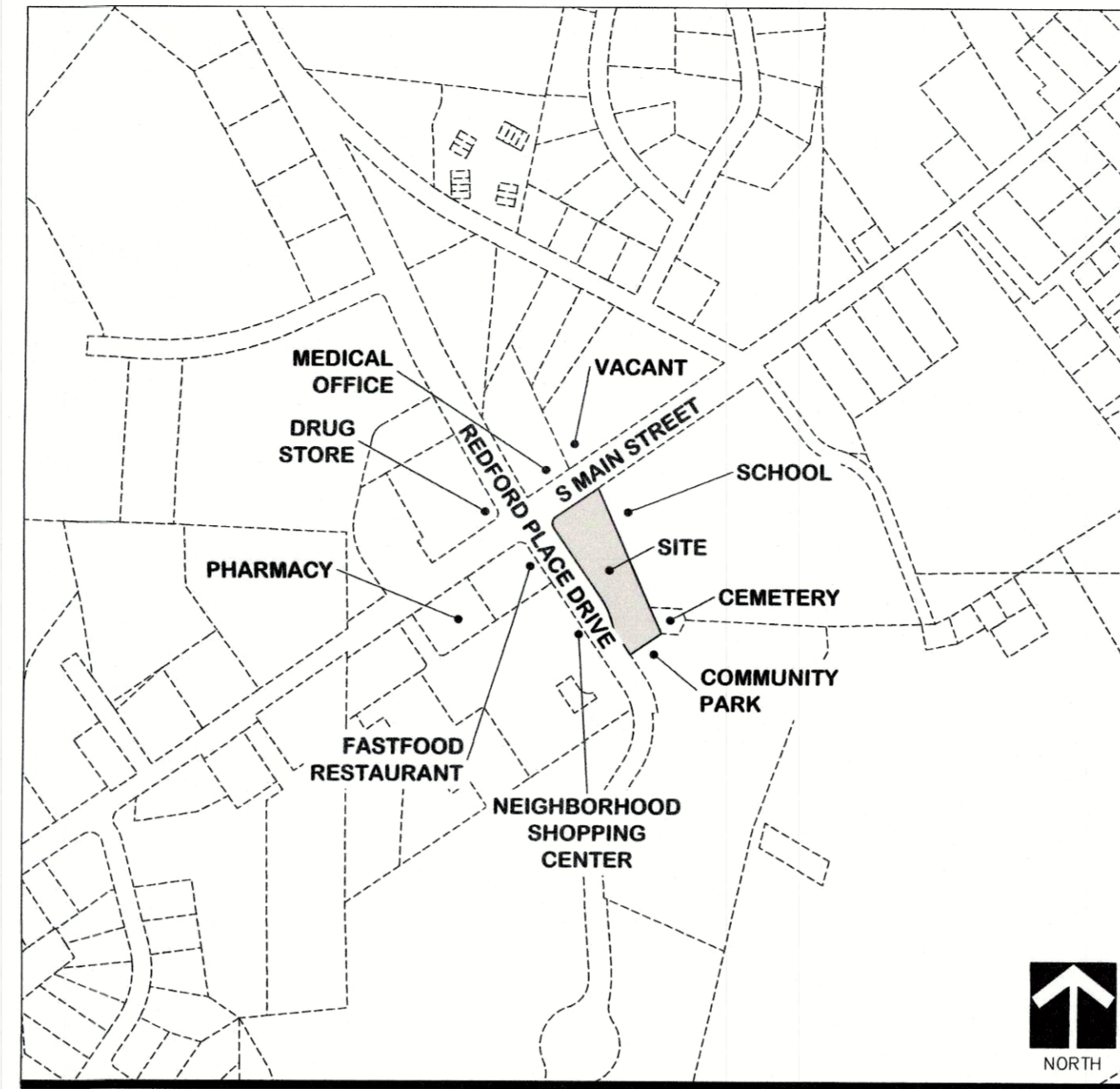


# CONSTRUCTION DRAWINGS FOR: 101 & 115 REDFORD PLACE DRIVE ROLESVILLE, NORTH CAROLINA

- **OWNER:**  
WALL, MYRTLE R. HEIRS  
400 WATKINS FARM RD  
ROLESVILLE, NC 27571
- **DEVELOPER:**  
ROGERS ROAD 3415, LLC  
(JONATHAN BOES)  
1000 CRESCENT GREEN  
CARY, NC 27518  
(O) 919.247.0497
- **ENGINEER:**  
FABST DESIGN GROUP, PA  
404-B GLENWOOD AVE.  
RALEIGH, NC 27603  
(O) 919.848.4399  
(F) 919.848.4395
- **ARCHITECT:**  
REDFOOT STUDIO ARCHITECTURE, PC  
2515 SAXAPAHAW BETHLEHEM CHURCH RD  
GRAHAM, NC 27253  
(O) 919.931.7134
- **SURVEYOR:**  
NEWCOMB LAND SURVEYORS, PLLC  
7008 HARPS MILL RD STE 105  
RALEIGH, NC 27615  
(O) 919.847.1800
- **GENERAL CONTRACTOR**  
CHAMBLISS & RABIL CONTRACTORS INC.  
(CHRIS DOUGHERTY)  
3614 HAWORTH DR  
RALEIGH, NC 27609  
(O) 919.355.0567  
(C) 252.883.8739  
(F) 252.442.9487



VICINITY MAP  
1" = 500'

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C-4.0	UTILITY PLAN
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D-4.2	EROSION CONTROL DETAIL SHEET
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L-1.1	LANDSCAPE DETAIL SHEET
SLI-1.0	LIGHTING PLAN
A1.0	BUILDING ELEVATIONS
A1.1	BUILDING ELEVATIONS

- MUNICIPAL CONTACT LIST**
- **PLANNING - TOWN OF ROLESVILLE**  
PLANNING DEPARTMENT  
DANNY JOHNSON - PLANNING DIRECTOR  
502 SOUTHTOWN CIRCLE  
ROLESVILLE, NC 27571  
(O) 919.554.6517
  - **STREETS AND HIGHWAYS - NCDOT**  
DIVISION 5, DISTRICT 1  
SEAN BRENNAN - SENIOR ASSISTANT DISTRICT ENGINEER  
4009 DISTRICT DRIVE  
RALEIGH, 27607  
(O) 919.733.7759  
spbrennan@ncdot.gov
  - **INSPECTIONS - WAKE COUNTY INSPECTIONS & PERMITS DEPARTMENT**  
KENNETH DORMAN - BUILDING INSPECTOR  
(C) 919.524.4623  
EMERSON PRIVETTE - TRADES INSPECTOR  
(C) 919.524.4598  
(O) 919.856.6118
  - **EROSION CONTROL & STORMWATER - WAKE COUNTY**  
WAKE COUNTY GOVERNMENT - WATER QUALITY  
JEEVAN NEUPANE  
P.O. BOX 550  
RALEIGH, NC 27602  
(O) 919.819.8907  
jeevan.neupane@wakegov.com
  - **WATER AND SEWER - CITY OF RALEIGH**  
PUBLIC UTILITIES DEPARTMENT  
TIM BEASLEY - DEPARTMENT REVIEW  
222 W. HARGETT STREET  
RALEIGH, NC 27601  
(O) 919.996.2176  
timothy.beasley@raleighnc.gov
  - **WATER AND SEWER - TOWN OF ROLESVILLE**  
COLEJENEST & STONE, PA  
LEWIS HARDEE, PE, PLS - PROJECT MANAGER  
131 1/2 S WILMINGTON STREET, SUITE 200  
RALEIGH, NC 27601  
(O) 919.645.5964  
(C) 252.908.5722

**EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT**

**APPROVED**

EROSION CONTROL  S- \_\_\_\_\_

STORMWATER MGMT.  S- \_\_\_\_\_

FLOOD STUDY  S- \_\_\_\_\_

DATE \_\_\_\_\_

ENVIRONMENTAL CONSULTANT SIGNATURE

**APPROVED FOR COMPLIANCE**

Case #SP-19-09 Project: 101/115 Redford Place Dr

By: *Danny Johnson* Date: *4/23/2020*

These plans have been approved for compliance with the Town Code of Ordinance & Standard specifications & Construction Details, subject to statements & conditions hereby incorporated by reference.

*Site Plan Amendment 4/23/2020 dj*

**ISSUED FOR CONSTRUCTION**

NOTE(s):  
ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, WAKE COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.

**FABST DESIGN GROUP, PA**  
Engineering | Consulting  
404-B Glenwood Avenue, Raleigh, North Carolina 27603  
Phone: 919.848.4399 | Fax: 919.848.4395 | NC LICENSE NUMBER: C-3211

PREPARED FOR: ROGERS ROAD 3415, LLC  
1000 CRESCENT GREEN  
CARY, NORTH CAROLINA 27518

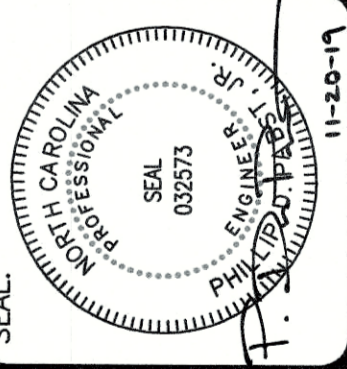
DATE: 7.31.2019

PROJECT ENGINEER: [Signature]

PROJECT CAD DESIGNER: [Signature]

PROJECT SURVEYOR: [Signature]

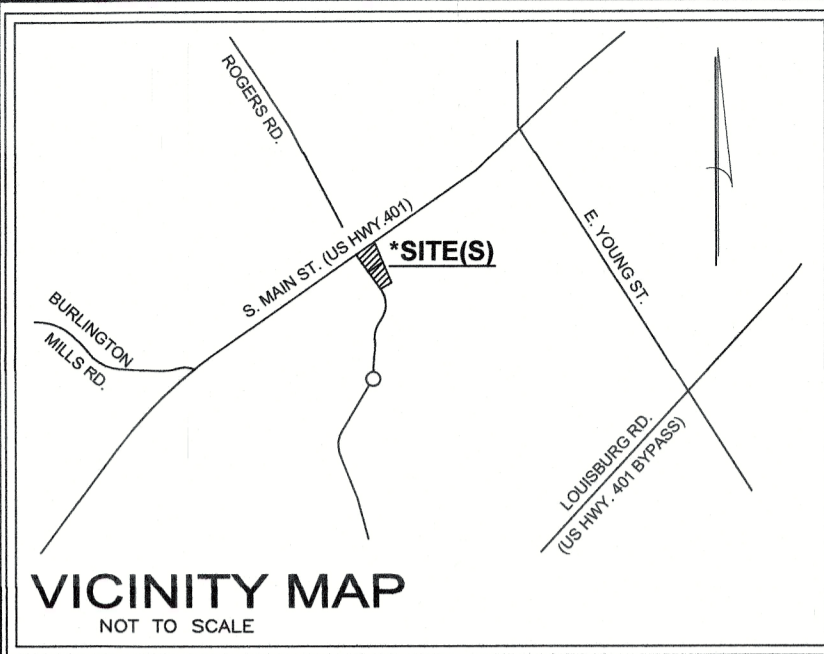
**101 & 115 REDFORD PLACE DRIVE**  
ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
COVER SHEET



NO.	REVISION	DATE
1	REVISED PER FOR COMMENTS	9/28/19
2	REVISED PER FOR COMMENTS	10/7/19
3	REVISED PER WAKE CO COMMENTS	10/22/19
	REVISED PER WAKE CO COMMENTS	11/26/19

**DRAWING SHEET**  
**C-0.0**  
PROJECT NUMBER  
**449-19**

F:\Public\10-Projects\400-499\449-19\_Redford\_Place\_Medical\_Office\_The\_Redfoot\_Studio\_Architecture\_PC\50-Drawings\64-Design\C-0.0.dwg Nov 19, 2019 3:31pm Bjt.dobson



**VICINITY MAP**  
NOT TO SCALE

**REFERENCES:**

WILL BOOK 2772, PAGE 00-E  
BOOK OF MAPS 1992, PAGE 41  
BOOK OF MAPS 2003, PAGE 435  
\*OTHERS SHOWN HEREON

**LEGEND and NOMENCLATURE**

<b>SYMBOLS</b>	<b>LINETYPES</b>
○ Ex. iron pipe/rod or nail	— X — Fence
□ Ex. concrete monument	— OU — Overhead utility
● New iron pipe	— W — Water
○ Calculated point	— SS — Sanitary sewer
○ Cable pedestal	— SD — Storm drain
○ Telephone pedestal	
○ Electric pedestal	<b>ABBREVIATIONS</b>
○ Fiber-optic marker	DB Dead Book
○ Traffic signal box	PB or BM Plat Book / Book of Maps
○ Water meter	FFE Finished floor elevation
○ Fire hydrant	PG Page
○ Valve (water or gas)	S.F. Square feet
○ Sanitary sewer manhole	AC. Acres
○ Sanitary sewer cleanout	R/W Right-of-way
○ HVAC	NCSR North Carolina State Route
○ Drainage inlet (w/ grate)	NCDDOT North Carolina Dept. of Transportation
○ Storm drain manhole	COV. Covered
○ Utility pole	EX. Existing
○ Lamp post	RCP Reinforced concrete pipe
○ Signal pole	PVC Polyvinyl chloride pipe
○ Guy wire	P/L Property line
○ Sign post	AG Above ground
	BG Below ground

**NOTES:**

- All distances are horizontal ground distances in u.s. survey feet unless otherwise noted.
- This survey does not include nor depict any environmental evaluations.
- Field survey performed June 29 & July 11, 2019.
- Surveyor has made no investigation or independent search for easements of record, encumbrances, restrictive covenants, ownership title evidence or any other facts that an accurate and current title search may disclose.
- The locations of underground utilities as shown hereon are based on aboveground structures and aboveground visual evidence. Locations of underground utilities/structures may vary from location shown hereon. Additional buried utilities/structures may be encountered. No excavations were made during the progress of this survey to locate buried utilities/structures.
- Subject properties are not located within a special flood hazard zone per FEMA Flood Insurance Rate Map (FIRM) #3720175800J, effective date May 2, 2006.
- The State Plane Coordinates for this project were produced with RTK GPS observations and processed using the North Carolina VRS network. The network positional accuracy of the derived positional information is ±0.07'.

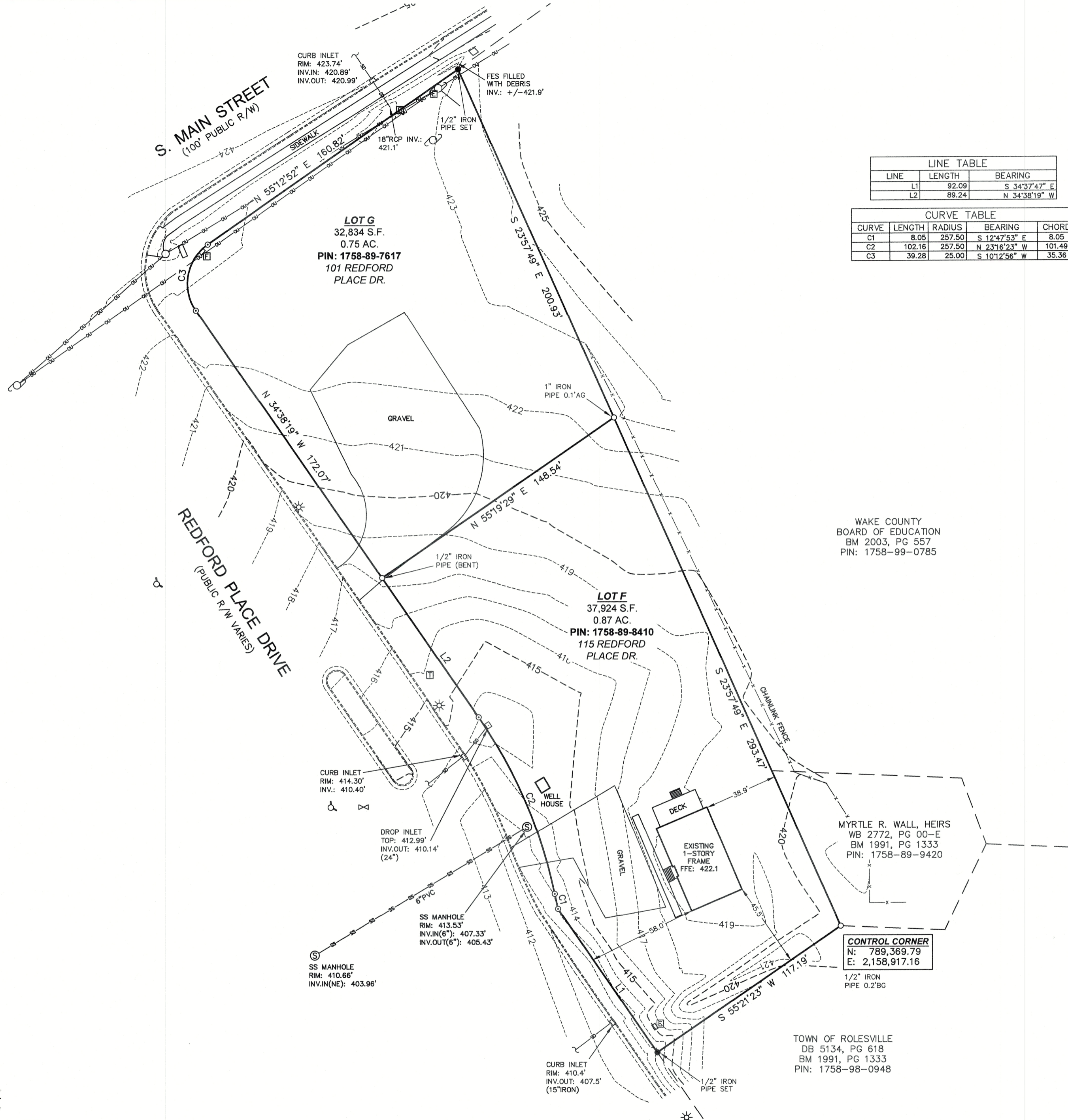
Horizontal Datum = NAD 83 / 2011  
Vertical Datum = NAVD 88

THIS SURVEY IS OF AN EXISTING PARCEL OR PARCELS OF LAND OR ONE OR MORE EXISTING EASEMENTS AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET

I, Justin L. Luther, certify that this plat was drawn under my supervision from an actual survey made under my supervision from references as noted on said plat; that the boundaries not surveyed are clearly indicated as drawn from information as indicated under references; that the ratio of precision or positional accuracy as calculated is greater than 1:10,000; that this plat was prepared in accordance with G.S. 47-30 as amended.

Witness my original signature, license number and seal this day of July, 2019.

Professional Land Surveyor (L-5107)



**LINE TABLE**

LINE	LENGTH	BEARING
L1	92.09	S 34°37'47\" E
L2	89.24	N 34°38'19\" W

**CURVE TABLE**

CURVE	LENGTH	RADIUS	BEARING	CHORD
C1	8.05	257.50	S 12°47'53\" E	8.05
C2	102.16	257.50	N 23°16'23\" W	101.49
C3	39.28	25.00	S 10°12'56\" W	35.36

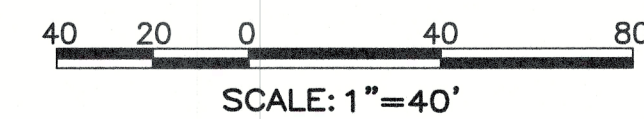
WAKE COUNTY  
BOARD OF EDUCATION  
BM 2003, PG 557  
PIN: 1758-99-0785

MYRTLE R. WALL, HEIRS  
WB 2772, PG 00-E  
BM 1991, PG 1333  
PIN: 1758-89-9420

**CONTROL CORNER**  
N: 789,369.79  
E: 2,158,917.16

TOWN OF ROLESVILLE  
DB 5134, PG 618  
BM 1991, PG 1333  
PIN: 1758-98-0948

**BOUNDARY & TOPOGRAPHIC SURVEY**  
**PROPERTIES OF**  
**MYRTLE R. WALL, HEIRS**  
WAKE FOREST TOWNSHIP WAKE COUNTY NORTH CAROLINA



NC GRID NORTH  
(NAD 83/2011)

**LEGEND**

- EX. STRUCTURE TO BE REMOVED
- EX. GRAVEL TO BE REMOVED
- EX. CONCRETE TO BE REMOVED
- LIMITS OF CONSTRUCTION
- PROPOSED TREE PROTECTION FENCE
- EX. OVERHEAD UTILITY
- EX. FENCE
- EX. WATER LINE
- EX. SANITARY SEWER LINE
- EX. STORM DRAIN LINE
- EX. STORM DRAIN LINE TO BE REMOVED
- EX. TREE TO BE REMOVED

**LEGEND and NOMENCLATURE**

- | SYMBOLS |                           | LINETYPES |                  |
|---------|---------------------------|-----------|------------------|
|         | Ex. iron pipe/rod or nail |           | Fence            |
|         | Ex. concrete monument     |           | Overhead utility |
|         | New iron pipe             |           | Water            |
|         | Calculated point          |           | Sanitary sewer   |
|         | Cable pedestal            |           | Storm drain      |
|         | Telephone pedestal        |           |                  |
|         | Electric pedestal         |           |                  |
|         | Fiber-optic marker        |           |                  |
|         | Traffic signal box        |           |                  |
|         | Water meter               |           |                  |
|         | Fire hydrant              |           |                  |
|         | Valve (water or gas)      |           |                  |
|         | Sanitary sewer manhole    |           |                  |
|         | Sanitary sewer cleanout   |           |                  |
|         | Storm curb inlet          |           |                  |
|         | Drainage inlet (w/ grate) |           |                  |
|         | Storm drain manhole       |           |                  |
|         | Utility pole              |           |                  |
|         | Lamp post                 |           |                  |
|         | Signal pole               |           |                  |
|         | Guy wire                  |           |                  |
|         | Sign post                 |           |                  |
- 
- | ABBREVIATIONS |  |
|---------------|--|
| DB            | Deed Book                              |
| PB or BM      | Plat Book / Book of Maps               |
| NF            | Now or formerly                        |
| Pg            | Page                                   |
| SF            | Square feet                            |
| Ac.           | Acres                                  |
| R/W           | Right-of-way                           |
| NCSR          | North Carolina State Route             |
| NCDOT         | North Carolina Dept. of Transportation |
| R/W           | Right-of-way                           |
| Ex.           | Existing                               |
| RCP           | Reinforced concrete pipe               |
| PVC           | Polyvinyl chloride pipe                |
| (M)           | Measured                               |
| AG            | Above ground                           |
| BG            | Below ground                           |

**ISSUED FOR CONSTRUCTION**

**NOTE(s):**  
ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, WAKE COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.

CURVE TABLE				
CURVE	LENGTH	RADIUS	BEARING	CHORD
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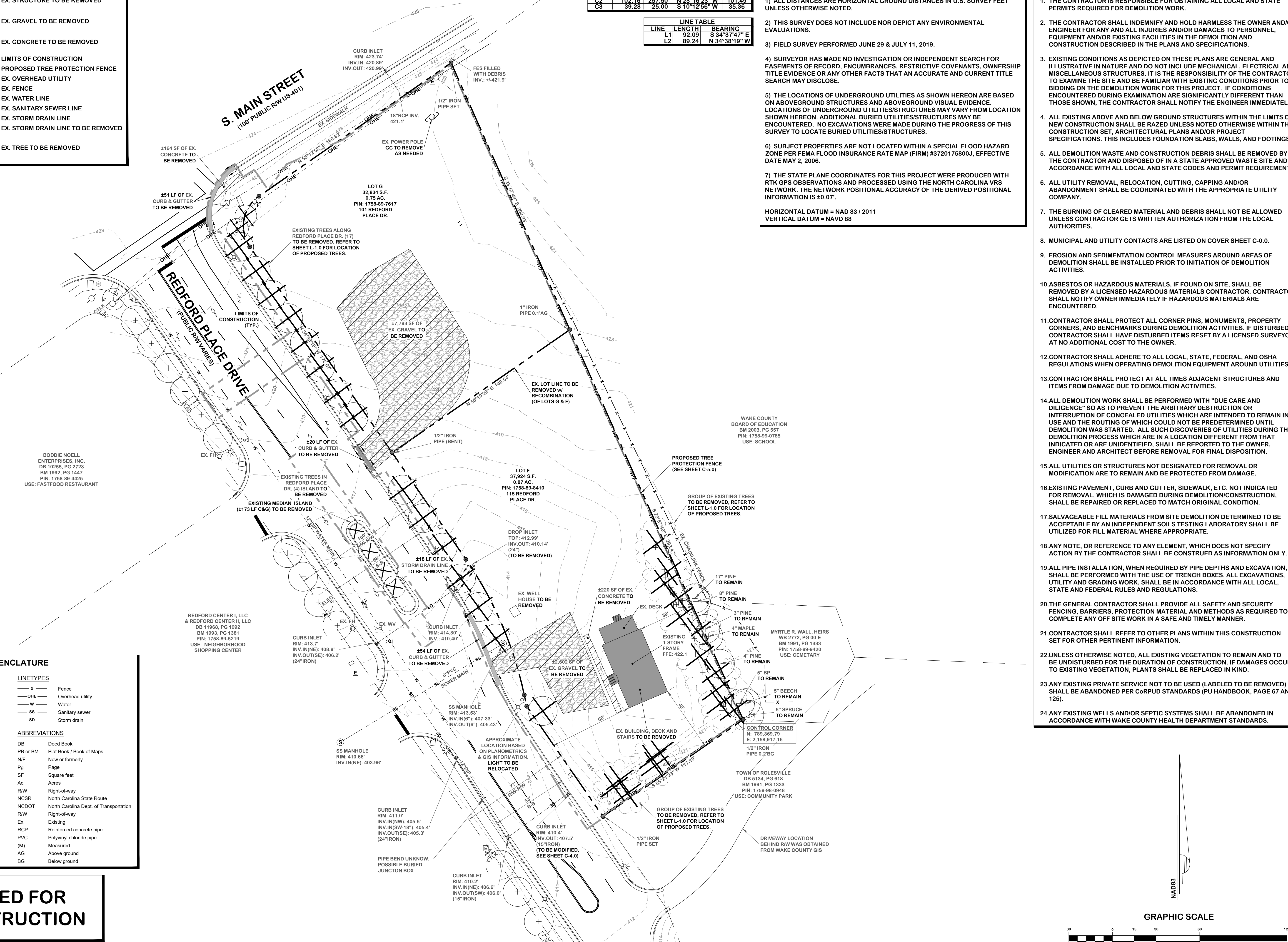
LINE TABLE		
LINE	LENGTH	BEARING
L1	92.09	S 34°37'47" E
L2	89.24	N 34°38'19" W

**SURVEY NOTES:**

- ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
  - THIS SURVEY DOES NOT INCLUDE NOR DEPICT ANY ENVIRONMENTAL EVALUATIONS.
  - FIELD SURVEY PERFORMED JUNE 29 & JULY 11, 2019.
  - SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP TITLE EVIDENCE OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.
  - THE LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVEGROUND STRUCTURES AND ABOVEGROUND VISUAL EVIDENCE. LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATION SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES.
  - SUBJECT PROPERTIES ARE NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD ZONE PER FEMA FLOOD INSURANCE RATE MAP (FIRM) #3720175800J, EFFECTIVE DATE MAY 2, 2006.
  - THE STATE PLANE COORDINATES FOR THIS PROJECT WERE PRODUCED WITH RTK GPS OBSERVATIONS AND PROCESSED USING THE NORTH CAROLINA VRS NETWORK. THE NETWORK POSITIONAL ACCURACY OF THE DERIVED POSITIONAL INFORMATION IS ±0.07'.
- HORIZONTAL DATUM = NAD 83 / 2011  
VERTICAL DATUM = NAVD 88

**DEMOLITION NOTES**

- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LOCAL AND STATE PERMITS REQUIRED FOR DEMOLITION WORK.
- THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER AND/OR ENGINEER FOR ANY AND ALL INJURIES AND/OR DAMAGES TO PERSONNEL, EQUIPMENT AND/OR EXISTING FACILITIES IN THE DEMOLITION AND CONSTRUCTION DESCRIBED IN THE PLANS AND SPECIFICATIONS.
- EXISTING CONDITIONS AS DEPICTED ON THESE PLANS ARE GENERAL AND ILLUSTRATIVE IN NATURE AND DO NOT INCLUDE MECHANICAL, ELECTRICAL AND MISCELLANEOUS STRUCTURES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE THE SITE AND BE FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BIDDING ON THE DEMOLITION WORK FOR THIS PROJECT. IF CONDITIONS ENCOUNTERED DURING EXAMINATION ARE SIGNIFICANTLY DIFFERENT THAN THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
- ALL EXISTING ABOVE AND BELOW GROUND STRUCTURES WITHIN THE LIMITS OF NEW CONSTRUCTION SHALL BE RAZED UNLESS NOTED OTHERWISE WITHIN THIS CONSTRUCTION SET, ARCHITECTURAL PLANS AND/OR PROJECT SPECIFICATIONS. THIS INCLUDES FOUNDATION SLABS, WALLS, AND FOOTINGS.
- ALL DEMOLITION WASTE AND CONSTRUCTION DEBRIS SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF IN A STATE APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
- ALL UTILITY REMOVAL, RELOCATION, CUTTING, CAPPING AND/OR ABANDONMENT SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY.
- THE BURNING OF CLEARED MATERIAL AND DEBRIS SHALL NOT BE ALLOWED UNLESS CONTRACTOR GETS WRITTEN AUTHORIZATION FROM THE LOCAL AUTHORITIES.
- MUNICIPAL AND UTILITY CONTACTS ARE LISTED ON COVER SHEET C-0.0.
- EROSION AND SEDIMENTATION CONTROL MEASURES AROUND AREAS OF DEMOLITION SHALL BE INSTALLED PRIOR TO INITIATION OF DEMOLITION ACTIVITIES.
- ASBESTOS OR HAZARDOUS MATERIALS, IF FOUND ON SITE, SHALL BE REMOVED BY A LICENSED HAZARDOUS MATERIALS CONTRACTOR. CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IF HAZARDOUS MATERIALS ARE ENCOUNTERED.
- CONTRACTOR SHALL PROTECT ALL CORNER PINS, MONUMENTS, PROPERTY CORNERS, AND BENCHMARKS DURING DEMOLITION ACTIVITIES. IF DISTURBED, CONTRACTOR SHALL HAVE DISTURBED ITEMS RESET BY A LICENSED SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL ADHERE TO ALL LOCAL, STATE, FEDERAL, AND OSHA REGULATIONS WHEN OPERATING DEMOLITION EQUIPMENT AROUND UTILITIES.
- CONTRACTOR SHALL PROTECT AT ALL TIMES ADJACENT STRUCTURES AND ITEMS FROM DAMAGE DUE TO DEMOLITION ACTIVITIES.
- ALL DEMOLITION WORK SHALL BE PERFORMED WITH "DUE CARE AND DILIGENCE" SO AS TO PREVENT THE ARBITRARY DESTRUCTION OR INTERRUPTION OF CONCEALED UTILITIES WHICH ARE INTENDED TO REMAIN IN USE AND THE ROUTING OF WHICH COULD NOT BE DETERMINED UNTIL DEMOLITION WAS STARTED. ALL SUCH DISCOVERIES OF UTILITIES DURING THE DEMOLITION PROCESS WHICH ARE IN A LOCATION DIFFERENT FROM THAT INDICATED OR ARE UNIDENTIFIED, SHALL BE REPORTED TO THE OWNER, ENGINEER AND ARCHITECT BEFORE REMOVAL FOR FINAL DISPOSITION.
- ALL UTILITIES OR STRUCTURES NOT DESIGNATED FOR REMOVAL OR MODIFICATION ARE TO REMAIN AND BE PROTECTED FROM DAMAGE.
- EXISTING PAVEMENT, CURB AND GUTTER, SIDEWALK, ETC. NOT INDICATED FOR REMOVAL, WHICH IS DAMAGED DURING DEMOLITION/CONSTRUCTION, SHALL BE REPAIRED OR REPLACED TO MATCH ORIGINAL CONDITION.
- SALVAGEABLE FILL MATERIALS FROM SITE DEMOLITION DETERMINED TO BE ACCEPTABLE BY AN INDEPENDENT SOILS TESTING LABORATORY SHALL BE UTILIZED FOR FILL MATERIAL WHERE APPROPRIATE.
- ANY NOTE, OR REFERENCE TO ANY ELEMENT, WHICH DOES NOT SPECIFY ACTION BY THE CONTRACTOR SHALL BE CONSTRUED AS INFORMATION ONLY.
- PIPE INSTALLATION, WHEN REQUIRED BY PIPE DEPTHS AND EXCAVATION, SHALL BE PERFORMED WITH THE USE OF TRENCH BOXES. ALL EXCAVATIONS, UTILITY AND GRADING WORK, SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL RULES AND REGULATIONS.
- THE GENERAL CONTRACTOR SHALL PROVIDE ALL SAFETY AND SECURITY FENCING, BARRIERS, PROTECTION MATERIAL AND METHODS AS REQUIRED TO COMPLETE ANY OFF SITE WORK IN A SAFE AND TIMELY MANNER.
- CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION.
- UNLESS OTHERWISE NOTED, ALL EXISTING VEGETATION TO REMAIN AND TO BE UNDISTURBED FOR THE DURATION OF CONSTRUCTION. IF DAMAGES OCCUR TO EXISTING VEGETATION, PLANTS SHALL BE REPLACED IN KIND.
- ANY EXISTING PRIVATE SERVICE NOT TO BE USED (LABELED TO BE REMOVED) SHALL BE ABANDONED PER CORPUD STANDARDS (PU HANDBOOK, PAGE 67 AND 125).
- ANY EXISTING WELLS AND/OR SEPTIC SYSTEMS SHALL BE ABANDONED IN ACCORDANCE WITH WAKE COUNTY HEALTH DEPARTMENT STANDARDS.



**PAST DESIGN GROUP, PA**  
Engineering | Consulting  
404-B Glenwood Avenue, Raleigh, North Carolina 27603  
Phone: 919 848 4399 | Fax: 919 848 4391 | LIC LICENSE NUMBER: C-3811

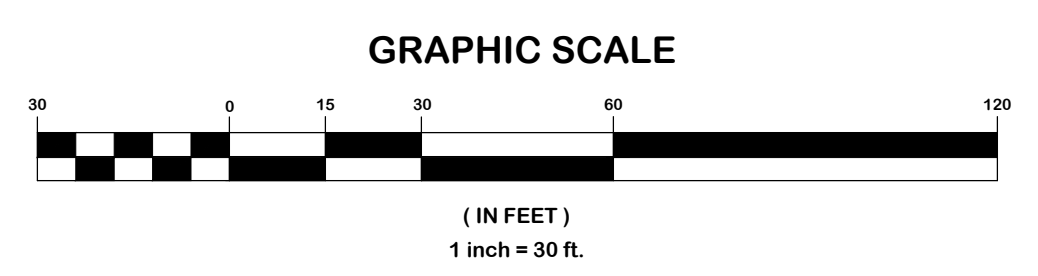
PREPARED FOR:  
ROBERTS ROAD 3415, LLC  
1000 PRESIDENT GREEN  
CART, NORTH CAROLINA 27518  
DATE: 7.31.2019  
PROJECT ENGINEER:  
PROJECT SURVEYOR:  
PROJECT CAD DESIGNER:  
MWP  
UTS/COMS LAND SURVEYORS

**101 & 115 REDFORD PLACE DRIVE**  
ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**EXISTING CONDITIONS & DEMOLITION SHEET**

SCALE:  
1" = 30'

NO.	REVISION	DATE
1	REVISED PER TOWN OF ROLESVILLE 10/17/19	12/19/19
2	REVISED PER ROAD IMPROVEMENTS 10/17/19	12/19/19
3	REVISED PER WAKE CO COMMENTS	12/19/19

DRAWING SHEET  
**C-1.0**  
PROJECT NUMBER  
**449-19**



LEGEND	
	PROPOSED LIGHT DUTY ASPHALT PAVEMENT
	PROPOSED HEAVY DUTY ASPHALT PAVEMENT
	PROPOSED CONCRETE
	EX. OVERHEAD UTILITY
	EX. FENCE

CURVE TABLE				
CURVE	LENGTH	RADIUS	BEARING	CHORD
C1	8.05	257.50	S 12°47'53" E	8.05
C2	102.16	257.50	N 23°16'23" W	101.49
C3	39.28	25.00	S 10°12'56" W	35.36

LINE TABLE		
LINE	LENGTH	BEARING
L1	92.09	S 34°37'47" E
L2	89.24	N 34°38'19" W

KEY ITEM	DESCRIPTION	WIDTH
UC	THERMOPLASTIC STRAIGHT ARROW	
T2	THERMOPLASTIC STOP BAR	24"
T0	THERMOPLASTIC CROSSWALK LINE	8"
T16	THERMOPLASTIC DOUBLE CENTER	6"
TA	THERMOPLASTIC EDGE LINE	4"
TK	THERMOPLASTIC 3 FT.-9 FT. WHITE MINISKIP	6"
UA	THERMOPLASTIC LEFT TURN ARROW	6"

SIGNS	
(R1-1)	MUTCD "STOP" R1-1 30"x30"

- CONSTRUCTION NOTES:**
- THE CONTRACTOR SHALL CONDUCT THE WORK IN A SAFE MANNER AND WITH A MINIMUM AMOUNT OF INCONVENIENCE TO TRAFFIC.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SHALL ADHERE TO THE PROVISIONS OF THE MUTCD (MOST CURRENT EDITION).
  - NO WORK OR BLOCKAGE OF EXISTING THROUGH TRAFFIC LANES SHALL OCCUR DURING THE TRAFFIC HOURS OF 7AM - 9AM AND 4PM - 6PM, MONDAY THROUGH FRIDAY. THE CONTRACTOR MUST OBTAIN A LANE-CLOSURE PERMIT FOR ANY WORK WHICH REQUIRES THE CLOSURE OF A TRAVEL LANE. PLEASE CONTACT THE CITY PUBLIC WORKS DEPARTMENT - TRANSPORTATION OPERATIONS DIVISION AT (919) 996-3030 FOR LANE CLOSURES AT LEAST 48 HOURS IN ADVANCE AND FOR STREET CLOSURES, AT LEAST 2 WEEKS IN ADVANCE. PROVIDE EXACT LOCATION, CROSS STREET, DATES FOR LANE CLOSURE, CONTACT PERSON AND FAX NUMBER.
  - PRIOR TO CONSTRUCTION BEGINNING, ALL SIGNAGE AND TRAFFIC CONTROL SHALL BE IN PLACE.
  - THE CONTRACTOR SHALL HAVE A COMPLETE SET OF CONTRACT DOCUMENTS AS WELL AS ALL APPROVALS AND EASEMENTS ON THE JOB SITE AT ALL TIMES.
  - THE CONTRACTOR SHALL REPAIR ALL DRIVEWAYS, DRIVEWAY PIPES, CURB AND GUTTER, SIDEWALKS AND STREETS TO EXISTING CONDITION OR BETTER.
  - ALL SIDEWALKS MUST BE ACCESSIBLE TO PERSONS WHO ARE BLIND, HAVE LOW VISION AND PEOPLE WITH MOBILITY DISABILITIES. PEDESTRIAN EXISTING ROUTES AND ALTERNATE PEDESTRIAN ROUTES DURING CONSTRUCTION WILL BE REQUIRED TO BE COMPLIANT WITH THE PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG), 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

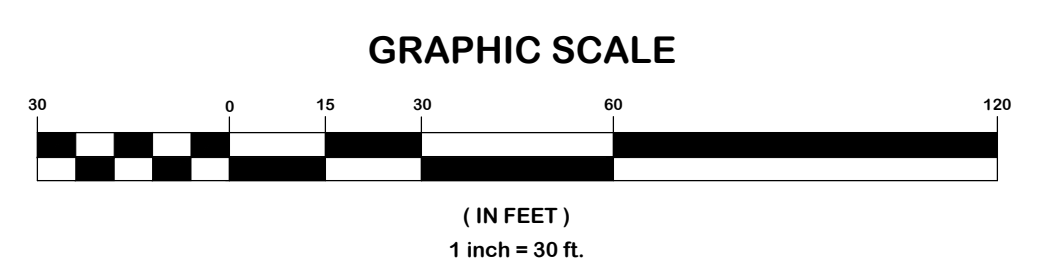
SITE DATA TABLE	
DEVELOPER:	ROGERS ROAD 3415, LLC JONATHAN BOES 1000 CRESCENT GREEN CARY, NC 27518 TEL: (919) 247-0497
OWNER(S):	WALL, MYRTLE R. HEIRS 400 WATKINS FARM RD ROLESVILLE, NC 27571
PROPERTY ADDRESS:	101 & 115 REDFORD PLACE DRIVE ROLESVILLE, NC 27571
PIN(G):	1758-89-7617 & 1758-89-8410
DEED:	BOOK: 2038 PAGE: 017 & BOOK: 1013 PAGE: 0-E
PLAT:	BOOK: 1992 PAGE: 00041
EXISTING ZONING:	RESIDENTIAL I DISTRICT (R-I)
PROPOSED ZONING:	COMMERCIAL OUTLYING CONDITIONAL USE DISTRICT (CO-CZ)
EXISTING LAND USE:	101 REDFORD PLACE DR: VACANT 115 REDFORD PLACE DR: SINGLE FAMILY
PROPOSED LAND USE:	MIXED-USE (RETAIL, MEDICAL, & DENTAL)
LOT AREA:	1.62 ACRES (COMBINED)
WATERSHED OVERLAY:	NONE
ADDITIONAL OVERLAY:	NONE
WATERSHED:	LOWER NEUSE RIVER
RIVER BASIN:	NEUSE RIVER
WETLAND/STREAM DATA:	PER THE NATIONAL WETLANDS INVENTORY, NO WETLANDS EXIST. PER WAKE COUNTY SOILS MAP AND USGS QUAD MAP, NO STREAMS EXIST.
PROPOSED GROSS FLOOR AREA:	19,500 SF (3 STORIES, 6,500 SF PER FLOOR)
BUILDING HEIGHT:	53'-8" (TOP OF PARAPET)
TOTAL DISTURBED AREA:	82,545 SF; 1.89 ACRES
EXISTING IMPERVIOUS SURFACE:	OFF-SITE: 556 SF (TO BE REMOVED) ON-SITE: 11,775 SF
PROPOSED IMPERVIOUS SURFACE:	OFF-SITE: 2,995 SF (NET INCREASE - 2,439 SF) ON-SITE: 43,284 SF (61.2% OF THE SITE AREA)
REDFORD PLACE DRIVE THOROUGHFARE STREETScape BUFFER:	30'
MAIN STREET STREETScape BUFFER:	10' D (STREET FRONT)
LANDSCAPE BUFFER BETWEEN LAND USES:	EAST (AGAINST SCHOOL): 10' C (SPATIAL DEFINITION) EAST (AGAINST CEMETERY): 25' B (SEMI-OPAQUE) SOUTH: 25' B (SEMI-OPAQUE)
PROJECT SETBACKS:	FRONT YARD: 20 FT MIN. SIDE YARD: 15 FT MIN. CORNER YARD: 25 FT MIN. REAR YARD: 35 FT MIN.
REQUIRED PARKING:	COMMERCIAL SHOPPING CENTER = 5.5 SPACES / 1,000 SF FLOOR AREA = 4,500 SF / 1,000 = 4.5 x 5.5 = 24.75 SPACES RESTAURANT = 1.2 SPACES / 100 SF FLOOR AREA = 2,000 SF / 100 = 20 x 1.2 = 24 SPACES MEDICAL = 6 SPACES / DOCTOR OR DENTIST PLUS 1 FOR EACH EMPLOYEE 3 DOCTORS AND 3 DENTISTS & 29 EMPLOYEES = 65 SPACES TOTAL REQUIRED = 114 SPACES
PROVIDED PARKING:	VEHICLE PARKING = 93 SPACES (4 HC; 2 VAN)

- LAYOUT NOTES**
- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, WAKE COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.
  - ALL DIMENSIONS ARE TO EDGE OF PAVEMENT, EDGE OF SIDEWALK, FACE OF CURB, CENTERLINE OF COLUMN AND FACE OF BUILDING WALL, UNLESS OTHERWISE NOTED. ALL RADII DIMENSIONS TO BACK OF CURB.
  - ALL PAINT STRIPING, PAVEMENT MARKINGS, AND SIGNAGE SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" OR AS REQUIRED IN SPECIFICATIONS.
  - VERIFY ALL SETBACKS WITH LOCAL CODES.
  - A SEPARATE PERMIT AND APPROVAL IS REQUIRED FOR SIGNS.
  - ALL CURB RAMPS SHALL HAVE A DETECTABLE WARNING COMPLYING WITH SECTIONS 4.7.7 AND 4.29.2 OF THE ADA ACCESSIBILITY GUIDELINES (ADAAG).
  - CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS FOR THE INSTALLATION OF TRAFFIC SIGNAGE AND PAVEMENT MARKINGS AS SHOWN ON THE CONSTRUCTION PLANS.
  - CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION.
  - DETECTABLE WARNINGS ARE REQUIRED AT ANY CROSSWALK, OR ISLAND CUT THRU, WHERE THERE IS NO CHANGE IN ELEVATION (I.E. RAMP NOT PROVIDED).
  - ALL HVAC UNITS MUST BE SCREENED FROM THE PUBLIC ROW.

