONTROL PLAN

DRAWING SCALE
1"=50'

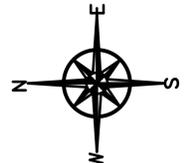
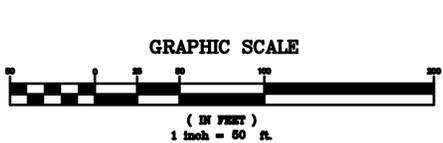
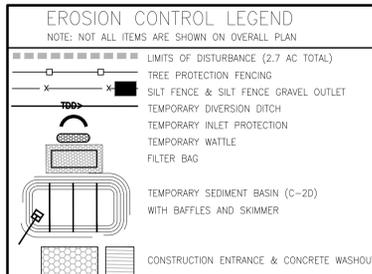
PLAN SET
CONCURRENT PLANS

DATE
1-26-2026

SHEET NUMBER
C-5-0

OLD PROJECT #: COMBO-000507-2020

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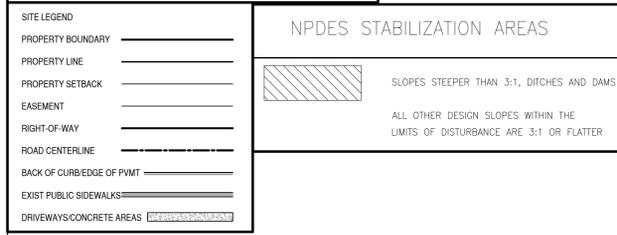
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TOWN OF MORRISVILLE
PROJECT # COMBO-000507-2020

B&F
CONSULTING
2805 Tobemory Lane
Raleigh, NC 27606
Phone No. (919) 818-0180
License No. C-2149

FINAL DRAWING
FOR REVIEW
PURPOSES ONLY



Sediment Control	Drainage Area (acres)	Q ₁₀ (cfs)	Required		Provided		Spilway (ft)	Skimmer		Dewatering Time (days)
			Surface Area (ft ²)	Volume (ft ³)	Surface Area (ft ²)	Volume (ft ³)		Diameter (inches)	Orifice (inches)	
Skimmer Basin	2.30	8.2	3547	4140	3570	6167	10	1.5	1.25	3.2

Ditch Lining Calculations
Project: Mason Manor Ditch Lining
Date: May 25, 2022

Prepared by: B&F Consulting, Inc.
2805 Tobemory Lane, Raleigh, NC 27606
Phone: 919-389-8102, NC License C-2149

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REVISIONS

NO.	DATE	DESCRIPTION
1	4/11/22	MORRISVILLE APPROVAL
2	6/17/22	WAKE CO EROSION CONTROL

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-CD-2022

PROJECT NAME
MASON MANOR

PIN 0746654751
MORRISVILLE, N.C.

DEVELOPER
STEMMA CAPITAL INC

10130 MALLARD CREEK RD
SUITE 300
CHARLOTTE, NC 28262

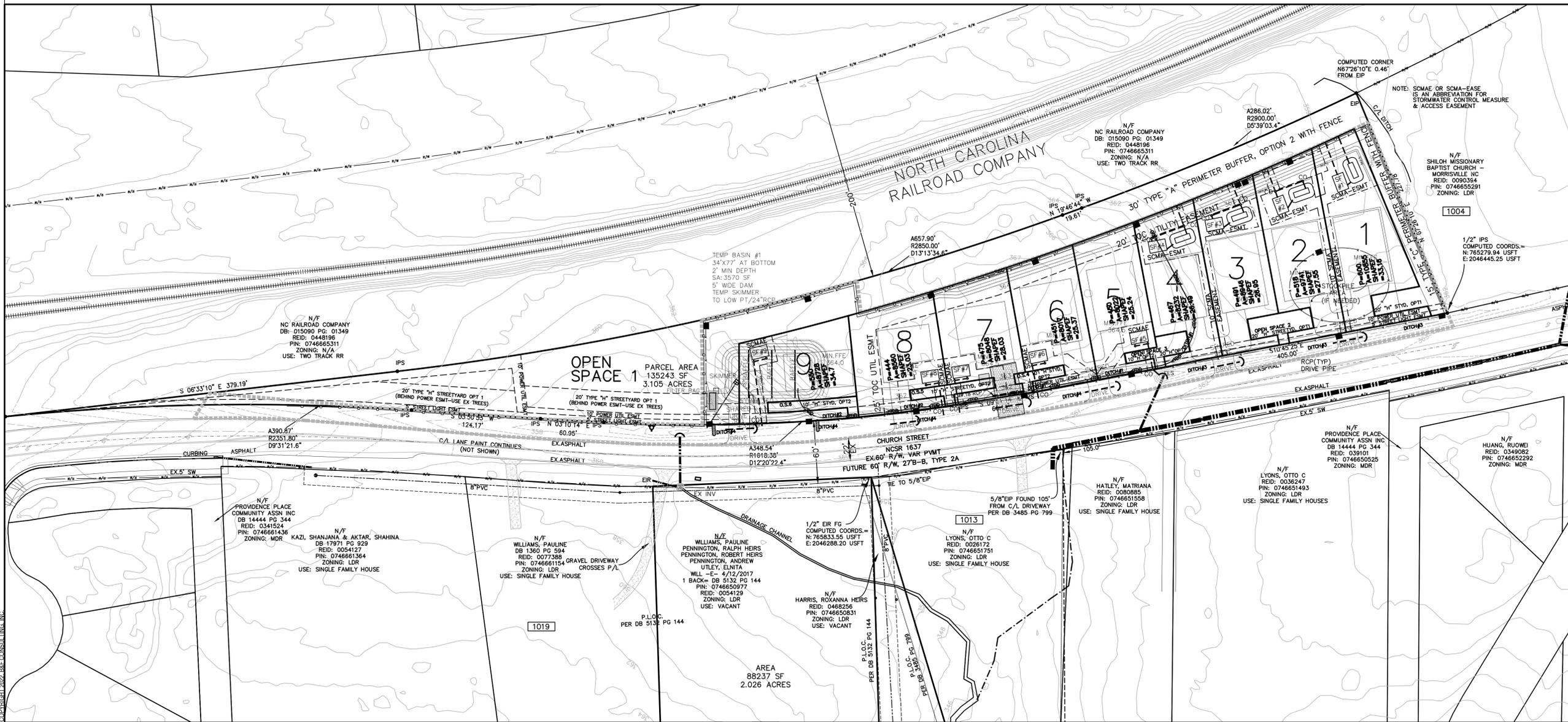
SHEET NAME
SECONDARY EROSION CONTROL PLAN

