Administrative Site Review Application

Planning and Development Customer Service Center • One Exchange Plaza, Suite 400 | Raleigh, NC 27601 | 919-996-2500

Raleigh

This form is required when submitting site plans as referenced in Unified Development Ordinance (UDO) Section 10.2.8. Please check the appropriate building types and include the plan checklist document when submitting.

Office Use Only: Case #: _____ Planner (print): _____

Please review UDO Section 10.2.8. to determine the site plan tier. If assistance determining a Site Plan Tier is needed a Site Plan Tier Verification request can be submitted online via the Permit and Development Portal. (Note: There is a fee for this verification service.)

Site Plan Tier: Tier Two Site Plan ☐ Tier Three Site Plan ☑

Building and Development Type (Check all that apply)		**Site Transaction History**
☐ Detached ☐ Attached ☐ Townhouse ☐ Apartment ☐ Tiny house ☐ Open lot	☑ General ☐ Mixed use ☐ Civic ☐ Cottage Court ☐ Frequent Transit Development Option	Subdivision case #: _____ Scoping/sketch plan case #: _____ Certificate of Appropriateness #: _____ Board of Adjustment #: _____ Zoning Case #: _____ Design Alternate #: _____

GENERAL INFORMATION

Development name: Chase Bank - New Bern Ave

Inside City limits? Yes ☑ No ☐

Property address(es): 5160 New Bern Ave Raleigh, NC 27610

Site P.I.N.(s): 1734345171

Please describe the scope of work. Include any additions, expansions, and uses (UDO 6.1.4).

THE SCOPE OF THIS PROJECT CONSISTS OF THE DEVELOPMENT OF A NEW +/- 3,319 SF DRIVE THROUGH CHASE BANK WITH ATM FACILITY AND SITE IMPROVEMENTS ASSOCIATED WITH PROPOSED DEVELOPMENT.

Current Property Owner(s): BRANDON KUBLANOW

Company: TWP PCP RALEIGH LLC | Title: PRINCIPAL

Address: 1962 HOWELL MILL ROAD, SUITE 210, ATLANTA, GA 30318

Phone #: 770-359-9636 | Email: brandon@trackwestpartners.com

Applicant Name (If different from owner. See "who can apply" in instructions):

Relationship to owner: ☑ Lessee or contract purchaser ☐ Owner's authorized agent ☐ Easement holder

Company: JPMorgan Chase Bank NA | Address: 1111 Polaris Parkway, Columbus, OH, 43240

Phone #: 1-786-473-1769	Email: Mauricio.r.delgado@chase.com
NOTE: please attach purchase agreement or contract, lease or easement when submitting this form.	
Developer Contact: Brandon Kublanow	
Company: TRACK WEST PARTNERS	Title: PRINCIPAL
Address: 1962 HOWELL MILL ROAD, SUITE 210, ATLANTA, GA 30318	
Phone #: (770) 359-9636	Email: brandon@trackwestpartners.com
Applicant Name: MAURICIO DELGADO VP of JPMorgan Chase Bank NA	
Company: **JPMorgan Chase Bank NA**	Address: 1111 Polaris Parkway, Columbus, Oh, 43240
Phone #: (770) 359-9636	Email: mauricio.r.delgado@chase.com

DEVELOPMENT TYPE + SITE DATE TABLE (Applicable to all developments)	
SITE DATA	**BUILDING DATA**
Zoning district(s) (please provide the acreage of each): Planned Development (PD) -	Existing gross floor area (not to be demolished): 0
Gross site acreage: +/- 1.29	Existing gross floor area to be demolished: 0
# of parking spaces proposed: 26	New gross floor area: 3,319 SF
Max # parking permitted (7.1.2.C): 17*	Total sf gross (to remain and new): 3,319 SF
Overlay District (if applicable): N/A	Proposed # of buildings: 1
Existing use (UDO 6.1.4): VACANT LOT	Proposed # of stories for each: 1
Proposed use (UDO 6.1.4): OFFICE	Proposed # of basement levels (UDO 1.5.7.A.6) N/A

* A variance shall be applied for to exceed the maximum number of parking spaces from 17 to 26

STORMWATER INFORMATION	
Imperious Area on Parcel(s): Existing (sf) 0 Proposed total (sf) 28,895	Impervious Area for Compliance (includes ROW): Existing (sf) 637 Proposed total (sf) 2,573

RESIDENTIAL & OVERNIGHT LODGING DEVELOPMENTS	
Total # of dwelling units: N/A	Total # of hotel bedrooms: N/A
# of bedroom units: 1br ____ 2br ____ 3br ____ 4br or more ____	
# of lots: N/A	Is your project a cottage court? ◯ Yes ◯ No
	A frequent transit development? ◯ Yes ◯ No

Continue to Applicant Signature Block on Page Three.

APPLICANT SIGNATURE BLOCK

Pursuant to state law (N.C. Gen. Stat. § 160D-403(a)), applications for development approvals may be made by the landowner, a lessee or person holding an option or contract to purchase or lease land, or an authorized agent of the landowner. An easement holder may also apply for development approval for such development as is authorized by the easement.

By submitting this application, the undersigned applicant acknowledges that they are either the property owner or one of the persons authorized by state law (N.C.G.S. 160D-403(a)) to make this application, as specified in the application. The undersigned also acknowledges that the information and statements made in the application are correct and the undersigned understands that developments approvals are subject to revocation for false statements or misrepresentations made in securing the development approval, pursuant to N.C. Gen. Stat. § 160D-403(f).

The undersigned indicates that the property owner(s) is aware of this application and that the proposed project described in this application will be maintained in all respects in accordance with the plans and specifications submitted herewith, and in accordance with the provisions and regulations of the City of Raleigh Unified Development Ordinance.

The undersigned hereby acknowledges that, pursuant to state law (N.C.G.S. 143-755(b1), if this permit application is placed on hold at the request of the applicant for a period of six consecutive months or more, or if the applicant fails to respond to comments or provide additional information requested by the City for a period of six consecutive months or more, then the application review is discontinued and a new application is required to proceed and the development regulations in effect at the time permit processing is resumed shall apply to the new application.

Signature: Mauricio Delgado	Date: 11/1/2023
Printed Name: MAURICIO DELGADO VP of JPMorgan Chase Bank NA	

SITE CONSTRUCTION PLANS FOR

CHASE - NEW BERN AVE

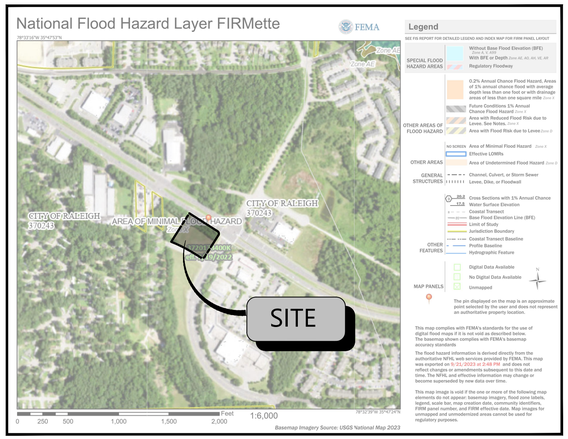
5160 NEW BERN AVE

CITY OF RALEIGH, WAKE COUNTY, NORTH CAROLINA

TAX PARCELS: ####

TY MAP

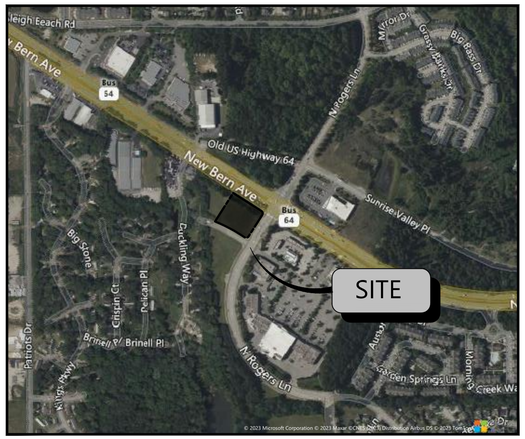
T.S.



FEMA MAP

N.T.S.

NOTE: BASED ON GRAPHIC DETERMINATION, THIS PROPERTY DOES NOT LIE IN A F.E.M.A./F.I.R.M. SPECIAL FLOOD HAZARD AREA PER COMMUNITY PANEL NO. 3720173400K DATED 07/19/2022.



AERIAL MAP

N.T.S.

TRAFFIC CONTROL AND PEDESTRIAN PLAN (TCPED) NOTES:

- PRIOR TO ANY WORK THAT IMPACTS THE RIGHT-OF-WAY, CLOSING OR DETOURING OF ANY STREET, LANE, OR SIDEWALK, THE CONTRACTOR MUST APPLY FOR A PERMIT WITH RIGHT-OF-WAY SERVICES. PLEASE DIRECT ANY QUESTIONS TO RIGHTOFWAYSERVICES@RALEIGHNC.GOV.
- THE STREET, LANE, SIDEWALK, CLOSURE PERMIT IS REQUIRED FOR ANY CLOSURE ON CITY STREETS AND
- ALL NCDOT STREETS WITHIN RALEIGH'S JURISDICTION.
- A PERMIT REQUEST WITH A TCPED PLAN SHALL BE SUBMITTED TO RIGHT-OF-WAY SERVICES THROUGH THE CITY OF RALEIGH PERMIT AND DEVELOPMENT PORTAL.
- PRIOR TO THE START OF WORK, THE CLIENT SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE ENGINEERING INSPECTIONS COORDINATOR TO REVIEW THE SPECIFIC COMPONENTS OF THE APPROVED PLAN, AND ENSURE ALL PERMITS ARE ISSUED.
- ALL TCPED PLANS SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS AND STANDARDS, INCLUDING BUT NOT LIMITED TO:
  - O MANUAL ON UNIFORM TRAFFIC CONTROL (MUTCD);
  - O PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG);
  - O AMERICAN DISABILITY ACT (ADA) REQUIREMENTS;
  - O RALEIGH STREET DESIGN MANUAL (RSDM).
- ALL PUBLIC SIDEWALKS MUST BE ACCESSIBLE TO PEDESTRIANS WHO ARE VISUALLY IMPAIRED AND/OR PEOPLE WITH MOBILITY CONCERNS. EXISTING AND ALTERNATIVE PEDESTRIAN ROUTES DURING CONSTRUCTION SHALL BE REQUIRED TO BE COMPLIANT WITH THE PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG), THE ADA STANDARDS FOR ACCESSIBLE DESIGN AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL PERMITS MUST BE AVAILABLE AND VISIBLE ON SITE DURING THE OPERATION.

SUBMITTAL DATE

SUBMITTAL - 11/13/2023

,319 SF
SSOCIATED

'PARTNERS.COM
)W

NTACTS

RALEIGHNC.GOV

RIVER RD.

'ER.COM

CIVIL ENGINEER
ATWELL, LLC
1800 PARKWAY PLACE, SUITE 700
MARIETTA, GA 30067
PHONE: (202) 465-6204
FAX: (770) 423-1262
CONTACT: CARL ROMERO

SURVEYOR
ATWELL, LLC
1850 PARKWAY PLACE, SUITE 650
MARIETTA, GA 30067
PHONE: (770) 423-0807
FAX: (770) 423-1262
CONTACT: MATTHEW BISSETT

LANDSCAPE ARCH.
ATWELL, LLC
1850 PARKWAY PLACE, SUITE 650
MARIETTA, GA 30067
PHONE: (770) 423-0807
FAX: (770) 423-1262
CONTACT: CYNDI O'SHIELDS

ELECTRICITY
PROVIDE: DUKE ENERGY
ADDRESS: P.O. BOX 1094
CHARLOTTE, NC 28201-1094
PHONE: (800) 653-530

Infrastructure Inspections Quantities Table

LF = Linear Feet

Phase Number(s)	Phase 1	Phase 2	Phase 3
Number of Lot(s)	1	1	N/A
Lot Number (s) by Phase	1	1	-
Number of Units		-	-
Liveable Buildings	0	0	-
Open Space?	NO	NO	-
Number of Open Space Lots	0	0	-
Public Water (LF)	8	239	-
Private Water (LF) For water mains 4" and larger	0	0	-
Public Sewer (LF)	0	0	-
Public Force Main (LF)	0	0	-
Private Sewer (LF) Sewer mains and manholes as a part of a collection system	0	127	-
Public Street (LF) - FULL			-
Public Street (LF) - PARTIAL			-
Public Sidewalk (LF) - FULL			-
Public Sidewalk (LF) - PARTIAL			-
Multi-Use Path (LF) 10 or 12 ft. wide path in lieu of sidewalk or a multi-use path as part of a development			-
Public Storm Drain (LF)			-
Street Signs (LF)			-
Water Service Stubs	2	0	-
Sewer Service Stubs	1	0	-

Sheet List Table

Project Data Sheet

Planning and Development Customer Service Center • One Exchange Plaza, Suite 400 | Raleigh, NC 27601 | 919-996-2500

Raleigh

This form must be completed and applied to the cover sheet of drawings submitted with a Non-Residential building permit associated with a Site Permit Review, or permits for an apartment, office, and/or commercial uses.

GENERAL INFORMATION

Development Name: CHASE BANK - NEW BERN AVE	Proposed Use: PLANNED DEVELOPMENT (PD) - OFFICE
Property Address(es): 5160 NEW BERN AVE, RALEIGH, NC 27610	
Approved Site Plan or Subdivision case #:	
Wake County Property Identification Number(s) (PIN) for each parcel to which these guidelines will apply:	
PIN #: 1734345171	PIN #: 1734345171 / PIN #: 1734345171 / PIN #: 1734345171

What is the project type?

☐	Apartment	☑	Bank	☐	Congregate care	☐	Hospital
☐	Hotel/Motel	☐	Industrial building	☐	Mixed residential	☐	Non-residential condo
☐	Office	☐	Religious institution	☐	Residential condo	☐	Retail
☐	School	☐	Shopping center	☐	Single-family residential	☐	Telecommunication tower
☐	Townhouse	☐	Civic use: Park, community center, museum or government facility	☐	Other		

Scope of work:

A NEW +/- 3,319 SF CHASE BANK WITH THE DRIVE-THRU ATM & IMPROVEMENTS

FOR APARTMENTS, CONDOS, AND TOWNHOMES ONLY

1. Total number of townhouse lots: Number attached:	Number detached:
2. Total number of apartment or condominium units:	
3. Total number of Congregate Care or Life Care Dwelling units:	
4. Overall total number of dwelling units (from 1-3 above):	
5. Number of bedroom units: 1BR: 2BR: 3BR:	4BR or more:
6. Overall unit(s) per acre densities per zoning district(s):	

DEVELOPMENT TYPE AND SITE DATA TABLE (applicable to all developments)

Zoning Information	Building Information
Zoning district(s): PLANNED DEVELOPMENT (PD)	Proposed use of building(s): BANK
If more than one district, provide acreage of each:	Proposed sq. ft. of building(s) gross: 3,319 SF
Overlay district(s): N/A	Existing sq. ft. of building(s) gross: 0
Total site acreage: +/- 1.29 AC	Total sq. ft. gross (existing and proposed): 3,319 SF
Off street parking: Required: 17 Provided: 26	Proposed height of building(s): 21'-6"
COA (Certificate of Appropriateness) case #: P-2380	FAR (floor area ratio) %: 5.9%
BOA (Board of Adjustment) case # A - N/A	Building lot coverage %: 5.9%
CUD (Conditional Use District) case # Z - N/A	Inside City Limits? Yes ☑ No ☐

STORMWATER INFORMATION

Existing impervious surface: 0 acres/square feet	
Proposed impervious surface: 0.66 / 28,895 acres/square feet	
Neuse River buffer: Yes ☐ No ☑	Wetlands: Yes ☐ No ☑
Flood Hazard Area: Yes ☐ No ☑ If yes, Alluvial soils:	
Flood Study: N/A	FEMA Map Panel #: 3720173400K
Total disturbed area: 1.46 / 63598 acres/square feet	

811 Know what's below. Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:

CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

24 HOUR EMERGENCY CONTACT
TRISH NEARHOOF-EUBANKS
813.323.9233

ATWELL
866.850.4200 www.atwell-group.com
1800 PARKWAY PLACE, SUITE 700
MARIETTA, GA 30067
COA# P-2380

PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
COVER

DATE 11/13/2023

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C000

NOT-ISSUED-FOR-CONSTRUCTION

EXHIBIT "A" TITLE LEGAL DESCRIPTION

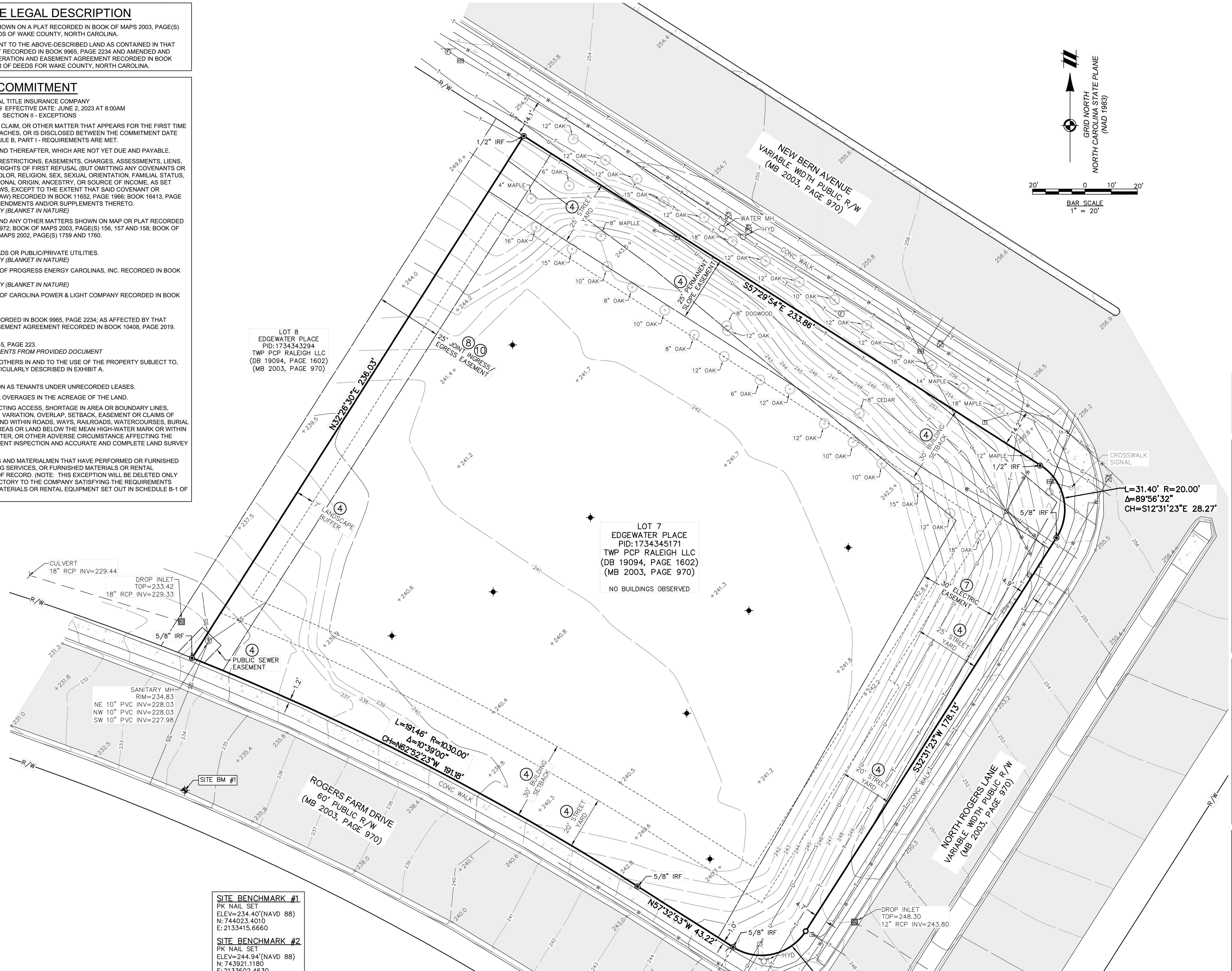
BEING ALL OF LOT 7 OF EDGEWATER PLACE, AS SHOWN ON A PLAT RECORDED IN BOOK OF MAPS 2003, PAGE(S) 970-972, IN THE OFFICE OF THE REGISTER OF DEEDS OF WAKE COUNTY, NORTH CAROLINA.

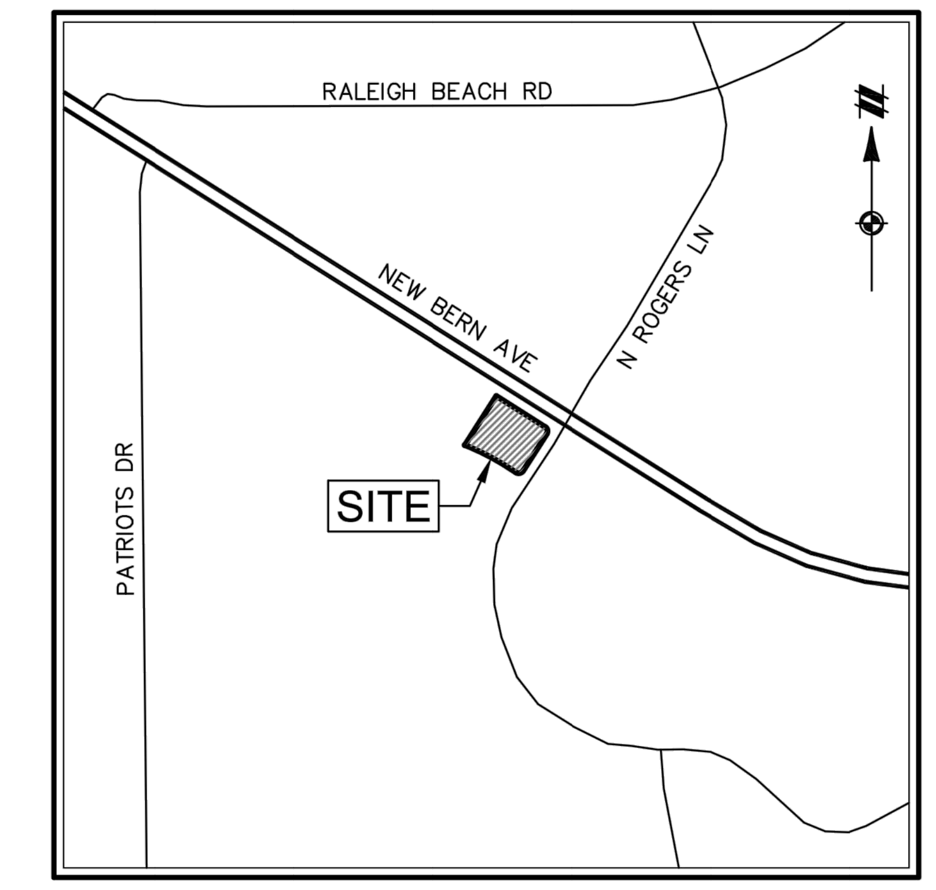
TOGETHER WITH THOSE EASEMENTS APPURTENANT TO THE ABOVE-DESCRIBED LAND AS CONTAINED IN THAT CERTAIN OPERATION AND EASEMENT AGREEMENT RECORDED IN BOOK 9965, PAGE 2234 AND AMENDED AND RESTATED BY THAT AMENDED AND RESTATED OPERATION AND EASEMENT AGREEMENT RECORDED IN BOOK 10408, PAGE 2019 IN THE OFFICE OF THE REGISTER OF DEEDS FOR WAKE COUNTY, NORTH CAROLINA.

TITLE COMMITMENT

FIDELITY NATIONAL TITLE INSURANCE COMPANY
COMMITMENT NO. GB23009319 EFFECTIVE DATE: JUNE 2, 2023 AT 8:00AM
SCHEDULE B SECTION II - EXCEPTIONS

1. ANY DEFECT, LIEN, ENCUMBRANCE, ADVERSE CLAIM, OR OTHER MATTER THAT APPEARS FOR THE FIRST TIME IN THE PUBLIC RECORDS OR IS CREATED, ATTACHES, OR IS DISCLOSED BETWEEN THE COMMITMENT DATE AND THE DATE ON WHICH ALL OF THE SCHEDULE B, PART I - REQUIREMENTS ARE MET.
2. THE LIEN OF ALL TAXES FOR THE YEAR 2023 AND THEREAFTER, WHICH ARE NOT YET DUE AND PAYABLE.
3. DECLARATION OF COVENANTS, CONDITIONS, RESTRICTIONS, EASEMENTS, CHARGES, ASSESSMENTS, LIENS, OPTIONS, RIGHTS OF OR TO PURCHASE, AND RIGHTS OF FIRST REFUSAL (BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW) RECORDED IN BOOK 11652, PAGE 1966; BOOK 16413, PAGE 1663 AND BOOK 16895, PAGE 2365 AND ANY AMENDMENTS AND/OR SUPPLEMENTS THERETO.
-AFFECTS PROPERTY, NOT SHOWN ON SURVEY (BLANKET IN NATURE)
4. BUILDING RESTRICTION LINES, EASEMENTS, AND ANY OTHER MATTERS SHOWN ON MAP OR PLAT RECORDED IN BOOK OF MAPS 2003, PAGE(S) 970; 971 AND 972; BOOK OF MAPS 2003, PAGE(S) 156, 157 AND 158; BOOK OF MAPS 2002, PAGE(S) 1000 AND 1001; BOOK OF MAPS 2002, PAGE(S) 1759 AND 1760.
-AFFECTS PROPERTY, AS SHOWN ON SURVEY
5. EASEMENT(S) AND RIGHT(S)-OF-WAY FOR ROADS OR PUBLIC/PRIVATE UTILITIES.
-AFFECTS PROPERTY, NOT SHOWN ON SURVEY (BLANKET IN NATURE)
6. EASEMENT(S) OR RIGHT(S)-OF-WAY IN FAVOR OF PROGRESS ENERGY CAROLINAS, INC. RECORDED IN BOOK 10109, PAGE 2585.
-AFFECTS PROPERTY, NOT SHOWN ON SURVEY (BLANKET IN NATURE)
7. EASEMENT(S) OR RIGHT(S)-OF-WAY IN FAVOR OF CAROLINA POWER & LIGHT COMPANY RECORDED IN BOOK 1614, PAGE 494 AND BOOK 3181, PAGE 293.
-AFFECTS PROPERTY, AS SHOWN ON SURVEY
8. OPERATION AND EASEMENT AGREEMENT RECORDED IN BOOK 9965, PAGE 2234; AS AFFECTED BY THAT AMENDED AND RESTATED OPERATION OF EASEMENT AGREEMENT RECORDED IN BOOK 10408, PAGE 2019.
-AFFECTS PROPERTY, AS SHOWN ON SURVEY
9. CONSENT JUDGMENT RECORDED IN BOOK 1745, PAGE 223.
-UNABLE TO DETERMINE LOCATION OF EASEMENTS FROM PROVIDED DOCUMENT
10. TERMS AND CONDITIONS OF, AND RIGHTS OF OTHERS IN AND TO THE USE OF THE PROPERTY SUBJECT TO, THE APPURTENANT EASEMENT(S) MORE PARTICULARLY DESCRIBED IN EXHIBIT A.
-AFFECTS PROPERTY, AS SHOWN ON SURVEY
11. RIGHTS OR CLAIMS OF PARTIES IN POSSESSION AS TENANTS UNDER UNRECORDED LEASES.
12. DISCREPANCIES, VARIANCES, SHORTAGES OR OVERAGES IN THE ACREAGE OF THE LAND.
13. ANY DISCREPANCY, CONFLICT, MATTER AFFECTING ACCESS, SHORTAGE IN AREA OR BOUNDARY LINES, ENCROACHMENT, ENCUMBRANCE, VIOLATION, VARIATION, OVERLAP, SETBACK, EASEMENT OR CLAIMS OF EASEMENT, RIPARIAN RIGHT, AND TITLE TO LAND WITHIN ROADS, WAYS, RAILROADS, WATERCOURSES, BURIAL GROUNDS, MARSHES, DREDGED OR FILLED AREAS OR LAND BELOW THE MEAN HIGH-WATER MARK OR WITHIN THE BOUNDS OF ANY ADJOINING BODY OF WATER, OR OTHER ADVERSE CIRCUMSTANCE AFFECTING THE TITLE THAT WOULD BE DISCLOSED BY A CURRENT INSPECTION AND ACCURATE AND COMPLETE LAND SURVEY OF THE LAND.
14. STATUTORY LIENS OF MECHANICS, LABORERS AND MATERIALMEN THAT HAVE PERFORMED OR FURNISHED LABOR, PROFESSIONAL DESIGN OR SURVEYING SERVICES, OR FURNISHED MATERIALS OR RENTAL EQUIPMENT OF WHICH NO NOTICE APPEARS OF RECORD. (NOTE: THIS EXCEPTION WILL BE DELETED ONLY UPON RECEIPT OF DOCUMENTATION SATISFACTORY TO THE COMPANY SATISFYING THE REQUIREMENTS ADDRESSING LIENS FOR LABOR, SERVICES, MATERIALS OR RENTAL EQUIPMENT SET OUT IN SCHEDULE B-1 OF THIS COMMITMENT.)





VICINITY MAP

NOT TO SCALE

SITE BENCHMARK #1
PK NAIL SET
ELEV=234.40'(NAVD 88)
N: 744023.4010
E: 2133415.6660

SITE BENCHMARK #2
PK NAIL SET
ELEV=244.94'(NAVD 88)
N: 743921.1180
E: 2133602.4630

LEGEND

	BENCHMARK		TRAFFIC SIGNAL
	IRON ROD FOUND	#	TITLE EXCEPTION NUMBER
	5/8" IRON ROD & CAP SET, LB 7832	×11.20	SPOT ELEVATION
	TREE		CONCRETE PAVEMENT
	SOIL BORING		ASPHALT PAVEMENT
S	SANITARY MANHOLE		SUBJECT BOUNDARY LINE
	SIGN	R/W	RIGHT OF WAY LINE
	LIGHT POLE		SETBACK LINE
	UTILITY POLE		EASEMENT
	GUY ANCHOR	40	GROUND CONTOUR
HH	UTILITY HANDHOLE	U	OVERHEAD UTILITY
T	TELECOM RISER	T	UNDERGROUND TELECOM
F	WARNING POST FIBER	E	UNDERGROUND ELECTRIC
	HYDRANT	W	UNDERGROUND WATER
	WATER MANHOLE	G	UNDERGROUND GAS
WV	WATER VALVE		STORM SEWER
	DROP INLET	SS	SANITARY SEWER
	CULVERT		

ABBREVIATIONS

BM	=	BENCHMARK
CONC	=	CONCRETE
DB	=	DEED BOOK
HYD	=	HYDRANT
INV	=	INVERT
IRF	=	IRON ROD FOUND
LB	=	LICENSED BUSINESS
MB	=	MAP BOOK
MH	=	MANHOLE
NAD	=	NORTH AMERICAN DATUM
NAVD	=	NORTH AMERICAN VERTICAL DATUM
PID	=	PARCEL IDENTIFICATION NUMBER
PK	=	PARKER - KALON
PVC	=	POLYVINYL CHLORIDE
RCP	=	REINFORCED CONCRETE PIPE
RLS	=	REGISTERED LAND SURVEYOR
RTK	=	REAL-TIME KINEMATIC
R/W	=	RIGHT-OF-WAY
SQ FT	=	SQUARE FEET
VRS	=	VIRTUAL REFERENCE STATION

DATUMS

HORIZONTAL: GRID NORTH, NAD83, NORTH CAROLINA STATE PLANE (NORTH AMERICAN DATUM OF 1983) (2011) US SURVEY FOOT, LINCOLN COUNTY, NORTH CAROLINA
VERTICAL: NAVD88 (NORTH AMERICAN VERTICAL DATUM OF 1988)
GEOID: GEOID18 (CONUS)

TABLE "A" NOTES

2. SITE ADDRESS: 1091 NORTH ROGERS LANE, RALEIGH, NORTH CAROLINA
3. FLOOD NOTE: ACCORDING TO THE FLOOD INSURANCE RATE MAP (FIRM) FOR WAKE COUNTY, NORTH CAROLINA, COMMUNITY-PANEL NUMBER 3720173400K, DATED 07/19/2022, THE SUBJECT SITE AREA IS NOT IN A FLOOD HAZARD ZONE AND LIES WITHIN ZONE X, DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
5. VERTICAL RELIEF: ELEVATIONS & 1' CONTOURS SHOWN HEREON PER GROUND SURVEY AND ARE PURSUANT TO NORTH AMERICAN VERTICAL DATUM OF 1988. ORIGINATING BENCHMARK: NGS EZ2497 (PUBLISHED ELEVATION 253.90')
6. ZONING: A ZONING REPORT WAS NOT PROVIDED TO THE SURVEYOR AT THE TIME OF SURVEY. STATE, COUNTY, & LOCAL BUFFERS AND SETBACKS MIGHT EXIST ON THE SUBJECT PROPERTY THAT ARE NOT SHOWN HEREON.
7. (A) EXTERIOR BUILDING DIMENSIONS NO BUILDINGS OBSERVED
(B) SQUARE FOOTAGE OF BUILDINGS NO BUILDINGS OBSERVED
(C) MEASURED HEIGHT OF BUILDINGS NO BUILDINGS OBSERVED
8. SUBSTANTIAL FEATURES: PARKING LOTS, BILLBOARDS, SIGNS, SWIMMING POOLS, LANDSCAPED AREAS, OR SUBSTANTIAL AREAS OF REFUSE LOCATED AS SHOWN.
9. THERE ARE 0 REGULAR PARKING SPACES AND 0 HANDICAP PARKING SPACES WITHIN THE SUBJECT PROPERTY.
11. UTILITIES: THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON VISIBLE STRUCTURES IN ADDITION TO NORTH CAROLINA 811 UTILITY MARKINGS, TICKET NUMBER A231592372, DATED 06/08/23. THE PROPERTY SHOWN HEREON MAY BE SERVED BY UNDERGROUND UTILITIES WHICH ARE NOT SHOWN HEREON.

SURVEY NOTES

1. THIS ALTA SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE PERSON, PERSONS, OR ENTITY NAMED HEREON. THIS PLAT DOES NOT EXTEND TO ANY UNNAMED PERSON, PERSONS OR ENTITY WITHOUT EXPRESS WRITTEN CERTIFICATION BY THE SURVEYOR NAMING SAID PERSON, PERSONS, OR ENTITY.
2. EASEMENTS AND RIGHTS OF WAY OF WHICH THE SURVEYOR HAS KNOWLEDGE ARE SHOWN HEREON, OTHERS MAY EXIST OF WHICH THE SURVEYOR HAS NO KNOWLEDGE AND OF WHICH THERE IS NO OBSERVABLE EVIDENCE. THE PROPERTY SHOWN HEREON IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD BOTH WRITTEN AND UNWRITTEN.
3. NORTH ARROW AND BEARINGS SHOWN HEREON ARE BASED ON NORTH CAROLINA STATE PLANE - NAD 83 ADJUSTED 2011. USING GLOBAL POSITIONAL SYSTEM (GPS) AND OBTAINED BY RTK OBSERVATIONS ON 06/14/2023 USING THE TRIMBLE VRS SYSTEM. ALL DISTANCES ARE HORIZONTAL GROUND MEASUREMENTS EXPRESSED IN U.S. SURVEY FEET.
4. EQUIPMENT USED FOR MEASUREMENT: ANGULAR/LINEAR: TRIMBLE S-5 ROBOTIC TOTAL STATION, TRIMBLE R12 GPS RECEIVER
5. STATE, COUNTY, & LOCAL BUFFERS AND SETBACKS MIGHT EXIST ON THE SUBJECT PROPERTY THAT ARE NOT SHOWN HEREON.

SURVEYOR'S ALTA CERTIFICATION

TO: TBD, LLC, A NORTH CAROLINA LIMITED LIABILITY COMPANY; FIDELITY NATIONAL TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 5, 6(A)(B), 7(A)(B)(C), 8, 9, 11(A)(B), 15 & 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON 06/14/2023.

DATE OF MAP OR PLAT: 06/23/2023

FOR REVIEW

PROFESSIONAL LAND SURVEYOR: MATTHEW C. BISSETT, PLS L-5420
NORTH CAROLINA PROFESSIONAL LAND SURVEYOR #5420
ATWELL, LLC DBA ATWELL, PLLC COA# P-2380

SURVEYOR'S CERTIFICATION

I, MATTHEW C. BISSETT, CERTIFY THAT THIS PROJECT WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION; THAT THIS GROUND SURVEY WAS PERFORMED AT THE 95 PERCENT CONFIDENCE LEVEL TO MEET FEDERAL GEOGRAPHIC DATA COMMITTEE STANDARDS; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS FOR A TOPOGRAPHIC/PLANIMETRIC SURVEY TO THE ACCURACY OF CLASS (A) AND VERTICAL ACCURACY WHEN APPLICABLE TO THE CLASS A STANDARD, AND THAT THE ORIGINAL DATA WAS OBTAINED ON JUNE 14, 2023; THAT THE SURVEY WAS COMPLETED JUNE 23, 2023; THAT CONTOURS SHOWN AS BROKEN LINES MAY NOT MEET THE STATED STANDARD; AND ALL COORDINATES ARE BASED ON NORTH CAROLINA STATE PLANE 'NAD 83' AND REALIZATION ADJUSTED 2011 AND ALL ELEVATIONS ARE BASED ON NAVD 88.

FOR REVIEW

PROFESSIONAL LAND SURVEYOR: MATTHEW C. BISSETT, PLS L-5420
NORTH CAROLINA PROFESSIONAL LAND SURVEYOR #5420
ATWELL, LLC DBA ATWELL, PLLC COA# P-2380

811 Know what's **below.** **Call** before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
1800 PARKWAY PLACE, SUITE 700
MARIETTA, GA
770.423.0807
ATWELL, LLC DBA ATWELL, PLLC COA# P-2380

LOCATED IN
CITY OF RALEIGH
WAKE COUNTY
NORTH CAROLINA

CLIENT
CHASE BANK NA

ALTA/NSPS LAND TITLE SURVEY
1091 NORTH ROGERS LANE
RALEIGH, NC

DATE 06/23/2023

REVISIONS

DWG. DLG	CH. KMK
P.M. KMK	
CODE AS	
JOB 23003175	
SHEET NO. 1 OF 1	

13. ALL SPOT ELEVATIONS SHALL BE TAKEN TO BE THE TOP OF PAVEMENT OR FINISHED GROUND UNLESS OTHERWISE NOTED.
    TC=TOP OF CURB ELEVATION
    MATCH=PROPOSED GRADE TO MATCH EXISTING GRADE
    TW=TOP OF RETAINING WALL ELEVATION;
    BW=FINISHED GRADE AT TOE OF WALL ELEVATION
14. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING STORM SEWER STRUCTURES, PIPES, AND ALL UTILITIES PRIOR TO CONSTRUCTION.
15. ALL PIPE LENGTHS SHOWN ON PLAN AND PROFILE VIEWS ARE BASED ON THE HORIZONTAL DISTANCE BETWEEN STRUCTURES.
16. THE CONTRACTOR SHALL COMPARE PLAN AND PROFILE STORM SEWER INFORMATION FOR DISCREPANCIES. IF ANY EXIST THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR CLARIFICATION.
17. PRECAST CONCRETE OR BRICK STRUCTURES MAY BE USED AT THE CONTRACTOR'S OPTION.
18. ALL STORM PIPE CONNECTIONS AT MANHOLES SHALL BE WATER TIGHT.
19. ALL STORM SEWER MANHOLE STRUCTURES IN PAVED AREAS SHALL BE INSTALLED OR ADJUSTED WITH TRAFFIC READY LIDS FLUSH WITH THE PAVEMENT. MANHOLE STRUCTURES IN UNPAVED AREAS SHALL BE INSTALLED FLUSH WITH FINISH GRADE.
20. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.
21. ALL SYSTEM MANHOLES AND PIPES SHALL BE FLUSHED CLEAN PRIOR TO TURNING OVER TO THE OWNER.
22. THE CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK. EXISTING UNDERGROUND UTILITIES SHOWN ON THESE DRAWINGS ARE TAKEN FROM THE BEST SOURCES AVAILABLE (FIELD SURVEYS AND UTILITY MAPS) AND MAY NOT BE FULLY ACCURATE. AS SUCH, THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE GRADING. ANY UTILITY RELOCATION DEEMED NECESSARY BUT NOT SHOWN ON THE APPROVED DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION.
23. THE GRADING CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES, ASSOCIATED GOVERNMENT DEPARTMENTS, AND THE OWNER'S REPRESENTATIVE PRIOR TO INTERRUPTION OF ANY UTILITY SERVICE. NOTIFICATION MUST BE MADE PER THE PROJECT SPECIFICATIONS. THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH AND ADHERENCE T0 THE REQUIREMENTS OF EACH UTILITY COMPANY AND ANY GOVERNMENT UTILITY DEPARTMENT REGARDING SERVICE INTERRUPTION.

UTILITY NOTES

1. THE PROJECT UTILITY SURVEY HAVE BEEN PROVIDED BY ATWELL, LLC.
2. THE CONTRACTOR SHALL HAVE A COPY OF THE APPROVED PLANS, A COPY OF THE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND A COPY OF ALL PERMITS AND APPROVALS ON THE JOB.
3. ALL UTILITY TRENCHES ARE TO BE SLOPED OR BRACED AND SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKERS AND FOR THE PROTECTION OF OTHER UTILITIES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SECURITY DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL COMPLY WITH THE LATEST OSHA STANDARDS AND/OR DIRECTIVES WITH REGARD TO EXCAVATION AND TRENCHING PROCEDURES.
6. ALL FILL MATERIAL SHALL BE PLACED AND COMPACTED PRIOR TO UTILITY INSTALLATION.
7. THE CONTRACTOR SHALL PROVIDE RECORD DRAWINGS "AS-BUILT PLANS" AND "FINAL PLATS" (IF APPLICABLE) UPON COMPLETION OF THE PROJECT.
8. THE CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK. EXISTING UNDERGROUND UTILITIES SHOWN ON THESE DRAWINGS ARE TAKEN FROM THE BEST SOURCES AVAILABLE (FIELD SURVEYS AND UTILITY MAPS) AND MAY NOT BE FULLY ACCURATE. AS SUCH, THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE GRADING. ANY UTILITY RELOCATION DEEMED NECESSARY BUT NOT SHOWN ON THE APPROVED DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION.
9. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY REGARDING ANY UTILITY CONFLICTS, ADDITIONAL UTILITIES ENCOUNTERED, AND/OR ANY OTHER UTILITY INFORMATION WHICH MAY REQUIRE EXAMINATION.
10. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO DETERMINE AND IMPLEMENT THEIR SPECIFIC INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
11. THE CONTRACTOR SHALL CALL 811, AT LEAST 72 HOURS PRIOR TO EXCAVATION, IN ORDER THAT UTILITIES BE FIELD LOCATED.
12. THE CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITY INSPECTOR 72 HOURS BEFORE CONNECTING TO ANY EXISTING UTILITY.
13. THE SITE CONTRACTOR SHALL COORDINATE SERVICE ROUTING OF ALL GAS, TELEPHONE, AND ELECTRICAL LINES WITH THE APPROPRIATE UTILITY COMPANY. ALL UTILITY CONSTRUCTION SHALL COMPLY WITH THE RESPECTIVE UTILITY'S STANDARDS AND SPECIFICATIONS.
14. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATION OF OR ADJUSTMENTS TO EXISTING UTILITIES DURING CONSTRUCTION. THIS WORK SHALL BE PERFORMED IN A TIMELY FASHION AND WITH A MINIMAL DISRUPTION OF SERVICE.
15. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR THE PROPOSED LOCATION OF ALL WET AND DRY UTILITY ENTRANCES INTO THE BUILDING. CONTRACTOR SHALL COORDINATE INSTALLATION OF THE VARIOUS UTILITIES TO AVOID CONFLICTS AND ENSURE THAT THE PROPER DEPTHS ARE ACHIEVED.
16. ALL DRY UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE PROPER UTILITY COMPANY STANDARDS AND SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL DRY UTILITIES BY OTHERS.
17. THE CONTRACTOR SHALL REPAIR ALL DAMAGE TO EXISTING UTILITIES DURING CONSTRUCTION.
18. THE CONTRACTOR SHALL COORDINATE THE INSTALLATIONS OF WATER AND SANITARY SERVICES WITH THE LOCAL WATER AND SEWER PROVIDER. THE LOCAL WATER AND SEWER AUTHORITY STANDARD SPECIFICATIONS AND DETAILS SHALL GOVERN ALL WATER AND SANITARY SEWER CONSTRUCTION.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE EXACT LOCATION, SIZE, AND MATERIAL OF ANY EXISTING WATER AND/OR SEWER FACILITY PROPOSED FOR CONNECTION OR USE BY THIS PROJECT. THE RELOCATION OF ALL WATER/SEWER FACILITIES SHALL BE COORDINATED WITH THE RESPECTIVE UTILITY COMPANY.
20. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL TELEVISE EXISTING SANITARY SEWER LINE FROM THE POINT OF CONNECTION THROUGH THE NEXT SUCCESSIVE DOWNSTREAM RUN OF PIPE. THE CONTRACTOR SHALL ALSO TELEVISE ALL NEWLY INSTALLED SANITARY SEWER PIPE TO ENSURE LINES AND GRADES HAVE BEEN MET.
21. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN SANITARY, WATER, STORM, AND PRIVATE UTILITY LINES. MEASUREMENTS SHALL BE TAKEN FROM THE NEAREST EDGE OF THE UTILITIES IN QUESTION.
22. THE MINIMUM HORIZONTAL SEPARATION BETWEEN THE WATER AND SEWER SERVICES SHALL BE 8'. THE MINIMUM VERTICAL SEPARATIONS SHALL BE 18”
23. SANITARY SEWER PIPE SLOPE SHALL BE MEASURED FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
24. ALL MANHOLES REQUIRE KOR-N-SEAL OR EQUAL RUBBER BOOTS.
25. TOPS FOR SANITARY SEWER MANHOLES PLACED WITHIN PAVED AREAS SHALL BE INSTALLED WITH TRAFFIC READY FRAMES AND SHALL MATCH THE FINISHED PAVEMENT ELEVATIONS. TOPS FOR MANHOLES PLACED WITHIN GRASSED AREAS SHALL MATCH FINISHED GRADE ELEVATIONS. ALL EXISTING MANHOLES & UTILITY BOXES SHALL BE ADJUSTED AS NECESSARY TO MATCH FINISHED GRADING.
26. ALL SANITARY MANHOLES AND PIPE SHALL BE FLUSHED CLEAN OF DEBRIS PRIOR TO TURNING SYSTEM OVER TO OWNER.
27. ALL FIRE HYDRANTS SHALL CONFORM TO LOCAL REQUIREMENTS.
28. THRUST BLOCKS ARE REQUIRED WHEREVER PIPE CHANGES DIRECTION (TEES, BENDS, ETC.).
29. GRAVITY SEWER LINE MATERIAL SHALL BE PVC (SDR35) OR DIP (CLASS 350).
30. THE PRIMARY ELECTRIC SERVICE SHALL BE PROVIDED BY THE LOCAL POWER PROVIDER. THIS INCLUDES THE TRANSFORMER, PAD, TRENCHING, BACKFILL AND COMPACTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF THE SECONDARY SERVICE. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF BOTH SERVICES.
31. THE GAS SERVICE UP TO THE GAS METER SHALL BE PROVIDED BY THE LOCAL GAS PROVIDER. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE GAS SERVICE.
32. THE GAS AND UNDERGROUND POWER LINES ARE SHOWN FOR INFORMATION PURPOSES ONLY. EXACT LOCATIONS SHALL BE FIELD DETERMINED DURING CONSTRUCTION.

EROSION NOTES

1. THE PROJECT TOPOGRAPHIC SURVEY HAS BEEN PROVIDED BY ATWELL, LLC.
2. THE OWNER SHALL ALLOW AND MAINTAIN OFF-STREET PARKING FOR WORKERS ON THE SUBJECT PROPERTY THROUGHOUT CONSTRUCTION.
3. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ONSITE WHENEVER LAND DISTURBANCE ACTIVITY IS IN PROGRESS.
4. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL CONFORM TO THE LATEST EROSION AND SEDIMENT CONTROL REGULATIONS FOR ASSOCIATED FEDERAL, REGIONAL, AND LOCAL REGULATORY AGENCIES.
5. ALL EROSION CONTROL MEASURES SHALL MEET THE REQUIREMENTS AND THE SPECIFICATIONS CONTAINED WITHIN THE CONSTRUCTION DETAILS UNLESS AN EQUAL PRODUCT HAS BEEN PRESENTED TO AND APPROVED BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
6. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES. THESE MEASURES SHALL BE MAINTAINED THROUGHOUT THE ENTIRE DURATION OF LAND DISTURBING ACTIVITIES.
7. THE CONTRACTOR SHALL PROTECT ANY BORDERING OR ADJACENT DRAINAGE COURSE AND SHALL REMOVE ANY INTRUDING CONSTRUCTION DEBRIS OR SPOIL MATERIAL IN AN EXPEDITIOUS MANNER.
8. THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY MARKED AT THE OUTSET OF CONSTRUCTION AND SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS AS INDICATED ON THE APPROVED EROSION CONTROL DRAWINGS. IF WETLANDS EXIST ON-SITE, ALL CLEARING MUST BE PERFORMED IN ACCORDANCE WITH THE APPROVED U.S. ARMY CORPS OF ENGINEERS WETLANDS PERMIT.
9. A CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED AT THE OUTSET OF CONSTRUCTION AND SHALL BE MAINTAINED APPROPRIATELY IN ORDER TO PREVENT TRACKING ONTO PUBLIC ROADWAYS. ALL MATERIALS SPILLED ONTO A PUBLIC ROADWAY OR INTO A PUBLIC STORM SEWER SHALL BE REMOVED IMMEDIATELY.
10. ONCE A CONSTRUCTION EXIT HAS BEEN APPROPRIATELY INSTALLED, APPROPRIATE PERIMETER EROSION CONTROL AND STORMWATER MEASURES SHALL BE INSTALLED PRIOR TO FURTHER CONSTRUCTION.
11. ALL SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED WITH EITHER PERMANENT HARD SURFACE GROUND COVER VEGETATION.
12. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ACCUMULATED SILT FROM EACH RESPECTIVE EROSION CONTROL MEASURE IN ACCORDANCE WITH THE NOTES AND DETAILS ON THESE DRAWINGS.
13. ALL DISTURBED AREAS LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING.
14. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
15. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED SHOULD INTERIM DRAINAGE CONDITIONS DIFFER FROM THE APPROVED FINAL CONDITIONS. THE CONTRACTOR SHALL MAKE ADJUSTMENTS ACCORDINGLY IN ORDER THAT SEDIMENT NOT LEAVE THE SITE.
16. THE CONTRACTOR SHALL KEEP AN ON-SITE DAILY LOG OF THE MAINTENANCE OF ALL EROSION CONTROL MEASURES. THE LOG SHALL BE MADE AVAILABLE FOR INSPECTION AT ALL TIMES.

DEMOLITION NOTES:

1. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXIST. UTILITIES AND GRAVITY STORM AND SANITARY SEWER LINES TO DETERMINE THE ACCURACY OF SURVEY INFORMATION REFLECTED ON THESE DRAWINGS. ADDITIONALLY, THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF ALL CONNECTIONS RELATIVE TO THOSE SHOWN ON THESE DRAWINGS. IF DISCREPANCIES ARE DETERMINED CONTACT THE ENGINEER.
2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXIST. UTILITIES WHICH CONFLICT WITH THE PROPOSED UTILITIES SHOWN ON THE PLANS.