LEGEND and NOMENCLATURE	
<b>SYMBOLS</b>	<b>LINETYPES</b>
	— X — Fence
	— OHE — Overhead utility
	— W — Water
	— SS — Sanitary sewer
	— SD — Storm drain
<b>ABBREVIATIONS</b>	
DB	Deed Book
PB or BM	Plat Book / Book of Maps
NF	Now or formerly
Pg.	Page
SF	Square feet
Ac.	Acres
R/W	Right-of-way
NCSR	North Carolina State Route
NCDOT	North Carolina Dept. of Transportation
R/W	Right-of-way
Ex.	Existing
RCP	Reinforced concrete pipe
PVC	Polyvinyl chloride pipe
(M)	Measured
AG	Above ground
BG	Below ground

**ISSUED FOR CONSTRUCTION**

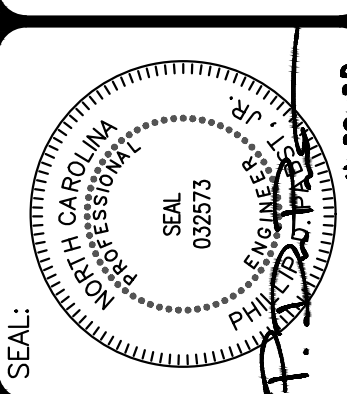
NOTE(S): ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, WAKE COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.



**PAST DESIGN GROUP, PA**  
Engineering | Consulting  
404-S Glenwood Avenue, Raleigh, North Carolina 27603  
Phone: 919 846 4599 | Fax: 919 846 6395 | NC LICENSE NUMBER: C-821

PREPARED FOR:  
ROGERS ROAD 3415, LLC  
1000 CRESCENT GREEN  
CARY, NORTH CAROLINA 27518  
DATE: 7.31.2019  
PROJECT ENGINEER:  
PROJECT CADD DESIGNER:  
PROJECT SURVEYOR:  
UTILITY/AS LAND SURVEYOR:

**101 & 115 REDFORD PLACE DRIVE**  
ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**SITE LAYOUT PLAN**

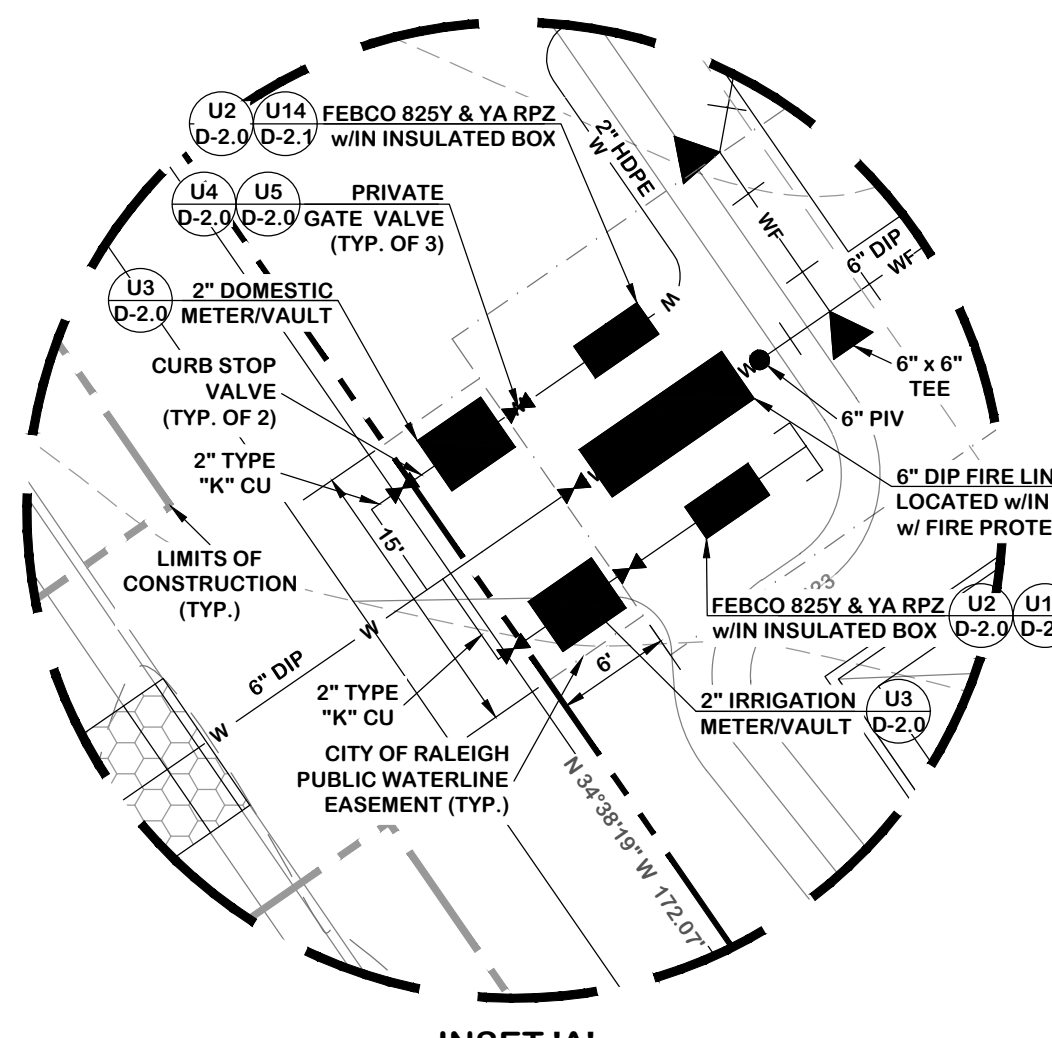


NO.	REVISION	DATE
1	REVISED PER TOR ROAD IMPROVEMENTS	10/11/19
2	REVISED PER CITY COMMENTS	10/21/19
3	REVISED PER WAKE CO COMMENTS	12/19/19
4	REVISED PER WAKE CO COMMENTS	12/19/19
5	REVISED PER ENGINEER	4/23/20

DRAWING SHEET  
**C-2.0**  
PROJECT NUMBER  
**449-19**

F:\Public\10-Projects\400-499\449-19 Redford Place Medical Office (The Redford Studios Architecture PC)\0-Drawing\54-Design\C-2.0.dwg Apr 23, 2020 - 10:31am BY Mark Phillips

F:\Public\Projects\400-499\449-19 Redford Place Medical Office (The Redford Studios Architecture PC)\30-Drawings\44-Design\C-3.0.dwg Apr 23, 2020 - 10:22am By: Mark Phillips



S. MAIN STREET  
(100' PUBLIC R/W US-401)

REDFORD PLACE DRIVE  
(PUBLIC R/W VARIES)

**LEGEND**

[Symbol]	PROPOSED ASPHALT / CURB & GUTTER PAVEMENT PATCH
[Symbol]	LIMITS OF CONSTRUCTION
[Symbol]	EX. OVERHEAD UTILITY
[Symbol]	EX. FENCE
[Symbol]	EX. WATER LINE
[Symbol]	EX. SANITARY SEWER LINE
[Symbol]	EX. STORM DRAIN LINE
[Symbol]	PROPOSED WATER LINE
[Symbol]	PROPOSED FIRE LINE
[Symbol]	PROPOSED SANITARY SEWER LINE
[Symbol]	PROPOSED STORM DRAIN LINE
[Symbol]	PROPOSED WATER METER
[Symbol]	PROPOSED BACKFLOW PREVENTER
[Symbol]	PROPOSED WATER VALVE
[Symbol]	PROPOSED POST INDICATOR VALVE
[Symbol]	PROPOSED THRUST BLOCK / TEE
[Symbol]	PROPOSED FIRE HYDRANT
[Symbol]	PROPOSED SEWER CLEANOUT
[Symbol]	PROPOSED CURB INLET
[Symbol]	PROPOSED JUNCTION BOX

**LEGEND and NOMENCLATURE**

SYMBOLS		LINETYPES	
[Symbol]	Ex. iron pipe/rod or nail	[Symbol]	Fence
[Symbol]	Ex. concrete monument	[Symbol]	Overhead utility
[Symbol]	New iron pipe	[Symbol]	Water
[Symbol]	Calculated point	[Symbol]	Sanitary sewer
[Symbol]	Cable pedestal	[Symbol]	Storm drain
[Symbol]	Telephone pedestal		
[Symbol]	Electric pedestal		
[Symbol]	Fiber-optic marker		
[Symbol]	Traffic signal box		
[Symbol]	Water meter		
[Symbol]	Fire hydrant		
[Symbol]	Valve (water or gas)		
[Symbol]	Sanitary sewer manhole		
[Symbol]	Sanitary sewer cleanout		
[Symbol]	Storm curb inlet		
[Symbol]	Drainage inlet (w/ grate)		
[Symbol]	Storm drain manhole		
[Symbol]	Utility pole		
[Symbol]	Lamp post		
[Symbol]	Signal pole		
[Symbol]	Guy wire		
[Symbol]	Sign post		
ABBREVIATIONS			
DB	Deed Book		
PB or BM	Plat Book / Book of Maps		
NF	Now or formerly		
Pg.	Page		
SF	Square feet		
Ac.	Acres		
R/W	Right-of-way		
NCSR	North Carolina State Route		
NCDOT	North Carolina Dept. of Transportation		
R/W	Right-of-way		
Ex.	Existing		
RCP	Reinforced concrete pipe		
PVC	Polyvinyl chloride pipe		
(M)	Measured		
AG	Above ground		
BG	Below ground		

**ISSUED FOR CONSTRUCTION**

NOTE(s): ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, WAKE COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.

**CURVE TABLE**

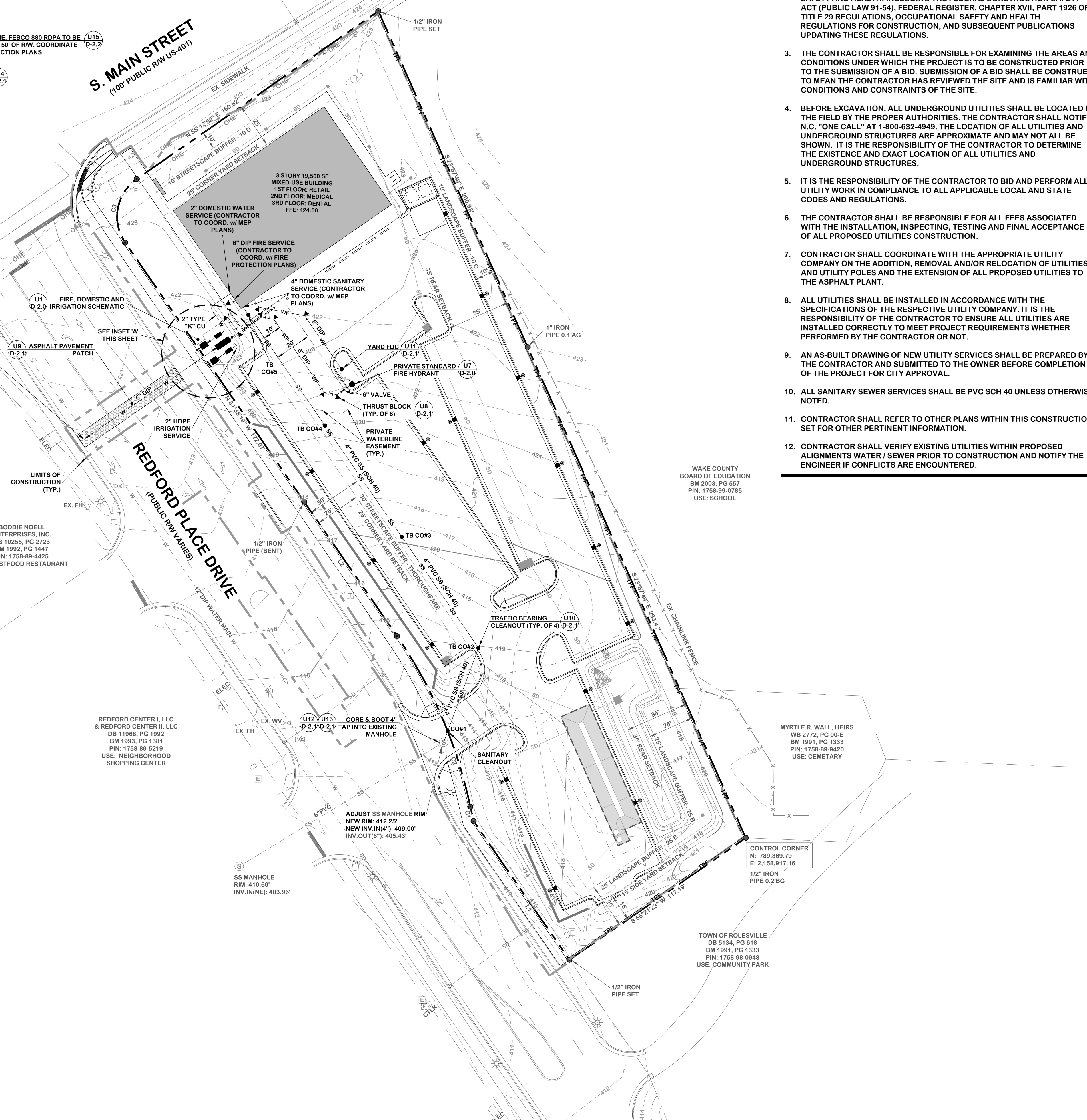
CURVE	LENGTH	RADIUS	BEARING	CHORD
C1	8.05	257.50	S 12°47'53" E	8.05
C2	102.16	257.50	N 23°16'23" W	101.49
C3	39.28	25.00	S 10°12'56" W	35.36

**LINE TABLE**

LINE	LENGTH	BEARING
L1	92.09	S 34°37'47" E
L2	89.24	N 34°38'19" W

- UTILITY NOTES:**
- ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH THE PLANS PREPARED BY PABST DESIGN GROUP, PA, THE CURRENT REQUIREMENTS OF THE CITY OF RALEIGH, AND ALL OTHER PERTINENT FEDERAL AND STATE LAWS.
  - THE CONTRACTOR SHALL COMPLY AT ALL TIMES WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, PROVISIONS, AND POLICIES GOVERNING SAFETY AND HEALTH, INCLUDING THE FEDERAL CONSTRUCTION SAFETY ACT (PUBLIC LAW 91-54), FEDERAL REGISTER, CHAPTER XVII, PART 1926 OF TITLE 29 REGULATIONS, OCCUPATIONAL SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, AND SUBSEQUENT PUBLICATIONS UPDATING THESE REGULATIONS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING THE AREAS AND CONDITIONS UNDER WHICH THE PROJECT IS TO BE CONSTRUCTED PRIOR TO THE SUBMISSION OF A BID. SUBMISSION OF A BID SHALL BE CONSTRUED TO MEAN THE CONTRACTOR HAS REVIEWED THE SITE AND IS FAMILIAR WITH CONDITIONS AND CONSTRAINTS OF THE SITE.
  - BEFORE EXCAVATION, ALL UNDERGROUND UTILITIES SHALL BE LOCATED IN THE FIELD BY THE PROPER AUTHORITIES. THE CONTRACTOR SHALL NOTIFY N.C. "ONE CALL" AT 1-800-632-4949. THE LOCATION OF ALL UTILITIES AND UNDERGROUND STRUCTURES ARE APPROXIMATE AND MAY NOT ALL BE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND EXACT LOCATION OF ALL UTILITIES AND UNDERGROUND STRUCTURES.
  - IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BID AND PERFORM ALL UTILITY WORK IN COMPLIANCE TO ALL APPLICABLE LOCAL AND STATE CODES AND REGULATIONS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES ASSOCIATED WITH THE INSTALLATION, INSPECTING, TESTING AND FINAL ACCEPTANCE OF ALL PROPOSED UTILITIES CONSTRUCTION.
  - CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANY ON THE ADDITION, REMOVAL AND/OR RELOCATION OF UTILITIES AND UTILITY POLES AND THE EXTENSION OF ALL PROPOSED UTILITIES TO THE ASPHALT PLANT.
  - ALL UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE RESPECTIVE UTILITY COMPANY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ALL UTILITIES ARE INSTALLED CORRECTLY TO MEET PROJECT REQUIREMENTS WHETHER PERFORMED BY THE CONTRACTOR OR NOT.
  - AN AS-BUILT DRAWING OF NEW UTILITY SERVICES SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE OWNER BEFORE COMPLETION OF THE PROJECT FOR CITY APPROVAL.
  - CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION.
  - CONTRACTOR SHALL VERIFY EXISTING UTILITIES WITHIN PROPOSED ALIGNMENTS WATER SEWER PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER IF CONFLICTS ARE ENCOUNTERED.

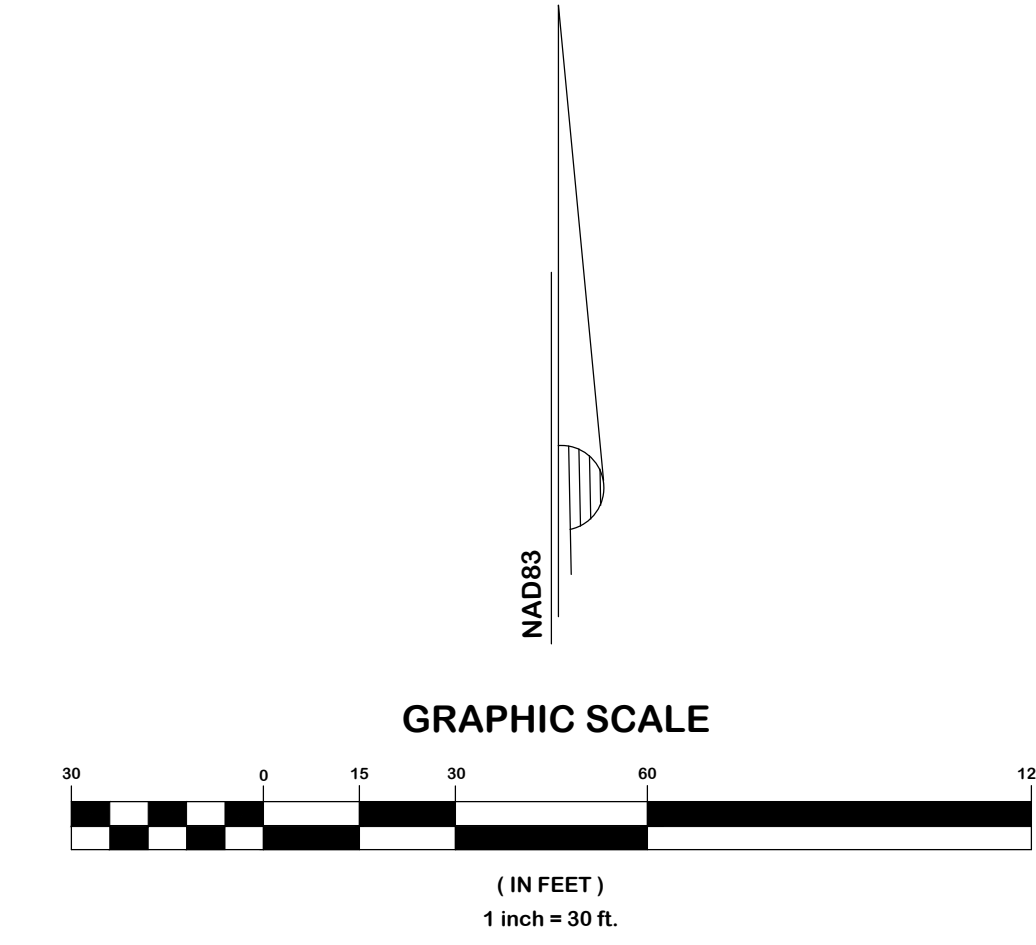
- STANDARD CITY OF RALEIGH UTILITY NOTES:**
- ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION)
  - UTILITY SEPARATION REQUIREMENTS:
    - A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.
    - WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.
    - WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
    - 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
    - MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & S-49).
    - ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
  - ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.
  - CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.
  - 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
  - IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.
  - INSTALL 2" COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.
  - INSTALL 4" PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
  - PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI. BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE.
  - ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
  - NCDOT /RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
  - CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT (919) 996-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.



WAKE COUNTY BOARD OF EDUCATION  
BM 2003, PG 557  
PIN: 1758-99-0785  
USE: SCHOOL

MYRTLE R. WALL, HEIRS  
WB 2772, PG 00-E  
BM 1991, PG 1333  
PIN: 1758-89-9420  
USE: CEMETARY

TOWN OF ROLESVILLE  
DB 5134, PG 618  
BM 1991, PG 1333  
PIN: 1758-98-0948  
USE: COMMUNITY PARK



**PABST DESIGN GROUP, PA**  
Engineering | Consulting  
404-B Glenwood Avenue, Raleigh, North Carolina 27603  
Phone: 919 846 4399 | Fax: 919 846 4395 | NC LICENSE NUMBER: C-3811

PREPARED FOR:  
ROGERS ROAD 3415, LLC  
1000 PRESIDENT GREEN  
CART, NORTH CAROLINA 27518  
DATE: 7.31.2019  
PROJECT ENGINEER:  
PDP  
PROJECT CADD DESIGNER:  
MMP  
PROJECT SURVEYOR:  
UTS/COMS LAND SURVEYORS

**101 & 115 REDFORD PLACE DRIVE**  
ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**UTILITY PLAN**

SCALE:  
SEAL:  
NORTH CAROLINA PROFESSIONAL ENGINEER  
032573

NO.	REVISION	DATE
1	REVISED PER TOWN OF ROLESVILLE COMMENTS	10/17/19
2	REVISED PER ROAD IMPROVEMENTS	10/21/19
3	REVISED PER CITY COMMENTS	12/19/19
4	REVISED PER WAKE CO COMMENTS	12/19/19
5	REVISED PER ENGINEER	4/23/20

DRAWING SHEET  
**C-3.0**  
PROJECT NUMBER  
**449-19**

**LEGEND**

---	LIMITS OF CONSTRUCTION
- - - -	EX. OVERHEAD UTILITY
X - X - X	EX. FENCE
- - - W	EX. WATER LINE
- - - SS	EX. SANITARY SEWER LINE
- - - SD	EX. STORM DRAIN LINE
- - - W	PROPOSED WATER LINE
- - - WF	PROPOSED FIRE LINE
- - - SS	PROPOSED SANITARY SEWER LINE
- - - SD	PROPOSED STORM DRAIN LINE
■	PROPOSED WATER METER
■	PROPOSED BACKFLOW PREVENTER
■	PROPOSED WATER VALVE
■	PROPOSED POST INDICATOR VALVE
■	PROPOSED THRUST BLOCK / TEE
■	PROPOSED FIRE HYDRANT
○	PROPOSED SEWER CLEANOUT
■	PROPOSED CURB INLET
●	PROPOSED JUNCTION BOX

**KEY**

FL	FLOW LINE
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TS	TOP OF SIDEWALK
TG	TOP OF GRADE
LP	LOW POINT
FFE	FINISHED FLOOR ELEV.
TW	TOP OF WALL
BW	BOTTOM OF WALL

**STORM CHART**

Line ID	Line Size (in)	Material	Invert Dn (ft)	Invert Up (ft)	Line Length (ft)	Line Slope (%)	Grnd/Rim Elev Dn (ft)	Grnd/Rim Elev Up (ft)
FES-E1 TO DBCB-E2	15	Cir	416.25	416.66	70.385	0.58	416.25	419.76
DBCB-E2 TO CB-E3	15	Cir	416.76	418.60	140.058	1.31	419.76	421.60
UG TO CB-B1	15	Cir	413.72	414.12	39.649	1.01	418.00	417.16
UG TO CB-C1	15	Cir	413.72	415.23	75.373	2.00	418.00	418.73
UG TO RS-D1	15	Cir	413.72	413.91	15.306	1.24	418.00	417.00
POA TO EX CB-A1	15	Cir	407.26	407.50	25.275	0.95	410.65	410.65
EX CB-A1 TO UG*	15	Cir	407.60	408.14	68.324	0.79	410.65	418.00

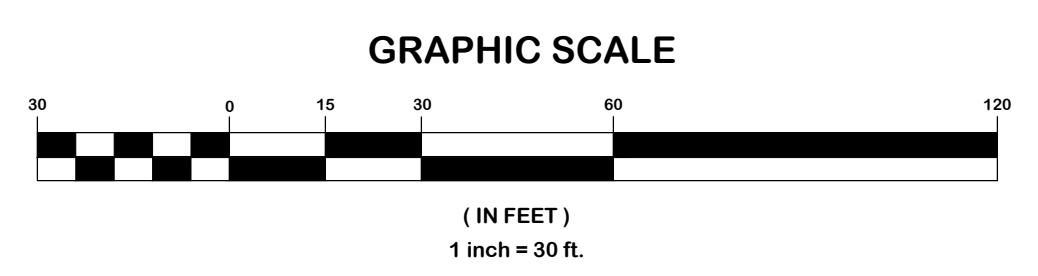
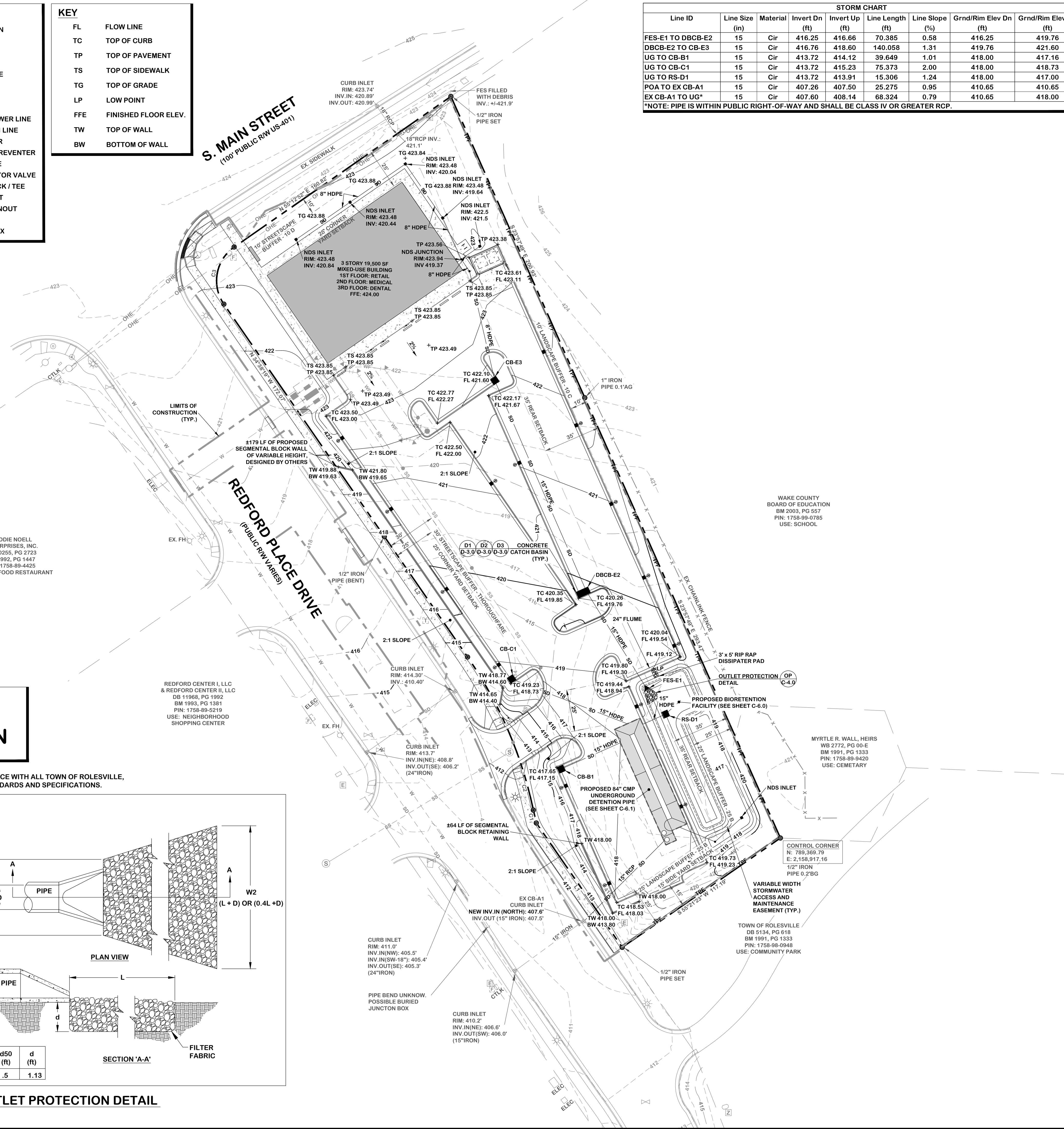
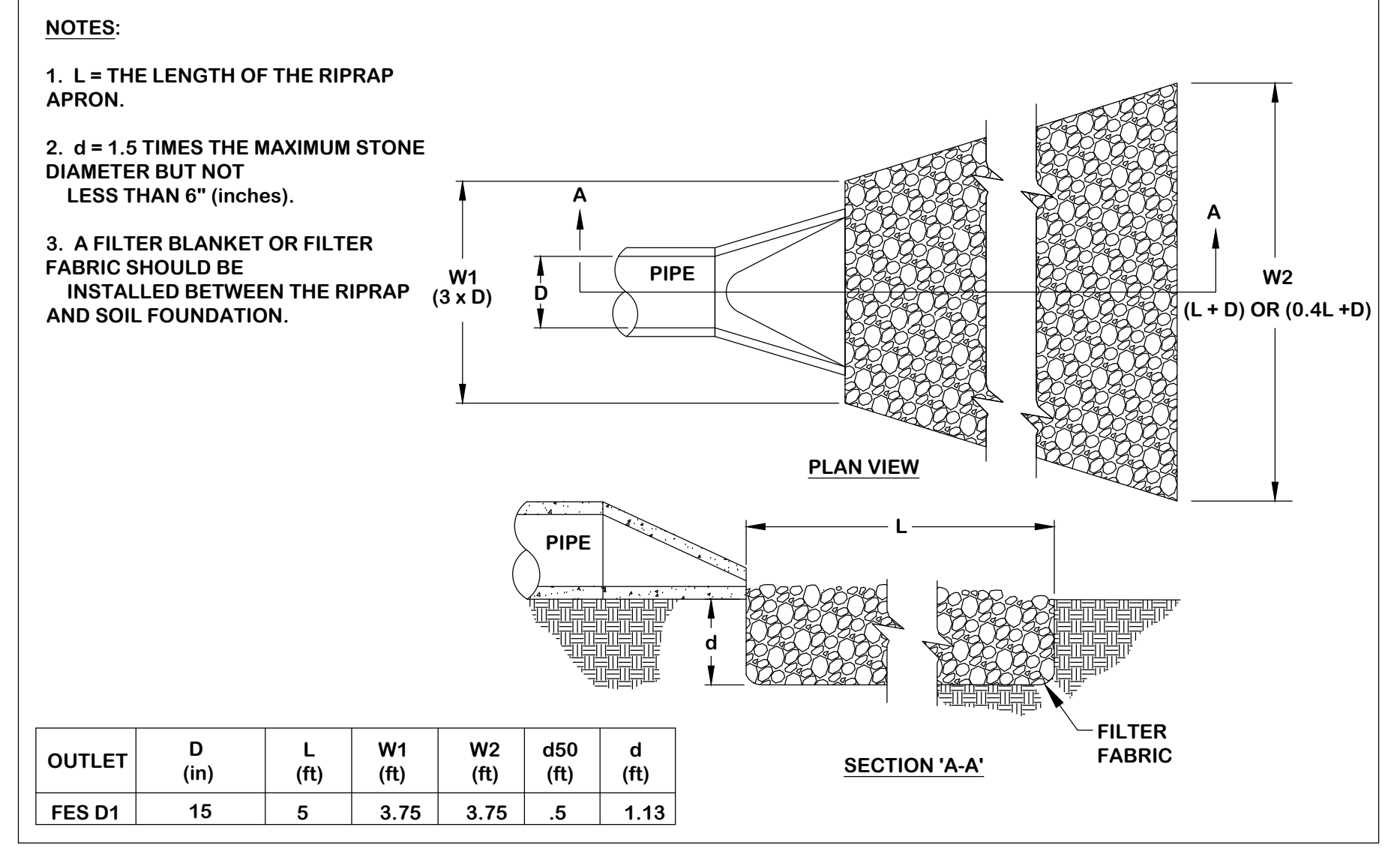
\*NOTE: PIPE IS WITHIN PUBLIC RIGHT-OF-WAY AND SHALL BE CLASS IV OR GREATER RCP.

- GENERAL NOTES**
- ALL SITE WORK SHALL BE DONE IN ACCORDANCE WITH THE PLANS PREPARED BY PAST DESIGN GROUP, PA, THE CURRENT REQUIREMENTS OF THE TOWN OF ROLESVILLE, THE APPLICABLE SECTIONS OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADWAY CONSTRUCTION, AND ALL OTHER PERTINENT FEDERAL AND STATE LAWS.
  - THE CONTRACTOR SHALL COMPLY AT ALL TIMES WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, PROVISIONS, AND POLICIES GOVERNING SAFETY AND HEALTH, INCLUDING THE FEDERAL CONSTRUCTION SAFETY ACT (PUBLIC LAW 91-54), FEDERAL REGISTER, CHAPTER XVII, PART 1926 OF TITLE 29 REGULATIONS, OCCUPATIONAL SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, AND SUBSEQUENT PUBLICATIONS UPDATING THESE REGULATIONS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING THE AREAS AND CONDITIONS UNDER WHICH THE PROJECT IS TO BE CONSTRUCTED PRIOR TO THE SUBMISSION OF A BID. SUBMISSION OF A BID SHALL BE CONSTRUED TO MEAN THE CONTRACTOR HAS REVIEWED THE SITE AND IS FAMILIAR WITH CONDITIONS AND CONSTRAINTS OF THE SITE.
  - BEFORE EXCAVATION, ALL UNDERGROUND UTILITIES SHALL BE LOCATED IN THE FIELD BY THE PROPER AUTHORITIES. THE CONTRACTOR SHALL NOTIFY N.C. "ONE CALL" AT 1-800-632-4949. THE LOCATION OF ALL UTILITIES AND UNDERGROUND STRUCTURES ARE APPROXIMATE AND MAY NOT ALL BE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND EXACT LOCATION OF ALL UTILITIES AND UNDERGROUND STRUCTURES.
  - ALL EXISTING TREES, VEGETATION, PAVEMENTS, CONCRETE FOUNDATIONS, STRUCTURES AND ORGANIC TOPSOIL SHALL BE STRIPPED AND REMOVED FROM NEW CONSTRUCTION AREAS UNLESS NOTED OTHERWISE.
  - ALL AREAS NOT PAVED SHALL BE TOPSOILED, SEEDED, MULCHED OR LANDSCAPED UNLESS OTHERWISE NOTED IN THE CONSTRUCTION DRAWINGS, SITE SPECIFICATIONS OR INSTRUCTED BY THE OWNER.
  - CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR DISPOSAL OF ALL WASTE MATERIALS OFF SITE. THIS RESPONSIBILITY SHALL INCLUDE ALL REQUIRED APPROVALS AND CONDITIONS DICTATED BY THE TOWN OF ROLESVILLE.
  - ALL OPEN STORM DRAIN PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER STOPPAGE OF WORK EACH DAY.
  - CONTRACTOR SHALL ADHERE TO ALL TERMS AND CONDITIONS AS OUTLINED IN THE GENERAL NPDES PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
  - IF AN OFFSITE SOIL SPOIL OR BORROW SITE IS UTILIZED, THEN THE DISTURBED AREA FOR THE SPOIL/BORROW SITE MUST BE INCLUDED IN THE LAND-DISTURBANCE PLAN AND PERMIT UNLESS THE SPOIL/BORROW SITE ALREADY HAS A LAND-DISTURBANCE PERMIT.
  - CONTRACTOR TO PROVIDE SHOP DRAWINGS ON ALL STORM SEWER MANHOLES AND INLETS.
  - BOUNDARY AND LOCATION SURVEY PROVIDED BY NEWCOMB LAND SURVEYORS, PLLC, DATED JULY 15, 2019.
  - TOPOGRAPHIC SURVEY PROVIDED BY NEWCOMB LAND SURVEYORS, PLLC, DATED JULY 15, 2019.
  - CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION.

- GRADING NOTES**
- CONTRACTOR SHALL FIELD VERIFY EXISTING TOPOGRAPHY IN RELATION TO THE PROPOSED GRADES TO ENSURE DRAINAGE IN THE DIRECTION INDICATED ON PLANS.
  - INITIATE CONSTRUCTION SEQUENCE BEFORE BEGINNING CLEARING AND GRADING ON-SITE OPERATIONS.
  - STRIP TOPSOIL TO FULL DEPTH IN AREAS TO BE GRADED.
  - MAXIMUM GRADED SLOPE SHALL NOT EXCEED 2:1, UNLESS OTHERWISE NOTED.
  - AREAS TO BE GRADED SHALL BE CLEARED OF ALL EXISTING VEGETATION. CONTRACTOR TO PROTECT VEGETATION LOCATED BEYOND GRADING LIMITS.
  - COMPACT ALL FILL AREAS TO 95% OF MAXIMUM DENSITY, OR PER GEOTECHNICAL RECOMMENDATIONS.
  - ALL 2:1 SLOPES TO BE STABILIZED WITH EXCELSIOR DOUBLE NET BLANKET PER MANUFACTURER'S RECOMMENDATIONS. SLOPES TO BE SODDED w/ BERMUDA. CONTACT ACF ENVIRONMENTAL FOR SPECIFICATIONS AT 1-800-448-3636.
  - ALL PROPOSED ROADS SHALL NOT EXCEED 12% RUNNING GRADE. ALL PROPOSED ROADS SHALL NOT EXCEED 1/4"1' CROSS SLOPE WITHIN RIGHT-OF-WAY.
- TOTAL DISTURBED AREA = ±1.89Ac.**

**ISSUED FOR CONSTRUCTION**

**NOTE(S):**  
ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, WAKE COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.



**PAST DESIGN GROUP, PA**  
Engineering | Consulting  
404-S Glenwood Avenue, Raleigh, North Carolina 27603  
Phone: 919-846-0399 | Fax: 919-846-0391 | NC LICENSE NUMBER: C-3811

PREPARED FOR:  
RODGERS ROAD 3415, LLC  
1000 PRESIDENT GREEN  
CART, NORTH CAROLINA 27518

DATE: 7.31.2019

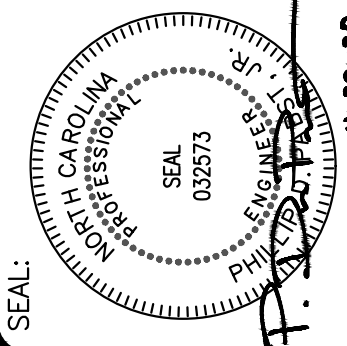
PROJECT ENGINEER:  
PDP

PROJECT CADD DESIGNER:  
MMP

PROJECT SURVEYOR:  
MMP

UTS/CMS LAND SURVEYORS

**101 & 115 REDFORD PLACE DRIVE**  
ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**GRADING & STORM DRAINAGE PLAN**



NO.	REVISION	DATE
1	REVISED PER ROAD IMPROVEMENTS	10/21/19
2	REVISED PER CITY COMMENTS	10/21/19
3	REVISED PER WAKE CO COMMENTS	12/19/19
4	REVISED PER ENGINEER	4/23/20
5	REVISED PER ENGINEER	4/23/20

**DRAWING SHEET**  
**C-4.0**  
PROJECT NUMBER  
**449-19**

F:\Public\Projects\400-499\449-19 Redford Place Medical Office (The Redford Studios Architecture PC)\30-Drawing\54-Design\C-4.0.dwg Apr 23, 2020 - 10:46am By: Mark Phillips

DIVERSION DITCH CALCULATIONS										
DIVERSION DITCH (SWALE)	DRAINAGE AREA (sf)	DRAINAGE AREA (ac)	C VALUE	Q (cfs)	AVG SWALE SLOPE %	SOIL TYPE	HYDROLOGIC SOIL CLASS	V10 (ft/sec)	LINER REQUIRED	SHEAR STRESS (lb/ft <sup>2</sup> )
DD1	43,101	0.99	0.4	2,846	2.45	ApB2/WmC2	B	3.28	YES	0.46
DD2	13,091	0.30	0.4	0,864	3.69	WmC2	B	2.55	YES	0.32

SKIMMER BASIN SCHEDULE									
SKIMMER BASIN	DRAINAGE AREA (AC)	DENUDED AREA (AC)	Q10 (CFS)	REQUIRED SURFACE AREA (SF)	REQUIRED VOLUME (CF)	TOTAL DEPTH (FT)	INTERIOR SIDE SLOPE	PROVIDED SURFACE AREA	PROVIDED VOLUME (CF)
	1.29	1.29	2.3	991	2,322	4	2 TO 1	2,415	3,820
	SKIMMER SIZE (IN)	ORIFICE RADIUS (IN)	ORIFICE DIAMETER (IN)	DRAW DOWN TIME (DAYS)	FREEBOARD ABOVE WATER SURFACE (FT)				
SKIMMER 1	2.5	0.75	0.75	3.9	1				

EROSION CONTROL LEGEND	
SF	TEMPORARY SILT FENCE
TPF	TREE PROTECTION FENCE
TDD	TEMPORARY DIVERSION DITCH (TDD)
[Pattern]	TEMPORARY CONSTRUCTION ENTRANCE
[Symbol]	SILT FENCE OUTLET
[Symbol]	ROCK CHECK DAM
[Symbol]	YARD INLET PROTECTION
[Symbol]	CURB INLET PROTECTION
[Symbol]	CONCRETE WASHOUT AREA
[Symbol]	RIP-RAP
[Symbol]	SOIL STOCKPILE

LEGEND	
[Line]	LIMITS OF CONSTRUCTION
[Line]	EXISTING OVERHEAD UTILITY
[Line]	EXISTING WATER LINE
[Line]	EXISTING SANITARY SEWER
[Line]	EXISTING STORM DRAINAGE

BODDIE NOELL ENTERPRISES, INC.  
DB 10255, PG 2723  
BM 1992, PG 1447  
PIN: 1758-89-4425  
USE: FASTFOOD RESTAURANT

REDFORD CENTER I, LLC & REDFORD CENTER II, LLC  
DB 11968, PG 1992  
BM 1993, PG 1381  
PIN: 1758-89-5019  
USE: NEIGHBORHOOD SHOPPING CENTER

**SELF INSPECTION NOTICE:**  
NOTIFICATION OF LAND RESOURCES SEDIMENT AND EROSION CONTROL SELF-INSPECTION PROGRAM:  
THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH STAGE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010. THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE STAGE OF THE PROJECT. AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED IN ACCORDANCE WITH NCGS 113A-54.1 AND 15A NCAC 4B.0131. THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS A PDF FORM FROM <http://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms>  
IF YOU HAVE QUESTIONS OR CANNOT ACCESS THE FORM, PLEASE CONTACT THE EMLR OFFICE AT (919)707-9200 FOR ASSISTANCE.

