



# TOWN OF KILL DEVIL HILLS

*Land Where Flight Began*

## NOTICE OF PUBLIC MEETING

NOTICE IS HEREBY GIVEN that on Tuesday, January 17, 2023, at 5:30 p.m., the Kill Devil Hills Planning Board will hold its regular meeting of the month in the Town Hall Meeting Room, located at 102 Town Hall Drive, Kill Devil Hills.

A printed packet is available for public inspection in the Planning Department, 102 Town Hall Drive. To schedule an inspection time, contact the Department at 252-449-5318. Packet materials can be viewed on the Town's website at <https://www.kdhnc.com/743/Meetings-Agendas-Packets-Minutes>.

Written public comments for the Planning Board can be emailed to [info@kdhnc.com](mailto:info@kdhnc.com). Comments must include your name and address and are limited to three minutes for individuals, and five minutes when speaking for a group.

## AGENDA

**Call to Order**

**Agenda Approval**

**Approval of the Minutes of the October 18, 2022, meeting**

**Public Comment**

**Response to Public Comment**

**Ongoing Business**

**New Business**

1. 2023 Meeting Schedule
2. Site Plan Review – 2000 N. Croatan Highway in the Commercial Zone – Proposed 2,015 Square Foot Car Wash and Associated Site Improvements

**Public Comment**

**Response to Public Comment**

**Board Member Comment**

**Adjournment**

Posted this 11<sup>th</sup> day of January 2023.

Jennifer Stecher

Administrative Assistant/Deputy Town Clerk

Copies to: Mayor and Board of Commissioners, Planning Board members in their packet materials; Town Manager; Town bulletin boards; Sunshine List, including all news media; Electronic Distribution List; Town website and social media; file

**Minutes of the Tuesday, October 18, 2022, meeting of the Kill Devil Hills Planning Board held at 5:30 p.m. in the Town Hall Meeting Room of 102 Town Hall Drive, Kill Devil Hills.**

**Members Present:** Chairperson Howard Buchanan, Becky Breiholz, T. Dillon Heikens, Mike Lowack, Ron Seidman, II, and Mary Simpson

**Members Absent:** Natalie Painter

**Others Present:** Cameron Ray, Assistant Planning Director; and Jennifer Stecher, Administrative Assistant/Deputy Town Clerk

**Call to Order**

At 5:30 p.m., Chairperson Howard Buchanan called the Tuesday, October 18, 2022, meeting of the Kill Devil Hills Planning Board to order.

**Agenda Approval**

Mary Simpson moved to approve the agenda for this meeting, as presented. Becky Breiholz seconded the motion, which carried by a unanimous, 5-0, vote.

**Approval of the Minutes of the June 21, 2022 meeting**

Ron Seidman moved to approve the minutes of the June 21, 2022, meeting, as presented. Dillon Heikens seconded the motion, which carried by a unanimous, 5-0, vote.

**Public Comment**

**Response to Public Comment**

**New Business**

**1. Election of Chairperson**

Mike Lowack made a motion to nominate Howard Buchanan for Chairperson of the Planning Board. Mr. Seidman seconded the motion, which carried by a unanimous, 5-0, vote.

**2. Proposed Zoning Amendment – §153.076(A)(9)(h) & §153.076(D) Off-Street Parking and Loading – Create Parking and Driveway Requirements for Emergency Services Facilities**

During the site plan design process for the proposed Kill Devil Hills Fire and Dare County EMS joint facility, it has been recognized that the Town Code provisions do not address off-street parking and loading requirements for this land use. The proposed Zoning Amendment to 153.076 Off-Street Parking and Loading includes required parking and driveway requirements. The amendment requires emergency services to have one parking space per employee and then an additional one parking space per 200 square feet of training facility and customer service areas. Also, the proposed amendment creates special entrance requirements that meet the needs of emergency services including a maximum width of 115’ entrance. The proposed amendment will provide adequate standards for the emergency services uses in Town.

**153.076 OFF-STREET PARKING AND LOADING**

(A) *Detailed specifications.* Required off-street parking spaces are permanent areas and shall not be used for any other ground purpose; and shall be constructed in accordance with generally accepted engineering practices.

(h) Special entrance requirements – Emergency Services. Where a lot abuts U.S. 158/Croatan Highway and does not abut any other dedicated public right-of-way, one entrance shall be allowed consistent with the following dimensional requirements; the width of a commercial driveway shall not exceed 115 feet measured at the property line. The outside radius (R) of an entrance/exit connection shall be a minimum of five feet measured at the property line. The outside radius (R) of an entrance/exit connection shall be a minimum of five feet, not to exceed a maximum of 45 feet.

(D) *Table of parking requirements*

| <i>Institutional uses</i>                              | <i>Required parking</i>   |
|--|---|
| <u>Emergency Services Facility (Police, Fire, EMS)</u> | <u>1 parking space per employee on duty and 1 parking space per 200 square feet of training facility and customer service areas</u> |

Staff recommended the Planning Board review and forward the proposed amendment and consistency statement to the Board of Commissioners with a favorable recommendation.

Ms. Breiholz moved to approve the proposed zoning amendment 153.076(A)(9)(h) and 153.076(D) Off-Street Parking and Loading – Create Parking and Driveway Requirements for Emergency Services Facilities as presented be forwarded to the Board of Commissioners with

the consistency statement. Ms. Simpson seconded the motion, which carried by a unanimous, 5-0, vote.

### **3. Zoning Ordinance Update –Introduction/Report**

Assistant Planning Director Cameron Ray shared that the Town of Kill Devil Hills has recently contracted with Stewart Engineering Community Planning group to perform a focused revision/update to Chapter 153 Zoning Code of the KDH Code of Ordinances. The purpose of the update of the Zoning Code is to improve overall structure, readability, and composition of the ordinance. Additionally, the update will focus on some revisions to reflect existing practices and revise regulation to meet Town goals and remove conflicts. Overall the revisions will create a user-friendly document and while incorporating current best practices on topics such as nonconformities, commercial site plan review, and redevelopment standards. The last update to the Town Zoning Code was in 1999. The slide presentations and any updates to the Zoning Ordinance revision will be kept updated on the Towns website.

#### **Public Comment**

#### **Response to Public Comment**

#### **Board Member Comment**

#### **Adjournment**

There being no further business before the Planning Board at this time, Ms. Breiholz moved to adjourn the meeting. Ms. Simpson seconded the motion, which passed with a unanimous, 5-0 vote. It was 5:50 p.m.

Submitted by:

Jennifer Stecher  
Administrative Assistant/Deputy Town Clerk

Director of  
Planning and Inspections  
MEREDITH GUNS

Building Inspector  
MARTY SHAW  
CHARLES THUMAN

Code Enforcement Officer  
JORDAN BLYTHE



Assistant Director of  
Planning and Inspections  
CAMERON RAY

Senior Planner  
RYAN LANG

Zoning Administrator  
DONNA ELLIOTT

**THE TOWN OF KILL DEVIL HILLS  
NORTH CAROLINA**

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**PLANNING DEPARTMENT**

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January 17, 2023

Memorandum

To: Planning Board

From: Ryan Lang, Senior Planner 

Subject: **SITE PLAN REVIEW —2000 N. Croatan Highway in the Commercial Zone – Proposed 2,015 Square Foot Car Wash and Associated Site Improvements**

Attached is the proposed site plan at 2000 N. Croatan Highway in the Commercial Zone, to construct a new 2,015 square foot drive thru carwash, 20 parking spaces, and associated site modifications. The proposed car wash is a permitted use in the Commercial Zone (*N*) *Retail Business* (car wash). Attached you will find a commercial site plan application, proposed site plan, proposed architectural plans, hydrology report, applicant's response to Staff's Tech 2 comments, and willingness to serve from KDHWTP, LLC.

The applicant has addressed most of staffs initial technical review comments; however, the following conditions remain to be addressed:

Planning

1. Lot coverage square footage provided exceeds 65%.
2. Provide elevations for proposed canopy.
3. Lower roof portion on Northern wall shall have a minimum roof height of 6 feet measured from top plate to ridge.
4. Sheet C 4.0
  - a. By-Pass Lane shall be identified with "No Parking" pavement markings. For parking space classification, it shall be identified and designed as a parking space on the site plan.
  - b. Detail parking requirements as shown in *Table of Parking Requirements 153.076(D)*.

Public Services

Solid Waste

1. The dumpster detail does not meet the size requirements for the Town's two dumpster site. The detail needs to be revised to reflect the required dumpster pad and enclosure.

2. The dumpster doors will need to be removed from the dumpster detail. The Town does not serve dumpsters with closed doors.
3. Show truck turning template access to the proposed dumpster pad to confirm width and alignment are adequate. Concerns about hitting vacuum island or not aligning with enclosure...may need to pull south.
4. Show grades of dumpster pad and drive to confirm access is serviceable and truck not off grade to pad where wheels land to service.

#### Streets/Drainage

1. Provide a shot section of pipe with HDPE plug on the west end D.I.#9 for future connection to the drainage system.
2. Recommend adding note to direct roof drain down spouts to retention basins or provide a downspout drainage plan. This is mostly pertinent to the rear of the building where there is no drainage conveyance. If this is already on the plan, please advise where.
3. Please provide turndown sidewalk detail showing proposed grades at the rear of the building.

#### Building Inspector

1. The site plan on sheet C4.0 doesn't indicate that there is a vacuum pedestal at the ADA space. If self-service vacuum services are offered, there should be accessible services offered as well.

#### Fire Marshal

5. Fire Lane shall be marked on site plan.

Staff recommends that the Planning Board forward the plan to the Board of Commissioners with a favorable recommendation after the above listed conditions have been addressed.



December 30, 2022

Ryan Lang  
Town of Kill Devil Hills  
Planning and Inspection Department  
102 Town Hall Drive  
Kill Devil Hills, NC 27948

Town of Kill Devil Hills

JAN 06 2023

Planning & Inspections Department

RE: Whitecap Auto Spa  
2000 N Croatan Highway  
Kill Devil Hills, NC 27948

Mr. Lang,

Please accept this letter as response to the site plan technical review dated December 13, 2022.

### Planning

#### General:

1. The proposed lot coverage is now 63.40%. See breakdown on page 6 under "Hydrology" at the lower right corner of the sheet.
2. The developer would like to keep the exit only; however, we did move back further from the intersection to line up with the bank access point across W Fifth Street.
3. All notes revised as requested
4. Town Engineer comments have been addressed

#### Sheet C1.0

1. Sheet Index has been revised to L1.1
2. The current owner information has been added to the contact information

#### Sheet C4.0

1. The canopy has been moved back out of the 15' setback. A dimension is included as well as a note that reads, "Proposed Canopy must be setback 15' from the R/W line"
2. A dimension of 92.9' feet from the curb of US 158 to the curb for the exit lane has been added as well as a 51.2' dimension from the right of way line to the exit lane curb.
3. A 10' dimension has been added from the south property line to the proposed curb.
4. A 16.3' dimension has been added from the rear property line to the drive aisle.
5. Dimensions added off the northern property line
6. Parking data added on the lower right corner of the sheet. There are 3 employees and a parking space plus a H/C space has been included near the tunnel entrance.
7. The "bypass lane" is very rarely used only in the event a car breaks down and has to be pushed out of the way. This doubles as the employee parking space. If it ever has to be utilized as a bypass lane (maybe two times a year) then the employee will move their car.
8. Fence has been extended to 10 feet from the east property line
9. Per telephone conversation, just an eave is overhanging into the setback and it is less than 24 inches.



10. The vac producers are now in an enclosure. See note at each vac producer.
11. The northern parking spaces are now 20 feet in depth
12. Each parking space now includes a number

Sheet C7.1 and C7.2

1. Construction entrance is now 50 feet in depth

Sheet C8.0

1. Please see note added to this sheet. The note is between the H/C sign detail and the parking space detail.

Sheet L.10

1. Locations of sod now called out in multiple locations
2. Fence has been extended to 10' off eastern property line.

Sheet P1.0

1. See note added on the left side of the sheet
2. See note added on the left side of the sheet

Commercial Building Exterior

Sheet A104

1. There is a 24" dimension now shown

Sheet A105

1. Dimension has been added
2. Per our telephone discussion, an eave can overhang a maximum of 24 inches. See dimension showing less than 24 inches.

**Building Inspector**

Site Plan:

1. The ADA parking space is dimensioned as 11 feet wide with a 5' unloading area.
2. The vacuum stations have been removed. There is now one ADA space and one employee space.

Building Plan:

1. There is a landing at the bottom of the staircase. See notes on the site plan just above the building footprint.
2. See notes on the site plan just above the building footprint.
3. See notes on the site plan just above the building footprint.

**Town Engineer**

General Comments

1. Noted
2. The Town drainage plans are overlayed on the site plans. Additionally, there is a note on each sheet stating, "Right of Way improvements currently under construction. Please refer to West Durham Street, North Croatan Highway and West Fifth Street Water and Stormwater improvements plans prepared by American Engineering for more information"
3. (a)The hydrology study has been updated to provide clarity on the methodology. See page 7 and 8 of the report. The precipitation input is "custom" whereby there is 4.3 inches of rainfall for a 10-



year storm event. Please also see page 8 of the hydrology study for a volume summary which is a combination of pond volume, void ratio at the pond sides, sock drains, and infiltration.

(b) The infiltration rate of 20 in/hr is included in the effect in the stage-discharge curve from elevation 5 up to elevation 7.

(c) The on site pipes have been changed to HDPE N-12 sock drains. Please see the grading and drainage plan.

#### Specific Comments

1. (a) boundary and topographic information blocks have been updated  
(b) The requested note has been added to the construction notes  
(c) We prefer to keep the notes as written
2. (a) A large note has been added on each applicable sheet stating the right of way work has started.  
(b) Spot elevations have been added from our field run survey as well as spot elevations included from the right of way plans.
3. (a) All pavement will be concrete. The detail is on sheet C8.0  
(b) All pavement will be concrete and additional clarity on drainage patterns are now included.  
(c) Please see the grading and drainage plan for curb and gutter elevations as well as new drainage piping system for W Fifth Street  
(d) The exit only has been moved back further away from the main intersection to line up with the access point across the street.
4. (a) The Quible plans are now coordinated with the right of way improvement plans currently under construction.
5. (a) General comments A.1 and A.2 addressed.
6. (a) Notes have been updated to Colington Creek  
(b) Noted
7. (a) Noted  
(b) the pavement cross section is on sheet C8.0 All pavement will be concrete.

#### Public Services

##### Solid Waste

1. The owner would like to use the Town for garbage pick-up. Please see the site plan, sheet C4.0 for relocated dumpster as requested. There is also a note shown on the site plan to include two 4 CY containers.
2. The dumpster enclosure has been moved to the east side of the loading zone area per the comment

##### Streets / Drainage

1. The owner would prefer not to widen the intersection as suggested
2. The owner would prefer not to install sidewalks on W Fifth Street. There is a sidewalk that will be installed by the Town across W Fifth Street that is shown on the plans that pedestrians could use if needed.
3. Please see the grading and drainage plan for more spot elevation information. The spot elevations include our field run survey as well as spot elevations from the right of way work from American Engineering.
4. Please see the grading and drainage plan for more information at each access point.
5. Storm sewer (sock drains) have been added including inlets to convey stormwater into the State right of Way.
6. The stormwater basin has been revised to not interfere with the right of way
7. The proposed curb and gutter has been moved to line up with the existing asphalt.



8. Existing edge of asphalt shown on applicable sheets
9. Existing edge of asphalt is shown on sheet C7.1

#### Water System

1. Water flow demands for this facility is shown on the top left corner of sheet C5.0
2. A note has been added on the bottom right corner of sheet C5.0
3. Fees have been provided to the owner

#### Wastewater

1. So noted
2. Willingness to serve letter has been provided with the resubmittal
3. Please see plans by Quible for sanitary sewer extension included in the resubmittal
4. So noted

#### General Plan Comments

1. Plans updated to show requested information
2. North arrow has been updated to correct orientation
3. Stormwater callouts revised

#### Fire Marshal

1. So noted
2. East driveway is now 20 feet wide
3. The 2<sup>nd</sup> story includes maintenance access to equipment
4. All pavement will be heavy duty concrete

#### Police

1. Do not enter signs have been added to the east exit
2. Vacuum spaces are updated
3. The vac producer will be in an enclosure to mitigate any sound
4. So noted

Should you have any questions or concerns, please contact me at [jeff@carterengineering.com](mailto:jeff@carterengineering.com) or 770-725-1200.

Sincerely,



Jeff Carter, P.E.  
Carter Engineering Consultants, Inc.

Town of Kill Devil Hills Planning and Inspections  
Commercial Site Plan Review Application\*



Planning & Inspections Department

**Applicant**

Name: Carter Engineering Consultants, Inc.  
Address: 3651 Mars Hill Road, Suite 2000  
Watkinsville, GA 30677  
Phone: 770-725-1200  
Fax: \_\_\_\_\_  
Cell: \_\_\_\_\_

**Property Owner**

Name: Floyd Properties of Florence, LLC  
Address: P.O. Box 3862  
Florence, SC 29502  
Phone: 843-250-6644  
Fax: \_\_\_\_\_  
Cell: \_\_\_\_\_

**Property Location**

Address: Parcel A, Wrights Shore Lot, Block: \_\_\_\_\_  
Subdivision \_\_\_\_\_ Pin#: 988406295099  
Zoning District:  Commercial  LI-1  LI-2  OIR  
Total Lot Size: 30,796 Sq. Ft. Disturbed Area: 30,796 Sq. Ft.

**Contractor**

Company Name: TBD License Number: \_\_\_\_\_  
Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Address: \_\_\_\_\_ Cell: \_\_\_\_\_  
Fax: \_\_\_\_\_  
Town Privilege License Number: \_\_\_\_\_

**Construction Information**

Type of Construction: VB  
 Assembly  Business  Educational  Factory/Industrial  High Hazard  
 Institutional  Mercantile  Residential  Storage  Utility/Misc.  
 New Construction  Addition  Repair/Replace  Remodel  Other: \_\_\_\_\_

*Square Footage Proposed:*

Interior Space: 2,015 Sq. Ft. Covered Deck(s): 0 Sq. Ft. Storage: 0 Sq. Ft.  
Garage: 0 Sq. Ft. # of Bedrooms: 0 # of Open Deck(s): 0  
Proposed Square Footage: 2,015 + Existing Square Footage: 0 = 2,015 Total Sq. Ft.  
% Impervious Coverage: 65 + % Pervious Coverage: 35 = 100 Total % Coverage  
# of Parking Spaces: Existing: 0 Proposed: 20 Total: 20  
Septic Tank Permit #: NA Construction Type: NA

Estimated Construction Cost (including labor and materials): \$1,500,000

**Flood Information**

Flood Zone:  VE  AE  X Base Flood Elevation: NA  
Proposed First Floor Elevation: 9.50' Sq. Ft Below Base Flood Elevation: NA

*\*This form is designed as a guide for Commercial Site Plan Review.  
Additional plans and information will be required prior to building permits.*

- Proposed First Floor Elevation
- Dumpster Pad Location
- Proposed Sign Location
- Sight triangle shown
- Commercial Building Plans showing architectural compliance
- Plans to N.C.D.O.T. ( if required)
- NC Engineer/Land Surveyor Seal on Site Plan

\*\*\* The items listed in the Site Plan portion of the above checklist represent information that must be indicated on any site plan submitted for review by the Kill Devil Hills Planning Department, Planning Board, and Board of Commissioners. All of the above required documents shall be submitted on or before the 3rd Tuesday of each month. Upon completion of review, the Planning Board shall transmit its recommendations to the Board of Commissioners. The Board of Commissioners shall review site plans on the second Monday of each month.

Signature of Applicant: Jeff Carter (Date) 12/05/2022



**KDHWTP, LLC**  
P.O. Box 3629 • Kill Devil Hills, NC 27948  
NCUC W-1160

## Willingness to Serve

January 3, 2023

Floyd Properties of Florence, LLC  
1832 Sally Hill Farms Blvd.,  
Florence, South Carolina 29501

Re: 0 North Croatan Highway and West Fifth Street  
Parcel Number 029831100

To whom it may concern:

We are Willing to Serve the above referenced property with 3000 gallons per day "gpd" of sewage treatment capacity.

This Willingness to Serve letter is specifically conditioned upon Floyd Properties taking title to the subject property on or before January 3, 2023 under the Purchase Agreement to which attached.

This Willingness to Serve commitment is specifically conditioned upon the subject property being added to the Public Utilities Service area by the North Carolina Utilities Commission and approval by the North Carolina Department of Environment and Natural Resources Division of Environmental Quality.

This Willingness to Serve letter is not assignable.

My best regards,

Eddie Goodrich  
Owner Manager









CONSTRUCTION NOTES

- 1. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO COVER A COMPLETE PROJECT, READY TO USE, AND ALL ITEMS NECESSARY FOR A COMPLETE AND WORKABLE JOB SHALL BE FURNISHED AND INSTALLED. ANY DISCREPANCY SHALL BE IMMEDIATELY REPORTED TO THE OWNER OR HIS REPRESENTATIVE.
2. NOTIFY THE INSPECTOR OF THE LOCAL GOVERNING AUTHORITY 24 HOURS BEFORE EVERY PHASE OF CONSTRUCTION.
3. ALL WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES. ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR, AT HIS EXPENSE, UNLESS ALREADY OBTAINED BY THE OWNER.
4. THE CONTRACTOR SHALL COORDINATE LOCATION AND INSTALLATION OF ALL UNDERGROUND UTILITIES AND APPURTENANCES TO MINIMIZE DISTURBING CURBING, PAVING, AND ALL OTHER UTILITIES.
5. THE EXISTING UTILITIES SHOWN ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE DRAWINGS, THE UTILITIES SHOWN ARE THOSE LOCATED BY THE SURVEYOR OF RECORD. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATION OF THE UTILITIES SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
6. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR CONSENT OF THE ENGINEER AND THE MUNICIPALITY MAY CAUSE FOR THE WORK TO BE UNACCEPTABLE.
7. ALL MATERIALS SHALL BE NEW UNLESS USED OR SALVAGED MATERIALS ARE AUTHORIZED BY THE OWNER.
8. THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY BARRICADES AROUND THE WORK AND SHALL PROVIDE PROTECTION AGAINST WATER DAMAGE AND SOIL EROSION.
9. ALL WORK SHALL BE PERFORMED IN A FINISHED AND WORKMANLIKE MANNER TO THE ENTIRE SATISFACTION OF THE OWNER, AND IN ACCORDANCE WITH THE BEST RECOGNIZED TRADE PRACTICES.
10. THE CONTRACTOR SHALL PROVIDE SHEETING AND SHORING FOR ALL TRENCH CONSTRUCTION IN ACCORDANCE WITH OSHA GUIDELINES.
11. ALL PIPE LENGTHS SHOWN ARE TO THE CENTERLINE OF THE STRUCTURES UNLESS SPECIFICALLY NOTED.
12. PIPES (STORM AND SANITARY SEWER) SHALL BE LAID ON SMOOTH, CONTINUOUS GRADES WITH NO VISIBLE BENDS AT THE JOINTS.
13. BEDDING REQUIREMENTS SPECIFIED HEREIN ARE TO BE CONSIDERED AS MINIMUM REQUIRED FOR RELATIVELY DRY STABLE EARTH CONDITIONS. ADDITIONAL BEDDING SHALL BE REQUIRED FOR ROCK TRENCHES TO PROVIDE SUCH ADDITIONAL BEDDING AS REQUIRED TO PROPERLY CONSTRUCT WORK.
14. ALL STORM DRAINAGE INLET STRUCTURES SHALL HAVE METAL RING AND COVER FOR ACCESS.
15. ALL ANGLES SHOWN ARE 90 DEGREES UNLESS SHOWN OTHERWISE.
16. ALL GRADES SHOWN ARE FINISHED GRADES. CONTRACTOR SHALL VERIFY DIMENSIONS, GRADES, AND EXISTING ELEVATIONS PRIOR TO CONSTRUCTION.
17. CONCRETE CURBS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS SHOWN ON PLANS. MATERIALS, EQUIPMENT, METHODS OF CONSTRUCTION AND WORKMANSHIP SHALL CONFORM TO STATE D.O.T. STANDARD SPECIFICATIONS.
18. ALL CONCRETE SHALL HAVE 3000 PSI COMPRESSIVE STRENGTH AFTER 28 DAYS, WITH A MAXIMUM SLUMP OF FOUR (4) INCHES, UNLESS SPECIFIED OTHERWISE.
19. ALL EXPOSED CONCRETE SHALL HAVE A FINE HAIR BROOMED FINISH.
20. PARKING AND DRIVEWAY BASE COURSE AND ASPHALTIC CONCRETE SURFACE AND PRIME MATERIALS, EQUIPMENT, METHODS FOR CONSTRUCTION AND WORKMANSHIP SHALL CONFORM TO STATE D.O.T. STANDARD SPECIFICATIONS.
21. CONTRACTOR TO FIELD VERIFY ALL STORM, SANITARY, WATER AND OTHER UTILITIES LOCATIONS AND INVERTS PRIOR TO INSTALLATION OF ANY UTILITIES. NOTIFY ENGINEER PRIOR TO PROCEEDING WITH ANY WORK IF DISCREPANCIES FOUND.
22. THE USE OF CONCRETE THRUST BLOCKS FOR THE INSTALLATION OF WATER MAINS IS STRICTLY PROHIBITED. PRESSURE PIPE FITTINGS AND OTHER ITEMS REQUIRING RESTRAINT SHALL BE RESTRAINED USING METHODS SPECIFIED AND APPROVED BY COUNTY/CITY TECHNICAL STANDARDS, SPECIFICATIONS AND REGULATIONS. THE PREFERRED METHOD OF RESTRAINT IS THROUGH THE USE OF "MEGA-LUGS" OR "MUR" DEVICES.
23. ALL DIMENSIONS ARE MEASURED TO THE BACK OF CURB UNLESS OTHERWISE NOTED.
24. ALL ROAD, CONCRETE, DRAINAGE/STORMWATER AND WATER WORK WITHIN THE RIGHT OF WAY OF W FIFTH STREET SHALL COMPLY WITH ALL PROVISIONS OF THE STANDARD CONTRACT DOCUMENTS OF THE TOWN OF KILL DEVIL HILLS (THE TOWN SPECIFICATIONS), WHICH MAY BE OBTAINED FROM THE TOWN'S DEPARTMENT OF PUBLIC SERVICES. IN CASE OF ANY CONFLICT BETWEEN THE TOWN SPECIFICATIONS AND NCDOT SPECIFICATIONS OR ANY NOTE OR PROVISION ON THESE PLANS, THE STRICTER SHALL GOVERN.