811. Know what's **below.** **Call** before you dig.

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NOTICE:

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24 HOUR EMERGENCY CONTACT
TRISH NEARHOOF-EUBANKS
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PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
NOTES

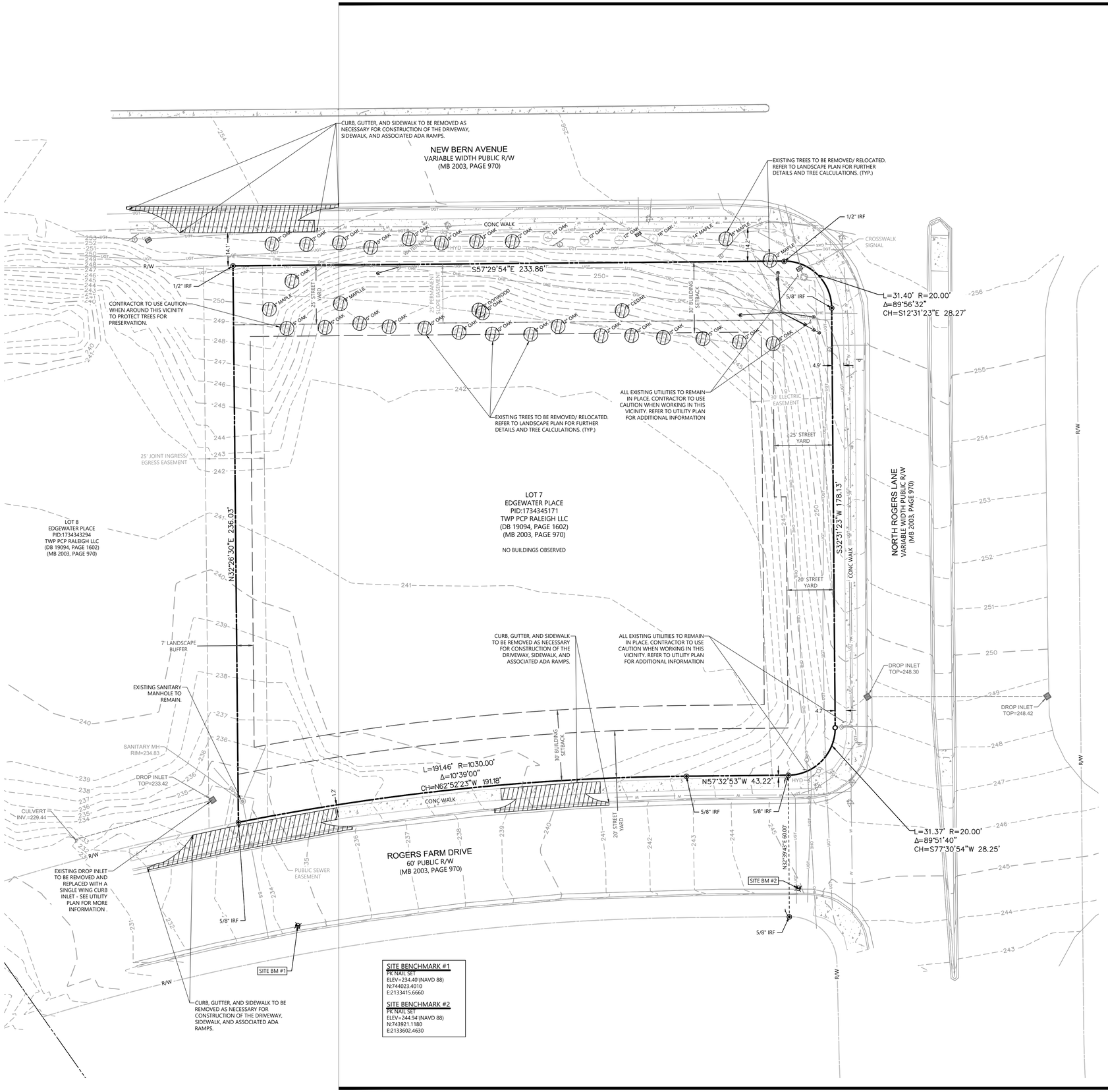
DATE 11/13/2023

REVISIONS

[redacted]

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C100

NOT-ISSUED-FOR-CONSTRUCTION



SITE BENCHMARK #1
PK NAIL SET
ELEV.=234.40'(NAVD 88)
N:744023.4010
E:2133415.6660

SITE BENCHMARK #2
PK NAIL SET
ELEV.=244.94'(NAVD 88)
N:743921.1180
E:2133602.4630

LEGEND

- BENCHMARK
- IRON ROD FOUND
- 5/8" IRON ROD & CAP SET, LB 7832
- TREE
- SANITARY MANHOLE
- SIGN
- UTILITY POLE
- GUY ANCHOR
- UTILITY HANDHOLE
- TELECOM RISER
- WARNING POST FIBER
- HYDRANT
- WATER MANHOLE
- WATER VALVE
- DROP INLET
- CULVERT
- TRAFFIC SIGNAL
- CONCRETE PAVEMENT
- ASPHALT PAVEMENT
- SUBJECT BOUNDARY LINE
- R/W — RIGHT OF WAY LINE
- SETBACK LINE
- EASEMENT
- 40 — GROUND CONTOUR
- OHE — OVERHEAD UTILITY
- UGT — UNDERGROUND TELECOM
- W — UNDERGROUND WATER
- STORM SEWER
- SS — SANITARY SEWER
- DEMO LIMITS

DEMOLITION NOTES

1. ATWELL, LLC IS NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. CONTRACTOR IS TO PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL THE OSHA REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY.
2. ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AS WELL AS ALL FEDERAL, STATE, AND LOCAL REGULATIONS. ANY DISCREPANCIES OR DEVIATIONS SHALL BE IDENTIFIED BY THE CONTRACTOR TO ATWELL, LLC IN WRITING FOR RESOLUTION PRIOR TO INITIATION OF SITE ACTIVITY.
3. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING SITE IMPROVEMENTS AND UTILITIES. ALL DISCREPANCIES SHALL BE IDENTIFIED TO THE ENGINEER IN WRITING.
4. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATIONS OF ALL UTILITIES AND PIPING WHICH MIGHT INTERFERE WITH DEMOLITION. ANY DAMAGES TO UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER
5. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ALL UTILITIES BEFORE CONSTRUCTION AND VERIFYING LOCATION OF ALL UTILITIES SHOWN OR NOT SHOW.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND COST OF THE RELOCATION OF ALL UTILITIES ALONG THE RIGHT OF WAY AND ON THE SITE ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT, SUCH AS, BUT NOT LIMITED TO SIGNAL POLES, SIGNAL CONTROLS, DRAINAGE STRUCTURES, TRAFFIC SIGNS, UTILITY POLES, GUY WIRES, ETC.
7. ALL EXISTING UTILITIES BEING REMOVED SHALL BE DONE SO BY THE CONTRACTOR IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS
8. PRIOR TO STARTING ANY DEMOLITION CONTRACTOR IS RESPONSIBLE FOR/TO:
   - A. REMOVAL OF ALL DEBRIS NOT ACCEPTABLE TO THE OWNER AND ENGINEER.
   - B. ENSURING THAT COPIES OF ALL PERMITS AND APPROVALS MUST BE MAINTAINED ON SITE AND AVAILABLE FOR REVIEW.
   - C. INSTALLING THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE DISTURBANCE.
   - D. LOCATE/CAP ALL UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC, WITHIN THE LIMITS OF DISTURBANCE.
   - E. PROTECTING AND MAINTAINING IN OPERATION, ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED DURING ALL DEMOLITION ACTIVITIES.
   - F. FAMILIARIZE THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDER AND BE RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION REQUIRED FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
   - G. COORDINATION WITH UTILITY COMPANIES REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS AS MAY BE REQUIRED TO MINIMIZE THE IMPACT ON THE AFFECTED PARTIES.
   - H. A COMPLETE INSPECTION OF CONTAMINANTS BY A LICENSED ENVIRONMENTAL TESTING AGENCY, OF ALL BUILDINGS AND/OR STRUCTURES TO BE REMOVED. SAME SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REGULATIONS. ANY/ALL CONTAMINANTS SHALL BE REMOVED AND DISPOSED OF BY A FEDERALLY LICENSED CONTRACTOR IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. ALL ENVIRONMENTAL WORK INCLUDING HAZARDOUS MATERIAL, SOILS, ASBESTOS, OR OTHER REFERENCED OR IMPLIED HEREIN IS THE SOLE RESPONSIBILITY OF THE OWNER'S ENVIRONMENTAL CONSULTANT.
9. THE CONTRACTOR SHALL PROVIDE ALL THE "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN AS A RESULT OF HIS ACTIVITIES. ALL REPAIRS SHALL USE NEW MATERIAL. THE REPAIRS SHALL RESTORE THE ITEM TO THE PRE-DEMOLITION CONDITION.
10. IN THE ABSENCE OF SPECIFICATIONS, THE CONTRACTOR SHALL PERFORM EARTH MOVEMENT ACTIVITIES, DEMOLITION AND REMOVAL OF ALL FOUNDATION WALLS, FOOTINGS, AND OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE IN ACCORDANCE WITH DIRECTION BY OWNER'S STRUCTURAL OR GEOTECHNICAL ENGINEER.
11. EXPLOSIVES SHALL NOT BE USED WITHOUT PRIOR WRITTEN CONSENT OF BOTH THE OWNER AND APPLICABLE GOVERNMENTAL AUTHORITIES. ALL THE REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES THAT ARE REQUIRED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS SHALL BE IN PLACE PRIOR TO STARTING AN EXPLOSIVE PROGRAM. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON ALL LOCAL STRUCTURES.
12. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH: "THE MANUAL ON UNIFORM TRAFFIC CONTROL", AS WELL AS FEDERAL, STATE, AND LOCAL REGULATIONS WHEN DEMOLITION RELATED ACTIVITIES IMPACT ROADWAYS OR ROADWAY RIGHTS-OF-WAY.
13. THE CONTRACTOR SHALL CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER AS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY.
14. DEMOLITION ACTIVITIES AND EQUIPMENT SHALL NOT USE AREAS OUTSIDE THE DEFINED PROPERTY LINE WITHOUT WRITTEN PERMISSION OF THE OWNER, AND/OR APPROPRIATE GOVERNMENT AGENCY.
15. USE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR IN ACCORDANCE WITH FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.
16. THE CONTRACTOR IS RESPONSIBLE TO SAFEGUARD THE SITE AS NECESSARY AND PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS AT ANY TIME.
17. THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION OTHER THAN THAT ALL METHODS AND MEANS ARE TO BE IN ACCORDANCE WITH STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE.
18. PRIOR TO THE REMOVAL OF ANY MATERIALS THE AREA MUST BE SAW CUT TO PREVENT ANY DAMAGE OF THE ROADWAY
19. SUB-GRADE SHALL BE COMPACTED TO 98% MAXIMUM DENSITY AND TEST RESULTS SHALL BE PROVIDED BEFORE INSTALLATION OF NEW STRUCTURES.
20. ALL NEW FINISH ELEVATIONS SHALL MATCH EXISTING ADJACENT CONCRETE AND ASPHALT ELEVATIONS.
21. TREE(S) TO BE DEMOLISHED SHALL BE CLEARED AND GRUBBED. NO BURNING SHALL BE ALLOWED ON OWNER'S PROPERTY.

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COA#: C-2380

PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
DEMOLITION PLAN

DATE 11/13/2023

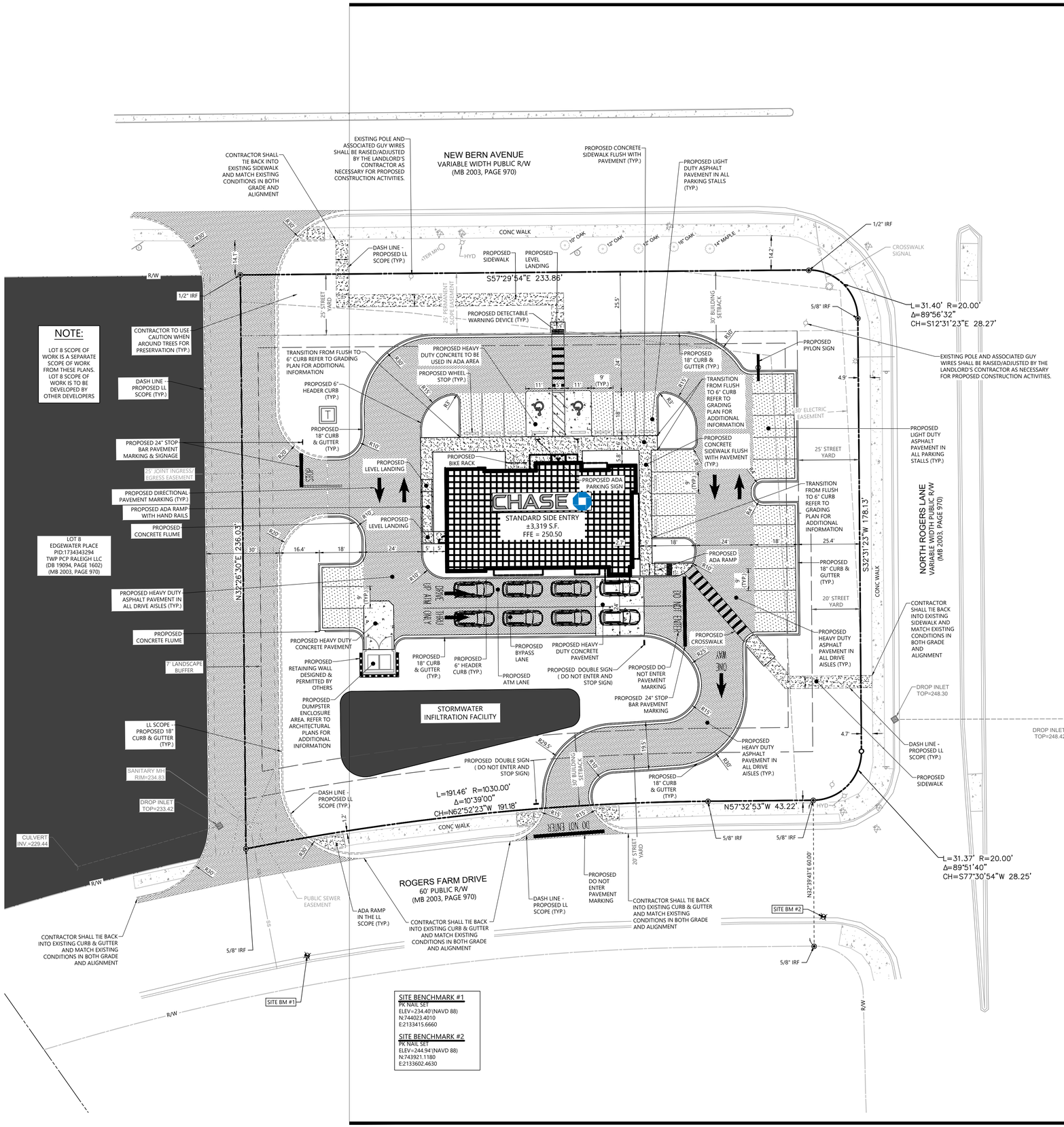
REVISIONS

[redacted]

0 10' 20'
SCALE: 1" = 20'

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C110

NOT-ISSUED-FOR-CONSTRUCTION



SITE NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PLANS AND SITE WORK SPECIFICATIONS AND SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
2. REFERENCE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS, TRUCK DOCKS, SIDEWALKS, STEPS, TRANSFORMER PADS, ETC.
3. TOPOGRAPHIC BOUNDARY SURVEY, INCLUDING PROPERTY LINES, LEGAL DESCRIPTION, EXISTING UTILITIES, SITE TOPOGRAPHY WITH SPOT ELEVATIONS, OUTSTANDING PHYSICAL FEATURES AND EXISTING STRUCTURE LOCATIONS WAS PROVIDED BY THE FOLLOWING COMPANY, AS A CONTRACTOR TO THE SELLER/OWNER: ATWELL GROUP
4. ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB, UNLESS OTHERWISE NOTED. ALL DIMENSIONS SHOWN TO BUILDINGS ARE TO OUTSIDE FACE OF BUILDING.
8. ALL STRIPED OR CURBED RADII SHALL BE 5' UNLESS OTHERWISE NOTED.
9. ALL HANDICAP ACCESSIBLE PARKING SIGNS AND STRIPING SHALL BE IN ACCORDANCE WITH THE AMERICAN WITH DISABILITY ACT (ADA) REQUIREMENTS AND STATE CODE.
10. ALL TRAFFIC SIGNS SHALL CONFORM TO THE UNIFORM TRAFFIC CONTROL MANUAL AND THE STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.
11. THE CONTRACTOR IS RESPONSIBLE FOR REPAIR OF ANY DAMAGE TO ANY EXISTING IMPROVEMENTS, ONSITE OR OFF SITE, SUCH AS PAVEMENT, UTILITIES, STORM DRAINAGE, ETC. THE REPAIR MUST BE APPROVED BY THE ENGINEER AND BE EQUAL OR BETTER THAN EXISTING CONDITIONS.
12. SITE LIGHTING SHALL BE INCLUDED IN THE GENERAL CONTRACTOR'S SCOPE OF WORK. ALL PARKING LOT LIGHTING POLES, BASES AND FIXTURES WITH LAMPS SHALL BE INSTALLED BY THE GENERAL CONTRACTOR'S ELECTRICAL CONTRACTOR AND SHALL SUPPLY A ONE YEAR WARRANTY CERTIFICATE.
13. CONTRACTOR SHALL OBTAIN ALL PERMITS BEFORE CONSTRUCTION BEGINS.
14. SITE CONTRACTOR SHALL SUPPLY AS-BUILT PLANS INDICATING ALL CHANGES AND DEVIATIONS.
15. ANY DEVIATION FROM THESE PLANS MAY CAUSE THE WORK TO BE UNACCEPTABLE.
16. ANY UNANTICIPATED CONDITIONS ENCOUNTERED DURING THE CONSTRUCTION PROCESS SHALL BE IDENTIFIED TO THE ENGINEER IMMEDIATELY.
17. ALL CONCRETE SHALL BE 4,500 PSI 28 DAY COMPRESSIVE STRENGTH. ALL CONCRETE WORK SHALL BE INSTALLED TO THE COMPRESSIVE STRENGTH ESTABLISHED IN THE PROJECT GEOTECHNICAL REPORT. THE REPORT SHALL BE FOLLOWED IF THERE IS A DISCREPANCY WITHIN THESE DRAWINGS.
18. PROJECT SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
19. ALL CURB AND GUTTER WITHIN THE DEVELOPMENT SHALL BE 18". IT SHALL BE 24" WITHIN THE R.O.W OR TO MATCH EXISTING. UNLESS NOTED OTHERWISE.
20. ALL HEADER CURB WITHIN THE DEVELOPMENT SHALL BE 6" UNLESS NOTED OTHERWISE.
21. PARKING LOT STRIPING SHALL BE INCLUDED IN PAVING CONTRACTOR'S SCOPE OF WORK. STRIPING WILL BE ACCORDING TO OWNER'S SPECIFICATIONS UNLESS NOTED OTHERWISE. ALL STRIPING IS TO HAVE TWO (2) COATS OF PAINT (MIN).
22. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL OFF-SITE EASEMENTS NOT DELINEATED ON PLANS OR KNOWN OF AT TIME OF PLAN ISSUANCE.
23. THE SITE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL WORK AND APPURTENANCE TO WITHIN 5' OF THE BUILDING. THIS INCLUDES TRANSFORMER AND DUMPSTER PADS AS WELL AS ALL UTILITY CONDUITS.
24. ADA PARKING STRIPING TO BE PAINTED WITH 2 COATS SOLID 4' BLUE PER CHASE STANDARDS.
25. MINIMUM SIZE OF LETTERING OF PAVEMENT MARKINGS SHALL BE 2' TALL & 4" THICK (TYP.).

SUSTAINABILITY NOTES:

1. CONTRACTOR SHALL USE MIN. 20% RECYCLED ASPHALT PER CHASE GREEN BUILDING CHECKLIST STANDARDS.
2. CONTRACTOR SHALL USE LOW EMBODIED CARBON CONCRETE IN COMPLIANCE WITH ALL CHASE GREEN BUILDING CHECKLIST STANDARDS.
3. ALL MATERIALS USED TO MEET GREEN BUILDING CHECKLIST STANDARDS MUST MATCH OR EXCEED MINIMUM STANDARDS AS SPECIFIED IN THE DETAILS AND GEOTECHNICAL REPORT.
4. CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE GEOTECHNICAL ENGINEER FOR THE MATERIAL USED.

SITE LEGEND

- EXISTING PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING SETBACK LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED SETBACK LINE
- 100 YEAR FLOOD PLAIN
- 18" CURB AND GUTTER
- 24" CURB AND GUTTER
- PROPOSED LL SCOPE OF WORK
- PROPOSED RETAINING WALL
- CROSS WALK
- STOP BAR (PAVEMENT MARKING)
- TRAFFIC FLOW ARROW (PAVEMENT MARKING)
- "YIELD" (PAVEMENT MARKING)
- DIRECTIONAL ARROWS (PAVEMENT MARKING)
- "ONLY" DIRECTIONAL ARROWS (PAVEMENT MARKING)
- HANDICAP STALL
- CART CORRAL
- CONCRETE WHEEL STOP
- A.D.A. STD HANDICAP RAMP
- PARKING SPACE COUNT
- SIGN
- LIGHT POLE
- GROUP OF FOUR GUARD POSTS
- DUMPSTER PAD
- TRANSFORMER PAD
- PROPOSED SIGNAL
- GRATE INLET
- STORM MANHOLE
- DOUBLE WING CATCH BASIN
- SINGLE WING CATCH BASIN
- AREA INLET
- OUTLET CONTROL STRUCTURE
- HEADWALL
- SANITARY SEWER MANHOLE
- CONCRETE
- STANDARD DUTY PAVING
- HEAVY DUTY PAVING

SITE AREA

TOTAL PROPERTY AREA:	1.29± AC (56,192± S.F.)
DISTURBED AREA:	1.46± AC (63,696± S.F.)
IMPERVIOUS AREA:	0.66± AC (28,750± S.F.)
PERVIOUS AREA:	0.63± AC (27,443± S.F.)

ZONING CLASSIFICATION

JURISDICTION:	CITY OF RALEIGH
ZONING:	PLANNED DEVELOPMENT (PD)
ADJACENT ZONING:	PLANNED DEVELOPMENT (PD)

BUILDING SETBACKS

FRONT (FROM PRIMARY STREET)	30'
SIDE (FROM SIDE STREET)	30'
SIDE (FROM SIDE LOT LINE)	5'
REAR	5'

BUILDING SUMMARY

PROPOSED BUILDING AREA:	3,319 SF

PARKING SUMMARY

FROM PRIMARY STREET	10'
FROM SIDE STREET (MIN):	10'
FROM SIDE LOT LINE (MIN):	0' OR 3'
FROM REAR LOT LINE (MIN):	0'-3'
FROM ALLEY (MIN):	5'
BUFFER YARD:	20' OR 25' (FRONTAGE OF ANY ROAD)
PARKING REQUIREMENTS	1 SPACE / 200 S.F. G.F.A.
TOTAL PARKING REQUIRED	17 SPACES
PARKING PROVIDED	26 SPACES, 2 ADA SPACES (2 VAN)
CAR STACKING REQUIRED	3 SPACES PER LANE
CAR STACKING PROVIDED:	4 SPACES PER LANE

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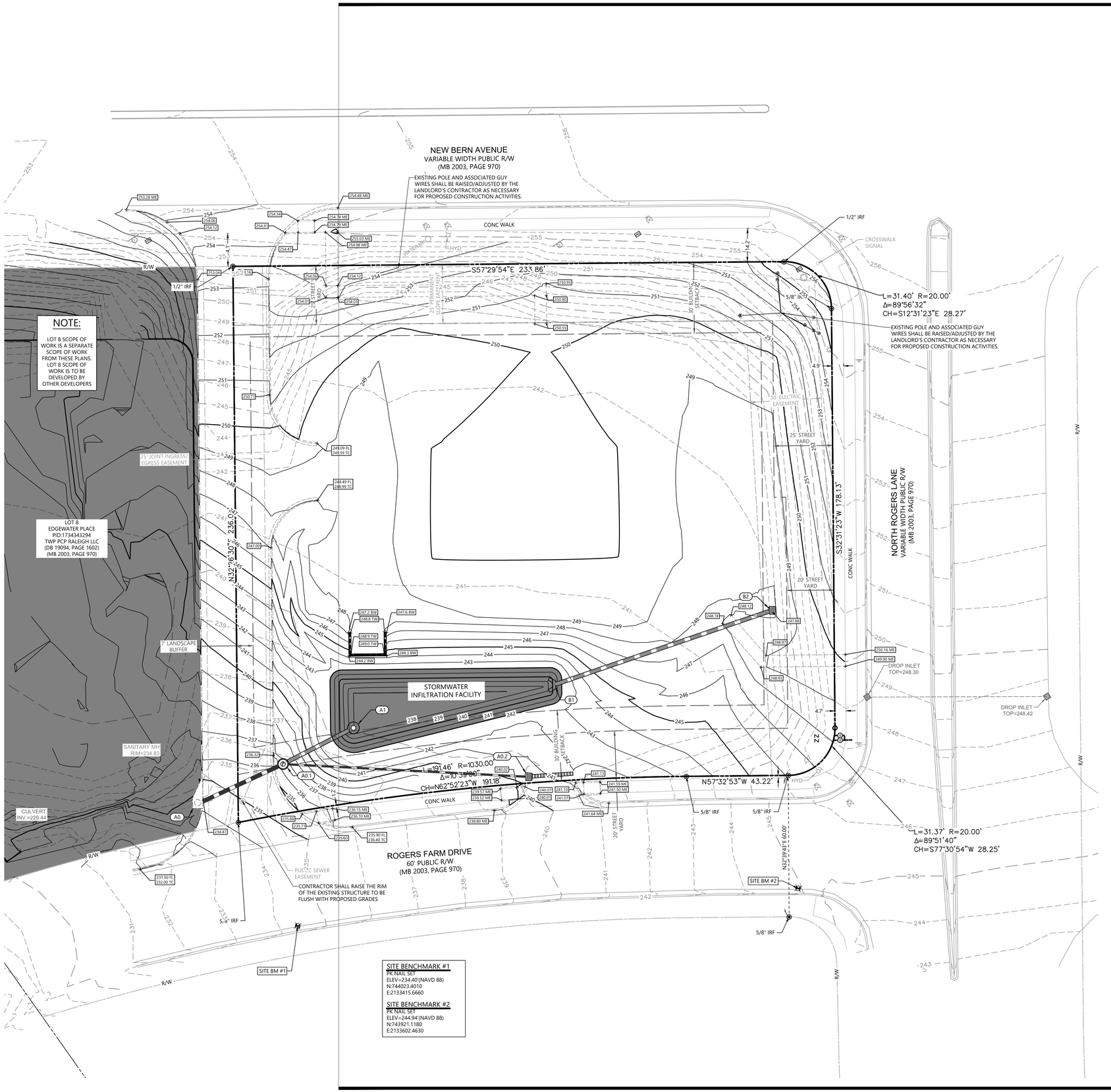

SITE BENCHMARK #1

PK NAIL SET
ELEV=234.40'(NAVD 88)
N:744023.4010
E:2133415.6660

SITE BENCHMARK #2

PK NAIL SET
ELEV=244.94'(NAVD 88)
N:743921.1180
E:2133602.4630

GRADING NOTES

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4. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES BEFORE CONSTRUCTION AND VERIFYING LOCATION OF ALL UTILITIES SHOWN OR NOT SHOWN.
5. HDPE STORM PIPE SHALL BE 12" MINIMUM. THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD AND RECEIVE CONFIRMATION IF A SUBSTITUTE MATERIAL IS DESIRED. ALL PIPE CONNECTIONS AT MANHOLES SHALL BE WATER TIGHT. CONTRACTOR TO VERIFY ADEQUACY OF PIPE CLASS/GAUGE AND MANHOLE THICKNESS FOR DEPTHS WITH MATERIAL SUPPLIERS. IF BURY DEPTH IS GREATER THAN 8' CONTACT ATWELL ENGINEERING FOR MODIFIED SPECIFICATION.
6. THE CONTRACTOR SHALL PROVIDE DRAINAGE AWAY FROM THE BUILDINGS.
7. PRECAST STRUCTURES MAY BE USED AT THE CONTRACTOR'S OPTION.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND COST OF THE RELOCATION OF ALL UTILITIES ALONG THE RIGHT OF WAY AND ON THE SITE ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT, SUCH AS, BUT NOT LIMITED TO SIGNAL POLES, SIGNAL CONTROLS, DRAINAGE STRUCTURES, TRAFFIC SIGNS, UTILITY POLES, GUY WIRES, ETC.
9. IN ALL AREAS WHERE NEW CURB AND GUTTER ARE INSTALLED, REMOVE ALL OLD CURB AND GUTTER AND SAW CUT A STRAIGHT EDGE ALONG ASPHALT.
10. THE EARTHWORK FOR ALL BUILDING FOUNDATIONS AND SLABS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL PLANS AND SPECIFICATIONS.
11. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING IMPROVEMENTS DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURBS, ETC. REPAIRS SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS.
12. ALL SLOPES AND DISTURBED AREAS NOT COVERED BY BUILDING OR PAVEMENT SHALL BE GRADED SMOOTH AND RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR TO PROVIDE TOPSOIL IF NOT AVAILABLE ON SITE. THE AREAS SHALL BE SEEDED, MULCHED, FERTILIZED AND WATERED TO PROVIDE A HEARTY MOWABLE STAND OF GRASS. SMALL ROCKS MUST BE REMOVED. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
13. SPOIL FROM FOOTINGS IS THE SITE CONTRACTOR'S RESPONSIBILITY. CONTRACTOR IS TO USE THE SOIL ON SITE OR REMOVE IT FROM THE SITE.
14. EARTHWORK SHALL BE ON AN UNCLASSIFIED BASIS.
15. ANY FILL USED TO INCREASE THE ELEVATION OF THE FLOOR SLAB OR ANY FILL TO BE USED AS BACKFILL, SHALL BE CLEAN, GRANULAR MATERIAL. PRIOR TO THE USE OF ANY GRANULAR FILL, GRADATION ANALYSIS SHALL BE PERFORMED ON REPRESENTATIVE SAMPLES OF THE FILL MATERIAL TO DETERMINE WHETHER THE MATERIAL IS SUITABLE AS FILL. COMPACTED FILL SHALL BE PLACED IN LAYERS OF NOT MORE THAN EIGHT INCHES IN THICKNESS, AT MOISTURE CONTENTS WITHIN THREE PERCENT OPTIMUM, AND COMPACTED TO MINIMUM DENSITY OF 98 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR METHOD, ASTM D-698.
16. ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT OR FINISHED GROUND UNLESS OTHERWISE NOTED.
17. ALL GRADES SHOWN REFERENCE PROPOSED ELEVATIONS AT FACE OF CURB, UNLESS OTHERWISE NOTED.
    TC=TOP OF CURB ELEVATION
    FL=BOTTOM OF CURB ELEVATION
    ME=PROPOSED GRADE TO MATCH EXISTING GRADE
    TW= TOP OF RETAINING WALL ELEVATION;
    BW=BOTTOM OF RETAINING WALL ELEVATION.
18. ALL SYSTEM MANHOLES AND PIPES TO BE FLUSHED CLEAN PRIOR TO TURNING OVER TO THE OWNER.
19. ALL PIPE LENGTHS LISTED ARE BASED ON THE HORIZONTAL DISTANCE FROM CENTER OF STRUCTURE AND USED FOR DESIGN.
20. THE CONTRACTOR IS RESPONSIBLE FOR COMPARING THE STORM SEWER AND SANITARY SEWER CHARTS WITH THE PROFILES FOR THE STORM SEWER AND SANITARY SEWER LINES AND INFORMING THE ENGINEER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
21. THE GEOTECHNICAL REPORT AND RECOMMENDATIONS SET FORTH THEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS AND IN CASE OF CONFLICT SHALL TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF ANY SUCH DISCREPANCY BETWEEN GEOTECHNICAL REPORT AND PLANS, ETC.
22. THE FLOW IN ALL SEWERS, DRAINS, AND WATERCOURSES ENCOUNTERED SHALL BE MAINTAINED.
23. ALL SOIL EROSION AND SILT MUST BE CONTROLLED AND CONTAINED ON-SITE.
24. ALL INTERIOR ISLANDS SHALL BE MOUNDED. MINIMUM GRADE FOR POSITIVE DRAINAGE SHALL BE 1%.
25. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING LIDS. MANHOLES IN UNPAVED AREAS SHALL BE FLUSH WITH FINISH GRADE. LIDS SHALL BE LABELED PER TOWNSHIP REQUIREMENTS.
26. THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL N.P.D.E.S. PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
27. ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH TOWNSHIP/COUNTY SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED
28. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.
29. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING STORM SEWER STRUCTURES, PIPES, AND ALL UTILITIES PRIOR TO CONSTRUCTION.
30. ALL STUMPS, ROOTS, AND ORGANIC MATTER SHALL BE REMOVED TO A DEPTH OF TWO FEET MINIMUM BELOW THE BOTTOM OF THE BASE MATERIAL. ALL ROCKS LARGER THAN SIX INCHES SHALL BE REMOVED AND ALL ROCK LARGER THAN 12 INCHES, WHICH CANNOT BE READILY BROKEN BY MIXING OPERATIONS, SHALL BE REMOVED TO A DEPTH OF TWO FEET.
31. **ADA GRADING: ALL EXTERIOR SLOPES, NEW CONSTRUCTION, SHALL BE VERIFIED TO BE IN COMPLIANCE WITH LOCALLY ADOPTED ACCESSIBILITY REGULATIONS AND SHALL BE MEASURED WITH A 24 INCH SMART LEVEL.**

INFILTRATION NOTE

THE PROPOSED INFILTRATION SYSTEM IS DESIGNED BASED ON THE ASSUMPTION THAT THE FILL BROUGHT ON TO THIS SITE WILL MEET OR EXCEED THE MINIMUM PERCOLATION RATES SPECIFIED IN THE ASSOCIATED DESIGN CALCULATIONS. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO PROCURE FILL SOILS THAT MEET OR EXCEED THE DESIGN INFILTRATION RATES.

GRADING LEGEND

- EXISTING PROPERTY LINE
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- 100 YEAR FLOOD PLAIN
- 123 EXISTING MINOR CONTOURS
- 123 EXISTING MAJOR CONTOURS
- 123 PROPOSED MINOR CONTOUR
- 123 PROPOSED MAJOR CONTOUR
- PROPOSED BREAK LINE
- EXISTING STORM LINE
- PROPOSED LL SCOPE OF WORK
- PROPOSED STORM LINE
- PROPOSED RETAINING WALL
- ×123.4 PROPOSED SPOT ELEV
- 2% SLOPE ARROW
- GRATE INLET
- STORM MANHOLE
- DOUBLE WING CATCH BASIN
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GRADING PLAN - PHASE 1

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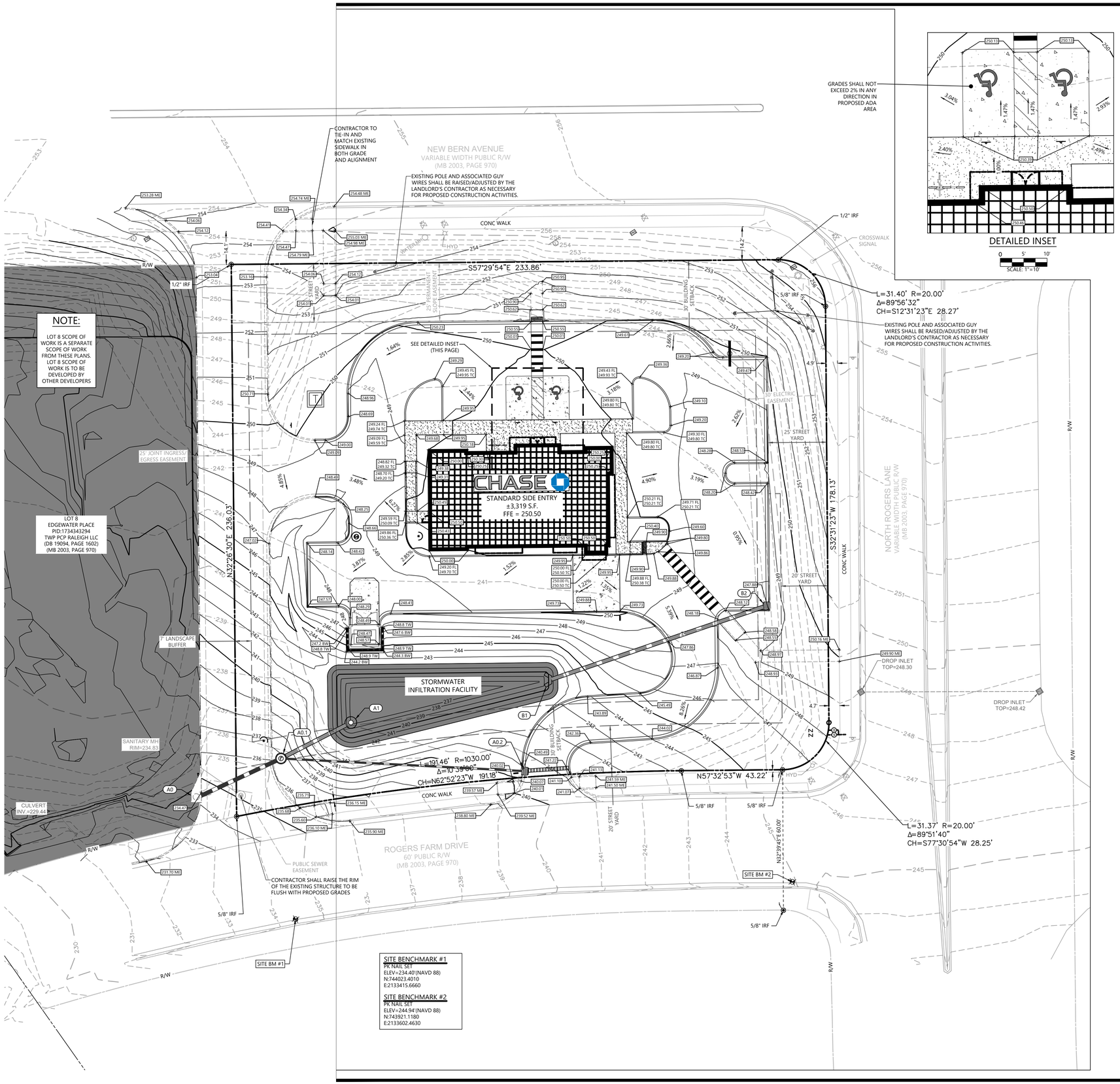
GRADING PLAN - PHASE 1



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13. SPOIL FROM FOOTINGS IS THE SITE CONTRACTOR'S RESPONSIBILITY. CONTRACTOR IS TO USE THE SOIL ON SITE OR REMOVE IT FROM THE SITE.
14. EARTHWORK SHALL BE ON AN UNCLASSIFIED BASIS.
15. ANY FILL USED TO INCREASE THE ELEVATION OF THE FLOOR SLAB OR ANY FILL TO BE USED AS BACKFILL, SHALL BE CLEAN, GRANULAR MATERIAL. PRIOR TO THE USE OF ANY GRANULAR FILL, GRADATION ANALYSIS SHALL BE PERFORMED ON REPRESENTATIVE SAMPLES OF THE FILL MATERIAL TO DETERMINE WHETHER THE MATERIAL IS SUITABLE AS FILL. COMPACTED FILL SHALL BE PLACED IN LAYERS OF NOT MORE THAN EIGHT INCHES IN THICKNESS, AT MOISTURE CONTENTS WITHIN THREE PERCENT OPTIMUM, AND COMPACTED TO MINIMUM DENSITY OF 98 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR METHOD, ASTM D-698.
16. ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT OR FINISHED GROUND UNLESS OTHERWISE NOTED.
17. ALL GRADES SHOWN REFERENCE PROPOSED ELEVATIONS AT FACE OF CURB, UNLESS OTHERWISE NOTED.
    TC=TOP OF CURB ELEVATION
    FL=BOTTOM OF CURB ELEVATION
    ME=PROPOSED GRADE TO MATCH EXISTING GRADE
    TW=TOP OF RETAINING WALL ELEVATION;
    BW=BOTTOM OF RETAINING WALL ELEVATION.
18. ALL SYSTEM MANHOLES AND PIPES TO BE FLUSHED CLEAN PRIOR TO TURNING OVER TO THE OWNER.
19. ALL PIPE LENGTHS LISTED ARE BASED ON THE HORIZONTAL DISTANCE FROM CENTER OF STRUCTURE AND USED FOR DESIGN.
20. THE CONTRACTOR IS RESPONSIBLE FOR COMPARING THE STORM SEWER AND SANITARY SEWER CHARTS WITH THE PROFILES FOR THE STORM SEWER AND SANITARY SEWER LINES AND INFORMING THE ENGINEER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
21. THE GEOTECHNICAL REPORT AND RECOMMENDATIONS SET FORTH THEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS AND IN CASE OF CONFLICT SHALL TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF ANY SUCH DISCREPANCY BETWEEN GEOTECHNICAL REPORT AND PLANS, ETC.
22. THE FLOW IN ALL SEWERS, DRAINS, AND WATERCOURSES ENCOUNTERED SHALL BE MAINTAINED.
23. ALL SOIL EROSION AND SILT MUST BE CONTROLLED AND CONTAINED ON-SITE.
24. ALL INTERIOR ISLANDS SHALL BE MOUNDED. MINIMUM GRADE FOR POSITIVE DRAINAGE SHALL BE 1%.
25. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING LIDS. MANHOLES IN UNPAVED AREAS SHALL BE FLUSH WITH FINISH GRADE. LIDS SHALL BE LABELED PER TOWNSHIP REQUIREMENTS.
26. THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL N.P.D.E.S. PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
27. ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH TOWNSHIP/COUNTY SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED
28. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.
29. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING STORM SEWER STRUCTURES, PIPES, AND ALL UTILITIES PRIOR TO CONSTRUCTION.
30. ALL STUMPS, ROOTS, AND ORGANIC MATTER SHALL BE REMOVED TO A DEPTH OF TWO FEET MINIMUM BELOW THE BOTTOM OF THE BASE MATERIAL. ALL ROCKS LARGER THAN SIX INCHES SHALL BE REMOVED AND ALL ROCK LARGER THAN 12 INCHES, WHICH CANNOT BE READILY BROKEN BY MIXING OPERATIONS, SHALL BE REMOVED TO A DEPTH OF TWO FEET.
31. **ADA GRADING: ALL EXTERIOR SLOPES, NEW CONSTRUCTION, SHALL BE VERIFIED TO BE IN COMPLIANCE WITH LOCALLY ADOPTED ACCESSIBILITY REGULATIONS AND SHALL BE MEASURED WITH A 24 INCH SMART LEVEL.**

INFILTRATION NOTE

THE PROPOSED INFILTRATION SYSTEM IS DESIGNED BASED ON THE ASSUMPTION THAT THE FILL BROUGHT ON TO THIS SITE WILL MEET OR EXCEED THE MINIMUM PERCOLATION RATES SPECIFIED IN THE ASSOCIATED DESIGN CALCULATIONS. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO PROCURE FILL SOILS THAT MEET OR EXCEED THE DESIGN INFILTRATION RATES.

GRADING LEGEND

- EXISTING PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING SETBACK LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED SETBACK LINE
- 100 YEAR FLOOD PLAIN
- 123 EXISTING MINOR CONTOURS
- 123 EXISTING MAJOR CONTOURS
- 123 PROPOSED MINOR CONTOUR
- 123 PROPOSED MAJOR CONTOUR
- PROPOSED BREAK LINE
- EXISTING STORM LINE
- PROPOSED STORM LINE
- PROPOSED RETAINING WALL
- ×123.4 PROPOSED SPOT ELEV
- 2% SLOPE ARROW
- GRATE INLET
- STORM MANHOLE
- DOUBLE WING CATCH BASIN
- SINGLE WING CATCH BASIN
- AREA INLET
- OUTLET CONTROL STRUCTURE
- HEADWALL
- SANITARY SEWER MANHOLE

811 Know what's below. Call before you dig.
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
GRADING PLAN - PHASE 2

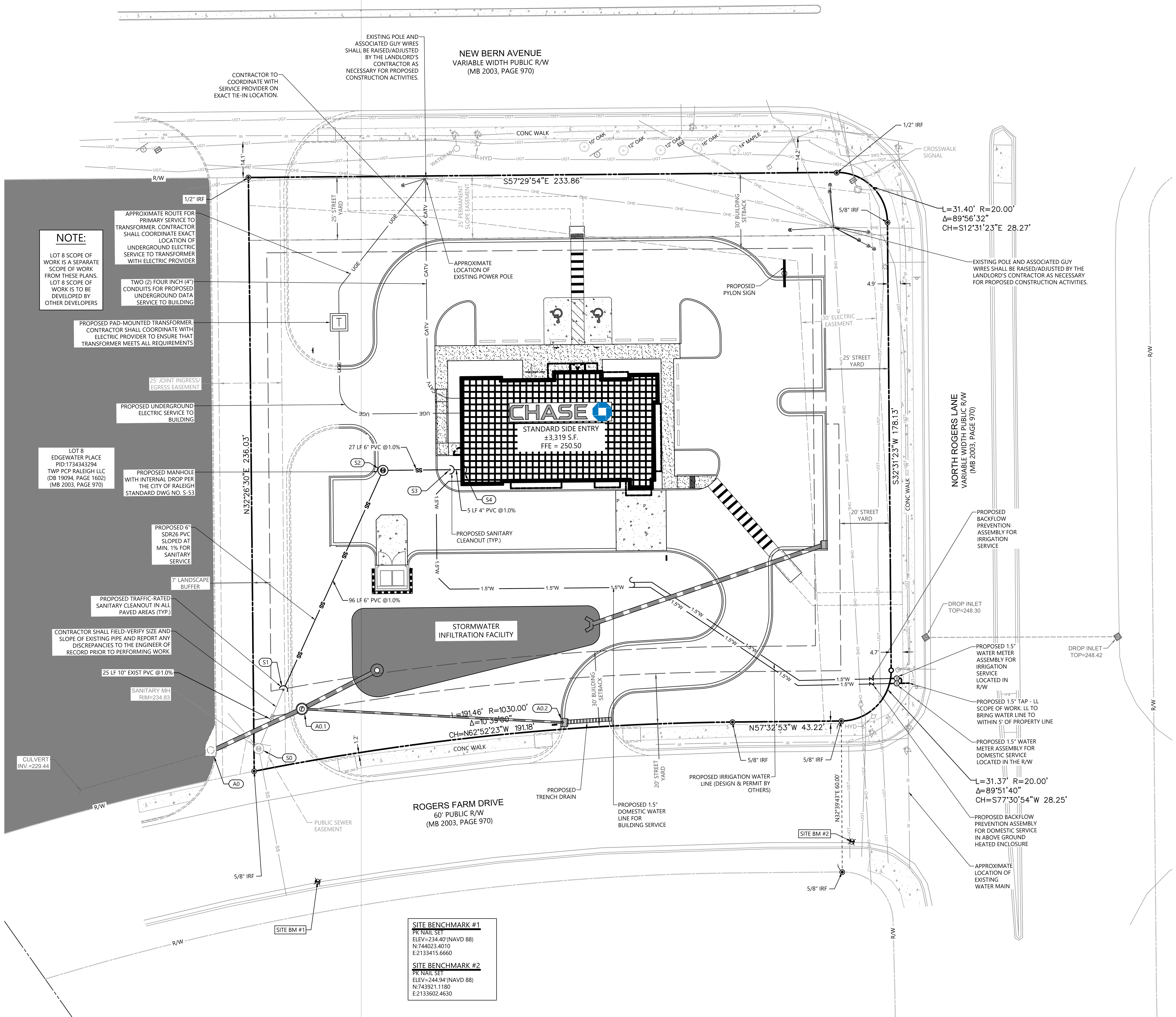
DATE 11/13/2023

REVISIONS

SCALE: 1"=20'

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C310

NOT-ISSUED-FOR-CONSTRUCTION



UTILITY NOTES

1. DRAWINGS DO NOT PURPORT TO SHOW ALL EXISTING UTILITIES. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION AND INSTALLATION OF UTILITIES. SEE BOUNDARY & TOPOGRAPHIC SURVEY FOR EXISTING UTILITY AND EASEMENT INFORMATION. NOTIFY THE ENGINEER IMMEDIATELY REGARDING ANY UTILITY CONFLICTS, ADDITIONAL UTILITIES AND/OR ANY OTHER UTILITY INFORMATION.
2. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
3. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITY DURING CONSTRUCTION AT NO COST TO THE OWNER.
4. PRIOR TO COMMENCING CONSTRUCTION, CONTRACTOR TO TELEVISE EXISTING SANITARY SEWER LINE FROM POINT OF CONNECTION THROUGH THE NEXT SEQUENTIAL DOWNSTREAM RUN OF PIPE, ADDITIONALLY, PRIOR TO COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL TELEVISE THE NEWLY INSTALLED SANITARY SEWER MAIN TO ENSURE NO DIPS OR DEBRIS WITHIN LINE.
5. THE CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
6. ANY UTILITIES NOT SHOWN THAT REQUIRE RELOCATION OR REMOVAL IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS TO REPORT ALL DISCREPANCIES TO THE ENGINEER IMMEDIATELY UPON DISCOVERY
7. THE CONTRACTOR MUST CALL 811 AT LEAST 3 WORKING DAYS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
8. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
9. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE, AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES, IN SUCH A MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH REQUISITE UTILITY REQUIREMENTS AS TO LOCATION AND SCHEDULING FOR TIE-INS/CONNECTIONS PRIOR TO CONNECTING TO EXISTING UTILITIES.
10. THE LOCAL WATER AND SEWER AUTHORITY STANDARD SPECIFICATIONS AND DETAILS SHALL GOVERN ALL WATER AND SANITARY SEWER MAIN CONSTRUCTION.
11. THE CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OR OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS TO INCLUDE BUT NOT LIMITED TO ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE TO COMPLY WITH PERFORMANCE CRITERIA FOR OSHA.
12. ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
13. THE BUILDING CONTRACTOR IS RESPONSIBLE FOR LOCATION, SIZE AND SPECIFICATIONS OF ALL ELECTRICAL TRANSFORMER PADS FROM THE LOCAL POWER COMPANY AND PROVIDING SERVICE FROM THE TRANSFORMER TO THE BUILDING.
14. MAINTAIN A MINIMUM 18" VERTICAL SEPARATION BETWEEN SANITARY, WATER, STORM, AND ALL FRANCHISE UTILITY LINES. MEASUREMENTS SHALL BE TAKEN FROM THE NEAREST EDGE OF THE UTILITY IN QUESTION.
15. ALL UTILITIES SHALL MAINTAIN TEN (10') OF HORIZONTAL SEPARATION (PARALLEL CENTER TO CENTER) OR WHEN CROSSING, 18" VERTICAL CLEARANCE (OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE).
16. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 3' COVER ON ALL FRANCHISE UTILITY LINES.
17. SANITARY SEWER PIPE SHALL BE PVC FOR PIPES LESS THAN 12' DEEP. PVC PIPE SHALL BE SDR26 OR AHJ-APPROVED EQUIVALENT.
18. SANITARY SEWER PIPE SHALL HAVE A MINIMUM DEPTH OF 3 FEET. PERCENTAGE OF GRADES LISTED FOR SANITARY SEWER LINES WERE CALCULATED FROM THE CENTERLINE OF ONE MANHOLE TO THE CENTERLINE OF THE NEXT MANHOLE.
19. SEWER SERVICE LATERALS SHALL BE COORDINATED WITH BUILDING PLANS, ANY DISCREPANCIES SHOULD BE CLARIFIED BEFORE INSTALLATION. SEWER SERVICE LATERALS ARE TO BE PERMANENTLY MARKED ON THE CURB.
20. ALL MANHOLES REQUIRE KOR-N-SEAL OR EQUAL RUBBER BOOTS.
21. THE TOP ELEVATION OF MANHOLES CONSTRUCTED IN PAVED AREAS SHALL MATCH FINISH GRADE, AND SHALL HAVE TRAFFIC BEARING LIDS. THE TOP ELEVATION OF MANHOLES CONSTRUCTED IN GRASSED AREAS MUST MATCH FINISHED GRADE (UNLESS OTHERWISE NOTED). ALL EXISTING MANHOLES & UTILITY BOXES SHALL BE ADJUSTED AS NECESSARY TO MATCH PROPOSED GRADING.
22. ALL SANITARY MANHOLES AND PIPE TO BE FLUSHED CLEAN OF DEBRIS PRIOR TO TURN OVER OF SYSTEM TO OWNER.
23. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 3' COVER ON ALL WATERLINES.
24. THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR DETERMINING DEFLECTION ANGLES AND LOCATION OF ALL VERTICAL BENDS IN THE WATER MAIN IN ACCORDANCE WITH THE CITY OF RALEIGH STANDARDS FOR WATER MAIN CONSTRUCTION. ANY QUESTIONS OR CONFLICTS WITH OTHER UTILITIES IN THE CONSTRUCTION PLANS MUST BE PROVIDED TO THE DESIGN ENGINEER IN WRITING PRIOR TO THE START OF CONSTRUCTION.
25. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF WATER SERVICE WITH WATER DEPARTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION, PURCHASE AND/OR FEES ASSOCIATED WITH ALL APPARATUS INCLUDING: WATER METERS, BACK FLOW PREVENTERS, POST INDICATOR VALVES, AND ENCLOSURES.
26. THE MINIMUM HORIZONTAL SEPARATION BETWEEN THE CLOSEST TWO POINTS OF WATER AND SEWER LINE IS (10') TEN FEET. THE MINIMUM VERTICAL SEPARATION BETWEEN THE CLOSEST TWO POINTS OF THE WATER AND SEWER LINES IS (18") EIGHTEEN INCHES.
27. ALL FIRE HYDRANTS SHALL CONFORM TO LOCAL REQUIREMENTS.
28. ALL DOMESTIC WATER LEADS SHALL HAVE REDUCED PRESSURE VALVES AS DIRECTED BY THE OWNER'S ARCHITECT.
29. ALL ELECTRIC, TELEPHONE AND GAS LINES, INCLUDING SERVICE LINES, ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE APPROPRIATE UTILITY COMPANIES SPECIFICATIONS.
30. THE CONTRACTOR IS TO COORDINATE INSTALLATION OF ALL UTILITIES BY OTHERS WITH HIS WORK.
31. PRIMARY ELECTRIC SERVICE IS PROVIDED BY THE POWER COMPANY. THIS INCLUDES THE TRANSFORMER AND PAD, TRENCHING, BACKFILL AND COMPACTION. CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND FEES ASSOCIATED WITH POWER SERVICE AS WELL AS SECONDARY SERVICE.
32. UNDERGROUND ELECTRIC LINES ARE SHOWN FOR COORDINATION ONLY. EXACT LOCATION WILL BE FIELD DETERMINED DURING CONSTRUCTION.
33. ALL EASEMENTS TO BE PLATTED BY THE CONTRACTOR (UNLESS OTHERWISE NOTED).
34. LINES UNDERGROUND SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
35. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICE.
36. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES, IN SUCH A MANNER AS TO AVOID CONFLICTS, AS WELL AS COORDINATING WITH TOWNSHIP UTILITY REQUIREMENTS AS TO ASSURE PROPER LOCATION AND SCHEDULING FOR TIE-INS/CONNECTIONS PRIOR TO CONNECTING TO EXISTING UTILITIES.
37. THE CONTRACTOR SHALL CONDUCT ALL REQUIRED TESTS TO THE SATISFACTION OF THE RESPECTIVE UTILITY COMPANIES AND THE OWNER'S INSPECTING AUTHORITIES.