STABILIZATION TIMEFRAMES (Effective Aug. 3, 2011)		
SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

CURVE TABLE				
CURVE	LENGTH	RADIUS	BEARING	CHORD
C1	8.05	257.50	S 12°47'53" E	8.05
C2	102.16	257.50	N 23°16'23" W	101.49
C3	39.28	25.00	S 10°12'56" W	35.36

LINE TABLE		
LINE	LENGTH	BEARING
L1	92.09	S 34°37'47" E
L2	89.24	N 34°38'19" W

- ### GENERAL NOTES
- DISTURBANCE LIMITS SHALL NOT ENCRUCH ON TREE COVERAGE AREAS. DISTURBANCE LIMITS ARE AT LIMITS OF GRADING.
  - ANY AREAS ON SITE THAT ARE SLOPED AT 3:1 OR STEEPER, CONTRACTOR IS TO USE APPROVED GEOTEXTILE FABRIC MATTING TO STABILIZE SLOPE. OTHER APPROVED METHODS MAY BE ACCEPTABLE. CONTRACTOR TO CONTACT ENGINEER TO DISCUSS OTHER APPROVED METHODS.
  - UNLESS OTHERWISE NOTED, ALL EXISTING TREES TO REMAIN AND BE UNDISTURBED. SHOULD DAMAGES OCCUR TO EXISTING TREE OR SHRUB, PLANT WILL BE REPLACED IN KIND.
  - ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, WAKE COUNTY, AND NCDOT STANDARDS AND SPECIFICATIONS.
  - VERIFY ALL SETBACKS WITH LOCAL CODES.
  - BOUNDARY, LOCATION AND TOPOGRAPHIC SURVEY PROVIDED BY NEWCOMB LAND SURVEYORS, PLLC.

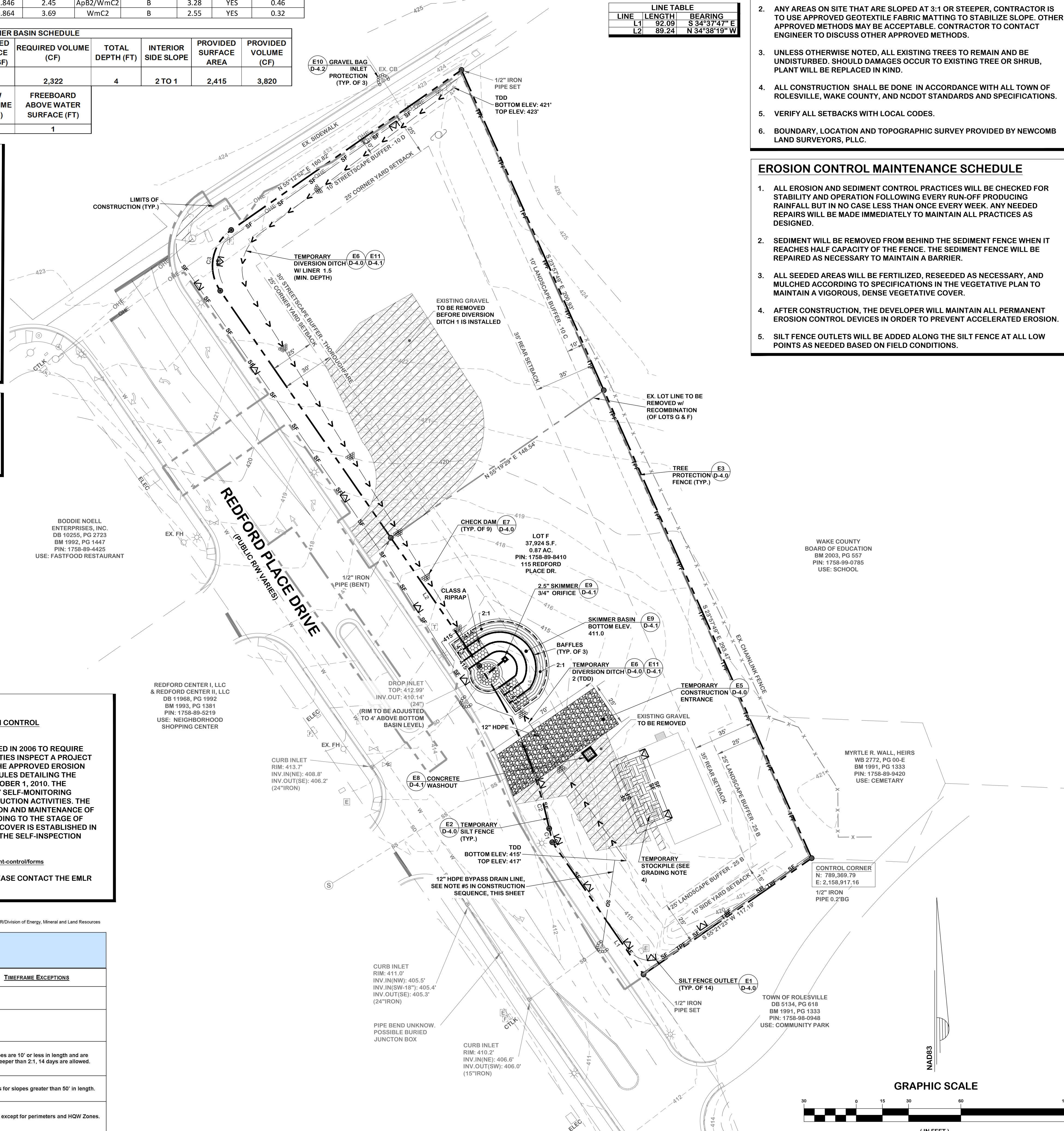
- ### EROSION CONTROL MAINTENANCE SCHEDULE
- ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUN-OFF PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
  - SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT REACHES HALF CAPACITY OF THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
  - ALL SEEDED AREAS WILL BE FERTILIZED, RESEED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
  - AFTER CONSTRUCTION, THE DEVELOPER WILL MAINTAIN ALL PERMANENT EROSION CONTROL DEVICES IN ORDER TO PREVENT ACCELERATED EROSION.
  - SILT FENCE OUTLETS WILL BE ADDED ALONG THE SILT FENCE AT ALL LOW POINTS AS NEEDED BASED ON FIELD CONDITIONS.

- ### CONSTRUCTION SEQUENCE PHASE - 1
- AFTER SITE PLAN/CONSTRUCTION PLAN APPROVAL HAS BEEN OBTAINED, CONTACT JEEVAN NEUPANE w/ WAKE COUNTY WATERSHED MANAGEMENT STAFF AT (919) 819-8907 AND PABST DESIGN GROUP AT 919-848-4399, TO SCHEDULE A PRE-CONSTRUCTION MEETING. OBTAIN LAND-DISTURBING PERMIT AND PLACARD, AND POST THE PLACARD ON SITE. THIS MUST BE DONE PRIOR TO BEGINNING WORK.
  - OBTAIN AN APPROVED (STAMPED) S&E CONTROL PLAN AND KEEP IT ON SITE, EITHER IN THE INSPECTION BOX, CONSTRUCTION OFFICE, OR WITH THE CONTRACTOR.
  - CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION TO AVOID CONFLICT DURING GRADING OPERATION. CONTRACTOR SHALL CALL 1-800-632-4949 N.C. "ONE CALL" PRIOR TO DIGGING TO LOCATE ALL EXISTING UNDERGROUND UTILITIES ON SITE.
  - EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED PRIOR TO DEMOLITION OF EXISTING STRUCTURES.
  - INSTALL TEMPORARY CONSTRUCTION ENTRANCE, SILT FENCE WITH SILT FENCE OUTLETS, SKIMMER BASIN AND REMAINING S&E MEASURES SPECIFIED ON THE PLAN, TREE PROTECTION FENCE AND INLET PROTECTION AROUND EXISTING DRAINAGE INLETS AS SHOWN ON PLANS. REMOVE LARGE AREA OF EXISTING GRAVEL ON SITE BEFORE INSTALLATION OF DIVERSION DITCH 1. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE WAKE COUNTY STANDARDS AND SPECIFICATIONS. ADD BYPASS DRAIN LINE.
  - ADD (2) BYPASS DRAIN LINES, SHOWN ON PLANS, THIS SHEET AND C-5.1. IF BYPASS DRAIN LINES OR 12" HDPE PIPE UNDER TEMPORARY CONSTRUCTION ENTRANCE ARE DAMAGED DURING CONSTRUCTION TRAFFIC, CONTRACTOR TO REPAIR OR REPLACE AS NEEDED.
  - CALL JEEVAN NEUPANE (919) 819-8907 FOR AN ONSITE INSPECTION BY THE WATERSHED MANAGER TO OBTAIN A CERTIFICATE OF COMPLIANCE.
  - REMOVE ANY NON-SEDIMENT UPLAND MATERIALS THAT MAY WASH INTO THE BASIN (E.G. LIMBS, DEBRIS, TRASH, BUILDING MATERIALS, ETC.) STABILIZE UPLAND AREAS THAT MAY CONTRIBUTE SIGNIFICANT AMOUNTS OF ERODED SOIL TO THE TRAP/BASIN AS QUICKLY AS POSSIBLE, TO AVOID FREQUENT DREDGING AND MAINTENANCE.
  - BEGIN CLEARING, GRUBBING AND ROUGH GRADING OF SITE AS SPECIFIED ON PLAN.
  - CONTRACTOR TO MAINTAIN EXISTING SEDIMENT AND EROSION CONTROL DEVICES AS SHOWN ON APPROVED PERMITTED PLANS.
  - SEDIMENT AND EROSION CONTROL DEVICES ARE TO BE INSPECTED AND MAINTAINED AFTER EVERY RAIN AND ONCE PER WEEK.
  - IF A STOCKPILE IS NECESSARY DUE TO EXCAVATION, A DOUBLE ROW OF SILT FENCE IS REQUIRED 10 FEET APART AT THE LIMITS OF THE STOCKPILE AREA.
  - CUT AND FILL SLOPES WILL BE STABILIZED WITHIN, PER STABILIZATION TIMEFRAMES, UPON COMPLETION OF ANY PHASE OF GRADING. (SEE STABILIZATION CRITERIA ON THIS SHEET AND SHEET D-4.2)
  - AS THE SITE IS BROUGHT TO GRADE, INSTALL ALL STORM SEWER AND INLET PROTECTION ON PROPOSED INLETS AS INDICATED ON THIS PLAN AND SHEET C-4.0, WHILE ENSURING GRADES MAINTAIN DRAINAGE TO THE SKIMMER BASIN UNTIL IT IS REMOVED.
  - CONTRACTOR TO RE-ESTABLISH TEMPORARY DIVERSION DITCHES, IF NEEDED, TO ENSURE POSITIVE DRAINAGE AT THE END OF EACH WORKING DAY.
  - STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION AND PAVING. ESTABLISH GROUND COVER ON DENUDED AREAS WITHIN FOURTEEN DAYS (14) DAYS OF COMPLETION OF ANY PHASE OF GRADING. (SEE STABILIZATION CRITERIA ON THIS SHEET AND SHEET D-4.2)
  - IF IT IS DETERMINED DURING CONSTRUCTION THAT SIGNIFICANT SEDIMENT IS LEAVING THE SITE, DESPITE PROPER IMPLEMENTATION AND MAINTENANCE, THE CONTRACTOR IS OBLIGATED TO TAKE ADDITIONAL CORRECTIVE ACTION.
  - THE CONTRACTOR SHALL INSPECT AND MAINTAIN THE EROSION CONTROL DEVICES SO THEY CONTINUE TO FUNCTION PROPERLY.
  - PERFORM REGULAR MAINTENANCE ON THE SEDIMENT TRAP FOR OPTIMUM PERFORMANCE. CHECK SPILLWAY FOR ACCUMULATED DEBRIS, EROSION, AND DISPLACEMENT OF ROCK. REMOVE SEDIMENT FROM THE TRAP WHEN SEDIMENT ACCUMULATES TO THE CLEAN OUT LEVEL. (50 PERCENT OF WET STORAGE DEPTH). USE PUMP FOR THIS WHEN NECESSARY. PUMP OUT THROUGH A SILT SACK. STABILIZE OR USE SILT FENCING TO ADDRESS UPSLOPE AREAS THAT ARE CONTRIBUTING EXCESSIVE VOLUMES OF SEDIMENT TO THE TRAP AND INCREASING MAINTENANCE NEEDS. MAINTAIN ORIGINAL DIMENSIONS OF TRAP (GRADE, DEPTH, ETC.) THROUGHOUT LIFE OF PRACTICE.
  - SEE PHASE 2 EROSION CONTROL MEASURES AND CONTINUATION OF EROSION CONTROL CONSTRUCTION SEQUENCE ON SHEET C-5.1.

- ### GRADING NOTES
- CONTRACTOR SHALL FIELD VERIFY EXISTING TOPOGRAPHY IN RELATION TO THE PROPOSED GRADES TO ENSURE DRAINAGE IN THE DIRECTION INDICATED ON PLANS.
  - INITIATE CONSTRUCTION SEQUENCE BEFORE BEGINNING CLEARING AND GRUBBING ON-SITE OPERATIONS.
  - CONTRACTOR TO PROTECT VEGETATION LOCATED BEYOND CONSTRUCTION LIMITS.
  - STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES. STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.
- TOTAL DISTURBED AREA = ±1.89 AC**

**ISSUED FOR CONSTRUCTION**

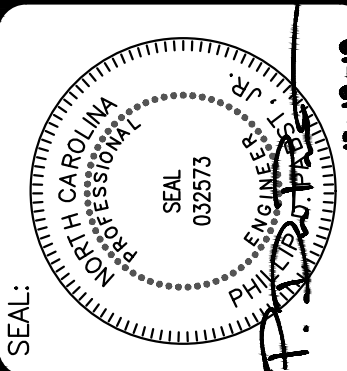
NOTE(S): ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, WAKE COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.



**PABST DESIGN GROUP, PA**  
Engineering | Consulting  
404-B Glenwood Avenue, Raleigh, North Carolina 27603  
Phone: 919 848 4399 | Fax: 919 848 4395 | LIC LICENSE NUMBER: C-3811

PREPARED FOR:  
RODGERS ROAD 3415, LLC  
1000 PRESIDENT GREEN  
CART, NORTH CAROLINA 27518  
DATE: 7.31.2019  
PROJECT ENGINEER:  
PROJECT CADD DESIGNER:  
MMP  
PROJECT SURVEYOR:  
NEWCOMB LAND SURVEYORS

**101 & 115 REDFORD PLACE DRIVE**  
ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**EROSION CONTROL PLAN - PHASE 1**



NO.	DATE	REVISION
1	11/20/19	REVISED PER TOP COORD COMMENTS
2	12/19/19	REVISED PER WAKE CO COMMENTS
3	12/19/19	REVISED PER WAKE CO COMMENTS

DRAWING SHEET  
**C-5.0**  
PROJECT NUMBER  
**449-19**

E:\Public\Projects\400-499\449-19 Redford Place Medical Office (The Redford Studios Architecture - PCD) - Drawing - E4 - Erosion - C-5.0.dwg Dec 19, 2019 - 11:20am By: rrobinnett

DIVERSION DITCH CALCULATIONS										
DIVERSION DITCH (SWALE)	DRAINAGE AREA (sf)	DRAINAGE AREA (ac)	C VALUE	Q (cfs)	AVG SWALE SLOPE %	SOIL TYPE	HYDROLOGIC SOIL CLASS	V10 (ft/sec)	LINER REQUIRED	SHEAR STRESS (lb/ft <sup>2</sup> )
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DD2	13,091	0.30	0.4	0,864	3.69	WmC2	B	2.55	YES	0.32

SKIMMER BASIN SCHEDULE									
SKIMMER BASIN	DRAINAGE AREA (AC)	DENUDED AREA (AC)	Q10 (CFS)	REQUIRED SURFACE AREA (SF)	REQUIRED VOLUME (CF)	TOTAL DEPTH (FT)	INTERIOR SIDE SLOPE	PROVIDED SURFACE AREA	PROVIDED VOLUME (CF)
SKIMMER 1	1.29	1.29	2.3	991	2,322	4	2 TO 1	2,415	3,820
	SKIMMER SIZE (IN)	ORIFICE RADIUS (IN)	ORIFICE DIAMETER (IN)	DRAW DOWN TIME (DAYS)	FREEBOARD ABOVE WATER SURFACE (FT)				
SKIMMER 1	2.5	0.75	0.75	3.9	1				

EROSION CONTROL LEGEND	
SF	TEMPORARY SILT FENCE
TPF	TREE PROTECTION FENCE
TDD	TEMPORARY DIVERSION DITCH (TDD)
[Symbol]	TEMPORARY CONSTRUCTION ENTRANCE
[Symbol]	SILT FENCE OUTLET
[Symbol]	ROCK CHECK DAM
[Symbol]	DROP INLET PROTECTION
[Symbol]	CURB INLET PROTECTION
[Symbol]	SANDBAG
[Symbol]	CONCRETE WASHOUT AREA
[Symbol]	SOIL STOCKPILE

LEGEND	
[Symbol]	LIMITS OF CONSTRUCTION
[Symbol]	EXISTING OVERHEAD UTILITY
[Symbol]	EXISTING WATER LINE
[Symbol]	EXISTING SANITARY SEWER
[Symbol]	EXISTING STORM DRAINAGE
[Symbol]	PROPOSED WATER LINE
[Symbol]	PROPOSED FIRE WATER LINE
[Symbol]	PROPOSED SANITARY SEWER
[Symbol]	PROPOSED STORM DRAINAGE

**ISSUED FOR CONSTRUCTION**

NOTE(s): ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE AND NCDOT STANDARDS AND SPECIFICATIONS.

**SELF INSPECTION NOTICE:**

NOTIFICATION OF LAND RESOURCES SEDIMENT AND EROSION CONTROL SELF-INSPECTION PROGRAM:  
 THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH STAGE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010. THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE STAGE OF THE PROJECT. AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED IN ACCORDANCE WITH NCGS 113A-54.1 AND 15A NCAC 4B.0131. THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS A PDF FORM FROM <http://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms>

IF YOU HAVE QUESTIONS OR CANNOT ACCESS THE FORM, PLEASE CONTACT THE EMLR OFFICE AT (919)707-9200 FOR ASSISTANCE.

NPDES Stormwater Discharge Permit for Construction Activities (NCG001) NCDENR/Division of Energy, Mineral and Land Resources

STABILIZATION TIMEFRAMES (Effective Aug. 3, 2015)		
SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

CURVE TABLE				
CURVE	LENGTH	RADIUS	BEARING	CHORD
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C3	39.28	25.00	S 10°12'56" W	35.36

LINE TABLE	
LINE	BEARING
L1	S 34°37'47" E
L2	N 34°38'19" W

- GENERAL NOTES**
- DISTURBANCE LIMITS SHALL NOT ENROACH IN TREE COVERAGE AREAS. DISTURBANCE LIMITS ARE AT LIMITS OF GRADING.
  - ANY AREAS ON SITE THAT ARE SLOPED AT 3:1 OR STEEPER, CONTRACTOR IS TO USE APPROVED GEOTEXTILE FABRIC MATTING TO STABILIZE SLOPE. OTHER APPROVED METHODS MAY BE ACCEPTABLE. CONTRACTOR TO CONTACT ENGINEER TO DISCUSS OTHER APPROVED METHODS.
  - UNLESS OTHERWISE NOTED, ALL EXISTING TREES TO REMAIN AND BE UNDISTURBED. SHOULD DAMAGES OCCUR TO EXISTING TREE OR SHRUB, PLANT WILL BE REPLACED IN KIND.
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  - BOUNDARY, LOCATION AND TOPOGRAPHIC SURVEY PROVIDED BY NEWCOMB LAND SURVEYORS, PLLC.

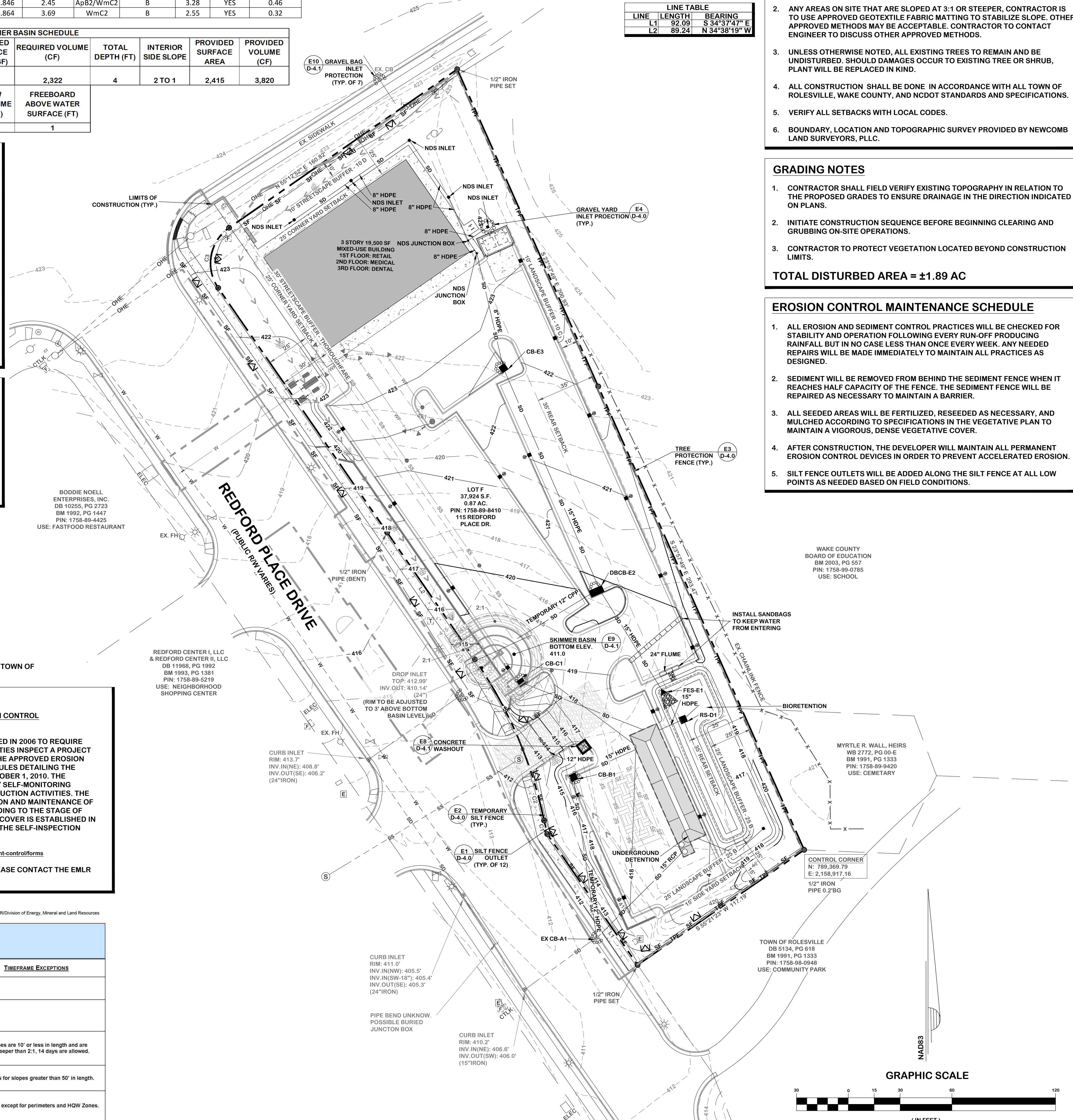
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- EROSION CONTROL MAINTENANCE SCHEDULE**
- ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUN-OFF PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
  - SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT REACHES HALF CAPACITY OF THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
  - ALL SEEDED AREAS WILL BE FERTILIZED, RESEED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
  - AFTER CONSTRUCTION, THE DEVELOPER WILL MAINTAIN ALL PERMANENT EROSION CONTROL DEVICES IN ORDER TO PREVENT ACCELERATED EROSION.
  - SILT FENCE OUTLETS WILL BE ADDED ALONG THE SILT FENCE AT ALL LOW POINTS AS NEEDED BASED ON FIELD CONDITIONS.

- CONSTRUCTION SEQUENCE PHASE 2**
- REFER TO SHEET C-5.0 IN THIS PLAN SET FOR PHASE 1 E&S OPERATIONS PRIOR TO BEGINNING THIS CONSTRUCTION SEQUENCE AND INSTALLATION OF MEASURES ON THIS PLAN SHEET.
  - DURING CONTINUED CONSTRUCTION, ADJUST THE TEMPORARY DIVERSION DITCHES AND GRADES AS NECESSARY, STAY AS CLOSE TO THE ORIGINAL LOCATION AS POSSIBLE. TO MAINTAIN POSITIVE DRAINAGE AND CROSS SECTION PER THE DETAIL E6 ON SHEET D-4.0.
  - INSTALL TEMPORARY 12" PIPE FROM DBCB-E2 TO THE SKIMMER BASIN AND CB-B1 TO EX CB-A1. INSTALL PLUG IN PIPE AT STRUCTURES DBCB-E2 AND CB-B1. PLUGS SHALL REMAIN INSTALLED UNTIL PDG APPROVES THE SCM DEVICE AND ALL STORM LINES ARE FREE OF SILT/TRASH.
  - CONTINUE BRINGING THE SITE TO FINAL GRADES AND INSTALLING UTILITIES AS NECESSARY. SKIMMER BASIN MUST REMAIN IN OPERATION UNTIL SUCH TIME THAT THE SITE UPSTREAM OF THE DEVICE IS STABILIZED. ONCE ENOUGH OF THE SITE IS STABILIZED AND THE STORM CONVEYANCE HAS BEEN INSTALLED, BEGIN THE BASIN REMOVAL SEQUENCE PER THE NOTES ON THIS SHEET.
  - ONCE BASIN IS REMOVED CONTINUE GRADING OPERATION PROGRESSING TOWARD DESIGN GRADE.
  - CUT AND FILL SLOPES WILL BE STABILIZED WITHIN 14 DAYS OF ANY PHASE OF GRADING. (SEE STABILIZATION CRITERIA ON THIS SHEET AND D-4.2).
  - INSTALL CURB AND GUTTER, CABG STONE, PAVEMENT AND SIDEWALK IN ALL HARDSCAPE AREAS.
  - CONTACT PDG TO INSPECT SCM DEVICES FOR ACCEPTANCE. ONCE APPROVED UNPLUG STRUCTURES DBCB-E2 AND CB-B1.
  - STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION AND PAVING. ESTABLISH GROUND COVER ON DENUDED AREAS WITHIN FOURTEEN DAYS (14) DAYS OF COMPLETION OF PROJECT.
  - REMOVE BYPASS DRAIN LINES FROM CB-B1 TO EX CB-A1 AND FROM DBCB-E2 TO SKIMMER BASIN. FOLLOWING THE REMOVAL OF BYPASS DRAIN LINE FROM CB-B1 TO EX CB-A1, COMPLETE DRIVEWAY CONSTRUCTION.
  - IF IT IS DETERMINED DURING CONSTRUCTION THAT SIGNIFICANT SEDIMENT IS LEAVING THE SITE, DESPITE PROPER IMPLEMENTATION AND MAINTENANCE, THE CONTRACTOR IS OBLIGATED TO TAKE ADDITIONAL CORRECTIVE ACTION.
  - THE CONTRACTOR SHALL INSPECT AND MAINTAIN THE EROSION CONTROL DEVICES SO THEY CONTINUE TO FUNCTION PROPERLY.
  - FINE GRADE THE FINAL PORTION OF THE SITE. SEED OR OTHERWISE STABILIZE ANY RESULTING BARE AREAS.
  - MAINTAIN ALL REMAINING SOIL AND EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
  - WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL ENVIRONMENTAL CONSULTANT FOR AN INSPECTION.
  - IF SITE IS APPROVED, REMOVE TEMPORARY DIVERSIONS, SILT FENCE, ETC., AND SEED OUT OR STABILIZE ANY RESULTING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SUCH AS VELOCITY DISSIPATORS, SHOULD NOW BE INSTALLED.
  - WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR A FINAL SITE INSPECTION BY JEEVAN NEUPANE WITH WAKE COUNTY WATERSHED MANAGEMENT STAFF AT (919) 819-8907. IF SITE IS APPROVED, OBTAIN A CERTIFICATE OF COMPLETION.

- EROSION CONTROL MAINTENANCE SCHEDULE**
- ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUN-OFF PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
  - SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT REACHES HALF CAPACITY OF THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
  - ALL SEEDED AREAS WILL BE FERTILIZED, RESEED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
  - AFTER CONSTRUCTION, THE DEVELOPER WILL MAINTAIN ALL PERMANENT EROSION CONTROL DEVICES IN ORDER TO PREVENT ACCELERATED EROSION.
  - SILT FENCE OUTLETS WILL BE ADDED ALONG THE SILT FENCE AT ALL LOW POINTS AS NEEDED BASED ON FIELD CONDITIONS.

- BASIN REMOVAL SEQUENCE**
- SCHEDULE A SITE MEETING WITH THE ENVIRONMENTAL ENGINEER/CONSULTANT TO DETERMINE IF A BASIN CAN BE REMOVED. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
  - REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES. IF CULVERT PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.
  - PERFORM SEEDBED PREPARATION, SEED, MULCH AND ASPHALT TACK ANY RESULTING BARE AREAS IMMEDIATELY.
  - INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.
  - WHEN SITE IS FULLY STABILIZED, CALL ENVIRONMENTAL ENGINEER/CONSULTANT FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVICE ON WHEN SITE CAN BE ISSUED A CERTIFICATE OF COMPLETION.
- NOTE: A MEETING SHOULD ALSO BE SCHEDULED WITH THE ENVIRONMENTAL ENGINEER/CONSULTANT TO DETERMINE WHEN A BASIN MAY BE CONVERTED FOR STORMWATER USE. SOME MUNICIPALITIES MAY ALSO REQUIRE THIS.



**PAST DESIGN GROUP, PA**  
 Engineering | Consulting  
 404-S Glenwood Avenue, Raleigh, North Carolina 27603  
 Phone: 919 846 4399 | Fax: 919 846 4395 | LIC LICENSE NUMBER: C-3811

PREPARED FOR:  
 ROGERS ROAD 3415, LLC  
 1000 PRESIDENT GREEN  
 CANT, NORTH CAROLINA 27518  
 DATE: 7.31.2019  
 PROJECT ENGINEER:  
 PROJECT CAD DESIGNER:  
 MWP  
 PROJECT SURVEYOR:  
 WAKECOUNTY LAND SURVEYORS

**101 & 115 REDFORD PLACE DRIVE**  
 ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**EROSION CONTROL PLAN - PHASE 2**

SCALE:

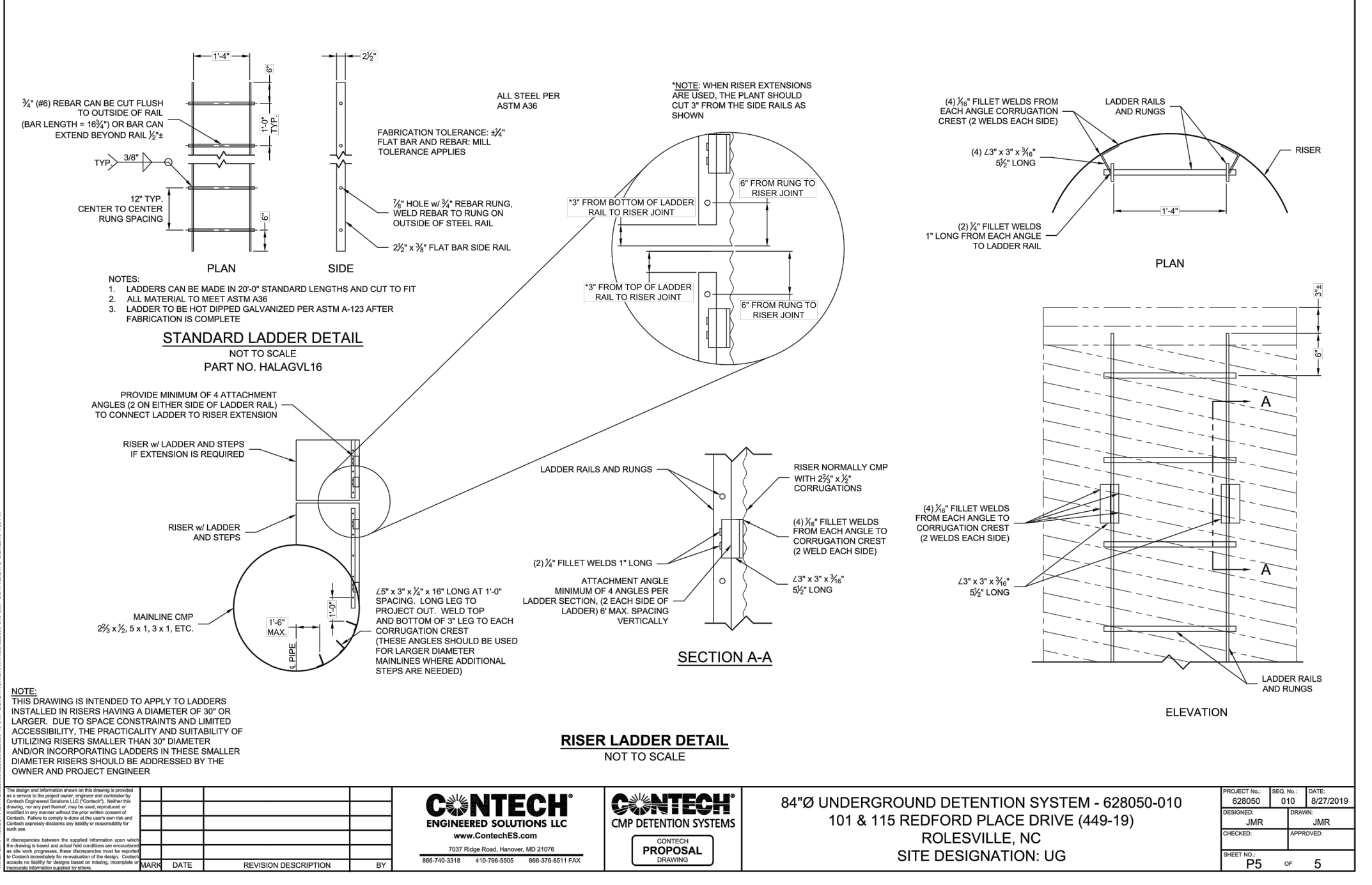
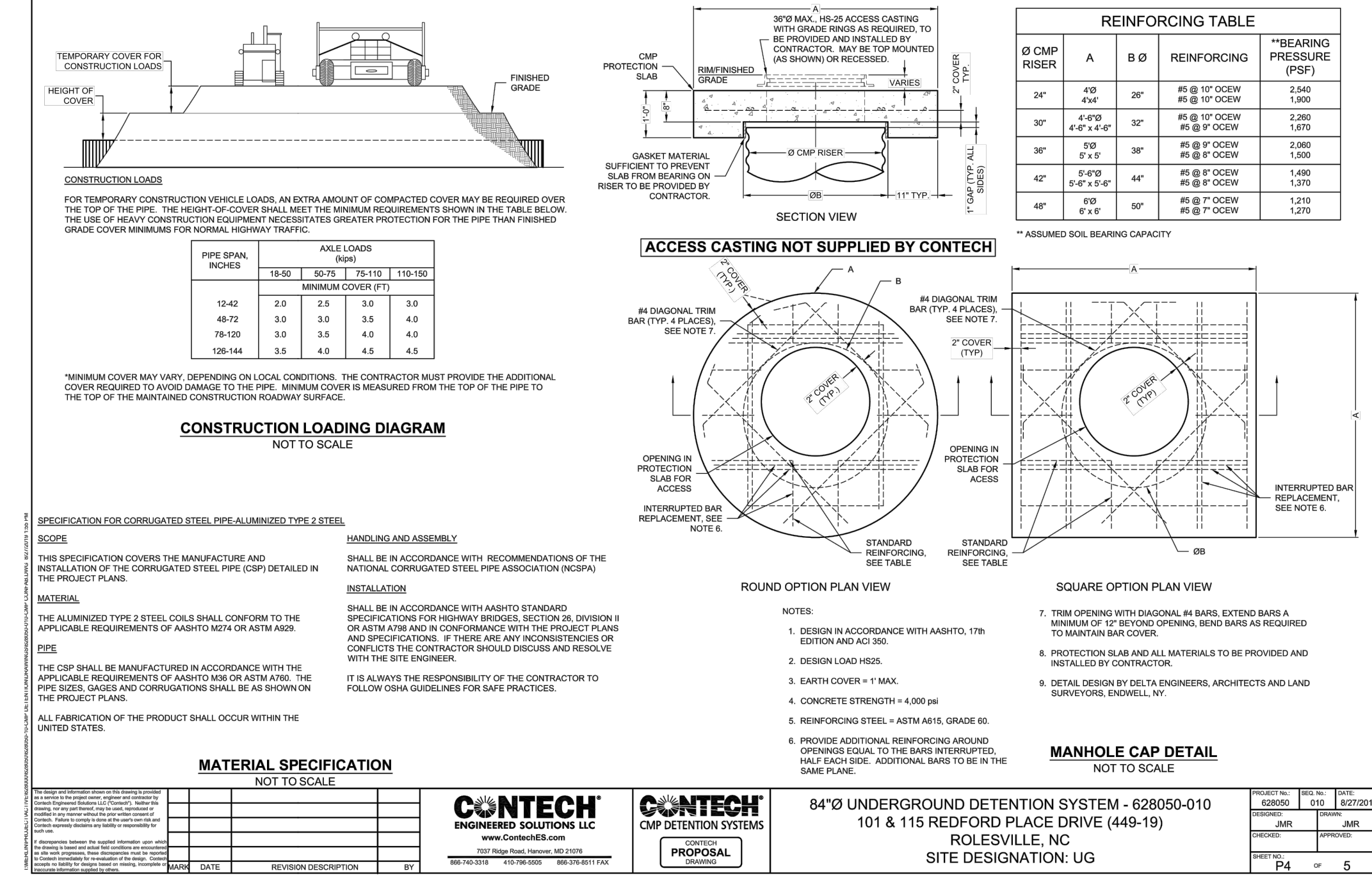
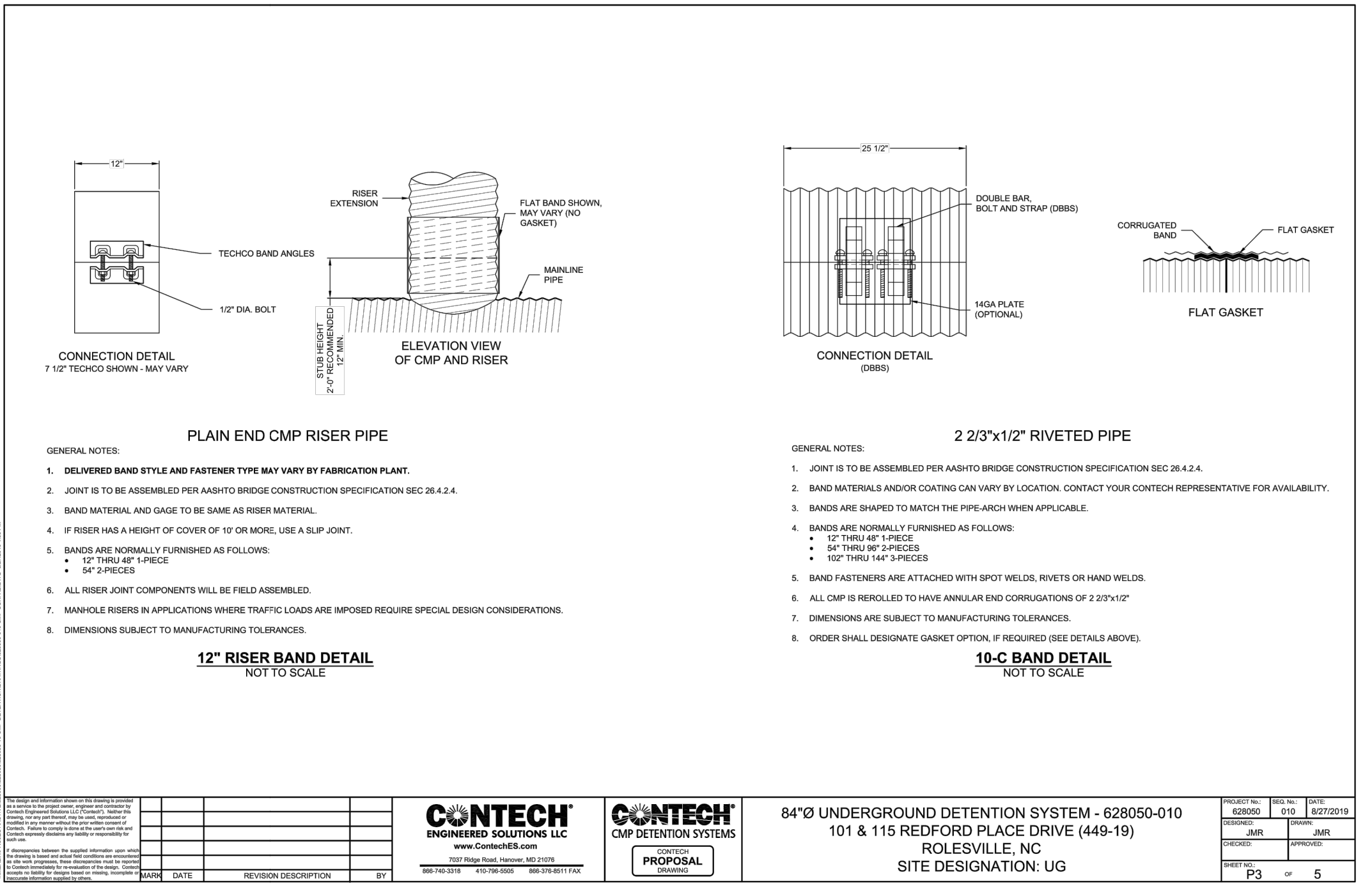
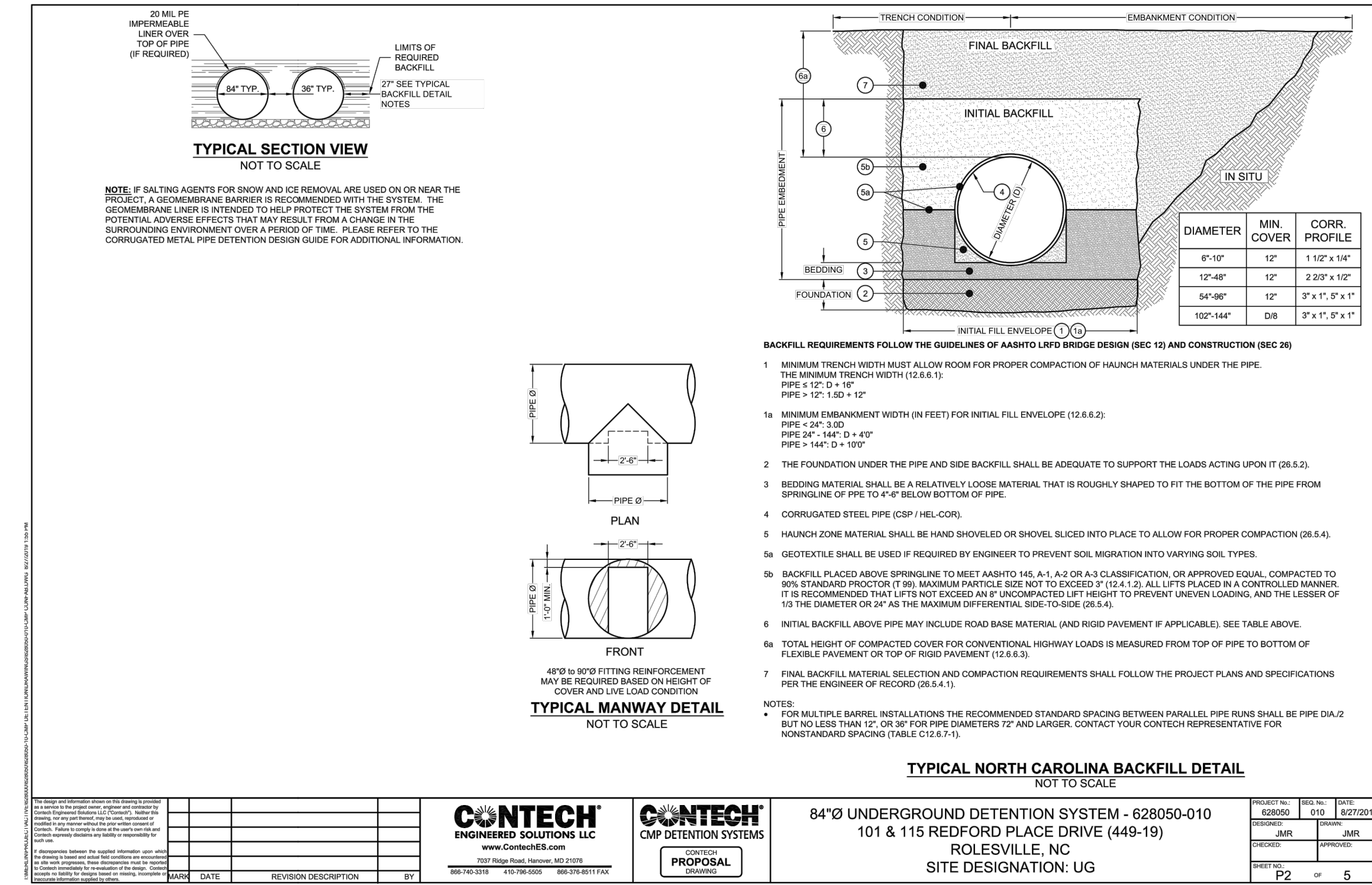
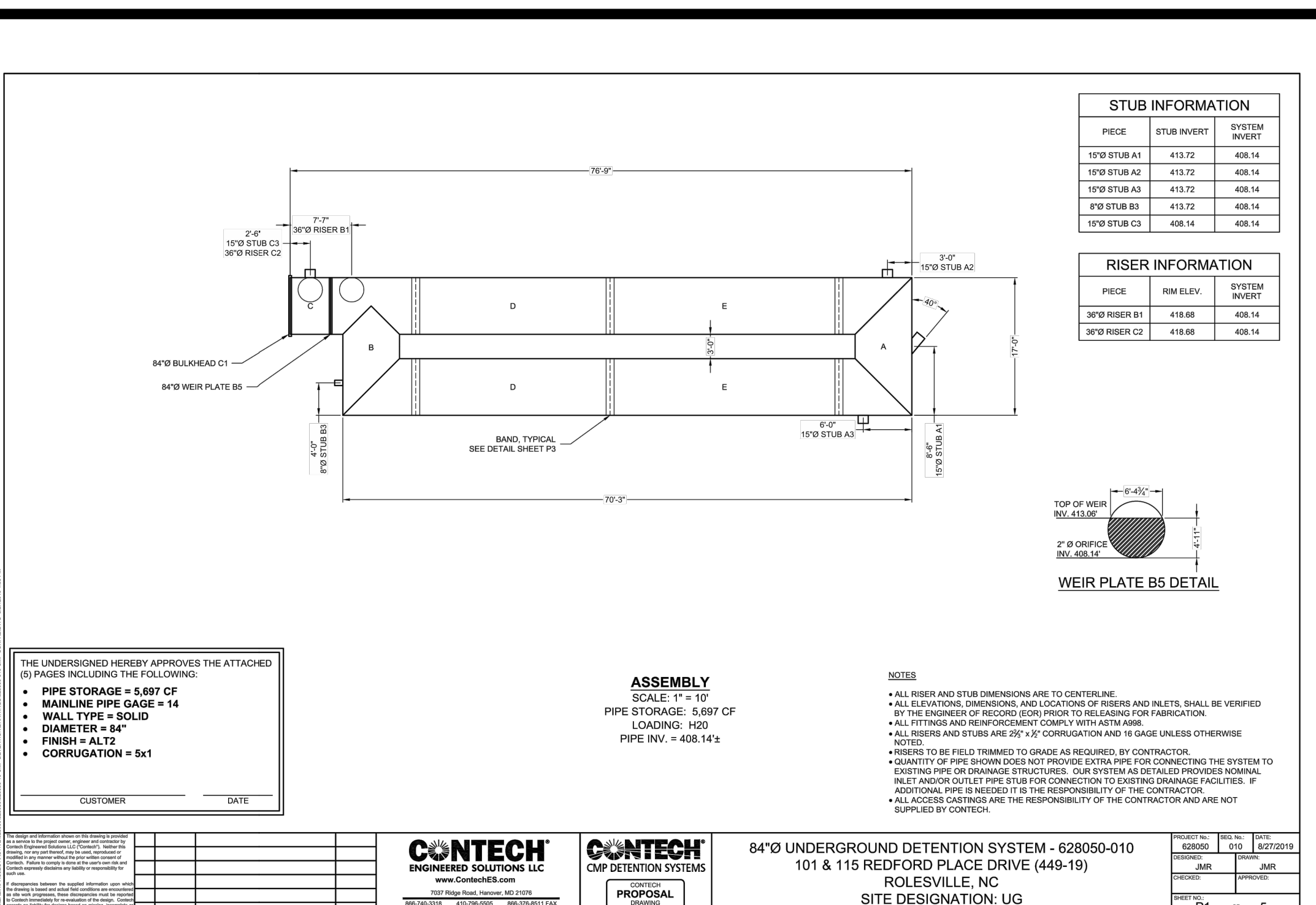
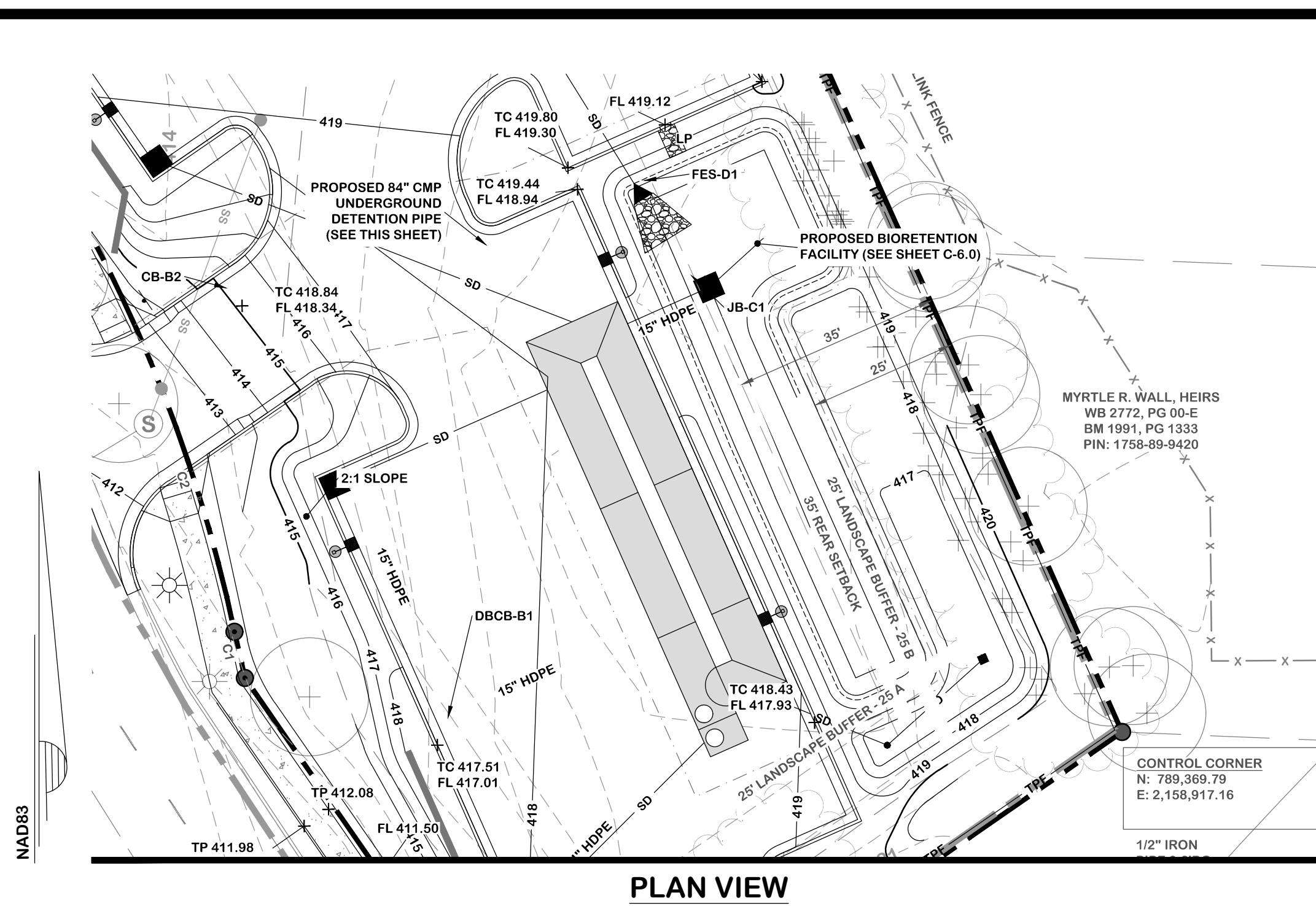
NO.	DATE	REVISION
1	11/20/19	REVISED PER TOP CO COMMENTS
2	12/9/19	REVISED PER WAKE CO COMMENTS
3	1/29/20	REVISED PER WAKE CO COMMENTS
4	4/23/20	REVISED PER ENGINEER

