

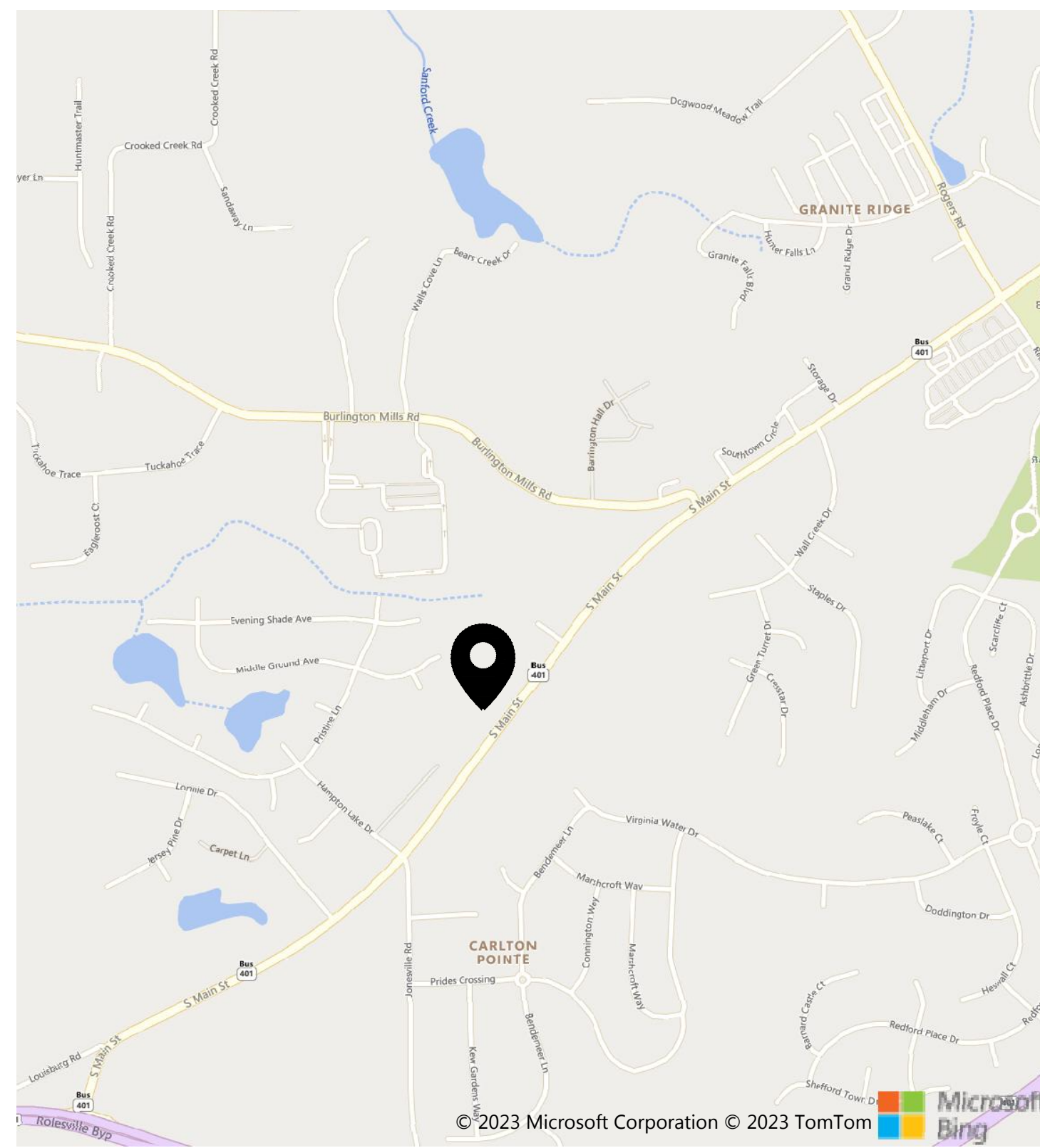
# TIDAL WAVE AUTO SPA

ROLESVILLE, NC, USA

City Project ID # V1-SDP-23-08

Town

## SITE LOCATION MAP



## 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.

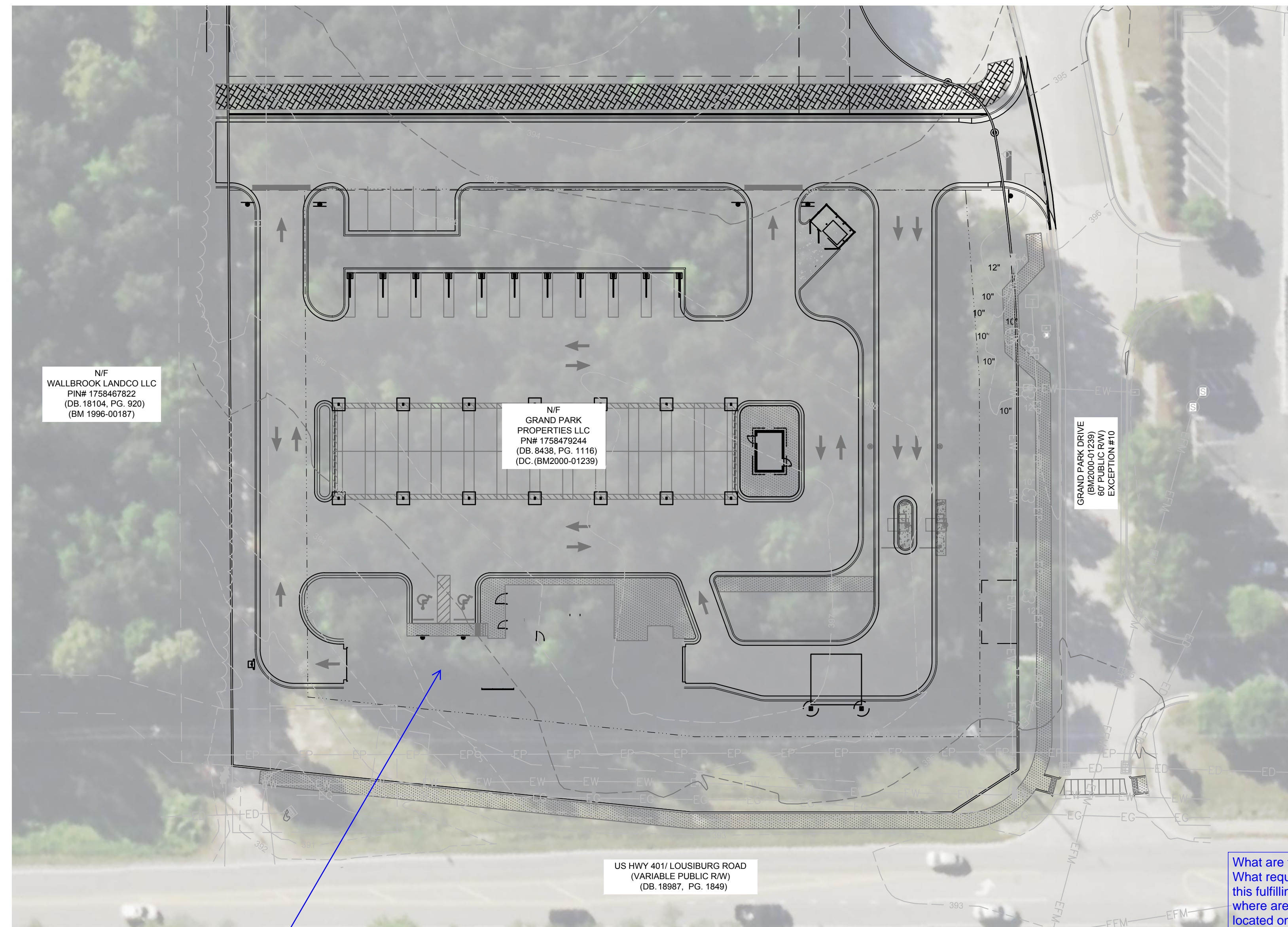
**PROPERTY INFORMATION:**  
 PARCEL ID: 1758479244  
 ZONING DISTRICT: GI (GENERAL INDUSTRIAL)

## 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.

## SITE OVERVIEW



NF WALLBROOK LANDCO LLC  
 PIN# 1758467822  
 (DB: 18104, PG: 520)  
 (BM 1996-00187)

GRAND PARK PROPERTIES LLC  
 PIN# 1758479244  
 (DB: 8438, PG: 1116)  
 (DC: (BM2000-01239))

GRAND PARK DRIVE  
 (BM2000-01239)  
 60' PUBLIC RW  
 EXCEPTION #10

US HWY 401 LOUISBURG ROAD  
 (VARIABLE PUBLIC RW)  
 (DB: 18987, PG: 1849)

What are these?  
 What requirement is this fulfilling and where are they located on the site?

Building footprint should be added to the plans

**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): REAR	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:	5 SPACES (1 ADA)
VACUUM STALLS:	34 STALLS

Date of revisions should be provided

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

### REVISION HISTORY

NO.	DATE	DESCRIPTION

TITLESHEET



Know what's below.  
 Call before you dig.

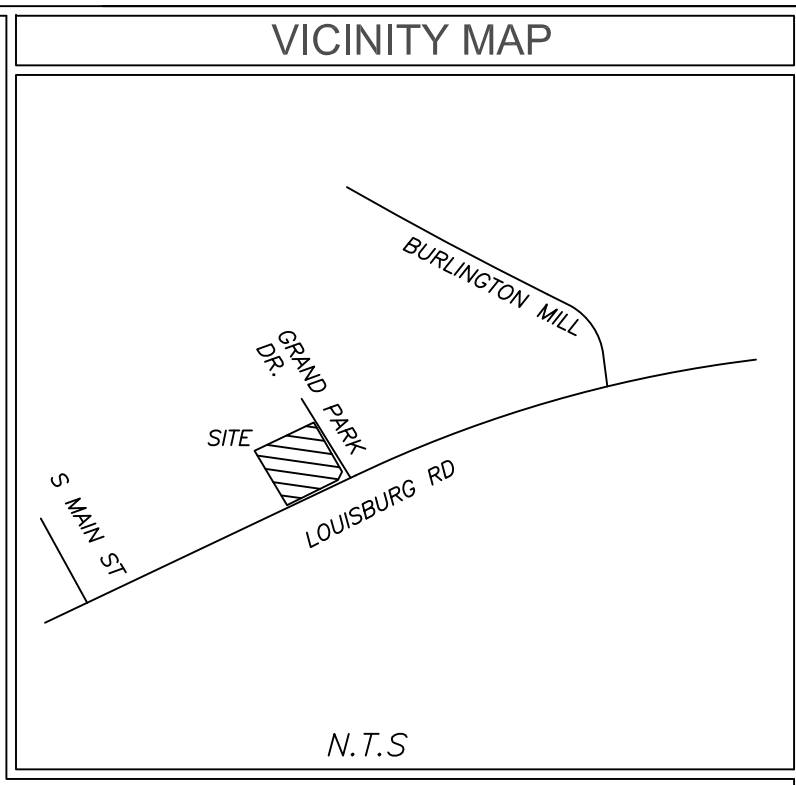
REVISION HISTORY	

# DRAWING LEGEND

NOTE: THIS LEGEND DOES NOT APPLY TO 'EXISTING CONDITIONS' SHEET(S). THOSE ARE SHOWN IN THE ORIGINAL FORMAT AS RECEIVED BY THE SURVEYOR

OBJECTS AND SYMBOLS			OBJECTS AND SYMBOLS			HATCH PATTERNS		SWPP PLAN LEGEND	
	EXISTING	NEW		EXISTING	NEW				
Right of Way			Benchmark		N/A	Demo Existing Gravel		Turf Reinforcement Mat	
Lot Line			Sanitary Sewer Manhole			Demo Existing Trees		Sodding	
Adjoining Property Line		N/A	Sanitary Sewer Manhole ID #	N/A		Proposed Sidewalk		Temporary Seeding	
Easement		N/A	Sanitary Sewer Cleanout			Heavy Duty Concrete Pavement		Permanent Seeding	
Setback		(Same as Existing)	TYPE 1 Storm Drainage Structure (CI-1)			Standard Duty Concrete Pavement		Erosion Control Blanket	
Sanitary Sewer (Gravity)			Catch Basin (CB)			Asphalt Greenway		Concrete Washout Basin	
Sanitary Sewer (Force Main)			Storm Drainage Junction Box (JB)			Area to be Permanently Stabilized		Block & Stone Inlet Protection	
Water Line			Yard Inlet (YI)					Filter Fabric Inlet Protection	
Curb & Gutter (Straight)			Control Structure (CS)					Construction Entrance	
Curb & Gutter (Roll)			Storm Drainage Structure ID #	N/A				Dandy Sack or Grate Gator Inlet Protection	
Previous Phase Storm Drain Pipe		N/A	Telephone Box		N/A				
Storm Drain Pipe			Telephone Manhole		N/A				
Drainage Flow Arrow	N/A		Electrical Box		N/A				
Silt Fence, Standard			Electrical Manhole		N/A				
Match Line	N/A		Power Pole						
Drainage Basin Limits	N/A		Light Pole						
Conduit			Fire Hydrant Assembly						
Natural Gas			Water Line Valve						
Overhead Electrical			Water Line Reducer						
Underground Electrical			Sign						
Underground Telephone			ADA Accessible Parking Space						
Fence			Spot Elevation						
Elevation Contour			Drainage Basin Area	N/A					
Revision Cloud (Encloses Revision)	N/A		Parking Count ID #	N/A					
			Revision ID #	N/A					
			Rip Rap at Pipe Outlet	N/A					

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 | 725 N. CEDAR STREET | SUMMERVILLE, SC 29586 | 104 N. DANIEL MORGAN AVENUE, SUITE 300 | SPARTANBURG, SC 29301  
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**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  | — C —   | GUY WIRE               |
| DI     | CRIMPED TOP PIPE         | — W —   | GAS LINE               |
| IE     | DROP INLET               | — W —   | WATER LINE             |
| JH     | 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            |
| NP     | 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             |
| FP     | 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

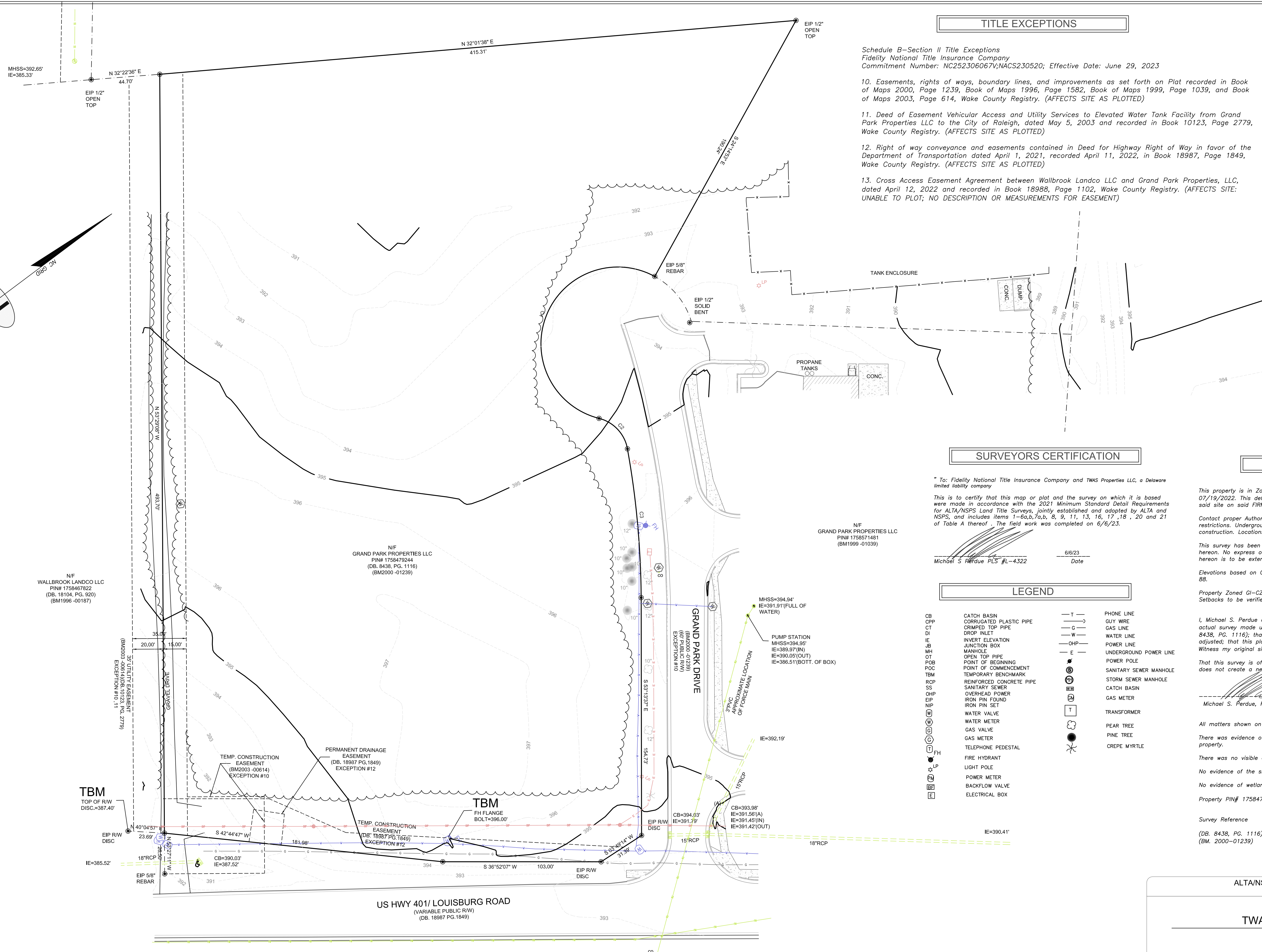
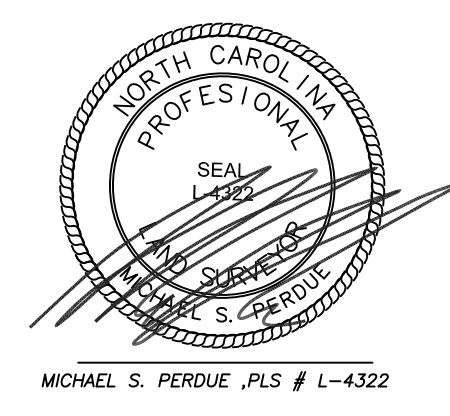
**TWAS Properties LLC**

TOWN: ROLESVILLE COUNTY: WAKE STATE: NORTH CAROLINA

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

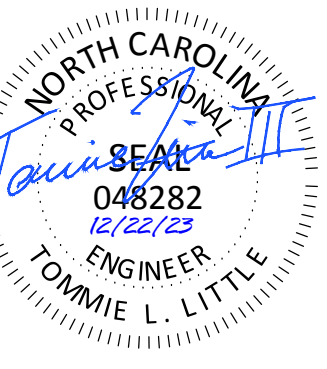
FIELD WORK: MSP DRAWN BY: MSP REVIEWED BY: MSP

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'





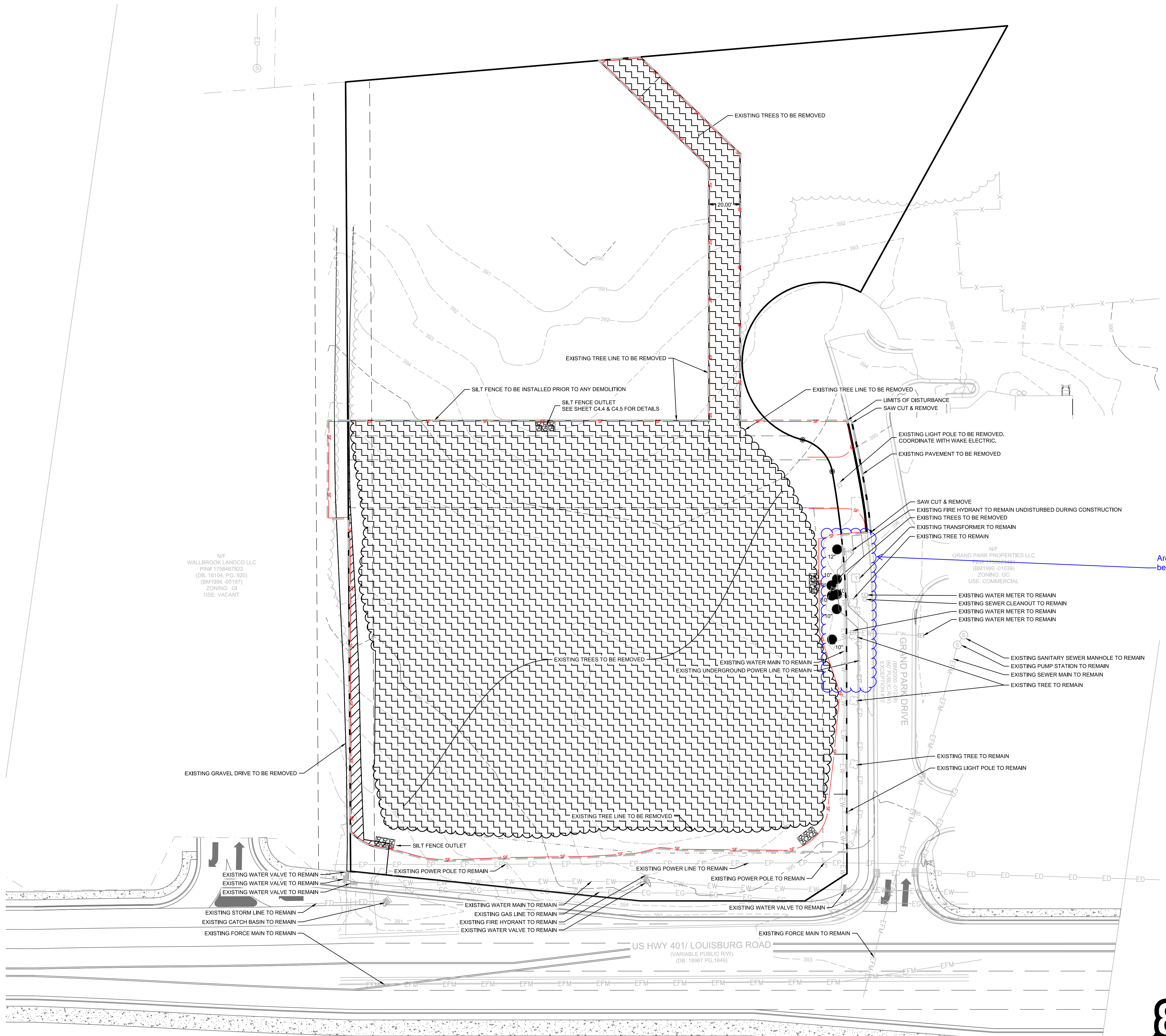
**TIDAL WAVE AUTO SPA**  
 ROLESVILLE, NC

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

**REVISION HISTORY**

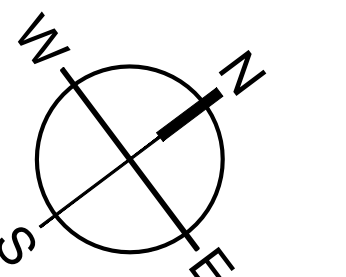
NO.	DESCRIPTION	DATE

**EXISTING CONDITIONS AND DEMO PLAN**



N/F WALLBROOK LANDCO LLC  
 PIN# 1758467822  
 (DB, 18104, PG, 920)  
 (BM1998-201637)  
 ZONING: G1  
 USE: VACANT

N/F GRAND PARK PROPERTIES LLC  
 PIN# 18104-01039  
 (BM1999-01039)  
 ZONING: GC  
 USE: COMMERCIAL



0 15 30 60  
 SCALE: 1" = 30'

DEMOLITION LEGEND		
DEMO EXISTING GRAVEL		LIMITS OF DISTURBANCE
DEMO EXISTING TREES		EXISTING UTILITY TO REMAIN
SILT FENCE OUTLET		EXISTING CURB TO BE REMOVED



A Tree Survey and Preservation Plan are required to be submitted as a portion of the Landscape Plan in accordance with Section 6.2.4.2.

Tree protection fencing shall be installed along the tree line to remain in accordance with Sections 6.2.4.5.B.8-11.

**DEMOLITION NOTES:**

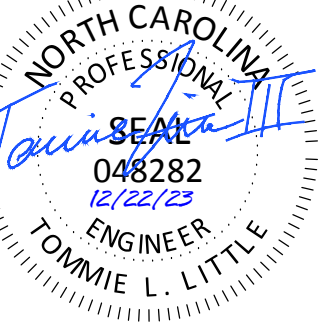
- ALL DEMOLITION DEBRIS IS TO BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE COUNTY, STATE, AND FEDERAL REGULATIONS.
- CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES BEFORE ANY WORK IS STARTED. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN THE FIELD MARKINGS AND SURVEY.
- NO LAND DISTURBING ACTIVITY PRIOR TO APPROVAL OF EROSION AND SEDIMENT CONTROL PLAN AND THE ISSUANCE OF THE LAND-DISTURBING PERMIT AT THE PRECONSTRUCTION MEETING.
- CONTRACTOR TO REMOVE ALL TREES WITHIN LIMITS OF DISTURBANCE.

**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.

Are all these trees to be removed?

50 WINDY PARK BOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29566 | JUDSON MILLS BUILDING 6000 701 EASLEY BRIDGE RD, SUITE 600 | GREENVILLE, SC 29611 | 230 PETERSON DR. | CHARLOTTE, NC 28217 | 713 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.



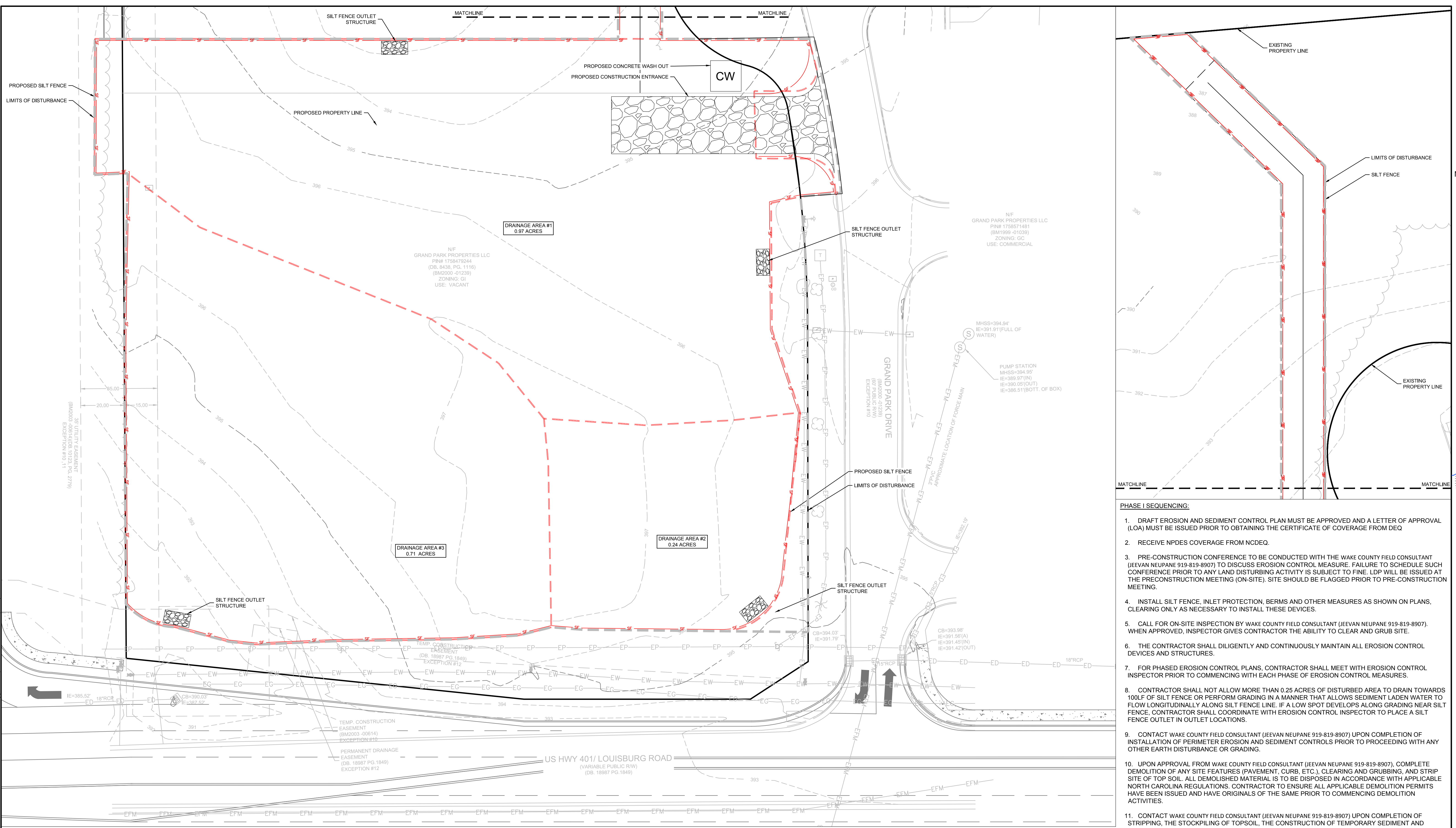
**TIDAL WAVE AUTO SPA**  
ROLESVILLE, NC

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

**REVISION HISTORY**

NO.	DESCRIPTION	DATE

**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.

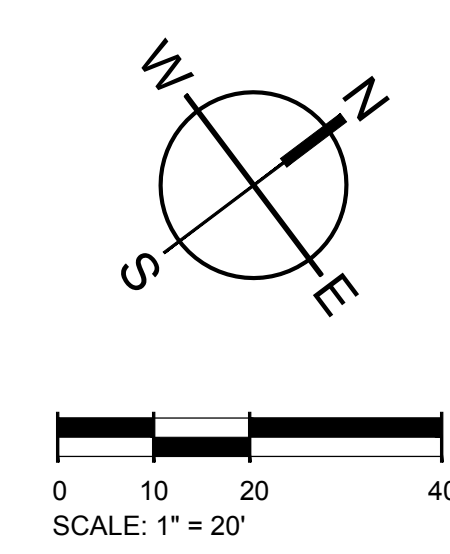
**INLET PROTECTION NOTE:**  
PROVIDE APPROPRIATE INLET PROTECTION FOR VARIOUS PHASES OF THE CONSTRUCTION. HARDWARE CLOTH AND GRAVEL PROTECTION SHALL BE PROVIDED FOR INLETS IN NON-PAVED AREA. WEEP FILTERS SHALL BE PROVIDED FOR INLETS IN PAVED AREAS.