UTILITY LEGEND

- EXISTING PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING SETBACK LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED SETBACK LINE
- 100 YEAR FLOOD PLAIN
- CATV — CABLE LINE
- OHE — ELECTRIC OVERHEAD LINE
- UGE — ELECTRIC UNDERGROUND LINE
- GAS — GAS LINE
- SS — SEWER LINE
- #FM — SEWER FORCEMAIN #=SIZE
- OHT — TELEPHONE OVERHEAD LINE
- UGT — TELEPHONE UNDERGROUND LINE
- #W — DOMESTIC WATER LINE #=SIZE
- #FW — FIRE WATER LINE #=SIZE
- SANITARY SEWER MANHOLE
- SEWER SERVICE (DOUBLE SERVICE)
- SEWER SERVICE (SINGLE SERVICE)
- SANITARY SEWER CLEAN OUT
- POST INDICATOR VALVE
- WATER SERVICE (DOUBLE SERVICE)
- WATER SERVICE (SINGLE SERVICE)
- WATER METER
- WATER BEND 45°
- WATER BEND 22.5°
- WATER BEND 11.25°
- WATER TEE
- GATE VALVE
- DDC — DOUBLE DETECTOR CHECK VALVE ASSEMBLY
- FIRE HYDRANT
- FDC — FIRE DEPARTMENT CONNECTION
- GREASE TRAP
- ELECTRICAL TRANSFORMER
- LIGHTING FIXTURE

811
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PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
UTILITY PLAN

DATE 11/13/2023

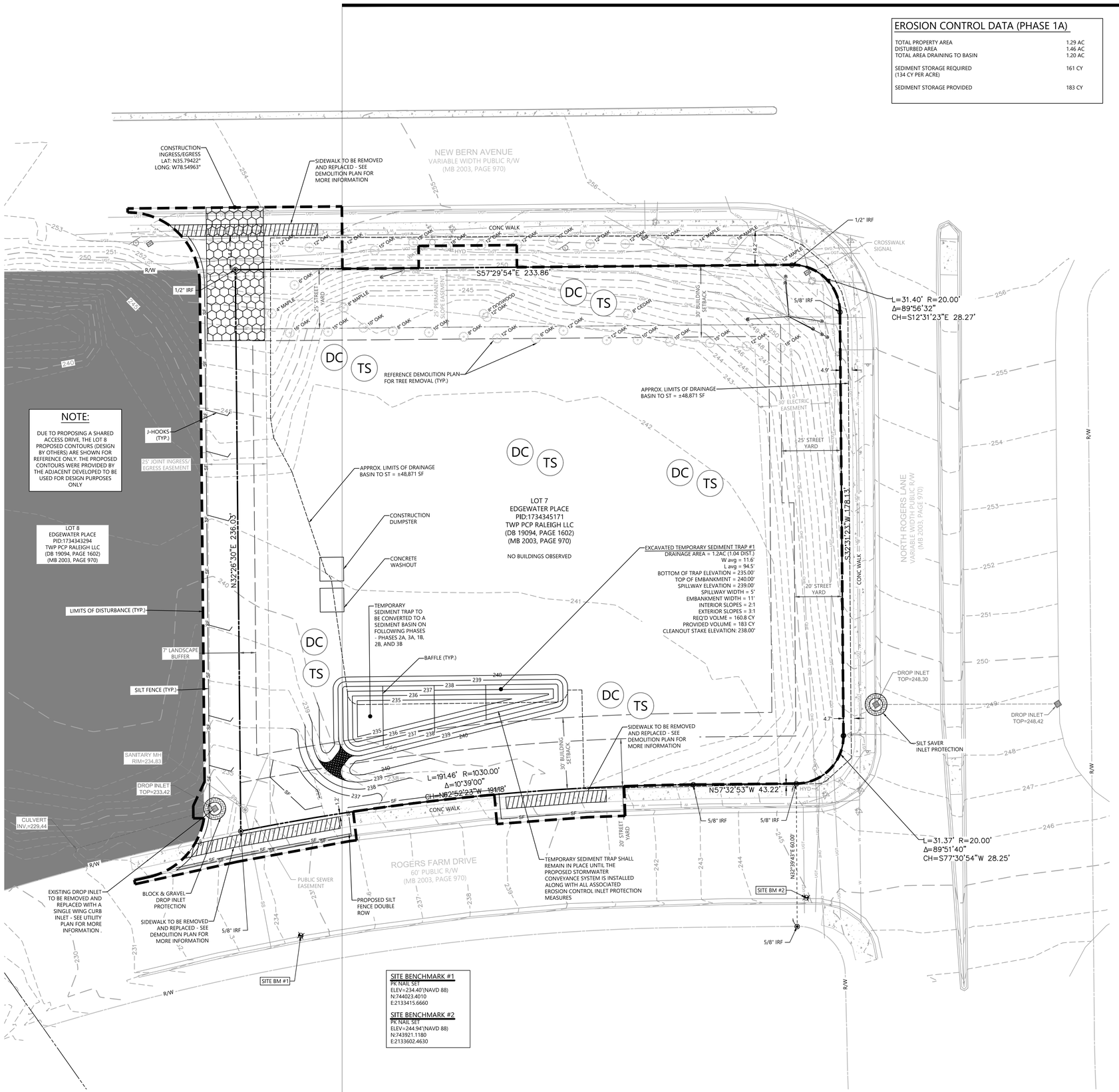
REVISIONS

[redacted]

SCALE: 1"=20'

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C400

NOT-ISSUED-FOR-CONSTRUCTION



EROSION CONTROL DATA (PHASE 1A)

TOTAL PROPERTY AREA	1.29 AC
DISTURBED AREA	1.46 AC
TOTAL AREA DRAINING TO BASIN	1.20 AC
SEDIMENT STORAGE REQUIRED (134 CY PER ACRE)	161 CY
SEDIMENT STORAGE PROVIDED	183 CY

EROSION CONTROL NOTES

1. ALL EROSION AND SEDIMENTATION CONTROL DEVICES SHALL CONFORM TO THE LATEST EROSION AND SEDIMENT CONTROL REGULATIONS FOR THE STATE, COUNTY, AND/OR CITY.
2. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES, AND MAINTAINED DURING SUCH ACTIVITIES.
3. WHEN ANY CONSTRUCTION BORDERS A DRAINAGE COURSE, THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY BUILDING OR OTHER EXCAVATION SPOILED DIRT, CONSTRUCTION TRASH OR DEBRIS, ETC. FROM THE DRAINAGE AREAS SHOWN HEREON IN AN EXPEDITIOUS MANNER AS CONSTRUCTION PROGRESSES.
4. EROSION CONTROL MEASURES ARE TO BE PLACED AT DOWNSTREAM TOE OF ALL CUT AND FILL SLOPES. WIRE REINFORCED BACKING (TYPE C) SILT FENCE TO BE USED UNLESS OTHERWISE INDICATED.
5. SILT FENCE MUST MEET REQUIREMENTS OF THE SPECIFICATIONS CONTAINED IN THE CONSTRUCTION DETAILS OR AN EQUIVALENT PRODUCT APPROVED BY THE OWNER'S REPRESENTATIVE.
6. PRIOR TO ANY OTHER CONSTRUCTION A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE BUILT. THE CONSTRUCTION ENTRANCE/EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH STONE. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLE OR SITE ONTO PUBLIC ROADWAY OR INTO STORM DRAIN MUST BE REMOVED IMMEDIATELY.
7. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS. IF WETLANDS EXIST ON-SITE, ANY CLEARING MUST BE IN ACCORDANCE WITH THE WETLANDS PERMIT.
8. IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION ENTRANCES/EXITS, ALL PERIMETER EROSION DEVICES AND STORMWATER MANAGEMENT DEVICES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.
9. OWNER AGREES TO PROVIDE AND MAINTAIN OFF-STREET PARKING ON THE SUBJECT PROPERTY DURING THE ENTIRE CONSTRUCTION PERIOD.
10. THE CONSTRUCTION OF THE SITE WILL COMMENCE WITH THE INSTALLATION OF EROSION CONTROL MEASURES SUFFICIENT TO CONTROL SEDIMENT DEPOSITS AND EROSION . ALL SEDIMENT CONTROL WILL BE MAINTAINED UNTIL ALL UPSTREAM GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/DRIVEWAYS HAVE BEEN PAVED.
11. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO GROUND DISTURBANCE. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FORM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
12. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED.
13. THE CONTRACTOR SHALL REMOVE ACCUMULATED SILT WHEN THE SILT IS WITHIN 12" OF THE TOP OF THE SILT FENCE UTILIZED FOR EROSION CONTROL. IN THE SEDIMENTATION POND, SEDIMENT REMOVAL IS REQUIRED WHEN SEDIMENT REACHES THE ELEVATION CORRESPONDING TO CLEANOUT BASIN.
14. FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB UNTIL SUCH MEASURES ARE CORRECTED.
15. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE WHENEVER LAND DISTURBANCE ACTIVITY IS IN PROGRESS.
16. ALL OPEN SWALES MUST BE GRASSED AND/OR RIP-RAP PLACED AS REQUIRED TO CONTROL EROSION. A MINIMUM OF 4.5 SQUARE YARDS OF 50-LB STONES SHALL BE PLACED AT ALL DOWNSTREAM HEADWALLS. THE PLACEMENT OF RIP-RAP AT THE DOWNSTREAM HEADWALLS SHALL BE PLACED IMMEDIATELY UPON THE INSTALLATION OF PIPES AND DRAINAGE DITCHES.
17. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING.
18. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
19. EROSION AND SEDIMENT CONTROL SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR COMPLIANCE, INSTALLATION, MAINTENANCE AND REMOVAL AS REQUIRED BY THE REGULATIONS OF THE STATE AND/OR GOVERNING AGENCY. THE INSTALLATION OF THE REQUIRED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS A FIRST STEP IN CONSTRUCTION.
20. CONTRACTOR TO MAINTAIN ON-SITE DAILY LOG OF ALL MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES. LOG SHALL BE MADE AVAILABLE FOR INSPECTION AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE TO SUBMIT THE NPDES NOTICE OF INTENT AND NOTICE OF TERMINATION TO THE APPROPRIATE STATE AGENCY.
21. THE CONTRACTOR IS RESPONSIBLE FOR UPHOLDING THE EROSION CONTROL STANDARDS FOR NORTH CAROLINA REGARDLESS OF WHAT SEDIMENT CONTROL MEASURES WERE INDICATED WITHIN THE PLAN SET.
22. FOR CALCULATIONS OF ANY BMPs SHOWN TO BE USED, SEE DETAIL SHEETS FOR THOSE NOT SHOWN ON THE PLAN.

CONSTRUCTION SEQUENCE

1. OBTAIN EROSION CONTROL PLAN (E&SC PLAN) APPROVAL FROM THE CITY OF RALEIGH ENGINEERING DEPARTMENT.
2. SUBMIT NOTICE OF INTENT (NOI) WITH NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY TO OBTAIN A CERTIFICATE OF COVERAGE (COC) UNDER THE NCG01 PERMIT. THE COC MUST BE PRESENTED AT THE PRE-CONSTRUCTION MEETING. NOI INSTRUCTIONS CAN BE FOUND ONLINE AT DEQ.NC.GOV.
3. SET UP A PRE-CONSTRUCTION MEETING WITH CITY OF CHARLOTTE EROSION CONTROL COORDINATOR. FAILURE TO SCHEDULE SUCH MEETING 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY IS A VIOLATION OF CHAPTER 17 OF THE CITY CODE AND IS SUBJECT TO FINES. PRE-CONSTRUCTION MEETING REQUESTS CAN BE COMPLETED AT THE FOLLOWING LINK: CHARLOTTENC.GOV/DEVELOPMENTCENTER
4. INSTALL ALL EROSION CONTROL MEASURES PER THE PHASE I E&SC PLAN, INCLUDING, BUT NOT LIMITED TO, SILT FENCE, INLET PROTECTION, SEDIMENT BASINS, DIVERSION DITCHES, TREE PROTECTION, CLEARING ONLY AS NECESSARY TO INSTALL THESE DEVICES.
5. CALL FOR ON-SITE INSPECTION BY COORDINATOR. WHEN APPROVED, COORDINATOR ISSUES THE CITY OF CHARLOTTE GRADING PERMIT, AND CLEARING AND GRUBBING MAY BEGIN.
6. THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES.
7. FOR PHASED EROSION CONTROL PLANS, CONTRACTOR SHALL OBTAIN APPROVAL FROM THE COORDINATOR PRIOR TO COMMENCING WITH EACH PHASE OF THE E&SC PLAN.
8. STABILIZE SITE AS AREAS ARE BROUGHT TO FINISHED GRADE, BUT WITHIN TEMPORARY OR PERMANENT STABILIZATION TIMELINES.
9. OBTAIN APPROVAL FROM THE COORDINATOR PRIOR TO REMOVAL OF ANY EROSION CONTROL MEASURE.
10. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE N. C. EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, U. S. DEPT. OF AGRICULTURE, CITY OF RALEIGH EROSION CONTROL ORDINANCE, AND THE CITY OF RALEIGH LAND DEVELOPMENT STANDARDS MANUAL.

NOTES

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PROPERTY OWNER

BRANDON KUBLANOW
TWP PCP RALEIGH LLC
1962 HOWELL MILL ROAD,
SUITE 200, ATLANTA, GA 30318
PHONE: 770-359-9636

ANTICIPATED ACTIVITY SCHEDULE

ACTIVITY	1	2	3	4	5	6
INITIAL PHASE EROSION CONTROL BMP INSTALLATION						
DEMOLITION						
MAINTAIN EROSION CONTROL						
INTERMEDIATE PHASE EROSION BMP INSTALLATION						
GRADING						
PAVING						
FINAL PHASE EROSION BMP INSTALLATION						
BUILDING CONSTRUCTION						
FINAL LANDSCAPING						
FINAL CLEAN UP						

SITE BENCHMARK #1

PK NAIL SET
ELEV=234.40'(NAVD 88)
N:744023.4010
E:2133415.6660

SITE BENCHMARK #2

PK NAIL SET
ELEV=244.94'(NAVD 88)
N:743921.1180
E:2133602.4630

811 Know what's below. Call before you dig.
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NOTICE:
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MARIETTA, GA 30067
COA#C-2380

PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
ESPCP PHASE 1A

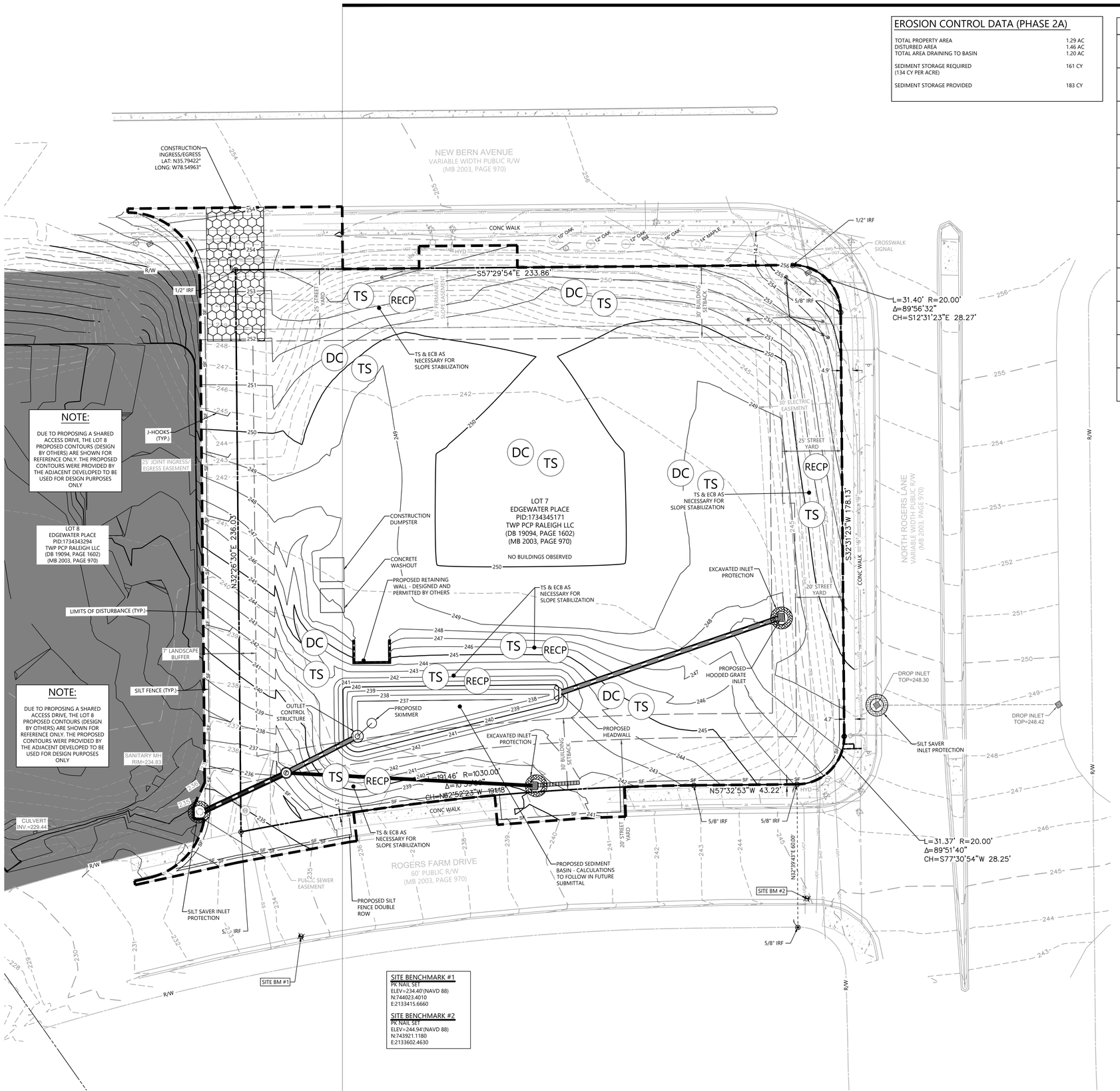
DATE 11/13/2023

REVISIONS

SCALE: 1"=20'

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C500

NOT-ISSUED-FOR-CONSTRUCTION



EROSION CONTROL DATA (PHASE 2A)

TOTAL PROPERTY AREA	1.29 AC
DISTURBED AREA	1.46 AC
TOTAL AREA DRAINING TO BASIN	1.20 AC
SEDIMENT STORAGE REQUIRED (134 CY PER ACRE)	161 CY
SEDIMENT STORAGE PROVIDED	183 CY

EROSION LEGEND

CONSTRUCTION EXIT	
SEDIMENT BARRIER SILT FENCE	SF
LIMITS OF DISTURBANCE LINE	
BASIN DELINEATION LINE	
TEMPORARY INLET PROTECTION	
TEMPORARY SEDIMENT TRAP	
DUST CONTROL	DC
MULCHING	M
TEMPORARY STABILIZATION	TS
PERMANENT STABILIZATION	PS
ROLLED EROSION CONTROL PRODUCT	RECP

CONSTRUCTION SEQUENCE

1. OBTAIN EROSION CONTROL PLAN (E&SC PLAN) APPROVAL FROM THE CITY OF RALEIGH ENGINEERING DEPARTMENT.
2. SUBMIT NOTICE OF INTENT (NOI) WITH NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY TO OBTAIN A CERTIFICATE OF COVERAGE (COC) UNDER THE NCG01 PERMIT. THE COC MUST BE PRESENTED AT THE PRE-CONSTRUCTION MEETING. NOI INSTRUCTIONS CAN BE FOUND ONLINE AT DEQ.NC.GOV.
3. SET UP A PRE-CONSTRUCTION MEETING WITH CITY OF CHARLOTTE EROSION CONTROL COORDINATOR. FAILURE TO SCHEDULE SUCH MEETING 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY IS A VIOLATION OF CHAPTER 17 OF THE CITY CODE AND IS SUBJECT TO FINES. PRE-CONSTRUCTION MEETING REQUESTS CAN BE COMPLETED AT THE FOLLOWING LINK: CHARLOTTENC.GOV/DEVELOPMENTCENTER
4. INSTALL ALL EROSION CONTROL MEASURES PER THE PHASE I E&SC PLAN, INCLUDING, BUT NOT LIMITED TO, SILT FENCE, INLET PROTECTION, SEDIMENT BASINS, DIVERSION DITCHES, TREE PROTECTION, CLEARING ONLY AS NECESSARY TO INSTALL THESE DEVICES.
5. CALL FOR ON-SITE INSPECTION BY COORDINATOR. WHEN APPROVED, COORDINATOR ISSUES THE CITY OF CHARLOTTE GRADING PERMIT, AND CLEARING AND GRUBBING MAY BEGIN.
6. THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES.
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3. WHEN ANY CONSTRUCTION BORDERS A DRAINAGE COURSE, THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY BUILDING OR OTHER EXCAVATION SPOILED DIRT, CONSTRUCTION TRASH OR DEBRIS, ETC. FROM THE DRAINAGE AREAS SHOWN HEREON IN AN EXPEDITIOUS MANNER AS CONSTRUCTION PROGRESSES.
4. EROSION CONTROL MEASURES ARE TO BE PLACED AT DOWNSTREAM TOE OF ALL CUT AND FILL SLOPES. WIRE REINFORCED BACKING (TYPE C) SILT FENCE TO BE USED UNLESS OTHERWISE INDICATED.
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7. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS. IF WETLANDS EXIST ON-SITE, ANY CLEARING MUST BE IN ACCORDANCE WITH THE WETLANDS PERMIT.
8. IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION ENTRANCES/EXITS, ALL PERIMETER EROSION DEVICES AND STORMWATER MANAGEMENT DEVICES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.
9. OWNER AGREES TO PROVIDE AND MAINTAIN OFF-STREET PARKING ON THE SUBJECT PROPERTY DURING THE ENTIRE CONSTRUCTION PERIOD.
10. THE CONSTRUCTION OF THE SITE WILL COMMENCE WITH THE INSTALLATION OF EROSION CONTROL MEASURES SUFFICIENT TO CONTROL SEDIMENT DEPOSITS AND EROSION. ALL SEDIMENT CONTROL WILL BE MAINTAINED UNTIL ALL UPSTREAM GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/DRIVEWAYS HAVE BEEN PAVED.
11. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO GROUND DISTURBANCE. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FORM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
12. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED.
13. THE CONTRACTOR SHALL REMOVE ACCUMULATED SILT WHEN THE SILT IS WITHIN 12" OF THE TOP OF THE SILT FENCE UTILIZED FOR EROSION CONTROL. IN THE SEDIMENTATION POND, SEDIMENT REMOVAL IS REQUIRED WHEN SEDIMENT REACHES THE ELEVATION CORRESPONDING TO CLEANOUT BASIN.
14. FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB UNTIL SUCH MEASURES ARE CORRECTED.
15. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE WHENEVER LAND DISTURBANCE ACTIVITY IS IN PROGRESS.
16. ALL OPEN SWALES MUST BE GRASSED AND/OR RIP-RAP PLACED AS REQUIRED TO CONTROL EROSION. A MINIMUM OF 4.5 SQUARE YARDS OF 50-LB STONES SHALL BE PLACED AT ALL DOWNSTREAM HEADWALLS. THE PLACEMENT OF RIP-RAP AT THE DOWNSTREAM HEADWALLS SHALL BE PLACED IMMEDIATELY UPON THE INSTALLATION OF PIPES AND DRAINAGE DITCHES.
17. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING.
18. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
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21. THE CONTRACTOR IS RESPONSIBLE FOR UPHOLDING THE EROSION CONTROL STANDARDS FOR NORTH CAROLINA REGARDLESS OF WHAT SEDIMENT CONTROL MEASURES WERE INDICATED WITHIN THE PLAN SET.
22. FOR CALCULATIONS OF ANY BMPs SHOWN TO BE USED, SEE DETAIL SHEETS FOR THOSE NOT SHOWN ON THE PLAN.

ANTICIPATED ACTIVITY SCHEDULE

ACTIVITY	1	2	3	4	5	6
INITIAL PHASE EROSION CONTROL BMP INSTALLATION						
DEMOLITION						
MAINTAIN EROSION CONTROL						
INTERMEDIATE PHASE EROSION BMP INSTALLATION						
GRADING						
PAVING						
FINAL PHASE EROSION BMP INSTALLATION						
BUILDING CONSTRUCTION						
FINAL LANDSCAPING						
FINAL CLEAN UP						

SITE BENCHMARK #1

PK NAIL SET
ELEV=234.40'(NAVD 88)
N:744023.4010
E:2133415.6660

SITE BENCHMARK #2

PK NAIL SET
ELEV=244.94'(NAVD 88)
N:743921.1180
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CHASE - NEW BERN AVE
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SITE CONSTRUCTION PLANS
ESPCP PHASE 2A

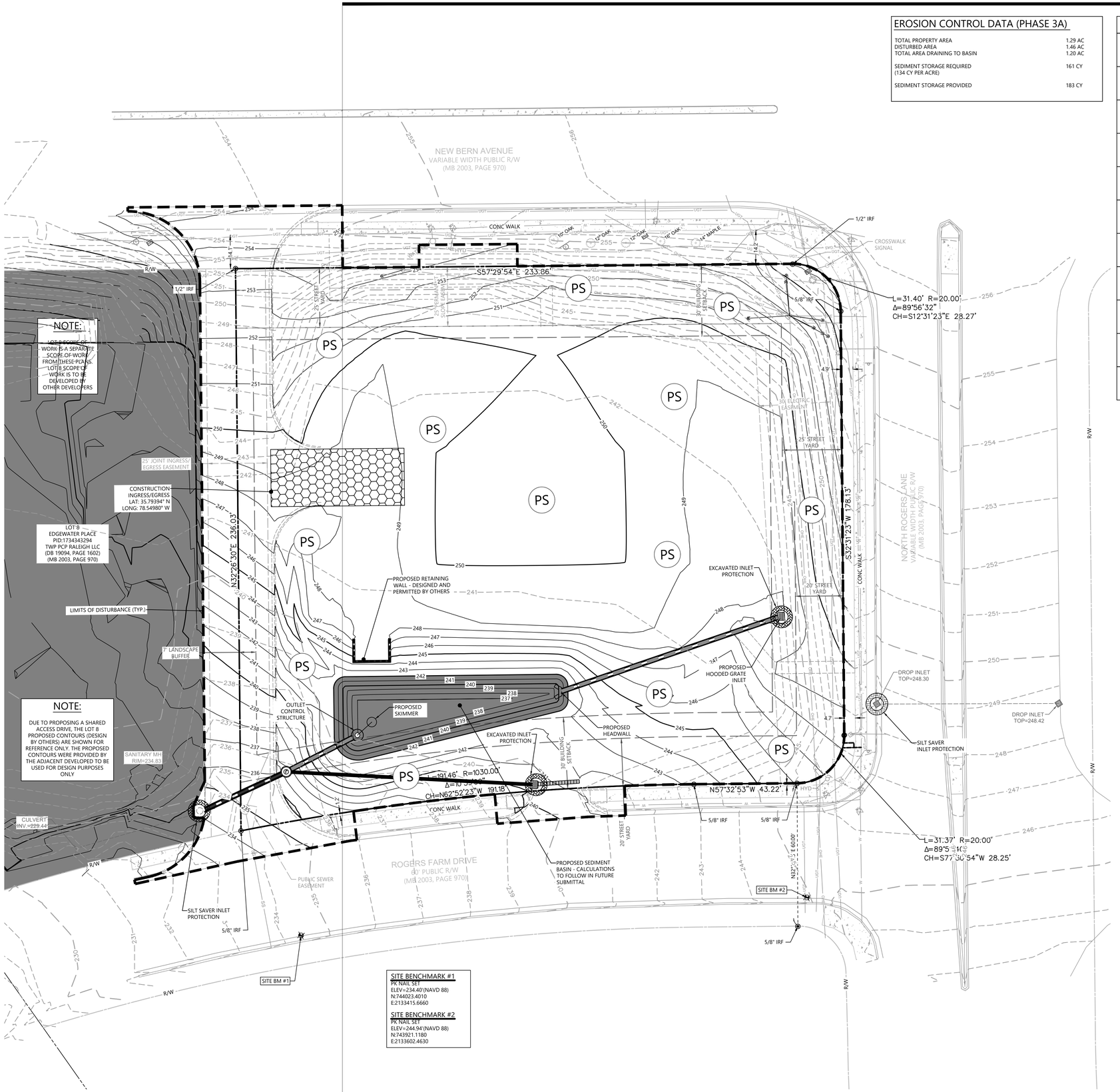
DATE 11/13/2023

REVISIONS

SCALE: 1"=20'

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C510

NOT-ISSUED-FOR-CONSTRUCTION



EROSION CONTROL DATA (PHASE 3A)

TOTAL PROPERTY AREA	1.29 AC
DISTURBED AREA	1.46 AC
TOTAL AREA DRAINING TO BASIN	1.20 AC
SEDIMENT STORAGE REQUIRED (134 CY PER ACRE)	161 CY
SEDIMENT STORAGE PROVIDED	183 CY

EROSION LEGEND

CONSTRUCTION EXIT	
SEDIMENT BARRIER SILT FENCE	SF
LIMITS OF DISTURBANCE LINE	
BASIN DELINEATION LINE	
TEMPORARY INLET PROTECTION	
TEMPORARY SEDIMENT TRAP	ST
DUST CONTROL	DC
MULCHING	M
TEMPORARY STABILIZATION	TS
PERMANENT STABILIZATION	PS
ROLLED EROSION CONTROL PRODUCT	RECP

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CONSTRUCTION SEQUENCE

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866.850.4200 www.atwell-group.com
1800 PARKWAY PLACE, SUITE 700
MARIETTA, GA 30067
COA#: C-2980

PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
ESPCP PHASE 3A

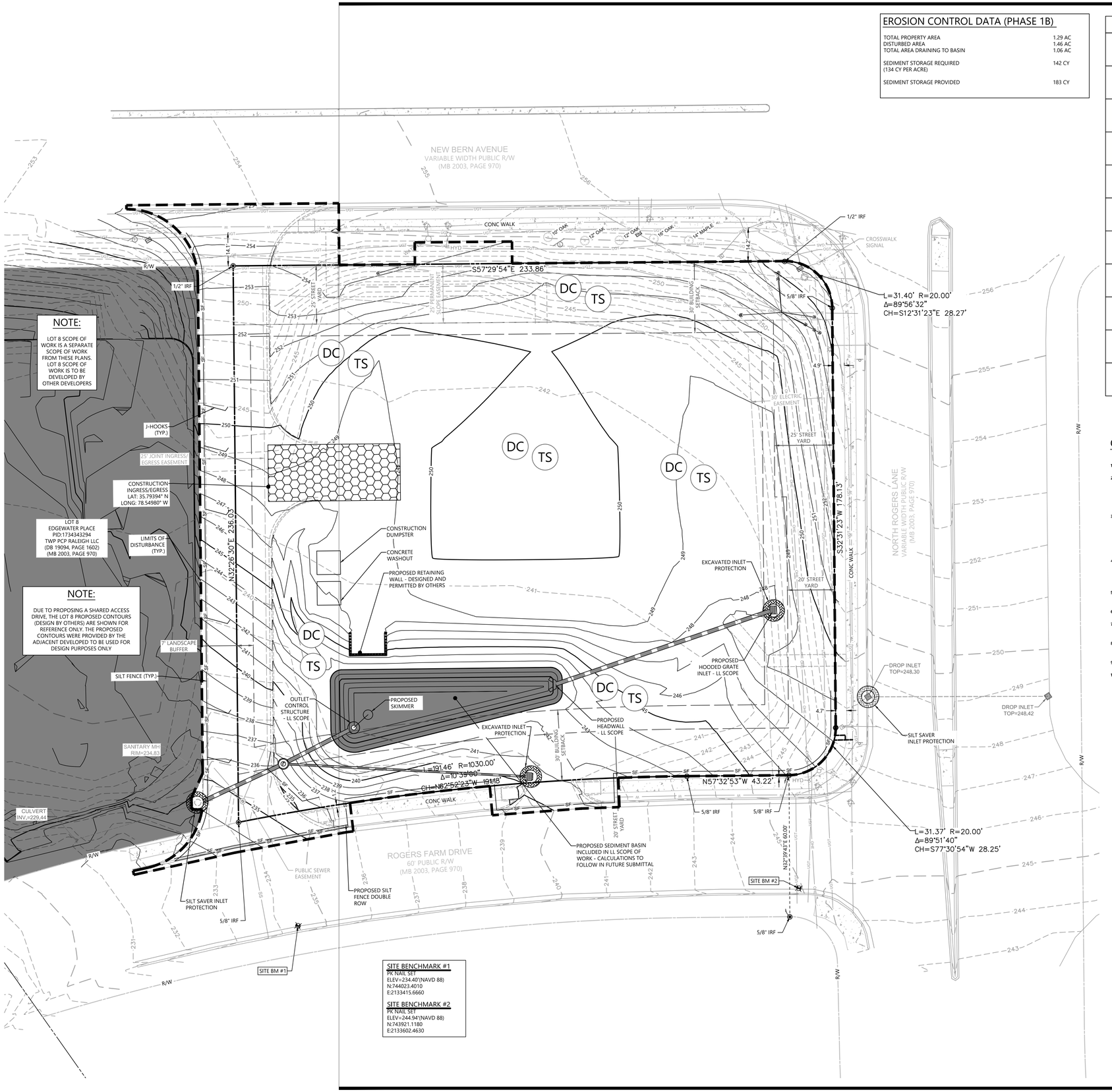
DATE 11/13/2023

REVISIONS

0 10' 20'
SCALE: 1" = 20'

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C520

NOT-ISSUED-FOR-CONSTRUCTION



SITE BENCHMARK #1

PK NAIL SET
ELEV=234.40'(NAVD 88)
N:744023.4010
E:2133415.6660

SITE BENCHMARK #2

PK NAIL SET
ELEV=244.94'(NAVD 88)
N:743921.1180
E:2133602.4630

EROSION CONTROL DATA (PHASE 1B)

TOTAL PROPERTY AREA	1.29 AC
DISTURBED AREA	1.46 AC
TOTAL AREA DRAINING TO BASIN	1.06 AC
SEDIMENT STORAGE REQUIRED (134 CY PER ACRE)	142 CY
SEDIMENT STORAGE PROVIDED	183 CY

EROSION LEGEND

CONSTRUCTION EXIT	
SEDIMENT BARRIER SILT FENCE	SF
LIMITS OF DISTURBANCE LINE	
BASIN DELINEATION LINE	
TEMPORARY INLET PROTECTION	
TEMPORARY SEDIMENT TRAP	
DUST CONTROL	DC
MULCHING	M
TEMPORARY STABILIZATION	TS
PERMANENT STABILIZATION	PS
ROLLED EROSION CONTROL PRODUCT	RECP

CONSTRUCTION SEQUENCE

1. OBTAIN EROSION CONTROL PLAN (E&SC PLAN) APPROVAL FROM THE CITY OF RALEIGH ENGINEERING DEPARTMENT.
2. SUBMIT NOTICE OF INTENT (NOI) WITH NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY TO OBTAIN A CERTIFICATE OF COVERAGE (COC) UNDER THE NCG01 PERMIT. THE COC MUST BE PRESENTED AT THE PRE-CONSTRUCTION MEETING. NOI INSTRUCTIONS CAN BE FOUND ONLINE AT DEQ.NC.GOV.
3. SET UP A PRE-CONSTRUCTION MEETING WITH CITY OF CHARLOTTE EROSION CONTROL COORDINATOR. FAILURE TO SCHEDULE SUCH MEETING 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY IS A VIOLATION OF CHAPTER 17 OF THE CITY CODE AND IS SUBJECT TO FINES. PRE-CONSTRUCTION MEETING REQUESTS CAN BE COMPLETED AT THE FOLLOWING LINK: CHARLOTTENC.GOV/DEVELOPMENTCENTER
4. INSTALL ALL EROSION CONTROL MEASURES PER THE PHASE I E&SC PLAN, INCLUDING, BUT NOT LIMITED TO, SILT FENCE, INLET PROTECTION, SEDIMENT BASINS, DIVERSION DITCHES, TREE PROTECTION, CLEARING ONLY AS NECESSARY TO INSTALL THESE DEVICES.
5. CALL FOR ON-SITE INSPECTION BY COORDINATOR. WHEN APPROVED, COORDINATOR ISSUES THE CITY OF CHARLOTTE GRADING PERMIT, AND CLEARING AND GRUBBING MAY BEGIN.
6. THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES.
7. FOR PHASED EROSION CONTROL PLANS, CONTRACTOR SHALL OBTAIN APPROVAL FROM THE COORDINATOR PRIOR TO COMMENCING WITH EACH PHASE OF THE E&SC PLAN.
8. STABILIZE SITE AS AREAS ARE BROUGHT TO FINISHED GRADE, BUT WITHIN TEMPORARY OR PERMANENT STABILIZATION TIMELINES.
9. OBTAIN APPROVAL FROM THE COORDINATOR PRIOR TO REMOVAL OF ANY EROSION CONTROL MEASURE.
10. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE N. C. EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, U. S. DEPT. OF AGRICULTURE, CITY OF RALEIGH EROSION CONTROL ORDINANCE, AND THE CITY OF RALEIGH LAND DEVELOPMENT STANDARDS MANUAL.

NOTES

CONTRACTOR IS RESPONSIBLE FOR THE SEQUENCE AND TIMING OF ALL EROSION AND SEDIMENT CONTROL MEASURES. PHASING PLANS ARE A GENERAL GUIDE TO EROSION CONTROL AS DEVELOPMENT OCCURS.

PROPERTY OWNER

BRANDON KUBLANOW
TWP PCP RALEIGH LLC
1962 HOWELL MILL ROAD,
SUITE 200, ATLANTA, GA 30318
PHONE: 770-359-9636

NOTES

PROPOSED MASS GRADING & SEDIMENT TRAP INSTALLATION TO BE COMPLETED PRIOR TO THE IMPLEMENTATION OF PHASE B. REFERENCE PHASE A (SHEETS C500, C510, AND C-520.)

EROSION CONTROL NOTES

1. ALL EROSION AND SEDIMENTATION CONTROL DEVICES SHALL CONFORM TO THE LATEST EROSION AND SEDIMENT CONTROL REGULATIONS FOR THE STATE, COUNTY, AND/OR CITY.
2. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES, AND MAINTAINED DURING SUCH ACTIVITIES.
3. WHEN ANY CONSTRUCTION BORDERS A DRAINAGE COURSE, THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY BUILDING OR OTHER EXCAVATION SPOILED DIRT, CONSTRUCTION TRASH OR DEBRIS, ETC. FROM THE DRAINAGE AREAS SHOWN HEREON IN AN EXPEDITIOUS MANNER AS CONSTRUCTION PROGRESSES.
4. EROSION CONTROL MEASURES ARE TO BE PLACED AT DOWNSTREAM TOE OF ALL CUT AND FILL SLOPES. WIRE REINFORCED BACKING (TYPE C) SILT FENCE TO BE USED UNLESS OTHERWISE INDICATED.
5. SILT FENCE MUST MEET REQUIREMENTS OF THE SPECIFICATIONS CONTAINED IN THE CONSTRUCTION DETAILS OR AN EQUIVALENT PRODUCT APPROVED BY THE OWNER'S REPRESENTATIVE.
6. PRIOR TO ANY OTHER CONSTRUCTION A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE BUILT. THE CONSTRUCTION ENTRANCE/EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH STONE. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLE OR SITE ONTO PUBLIC ROADWAY OR INTO STORM DRAIN MUST BE REMOVED IMMEDIATELY.
7. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS. IF WETLANDS EXIST ON-SITE, ANY CLEARING MUST BE IN ACCORDANCE WITH THE WETLANDS PERMIT.
8. IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION ENTRANCES/EXITS, ALL PERIMETER EROSION DEVICES AND STORMWATER MANAGEMENT DEVICES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.
9. OWNER AGREES TO PROVIDE AND MAINTAIN OFF-STREET PARKING ON THE SUBJECT PROPERTY DURING THE ENTIRE CONSTRUCTION PERIOD.
10. THE CONSTRUCTION OF THE SITE WILL COMMENCE WITH THE INSTALLATION OF EROSION CONTROL MEASURES SUFFICIENT TO CONTROL SEDIMENT DEPOSITS AND EROSION . ALL SEDIMENT CONTROL WILL BE MAINTAINED UNTIL ALL UPSTREAM GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/DRIVEWAYS HAVE BEEN PAVED.
11. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO GROUND DISTURBANCE. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FORM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
12. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED.
13. THE CONTRACTOR SHALL REMOVE ACCUMULATED SILT WHEN THE SILT IS WITHIN 12" OF THE TOP OF THE SILT FENCE UTILIZED FOR EROSION CONTROL. IN THE SEDIMENTATION POND, SEDIMENT REMOVAL IS REQUIRED WHEN SEDIMENT REACHES THE ELEVATION CORRESPONDING TO CLEANOUT BASIN.
14. FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB UNTIL SUCH MEASURES ARE CORRECTED.
15. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE WHENEVER LAND DISTURBANCE ACTIVITY IS IN PROGRESS.
16. ALL OPEN SWALES MUST BE GRASSED AND/OR RIP-RAP PLACED AS REQUIRED TO CONTROL EROSION. A MINIMUM OF 4.5 SQUARE YARDS OF 50-LB STONES SHALL BE PLACED AT ALL DOWNSTREAM HEADWALLS. THE PLACEMENT OF RIP-RAP AT THE DOWNSTREAM HEADWALLS SHALL BE PLACED IMMEDIATELY UPON THE INSTALLATION OF PIPES AND DRAINAGE DITCHES.
17. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING.
18. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
19. EROSION AND SEDIMENT CONTROL SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR COMPLIANCE, INSTALLATION, MAINTENANCE AND REMOVAL AS REQUIRED BY THE REGULATIONS OF THE STATE AND/OR GOVERNING AGENCY. THE INSTALLATION OF THE REQUIRED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS A FIRST STEP IN CONSTRUCTION.
20. CONTRACTOR TO MAINTAIN ON-SITE DAILY LOG OF ALL MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES. LOG SHALL BE MADE AVAILABLE FOR INSPECTION AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE TO SUBMIT THE NPDES NOTICE OF INTENT AND NOTICE OF TERMINATION TO THE APPROPRIATE STATE AGENCY.
21. THE CONTRACTOR IS RESPONSIBLE FOR UPHOLDING THE EROSION CONTROL STANDARDS FOR NORTH CAROLINA REGARDLESS OF WHAT SEDIMENT CONTROL MEASURES WERE INDICATED WITHIN THE PLAN SET.
22. FOR CALCULATIONS OF ANY BMPs SHOWN TO BE USED, SEE DETAIL SHEETS FOR THOSE NOT SHOWN ON THE PLAN.

ANTICIPATED ACTIVITY SCHEDULE

ACTIVITY	1	2	3	4	5	6
INITIAL PHASE EROSION CONTROL BMP INSTALLATION						
DEMOLITION						
MAINTAIN EROSION CONTROL						
INTERMEDIATE PHASE EROSION BMP INSTALLATION						
GRADING						
PAVING						
FINAL PHASE EROSION BMP INSTALLATION						
BUILDING CONSTRUCTION						
FINAL LANDSCAPING						
FINAL CLEAN UP						

811 Know what's below. Call before you dig.
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

24 HOUR EMERGENCY CONTACT
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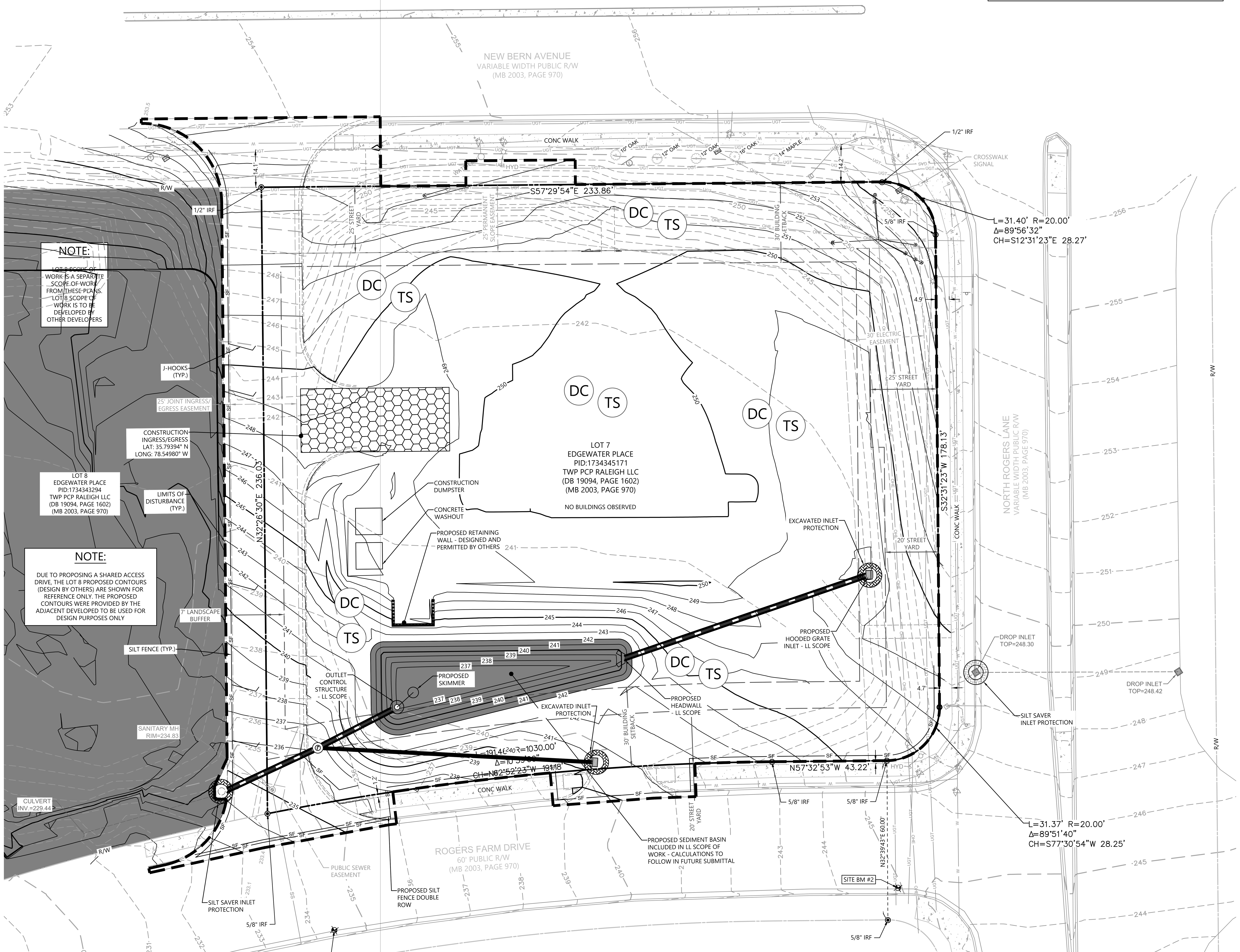
CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
ESPCP PHASE 1B

DATE 11/13/2023

0 10' 20'
SCALE: 1"=20'

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C530

NOT-ISSUED-FOR-CONSTRUCTION



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N:744023.4010
E:2133415.6660

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PK NAIL SET
ELEV=244.94'(NAVD 88)
N:743921.1180
E:2133602.4630

EROSION CONTROL DATA (PHASE 2B)

TOTAL PROPERTY AREA	1.29 AC
DISTURBED AREA	1.46 AC
TOTAL AREA DRAINING TO BASIN	1.06 AC
SEDIMENT STORAGE REQUIRED (134 CY PER ACRE)	142 CY
SEDIMENT STORAGE PROVIDED	183 CY

EROSION LEGEND

CONSTRUCTION EXIT	
SEDIMENT BARRIER SILT FENCE	SF
LIMITS OF DISTURBANCE LINE	
BASIN DELINEATION LINE	
TEMPORARY INLET PROTECTION	
TEMPORARY SEDIMENT TRAP	
DUST CONTROL	DC
MULCHING	M
TEMPORARY STABILIZATION	TS
PERMANENT STABILIZATION	PS
ROLLED EROSION CONTROL PRODUCT	RECP

CONSTRUCTION SEQUENCE

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PROPERTY OWNER

BRANDON KUBLANOW
TWP PCP RALEIGH LLC
1962 HOWELL MILL ROAD,
SUITE 200, ATLANTA, GA 30318
PHONE: 770-359-9636

NOTES

PROPOSED MASS GRADING & SEDIMENT TRAP INSTALLATION TO BE COMPLETED PRIOR TO THE IMPLEMENTATION OF PHASE B. REFERENCE PHASE A (SHEETS C500, C510, AND C-520.)

EROSION CONTROL NOTES

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9. OWNER AGREES TO PROVIDE AND MAINTAIN OFF-STREET PARKING ON THE SUBJECT PROPERTY DURING THE ENTIRE CONSTRUCTION PERIOD.
10. THE CONSTRUCTION OF THE SITE WILL COMMENCE WITH THE INSTALLATION OF EROSION CONTROL MEASURES SUFFICIENT TO CONTROL SEDIMENT DEPOSITS AND EROSION. ALL SEDIMENT CONTROL WILL BE MAINTAINED UNTIL ALL UPSTREAM GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/DRIVEWAYS HAVE BEEN PAVED.
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22. FOR CALCULATIONS OF ANY BMPs SHOWN TO BE USED, SEE DETAIL SHEETS FOR THOSE NOT SHOWN ON THE PLAN.

