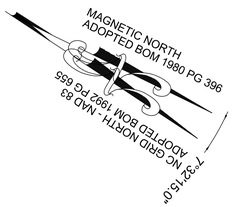

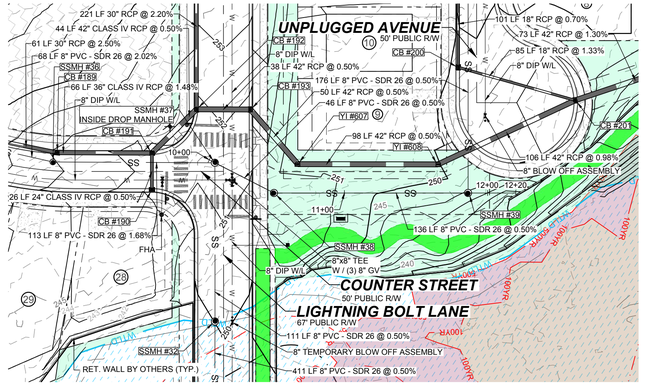

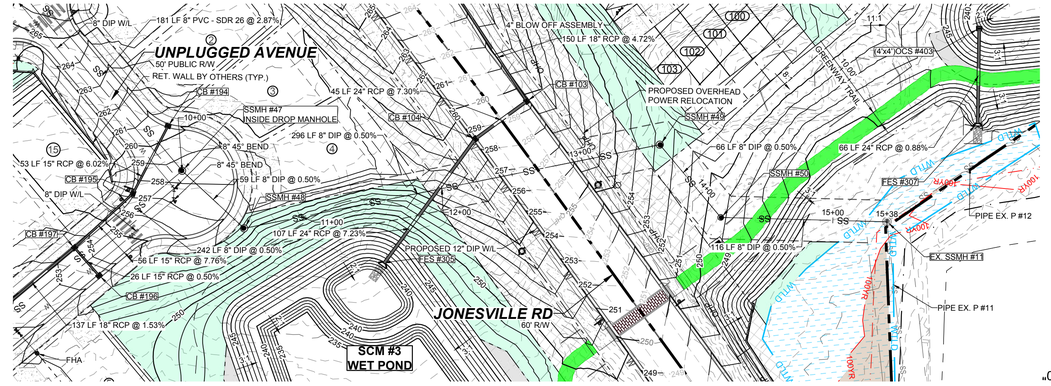

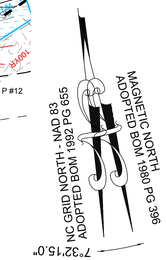

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

PROPOSED SSMH #37 - SSMH #39 - PLAN

HORIZONTAL: 1" = 50'

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

PROPOSED SSMH #47 - EX SSMH #11 - PLAN

HORIZONTAL: 1" = 50'

PUBLIC
WATER DISTRIBUTION / EXTENSION SYSTEM
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CITY OF RALEIGH
PUBLIC UTILITIES DEPARTMENT PERMIT # _____

PUBLIC
SEWER COLLECTION / EXTENSION SYSTEM
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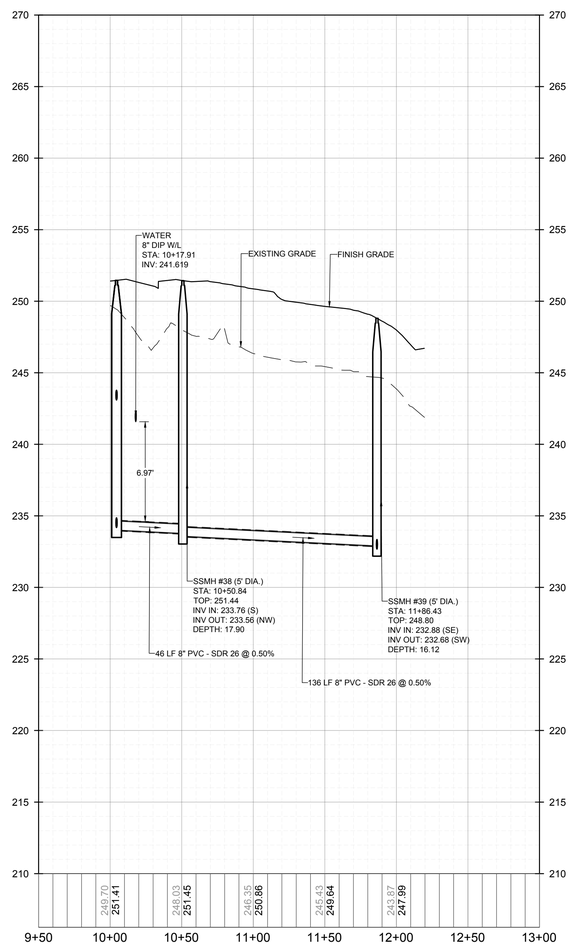
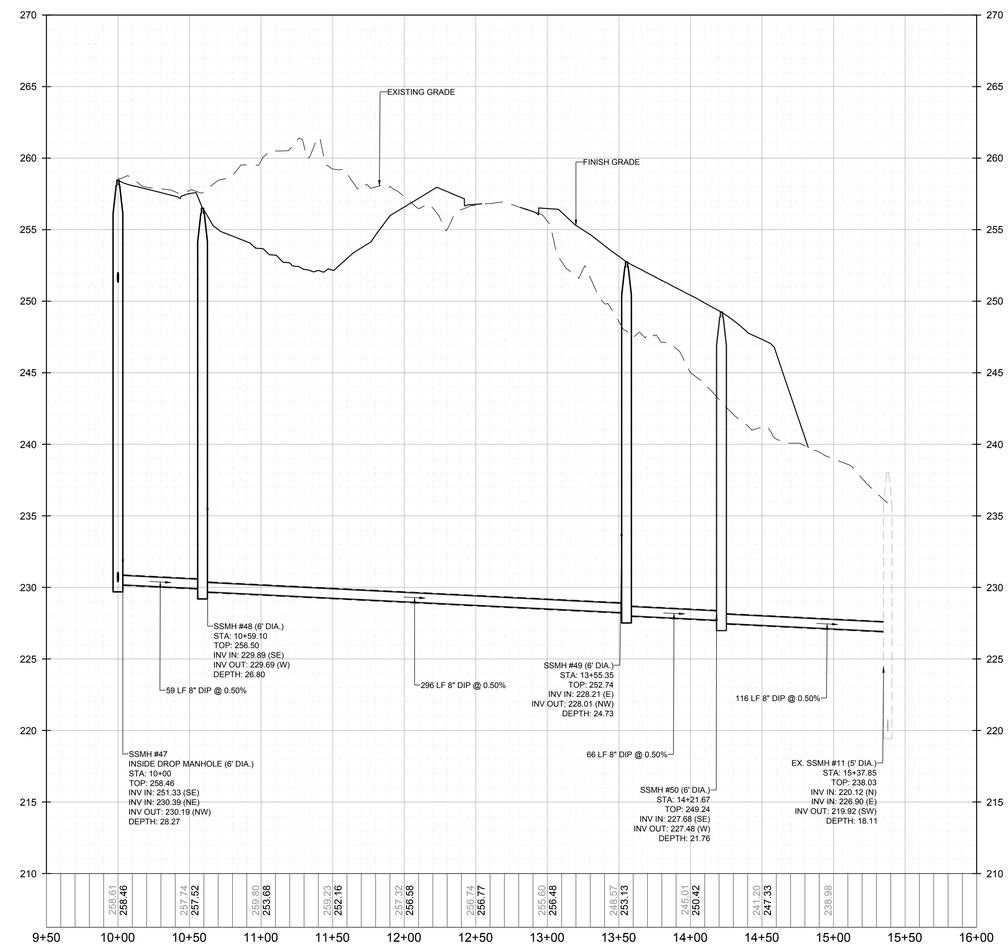
CITY OF RALEIGH
PUBLIC UTILITIES DEPARTMENT PERMIT # _____

4



PROPOSED SSMH #37 - SSMH #39 - PROFILE

VERTICAL: 1" = 5'
HORIZONTAL: 1" = 50'



PROPOSED SSMH #47 - EX SSMH #11 - PROFILE

VERTICAL: 1" = 5'
HORIZONTAL: 1" = 50'

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL:

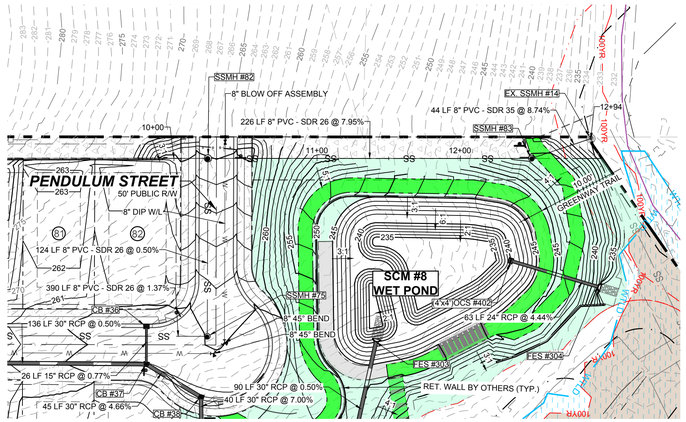
STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	PSP-23-03
	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

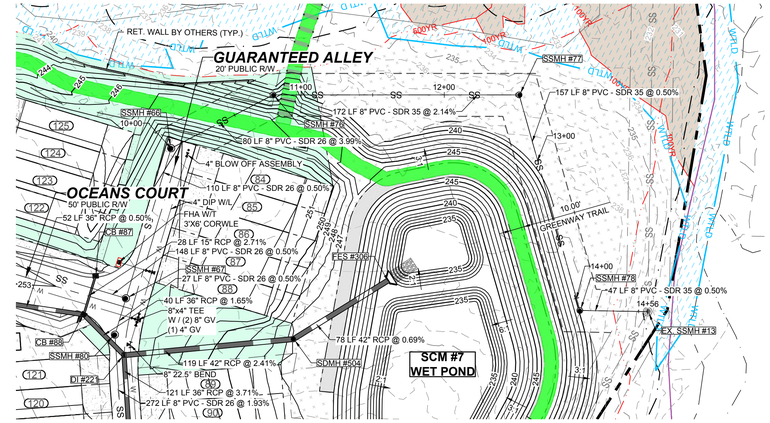
ON-SITE SANITARY SEWER - PLAN & PROFILE

DRAWING / SHEET
C-11.41



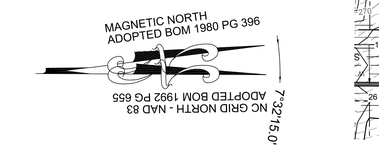
PROPOSED SSMH #82 - EX. SSMH #14 - PLAN

HORIZONTAL: 1" = 50'



PROPOSED SSMH #66 - EX. SSMH #13 - PLAN

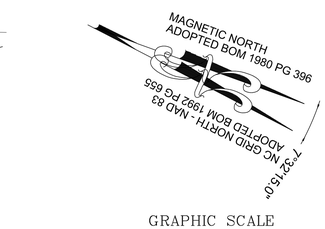
HORIZONTAL: 1" = 50'



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

PUBLIC
WATER DISTRIBUTION / EXTENSION SYSTEM
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CITY OF RALEIGH
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PUBLIC
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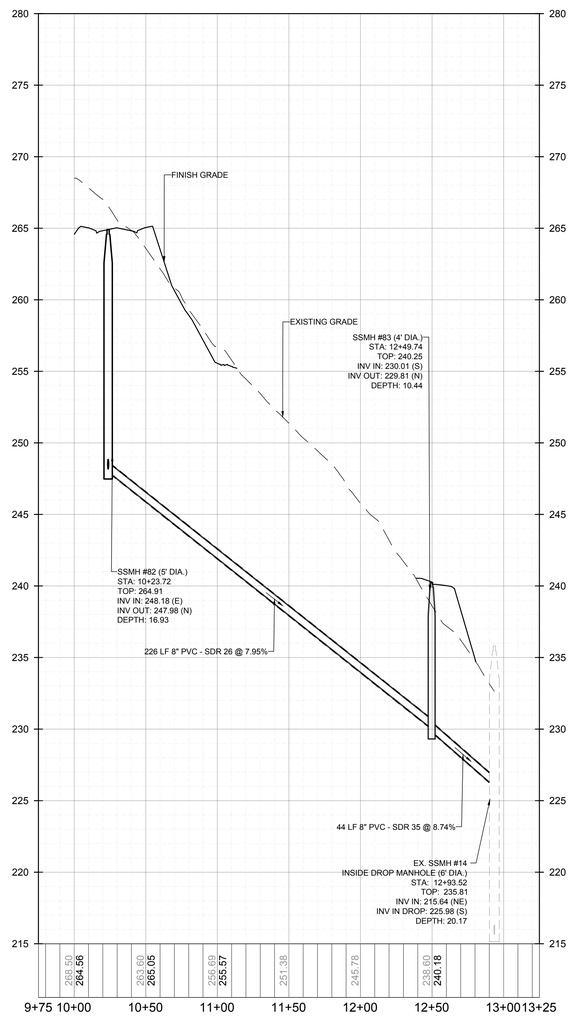
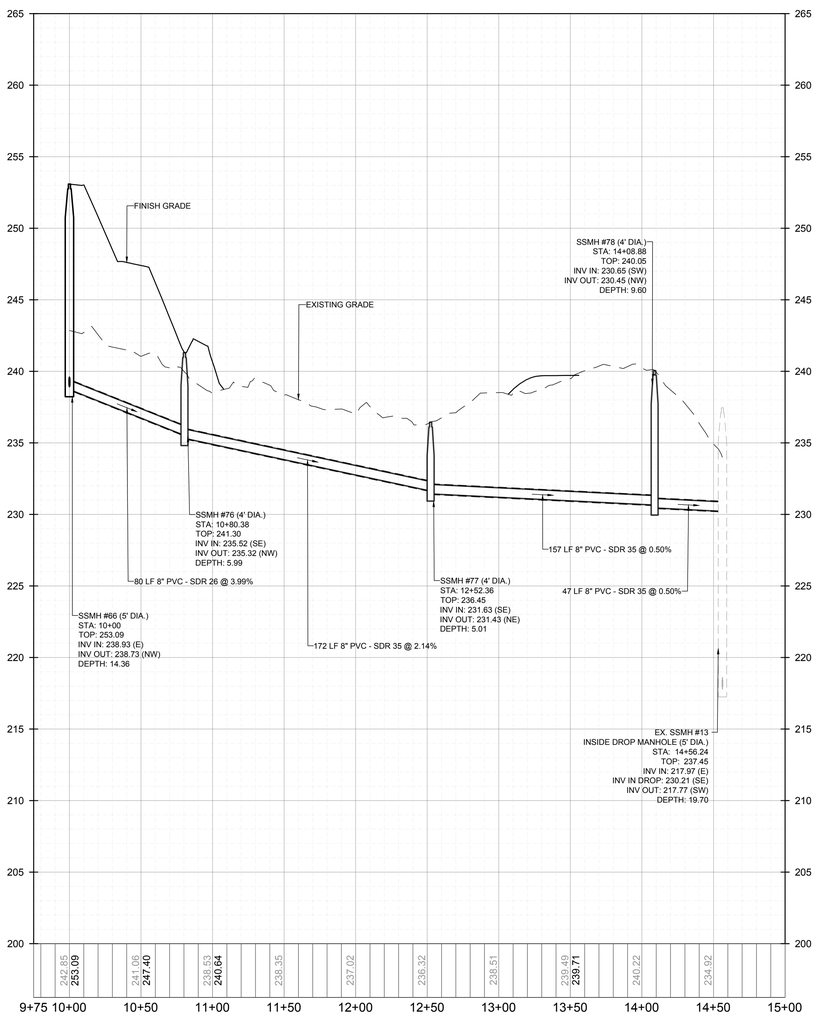
4



PROPOSED SSMH #82 - EX. SSMH #14 - PROFILE

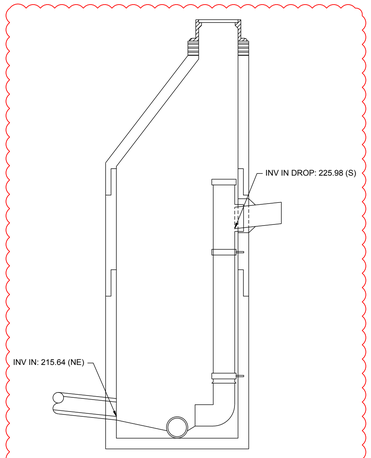
VERTICAL: 1" = 5'
HORIZONTAL: 1" = 50'



PROPOSED SSMH #66 - EX. SSMH #13 - PROFILE

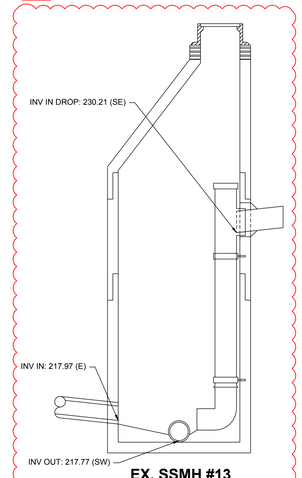
VERTICAL: 1" = 5'
HORIZONTAL: 1" = 50'

4



EX. SSMH #14
INSIDE DROP MANHOLE

4



EX. SSMH #13
INSIDE DROP MANHOLE

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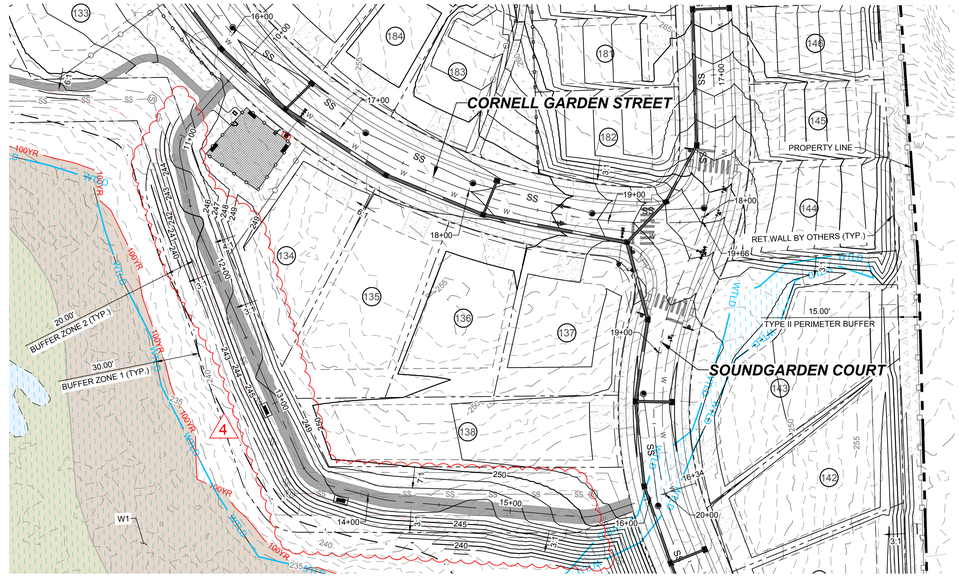
SEAL:

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT PSP-23-03	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

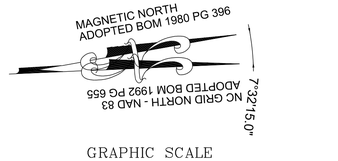
RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
ON-SITE SANITARY SEWER - PLAN & PROFILE

DRAWING
SHEET
C-11.42



PROPOSED MULTI USE ASPHALT PATH - PLAN

HORIZONTAL: 1" = 50'



GRAPHIC SCALE

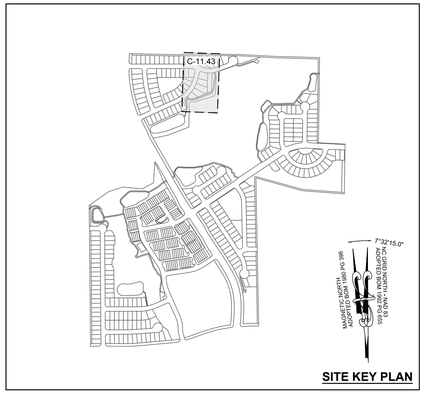
50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

PROPOSED MULTI USE ASPHALT PATH - PROFILE

VERTICAL: 1" = 5'

HORIZONTAL: 1" = 50'



SITE KEY PLAN

4

PUBLIC

WATER DISTRIBUTION / EXTENSION SYSTEM

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CITY OF RALEIGH
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PUBLIC

SEWER COLLECTION / EXTENSION SYSTEM

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	PSP-23-03
	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
MULTI USE ASPHALT PATH - PLAN & PROFILE

DRAWING / SHEET

C-11.43

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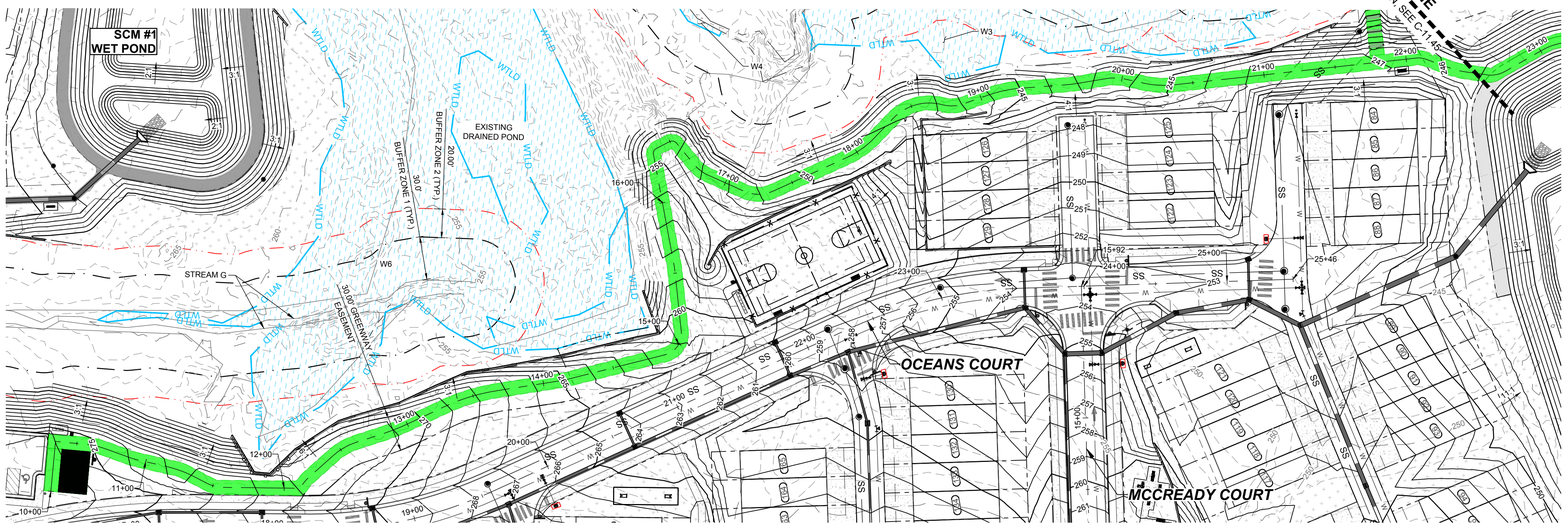
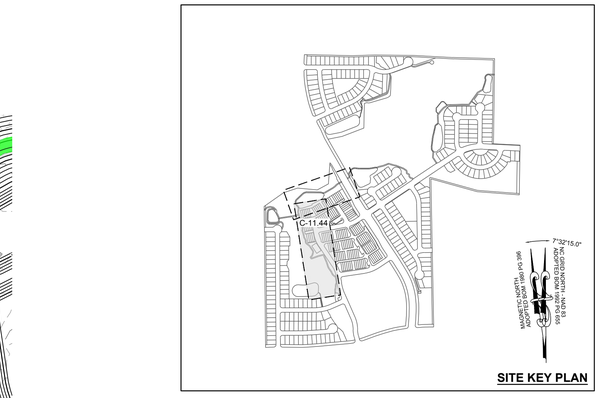


PROPOSED GREENWAY 1 - PLAN

HORIZONTAL: 1" = 50'



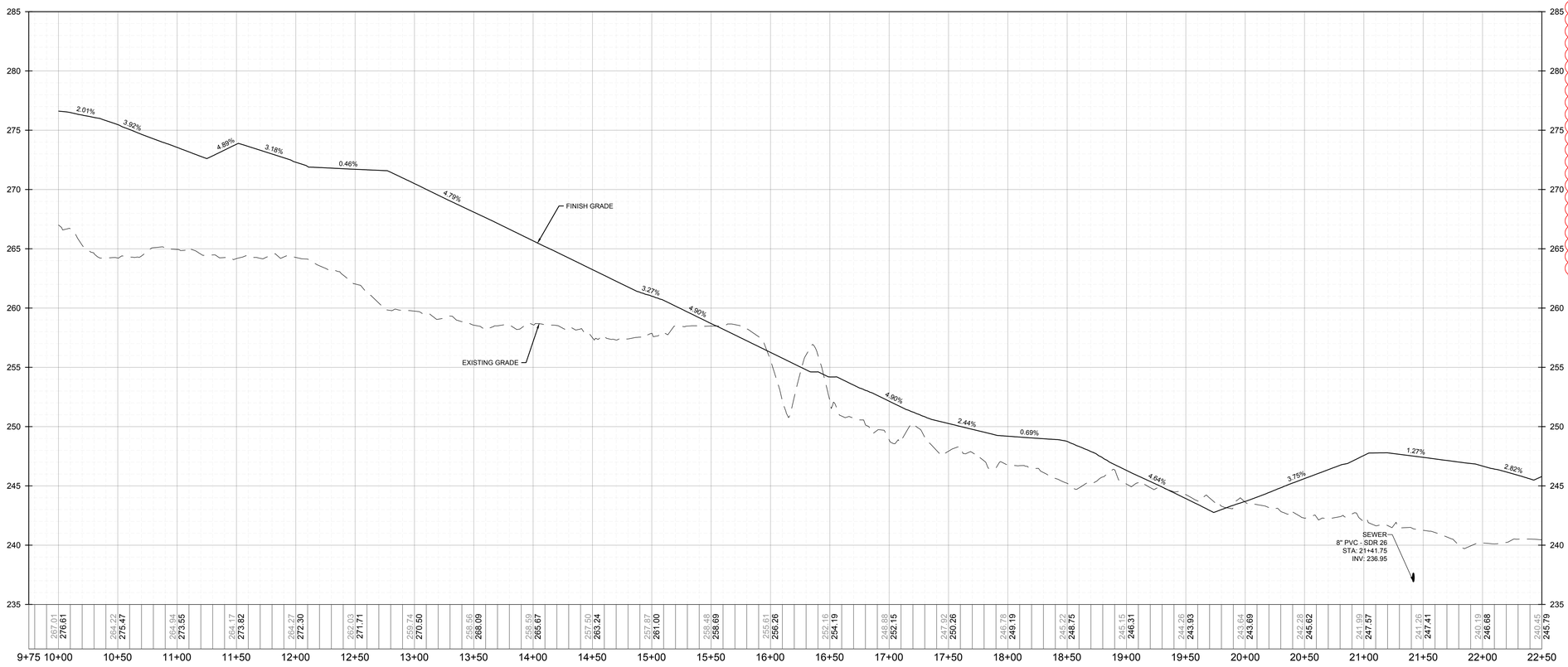
MAGNETIC NORTH
ADOPTED BOM 1980 PG 396

NC GRID NORTH - NAD 83
ADOPTED BOM 1992 PG 655
7°32'15.0"

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



PROPOSED GREENWAY 1 - PROFILE

VERTICAL: 1" = 5'
HORIZONTAL: 1" = 50'

4

PUBLIC
WATER DISTRIBUTION / EXTENSION SYSTEM
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SEAL

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT
PSP-23-03

NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PROPOSED GREENWAY 1
- PLAN & PROFILE

DRAWING
SHEET
C-11.44

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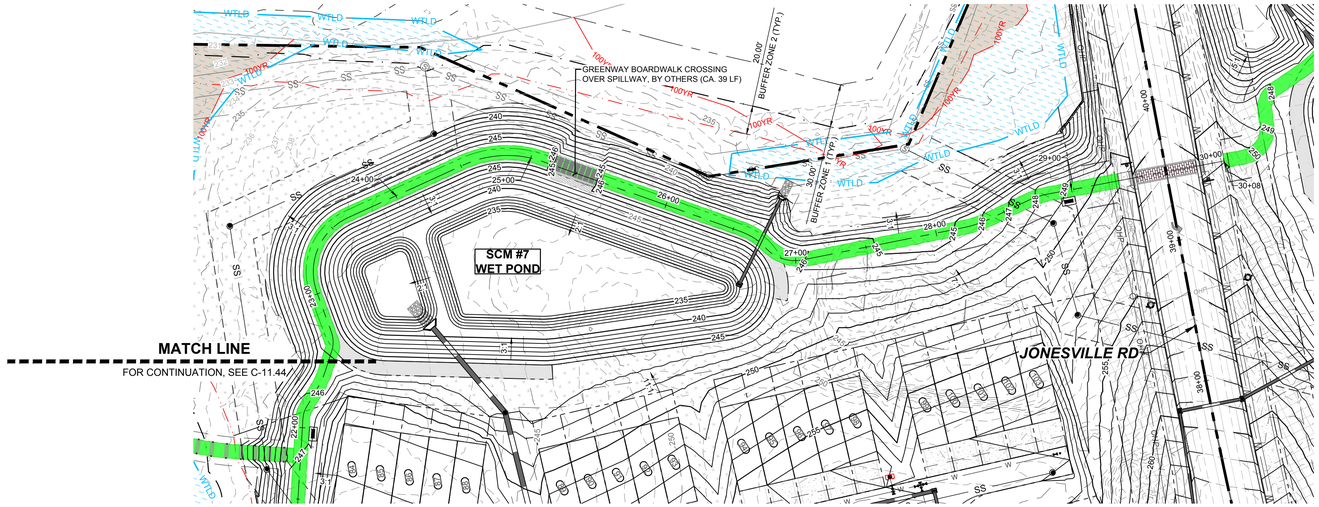
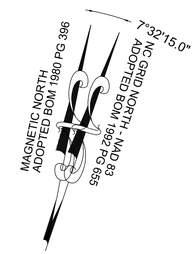


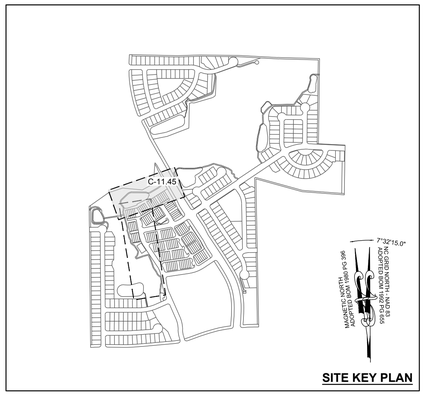
PROPOSED GREENWAY 1 - PLAN
HORIZONTAL: 1" = 50'



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



SITE KEY PLAN

4

PUBLIC
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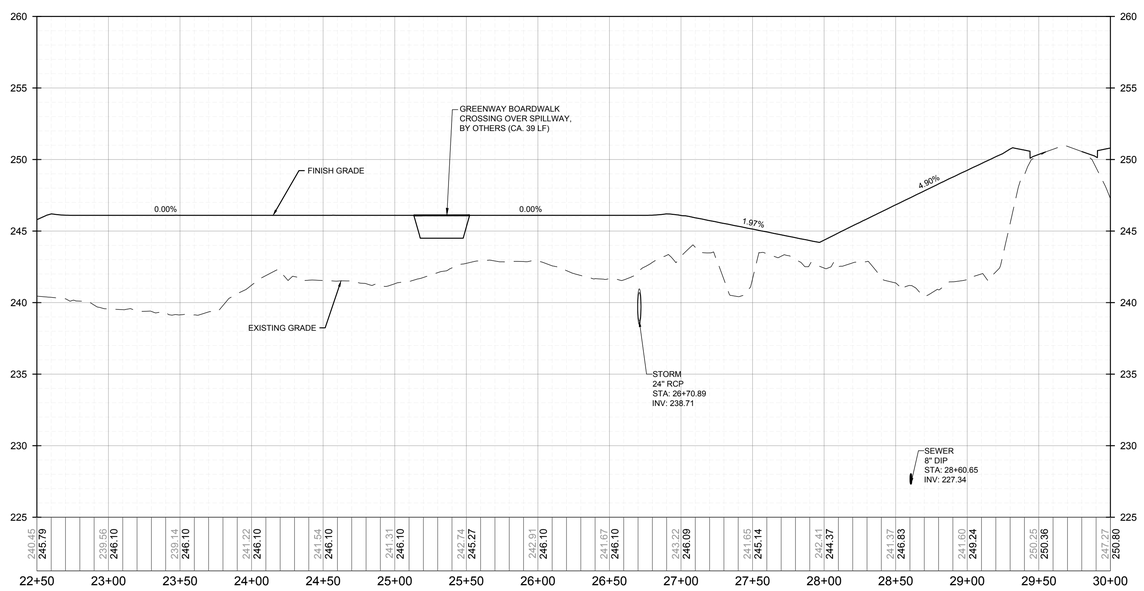

PROPOSED GREENWAY 1 - PROFILE
VERTICAL: 1" = 5'
HORIZONTAL: 1" = 50'

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SEAL

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

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DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PROPOSED GREENWAY 1
- PLAN & PROFILE

DRAWING
SHEET
C-11.45

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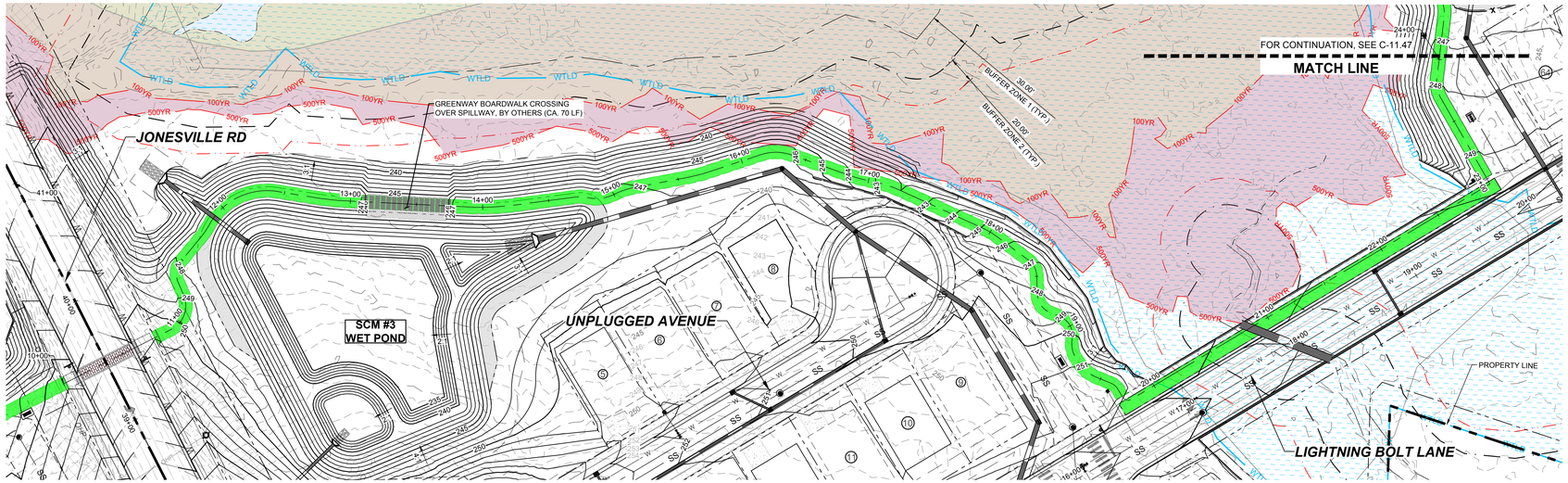
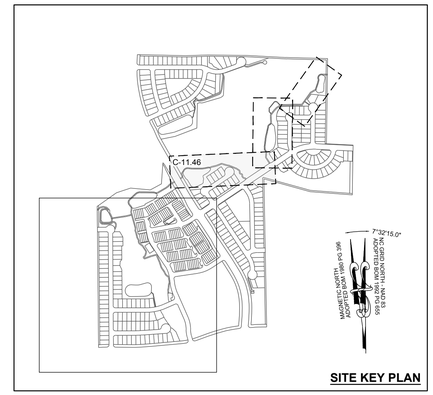


PROPOSED GREENWAY 2 - PLAN
HORIZONTAL: 1" = 50'



SITE KEY PLAN

7°32'15.0"
MAGNETIC NORTH
ADOPTED BOM 1980 PG 396
NC GRID NORTH - NAD 83
ADOPTED BOM 1992 PG 655

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

4

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CITY OF RALEIGH
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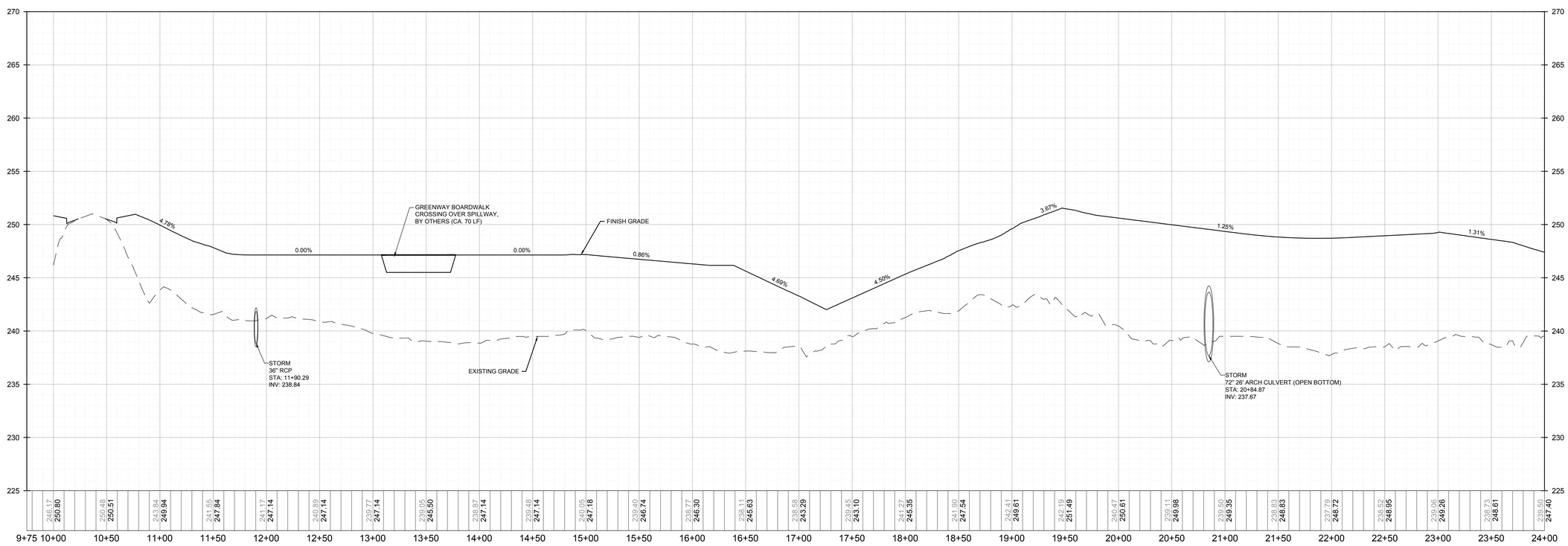

PROPOSED GREENWAY 2 - PROFILE
VERTICAL: 1" = 5'
HORIZONTAL: 1" = 50'

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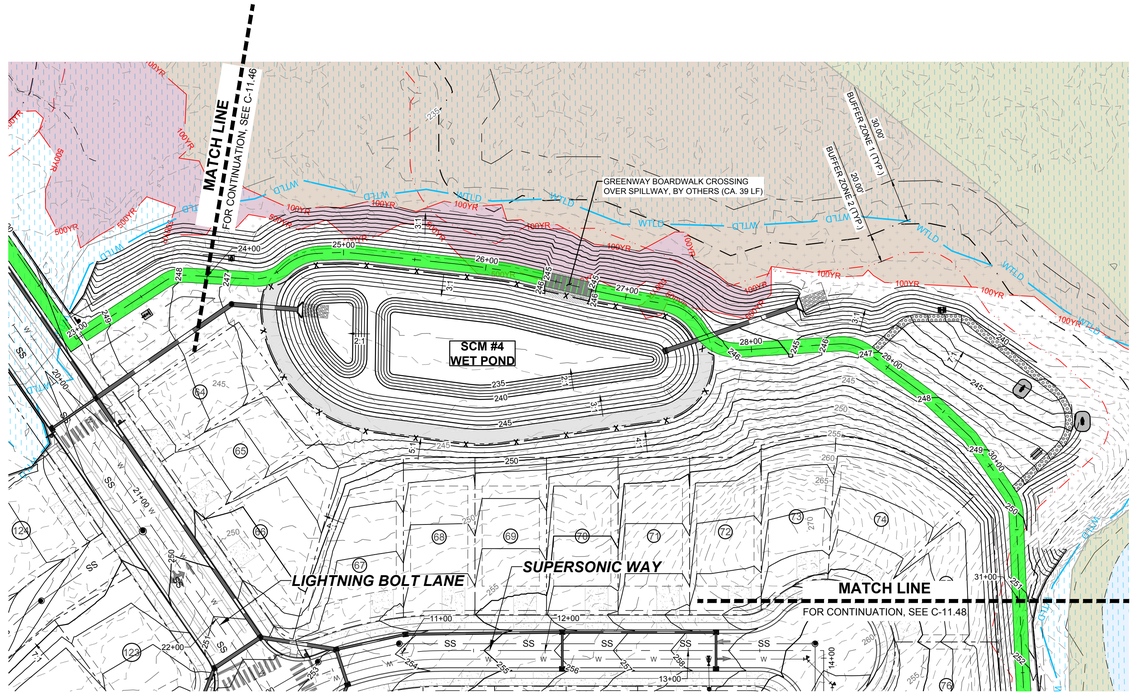
SEAL

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

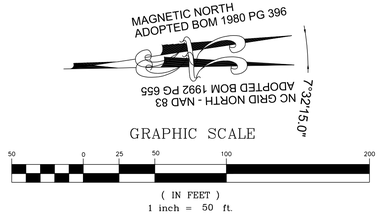
STRONG ROCK PROJECT	PSP-23-03
	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

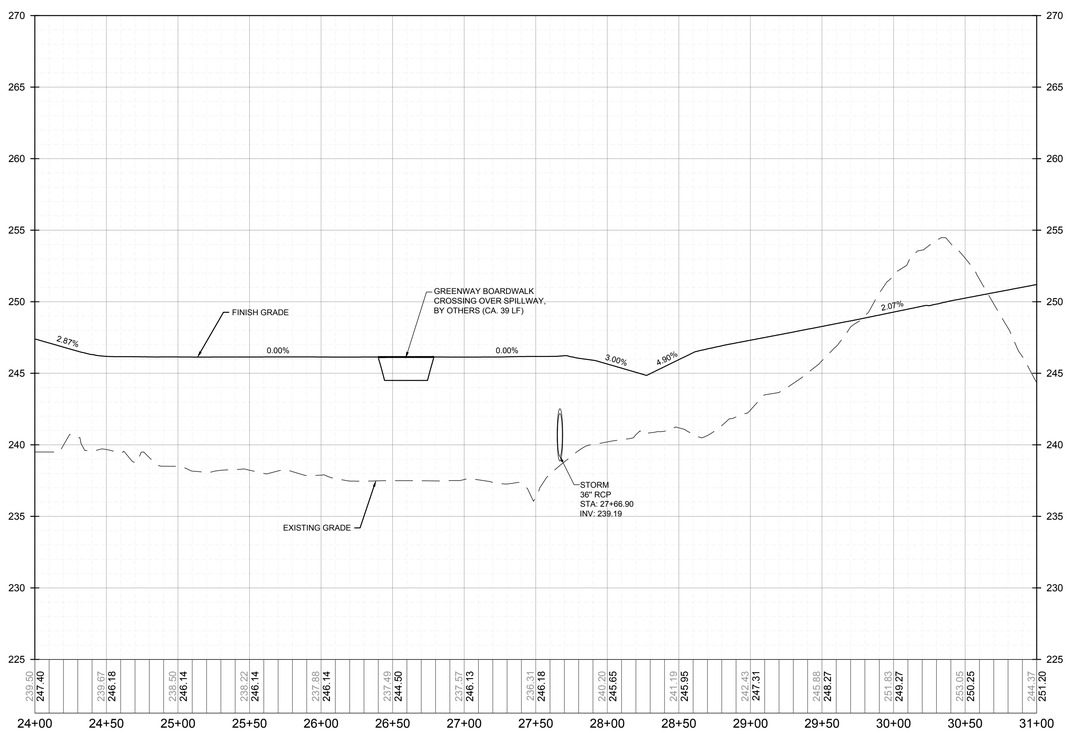
RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PROPOSED GREENWAY 2
- PLAN & PROFILE

DRAWING
SHEET
C-11.46

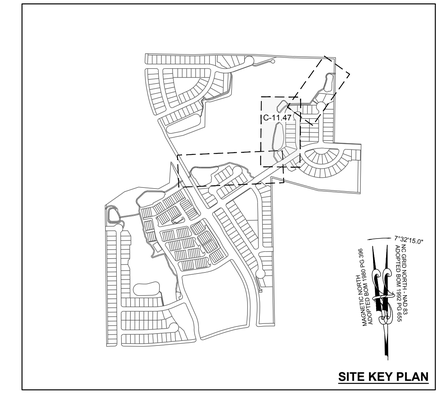


PROPOSED GREENWAY 2 - PLAN
HORIZONTAL: 1" = 50'





PROPOSED GREENWAY 2 - PROFILE
VERTICAL: 1" = 5'
HORIZONTAL: 1" = 50'



SITE KEY PLAN

4

PUBLIC
WATER DISTRIBUTION / EXTENSION SYSTEM
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CITY OF RALEIGH
PUBLIC UTILITIES DEPARTMENT PERMIT # _____

PUBLIC
SEWER COLLECTION / EXTENSION SYSTEM
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RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PROPOSED GREENWAY 2
- PLAN & PROFILE

DRAWING
SHEET
C-11.47

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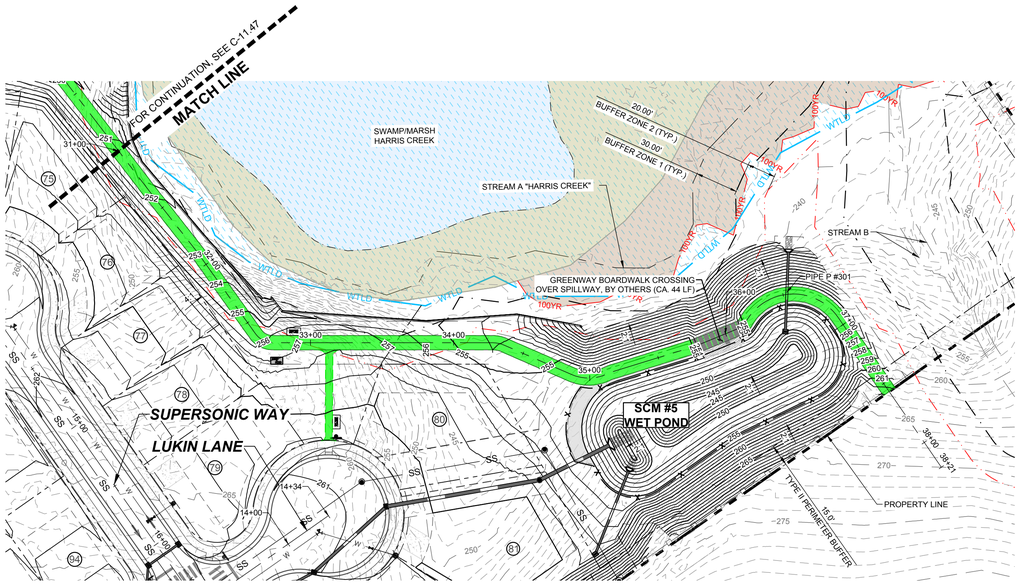
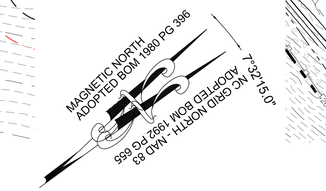


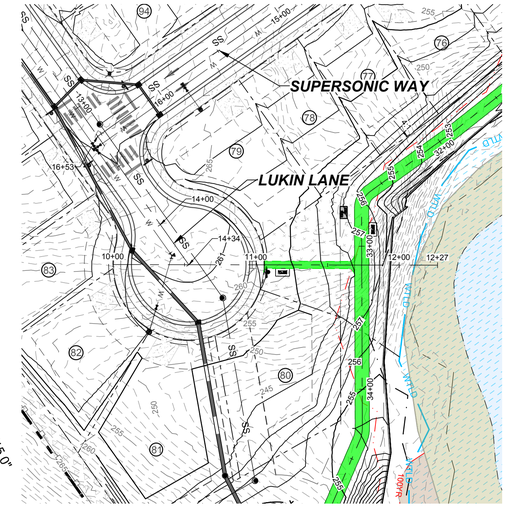
PROPOSED GREENWAY 2 - PLAN
HORIZONTAL: 1" = 50'



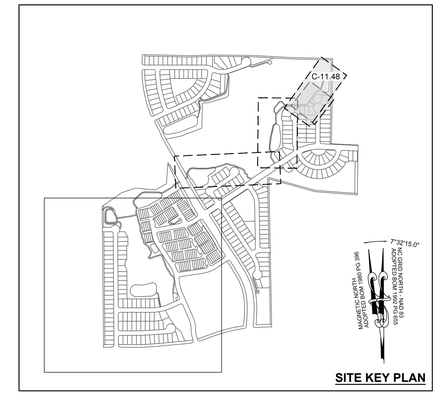
GRAPHIC SCALE

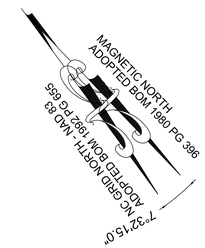
50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



PROPOSED GREENWAY 3 - PLAN
HORIZONTAL: 1" = 50'

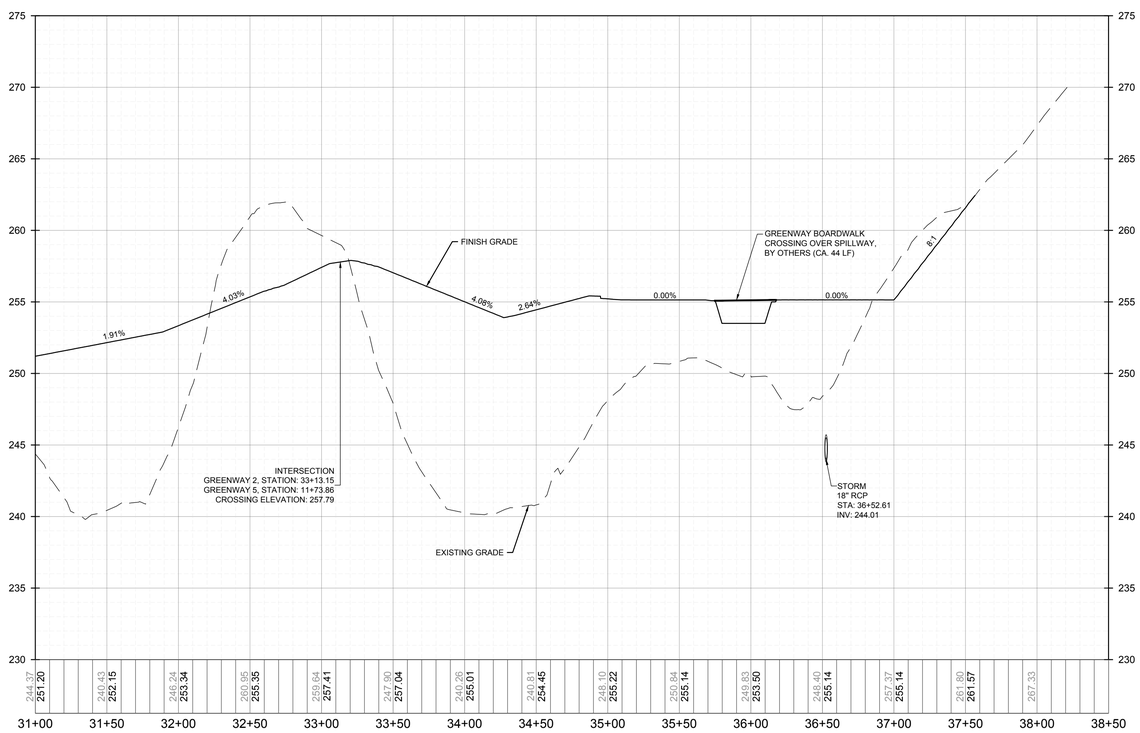




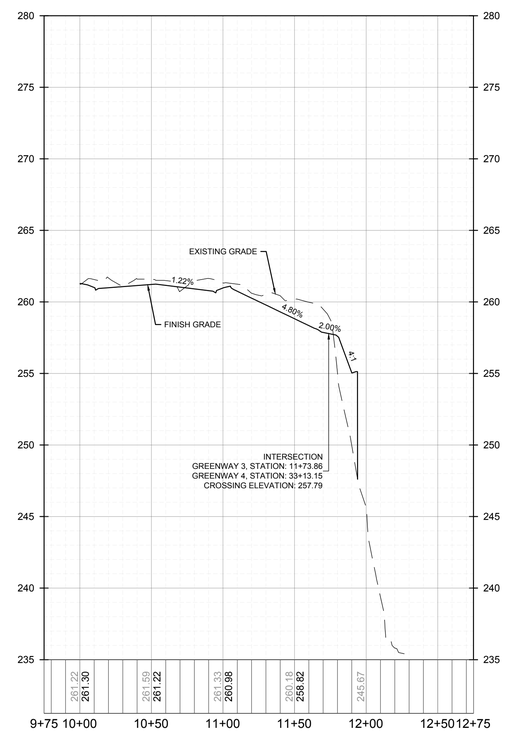
GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



PROPOSED GREENWAY 2 - PROFILE
VERTICAL: 1" = 5'
HORIZONTAL: 1" = 50'



PROPOSED GREENWAY 3 - PROFILE
VERTICAL: 1" = 5'
HORIZONTAL: 1" = 50'

4

PUBLIC
WATER DISTRIBUTION / EXTENSION SYSTEM
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SEAL

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305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

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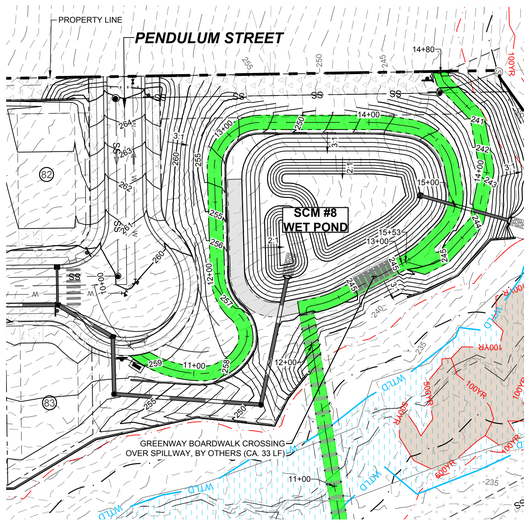
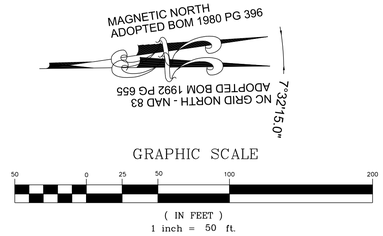
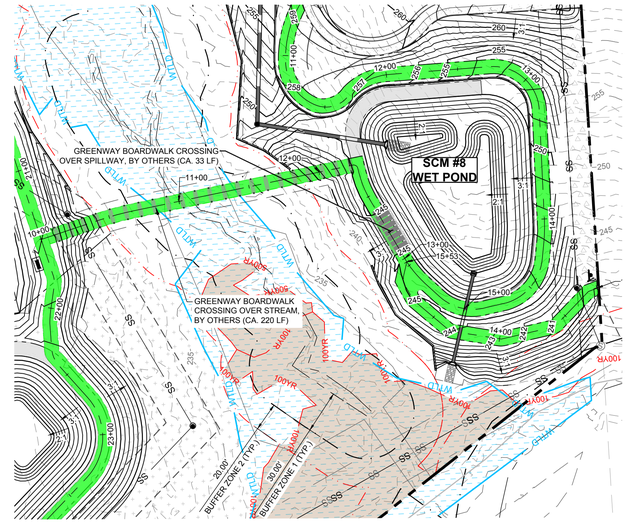
RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PROPOSED GREENWAY 2 & 3 - PLAN & PROFILE

DRAWING / SHEET
C-11.48

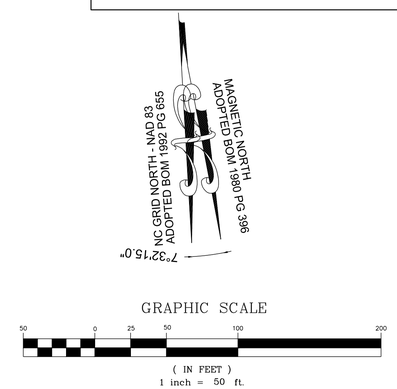


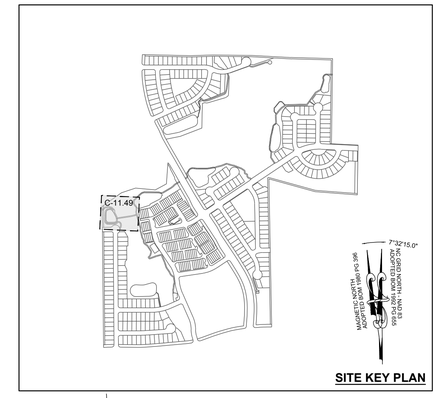
PROPOSED GREENWAY 4 - PLAN
HORIZONTAL: 1" = 50'

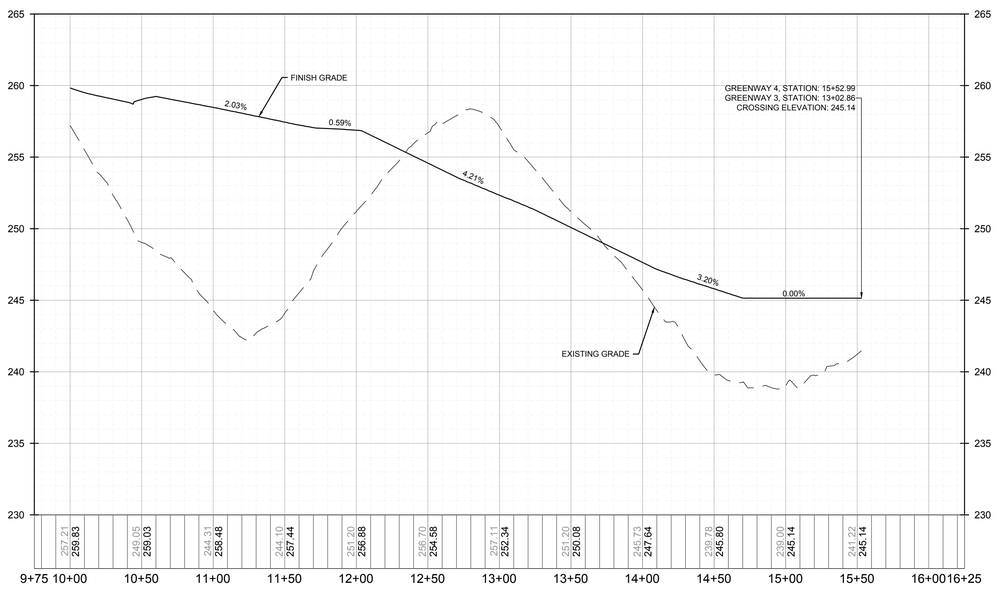




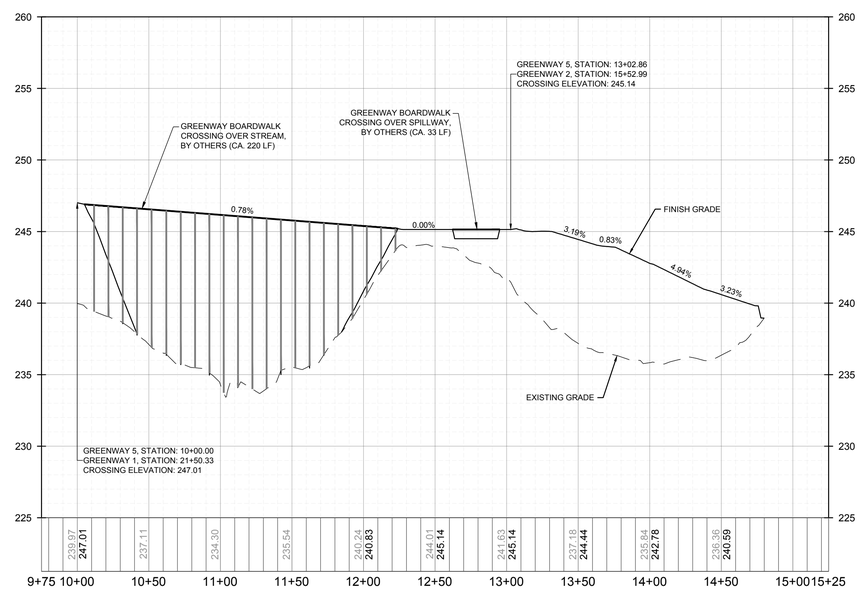
PROPOSED GREENWAY 5 - PLAN
HORIZONTAL: 1" = 50'







PROPOSED GREENWAY 4 - PROFILE
VERTICAL: 1" = 5'
HORIZONTAL: 1" = 50'



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HORIZONTAL: 1" = 50'

4

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DRAWING
SHEET
C-11.49

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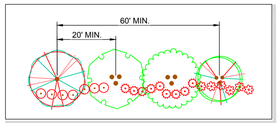

30' STREET YARD BUFFER

NOTES:

SEE SHEET C-3.0 FOR ADJACENT PROPERTY DETAILS

LANDSCAPING NOTES:

1. BUFFERS SHALL BE PLATTED AS SEPARATE TRACTS TO BE OWNED AND MAINTAINED BY THE HOA OR SIMILAR ENTITY.

2. OPEN SPACE RECORDED AS A CONSERVATION EASEMENT SHALL BE INDICATED ON ALL DEVELOPMENT APPROVALS.

TOWNHOME NOTES:

STATES INTERNAL TOWNHOME DRIVEWAYS ARE PRIVATE EASEMENTS AS PER CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	CONTAINER	CALIPER	MIN. SPACING
STREET TREES								
	ACE FLD	51	ACER FLORIDANUM	SOUTHERN SUGAR MAPLE	12' HT.	B&B	3.0"	40' OC
	ACE SCR	55	ACER X FREEMANII 'SCARSEN'	SCARLET SENTINEL® RED MAPLE	12' HT.	B&B	3.0"	40' OC
	CAR FST	20	CARPINUS BETULUS 'FASTIGIATA'	UPRIGHT EUROPEAN HORNBEAM	12' HT.	B&B	3.0"	40' OC
	CLA LUT	29	CLADRASTIS LUTEA	AMERICAN YELLOWWOOD	12' HT.	B&B	3.0"	40' OC
	GIN AUT	21	GINKGO BILOBA 'AUTUMN GOLD'	AUTUMN GOLD MAIDENHAIR TREE	12' HT.	B&B	3.0"	40' OC
	GLE TTI	36	GLEDITSIA TRIACANTHOS F. INERMIS	THORNLESS HONEY LOCUST	12' HT.	B&B	3.0"	40' OC
	NYS SYL	38	NYSSA SYLVATICA	TUPELO	12' HT.	B&B	3.0"	40' OC
	PIS SAR	43	PISTACIA CHINENSIS 'SARAH'S RADIANCE'	SARAH'S RADIANCE CHINESE PISTACHE	12' HT.	B&B	3.0"	40' OC
	PLA OCC	20	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12' HT.	B&B	3.0"	40' OC
	QUE CEN	43	QUERCUS BICOLOR 'BONNIE AND MIKE'	BEACON® OAK	12' HT.	B&B	3.0"	40' OC
	QUE UIY	27	QUERCUS HEMISPHAERICA 'QHMTF'	AVALYN™ LAUREL OAK	12' HT.	B&B	3.0"	40' OC
	QUE SHU	46	QUERCUS SHUMARDII	SHUMARD OAK	12' HT.	B&B	3.0"	40' OC
	TIL AME	55	TILIA AMERICANA	AMERICAN LINDEN	12' HT.	B&B	3.0"	40' OC
SUBTOTAL:		484						
UNDERSTORY BUFFER								
	AME LKG	49	AMELANCHIER LAEVIS	ALLEGHENY SERVICEBERRY MULTI-TRUNK	8' HT.	B&B	3.0"	MULTI STEM
	CAR OCR	62	CARPINUS CAROLINIANA 'ORANGE CRUSH'	ORANGE CRUSH AMERICAN HORNBEAM	7' HT.	B&B	3.0"	MULTI STEM
	CHI VIR	50	CHIONANTHUS VIRGINICUS	WHITE FRINGETREE	6' HT.	B&B	3.0"	MULTI STEM
	LAG PXC	15	LAGERSTROEMIA INDICA X FAURIEI 'APALACHEE'	APALACHEE CRAPE MYRTLE	6' HT.	B&B	3.0"	MULTI STEM
	LAG OTN	62	LAGERSTROEMIA INDICA X FAURIEI 'COMANCHE'	COMANCHE CRAPE MYRTLE	6' HT.	B&B	3.0"	MULTI STEM
	LAG TON	16	LAGERSTROEMIA INDICA X FAURIEI 'TONTO'	TONTO CRAPE MYRTLE MULTI-TRUNK	6' HT.	B&B	3.0"	MULTI STEM
SUBTOTAL:		254						

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING	DETAIL
BUFFER SHRUBS								
	ILE CON	475	ACER FLORIDANUM	CONVEX-LEAVED JAPANESE HOLLY	2' HT.	POT	48' O.C.	
	LOR ' 'C	512	LOROPETALUM CHINENSE RUBRUM 'CAROLINA MIDNIGHT'	CAROLINA MIDNIGHT FRINGE FLOWER	2' HT.	POT	48' O.C.	
	PRU CSL	499	PRUNUS LUSITANICA 'ANGUSTIFLOLIA'	PORTUGAL LAUREL	3 GAL.	POT	48' O.C.	
SUBTOTAL:		1486						

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CONSTRUCTION PLANS
OVERALL LANDSCAPE PLAN

DRAWING SHEET
L-1.0

CHARLES ALFONSA JONES AND WIFE ALLIE V.JONES
PIN: 1757484609
DB 2305 PG 673
ZONING: R-30 (WC)
USE: SF

BENJAMIN FERRELL
PIN: 1757485713
DB 1697 PG 465
ZONING: R-30 (WC)
USE: SF

ALESHIA FERRELL & ARRON WALKER
PIN: 1757486733
DB 6374 PG 89
BM 1996 PG 00524
ZONING: R-30 (WC)
USE: SF

15.0' TYPE II PERIMETER BUFFER

CHRIST HOLINESS CHURCH #1
PIN: 1757487783
DB 2928 PG 328
ZONING: R-30 (WC)
USE: CH

CHRIST HOLINESS CHURCH #1
PIN: 1757489733
DB 4321 PG 788
ZONING: R-30 (WC)
USE: VA

CHRIST HOLINESS CHURCH #1
PIN: 1757580764
DB 9467 PG 430
ZONING: R-30 (WC)
USE: VA

ALICIA BROWN & CARL T. JONES
PIN: 1757582714
DB 16128 PG 183
ZONING: R-30 (WC)
USE: SF

RS RENTAL II LLC
PIN: 1757584724
DB 18703 PG 2414
BM 1981 PG 894
ZONING: R-30 (WC)
USE: SF

KAREN E. BASS
PIN: 1757586704
DB 12560 PG 1626
BM 1984 PG 943
ZONING: R-30 (WC)
USE: SF

GENERIC WOODEN PRIVACY FENCE 6' TALL

PROPERTY LINE (TYP.)

PHASE LINE (TYP.)

RET. WALL BY OTHERS (TYP.)