DRAWING SCALE
1"=50'

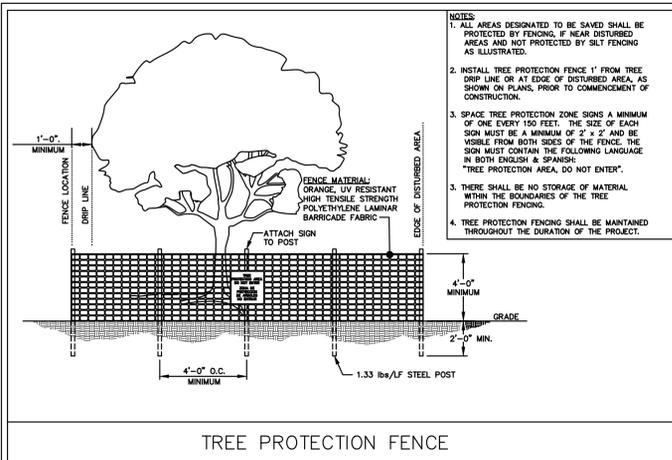
PLAN SET
CONCURRENT PLANS

DATE
1-26-2026

SHEET NUMBER
C-5-1
OLD PROJECT #: COMBO-000507-2020



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TREE PROTECTION FENCE

- NOTES:**
1. ALL AREAS DESIGNATED TO BE SAVED SHALL BE PROTECTED BY FENCING, IF NEAR DISTURBED AREAS AND NOT PROTECTED BY SILT FENCING AS ILLUSTRATED.
 2. INSTALL TREE PROTECTION FENCE 1' FROM TREE TRUNK OR AT EDGE OF DISTURBED AREA, AS SHOWN ON PLANS, PRIOR TO COMMENCEMENT OF CONSTRUCTION.
 3. SPACE TREE PROTECTION FENCE SIGNS A MINIMUM OF ONE EVERY 150 FEET. THE SIZE OF EACH SIGN MUST BE A MINIMUM OF 2' X 2' AND BE VISIBLE FROM BOTH SIDES OF THE FENCE. THE SIGN MUST CONTAIN THE FOLLOWING LANGUAGE IN BOTH ENGLISH & SPANISH: "TREE PROTECTION AREA, DO NOT ENTER".
 4. THERE SHALL BE NO STORAGE OF MATERIAL WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING.
 5. TREE PROTECTION FENCING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

SITE LEGEND

- PROPERTY BOUNDARY
- PROPERTY LINE
- PROPERTY SETBACK
- EASEMENT
- ROAD CENTERLINE
- BACK OF CURB/EDGE OF PAVT
- EXIST PUBLIC SIDEWALKS
- DRIVEWAYS/CONCRETE AREAS
- TREE PROTECTION AREA

EROSION CONTROL LEGEND

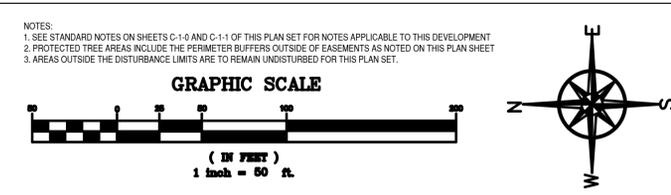
NOTE: NOT ALL ITEMS ARE SHOWN ON OVERALL PLAN

LIMITS OF DISTURBANCE (2.7 AC TOTAL)

TREE PROTECTION FENCING

Tree Protection Plan Calculations 10-Sep-20

Item	sf	ac	%
Total Original Lot Size	135243	3.10	
Total Existing Tree Coverage Area	87908	2.02	
Percentage Existing Coverage			65%
Total Required Save Area per UDO			27%
Total Tree Save Areas Proposed (shown gray)	25391	0.58	
Open Space Triangle Area Existing Tree Area	11534	0.26	
30' Perimeter Buffer Existing Tree Area	13857	0.32	
Total Existing Coverage Area Protected			29%



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6/17/22	WAKE CO EROSION CONTROL	

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-CD-2022

PROJECT NAME

MASON MANOR

PIN 0746654751
MORRISVILLE, N.C.

DEVELOPER

STEMMA CAPITAL INC

10130 MALLARD CREEK RD
SUITE 300
CHARLOTTE, NC 28262

SHEET NAME

TREE PROTECTION PLAN

DRAWING SCALE

1"=50'

