

# TIDAL WAVE AUTO SPA

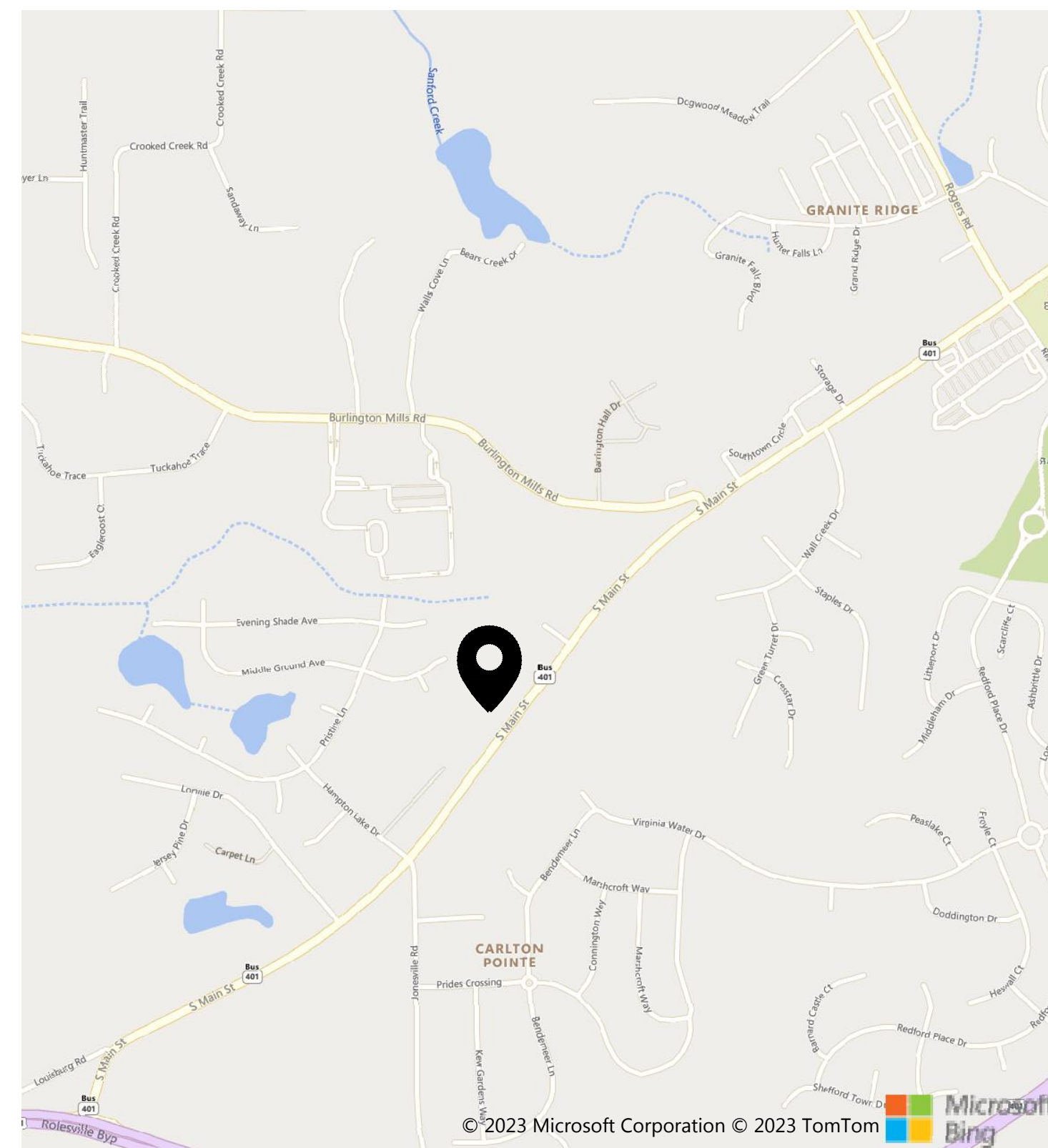
ROLESVILLE, NC, USA

City Project ID # V1-SDP-23-08

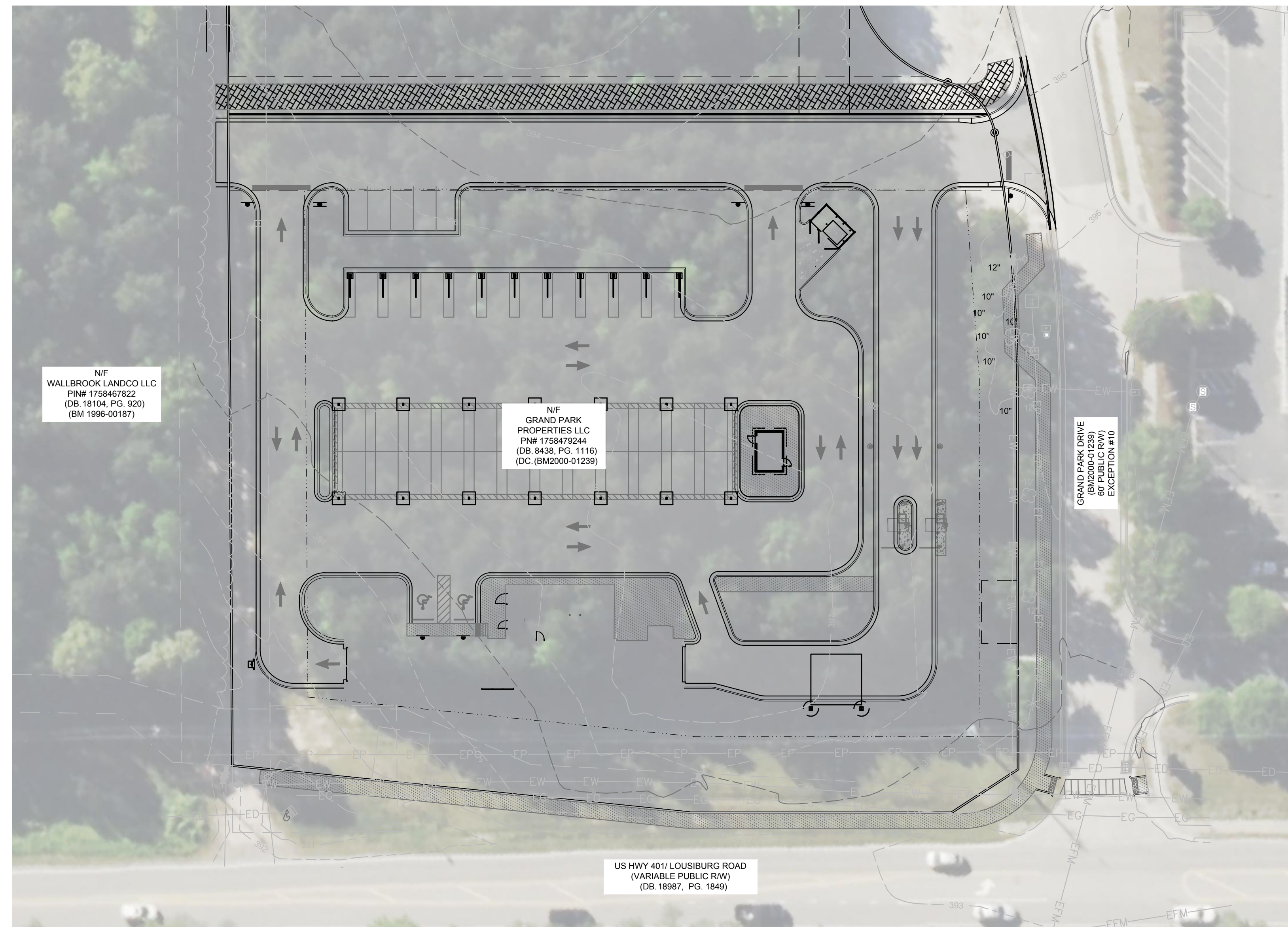


MOUNT PLEASANT, SC  
843.884.1667  
GREENVILLE, SC  
864.298.0534  
SUMMERVILLE, SC  
843.972.0710  
SPARTANBURG, SC  
864.272.1272  
CHARLOTTE, NC  
980.312.5450  
WWW.SEAMONWHITESIDE.COM

## SITE LOCATION MAP



## SITE OVERVIEW



## PROJECT DESCRIPTION

**PROJECT DATA:**  
THIS PROJECT IS LOCATED ON A 1.92 ACRE SITE, IN ROLESVILLE, NC. THE PROPERTY AS IT EXISTS IS AN UNDEVELOPED LOT. THE PROPOSED DEVELOPMENT WILL BE AN AUTOMATED CAR WASH WITH ASSOCIATED PARKING AND INFRASTRUCTURE.

**FLOOD ZONE:**  
THIS PROPERTY IS LOCATED OUTSIDE OF ANY REGULATED FLOOD ZONES, ZONEX (OTHER AREAS), NAVD88, SCALED FROM THE FIRM THE TOWN OF ROLESVILLE, NORTH CAROLINA PANEL NO. 3720175800K.

**PROPERTY INFORMATION:**  
PARCEL ID: 1758479244  
ZONING DISTRICT: GI (GENERAL INDUSTRIAL)

## GENERAL NOTES

### PROJECT SURVEY INFORMATION AND CONTRACTOR VERIFICATION REQUIREMENTS

- BOUNDARY, TOPOGRAPHIC, TREE, WETLAND DELINEATION, AND OTHER EXISTING CONDITIONS SHOWN ARE FROM SURVEY PREPARED BY MSP & ASSOCIATES LAND SURVEYING, INC.
- ALL ELEVATIONS ARE BASED ON NAVD88 DATUM.
- THE CONTRACTOR SHALL VERIFY THE EXISTING TOPOGRAPHIC WORK, EXISTING UTILITY LINE LOCATIONS AND ELEVATIONS PRIOR TO BEGINNING WORK. SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES ON THE DRAWINGS PRIOR TO BEGINNING WORK OR DURING CONSTRUCTION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
- THE CONTRACTOR SHALL MAINTAIN AND BE SOLELY RESPONSIBLE FOR JOBSITE SAFETY.
- AN AUTOCAD BASE PLAN OF THIS DRAWINGS CAN BE PROVIDED TO THE CONTRACTOR UPON REQUEST. ENGINEER SHALL NOT BE RESPONSIBLE FOR ERRORS IN ELECTRONIC DATA.
- THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL PLANS AND COORDINATION WITH THE TOWN OF ROLESVILLE FOR LANE/ROAD CLOSURE AS NEEDED THROUGHOUT CONSTRUCTION.
- ALL SITE WORK TO BE PERFORMED IN CONFORMANCE WITH THE TOWN OF ROLESVILLE CODE OF ORDINANCE. MATERIAL SPECIFICATIONS ARE PROVIDED IN THE SPECIFICATIONS AND SPECIAL PROVISIONS SECTION.
- ALL UTILITY INSTALLATIONS, PUBLIC AND PRIVATE, SHALL BE PERFORMED IN CONFORMANCE WITH THE TOWN OF ROLESVILLE WATER AND SEWER POLICIES, PROCEDURES, STANDARDS AND SPECIFICATIONS.

**EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT**

APPROVED

EROSION CONTROL  SEC-

STORMWATER MGMT.  SWF-

FLOOD STUDY  SWF-

DATE \_\_\_\_\_

ENVIRONMENTAL CONSULTANT SIGNATURE \_\_\_\_\_

## PROJECT CONTACTS

**DEVELOPER:**  
SHJ DEVELOPMENT, LLC  
124 EAST THOMPSON STREET  
POST OFFICE DRAWER 311  
THOMASTON, GA 30286  
CONTACT: ALEX PERRY  
PHONE: 478-972-2418

**CIVIL ENGINEER & LANDSCAPE ARCHITECT:**  
SEAMON WHITESIDE & ASSOCIATES, LLC  
230 E PETERSON DR  
CHARLOTTE, NC 28217  
CONTACT: TOMMIE LITTLE  
PHONE: 980-312-5450

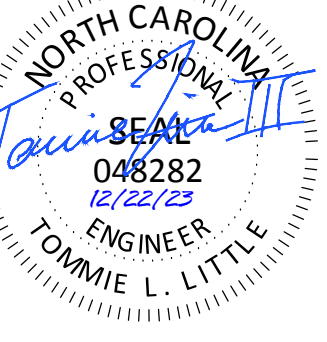
**SOURCES:**  
SURVEYOR OWNER:  
MSP & ASSOCIATES  
LAND SURVEYING INC.  
301 E. HILLCREST DR.  
GREENVILLE, SC, 29609  
PHONE: (864) 370-2232

**GRAND PARK PROPERTIES, LLC**  
2636 WAIT AVENUE  
WAKE FOREST, NC 27587  
CONTACT: GEORGE M. UPCHURCH, JR.

**UTILITY CONTACTS:**  
CITY OF RALEIGH PUBLIC UTILITIES  
ONE EXCHANGE PLAZA,  
RALEIGH, NC 27601  
PHONE: 919-996-3245

Sheet List Table	
C1.0	TITLESHEET
C1.1	LEGEND & REVISION NOTES
C2.1	SURVEY
C3.1	EXISTING CONDITIONS AND DEMO PLAN
C4.1	EROSION CONTROL PH I
C4.2	EROSION CONTROL PH II
C4.3	EROSION CONTROL PH III
C4.6	EROSION CONTROL NOTES
C4.4	EROSION CONTROL DETAILS
C4.5	EROSION CONTROL DETAILS
C5.1	SITE PLAN
C5.2	VEHICLE STACKING & TURNING MOVEMENT
C5.3	FIRE PROTECTION PLAN
C6.1	OVERALL GRADING AND DRAINAGE PLAN
C6.2	DRAINAGE PROFILES
C7.1	UTILITY PLAN AND PROFILES
C7.2	UTILITY PROFILES
C8.1	CONSTRUCTION DETAILS
C8.2	CONSTRUCTION DETAILS
C8.3	CONSTRUCTION DETAILS
C8.4	CONSTRUCTION DETAILS
C8.5	CONSTRUCTION DETAILS
D1.0	ADS STORMTECH
D1.1	ADS STORMTECH
D1.2	ADS STORMTECH
D1.3	ADS STORMTECH
D1.4	ADS STORMTECH
L1.0	LANDSCAPE PLAN
L1.1	PLANT SCHEDULE & DETAILS & NOTES

SITE DATA TABLE:	
ADDRESS: 0 S MAIN STREET, ROLESVILLE, NC	
PROPERTY AREA: 1.92 ACRES	
PARCEL: 1758479244	
EXISTING USE: UNDEVELOPED	
PROPOSED USE: CAR WASH	
WATERSHED: TOMS CREEK (MILL CREEK)	
RIVER BASIN: NEUSE	
PROPERTY ZONING: GI (GENERAL INDUSTRIAL)	
BUILDING SETBACKS:	
FRONT (SE):	30'
CORNER (NE):	15'
SIDE (NW):	15'
SIDE (SW):	30'
PERIMETER LANDSCAPE YARDS:	
NORTHEAST:	15'
REQUIRED OPEN SPACE (5%) = 0.01 AC (4182 SF)	
<b>BUILDING:</b>	
BUILDING AREA: 3325 SF	
BUILDING HEIGHT: 21'-7"	
<b>PRE VS. POST DEVELOPMENT AREA:</b>	
SITE AREA:	1.92 AC
PRE-IMPERVIOUS AREA:	0.04 AC (2.08%)
POST-IMPERVIOUS AREA:	1.30 AC (67.7%)
<b>PARKING NOTE:</b>	
PARKING REQUIRED: 1 SPACE PER 400 SF GFA OR 5 SPACES MINIMUM = 5 SPACES	
PARKING PROVIDED:	
EMPLOYEE SPACES: (4 MAX ON SHIFT)	5 SPACES (1 ADA)
VACUUM STALLS:	34 STALLS



TIDAL WAVE AUTO SPA  
ROLESVILLE, NC

SW+ PROJECT: 10772  
DATE: 12/22/23  
DRAWN BY: CPE  
CHECKED BY: TLL

### REVISION HISTORY

NO.	DESCRIPTION

TITLESHEET

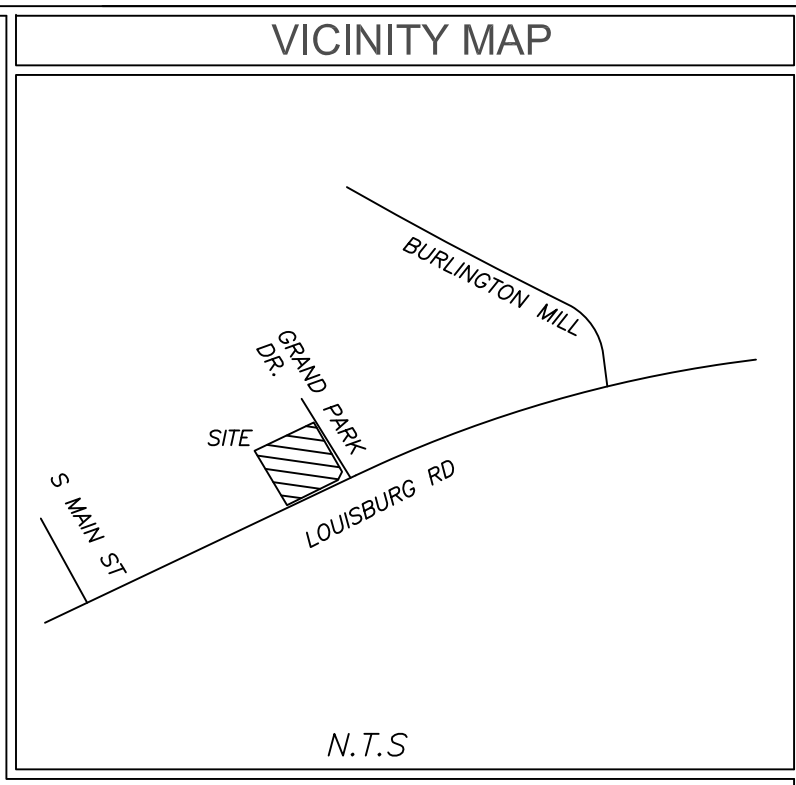


Know what's below.  
Call before you dig.









**TITLE EXCEPTIONS**

- Schedule B-Section II Title Exceptions  
 Fidelity National Title Insurance Company  
 Commitment Number: NC252306067V;NACS230520; Effective Date: June 29, 2023
- Easements, rights of ways, boundary lines, and improvements as set forth on Plat recorded in Book of Maps 2000, Page 1239, Book of Maps 1996, Page 1582, Book of Maps 1999, Page 1039, and Book of Maps 2003, Page 614, Wake County Registry. (AFFECTS SITE AS PLOTTED)
  - Deed of Easement Vehicular Access and Utility Services to Elevated Water Tank Facility from Grand Park Properties LLC to the City of Raleigh, dated May 5, 2003 and recorded in Book 10123, Page 2779, Wake County Registry. (AFFECTS SITE AS PLOTTED)
  - Right of way conveyance and easements contained in Deed for Highway Right of Way in favor of the Department of Transportation dated April 1, 2021, recorded April 11, 2022, in Book 18987, Page 1849, Wake County Registry. (AFFECTS SITE AS PLOTTED)
  - Cross Access Easement Agreement between Wallbrook Landco LLC and Grand Park Properties, LLC, dated April 12, 2022 and recorded in Book 18988, Page 1102, Wake County Registry. (AFFECTS SITE: UNABLE TO PLOT; NO DESCRIPTION OR MEASUREMENTS FOR EASEMENT)

**SURVEYORS CERTIFICATION**

\* To: Fidelity National Title Insurance Company and TWAS Properties LLC, a Delaware limited liability company

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1-6a,b,7a,b, 8, 9, 11, 13, 16, 17, 18, 20 and 21 of Table A thereof. The field work was completed on 6/6/23.

NIF  
 GRAND PARK PROPERTIES LLC  
 PIN# 1758479244  
 (BM1999-01039)

6/6/23  
 Date

Michael S. Perdue PLS #L-4322

**LEGEND**

- |        |                          |         |                        |
|--------|--------------------------|---------|------------------------|
| CB CPP | CATCH BASIN              | — T —   | PHONE LINE             |
| CT     | CORRUGATED PLASTIC PIPE  | — G —   | GUY WIRE               |
| DI     | CRIMPED TOP PIPE         | — C —   | GAS LINE               |
| IE     | DROP INLET               | — W —   | WATER LINE             |
| JB     | INVERT ELEVATION         | — OHP — | POWER LINE             |
| MH     | JUNCTION BOX             | — E —   | UNDERGROUND POWER LINE |
| OT     | MANHOLE                  | ●       | POWER POLE             |
| POB    | OPEN TOP PIPE            | ⊙       | SANITARY SEWER MANHOLE |
| POC    | POINT OF BEGINNING       | ⊕       | STORM SEWER MANHOLE    |
| POC    | POINT OF COMMENCEMENT    | ⊖       | CATCH BASIN            |
| TBM    | TEMPORARY BENCHMARK      | ⊗       | GAS METER              |
| RCP    | REINFORCED CONCRETE PIPE | ⊘       | TRANSFORMER            |
| SS     | SANITARY SEWER           | ⊙       | IRON PIN FOUND         |
| OHP    | OVERHEAD POWER           | ⊖       | IRON PIN SET           |
| EIP    | IRON PIN FOUND           | ⊙       | WATER VALVE            |
| IP     | IRON PIN SET             | ⊖       | WATER METER            |
| WV     | WATER VALVE              | ⊙       | GAS VALVE              |
| WM     | WATER METER              | ⊖       | GAS METER              |
| GV     | GAS VALVE                | ⊙       | TELEPHONE PEDESTAL     |
| GM     | GAS METER                | ⊖       | FIRE HYDRANT           |
| TP     | TELEPHONE PEDESTAL       | ⊙       | LIGHT POLE             |
| FH     | FIRE HYDRANT             | ⊖       | POWER METER            |
| LP     | LIGHT POLE               | ⊙       | BACKFLOW VALVE         |
| PM     | POWER METER              | ⊖       | ELECTRICAL BOX         |
| BV     | BACKFLOW VALVE           | ⊙       |                        |
| EB     | ELECTRICAL BOX           | ⊖       |                        |

**GENERAL NOTES**

This property is in Zone X based on Flood Insurance Rate Map 3720175800K dated 07/19/2022. This determination was made by graphically determining the position of said site on said FIRM Map.

Contact proper Authorities Before building near utility lines, for easement width and restrictions. Underground Utilities are approximate and should be verified prior to any construction. Locations shown are approximate.

This survey has been prepared for the exclusive use of the person or entities named hereon. No express or implied warranties with respect to the information shown hereon is to be extended to any persons or entities other than those shown hereon.

Elevations based on GPS VRS connected to NC GPS Network. Vertical Datum NAVD 88.

Property Zoned GI-CZ  
 Setbacks to be verified by Engineer prior to development.

I, Michael S. Perdue certify that this plat was drawn under my supervision from an actual survey made under my supervision and is a portion property as shown in (DB. 8438, PG. 1116); that the ratio of precision as calculated 1: 20,000 + and was not adjusted; that this plat was prepared in accordance with G.S. 47-30 as amended. Witness my original signature, registration # and seal this 6th day of June 2023.

That this survey is of an existing parcel of land, existing structures and buildings and does not create a new street or change existing streets.

Michael S. Perdue, PLS# L-4322

All matters shown on recorded plats are shown on survey, if applicable.

There was evidence of recent earth moving work or construction was observed on the property.

There was no visible evidence of cemeteries or burial grounds found.

No evidence of the site being used as a solid waste dump, sump or sanitary landfill.

No evidence of wetlands being marked on subject property.

Property PIN# 1758479244

Survey Reference  
 (DB. 8438, PG. 1116)  
 (BM. 2000-01239)

ALTA/NSPS LAND TITLE SURVEY  
 FOR

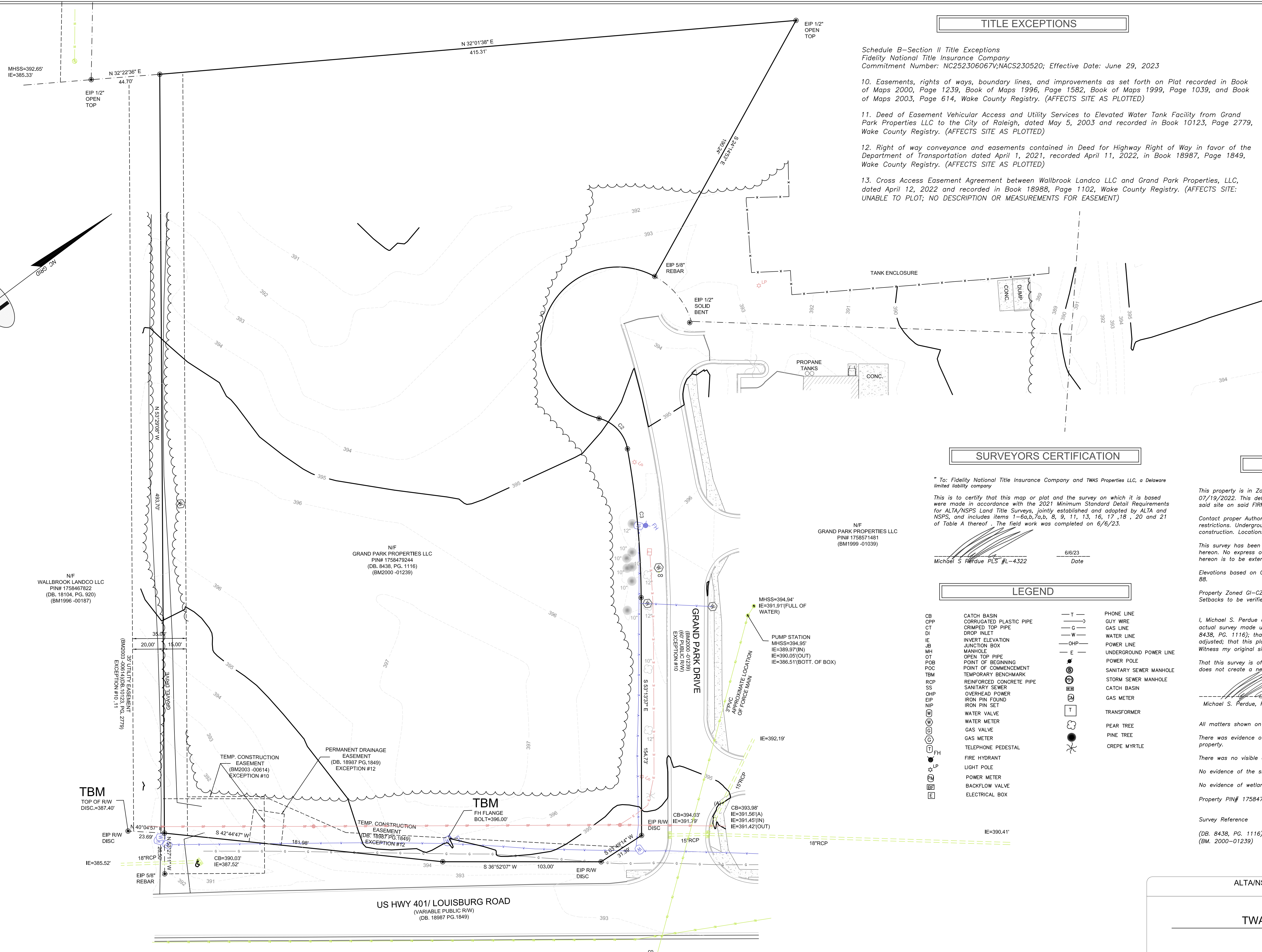
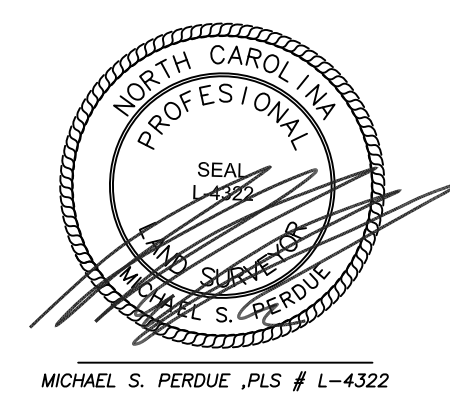
**TWAS Properties LLC**

TOWN: ROLESVILLE COUNTY: WAKE STATE: NORTH CAROLINA

DATE: 6/6/23 SCALE: 1:30

FIELD WORK: MSP DRAWN BY: MSP REVIEWED BY: MSP

MSP FILE: twrolesville MSP JOB#: 231820



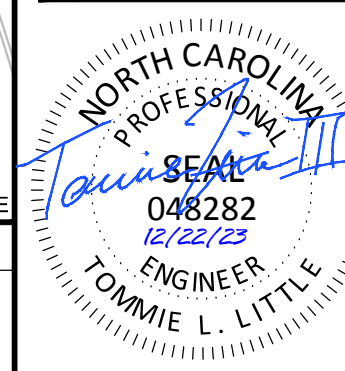
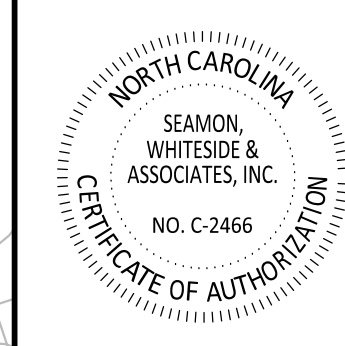
CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
C1	50.00'	1.6977'	99.20'	S 31°42'56" E	1194°32'39"	391.83'
C2	25.01'	28.63'	27.05'	N 83°49'48" E	65°34'40"	16.11'
C3	570.00'	197.34'	97.22'	S 58°23'28" E	9°47'04"	48.79'











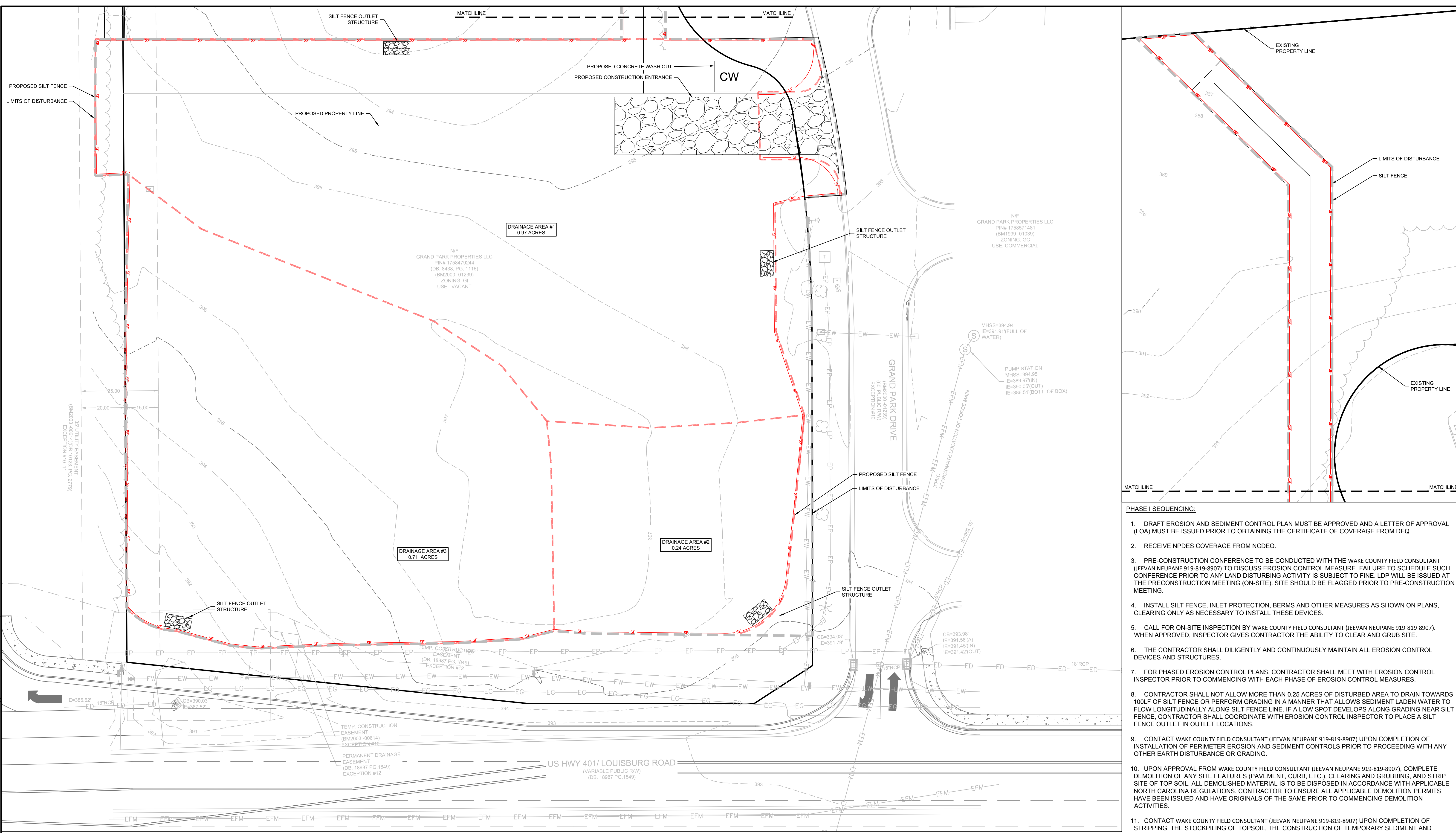
**TIDAL WAVE AUTO SPA**  
ROLESVILLE, NC

SW+ PROJECT: 10772  
DATE: 12/22/23  
DRAWN BY: CPE  
CHECKED BY: TLL

**REVISION HISTORY**

NO.	DESCRIPTION

**EROSION CONTROL PH I**



**PHASE I SEQUENCING:**

- DRAFT EROSION AND SEDIMENT CONTROL PLAN MUST BE APPROVED AND A LETTER OF APPROVAL (LOA) MUST BE ISSUED PRIOR TO OBTAINING THE CERTIFICATE OF COVERAGE FROM DEQ
- RECEIVE NPDES COVERAGE FROM NCDEQ.
- PRE-CONSTRUCTION CONFERENCE TO BE CONDUCTED WITH THE WAKE COUNTY FIELD CONSULTANT (JEEVAN NEUPANE 919-819-8907) TO DISCUSS EROSION CONTROL MEASURE. FAILURE TO SCHEDULE SUCH CONFERENCE PRIOR TO ANY LAND DISTURBING ACTIVITY IS SUBJECT TO FINE. LDP WILL BE ISSUED AT THE PRECONSTRUCTION MEETING (ON-SITE). SITE SHOULD BE FLAGGED PRIOR TO PRE-CONSTRUCTION MEETING.
- INSTALL SILT FENCE, INLET PROTECTION, BERMS AND OTHER MEASURES AS SHOWN ON PLANS. CLEARING ONLY AS NECESSARY TO INSTALL THESE DEVICES.
- CALL FOR ON-SITE INSPECTION BY WAKE COUNTY FIELD CONSULTANT (JEEVAN NEUPANE 919-819-8907). WHEN APPROVED, INSPECTOR GIVES CONTRACTOR THE ABILITY TO CLEAR AND GRUB SITE.
- THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES.
- FOR PHASED EROSION CONTROL PLANS, CONTRACTOR SHALL MEET WITH EROSION CONTROL INSPECTOR PRIOR TO COMMENCING WITH EACH PHASE OF EROSION CONTROL MEASURES.
- CONTRACTOR SHALL NOT ALLOW MORE THAN 0.25 ACRES OF DISTURBED AREA TO DRAIN TOWARDS 100LF OF SILT FENCE OR PERFORM GRADING IN A MANNER THAT ALLOWS SEDIMENT LADEN WATER TO FLOW LONGITUDINALLY ALONG SILT FENCE LINE. IF A LOW SPOT DEVELOPS ALONG GRADING NEAR SILT FENCE, CONTRACTOR SHALL COORDINATE WITH EROSION CONTROL INSPECTOR TO PLACE A SILT FENCE OUTLET IN OUTLET LOCATIONS.
- CONTACT WAKE COUNTY FIELD CONSULTANT (JEEVAN NEUPANE 919-819-8907) UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
- UPON APPROVAL FROM WAKE COUNTY FIELD CONSULTANT (JEEVAN NEUPANE 919-819-8907), COMPLETE DEMOLITION OF ANY SITE FEATURES (PAVEMENT, CURB, ETC.), CLEARING AND GRUBBING, AND STRIP SITE OF TOP SOIL. ALL DEMOLISHED MATERIAL IS TO BE DISPOSED IN ACCORDANCE WITH APPLICABLE NORTH CAROLINA REGULATIONS. CONTRACTOR TO ENSURE ALL APPLICABLE DEMOLITION PERMITS HAVE BEEN ISSUED AND HAVE ORIGINALS OF THE SAME PRIOR TO COMMENCING DEMOLITION ACTIVITIES.
- CONTACT WAKE COUNTY FIELD CONSULTANT (JEEVAN NEUPANE 919-819-8907) UPON COMPLETION OF STRIPPING, THE STOCKPILING OF TOPSOIL, THE CONSTRUCTION OF TEMPORARY SEDIMENT AND EROSION CONTROL FACILITIES, DISPOSAL OF ALL WASTE MATERIAL, AND PREPARATION OF THE GROUND.

**INLET PROTECTION NOTE:**

PROVIDE APPROPRIATE INLET PROTECTION FOR VARIOUS PHASES OF THE CONSTRUCTION. HARDWARE CLOTH AND GRAVEL PROTECTION SHALL BE PROVIDED FOR INLETS IN NON-PAVED AREA. WEEP FILTERS SHALL BE PROVIDED FOR INLETS IN PAVED AREAS.

**TOTAL SITE ACREAGE**  
1.92 ACRES

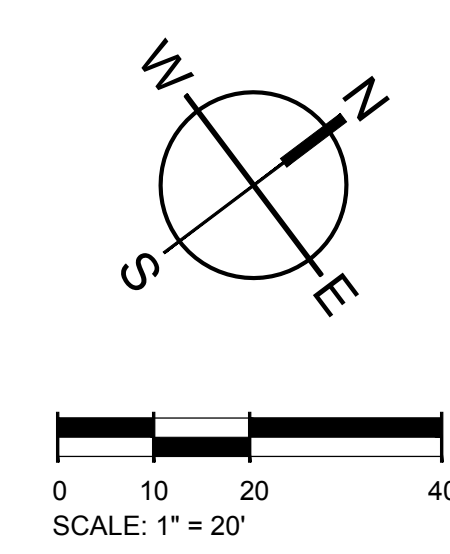
**DISTURBED ACREAGE**  
2.02 ACRES

**EXISTING UTILITY NOTE:**

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

**STABILIZATION NOTE:**

PROVIDE FINAL STABILIZATION FOR ALL DISTURBED AREAS. REFER TO THE LANDSCAPE PLAN FOR SPECIFIC MATERIALS / PLANTINGS. ANY DISTURBED AREA NOT ADDRESSED IN THE LANDSCAPE PLANS SHALL BE PERMANENT SEEDED.