30.0' EXISTING TOWN OF ROLESVILLE DRAINAGE EASEMENT INTERCEPTOR BM 1992 PG 655

HENRY ALSTON
PIN: 1757481376
DB 19248 PG 984
BM 1982 PG 721
ZONING: R-30 (WC)
USE: SF

KENNETH INVESTMENT LLC
PIN: 1757471559
DB 19248 PG 1884
LOT - BM 2007 PG 01224
ZONING: R-30 (WC)
USE: VA

THE OVERHEAD POWER WILL BE RELOCATED

FUTURE DAYS WAY
50' PUBLIC R/W

30.0' STREET YARD BUFFER

BALLFIELD

STREET LIGHT (TYP.)

SMALL IPEMA PLAYGROUND

CORNELL GARDEN STREET
50' PUBLIC R/W

SOUNDGARDEN COURT
50' PUBLIC R/W

POLLINATOR GARDEN

10.0' WIDE PRIVATE MULTI-USE PATHWAY

BUFFER ZONE 2 (TYP.) 20.0'

BUFFER ZONE 1 (TYP.) 30.0'

PRIMITIVE TRAIL

SWAMP/MARSH HARRIS CREEK

10.0' BERM

SCM #6 WET POND

STREAM A "HARRIS CREEK"

JONESVILLE RD
100' R/W

MATCH LINE
FOR CONTINUATION, SEE L-1.2

MATCH LINE
FOR CONTINUATION, SEE L-1.4

MAGNETIC NORTH ADOPTED BOM 1980 PG 396

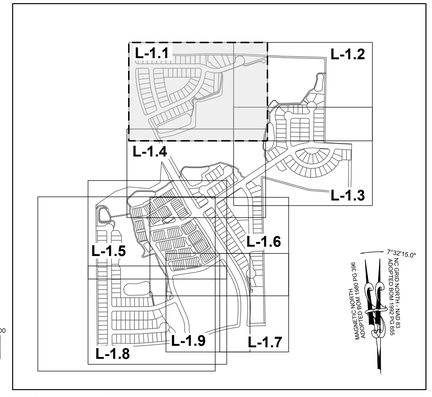
7°32'15.0"

NC GRID NORTH, NAD 83 ADOPTED BOM 1992 PG 655

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



SITE KEY PLAN

LEGEND:

SEE SHEET L-1.0 FOR TREE TABLES.

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No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE CID-24-04 V2	11/01/2024	SREG
03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL:

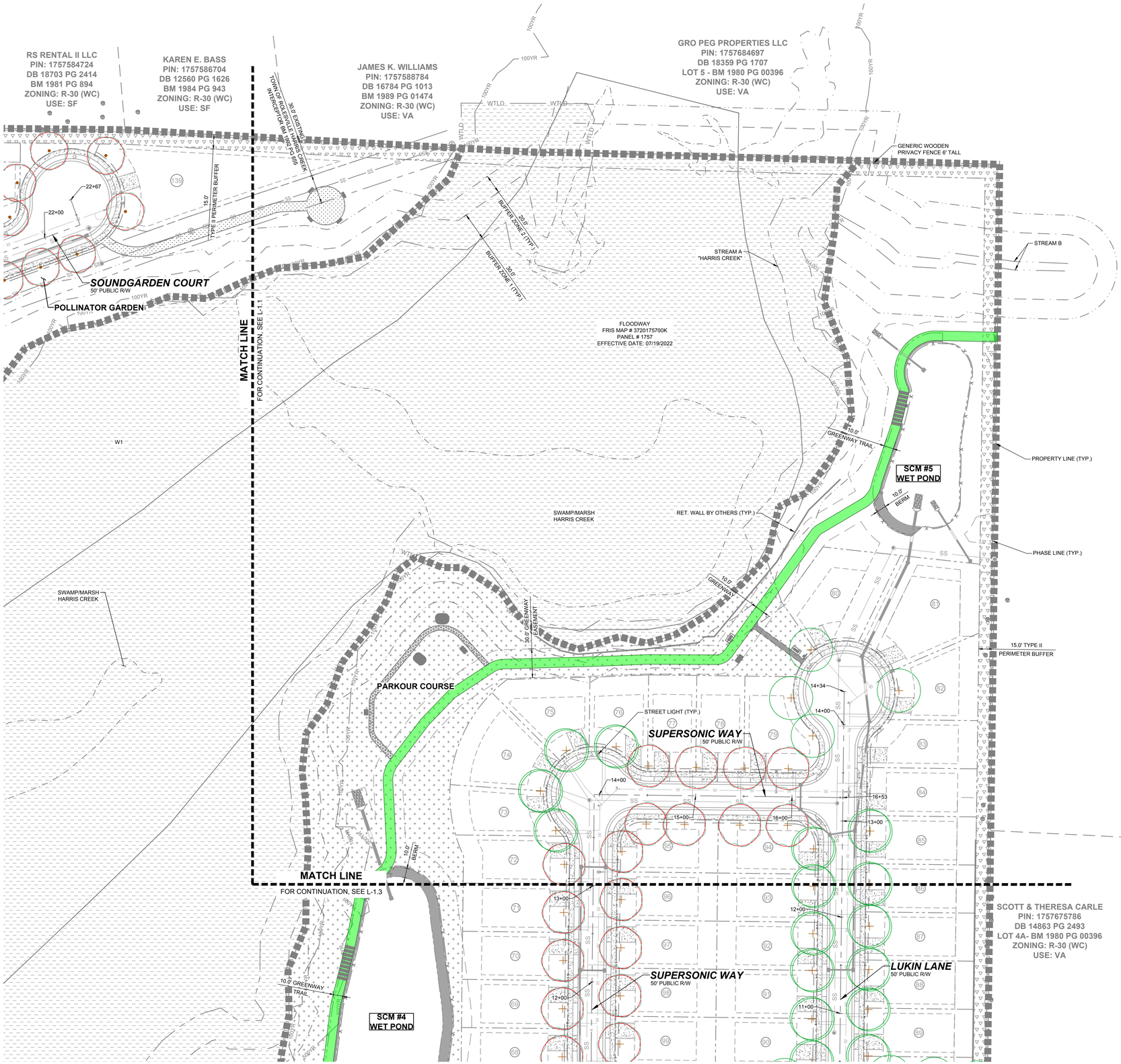
STRONGROCK
ENGINEERING GROUP

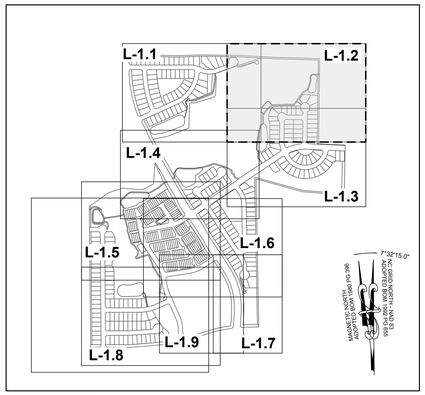
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT PSP-23-03	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PARTIAL LANDSCAPE PLAN I

DRAWING SHEET
L-1.1





SITE KEY PLAN

LEGEND:

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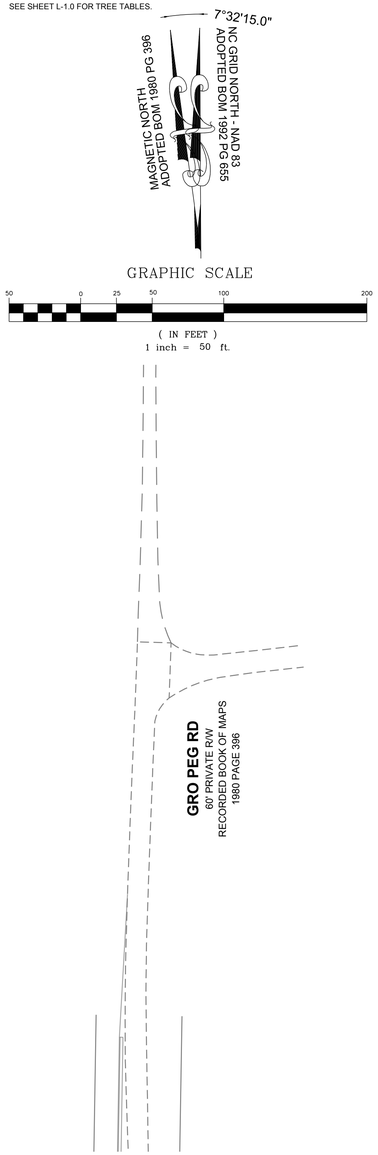

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

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CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

PARTIAL LANDSCAPE PLAN II

DRAWING
SHEET

L-1.2

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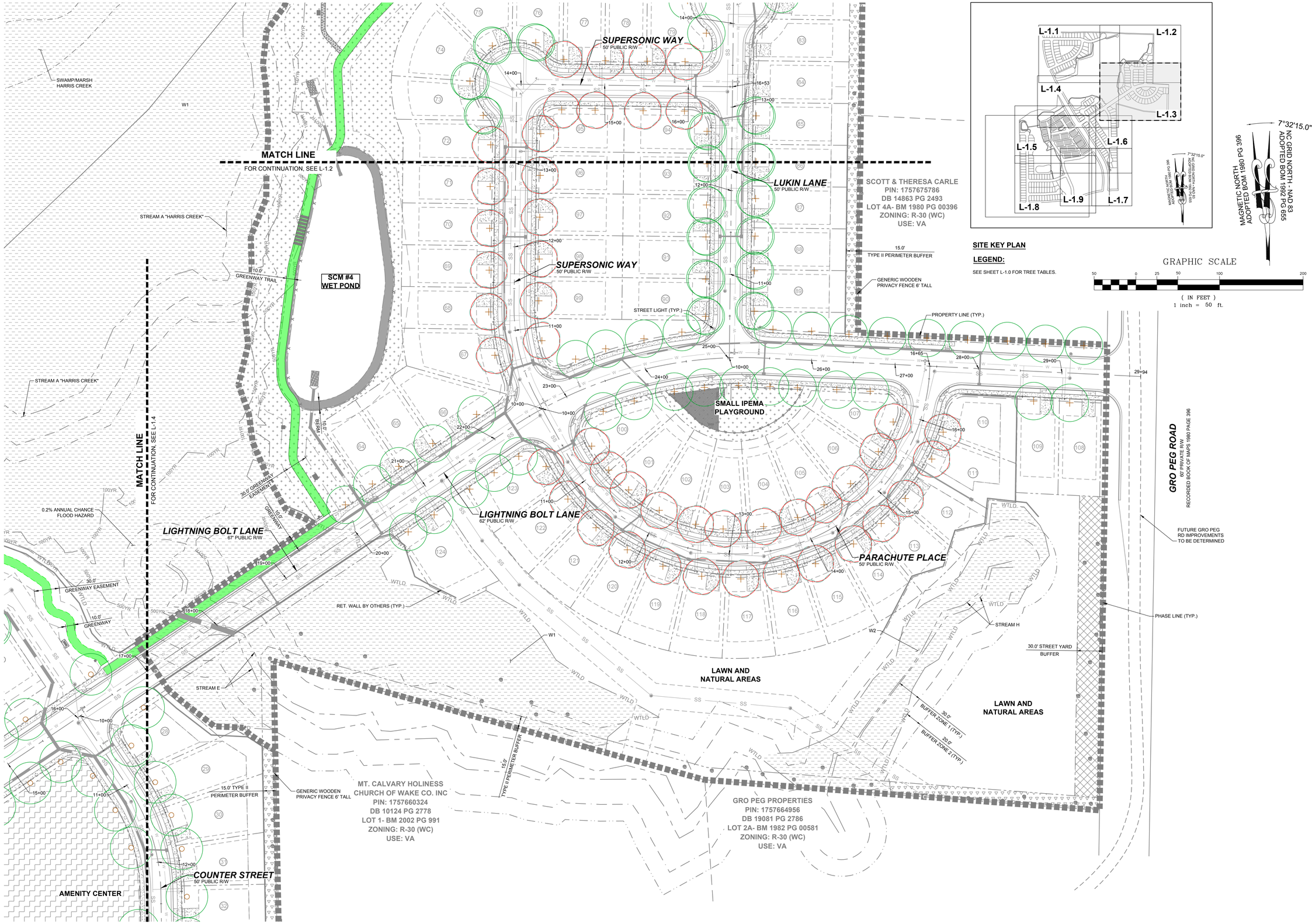

SITE KEY PLAN

LEGEND:

SEE SHEET L-1.0 FOR TREE TABLES.

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

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RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

PARTIAL LANDSCAPE PLAN III

DRAWING
SHEET

L-1.3

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TOWNHOME NOTES:

STATES INTERNAL TOWNHOME DRIVEWAYS ARE PRIVATE EASEMENTS AS PER CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT

SITE KEY PLAN

LEGEND:

SEE SHEET L-1.0 FOR TREE TABLES.

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

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STRONG ROCK PROJECT	PSP-22-03
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SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL

TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

PARTIAL LANDSCAPE PLAN IV

DRAWING
SHEET

L-1.4

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TOWNHOME NOTES:

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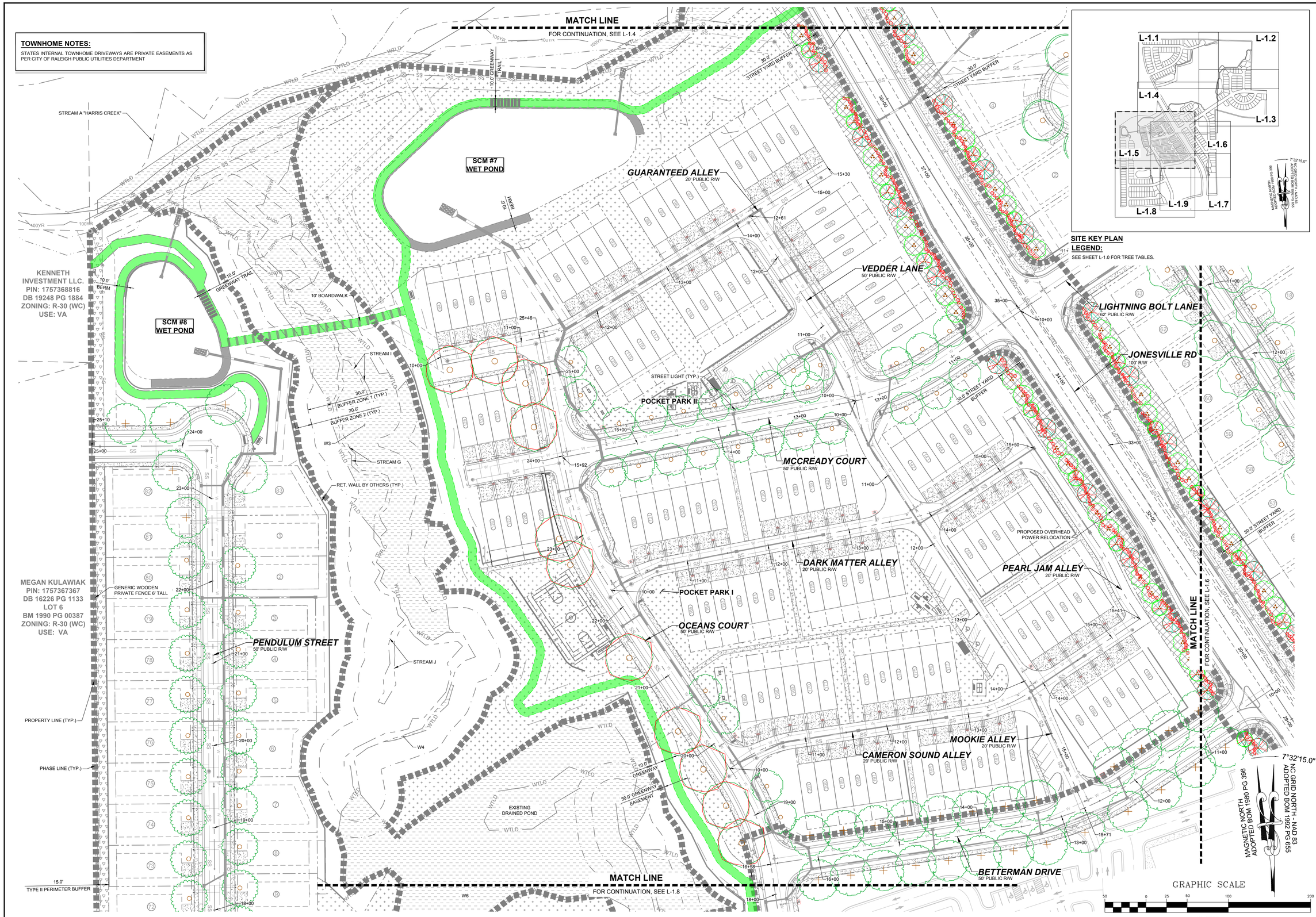

SITE KEY PLAN

LEGEND:

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DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL

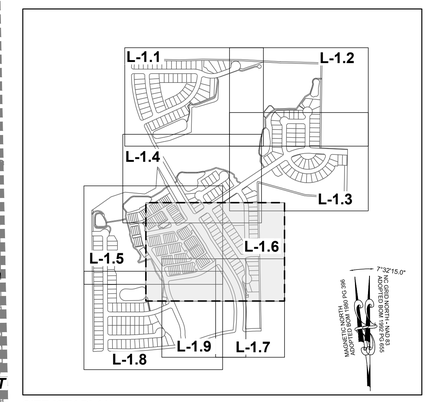
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

PARTIAL LANDSCAPE PLAN V

DRAWING SHEET

L-1.5



SITE KEY PLAN

LEGEND:

SEE SHEET L-1.0 FOR TREE TABLES.

TOWNHOME NOTES:

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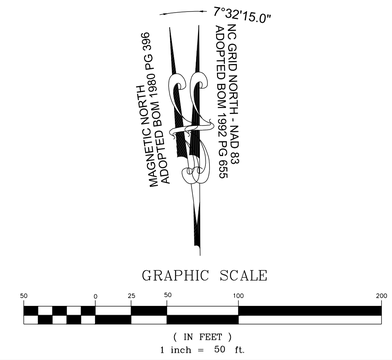

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STRONG ROCK PROJECT	PSP-23-03
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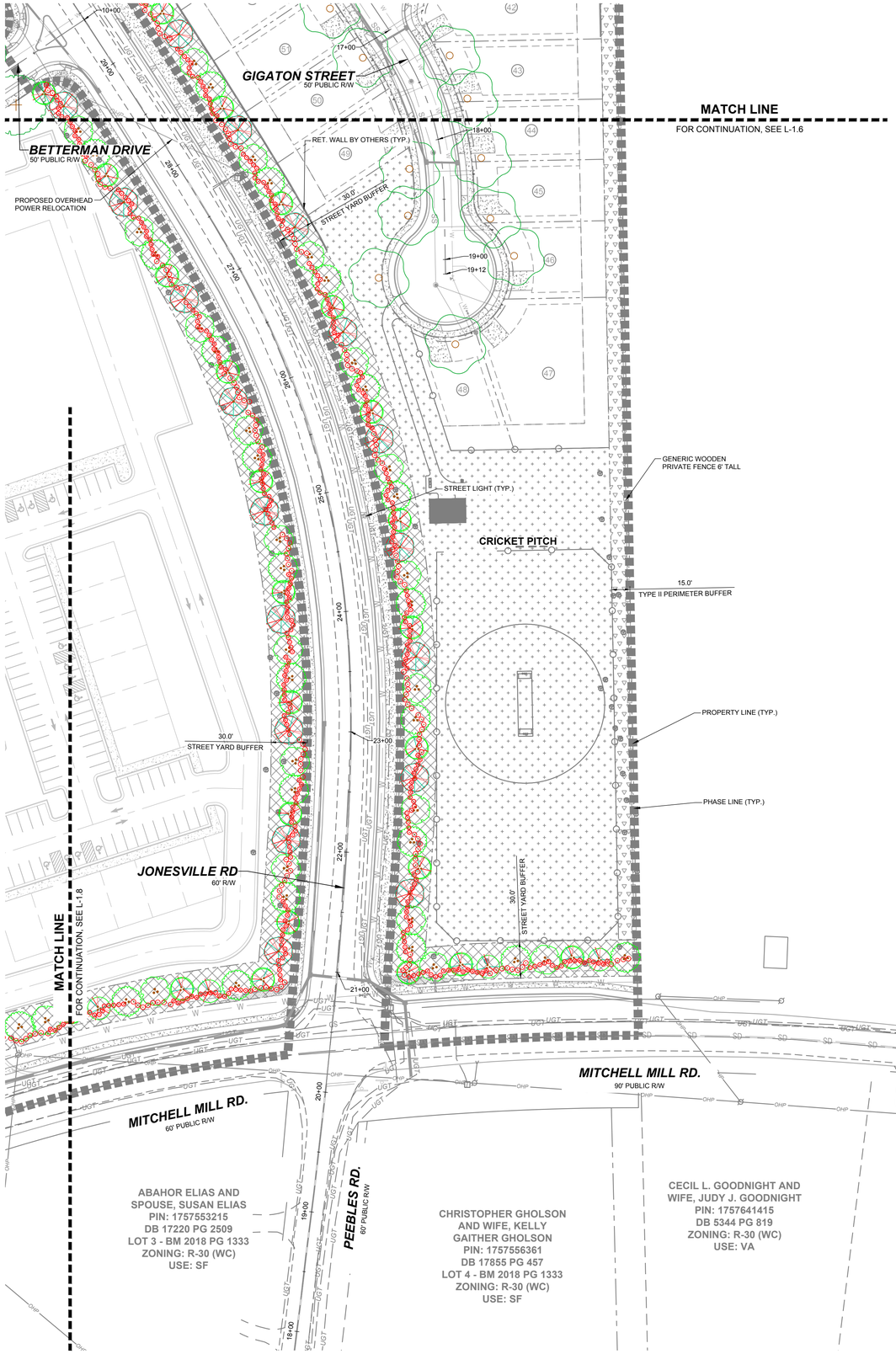
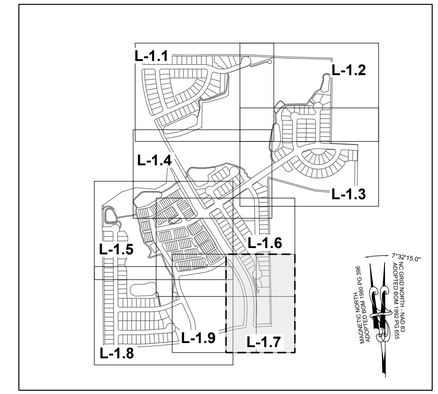
RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PARTIAL LANDSCAPE PLAN VI

DRAWING SHEET
L-1.6

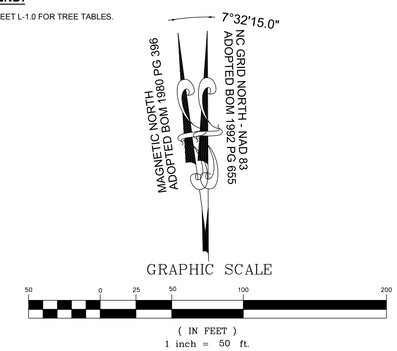




SITE KEY PLAN

LEGEND:

SEE SHEET L-1.0 FOR TREE TABLES.



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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

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RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PARTIAL LANDSCAPE PLAN VII

DRAWING
SHEET
L-1.7

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SITE KEY PLAN

LEGEND:

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

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ENGINEERING GROUP
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STRONG ROCK PROJECT PSP-23-03	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

PARTIAL LANDSCAPE PLAN VIII

DRAWING SHEET

L-1.8

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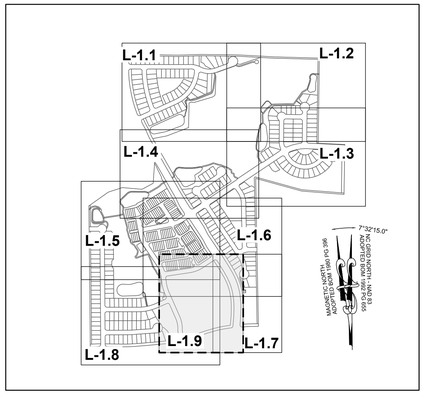


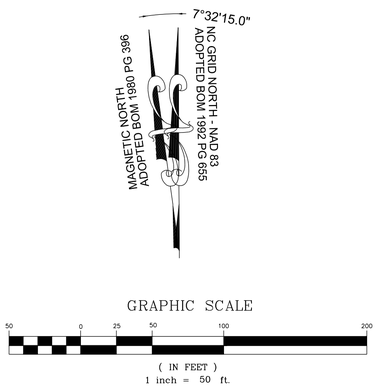
SITE KEY PLAN

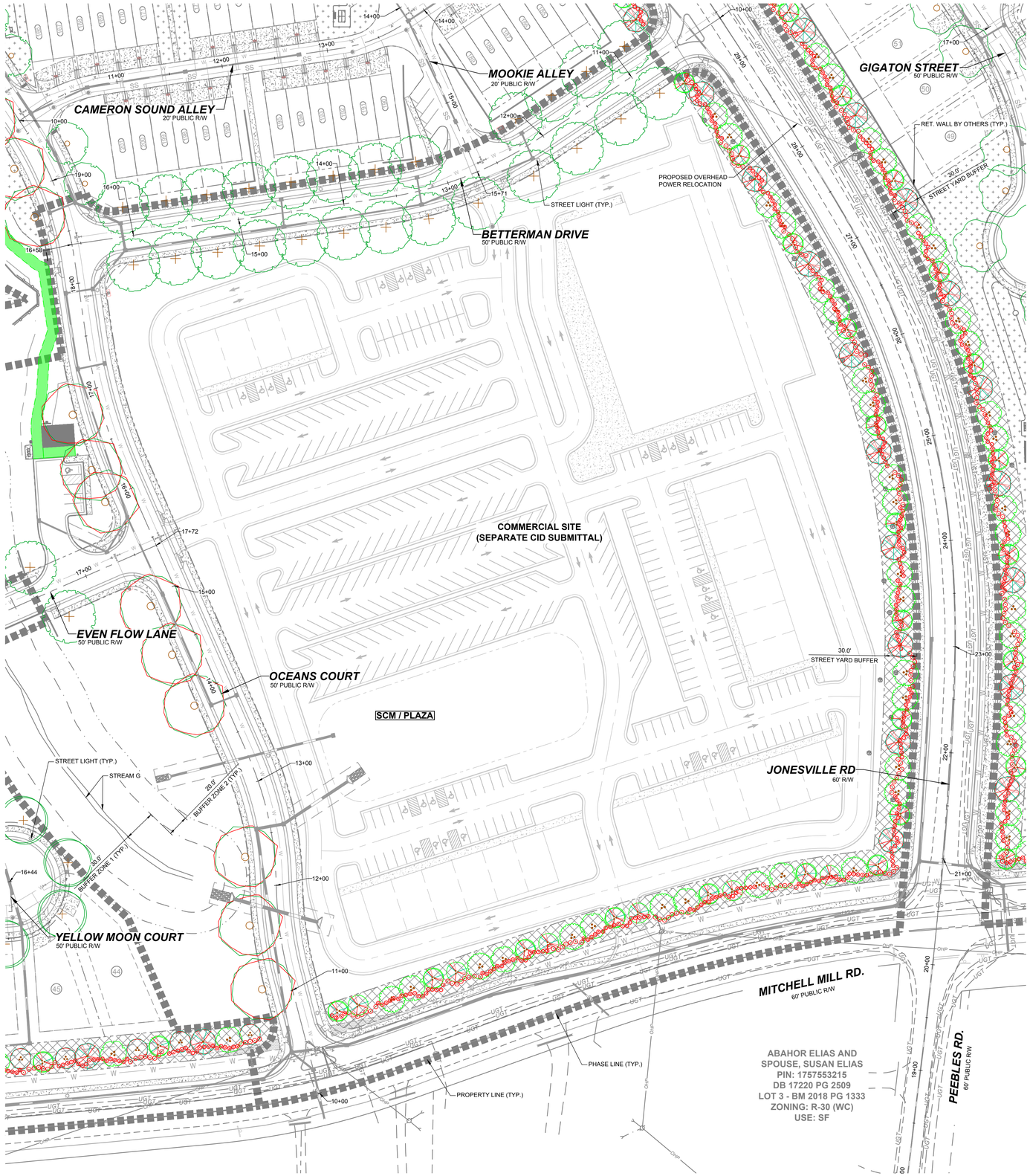
LEGEND:

SEE SHEET L-1.0 FOR TREE TABLES.

TOWNHOME NOTES:

STATES INTERNAL TOWNHOME DRIVEWAYS ARE PRIVATE EASEMENTS AS PER CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT





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SEAL

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RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

PARTIAL LANDSCAPE PLAN IX

DRAWING
SHEET

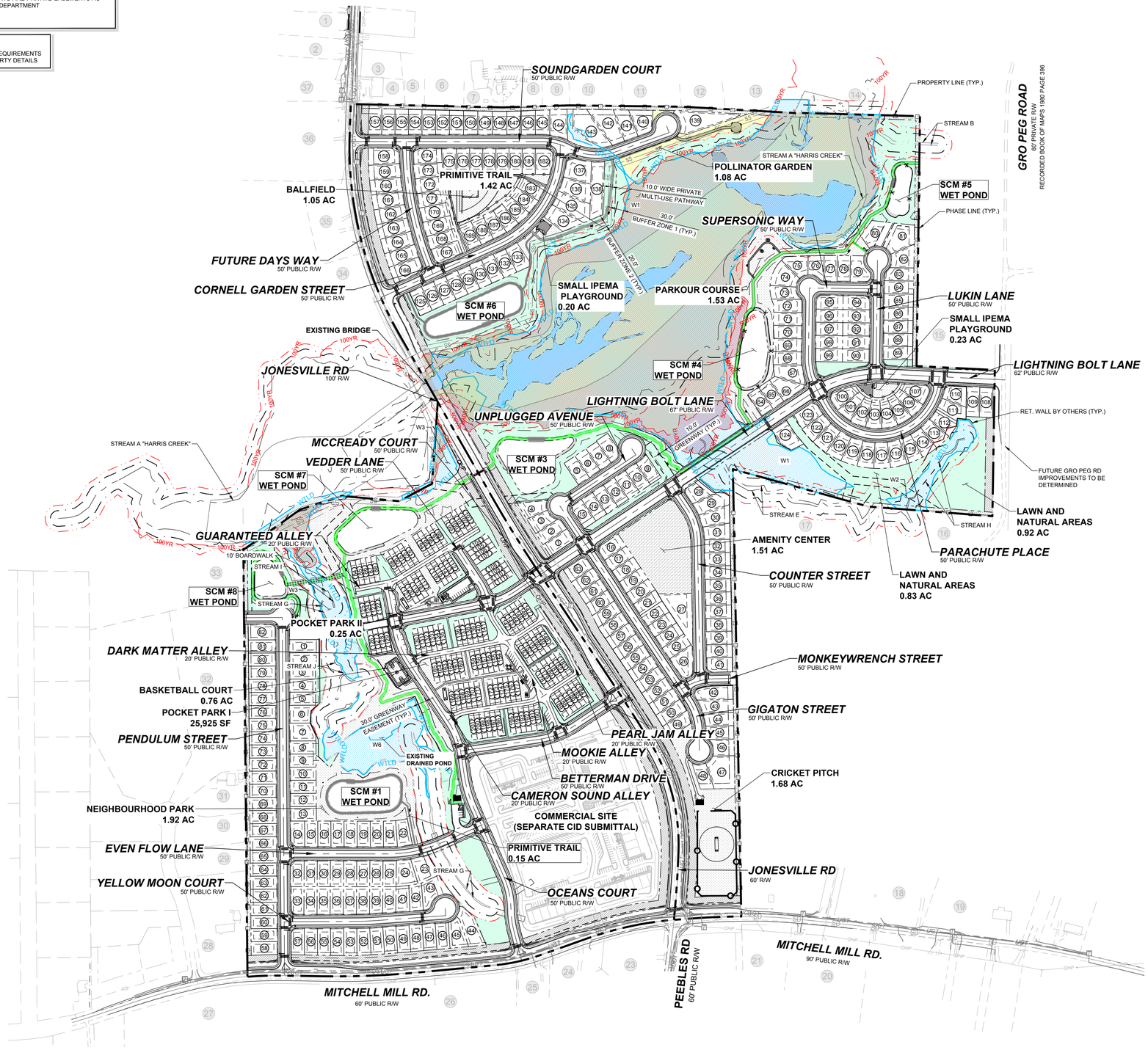
L-1.9

TOWNHOME NOTES:

STATES INTERNAL TOWNHOME DRIVEWAYS ARE PRIVATE EASEMENTS AS PER CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT

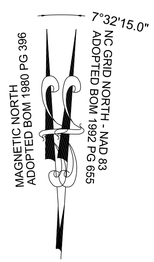
NOTES:

SEE COVER SHEET FOR ALL SETBACK REQUIREMENTS
SEE SHEET C-3.0 FOR ADJACENT PROPERTY DETAILS



LEGEND:

- EXISTING PROPERTY LINE
- 500YR — 500 YEAR FLOOD LINE
- 100YR — 100 YEAR FLOOD LINE
- SIGN
- STOP BAR
- ROADWAY CENTER LINE
- PROPOSED PROPERTY LINE
- ROLESVILLE STANDARD VALLEY CURB
- STANDARD CURB & GUTTER
- GREENWAY
- CONCRETE SIDEWALK
- ASPHALT PAVEMENT
- POLINATOR GARDEN
- ACTIVE & PASSIVE OPEN SPACE
- 30' STREET YARD BUFFER
- 15' TYPE II PERIMETER BUFFER
- OPEN SPACE
- WTLD — EXISTING WETLAND
- FLOOD HAZARD
- FLOODZONE AE
- FLOODWAY
- SWAMP/MARSH HARRIS CREEK
- GENERIC WOODEN PRIVACY FENCE
- FENCE PICKET FLAT-TOP
- X — X — FENCING



GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

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SEAL:

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NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
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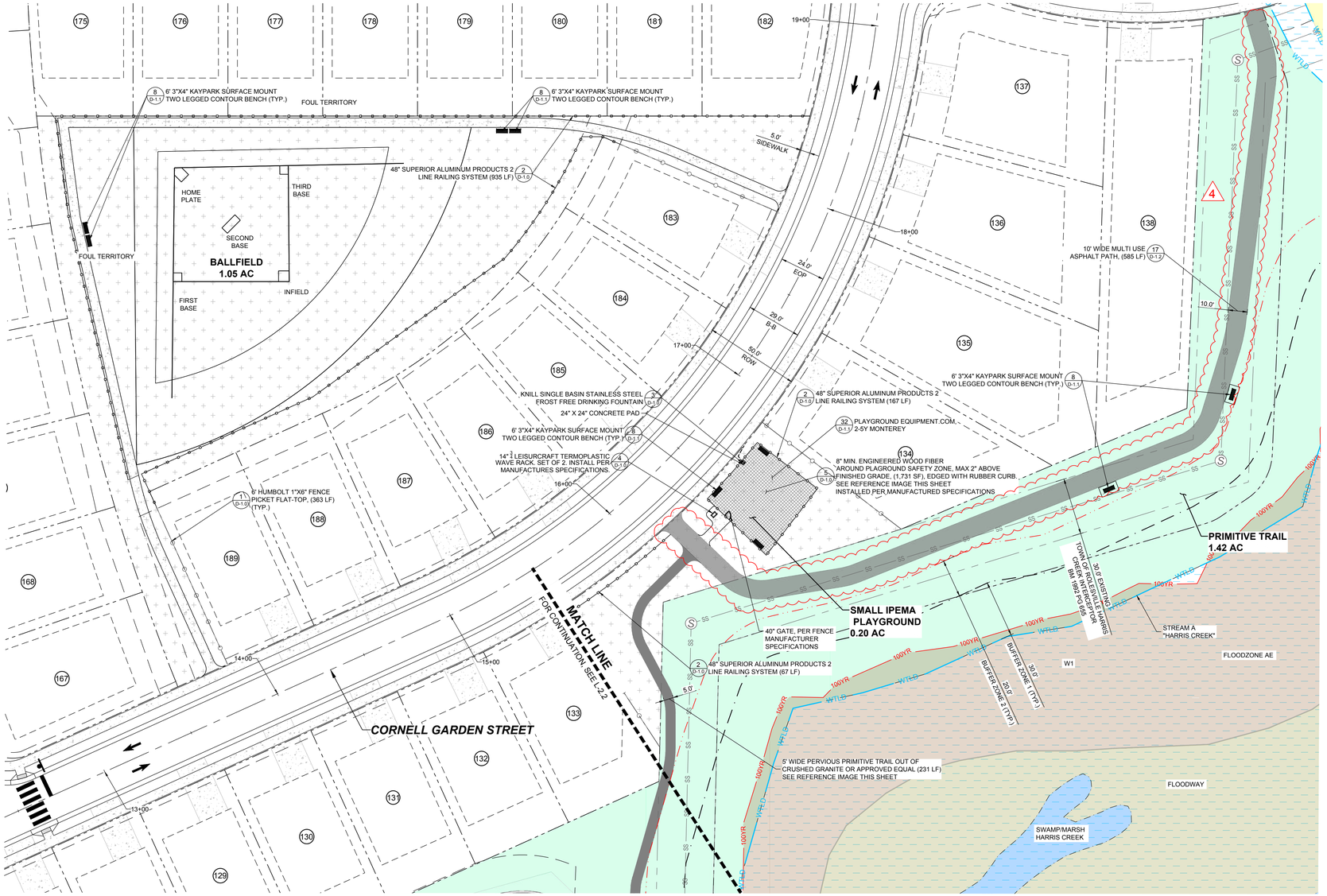
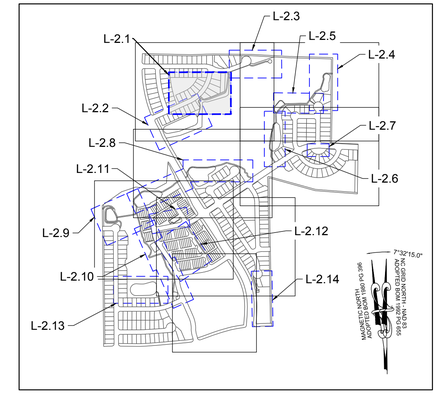
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
OVERALL AMENITIES PLAN

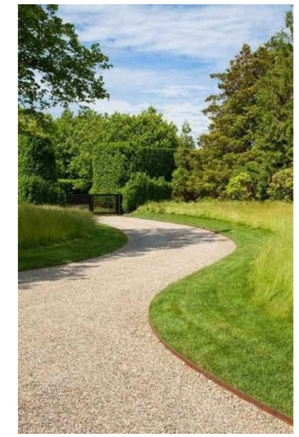
DRAWING / SHEET
L-2.0



BALLFIELD & SMALL IPEMA PLAYGROUND PLAN



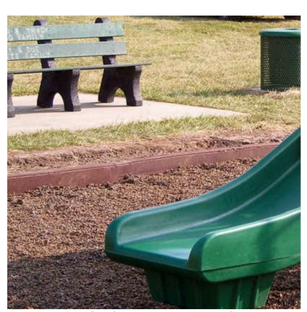
SITE KEY PLAN



CRUSHED GRAVEL PATH

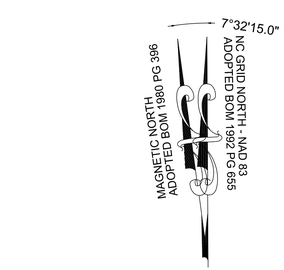
LEGEND:

EXISTING PROPERTY LINE	30' STREET YARD BUFFER
500 YEAR FLOOD LINE	15' TYPE II PERIMETER BUFFER
100 YEAR FLOOD LINE	OPEN SPACE
SIGN	EXISTING WETLAND
STOP BAR	FLOOD HAZARD
ROADWAY CENTER LINE	FLOODZONE AE
PROPOSED PROPERTY LINE	FLOODWAY
ROLESVILLE STANDARD VALLEY CURB	SWAMP/MARSH HARRIS CREEK
STANDARD CURB & GUTTER	GENERIC WOODEN PRIVACY FENCE
GREENWAY	FENCE PICKET FLAT-TOP
CONCRETE SIDEWALK	FENCING
ASPHALT PAVEMENT	
POLLINATOR GARDEN	
ACTIVE & PASSIVE OPEN SPACE	



PLAYGROUND RUBBER CURB

PLAYGROUND FENCE



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

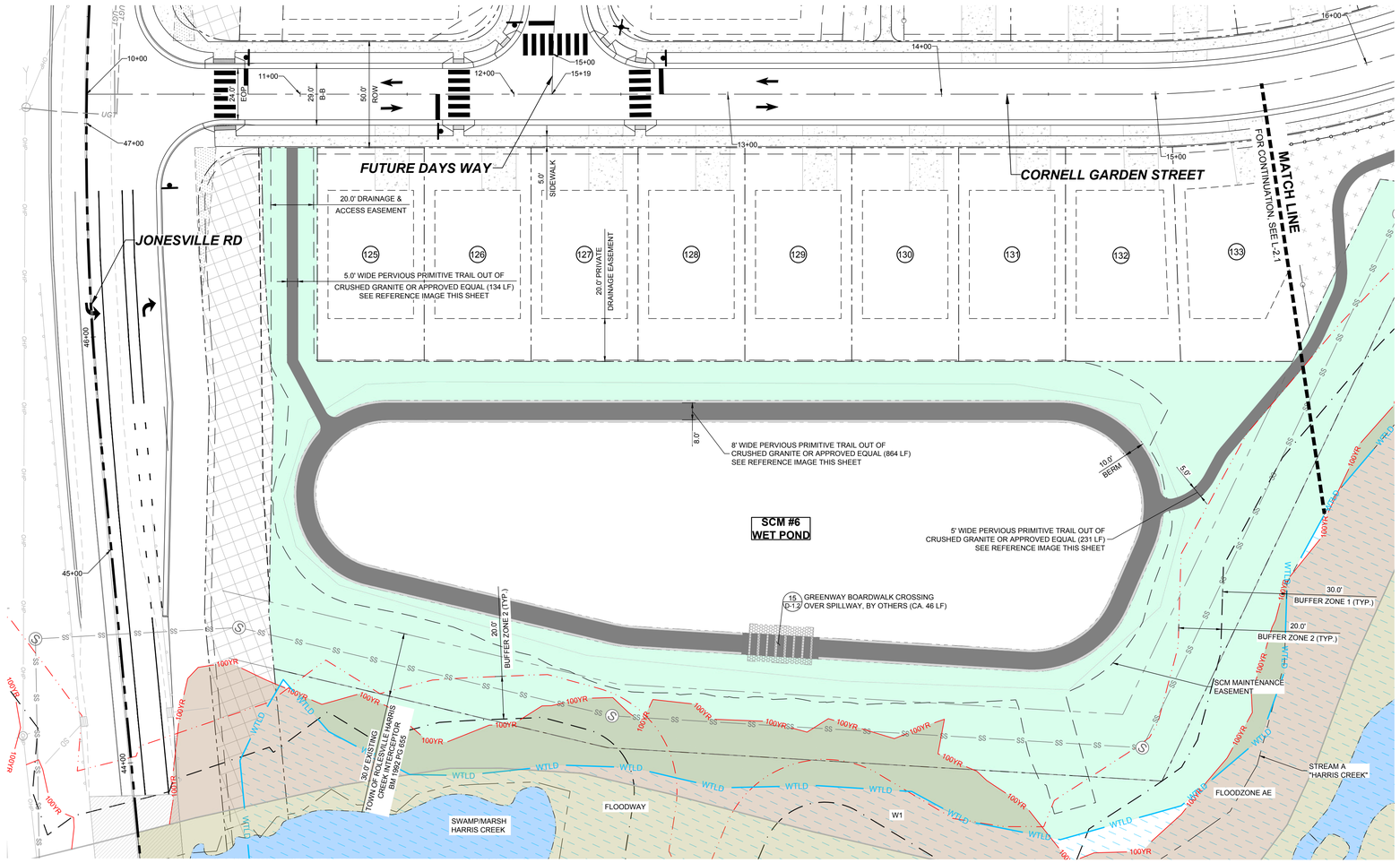
STRONGROCK ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

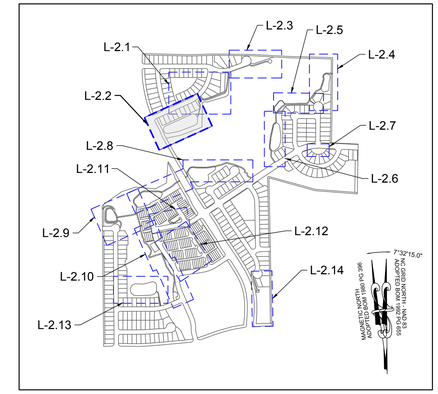
STRONG ROCK PROJECT PSP-23-03	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
BALLFIELD & SMALL IPEMA PLAYGROUND PLAN

DRAWING / SHEET
L-2.1



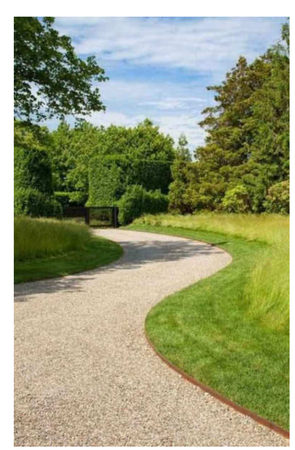
PRIMITIVE TRAIL



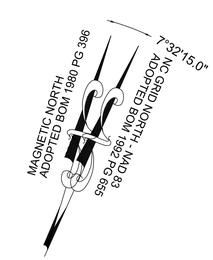
SITE KEY PLAN

LEGEND:

EXISTING PROPERTY LINE	30' STREET YARD BUFFER
500 YEAR FLOOD LINE	
100 YEAR FLOOD LINE	15' TYPE II PERIMETER BUFFER
SIGN	
STOP BAR	OPEN SPACE
ROADWAY CENTER LINE	EXISTING WETLAND
PROPOSED PROPERTY LINE	
ROLESVILLE STANDARD VALLEY CURB	
STANDARD CURB & GUTTER	FLOOD HAZARD
GREENWAY	FLOODZONE AE
CONCRETE SIDEWALK	FLOODWAY
ASPHALT PAVEMENT	SWAMP/MARSH HARRIS CREEK
POLLINATOR GARDEN	GENERIC WOODEN PRIVACY FENCE
	FENCE PICKET FLAT-TOP
ACTIVE & PASSIVE OPEN SPACE	FENCING



CRUSHED GRAVEL PATH



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SEAL

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DRAWN BY	SRG
CHECKED BY	SRG

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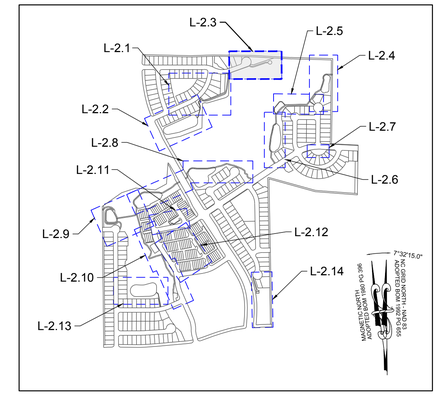
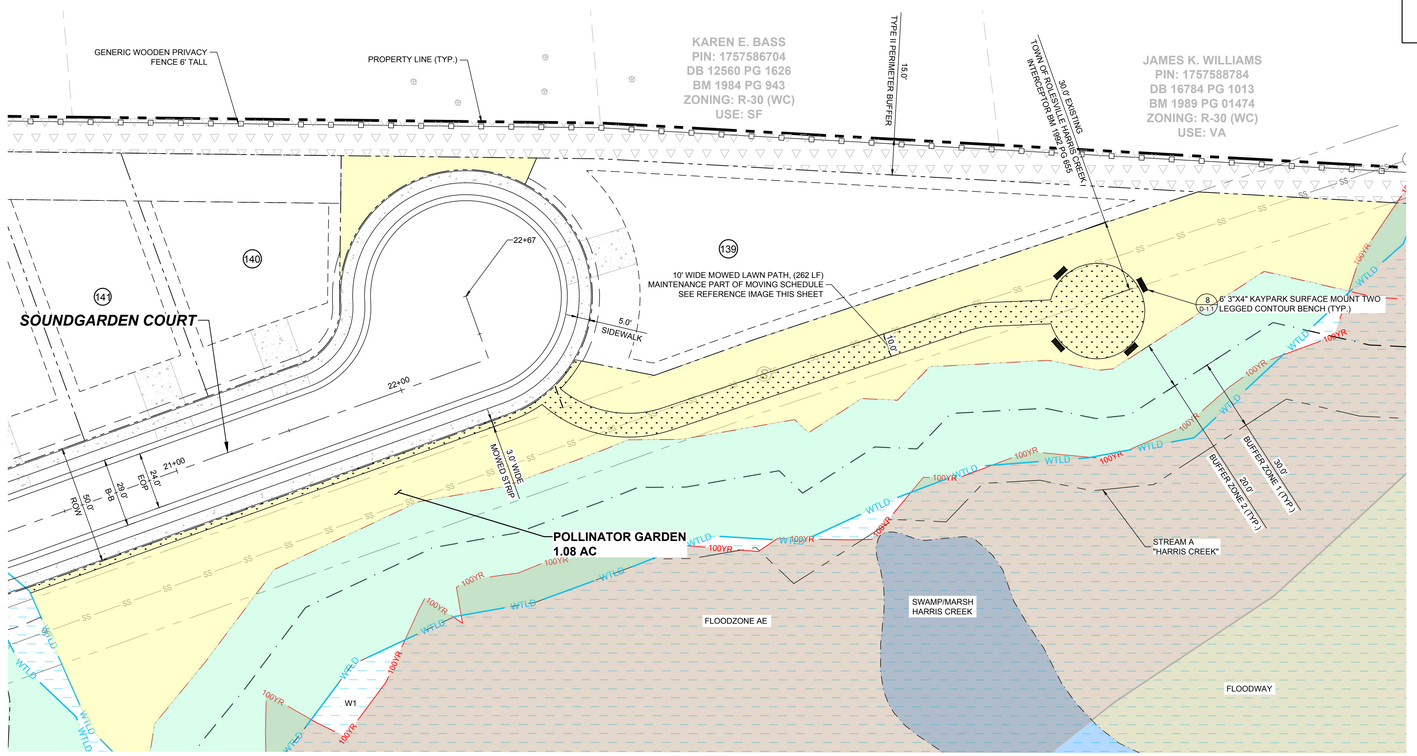
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PRIMITIVE TRAIL

DRAWING SHEET
L-2.2



SITE KEY PLAN

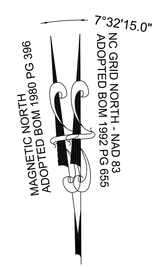


POLLINATOR GARDEN

LEGEND:

EXISTING PROPERTY LINE	30' STREET YARD BUFFER
500YR — 500 YEAR FLOOD LINE	
100YR — 100 YEAR FLOOD LINE	15' TYPE II PERIMETER BUFFER
SIGN	
STOP BAR	OPEN SPACE
ROADWAY CENTER LINE	WTLD — EXISTING WETLAND
PROPOSED PROPERTY LINE	
ROLESVILLE STANDARD VALLEY CURB	WTLD
STANDARD CURB & GUTTER	FLOOD HAZARD
GREENWAY	FLOODZONE AE
CONCRETE SIDEWALK	FLOODWAY
ASPHALT PAVEMENT	SWAMP/MARSH HARRIS CREEK
POLLINATOR GARDEN	GENERIC WOODEN PRIVACY FENCE
	FENCE PICKET FLAT-TOP
ACTIVE & PASSIVE OPEN SPACE	x — x FENCING

MOWED LAWN PATH



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SEAL:

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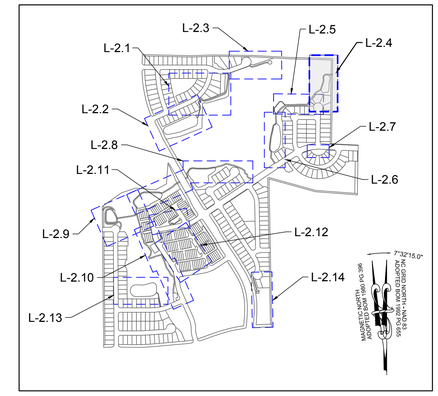
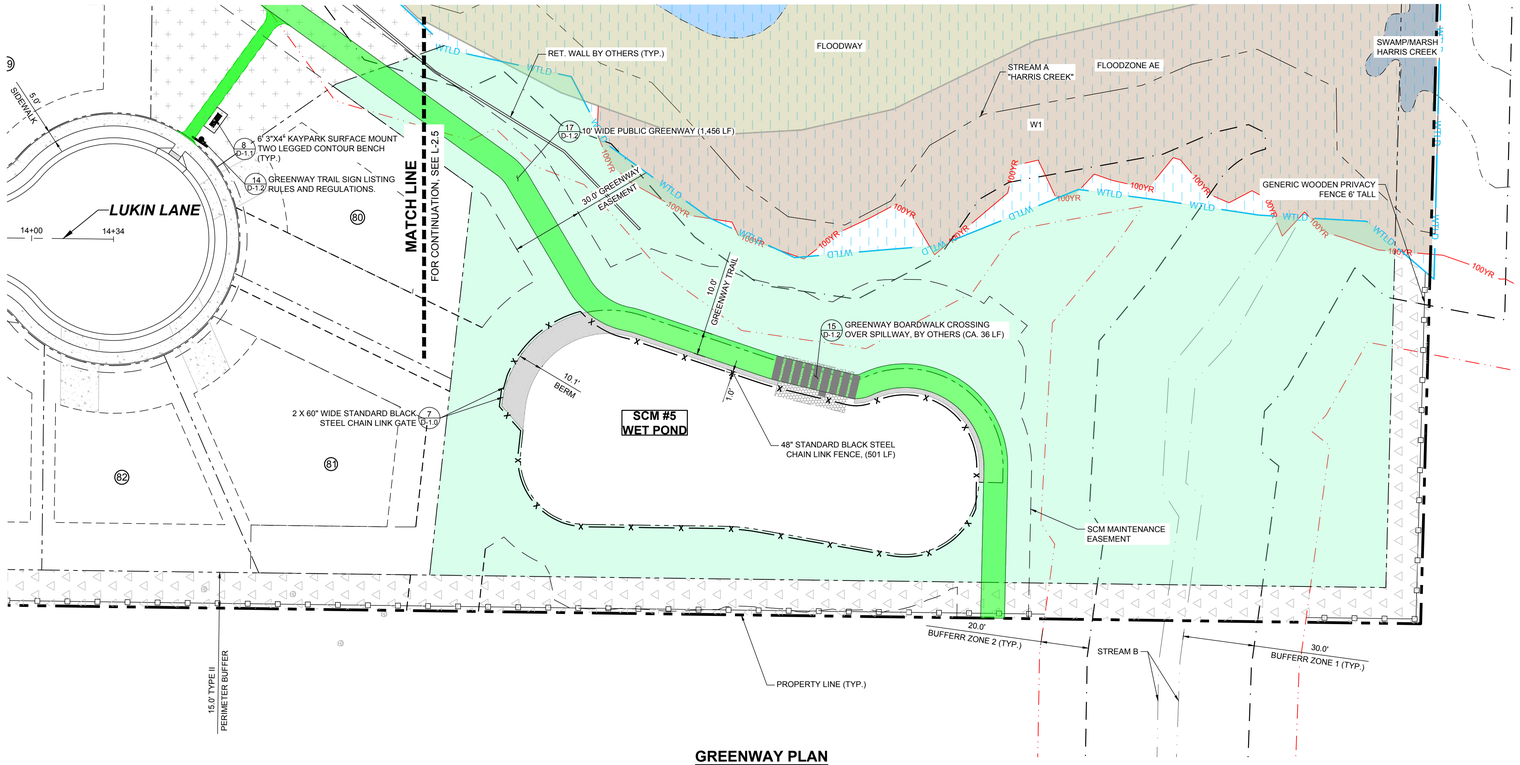
RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
POLLINATOR GARDEN

DRAWING SHEET
L-2.3



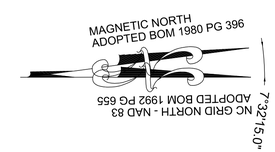
SITE KEY PLAN



GREENWAY PLAN

LEGEND:

EXISTING PROPERTY LINE	30' STREET YARD BUFFER
500 YEAR FLOOD LINE	15' TYPE II PERIMETER BUFFER
100 YEAR FLOOD LINE	OPEN SPACE
SIGN	EXISTING WETLAND
STOP BAR	FLOOD HAZARD
ROADWAY CENTER LINE	FLOODZONE AE
PROPOSED PROPERTY LINE	FLOODWAY
ROLESVILLE STANDARD VALLEY CURB	SWAMP/MARSH HARRIS CREEK
STANDARD CURB & GUTTER	GENERIC WOODEN PRIVACY FENCE
GREENWAY	FENCE PICKET FLAT-TOP
CONCRETE SIDEWALK	FENCING
ASPHALT PAVEMENT	
POLLINATOR GARDEN	
ACTIVE & PASSIVE OPEN SPACE	



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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SEAL:

STRONGROCK
E N G I N E E R I N G G R O U P
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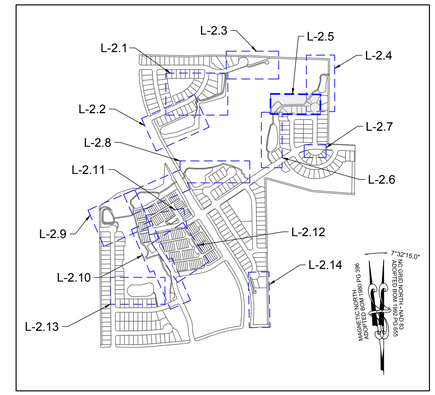
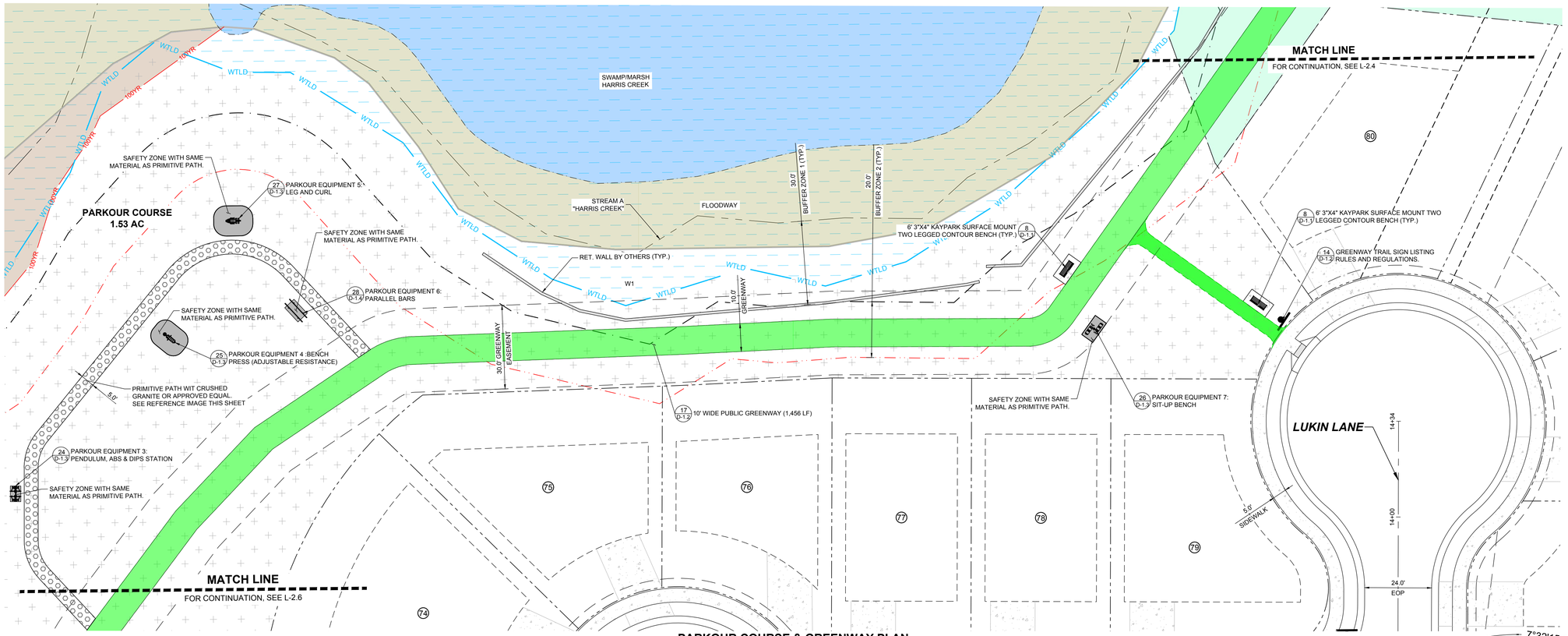
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
GREENWAY PLAN

DRAWING SHEET
L-2.4



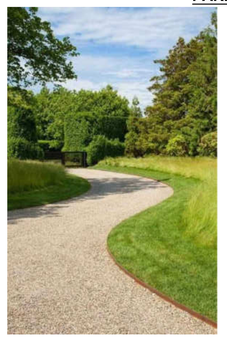
SITE KEY PLAN



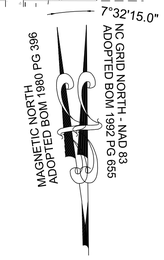
PARKOUR COURSE & GREENWAY PLAN

LEGEND:

EXISTING PROPERTY LINE	30' STREET YARD BUFFER
500 YEAR FLOOD LINE (500YR)	15' TYPE II PERIMETER BUFFER
100 YEAR FLOOD LINE (100YR)	OPEN SPACE
SIGN	EXISTING WETLAND (WTLD)
STOP BAR	FLOOD HAZARD
ROADWAY CENTER LINE	FLOODZONE AE
PROPOSED PROPERTY LINE	FLOODWAY
ROLESVILLE STANDARD VALLEY CURB	SWAMP/MARSH HARRIS CREEK
STANDARD CURB & GUTTER	GENERIC WOODEN PRIVACY FENCE
GREENWAY	FENCE PICKET FLAT-TOP
CONCRETE SIDEWALK	FENCING
ASPHALT PAVEMENT	
POLLINATOR GARDEN	
ACTIVE & PASSIVE OPEN SPACE	



CRUSHED GRAVEL PATH



GRAPHIC SCALE

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(IN FEET)
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SEAL

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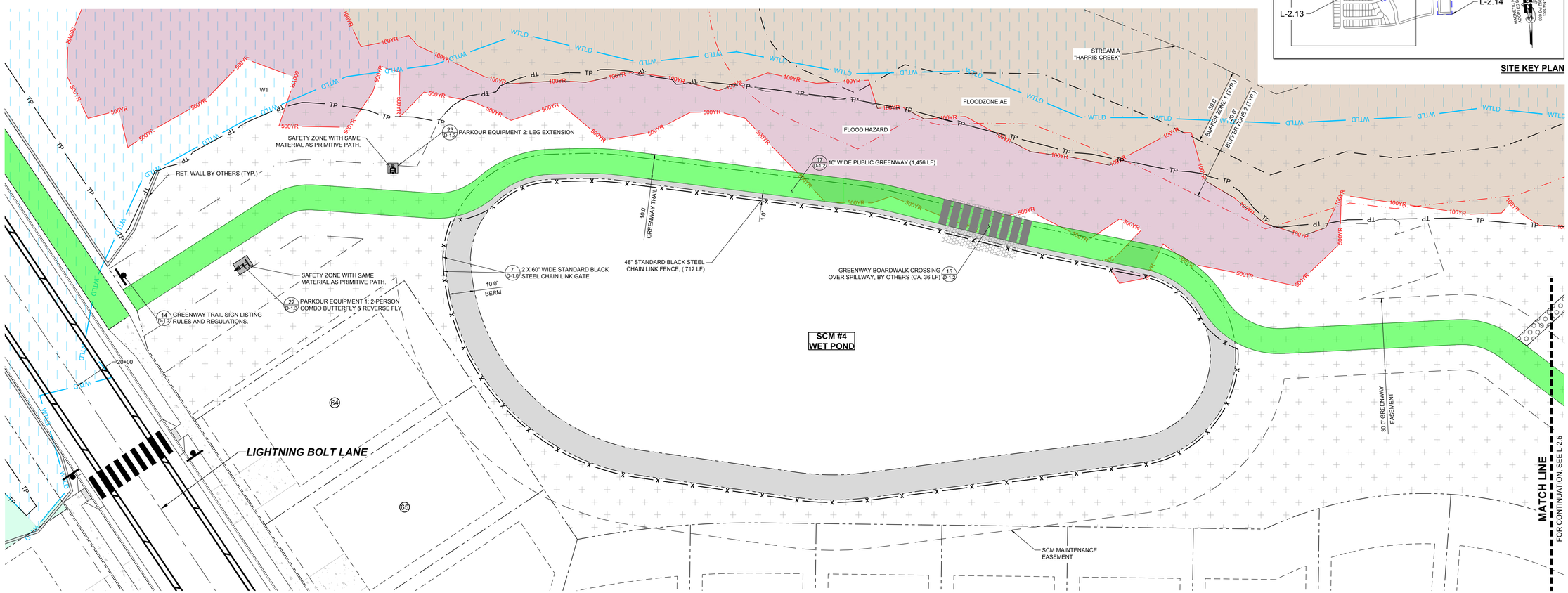
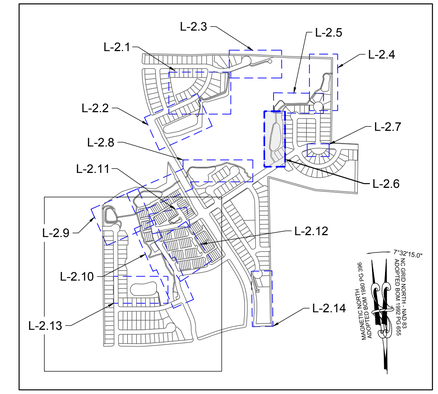
CONSTRUCTION PLANS
PARKOUR COURSE & GREENWAY PLAN

DRAWING SHEET
L-2.5



GREENWAY PLAN



SITE KEY PLAN

LEGEND:

EXISTING PROPERTY LINE	30' STREET YARD BUFFER
500YR — 500 YEAR FLOOD LINE	15' TYPE II PERIMETER BUFFER
100YR — 100 YEAR FLOOD LINE	OPEN SPACE
SIGN	EXISTING WETLAND
STOP BAR	FLOOD HAZARD
ROADWAY CENTER LINE	FLOODZONE AE
PROPOSED PROPERTY LINE	FLOODWAY
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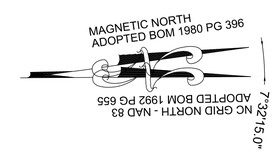
CONCRETE SIDEWALK	FENCING
ASPHALT PAVEMENT	
POLLINATOR GARDEN	
ACTIVE & PASSIVE OPEN SPACE	



