TOWN OF SOUTHERN SHORES

TOWN COUNCIL REGULAR MEETING

5375 N. Virginia Dare Trail, Southern Shores, NC 27949
Phone 252-261-2394 / Fax 252-255-0876
www.southernshores-nc.gov

PITTS CENTER

Tuesday, September 07, 2021 at 5:30 PM

AGENDA

Call Meeting to Order

Pledge of Allegiance
Moment of Silence

Amendments to / Approval of Agenda

Consent Agenda

1. Minutes-Emailed to Council
2. Consideration of Resolution opposing US Fish & Wildlife Service's proposed designation of critical habitat for the Rufa Red Knot
3. Resolution 2021-09-03 Awarding Badge and Service Weapon -Police Sergeant George M. Farrow. NCGS 20-187.2

Presentations

4. Service Award- 20 Years of Service, Deputy Chief Jonathan Slegel

Staff Reports

Deputy Town Manager/Planning Director

Police Chief

Fire Chief

Town Manager

-Beach Nourishment Update

-Traffic

-Tax Bills

Town Attorney

General Public Comment (Limit: 3 minutes per speaker.)

Old Business

New Business

5. Public Hearing- SPA-21-01, a Site Plan Amendment application submitted by Aston Properties to amend the site plan for the Marketplace Shopping Center
6. Financial Advisory Agreement and Budget Amendment #11
7. Southern Shores Beach Nourishment Projects - Initial Resolution #2021-09-01 Directing the Application to the Local Government Commission for Approval of a Special Obligation Bond;

Requesting Local Government Commission Approval of The Town's Special Obligation Bond; and certain related matters

8. Consideration of Dare County Tourism Impact Grant
9. Consideration of FEMA Building Resilient Infrastructure and Communities (BRIC) Grant and Budget Amendment

General Public Comment (Limit: 3 minutes per speaker.)

Council Business

Adjourn

AGENDA ITEM SUMMARY

MEETING DATE: September 7, 2021

ITEM TITLE: Consideration of Resolution opposing US Fish & Wildlife Service's proposed designation of critical habitat for the Rufa Red Knot

ITEM SUMMARY:

The US Fish & Wildlife Service is proposing the designation of critical habitat for the Rufa Red Knot. To the extent that such designation might close beaches during beach nourishment project construction windows, it could significantly impact ability to construct projects and could increase costs if required to construct outside current scheduled windows. Carteret County and Dare County has expressed concern as to the effect this may have on their beach nourishment and dredging projects and has adopted a similar resolution.

Attached please find a resolution opposing the US Fish & Wildlife Service's proposed designation of critical habitat for the Rufa Red Knot for the Council's consideration at the September 7th Council meeting.

STAFF RECOMMENDATION:

Staff recommends Council adopts Resolution 2021-09-02

REQUESTED ACTION:

Motion to adopt Resolution 2021-09-02 opposing US Fish & Wildlife Service's proposed designation of critical habitat for the Rufa Red Knot.

TOWN OF SOUTHERN SHORES, NORTH CAROLINA
RESOLUTION #2021-09-02

RESOLUTION OPPOSING THE UNITED STATES FISH & WILDLIFE SERVICE'S PROPOSED DESIGNATION OF CRITICAL HABITAT FOR THE RUFA RED KNOT

WHEREAS, on December 11, 2014, the United States Fish and Wildlife Service (USFWS) listed the Rufa Red Knot shorebird as a threatened species under the auspices of the Endangered Species Act and disclosed a compulsory critical habitat designation would be forthcoming in 2015: AND

WHEREAS, the designation of critical habitat can impact a wide variety of coastal projects involving federal action, which include activities or programs of any kind authorized, funded, or carried out, in whole or in part by federal agencies pertaining to coastal and inlet management activities, such as dredging and beach renourishment projects that are permitted, and/or funded and implemented by the United States Army Corps of Engineers and hurricane recovery activities financially supported by the Federal Emergency Management Agency; AND

WHEREAS, other federal actions can involve the administration of the National Flood Insurance Program, implementation of building codes, federal grants for public access and infrastructure improvements, and other programs/policies; AND

WHEREAS, on July 15, 2021 and nearly seven years after listing the Rufa Red Knot as threatened, the USFWS is proposing to indiscriminately designate ALL of the Bogue Banks oceanfront shoreline (25.4 miles) as critical habitat identified as "Unit NC-4 (Emerald Isle-Atlantic Beach)", encompassing a total geographic footprint of 2,030 acres (1,908 acres State + 122 acres private); AND

WHEREAS, Bogue Banks (Unit NC-4) has never been identified as an important stopover for the Rufa Red Knot in any previous publication authored by the USFWS; AND

WHEREAS, the USFWS also specifically disclosed special management considerations for the Rufa Red Knot will be necessitated to address threats to critical habitat and are divided into seven categories, and moreover some the activities citied in these categories include; recreational beach use, beach driving, predation, beach nourishment, sand fencing, dredged material disposal, inlet relocation, and human-caused disasters; AND

WHEREAS, these special management considerations therefore can unnecessarily and negatively impact the local, State, and federal economies; and the public's access and enjoyment of the beach; AND

WHEREAS, the USFWS has also proposed to extend the continuous Rufa Red Knot critical habitat in Carteret County and Dare County, along the entire oceanfront shoreline of the Cape Hatteras National Seashore as well as Units NC-1A and 1B. When combined, Carteret County and Dare County total over a 150 continuous mile stretch of North Carolina oceanfront that is proposed as Rufa Red Knot critical habitat; AND

WHEREAS, the proposed designation of a 150-mile continuous stretch of Rufa Red Knot oceanfront shoreline strongly implies the USFWS designation methodology is too sensitive and broad, and therefore is capturing all habitat instead of critical habitat for the Rufa Red Knot.

NOW, THEREFORE, BE IT RESOLVED, that the Town of Southern Shores is strongly opposed to the USFWS proposed designation of Rufa Red Knot critical habitat along the shorelines of Bogue Banks (Unit NC-4) and Cape Hatteras National Seashore as set forth in Document Number 2021-14406 of the Federal Register and will work with State and federal resource officials and elected representatives to ensure the critical habitat designation, as proposed, is not included in the final rule.

BE IT FURTHER RESOLVED that the Town of Southern Shores hereby requests the USFWS revisit the Rufa Red Knot critical habitat designation methodology in a manner resulting in a more fine-tuned designation of important habitats for the Rufa Red Knot rather than broad, indiscriminate continuous stretches of oceanfront shoreline; most notably, an unprecedented 150-mile continuous stretch in North Carolina.

This the 7th day of September 2021.

_____
Thomas G. Bennett, Mayor
Town of Southern Shores

ATTEST:

_____
Sheila Kane, Town Clerk

TOWN OF SOUTHERN SHORES, NORTH CAROLINA

MEMORANDUM

TO: Mayor Bennett and Members of the Town Council

FROM: Cliff Ogburn, Town Manager

SUBJECT: Police Sergeant Retirement Resolution – Awarding Badge & Gun (Resolution #2021-09-03)

DATE: Sept. 7, 2021

Attached please find a resolution awarding badge and service weapon to Police Sergeant George M. Farrow. NCGS 20-187.2 authorizes municipal governing bodies, at their discretion, to award to a retiring law enforcement officer the badge and service sidearm carried during his service with the local government. The statute requires the governing body to determine a price for the service sidearm and further requires that the retiring officer obtain the appropriate permit in accordance with the NCGS 14-402. The resolution recognizes Sergeant Farrow for his dedication to duty and his service to the Town of Southern Shores. Also, the resolution requests the value of the service sidearm be established at $1 and authorizes the Town Manager to transfer to Sergeant Farrow the service sidearm carried and a retired badge similar to the badge worn during his service with the Southern Shores Police Department.

TOWN OF SOUTHERN SHORES, NORTH CAROLINA

RESOLUTION #2021-09-03

RESOLUTION HONORING POLICE SERGEANT GEORGE M. FARROW FOR 25+ YEARS OF SERVICE & AWARDING HIM HIS RETIRED BADGE AND SERVICE SIDEARM

WHEREAS, George M. Farrow joined the Town of Southern Shores Police Department on October 22, 2012 and held the ranks of Patrolman and Sergeant; and

WHEREAS, Sergeant Farrow's service and dedication to the Southern Shores Police Department and accomplishments in the field of law enforcement are hereby recognized and commended; and

WHEREAS, G.S. 20-187.2 provides that retiring members of municipal law enforcement agencies may receive, at the time of their retirement, the badge or a retired badge similar to the badge worn or carried by them during their service with the municipality; and

WHEREAS, G.S. 20-187.2 further provides that the governing body of the municipal law enforcement agency may, in its discretion, award to a retiring member the service sidearm of such retiring member at a price determined by the governing body, upon securing a permit as required by NCGS 14-402 et seq; and

WHEREAS, George M. Farrow has served for over twenty-five total years in law enforcement and nine of those years as a member of the Southern Shores Police Department and is retiring from the Southern Shores Police Department on September 30, 2021; and

WHEREAS, the Town Council members of the Town of Southern Shores hereby determines One and No/100 Dollars ($1.00) to be the value of the service sidearm carried by George M. Farrow, a Glock 45 caliber, Model 21, serial number WTK448.

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Southern Shores, North Carolina as follows:

1. The Town Manager is hereby authorized in accordance with the provisions of G.S. 20-187.2 to transfer to George M. Farrow a retired badge similar the badge worn by him during his service with the Southern Shores Police Department; and

2. The Town Manager is hereby authorized in accordance with the Provisions of G.S. 20-187.2 to transfer to George M. Farrow his service sidearm for and in consideration of the sum of One and No/100 Dollars ($1.00) received from George M. Farrow and upon his securing a permit as required by NCGS 14-402.

BE IT FURTHER RESOLVED that the Town Council of the Town of Southern Shores do hereby extend their best wishes to Sergeant George M. Farrow and his family for a long, happy and healthy retirement.

This Resolution adopted this 7th day of September 2021.

_____
Tom Bennett, Mayor
Town of Southern Shores

ATTEST:_____
Sheila Kane, Town Clerk

AGENDA ITEM SUMMARY FORM

MEETING DATE: September 7, 2021

ITEM TITLE: Public Hearing- SPA-21-01, a Site Plan Amendment application submitted by Aston Properties to amend the site plan for the Marketplace Shopping Center

ITEM SUMMARY:

The applicant seeks an amendment to the site plan for the Marketplace shopping center by demolishing a portion of one building and construction of a new 24,000 sq. ft. Marshalls, a new 6,000 sq. ft. retail space for a business to be determined, and parking lot modifications. The proposed parking lot modifications include the use of permeable pavers in order to be eligible for a maximum lot coverage of 67% instead of 60%. Currently, the proposed lot coverage is 67.1%. As of September 1, 2021, we have not received enough documentation to determine the permeability of the proposed pavers which could affect the square footage of permeable pavers required.

The proposed signage for Marshalls includes three wall signs, one under canopy sign, and one name plate on the freestanding sign which are in compliance with the Town's sign requirements. There are 150 proposed parking spaces with 102 of them being permeable and a total of 613 parking spaces for the site which are in compliance with the Town's parking requirements. A lighting plan and required documentation have also been provided that demonstrate compliance with the Town's outdoor lighting requirements.

STAFF RECOMMENDATION:
The Land Use Plan identifies this area as Commercial in the C, General Commercial zoning district which is consistent with the improvements proposed in the application. All applicable regulations of the Town Zoning Ordinance and all of Town Staff's concerns that are applicable to this application have been identified or are addressed in the recommended conditions. Town Staff recommends conditional approval of the application and the Town Planning Board unanimously (5-0) recommended conditional approval of the application at the August 16, 2021 Planning Board meeting. Both recommend the following conditions:

1. The following approvals shall be issued prior to submittal of a Building Permit application:

    a. Soil Erosion Sedimentation Control Plan Permit for land disturbance over 1 acre as issued by the NCDEQ;
    b. Stormwater Management Permit as issued by the NCDEQ;
    c. Wastewater approval by the Dare County Health Dept. (tentative approval received from the Dare County Health Dept. and the N.C. Dept. of Health and Human Services).
    d. Review and approval of potable water distribution system modifications or extensions

by the Dare County Water Dept. (tentative approval received).

2. Lot coverage shall be reduced to not exceed 67% prior to submittal of a Building Permit application.

3. Documentation showing the proposed permeable paver product and its permeability shall be submitted prior to submittal of a Building Permit application.

4. The applicant must strictly abide by all requirements of the Town Code and must also strictly comply with all other applicable local, State, and Federal requirements.

5. Prior to issuance of a Building Permit, the Town Engineer and the applicant's representative shall evaluate the existing stormwater system for glaring deficiencies and address them.

REQUESTED ACTION:

Motion to approve SPA-21-01 with the recommended conditions.

STAFF REPORT

To: Southern Shores Town Council
Date: September 7, 2021
Case: SPA-21-01
Prepared By: Wes Haskett, Deputy Town Manager/Planning Director

GENERAL INFORMATION

Applicant: Aston Properties
610 E. Morehead St.
Charlotte, NC 28202

Requested Action: Site Plan Amendment application submitted by Aston Properties to amend the site plan for the Marketplace shopping center.

PIN #: 986720717057
Location: 5500 N. Croatan Hwy.
Zoning: C, General Commercial District

Existing Land Use: **"**Commercial"

Surrounding Land Use & Zoning:

North- Residential; RS-1, Single-Family Residential District
South- Highway 158, Town of Kitty Hawk
East- Commercial; C, General Commercial District
West- Commercial; C, General Commercial District

Physical Characteristics: Developed (existing Group Development)

Applicable Regulations: Town Zoning Ordinance: Article III, Interpretation and Definition of Terms; Article IV, Application of Regulations; Article VI, General Provisions; Article VII, Schedule of District Regulations; Article X, Administration and Enforcement.

ANALYSIS

The applicant seeks an amendment to the site plan for the Marketplace shopping center by demolishing a portion of one building and construction of a new 24,000 sq. ft. Marshalls, a new 6,000 sq. ft. retail space for a business to be determined, and parking lot modifications. The proposed parking lot modifications include the use of permeable pavers in order to be eligible for a maximum lot coverage of 67% instead of 60%. Currently, the proposed lot coverage is 67.1%. As of September 1, 2021, we have not received enough documentation to determine the permeability of the proposed pavers which could affect the square footage of permeable pavers required.

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RECOMMENDATION

The Land Use Plan identifies this area as Commercial in the C, General Commercial zoning district which is consistent with the improvements proposed in the application. All applicable regulations of the Town Zoning Ordinance and all of Town Staff's concerns that are applicable to this application have been identified or are addressed in the recommended conditions. Town Staff recommends conditional approval of the application and the Town Planning Board unanimously (5-0) recommended conditional approval of the application at the August 16, 2021 Planning Board meeting. Both recommend the following conditions:

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    c. Wastewater approval by the Dare County Health Dept. (tentative approval received from the Dare County Health Dept. and the N.C. Dept. of Health and Human Services).
    d. Review and approval of potable water distribution system modifications or extensions by the Dare County Water Dept. (tentative approval received).

2. Lot coverage shall be reduced to not exceed 67% prior to submittal of a Building Permit application.

3. Documentation showing the proposed permeable paver product and its permeability shall be submitted prior to submittal of a Building Permit application.

4. The applicant must strictly abide by all requirements of the Town Code and must also strictly comply with all other applicable local, State, and Federal requirements.

5. Prior to issuance of a Building Permit, the Town Engineer and the applicant's representative shall evaluate the existing stormwater system for glaring deficiencies and address them.