EARTHWORK SPECIFICATIONS

CLEARING AND GRUBBING

- 1. CLEARING AND GRUBBING SHALL CONSIST OF CLEARING THE SURFACE OF THE GROUND OF THE DESIGNATED AREAS OF ALL TREES, LOGS, SNAGS, BRUSH, UNDERGROWTH, HEAVY GROWTH OF GRASS, WEEDS, FENCE STRUCTURES, DEBRIS AND RUBBISH OF ANY NATURE, NATURAL OBSTRUCTIONS SUCH AS OBJECTIONABLE SOIL MATERIAL UNSATISFACTORY FOR FOUNDATIONS, IT SHALL ALSO CONSIST OF GRUBBING OF STUMPS, ROOTS FOUNDATIONS AND DISPOSAL OF ALL SUCH MATERIAL. ALL HOLES REMAINING AFTER THE GRUBBING OPERATION IN EMBANKMENT AREAS AND IN EXCAVATION AREAS LESS THAN TWO (2) FEET IN DEPTH, SHALL HAVE SIDES BROKEN DOWN AND LEVELLED. IF NECESSARY TO FLATTEN CUT SLOPES, REVELED WITH ACCEPTABLE MATERIAL THAT IS PROPERLY COMPACTED IN LAYERS BY TAMPERS, ROLLERS OR CONSTRUCTION EQUIPMENT.
2. BURNING ON SITE IS NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE LOCAL GOVERNING AUTHORITIES HAVING JURISDICTION.

EXISTING TREES OUTSIDE OF GRADING LIMITS LINE:

- 1. TREES AND VEGETATION TO BE SAVED SHALL BE PROTECTED FROM DAMAGE BY A FENCE BARRICADE PRIOR TO, OR DURING, CLEARING OPERATIONS. TREES TO BE REMOVED FROM THE AREA OUTSIDE THE LIMITS OF GRADING OR FROM SPECIFICALLY DESIGNATED AREAS WITHIN THE CONSTRUCTION AREAS. IF, IN THE OPINION OF THE ENGINEER, A CONTRACTOR DAMAGES A TREE NOT TO BE REMOVED, THE CONTRACTOR WILL BE FINED A PREDETERMINED AMOUNT FOR EACH DAMAGED TREE. THE CONTRACT SHALL ALSO BE RESPONSIBLE FOR ALL COSTS ASSOCIATED IN REMOVING THE DAMAGED TREE FROM THE SITE.

FILL:

- 1. ALL VEGETATION SUCH AS ROOTS, BRUSH, HEAVY GROWTH OF GRASS, TOPSOIL, ALL DECAYED VEGETABLE MATTER, RUBBISH, AND OTHER UNSUITABLE MATERIAL WITHIN THE AREA UPON WHICH FILL IS TO BE PLACED SHALL BE STRIPPED OR BE OTHERWISE REMOVED BEFORE THE FILL OPERATION IS STARTED. IN NO CASE SHALL UNSUITABLE MATERIAL REMAIN IN OR UNDER THE FILL AREA. SLOPED GROUND SURFACE STEEPER THAN ON VERTICAL TO FOUR HORIZONTAL, ON WHICH FILL IS TO BE PLACED, SHALL BE PLACED, STEPPED OR BENCHED IN SUCH A MANNER THAT THE FILL TO BE PLACED SHALL BE 97 PERCENT OF THE MAXIMUM LABORATORY DRY DENSITY ACCORDING TO STANDARD PROCTOR (AASHTO T99, ASTM D-698). MOISTURE CONTENT SHALL BE WITHIN 3 PERCENT OF THE OPTIMUM MOISTURE CONTENT. PROOF ROLL THE AREAS TO BE FILLED OR ON WHICH STRUCTURES ARE TO BE PLACED. A LOADED DUMP TRUCK OR OTHER RUBBER TIERED EQUIPMENT SHALL BE USED FOR PROOF ROLLING. OVERLAPPING PASSES OF A VEHICLES SHOULD BE MADE ACROSS THE SITE IN ONE DIRECTION AND THEN PERPENDICULAR TO THE ORIGINAL DIRECTION OF ROLLING.
2. ANY YIELDING, PUMPING OR SOFT AREAS SHOULD BE CUT OUT AND REPLACED WITH FILL COMPACTED AS DESCRIBED HEREIN.
3. THE PROPOSED FILL SHOULD BE LIMITED TO SOILS CLASSIFIED IN ACCORDANCE WITH ASTM D-2487 AS GM, GC, SW, SM, SC, ML AND CL. SOIL CLASSIFIED AS PT, OH, OL, CH AND MH ARE NOT SATISFACTORY AS COMPACTED FILL.
4. FILLS AND EMBANKMENTS SHALL BE CONSTRUCTED AT THE LACTATIONS AND TO THE LINES AND GRADES INDICATED ON CONSTRUCTION PLANS. THE SLOPE SHALL NOT EXCEED 2 FOOT HORIZONTAL TO 1 FOOT VERTICAL (3 FOOT HORIZONTAL TO 1 FOOT VERTICAL IN THE PUBLIC RIGHT OF WAY). THE COMPLETED FILL SHALL CORRESPOND TO THE SHAPE OF THE TYPICAL SECTIONS INDICATED ON THE CONSTRUCTION PLANS. MATERIAL REMOVED FROM THE EXCAVATION SHALL BE USED IN FORMING THE FILL. FILL MATERIAL SHALL BE REASONABLY FREE FROM ROOTS, OTHER ORGANIC MATERIAL, TRASH AND STONES HAVING MAXIMUM DIMENSIONS GREATER THAN 6 INCHES (4 INCHES IN TRENCHES FOR UTILITIES). NO FROZEN MATERIAL WILL BE PERMITTED IN THE FILL. STONES HAVING A MAXIMUM DIMENSION OF 4 INCHES WILL NOT BE PERMITTED IN THE UPPER SIX INCHES OF FILL OR EMBANKMENT OR UTILITY TRENCH. THE MATERIAL SHALL BE PLACED IN SUCCESSIVE HORIZONTAL LAYERS NOT MORE THAN 8 INCHES THICK, UNLESS OTHERWISE NOTED, IN LOOSE DEPTH FOR THE WIDTH OF THE CROSS SECTION AND SHALL BE COMPACTED TO AT LEAST 97 PERCENT OF THE MAXIMUM LABORATORY DRY DENSITY ACCORDING TO STANDARD PROCTOR (ASTM D-698, AASHTO T-99). MOISTURE SHALL BE WITHIN 3 PERCENT OF THE OPTIMUM MOISTURE CONTENT. THE TOP 12 INCHES OF THE PAVING, PARKING AND/OR ROADWAY SUB-GRADE SHALL BE COMPACTED TO 97 PERCENT OF THE MAXIMUM

- DRY DENSITY (STANDARD PROCTOR). EACH LIFT SHALL BE ROLLED WITH A VIBRATORY ROLLER, A SHEEPSFOOT ROLLER, OR A LOADED RUBBER TIERED DUMP TRUCK, SCRAPER OR LOADER. IF THE SOIL IS TOO DRY, A WATER TRUCK WITH SPREADER BAR OR SPRAY HOSE SHALL BE USED TO BRING THE SOIL TO THE PROPER MOISTURE RANGE. THE WATER SHALL BE THOROUGHLY AND PROPERLY MIXED WITH THE SOIL PRIOR TO COMPACTION.
5. STORM DRAIN PIPES SHALL BE PLACED ON FIRM BOTTOM AND HAND TAMPED TO SAFE UP THE PIPE. A CUSHION OF SOIL SHALL BE TAMPED ABOVE THE CROWN OF THE PIPE IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS SO THAT THE HEAVIER COMPACTION EQUIPMENT CAN THEN BE USED TO BRING THE SOIL TO A DENSITY AS DESCRIBED ABOVE FOR FILL AREAS.
6. IF SOILS INVESTIGATION REPORT IS PROVIDED, THEN FOLLOW THE RECOMMENDATIONS OF THE REPORT IF THEY EXCEED THE RECOMMENDATIONS OF THESE SPECIFICATIONS.

TOPSOIL:

- 1. UNLESS OTHERWISE SPECIFIED, AREAS DESIGNATED FOR GRADING OPERATIONS THAT CONTAIN A BLANKET OF TOPSOIL SHALL BE STRIPPED AND PLACED IN CONVENIENT STOCKPILES FOR LATER USE AS A TOPSOIL BLANKET ON THE NEW GRADED AREAS SPECIFIED HEREIN, OR AS DESIGNATED. TOPSOIL SHALL BE STRIPPED FROM ALL AREAS DESIGNATED TO RECEIVE FILL. THE STRIPPING OF MATERIAL FOR TOPSOIL SHALL BE CAREFULLY DETERMINED AND ONLY THE QUANTITY REQUIRED SHALL BE STOCKPILED. MATERIAL STOCKPILED SHALL BE STORED IN A SATISFACTORY MANNER TO AFFORD PROPER DRAINAGE. WHEN GRADING OPERATIONS PERMIT, INSTEAD OF STOCKPILING, THE TOPSOIL SHALL BE HAULED AND SPREAD DIRECTLY ON THE AREAS DESIGNATED TO RECEIVE TOPSOIL.

ROCK EXCAVATION:

- 1. IF ROCK IS ENCOUNTERED, CLEAR AWAY EARTH TO EXPOSE MATERIAL. NOTIFY OWNER AND RECEIVE WRITTEN INSTRUCTIONS PRIOR TO EXCAVATION. REMOVE ROCK TO A DEPTH OF 6 INCHES BELOW AND 8 INCHES ON EACH SIDE OF PIPES IN TRENCHES. A MEASUREMENT OF EXTENT OF ROCK TO BE REMOVED SHALL BE MADE. ROCK EXCAVATION SHALL BE PAID FOR IN ACCORDANCE WITH AGREEMENT WITH THE OWNER.

DEMOLITION NOTES

EXISTING STRUCTURES & FACILITIES:

- 1. THE LOCATIONS OF ALL EXISTING FACILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER / LANDSCAPE ARCHITECT ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR ON-SITE LOCATIONS OF EXISTING UTILITIES.
2. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, SUPERVISION AND EQUIPMENT REQUIRED FOR THE ORDERLY DEMOLITION AND REMOVAL OF EXISTING STRUCTURES, PAVEMENT, AND UTILITIES AS SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN.
3. THE CONTRACTOR IS REQUIRED TO FAMILIARIZE HIM/HERSELF WITH THE STRUCTURES TO BE DEMOLISHED. A BRIEF DESCRIPTION OF THE STRUCTURES PROPOSED TO BE INSTALLED AND DEMOLISHED ARE INCLUDED FOR THE CONTRACTOR'S CONVENIENCE ONLY.
4. THE FOLLOWING LIST OF STRUCTURES REQUIRING DEMOLITION IS INCLUDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE DRAWINGS INDICATE THE SCOPE OF THE DEMOLITION WHERE DEMOLITION IS REQUIRED (SEE CORRESPONDING PLANS):
4.1. DEMOLITION AND REMOVAL OF EXISTING ON-SITE ASPHALT, CONCRETE, PAVING, AND CURBING TO LIMITS OF DISTURBANCE/DEMOLITION AS SHOWN ON THE CORRESPONDING PLANS. CONTRACTOR TO VERIFY AND COORDINATE ANY DISCREPANCIES AND/OR CONCERNS WITH ENGINEER/LANDSCAPE ARCHITECT ACCORDINGLY.
5. ALL ON-SITE UNDERGROUND STRUCTURES AND PIPING MUST BE COMPLETELY REMOVED AND OVER-EXCAVATED BY A MINIMUM OF 12" BENEATH THE STRUCTURES. CONTRACTOR SHALL USE APPROVED FILLING MATERIAL FOR FILLING THESE AREAS. FILL SHALL BE CLEAN WITH LESS THAN 50% PASSING THE #200 SIEVE, PLASTICITY INDEX LESS THAN 10, WITH MAXIMUM PARTICLE SIZE OF 1.25 INCHES, AND SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS AND COMPACTED TO AT LEAST 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T99).
6. ALL EXISTING STRUCTURES, PAVEMENTS, SLABS, FOUNDATIONS, STEPS AND OTHER EXISTING FEATURES INDICATED ON THE DRAWINGS TO BE REMOVED SHALL BE DEMOLISHED AND REMOVED BY THE CONTRACTOR. REMOVE NO STRUCTURE SUBSTANTIALLY AS A WHOLE. DEMOLISH COMPLETELY ON THE PREMISES.
7. ALL EXISTING SEWERS, PIPING, UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. CONTRACTOR SHALL GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK.
8. CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION FOR PERSON AND PROPERTY AT ALL TIMES. HE OR SHE SHALL EXECUTE THE WORK IN A MANNER THAT AVOIDS HAZARDS TO PERSONS AND PROPERTY AND THAT PREVENTS INTERFERENCE WITH THE USE AND ACCESS TO ADJACENT PROPERTIES, BUILDINGS, AND ADJACENT STREETS. STREETS AND SIDEWALKS SHALL NOT BE BLOCKED BY DEBRIS AND EQUIPMENT.
9. CONTRACTOR MUST STOP OPERATION AND NOTIFY THE OWNER FOR PROPER DIRECTION IF ANY ENVIRONMENTAL OR HEALTH RELATED CONTAMINATE IS ENCOUNTERED DURING THE DEMOLITION AND/OR EXCAVATION PROCESS.
DISPOSAL:
10. REMOVE AND LEGALLY DISPOSE OF ALL OTHER RUBBISH, RUBBLE, AND DEBRIS. ALL REFUSE AND MISCELLANEOUS ITEMS TO BE REMOVED, THAT ARE NOT TO BE STOCKPILED FOR LATER USE ON THE PROJECT OR DELIVERED TO THE OWNER, SHALL BE LEGALLY DISPOSED OF OFF-SITE BY THE CONTRACTOR IN ACCORDANCE WITH ANY AND ALL APPLICABLE LAWS, STANDARDS, AND REGULATIONS SET FORTH BY LOCAL, STATE, AND FEDERAL OFFICIALS THAT GOVERN THE DISPOSAL OF WASTE AND DEBRIS.

PAVEMENT REMOVAL:

- 11. WHERE EXISTING PAVEMENT IS TO BE REMOVED, CONTRACTOR SHALL SAW-CUT THE SURFACING LEAVING A UNIFORM AND STRAIGHT EDGE WITH THE MINIMAL DISTURBANCE POSSIBLE TO THE REMAINING ADJACENT SURFACING. IF CONSTRUCTION RESULTS IN RAVELING OF THE SAW-CUT SURFACE, RECUT BACK FROM THE RAVELED EDGE PRIOR TO RESTORATION.
12. WHERE EXISTING PAVEMENT, CURB, CURB AND GUTTER, SIDEWALK, DRIVEWAY OR VALLEY GUTTER IS TO BE REMOVED FOR THE PURPOSE OF CONSTRUCTION OR REMOVING BOX CULVERTS, PIPE, INLETS, MANHOLES, APPURTENANCES, FACILITIES OR STRUCTURES, SAID PAVEMENT, ETC., THE SAID OR PROPOSED STRUCTURE SHALL BE REPLACED AND RESTORED IN EQUAL OR BETTER CONDITION THAN THE ORIGINAL. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY LABOR, MATERIALS, EQUIPMENT, TOOLS, SUPPLIES, AND ANY OTHER NECESSARY EQUIPMENT AS REQUIRED BY PROJECT AND SITE REQUIREMENTS.

ACCESS:

- 13. CONTINUOUS ACCESS SHALL BE MAINTAINED FOR THE SURROUNDING PROPERTIES AT ALL TIMES DURING THE DEMOLITION PROCESS OF THE EXISTING FACILITIES AND SITE.

PERMITTING:

- 14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ANY REQUIRED PERMITTING FOR DEMOLITION FROM THE RESPONSIBLE AUTHORITIES AND REGULATIONS AND FULLY ACKNOWLEDGE AND COMPLY WITH ALL REQUIREMENTS PRIOR TO COMMENCING OF DEMOTION WORK.
15. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE THE EXTENT OF DEMOLITION REQUIRED IN ORDER TO PERFORM THE CONTRACT WORK FOR THIS PROJECT. THE CONTRACTOR SHALL CONDUCT SITE VISITS AND SHALL EXAMINE ALL OF THE INFORMATION WITHIN THESE DOCUMENTS AND ALL DISCREPANCIES AND/OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LEAD ENGINEER/ARCHITECT PRIOR TO BID SUBMITTAL.
16. CONTRACTOR SHALL LIMIT ALL DEMOLITION ACTIVITY TO THAT AREA DELINEATED IN THE DRAWING AND APPROVED BY OFFICIALS.
17. ALL OTHER EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO STORM DRAINAGE, GAS, ELECTRIC, TELEPHONE, AND WATER & SEWER SHALL BE PRESERVED AND PROTECTED AT ALL TIMES AS NEEDED AND AS REQUIRED.

STAKING AND SURVEYING NOTES

STAKING:

- 1. THE CONTRACTOR SHALL PERFORM ALL CONSTRUCTION STAKING AND CONSTRUCTION ACTIVITIES BASED ON

THE LATEST APPROVED DESIGN PLANS AND/OR DESIGN FILE(S) AS PROVIDED AND AS WARRANTED BY CLIENT AND PROJECT NEEDS.

- 2. PRIOR TO COMMENCING CONSTRUCTION STAKING OR CONSTRUCTION ACTIVITIES, THE CONTRACTOR AND/OR STAKING SURVEYOR SHALL CONFIRM WITH THE PROJECT LEAD ENGINEER/ARCHITECT, WHO'S RESPONSIBLE FOR THIS PROJECT, THAT THE LATEST PLANS AND/OR DESIGN FILE(S) ARE BEING UTILIZED.
3. THE ENGINEER/LANDSCAPE ARCHITECT IS NOT RESPONSIBLE FOR OWNERS, CONTRACTORS OR SURVEYORS STAKING OR PERFORMING CONSTRUCTION ACTIVITIES BASED ON OUT-OF-DATE DESIGN PLANS AND/OR DESIGN FILES.
4. CONSTRUCTION STAKING SHALL ADHERE TO THE HORIZONTAL AND VERTICAL DATUM LISTED IN THIS CONSTRUCTION SET AND AS PROVIDED IN THE CORRESPONDING FILES, NOTES, AND/OR DRAWINGS.

TOLERANCES & DISCREPANCIES:

- 5. IF, DURING CONSTRUCTION STAKING OR CONSTRUCTION ACTIVITIES, SURVEY DISCREPANCIES ARE ENCOUNTERED WITH REGARD TO THE DESIGN PLANS OR DESIGN FILE, WORK SHOULD CEASE AND THE LEAD ENGINEER/LANDSCAPE ARCHITECT SHOULD BE NOTIFIED IMMEDIATELY TO RESOLVE THE ISSUE OR ISSUES. THE ENGINEER / LANDSCAPE ARCHITECT CAN NOT BE HELD RESPONSIBLE OR LIABLE FOR ISSUES THAT THEY HAVE NOT RECEIVED NOTIFICATION.
6. THE CONSTRUCTION TOLERANCES SHOWN IN THE CORRESPONDING DRAWINGS, NOTES, AND/OR FILES, IN GENERAL, REPRESENT INDUSTRY STANDARDS. HOWEVER, EXCEPTIONS CAN BE MADE IF IT DETERMINED THAT CERTAIN DEVIATED CONSTRUCTION ACTIVITIES DO NOT ADVERSELY AFFECT THE DESIGN REQUIREMENTS OR FUNCTIONALITY. THE LEAD ENGINEER/LANDSCAPE ARCHITECT WILL EVALUATE CONSTRUCTION ACTIVITIES THAT DEVIATE FROM THE DESIGN PLANS ON A CASE-BY-CASE BASIS. IF IT IS DETERMINED THAT THE CERTAIN DEVIATED CONSTRUCTION ACTIVITIES DO ADVERSELY AFFECT THE DESIGN REQUIREMENTS, FUNCTIONALITY, AND INTENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING OR REPAIRING ALL ITEMS TO THE PLANS AND SPECIFICATIONS AS DETERMINED AND REQUIRED BY DESIGN PROFESSIONAL, AT THE CONTRACTOR'S EXPENSE.

CIVIL ENGINEERING DESIGN TOLERANCES FOR PROJECT:

Table with 3 columns: Item, Tolerance, and Notes. Includes GENERAL GRADING (+/-0.10 FEET), ALL PIPE/CONDUITS (+/-0.05 FEET), DRAINAGE STRUCTURES (+/-0.05 FEET), SANITARY SEWER STRUCTURES (+/-0.05 FEET), STORMWATER POND FEATURES (+/-0.05 FEET), RETAINING WALLS (+/-0.05 FEET), SITE FEATURES (SPOT ELEV., ETC.) (+/-0.05 FEET), UTILITY ELEVATIONS (+/-0.10 FEET), EROSION CONTROL BMPs (+/-0.05 FEET).

AS-BUILT & SPECIFICATIONS:

- 7. THE ENGINEER/LANDSCAPE ARCHITECT SHOULD BE PROVIDED WITH AN AS-BUILT SURVEY OF THE PROJECT FOR REVIEW AND APPROVAL AFTER THE PROJECT IS COMPLETE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING EFFORTS WITH DESIGN PROFESSIONAL.
8. SEE THE PROJECT SPECIFICATIONS FOR ADDITIONAL SITE SPECIFIC REQUIREMENTS REGARDING CONSTRUCTION, MATERIALS, TESTING, AND CERTIFICATIONS.

PROJECT GEOGRAPHICAL INFORMATION

PROJECT PROJECTION & DATUM:

HORIZONTAL DATUM: NAD83 NORTH CAROLINA STATE PLANES, US FOOT
VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

BOUNDARY SURVEY:

SURVEYOR NAME: SEABOARD SURVEYING & PLANNING, INC.
DATE OF SURVEY: 8/26/22
TRACT OR PARCEL: 988406 29 5099
HORIZONTAL DATUM: NAD83
VERTICAL DATUM: NAVD 1988

TOPOGRAPHIC SURVEY:

SURVEYOR NAME: SEABOARD SURVEYING & PLANNING, INC.
DATE OF SURVEY: 8/26/22
TRACT OR PARCEL: 988406 29 5099
HORIZONTAL DATUM: NAD83
VERTICAL DATUM: NAVD 1988

GEOGRAPHICAL INFORMATION SYSTEMS (GIS) DATA UTILIZED:

TOPOGRAPHIC DATA: -
PARCEL DATA: -
ADDITIONAL DATA: -

GEORGIA COMP. R. & REGS. R. 180-6-.09:

THE TOPOGRAPHIC AND ELEVATION DATA SHOWN HEREON WAS OBTAINED FROM TOPOGRAPHIC DATA UTILIZED FOR DESIGN AND IS NOT CERTIFIED AS CORRECT BY THIS ENGINEER. USERS OF THIS DATA DO SO AT THEIR OWN RISK.

REVISION BLOCK table with columns: ISSUE, REVISION DATE & DESCRIPTION, and a grid for revision numbers 1-8.



CARTER ENGINEERING
3651 MARS HILL ROAD
SUITE 2000
WATKINSVILLE, GA 30677

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SITE DEVELOPMENT PLANS FOR WHITE CAP AUTO SPA 2000 N Croatan Hwy Kill Devil Hills, NC 27948

SHEET TITLE: GENERAL NOTES

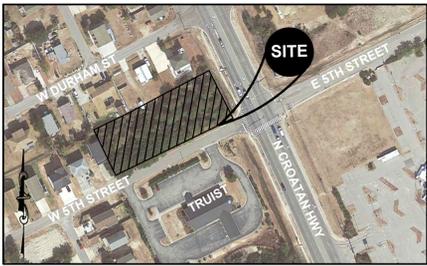
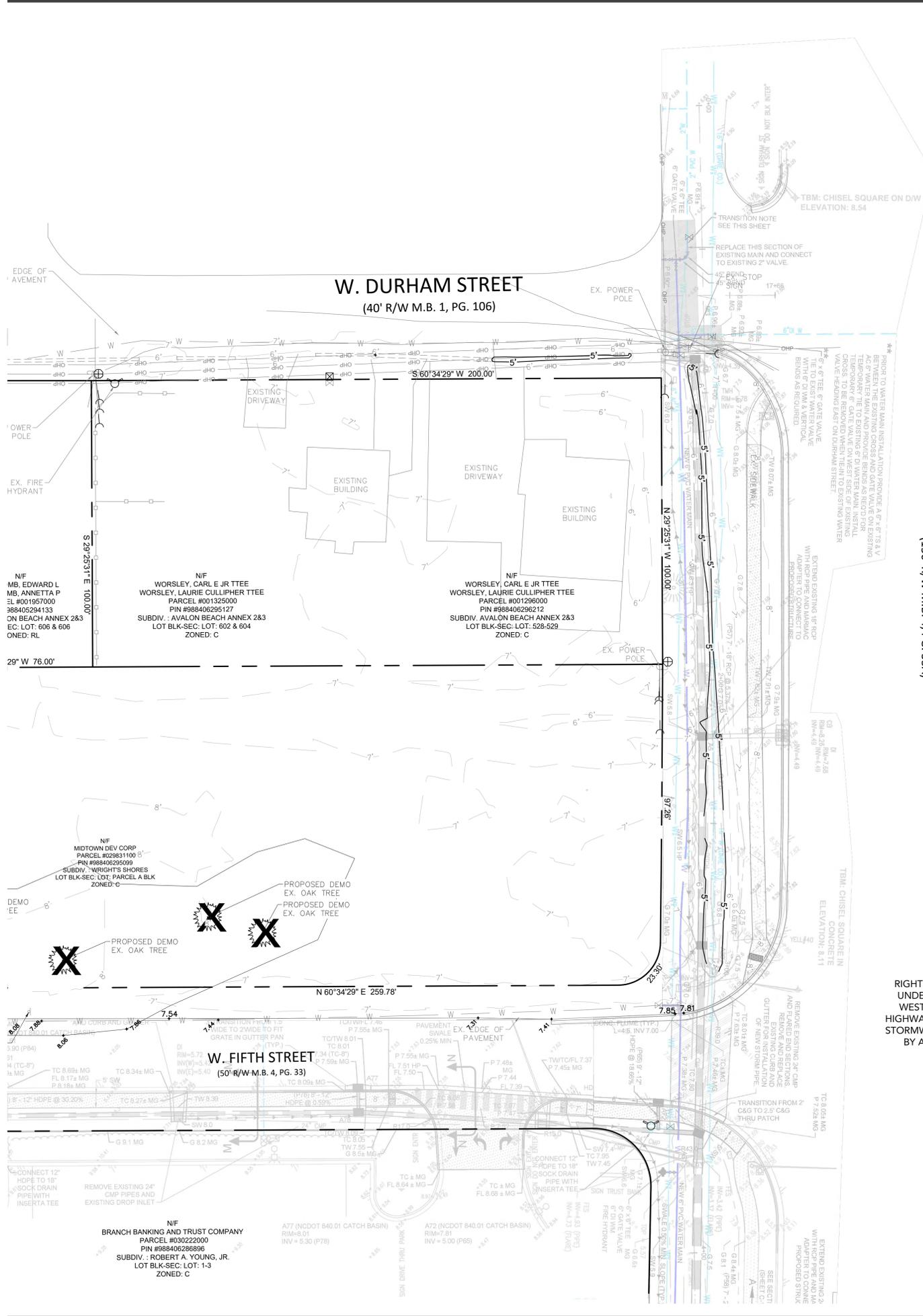
PROJECT NAME: WHITE CAP AUTO SPA

SHEET NUMBER: C 2.0

PROJECT NUMBER: 22019SCW

DATE: 9/20/22

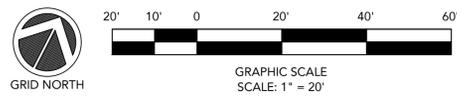
ENGINEER DESIGNER NOT RESPONSIBLE FOR COST CHANGES, OMISSIONS, PRELIMINARY PHASE, BID & QUOTES SHALL BE BASED ON PLANS SETS LABEL ISSUED FOR BID. BID & QUOTES SHALL BE REVISED BASED ON PLANS LABELLED ISSUED FOR CONSTRUCTION. MEANS WITHOUT PRIOR CONSENT, AGREEMENT AND WRITTEN PERMISSION FROM CARTER ENGINEERING CONSULTANTS, INC.