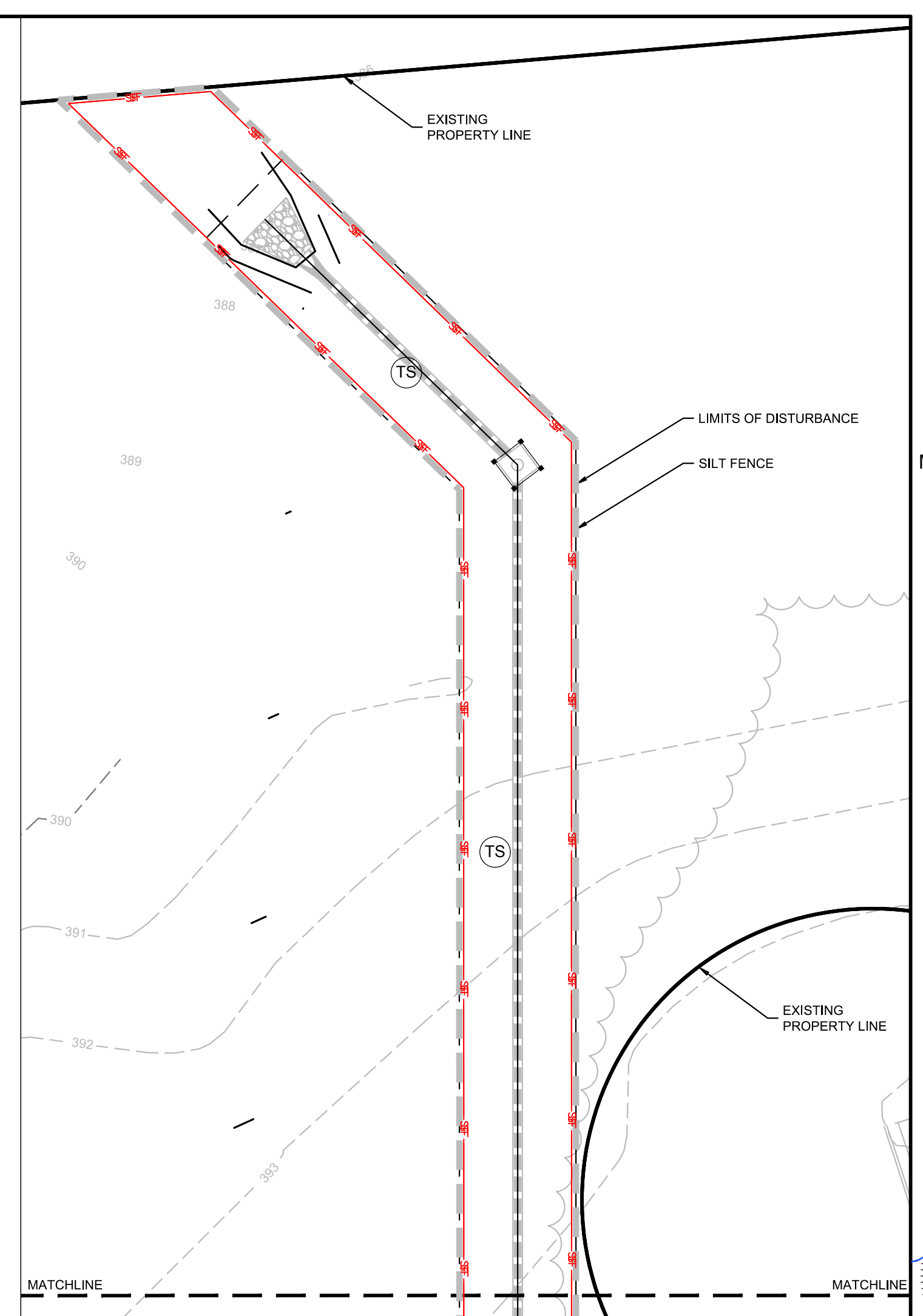
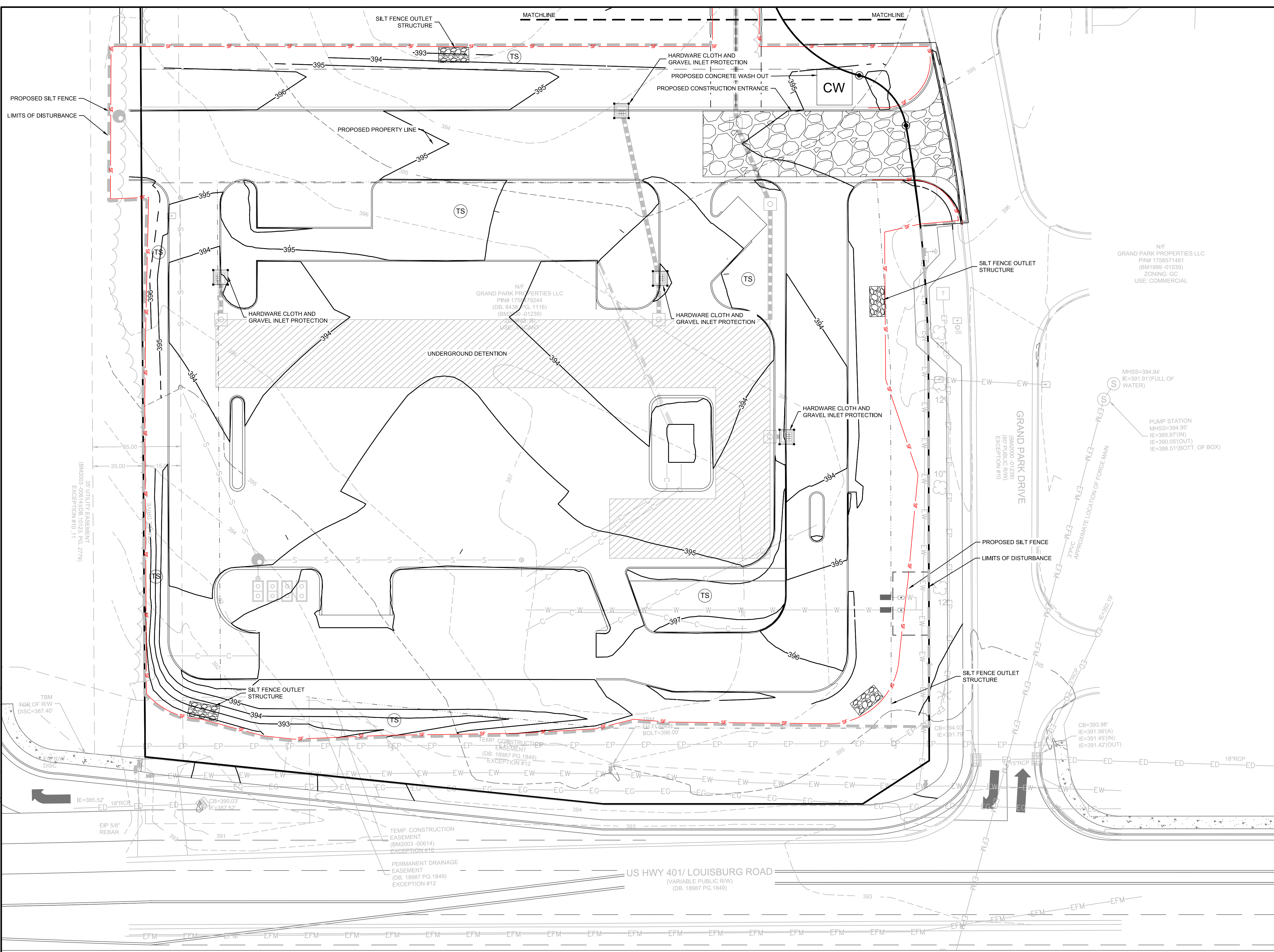
**E&S PLAN LEGEND**

LIMITS OF DISTURBANCE	CONCRETE WASHOUT BASIN (SEE DETAIL)	CW
SILT FENCE, STANDARD	SILT BAG INLET PROTECTION	
SILT FENCE OUTLET/RIP RAP APRON/RIP RAP BASIN & ROCK SEDIMENT TRAP	HARDWARE CLOTH AND GRAVEL INLET PROTECTION	
CONSTRUCTION ENTRANCE	TEMPORARY SEEDING	TS
PERMANENT SOD		PS



501 WANDOPARKBOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29546 | JUDSON MILLS BUILDING 6000 TOY EASLEY BROOK RD, SUITE 6000 | GREENVILLE, SC 29611 | 230 PETERSON DR. | CHARLOTTE, NC 28217 | 710 N. CEDAR STREET | SUMMERVILLE, SC 29586 | 104 N. DANIEL MORGAN AVENUE, SUITE 300 | SPARTANBURG, SC 29301





- PHASE II SEQUENCING:**
- CONTACT THE WAKE COUNTY FIELD CONSULTANT (JEEVAN NEUPANE 919-819-8907) FOR APPROVAL TO PROCEED.
  - TEMPORARILY STABILIZE GRADED AREAS (NON-STEEP SLOPES) AS REQUIRED.
  - COMPLETE ROUGH GRADING. COMPLETE THE INSTALLATION OF STORMWATER SYSTEM AND SITE UTILITIES.
  - CONTACT THE WAKE COUNTY FIELD CONSULTANT (JEEVAN NEUPANE 919-819-8907) UPON COMPLETION OF ROUGH GRADING, BUT PRIOR TO PLACING TOPSOIL, PERMANENT DRAINAGE, OR OTHER SITE DEVELOPMENT IMPROVEMENTS AND GROUND COVERS.
  - INSTALL CURB ALONG THE PERIMETER OF THE SITE TO AID IN THE PROTECTION OF THE EXISTING ADJACENT PROPERTIES AND THE ADJACENT ROADWAYS.
- INLET PROTECTION NOTE:**
- PROVIDE APPROPRIATE INLET PROTECTION FOR VARIOUS PHASES OF THE CONSTRUCTION. HARDWARE CLOTH AND GRAVEL INLET PROTECTION SHALL BE PROVIDED FOR INLETS IN NON-PAVED AREA. DANDY SACK INLET PROTECTION SHALL BE PROVIDED FOR INLETS IN PAVED AREAS.

**TOTAL SITE ACREAGE**  
1.92 ACRES

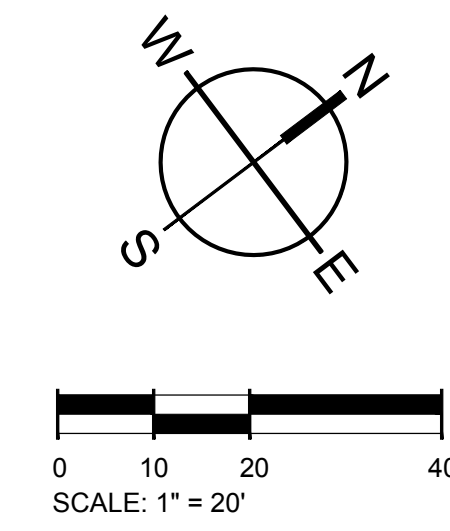
**DISTURBED ACREAGE**  
2.02 ACRES

**EXISTING UTILITY NOTE:**

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

**STABILIZATION NOTE:**

PROVIDE FINAL STABILIZATION FOR ALL DISTURBED AREAS. REFER TO THE LANDSCAPE PLAN FOR SPECIFIC MATERIALS / PLANTINGS. ANY DISTURBED AREA NOT ADDRESSED IN THE LANDSCAPE PLANS SHALL BE PERMANENT SEEDED.

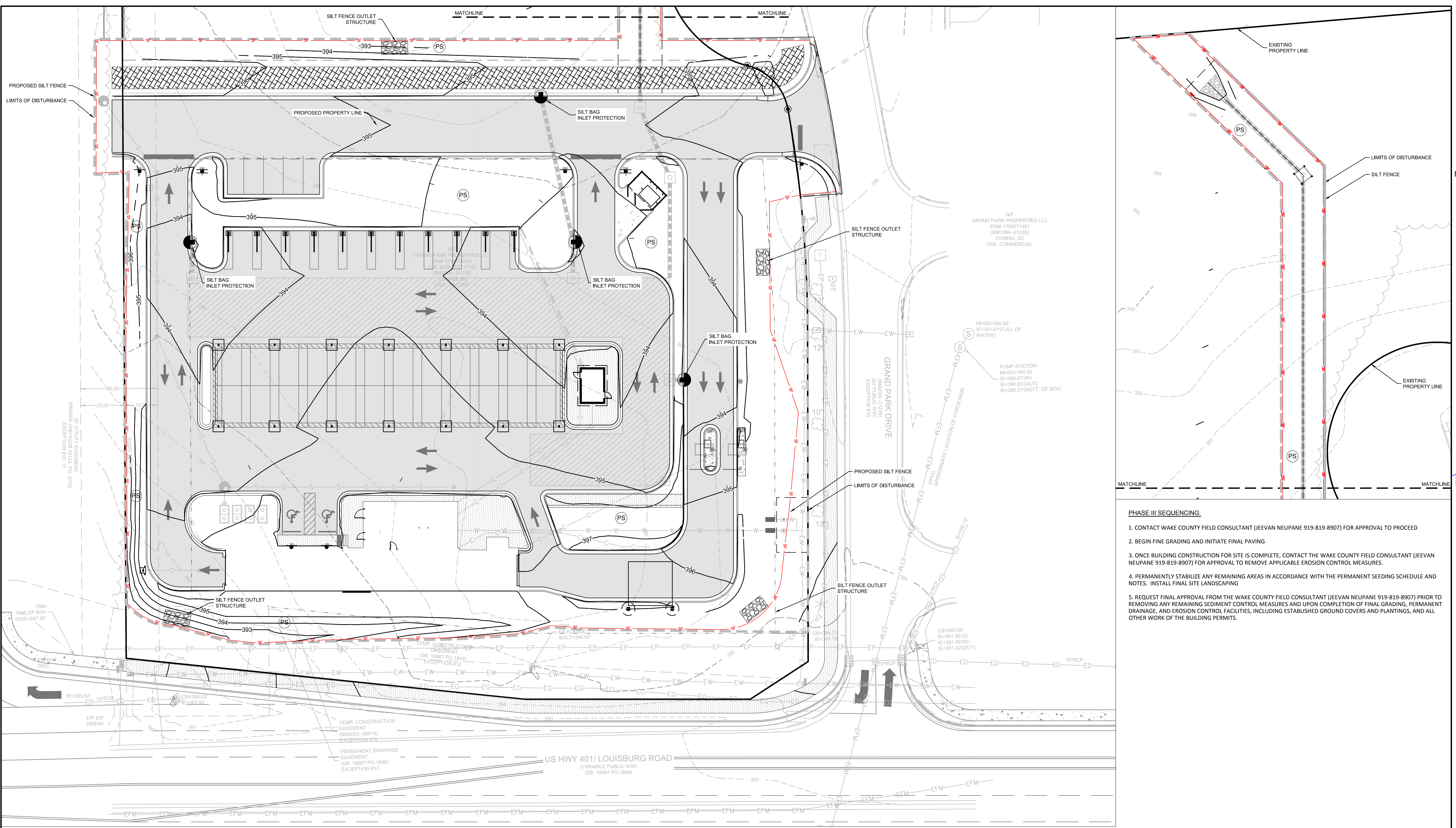


**E&S PLAN LEGEND**

LIMITS OF DISTURBANCE	CONCRETE WASHOUT BASIN (SEE DETAIL)	CW
SILT FENCE, STANDARD	SILT BAG INLET PROTECTION	
SILT FENCE OUTLET/ RIP RAP APRON/ RIP RAP BASIN & ROCK SEDIMENT TRAP	HARDWARE CLOTH AND GRAVEL INLET PROTECTION	
CONSTRUCTION ENTRANCE	TEMPORARY SEEDING	TS
PERMANENT SOD		PS

501 WANDO PARK BOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29546 | JUDSON MILLS BUILDING 6000, 701 EASLEY BROOK RD, SUITE 6000, GREENVILLE, SC 29611 | 230 PETERSON DR., CHARLOTTE, NC 28217 | 710 N. CEDAR STREET | SUMMERVILLE, SC 29586 | 104 N. DANIEL MORGAN AVENUE, SUITE 300 | SPARTANBURG, SC 29301





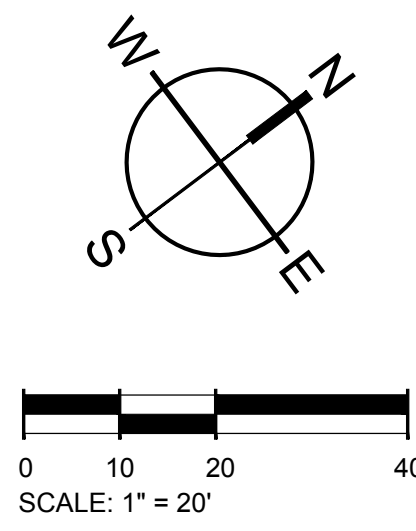
- PHASE III SEQUENCING:**
1. CONTACT WAKE COUNTY FIELD CONSULTANT (JEEVAN NEUPANE 919-819-8907) FOR APPROVAL TO PROCEED
  2. BEGIN FINE GRADING AND INITIATE FINAL PAVING
  3. ONCE BUILDING CONSTRUCTION FOR SITE IS COMPLETE, CONTACT THE WAKE COUNTY FIELD CONSULTANT (JEEVAN NEUPANE 919-819-8907) FOR APPROVAL TO REMOVE APPLICABLE EROSION CONTROL MEASURES.
  4. PERMANENTLY STABILIZE ANY REMAINING AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING SCHEDULE AND NOTES. INSTALL FINAL SITE LANDSCAPING
  5. REQUEST FINAL APPROVAL FROM THE WAKE COUNTY FIELD CONSULTANT (JEEVAN NEUPANE 919-819-8907) PRIOR TO REMOVING ANY REMAINING SEDIMENT CONTROL MEASURES AND UPON COMPLETION OF FINAL GRADING, PERMANENT DRAINAGE, AND EROSION CONTROL FACILITIES, INCLUDING ESTABLISHED GROUND COVERS AND PLANTINGS, AND ALL OTHER WORK OF THE BUILDING PERMITS.

**TOTAL SITE ACREAGE**  
1.92 ACRES

**DISTURBED ACREAGE**  
2.02 ACRES

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

**STABILIZATION NOTE:**  
PROVIDE FINAL STABILIZATION FOR ALL DISTURBED AREAS. REFER TO THE LANDSCAPE PLAN FOR SPECIFIC MATERIALS / PLANTINGS. ANY DISTURBED AREA NOT ADDRESSED IN THE LANDSCAPE PLANS SHALL BE PERMANENT SEEDDED.



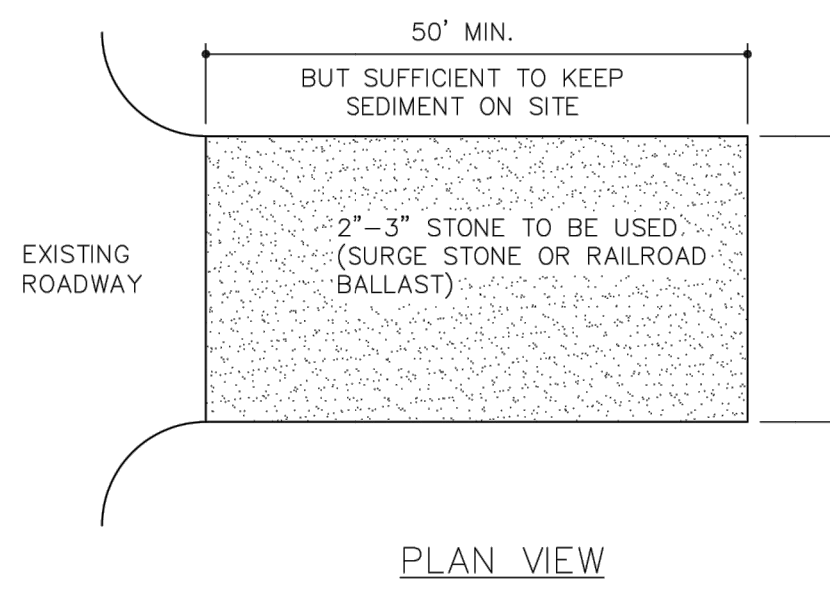
**E&S PLAN LEGEND**

LIMITS OF DISTURBANCE	---	CONCRETE WASHOUT BASIN (SEE DETAIL)	CW
SILT FENCE, STANDARD	—+—	SILT BAG INLET PROTECTION	⊙
SILT FENCE OUTLET/RIP RAP APRON/RIP RAP BASIN & ROCK SEDIMENT TRAP	▨	HARDWARE CLOTH AND GRAVEL INLET PROTECTION	⊠
CONSTRUCTION ENTRANCE	▨	TEMPORARY SEEDING	⊙
PERMANENT SOD	⊙		



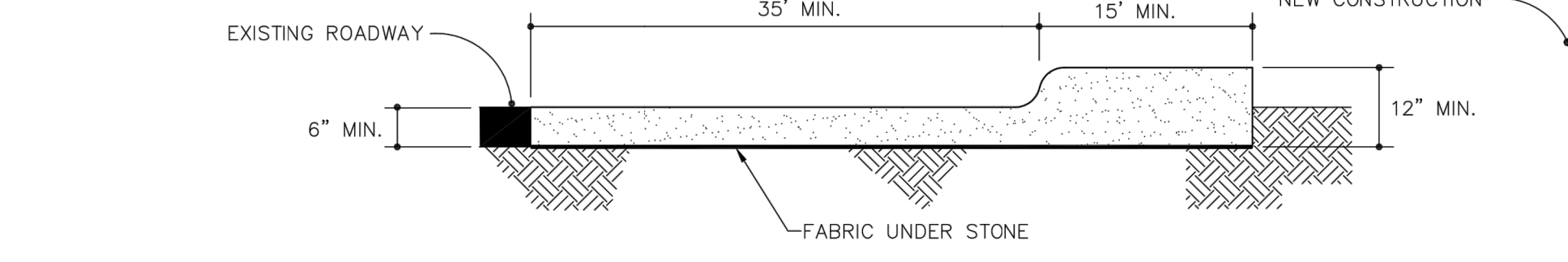
501 WINDO PARK BOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29546 | JUDSON MILLS BUILDING 6000, 701 EASLEY BROOK RD, SUITE 6000 | GREENVILLE, SC 29611 | 230 PETERSON DR. | CHARLOTTE, NC 28217 | 7124 CEDAR STREET | SUMMERVILLE, SC 29585 | 104 N. DANIEL MORGAN AVENUE, SUITE 300 | SPARTANBURG, SC 29301  
COPYRIGHT © SEAMON WHITESIDE & ASSOCIATES, INC. THIS DRAWING SHALL NOT BE REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION.





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

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

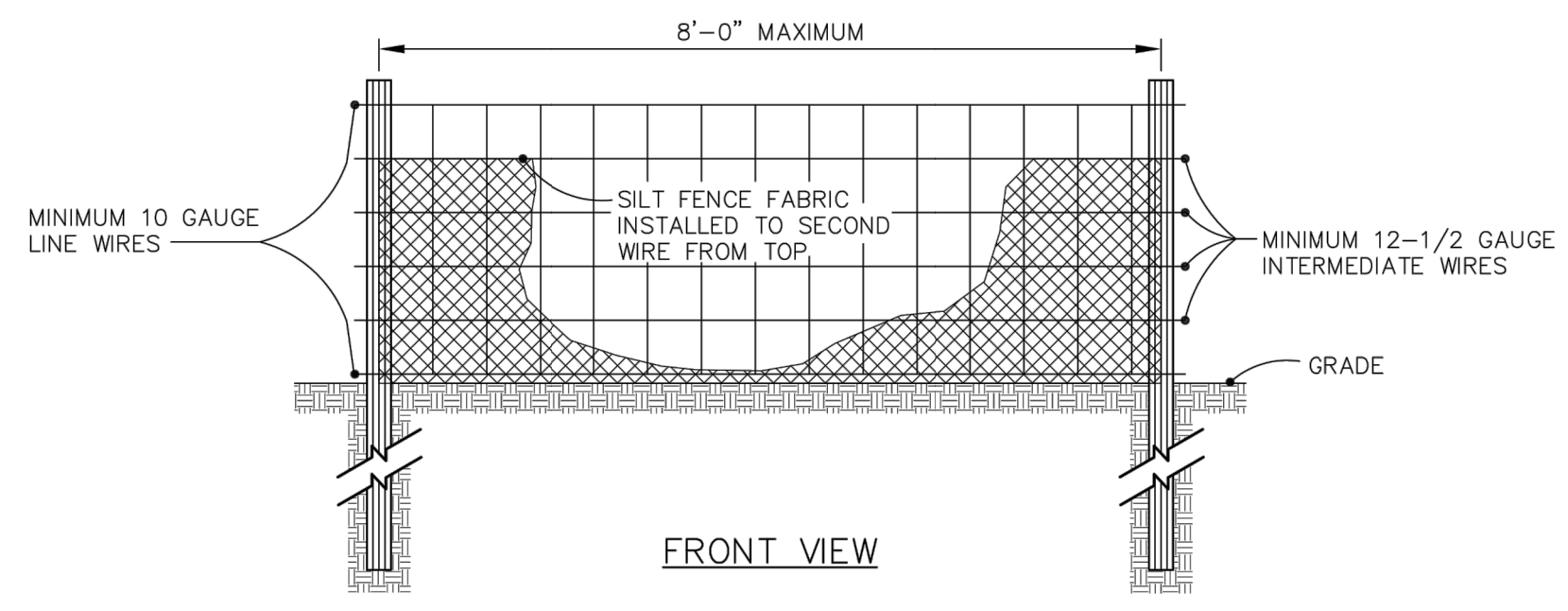


CROSS SECTION

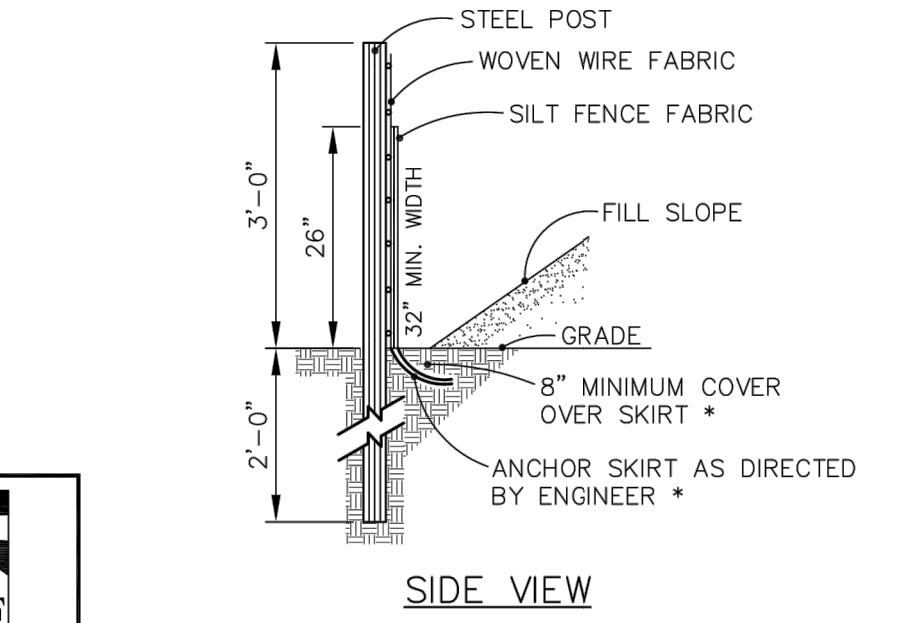
STANDARD CONSTRUCTION ENTRANCE



EFFECTIVE: 01/31/08



FRONT VIEW



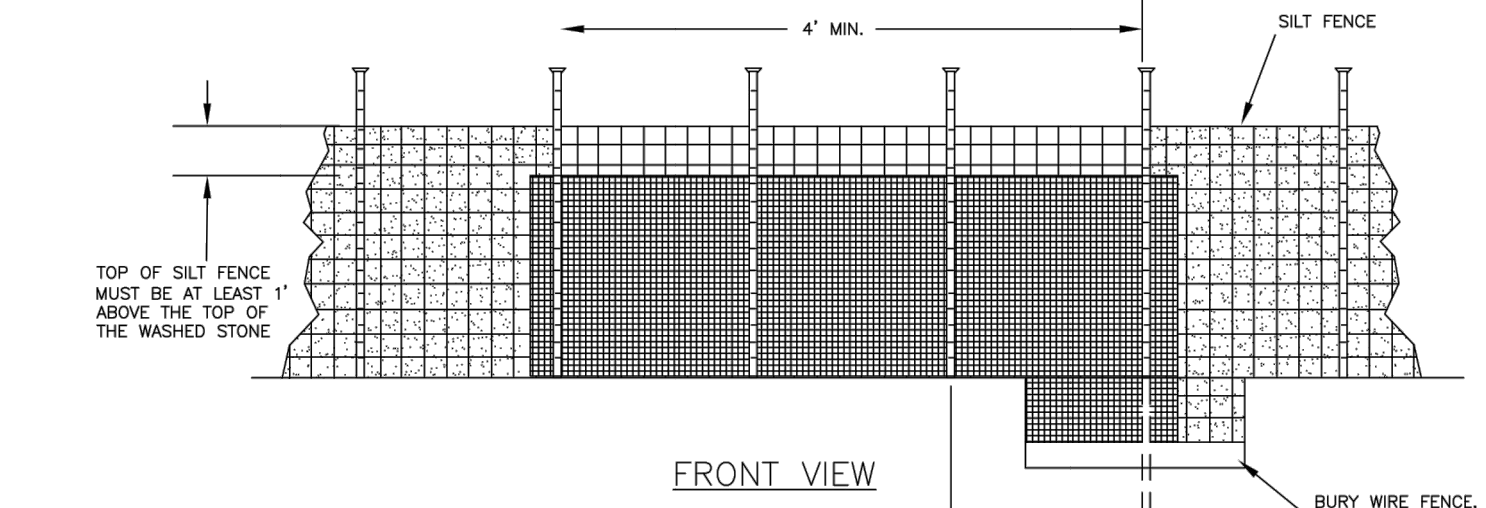
SIDE VIEW

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

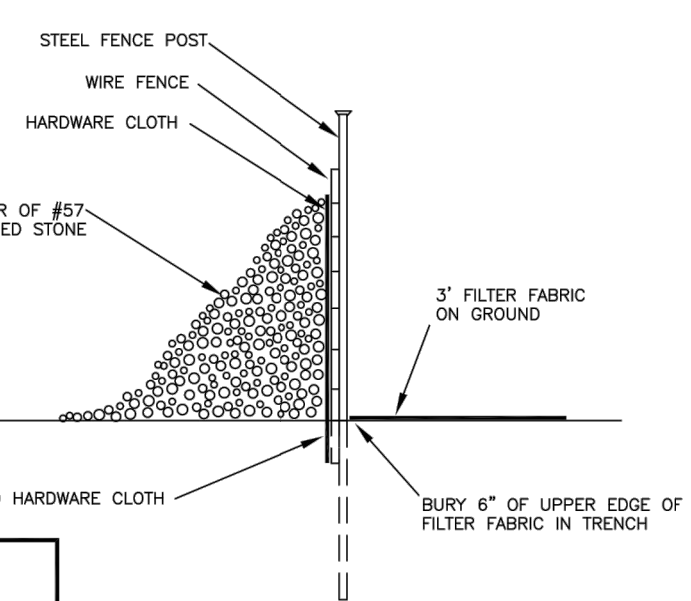
STANDARD TEMPORARY SILT FENCE



EFFECTIVE: 01/31/08



FRONT VIEW



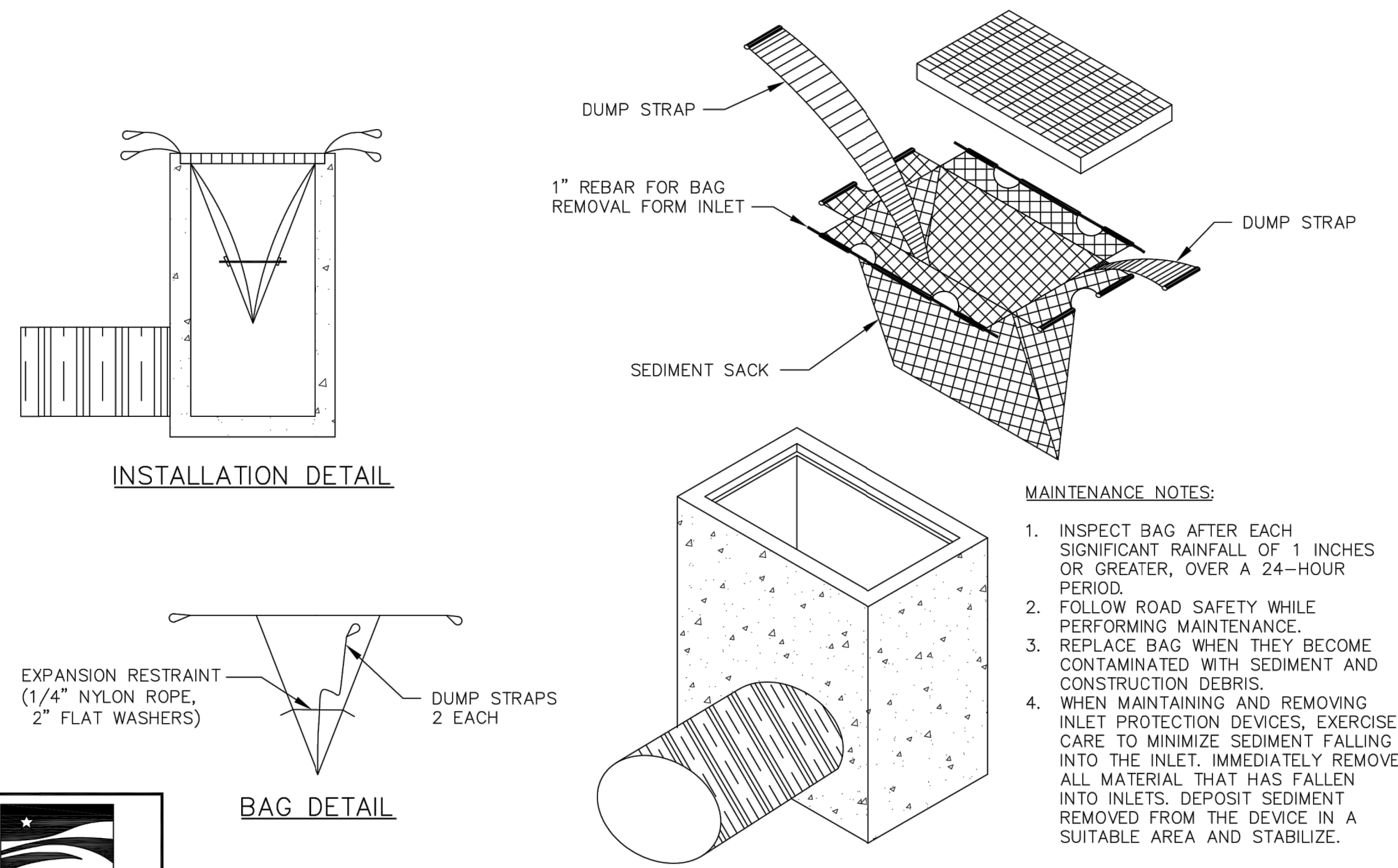
SECTION VIEW

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

STANDARD SILT FENCE OUTLET



EFFECTIVE: 01/31/08



INSTALLATION DETAIL

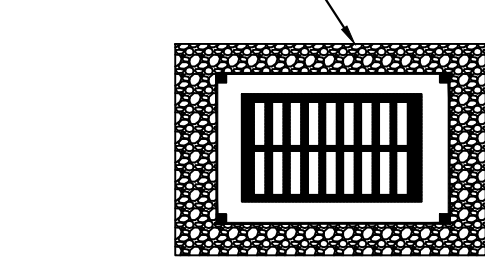
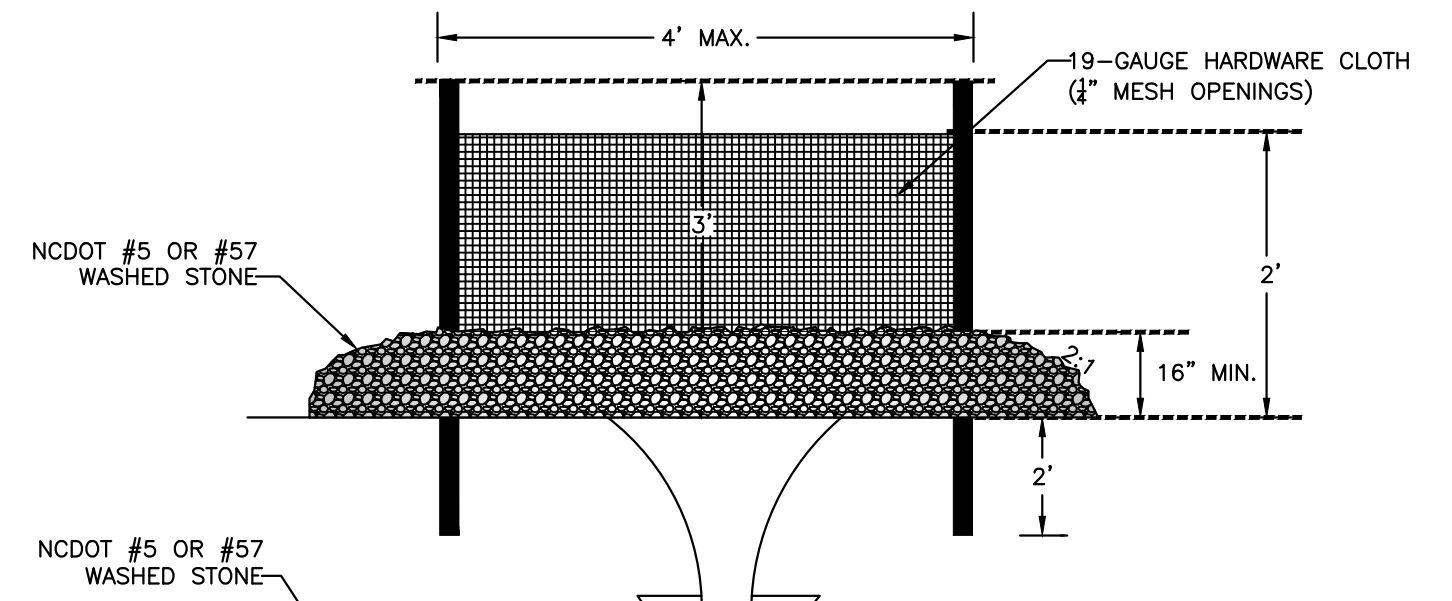
**MAINTENANCE NOTES:**  
 1. INSPECT BAG AFTER EACH SIGNIFICANT RAINFALL OF 1 INCHES OR GREATER, OVER A 24-HOUR PERIOD.  
 2. FOLLOW ROAD SAFETY WHILE PERFORMING MAINTENANCE.  
 3. REPLACE BAG WHEN THEY BECOME CONTAMINATED WITH SEDIMENT AND CONSTRUCTION DEBRIS.  
 4. WHEN MAINTAINING AND REMOVING INLET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

STANDARD SILT BAG - INLET SEDIMENT CONTROL DEVICE

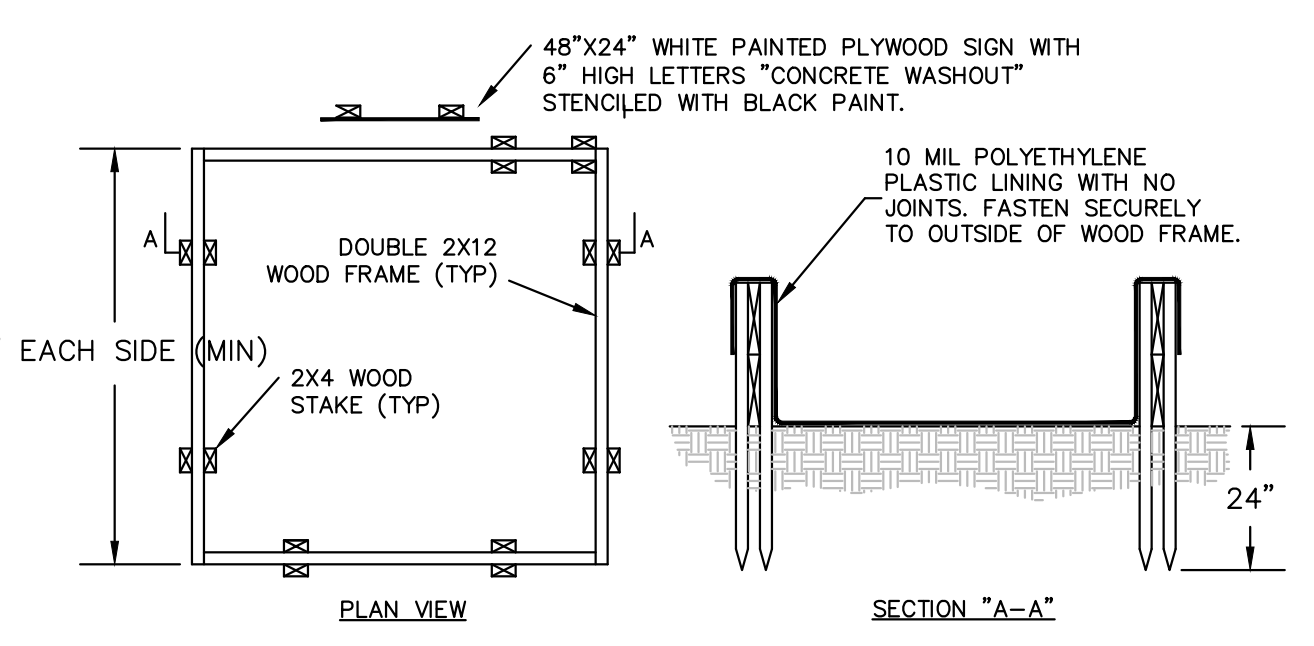


EFFECTIVE: 01/31/08

**GENERAL NOTES:**  
 1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.  
 2. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.  
 3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.  
 4. PLACE CLEAN GRAVEL (NO DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.  
 5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.  
 6. COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUND COVER.