PLAN SET

CONCURRENT PLANS

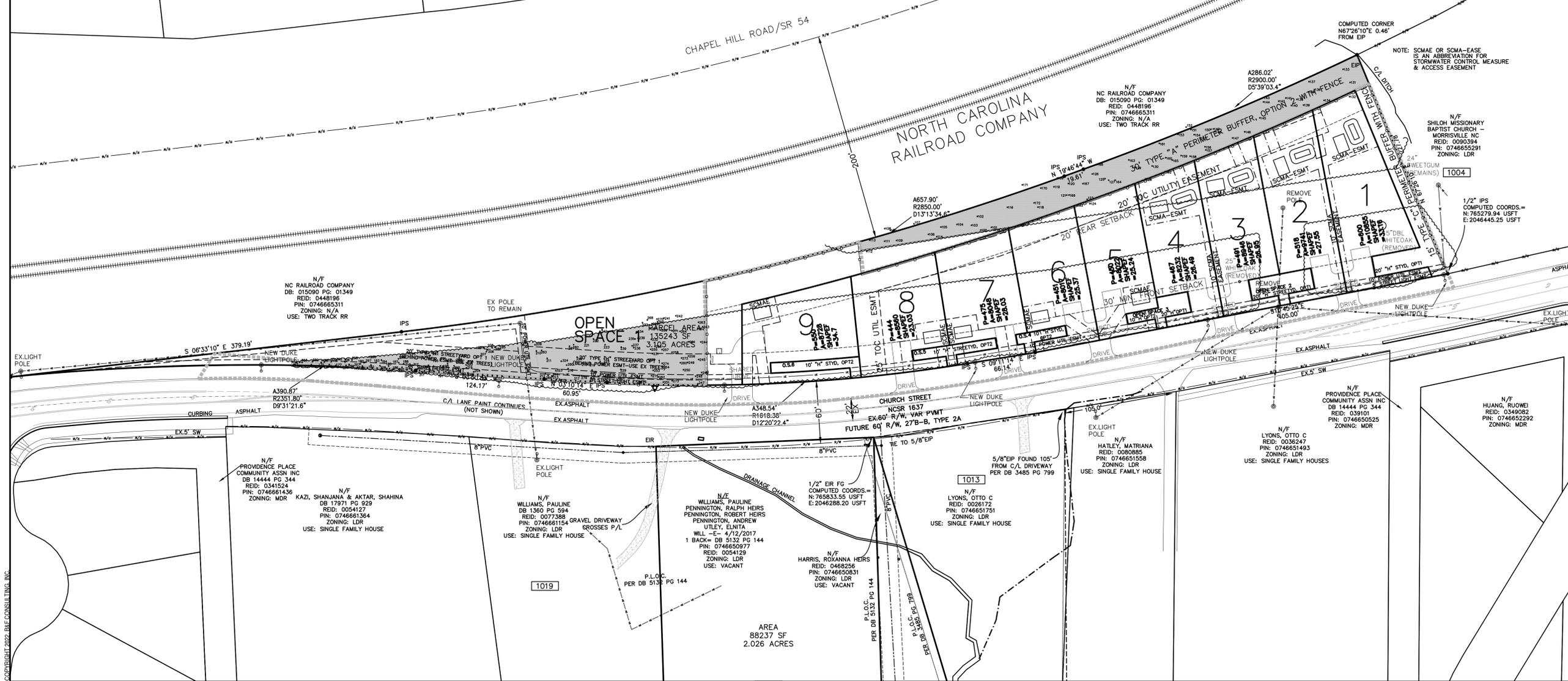
DATE

1-26-2026

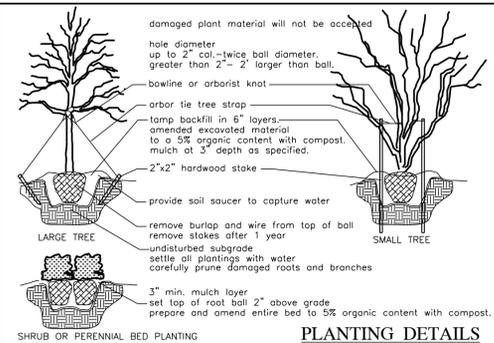
SHEET NUMBER

C-6-0

OLD PROJECT #: COMBO-000507-2020

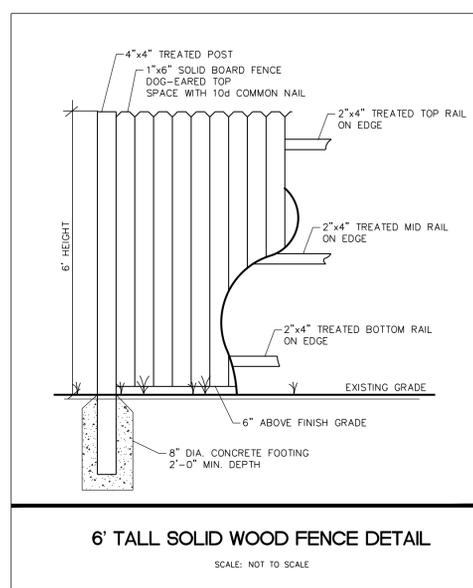


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GENERAL PLANTING NOTES

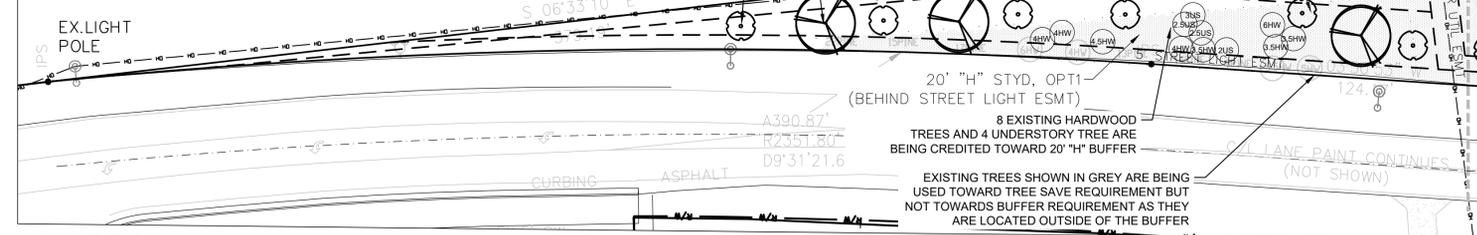
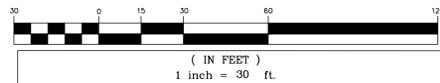
1. VERIFICATION OF TOTAL QUANTITIES AS SHOWN SHALL BE THE RESPONSIBILITY OF THE PLANTING CONTRACTOR.
2. ALL TREES, SHRUBS, AND BEDDING PLANTS SHALL CONFORM TO THE ACCEPTED STANDARDS ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
3. ALL SAUCERS SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING PLANTING.
4. SET TOP OF TREE ROOT BALL 3" ABOVE GRADE, SHRUBS 2" ABOVE GRADE.
5. PLANT MATERIAL SHALL CARRY A ONE YEAR WARRANTY AND REPLACEMENT GUARANTEE.
6. AMEND PLANTING SOIL WITH FERTILIZER AND/OR LIME PER SOIL TEST REPORT AT THE RECOMMENDED MANUFACTURERS APPLICATION RATE.
7. THOROUGHLY MIX AGED COMPOST WITH PLANTING SOIL TO ACHIEVE A 5%-10% ORGANIC CONTENT BY VOLUME.
8. GUYING AND STAKING, IF NECESSARY, SHALL BE REMOVED AFTER ONE GROWING SEASON.
9. ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO BACKFILLING.
10. ALL TREES HAVE BEEN LOCATED WITH RESPECT TO KNOWN OR EXISTING FACILITIES OR STRUCTURES, COORDINATE FIELD ADJUSTMENT WITH PROJECT OWNER OR AGENT.
11. ALL PLANT BEDS AND PLANT MATERIAL SHALL BE MAINTAINED IN GOOD HEALTH, AND ANY DEAD, UNHEALTHY OR MISSING PLANTS SHALL BE REPLACED WITH LOCALLY ADAPTED VEGETATION WHICH CONFORMS TO THE INITIAL PLANTING STANDARDS OF THE LANDSCAPE ORDINANCE.
12. REPORT ANY DISCREPANCIES TO THE PROJECT OWNER OR AGENT.
13. SUBSTITUTIONS OR ALTERATIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN NOTIFICATION BY THE OWNER OR AGENT.
14. APPLY MULCH TO ALL PLANTING AREAS AS SPECIFIED.
15. ADD COMPOST TO PLANTING SOIL TO ACHIEVE 5% ORGANIC CONTENT.
16. ALL BEDS ARE TO HAVE A SPADE CUT MULCH EDGE WHEN ADJACENT TO TURF.