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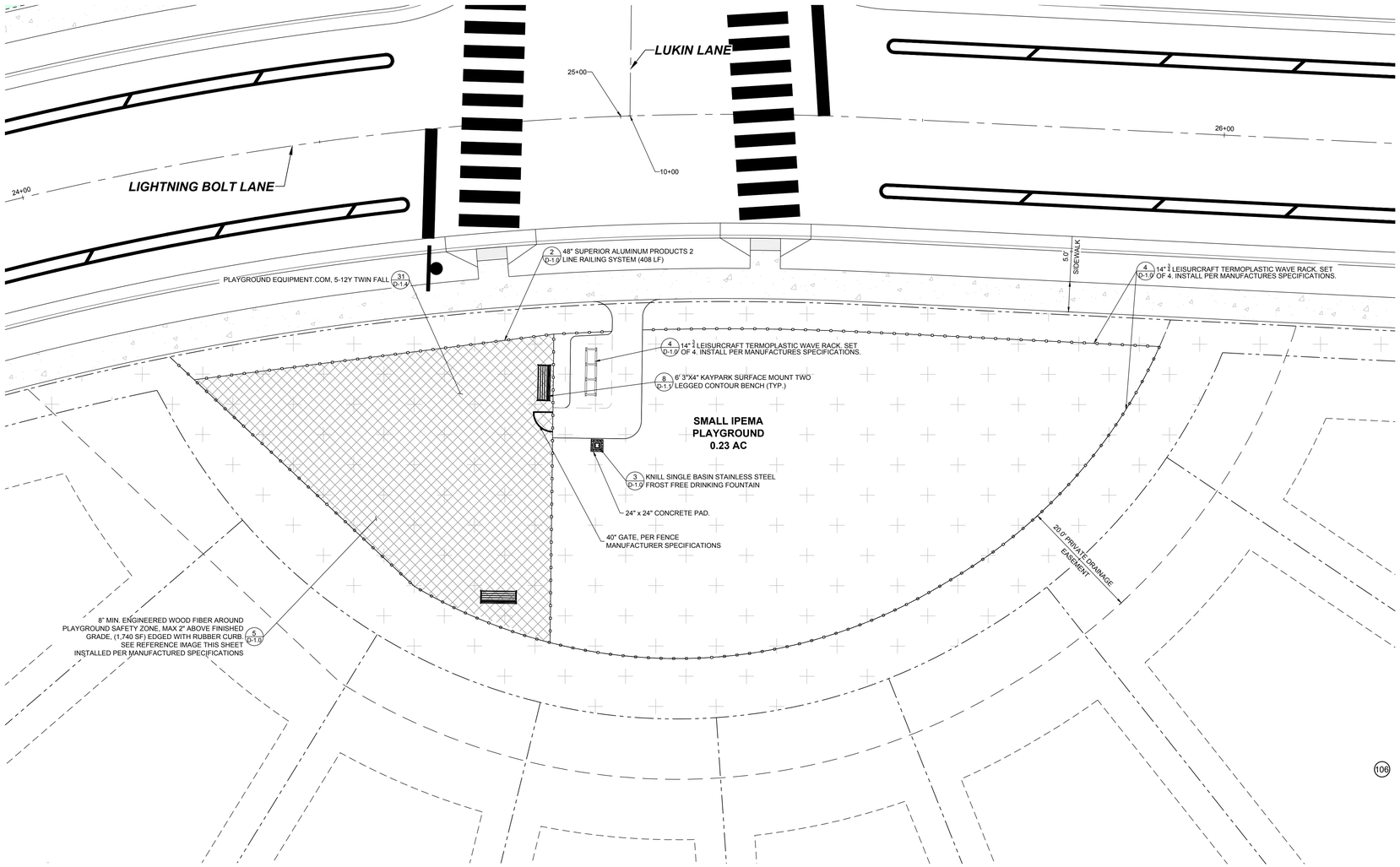
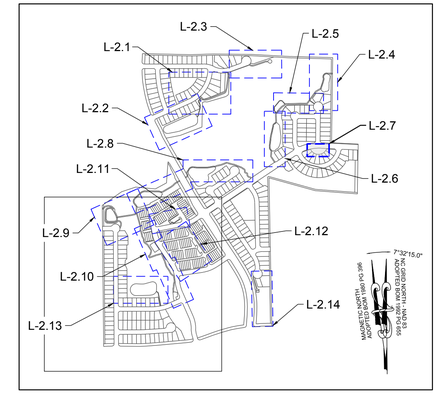
GREENWAY PLAN

DRAWING SHEET
L-2.6



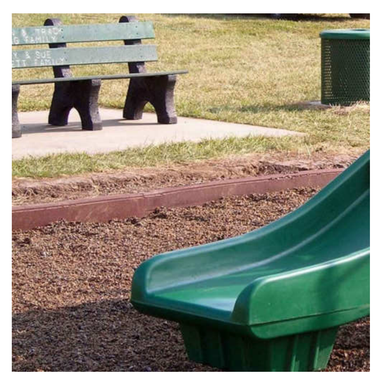
SMALL IPEMA PLAYGROUND PLAN



SITE KEY PLAN

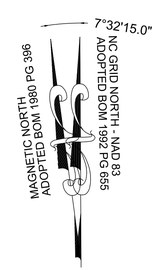
LEGEND:

	EXISTING PROPERTY LINE		30' STREET YARD BUFFER
500YR	500 YEAR FLOOD LINE		15' TYPE II PERIMETER BUFFER
100YR	100 YEAR FLOOD LINE		
	SIGN		OPEN SPACE
	STOP BAR	WTLD	
	ROADWAY CENTER LINE		EXISTING WETLAND
	PROPOSED PROPERTY LINE	WTLD	
	ROLESVILLE STANDARD VALLEY CURB		FLOOD HAZARD
	STANDARD CURB & GUTTER		
	GREENWAY		FLOODZONE AE
	CONCRETE SIDEWALK		FLOODWAY
	ASPHALT PAVEMENT		SWAMP/MARSH HARRIS CREEK
	POLLINATOR GARDEN		GENERIC WOODEN PRIVACY FENCE
			FENCE PICKET FLAT-TOP
	ACTIVE & PASSIVE OPEN SPACE	X X	FENCING



PLAYGROUND RUBBER CURB

PLAYGROUND FENCE



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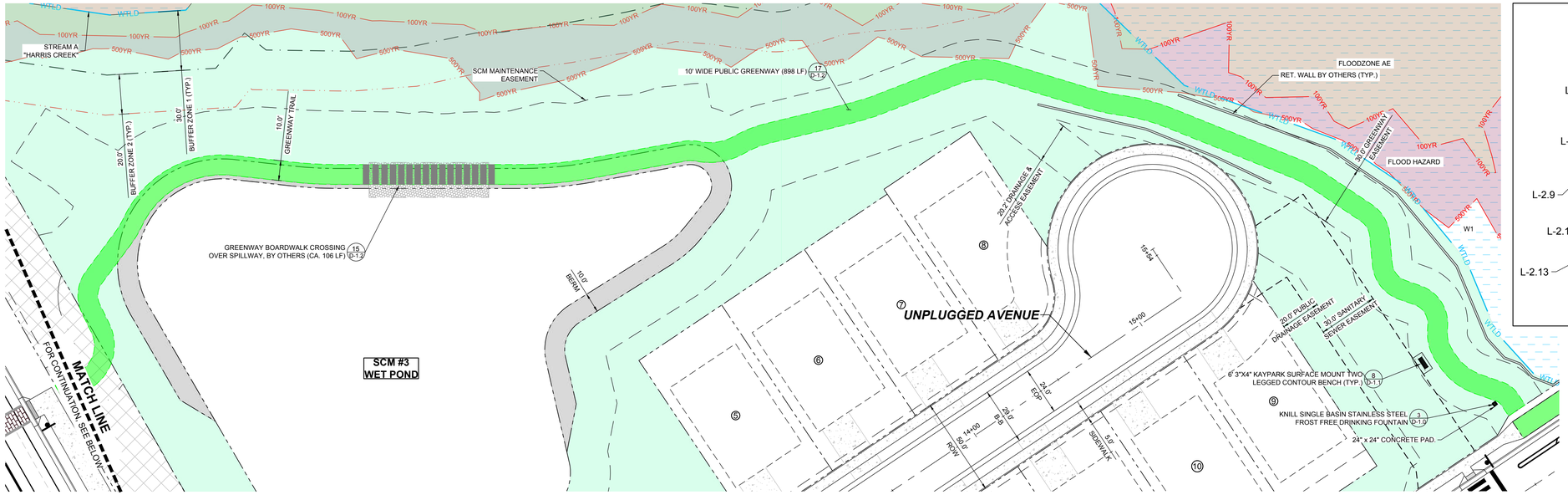
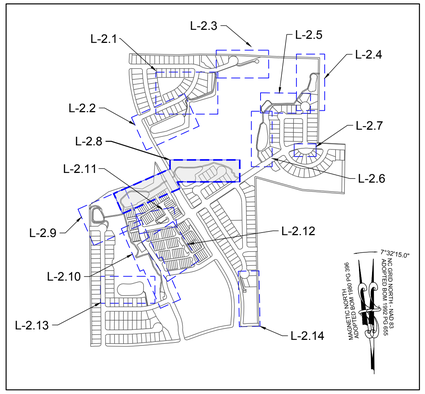
SMALL IPEMA PLAYGROUND PLAN

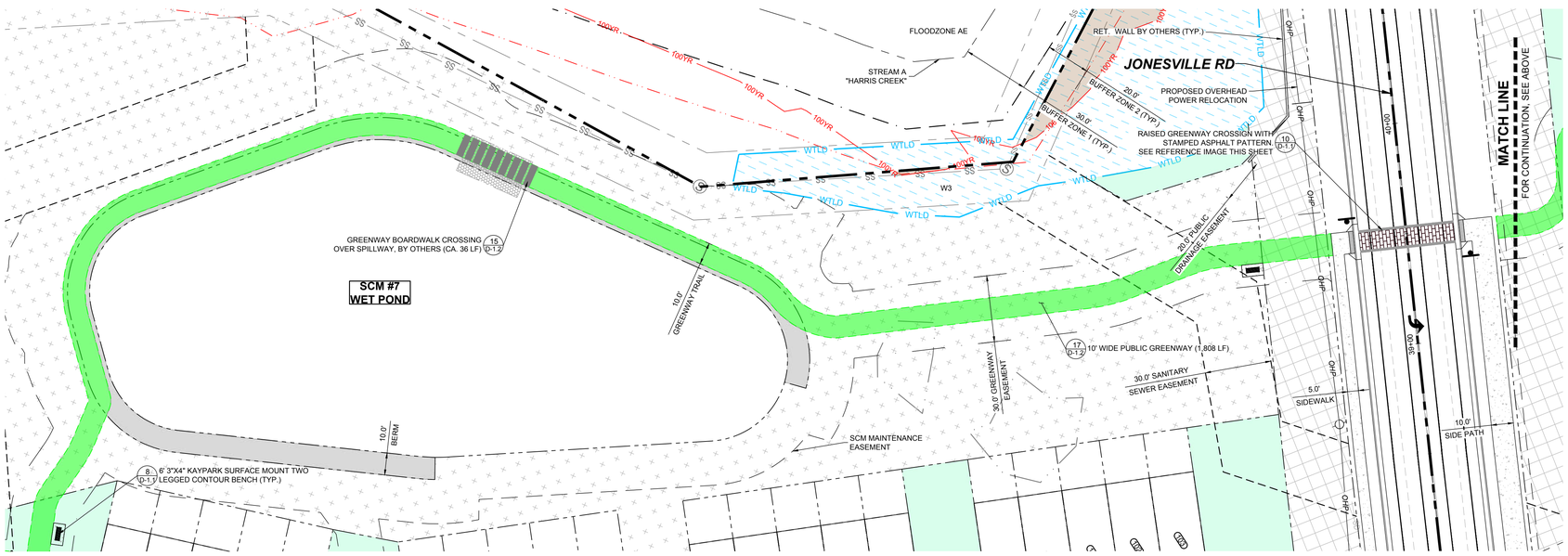
DRAWING SHEET
L-2.7



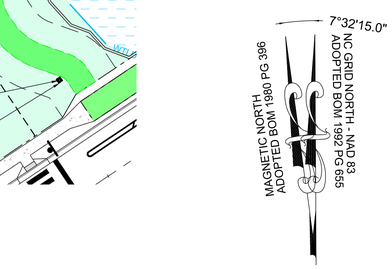
GREENWAY PLAN

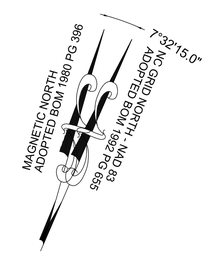


SITE KEY PLAN



GREENWAY PLAN





LEGEND:

EXISTING PROPERTY LINE	30' STREET YARD BUFFER
500 YEAR FLOOD LINE	15' TYPE II PERIMETER BUFFER
100 YEAR FLOOD LINE	OPEN SPACE
SIGN	EXISTING WETLAND
STOP BAR	FLOOD HAZARD
ROADWAY CENTER LINE	FLOODZONE AE
PROPOSED PROPERTY LINE	FLOODWAY
ROLESVILLE STANDARD VALLEY CURB	SWAMP/MARSH HARRIS CREEK
STANDARD CURB & GUTTER	GENERIC WOODEN PRIVACY FENCE
GREENWAY	FENCE PICKET FLAT-TOP
CONCRETE SIDEWALK	FENCING
ASPHALT PAVEMENT	
POLLINATOR GARDEN	
ACTIVE & PASSIVE OPEN SPACE	

GREENWAY PLAN

RAISED GREENWAY CROSSING

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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03	TOWN OF ROLESVILLE C/D-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE C/D-24-04 V4	06/02/2025	SREG

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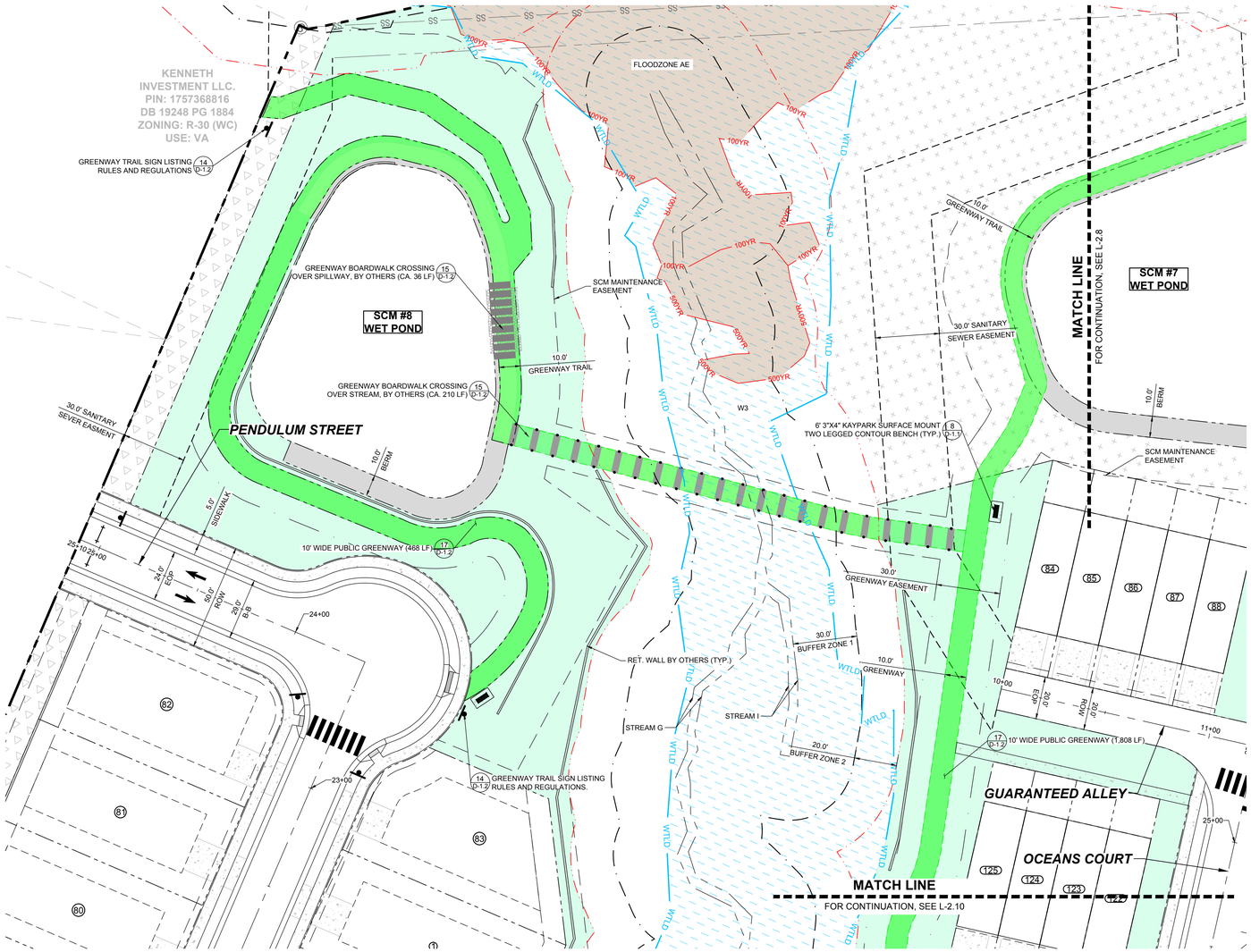
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

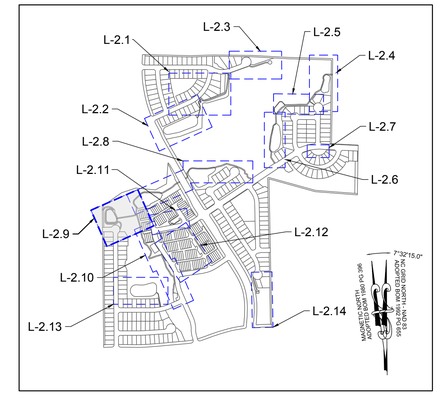
STRONG ROCK PROJECT PSP-23-03	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
GREENWAY PLAN

DRAWING
SHEET
L-2.8



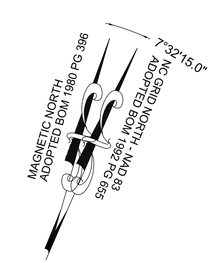
GREENWAY PLAN



SITE KEY PLAN

LEGEND:

EXISTING PROPERTY LINE	30' STREET YARD BUFFER
500YR 500 YEAR FLOOD LINE	
100YR 100 YEAR FLOOD LINE	15' TYPE II PERIMETER BUFFER
SIGN	
STOP BAR	OPEN SPACE
ROADWAY CENTER LINE	WTLD
PROPOSED PROPERTY LINE	EXISTING WETLAND
ROLESVILLE STANDARD VALLEY CURB	WTLD
STANDARD CURB & GUTTER	FLOOD HAZARD
GREENWAY	FLOODZONE AE
CONCRETE SIDEWALK	FLOODWAY
ASPHALT PAVEMENT	SWAMP/MARSH HARRIS CREEK
POLLINATOR GARDEN	GENERIC WOODEN PRIVACY FENCE
	FENCE PICKET FLAT-TOP
ACTIVE & PASSIVE OPEN SPACE	X X FENCING



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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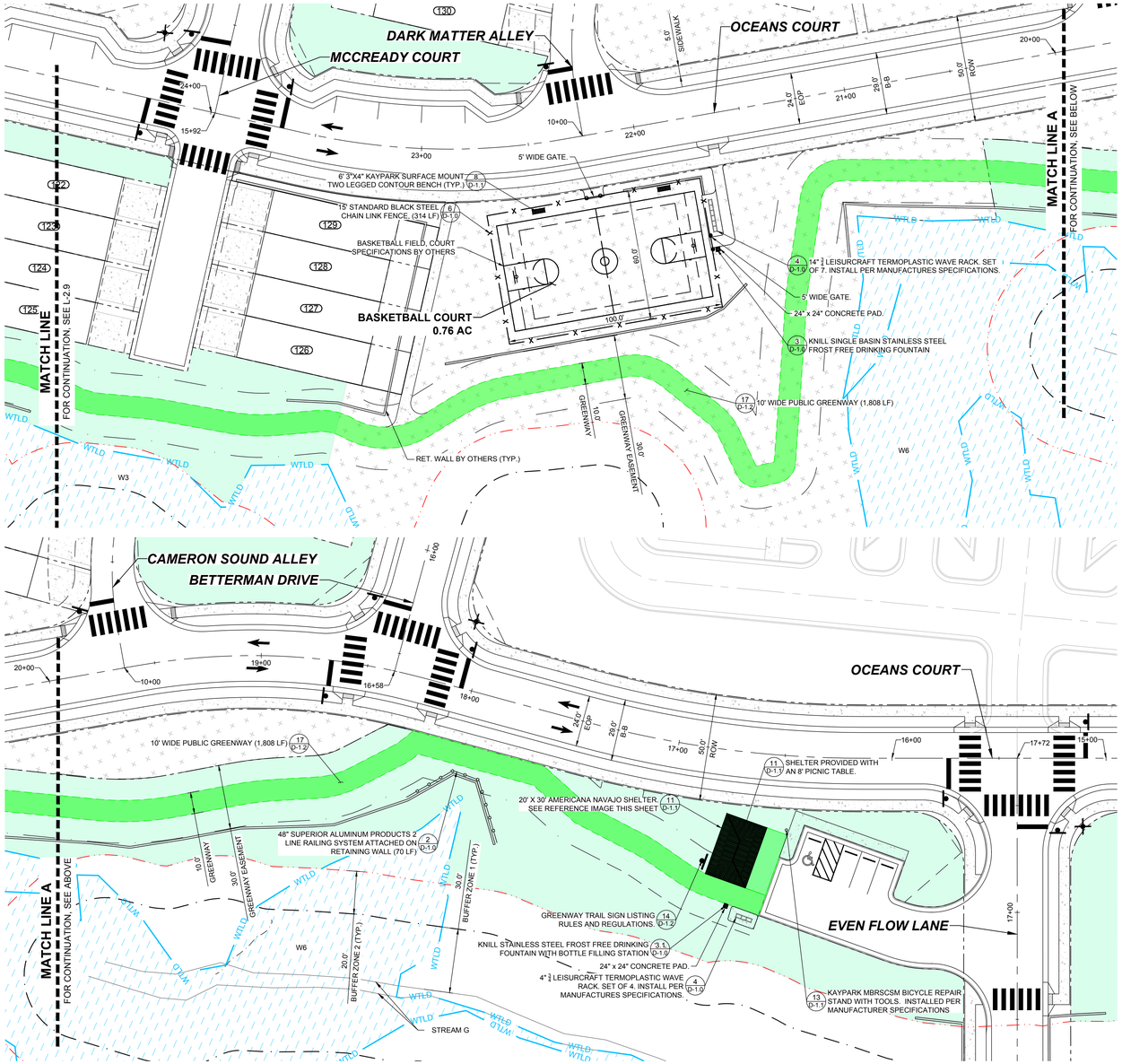
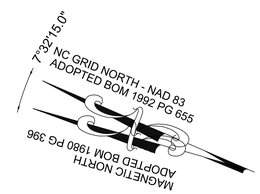
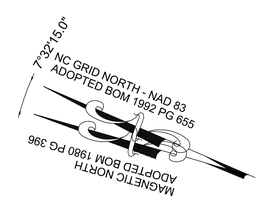
RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
GREENWAY PLAN

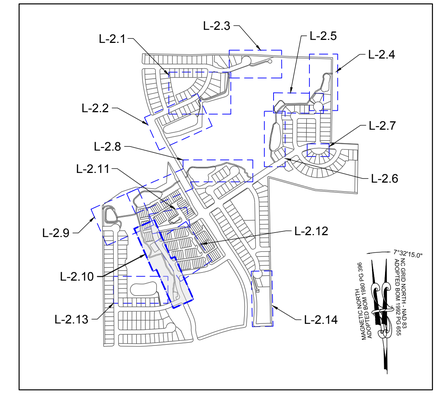
DRAWING SHEET
L-2.9



BASKETBALL COURT & GREENWAY PLAN







SITE KEY PLAN

LEGEND:

EXISTING PROPERTY LINE	30' STREET YARD BUFFER
500YR — 500 YEAR FLOOD LINE	15' TYPE II PERIMETER BUFFER
100YR — 100 YEAR FLOOD LINE	OPEN SPACE
SIGN	EXISTING WETLAND
STOP BAR	FLOOD HAZARD
ROADWAY CENTER LINE	FLOODZONE AE
PROPOSED PROPERTY LINE	FLOODWAY
ROLESVILLE STANDARD VALLEY CURB	SWAMP/MARSH HARRIS CREEK
STANDARD CURB & GUTTER	GENERIC WOODEN PRIVACY FENCE
GREENWAY	FENCE PICKET FLAT-TOP
CONCRETE SIDEWALK	FENCING
ASPHALT PAVEMENT	
POLLINATOR GARDEN	
ACTIVE & PASSIVE OPEN SPACE	

NAVAJO SHELTER

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

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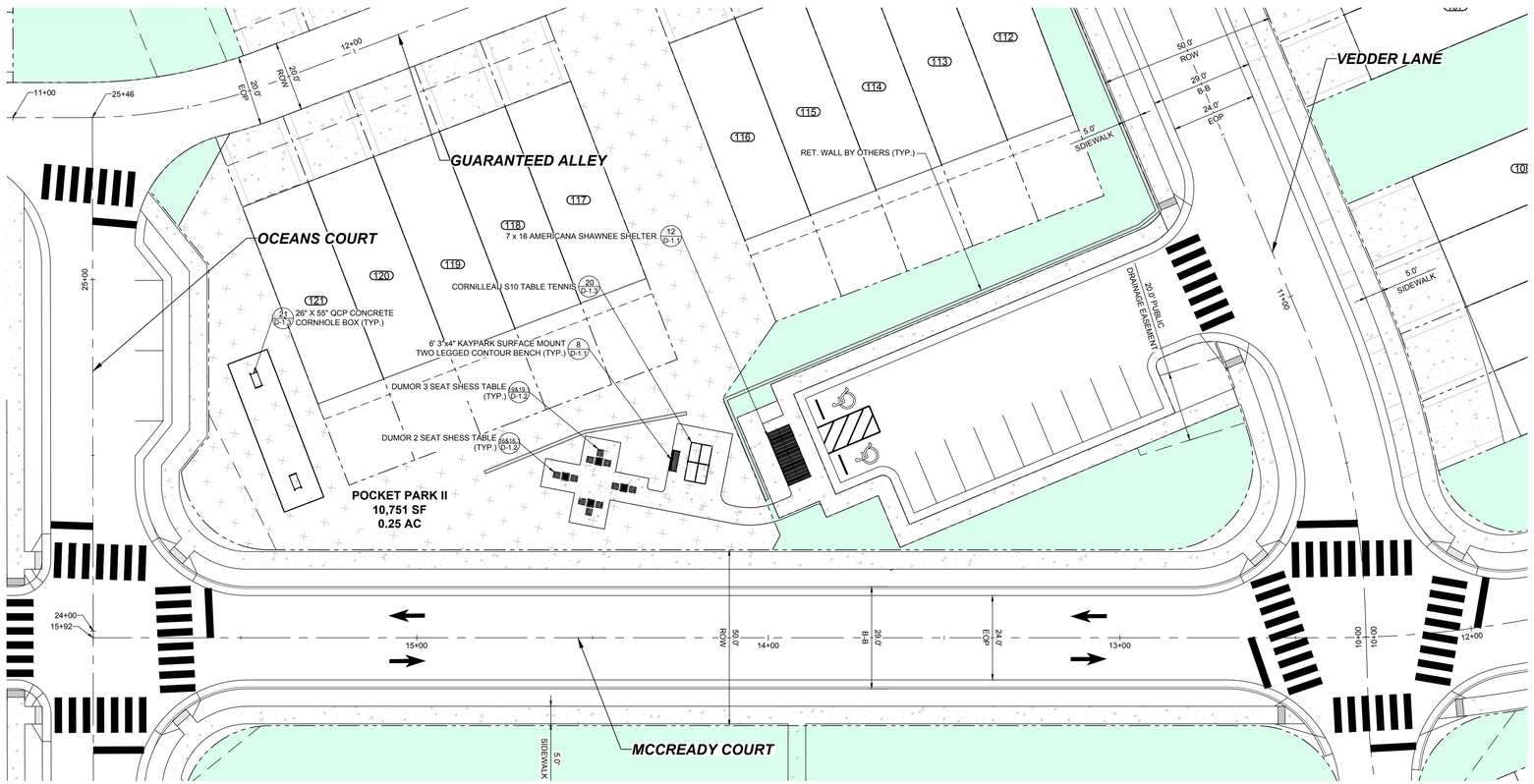
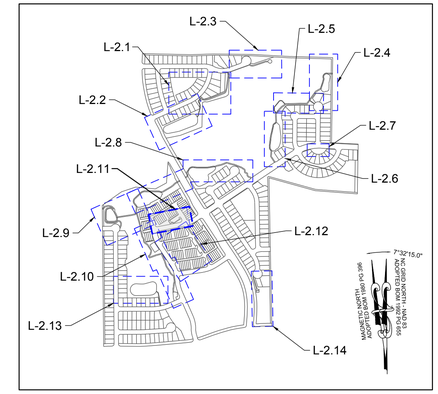
CONSTRUCTION PLANS
BASKETBALL COURT & GREENWAY PLAN

DRAWING SHEET
L-2.10



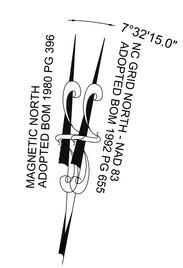
POCKET PARK II PLAN



SITE KEY PLAN

LEGEND:

EXISTING PROPERTY LINE	30' STREET YARD BUFFER
500 YEAR FLOOD LINE (500YR)	15' TYPE II PERIMETER BUFFER
100 YEAR FLOOD LINE (100YR)	OPEN SPACE
SIGN	EXISTING WETLAND (WTLD)
STOP BAR	FLOOD HAZARD
ROADWAY CENTER LINE	FLOODZONE AE
PROPOSED PROPERTY LINE	FLOODWAY
ROLESVILLE STANDARD VALLEY CURB	SWAMP/MARSH HARRIS CREEK
STANDARD CURB & GUTTER	GENERIC WOODEN PRIVACY FENCE
GREENWAY	FENCE PICKET FLAT-TOP
CONCRETE SIDEWALK	FENCING
ASPHALT PAVEMENT	
POLLINATOR GARDEN	
ACTIVE & PASSIVE OPEN SPACE	



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
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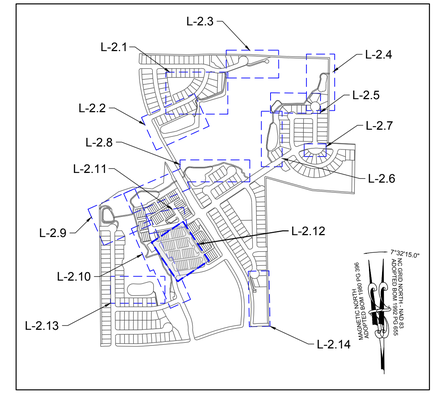
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
POCKET PARK II PLAN

DRAWING SHEET
L-2.11

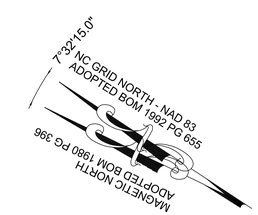
POCKET PARK I PLAN



SITE KEY PLAN

LEGEND:

- EXISTING PROPERTY LINE
- 500 YEAR FLOOD LINE
- 100 YEAR FLOOD LINE
- SIGN
- STOP BAR
- ROADWAY CENTER LINE
- PROPOSED PROPERTY LINE
- ROLESVILLE STANDARD VALLEY CURB
- STANDARD CURB & GUTTER
- GREENWAY
- CONCRETE SIDEWALK
- ASPHALT PAVEMENT
- POLLINATOR GARDEN
- ACTIVE & PASSIVE OPEN SPACE
- 30' STREET YARD BUFFER
- 15' TYPE II PERIMETER BUFFER
- OPEN SPACE
- EXISTING WETLAND
- FLOOD HAZARD
- FLOODZONE AE
- FLOODWAY
- SWAMP/MARSH HARRIS CREEK
- GENERIC WOODEN PRIVACY FENCE
- FENCE PICKET FLAT-TOP
- FENCING



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
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CHECKED BY	SRG

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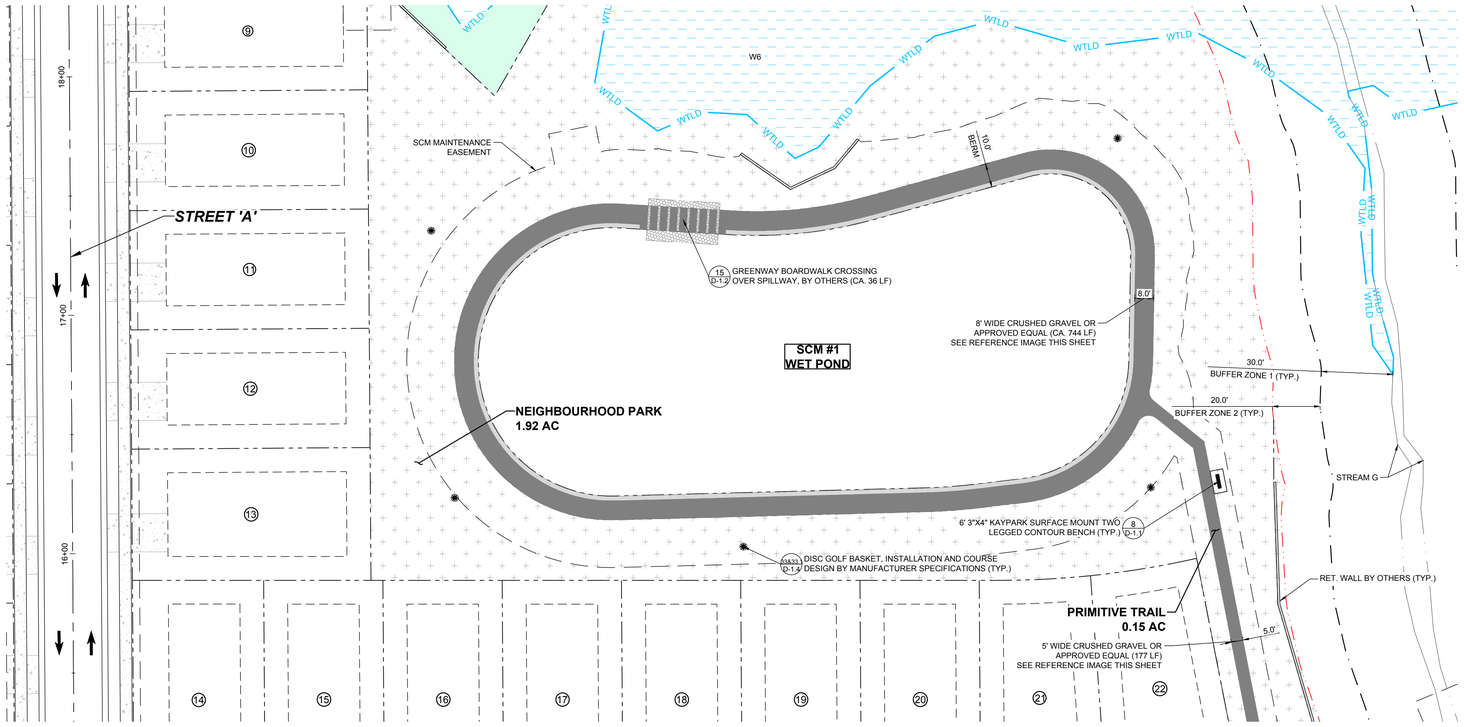
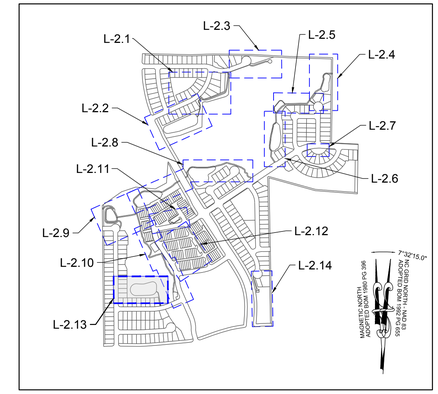
CONSTRUCTION PLANS
POCKET PARK I PLAN

DRAWING / SHEET
L-2.12



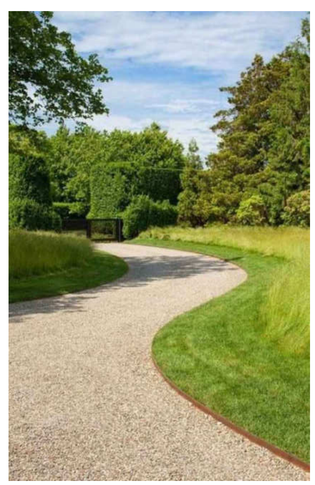
NEIGHBOURHOOD PARK PLAN



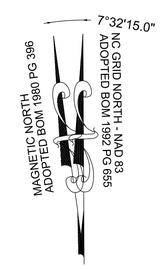
SITE KEY PLAN

LEGEND:

EXISTING PROPERTY LINE	30' STREET YARD BUFFER
500YR — 500 YEAR FLOOD LINE	
100YR — 100 YEAR FLOOD LINE	15' TYPE II PERIMETER BUFFER
SIGN	
STOP BAR	OPEN SPACE
ROADWAY CENTER LINE	WTLD — EXISTING WETLAND
PROPOSED PROPERTY LINE	
ROLESVILLE STANDARD VALLEY CURB	
STANDARD CURB & GUTTER	FLOOD HAZARD
GREENWAY	FLOODZONE AE
CONCRETE SIDEWALK	FLOODWAY
ASPHALT PAVEMENT	SWAMP/MARSH HARRIS CREEK
POLLINATOR GARDEN	GENERIC WOODEN PRIVACY FENCE
	FENCE PICKET FLAT-TOP
ACTIVE & PASSIVE OPEN SPACE	X — X — FENCING



CRUSHED GRAVEL PATH



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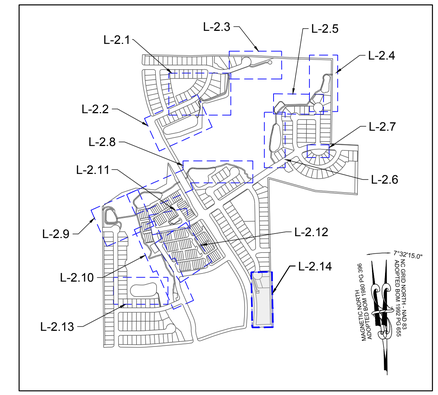
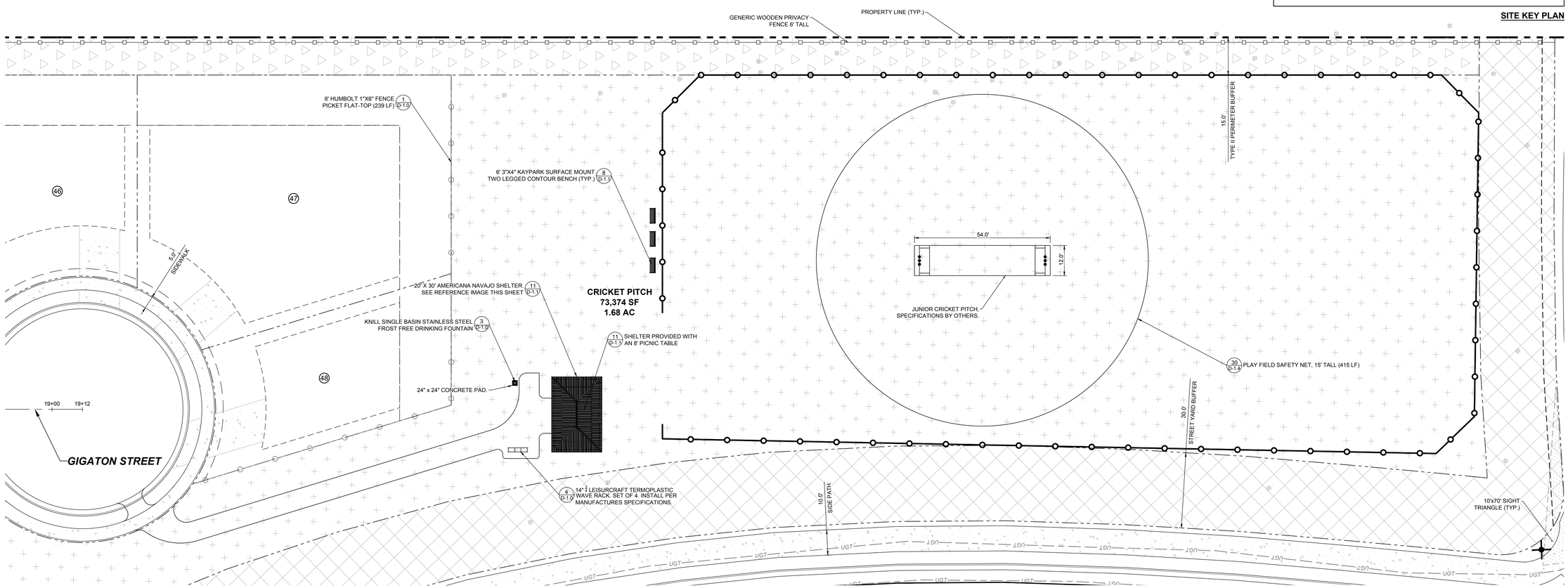
NEIGHBOURHOOD PARK PLAN

DRAWING SHEET
L-2.13



SITE KEY PLAN

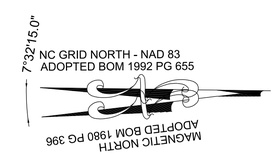


CRICKET PITCH PLAN

LEGEND:

EXISTING PROPERTY LINE	30' STREET YARD BUFFER
500 YEAR FLOOD LINE	15' TYPE II PERIMETER BUFFER
100 YEAR FLOOD LINE	OPEN SPACE
SIGN	EXISTING WETLAND
STOP BAR	FLOOD HAZARD
ROADWAY CENTER LINE	FLOODZONE AE
PROPOSED PROPERTY LINE	FLOODWAY
ROLESVILLE STANDARD VALLEY CURB	SWAMP/MARSH HARRIS CREEK
STANDARD CURB & GUTTER	GENERIC WOODEN PRIVACY FENCE
GREENWAY	FENCE PICKET FLAT-TOP
CONCRETE SIDEWALK	FENCING
ASPHALT PAVEMENT	
POLLINATOR GARDEN	
ACTIVE & PASSIVE OPEN SPACE	

NAVAJO SHELTER



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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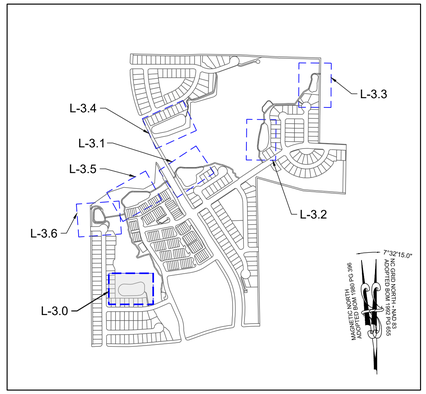
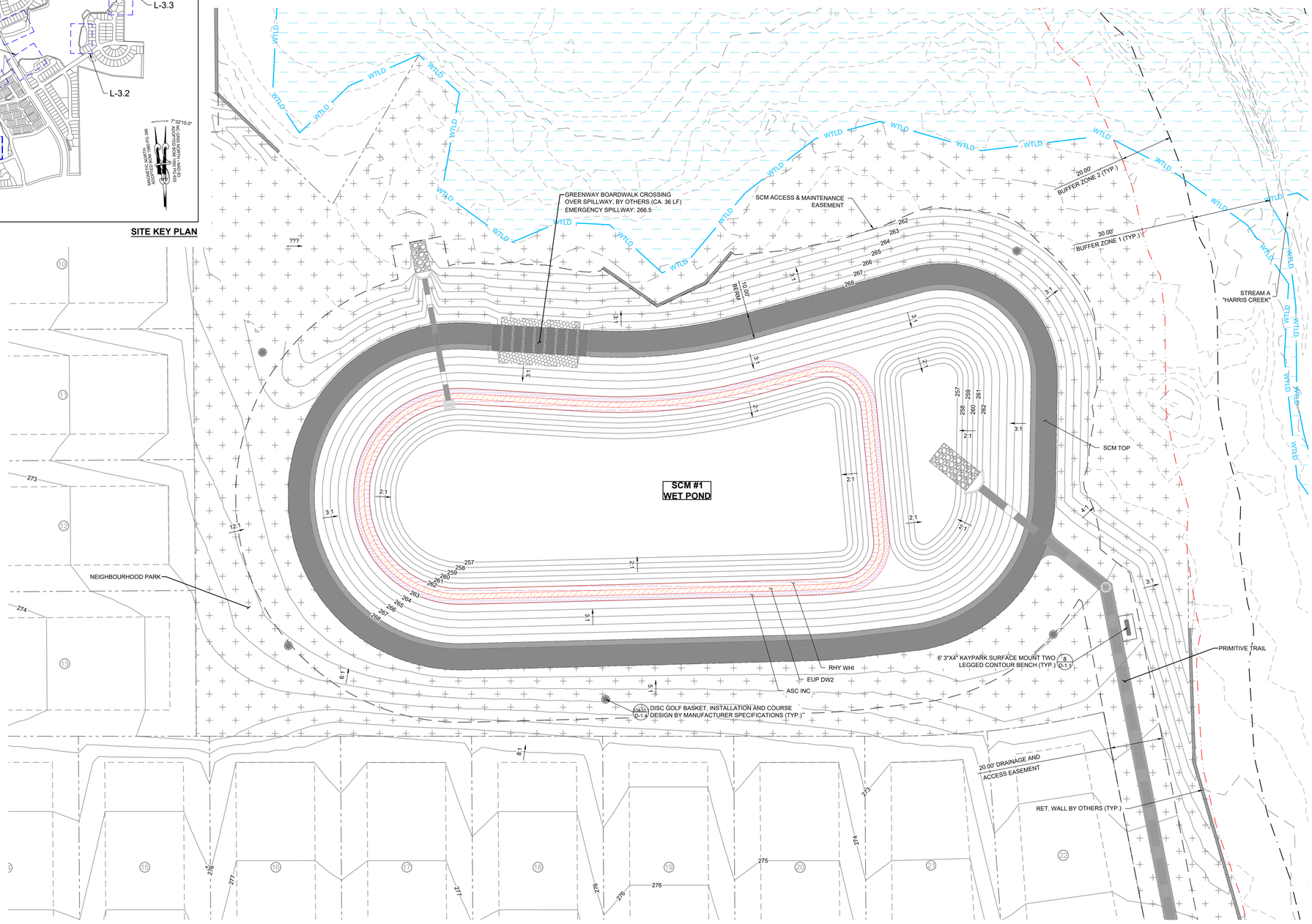
CRICKET PITCH PLAN

DRAWING SHEET
L-2.14



SITE KEY PLAN



PLANT SCHEDULE SCM PLANTING

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
LOW GROUND COVERS							
	RHY WHI	4,110	*RHYNCHOSPORA COLORATA*	WHITE-TOPPED SEDGE	#SP1	POT	6" O.C.
		4,110	SUBTOTAL:				
MEDIUM GROUND COVERS							
	EUP DW2	4,215	*EUPATORIADELPHUS DUBIUS*	DWARF JOE PYE WEED	#SP1	POT	6" O.C.
		4,215	SUBTOTAL:				
TALL GROUND COVERS							
	ASC INC	4,320	*ASCLEPIAS INCARNATA*	SWAMP MILKWEED	#SP1	POT	6" O.C.
		4,320	SUBTOTAL:				

LEGEND:

- STORM DRAIN LINE
- FLARED END SECTION
- CATCH BASIN
- STORM DRAIN MANHOLE
- 240 — EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- 240 — PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- WTLD — EXISTING WETLAND
- 500YR — 500 YEAR FLOOD LINE
- 100YR — 100 YEAR FLOOD LINE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE CID-24-04 V2	11/01/2024	SREG
03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

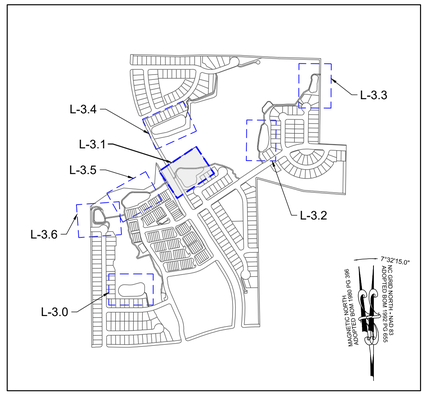
STRONGROCK ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

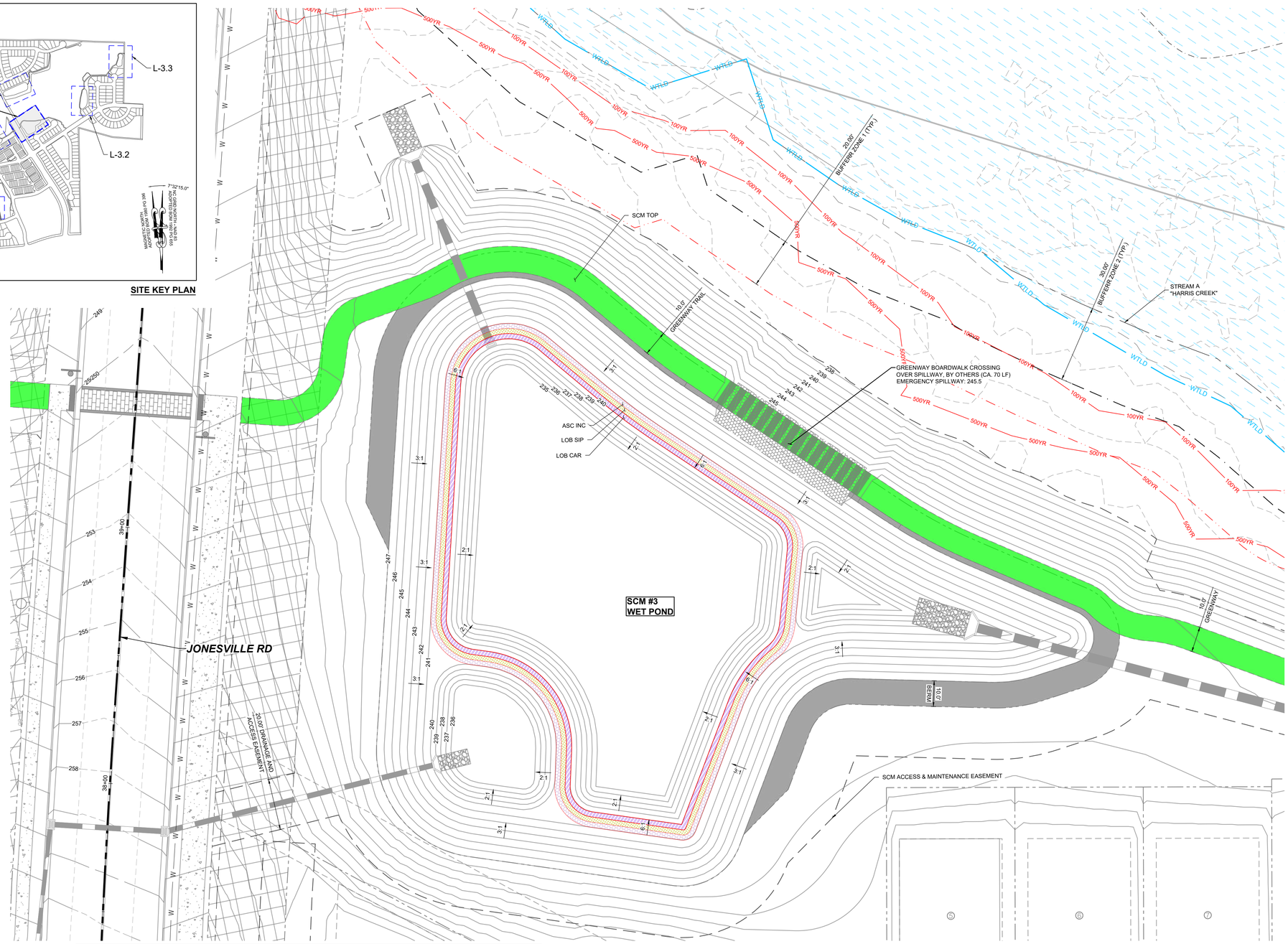
STRONG ROCK PROJECT	PSP-23-03
	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PLANTING SCM #1

DRAWING
SHEET
L-3.0



SITE KEY PLAN

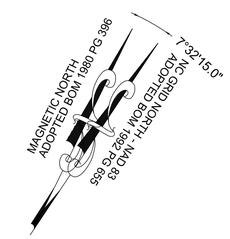


PLANT SCHEDULE SCM PLANTING

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
LOW GROUND COVERS							
	LOB CAR	4,363	*LOBELIA CARDINALIS*	CARDINAL FLOWER	#SP1	POT	6" O.C.
		4,363	SUBTOTAL:				
MEDIUM GROUND COVERS							
	LOB SIP	4,472	*LOBELIA SIPHILITICA*	GREAT LOBELIA	#SP1	POT	6" O.C.
		4,472	SUBTOTAL:				
TALL GROUND COVERS							
	ASC INC	4,471	*ASCLEPIAS INCARNATA*	SWAMP MILKWEED	#SP1	POT	6" O.C.
		4,471	SUBTOTAL:				

LEGEND:

- STORM DRAIN LINE
- FLARED END SECTION
- CATCH BASIN
- STORM DRAIN MANHOLE
- 240 — EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- 240 — PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- WTLD — EXISTING WETLAND
- 500YR — 500 YEAR FLOOD LINE
- 100YR — 100 YEAR FLOOD LINE



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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SEAL

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STRONG ROCK PROJECT	PSP-23-03
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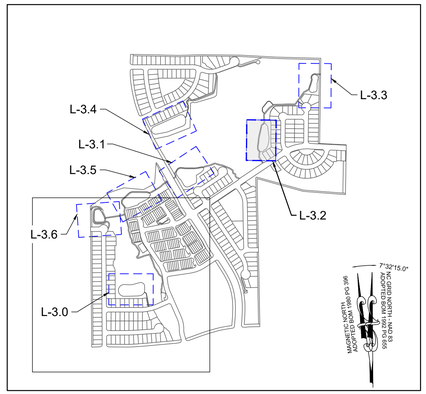
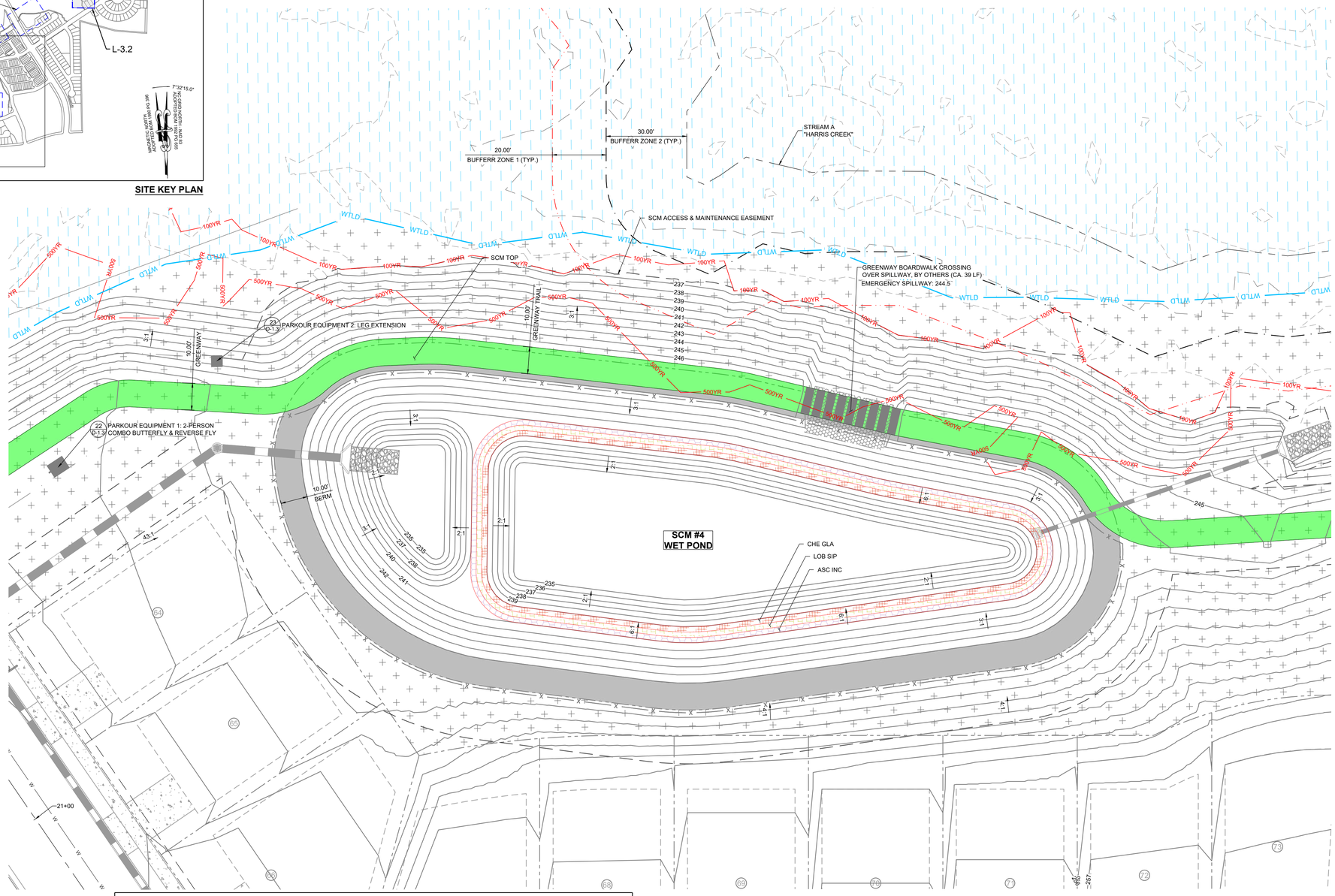
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PLANTING SCM #3

DRAWING SHEET
L-3.1



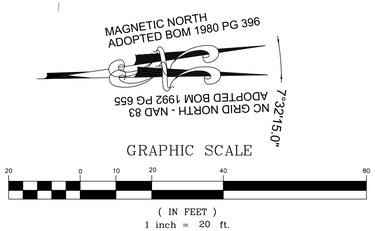
SITE KEY PLAN



SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
LOW GROUND COVERS							
	CHE GLA	3,778	*CHELONE GLABRA*	WHITE TURTLEHEAD	#SP1	POT	6" O.C.
		3,778	SUBTOTAL:				
MEDIUM GROUND COVERS							
	LOB SIP	3,883	*LOBELIA SIPHILITICA*	GREAT LOBELIA	#SP1	POT	6" O.C.
		3,883	SUBTOTAL:				
TALL GROUND COVERS							
	ASC INC	3,987	*ASCLEPIAS INCARNATA*	SWAMP MILKWEED	#SP1	POT	6" O.C.
		3,987	SUBTOTAL:				

LEGEND:

- STORM DRAIN LINE
- FLARED END SECTION
- CATCH BASIN
- STORM DRAIN MANHOLE
- 240 — EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- 240 — PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- WTLD — EXISTING WETLAND
- 500YR — 500 YEAR FLOOD LINE
- 100YR — 100 YEAR FLOOD LINE



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SEAL

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STRONG ROCK PROJECT PSP-23-03

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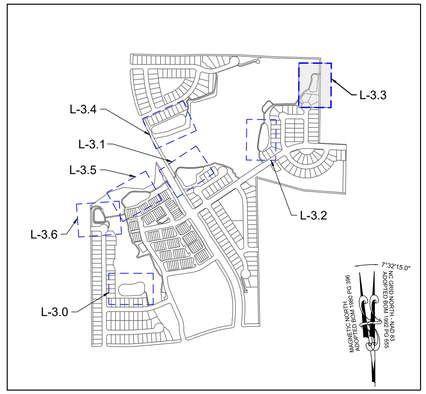
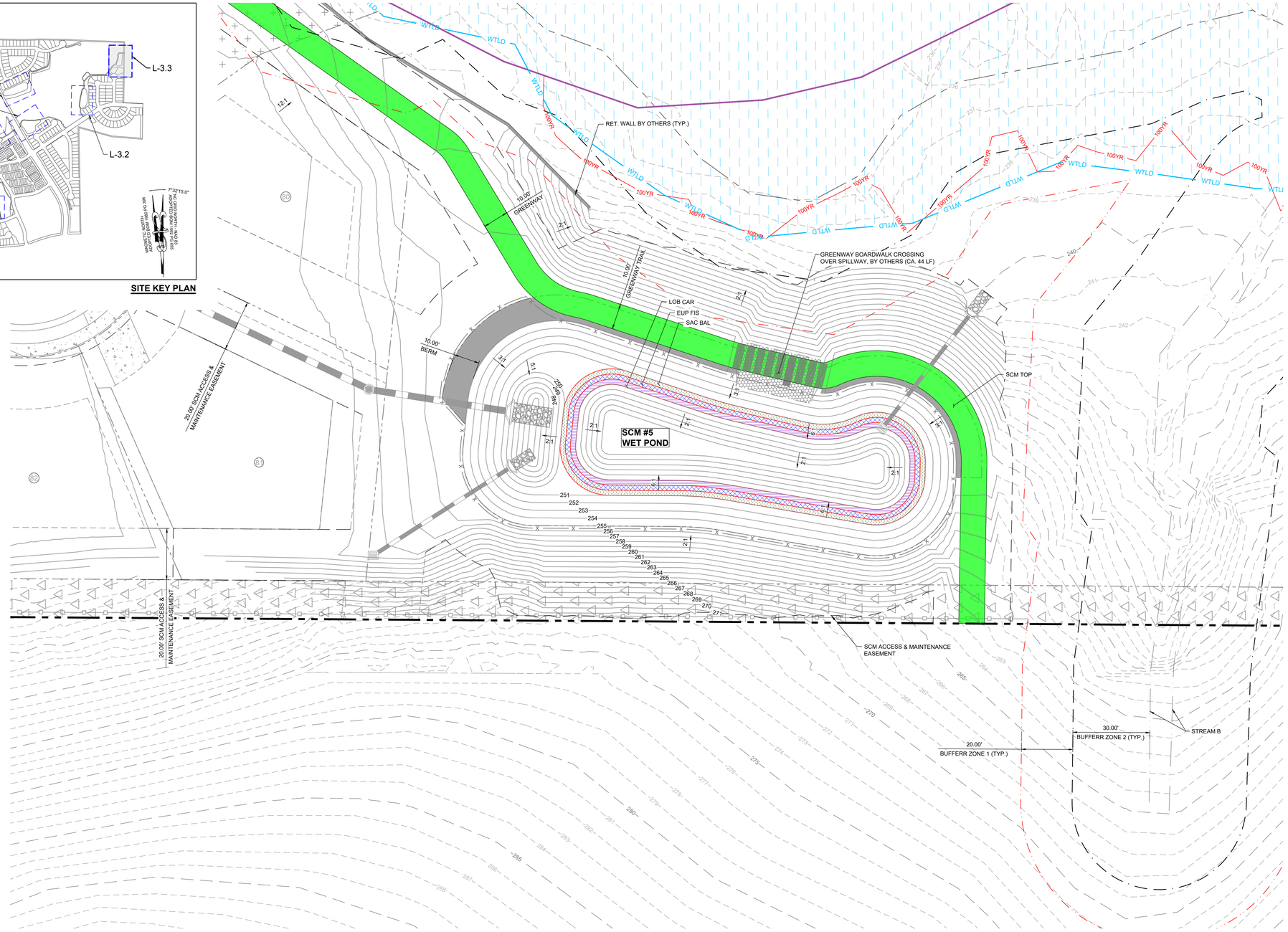
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PLANTING SCM #4

DRAWING SHEET
L-3.2



SITE KEY PLAN

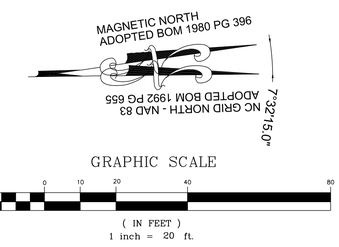


PLANT SCHEDULE SCM PLANTING

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
LOW GROUND COVERS							
	LOB CAR	2,409	*LOBELIA CARDINALIS*	CARDINAL FLOWER	#SP1	POT	6" O.C.
		2,409	SUBTOTAL:				
MEDIUM GROUND COVERS							
	EUP FIS	2,514	*EUPATORIADELPHUS FISTULOSUS*	JOE PYE WEED	#SP1	POT	6" O.C.
		2,514	SUBTOTAL:				
TALL GROUND COVERS							
	SAC BAL	2,618	*SACCHARUM BALDWINII*	NARROW PLUMEGRASS	#SP1	POT	6" O.C.
		2,618	SUBTOTAL:				

LEGEND:

- STORM DRAIN LINE
- FLARED END SECTION
- CATCH BASIN
- STORM DRAIN MANHOLE
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- EXISTING WETLAND
- 500 YEAR FLOOD LINE
- 100 YEAR FLOOD LINE



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SEAL

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STRONG ROCK PROJECT PSP-23-03	
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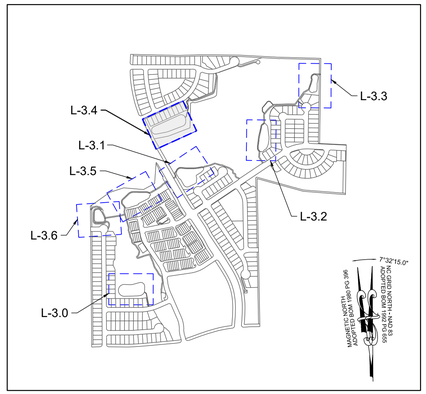
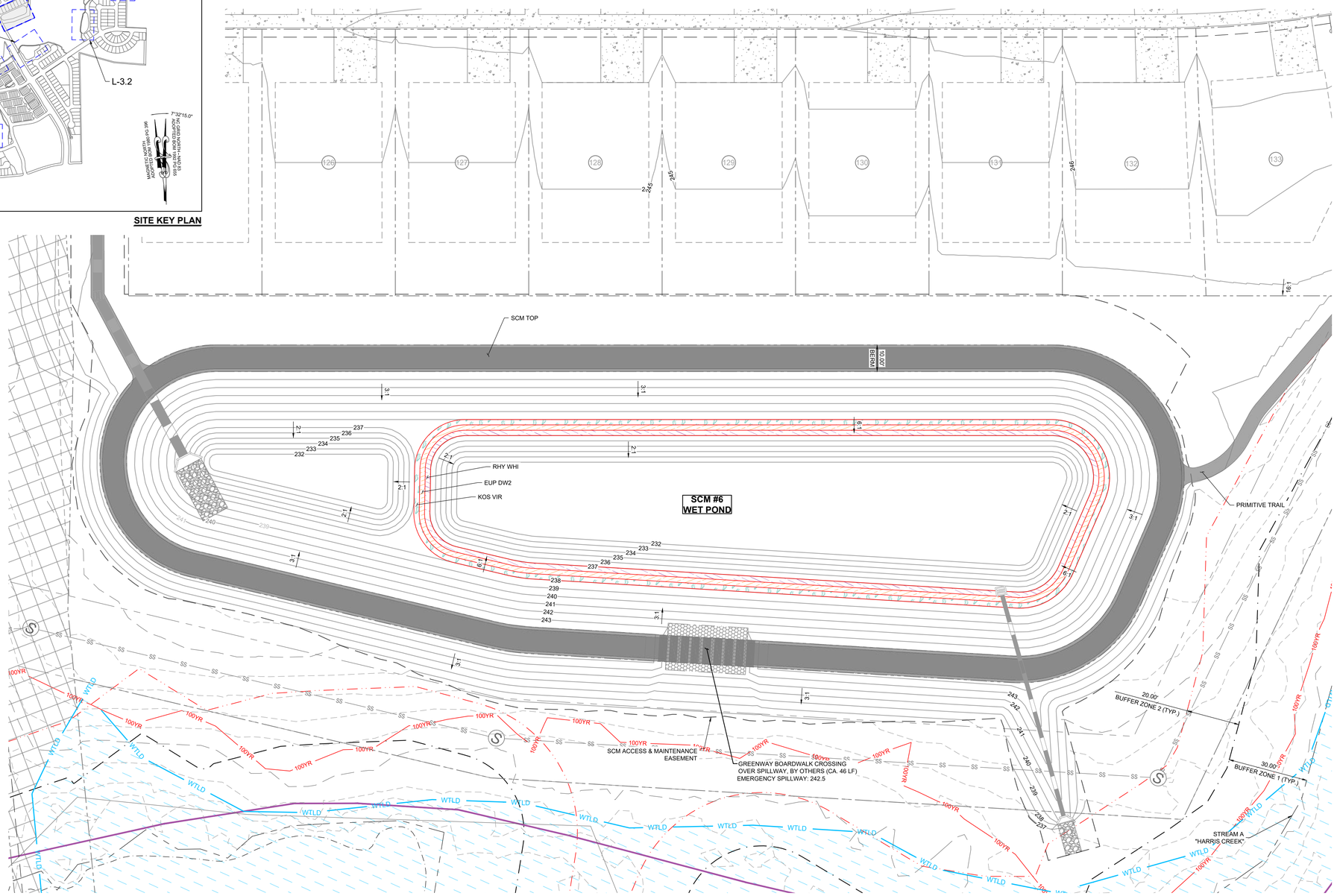
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PLANTING SCM #5