Hardware Cloth and Gravel Inlet Protection  
SCALE: NOT TO SCALE

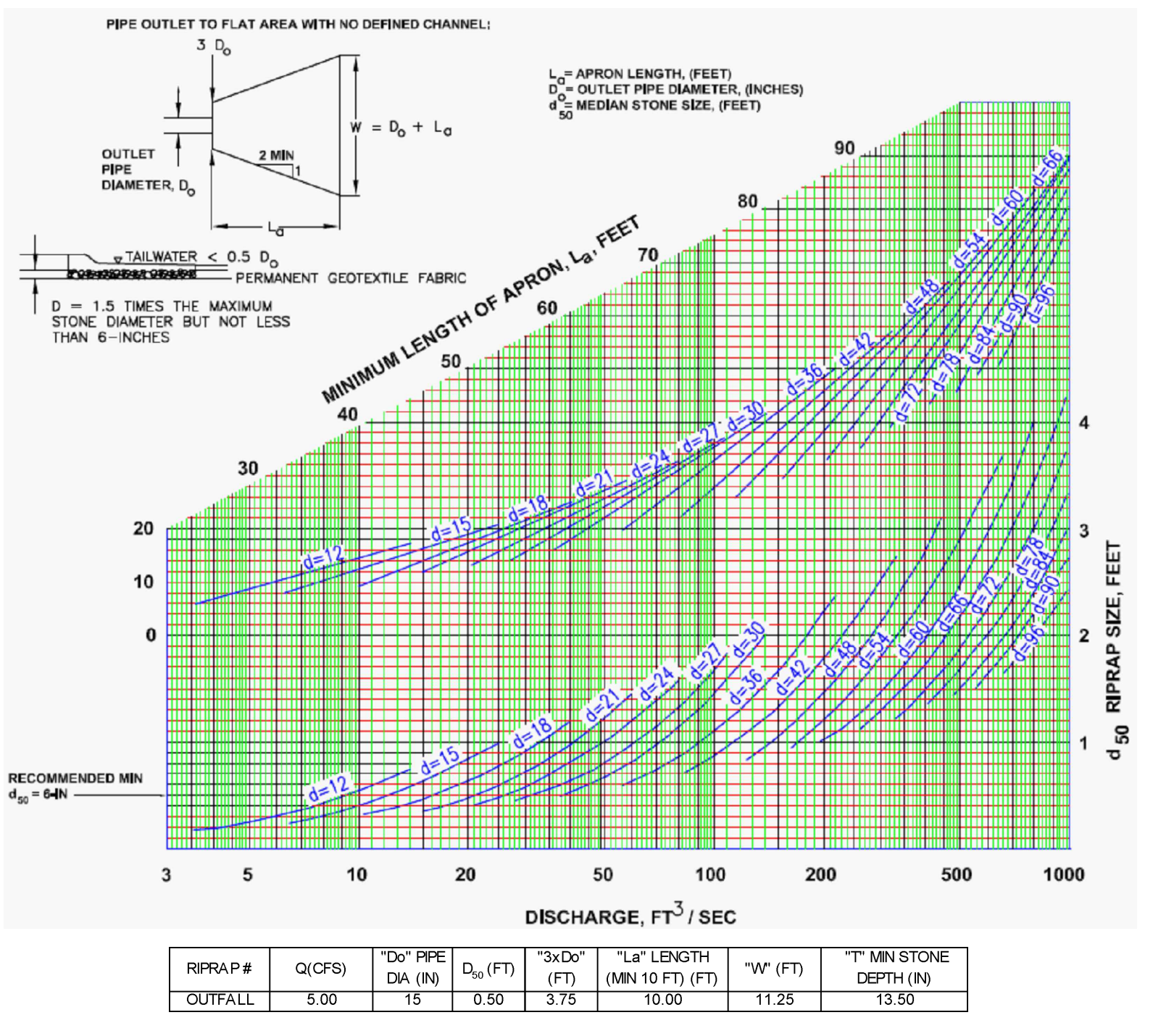


**NOTES:**  
 1. PREPARE GROUND & FRAME SUCH THAT SHARP OBJECTS/CORNERS DO NOT DAMAGE THE LINER. PROMPTLY REMOVE CONTENTS (AS NOTED BELOW) & REPLACE LINER IF LEAKAGE IS OBSERVED.  
 2. LIQUID & CONCRETE DEBRIS SHALL BE REMOVED BY VACUUM TRUCK & LEGALLY DISPOSED UPON COMPLETION OF PROJECT OR ANYTIME WHEN LIQUID REACHES A LEVEL 8" BELOW THE TOP.

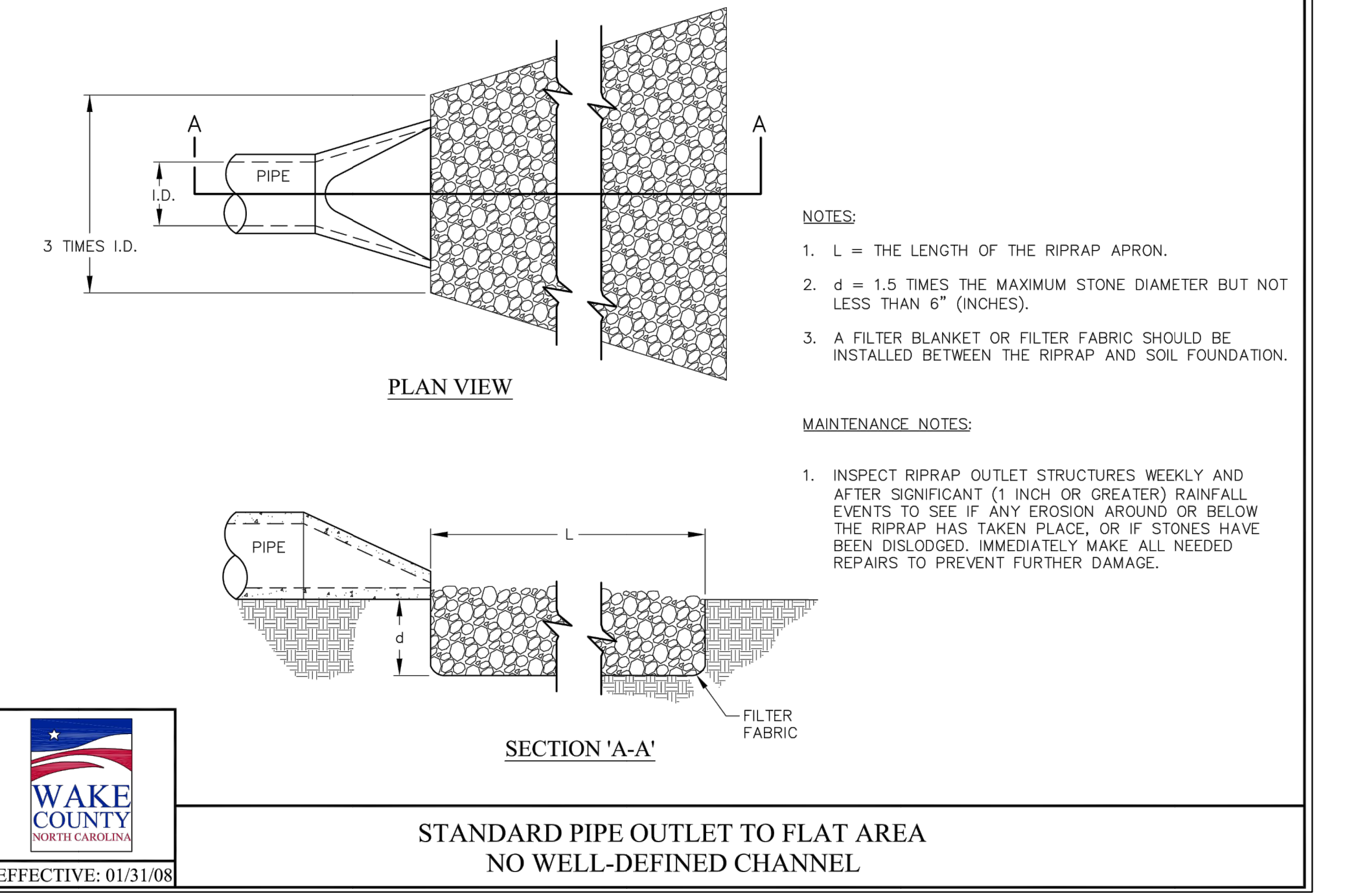
Concrete Washout Basin  
SCALE: NOT TO SCALE

FOR LATE WINTER AND EARLY SPRING:	FOR SUMMER:	FOR FALL:
<p><b>SEEDING MIXTURE:</b>            RYE (GRAIN) - 120 LB/ACRE            ANNUAL LESPEDEZA (KOBE) - 50 LB/ACRE            (OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXCEED BEYOND JUNE)</p> <p><b>SEEDING DATES:</b>            JAN. 1 - MAY 1</p>	<p><b>SEEDING MIXTURE:</b>            GERMAN MILLET - 40 LB/ACRE            (A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 LB/ACRE)</p> <p><b>SEEDING DATES:</b>            MAY 1 - AUG. 15</p>	<p><b>SEEDING MIXTURE:</b>            RYE (GRAIN) - 120 LB/ACRE</p> <p><b>SEEDING DATES:</b>            AUG. 15 - DEC 30</p>
<p><b>SOIL AMENDMENTS:</b>            FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER</p> <p><b>MULCH:</b>            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.</p> <p><b>MAINTENANCE:</b>            REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE</p>	<p><b>SOIL AMENDMENTS:</b>            FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER</p> <p><b>MULCH:</b>            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.</p> <p><b>MAINTENANCE:</b>            REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE</p>	<p><b>SOIL AMENDMENTS:</b>            FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER</p> <p><b>MULCH:</b>            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.</p> <p><b>MAINTENANCE:</b>            REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/ACRE KOBE LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.</p>

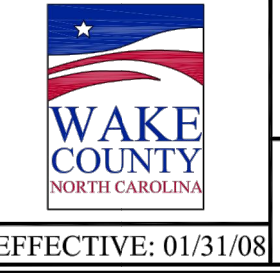
Temporary Seeding Schedule  
SCALE: NOT TO SCALE



Pipe Outlet Riprap Protection with Calculations  
SCALE: NOT TO SCALE



STANDARD PIPE OUTLET TO FLAT AREA NO WELL-DEFINED CHANNEL



EFFECTIVE: 01/31/08



MOUNT PLEASANT, SC 843.884.1667  
 GREENVILLE, SC 864.298.0534  
 SUMMERVILLE, SC 843.972.0710  
 SPARTANBURG, SC 864.272.1272  
 CHARLOTTE, NC 980.312.5450  
 WWW.SEAMONWHITESIDE.COM



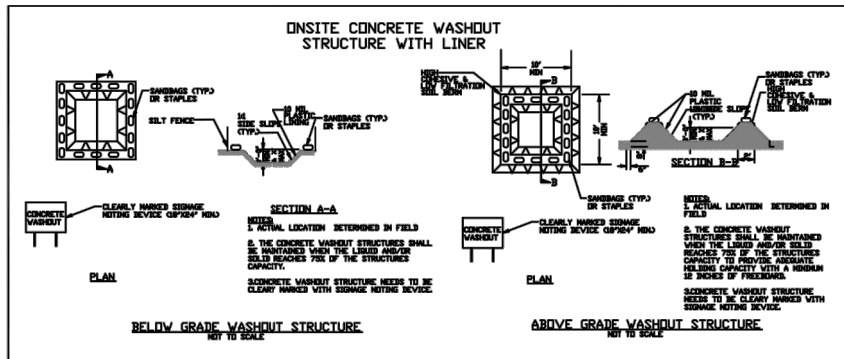
**TIDAL WAVE AUTO SPA**  
 ROLESVILLE, NC

SW+ PROJECT: 10772  
 DATE: 12/22/23  
 DRAWN BY: CPE  
 CHECKED BY: TLL

REVISION HISTORY

EROSION CONTROL DETAILS





- CONCRETE WASHOUTS**
- Do not discharge concrete or cement slurry from the site.
  - Dispose of, or recycle steel, 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 on 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. Post signage on the washout itself to identify this location.
  - Remove loadings 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 loadings 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.

- 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 provide 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 relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
  - Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
  - Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

- EARTHEN STOCKPILE MANAGEMENT**
- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown that 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.

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

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

**SECTION E: GROUND STABILIZATION**

Site Area Description	Required Ground Stabilization Timeframes	
	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. -7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(d) Slopes 3:1 to 4:1	14	
(e) Areas with slopes flatter than 4:1	14	

**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>Roller 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>Roller 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.

**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 if:
  - They are 25 gallons or more,
  - They are less than 25 gallons but cannot be cleaned up within 24 hours,
  - They cause sheen on surface waters (regardless of volume), or
  - They are within 100 feet of surface waters (regardless of volume).
- Releases of hazardous substances in excess of reportable quantities under Section 313 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. 148-215.85.
- 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) 856-0368.

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>Anticipated bypasses (40 CFR 122.41(m)(7))</li> <li>Unanticipated bypasses (40 CFR 122.41(m)(8))</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> <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> <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 cause, 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(m)(8)).</li> <li>Division staff may waive the requirement for a written report on a case-by-case basis.</li> </ul>



EFFECTIVE: 04/01/19

**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.
- Documentation to be Retained for Three Years  
All data used to complete the e-NCR 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 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) E&S Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	Daily rainfall amounts. If no daily rain gauge observations are made during wettest or holiday periods, and no individual day rainfall information is available, record the cumulative rain measurements for those unattended days (note this will determine if a rain inspection is required). Days on which no rainfall occurred shall be recorded as "Zero." The permittee may use another rain-measuring device approved by the Division. 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 measures, 6. Description, evidence, and date of corrective actions taken.
(2) Stormwater discharge outfalls (SDCO)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollutants 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.
(3) Perimeter of site	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 perimeter of the site inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollutants 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) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item 2)(c) of this permit.
(5) 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 redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframes or an assurance that they will be provided as soon as possible.

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

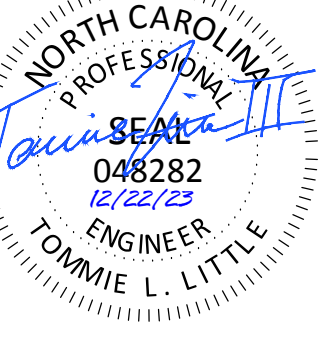
**PART II, SECTION 6, ITEM (4) DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT**

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 sized, 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.
- Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING





**TIDAL WAVE AUTO SPA**  
ROLESVILLE, NC

SW+ PROJECT: 10772  
DATE: 12/22/23  
DRAWN BY: CPE  
CHECKED BY: TLL

REVISION HISTORY	

SITE PLAN

**SITE INFORMATION:**  
ADDRESS: ROLESVILLE, NC  
PROPERTY AREA: 1.92 ACRES  
PARCEL: 1758479244  
EXISTING USE: UNDEVELOPED  
PROPOSED USE: CAR WASH

PROPERTY ZONING: GI-CZ (GENERAL INDUSTRIAL - CONDITIONAL ZONING)  
BUILDING SETBACKS:  
FRONT (SE): 30'  
CORNER (NE): 15'  
SIDE (NW): 15'  
SIDE (SW): 30'

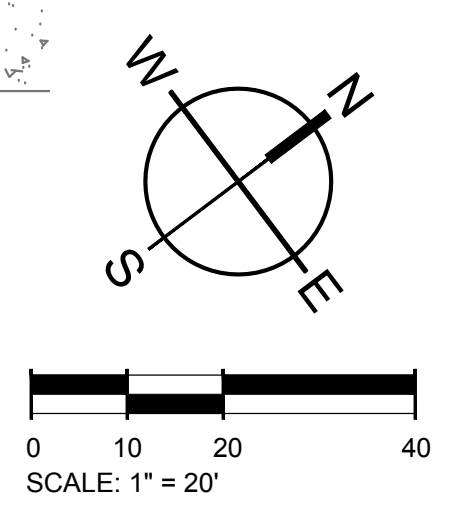
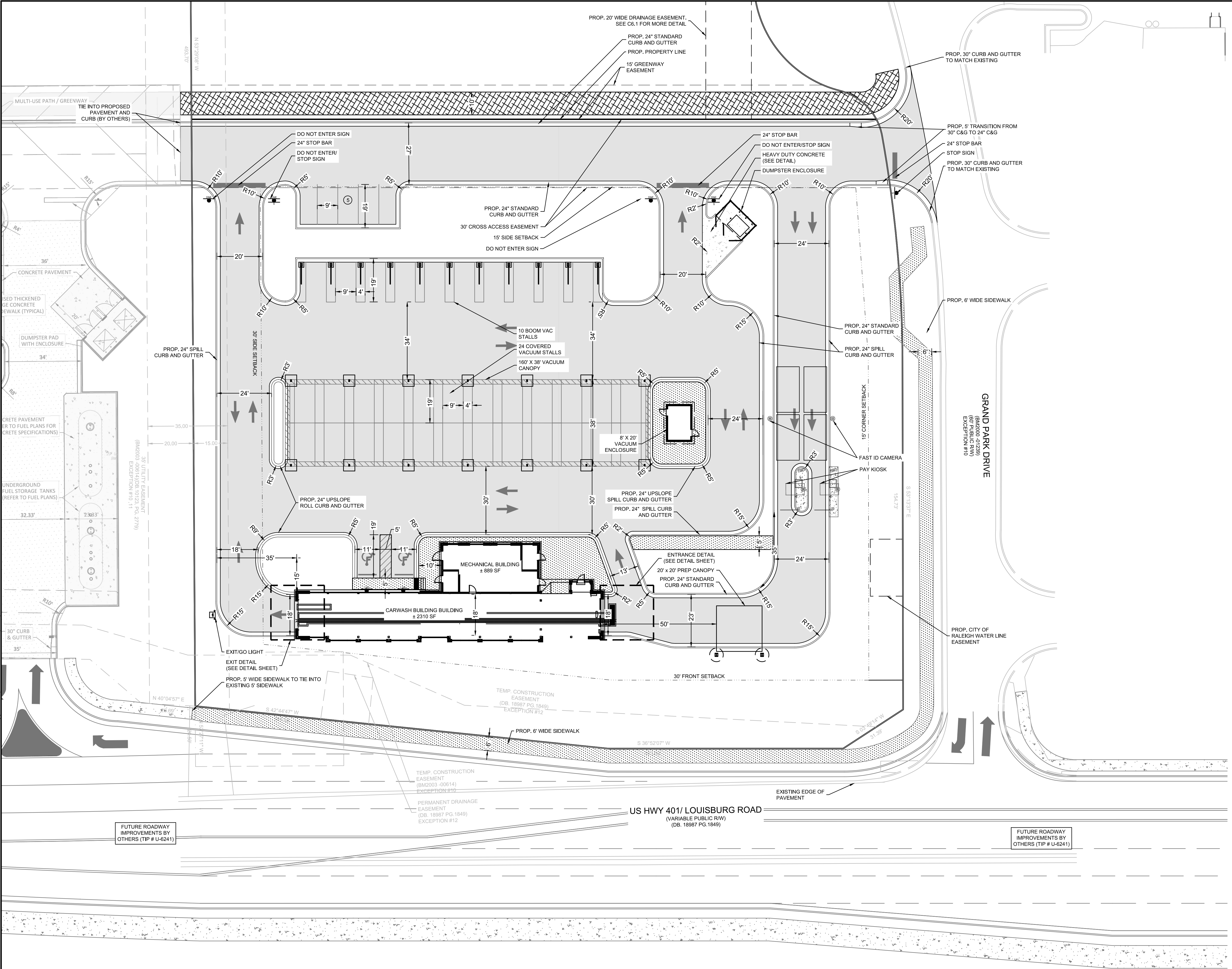
PERIMETER LANDSCAPE YARDS:  
NORTHEAST: 15'

REQUIRED OPEN SPACE (5%) = 0.01 AC (4182 SF)

**PRE VS. POST DEVELOPMENT AREA:**  
SITE AREA: 1.92 AC  
PRE-IMPERVIOUS AREA: 0.04 AC (2.08%)  
POST-IMPERVIOUS AREA: 1.30 AC (67.7%)

**PARKING NOTE:**  
PARKING REQUIRED: 1 SPACE PER 400 SF GFA OR 5 SPACES MINIMUM = 5 SPACES  
PARKING PROVIDED:  
EMPLOYEE SPACES: 5 SPACES (1 ADA)  
(4 MAX ON SHIFT)  
VACUUM STALLS: 34 STALLS

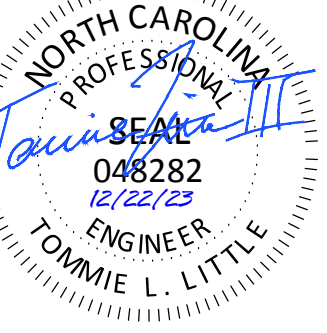
**SITE LAYOUT AND STAKING NOTES:**  
1. CONTRACTOR SHALL CAREFULLY EXAMINE ALL DOCUMENTS AND THE CONSTRUCTION SITE TO OBTAIN FIRST HAND KNOWLEDGE OF EXISTING CONDITIONS.  
2. ENTIRE SITE SHALL BE DRESSED TO UNIFORM, WELL DRAINED AND VISUALLY APPEALING SURFACE WITH A MINIMUM TOPSOIL LAYER OF FOUR INCHES.  
3. ALL STRIPING AND SIGNS SHALL CONFORM WITH THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES LATEST EDITION. PARKING STALL STRIPING TO BE WHITE WITH BLUE HANDICAPPED STRIPING.  
4. ALL HANDICAP PARKING SPACED AND ACCESSIBLE ROUTE SHALL CONFORM WITH THE AMERICAN WITH DISABILITY ACT DESIGN GUIDELINES AND SPECIFICATIONS LATEST EDITION.  
5. DIMENSIONS AND CURVE RADII ARE GIVEN TO FACE OF CURB, WHERE CURB AND GUTTER IS SHOWN. OTHERWISE DIMENSIONS ARE GIVEN TO THE EDGE OF PAVEMENT. CONTRACTOR IS TO COORDINATE WITH THE ARCHITECTURAL PLANS AS TO THE BUILDING LAYOUT AND DIMENSIONS.



SITE LEGEND	
	PROPOSED SIDEWALK
	HEAVY DUTY CONCRETE PAVEMENT
	STANDARD DUTY CONCRETE PAVEMENT
	ASPHALT GREENWAY
	STOP SIGN
	DO NOT ENTER SIGN
	HANDICAP PARKING SIGN

501 WINDO PARK BOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29546 | JUDSON MILLS BUILDING 6000, 701 EASLEY BROOK RD, SUITE 6000, GREENVILLE, SC 29611 | 710 N. CEDAR STREET | SUMMERVILLE, SC 29586 | 104 N. DANIEL MORGAN AVENUE, SUITE 300 | SPARTANBURG, SC 29301  
 COPYRIGHT © SEAMON WHITESIDE & ASSOCIATES, INC. THIS DRAWING SHALL NOT BE REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION.





**TIDAL WAVE AUTO SPA**  
ROLESVILLE, NC

SW+ PROJECT: 10772  
DATE: 12/22/23  
DRAWN BY: CPE  
CHECKED BY: TLL

**REVISION HISTORY**

NO.	DESCRIPTION

**VEHICLE STACKING & TURNING MOVEMENT**

**SITE INFORMATION:**

ADDRESS: ROLESVILLE, NC  
PROPERTY AREA: 1.82 ACRES  
PARCEL: 1758479244  
EXISTING USE: UNDEVELOPED  
PROPOSED USE: CAR WASH

PROPERTY ZONING: GI-CZ (GENERAL INDUSTRIAL - CONDITIONAL ZONING)

**BUILDING SETBACKS:**

FRONT (SE):	30'
FRONT (NE):	25'
SIDE (NW):	15'
SIDE (SW):	30'

**PERIMETER LANDSCAPE YARDS:**

NORTHEAST:	15'
------------	-----

**PRE VS. POST DEVELOPMENT AREA:**

SITE AREA:	1.82 AC
PRE-IMPERVIOUS AREA:	0.04 AC (2.20%)
POST-IMPERVIOUS AREA:	1.29 AC (70.88%)

**PARKING NOTE:**

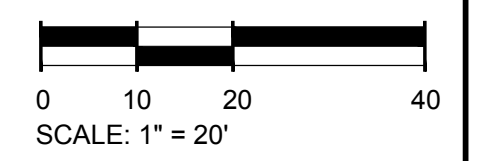
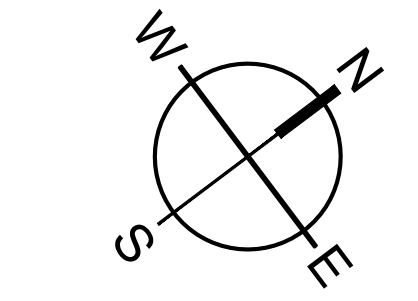
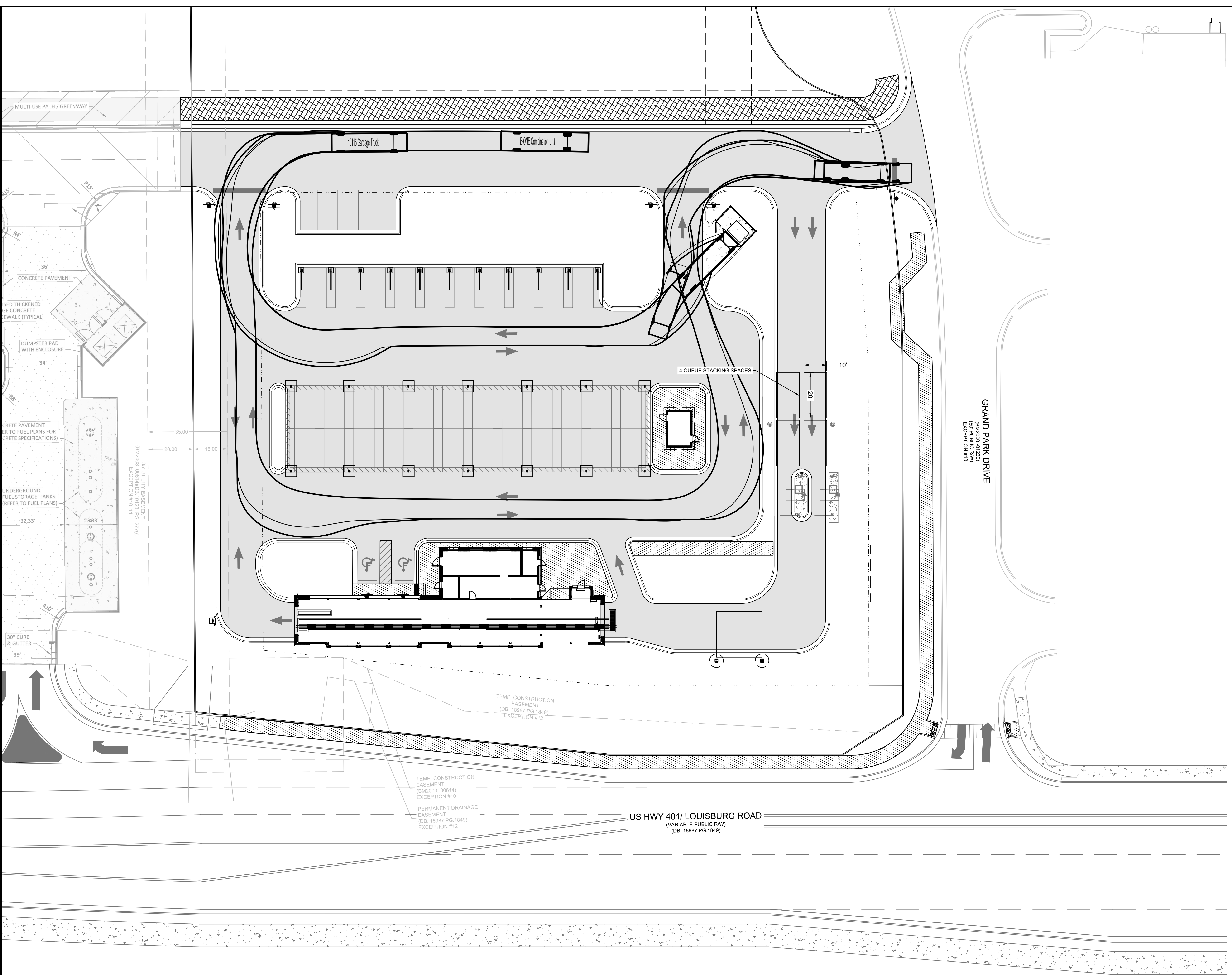
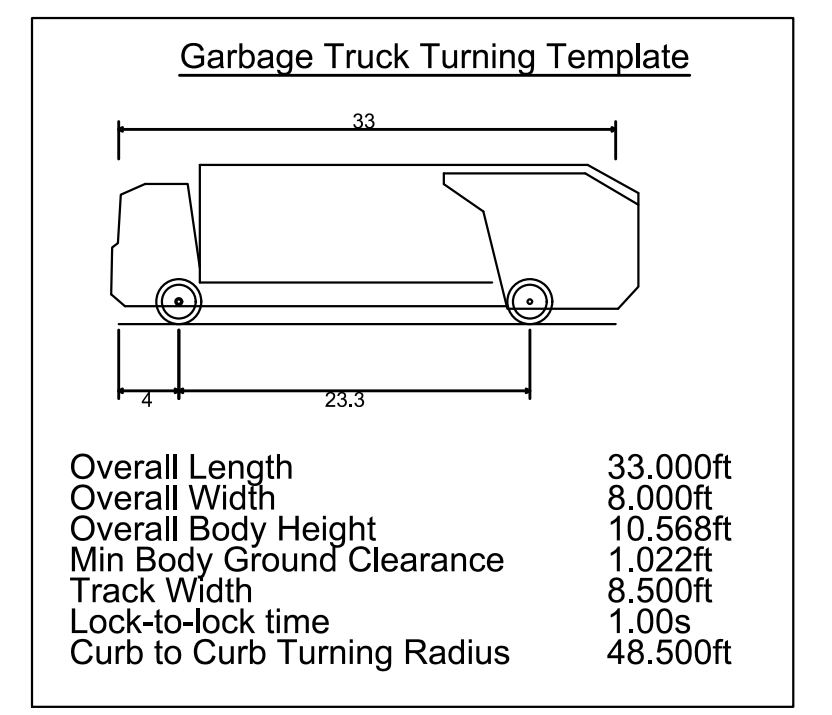
**PARKING REQUIRED:**  
1 SPACE PER 400 SF GFA OR 5 SPACES MINIMUM = 5 SPACES

**PARKING PROVIDED:**

EMPLOYEE SPACES:	5 SPACES (1 ADA)
(4 MAX ON SHIFT)	
VACUUM STALLS:	34 STALLS

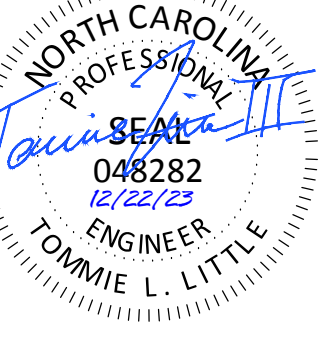
**SITE LAYOUT AND STAKING NOTES:**

- CONTRACTOR SHALL CAREFULLY EXAMINE ALL DOCUMENTS AND THE CONSTRUCTION SITE TO OBTAIN FIRST HAND KNOWLEDGE OF EXISTING CONDITIONS.
- ENTIRE SITE SHALL BE DRESSED TO UNIFORM, WELL DRAINED AND VISUALLY APPEALING SURFACE WITH A MINIMUM TOPSOIL LAYER OF FOUR INCHES.
- ALL STRIPING AND SIGNS SHALL CONFORM WITH THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES LATEST EDITION. PARKING STALL STRIPING TO BE WHITE WITH BLUE HANDICAPPED STRIPING.
- ALL HANDICAP PARKING SPACED AND ACCESSIBLE ROUTE SHALL CONFORM WITH THE AMERICAN WITH DISABILITY ACT DESIGN GUIDELINES AND SPECIFICATIONS LATEST EDITION.
- DIMENSIONS AND CURVE RADII ARE GIVEN TO FACE OF CURB, WHERE CURB AND GUTTER IS SHOWN. OTHERWISE DIMENSIONS ARE GIVEN TO THE EDGE OF PAVEMENT. CONTRACTOR IS TO COORDINATE WITH THE ARCHITECTURAL PLANS AS TO THE BUILDING LAYOUT AND DIMENSIONS.



501 WANDOPARKBOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29546 | JUDSON MILLS BUILDING 6000, 701 EASLEY BROOK RD, SUITE 6000, GREENVILLE, SC 29611 | 230 PETERSON DR., CHARLOTTE, NC 28217 | 710 N. CEDAR STREET | SUMMERVILLE, SC 29586 | 104 N. DANIEL MORGAN AVENUE, SUITE 300 | SPARTANBURG, SC 29301  
 COPYRIGHT © SEAMON WHITESIDE & ASSOCIATES, INC. THIS DRAWING SHALL NOT BE REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WITHOUT WRITTEN PERMISSION.





**TIDAL WAVE AUTO SPA**  
ROLESVILLE, NC

SW+ PROJECT: 10772  
DATE: 12/22/23  
DRAWN BY: CPE  
CHECKED BY: TLL

**REVISION HISTORY**

NO.	DESCRIPTION

**FIRE PROTECTION PLAN**

**SITE INFORMATION:**  
ADDRESS: ROLESVILLE, NC  
PROPERTY AREA: 1.82 ACRES  
PARCEL: 1758479244  
EXISTING USE: UNDEVELOPED  
PROPOSED USE: CAR WASH

PROPERTY ZONING: GI-CZ (GENERAL INDUSTRIAL - CONDITIONAL ZONING)  
BUILDING SETBACKS:  
FRONT (SE): 30'  
FRONT (NE): 25'  
SIDE (NW): 15'  
SIDE (SW): 30'

PERIMETER LANDSCAPE YARDS:  
NORTHEAST: 15'

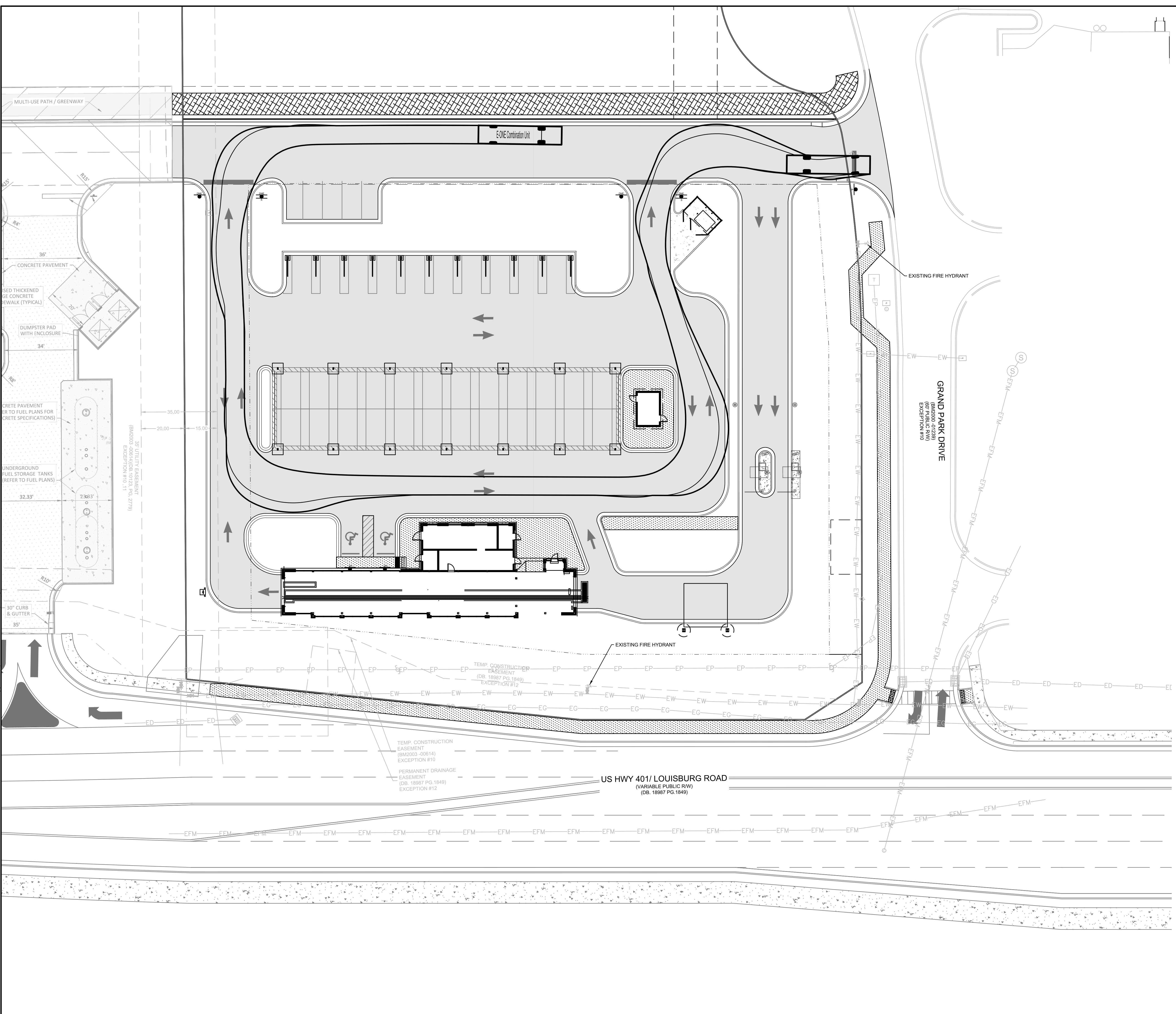
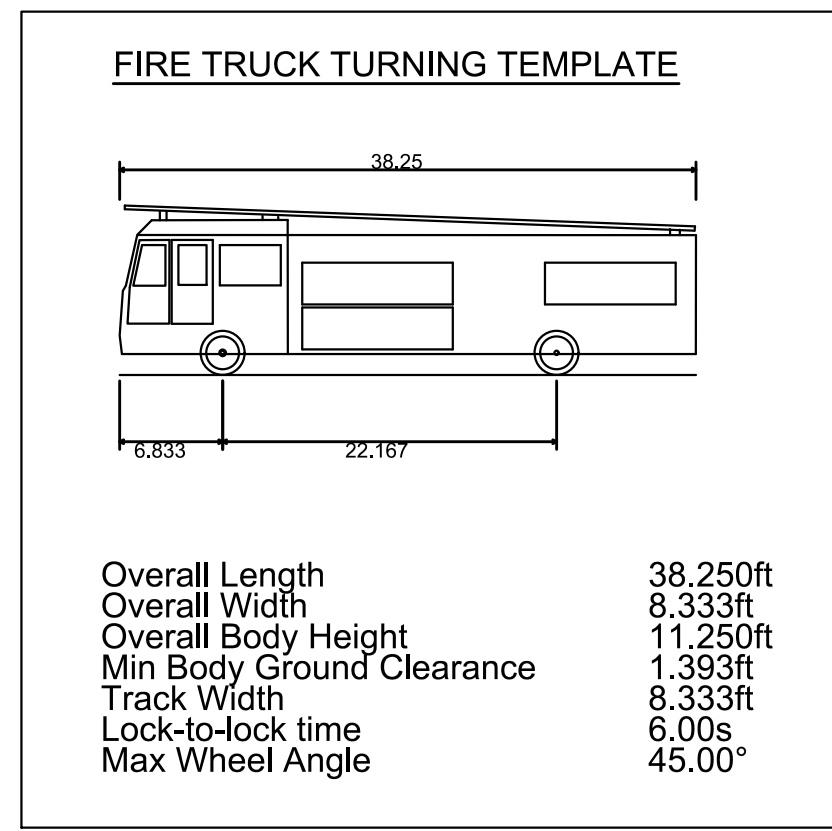
PRE VS. POST DEVELOPMENT AREA:  
SITE AREA: 1.82 AC  
PRE-IMPERVIOUS AREA: 0.04 AC (2.20%)  
POST-IMPERVIOUS AREA: 1.29 AC (70.88%)

**PARKING NOTE:**  
PARKING REQUIRED:  
1 SPACE PER 400 SF GFA OR 5 SPACES MINIMUM = 5 SPACES

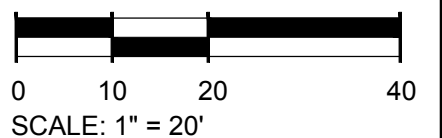
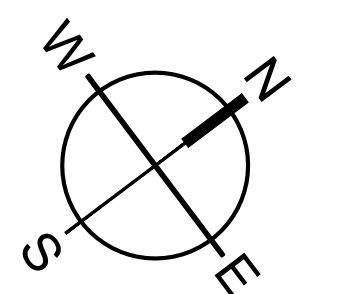
PARKING PROVIDED:  
EMPLOYEE SPACES: 5 SPACES (1 ADA)  
(4 MAX ON SHIFT)  
VACUUM STALLS: 34 STALLS

**SITE LAYOUT AND STAKING NOTES:**

- CONTRACTOR SHALL CAREFULLY EXAMINE ALL DOCUMENTS AND THE CONSTRUCTION SITE TO OBTAIN FIRST HAND KNOWLEDGE OF EXISTING CONDITIONS.
- ENTIRE SITE SHALL BE DRESSED TO UNIFORM, WELL DRAINED AND VISUALLY APPEALING SURFACE WITH A MINIMUM TOPSOIL LAYER OF FOUR INCHES.
- ALL STRIPING AND SIGNS SHALL CONFORM WITH THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES LATEST EDITION. PARKING STALL STRIPING TO BE WHITE WITH BLUE HANDICAPPED STRIPING.
- ALL HANDICAP PARKING SPACED AND ACCESSIBLE ROUTE SHALL CONFORM WITH THE AMERICAN WITH DISABILITY ACT DESIGN GUIDELINES AND SPECIFICATIONS LATEST EDITION.
- DIMENSIONS AND CURVE RADII ARE GIVEN TO FACE OF CURB, WHERE CURB AND GUTTER IS SHOWN. OTHERWISE DIMENSIONS ARE GIVEN TO THE EDGE OF PAVEMENT. CONTRACTOR IS TO COORDINATE WITH THE ARCHITECTURAL PLANS AS TO THE BUILDING LAYOUT AND DIMENSIONS.