**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.

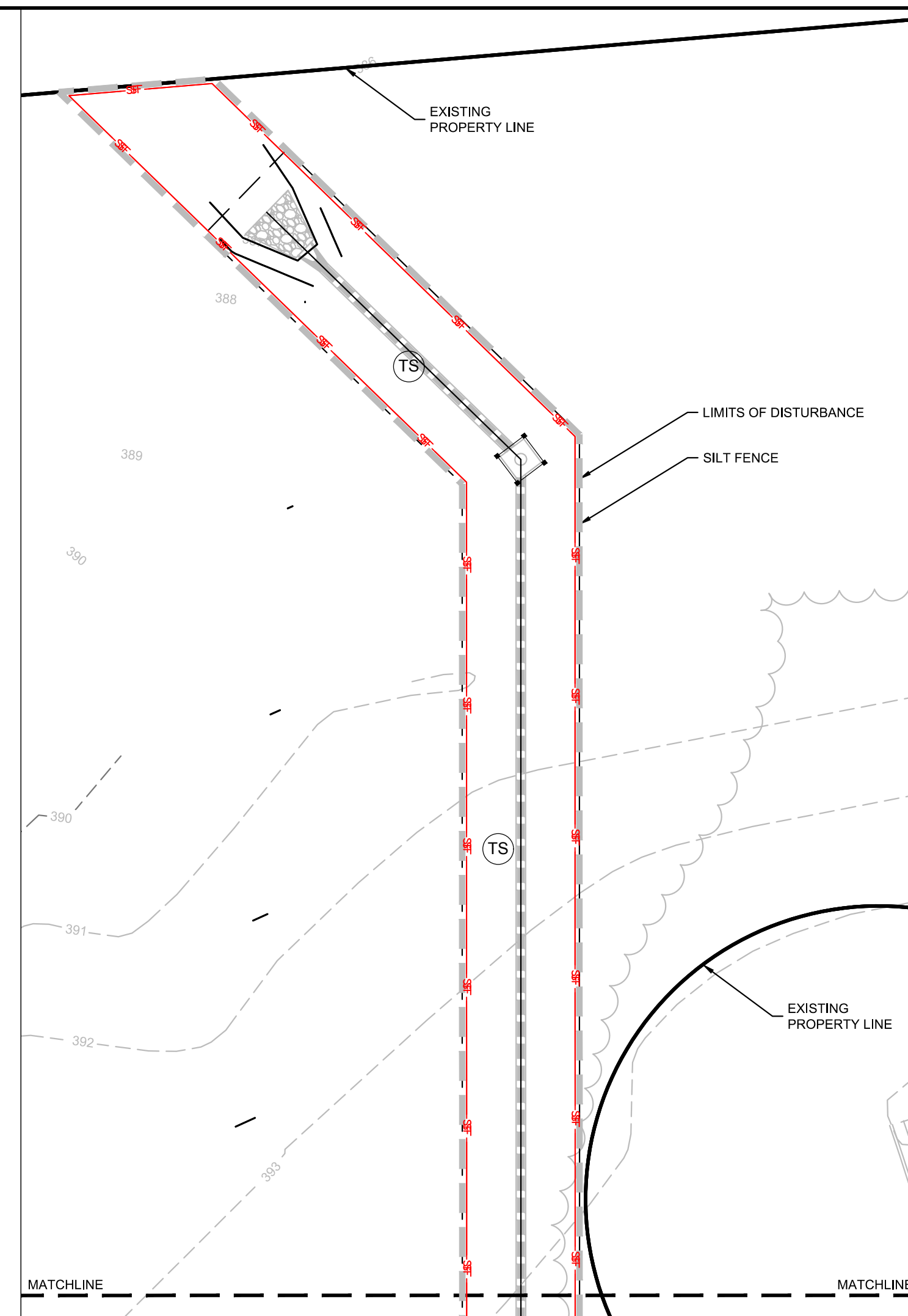
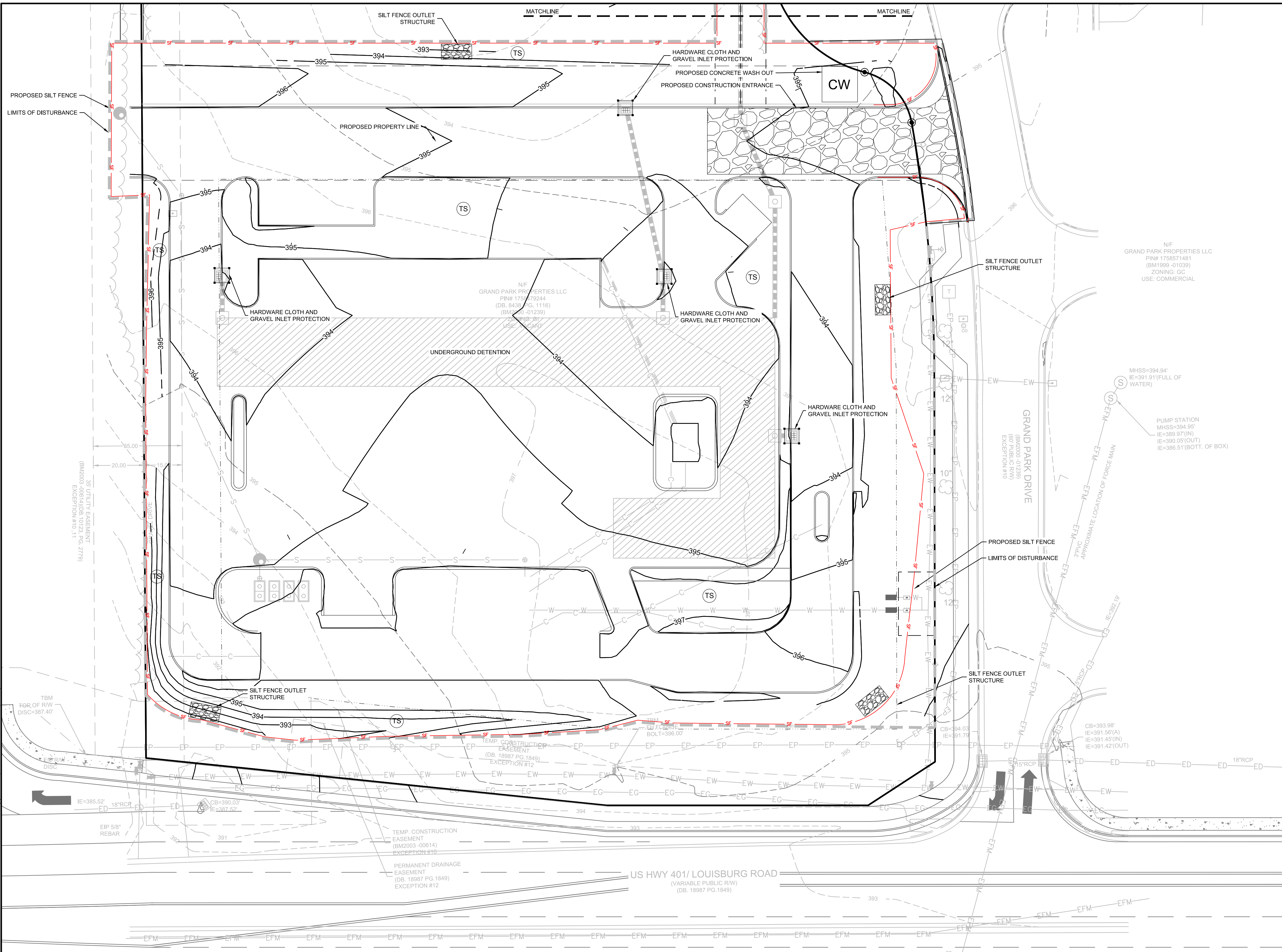


**E&S PLAN LEGEND**

LIMITS OF DISTURBANCE	---	CONCRETE WASHOUT BASIN (SEE DETAIL)	CW
SILT FENCE, STANDARD	—S—	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 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  
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**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:**

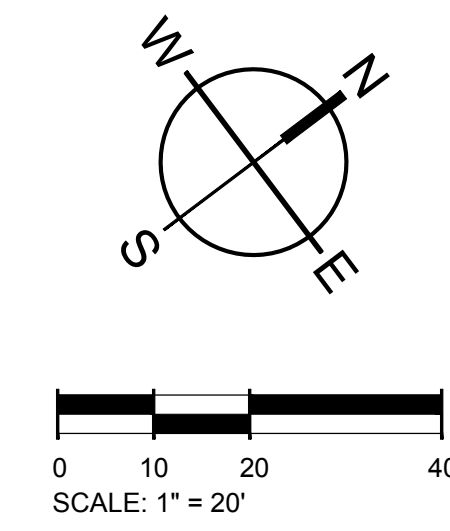
PROVIDE APPROPRIATE INLET PROTECTION FOR VARIOUS PHASES OF THE CONSTRUCTION. HARDWARE CLOTH AND GRAVEL INLET PROTECTION SHALL BE PROVIDED FOR INLETS IN NON-PAVED AREA. DANDY SACK INLET PROTECTION SHALL BE PROVIDED FOR INLETS IN PAVED AREAS.

**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.

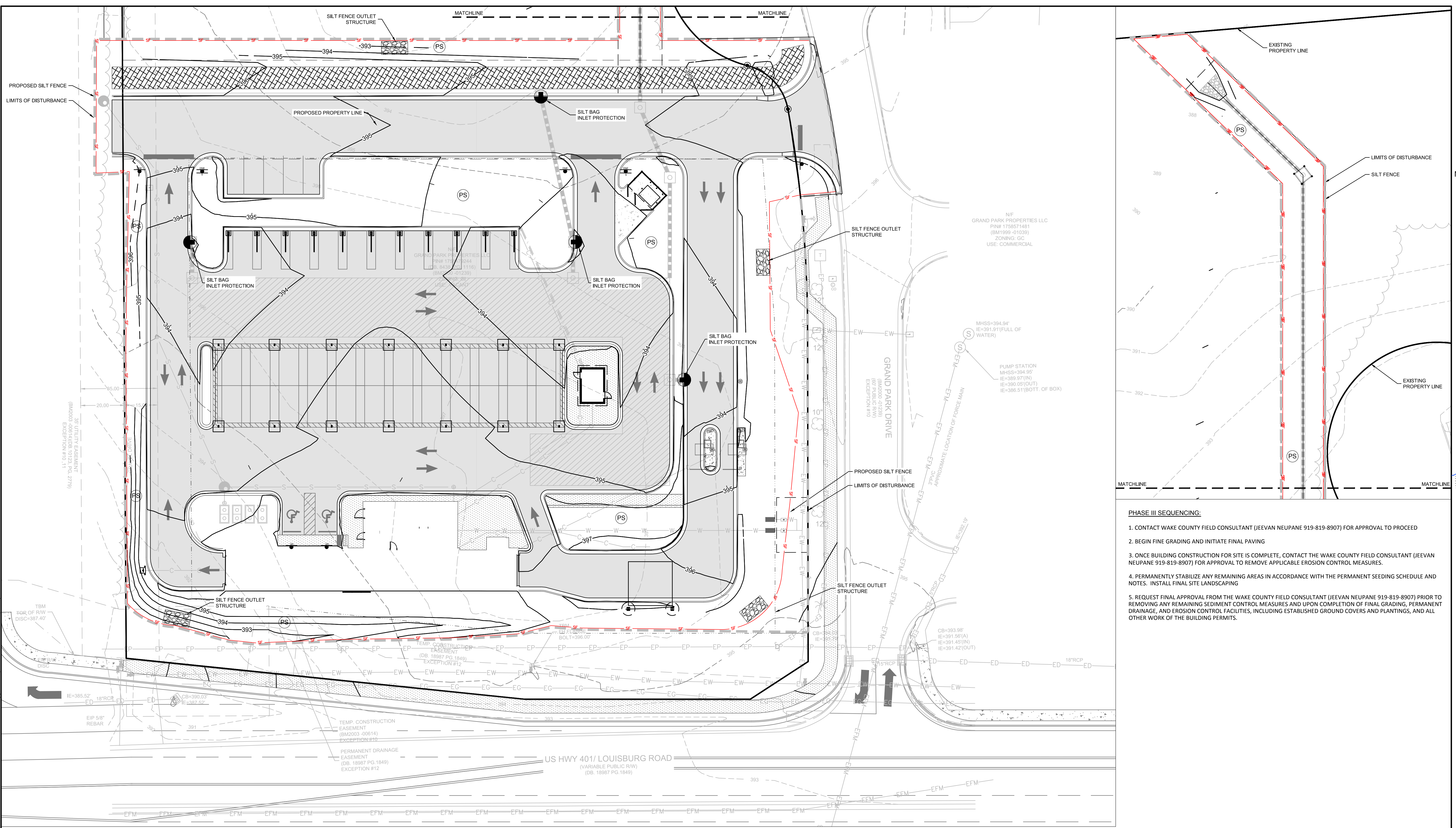
**STABILIZATION NOTE:**  
PROVIDE FINAL STABILIZATION FOR ALL DISTURBED AREAS. REFER TO THE LANDSCAPE PLAN FOR SPECIFIC MATERIALS / PLANTINGS. ANY DISTURBED AREA NOT ADDRESSED IN THE LANDSCAPE PLANS SHALL BE PERMANENT SEEDED.



**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	⊙
PERMANENT SOD	⊙		

501 WANDO PARK BOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29566 | 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 MCGRAW AVENUE, SUITE 300 | SPARTANBURG, SC 29301  
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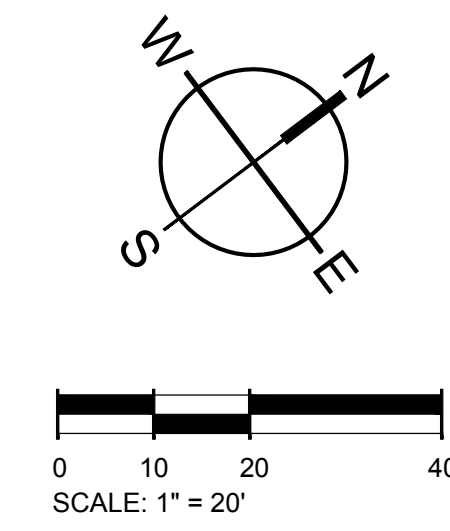


- PHASE III SEQUENCING:**
1. CONTACT WAKE COUNTY FIELD CONSULTANT (JEEVAN NEUPANE 919-819-8907) FOR APPROVAL TO PROCEED
  2. BEGIN FINE GRADING AND INITIATE FINAL PAVING
  3. ONCE BUILDING CONSTRUCTION FOR SITE IS COMPLETE, CONTACT THE WAKE COUNTY FIELD CONSULTANT (JEEVAN NEUPANE 919-819-8907) FOR APPROVAL 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.

<b>TOTAL SITE ACREAGE</b>	<b>1.92 ACRES</b>
<b>DISTURBED ACREAGE</b>	<b>2.02 ACRES</b>

**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.

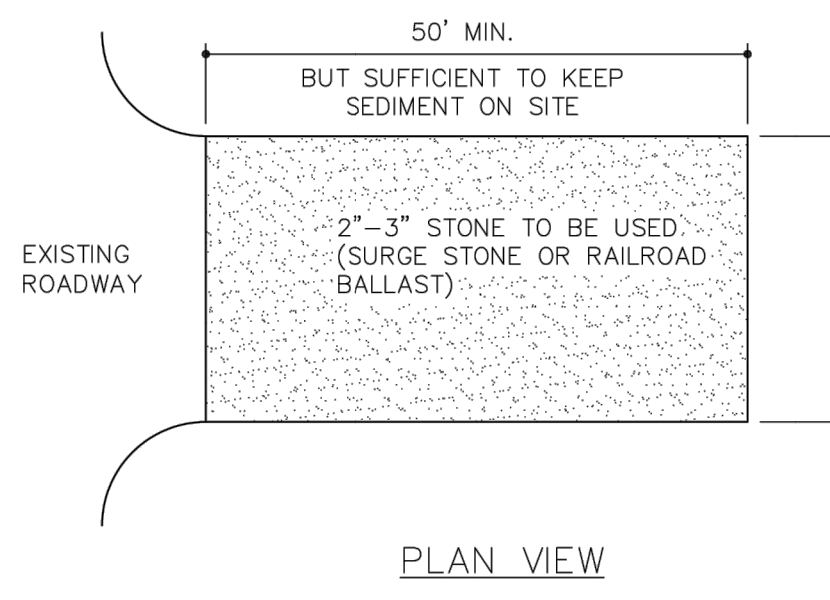


**E&S PLAN LEGEND**

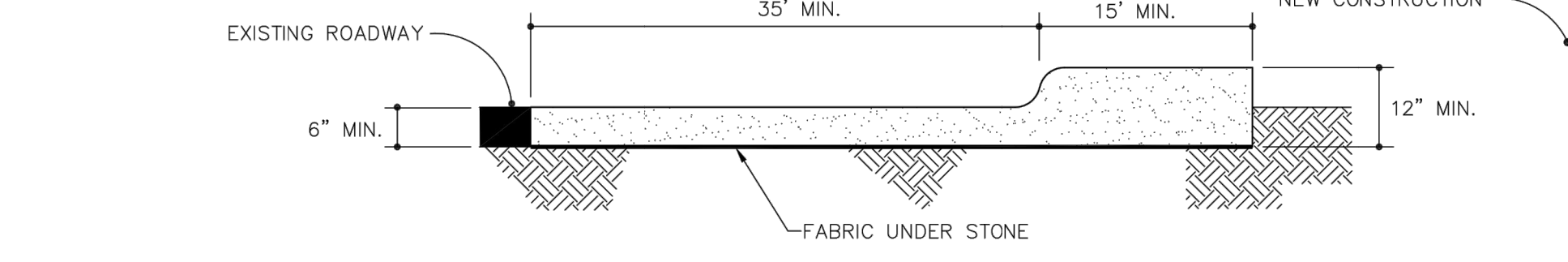
LIMITS OF DISTURBANCE	---	CONCRETE WASHOUT BASIN (SEE DETAIL)	CW
SILT FENCE, STANDARD	—+—	SILT BAG INLET PROTECTION	⊙
SILT FENCE OUTLET/RIP RAP APRON/RIP RAP BASIN & ROCK SEDIMENT TRAP	⊞	HARDWARE CLOTH AND GRAVEL INLET PROTECTION	⊞
CONSTRUCTION ENTRANCE	⊞	TEMPORARY SEEDING	⊙
PERMANENT SOD	⊙		



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 29586 | 104 N. DANIEL MORGAN AVENUE, SUITE 300 | SPARTANBURG, SC 29301  
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- 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.

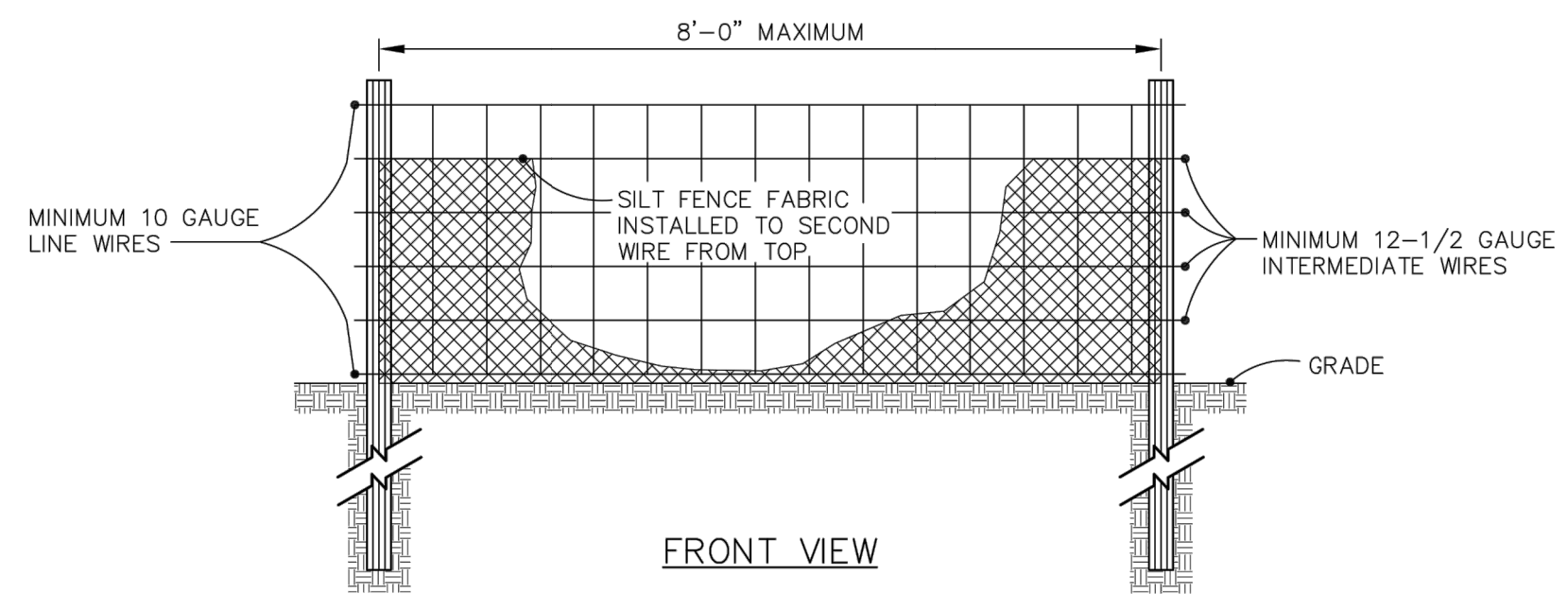


CROSS SECTION

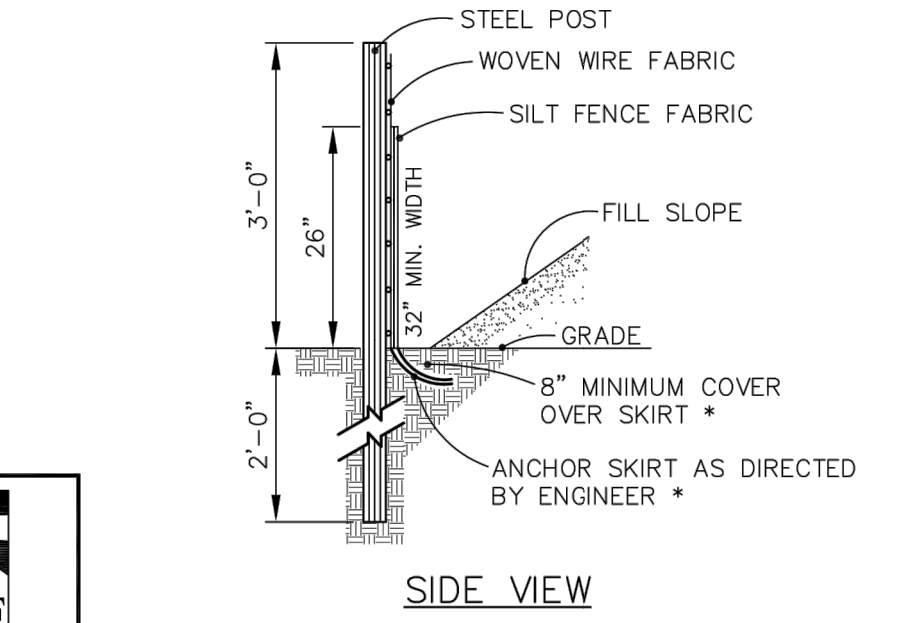
STANDARD CONSTRUCTION ENTRANCE



EFFECTIVE: 01/31/08



FRONT VIEW



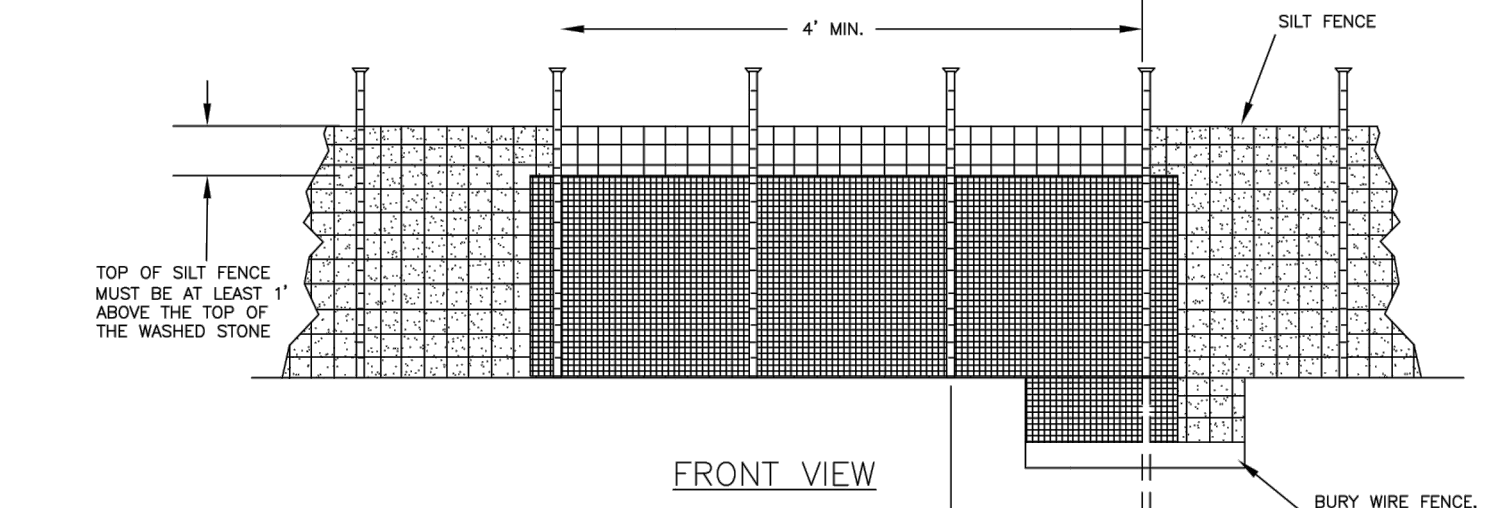
SIDE VIEW

- 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.

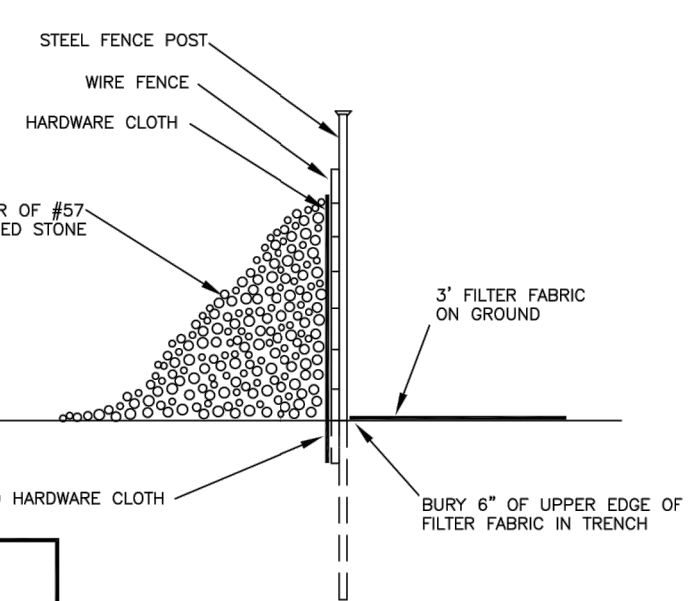
STANDARD TEMPORARY SILT FENCE



EFFECTIVE: 01/31/08



FRONT VIEW



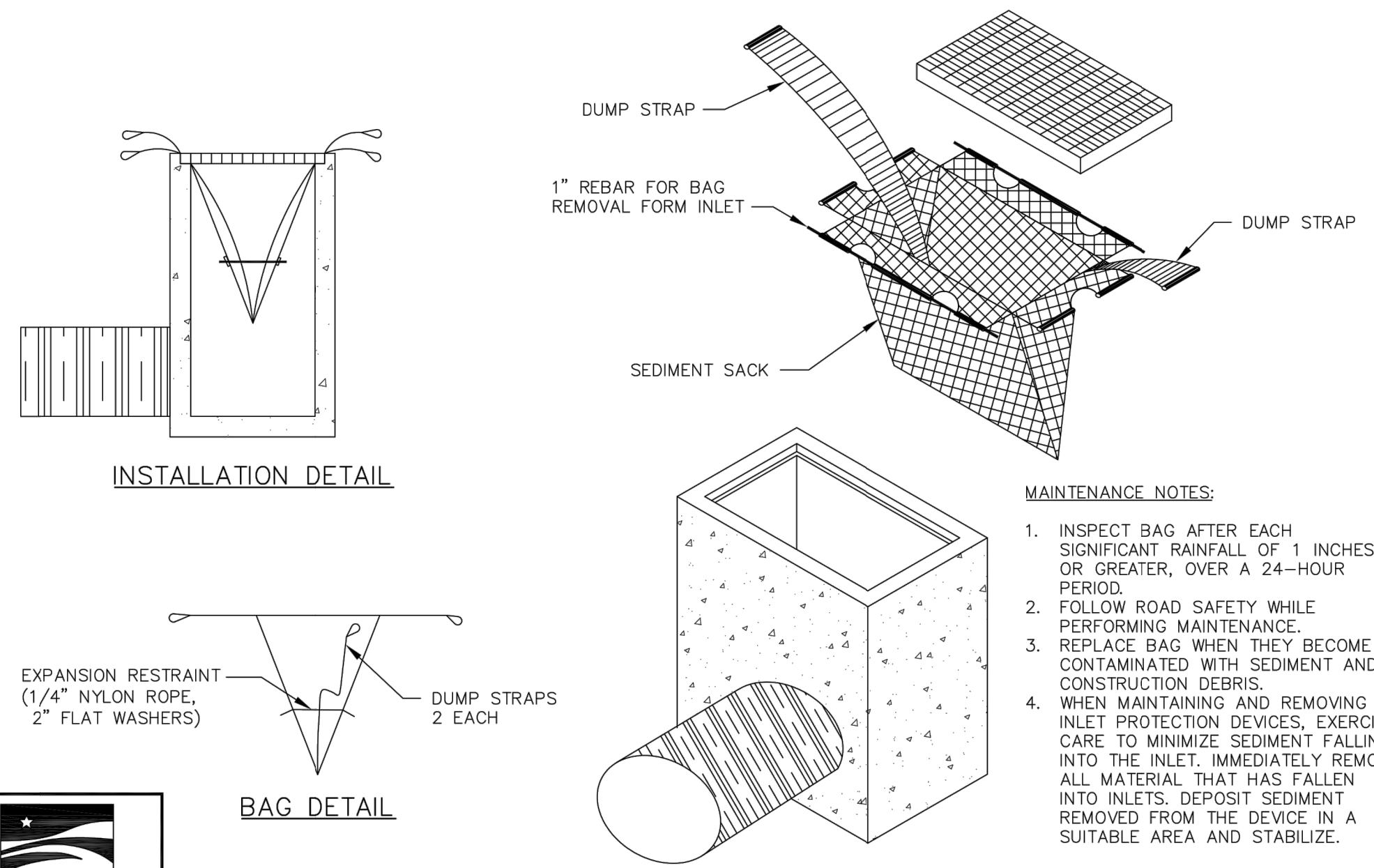
SECTION VIEW

- 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.

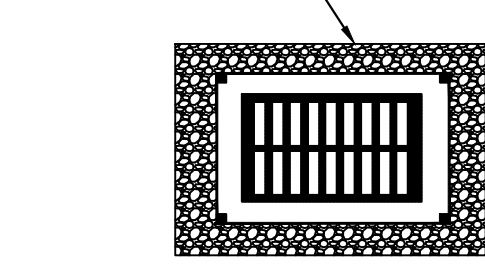
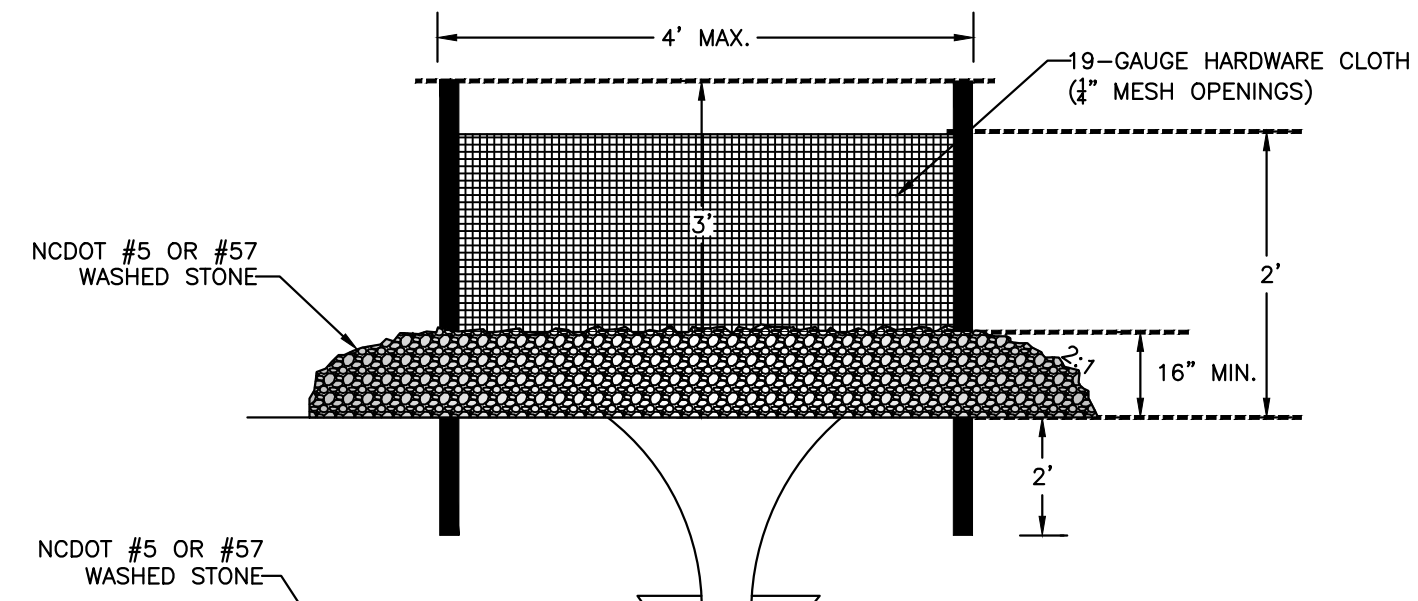
STANDARD SILT BAG - INLET SEDIMENT CONTROL DEVICE



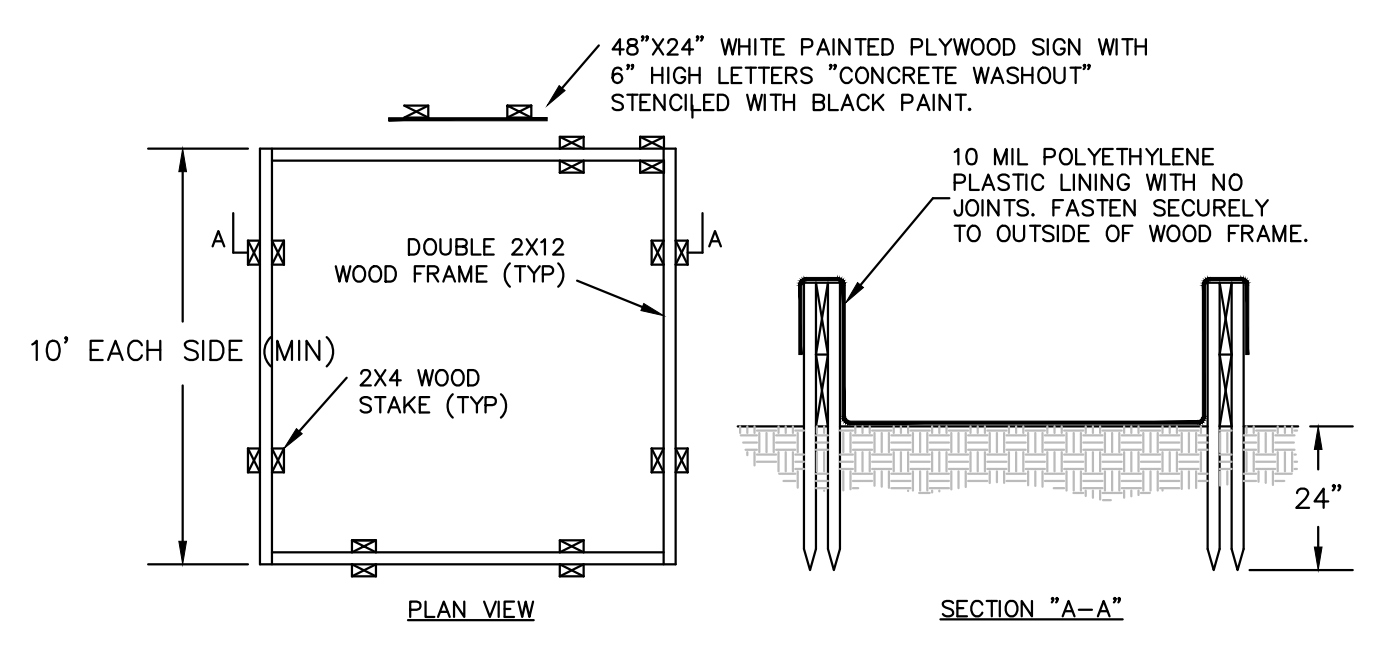
EFFECTIVE: 01/31/08

**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



PLAN VIEW

SECTION "A-A"