DRAWING SHEET  
**C-5.1**  
 PROJECT NUMBER  
**449-19**

C:\Public\Projects\400-499\449-19 Redford Place Medical Office (The Redford Studios Architecture - PCD\30-Drawing\54-Design\C-5.1.dwg Apr. 23, 2020 - 10:52am BY Mark Phillips







# ISSUED FOR CONSTRUCTION

NOTE(S): ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE AND NCDOT STANDARDS AND SPECIFICATIONS.

STORM CHART										
Line ID	Line Size (in)	Material	Invert Dn (ft)	Invert Up (ft)	Line Length (ft)	Line Slope (%)	Grnd/Rim Elev Dn (ft)	Grnd/Rim Elev Up (ft)		
FES-E1 TO DBCB-E2	15	Cir	416.25	416.66	70.385	0.58	416.25	419.76		
DBCB-E2 TO CB-E3	15	Cir	416.76	418.60	140.058	1.31	419.76	421.60		
UG TO CB-B1	15	Cir	413.72	414.12	39.649	1.01	418.00	417.16		
UG TO CB-C1	15	Cir	413.72	415.23	75.373	2.00	418.00	418.73		
UG TO RS-D1	15	Cir	413.72	413.91	15.306	1.24	418.00	417.00		
POA TO EX CB-A1	15	Cir	407.26	407.50	25.275	0.95	410.65	410.65		
EX CB-A1 TO UG*	15	Cir	407.60	408.14	68.324	0.79	410.65	418.00		

\*NOTE: PIPE IS WITHIN PUBLIC RIGHT-OF-WAY AND SHALL BE CLASS IV OR GREATER RCP.

PREPARED FOR: 1000 GREENBERRY DRIVE, SUITE 100, ROLESVILLE, NC 27053  
 PROJECT ENGINEER: JAMES W. BRYANT  
 PROJECT CAD DESIGNER: JAMES W. BRYANT  
 PROJECT SURVEYOR: JAMES W. BRYANT  
 PROJECT NUMBER: C-6.1  
 DATE: 7.31.2019  
 SCALE: 1" = 20'  
 SHEET: C-6.1  
 PROJECT: 84" UNDERGROUND DETENTION SYSTEM - 628050-010  
 101 & 115 REDFORD PLACE DRIVE (449-19)  
 ROLESVILLE, NC  
 SITE DESIGNATION: UG  
 DRAWING SHEET C-6.1  
 PROJECT NUMBER 449-19

## PAST DESIGN GROUP, PA

Engineering | Consulting

404-S Glenwood Avenue, Raleigh, North Carolina 27603  
 Phone: 919 846 4399 | Fax: 919 846 4395 | LIC LICENSE NUMBER: C-3811

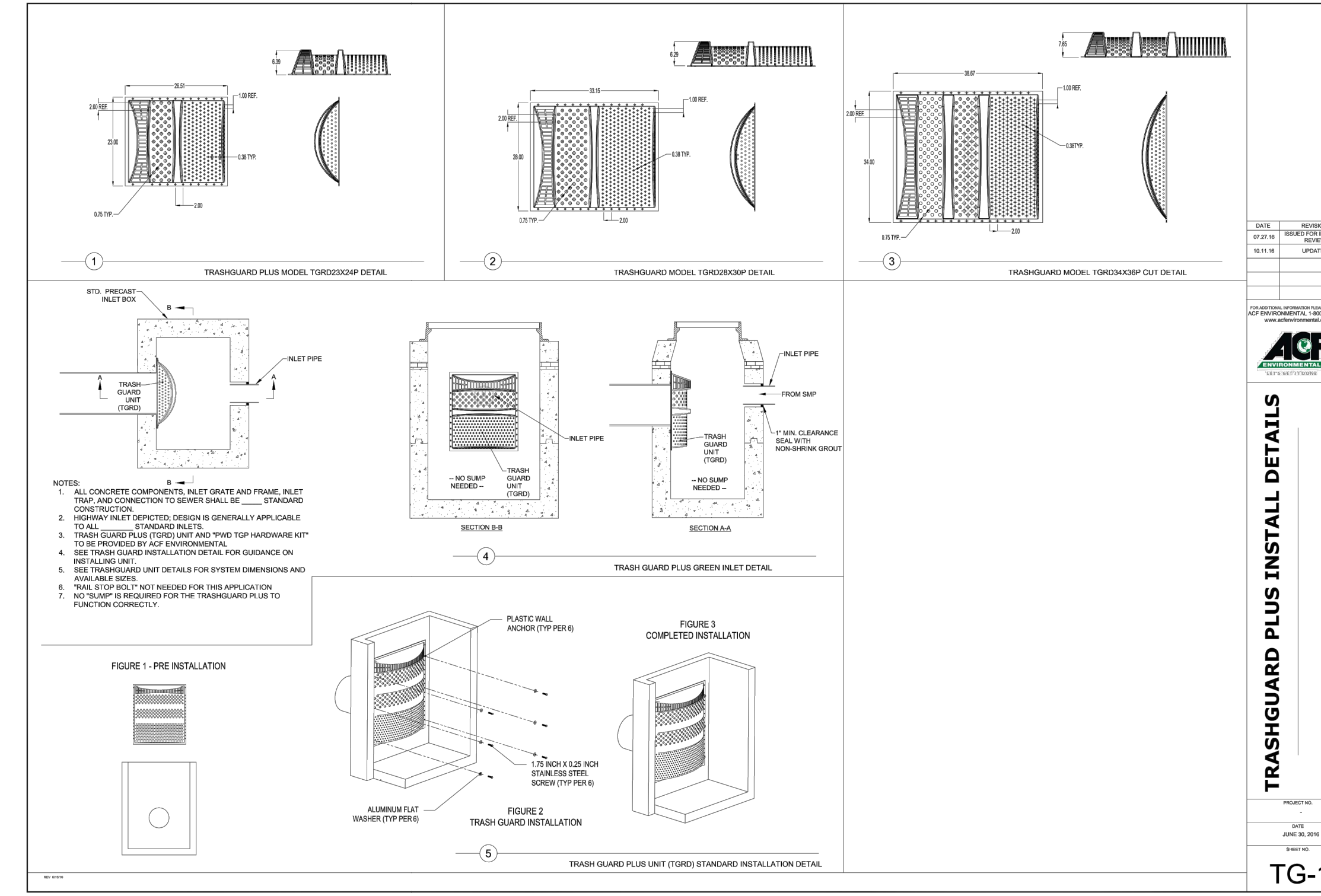
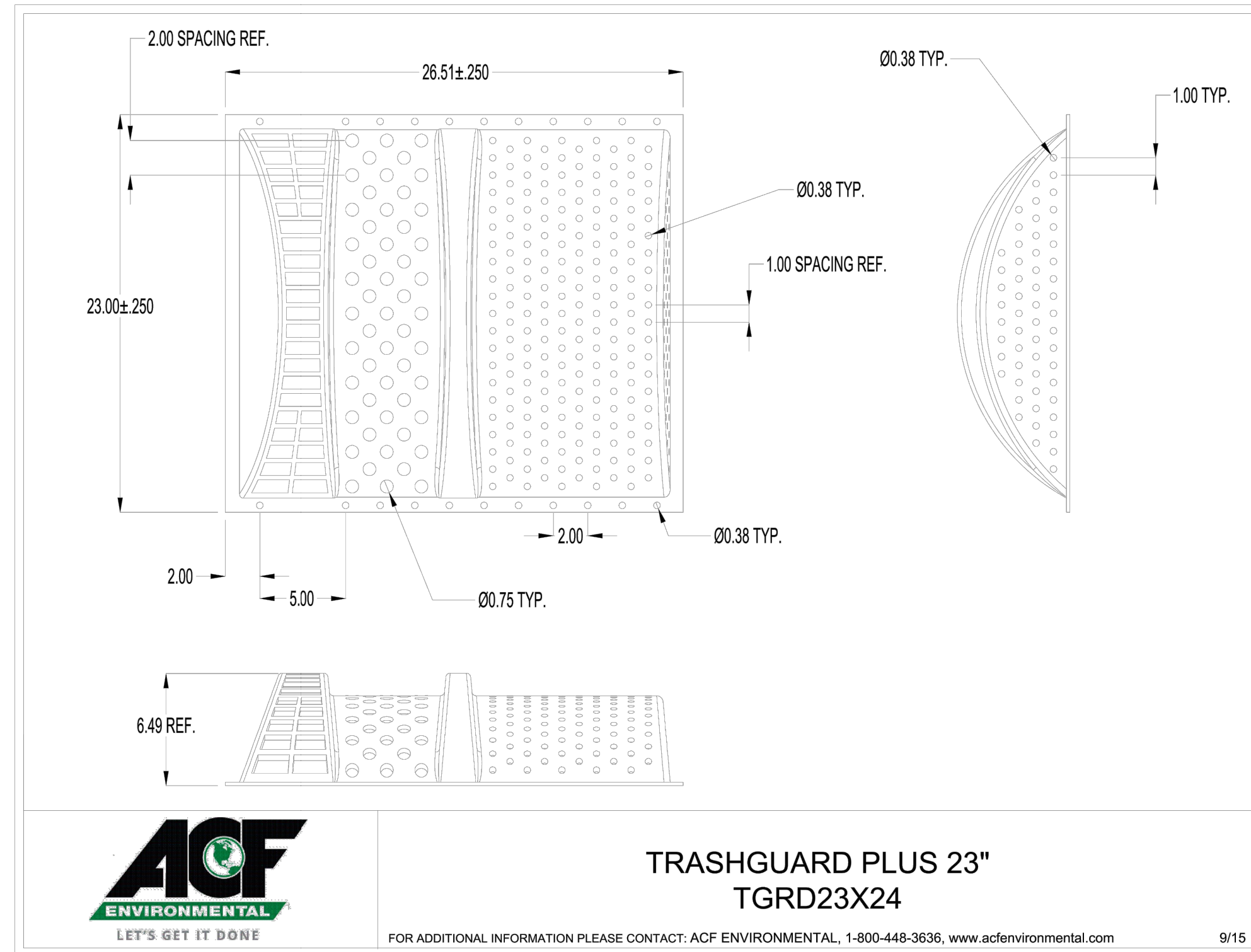
# 101 & 115 REDFORD PLACE DRIVE

ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

## CONSTRUCTION DRAWINGS

### UNDERGROUND DETENTION PLAN & PROFILE

ISSUED FOR CONSTRUCTION



**Trash Guard Plus® Installation Instructions**

Trash Guard Plus® can be installed in a variety of catch basin configurations (or field conditions). In general the Trash Guard Plus® is mounted on the catch basin wall, centered over the outlet pipe.

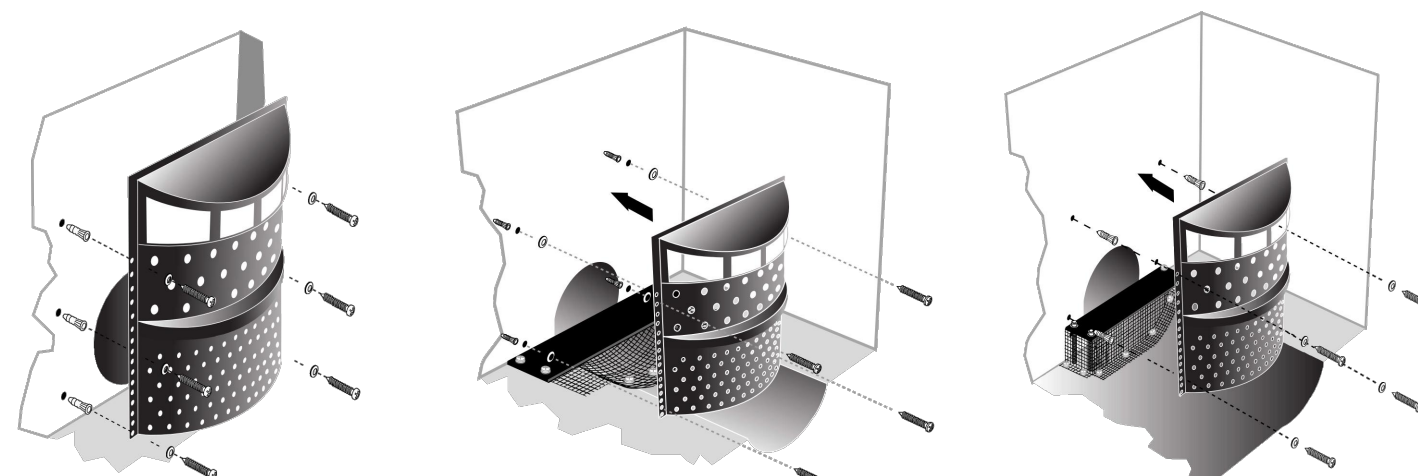
Before installing Trash Guard Plus®, a hydraulic calculation should be performed to determine maximum flow rate based on depth of the catch basin and size of Trash Guard Plus® used. This calculated model will determine maximum flow rate with no obstructions or varying amounts of trash build up, and determine drainage area required to support the calculated flow rate. Allowable trash build up and drainage area required for trash build up will determine maintenance frequency.

If catch basin conditions allow and increased flow rate and additional vertical capacity are desired, a model can be calculated to determine flow rate when extending Trash Guard Plus® from one inch to seven inches from the catch basin wall. As above, this calculated model will determine maximum flow rate with no obstructions or varying amounts of trash build up. Contact Trash Guard Plus® for assistance in determining flow rate and drainage areas under varying field conditions.

The following instructions are organized in sections described as follows:

- ☐ Section 1 – Trash Guard Plus® installed on a flat perpendicular wall with a flat bottom
- ☐ Section 2 – Bottom Plate installed on an inverted bottom
- ☐ Section 3 – Trash Guard Plus® installed on a flat perpendicular wall with an inverted bottom
- ☐ Section 4 – Trash Guard Plus® installed on tiered brick wall escalating width from top to bottom with an inverted or flat bottom.
- ☐ Section 5 – Trash Guard Plus® installed on concave wall reasonable flat at top and bottom with an inverted or flat bottom.
- ☐ Section 6 – Trash Guard Plus® installed extended front wall increase flow capacity with an inverted or flat bottom.

**EXAMPLES OF FLAT AND INVERTED BOTTOMS**



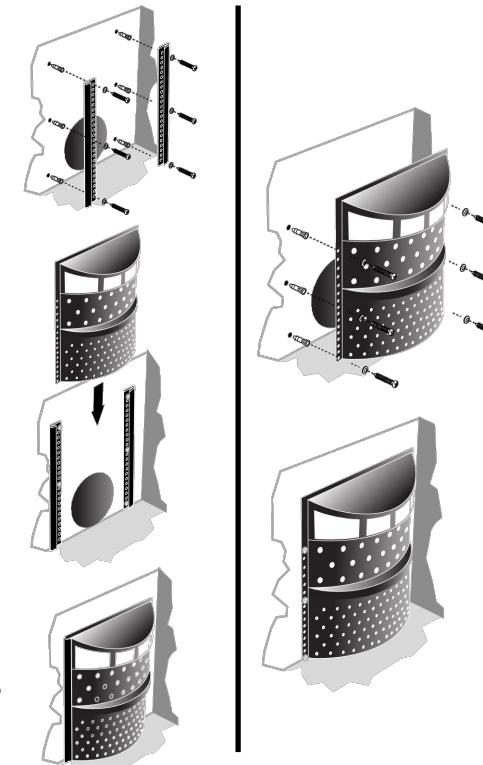
**WARNING:** Improper installation of the Trash Guard Plus® or failure to keep the area around the Trash Guard Plus® free from sediment, debris and litter after installation may result in clogging of the storm water drainage system and increase the risk of flooding during times of heavy rainfall. It is important to clear sediment, debris and litter from around the Trash Guard Plus® at least four (4) times a year and more frequently in areas with large amounts of vegetation or litter. Please contact your local Trash Guard Plus® distributor with any questions regarding the installation or regular maintenance requirements of the Trash Guard Plus®.

**Section 1 (Diagram I)**

- ☐ Items Included:
- Trash Guard Plus® (Chosen Size)
  - Seven Plastic Anchors
  - Seven Flat Washers
  - Seven 1.75" x .25" Stainless Steel Phillips Screws
- ☐ Tools Needed:
- Cordless Hammer Drill
  - 5/16" Masonry Drill Bit
  - Phillips Screwdriver

**Installation Instructions**

- Can be attached with or without retaining rails.
1. Place Trash Guard Plus over outlet pipe.
  2. Drill 5/16" hole top and bottom each side.
  3. Insert plastic anchor and attach washer and phillips screws as shown in diagram.



**Section 2 (Diagram A & B)**

- ☐ Items Included for A:
- Bottom Plate with plastic netting attached
  - Seven Plastic Anchors
  - Seven Flat Washers
  - Seven 1.75" x .25" Stainless Steel Phillips Screws
- ☐ Tools Needed:
- Cordless Hammer Drill
  - 5/16" Masonry Drill Bit
  - Phillips Screwdriver
- ☐ Items Included for B:
- Bottom Plate with plastic netting attached
  - Seven Plastic Anchors
  - Seven Flat Washers
  - Seven 1.75" x .25" Stainless Steel Phillips Screws
  - Stainless Steel All Thread Rod Cut to Size
  - Fourteen Hex Nuts & Flat Washers
  - Four Expansion Anchors
  - Plastic Netting (if excess amount on plate is not enough)
  - Two Tie Wraps
- ☐ Tools Needed:
- Cordless Hammer Drill
  - 5/16" Masonry Drill Bit for Plastic Anchors
  - 1/2" Masonry Drill Bit for Expansion Anchors
  - Phillips Screwdriver

**Installation Instructions For A**

1. Place bottom plate over inverted bottom with level sides. (Front and Back)
2. Drill 5/16" holes as shown in diagram.
3. Insert plastic wall anchors as shown in diagram A.
4. Attach with washer and screw as shown.

**Installation Instructions For B**

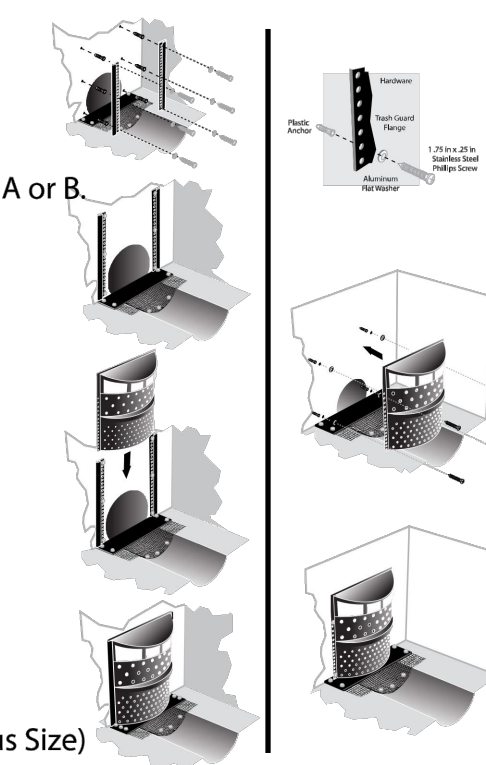
1. Follow instructions A if one side is level.
2. Drill 1/2" holes to accommodate expansion anchors.
3. Cut stainless steel rod to desired length. (Allow 1" inside expansion anchor and 1" through bottom plate)
4. Attach washers and hex nuts as shown in diagram.
5. Attach netting as shown in diagram.

**Section 3 (Diagram C) Installation Instructions**

- ☐ Items Included:
- Same as Section 2 A or B
  - Trash Guard Plus® (Chosen Size)
  - Seven Plastic Anchors
  - Seven Flat Washers
  - Seven 1.75" x .25" Stainless Steel Phillips Screws
- ☐ Tools Needed:
- Same as Section 2 A or B

Can be attached with or without retaining rails.

1. Follow instruction for Section 2 A or B.
2. Follow instruction for Section 1

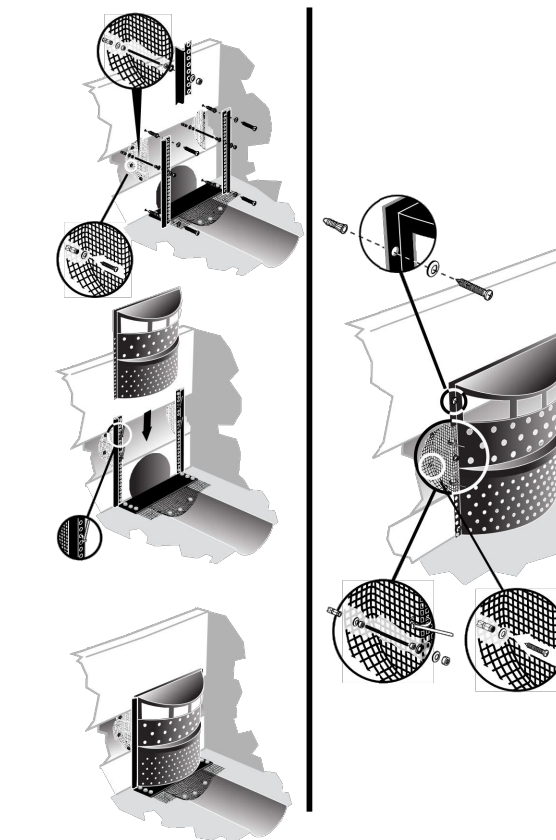


**Section 4 (Diagram D & G)**

- ☐ Items Included:
- Same as Section 2 A or B if inverted bottom
  - Trash Guard Plus® (Chosen Size)
  - Plastic Netting for Sides (Length Determined by Trash Guard Plus Size)
  - Fourteen Plastic Anchors
  - Fourteen Flat Washers
  - Fourteen 1.75" x .25" Stainless Steel Phillips Screws
  - 3" Stainless Steel All-Tread Rod
  - Seven Stainless Steel Hex Nuts and Seven Flat Washers and two Expansion Anchors
  - Seven Tie Wraps
- ☐ Tools Needed:
- Cordless Hammer Drill
  - 5/16" Masonry Drill Bit
  - Phillips Screwdriver
- Additional:
- 1/2" Masonry Drill Bit
  - Hacksaw

**Installation Instructions**

- Can be attached with or without retaining rails.
1. Attach bottom plate to floor directly under area where Trash Guard Plus® will sit. (Use either A or B bottom instructions)
  2. Drill the 5/16" holes on each side of Trash Guard Plus® near top and insert plastic anchors.
  3. Drill 1/2" holes on each side of Trash Guard® near bottom insert expansion anchors.
  4. Cut two sections from all thread Rod the length required for Trash Guard Plus® or retaining rails to hang perpendicular with top attached to wall (allow 1" inside anchors and 1" through Trash Guard Plus® Flange or retaining rails)
  5. Secure Trash Guard Plus® or retaining rails to top as shown in diagram.
  6. Secure rods to expansion anchors and Trash Guard Plus® or retaining rails as shown in insert.
  7. Attach plastic netting to Trash Guard Plus® flange or retaining rails with tie wraps as shown in insert.
  8. Cut mesh from top tier of bricks and secure with plastic anchor, screw and washer as shown in insert.
  9. Continue process until netting is attached to wall top and bottom.



**Section 6 (Diagram H)**

- Items Included:
- Same As Section 4
- Additional:
- Top Expansion Strip
  - Seven Phillip Head Screws, Flat Washers and Plastic Anchors
  - Seven Hex Nuts and Flat Washers
  - Two Additional Expansion Anchors
- Tools Needed:
- Same As Section 4

**Installation Instructions**

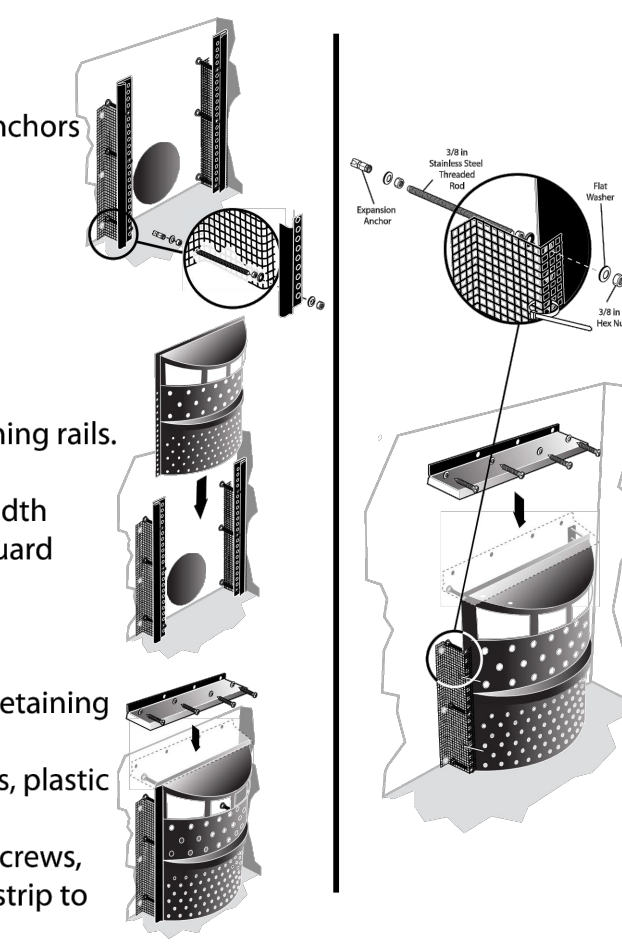
1. Follow Instructions In Section 4
2. Drill 1/2" holes each side of Trash Guard Plus® or retaining rails. Insert expansion anchors.
3. Cut four sections from all thread rod the expansion width desired. (allow 1" inside anchors & 1" through Trash Guard Plus® Flange or retaining rails).
4. Secure Rods to anchors & Trash Guard Plus® Flange or retaining rails as shown in insert.
5. Attach plastic netting to Trash Guard Plus® Flange or retaining rails with the wraps as shown in insert
6. Attach plastic netting to wall with phillips head screws, plastic anchors & washers as shown in insert.
7. Attach top expansion strip to wall with phillips head screws, plastic anchors & washers as shown. Allow extension strip to lay on top of Trash Guard Plus® as shown.

**Section 5 (Diagram F)**

- Items Included:
- Same As Section 1
  - Same As Section 2 A or B if inverted bottom
- Additional:
- Plastic Netting for concave wall
  - Seven Stainless Steel Screws, Flat Washers and Plastic Anchors
- Tools Needed:
- Same As Section 2 A or B

**Installation Instructions**

1. Follow Instructions In Section 1 and Section 2 A or B if necessary
2. Attach Plastic Netting To Trash Guard Plus® Flange or retaining rails with Tie Wraps As Shown In Insert
3. Bend & Form Netting To Concave Wall As Shown In Insert
4. Drill 5/16" Holes To Secure Netting To Wall
5. Secure Plastic Netting To Wall With Phillips Head Screws, Plastic Anchors & Washers As Shown In Insert.



**PAST DESIGN GROUP, PA**  
Engineering | Consulting  
404-B Glenwood Avenue, Raleigh, North Carolina 27603  
Phone: 919 846 4399 | Fax: 919 846 4395 | LIC LICENSE NUMBER: C-3811

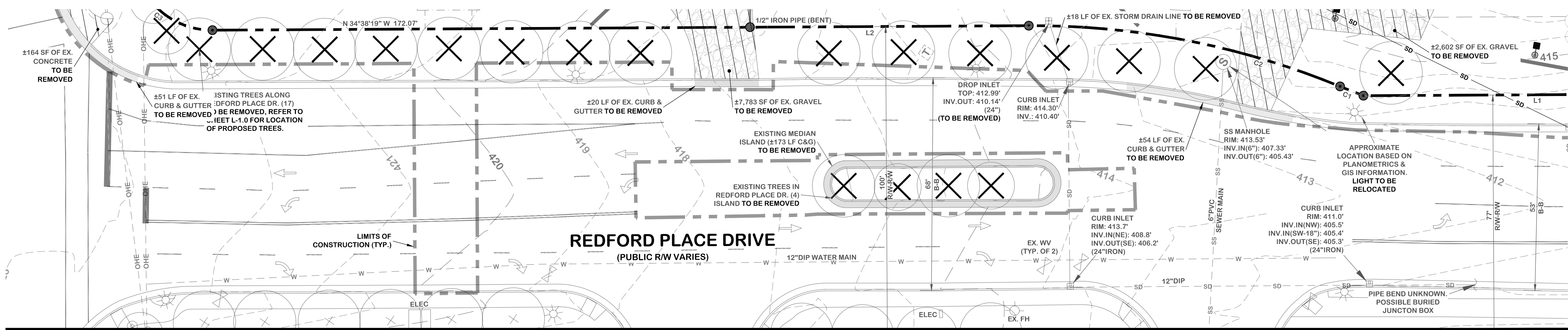
**101 & 115 REDFORD PLACE DRIVE**  
ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**BMP DETAIL SHEET**

PREPARED FOR: ACF ENVIRONMENTAL  
RODGERS ROAD 3415, LLC  
1000 CRESENT GREEN  
CARY, NORTH CAROLINA 27518  
DATE: 7.31.2019  
PROJECT ENGINEER: PJP  
PROJECT CAD: MWP  
PROJECT SURVEYOR: MWP  
CUSTOMER: ACF ENVIRONMENTAL

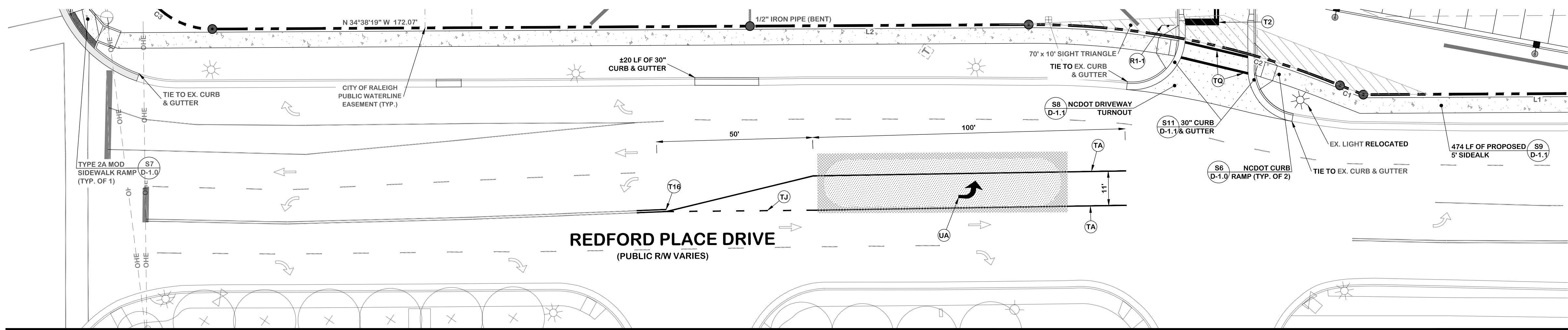
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DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
NO. \_\_\_\_\_

**DRAWING SHEET**  
**C-6.2**  
PROJECT NUMBER  
**449-19**

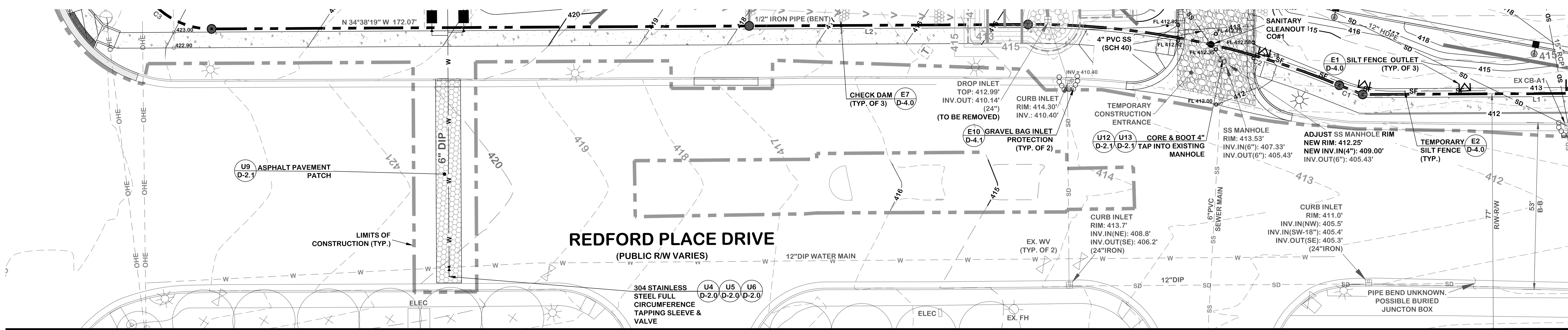
F:\Public\Projects\400-499\449-19 Redford Place Medical Office (The Redford Studios Architecture PC)\0-Drawing\54-Design\C-7.0.dwg Dec. 31, 2019 - 2:56pm Bymphilliba



**REDFORD PLACE DRIVE  
(VARIABLE PUBLIC RIGHT-OF-WAY)  
EXISTING CONDITIONS AND DEMOLITION PLAN**



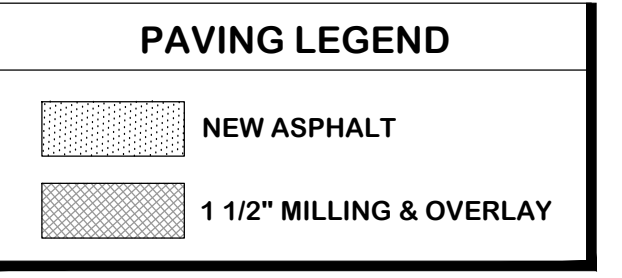
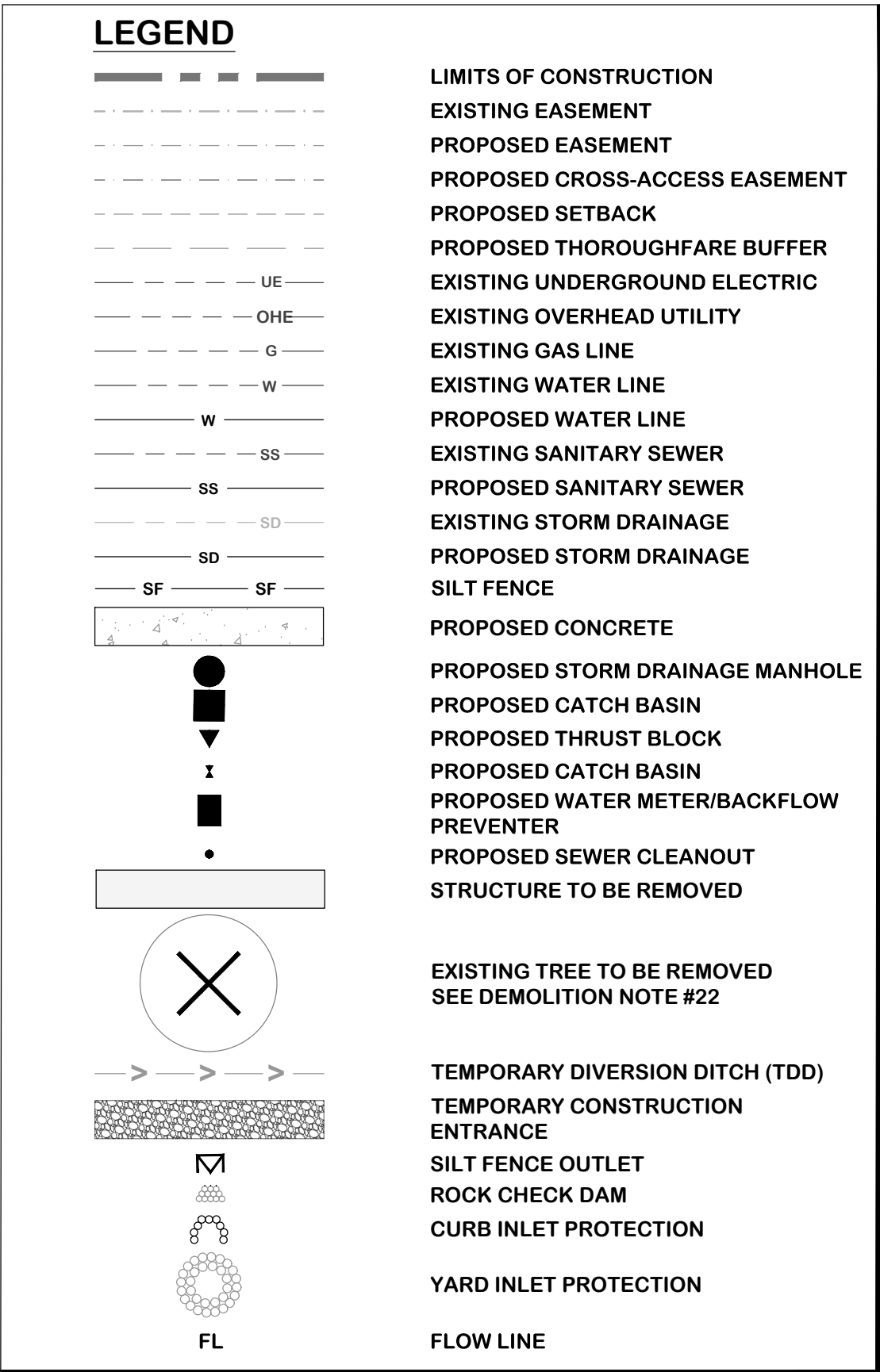
**REDFORD PLACE DRIVE  
(VARIABLE PUBLIC RIGHT-OF-WAY)  
ROAD IMPROVEMENT PLAN & PAVEMENT MARKINGS**