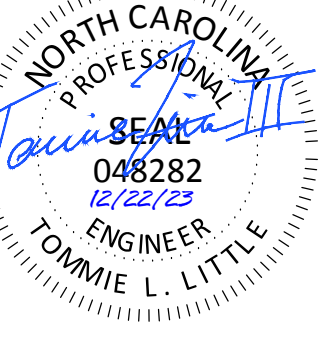


Know what's below.  
Call before you dig.

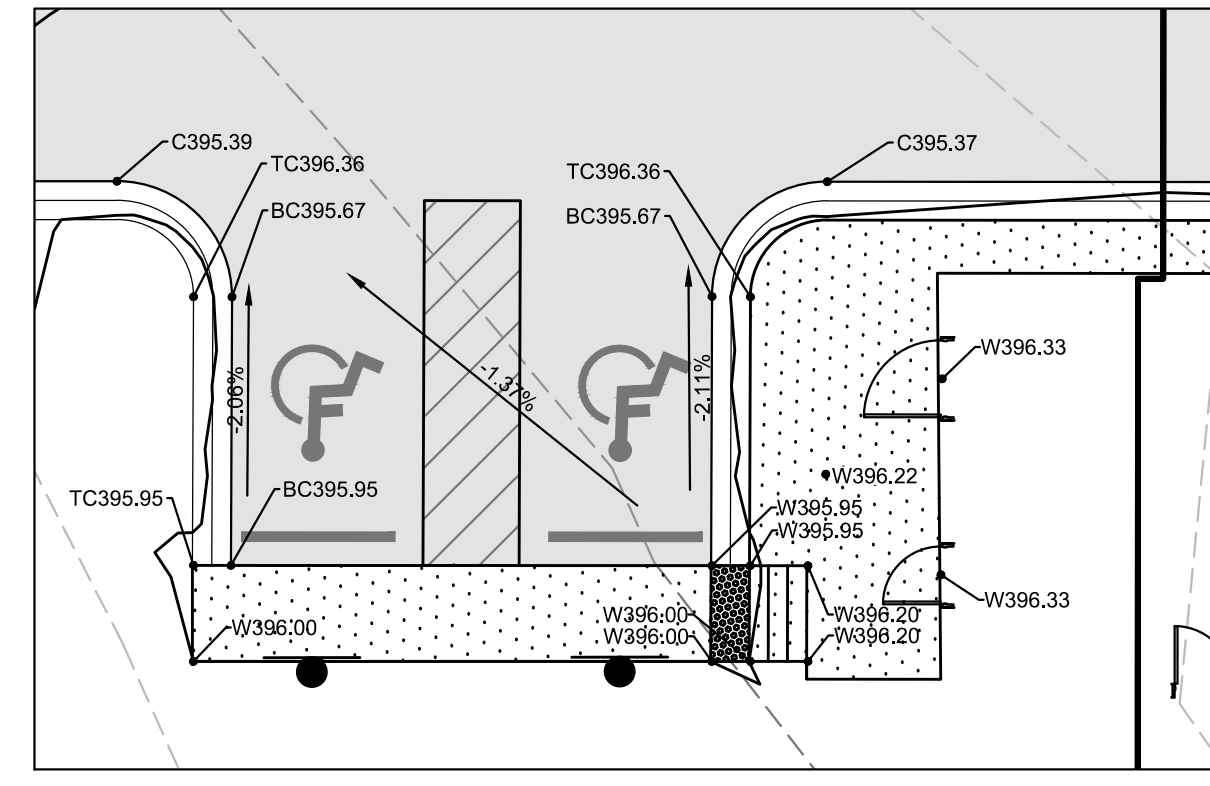
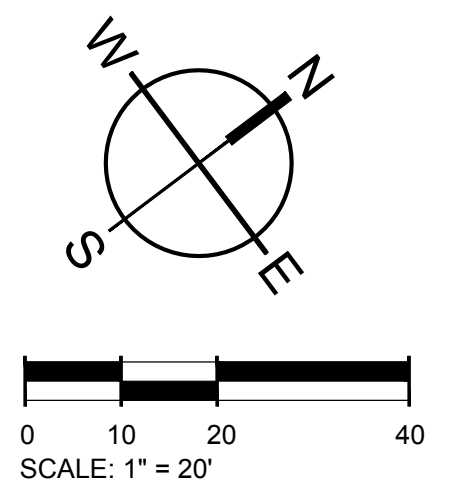
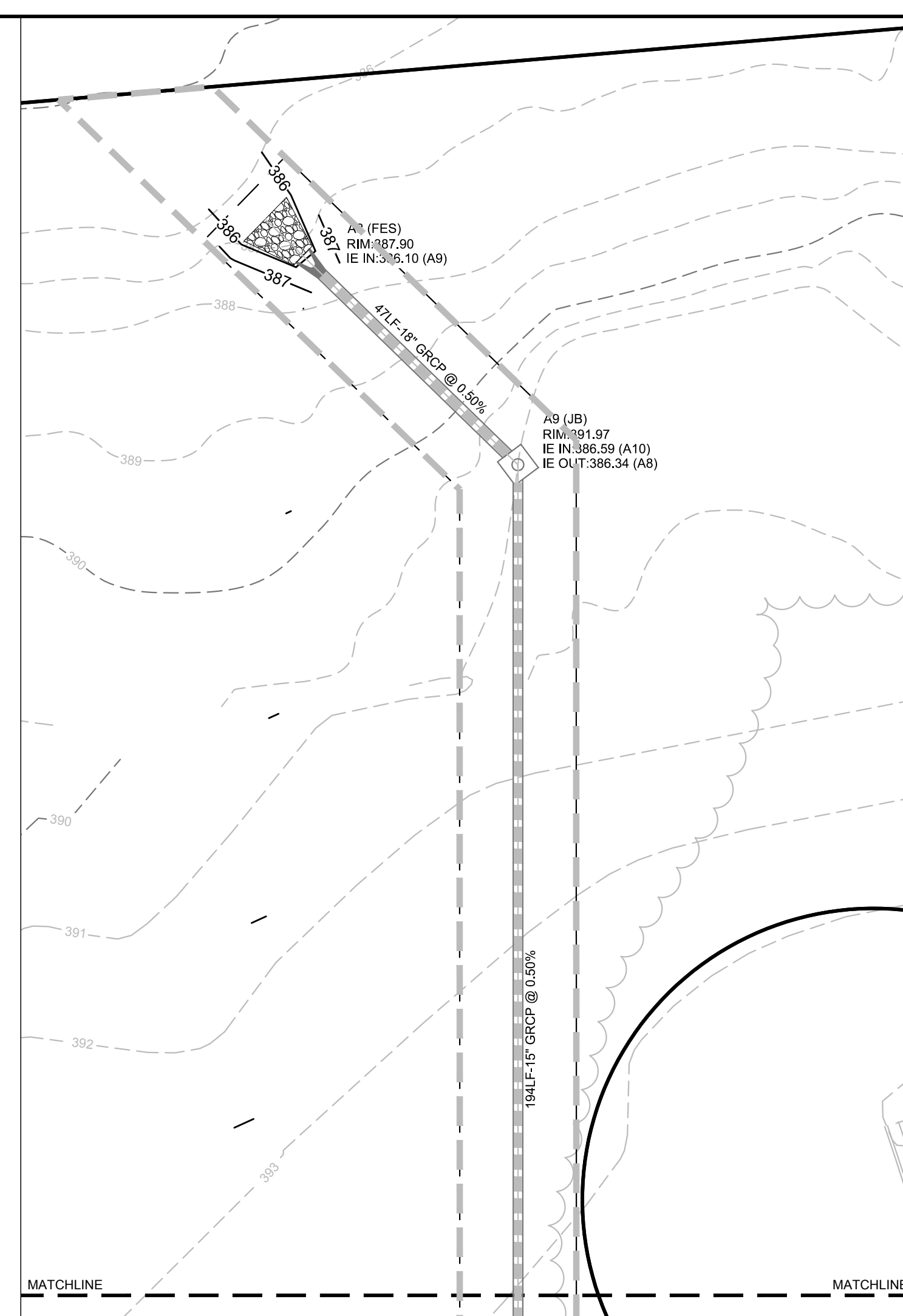
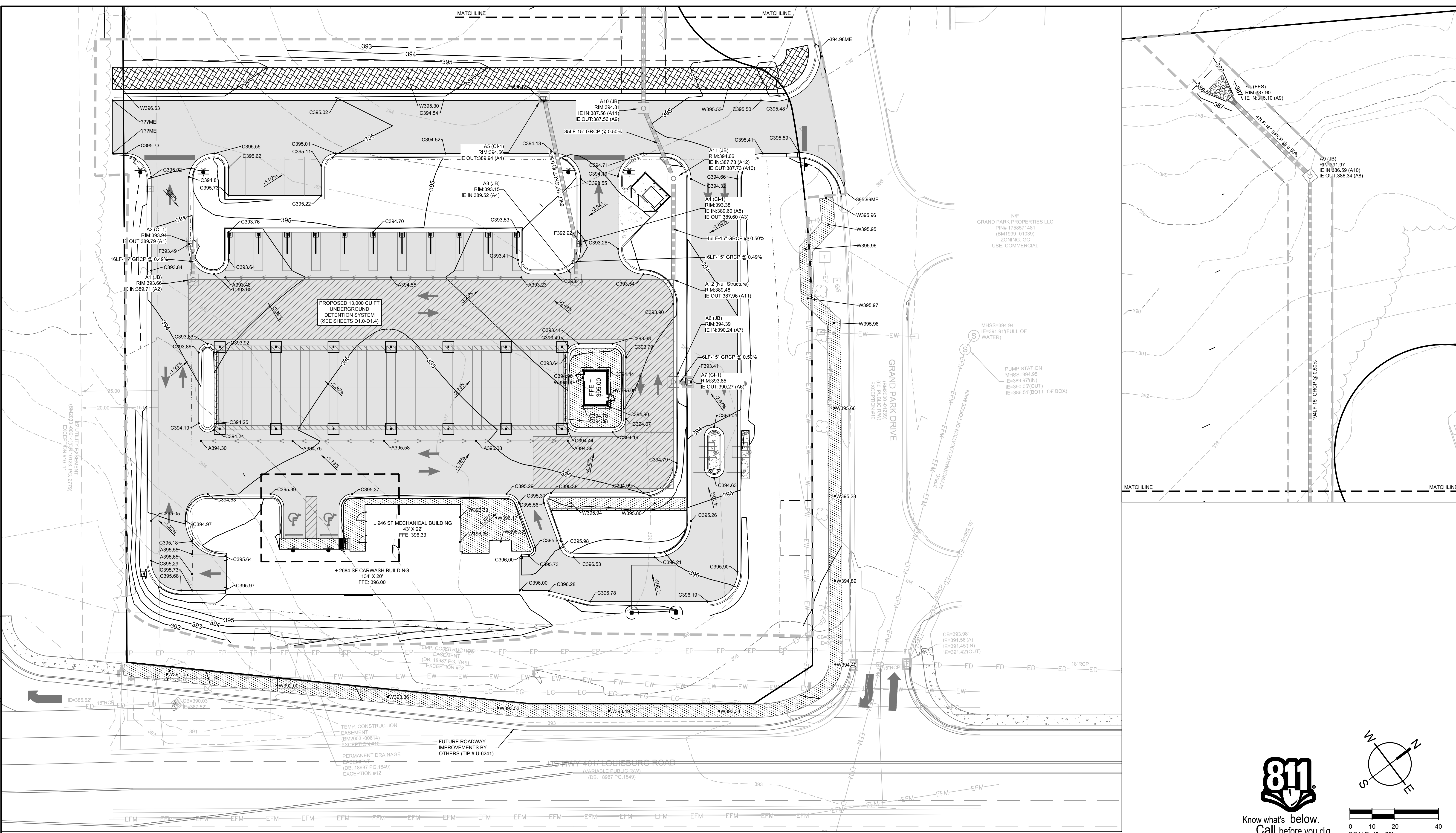


501 WANDOPARKBOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29546 | JUDSONMILLS BUILDING 6000, 701 EASLEY BROOK RD, SUITE 6000, GREENVILLE, SC 29611 | 230 PETERSON DR., CHARLOTTE, NC 28217 | 7101 CEDAR STREET | SUMMERVILLE, SC 29586 | 104 N. DANIEL MORGAN AVENUE, SUITE 300 | SPARTANBURG, SC 29301  
 COPYRIGHT © SEAMON WHITESIDE & ASSOCIATES, INC. THIS DRAWING SHALL NOT BE REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WITHOUT WRITTEN PERMISSION.





**TIDAL WAVE AUTO SPA**  
ROLESVILLE, NC



**NOTES:**  
1. THE LONGITUDINAL SLOPE OF ALL SURFACES ALONG THE ADA ACCESSIBLE ROUTE, WHICH ARE NOT SPECIFICALLY NOTED AS BEING A RAMP, SHALL NOT EXCEED 1:20. RAMPS SHALL NOT EXCEED A SLOPE OF 1:12. TRANSVERSE SLOPES SHALL NOT EXCEED 1:50. CONTRACTOR SHALL FIELD VERIFY SLOPES BEFORE INSTALLATION AND NOTIFY ENGINEER IMMEDIATELY IF MAX. SLOPES ARE EXCEEDED.  
2. AT PARKING SPACES AND ASSOCIATED ACCESS AISLES, SLOPE SHALL NOT EXCEED 1:50 IN ANY DIRECTION.

**LEGEND**

RCP DRAINAGE PIPE	
GRADING LIMITS	
HOODED CATCH BASIN (HCB)	
JUNCTION BOX (JB)	

**SPOT ELEV KEY (FINISHED GRADING)**

A-(ASPHALT) SURFACE OF FINISHED ASPHALT ROADWAY OR WALKING PATH  
C-(CONCRETE) CONCRETE PAVING  
D-(DIRT) FINISHED GROUND ELEVATION  
F-(FLOW) ELEVATION AT WHICH SURFACE WATER FLOWS INTO DRAINAGE STRUCTURE  
-SURFACE OF ASPHALT ADJACENT TO THROAT OR GRATE AT CURB INLET  
-SURFACE OF ACCESS COVER FOR JUNCTION OR ISOLATION BOX  
-SURFACE OF GRATE AT OUTSIDE EDGE FOR CATCH BASIN, GUTTER INLET, OR GRATED POND STRUCTURE  
FFE - FINISHED FLOOR ELEVATION  
G-(GUTTER) SURFACE OF FINISHED GUTTER AT LOWEST POINT (ALONG WATER FLOW PATH)  
W-(WALK) SURFACE OF FINISHED CONCRETE OR INTERLOCKING PAVER SIDEWALK, PATIO, PLAZA, OR SLAB  
TC - TOP OF CURB ELEVATION  
BC - BOTTOM OF CURB ELEVATION  
TS - TOP OF STAIRS ELEVATION  
BS - BOTTOM OF STAIRS ELEVATION  
TW - FINISHED GRADE ELEVATION AT TOP OF WALL  
BW - FINISHED GRADE ELEVATION AT BOTTOM OF WALL  
ME-(MATCH EXISTING) FOLLOWING ELEVATION NUMBER - INDICATES TO MATCH ELEVATION OF EXISTING SURFACE AT POINT OF CONNECTION

EXAMPLE: A12.56ME MEANS THAT THE SURFACE OF NEW ASPHALT IS TO BE AT ELEVATION 12.56 WHICH SHOULD MATCH THE ELEVATION OF THE EXISTING ASPHALT SURFACE AT THE JOINT

SW+ PROJECT: 10772  
DATE: 12/22/23  
DRAWN BY: CPE  
CHECKED BY: TLL

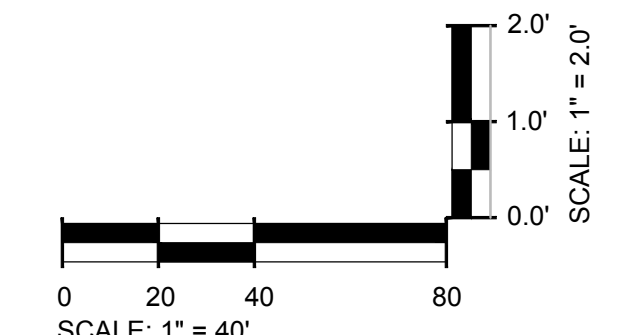
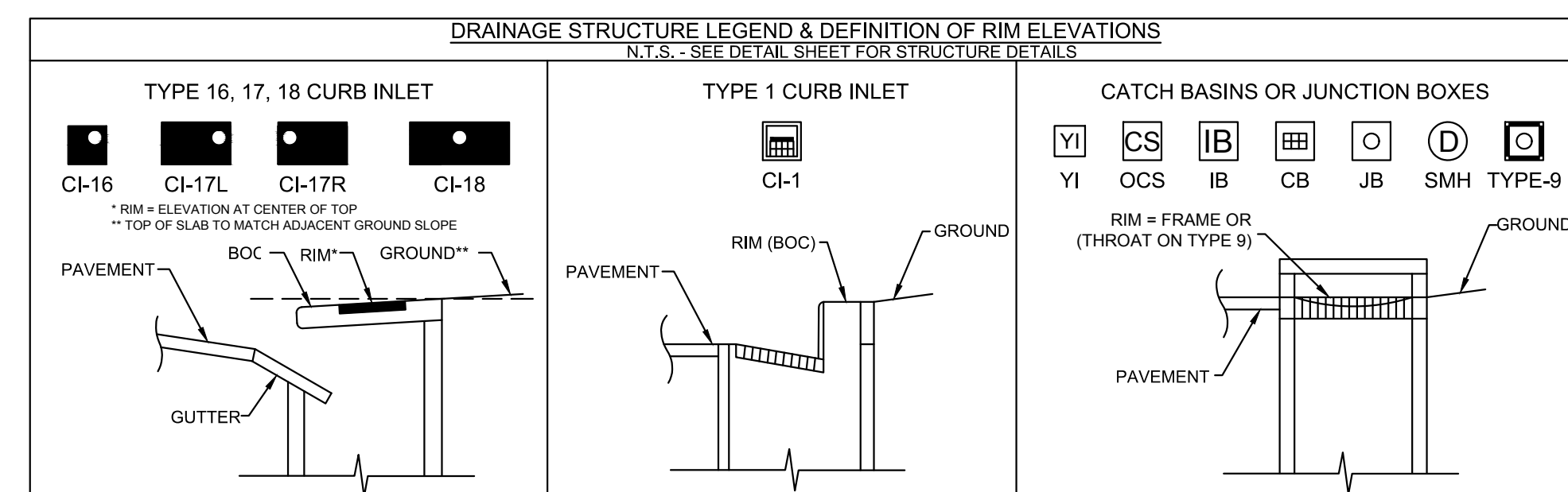
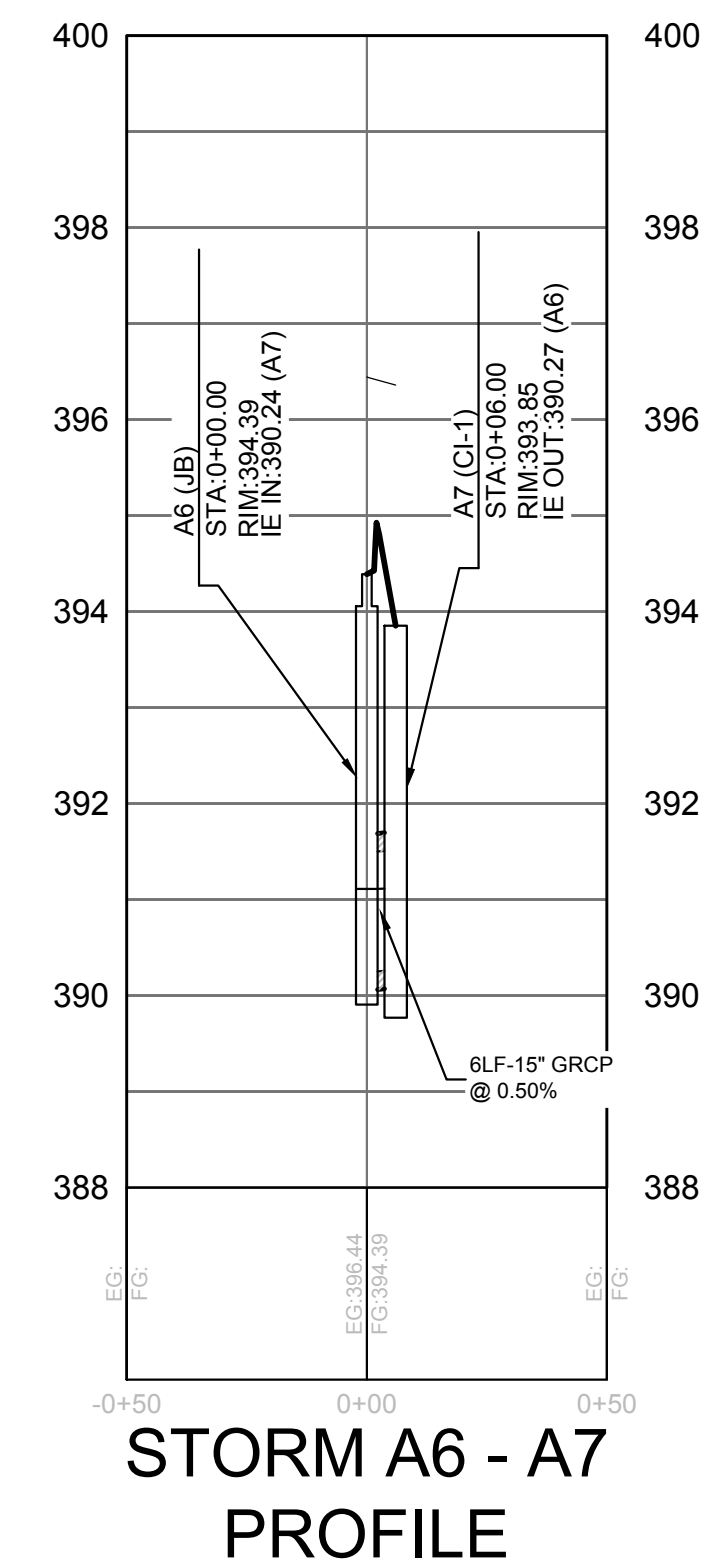
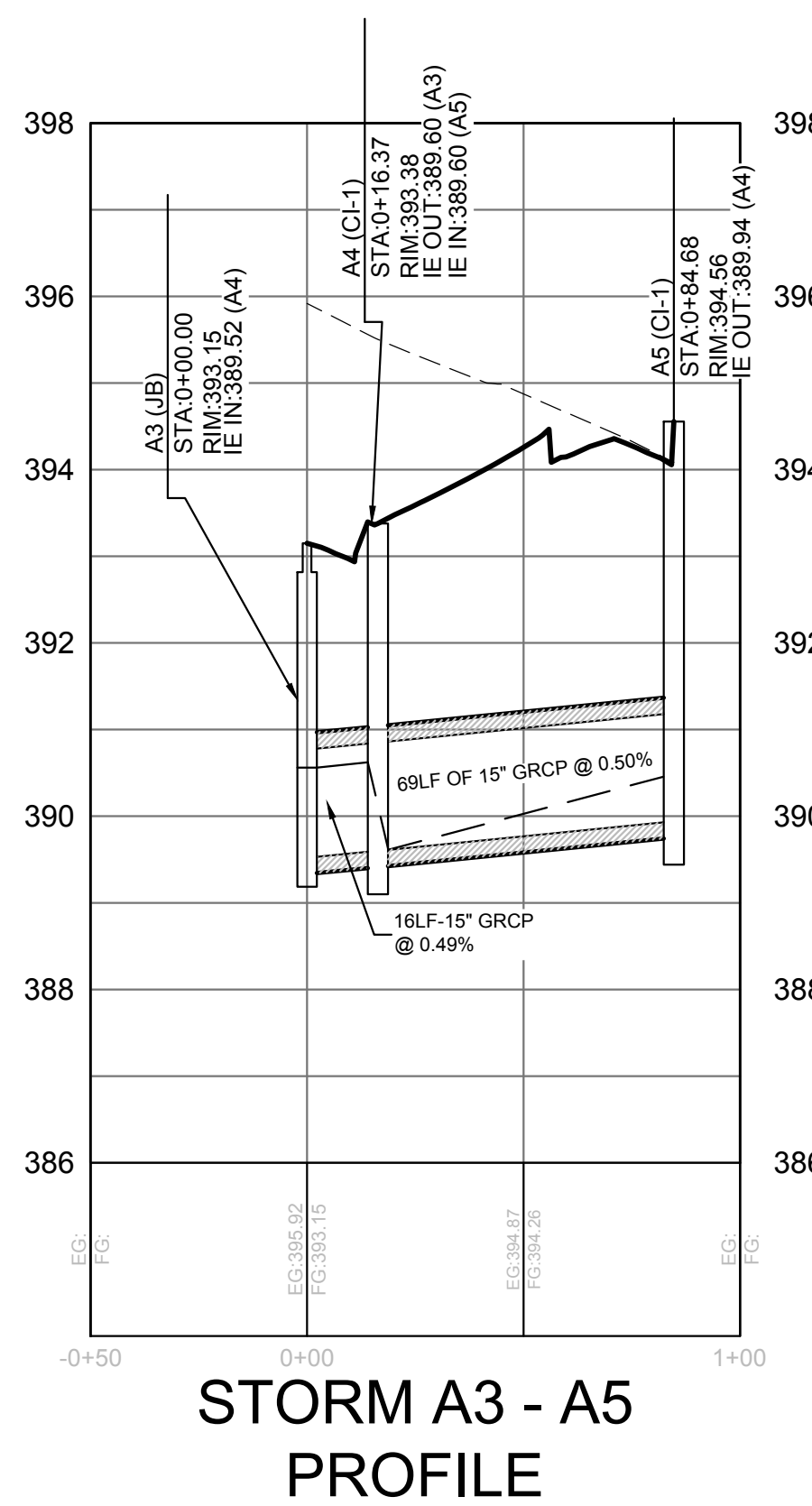
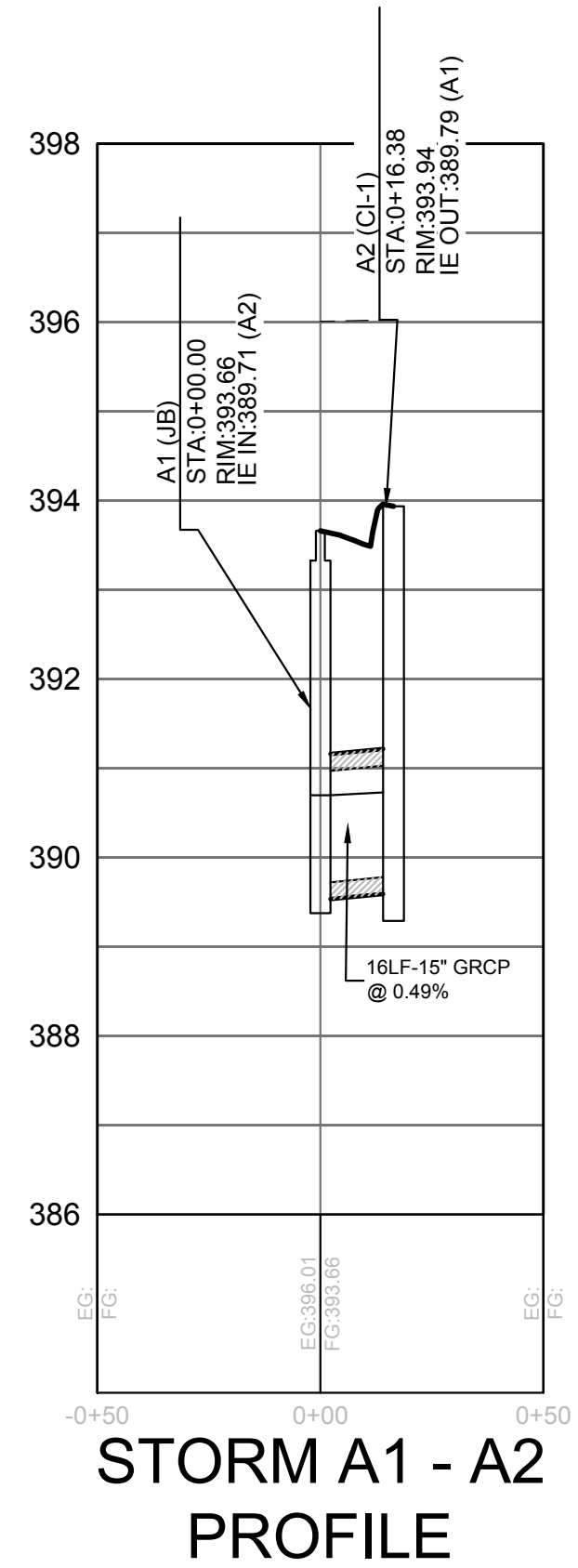
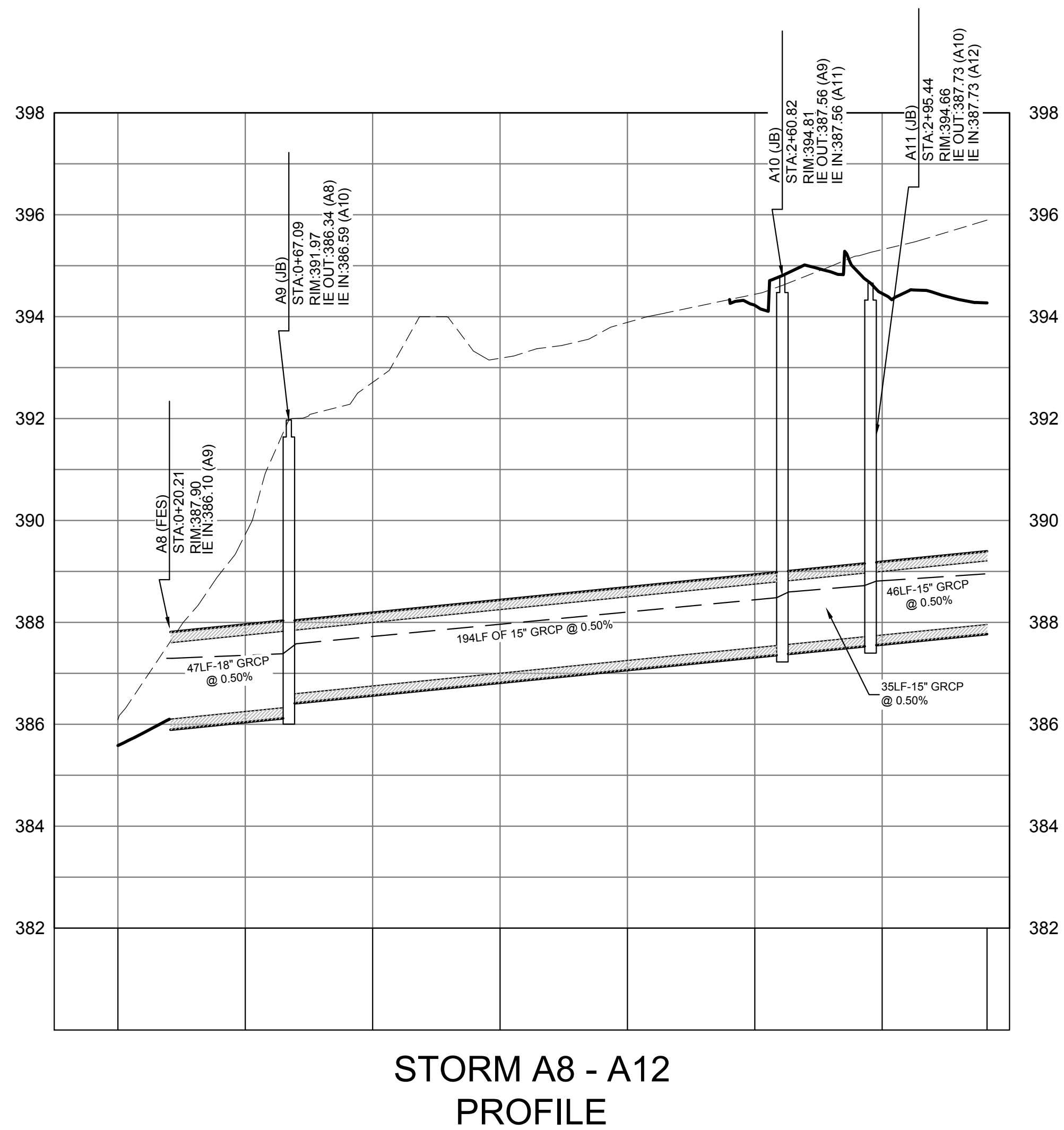
**REVISION HISTORY**

NO.	DESCRIPTION

**OVERALL GRADING AND DRAINAGE PLAN**

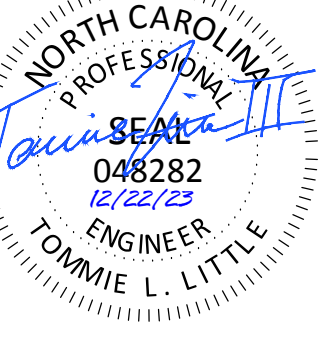


NO.	DESCRIPTION



501 WINDO PARK BOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29546 | JUDSON MILLS BUILDING 6000 701 EASLEY BROOK RD, SUITE 600 | GREENVILLE, SC 29611 | 230 PETERSON DR. | CHARLOTTE, NC 28217 | 710 N. CECIL STREET | SUMMERVILLE, SC 29586 | 104 N. DANIEL MORGAN AVENUE, SUITE 300 | SPARTANBURG, SC 29301  
 COPYRIGHT © SEAMON WHITESIDE & ASSOCIATES, INC. | THIS DRAWING SHALL NOT BE REPRODUCED IN ANY MANNER OR FOR ANY PURPOSE WITHOUT WRITTEN PERMISSION.





**TIDAL WAVE AUTO SPA**  
ROLESVILLE, NC

SW+ PROJECT: 10772  
DATE: 12/22/23  
DRAWN BY: CPE  
CHECKED BY: TLL

**REVISION HISTORY**

NO.	DESCRIPTION

**UTILITY PLAN AND PROFILES**

**BACKFLOW PREVENTION NOTES**

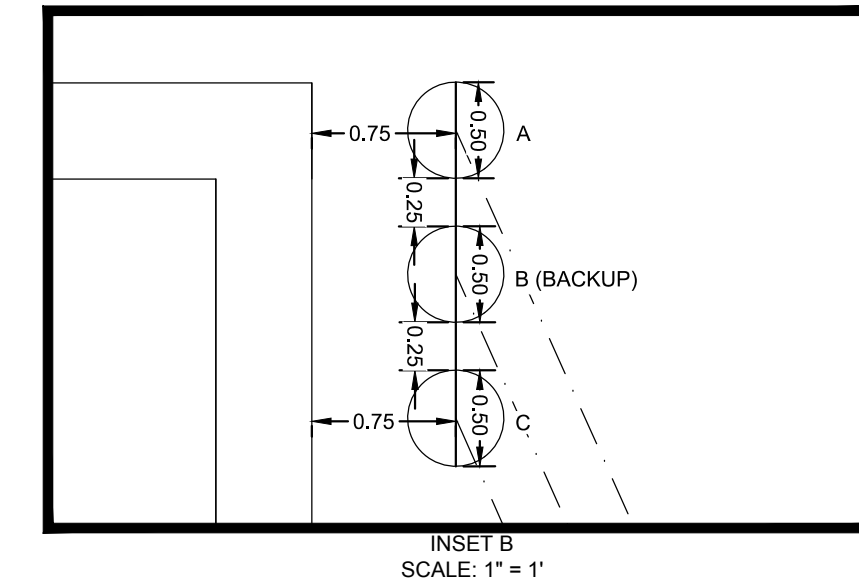
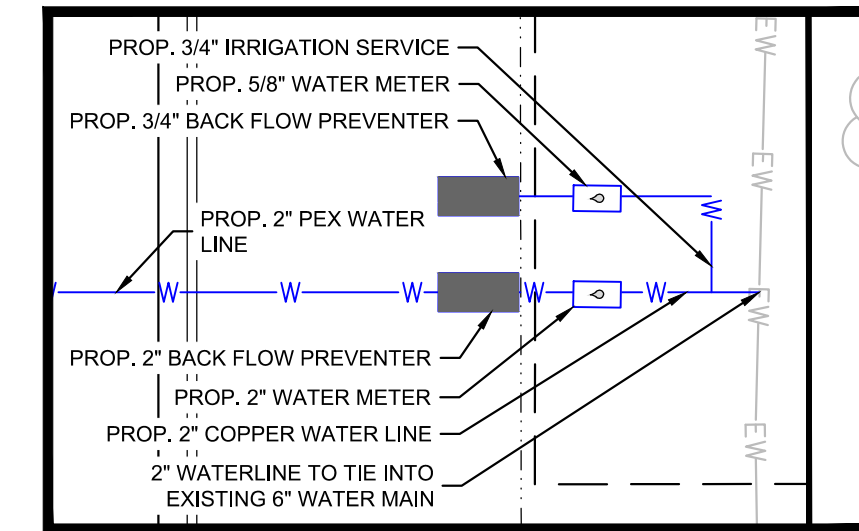
1. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY AS APPROVED BY TOWN OF ROLESVILLE AND INSTALLED BY CONTRACTOR DURING CONSTRUCTION. ASSEMBLY TO BE INSTALLED ABOVE GROUND WITHIN INSULATED ENCLOSURE PER TOWN OF ROLESVILLE REQUIREMENTS. ENCLOSURE TO BE LOCATED OUT OF SETBACK.
2. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS OR OTHER WATER USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS REQUIRED BACKFLOW PREVENTER.
3. EACH REQUIRED BACKFLOW PREVENTION ASSEMBLY IS REQUIRED TO BE TESTED BY AN APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE AND YEARLY THEREAFTER. SUBMIT PASSING TEST REPORTS TO TOWN OF ROLESVILLE.
4. DUCTILE IRON, COPPER, OR OTHER METALLIC PIPING (NO PVC) IS TO BE USED WITHIN 5 FEET OF ALL BACKFLOW PREVENTION DEVICES.
5. TAMPER SWITCHES SHALL BE INSTALLED ON THE FIRE LINE BACKFLOW PREVENTION. INSTALL 3/4" CONDUIT FROM FIRE LINE BACKFLOW ENCLOSURE/WALL TO BUILDING ALARM SYSTEM INSIDE BUILDING. COORDINATE WITH ELECTRICAL DRAWINGS AND ALARM SYSTEM MANUFACTURER.