- 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:**

**SOIL AMENDMENTS:**  
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER

**MULCH:**  
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

**MAINTENANCE:**  
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE

**SEEDING DATES:**  
JAN. 1 - MAY 1

**FOR SUMMER:**

**SOIL AMENDMENTS:**  
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER

**MULCH:**  
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

**MAINTENANCE:**  
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE

**SEEDING DATES:**  
MAY 1 - AUG. 15

**FOR FALL:**

**SOIL AMENDMENTS:**  
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER

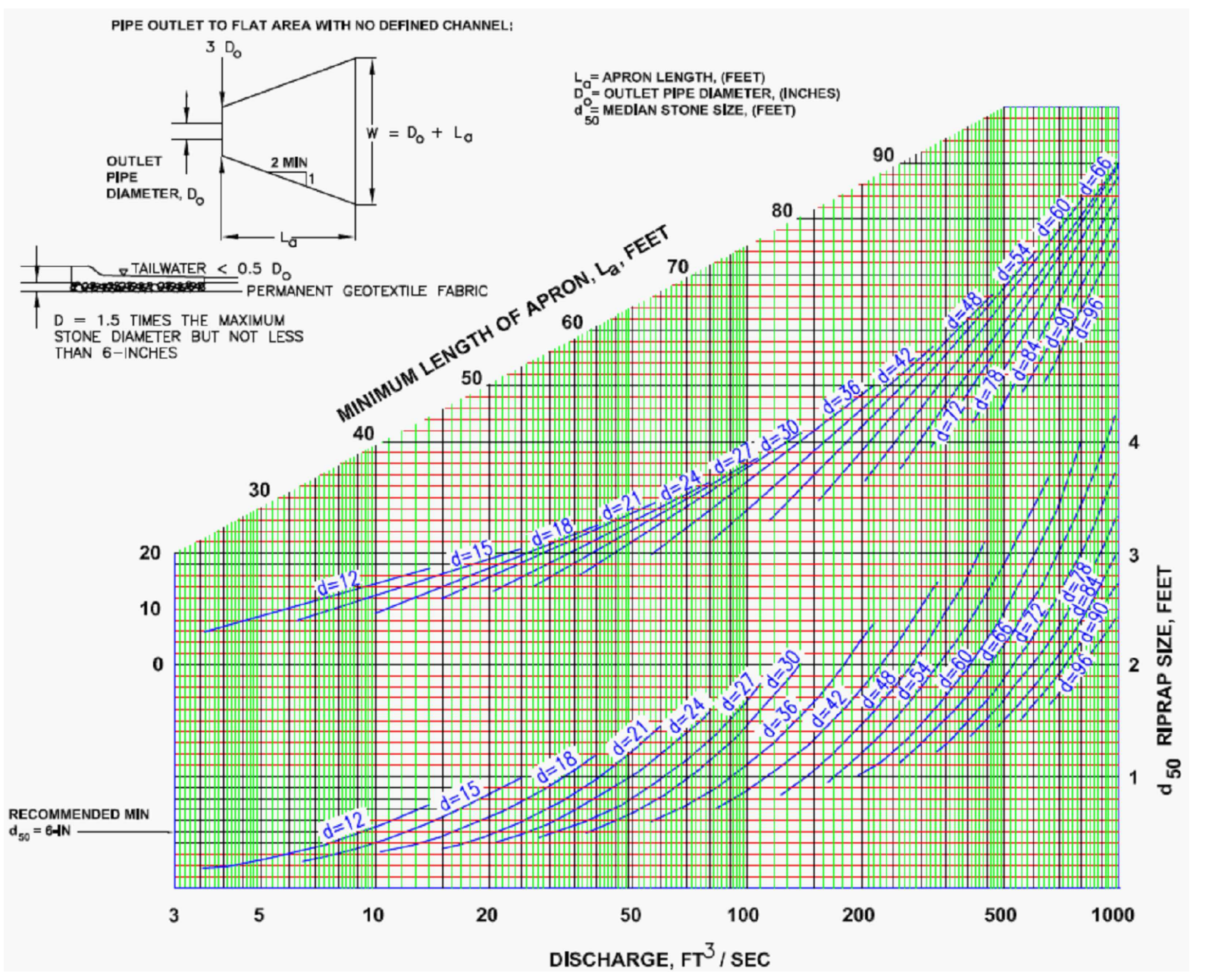
**MULCH:**  
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

**MAINTENANCE:**  
REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/ACRE KOBE LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

**SEEDING DATES:**  
AUG. 15 - DEC 30

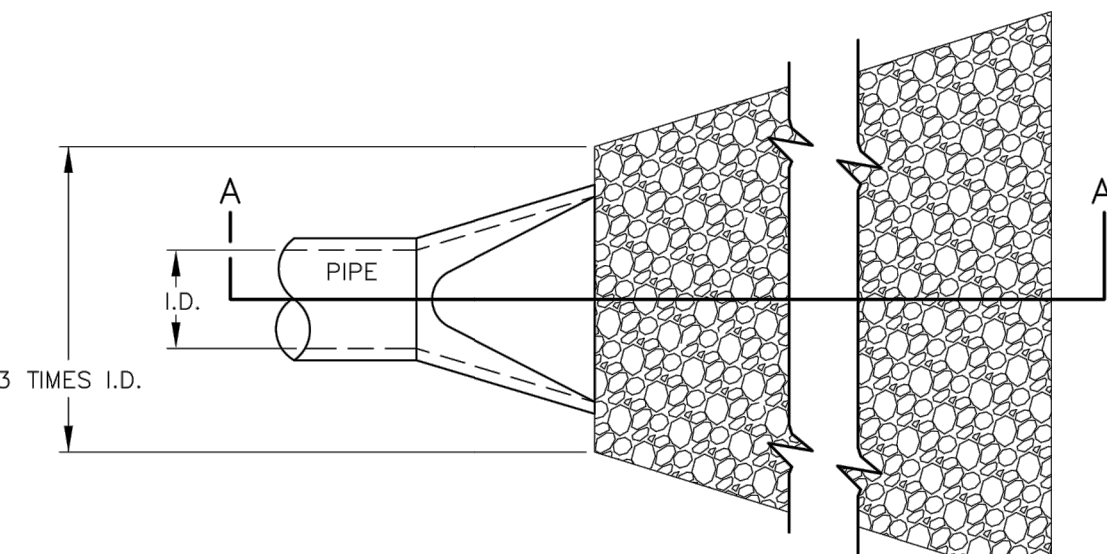
FOR ADDITIONAL INFORMATION, REFER TO NCDENR EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (ESCPDM), SECTION 6.10. FOR PERMANENT SEED BED PREP, SEASONAL OPERATIONS, INCLUDING SEED BED GRADATIONS, THE KINDS OF GRADES OF FERTILIZERS, THE KINDS OF SEED, AND THE RATES OF APPLICATION OF LIMESTONE, FERTILIZER, AND SEED, REFER TO NCDENR ESCPDM SECTION 6.11.

Temporary Seeding Schedule  
SCALE: NOT TO SCALE

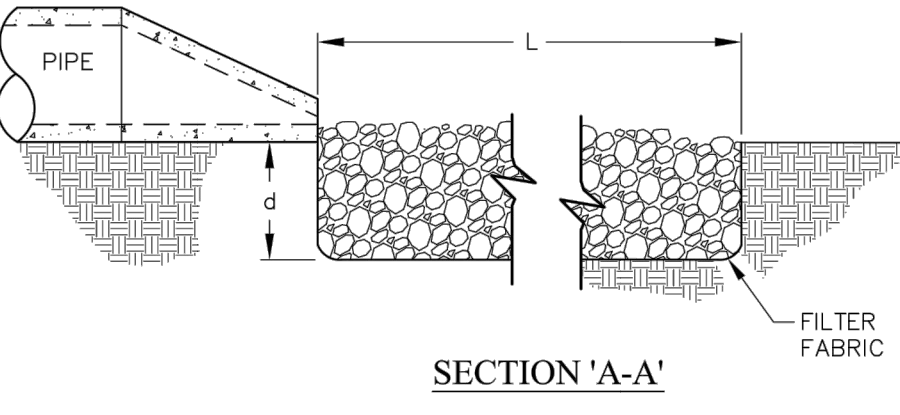


RIPRAP #	Q (CFS)	"Do" PIPE DIA (IN)	"D <sub>50</sub> " (FT)	"3xD <sub>50</sub> " (FT)	"La" LENGTH (MIN 10 FT) (FT)	"W" (FT)	"T" MIN STONE DEPTH (IN)
OUTFALL	5.00	15	0.50	3.75	10.00	11.25	13.50

Pipe Outlet Riprap Protection with Calculations  
SCALE: NOT TO SCALE



PLAN VIEW

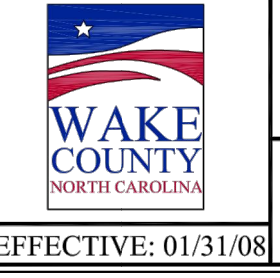


SECTION "A-A"

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

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

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

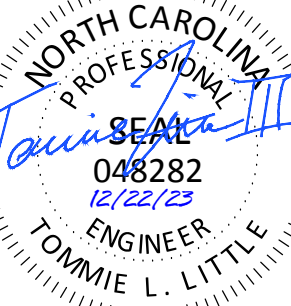
**REVISION HISTORY**

NO.	DATE	DESCRIPTION

EROSION CONTROL DETAILS







**TIDAL WAVE AUTO SPA**  
ROLESVILLE, NC

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

**REVISION HISTORY**

NO.	DESCRIPTION

**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:**

- 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.

Update setbacks as indicated on Sheet 1

Clarify

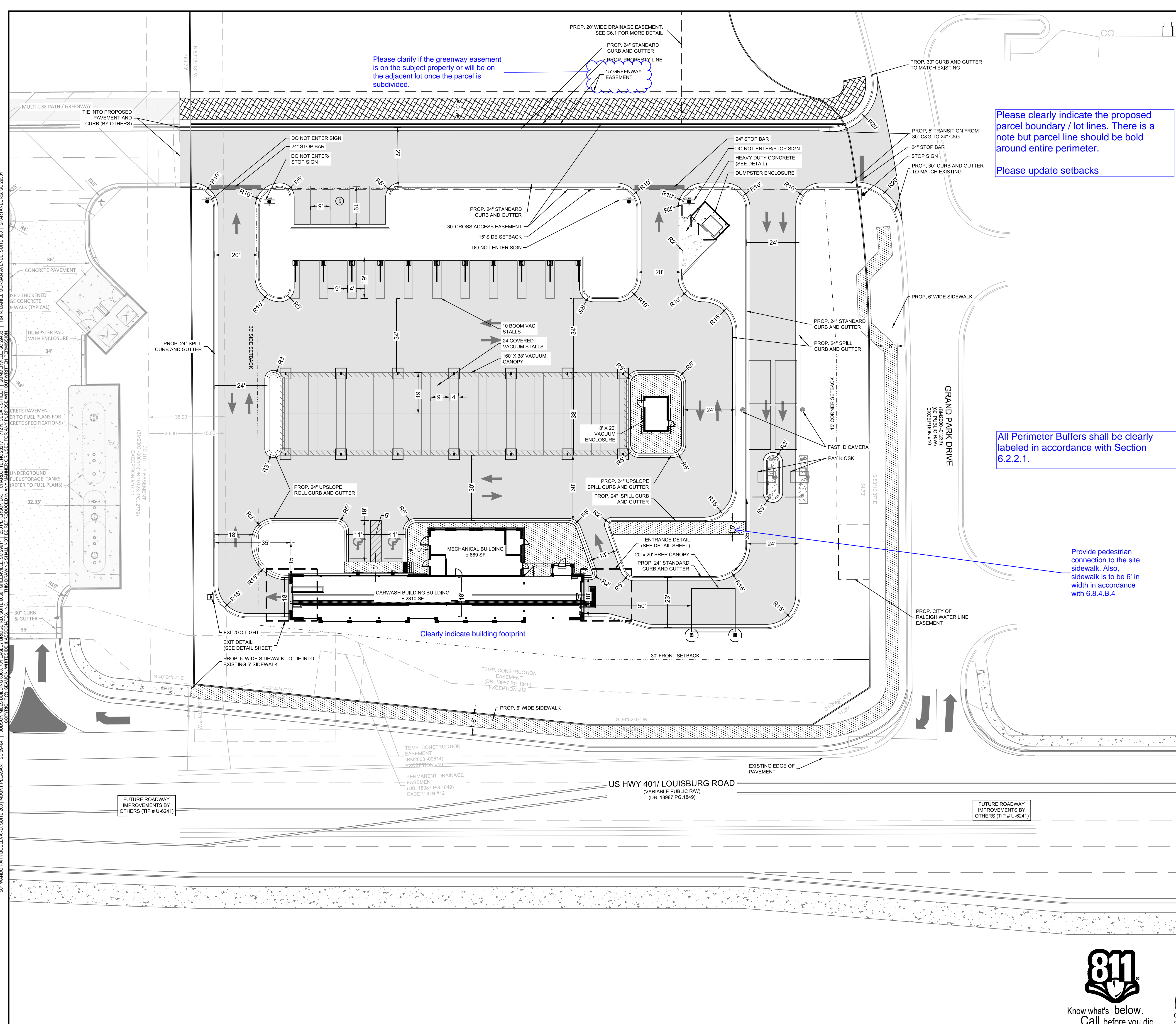
Please clearly indicate the proposed parcel boundary / lot lines. There is a note but parcel line should be bold around entire perimeter.  
Please update setbacks

All Perimeter Buffers shall be clearly labeled in accordance with Section 6.2.2.1.

Provide pedestrian connection to the site sidewalk. Also, sidewalk is to be 6' in width in accordance with 6.8.4.B.4

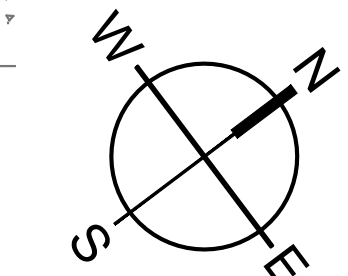
Please clarify if the greenway easement is on the subject property or will be on the adjacent lot once the parcel is subdivided.

501 WANDO 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



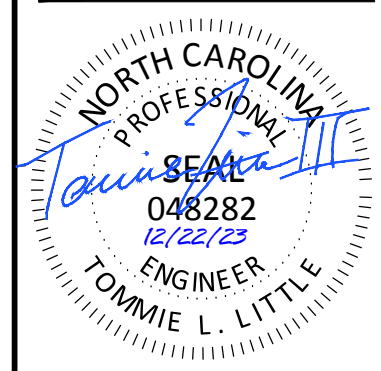
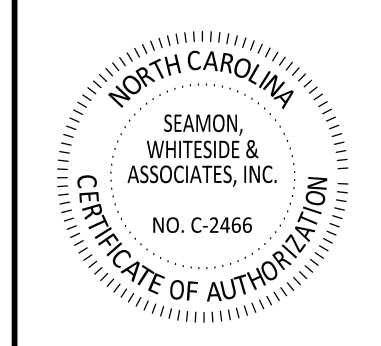
**SITE LEGEND**

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



SCALE: 1" = 20'





**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:**

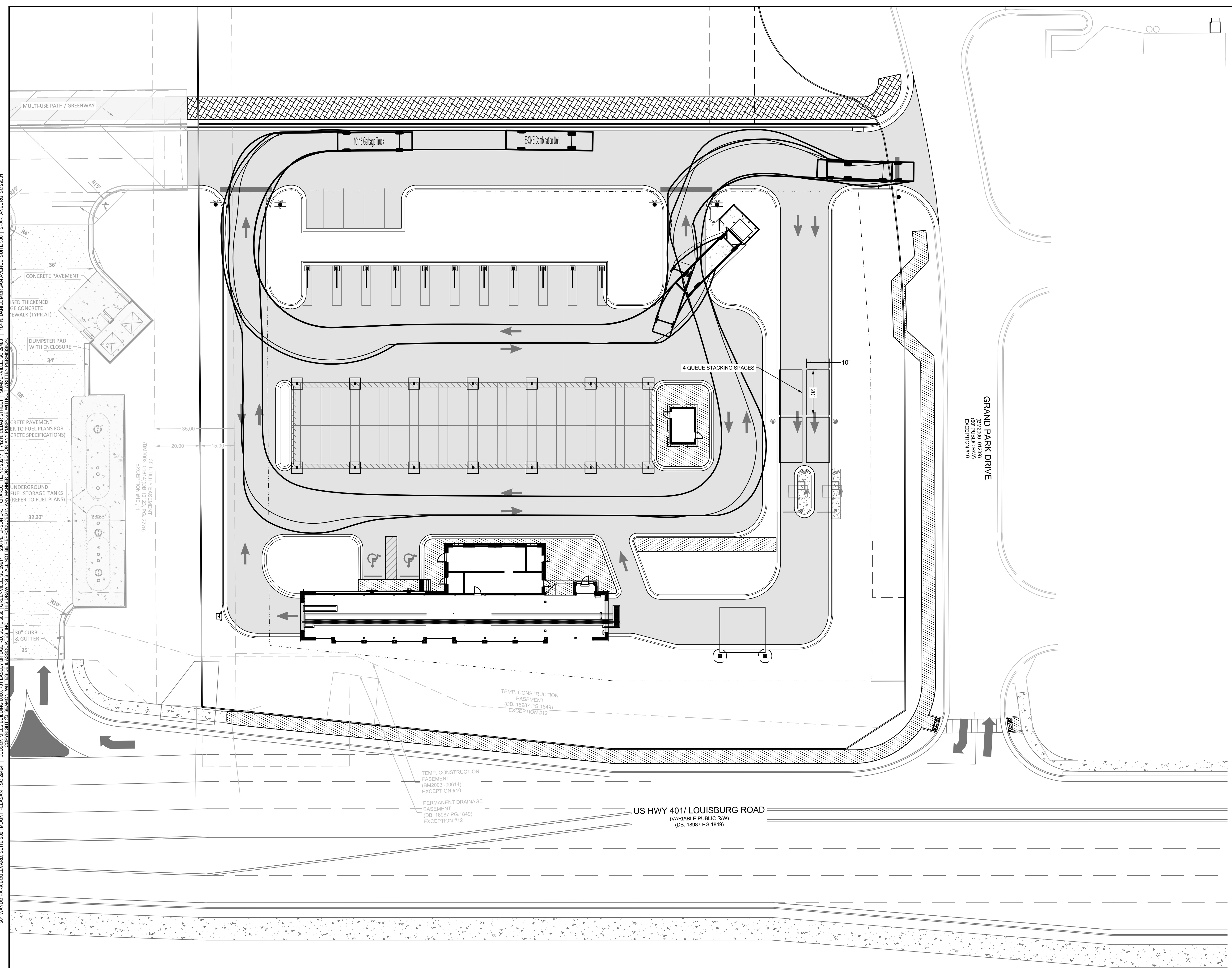
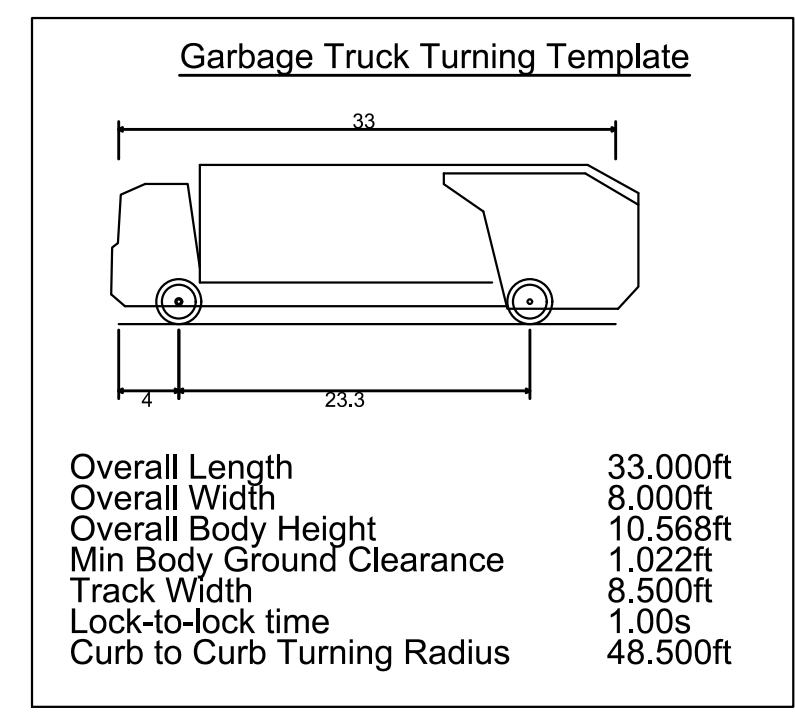
**PARKING REQUIRED:**  
1 SPACE PER 400 SF GFA OR 5 SPACES MINIMUM = 5 SPACES

**PARKING PROVIDED:**

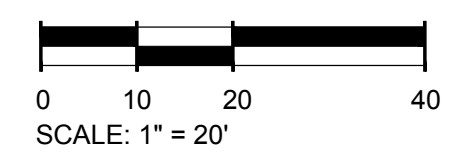
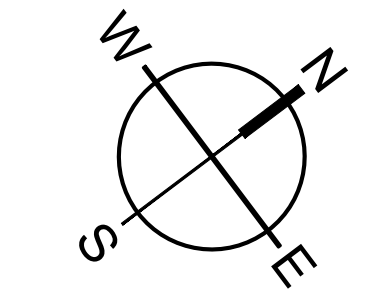
EMPLOYEE SPACES:	5 SPACES (1 ADA)
(4 MAX ON SHIFT)	
VACUUM STALLS:	34 STALLS

**SITE LAYOUT AND STAKING NOTES:**

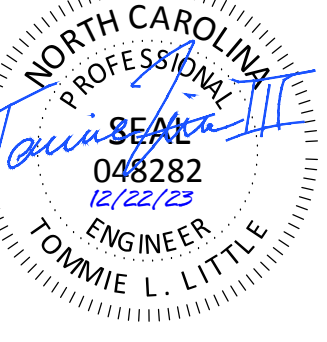
- CONTRACTOR SHALL CAREFULLY EXAMINE ALL DOCUMENTS AND THE CONSTRUCTION SITE TO OBTAIN FIRST HAND KNOWLEDGE OF EXISTING CONDITIONS.
- ENTIRE SITE SHALL BE DRESSED TO UNIFORM, WELL DRAINED AND VISUALLY APPEALING SURFACE WITH A MINIMUM TOPSOIL LAYER OF FOUR INCHES.
- ALL STRIPING AND SIGNS SHALL CONFORM 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.



Know what's below.  
Call before you dig.



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  
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**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:**

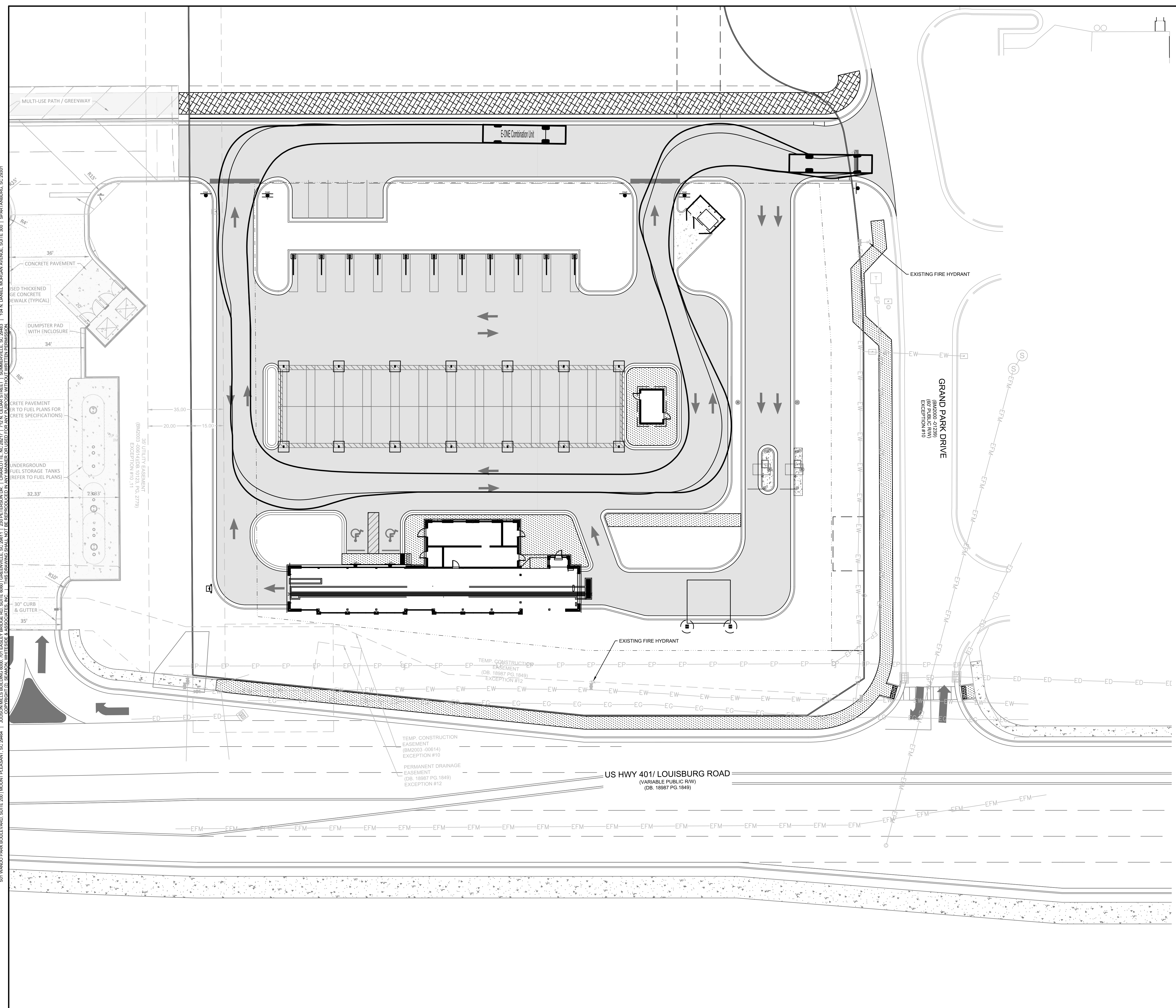
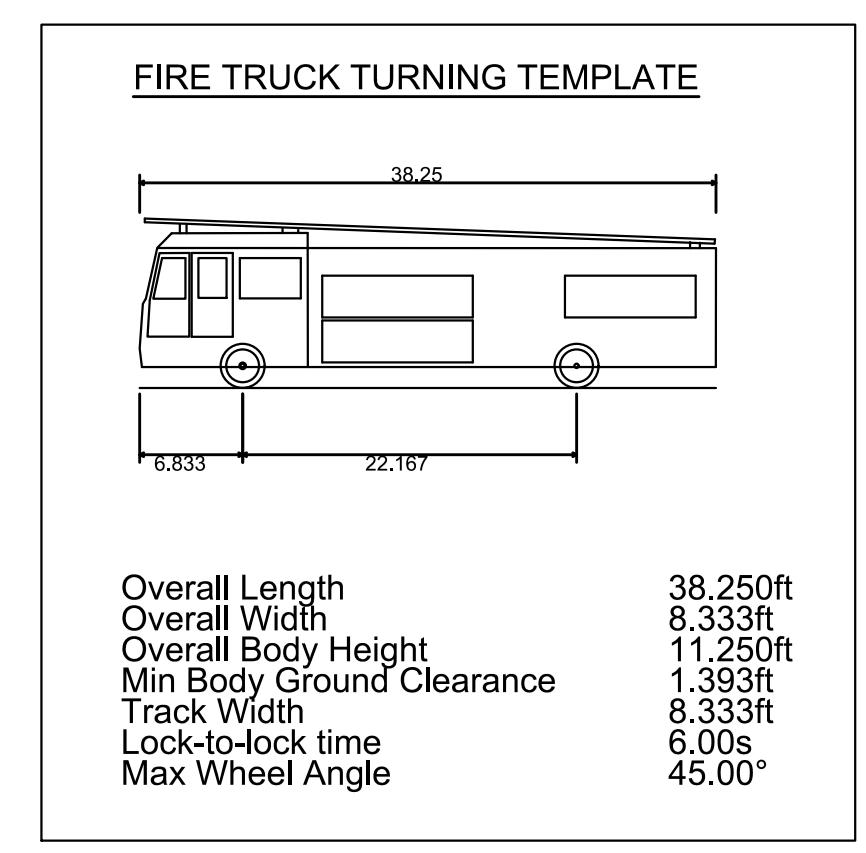
**PARKING REQUIRED:**  
1 SPACE PER 400 SF GFA OR 5 SPACES MINIMUM = 5 SPACES

**PARKING PROVIDED:**

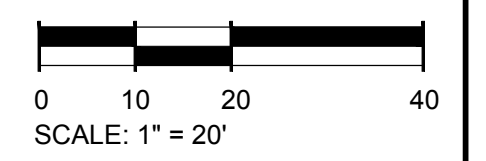
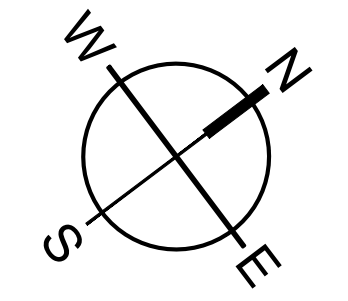
EMPLOYEE SPACES:	5 SPACES (1 ADA)
(4 MAX ON SHIFT)	
VACUUM STALLS:	34 STALLS