LANDSCAPE CALCULATIONS:

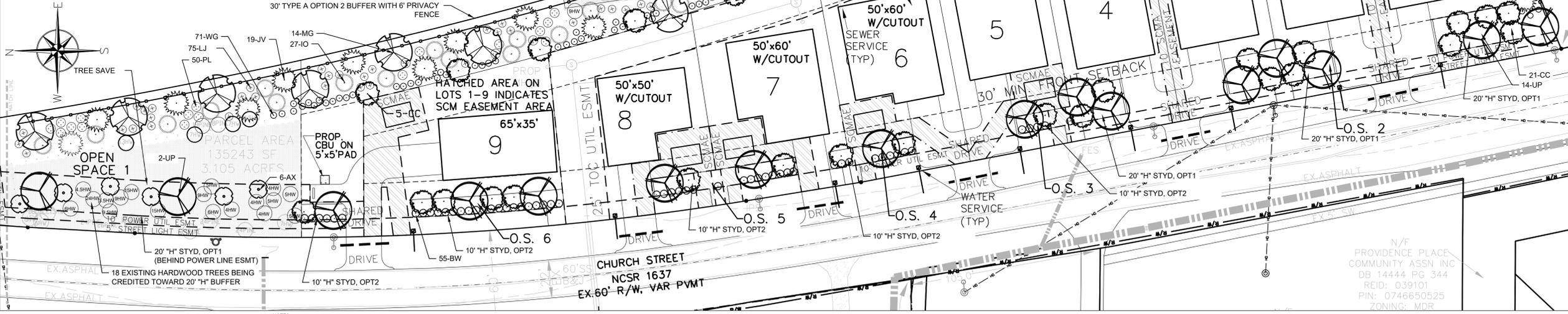
- 30' TYPE A OPTION 2 BUFFER INCREMENT LENGTH - 1302' total (all plantings in 832' allowed planting area)
- ☉ shade trees = 66 shade trees required & provided
 - ☉ 33 existing hardwood trees 3.5" cal+ 33 new trees
 - ☉ understory trees = 40 understory trees required & provided
 - ☉ 12 existing hardwood trees 2" cal+ 28 new trees
 - ☉ evergreen shrubs = 196 evergreen shrubs required & provided
 - ☉ at least 50% evergreen trees
 - ☉ 6 privacy fence - provided.
- 15' TYPE C OPTION 2 BUFFER INCREMENT LENGTH - 173'
- ☉ shade trees = 7 shade trees required
 - ☉ evergreen shrubs = 26 shrubs required (at least 75% evergreen)
 - ☉ 6' privacy fence - provided.
- 20' TYPE H OPTION 1 BUFFER INCREMENT LENGTH - 462' (OPEN SPACE AREA)
- ☉ shade trees = 10 shade trees required & 31 provided
 - ☉ 26 existing hardwood trees 3.5" cal+ 5 new trees (added to meet spacing requirements)
 - ☉ understory trees = 14 understory trees required
 - ☉ 4 existing understory trees 2" cal+ 12 new trees (2 extra to meet spacing requirements)
- TYPE H BUFFER INCREMENT LENGTH - 699' * (20' OPTION 1 IN FRONT OF LOTS 1-4 AND 10' OPTION 2 IN FRONT OF LOTS 5-MAIL KIOSK)
- ☉ shade trees = 9 shade trees required & provided
 - ☉ understory trees = 13 understory trees required & provided
 - ☉ evergreen hedge 3" tall (for 10' option) at installation required in lieu of fence) & provided
- *PLANTS SPACED TO AVOID REQUIRED UTILITY EASEMENTS AND DRIVEWAYS

GRAPHIC SCALE



KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	QTY.	USE	LOCATION	COMMENTS
UP	Ulmus parvifolia 'Alie'	Alle Elm	3.5" CAL	B&B	19	Shade Tree	Streetyard - Church Street	Meets ToM Min. Requirements
CC	Cercis canadensis 'Forest Pansy'	Forest Pansy Redbud	2" CAL	B&B	26	Understory Tree	Streetyard-Bufferyard	8' Min Height per ToM
AX	Azalea x grandiflora 'Autumn Brilliance'	Servicberry	2" CAL	B&B	12	Understory Tree	Streetyard	8' Min Height per ToM
MV	Magnolia grandiflora	Southern Magnolia	3.5" CAL	B&B	17	Evergreen Shade Tree	Bufferyard	14' Min Height per ToM
JV	Juniperus virginiana	Eastern Red Cedar	3.5" CAL	B&B	22	Understory Tree	Bufferyard	14' Min Height per ToM
IO	Ilex opaca	American Holly	2" CAL	B&B	27	Evergreen Understory Tree	Bufferyard	8' Min Height per ToM
LJ	Ligustrum japonicum 'Recurvifolium'	Wax leaf Ligustrum	3 GAL	Cont.	89	Evergreen Shrub	Bufferyard	18" Min Height per ToM
OX	Osmunda x fortunei	Tea Olive	3 GAL	Cont.	12	Evergreen Shrub	Bufferyard	18" Min Height per ToM
PL	Prunus laurocerasus	Skip Laurel	3 GAL	Cont.	50	Evergreen Shrub	Bufferyard	18" Min Height per ToM
WG	Weigela florida	Weigela	3 GAL	Cont.	71	Deciduous Shrub	PS	18" Min Height per ToM
BW	Buxus microphylla 'Wintergreen'	Wintergreen Boxwood	7 GAL	Cont.	55	Evergreen Shrub	Streetyard	36" Min Height per ToM
Existing Plants in Type "H" Streetyard used for Credit								
HW3.5	Existing 3.5" Cal. Hardwood				4	Shade Tree	Streetyard - Church Street	Meets ToM Min. Requirements
HW4	Existing 4" Cal. Hardwood				7	Shade Tree	Streetyard - Church Street	Meets ToM Min. Requirements
HW4.5	Existing 4.5" Cal. Hardwood				2	Shade Tree	Streetyard - Church Street	Meets ToM Min. Requirements
HW5	Existing 5" Cal. Hardwood				4	Shade Tree	Streetyard - Church Street	Meets ToM Min. Requirements
HW6	Existing 6" Cal. Hardwood				3	Shade Tree	Streetyard - Church Street	Meets ToM Min. Requirements
HW9	Existing 9" Cal. Hardwood				2	Shade Tree	Streetyard - Church Street	Meets ToM Min. Requirements
HW9.5	Existing 9.5" Cal. Hardwood				1	Shade Tree	Streetyard - Church Street	Meets ToM Min. Requirements
HW15	Existing 15" Cal. Hardwood				2	Shade Tree	Streetyard - Church Street	Meets ToM Min. Requirements
HW24	Existing 24" Cal. Hardwood				1	Shade Tree	Streetyard - Church Street	Meets ToM Min. Requirements
US2	Existing 2" Cal. Understory				1	Understory Tree	Streetyard - Church Street	Meets ToM Min. Requirements
US2.5	Existing 2.5" Cal. Understory				2	Understory Tree	Streetyard - Church Street	Meets ToM Min. Requirements
US3	Existing 3" Cal. Understory				1	Understory Tree	Streetyard - Church Street	Meets ToM Min. Requirements
Existing Plants in Type "A" Perimeter Buffer used for Credit								
HW6	Existing 6" Cal. Hardwood				5	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW6.5	Existing 6.5" Cal. Hardwood				1	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW7	Existing 7" Cal. Hardwood				8	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW9	Existing 9" Cal. Hardwood				3	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW10	Existing 9" Cal. Hardwood				3	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW11	Existing 11" Cal. Hardwood				3	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW12	Existing 12" Cal. Hardwood				1	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW13	Existing 13" Cal. Hardwood				3	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW14	Existing 14" Cal. Hardwood				1	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW15	Existing 15" Cal. Hardwood				2	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW17	Existing 17" Cal. Hardwood				1	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW18	Existing 18" Cal. Hardwood				1	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW19	Existing 19" Cal. Hardwood				1	Shade Tree	Bufferyard	Meets ToM Min. Requirements
HW36	Existing 36" Cal. Hardwood				1	Shade Tree	Bufferyard	Meets ToM Min. Requirements
US2	Existing 2" Cal. Understory				2	Understory Tree	Bufferyard	Meets ToM Min. Requirements
US2.5	Existing 2.5" Cal. Understory				4	Understory Tree	Bufferyard	Meets ToM Min. Requirements
US3.5	Existing 3.5" Cal. Understory				2	Understory Tree	Bufferyard	Meets ToM Min. Requirements
US3	Existing 3" Cal. Understory				2	Understory Tree	Bufferyard	Meets ToM Min. Requirements
TOTAL 45								