LOCATION MAP  
SCALE: N.T.S.

| PROJECT INFORMATION  |  |
|--|--|
| DRAWING SET PREPARED BY:   | OWNER/DEVELOPER:   |
| CARTER ENGINEERING CONSULTANTS, INC.   | MACALLAN REAL ESTATE   |
| 3651 MARS HILL ROAD, STE 2000<br>WATKINSVILLE, GA 30677<br>CONTACT: JEFF CARTER, P.E.  | 1642 POWERS FERRY RD SE, SUITE 2084<br>MARIETTA, GA 30067<br>CONTACT: MIKE BRADLEY |
| PHONE: 770.725.1200<br>JEFF@CARTERENGINEERING.NET  | PHONE: 404-547-4999<br>MKIMREY@FLOYDVEVGROUP.COM                                   |
| SITE INFORMATION   |  |
| JURISDICTION   | KILL DEVIL HILLS   |
| PROPERTY LOCATION  | 2000 N. CROATAN HWY<br>KILL DEVIL HILLS, NC 27948                                  |
| PARCEL NUMBER  | 029831100  |
| NOTE:  | COMMERCIAL USE (N) RETAIL BUSINESS   |
| CURRENT ZONING   | C (COMMERCIAL ZONE)  |
| PROPOSED ZONING  | C (COMMERCIAL ZONE)  |
| EXISTING USE   | VACANT, COMMERCIAL   |
| PROPOSED USE   | SELF AUTOMATED CAR WASH  |
| BUFFERS REQUIRED   | FRONT: 30 FEET<br>SIDE: 10 FEET (SIDE STREET 15 FEET)<br>REAR: 10 FEET             |
| REQUIRED BUILDING SETBACKS   |  |
| MAXIMUM LOT COVERAGE   | 63.40%   |
| PROPOSED LOT COVERAGE  | 20.081 sq. ft.   |
| MAXIMUM BUILDING HEIGHT  | 50 FEET  |
| PROPOSED BUILDING HEIGHT   | 32 FEET  |
| FLOOR AREA RATIO   | 2.70%  |
| TOTAL SQUARE FOOTAGE OF PARCELS  | 30,797 sq. ft. (0.707 AC)  |
| SANITARY SEWER SERVICE   | PRIVATE SEWER  |
| WATER SERVICE  | TOWN WATER   |
| FEMA FLOOD INSURANCE RATE MAP NO.  | 3720988400K  |
| FEMA FIRM DATE   | 6/19/2020  |
| FEMA SFHA ZONE   | ZONE X   |
| REGULATORY FLOOD PROTECTION ELEVATION = 8', ALL ELEVATIONS REFERENCE TO NAVD88   |  |
| <p>UNDERGROUND UTILITY DISCLAIMER:<br/>THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD INFORMATION AND/OR EXISTING DRAWINGS. CARTER ENGINEERING DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. CARTER ENGINEERING DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE OWNER, HIS/HER EMPLOYEES, CONSULTANTS AND CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE CARTER ENGINEERING IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION REGARDING THE UNDERGROUND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES SHOWN HEREON. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD LOCATE ALL UTILITIES PRIOR TO COMMENCING WORK AND NOTIFY ENGINEER IF A DISCREPANCY IS FOUND. SPECIFICALLY, THE CONTRACTOR SHALL VERIFY THE INVERT ELEVATIONS OF ALL EXISTING STORM AND SANITARY SEWER STRUCTURES PRIOR TO COMMENCEMENT OF STORM AND SANITARY SEWER CONSTRUCTION.</p> |  |

RIGHT OF WAY IMPROVEMENTS CURRENTLY UNDER CONSTRUCTION. PLEASE REFER TO WEST DURHAM STREET, NORTH CROATAN HIGHWAY AND WEST FIFTH STREET WATER AND STORMWATER IMPROVEMENTS PLAN PREPARED BY AMERICAN ENGINEERING FOR MORE INFORMATION



| REVISION BLOCK | REVISION DATE & DESCRIPTION      |
|----------------|----------------------------------|
| 1              | 9/20/22 - INITIAL SUBMITTAL      |
| 2              | 12/07/22 - REVISE SITE PER OWNER |
| 3              | 12/30/22 - TOWN RESUBMITTAL      |
| 4              |                                  |
| 5              |                                  |
| 6              |                                  |
| 7              |                                  |
| 8              |                                  |



**CARTER ENGINEERING**

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**SITE DEVELOPMENT PLANS**  
FOR  
**WHITE CAP AUTO SPA**  
2000 N Croatan Hwy Kill Devil Hills, NC 27948

SHEET TITLE:  
**EXISTING CONDITIONS & DEMOLITION PLAN**

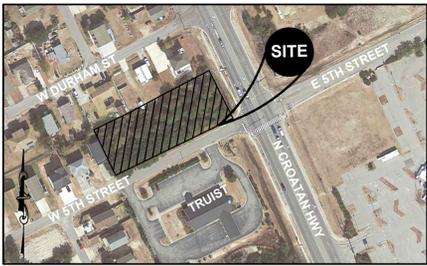
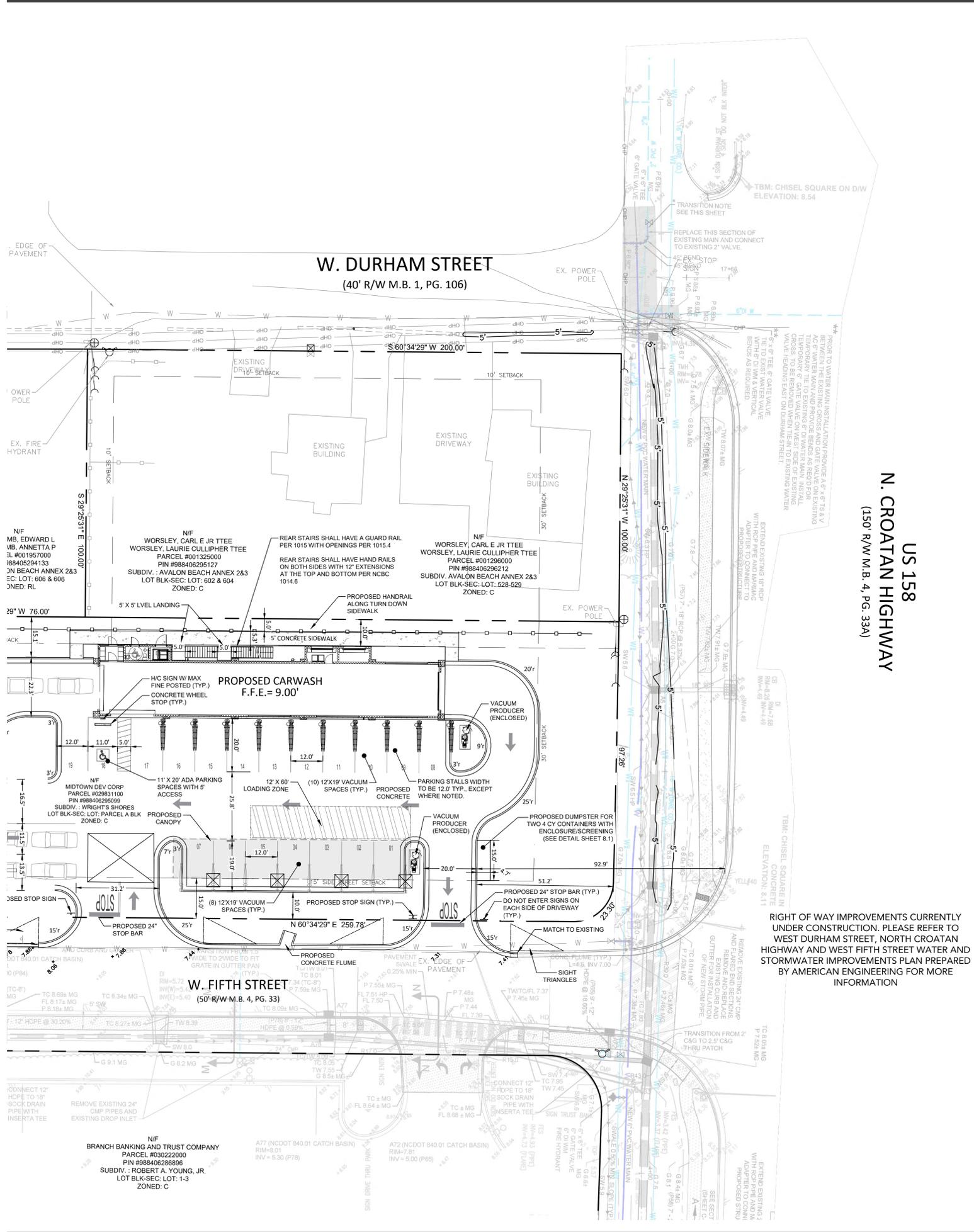
PROJECT NAME:  
**WHITE CAP AUTO SPA**

SHEET NUMBER:  
**C 3.0**

PROJECT NUMBER:  
**22019SCW**

DATE:  
**9/20/22**

CARTER ENGINEERING CONSULTANTS, INC. AND ITS EMPLOYEES, CONSULTANTS AND CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE CARTER ENGINEERING IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION REGARDING THE UNDERGROUND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES SHOWN HEREON. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD LOCATE ALL UTILITIES PRIOR TO COMMENCING WORK AND NOTIFY ENGINEER IF A DISCREPANCY IS FOUND. SPECIFICALLY, THE CONTRACTOR SHALL VERIFY THE INVERT ELEVATIONS OF ALL EXISTING STORM AND SANITARY SEWER STRUCTURES PRIOR TO COMMENCEMENT OF STORM AND SANITARY SEWER CONSTRUCTION.



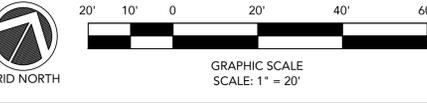
LOCATION MAP  
SCALE: N.T.S.

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| PROPOSED BUILDING HEIGHT   | 32 FEET  |
| FLOOR AREA RATIO   | 2.70%  |
| TOTAL SQUARE FOOTAGE OF PARCELS  | 30,797 sq. ft. (0.707 AC)  |
| SANITARY SEWER SERVICE   | PRIVATE SEWER  |
| WATER SERVICE  | TOWN WATER   |
| FEMA FLOOD INSURANCE RATE MAP NO.  | 3720988400K  |
| FEMA FIRM DATE   | 6/19/2020  |
| FEMA SFHA ZONE   | ZONE X   |
| REGULATORY FLOOD PROTECTION ELEVATION = 8', ALL ELEVATIONS REFERENCE TO NAVD88   |  |
| UNDERGROUND UTILITY DISCLAIMER:<br>THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD INFORMATION AND/OR EXISTING DRAWINGS. CARTER ENGINEERING DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. CARTER ENGINEERING DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE OWNER, HIS/HER EMPLOYEES, CONSULTANTS AND CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE CARTER ENGINEERING IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION REGARDING THE UNDERGROUND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES SHOWN HEREON. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD LOCATE ALL UTILITIES PRIOR TO COMMENCING WORK AND NOTIFY ENGINEER IF A DISCREPANCY IS FOUND. SPECIFICALLY, THE CONTRACTOR SHALL VERIFY THE INVERT ELEVATIONS OF ALL EXISTING STORM AND SANITARY SEWER STRUCTURES PRIOR TO COMMENCEMENT OF STORM AND SANITARY SEWER CONSTRUCTION. |  |

| PARKING DATA      |  |
|-------------------|--|
| Parking Required: | 1 space for every 3 employees            |
| 3 - Employees     | = 1 Parking Spaces Required              |
| Required Parking  | = 1 Parking Spaces Required (1 Provided) |
| Handicap Parking  | = 1 Required (1 Provided)                |

THE PROPOSED TOWN PROJECT WORK IS UNDER CONSTRUCTION BY OTHERS

RIGHT OF WAY IMPROVEMENTS CURRENTLY UNDER CONSTRUCTION. PLEASE REFER TO WEST DURHAM STREET, NORTH CROATAN HIGHWAY AND WEST FIFTH STREET WATER AND STORMWATER IMPROVEMENTS PLAN PREPARED BY AMERICAN ENGINEERING FOR MORE INFORMATION



GRID NORTH

| REVISION BLOCK | ISSUE    | DATE                  | DESCRIPTION |
|----------------|----------|-----------------------|-------------|
| 1              | 12/07/22 | INITIAL SUBMITTAL     |             |
| 2              | 12/07/22 | REVISE SITE PER OWNER |             |
| 3              | 12/30/22 | TOWN RESUBMITTAL      |             |
| 4              |          |                       |             |
| 5              |          |                       |             |
| 6              |          |                       |             |
| 7              |          |                       |             |
| 8              |          |                       |             |



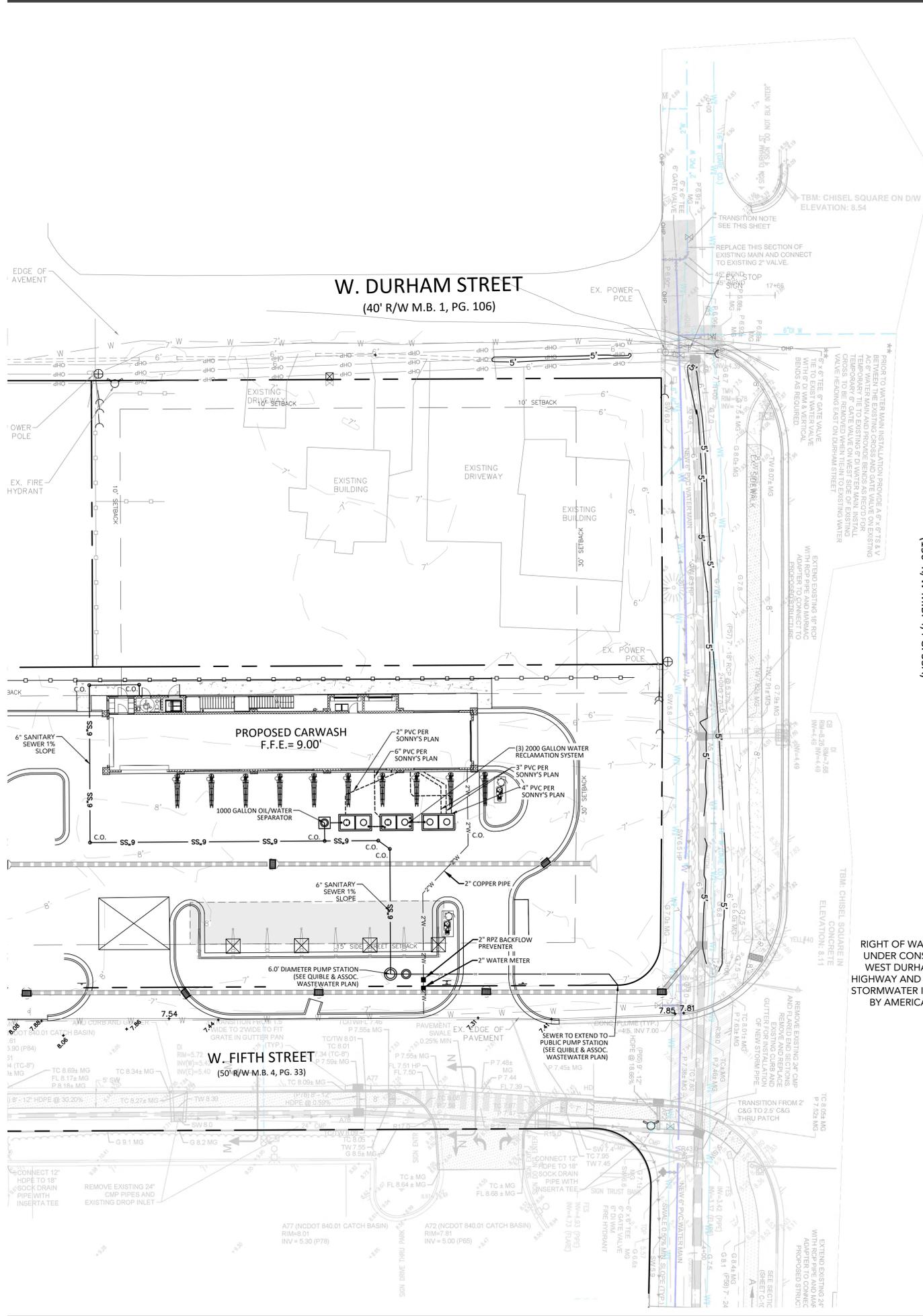
CARTER ENGINEERING

CARTER ENGINEERING  
3651 MARS HILL ROAD  
SUITE 2000  
WATKINSVILLE, GA 30067  
P: 770.725.1200  
F: 770.725.1204  
www.carterengineering.com

SITE DEVELOPMENT PLANS  
FOR  
WHITE CAP AUTO SPA  
2000 N Croatan Hwy Kill Devil Hills, NC 27948

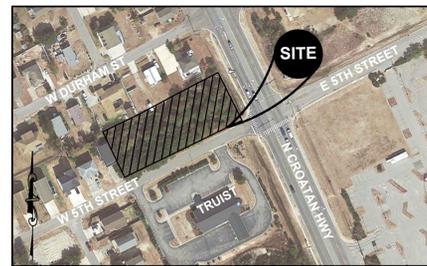
|                 |                    |
|-----------------|--------------------|
| SHEET TITLE:    | SITE PLAN          |
| PROJECT NAME:   | WHITE CAP AUTO SPA |
| SHEET NUMBER:   | C 4.0              |
| PROJECT NUMBER: | 22019SCW           |
| DATE:           | 9/20/22            |

ENGINEER DESIGNER NOT RESPONSIBLE FOR COST CHANGES DURING PRELIMINARY PHASE. BIDDING NOTES SHALL BE BASED ON PLAN SETS LABEL 'ISSUED'.  
 FOR BIDDING & CLOSURES SHALL BE REVISED BASED ON PLAN SETS LABEL 'ISSUED FOR CONSTRUCTION'.  
 CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL UTILITIES PRIOR TO COMMENCING WORK AND NOTIFY ENGINEER IF A DISCREPANCY IS FOUND. SPECIFICALLY, THE CONTRACTOR SHALL VERIFY THE INVERT ELEVATIONS OF ALL EXISTING STORM AND SANITARY SEWER STRUCTURES PRIOR TO COMMENCEMENT OF STORM AND SANITARY SEWER CONSTRUCTION.



US 158  
 N. CROATIAN HIGHWAY  
 (150' R/W M.B. 4, PG. 33A)

RIGHT OF WAY IMPROVEMENTS CURRENTLY UNDER CONSTRUCTION. PLEASE REFER TO WEST DURHAM STREET, NORTH CROATIAN HIGHWAY AND WEST FIFTH STREET WATER AND STORMWATER IMPROVEMENTS PLAN PREPARED BY AMERICAN ENGINEERING FOR MORE INFORMATION



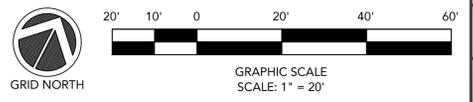
LOCATION MAP  
SCALE: N.T.S.

| PROJECT INFORMATION   |  |
|---|--|
| DRAWING SET PREPARED BY:  | CARTER ENGINEERING CONSULTANTS, INC.   |
| OWNER/DEVELOPER:  | MACALLAN REAL ESTATE   |
| 3651 MARS HILL ROAD, STE 2000<br>WATKINSVILLE, GA 30677<br>CONTACT: JEFF CARTER, P.E. | 1642 POWERS FERRY RD SE, SUITE 2084<br>MARIETTA, GA 30067<br>CONTACT: MIKE BRADLEY |
| PHONE: 770.725.1200<br>JEFF@CARTERENGINEERING.NET                                     | PHONE: 404-547-4999<br>MKIMREY@LOYDEVEGROUP.COM                                    |

| SITE INFORMATION   |  |
|--|--|
| JURISDICTION   | KILL DEVIL HILLS   |
| PROPERTY LOCATION  | 2000 N. CROATIAN HWY<br>KILL DEVIL HILLS, NC 27948                     |
| PARCEL NUMBER  | 029831100  |
| NOTE:  | COMMERCIAL USE (N) RETAIL BUSINESS                                     |
| CURRENT ZONING   | C (COMMERCIAL ZONE)  |
| PROPOSED ZONING  | C (COMMERCIAL ZONE)  |
| EXISTING USE   | VACANT, COMMERCIAL   |
| PROPOSED USE   | SELF AUTOMATED CAR WASH  |
| BUFFERS REQUIRED   | FRONT: 30 FEET<br>SIDE: 10 FEET (SIDE STREET 15 FEET)<br>REAR: 10 FEET |
| REQUIRED BUILDING SETBACKS   |  |
| MAXIMUM LOT COVERAGE   | 63.40%   |
| PROPOSED LOT COVERAGE  | 20,081 sq. ft.   |
| MAXIMUM BUILDING HEIGHT  | 50 FEET  |
| PROPOSED BUILDING HEIGHT   | 32 FEET  |
| FLOOR AREA RATIO   | 2.70%  |
| TOTAL SQUARE FOOTAGE OF PARCELS  | 30,797 sq. ft. (0.707 AC)  |
| SANITARY SEWER SERVICE   | PRIVATE SEWER  |
| WATER SERVICE  | TOWN WATER   |
| FEMA FLOOD INSURANCE RATE MAP NO.  | 3720988400K  |
| FEMA FIRM DATE   | 6/19/2020  |
| FEMA SFHA ZONE   | ZONE X   |
| REGULATORY FLOOD PROTECTION ELEVATION = 8', ALL ELEVATIONS REFERENCE TO NAVD88 |  |

**UNDERGROUND UTILITY DISCLAIMER:**  
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**NOTE:**  
Town of Kill Devil Hills to install all Taps and Meters for services 2 inches or less.



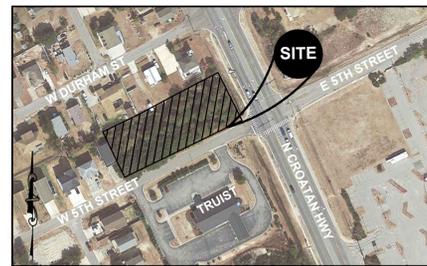
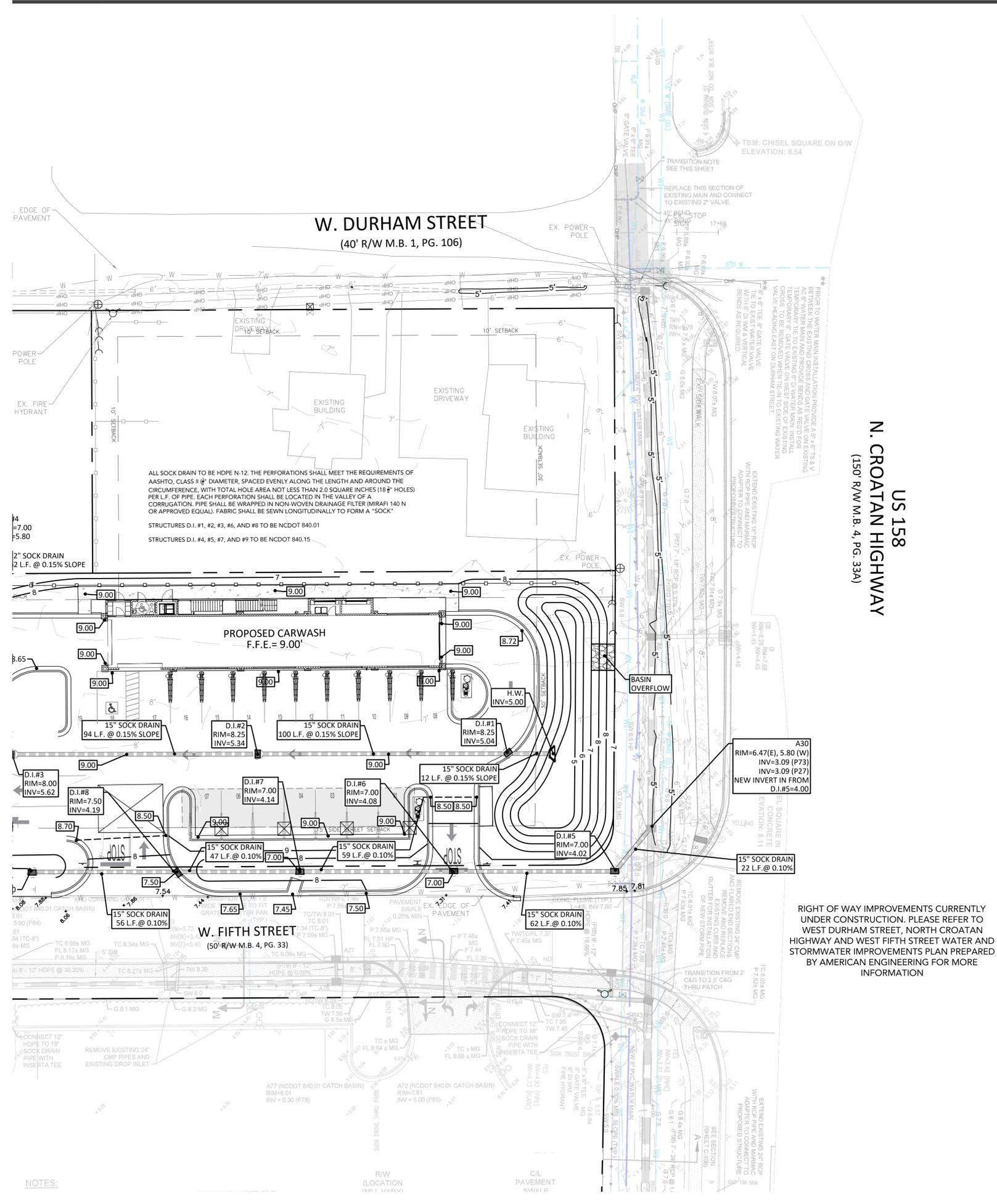
| REVISION BLOCK |                                  |
|----------------|----------------------------------|
| ISSUE          | REVISION DATE & DESCRIPTION      |
| 1              | 9/20/22 - INITIAL SUBMITTAL      |
| 2              | 12/07/22 - REVISE SITE PER OWNER |
| 3              | 12/30/22 - TOWN RESUBMITTAL      |
| 4              |                                  |
| 5              |                                  |
| 6              |                                  |
| 7              |                                  |
| 8              |                                  |

**CARTER ENGINEERING**

**SITE DEVELOPMENT PLANS**  
 FOR  
**WHITE CAP AUTO SPA**  
 2000 N Croatian Hwy Kill Devil Hills, NC 27948

|                 |                    |
|-----------------|--------------------|
| SHEET TITLE:    | UTILITY PLAN       |
| PROJECT NAME:   | WHITE CAP AUTO SPA |
| SHEET NUMBER:   | C 5.0              |
| PROJECT NUMBER: | 22019SCW           |
| DATE:           | 9/20/22            |

ENGINEER DESIGNER NOT RESPONSIBLE FOR COST CHANGES DURING PRELIMINARY PHASE. BID & QUOTES SHALL BE BASED ON PLANS SETS LABEL. ISSUED FOR BID. BID & QUOTES SHALL BE REVISED BASED ON PLANS LABELLED "ISSUED FOR CONSTRUCTION".