**SITE LAYOUT AND STAKING NOTES:**

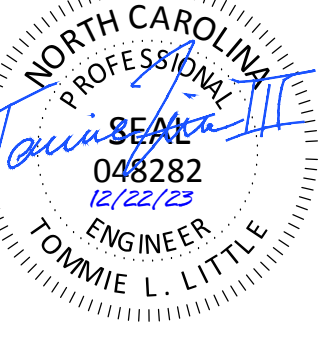
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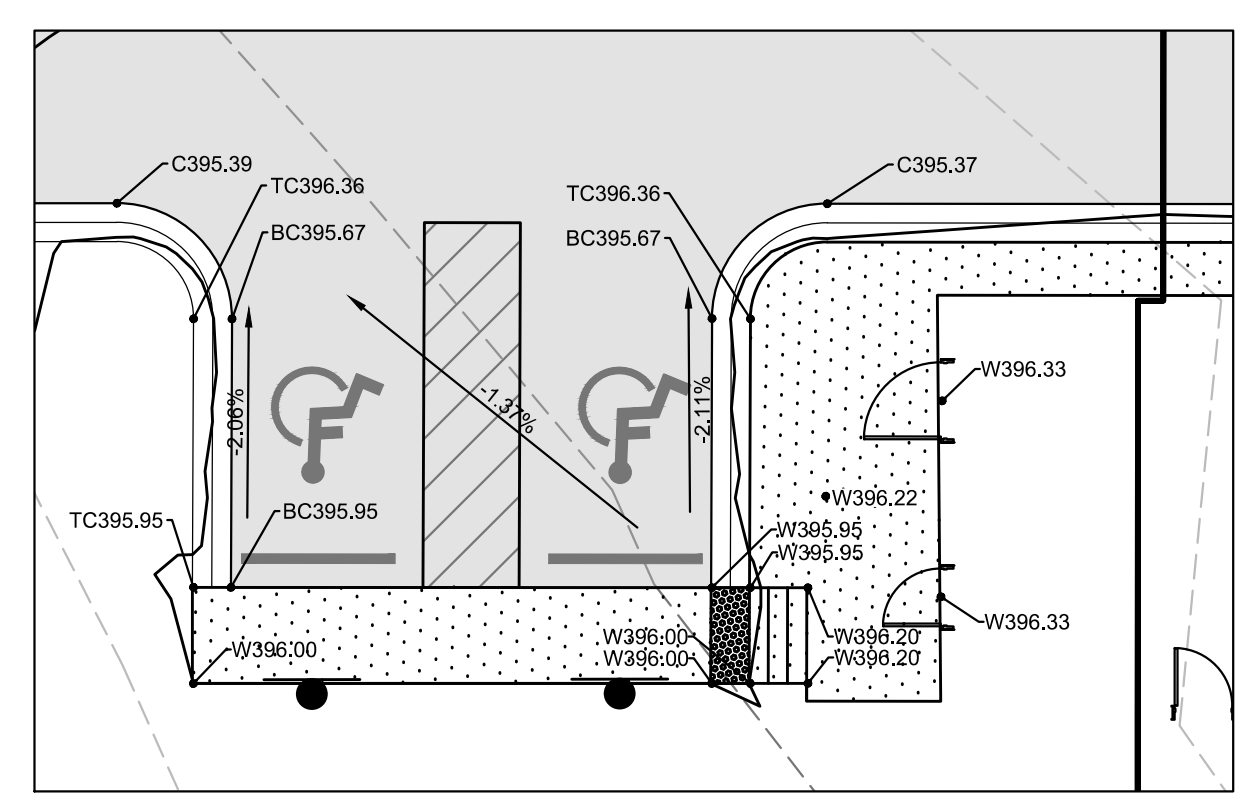
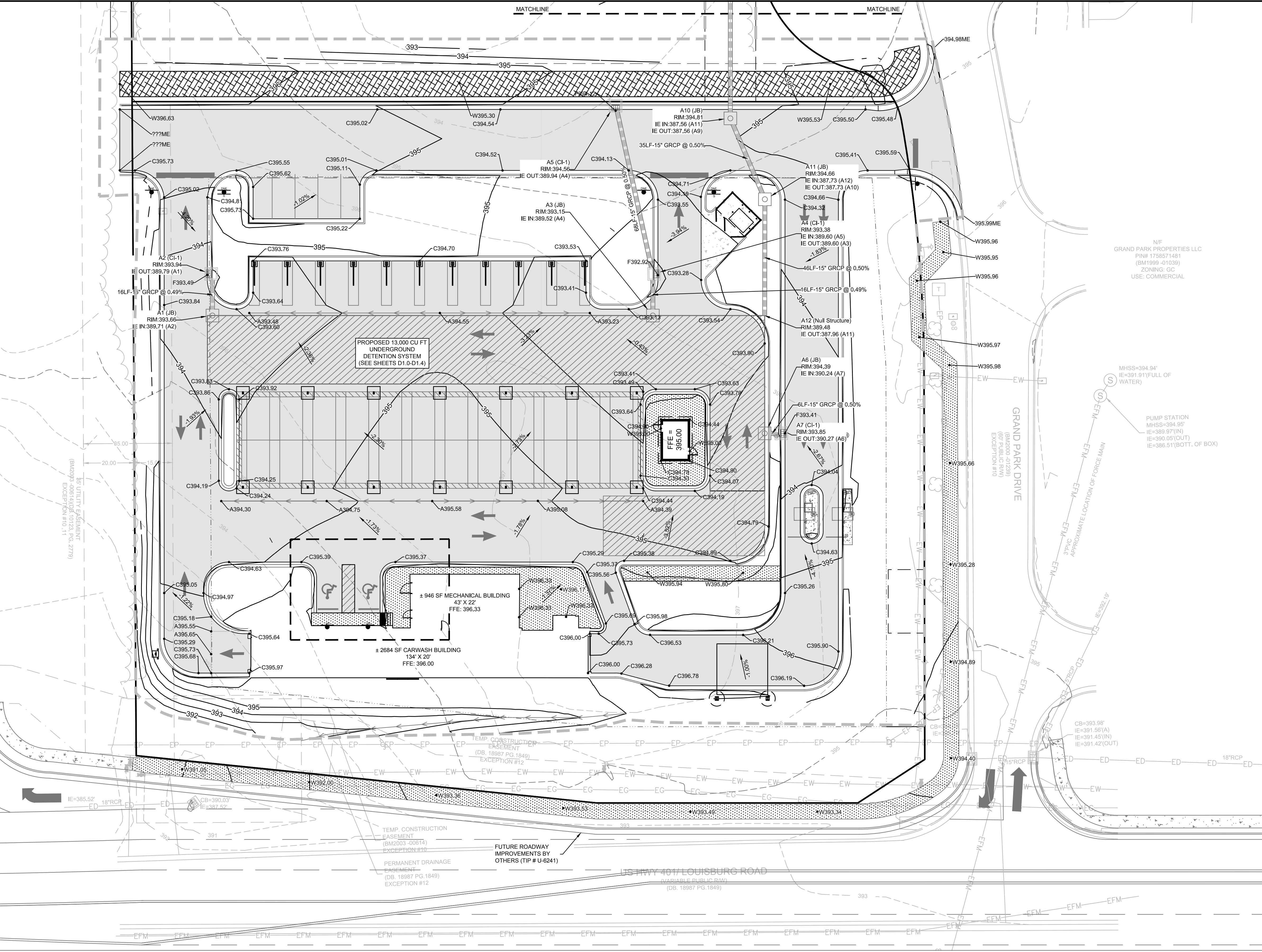
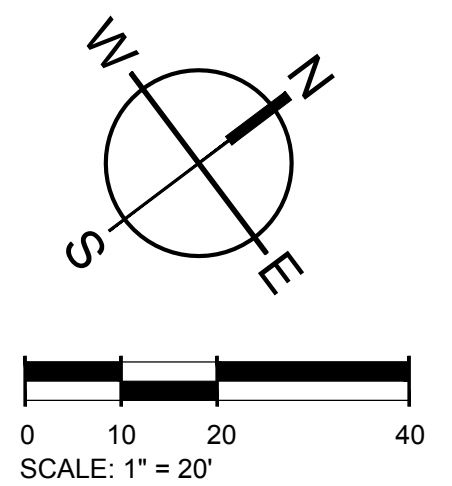
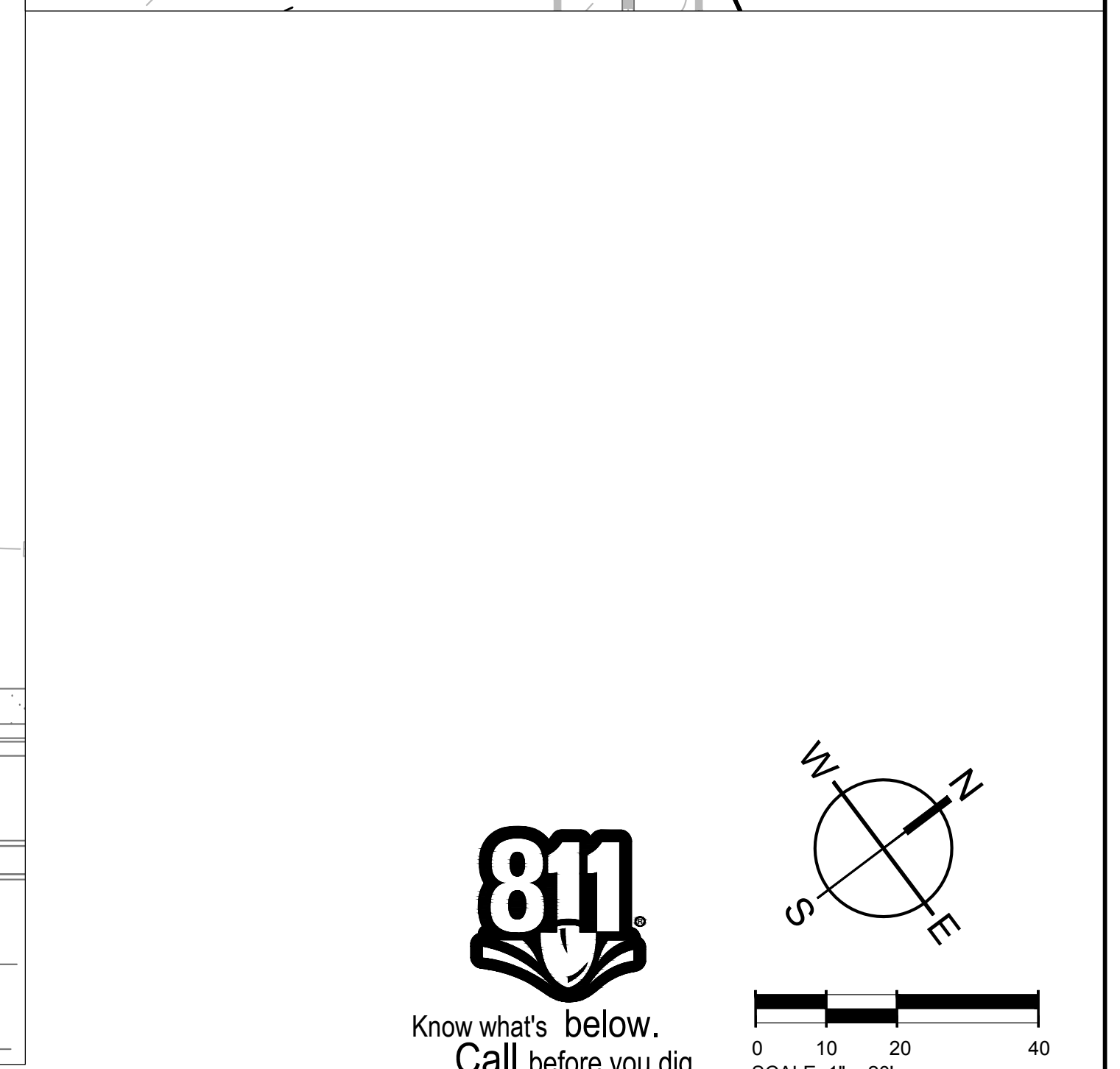
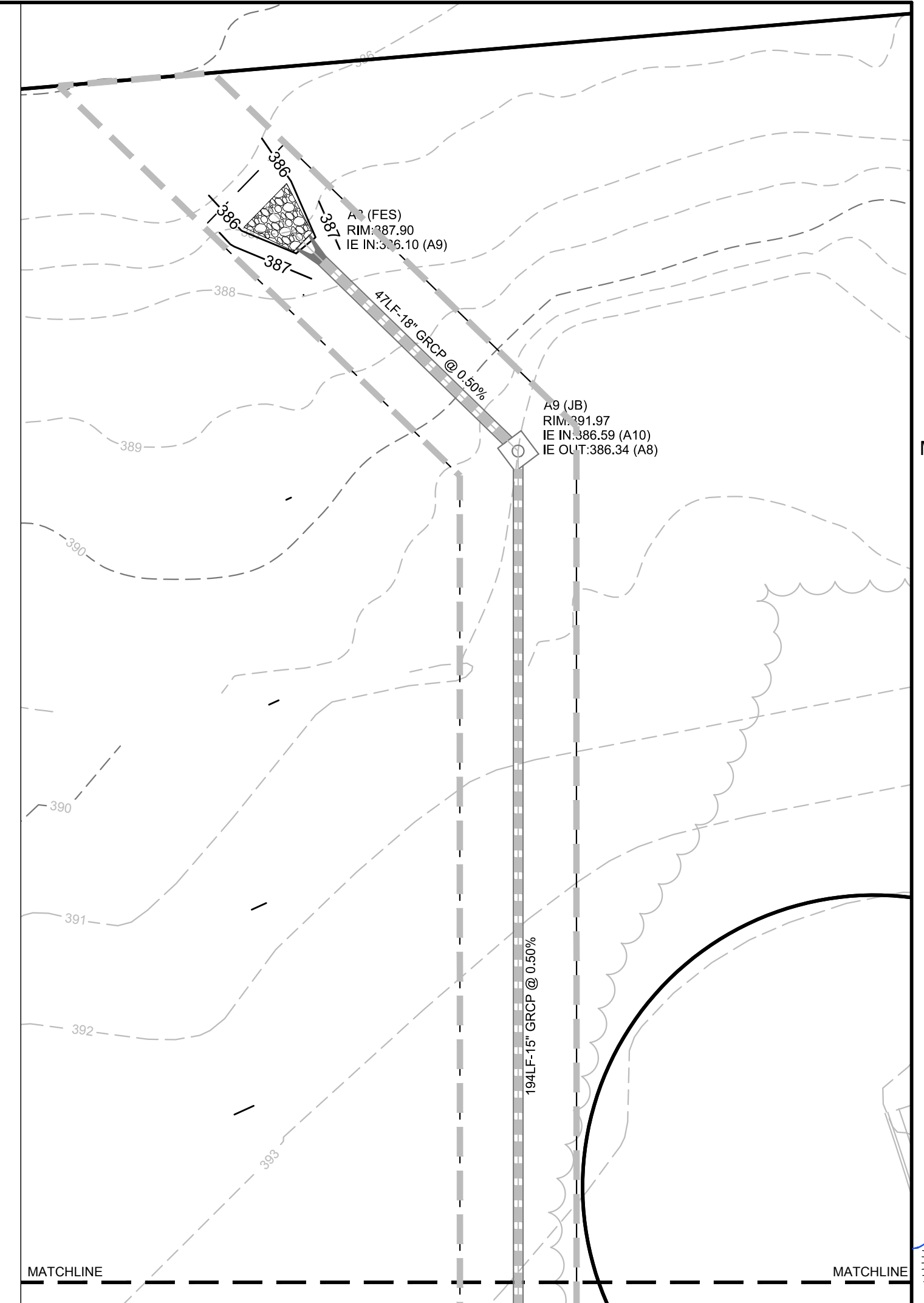
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**TIDAL WAVE AUTO SPA**  
ROLESVILLE, NC



**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.

**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

**LEGEND**

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

**REVISION HISTORY**

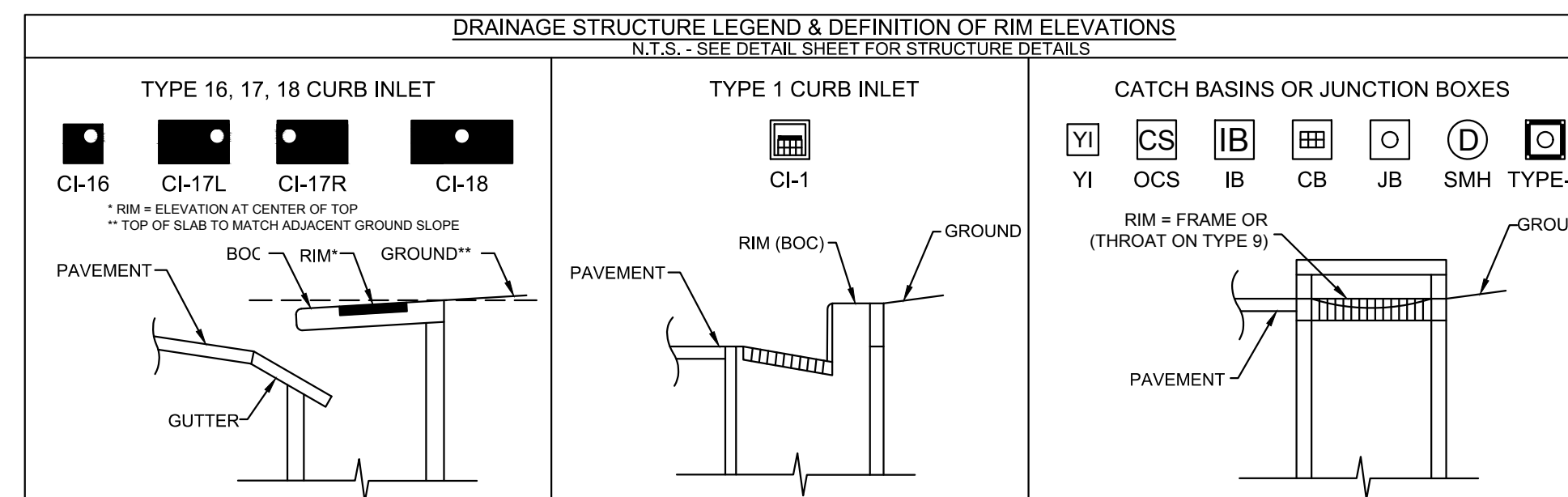
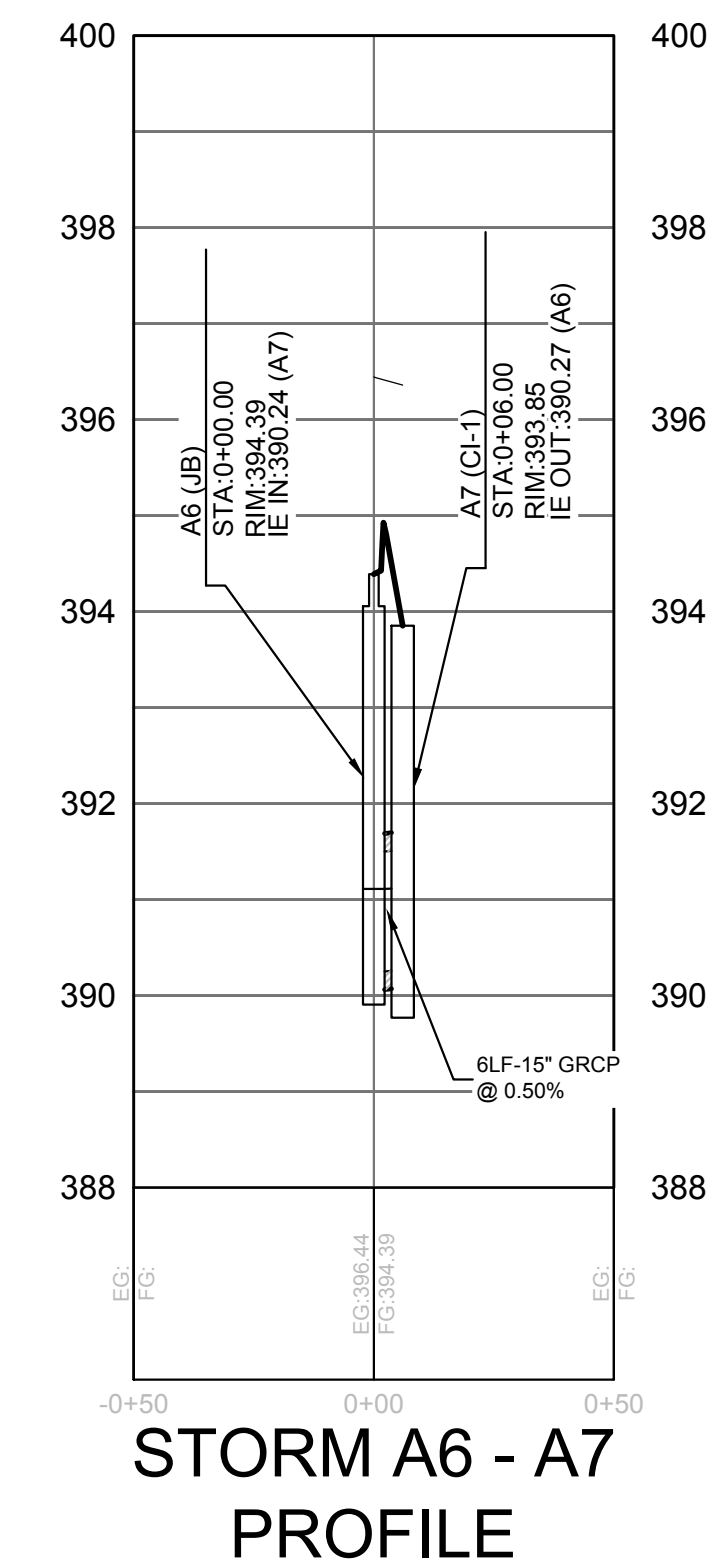
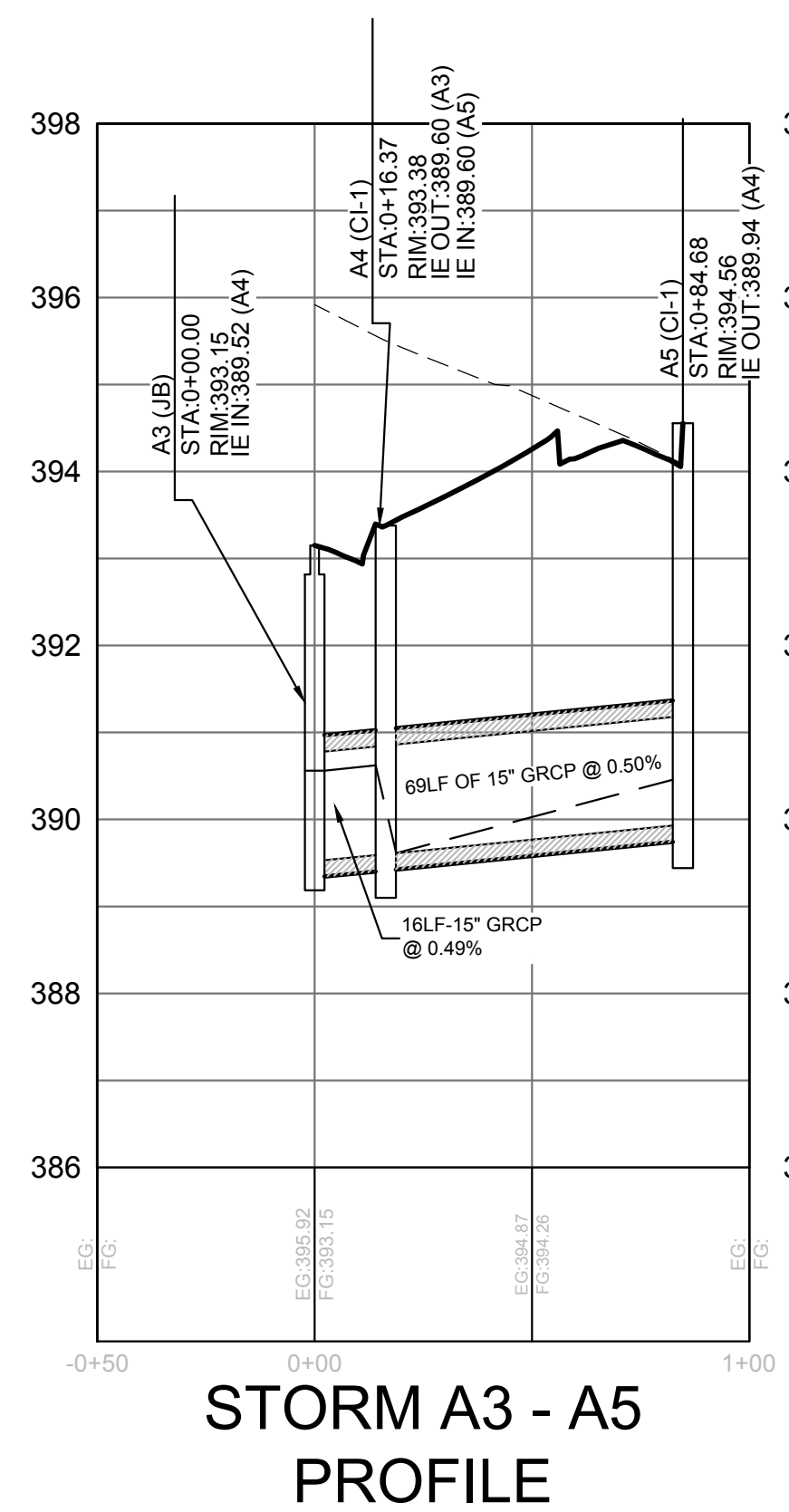
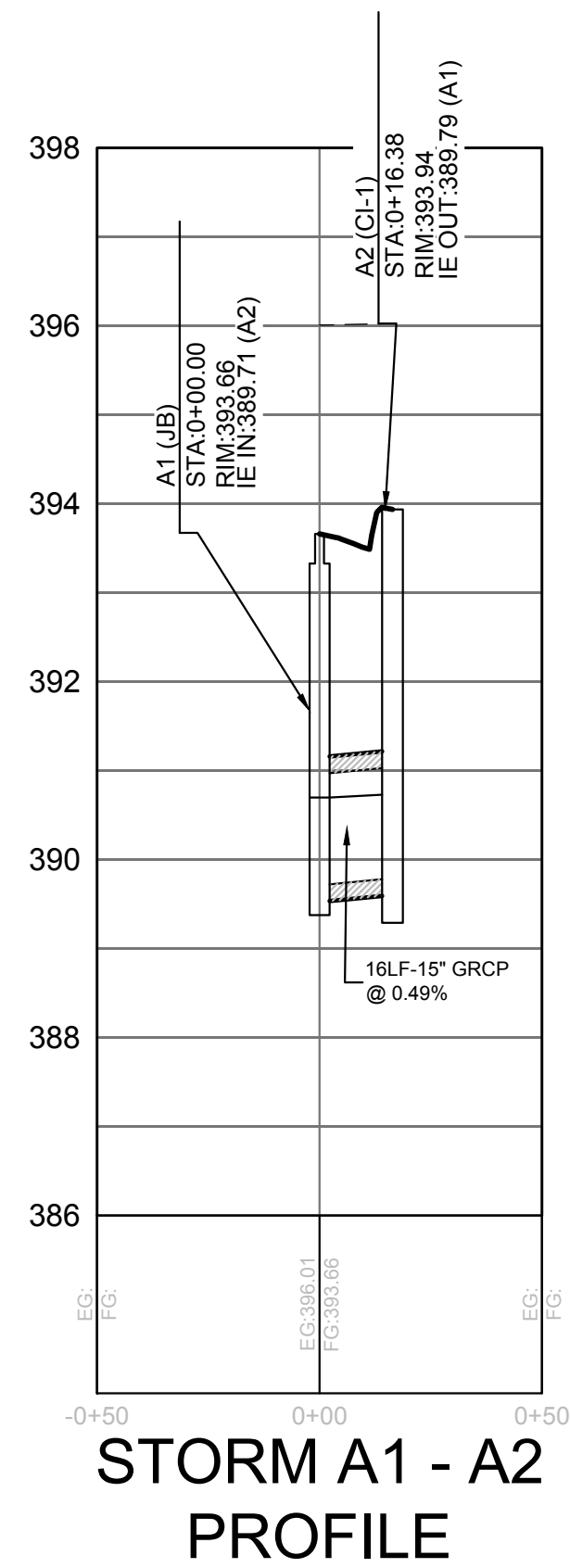
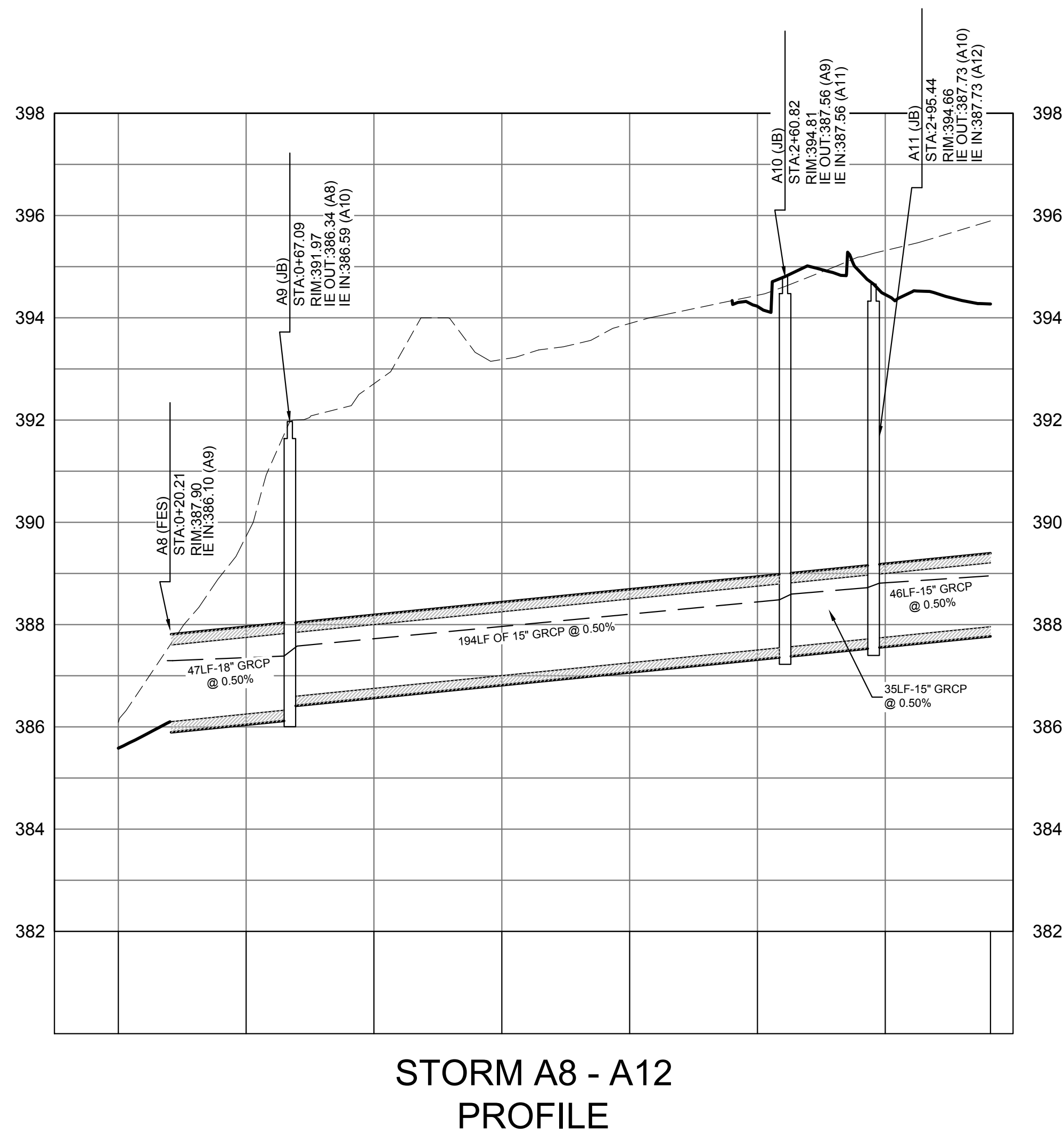
NO.	DESCRIPTION	DATE

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

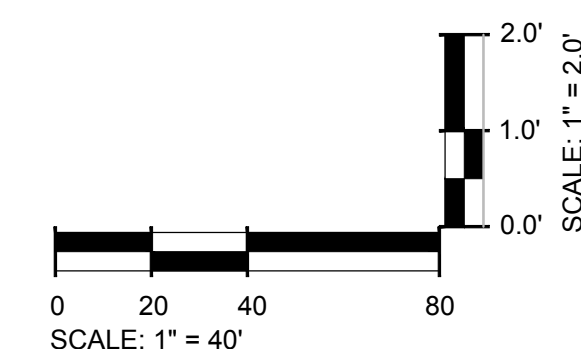
**OVERALL GRADING AND DRAINAGE PLAN**

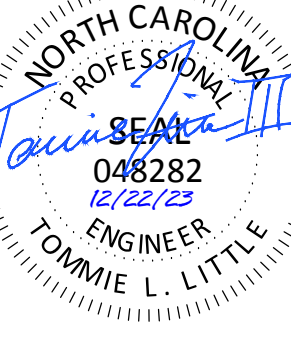
C6.1

NO.	DATE	DESCRIPTION



Know what's below.  
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**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**

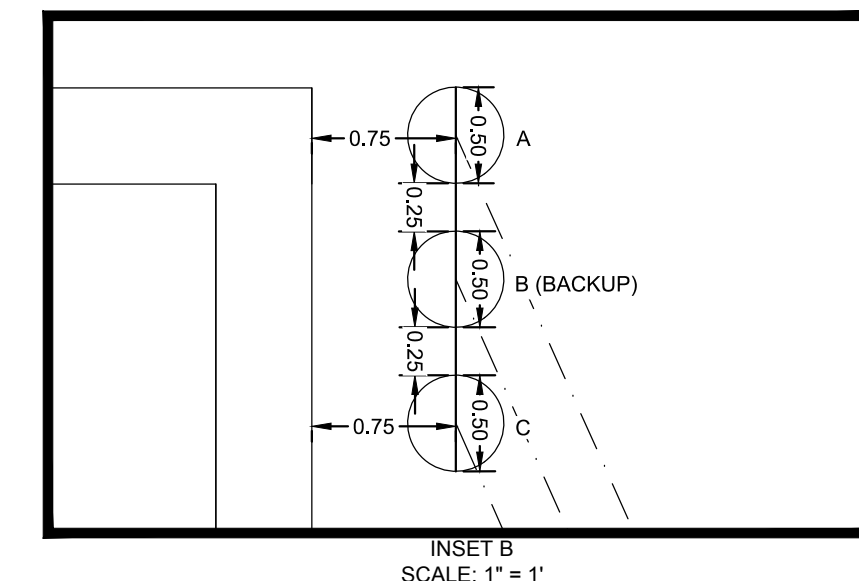
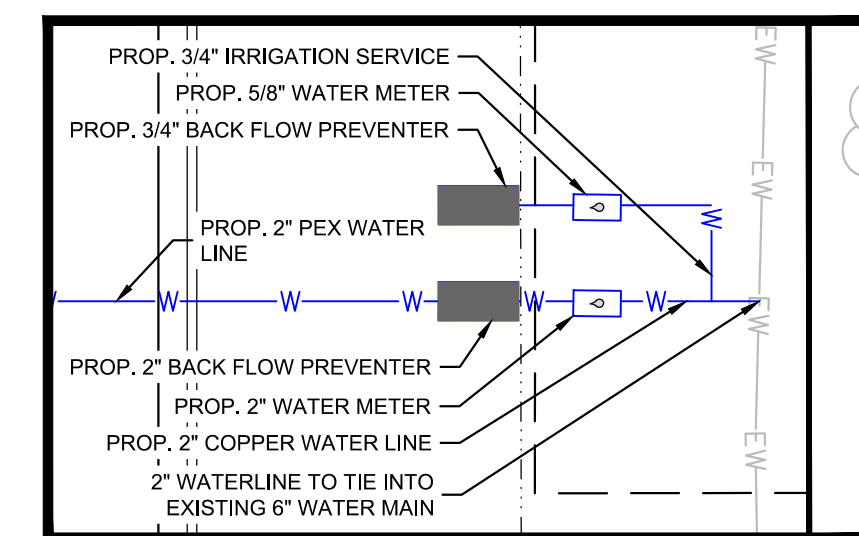
1. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY AS APPROVED BY TOWN OF ROLESVILLE AND INSTALLED BY CONTRACTOR DURING CONSTRUCTION. ASSEMBLY TO BE INSTALLED ABOVE GROUND WITHIN INSULATED ENCLOSURE PER TOWN OF ROLESVILLE REQUIREMENTS. ENCLOSURE TO BE LOCATED OUT OF SETBACK.
2. THERE SHALL BE 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.