**REDFORD PLACE DRIVE  
(VARIABLE PUBLIC RIGHT-OF-WAY)  
UTILITY, STORM DRAINAGE, GRADING AND E&S PLAN**

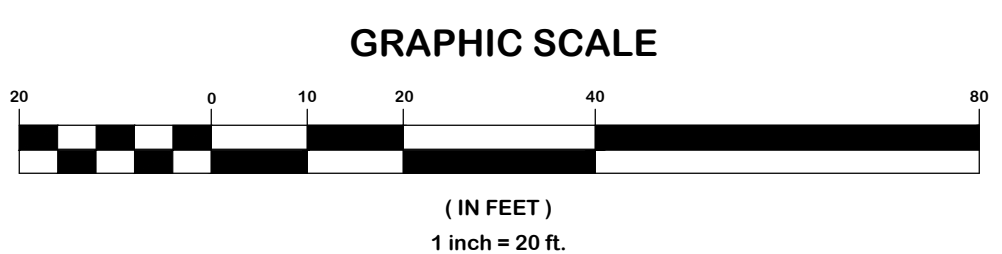
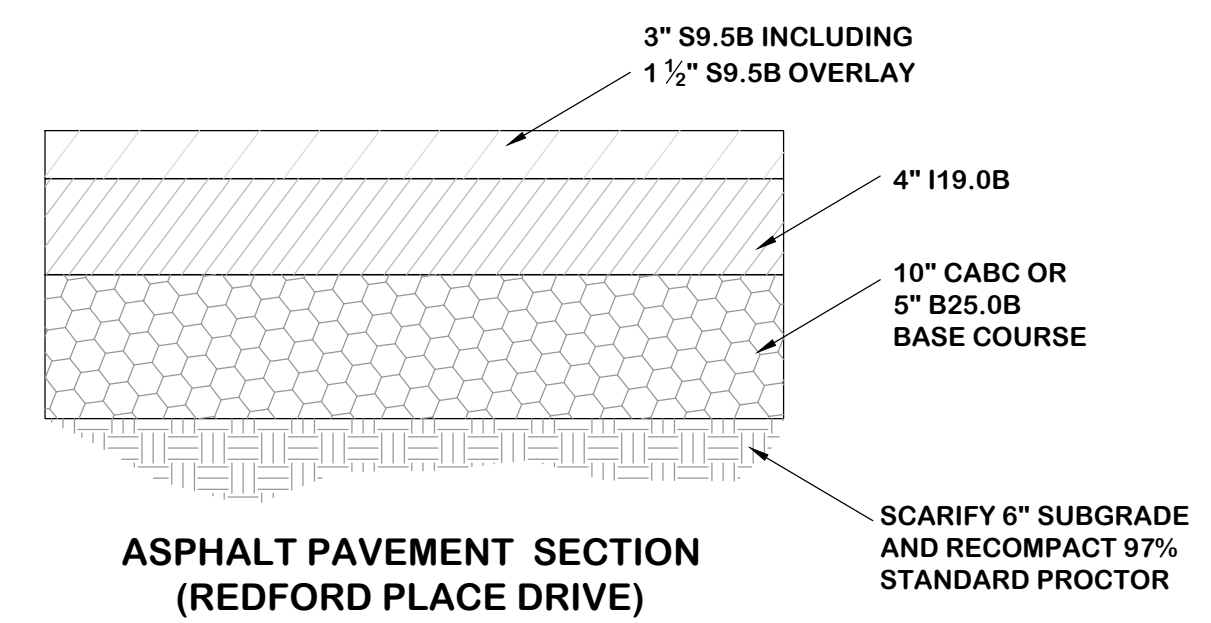
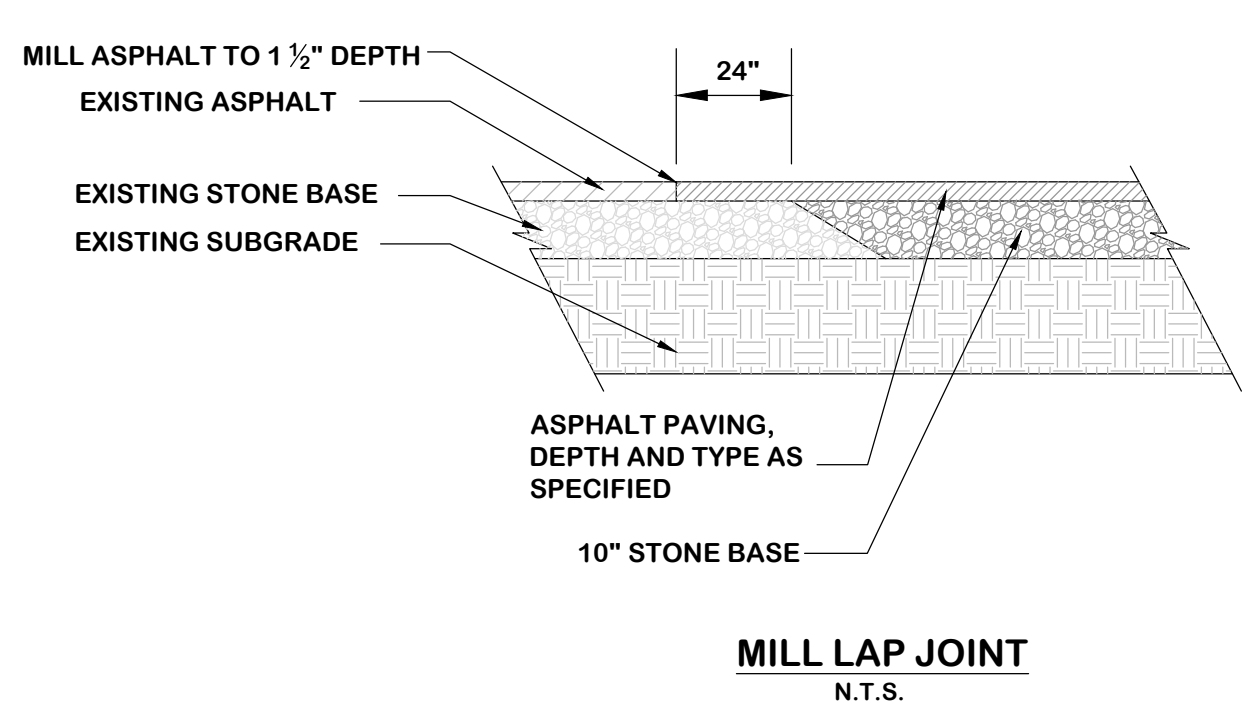
- GENERAL NOTES**
- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE AND NCDOT STANDARDS AND SPECIFICATIONS.
  - ALL DIMENSIONS ARE TO EDGE OF PAVEMENT OR FACE OF CURB, UNLESS OTHERWISE NOTED.
  - ALL PAINT STRIPING, PAVEMENT MARKINGS, AND SIGNAGE SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" OR AS REQUIRED IN SPECIFICATIONS.
  - ALL PERMITS RELATING TO THIS PROJECT MUST BE OBTAINED PRIOR TO CONSTRUCTION.
  - PAVEMENT MARKINGS SHALL BE REMOVED FROM INDICATED AREAS BY TOWN OF ROLESVILLE / NCDOT APPROVED METHOD THAT CAUSES NEGLIGIBLE DAMAGE TO EXISTING PAVEMENTS.
  - PAVEMENT DESIGN WILL REQUIRE NCDOT APPROVAL. THE MOST RESTRICTIVE CROSS-SECTION BETWEEN THE MINIMUM DESIGN, CALCULATED PAVEMENT DESIGN, AND NCDOT DESIGN WILL APPLY.
  - REFER TO DETAIL SHEETS FOR ROAD IMPROVEMENT DETAILS.

- TRANSPORTATION CONSTRUCTION NOTES:**
- THE CONTRACTOR SHALL CONDUCT THE WORK IN A SAFE MANNER AND WITH A MINIMUM AMOUNT OF INCONVENIENCE TO TRAFFIC.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SHALL ADHERE TO THE PROVISIONS OF THE MUTCD (MOST CURRENT EDITION).
  - PRIOR TO CONSTRUCTION BEGINNING, ALL SIGNAGE AND TRAFFIC CONTROL SHALL BE IN PLACE.
  - THE CONTRACTOR SHALL CONTACT NCDOT AND THE TOWN OF ROLESVILLE PUBLIC WORKS DEPARTMENT AT LEAST 72 HOURS PRIOR TO LANE CLOSURE.
  - THE CONTRACTOR SHALL HAVE A COMPLETE SET OF CONTRACT DOCUMENTS AS WELL AS ALL APPROVALS AND EASEMENTS ON THE JOB SITE AT ALL TIMES.
  - THE CONTRACTOR SHALL REPAIR ALL DRIVEWAYS, DRIVEWAY PIPES, CURB AND GUTTER, SIDEWALKS AND STREET TO EXISTING CONDITION OR BETTER.



KEY ITEM	DESCRIPTION	WIDTH
UC	THERMOPLASTIC	STRAIGHT ARROW
T2	THERMOPLASTIC	STOP BAR
T0	THERMOPLASTIC	CROSSWALK LINE
T16	THERMOPLASTIC	DOUBLE CENTER
TA	THERMOPLASTIC	EDGE LINE
TJ	THERMOPLASTIC	10 FT. WHITE SKIP
UA	THERMOPLASTIC	LEFT TURN ARROW

LINE TABLE		CURVE TABLE				
LINE	LENGTH	CURVE	LENGTH	RADIUS	BEARING	CHORD
L1	89.24	C1	8.05	257.50	S 12°47'53" E	8.05
L2	89.24	C2	102.16	257.50	N 23°16'23" W	101.49
		C3	39.28	25.00	S 10°12'56" W	35.36



**ISSUED FOR CONSTRUCTION**

**SIGNS**

R1-1	MUTCD "STOP" R1-1	30"x30"
R3-2	MUTCD LEFT TURN PROHIBITION R3-2	24"x24"

**PAST DESIGN GROUP, PA**  
 Engineering | Consulting  
 404-S Glenwood Avenue, Raleigh, North Carolina 27603  
 Phone: 919 846 4399 | Fax: 919 846 4395 | NC LICENSE NUMBER: C-3811

PREPARED FOR:  
 ROGERS ROAD 3415, LLC  
 1000 PRESIDENT GREEN  
 CARY, NORTH CAROLINA 27515  
 DATE: 7.31.2019  
 PROJECT ENGINEER:  
 PROJECT CADD DESIGNER:  
 MWP  
 PROJECT SURVEYOR:  
 WETUMKINS LAND SURVEYORS

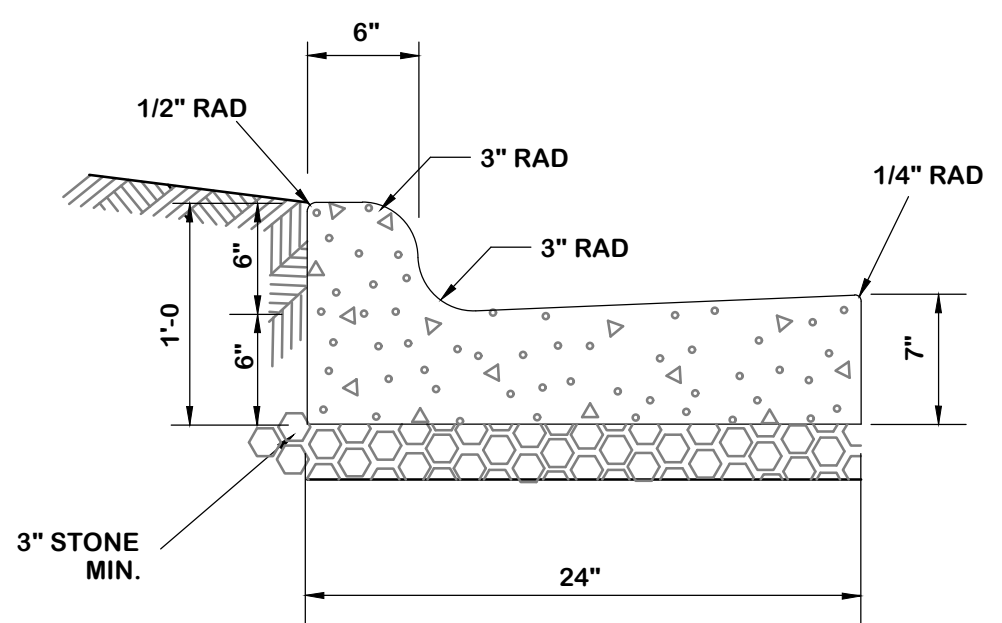
**101 & 115 REDFORD PLACE DRIVE**  
 ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**ROAD IMPROVEMENT PLAN - REDFORD PLACE DR**

SEAL: [Professional Engineer Seal]

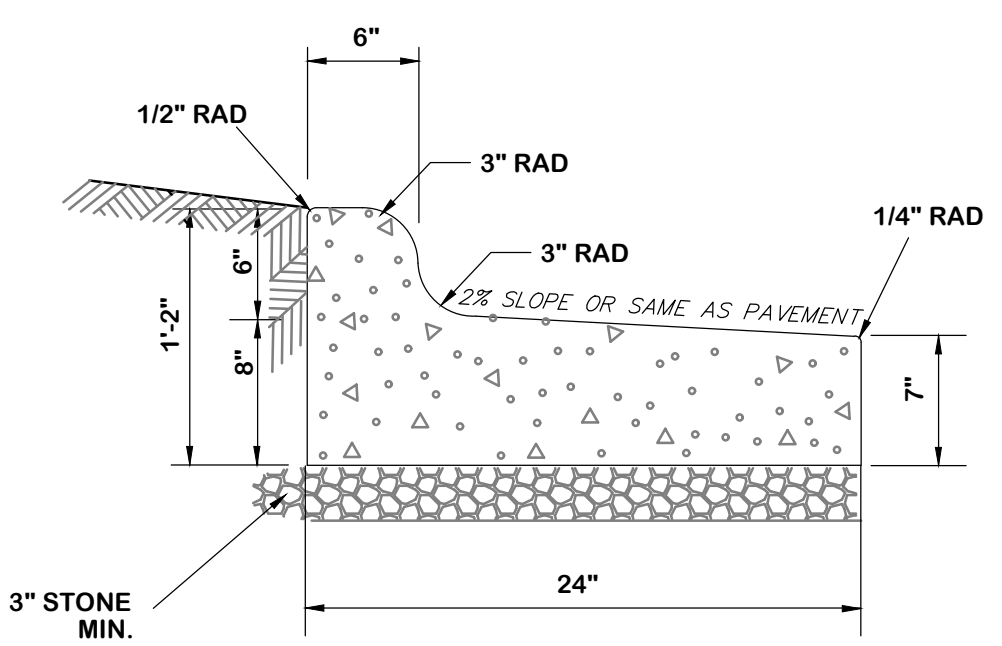
NO.	REVISION	DATE
1	REVISED PER CITY COMMENTS	12/18/19
1	REVISED PER WAKE CO COMMENTS	

**DRAWING SHEET**  
**C-7.0**  
 PROJECT NUMBER  
**449-19**

E:\Public\Projects\400-499\449-19 Redford Place Medical Office (The Redford Studios Architecture PC)\30-Drawings\54-Design\1-0.dwg Oct. 23, 2019 - 8:32am BY:atdlw

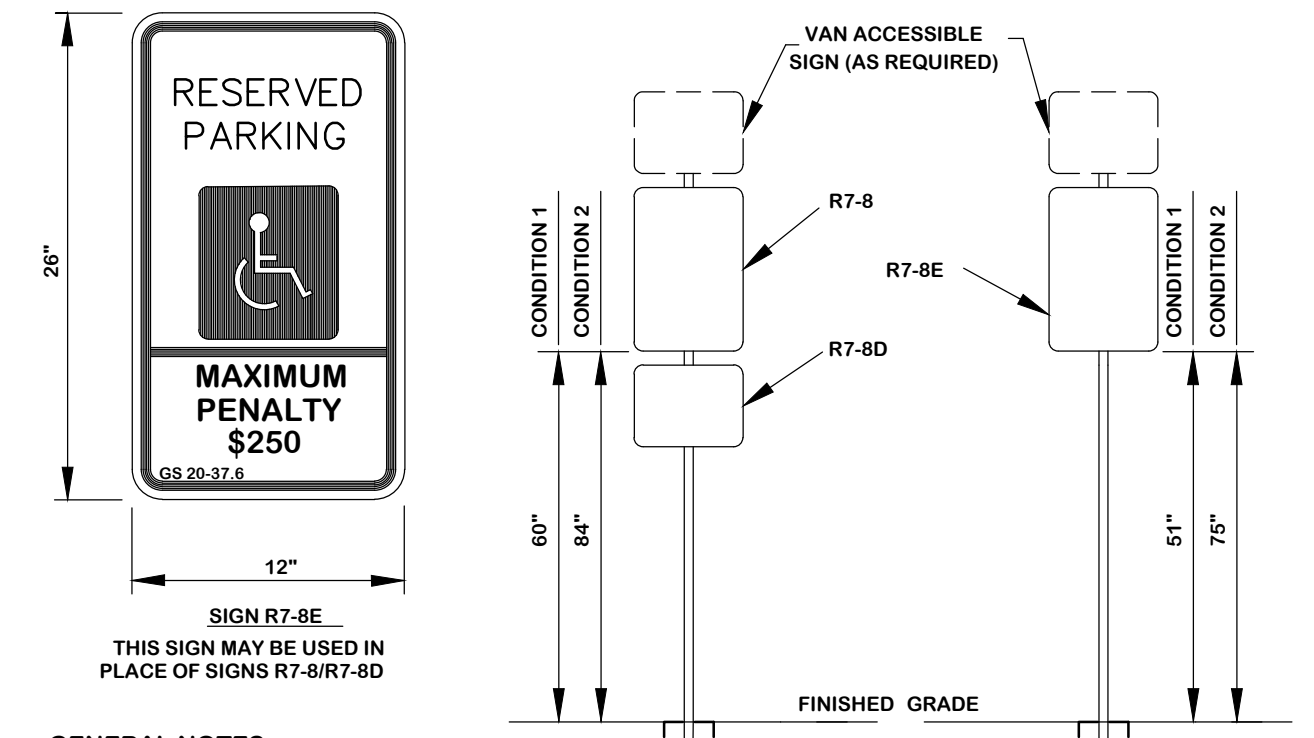
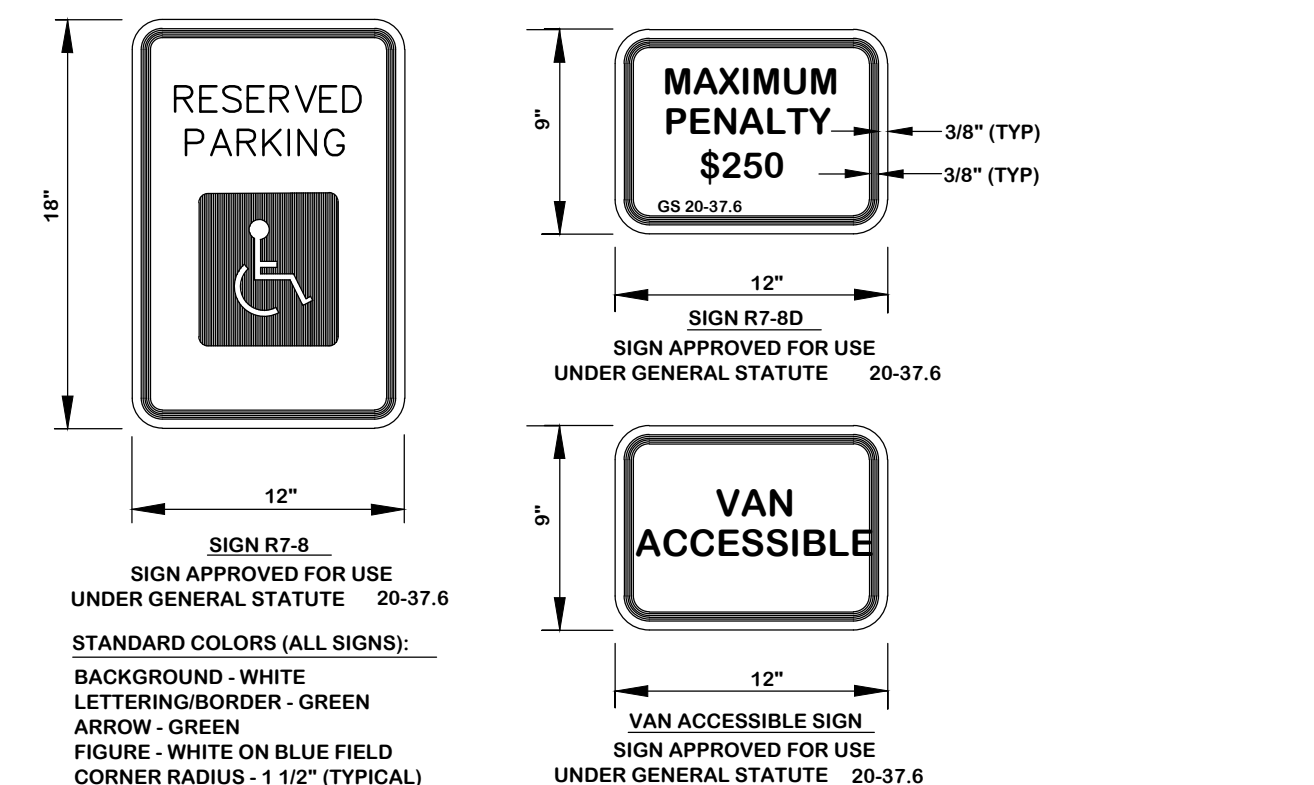


**24" CONCRETE CURB & GUTTER**  
NTS



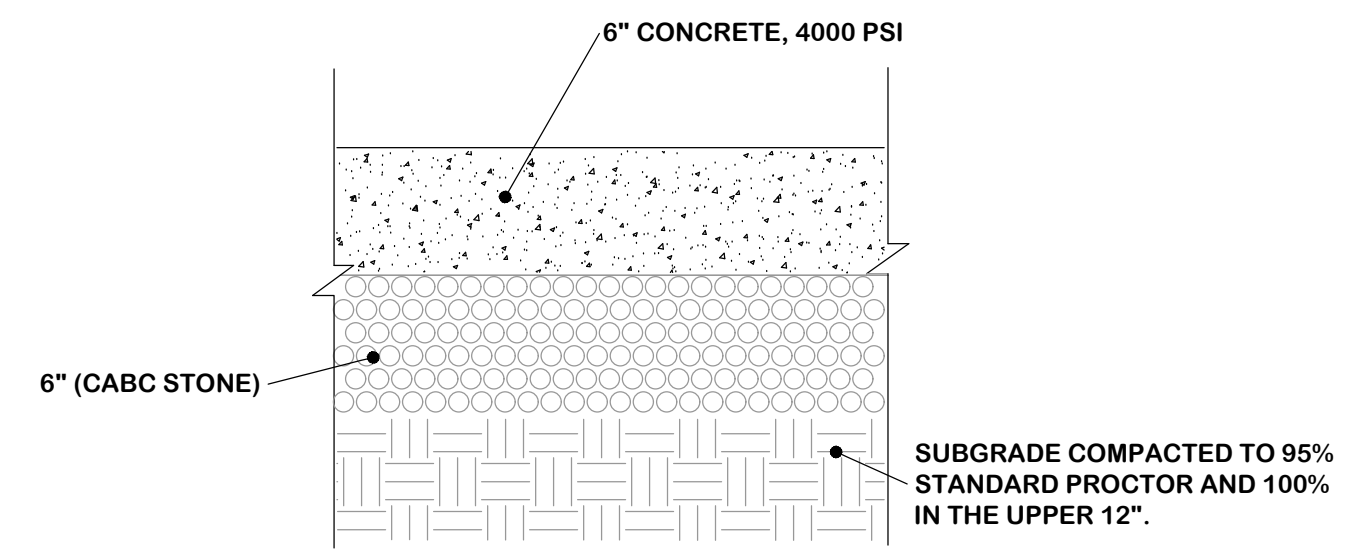
**24" CONCRETE SPILL CURB & GUTTER**  
NTS

**S1 24" CURB AND GUTTER**

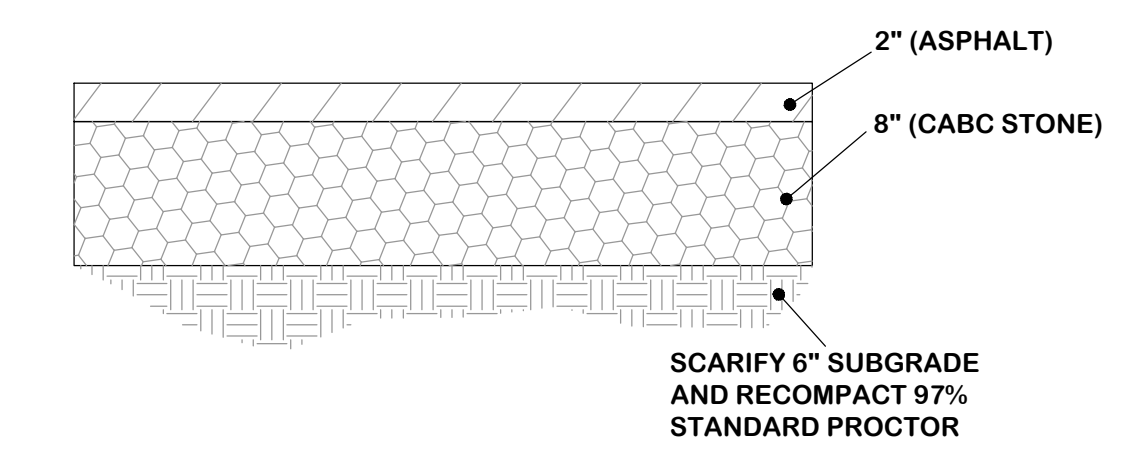


- GENERAL NOTES:**
- REGARDLESS OF AGE, ALL ACCESSIBLE SPACES SHALL BE IDENTIFIED BY ABOVE-GROUND SIGNS ONLY. (SEE N.C.G.S.)
  - NEW SPACES SHALL NOT USE GROUND-PAINTED SYMBOLS.
  - ACCESSIBLE SPACES ARE REQUIRED TO BE STRIPED OFF ONLY. BLUE COLORING IS NOT NECESSARY NOR REQUIRED.
  - STRIPING IS WHITE ON DARK PAVEMENT; BLACK ON LIGHT PAVEMENT. (N.C.D.O.T.)