DRAWING SHEET
L-3.3



SITE KEY PLAN

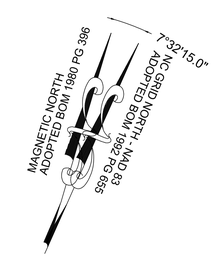


PLANT SCHEDULE SCM PLANTING

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
LOW GROUND COVERS							
	RHY WHI	4,749	*RHYNCHOSPORA COLORATA*	WHITE-TOPPED SEDGE	#SP1	POT	6" O.C.
		4,749	SUBTOTAL:				
MEDIUM GROUND COVERS							
	EUP DW2	4,853	*EUPATORIADELPHUS DUBIUS*	DWARF JOE PYE WEED	#SP1	POT	6" O.C.
		4,853	SUBTOTAL:				
TALL GROUND COVERS							
	KOS VIR	4,948	*KOSTELETZKYA VIRGINICA*	SEASHORE MALLOW	#SP1	POT	6" O.C.
		4,948	SUBTOTAL:				

LEGEND:

- STORM DRAIN LINE
- FLARED END SECTION
- CATCH BASIN
- STORM DRAIN MANHOLE
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- EXISTING WETLAND
- 500 YEAR FLOOD LINE
- 100 YEAR FLOOD LINE



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL:

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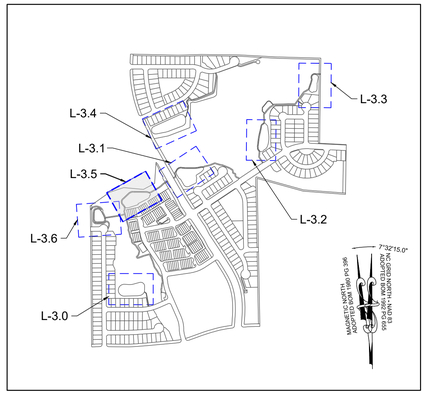
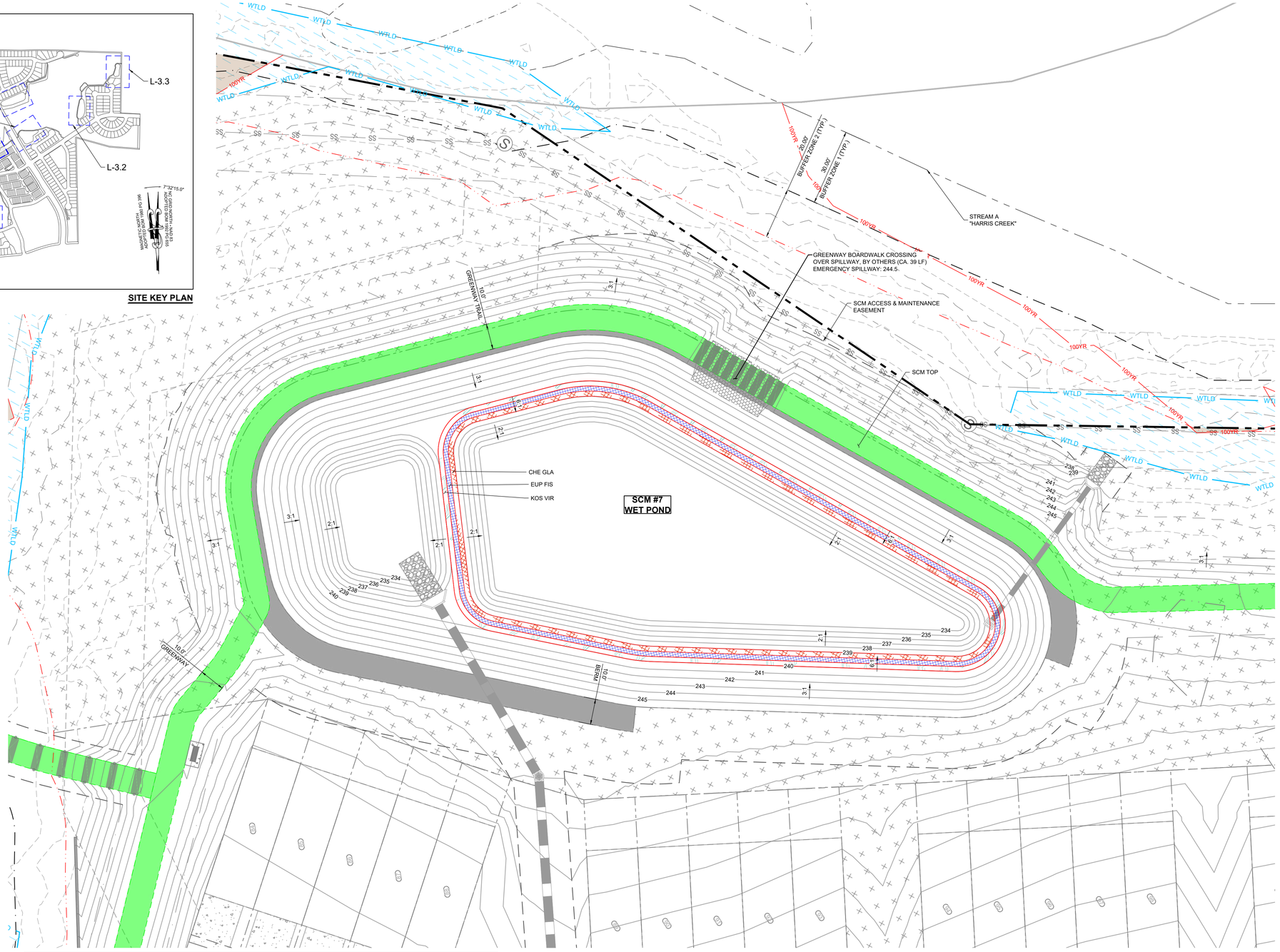
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PLANTING SCM #6

DRAWING SHEET
L-3.4



SITE KEY PLAN

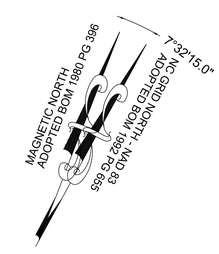


PLANT SCHEDULE SCM PLANTING

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
LOW GROUND COVERS							
	CHE GLA	4,352	*CHELONE GLABRA*	WHITE TURTLEHEAD	#SP1	POT	6" O.C.
		4,352	SUBTOTAL:				
MEDIUM GROUND COVERS							
	EUP FIS	4,457	*EUPATORIADELPHUS FISTULOSUS*	JOE PYE WEED	#SP1	POT	6" O.C.
		4,457	SUBTOTAL:				
TALL GROUND COVERS							
	KOS VIR	4,555	*KOSTELETZKYA VIRGINICA*	SEASHORE MALLOW	#SP1	POT	6" O.C.
		4,555	SUBTOTAL:				

LEGEND:

- STORM DRAIN LINE
- FLARED END SECTION
- CATCH BASIN
- STORM DRAIN MANHOLE
- 240 — EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- 240 — PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- WTLD — EXISTING WETLAND
- 500YR — 500 YEAR FLOOD LINE
- 100YR — 100 YEAR FLOOD LINE



GRAPHIC SCALE

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(IN FEET)
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SEAL

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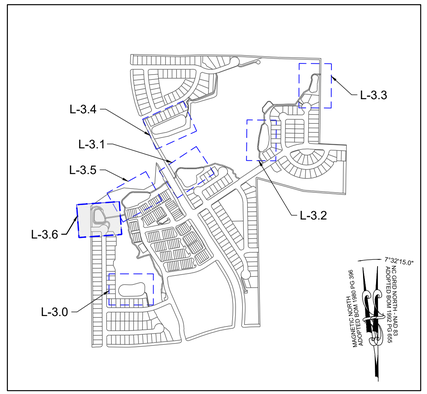
STRONG ROCK PROJECT PSP-23-03

NOT FOR CONSTRUCTION

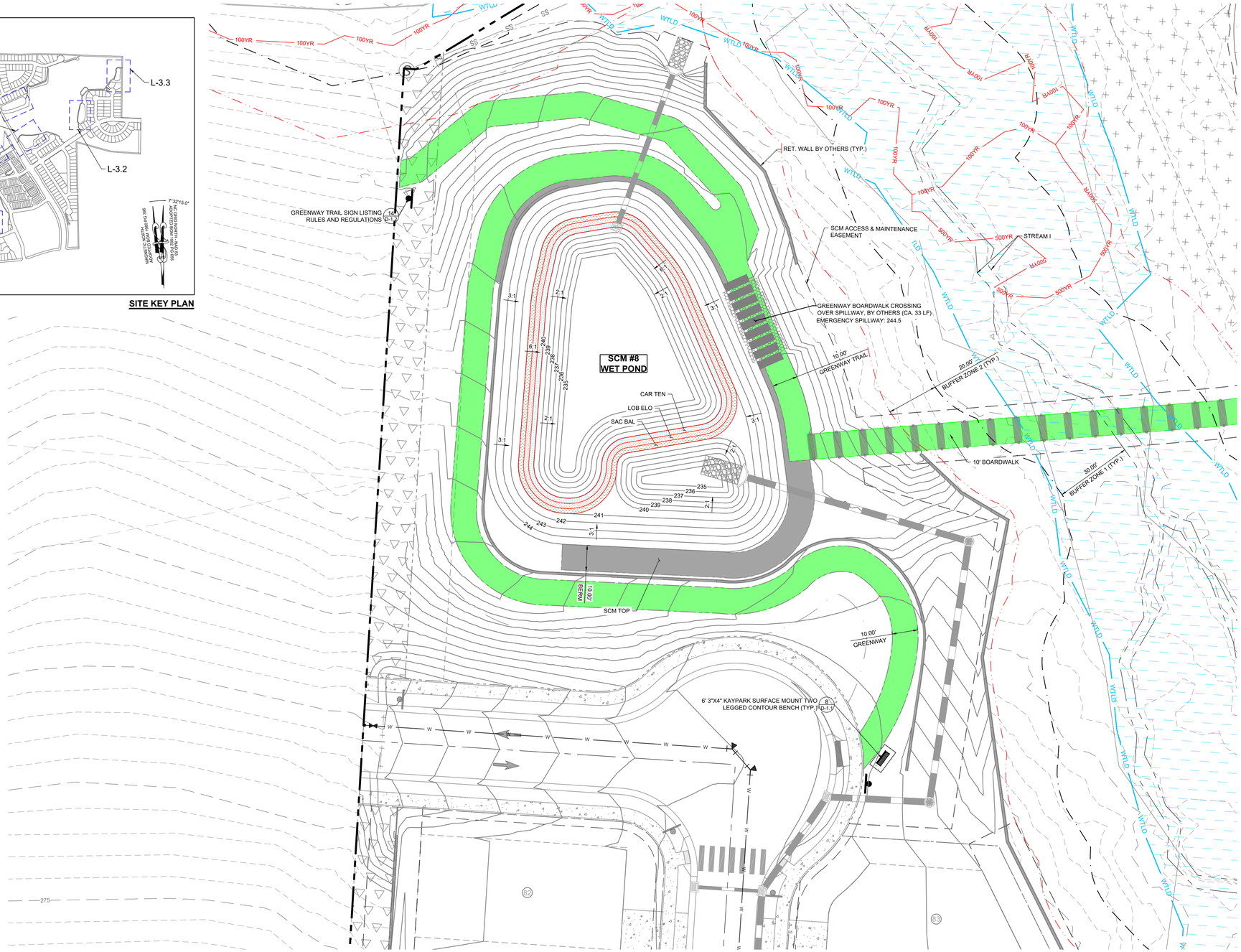
SCALE: AS SHOWN
DESIGNED BY: SRG
DRAWN BY: SRG
CHECKED BY: SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PLANTING SCM #7

DRAWING SHEET
L-3.5



SITE KEY PLAN

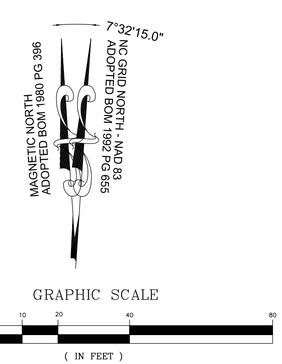


PLANT SCHEDULE SCM PLANTING

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
LOW GROUND COVERS							
	CAR TEN	2,479	*CAREX TENERA*	QUILL SEDGE	#SP1	POT	6" O.C.
		2,479	SUBTOTAL:				
MEDIUM GROUND COVERS							
	LOB ELO	2,584	*LOBELIA ELONGATA*	LONGLEAF LOBELIA	#SP1	POT	6" O.C.
		2,584	SUBTOTAL:				
TALL GROUND COVERS							
	SAC BAL	2,689	*SACCHARUM BALDWINII*	NARROW PLUMEGRASS	#SP1	POT	6" O.C.
		2,689	SUBTOTAL:				

LEGEND:

- STORM DRAIN LINE
- FLARED END SECTION
- CATCH BASIN
- STORM DRAIN MANHOLE
- 240 — EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- 240 — PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- WTLD — EXISTING WETLAND
- 500YR — 500 YEAR FLOOD LINE
- 100YR — 100 YEAR FLOOD LINE



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SEAL

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STRONG ROCK PROJECT
PSP-23-03

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SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PLANTING SCM #8

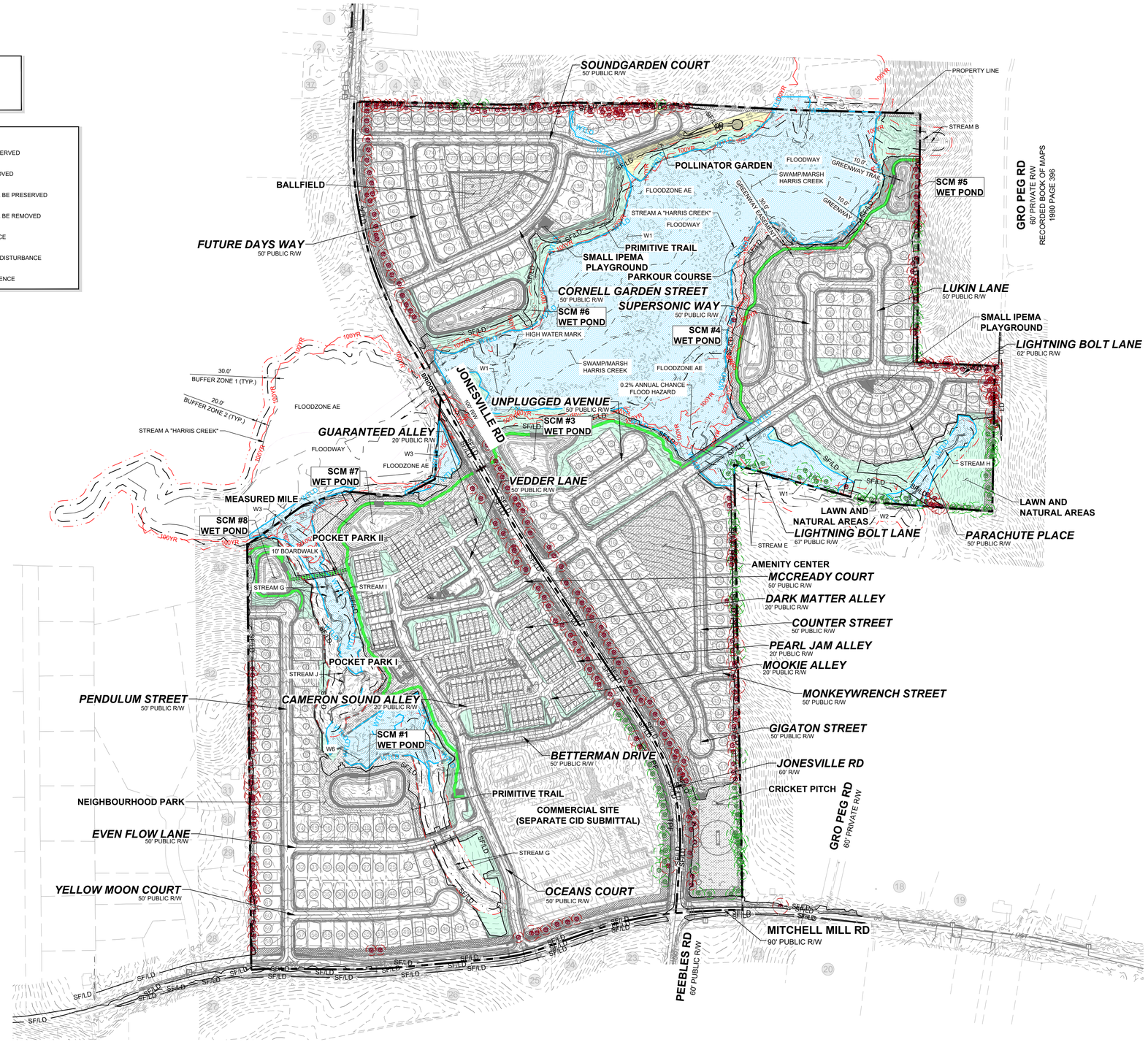
DRAWING SHEET
L-3.6

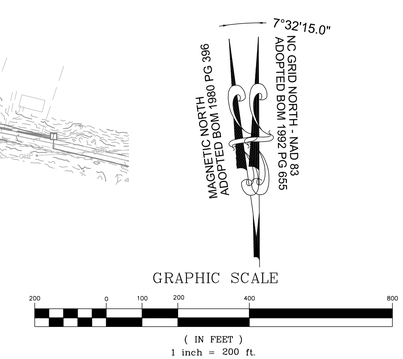
NOTE:

THE CRITICAL ROOT ZONES (CRZ) SHALL REMAIN FREE OF ALL BUILDING MATERIALS, REFUSE, AND DEBRIS. SEE SHEET C-3.0 FOR ADJACENT PROPERTY DETAILS

LEGEND:

- TREES WILL BE PRESERVED
- TREES WILL BE REMOVED
- CRZ FOR TREES WILL BE PRESERVED
- CRZ FOR TREES WILL BE REMOVED
- LD — LIMIT OF DISTURBANCE
- SF/LD — SILT FENCE/LIMIT OF DISTURBANCE
- TPF — TREE PROTECTION FENCE





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SEAL

STRONGROCK ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT PSP-23-03	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
OVERALL PRESERVATION PLAN

DRAWING SHEET
C-12.0

CHARLES ALFONSA JONES AND WIFE ALLIE V.JONES
PIN: 1757484609
DB 2305 PG 673
ZONING: R-30 (WC)
USE: SF

BENJAMIN FERRELL
PIN: 1757485713
DB 1697 PG 465
ZONING: R-30 (WC)
USE: SF

ALESHIA FERRELL & ARRON WALKER
PIN: 1757486733
DB 6374 PG 89
BM 1996 PG 00524
ZONING: R-30 (WC)
USE: SF

CHRIST HOLINESS CHURCH #1
PIN: 1757487783
DB 2928 PG 328
ZONING: R-30 (WC)
USE: CH

CHRIST HOLINESS CHURCH #1
PIN: 1757489733
DB 4321 PG 788
ZONING: R-30 (WC)
USE: VA

CHRIST HOLINESS CHURCH #1
PIN: 1757580764
DB 9467 PG 430
ZONING: R-30 (WC)
USE: VA

ALICIA BROWN & CARL T. JONES
PIN: 1757582714
DB 16128 PG 183
ZONING: R-30 (WC)
USE: SF

RS RENTAL II LLC
PIN: 1757584724
DB 18703 PG 2414
BM 1981 PG 894
ZONING: R-30 (WC)
USE: SF

KAREN E. BASS
PIN: 1757586704
DB 12560 PG 1626
BM 1984 PG 943
ZONING: R-30 (WC)
USE: SF

HENRY ALSTON
PIN: 1757481376
DB 19248 PG 984
BM 1982 PG 721
ZONING: R-30 (WC)
USE: SF

KENNETH INVESTMENT LLC
PIN: 1757471559
DB 19248 PG 1884
LOT - BM 2007 PG 01224
ZONING: R-30 (WC)
USE: VA

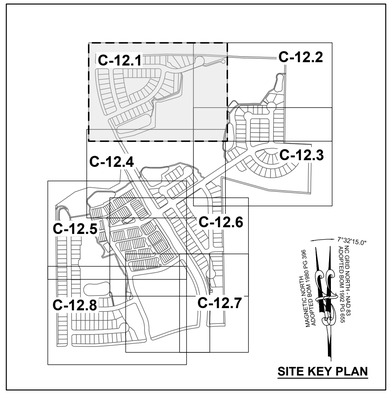
PROPERTY LINE
KH-282
KH-283
KH-159
AJ-129
GENERIC WOODEN PRIVACY FENCE 6' TALL
30.0' STREET YARD BUFFER
15.0' TYPE II PERIMETER BUFFER
BALLFIELD
FUTURE DAYS WAY
50' PUBLIC R/W
SMALL IPEMA PLAYGROUND
PRIMITIVE TRAIL
CORNELL GARDEN STREET
50' PUBLIC R/W
SOUNDGARDEN COURT
50' PUBLIC R/W
POLLINATOR GARDEN
SCM #6 WET POND
BERM
JONESVILLE RD
60' R/W
MATCH LINE
FOR CONTINUATION, SEE C-12.4
MATCH LINE
FOR CONTINUATION, SEE C-12.2
STREAM A "HARRIS CREEK"
FLOODZONE AE
FLOODWAY
BUFFER ZONE I (TYP.)
BUFFER ZONE II (TYP.)
30.0' EXISTING UTILITY EASEMENT TOWN OF ROLESVILLE HARRIS CREEK INTERCEPTOR BM 1992 PG 655
SWAMP/MARSH HARRIS CREEK
100YR
W1

LEGEND:

- TREES WILL BE PRESERVED
- TREES WILL BE REMOVED
- CRZ FOR TREES WILL BE PRESERVED
- CRZ FOR TREES WILL BE REMOVED
- LD — LIMIT OF DISTURBANCE
- SF/LD — SILT FENCE/LIMIT OF DISTURBANCE
- TPF — TREE PROTECTION FENCE

MAGNETIC NORTH ADOPTED BOM 1980 PG 396
NC GRID NORTH - NAD 83 ADOPTED BOM 1992 PG 655
7°32'15.0"

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.



SITE KEY PLAN

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RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PRESERVATION PLAN I

DRAWING SHEET
C-12.1

RS RENTAL II LLC
PIN: 1757584724
DB 18703 PG 2414
BM 1981 PG 894
ZONING: R-30 (WC)
USE: SF

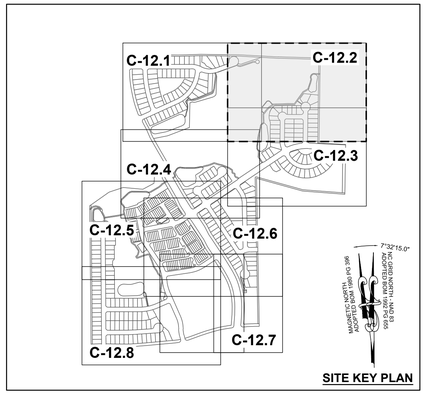
KAREN E. BASS
PIN: 1757586704
DB 12560 PG 1626
BM 1984 PG 943
ZONING: R-30 (WC)
USE: SF

JAMES K. WILLIAMS
PIN: 1757588784
DB 16784 PG 1013
BM 1989 PG 01474
ZONING: R-30 (WC)
USE: VA

GRO PEG PROPERTIES LLC
PIN: 1757684697
DB 18359 PG 1707
LOT 5 - BM 1980 PG 00396
ZONING: R-30 (WC)
USE: VA

SCOTT & THERESA CARLE
PIN: 1757675786
DB 14863 PG 2493
LOT 4A- BM 1980 PG 00396
ZONING: R-30 (WC)
USE: VA

AJ-129
GENERIC WOODEN PRIVACY FENCE 6' TALL
PROPERTY LINE
STREAM B
TYPE I PERIMETER BUFFER
30' O.S. EXISTING
TOWN OF ROLESVILLE
CREEK INTEREST FOR HARRIS
BM 1992 PG 655
BUFFER ZONE 2 (TYP)
BUFFER ZONE 1 (TYP)
FLOODWAY
STREAM A "HARRIS CREEK"
SOUNDGARDEN COURT
50' PUBLIC R/W
POLLINATOR GARDEN
MATCH LINE
FOR CONTINUATION, SEE C-12.1
SWAMP/MARSH HARRIS CREEK
FLOODZONE AE
GENERIC WOODEN PRIVACY FENCE 6' TALL
GREENWAY TRAIL
15.0'
TYPE II PERIMETER BUFFER
SCM #5 WET POND
10.0' BERM
KH-014
KH-016
KH-017
PARKOUR COURSE
30' GREENWAY EASEMENT
SUPERSONIC WAY
50' PUBLIC R/W
LUKIN LANE
50' PUBLIC R/W
AJ-003
AJ-004
AJ-006
AJ-008
AJ-009
AJ-013
AJ-014
FLOOD ZONE AE
MATCH LINE
FOR CONTINUATION, SEE C-12.3
SCM #4 WET POND



LEGEND:

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	TREES WILL BE REMOVED
	CRZ FOR TREES WILL BE PRESERVED
	CRZ FOR TREES WILL BE REMOVED
LD	LIMIT OF DISTURBANCE
SF/LD	SILT FENCE/LIMIT OF DISTURBANCE
TPF	TREE PROTECTION FENCE

7°32'15.0"
MAGNETIC NORTH
ADOPTED BOM 1980 PG 396
NC GRID NORTH - NAD 83
ADOPTED BOM 1992 PG 655

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

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DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PRESERVATION PLAN II

DRAWING SHEET
C-12.2

LEGEND:

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- TREES WILL BE REMOVED
- CRZ FOR TREES WILL BE PRESERVED
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- LD — LIMIT OF DISTURBANCE
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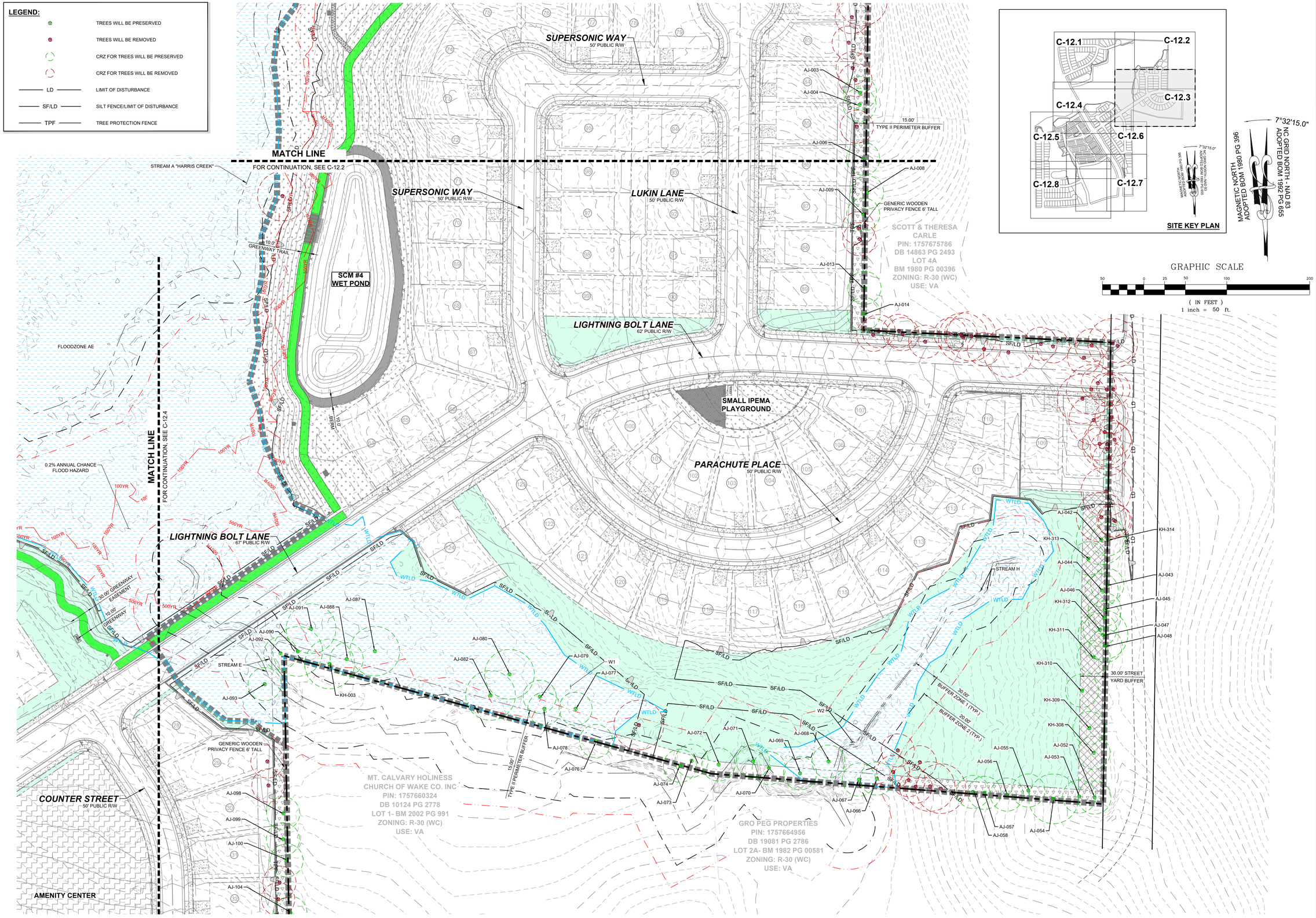

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RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PRESERVATION PLAN III

DRAWING
SHEET
C-12.3

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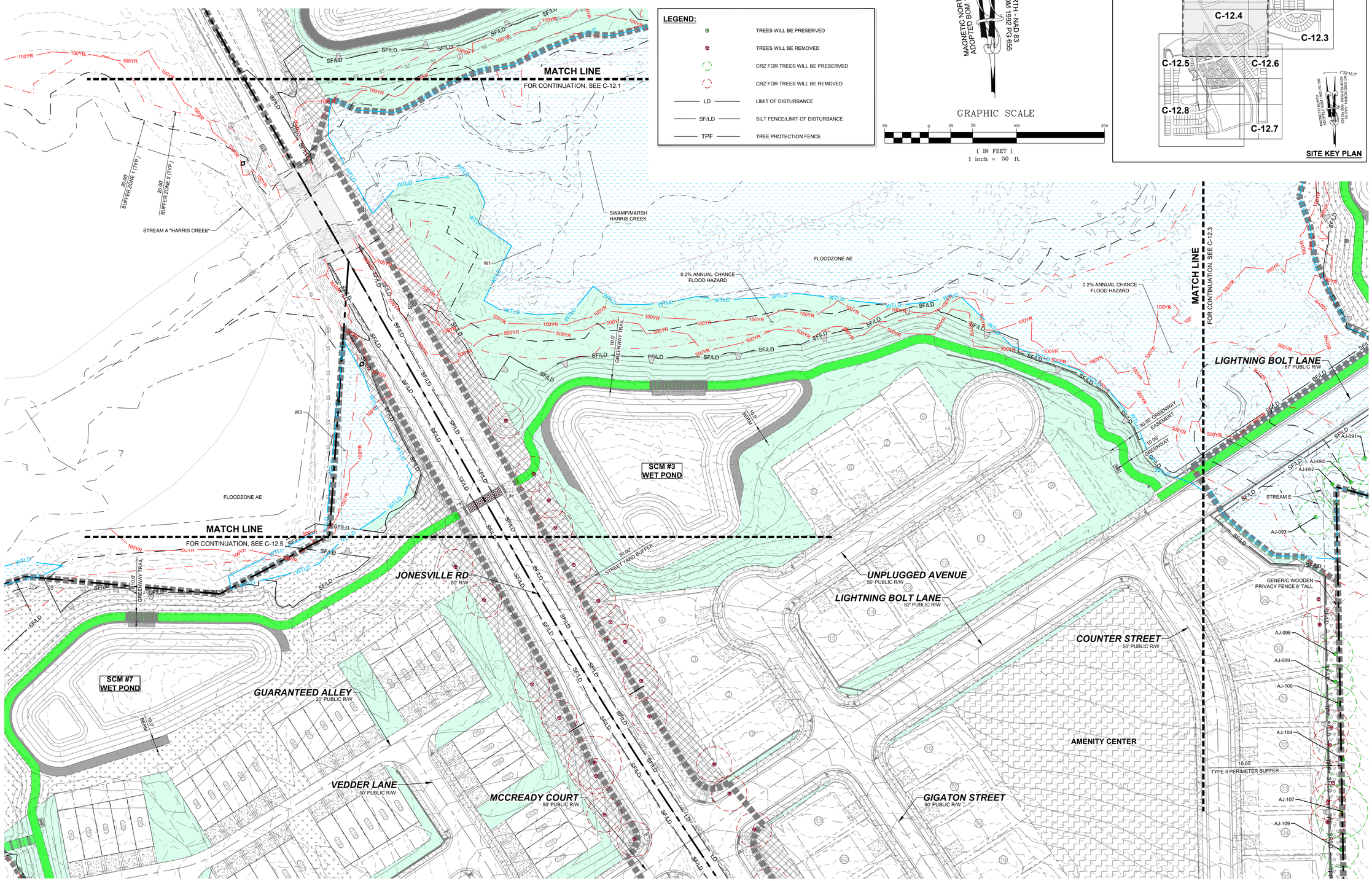

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PRESERVATION PLAN IV

DRAWING SHEET
C-12.4

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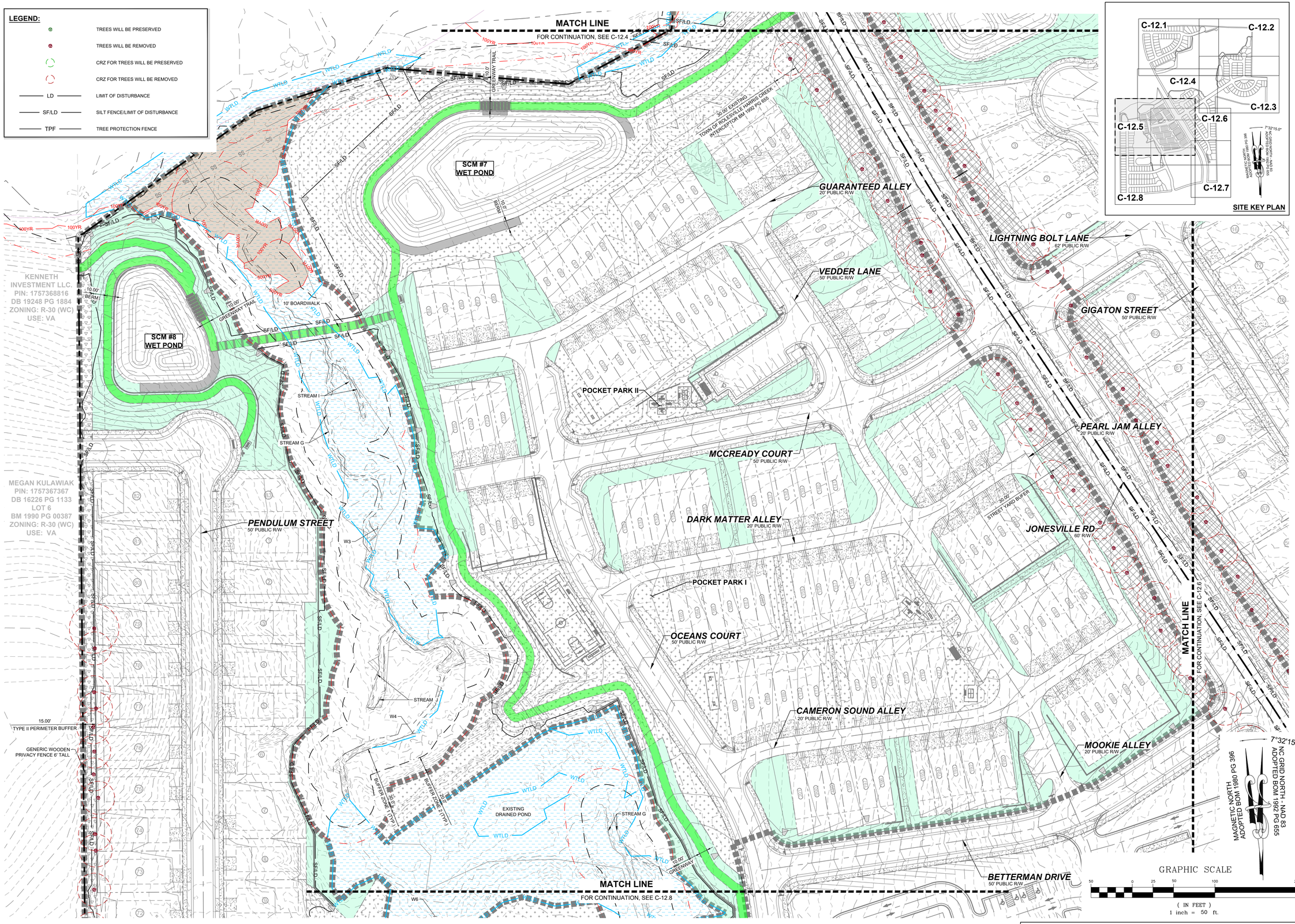

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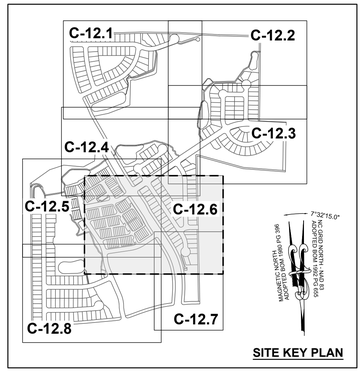
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PRESERVATION PLAN V

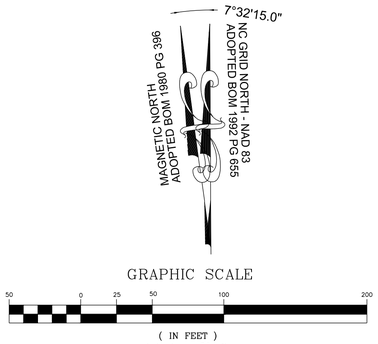
DRAWING SHEET
C-12.5

LEGEND:

	TREES WILL BE PRESERVED
	TREES WILL BE REMOVED
	CRZ FOR TREES WILL BE PRESERVED
	CRZ FOR TREES WILL BE REMOVED
LD	LIMIT OF DISTURBANCE
SF/LD	SILT FENCE/LIMIT OF DISTURBANCE
TPF	TREE PROTECTION FENCE



SITE KEY PLAN



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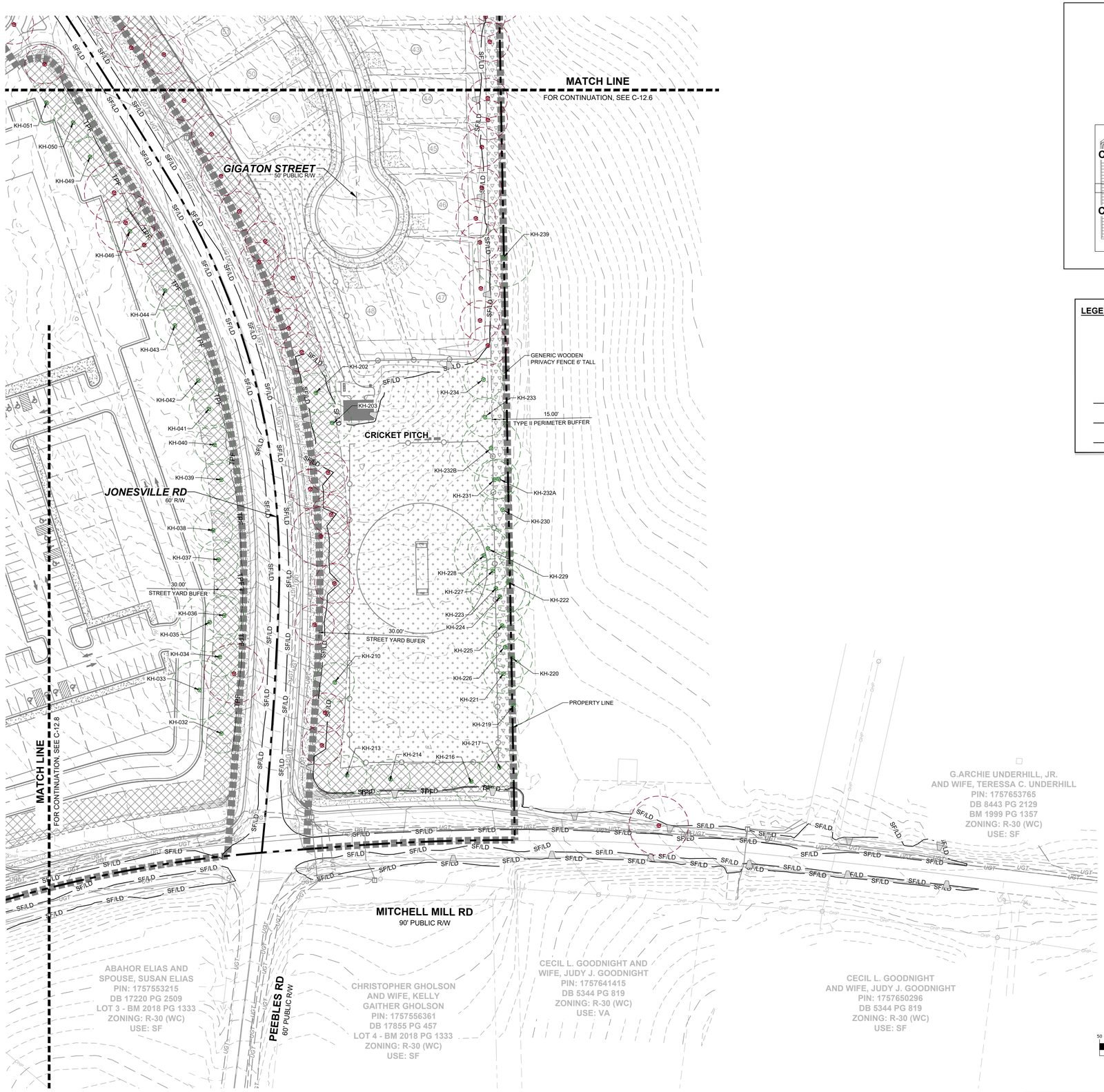
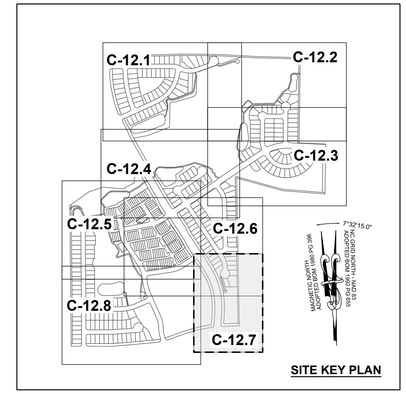
PRESERVATION PLAN VI

DRAWING SHEET
C-12.6





LEGEND:

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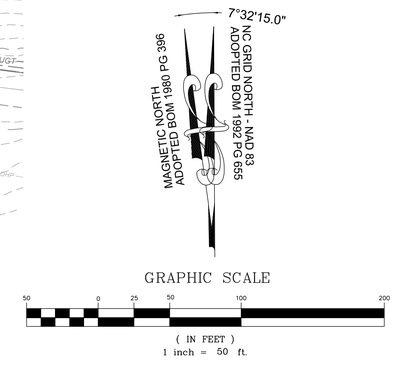
TPF	TREE PROTECTION FENCE



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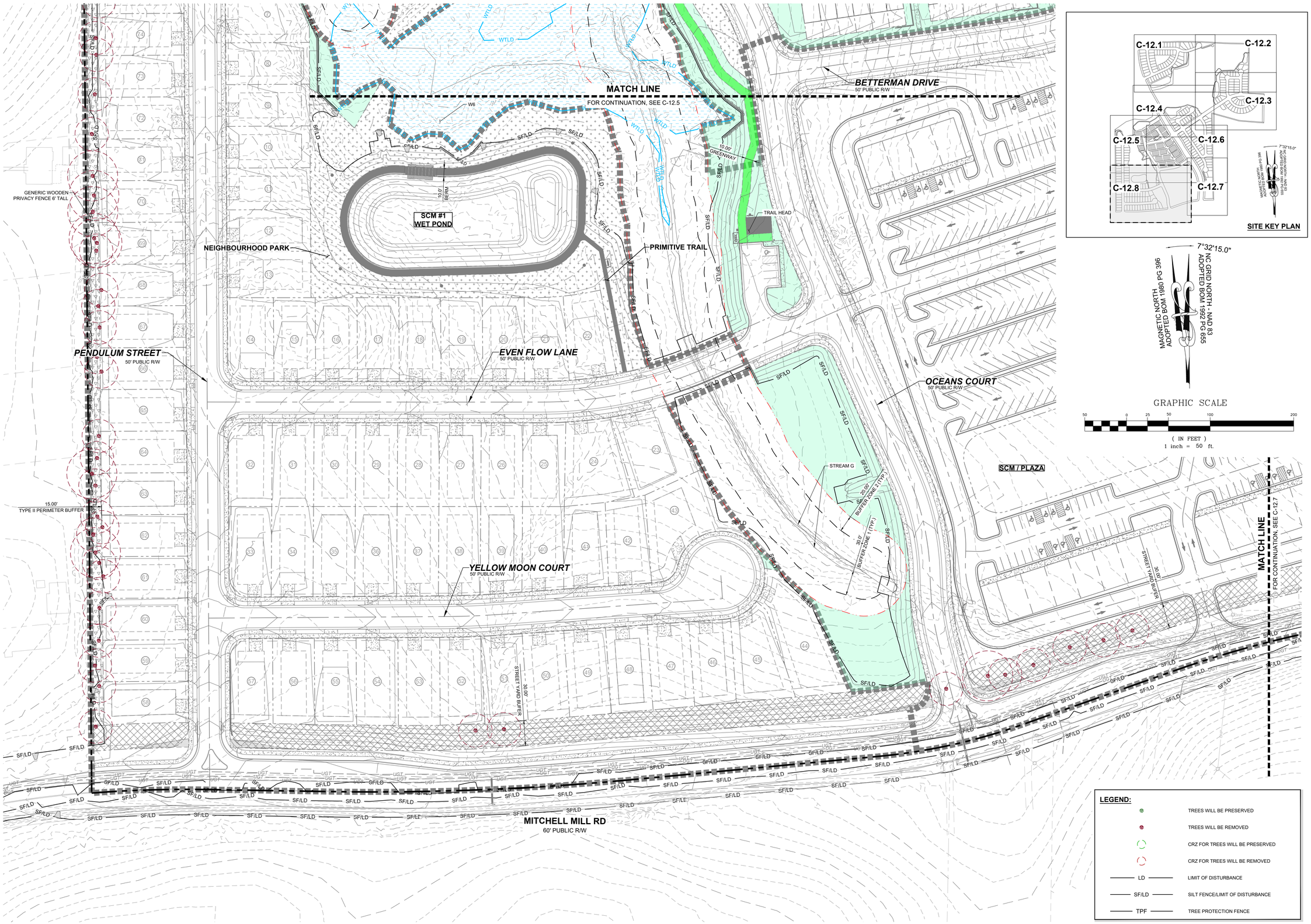
PRESERVATION PLAN VII

DRAWING SHEET
C-12.7



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CONSTRUCTION PLANS
PRESERVATION PLAN VIII

DRAWING / SHEET
C-12.8

TREE INVENTORY SPECIES LIST	
ACRU	ACER RUBRUM
CACA	CARPINUS CAROLINIANA
CATO	CARYA TOMENTOSA
COFL	CORNUS FLORIDA
DIVI	DIOSPYROS VIRGINIANA
FRPE	FRAXINUS PENNSYLVANICA
ILOP	ILEX OPACA
JUVI	JUNIPERUS VIRGINIANA
LISI	LIGUSTRUM SINENSE
LIST	LIQUIDAMBAR STYRACIFLUA
LITU	LIRIODENDRON TULIPIFERA
MORU	MORUS RUBRA
NYSY	NYSSA SYLVATICA
OXAR	OXYDENDRUM ARBOREUM
PITA	PINUS TAEDA
PLOC	PLATANUS OCCIDENTALIS
PLOR	PLATYCLADUS ORIENTALIS
PRSE	PRUNUS SEROTINA
QUAL	QUERCUS ALBA
QUFA	QUERCUS FALCATA
QUNI	QUERCUS NIGRA
QUPA	QUERCUS PAGODA
QUPH	QUERCUS PHELLOS
QURU	QUERCUS RUBRA
QUST	QUERCUS STELLATA
QUVE	QUERCUS VELUTINA
ULAL	ULMUS ALATA
ULRU	ULMUS RUBRA

NO OF TREE	BOTANICAL NAME	CALIPER INCHES	CONDITION OVERALL
AJ-003	QUAL	10"	GOOD
AJ-004	JUVI	6"	GOOD
AJ-006	QURU	10"	GOOD
AJ-007	QURU	8"	GOOD
AJ-008	LIST	18"	GOOD
AJ-009	QUAL	6"	GOOD
AJ-012	QUAL	12"	GOOD
AJ-013	CATO	6"	GOOD
AJ-014	ACRU	14"	GOOD
AJ-042	LITU	22"	GOOD
AJ-043	LITU	18"	GOOD
AJ-044	PRSE	19"	FAIR
AJ-045	LITU	19"	GOOD
AJ-046	LITU	17"	GOOD
AJ-047	QUVE	31"	GOOD
AJ-048	LIST	6"	FAIR
AJ-049	QUNI	17"	GOOD
AJ-050	QUAL	12"	GOOD
AJ-051	QUAL	12"	GOOD
AJ-052	QURU	12"	GOOD
AJ-053	QUAL	4"	GOOD
AJ-054	QUAL	32"	GOOD
AJ-055	OXAR	6"	GOOD
AJ-056	QURU	19"	GOOD
AJ-057	QUAL	13"	GOOD

NO OF TREE	BOTANICAL NAME	CALIPER INCHES	CONDITION OVERALL
AJ-058	LITU	17"	GOOD
AJ-066	OXAF	14"	GOOD
AJ-067	ACRU	4"	GOOD
AJ-068	ACRU	5"	GOOD
AJ-069	ACRU	10"	GOOD
AJ-070	ACRU	6"	GOOD
AJ-071	ACRU	6"	GOOD
AJ-072	PRSE	9"	GOOD
AJ-073	DIVI	3"	GOOD
AJ-074	LITU	8"	FAIR
AJ-076	LITU	13"	GOOD
AJ-077	LIST	13"	GOOD
AJ-078	LIST	4"	GOOD
AJ-079	LITU	18"	POOR
AJ-080	LITU	25"	GOOD
AJ-081	PRSE	9"	GOOD
AJ-082	LITU	22"	GOOD
AJ-083	LITU	21"	GOOD
AJ-084	PLOC	41"	GOOD
AJ-086	ACRU	9"	GOOD
AJ-087	LITU	30"	GOOD
AJ-088	LIST	4"	GOOD
AJ-089	ACRU	18"	GOOD
AJ-090	ACRU	30"	GOOD
AJ-091	ACRU	30"	GOOD

NO OF TREE	BOTANICAL NAME	CALIPER INCHES	CONDITION OVERALL
AJ-092	LIST	4"	GOOD
AJ-093	LIST	9"	GOOD
AJ-094	FRPE	22"	GOOD
AJ-095	LIST	21"	GOOD
AJ-098	PRSE	8"	GOOD
AJ-099	QUNI	4"	GOOD
AJ-100	ILOP	4"	GOOD
AJ-101	QUST	29"	POOR
AJ-104	QURU	19"	GOOD
AJ-107	QURU	28"	GOOD
AJ-109	QUST	18"	GOOD
AJ-110	PRSE	6"	GOOD
AJ-111	LIST	14"	GOOD
AJ-112	PITA	21"	GOOD
AJ-114	PITA	28"	GOOD
AJ-116	QUST	20"	GOOD
AJ-117B	CACA	7"	GOOD
AJ-129	PITA	20"	GOOD
AJ-130	LITU	21"	GOOD
AJ-131	ULRU	8"	GOOD
KH-003	ACRU	31"	GOOD
KH-014	QUAL	20"	GOOD
KH-016	CATO	10"	GOOD
KH-017	QUPA	10"	GOOD
KH-032	DIVI	18"	GOOD

NO OF TREE	BOTANICAL NAME	CALIPER INCHES	CONDITION OVERALL
KH-033	PITA	25"	EXCELLENT
KH-034	PITA	18"	EXCELLENT
KH-035	PITA	29"	GOOD
KH-036	LIST	8"	GOOD
KH-037	ULRU	14"	GOOD
KH-038	PITA	17"	GOOD
KH-039	PITA	13"	GOOD
KH-040	PITA	16"	GOOD
KH-041	QUAL	6"	GOOD
KH-042	PITA	18"	GOOD
KH-043	ULRU	6"	GOOD
KH-044	QUNI	5"	FAIR
KH-046	QUNI	6"	GOOD
KH-049	QUNI	5"	GOOD
KH-050	QUNI	5"	GOOD
KH-051	QURU	6"	GOOD
KH-096	PRSE	25"	GOOD
KH-097	PRSE	4"	FAIR
KH-151	ULRU	9"	GOOD
KH-154	MORU	10"	FAIR
KH-155	ULRU	13"	GOOD
KH-156	PITA	31"	GOOD
KH-157	PRSE	9"	GOOD
KH-158	QURU	37"	EXCELLENT
KH-159	LIST	6"	GOOD

NO OF TREE	BOTANICAL NAME	CALIPER INCHES	CONDITION OVERALL
KH-160	LITU	34"	GOOD
KH-163	QUAL	24"	GOOD
KH-164	QURU	23"	GOOD
KH-165	ILOP	9"	GOOD
KH-167	QUAL	21"	GOOD
KH-169	QUAL	22"	GOOD
KH-170	QURU	23"	GOOD
KH-171	PITA	21"	GOOD
KH-172	PITA	24"	GOOD
KH-173	LIST	9/8"	FAIR
KH-202	QUNI	7"	GOOD
KH-203	QUAL	9"	GOOD
KH-210	PITA	13"	GOOD
KH-213	PITA	16"	GOOD
KH-214	PITA	10"	GOOD
KH-216	PITA	14"	GOOD
KH-217	PITA	14"	GOOD
KH-218	ULRU	11"	GOOD
KH-219	QUNI	4"	GOOD
KH-220	ULRU	15"	GOOD
KH-221	JUVI	5"	GOOD
KH-222	QURU	56"	GOOD
KH-223	QURU	22"	GOOD
KH-224	QURU	25"	GOOD
KH-225	ULRU	10"	GOOD

NO OF TREE	BOTANICAL NAME	CALIPER INCHES	CONDITION OVERALL
KH-226	CATO	6"	GOOD
KH-227	QURU	11"	GOOD
KH-228	PITA	22"	GOOD
KH-229	QURU	13"	GOOD
KH-230	QUAL	16"	GOOD
KH-231	QURU	17"	FAIR
KH-232A	QURU	18"	GOOD
KH-232B	QURU	20/11"	GOOD
KH-233	QURU	10"	GOOD
KH-234	QURU	10/7/7/7/7"	FAIR
KH-239	PITA	26"	GOOD
KH-251	LITU	31/12"	GOOD
KH-269	PITA	15"	GOOD
KH-270	PITA	15"	GOOD
KH-271	QURU	8"	GOOD
KH-282	PITA	25"	GOOD
KH-283	QUAL	16"	GOOD
KH-308	QUPH	10"	GOOD
KH-309	LIST	5"	GOOD
KH-310	QUNI	17"	FAIR
KH-311	QURU	6"	GOOD
KH-312	LITU	15"	GOOD
KH-313	LITU	18"	GOOD
KH-314	ACRU	14"	GOOD
OAK	QURU	4"	GOOD

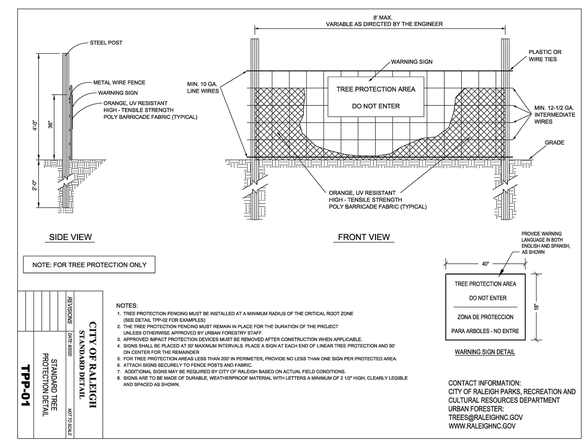
TREE TO BE REMOVED			
TYPE	NO OF TREE	BOTANICAL NAME	CALIPER INCHES
CONIFERS	46	PITA	46"
CONIFERS	AJ-022A	PITA	20"
CONIFERS	AJ-022B	PITA	20"
CONIFERS	AJ-028	PITA	25"
CONIFERS	AJ-036	PITA	20"
CONIFERS	AJ-123	PITA	23"
CONIFERS	AJ-124	PITA	25"
CONIFERS	AJ-128	PITA	20"
CONIFERS	KH-002	PITA	30"
CONIFERS	KH-021	PITA	40"
CONIFERS	KH-047	PITA	21"
CONIFERS	KH-048	PITA	21"
CONIFERS	KH-054	PITA	20"
CONIFERS	KH-069	PITA	27"
CONIFERS	KH-105	PITA	23"
CONIFERS	KH-106	PITA	22"
CONIFERS	KH-107	PITA	29"
CONIFERS	KH-108	PITA	26"
CONIFERS	KH-109	PITA	28"
CONIFERS	KH-130	PITA	21"
CONIFERS	KH-131	PITA	25"
CONIFERS	KH-136	PITA	29"
CONIFERS	KH-145	PITA	24"
CONIFERS	KH-197	PITA	20"
CONIFERS	KH-200	PITA	20"
CONIFERS	KH-205	PITA	20"
CONIFERS	KH-207	PITA	20"
CONIFERS	KH-247	PITA	25"
CONIFERS	KH-277	PITA	28"

TREE TO BE REMOVED			
TYPE	NO OF TREE	BOTANICAL NAME	CALIPER INCHES
DECIDOUS	AJ-001	LITU	19"
DECIDOUS	AJ-024	QUST	22"
DECIDOUS	AJ-030	QURU	20"
DECIDOUS	AJ-031	LIST	19"
DECIDOUS	AJ-033	LITU	27"
DECIDOUS	AJ-034	LIST	18"
DECIDOUS	AJ-035	LITU	23"
DECIDOUS	AJ-038	LITU	19"
DECIDOUS	AJ-039	LIST	36"
DECIDOUS	AJ-040	ACRU	22"
DECIDOUS	AJ-041B	ACRU	18"
DECIDOUS	AJ-059	LITU	24"
DECIDOUS	AJ-060	QURU	32"
DECIDOUS	AJ-062	QURU	20"
DECIDOUS	AJ-064	QURU	19"
DECIDOUS	AJ-075	ACRU	21"
DECIDOUS	AJ-096	LIST	18"
DECIDOUS	AJ-097	LITU	19"
DECIDOUS	AJ-102	QURU	18"
DECIDOUS	AJ-113	QUPH	18"
DECIDOUS	KH-004	LITU	45"
DECIDOUS	KH-012	QUAL	21"
DECIDOUS	KH-019a	QUAL	20"
DECIDOUS	KH-092	QUNI	19"
DECIDOUS	KH-096	PRSE	25"
DECIDOUS	KH-121a	QURU	27"
DECIDOUS	KH-168	QUFA	21"
DECIDOUS	KH-250	QURU	24"
DECIDOUS	KH-253	QURU	23"
DECIDOUS	KH-261	LITU	22"
DECIDOUS	KH-274	ULRU	20"
DECIDOUS	KH-284	QUNI	20"
DECIDOUS	KH-305	QUNI	19"
DECIDOUS	KH-306	QUFA	19"
DECIDOUS	KH-307	QURU	19"
DECIDOUS	KH-317	QUAL	20"
DECIDOUS	KH-319	QUAL	29"

TREE TYPE	CODE SECTION	CALIPER MIN. (")	REPLACEMENT RATE	NUMBER OF TREES CUT DOWN	NUMBER OF REPLACEMENT TREES
EVERGREEN*	6.2.4.5.B.2 & 6.2.4.5.B.3	20	4 TREES	29	116
DECIDUOUS*		18	4 TREES	37	148
ALL**	6.2.4.5.B.4	60	60"	0	0
			TOTAL:	66	264

* REPLACEMENT TREES TO BE OF SIMILAR SPECIES AND SIZE

** REPLACEMENT TREE MIN 3" CALIPER



NOTES:
1. TREE PROTECTION FENCING MUST BE INSTALLED AT A MINIMUM RADIUS OF THE CRITICAL ROOT ZONE (SEE DETAIL TPP-02 FOR EXAMPLES)
2. THE TREE PROTECTION FENCING MUST REMAIN IN PLACE FOR THE DURATION OF THE PROJECT UNLESS OTHERWISE APPROVED BY URBAN FORESTRY STAFF.
3. APPROVED IMPACT PROTECTION DEVICES MUST BE REMOVED AFTER CONSTRUCTION WHEN APPLICABLE.
4. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER FOR THE REMAINDER
5. FOR SMALL PROJECTS WITH PERIMETERS LESS THAN 200 IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTED AREA.
6. FENCING SHALL BE SECURELY TO FRAME POSTS AND FABRIC.
7. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF RALEIGH BASED ON ACTUAL FIELD CONDITIONS.
8. SIGNS ARE TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL WITH LETTERS A MINIMUM OF 2 1/2" HIGH, CLEARLY LEGIBLE AND SPACED AS SHOWN.

CITY OF RALEIGH
STANDARD DETAIL
REVISIONS | DATE 03/09 | APP'D BOCE
STANDARD TREE PROTECTION DETAIL
TPP-01

CONTACT INFORMATION:
CITY OF RALEIGH PARKS, RECREATION AND CULTURAL RESOURCES DEPARTMENT
URBAN FORESTER:
TREES@RALEIGHNC.GOV
WWW.RALEIGHNC.GOV

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No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE CID-24-04 V2	11/01/2024	SREG
03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

STRONGROCK ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	PSP-23-03
	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PRESERVATION PLAN TABLES

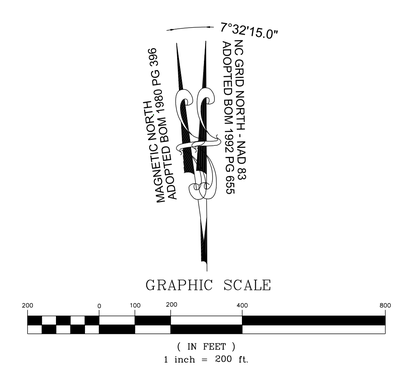
DRAWING SHEET
C-12.9

SIGN LEGEND:

1. ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.

SIGN	MUTCD STD.	SIZE
STOP	R1-1, R1-3P	30"X30"
20 MPH	R2-1	24"X30"
DEAD END	W14-1	30"X30"
STREET NAME	D3-1	VARIES"X12"
PEDESTRIAN CROSSING	W11-2, W16-7P	30"X30", 12"X24"
PARKING		24"X30"

2. ALL SIGNS SHALL BE MOUNTED WITH 7-FT MIN. VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 3-LB. GALV. STEEL U-CHANNEL POST SET IN 3-FT SIGN DEEP X 12-IN DIA. CONCRETE FOOTING. MUTCD STD. SIZE NCDOT PRIOR TO SIGN INSTALLATION.
3. ALL SIGNAGE SHALL BE FIELD STAKED AND THE LOCATIONS APPROVED BY THE TOWN OF ROLESVILLE
4. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AS REQUIRED BY THE TOWN OF ROLESVILLE, NCDOT STANDARDS AND SPECIFICATIONS.