TIMMONS GROUP

1805 West City Drive
Unit E
Elizabeth City, NC 27909

P 252.621.5030
F 252.562.6974
www.timmons.com

August 9, 2021

Mr. Wes Haskett, Planning Director
Town of Southern Shores
5375 N. Virginia Dare Trail,
Southern Shores, NC 27949

RE: Modification to The Marketplace
At Southern Shores
Timmons Project No. 44588

Dear Wes:

Please accept the following submittal for Planning Board Review:

1. 12 copies of Civil Site Plan Design
2. 12 copies of the building rendering with signage calculations.
3. 12 copies of the lighting plans with supporting lighting cut sheets.
4. A copy of the willingness serve letter from Dare County Water which also states approval for the reduction of cover from 36 inches to 30 inches.

The revised plans have incorporated responses to comments that have been made by you and Mr. Joe Anlauf.

1. We have now provided the require pervious pavement in excess of the minimum required per your calculation. The product proposed is permeable pavers.
2. I have added to the landscape plan and indicated that the area of development does contain more than 15% open space. I would like to further discuss with you the comment regarding a landscape buffer and whether that is applicable for this design.
3. We have corrected the grading labels and have added a few existing spot grades to help illustrate how the rear portion of the site will drain.
4. We have added information on the area of disturbance which is substantially larger than previous due to the removal of pavement for installation of the pervious pavers. We will be filing for erosion control and stormwater permits once the scope of development work is approved by the Town.
5. The waterline changes will require permitting through NCDEQ – Public Water Supply. We are working with Dare County to insure compliance with their specifications.
6. We have added a “connection to sewer manhole” detail.
7. The water pumped from the well point systems for dewatering for waterline installation will be routed through a sediment bag that will be allowed to discharge on the existing pavement. This water should not contain sediment; however, gutter protection is provided at each flume that discharges from that area.

At the time of publishing our plans and documents for this submittal, we did not yet have the letter requested from the health department documenting that the septic system is sufficient for this modification to the shopping center. We are hoping that the engineers working on that portion of the project will be able to obtain the letter in time for this project to be able to move forward as anticipated.

We will continue to review our plans and make additional changes as necessary. If you have any questions or require any additional information, please do not hesitate to contact me at (252) 621-5029.

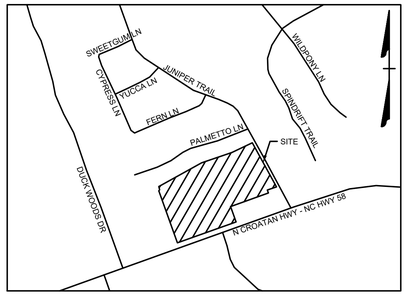
Sincerely,
Timmons Group

Kimberly D. Hamby, PE
Sr. Project Manager

cc: file
L. Karen Partee, Aston Properties

THE MARKETPLACE AT SOUTHERN SHORES

SITE PLAN



VICINITY MAP
NO SCALE

AUGUST 9, 2021

SITE DATA:

1. OWNER:
   SOUTHERN SHORES OWNER, LLC
   610 E MOREHEAD STREET, SUITE 100
   CHARLOTTE, NC 28202

   REGISTERED AGENT/DEVELOPER
   ASTON PROPERTIES, INC.
   CONTACT: KAREN PARTEE
   (704) 366-7337

2. SITE INFORMATION:
   PIN#: 986720717057
   PARCEL#: 022510000
   D.B. 1982 PG. 893
   SITE AREA: 18.1 AC
   ZONING: COMMERCIAL HIGHWAY PRIMARY
   ADDRESS: 5539 NORTH CROATAN HIGHWAY
   SOUTHERN SHORES, NC 27949

3. SITE LOCATED IN FLOOD ZONES "X", "SHADED X" AND "AE(4')" ACCORDING TO FIRM MAP NUMBER 3720986700K, DATED JUNE 19, 2020. THE TOWN HAS ADOPTED A LOCAL ELEVATION STANDARD OF 8'.

4. THIS IS NOT A BOUNDARY SURVEY, BOUNDARY INFORMATION TAKEN FROM SURVEY TITLED "MARKETPLACE SHOPPING CENTER", BY MICHAEL D. BARR, PLS ON OCTOBER 30, 2017.

5. IMPERVIOUS AREA CALCULATIONS:
   EXISTING = 530,755 SF (67.3% OF SITE)
   PROPOSED = 529,719 SF (67.1% OF SITE)
   REQUIRED PERVIOUS PAVEMENT:
   5.1% OF 529,719 SF = 27,016 SF
   PERVIOUS PAVER AREA PROVIDED = 28,332 SF

6. PARKING:
   EXISTING SPACES = 587
   EXISTING TO BE REMOVED = 124
   PROPOSED NEW = 150
   FINAL TOTAL = 613
   (INCLUDING 12 ADA SPACES)
   REQUIRED ADA SPACES = 2% OF TOTAL
   614 * 0.02 = 12 ADA SPACES
   REQUIRED SPACES = 514
   (SEE CALCULATIONS ON SHEET C0.1)

7. LANDSCAPING CALCULATIONS: PARKING AREA BEING MODIFIED BY PROJECT = 99,999 SF
   REQUIRED LANDSCAPE AREA (15%) = 15,000 SF
   LANDSCAPE AREA PROVIDED = 16,980 SF

8. DISTURBED AREA WILL NOT EXCEED 3.2 ACRES

9. ALL MATERIAL REMOVED FROM SITE SHALL BE DISPOSED OF IN AN APPROVED LOCATION. ANY SOIL MATERIAL BROUGHT ON SITE SHALL COME FROM AN APPROVED MINE.

10. TOPOGRAPHIC SURVEY PREPARED BY MICHAEL D. BARR, PLS ON NOVEMBER 27, 2019.

SHEET LIST

SITE LOCATION

5539 NORTH CROATAN HIGHWAY
SOUTHERN SHORES, NC 27949

OWNER

SOUTHERN SHORES OWNER, LLC
610 E MOREHEAD STREET, SUITE 100
CHARLOTTE, NC 28202

CIVIL ENGINEER

TIMMONS GROUP
1805 WEST CITY DRIVE, UNIT E
ELIZABETH CITY, NC 27909
KIMBERLY HAMBY, PE
(252) 621-5029
KIM.HAMBY@TIMMONS.COM

DEVELOPER

ASTON PROPERTIES, INC
610 E MOREHEAD STREET, SUITE 100
CHARLOTTE, NC 28202
KAREN PARTEE
(704) 319-4922
LKPARTEE@ASTONPROP.COM

NORTH CAROLINA PROFESSIONAL SEAL 042614 ENGINEER KIMBERLY D. HAMBY
Kimberly D. Hamby
8-9-21

PERMIT DRAWING
NOT FOR CONSTRUCTION

THIS DRAWING PREPARED AT THE
ELIZABETH CITY OFFICE
1805 West City Drive, Unit E | Elizabeth City, NC 27909
TEL 252.621.5030 FAX 252.562.6974 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE
REVISED PER TRC/TOWN COMMENTS	08/09/2021

DATE 06/15/21
DRAWN BY BCD
DESIGNED BY -
CHECKED BY KDH
SCALE -

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA
COVER SHEET

JOB NO. 44588
SHEET NO. C0.0

GENERAL PLAN NOTES:

1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL CONSTRUCTION SHALL CONFORM TO THE LATEST VERSION OF NCDOT STANDARDS.
2. THE PLAN SET APPROVED BY THE TOWN OF SOUTHERN SHORES SHALL BE THE PLAN SET USED FOR CONSTRUCTION, UNLESS OTHERWISE DIRECTED BY THE OWNER.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN INDEPENDENT QUANTITY TAKE-OFF AND INCLUDE ALL ITEMS NECESSARY TO DELIVER A COMPLETE PROJECT AS PART OF THEIR BASE BID. THIS INCLUDES ANY INTERIM STAGING OR CONSTRUCTION MEANS AND METHODS EMPLOYED BY THE CONTRACTOR IN ORDER TO DELIVER A COMPLETE PROJECT.
4. CONTRACTOR SHALL CLARIFY ANY UNCLEAR INFORMATION THEY IDENTIFY IN THE PLAN SET OR IN THE CONTRACT DOCUMENTS DURING THE BID PERIOD.
5. THIS PLAN SET DOES NOT SPECIFY EXACT JOB SEQUENCING OR CONTRACTOR'S MEANS & METHODS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING THE JOB TO AVOID SUB-CONTRACTOR & TRADE CONFLICTS, WORK DELAYS, AND WORK STOPPAGES IN SITE CONSTRUCTION. THIS INCLUDES STAGING AND SCHEDULING OF SITE PLAN ELEMENTS OR CONSTRUCTION PRACTICES FOR MATERIAL AND EQUIPMENT THAT OVERLAP OR OCCUPY THE SAME PHYSICAL FOOTPRINT EITHER CONCURRENTLY OR DURING DIFFERENT PERIODS OF SITE CONSTRUCTION.

DEMOLITION PLAN:

1. PERFORM ALL WORK IN ACCORDANCE WITH LOCAL CODES AND REGULATIONS.
2. USE ALL MEANS NECESSARY TO CONTROL DUST AT THE SITE. PROVIDE STREET CLEANING WHEN NECESSARY OR DIRECTED.
3. LEGALLY DISPOSE OF ANY EXCESS MATERIALS OFF-SITE AT NO ADDITIONAL COST TO THE OWNER.
4. WORK IS TO BE PERFORMED SO THAT INTERRUPTIONS TO THE OPERATIONS OF ADJACENT FACILITIES ARE AVOIDED.
5. DIMENSIONS PROVIDED ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ACCURACY OF QUANTITY TAKEOFF.
6. ANY PROPERTY PINS DAMAGED AS A PART OF CONSTRUCTION SHALL BE RESET BY A NORTH CAROLINA REGISTERED SURVEYOR.
7. SEED DISTURBED GROUND ACCORDING TO EROSION CONTROL DETAILS.
8. SAW-CUT EXISTING PAVEMENT, CONCRETE AND CURB & GUTTER AT LIMITS OF REMOVAL TO FULL DEPTH USING CARE TO CUT NEAT, STRAIGHT LINES. CUT AT EXISTING JOINTS WHERE POSSIBLE.
9. PAVEMENT REMOVAL AREAS SHALL INCLUDE ALL OF THE PAVEMENT STRUCTURE (ASPHALT, CONCRETE, BASE STONE, ETC.).
10. CONTRACTOR SHALL ENGAGE NC ONE CALL OR A PRIVATE UTILITY LOCATION SERVICE TO MARK ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
11. THE CONTRACTOR SHALL PROVIDE TEMPORARY FENCES, BARRICADES, COVERINGS, OR OTHER PROTECTIONS TO EXISTING ITEMS INDICATED TO REMAIN, APPLY PROTECTIONS TO ADJACENT PROPERTIES AS REQUIRED. RESTORE DAMAGED WORK TO THE CONDITION EXISTING PRIOR TO THE START OF WORK, UNLESS OTHERWISE DIRECTED. PROTECT EXISTING TREES AND VEGETATION WHICH ARE TO REMAIN FROM PHYSICAL DAMAGE.
12. ALL DEMOLITION DEBRIS SHALL BE LEGALLY DISPOSED OF OFF-SITE.

SITE CLEARING:

1. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND ALL ELSE REQUIRED FOR AND TO PERFORM ALL CLEARING AND GRUBBING OF THE SURFACE OF THE GROUND OF THE DESIGNATED AREAS.
2. IN AREAS DESIGNATED TO BE CLEARED AND GRUBBED, ALL STUMPS, ROOTS, BURIED LOGS, BRUSH, GRASS AND OTHER UNSATISFACTORY MATERIALS SHALL BE REMOVED. THE ROOTS AND OTHER PROJECTIONS WITHIN EXCAVATION AREAS OVER ONE AND ONE-HALF (1-1/2) INCHES IN DIAMETER SHALL BE GRUBBED OUT TO A DEPTH OF AT LEAST EIGHTEEN (18) INCHES BELOW THE FINISHED SUBGRADE ELEVATION OR SLOPE GRADE. STUMPS, ROOTS AND OTHER PROJECTIONS WITHIN EMBANKMENT AREAS SHALL BE COMPLETELY GRUBBED OUT TO A DEPTH OF NOT LESS THAN EIGHT (8) INCHES BELOW THE EXISTING GROUND LEVEL.
3. ALL DEBRIS AND OTHER ITEMS TO BE REMOVED FROM THE SITE SHALL BE DONE SO AT THE CONTRACTOR'S EXPENSE. WASTE ITEMS AND MATERIALS SHALL BE LEGALLY DISPOSED OF AS DIRECTED BY THE OWNER.

TRENCHING, DEWATERING AND BACKFILLING:

1. ALL PIPE LINES SHALL BE LAID TO SUCH LINE AND GRADE SO AS NOT TO CONFLICT WITH WATER, SEWER, GAS, STORM SEWER OR OTHER EXISTING UTILITY LINES OR SERVICES. ALL PIPE LINES SHALL GENERALLY BE LAID TO LINE AND GRADE SHOWN ON THE CONTRACT DRAWINGS.
2. THE EXISTENCE AND LOCATIONS OF UNDERGROUND UTILITIES INDICATED ON THE CONTRACT DRAWINGS ARE NOT GUARANTEED AND SHALL BE INVESTIGATED AND VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE STARTING WORK. EXCAVATIONS IN THE VICINITY OF EXISTING STRUCTURES AND UTILITIES SHALL BE DONE CAREFULLY BY HAND.
3. EXCAVATION AND TRENCHING WORK SHALL INCLUDE THE REMOVAL AND SUBSEQUENT HANDLING OF ALL UNSUITABLE MATERIALS EXCAVATED OR OTHERWISE REMOVED IN PERFORMANCE OF THE CONTRACT WORK.
4. EXCAVATED MATERIALS SHALL BE DEPOSITED IN AREAS DESIGNATED BY THE OWNER. THE CONTRACTOR SHALL AVOID DEPOSITING EXCAVATED MATERIALS ON PAVEMENTS, SIDEWALKS OR GRASS PLOTS, EXCEPT ON AUTHORIZATION OF THE OWNER AND THEN ONLY WHEN ADEQUATE TEMPORARY PROVISIONS HAVE BEEN MADE FOR PASSAGE AND PROTECTION OF PEDESTRIANS AND VEHICLES.
5. ADEQUATE BRIDGING AND PLANKED CROSSINGS MUST BE PROVIDED AND MAINTAINED ACROSS ALL OPEN TRENCHES FOR PEDESTRIANS AND VEHICLES.
6. THE CONTRACTOR SHALL SHORE UP OR OTHERWISE PROTECT ALL FENCES, BUILDINGS, WALLS, WALKS, CURBS OR OTHER PROPERTY ADJACENT TO ANY EXCAVATION WHICH MIGHT BE DISTURBED DURING THE PROGRESS OF THE WORK. THE PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS AND OTHER FACILITIES IN AREAS OF WORK.
7. BARRICADE OPEN EXCAVATIONS AND PROVIDE WARNING LIGHTS FROM DUSK TO DAWN EACH DAY.
8. PROVIDE BRACING AND SHORING AS REQUIRED IN EXCAVATIONS, TO MAINTAIN SIDES AND TO PROTECT ADJACENT STRUCTURES FROM SETTLEMENT, COMPLYING WITH LOCAL CODES AND REGULATIONS. MAINTAIN UNTIL EXCAVATIONS ARE BACKFILLED.
9. DEWATERING EQUIPMENT SHALL BE PROVIDED TO REMOVE AND DISPOSE OF ALL SURFACE AND GROUND WATER ENTERING EXCAVATIONS, TRENCHES, OR OTHER PARTS OF THE WORK. WATER FROM DEWATERING OPERATIONS SHALL BE ROUTED THROUGH A DEWATERING FILTER BAG.
10. EACH EXCAVATION SHALL BE KEPT DRY DURING SUBGRADE PREPARATION AND CONTINUALLY THEREAFTER UNTIL THE STRUCTURE TO BE BUILT, OR THE PIPE TO BE INSTALLED THEREIN, IS COMPLETED TO THE EXTENT THAT NO DAMAGE FROM HYDROSTATIC PRESSURE, FLOTATION, OR OTHER CAUSE WILL RESULT.
11. ALL EXCAVATIONS FOR CONCRETE STRUCTURES OR TRENCHES WHICH EXTEND DOWN TO OR BELOW GROUND WATER SHALL BE DEWATERED BY LOWERING AND KEEPING THE GROUND WATER LEVEL BENEATH SUCH EXCAVATIONS 12 INCHES OR MORE BELOW THE BOTTOM OF THE EXCAVATION.
12. WHENEVER UNSUITABLE OR UNSTABLE SOIL CONDITIONS WHICH CANNOT BE CORRECTED BY DEWATERING ARE ENCOUNTERED, TRENCHES SHALL BE EXCAVATED BELOW GRADE AND THE TRENCH BOTTOM SHALL BE BROUGHT TO GRADE WITH SUITABLE STABILIZATION MATERIAL.
13. SUBGRADES FOR STRUCTURES AND TRENCH BOTTOMS SHALL BE FIRM AND THOROUGHLY COMPACTED; SHALL BE FREE FROM SILT AND MUCK; AND SHALL BE SUFFICIENTLY STABLE TO REMAIN FIRM AND INTACT UNDER THE FEET OF THE WORKMEN.
14. SUBGRADES FOR CONCRETE STRUCTURES OR TRENCH BOTTOMS WHICH ARE OTHERWISE SOLID, BUT WHICH BECOME MUCKY ON TOP DUE TO CONSTRUCTION OPERATIONS, SHALL BE REINFORCED WITH CRUSHED ROCK OR GRAVEL. THE STABILIZING MATERIAL SHALL BE SPREAD AND COMPACTED TO A DEPTH OF NOT MORE THAN 4 INCHES. NOT MORE THAN 1/2 INCH DEPTH OF MUD OR MUCK SHALL BE ALLOWED TO REMAIN ON STABILIZED TRENCH BOTTOMS WHEN THE PIPE BEDDING MATERIAL IS PLACED THEREON.
15. THE FINISHED ELEVATION OF STABILIZING SUBGRADES SHALL NOT BE ABOVE SUBGRADE ELEVATIONS INDICATED ON THE DRAWINGS.
16. BACKFILL COMPACTED TO 95 PERCENT WILL BE REQUIRED FOR THE FULL DEPTH OF THE TRENCH ABOVE THE PIPE. THE METHOD OF COMPACTION AND THE EQUIPMENT USED SHALL BE APPROPRIATE FOR THE MATERIAL TO BE COMPACTED AND SHALL NOT TRANSMIT DAMAGING SHOCKS TO THE PIPE.
17. BACKFILL MATERIAL SHALL BE COMPACTED TO THE SPECIFIED PERCENT OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.
18. THE TOP PORTION OF BACKFILL BENEATH ESTABLISHED LAWN AREAS SHALL BE FINISHED WITH NOT LESS THAN 4 INCHES OF TOPSOIL CORRESPONDING TO, OR BETTER THAN, THAT UNDERLYING ADJOINING LAWN AREAS.

STORM DRAINAGE PIPING:

1. ALL PIPE MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE NCDOT "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES".
2. ALL PIPE JOINTS AND CONNECTIONS MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S, ASTM AND NCDOT PROVISIONS, SPECIFICATIONS, AND STANDARDS SO AS TO BE SOIL TIGHT AND LEAK RESISTANT.
3. PIPE INSTALLATION SHALL CONFORM TO THE LINES AND GRADES AS SHOWN ON THE DRAWINGS.
4. DURING CONSTRUCTION, MINIMUM HEIGHTS OF COVER OVER STORM SEWER PIPING TO BE SUBJECTED TO TRAFFIC LOADING ARE TO BE MAINTAINED PER NCDOT REQUIREMENTS.
5. ALL CONCRETE PIPES ARE TO BE CLASS III RCP UNLESS OTHERWISE NOTED.
6. ALL STORM PIPES ARE TO BE INSTALLED PER THE LATEST NCDOT ROAD AND BRIDGE STANDARDS AND DETAILS AND MANUFACTURER'S RECOMMENDATIONS.

STORM DRAINAGE STRUCTURES:

1. CONTRACTOR SHALL EXCAVATE SUFFICIENT AREA TO THE ELEVATIONS AND DIMENSIONS SHOWN WITHIN A TOLERANCE OF PLUS OR MINUS 0.10'. EXCAVATIONS SHALL EXTEND A SUFFICIENT DISTANCE FROM FOOTINGS AND FOUNDATIONS TO PERMIT PLACEMENT AND REMOVAL OF FORMWORK, INSTALLATION OF SERVICES AND INSPECTION OF CONSTRUCTION.
2. DRAINAGE STRUCTURES SHALL BE BUILT OF THE MATERIALS SHOWN ON THE DRAWINGS.
3. CONTRACTOR SHALL CONSTRUCT ALL INDICATED DRAINAGE STRUCTURES IN ACCORDANCE WITH THE DRAWINGS, DETAILS, AND NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

GRADING PLAN:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES AND TOWN OF KILL DEVIL HILLS SPECIFICATIONS AND STANDARDS WHERE APPLICABLE.
2. ALL SITE GRADING, EXCAVATION, BACKFILL AND FILL SHALL COMPLY WITH THE REQUIREMENTS SET FORTH BY THE PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS.
3. ACCESSIBLE PARKING SPACES MUST MEET ADA STANDARDS AND HAVE A MAXIMUM SLOPE OF 2.00% IN ANY DIRECTIONS.
4. PROOF ROLL EXPOSED SOILS USING A HEAVILY-LOADED, TANDEM-AXLE TRUCK IN THE PRESENCE OF A REPRESENTATIVE OF THE TESTING AGENCY TO DETECT SOFT, WET OR WEAK ZONES. IF THE EXPOSED SOILS ARE UNSTABLE, THE CONTRACTOR SHALL REPAIR THE SOILS AS DIRECTED BY THE TESTING AGENCY.
5. ALL EXISTING VALVES, MANHOLES, AND OTHER APPURTANCES TO REMAIN LOCATED WITHIN THE WORK LIMITS SHALL BE ADJUSTED TO FINISH GRADE.

LAYOUT PLAN:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS OF NCDOT, NCDEQ, AND THE TOWN OF SOUTHERN SHORES.
2. ALL DIMENSIONS ARE FROM THE FACE OF CURB UNLESS NOTED OTHERWISE.
3. QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR PERFORMING THEIR OWN QUANTITY TAKEOFF.
4. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL STOP SIGNS, DIRECTIONAL SIGNS, AND STRIPING SHOWN ON THE PLANS.

PAVING:

1. ABC STONE BASE AND BITUMINOUS CONCRETE PAVING WEATHER LIMITATIONS: APPLY PRIME AND TACK COSTS ONLY WHEN AMBIENT TEMPERATURE IS ABOVE 50°F. AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35°F FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION. DO NO APPLY WHEN BASE IS WET OR CONTAINS AN EXCESS OF MOISTURE. CONSTRUCT BITUMINOUS CONCRETE SURFACE COURSE ONLY WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40°F. AND WHEN BASE IS DRY. BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30°F AND RISING.
2. CONTRACTOR SHALL PLACE COMPACTED BASE COURSE AT DEPTHS INDICATED IN DETAIL DRAWINGS TO ACHIEVE REQUIRED FINISH GRADE.
3. BASE COURSE SHALL BE CONSTRUCTED OF GRADED CRUSHED STONE MATERIAL, NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS STANDARD STONE TYPE ABC.
4. THE BASE MATERIAL AND METHOD OF CONSTRUCTION SHALL MEET THE STANDARD REQUIREMENTS OF THE NCDOT DIVISION OF HIGHWAYS.
5. SURFACE COURSE SHALL BE 2" OF SF TYPE 9.5A PLANT MIX CONCRETE. MATERIALS USED AND METHOD OF MIXING, PLACING, COMPACTING, ETC., SHALL MEET THE STANDARD REQUIREMENTS OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
6. BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30°F AND RISING.
7. APPLY PRIME AND TACK COATS ONLY WHEN AMBIENT TEMPERATURE IS ABOVE 50°F, AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35°F FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION. DO NO APPLY WHEN BASE IS WET OR CONTAINS AN EXCESS OF MOISTURE. CONSTRUCT BITUMINOUS CONCRETE SURFACE COURSE ONLY WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40°F, AND WHEN BASE IS DRY. BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30°F AND RISING.

STRIPING NOTES:

1. CONTRACTOR SHALL STRIPE PARKING LOT IN ACCORDANCE WITH THE DRAWINGS.
2. THE CONTRACTOR SHALL SWEEP AND CLEAN THE NEW PAVEMENT SURFACE TO ELIMINATE LOOSE MATERIAL AND DUST.
3. DO NOT PAINT INSIDE THE GUTTER PAN IN ANY AREA.
4. PAVEMENT MARKING PAINT SHALL BE TYPE A, WATER EMULSION BASE, TRAFFIC PAINT CONFORMING TO THE REQUIREMENTS OF THE LATEST VERSION OF NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES. COLOR SHALL BE WHITE UNLESS OTHERWISE INDICATED.
5. ALL PAVEMENT MARKINGS SHALL BE INSTALLED WITH SLIP-RESISTANT PAINT.
6. APPLY PAINT WITH MECHANICAL EQUIPMENT TO PRODUCE UNIFORM STRAIGHT EDGES. APPLY IN 2 COATS AT MANUFACTURER'S RECOMMENDED RATES.
7. CONTRACTOR SHALL TIE ALL PROPOSED PAVEMENT MARKINGS TO EXISTING MARKINGS AT THE PROJECT LIMITS.

PARKING CALCULATIONS:

MARKETPLACE SHOPPING CENTER
SOUTHERN SHORES, NC
POST-REDEVELOPMENT

	No.		New Size	Post-Redevelopment Status	Use Category Applied	Offices: Total # of Employees	Medical Clinics: Total # of Employees	Medical Clinics: Total # of Doctors	Restaurants: Total # of Employees on Largest Shift	Restaurants: Total # of Seats	Retail: Square Footage	Parking Spaces Required by Code as of 2020-12-17	FFE
5531	1	Farm Bureau Insurance	3,750	Remains	Gen Ofc	7					3,750	16	9.6
5535	2	Scott Team Realty	1,177	Remains	Gen Ofc	4					1,177	6	9.4
5537	3	Shun Xing Chinese Restaurant	1,177	Remains	Restaurant				3	30		13	10.2
5539	4	Food Lion #1274	52,265	Remains	Grocery						52,265	105	11.9
5545	5	Dollar Tree	10,007	Remains	Retail						10,007	34	13.7
5547	6	CVS	11,200	Remains	Retail						11,200	38	11.8
5549	7	Marshalls	24,000	Relo	Retail						24,000	80	
5551	8	Vacant	6,000	Relo/Demo/Rebuild	Proposed Retail						6,000	20	
5557	~~11~~		0	Space Demolished								0	
5559	~~12~~		0	Space Demolished								0	
5561	~~13~~		0	Space Demolished								0	
5565	~~14-15~~		0	Space Demolished								0	
5567	~~16~~		0	Relo/Demo								0	
5569	17	Affordable Optical (Existing)	1,560	Remains	Clinic		6	1				11	9
5571	18	Affordable Optical (Expansion)	1,348	Remains	Clinic		*included above*					0	9.1
5573	19	Vacant	1,046	Remains	Proposed Restaurant				4	25		13	9.1
5575	20	Vacant	1,287	Remains	Restaurant				5	25		14	8.5
5579	21	Vacant	1,820	Remains	Proposed Retail						1,820	7	8.4
5581	22	Vacant	1,080	Remains	Proposed Retail						1,080	4	7.7
5583	23	[Coastal Rehabilitation]	1,080	Remains	Gen Ofc	5					1,080	7	7.7
5585	24	[Coastal Rehabilitation]	1,290	Remains	Gen Ofc	7					1,290	8	7.8
5587	25	Charter Communications	2,040	Remains	Retail						2,040	7	7.8
5589	26	Tidewater Skin Care	2,000	Remains	Clinic		10	2				20	7.8
5591	27	Cosmo's Pizza	1,393	Remains	Restaurant				4	59		24	7.8
5593	28	Vacant	1,470	Remains	Proposed Restaurant				5	50		22	7.8
5593-A	29	Vacant	1,514	Remains	Proposed Retail						1,514	6	7.8
5595	30	Keller Williams Realty	5,100	Remains	Gen Ofc	12					5,100	23	7.9
5597-C	31	A Wireless	1,747	Remains	Retail						1,747	6	7.9
5597-B	32	Jersey Mikes	1,648	Remains	Restaurant				8	35		20	7.9
5597-A	33	Starbucks	1,747	Remains	Restaurant				8	26		17	7.9
		Totals	**138,746**								**Total Spaces Required by Code**	**521**	

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042614 8-9-21 KIMBERLY D. HAMBY
Kimberly D. Hamby
PERMIT DRAWING
NOT FOR CONSTRUCTION
THIS DRAWING PREPARED AT THE ELIZABETH CITY OFFICE
1805 West City Drive, Unit E | Elizabeth City, NC 27909
TEL 252.621.5030 FAX. 252.562.6974 www.timmons.com

DATE	REVISION DESCRIPTION
08/09/2021	REVISED PER TRC/TOWN COMMENTS

YOUR VISION ACHIEVED THROUGH OURS.

DATE 06/15/21
DRAWN BY BCD
DESIGNED BY KDH
CHECKED BY KDH
SCALE -

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA

GENERAL NOTES

JOB NO. 44588
SHEET NO. C0.1

SITE DATA:

1. OWNER:
SOUTHERN SHORES OWNER, LLC
610 E MOREHEAD STREET, SUITE 100
CHARLOTTE, NC 28202

REGISTERED AGENT/DEVELOPER
ASTON PROPERTIES, INC.
CONTACT: KAREN PARTEE
(704) 366-7337

2. SITE INFORMATION:
PIN#: 986720717057
PARCEL#: 022510000
D.B. 1982 PG. 893
SITE AREA: 18.1 AC
ZONING: COMMERCIAL HIGHWAY PRIMARY
ADDRESS: 5539 NORTH CROATAN HIGHWAY
SOUTHERN SHORES, NC 27949

3. SITE LOCATED IN FLOOD ZONES "X", "SHADED X" AND "AE(4')" ACCORDING TO FIRM MAP NUMBER 3720986700K, DATED JUNE 19, 2020. THE TOWN HAS ADOPTED A LOCAL ELEVATION STANDARD OF 8'.

4. THIS IS NOT A BOUNDARY SURVEY, BOUNDARY INFORMATION TAKEN FROM SURVEY TITLED "MARKETPLACE SHOPPING CENTER", BY MICHAEL D. BARR, PLS ON OCTOBER 30, 2017.