**WATER SERVICE NOTES**

1. 2" WATER METER FOR DOMESTIC SERVICE FURNISHED AND INSTALLED BY (CONTRACTOR/UTILITY) IN BELOW GRADE CONCRETE VAULT PREPARED BY CONTRACTOR IN ACCORDANCE WITH UTILITY DEPARTMENT STANDARDS. SEE DETAILS.
2. 3/4" WATER METER FOR IRRIGATION SERVICE FURNISHED AND INSTALLED BY (CONTRACTOR/UTILITY) IN BELOW GRADE CONCRETE VAULT PREPARED BY CONTRACTOR IN ACCORDANCE WITH UTILITY DEPARTMENT STANDARDS. SEE DETAILS.

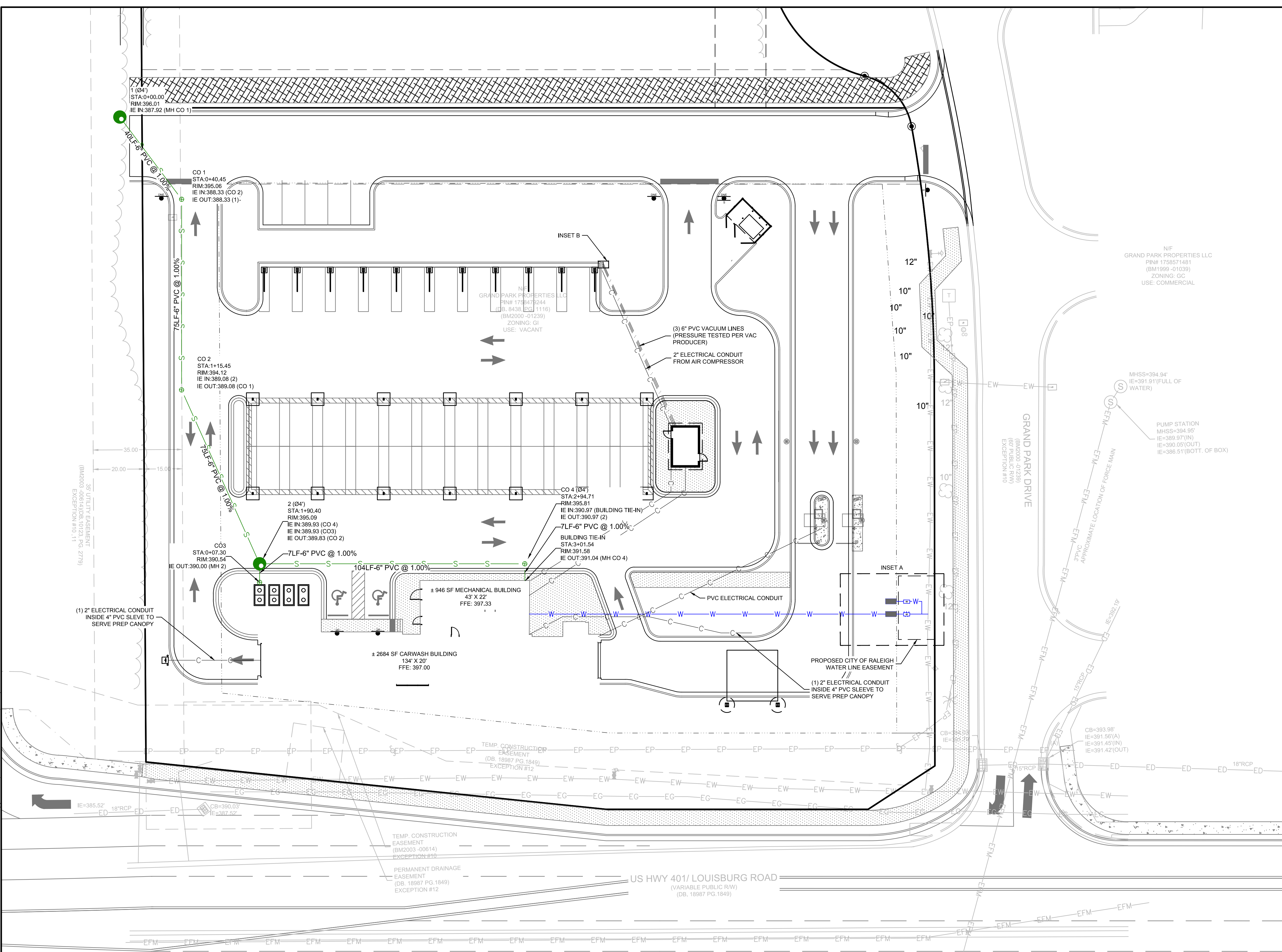
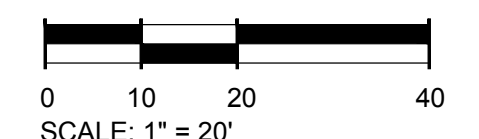
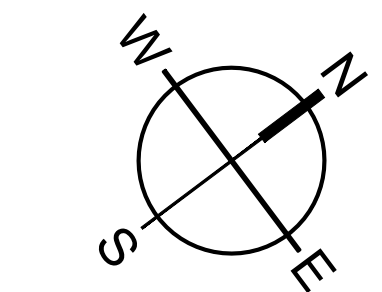
**STANDARD SEWER PLAN NOTES**

1. FOR PROJECT SURVEY INFORMATION INCLUDING VERTICAL DATUM AND BENCHMARK LOCATIONS, SEE "PROJECT SURVEY INFORMATION AND CONTRACTOR VERIFICATION REQUIREMENTS" ON SHEET C1.0.
2. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS, INCLUDING BUT NOT LIMITED TO TOPOGRAPHIC, TREE, STORM DRAINAGE FACILITIES, AND ALL UTILITIES. EXISTING UTILITIES SHOWN ARE APPROXIMATE AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ENGINEER. THEREFORE, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT VERTICAL AND HORIZONTAL LOCATIONS OF ALL EXISTING UTILITIES. ANY DISCREPANCIES OR CONFLICTS IDENTIFIED DURING VERIFICATION OF EXISTING CONDITIONS AND UTILITIES SHALL BE REPORTED TO THE OWNER AND ENGINEER. ANY COSTS ASSOCIATED WITH CORRECTIVE WORK OR DAMAGES THAT ARE A RESULT OF THE CONTRACTOR NOT VERIFYING EXISTING CONDITIONS AND THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES WILL BE THE CONTRACTOR'S RESPONSIBILITY.
3. MANHOLE COVERS ARE NOT ALLOWED WITHIN CURB AND GUTTER AND ARE TO BE INSTALLED COMPLETELY WITHIN OR COMPLETELY OUT OF PAVED AREAS (INCLUDING SIDEWALKS).
4. SEWER MANHOLE CONES ADJACENT TO CURB AND/OR SIDEWALK RAMP SHALL BE ROTATED TO LOCATE MANHOLE FRAME AND COVER AWAY FROM THE SIDEWALK RAMP AND CURBS.
5. REFER TO THE SEWER AUTHORITY'S STANDARD NOTES, DETAILS, AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND PROCEDURES, INCLUDING WATERTIGHT MANHOLE LOCATIONS.
6. REFER TO SEWER DETAIL SHEETS AND SEWER PROFILE SHEETS FOR DETAILS AND ANY ADDITIONAL SEWER SYSTEM INFORMATION.



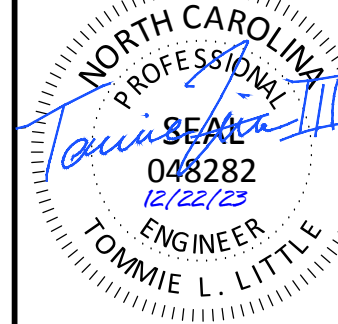
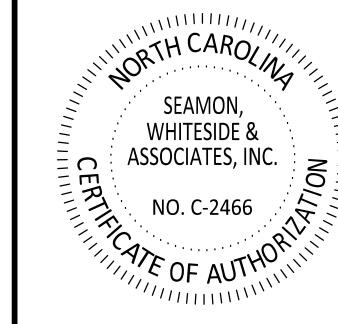
**EXISTING UTILITY NOTE:**

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



501 WANDO PARK BOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29546 | JUDSON MILLS BUILDING 6000, 701 EASLEY BROOK RD, SUITE 600 | GREENVILLE, SC 29611 | 230 PETERSON DR. | CHARLOTTE, NC 28217 | 710 N. CEDAR STREET | SUMMERVILLE, SC 29586 | 104 N. DANIEL MORGAN AVENUE, SUITE 300 | SPARTANBURG, SC 29301  
 COPYRIGHT © SEAMON WHITESIDE & ASSOCIATES, INC. THIS DRAWING SHALL NOT BE REPRODUCED IN ANY MANNER OR FOR ANY PURPOSE WITHOUT WRITTEN PERMISSION.





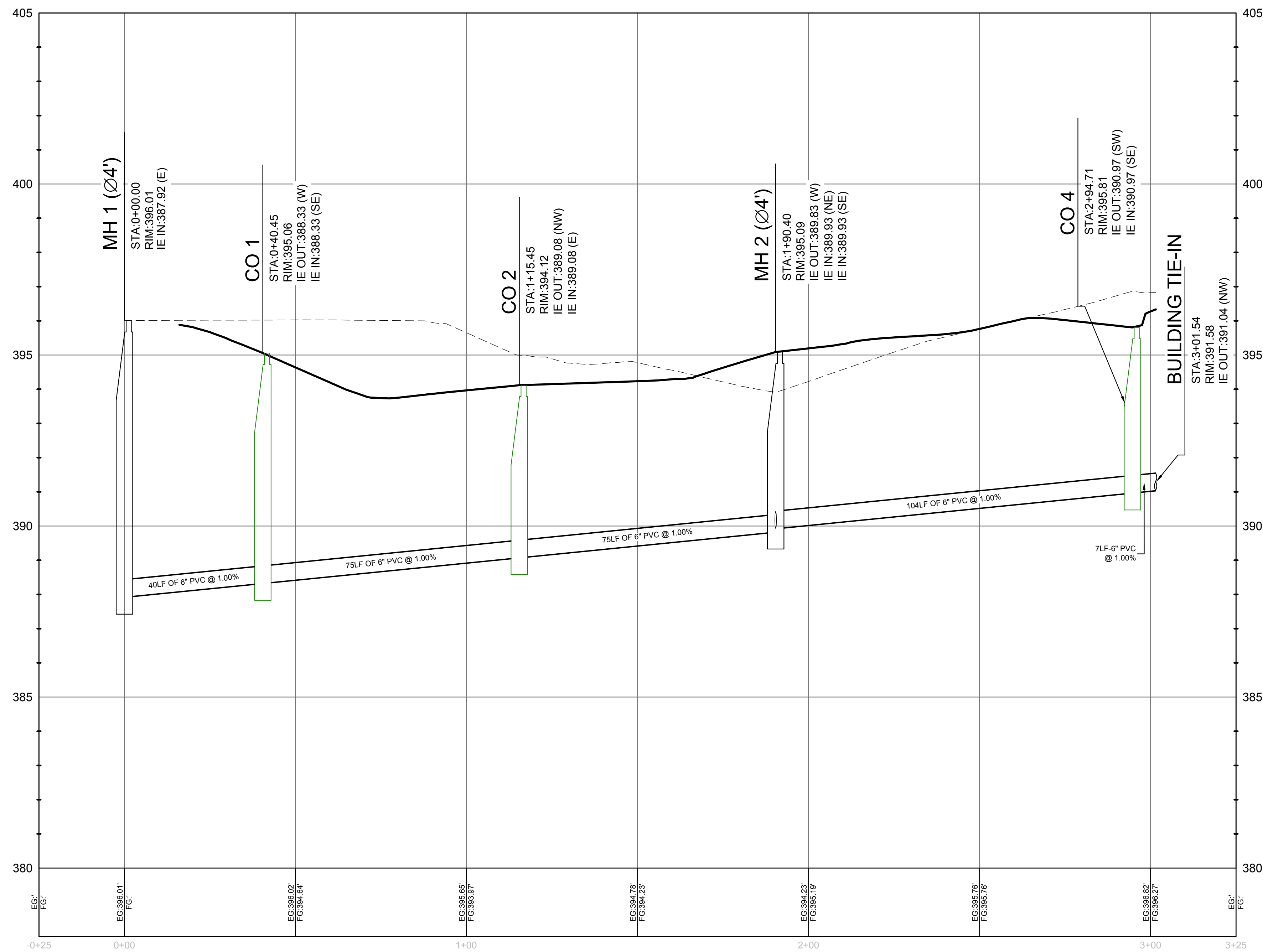
**TIDAL WAVE AUTO SPA**  
 ROLESVILLE, NC

SW+ PROJECT: 10772  
 DATE: 12/22/23  
 DRAWN BY: CPE  
 CHECKED BY: TLL

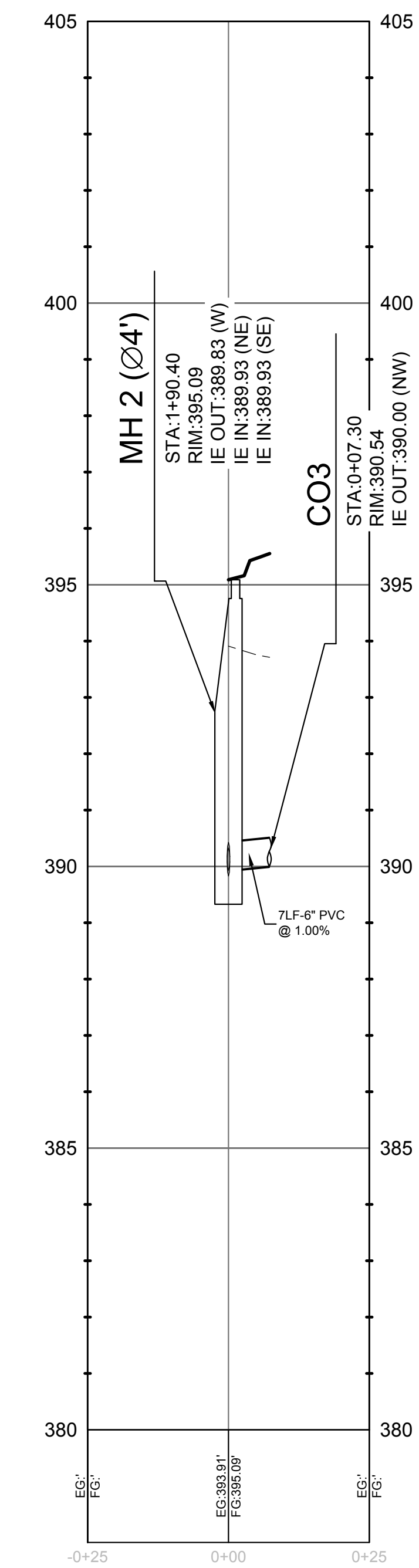
**REVISION HISTORY**

NO.	DESCRIPTION

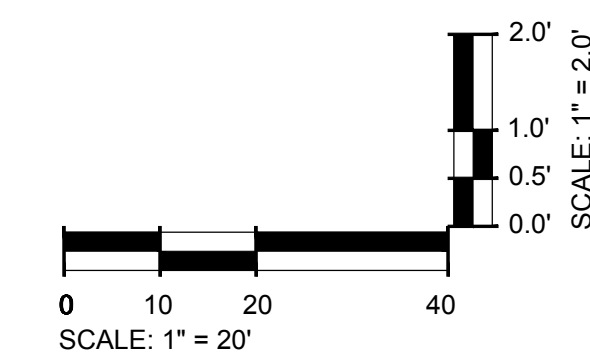
**UTILITY PROFILES**



MH 1 - BUILDING TIE-IN PROFILE



MH 2 - CO3 PROFILE



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

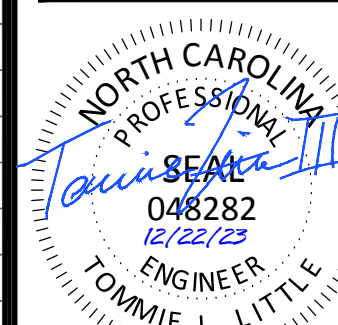


Know what's below.  
 Call before you dig.

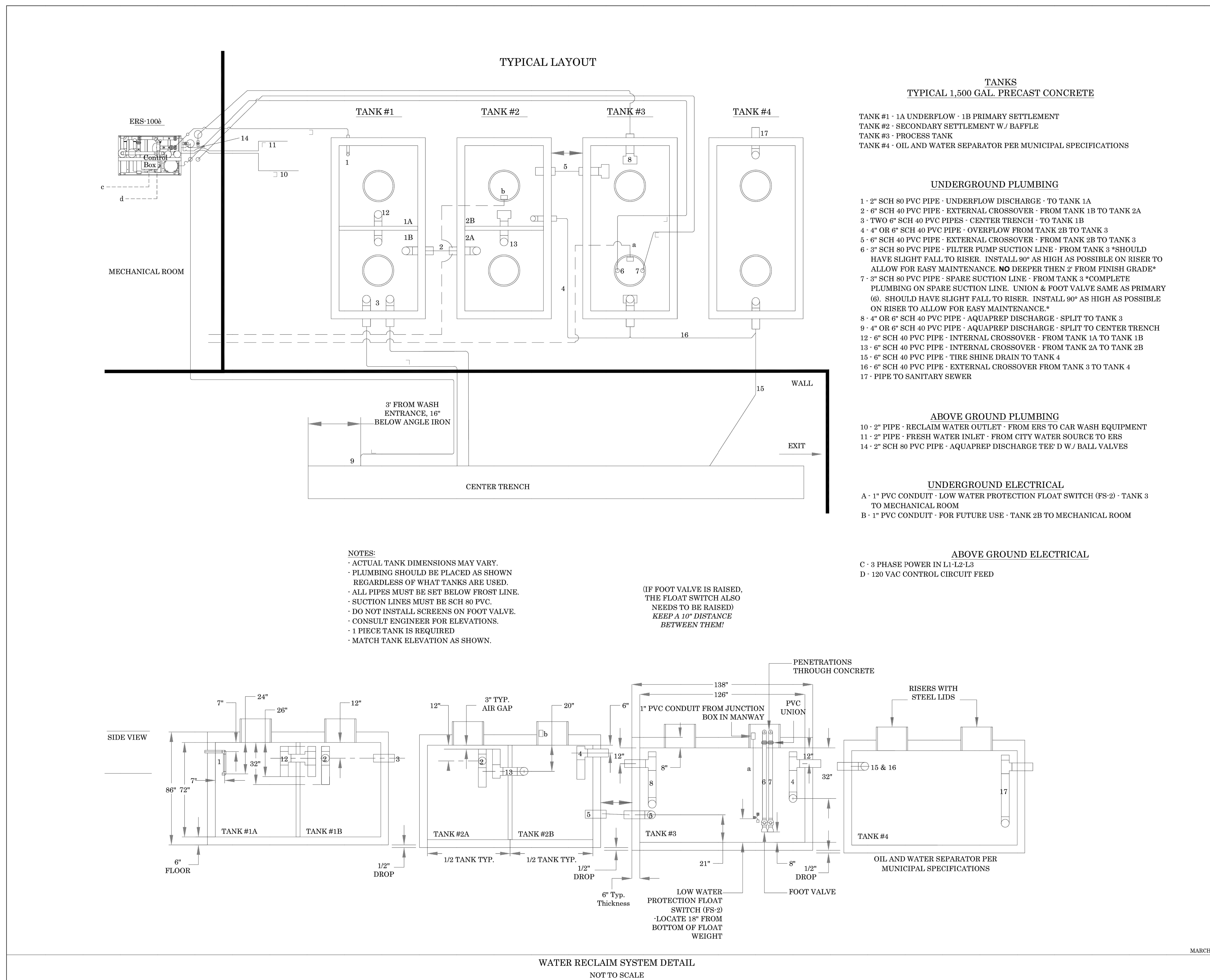




MOUNT PLEASANT, SC  
843.884.1667  
GREENVILLE, SC  
864.298.0534  
SUMMERVILLE, SC  
843.972.0710  
SPARTANBURG, SC  
864.272.1272  
CHARLOTTE, NC  
980.312.5450  
WWW.SEAMONWHITESIDE.COM



DATE OF PLANS		
03/31/2023		
REVISIONS		
NO.	DATE	DESCRIPTION
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-
9	-	-
10	-	-



TECHNICAL CRITERIA  
SHJ CONSTRUCTION GROUP  
WATER RECLAIM SYSTEM DETAIL

TIDAL WAVE AUTO SPA  
ROLESVILLE, NC

SW+ PROJECT: 10772  
DATE: 12/22/23  
DRAWN BY: CPE  
CHECKED BY: TLL

REVISION HISTORY

NO.	DATE	DESCRIPTION

CONSTRUCTION DETAILS

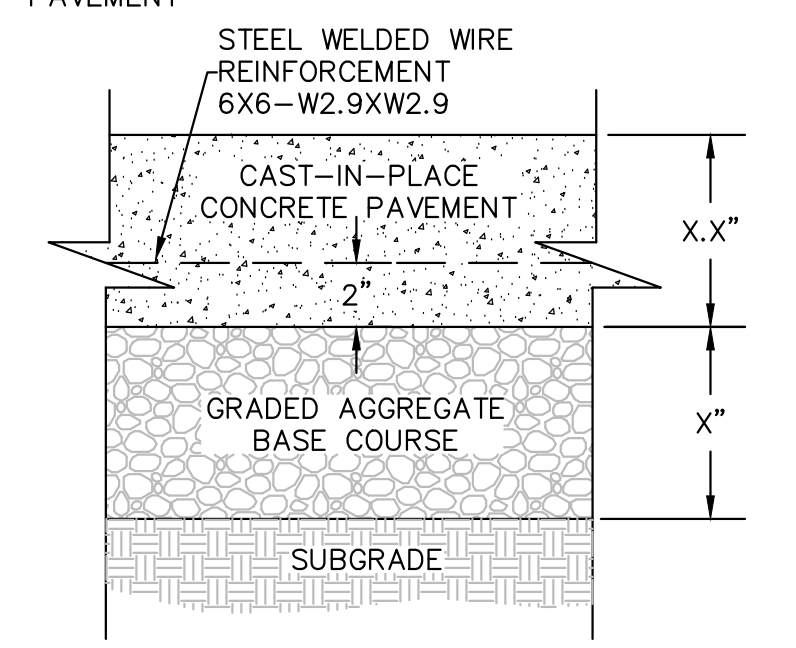
NOT TO SCALE  
SHEET  
1 OF 1





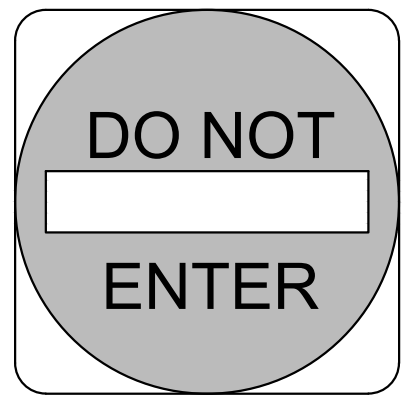


ITEM:	MATERIAL:
SUBGRADE	PREPARED IN-SITU SUBSOIL OR STRUCTURAL FILL
BASE COURSE	GRADED AGGREGATE BASE COURSE
CONCRETE PAVEMENT	CAST-IN-PLACE CONCRETE



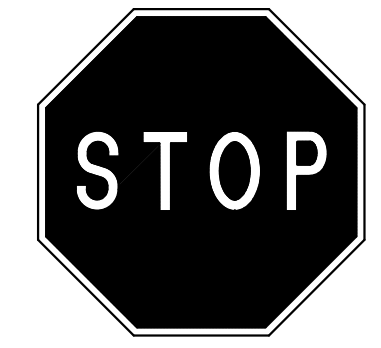
**NOTES:**  
 1. WHERE SHOWN, SEE PLAN FOR EXPANSION AND CONTROL JOINT LOCATIONS. OTHERWISE, SEE SPECS FOR REQUIRED LOCATION AND SPACING.  
 2. CONTRACTOR IS ADVISED THAT PAVING DESIGN RECOMMENDED BY GEOTECHNICAL ENGINEER IS BASED ON PREDICTED TRAFFIC LOADING AND ESTABLISHED STRENGTHS FOR PROPERLY INSTALLED PAVEMENTS. CONTRACTOR MUST COORDINATE REQUIRED GEOTECHNICAL TESTING & INSPECTION TO ENSURE THAT SUBGRADE AND PAVEMENT STRENGTH REQUIREMENTS ARE MET.

**1 CONCRETE PAVEMENT - HEAVY DUTY**  
 SCALE: NOT TO SCALE



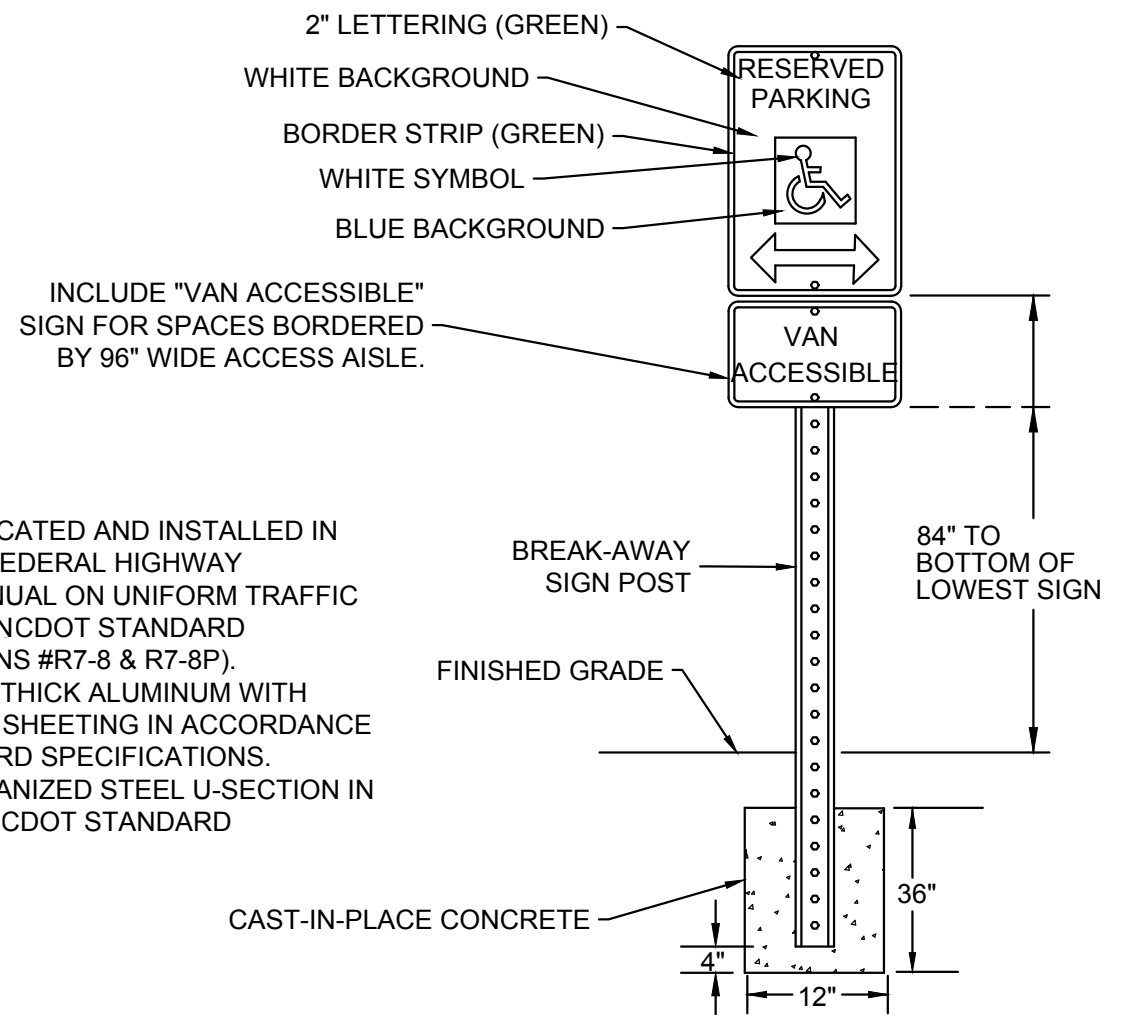
DO NOT ENTER SIGN AND INSTALLATION TO CONFORM WITH M.U.T.C.D. SPECIFICATIONS.  
 NUMBER: R5-1-30  
 SIZE: 30" X 30"  
 CLASS: STANDARD  
 LEGEND AND BACKGROUND: WHITE-REFLECTORIZED  
 CIRCLE: RED-REFLECTORIZED  
 SIGN POST: GALVANIZED U-CHANNEL PER NCDOT SPECIFICATIONS

**2 SIGN - DO NOT ENTER**  
 SCALE: NOT TO SCALE



STOP SIGN AND INSTALLATION TO CONFORM WITH M.U.T.C.D. SPECIFICATIONS.  
 NUMBER: R1-1-30  
 SIZE: 30" X 30"  
 CLASS: STANDARD  
 BACKGROUND: RED-REFLECTORIZED  
 LEGEND AND BORDER: WHITE-REFLECTORIZED  
 SIGN POST: GALVANIZED U-CHANNEL PER NCDOT SPECIFICATIONS

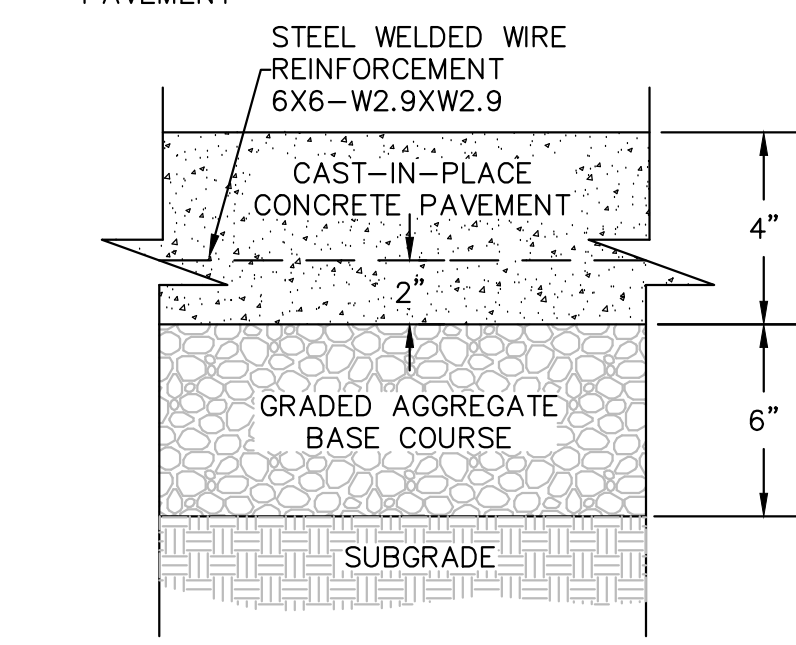
**3 SIGN - STOP**  
 SCALE: NOT TO SCALE



**NOTES:**  
 1. SIGN SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES & NCDOT STANDARD SPECIFICATIONS (SIGNS #R7-8 & R7-8P).  
 2. SIGN SHALL BE 0.080" THICK ALUMINUM WITH APPLIED REFLECTIVE SHEETING IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS.  
 3. POST SHALL BE GALVANIZED STEEL U-SECTION IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS.

**4 ADA PARKING SIGN**  
 SCALE: NOT TO SCALE

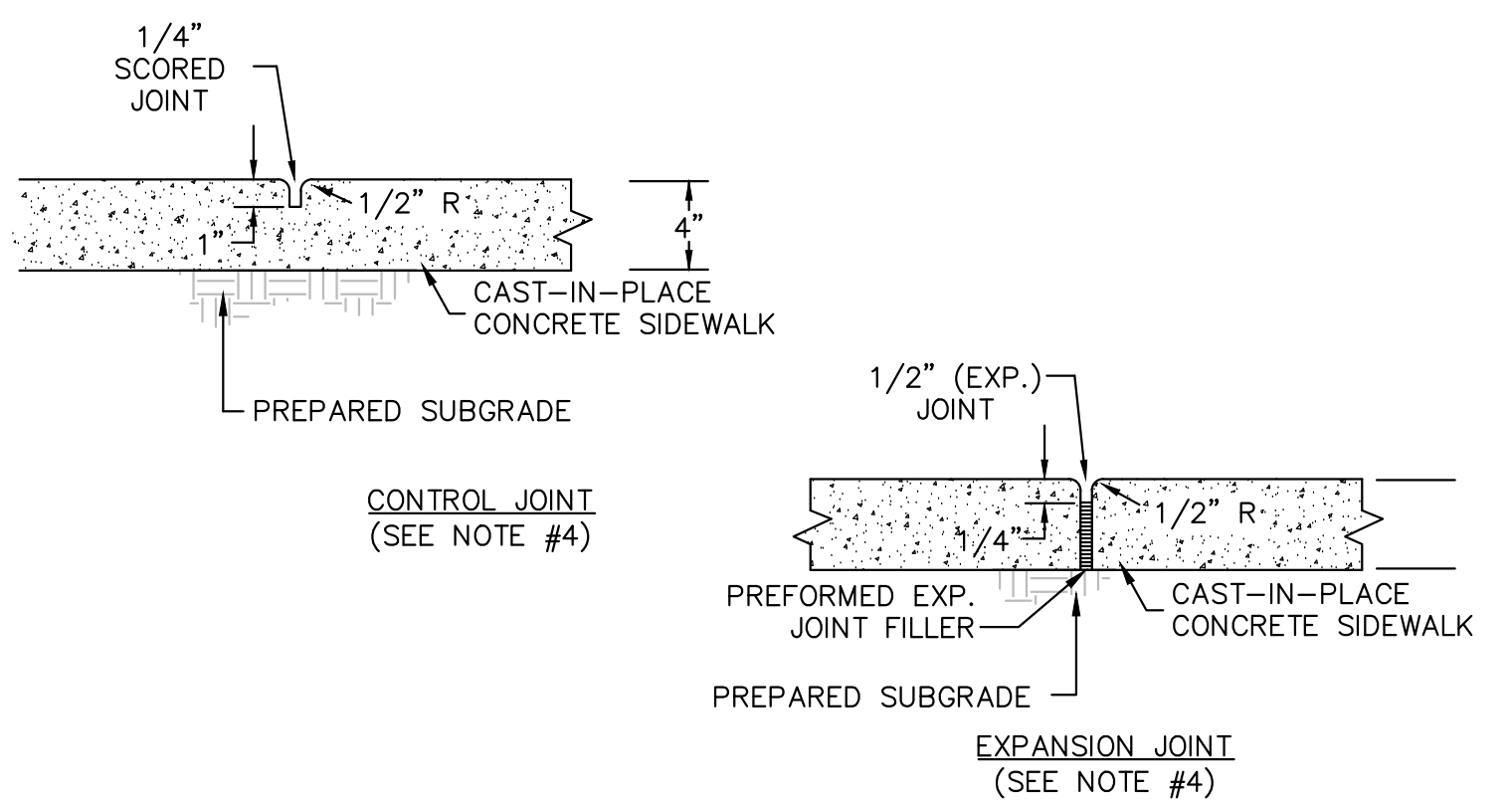
ITEM:	MATERIAL:
SUBGRADE	PREPARED IN-SITU SUBSOIL OR STRUCTURAL FILL
BASE COURSE	GRADED AGGREGATE BASE COURSE
CONCRETE PAVEMENT	CAST-IN-PLACE CONCRETE



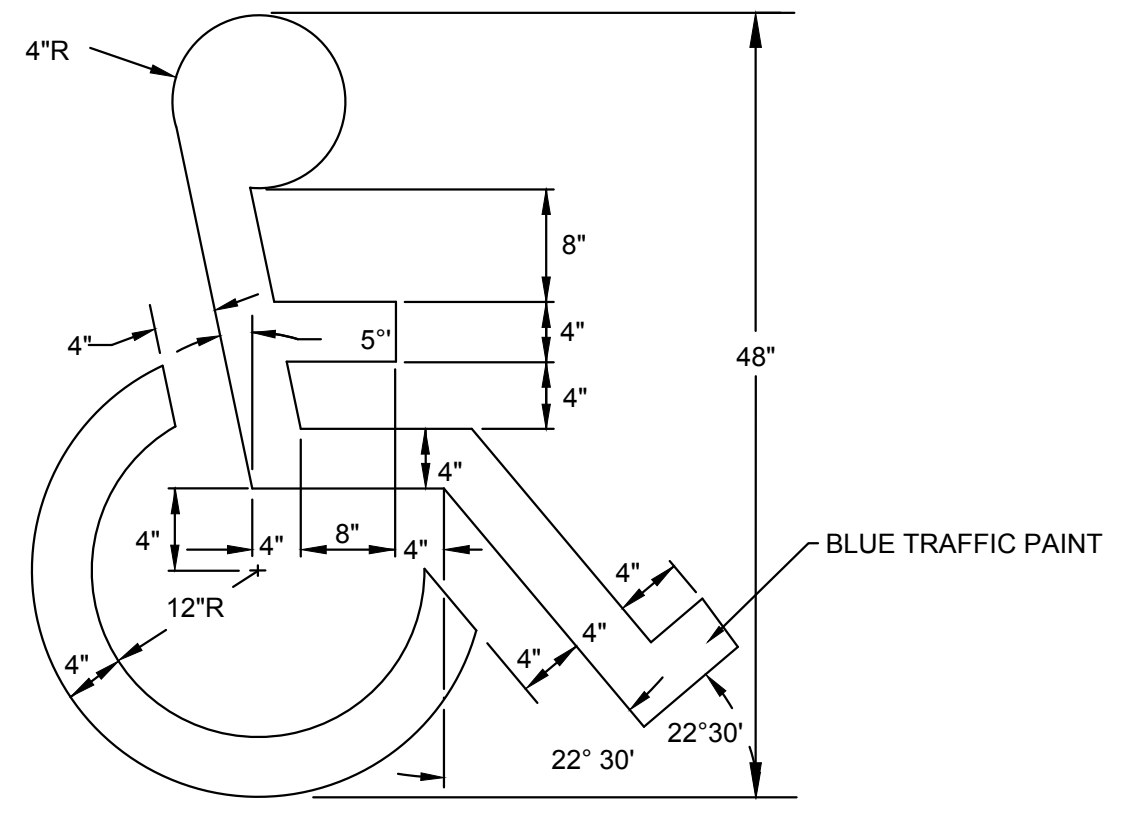
**NOTES:**  
 1. WHERE SHOWN, SEE PLAN FOR EXPANSION AND CONTROL JOINT LOCATIONS. OTHERWISE, SEE SPECS FOR REQUIRED LOCATION AND SPACING.  
 2. CONTRACTOR IS ADVISED THAT PAVING DESIGN RECOMMENDED BY GEOTECHNICAL ENGINEER IS BASED ON PREDICTED TRAFFIC LOADING AND ESTABLISHED STRENGTHS FOR PROPERLY INSTALLED PAVEMENTS. CONTRACTOR MUST COORDINATE REQUIRED GEOTECHNICAL TESTING & INSPECTION TO ENSURE THAT SUBGRADE AND PAVEMENT STRENGTH REQUIREMENTS ARE MET.

**5 CONCRETE PAVEMENT - STANDARD DUTY**  
 SCALE: NOT TO SCALE

**NOTES:**  
 1. SIDEWALK CROSS SLOPE NOT TO EXCEED 2% AND LONGITUDINAL SLOPE NOT TO EXCEED 5%.  
 2. SIDEWALK TO HAVE LIGHT BROOM FINISH, PERPENDICULAR TO DIRECTION OF TRAVEL.  
 3. SEE PLAN FOR SIDEWALK WIDTH.  
 4. UNLESS OTHERWISE SHOWN ON DRAWINGS, SPACE CONTROL JOINTS NOT TO EXCEED 5'. SPACE EXPANSION JOINTS TO COINCIDE WITH CONTROL JOINTS, NOT TO EXCEED 50'. WHERE CURB IS ADJACENT TO CONCRETE WALK, JOINTS SHALL COINCIDE. SEE SPECIFICATIONS FOR ADDITIONAL INFO.