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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

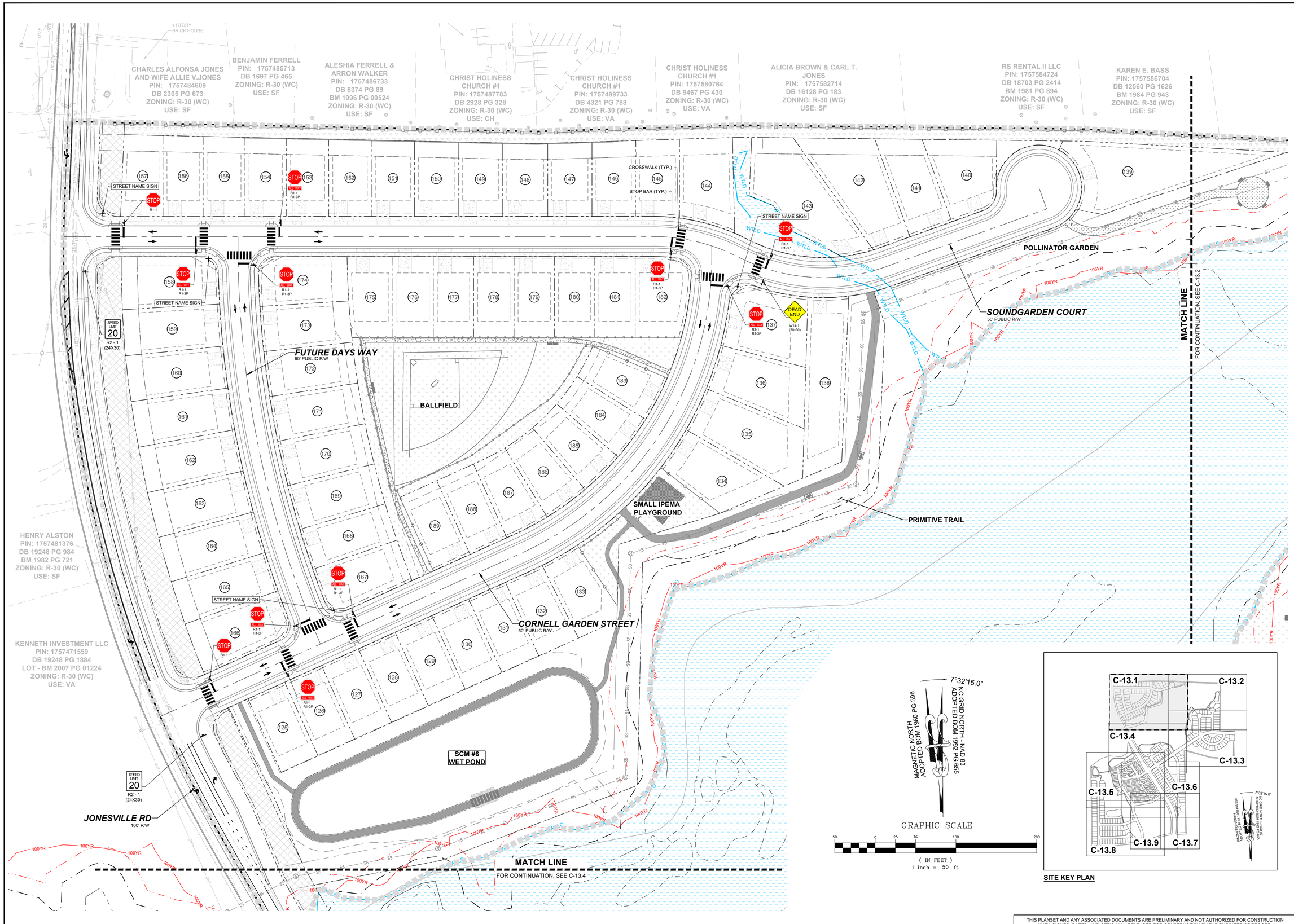
STRONG ROCK PROJECT	PSP-23-03
	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

OVERALL SIGNAGE & PAVEMENT MARKING PLAN

DRAWING
SHEET

C-13.0



SITE KEY PLAN

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

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STRONG ROCK PROJECT	PSP-23-03
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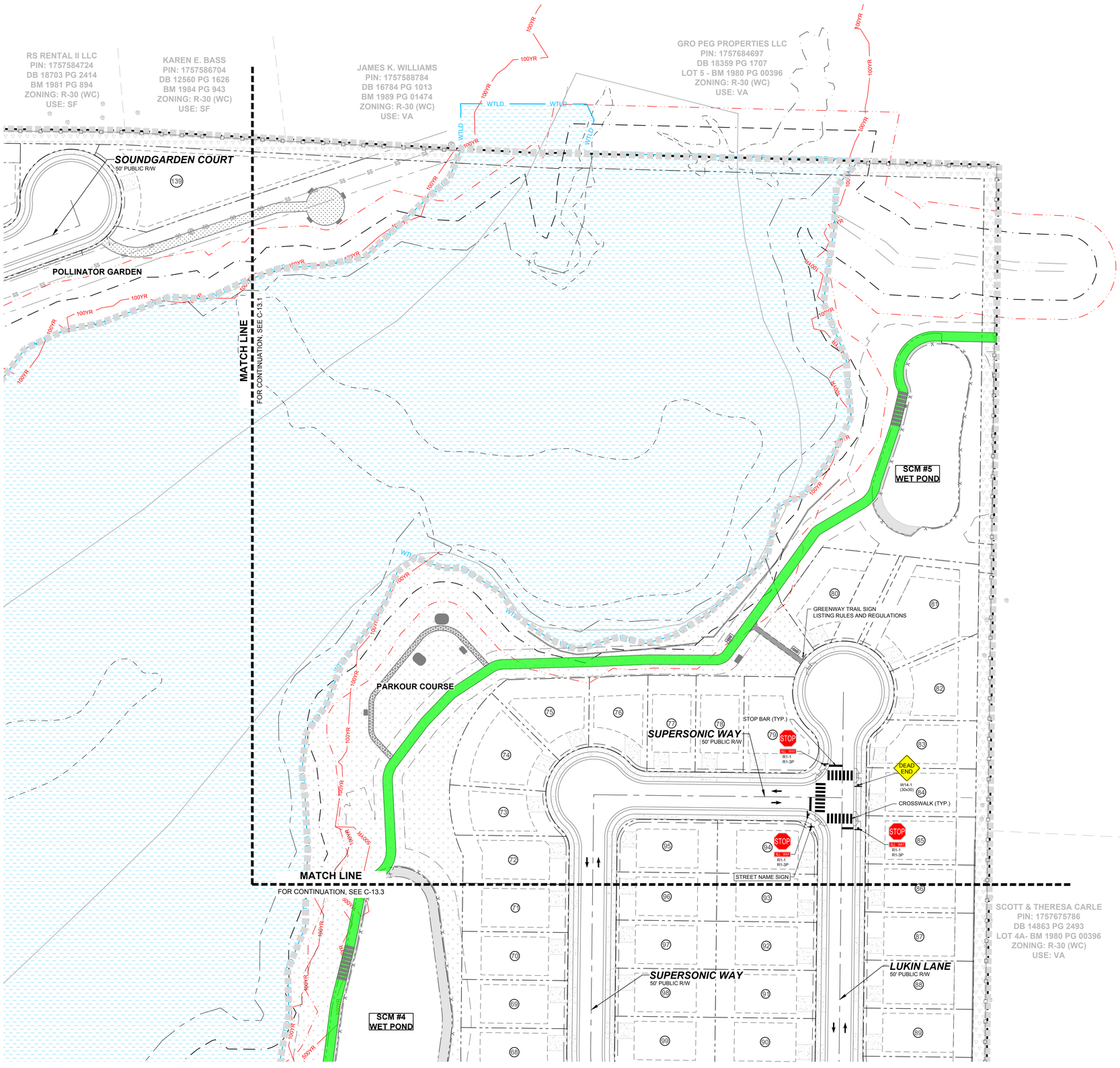
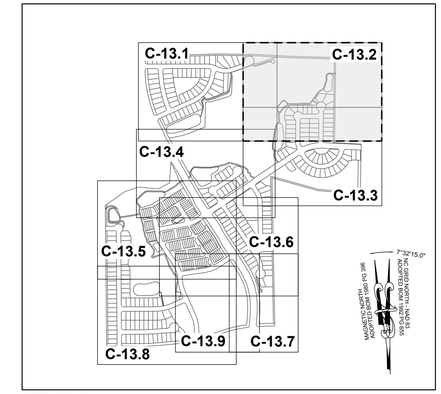
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

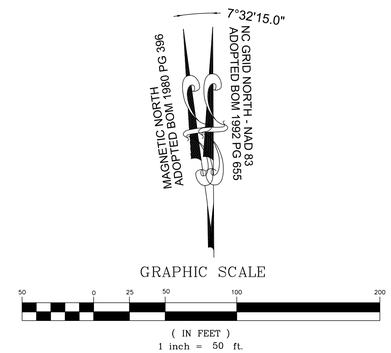
RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PARTIAL SIGNAGE & PAVEMENT MARKING PLAN I

DRAWING / SHEET
C-13.1





SITE KEY PLAN



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SEAL

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305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT PSP-23-03	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

PARTIAL SIGNAGE & PAVEMENT MARKING PLAN II

DRAWING SHEET

C-13.2

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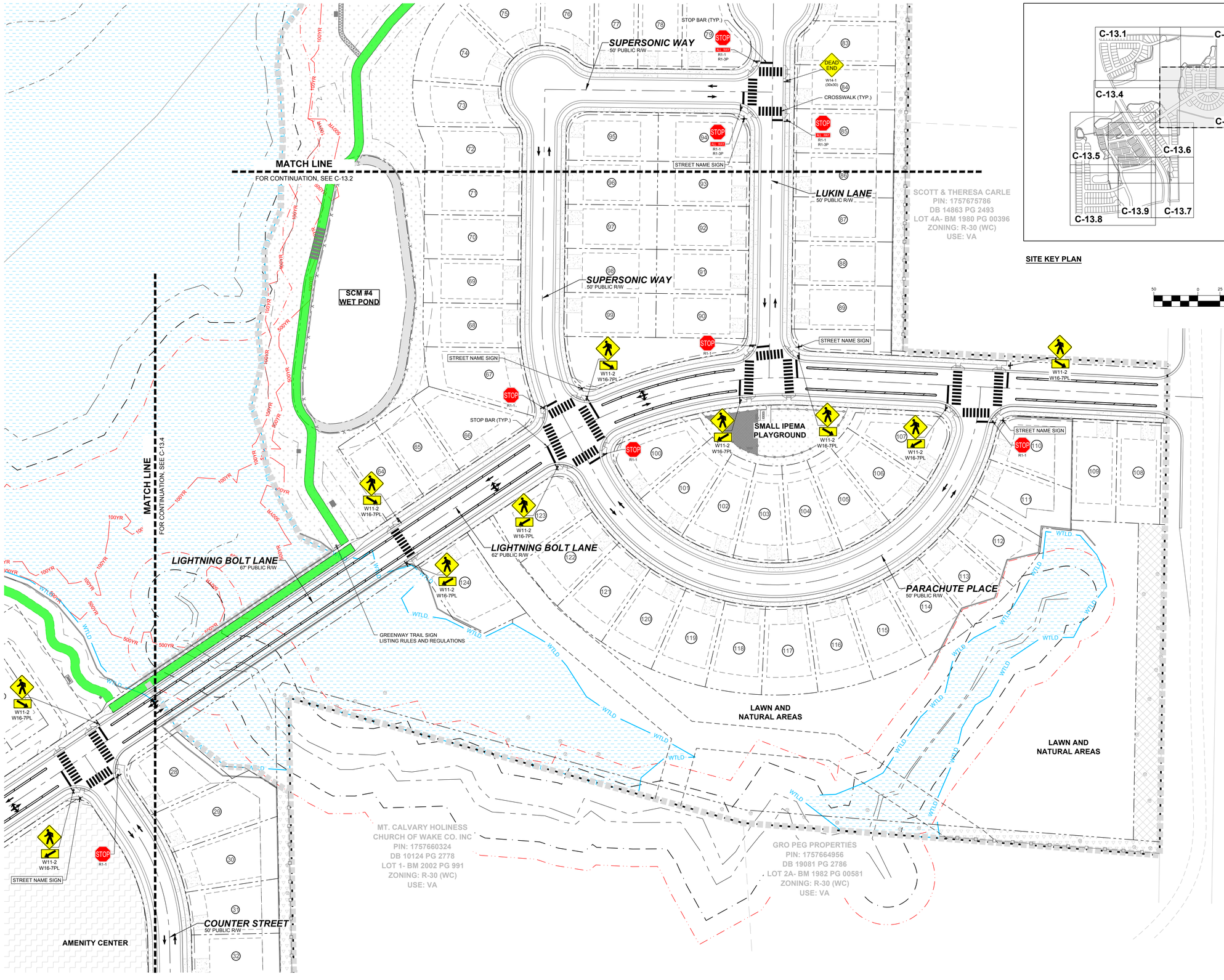

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

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STRONG ROCK PROJECT	PSP-23-03
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SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

PARTIAL SIGNAGE & PAVEMENT MARKING PLAN III

DRAWING
SHEET

C-13.3

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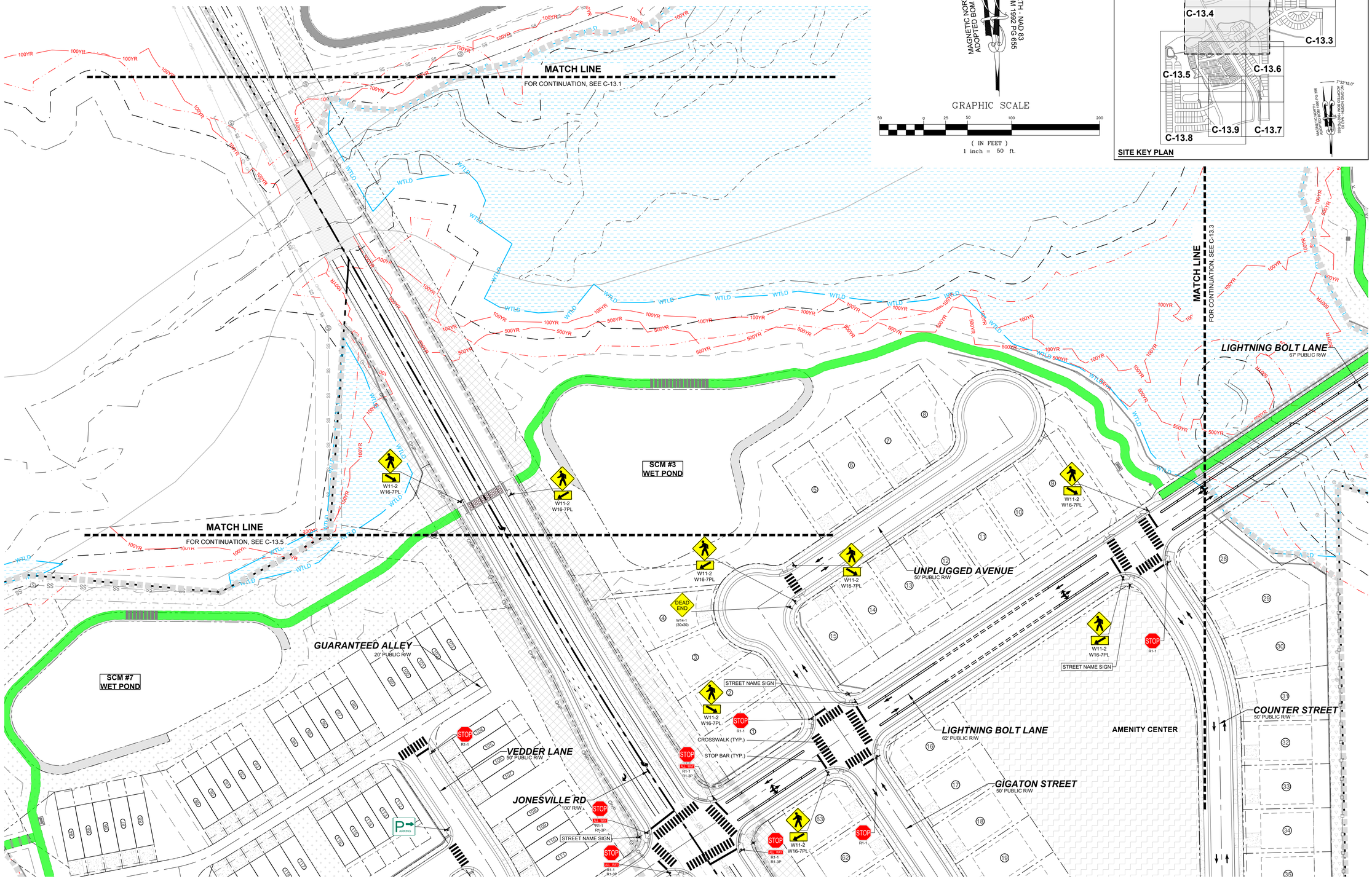

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

STRONGROCK ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	PSP-23-03
	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

PARTIAL SIGNAGE & PAVEMENT MARKING PLAN IV

DRAWING
SHEET

C-13.4

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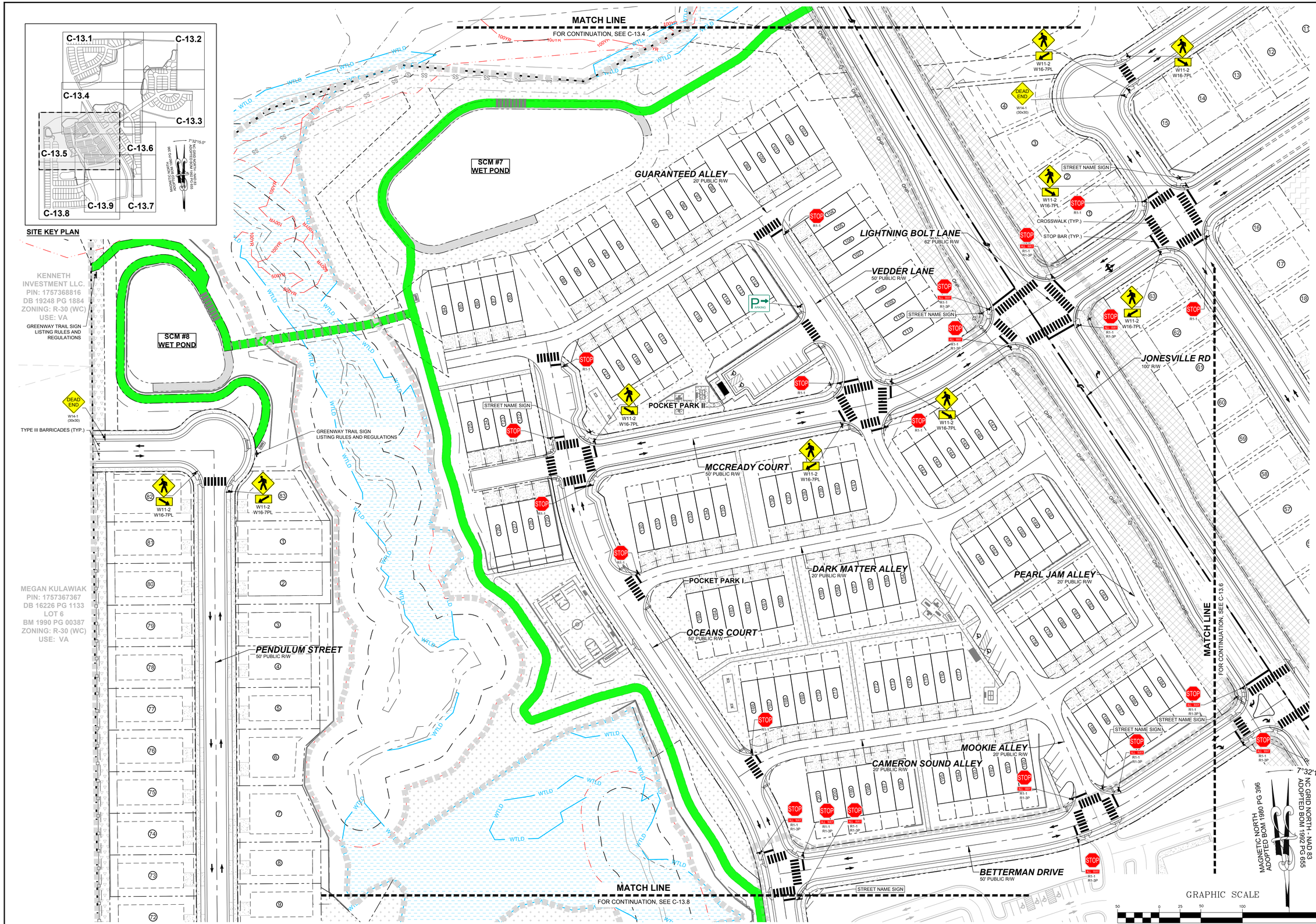
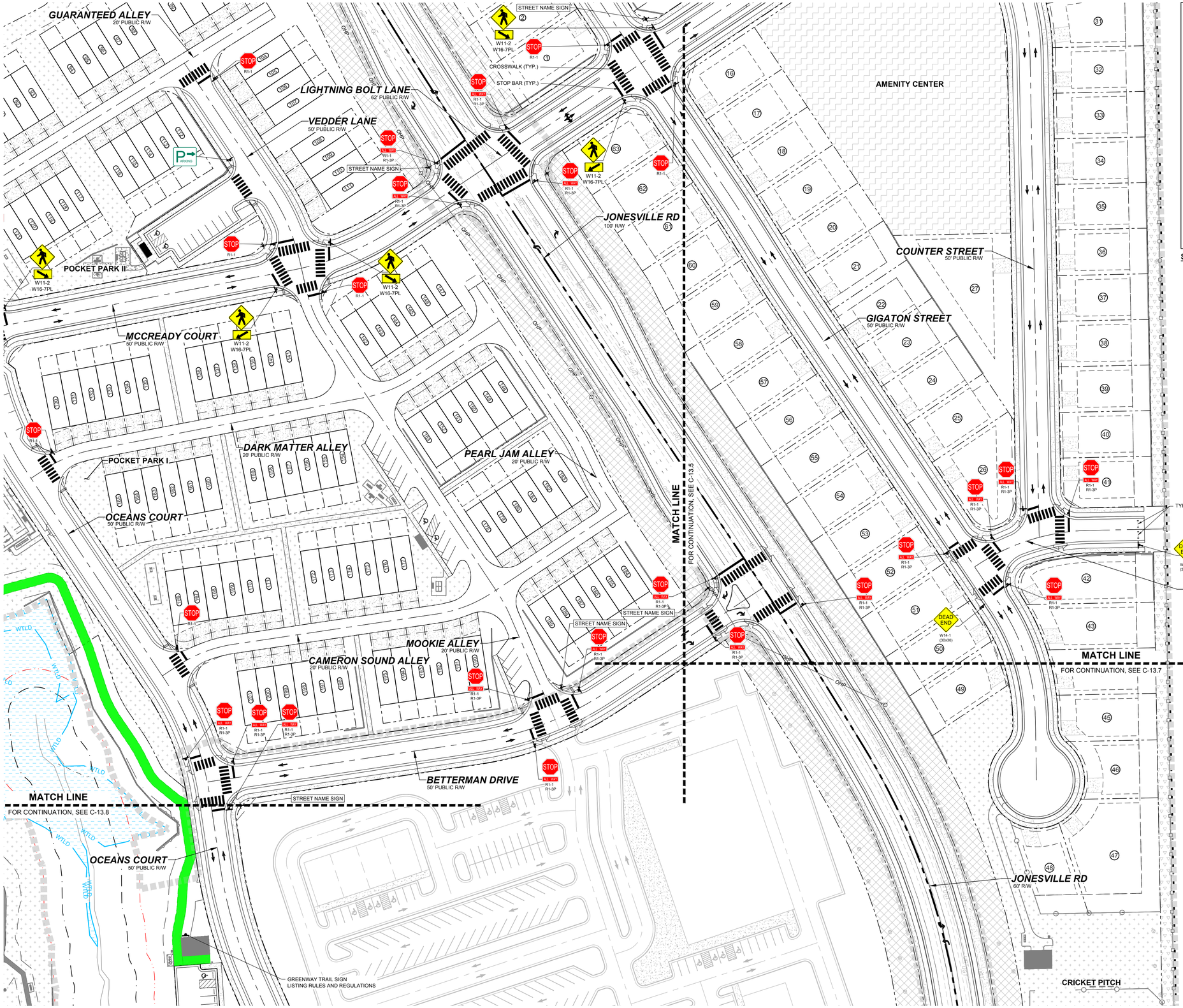
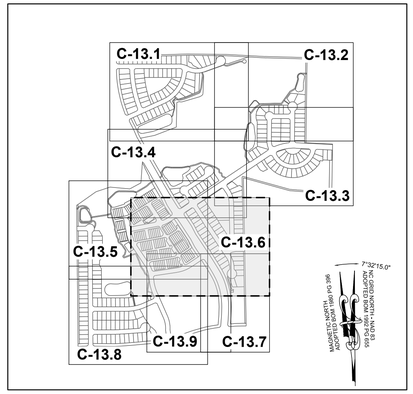

MATCH LINE
FOR CONTINUATION, SEE C-13.4
SITE KEY PLAN
C-13.1
C-13.2
C-13.3
C-13.4
C-13.5
C-13.6
C-13.7
C-13.8
C-13.9
SCM #7 WET POND
SCM #8 WET POND
GUARANTEED ALLEY
20' PUBLIC R/W
LIGHTNING BOLT LANE
62' PUBLIC R/W
VEDDER LANE
50' PUBLIC R/W
JONESVILLE RD
100' R/W
POCKET PARK II
POCKET PARK I
MCCREADY COURT
50' PUBLIC R/W
DARK MATTER ALLEY
20' PUBLIC R/W
PEARL JAM ALLEY
20' PUBLIC R/W
OCEANS COURT
50' PUBLIC R/W
PENDULUM STREET
50' PUBLIC R/W
MOOKIE ALLEY
20' PUBLIC R/W
CAMERON SOUND ALLEY
20' PUBLIC R/W
BETTERMAN DRIVE
50' PUBLIC R/W
KENNETH INVESTMENT LLC.
PIN: 1757368816
DB 19248 PG 1884
ZONING: R-30 (WC)
USE: VA
MEGAN KULAWIAK
PIN: 1757367367
DB 16226 PG 1133
LOT 6
BM 1990 PG 00387
ZONING: R-30 (WC)
USE: VA
GREENWAY TRAIL SIGN LISTING RULES AND REGULATIONS
TYPE III BARRICADES (TYP.)
DEAD END
W14-1 (30x30)
W11-2 W16-7PL
STREET NAME SIGN
CROSSWALK (TYP.)
STOP BAR (TYP.)
STOP R1-1
R1-1 R1-3P
R1-1 R1-3B
R1-1 R1-3P
R1-1 R1-3P
R1-1 R1-3P





SITE KEY PLAN

No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE CID-24-04 V2	11/01/2024	SREG
03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

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STRONG ROCK PROJECT	PSP-23-03
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DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

PARTIAL SIGNAGE & PAVEMENT MARKING PLAN VI

DRAWING SHEET
C-13.6

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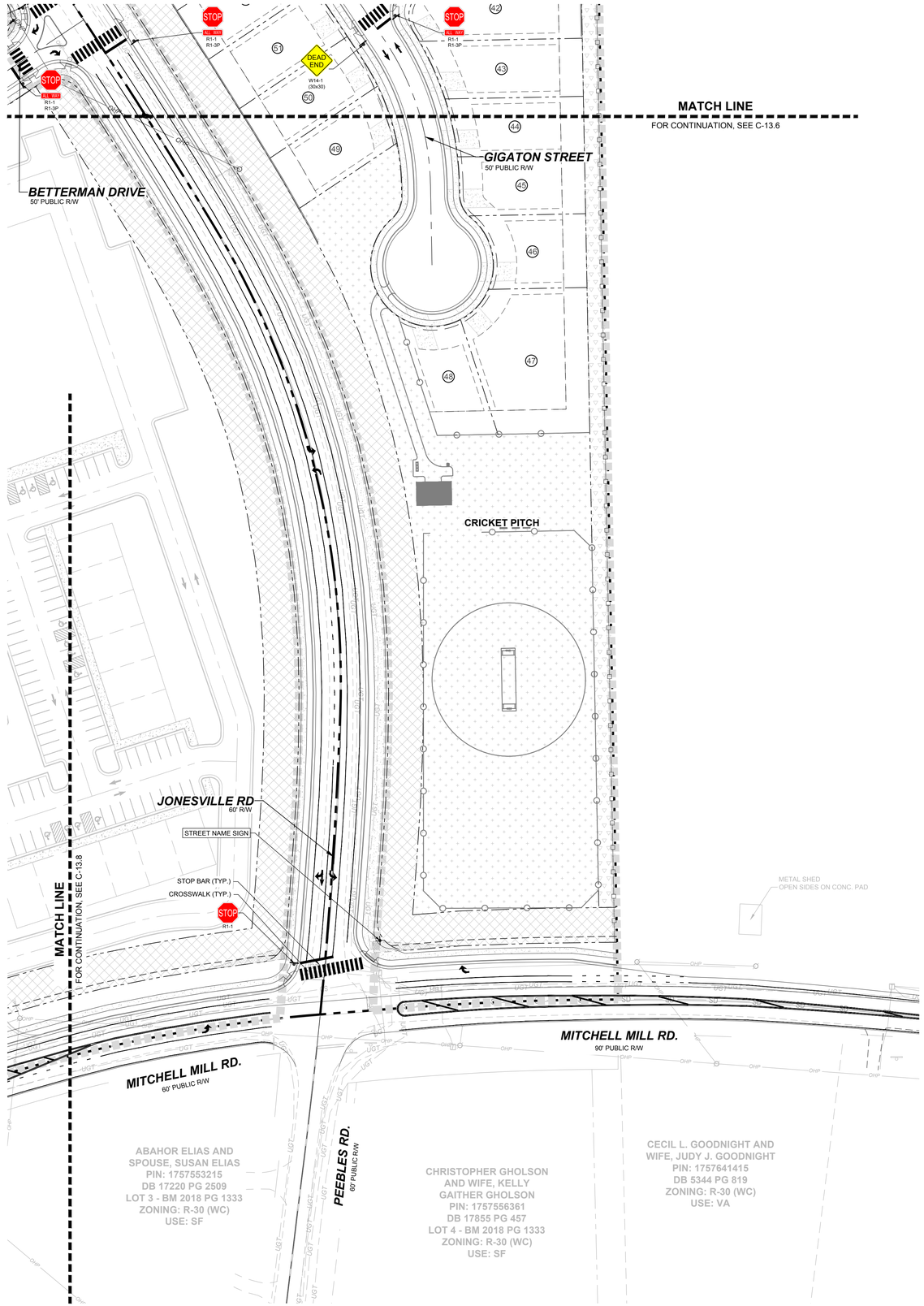
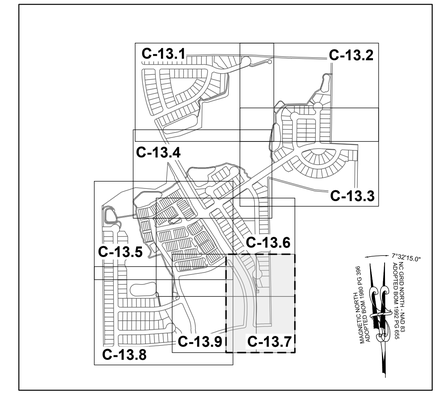
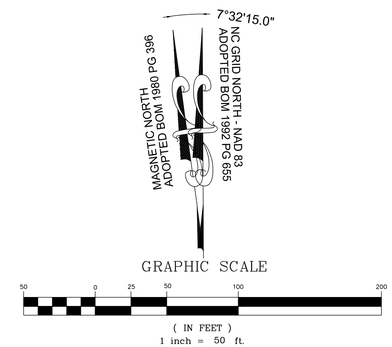




SITE KEY PLAN



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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

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SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

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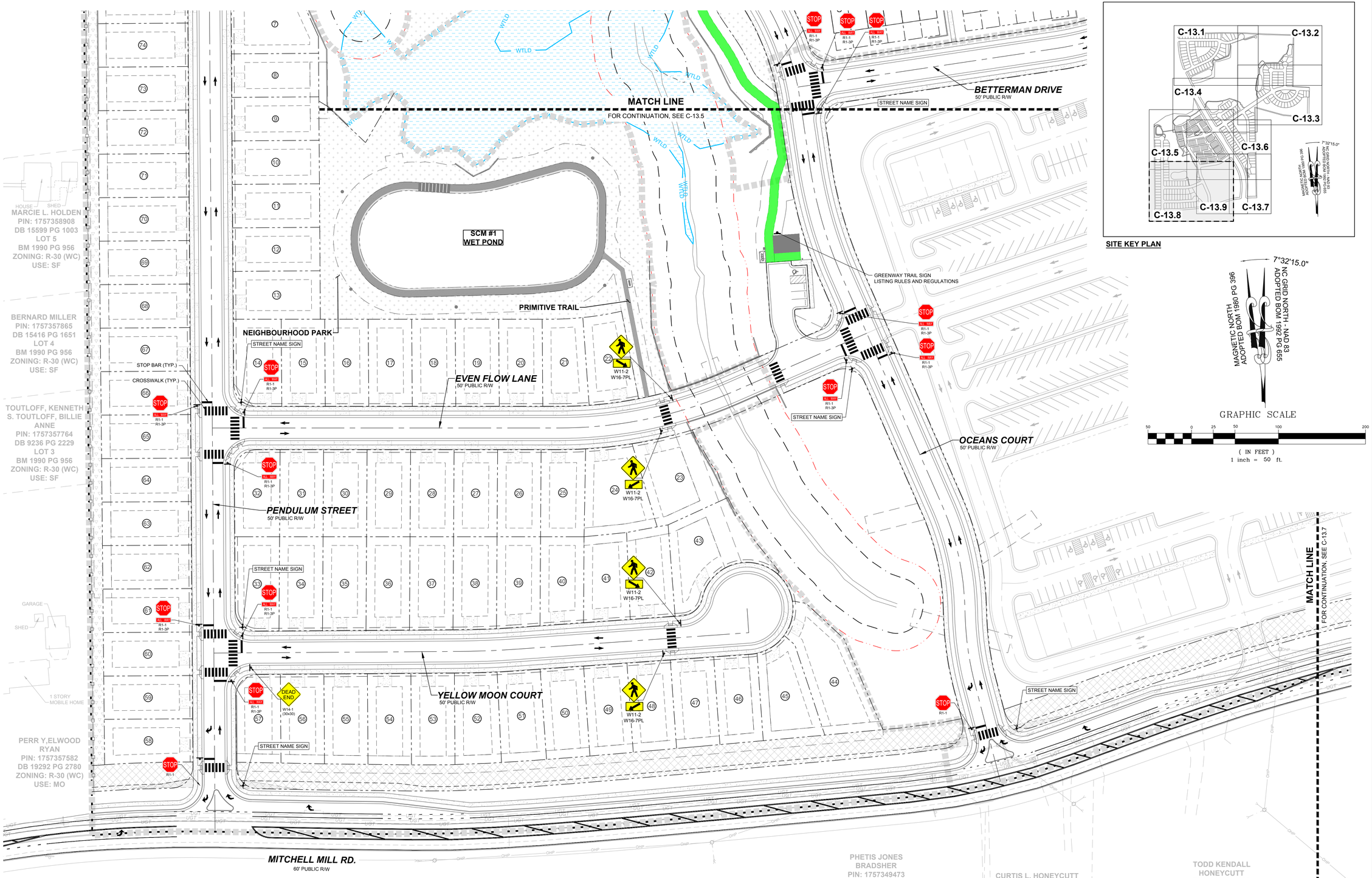
CONSTRUCTION PLANS

PARTIAL SIGNAGE & PAVEMENT MARKING PLAN VII

DRAWING
SHEET

C-13.7



SITE KEY PLAN

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

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DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

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CONSTRUCTION PLANS

PARTIAL SIGNAGE & PAVEMENT MARKING PLAN VIII

DRAWING
SHEET

C-13.8

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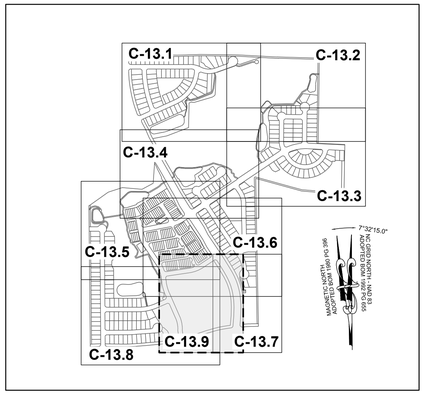
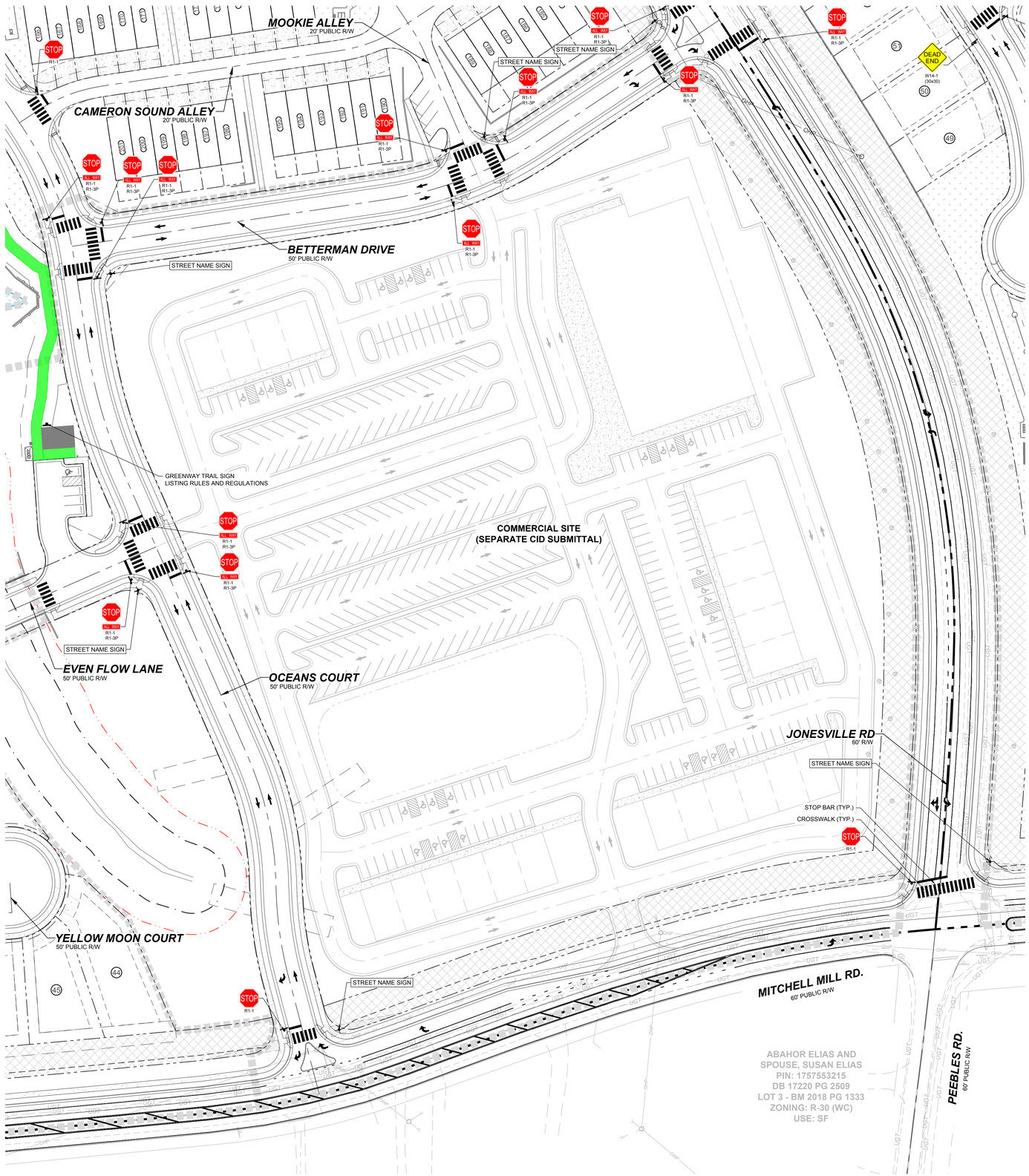
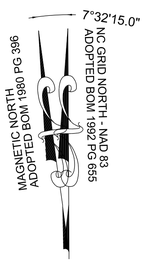


SITE KEY PLAN





GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

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STRONG ROCK PROJECT
PSP-23-03

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SCALE: AS SHOWN
DESIGNED BY: SRG
DRAWN BY: SRG
CHECKED BY: SRG

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CONSTRUCTION PLANS

PARTIAL SIGNAGE & PAVEMENT MARKING PLAN IX

DRAWING
SHEET

C-13.9

Humboldt™

HUMBOLDT SAWMILL
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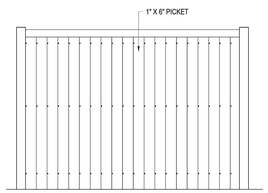
SANTA ROSA, CA 95403
www.getredwood.com

☑ SELECT DESIRED STYLE:
- ☐ DOG-EAR
- ☐ FLAT-TOP (SHOWN)

☑ SELECT DESIRED SIZE:
- ☐ 1" X 4"
- ☐ 1" X 6" (SHOWN)
- ☐ 1" X 8"
- ☐ 1" X 10"
- ☐ 1" X 12"

☑ SELECT DESIRED GRADE:
- ☐ CONSTRUCTION COMMON (PREMIUM)
- ☐ CONSTRUCTION HEART
- ☐ CLEAR RIDGE & VALLEY



FRONT VIEW

SPECIFICATIONS
FINISH CHARACTERISTICS: ROUGH
NOTES:
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2. DO NOT SCALE DRAWING.
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5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 5348-029

1 / D-1.0 REDWOOD FENCING

REDWOOD FENCING: 1" X 6" FENCE PICKET FLAT-TOP

5348-029 — REVISION DATE 07/09/2021

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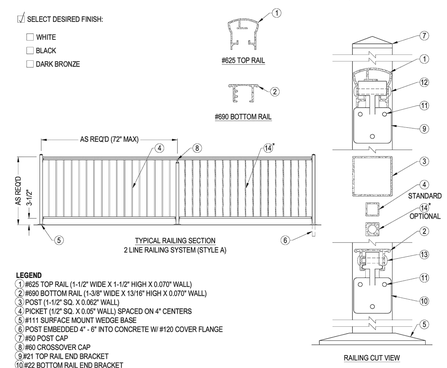
☑ SELECT DESIRED FINISH:
- ☐ WHITE
- ☐ BLACK
- ☐ DARK BRONZE



TYPICAL RAILING SECTION
2 LINE RAILING SYSTEM (STYLE A)

RAILING CUT VIEW

LEGEND
1. #625 TOP RAIL (1-1/2" WIDE X 1-1/2" HIGH X 0.070" WALL)
2. #690 BOTTOM RAIL (1-3/8" WIDE X 13/16" HIGH X 0.070" WALL)
3. POST (1-1/2" SQ. X 0.062" WALL)
4. PICKET (1/2" SQ. X 0.05" WALL) SPACED ON 4" CENTERS
5. #111 SURFACE MOUNT WEDGE BASE
6. POST EMBEDDED 4" - 6" INTO CONCRETE W/ #120 COVER FLANGE
7. #50 POST CAP
8. #60 CROSSOVER CAP
9. #21 TOP RAIL END BRACKET
10. #22 BOTTOM RAIL END BRACKET
11. #452 POST BRACKET RIVET (1/8")
12. #612 TOP RAIL BRACKET BINDER BOLT (13/64")
13. #613 BOTTOM RAIL BRACKET BINDER BOLT (13/64")
14. TWISTED PICKET (1/2" SQ. X 0.094" WALL) SPACED ON 4" CENTERS

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5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 5311-010

2 / D-1.0 ECONOMY PICKET RAILING

SERIES 6E: 2 LINE RAILING SYSTEM (STYLE A)

5311-010 — REVISION DATE 26/07/2022

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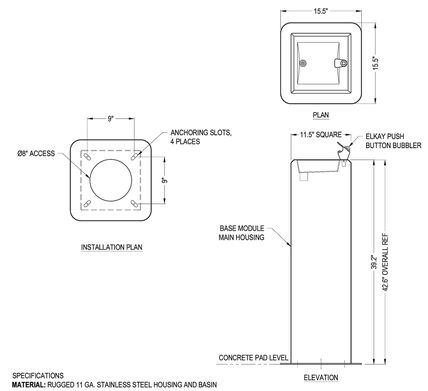
www.knillcustomfab.com



SPECIFICATIONS
MATERIAL: RUGGED 11 GA. STAINLESS STEEL HOUSING AND BASIN
MANUFACTURERS NOTES:
1. KNILL FABRICATION LTD. MAINTAINS A POLICY OF CONTINUOUS PRODUCT IMPROVEMENT. AS A RESULT, SOME DETAILS MAY CHANGE WITHOUT NOTICE.

NOTES:
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5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 5436-073.

3 / D-1.0 DRINKING FOUNTAINS AND BOTTLE FILLING STATIONS

(350000) DRINKING FOUNTAIN, SINGLE BASIN

5436-073 — REVISION DATE 15/08/2022

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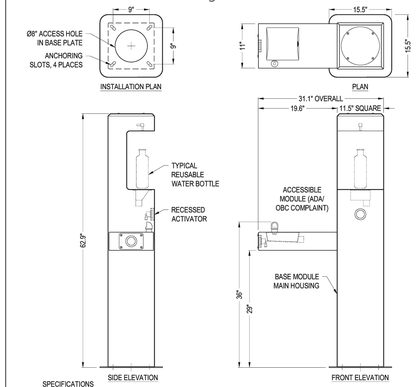

SPECIFICATIONS
MATERIAL: RUGGED 11 GA. STAINLESS STEEL HOUSING WITH POLYESTER POWDER TOP COAT
MANUFACTURERS NOTES:
1. KNILL FABRICATION LTD. MAINTAINS A POLICY OF CONTINUOUS PRODUCT IMPROVEMENT. AS A RESULT, SOME DETAILS MAY CHANGE WITHOUT NOTICE.

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3.1 / D-1.0 DRINKING FOUNTAINS AND BOTTLE FILLING STATIONS

(350040) "THE ATHABASCA" - BOTTLE FILLING STATION, WITH ACCESSIBLE DRINKING MODULE

5436-077 — REVISION DATE 15/08/2022

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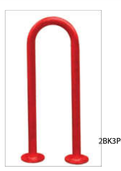
Fax: (828) 693-8777 • www.leisurecraftinc.com • sales@leisurecraftinc.com

SPEC SHEET: 2BK3P-IG

14 3/4" THERMOPLASTIC WAVE RACK 2 3/8" DIA *in-ground* **Wt. 87 lbs**

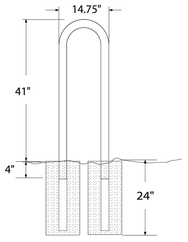
photo



2BK3P-SM FOR SHOW ONLY

top view

front view



4 / D-1.0

Fibar

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ARMONK, NY 10504
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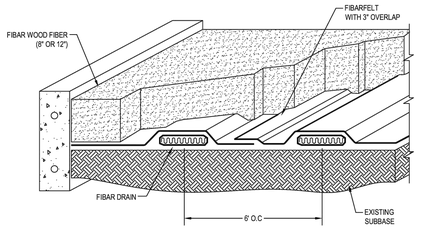
FAX: (914) 273-8659
www.fibar.com



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5 / D-1.0 ENGINEERED WOOD FIBER PLAYGROUND SAFETY SURFACING

SYSTEM 300, N.T.S.

312-005 — REVISION DATE 21/06/2024

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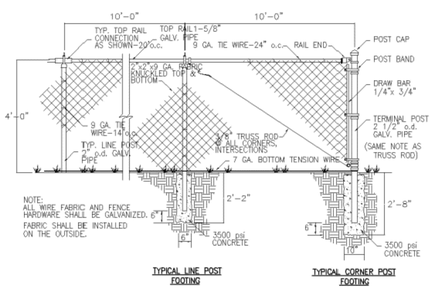
C



6 / D-1.0 FENCING

4' CHAIN LINK FENCE

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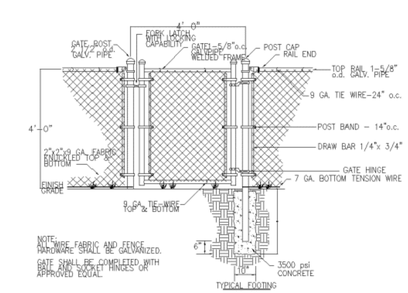

7 / D-1.0 FENCING

4' CHAIN LINK GATE

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305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609

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DRAWN BY	SRG
CHECKED BY	SRG

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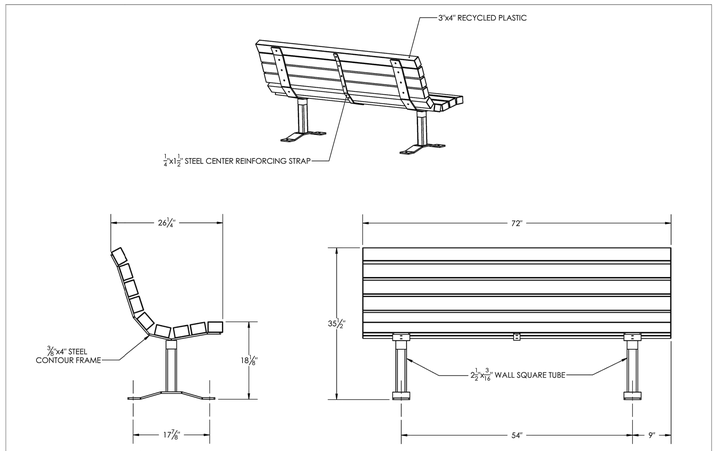
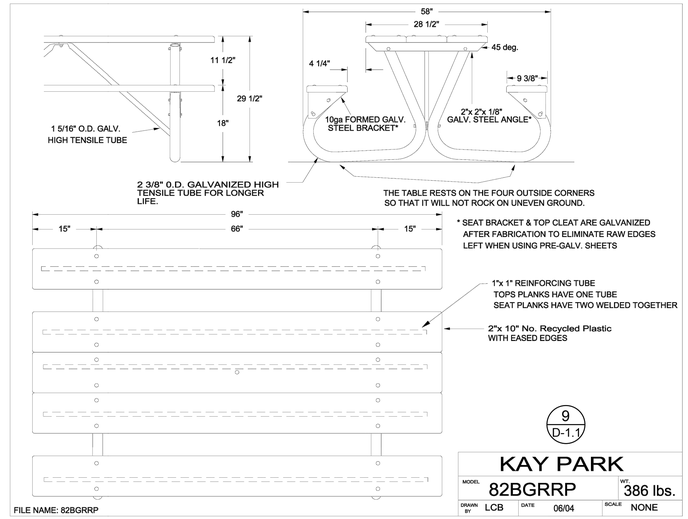
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

AMENITIES DETAILS

DRAWING SHEET
D-1.0



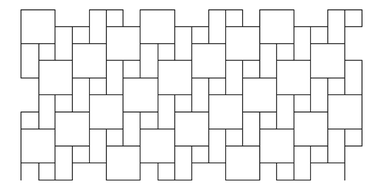
Sheet 1 of 1	Initials	Date	Spec Drawing	Model #: 6CB3RP	Kay Park-Rec Corp.
Drawn by	BGS	6/5/2014	Description: 6' 3"x4" SURFACE MOUNT COUTOUR BENCH		1301 Pine Street Janesville, IA 50647 1-800-553-2476 WWW.KAYPARK.COM
Note:	This drawing and all information contained herin is the property of Kay Park Rec, and is not to be reproduced without express written permission. Kay Park Rec. assumes no responsibility for unauthorized use of this drawing.		Material: COATED STEEL, RECYCLED PLASTIC Weight: 224 lbs	8 D-1.1	



FILE NAME: 82BGRRP

KAY PARK		
MODEL 82BGRRP		WT. 386 lbs.
DRAWN BY LCB	DATE 06/04	SCALE NONE

PATTERN PAVING PRODUCTS
1750 HWY 160 WEST, SUITE 101-222
FORT MILL, SC 29708
TOLL FREE: 1-888-434-8611
PHONE: (704) 996-7248
FAX: (215) 893-4827
www.patternpaving.com



PLAN VIEW

5' X 10' ASPHALT CABLE STAMPING TEMPLATE
BRICK SIZES ARE 6" X 6" TO 12" X 12" (15.25CM X 15.25CM TO 30.50CM X 30.50CM)
PATTERN IS WOVEN TILE WITH 3/8" (.75CM) MORTAR

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. ALL DIMENSIONS ARE CONSIDERED TRUE AND REFLECT MANUFACTURER'S SPECIFICATIONS.
3. DO NOT SCALE DRAWING.
4. THESE DRAWINGS ARE NOT FOR CONSTRUCTION PURPOSES AND ARE FOR INFORMATION PURPOSES ONLY. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 4728-008.

10 D-1.1 CABLE PATTERNS
STAMPED ASPHALT: HAMPTON TILE

4728-008 REVISION DATE 05/16/2012

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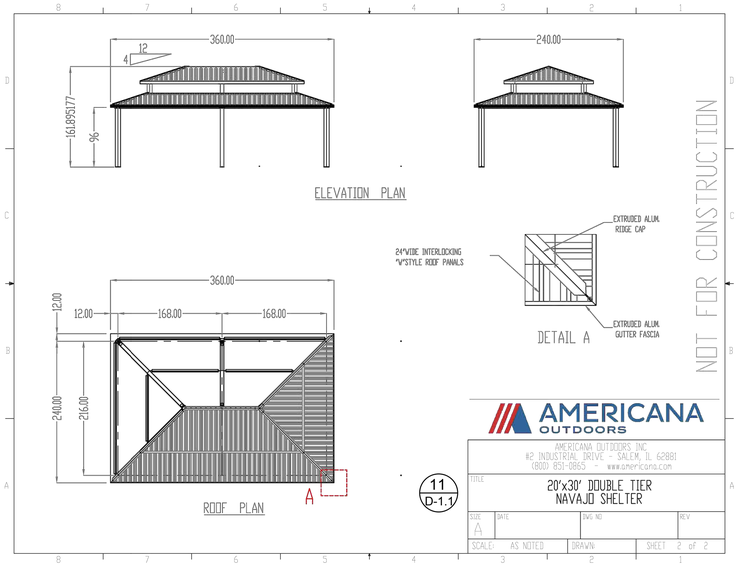
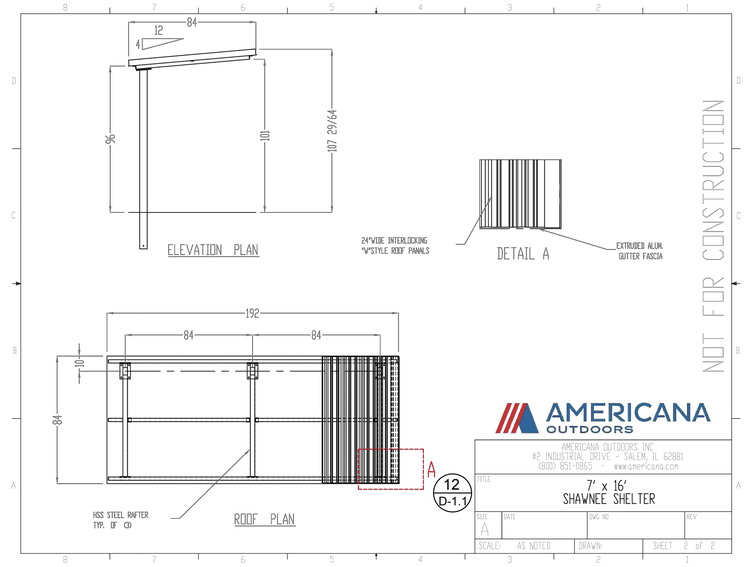


AMERICANA OUTDOORS
AMERICANA OUTDOORS INC.
#2 INDUSTRIAL DRIVE - SALEM, IL 62881
(800) 851-0865 - www.americana.com

11 D-1.1

TITLE 20'x30' DOUBLE TIER NAVAJO SHELTER		
SIZE A	DATE	DWG NO	REV
SCALE: AS NOTED	DRAWN:	SHEET 2 OF 2



AMERICANA OUTDOORS
AMERICANA OUTDOORS INC.
#2 INDUSTRIAL DRIVE - SALEM, IL 62881
(800) 851-0865 - www.americana.com

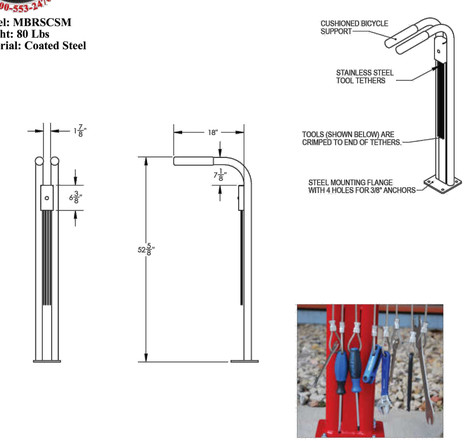
12 D-1.1

TITLE 7' x 16' SHAWNEE SHELTER		
SIZE A	DATE	DWG NO	REV
SCALE: AS NOTED	DRAWN:	SHEET 2 OF 2

WWW.KAYPARK.COM
1-800-553-2476

Model: MBRSCSM
Weight: 80 Lbs
Material: Coated Steel

MADRAX DIVISION
GRABER MANUFACTURING, INC.
1080 UNIEK DRIVE
WAUNAKEE, WI 53597
P(800) 448-7931, P(608) 849-1080, F(608) 849-1081
WWW.MADRAX.COM, E-MAIL: SALES@MADRAX.COM



PRODUCT: BRS-NP
DESCRIPTION: RepairSTAN' TM, BICYCLE REPAIR STAND, WITH REPAIR TOOLS

DATE: 10-5-16
ENG: SMC

INCLUDED TOOL LIST:
1. PHILIPS SCREWDRIVER
2. STRAIGHT SCREWDRIVER
3. 2.5, 3, 4, 5, 6, 8MM ALLEN WRENCHES
4. HEADSET WRENCH
5. PEDAL WRENCH
6. 8, 9, 10, 11MM OPEN WRENCHES
7. TIRE LEVER (1)
8. ADJUSTABLE WRENCH

NOTES:
1. INSTALL BIKE RACKS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. CONSULTANT TO SELECT COLOR (FINISH), SEE MANUFACTURER'S SPECIFICATIONS.
3. SEE SITE PLAN FOR LOCATION OR CONSULT OWNER.

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Kay Park Recreation
Making People Places, People Friendly Since 1954!
Email us: sales@kaypark.com or Call us: (800)553-2476
1301 Pine St. Janesville, IA 50647

13 D-1.1

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No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE C/D-24-04 V2	11/01/2024	SREG
03	TOWN OF ROLESVILLE C/D-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE C/D-24-04 V4	06/02/2025	SREG

SEAL:

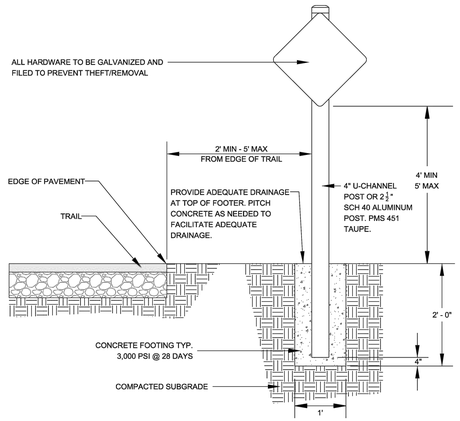
STRONGROCK ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	PSP-23-03
	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
AMENITIES DETAILS

DRAWING SHEET
D-1.1

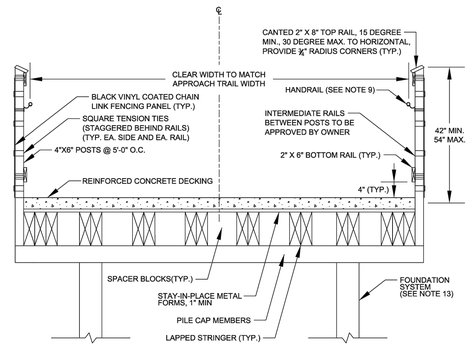


14 D-1.2 TYPICAL TRAIL SIGN INSTALLATION

NOTE:
1. SMALLER SCALE SIGNS OR PLAQUES MAY BE USED FOR GREENWAY TRAIL APPLICATIONS.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 12/2022	NOT TO SCALE
	TYPICAL TRAIL SIGN INSTALLATION	
	GW-40.01	

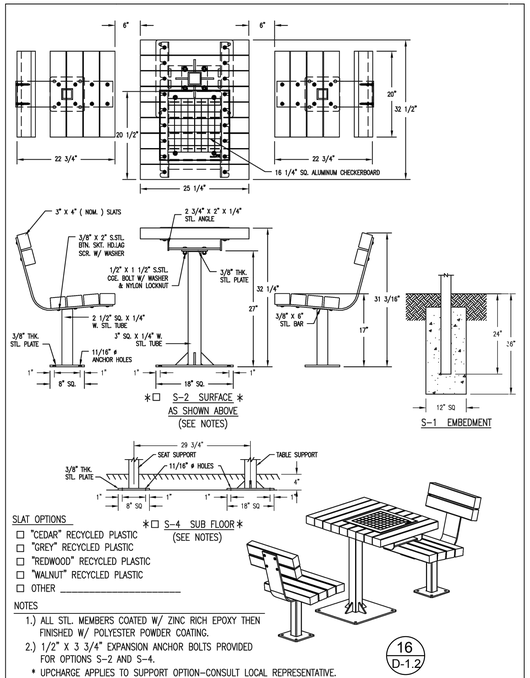


15 D-1.2 TYPICAL BOARDWALK SECTION

NOTES:
1. BOARDWALK DECK IS TO BE CAST-IN-PLACE REINFORCED CONCRETE WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
2. THE REINFORCING STEEL IN THE CAST-IN-PLACE CONCRETE BOARDWALK DECK SHALL BE EPOXY COATED GRADE 60.
3. CONCRETE DECKING CROSS SLOPE SHALL MATCH CROSS SLOPE OF TRAIL ON BOTH APPROACHES TO FACILITATE POSITIVE DRAINAGE AND PREVENT PONDING.
4. STAY-IN-PLACE METAL FORMS SHALL BE PROVIDED TO FACILITATE REINFORCED CONCRETE DECK CONSTRUCTION.
5. STAY-IN-PLACE METAL FORMS SHALL BE ATTACHED TO LONGITUDINAL TIMBER JOISTS USING AN APPROVED METHOD. ALL SCREWS AND OTHER HARDWARE USED SHALL BE GALVANIZED.
6. ALL OTHER HARDWARE (NUTS, WASHERS, BOLTS, ETC.) SHALL BE HOT DIPPED GALVANIZED PER ASTM A153.
7. TOP RAIL AND OTHER CONNECTIONS SHALL BE MADE WITH WOOD SCREW; NAILED CONNECTIONS WILL NOT BE ACCEPTABLE.
8. THE MINIMUM HEIGHT OF BRIDGE/BOARDWALK RAILING SHALL BE 42", UNLESS OTHERWISE NOTED. THE HEIGHT CAN RANGE BETWEEN 42", 48", OR 54".
9. A GRIP-ABLE, ROUND RAIL THAT WILL ACT AS BOTH A RUB RAIL AND HANDRAIL SHALL ONLY BE REQUIRED WHEN GRADES ARE GREATER THAN 5%. REFER TO DETAIL GW-30.04 FOR BRIDGE OR BOARDWALK RUB RAIL/HANDRAIL ATTACHMENT.
10. BLACK VINYL COATED CHAIN LINK FENCE AND TENSION TIES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
11. ALL TIMBER BOARDWALK COMPONENTS AND REINFORCED CONCRETE DECK SHALL DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF THE AASHTO LRFD GUIDE SPECIFICATIONS FOR PEDESTRIAN BRIDGES.
12. SPAN LENGTHS, JOIST SPACING, SIZING OF MEMBERS, REINFORCED CONCRETE DECK, AND OTHER DESIGN SPECIFICS SHALL BE DETERMINED BY THE ENGINEER ON A PROJECT SPECIFIC BASIS.
13. FOUNDATION SHALL CONSIST OF DRIVEN PILES, AUGURED PILES, HELICAL PIERS, OR OTHER APPLIED FOUNDATION SYSTEM. SPECIFICS SUCH AS NUMBER OF PILES, SPACING, AND HEIGHT SHALL BE DETERMINED BY ENGINEER ON A PROJECT SPECIFIC BASIS BASED ON REQUIRED LOADING.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 12/2022	NOT TO SCALE
	TYPICAL BOARDWALK SECTION	
	GW-30.01	



SLAT OPTIONS
- ☐ "CEDAR" RECYCLED PLASTIC
- ☐ "GREY" RECYCLED PLASTIC
- ☐ "REDWOOD" RECYCLED PLASTIC
- ☐ "WALNUT" RECYCLED PLASTIC
- ☐ OTHER _____

NOTES
1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
2.) 1/2" X 3 3/4" EXPANSION ANCHOR BOLTS PROVIDED FOR OPTIONS S-2 AND S-4.
* UPCHARGE APPLIES TO SUPPORT OPTION-CONSULT LOCAL REPRESENTATIVE.

16 D-1.2

DuMor, inc.	GAME TABLE	DATE DRAWN : 10/09/19 DRAWN BY : ESS DATE REV. : REV. BY :	REV. A	DRAWING NUMBER 78-32ADAPL	SHEET 1 OF 2

NOTES:
1.) DURING ASSEMBLY PROCEDURE: DO NOT COMPLETELY TIGHTEN HARDWARE.
2.) THE ACTUAL PARTS WILL NOT BE NUMBERED. NUMBERS ONLY APPLY TO DRAWING.
3.) UPON COMPLETION OF ASSEMBLY SQUARE ALL COMPONENTS THEN TIGHTEN ALL HARDWARE.
4.) MOUNT AND ANCHOR AS SPECIFIED.

TOOLS REQ'D
3/4" WRENCH
1/4" ALLEN WRENCH
1/2" MASONRY DRILL BIT
DRILL

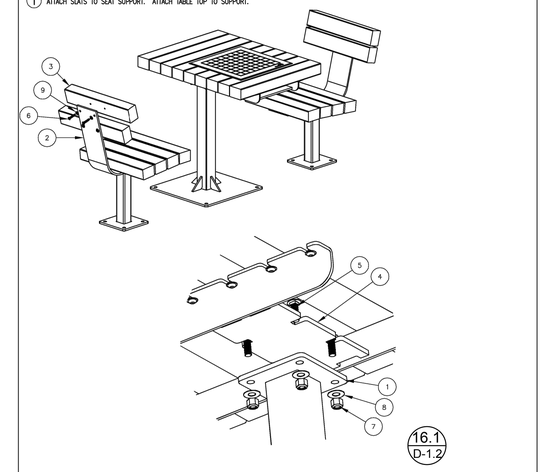
PARTS LIST FOR S-2

ITEM	QTY	PART NO	DESCRIPTION
1	1	0-78-00-01ADA/2	TABLE SUPPORT FOR SURFACE MOUNT, ADA
2	3	0-78-00-02/S-2	SEAT SUPPORT FOR SURFACE MOUNT
3	18	0-78-00PL-04	3" X 4" X 20" SLAT, PLASTIC
4	1	0-78-30ADAPL	TABLE TOP ASSEMBLY W/ CHECKERBOARD, PLASTIC
5	4	1-11-042	1/2" X 1 1/2" SS CGE BOLT
6	24	1-13-016	3/8" X 2" SS BTN SKT HD LAG SCR
7	4	1-20-015	1/2" SS NYLON LOCKNUT
8	4	1-22-015	1/2" SS FLAT WASHER
9	24	1-22-024	3/8" SS FLAT WASHER

KITS PROVIDED FOR S-2

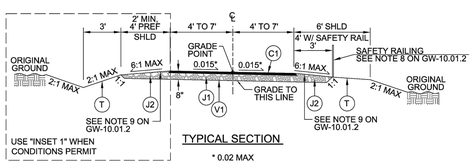
ITEM	QTY	PART NO	DESCRIPTION
10	3	K-ANCOB60-4	1/2" X 3 3/4" SS ANCHOR KIT (4PC)
11	1	K-BL0632-24	3/8" LAG HARDWARE KIT (24PC)
12	1	K-CGOB24-4L	1/2" CGE BOLT HARDWARE KIT (4)

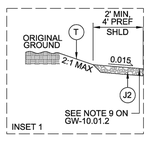
1 ATTACH SLATS TO SEAT SUPPORT. ATTACH TABLE TOP TO SUPPORT.



16.1 D-1.2

DuMor, inc.	ASSEMBLY INSTRUCTIONS	DATE DRAWN : 10/09/19 DRAWN BY : ESS DATE REV. : REV. BY :	REV. A	DRAWING NUMBER 78-32ADAPL	SHEET 2 OF 2





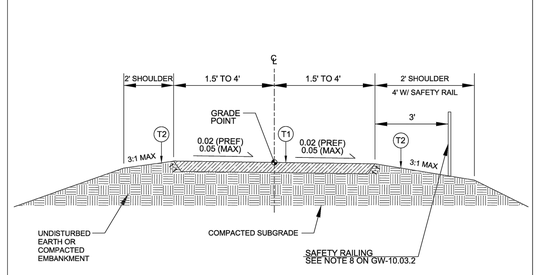
17 D-1.2 ASPHALT TYPICAL TRAIL SECTION VARIABLE WIDTH (8' MIN, 14' MAX)

PAVEMENT SCHEDULE	
C1	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 220 LBS. PER SQ. YD. OR 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
J1	6" AGGREGATE BASE COURSE
J2	VARIABLE DEPTH AGGREGATE BASE COURSE
T	EARTH MATERIAL
V1	GEOTEXTILE FOR PAVEMENT STABILIZATION

SHEET 1 OF 2

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 12/2022	NOT TO SCALE
	ASPHALT TYPICAL TRAIL SECTION VARIABLE WIDTH (8' MIN, 14' MAX)	
	GW-10.01.1	



18 D-1.2 UNPAVED TRAIL

PAVEMENT SCHEDULE	
T1	3" COMPACTED MATERIAL (SEE NOTE 2 ON GW-10.03.2)
T2	EARTH MATERIAL

SHEET 1 OF 2

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 12/2022	NOT TO SCALE
	UNPAVED TRAIL	
	GW-10.03.1	

NOTES:
1.) DURING ASSEMBLY PROCEDURE: DO NOT COMPLETELY TIGHTEN HARDWARE.
2.) THE ACTUAL PARTS WILL NOT BE NUMBERED. NUMBERS ONLY APPLY TO DRAWING.
3.) UPON COMPLETION OF ASSEMBLY SQUARE ALL COMPONENTS THEN TIGHTEN ALL HARDWARE.
4.) MOUNT AND ANCHOR AS SPECIFIED.