ANTICIPATED ACTIVITY SCHEDULE

ACTIVITY	1	2	3	4	5	6
INITIAL PHASE EROSION CONTROL BMP INSTALLATION	■					
DEMOLITION	■					
MAINTAIN EROSION CONTROL	■	■	■	■	■	■
INTERMEDIATE PHASE EROSION BMP INSTALLATION		■	■			
GRADING		■	■			
PAVING					■	■
FINAL PHASE EROSION BMP INSTALLATION					■	
BUILDING CONSTRUCTION				■	■	■
FINAL LANDSCAPING						■
FINAL CLEAN UP						■

811
Know what's **below.**
Call before you dig.

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CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
ESPCP PHASE 2B

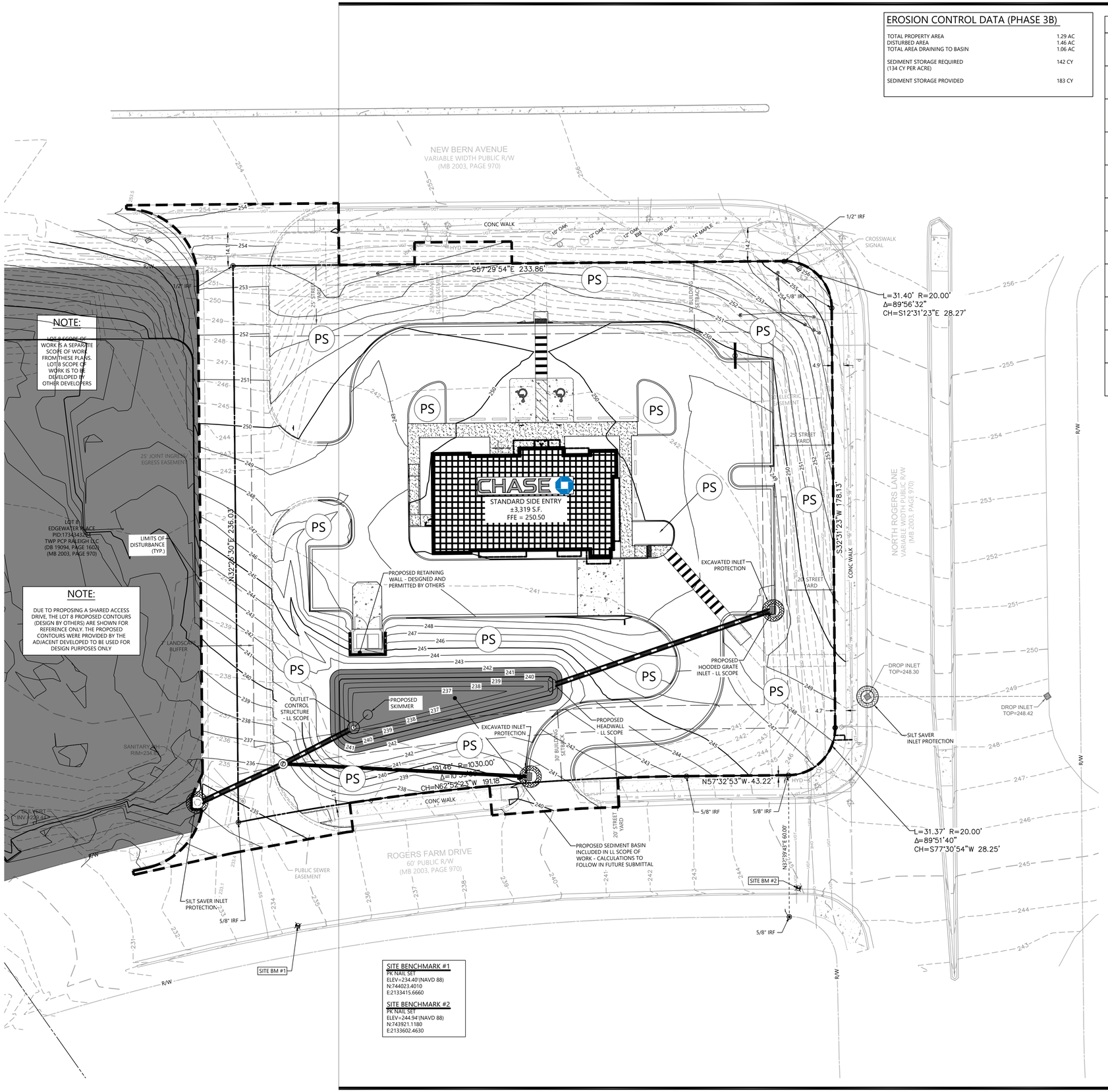
DATE 11/13/2023

[redacted]

0 10' 20'
SCALE: 1"=20'

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C540

CAD FILE: C540 EROSION PHASE 2B
NOT-ISSUED-FOR-CONSTRUCTION



EROSION CONTROL DATA (PHASE 3B)

TOTAL PROPERTY AREA	1.29 AC
DISTURBED AREA	1.46 AC
TOTAL AREA DRAINING TO BASIN	1.06 AC
SEDIMENT STORAGE REQUIRED (134 CY PER ACRE)	142 CY
SEDIMENT STORAGE PROVIDED	183 CY

EROSION LEGEND

CONSTRUCTION EXIT	
SEDIMENT BARRIER SILT FENCE	SF
LIMITS OF DISTURBANCE LINE	
BASIN DELINEATION LINE	
TEMPORARY INLET PROTECTION	
TEMPORARY SEDIMENT TRAP	
DUST CONTROL	DC
MULCHING	M
TEMPORARY STABILIZATION	TS
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ROLLED EROSION CONTROL PRODUCT	RECP

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1. ALL EROSION AND SEDIMENTATION CONTROL DEVICES SHALL CONFORM TO THE LATEST EROSION AND SEDIMENT CONTROL REGULATIONS FOR THE STATE, COUNTY, AND/OR CITY.
2. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES, AND MAINTAINED DURING SUCH ACTIVITIES.
3. WHEN ANY CONSTRUCTION BORDERS A DRAINAGE COURSE, THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY BUILDING OR OTHER EXCAVATION SPOILED DIRT, CONSTRUCTION TRASH OR DEBRIS, ETC. FROM THE DRAINAGE AREAS SHOWN HEREON IN AN EXPEDITIOUS MANNER AS CONSTRUCTION PROGRESSES.
4. EROSION CONTROL MEASURES ARE TO BE PLACED AT DOWNSTREAM TOE OF ALL CUT AND FILL SLOPES. WIRE REINFORCED BACKING (TYPE C) SILT FENCE TO BE USED UNLESS OTHERWISE INDICATED.
5. SILT FENCE MUST MEET REQUIREMENTS OF THE SPECIFICATIONS CONTAINED IN THE CONSTRUCTION DETAILS OR AN EQUIVALENT PRODUCT APPROVED BY THE OWNER'S REPRESENTATIVE.
6. PRIOR TO ANY OTHER CONSTRUCTION A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE BUILT. THE CONSTRUCTION ENTRANCE/EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH STONE. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLE OR SITE ONTO PUBLIC ROADWAY OR INTO STORM DRAIN MUST BE REMOVED IMMEDIATELY.
7. PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE ACTIVITY SHALL BE DEMARCATED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. NO LAND DISTURBANCE SHALL OCCUR OUTSIDE THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS. IF WETLANDS EXIST ON-SITE, ANY CLEARING MUST BE IN ACCORDANCE WITH THE WETLANDS PERMIT.
8. IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION ENTRANCES/EXITS, ALL PERIMETER EROSION DEVICES AND STORMWATER MANAGEMENT DEVICES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.
9. OWNER AGREES TO PROVIDE AND MAINTAIN OFF-STREET PARKING ON THE SUBJECT PROPERTY DURING THE ENTIRE CONSTRUCTION PERIOD.
10. THE CONSTRUCTION OF THE SITE WILL COMMENCE WITH THE INSTALLATION OF EROSION CONTROL MEASURES SUFFICIENT TO CONTROL SEDIMENT DEPOSITS AND EROSION . ALL SEDIMENT CONTROL WILL BE MAINTAINED UNTIL ALL UPSTREAM GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/DRIVEWAYS HAVE BEEN PAVED.
11. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO GROUND DISTURBANCE. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FORM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
12. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED.
13. THE CONTRACTOR SHALL REMOVE ACCUMULATED SILT WHEN THE SILT IS WITHIN 12" OF THE TOP OF THE SILT FENCE UTILIZED FOR EROSION CONTROL. IN THE SEDIMENTATION POND, SEDIMENT REMOVAL IS REQUIRED WHEN SEDIMENT REACHES THE ELEVATION CORRESPONDING TO CLEANOUT BASIN.
14. FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB UNTIL SUCH MEASURES ARE CORRECTED.
15. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE WHENEVER LAND DISTURBANCE ACTIVITY IS IN PROGRESS.
16. ALL OPEN SWALES MUST BE GRASSED AND/OR RIP-RAP PLACED AS REQUIRED TO CONTROL EROSION. A MINIMUM OF 4.5 SQUARE YARDS OF 50-LB STONES SHALL BE PLACED AT ALL DOWNSTREAM HEADWALLS. THE PLACEMENT OF RIP-RAP AT THE DOWNSTREAM HEADWALLS SHALL BE PLACED IMMEDIATELY UPON THE INSTALLATION OF PIPES AND DRAINAGE DITCHES.
17. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING.
18. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
19. EROSION AND SEDIMENT CONTROL SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR COMPLIANCE, INSTALLATION, MAINTENANCE AND REMOVAL AS REQUIRED BY THE REGULATIONS OF THE STATE AND/OR GOVERNING AGENCY. THE INSTALLATION OF THE REQUIRED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS A FIRST STEP IN CONSTRUCTION.
20. CONTRACTOR TO MAINTAIN ON-SITE DAILY LOG OF ALL MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES. LOG SHALL BE MADE AVAILABLE FOR INSPECTION AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE TO SUBMIT THE NPDES NOTICE OF INTENT AND NOTICE OF TERMINATION TO THE APPROPRIATE STATE AGENCY.
21. THE CONTRACTOR IS RESPONSIBLE FOR UPHOLDING THE EROSION CONTROL STANDARDS FOR NORTH CAROLINA REGARDLESS OF WHAT SEDIMENT CONTROL MEASURES WERE INDICATED WITHIN THE PLAN SET.
22. FOR CALCULATIONS OF ANY BMPs SHOWN TO BE USED, SEE DETAIL SHEETS FOR THOSE NOT SHOWN ON THE PLAN.

CONSTRUCTION SEQUENCE

1. OBTAIN EROSION CONTROL PLAN (E&SC PLAN) APPROVAL FROM THE CITY OF RALEIGH ENGINEERING DEPARTMENT.
2. SUBMIT NOTICE OF INTENT (NOI) WITH NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY TO OBTAIN A CERTIFICATE OF COVERAGE (COC) UNDER THE NCG01 PERMIT. THE COC MUST BE PRESENTED AT THE PRE-CONSTRUCTION MEETING. NOI INSTRUCTIONS CAN BE FOUND ONLINE AT DEQ.NC.GOV.
3. SET UP A PRE-CONSTRUCTION MEETING WITH CITY OF CHARLOTTE EROSION CONTROL COORDINATOR. FAILURE TO SCHEDULE SUCH MEETING 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITY IS A VIOLATION OF CHAPTER 17 OF THE CITY CODE AND IS SUBJECT TO FINES. PRE-CONSTRUCTION MEETING REQUESTS CAN BE COMPLETED AT THE FOLLOWING LINK: CHARLOTTENC.GOV/DEVELOPMENTCENTER
4. INSTALL ALL EROSION CONTROL MEASURES PER THE PHASE I E&SC PLAN, INCLUDING, BUT NOT LIMITED TO, SILT FENCE, INLET PROTECTION, SEDIMENT BASINS, DIVERSION DITCHES, TREE PROTECTION, CLEARING ONLY AS NECESSARY TO INSTALL THESE DEVICES.
5. CALL FOR ON-SITE INSPECTION BY COORDINATOR. WHEN APPROVED, COORDINATOR ISSUES THE CITY OF CHARLOTTE GRADING PERMIT, AND CLEARING AND GRUBBING MAY BEGIN.
6. THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES.
7. FOR PHASED EROSION CONTROL PLANS, CONTRACTOR SHALL OBTAIN APPROVAL FROM THE COORDINATOR PRIOR TO COMMENCING WITH EACH PHASE OF THE E&SC PLAN.
8. STABILIZE SITE AS AREAS ARE BROUGHT TO FINISHED GRADE, BUT WITHIN TEMPORARY OR PERMANENT STABILIZATION TIMELINES.
9. OBTAIN APPROVAL FROM THE COORDINATOR PRIOR TO REMOVAL OF ANY EROSION CONTROL MEASURE.
10. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE N. C. EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, U. S. DEPT. OF AGRICULTURE, CITY OF RALEIGH EROSION CONTROL ORDINANCE, AND THE CITY OF RALEIGH LAND DEVELOPMENT STANDARDS MANUAL.

NOTE
CONTRACTOR IS RESPONSIBLE FOR THE SEQUENCE AND TIMING OF ALL EROSION AND SEDIMENT CONTROL MEASURES. PHASING PLANS ARE A GENERAL GUIDE TO EROSION CONTROL AS DEVELOPMENT OCCURS.

PROPERTY OWNER
BRANDON KUBLANOW
TWP PCP RALEIGH LLC
1962 HOWELL MILL ROAD,
SUITE 200, ATLANTA, GA 30318
PHONE: 770-359-9636

NOTE
PROPOSED MASS GRADING & SEDIMENT TRAP INSTALLATION TO BE COMPLETED PRIOR TO THE IMPLEMENTATION OF PHASE B. REFERENCE PHASE A (SHEETS C500, C510, AND C-520.)

NOTE
ALL TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED ONCE THE SITE IS DEEMED STABILIZED.

ANTICIPATED ACTIVITY SCHEDULE

ACTIVITY	1	2	3	4	5	6
INITIAL PHASE EROSION CONTROL BMP INSTALLATION						
DEMOLITION						
MAINTAIN EROSION CONTROL						
INTERMEDIATE PHASE EROSION BMP INSTALLATION						
GRADING						
PAVING						
FINAL PHASE EROSION BMP INSTALLATION						
BUILDING CONSTRUCTION						
FINAL LANDSCAPING						
FINAL CLEAN UP						

SITE BENCHMARK #1
PK NAIL SET
ELEV=234.40'(NAVD 88)
N:744023.4010
E:2133415.6660

SITE BENCHMARK #2
PK NAIL SET
ELEV=244.94'(NAVD 88)
N:743921.1180
E:2133602.4630

811 Know what's below. Call before you dig.
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24 HOUR EMERGENCY CONTACT
TRISH NEARHOOF-EUBANKS
813.323.9233

ATWELL
866.850.4200 www.atwell-group.com
1800 PARKWAY PLACE, SUITE 700
MARIETTA, GA 30067
COA#: C-2980

PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
ESPCP PHASE 3B

DATE 11/13/2023

REVISIONS

0 10' 20'
SCALE: 1"=20'

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C550

CAD FILE: C550 EROSION PHASE 3B

NOT-ISSUED-FOR-CONSTRUCTION

ICES FOR COMPLIANCE WITH

will result in the construction
ion and Materials Handling
E and F, respectively). The
plan approved by the
ations shown on this sheet
authority having jurisdiction.

rames

neframe variations

None

None

10' or less in length and are
han 2:1, 14 days are

opes greater than 50' in
ith slopes steeper than 4:1
erimeter dikes, swales,
neter slopes and HQW

Falls Lake Watershed

erimeter dikes, swales,
neter slopes and HQW Zones
Falls Lake Watershed unless
slope

, any areas with temporary
stabilization as soon as
he last land disturbing
n a manner to render the
ound stabilization is achieved.

he soil. Use one of the

bilization
ered with straw or
ers
permanent soil
t plantings covered
buted ground cover
on
s concrete, asphalt or
ducts with grass seed

g exposed during
ed PAMS/Flocculants.
Sediment Control Measures.
NC DWR List of Approved
urer's instructions.
water before discharging

under storm-resistant cover

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

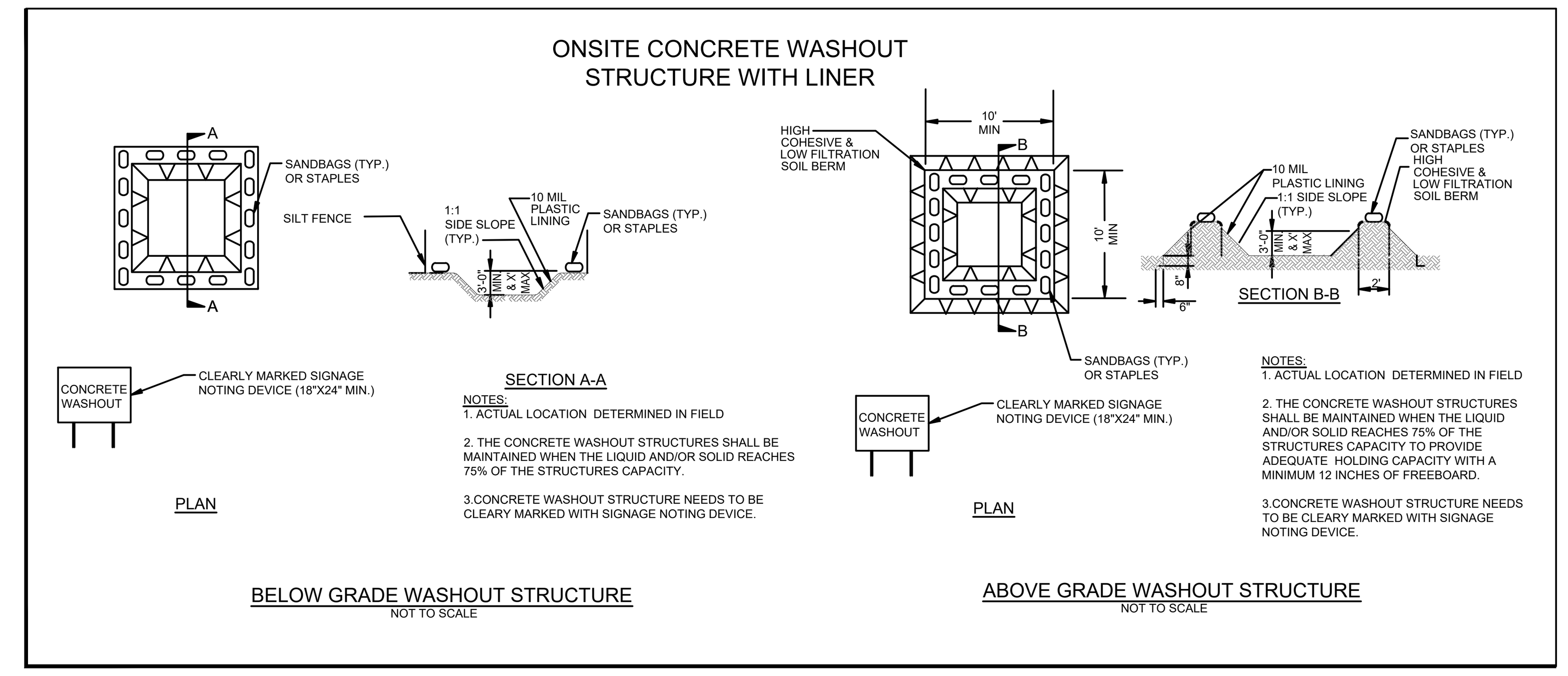
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, 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.

GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

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MARIETTA, GA
770.423.0807
COA#P-2380

PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
ESPCP NOTES

DATE 11/13/2023

REVISIONS

[redacted]

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C560

NOT-ISSUED-FOR-CONSTRUCTION

PORTING

ccordance with the table
he safety of the inspection
il the next business day on
torm event of equal to or
he self-inspection shall be
Any time when inspections

are made during weekend or al-day rainfall information is n measurement for those un- rmine if a site inspection is occurred shall be recorded as nother rain-monitoring device
pected, he inspection, es were operating s for the measure, f corrective actions taken.
tfalls inspected, he inspection, ater pollution such as oil ds or discoloration, ving the site, f corrective actions taken.
side site limits, then a record lize the sediment that has left f corrective actions taken, and aken to control future
ed visible sedimentation or a y from the construction g shall be made: f corrective actions taken, and o the appropriate Division n C, Item (2)(a) of this permit.
of perimeter E&SC installation of storm all land-disturbing pment, permanent ground stabilization thin the required hey will be provided as

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

as of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down
nstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather).
only when all of the following criteria have been met:

ntation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal
proved these items,
cipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
ize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include
, weir tanks, and filtration systems,
d stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
t traps, and riprap are provided at the discharge points of all dewatering devices, and
s described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

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.

SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

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CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
ESPCP NOTES

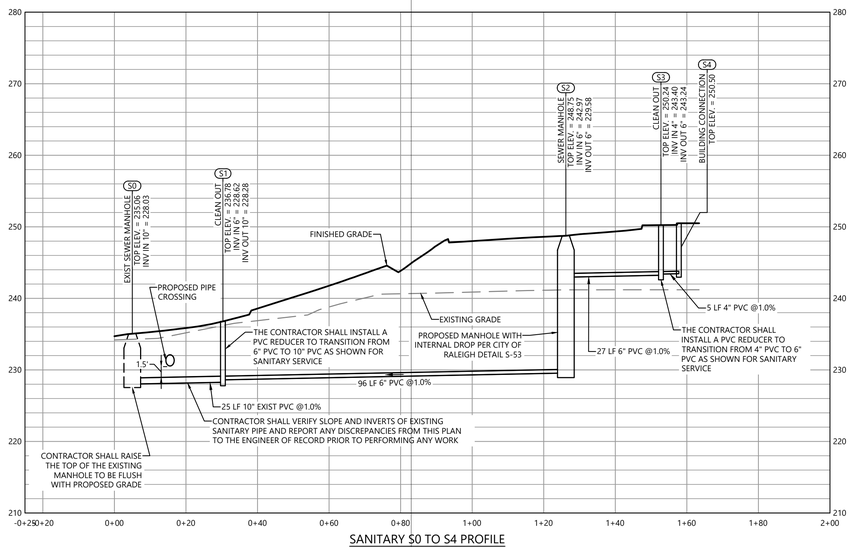
DATE 11/13/2023

REVISIONS

[redacted]

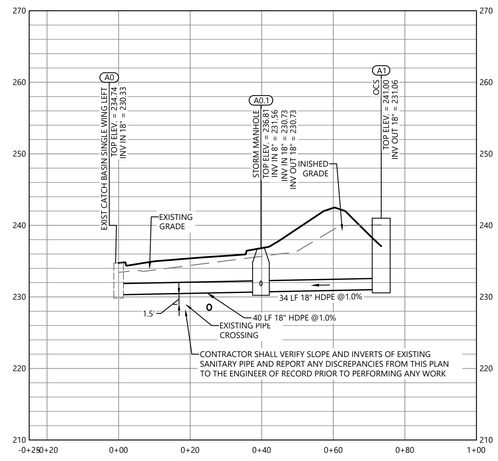
DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C570

CAD FILE: C560 EROSION NOTES
NOT-ISSUED-FOR-CONSTRUCTION



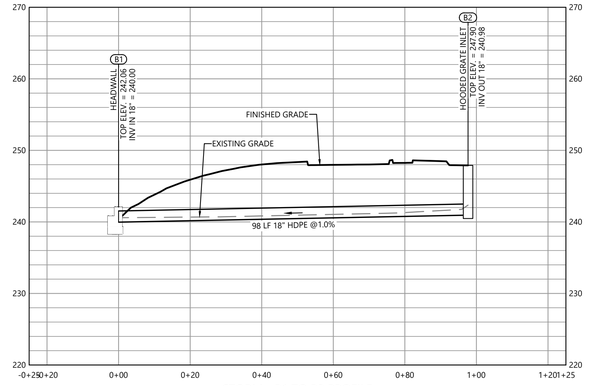
SANITARY S0 TO S4 PROFILE

HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'



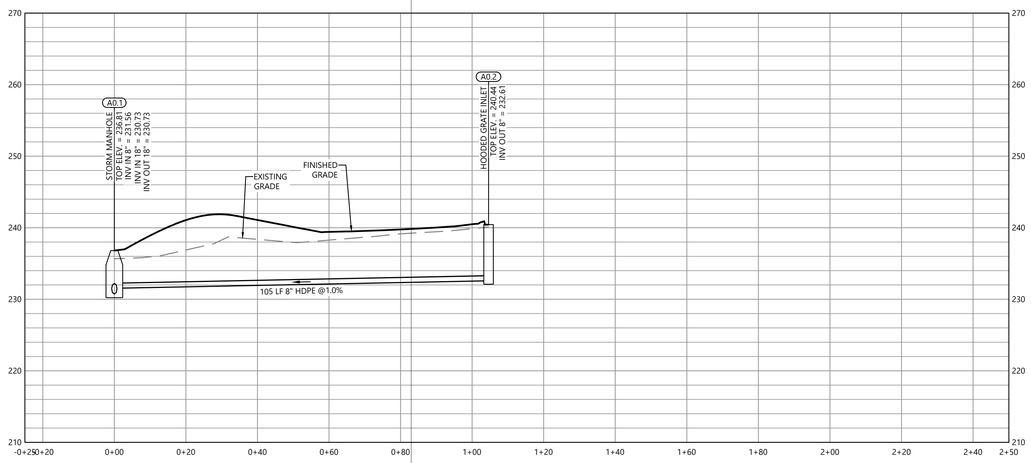
STORM - EX1 TO A1 PROFILE

HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'



STORM - B1 TO B2 PROFILE

HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'



STORM A0 TO A0.1 PROFILE

HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

Know what's below. Call before you dig.

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NOTICE:

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24 HOUR EMERGENCY CONTACT
TRISH NEARHOOF-EUBANKS
813.323.9233

ATWELL
866.850.4200 www.atwell-group.com
1800 PARKWAY PLACE, SUITE 700
MARIETTA, GA
30067-2380

PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE

BDG ARCHITECTS
SITE CONSTRUCTION PLANS
PIPE PROFILES

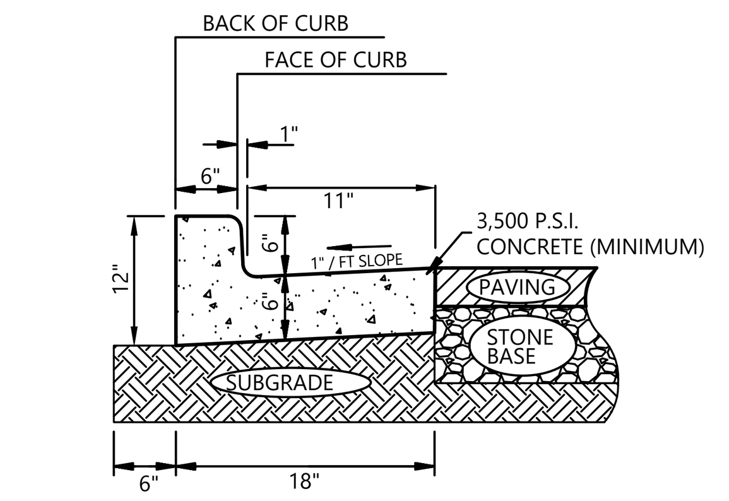
DATE 11/13/2023

[redacted]

CAD FILE: C630 PIPE CHARTS

NOT-ISSUED-FOR-CONSTRUCTION

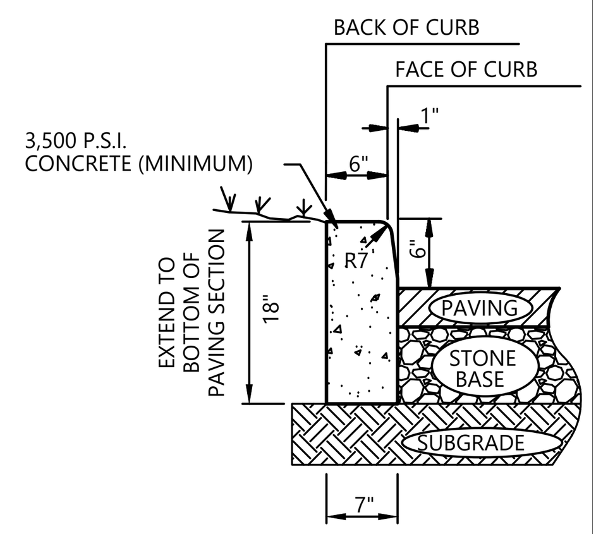
DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C600



NOTES
1. EXPANSION JOINTS REQUIRED AT ALL STRUCTURES AND CURB RETURNS. 25 FOOT MAXIMUM DISTANCE BETWEEN EXPANSION JOINTS.
2. 3,500 P.S.I. CONCRETE WITH SMOOTH FINISH.
3. COMPACT SUBGRADE TO 95% STANDARD PROCTOR.
4. SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

STANDARD 18" CONCRETE CURB AND GUTTER "C"

N.T.S.



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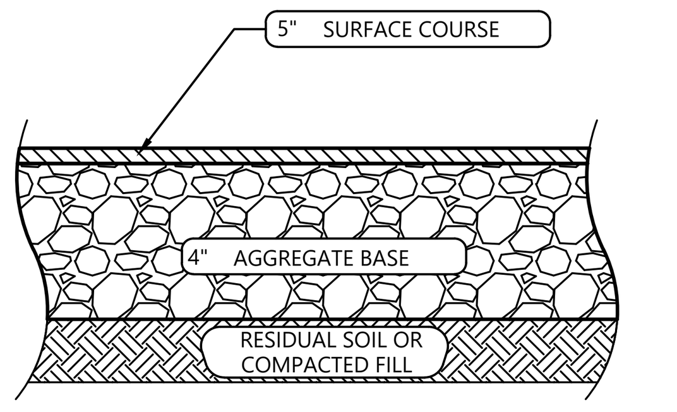
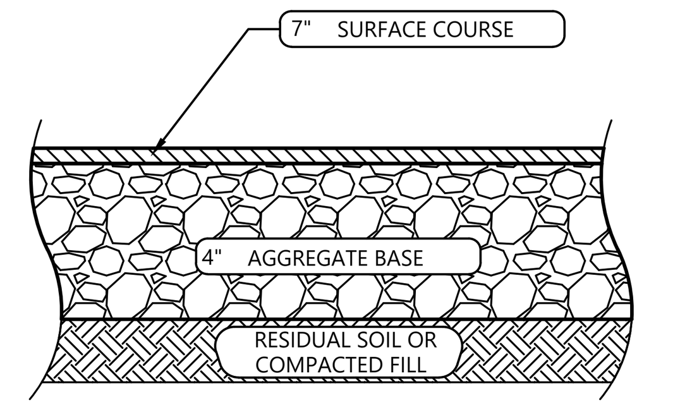
HEADER CURB

N.T.S.



THIS PAVEMENT DETAIL IS BASED ON THE GEOTECHNICAL REPORT FOR BDG ARCHITECTS, BY TERRACON CONSULTANTS, INC., DATED JUNE, 28, 2023. THE CONTRACTOR SHOULD CLARIFY ANY DISCREPANCY BETWEEN THE GEOTECHNICAL REPORT AND THIS DETAIL PRIOR TO BIDDING OR CONSTRUCTING.

DRIVES HEAVY DUTY CONCRETE PAVING SPECIFICATION



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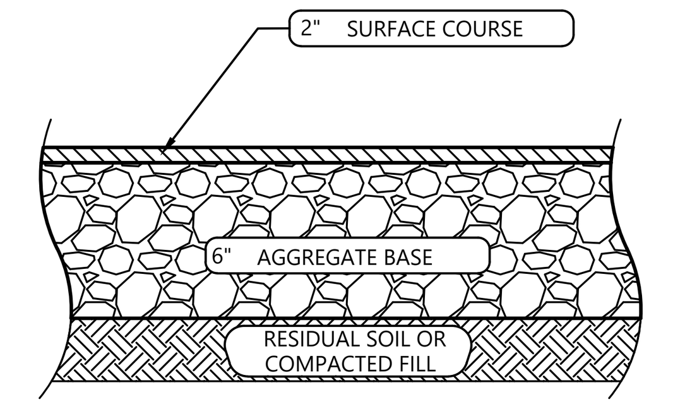
DUMPSTER HEAVY DUTY CONCRETE PAVING SPECIFICATION

N.T.S.



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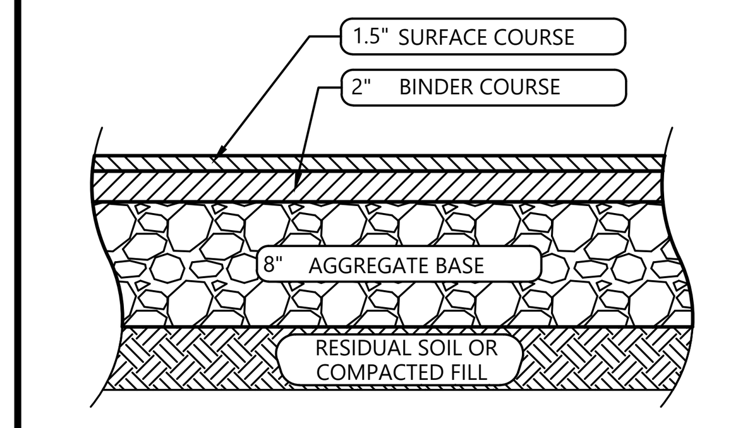
STANDARD DUTY ASPHALT PAVING SPECIFICATION

N.T.S.



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HEAVY DUTY ASPHALT PAVING SPECIFICATION

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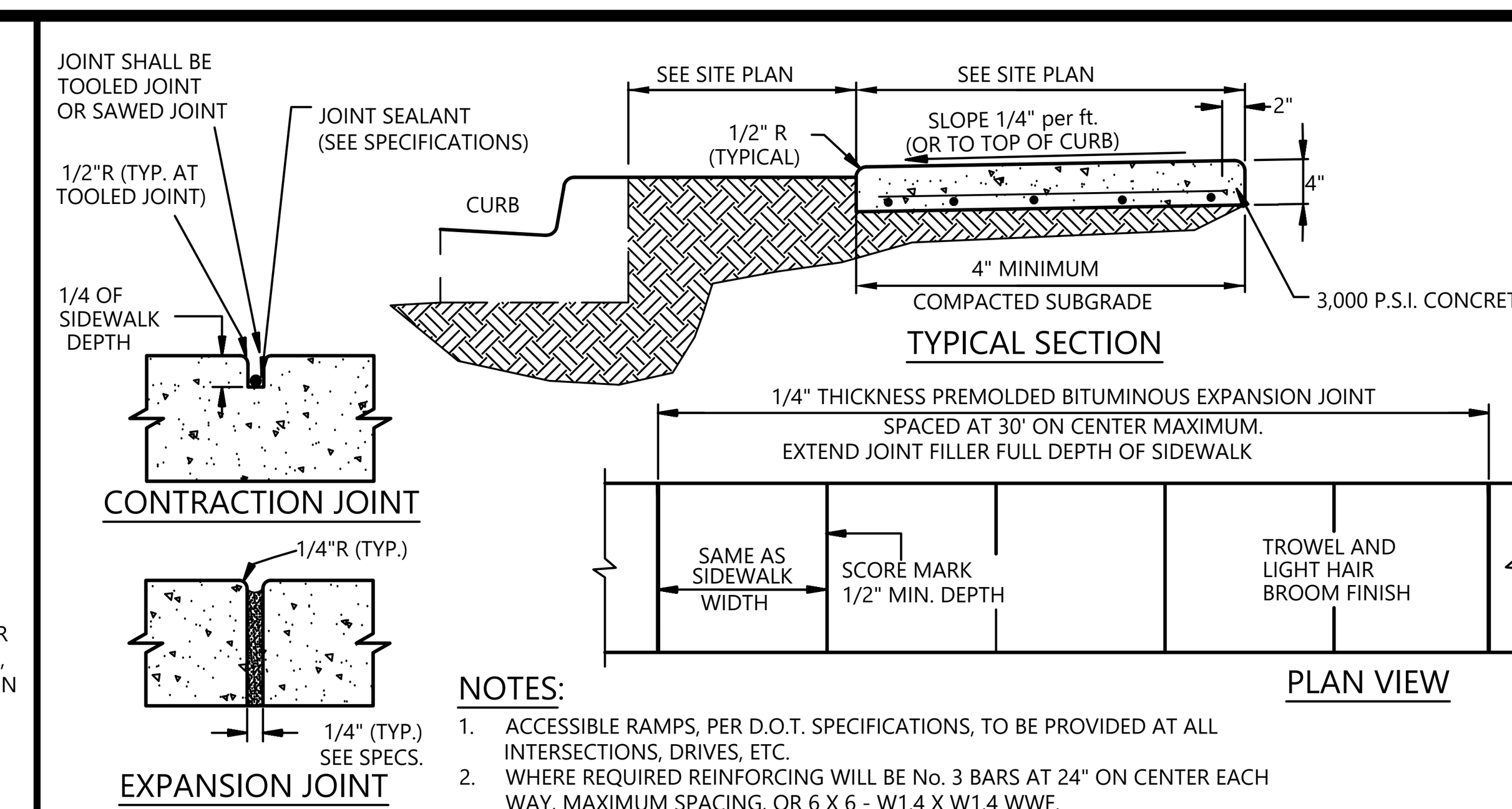
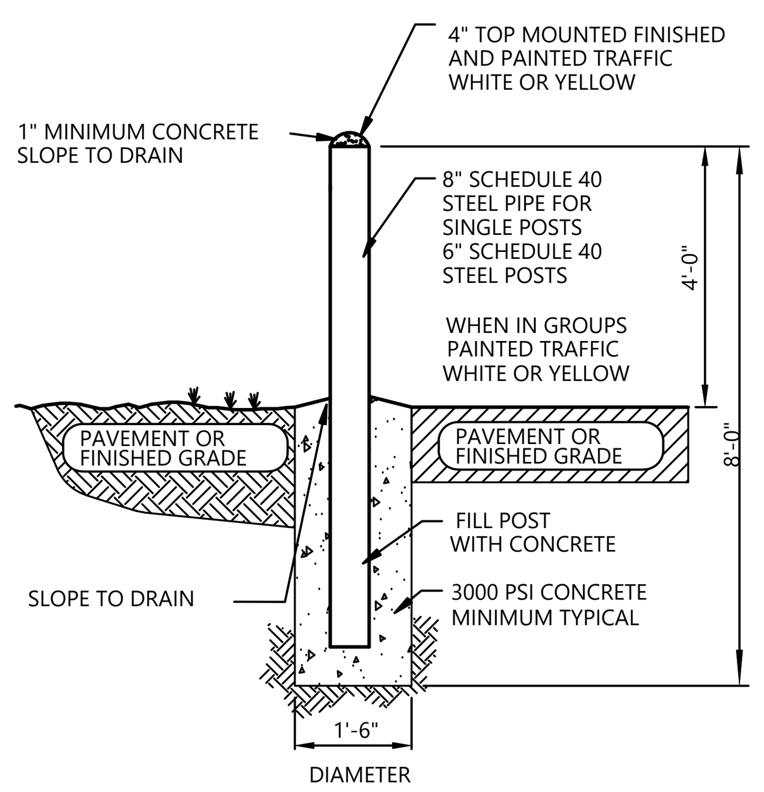


NOTES:
1. ACCESSIBLE RAMPS, PER D.O.T. SPECIFICATIONS, TO BE PROVIDED AT ALL INTERSECTIONS, DRIVES, ETC.
2. WHERE REQUIRED REINFORCING WILL BE No. 3 BARS AT 24" ON CENTER EACH WAY, MAXIMUM SPACING, OR 6 X 6 - W1.4 X W1.4 WWF.
3. 4" AGGREGATE BASE COURSE COMPACTED TO 98% STANDARD PROCTOR TYPICAL IN AREAS WITH UNSUITABLE SUBGRADE.

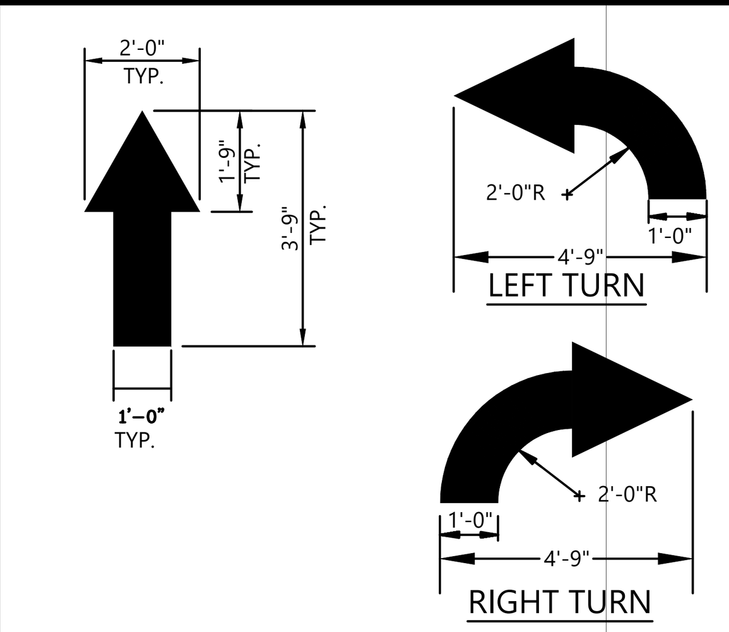
CONCRETE SIDEWALK ALONG ROADWAY/DRIVE

N.T.S.



BOLLARD

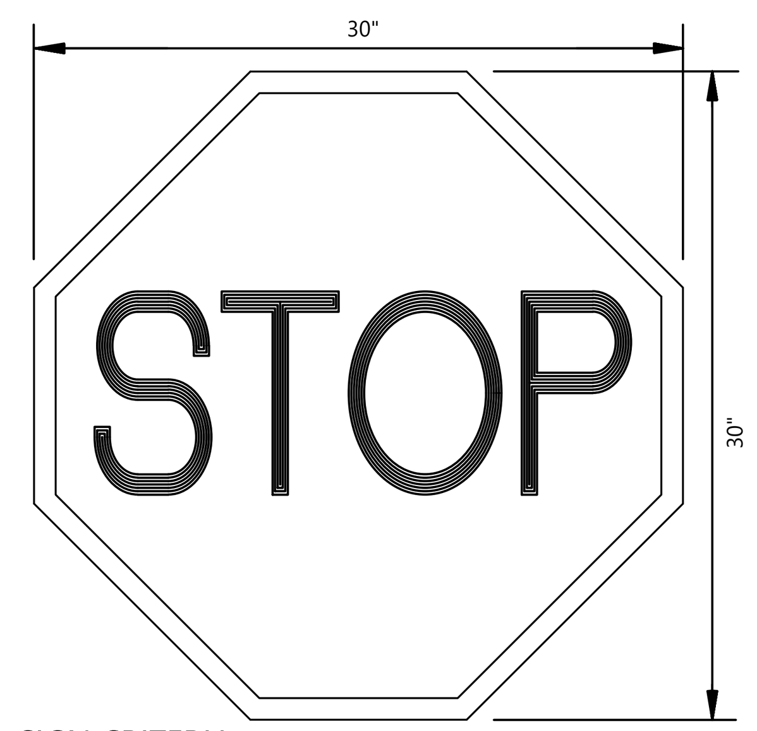
N.T.S.



NOTES:
1. WORDS AND ARROWS FOR DRIVEWAYS SHALL BE APPLIED ACCORDING TO REQUIREMENTS AS OUTLINED IN SECTION 3B-20 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.
2. ALL TRAFFIC FLOW ARROWS TO BE SOLID WHITE REFLECTIVE TRAFFIC PAINT OR MEET LOCAL REQUIREMENTS.

PARKING LOT FLOW ARROW

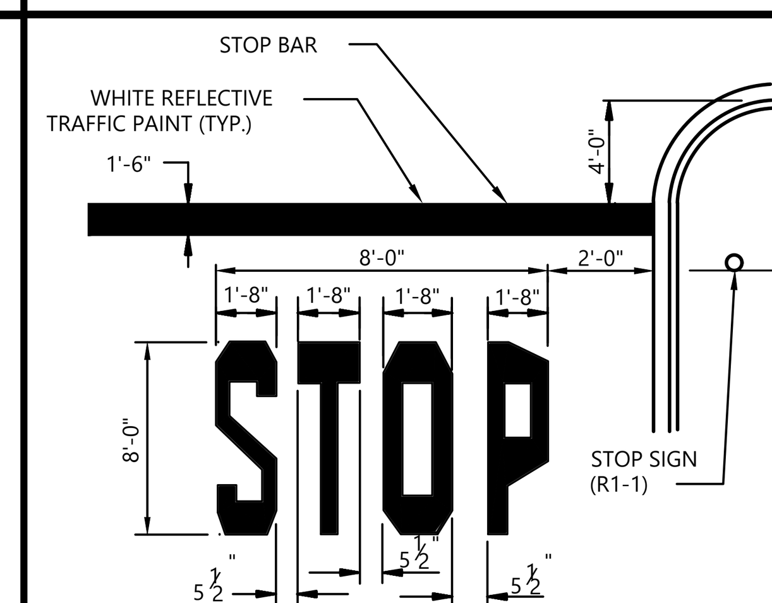
N.T.S.



SIGN CRITERIA
BACKGROUND: RED
LETTERING: WHITE
BORDER: WHITE
REFERENCE: MUTCD

"STOP" SIGN

N.T.S.



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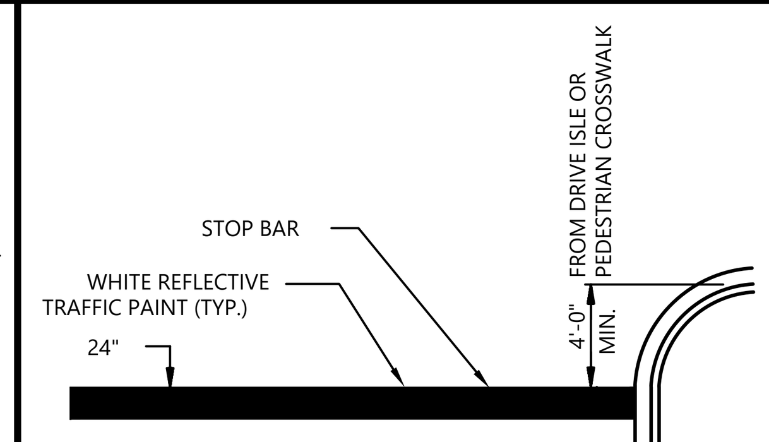
STOP BAR

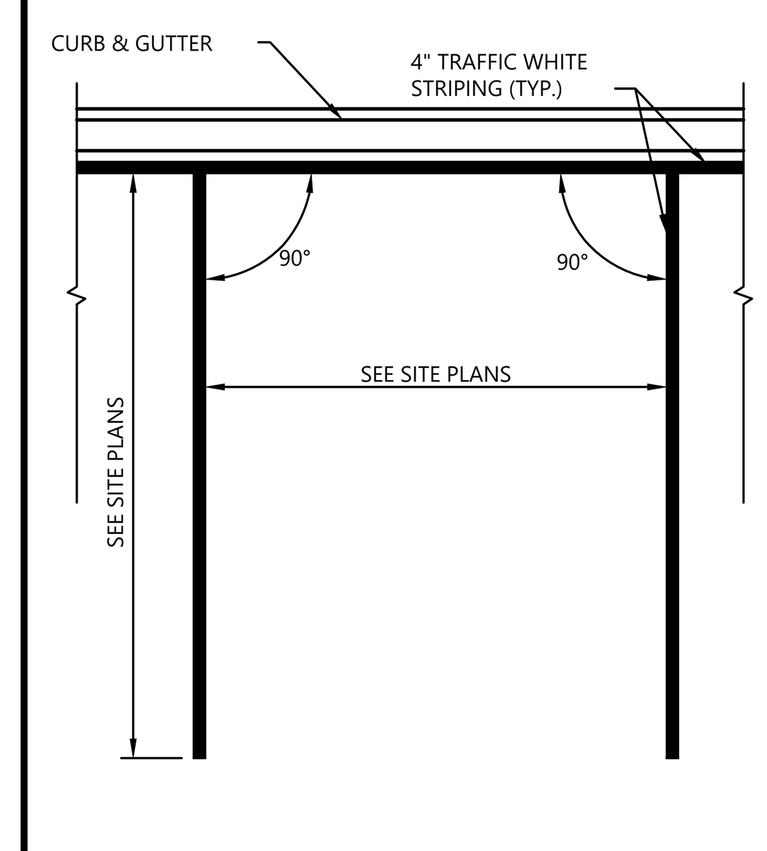
N.T.S.



NOTE:
REFER TO SITE WORK SPECIFICATIONS FOR FURTHER INFORMATION.

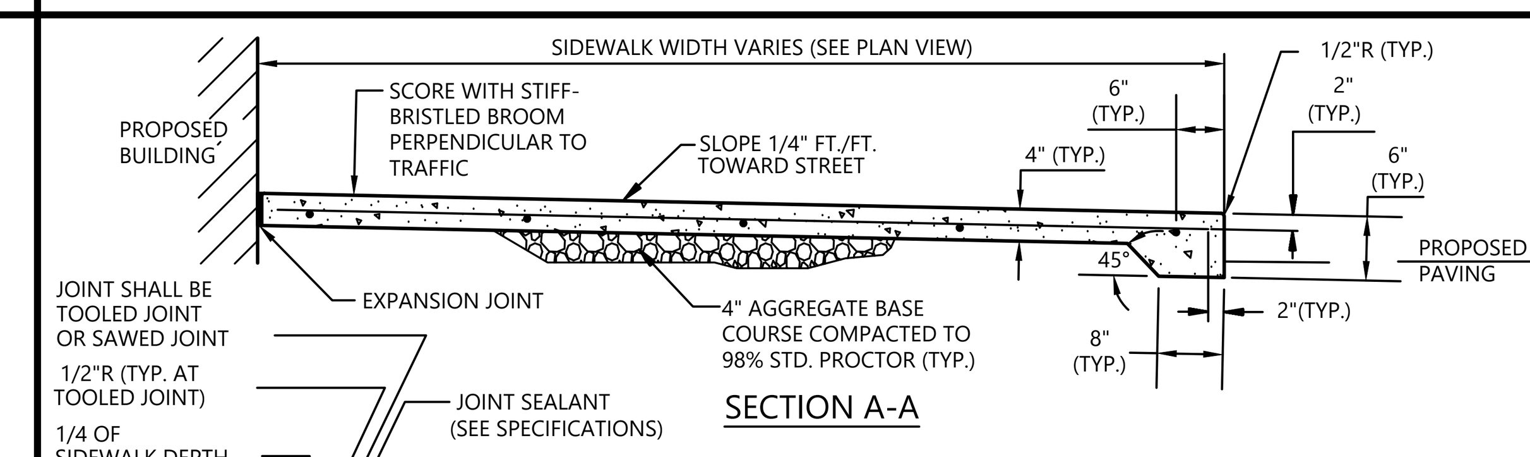
STOP BAR

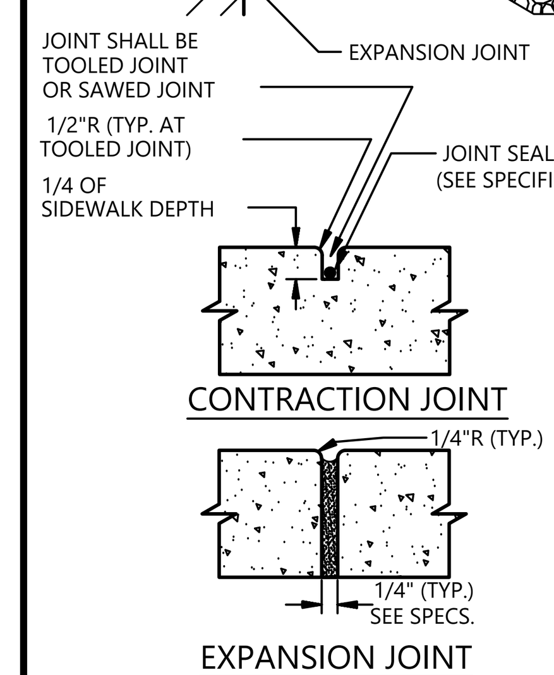
N.T.S.



PARKING SPACE STRIPING

N.T.S.

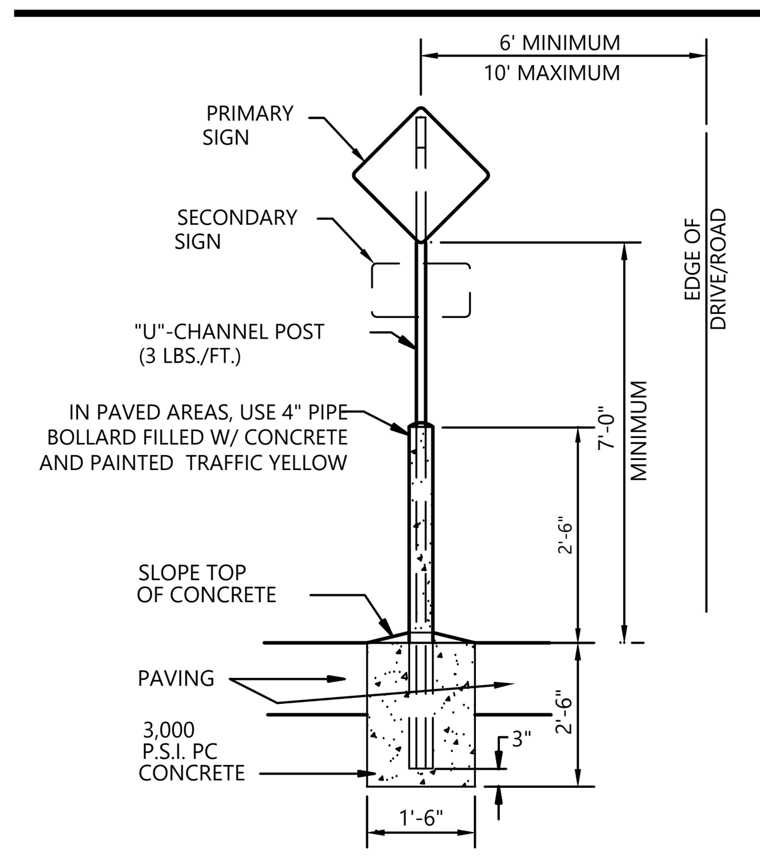




NOTES:
1. WHERE REQUIRED REINFORCEMENT WILL BE No. 3 BARS 24" O.C. EACH WAY (MAX. SPACING), OR 6 X 6 -W1.4 X W1.4 WWF CONCRETE TO BE 4", 3500 P.S.I. P.C. CONCRETE.
2. TOOLED CONTRACTION JOINT IN FRESH CONCRETE TO BE GROOVED JOINT 1/4 OF CONCRETE DEPTH MIN. WITH 1/2" MIN. RADIUS ON EXPOSED EDGES.
3. SAWED CONTRACTION JOINT TO BE 1/4 OF CONCRETE DEPTH MIN. AND FILLED WITH CONTINUOUS LENGTHS OF JOINT SEALANT AS SPECIFIED IN SECTION 02520-2.01 OF THE SPECIFICATIONS.
4. PATHFINDER DETECTABLE WARNING SURFACE AVAILABLE FROM CARSONITE INTERNATIONAL, CARSON CITY, NV (800) 648-7974 3' WIDE - DOT 12"x12"x1/4" OVERLAY, OR EQUAL.

CONCRETE SIDEWALK AT BUILDING

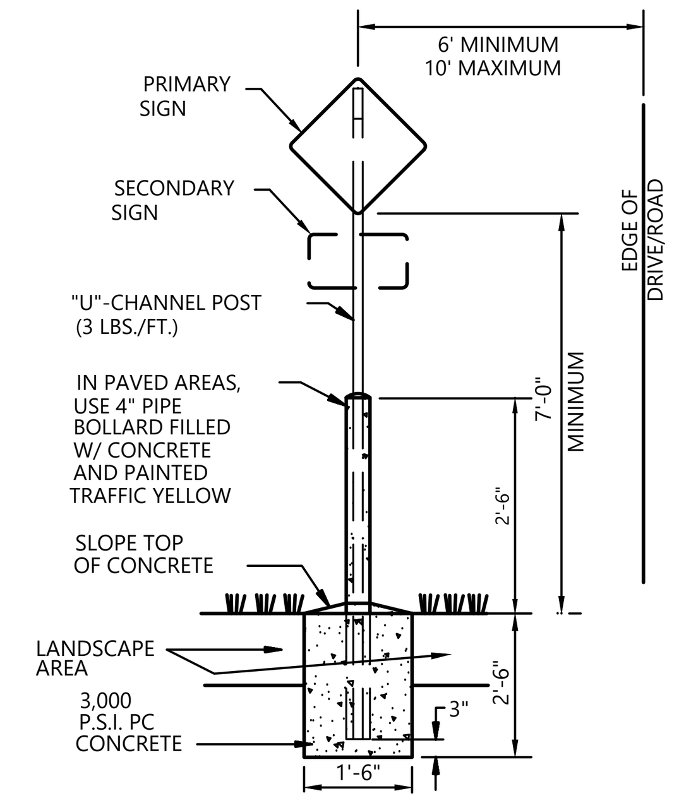
N.T.S.



NOTE
SIGN SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS AND ALL FEDERAL, STATE, AND LOCAL CODES.
CONCRETE BOLLARD AROUND POST IS NECESSARY WHERE SIGN IS TO BE WITHIN 2' OF TRAVEL LANE OR PARKING SPACE.

SIGN BASE IN PAVING

N.T.S.