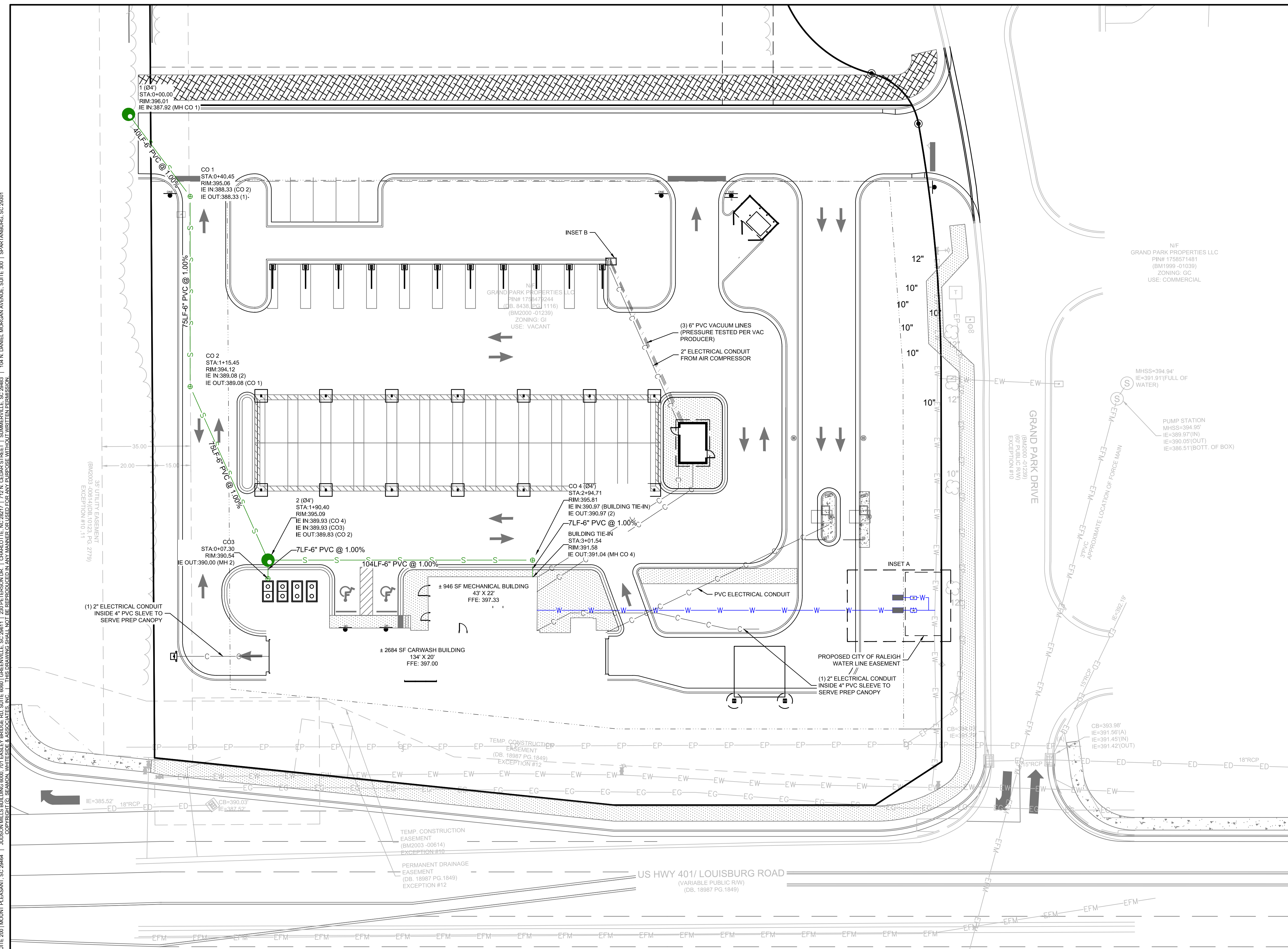
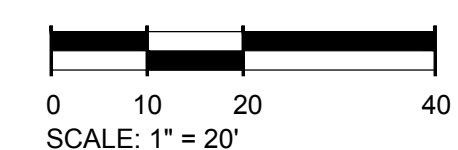
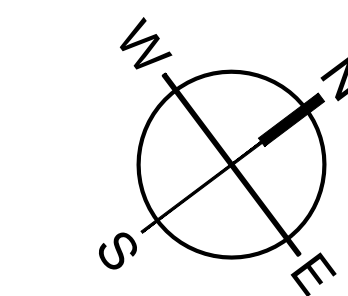
**STANDARD SEWER PLAN NOTES**

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.

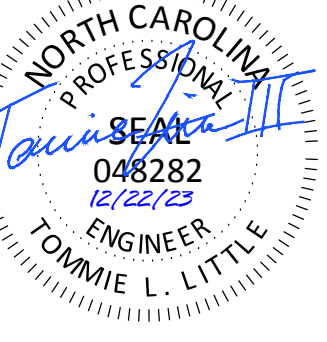


**EXISTING UTILITY NOTE:**

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 BOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29546 | JUDSON MILLS BUILDING 6000 TOY 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  
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DATE: 12/22/23 10:21 AM BY: Pomer-Little  
SCALE: 1" = 20'



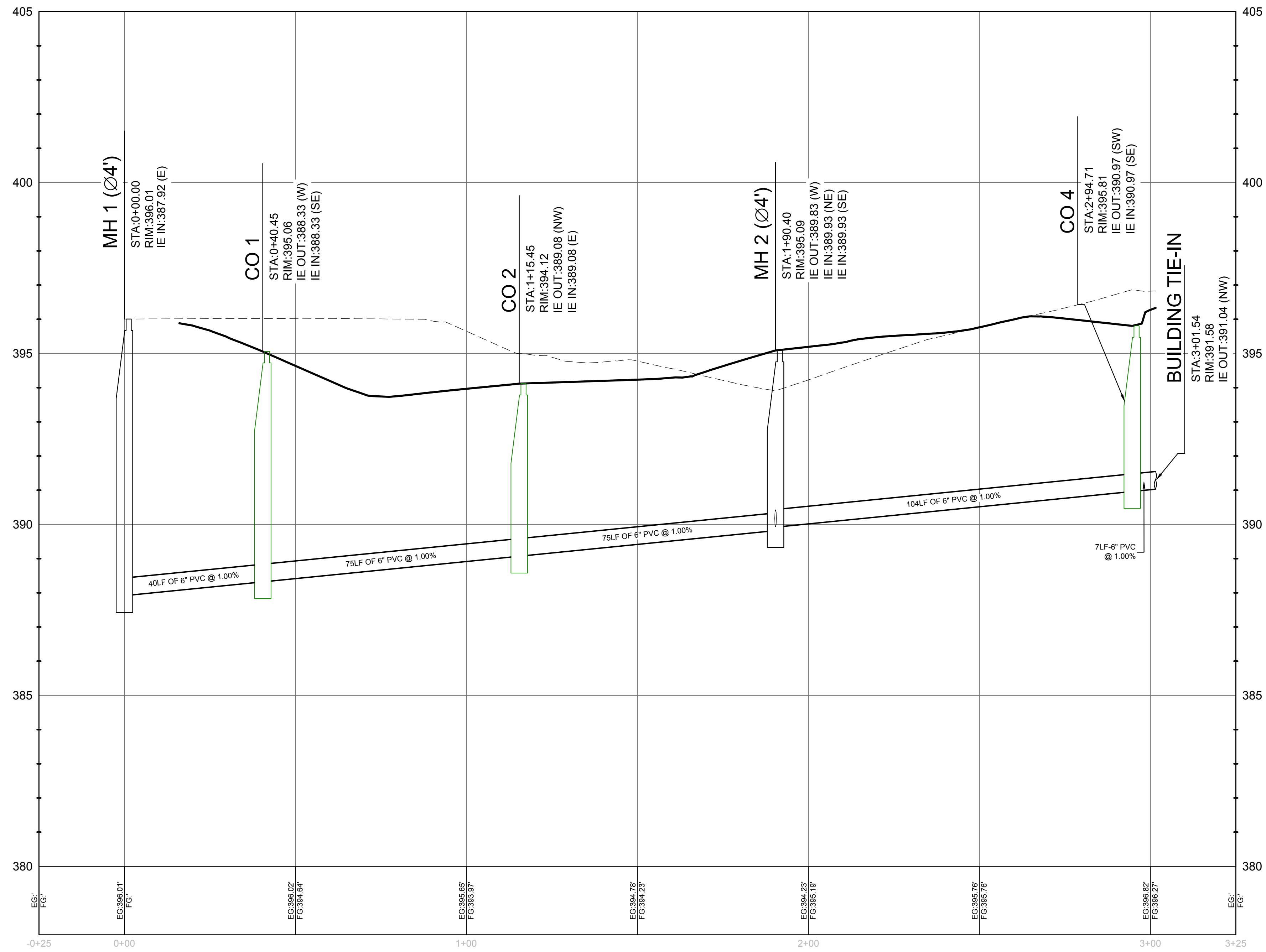
**TIDAL WAVE AUTO SPA**  
 ROLESVILLE, NC

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

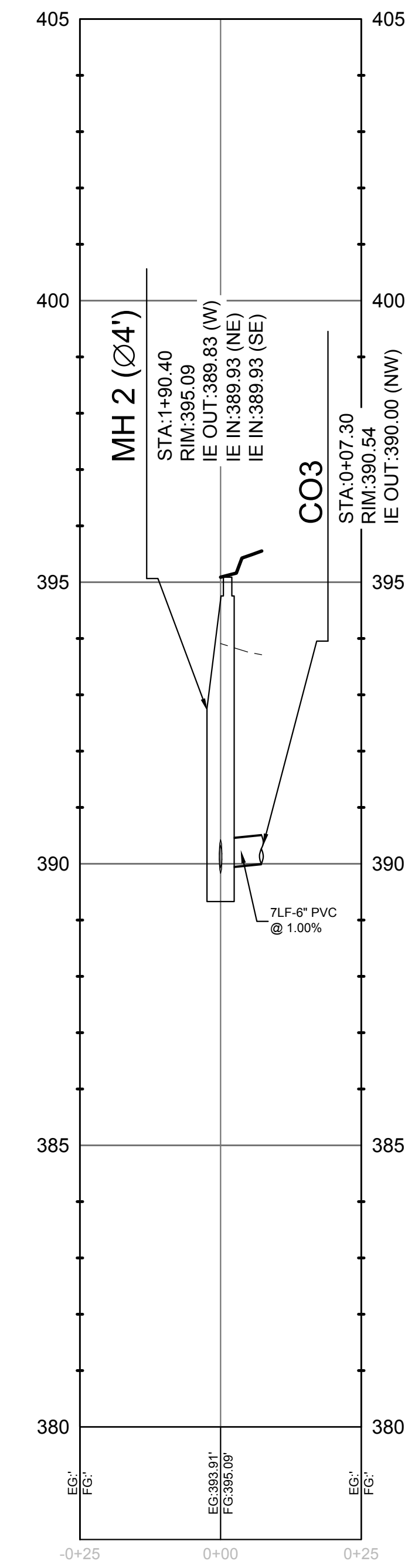
**REVISION HISTORY**

NO.	DESCRIPTION

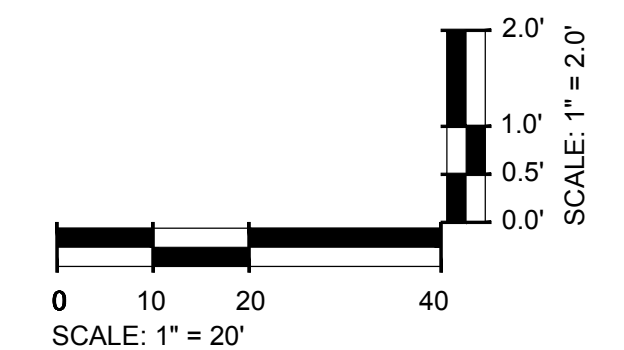
**UTILITY PROFILES**



**MH 1 - BUILDING TIE-IN PROFILE**



**MH 2 - CO3 PROFILE**



**EXISTING UTILITY NOTE:**  
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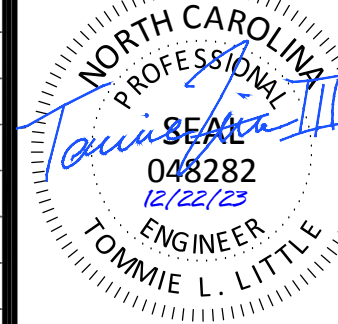
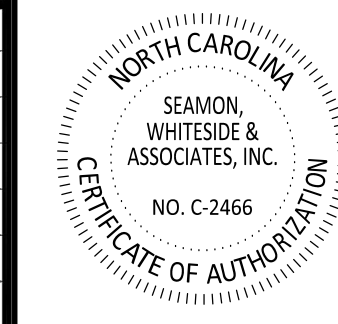
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\\s01n012\22\2023\1021\_Alt\_By\_Polker\Drawings\10772\CSS\Rev\CO\CV1\UTILITY PLAN AND PROFILES.dwg

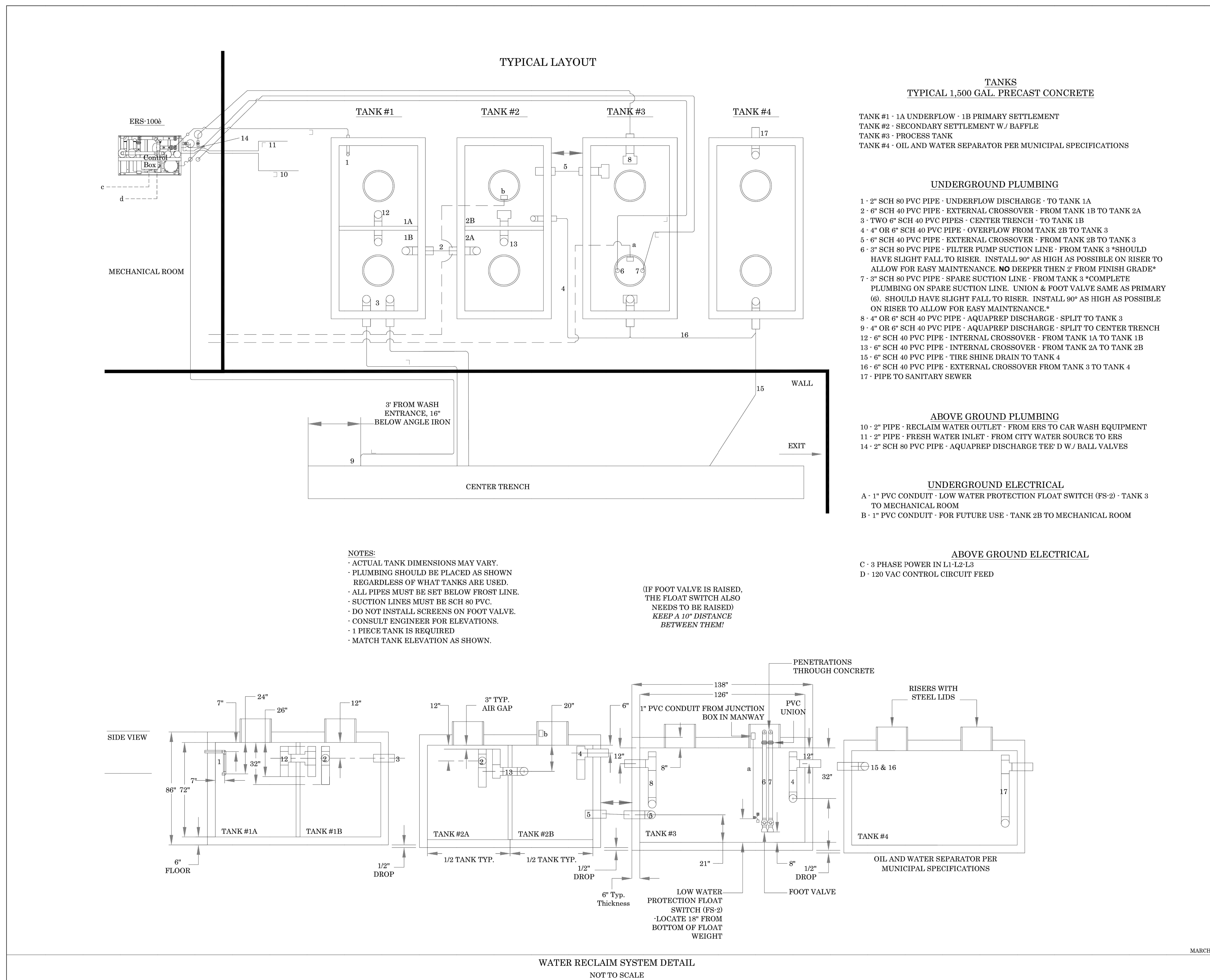




MOUNT PLEASANT, SC 843.884.1667  
 GREENVILLE, SC 864.298.0534  
 SUMMERVILLE, SC 843.972.0710  
 SPARTANBURG, SC 864.272.1272  
 CHARLOTTE, NC 980.312.5450  
 WWW.SEAMONWHITESIDE.COM



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

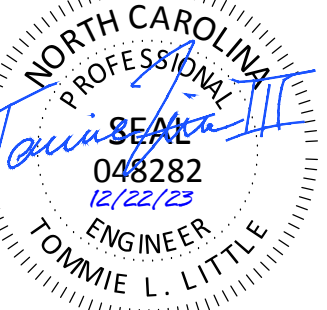
REVISION HISTORY

NO.	DATE	DESCRIPTION

CONSTRUCTION DETAILS

NOT TO SCALE  
 SHEET  
 1 OF 1

501 WINDO PARK BOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29546 | JUDSON MILLS BUILDING 6000 TOY 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  
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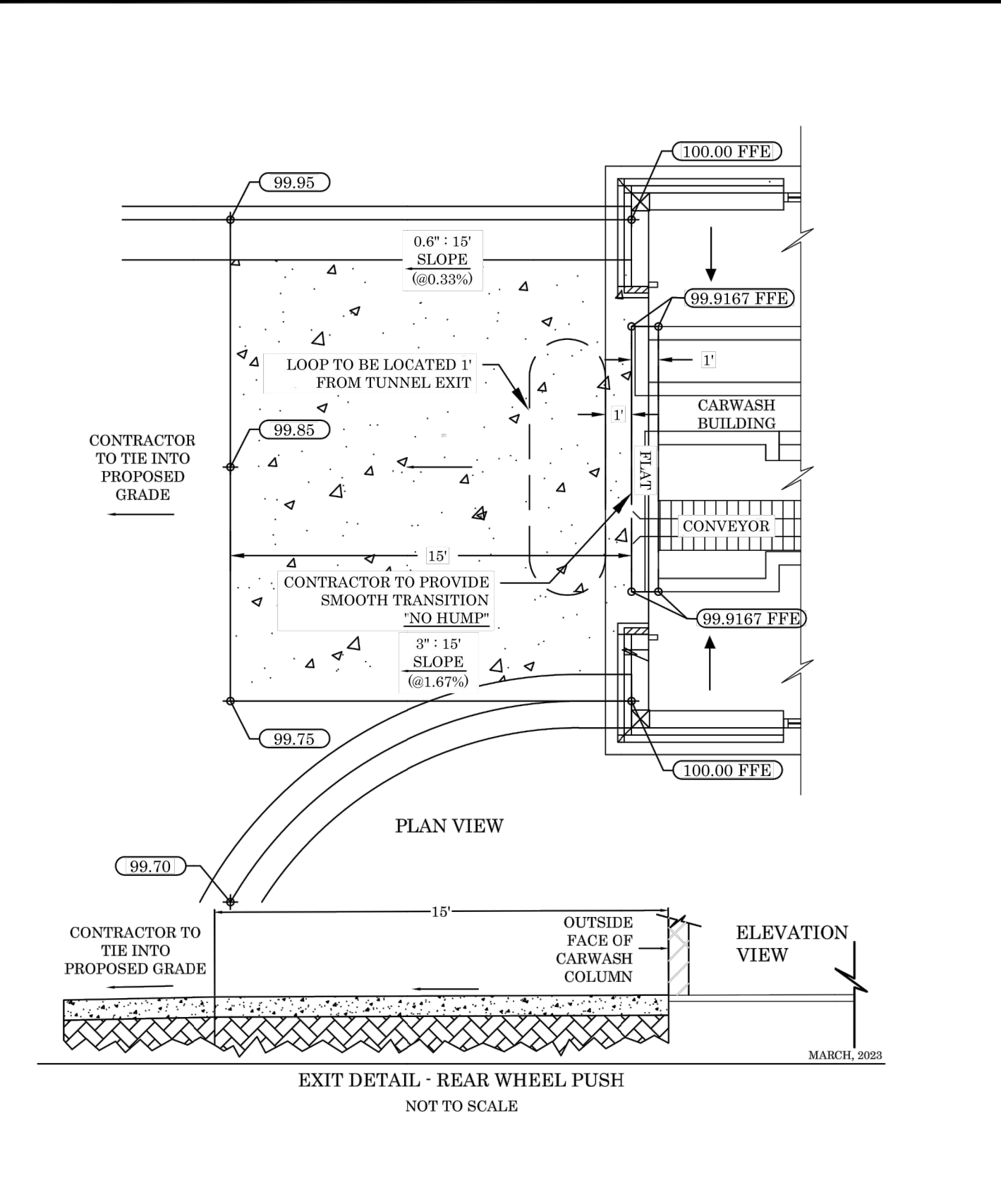


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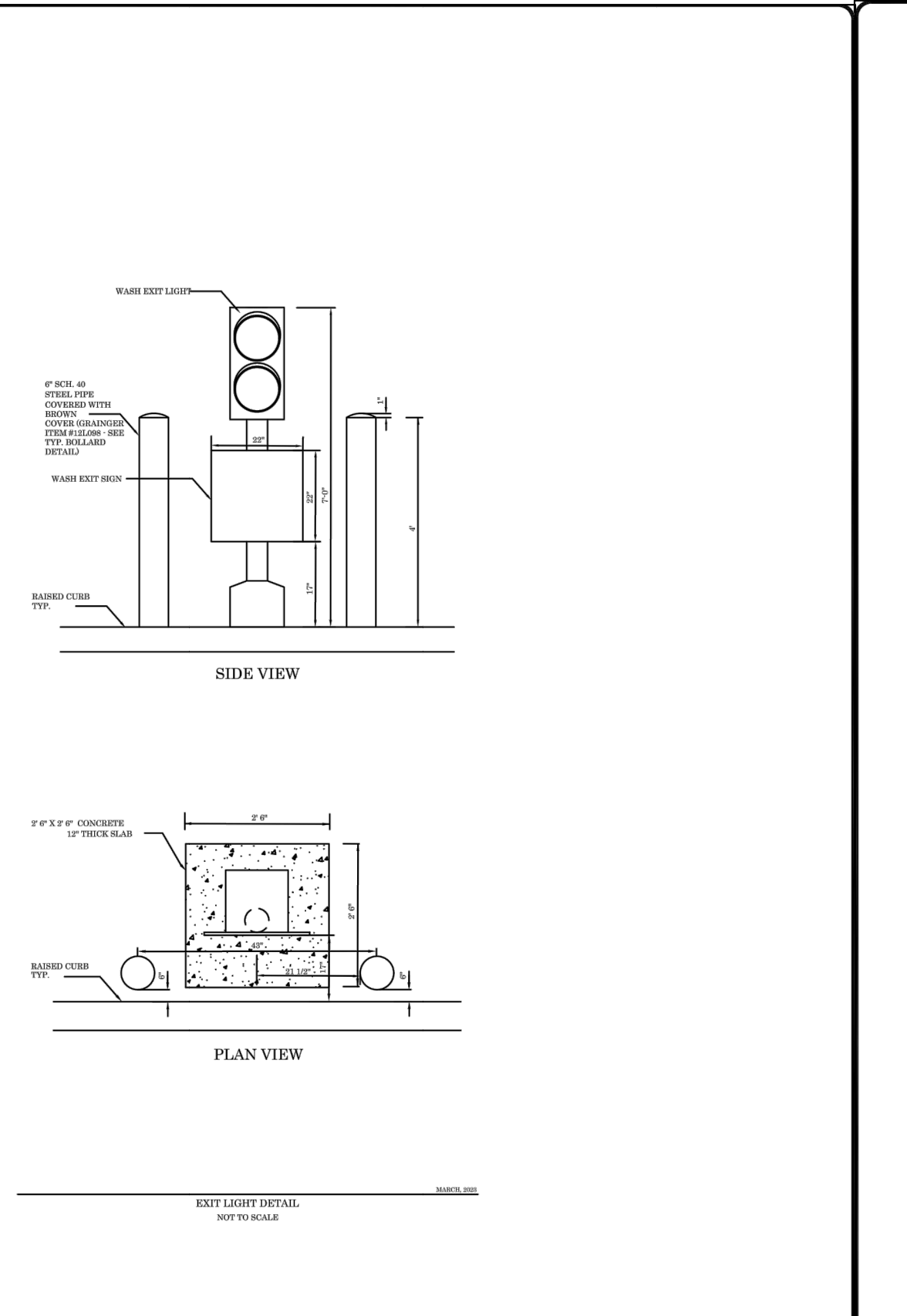
**REVISION HISTORY**

NO.	DESCRIPTION

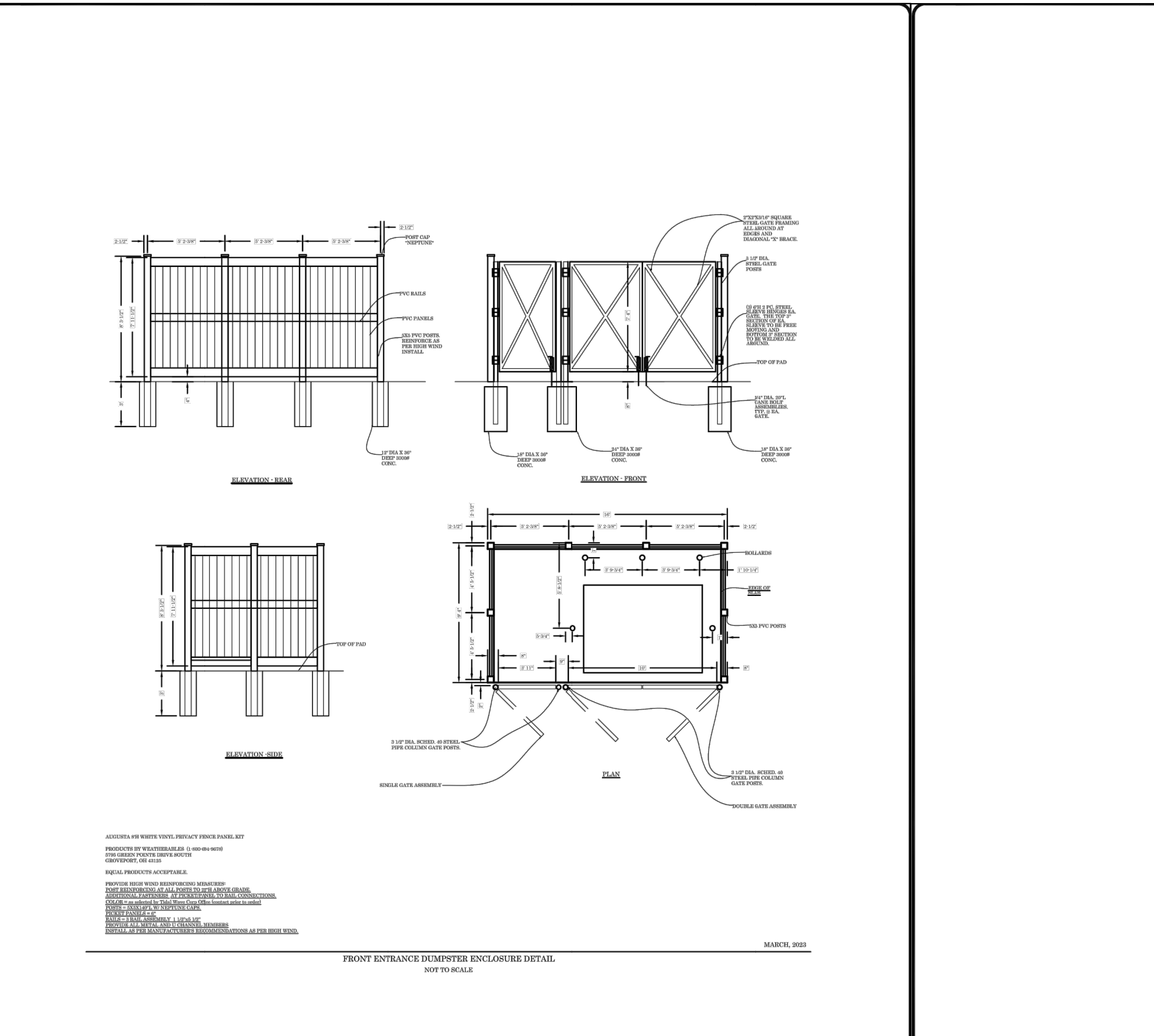
**CONSTRUCTION DETAILS**



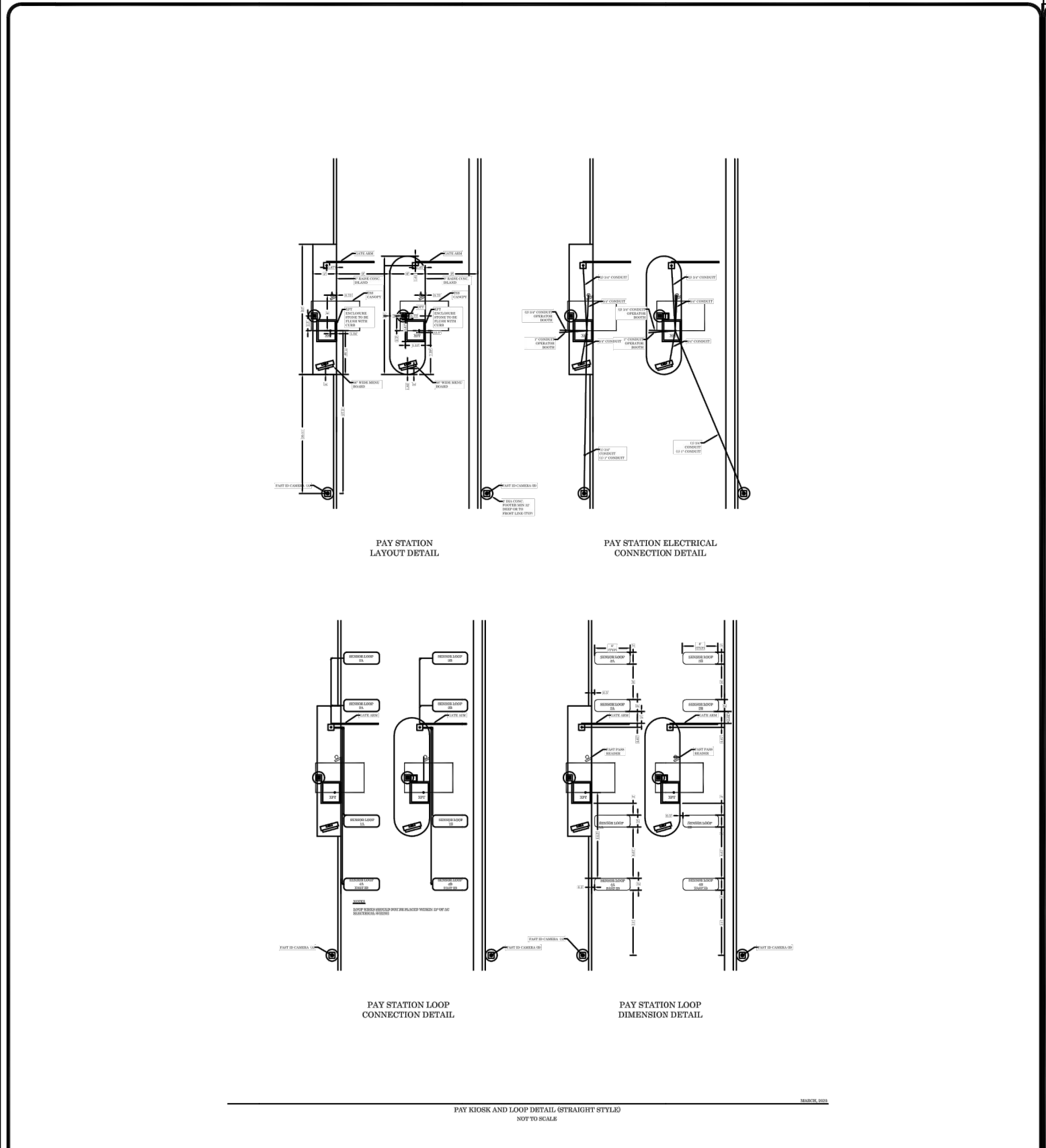
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DATE OF PLANS	03/15/2023
NOT TO SCALE	NOT TO SCALE



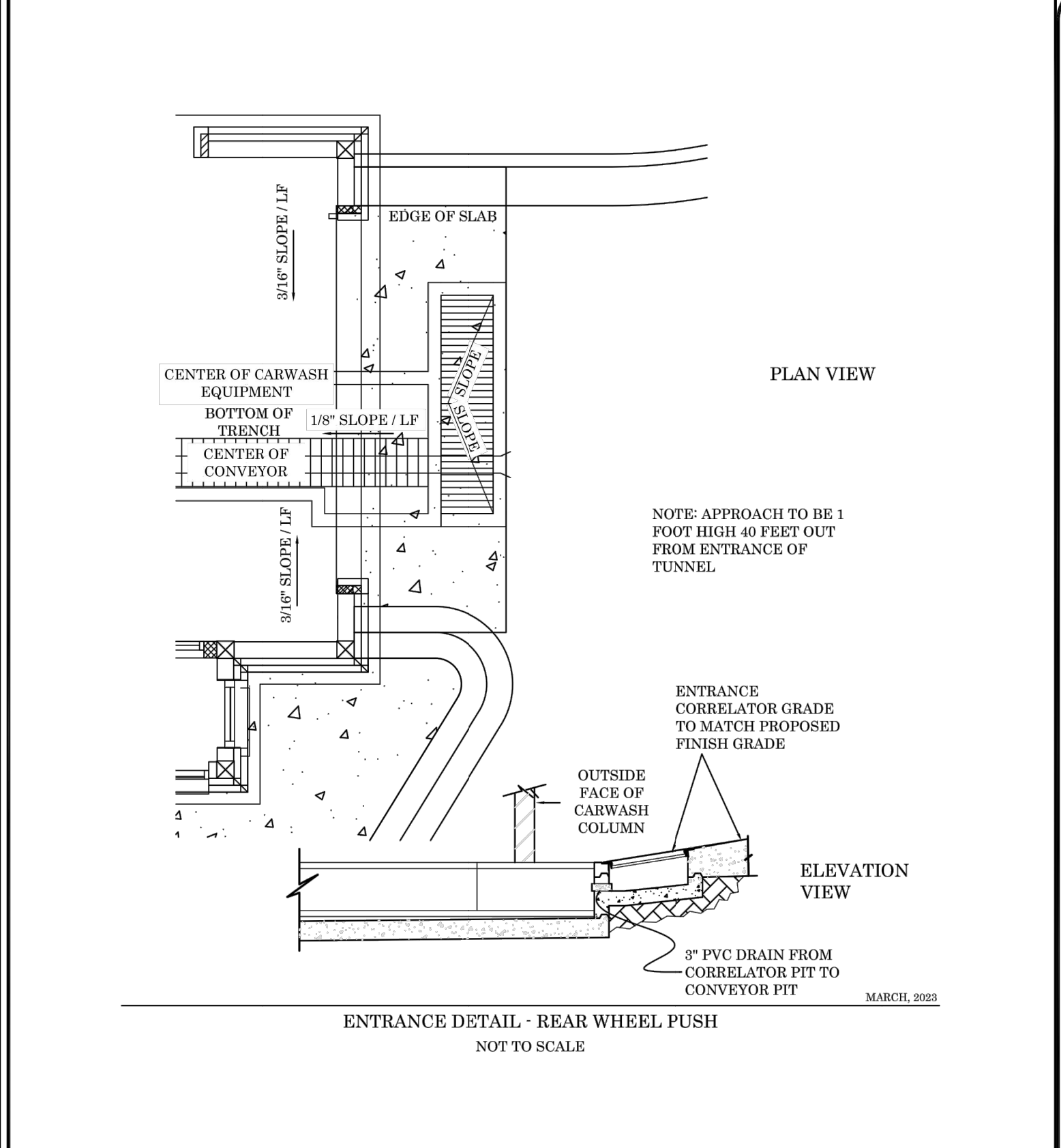
TECHNICAL CRITERIA	
DATE OF PLANS	03/15/2023
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TECHNICAL CRITERIA	
DATE OF PLANS	03/15/2023
NOT TO SCALE	NOT TO SCALE



TECHNICAL CRITERIA	
DATE OF PLANS	03/31/2023
NOT TO SCALE	NOT TO SCALE



TECHNICAL CRITERIA	
DATE OF PLANS	03/15/2023
NOT TO SCALE	NOT TO SCALE

**GO Trooper Grit Oil Interceptor**

NAMEPLATE INDICATING:  
 MFG: PARKUSA  
 888-611-PARK  
 WWW.PARKUSA.COM  
 MODEL: GO-1  
 DATE MANUFACTURED

30x60 GALV. STEEL PARKWAY™  
 FRAME & COVER, RATED FOR  
 H2O TRAFFIC LOADING.