5. IMPERVIOUS AREA CALCULATIONS:
EXISTING = 530,755 SF (67.3% OF SITE)
PROPOSED = 529,719 SF (67.1% OF SITE)
REQUIRED PERVIOUS PAVEMENT:
5.1% OF 529,719 SF = 27,016 SF
PERVIOUS PAVER AREA PROVIDED = 28,332 SF

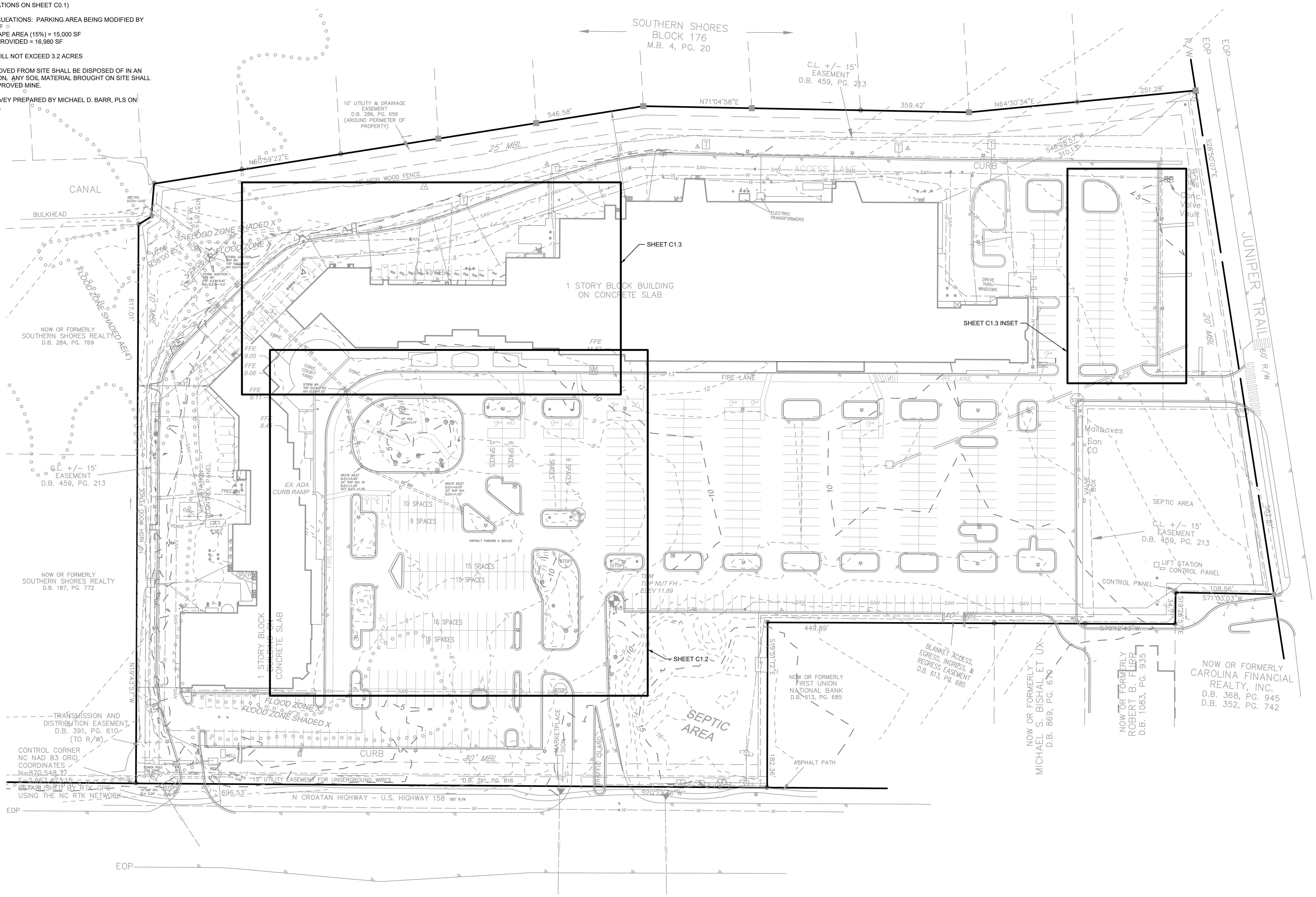
6. PARKING:
EXISTING SPACES = 587
EXISTING TO BE REMOVED = 124
PROPOSED NEW = 150
FINAL TOTAL = 613
(INCLUDING 12 ADA SPACES)
REQUIRED ADA SPACES = 2% OF TOTAL
614 * 0.02 = 12 ADA SPACES
REQUIRED SPACES = 514
(SEE CALCULATIONS ON SHEET C0.1)

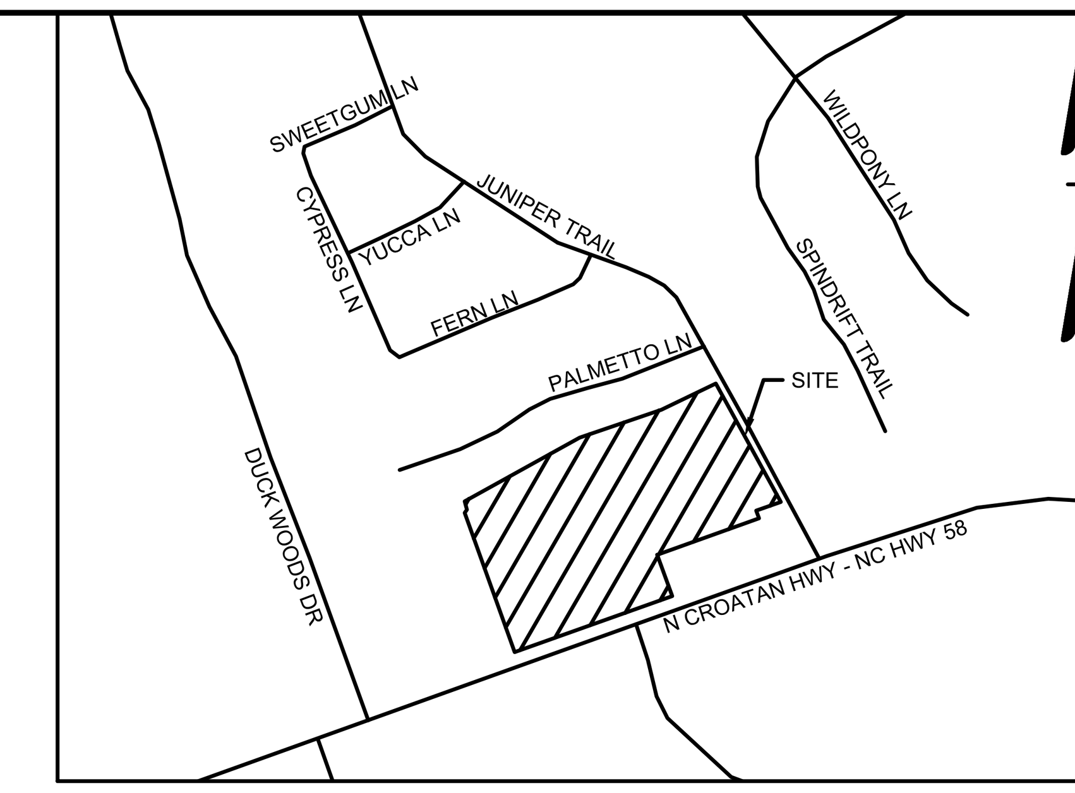
7. LANDSCAPING CALCUEATIONS: PARKING AREA BEING MODIFIED BY PROJECT = 99,999 SF
REQUIRED LANDSCAPE AREA (15%) = 15,000 SF
LANDSCAPE AREA PROVIDED = 16,980 SF

8. DISTURBED AREA WILL NOT EXCEED 3.2 ACRES

9. ALL MATERIAL REMOVED FROM SITE SHALL BE DISPOSED OF IN AN APPROVED LOCATION. ANY SOIL MATERIAL BROUGHT ON SITE SHALL COME FROM AN APPROVED MINE.

10. TOPOGRAPHIC SURVEY PREPARED BY MICHAEL D. BARR, PLS ON NOVEMBER 27, 2019.





VICINITY MAP
NO SCALE

LEGEND

- BENCHMARK
- EX. IRON ROD
- EX. SEWER MANHOLE
- EX. LIGHT POLE
- EX. WATER VALVE
- EX. FIRE HYDRANT
- EX. WATER METER
- EX. BOLLARD
- EX. CATCH BASIN
- EX. STORMWATER MANHOLE
- BOUNDARY
- RIGHT-OF-WAY
- ADJOINING PROPERTY BOUNDARY
- BUILDING SETBACK
- EX. EDGE OF PAVEMENT
- EX. CENTERLINE
- EX. FENCE
- EX. CULVERT PIPE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- EX. FLOOD ZONE LIMITS
- EX. UNDERGROUND POWER LINE
- EX. WATER LINE
- EX. SANITARY SEWER LINE

SCALE 1"=60'
0 60' 120'

NORTH CAROLINA PROFESSIONAL SEAL 042614 ENGINEER KIMBERLY D. HAMBY
Kimberly D. Hamby 8-9-21

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DESIGNED BY: -
CHECKED BY: KDH
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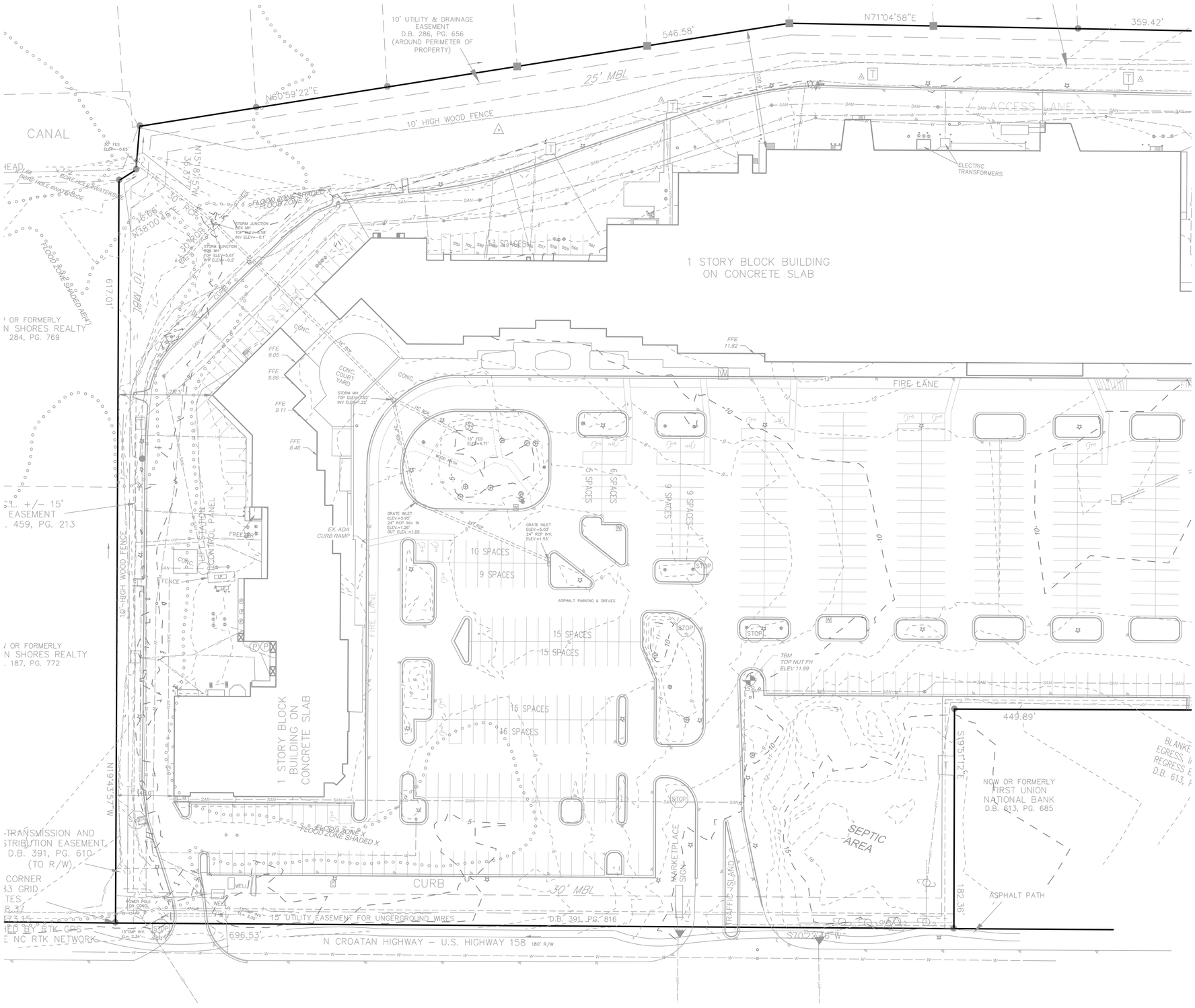
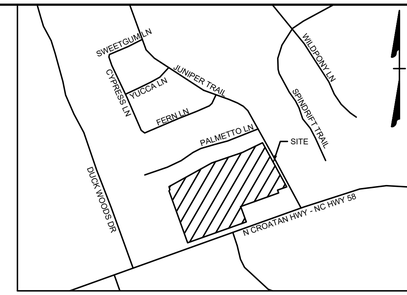
TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA
EXISTING CONDITIONS OVERVIEW

JOB NO.: 44588
SHEET NO.: C1.0





VICINITY MAP

NO SCALE

NAD 83

LEGEND

- BENCHMARK
- EX. IRON ROD
- EX. SEWER MANHOLE
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- EX. WATER LINE
- EX. SANITARY SEWER LINE

SCALE 1"=40'

0 40' 80'

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SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA

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SHEET NO. C1.1

S:\18\44588 - The Marketplace at Southern Shores - Southern Shores, NC\DWG\Sheet\CD\44588C-C1.0 - EXIST.dwg | Plotted on 8/9/2021 12:39 PM | by Kim Hamby

SITE DATA:

1. OWNER:
SOUTHERN SHORES OWNER, LLC
610 E MOREHEAD STREET, SUITE 100
CHARLOTTE, NC 28202

REGISTERED AGENT/DEVELOPER
ASTON PROPERTIES, INC.
CONTACT: KAREN PARTEE
(704) 366-7337

2. SITE INFORMATION:
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PARCEL#: 022510000
D.B. 1982 PG. 893
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ZONING: COMMERCIAL HIGHWAY PRIMARY
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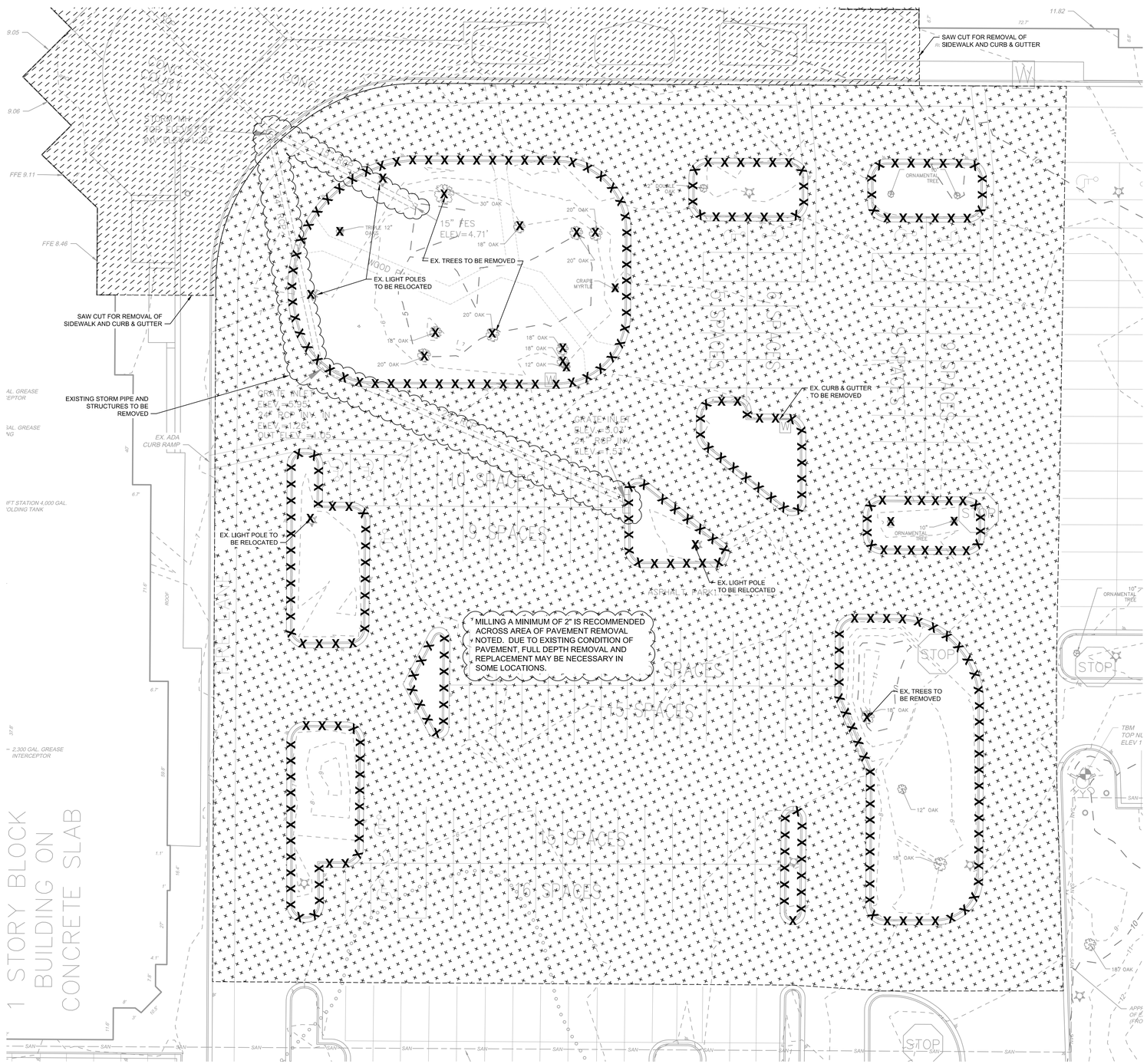
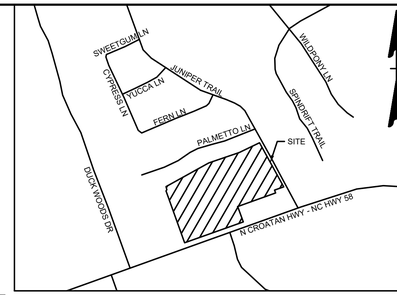
10. TOPOGRAPHIC SURVEY PREPARED BY MICHAEL D. BARR, PLS ON NOVEMBER 27, 2019.

124 PARKING SPACES BEING DEMOLISHED INCLUDING 9 ADA SPACES (THIS TOTAL INCLUDES 11 SPACES BEING STRIPED OUT TO ALLOW FOR IMPROVED TRUCK ACCESS).





VICINITY MAP
NO SCALE

LEGEND

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- EX. FLOOD ZONE LIMITS
- EX. UNDERGROUND POWER LINE
- EX. WATER LINE
- EX. SANITARY SEWER LINE
- EX. BUILDING TO BE DEMOLISHED
- EX. PAVEMENT TO BE MILLED
- EX. CONCRETE/PAVEMENT TO BE REMOVED
- EX. OBJECT TO BE REMOVED

NORTH CAROLINA PROFESSIONAL SEAL 042614 ENGINEER KIMBERLY D. HAMBY
Kimberly D. Hamby 8-9-21

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TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA

DEMOLITION PLAN

JOB NO. 44588
SHEET NO. C1.2

SITE DATA:

1. OWNER:
SOUTHERN SHORES OWNER, LLC
610 E MOREHEAD STREET, SUITE 100
CHARLOTTE, NC 28202

REGISTERED AGENT/DEVELOPER
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CONTACT: KAREN PARTEE
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ADDRESS: 5539 NORTH CROATAN HIGHWAY
SOUTHERN SHORES, NC 27949

3. SITE LOCATED IN FLOOD ZONES "X", "SHADED X" AND "AE(4')" ACCORDING TO FIRM MAP NUMBER 3720986700K, DATED JUNE 19, 2020. THE TOWN HAS ADOPTED A LOCAL ELEVATION STANDARD OF 8'.

4. THIS IS NOT A BOUNDARY SURVEY, BOUNDARY INFORMATION TAKEN FROM SURVEY TITLED "MARKETPLACE SHOPPING CENTER", BY MICHAEL D. BARR, PLS ON OCTOBER 30, 2017.

5. IMPERVIOUS AREA CALCULATIONS:
EXISTING = 530,755 SF (67.3% OF SITE)
PROPOSED = 529,719 SF (67.1% OF SITE)
REQUIRED PERVIOUS PAVEMENT:
5.1% OF 529,719 SF = 27,016 SF
PERVIOUS PAVER AREA PROVIDED = 28,332 SF

6. PARKING:
EXISTING SPACES = 587
EXISTING TO BE REMOVED = 124
PROPOSED NEW = 150
FINAL TOTAL = 613
(INCLUDING 12 ADA SPACES)
REQUIRED ADA SPACES = 2% OF TOTAL
614 * 0.02 = 12 ADA SPACES
REQUIRED SPACES = 514
(SEE CALCULATIONS ON SHEET C0.1)

7. LANDSCAPING CALCULATIONS: PARKING AREA BEING MODIFIED BY PROJECT = 99,999 SF
REQUIRED LANDSCAPE AREA (15%) = 15,000 SF
LANDSCAPE AREA PROVIDED = 16,980 SF

8. DISTURBED AREA WILL NOT EXCEED 3.2 ACRES

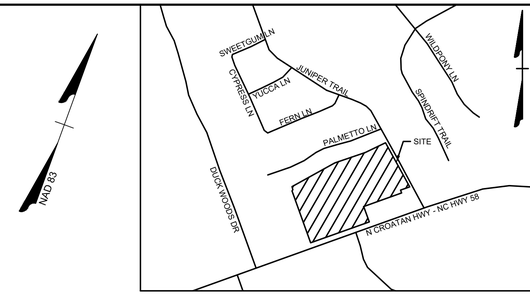
9. ALL MATERIAL REMOVED FROM SITE SHALL BE DISPOSED OF IN AN APPROVED LOCATION. ANY SOIL MATERIAL BROUGHT ON SITE SHALL COME FROM AN APPROVED MINE.

10. TOPOGRAPHIC SURVEY PREPARED BY MICHAEL D. BARR, PLS ON NOVEMBER 27, 2019.

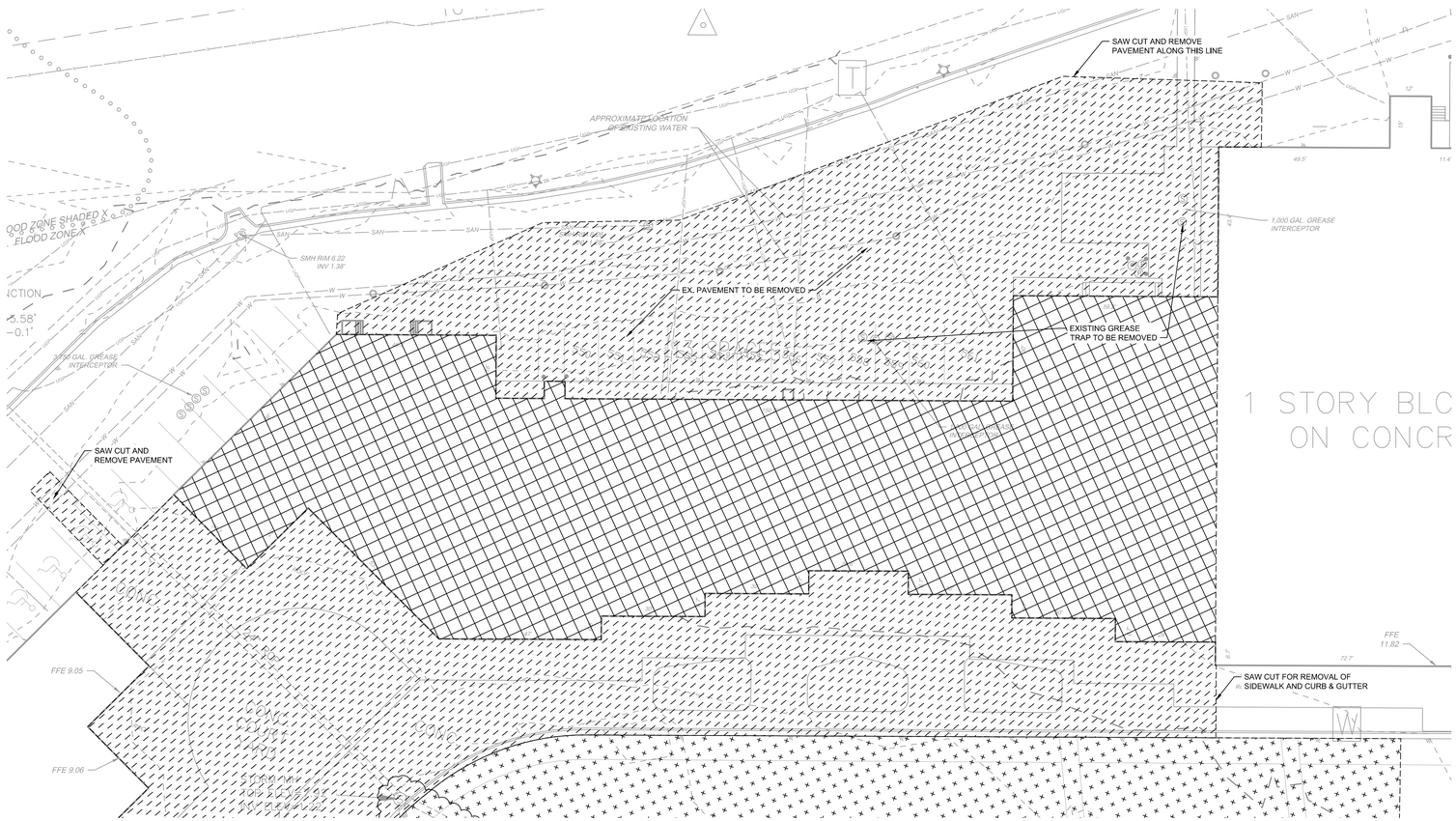
124 PARKING SPACES BEING DEMOLISHED INCLUDING 9 ADA SPACES (THIS TOTAL INCLUDES 11 SPACES BEING STRIPED OUT TO ALLOW FOR IMPROVED TRUCK ACCESS).

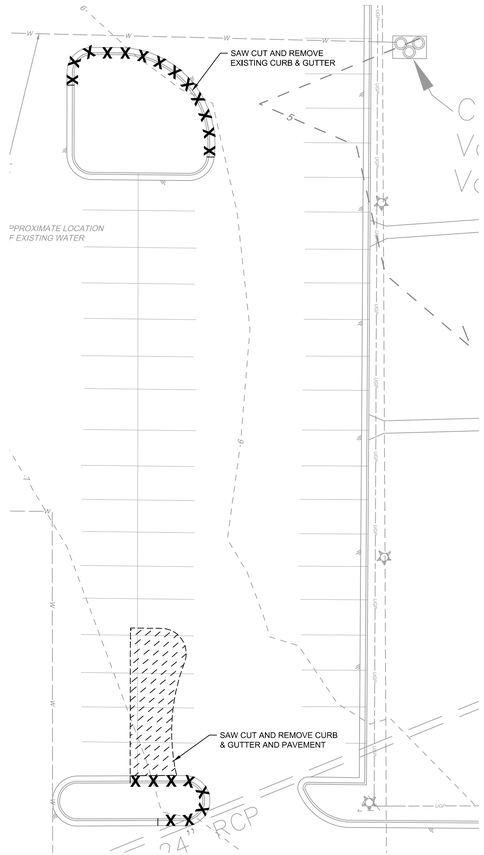
LEGEND

- BENCHMARK
- EX. IRON ROD
- EX. SEWER MANHOLE
- EX. LIGHT POLE
- EX. WATER VALVE
- EX. FIRE HYDRANT
- EX. WATER METER
- EX. BOLLARD
- EX. CATCH BASIN
- EX. STORMWATER MANHOLE
- BOUNDARY
- RIGHT-OF-WAY
- ADJOINING PROPERTY BOUNDARY
- BUILDING SETBACK
- EX. EDGE OF PAVEMENT
- EX. CENTERLINE
- EX. FENCE
- EX. CULVERT PIPE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- EX. FLOOD ZONE LIMITS
- EX. UNDERGROUND POWER LINE
- EX. WATER LINE
- EX. SANITARY SEWER LINE
- EX. BUILDING TO BE DEMOLISHED
- EX. PAVEMENT TO BE MILLED
- EX. CONCRETE/PAVEMENT TO BE REMOVED
- EX. OBJECT TO BE REMOVED



VICINITY MAP
NO SCALE





INSET
SCALE 1"=20'
0 20' 40'

PERMIT DRAWING
NOT FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042614 8-9-21 KIMBERLY D. HANEY

THIS DRAWING PREPARED AT THE
ELIZABETH CITY OFFICE
1805 West City Drive, Unit E | Elizabeth City, NC 27909
TEL 252.621.5030 FAX 252.562.6974 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
08/09/2021	REVISED PER TRC/TOWN COMMENTS

DATE 06/15/21
DRAWN BY BCD
DESIGNED BY KDH
CHECKED BY KDH
SCALE 1"=20'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA
DEMOLITION PLAN

JOB NO. 44588
SHEET NO. C1.3

S:\100\44588 - The Marketplace at Southern Shores - Southern Shores, NC\DWG\Sheet\CD\44588C-C1.2-DEMO.dwg | Plotted on 8/9/2021 12:38 PM | by Kim Hamby

SITE DATA:

1. OWNER:
SOUTHERN SHORES OWNER, LLC
610 E MOREHEAD STREET, SUITE 100
CHARLOTTE, NC 28202

REGISTERED AGENT/DEVELOPER
ASTON PROPERTIES, INC.
CONTACT: KAREN PARTEE
(704) 366-7337

2. SITE INFORMATION:
PIN#: 986720717057
PARCEL#: 022510000
D.B. 1982 PG. 893
SITE AREA: 18.1 AC
ZONING: COMMERCIAL HIGHWAY PRIMARY
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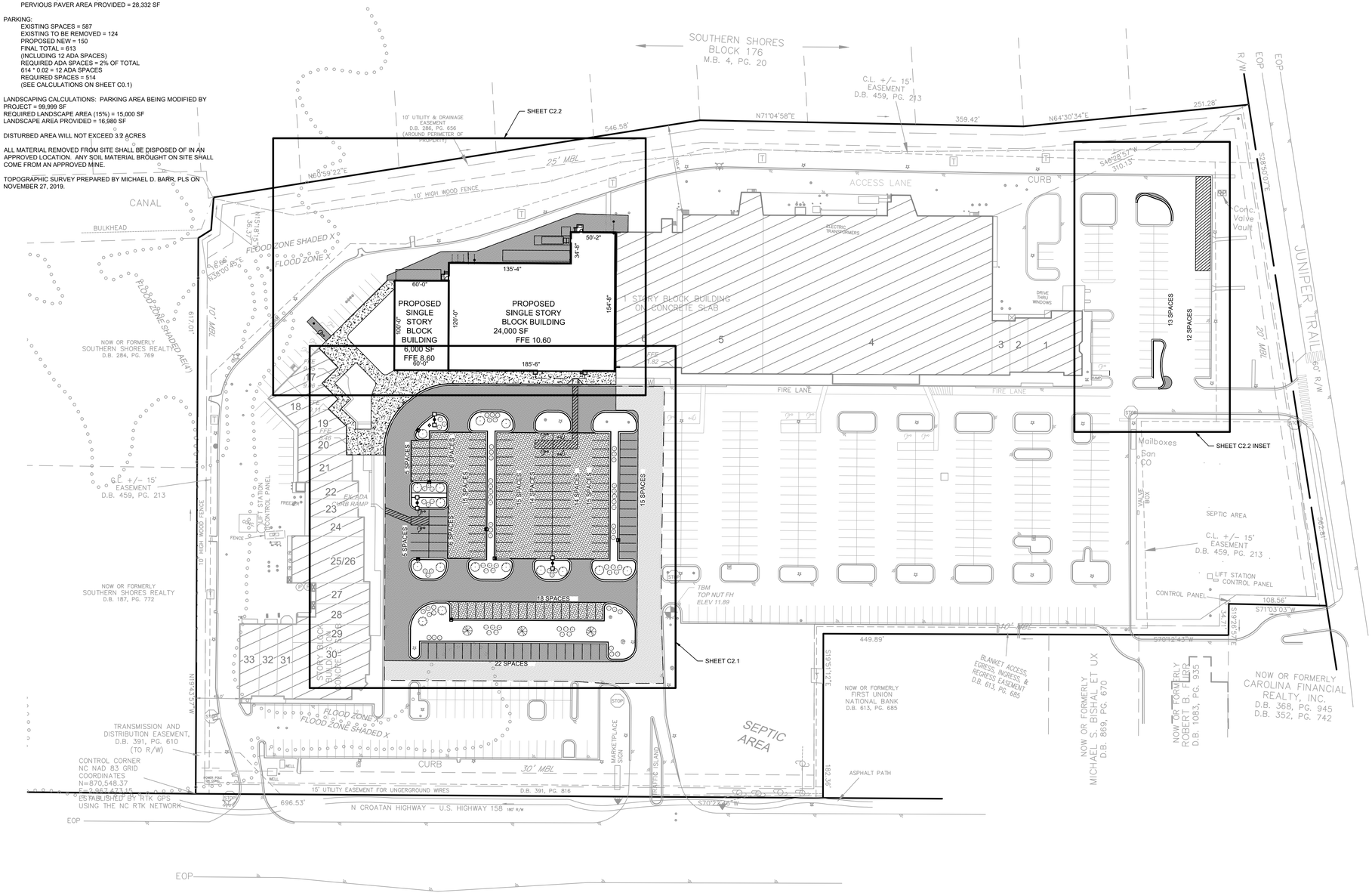

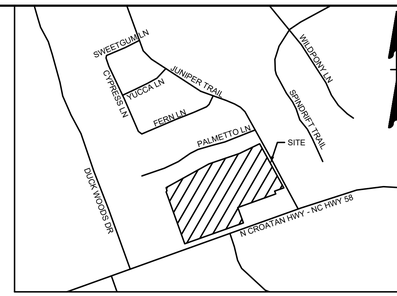

VICINITY MAP

NO SCALE

NAD 83

LEGEND

- BENCHMARK
- EX. IRON ROD
- EX. SEWER MANHOLE
- EX. LIGHT POLE
- EX. WATER VALVE
- EX. FIRE HYDRANT
- EX. WATER METER
- EX. BOLLARD
- EX. CATCH BASIN
- EX. STORMWATER MANHOLE
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- PROP. SEWER CLEANOUT
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- PROP. PERMEABLE PAVERS
- CREPE MYRTLE
- HI-RISE LIVE OAK
- LITTLE GEM MAGNOLIA
- ELEANOR TABOR INDIAN HAWTHORN
- JAPANESE PITTOSPORUM

SCALE 1"=60'
0 60' 120'

NORTH CAROLINA PROFESSIONAL SEAL 042614 8-9-21 ENGINEER KIMBERLY D. HAMBY

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08/09/2021	REVISED PER TRC/TOWN COMMENTS

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DESIGNED BY KDH
CHECKED BY KDH
SCALE 1"=60'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE

SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA

SITE PLAN OVERVIEW

JOB NO. 44588
SHEET NO. C2.0

S:\100\44588 - The Marketplace at Southern Shores - Southern Shores, NC\DWG\Sheet\CD\44588C-C2.0-SITE.dwg | Plotted on 8/9/2021 12:40 PM | by Kim Hamby

SITE DATA:

1. OWNER:
SOUTHERN SHORES OWNER, LLC
610 E MOREHEAD STREET, SUITE 100
CHARLOTTE, NC 28202

REGISTERED AGENT/DEVELOPER
ASTON PROPERTIES, INC.
CONTACT: KAREN PARTEE
(704) 366-7337

2. SITE INFORMATION:
PIN#: 986720717057
PARCEL#: 022510000
D.B. 1982 PG. 883
SITE AREA: 18.1 AC
ZONING: COMMERCIAL HIGHWAY PRIMARY
ADDRESS: 5539 NORTH CROATAN HIGHWAY
SOUTHERN SHORES, NC 27949

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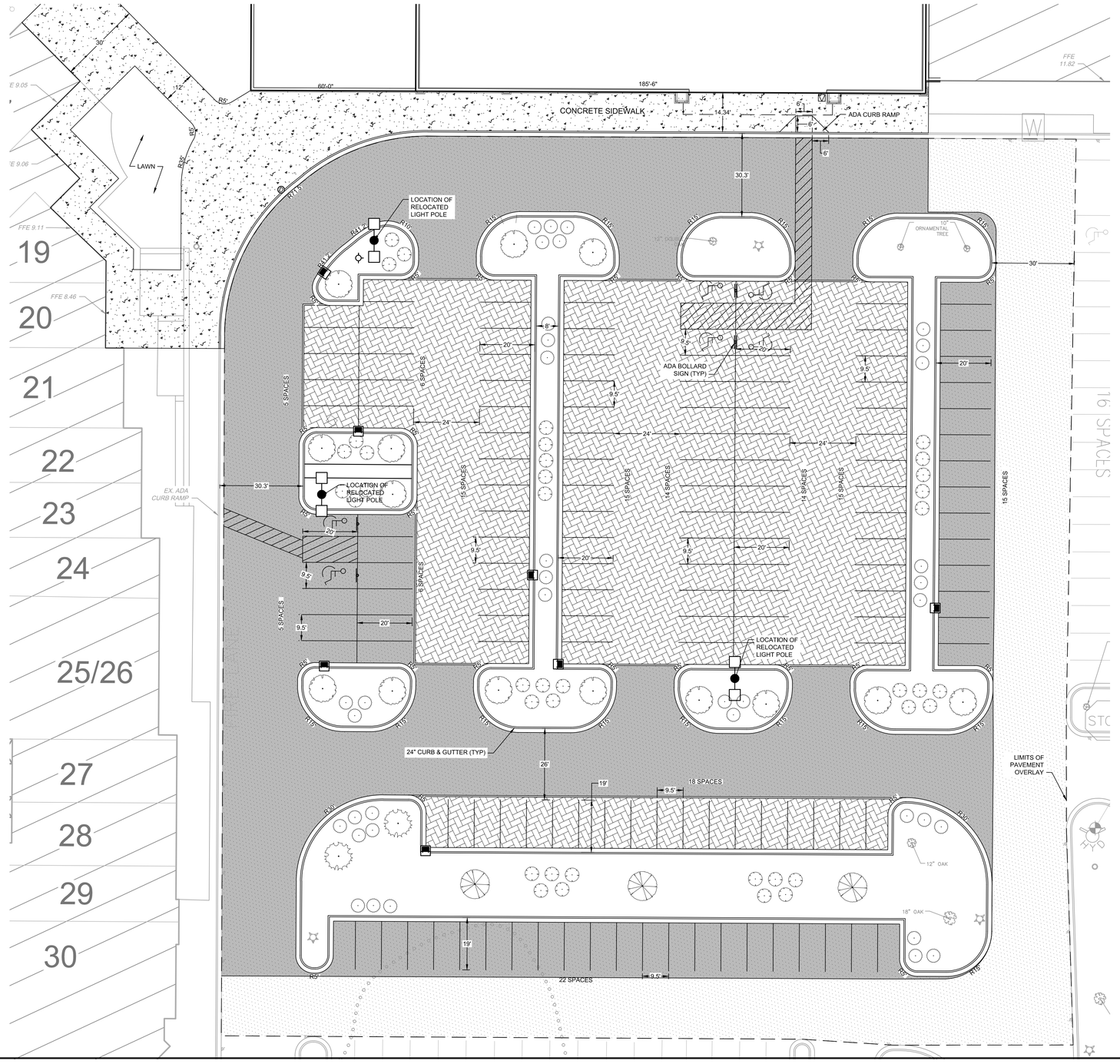

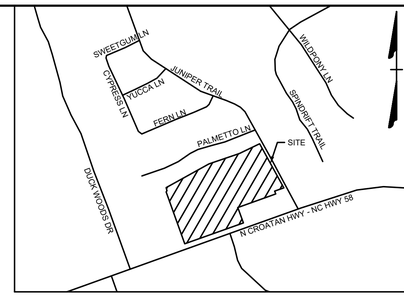

VICINITY MAP
NO SCALE

LEGEND

- BENCHMARK
- EX. IRON ROD
- EX. SEWER MANHOLE
- EX. LIGHT POLE
- EX. WATER VALVE
- EX. FIRE HYDRANT
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- JAPANESE PITTOSPORUM

NOTE: ALL DIMENSIONS AND RADII ARE MEASURED TO FACE OF CURB UNLESS OTHERWISE STATED.

SCALE 1"=20'
0 20' 40'

NORTH CAROLINA PROFESSIONAL SEAL 042614 ENGINEER KIMBERLY D. HAMBY
8-9-21

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REVISION DESCRIPTION	DATE
REVISED PER TRC/TOWN COMMENTS	08/09/2021

DATE 06/15/21
DRAWN BY KDH
DESIGNED BY KDH
CHECKED BY KDH
SCALE 1"=20'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA

SITE PLAN

JOB NO. 44588
SHEET NO. C2.1

SITE DATA:

1. OWNER:
   SOUTHERN SHORES OWNER, LLC
   610 E MOREHEAD STREET, SUITE 100
   CHARLOTTE, NC 28202

   REGISTERED AGENT/DEVELOPER
   ASTON PROPERTIES, INC.
   CONTACT: KAREN PARTEE
   (704) 366-7337

2. SITE INFORMATION:
   PIN#: 986720717057
   PARCEL#: 022510000
   D.B. 1982 PG. 893
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   ADDRESS: 5539 NORTH CROATAN HIGHWAY
   SOUTHERN SHORES, NC 27949

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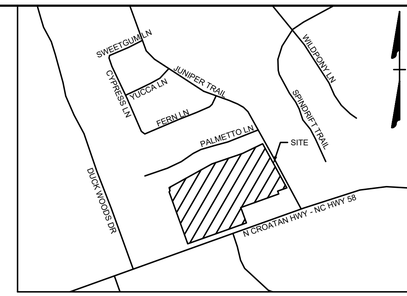
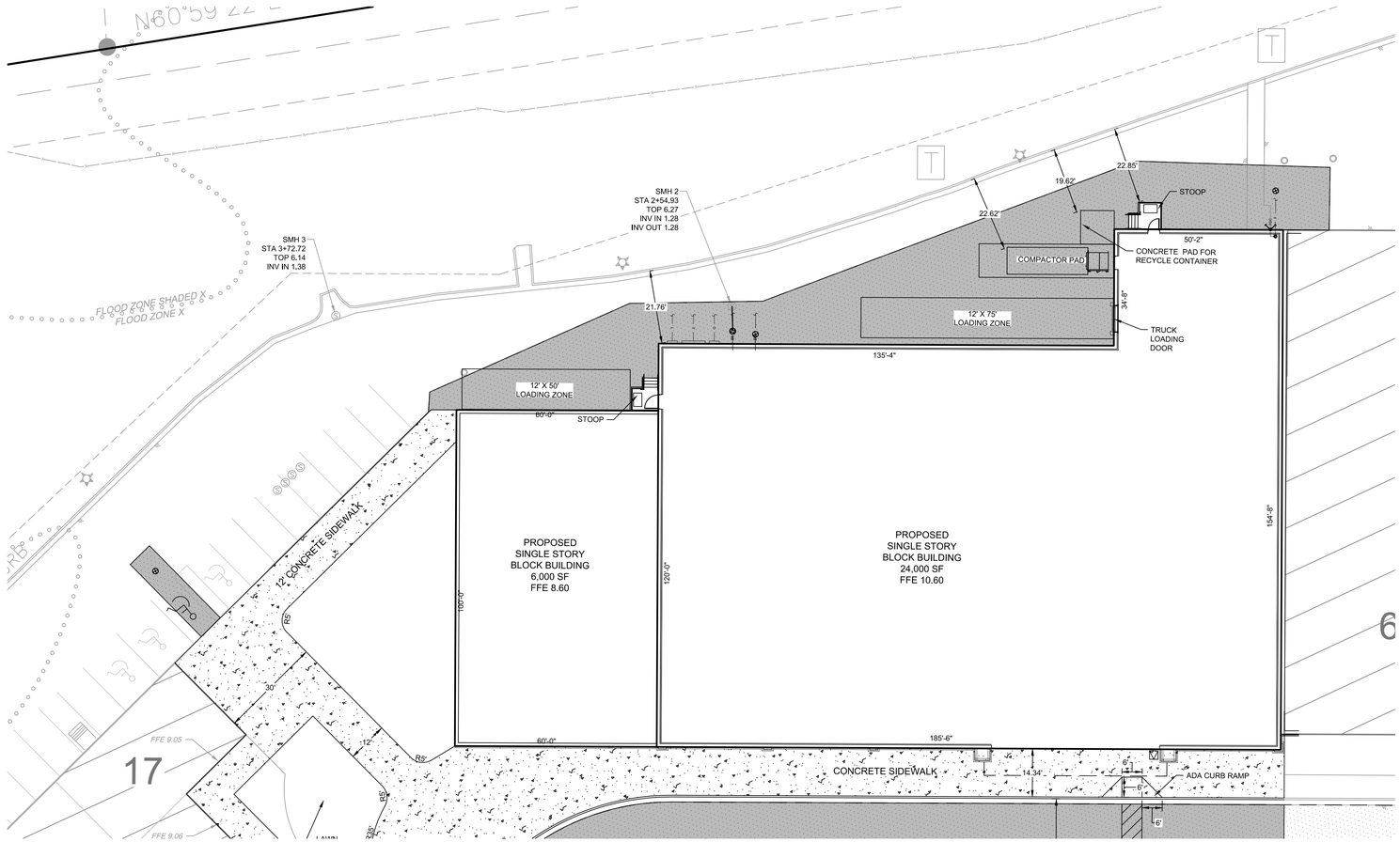