NOTE: ANY NEW TREE OR SHRUB TO BE LOCATED IN A TREE SAVE AREA SHALL BE HAND DUG.



- NOTES:
1. SEE STANDARD NOTES ON SHEETS C-1.0 AND C-1.1 OF THIS PLAN SET FOR NOTES APPLICABLE TO THIS DEVELOPMENT
 2. PROTECTED TREE AREAS INCLUDE THE PERIMETER BUFFERS OUTSIDE OF EASEMENTS AS NOTED ON THIS PLAN SHEET
 3. AREAS OUTSIDE THE DISTURBANCE LIMITS ARE TO REMAIN UNDISTURBED FOR THIS PLAN SET.

PRELIMINARY PLANS - DO NOT USE FOR CONSTRUCTION



NO.	DATE	DESCRIPTION
2-17-22		
4-27-21		Comments Revision
7-26-21		Comments Revision
12-15-21		Comments Revision
2-17-22		Comments Revision

NO.	DATE	DESCRIPTION
4-27-21		Comments Revision
7-26-21		Comments Revision
12-15-21		Comments Revision
2-17-22		Comments Revision

PROJECT INFORMATION

PROJECT MANAGER:	RJB
DRAWN BY:	PMP
APPROVED BY:	RJB
DRAWING NAME:	BASE-CD-2021

PROJECT NAME

MASON MANOR

PIN 0746654751
 MORRISVILLE, N.C.

DEVELOPER

MASON FARM ESTATES LLC

5904 NOBLEMAN COURT
 ELM CITY, NC 27822

SHEET NAME

LANDSCAPING PLAN

DRAWING SCALE
 1"=50'

PLAN SET
 CONCURRENT PLANS

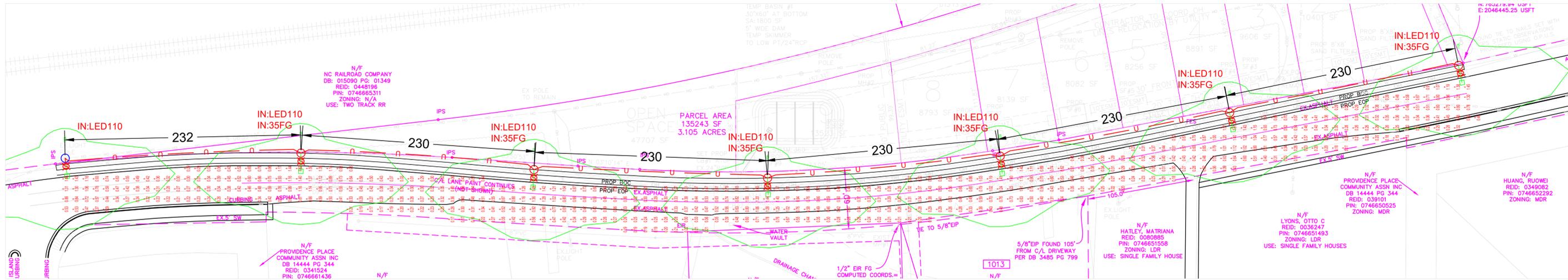
DATE
 12-15-2021

SHEET NUMBER

C-7-0

PROJECT #: COMBO-000507-2020
 PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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Results	
Pole Spacing:	230.00 ft.
Total Luminares Required:	6
Total Poles Required:	6
Total Cost:	\$0.00
Roadway Lighting Standard:	IESNA RP-8
Horizontal Illuminance	
Average:	0.56 fc
Minimum:	0.22 fc
Maximum:	1.50 fc
Max/Min:	6.90
Ave/Min:	2.57
Roadway Luminance	
Average:	0.43 cd/sq. M
Minimum:	0.16 cd/sq. M
Maximum:	1.18 cd/sq. M
Max/Min:	7.56
Ave/Min:	2.75
Veiling Luminance Ratio:	
Average:	0.11
Minimum:	0.00
Maximum:	0.39
Max/Min:	1077.52
Ave/Min:	309.52
Visibility Level	
Average:	3.07
Minimum:	2.80
Maximum:	3.34

Roadway Characteristics	
Traffic Flow:	Two-Way
Lane Width:	12.00 ft.
Right Side Lanes:	2
Left Side Lanes:	1
Median Width:	0.00 ft.
Roadway Length:	1150.00 ft.
Pavement Classification:	R3