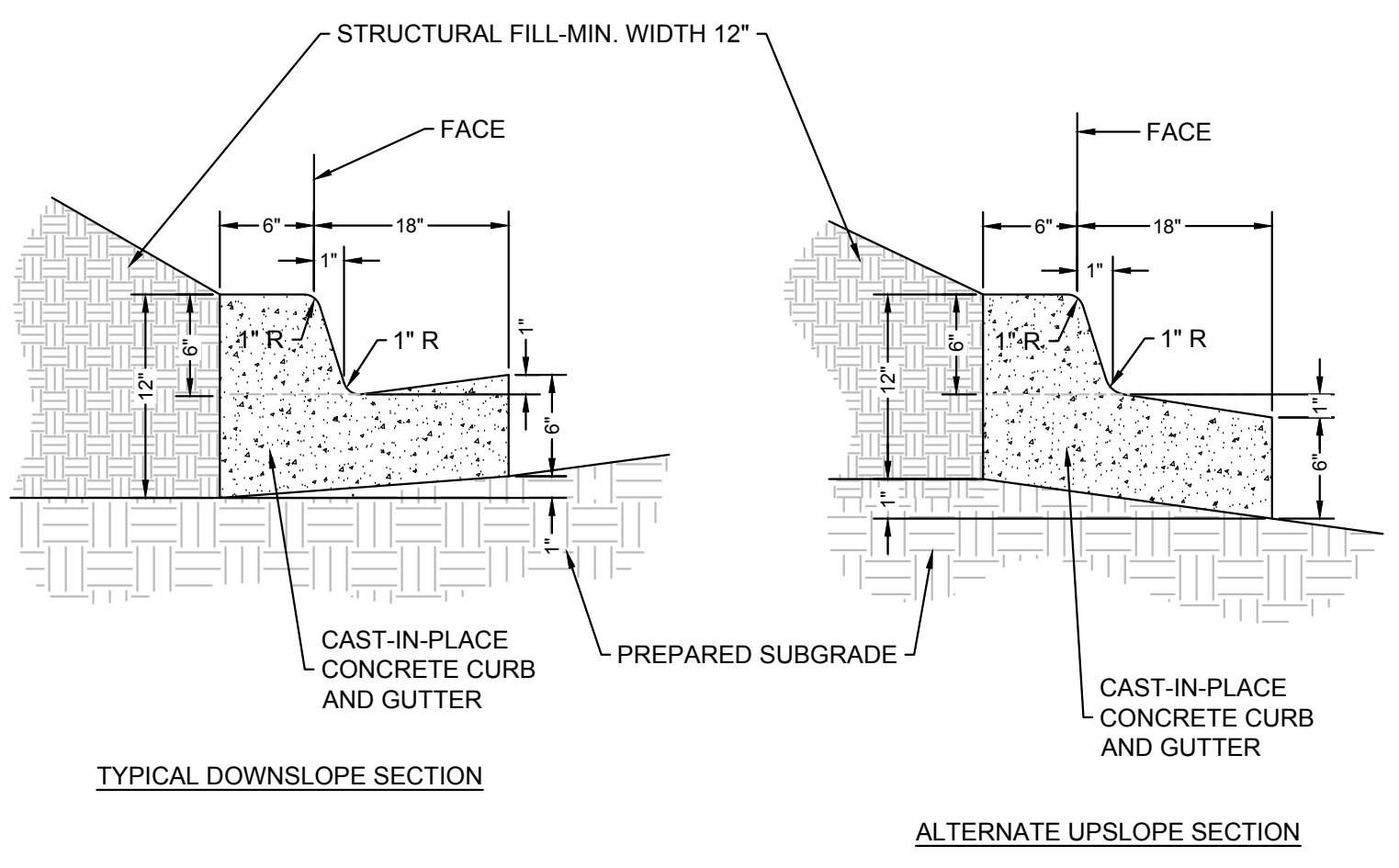


**6 SIDEWALK-SECTION**

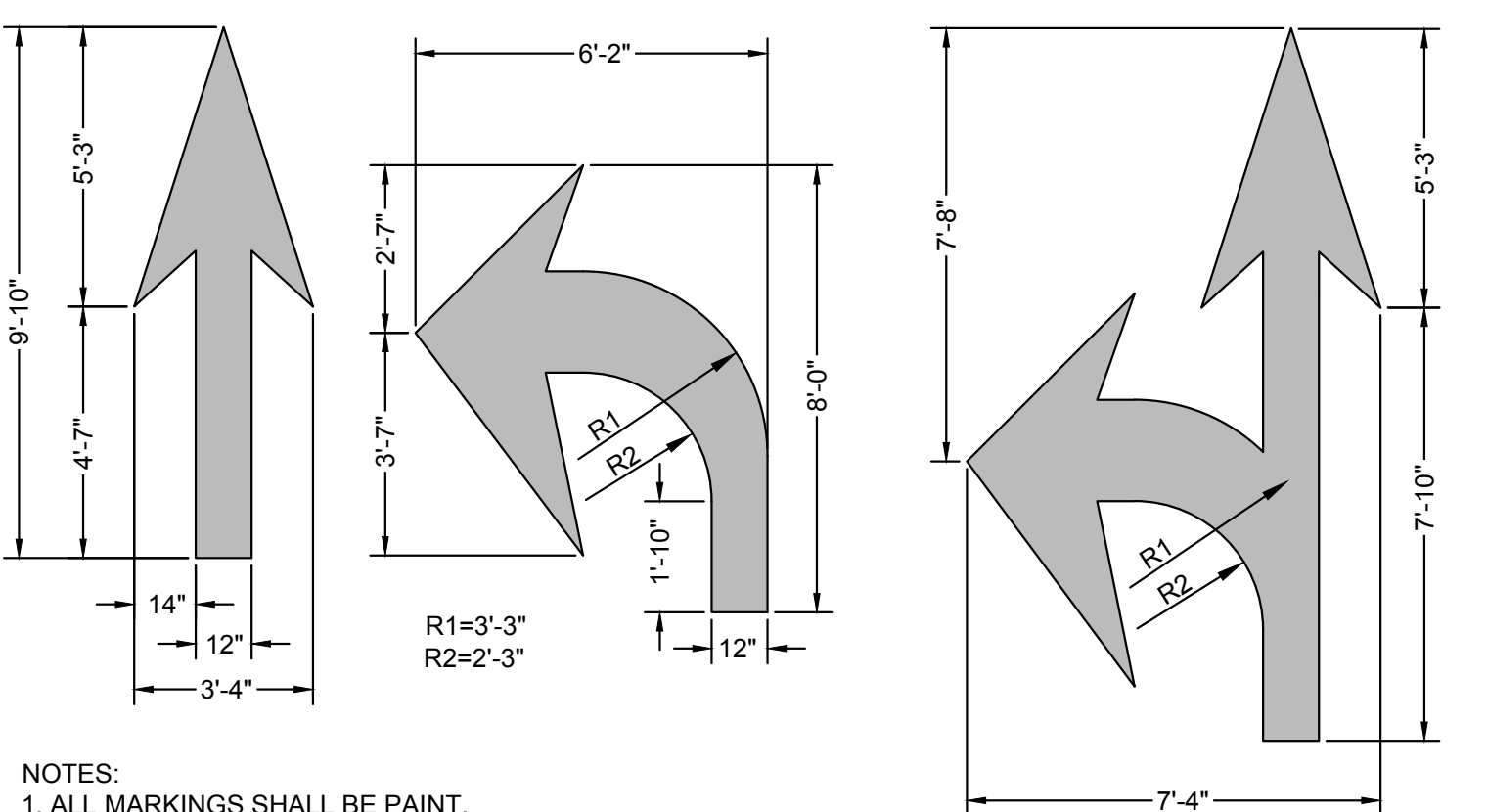


**7 PAINTED ADA PARKING SYMBOL**

**NOTES:**  
 1. ALTERNATE UPSLOPE SECTION TO BE USED ONLY WHEN DRAINING AWAY FROM CURB.  
 2. UNLESS OTHERWISE SHOWN ON DRAWINGS, LOCATE CONTROL JOINTS AT 10' INTERVALS AND EXPANSION JOINTS AT 50' INTERVALS. WHERE CURB IS ADJACENT TO CONCRETE WALK, JOINTS SHALL COINCIDE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



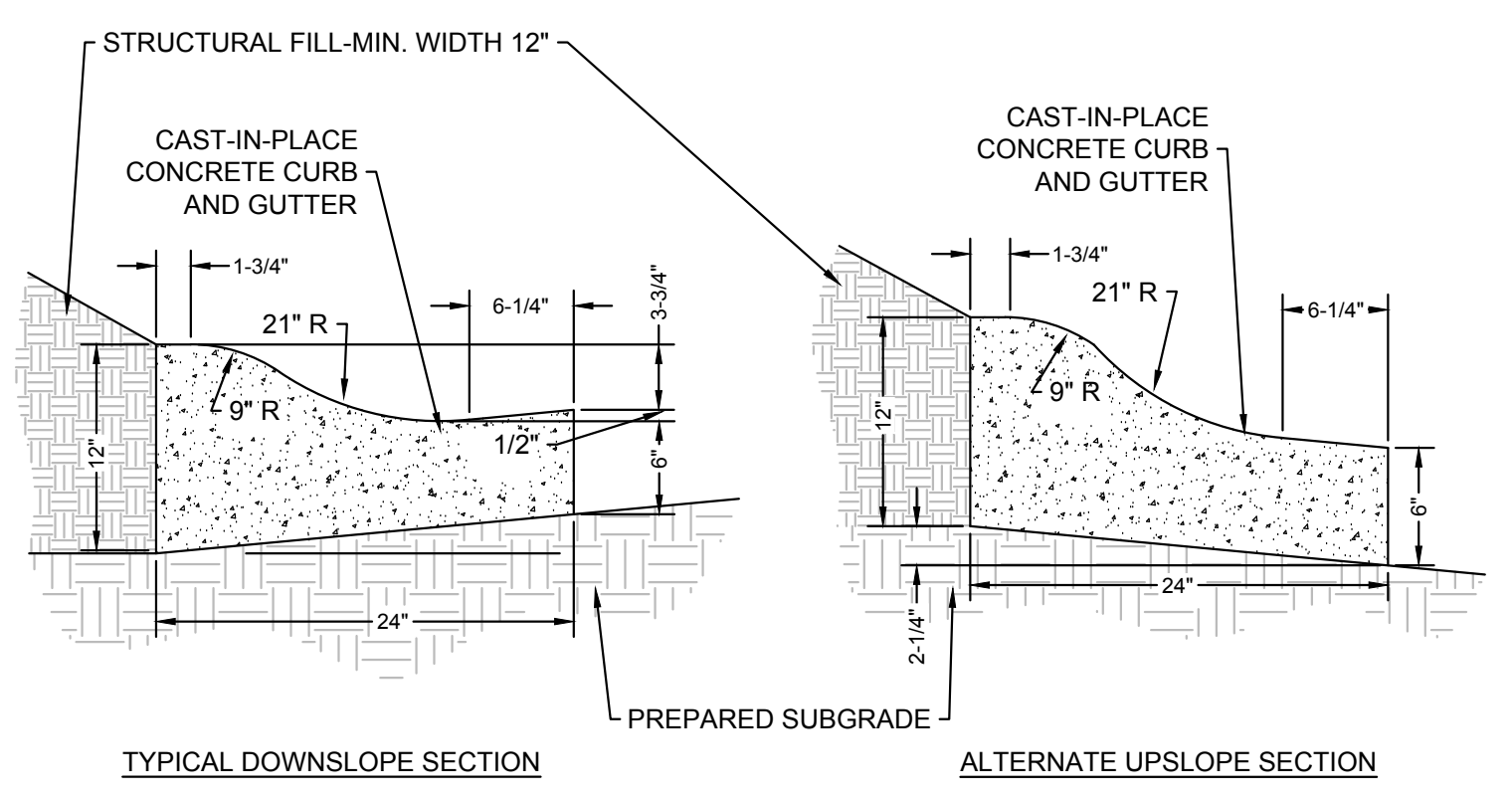
**8 24" STRAIGHT CURB AND GUTTER**  
 SCALE: NOT TO SCALE



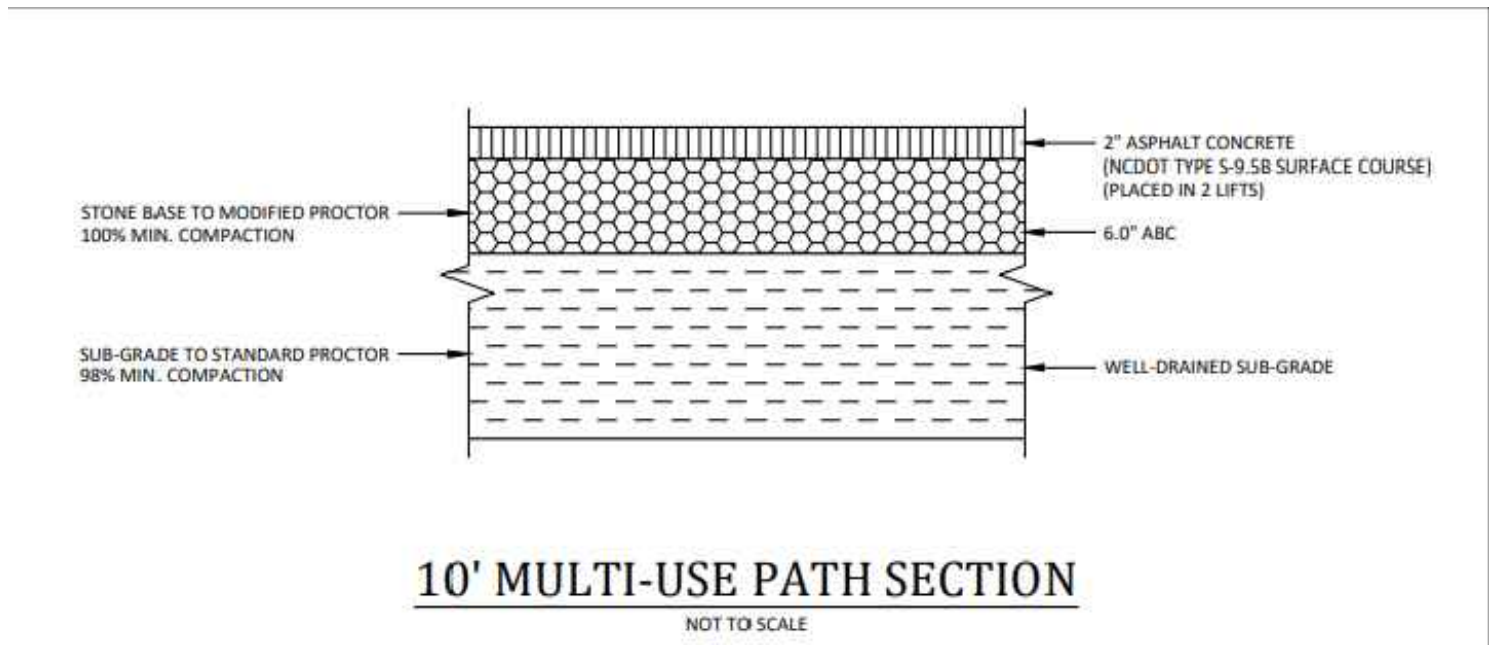
**NOTES:**  
 1. ALL MARKINGS SHALL BE PAINT.  
 2. ALL MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH N.C.D.O.T. STANDARD SPECIFICATIONS AND NORTH CAROLINA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

**9 PAVEMENT-MARKING**  
 SCALE: NOT TO SCALE

**NOTES:**  
 1. ALTERNATE SECTION TO BE USED ONLY WHEN DRAINING AWAY FROM CURB.  
 2. UNLESS OTHERWISE SHOWN ON DRAWINGS, LOCATE CONTROL JOINTS AT 10' INTERVALS AND EXPANSION JOINTS AT 50' INTERVALS. WHERE CURB IS ADJACENT TO CONCRETE WALK, JOINTS SHALL COINCIDE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

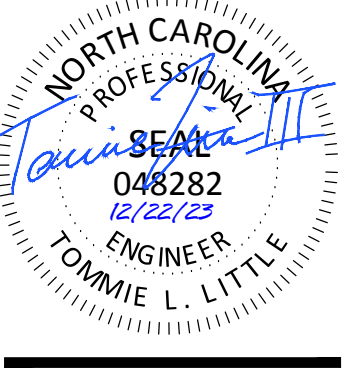


**10 24" ROLL CURB AND GUTTER**  
 SCALE: NOT TO SCALE



**11 10' MULTI-USE PATH SECTION**  
 SCALE: NOT TO SCALE

**SW SEAMONWHITESIDE**  
 MOUNT PLEASANT, SC 843.884.1667  
 GREENVILLE, SC 864.298.0534  
 SUMMERVILLE, SC 843.972.0710  
 SPARTANBURG, SC 864.272.1272  
 CHARLOTTE, NC 980.312.5450  
 WWW.SEAMONWHITESIDE.COM



**TIDAL WAVE AUTO SPA**  
 ROLESVILLE, NC

SW+ PROJECT:	10772
DATE:	12/22/23
DRAWN BY:	CPE
CHECKED BY:	TLL

REVISION HISTORY	

CONSTRUCTION DETAILS



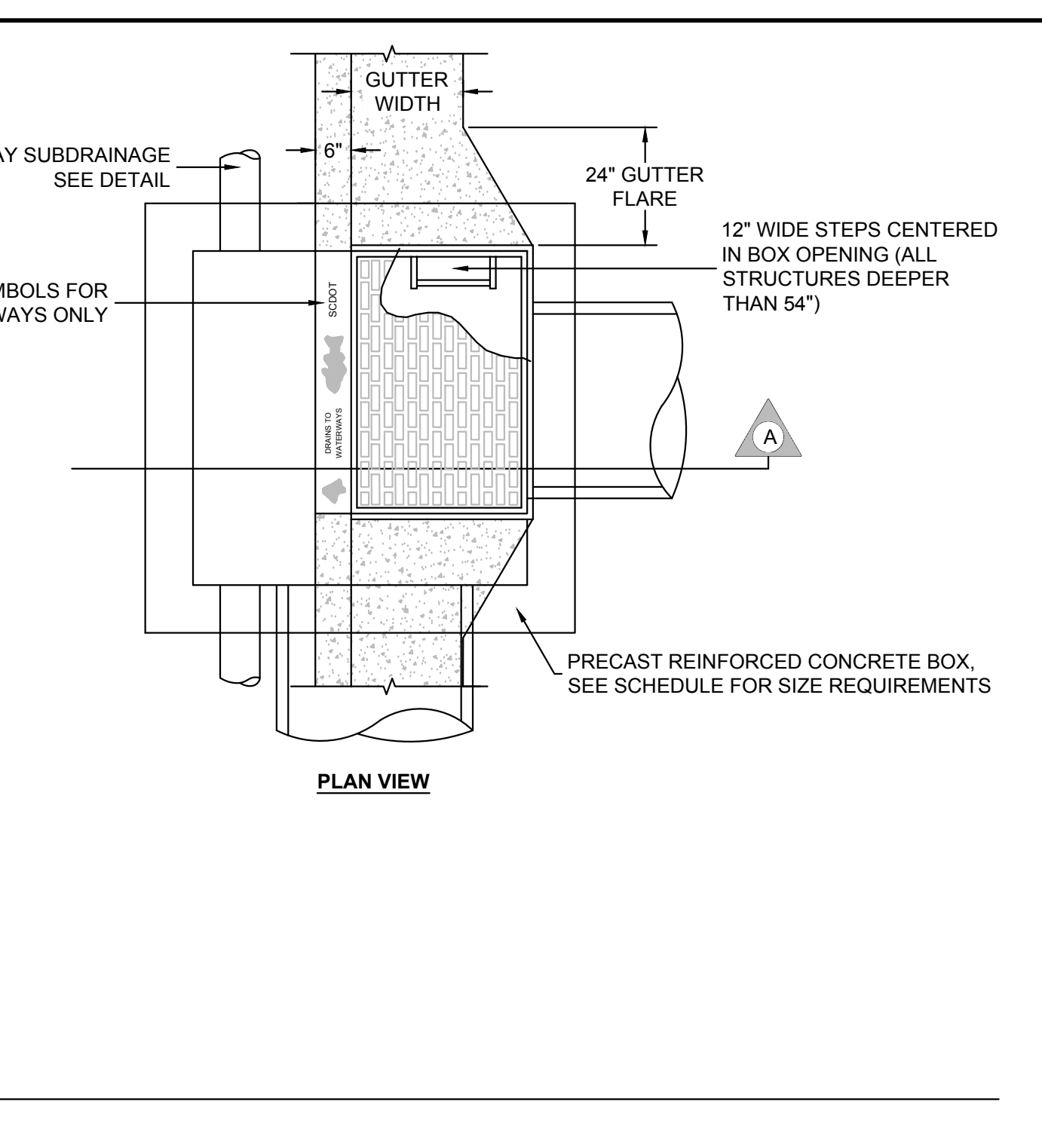
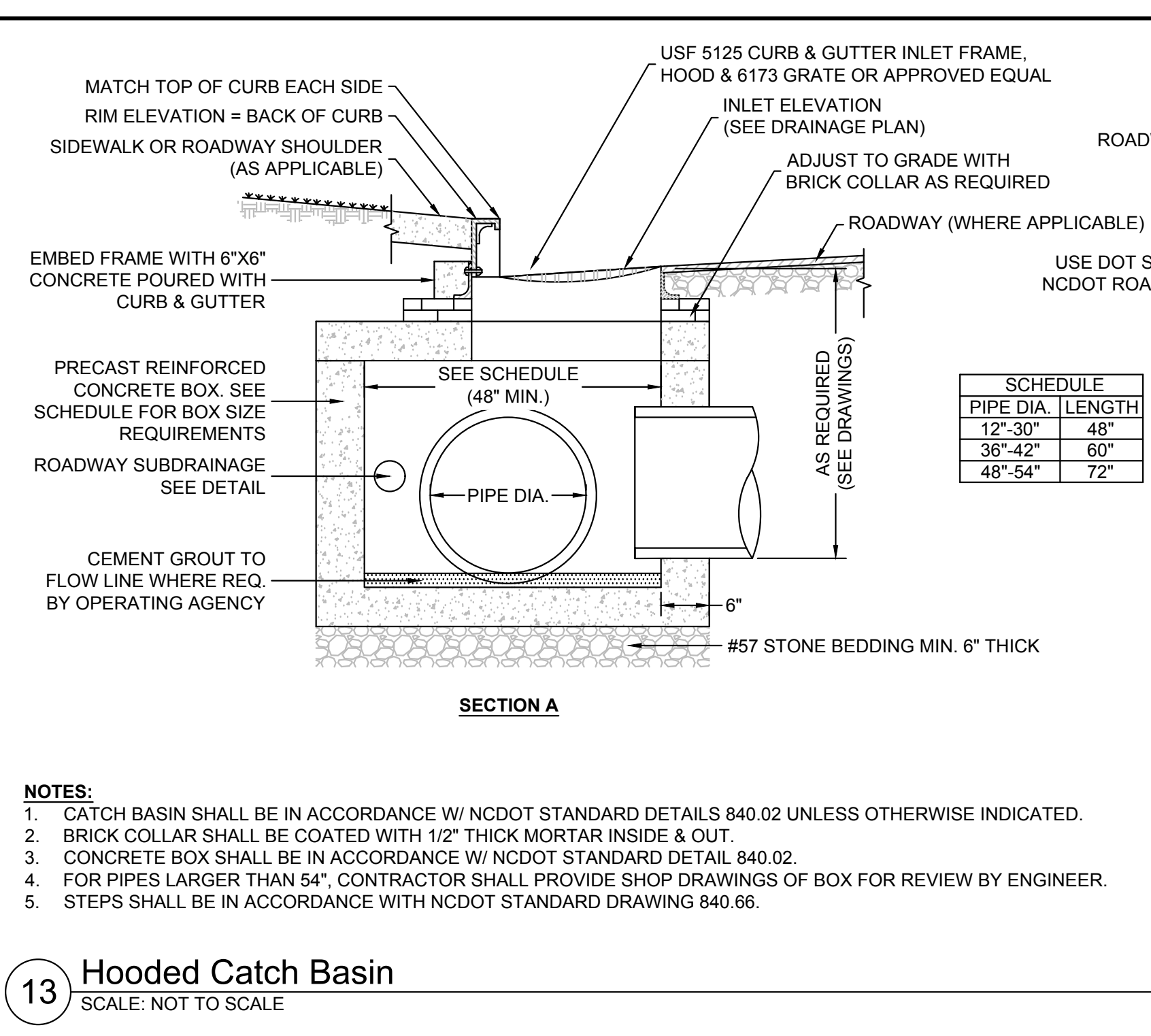
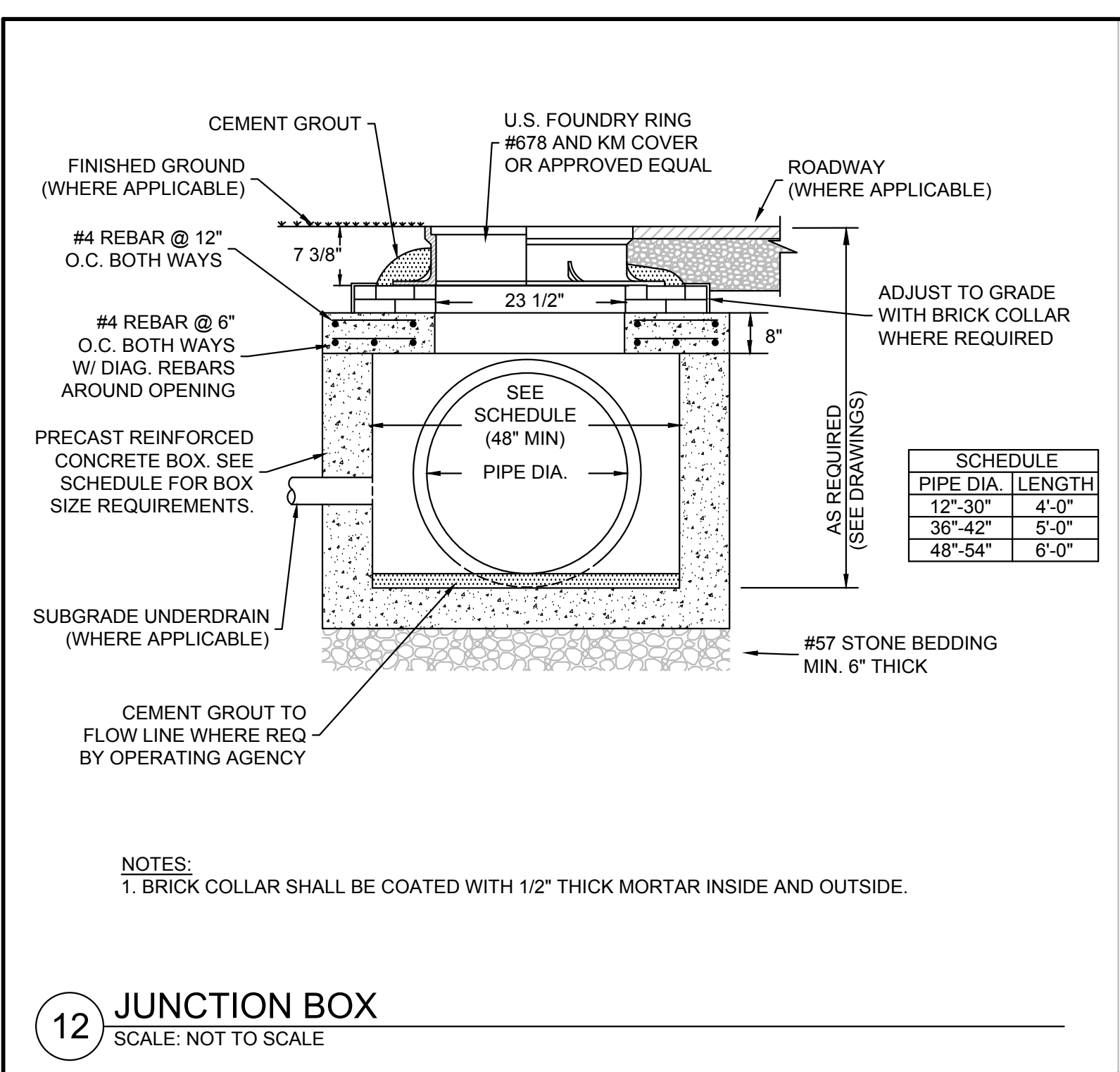
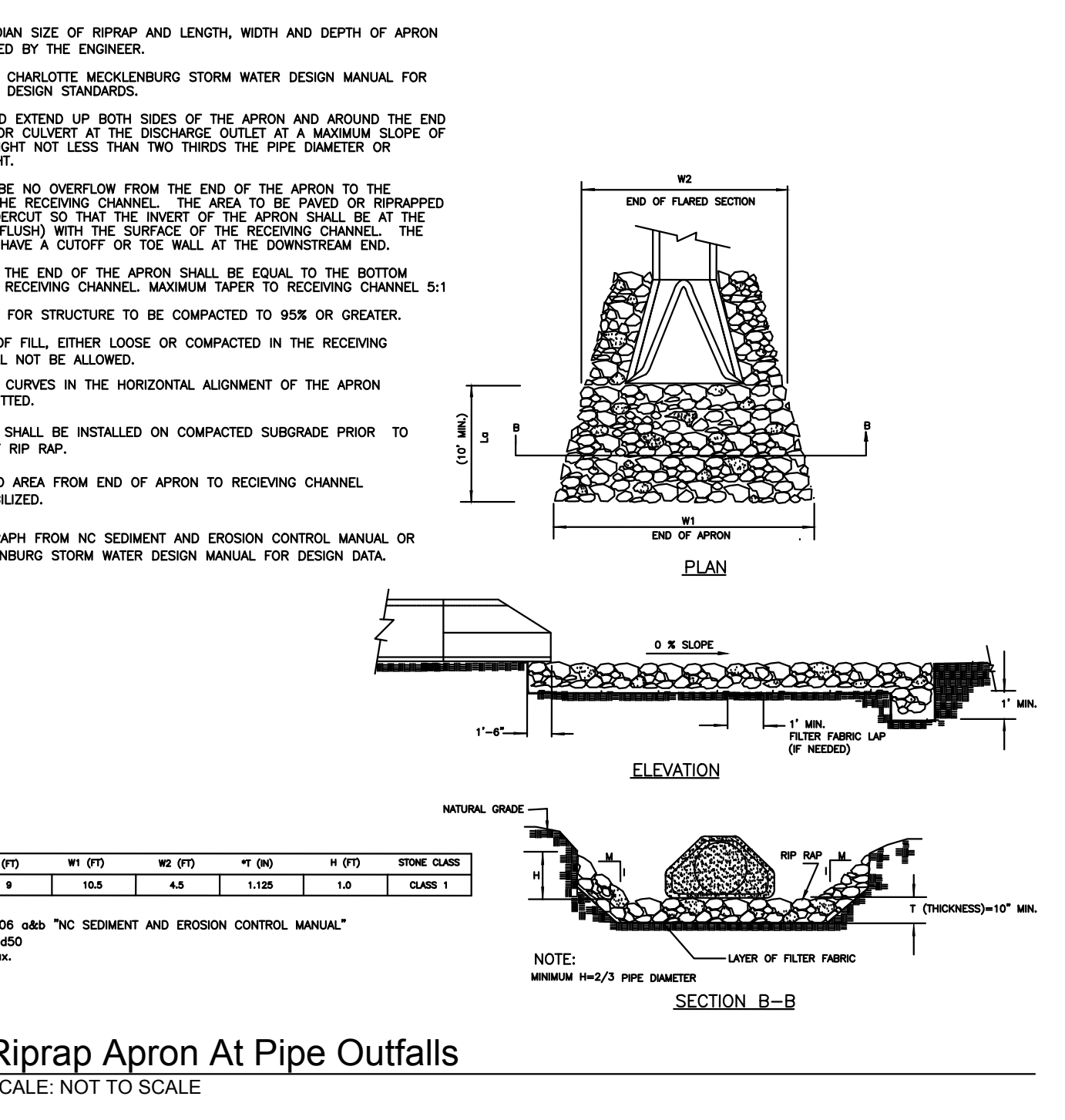
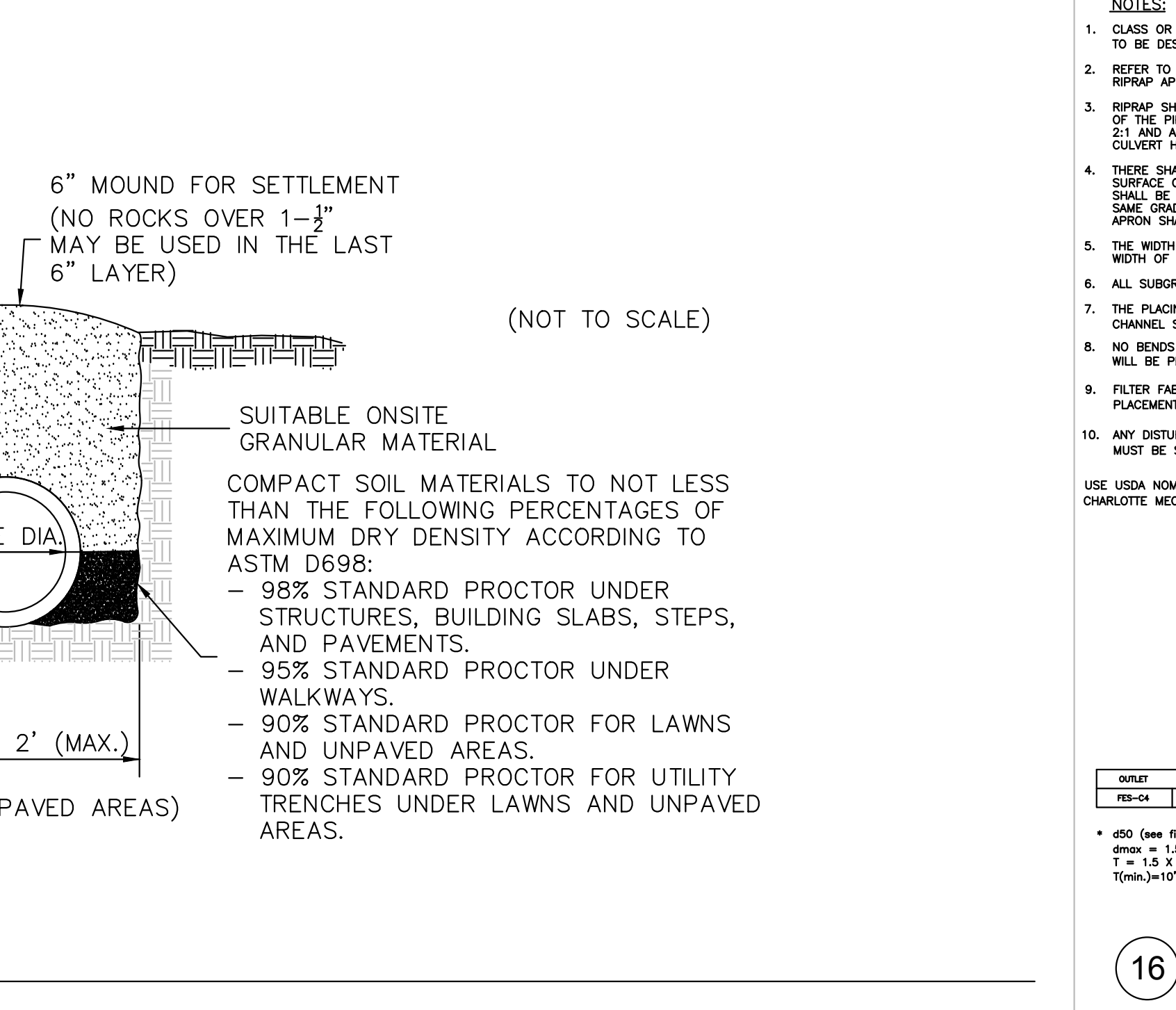
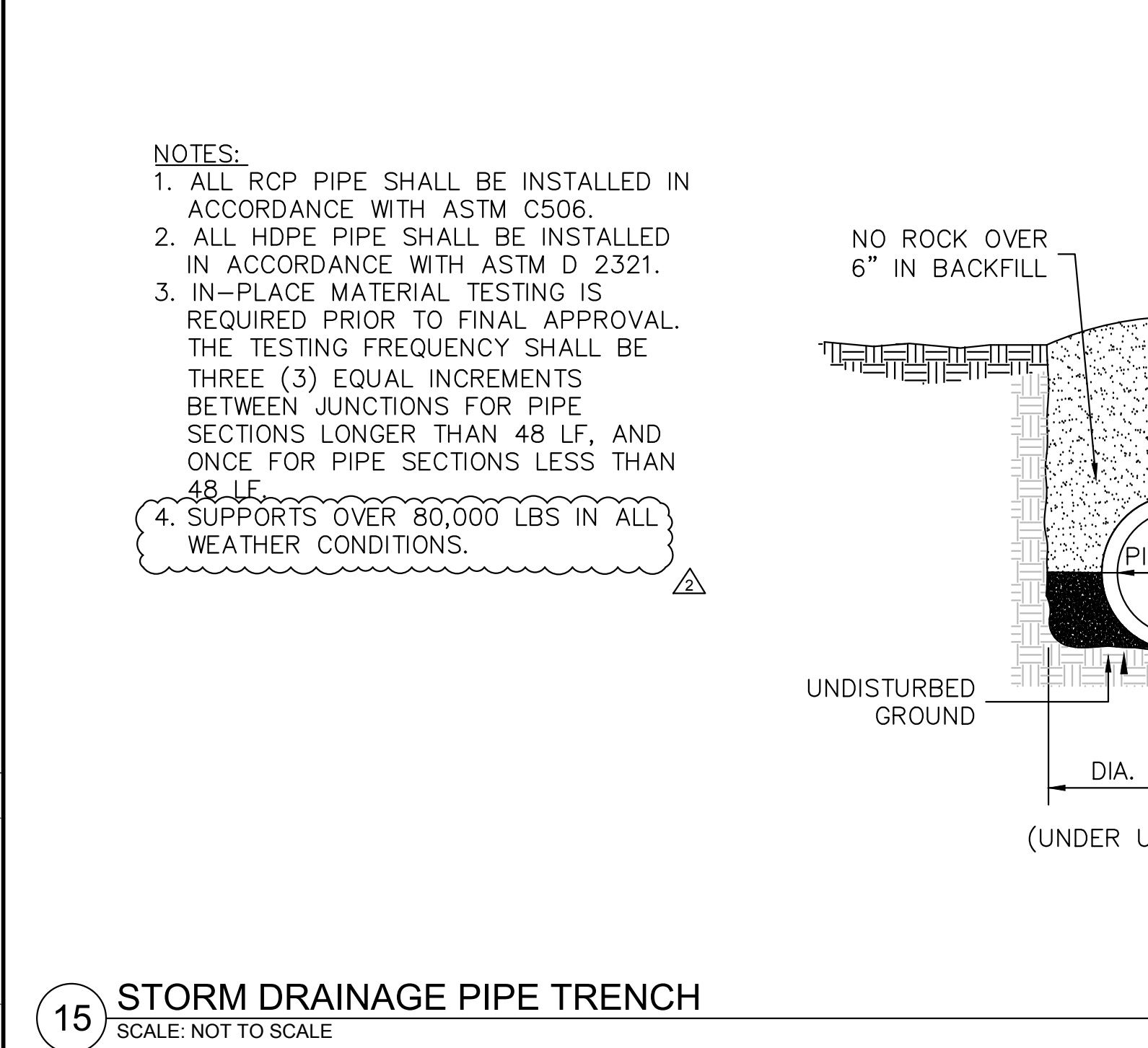


TABLE OF DIMENSIONS

D	T	A	B	C	E	L	WT.
12"	2-1/4"	4"	2'-0"	4'-1"	2'-0"	6'-1"	730
15"	2-1/4"	6"	2'-3"	3'-10"	2'-0"	6'-1"	730
18"	2-1/2"	9"	2'-3"	3'-10"	3'-0"	6'-1"	1160
24"	3"	10"	3'-8"	2'-6"	4'-0"	6'-2"	1770
30"	3-1/2"	1'-0"	4'-6"	1'-8"	5'-0"	6'-2"	2380
36"	4"	1'-3"	5'-3"	2'-11"	6'-0"	6'-2"	5320
42"	4-1/2"	1'-9"	5'-3"	2'-11"	6'-0"	6'-2"	5900
48"	5"	2'-0"	6'-0"	2'-2"	7'-0"	6'-2"	7470
54"	5-1/2"	2'-3"	6'-6"	2'-10"	7'-6"	6'-4"	8810
60"	6"	2'-6"	6'-0"	3'-3"	8'-0"	6'-3"	11180
66"	6-1/2"	3'-0"	6'-0"	2'-3"	8'-6"	6'-3"	12530
72"	7"	3'-0"	6'-6"	1'-8"	9'-0"	6'-3"	13980

GENERAL NOTES:

- SEE FORMER NCDOT STANDARD 310.01 FOR DETAILS.
- REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF REINFORCED CONCRETE PIPE OF LIKE DIAMETER PER AASHTO M170, TABLE 2, WALL B.
- ALL CONCRETE TO BE 3600 P.S.I. COMPRESSIVE STRENGTH.
- PROVIDE TONGUE OR SPIGOT JOINT AT INLET END SECTION.
- PROVIDE GROOVE OR BELL JOINT AT OUTLET END SECTION.
- THE DIMENSIONS FOR END SECTIONS SHALL SUBSTANTIALLY AGREE WITH THE TABLE. MINOR VARIATIONS WILL BE PERMITTED BASED ON THE MANUFACTURER'S STANDARD FORMS AND TEMPLATES.
- NOT TO BE USED IN NCDOT MAINTAINED RIGHT OF WAY.