VICINITY MAP

NO SCALE



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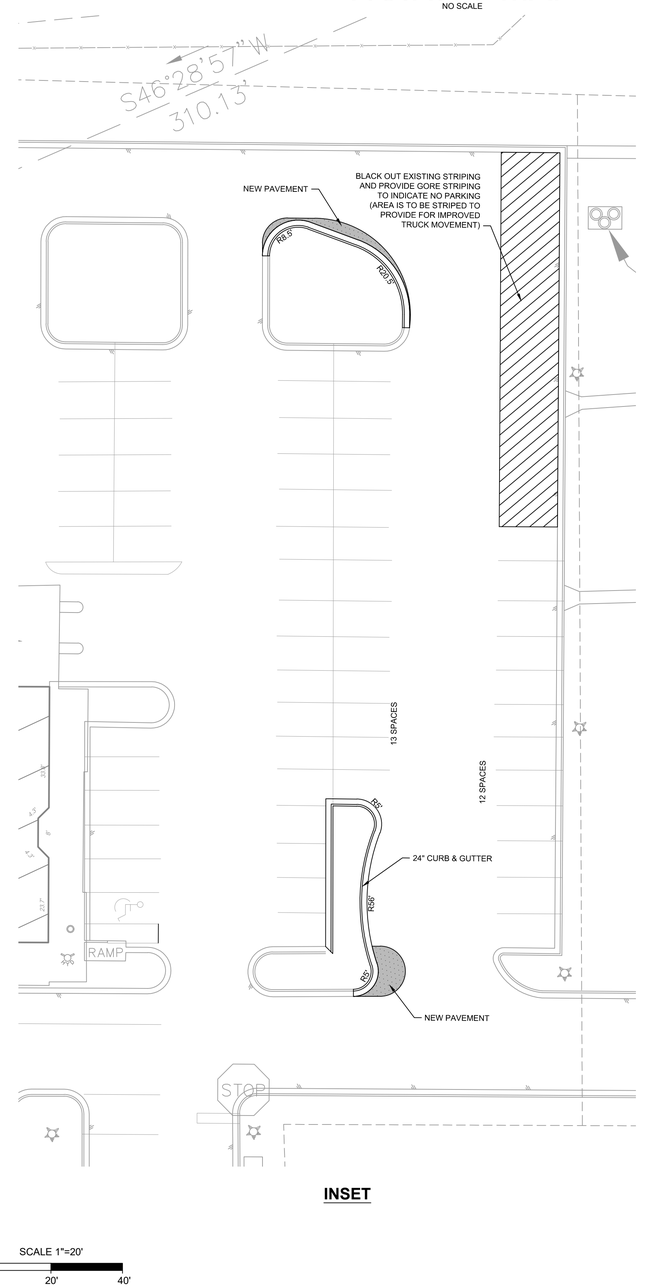

INSET

NORTH CAROLINA PROFESSIONAL SEAL 042614 ENGINEER KIMBERLY D. HAMBY
8-9-21

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SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA

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JOB NO. 44588
SHEET NO. C2.2

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   610 E MOREHEAD STREET, SUITE 100
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   REGISTERED AGENT/DEVELOPER
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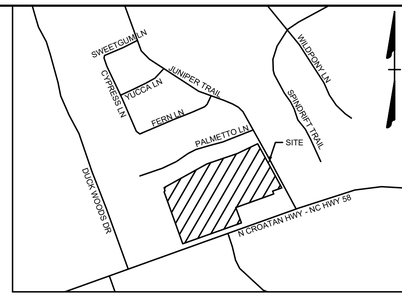
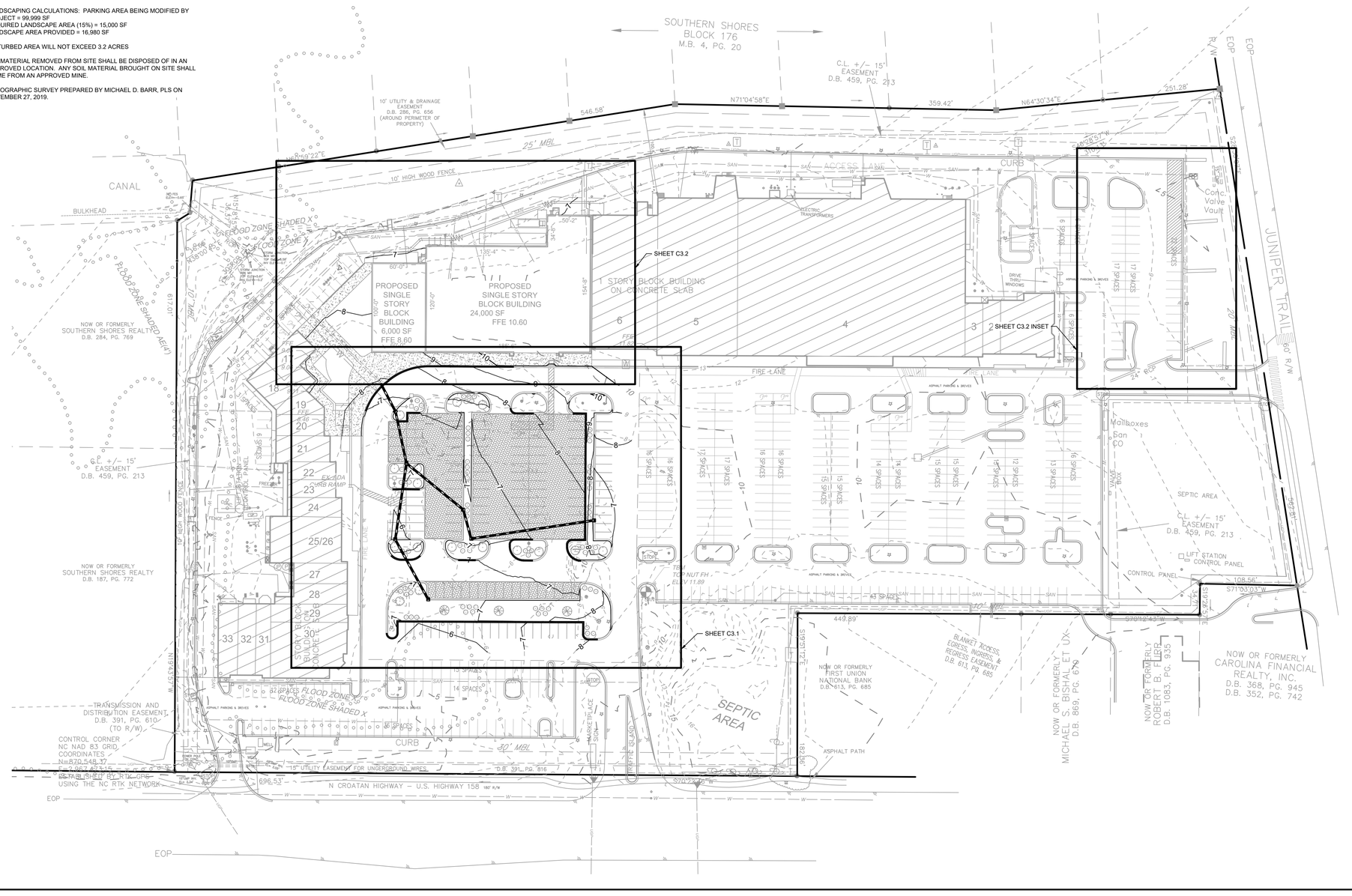


VICINITY MAP
NO SCALE

NAD 83



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- PROP. CONCRETE
- SPILL CURB

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042614 8-9-21 KIMBERLY D. HAMBY

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TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE

SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA

GRADING & DRAINAGE PLAN OVERVIEW

JOB NO. 44588
SHEET NO. C3.0

SITE DATA:

1. OWNER:
SOUTHERN SHORES OWNER, LLC
610 E MOREHEAD STREET, SUITE 100
CHARLOTTE, NC 28202

REGISTERED AGENT/DEVELOPER
ASTON PROPERTIES, INC.
CONTACT: KAREN PARTEE
(704) 366-7337

2. SITE INFORMATION:
PIN#: 986720717057
PARCEL#: 022510000
D.B. 1982 PG. 893
SITE AREA: 18.1 AC
ZONING: COMMERCIAL HIGHWAY PRIMARY
ADDRESS: 5539 NORTH CROATAN HIGHWAY
SOUTHERN SHORES, NC 27949

3. SITE LOCATED IN FLOOD ZONES "X", "SHADED X" AND "AE(4')" ACCORDING TO FIRM MAP NUMBER 3720986700K, DATED JUNE 19, 2020. THE TOWN HAS ADOPTED A LOCAL ELEVATION STANDARD OF 8'.

4. THIS IS NOT A BOUNDARY SURVEY, BOUNDARY INFORMATION TAKEN FROM SURVEY TITLED "MARKETPLACE SHOPPING CENTER", BY MICHAEL D. BARR, PLS ON OCTOBER 30, 2017.

5. IMPERVIOUS AREA CALCULATIONS:
EXISTING = 530,755 SF (67.3% OF SITE)
PROPOSED = 529,719 SF (67.1% OF SITE)
REQUIRED PERVIOUS PAVEMENT:
5.1% OF 529,719 SF = 27,016 SF
PERVIOUS PAVER AREA PROVIDED = 28,332 SF

6. PARKING:
EXISTING SPACES = 587
EXISTING TO BE REMOVED = 124
PROPOSED NEW = 150
FINAL TOTAL = 613
(INCLUDING 12 ADA SPACES)
REQUIRED ADA SPACES = 2% OF TOTAL
614 * 0.02 = 12 ADA SPACES
REQUIRED SPACES = 514
(SEE CALCULATIONS ON SHEET C0.1)

7. LANDSCAPING CALCULATIONS: PARKING AREA BEING MODIFIED BY PROJECT = 99,999 SF
REQUIRED LANDSCAPE AREA (15%) = 15,000 SF
LANDSCAPE AREA PROVIDED = 16,980 SF

8. DISTURBED AREA WILL NOT EXCEED 3.2 ACRES

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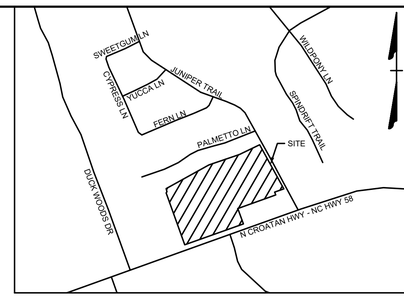
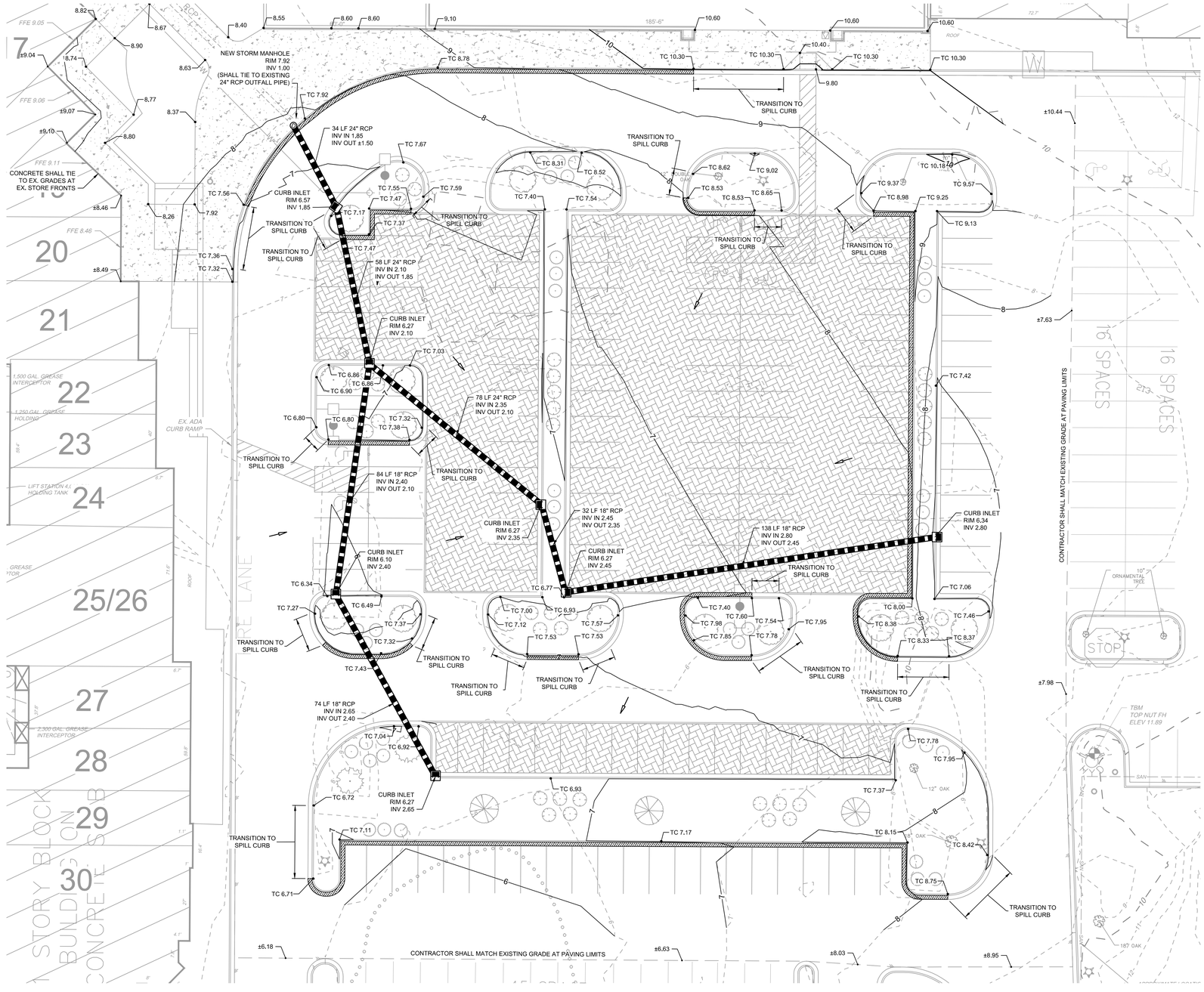
10. TOPOGRAPHIC SURVEY PREPARED BY MICHAEL D. BARR, PLS ON NOVEMBER 27, 2019.