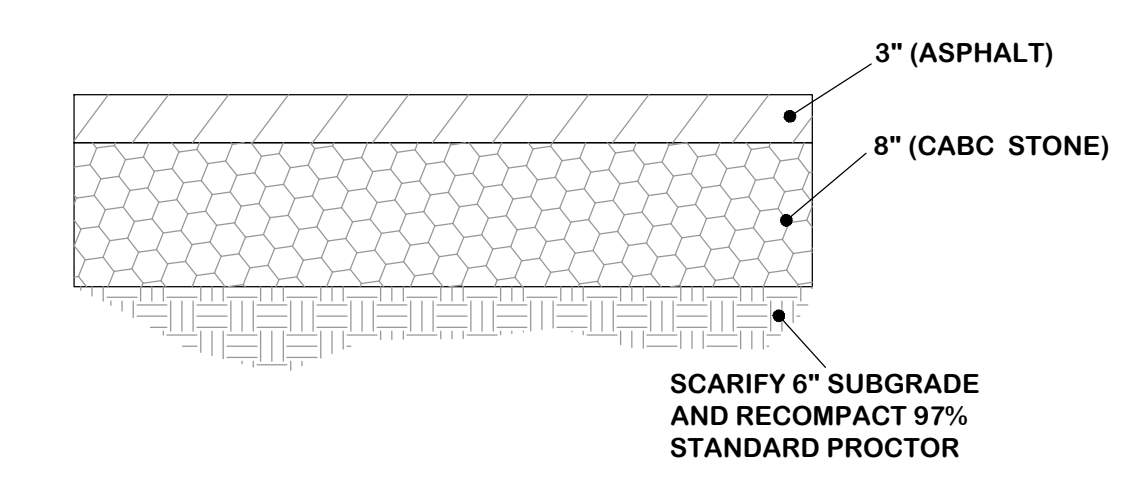
**S2 HANDICAP SIGN DETAILS**



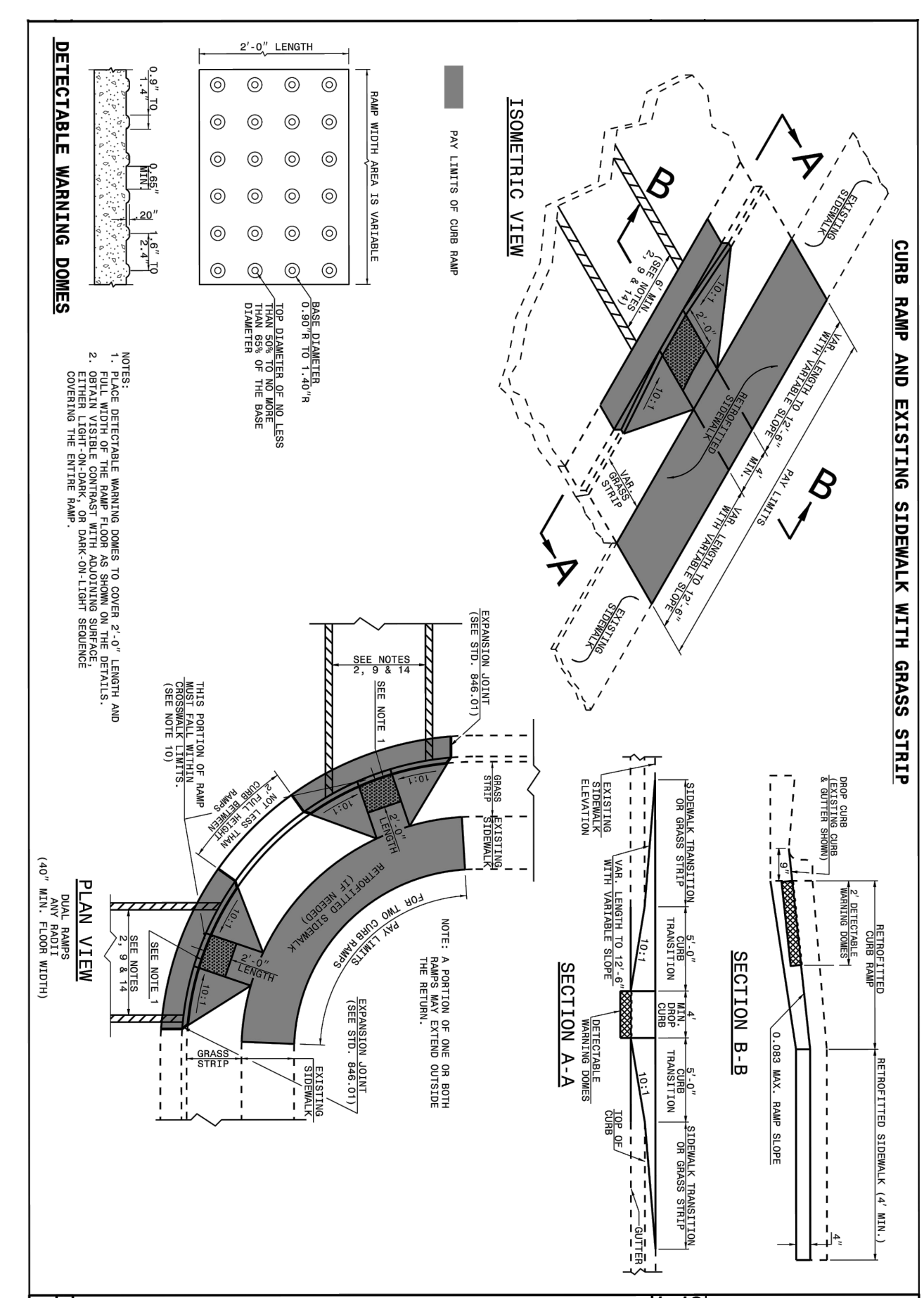
**S3 CONCRETE PAVEMENT SECTION**



**S4 LIGHT DUTY - ASPHALT PAVEMENT SECTION**

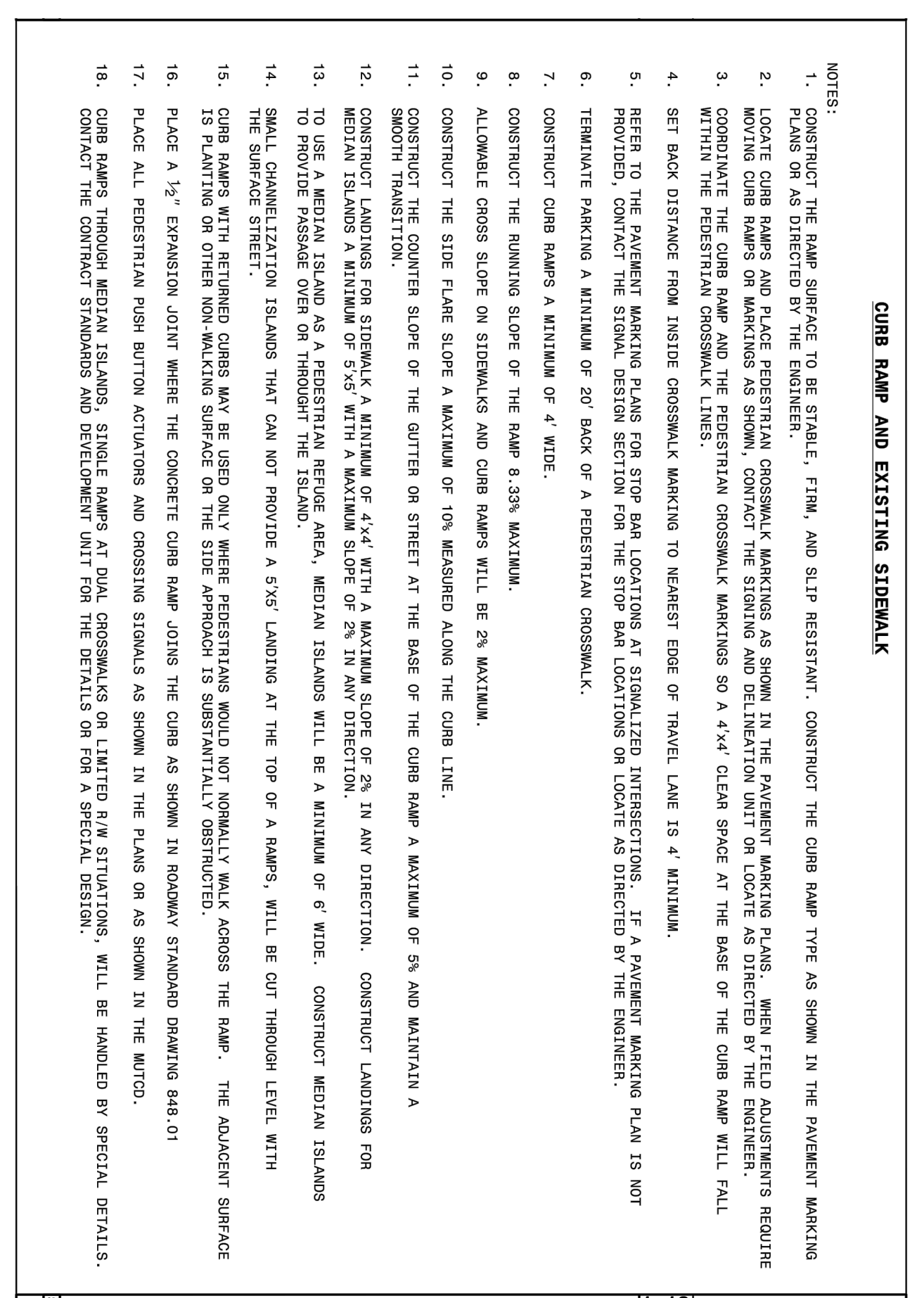


**S5 HEAVY DUTY - ASPHALT PAVEMENT SECTION**



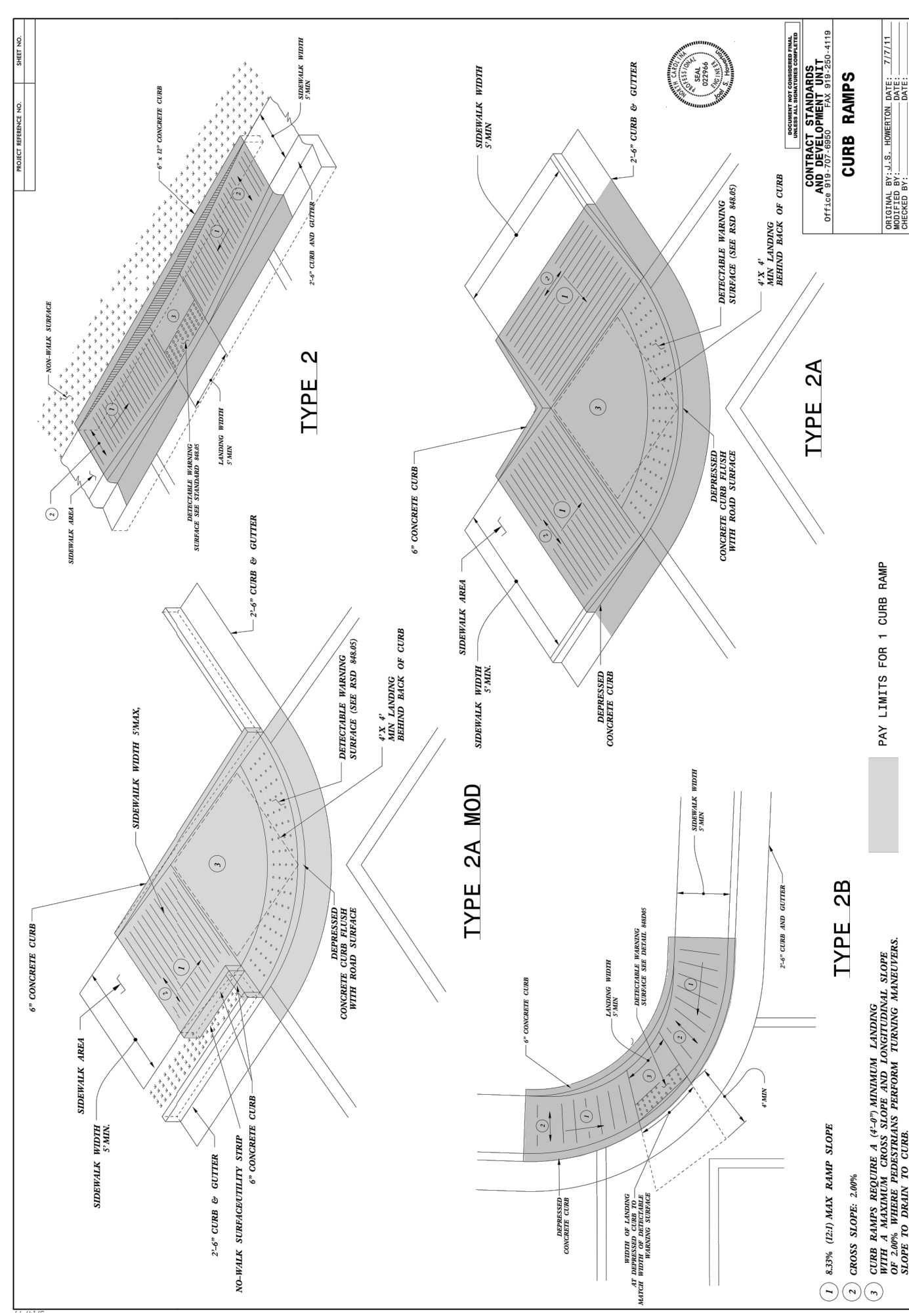
ROADWAY STANDARD DRAWING FOR  
**CURB RAMP**  
EXISTING CURB AND GUTTER

**S6 NCDOT CURB RAMP**



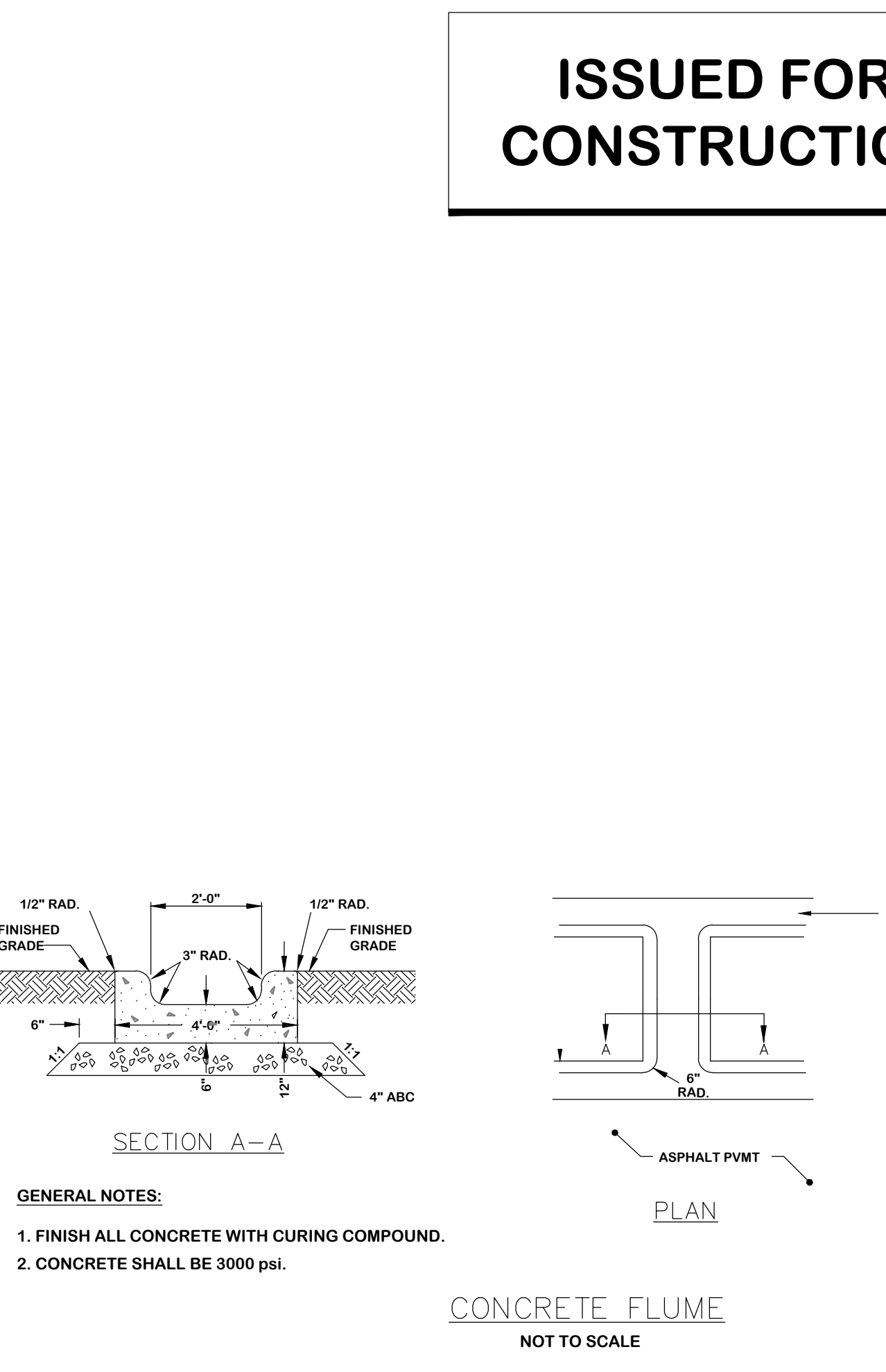
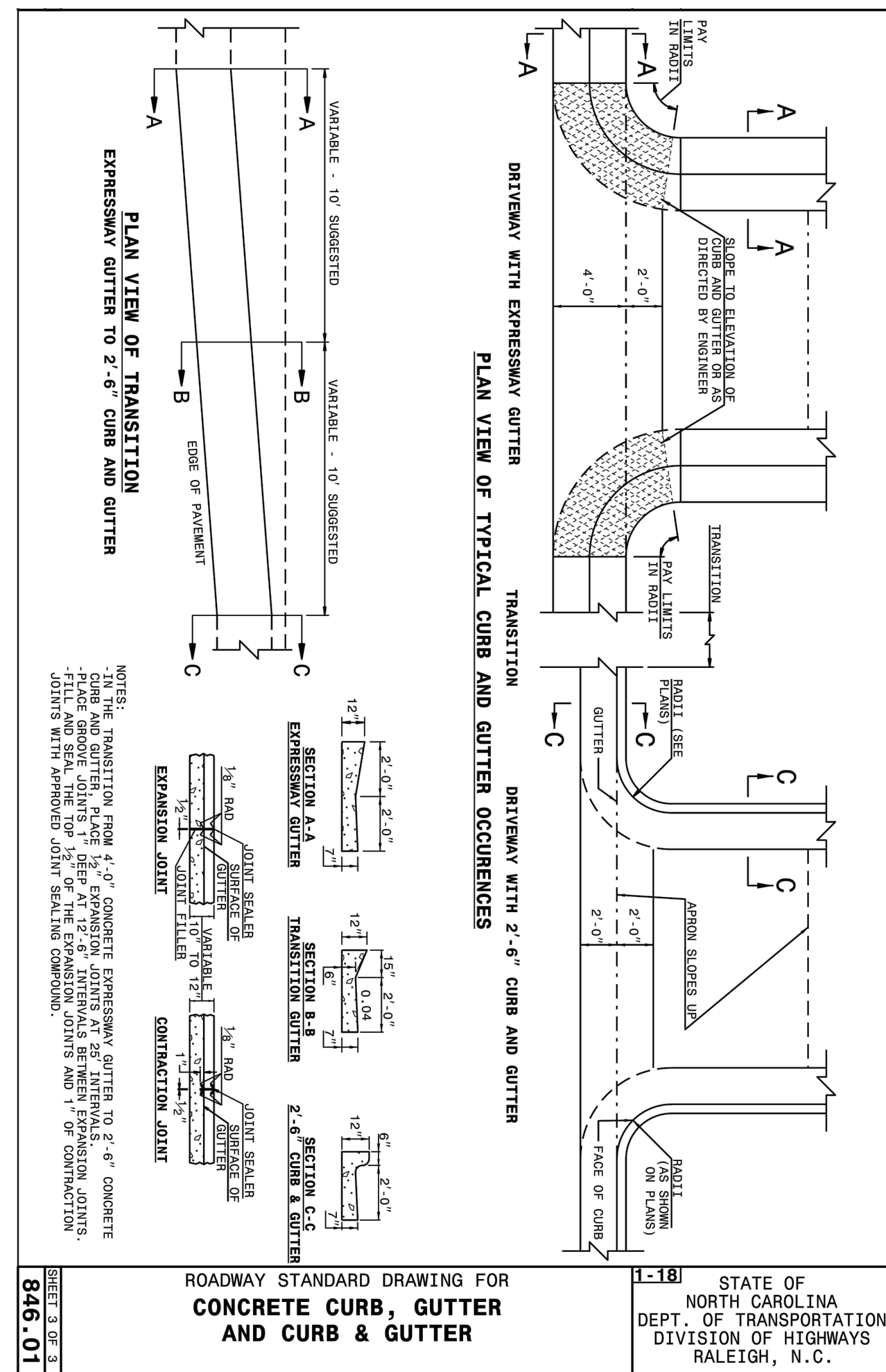
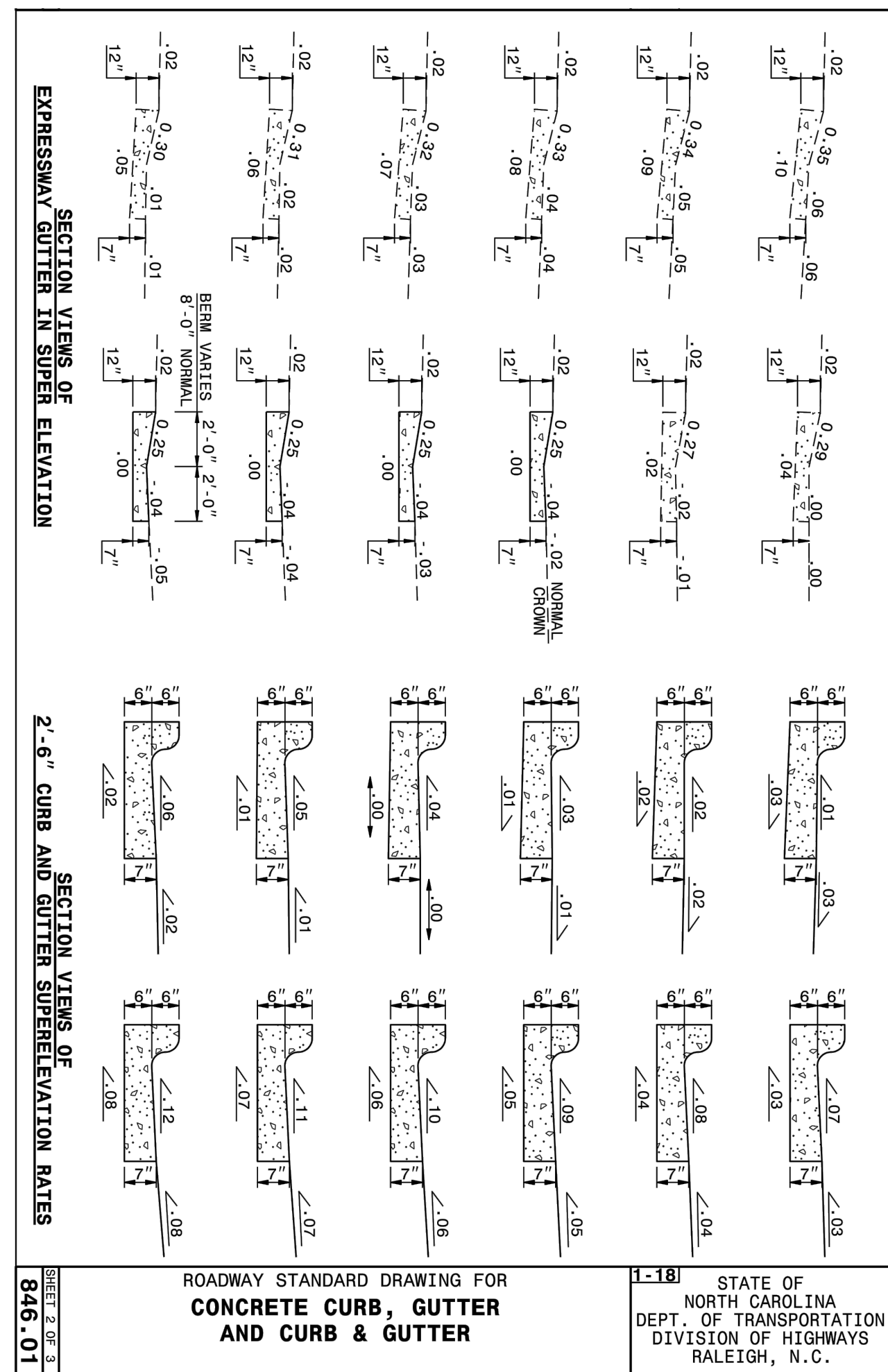
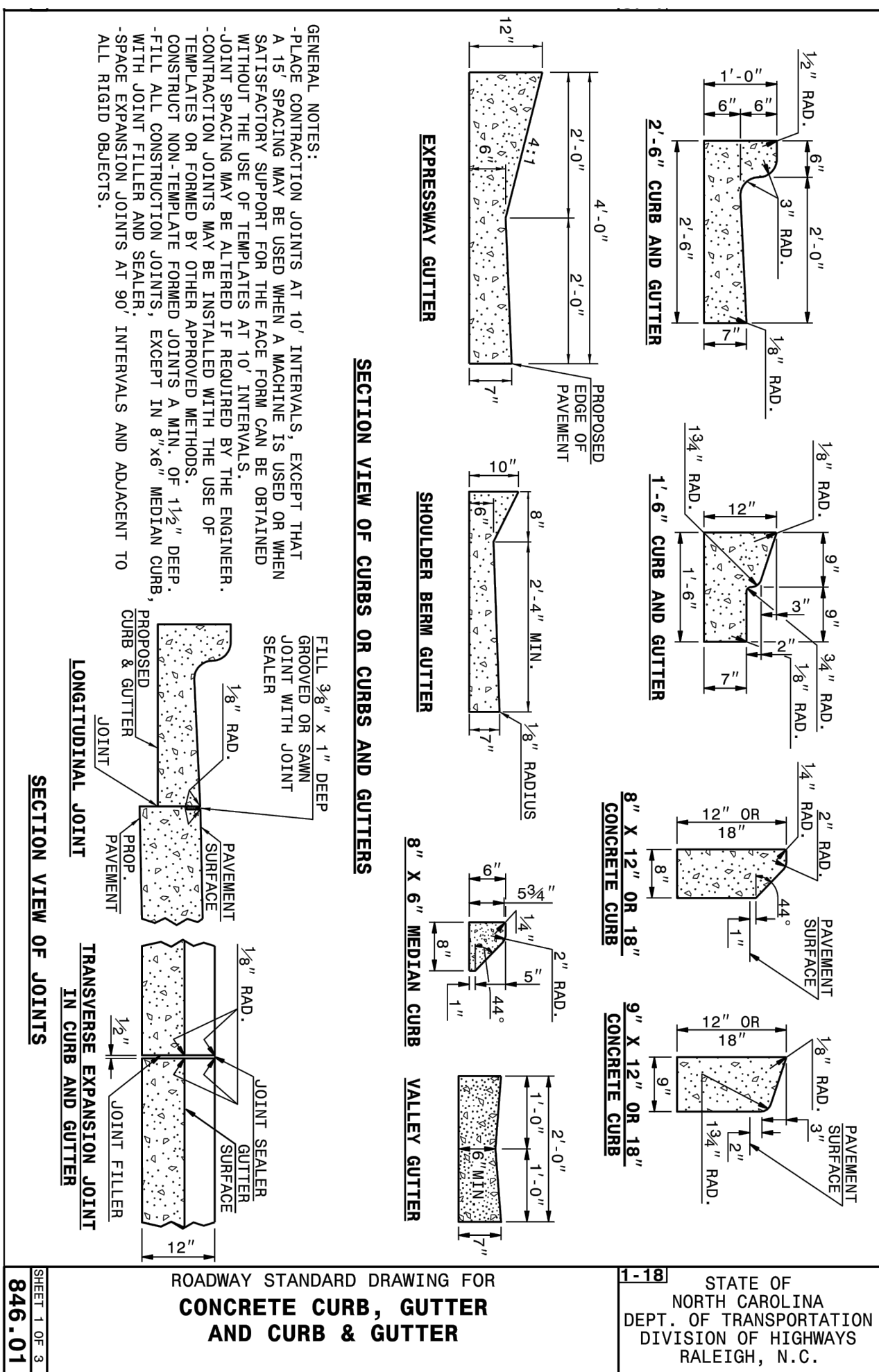
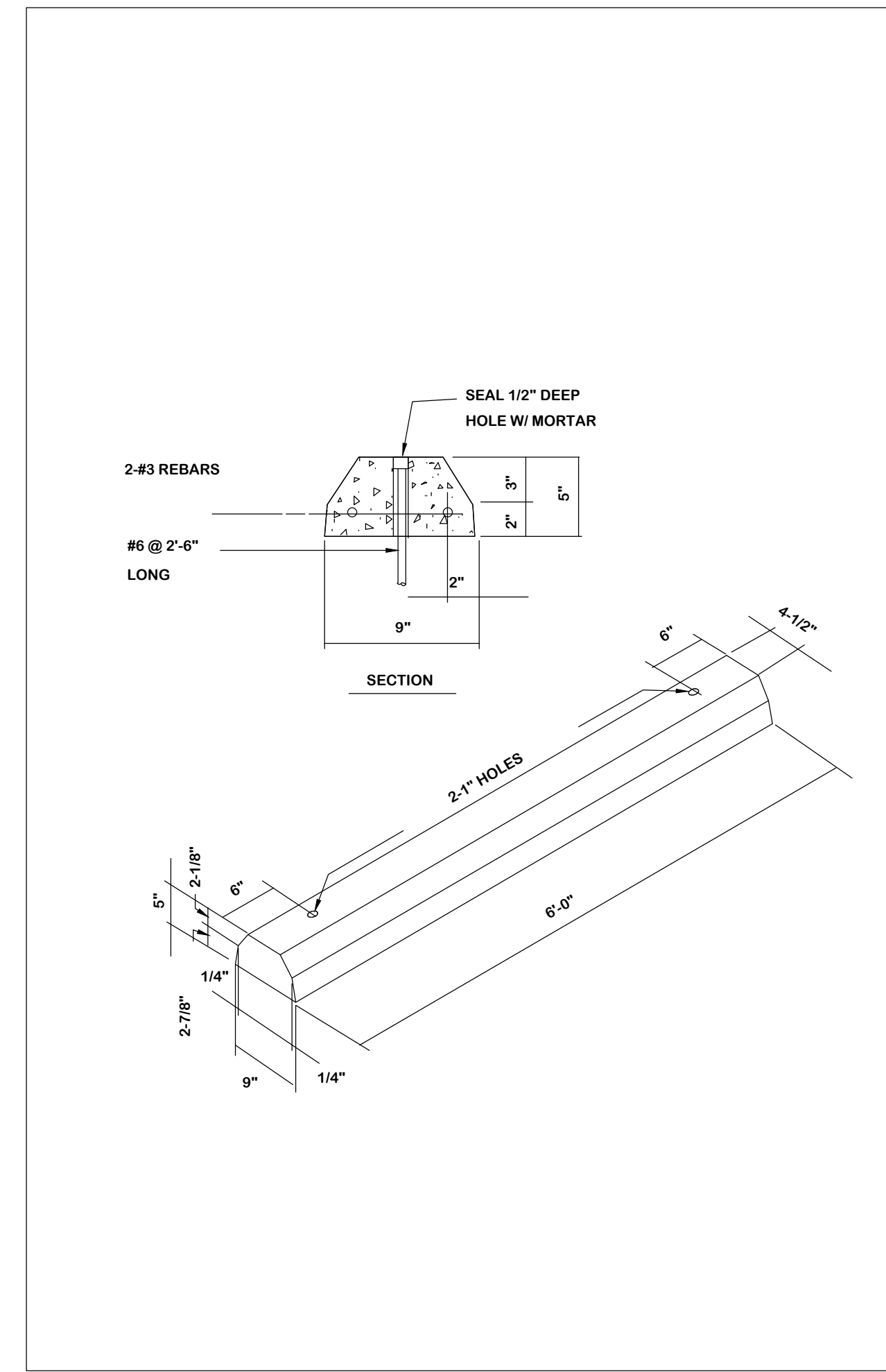
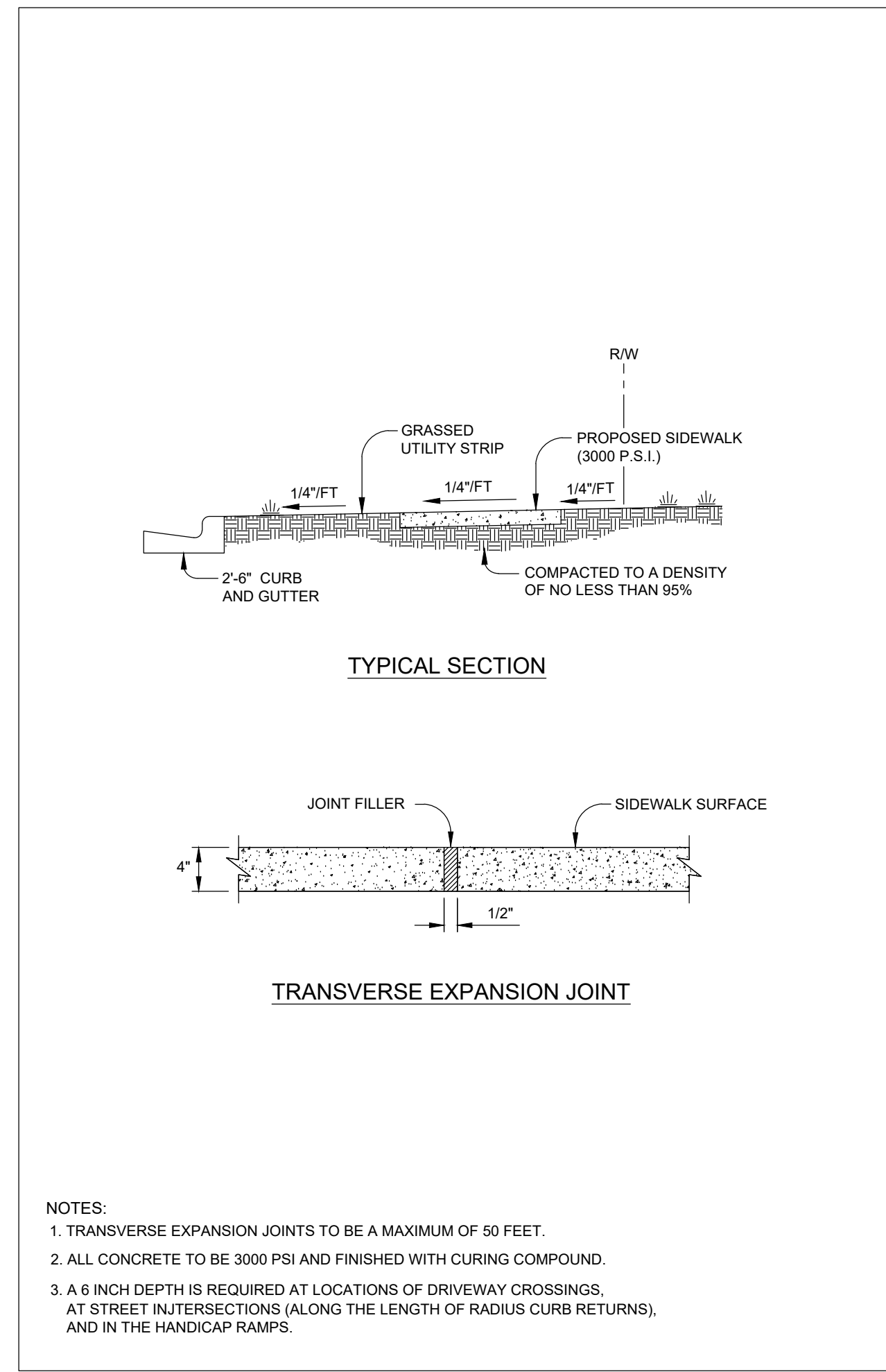
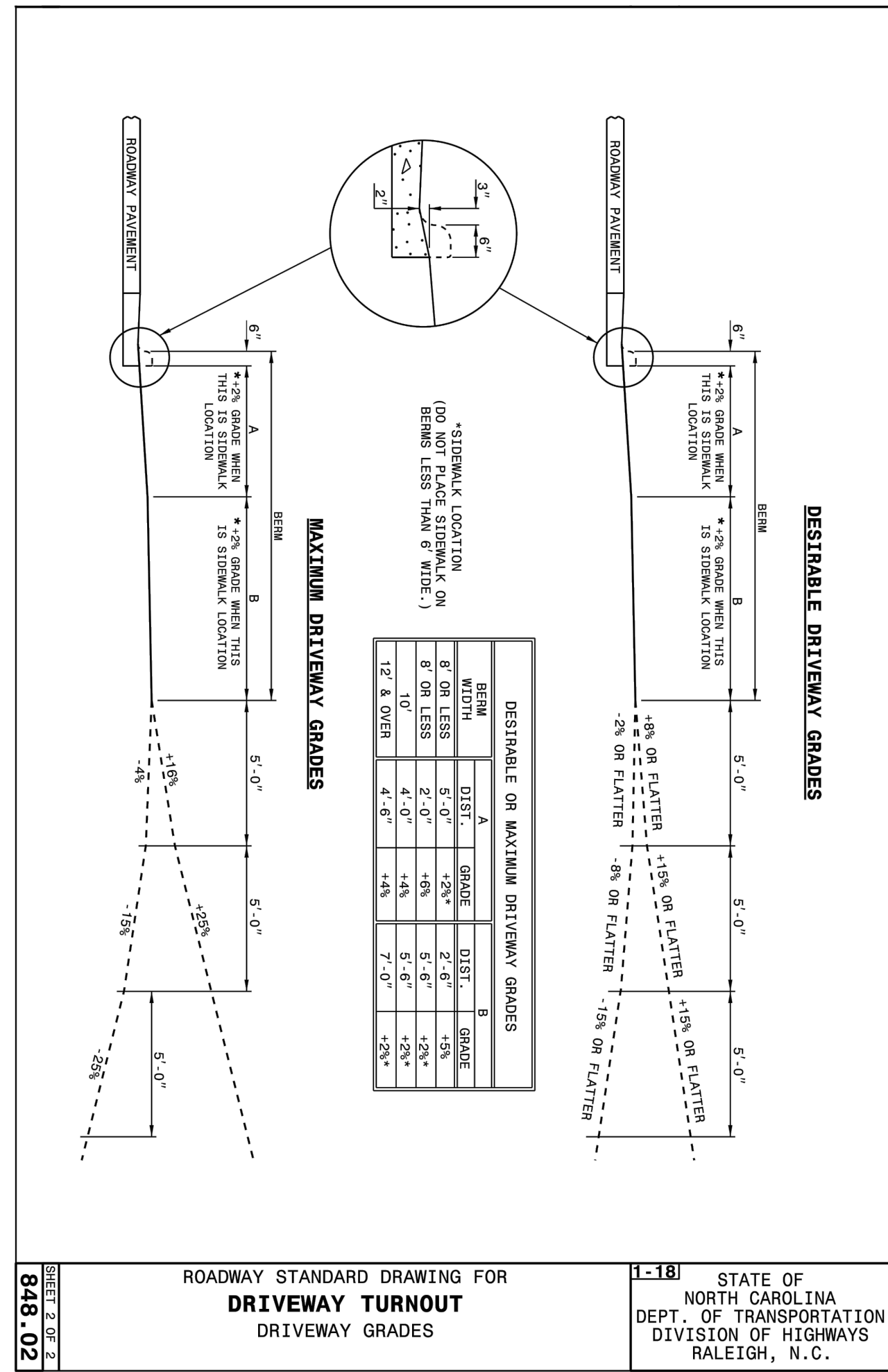
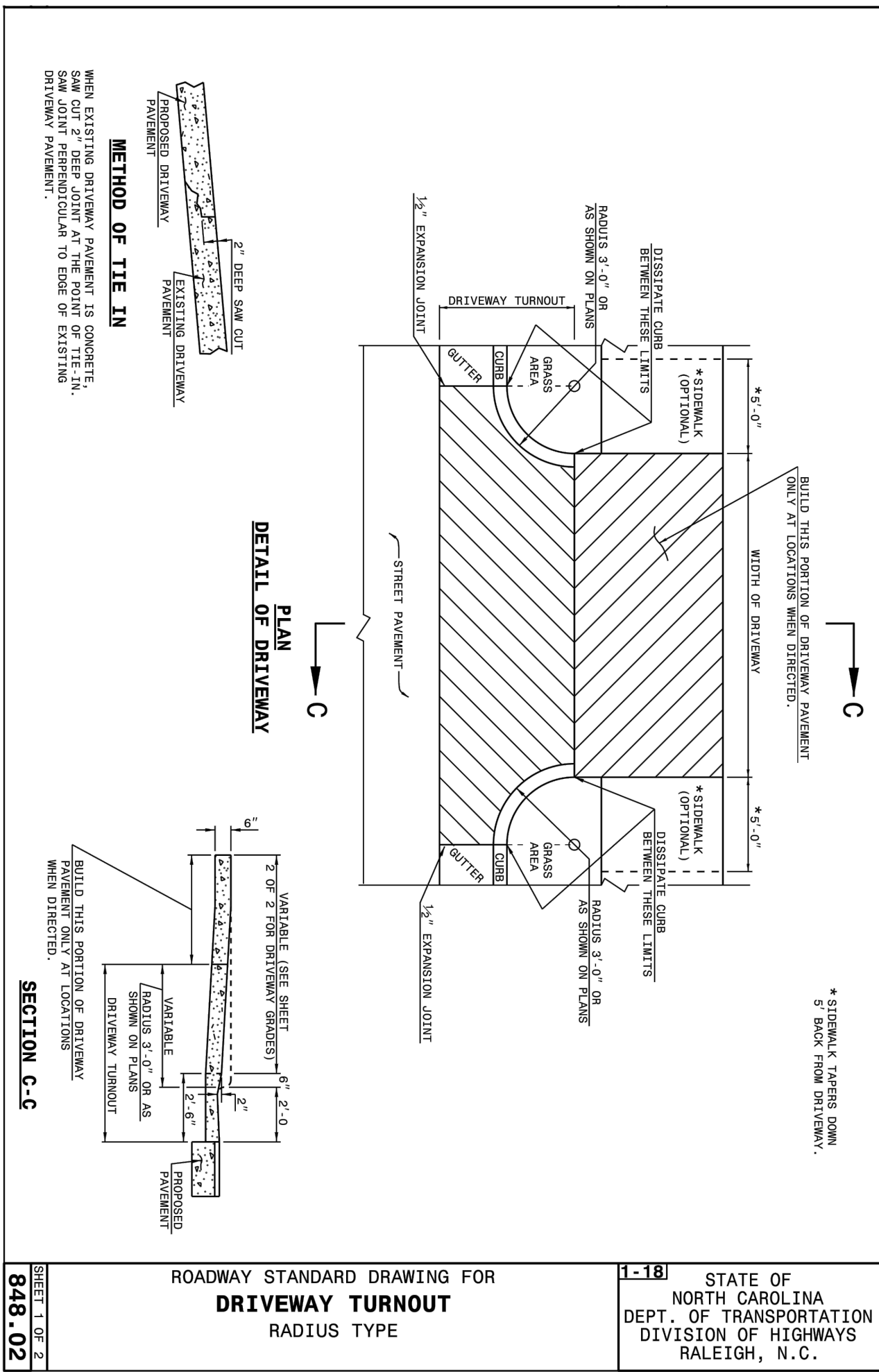
ROADWAY STANDARD DRAWING FOR  
**CURB RAMP**  
EXISTING CURB AND GUTTER

**S7 TYPE 2A MOD SIDEWALK RAMP**



ROADWAY STANDARD DRAWING FOR  
**CURB RAMPS**

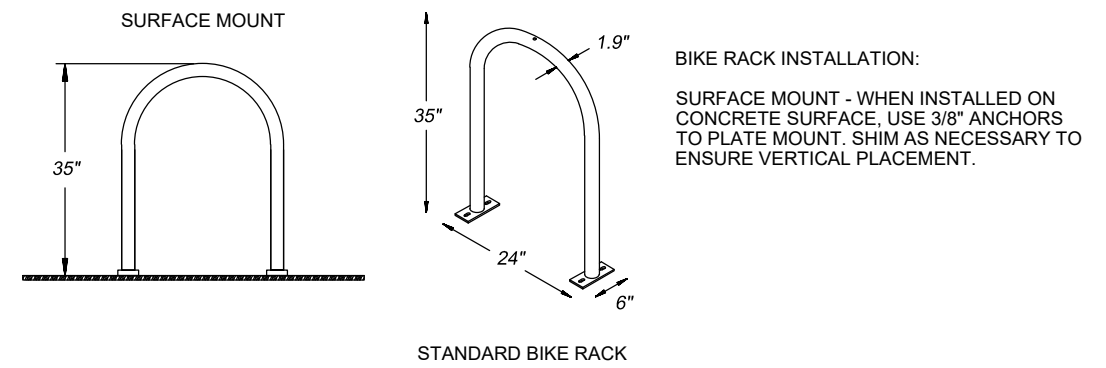
**ISSUED FOR CONSTRUCTION**



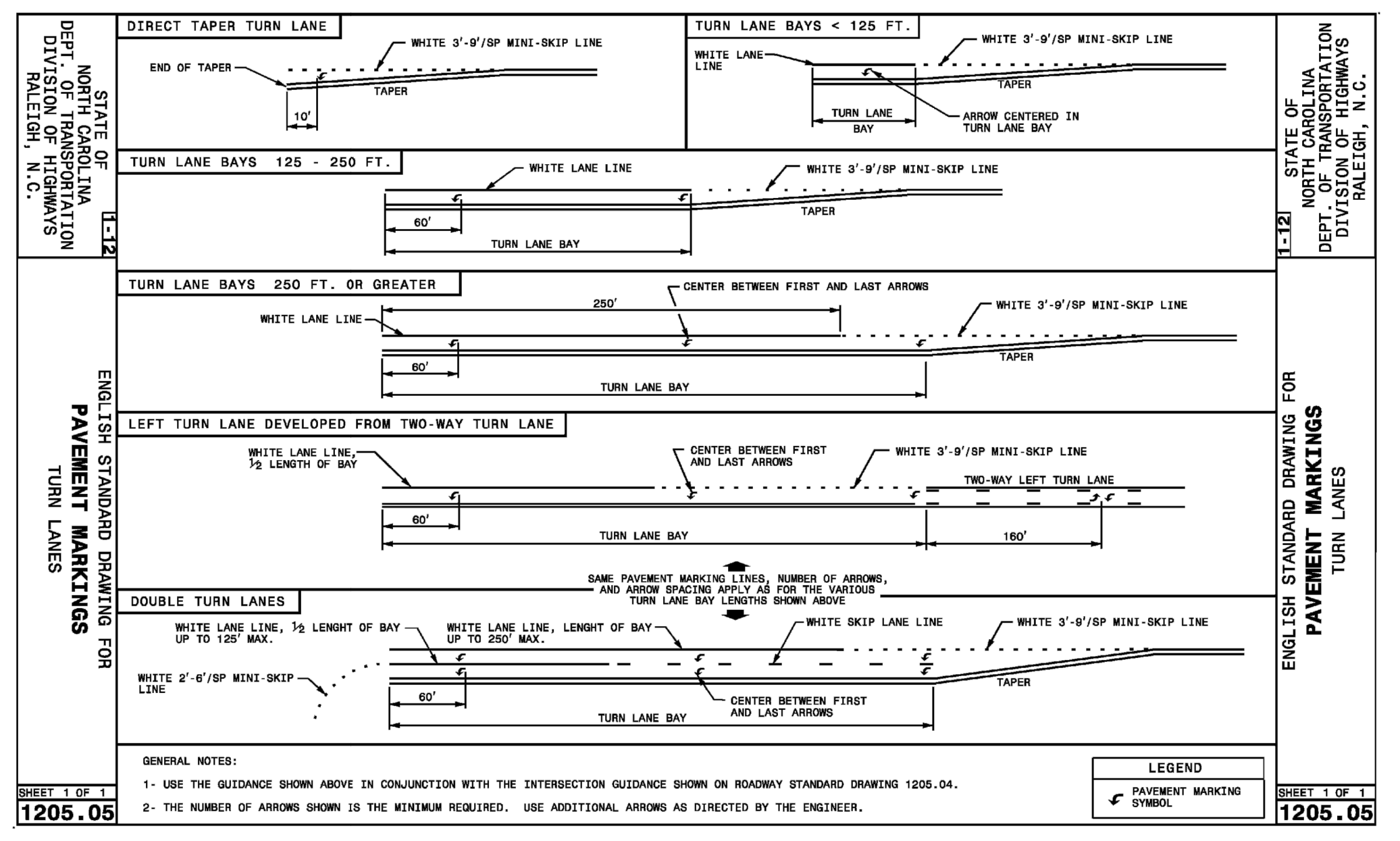
**ISSUED FOR CONSTRUCTION**

**CONCRETE FLUME**  
NOT TO SCALE

**S12 24" CONCRETE FLUME DETAIL**



S13 BICYCLE PARKING RACK



S14 PAVEMENT MARKINGS (TURN LANES)

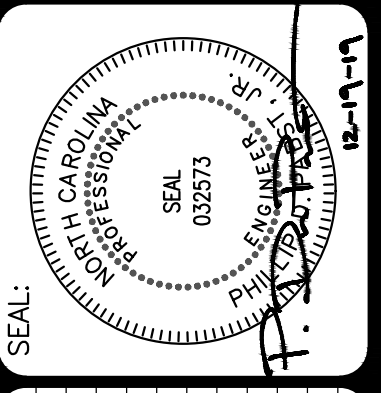
F:\Public\10-Projects\400-499\449-19 Redford Place Medical Office (The Redford Studio Architecture, PC)\30-Drawings\54-Design\0-1.2.dwg Dec 19, 2019 - 11:30am BY:robminnet

ISSUED FOR CONSTRUCTION

**PBST DESIGN GROUP, PA**  
 Engineering | Consulting  
 404-B Glenwood Avenue, Raleigh, North Carolina 27603  
 Phone: 919 846 4399 | Fax: 919 846 4395 | NC LICENSE NUMBER: C-3811

PREPARED FOR:  
 ROGERS ROAD 3415, LLC  
 1000 CRESENT GREEN  
 CARY, NORTH CAROLINA 27518  
 DATE: 7.31.2019  
 PROJECT ENGINEER:  
 PJP  
 PROJECT CAD DESIGNER:  
 WMP  
 PROJECT SURVEYOR:  
 WSC/MS/LND SURVEYORS

**101 & 115 REDFORD PLACE DRIVE**  
 ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**SITE DETAIL SHEET**



NO.	REVISION	DATE
1	REVISED PER CITY COMMENTS	10/21/19
2	REVISED PER WAKE CO COMMENTS	12/18/19

DRAWING SHEET  
**D-1.2**  
 PROJECT NUMBER  
**449-19**







Job Name \_\_\_\_\_ Contractor \_\_\_\_\_  
 Job Location \_\_\_\_\_ Approval \_\_\_\_\_  
 Engineer \_\_\_\_\_ Contractor's P.O. No. \_\_\_\_\_  
 Approval \_\_\_\_\_ Representative \_\_\_\_\_

**LEAD FREE**

**MasterSeries®  
LF880V**

Reduced Pressure Zone  
Prevention Assemblies

Size: 2 1/2" - 10"

The FEBCO MasterSeries LF880V Reduced Pressure Zone Assembly is specifically designed to protect against possible backpressure and backsiphonage conditions for high hazard [i.e., toxic] application in accordance with Local Governing Water Utility Code. This Backflow Assembly is primarily used on potable drinking water systems where Local Governing Code mandates protection from non-potable quality water being pumped or siphoned back into the potable water system.

The LF880V features Lead Free\* construction to comply with low lead installation requirements. The Lead Free\* Reduced Pressure Zone Assembly shall comply with state codes and standards, where applicable, requiring reduced lead content.

**Features**

- Inline Serviceable Assembly
- Horizontal "N-Pattern" Installations
- Vertical-Up "Z-Pattern" Installations
- No Special Tools Required for Servicing
- Captured Modular Spring Assembly
- Reversible & Replaceable Discs
- Field Replaceable Seats
- Ductile Iron Valve Body Design
- Stainless Steel Check Components
- Modular Pressure Differential Relief Valve
- Replaceable Pressure Differential Relief Valve
- Clapper Check Assembly
- Captured O-ring Design



MODEL 880V REDUCED PRESSURE ZONE ASSEMBLY  
(Shown in standard orientation)

**Specifications**

The FEBCO MasterSeries LF880V Reduced Pressure Zone Assembly shall be installed on the potable water supply and at each point of cross-connection to protect against possible backpressure and backsiphonage conditions for high hazard [i.e., toxic] applications. The assembly shall consist of a main line valve body composed of a pressure differential relief valve located in a zone between two (2) independently acting approved clapper style check modules with replaceable seats and disc rubbers. Servicing of the pressure differential relief valve and both check modules does not require any special tools; both check modules are accessed through independently top entry covers. This assembly shall be fitted with AWWA Compliant inlet/outlet resilient seated shutoff valves, when used on a Fire-Sprinkler application, the assembly shall be fitted with approved UL/FM inlet/outlet resilient seated shutoff valves and contain four (4) properly located resilient seated test cocks as specified by AWWA Standard C511. Flow and pressure loss performance parameters shall meet the requirements of AWWA Standard C511.

**NOTICE**

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

**NOTICE**

Inquire with governing authorities for local installation requirements

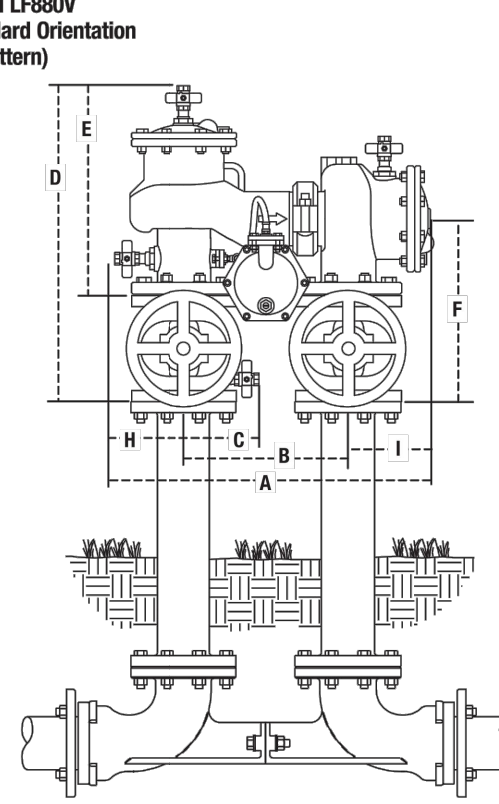
\*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

**Dimensions – Weights**

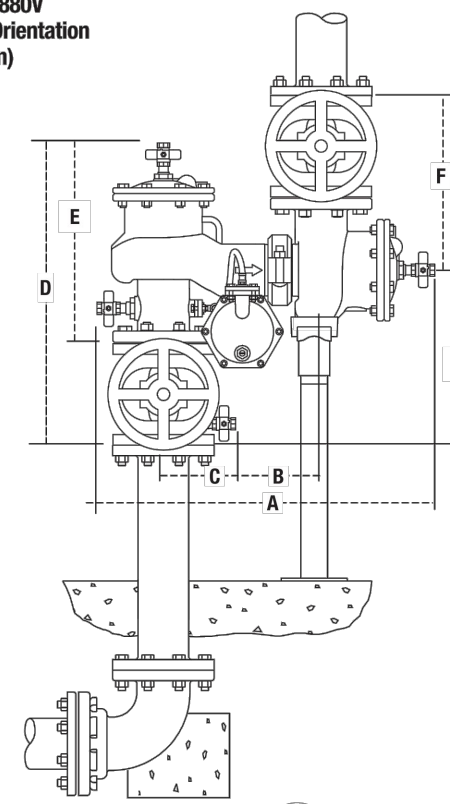
Size: 2 1/2" - 10"

Below are the nominal dimensions and physical weights for the Model LF880V size 2 1/2" through 10". Allowances must be made for nominal manufacturing tolerances. Please visit our website to download a copy of this product's installation instructions, or contact your local FEBCO Representative for more information.

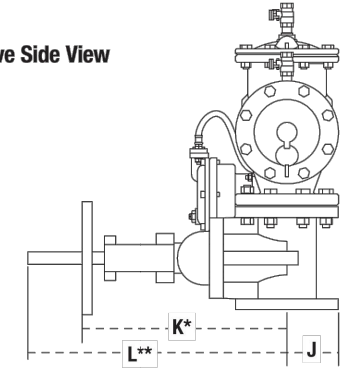
Model LF880V  
Standard Orientation  
(N-Pattern)



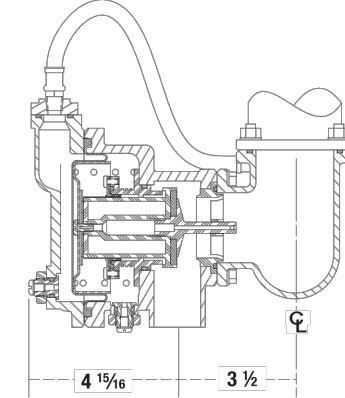
Model LF880V  
Vertical Orientation  
(Z-Pattern)



Gate Valve Side View



Relief Valve Detail  
Relief shipped on right side (shown) field reversible to left side.



SIZE	DIMENSIONS																WEIGHT**											
	A	B	C	D	E	F	G	H	I	J	K*	L**	MNS	OSY														
2 1/2"	251	654	121	218	614	159	241	616	164	422	136	346	271	602	518	140	71	184	316	89	129	321	164	416	221	100	225	102
3"	291	654	121	218	614	159	241	616	164	422	144	358	281	718	518	140	71	184	316	95	129	321	221	565	247	112	251	114
4"	274	706	14	236	7	178	261	680	176	451	151	364	31	757	6	152	71	184	416	114	146	365	231	591	344	156	356	162
6"	321	819	16	466	8	203	321	819	216	548	186	473	371	946	76	191	91	241	516	140	181	479	301	765	517	235	537	244
8"	371	953	181	479	91	236	361	324	241	632	201	537	411	1054	81	222	101	260	61	172	251	597	371	959	808	366	836	379
10"	421	1092	21	533	101	264	401	1032	271	691	221	611	471	1332	91	238	1171	236	8	203	271	699	431	1162	-	-	1344	619

Notes:  
 \* Indicates nominal dimensions with NPS Gate Valves  
 \*\* Indicates nominal dimensions with OSY Gate Valves (Full Open Position)  
 \*\*\* Indicates weight of complete Backflow Assemblies with specified Gate Valves  
 The gap drain is not designed to catch the maximum discharge possible from the relief valve. The installation of the FEBCO air gap with the drain line terminating above a floor drain will handle any normal discharge or nuisance spilling through the relief valve. However, floor drain size may need to be designed to prevent water damage caused by a catastrophic failure condition. Do not reduce the size of the drain line from the air gap fitting.

FEBCO product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact FEBCO Technical Service. FEBCO reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on FEBCO products previously or subsequently sold.



**U15 FEBCO LF880V RPDA ASSEMBLY**

**PAST DESIGN GROUP, PA**  
 Engineering | Consulting  
 404-B Glenwood Avenue, Raleigh, North Carolina 27603  
 Phone: 919 846 0399 | Fax: 919 846 0395 | NC LICENSE NUMBER: C-3011

CREATED FOR:  
 ROGERS ROAD 3415, LLC  
 1000 PRESIDENT GREEN  
 CARY, NORTH CAROLINA 27518  
 DATE: 7.31.2019  
 PROJECT ENGINEER:  
 PROJECT CAD: DESIGNER:  
 PROJECT SURVEYOR:  
 VETCOBAM LAND SURVEYORS

**101 & 115 REDFORD PLACE DRIVE**  
 ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**UTILITY DETAIL SHEET**

SEAL:

NO.	REVISION	DATE

DRAWING SHEET  
**D-2.2**  
 PROJECT NUMBER  
**449-19**

**ISSUED FOR  
CONSTRUCTION**

**840.66** SHEET 1 OF 1  
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR DRAINAGE STRUCTURE STEPS

NOTES:  
1. ALL STEPS, FOUNDATIONS, AND CURBS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS FOR HIGHWAYS, SECTION 205, PART 1, DIVISION 205.01, AND SHALL BE APPROVED BY THE ENGINEER WITH DETAILS OF THE PROPOSED STEPS AND HAS RECEIVED WRITTEN APPROVAL FROM THE ENGINEER FOR THE USE OF SUCH STEPS.  
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS.  
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS.  
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS.  
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS.