TOOLS REQ'D
3/4" WRENCH
1/4" ALLEN WRENCH
1/2" MASONRY DRILL BIT
DRILL

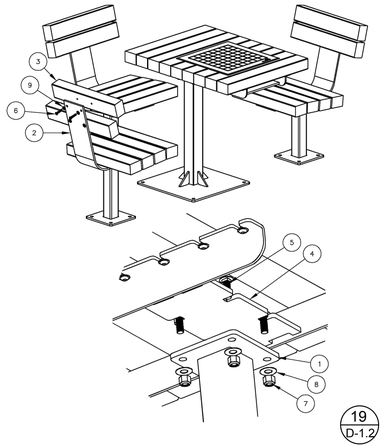
PARTS LIST FOR S-2

ITEM	QTY	PART NO	DESCRIPTION
1	1	0-78-00-01ADA/2	TABLE SUPPORT FOR SURFACE MOUNT, ADA
2	3	0-78-00-02/S-2	SEAT SUPPORT FOR SURFACE MOUNT
3	36	0-78-00PL-04	3" X 4" X 20" SLAT, PLASTIC
4	1	0-78-30ADAPL	TABLE TOP ASSEMBLY W/ CHECKERBOARD, PLASTIC
5	4	1-11-042	1/2" X 1 1/2" SS CGE BOLT
6	36	1-13-016	3/8" X 2" SS BTN SKT HD LAG SCR
7	4	1-20-015	1/2" SS NYLON LOCKNUT
8	4	1-22-015	1/2" SS FLAT WASHER
9	36	1-22-024	3/8" SS FLAT WASHER

KITS PROVIDED FOR S-2

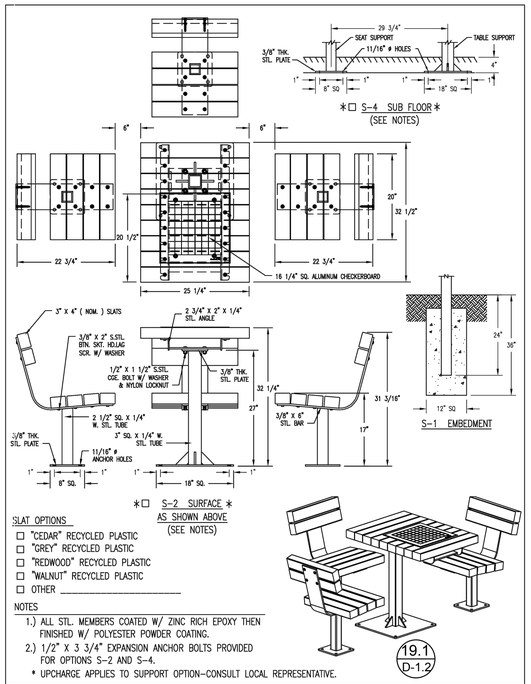
ITEM	QTY	PART NO	DESCRIPTION
10	4	K-ANCOB60-4	1/2" X 3 3/4" SS ANCHOR KIT (4PC)
11	2	K-BL0632-18	3/8" LAG HARDWARE KIT (18PC)
12	1	K-CGOB24-4L	1/2" CGE BOLT HARDWARE KIT (4)

1 ATTACH SLATS TO SEAT SUPPORT. ATTACH TABLE TOP TO SUPPORT.



19 D-1.2

DuMor, inc.	ASSEMBLY INSTRUCTIONS	DATE DRAWN : 10/08/19 DRAWN BY : ESS DATE REV. : REV. BY :	REV. A	DRAWING NUMBER 78-33ADAPL	SHEET 2 OF 2



SLAT OPTIONS
- ☐ "CEDAR" RECYCLED PLASTIC
- ☐ "GREY" RECYCLED PLASTIC
- ☐ "REDWOOD" RECYCLED PLASTIC
- ☐ "WALNUT" RECYCLED PLASTIC
- ☐ OTHER _____

NOTES
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* UPCHARGE APPLIES TO SUPPORT OPTION-CONSULT LOCAL REPRESENTATIVE.

19.1 D-1.2

DuMor, inc.	GAME TABLE	DATE DRAWN : 10/08/19 DRAWN BY : ESS DATE REV. : REV. BY :	REV. A	DRAWING NUMBER 78-33ADAPL	SHEET 1 OF 2

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No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE CID-24-04 V2	11/01/2024	SREG
03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL:

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT PSP-23-03	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

AMENITIES DETAILS

DRAWING SHEET
D-1.2

510 OUTDOOR — cornilleau

7 mm — 60 mm — 10 YEARS GUARANTEE

Made in France

MAST TOP

PLAYGROUND
TALENTSPORT
COMP
MULTI - RESISTANT

USES

www.cornilleau.com

20 D-1.3

PRODUCT: Q-CH2

WEIGHT: 315 lbs. (CUSTOMER TO OPTLOAD IF OVER 6000 Lbs.)

QUANTITY: ___

CONCRETE COLOR: QUAIL HILL RED, NATURAL, MISSION WHITE, LATTE, HARVEST, FRENCH GREY, BURGAUDY, ADOBE TAUPE, CUSTOM COLOR

CONCRETE TEXTURE: CRAFTSMANS ETCH, ETRUSCA, COMBO

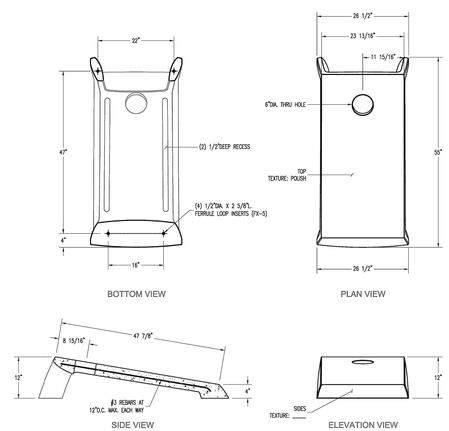
SEALER: STANDARD SEALER

21 D-1.3

Authorized Signature ____ Date ____

By signing above or stamping this drawing "approved" or "no exception taken" authorization to give to QCP to produce this drawing as shown within a 5/8" tolerance.

GENERAL PRODUCT NOTES:
E = EXPOSED FINISHED SURFACE
INSTALLATION IS REQUIRED BY OTHERS.
ALL EDGES TO BE EASED.
MANUFACTURING TOLERANCE ±1/4".



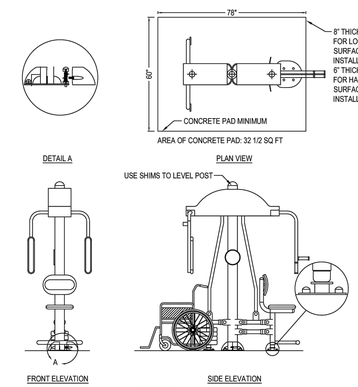
QCP — www.qcp-corp.com

PLAN TYPE	CONSTRUCTION PLAN	DATE 8/26/22	FILE NO. Q-CH2
PRODUCT	Q-CH2 | GAMING | CORNHOLE	SCALE 5/8" = 1'	DRAWN BY ----
PROJECT NAME		PC NO.	QQ ITEM NO.

SHEET ___ OF ___

Greenfields Outdoor Fitness — Promoting Wellness & Fighting Obesity One Community at a Time.™

GREENFIELDS OUTDOOR FITNESS
2617 W. WOODLAND DR.
ANAHEIM, CA 92801
PHONE: (888) 315-9037
EMAIL: info@greenfieldsfitness.com
www.greenfieldsfitness.com



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5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 4913-068.

22 D-1.3 LEGACY SERIES & SIGNATURE ACCESSIBLE
MODEL (SGR048EW) 2-PERSON COMBO BUTTERFLY & REVERSE FLY, CONFIGURATION A

4913-068 — REVISION DATE 17/05/2022

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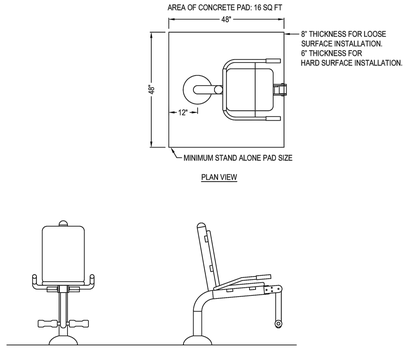

NOTES:
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2. DO NOT SCALE DRAWING.
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5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 4913-026.

23 D-1.3 LEGACY SERIES & SIGNATURE ACCESSIBLE
LEGACY SERIES: MODEL (SGR098) LEG EXTENSION

4913-026 — REVISION DATE 19/05/2022

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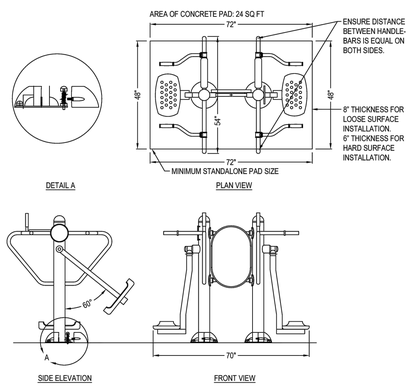

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24 D-1.3 LEGACY SERIES & SIGNATURE ACCESSIBLE
MODEL (SGR022) 4-PERSON PENDULUM, ABS & DIPS STATION

4913-006 — REVISION DATE 17/05/2022

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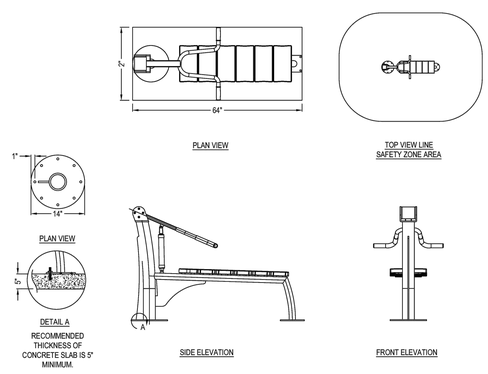

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5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 4913-048.

25 D-1.3 PROFESSIONAL SERIES
MODEL (UBX293) BENCH PRESS (ADJUSTABLE RESISTANCE)

4913-048 — REVISION DATE 17/05/2022

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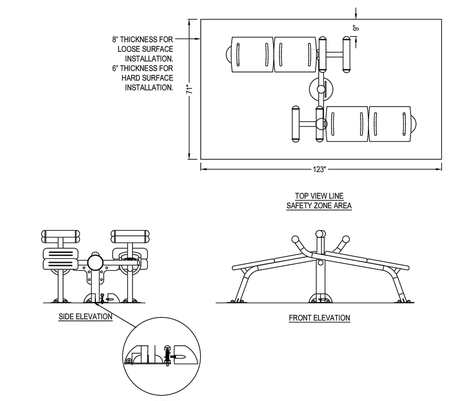

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5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 4913-004.

26 D-1.3 FUNCTIONAL FITNESS
MODEL (SGR019) 2-PERSON SIT-UP BENCH

4913-004 — REVISION DATE 17/05/2022

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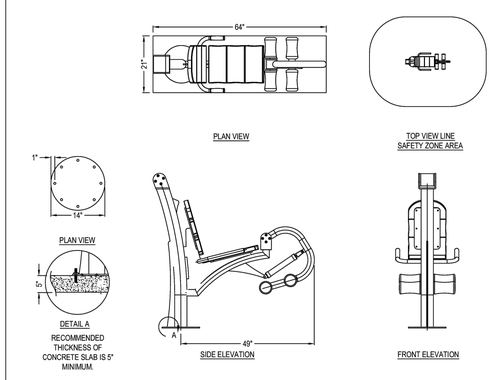

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27 D-1.3 PROFESSIONAL SERIES
MODEL (UBX298) LEG EXTENSION & CURL (ADJUSTABLE RESISTANCE)

4913-049 — REVISION DATE 19/05/2022

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No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE C/D-24-04 1/2	11/01/2024	SREG
03	TOWN OF ROLESVILLE C/D-24-04 1/3	02/01/2024	SREG
04	TOWN OF ROLESVILLE C/D-24-04 1/4	06/02/2025	SREG

SEAL:

STRONGROCK ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT PSP-23-03	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

AMENITIES DETAILS

DRAWING SHEET
D-1.3

THIS PLANSET AND ANY ASSOCIATED DOCUMENTS ARE PRELIMINARY AND NOT AUTHORIZED FOR CONSTRUCTION UNTIL SIGNED, DATED, AND OFFICIALLY RELEASED FOR CONSTRUCTION BY THE ENGINEER OF RECORD.

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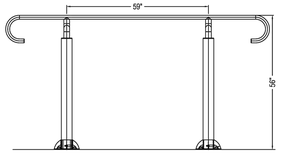
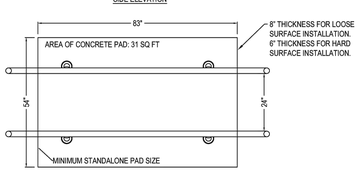


SIDE ELEVATION



PLAN VIEW

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28 / D-1.4 FUNCTIONAL FITNESS

MODEL (SGR043) PARALLEL BARS

4913-071 REVISION DATE 17/05/2022

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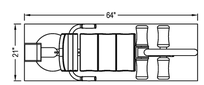
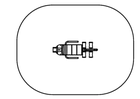


PLAN VIEW

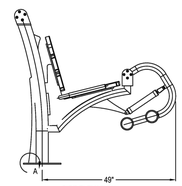


TOP VIEW LINE SAFETY ZONE AREA

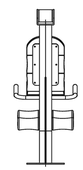
PLAN VIEW

DETAIL A

RECOMMENDED THICKNESS OF CONCRETE SLAB IS 5" MINIMUM.



SIDE ELEVATION



FRONT ELEVATION

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29 / D-1.4 PROFESSIONAL SERIES

MODEL (UBX298) LEG EXTENSION & CURL (ADJUSTABLE RESISTANCE)

4913-049 REVISION DATE 19/05/2022

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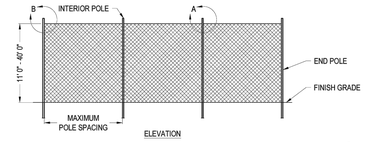
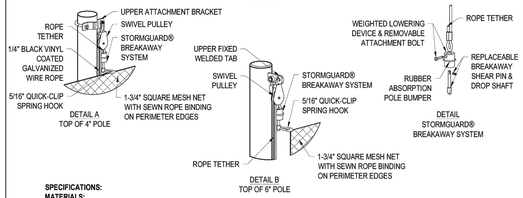
☑ SELECT DESIRED POLE SPACING:
☐ 20'
☐ 25'

☑ SELECT DESIRED NETTING:
☐ #36 KNOTTED BLACK NYLON
☐ ULTRA CROSS® KNOTLESS DYNEEMA®



ELEVATION



SPECIFICATIONS:
MATERIALS:
POLES: BLACK SUPER DURABLE POWDER COATED ALUMINUM OR STEEL POLES
- 12' TO 40' HEIGHTS COMMONLY USED FOR MULTI-SPORT APPLICATIONS
- PROFESSIONALLY PRE-ENGINEERED TO MEET ASCE 7-10 WIND RATING UP TO 105 MPH

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5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 5455-023.

30 / D-1.4 NETTING SYSTEMS

MULTI-SPORT NETTING: STORMGUARD BREAKAWAY BALL SAFETY SYSTEM NETTING

5455-023 REVISION DATE 01/03/2022

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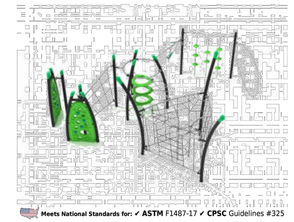
Twin Falls



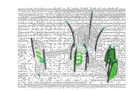
Meets National Standards for: ✓ ASTM F1487-17 ✓ CPSC Guidelines #325

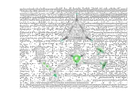
Product Description
Twin Falls is the ultimate climbing playground structure designed for endless hours of fun and adventure! With various climbing elements including net climbers, ladders, bridges, rock wall panels, and floating tunnels, children can explore and conquer their fears while developing their physical skills.
Twin Falls is designed with safety and durability in mind, constructed with high-quality materials that are built to last. The structure's engaging design, vibrant colors, and unique features like the floating tunnels will capture the imagination of children of all ages, encouraging them to spend more time outside and engage in physical activity.
Twin Falls is the perfect addition to any outdoor play area, like parks, schools, or community centers. It offers a challenging and exciting way for kids to develop their physical skills and build their confidence in a safe and supervised environment. Give your children the opportunity to discover the joys of outdoor play with the exciting and dynamic Twin Falls playground structure.

Product Specifications
Price: $24,456.[00]
Model Number: PGP031
Age Range: 5-12 years
Child Capacity: 28-36
Fall Height: 96"
Post Diameter: 4.5-inch
Product Type: Get Physical
Safety Zone: 40' 3" x 38' 9"

✓ ADA Compliant

Elevated	10 components
Ground Level	0 components





31 / D-1.4

Monterey

Meets National Standards for: ✓ ASTM F1487-17 ✓ CPSC Guidelines #325

Product Description
The Monterey play system is an awesome land of fun with excitement around every corner. It has a series of four-foot tall deck platforms which splits into an arched Sea Creature Climber with adorable ocean shapes, and an exciting Wave Slide. This way, kids will have quick routes to get up or down from that side of the structure. The sides of the other four-foot platforms are lined with fun activities, including a Ship's Wheel, Gear Panel, and Vertical PE Rock Climbing Wall. There is also a place where the deck diverges and leads up to a 66-inch platform. Here, they will find a humongous Spiral Slide that spins children around a full 360 degrees as they twirl towards the ground. This slide is sure to be the focal point of playgrounds everywhere. There is even an extension on the ground level with a Drum Panel and Car Panel.

Product Specifications
Price: $19,890.[00]
Model Number: PKP158
Age Range: 2-12 years
Child Capacity: 27-32
Fall Height: 66"
Post Diameter: 3.5-inch
Product Type: Spark
Safety Zone: 25' x 29' 7"

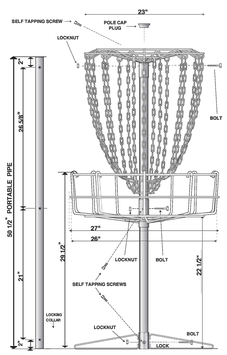
✓ ADA Compliant

Elevated	6 components
Ground Level	2 components

32 / D-1.4

DGA MACH 2™ PERMANENT DISC GOLF BASKET SPECIFICATION SHEET

The Mach II Permanent Disc Pole Hole disc golf basket is an excellent portable target for home, schools, colleges or any recreational setting. With the inground installation kit the Mach II is also perfect for entry level disc golf courses.



PORTABLE BASE - 3/8" steel rod, welded and hot-dipped galvanized. 6" Sleeve, bolt, nylon insert locknut and hex head tec screw.

PORTABLE BASE ASSEMBLY INSTRUCTIONS - Place the base on level ground and insert the short pole into the base with the swedged end facing up. Line up the pole's three bottom bolt holes with the three bolt holes on the base. Push a long bolt through both the base and pole bolt holes and tighten with a locking nut.

POLE (50 1/2" total length) - Two 1 1/2" I.D., 1 15/16" O.D. hot-dipped galvanized pipe, drilled. One long pole with cap, one swedged short pole

POLES - The short pole fits into the base with the swedged end facing up. The longer pole with the cap side up fits onto the short pole's swedged end.The bolt holes on both poles line up and attach with the basket.

TRAPPER BASKET ASSEMBLY - 3/8" steel rod, welded and hot-dipped galvanized. 6" Sleeve, bolt, hex head nut, nylon insert locknut and hex head tec screw.

TRAPPER BASKET ASSEMBLY INSTRUCTIONS - Lift the trapper basket up onto the top of the pole. Slide the trapper basket down past the middle of the pole and line up the three trapper basket bolt holes with the holes on the poles. Push a long bolt through the trapper basket and the pole's bolt holes.Tighten the long bolt with a locking nut.

CHAIN ASSEMBLY - Welded and hot-dipped galvanized. 12 outer sliding links and chains, 6 inner pipe protectors and chains. All 18 chains assembled with heavy duty "S" hooks to allow freer movement of chains. 6" Sleeve , bolt, hex head nut, nylon insert locknut and hex head tec screw. Rod Assembly - 3/8". steel rod.

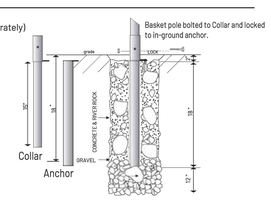
CHAIN ASSEMBLY INSTRUCTIONS - Slide Chain Assembly, (ring first), down pole. Align holes in collar with holes at top of pole. Fasten with bolt and nylon insert locknut

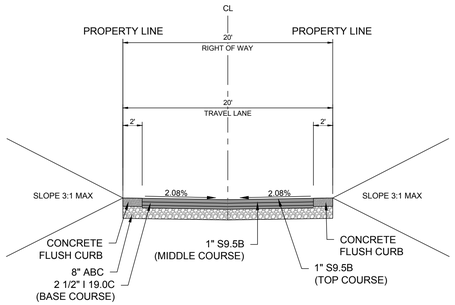
IN-GROUND INSTALLATION KIT (Sold Separately)

With the locking tab towards top of collar align holes in locking collar with holes in pole and fasten with bolt, head nut and nylon insert locknut.

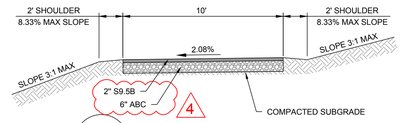
Once fastened, the pole can be placed and locked in anchor.

*Note: The LOCKING TAB should always be pointing at the tee.

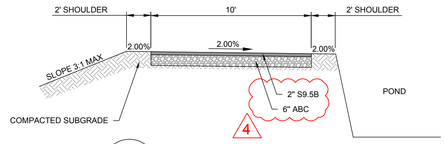

Basket pole bolted to Collar and locked to in-ground anchor.
grade
LOCK
30"
28"
CONCRETE & RIVER ROCK
SRA
SRB
18"
SRA
SRB
SRA
SRB
SRA
SRB



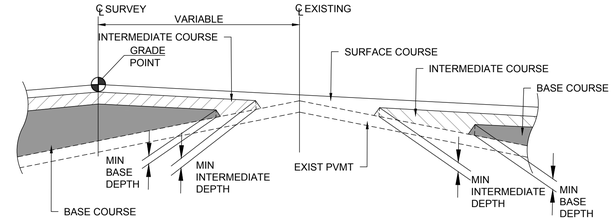
1 / D-2.0 **ALLEY CROSS SECTION - 20' ROW**
SCALE: NTS



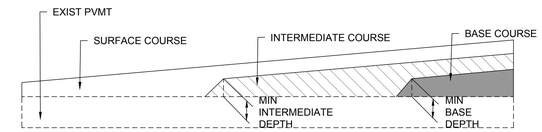
2 / D-2.0 **GREENWAY CROSS SECTION**
SCALE: NTS



3 / D-2.0 **GREENWAY CROSS SECTION - POND**
SCALE: NTS

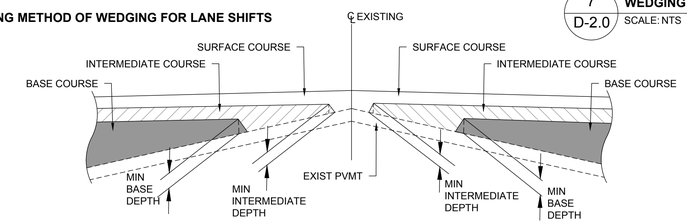


SAMPLE DETAIL SHOWING METHOD OF WEDGING FOR LANE SHIFTS

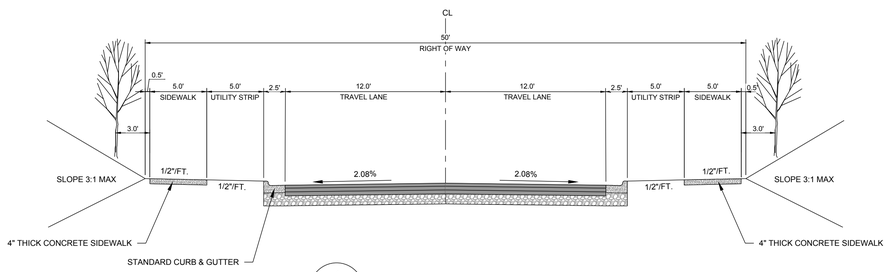


SAMPLE DETAIL WEDGING DETAIL FOR RESURFACING FOR EOP WEDGING TIE INS

7 / D-2.0 **WEDGING DETAIL**
SCALE: NTS



SAMPLE DETAIL SHOWING METHOD OF WEDGING FOR ROOF TOP WEDGING



4 / D-2.0 **TYPICAL CROSS SECTION - 50' ROW**
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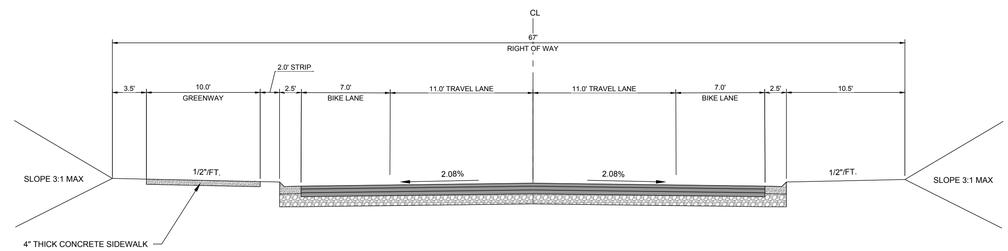

8 / D-2.0 **LIGHTNING BOLT LANE BRIDGE CROSS SECTION - 67' ROW**
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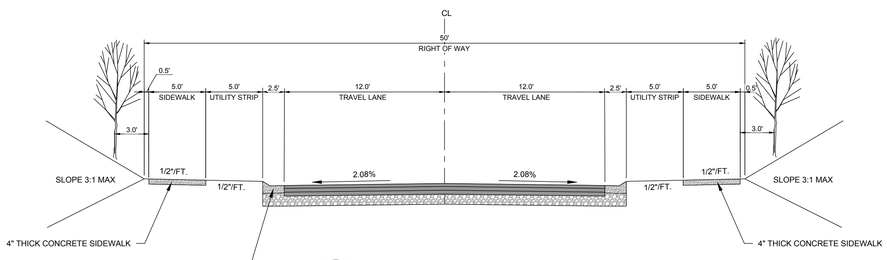

5 / D-2.0 **TYPICAL CROSS SECTION - 50' ROW**
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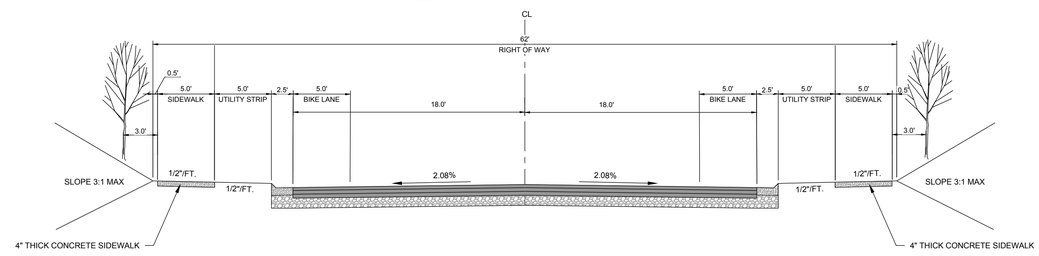
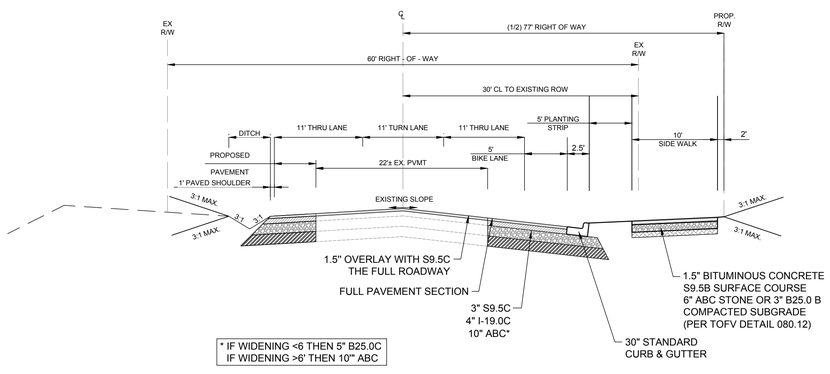
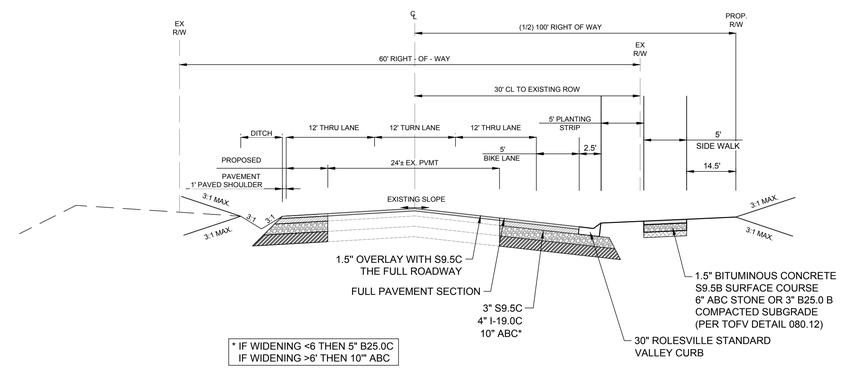


9 / D-2.0 **TYPICAL CROSS SECTION - 62' ROW**
SCALE: NTS



6 / D-2.0 **JONESVILLE RD ROADWAY IMPROVEMENTS**
SCALE: NTS



10 / D-2.0 **MITCHELL MILL RD ROADWAY IMPROVEMENTS**
SCALE: NTS

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No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE CID-24-04 V2	11/01/2024	SREG
03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL:

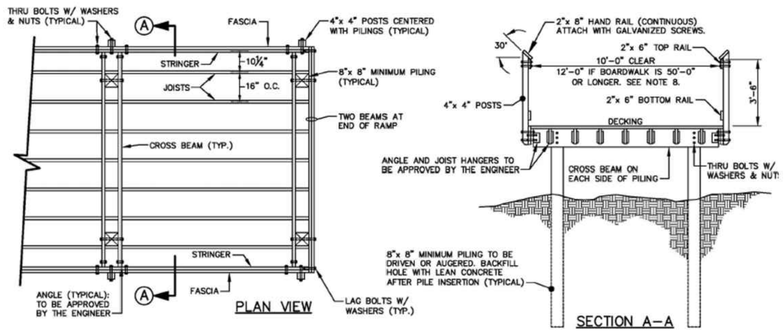
STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	PSP-23-03
	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

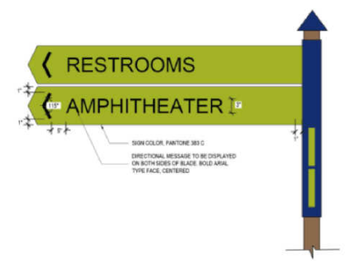
SITE DETAILS

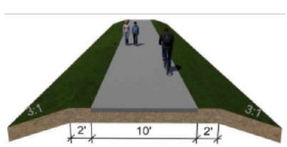
DRAWING / SHEET
D-2.0



1 / D-2.1 **TOWN OF ROLESVILLE BOARDWALK DETAIL**
SCALE: NTS

4





2 / D-2.1 **TYPICAL GREENWAY SECTION**
SCALE: NTS

3 / D-2.1 **GREENWAY BOARDWALK APPROACH DETAIL**
SCALE: NTS

4 / D-2.1 **TRAIL ACCESS POINT DETAIL**
SCALE: NTS

5 / D-2.1 **GREENWAY SIGNAGE DETAILS**
SCALE: NTS

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03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

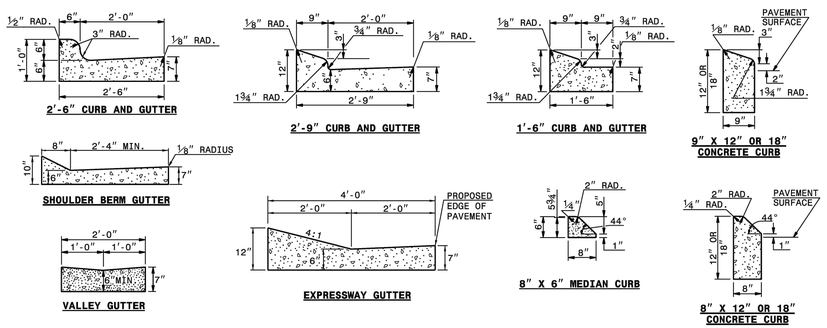
SEAL:

STRONGROCK ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT PSP-23-03
NOT FOR CONSTRUCTION
SCALE: AS SHOWN
DESIGNED BY: SRG
DRAWN BY: SRG
CHECKED BY: SRG

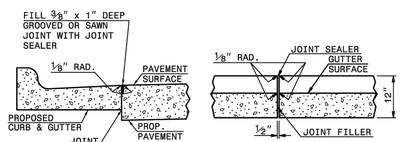
RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
SITE DETAILS

DRAWING SHEET
D-2.1



SECTION VIEW OF CURBS OR CURBS AND GUTTERS

GENERAL NOTES:
- PLACE CONTRACTION JOINTS AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
- JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
- CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. CONSTRUCT NON-TEMPLATE FORMED JOINTS A MIN. OF 1½" DEEP.
- FILL ALL CONSTRUCTION JOINTS, EXCEPT IN 8"x6" MEDIAN CURB, WITH JOINT FILLER AND SEALER.
- SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.



LONGITUDINAL JOINT

TRANSVERSE EXPANSION JOINT IN CURB AND GUTTER

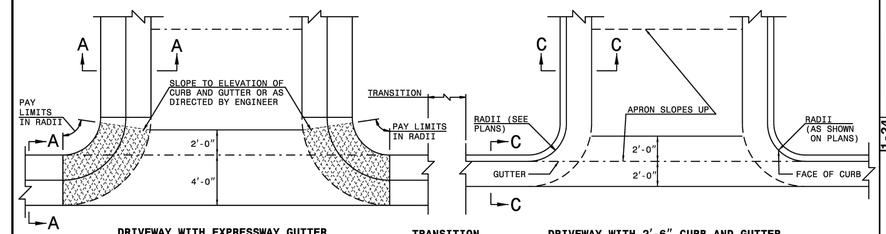
SECTION VIEW OF JOINTS

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

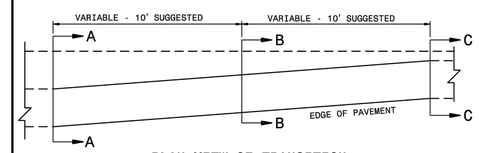
ROADWAY STANDARD DRAWING FOR
CONCRETE CURB, GUTTER AND CURB & GUTTER

SHEET 1 OF 3
846.01

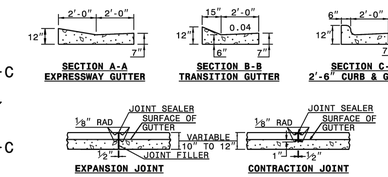


DRIVEWAY WITH EXPRESSWAY GUTTER — TRANSITION — DRIVEWAY WITH 2'-6" CURB AND GUTTER

PLAN VIEW OF TYPICAL CURB AND GUTTER OCCURENCES



PLAN VIEW OF TRANSITION
EXPRESSWAY GUTTER TO 2'-6" CURB AND GUTTER



NOTES:
- IN THE TRANSITION FROM 4'-0" CONCRETE EXPRESSWAY GUTTER TO 2'-6" CONCRETE CURB AND GUTTER, PLACE ½" EXPANSION JOINTS AT 25' INTERVALS.
- PLACE GROOVE JOINTS 1" DEEP AT 12'-6" INTERVALS BETWEEN EXPANSION JOINTS.
- FILL AND SEAL THE TOP ½" OF THE EXPANSION JOINTS AND 1" OF CONTRACTION JOINTS WITH APPROVED JOINT SEALING COMPOUND.

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1-24

ROADWAY STANDARD DRAWING FOR
CONCRETE CURB, GUTTER AND CURB & GUTTER

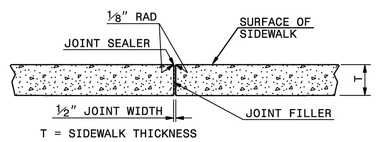
SHEET 3 OF 3
846.01

NOTES:

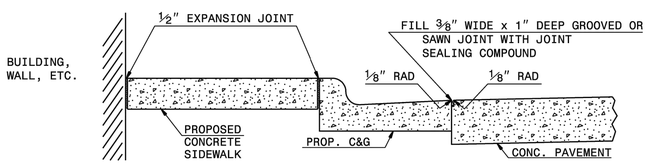
CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

PLACE A GROOVE JOINT 1" DEEP WITH ⅛" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE ½" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A ½" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

SEE STD. DWG. 848.05 FOR CURB RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



TRANSVERSE EXPANSION JOINT IN SIDEWALK



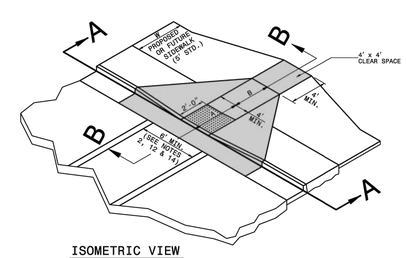
DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
CONCRETE SIDEWALK

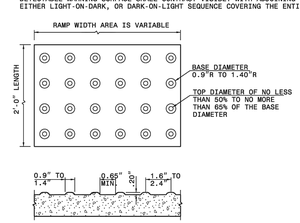
SHEET 1 OF 1
848.01



ISOMETRIC VIEW

NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.

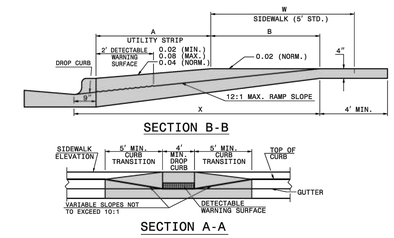
DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING SURFACE

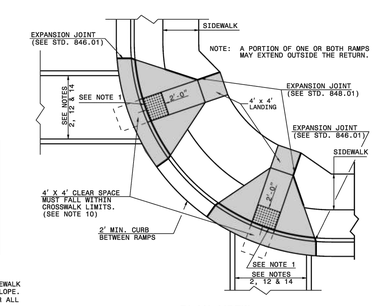
W	A	W+A+9"	X	B
5'	0.0'	5.8'	5.8'	5.0'*
6'	0.0'	6.8'	6.8'	6.0'**
7'	0.0'	7.8'	7.3'	6.5'**
8'	0.0'	8.8'	7.3'	6.5'**
5'	2.0'	7.8'	7.8'	5.0'
5'	2.5'	8.3'	8.1'	4.8'
5'	3.0'	8.8'	8.3'	4.4'
5'	3.5'	9.3'	8.4'	4.1'
5'	4.0'	9.8'	8.6'	3.8'
5'	4.5'	10.3'	8.7'	3.4'
5'	5.0'	10.8'	8.9'	3.1'

B = X-(A+9")
B = DISTANCE FROM FRONT EDGE OF SIDEWALK TO BACK POINT OF 12:1 (8.33%) SLOPE.
* BACK OF SIDEWALK DROP REQUIRED FOR ALL SIDEWALK SLOPES.
** BACK OF SIDEWALK DROP REQUIRED FOR SIDEWALK SLOPES 0.04.



SECTION B-B

SECTION A-A



PLAN VIEW
DUAL RAMPS
ANY RADII
(4' MIN. FLOOR WIDTH)

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP
PROPOSED CURB AND GUTTER

SHEET 1 OF 13
848.06

No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

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STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	PSP-23-03
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

SITE DETAILS

DRAWING / SHEET
D-2.2

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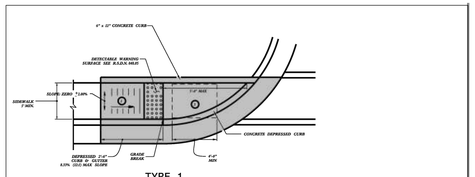
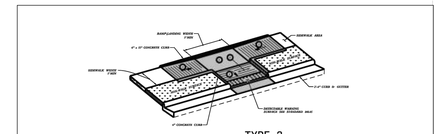


TYPE 1

REFER TO ROADWAY STANDARD DRAWING NUMBER M620 SHEET 3 OF 3 FOR ALL RAMP NOTES

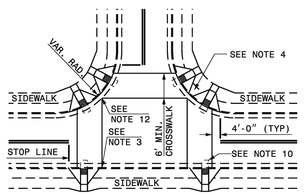
CURB RAMP DETAIL



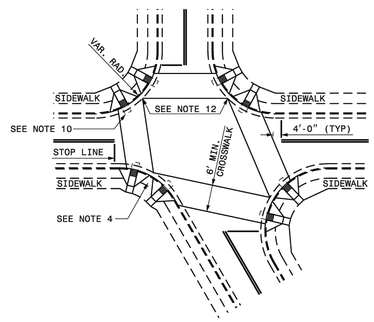
TYPE 3

REFER TO ROADWAY STANDARD DRAWING NUMBER M620 SHEET 3 OF 3 FOR ALL RAMP NOTES

CURB RAMP DETAIL



DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES FOR TEE INTERSECTIONS



DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES

ROADWAY PLAN SYMBOL
CR
FOR PROPOSED CURB RAMP

PROPOSED CURB RAMP W/ CLEAR SPACE
PROPOSED OR FUTURE SIDEWALK

ALLOWABLE LOCATIONS
DUAL RAMP RADII.....ANY

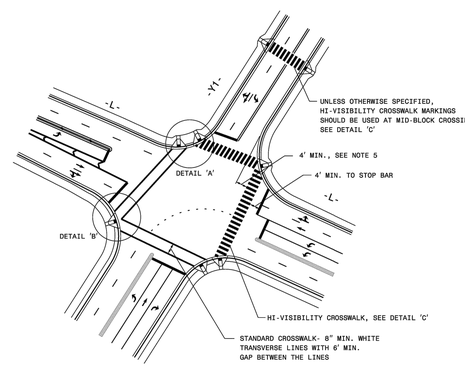
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

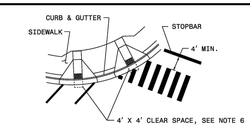
1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP
CURB RAMP LOCATION

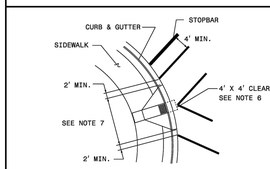
SHEET 5 OF13
848.06

CROSSWALK PLACEMENT GUIDANCE

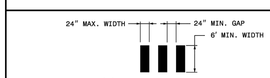




DETAIL 'A'- DUAL CURB RAMPS



DETAIL 'B'- SINGLE DIAGONAL CURB RAMP



DETAIL 'C'- HI-VISIBILITY CROSSWALK

GENERAL NOTES:

1- USE THE DETAILS ABOVE AND THE FOLLOWING NOTES FOR GUIDANCE IN PLACING CROSSWALK MARKINGS. REFER TO NCDOT ROADWAY STANDARD DRAWINGS, MUTCD AND ADA STANDARDS FOR ADDITIONAL GUIDANCE.

2- THE LOCATION AND TYPE OF CROSSWALK MARKINGS SHOWN ON THE ABOVE DETAILS ARE FOR REFERENCE ONLY. LOCATE CROSSWALK MARKINGS AS SHOWN ON THE PROJECT DETAIL SHEETS OR AS DIRECTED BY THE ENGINEER. THE CROSSWALK MARKING TYPE, STANDARD OR HI-VISIBILITY, SHALL BE INSTALLED AS SPECIFIED ON THE PROJECT DETAIL SHEETS OR AS DIRECTED BY THE ENGINEER.

3- THE STANDARD CROSSWALK IS TWO WHITE 8" MIN. TRANSVERSE LINES WITH A 6' MIN. GAP BETWEEN THE LINES. THE HI-VISIBILITY CROSSWALK IS WHITE 24" MAX. WIDE LONGITUDINAL LINES WITH 24" MIN. GAPS BETWEEN LINES, SEE DETAIL 'C'. HI-VISIBILITY CROSSWALKS SHOULD BE A MINIMUM OF 6' WIDE. CURB RAMPS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARES.

4- STOP BARS SHOULD BE PLACED A 4' MIN. IN ADVANCE OF NEAREST CROSSWALK LINE.

5- SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL IS 4' MIN.

6- BEYOND THE BOTTOM GRADE BREAK, A CLEAR SPACE OF 4' X 4' MIN. SHALL BE PROVIDED WITHIN THE MARKINGS.

7- SINGLE DIAGONAL CURB RAMPS WITH FLARED SIDES SHALL HAVE A SEGMENT OF CURB 2' MIN. LONG LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING, SEE DETAIL 'B'.

8- CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE TO THE LATEST NCDOT ROADWAY STANDARD DRAWINGS. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS. CONTACT THE CONTRACT STANDARDS AND DEVELOPMENT UNIT FOR DETAILS OR A SPECIAL DESIGN.

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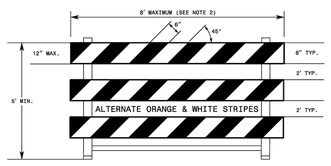
1-24

ROADWAY STANDARD DRAWING FOR
PAVEMENT MARKINGS
PEDESTRIAN CROSSWALKS

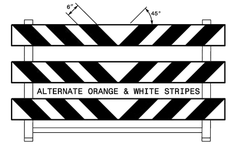
SHEET 1 OF 2
1205.07

TYPE III BARRICADE



TYPE III BARRICADE

END-OF-ROADWAY APPLICATIONS



GENERAL NOTES

1- HORIZONTAL RAILS FOR BARRICADES MAY BE CONSTRUCTED OF APPROVED COMPOSITE, HOLLOW/ CORRUGATED EXTRUDED RIGID POLYOLEFIN, HIGH DENSITY POLYETHYLENE, OR OTHER NCDOT APPROVED MATERIAL.

2- BARRICADE SHALL BE LIMITED TO A MAXIMUM LENGTH OF 8 FT UNLESS NCDOT APPROVED.

3- ONLY NCDOT APPROVED COMPOSITE AND ROLL-UP SIGNS MAY BE MOUNTED ON THE BARRICADE RAILS. MOUNT SIGNS TO BARRICADE RAILS TO ENSURE SIGN WILL NOT BECOME DETACHED UNDER NORMAL WIND AND TRAFFIC CONDITIONS.

4- SIGNS SHALL BE MOUNTED A MINIMUM OF 1 FOOT FROM THE GROUND TO THE BOTTOM OF THE SIGN UNLESS SIGN R11-3 IS REQUIRED BY THE PLANS OR DIRECTED BY THE ENGINEER.

5- ASSEMBLY OF THE GENERIC BARRICADES MUST BE SELF CERTIFIED BY THE ASSEMBLER.

6- BARRICADES USED TO CLOSE A ROADWAY SHALL EXTEND ACROSS THE ENTIRE ROADWAY. WHERE LOCAL TRAFFIC MUST BE MAINTAINED, THEY MAY BE PLACED IN A STAGGERED PATTERN.

7- STRIPES ON WORK ZONE BARRICADE RAILS SHALL BE ALTERNATE ORANGE AND WHITE RETROREFLECTIVE STRIPES, SLOPED DOWNWARD TOWARDS THE SIDE WHICH TRAFFIC IS TO PASS OR TURN IN DETOURING. WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.

8- USE RED AND WHITE STRIPES FOR PERMANENT BARRICADES.

9- ALL BARRICADES MUST BE LISTED ON THE DEPARTMENT'S APPROVED PRODUCTS LIST.

10- PLACE SANDBAGS OR OTHER APPROVED BALLASTING METHODS ON THE FEET OF THE FRAME. DO NOT PLACE SANDBAGS ON TOP OF A STRIPED RAIL OR STABILIZER BAR. DO NOT BALLAST BARRICADES BY HEAVY OBJECTS SUCH AS ROCKS, CHUNKS OF CONCRETE OR OTHER ITEMS THAT WOULD CAUSE DAMAGE IF THE BARRICADE IS STRUCK BY A VEHICLE.

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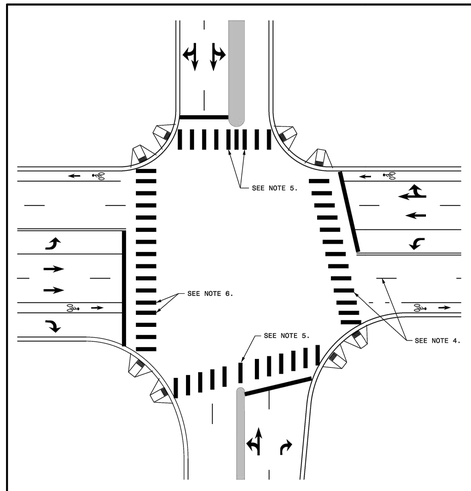
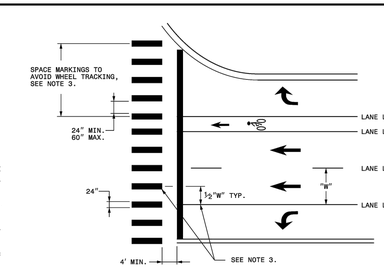
1-24

ROADWAY STANDARD DRAWING FOR
BARRICADES
TYPE-III

SHEET 1 OF 1
1145.01



CROSSWALK INTERSECTION DETAIL



CROSSWALK MARKING DETAIL

GENERAL NOTES:

1- THE GUIDANCE IN THIS DETAIL IS TO BE USED WHEN NO-TRACK SPACING OF HI-VISIBILITY MARKINGS IS REQUESTED.

2- USE THE GUIDANCE SHOWN ON THE ABOVE DETAILS IN CONJUNCTION WITH PAVEMENT MARKING GUIDANCE SHOWN ON ROADWAY STANDARD DRAWINGS 1205.01 AND 1205.07.

3- PLACE MARKINGS TO AVOID WHEELPATH OF VEHICLES. MARKINGS TYPICALLY WILL BE LOCATED CENTERED AT THE LANE LINES AND EDGE LINES WITH ONE ADDITIONAL MARKING CENTERED IN THE MIDDLE OF THE LANE. AT WIDE LANE WIDTHS DUE TO TAPERS AND LARGE RADII, LOCATE MARKINGS AT BEST SPACING TO AVOID WHEEL TRACKING. THE SPACE BETWEEN MARKINGS SHALL NOT BE LESS THAN 24 INCHES OR GREATER THAN 60 INCHES.

4- WHERE THE CROSSWALK IS SKEWED TO THE LANE LINES, THE MARKINGS SHOULD BE PARALLEL TO THE LANE LINES.

5- PLACE MARKINGS ON BOTH EDGES OF THE NOSE OF A MEDIAN. FOR NARROW MEDIANS LESS THAN 4 FEET, A SINGLE MARKING MAY BE USED. FOR WIDE MEDIANS, INSTALL ADDITIONAL MARKINGS IN THE MEDIAN AREA. THE SPACE BETWEEN THE MARKINGS SHALL NOT TO BE LESS THAN 24 INCHES OR GREATER THAN 60 INCHES.

6- LOCATE MARKINGS CENTERED ON BICYCLE LANE LINES. MARKINGS SHALL NOT BE LOCATED IN THE CENTER OF THE BICYCLE PATH.

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ROADWAY STANDARD DRAWING FOR
PAVEMENT MARKINGS
HI-VISIBILITY CROSSWALKS
NO-TRACK MARKING GUIDANCE

SHEET 2 OF 2
1205.07

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03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

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STRONG ROCK PROJECT	PSP-23-03
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SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

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TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
SITE DETAILS

DRAWING SHEET
D-2.3

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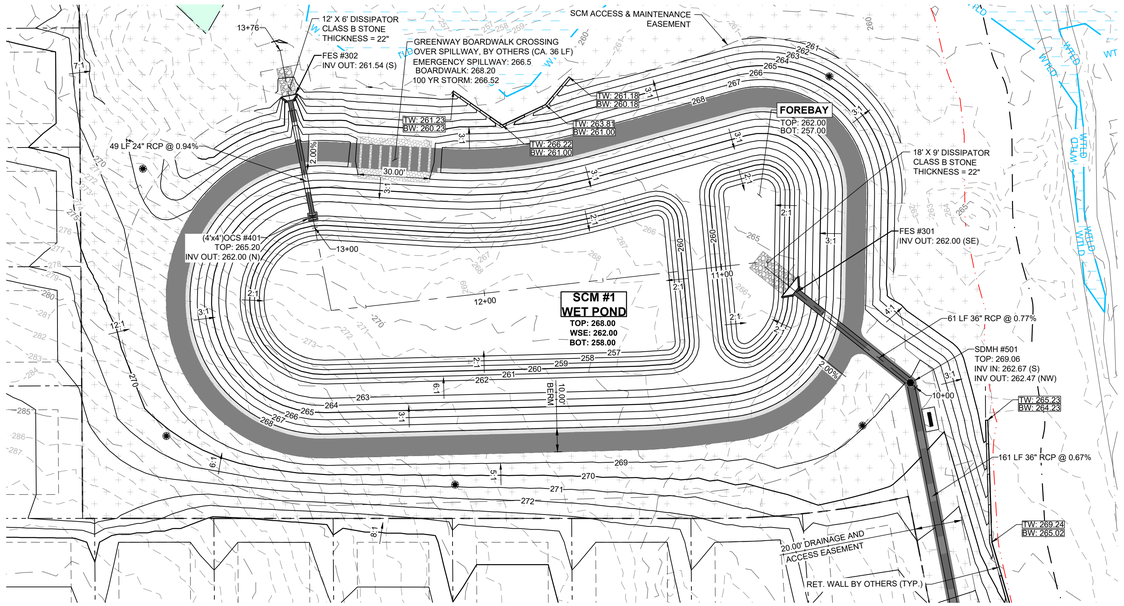
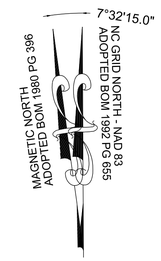


SCM #1 (WETPOND) - PLAN VIEW
HORIZONTAL: 1" = 30'



GRAPHIC SCALE

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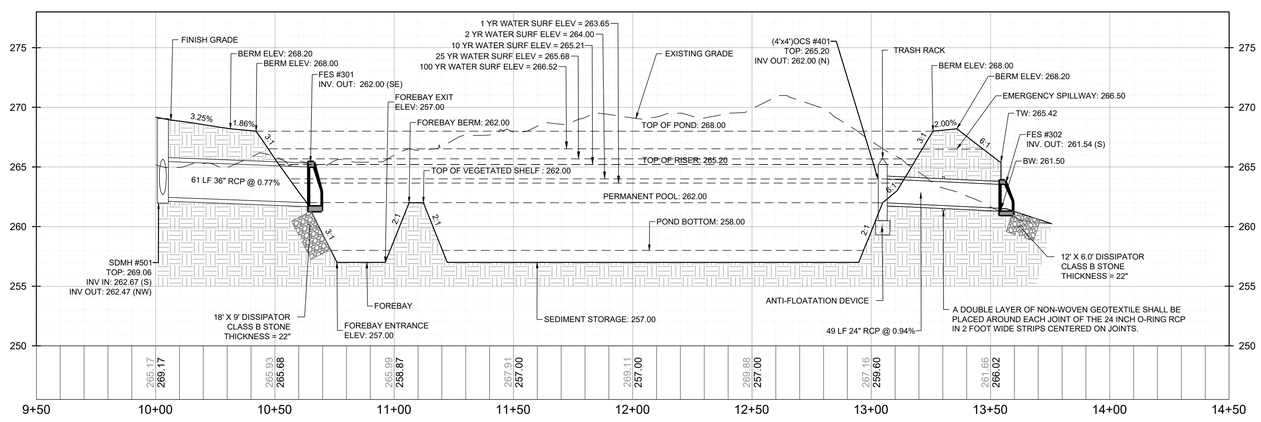
(IN FEET)
1 inch = 30 ft.



SCM #1 (WETPOND) - PROFILE VIEW
HORIZONTAL: 1" = 30'
VERTICAL: 1" = 6'

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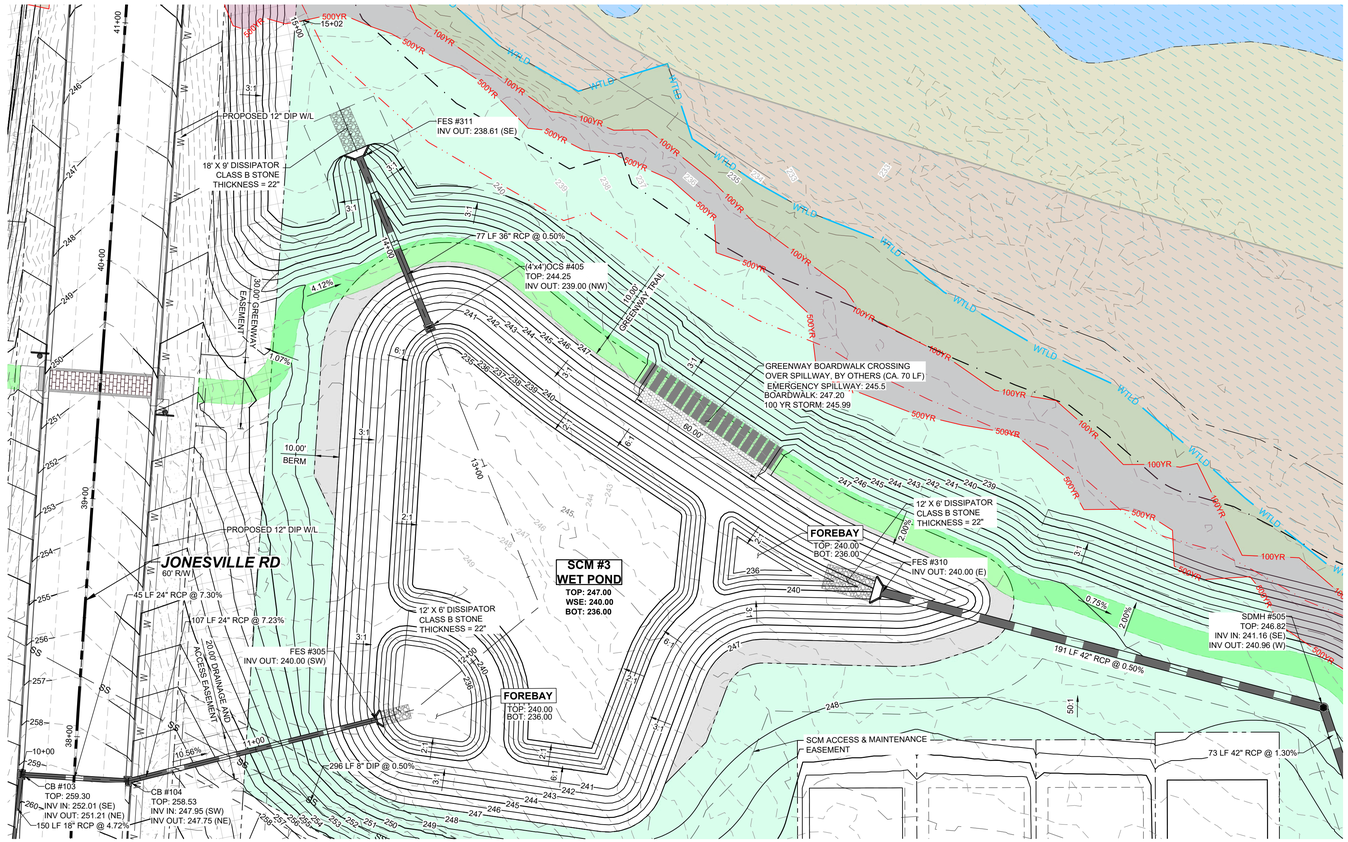
STORMWATER CONTROL MEASURE '1'

DRAWING SHEET
D-3.0



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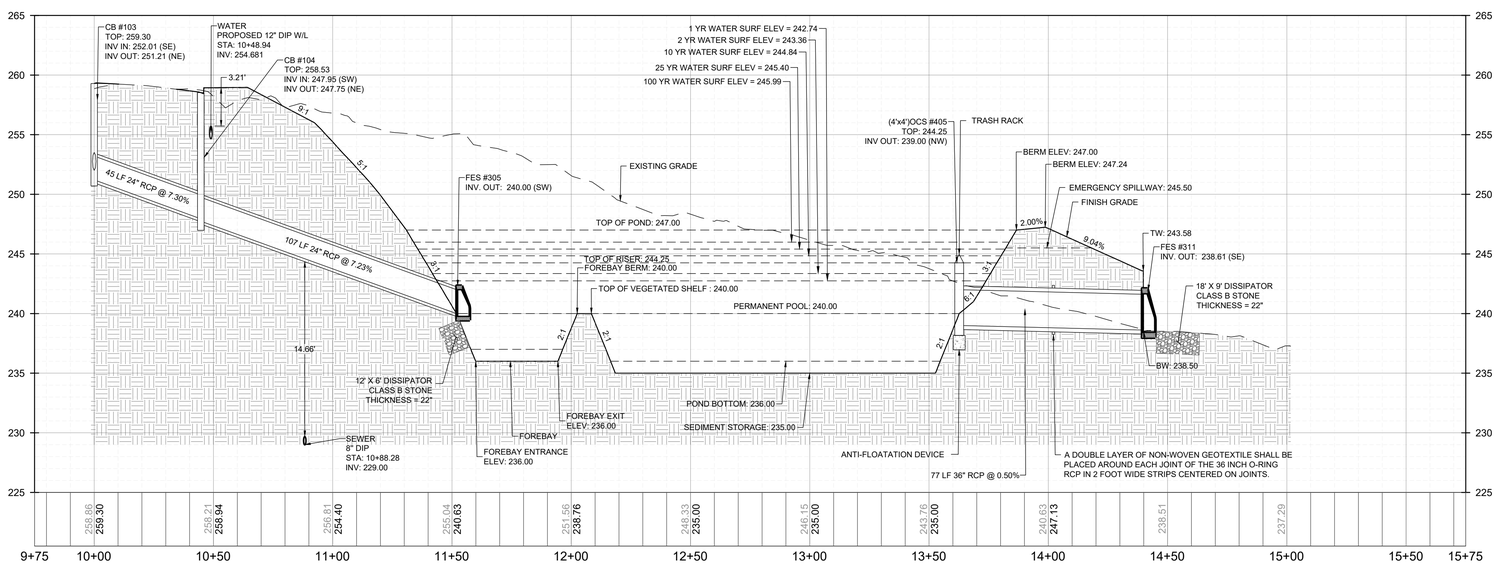
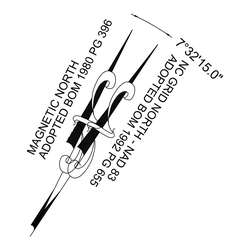


SCM #3 (WETPOND) - PROFILE
HORIZONTAL: 1" = 30'
VERTICAL: 1" = 6'



GRAPHIC SCALE

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(IN FEET)
1 inch = 30 ft.

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

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STORMWATER CONTROL MEASURE '3'

DRAWING SHEET
D-3.1

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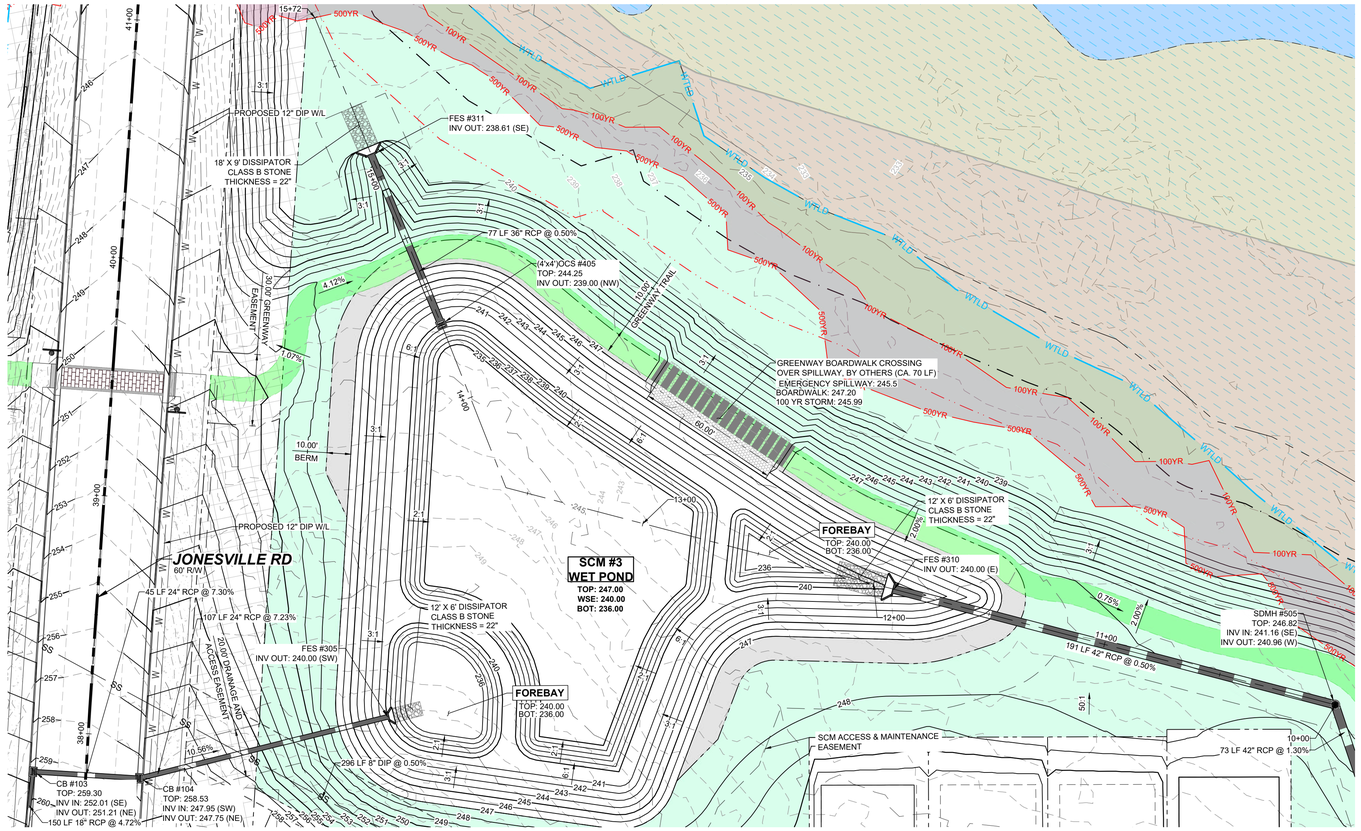

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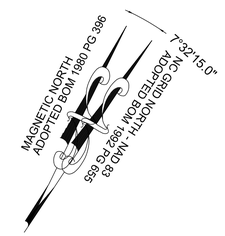
HORIZONTAL: 1" = 30'



GRAPHIC SCALE

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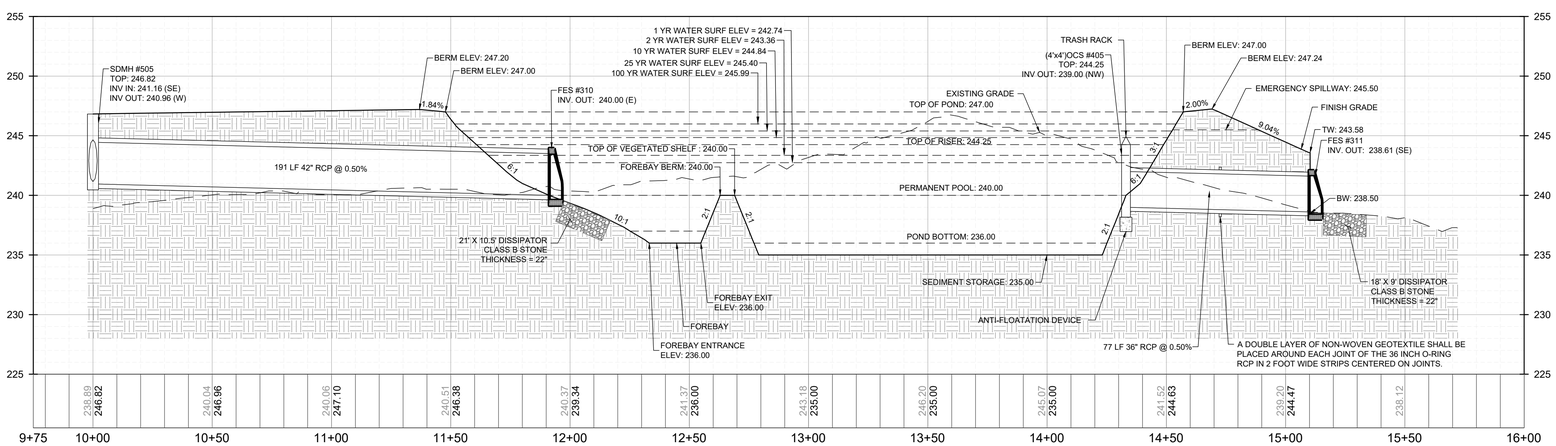
(IN FEET)
1 inch = 30 ft.