APPLICATIONS:  
 □ PARKING GARAGE  
 □ PRESSURE WASHING  
 □ GENERAL INDUSTRY  
 □ EQUIPMENT & TRANSPORTATION  
 □ WASHDOWN FACILITIES  
 □ CARWASHES  
 □ FIRE STATION WASHDOWN  
 □ SERVICE STATION FUEL  
 □ DEPOTS  
 □ MANUFACTURING FACILITY  
 □ EFFLUENT WATER  
 □ CITY MAINTENANCE  
 □ WASHDOWN

GUARANTEED PERFORMANCE  
 A certified performance analysis  
 utilizing a proprietary computer  
 program will accurately model  
 systems to ensure that their  
 effluent qualities meet the  
 required discharge criteria  
 (EPA and Local Codes)

Influent oily water contains  
 oil droplets of many different  
 sizes. These droplets rise  
 at different rates. Park  
 utilizes a statistical program  
 that divides the droplets into  
 ranges of sizes and calculates  
 the rise rates of each range.  
 This calculation determines  
 which droplets the separator  
 can capture.

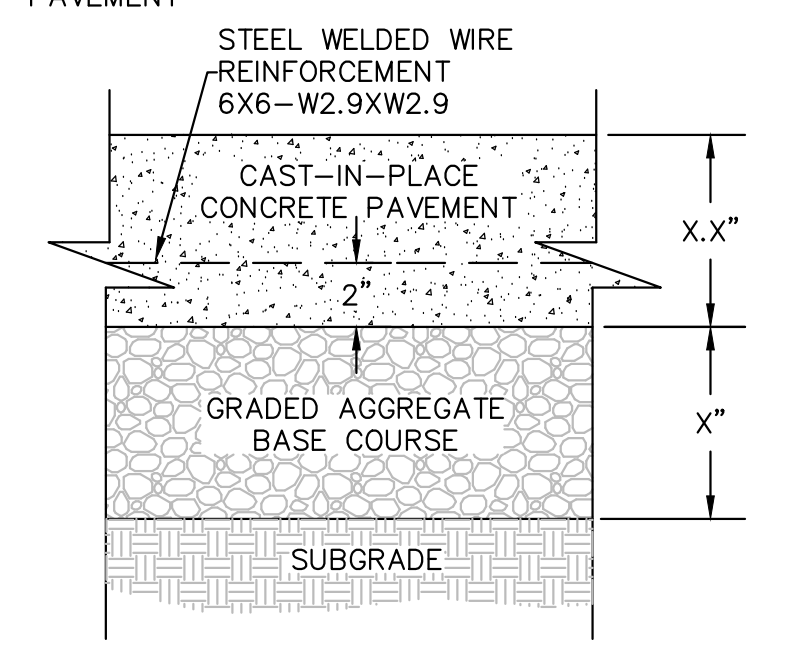
Contact our Engineering Dept.  
 @ 888-611-PARK for a free  
 performance evaluation.

**GO Trooper**  
 Grit Oil Interceptor

GUARANTEED PERFORMANCE FOR CODE MAXIMUM OIL CONCENTRATION ( SANITARY SEWER 400 PPM, STORM SEWER 15 PPM) © ParkUSA. ALL RIGHTS RESERVED.

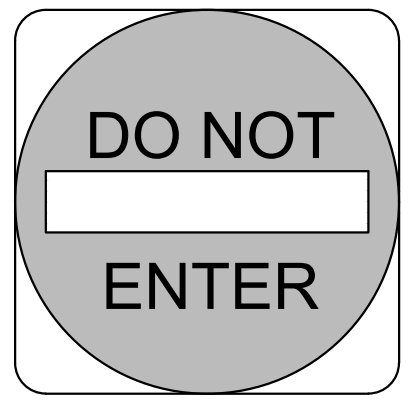
Specifications	
CONCRETE:	Class 1/1 concrete with design strength of 4500 psi at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
REINFORCEMENT:	Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.
MATERIALS:	Access frame & cover shall be fabricated with min. 1/4" thick nonskid floor plate, ball-down, & lifting handles. All materials to be corrosion resistant.
<b>Engineering Data</b> Interceptor is structurally and hydraulically engineered conforming to Uniform Plumbing Code. Nominal total liquid capacity and oil holding capacity as indicated. Recommended for flow rates of 5 to 180 GPM (consult Park for proper sizing). Manufacturer shall submit performance calculations for oil & water separation certified by a licensed professional engineer. Field excavation and preparation shall be completed prior to delivery of interceptor.	
PROJECT:	
CUSTOMER:	
ENGINEER:	
ORDER #:	
PROJ #:	
DATE:	
888.611.PARK WWW.PARKUSA.COM <b>PARK</b> DESIGN FOR WATER <b>GO Trooper</b> Grit Oil Interceptor Grit Oil Interceptor Model GO Sizes 500 thru 2000 PM DRN ENG DATE 2018 DWG. NO. GO-1 REV. A	

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



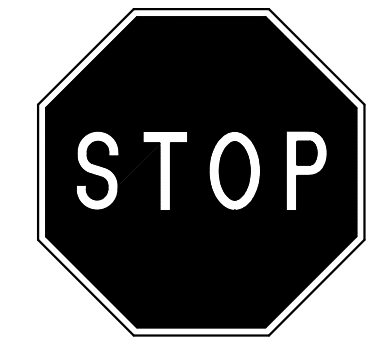
**NOTES:**  
 1. WHERE SHOWN, SEE PLAN FOR EXPANSION AND CONTROL JOINT LOCATIONS. OTHERWISE, SEE SPECS FOR REQUIRED LOCATION AND SPACING.  
 2. CONTRACTOR IS ADVISED THAT PAVING DESIGN RECOMMENDED BY GEOTECHNICAL ENGINEER IS BASED ON PREDICTED TRAFFIC LOADING AND ESTABLISHED STRENGTHS FOR PROPERLY INSTALLED 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



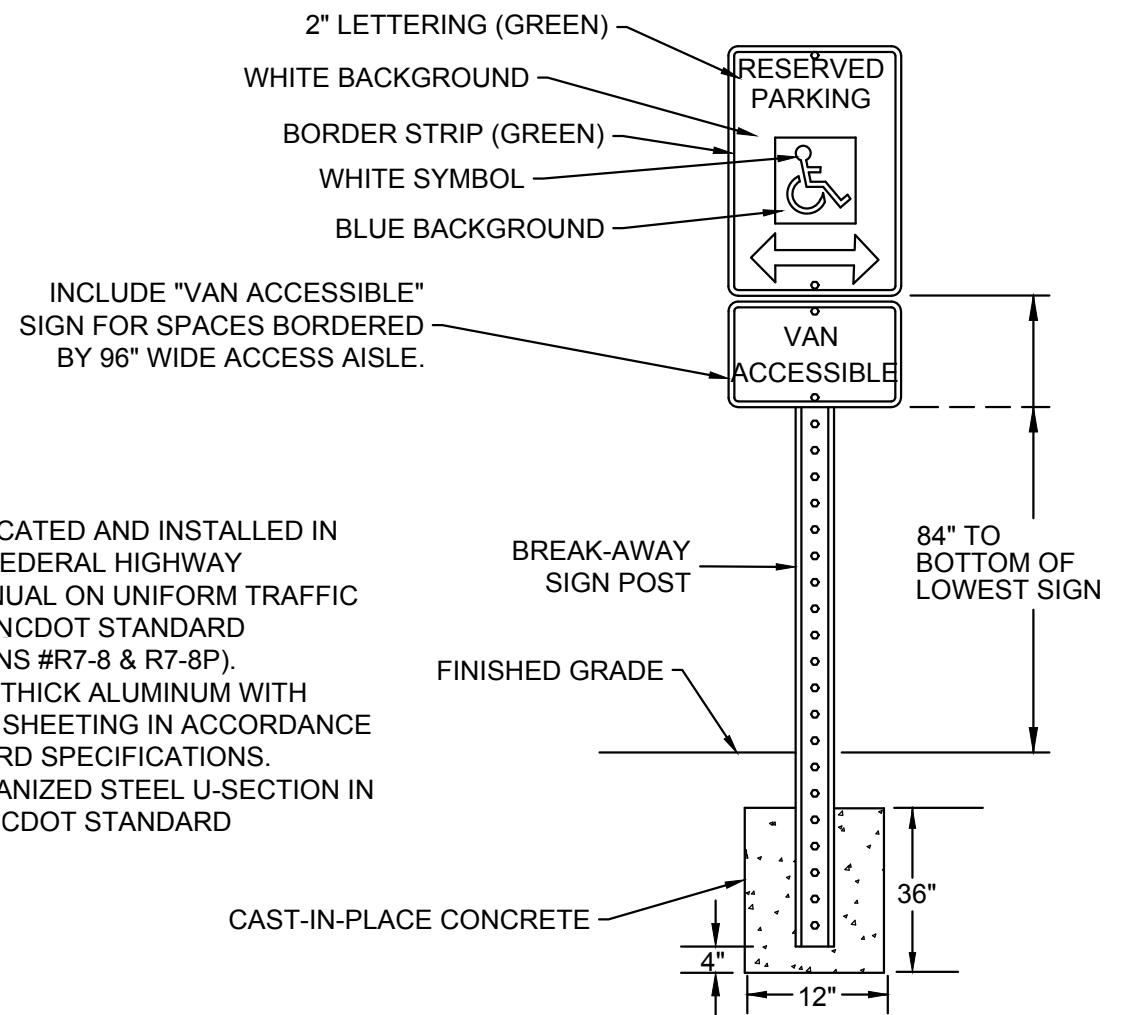
DO NOT ENTER SIGN AND INSTALLATION TO CONFORM WITH M.U.T.C.D. SPECIFICATIONS.  
 NUMBER: R5-1-30  
 SIZE: 30" X 30"  
 CLASS: STANDARD  
 LEGEND AND BACKGROUND: WHITE-REFLECTORIZED  
 CIRCLE: RED-REFLECTORIZED  
 SIGN POST: GALVANIZED U-CHANNEL PER NCDOT SPECIFICATIONS

**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

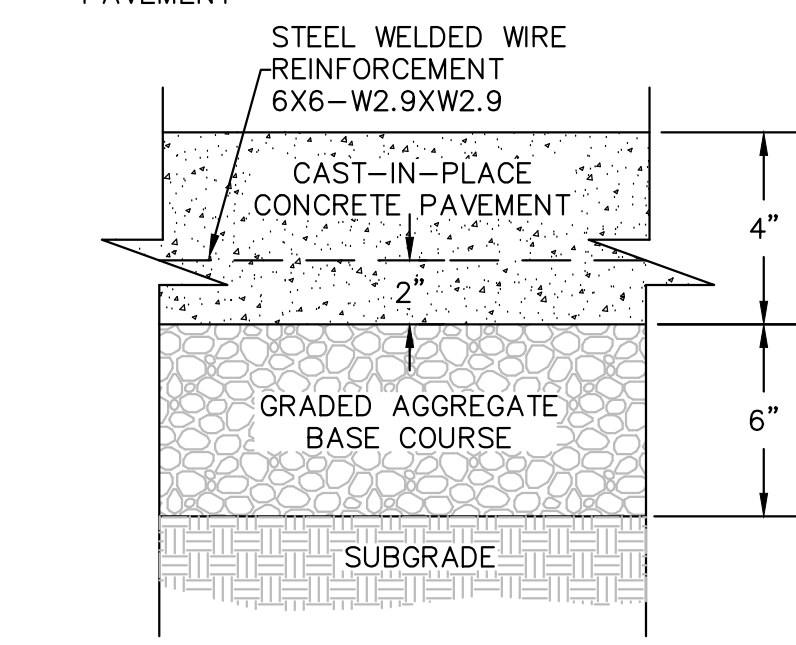
**3 SIGN - STOP**  
 SCALE: NOT TO SCALE



**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

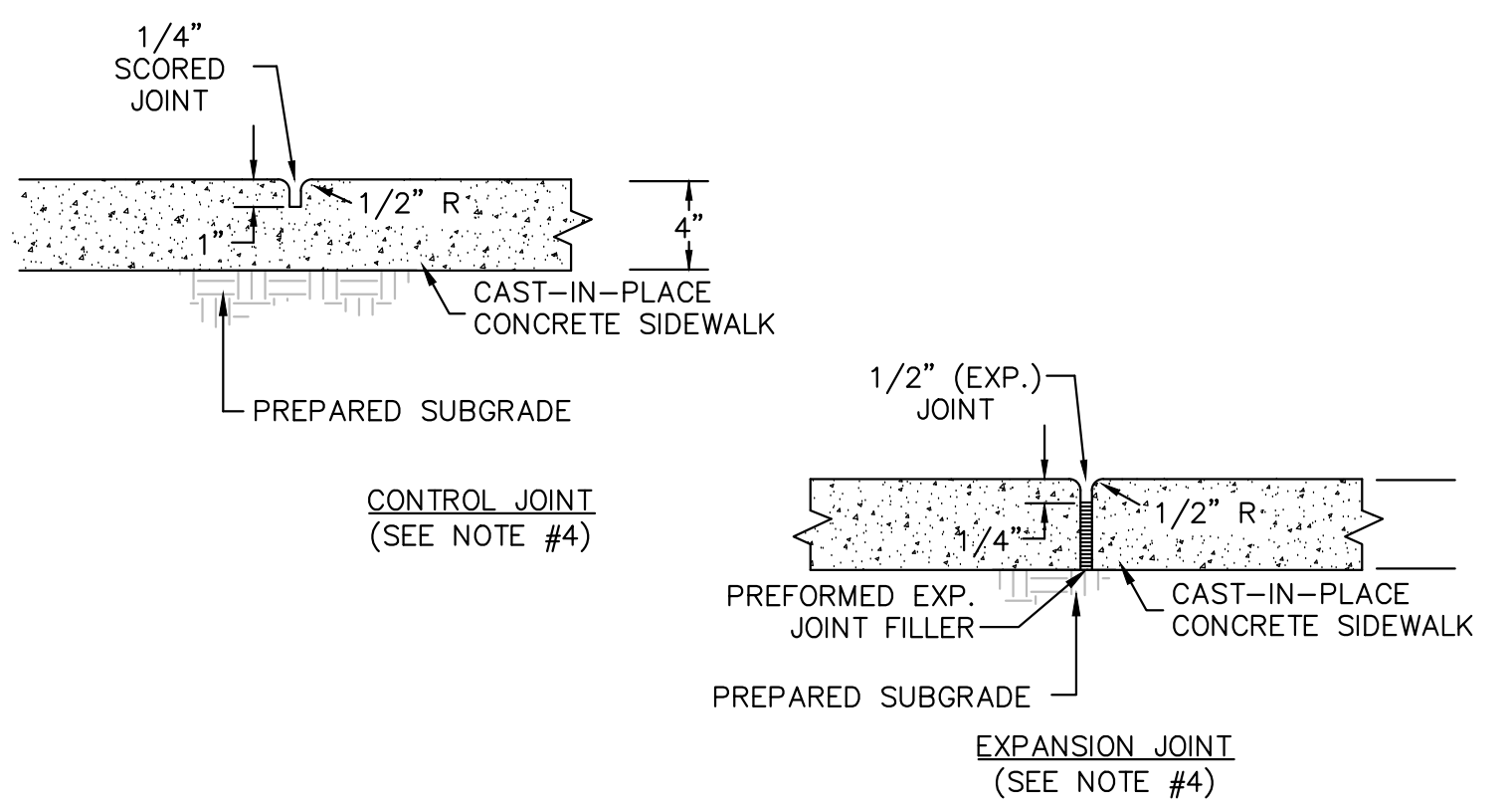
ITEM:	MATERIAL:
SUBGRADE	PREPARED IN-SITU SUBSOIL OR STRUCTURAL FILL
BASE COURSE	GRADED AGGREGATE BASE COURSE
CONCRETE PAVEMENT	CAST-IN-PLACE CONCRETE



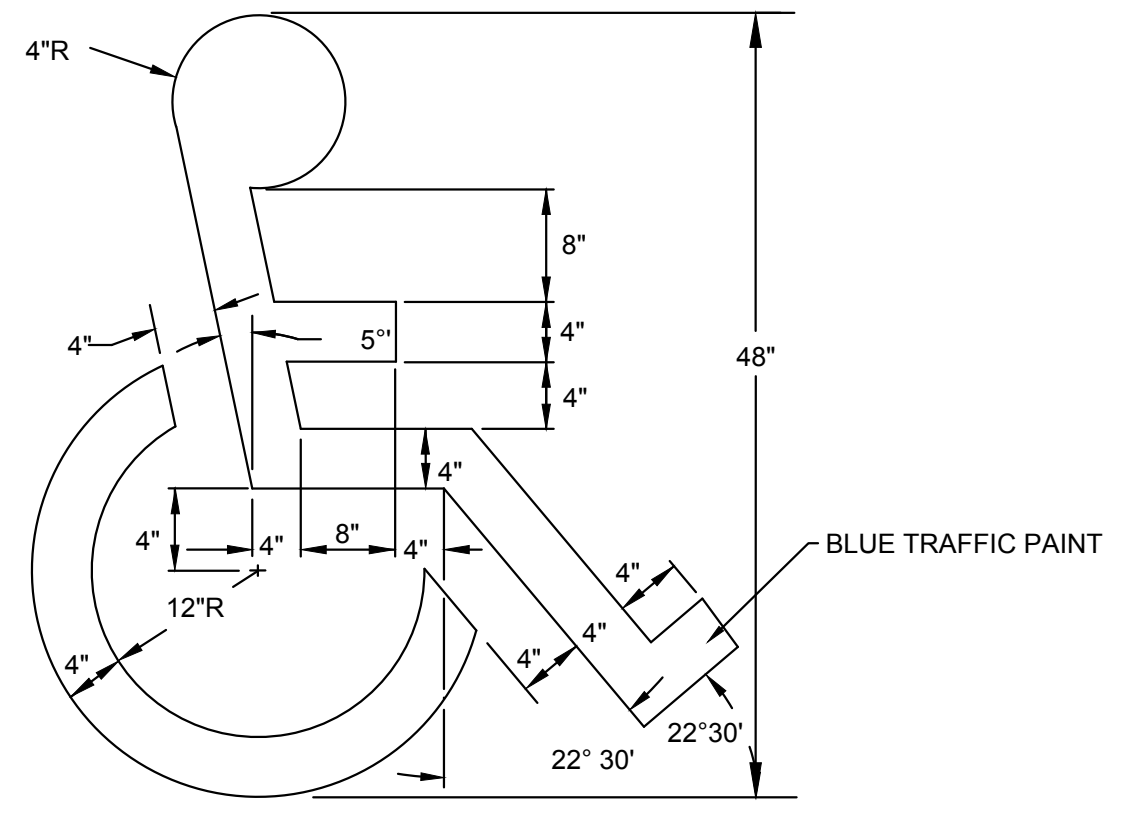
**NOTES:**  
 1. WHERE SHOWN, SEE PLAN FOR EXPANSION AND CONTROL JOINT LOCATIONS. OTHERWISE, SEE SPECS FOR REQUIRED LOCATION AND SPACING.  
 2. CONTRACTOR IS ADVISED THAT PAVING DESIGN RECOMMENDED BY GEOTECHNICAL ENGINEER IS BASED ON PREDICTED TRAFFIC LOADING AND ESTABLISHED STRENGTHS FOR PROPERLY INSTALLED 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.

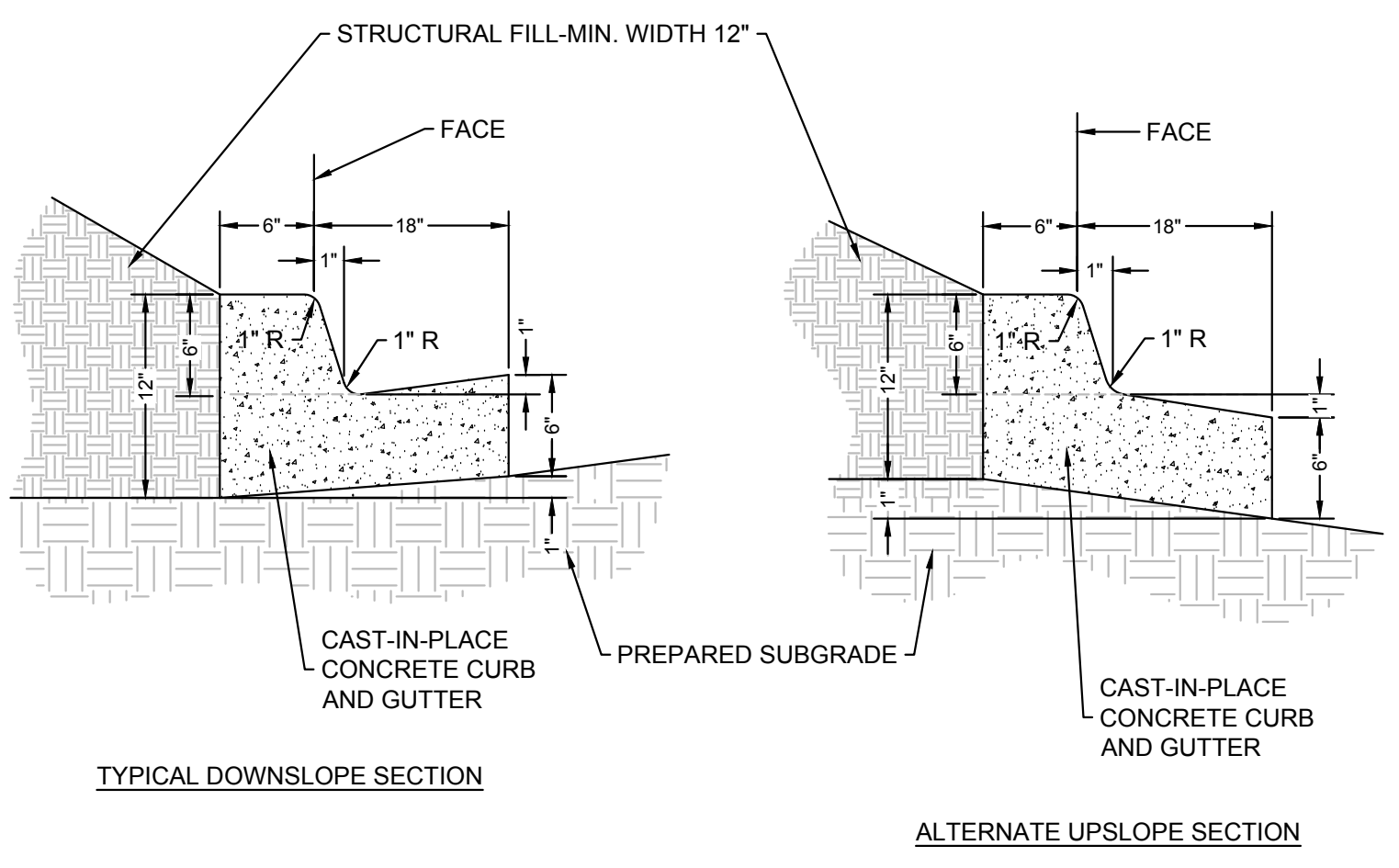


**6 SIDEWALK-SECTION**

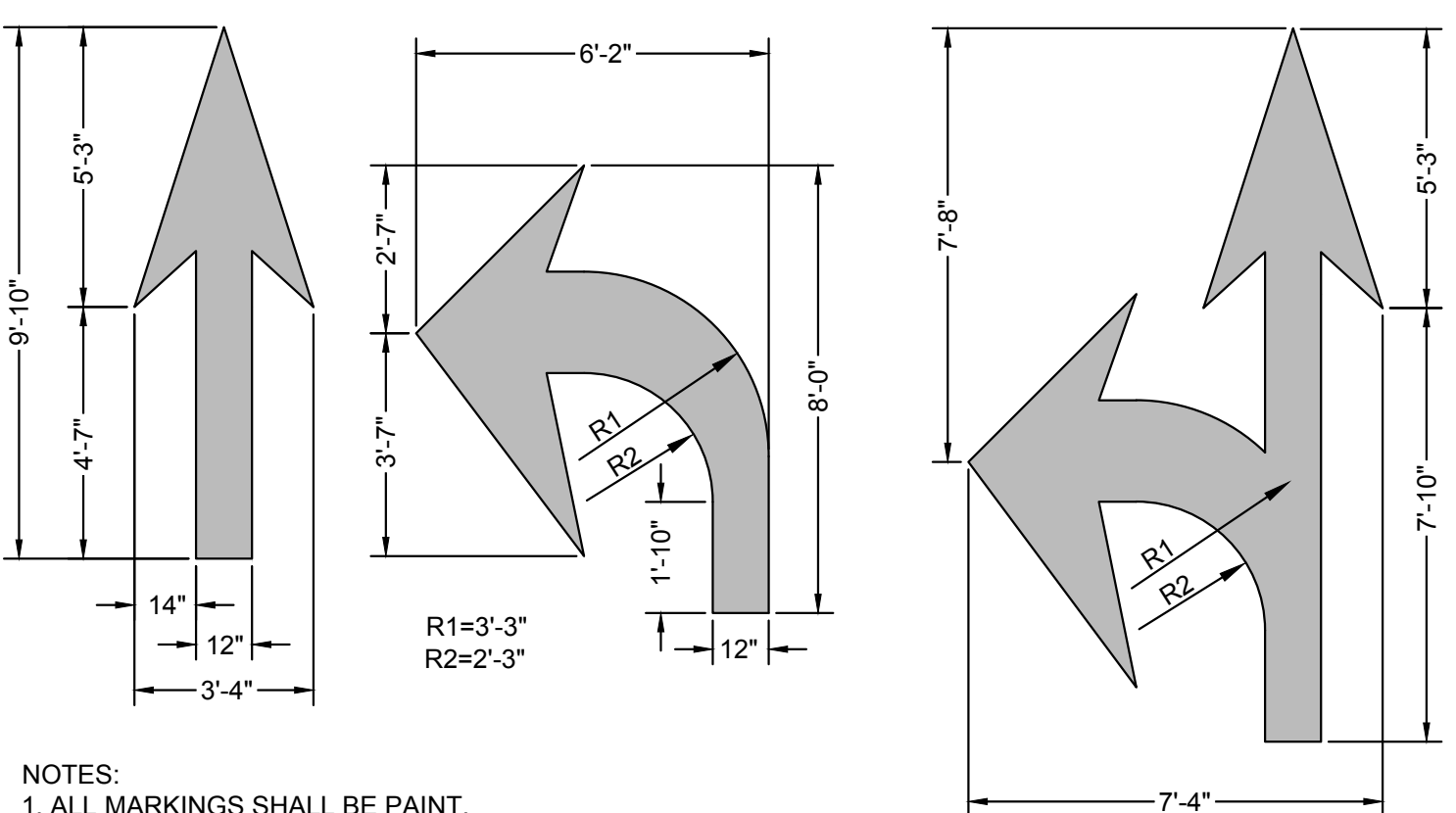


**7 PAINTED ADA PARKING SYMBOL**

**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.



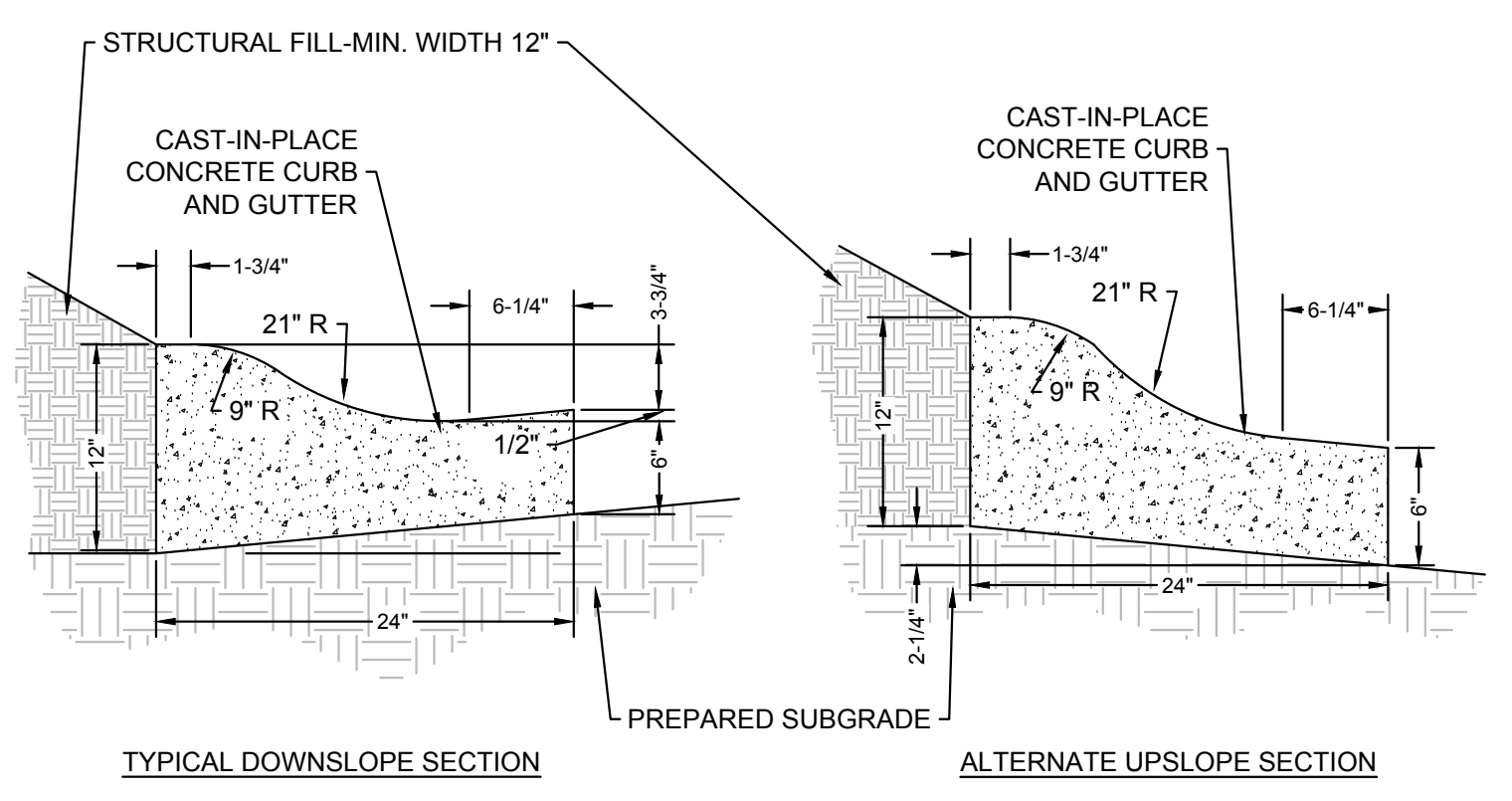
**8 24" STRAIGHT CURB AND GUTTER**  
 SCALE: NOT TO SCALE



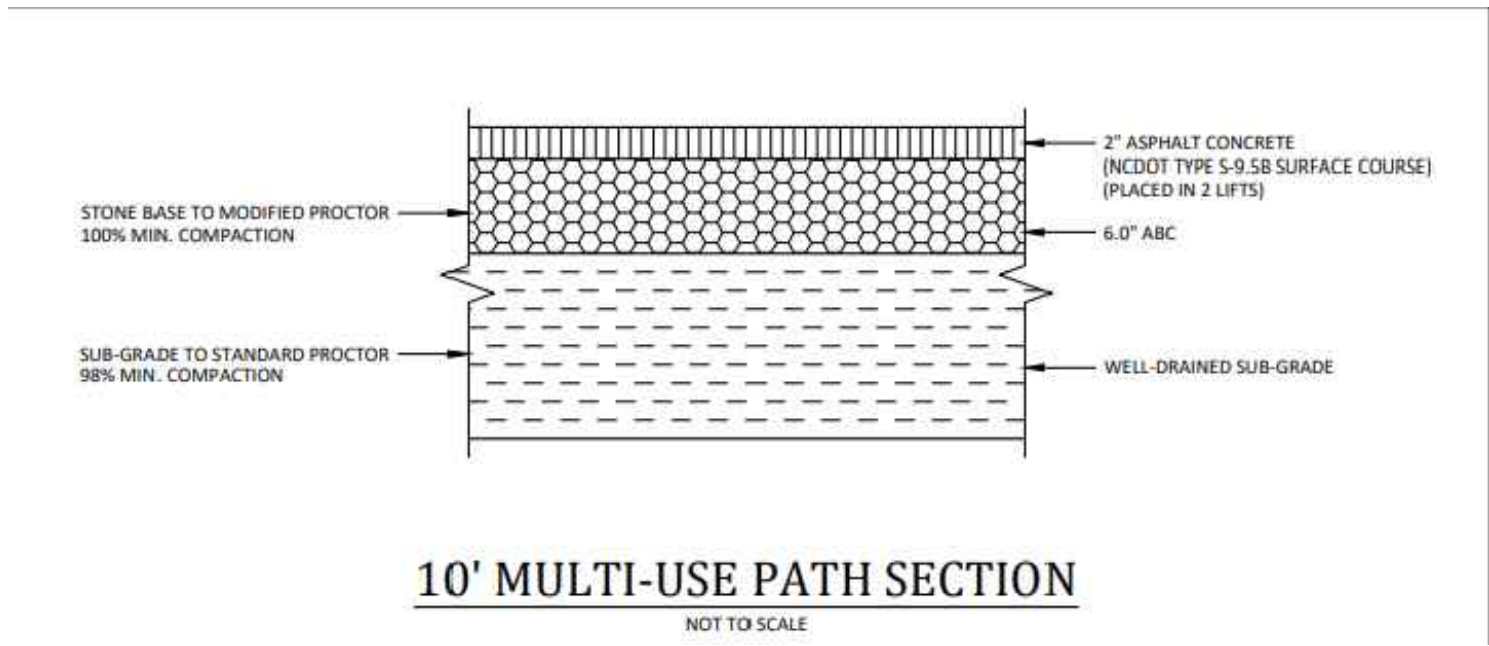
**NOTES:**  
 1. ALL MARKINGS SHALL BE PAINT.  
 2. ALL MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH N.C.D.O.T. STANDARD SPECIFICATIONS AND NORTH CAROLINA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