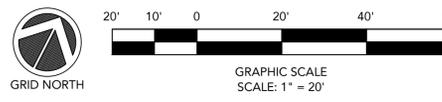


LOCATION MAP  
SCALE: N.T.S.

| PROJECT INFORMATION   |  |
|---|--|
| DRAWING SET PREPARED BY:  | CARTER ENGINEERING CONSULTANTS, INC.   |
| OWNER/DEVELOPER:  | MACALLAN REAL ESTATE   |
| 3651 MARS HILL ROAD, STE 2000<br>WATKINSVILLE, GA 30677<br>CONTACT: JEFF CARTER, P.E. | 1642 POWERS FERRY RD SE, SUITE 2084<br>MARIETTA, GA 30067<br>CONTACT: MIKE BRADLEY |
| PHONE: 770.725.1200<br>JEFF@CARTERENGINEERING.NET                                     | PHONE: 404-547-4999<br>MKIMREY@FLOYDDEVGROUP.COM                                   |
| SITE INFORMATION  |  |
| JURISDICTION:   | KILL DEVIL HILLS   |
| PROPERTY LOCATION:  | 2000 N. CROATAN HWY<br>KILL DEVIL HILLS, NC 27948                                  |
| PARCEL NUMBER:  | 029831100  |
| NOTE:   | COMMERCIAL USE (N) RETAIL BUSINESS   |
| CURRENT ZONING:   | C (COMMERCIAL ZONE)  |
| PROPOSED ZONING:  | C (COMMERCIAL ZONE)  |
| EXISTING USE:   | VACANT, COMMERCIAL   |
| PROPOSED USE:   | SELF AUTOMATED CAR WASH  |
| BUFFERS REQUIRED:   | FRONT: 10 FEET<br>SIDE: 10 FEET (SIDE STREET 15 FEET)<br>REAR: 10 FEET             |
| REQUIRED BUILDING SETBACKS:   |  |
| MAXIMUM LOT COVERAGE:   | 63.40%   |
| PROPOSED LOT COVERAGE:  | 20,081 sq. ft.   |
| MAXIMUM BUILDING HEIGHT:  | 50 FEET  |
| PROPOSED BUILDING HEIGHT:   | 32 FEET  |
| FLOOR AREA RATIO:   | 2.70%  |
| TOTAL SQUARE FOOTAGE OF PARCELS:  | 30,797 sq. ft. (0.707 AC)  |
| SANITARY SEWER SERVICE:   | PRIVATE SEWER  |
| WATER SERVICE:  | TOWN WATER   |
| FEMA FLOOD INSURANCE RATE MAP NO.:  | 372098400K   |
| FEMA FIRM DATE:   | 6/19/2020  |
| FEMA SFHA ZONE:   | ZONE X   |
| REGULATORY FLOOD PROTECTION ELEVATION = 8', ALL ELEVATIONS REFERENCE TO NAVD88        |  |

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| HYDROLOGY   |  |
| TOTAL AREA = 0.707 ACRES<br>IMP AREA = 0.448 ACRES<br>63.4% IMPERVIOUS  |  |
| COMPOSITE CURVE NUMBER<br>$(0.448)(100) + (0.259)(39) = 78$<br>0.707 ACRES  |  |
| HYDROLOGIC SOIL GROUP A   |  |
| SEE HYDROLOGY REPORT FOR<br>DETAILED STORMWATER<br>NARRATIVE AND CALCULATIONS   |  |

RIGHT OF WAY IMPROVEMENTS CURRENTLY UNDER CONSTRUCTION. PLEASE REFER TO WEST DURHAM STREET, NORTH CROATAN HIGHWAY AND WEST FIFTH STREET WATER AND STORMWATER IMPROVEMENTS PLAN PREPARED BY AMERICAN ENGINEERING FOR MORE INFORMATION



**SITE DEVELOPMENT PLANS FOR**

**WHITE CAP AUTO SPA**  
2000 N Croatan Hwy Kill Devil Hills, NC 27948

| REVISION | DATE     | DESCRIPTION           |
|----------|----------|-----------------------|
| 1        | 9/20/22  | INITIAL SUBMITTAL     |
| 2        | 12/07/22 | REVISE SITE PER OWNER |
| 3        | 12/30/22 | TOWN RESUBMITTAL      |
| 4        |          |                       |
| 5        |          |                       |
| 6        |          |                       |
| 7        |          |                       |
| 8        |          |                       |

**CARTER ENGINEERING**  
3651 MARS HILL ROAD  
SUITE 2000  
WATKINSVILLE, GA 30677  
P: 770.725.1200  
F: 770.725.1204  
www.carterengineering.com

**SHEET TITLE:**  
GRADING AND DRAINAGE PLAN

**PROJECT NAME:**  
WHITE CAP AUTO SPA

**SHEET NUMBER:**  
C 6.0

**PROJECT NUMBER:**  
22019SCW

**DATE:**  
9/20/22

ENGINEER DESIGNER NOT RESPONSIBLE FOR COST CHANGES DURING PRELIMINARY PHASE. BIDDING NOTES SHALL BE BASED ON PLAN SETS LABEL 'ISSUED FOR CONSTRUCTION'. FOR BID: BID & CLOSURES SHALL BE REVISED BASED ON PLAN SETS LABEL 'ISSUED FOR CONSTRUCTION'.

**Donny's Carwash Construction Sequence**

ur concurrently unless specifically noted

ng land-disturbing activities. A  
disturbances greater than 1 ac.

allation of perimeter controls and initial  
for the installation of silt fence.  
, barriers) and inlet protection must be

of diversion to those structures must be  
preceding to the next step.  
sediment & erosion control measures for

t protection.

paving and the removal of debris. Once  
ation of the proposed storm system and

crete paving, landscaping/ permanent

ontrol structures after entire area draining to  
/ner/operator should have the SWPPP  
removal of temporary structures.)  
ection.

asures must continue until the site is  
ved.

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

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

**SECTION E: GROUND STABILIZATION**

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

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

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

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

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

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

**EQUIPMENT AND VEHICLE MAINTENANCE**

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

**LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE**

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

**PAINT AND OTHER LIQUID WASTE**

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

**PORTABLE TOILETS**

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

**EARTHEN STOCKPILE MANAGEMENT**

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

**CONCRETE WASHOUTS**

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

**HERBICIDES, PESTICIDES AND RODENTICIDES**

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

**HAZARDOUS AND TOXIC WASTE**

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

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

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

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

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

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

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

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

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

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

**SECTION B: RECORDKEEPING**

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

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

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

- This General Permit as well as the Certificate of Coverage, after it is received.
- Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

**3. Documentation to be Retained for Three Years**  
All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. (40 CFR 122.41.)

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

**SECTION C: REPORTING**

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

- Visible sediment deposition in a stream or wetland.
- Oil spills if:
  - They are 25 gallons or more,
  - They are less than 25 gallons but cannot be cleaned up within 24 hours,
  - They cause sheen on surface waters (regardless of volume), or
  - They are within 100 feet of surface waters (regardless of volume).
- Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref. 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref. 40 CFR 302.4) or G.S. 143-215.85.
- Anticipated bypasses and unanticipated bypasses.
- Noncompliance with the conditions of this permit that may endanger health or the environment.

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

| Occurrence   | Reporting Timeframes (After Discovery) and Other Requirements   |
|--|---|
| (a) Visible sediment deposition in a stream or wetland   | <ul style="list-style-type: none"> <li><b>Within 24 hours</b>, an oral or electronic notification.</li> <li><b>Within 7 calendar days</b>, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis.</li> <li>If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices. If staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.</li> </ul> |
| (b) Oil spills and release of hazardous substances per Item 1(b)(1) above  | <ul style="list-style-type: none"> <li><b>Within 24 hours</b>, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.</li> </ul>   |
| (c) Anticipated bypasses (40 CFR 122.41(m)(3))   | <ul style="list-style-type: none"> <li><b>A report at least ten days before the date of the bypass, if possible.</b> The report shall include an evaluation of the anticipated quality and effect of the bypass.</li> </ul>   |
| (d) Unanticipated bypasses (40 CFR 122.41(m)(3))   | <ul style="list-style-type: none"> <li><b>Within 24 hours</b>, an oral or electronic notification.</li> <li><b>Within 7 calendar days</b>, a report that includes an evaluation of the quality and effect of the bypass.</li> </ul>   |
| (e) Noncompliance with the conditions of this permit that may endanger health or the environment (40 CFR 122.41(i)(7)) | <ul style="list-style-type: none"> <li><b>Within 24 hours</b>, an oral or electronic notification.</li> <li><b>Within 7 calendar days</b>, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR 122.41(i)(6)).</li> <li>Division staff may waive the requirement for a written report on a case-by-case basis.</li> </ul>  |

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

**REVISION BLOCK**

| ISSUE | REVISION DATE & DESCRIPTION      |
|-------|----------------------------------|
| 1     | 9/20/22 - INITIAL SUBMITTAL      |
| 2     | 12/07/22 - REVISE SITE PER OWNER |
| 3     | 12/30/22 - TOWN RESUBMITTAL      |
| 4     |                                  |
| 5     |                                  |
| 6     |                                  |
| 7     |                                  |
| 8     |                                  |

**ENGINEER**  
NORTH CAROLINA PROFESSIONAL ENGINEER  
JAMES J. CARTER

**CARTER ENGINEERING**  
3651 MARS HILL ROAD  
SUITE 2000  
WATKINSVILLE, GA 30677  
P: 770.725.1200  
F: 770.725.1204  
www.carterengineering.com

**SITE DEVELOPMENT PLANS FOR**  
**WHITE CAP AUTO SPA**  
2000 N Croatan Hwy Kill Devil Hills, NC 27948

**SHEET TITLE:**  
ES&PC NOTES

**PROJECT NAME:**  
WHITE CAP AUTO SPA

**SHEET NUMBER:**  
C 7.0

**PROJECT NUMBER:**  
22019SCW

**DATE:**  
9/20/22

**DISCLAIMER:** ENGINEER DESIGNER NOT RESPONSIBLE FOR COST CHANGES. PRELIMINARY PHASE. BIDDING NOTES SHALL BE BASED ON PLANS SETS LABEL ISSUED FOR BID. BID & QUOTES SHALL BE REVISED BASED ON PLANS LABELLED ISSUED FOR CONSTRUCTION.

**TEMPORARY SEDIMENT TRAP CALCULATION:**  
**TRAP A:**

- 0.707 AC X 3600 CUBIC FEET PER ACRE
- 2,545 CUBIC FEET REQUIRED
- 2,654 CUBIC FEET PROPOSED
- REQUIRED SURFACE AREA
- $Q = 0.6 \times 9.43 \times 0.707 = 4.00$  cfs
- $4.00 \text{ cfs} \times 0.01 \text{ S.F.} / \text{cfs} = 0.04 \text{ AC}$
- $0.04 \text{ AC} \times 43,560 = 1,743 \text{ S.F. REQUIRED}$
- 1,980 S.F. PROVIDED

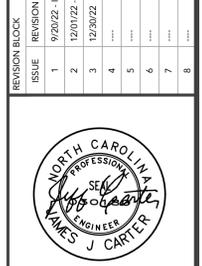
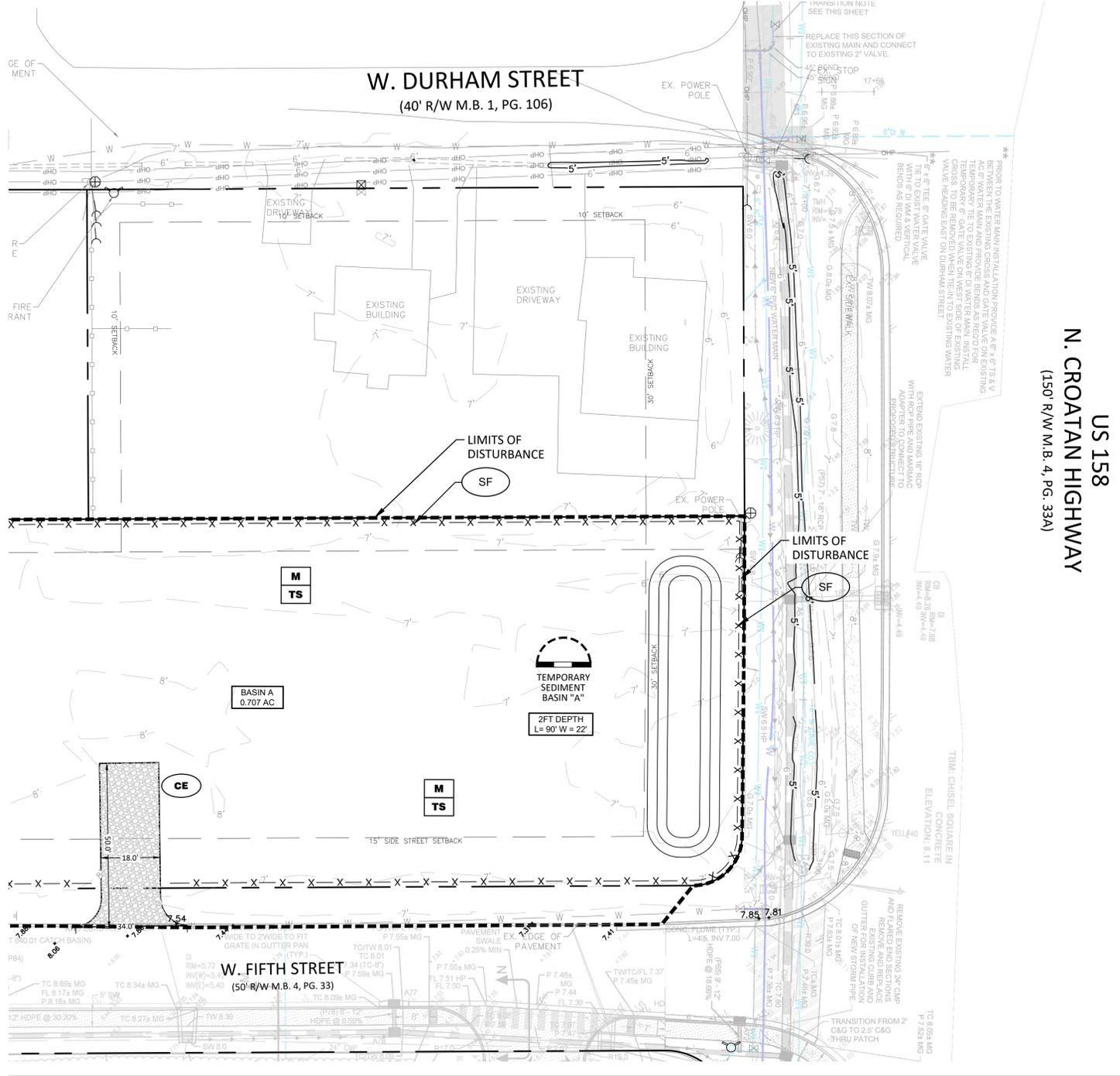
- EROSION CONTROL NOTES:**
1. DEVELOPER/OWNER: MACALLAN REAL ESTATE.
  2. NAME AND PHONE NUMBER OF THE 24-HOUR CONTACT PERSON FOR EROSION, SEDIMENTATION AND POLLUTION CONTROLS IS: MIKE BRADLEY: (404) 647 4999
  3. TOTAL PROJECT AREA = 0.707
  4. TOTAL DISTURBED AREA = 0.707
  5. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.
  6. EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES SHALL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION AND SEDIMENT CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
  7. SEDIMENT STORAGE MAINTENANCE INDICATORS MUST BE INSTALLED IN SEDIMENT STORAGE STRUCTURES, INDICATING THE FULL VOLUME.
  8. MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES, WHETHER TEMPORARY OR PERMANENT, SHALL AT ALL TIMES BE THE RESPONSIBILITY OF THE PROPERTY OWNER.
  9. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
  10. ALL FILL SLOPES SHALL HAVE SILT FENCE PLACED AT THE SLOPE'S TOE
  11. CONCENTRATED FLOW AREAS AND ALL SLOPES STEEPER THAN 2.5:1 WITH A HEIGHT OF TEN FEET OR GREATER SHALL BE STABILIZED WITH APPROPRIATE EROSION CONTROL MATTING OR BLANKET.
  12. THE PROFESSIONAL WHO SEALS THIS PLAN CERTIFIES UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY THE PROFESSIONAL OR THE PROFESSIONAL'S AUTHORIZED AGENT, UNDER THE PROFESSIONAL'S DIRECT SUPERVISION.
  13. UPON NOTIFICATION AND AUTHORIZATION OF THE OWNER, THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS RESPONSIBLE FOR INSPECTING THE INSTALLATION OF THE BMP'S WITHIN 7 DAYS AFTER INITIAL CONSTRUCTION ACTIVITIES BEGINS.
  14. THE RECEIVING WATER(S) IS THE COLINGTON CREEK.
  15. AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE SIGNIFICANT EFFECT ON BMP'S WITH HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
  16. MAINTENANCE OF ALL EROSION CONTROL MEASURES, WEATHER TEMPORARY OR PERMANENT, SHALL AT ALL TIME BE THE RESPONSIBILITY OF THE OWNER.

| BEST MANAGEMENT PRACTICE (BMP)             | ABBREVIATION | SYMBOL |
|--|--------------|--------|
| <b>SITE PREPARATION</b>                    |              |        |
| CONSTRUCTION EXIT                          | CE           |        |
| LAND GRADING                               | LG           |        |
| <b>SURFACE STABILIZATION</b>               |              |        |
| TEMPORARY SEDIMENT TRAP                    | TST          |        |
| <b>SURFACE STABILIZATION</b>               |              |        |
| MULCHING                                   | MU           |        |
| TEMPORARY SEEDING                          | TS           |        |
| SODDING                                    | SOD          |        |
| <b>INLET PROTECTION</b>                    |              |        |
| HARDWARE CLOTH AND GRAVEL INLET PROTECTION | HIP          |        |
| SILT SACK INLET PROTECTION                 | SD2-SS       |        |
| <b>SEDIMENT CONTROL</b>                    |              |        |
| SEDIMENT FENCE                             | SF           |        |
| <b>RUNOFF CONTROL MEASURES</b>             |              |        |
| TEMPORARY DIVERSION                        | TD           |        |



LOCATION MAP  
SCALE: N.T.S.

| PROJECT INFORMATION  |  |
|--|--|
| DRAWING SET PREPARED BY:   | OWNER/DEVELOPER:   |
| CARTER ENGINEERING CONSULTANTS, INC.   | MACALLAN REAL ESTATE   |
| 3651 MARS HILL ROAD, STE 2000<br>WATKINSVILLE, GA 30677<br>CONTACT: JEFF CARTER, P.E.  | 1642 POWERS FERRY RD SE, SUITE 2084<br>MARIETTA, GA 30067<br>CONTACT: MIKE BRADLEY |
| PHONE: 770.725.1200<br>JEFF@CARTERENGINEERING.NET  | PHONE: 404-647-4999<br>MKIMREY@FLOYDDEVGROUP.COM                                   |
| SITE INFORMATION   |  |
| JURISDICTION   | KILL DEVIL HILLS   |
| PROPERTY LOCATION  | 2000 N. CROATAN HWY<br>KILL DEVIL HILLS, NC 27948                                  |
| PARCEL NUMBER  | 029831100  |
| NOTE:  | COMMERCIAL USE (N) RETAIL BUSINESS   |
| CURRENT ZONING   | C (COMMERCIAL ZONE)  |
| PROPOSED ZONING  | C (COMMERCIAL ZONE)  |
| EXISTING USE   | VACANT, COMMERCIAL   |
| PROPOSED USE   | SELF AUTOMATED CAR WASH  |
| BUFFERS REQUIRED   | FRONT: 30- FEET<br>SIDE: 10- FEET (SIDE STREET 15 FEET)<br>REAR: 10- FEET          |
| REQUIRED BUILDING SETBACKS   |  |
| MAXIMUM LOT COVERAGE   | 63.40%   |
| PROPOSED LOT COVERAGE  | 20.081 sq. ft.   |
| MAXIMUM BUILDING HEIGHT  | 50- FEET   |
| PROPOSED BUILDING HEIGHT   | 32- FEET   |
| FLOOR AREA RATIO   | 2.70%  |
| TOTAL SQUARE FOOTAGE OF PARCELS  | 30,797 sq. ft. (0.707 AC)  |
| SANITARY SEWER SERVICE   | PRIVATE SEWER  |
| WATER SERVICE  | TOWN WATER   |
| FEMA FLOOD INSURANCE RATE MAP NO.  | 3720988400K  |
| FEMA FIRM DATE   | 6/19/2020  |
| FEMA SFHA ZONE   | ZONE X   |
| REGULATORY FLOOD PROTECTION ELEVATION = 8', ALL ELEVATIONS REFERENCE TO NAVD88   |  |
| UNDERGROUND UTILITY DISCLAIMER:<br>THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD INFORMATION AND/OR EXISTING DRAWINGS. CARTER ENGINEERING DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. CARTER ENGINEERING DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE OWNER, HIS/HER EMPLOYEES, CONSULTANTS AND CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE CARTER ENGINEERING IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION REGARDING THE UNDERGROUND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES SHOWN HEREON. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD LOCATE ALL UTILITIES PRIOR TO COMMENCING WORK AND NOTIFY ENGINEER IF A DISCREPANCY IS FOUND. SPECIFICALLY, THE CONTRACTOR SHALL VERIFY THE INVERT ELEVATIONS OF ALL EXISTING STORM AND SANITARY SEWER STRUCTURES PRIOR TO COMMENCEMENT OF STORM AND SANITARY SEWER CONSTRUCTION. |  |



CARTER ENGINEERING  
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**SITE DEVELOPMENT PLANS**  
 FOR  
**WHITE CAP AUTO SPA**  
 2000 N Croatan Hwy Kill Devil Hills, NC 27948

|                 |                       |
|-----------------|-----------------------|
| SHEET TITLE:    | ES&PC<br>PHASE I      |
| PROJECT NAME:   | WHITE CAP<br>AUTO SPA |
| SHEET NUMBER:   | C 7.1                 |
| PROJECT NUMBER: | 22019SCW              |
| DATE:           | 9/20/22               |

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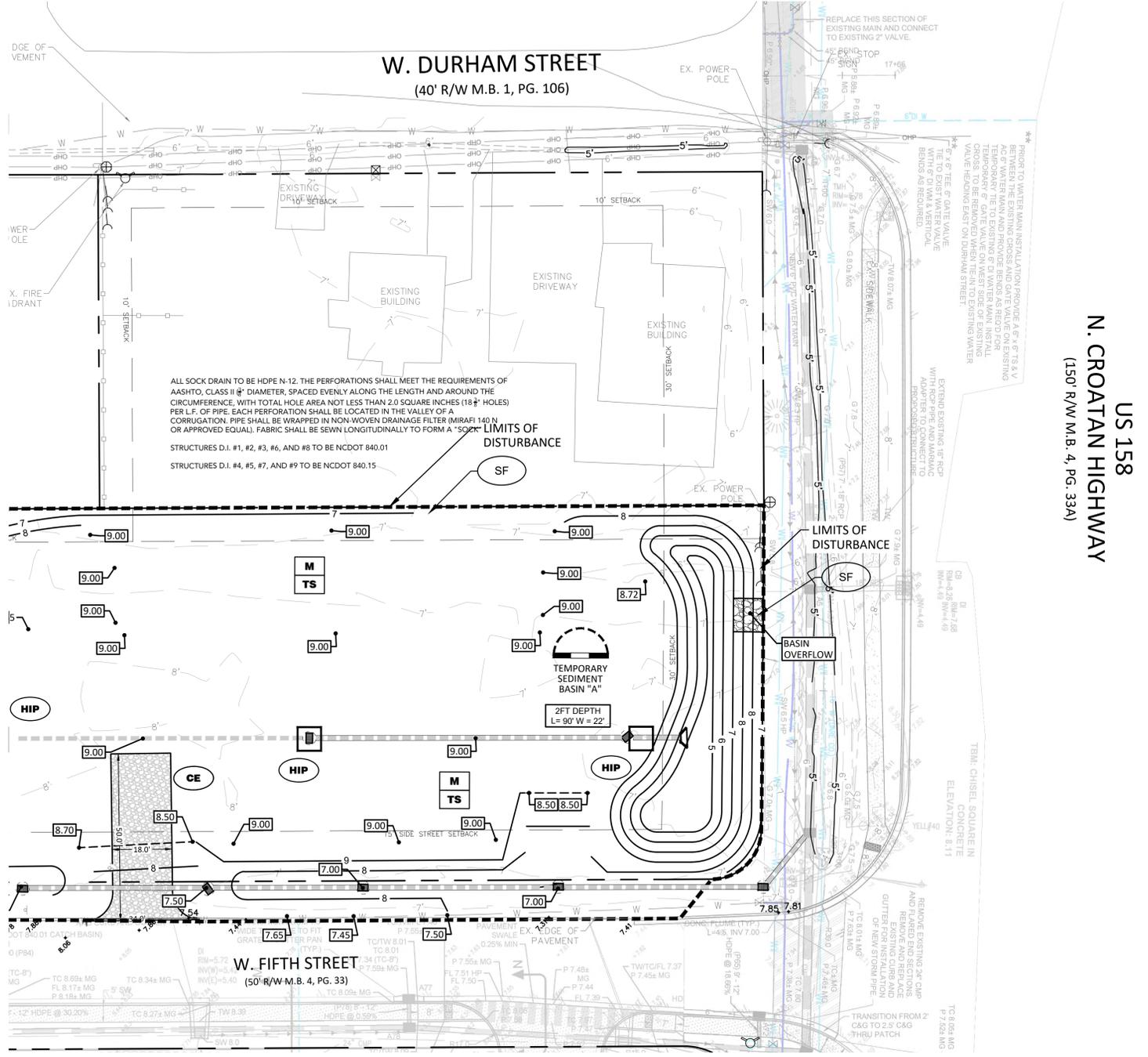
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  - THE RECEIVING WATER(S) IS THE COLINGTON CREEK.
  - AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE SIGNIFICANT EFFECT ON BMP'S WITH HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
  - MAINTENANCE OF ALL EROSION CONTROL MEASURES, WEATHER TEMPORARY OR PERMANENT, SHALL AT ALL TIME BE THE RESPONSIBILITY OF THE OWNER.