SECTION A-A  
SECTION B-B  
SECTION C-C  
SECTION D-D  
SECTION E-E  
SECTION F-F  
SECTION G-G  
SECTION H-H  
SECTION I-I  
SECTION J-J  
SECTION K-K  
SECTION L-L  
SECTION M-M  
SECTION N-N  
SECTION O-O  
SECTION P-P  
SECTION Q-Q  
SECTION R-R  
SECTION S-S  
SECTION T-T  
SECTION U-U  
SECTION V-V  
SECTION W-W  
SECTION X-X  
SECTION Y-Y  
SECTION Z-Z

**D3** DRAINAGE STRUCTURE STEPS

**840.02** SHEET 1 OF 2  
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

GENERAL NOTES:  
1. CONCRETE SHALL BE TYPE III OR TYPE IV CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.  
2. ALL REINFORCING SHALL BE TYPE 60 STEEL REBAR WITH A MINIMUM YIELD STRENGTH OF 60,000 PSI.  
3. ALL REINFORCING SHALL BE TYPE 60 STEEL REBAR WITH A MINIMUM YIELD STRENGTH OF 60,000 PSI.  
4. ALL REINFORCING SHALL BE TYPE 60 STEEL REBAR WITH A MINIMUM YIELD STRENGTH OF 60,000 PSI.  
5. ALL REINFORCING SHALL BE TYPE 60 STEEL REBAR WITH A MINIMUM YIELD STRENGTH OF 60,000 PSI.

SECTION A-A  
SECTION B-B  
SECTION C-C  
SECTION D-D  
SECTION E-E  
SECTION F-F  
SECTION G-G  
SECTION H-H  
SECTION I-I  
SECTION J-J  
SECTION K-K  
SECTION L-L  
SECTION M-M  
SECTION N-N  
SECTION O-O  
SECTION P-P  
SECTION Q-Q  
SECTION R-R  
SECTION S-S  
SECTION T-T  
SECTION U-U  
SECTION V-V  
SECTION W-W  
SECTION X-X  
SECTION Y-Y  
SECTION Z-Z

**D1** CONCRETE CATCH BASIN

**840.02** SHEET 2 OF 2  
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

DETAIL OF REBAR CONSTRUCTION  
SECTION A-A  
SECTION B-B  
SECTION C-C  
SECTION D-D  
SECTION E-E  
SECTION F-F  
SECTION G-G  
SECTION H-H  
SECTION I-I  
SECTION J-J  
SECTION K-K  
SECTION L-L  
SECTION M-M  
SECTION N-N  
SECTION O-O  
SECTION P-P  
SECTION Q-Q  
SECTION R-R  
SECTION S-S  
SECTION T-T  
SECTION U-U  
SECTION V-V  
SECTION W-W  
SECTION X-X  
SECTION Y-Y  
SECTION Z-Z

**840.02** SHEET 2 OF 2  
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

DETAIL OF REBAR CONSTRUCTION  
SECTION A-A  
SECTION B-B  
SECTION C-C  
SECTION D-D  
SECTION E-E  
SECTION F-F  
SECTION G-G  
SECTION H-H  
SECTION I-I  
SECTION J-J  
SECTION K-K  
SECTION L-L  
SECTION M-M  
SECTION N-N  
SECTION O-O  
SECTION P-P  
SECTION Q-Q  
SECTION R-R  
SECTION S-S  
SECTION T-T  
SECTION U-U  
SECTION V-V  
SECTION W-W  
SECTION X-X  
SECTION Y-Y  
SECTION Z-Z

**840.02** SHEET 1 OF 2  
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

DETAIL OF REBAR CONSTRUCTION  
SECTION A-A  
SECTION B-B  
SECTION C-C  
SECTION D-D  
SECTION E-E  
SECTION F-F  
SECTION G-G  
SECTION H-H  
SECTION I-I  
SECTION J-J  
SECTION K-K  
SECTION L-L  
SECTION M-M  
SECTION N-N  
SECTION O-O  
SECTION P-P  
SECTION Q-Q  
SECTION R-R  
SECTION S-S  
SECTION T-T  
SECTION U-U  
SECTION V-V  
SECTION W-W  
SECTION X-X  
SECTION Y-Y  
SECTION Z-Z

**840.03** SHEET 1 OF 2  
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

SECTION A-A  
SECTION B-B  
SECTION C-C  
SECTION D-D  
SECTION E-E  
SECTION F-F  
SECTION G-G  
SECTION H-H  
SECTION I-I  
SECTION J-J  
SECTION K-K  
SECTION L-L  
SECTION M-M  
SECTION N-N  
SECTION O-O  
SECTION P-P  
SECTION Q-Q  
SECTION R-R  
SECTION S-S  
SECTION T-T  
SECTION U-U  
SECTION V-V  
SECTION W-W  
SECTION X-X  
SECTION Y-Y  
SECTION Z-Z

**D2** FRAME, GRATES, AND HOOD

**840.03** SHEET 2 OF 2  
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

DETAIL OF REBAR CONSTRUCTION  
SECTION A-A  
SECTION B-B  
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SECTION Y-Y  
SECTION Z-Z

**840.03** SHEET 1 OF 2  
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

DETAIL OF REBAR CONSTRUCTION  
SECTION A-A  
SECTION B-B  
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SECTION E-E  
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SECTION W-W  
SECTION X-X  
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SECTION Z-Z

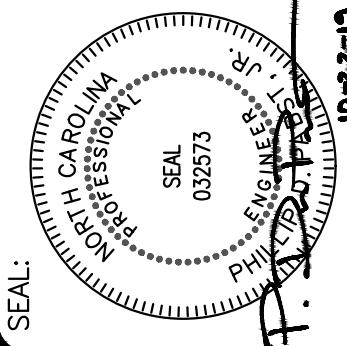
**840.03** SHEET 2 OF 2  
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

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

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SECTION Y-Y  
SECTION Z-Z

ISSUED FOR CONSTRUCTION

DRAWING SHEET  
**D-3.0**  
PROJECT NUMBER  
**449-19**



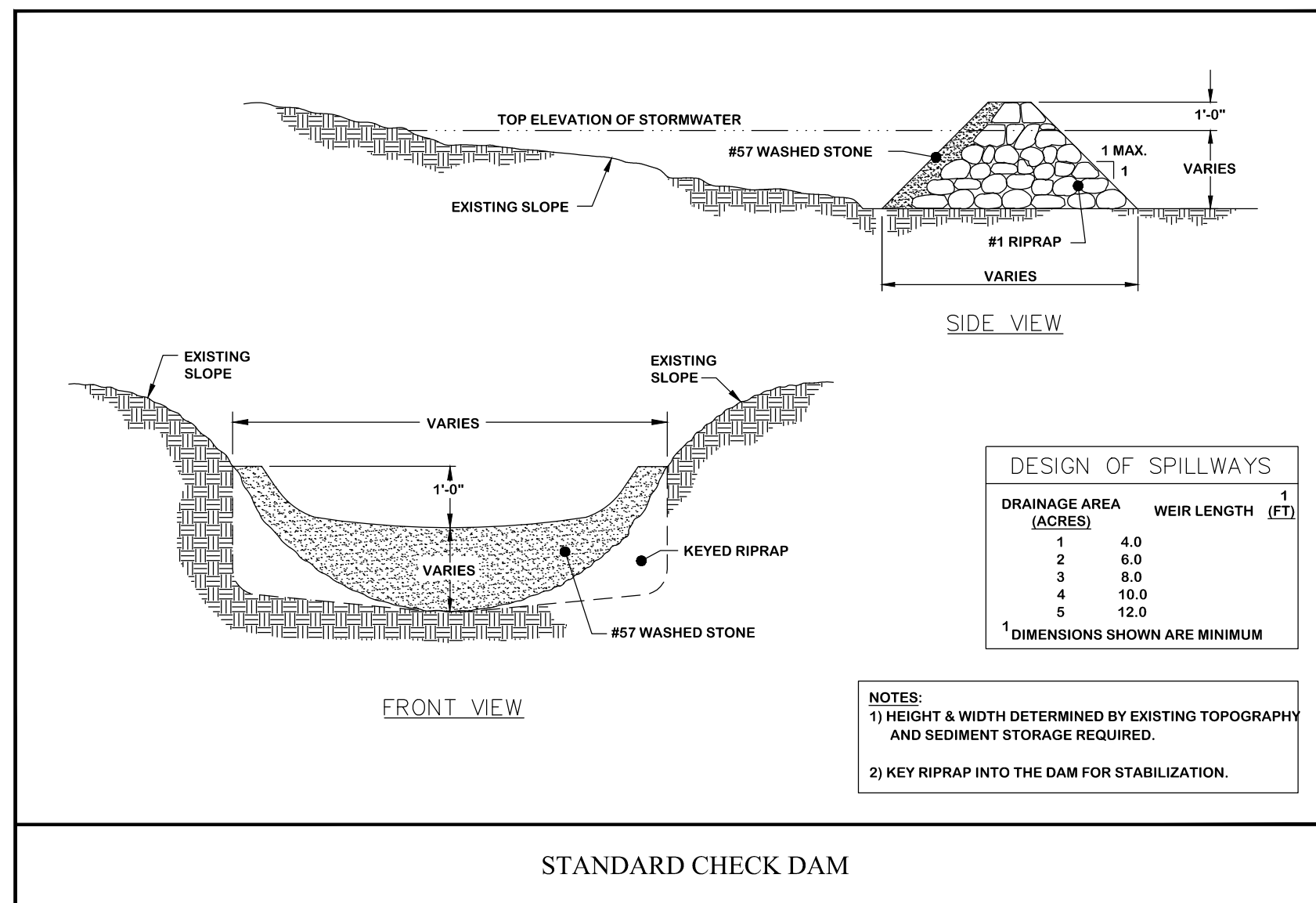
NO.	REVISION	DATE
1	REVISED PER TOR COMMENTS	8/26/19

**101 & 115 REDFORD PLACE DRIVE**  
ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**STORM DRAINAGE DETAIL SHEET**

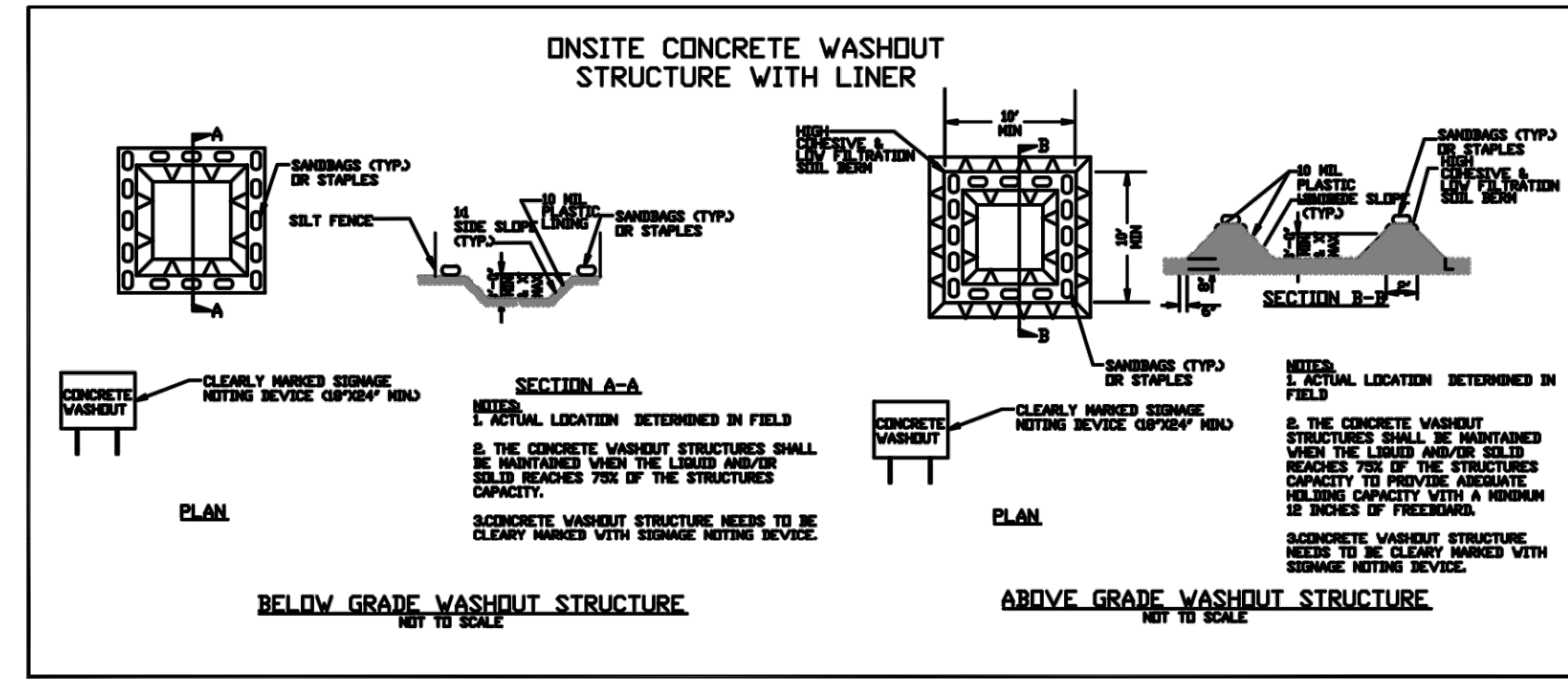
PREPARED FOR:  
RODGERS ROAD 3415, LLC  
1000 CRESENT GREEN  
CARY, NORTH CAROLINA 27518  
DATE: 7.31.2019  
PROJECT ENGINEER:  
PMP  
PROJECT CAD DESIGNER:  
MMP  
PROJECT SURVEYOR:  
VLS/MSLS LAND SURVEYORS

**PAST DESIGN GROUP, PA**  
Engineering | Consulting  
404-S Glenwood Avenue, Raleigh, North Carolina 27603  
Phone: 919 846 4399 | Fax: 919 846 4392 | LIC LICENSE NUMBER: C-3011

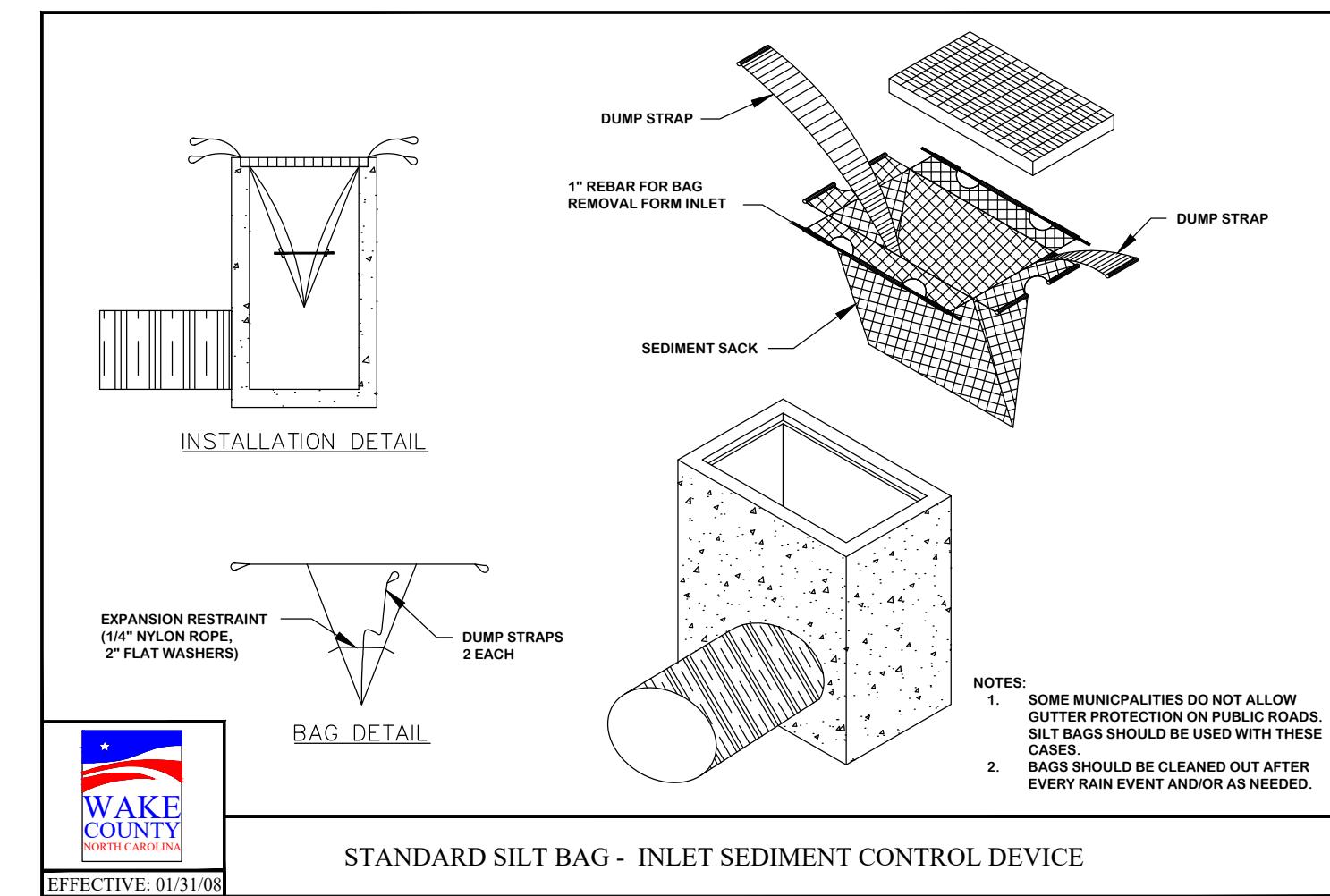




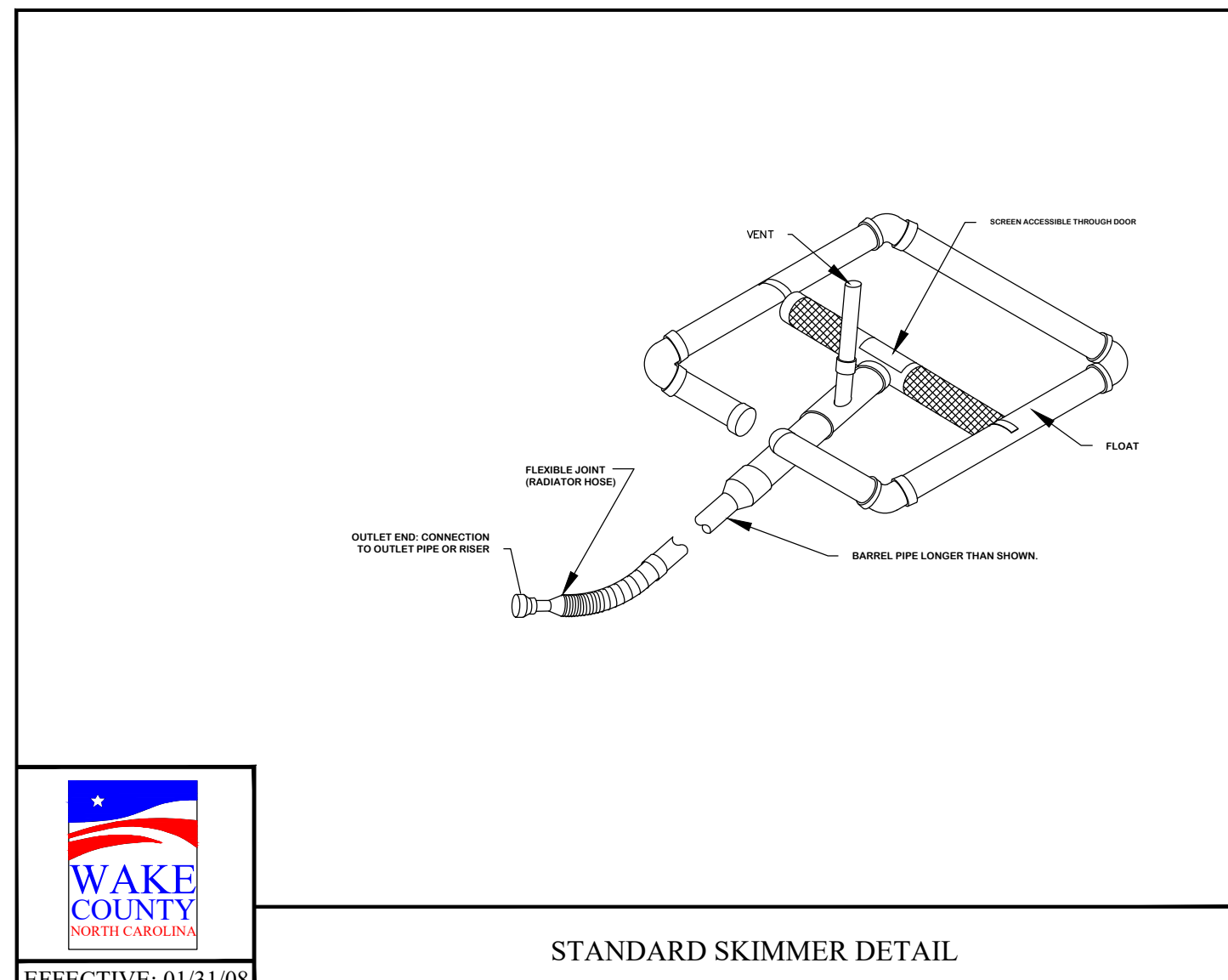
E7 STANDARD CHECK DAM



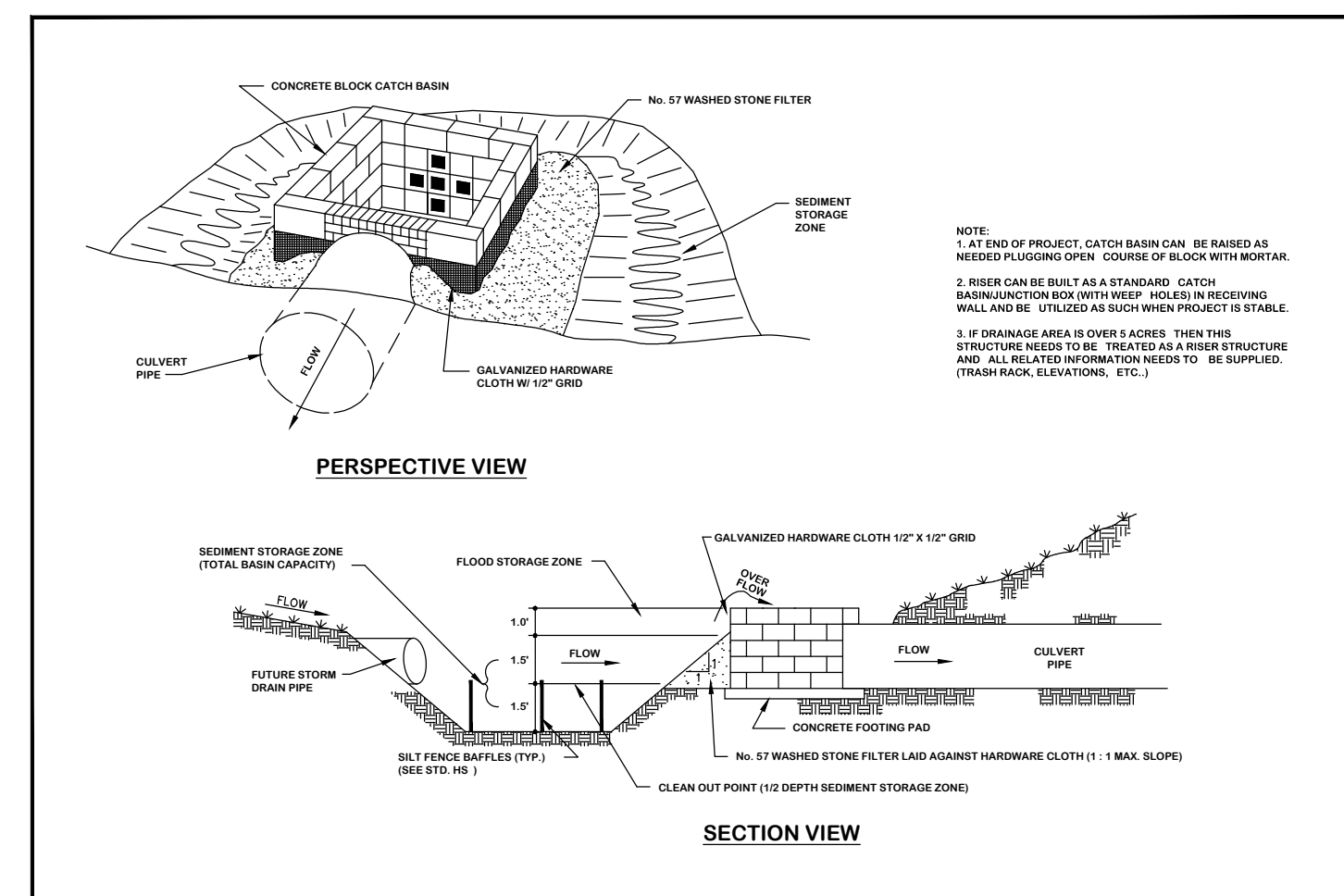
E8 CONCRETE WASHOUT-NCDEQ



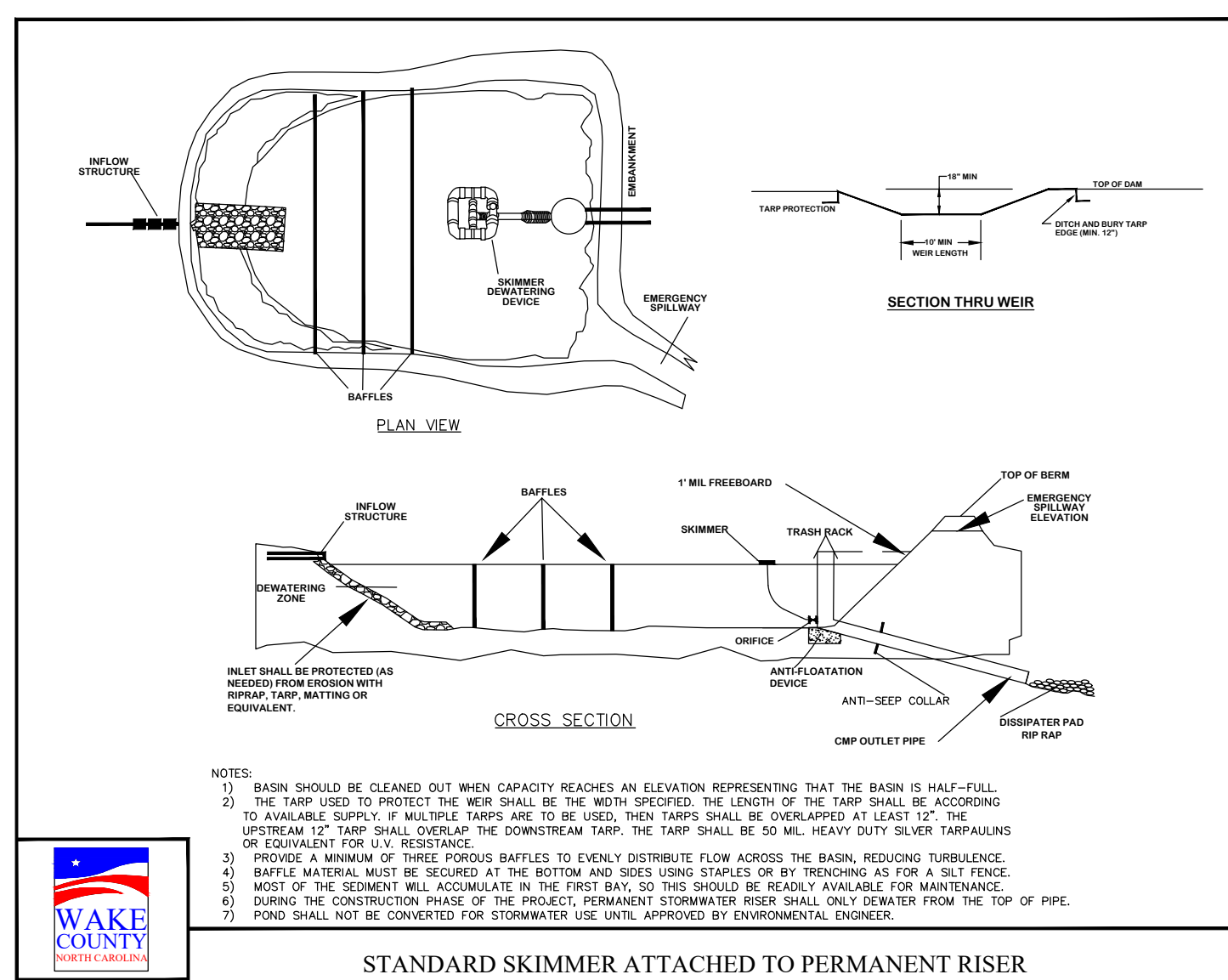
E9 STANDARD GRAVEL BAG INLET PROTECTION



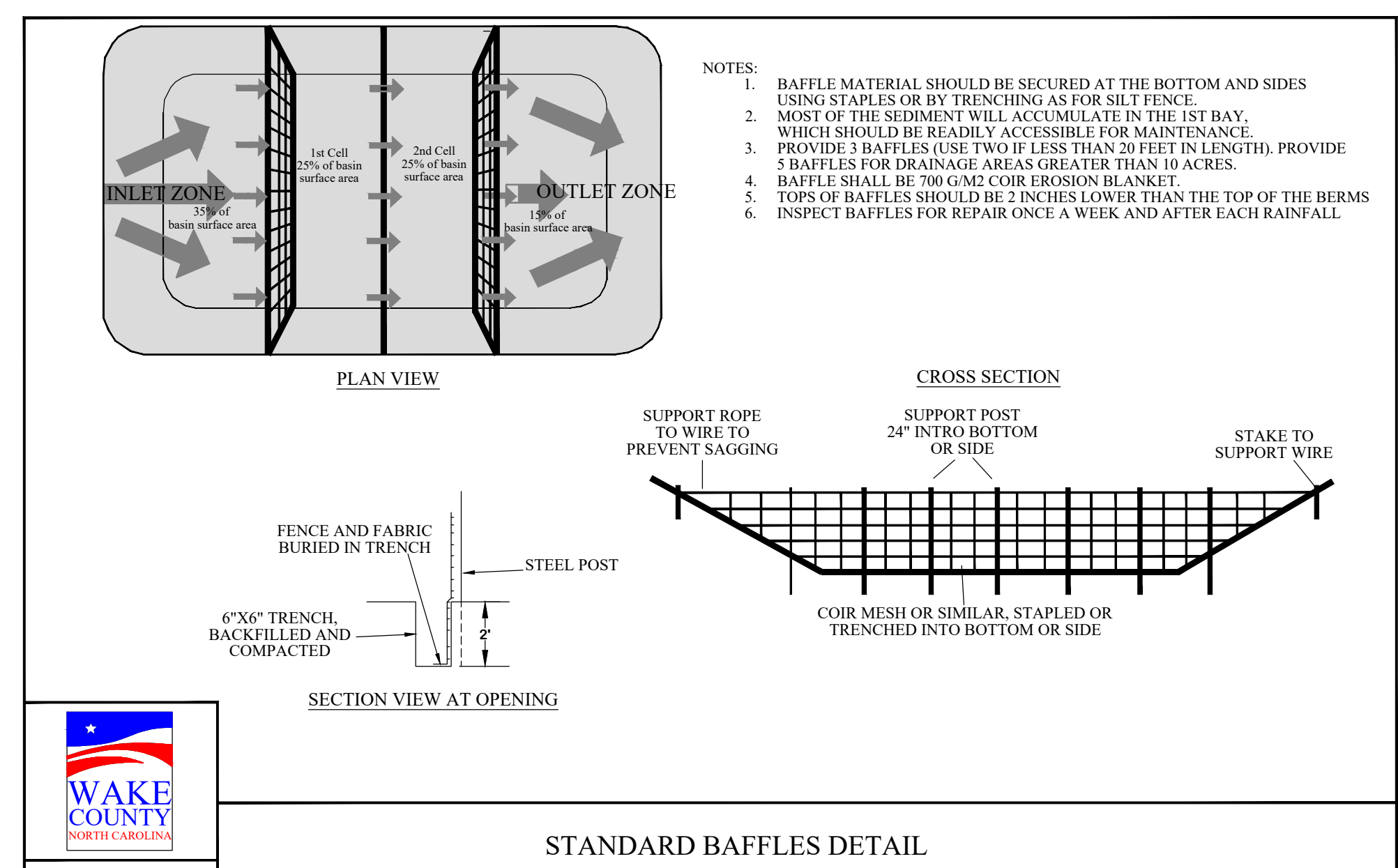
EFFECTIVE: 01/31/08



EFFECTIVE: 01/31/08



EFFECTIVE: 01/31/08



EFFECTIVE: 01/31/08

E10 TEMPORARY SKIMMER BASIN

**EAST COAST** erosion control

Proud Member and Participant of:  
 www.eastcoasterosion.com  
 443 Bricker Road, Bernville, PA 19506  
 1.800.582.4005 • +1.610.488.8496 Fax +1.610.488.8494

Material and Performance Specification

**ECS-1B™ Single Net Straw Biodegradable Rolled Erosion Control Product**

**Description:**  
 The ECS-1B™ is made with uniformly distributed 100% agricultural straw and one organic jute net securely sewn together with biodegradable thread. The tightly compressed blankets are wrapped and include a product label, code and installation guide. The blankets are palletized for easy transportation. The ECS-1B™ has functional longevity of approximately 12 months, but will vary depending on soil and climatic conditions, and is suitable for slopes 3:1 or less and low flow channels. The ECS-1B™ meets Type 2.C specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17.

Matrix:	1	2	
Netting:	100% Straw		
Top:	Organic Leno Weave Jute	Net Color	
Middle:	None	Natural	
Bottom:	None		
Net Opening:	Top: 0.5" x 1.0"	Middle: Bottom:	
Thread:	Type: Biodegradable Thread	Color: Natural	
Roll Sizes:	Standard	"A" Size	Mega
Width:	8 ft 2.4 m	4 ft 1.2 m	16 ft 4.9 m
Length:	112.5 ft 34.3 m	225 ft 68.6 m	112.5 ft 34.3 m
Weight*:	57 lbs 25.9 kg	57 lbs 25.9 kg	114 lbs 51.7 kg
Area:	100 yd² 83.6 m²	100 yd² 83.6 m²	200 yd² 167.2 m²
#/rolls:	20	6	20

\*Weight at time of manufacturing.

Index Value Properties*	Test Method	Typical	Bench-Scale Testing* (NTP#1**)	Parameters	Results	
Mass/Unit Area	ASTM D6475	9.00 oz/yd²	305.1 g/m²	50mm (2in) / hr-30 min	SLR**=4.73	
Thickness	ASTM D6625	0.30 in	7.62 mm	ECTC Method 2 Rainfall	100mm (4in) / hr-30 min	SLR**=7.45
Tensile Strength-MD	ASTM D6818	1.06 lb/ft	1.55 kN/m	ECTC Method 3 Shear Resistance	150mm (6in) / hr-30 min	SLR**=8.26
Elongation-MD	ASTM D6818	17 %		ECTC Method 3 Shear Resistance	Shear at 50 in soil loss	1.40 lb/ft²
Tensile Strength-TD	ASTM D6818	118 lb/ft	1.72 kN/m	ECTC Method 4 Germination	Top soil; Fescue; 21 day incubation	580 %
Elongation-TD	ASTM D6818	26.8 %				
Light Penetration	ASTM D6957	20 %				
Density / Specific Gravity	ASTM D972	N/A	g/cm³			
Water Absorption	ASTM D1117	492 %				

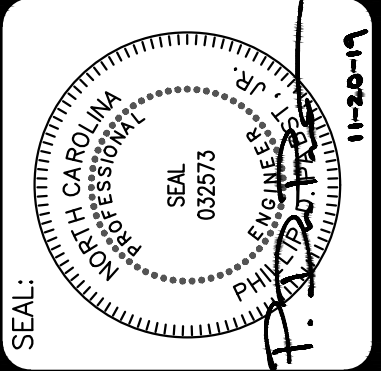
\*May differ depending upon raw material variations.

Slope Performance Design Values*	Property	Test Method	Value	Channel Performance Design Values*	Property	Test Method	Value
	C-Factors	ASTM D6459	0.08		Unvegetated Shear Stress	ASTM D 6460	1.55 lb/ft² 74.21 Pa
	Slope Length (L)	§ 31	§ 31-§ 31	2.21	Unvegetated Velocity	ASTM D 6460	6.8 ft/s 2.07 m/s
	< 50 ft (15 m)	0.075	N/A	N/A	Vegetated Shear Stress	N/A	N/A lb/ft² N/A Pa
	50 ft - 100 ft	0.156	N/A	N/A	Vegetated Velocity	N/A	ft/s m/s
	> 100 ft (30 m)	0.236	N/A	N/A	Manning's N (Value Represents a Range)		0.025

\*Large-Scale Results obtained by 3rd Party GAI Accredited Independent Laboratory

E11 SINGLE NET STRAW BIODEGRADABLE LINER

ISSUED FOR CONSTRUCTION



NO.	DATE	REVISION
1	01/31/08	REVISION FOR COMMENTS
2	01/31/08	REVISION FOR COMMENTS
3	11/20/10	REVISION FOR COMMENTS

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**GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCGO1 CONSTRUCTION GENERAL PERMIT**

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCGO1 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

**SECTION E: GROUND STABILIZATION**

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

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

**GROUND STABILIZATION SPECIFICATION**

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

Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none"> <li>Temporary grass seed covered with straw or other mulches and tackifiers</li> <li>Hydroseeding</li> <li>Roll-on erosion control products with or without temporary grass seed</li> <li>Appropriately applied straw or other mulch</li> <li>Plastic sheeting</li> </ul>	<ul style="list-style-type: none"> <li>Permanent grass seed covered with straw or other mulches and tackifiers</li> <li>Geotextile fabrics such as permanent soil reinforcement matting</li> <li>Hydroseeding</li> <li>Shrubs or other permanent plantings covered with mulch</li> <li>Uniform and evenly distributed ground cover sufficient to restrain erosion</li> <li>Structural methods such as concrete, asphalt or retaining walls</li> <li>Roll-on erosion control products with grass seed</li> </ul>

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

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

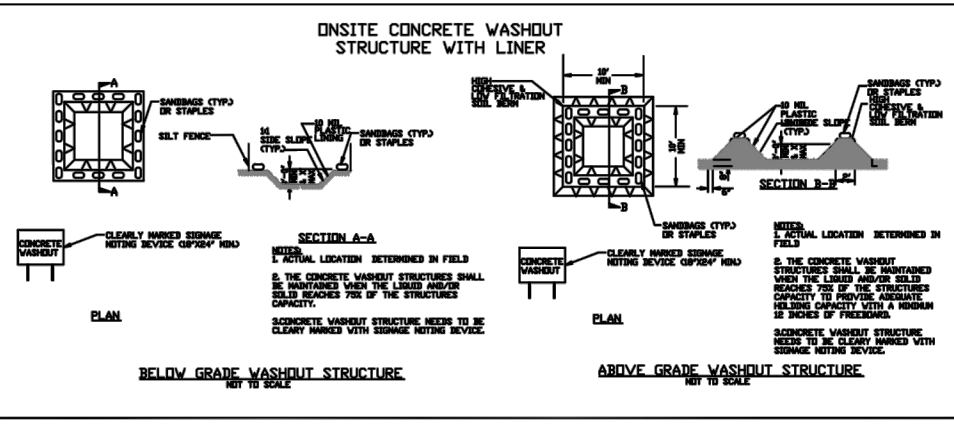
- EQUIPMENT AND VEHICLE MAINTENANCE**
- Maintain vehicles and equipment to prevent discharge of fluids.
  - Provide drip pans under any stored equipment.
  - Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
  - Collect all spent fluids, store in separate containers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

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

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

- PORTABLE TOILETS**
- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide roll-on portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
  - Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
  - 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 MAINTENANCE**
- 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.
  - Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
  - Provide stable stone access point when feasible.
  - Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



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

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

- HAZARDOUS AND TOXIC WASTE**
- Create designated hazardous waste collection areas on-site.
  - Place hazardous waste containers under cover or in secondary containment.
  - Do not store hazardous chemicals, drums or bagged materials directly on the ground.

**PERMANENT SEEDING SCHEDULE**

SEEDING MIXTURE PER NCDOT (EAST), ALTERNATE NATIVE SEED VARIETIES AND MIX RATES MAY BE CONSIDERED IF INCLUDED IN THE NC STATE UNIVERSITY/ATM UNIVERSITY COOPERATIVE EXTENSION THAT'S APPROVED BY NCDCEQ AND TABLES IN NCDCEQ EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL SECTION 6.11

MARCH 1- AUG. 31

SPECIES	RATE (LB/ACRE)
TALL FESCUE	50
CENTPEDE	10
BERMUDAGRASS (HULLED)	25
FERTILIZER	500

SEPTEMBER 1 - FEBRUARY 28

SPECIES	RATE (LB/ACRE)
TALL FESCUE	50
CENTPEDE	10
BERMUDAGRASS (UNHULLED)	35
FERTILIZER	500
LIMESTONE	4000

- SEEDBED PREPARATION**
- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 2 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
  - AVAILABLE.
  - RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
  - REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE LEAVING REASONABLY SMOOTH AND UNIFORM.
  - APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL.
  - CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLE UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
  - SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
  - MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
  - INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.

**NOTE:**  
ON CUT AND FILL SLOPES 2:2 OR STEEPER CENTPEDE SHALL BE APPLIED AT THE RATE OF 5 LBS/ACRE AND ADD 20 LBS/ACRE OF SERICEA LESPEDEZA FROM JANUARY 1-DECEMBER 31.

FERTILIZER SHALL BE 10-20-20 ANALYSIS. A DIFFERENT ANALYSIS OF FERTILIZER MAY BE USED PROVIDED THE 1-2-2 RATIO IS MAINTAINED AND THE RATE OF APPLICATION ADJUSTED TO PROVIDE THE SAME AMOUNT OF PLANT FOOD AS 10-20-20 ANALYSIS AND AS DIRECTED.

**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.

**TEMPORARY SEEDING SCHEDULE**

SEEDING MIXTURE PER NCDCEQ EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL IN THE PIEDMONT

(LATE WINTER AND EARLY SPRING): JAN. 1-MAY 1

SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	120
ANNUAL LESPEDEZA (KOBÉ IN PIEDMONT AND COASTAL PLAIN, KOREAN IN MOUNTAINS)	50

OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.

(SUMMER): MAY 1- AUG. 15

SPECIES	RATE (LB/ACRE)
GERMAN MILLET	40

IN THE PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUDAN GRASS MAY BE SUBSTITUTED AT A RATE OF 50 LBS/ACRE.