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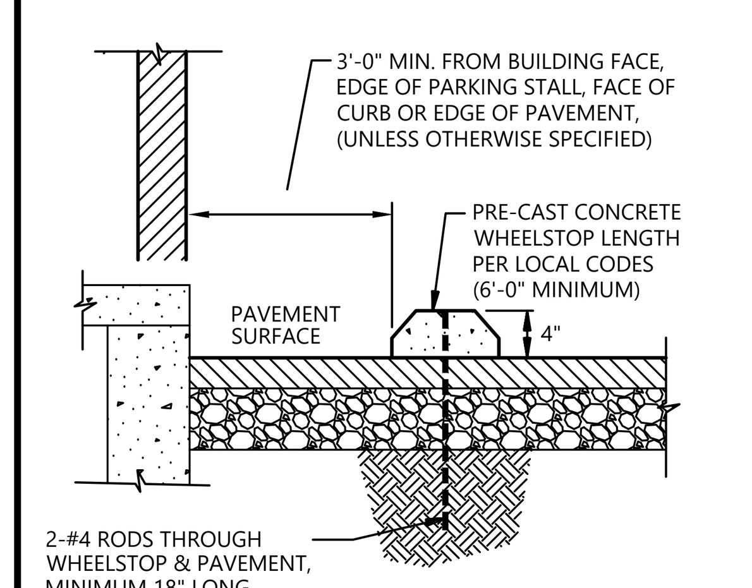
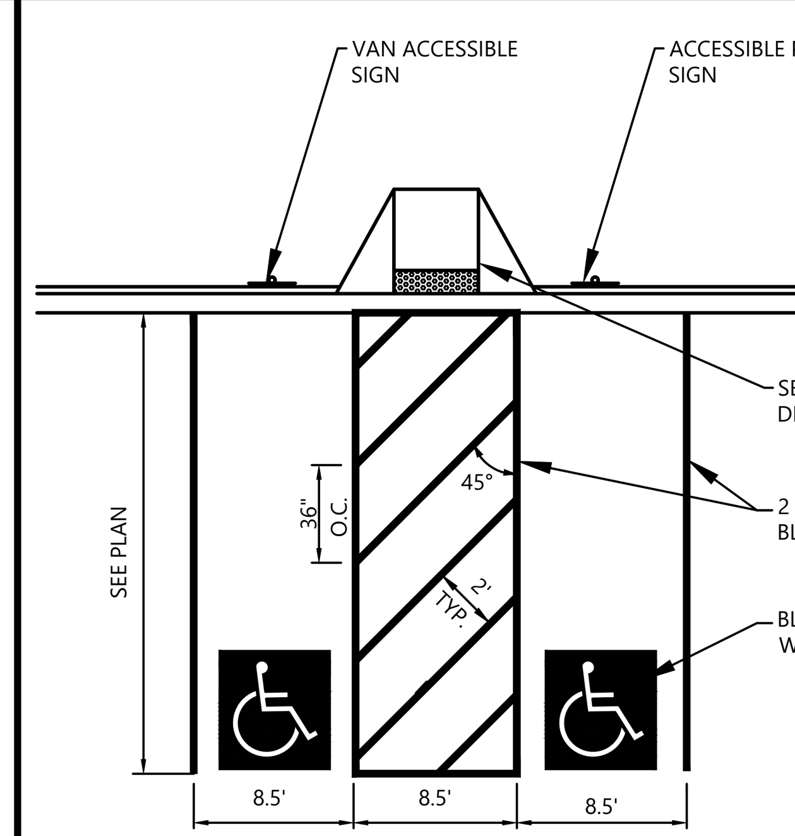
SIGN BASE IN LANDSCAPE AREA

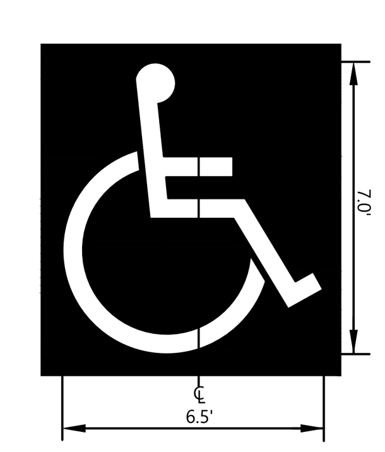
N.T.S.



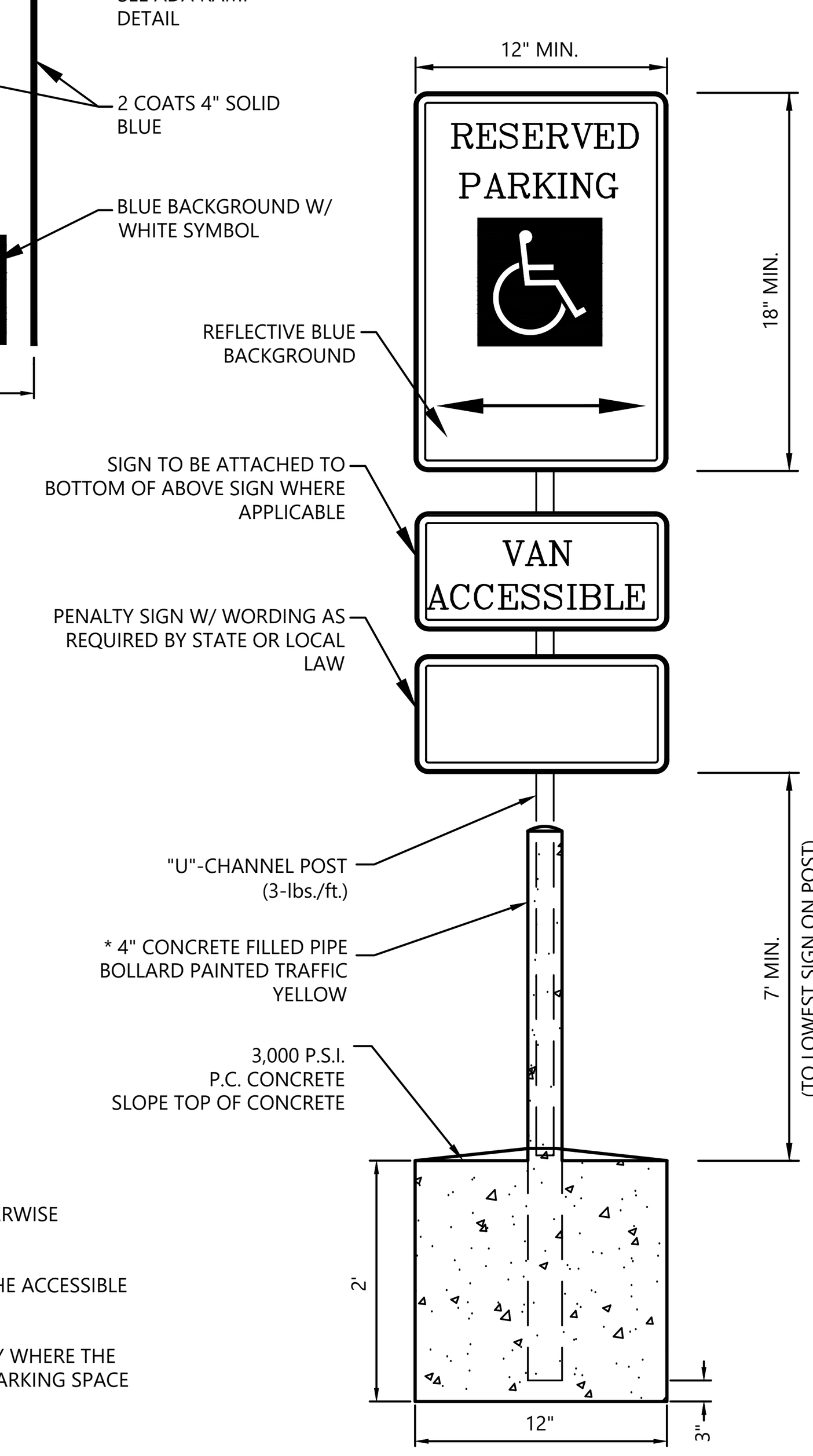
PRE-CAST CONCRETE WHEELSTOP

N.T.S.





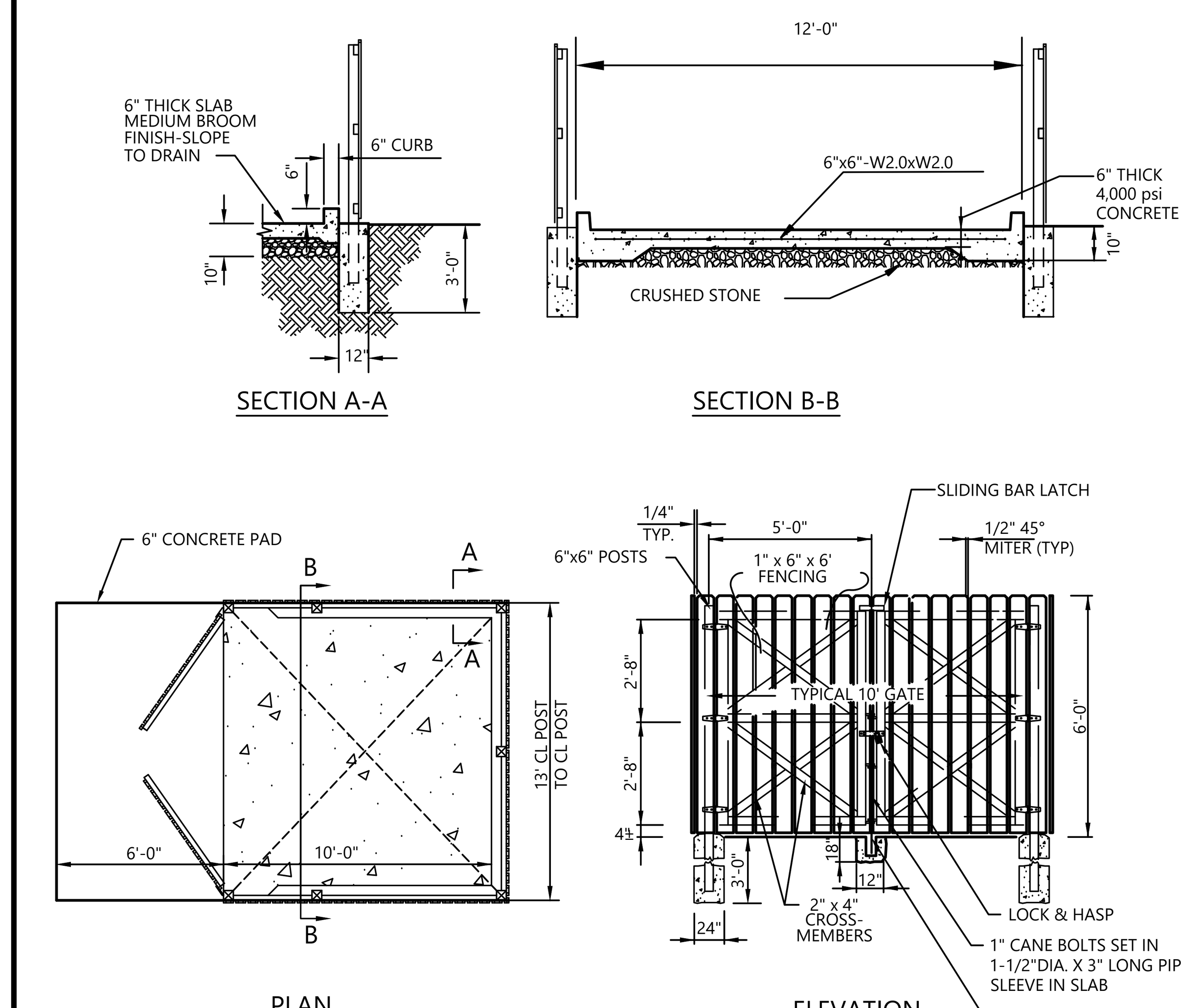
ACCESSIBLE PARKING SYMBOL
LOCATE AT EDGE OF PARKING SPACE UNLESS ACCOMPANIED BY "VAN" LETTERING



NOTES:
1. SEE SITE PLAN FOR LAYOUT AND LOCATION.
2. ALL DIMENSIONS ARE TO ℄ OF STRIPE UNLESS OTHERWISE INDICATED.
3. 2% MAXIMUM SLOPE IN ALL DIRECTIONS WITHIN THE ACCESSIBLE SPACE.
4. * CONCRETE BOLLARD AROUND POST IS NECESSARY WHERE THE SIGN IS TO BE WITHIN 2' OF THE TRAVEL LANE OR PARKING SPACE

ADA PARKING DETAIL

N.T.S.



NOTES:
1. ALL POST AND STRINGERS SHALL BE OSMOSIS TREATED PINE.
2. ALL FENCE SIDING SHALL BE UNTREATED CEDAR.
3. ALL METAL FASTENERS SHALL BE HOT DIPPED GALVANIZED.
4. IF DRAIN IS REQUIRED BY LOCAL CODE INSTALL DRAIN IN CENTER OF PAD AND SLOPE PAD TO DRAIN. IF NO DRAIN SLOPE PAD TO DRAIN TO ACCESS POINT.
5. REFER TO GEOTECHNICAL RECOMMENDATIONS FOR THICKNESS OR APPLICABILITY OF STONE BASE.

DUMPSTER PAD AND FENCE ENCLOSURE

N.T.S.

811
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CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
CIVIL DETAILS SHEET

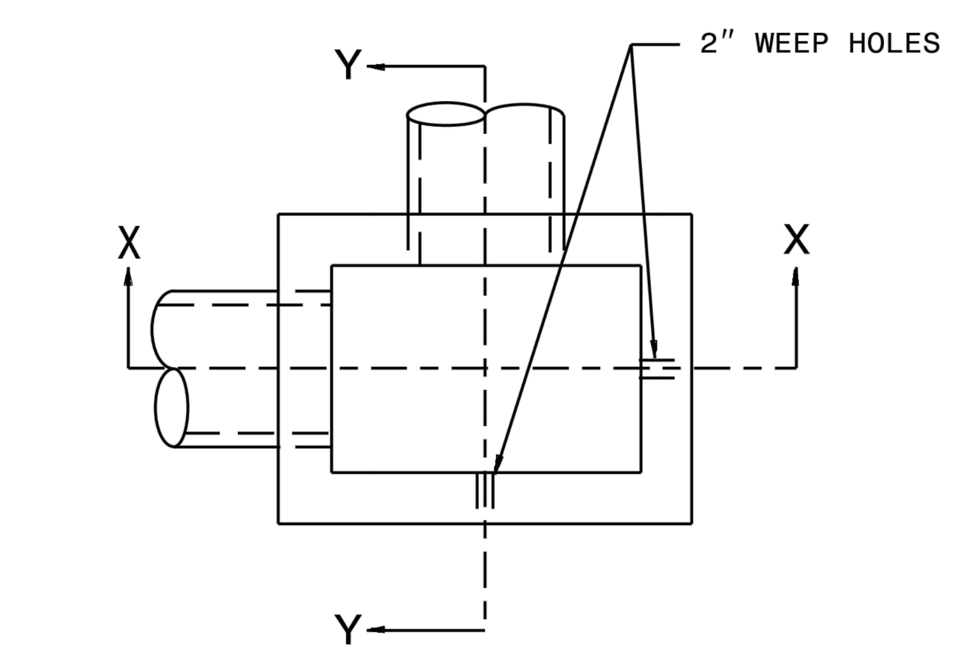
DATE 11/13/2023

REVISIONS

[redacted]

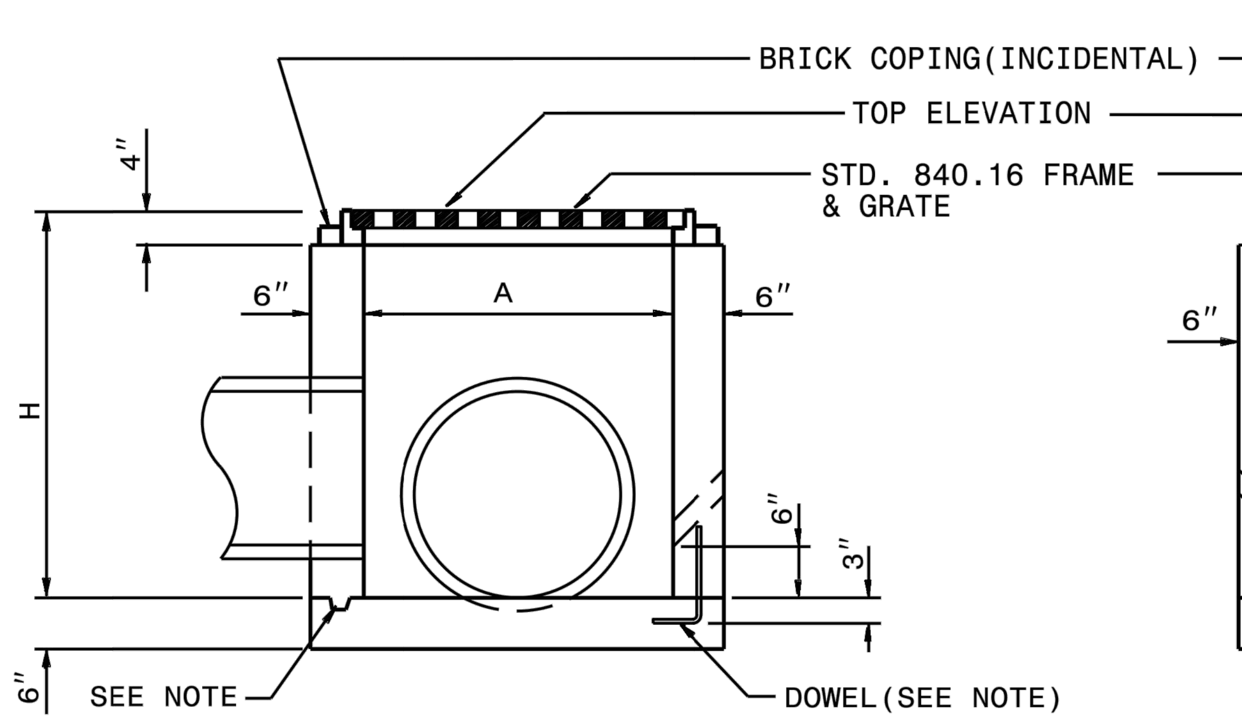
DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C700

CAD FILE: C700 DETAILS
NOT-ISSUED-FOR-CONSTRUCTION

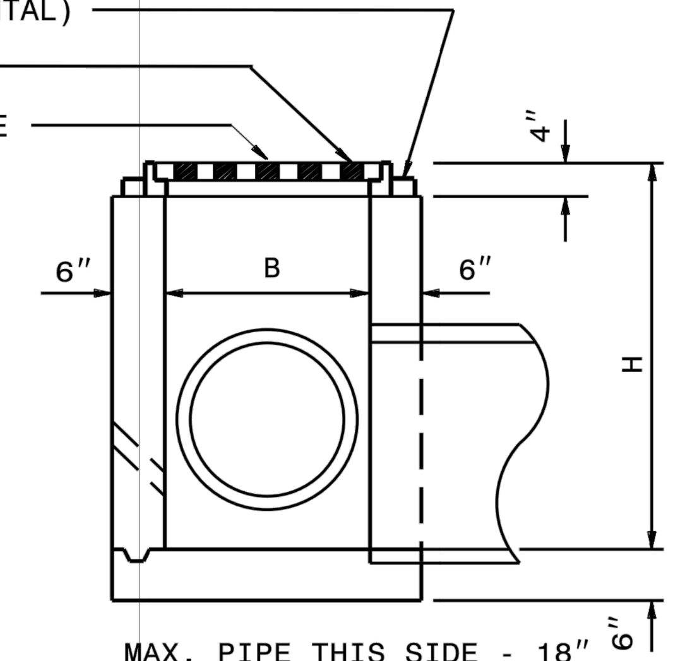


PLAN

WITH GRATE & FRAME REMOVED



SECTION X-X



SECTION Y-Y

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

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

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

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

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

CONSTRUCT WITH PIPE CROWNS MATCHING.

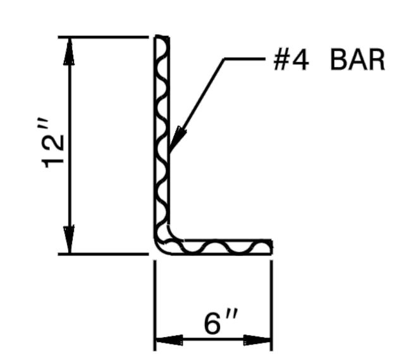
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

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

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.



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

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

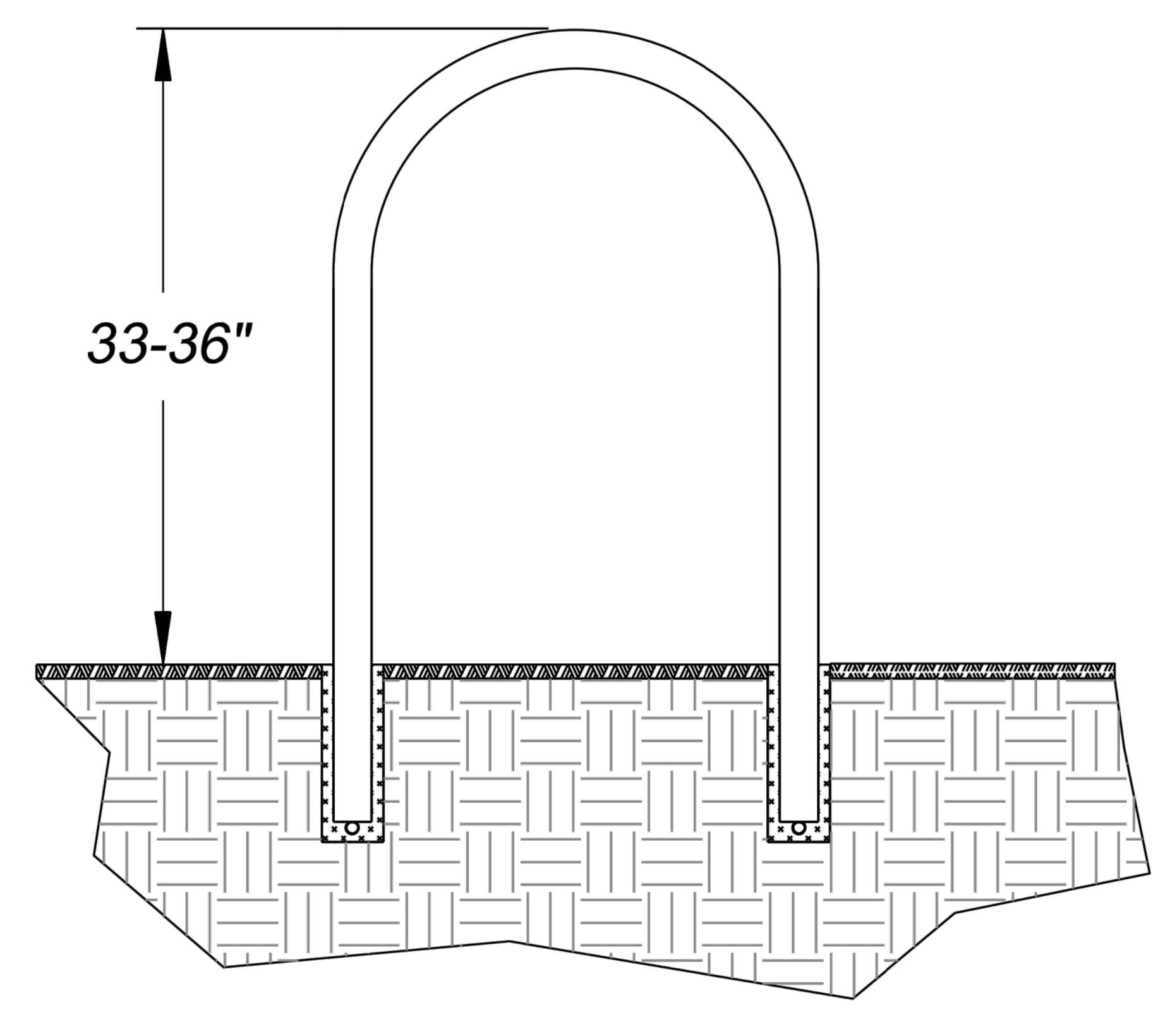
1-18

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

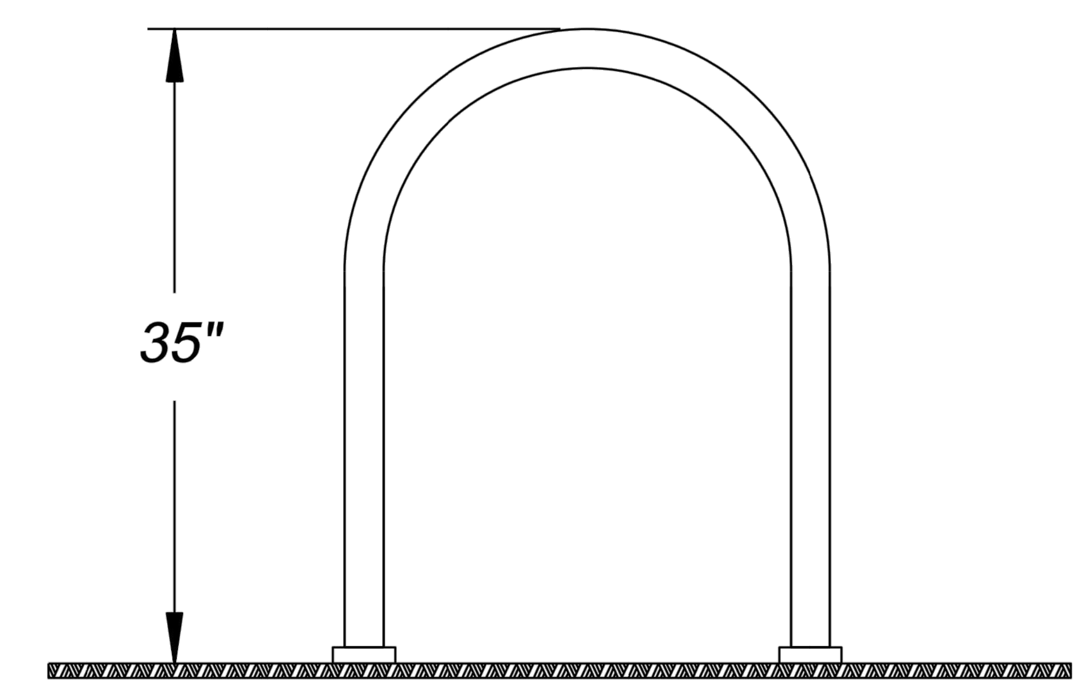
SHEET 1 OF 1

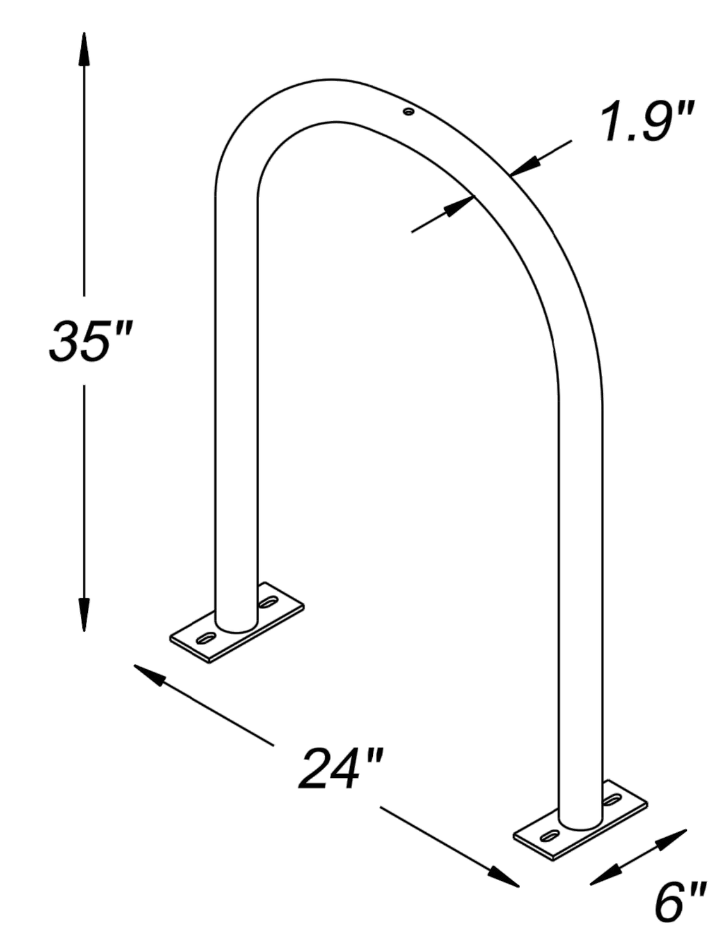
840.14

IN-GROUND MOUNT



SURFACE MOUNT





STANDARD BIKE RACK

BIKE RACK INSTALLATION:

SURFACE MOUNT - WHEN INSTALLED ON CONCRETE SURFACE, USE 3/8" ANCHORS TO PLATE MOUNT. SHIM AS NECESSARY TO ENSURE VERTICAL PLACEMENT.

IN-GROUND MOUNT - WHEN INSTALLED ON PAVERS OR OTHER NON-STABLE SURFACES, EMBED INTO BASE. CORE HOLES NO LESS THAN 3" IN DIAMETER AND 10" DEEP.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/2020	NOT TO SCALE
	BIKE RACK DETAILS	
	B-20.03	

811
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5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
CIVIL DETAILS SHEET

DATE 11/13/2023

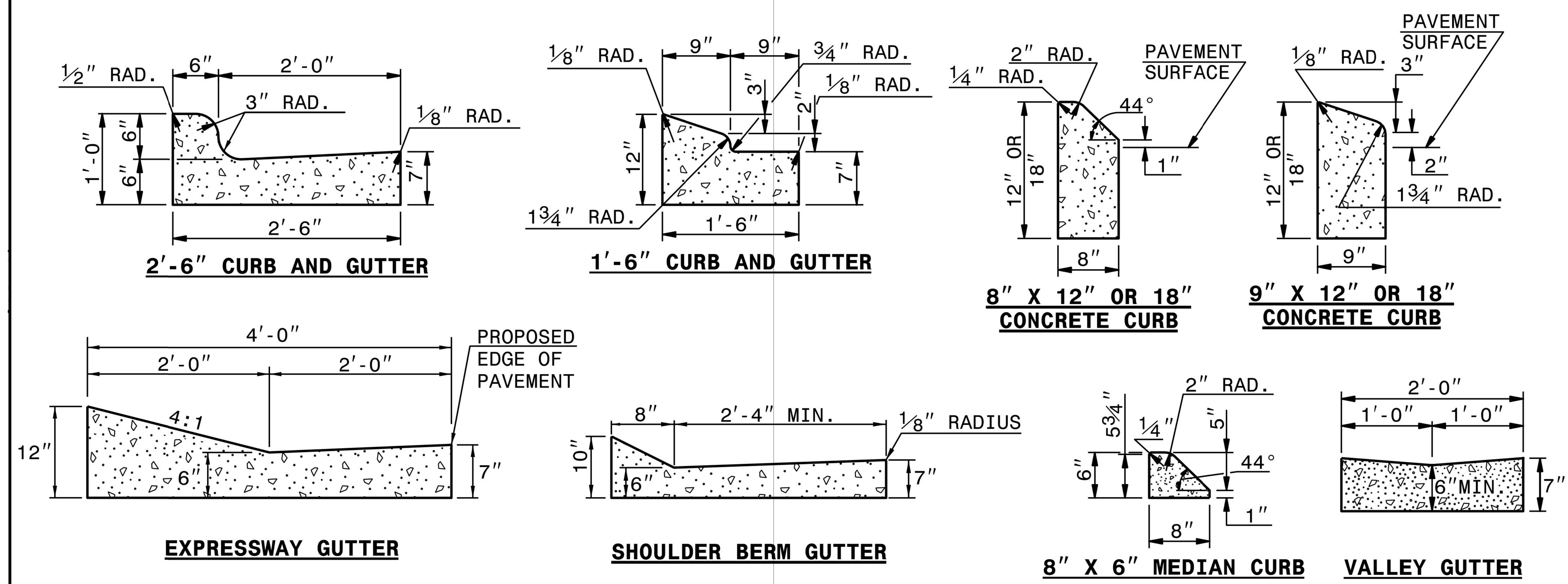
REVISIONS

[redacted]

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C702

CAD FILE: C700 DETAILS

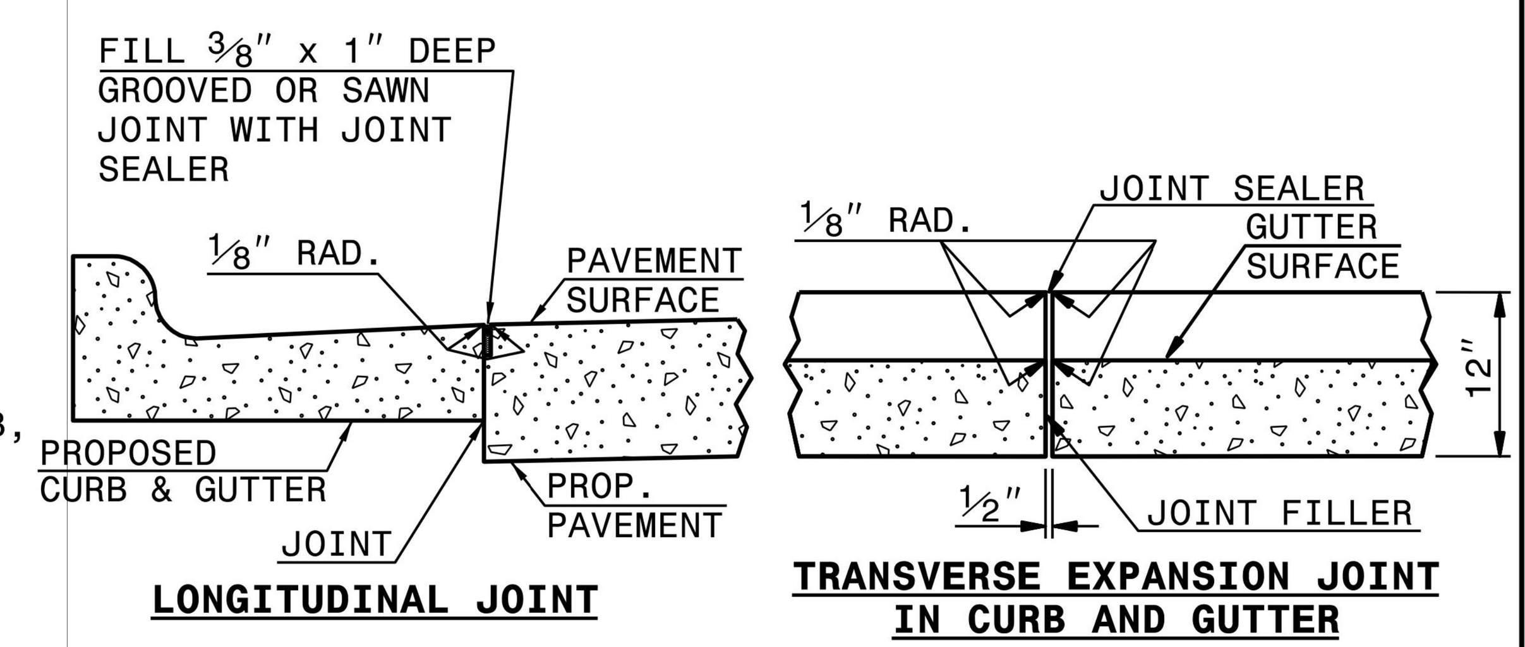
NOT-ISSUED-FOR-CONSTRUCTION



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 1 1/2" 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.



SECTION VIEW OF JOINTS

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

1-18

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

SHEET 1 OF 3

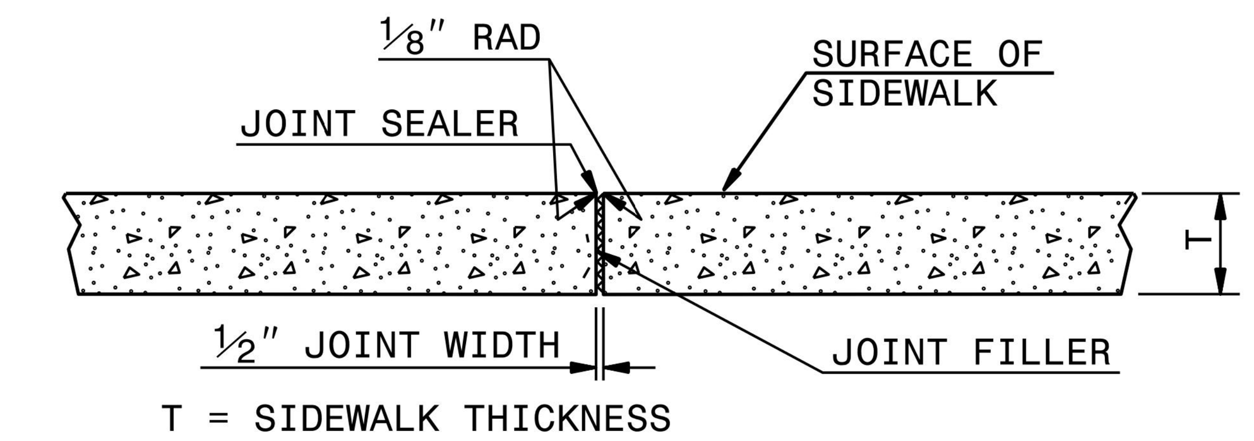
846.01

NOTES:

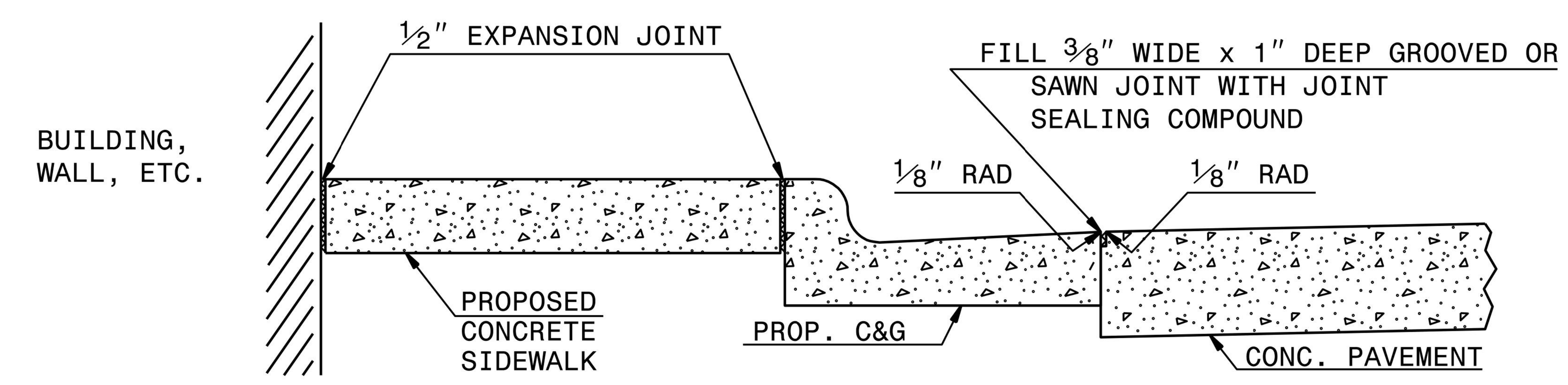
CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

PLACE A GROOVE JOINT 1" DEEP WITH 1/8" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A 1/2" 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.

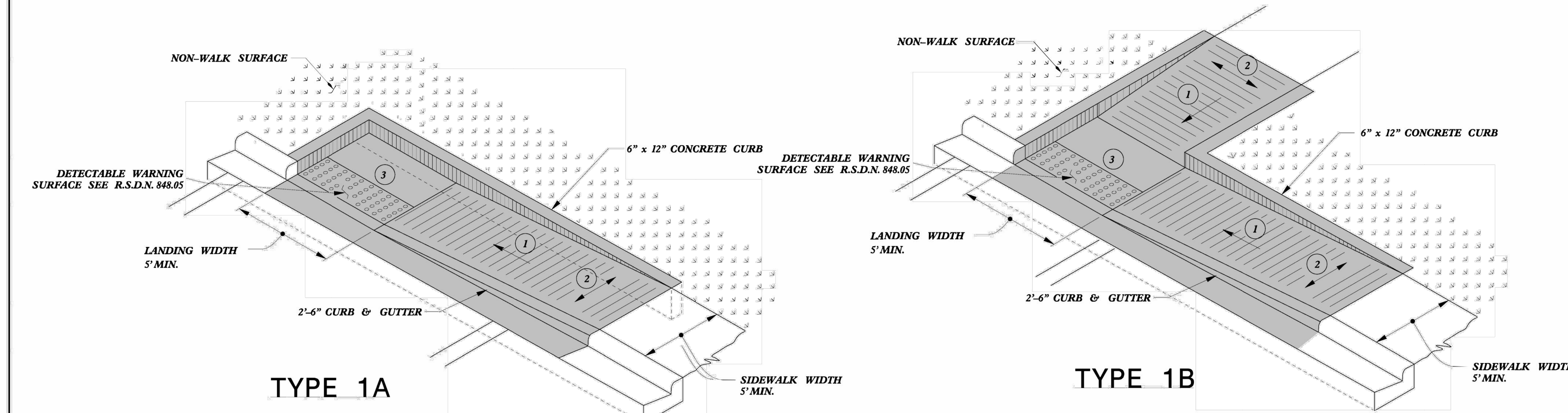
1-18

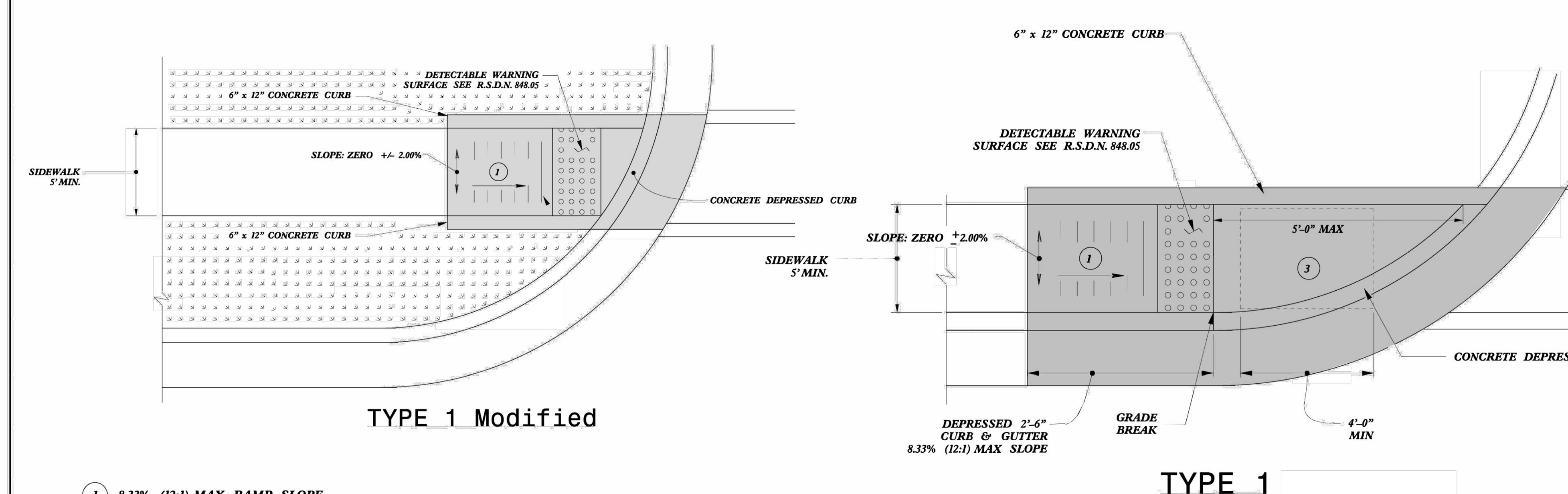
ROADWAY STANDARD DRAWING FOR
CONCRETE SIDEWALK

SHEET 1 OF 1

848.01

PROJECT REFERENCE NO. | SHEET NO.





1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

PAY LIMITS FOR 1 CURB RAMP

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 33144 NICOLE M. HACKLER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

CURB RAMPS
Directional Ramps

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC. stds/2012CurbRamp/CurbRampDetails.dgn

Know what's **below.** **Call** before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
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MARIETTA, GA
770.423.0807
COA#P-2380

PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
CIVIL DETAILS SHEET

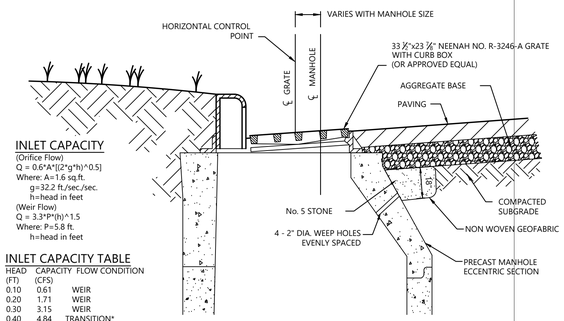
DATE 11/13/2023

REVISIONS

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C701

CAD FILE: C700 DETAILS

NOT-ISSUED-FOR-CONSTRUCTION



INLET CAPACITY
(Orifice Flow)
Q = 0.6*A*[(2*g*h)^0.5]
Where: A=1.6 sq.ft.
g=32.2 ft./sec./sec.
h=head in feet
(Weir Flow)
Q = 3.3*P*(h)^1.5
Where: P=5.8 ft.
h=head in feet

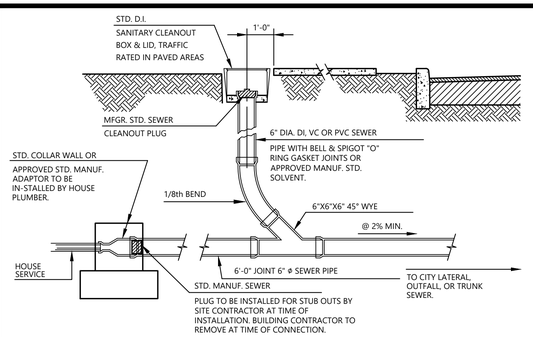
INLET CAPACITY TABLE

HEAD (FT)	CAPACITY (CFS)	FLOW CONDITION
0.10	0.61	WEIR
0.20	1.71	WEIR
0.30	3.15	WEIR
0.40	4.84	TRANSITION*
0.50	5.45	TRANSITION*

*Compared Weir and Orifice Capacity and used lower value.

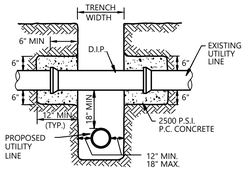
HOODED CURB INLET WITH WEEP HOLES

N.T.S.



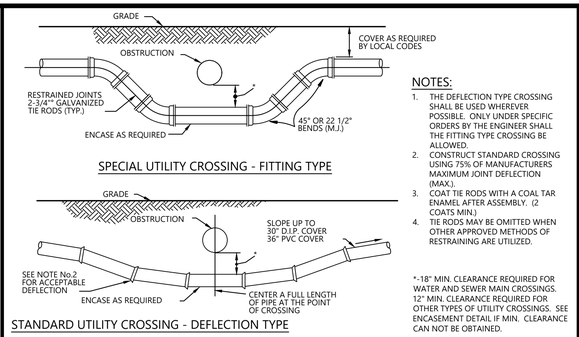
STANDARD SANITARY CLEAN-OUT

N.T.S.



UTILITY CROSSING

N.T.S.



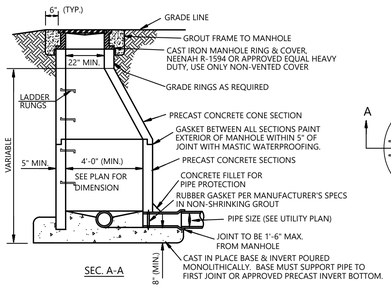
NOTES:

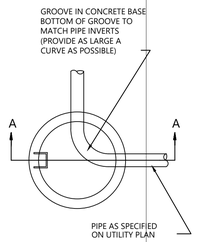
1. THE DEFLECTION TYPE CROSSING SHALL BE USED WHEREVER POSSIBLE. ONLY UNDER SPECIFIC ORDERS BY THE ENGINEER SHALL THE FITTING TYPE CROSSING BE ALLOWED.
2. CONSTRUCT STANDARD CROSSING USING 75% OF MANUFACTURERS MAXIMUM JOINT DEFLECTION (MAX.).
3. COAT TIE RODS WITH A COAL TAR ENAMEL AFTER ASSEMBLY. (2 COATS MIN.)
4. TIE RODS MAY BE OMITTED WHEN OTHER APPROVED METHODS OF RESTRAINING ARE UTILIZED.

*-18" MIN. CLEARANCE REQUIRED FOR WATER AND SEWER MAIN CROSSINGS. 12" MIN. CLEARANCE REQUIRED FOR OTHER TYPES OF UTILITY CROSSINGS. SEE ENCASEMENT DETAIL IF MIN. CLEARANCE CAN NOT BE OBTAINED.

UTILITY CROSSING

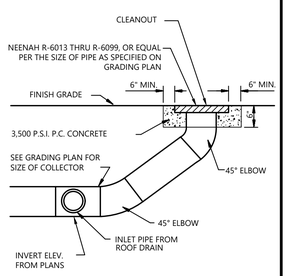
N.T.S.





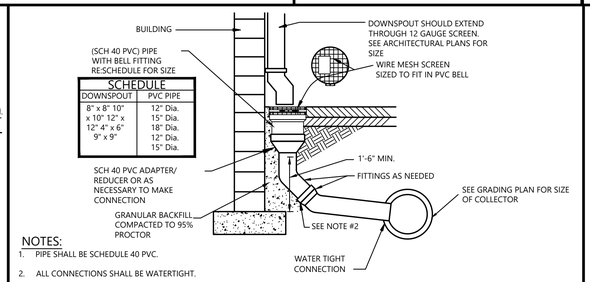
PRE-CAST SANITARY SEWER MANHOLE

N.T.S.



STORM DRAIN CLEAN-OUT

N.T.S.

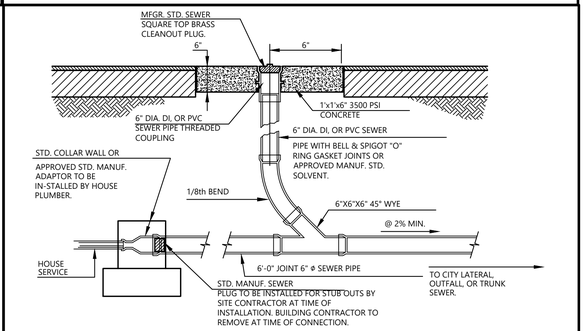


NOTES:

1. PIPE SHALL BE SCHEDULE 40 PVC.
2. ALL CONNECTIONS SHALL BE WATERTIGHT.
3. THE DOWNSPOUT COLLECTOR DRAIN SHALL BE INSTALLED BEFORE THE DOWNSPOUTS ARE INSTALLED ON THE BUILDING. SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO AND INCLUDING THE RODENT SCREEN.
4. BUILDING CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONNECTION AT THE POINT OF THE RODENT SCREEN. INSTALL PIPES CLEAR OF PORCHES, BOLLARDS, AND OTHER BUILDING APPURTENANCES.

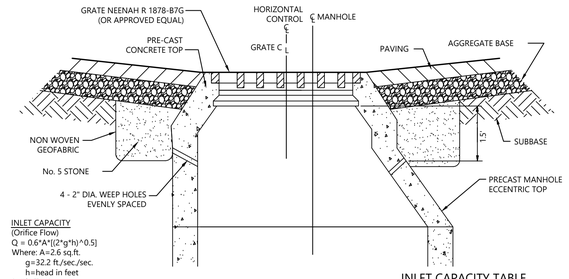
DOWNSPOUT COLLECTOR

N.T.S.



HEAVY DUTY SANITARY CLEAN-OUT IN ROADWAY SECTION

N.T.S.



INLET CAPACITY
(Orifice Flow)
Q = 0.6*A*[(2*g*h)^0.5]
Where: A=2.6 sq.ft.
g=32.2 ft./sec./sec.
h=head in feet
(Weir Flow)
Q = 3.3*P*(h)^1.5
Where: P=10.5 ft.
h=head in feet

INLET CAPACITY TABLE

HEAD (FT)	CAPACITY (CFS)	FLOW CONDITION
0.10	1.10	WEIR
0.20	3.10	WEIR
0.30	5.69	WEIR
0.40	7.92	TRANSITION*
0.50	8.85	TRANSITION*

*Compared Weir and Orifice Capacity and used lower value.

24"x36" GRATE INLET

N.T.S.