| EROSION CONTROL LEGEND                     |              |        |
|--|--------------|--------|
| BEST MANAGEMENT PRACTICE (BMP)             | ABBREVIATION | SYMBOL |
| SITE PREPARATION                           |              |        |
| CONSTRUCTION EXIT                          | CE           |        |
| LAND GRADING                               | LG           |        |
| SURFACE STABILIZATION                      |              |        |
| TEMPORARY SEDIMENT TRAP                    | TST          |        |
| SURFACE STABILIZATION                      |              |        |
| MULCHING                                   | MU           |        |
| TEMPORARY SEEDING                          | TS           |        |
| SODDING                                    | SOD          |        |
| INLET PROTECTION                           |              |        |
| HARDWARE CLOTH AND GRAVEL INLET PROTECTION | HIP          |        |
| SILT SACK INLET PROTECTION                 | SD2-SS       |        |
| SEDIMENT CONTROL                           |              |        |
| SEDIMENT FENCE                             | SF           |        |
| RUNOFF CONTROL MEASURES                    |              |        |
| TEMPORARY DIVERSION                        | TD           |        |



LOCATION MAP  
SCALE: N.T.S.

| PROJECT INFORMATION  |  |
|--|--|
| DRAWING SET PREPARED BY:   | OWNER/DEVELOPER:   |
| CARTER ENGINEERING CONSULTANTS, INC.   | MACALLAN REAL ESTATE   |
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| PHONE: 770.725.1200<br>JEFF@CARTERENGINEERING.NET  | PHONE: 404-647-4999<br>MKIMREY@YOLYDEVGROUP.COM                                    |
| SITE INFORMATION   |  |
| JURISDICTION   | KILL DEVIL HILLS   |
| PROPERTY LOCATION  | 2000 N. CROATAN HWY<br>KILL DEVIL HILLS, NC 27948                                  |
| PARCEL NUMBER  | 029831100  |
| NOTE:  | COMMERCIAL USE (N) RETAIL BUSINESS   |
| CURRENT ZONING   | C (COMMERCIAL ZONE)  |
| PROPOSED ZONING  | C (COMMERCIAL ZONE)  |
| EXISTING USE   | VACANT, COMMERCIAL   |
| PROPOSED USE   | SELF AUTOMATED CAR WASH  |
| BUFFERS REQUIRED   | FRONT: 30 FEET<br>SIDE: 10 FEET (SIDE STREET 15 FEET)<br>REAR: 10 FEET             |
| REQUIRED BUILDING SETBACKS   |  |
| MAXIMUM LOT COVERAGE   | 65   |
| PROPOSED LOT COVERAGE  | 20,081 sq. ft.   |
| MAXIMUM BUILDING HEIGHT  | 50 FEET  |
| PROPOSED BUILDING HEIGHT   | 32 FEET  |
| FLOOR AREA RATIO   | 2.70%  |
| TOTAL SQUARE FOOTAGE OF PARCELS  | 30,797 sq. ft. (0.707 AC)  |
| SANITARY SEWER SERVICE   | PRIVATE SEWER  |
| WATER SERVICE  | TOWN WATER   |
| FEMA FLOOD INSURANCE RATE MAP NO.  | 3720988400K  |
| FEMA FIRM DATE   | 6/19/2020  |
| FEMA SFHA ZONE   | ZONE X   |
| REGULATORY FLOOD PROTECTION ELEVATION = 8', ALL ELEVATIONS REFERENCE TO NAVD88   |  |
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US 158  
N. CROATAN HIGHWAY  
(150' R/W M.B. 4, PG. 33A)

| REVISION BLOCK |                                  |
|----------------|----------------------------------|
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| 1              | 9/20/22 - INITIAL SUBMITTAL      |
| 2              | 12/07/22 - REVISE SITE PER OWNER |
| 3              | 12/30/22 - TOWN RESUBMITTAL      |
| 4              |                                  |
| 5              |                                  |
| 6              |                                  |
| 7              |                                  |
| 8              |                                  |

**CARTER ENGINEERING**

CARTER ENGINEERING  
3651 MARS HILL ROAD  
SUITE 2000  
WATKINSVILLE, GA 30677  
P: 770.725.1200  
F: 770.725.1204  
www.carterengineering.com

**SITE DEVELOPMENT PLANS**  
FOR  
**WHITE CAP AUTO SPA**  
2000 N Croatan Hwy Kill Devil Hills, NC 27948

|                 |                    |
|-----------------|--------------------|
| SHEET TITLE:    | ES&PC PHASE II     |
| PROJECT NAME:   | WHITE CAP AUTO SPA |
| SHEET NUMBER:   | C 7.2              |
| PROJECT NUMBER: | 22019SCW           |
| DATE:           | 9/20/22            |

**TEMPORARY SEDIMENT TRAP CALCULATION:**  
**TRAP A:**

- 0.707 AC X 3600 CUBIC FEET PER ACRE
- 2,545 CUBIC FEET REQUIRED
- 2,654 CUBIC FEET PROPOSED
- REQUIRED SURFACE AREA
- $Q = 0.8 \times 9.43 \times 0.707 = 4.00$  cfs
- $4.00 \text{ cfs} \times 0.01 \text{ S.F.} / \text{cfs} = 0.04 \text{ AC}$
- $0.04 \text{ AC} \times 43,560 = 1,743 \text{ S.F. REQUIRED}$
- 1,980 S.F. PROVIDED

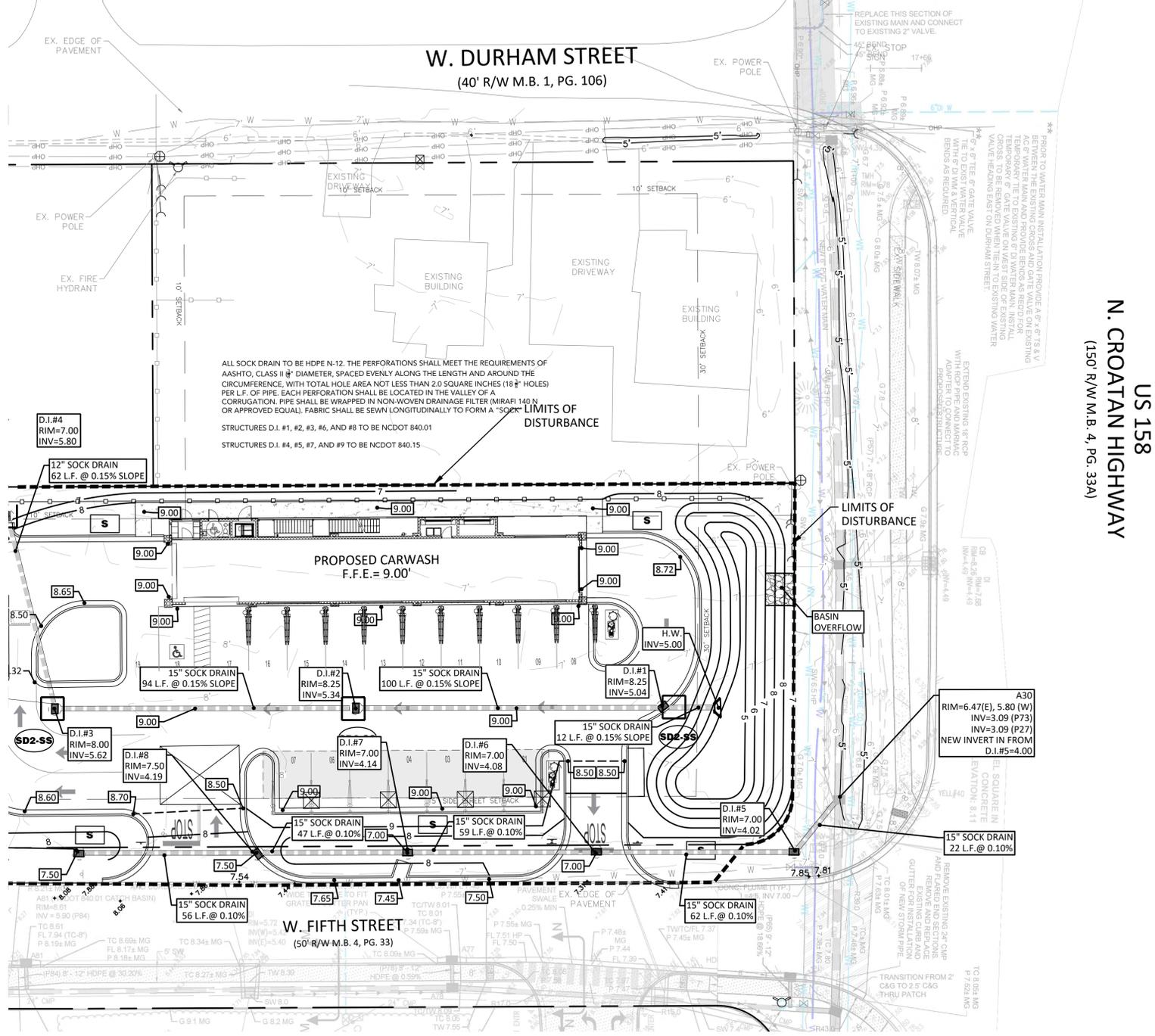
- EROSION CONTROL NOTES:**
1. DEVELOPER/OWNER: MACALLAN REAL ESTATE.
  2. NAME AND PHONE NUMBER OF THE 24-HOUR CONTACT PERSON FOR EROSION, SEDIMENTATION AND POLLUTION CONTROLS IS: MIKE BRADLEY: (404) 647 4999
  3. TOTAL PROJECT AREA = 0.707
  4. TOTAL DISTURBED AREA = 0.707
  5. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.
  6. EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES SHALL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION AND SEDIMENT CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.
  7. SEDIMENT STORAGE MAINTENANCE INDICATORS MUST BE INSTALLED IN SEDIMENT STORAGE STRUCTURES, INDICATING THE FULL VOLUME.
  8. MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES, WHETHER TEMPORARY OR PERMANENT, SHALL AT ALL TIMES BE THE RESPONSIBILITY OF THE PROPERTY OWNER.
  9. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
  10. ALL FILL SLOPES SHALL HAVE SILT FENCE PLACED AT THE SLOPE'S TOE.
  11. CONCENTRATED FLOW AREAS AND ALL SLOPES STEEPER THAN 2.5:1 WITH A HEIGHT OF TEN FEET OR GREATER SHALL BE STABILIZED WITH APPROPRIATE EROSION CONTROL MATTING OR BLANKET.
  12. THE PROFESSIONAL WHO SEALS THIS PLAN CERTIFIES UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY THE PROFESSIONAL OR THE PROFESSIONAL'S AUTHORIZED AGENT, UNDER THE PROFESSIONAL'S DIRECT SUPERVISION.
  13. UPON NOTIFICATION AND AUTHORIZATION OF THE OWNER, THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS RESPONSIBLE FOR INSPECTING THE INSTALLATION OF THE BMP'S WITHIN 7 DAYS AFTER INITIAL CONSTRUCTION ACTIVITIES BEGINS.
  14. THE RECEIVING WATER(S) IS THE COLINGTON CREEK.
  15. AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE SIGNIFICANT EFFECT ON BMP'S WITH HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
  16. MAINTENANCE OF ALL EROSION CONTROL MEASURES, WEATHER TEMPORARY OR PERMANENT, SHALL AT ALL TIME BE THE RESPONSIBILITY OF THE OWNER.

| EROSION CONTROL LEGEND                     |              |        |
|--|--------------|--------|
| BEST MANAGEMENT PRACTICE (BMP)             | ABBREVIATION | SYMBOL |
| SITE PREPARATION                           |              |        |
| CONSTRUCTION EXIT                          | CE           |        |
| LAND GRADING                               | LG           |        |
| SURFACE STABILIZATION                      |              |        |
| TEMPORARY SEDIMENT TRAP                    | TST          |        |
| SURFACE STABILIZATION                      |              |        |
| MULCHING                                   | MU           |        |
| TEMPORARY SEEDING                          | TS           |        |
| SODDING                                    | SOD          |        |
| INLET PROTECTION                           |              |        |
| HARDWARE CLOTH AND GRAVEL INLET PROTECTION | HIP          |        |
| SILT SACK INLET PROTECTION                 | SD2-SS       |        |
| SEDIMENT CONTROL                           |              |        |
| SEDIMENT FENCE                             | SF           |        |
| RUNOFF CONTROL MEASURES                    |              |        |
| TEMPORARY DIVERSION                        | TD           |        |

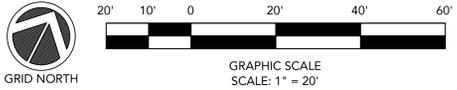


LOCATION MAP  
SCALE: N.T.S.

| PROJECT INFORMATION  |  |
|--|--|
| DRAWING SET PREPARED BY:   | OWNER/DEVELOPER:   |
| CARTER ENGINEERING CONSULTANTS, INC.   | MACALLAN REAL ESTATE   |
| 3651 MARS HILL ROAD, STE 2000<br>WATKINSVILLE, GA 30677<br>CONTACT: JEFF CARTER, P.E.  | 1642 POWERS FERRY RD SE, SUITE 2084<br>MARIETTA, GA 30067<br>CONTACT: MIKE BRADLEY |
| PHONE: 770.725.1200<br>JEFF@CARTERENGINEERING.NET  | PHONE: 404-647-4999<br>MKIMREY@FLOYDDEVELOPMENT.COM                                |
| SITE INFORMATION   |  |
| JURISDICTION   | KILL DEVIL HILLS   |
| PROPERTY LOCATION  | 2000 N. CROATAN HWY<br>KILL DEVIL HILLS, NC 27948                                  |
| PARCEL NUMBER  | 029831100  |
| NOTE:  | COMMERCIAL USE (N) RETAIL BUSINESS   |
| CURRENT ZONING   | C (COMMERCIAL ZONE)  |
| PROPOSED ZONING  | C (COMMERCIAL ZONE)  |
| EXISTING USE   | VACANT, COMMERCIAL   |
| PROPOSED USE   | SELF AUTOMATED CAR WASH  |
| BUFFERS REQUIRED   | FRONT: 10 FEET<br>SIDE: 10 FEET (SIDE STREET 15 FEET)<br>REAR: 10 FEET             |
| REQUIRED BUILDING SETBACKS   |  |
| MAXIMUM LOT COVERAGE   | 65   |
| PROPOSED LOT COVERAGE  | 63.40%   |
| MAXIMUM BUILDING HEIGHT  | 20,081 sq. ft.   |
| PROPOSED BUILDING HEIGHT   | 50 FEET  |
| FLOOR AREA RATIO   | 32 FEET  |
| TOTAL SQUARE FOOTAGE OF PARCELS  | 2.70%  |
|  | 30,797 sq. ft. (0.707 AC)  |
| SANITARY SEWER SERVICE   | PRIVATE SEWER  |
| WATER SERVICE  | TOWN WATER   |
| FEMA FLOOD INSURANCE RATE MAP NO.  | 3720988400K  |
| FEMA FIRM DATE   | 6/19/2020  |
| FEMA SFHA ZONE   | ZONE X   |
| REGULATORY FLOOD PROTECTION ELEVATION = 8', ALL ELEVATIONS REFERENCE TO NAVD88   |  |
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|  | 5  |                                  |                             |                             |                             |                                  |                                  |                             |                             |   |   |   |   |   |   |   |  |
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| <p><b>PROJECT INFORMATION</b></p> <p>DRAWING SET PREPARED BY:</p> <p>CARTER ENGINEERING CONSULTANTS, INC.</p> <p>3651 MARS HILL ROAD, STE 2000<br/>WATKINSVILLE, GA 30677<br/>CONTACT: JEFF CARTER, P.E.</p> <p>PHONE: 770.725.1200<br/>JEFF@CARTERENGINEERING.NET</p>   | <p><b>OWNER/DEVELOPER:</b></p> <p>MACALLAN REAL ESTATE</p> <p>1642 POWERS FERRY RD SE, SUITE 2084<br/>MARIETTA, GA 30067<br/>CONTACT: MIKE BRADLEY</p> <p>PHONE: 404-647-4999<br/>MKIMREY@FLOYDDEVELOPMENT.COM</p>   |                                  |                             |                             |                             |                                  |                                  |                             |                             |   |   |   |   |   |   |   |  |
| <p><b>NOTE:</b></p> <p>COMMERCIAL USE (N) RETAIL BUSINESS</p> <p>C (COMMERCIAL ZONE)</p> <p>C (COMMERCIAL ZONE)</p> <p>VACANT, COMMERCIAL</p> <p>SELF AUTOMATED CAR WASH</p> <p>FRONT: 10 FEET<br/>SIDE: 10 FEET (SIDE STREET 15 FEET)<br/>REAR: 10 FEET</p> <p>65</p> <p>63.40%</p> <p>20,081 sq. ft.</p> <p>50 FEET</p> <p>32 FEET</p> <p>2.70%</p> <p>30,797 sq. ft. (0.707 AC)</p> <p>PRIVATE SEWER</p> <p>TOWN WATER</p> <p>3720988400K</p> <p>6/19/2020</p> <p>ZONE X</p> <p>REGULATORY FLOOD PROTECTION ELEVATION = 8', ALL ELEVATIONS REFERENCE TO NAVD88</p>  | <p><b>UNDERGROUND UTILITY DISCLAIMER:</b></p> <p>THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD INFORMATION AND/OR EXISTING DRAWINGS. CARTER ENGINEERING DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. CARTER ENGINEERING DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE OWNER, HIS/HER EMPLOYEES, CONSULTANTS AND CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE CARTER ENGINEERING IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION REGARDING THE UNDERGROUND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES SHOWN HEREON. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD LOCATE ALL UTILITIES PRIOR TO COMMENCING WORK AND NOTIFY ENGINEER IF A DISCREPANCY IS FOUND. SPECIFICALLY, THE CONTRACTOR SHALL VERIFY THE INVERT ELEVATIONS OF ALL EXISTING STORM AND SANITARY SEWER STRUCTURES PRIOR TO COMMENCEMENT OF STORM AND SANITARY SEWER CONSTRUCTION.</p> |                                  |                             |                             |                             |                                  |                                  |                             |                             |   |   |   |   |   |   |   |  |
| <p><b>REVISION BLOCK</b></p> <table border="1"> <thead> <tr> <th>ISSUE</th> <th>REVISION DATE &amp; DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>9/20/22 - INITIAL SUBMITTAL</td> </tr> <tr> <td>2</td> <td>12/07/22 - REVISE SITE PER OWNER</td> </tr> <tr> <td>3</td> <td>12/30/22 - TOWN RESUBMITTAL</td> </tr> <tr> <td>4</td> <td></td> </tr> <tr> <td>5</td> <td></td> </tr> <tr> <td>6</td> <td></td> </tr> <tr> <td>7</td> <td></td> </tr> </tbody> </table>  | ISSUE  | REVISION DATE & DESCRIPTION      | 1                           | 9/20/22 - INITIAL SUBMITTAL | 2                           | 12/07/22 - REVISE SITE PER OWNER | 3                                | 12/30/22 - TOWN RESUBMITTAL | 4                           |   | 5 |   | 6 |   | 7 |   |  |
| ISSUE  | REVISION DATE & DESCRIPTION  |                                  |                             |                             |                             |                                  |                                  |                             |                             |   |   |   |   |   |   |   |  |
| 1  | 9/20/22 - INITIAL SUBMITTAL  |                                  |                             |                             |                             |                                  |                                  |                             |                             |   |   |   |   |   |   |   |  |
| 2  | 12/07/22 - REVISE SITE PER OWNER   |                                  |                             |                             |                             |                                  |                                  |                             |                             |   |   |   |   |   |   |   |  |
| 3  | 12/30/22 - TOWN RESUBMITTAL  |                                  |                             |                             |                             |                                  |                                  |                             |                             |   |   |   |   |   |   |   |  |
| 4  |  |                                  |                             |                             |                             |                                  |                                  |                             |                             |   |   |   |   |   |   |   |  |
| 5  |  |                                  |                             |                             |                             |                                  |                                  |                             |                             |   |   |   |   |   |   |   |  |
| 6  |  |                                  |                             |                             |                             |                                  |                                  |                             |                             |   |   |   |   |   |   |   |  |
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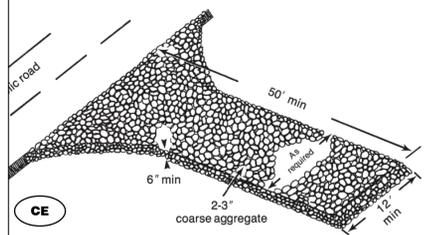
**TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT**

**Definition** A gravelled area or pad located at points where vehicles enter and leave a construction site.

**Purpose** To provide a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, to control erosion from surface runoff, and to help control dust.

**Locations Where Practice Applies** Whenever traffic will be leaving a construction site and moving directly onto a public road or other paved off-site area. Construction plans should limit traffic to properly constructed entrances.

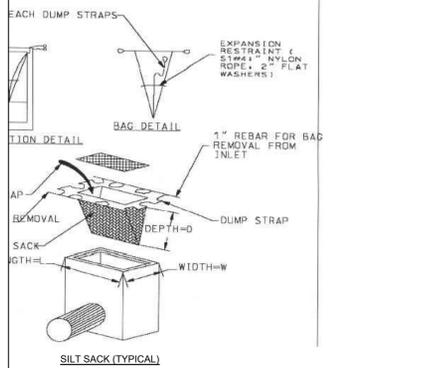
**Design Criteria** **Aggregate Size**—Use 2-3 inch washed stone.  
**Dimensions of gravel pad**—  
 Thickness: 6 inches minimum  
 Width: 12-foot minimum or full width at all points of the vehicular entrance and exit area, whichever is greater  
 Length: 50-foot minimum  
**Location**—Locate construction entrances and exits to limit sediment from leaving the site and to provide for maximum utility by all construction vehicles (Figure 6.06a). Avoid steep grades, and entrances at curves in public roads.



**Washing**—If conditions at the site are such that most of the mud and sediment are not removed by vehicles traveling over the gravel, the tires should be washed. Washing should be done on an area stabilized with crushed stone that drains into a sediment trap or other suitable disposal area. A wash rack may also be used to make washing more convenient and effective.

- Construction Notes**
1. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
  2. Place the gravel to the specific grade and dimensions shown on the plans, and smooth it.
  3. Provide drainage to carry water to a sediment trap or other suitable outlet.
  4. Use geotextile fabrics because they improve stability of the foundation in locations subject to seepage or high water table.

**Maintenance** Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2-inch stone. After each rainfall, inspect any structure used to trap sediment and clean it out as necessary. Immediately remove all objectionable materials spilled, washed, or tracked onto public roadways.



**Practice Standards and Specifications**

**6.20 TEMPORARY DIVERSIONS**

**Definition** A temporary ridge or excavated channel or combination ridge and channel constructed across sloping land on a predetermined grade.

**Purpose** To protect work areas from upslope runoff, and to divert sediment-laden water to appropriate traps or stable outlets.

**Conditions Where Practice Applies** This practice applies to construction areas where runoff can be diverted and disposed of properly to control erosion, sedimentation, or flood damage. Specific locations and conditions include:  
 • above disturbed existing slopes, and above cut or fill slopes to prevent runoff over the slope;  
 • across unprotected slopes, as slope breaks, to reduce slope length;  
 • below slopes to divert excess runoff to stabilized outlets;  
 • where needed to divert sediment-laden water to sediment traps;  
 • at or near the perimeter of the construction area to keep sediment from leaving the site; and  
 • above disturbed areas before stabilization to prevent erosion, and maintain acceptable working conditions.  
 • Temporary diversions may also serve as sediment traps when the site has been overexcavated on a flat grade; they may also be used in conjunction with a sediment fence.

**Planning Considerations** It is important that diversions are properly designed, constructed and maintained since they concentrate water flow and increase erosion potential (Figure 6.20a). Particular care must be taken in planning diversion grades. Too much slope can result in excessive velocity in the diversion channel or at the outlet. A change of slope from steeper grade to flatter may cause deposition to occur. The deposition reduces carrying capacity, and may cause overtopping and failure. Frequent inspection and timely maintenance are essential to the proper functioning of diversions.

**Design Criteria** Sufficient area must be available to construct and properly maintain diversions. It is usually less costly to excavate a channel and form a ridge or dike on the

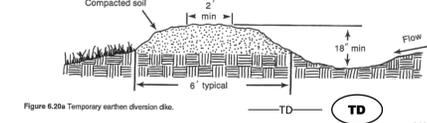


Figure 6.20a Temporary earthen diversion dike.

**Practice Standards and Specifications**

**6.51 HARDWARE CLOTH & GRAVEL INLET PROTECTION**

**Definition** A temporary measure of wire-mesh hardware cloth around steel posts supporting washed stone placed around the opening of a drop inlet.

**Purpose** To prevent sediment from entering yard inlets, graded storm drains or drop inlets during construction. This practice allows early use of the storm drain system.

**Conditions Where Practice Applies** To be placed around a catch basin or a drop inlet and where the flow is light to moderate. If heavy flow is anticipated, use the rock dewater inlet protection method (Practice 6.54, Rock Dewater Inlet Protection). It is also used where storm drain inlets are to be made operational before permanent stabilization of the disturbed drainage area. This method of inlet protection is effective where the inlet is exposed to drain shallow above flow. The immediate land area surrounding the inlet should be clearly the flow than 1 percent and located on flat accumulated sediment can be easily removed.  
 This practice must not be used near the edge of fill material and must not divert water over cut or fill slopes.