**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

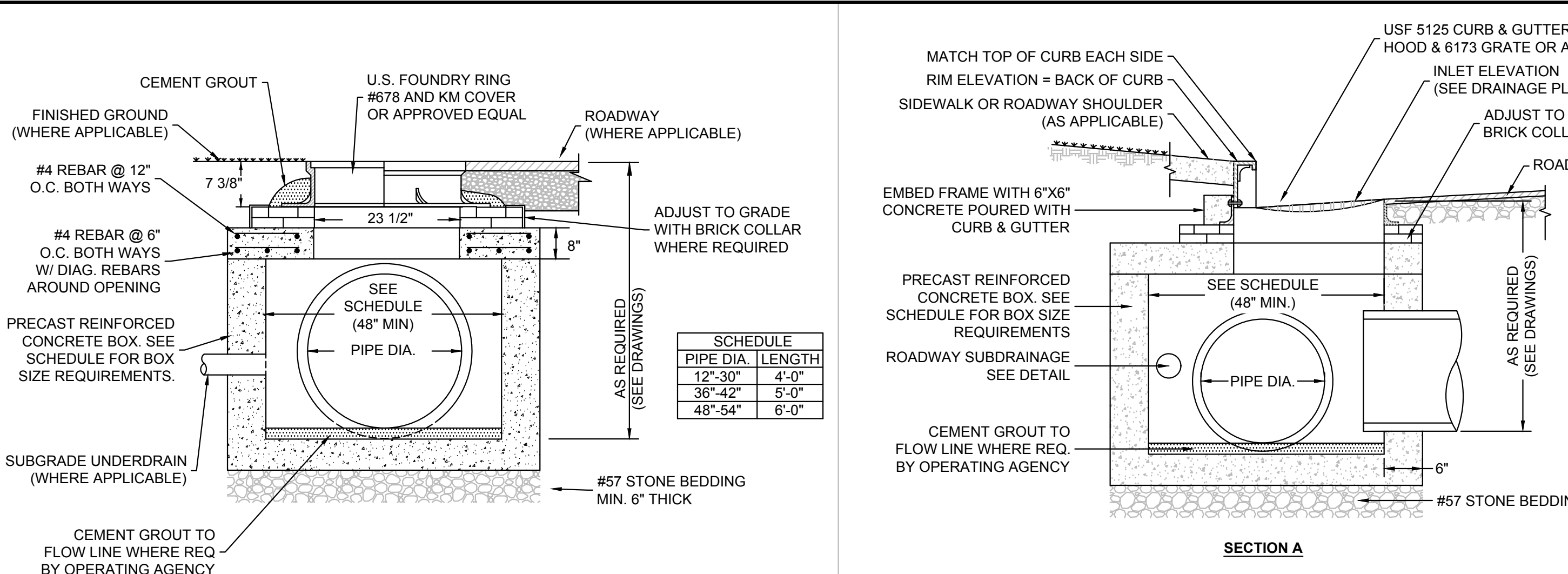
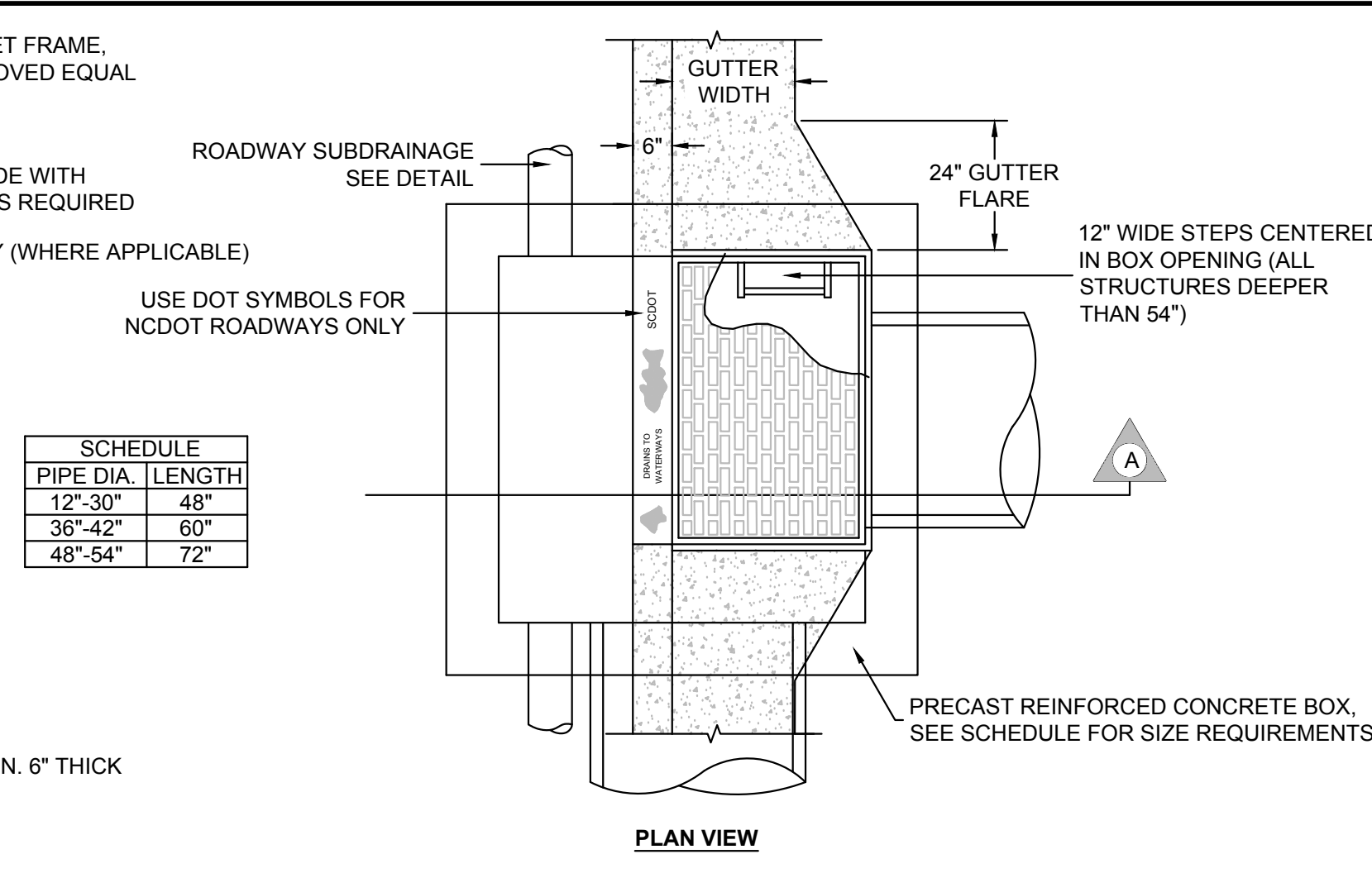
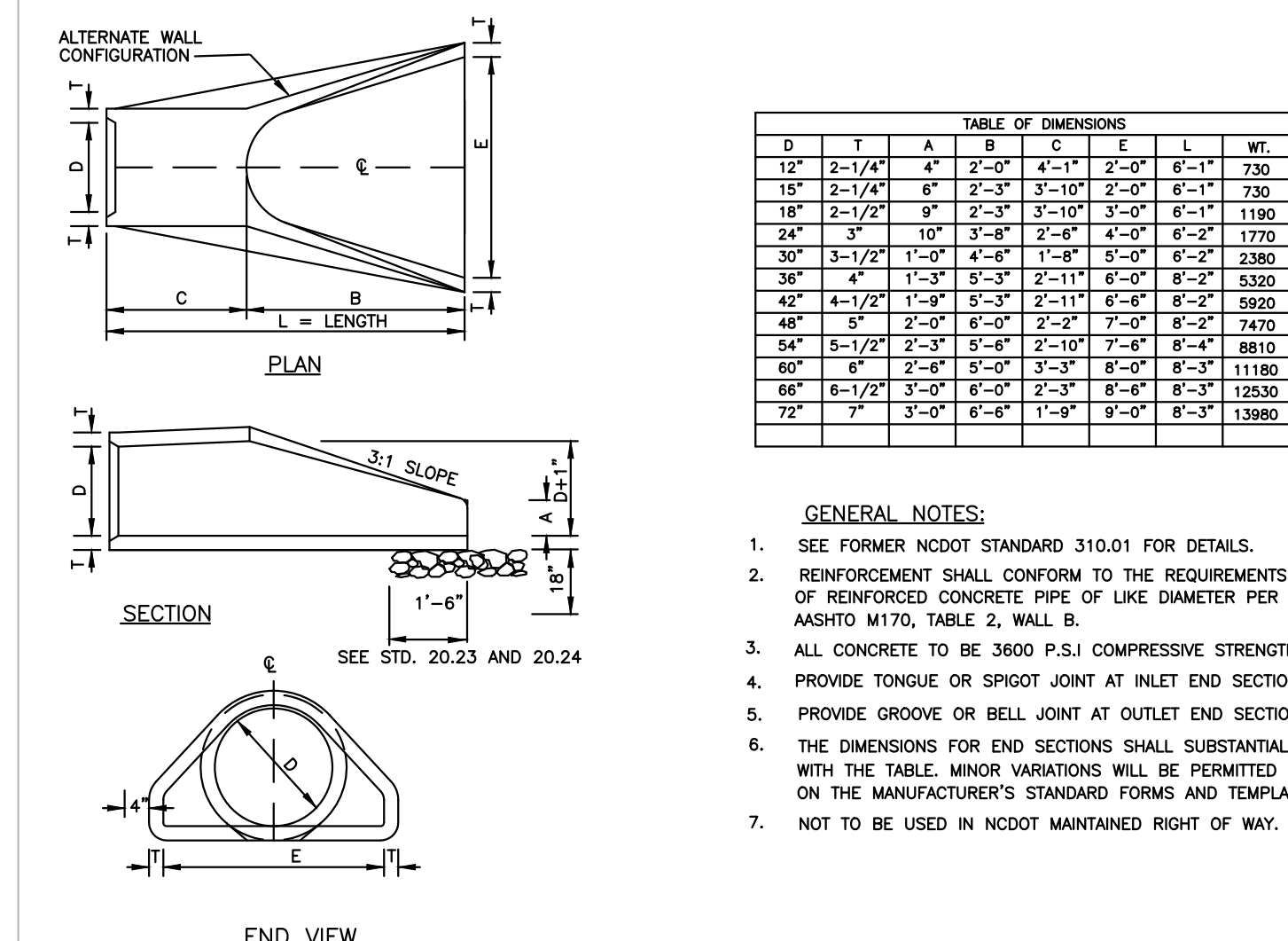


**TIDAL WAVE AUTO SPA**  
 ROLESVILLE, NC

SW+ PROJECT:	10772
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DRAWN BY:	CPE
CHECKED BY:	TLL

REVISION HISTORY	

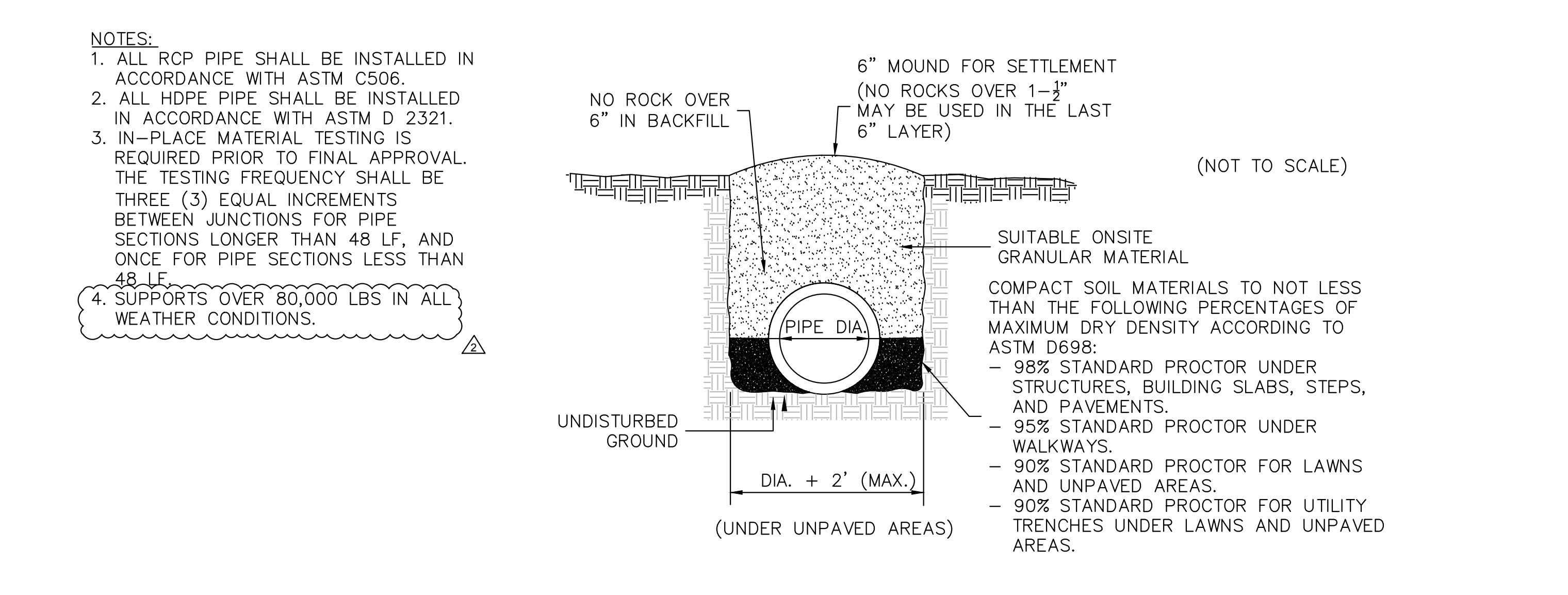
CONSTRUCTION DETAILS



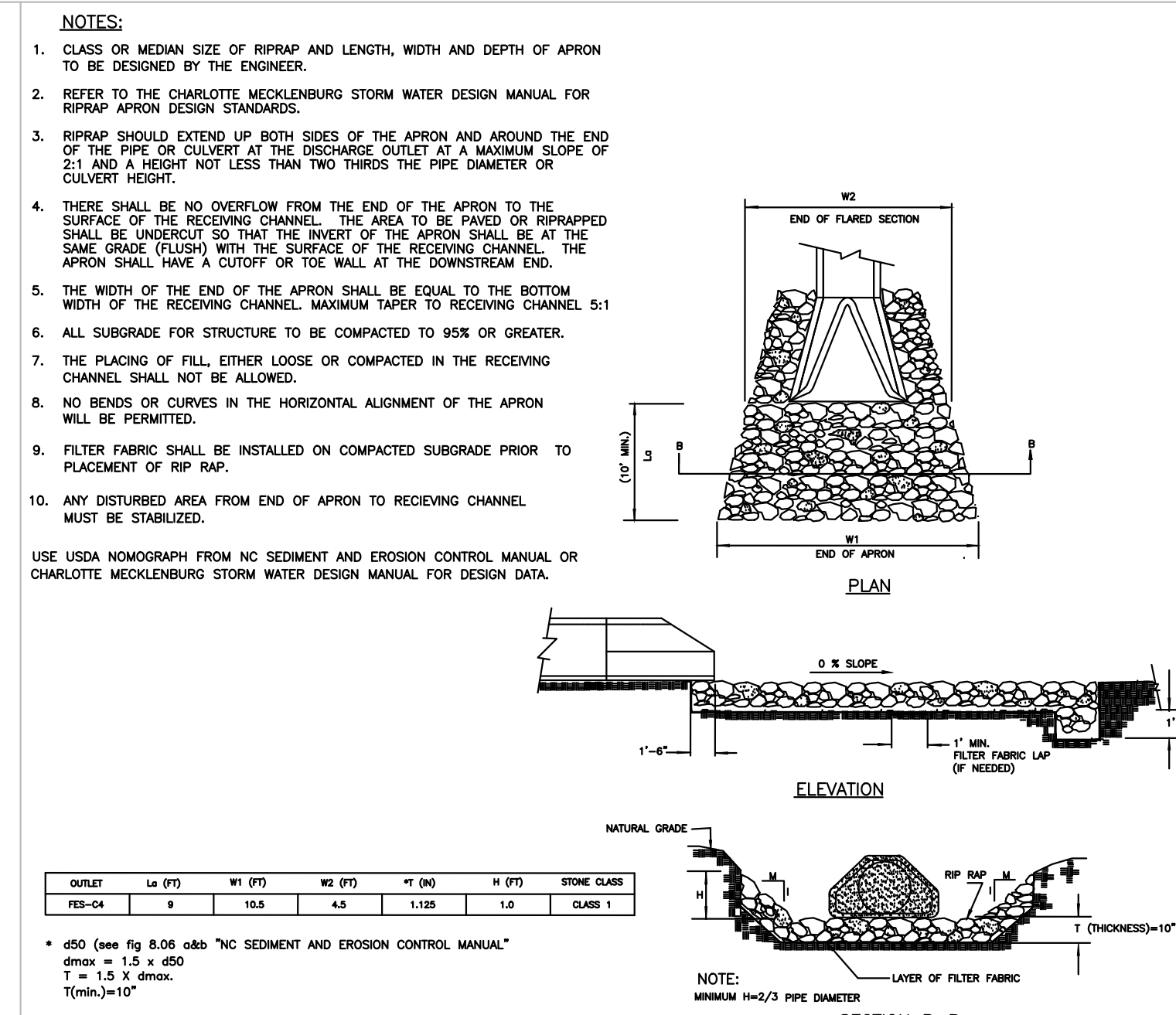
**12** JUNCTION BOX  
 SCALE: NOT TO SCALE

**13** Hooded Catch Basin  
 SCALE: NOT TO SCALE

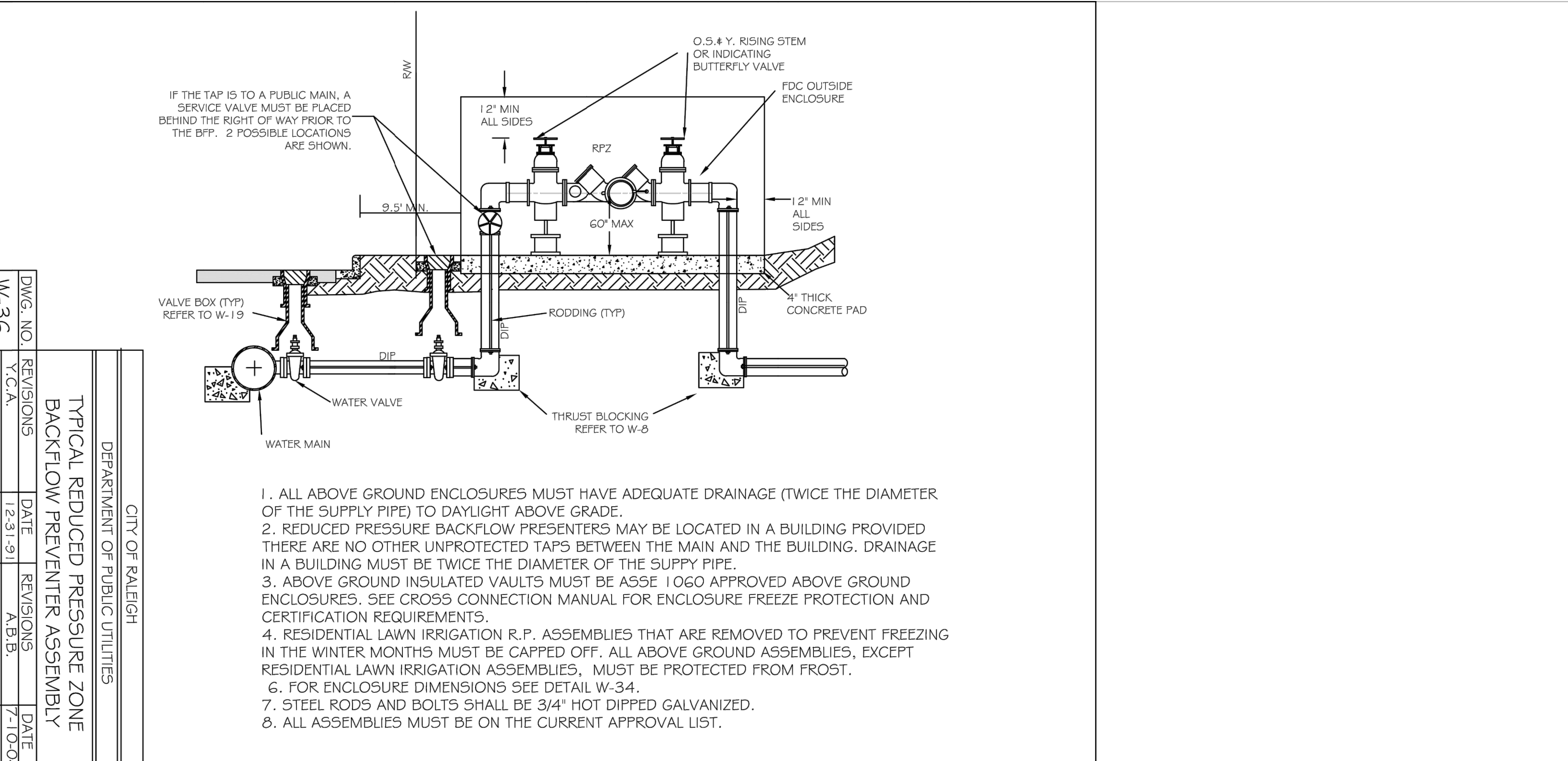
**14** Flared End Section  
 SCALE: NOT TO SCALE