Pole Characteristics	
Pole Properties:	
Mounting Height:	35.00 ft.
Setback:	14.00 ft.
Arm Length:	6.00 ft.
Pole Cost:	\$0.00
Arm Cost:	\$0.00
Lamp Properties:	
Lamps Per Luminaire:	1
Lamp Lumens:	
Description:	American Electr RW110_1/POLE (1) "L110" ATB0 30BLEDE10 XXXXX R2 4K/5K
Luminaire Properties:	(1) 12415 Lumens
Total Light Loss Factor (w/ tilt):	
Efficiency:	0.000
Wattage:	0.00
Tilt:	0.00°
Cost:	\$0.00
Curve:	
Distribution:	Medium, Type II, Cutoff
Luminaire Description:	Roadway-110W-II-4000K-ATB0_30BLEDE10_XX

Roadway/Area Classification for Lighting for Town of Morrisville (File #Morrisville 091020)								
Road Number	Road Name	Coverage	Classification	Average Maintained Foot-candles	Average to Minimum Design Uniformity	L _v Ratio	Average Daily Traffic (Year 2015)	Speed Limit in MPH
SR 1637	Church Street	Mason Farm Rd to Everette Fields Rd	Local/Residential	0.4	6:1	0.4:1	9300	45

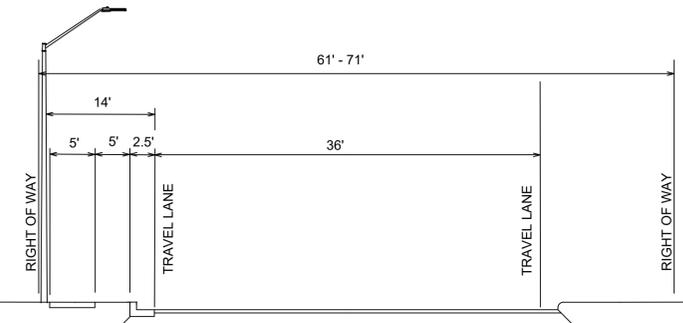
This classification is valid for a period of one year after this date: September 10, 2020

1. See the website below for the Policies and Procedures Manual for Accommodating Utilities on Highway Rights of Way. Lighting can be found on page 47 of the document (page 55 of the .pdf file).

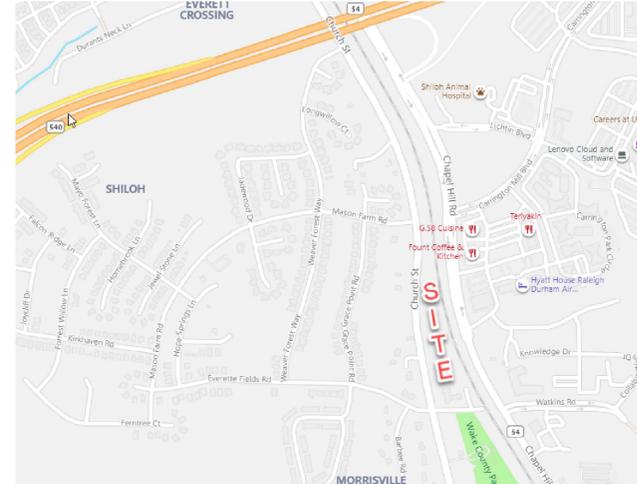
<https://connect.ncdot.gov/municipalities/Utilities/UtilitiesDocuments/Accommodating%20Utilities%20on%20Highway%20Rights%20of%20Way.pdf>

CALCULATION SUMMARY										
AREA NAME	DIMENSIONS	GRID / TYPE	# PTS	SPAC	GROUP	AVE	MAX	MIN	MAX/MIN	AVE/MIN
New Area	1035.13x2264.25Ft	CHURCH STREET	584	10.00	<>>	0.54	1.84	0.13	14.16	4.14

LUMINAIRE SCHEDULE							
TYP	SYMBOL	DESCRIPTION	LAMP	LUMENS	MOUNTING/BALLAST	LLF	QTY
110A	⊕	American Electr RW110_1/POLE (1) "L110" ATB0 30BLEDE10 XXXXX R2 4K/5K	(1) 12415 Lumens	12415	35 MT HT Autobahn	0.85	7



PROPOSED	EXISTING	LEGEND
⊕	⊕	COBRA HEAD LUMINAIRE
○	○	POLE
○	○	POST AND LUMINAIRE
⊕	⊕	TRANSFORMER (POLE MOUNTED)
⊕	⊕	TRANSFORMER (PADMOUNT)
⊕	⊕	TRAFFIC RATED HAND HOLE
⊕	⊕	PEDESTAL
⊕	⊕	STREET LIGHT CIRCUIT UNDERGROUND
⊕	⊕	STREET LIGHT CIRCUIT OVERHEAD
→	→	DOWN GUY



- NOTES**
- LIGHTING LEVELS ARE BASED ON A ONE-SIDED LIGHTING ARRANGEMENT FOR THE ROADWAY. SEE TYPICAL SECTIONS AND DRAWING FOR DETAILS.
 - LUMINARIES WILL BE: 110W LED ROADWAY 4000K, TYPE III PATTERN WITH PHOTOCELLS AND DRIVER, RATED 12415 LUMENS MULTI-VOLT. SEE TYPICAL SECTIONS AND DRAWING FOR DETAILS.
 - NEW LIGHTING UNDERGROUND FACILITIES WILL BE INSTALLED INSIDE OF THE RW, WITH CABLE BURIED A MINIMUM OF 36" BELOW GRADE.
 - MOUNTING FOR LIGHTING FIXTURES ON NEW POLES: 35' FIBERGLASS POLE WITH A 6" BRACKET.
 - POLES WILL BE INSTALLED AT A MINIMUM 14' FROM TRAVEL LANE WHERE CURB & GUTTER EXISTS.
 - ALL POWER SOURCES WILL BE FROM DUKE ENERGY PROGRESS FACILITIES.
 - ALL CONSTRUCTION WILL COMPLY WITH NESC REQUIREMENTS AND DUKE ENERGY PROGRESS SPECIFICATIONS. REFER TO THE DUKE ENERGY PROGRESS DRAWINGS LISTED.
 - THIS IS A NCDOT ROADWAY, APPROVED NCDOT ENCROACHMENT MUST BE ON-SITE DURING CONSTRUCTION.