**Design Criteria** Ensure that drainage areas do not exceed 1 acre per inlet. The posts need to be 125 lb/linear ft steel with a minimum length of 5 feet. Make sure the posts have projections to facilitate fastening the hardware cloth. Securely drive each stake into the ground to a minimum depth of 7 feet. The maximum spacing for the posts is 4 feet.  
 The wire mesh should be at least a 19-gauge hardware cloth with a 1/2 inch mesh opening. The steel height should be a minimum of 2 feet. Providing a flap of hardware cloth on the ground projecting away from the inlet one and a half times the width of the mesh at the project's completion. The sediment control stone, with a length of 16 inches, should have a minimum slope of 2:1.  
 The top elevation of the structure must be at least 12 inches lower than the ground elevation downspout from the inlet. It is important that all storm flows pass over the structure into the storm drain and not bypass the structure. Temporary dikes before the structures may be necessary to prevent bypass flow. Soil accumulated when constructing the sediment pool may be used for this purpose (Figure 6.51a).

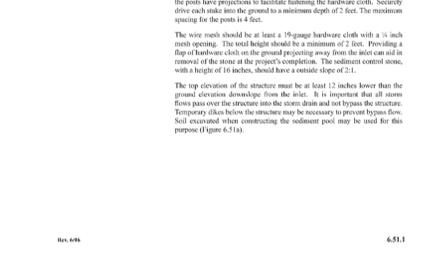


Figure 6.51a Hardware cloth and gravel inlet protection.

**Practice Standards and Specifications**

**Table 6.60a Design of Spillways**

| Drainage Area (acres) | Weir Length <sup>1</sup> (ft) |
|-----------------------|-------------------------------|
| 1                     | 4.0                           |
| 2                     | 6.0                           |
| 3                     | 8.0                           |
| 4                     | 10.0                          |
| 5                     | 12.0                          |

<sup>1</sup>Dimensions shown are minimum.

**Construction Specifications**

1. Clear, grub, and strip the area under the embankment of all vegetation and root mat. Remove all surface soil containing high amounts of organic matter, and stockpile or dispose of it properly. Haul all objectionable material to the designated disposal area.
2. Ensure that fill material for the embankment is free of roots, woody vegetation, organic matter, and other objectionable material. Place the fill in lifts not to exceed 9 inches, and machine compact it. Over lift divert embankment 6 inches to allow for settlement.
3. Construct the outlet section in the embankment. Protect the connection between the riprap and the soil from piping by using filter fabric or a keyway cutoff trench between the riprap structure and soil.  
 • Place the filter fabric between the riprap and the soil. Extend the fabric across the spillway foundation and sides to the top of the dam, or  
 • Excavate a keyway trench along the center line of the spillway foundation extending up the sides to the height of the dam. The trench should be at least 2 feet deep and 2 feet wide with 1:1 side slopes.
4. Clear the pond area below the elevation of the crest of the spillway to facilitate sediment clearance.
5. All cut and fill slopes should be 2:1 or flatter.
6. Ensure that the stone (drainage) section of the embankment has a minimum bottom width of 3 feet and maximum side slopes of 1:1 that extend to the bottom of the spillway section.
7. Construct the minimum finished stone spillway bottom width, as shown on the plans, with 2:1 side slopes extending to the top of the over filled embankment. Keep the thickness of the sides of the spillway outlet structure at a minimum of 21 inches. The weir must be level and constructed to grade to assure design capacity.
8. Material used in the stone section should be a well-graded mixture of stone with a size of 9 inches (class B erosion control stone is recommended) and a maximum stone size of 14 inches. The stone may be machine placed and the smaller stones worked into the voids of the larger stones. The stone should be hard, angular, and highly weather-resistant.
9. Discharge inlet water into the basin in a manner to prevent erosion. Use temporary slope drains or diversions with outlet protection to divert sediment-laden water to the upper end of the pool area to improve basin trap efficiency (References: Runoff Control Measures and Outlet Protection).

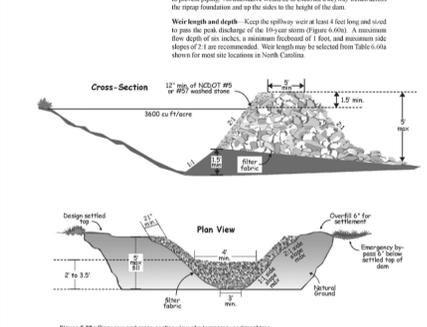


Figure 6.60a Plan view and cross-section view of a temporary sediment trap.

NOT TO SCALE

**Practice Standards and Specifications**

**6.20b Temporary gravel diversion dike for vehicles crossing (modified from Va SWCC).**

**Definition** A temporary ridge or excavated channel or combination ridge and channel constructed across sloping land on a predetermined grade.

**Purpose** To protect work areas from upslope runoff, and to divert sediment-laden water to appropriate traps or stable outlets.

**Conditions Where Practice Applies** This practice applies to construction areas where runoff can be diverted and disposed of properly to control erosion, sedimentation, or flood damage. Specific locations and conditions include:  
 • above disturbed existing slopes, and above cut or fill slopes to prevent runoff over the slope;  
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 • above disturbed areas before stabilization to prevent erosion, and maintain acceptable working conditions.  
 • Temporary diversions may also serve as sediment traps when the site has been overexcavated on a flat grade; they may also be used in conjunction with a sediment fence.

**Planning Considerations** It is important that diversions are properly designed, constructed and maintained since they concentrate water flow and increase erosion potential (Figure 6.20a). Particular care must be taken in planning diversion grades. Too much slope can result in excessive velocity in the diversion channel or at the outlet. A change of slope from steeper grade to flatter may cause deposition to occur. The deposition reduces carrying capacity, and may cause overtopping and failure. Frequent inspection and timely maintenance are essential to the proper functioning of diversions.

**Design Criteria** Sufficient area must be available to construct and properly maintain diversions. It is usually less costly to excavate a channel and form a ridge or dike on the

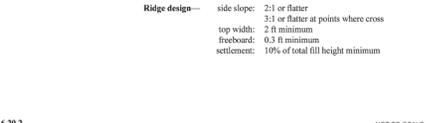


Figure 6.20b Temporary gravel diversion dike for vehicles crossing (modified from Va SWCC).

**Practice Standards and Specifications**

**6.20c Temporary gravel diversion dike for vehicles crossing (modified from Va SWCC).**

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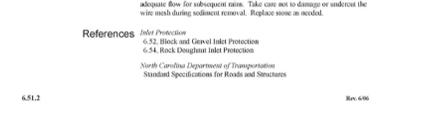


Figure 6.20c Temporary gravel diversion dike for vehicles crossing (modified from Va SWCC).

**Practice Standards and Specifications**

**6.51a Hardware cloth and gravel inlet protection**

**Definition** A temporary measure of wire-mesh hardware cloth around steel posts supporting washed stone placed around the opening of a drop inlet.

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 This practice must not be used near the edge of fill material and must not divert water over cut or fill slopes.

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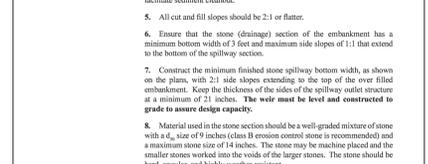


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NOT TO SCALE

**Practice Standards and Specifications**

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Figure 6.20b Temporary gravel diversion dike for vehicles crossing (modified from Va SWCC).

**Practice Standards and Specifications**

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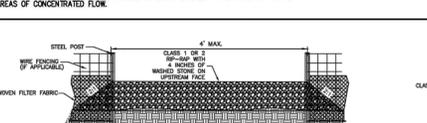


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Figure 6.51a Hardware cloth and gravel inlet protection.

NOT TO SCALE

**REVISION BLOCK**

| REVISION DATE & DESCRIPTION      | ISSUE |
|----------------------------------|-------|
| 9/20/22 - INITIAL SUBMITTAL      | 1     |
| 12/07/22 - REVISE SITE PER OWNER | 2     |
| 12/30/22 - TOWN RESUBMITTAL      | 3     |
|                                  | 4     |
|                                  | 5     |
|                                  | 6     |
|                                  | 7     |
|                                  | 8     |



**CARTER ENGINEERING**

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 www.carterengineering.com

**SITE DEVELOPMENT PLANS FOR**  
**WHITE CAP AUTO SPA**  
 2000 N Croatan Hwy Kill Devil Hills, NC 27948

SHEET TITLE:  
**ES&PC DETAILS**

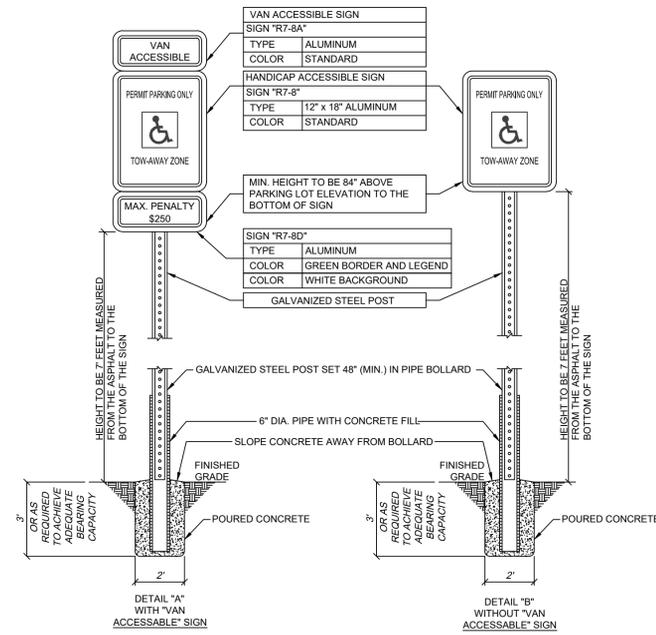
PROJECT NAME:  
**WHITE CAP AUTO SPA**

SHEET NUMBER:  
**C 7.4**

PROJECT NUMBER:  
**22019SCW**

DATE:  
**9/20/22**

ENGINEER DESIGNER NOT RESPONSIBLE FOR COST CHANGES DURING PRELIMINARY PHASE. BIDDING QUOTES SHALL BE BASED ON PLANS SETS LABEL ISSUED FOR BIDDING. BID QUOTES SHALL BE REVISED BASED ON PLANS LABEL ISSUED FOR CONSTRUCTION.

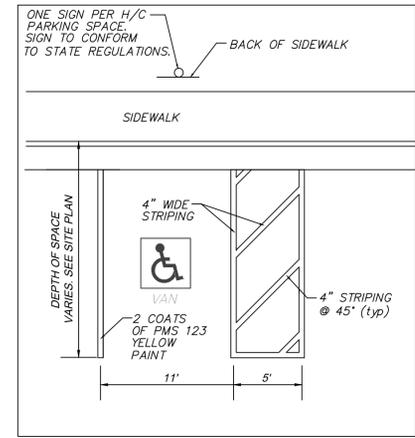


- NOTES:**
- SIGNS ARE TO BE MOUNTED TO A GALVANIZED STEEL POST FROM 60" ABOVE FINISH GRADE TO THE BOTTOM OF SIGN.
  - ALL SIGNS MUST BE INSTALLED PERPENDICULAR TO THE PARKING STALL (ESPECIALLY ON ANGLED PARKING)

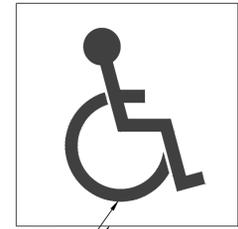
**"HANDICAP PARKING ONLY" SIGNS**

NTS

ALL HANDICAP SIGNAGE SHALL MEET ALL STATE OF NORTH CAROLINA STANDARDS INCLUDING REFERENCING GENERAL STATUTE 20-37.6

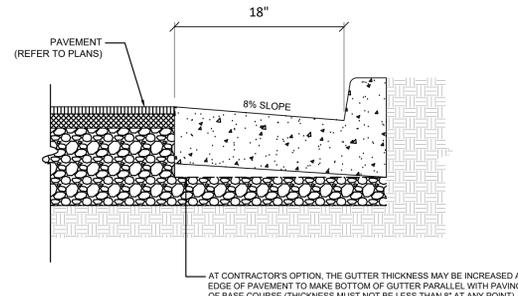


ACCESSIBLE PARKING SPACES, ACCESS AISLES AND PASSENGER LOADING ZONES SHALL HAVE SURFACE SLOPES NOT STEEPER THAN 1:50 (2.0%) IN ANY DIRECTION.



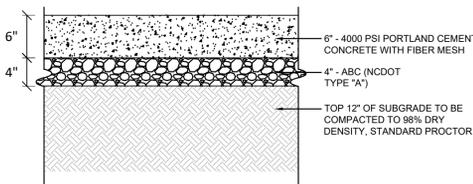
PMS XXX WHITE PAINT  
TTP 115 BLUE PAINT

**PAINTED HANDICAP PARKING SPACE & SYMBOL**

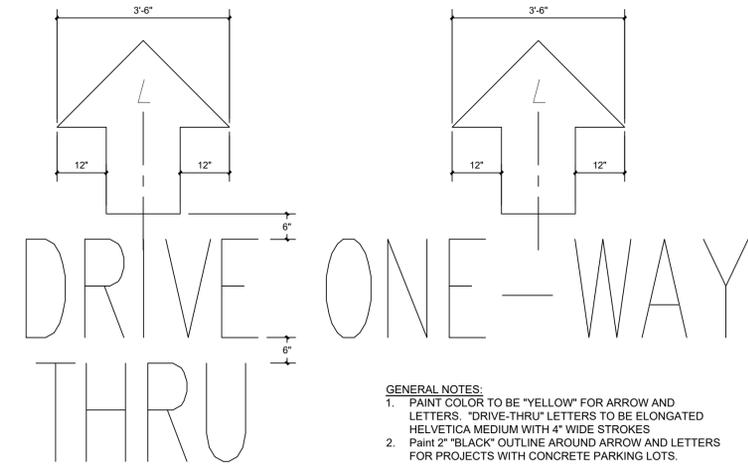


- GENERAL NOTES:**
- Minimum design standards shall meet Georgia Department of Transportation (GDOT) standard specifications and details.
  - Concrete curb and apron shall have a minimum 28-day compressive strength of 3,000 pounds per square inch (P.S.I.).
  - 1/2" Expansion Joints or premolded bituminous expansion joint material shall be provided at all structures and radius points and at intervals not to exceed 100' in the remainder of the curb and gutter.
  - Aggregate material used as base course must comply with the gradation requirements established by the GDOT. Aggregate material should be compacted to at least 100 percent of the maximum dry density obtained in accordance with ASTM D-1557, Modified Proctor Method.
  - A minimum 4 inches of compacted graded aggregate base should be placed beneath all rigid concrete pavements.
  - Refer to geotechnical report for further details.

**24" CURB & GUTTER**



CONCRETE

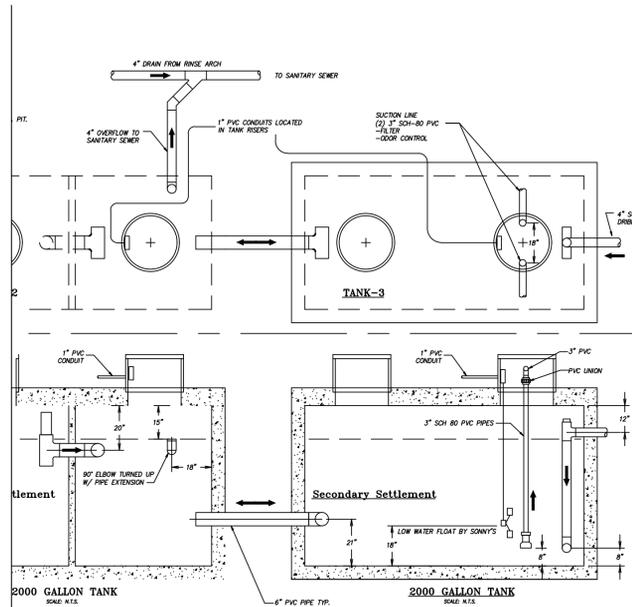


- GENERAL NOTES:**
- PAINT COLOR TO BE "YELLOW" FOR ARROW AND LETTERS. "DRIVE-THRU" LETTERS TO BE ELONGATED HELVETICA MEDIUM WITH 4" WIDE STROKES.
  - Paint 2" "BLACK" OUTLINE AROUND ARROW AND LETTERS FOR PROJECTS WITH CONCRETE PARKING LOTS.

MARKING DETAIL  
NTS

| <p>REVISION BLOCK</p> <table border="1"> <thead> <tr> <th>ISSUE</th> <th>REVISION DATE &amp; DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>9/20/22 - INITIAL SUBMITTAL</td> </tr> <tr> <td>2</td> <td>12/07/22 - REVISE SITE PER OWNER</td> </tr> <tr> <td>3</td> <td>12/30/22 - TOWN RESUBMITTAL</td> </tr> <tr> <td>4</td> <td></td> </tr> <tr> <td>5</td> <td></td> </tr> <tr> <td>6</td> <td></td> </tr> <tr> <td>7</td> <td></td> </tr> <tr> <td>8</td> <td></td> </tr> </tbody> </table> |                                  | ISSUE | REVISION DATE & DESCRIPTION | 1 | 9/20/22 - INITIAL SUBMITTAL | 2 | 12/07/22 - REVISE SITE PER OWNER | 3 | 12/30/22 - TOWN RESUBMITTAL | 4 |  | 5 |  | 6 |  | 7 |  | 8 |  |
|--|----------------------------------|-------|-----------------------------|---|-----------------------------|---|----------------------------------|---|-----------------------------|---|--|---|--|---|--|---|--|---|--|
| ISSUE  | REVISION DATE & DESCRIPTION      |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| 1  | 9/20/22 - INITIAL SUBMITTAL      |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| 2  | 12/07/22 - REVISE SITE PER OWNER |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| 3  | 12/30/22 - TOWN RESUBMITTAL      |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| 4  |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| 5  |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| 6  |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| 7  |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| 8  |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
|  |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
|  |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| <p>CARTER ENGINEERING<br/>3651 MARS HILL ROAD<br/>SUITE 2000<br/>WATKINSVILLE, GA 30677<br/>P: 770.725.1200<br/>F: 770.725.1204<br/>www.carterengineering.com</p>  |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| <p><b>SITE DEVELOPMENT PLANS</b><br/>FOR<br/><b>WHITE CAP AUTO SPA</b><br/>2000 N Croatan Hwy Kill Devil Hills, NC 27948</p>   |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| <p>SHEET TITLE:<br/><b>STANDARD DETAILS</b></p>  |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| <p>PROJECT NAME:<br/><b>WHITE CAP AUTO SPA</b></p>   |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| <p>SHEET NUMBER:<br/><b>C 8.0</b></p>  |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| <p>PROJECT NUMBER:<br/><b>22019SCW</b></p>   |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |
| <p>DATE:<br/><b>9/20/22</b></p>  |                                  |       |                             |   |                             |   |                                  |   |                             |   |  |   |  |   |  |   |  |   |  |

ENGINEER DESIGNER NOT RESPONSIBLE FOR COST CHANGES DURING PRELIMINARY PHASE. BIDDING NOTES SHALL BE BASED ON PLANS SETS LABEL ISSUED FOR BID. BID & NOTES SHALL BE REVISED BASED ON PLANS LABELLED ISSUED FOR CONSTRUCTION.

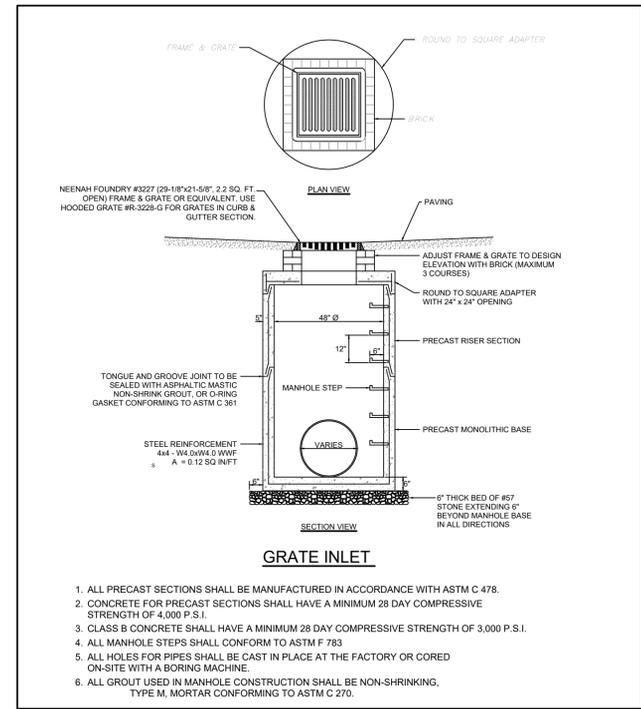


**WASH RECLAIM SYSTEM AND RECLAIM 3 TANK**

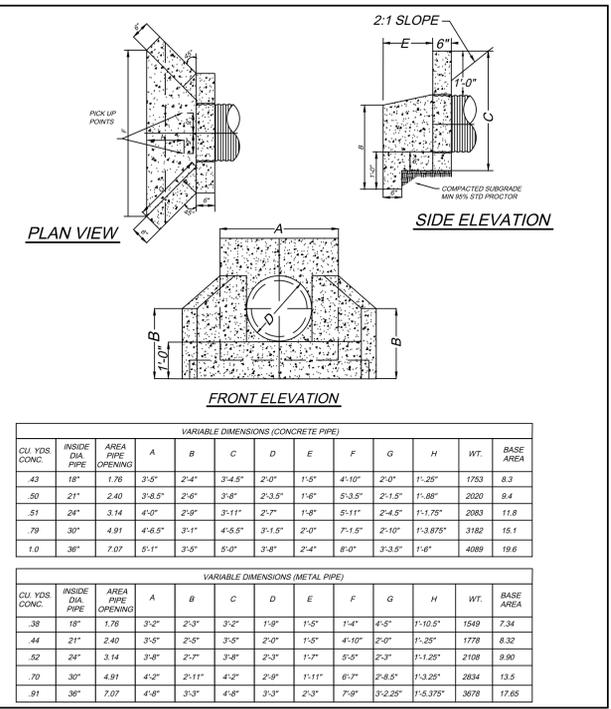
**RECLAIM SHEET FOR DETAIL**

**WASH RECLAMATION SYSTEM WILL APPROXIMATELY 65% OF THE RUN THROUGH THE SYSTEM**

- NOTE:**
1. ALL UNDERGROUND TANKS AND PIPING BY CONTRACTOR
  2. PIPE LOCATIONS SHOULD BE USED FOR ANY TANK
  3. ALL INTERNAL TANK PLUMBING TO BE 6" SCH 40 PVC UNLESS NOTED OTHERWISE
  4. ALL TANK BOTTOMS SHOULD BE LEVEL
  5. THIS DRAWING IS TO SHOW TANK HOLDING CAPACITY AND PIPING RELATIONSHIPS ONLY. THEY ARE NOT INTENDED TO ADDRESS TANK STRUCTURE ENGINEERING.



1. ALL PRECAST SECTIONS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C 478.
2. CONCRETE FOR PRECAST SECTIONS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 P.S.I.
3. CLASS B CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 P.S.I.
4. ALL MANHOLE STEPS SHALL CONFORM TO ASTM F 703
5. ALL HOLES FOR PIPES SHALL BE CAST IN PLACE AT THE FACTORY OR CURED ON-SITE WITH A BORING MACHINE.
6. ALL GROUT USED IN MANHOLE CONSTRUCTION SHALL BE NON-SHRINKING, TYPE M, MORTAR CONFORMING TO ASTM C 270.