NOTES:

- CLASS OR MEDIAN SIZE OF RIPRAP AND LENGTH, WIDTH AND DEPTH OF APRON TO BE DESIGNED BY THE ENGINEER.
- REFER TO THE CHARLOTTE-MECKLENBURG STORM WATER DESIGN MANUAL FOR RIPRAP APRON DESIGN STANDARDS.
- RIPRAP SHOULD EXTEND UP BOTH SIDES OF THE APRON AND AROUND THE END OF THE PIPE OR CULVERT AT THE DISCHARGE OUTLET AT A MAXIMUM SLOPE OF 2:1 AND A HEIGHT NOT LESS THAN TWO THIRDS THE PIPE DIAMETER OR CULVERT HEIGHT.
- THERE SHALL BE NO OVERFLOW FROM THE END OF THE APRON TO THE SURFACE OF THE RECEIVING CHANNEL. THE AREA TO BE PAVED OR RIPRAPPED SHALL BE UNDERCUT SO THAT THE INVERT OF THE APRON SHALL BE AT THE SAME GRADE (FLUSH) WITH THE SURFACE OF THE RECEIVING CHANNEL. THE APRON SHALL HAVE A CUTOFF OR TOE WALL AT THE DOWNSTREAM END.
- THE WIDTH OF THE END OF THE APRON SHALL BE EQUAL TO THE BOTTOM WIDTH OF THE RECEIVING CHANNEL. MAXIMUM TAPER TO RECEIVING CHANNEL: 5:1
- ALL SUBGRADE FOR STRUCTURE TO BE COMPACTED TO 95% OR GREATER.
- THE PLACING OF FILL, EITHER LOOSE OR COMPACTED IN THE RECEIVING CHANNEL SHALL NOT BE ALLOWED.
- NO BENDS OR CURVES IN THE HORIZONTAL ALIGNMENT OF THE APRON WILL BE PERMITTED.
- FILTER FABRIC SHALL BE INSTALLED ON COMPACTED SUBGRADE PRIOR TO PLACEMENT OF RIP RAP.
- ANY DISTURBED AREA FROM END OF APRON TO RECEIVING CHANNEL MUST BE STABILIZED.

USE USDA MONOGRAPH FROM SOIL SEDIMENT AND EROSION CONTROL MANUAL OR CHARLOTTE-MECKLENBURG STORM WATER DESIGN MANUAL FOR DESIGN DATA.

OUTLET	L <sub>1</sub> (FT)	W <sub>1</sub> (FT)	W <sub>2</sub> (FT)	H <sub>1</sub> (FT)	H <sub>2</sub> (FT)	STONE CLASS
FEI-C4	9	10.5	4.5	1.125	1.0	CLASS 1

\* 450 (min) to 8.05 (max) % SILT AND CLAY PER AASHTO M228  
 d<sub>max</sub> = 1.5 x d<sub>50</sub>  
 T = 1.5 x d<sub>max</sub>  
 T<sub>min</sub> = 10"

NOTE: MINIMUM 1/2" PIPE DIAMETER LAYER OF FILTER FABRIC

NOTES:

- ALL RCP PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C506.
- ALL HDPE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D 2321.
- IN-PLACE MATERIAL TESTING IS REQUIRED PRIOR TO FINAL APPROVAL. THE TESTING FREQUENCY SHALL BE THREE (3) EQUAL INCREMENTS BETWEEN JUNCTIONS FOR PIPE SECTIONS LONGER THAN 48 LF, AND ONCE FOR PIPE SECTIONS LESS THAN 48 LF.
- SUPPORTS OVER 80,000 LBS IN ALL WEATHER CONDITIONS.

DEPARTMENT OF PUBLIC UTILITIES  
 CITY OF RALEIGH

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-36	V.C.A.	1-23-19	A.B.B.	7-10-20
	D.W.C.	11-6-19	D.H.L.	6/10/20

NOTES:

- ALL ABOVE GROUND ENCLOSURES MUST HAVE ADEQUATE DRAINAGE (TWICE THE DIAMETER OF THE SUPPLY PIPE) TO DAYLIGHT ABOVE GRADE.
- REDUCED PRESSURE BACKFLOW PREVENTERS MAY BE LOCATED IN A BUILDING PROVIDED THERE ARE NO OTHER UNPROTECTED TAPS BETWEEN THE MAIN AND THE BUILDING. DRAINAGE IN A BUILDING MUST BE TWICE THE DIAMETER OF THE SUPPLY PIPE.
- ABOVE GROUND INSULATED VAULTS MUST BE ASSE 1060 APPROVED ABOVE GROUND ENCLOSURES. SEE CROSS CONNECTION MANUAL FOR ENCLOSURE FREEZE PROTECTION AND CERTIFICATION REQUIREMENTS.
- RESIDENTIAL LAWN IRRIGATION R.P. ASSEMBLIES THAT ARE REMOVED TO PREVENT FREEZING IN THE WINTER MONTHS MUST BE CAPPED OFF. ALL ABOVE GROUND ASSEMBLIES, EXCEPT RESIDENTIAL LAWN IRRIGATION ASSEMBLIES, MUST BE PROTECTED FROM FROST.
- FOR ENCLOSURE DIMENSIONS SEE DETAIL W-34.
- STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
- ALL ASSEMBLIES MUST BE ON THE CURRENT APPROVAL LIST.

NOTES:

- SEE FORMER NCDOT STANDARD 310.01 FOR DETAILS.
- REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF REINFORCED CONCRETE PIPE OF LIKE DIAMETER PER AASHTO M170, TABLE 2, WALL B.
- ALL CONCRETE TO BE 3600 P.S.I. COMPRESSIVE STRENGTH.
- PROVIDE TONGUE OR SPIGOT JOINT AT INLET END SECTION.
- PROVIDE GROOVE OR BELL JOINT AT OUTLET END SECTION.
- THE DIMENSIONS FOR END SECTIONS SHALL SUBSTANTIALLY AGREE WITH THE TABLE. MINOR VARIATIONS WILL BE PERMITTED BASED ON THE MANUFACTURER'S STANDARD FORMS AND TEMPLATES.
- NOT TO BE USED IN NCDOT MAINTAINED RIGHT OF WAY.

REVISION HISTORY

NO.	DATE	DESCRIPTION

CONSTRUCTION DETAILS

MOUNT PLEASANT, SC 843.884.1667  
 GREENVILLE, SC 864.298.0534  
 SUMMERVILLE, SC 843.972.0710  
 SPARTANBURG, SC 864.272.1272  
 CHARLOTTE, NC 980.312.5450  
 WWW.SEAMONWHITESIDE.COM

NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAMON WHITESIDE & ASSOCIATES, INC.  
 NO. C-2466  
 JOYMMIE L. LITTLE  
 048282  
 12/22/23

TIDAL WAVE AUTO SPA  
 ROLESVILLE, NC

SW+ PROJECT: 10772  
 DATE: 12/22/23  
 DRAWN BY: CPE  
 CHECKED BY: TLL

C8.4







PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	



# TWAS S MAIN

## ROLESVILLE, NC, USA

### SC-160LP STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-160LP.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1.5".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
  - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
  - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
  - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

### IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-160LP SYSTEM

- STORMTECH SC-160LP CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-160LP CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-160LP CONSTRUCTION GUIDE".
- FOUNDATION STONE AND EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE; AASHTO M43 #3,357, 4, 467, 5, 56, OR 57.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- THE DEPTH OF FOUNDATION STONE SHALL BE DETERMINED BASED ON THE SUBGRADE BEARING CAPACITY PROVIDED BY THE SITE DESIGN ENGINEER.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES CONCERNING CHAMBER FOUNDATION DESIGN AND SUBGRADE BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- CHAMBERS SHALL BE INSTALLED "TOE TO TOE". NO ADDITIONAL SPACING BETWEEN ROWS IS REQUIRED.
- STORMTECH RECOMMENDS 3 BACKFILL METHODS:
  - STONESHOOTER LOCATED OFF THE CHAMBER BED.
  - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
  - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

### NOTES FOR CONSTRUCTION EQUIPMENT

- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-160LP CHAMBERS IS LIMITED:
  - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
  - NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-160LP CONSTRUCTION GUIDE".
  - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-106LP CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



PROPOSED LAYOUT		PROPOSED ELEVATIONS:		*INVERT ABOVE BASE OF CHAMBER				
				PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
457	STORMTECH SC-160LP CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	399.45					
92	STORMTECH SC-160LP END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	391.12					
6	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	390.62	MANIFOLD	A	12" x 8" REDUCING CONCENTRIC MOLDED FITTINGS (12" PIPE)	-1.17"	
6	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	390.62				0.96"	
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	390.62	MANIFOLD	B	18" x 8" ADS N-12 (18" PIPE)	-4.13"	
8351	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	389.95	MANIFOLD	C	8" x 8" BOTTOM MANIFOLD, MOLDED FITTINGS	0.96"	
		TOP OF SC-160LP CHAMBER:	389.45					
		8" x 8" BOTTOM MANIFOLD INVERT:	388.53	MANIFOLD	D	15" x 8" ADS N-12 (15" PIPE)	-2.58"	
		8" ISOLATOR ROW PLUS INVERT:	388.53				0.96"	
8089	SYSTEM AREA (SF)	8" ISOLATOR ROW PLUS INVERT:	388.53	CONCRETE STRUCTURE	E	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		3.4 CFS OUT
646.3	SYSTEM PERIMETER (ft)	8" ISOLATOR ROW PLUS INVERT:	388.53	CONCRETE STRUCTURE	F	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		4.4 CFS IN
		8" BOTTOM CONNECTION INVERT:	388.53	W/WEIR				
		18" x 8" BOTTOM MANIFOLD INVERT (8" PIPE):	388.53	CONCRETE STRUCTURE	G	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		5.9 CFS IN
		15" x 8" BOTTOM MANIFOLD INVERT (8" PIPE):	388.53	W/WEIR				
		12" x 8" BOTTOM MANIFOLD INVERT (8" PIPE):	388.53	CONCRETE STRUCTURE	H	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		0.7 CFS IN
		BOTTOM OF SC-160LP CHAMBER:	388.45	W/WEIR				
		12" x 8" BOTTOM MANIFOLD INVERT (12" PIPE):	388.35	UNDERDRAIN	I	4" ADS N-12 DUAL WALL PERFORATED HDPE UNDERDRAIN		
		15" x 8" BOTTOM MANIFOLD INVERT (15" PIPE):	388.24					
		18" x 8" BOTTOM MANIFOLD INVERT (18" PIPE):	388.11					
		UNDERDRAIN INVERT:	387.95					
BOTTOM OF STONE:	387.95							

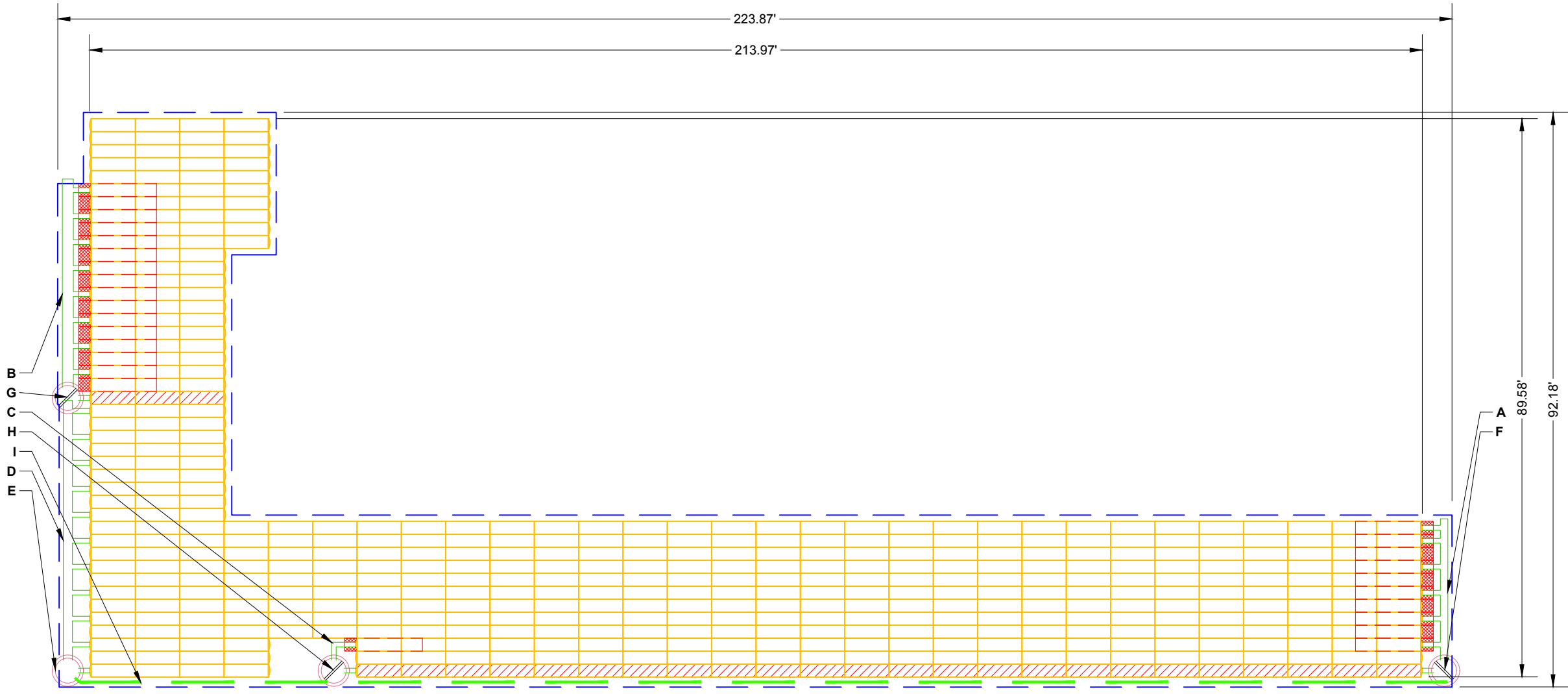
TWAS S MAIN	
ROLESVILLE, NC, USA	
DATE:	DRAWN: KH
PROJECT #:	CHECKED: N/A

DATE	CHK	DRW	CHK	DESCRIPTION

**StormTech®**  
Chamber System

888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD  
HILLIARD, OH 43026  
1-800-733-7473



- ISOLATOR ROW PLUS (SEE DETAIL/TYP 2 PLACES)
- PLACE MINIMUM 12.50' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS
- BED LIMITS

**NOTES**

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

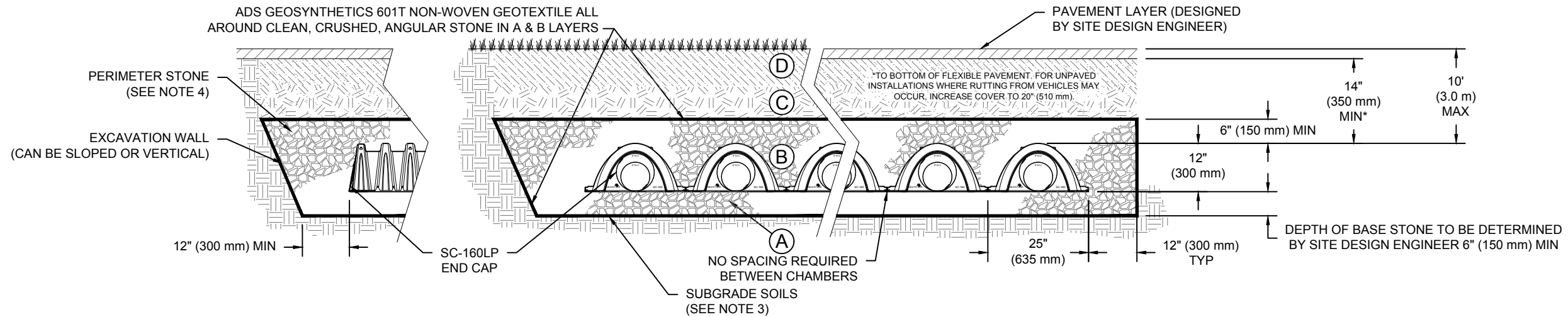


## ACCEPTABLE FILL MATERIALS: STORMTECH SC-160LP CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	<b>FINAL FILL:</b> FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	<b>INITIAL FILL:</b> FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 14" (355 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE.  MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3  OR  AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	<b>EMBEDMENT STONE:</b> FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	<b>FOUNDATION STONE:</b> FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>

**PLEASE NOTE:**

- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



**NOTES:**

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1.5"
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

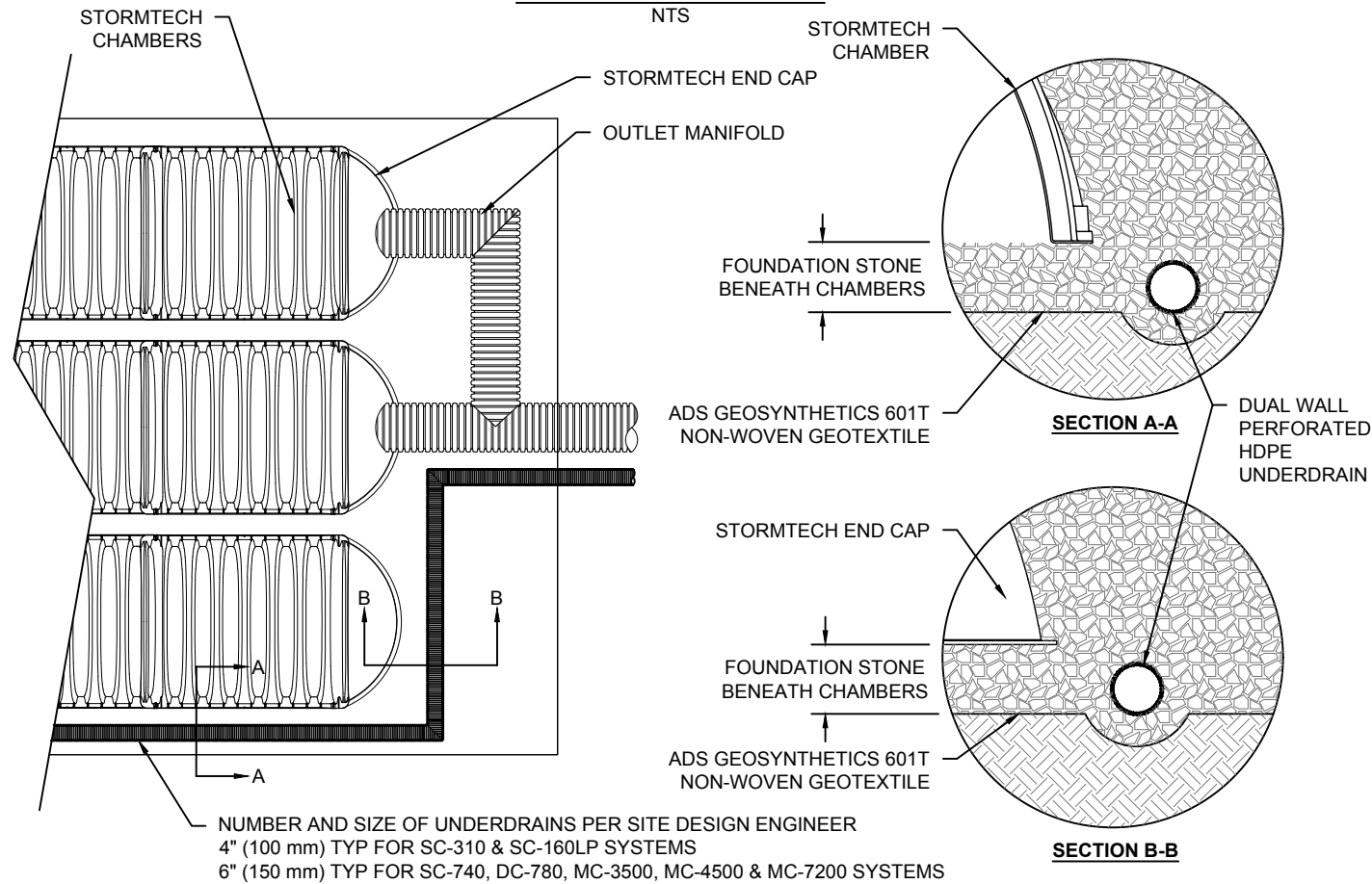
<b>TWAS MAIN</b>	ROLESVILLE, NC, USA	DRAWN: KH	CHECKED: N/A
		DATE:	PROJECT #:
		DATE	DESCRIPTION
		CHK	CHK
		DRW	DRW
		DATE	DATE
<b>StormTech®</b> Chamber System		888-892-2694   WWW.STORMTECH.COM	
4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473			
THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.			
SHEET <b>3 OF 5</b>			



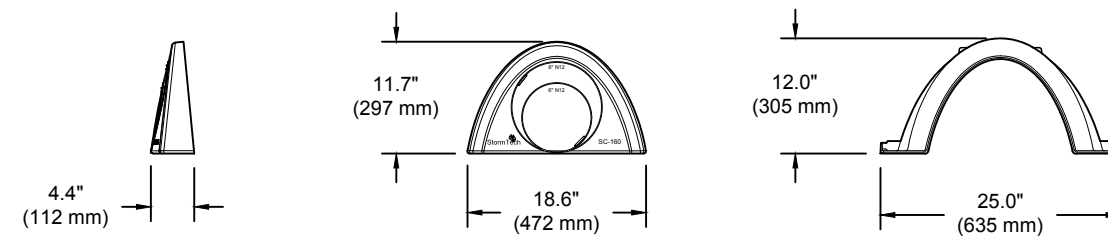
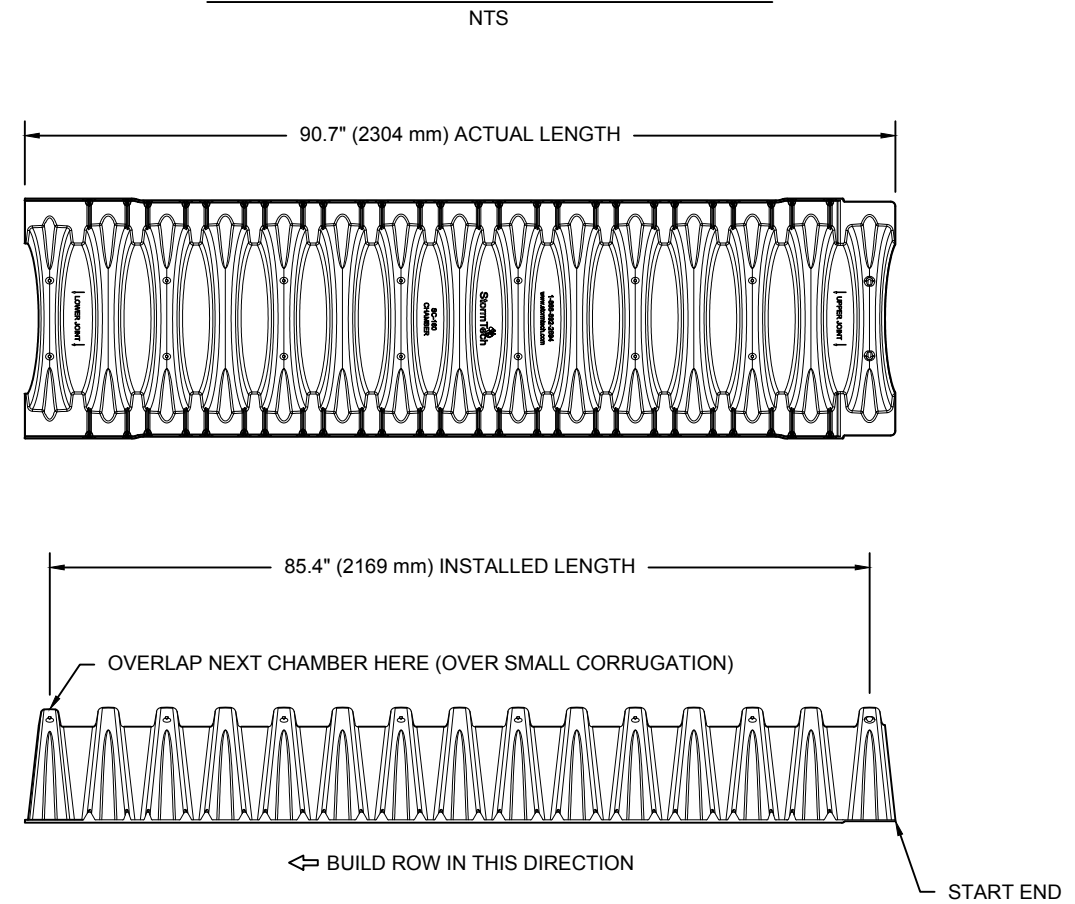




**UNDERDRAIN DETAIL**



**SC-160LP TECHNICAL SPECIFICATION**



**NOMINAL CHAMBER SPECIFICATIONS**

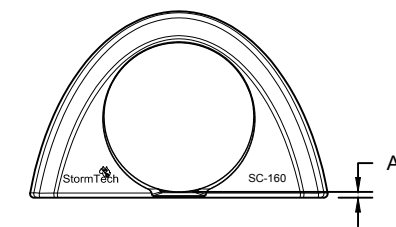
SIZE (W X H X INSTALLED LENGTH)	25.0" X 12.0" X 85.4"	(635 mm X 305 mm X 2169 mm)
CHAMBER STORAGE	6.85 CUBIC FEET	(0.19 m <sup>3</sup> )
MINIMUM INSTALLED STORAGE*	16.0 CUBIC FEET	(0.45 m <sup>3</sup> )
WEIGHT	24.0 lbs.	(10.9 kg)

\*ASSUMES 6" (152 mm) ABOVE, 6" (152 mm) BELOW, AND STONE BETWEEN CHAMBERS WITH 40% STONE POROSITY.

PART #	STUB	A
SC160EPP	6" (150 mm)	0.66" (16 mm)
	8" (200 mm)	0.80" (20 mm)
SC160EPP08	8" (200 mm)	0.96" (24 mm)

ALL STUBS ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

NOTE: ALL DIMENSIONS ARE NOMINAL



TWAS S MAIN  
 ROLESVILLE, NC, USA

DATE: \_\_\_\_\_  
 DRAWN: KH  
 PROJECT #: \_\_\_\_\_  
 CHECKED: N/A

DATE	DRW	CHK	DESCRIPTION

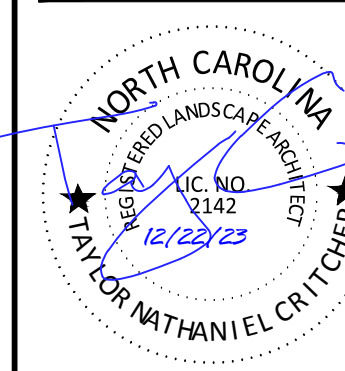
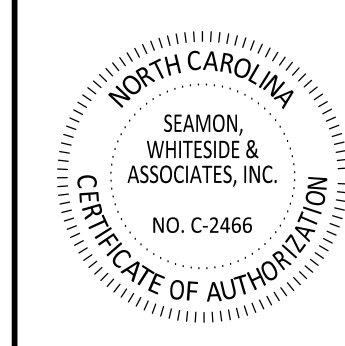
**StormTech®**  
 Chamber System  
 888-892-2694 | WWW.STORMTECH.COM

4640 TRUJMAN BLVD  
 HILLIARD, OH 43026  
 1-800-733-7473

**ADS**

THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.





**REVISION HISTORY**

NO.	DESCRIPTION

**GENERAL NOTES:**

- SEE EROSION CONTROL PLANS (SHEETS C4.1 - C4.3) FOR SILT FENCE LOCATIONS, TREE PROTECTION ZONES AND BARRICADES, AND ADDITIONAL NOTES AND DETAILS.
- FOR TREE REMOVALS, PLEASE REFER TO SHEETS C3.1.
- FOR REQUIRED TREE MITIGATION AND DEVELOPMENT INCHES PER THE TOWN OF ROLESVILLE ZONING ORDINANCE, PLEASE REFER TO SHEET L1.1 FOR PLANT SCHEDULE QUANTITY AND SIZES. THE OVERALL PLANT QUANTITY FOR THE ENTIRE SITE CAN BE FOUND ON THE MASTER PLAN SCHEDULE, SHEET L-1.1.
- SEE SITE PLAN [C5.1] FOR SITE LABELS, INFORMATION AND DETAILS.
- CONTRACTOR TO CONTACT CIVIL ENGINEER OR LANDSCAPE ARCHITECT REGARDING ANY SITE WORK MODIFICATIONS FROM THESE PLANS PRIOR TO CHANGES IN THE FIELD.  
**CONTACT: 980-312-5450**

US HWY 401 / LOUISBURG ROAD (317 LF)			
	STREET BUFFER	PLANTINGS REQUIRED	PLANTINGS PROVIDED
MINIMUM BUFFER WIDTH	30' MIN.		
CANOPY TREE	1 TREE PER 40 LF	1	1
UNDERSTORY TREE*	2 TREES PER 40 LF	14	14

\*UNDERSTORY TREES SHALL BE USED WHERE OVERHEAD UTILITIES CONFLICTS WITH STREET BUFFER

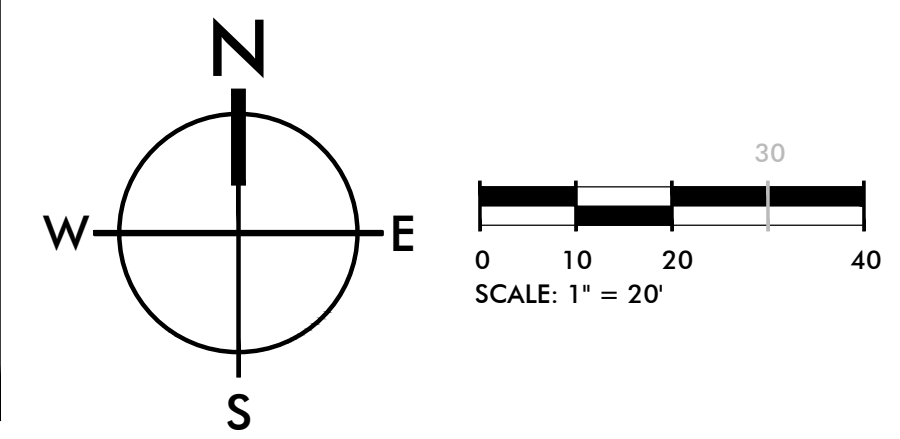
PLANT SCHEDULE HWY 401 BUFFER									
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	HEIGHT	SPREAD	SPACING	REMARKS	
<b>TREES</b>									
○	QUEP	1	QUERCUS PALUSTRIS / PIN OAK	2.5" CAL	8' MIN	4'-6"	AS SHOWN	FWF, SP	
<b>UNDERSTORY TREES</b>									
+	CERO	2	CERCIS CANADENSIS 'OKLAHOMA' / OKLAHOMA REDBUD	1.5" CAL	8' MIN	8'	AS SHOWN	FWF, SP	
●	CHIV	7	CHIONANTHUS VIRGINICUS / WHITE FRINGETREE	1.5" CAL	8' MIN	8'	AS SHOWN	FWF, SP	
⊗	MAGS	5	MAGNOLIA X SOULANGIANA / SAUCER MAGNOLIA	1.5" CAL	8' MIN	8'	AS SHOWN	MS, FWF, SP	

GRAND PARK DRIVE (275 LF)			
	STREET BUFFER	PLANTINGS REQUIRED	PLANTINGS PROVIDED
MINIMUM BUFFER WIDTH	10' MIN.		
CANOPY TREE	1 TREE PER 60 LF	5	6 (1 PROPOSED TREE, 5 EX. TREES TO REMAIN)

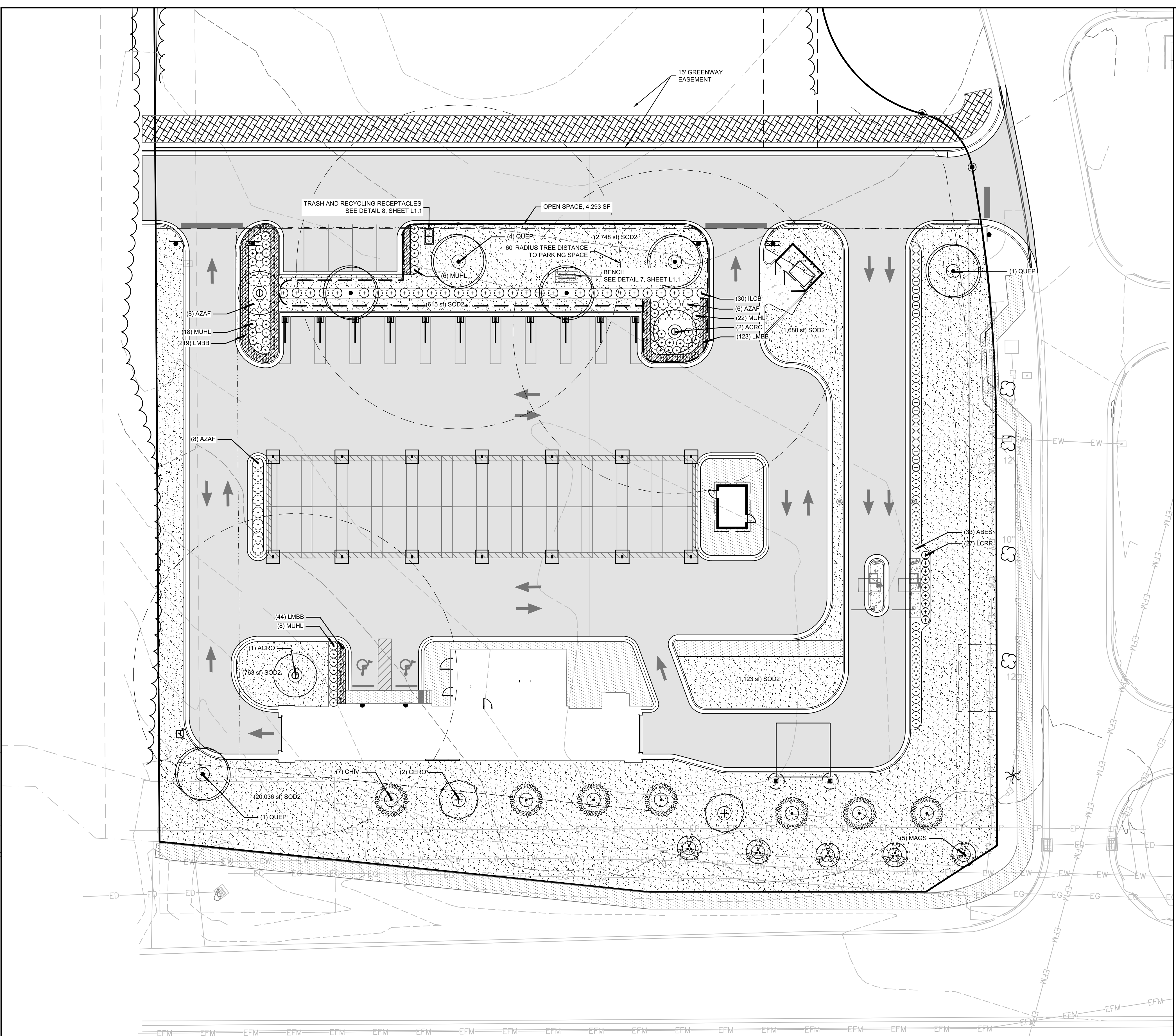
PLANT SCHEDULE GRAND PARK DRIVE									
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	HEIGHT	SPREAD	SPACING	REMARKS	
<b>TREES</b>									
○	QUEP	1	QUERCUS PALUSTRIS / PIN OAK	2.5" CAL	8' MIN	4'-6"	AS SHOWN	FWF, SP	

**OPEN SPACE**  
SITE AREA = 79,279.2 SF  
OPEN SPACE REQUIREMENTS = 5% OF TOTAL SITE AREA  
OPEN SPACE REQUIRED = 3,964 SF  
OPEN SPACE PROVIDED = 4,293 SF

PLANT SCHEDULE			
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME
<b>TREES</b>			
○	ACRO	3	ACER RUBRUM 'OCTOBER GLORY'™ / OCTOBER GLORY MAPLE
○	QUEP	6	QUERCUS PALUSTRIS / PIN OAK
<b>UNDERSTORY TREES</b>			
+	CERO	2	CERCIS CANADENSIS 'OKLAHOMA' / OKLAHOMA REDBUD
●	CHIV	7	CHIONANTHUS VIRGINICUS / WHITE FRINGETREE
⊗	MAGS	5	MAGNOLIA X SOULANGIANA / SAUCER MAGNOLIA
<b>SHRUBS</b>			
●	ABES	33	ABELIA X GRANDIFLORA 'SHERWOODII' / DWARF ABELIA
●	AZAF	22	AZALEA INDICA 'FORMOSA' / FORMOSA AZALEA
+	ILCB	30	ILEX CORNUTA 'BURFORDII NANA' / DWARF BURFORD HOLLY
+	LCRR	27	LOROPETALUM CHINENSE RUBRUM 'RUBY' / DWARF RUBY FRINGE FLOWER
<b>GRASSES</b>			
+	MUHL	54	MUHLENBERGIA FILIPES / SWEETGRASS
<b>GROUND COVERS</b>			
▨	LMBB	422	LIRIOPE MUSCARI 'BIG BLUE' / BIG BLUE LILYTURF
<b>SOD/SEED</b>			
▨	SOD2	26,904 SF	CYNODON DACTYLON 'TIFTUF' / TIFTUF BERMUDA GRASS



- TIDAL WAVE LANDSCAPE NOTES**
- ALL DISTURBED AREAS NOT COVERED BY STRUCTURES, PAVING OR LANDSCAPING SHALL BE SODDED. NO SEEDING SHALL BE USED.
  - ALL PLANT BEDS SHALL BE UNDERLAIN WITH LANDSCAPING FABRIC AND HAVE 3" OF DYED BROWN OR BLACK WOOD MULCH WITH EDGING AS REQUIRED. NO PINE STRAW MULCH WILL BE ALLOWED.
  - ALL RIVER ROCK SHALL BE 4"-6" MINIMUM IN DIAMETER AND SHALL BE UNDERLAIN WITH LANDSCAPING FABRIC.
  - AN UNDERGROUND IRRIGATION SYSTEM, SHALL BE INSTALLED AND SHALL COMPLY WITH ALL LOCAL MUNICIPAL CODES AND REGULATIONS AND ALSO COMPLY WITH THE LATEST NATIONAL ELECTRIC CODE RULES FOR ALL ELECTRIC WORKS AND MATERIALS.
  - IF THERE IS NO PLANT BED AGAINST THE CAR WASH TUNNEL, VAC HOUSE(S), OR DUMPSTER ENCLOSURE, THEN THERE SHALL BE A 18 INCH MINIMUM STRIP OF RIVER ROCK INSTALLED.



501 WINDY PARK BOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29546 | JUDSON MILLS BUILDING 6000, 701 EASLEY BROOK RD, SUITE 6000, GREENVILLE, SC 29611 | 713 N. CEDAR STREET | SUMMERVILLE, SC 29583 | 104 N. DANIEL MORGAN AVENUE, SUITE 300 | SPARTANBURG, SC 29301  
COPYRIGHT © SEAMON WHITESIDE & ASSOCIATES, INC. | THIS DRAWING SHALL NOT BE REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION.