(FALL): AUG. 15- DEC. 30

SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	120

**SOIL AMENDMENTS:**  
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LBS/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LBS/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.  
FOR THE FALL, REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOP DRESS WITH 50 LBS/ACRE KOBÉ (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

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

**PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING**

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

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

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

**PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION B: RECORDKEEPING**  
**1. E&S Plan Documentation**  
The approved E&S plan as well as any approved deviation shall be kept on the site. The approved E&S plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&S 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&S measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&S plan.	Initial and date each E&S measure on a copy of the approved E&S plan or complete, date and sign an inspection report that lists each E&S measure shown on the approved E&S plan. This documentation is required upon the initial installation of the E&S measures or if the E&S measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&S 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&S plan.	Initial and date a copy of the approved E&S 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&S measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&S measures.	Initial and date a copy of the approved E&S 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&S 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:
- This General Permit as well as the Certificate of Coverage, after it is received.
  - Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.
- 3. Documentation to be Retained For Three Years**  
All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

**PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION C: REPORTING**  
**1. Occurrences that Must be Reported**  
Permittees shall report the following occurrences:

- Visible sediment deposition in a stream or wetland.
- Oil spills:
  - 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).
- 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.
- Anticipated bypasses and unanticipated bypasses.
- 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	<ul style="list-style-type: none"> <li>Within 24 hours, an oral or electronic notification.</li> <li>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.</li> <li>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.</li> </ul>
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>
(c) Anticipated bypasses (40 CFR 122.41(m)(3))	<ul style="list-style-type: none"> <li>Within 24 hours, an oral or electronic notification.</li> <li>Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.</li> </ul>
(d) Unanticipated bypasses (40 CFR 122.41(m)(3))	<ul style="list-style-type: none"> <li>Within 24 hours, an oral or electronic notification.</li> <li>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 recurrence of the noncompliance. [40 CFR 122.41(j)(6)].</li> <li>Division staff may waive the requirement for a written report on a case-by-case basis.</li> </ul>
(e) Noncompliance with the conditions of this permit that may endanger health or the environment (40 CFR 122.41(j)(7))	<ul style="list-style-type: none"> <li>Within 24 hours, an oral or electronic notification.</li> <li>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 recurrence of the noncompliance. [40 CFR 122.41(j)(6)].</li> <li>Division staff may waive the requirement for a written report on a case-by-case basis.</li> </ul>

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

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

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

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

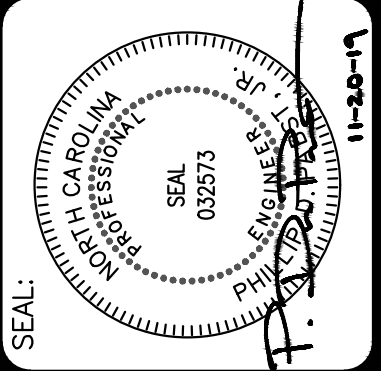


**ISSUED FOR CONSTRUCTION**

**PAST DESIGN GROUP, PA**  
Engineering | Consulting  
4018 Glenwood Avenue, Raleigh, North Carolina 27603  
Phone: 919 948-0399 | Fax: 919 948-4395 | NC LICENSE NUMBER: C-3811

PROJECT NO.: 19-0000  
PROJECT NAME: 1000 CRESCENT GREEN CARY, NORTH CAROLINA 27518  
DATE: 7/31/2019  
PROJECT ENGINEER: [Signature]  
PROJECT CAD DESIGNER: [Signature]  
PROJECT SURVEYOR: [Signature]  
UNREGISTERED LAND SURVEYORS

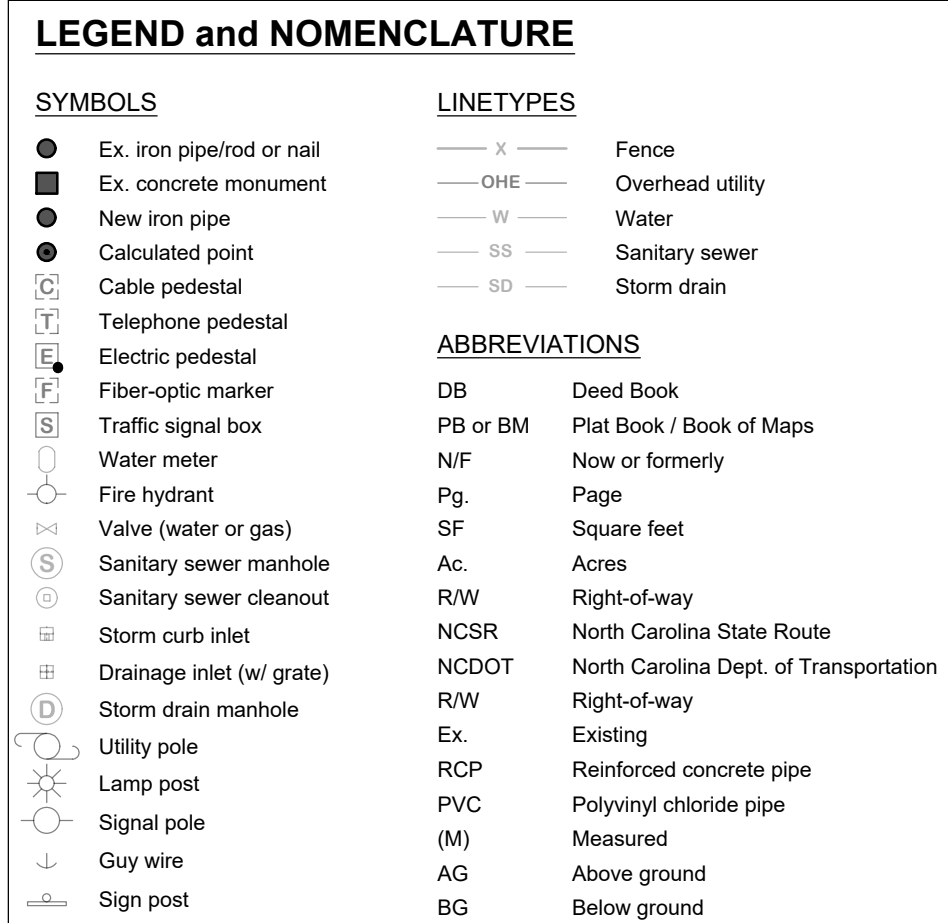
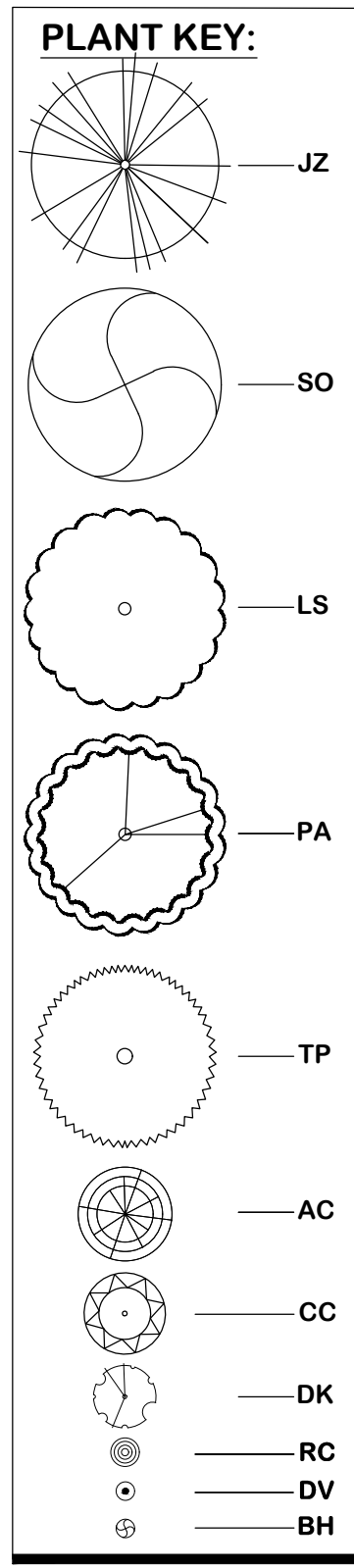
**101 & 115 REDFORD PLACE DRIVE**  
ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**EROSION CONTROL DETAIL SHEET**



NO.	REVISION	DATE

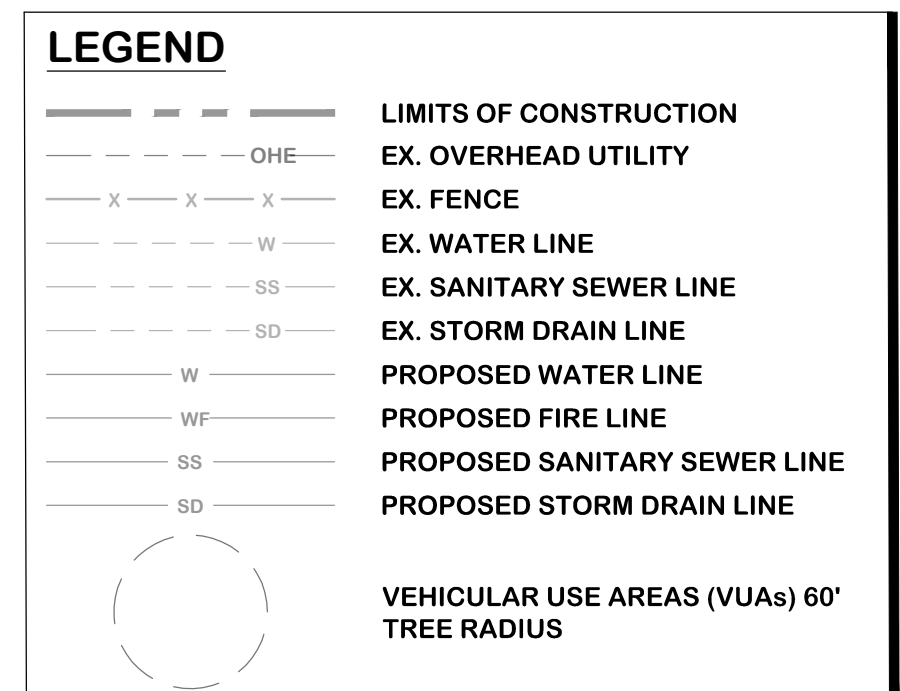
**DRAWING SHEET**  
**D-4.2**  
PROJECT NUMBER  
**449-19**

F:\Public\10-Projects\400-499\449-19 Redford Place Medical Office (The Redford Studio Architecture P)150-Drawing\54-Design\4-4.dwg Nov 20, 2019 - 10:49am Bly:cbrown



**PLANT LIST**

KEY	QTY.	BOTANICAL NAME	COMMON NAME	CAL./CONT.	HT.	ROOT	REMARKS
JZ	4	<i>Zelkova serrata</i>	Japanese Zelkova	2.5" MIN.	10'	B&B	STRAIGHT LEADER, FULL, MATCHING
SO	4	<i>Quercus coccinea</i>	Scarlet Oak	2.5" MIN.	10'	B&B	STRAIGHT LEADER, FULL, MATCHING
LS	4	<i>Acer saccharum</i> 'Legacy'	Legacy Sugar Maple	2.5" MIN.	10'	B&B	STRAIGHT LEADER, FULL, MATCHING
PA	6	<i>Ulmus americana</i> 'Princeton'	Princeton American Elm	2.5" MIN.	10'	B&B	STRAIGHT LEADER, FULL, MATCHING
TP	4	<i>Liriodendron tulipifera</i>	Tulip Poplar	2.5" MIN.	10'	B&B	STRAIGHT LEADER, FULL, MATCHING
<b>EVERGREEN TREES</b>							
DK	13	<i>Ilex x 'Dr. Kassab'</i>	Dr. Kassab Holly	N/A	6"	B&B	FULL, MATCH
<b>UNDERSTORY DECIDUOUS TREES</b>							
AC	4	<i>Prunus yedoensis</i> 'Akebono'	Akebono Cherry	1.5" MIN.	8"	B&B	SINGLE STEM, FULL, MATCHING
CC	6	<i>Lagerstroemia indica</i> 'Catawba'	Catawba Crape Myrtle	1.5" MIN.	8"	B&B	SINGLE STEM, FULL, MATCHING
<b>EVERGREEN SHRUBS</b>							
DV	131	<i>Viburnum davidii</i>	David Viburnum	N/A	24" MIN.		FULL, MATCH
BH	102	<i>Ilex cornuta</i> 'Burfordii Nana'	Dwarf Burfordii Holly	N/A	24" MIN.		FULL, MATCH
<b>DECIDUOUS SHRUBS</b>							
RC	16	<i>Aronia</i> 'Brilliantissima'	Red Chokeberry	N/A	24" MIN.		FULL, MATCH

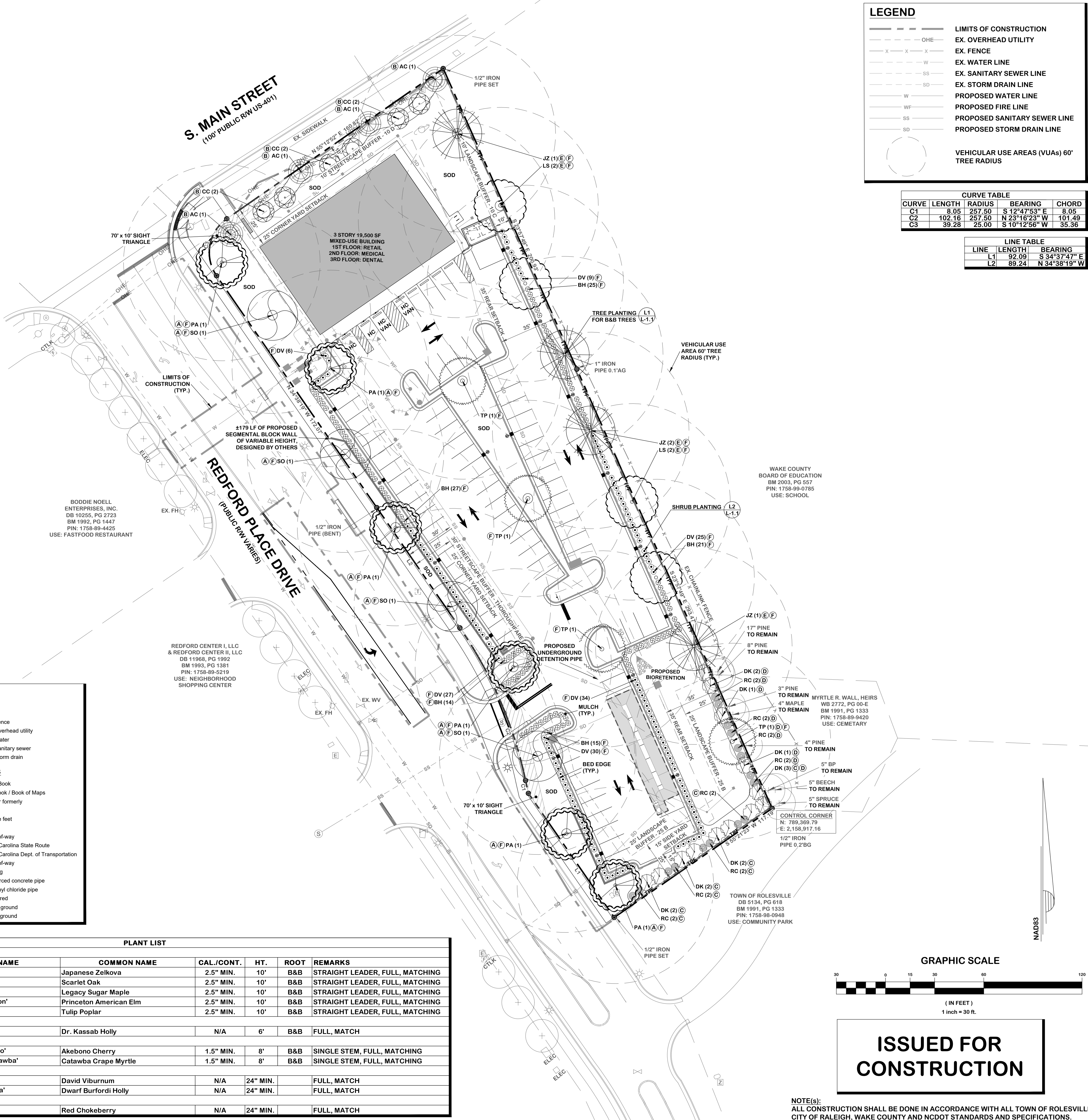


**CURVE TABLE**

CURVE	LENGTH	RADIUS	BEARING	CHORD
C1	8.05	257.50	S 12°47'53" E	8.05
C2	102.16	257.50	N 23°16'23" W	101.49
C3	39.28	25.00	S 10°12'56" W	35.36

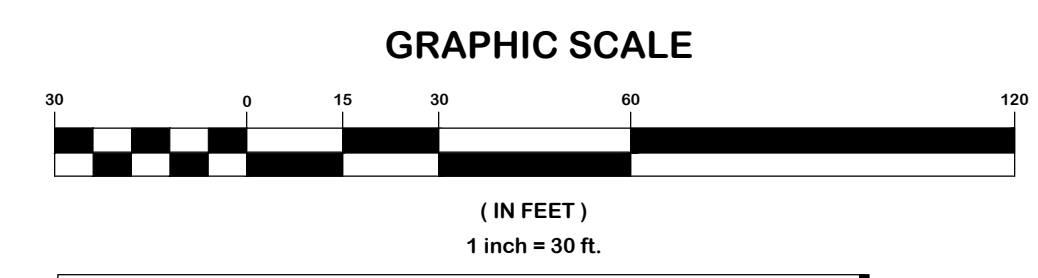
**LINE TABLE**

LINE	LENGTH	BEARING
L1	32.09	S 34°37'47" E
L2	89.24	N 34°38'19" W



- GENERAL PLANTING NOTES:**
- ALL LANDSCAPING SHALL BE INSTALLED ACCORDING TO SOUND NURSERY PRACTICES AND SHALL MEET ALL STANDARDS AS STATED IN THE LATEST EDITION OF 'AMERICAN STANDARD FOR NURSERY STOCK'.
  - PLANT LIST QUANTITIES ARE PROVIDED FOR CONVENIENCE ONLY. IN THE EVENT OF QUANTITY DISCREPANCIES, THE DRAWINGS SHALL TAKE PRECEDENCE.
  - NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION FROM THE OWNER OR LANDSCAPE DESIGNER.
  - CONTRACTOR SHALL HAVE UTILITY COMPANY LOCATE ALL UTILITIES PRIOR TO DIGGING. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES INCURRED BY HIS/HER WORK.
  - METHODS OF TREE STAKING INDICATED ON THE DRAWINGS ARE SUGGESTIONS ONLY. THE LANDSCAPE CONTRACTOR SHALL USE WHATEVER METHOD HE DEEMES FIT, HOWEVER HE WILL BE HELD LIABLE FOR ANY DAMAGES CAUSED TO TREES BY IMPROPER STAKING METHODS (OR ABSENCE OF STAKING) AND IS RESPONSIBLE FOR UPRIGHTING AND REPLANTING TREES WHICH ARE BLOWN OVER.
  - ALL AREAS NOT SHOWN AS HARD SURFACES, PLANT BED, MULCHED OR UNDISTURBED AREAS, SHALL BE SEEDED OR SODDED AS LAWN WITH "REBEL IV", CONFEDERATE PLUS OR LESCO TALL TURF TYPE FESCUE FOR IN ALL AREAS IN RIGHT OF WAY UP TO THE ROAD.
  - ALL LANDSCAPE BEDS CONTAIN TRIPLE SHREDDED HARDWOOD MULCH AT A THICKNESS OF 3".
  - ALL LANDSCAPE BEDS SHALL HAVE POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES.
  - ALL PLANT BEDS SHALL BE TREATED WITH PRE-EMERGENT WEED CONTROL (I.E. TREFLON GRANULES).
  - ALL PLANTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN ASSOCIATION OF NURSERYMEN AND SHALL BE VIGOROUS, HEALTHY MATERIAL FREE OF PESTS AND DISEASE.
  - VERIFICATION OF TOTAL QUANTITIES AS SHOWN ON THE PLANT LIST SHALL BE THE RESPONSIBILITY OF THE PLANTING CONTRACTOR, AND THE TOTAL QUANTITIES SHALL BE REQUIRED ON THE PLANTING PLAN.
  - OWNERS SHALL MAINTAIN ALL PLANT BEDS AND PLANT MATERIAL IN GOOD HEALTH, AND ANY DEAD, UNHEALTHY OR MISSING PLANTS SHALL BE REPLACED WITH THE SAME PLANT MATERIAL ORIGINALLY SPECIFIED ON THIS PLAN.
  - PLANT MATERIAL ON THIS SITE MUST BE INSTALLED IN CONFORMANCE WITH THE GENERAL PLANTING NOTES AND DETAILS ON THIS PLAN OR TO THE STANDARDS OF TOWN OF ROLESVILLE.
  - LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED PERMITS AND LICENSES TO PERFORM THE REQUIRED WORK.

- LANDSCAPE CALCULATIONS:**
- STREETSCAPE BUFFERS**
- A REDFORD PLACE DRIVE**  
30' STREETSCAPE BUFFER - THOROUGHFARE
- REQUIRED: COLLECTOR STREET / 1 STREET TREE EVERY 50 LF  
480 LF / 50 = 9.78 STREET TREES  
PROVIDED: 10 STREET TREES
- B S. MAIN STREET**  
10' STREETSCAPE BUFFER - 10 D
- REQUIRED: STREET FRONT TYPE D / 1 TREE EVERY 40 LF  
180 LF / 40 = 4.73 DECIDUOUS CANOPY TREE  
(TWO UNDERSTORY ORNAMENTAL TREES IN SUBSTITUTE OF ONE DECIDUOUS CANOPY TREE WHEN OVERHEAD UTILITY LINES ARE PRESENT)  
4.73 TREES = 9.46 UNDERSTORY ORNAMENTAL TREES  
PROVIDED: 10 UNDERSTORY ORNAMENTAL TREES
- LANDSCAPE BUFFERS**
- C SOUTH BUFFER**  
25' LANDSCAPE BUFFER - 25 B
- REQUIRED: SEMI-OPAQUE TYPE B  
SEMI-OPAQUE SCREEN FROM GROUND TO 3'  
MIN. HEIGHT OF 20'  
NO UNOBSTRUCTED OPENINGS WIDER THAN 20' BETWEEN TREE CANOPIES  
MIN. 50% OF SHRUBS TO BE EVERGREEN  
PROVIDED: 8 EVERGREEN TREES  
8 EVERGREEN SHRUBS
- D EAST BUFFER (AGAINST CEMETERY)**  
25' LANDSCAPE BUFFER - 25 B
- REQUIRED: SEMI-OPAQUE TYPE B  
SEMI-OPAQUE SCREEN FROM GROUND TO 3'  
MIN. HEIGHT OF 20'  
NO UNOBSTRUCTED OPENINGS WIDER THAN 20' BETWEEN TREE CANOPIES  
MIN. 50% OF SHRUBS TO BE EVERGREEN  
PROVIDED: 6 EVERGREEN TREES  
8 EVERGREEN SHRUBS  
1 DECIDUOUS TREE
- E EAST BUFFER (AGAINST SCHOOL)**  
10' LANDSCAPE BUFFER - 10 C
- REQUIRED: SPATIAL DEFINITION TYPE C  
NO UNOBSTRUCTED OPENINGS WIDER THAN 50' BETWEEN TREE CANOPIES  
PROVIDED: 8 DECIDUOUS TREES
- F VEHICULAR USE AREAS (VUAs)**
- REQUIRED: VUAs SHALL BE WITHIN 60' OF CANOPY TREES  
SCREEN OFF-SITE VIEWS WITH CONTINUOUS EVERGREEN HEDGE  
PROVIDED: 23 CANOPY TREES  
232 EVERGREEN SHRUBS



**ISSUED FOR CONSTRUCTION**

NOTE(S): ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL TOWN OF ROLESVILLE, CITY OF RALEIGH, WAKE COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.

**PAST DESIGN GROUP, PA**  
Engineering | Consulting  
404-B Glenwood Avenue, Raleigh, North Carolina 27603  
Phone: 919 846 4399 | Fax: 919 846 4395 | LIC LICENSE NUMBER: C-3811

**101 & 115 REDFORD PLACE DRIVE**  
ROLESVILLE, WAKE COUNTY, NORTH CAROLINA  
**CONSTRUCTION DRAWINGS**  
**LANDSCAPE PLAN**

APPROVED FOR: BODDIE NOELL ENTERPRISES, INC. DB 10255, PG 2723 BM 1992, PG 1447 PIN: 1758-89-4425 USE: FASTFOOD RESTAURANT

APPROVED FOR: REDFORD CENTER I, LLC & REDFORD CENTER II, LLC DB 11968, PG 1992 BM 1993, PG 1381 PIN: 1758-89-5219 USE: NEIGHBORHOOD SHOPPING CENTER

APPROVED FOR: WAKE COUNTY BOARD OF EDUCATION BM 2003, PG 557 PIN: 1758-99-0785 USE: SCHOOL

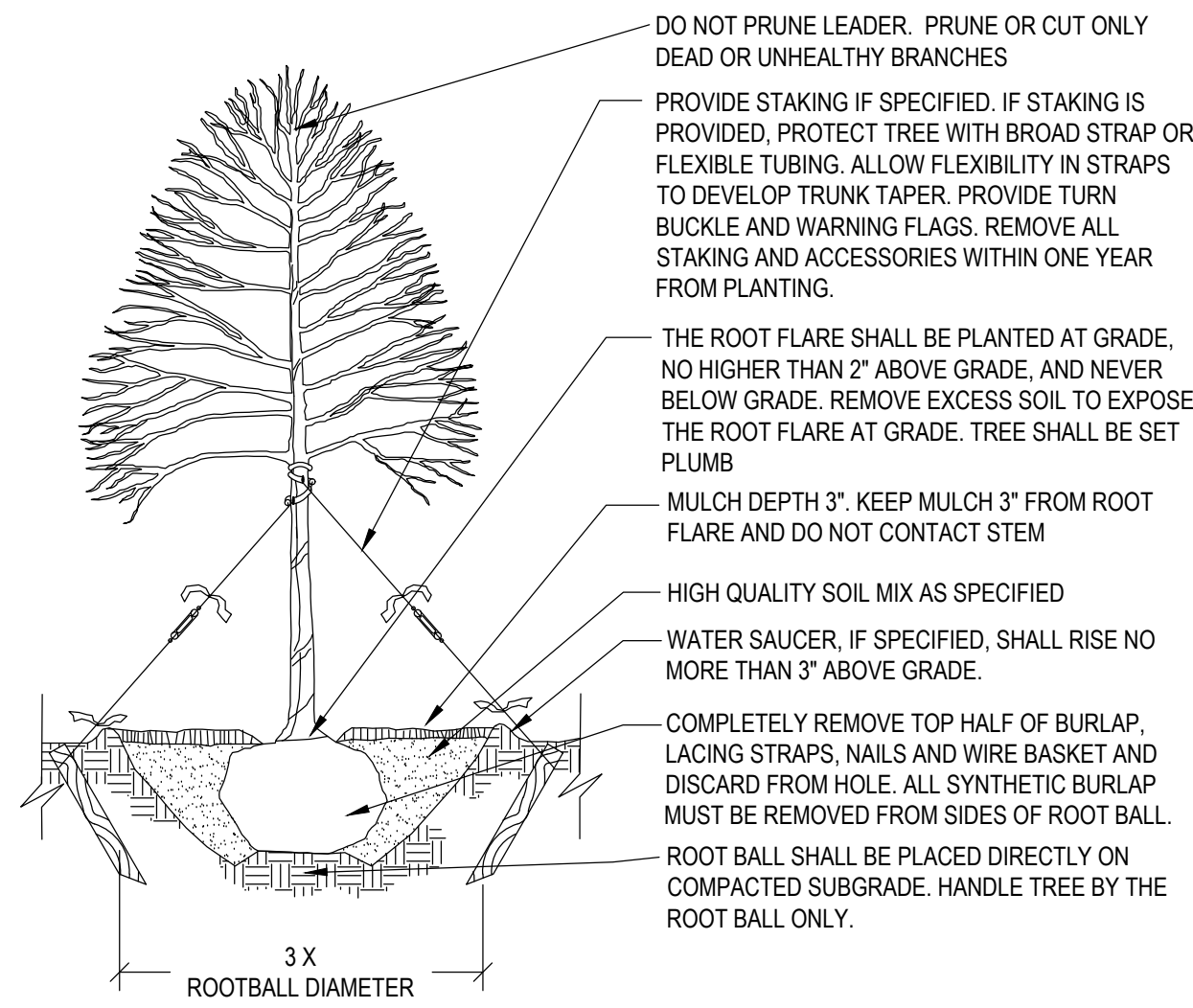
APPROVED FOR: MYRTLE R. WALL, HEIRS WB 2772, PG 00-E BM 1991, PG 1333 PIN: 1758-89-9420 USE: CEMETERY

APPROVED FOR: TOWN OF ROLESVILLE DB 5134, PG 618 BM 1991, PG 1533 PIN: 1758-99-0948 USE: COMMUNITY PARK

REVISIONS:

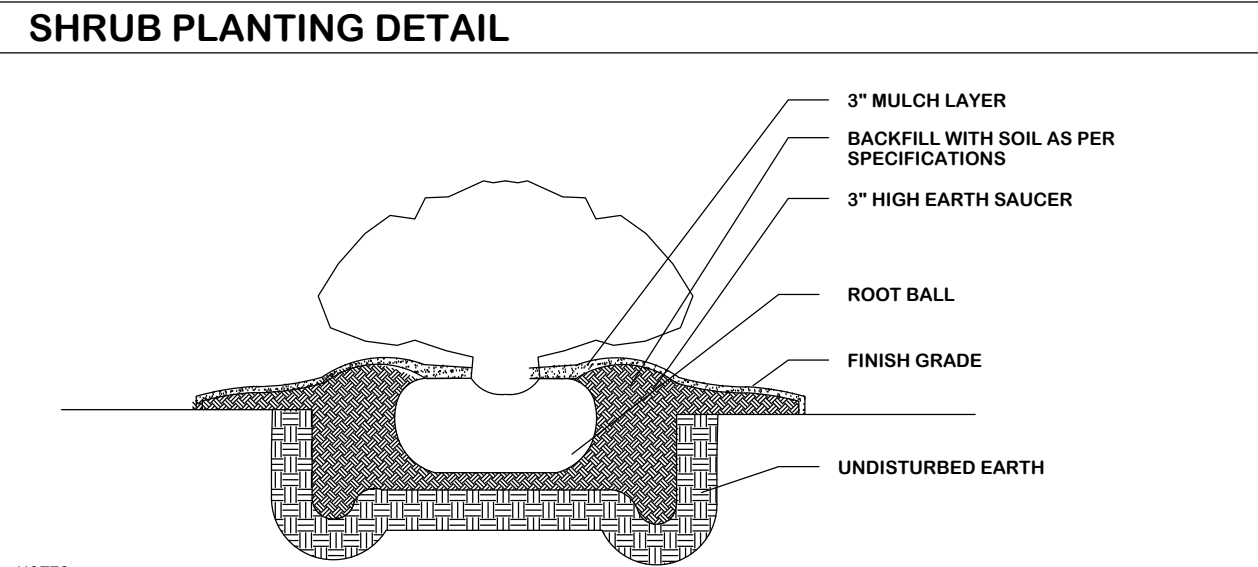
NO.	DATE	REVISION
1	10/1/19	REVISED PER CITY COMMENTS
2	10/2/19	REVISED PER CITY COMMENTS
3	12/19/19	REVISED PER WAKE CO COMMENTS
4	4/23/20	REVISED PER ENGINEER

DRAWING SHEET  
**L-1.0**  
PROJECT NUMBER  
**449-19**



- NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR ADEQUATE DRAINAGE OF ALL PLANTING PITS. (POSITIVE DRAINAGE AWAY FROM PIT)
  2. ADHERE TO STANDARDS IN THE CITY TREE MANUAL.
  3. STREET TREES MUST BE 3" CALIPER AT INSTALLATION WITH A 5' MINIMUM FIRST BRANCH HEIGHT.
  4. PLANTING SEASON OCTOBER - APRIL.
  5. A TREE IMPACT PERMIT IS REQUIRED.
  6. ELECTRICAL OUTLETS AND OTHER UTILITIES ARE PROHIBITED IN THE PLANTING AREA IMMEDIATELY SURROUNDING THE TREE.

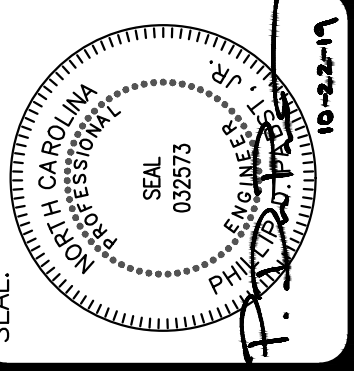
**L1 TREE PLANTING FOR B&B TREES**



- NOTES:
1. Remove the burlap, burlap ties and wire basket from top 1/3 of rootball. Remove all nylon strings, plastic liners and synthetic burlap - type of materials from the entire rootball.
  2. Scarify rootball and bottom/sides of plant pit.
  3. Excavate planting pit two to three times as wide as the rootball. Install rootball 1/4 to 1/3 above existing/proposed grade. Locate rootball on solid soil and not loose backfill.
  4. All saucers shall be soaked with water and mulched immediately following planting.
  5. The size of the rootball shall conform to the AAN standards.
  6. Fertilized all plants with Agriform fertilizer tablets or equal, to be applied according to manufacturer's recommendation.
  7. All rootballs after removing from containers shall be scarified prior to backfilling the planting hole.
  8. Thoroughly soak the shrub root ball and adjacent prepared soil several times during the first month after planting and at least once a week for the first two growing seasons.

**L2 SHRUB PLANTING**

**ISSUED FOR CONSTRUCTION**



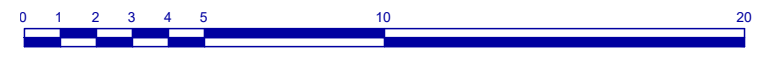
NO.	REVISION	DATE



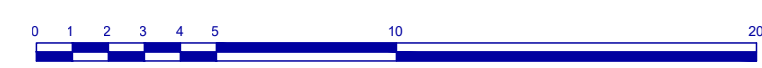




**1 Main Street Elevation**  
SCALE 3/16" = 1'-0"

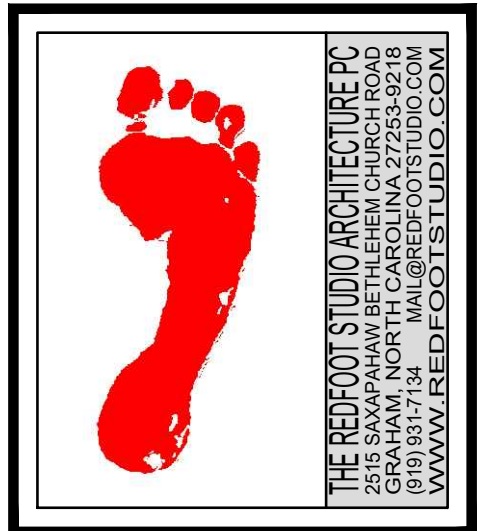
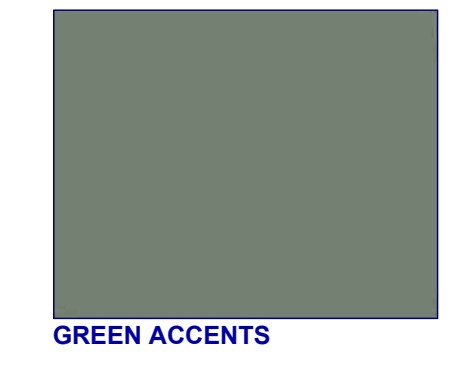


**2 Redford Place Drive Elevation**  
SCALE 3/16" = 1'-0"

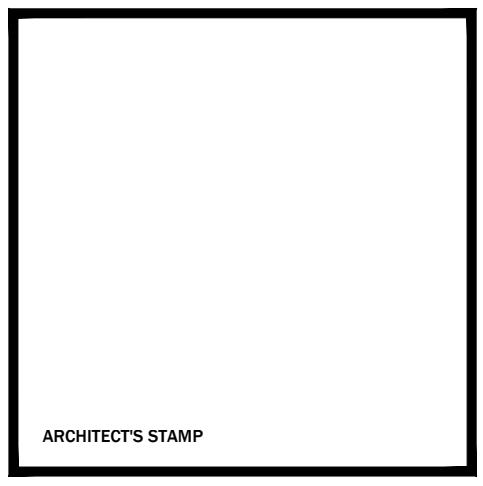


- DECORATIVE EIFS ROOF PARAPET - GRAY
- DECORATIVE EIFS BRACKET - GRAY
- DECORATIVE EIFS PILASTER CAP - GREEN AND GRAY
- FIELD BRICK, TYPICAL - BRICK 1
- ACCENT BRICK, TYPICAL - BRICK 2
- STOREFRONT OPENING - ANODIZED SILVER
- EIFS ARCHES OVER WINDOW - MATCH BRICK 2
- FIELD BRICK, TYPICAL - BRICK 1
- ACCENT BRICK DETAILS, TYPICAL - BRICK 2
- MASONRY BASE - ARRISCRAFT STONE

- MATERIAL SELECTIONS**
- BASE AND TRIM - ARRISCRAFT RENAISSANCE MASONRY UNIT SATIN CAFE
  - BRICK 1 - LEE BRICK 740 'SCOTSDALE' MODULAR SMOOTH
  - BRICK 2 - LEE BRICK 874 'HATTERAS' MODULAR SAND FINISH
  - STOREFRONT - CLEAR ANODIZED ALUMINUM
  - METAL ROOFING - DMI METALS - HEMLOCK GREEN
  - HARDI-TRIM AND HARDI-PANEL - MATCH BASE & BRICK 1



**TRIANGLE FAMILY DENTISTRY  
MEDICAL OFFICE BUILDING**  
101 REDFORD PLACE DRIVE  
ROLESVILLE, NORTH CAROLINA



No	Rev./Submissions	Date
	NEIGHBOR	07/17/19

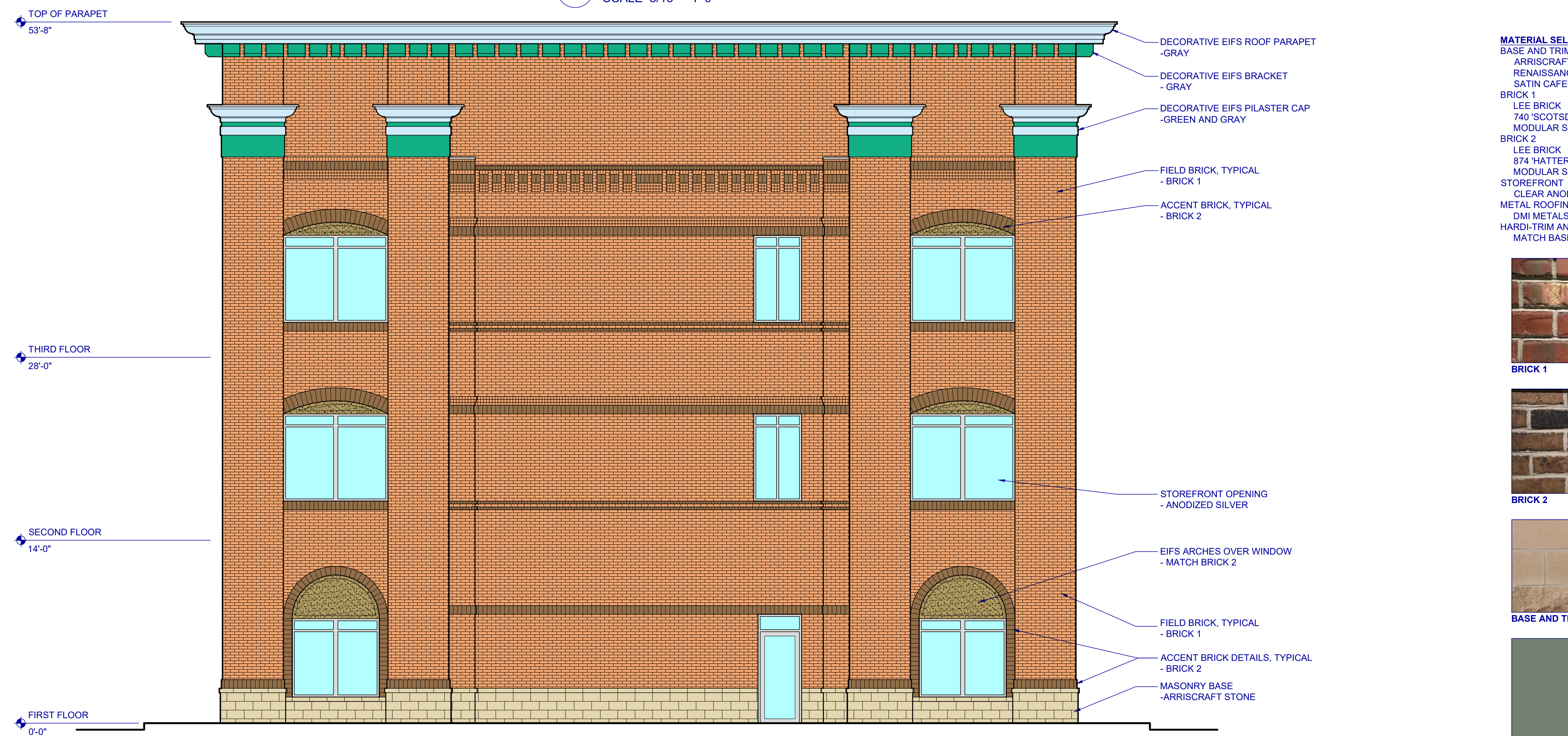
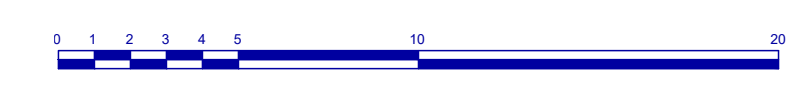
SCALE	PROJECT NO
AS NOTED	190701
DESIGNED	DATE
RSR	17 OCT 19
DRAWN	CHECKED
RSR	RSR

DRAWINGS  
**BUILDING ELEVATIONS**  
DRAWING NO  
**A1.0**

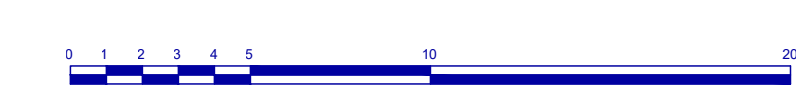
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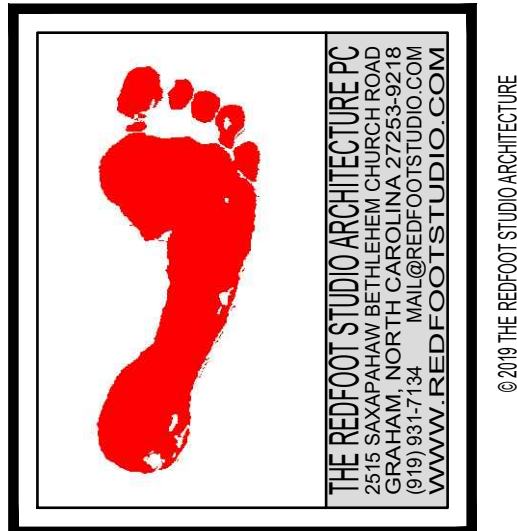
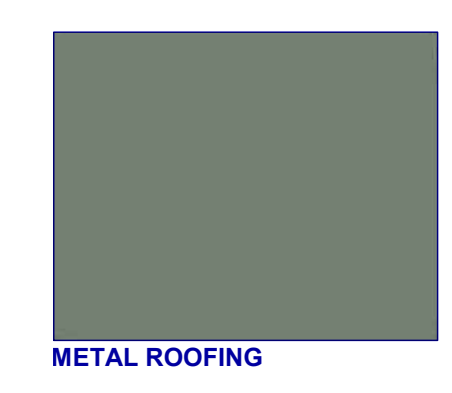
**1 Parking Lot Elevation**  
SCALE 3/16" = 1'-0"



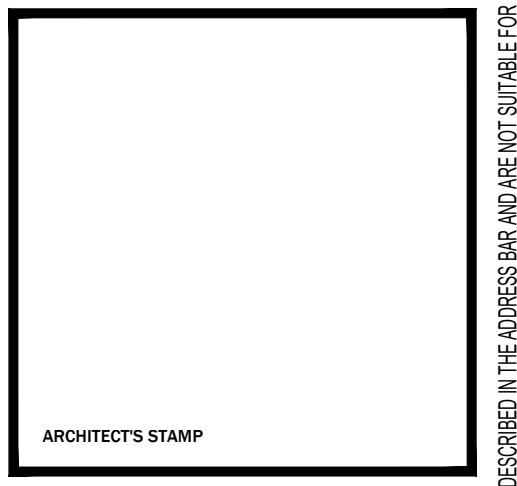
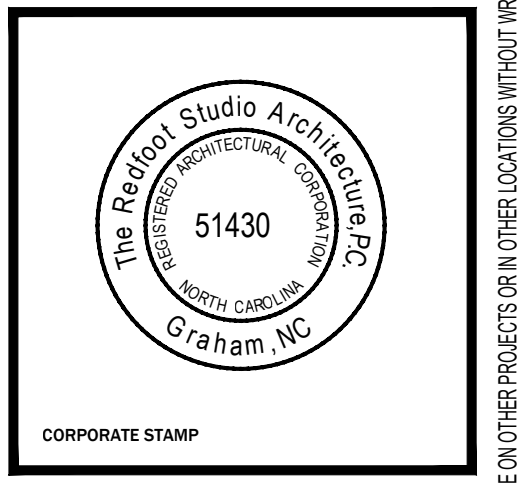
**2 Elementary School Elevation**  
SCALE 3/16" = 1'-0"



- MATERIAL SELECTIONS**
- BASE AND TRIM - ARRISCRRAFT RENAISSANCE MASONRY UNIT SATIN CAFE
  - BRICK 1 - LEE BRICK 740 'SCOTSDALE' MODULAR SMOOTH
  - BRICK 2 - LEE BRICK 874 'HATTERAS' MODULAR SAND FINISH
  - STOREFRONT - CLEAR ANODIZED ALUMINUM
  - METAL ROOFING - DMI METALS - HEMLOCK GREEN
  - HARDI-TRIM AND HARDI-PANEL - MATCH BASE & BRICK 1



**TRIANGLE FAMILY DENTISTRY  
MEDICAL OFFICE BUILDING**  
101 REDFORD PLACE DRIVE  
ROLESVILLE, NORTH CAROLINA



No	Rev./Submissions	Date
	NEIGHBOR	07/17/19

DRAWINGS  
**BUILDING ELEVATIONS**  
DRAWING NO  
**A1.1**

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