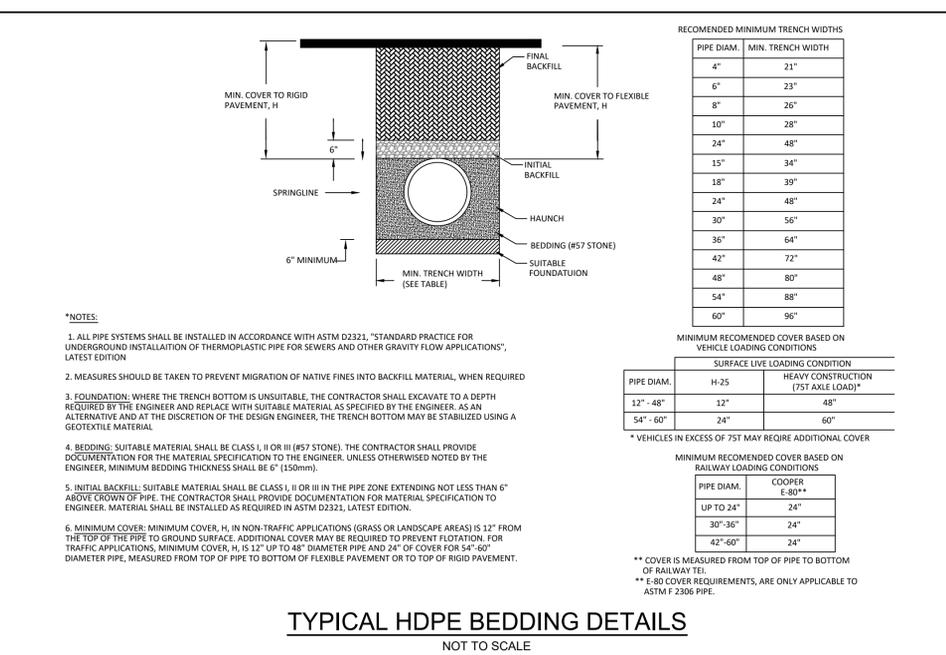
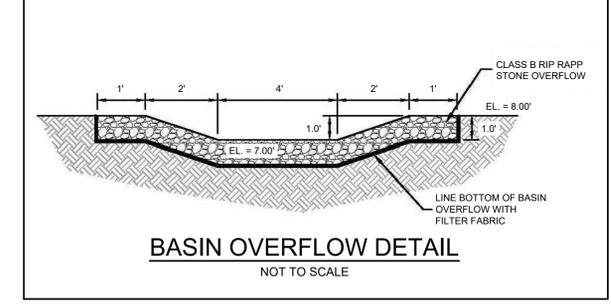
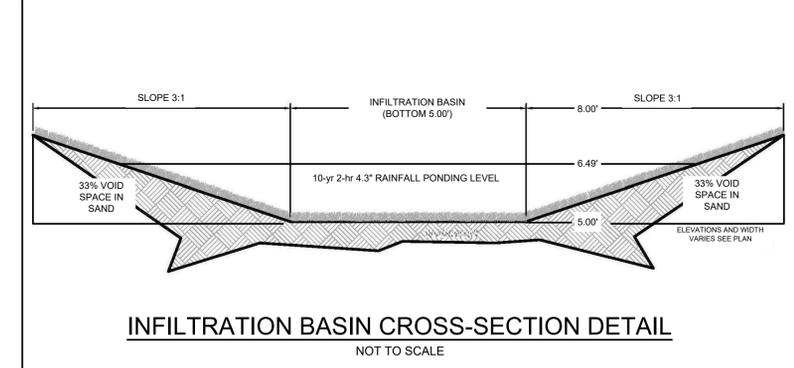
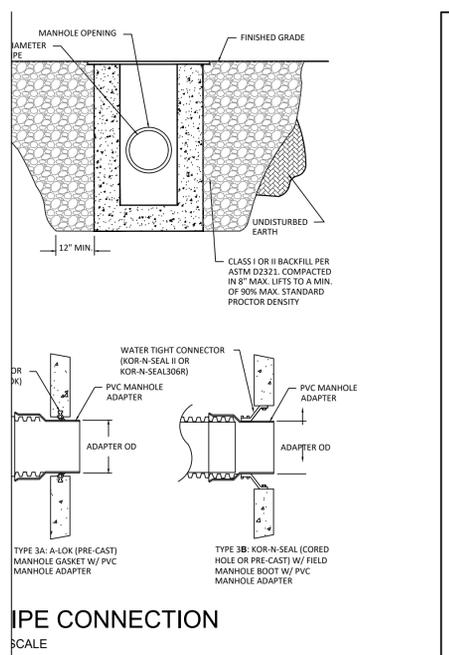
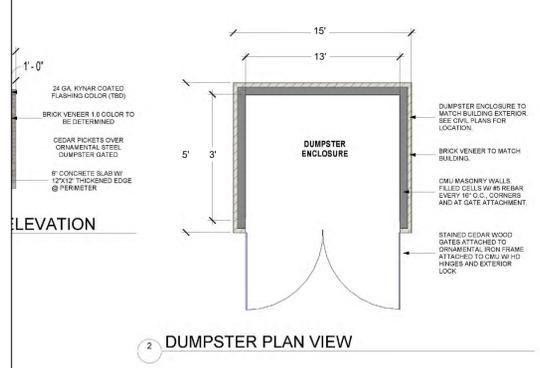


**VARIABLE DIMENSIONS (CONCRETE PIPE)**

| CU YDS CONC. | INSIDE DIA. PIPE | AREA PIPE OPENING | A       | B     | C       | D       | E     | F       | G       | H         | WT.  | BASE AREA |
|--------------|------------------|-------------------|---------|-------|---------|---------|-------|---------|---------|-----------|------|-----------|
| .43          | 18"              | 1.76              | 3'-5"   | 2'-4" | 3'-4.5" | 2'-0"   | 1'-5" | 4'-10"  | 2'-0"   | 1'-25"    | 1763 | 8.3       |
| .50          | 21"              | 2.40              | 3'-8.5" | 2'-6" | 3'-8"   | 2'-3.5" | 1'-6" | 5'-3.5" | 2'-1.5" | 1'-88"    | 2020 | 9.4       |
| .51          | 24"              | 3.14              | 4'-0"   | 2'-8" | 3'-11"  | 2'-7"   | 1'-8" | 5'-11"  | 2'-4.5" | 1'-1.75"  | 2083 | 11.8      |
| .79          | 30"              | 4.91              | 4'-6.5" | 3'-1" | 4'-5.5" | 3'-1.5" | 2'-0" | 7'-1.5" | 2'-10"  | 1'-3.875" | 3182 | 15.1      |
| 1.0          | 36"              | 7.07              | 5'-1"   | 3'-5" | 5'-0"   | 3'-8"   | 2'-4" | 8'-0"   | 3'-3.5" | 1'-6"     | 4089 | 19.6      |

**VARIABLE DIMENSIONS (METAL PIPE)**

| CU YDS CONC. | INSIDE DIA. PIPE | AREA PIPE OPENING | A     | B      | C     | D     | E      | F      | G        | H         | WT.  | BASE AREA |
|--------------|------------------|-------------------|-------|--------|-------|-------|--------|--------|----------|-----------|------|-----------|
| .38          | 18"              | 1.76              | 3'-2" | 2'-3"  | 3'-2" | 1'-9" | 1'-5"  | 4'-5"  | 1'-10.5" | 1'-10.5"  | 1549 | 7.34      |
| .44          | 21"              | 2.40              | 3'-5" | 2'-5"  | 3'-5" | 2'-0" | 1'-5"  | 4'-10" | 2'-0"    | 1'-25"    | 1778 | 8.32      |
| .52          | 24"              | 3.14              | 3'-8" | 2'-7"  | 3'-8" | 2'-3" | 1'-7"  | 5'-5"  | 2'-3"    | 1'-1.25"  | 2108 | 9.90      |
| .70          | 30"              | 4.91              | 4'-2" | 2'-11" | 4'-2" | 2'-9" | 1'-11" | 6'-7"  | 2'-8.5"  | 1'-3.25"  | 2634 | 13.5      |
| .91          | 36"              | 7.07              | 4'-8" | 3'-3"  | 4'-8" | 3'-3" | 2'-3"  | 7'-9"  | 3'-2.25" | 1'-5.375" | 3678 | 17.65     |



- \*NOTES:**
1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION
  2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED
  3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSUITABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL
  4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
  5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
  6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF THE PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

**RECOMMENDED MINIMUM TRENCH WIDTHS**

| PIPE DIAM. | MIN. TRENCH WIDTH |
|------------|-------------------|
| 4"         | 21"               |
| 6"         | 23"               |
| 8"         | 26"               |
| 10"        | 28"               |
| 24"        | 48"               |
| 15"        | 34"               |
| 18"        | 39"               |
| 24"        | 48"               |
| 30"        | 56"               |
| 36"        | 64"               |
| 42"        | 72"               |
| 48"        | 80"               |
| 54"        | 88"               |
| 60"        | 96"               |

**MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS**

| PIPE DIAM. | H-25 SURFACE LIVE LOADING CONDITION | HEAVY CONSTRUCTION (75T AXLE LOAD)* |
|------------|-------------------------------------|-------------------------------------|
| 12" - 48"  | 12"                                 | 48"                                 |
| 54" - 60"  | 24"                                 | 60"                                 |

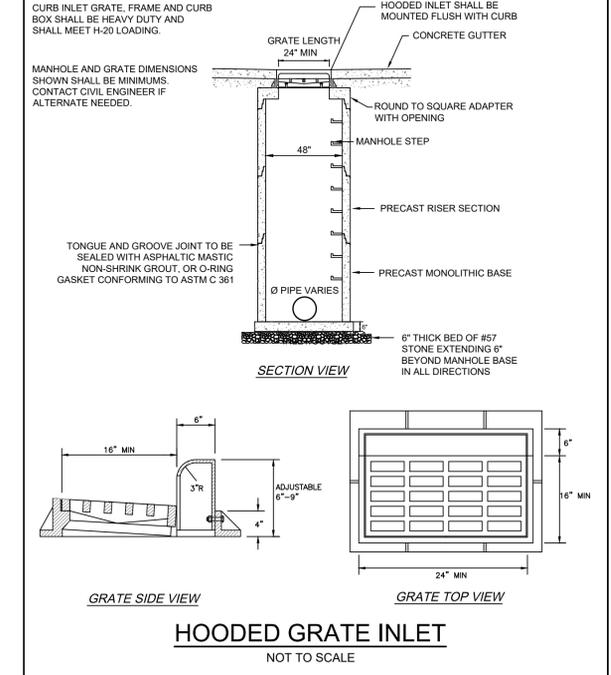
**MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS**

| PIPE DIAM. | COOPER E-30** |
|------------|---------------|
| UP TO 24"  | 24"           |
| 30" - 36"  | 24"           |
| 42" - 60"  | 24"           |

\* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

\*\* COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE

\*\* E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.



**REVISION BLOCK**

| ISSUE | REVISION DATE & DESCRIPTION      |
|-------|----------------------------------|
| 1     | 9/20/22 - INITIAL SUBMITTAL      |
| 2     | 12/07/22 - REVISE SITE PER OWNER |
| 3     | 12/30/22 - TOWN RESUBMITTAL      |
| 4     |                                  |
| 5     |                                  |
| 6     |                                  |
| 7     |                                  |
| 8     |                                  |

**CARTER ENGINEERING**

CARTER ENGINEERING  
3651 MARS HILL ROAD  
SUITE 2000  
WATKINSVILLE, GA 30677  
P: 770.725.1200  
F: 770.725.1204  
www.carterengineering.com

**WHITE CAP AUTO SPA**

2000 N Croatan Hwy Kill Devil Hills, NC 27948

**SITE DEVELOPMENT PLANS FOR**

**STANDARD DETAILS**

PROJECT NAME: **WHITE CAP AUTO SPA**

SHEET NUMBER: **C 8.1**

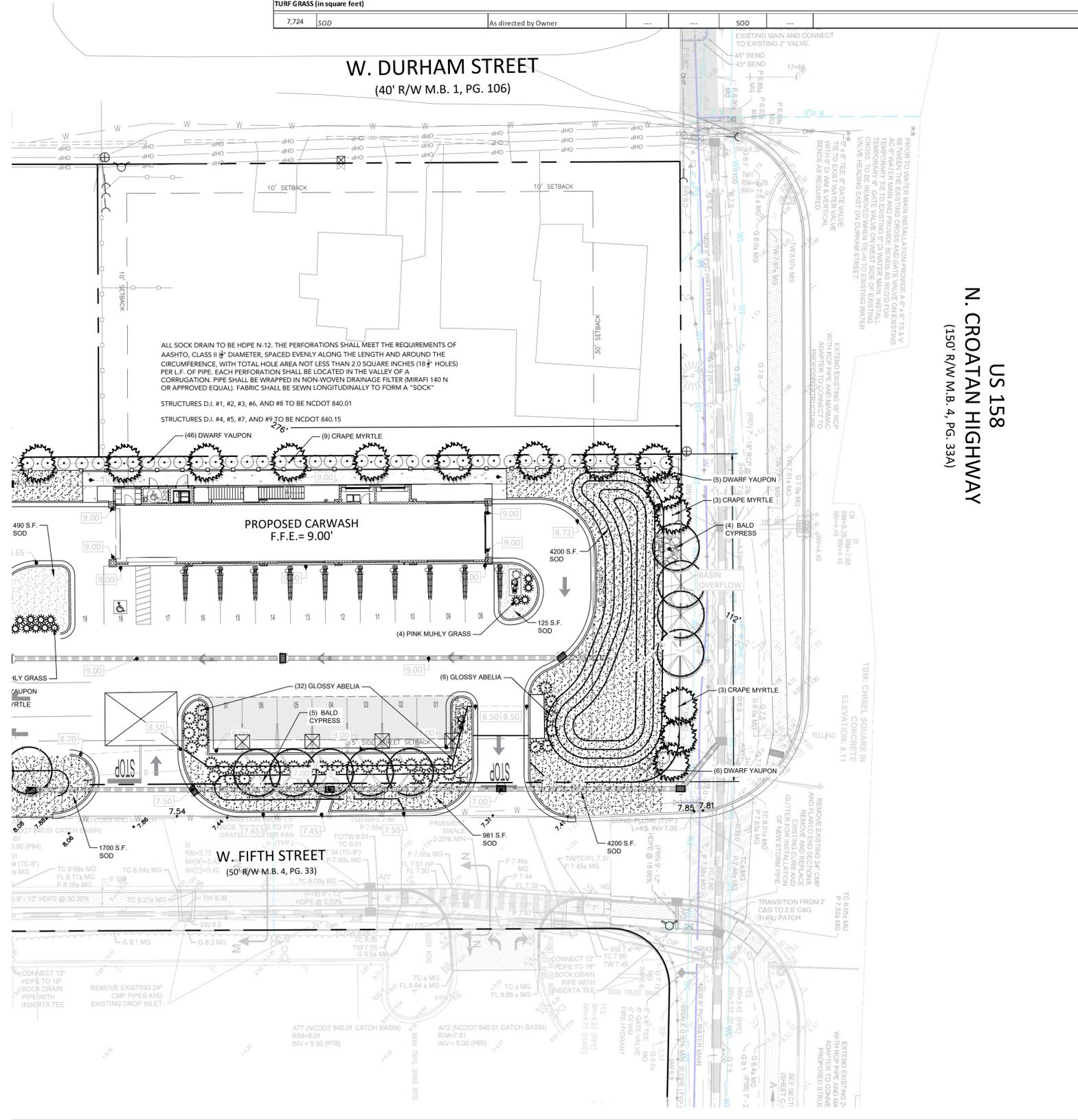
PROJECT NUMBER: **22019SCW**

DATE: **9/20/22**

| PLANT SCHEDULE                      |                                       |                      |           |          |           |                  |   |
|-------------------------------------|---------------------------------------|----------------------|-----------|----------|-----------|------------------|---|
| TOTAL QTY                           | BOTANICAL NAME                        | COMMON NAME          | CAL./GAL. | SPACING  | TYPE      | HT./SPR. MINIMUM | REMARKS   |
| <b>CANOPY TREES</b>                 |                                       |                      |           |          |           |                  |   |
| 13                                  | <i>Taxodium distichum</i>             | Bald Cypress         | 3" Cal.   | As Shown | B & B     | 10' / 5'         | Straight Central Leader to Min. 6' Ht., Well Spaced Branches, Symmetrical Crown |
| <b>UNDERSTORY/FLOWERING TREES</b>   |                                       |                      |           |          |           |                  |   |
| 19                                  | <i>Lagerstroemia</i>                  | Crape Myrtle         | 2" Cal.   | As Shown | B & B     | 8' / 4'          | Straight Central Leader to Min. 6' Ht., Well Spaced Branches, Symmetrical Crown |
| <b>EVERGREEN SHRUBS</b>             |                                       |                      |           |          |           |                  |   |
| 32                                  | <i>Abelia grandiflora</i>             | Glossy Abelia        | 3 Gal.    | As Shown | Container | 18" / 12"        | Full Pot, Well Shaped   |
| 78                                  | <i>Ilex cornuta 'Dwarf Burford'</i>   | Dwarf Yaupon Holly   | 3 Gal.    | As Shown | Container | 18" / 12"        | Full Pot, Well Shaped   |
| <b>ORNAMENTAL GRASSES/PRENNIALS</b> |                                       |                      |           |          |           |                  |   |
| 13                                  | <i>Muhlenbergia capillaris 'Pink'</i> | Pink Muhly Grass     | 3 Gal.    | As Shown | Container | 18" / 12"        | Full Pot, Well Shaped   |
| <b>TURF GRASS (in square feet)</b>  |                                       |                      |           |          |           |                  |   |
| 7,724                               | SOD                                   | As directed by Owner | ---       | ---      | SOD       | ---              | ---   |



LOCATION MAP  
SCALE: N.T.S.



N. CROATIAN HIGHWAY  
 US 158  
 (150' R/W M.B. 4, PG. 33A)

| PROJECT INFORMATION           |                                      |
|-------------------------------|--------------------------------------|
| DRAWING SET PREPARED BY:      | CARTER ENGINEERING CONSULTANTS, INC. |
| OWNER/DEVELOPER:              | MACALLAN REAL ESTATE                 |
| 3651 MARS HILL ROAD, STE 2000 | 1642 POWERS FERRY RD SE, SUITE 2084  |
| WATKINSVILLE, GA 30677        | MARIETTA, GA 30067                   |
| CONTACT: JEFF CARTER, P.E.    | CONTACT: MIKE BRADLEY                |
| PHONE: 770.725.1200           | PHONE: 404-547-4999                  |
| JEFF@CARTERENGINEERING.NET    | MIKIMREY@FLOYDDEVGROUP.COM           |

| SITE INFORMATION   |  |
|--|--|
| JURISDICTION   | KILL DEVIL HILLS   |
| PROPERTY LOCATION  | 2000 N. CROATIAN HWY<br>KILL DEVIL HILLS, NC 27948                     |
| PARCEL NUMBER  | 029831100  |
| NOTE:  | COMMERCIAL USE (N) RETAIL BUSINESS                                     |
| CURRENT ZONING   | C (COMMERCIAL ZONE)  |
| PROPOSED ZONING  | C (COMMERCIAL ZONE)  |
| EXISTING USE   | VACANT, COMMERCIAL   |
| PROPOSED USE   | SELF AUTOMATED CAR WASH  |
| BUFFERS REQUIRED   | FRONT: 30 FEET<br>SIDE: 10 FEET (SIDE STREET 15 FEET)<br>REAR: 10 FEET |
| REQUIRED BUILDING SETBACKS   |  |
| MAXIMUM LOT COVERAGE   | 63.40%   |
| PROPOSED LOT COVERAGE  | 20,081 sq. ft.   |
| MAXIMUM BUILDING HEIGHT  | 50 FEET  |
| PROPOSED BUILDING HEIGHT   | 32 FEET  |
| FLOOR AREA RATIO   | 2.70%  |
| TOTAL SQUARE FOOTAGE OF PARCELS  | 30,797 sq. ft. (0.707 AC)  |
| SANITARY SEWER SERVICE   | PRIVATE SEWER  |
| WATER SERVICE  | TOWN WATER   |
| FEMA FLOOD INSURANCE RATE MAP NO.  | 3720988400K  |
| FEMA FIRM DATE   | 6/19/2020  |
| FEMA SFHA ZONE   | ZONE X   |
| REGULATORY FLOOD PROTECTION ELEVATION = 8', ALL ELEVATIONS REFERENCE TO NAVD88 |  |

**UNDERGROUND UTILITY DISCLAIMER:**  
THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD INFORMATION AND/OR EXISTING DRAWINGS. CARTER ENGINEERING DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. CARTER ENGINEERING DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE OWNER, HIS/HER EMPLOYEES, CONSULTANTS AND CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE CARTER ENGINEERING IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION REGARDING THE UNDERGROUND UTILITIES AND STRUCTURES RELATED TO UNDERGROUND UTILITIES SHOWN HEREON. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD LOCATE ALL UTILITIES PRIOR TO COMMENCING WORK AND NOTIFY ENGINEER IF A DISCREPANCY IS FOUND. SPECIFICALLY, THE CONTRACTOR SHALL VERIFY THE INVERT ELEVATIONS OF ALL EXISTING STORM AND SANITARY SEWER STRUCTURES PRIOR TO COMMENCEMENT OF STORM AND SANITARY SEWER CONSTRUCTION.

| TREE CALCULATIONS:                                    |                        |
|---|------------------------|
| <b>TREE PLANTING SUMMARY:</b>                         |                        |
| REQUIRED:   | PROVIDED:              |
| US 158 (FRONT PROPERTY LINE)                          | US 158 112 LINEAR FEET |
| 1 SHRUB PER 10 FEET, 112 L.F. / 10 L.F. = 11 REQUIRED | 11 PROVIDED            |
| 1 TREE PER 10 FEET, 11 REQUIRED                       | 11 PROVIDED            |
| W 5TH STREET  |                        |
| 1 SHRUB PER 10 FEET, 276 L.F. / 10 L.F. = 28 REQUIRED | 28 PROVIDED            |
| 1 TREE PER 30 FEET, 276 L.F. / 30 L.F. = 9 REQUIRED   | 9 PROVIDED             |
| WEST PROPERTY LINE                                    |                        |
| 1 TREE PER 30 L.F. AND 1 SHRUB PER 10 L.F.            |                        |
| 112 L.F. = 4 TREES REQUIRED AND 11 SHRUBS REQUIRED    |                        |
| 4 TREES AND 21 SHRUBS PROVIDED                        |                        |
| NORTH PROPERTY LINE                                   |                        |
| 1 TREE PER 30 L.F. AND 1 SHRUB PER 10 L.F.            |                        |
| 276 L.F. = 9 TREES REQUIRED AND 28 SHRUBS REQUIRED    |                        |
| 9 TREES AND 49 SHRUBS PROVIDED                        |                        |

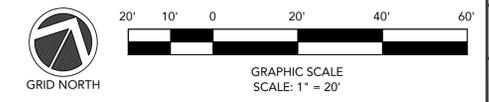
| REVISION BLOCK                   |       |
|----------------------------------|-------|
| REVISION DATE & DESCRIPTION      | ISSUE |
| 9/20/22 - INITIAL SUBMITTAL      | 1     |
| 12/07/22 - REVISE SITE PER OWNER | 2     |
| 12/30/22 - TOWN RESUBMITTAL      | 3     |
|                                  | 4     |
|                                  | 5     |
|                                  | 6     |
|                                  | 7     |
|                                  | 8     |



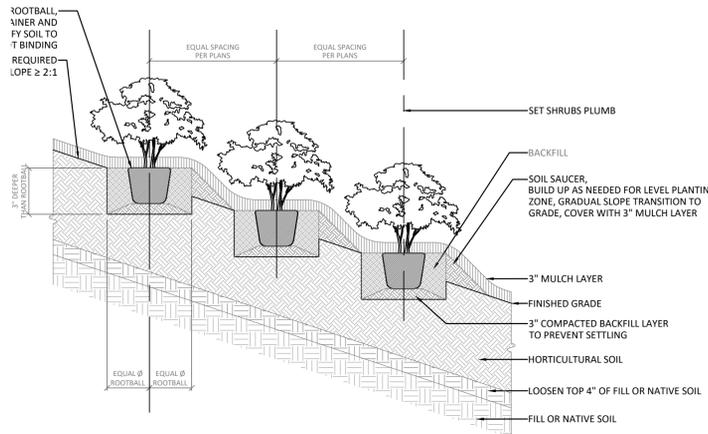
CARTER ENGINEERING  
3651 MARS HILL ROAD  
SUITE 2000  
WATKINSVILLE, GA 30677  
P: 770.725.1200  
F: 770.725.1204  
www.carterengineering.com

**SITE DEVELOPMENT PLANS**  
 FOR  
**WHITE CAP AUTO SPA**  
 2000 N Croatian Hwy Kill Devil Hills, NC 27948

|                 |                    |
|-----------------|--------------------|
| SHEET TITLE:    | LANDSCAPING PLAN   |
| PROJECT NAME:   | WHITE CAP AUTO SPA |
| SHEET NUMBER:   | L 1.0              |
| PROJECT NUMBER: | 22019SCW           |
| DATE:           | 9/20/22            |



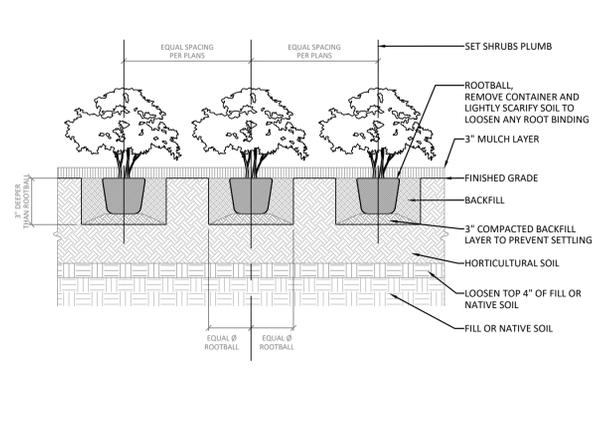
ENGINEER DESIGNER NOT RESPONSIBLE FOR COST CHANGES DURING PRELIMINARY PHASE. BIDDING NOTES SHALL BE BASED ON PLAN SETS LABEL ISSUED FOR BIDDING. BID & QUOTES SHALL BE REVISED BASED ON PLAN SETS LABEL ISSUED FOR CONSTRUCTION.



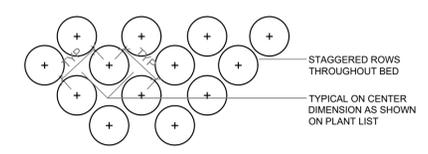
PLANTING ON A SLOPE

PLANTING DETAILS

0"



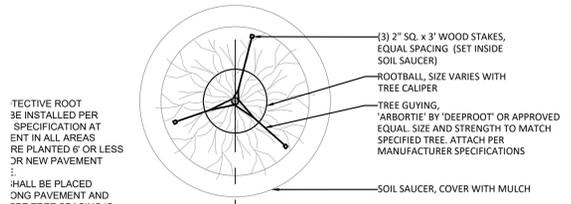
SHRUB PLANTING AT LANDSCAPE



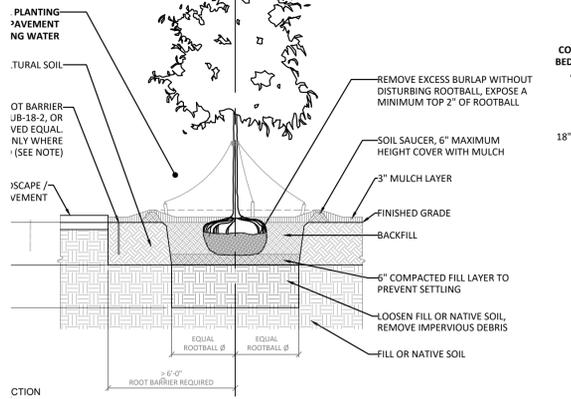
NOTES:

1. SEE PLANTING PLANS FOR SHRUB AND GROUNDCOVER BED AREAS.
2. ROWS SHALL BE STRAIGHT AND PARALLEL.
3. SEE PLANTING SCHEDULE FOR GROUNDCOVER SPACING AND QUANTITIES.