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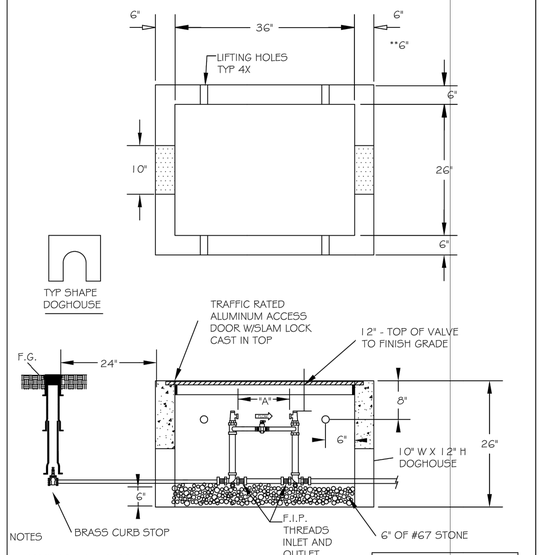
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C703

CAD FILE: C700 DETAILS

NOT-ISSUED-FOR-CONSTRUCTION



NOTES

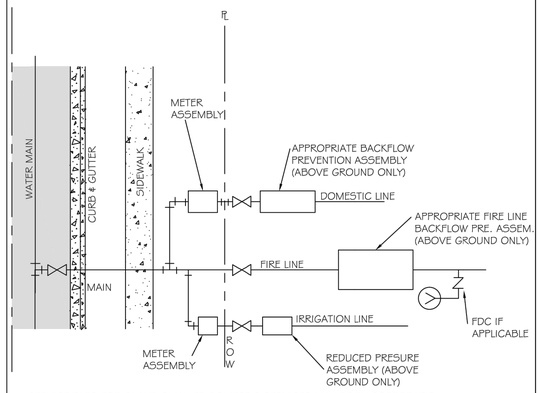
1. METER AS MANUFACTURED BY SENSUS OR NEPTUNE.
2. BACKFILL TAMPED IN 6" LIFTS.
3. REINFORCEMENT: #4 @ 6" OCEW
4. CONCRETE: 4,000 PSI @ 28 DAYS
5. ALL RPZ BACKFLOW PREVENTION DEVICES MUST BE INSTALLED PRIOR TO METER BEING SET.
6) ALL COPPER SETTERS ARE TO HAVE A BALL TYPE SHUT OFF VALVE ON BOTH SIDES OF COPPER SETTER WITH HIGH RISE BYPASS THAT IS MANUFACTURED BY FORD, MUELLER, OR AY McDONALD. (NO EXCEPTIONS)

DIMENSION "A"	
1½" METER	13¼"
2" METER	17¼"

** TRAFFIC RATED VAULT WALL THICKNESS

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TYPICAL 1 1/2"- 2" WATER METER BOX INSTALLATION

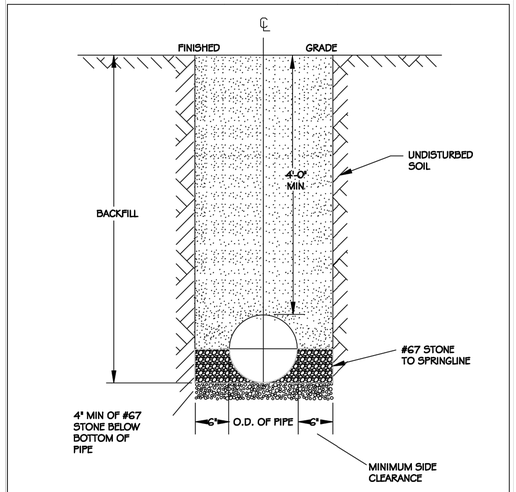
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-31	A.B.B.	8-17-04	J.P.S.	11-4-10
	D.H.L	6-18-08		



1. SERVICE TAPS FOR 2" AND SMALLER DOMESTIC SERVICES MAY BE BY CORPORATION COCKS. LARGER SERVICES WILL REQUIRE A TEE AND GATE VALVE OR TAPPING SLEEVE AND VALVE ASSEMBLY AND 90° BEND.
2. DOMESTIC SERVICE TAPS SHALL BE ALLOWED ONLY ON 6" OR LARGER FIRE LINES BEFORE THE BACKFLOW ASSEMBLY.
3. ONE DOMESTIC TAP PER FIRE LINE ON STREET SIDE OF BACKFLOW. 4. FIRE LINE SHALL HAVE A FIRE HYDRANT OR BLOW OFF ASSEMBLY AT ITS END TO FACILITATE FLUSHING WHEN NEEDED.
5. IRRIGATION METER SHALL BE LOCATED ON THE SIDE OF DOMESTIC METER WITH INCREASING ADDRESSES.
6. THE BACKFLOW SHALL BE INSTALLED NO MORE THAN 10' FROM THE METER IN A VISIBLE LOCATION.
7. DOMESTIC/IRRIGATION BACKFLOW RISER/STANDPIPE SHALL BE OF COPPER OR BRASS.
8. THE RP RELIEF VALVE SHALL BE A MINIMUM OF 12" ABOVE ANY MATERIAL (MULCH INCLUDED) OR GRADE.
9. A SERVICE VALVE IS REQUIRED AFTER THE METER BUT BEFORE THE BACKFLOW ASSEMBLY FOR MAINTENANCE AND REPLACEMENT PURPOSES.
10. THE INSTALLATION MUST ALSO MEET ALL CODE REQUIREMENTS PER THE NC PLUMBING CODE.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
FIRE, DOMESTIC & IRRIGATION OPTIONS SCHEMATIC

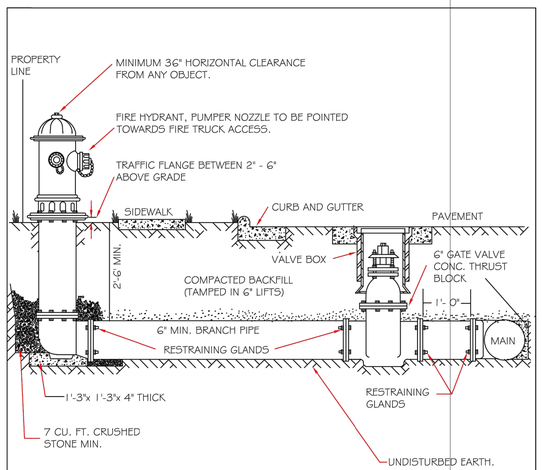
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-34	D.W.C.	11-18-99	A.B.B.	7-10-04
	RRH	3-31-00	D.H.L.	6/18/08



NOTES:
1. TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS.
5. ACHIEVE 95% COMPACTION IN BACKFILL.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR PVC REUSE MAINS

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
R-3a	D.W.C.	9-3-99	ABB	2-15-05
	RRH	3-31-00	J.P.S	10-1-10

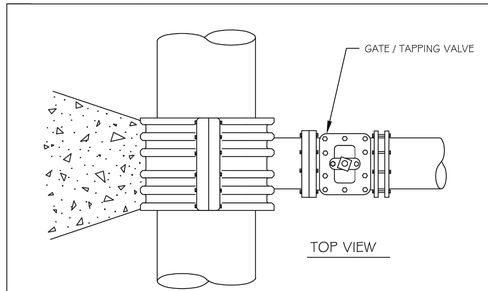


NOTES:
1. FIRE HYDRANT SHALL BE AS MANUFACTURED: MUELLER, AMERICAN DARLING, KENNEDY, M&H, WATEROUS, CLOW, EAST JORDAN IRON WORKS, OR US PIPE.
2. BRANCH PIPE SHALL BE DUCTILE IRON AWWA C150-96
3. 6" GATE VALVE SHALL BE AWWA C500-96 OPEN LEFT
4. STEEL RODS AND BOLTS SHALL BE 3" HOT DIPPED GALVANIZED
5. 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.

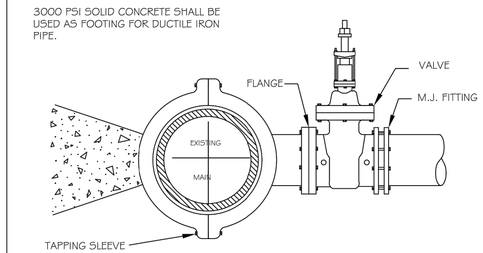
CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD FIRE HYDRANT INSTALLATION DETAIL

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-4	ABB	4-6-04	PAP	2/17/09
	DHL	2/14/08		



TOP VIEW

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

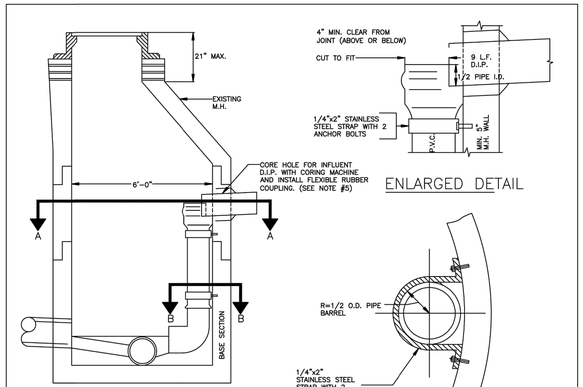


SIDE VIEW

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.

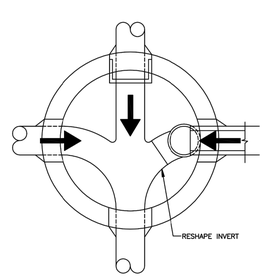
CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
4" - 24" STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY

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



ENLARGED DETAIL

SECTION B–B



SECTION A–A

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		

811
Know what's below. Call before you dig.
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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TRISH NEARHOOF-EUBANKS
813.323.9233

ATWELL
866.850.4200 www.atwell-group.com
1800 PARKWAY PLACE, SUITE 700
MARIETTA, GA
30067
COA#—2380

PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
CIVIL DETAILS SHEET

DATE 11/13/2023

REVISIONS

CAD FILE: C700 DETAILS

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C704

NOT-ISSUED-FOR-CONSTRUCTION

PRODUCT SPECIFICTIONS

Filtrexx SiltSoxx® ORIGINAL

filtrexx® SUSTAINABLE TECHNOLOGIES

PURPOSE & DESCRIPTION

Filtrexx **SiltSoxx ORIGINAL** is a pre-filled compost filter sock comprised of mesh material and certified FilterMedia™. Filtrexx SiltSoxx ORIGINAL strength mesh is the most widely recognized and used product in the industry. Available in green/black stripe or tan.

APPLICATIONS

- Perimeter Control
- Inlet Protection
- Check Dams
- Slope Interruption

FOR ADDITIONAL INFORMATION

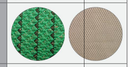
Refer to the **Filtrexx Catalog** for full item listings.

Refer to **Filtrexx Design Specifications** for complete application, design, installation, maintenance, and removal documentation at www.filtrexx.com/specs

FIELD APPLICATION PHOTO REFERENCES

Filtrexx SiltSoxx ORIGINAL used as Perimeter Control.

Filtrexx SiltSoxx ORIGINAL Specifications

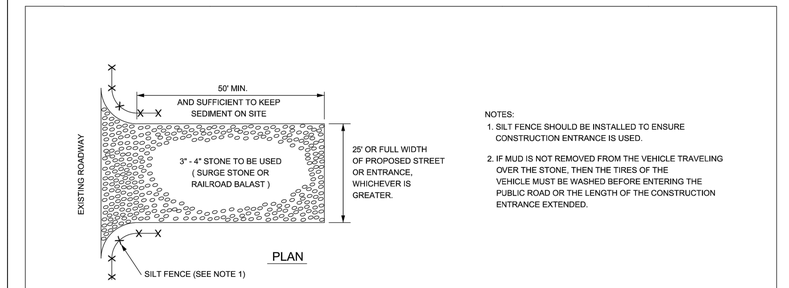
Product Name	**SiltSoxx ORIGINAL**
Mesh Material Type	Multi-Filament Polypropylene (MFPP) Photodegradable
Uses	standard sediment control applications
Mesh Opening Size	1/8"
Diameters	5", 8", 12", 18", 24"
Functional Longevity/ Project Duration[1]	up to 5 yr
Tensile Strength (ASTM D4595)[2]	MD: 670 lbs TD: 423 lbs
Fill Material	Locally sourced FilterMedia™
Mesh Color	green/thin black stripe; tan (5", & 8" only)
Mesh Sample	
FilterMedia Sample	

[1]Functional longevity ranges are estimates only. Site specific environmental conditions may result in significantly shorter or longer time periods.
[2]Tensile Strength is based on 12" diameter using ATSM D4595. See Filtrexx TechLink #3342 for full tensile strength testing.

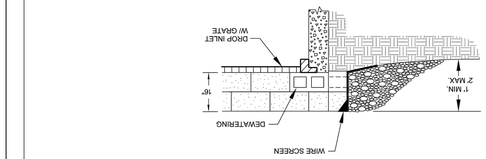
Filtrexx SiltSoxx is in compliance with most state & federal agencies including:

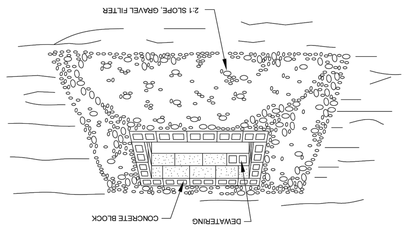
US Army Corps of Engineers. USDA NRCS Made in USA USDA CERTIFIED BIOBASED PRODUCT

filtrexx.com | 877.542.7699 | info@filtrexx.com



CITY OF RALEIGH
STANDARD DETAIL
NOT TO SCALE
REVISIONS | DATE: 8/2020
CONSTRUCTION ENTRANCE
SW-20.09





CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. PLACE THE BOTTOM ROW OF BLOCK AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS.
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, 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
4. NOT TO BE USED FOR SEDIMENT STORAGE OR ON ROADWAYS OPEN TO PUBLIC TRAFFIC.

CITY OF RALEIGH
STANDARD DETAIL
NOT TO SCALE
REVISIONS | DATE: 8/2020
BLOCK AND GRAVEL DROP INLET PROTECTION
SW-20.14

24 HOUR EMERGENCY CONTACT
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ATWELL
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1800 PARKWAY PLACE, SUITE 700
MARIETTA, GA
COA#: C-2380

PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
ESPCP DETAILS SHEET

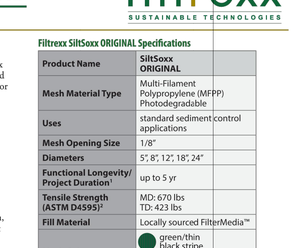
DATE 11/13/2023

CAD FILE: C800 EROSION DETAILS

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C800

NOT-ISSUED-FOR-CONSTRUCTION

TYPE "BELOW GRADE"



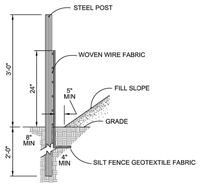
TYPE "ABOVE GROUND" WITH WOOD PLANKS

CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

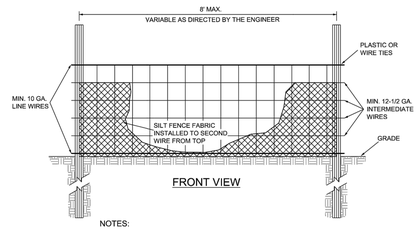
TYPE "ABOVE GRADE" WITH STRAW BALES

NOTES:
1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.
5. MUST BE LOCATED >50 FT AWAY FROM INLETS/WATERWAYS UNLESS THERE IS NO OTHER PRACTICAL ALTERNATIVE.

CITY OF RALEIGH
STANDARD DETAIL
REVISIONS | DATE: 8/2020 | NOT TO SCALE
CONCRETE WASHOUT
SW-20.25



MAINTENANCE: CLEAN OUT AT 50% CAPACITY
LIFE OF FENCING: 6-9 MONTHS

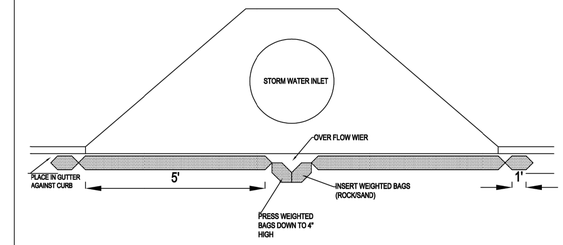


NOTES:
1. FLOW SHALL NOT RUN PARALLEL WITH THE FENCE.
2. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.
3. SEE NC DEQ SEDIMENT DESIGN MANUAL FOR CONSTRUCTION SPECIFICATIONS, WHERE PRACTICE APPLIES AND PLANNING CONSIDERATIONS.
4. SILT FENCE SHOULD NOT BE USED ALONE BELOW GRADED SLOPES GREATER THAN 10' IN HEIGHT.

CITY OF RALEIGH
STANDARD DETAIL
NOT TO SCALE
REVISIONS | DATE: 8/2020
STANDARD TEMPORARY (SEDIMENT/SILT) FENCE
SW-20.01

SS-300

SILT - SAVER
EROSION AND SEDIMENT CONTROL PRODUCTS

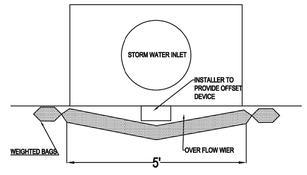


INSTALLATION

1. IDENTIFY CURB OPENING DIMENSIONS TO DETERMINE THE NUMBER OF SS-300 CURB INLET FILTERS THAT WILL BE REQUIRED
2. INSTALL WEIGHTED BAGS OF #57 STONE/SAND INTO EACH OPEN END OF THE SS-300 + SECURE WITH ZIP TIES (PROVIDED)
3. SECURE ENDS OF THE WEIGHTED BAGS WITH TIES.
4. PLACE THE SS-300 CURB INLET FILTER(S) IN FRONT OF THE CURB INLET OR OPENING TO PREVENT THE MIGRATION OF SILT INTO THE STORM DRAIN SYSTEM.
5. USE WEIGHTED ENDS TO CREATE STORM WATER OVER FLOW WEIR.

(EACH SS-300 INCLUDES 2 EMPTY SAND BAGS AND 2 ZIP-TIES TO SECURE WEIGHTED ENDS)

INSTALLATION PROCEDURES AND SAFETY CONSIDERATIONS CAN VARY UPON SITE CONDITIONS. DO NOT COMPLETELY BLOCK THE OPENING PROVIDED FOR OVERFLOW, INSTALLER TO PROVIDE OFFSET DEVICE



CURB INLET FILTER
SS-300

SLEEVE MATERIAL: HIGH VISIBILITY GREEN HIGH FLOW POLYESTER GEOTEXTILE
FILTER MATERIAL: PINE STRAW
SCALE: NOT TO SCALE
LAST UPDATED: 11-22-21

SILT-SAVER, INC. 1200 FORRESTER CEMETERY RD, COVINGTON, GA 30014 PHONE: (770) 388-7818 FAX: (770) 388-7840 TOLL FREE: 1-888-382-SILT (7458) www.siltsaver.com

6.66 COMPOST SOCK

C SOCK

Definition

A compost sock is a three-dimensional tubular sediment control and storm water runoff device typically used for perimeter control of sediment and soluble pollutants (such as phosphorous and petroleum hydrocarbon), on and around construction activities. Compost socks trap sediment and other pollutants in runoff water as it passes through the matrix of the sock and by allowing water to temporarily pond behind the sock, allowing deposition of suspended solids. Compost socks are also used to reduce runoff flow velocities on sloped surfaces.

Compost products acceptable for this application should meet the chemical, physical and biological properties specified for Practice 6.18, *Compost Blankets.*

Figure 6.66a – Compost Sock
Photo Credit – Filtrexx International

Conditions Where Practice Applies

Compost socks are to be installed down slope of disturbed areas requiring erosion and sediment control. Compost socks are effective when installed perpendicular to sheet flow, in areas where sediment accumulation of less than six inches is anticipated. Acceptable applications include (Fifield, 2001):

- Site perimeters
- Below disturbed areas subject to sheet runoff, with minor sheet or rill erosion. Compost socks should not be used alone below graded slopes greater than 10 feet in height.
- Above graded slopes to serve as a diversion berm.

- Check dams
- Along the toe of stream and channel banks
- Around area drains or inlets located in a storm drain system
- Around sensitive trees where trenching of silt fence is not beneficial for tree survival or may unnecessarily disturb established vegetation.
- On paved surfaces where trenching of silt fence is impossible.

A compost sock can be applied to areas of sheet runoff, on slopes up to a 2:1 grade with a maximum height of 10 feet, around inlets, and in other disturbed areas of construction sites requiring sediment control. Compost socks may also be used in sensitive environmental areas, or where trenching may damage roots.

The weight of a filled sock (40 lbs / linear ft. for 8" diameter) effectively prevents sediment migration beneath the sock. It is possible to drive over a compost sock during construction (although not recommended); however, these areas should be immediately repaired by manually moving the sock back into place, if disturbed. Continued heavy construction traffic may destroy the fabric mesh, reduce the dimensions, and reduce the effectiveness of the compost sock. Vegetating the compost sock should be considered.

Planning Considerations

Compost socks shall either be made on site or delivered to the jobsite assembled. The sock shall be produced from a 5 mil thick continuous HDPE or polypropylene, woven into a tubular mesh netting material, with openings in the knitted mesh of ⅛" - ¾" (3-10mm). This shall then be filled with compost meeting the specifications outlined in Practice 6.18, *Compost Blankets,* with the exception of particle size, to the diameter of the sock. Compost sock netting materials are also available in biodegradable plastics for areas where removal and disposal are not desired (i.e., when using pre-seeded socks). Compost socks contain the compost, maintaining its density and shape.

Compost socks should be installed parallel to the base of the slope or other affected area, perpendicular to sheet flow. The sock should be installed a minimum of 10 feet beyond the top of graded slopes. When runoff flows onto the disturbed area from a land above the work zone, a second sock may be constructed at the top of the slope in order to dissipate flows.

On locations where greater than a 200-foot long section of ground is to be treated with a compost sock, the sock lengths should be sleeved. After one sock section (200 feet) is filled and tied off (knotted) or zip tied, the second sock section shall be pulled over the first 1-2 feet and 'sleeved' creating an overlap. Once overlapped, the second section is filled with compost starting at the sleeved area to create a seamless appearance. The socks may be staked at the overlapped area (where the sleeve is) to keep the sections together. Sleeving at the joints is necessary because it reduces the opportunity for water to penetrate the joints when installed in the field.

Compost Sock BMP	Conventional Application	Product Description	Example
Silt Socks	Silt Fence (on smaller areas)	A 3-dimensional sediment control measure used for sediment removal	
Inlet Socks	Inlet Protection	Designed to allow stormwater to enter inlets while removing sediment and protecting inlets from clogging	
Ditch Check	Rock Check Dams	Contours to ditch shape and eliminates gullies	

Table 6.66a Compost Sock BMPs as Replacements for Current Erosion Control Practices
Photo credits: Filtrexx International

After filling, the compost sock must be staked in place. Oak or other durable hardwood stakes 2"x 2" in cross section should be driven vertically plumb, through the center of the compost sock. Stakes should be placed at a maximum interval of 4 feet, or a maximum interval of 8 feet if the sock is placed in a 4 inch trench. See Figure 6.66b. The stakes should be driven to a minimum depth of 12 inches, with a minimum of 3 inches protruding above the compost sock.

If the compost sock is to be left as part of the natural landscape, it may be seeded at time of installation for establishment of permanent vegetation using the seeding specification in the erosion and sedimentation control plan. A maximum life of 2 years for photodegradable netting and 6 months for biodegradable netting should be used for planning purposes.

Compost socks may be used as check dams in ditches not exceeding 3 feet in depth. Normally, 8 to 12 inch diameter socks should be used. Be sure to stake the sock perpendicular to the slope of the ditch. When used as check dams, installation should be similar to that of natural fiber wattles. The ends and middle of the sock should be staked, and additional stakes placed at a 2-foot maximum interval. See Table 6.66b for spacing.

Design Criteria

The sediment and pollutant removal process characteristic to a compost sock allows deposition of settling solids. Ponding occurs when water flowing to the sock accumulates faster than the hydraulic flow through rate of the sock. Typically, initial hydraulic flow-through rates for a compost sock are 50% greater than geotextile fabric (silt fence). However, installation and maintenance is especially important for proper function and performance. Design consideration should be given to the duration of the project, total area of disturbance, rainfall/runoff potential, soil erosion potential, and sediment loading when specifying a compost sock.

Runoff Flow:
The depth of runoff ponded above the compost sock should not exceed the height of the compost sock. If overflow of the device is a possibility, a larger diameter sock should be constructed, other sediment control devices may be used, or management practices to reduce runoff should be installed. Alternatively, a second sock may be constructed or used in combination with Practice 6.17, *Rolled Erosion Control Products* or Practice 6.18, *Compost Blankets* to slow runoff and reduce erosion.

Level Contour:
The compost sock should be placed on level contours to assist in dissipating low concentrated flow into sheet flow and reducing runoff flow velocity. Do not construct compost socks to concentrate runoff or channel water. Sheet flow of water should be perpendicular to the sock at impact and un-concentrated. Placing compost socks on undisturbed soil will reduce the potential for undermining by concentrated runoff flows.

Runoff and Sediment Accumulation:
The compost sock should be placed at a 10 foot minimum distance away from the toe of the slope to allow for proper runoff accumulation for sediment deposition and to allow for maximum sediment storage capacity behind the device. On flat areas, the sock should be placed at the edge of the land-disturbance.

End Around Flow:
In order to prevent water flowing around the ends of the compost sock, the ends of the sock must be constructed pointing upslope so the ends are at a higher elevation. A minimum of 10 linear feet at each end placed at a 30 degree angle is recommended.

Vegetated Compost Sock:
For permanent areas the compost sock can be directly seeded to allow vegetation established directly on the device. Vegetation on and around the compost sock will assist in slowing runoff velocity for increased deposition of pollutants. The option of adding vegetation should be shown on the erosion and sedimentation control plan. No additional soil amendments or fertilizer are required for vegetation establishment in the vegetated compost sock.

Slope Spacing & Drainage Area:
Maximum drainage area to and spacing between the compost socks is dependent on rainfall intensity and duration used for specific design/plan, slope steepness, and width of area draining to the sock.

A compost sock across the full length of the slope is normally used to ensure that stormwater does not break through at the intersection of socks placed end-to-end. Ends are jointed together by sleeving one sock end into the other. The diameter of the compost sock used will vary depending upon the steepness and length of the slope; example slopes and slope lengths used with different diameter compost socks are presented in Table 6.66b.

Table 6.66b - Compost Sock Spacing versus Channel Slope

Channel Slope (%)	Spacing Between Socks (feet)	
	8-inch Diameter Sock	12-inch Diameter Sock
1	67	100
2	33	50
3	22	33
4	17	25
5	13	20

Source: B. Faucette – 2010

Material:
The compost media shall be derived from well-decomposed organic matter source produced by controlled aerobic (biological) decomposition that has been sanitized through the generation of heat and stabilized to the point that it is appropriate for this particular application. Compost material shall be processed through proper thermophilic composting, meeting the US Environmental Protection Agency's definition for a 'Process to Further Reduce Pathogens' (PFRP), as defined at 40 CFR Part 503. The compost portion shall meet the chemical, physical and biological properties specified in Practice 6.18, *Compost Blankets* Table 6.18a, with the exception of particle size. Slightly more coarse compost is recommended for the socks, as follows:

Particle Size Distribution

Sieve Size	Percent Passing Selected Sieve Mesh Size, Dry Weight Basis
2"	99 % (3" Maximum Particle Size)
3/8"	30-50 %

See Practice 6.18, *Compost Blankets* for complete information on compost parameters and tests. Installer should provide documentation to support compliance of testing required in the compost specification.

This specification covers compost produced from various organic by-products, for use as an erosion and sediment control measure on sloped areas. The product's parameters will vary based on whether vegetation will be established on the treated slope. Only compost products that meet all applicable state and federal regulations pertaining to its production and distribution may be used in this application. Approved compost products must meet related state and federal chemical contaminant (e.g., heavy metals, pesticides, etc.) and pathogen limit standards pertaining to the feedstocks (source materials) in which it are derived.

In regions subjected to higher rates of precipitation and/or greater rainfall intensity, larger compost socks should be used. In these particular regions, coarser compost products are preferred as the compost sock must allow for an improved water percolation rate. The designer should check the flow rate per foot of sock in order to ensure drainage rate of the compost sock being used is adequate. The required flow rates are outlined in Table 6.66c.

Table 6.66c – Compost Sock Initial Flow Rates

Compost Sock Design Diameter	8 inch (200mm)	12 inch (300mm)	18 inch (450mm)	24 inch (600mm)	32 inch (800mm)
Maximum Slope Length (<2%)	600 ft (183m)	750 ft (229m)	1,000 ft (305m)	1,300 ft (396m)	1,650 ft (500m)
Hydraulic Flow Through Rate	7.5 gpm/ft (94 l/m/m)	11.3 gpm/ft (141 l/m/m)	15.0 gpm/ft (188 l/m/m)	22.5gpm/ft (281 l/m/m)	30.0 gpm/ft (374 l/m/m)

Source: B. Faucette-2010

Construction Specifications

INSTALLATION

1. Materials used in the compost sock must meet the specifications outlined above and in Practice 6.18, Compost Blankets.

2. Compost socks should be located as shown on the erosion and sedimentation control plan.

3. Prior to installation, clear all obstructions including rocks, clods, and other debris greater than one inch that may interfere with proper function of the compost sock.

4. Compost socks should be installed parallel to the toe of a graded slope, a minimum of 10 feet beyond the toe of the slope. Socks located below flat areas should be located at the edge of the land-disturbance. The ends of the socks should be turned slightly up slope to prevent runoff from going around the end of the socks.

5. Fill sock netting uniformly with compost to the desired length such that logs do not deform.

6. Oak or other durable hardwood stakes 2" X 2" in cross section should be driven vertically plumb, through the center of the compost sock. Stakes should be placed at a maximum interval of 4 feet, or a maximum interval of 8 feet if the sock is placed in a 4 inch trench. See Figure 6.66b. The stakes

should be driven to a minimum depth of 12 inches, with a minimum of 3 inches protruding above the compost sock.

7. In the event staking is not possible (i.e., when socks are used on pavement) heavy concrete blocks shall be used behind the sock to hold it in place during runoff events.

8. If the compost sock is to be left as part of the natural landscape, it may be seeded at time of installation for establishment of permanent vegetation using the seeding specification in the erosion and sedimentation control plan.

9. Compost socks are not to be used in perennial or intermittent streams.

Maintenance

Inspect compost socks weekly and after each significant rainfall event (1/2 inch or greater). Remove accumulated sediment and any debris. The compost sock must be replaced if clogged or torn. If ponding becomes excessive, the sock may need to be replaced with a larger diameter or a different measure. The sock needs to be reinstalled if undermined or dislodged. The compost sock shall be inspected until land disturbance is complete and the area above the measure has been permanently stabilized.

DISPOSAL/RECYCLING
Compost media is a composted organic product recycled and manufactured from locally generated organic, natural, and biologically based materials. Once all soil has been stabilized and construction activity has been completed, the compost media may be dispersed with a loader, rake, bulldozer or similar device and may be incorporated into the soil as an amendment or left on the soil surface to aid in permanent seeding or landscaping. Leaving the compost media on site reduces removal and disposal costs compared to other sediment control devices. The mesh netting material will be extracted from the media and disposed of properly. The photodegradable mesh netting material will degrade in 2 to 5 years if left on site. Biodegradable mesh netting material is available and does not need to be extracted and disposed of, as it will completely decompose in approximately 6 to 12 months. Using biodegradable compost socks completely eliminates the need and cost of removal and disposal.

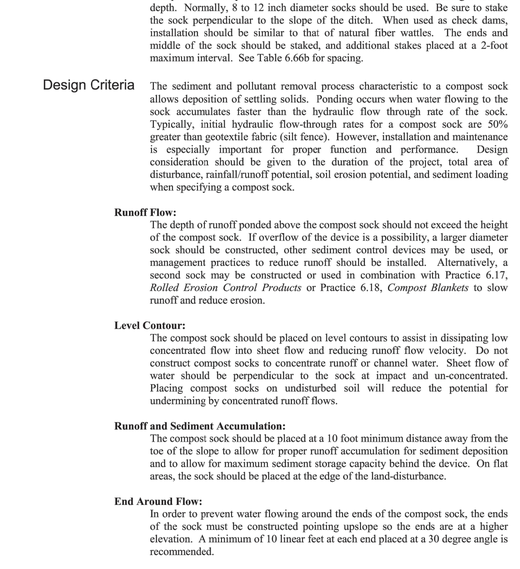


Figure 6.66b Compost Sock Installation

Maryland Standards and Specifications for Soil Erosion and Sediment Control, 2011, Maryland Department of Environment, Water Management Administration

6.50

EXCAVATED DROP INLET PROTECTION (Temporary)

Definition An excavated area in the approach to a storm drain drop inlet or curb inlet.

Purpose To trap sediment at the approach to the storm drainage systems. This practice allows use of permanent stormwater conveyance at an early stage of site development.

Conditions Where Practice Applies Where storm drain drop inlets are to be made operational before permanent stabilization of the disturbed drainage area. This method of inlet protection is applicable where relatively heavy flows are expected, and overflow capability is needed (Figure 6.50a). Frequent maintenance is required and temporary flooding in the excavated area will occur. This practice can be used in combination with other temporary inlet protection devices such as Practice 6.51, *Hardware Cloth, and Gravel Inlet Protection* and Practice 6.52, *Block and Gravel Inlet Protection*.

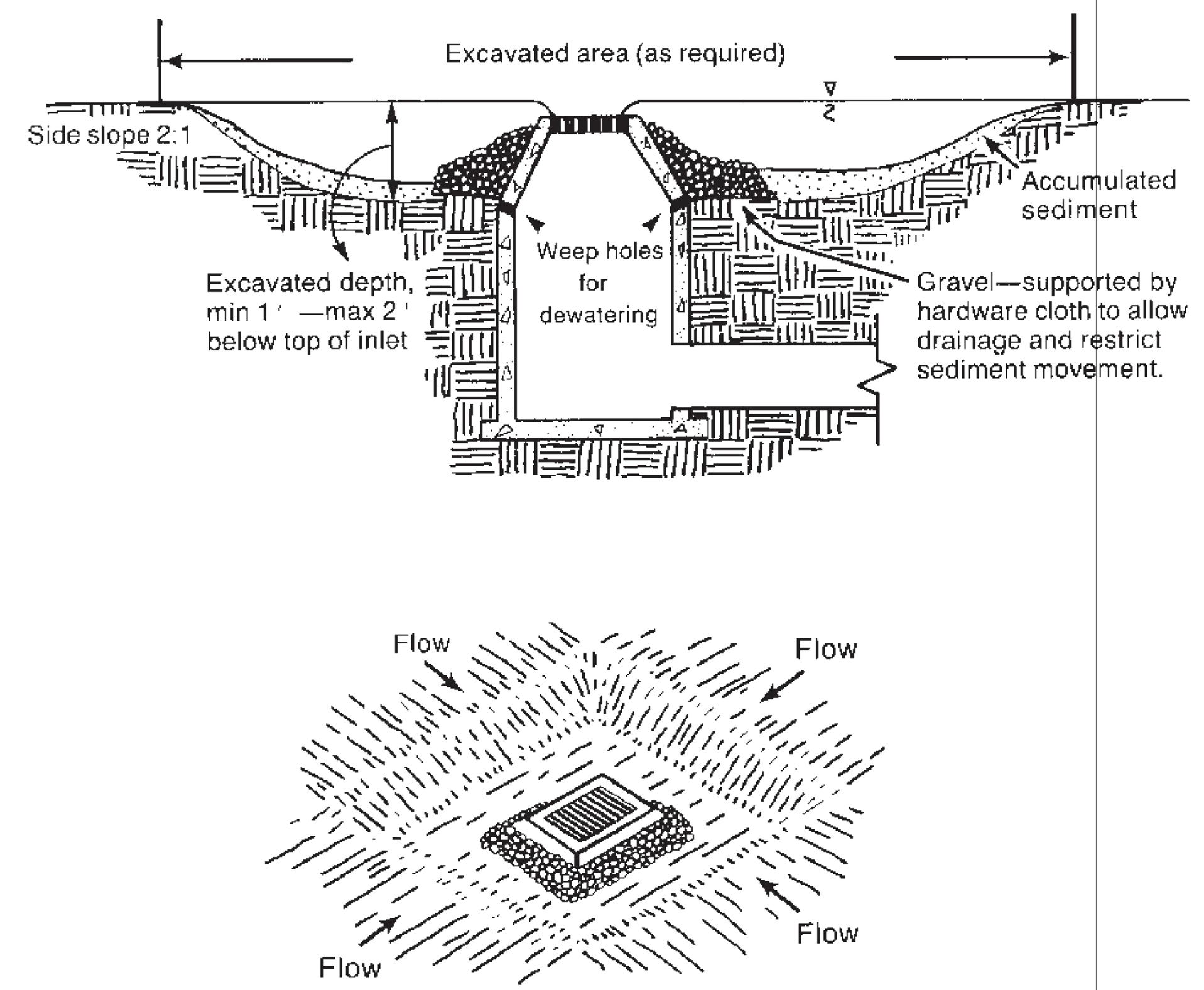


Figure 6.50a Excavated drop inlet protection.

Design Criteria Limit the drainage area to 1 acre. Keep the minimum depth at 1 foot and the maximum depth of 2 feet as measured from the crest of the inlet structure.

Maintain side slopes around the excavation no steeper than 2:1

Keep the minimum volume of excavated area around the drop inlet at approximately 1800 ft^3/acre disturbed.

Shape the basin to fit site conditions, with the longest dimension oriented toward the longest inflow area to provide maximum trap efficiency.

Install provisions for draining the temporary pool to improve trapping efficiency for small storms and to avoid problems from standing water after heavy rains.

Construction Specifications

1. Clear the area of all debris that might hinder excavation and disposal of spoil.

2. Grade the approach to the inlet uniformly.

3. Protect weep holes by gravel.

4. When the contributing drainage area has been permanently stabilized, seal weep holes, fill the basin with stable soil to final grading elevations, compact it properly, and stabilize.

Maintenance Inspect, clean, and properly maintain the excavated basin after every storm until the contributing drainage area has been permanently stabilized. To provide satisfactory basin efficiency, remove sediment when the volume of the basin has been reduced by one-half. Spread all excavated material evenly over the surrounding land area or stockpile and stabilize it appropriately.

References *Inlet Protection*
6.51, Hardware, Cloth, and Gravel Inlet Protection
6.52, Block and Gravel Inlet Protection (Temporary)

6.84

DC

DUST CONTROL

Definition The control of dust resulting from land-disturbing activities.

Purpose To prevent surface and air movement of dust from disturbed soil surfaces that may cause off-site damage, health hazards, and traffic safety problems.

Conditions Where Practice Applies On construction routes and other disturbed areas subject to surface dust movement, and dust blowing where off-site damage may occur if dust is not controlled.

Planning Considerations Construction activities that disturb soil can be a significant source of air pollution. Large quantities of dust can be generated, especially in "heavy" construction activities such as land grading for road construction and commercial, industrial, or subdivision development.

In planning for dust control, it is important to schedule construction operations so that the least area is disturbed at one time.

Leave undisturbed buffer areas between graded areas wherever possible.

The greatest dust problems occur when the probability of rainfall erosion is least. Therefore, do not expose large areas of soil, especially during drought conditions.

Install temporary or permanent surface stabilization measures immediately after completing land grading.

Design Criteria No formal design procedure is given for dust control. See Construction Specifications below for the most common dust control methods.

Construction Specifications

Vegetative cover—For disturbed areas not subject to traffic, vegetation provides the most practical method of dust control (*References: Surface Stabilization*).

Mulch (including gravel mulch)—When properly applied, mulch offers a fast, effective means of controlling dust.

Spray-on adhesive—Examples of spray-on adhesives for use on mineral soils are presented in Table 6.84a.

Table 6.84a Spray-on Adhesive for Dust Control on Mineral Soil

	Water Dilution	Type of Nozzle	Apply Gallons/Acre
Anionic asphalt emulsion	7:1	Coarse Spray	1,200
Latex emulsion	12.5:1	Fine Spray	235
Resin in water	4:1	Fine Spray	300

Calcium chloride may be applied by mechanical spreader as loose, dry granules or flakes at a rate that keeps the surface moist, but not so high as to cause water pollution or plant damage.

Sprinkling—The site may be sprinkled until the surface is wet. Sprinkling is especially effective for dust control on haul roads and other traffic routes.

Stone used to stabilize construction roads can also be effective for dust control.

Barriers—A board fence, wind fence, sediment fence, or similar barrier can control air currents and blowing soil. Place barriers perpendicular to prevailing air currents at intervals about 15 times the barrier height. Where dust is a known problem, preserve windbreak vegetation.

Tillage—Deep plow large open undisturbed areas and bring clods to the surface. This is a temporary emergency measure that can be used as soon as soil blowing starts. Begin plowing on the windward edge of the site.

Maintenance Maintain dust control measures through dry weather periods until all disturbed areas have been stabilized.

References *Surface Stabilization*
6.10, Temporary Seeding
6.11, Permanent Seeding
6.14, Mulching

Other Related Practices
6.80, Construction Road Stabilization

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CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
ESPCP DETAILS SHEET

DATE 11/13/2023

REVISIONS

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C802

CAD FILE: C800 EROSION DETAILS

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6.11

PS

PERMANENT SEEDING

Definition Controlling runoff and erosion on disturbed areas by establishing perennial vegetative cover with seed.

Purpose To reduce erosion and decrease sediment yield from disturbed areas, to permanently stabilize such areas in a manner that is economical, adapts to site conditions, and allows selection of the most appropriate plant materials.

Conditions Where Practice Applies Fine-graded areas on which permanent, long-lived vegetative cover is the most practical or most effective method of stabilizing the soil. Permanent seeding may also be used on rough-graded areas that will not be brought to final grade for a year or more.

Areas to be stabilized with permanent vegetation must be seeded or planted within 15 working days or 90 calendar days after final grade is reached, unless temporary stabilization is applied.

Introduction During the initial phase of all land disturbing projects, the protective layer, either natural or man-made, is removed from the earth's surface. As the protective layer is removed, the resulting bare areas are exposed to the natural forces of rainfall, freezing, thawing, and wind. The result is soil erosion that leads to sediment pollution of North Carolina streams, rivers, lakes, and estuaries.

This design manual presents many alternative strategies for preventing erosion and reducing sediment loss during the construction process. Establishment of protective vegetative cover during the construction project, however, is the crucial step in achieving soil stabilization, controlling soil erosion, and preventing sedimentation of waterways. Without a sufficient amount of root mat and leaf cover to protect and hold the soil in place, large volumes of soil will be lost and waterways will be degraded long after projects are considered complete.

Sections of this practice standard address many of these various situations and set forth selection criteria for the appropriate cover based on purpose and adaptability. Some sediment and erosion control practices recommended in earlier editions of the manual may no longer be applicable. For example, many popular and commonly used seed and plant varieties have been identified as invasive. Invasive plants are defined as species that aggressively compete with, and displace, locally adapted native plant communities. In select cases where no practical alternative is available, these plants may be considered on a limited basis for soil stabilization, understanding that the goal is to eliminate the use of all invasive plants in favor of non-invasive native and/or introduced species that will provide an equally acceptable vegetative cover. Where there is no alternative to the use of invasive species, measures need to be incorporated in the installation and maintenance of these plants to limit their impacts.

It is imperative that disturbed soils be totally protected from erosion and sediment loss during construction and before a project is considered complete and acceptable. Installing appropriate vegetation in an immediate and timely fashion is the optimal means of achieving this stabilization. Vegetative specifications for most exposed soil conditions across North Carolina are provided in this section of the manual. It should be noted however, that no two sites in the State are exactly alike; therefore the protective vegetative cover for individual sites should be carefully selected. Each requires its own investigation, analysis, design and vegetative prescription as set forth in this section of the manual.

This practice standard describes three stages of vegetative cover; immediate, primary and long term. Effective and acceptable stabilization can be provided only when the optimum combination of immediate, primary, and long term vegetative practices are applied.

The vegetative measures presented in this chapter include application of seed, sod and sprigs. Use of field and container grown plants are not addressed in this manual. Planting of these types of vegetation is typically at spacing and intervals that will not provide the required protective cover. However, the design professional is encouraged to utilize these larger plants to compliment the required protective cover, particularly where these types of plants will provide seed for continued long term cover and wildlife habitat.

PLANNING CONSIDERATIONS

SOILS

Test and analyze the type(s) and quality of the existing soils on a site, their pH ranges, and their nutrient levels. Taking soil samples from the different areas of the project site and having them tested at a state or independent lab will provide a baseline for determining the pH modifiers and additional nutrients required for the selected plant varieties.

Disturbed conditions on a site may produce a variety of soil communities. Nutrient and pH levels in deeply cut soils will be quite different from those soils found on the original surface. When sites are highly disturbed through mechanical means such as grading, the soils become mixed together in many different ratios. These areas should be identified and tested.

Results from soil tests will usually include recommended application rates of soil modifiers such as lime and fertilizer for the selected plant species in the particular soils. Application rates will be itemized in the report.

The texture of the soil on a site, which is the proportion of sand, silt, and clay in the soil, is an important physical indicator of the site's ability to support vegetation. In heavy clay soils amendments may be necessary to provide an adequately drained planting medium. Conversely, in extremely sandy soils, amendments may be required to provide for moisture and nutrient retention.

Soil tests will indicate the texture of the given soil but will not provide recommendations for amendments that will improve the soil texture. Generally, the addition of organic materials will improve the porosity of heavy clay soils and improve the water holding capacity of extremely sandy soils. On sites where these different soil conditions exist, it is recommended that a design professional with experience in soil modification be employed to recommend the proper amendments.

For more information visit the NCDA Agronomic Services Soil Testing web page http://www.agr.state.nc.us/agronomic/sthome.htm

SOIL PREPARATION

Proper soil preparation is necessary for successful seed germination and root establishment. It is also necessary for establishment of rooted sprigs, sod and woody plants. Heavily compacted soils prevent air, nutrients and moisture from reaching roots thereby retarding or preventing plant growth. The success of site stabilization and reduction of future maintenance are dependent on an adequately prepared soil bed. Following are the requirements for preparation of areas to be vegetated by grassing, sprigging, sodding, and/or planting of woody plants:

General Requirements:

- Preparation for primary/permanent stabilization shall not begin until all construction and utility work within the preparation area is complete. However, it may be necessary to prepare for nurse crops prior to completion of construction and installation of utilities.
- A North Carolina Department of Agriculture Soils Test (or equal) shall be obtained for all areas to be seeded, sprigged, sodded or planted. Recommended fertilizer and pH adjusting products shall be incorporated into the prepared areas and backfill material per the test.
- All areas to be seeded or planted shall be tilled or ripped to a depth specified on the approved plans, construction sequence and/or construction bid list. Ripping consists of creating fissures in a criss-cross pattern over the entire surface area, utilizing an implement that will not glaze the side walls of the fissures. Site preparation that does not comply with these documents shall not be acceptable. The depth of soil preparation may be established as a range based on the approval of the reviewing state or local agency. Once tilled or ripped according to the approved plan, all areas are to be returned to the approved final grade. pH modifiers and/or other soil amendments specified in the soil tests can be added during the soil preparation procedure or as described below.
- All stones larger than three (3) inches on any side, sticks, roots, and other extraneous materials that surface during the bed preparation shall be removed.

Areas to be Seeded:

- Till or disc the prepared areas to be seeded to a minimum depth of four (4) inches. Remove stones larger than three (3) inches on any side, sticks, roots and other extraneous materials that surface. If not incorporated during the soil preparation process, add pH modifier and fertilizers at the rate specified in the soil test report.
- Re-compact the area utilizing a cultipacker roller. The finished grade shall be a smooth even soil surface with a loose, uniformly fine texture. All ridges and depressions shall be removed and filled to provide the approved surface drainage. Seeding of graded areas is to be done immediately after finished grades are obtained and seedbed preparation is completed.

Areas to be Sprigged, Sodded, and/or Planted:

- At the time of planting till or disc the prepared areas to a depth of four (4) to six (6) inches below the approved finished grade. Remove all stones larger than three (3) inches on any side, sticks, roots and other extraneous materials that surface. If not incorporated in the ripping process, add pH modifier, fertilizer, and other recommended soil amendments.
- Re-compact the area utilizing a cultipacker roller and prepare final grades as described above. Install sprigs, sod and plants as directed immediately after fine grading is complete. Mulch, mat and/or tack as specified.

VEGETATION

Availability of seed and plant materials is an important consideration of any construction stabilization effort. Throughout North Carolina, climate, economics, construction schedule delays and accelerations, and other factors present difficult challenges in specifying the different vegetation needed for site stabilization. To help resolve this issue, vegetative stabilization requires consideration in three categories:

- Immediate Stabilization – nurse crop varieties (Note: temporary mulching may be utilized for immediate stabilization if outlined on the approved plans and construction sequence.)
- Primary Stabilization – plant varieties providing cover up to 3 years with a specified maintenance program
- Long Term Stabilization – plant varieties providing protective cover with maintenance levels selected by the owner

An adequate job in one of these areas does not guarantee success in the later phases. Horticultural maintenance must be included in the plans.

Immediate vegetative cover will always require additional fertilization, soil amendments, soil tests, overseeding and/or other horticultural maintenance until primary vegetative cover is established.

Where provisions are made for regular maintenance, primary vegetative cover may be the end result. An example of primary vegetative cover being acceptable as an end use would be lawns in residential and commercial developments that are established, monitored and complimented with regular and approved horticultural maintenance practices. (See Example 6.11.a.)

In projects where continual maintenance will not be provided or scheduled following the primary stabilization of a project, long-term stabilization will be necessary. Maintenance of initial and long-term stabilization can cease only after the long-term cover has established and hardened to local climatic conditions. Maintenance of long-term vegetation must be included in the project construction sequence and on the approved plans. Examples of areas suitable for long term vegetation include roadsides, reforestation areas, restored flood plains, restored riparian areas, phased closing of landfills, and mining reclamations.

Complete stabilization requires using at least two, and most times, all three vegetative phases. The design professional must clearly communicate this point in their specifications, construction sequence, and in direct communications to owners and installers. The charts in tables 6.11.a through 6.11.d provide information to assist the design professional in this task. The tables are not inclusive and are presented only as alternatives. The professional is expected and required to provide design and specifications that combine the information in the manual with knowledge of the particular sites and their constraints.

pH AND NUTRIENT AMENDMENTS

Determining the nutrients that enable seed and container plants to grow, flourish, and become established after planting are critical elements of the design and stabilization process. The soils tests previously described will provide a recipe for amendments based on particular plants and particular soils. The test results will recommend the amounts of base elements (nitrogen, phosphorous, potassium), pH modifiers and other trace elements that should to be added to the soil for selected species of seeds and plants.

The acid/base characteristic of the soil is a primary component of soil fertility. If the soil acidity is not in the proper range, other nutrients will be ineffective, resulting in less productive plant growth. Most plants grow best in a pH range of 6.5 – 7.0 (slightly acidic to neutral). The soil tests will recommend the specific amendments and application rates required to achieve this range. These amendments must be incorporated into the soil (not applied on the surface) to be effective. (See the General Requirements for soil preparation specifications and timing for incorporation of soil amendments.)

The base elements are easily found in bulk quantities. Lime can also be obtained in large quantities. They all must be thoroughly incorporated into the soil through appropriate mechanical means. Ground surface applications without proper soil mixing will result in poor results.

In addition to the base fertilizers, other trace elements are needed to produce healthy and vigorous growth. These include but may not be limited to sulfur, manganese, zinc, boron, chlorine and molybdenum. If not already included with bulk mixes of the base elements, they can be obtained from commercial suppliers.

Provisions for soils test during and/or after initial grading is complete shall be included on the approved plan, in the approved construction sequence, and on the bid item list utilized for the project. *If you did not obtain a soil test:* Follow these recommendations for all grasses except centipedegrass.

1. Apply 75 pounds of ground limestone per 1,000 sq. ft.
2. Apply a starter type fertilizer (one that is high in phosphorus) based on the type of grass and planting method. Fertilizer bags have a three-number system indicating the primary nutrients, such as 8-8-8 or 5-10-10. These numbers denote the N-P-K ratio—the percentage of each nutrient in a fertilizer. The percentages are always noted in the following order:

N Nitrogen for green color and growth.
P_2O_5 Phosphorus for good establishment and rooting.
K_2O Potassium to enhance pest and environmental stress tolerance.

Some common examples of starter type fertilizers required for a 1,000 sq. ft. area include 40 pounds of 5-10-10, 20 pounds of 10-20-20, or 16 pounds of 18-24-6. For sandy soils, typical to coastal plain and sandhills of North Carolina, fertilizer rates should be increased by 20 percent.

Where available, it is recommended that the design professional specify organic compounds that meet the fertilization requirements, pH and other element requirements. Initial studies have indicated that these compounds have a more positive effect on the environment than some of the synthetic compounds used to manufacture inorganic fertilizers. These materials are readily available in the commercial trade as well as found in recycled yard waste debris, sewerage sludge, lime-stabilized sludge and animal manures. Materials proposed for use must be industry certified and/or privately tested and certified to be acceptable for proposed areas of use and application prior to approval.

MULCHES AND TACKING AGENTS

Mulches and tacking agents may be required or necessary to protect a seedbed's disturbed surface until the seed can germinate and provide the required protection from erosion. Selection of the materials used in this application should be based on their ability to hold moisture in the soil, as well as protect exposed soil from rainfall, storm water runoff, and wind. The availability of the selected material and the means to apply it are critical factors to consider when planning for the stabilization of any disturbed area. The mulch must cover a minimum of eighty (80) percent of the soil surface and must be secured by a tacking agent, crimping, or protective biodegradable netting. Netting that incorporates plastic mesh and/or plastic twine should not be used in wetlands, riparian buffers or floodplains due to the potential of small animal mortality. See Section 6.14 for detailed specifications and product applications.

SOIL BLANKETS

Soil blankets can be an acceptable and effective method of temporary sediment and erosion control in lieu of nurse crops. See Section 6.17 of the manual for descriptions of this product and how it can be used in conjunction with this section. In absence of mulches and tracking agents other means of protection may be necessary and required.

PROTECTIVE MATTING

Protective matting consists of an impervious cover secured to the soil surface in lieu of vegetative cover. It is used to protect and stabilize the surface where the process of seeding or planting forms of vegetation may cause more erosion and off-site sedimentation than application of the mat. It is also used where a disturbed area is intended to lay fallow for a period of time before additional construction or land disturbance takes place. If a pervious matting is selected, a combination of vegetation and matting is required. Seeds can be applied prior to installation of the matting only after proper seedbed preparation has been provided. Also, live stakes, dormant sprigs, and other vegetation forms can be inserted in the pervious matting once it has been installed. Pre-seeded pervious matting may be used for quicker root establishment and stabilization only if certified dating and germination guarantees are provided. The reviewing agency must approve all pre-seeded matting on site prior to installation. Matting that incorporates plastic mesh and/or plastic twine should not be used in wetlands, riparian buffers or floodplains due to the potential of small animal mortality. See Section 6.17 for detailed specifications and recommended product applications.

STABILIZATION IN WETLANDS, RIPARIAN BUFFERS, AND FLOODPLAINS

Land disturbing activity involving streams, wetlands or other waterbodies may also require permitting by the U.S. Army Corps of Engineers or the N.C. Division of Water Quality. Approval of an erosion and sedimentation control plan is conditioned upon the applicant's compliance with federal and State water quality laws, regulations, and rules. Additionally, a draft plan should be disapproved if implementation of the plan would result in a violation of rules adopted by the Environmental Management Commission to protect riparian buffers along surface waters. Care should be taken in selecting vegetative stabilization of wetlands and riparian buffers to comply with permitting requirements of other agencies, as well as provide adequate ground cover.