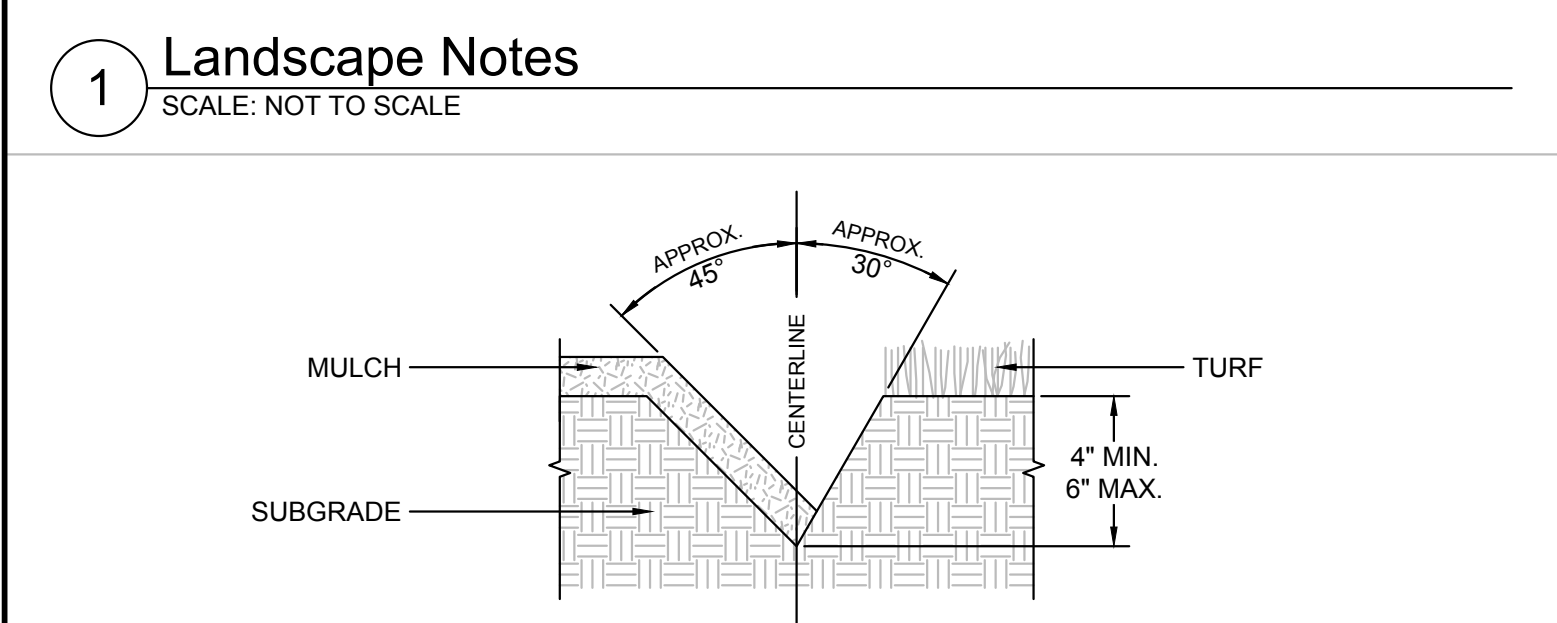
- GENERAL PLANTING NOTES:**
- THE LANDSCAPE CONTRACTOR SHALL MEET WITH LANDSCAPE ARCHITECT PRIOR TO BEGINNING WORK SO THAT THERE IS A CLEAR UNDERSTANDING OF PROJECT REQUIREMENTS. FAILURE TO DO SO JEOPARDIZES FINAL ACCEPTANCE OF WORK.
  - THE LANDSCAPE CONTRACTOR IS HEREBY NOTIFIED OF THE EXISTENCE OF UNDERGROUND UTILITIES WITHIN THE LIMITS OF THE PROJECT AREA. THE LANDSCAPE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UTILITY LINES PRIOR TO COMMENCEMENT OF DIGGING OPERATIONS. THE LANDSCAPE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING, PROTECTING, AND REPAIRING ALL DAMAGE TO BUILDINGS, UTILITIES, PAVEMENT, AND CURB & GUTTER. ANY REPAIRS SHALL BE DONE PROMPTLY AT LANDSCAPE CONTRACTOR'S EXPENSE. THE LANDSCAPE CONTRACTOR MUST ADVISE THE LANDSCAPE ARCHITECT IMMEDIATELY OF ANY POSSIBLE CONFLICTS BETWEEN PROPOSED IMPROVEMENTS AND UTILITIES, SIGNS, AND/OR OTHER STRUCTURES.
  - IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO VERIFY THAT EACH EXCAVATED TREE OR SHRUB PIT WILL PERCOLATE (DRAIN) PRIOR TO ADDING TOPSOIL AND INSTALLING TREES OR SHRUBS. THE LANDSCAPE CONTRACTOR SHALL FILL THE BOTTOM OF HOLES WITH SIX (6) INCHES OF WATER. IF WATER DOES NOT PERCOLATE WITHIN A TWENTY-FOUR (24) HOUR PERIOD. IF WATER DOES NOT PERCOLATE, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLING PLANTS.
  - SHOULD THE LANDSCAPE CONTRACTOR ENCOUNTER UNSATISFACTORY SURFACE OR SUBSURFACE DRAINAGE CONDITIONS, SOIL DEPTH, LATENT SOILS, HARD PANS, STEAM OR OTHER UTILITY LINES OR OTHER CONDITIONS THAT WILL JEOPARDIZE THE HEALTH AND VIGOR OF THE PLANTS, THE LANDSCAPE CONTRACTOR MUST ADVISE THE LANDSCAPE ARCHITECT IN WRITING OF THE CONDITIONS PRIOR TO INSTALLING THE PLANTS. OTHERWISE, THE LANDSCAPE CONTRACTOR WARRANTS THAT THE PLANTING AREAS ARE SUITABLE FOR PROPER GROWTH AND DEVELOPMENT OF THE PLANTS TO BE INSTALLED.
  - THE LANDSCAPE CONTRACTOR WILL BE RESPONSIBLE FOR STAKING AND LAYOUT OF PLANTINGS ON THIS PROJECT. THE LANDSCAPE ARCHITECT OR OWNER SHALL BE ADVISED WHEN STAKES ARE READY FOR INSPECTION ON VARIOUS PLANTING AREAS. ALL LAYOUT WORK SHALL BE INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT AND OWNER PRIOR TO OPENING ANY PLANTING PITS.
  - PLANT MATERIAL QUANTITIES PROVIDED IN THE PLANT SCHEDULE ARE FOR REFERENCE ONLY AND THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE ACTUAL PLANT MATERIAL QUANTITIES.** DISCREPANCIES BETWEEN QUANTITIES SHOWN ON THE PLANTING PLAN AND THOSE IN THE PLANT SCHEDULE SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. IF CLARIFICATION OF DISCREPANCIES FROM THE LANDSCAPE ARCHITECT IS NOT POSSIBLE, THEN QUANTITIES SHOWN ON THE PLANTING PLAN SHALL TAKE PRECEDENCE.
  - REQUIREMENTS FOR THE MEASUREMENTS, BRANCHING, GRADING, QUALITY, BALLING AND BURLAPPING OF PLANTS IN THE PLANT LIST SHOULD FOLLOW OR EXCEED THE STANDARDS CURRENTLY RECOMMENDED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. IN THE AMERICAN STANDARD FOR NURSERY STOCKS (ANSI Z60-1), UNLESS OTHERWISE SPECIFIED, ANY SIZE SPECIFIED SHALL BE CONSIDERED MINIMUM. **MINIMUMS FOR HEIGHT, SPREAD, OR CALIPER SHALL TAKE PRECEDENCE OVER A SPECIFIED CONTAINER SIZE.**
  - ALL PLANTS SHALL HAVE A WELL FORMED HEAD WITH MINIMUM CALIPER, HEIGHT AND SPREAD OF THE SIDE BRANCHES AS SHOWN ON THE PLANT LIST. TRUNKS SHALL BE UNDAUNED AND SHAPE SHALL BE TYPICAL OF THE SPECIES.
  - MEASUREMENT OF CONIFER HEIGHT SHALL INCLUDE NOT MORE THAN FIFTY (50) PER CENT OF THIS YEAR'S VERTICAL GROWTH (TOP CANDLE).
  - NO EXCAVATION OR PLANTING PIT SHALL BE LEFT UNATTENDED OVERNIGHT.
  - REMOVE BURLAP/STRAPPING AND WIRE BASKET FROM TOP 1/3 OF ROOT BALL ON TREES.
  - REMOVE PAPER, PLASTIC OR METAL AROUND ROOT BALLS OF SHRUBS.
  - DO NOT WRAP TREES.
  - WATER ALL PLANT MATERIAL IMMEDIATELY AFTER PLANTING.
  - TREE GUYING MATERIAL SHALL BE 'ARBOR-TIE' OR EQUIVALENT.
  - ALL PLANT BEDS TO BE MULCHED WITH 4" OF DOUBLE SHREDDED HARDWOOD MULCH UNLESS OTHERWISE SPECIFIED.
  - ALL AREAS OF PLANTING, INCLUDING AREAS OF GRASS SEEDING AND SOD, SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AND SHALL BE PROVIDED APPROPRIATE SOIL FOR THE PROPOSED PLANTINGS. SEE SOIL NOTES.
  - ALL EXISTING VEGETATION WITHIN AREAS TO BE PLANTED, SODDED AND/OR SEEDED SHALL BE REMOVED PRIOR TO PLANTING, SODDING, AND SEEDING. ALL AREAS INDICATED TO BE GRASS SEED SHALL BE SEED PER GRASSING SPECIFICATIONS FOR PERMANENT STABILIZATION.
  - ALL DISTURBED AREAS NOT SPECIFICALLY CALLED OUT ON THIS PLAN SHALL BE SEED PER THE PROVIDED SEEDING SCHEDULE. ALL DISTURBED NATURAL AREAS SHALL BE MULCHED (SEE MULCH SPECIFICATIONS).
  - DRAINAGE TO BE PROVIDED FOR ALL ABOVE GROUND PLANTERS.
  - PLANTINGS SHALL BE PRUNED TO CONFORM WITH THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION, INCLUDING BUT NOT LIMITED TO THE CITY, COUNTY, STATE AND FEDERAL REQUIREMENTS.
  - THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING UP THE SITE AT THE COMPLETION OF THE PROJECT AND SHALL MAINTAIN THE SITE IN A REASONABLY NEAT AND CLEAN STATE THROUGHOUT THE INSTALLATION PROCESS. STREETS AND PAVED AREAS SHALL BE CLEANED REGULARLY TO REMOVE CONSTRUCTION MATERIALS AND OTHER DEBRIS RESULTING FROM WORK OF THE PROJECT.
  - REPLACEMENTS OF PLANTS AND/OR MATERIAL SHALL BE MADE AS SPECIFIED IN THE PLANT LIST. THE OWNER OR LANDSCAPE ARCHITECT SHALL INSPECT REPLACED PLANTS WHEN ALL REPLACEMENTS HAVE BEEN MADE. REPLACEMENTS ARE TO BE ALIVE AND IN A HEALTHY CONDITION WHEN THE REPLACEMENTS ARE COMPLETE. REPLACEMENTS ARE NOT SUBJECT TO AN ADDITIONAL GUARANTEE, BUT THE LANDSCAPE CONTRACTOR SHALL CONSULT WITH THE LANDSCAPE ARCHITECT ON REASON FOR PLANT DECLINE/DEATH AND HOW TO AVOID FUTURE INSTANCES.
  - SHOULD THE LANDSCAPE CONTRACTOR NOT MAKE REPLACEMENTS IN A SATISFACTORY AND TIMELY FASHION IN ACCORD WITH THE PLANTING NOTES, THE OWNER, AFTER PROPER NOTIFICATION TO THE LANDSCAPE CONTRACTOR MAY UTILIZE THE FUNDS OF THE RETAINAGE TO HAVE THE REPLACEMENTS MADE IN ACCORDANCE WITH THE SPECIFICATIONS BY ANOTHER CONTRACTOR.

- SOIL NOTES:**
- FOR EACH UNAMENDED SOIL TYPE, FURNISH SOIL ANALYSIS AND A WRITTEN REPORT BY A QUALIFIED SOIL-TESTING LABORATORY STATING PERCENTAGES OF ORGANIC MATTER, GRADATION OF SAND, SILT, AND CLAY CONTENT; CATION EXCHANGE CAPACITY; SODIUM ADSORPTION RATIO; DELETERIOUS MATERIAL, BUFFER PH LEVELS; AND MINERAL AND PLANT-NUTRIENT CONTENT OF THE SOIL.
  - A MINIMUM OF THREE REPRESENTATIVE SAMPLES SHALL BE TAKEN FROM VARIOUS LOCATIONS FOR EACH SOIL TO BE USED OR AMENDED FOR PLANTING PURPOSES.
  - LANDSCAPE CONTRACTOR SHALL SUBMIT TO LANDSCAPE ARCHITECT THE LAB RECOMMENDATIONS FOR SOIL TREATMENTS AND SOIL AMENDMENTS TO BE INCORPORATED. INDICATE LAB RECOMMENDATIONS IN WEIGHT PER 1000 SQ. FT. OR VOLUME PER CU. YD. FOR NITROGEN, PHOSPHORUS, AND POTASH NUTRIENTS AND ORGANIC AND INORGANIC SOIL AMENDMENTS TO BE ADDED TO PRODUCE PLANTING SOIL SUITABLE FOR HEALTHY, VIABLE PLANTS.
  - ALL SOILS USED FOR PLANTING SHALL BE PREPARED AS NECESSARY USING ORGANIC AND INORGANIC SOIL AMENDMENTS AND FERTILIZERS IN THE QUANTITIES RECOMMENDED IN THE SOIL ANALYSIS REPORT TO PRODUCE SATISFACTORY PLANTING SOIL FOR HEALTHY, VIABLE PLANTS. PLANTING SOILS SHALL HAVE A PH LEVEL BETWEEN 6.0 AND 7.0.
  - IN ALL PLANTING AREAS, SPREAD PLANTING SOIL TO A DEPTH OF 8 INCHES BUT NOT LESS THAN REQUIRED TO MEET FINISH GRADES AFTER NATURAL SETTLEMENT.

- IRRIGATION NOTES:**
- LANDSCAPE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF PROPOSED IRRIGATION SYSTEM TO LANDSCAPE ARCHITECT AND OWNER FOR ACCEPTANCE. LANDSCAPE CONTRACTOR TO SUPPLY AUTOMATIC IRRIGATION SYSTEMS, COMPLETE AND INSTALLED. SYSTEM TO INCLUDE ALL VALVES, PIPES, HEADS, FITTINGS, RAIN SENSOR, AND CLOCK AND TO PROVIDE 100% HEAD TO HEAD COVERAGE OF ALL NEW SODDED AND IMPROVED EXISTING GRASS AREAS, TREES, SHRUBS AND PLANTING BEDS. COORDINATE IRRIGATION WITH OWNER'S REPRESENTATIVE.
  - LANDSCAPE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR AUTOMATIC IRRIGATION SYSTEMS. LANDSCAPE CONTRACTOR SHALL PROVIDE ELECTRIC METER, BACKFLOW PREVENTER AND SERVICE IN ACCORDANCE WITH STATE AND LOCAL CODES FOR IRRIGATION SYSTEM. LOCATION OF METERS AND CONTROL PANELS FOR IRRIGATION SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. COORDINATE WATER METER REQUIREMENTS WITH CIVIL ENGINEER.
  - LANDSCAPE CONTRACTOR TO PROVIDE DRIP IRRIGATION TO ALL ABOVE GROUND PLANTERS. IRRIGATION LINE TO BE INSTALLED BENEATH ADJACENT HARDSCAPE AS NECESSARY.
  - IRRIGATION PIPING, SPRINKLERS, AND OTHER EQUIPMENT MAY BE SHOWN OUTSIDE OF LANDSCAPE AREAS ON DRAWING FOR GRAPHIC CLARITY. ALL VALVE BOXES AND EQUIPMENT VALVS SHALL BE LOCATED IN MULCH BEDS.
  - NO IRRIGATION COMPONENTS, INCLUDING BUT NOT LIMITED TO, VALVE BOXES, CONTROL BOXES, BACKFLOW PREVENTERS, AND/OR RAIN SENSORS ARE ALLOWED TO BE INSTALLED WITHIN DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY.

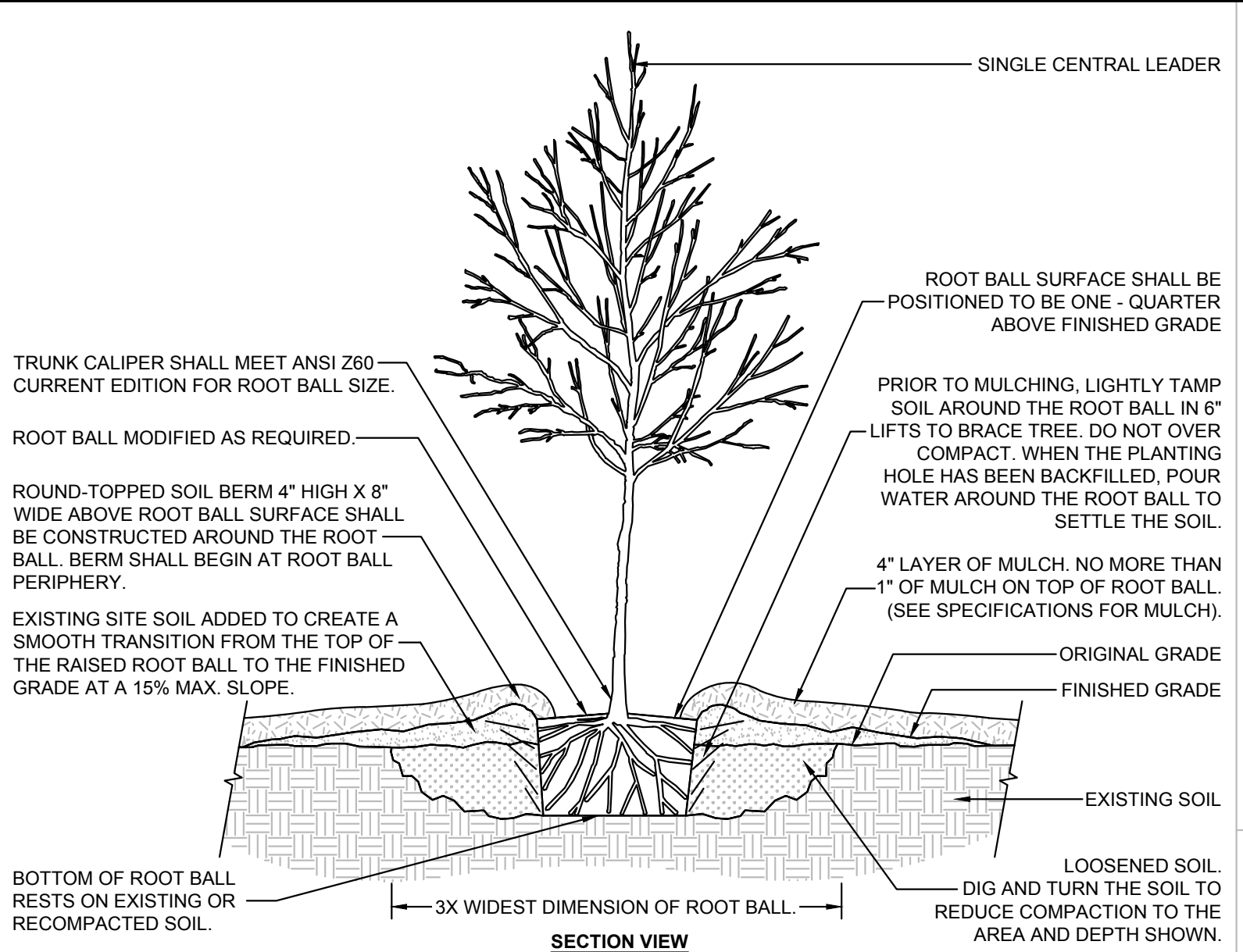
- PLANT SCHEDULE NOTES:**
- THE TECHNICAL SPECIFICATIONS ARE MADE A PART OF THESE PLANS AND SHALL BE CONSULTED BY THE LANDSCAPE CONTRACTOR. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING WORK AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS AND ON THESE PLANS.
  - THE LANDSCAPE CONTRACTOR SHALL NOTIFY THIS OFFICE OF ANY DISCREPANCIES PRIOR TO BEGINNING OR CONTINUING WORK.
  - THERE WILL BE NO SUBSTITUTIONS, DELETIONS OR ADDITIONS WITHOUT APPROVAL OF THIS OFFICE.
  - SIZE OF PLANT MATERIALS SHALL CONFORM WITH THE CURRENT EDITION OF 'AMERICAN STANDARD FOR NURSERY STOCK' FOR NUMBER ONE NURSERY STOCK AS ADOPTED BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND AMERICAN NATIONAL STANDARDS INSTITUTE.
  - THE QUANTITIES ON THE SCHEDULE ARE ONLY A GUIDE. ALL QUANTITIES SHALL BE VERIFIED BY THE LANDSCAPE CONTRACTOR ON THE PLANTING PLAN.

- ABBREVIATIONS:**
- |                              |                        |                          |                        |
|------------------------------|------------------------|--------------------------|------------------------|
| BBB = BALLED & BURLAPPED     | CT = CLEAR TRUNK       | GAL = GALLON CONTAINER   | RF = REFOOLIATED       |
| BR = BARE ROOT MATERIAL      | ESP = ESPALIER         | HC = HURRICANE CUT       | SP = SPECIMEN MATERIAL |
| CAL = TRUNK CALIPER (MIN)    | FTG = FULL TO GROUND   | MS = MULTI-STEMMED TRUNK | TF = TREE FORM HABIT   |
| CON = CONTAINERIZED MATERIAL | FWF = FULL WELL FORMED | OC = ON-CENTER           | TYP = TYPICAL          |



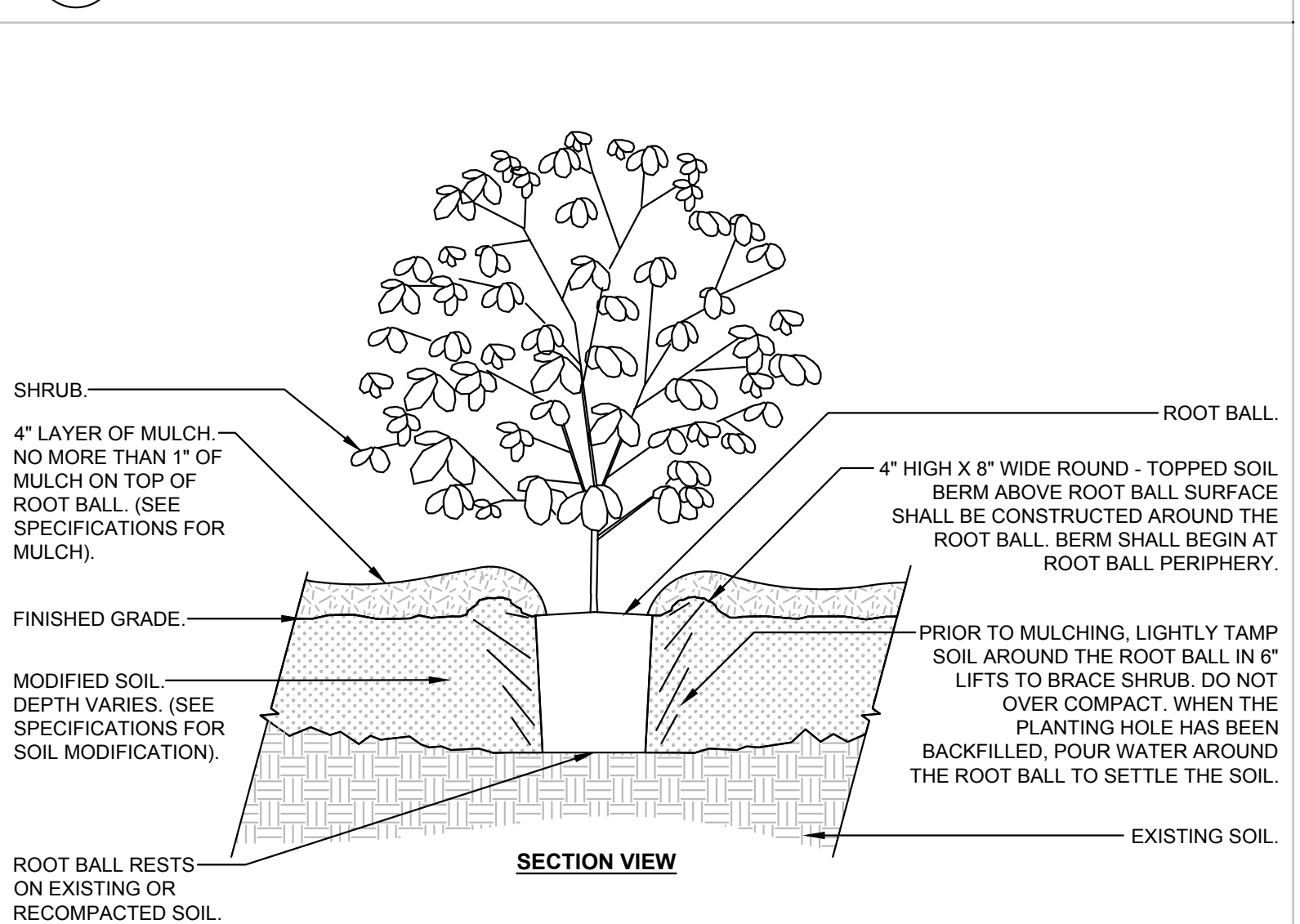
- NOTES:**
- SEE LANDSCAPE NOTES AND SPECIFICATIONS FOR FURTHER REQUIREMENTS RELATED TO THIS DETAIL.
  - EXCAVATE TRENCH BY HAND WITH SPADE.
  - ADD EXCESS SOIL TO ADJACENT PLANT BED AFTER PULLING BACK EXISTING MULCH. RAKE SOIL AND SMOOTH BEFORE MULCHING.

**2 Lawn Edge Detail**  
SCALE: NOT TO SCALE



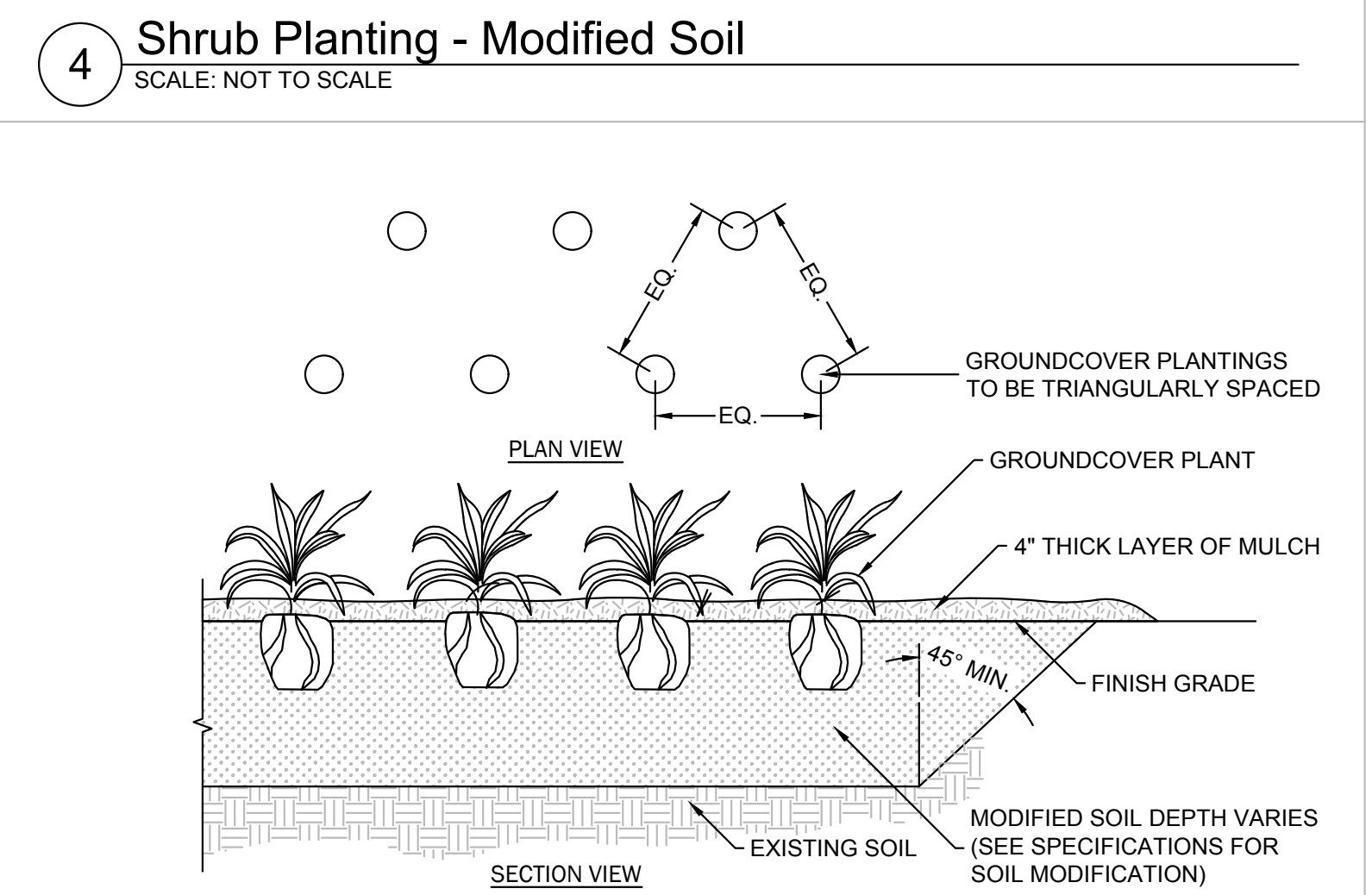
- NOTES:**
- SEE LANDSCAPE NOTES AND SPECIFICATIONS FOR FURTHER REQUIREMENTS RELATED TO THIS DETAIL.

**3 Tree in Poorly Drained Soil**  
SCALE: NOT TO SCALE



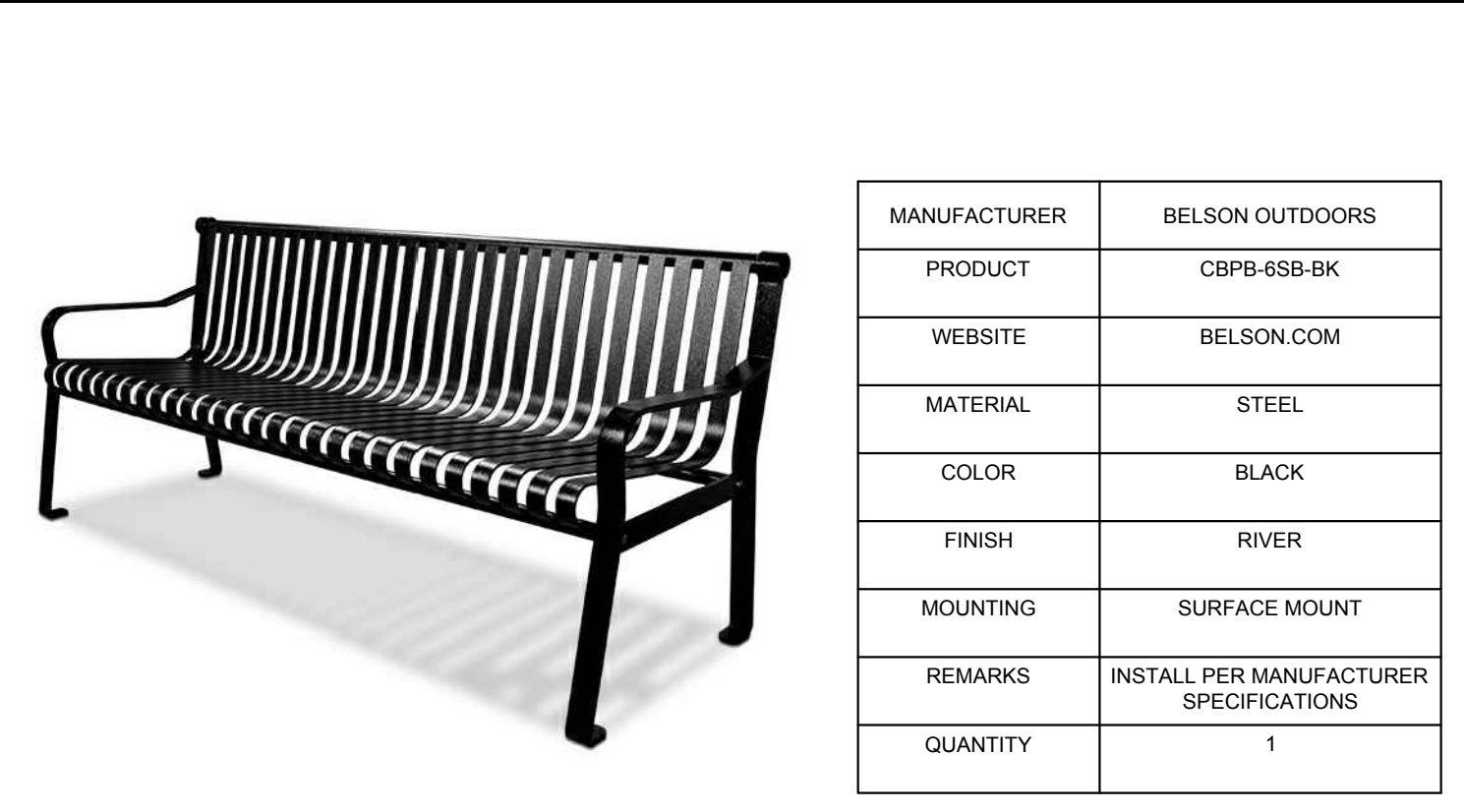
- NOTES:**
- SEE LANDSCAPE NOTES AND SPECIFICATIONS FOR FURTHER REQUIREMENTS RELATED TO THIS DETAIL.

**4 Shrub Planting - Modified Soil**  
SCALE: NOT TO SCALE



- NOTES:**
- SEE LANDSCAPE NOTES AND SPECIFICATIONS FOR FURTHER REQUIREMENTS RELATED TO THIS DETAIL.
  - SEE PLANT SCHEDULE FOR PLANT SPECIES, SIZE, AND SPACING DIMENSION.
  - SMALL ROOTS (1/2\"/>

**5 Groundcover / Ornamental Grass Planting Detail**  
SCALE: NOT TO SCALE



**7 Bench**  
SCALE: NOT TO SCALE

MANUFACTURER	BELSON OUTDOORS
PRODUCT	CBPB-6SB-BK
WEBSITE	BELSON.COM
MATERIAL	STEEL
COLOR	BLACK
FINISH	RIVER
MOUNTING	SURFACE MOUNT
REMARKS	INSTALL PER MANUFACTURER SPECIFICATIONS
QUANTITY	1



**8 Trash And Recycling Receptacles**  
SCALE: NOT TO SCALE

MANUFACTURER	BELSON OUTDOORS
PRODUCT	TF1953
WEBSITE	BELSON.COM
MATERIAL	PLASTIC
COLOR	CHARCOAL
FINISH	N/A
MOUNTING	N/A
REMARKS	ONE RECEPTACLE WILL HAVE RECYCLING DECAL AND THE OTHER WILL HAVE TRASH DECAL
QUANTITY	2

**PLANT SCHEDULE TERMINAL ISLAND OPS**

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	HEIGHT	SPREAD	SPACING	REMARKS
<b>TREES</b>								
⊕	ACRO	3	ACER RUBRUM 'OCTOBER GLORY' TM / OCTOBER GLORY MAPLE	2.5" CAL	8' MIN	4'-6"	AS SHOWN	FWF, SP
⊙	QUEP	4	QUERCUS PALUSTRIS / PIN OAK	2.5" CAL	8' MIN	4'-6"	AS SHOWN	FWF, SP
<b>SHRUBS</b>								
⊕	AZAF	22	AZALEA INDICA 'FORMOSA' / FORMOSA AZALEA	3 GAL	18"-24"	18"-24"	AS SHOWN	FWF, SP
⊕	ILCB	30	ILEX CORNUTA 'BURFORDII NANA' / DWARF BURFORD HOLLY	3 GAL	18"-24"	18"-24"	AS SHOWN	FWF, SP
⊕	MUHL	54	MUHLENBERGIA FILIPES / SWEETGRASS	3 GAL	18"-24"	18"-24"	AS SHOWN	FWF, SP
<b>GROUND COVERS</b>								
▨	LMBB	422	LIRIOPE MUSCARI 'BIG BLUE' / BIG BLUE LILYTURF	4" POT	8"-12"	8"-12"	24"	FWF, SP

**PLANT SCHEDULE PERIMETER PLANTING**

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	HEIGHT	SPREAD	SPACING	REMARKS
<b>SHRUBS</b>								
⊙	ABES	33	ABELIA X GRANDIFLORA 'SHERWOODII' / DWARF ABELIA	3 GAL	18"-24"	18"-24"	AS SHOWN	FWF, SP
⊕	LCRR	27	LOROPETALUM CHINENSE RUBRUM 'RUBY' / DWARF RUBY FRINGE FLOWER	3 GAL	18"-24"	18"-24"	AS SHOWN	FWF, SP

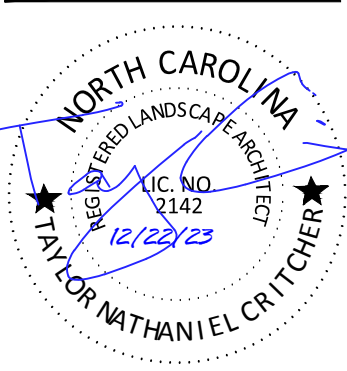
**PLANT SCHEDULE**

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	HEIGHT	SPREAD	SPACING	REMARKS
<b>TREES</b>								
⊕	ACRO	3	ACER RUBRUM 'OCTOBER GLORY' TM / OCTOBER GLORY MAPLE	2.5" CAL	8' MIN	4'-6"	AS SHOWN	FWF, SP
⊙	QUEP	6	QUERCUS PALUSTRIS / PIN OAK	2.5" CAL	8' MIN	4'-6"	AS SHOWN	FWF, SP
<b>UNDERSTORY TREES</b>								
⊕	CERO	2	CERCIS CANADENSIS 'OKLAHOMA' / OKLAHOMA REDBUD	1.5" CAL	8' MIN	8'	AS SHOWN	FWF, SP
⊙	CHIV	7	CHIONANTHUS VIRGINICUS / WHITE FRINGETREE	1.5" CAL	8' MIN	8'	AS SHOWN	FWF, SP
⊕	MAGS	5	MAGNOLIA X SOULANGIANA / SAUCER MAGNOLIA	1.5" CAL	8' MIN	8'	AS SHOWN	MS, FWF, SP
<b>SHRUBS</b>								
⊙	ABES	33	ABELIA X GRANDIFLORA 'SHERWOODII' / DWARF ABELIA	3 GAL	18"-24"	18"-24"	AS SHOWN	FWF, SP
⊙	AZAF	22	AZALEA INDICA 'FORMOSA' / FORMOSA AZALEA	3 GAL	18"-24"	18"-24"	AS SHOWN	FWF, SP
⊕	ILCB	30	ILEX CORNUTA 'BURFORDII NANA' / DWARF BURFORD HOLLY	3 GAL	18"-24"	18"-24"	AS SHOWN	FWF, SP
⊕	LCRR	27	LOROPETALUM CHINENSE RUBRUM 'RUBY' / DWARF RUBY FRINGE FLOWER	3 GAL	18"-24"	18"-24"	AS SHOWN	FWF, SP
<b>GRASSES</b>								
⊕	MUHL	54	MUHLENBERGIA FILIPES / SWEETGRASS	3 GAL	18"-24"	18"-24"	AS SHOWN	FWF, SP
<b>GROUND COVERS</b>								
▨	LMBB	422	LIRIOPE MUSCARI 'BIG BLUE' / BIG BLUE LILYTURF	4" POT	8"-12"	8"-12"	24"	FWF, SP
<b>SOD/SEED</b>								
▨	SOD2	26,904 SF	CYNODON DACTYLON 'TIFTUF' / TIFTUF BERMUDA GRASS	SOD	N/A	N/A	N/A	SP

**6 Plant Schedule**  
SCALE: NOT TO SCALE



MOUNT PLEASANT, SC  
843.884.1667  
GREENVILLE, SC  
864.298.0534  
SUMMERVILLE, SC  
843.972.0710  
SPARTANBURG, SC  
864.272.1272  
CHARLOTTE, NC  
980.312.5450  
WWW.SEAMONWHITESIDE.COM



**TIDAL WAVE AUTO SPA**  
ROLESVILLE, NC

SW+ PROJECT: 10772  
DATE: 12/22/23  
DRAWN BY: CPE  
CHECKED BY: TLL

**REVISION HISTORY**

NO.	DESCRIPTION

**PLANT SCHEDULE & DETAILS & NOTES**