SHRUB & GROUNDCOVER SPACING



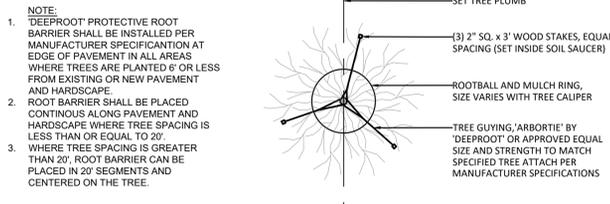
PROTECTIVE ROOT BARRIER SHALL BE INSTALLED PER SPECIFICATION AT EDGE OF PAVEMENT IN ALL AREAS WHERE TREES ARE PLANTED 6\"/>



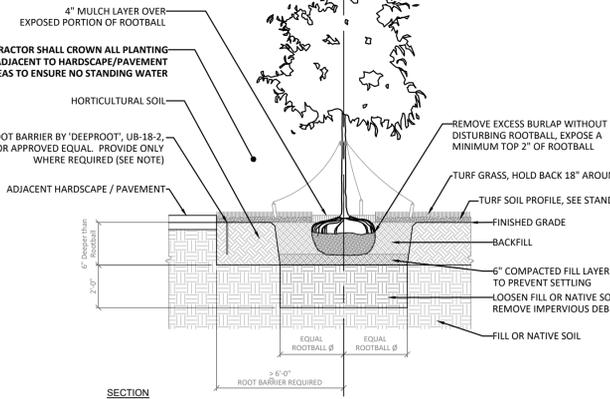
PLANTING AT LANDSCAPE

PLANTING DETAILS

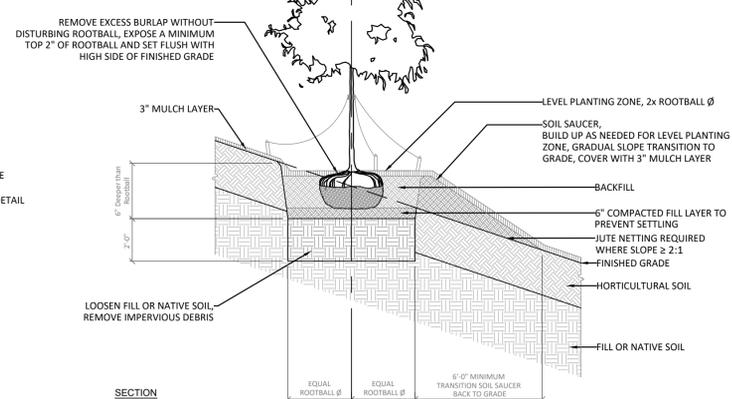
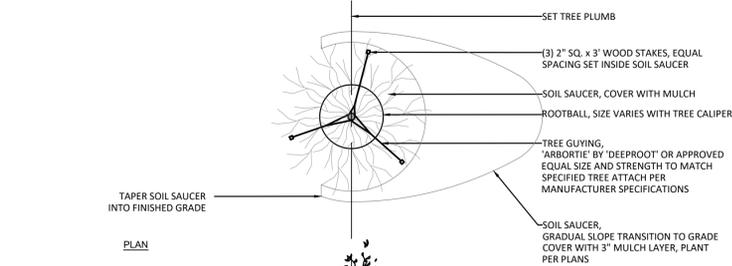
0"



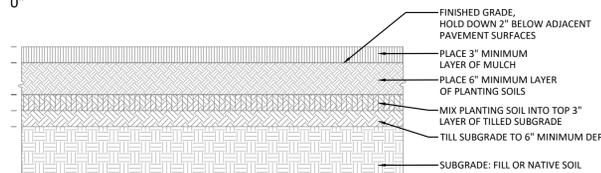
- NOTE:
1. "DEEPROOT" PROTECTIVE ROOT BARRIER SHALL BE INSTALLED PER MANUFACTURER SPECIFICATION AT EDGE OF PAVEMENT IN ALL AREAS WHERE TREES ARE PLANTED 6\"/>
  - 2. ROOT BARRIER SHALL BE PLACED CONTINUOUS ALONG PAVEMENT AND HARDSCAPE WHERE TREE SPACING IS LESS THAN OR EQUAL TO 20\"/>
  - 3. WHERE TREE SPACING IS GREATER THAN 20\"/>



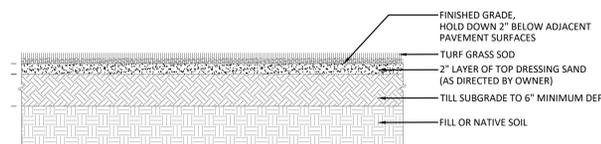
TREE PLANTING AT LAWN



TREE PLANTING ON A SLOPE



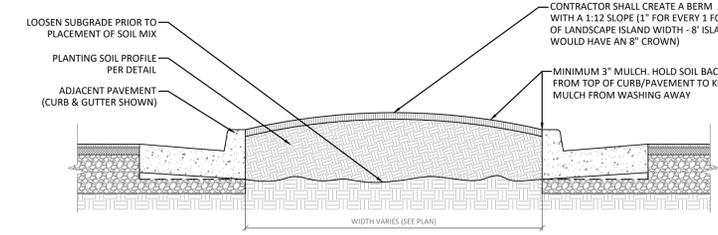
PARATION - PLANTING BEDS



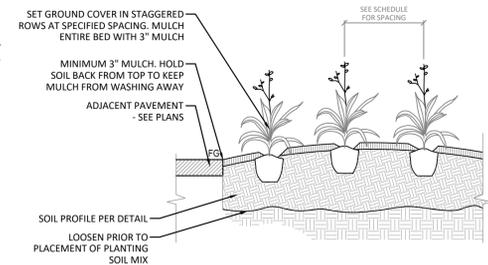
PARATION - TURF GRASS

PARATION DETAILS

0"



PARKING ISLAND AND ADJACENT PAVEMENT PROFILE



GROUNDCOVER, GRASS, AND PERENNIAL PLANTING

5 GROUNDCOVER AND PLANTING BED DETAILS

| REVISION BLOCK | ISSUE    | REVISION DATE & DESCRIPTION |
|----------------|----------|-----------------------------|
| 1              | 9/20/22  | INITIAL SUBMITTAL           |
| 2              | 12/07/22 | REVISE SITE PER OWNER       |
| 3              | 12/30/22 | TOWN RESUBMITTAL            |
| 4              |          |                             |
| 5              |          |                             |
| 6              |          |                             |
| 7              |          |                             |
| 8              |          |                             |



**CARTER ENGINEERING**

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3651 MARS HILL ROAD  
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www.carterengineering.com

**SITE DEVELOPMENT PLANS**  
 FOR  
**WHITE CAP AUTO SPA**  
 2000 N Croatan Hwy Kill Devil Hills, NC 27948

SHEET TITLE:  
**LANDSCAPE DETAILS**

PROJECT NAME:  
**WHITE CAP AUTO SPA**

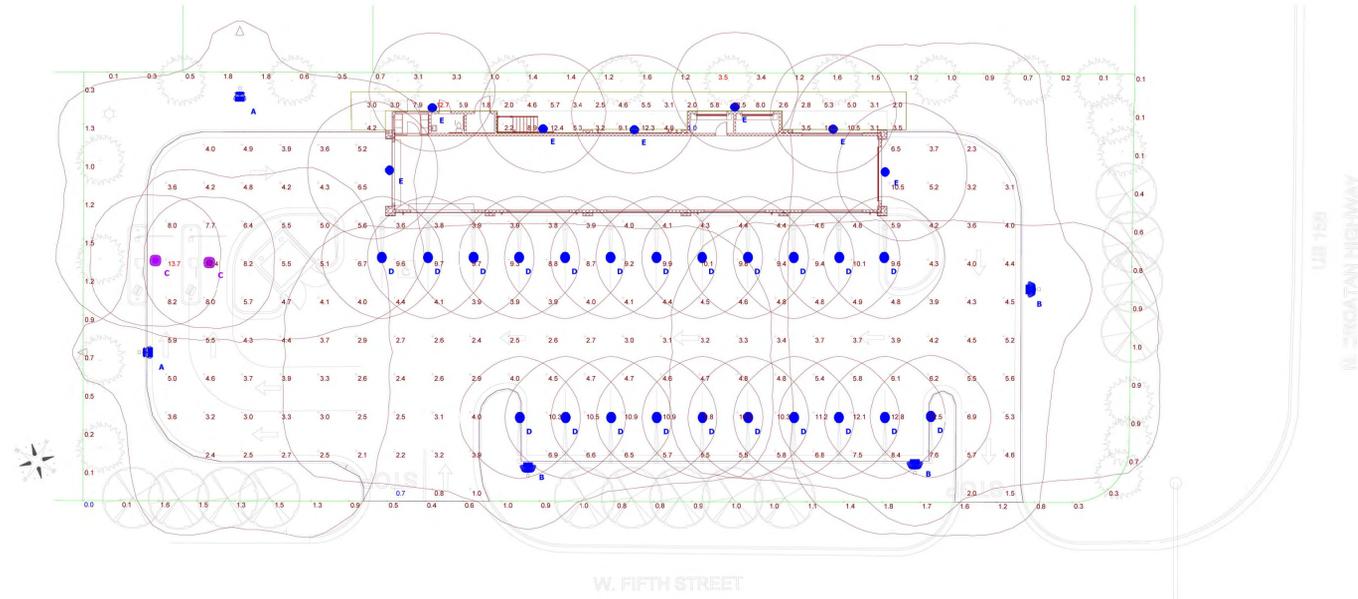
SHEET NUMBER:  
**L 1.1**

PROJECT NUMBER:  
**22019SCW**

DATE:  
**9/20/22**

ENGINEER DESIGNER NOT RESPONSIBLE FOR COST CHANGES. DRAWING PRELIMINARY. PLEASE REFER TO NOTES FOR ANY CHANGES. ALL NOTES SHALL BE REVISED BASED ON PLANS SETS LABEL. ISSUED FOR BID. BID & NOTES SHALL BE REVISED BASED ON PLANS LABEL. ISSUED FOR CONSTRUCTION.

|                 | Lumens | Catalog Number      | Light Loss Factor | Wattage | Plot             |
|-----------------|--------|---------------------|-------------------|---------|------------------|
| row<br>sh<br>se | 14864  | VP-2-72L-115-4K7-4F | 0.95              | 113.7   | <br>Max: 16689cd |
| 8'              | 16058  | VP-2-72L-145-4K7-4W | 0.95              | 143.2   | <br>Max: 16221cd |
| MFG             | 2670   | SCP-R-20-P-VS-4K    | 0.95              | 20.48   | <br>Max: 990cd   |
| ited            | 1950   | WPX2-SO             | 0.95              | 12      | <br>Max: 688cd   |
| o be            | 2709   | XTOR3B-W            | 0.95              | 25.5    | <br>Max: 1431cd  |



**Plan View**  
Scale - 1" = 20ft

H SIDE OF THE SHIELDING TO LING ONTO S ALONG THE ERTY LINE

ADDED TO : "C" ALONG ERTY LINE

S  
ATA (.IES FILES) THAT ARE GENERALLY UNIQUE TO THE NAMED EN THOSE VERY SIMILAR, MAY SIGNIFICANTLY ALTER THE METRIC STUDY IS NOT TRANSFERABLE; ANY SUBSTITUTION OR

S PLAN SHOWS THE EXPECTED LIGHTING PERFORMANCE COMPLIES. WS:  
AND DISTRIBUTIONS THAT CONCENTRATE LIGHT INTENSITY DOWN THE SITE IS DIRECTED INWARD A WAY FROM R.O.W.'S AND

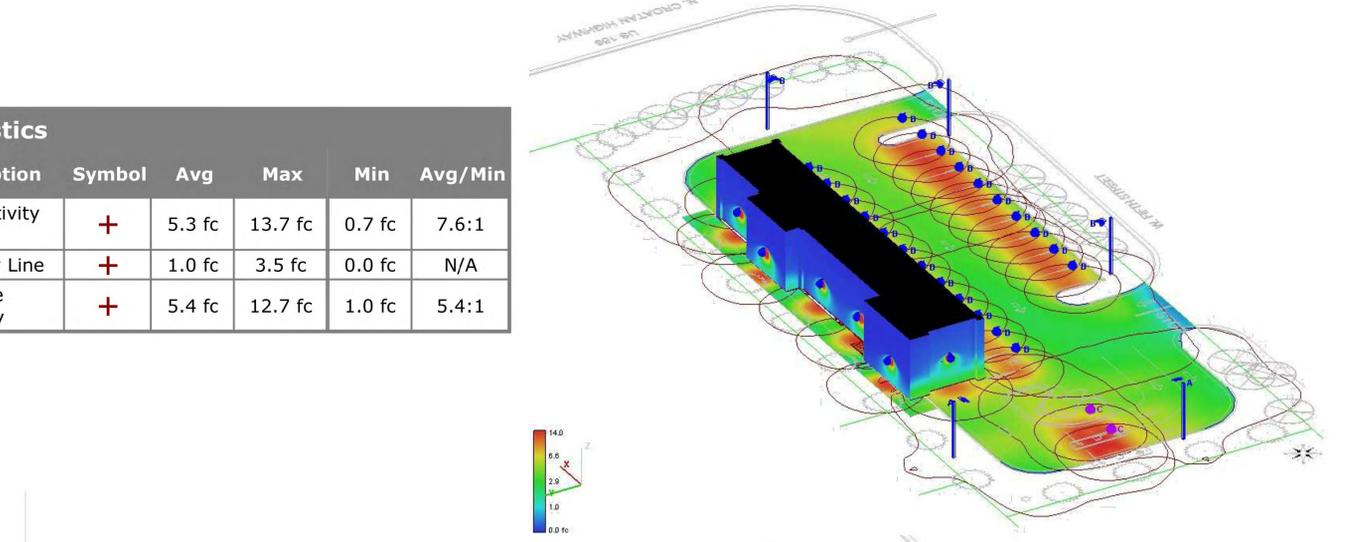
OT-CANDLE (FC) LEVEL OF BETWEEN 4 FC (MIN) AND 7 FC (MAX) AS F THIS TYPE.  
IVITY AREAS OF THIS SITE ARE LESS THAN 14 FC.

E FROM THE ARCHITECTURAL ELEMENTS VISIBLE ON THE CLUDE BLOCKING/SHADING BY PLANTS, TREES, VEHICLES,

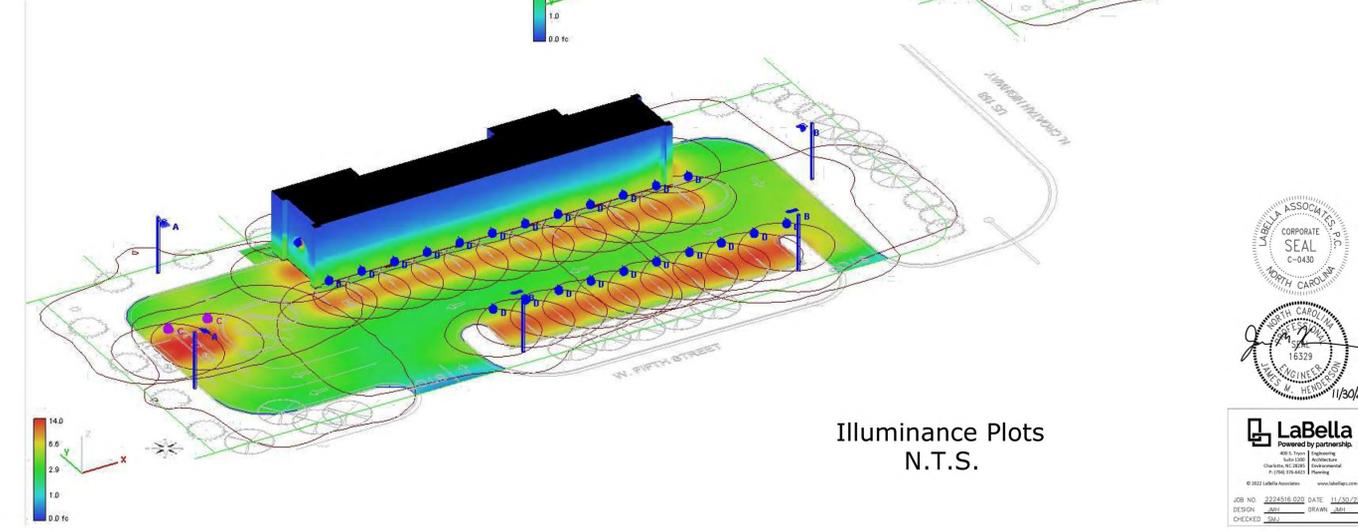
ROXIMATE THE INTEGRATED LIGHTING THAT IS FURNISHED WITH Y ATOP A 30", REINFORCED CONCRETE BASE). LIGHTING POLES IXTURE SPECIFICATION AND POLE BASE DETAIL ON SHEET 2 FOR

D ONLY SECURITY LIGHTING WILL OPERATE DUSK-TO-DAWN. THE F AND IS LIGHTED BY (36) LED FIXTURES CONSUMING 1150 WATTS. W THE NC-IECC ENERGY BUDGET FOR THE PLANNED CAR WASH WILL BE INCLUDED ON ELECTRICAL CDs.

| Statistics         |        |        |         |        |         |
|--------------------|--------|--------|---------|--------|---------|
| Description        | Symbol | Avg    | Max     | Min    | Avg/Min |
| Main Activity Area | +      | 5.3 fc | 13.7 fc | 0.7 fc | 7.6:1   |
| Property Line      | +      | 1.0 fc | 3.5 fc  | 0.0 fc | N/A     |
| Backside Walkway   | +      | 5.4 fc | 12.7 fc | 1.0 fc | 5.4:1   |



**Illuminance Plots**  
N.T.S.



**LaBella**  
 Powered by partnership  
 ARCHITECTS ENGINEERS PLANNERS  
 10000 W. HARRIS LANE  
 CHARLOTTE, NC 28268  
 704.488.1000  
 www.labellainc.com

**Kill Devil Hills Car Wash**  
**Kill Devil Hills, NC**

**SITE DEVELOPMENT PLANS**  
FOR  
**WHITE CAP AUTO SPA**  
2000 N Croatan Hwy Kill Devil Hills, NC 27948

SHEET TITLE:  
**LIGHTING PLAN**

PROJECT NAME:  
**WHITE CAP AUTO SPA**

SHEET NUMBER:  
**P 1.0**

PROJECT NUMBER:  
**22019SCW**

DATE:  
**9/20/22**

| REVISION BLOCK | ISSUE    | REVISION DATE & DESCRIPTION |
|----------------|----------|-----------------------------|
| 1              | 12/01/22 | INITIAL SUBMITTAL           |
| 2              | 12/01/22 | REVISE SITE PER OWNER       |
| 3              | 12/30/22 | TOWN RESUBMITTAL            |
| 4              |          |                             |
| 5              |          |                             |
| 6              |          |                             |
| 7              |          |                             |
| 8              |          |                             |



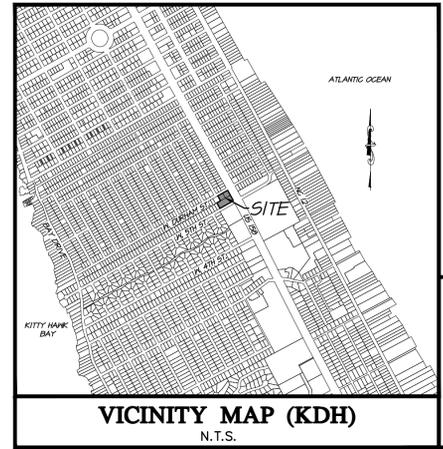
ENGINEER DESIGNER NOT RESPONSIBLE FOR COST CHANGES DURING PRELIMINARY PHASE. BID & QUOTES SHALL BE BASED ON PLANS SETS LABEL ISSUED FOR BID. BID & QUOTES SHALL BE REVISED BASED ON PLANS LABELLED 'ISSUED FOR CONSTRUCTION'.  
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**SHEET INDEX**  
**WASTEWATER SYSTEM SITE PLAN**  
**WASTEWATER DETAILS**  
**WASTEWATER PLAN & PROFILE**



**VICINITY MAP (KDH)**  
 N.T.S.

NC License# C-0208  
 SINCE 1959  
**Quible & Associates, P.C.**  
 CIVIL ENGINEERING & SURVEYING  
 ENVIRONMENTAL SCIENCES & SURVEYING  
 8466 CARATOKE HWY 90 CHURCH STREET  
 POWELLS POINT, NC 27966 BLACK MOUNTAIN, NC 28711  
 Phone: (252) 891-8127 Fax: (252) 891-8127  
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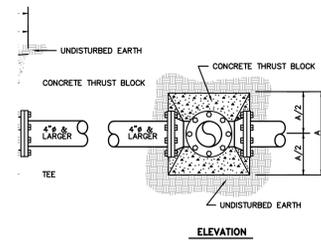
**NOTES:**

- DEVELOPER: MACALLAN REAL ESTATE  
1642 POWERS FERRY ROAD  
SUITE 2084  
MARIETTA, GA 30067
- OWNER: MIDTOWN DEVELOPMENT CORPORATION  
3200 PACIFIC AVENUE  
SUITE 100  
VIRGINIA BEACH, VA, 23451
- ENGINEER: QUIBLE & ASSOCIATES, P.C.  
8466 CARATOKE HIGHWAY  
POWELLS POINT, NC 27966
- PIN#: 9884-0629-5099  
PID#: 029831100
- RECORDED REFERENCE: PL. 4 SL. 33
- PROPERTIES ZONED: COMMERCIAL
- TOTAL PARCEL AREA: 30,786.5 SQ.FT. – 0.71 acres
- WASTEWATER CALCULATIONS:  
PER NCAC 02T 1,200 GAL./DAY REQUIRED. ANTICIPATED WASTEWATER EFFLUENT 4,500 GPD (80% OF WATER IS RECLAIMED).
- PROPERTY IS LOCATED IN NFIP FLOOD ZONE X SHOWN AND SUBJECT TO CHANGES, BASED ON COMMUNITY CID NO. 375353; PANEL 9884; SUFFIX K. (MAP NUMBER 3720988400K) EFFECTIVE DATE: 06/19/2020.
- BOUNDARY INFORMATION SHOWN BASED UPON SURVEY PROVIDED BY SEABOARD SURVEYING & PLANNING, LLC. PROVIDED 09/02/2022.
- TOPOGRAPHIC INFORMATION SHOWN BASED UPON FIELD SURVEY BY SEABOARD SURVEYING & PLANNING, LLC. PROVIDED 09/02/2022.
- HORIZONTAL DATUM IS NAD 83 NORTH CAROLINA STATE PLANES, US FOOT; VERTICAL DATUM IS NAVD 88.
- PROJECT SCOPE: THIS PLAN IS FOR INSTALLATION OF THE WASTEWATER SYSTEM ONLY.
- ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- ALL UTILITIES SERVING THIS SITE WILL BE PLACED UNDERGROUND.
- EXISTING VEGETATION TO BE PRESERVED WHERE POSSIBLE.
- REMOVE TREES, GRASSES, SHRUBS AND OTHER VEGETATION, IMPROVEMENTS OR OBSTRUCTIONS INTERFERING WITH INSTALLATION OF NEW CONSTRUCTION UNLESS NOTED OTHERWISE.
- PRIOR TO CONSTRUCTION A NCDOT ENCROACHMENT AGREEMENT IS REQUIRED.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ALL PROPERTY MONUMENTS DURING CONSTRUCTION. DISTURBED OR REMOVED PROPERTY MONUMENTS SHALL BE REPLACED BY A NORTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE DRAWINGS, APPLICABLE TOWN OF KILL DEVIL HILLS CODES AND ORDINANCES, AND

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| REVISIONS   |          |
|---|----------|
| NO.   | DATE     |
| 1   | 12/29/22 |
| UPDATED TO REFLECT TOWN OF KILL DEVIL HILLS WATER IMPROVEMENT PLANS DATED 7/12/22 |          |
|   |          |
|   |          |
|   |          |
|   |          |

**LAN**  
**VAY**  
 NORTH CAROLINA



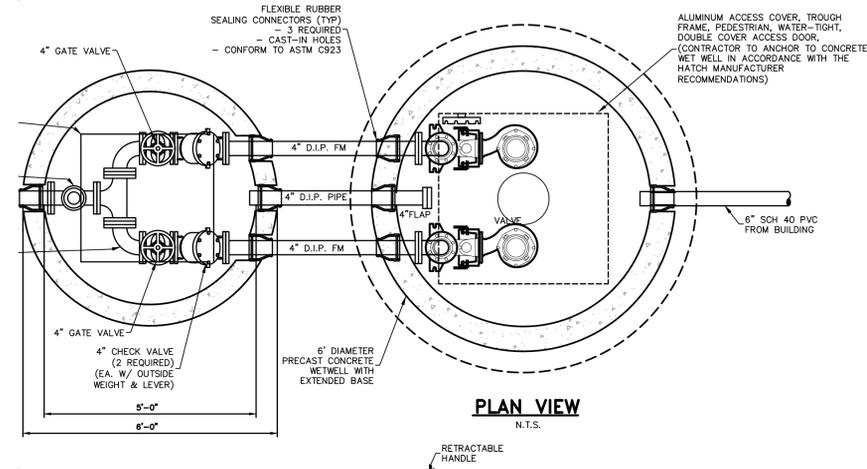
SEE SHALL BE TAKEN WHEN PLACING THRUST BLOCKS  
KEEP THE FITTING BOLTS FREE OF CONCRETE.

| 4\"/> |    |    |     |     |     |
|-------|----|----|-----|-----|-----|
| 12    | 12 | 12 | 16  | 16  | 14  |
| 12    | 12 | 12 | 16  | 16  | 14  |
| 12    | 14 | 20 | 28  | 28  | 22  |
| 12    | 18 | 24 | 32  | 32  | 28  |
| 14    | 20 | 28 | 36  | 36  | 32  |
| 16    | 24 | 32 | 42  | 42  | 36  |
| 18    | 28 | 36 | 48  | 48  | 40  |
| 20    | 32 | 40 | 52  | 52  | 44  |
| 24    | 42 | 48 | 64  | 64  | 54  |
| 30    | 48 | 56 | 78  | 78  | 66  |
| 36    | 56 | 64 | 94  | 94  | 80  |
| 40    | 64 | 72 | 108 | 108 | 92  |
| 46    | 72 | 80 | 124 | 124 | 104 |

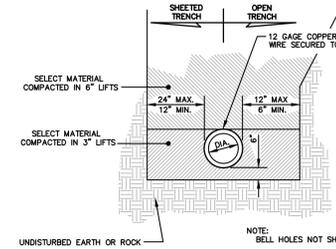
THRUST BLOCKS - DIMENSION "A"

**TYPICAL THRUST BLOCK FOR TEES**  
N.T.S.

LAYOUT SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. FINAL INSTALLATION VARY AS PER PUMP MANUFACTURER'S INSTRUCTIONS.



**PLAN VIEW**  
N.T.S.



**STANDARD EXCAVATION**

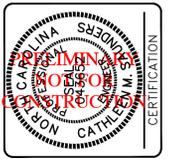
NOTE:  
MINIMUM 30" COVER IN PIEDMONT AND COASTAL AREAS

- NOTES:
- CROSSING A WATER MAIN OVER A SEWER: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18" ABOVE THE TOP OF THE SEWER, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION; IN WHICH CASE BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
  - CROSSING A WATER MAIN UNDER A SEWER: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.

**TYPICAL SEWER TRENCHING**

N.T.S.

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SWICE #559  
**Quible & Associates, P.C.**  
ENGINEERING, SURVEYING, ENVIRONMENTAL SCIENCES & SURVEYING  
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Phone: (252) 891-8127 Fax: (252) 891-8127  
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REVISIONS

| NO. | DATE     | DESCRIPTION   |
|-----|----------|---|
| 1   | 12/29/22 | UPDATED TO REFLECT TOWN OF KILL DEVIL HILLS WATER IMPROVEMENT PLANS DATED 7/12/22 |

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**VAY**  
NORTH CAROLINA