PERSONAL ACCOUNTABILITY
ACTIVE CAREER
HAZARD RECOGNITION

Safety Reminders / Adverse Conditions

WZS: REMEMBER "YOUR CIRCLE OF SAFETY"
WZS: SET PROPER WORK ZONE NEEDED
WZS: SET PROPER SIGNS, CONES, AND BARRICADES
WZS: REMEMBER WALK AROUNDS AND PRETRIP
WZS:

REMEMBER: Work zone area conditions may have changed for this job! Everyone is responsible for verifying the above safety information is correct prior to any work being performed each day.

MASON MANOR LIGHTING PLAN

SHEET C-8-0

PROJECT #: COMBO-000507-2020

NO.	DATE	REVISION	BY

LIGHTING DESIGN TOLERANCE

The calculated illuminance, light levels in this lighting design are predicted values and are based on specific information that has been supplied to Duke Energy. Any inaccuracies in the supplied information, differences in luminaire installation, lighted area geometry including elevation differences, reflective properties of surrounding surfaces, obstructions (foliage or otherwise) in the lighted area, or lighting from sources other than listed in this design may produce different results from the predicted values. Normal tolerances of voltage, lamp output, and ballast and luminaire manufacture will also affect results.

PROPRIETARY & CONFIDENTIAL

This document together with the concepts and designs presented herein, presented as an instrument of service, is the sole property of Duke Energy, and is intended only for the specific purpose and prospective client as stated in the title block of this drawing. Any use, copying, reproduction or disclosure of the drawing, design or any information contained herein by the prospective customer or other entities, including without limitation, architects, engineers, or equipment manufacturers is hereby expressly prohibited and shall not be permitted absent prior written consent from, and payment of compensation to Duke Energy. Duke Energy disclaims any liability or responsibility for any unauthorized use of or reliance on this document.

STREET LIGHTING ARRANGEMENT FOR CHURCH STREET (SR 1637)	
MASON FARM ROAD TO EVERETTE FIELDS ROAD	
Designed by	DUKE ENERGY PROGRESS LIGHTING SOLUTIONS
Reviewed by	RICK WHITAKER Scale 1" = 50'
Date	12/21/2020 Size Drawing size "D"
Description	N/A
Drawing No.	39429045 Sht. 1 OF 1

SITE LEGEND	
PROPERTY BOUNDARY	---
PROPERTY LINE	---
PROPERTY SETBACK	---
EASEMENT	---
RIGHT-OF-WAY	---
ROAD CENTERLINE	---
BACK OF CURB/EDGE OF PAVT	---
EXIST PUBLIC SIDEWALKS	---
DRIVEWAYS/CONCRETE AREAS	---

- EXISTING PAVEMENT WITH ON CHURCH STREET MEETS 12' TRAVEL LANE REQUIREMENT ALONG PROJECT FRONTAGE EXCEPT WHERE NOTED.
- CONTRACTOR WILL NOT INSTALL ROAD WIDENING, OVERLAY, CURB OR SIDEWALK WITHIN RIGHT OF WAY FOR THIS PROJECT. DEVELOPER TO PROVIDE PAYMENT IN LIEU IF REQUIRED BY TOWN APPROVAL FOR EASTERN SIDE ONLY.
- EXISTING PAVEMENT ALONG PROJECT FRONTAGE IS TO BE SAW CUT AT CURRENT OUTSIDE EDGE OF TRAVEL LANE TO PROVIDE DRIVEWAY ACCESS POINTS PER NCDOT STANDARD.
- CONTRACTOR TO INSTALL DRIVEWAY LOCATIONS TO LIMITS OF RIGHT OF WAY PER STANDARD MORRISVILLE DETAIL, WHERE NOTED ON PLANS.
- CONTRACTOR TO INSTALL STORM DRIVEWAY PIPES PER PLANS PRIOR TO DRIVEWAY PLACEMENT AS NOTED ON STORM CHART.
- CONTRACTOR TO GRADE ACCORDING TO THE PLANS ALONG FRONTAGE OF PROJECT PROPERTY PER DETAILS.

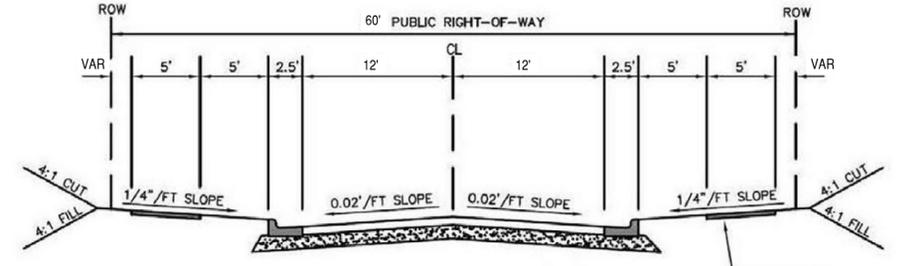
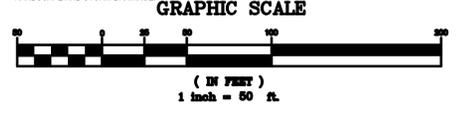
- NOTES:
- SEE STANDARD NOTES ON SHEETS C-1.0 AND C-1.1 OF THIS PLAN SET FOR NOTES APPLICABLE TO THIS DEVELOPMENT.
 - PLACEMENT OF ANY FILL MATERIAL UNDER PUBLIC STRUCTURES MUST BE CONDUCTED UNDER THE OBSERVATION OF A QUALIFIED LICENSED GEOTECHNICAL ENGINEER, AND UPON COMPLETION OF THE EARTHWORK ACTIVITIES THE TOWN MUST BE PROVIDED WITH A FINAL GRADING REPORT THAT INCLUDES THE CORRESPONDING COMPACTION TEST RESULTS AND CERTIFIES THE TYPE OF FILL MATERIAL AND ITS PROPER PLACEMENT.
 - ACCESSIBLE ROUTE IS EXISTING ALONG CHURCH STREET ON WESTERN SIDE OF ROADWAY.
 - THE CONTRACTOR SHALL CONFIRM THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO BEGINNING CONSTRUCTION AND NOTIFY THE OWNER OR ENGINEER OF ANY DISCREPANCIES. BEGINNING CONSTRUCTION SHALL CAUSE THE CONTRACTOR TO ASSUME FULL RESPONSIBILITY FOR ANY SUBSEQUENT MODIFICATIONS OF THEIR WORK.
 - CONTRACTOR TO RELOCATE EXISTING FIBER OPTIC/COMMUNICATION CABLE AT ROAD EDGE AS NECESSARY FOR INSTALLATION OF HARDSCAPE AND STORM DRAINAGE.