SCM #3 (WETPOND) - PROFILE
HORIZONTAL: 1" = 30'
VERTICAL: 1" = 6'

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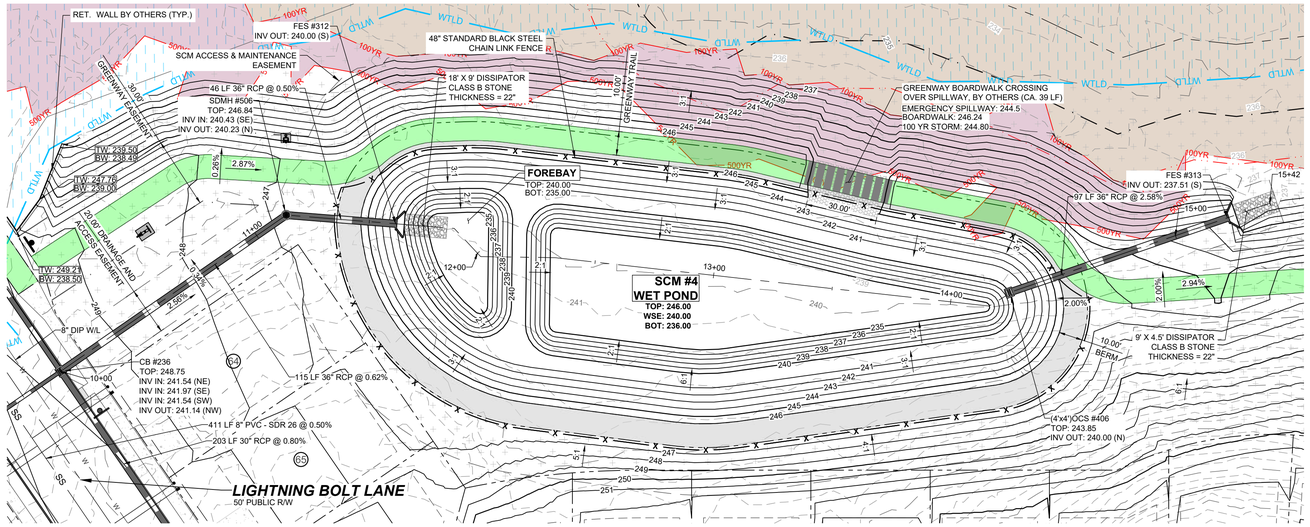
CONSTRUCTION PLANS
STORMWATER CONTROL MEASURE '3'

DRAWING
SHEET
D-3.2



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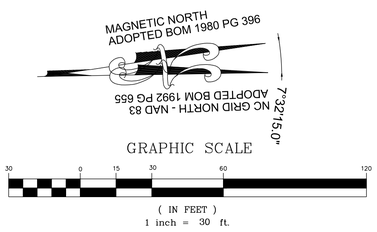

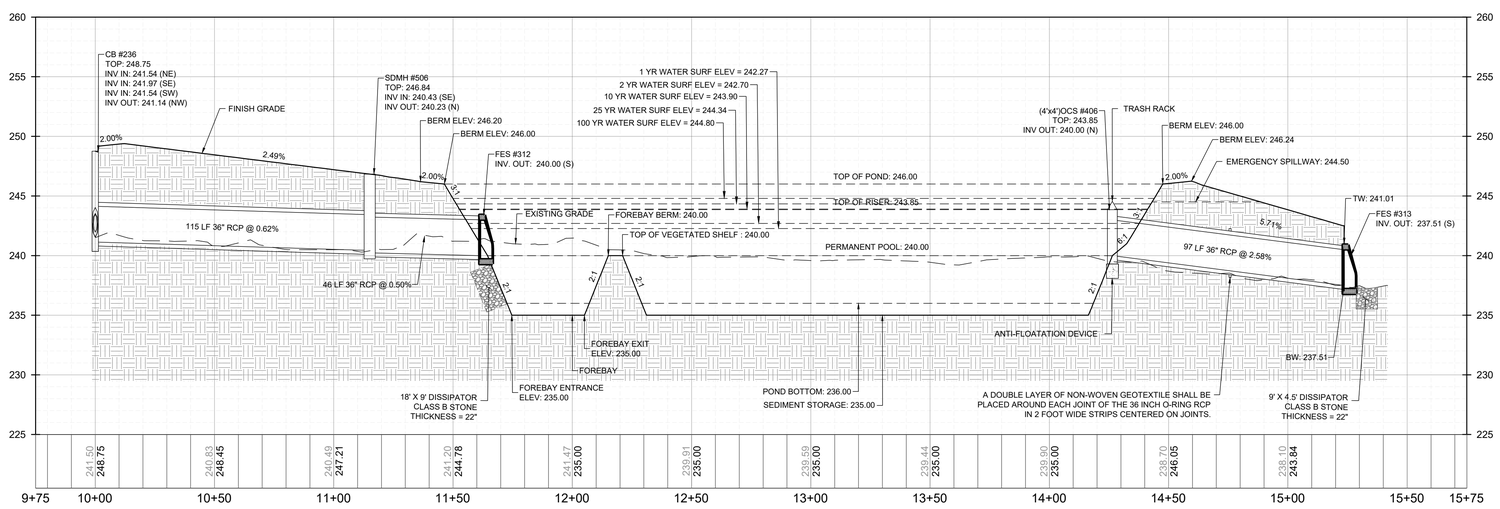

SCM #4 (WETPOND) - PROFILE
HORIZONTAL: 1" = 30'
VERTICAL: 1" = 6'

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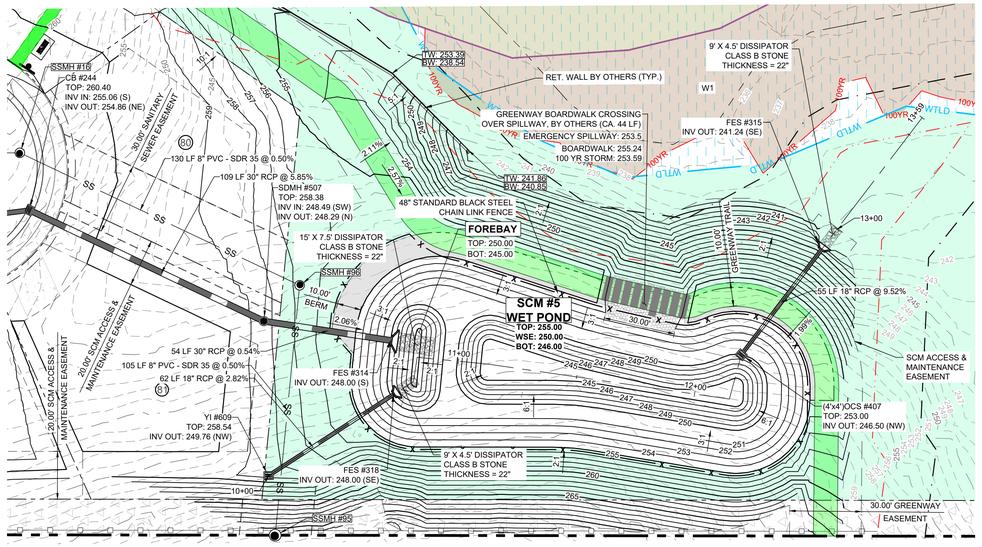
STORMWATER CONTROL MEASURE '4'

DRAWING SHEET
D-3.3



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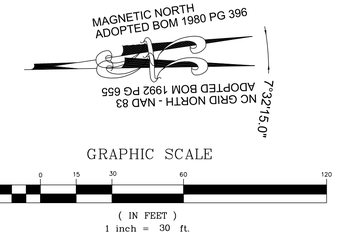
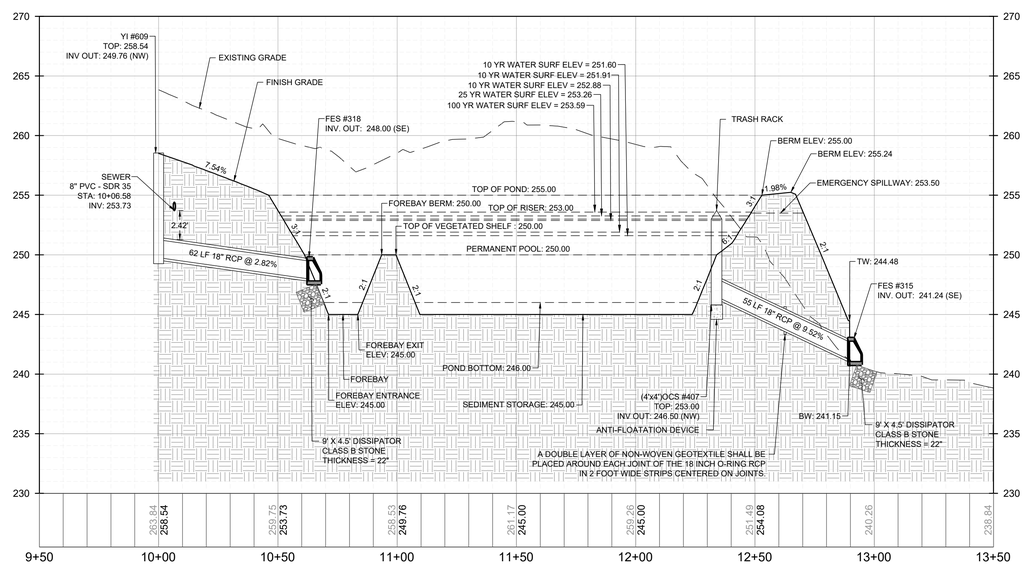
HORIZONTAL: 1" = 30'





SCM #5 (WETPOND) - PROFILE VIEW
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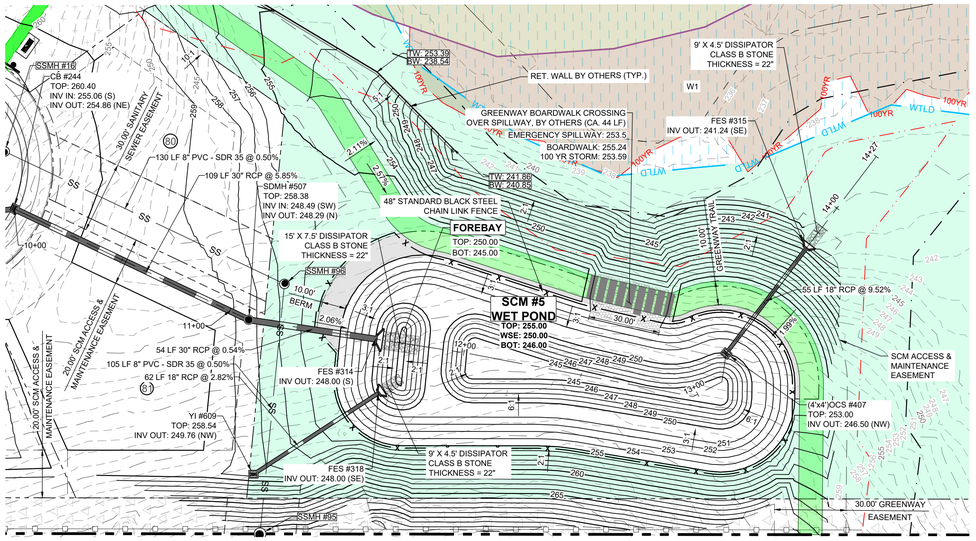
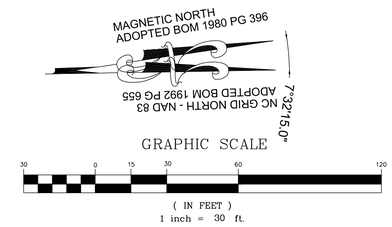
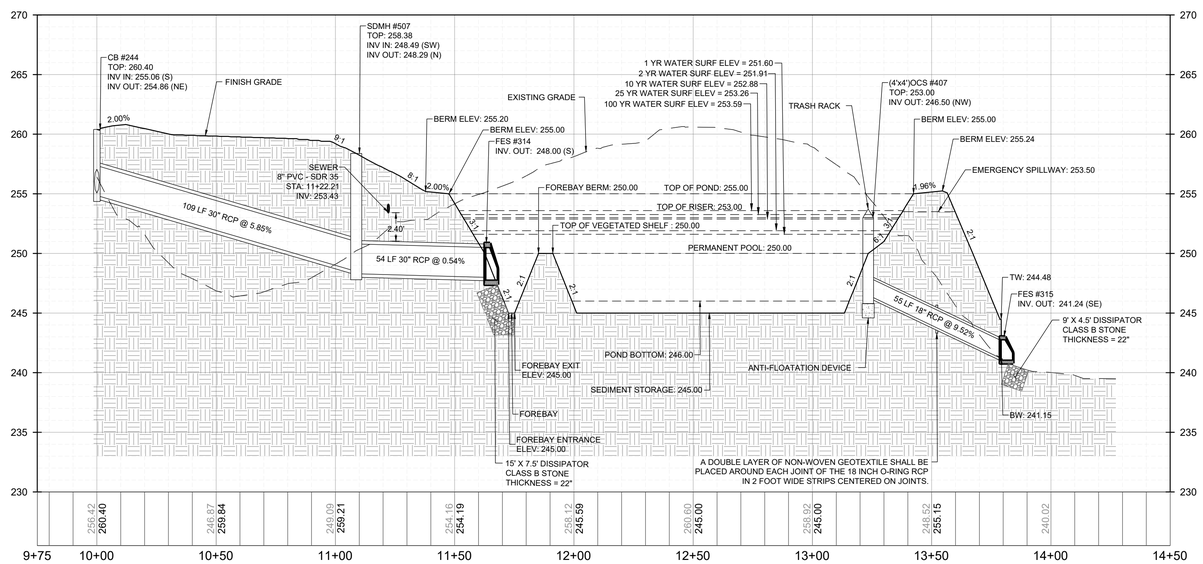
CONSTRUCTION PLANS
STORMWATER CONTROL MEASURE '5'

DRAWING SHEET
D-3.4



SCM #5 (WETPOND) - PLAN VIEW
HORIZONTAL: 1" = 30'





SCM #5 (WETPOND) - PROFILE VIEW
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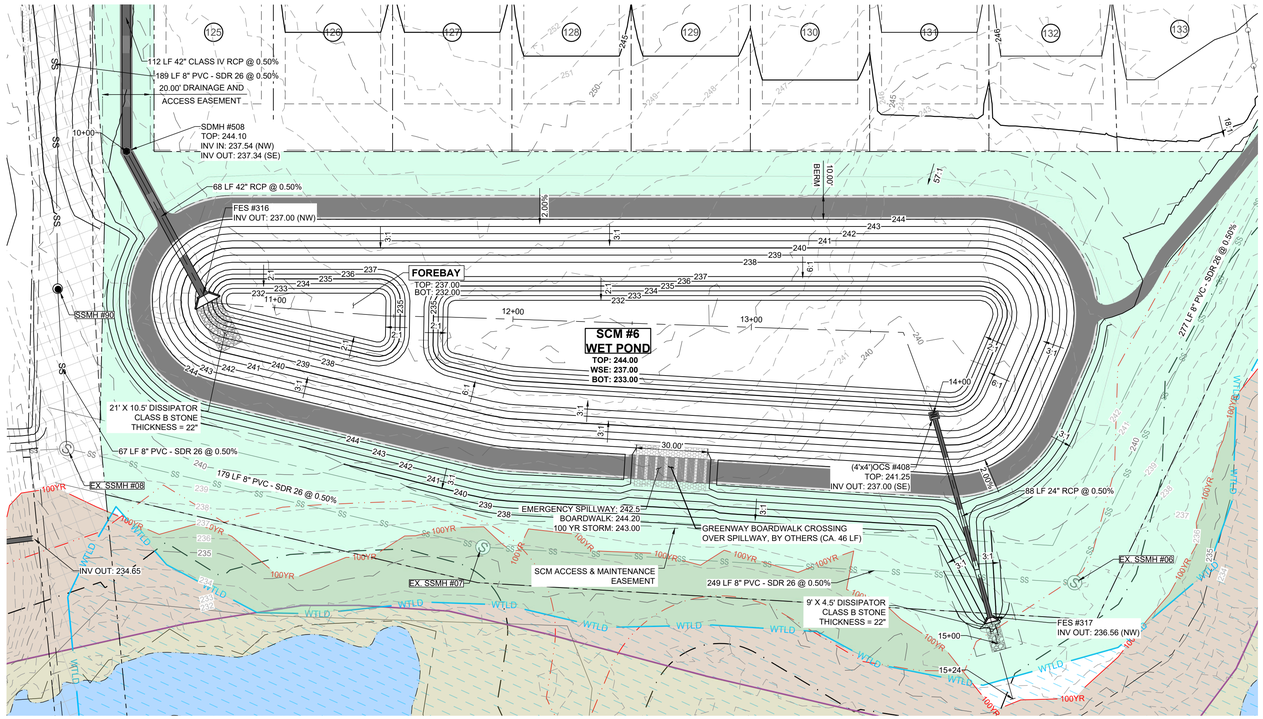
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT PSP-23-03

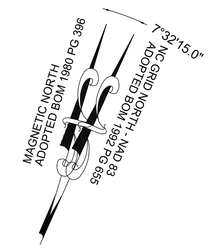
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
STORMWATER CONTROL MEASURE '5'

DRAWING
SHEET
D-3.5



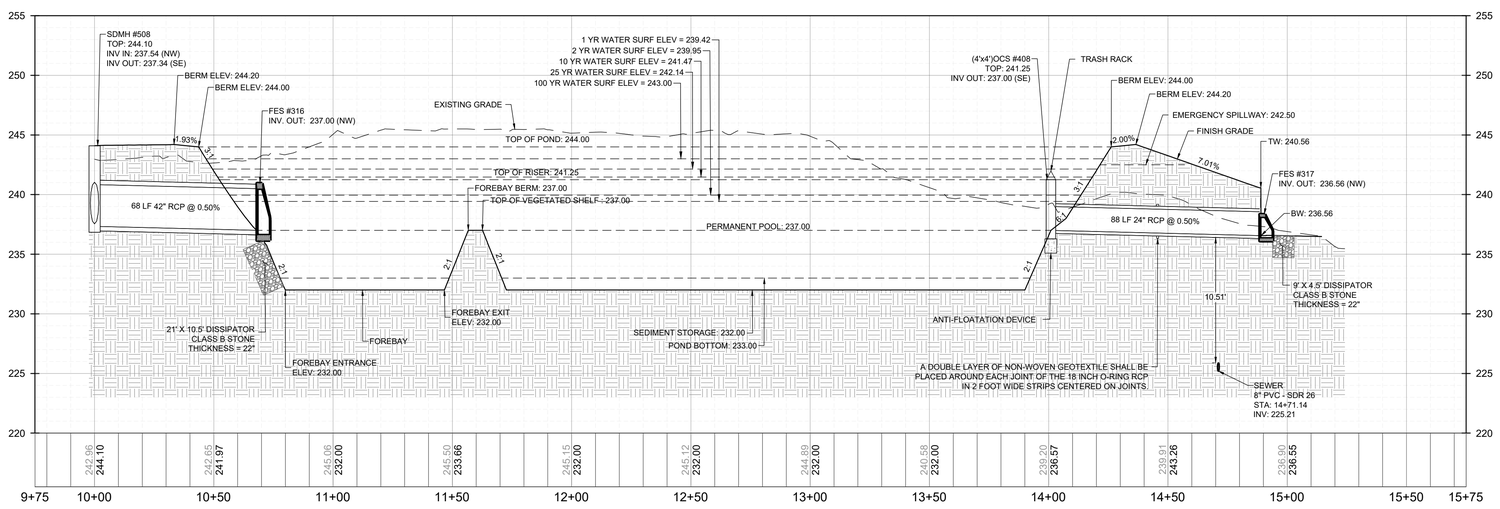
SCM #6 (WETPOND) - PLAN VIEW
HORIZONTAL: 1" = 30'



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.



SCM #6 (WETPOND) - PROFILE VIEW
HORIZONTAL: 1" = 30'
VERTICAL: 1" = 6'

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No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE CID-24-04 V2	11/01/2024	SREG
03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

STRONGROCK
ENGINEERING GROUP
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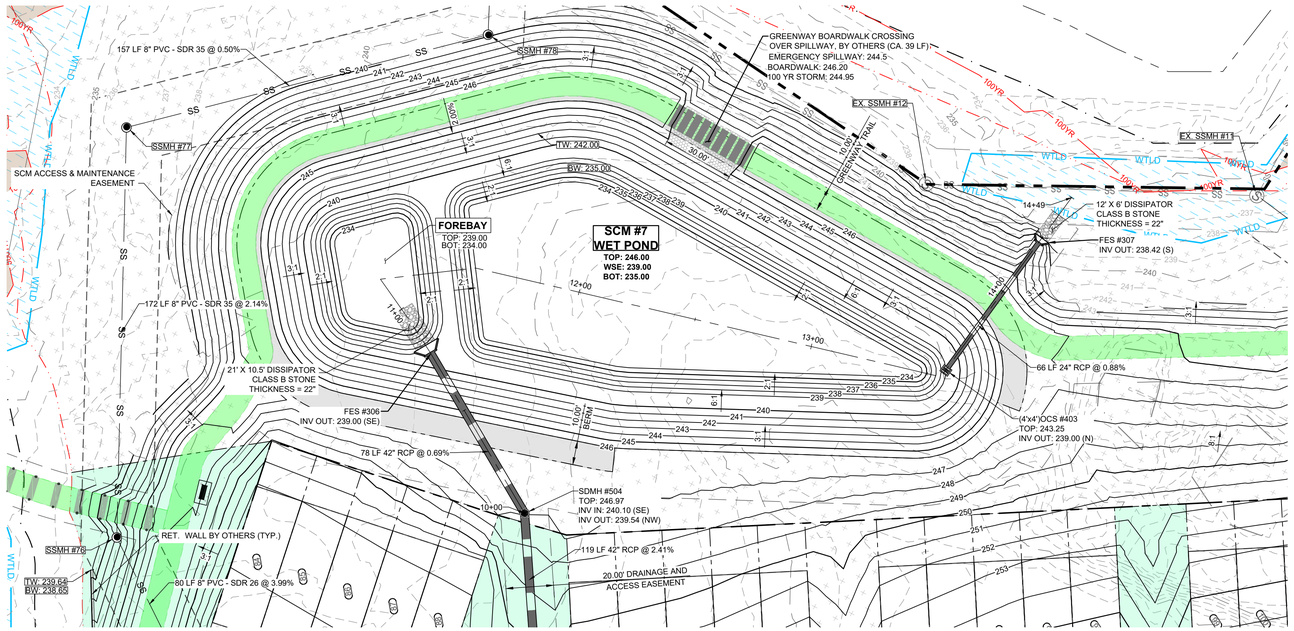
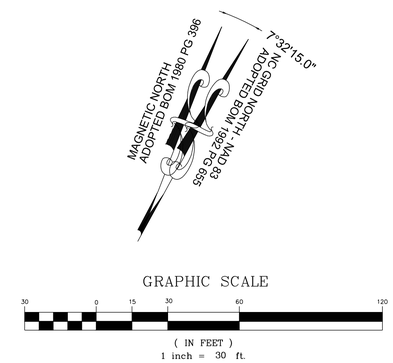
STRONG ROCK PROJECT PSP-23-03	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

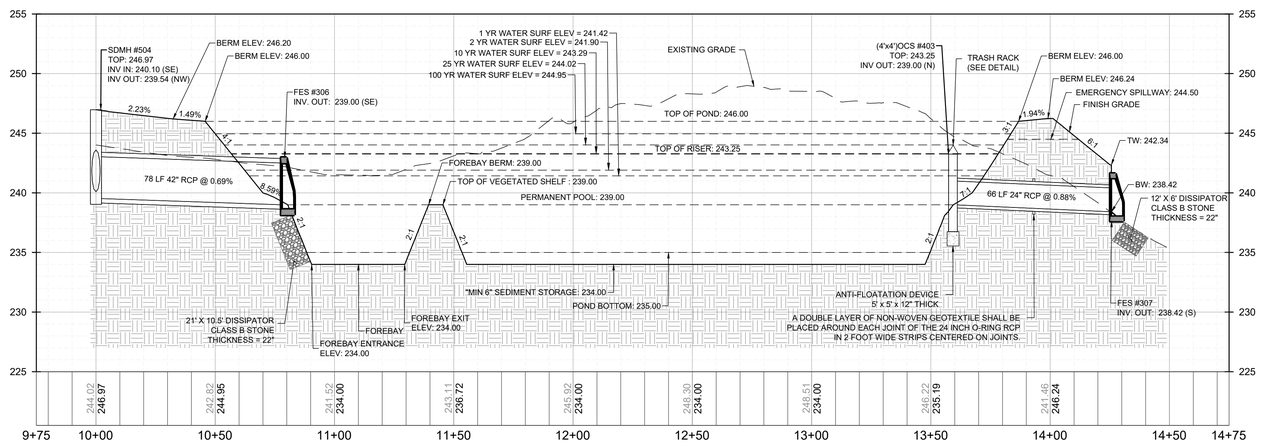
RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
STORMWATER CONTROL MEASURE '6'

DRAWING SHEET
D-3.6



SCM #7 (WETPOND) - PLAN VIEW
HORIZONTAL: 1" = 30'





SCM #7 (WETPOND) - PROFILE VIEW
HORIZONTAL: 1" = 30'
VERTICAL: 1" = 6'

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03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

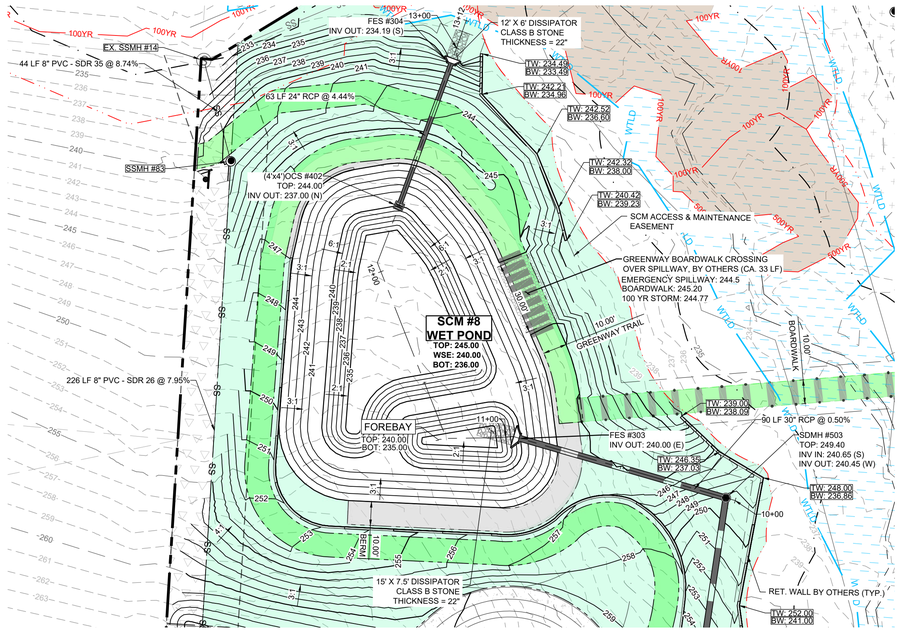
STRONGROCK ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

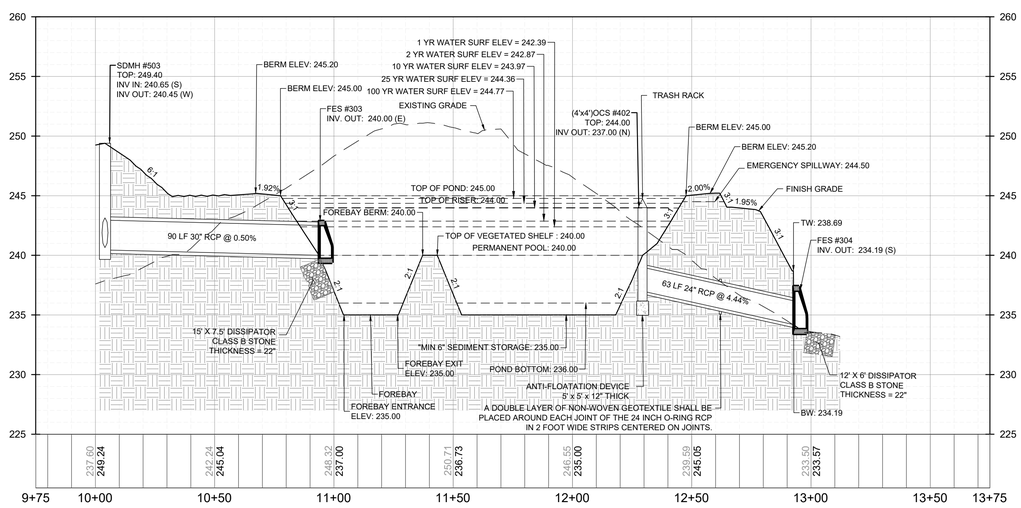
STRONG ROCK PROJECT	PSP-23-03
	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
STORMWATER CONTROL MEASURE '7'

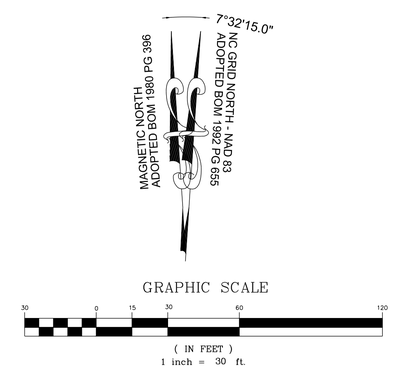
DRAWING / SHEET
D-3.7



SCM #8 (WETPOND) - PLAN VIEW
HORIZONTAL: 1" = 30'



SCM #8 (WETPOND) - PROFILE VIEW
HORIZONTAL: 1" = 30'
VERTICAL: 1" = 6'



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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL:

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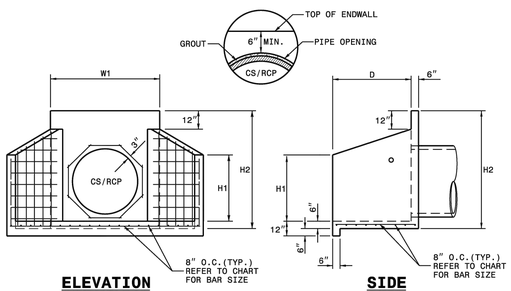
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

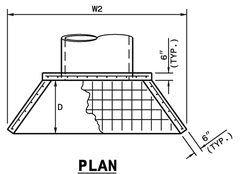
RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
STORMWATER CONTROL MEASURE '8'

DRAWING
SHEET
D-3.8

THIS PLANSET AND ANY ASSOCIATED DOCUMENTS ARE PRELIMINARY AND NOT AUTHORIZED FOR CONSTRUCTION UNTIL SIGNED, DATED, AND OFFICIALLY RELEASED FOR CONSTRUCTION BY THE ENGINEER OF RECORD.



ELEVATION **SIDE**



PLAN

NOTES:

* THIS PRECAST ENDWALL MAY BE USED FOR THE FOLLOWING STANDARDS: 838.01, 838.11, 838.21, 838.27, 838.33, 838.39, 838.51, 838.57, 838.63 AND 838.69.
* INSTALL PRECAST ENDWALLS WITH WINGS AND PAY FOR IN ACCORDANCE WITH SPECIFICATION SECTION 838.
* USE 4000 PSI CONCRETE.
* PROVIDE ALL REINFORCING STEEL WHICH MEETS ASTM A615 FOR GRADE 60 AND WELDED WIRE FABRIC CONFORMING TO ASTM A185 WITH 2" MIN. CLEARANCE.
* PLACE LIFT HOLES OR PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704.
* PIPE TO BE GROUTED INTO ENDWALL AT JOB SITE BY CONTRACTOR.
* ALL ELEMENTS PRECAST TO MEET ASTM C913.
* WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR AS LONG AS THE SAME AREA OF STEEL IS PROVIDED.
* CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

NOTE: THE MINIMUM BAR SIZE SHALL BE #5 BARS AT 8" CTS.THE CONTRACTOR WILL HAVE THE OPTION TO INCREASE THIS BAR SIZE AS NEEDED.

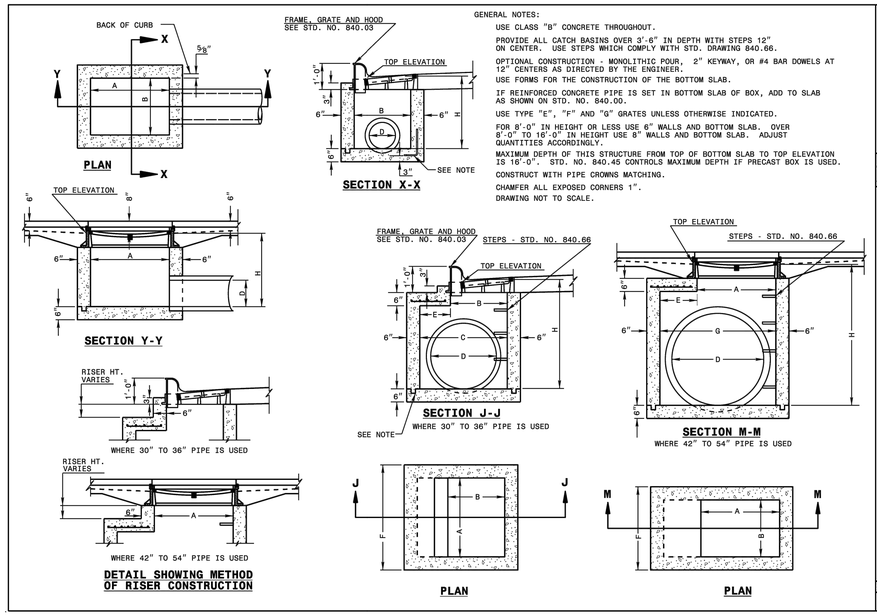
ENDWALL DIMENSIONS

	MINIMUM	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.
PIPE DIA.	BAR SIZE	H1	H2	D	W1	W2
12"	#5 @ 8"	15"/24"	33"/45"	15"/21"	36"/45"	66"/72"
15"	#5 @ 8"	15"/24"	37"/45"	15"/24"	42"/45"	78"/81"
18"	#5 @ 8"	15"/24"	40"/51"	15"/30"	42"/45"	78"/81"
24"	#5 @ 8"	18"/32"	47"/57"	21"/30"	48"/51"	90"/99"
30"	#5 @ 8"	30"/42"	54"/72"	24"/36"	54"/66"	120"/138"
36"	#5 @ 8"	36"/42"	61"/72"	33"/42"	63"/69"	138"/141"
42"	#5 @ 8"	39"/52"	68"/81"	39"/42"	72"/81"	144"/159"
48"	#5 @ 8"	42"/52"	75"/84"	39"/42"	78"/81"	156"/159"
54"	#5 @ 8"	48"/60"	82"/102"	39"/48"	84"/111"	162"/189"
60"	#5 @ 8"	54"/60"	89"/102"	39"/48"	89"/111"	165"/189"
66"	#5 @ 8"	54"/60"	96"/102"	39"/48"	96"/111"	168"/189"
72"	#5 @ 8"	54"/60"	103"/108"	39"/48"	103"/111"	177"/201"

1-24 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
PRECAST CONCRETE ENDWALL
FOR SINGLE 12" THRU 72" PIPE - 90° SKEW

SHEET 1 OF 1
838.80



GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

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

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

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

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

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

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

MAXIMUM DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 16'-0". STD. NO. 840.45 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.

CONSTRUCT WITH PIPE CROWNS MATCHING.

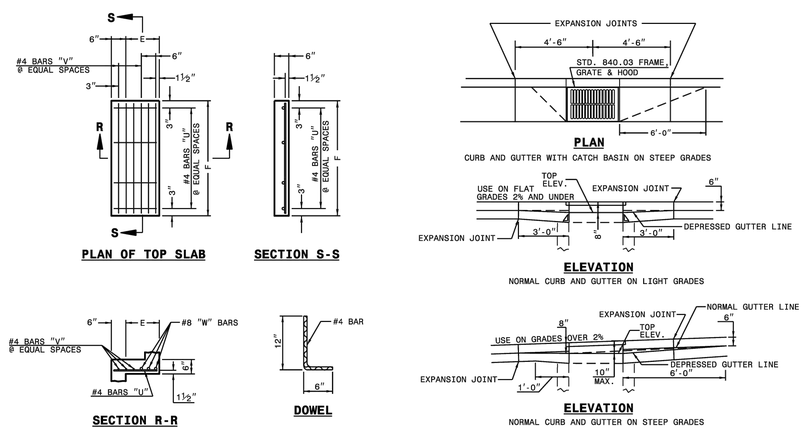
CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

1-24 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

SHEET 1 OF 2
840.02



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

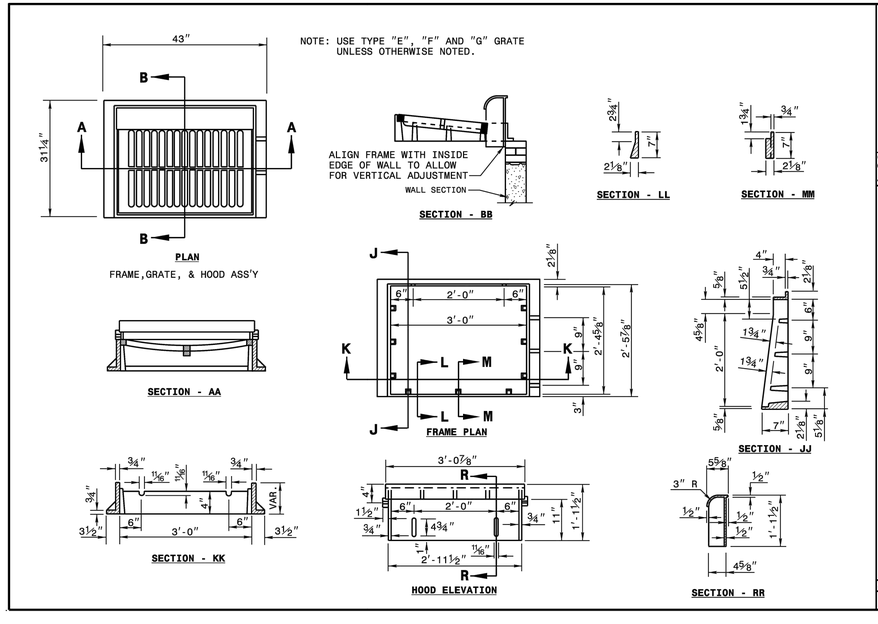
DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		BARS-U		BARS-V		BARS-W		TOTAL LBS.	CU.YDS. CONC. IN BOX TOP SLAB	BOTTOM SLAB	TOT. CONC. FOR MINIMUM HEIGHT, H	DEDUCTIONS ONE PIPE	
PIPE	SPAN	WIDTH	WIDTH	SPAN	MIN. HEIGHT														
D	A	B	C	G	H	E	F	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH					C.M.	R.C.
12"	3'-0"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

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

1-24 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

SHEET 2 OF 2
840.02



1-24 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

SHEET 1 OF 2
840.03

No.	REVISIONS	DATE	BY
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02	TOWN OF ROLESVILLE CID-24-04 V2	11/01/2024	SREG
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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL:

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ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

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SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
STORM DRAINAGE DETAILS

DRAWING / SHEET
D-3.9

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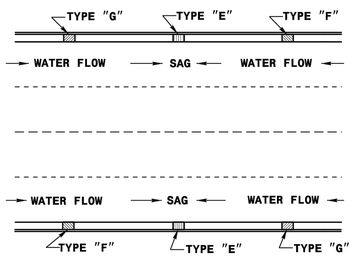
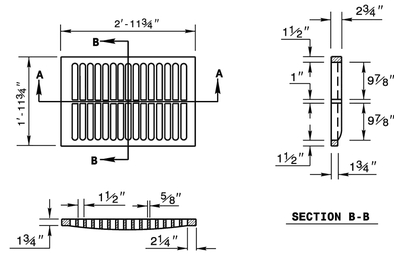
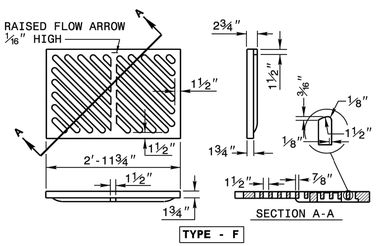
DETAIL SHOWING TYPES OF GRATES
USE ACCORDING TO WATER FLOW.

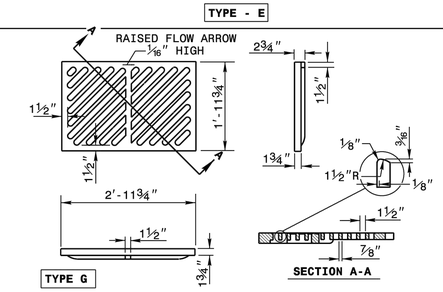




TYPE - E



TYPE - F



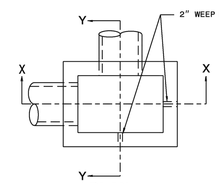
TYPE G

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

SHEET 2 OF 2
840.03



PLAN
WITH GRATE & FRAME REMOVED

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

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

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

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

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

MAX.DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12'-0". STD. DWG. 840.45 OR 840.46 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.

CONSTRUCT WITH PIPE CROWNS MATCHING.

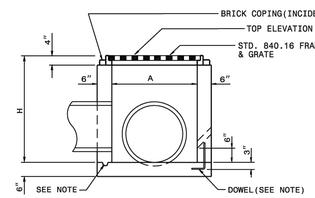
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

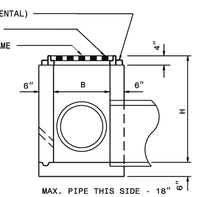
INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

CHAMFER ALL EXPOSED CORNERS 1".

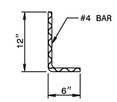
DRAWING NOT TO SCALE.



SECTION X-X



SECTION Y-Y



DOWEL

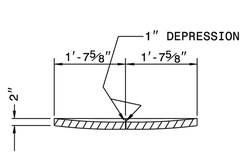
DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)								
DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONC. IN BOX			DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	MIN. HEIGHT	BOTTOM SLAB	WALL PER FT. HT.	TOTAL CONCRETE FOR MINIMUM HEIGHT, H	C.M.	R.C.
D	A	B	H					
12"	3'-0"	2'-0"	2'-0"	0.222	0.222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

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

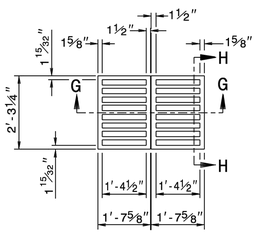
1-24

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

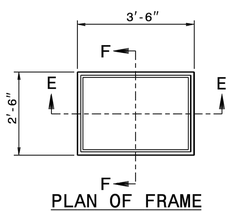
SHEET 1 OF 1
840.14



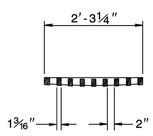
SECTION G-G



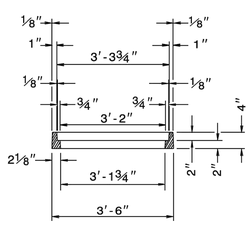
PLAN OF GRATING
CAST IRON



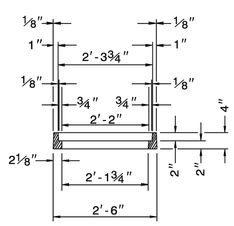
PLAN OF FRAME
CAST IRON



SECTION H-H



SECTION E-E



SECTION F-F

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWG.S 840.14 AND 840.15

SHEET 1 OF 1
840.16

No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE CID-24-04 V2	11/01/2024	SREG
03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT PSP-23-03	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
STORM DRAINAGE DETAILS

DRAWING / SHEET
D-3.10

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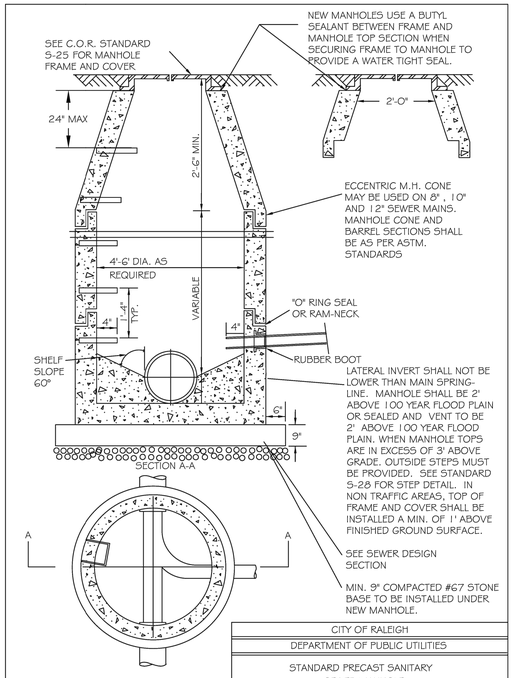
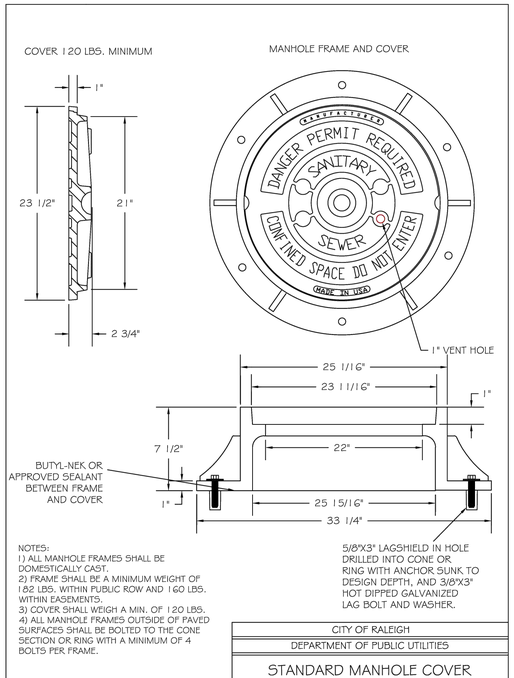


CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD PRECAST SANITARY SEWER MANHOLE

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-20	Y.C.A.	12-31-92	ABB	2-21-05
	RRH	3-30-00	D.H.L.	6-16-06

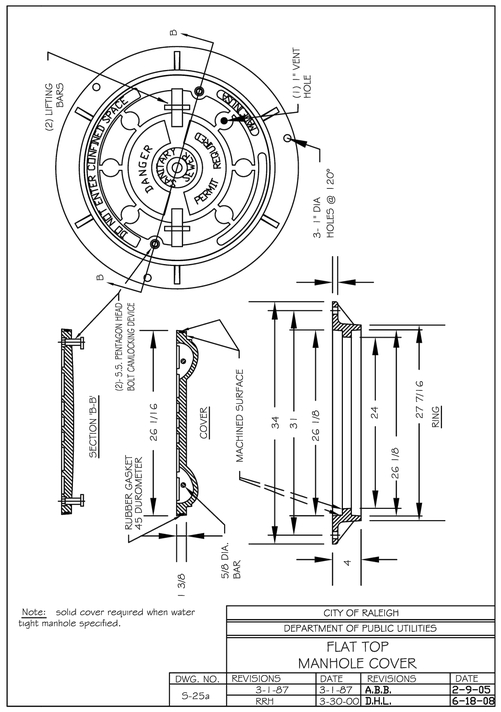


NOTES:
1) ALL MANHOLE FRAMES SHALL BE DOMESTICALLY CAST.
2) FRAME SHALL BE A MINIMUM WEIGHT OF 182 LBS. WITHIN PUBLIC ROW AND 160 LBS. WITHIN EASEMENTS.
3) COVER SHALL WEIGH A MIN. OF 120 LBS.
4) ALL MANHOLE FRAMES OUTSIDE OF PAVED SURFACES SHALL BE BOLTED TO THE CONE SECTION OR RING WITH A MINIMUM OF 4 BOLTS PER FRAME.

5/8"X3" LAGSHIELD IN HOLE DRILLED INTO CONE OR RING WITH ANCHOR SUNK TO DESIGN DEPTH, AND 3/8"X3" HOT DIPPED GALVANIZED LAG BOLT AND WASHER.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD MANHOLE COVER

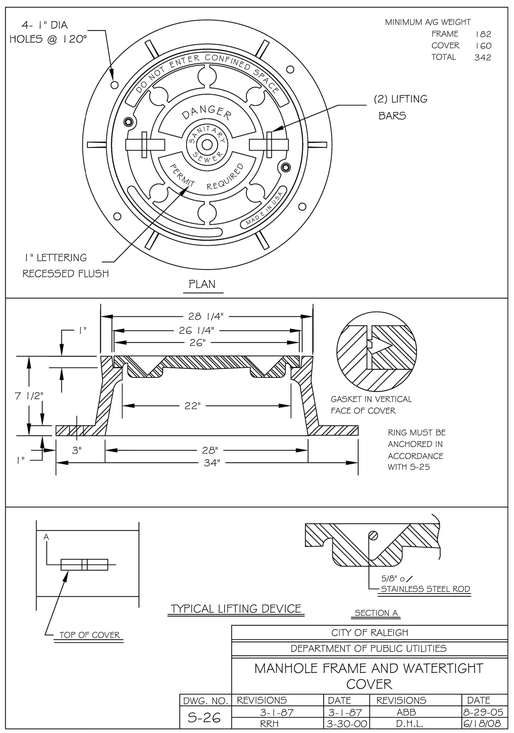
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-25	3-1-87	3-1-87	A.B.B.	2-9-05
	RRH	3-30-00	D.H.L.	6-18-08



Note: solid cover required when water tight manhole specified.

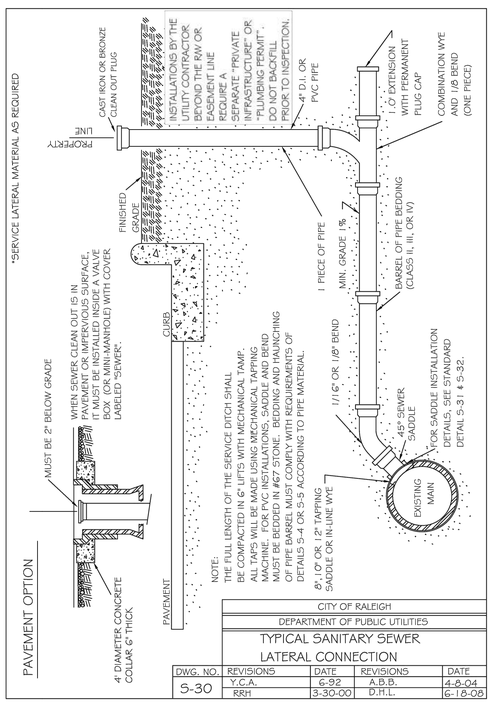
CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
FLAT TOP MANHOLE COVER

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-25a	3-1-87	3-1-87	A.B.B.	2-9-05
	RRH	3-30-00	D.H.L.	6-18-08



CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
MANHOLE FRAME AND WATERTIGHT COVER

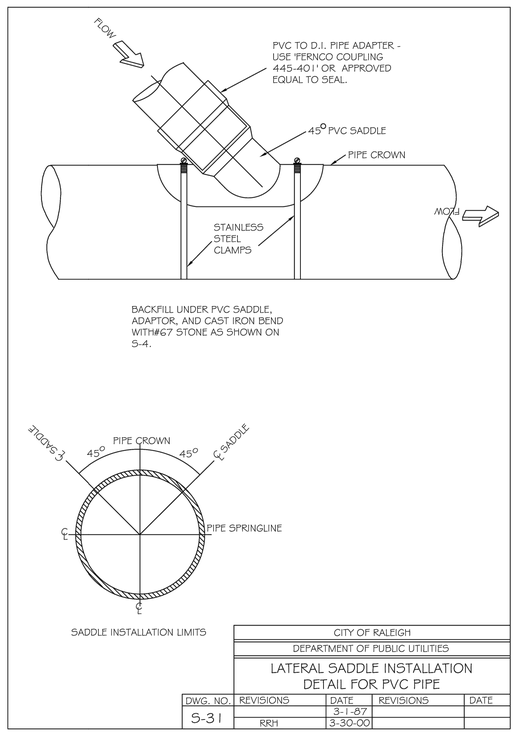
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-26	3-1-87	3-1-87	ABB	8-29-05
	RRH	3-30-00	D.H.L.	6/18/08



NOTE:
THE FULL LENGTH OF THE SERVICE DITCH SHALL BE COMPACTED IN 6" LIFTS WITH MECHANICAL TAMP. ALTERNATIVE BEARING SURFACE MATERIALS AND MACHINE - FOR PVC INSTALLATIONS, SADDLE AND BEND MUST BE BEDDED IN #67 STONE. BEDDING AND HAUNCHING OF PIPE BARREL MUST COMPLY WITH REQUIREMENTS OF DETAILS S-4 OR S-5 ACCORDING TO PIPE MATERIAL.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL SANITARY SEWER LATERAL CONNECTION

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-30	Y.C.A.	6-92	A.B.B.	4-8-04
	RRH	3-30-00	D.H.L.	6-18-08



CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
LATERAL SADDLE INSTALLATION DETAIL FOR PVC PIPE

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-31		3-1-87		
	RRH	3-30-00		

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03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

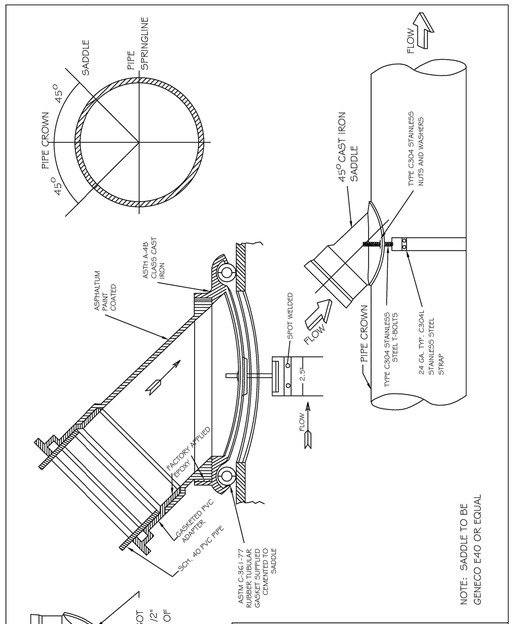
SEAL:

STRONGROCK ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

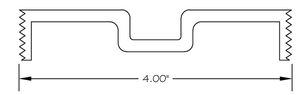
STRONG ROCK PROJECT	PSP-23-03
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
SANITARY SEWER DETAILS

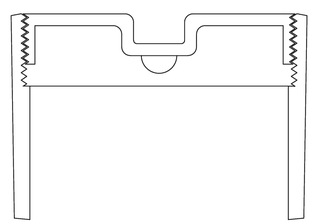
DRAWING SHEET
D-4.0



CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
LATERAL SADDLE INSTALLATION DETAIL FOR VCP AND DUCTILE IRON PIPE			
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-32	3-1-87	3-1-87		
	RR1	3-30-00		



STANDARD 4" BRONZE CLEANOUT PLUG

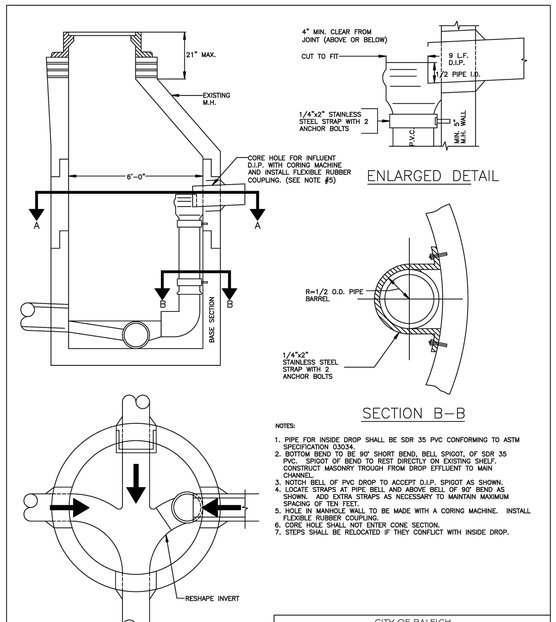


CLEANOUT FERRULE WITH PLUG

STYLES ACCEPTED:

INVERTED NUT
RAISED NUT

CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
4" CLEANOUT PLUG			
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-34		3-1-87	RR1	3-30-00
	D.W.C.	3-27-98		



NOTES:

1. PIPE FOR INSIDE DROP SHALL BE SDR 35 PVC CONFORMING TO ASTM SPECIFICATION D3034.
2. BOTTOM BEND TO BE 90° SHORT BEND, BELL SPIGOT, OF SDR 35 PVC. SPIGOT OF BEND TO REST DIRECTLY ON EXISTING SHELF. CONSTRUCT MASONRY TROUGH FROM DROP EFFLUENT TO MAIN CHANNEL.
3. NOTCH BELL OF PVC DROP TO ACCEPT D.I.P. SPIGOT AS SHOWN.
4. LOCATE STRAPS AT PIPE BELL AND ABOVE BELL OF 90° BEND AS SHOWN. ADD EXTRA STRAPS AS NECESSARY TO MAINTAIN MAXIMUM SPACING OF TEN FEET.
5. HOLE IN MANHOLE WALL TO BE MADE WITH A CORING MACHINE. INSTALL FLEXIBLE RUBBER COUPLING.
6. CORE HOLE SHALL NOT ENTER CONE SECTION.
7. STEPS SHALL BE RELOCATED IF THEY CONFLICT WITH INSIDE DROP.

CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
INSIDE DROP MANHOLE			
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-53	MAB	11-6-13		

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03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL:

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

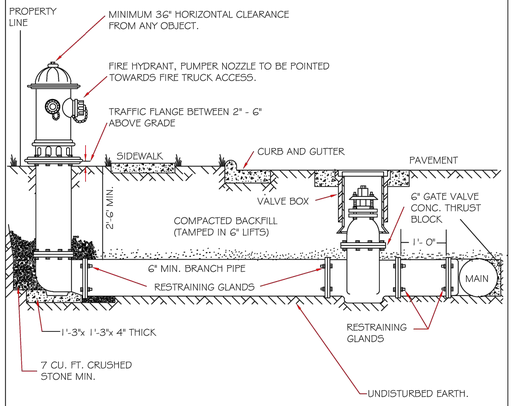
STRONG ROCK PROJECT PSP-23-03

NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
SANITARY SEWER DETAILS

DRAWING
SHEET

D-4.1

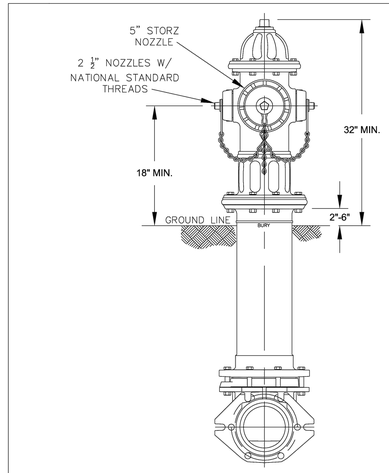


NOTES:
1. FIRE HYDRANT SHALL BE AS MANUFACTURED: MUELLER, AMERICAN DARLING, KENNEDY, M&H, WATEROUS, CLOW, EAST JORDAN IRON WORKS, OR US PIPE.
2. BRANCH PIPE SHALL BE DUCTILE IRON AWWA C150-96
3. 6" GATE VALVE SHALL BE AWWA C500-86 OPEN LEFT
4. STEEL RODS AND BOLTS SHALL BE ¾" HOT DIPPED GALVANIZED
5. FIRE HYDRANTS WILL BE INSTALLED IN TRUE VERTICAL POSITION
RODS SHALL NOT BE COUPLED MORE THAN ONCE. IF THE LENGTH FROM THE VALVE TO THE HYDRANT EXCEEDS 20' THEN A MECHANICAL RESTRAINING GLAND WITH A REBAR CAGE SHALL BE INSTALLED NO MORE THAN 10' FROM HYDRANT AND POURED IN CONCRETE.
FIRE HYDRANTS TO BE LOCATED IN ROW OR 2 FOOT EASEMENT ADJACENT TO ROW

ANYTIME SITE WORK, CONSTRUCTION, ROAD WORK, OR ANY OTHER WORK CHANGES THE GRADE OF THE FIRE HYDRANT, THE PERSON RESPONSIBLE FOR THE WORK IS RESPONSIBLE FOR ADJUSTING THE FIRE HYDRANT TO STAY WITHIN COMPLIANCE.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD FIRE HYDRANT INSTALLATION DETAIL

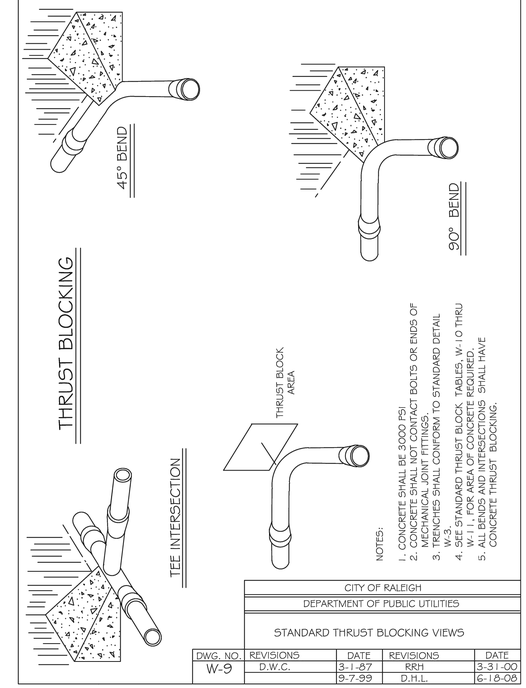
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-4	ABB	4-6-04	PAP	2/17/09
	DHL	2/14/06		



NOTES:
1. ALL PUBLIC FIRE HYDRANTS IN THE CITY OF RALEIGH AND THE MERGER TOWNS OF GARNER, ROLESVILLE, WAKE FOREST, KNIGHTDALE, WENDELL AND ZEBULON SHALL BE PAINTED CHROME YELLOW WITH HIGH REFLECTIVE ALUMINUM SILVER CAPS, BONNETS AND OPERATING NUTS.
2. ALL PRIVATE FIRE HYDRANTS SHALL BE RED.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
RALEIGH, GARNER, KNIGHTDALE, ROLESVILLE, WAKE FOREST, WENDELL & ZEBULON
STANDARD FIRE HYDRANT WITH 5" STORZ PUMPER NOZZLE

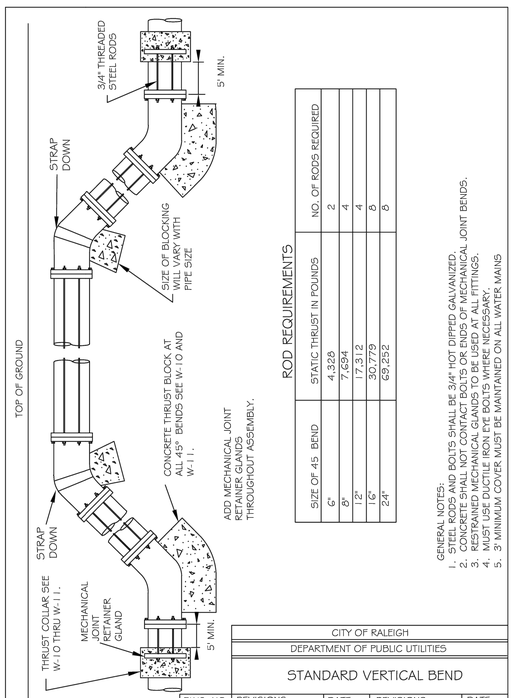
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-5	MAB	6-30-16		
	KAT	9-15-17		



NOTES:
1. CONCRETE SHALL BE 3000 PSI
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
3. TRENCHES SHALL CONFORM TO STANDARD DETAIL W-3.
4. SEE STANDARD THRUST BLOCK TABLES, W-10 THRU W-11, FOR AREA OF CONCRETE REQUIRED.
5. ALL BENDS AND INTERSECTIONS SHALL HAVE CONCRETE THRUST BLOCKING.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD THRUST BLOCKING VIEWS

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-9	D.W.C.	3-1-87	RRH	3-31-00
		9-7-99	D.H.L.	6-18-08



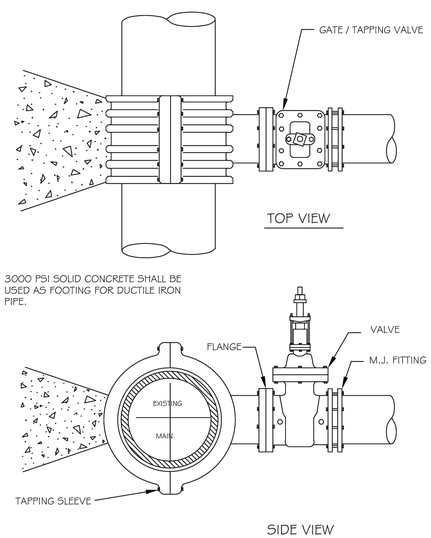
ROD REQUIREMENTS

SIZE OF 45 BEND	STATIC THRUST IN POUNDS	NO. OF RODS REQUIRED
6"	4,328	2
8"	7,694	2
12"	17,312	4
16"	30,779	4
24"	69,252	8
		8

GENERAL NOTES:
1. STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.
3. RESTRAINED MECHANICAL GLANDS TO BE USED AT ALL FITTINGS.
4. MUST USE DUCTILE IRON RODS WHERE NECESSARY.
5. 3' MINIMUM COVER MUST BE MAINTAINED ON ALL WATER MAINS

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD VERTICAL BEND

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-12	ABB	4-6-04	J.P.S.	11-1-10
	D.H.L.	6-18-08		

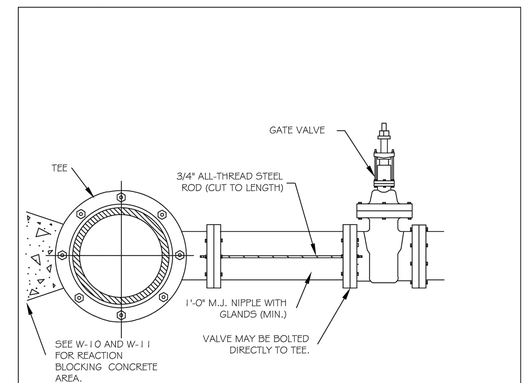


3000 PSI SOLID CONCRETE SHALL BE USED AS FOOTING FOR DUCTILE IRON PIPE.

NOTES:
1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
2. SEE STANDARD REACTION BLOCK TABLES, W-10 AND W-11 FOR AREA OF CONCRETE REQUIRED.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
4" - 24" STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-14	Y.C.A.	12-31-91	RRH	3-31-00
	D.W.C.	9-7-99	J.P.S.	11-1-10



ROD REQUIREMENTS

NO. OF RODS	BRANCH SIZE
4"	2
6"	2
8"	4
12"	4
16"	6
24"	6
30"	8
36"	8

NOTES:
1. STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
2. SEE STANDARD THRUST BLOCK, TABLES W-10 AND W-11 FOR CONCRETE.
3. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.
4. THIS RODDING REQUIREMENT DOES NOT APPLY TO FIRE HYDRANTS.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
VALVE RESTRAINT AT TEES AND CROSSES FOR LINES (4"-24")

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-15	RRH	3-31-00	D.H.L.	6-16-08
	A.B.B.	4-19-04	J.P.S.	11-1-10

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04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

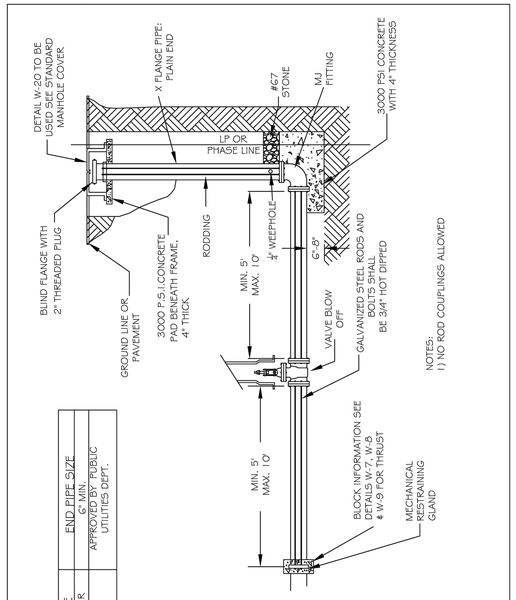
SEAL

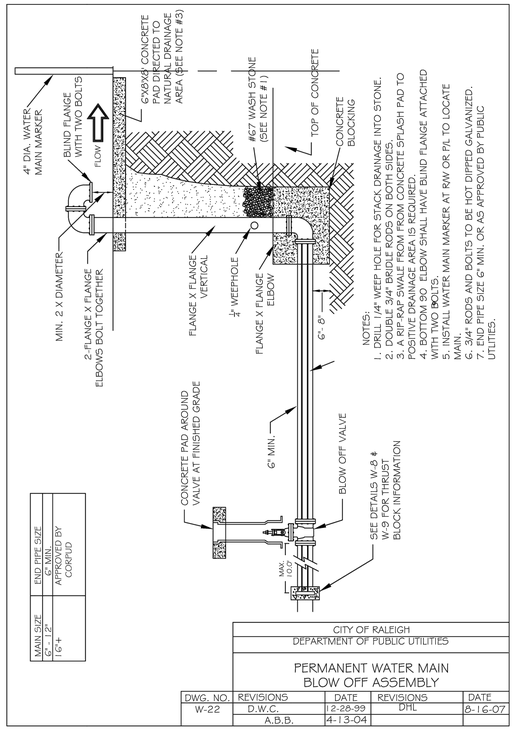
STRONGROCK ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

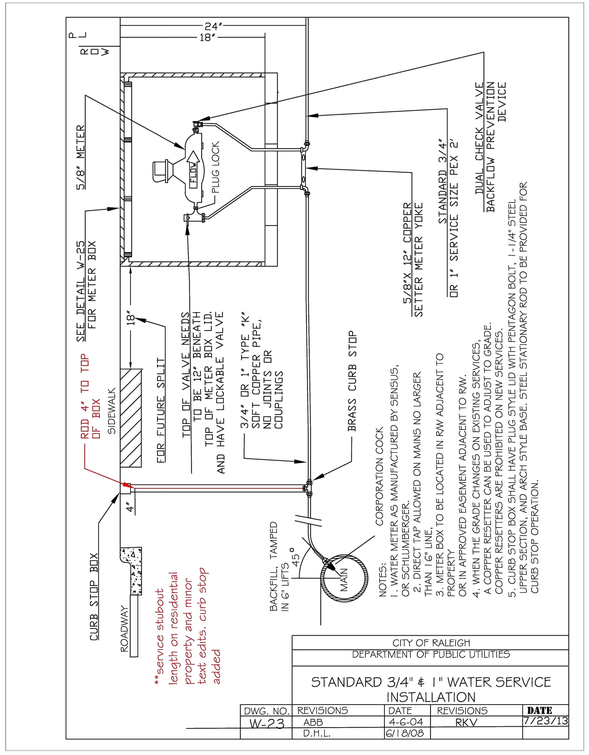
STRONG ROCK PROJECT PSP-23-03
NOT FOR CONSTRUCTION
SCALE AS SHOWN
DESIGNED BY SRG
DRAWN BY SRG
CHECKED BY SRG

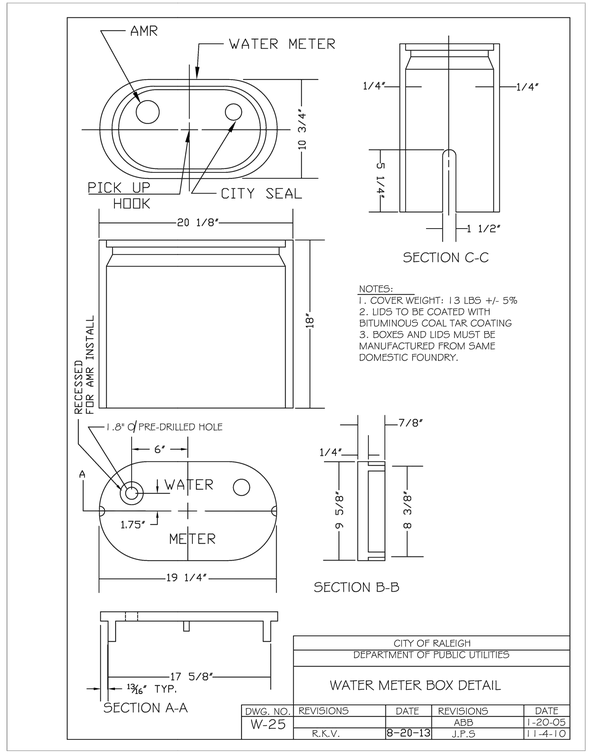
RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
WATER DETAILS

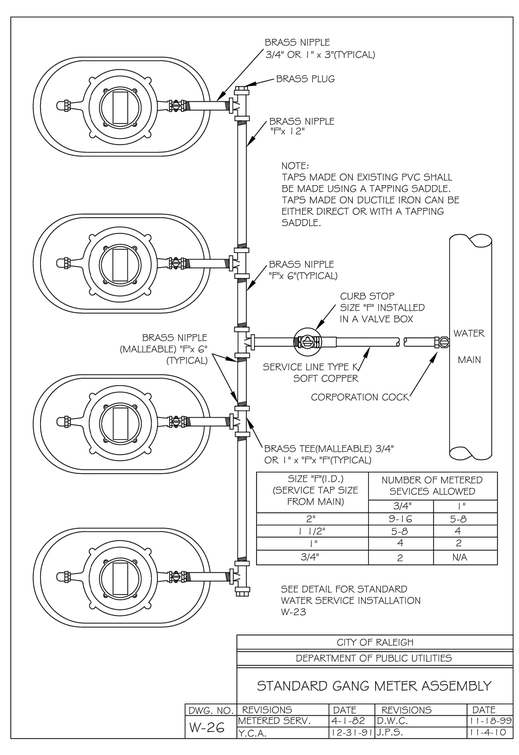
DRAWING SHEET
D-5.0











SIZE "I"(I.D.) (SERVICE TAP SIZE FROM MAIN)	NUMBER OF METERED SEVICES ALLOWED	
	3/4"	1"
2"	9-16	5-8
1 1/2"	5-8	4
1"	4	2
3/4"	2	N/A

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No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
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03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL:

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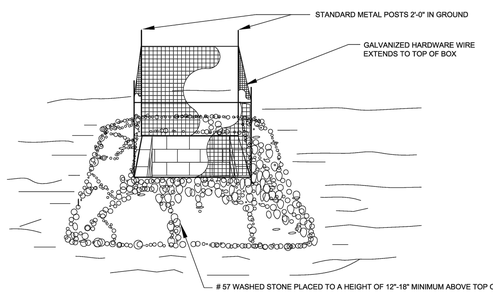


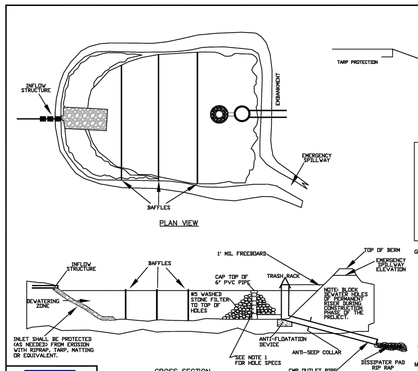
MAINTENANCE NOTES:

1. REMOVE SEDIMENT WHEN HALF HEIGHT OF STONE AND CLEAR HARDWARE OF DEBRIS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS, TAKING CARE NOT TO DAMAGE OR UNDERCUT HARDWARE DURING SEDIMENT REMOVAL.
2. REPLACE STONE AS NEEDED.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD GRAVEL YARD INLET PROTECTION



NOTE 1

HOLE SPECS:

DEWATERING HOLES WILL BE INSTALLED IN SETS OF HORIZONTAL ROWS. THE FIRST SET OF HOLES WILL BE SET 1 INCHES FROM THE BOTTOM OF THE RISER PIPE. THE FIRST RING OF HOLES WILL CONTINUE UP RISER AT INTERVALS OF 3 INCHES. HOLES WILL BE 3/4 INCH IN DIAMETER AND WILL BE SPACED EQUALLY AROUND THE RISER. THE NUMBER OF HOLES PER RING WILL EQUAL TO THE DRAINAGE AREA.