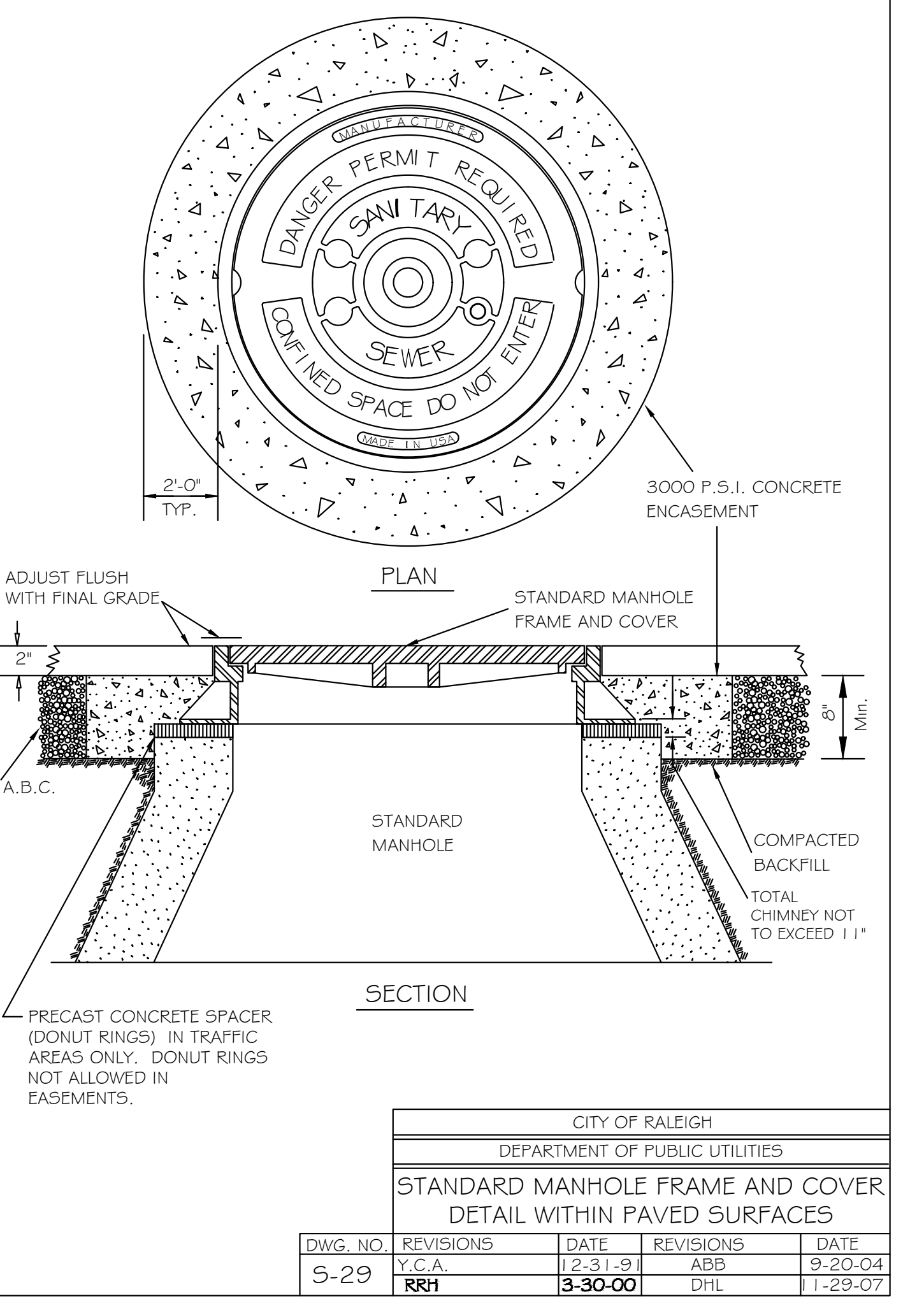
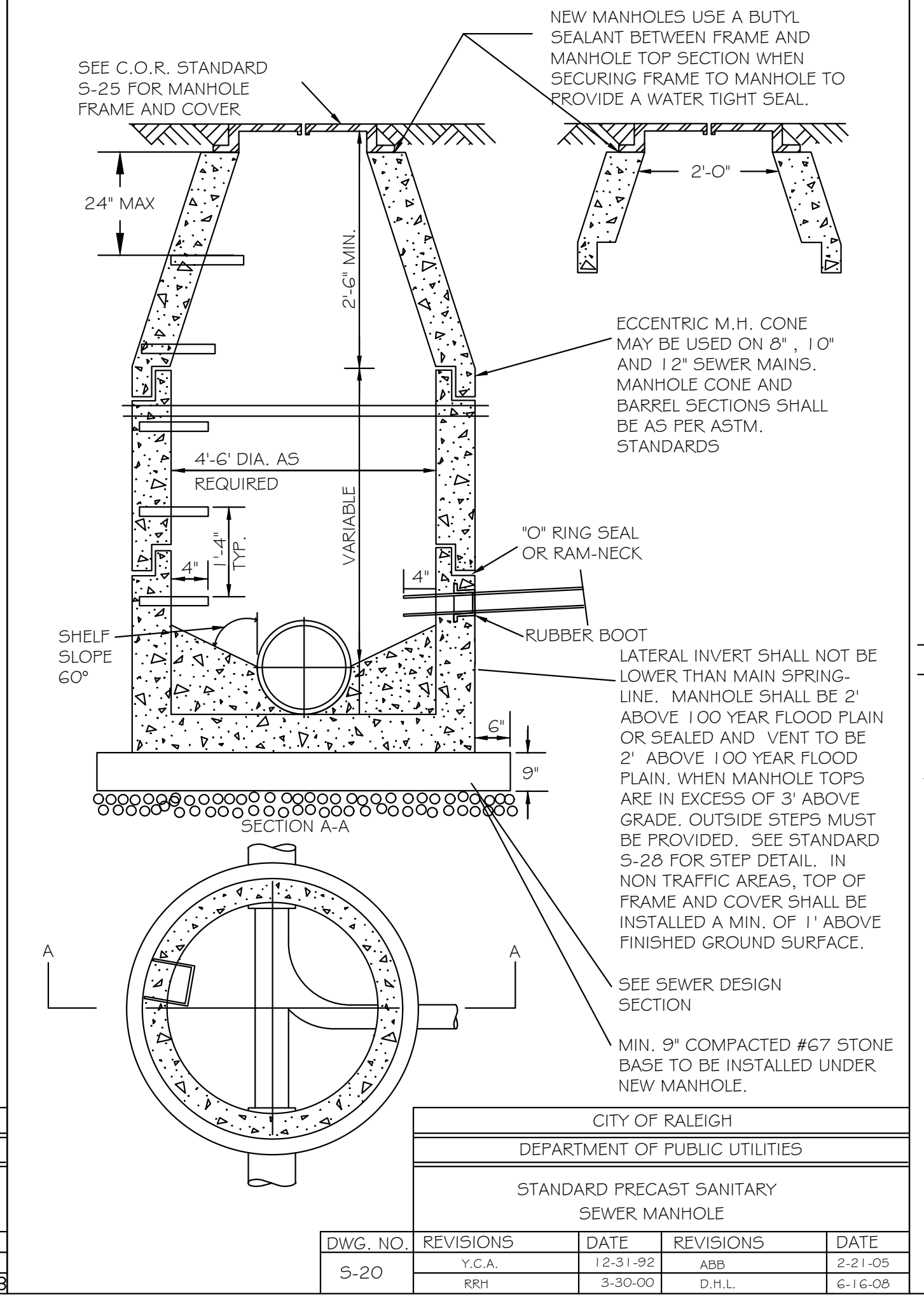
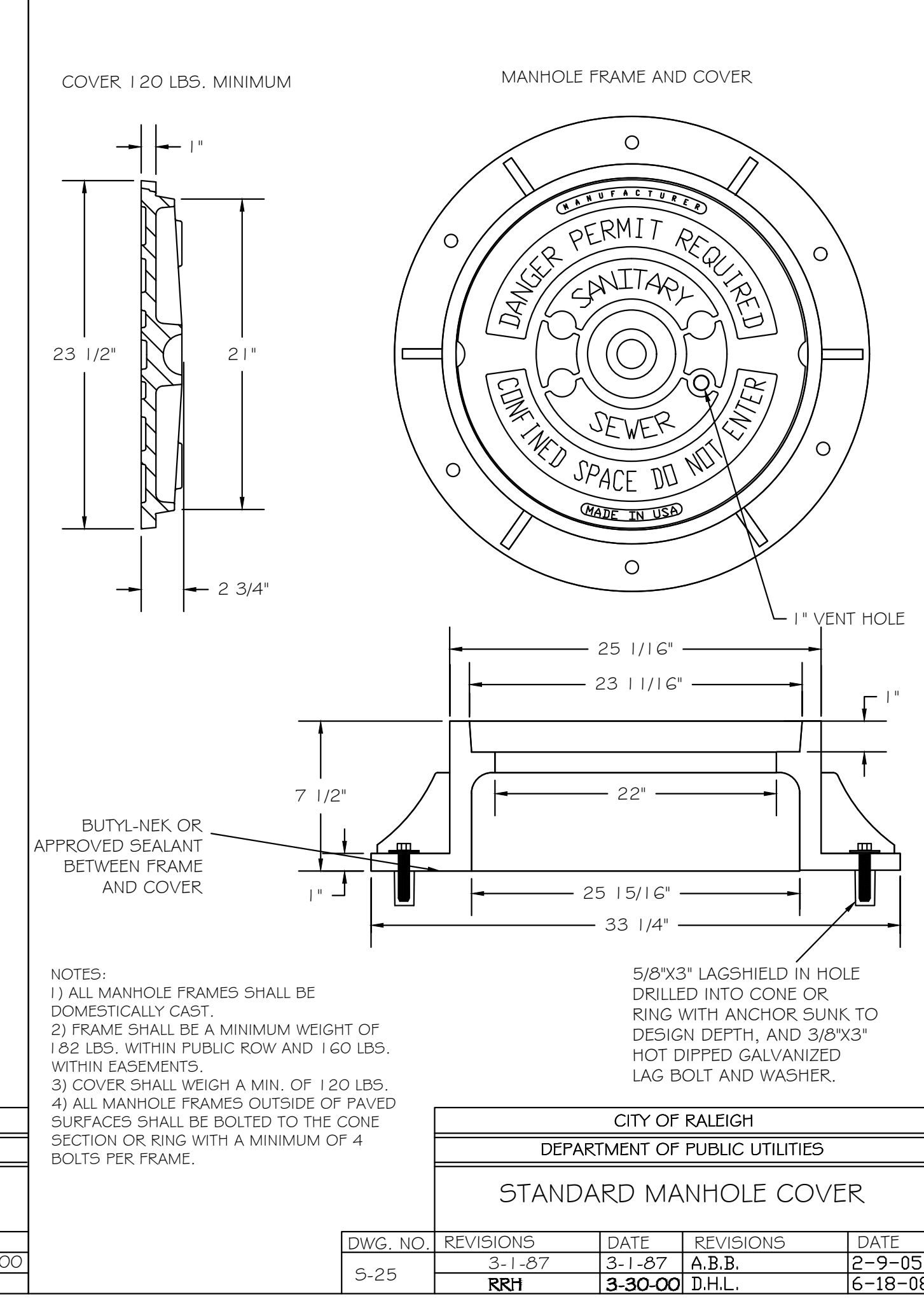
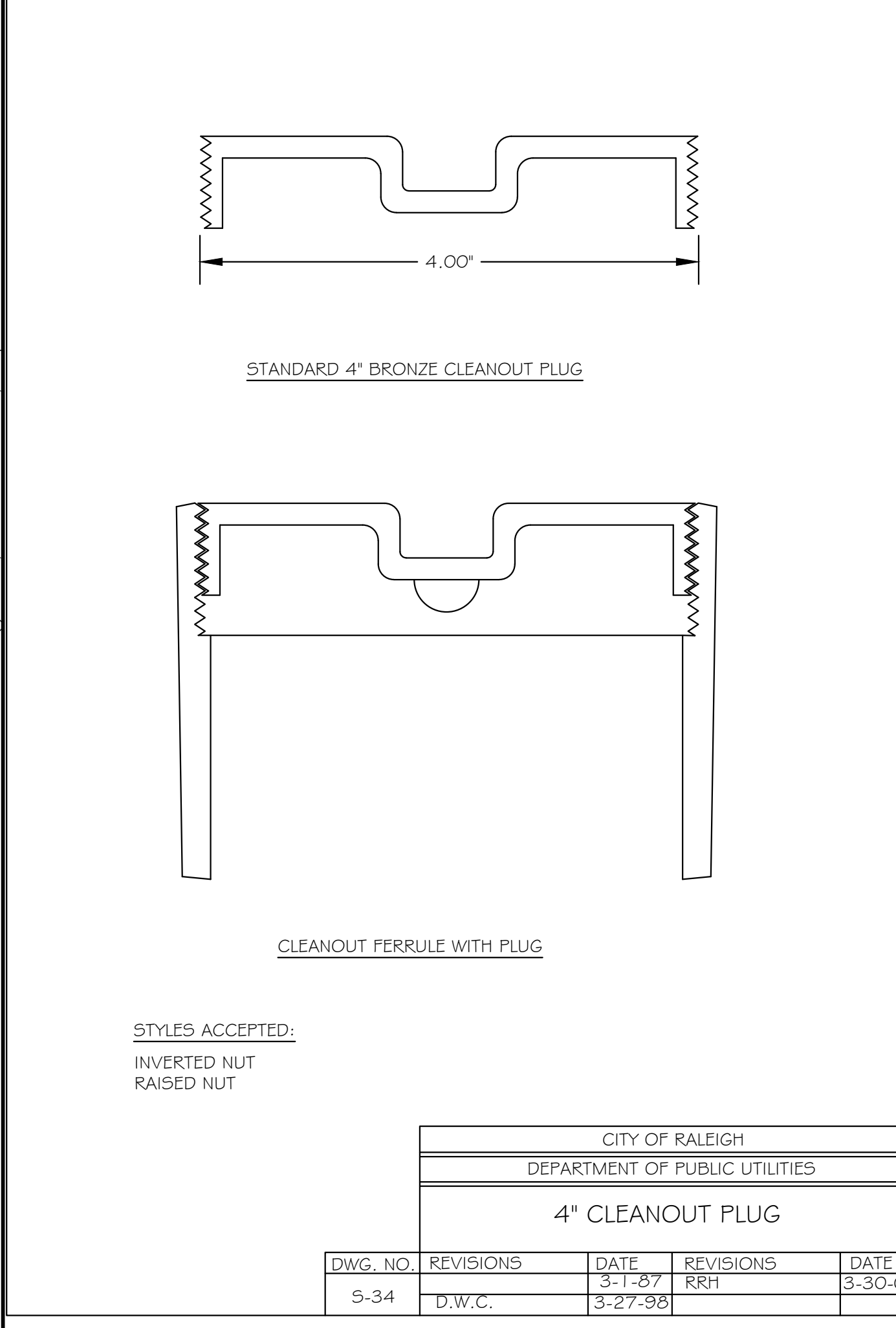
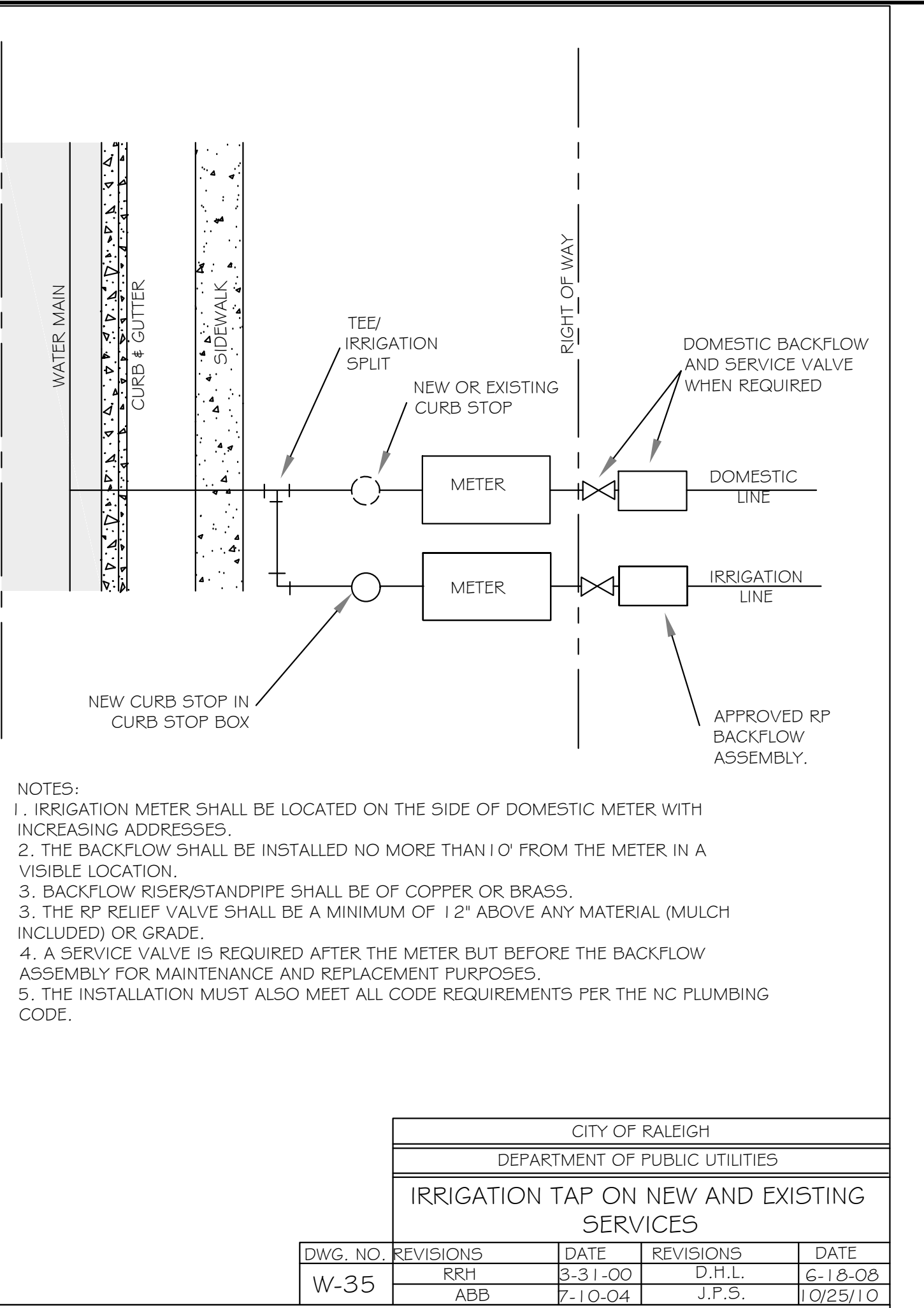
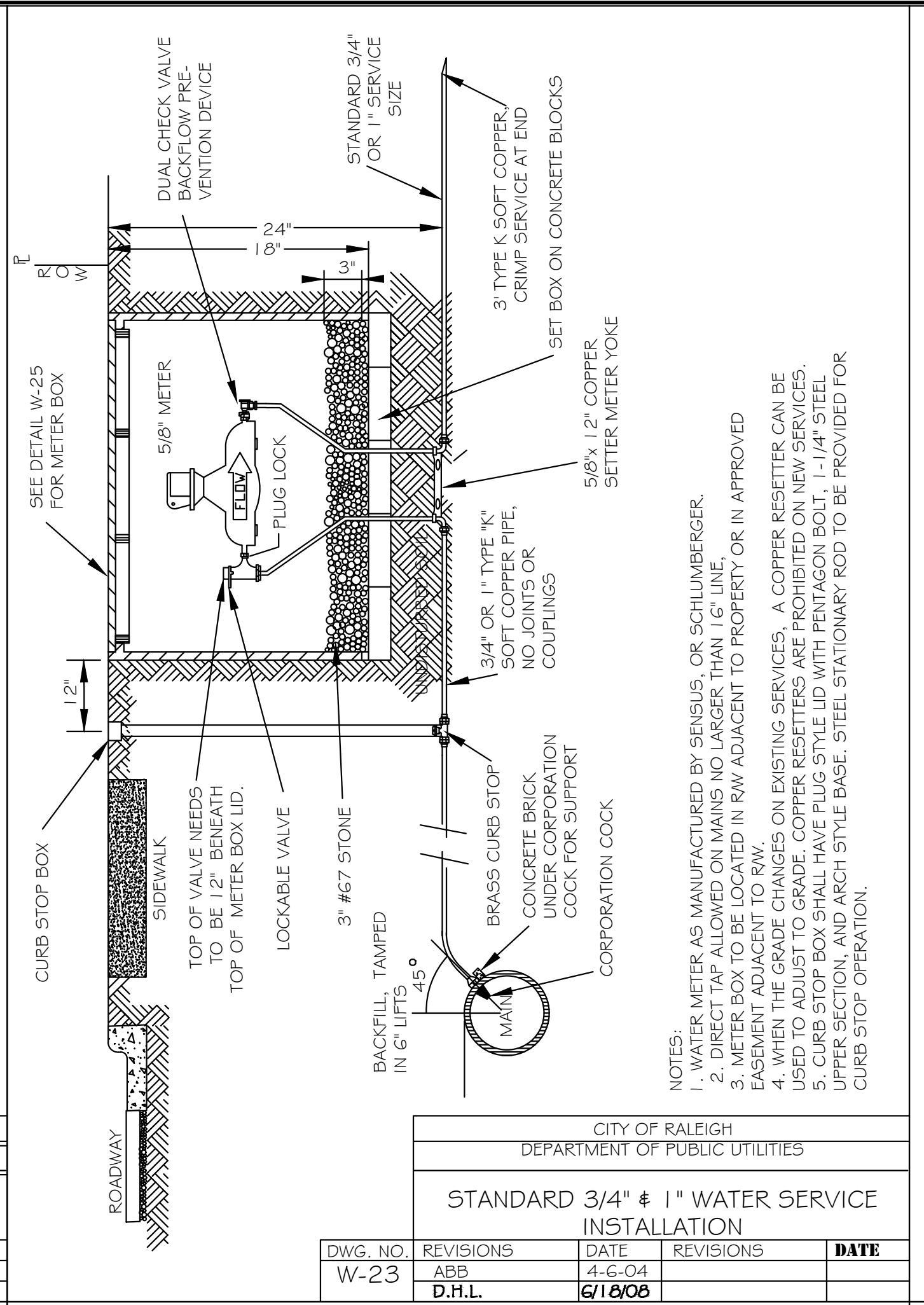
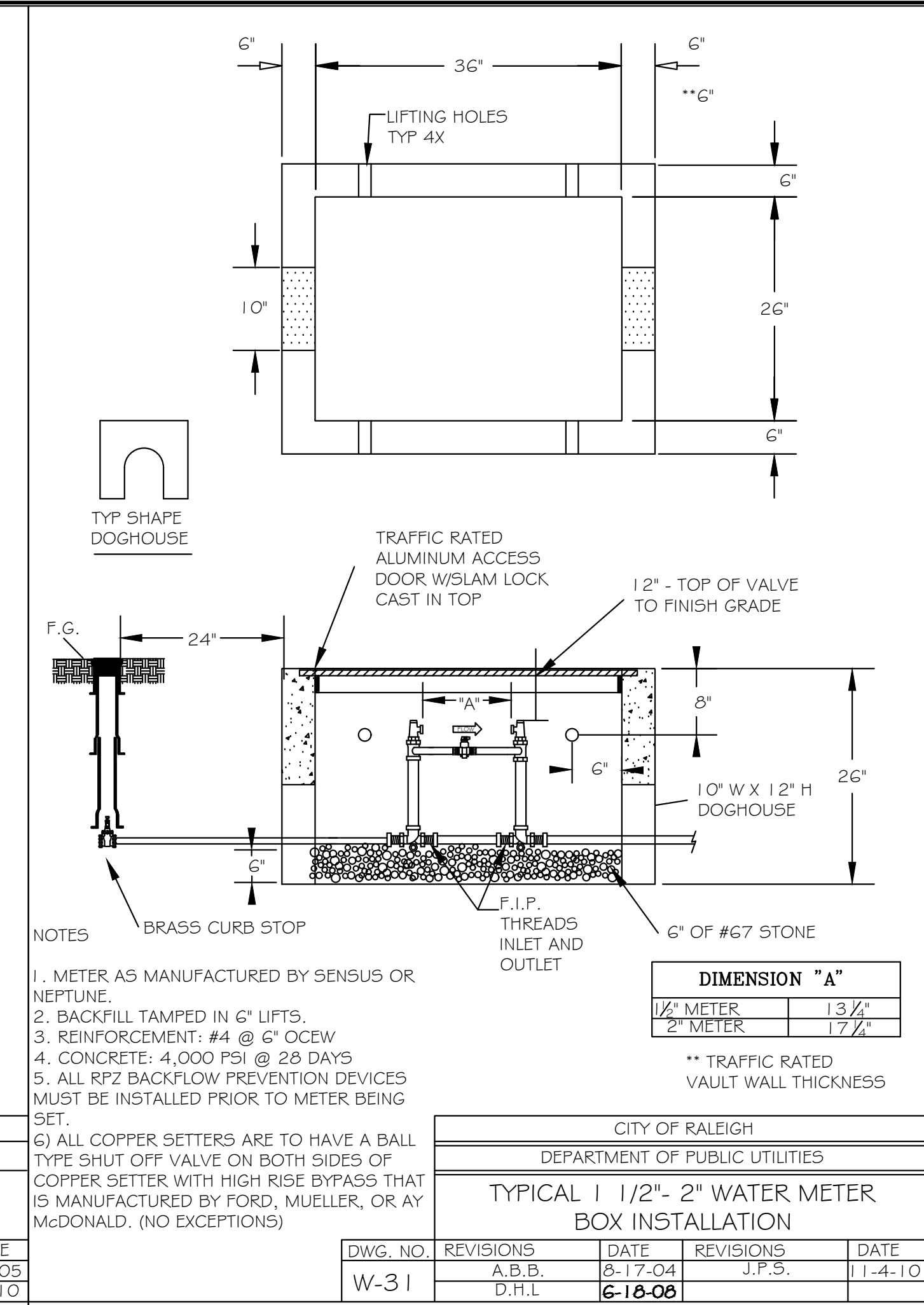
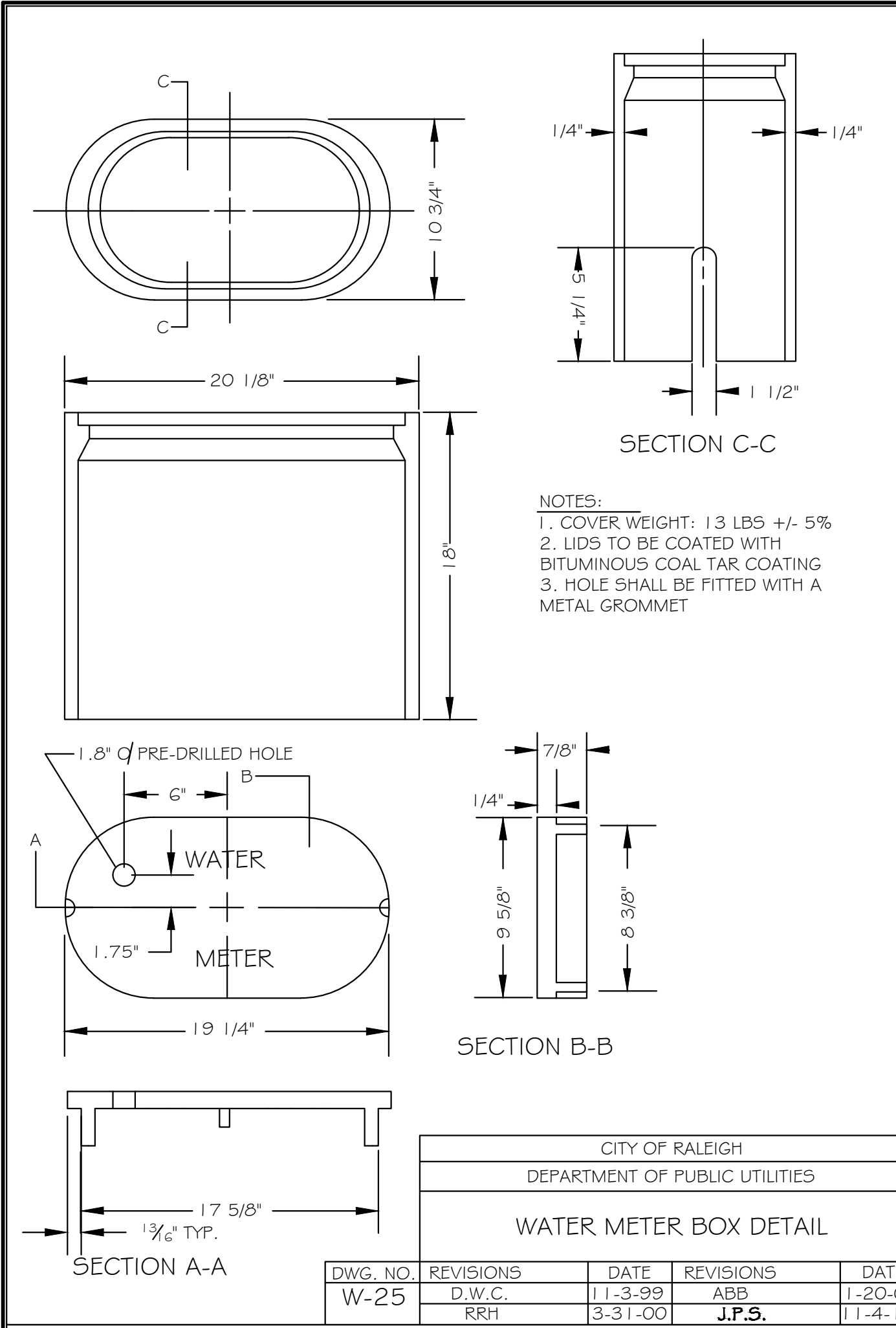
**15** STORM DRAINAGE PIPE TRENCH  
 SCALE: NOT TO SCALE



**16** Riprap Apron At Pipe Outfalls  
 SCALE: NOT TO SCALE



50 WINDO PARK BOULEVARD, SUITE 200 | MOUNT PLEASANT, SC 29566 | JUDSON HILLS BUILDING GROUP, 701 EASLEY BROOK RD, SUITE 600, GREENVILLE, SC 29611 | 230 PERSONNEL DR., CHARLOTTE, NC 28217 | 710 N. DANIEL MORGAN AVENUE, SUITE 300 | SPARTANBURG, SC 29301



**SW SEAMONWHITESIDE**

MOUNT PLEASANT, SC 29301  
 843.884.1667  
 GREENVILLE, SC 29615  
 864.298.0534  
 SUMMERVILLE, SC 29586  
 843.972.0710  
 SPARTANBURG, SC 29303  
 864.272.1272  
 CHARLOTTE, NC 28203  
 980.312.5450  
 WWW.SEAMONWHITESIDE.COM

**SEAMON WHITESIDE & ASSOCIATES, INC.**  
 NO. C-2466  
 CERTIFICATE OF AUTHORITY

**PROFESSIONAL SEAL**  
 048282  
 12/22/23  
 ENGINEER  
 JAMIE L. LITTLE

**TIDAL WAVE AUTO SPA**  
 ROLESVILLE, NC

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

REVISION HISTORY

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	18" x 8" ADS N-12 (8" PIPE)	0.96"	
		TOP OF SC-160LP CHAMBER:	389.45	MANIFOLD		8" x 8" BOTTOM MANIFOLD, MOLDED FITTINGS		
		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	MANIFOLD		15" x 8" ADS N-12 (8" PIPE)	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					

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

DATE	CHK	DRW	CHK	DESCRIPTION

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**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.

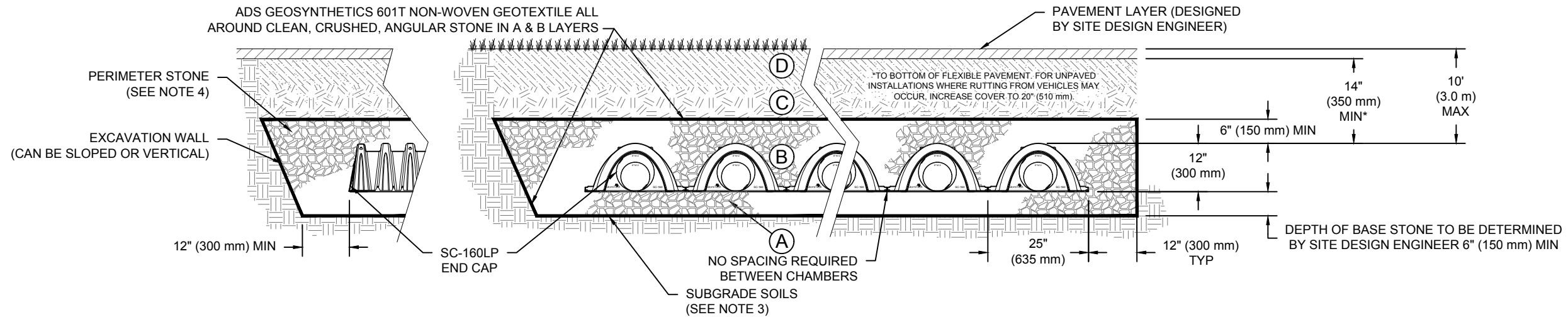
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## ACCEPTABLE FILL MATERIALS: STORMTECH SC-160LP CHAMBER SYSTEMS

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	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.	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.	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.	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:**

1. 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".
2. 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.
3. 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.
4. 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:**

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. 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.
3. 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.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. 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.

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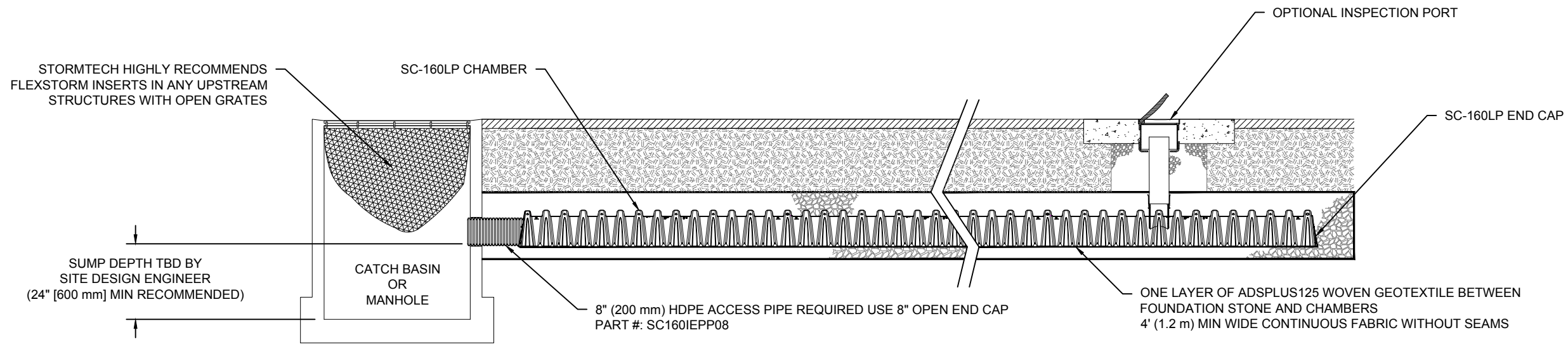
ADS

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SHEET

3 OF 5





**SC-160LP ISOLATOR ROW PLUS DETAIL**  
NTS

**INSPECTION & MAINTENANCE**

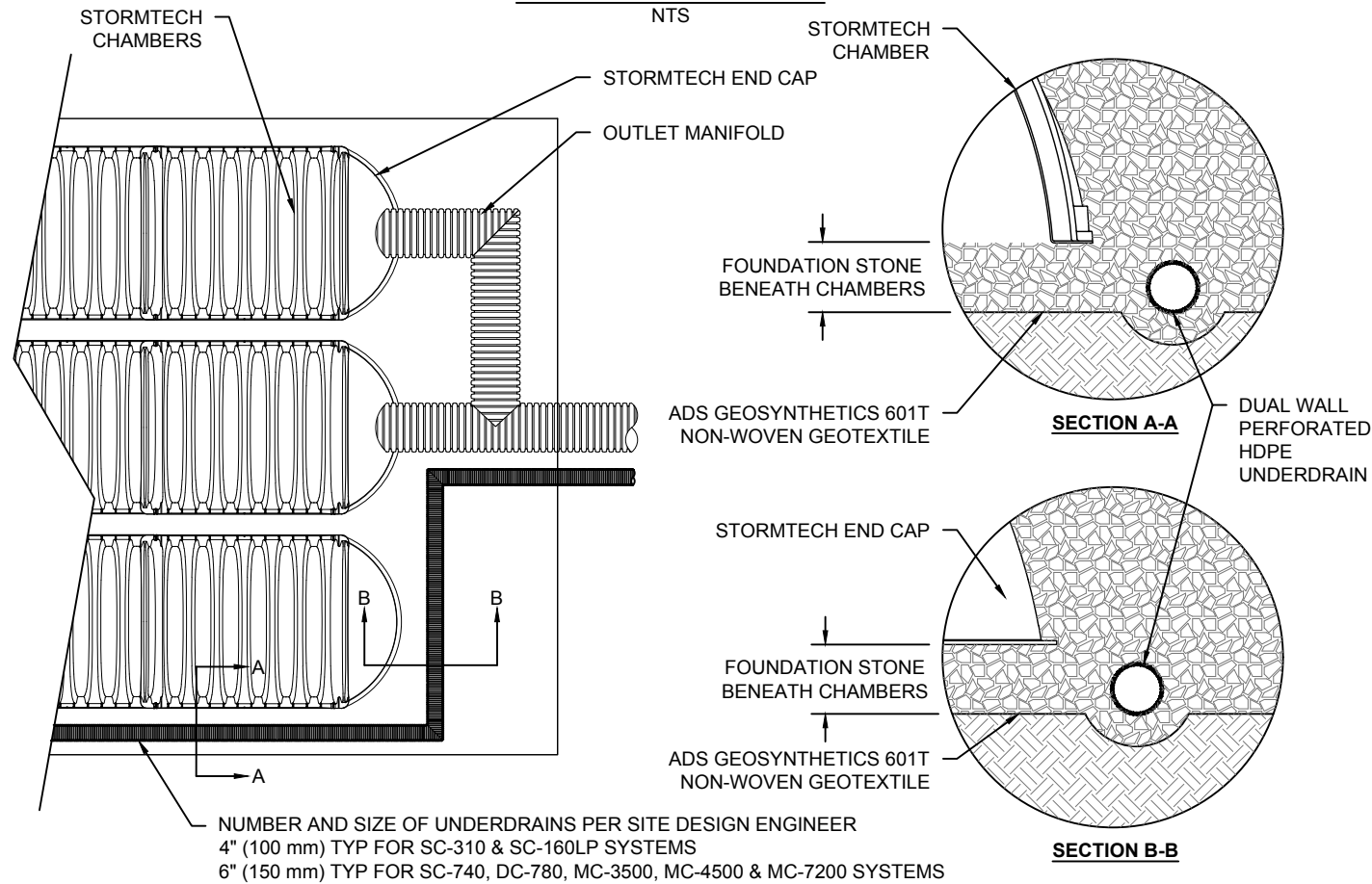
- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
    - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
    - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
    - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
    - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
    - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
  - B. ALL ISOLATOR PLUS ROWS
    - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
    - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
      - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
      - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
    - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
  - B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
  - C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

**NOTES**

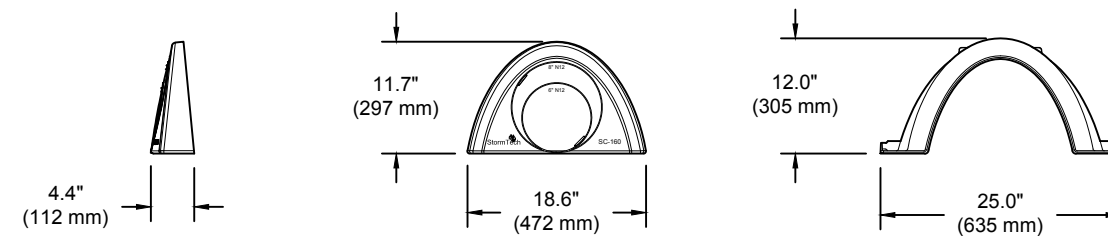
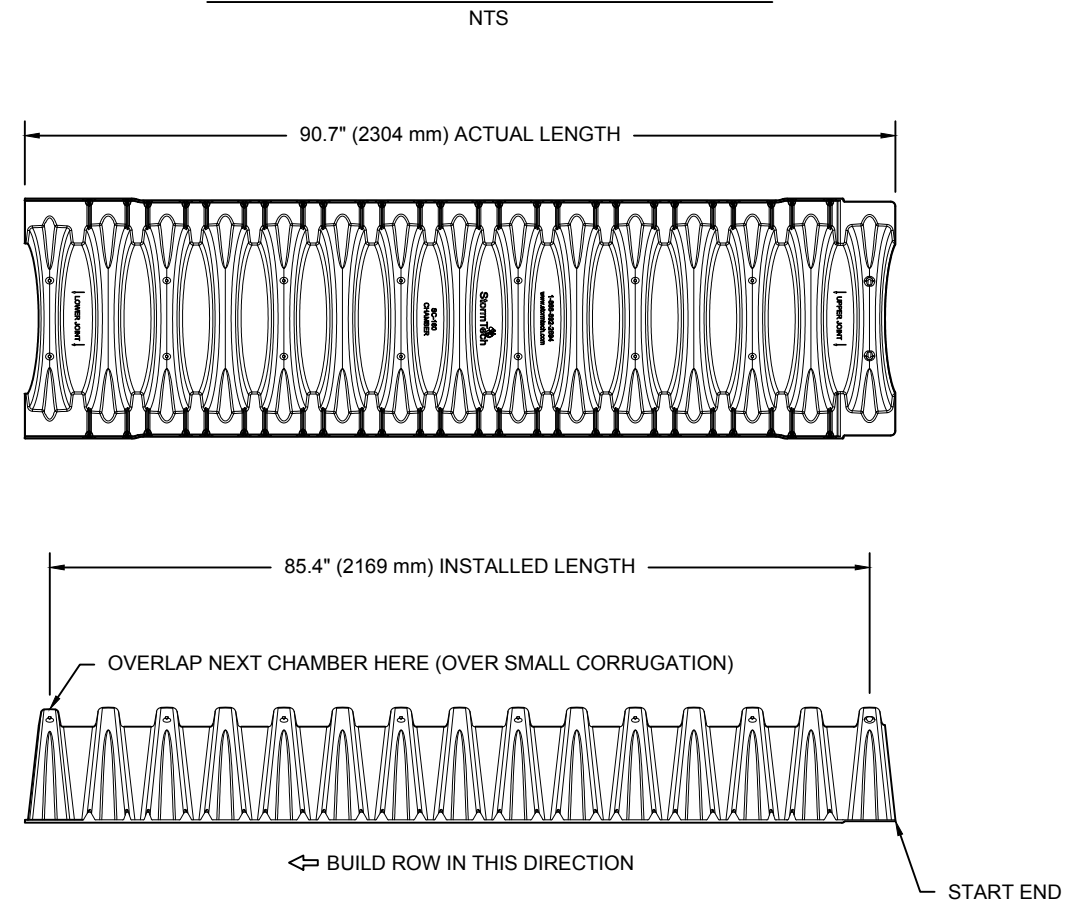
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

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



**SC-160LP TECHNICAL SPECIFICATION**



**NOMINAL CHAMBER SPECIFICATIONS**

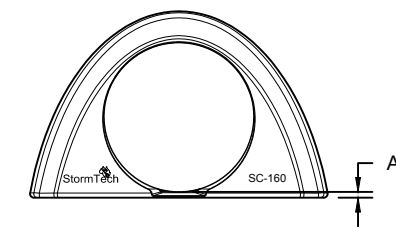
SIZE (W X H X INSTALLED LENGTH)	25.0" X 12.0" X 85.4"	(635 mm X 305 mm X 2169 mm)
CHAMBER STORAGE	6.85 CUBIC FEET	(0.19 m <sup>3</sup> )
MINIMUM INSTALLED STORAGE*	16.0 CUBIC FEET	(0.45 m <sup>3</sup> )
WEIGHT	24.0 lbs.	(10.9 kg)

\*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



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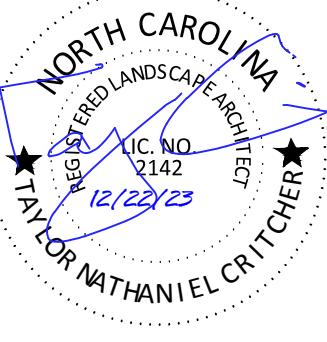
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**REVISION HISTORY**

NO.	DATE	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	

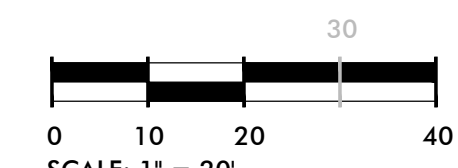
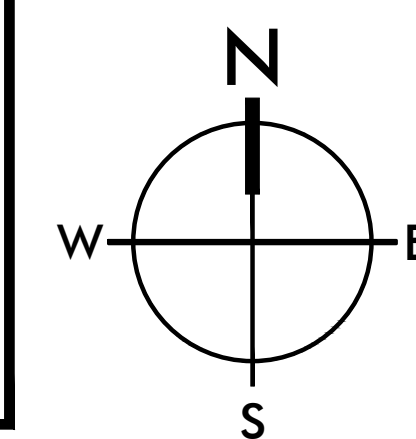
**OPEN SPACE**

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.



Know what's below.  
Call before you dig.