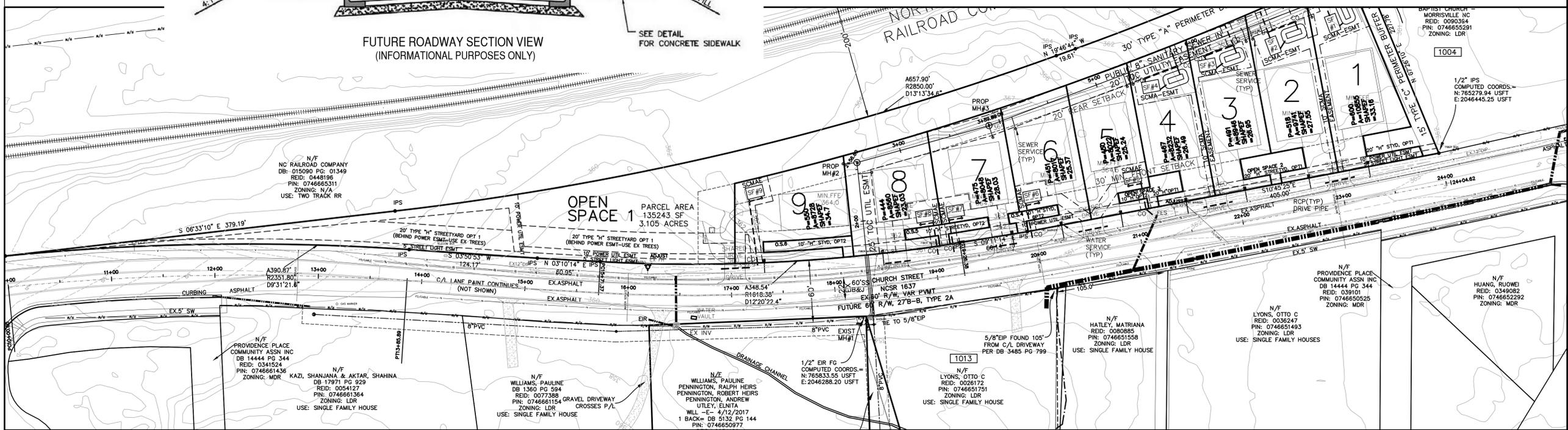
ALL TOWN OF CARY UTILITY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH TOWN OF CARY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT TIME OF UTILITY PERMITTING

ALL CONSTRUCTION ACTIVITY SHALL BE CONDUCTED IN ACCORDANCE WITH ACCEPTED POLICIES OF THE TOWN OF MORRISVILLE. NCDOT STANDARD SPECIFICATIONS SHALL BE USED IF TOWN STANDARDS ARE NOT SPECIFIED.

TOWN OF MORRISVILLE
PROJECT # COMBO-000507-2020



FUTURE ROADWAY SECTION VIEW
(INFORMATIONAL PURPOSES ONLY)



B&F
CONSULTING
2805 Tobory Lane
Raleigh, NC 27606
Phone No. (919) 818-0180
License No. C-2149

FINAL DRAWING
FOR REVIEW
PURPOSES ONLY

REVISIONS		
NO.	DATE	DESCRIPTION
1	4/11/22	MORRISVILLE APPROVAL
2	6/17/22	WAKE CO EROSION CONTROL

PROJECT INFORMATION	
PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-CD-2022

PROJECT NAME
MASON MANOR

PIN 0746654751
MORRISVILLE, N.C.

DEVELOPER
STEMMA CAPITAL INC

10130 MALLARD CREEK RD
SUITE 300
CHARLOTTE, NC 28262

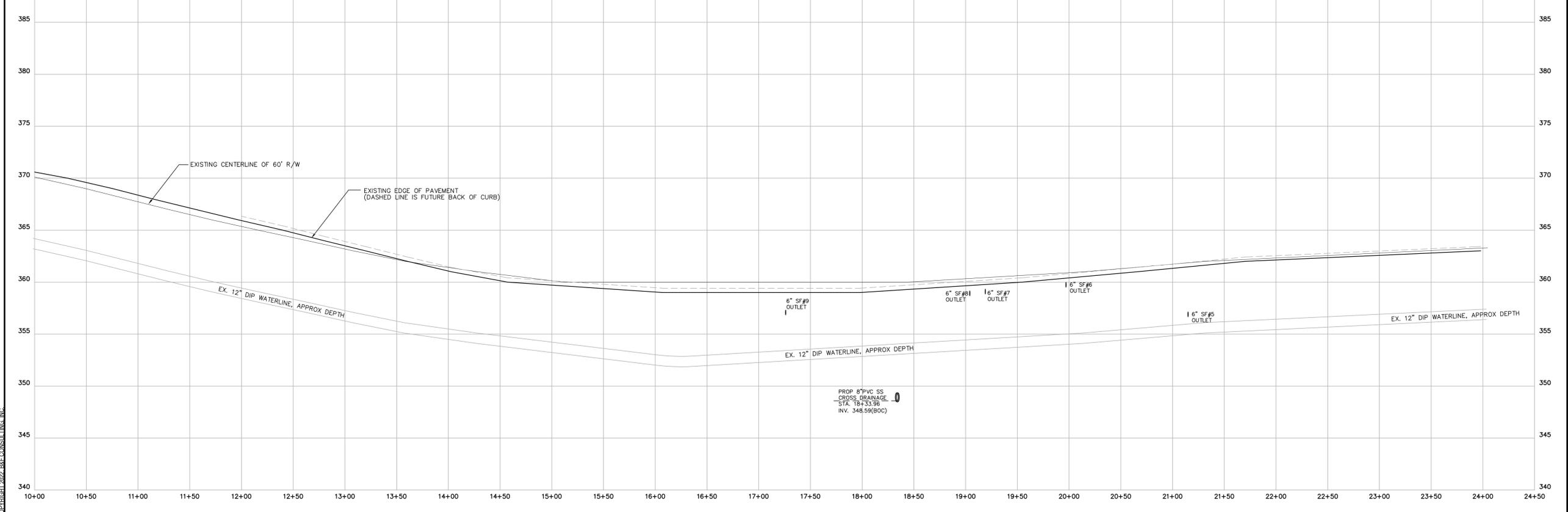
SHEET NAME
ROADWAY PLAN AND PROFILE

DRAWING SCALE
1"=50'

PLAN SET
CONCURRENT PLANS

DATE
1-26-2026

SHEET NUMBER
C-9-0
OLD PROJECT #: COMBO-000507-2020



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