EXAMPLE:
A BASIN DRAINING 2.0 ACRES SHOULD HAVE 8 HOLES PER RING EVERY 3 INCHES ON THE RISER PIPE. THE FIRST RING OF HOLES WILL BE SET 6 INCHES FROM THE BOTTOM OF THE RISER.

NOTE: ROUND DRAINAGE AREA TO THE NEAREST WHOLE NUMBER TO DETERMINE NUMBER OF HOLES.

GENERAL NOTES:

1) SILT SAC REQUIRED WHEN DEWATERING BASIN.
2) PROVIDE A MINIMUM OF THREE POROUS BAFFLES TO EVENLY DISTRIBUTE FLOW ACROSS THE BASIN, REDUCING TURBULENCE.
3) BAFFLE MATERIAL MUST BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR A SILT FENCE.
4) THE TARP USED TO PROTECT THE WEIR SHALL BE THE WIDTH SPECIFIED. THE LENGTH OF THE TARP SHALL BE ACCORDING TO AVAILABLE SUPPLY. IF MULTIPLE TARPS ARE TO BE USED, THEN TARPS SHALL BE OVERLAPPED AT LEAST 12". THE UPSTREAM 12" TARP SHALL OVERLAP THE DOWNSTREAM TARP. THE TARP SHALL BE 50 MIL. HEAVY DUTY SILVER TARPAULINS OR EQUIVALENT FOR U.V. RESISTANCE.
5) DURING THE CONSTRUCTION PHASE OF THE PROJECT, PERMANENT STORMWATER RISER SHALL ONLY DEWATER FROM THE TOP OF PIPE.
6) POND SHALL NOT BE CONVERTED FOR STORMWATER USE UNTIL APPROVED BY ENVIRONMENTAL ENGINEER.

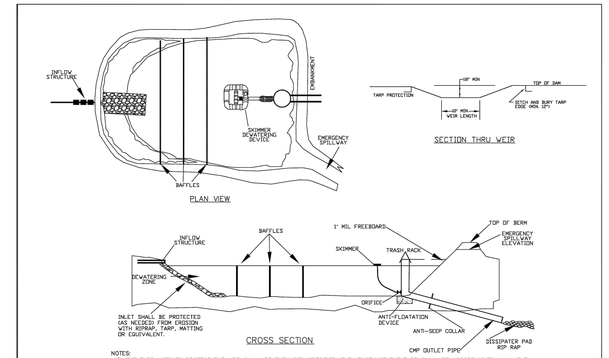
MAINTENANCE NOTES:

1) INSPECT THE BASIN AND RISER ON A REGULAR BASIS AND AFTER EVERY SIGNIFICANT RAINFALL EVENT (1 INCH OR GREATER).
2) BASIN SHOULD BE CLEANED OUT WHEN CAPACITY REACHES AN ELEVATION REPRESENTING THAT THE BASIN IS HALF-FULL.
3) MOST OF THE SEDIMENT WILL ACCUMULATE IN THE FIRST BAY, SO THIS SHOULD BE READILY AVAILABLE FOR MAINTENANCE.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/15

STANDARD CUSTOM BASIN ATTACHED TO PERMANENT RISER



NOTES:

1) THE TARP USED TO PROTECT THE WEIR SHALL BE THE WIDTH SPECIFIED. THE LENGTH OF THE TARP SHALL BE ACCORDING TO AVAILABLE SUPPLY. IF MULTIPLE TARPS ARE TO BE USED, THEN TARPS SHALL BE OVERLAPPED AT LEAST 12". THE UPSTREAM 12" TARP SHALL OVERLAP THE DOWNSTREAM TARP. THE TARP SHALL BE 50 MIL. HEAVY DUTY SILVER TARPAULINS OR EQUIVALENT FOR U.V. RESISTANCE.
2) PROVIDE A MINIMUM OF THREE POROUS BAFFLES TO EVENLY DISTRIBUTE FLOW ACROSS THE BASIN, REDUCING TURBULENCE.
3) BAFFLE MATERIAL MUST BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR A SILT FENCE.
4) DURING THE CONSTRUCTION PHASE OF THE PROJECT, PERMANENT STORMWATER RISER SHALL ONLY DEWATER FROM THE TOP OF PIPE.
5) POND SHALL NOT BE CONVERTED FOR STORMWATER USE UNTIL APPROVED BY ENVIRONMENTAL ENGINEER.

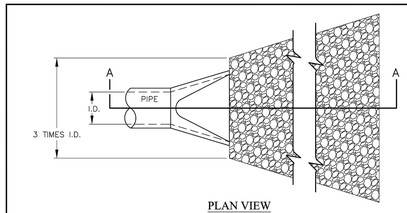
MAINTENANCE NOTES:

1) INSPECT THE BASIN AND RISER ON A REGULAR BASIS AND AFTER EVERY SIGNIFICANT RAINFALL EVENT (1 INCH OR GREATER).
2) BASIN SHOULD BE CLEANED OUT WHEN CAPACITY REACHES AN ELEVATION REPRESENTING THAT THE BASIN IS HALF-FULL.
3) MOST OF THE SEDIMENT WILL ACCUMULATE IN THE FIRST BAY, SO THIS SHOULD BE READILY AVAILABLE FOR MAINTENANCE.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/15

STANDARD SKIMMER ATTACHED TO PERMANENT RISER



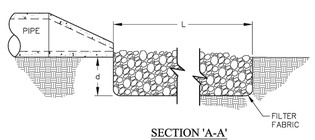
PLAN VIEW

NOTES:

1. L = THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
3. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

MAINTENANCE NOTES:

1. INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1 INCH OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

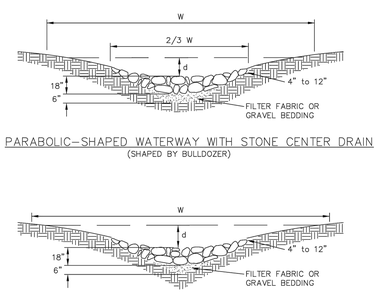


SECTION 'A-A'

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD PIPE OUTLET TO FLAT AREA NO WELL-DEFINED CHANNEL



PARABOLIC-SHAPED WATERWAY WITH STONE CENTER DRAIN
(SHAPED BY BULLDOZER)

V-SHAPED WATERWAY WITH STONE CENTER DRAIN
(SHAPED BY MOTOR GRADER)

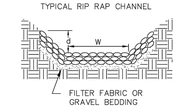
NOTES:

-TO BE USED WHERE EXCESSIVE STORMWATER VELOCITIES PROHIBIT VEGETATIVE LININGS.

-SIZE OF STONE MUST BE DETERMINED BY APPROPRIATE DESIGN PROCEDURE.

-DIMENSIONS FOR d & W VARIES ACCORDING TO DESIGN.

TYPICAL RIP RAP CHANNEL



TRAPEZOIDAL

MAINTENANCE NOTES:
-INSPECT RIPRAP DITCH WEEKLY AND AFTER SIGNIFICANT RAIN EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIP RAP HAS TAKEN PLACE. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.
-IF EROSION IS EVIDENT PAST END OF RIPRAP DITCH DUE TO RUNOFF DISCHARGING FROM DITCH, INCREASE DIMENSIONS OF RIPRAP PAD PROVIDED SPACE IS AVAILABLE WITHIN THE APPROVED LIMITS OF DISTURBANCE.
-MAINTAIN ALL VEGETATION ADJACENT TO CHANNEL IN A HEALTHY, VIGOROUS CONDITION TO PROTECT DITCH FROM EROSION AND SCOUR DURING OUT-OF-BANK FLOW.

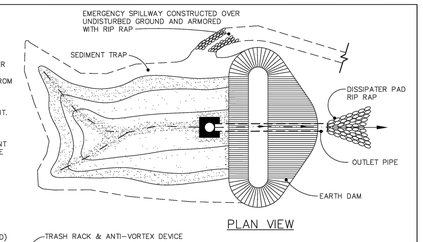
WAKE COUNTY NORTH CAROLINA

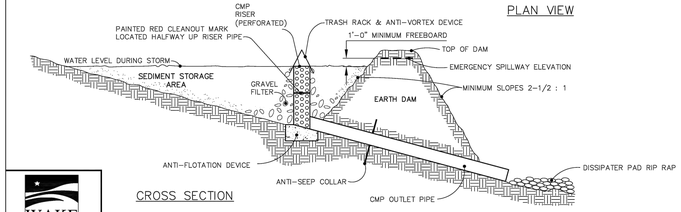
EFFECTIVE: 01/31/08

STANDARD RIP-RAP LINED CHANNELS

MAINTENANCE NOTES:

1. INSPECT THE BASIN AND RISER ON A REGULAR BASIS AND AFTER EVERY SIGNIFICANT RAINFALL EVENT (1 INCH OR GREATER).
2. INSPECT THE BASIN SHOULD BE CLEANED OUT WHEN CAPACITY REACHES AN ELEVATION REPRESENTING THAT THE BASIN IS HALF-FULL.
3. CHECK THE SKIMMER FOR PROPER FUNCTIONING AND TO VERIFY THAT IT IS NOT CLOGGED WITH SEDIMENT.
4. MAKE SURE THE VENT PIPE ON THE SKIMMER IS TURNED UPRIGHT.
5. INSPECT THE BARREL FOR SEEPAGE AROUND THE PIPE AT THE OUTLET.
6. INSPECT THE EMBANKMENT, BAFFLES, OVERFLOW SPILLWAY AND OUTLET FOR EROSION DAMAGE.□AT A MINIMUM, REMOVE SEDIMENT WHEN THE BASIN VOLUME REACHES 50% OF THE TOTAL STORAGE VOLUME AND AS NEEDED.

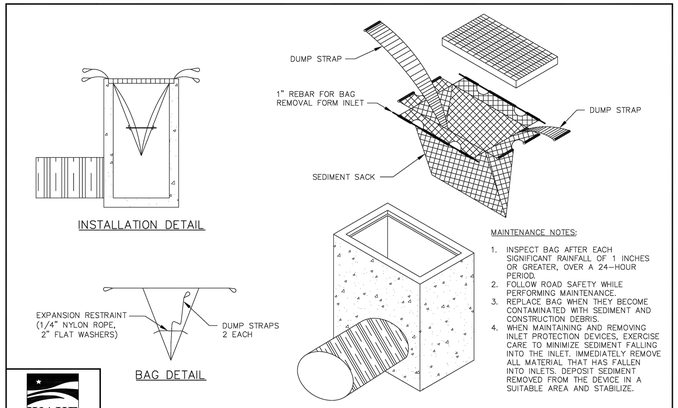




WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD RISER-BARREL SEDIMENT BASIN



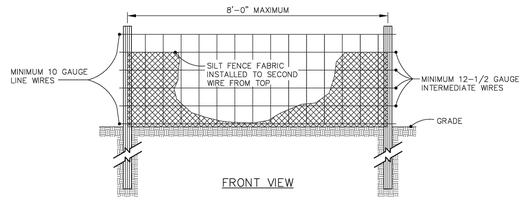
MAINTENANCE NOTES:

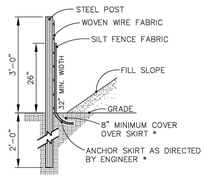
1. INSPECT BAG AFTER EACH SIGNIFICANT RAINFALL OF 1 INCHES OR GREATER, OVER A 24-HOUR PERIOD.
2. FOLLOW ROAD SAFETY WHILE PERFORMING MAINTENANCE.
3. REPLACE BAG WHEN THEY BECOME CONTAMINATED WITH SEDIMENT AND CONSTRUCTION DEBRIS.
4. WHEN MAINTAINING AND REMOVING INLET PROTECTION DEVICES, EXERCISE CARE TO MINIMIZE SEDIMENT FALLING INTO THE INLET. IMMEDIATELY REMOVE ALL MATERIAL THAT HAS FALLEN INTO INLETS. DEPOSIT SEDIMENT REMOVED FROM THE DEVICE IN A SUITABLE AREA AND STABILIZE.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD SILT BAG - INLET SEDIMENT CONTROL DEVICE





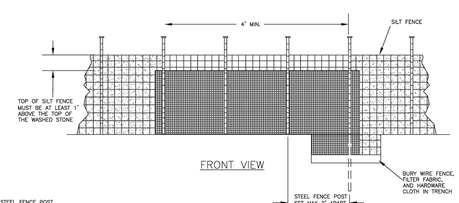
MAINTENANCE NOTES:

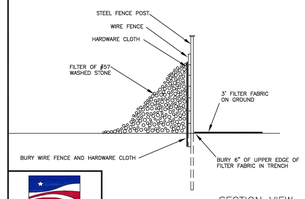
1. INSPECT BAG AFTER EACH SIGNIFICANT RAINFALL OF 1 INCHES OR GREATER, OVER A 24-HOUR PERIODL. MAKE ANY REPAIRS IMMEDIATELY.
2. INSPECT THE SILT FENCE TO BE SURE THE BOTTOM OF THE
3. GEOTEXTILE IS KEYED IN PROPERLY.
4. AT A MINIMUM, REMOVE AND DISPOSE OF ALL SILT ACCUMULATIONS WHEN DEPTH REACHES 1/2 THE HEIGHT OF THE GEOTEXTILE. DO NOT UNDERMINE THE FENCE DURING CLEANOUT.
5. DISPOSE OF SEDIMENT BY HAULING IT TO AN APPROVED WASTE SITE WITH APPROPRIATE PERIMETER PROTECTION.
6. REMOVE AND REPLACE DETERIORATED OR CLOGGED SILT FENCE.
7. REPLACE SILT FENCE REMOVED FOR ACCESS AT THE END OF EACH DAY'S OPERATION.
8. INSTALL ADDITIONAL POSTS OR WIRE BACKING IF FENCE IS SAGGING.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD TEMPORARY SILT FENCE





MAINTENANCE NOTES:

1. INSPECT THE DEVICE PERIODICALLY AND AFTER 1 INCH RAINFALL OVER 24 HOUR PERIOD FOR DAMAGE AND SEDIMENT ACCUMULATION TO CONFIRM THE DEVICE IS FUNCTIONING PROPERLY.
2. AT A MINIMUM, REMOVE SEDIMENT FROM THE DEVICE WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE SEDIMENT CONTROL STONE.
3. REPLACE OR CLEAN THE SEDIMENT CONTROL STONE AS NEEDED TO ALLOW WATER TO DRAIN THROUGH THE DEVICE BETWEEN RAINFALL EVENTS.
4. REPAIR AREAS WHERE OUTLET BECOMES UNDERMINED DUE TO CONCENTRATED FLOWS.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD SILT FENCE OUTLET

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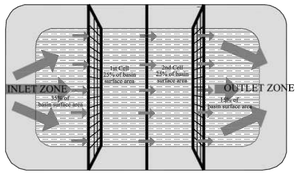
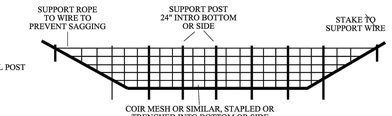


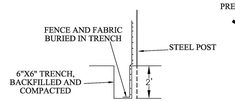
PLAN VIEW

NOTES:
1. BAFFLE MATERIAL SHOULD BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
2. MOST OF THE SEDIMENT WILL ACCUMULATE IN THE 1ST BAY, WHICH SHOULD BE READILY ACCESSIBLE FOR MAINTENANCE.
3. PROVIDE 3 BAFFLES (USE TWO IF LESS THAN 20 FEET IN LENGTH). PROVIDE 5 BAFFLES FOR DRAINAGE AREAS GREATER THAN 10 ACRES.
4. BAFFLE SHALL BE 700 GM2 COIR EROSION BLANKET.
5. TOPS OF BAFFLES SHOULD BE 2 INCHES LOWER THAN THE TOP OF THE BERMS.

MAINTENANCE NOTES:
1. INSPECT BAFFLES FOR REPAIR ONCE A WEEK AND AFTER EACH 1" RAINFALL.
2. MAINTAIN ACCESS TO BAFFLES AND MAKE ANY REPAIRS IMMEDIATELY.
3. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL.
4. AVOID DAMAGING BAFFLES DURING CLEANOUT AND REPLACE IF DAMAGED.
5. REMOVE BAFFLES AND SEDIMENT DEPOSITS AFTER CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.

CROSS SECTION



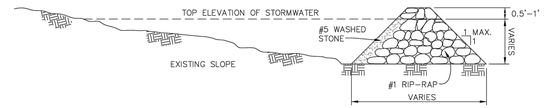


SECTION VIEW AT OPENING

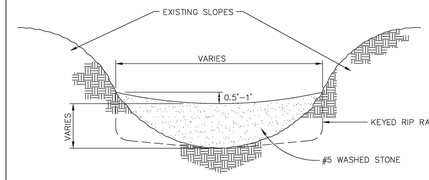
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD BAFFLES DETAIL



SIDE VIEW



FRONT VIEW

CONSTRUCTION NOTES:
1. HEIGHT & WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.
2. KEY RIP RAP INTO THE DAM FOR STABILIZATION.

MAINTENANCE NOTES:
1. INSPECT CHECK DAMS WEEKLY AND AFTER EVERY RAINFALL EVENT OF 1" OR MORE.
2. REMOVE SEDIMENT AND DEBRIS AS NEEDED.
3. MAINTAIN FLOW THROUGH THE CHECK DAM.

STEP SEQUENCE

NOTE: REMOVE SEDIMENT ACCUMULATION FROM BEHIND CHECK DAMS TO PREVENT DAMAGE TO CHANNEL VEGETATION. FLOW SHOULD BE MAINTAINED THROUGH THE DAM.

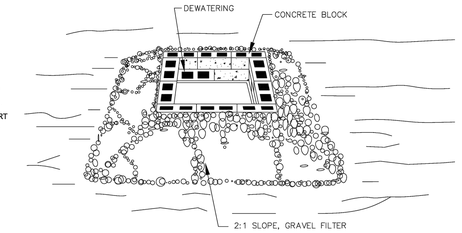
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

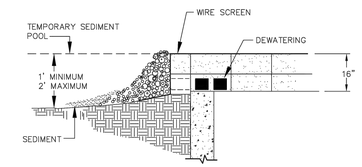
STANDARD CHECK DAM

CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCHES BELOW THE CREST OF THE STORM 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, 3/4 TO 1/2 INCH IN DIAMETER, PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE. DOT #57 WASHED STONE IS RECOMMENDED.



MAINTENANCE NOTES:
1. INSPECT INLET PROTECTION AND REMOVE SEDIMENT AFTER EACH 1" RAIN EVENT.
2. REMOVE SEDIMENT WHEN VOLUME OF THE BASIN IS REDUCED BY ONE-HALF.
3. GRAVEL SHOULD BE REPLACED AND REPAIRS MADE AS NEEDED.



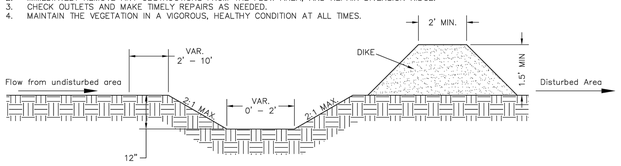
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD BLOCK & GRAVEL DROP INLET PROTECTION

NOTES:
1. DIVERSION TO BE USED UPSLOPE OF A CONSTRUCTION SITE TO PREVENT STORM RUNOFF FROM ENTERING THE DISTURBED AREA.
2. IMMEDIATELY LINE AND STABILIZE BEFORE ANY DOWNSLOPE GRADING BEGINS (STABILIZATION MUST OCCUR BEFORE ISSUANCE OF A CERTIFICATE OF COMPLIANCE). STABILIZATION METHOD IS BASED ON VELOCITY OF OFFSITE DRAINAGE.
3. DIVERSIONS SHOULD ONLY BE USED FOR DRAINAGES 5 ACRES OR LESS.
4. ANY SEDIMENT LADEN WATER PRIOR TO STABILIZATION OF THE DIVERSION MUST BE DIVERTED INTO AN APPROVED EROSION AND SEDIMENT CONTROL BMP. CLEAN WATER SHOULD EMPTY INTO AN APPROVED OUTLET DEVICE.

MAINTENANCE NOTES:
1. INSPECT AFTER EVERY RAINFALL DURING THE CONSTRUCTION OPERATION.
2. IMMEDIATELY REMOVE ANY OBSTRUCTIONS FROM THE FLOW AREA, AND REPAIR DIVERSION RIDGE.
3. CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.
4. MAINTAIN THE VEGETATION IN A VIGOROUS, HEALTHY CONDITION AT ALL TIMES.

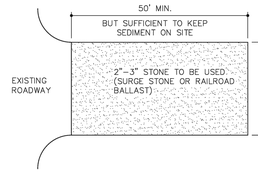


CROSS SECTIONAL VIEW

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

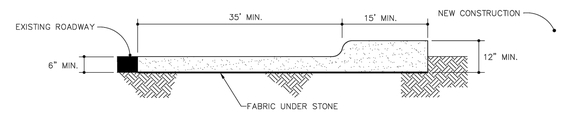
STANDARD CLEAN WATER DIVERSION



PLAN VIEW

NOTES:
1. INSTALL SILT FENCE OR TREE PROTECTION FENCE TO ENSURE CONSTRUCTION ENTRANCE IS USED BY VEHICLES.
2. IF MUD IS NOT REMOVED FROM TIRES AFTER VEHICLE TRAVELS OVER STONE, THE TIRES OF THE VEHICLE MUST BE WASHED BEFORE ENTERING PUBLIC ROADS.

MAINTENANCE NOTES:
1. THE GRAVEL CONSTRUCTION ENTRANCE MUST BE MAINTAINED IN A CONDITION TO PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO ADJACENT ROADWAYS.
2. REPLACEMENT OF STONE MAY BE NECESSARY TO ENSURE THE GRAVEL ENTRANCE FUNCTIONS PROPERLY.
3. REPLENISHMENT OF STONE MAY BE NECESSARY.
4. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE SHOULD BE COMPLETED.
5. ANY MATERIAL TRACKED ONTO THE ROADWAY SHALL BE CLEANED UP IMMEDIATELY.

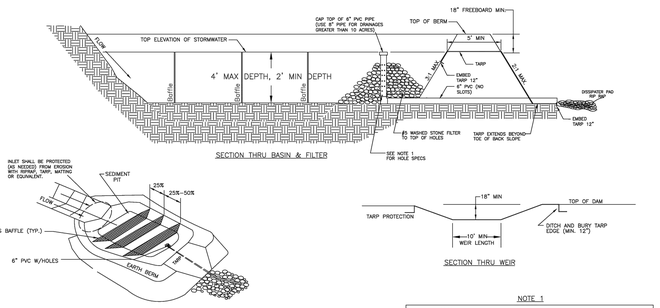


CROSS SECTION

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD CONSTRUCTION ENTRANCE



GENERAL NOTES
1. DRAW DOWN RISER & BARREL SHALL BE 6" SCH. 40 PVC WITH CLEAN-OUT CAP AND 3/4" HOLES. SEE NOTE 1 FOR NUMBER AND SPACING OF HOLES.
2. THE TARP USED TO PROTECT THE WEIR SHALL BE THE MODIFIED SIZE AND LENGTH OF THE TARP SHALL BE ROUGHLY EQUIVALENT TO THE SURFACE AREA OF THE PIPE TO BE USED. THEN TARPS SHALL BE OVERLAPPED AT LEAST 12". THE UPSTREAM 12" TARP SHALL OVERLAP THE DOWNSTREAM TARP. THE TARP SHALL BE 50 MIL. HEAVY DUTY SILVER TARPAULINS OR EQUIVALENT FOR U.V. RESISTANCE.

MAINTENANCE NOTES
1. INSPECT WEEKLY AND AFTER EVERY 1" OR GREATER RAINFALL.
2. REMOVE SEDIMENT AND PROPERLY DISPOSED OF WHEN BASIN IS HALF FULL.
3. THE FILTER MATERIAL AROUND RISER SHOULD BE REPLACED AS NEEDED TO ENSURE DEWATERING.
4. CHECK THE STRUCTURE FOR DAMAGE FROM EROSION OR PIPING.
5. ANY RIP RAP DISPLACED FROM DISSIPATER PAD MUST BE REPLACED IMMEDIATELY.

NOTE 1

HOLE SPECS:
DEWATERING HOLES WILL BE INSTALLED IN SETS OF HORIZONTAL RINGS. THE FIRST SET OF HOLES WILL BE SET 6 INCHES FROM THE BOTTOM OF THE RISER. RINGS WILL CONTINUE UP THE RISER IN INTERVALS OF 3 INCHES. HOLES WILL BE 3/4 INCH IN DIAMETER AND WILL BE SPACED EQUALLY AROUND THE RISER. THE NUMBER OF HOLES PER RING WILL EQUAL TO THE DRAINAGE AREA.

EXAMPLE
A BASIN DRAINING 2.0 ACRES SHOULD HAVE 2 HOLES PER RING EVERY 3 INCHES ON THE RISER PIPE; THE FIRST RING (2 HOLES) WILL BE SET 6 INCHES FROM THE BOTTOM OF THE RISER.

NOTE: ROUND DRAINAGE AREA TO THE NEAREST WHOLE NUMBER TO DETERMINE NUMBER OF HOLES.

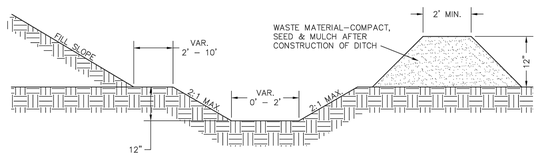
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD CUSTOM BASIN

NOTES:
1. TEMPORARY DIVERSION DITCH TO BE USED TO INTERCEPT FLOW AND/OR DIVERT TO A SEDIMENT CONTROL MEASURE OR BMP.
2. STABILIZE DIVERSION DITCH BERM WITH TEMPORARY SEEDING, MULCH WITH TAC, AND/OR EROSION CONTROL NETTING.

MAINTENANCE NOTES:
1. INSPECT ONCE A WEEK AND AFTER EVERY 1" RAINFALL.
2. SILT SHALL BE REMOVED WHEN DITCH IS ONE-HALF FULL.
3. DITCH SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.
4. CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.
5. AFTER DRAINAGE AREA IS PERMANENTLY STABILIZED, PLACE WASTE MATERIAL IN DITCH TO BLEND WITH NATURAL GROUND AND STABILIZE.

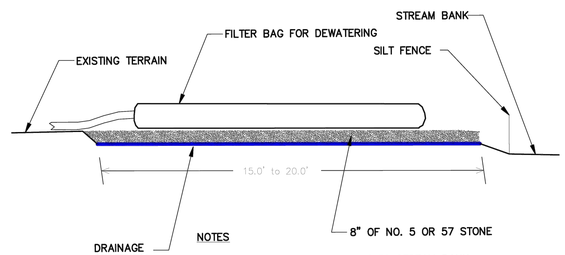


CROSS SECTIONAL VIEW

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD TEMPORARY DIVERSION DITCH



NOTES
1. PROVIDE STABILIZED OUTLET TO STREAM BANK.
2. WOOD PALLETS MAY BE USED IN LIEU OF STONE AND GEOTEXTILE AS DIRECTED. A SUFFICIENT NUMBER OF PALLETS MUST BE PROVIDED TO ELEVATE THE ENTIRE FILTER BAG FOR DEWATERING ABOVE NATURAL GROUND.

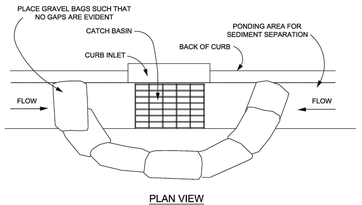
MAINTENANCE NOTES
1. REPLACE AND DISPOSE OF FILTER BAG(S) WHEN IT IS ¾ FULL OF SEDIMENT OR WHEN IT IS IMPRCTICAL FOR BAG TO FILTER SEDIMENT.
2. PROVIDE A SUFFICEINT QUANTITY OF FILTER BAGS TO CONTAIN SILT FROM PUMPED EFFLUENT.

NOT TO SCALE

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

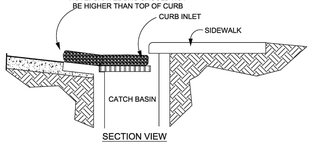
STANDARD FILTER BAG FOR DEWATERING ACTIVITIES



PLAN VIEW

NOTES:
1. PLACE GRAVEL BAG BARRIER ON GENTLY SLOPING STREET, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNNOFF.
2. USE SAND BAGS OF WOVEN GEOTEXTILE FABRIC (NOT BURLAP) AND FILL WITH ¾ INCH (OR SMALLER) GRAVEL. BAGS MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.
3. WHEN INSTALLING CURB INLET PROTECTION DEVICES, **NEVER** BLOCK THE CURB INLET.

MAINTENANCE NOTES:
1. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT (1 INCH OR GREATER). SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.



SECTION VIEW

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD GRAVEL BAG CURB INLET PROTECTION

THIS PLANSET AND ANY ASSOCIATED DOCUMENTS ARE PRELIMINARY AND NOT AUTHORIZED FOR CONSTRUCTION UNTIL SIGNED, DATED, AND OFFICIALLY RELEASED FOR CONSTRUCTION BY THE ENGINEER OF RECORD.

No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE CID-24-04 V2	11/01/2024	SREG
03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL:

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT PSP-23-03

NOT FOR CONSTRUCTION

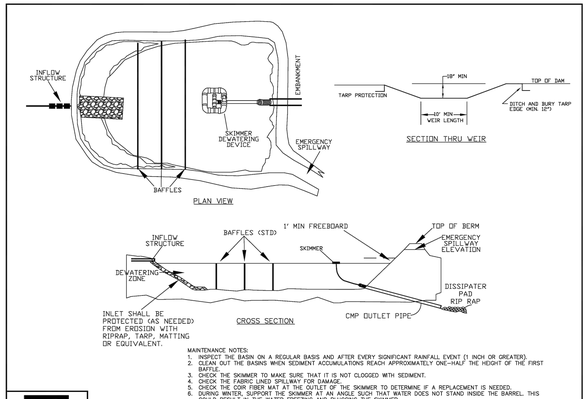
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

EROSION CONTROL PLAN DETAILS

DRAWING / SHEET

D-6.1



MAINTENANCE NOTES:

1. INSPECT THE BASIN ON A REGULAR BASIS AND AFTER EVERY SIGNIFICANT RAINFALL EVENT (1 INCH OR GREATER).
2. CLEAN OUT THE BASINS WHEN SEDIMENT ACCUMULATIONS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE FIRST BAFFLE.
3. CHECK THE SKIMMER TO MAKE SURE THAT IT IS NOT CLOGGED WITH SEDIMENT.
4. CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE.
5. CHECK THE COIR FIBER MAT AT THE OUTLET OF THE SKIMMER TO DETERMINE IF A REPLACEMENT IS NEEDED.
6. CLEAN OUT THE SKIMMER DEWATERING ORIFICE AT AN ANGLE SUCH THAT WATER DOES NOT STAND INSIDE THE BARREL. THIS COULD RESULT IN THE WATER FREEZING AND PLUGGING THE SKIMMER.
7. REPAIR SEED AND REPLACE MATTING ON THE SIDE SLOPE AREAS THAT HAVE ERODED OR HAVE BECOME DAMAGED BY EQUIPMENT FROM SILT CLEANOUT.
8. REMOVE SEDIMENT THAT MAY ACCUMULATE ON THE STONE PAD UNDERNEATH THE SKIMMER DEVICE.
9. INSPECT THE BAFFLES AFTER EACH RAIN EVENT FOR EROSION DAMAGE AND SEDIMENT ACCUMULATIONS.

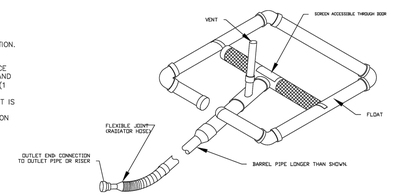
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD SKIMMER BASIN

MAINTENANCE NOTES:

1. INSTALL A PAD FOR SKIMMER TO REST ON STONE OR WOOD PALLETS OR H-BEAM SECTION.
2. INSTALL SKIMMER AND PAD AWAY FROM BAFFLES.
3. ATTACH ROPE TO SKIMMER FOR MAINTENANCE.
4. INSPECT THE BASIN ON A REGULAR BASIS AND AFTER EVERY SIGNIFICANT RAINFALL EVENT (1 INCH OR GREATER).
5. CHECK THE SKIMMER TO MAKE SURE THAT IT IS NOT CLOGGED WITH SEDIMENT.
6. REMOVE SEDIMENT THAT MAY ACCUMULATE ON THE STONE PAD UNDERNEATH THE SKIMMER DEVICE.



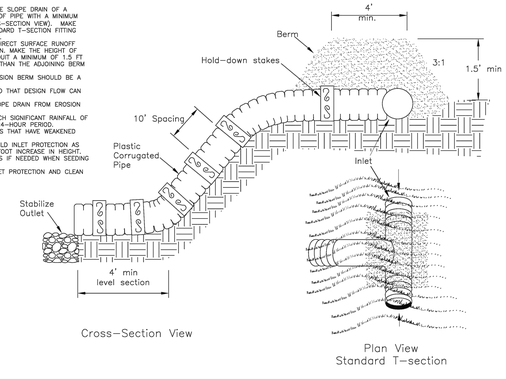
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD SKIMMER DETAIL

MAINTENANCE NOTES:

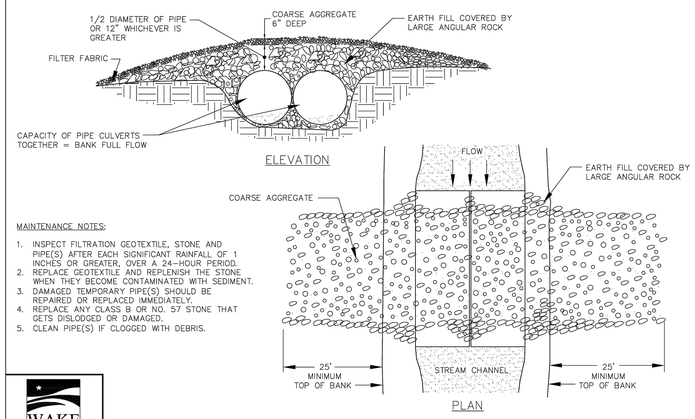
1. CONSTRUCT THE ENTRANCE TO THE SLOPE DRAIN OF A STANDARD FLARED-END SECTION OF PIPE WITH A MINIMUM 6-INCH METAL TOE PLATE (CROSS-SECTION VIEW). MAKE ALL FITTINGS WATERTIGHT. A STANDARD T-SECTION FITTING MAY ALSO BE USED AT THE INLET.
2. USE AN EARTHEN DIVERSION TO DIRECT SURFACE RUNOFF INTO THE TEMPORARY SLOPE DRAIN. MAKE THE HEIGHT OF THE BERM OVER THE DRAIN CONDUIT A MINIMUM OF 1.5 FT AND AT LEAST 6 INCHES HIGHER THAN THE ADJOINING BERM ON EITHER SIDE.
3. THE LOWEST POINT OF THE DIVERSION BERM SHOULD BE A MINIMUM OF 1 FT.
4. ABOVE THE TOP OF THE DRAIN SO THAT DESIGN FLOW CAN FREELY ENTER THE PIPE.
5. PROTECT THE OUTLET OF THE SLOPE DRAIN FROM EROSION WITH RIPRAP DISSIPATOR.
6. INSPECT SLOPE DRAINS AFTER EACH SIGNIFICANT RAINFALL OF 1 INCHES OR GREATER, OVER A 24-HOUR PERIOD.
7. REBUILD EARTH BERMS AND INLETS THAT HAVE WEAKENED OVER TIME.
8. EXTEND SLOPE DRAINS AND REBUILD INLET PROTECTION AS SLOPE IS BUILT, AFTER EACH 2-FOOT INCREASE IN HEIGHT.
9. REBUILD OR REPAIR SLOPE DRAINS IF NEEDED WHEN SEEDING AND MULCHING IS PERFORMED.
10. REFURBISH CLASS B STONE OUTLET PROTECTION AND CLEAN AS NEEDED.



WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD TEMPORARY SLOPE DRAIN



MAINTENANCE NOTES:

1. INSPECT FILTRATION GEOTEXTILE, STONE AND PIPE(S) AFTER EACH SIGNIFICANT RAINFALL OF 1 INCHES OR GREATER, OVER A 24-HOUR PERIOD.
2. REPLACE GEOTEXTILE AND REPLENISH THE STONE WHEN THEY BECOME CONTAMINATED WITH SEDIMENT.
3. DAMAGED TEMPORARY PIPE(S) SHOULD BE REPAIRED OR REPLACED IMMEDIATELY.
4. REPLACE ANY CLASS B OR NO. 57 STONE THAT GETS DISLODGED OR DAMAGED.
5. CLEAN PIPE(S) IF CLOGGED WITH DEBRIS.

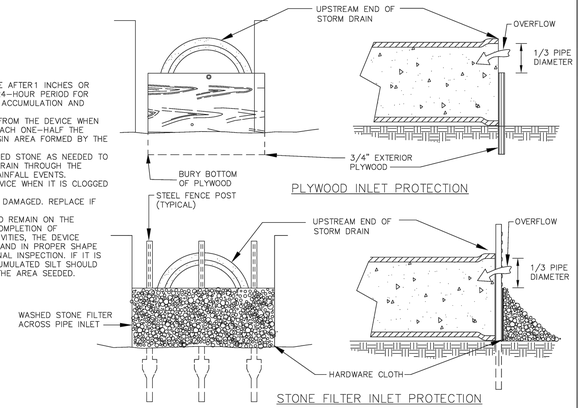
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD TEMPORARY STREAM CROSSING

MAINTENANCE NOTES:

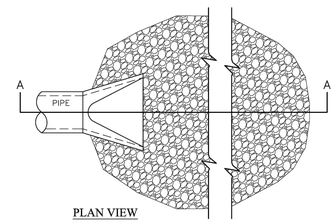
1. INSPECT THE DEVICE AFTER1 INCHES OR GREATER, OVER A 24-HOUR PERIOD FOR DAMAGE, SEDIMENT ACCUMULATION AND PROPER FUNCTION.
2. REMOVE SEDIMENT FROM THE DEVICE WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE BASIN AREA FORMED BY THE DEVICE.
3. REPLACE THE WASHED STONE AS NEEDED TO ALLOW WATER TO DRAIN THROUGH THE DEVICE BETWEEN RAINFALL EVENTS.
4. CLEAN OUT THE DEVICE WHEN IT IS CLOGGED WITH DEBRIS.
5. CHECK PLYWOOD IF DAMAGED. REPLACE IF NEEDED.
6. IF THE DEVICE IS TO REMAIN ON THE PROJECT AT THE COMPLETION OF CONSTRUCTION ACTIVITIES, THE DEVICE SHOULD BE CLEAN AND IN PROPER SHAPE AT THE TIME OF FINAL INSPECTION. IF IT IS REMOVED, ALL ACCUMULATED SILT SHOULD BE REMOVED AND THE AREA SEEDED.



WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD PIPE INLET PROTECTION (PLYWOOD & STONE)



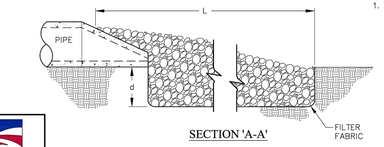
PLAN VIEW

NOTES:

1. L = THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
3. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" (INCHES) ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

MAINTENANCE NOTES:

1. INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1 INCH OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.



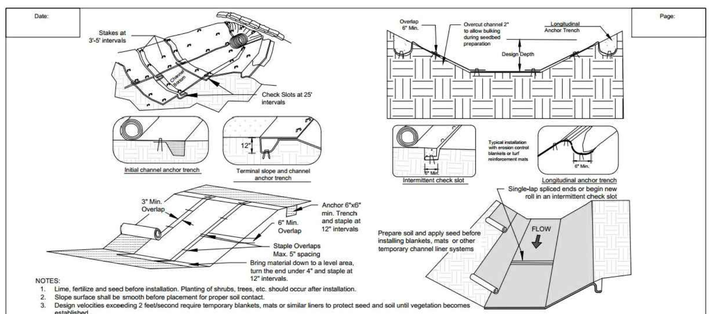
SECTION 'A-A'

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD PIPE OUTLET TO WELL-DEFINED CHANNEL

Date: Page:



NOTES:

1. Lime, fertilize and seed before installation. Planting of shrubs, trees, etc. should occur after installation.
2. Slope surface shall be smooth before placement for proper soil contact.
3. Design velocities exceeding 2 feet/second require temporary blankets, mats or similar liners to protect seed and soil until vegetation becomes established.
4. Terminal anchor trenches are required at RECP ends and intermittent check slots must be constructed across channels at 25 foot intervals.
5. Terminal anchor trenches should be a minimum of 12 inches in depth and 6 inches in width. Intermittent check slots should be 6 inches deep and 6 inches wide.
6. For installation on a slope, place RECP 2-3 feet over the top of the slope and into an excavated end tranch measuring approximately 12 inches deep by 6 inches wide. Pin the RECP at 1 foot intervals along the bottom of the trench, backfill and compact. Unroll the RECP down the slope maintaining direct contact between the soil and RECP. Pin using staples or pins in a 3 feet center-to-center pattern.
7. 11 gauge, at least 6 inch by 1 inch staples or 12 inch minimum length wooden stakes are recommended for anchoring.
8. Grass-lined channels with design velocities exceeding 6 feet/second should include turf reinforcement mats
9. Check slots to be constructed per manufacturers specifications.
10. Staking or stapling layout per manufacturers specification.
11. If there is a berm at the top of slope, anchor upslope of the berm.
12. Do not stretch blankets/matting tight, allow the rolls to conform to any irregularities.
13. For slopes less than 3H:1V, rolls may be placed in horizontal strips.

MAINTENANCE:

1. Inspect Rolled Erosion Control Products at least weekly and after each rain of 1 inch or greater; repair immediately.
2. Good contact with the ground must be maintained, and erosion must not occur beneath the RECP.
3. Any areas of the RECP that are damaged or not in close contact with the ground shall be repaired and stapled.
4. If erosion occurs due to poorly controlled drainage, the problem shall be fixed and the eroded area protected.
5. Monitor and repair the RECP as necessary until ground cover is established.

NORTH CAROLINA Environmental Quality

DIVISION OF LAND RESOURCES

ROLLED EROSION CONTROL PRODUCTS (RECP)

No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE CID-24-04 V2	11/01/2024	SREG
03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL

STRONGROCK ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT PSP-23-03	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

EROSION CONTROL PLAN DETAILS

DRAWING
SHEET

D-6.2

THIS PLANSET AND ANY ASSOCIATED DOCUMENTS ARE PRELIMINARY AND NOT AUTHORIZED FOR CONSTRUCTION UNTIL SIGNED, DATED, AND OFFICIALLY RELEASED FOR CONSTRUCTION BY THE ENGINEER OF RECORD.

DATE:

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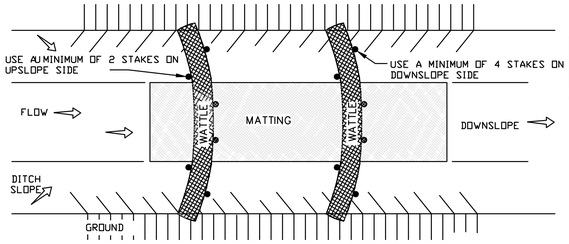
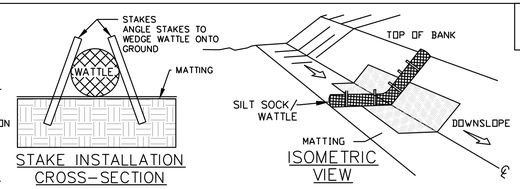


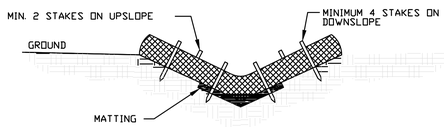
PLAN VIEW



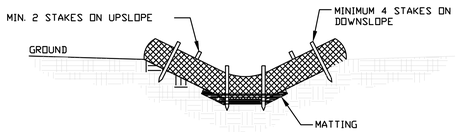
STAKE INSTALLATION CROSS-SECTION

ISOMETRIC VIEW

Ditch Spacing For 12 Inch Silt Sock/Wattle	
Channel Slope (%)	Space Between Silt Socks/ Wattles (Feet)
1	100
2	50
3	33
4	25
5	20



V-DITCH SECTION VIEW

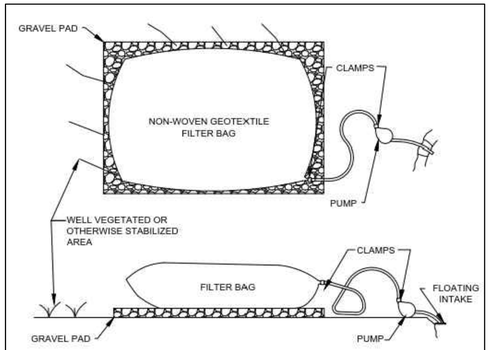


TRAPEZOIDAL DITCH SECTION VIEW

NOTES:
1. Other materials providing equivalent protection against erosive velocities may be substituted for use in silt socks or wattles.
2. Use a minimum 12 inch diameter silt sock/wattle.
3. Fill silt sock/wattle netting uniformly to the desired length such that logs do not deform.
4. Use 24 inch long wooden stakes with a 2 inch x 2 inch nominal cross section.
5. Install silt sock/wattle(s) to a height on slope so flow will not wash around silt sock/wattle and scour slopes, or as directed.
6. Install a minimum of two upslope stakes and four downslope stakes at an angle to wedge silt sock/wattle to ground at bottom ditch.
7. The use of Polyacrylamide (PAM) is recommended. Apply 2-3 ounces of anionic PAM on top of sock/wattle. Apply 1-2 ounces to matting on either side of sock/wattle. Reapply after each 1.0 inch rainfall.

MAINTENANCE:
1. Inspect silt sock/wattle(s) weekly and after each rain of 1 inch or greater. Remove accumulated sediment and any debris.
2. Silt sock/Wattle(s) must be replaced if clogged or torn.
3. If ponding becomes excessive, the silt sock/wattle may need to be replaced with a larger diameter or a different measure.
4. Reinstall if damaged or dislodged.
5. Silt socks/Wattles shall be inspected until land disturbance is compete and the area above the measure is permanently stabilized.

SILT SOCK / WATTLE FOR CHECK DAM



FILTER BAGS MAY BE USED TO FILTER WATER PUMPED FROM EXCAVATIONS PRIOR TO DISCHARGING.

FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.

THE PUMPING RATE SHALL BE NO GREATER THAN 1000GPM OR ½ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREAS AND DISCHARGED ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE FLOW PATH SHALL BE PROVIDED. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%.

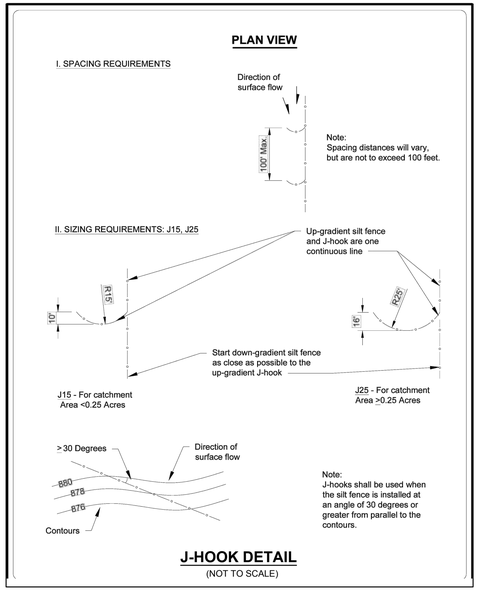
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE FILTER BAG IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ½ FULL. SPARE REPLACEMENT BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE ½ FULL.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

FILTER BAG

NO SCALE



J-HOOK DETAIL

(NOT TO SCALE)

J-HOOK MAINTENANCE:

1. INSPECT J-HOOK INSTALLATION AT REGULAR INTERVALS PER NPDES MONITORING REQUIREMENTS.
2. REPLACE TORN SILT FENCE FABRIC WITH NEW FENCE MATERIAL.
3. BENT OR BROKEN WIRES AND T-POLES SHALL BE REPLACED IMMEDIATELY.
4. SEDIMENT ACCUMULATION HIGHER THAN 1/3 OF INSTALLED HEIGHT OF FABRIC SHALL BE PROMPTLY REMOVED.

DATE:

PAGE:

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

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

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10 feet or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

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

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

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

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

PAINT AND OTHER LIQUID WASTE

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

PORTABLE TOILETS

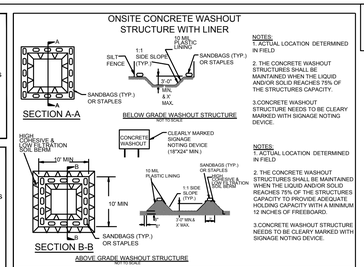
1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.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

EARTHEN STOCKPILE MANAGEMENT

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

HAZARDOUS AND TOXIC WASTE

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



NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

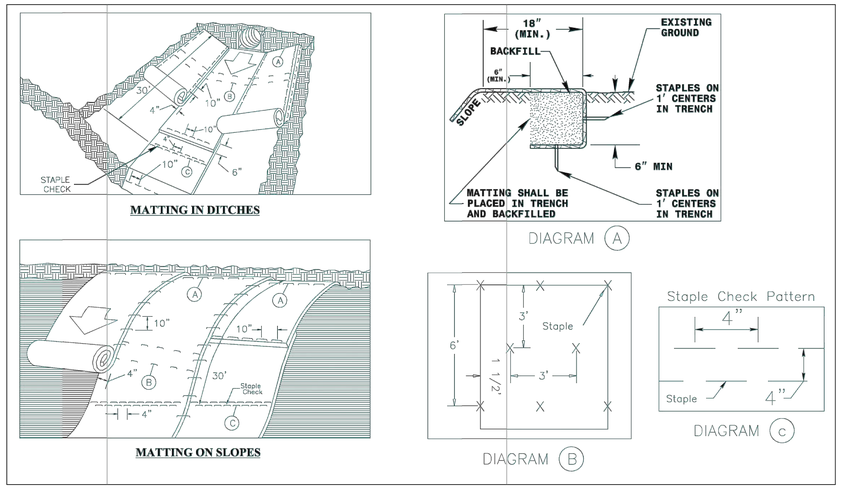
CONCRETE WASHOUTS

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

HERBICIDES, PESTICIDES AND RODENTICIDES

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

NCG-01 GROUND COVER & MATERIALS HANDLING



WAKE COUNTY NORTH CAROLINA

REVISED: 1/2/2020

ROLLED EROSION CONTROL PRODUCT INSTALLATION DETAIL

A-10

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No.	REVISIONS	DATE	BY
01	CONSTRUCTION INFRASTRUCTURE DRAWINGS CID-24-04	06/04/2024	SREG
02	TOWN OF ROLESVILLE CID-24-04 V2	11/01/2024	SREG
03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL:

STRONGROCK ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2165
SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM
305 CHURCH AT NORTH HILLS STREET, SUITE 1110

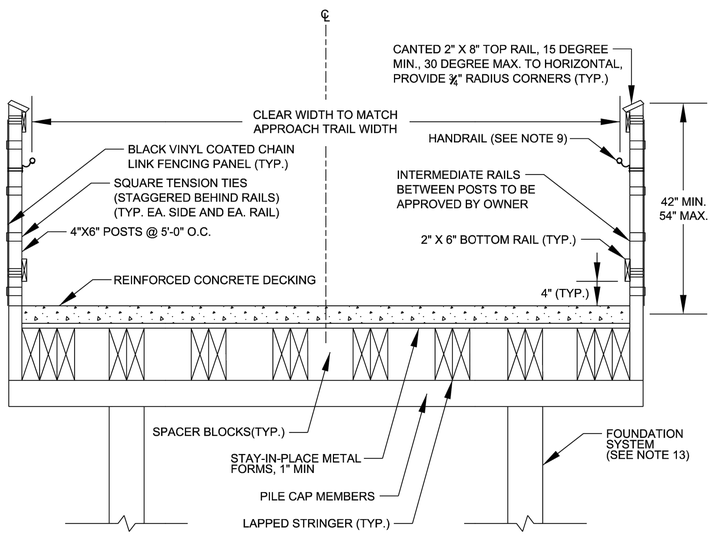
STRONG ROCK PROJECT	PSP-23-03
	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	SRG
DRAWN BY	SRG
CHECKED BY	SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

EROSION CONTROL PLAN DETAILS

DRAWING SHEET

D-6.3



TYPICAL BOARDWALK SECTION

NOTES:

1. BOARDWALK DECK IS TO BE CAST-IN-PLACE REINFORCED CONCRETE WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
2. THE REINFORCING STEEL IN THE CAST-IN-PLACE CONCRETE BOARDWALK DECK SHALL BE EPOXY COATED GRADE 60.
3. CONCRETE DECKING CROSS SLOPE SHALL MATCH CROSS SLOPE OF TRAIL ON BOTH APPROACHES TO FACILITATE POSITIVE DRAINAGE AND PREVENT PONDING.
4. STAY-IN-PLACE METAL FORMS SHALL BE PROVIDED TO FACILITATE REINFORCED CONCRETE DECK CONSTRUCTION.
5. STAY-IN-PLACE METAL FORMS SHALL BE ATTACHED TO LONGITUDINAL TIMBER JOISTS USING AN APPROVED METHOD. ALL SCREWS AND OTHER HARDWARE USED SHALL BE GALVANIZED.
6. ALL OTHER HARDWARE (NUTS, WASHERS, BOLTS, ETC.) SHALL BE HOT DIPPED GALVANIZED PER ASTM A153.
7. TOP RAIL AND OTHER CONNECTIONS SHALL BE MADE WITH WOOD SCREW; NAILED CONNECTIONS WILL NOT BE ACCEPTABLE.
8. THE MINIMUM HEIGHT OF BRIDGE/BOARDWALK RAILING SHALL BE 42", UNLESS OTHERWISE NOTED. THE HEIGHT CAN RANGE BETWEEN 42", 48", OR 54".
9. A GRIP-ABLE, ROUND RAIL THAT WILL ACT AS BOTH A RUB RAIL AND HANDRAIL SHALL ONLY BE REQUIRED WHEN GRADES ARE GREATER THAN 5%. REFER TO DETAIL GW-30.04 FOR BRIDGE OR BOARDWALK RUB RAIL/HANDRAIL ATTACHMENT.
10. BLACK VINYL COATED CHAIN LINK FENCE AND TENSION TIES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
11. ALL TIMBER BOARDWALK COMPONENTS AND REINFORCED CONCRETE DECK SHALL DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF THE AASHTO LRFD GUIDE SPECIFICATIONS FOR PEDESTRIAN BRIDGES.
12. SPAN LENGTHS, JOIST SPACING, SIZING OF MEMBERS, REINFORCED CONCRETE DECK, AND OTHER DESIGN SPECIFICS SHALL BE DETERMINED BY THE ENGINEER ON A PROJECT SPECIFIC BASIS.
13. FOUNDATION SHALL CONSIST OF DRIVEN PILES, AUGURED PILES, HELICAL PIERS, OR OTHER APPLIED FOUNDATION SYSTEM. SPECIFICS SUCH AS NUMBER OF PILES, SPACING, AND HEIGHT SHALL BE DETERMINED BY ENGINEER ON A PROJECT SPECIFIC BASIS BASED ON REQUIRED LOADING.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 12/2022 NOT TO SCALE
	TYPICAL BOARDWALK SECTION
	GW-30.01

SEEDING SPECIFICATIONS:

SEEDBED PREPARATION:

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

MIXTURE:

AGRICULTURAL LIMESTONE	2 TONS/ACRE (3 TONS/ACRE IN CLAY SOILS)
FERTILIZER	1,000 LBS/ACRE - 10-10-10
SUPERPHOSPHATE	500 LBS/ACRE - 20% ANALYSIS
MULCH	2 TONS/ACRE - SMALL GRAIN STRAW
ANCHOR	ASPHALT EMULSION AT 400 GALS/ACRE

SEEDING SCHEDULE:

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

DATE	TYPE	PLANTING RATE
AUG 15-NOV 1	TALL FESCUE	300 LBS/ACRE
NOV 1-MAR 1	TALL FESCUE & ABRUZZI RYE	300 LBS/ACRE
MAR 1-APR 15	TALL FESCUE	300 LBS/ACRE
APR 15-JUN 30	HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUL 1-AUG 15	TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS***	125 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MILLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)

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

DATE	TYPE	PLANTING RATE
MAR 1-JUN 1	SERICEA LESPEDEZA (SCARIFIED) AND USE THE FOLLOWING COMBINATIONS:	50 LBS/ACRE (SERICEA LESPEDEZA);
MAR 1-APR 15	ADD TALL FESCUE	120 LBS/ACRE
MAR 1-JUN 30	OR ADD WEEPING LOVE GRASS	10 LBS/ACRE
MAR 1-JUN 30	OR ADD HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUL 1-SEPT 1	TALL FESCUE AND BROWNTOP MULLET OR SORGHUM-SUDAN HYBRIDS***	120 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MULLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)
SEPT 1-MAR 1	SERICEA LESPEDEZA (UNHULLED -UNSCARIFIED) AND TALL FESCUE	70 LBS/ACRE (SERICEA LESPEDEZA); 120 LBS/ACRE (TALL FESCUE)
NOV 1-MAR 1	AND ABRUZZI RYE	25 IBS/ACRE

CONSULT WAKE COUNTY SOIL & WATER CONSERVATION DISTRICT OR NC STATE COOPERATIVE EXTENSION FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDED AREAS. THE ABOVE VEGETATION RATES ARE THOSE THAT DO WELL UNDER LOCAL CONDITIONS; OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.

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

WAKE COUNTY NORTH CAROLINA **Environmental Services**

tel: 919 856 7400
fax: 919 743 4772

Sedimentation & Erosion Control
336 Fayetteville St. • P.O. Box 550 • Raleigh, NC 27602

Effective September 1, 2008
Soil stockpiles shall be located on the approved plan and shall adhere to the following requirements:

Design Criteria

a. A 25-foot temporary maintenance and access easement shall be shown around all proposed stockpiles (erosion control measures surrounding the stockpile shall be shown at the outer limit of this easement).
b. Stockpile footprints shall be setback a minimum of 25' from adjacent property lines.
c. A note shall be provided on the approved plan that stockpile height shall not exceed 35 feet.
d. Stockpile slopes shall be 2:1 or flatter.
e. Approved BMPs shall be shown on a plan to control any potential sediment loss from a stockpile.
f. Stockpiling materials adjacent to a ditch, drainageway, watercourse, wetland, stream buffer, or other body of water shall be avoided unless an alternative location is demonstrated to be unavailable.
g. Any concentrated flow likely to affect the stockpile shall be diverted to an approved BMP.
h. Off-site spoil or borrow areas must be in compliance with Wake County UDO and State Regulations. All spoil areas over an acre are required to have an approved sediment control plan. Developer/Contractor shall notify Wake County of any offsite disposal of soil, prior to disposal. Fill of FEMA Floodways and Non-encroachment Areas are prohibited except as otherwise provided by subsection 14-19-2 of the Wake County Unified Development Ordinance (certifications and permits required).

Maintenance Requirements to be Noted on the Plan

i. Seeding or covering stockpiles with tarps or mulch is required and will reduce erosion problems. Tarps should be keyed in at the top of the slope to keep water from running underneath the plastic.
j. If a stockpile is to remain for future use after the project is complete (builders, etc.), the financial responsible party must notify Wake County of a new responsible party for that stockpile.
k. The approved plan shall provide for the use of staged seeding and mulching on a continual basis while the stockpile is in use.
l. Establish and maintain a vegetative buffer at the toe of the slope (where practical).

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.

THIS PLANSET AND ANY ASSOCIATED DOCUMENTS ARE PRELIMINARY AND NOT AUTHORIZED FOR CONSTRUCTION UNTIL SIGNED, DATED, AND OFFICIALLY RELEASED FOR CONSTRUCTION BY THE ENGINEER OF RECORD.

No.	REVISIONS	DATE	BY
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03	TOWN OF ROLESVILLE CID-24-04 V3	02/01/2024	SREG
04	TOWN OF ROLESVILLE CID-24-04 V4	06/02/2025	SREG

SEAL:

STRONGROCK ENGINEERING GROUP
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305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT PSP-23-03
NOT FOR CONSTRUCTION
SCALE: AS SHOWN
DESIGNED BY: SRG
DRAWN BY: SRG
CHECKED BY: SRG

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN DETAILS

DRAWING / SHEET
D-6.4

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

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

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	**Stabilize within this many calendar days after ceasing land disturbance**	**Timeframe variations**
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

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

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

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

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

PAINT AND OTHER LIQUID WASTE

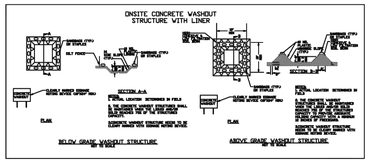
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled,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

PORTABLE TOILETS

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

EARTHEN STOCKPILE MANAGEMENT

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



CONCRETE WASHOUTS

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

HERBICIDES, PESTICIDES AND RODENTICIDES

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

HAZARDOUS AND TOXIC WASTE

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

NORTH CAROLINA *Environmental Quality*

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING | EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

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

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

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

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

2. Additional Documentation to be Kept on Site

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

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

(b) Records of inspections made during the previous 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.

3. Documentation to be Retained for Three Years

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

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

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

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

(d) Anticipated bypasses and unanticipated bypasses.

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

2. Reporting Timeframes and Other Requirements

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

Occurrence	Reporting Timeframes [After Discovery] and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours,*** an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible.*** The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART III, 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,
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(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.

NORTH CAROLINA *Environmental Quality*

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING | EFFECTIVE: 04/01/19

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