Planning Considerations for Land Disturbing Activities Within Wetland, Riparian, and Floodplain Areas

Wetlands, riparian areas, floodplains, and/or terrestrial areas between streams and uplands, serve to buffer surface water and provide habitat for aquatic and terrestrial flora and fauna. When cleared and disturbed, these sensitive areas are difficult to protect. Because of their proximity to water courses, relatively high ground water tables, and flooding potential, detailed analysis and design is necessary to determine the appropriate erosion control measures during construction. Determining the appropriate and most expeditious means of permanent vegetative stabilization in these areas requires equally detailed analysis and design. The following considerations for erosion control and stabilization should be taken into account during the design phase of the land disturbing project where sensitive areas are involved:

- Obtain soil tests to determine the soil type, pH, texture and available nutrients.
- Based on the soil tests provide a schedule of nutrients and other soil amendments that will be required.

- Select a seeding mix of non-invasive species that will provide immediate stabilization (a short-term environment that will support and compliment permanent vegetative stabilization) and include a selective native species mix that will eventually provide a permanent cover (a long-term environment that, with minimal maintenance, will provide adequate root and leaf cover).
- Invasive species are to be avoided. If native species and introduced non-invasive seed sources are not available, protective matting that will hold and foster the development of native cover from adjacent seed sources should be used. Continuous maintenance must be employed until the selected species have matured and are no longer susceptible to competition from invasive plants. If no alternative to the use of invasive seeds and plants is available, invasives approved on the plans may be utilized only with strict containment measures outlined in detail on the plans, in the construction sequence and in the maintenance specifications.
- A quickly germinating nurse crop of non-invasive, non-competitive annual grass species can be used along with native seeding and/or matting. These temporary systems should be planted at minimal density so that they do not inhibit the growth and establishment of the permanent, native species. (See the plant chart in Table 6.11.a for recommended native and nurse crop species.)
- Seed bed preparation is key to successful establishment of seeds. Particular care should be taken, however, when working in wetlands, riparian areas, or floodplains due to their sensitive nature. Careful consideration should be given to the types and placement of large equipment working in these areas. This process must be outlined in detail on the plan's construction sequence.
- Installation techniques vary and should be planned for accordingly.
- A maintenance plan must be established for optimal plant establishment, submitted with the plans and included in the bid list for the project.

Like all construction sites, wetlands, riparian areas, and floodplains will vary widely in physical makeup across North Carolina. Different conditions will dictate specific treatment, design and plant selection within the Mountains, Piedmont, and Coastal Plain regions. Soil tests, seedbed preparation, mulching, matting, and maintenance will be critical for successful vegetative establishment and long-term protection of these environmentally sensitive areas. Unavoidable impacts to these areas during land disturbing activities need to be addressed in detail on the plan sheets and construction sequence.

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DATE 11/13/2023

REVISIONS

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Native Seed and Plant Selection for Stabilization of Wetlands, Riparian Areas, and Floodplains

Upon the completion of the land disturbing activity, vegetative cover must be established on all areas not stabilized by other means. If work in these areas stops for more than 15 working days, temporary vegetative cover and/or matting must be applied to all disturbed areas. The goal is to protect these areas from erosion and to prevent sedimentation of adjacent streams, wetlands, lakes, and other water bodies.

Planning considerations for wetlands, riparian areas and floodplains will require additional research, detail and specifications. Native grasses are usually required as a condition of a 401 Water Quality Certification or a trout buffer variance.

Native vegetative species are plant species that naturally occur in the region in which they evolved. These plants are adapted to local soil types and climatic variations. Because most native species do not germinate and establish as readily as some introduced species, it is necessary to provide a non-native nurse crop or matting to stabilize the soil until the native crop can become established as the dominant cover. Once established, the native plants will produce an extensive root structure that, if properly maintained, will stabilize soils and reduce erosive forces of rainfall and overland stormwater flow. Many of these plants also possess characteristics that, when established, allow them not only to survive, but also to thrive under local conditions.

Seeding a mixture of perennial native grasses, rushes, and sedges is a way to establish permanent ground cover within wetlands, riparian areas and floodplains. The use of propagated plants is another method of reestablishing natives in these environments. Selecting a seed mixture and/or propagated plants of different species with complimentary characteristics will provide vegetation to fill select niches on sites with varying physical conditions. The design professional should note that because most native species do not germinate and establish as readily as some introduced species, it is necessary to provide a non-native nurse crop or matting to stabilize the soil until the native crop can become established as the dominant cover. For additional information about acceptable nurse crop varieties, consult the planting list in Appendix 8.02, local seed and plant suppliers, the North Carolina Cooperative Extension Service or a qualified design professional to assure the proper selection and plant mix.

Permanent native seed species within the seed mixture should be selected based on natural occurrence of each species in the project site area. Climate, soils, topography, and aspect are major factors affecting the suitability of plants for a particular site and these factors vary widely across North Carolina, with the most significant contrasts occurring among the three major physiographic regions of the state – Mountains, Piedmont, and Coastal Plain. Sub-regions of the state should also be considered. For example, the Triassic Basin in the Piedmont region may have characteristics that call for special soil treatment, limited plant selection, and special maintenance. Even within the riparian area, there may be need for different species depending on site conditions (i.e., dry sandy alluvial floodplains with wet pockets). Therefore, thoughtful planning is required when selecting species for individual sites in order to maximize successful vegetation establishment.

Native seed and plant species are included on the plant list in Appendix 8.02 of this manual.

The design professional should note that regardless of the benefits and advantages of native seeds and plants, there are potential issues if proper planning, installation and maintenance do not occur. These may include:

- Potential for erosion or washout during the establishment stage;
- Seasonal limitation on suitable seeding dates and availability of seed and plants;
- Adaptability of species at specific sites;
- Availability of water and appropriate temperatures during germination and early growth; and
- Lack of maintenance to control invasive plants and undesirable competition.

PLANTING

- **Seed** – Prepare the seed bed as described above in soil preparation. Apply seed at rates specified on the plans, and/or as recommended in Tables 6.11a-c of this manual, with a cyclone seeder, prop type spreader, drill, or hydroseeder on and/or into the prepared bed. Incorporate the seed into the seed bed as specified. Provide finished grades as specified on the approved plan and carefully culti-pack the seedbed as terrain allows. If terrain does not allow for the use of a cultipacker, the approved plans and construction sequence must provide an alternative method of lightly compacting the soil. Mulch immediately.
- **Sprigs and Sod** – Install onto the prepared seed bed per the most current guidance in Carolina Lawns, NCSU Extension Bulletin AG-69, or Practice 6.12 *Sodding*.

- **Woody plants (liners, container, B&B)** – These materials are typically used to complement an herbaceous protective cover. They eventually are major components of long-term, permanent stabilization and should be chosen and planned in conjunction with immediate and long-term maintenance. The plants should be selected and specified by the design professional for each individual project. See Practice 6.13 *Trees, Shrubs, Vines, and Ground Covers*.

MAINTENANCE

The absence of or an incomplete landscape management specification and/or complete maintenance schedule shall constitute grounds for disapproval of the plans. Proper maintenance is critical for the continued stabilization once vegetative cover is established. Although maintenance strategies for different sites may be similar, no two construction sites in North Carolina have been or will be able to be controlled or protected in identical ways. Variations in climate, topography, soils, available moisture, size and many other conditions will dictate the maintenance methodology to be used. A detailed schedule of maintenance will be required on the plans. This schedule will illustrate how the initial planting will be maintained to assure immediate, short term and permanent protection. The schedule will address topics such as appropriate irrigation of plants during the early establishment phase, drought conditions, excessive rainfall, mulch replacement, supplemental seeding, supplemental soils tests, application of nutrients and amendments, control of competitive and invasive species, disease and insect control, and corrective maintenance, measures to address failure of vegetation to become established. Contractual responsibility for maintenance after initial establishment of vegetative cover will be provided on the plans, in the construction sequence and on the bid list for the project. Maintenance bonds and/or warranty guarantee may be required of the responsible party, especially for areas in or adjacent to environmentally sensitive sites such as wetlands, riparian buffers, floodplains, and waters of the State. See Example 6.11a for a sample maintenance specification and a minimum maintenance check list that shall be provided on all plans.

RECOMMENDED BID LIST

(These items should be itemized on documents utilized to obtain pricing for planting pertaining to vegetative stabilization of land disturbing projects in North Carolina.)

- Soil test prior to grading (price per each test).
- Soil test during grading operations (price per each test).
- Soil test at completion of grading and/or prior to seeding, sprigging, sodding and application of fertilizer, lime, and other soil amendments (price per each test).
- Ripping/subsoiling to a depth of six (6) inches. (Provide an alternate for ripping to a depth greater than six (6) inches.) (price per acre)
- Tilling/discing ripped area to a depth of four (4) inches and re-compacting with a cultipacker roller (include in seeding price).

- Seeding (price per square foot).
- Mulching (price per square foot).
- Repair seeding (price per square foot).
- Repair mulching (price per square foot).
- Matting (price per square yard).
- Watering (price per thousand gallons).
- Mowing (price per square foot).

SEEDING RECOMMENDATIONS

The following tables list herbaceous plants recommended for use as nurse crops for immediate stabilization and primary crops for initial and long-term stabilization. Nurse crops are expected to develop in two to five weeks and, with adequate maintenance, be an effective method of soil stabilization for a period of six months to one year. Nurse crops are not effective as primary long-term cover, however if properly maintained they can be an adequate cover and protection for the development of primary crops.

The goal for a primary crop is for it to develop over a three-week to one-year period and be effective up to three years with a well-defined maintenance program. The long-term goal for a primary crop is the initial step toward a sustainable protective cover without the need of maintenance. Where the primary crop is intended for a managed lawn and landscape aesthetics, the effective period can be extended by a more intense maintenance program. Where native species are utilized and become established during the planned maintenance program, a permanent cover that will support future succession species should exist and require little or no additional maintenance or management.

In uses of both nurse and primary crops, the development periods listed on the tables are optimal based on normal climatic conditions for the planting dates listed. The sediment and erosion control maintenance program must recognize that optimum temperatures and rainfall are the exception rather than the rule. The design professional needs to provide flexibility in the stabilization plan to address the potential ranges of temperature and moisture conditions we experience in North Carolina.

Information is provided for seeding rates, optimum planting dates in the state's three regions, sun and shade tolerance, invasive characteristics, compatibility in wetlands and riparian buffers, and installation maintenance considerations. By going through the lists the design professional can select the nurse and primary seed varieties and maintenance characteristics they feel are best suited for their site conditions, vegetation management expertise and maintenance capabilities.

To use the information in the seeding charts the plan preparer must:

- Determine what nurse crop best fits their site, soil conditions, and permanent seed mix.
- Obtain soil tests for all areas to be seeded.
- Know the site's region: mountains, piedmont, or coastal plain.
- Know if the areas to be seeded are sunny, part shade, or full shade.
- Know if the areas are well or poorly drained.
- Know if wetlands or riparian buffers are included in the areas to be seeded.
- Know if a chosen crop is invasive and if so, what potential impacts it will have on the site and adjacent properties.

With this knowledge the plan preparation may proceed utilizing the charts provided to provide the several seed mixes that will be applicable to the different areas requiring stabilization.

HERBACEOUS PLANTS-Seeding recommendations for immediate stabilization/nurse crops
(2 to 5 weeks for development; effectiveness goal: 6 months to 1 year stabilization)

Table 6.11.a

NURSE CROP SPECIES

Common Name	Botanical Name	Native / Introduced	Seeding Rates lbs/acre	Fertilization/ limestone lbs/acre	Optimal Planting Dates: Mountains	Piedmont	Coastal Plains	Sun/Shade tolerant	Wetlands	Riparian Buffers	Invasive Yes or No	Installation / Maintenance Considerations	Other information, commentary
Rye Grain	*Secale cereale*	I	40 lbs	By soil test	11/1 - 4/30	8/15 - 4/15	8/15 - 4/15	Sun	Yes	Yes	No	Must be mown to reduce competitiveness with permanent or long term vegetation	
Wheat	*Triticum aestivum*	I	30 lbs	By soil test	11/1 - 4/30	8/15 - 5/15	8/15 - 4/15	Sun	Yes	Yes	No	Must be mown to reduce competitiveness with permanent or long term vegetation	Not water tolerant. May be used in wetlands that are not continuously saturated.
German Millet	*Setaria italica*	I	10 lbs	By soil test	5/11 - 9/30	5/15 - 8/15	4/15 - 8/15	Sun	Yes	Yes	No	Crop should be cut / disc prior to planting primary or long term vegetation	Not water tolerant. May be used in wetlands that are not continuously saturated.
Browntop Millet	*Urochloa ramosa*	I	10 lbs	By soil test	5/11 - 9/30	5/15 - 8/15	4/15 - 8/15	Sun	Yes	Yes	No	Crop should be cut / disc prior to planting primary or long term vegetation	Not water tolerant. May be used in wetlands that are not continuously saturated.
Sudangrass (hybrids)	*Sorghum saccharatum* *S. bicolor ssp.Drummondi*	I	15 lbs	By soil test	NR	NR	4/15 - 8/15	Sun	No	No	Yes	Crop should be cut / disc prior to planting primary or long term vegetation	Use only where plants and seed can be contained and controlled.
Kobe Lespedeza	*Kummerowia striata v. kobe*	I	10 lbs	By soil test	5/1 - 9/1	5/1 - 9/1	5/1 - 9/1	Sun	No	No	No	Consult qualified horticulturalist or extension agent for over-seeding with primary cover	Use in Coastal Plain
Korean Lespedeza	*Kummerowia stipulacea*	I	10 lbs	By soil test	5/1 - 9/1	5/1 - 9/1	5/1 - 9/1	Sun	No	No	No	Consult qualified horticulturalist or extension agent for over-seeding with primary cover	Use in Piedmont and Mountains. May become invasive

NOTES:
1. Seeding rates are for hulled seed unless otherwise noted.
2. Fertilizer & Limestone - rates to be applied in absense of soils tests. Recommended application rate assumes significantly disturbed site soils with little or no residual value.
3. NR means Species not recommended for this region or application area.
4. Invasive designation as determined by the N.C. Exotic Pest Pant Council and N.C. Native Plant Society .
5. Sprigging is not recommended for immediate stabilization unless terrain is flat heavy mulch is applied and no other immediate stabilization method is practical.

HERBACEOUS PLANTS-Seeding recommendations for primary stabilization
Successful development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

Table 6.11.b

NON-NATIVE SPECIES

Common Name	Botanical Name / Cultivar	Native / Introduced	Broadcast Seeding Rates lbs/acre	Fertilization/ limestone lbs/acre	Optimal Planting Dates: Mountains	Piedmont	Coastal Plains	Sun/Shade tolerant	Wetlands	Riparian Buffers	Invasive Yes or No	Installation / Maintenance Considerations	Other information, commentary
Sericea Lespedeza	*Lespedeza cuneata Dumont'*	I	15 lbs	By soil test	9/1 - 6/1	9/1 - 5/1	10/1 - 4/1	Sun	NR	NR	Yes	Responds well to controlled burns	Severe Threat Invasive species
Crown Vetch	*Securigera varia (Coronilla varia)*	I	15 lbs	By soil test	3/15-4/30	NR	NR	Sun	NR	NR	Yes	Highly competitive, not recommended unless an acceptable alternative is not available.	Prefers neutral soils
Centipede Grass	*Eremochloa ophiuroi*	I	5 lbs 10 lbs. for road shoulders	By soil test	NR	Eastern only	9/1 - 5/1	Sun	NR	NR	No	Significant maintenance may be required to obtain desired cover	Does not tolerate high traffic. Acceptable for sodding
KY 31 Tall Fescue	*Schedonorus phoeni (Festuca arundinacea)*	I	100 lbs	By soil test	8/15-5/1	9/1-4/15	9/30 - 3/15	Sun / mod. Shade	NR	NR	Yes	If utilized, it is imperative that maintenance includes a containment plan	Acceptable for sodding
KY Blue Grass	*Poa pratensis*	I	15 lbs	By soil test	8/15-5/1	NR	NR	Sun	NR	NR	Yes	If utilized, it is imperative that maintenance includes a containment plan	Prefers neutral soils, highly competitive, not recommended unless an acceptable alternative is not available. Acceptable for sodding
Hard Fescue	*Festuca brevipila (Festuca longifolia)*	I	15 lbs	By soil test	8/1 - 6/1	NR	NR	Shade	NR	NR	No	Not recommended for slopes greater than 5%	Low growing, bunch grass
Bermuda Grass	*Cynodon dactylon*	I	25 lbs	By soil test	NR	4/15-6/30	4/15-6/30	Sun	NR	NR	Yes	If utilized, it is imperative that maintenance includes a containment plan	Extremely aggressive, not recommended and should be avoided unless an acceptable alternative is not available. May be sodded or sprigged

HERBACEOUS PLANTS-Seeding recommendations for primary stabilization
Successfull development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

Table 6.11.c

NATIVE SPECIES

Common Name	Botanical Name / Cultivar	Native / Introduced	See Table 6.11.d for variety seedling rates	Fertilization/ limestone lbs/acre	Optimal Planting Dates: Mountains	Piedmont	Coastal Plains	Sun/Shade tolerant	Wetlands	Riparian Buffers	Invasive Yes or No	Installation / Maintenance Considerations	Other information, commentary
Switchgrass	*Panicum virgatum / Cave-in-Rock*	N	A	By soil test	12/1-4/15	NR	NR	Sun	NR	Well drained only	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	*Panicum virgatum / Blackwell*	N	A	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained only	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	*Panicum virgatum / Shelter*	N	A	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained only	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	*Panicum virgatum / Carthage*	N	A	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	Yes	Yes	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	*Panicum virgatum / Kanlow*	N	A	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	No	Poorly drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	*Panicum virgatum / Alamo*	N	A	By soil test	NR	12/1 - 5/1	1/1 - 5/1	Sun	No	Poorly drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Indiangrass	*Sorghastrum nutans / Rumsey*	N	B	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Western coastal plain only
Indiangrass	*Sorghastrum nutans / Osage*	N	B	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Western coastal plain only

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CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
ESPCP DETAILS SHEET

DATE 11/13/2023

[redacted]

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C804

CAD FILE: C800 EROSION DETAILS
NOT-ISSUED-FOR-CONSTRUCTION

HERBACEOUS PLANTS-Seeding recommendations for primary stabilization
Successfull development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

Table 6.11.c (con't)

NATIVE SPECIES

Common Name	Botanical Name / Cultivar	Native / Introduced	See Table 6.11.d for variety seedling rates	Fertilization/ limestone lbs/acre	Optimal Planting Dates: Mountains	Piedmont	Coastal Plains	Sun/Shade tolerant	Wetlands	Riparian Buffers	Invasive Yes or No	Installation / Maintenance Considerations	Other information, commentary
Indiangrass	*Sorghastrum nutans / Cheyenne*	N	B	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Western coastal plain only
Indiangrass	*Sorghastrum nutans / Lomenta*	N	B	By soil test	NR	12/1 - 5/1	1/1 -5/1	Sun	NR	Well drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Only Indiangrass adaptable to Eastern coastal plain (Zone 8)
Deertongue	*Dichanthelium clandestinum / Tioga*	N	C	By soil test	5/1-4/15	5/1 - 4/1	NR	Sun & Shade	Yes	Poorly drained to drought	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Big Bluestem	*Andropogon gerardii / Rountree*	N	D	By soil test	12/1-4/15	12/1 - 4/1	NR	Sun	NR	Welll drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Warm season grass
Big Bluestem	*Andropogon gerardii / Kaw*	N	D	By soil test	12/1-4/15	12/1 - 4/1	NR	Sun	NR	Welll drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Warm season grass
Big Bluestem	*Andropogon gerardii / Earl*	N	D	By soil test	12/1-4/15	12/1 - 4/1	12/1-5/1	Sun	NR	Welll drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Warm season grass
Little Bluestem	*Schizachyrium scoparium / Aldous*	N	E	By soil test	12/1-4/15	NR	NR	Sun	NR	Welll drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Warm season grass
Little Bluestem	*Schizachyrium scoparium / Cimmaron*	N	E	By soil test	12/1-4/15	12/1 - 4/1	NR	Sun	NR	Welll drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Warm season grass

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HERBACEOUS PLANTS-Seeding recommendations for primary stabilization
Successfull development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

Table 6.11.c (con't)

NATIVE SPECIES

Common Name	Botanical Name / Cultivar	Native / Introduced	See Table 6.11.d for variety seedling rates	Fertilization/ limestone lbs/acre	Optimal Planting Dates: Mountains	Piedmont	Coastal Plains	Sun/Shade tolerant	Wetlands	Riparian Buffers	Invasive Yes or No	Installation / Maintenance Considerations	Other information, commentary
Little Bluestem	*Schizachyrium scoparium / Common*	N	E	By soil test	NR	NR	12/1-4/1	Sun	NR	Welll drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Warm season grass
Sweet Woodreed	*Cinna arundinacea*	N	F	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun & mod. Shade	Yes	Poorly to well drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	Warm season grass
Rice Cutgrass	*Leersia oryzoides*	N	G	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	Yes	Poorly drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	Warm season grass
Indian Woodoats	*Chasmanthium latifolium*	N	H	By soil test	3/1 - 5/15 7/15-8/15	2/15 - 4/1 8/15 - 10/15	2/15-3/20 9/1 - 11/1	Sun & mod. Shade	NR	Well drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	Cool season grass
Virginia Wild Rye	*Elymus virginicus*	N	I	By soil test	3/1 - 5/15 7/15-8/15	2/15 - 4/1 8/15 - 10/15	2/15-3/20 9/1 - 11/1	Sun & mod. Shade	NR	Well drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	Cool season grass
Eastern Bottlebrush Grass	*Elymus hystrix*	N	J	By soil test	3/1 - 5/15 7/15-8/15	2/15 - 4/1 8/15 - 10/15	NR	Sun & mod. Shade	NR	Well drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	Cool season grass
Soft Rush	*Juncus effusus*	N	K	By soil test	12/1 - 5/15 8/15-10/15	12/1 - 5/1 9/1 - 11/1	12/1-4/15	Sun	Yes	Poorly drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	
Shallow Sedge	*Carex lurida*	N	L	By soil test	12/1 - 5/15 8/15-10/15	12/1 - 5/1 9/1 - 11/1	12/1-4/15	Sun	Yes	Poorly drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	
Fox Sedge	*Carex vulpinoidea*	N	L	By soil test	12/1 - 5/15 8/15-10/15	12/1 - 5/1 9/1 - 11/1	12/1-4/15	Sun	Yes	Poorly drained	No	Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations	

NOTE:
1. Seeding rates are for hulled seed unless otherwise noted.
2. Fertilizer & Limestone - rates to be applied in absense of soils tests. Recommended application rate assumes significantly disturbed site soils with little or no residual value.
3. NR means Species not recommended for this region or application area.
4. Native, warm season grasses require six or more months to germinate under optimum conditions. If they are planted in the summer, then a whole year will have to pass before they germinate.
5. Invasive designation as determined by the N.C. Exotic Pest Pant Council and N.C. Native Plant Society .
6. Sprigging is not recommended for immediate stabilization unless terrain is flat, heavymulch is applied and no other immediate stabilization method is practical.
7. Sodding for immediate stabilization - see primary stabilization charts (other information column) and Section 6.12.
8. Long term stabilization can only be accomplished with an adequate, immediate, and primary stabilization program. To achieve long term protective cover with the species listed in

Table 6.11.d

Seed Mixes for Native Species (lbs/ac)
When Mixed with 3, 4, or 5 Other Native Species
(See Table 6.11.a for nurse crop species to be added to these mixes)

	3 Other (total 4 species)	4 Other (total 5 species)	5 Other (total 6 species)
Switch Grasses (A)	3.5 lbs.	3.0 lbs.	2.5 lbs.
Indian Grasses (B)	7.0 lbs.	6.0 lbs.	5.0 lbs.
Deertongue (C)	6.0 lbs.	5.0 lbs.	4.0 lbs.
Big Bluestem (D)	7.0 lbs.	6.0 lbs.	5.0 lbs.
Little Bluestem (E)	7.0 lbs.	6.0 lbs.	5.0 lbs.
Sweet Woodreed (F)	2.5 lbs.	2.0 lbs.	1.5 lbs.
Rice Cutgrass (G)	6.0 lbs.	5.0 lbs.	4.0 lbs.
Indian Woodoats (H)	2.5 lbs.	2.0 lbs.	1.5 lbs.
Virginia Wild Rye (I)	6.0 lbs.	5.0 lbs.	4.0 lbs.
Eastern Bottlebrush Grass (J)	2.5 lbs.	2.0 lbs.	1.5 lbs.
Soft Rush (K)	2.5 lbs.	2.0 lbs.	1.5 lbs.
Sedges (L)	2.5 lbs.	2.0 lbs.	1.5 lbs.

NOTE:
With the native varieties, the seed mix should be in the range of 15 pounds per acre. Depending on availability of native seeds adaptable to North Carolina, the percentage of a particular variety used may be reduced or increased accordingly. Although diversity is desirable, it is imperative that the primary crop develop and become an effective protective cover. In addition to the native species mix, additional nurse crop species must be included to provide immediate stabilization and an adequate ground cover.

6.14

MULCHING

M

Definition

Application of a protective blanket of straw or other plant residue, gravel, or synthetic material to the soil surface.

Purpose

To protect the soil surface from the forces of raindrop impact and overland flow. Mulch fosters the growth of vegetation, reduces evaporation, insulates the soil, and suppresses weed growth. Mulch is frequently used to accent landscape plantings.

Conditions Where Practice Applies

Mulch temporary or permanent seedings immediately. Areas that cannot be seeded because of the season should be mulched to provide temporary protection of the soil surface. Use an organic mulch in this case (but not wood fiber), and seed the area as soon as possible. Mulch around plantings of trees, shrubs, or ground covers to stabilize the soil between plants.

Planning Considerations

A surface mulch is the most effective, practical means of controlling runoff and erosion on disturbed land prior to vegetation establishment. Mulch reduces soil moisture loss by evaporation, prevents crusting and sealing of the soil surface, moderates soil temperatures, provides a suitable microclimate for seed germination, and may increase the infiltration rate of the soil.

Organic mulches such as straw, wood chips, and shredded bark have been found to be the most effective. Do not use materials which may be sources of competing weed and grass seeds. Decomposition of some wood products can tie up significant amounts of soil nitrogen, making it necessary to modify fertilization rates, or add fertilizer with the mulch (Table 6.14a).

A variety of mats and fabrics have been developed in recent years for use as mulch, particularly in critical areas such as waterways and channels. Various types of netting materials are also available to anchor organic mulches.

Chemical soil stabilizers or soil binders, when used alone, are less effective than other types of mulches. These products are primarily useful for tacking wood fiber mulches.

The choice of materials for mulching should be based on soil conditions, season, type of vegetation, and size of the area. A properly applied and tacked mulch is always beneficial. It is especially important when conditions for germination are not optimum, such as midsummer and early winter, and on difficult areas such as cut slopes and slopes with southern exposures.

ORGANIC MULCHES
Straw is the mulch most commonly used in conjunction with seeding. The straw should come from wheat or oats ("small grains"), and may be spread by hand or with a mulch blower. Straw may be lost to wind, and must be tacked down.

Wood chips are suitable for areas that will not be closely mowed, and around ornamental plantings. Chips do not require tacking. Because they decompose slowly, they must be treated with 12 pounds of nitrogen per ton to prevent

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Table 6.14a
Mulching Materials and Application Rates

Material	Rate Per Acre	Quality	Notes
Organic Mulches			
Straw	1-2 tons	Dry, unchopped, unweathered; avoid weeds.	Should come from wheat or oats; spread by hand or machine; must be tacked down.
Wood chips	5-6 tons	Air dry	Treat with 12 lbs nitrogen/ton. Apply with mulch blower, chip handler, or by hand. Not for use in fine turf.
Wood fiber	0.5-1 tons		Also referred to as wood cellulose. May be hydroseeded. Do not use in hot, dry weather.
Bark	35 cubic yards	Air dry, shredded or hammer-milled, or chips.	Apply with mulch blower, chip handler, or by hand. Do not use asphalt tack.
Corn stalks	4-6 tons	Cut or shredded in 4-6 in. lengths.	Apply with mulch blower or by hand. Not for use in fine turf.
Sericea lespedeza seed-bearing stems	1-3 tons	Green or dry; should contain mature seed.	
Nets and Mats[1]			
Jute net	Cover area	Heavy, uniform; woven of single jute yarn.	Withstands waterflow. Best when used with organic mulch.
Fiberglass net	Cover area		Withstands waterflow. Best when used with organic mulch.
Excelsior (wood fiber) mat	Cover area		Withstands waterflow.
Fiberglass roving	0.5-1 tons	Continuous fibers of drawn glass bound together with a non-toxic agent.	Apply with a compressed air ejector. Tack with emulsified asphalt at a rate of 25-35 gal/1,000 sq ft.
Chemical Stabilizers[2]			
Aquatain Aerospray Curasol AK Petroset SB Terra Tack Crust 500 Genaqua 743 M-145	follow manufacturer's specifications		Not beneficial to plant growth.

[1]Refer to Practice No. 6.30, *Grass Lined Channels.*

[2]Use of trade names does not imply endorsement of product.

nutrient deficiency in plants. This can be an inexpensive mulch if chips are obtained from trees cleared on the site.

Bark chips and shredded bark are by-products of timber processing often used in landscape plantings. Bark is also a suitable mulch for areas planted to grasses and not closely mowed. It may be applied by hand or with a mulch blower. Unlike wood chips, the use of bark does not require additional nitrogen fertilizer.

Wood fiber refers to short cellulose fibers applied as a slurry in hydroseeding operations. Wood fiber does not require tacking, although tacking agents or soil binders can easily be added to the slurry. Wood fiber hydroseeder slurries may be used to tack straw mulch on steep slopes, critical areas, and where harsh climatic conditions exist. **Wood fiber mulch does not provide sufficient erosion protection to be used alone**.

There are other organic materials that make excellent mulches, but may only be available locally or seasonally, for example: dried sewage sludge, corn stalks, animal manure, pine boughs, cotton burs, peanut hulls, and hay. Creative use of these materials can reduce costs.

CHEMICAL MULCHES AND SOIL BINDERS
A wide range of synthetic mulching compounds is available to stabilize and protect the soil surface. These include emulsions or dispersions of vinyl compounds, asphalt, or rubber mixed with water. They may be used alone, or may be used to tack wood fiber hydromulches.

When used alone, chemical mulches do not insulate the soil or retain moisture, and therefore do little to aid seedling establishment. They are easily damaged by traffic, are usually more expensive than organic mulches, and they decompose in 60-90 days.

Check labels on chemical mulches and binders for environmental concerns. Take precautions to avoid damage to fish, wildlife, and water resources.

NETS, MATS, AND ROVING
Netting is very effective in holding mulch in place on waterways and slopes before grasses become established.

Mats promote seedling growth in the same way as organic mulches. They are very useful in establishing grass in channels and waterways. A wide variety of synthetic and organic materials are available. "Excelsior" is a wood fiber mat, and should not be confused with wood fiber slurry.

When installing nets and mats, it is critical to obtain a firm, continuous contact between the material and the soil. Without such contact, the material is useless, and erosion will occur underneath.

Fiberglass roving consists of continuous strands of fiberglass which, when blown onto the soil surface from a special compressed air ejector, form a mat of glass fibers. This mat must then be tacked down with asphalt.

6

Construction Specifications

Select a material based on site and practice requirements, availability of material, labor, and equipment. Table 6.14a lists commonly used mulches and some alternatives.

Before mulching, complete the required grading, install sediment control practices, and prepare the seedbed. Apply seed before mulching **except** in the following cases:

- Seed is applied as part of a hydroseeder slurry containing wood fiber mulch.
- A hydroseeder slurry is applied over straw.

APPLICATION OF ORGANIC MULCH
Organic mulches are effective where they can be tacked securely to the surface. Material and specifications are given in Table 6.14a.

Spread mulch uniformly by hand, or with a mulch blower. When spreading straw mulch by hand, divide the area to be mulched into sections of approximately 1,000 ft^2, and place 70-90 lb of straw (1 1/2 to 2 bales) in each section to facilitate uniform distribution. After spreading mulch, no more than 25% of the ground surface should be visible. In hydroseeding operations a green dye, added to the slurry, assures a uniform application.

ANCHORING ORGANIC MULCH
Straw mulch must be anchored immediately after spreading. The following methods of anchoring mulch may be used:

Mulch anchoring tool—A tractor-drawn implement designed to punch mulch into the soil, a mulch anchoring tool provides maximum erosion control with straw. A regular farm disk, weighted and set nearly straight, may substitute, but will not do a job comparable to the mulch anchoring tool. The disk should not be sharp enough to cut the straw. These methods are limited to slopes no steeper than 3:1, where equipment can operate safely. Operate machinery on the contour.

Liquid mulch binders—Application of liquid mulch binders and tackifiers should be heaviest at the edges of areas and at crests of ridges and banks, to resist wind. Binder should be applied uniformly to the rest of the area. Binders may be applied after mulch is spread, or may be sprayed into the mulch as it is being blown onto the soil. Applying straw and binder together is the most effective method. Liquid binders include asphalt and an array of commercially available synthetic binders.

Emulsified asphalt is the most commonly used mulch binder. Any type thin enough to be blown from spray equipment is satisfactory. Asphalt is classified according to the time it takes to cure. Rapid setting (RS or CRS designation) is formulated for curing in less than 24 hours, even during periods of high humidity; it is best used in spring and fall. Medium setting (MS or CMS) is formulated for curing within 24 to 48 hours, and slow setting (SS or CSS) is formulated for use during hot, dry weather, requiring 48 hours or more curing time.

Apply asphalt at 0.10 gallons per square yard (10 gal/1,000 ft^2). Heavier applications cause straw to "perch" over rills.

In traffic areas, uncured asphalt can be picked up on shoes and cause damage to rugs, clothing etc. Use types RS or CRS to minimize such problems.

Synthetic binders such as Petroset, Terratack, and Aerospray may be used, as recommended by the manufacturer, to anchor mulch. These are expensive, and therefore usually used in small areas or in residential areas where asphalt may be a problem (Use of trade names does not constitute an endorsement).

Mulch nettings—Lightweight plastic, cotton, jute, wire, or paper nets may be stapled over the mulch according to the manufacturer's recommendations (see "Nets and Mats" below).

Peg and twine—Because it is labor-intensive, this method is feasible only in small areas where other methods cannot be used. Drive 8-10 inch wooden pegs to within 3 inches of the soil surface, every 4 feet in all directions. Stakes may be driven before or after straw is spread. Secure mulch by stretching twine between pegs in a criss-cross-within-a-square pattern. Turn twine two or more times around each peg. Twine may be tightened over the mulch by driving pegs further into the ground.

Vegetation—Rye (grain) may be used to anchor mulch in fall plantings, and German millet in spring. Broadcast at 15 lb/acre before applying mulch.

CHEMICAL MULCHES
Chemical mulches may be effective for soil stabilization if used between May 1 and June 15, or Sept. 15 and Oct. 15, provided that they are used on slopes **no steeper** than 4:1, and that proper seedbed preparation has been accomplished, including surface roughening where required.

Chemical mulches may be used to bind other mulches, or with wood fiber in a hydroseeded slurry at any time. Follow the manufacturer's recommendations for application.

FIBERGLASS ROVING
Fiberglass roving ("roving") is wound into a cylindrical package so that it can be continuously withdrawn from the center using a compressed air ejector. Roving expands into a mat of glass fibers as it contacts the soil surface. It is often used over a straw mulch, but must still be tacked with asphalt.

Spread roving uniformly over the area at a rate of 0.25 to 0.35 lb/yd^2. Anchor with asphalt immediately after application, at a rate of 0.25 to 0.35 gal/yd^2.

As a channel lining, and at other sites of concentrated flow, the roving mat must be further anchored to prevent undermining. It may be secured with stakes placed at intervals no greater than 10 feet along the drainageway, and randomly throughout its width, but not more than 10 feet apart. As an option to staking, the roving can be buried to a depth of 5 inches at the upgrade end and at intervals of 50 feet along the length of the channel.

NETS AND MATS
Nets alone generally provide little moisture conservation benefits and only

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CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
ESPCP DETAILS SHEET

DATE 11/13/2023

REVISIONS

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CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
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6

limited erosion protection. Therefore, they are usually used in conjunction with an organic mulch such as straw.

Except when wood fiber slurry is used, netting should always be installed **over** the mulch. Wood fiber may be sprayed on top of an installed net.

Mats, including “excelsior” (wood fiber) blankets, are considered protective mulches and may be used alone, on erodible soils, and during all times of the year. Place the matting in firm contact with the soil, and staple securely.

INSTALLATION OF NETTING AND MATTING
Products designed to control erosion should be installed in accordance with manufacturer’s instructions. Any mat or blanket-type product used as a protective mulch should provide cover of at least 30% of the surface where it is applied. Installation is illustrated in Figure 6.14a.

1. Apply lime, fertilizer, and seed **before** laying the net or mat.

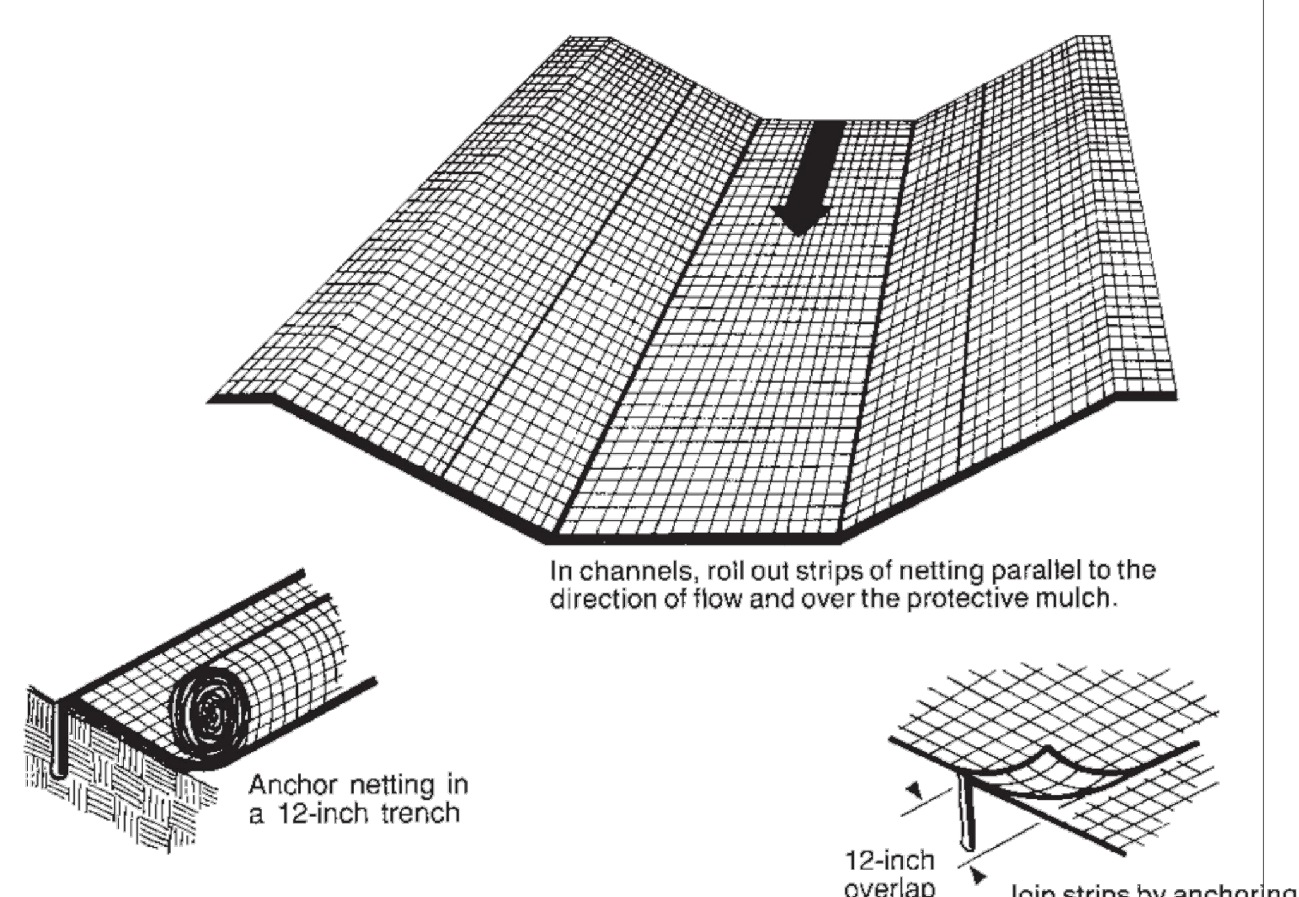

Figure 6.14a Installation of netting and matting (modified from Va. Div. of Forestry).

2. Start laying the net from the top of the channel or slope, and unroll it down the grade. **Allow netting to lay loosely on the soil or mulch cover but without wrinkles—do not stretch.**

3. To secure the net, bury the upslope end in a slot or trench no less than 6 inches deep, cover with soil, and tamp firmly as shown in Figure 6.14a. Staple the net every 12 inches across the top end and every 3 ft around the edges and bottom. Where 2 strips of net are laid side by side, the adjacent edges should be overlapped 3 inches and stapled together. Each strip of netting should also be stapled down the center, every 3 ft. **Do not stretch the net when applying staples.**

4. To join two strips, cut a trench to anchor the end of the new net. Overlap the end of the previous roll 18 inches, as shown in Figure 6.14a, and staple every 12 inches just below the anchor slot.

Maintenance

Inspect all mulches periodically, and after rainstorms to check for rill erosion, dislocation or failure. Where erosion is observed, apply additional mulch. If washout occurs, repair the slope grade, reseed and reinstall mulch. Continue inspections until vegetation is firmly established.

References

Surface Stabilization
6.11, Permanent Seeding

Appendix
8.02, Vegetation Tables

6.10

TEMPORARY SEEDING

TS

Definition

Planting rapid-growing annual grasses, small grains, or legumes to provide initial, temporary cover for erosion control on disturbed areas.

Purpose

To temporarily stabilize denuded areas that will not be brought to final grade for a period of more than 21 calendar days.

Temporary seeding controls runoff and erosion until permanent vegetation or other erosion control measures can be established. In addition, it provides residue for soil protection and seedbed preparation, and reduces problems of mud and dust production from bare soil surfaces during construction.

Conditions Where Practice Applies

On any cleared, unvegetated, or sparsely vegetated soil surface where vegetative cover is needed for less than 1 year. Applications of this practice include diversions, dams, temporary sediment basins, temporary road banks, and topsoil stockpiles.

Planning Considerations

Annual plants, which sprout and grow rapidly and survive for only one season, are suitable for establishing initial or temporary vegetative cover. Temporary seeding preserves the integrity of earthen sediment control structures such as dikes, diversions, and the banks of dams and sediment basins. It can also reduce the amount of maintenance associated with these devices. For example, the frequency of sediment basin cleanouts will be reduced if watershed areas, outside the active construction zone, are stabilized.

Proper seedbed preparation, selection of appropriate species, and use of quality seed are as important in this Practice as in Practice 6.11, *Permanent Seeding*. Failure to follow established guidelines and recommendations carefully may result in an inadequate or short-lived stand of vegetation that will not control erosion.

Temporary seeding provides protection for no more than 1 year, during which time permanent stabilization should be initiated.

Specifications

Complete grading before preparing seedbeds, and install all necessary erosion control practices such as, dikes, waterways, and basins. Minimize steep slopes because they make seedbed preparation difficult and increase the erosion hazard. If soils become compacted during grading, loosen them to a depth of 6-8 inches using a ripper, harrow, or chisel plow.

SEEDBED PREPARATION
Good seedbed preparation is essential to successful plant establishment. A good seedbed is well-pulverized, loose, and uniform. Where hydroseeding methods are used, the surface may be left with a more irregular surface of large clods and stones.

Liming—Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the

rate of 1 to 1 1/2 tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

Fertilizer—Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

Surface roughening—If recent tillage operations have resulted in a loose surface, additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by disking, raking, harrowing, or other suitable methods. Groove or furrow slopes steeper than 3:1 on the contour before seeding (Practice 6.03, *Surface Roughening*).

PLANT SELECTION
Select an appropriate species or species mixture from Table 6.10a for seeding in late winter and early spring, Table 6.10b for summer, and Table 6.10c for fall.

In the Mountains, December and January seedings have poor chances of success. When it is necessary to plant at these times, use recommendations for fall and a securely tacked mulch.

SEEDING
Evenly apply seed using a cyclone seeder (broadcast), drill, cultipacker seeder, or hydroseeder. Use seeding rates given in Tables 6.10a-6.10c. Broadcast seeding and hydroseeding are appropriate for steep slopes where equipment cannot be driven. Hand broadcasting is not recommended because of the difficulty in achieving a uniform distribution.

Small grains should be planted no more than 1 inch deep, and grasses and legumes no more than 1/2 inch. Broadcast seed must be covered by raking or chain dragging, and then lightly firmed with a roller or cultipacker. Hydroseeded mixtures should include a wood fiber (cellulose) mulch.

MULCHING
The use of an appropriate mulch will help ensure establishment under normal conditions, and is essential to seeding success under harsh site conditions (Practice 6.14, *Mulching*). Harsh site conditions include:

- seeding in fall for winter cover (wood fiber mulches are not considered adequate for this use),
- slopes steeper than 3:1,
- excessively hot or dry weather,
- adverse soils (shallow, rocky, or high in clay or sand), and
- areas receiving concentrated flow.

If the area to be mulched is subject to concentrated waterflow, as in channels, anchor mulch with netting (Practice 6.14, *Mulching*).

Maintenance

Reseed and mulch areas where seedling emergence is poor, or where erosion occurs, as soon as possible. Do not mow. Protect from traffic as much as possible.

References

Site Preparation
6.03, Surface Roughening
6.04, Topsoiling

Surface Stabilization
6.11, Permanent Seeding
6.14, Mulching

Appendix
8.02, Vegetation Tables

Table 6.10a Temporary Seeding Recommendations for Late Winter and Early Spring

Seeding mixture

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

Seeding dates
Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1
Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Table 6.10b Temporary Seeding Recommendations for Summer

Seeding mixture

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

Seeding dates
Mountains—May 15 - Aug. 15
Piedmont—May 1 - Aug. 15
Coastal Plain—Apr. 15 - Aug. 15

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

Table 6.10c Temporary Seeding Recommendations for Fall

Seeding mixture

Species	Rate (lb/acre)
Rye (grain)	120

Seeding dates
Mountains—Aug. 15 - Dec. 15
Coastal Plain and Piedmont—Aug. 15 - Dec. 30

Soil amendments
Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extent temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

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FILE CODE: ##
SHEET NO. C806

CAD FILE: C800 EROSION DETAILS
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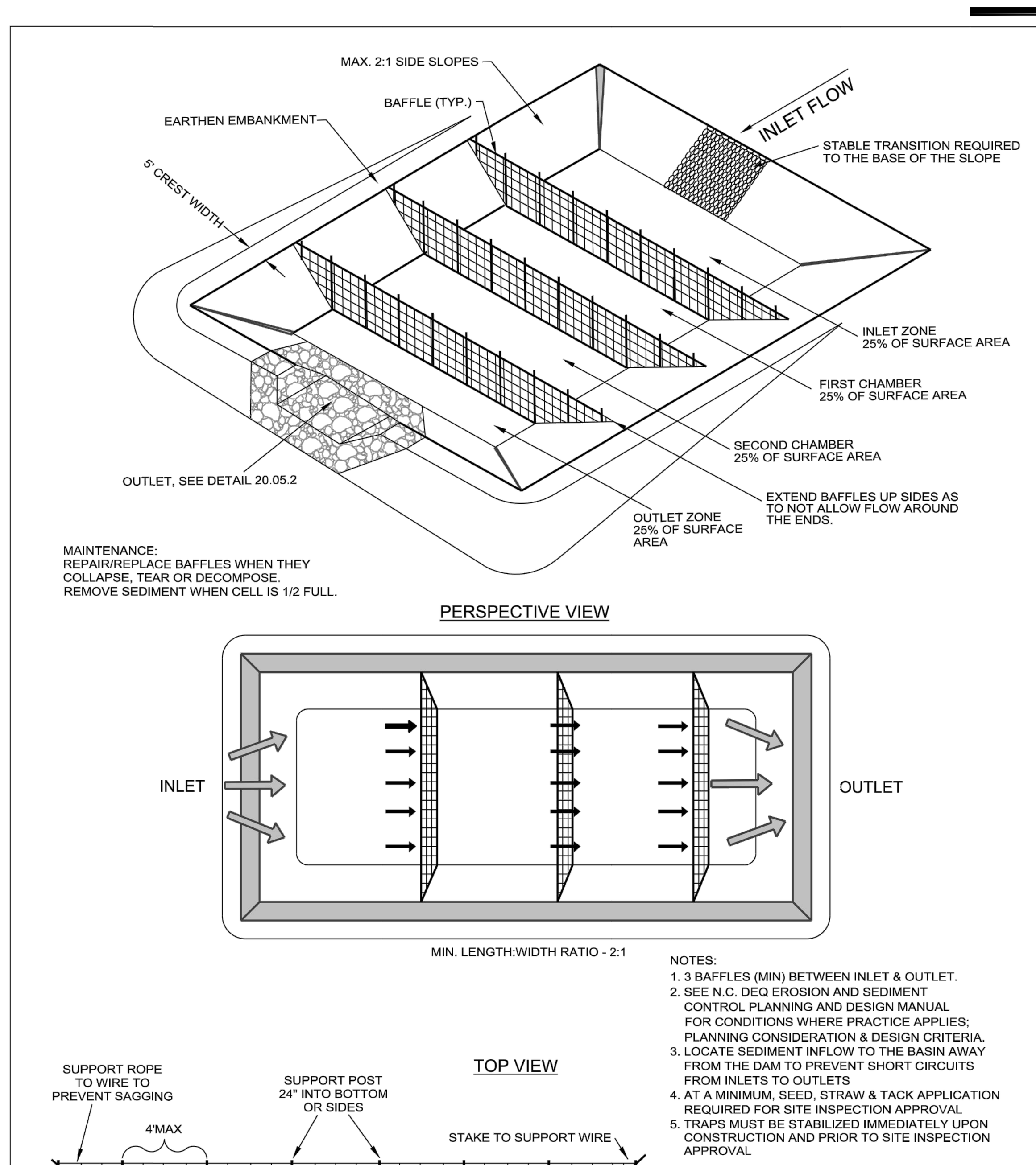
MAX. 2:1 SIDE SLOPES
BAFFLE (TYP.)
EARTHEN EMBANKMENT
INLET FLOW
STABLE TRANSITION REQUIRED TO THE BASE OF THE SLOPE
5' CREST WIDTH
INLET ZONE 25% OF SURFACE AREA
FIRST CHAMBER 25% OF SURFACE AREA
SECOND CHAMBER 25% OF SURFACE AREA
OUTLET, SEE DETAIL 20.05.2
EXTEND BAFFLES UP SIDES AS TO NOT ALLOW FLOW AROUND THE ENDS.
OUTLET ZONE 25% OF SURFACE AREA
MAINTENANCE: REPAIR/REPLACE BAFFLES WHEN THEY COLLAPSE, TEAR OR DECOMPOSE. REMOVE SEDIMENT WHEN CELL IS 1/2 FULL.
PERSPECTIVE VIEW
INLET
OUTLET
MIN. LENGTH:WIDTH RATIO - 2:1
TOP VIEW
NOTES:
1. 3 BAFFLES (MIN) BETWEEN INLET & OUTLET.
2. SEE N.C. DEQ EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATION & DESIGN CRITERIA.
3. LOCATE SEDIMENT INFLOW TO THE BASIN AWAY FROM THE DAM TO PREVENT SHORT CIRCUITS FROM INLETS TO OUTLETS
4. AT A MINIMUM, SEED, STRAW & TACK APPLICATION REQUIRED FOR SITE INSPECTION APPROVAL
5. TRAPS MUST BE STABILIZED IMMEDIATELY UPON CONSTRUCTION AND PRIOR TO SITE INSPECTION APPROVAL
SUPPORT ROPE TO WIRE TO PREVENT SAGGING
SUPPORT POST 24" INTO BOTTOM OR SIDES
4'MAX
STAKE TO SUPPORT WIRE
3'min
DESIGN LIFE OF FABRIC IS 6-12 MONTHS
COIR MESH OR JUTE, TRENCHED INTO BOTTOM AND SIDE
BAFFLE DETAIL

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STANDARD DETAIL

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TEMPORARY SEDIMENT TRAP

SW-20.05.1

6.60

TEMPORARY SEDIMENT TRAP

Definition A small, temporary ponding basin formed by an embankment or excavation to capture sediment.

Purpose To detain sediment-laden runoff and trap the sediment to protect receiving streams, lakes, drainage systems, and protect adjacent property.

Conditions Where Practice Applies Specific criteria for installation of a temporary sediment trap are as follows:

- At the outlets of diversions, channels, slope drains, or other runoff conveyances that discharge sediment-laden water.
- Below areas that are draining 5 acres or less.
- Where access can be maintained for sediment removal and proper disposal.
- In the approach to a stormwater inlet located below a disturbed area as part of an inlet protection system.
- Structure life limited to 2 years.

A temporary sediment trap should not be located in an intermittent or perennial stream.

Planning Considerations Select locations for sediment traps during site evaluation. Note natural drainage divides and select trap sites so that runoff from potential sediment-producing areas can easily be diverted into the traps. Ensure the drainage areas for each trap does not exceed 5 acres. Install temporary sediment traps before land disturbing takes place within the drainage area.

Make traps readily accessible for periodic sediment removal and other necessary maintenance. Plan locations for sediment disposal as part of trap site selection. Clearly designate all disposal areas on the plans.

In preparing plans for sediment traps, it is important to consider provisions to protect the embankment from failure from storm runoff that exceeds the design capacity. Locate bypass outlets so that flow will not damage the embankment. Direct emergency bypasses to undisturbed natural, stable areas. If a bypass is not possible and failure would have severe consequences, consider alternative sites.

Sediment trapping is achieved primarily by settling within a pool formed by an embankment. The sediment pool may also be formed by excavation, or by a combination of excavation and embankment. Sediment-trapping efficiency is a function of surface area and inflow rate (Practice 6.61, *Sediment Basin*). Therefore, maximize the surface area in the design. Because porous baffles improve flow distribution across the basin, high length to width ratios are not necessary to reduce short-circuiting and to optimize efficiency.

Because well planned sediment traps are key measures to preventing off-site sedimentation, they should be installed in the first stages of project development.

6

Design Criteria

Summary:	**Temporary Sediment Trap**
Primary Spillway:	Stone Spillway
Maximum Drainage Area:	5 acres
Minimum Volume:	3600 cubic feet per acre of disturbed area
Minimum Surface Area:	435 square feet per cfs of Q_{10} peak inflow
Minimum L/W Ratio:	2:1
Minimum Depth:	3.5 feet, 1.5 feet excavated below grade
Maximum Height:	Weir elevation 3.5 feet above grade
Dewatering Mechanism:	Stone Spillway
Minimum Dewatering Time:	N/A
Baffles Required:	3

Storage capacity—Provide a minimum volume of 3600 ft^3/acre of disturbed area draining into the basin. Required storage volume may also be determined by modeling the soil loss with the Revised Universal Soil Loss Equation or other acceptable methods. Measure volume to the crest elevation of the stone spillway outlet.

Trap cleanout—Remove sediment from the trap, and restore the capacity to original trap dimensions when sediment has accumulated to one-half the design depth.

Trap efficiency—The following design elements must be provided for adequate trapping efficiency:

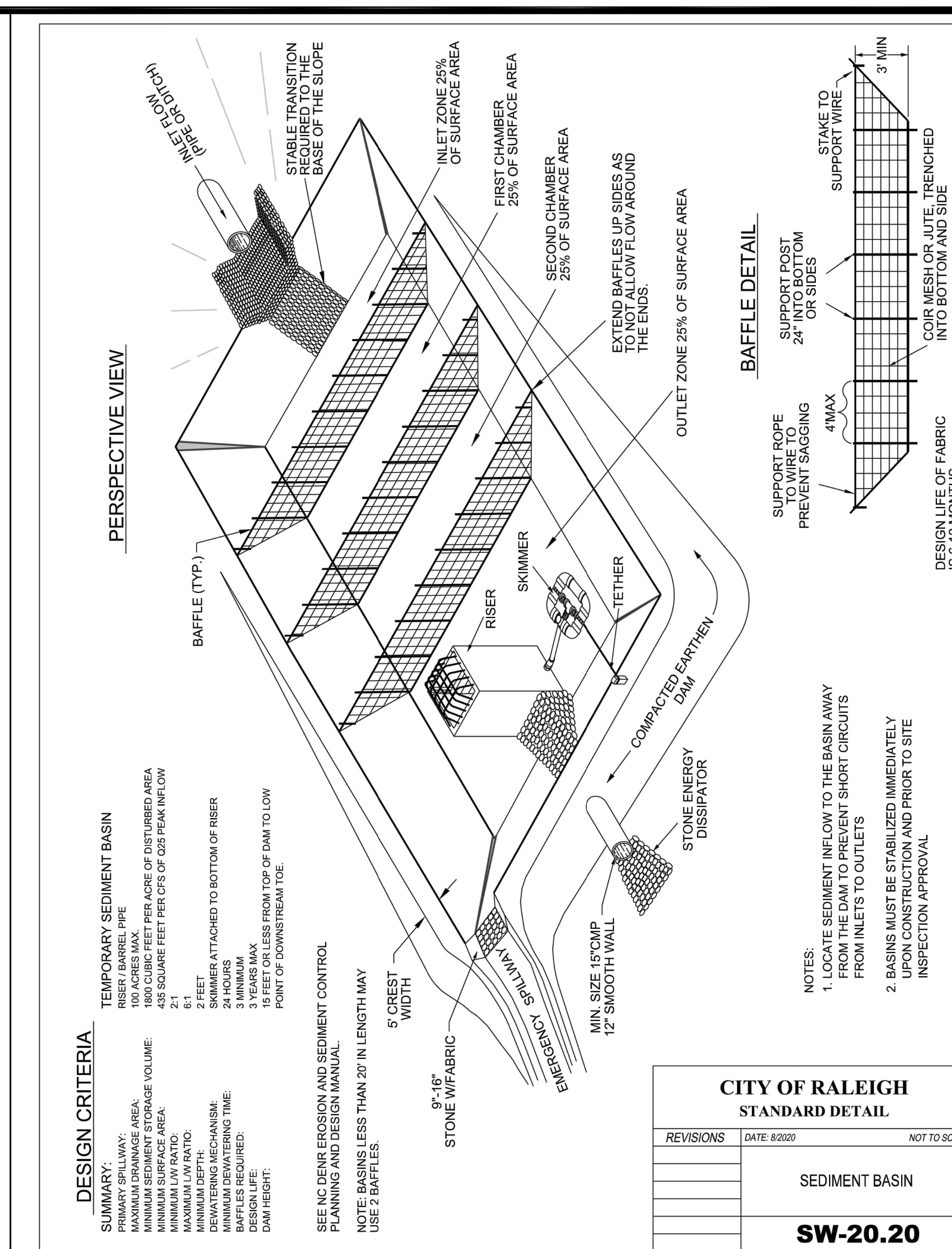
- Provide a surface area of 0.01 acres (435 square feet) per cfs based on the 10-year storm;
- Convey runoff into the basin through stable diversions or temporary slope drains;
- Locate sediment inflow to the basin away from the dam to prevent short circuits from inlets to the outlet;
- Provide porous baffles (Practice 6.65, *Porous Baffles*);
- Excavate 1.5 feet of the depth of the basin below grade, and provide minimum storage depth of 2 feet above grade.

Embankment—Ensure that embankments for temporary sediment traps do not exceed 5 feet in height. Measure from the center line of the original ground surface to the top of the embankment. Keep the crest of the spillway outlet a minimum of 1.5 feet below the settled top of the embankment. Freeboard may be added to the embankment height to allow flow through a designated bypass location. Construct embankments with a minimum top width of 5 feet and side slopes of 2:1 or flatter. Machine compact embankments.

Excavation—Where sediment pools are formed or enlarged by excavation, keep side slopes at 2:1 or flatter for safety.

Outlet section—Construct the sediment trap outlet using a stone section of the embankment located at the low point in the basin. The stone section serves two purposes: (1) the top section serves as a non-erosive spillway outlet for flood flows; and (2) the bottom section provides a means of dewatering the basin between runoff events.

Stone size—Construct the outlet using well-graded stones with a d_{50} size of 9 inches (Class B erosion control stone is recommended,) and a maximum stone


PERSPECTIVE VIEW
INLET FLOW
STABLE TRANSITION REQUIRED TO THE BASE OF THE SLOPE
INLET ZONE 25% OF SURFACE AREA
FIRST CHAMBER 25% OF SURFACE AREA
SECOND CHAMBER 25% OF SURFACE AREA
EXTEND BAFFLES UP SIDES AS TO NOT ALLOW FLOW AROUND THE ENDS.
OUTLET ZONE 25% OF SURFACE AREA
BAFFLE DETAIL
BAFFLE (TYP.)
RISER
SKIMMER
TETHER
COMPACTED EARTHEN DAM
STONE ENERGY DISSIPATOR
5' CREST WIDTH
EMERGENCY SPILLWAY
MIN. SIZE 15"CMP 12" SMOOTH WALL
DESIGN CRITERIA
NOTES:
1. LOCATE SEDIMENT INFLOW TO THE BASIN AWAY FROM THE DAM TO PREVENT SHORT CIRCUITS FROM INLETS TO OUTLETS
2. BASINS MUST BE STABILIZED IMMEDIATELY UPON CONSTRUCTION AND PRIOR TO SITE INSPECTION APPROVAL.
SUPPORT ROPE TO WIRE TO PREVENT SAGGING
SUPPORT POST 24" INTO BOTTOM OR SIDES
STAKE TO SUPPORT WIRE
COIR MESH OR JUTE, TRENCHED INTO BOTTOM AND SIDE
DESIGN LIFE OF FABRIC IS 6-12 MONTHS

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SEDIMENT BASIN

SW-20.20

size of 14 inches. The entire upstream face of the rock structure should be covered with fine gravel (NCDOT #57 or #5 wash stone) a minimum of 1 foot thick to reduce the drainage rate.

Side slopes—Keep the side slopes of the spillway section at 2:1 or flatter. To protect the embankment, keep the sides of the spillway at least 21 inches thick.

Depth—The basin should be excavated 1.5 feet below grade.

Stone spillway height—The sediment storage depth should be a minimum of 2 feet and a maximum of 3.5 feet above grade.

Protection from piping—Place filter cloth on the foundation below the riprap to prevent piping. An alternative would be to excavate a keyway trench across the riprap foundation and up the sides to the height of the dam.

Weir length and depth—Keep the spillway weir at least 4 feet long and sized to pass the peak discharge of the 10-year storm (Figure 6.60a). A maximum flow depth of six inches, a minimum freeboard of 1 foot, and maximum side slopes of 2:1 are recommended. Weir length may be selected from Table 6.60a shown for most site locations in North Carolina.

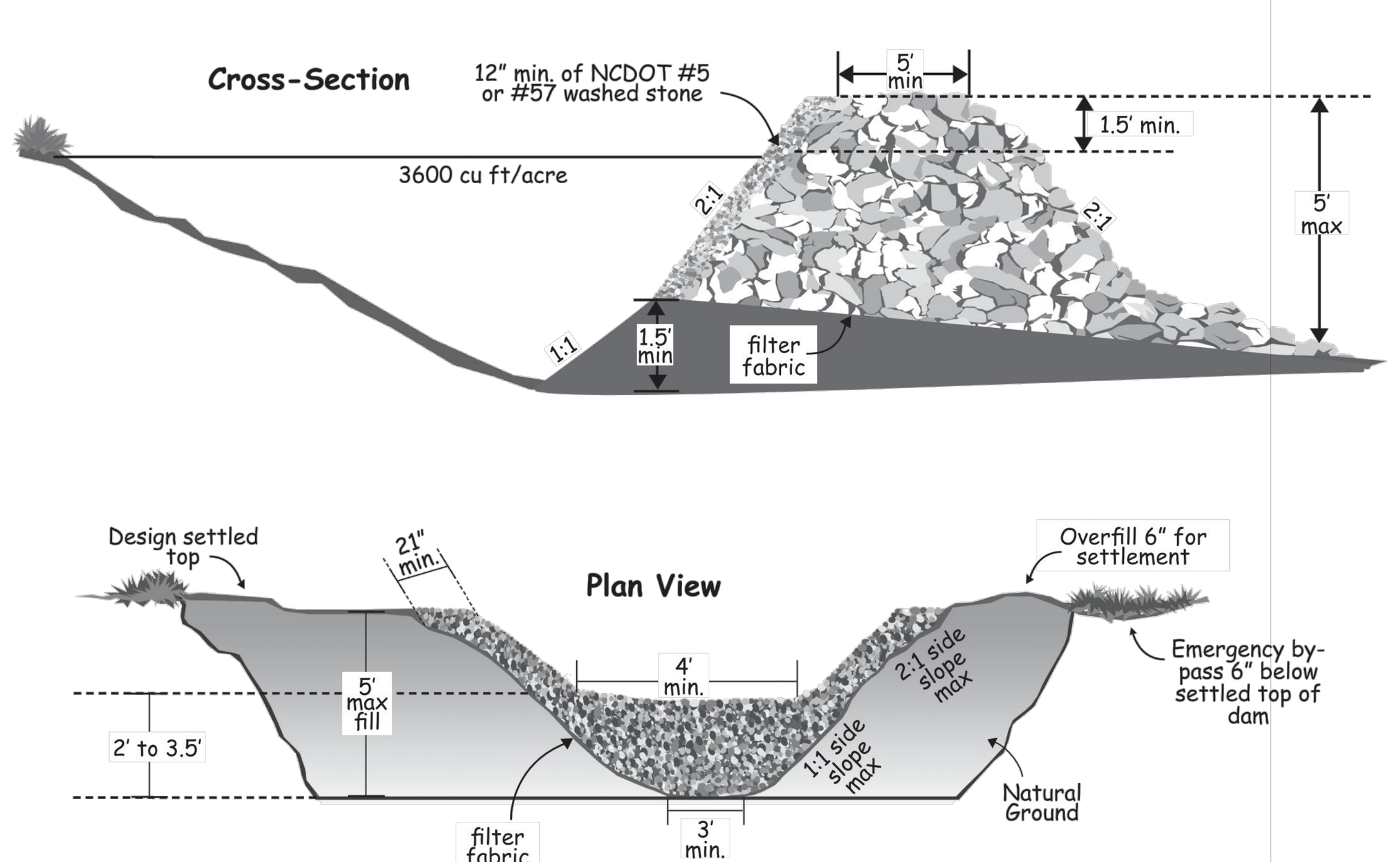

Cross-Section
12" min. of NCDOT #5 or #57 washed stone
5' min
1.5' min.
3600 cu ft/acre
2:1
5' max
1:1
1.5' min
filter fabric
Plan View
Design settled top
21" min.
Overfill 6" for settlement
4' min.
Emergency by-pass 6" below settled top of dam
5' max fill
2' to 3.5'
2:1 side slope max
1:1 side slope max
Natural Ground
filter fabric
3' min.

Figure 6.60a Plan view and cross-section view of a temporary sediment trap.

6

Table 6.60a Design of Spillways

Drainage Area (acres)	Weir Length[1] (ft)
1	4.0
2	6.0
3	8.0
4	10.0
5	12.0

[1] Dimensions shown are minimum.

Construction Specifications

1. Clear, grub, and strip the area under the embankment of all vegetation and root mat. Remove all surface soil containing high amounts of organic matter, and stockpile or dispose of it properly. Haul all objectionable material to the designated disposal area.

2. Ensure that fill material for the embankment is free of roots, woody vegetation, organic matter, and other objectionable material. Place the fill in lifts not to exceed 9 inches, and machine compact it. Over fill the embankment 6 inches to allow for settlement.

3. Construct the outlet section in the embankment. Protect the connection between the riprap and the soil from piping by using filter fabric or a keyway cutoff trench between the riprap structure and soil.

- Place the filter fabric between the riprap and the soil. Extend the fabric across the spillway foundation and sides to the top of the dam; or
- Excavate a keyway trench along the center line of the spillway foundation extending up the sides to the height of the dam. The trench should be at least 2 feet deep and 2 feet wide with 1:1 side slopes.

4. Clear the pond area below the elevation of the crest of the spillway to facilitate sediment cleanout.

5. All cut and fill slopes should be 2:1 or flatter.

6. Ensure that the stone (drainage) section of the embankment has a minimum bottom width of 3 feet and maximum side slopes of 1:1 that extend to the bottom of the spillway section.

7. Construct the minimum finished stone spillway bottom width, as shown on the plans, with 2:1 side slopes extending to the top of the over filled embankment. Keep the thickness of the sides of the spillway outlet structure at a minimum of 21 inches. **The weir must be level and constructed to grade to assure design capacity.**

8. Material used in the stone section should be a well-graded mixture of stone with a d_{50} size of 9 inches (class B erosion control stone is recommended) and a maximum stone size of 14 inches. The stone may be machine placed and the smaller stones worked into the voids of the larger stones. The stone should be hard, angular, and highly weather-resistant.

9. Discharge inlet water into the basin in a manner to prevent erosion. Use temporary slope drains or diversions with outlet protection to divert sediment-laden water to the upper end of the pool area to improve basin trap efficiency (*References: Runoff Control Measures and Outlet Protection*).

10. Ensure that the stone spillway outlet section extends downstream past the toe of the embankment until stable conditions are reached and outlet velocity is acceptable for the receiving stream. Keep the edges of the stone outlet section flush with the surrounding ground, and shape the center to confine the outflow stream (*References: Outlet Protection*).

11. Direct emergency bypass to natural, stable areas. Locate bypass outlets so that flow will not damage the embankment.

12. Stabilize the embankment and all disturbed areas above the sediment pool and downstream from the trap immediately after construction (*References: Surface Stabilization*).

13. Show the distance from the top of the spillway to the sediment cleanout level (1/2 the design depth) on the plans and mark it in the field.

14. Install porous baffles as specified in Practice 6.65, *Porous Baffles.*

Maintenance Inspect temporary sediment traps at least weekly and after each significant (½ inch or greater) rainfall event and repair immediately. Remove sediment, and restore the trap to its original dimensions when the sediment has accumulated to one-half the design depth of the trap. Place the sediment that is removed in the designated disposal area, and replace the part of the gravel facing that is impaired by sediment.

Check the structure for damage from erosion or piping. Periodically check the depth of the spillway to ensure it is a minimum of 1.5 feet below the low point of the embankment. Immediately fill any settlement of the embankment to slightly above design grade. **Any riprap displaced from the spillway must be replaced immediately.**

After all sediment-producing areas have been permanently stabilized, remove the structure and all unstable sediment. Smooth the area to blend with the adjoining areas, and stabilize properly (*References: Surface Stabilization*).

References

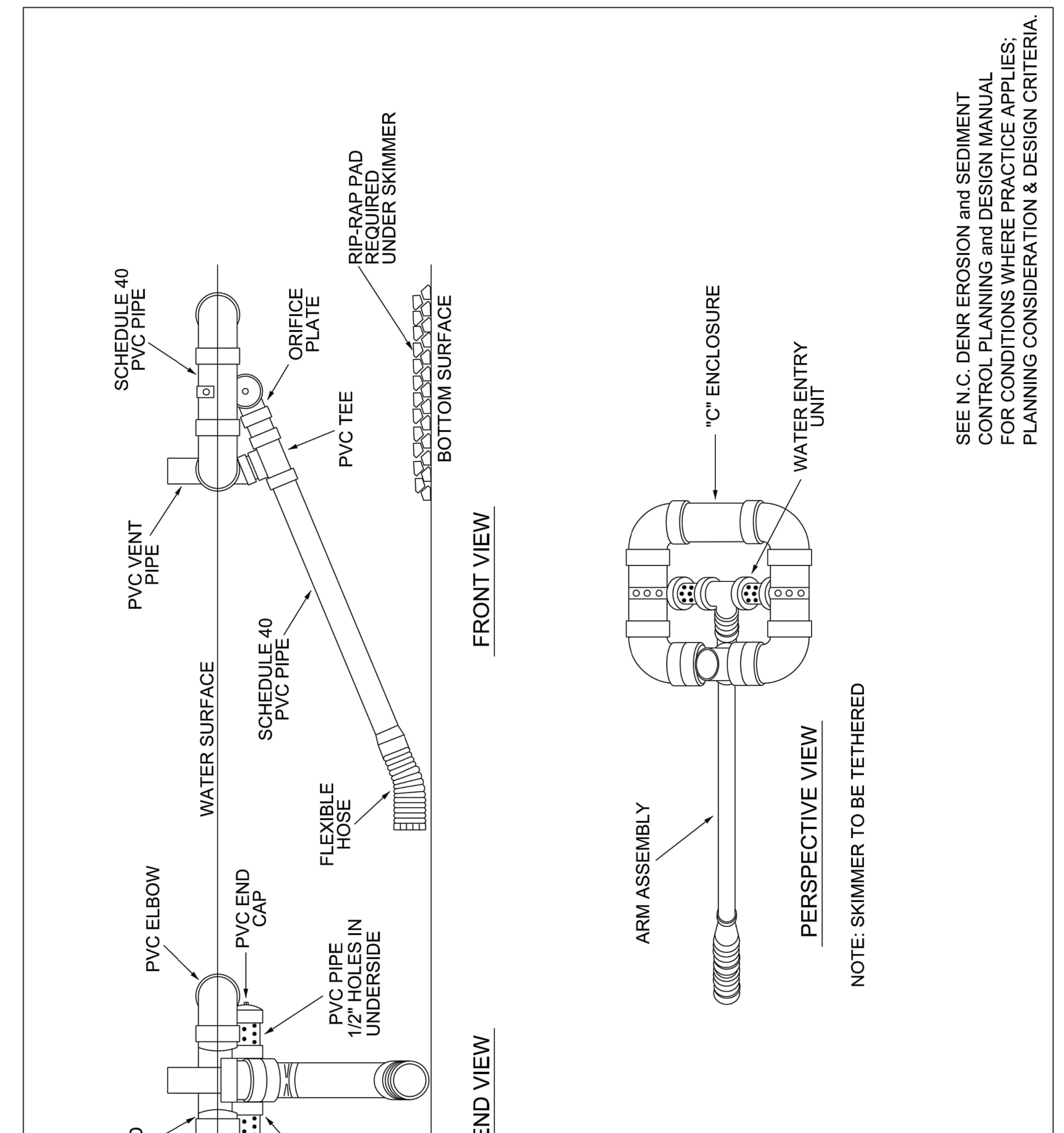
Outlet Protection
6.41, Outlet Stabilization Structure

Runoff Control Measures
6.20, Temporary Diversions
6.21, Permanent Diversions
6.22, Diversion Dike (Perimeter Protection)
6.23, Right-of-way Diversion (Water Bars)

Surface Stabilization
6.10, Temporary Seeding
6.11, Permanent Seeding
6.15, Riprap

Sediment Traps and Barriers
6.61, Sediment Basins
6.64, Skimmer Basins
6.65, Porous Baffles

North Carolina Department of Transportation
Standard Specifications for Roads and Structures


SCHEDULE 40 PVC PIPE
ORIFICE PLATE
RIP-RAP PAD REQUIRED UNDER SKIMMER
PVC TEE
BOTTOM SURFACE
FRONT VIEW
PVC VENT PIPE
WATER SURFACE
SCHEDULE 40 PVC PIPE
FLEXIBLE HOSE
PVC ELBOW
PVC END CAP
PVC PIPE 1/2" HOLES IN UNDERSIDE
PVC END CAP
PVC TEE
END VIEW
"C" ENCLOSURE
WATER ENTRY UNIT
ARM ASSEMBLY
PERSPECTIVE VIEW
NOTE: SKIMMER TO BE TETHERED
SEE N.C. DENR EROSION and SEDIMENT CONTROL PLANNING and DESIGN MANUAL FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATION & DESIGN CRITERIA.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS | DATE: 8/2020 | NOT TO SCALE

SKIMMER

SW-20.19

811 Know what's below. Call before you dig.

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24 HOUR EMERGENCY CONTACT
TRISH NEARHOOF–EUBANKS
813.323.9233

ATWELL
866.850.4200 www.atwell-group.com
1800 PARKWAY PLACE, SUITE 700
MARIETTA, GA
770.423.0807
COA#P-2380

PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
ESPCP DETAILS SHEET

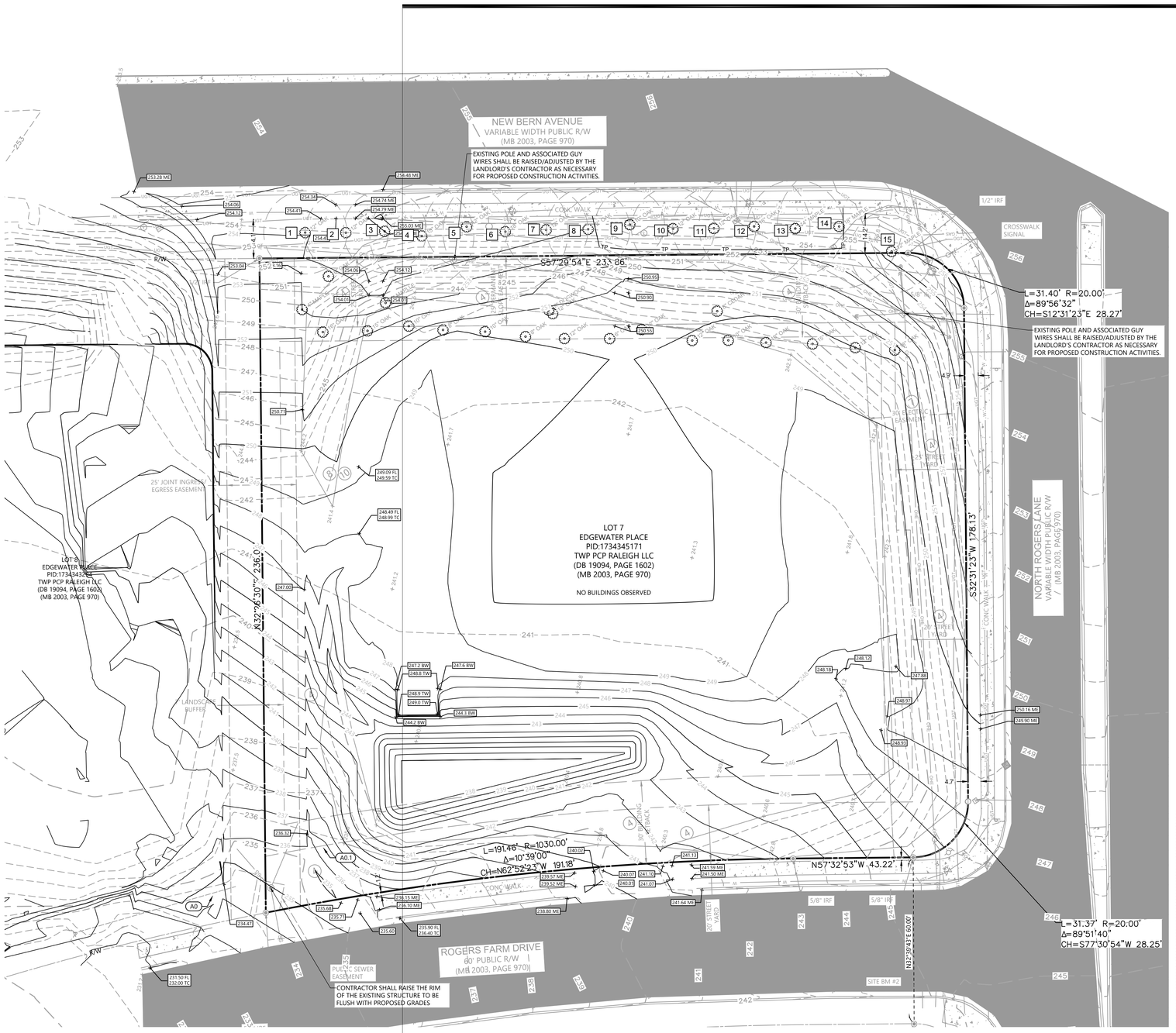
DATE 11/13/2023

REVISIONS

[redacted]

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. C807

CAD FILE: C800 EROSION DETAILS
NOT-ISSUED-FOR-CONSTRUCTION

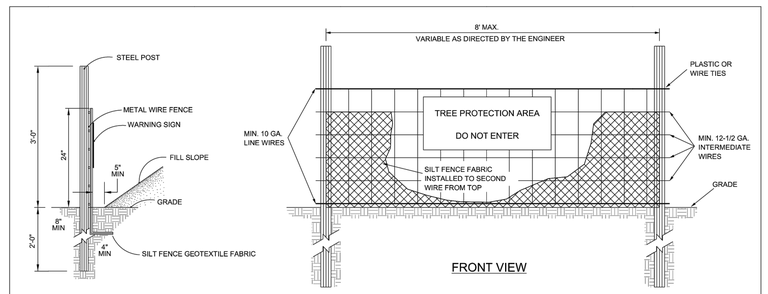


LEGEND

- TREES WITHIN THE R.O.W. (SEE CHART)
- TREES WITHIN SITE. (ALL TO BE REMOVED)
- CRITICAL ROOT ZONE OF EXISTING TREES
- TP — TREE PROTECTION FENCE

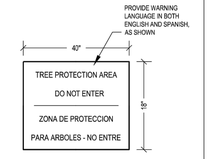
EXISTING R.O.W. TREES

Tree #	Common Name	DBH (inches)	To Be Removed
1	OAK	12	YES
2	OAK	12	YES
3	OAK	12	YES
4	OAK	15	YES
5	OAK	12	YES
6	OAK	18	YES
7	OAK	12	YES
8	OAK	12	YES
9	OAK	10	NO
10	OAK	12	NO
11	OAK	12	NO
12	OAK	16	NO
13	MAPLE	14	NO
14	MAPLE	18	YES
15	MAPLE	12	YES



MAINTENANCE: CLEAN OUT AT 50% CAPACITY
LIFE OF FENCING: 6-9 MONTHS
DO NOT DISTURB TREE CONSERVATION AREAS
SILT FENCE SHOULD NOT BE USED ALONE BELOW GRADED SLOPES GREATER THAN 10' IN HEIGHT.

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 TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTED AREA.
6. ATTACH SIGNS SECURELY TO FENCE 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.
9. FLOW SHALL NOT RUN PARALLEL WITH THE FENCE. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.
10. SEE NC STATE DEQ PRACTICE STANDARDS & SPECIFICATIONS SEDIMENT FENCE SET FOR CONDITIONS WHERE APPLIES: PLANNING CONSIDERATIONS & DESIGN CRITERIA. (HOWEVER, FLOW SHALL NOT RUN PARALLEL WITH THE TOE OF THE FENCE.)



WARNING SIGN DETAIL

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

CITY OF RALEIGH STANDARD DETAIL
TPP-08
STANDARD TEMPORARY REPRESENTATIVE TREE PROTECTION FENCE
REVISIONS
DATE: 8/8/08
NOT TO SCALE

Know what's below. Call before you dig.
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PID: 1734345171
5160 NEW BERN AVE
CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
TREE PROTECTION PLAN

DATE 11/13/2023

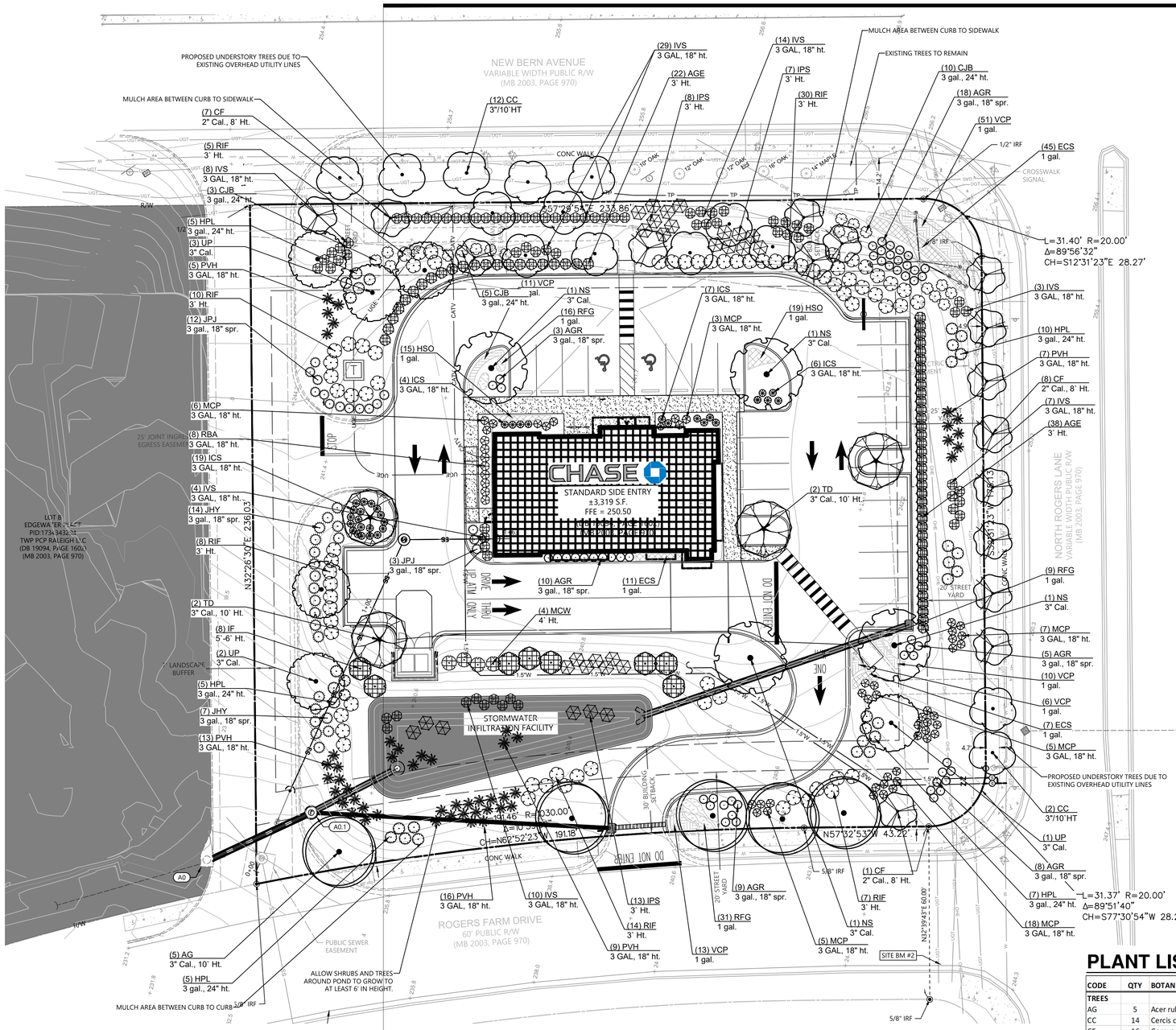
REVISIONS

SCALE: 1" = 20'

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. L100

CAD FILE: L100 LANDSCAPE

NOT-ISSUED-FOR-CONSTRUCTION



NOTES:
1. GRAPHIC SYMBOLS TAKE PRECEDENCE OVER WRITTEN QUANTITIES AND KEYS ON PLANS.
2. CONTRACTOR TO PROVIDE IRRIGATION DESIGN FOR LANDSCAPE ARCHITECTS APPROVAL PRIOR TO INSTALLATION.
3. ALL PLANT MATERIAL SHALL MEET OR EXCEED SIZE AND SHAPE RELATIONSHIPS SPECIFIED IN THE LATEST EDITION OF THE AMERICAN STANDARDS FOR NURSERY STOCK.
4. GENERAL CONTRACTOR TO PROVIDE STRIP AND PILE TOPSOIL FOR THE LANDSCAPE CONTRACTOR TO BACKFILL LANDSCAPE ISLANDS. MOUND LANDSCAPE ISLANDS A MIN. 18" FROM CENTER TO BACK OF CURB.
5. A MINIMUM 4" DEPTH OF TOPSOIL TO BE SPREAD AND FINE GRADED BY THE LANDSCAPE CONTRACTOR PRIOR TO SOD INSTALLATION.
6. ALL PLANTING BEDS TO RECEIVE SHREDDED HARDWOOD MULCH TO A DEPTH OF 3 INCHES MINIMUM.
7. ALL SUBSTITUTIONS OF PLANT MATERIALS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

LANDSCAPE REQUIREMENTS SUMMARY

ITEM	REQUIREMENT	QTY. REQUIRED	QTY. PROVIDED	FORMULA
STREET TREES	1 SHADE TREE PER 40' 1 UNDERSTORY TREE PER 20' CLOSE TO OVERHEAD UTILITIES	NEW BERN AVE. =9 TREES N. ROGERS LANE = 9 TREES ROGERS FARM DR.= 6 TREES	NEW BERN AVE. = 10 TREES (5 REDBUD, 5 EXISTING) ROGERS LANE = 10 TREES (8 DOGWOOD, 2 REDBUD) ROGERS FARM DR.= 6 TREES (5 MAPLE, 1 DOGWOOD)	NEW BERN AVE. =233' TOTAL =100'/20' = 5 TREES = 133'/40' = 4 TREES , 9 TREES TOTAL. N. ROGERS LANE =178'/20'=8.9=9TREES ROGERS FARM DR.=234'/40' =5.85 = 6 TREES
PARKING LOT TREES	1 TREE AT THE END OF EVERY BAY NO MORE THAN 10 SPACES WITHOUT 1 TREE PER 2000 sf. PARKING AREA	7 TREES	7 TREES (3 BLACKGUM, 4 CYPRESS)	13601 SF PARKING AREA / 2000 = 6.8 = 7 TREES
STREET PROTECTIVE YARD TYP C3	TYP C3 10' WIDTH, 30 (3.5' HT.) SHRUBS PER 100 LF	NEW BERN AVE. = 55 SHRUBS N. ROGERS LANE = 33 SHRUBS ACCESS ROAD = 8 SHRUBS	NEW BERN AVE. = 56 SHRUBS N. ROGERS LANE =38 SHRUBS ACCESS ROAD= 8 SHRUBS	NEW BERN AVE. =178' /100'=1.78 x 30 = 53.4 = 55 SHRUBS N. ROGERS LANE =107'/100'=1.07 x 30 = 32.1 = 33 SHRUBS ACCESS ROAD=26'/100' =0.26 = 7.8 = 8 SHRUBS
PERIMETER ISLANDS	5 FT. WIDE LANDSCAPE STRIP ALONG ACCESS ISLES WITH SHRUBS 30 PER 100 LF	SEE PLAN	SEE PLAN	N/A
DETENTION POND SCREENING	75% OF PERIMETER OF POND TO BE SCREENED WITH EVERGREEN SHRUBS / TREES WITH A MATURE HEIGHT OF 6'.	197 LF OF POND SCREENED	236 LF OF POND SCREENED WITH EVERGREEN TREES AND SHRUBS	POND PERIMETER 263' x .75 = 197.25' SCREENED
SHOD 4 -NEW BERN AVE	3 SHADE TREES (3.5" CAL. 14' HT.) 4 UNDERSTORY TREES (6' HT.) AND 50 SHRUBS (18" HT.) PER 100 LF	7 SHADE TREES 10 UNDERSTORY TREES 117 SHRUBS	3 SHADE TREES , 4 UNDERSTORY TREES DUE TO UTILITY LINES (3 ELM, 4 REDBUD 10 UNDERSTORY TREES (7 DOGWOOD, 3 REDBUD) 117 SHRUBS	NEW BERN AVE. =233' /100'= 2.33 2.33 x 3 =6.99 = 7 SHADE TREES 2.33 x 4 = 9.3 = 10 UNDERSTORY TREES 2.33 x 50 = 116.5 = 117 SHRUBS

PLANT LIST

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER		REMARKS	WATER REQUIREMENTS
TREES								
AG	5	Acer rubrum `October Glory` TM	October Glory Maple	3" Cal., 10` Ht.	B&B or Cont.		Straight trunk, full head	Moderate
CC	14	Cercis canadensis	Eastern Redbud	3" Cal.,10`Ht.	B&B or Cont.		Single trunk, full head, 5` clear trunk	Low
CF	16	Cornus florida	Eastern Dogwood	2" Cal., 8` Ht.	B&B or Cont.		Fully branched	Low
IF	8	Ilex x attenuata `Fosteri`	Foster`s Holly	5`-6` Ht.	B&B		Full to ground	Low
NS	4	Nyssa sylvatica 'Wildfire'	Wildfire Blackgum	3" Cal., 10' Ht.	B&B or Cont.		Straight trunk, Well Rounded and Full	Low
TD	4	Taxodium distichum	Bald Cypress	3" Cal., 10` Ht.	B&B or Cont.		Straight trunk, even crown	Low
UP	6	Ulmus parvifolia `Emer II`	`Emer II` Allee Elm	3" Cal., 10` Ht.	B&B		Well branched head, Straight trunk	Low
CODE	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**	**SPACING**	**REMARKS**	
SHRUBS								
AGE	60	Abelia x grandiflora `Edward Goucher`	Glossy Abelia	3` Ht.	Pot	48" o.c.	Full, even haed	Medium
AGR	53	Abelia x grandiflora `Rose Creek`	Rose Creek Abelia	3 gal., 18" spr.	Pot	36" o.c.	Full even head	Medium
CJB	18	Cleyera japonica	Cleyera	3 gal., 24" ht.	Pot	48" o.c.	Full pots matched	Low
HPL	32	Hydrangea paniculata `Limelight` TM	Limelight Hydrangea	3 gal., 24" ht.	Pot	48" o.c.	Full Pots Specimens	Low
ICS	36	Ilex cornuta `Soft Touch`	Soft Touch Holly	3 GAL, 18" ht.	Pot	30" o.c.	full even head	Low
IVS	75	Ilex vomitoria `Schillings`	Schillings Holly	3 GAL, 18" ht.	Pot	42" o.c.	Full, Rounded Head	Low
IPS	28	Illicium parviflorum	Swamp Anise	3` Ht.	Pot	60" o.c.	Full to ground	Medium
JPJ	15	Juniperus conferta 'Blue Pacific'	Blue Pacific Juniper	3 gal., 18" spr.	Pot	42" o.c.	Full	Low
JHY	21	Juniperus horizontalis plumosa `Youngstow	Creeping Juniper	3 gal., 18" spr.	Pot	48" o.c.	Full	Low
MCP	44	Muhlenbergia capillaris	Pink Muhly	3 GAL, 18" ht.	Pot	36" o.c.	Full pot	Low
MCW	4	Myrica cerifera	Wax Myrtle	4` Ht.	Pot	60" o.c.	Full, even head	Medium
PVH	50	Panicum virgatum `Heavy Metal`	Blue Switch Grass	3 GAL, 18" ht.	Pot	48" o.c.	Full pot	Low
RIF	74	Rhododendron indicum `Formosa`	Formosa Azalea	3` Ht.	Pot	60" o.c.	Full to ground	Low
RBA	8	Rhododendron x 'Robled'	Autumn Chiffon Azalea	3 GAL, 18" ht.	Pot	36" o.c.	Full even head	Medium
GROUND								
ECS	63	Echinacea x 'Cheyenne Spirit'	Cheyenne Spirit Coneflower	1 gal.	Pot	24" o.c.	Full pot	Low
HSO	34	Hemerocallis x `Stella de Oro`	Stella de Oro Daylily	1 gal.	Pot	18" o.c.	Full pot	Medium
RFG	56	Rudbeckia fulgida `Goldstrum`	Coneflower	1 gal.	Pot	18" o.c.	Full	Low
VCP	91	Verbena canadensis 'Homestead Purple'	Homestead Purple Verbena	1 gal.	Pot	24" o.c.	Full pot	Low

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PID: 1734345171
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WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE
BDG ARCHITECTS
SITE CONSTRUCTION PLANS
LANDSCAPE PLAN

DATE 11/13/2023

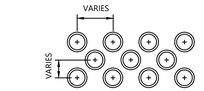
REVISIONS

CAD FILE: L100 LANDSCAPE

0 10' 20'
SCALE: 1" = 20'

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. L110

NOT-ISSUED-FOR-CONSTRUCTION

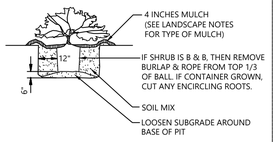


NOTE:

1. ENTIRE BED SHALL BE EXCAVATED TO RECEIVE SOIL MIX AND GROUNDCOVERS.
2. GROUNDCOVER BEDS SHALL BE RAISED 4" ABOVE SURROUNDING GRADE.

GROUND COVER PLANTING

L1G



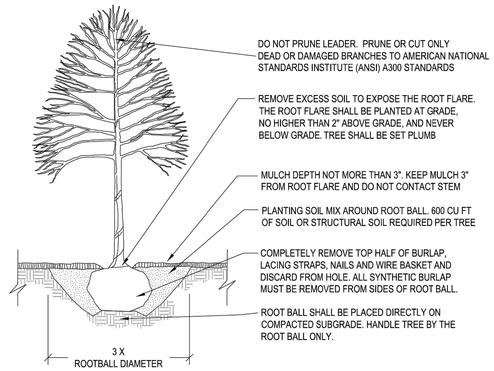
NOTE:

1. WHEN SHRUBS ARE USED IN MASSES, ENTIRE BED SHALL BE EXCAVATED TO RECEIVE SOIL MIX AND PLANT MATERIAL.
2. SHRUB BEDS SHALL BE RAISED 4" ABOVE SURROUNDING GRADE.

SHRUB PLANTING

N.T.S.

L1H



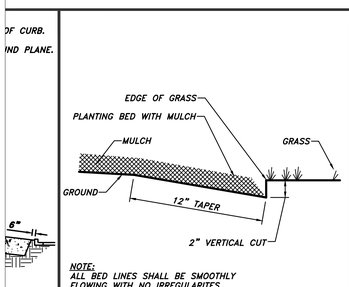
CONTACT INFORMATION:
CITY OF RALEIGH PARKS, RECREATION AND CULTURAL RESOURCES DEPARTMENT URBAN FORESTER:
TREES@RALEIGHNC.GOV
WWW.RALEIGHNC.GOV

NOTES:

1. TREES MUST MEET THE TREE QUALITY STANDARDS IN CH. 2 OF THE CITY TREE MANUAL.
2. CONTRACTOR IS RESPONSIBLE FOR ADEQUATE DRAINAGE OF ALL PLANTING PITS. (POSITIVE DRAINAGE AWAY FROM PIT)
3. TREES SHALL BE PLANTED BETWEEN OCTOBER 1ST AND APRIL 30TH.
4. A TREE IMPACT PERMIT IS REQUIRED.
5. ELECTRICAL OUTLETS AND OTHER UTILITIES ARE PROHIBITED IN THE PLANTING AREA IMMEDIATELY SURROUNDING THE TREE.
6. IF STAKING IN ACCORDANCE WITH THE CITY TREE MANUAL, THE STAKING MUST BE REMOVED WITHIN ONE YEAR.
7. TREES WILL HAVE A MINIMUM 1 YEAR WARRANTY AFTER THE INITIAL PLANTING IS APPROVED BY THE CITY.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/2020	NOT TO SCALE
10/2019	TREE PLANTING DETAIL	
	TPP-03	

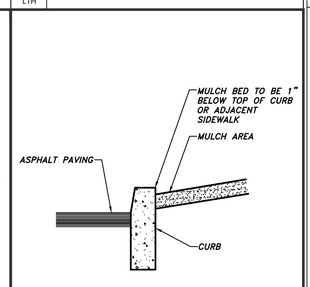


ON

TRENCHED BED EDGE DETAIL

N.T.S.

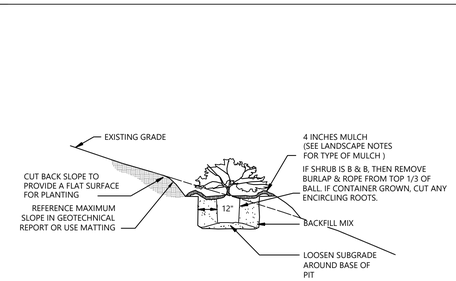
L3C



MULCH BED AT CURB OR WALKWAY

N.T.S.

L3A



SHRUB PLANTING ON SLOPE

N.T.S.

L1I

GENERAL

1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING ALL WORK AS SPECIFIED IN ACCORDANCE WITH THE PLANS AND AS LISTED IN THE GENERAL NOTES.
2. BEFORE BEGINNING ANY WORK, ALL UTILITIES AND UNDERGROUND CONSTRUCTION SHALL BE LOCATED BY THE LANDSCAPE CONTRACTOR SO THAT PROPER PRECAUTIONS MAY BE TAKEN NOT TO DISTURB OR DAMAGE ANY SUBSURFACE IMPROVEMENTS. WHERE PUBLIC UTILITIES ARE PRESENT, THE LANDSCAPE CONTRACTOR SHALL REQUEST ON-SITE LOCATIONS BY ALL UTILITY COMPANIES AND CONFIRM THAT SUCH LOCATIONS HAVE BEEN COMPLETED. THE LANDSCAPE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR MAKING, AT HIS OWN EXPENSE, ALL REPAIRS TO DAMAGED UTILITIES RESULTING FROM WORK COVERED BY THIS CONTRACT.
3. ANY DAMAGE DONE BY THE LANDSCAPE CONTRACTOR TO ANY PAVING, BUILDINGS, CURB, OR WALKS SHALL BE REPAIRED OR REPLACED BY THE LANDSCAPE CONTRACTOR.
4. THE LANDSCAPE CONTRACTOR SHALL TAKE MEASURES TO PREVENT DUST, MUD, MARKS, ETC FROM SOILING AND DAMAGING IMPROVEMENTS. ANY DAMAGE SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
5. THE LANDSCAPE CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE FROM ALL PARTS OF THE PROJECT.
6. ALL PROPOSED PLANT MATERIALS SHALL BE FREE FROM INJURY, PEST, DISEASE, OR ROOT DEFECTS AND SHALL MEET OR EXCEED STANDARDS SET FORTH IN THE CURRENT EDITION OF 'AMERICAN STANDARD FOR NURSERY STOCK'. THE LANDSCAPE ARCHITECT MAY REJECT PLANT MATERIAL OR INSTALLATION WHICH DOES NOT COMPLY WITH THE SPECIFICATIONS OF THIS DRAWING AT ANY TIME PRIOR TO FINAL ACCEPTANCE.
7. PLANTS SHALL BE WATERED PRIOR TO TRANSPORTATION AND SHALL BE KEPT MOIST UNTIL PLANTED. ALL PLANTS SHALL BE PROTECTED FROM DESICCATION DURING DELIVERY WITH A PROTECTIVE COVERING OR ENCLOSED TRUCK.
8. THE PLANT LIST IS FOR THE LANDSCAPE CONTRACTORS CONVENIENCE. THE LANDSCAPE CONTRACTOR SHALL VERIFY THE COUNT FROM THE PLAN AND REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT.
9. ALL LANDSCAPE AREAS WHERE ASPHALT OR CURBING HAS BEEN REMOVED AND ALL LANDSCAPE ISLANDS MUST HAVE CLEAN, FRIALBE TOPSOIL TO A TOTAL DEPTH OF TWO (2) FEET.
10. THE LANDSCAPE CONTRACTOR SHALL FURNISH ALL MATERIALS INCLUDING, BUT NOT LIMITED TO, TOPSOIL, MULCHES, LIMES, AND FERTILIZERS NECESSARY FOR THE HEALTHY GROWTH OF PLANT MATERIAL.
11. INSTALL TREES PLUMB. DO NOT DEPEND ON STAKING TO PULL PLANTS TO PLUMB POSITION. STAKING SHALL BE ON AN AS-NEEDED BASIS.
12. MULCH ALL GROUND COVER AND PLANTING BEDS AND MULCH AREAS WITH 3" MIN. SHREDDED HARDWOOD MULCH.
13. ALL TEMPORARY CONSTRUCTION ACTIVITIES WILL OCCUR IN PARKING LOT AREAS ON THE SITE.
14. SHRUB HEIGHTS SHALL BE MAINTAINED AT 2'-0" AND TREE CANOPIES SHALL BE ABOVE 6'-0" AT ALL PLANTING ISLANDS AND DRIVE OPENINGS WITHIN THE PARKING LOT AND INTERSECTING STREETS BY LANDSCAPE CONTRACTOR AND OWNER TO INSURE SAFE SIGHT DISTANCES.
15. ALL CONSTRUCTION DEBRIS IS TO BE ENTIRELY REMOVED FROM SITE BY THE LANDSCAPE CONTRACTOR.
16. THE LANDSCAPE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE MAINTENANCE, INCLUDING WATERING, WEEDING, PRUNING, MOWING OF LAWNS, AND RE-MULCHING OF THIS WORK UNTIL DATE OF FINAL ACCEPTANCE.

INSPECTION

1. THE OWNER'S REPRESENTATIVE SHALL INSPECT THE TOTAL WORK FOR ACCEPTANCE UPON REQUEST OF THE LANDSCAPE CONTRACTOR. ANY UNSATISFACTORY ITEMS SHALL BE NOTED AND MUST BE REMEDIED BY THE LANDSCAPE CONTRACTOR PRIOR TO ACCEPTANCE. UPON SATISFACTORY COMPLETION OF ALL WORK, THE OWNER'S REPRESENTATIVE SHALL CERTIFY IN WRITING ACCEPTANCE OF THE WORK. PAYMENT FOR CONTRACT WORK TO THE CONTRACTOR PURSUANT TO ISSUANCE OF ACCEPTANCE SHALL BE DEEMED THE FINAL PAYMENT FOR SAID WORK.

WARRANTY

1. ALL PLANT MATERIAL SHALL BE WARRANTEED BY THE LANDSCAPE CONTRACTOR FOR A PERIOD OF ONE YEAR FOLLOWING ACCEPTANCE. THE LANDSCAPE CONTRACTOR SHALL REPLACE, AT NO EXPENSE TO THE OWNER, UNHEALTHY PLANTS WITHIN 15 DAYS. THIS ASSUMES THAT THE OWNER HAS FOLLOWED THE APPROPRIATE MAINTENANCE PROCEDURES AND THAT NO SUCH REPLACEMENTS ARE NECESSITATED BY NEGLECT OR ABUSE BY OWNER, BY VANDALISM OR BY ACTS-OF-GOD DAMAGE.
2. REPLACEMENT SIZES SHALL BE COMPARABLE TO THOSE ATTAINED BY ADJACENT THRIVING PLANTS. ALL REPLACEMENT STOCK WILL BE SUBJECT TO THE SAME WARRANTY REQUIREMENTS AS THE ORIGINAL STOCK. REPLACEMENT WARRANTY BEGINS ON DAY OF INSTALLATION.
3. THE LANDSCAPE CONTRACTOR SHALL MAKE ALL NECESSARY REPAIRS TO GRADES, VEGETATIVE COVER AND PAVING REQUIRED BECAUSE OF PLANT REPLACEMENTS. SUCH REPAIRS SHALL BE DONE AT NO EXTRA COST TO THE OWNER.

811 Know what's below. Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:

CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

24 HOUR EMERGENCY CONTACT
TRISH NEARHOOF-EUBANKS
813.323.9233

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CITY OF RALEIGH
WAKE COUNTY, NORTH CAROLINA

CHASE - NEW BERN AVE

BDG ARCHITECTS

SITE CONSTRUCTION PLANS

LANDSCAPE DETAILS

DATE 11/13/2023

REVISIONS

CAD FILE: L100 LANDSCAPE

0 10' 20'
SCALE: 1" = 20'

DRAWN BY: WA
CHECKED BY: BP
PROJECT MANAGER: KW
JOB #: 23003175
FILE CODE: ##
SHEET NO. L120

NOT-ISSUED-FOR-CONSTRUCTION