VICINITY MAP
NO SCALE

NAD 83



LEGEND

- BENCHMARK
- EX. IRON ROD
- EX. SEWER MANHOLE
- EX. LIGHT POLE
- EX. WATER VALVE
- EX. FIRE HYDRANT
- EX. WATER METER
- EX. BOLLARD
- EX. CATCH BASIN
- EX. STORMWATER MANHOLE
- PROP. CURB INLET
- PROP. SEWER CLEANOUT
- PROP. WATER VALVE
- PROP. FIRE HYDRANT
- BOUNDARY
- RIGHT-OF-WAY
- ADJOINING PROPERTY BOUNDARY
- BUILDING SETBACK
- EX. EDGE OF PAVEMENT
- EX. CENTERLINE
- EX. FENCE
- EX. CULVERT PIPE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- EX. FLOOD ZONE LIMITS
- EX. UNDERGROUND POWER LINE
- EX. WATER LINE
- EX. SANITARY SEWER LINE
- PROP. MAJOR CONTOUR
- PROP. MINOR CONTOUR
- PROP. WATER LINE
- PROP. SANITARY SEWER LINE
- PROP. STORM PIPE
- PROP. CONCRETE
- SPILL CURB

SCALE 1"=20'
0 20' 40'

Kimberly D. Hamby
NORTH CAROLINA PROFESSIONAL SEAL 042614 ENGINEER KIMBERLY D. HAMBY
8-9-21

PERMIT DRAWING
NOT FOR CONSTRUCTION

THIS DRAWING PREPARED AT THE
ELIZABETH CITY OFFICE
1805 West City Drive, Unit E | Elizabeth City, NC 27909
TEL 252.621.5030 FAX 252.562.6974 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE
REVISED PER TRC/TOWN COMMENTS	08/09/2021

DATE 06/15/21
DRAWN BY BCD
DESIGNED BY KDH
CHECKED BY KDH
SCALE 1"=20'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA
GRADING & DRAINAGE PLAN

JOB NO. 44588
SHEET NO. C3.1

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(SEE CALCULATIONS ON SHEET C0.1)

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LEGEND

- BENCHMARK
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- EX. SEWER MANHOLE
- EX. LIGHT POLE
- EX. WATER VALVE
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- EX. WATER METER
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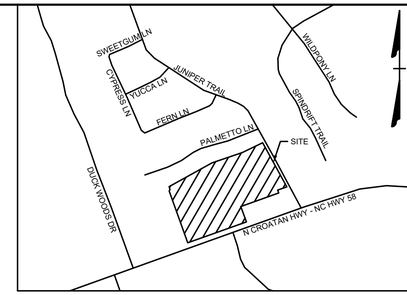
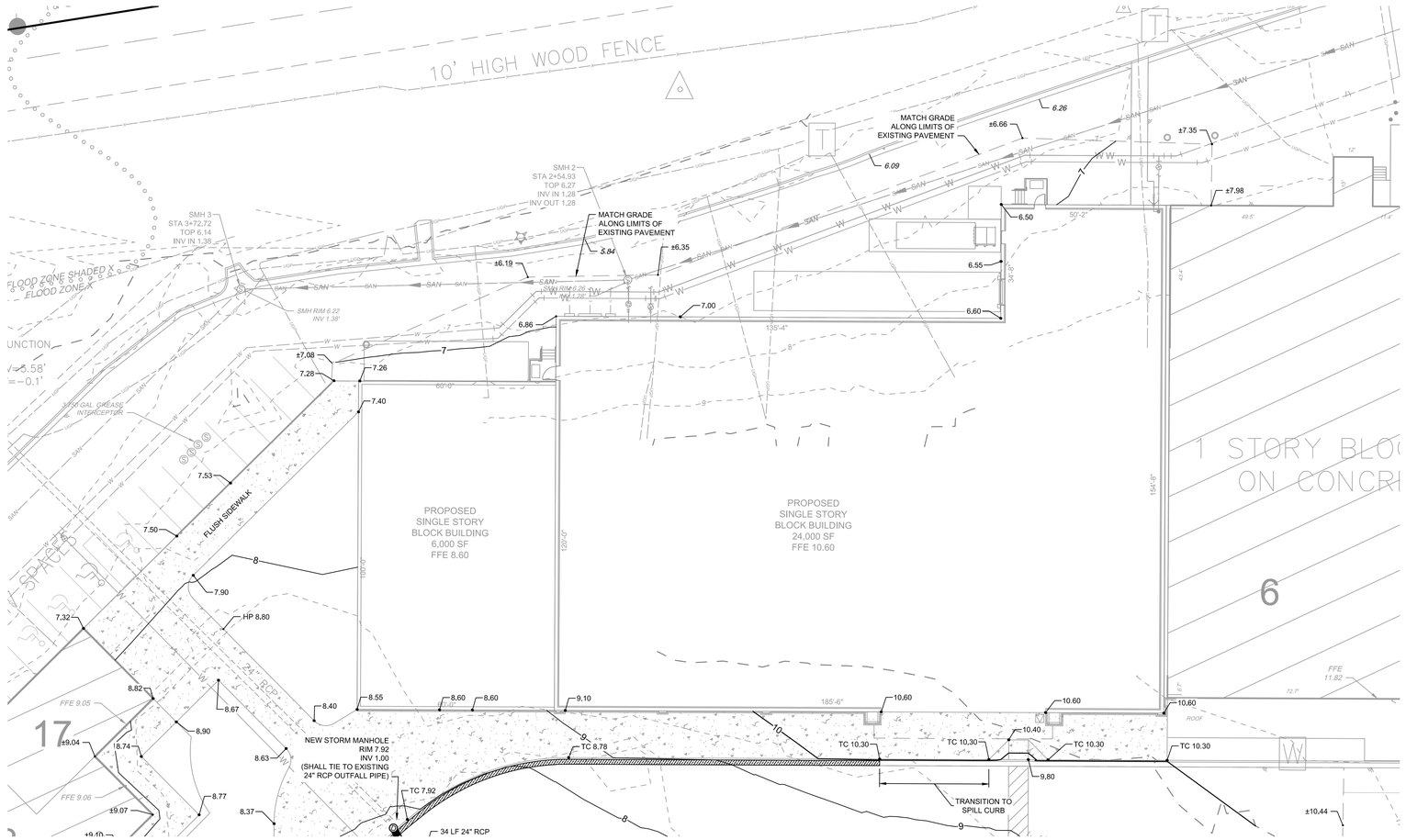
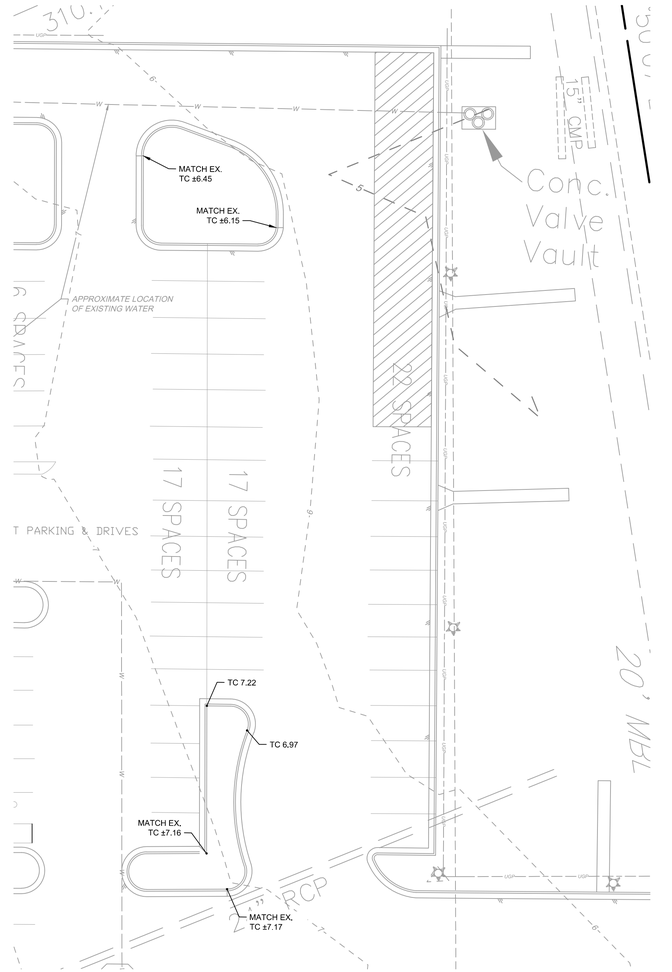


VICINITY MAP
NO SCALE





SCALE 1"=20'
0 20' 40'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA
GRADING & DRAINAGE PLAN

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YOUR VISION ACHIEVED THROUGH OURS.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042614 8-9-21 KIMBERLY D. HANBY

PERMIT DRAWING
NOT FOR CONSTRUCTION

DATE	REVISION DESCRIPTION
08/09/2021	REVISED PER TRC/TOWN COMMENTS

DATE 06/15/21
DRAWN BY BCD
DESIGNED BY KDH
CHECKED BY KDH
SCALE 1"=20'
JOB NO. 44588
SHEET NO. C3.2

S:\10\44588 - The Marketplace at Southern Shores - Southern Shores, NC\DWG\Sheet\CD\44588C-C3.0-GRAD.dwg | Plotted on 8/9/2021 2:38 PM | by Kim Hanby

VICINITY MAP

NO SCALE

LEGEND

IP		INLET PROTECTION
LOD		LIMIT OF DISTRUBANCE
GCE		TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

SCALE 1"=40'

0 40' 80'

NORTH CAROLINA PROFESSIONAL SEAL 042614 8-9-21 ENGINEER KIMBERLY D. HAMBY

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MODIFICATIONS TO THE MARKETPLACE

SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA

EROSION CONTROL PLAN

JOB NO. 44588

SHEET NO. C3.3

S:\100\44588 - The Marketplace at Southern Shores - Southern Shores, NC\DWG\Sheet\CD\44588C-C3.3-EROS.dwg | Plotted on 8/9/2021 12:50 PM | by Kim Hamby

SITE DATA:

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   610 E MOREHEAD STREET, SUITE 100
   CHARLOTTE, NC 28202

   REGISTERED AGENT/DEVELOPER
   ASTON PROPERTIES, INC.
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WATERMAIN NOTES:

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2. DARE COUNTY WILL PROVIDE WATER SERVICE FOR THIS PROJECT.
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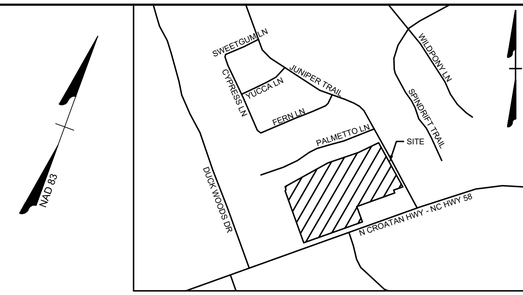
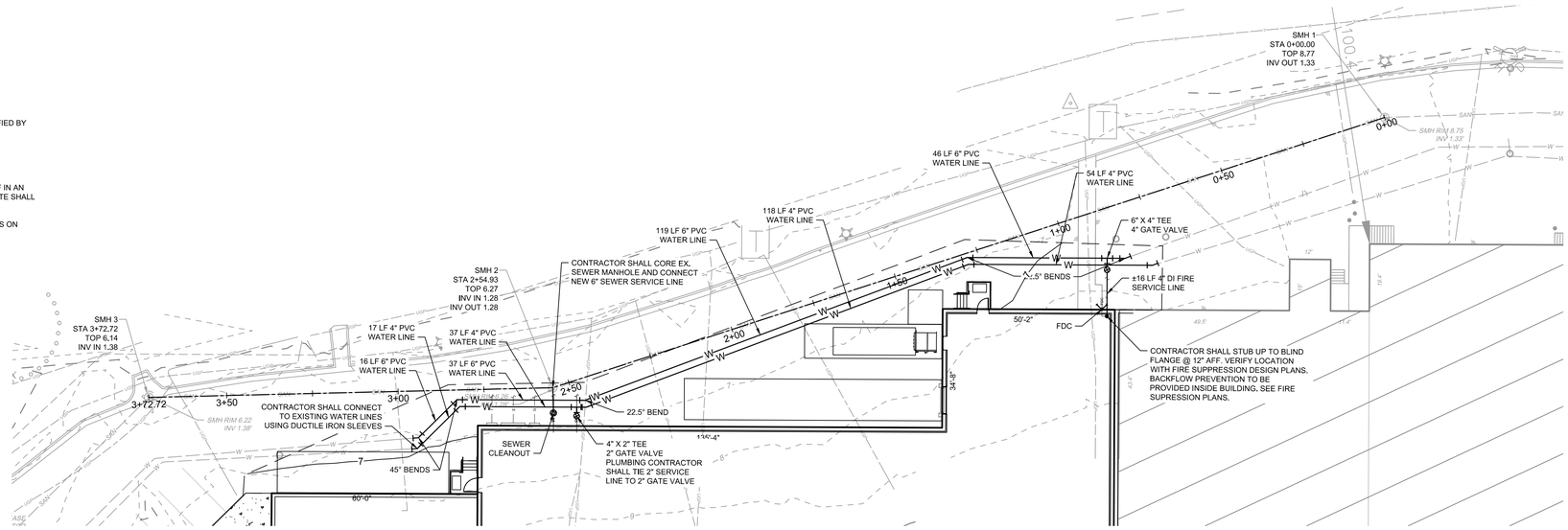
4. ALL WATERMAINS SHALL BE EITHER SDR 21 PVC, C-900 PVC, OR DUCTILE IRON AS SHOWN ON PLANS. ALL PIPE SHALL COMPLY WITH THE REQUIREMENTS OF AWWA STANDARDS AND THE NATIONAL SANITATION FOUNDATION. ALL PIPE MUST BEAR THE NSF LOGO FOR POTABLE WATER.
5. WATERMAINS MAY BE INSTALLED UNDER STORM DRAINS WITHOUT FITTINGS, WHERE THE CHANGE IN VERTICAL ELEVATION IS TWO FEET OR LESS.
6. WATERMAINS INSTALLED UNDER STORM DRAINS SHALL HAVE A MINIMUM SEPARATION OF 18" BETWEEN WATERMAIN AND STORM DRAIN AND WATERMAIN SHALL BE DUCTILE IRON. WHERE PRACTICAL, INSTALL A FULL JOINT OF 20 LF DUCTILE IRON PIPE CENTERED UNDER THE STORM DRAIN. WHERE THE WATERLINE BENDS INTO A VERTICAL LEG WITHIN 10 HORIZONTAL FEET OF THE STORM DRAIN, THE VERTICAL LEG SHALL BE DUCTILE IRON.
7. THRUST BLOCKING SHALL BE INSTALLED ON ALL BENDS OF 22 1/2° OR GREATER. (SEE THE SPECIFICATIONS AND DETAILS ON THRUST BLOCKINGS.)
8. THE CONTRACTOR SHALL FIELD VERIFY THE SIZE AND MATERIAL OF EXISTING MAINS PRIOR TO ORDERING MATERIALS.
9. DURING CONSTRUCTION, NO PIPE SHALL BE COVERED UNTIL INSPECTED BY DARE COUNTY WATER SYSTEM. THE CONTRACTOR SHALL NOTIFY THE WATER DEPARTMENT 48 HOURS PRIOR TO COMMENCEMENT OF WORK TO COORDINATE INSPECTION OF WATERLINE.
10. THE CONTRACTOR SHALL SATISFY ALL BOND REQUIREMENTS OF THE DEPARTMENT OF TRANSPORTATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
11. ALL WATERMAINS SHALL HAVE A MINIMUM OF 30" COVER.
12. ALL PIPES AND SERVICES TO HAVE RUNNING ALONG AND WITH THE PIPE A CONTINUOUS LENGTH OF #12 SOLID COPPER WIRE AND A 3" WIDE TRACER TAPE AT ONE (1) FOOT BELOW THE FINISHED GRADE OF THE EXCAVATION FOR THE PIPE.
13. WATERLINES SHALL BE PRESSURE TESTED AND CHLORINATED AS REQUIRED BY NCDEQ AND AS DETAILED IN THE COUNTY'S SPECIFICATIONS. TESTING SHALL BE INSPECTED BY A REPRESENTATIVE OF DARE COUNTY WATER SYSTEM AND/OR THE ENGINEER.
14. UNDERGROUND WATERLINES SHALL BE INSTALLED PER NFPA REQUIREMENTS FOR THE SPRINKLER SYSTEM. THESE LINES SHALL BE PRESSURE TESTED AT 200 PSI FOR TWO HOURS, AFTER WHICH, THEY SHALL BE THOROUGHLY FLUSHED. THIS TESTING SHALL BE DONE IN THE PRESENCE OF THE FIRE MARSHAL.

NOTE: THERE ARE TWO WATERLINES CROSSING BEHIND THIS SHOPPING CENTER COMPLEX. BASED ON DATA PROVIDED BY DARE COUNTY, ONE LINE IS A 6" MAIN AND THE OTHER IS A 4" DOMESTIC SERVICE LINE. THE LOCATION DATA PROVIDED DOES NOT DISTINGUISH WHICH LINE IS CLOSEST TO THE BUILDING AND IT DOES NOT IDENTIFY WHICH LINES HAVE ISOLATION VALVES IN THE VICINITY. CONTRACTOR SHALL FIELD VERIFY LOCATION OF EACH LINE AND INSURE CONNECTION MADE TO CORRECT WATERLINES.



VICINITY MAP
NO SCALE



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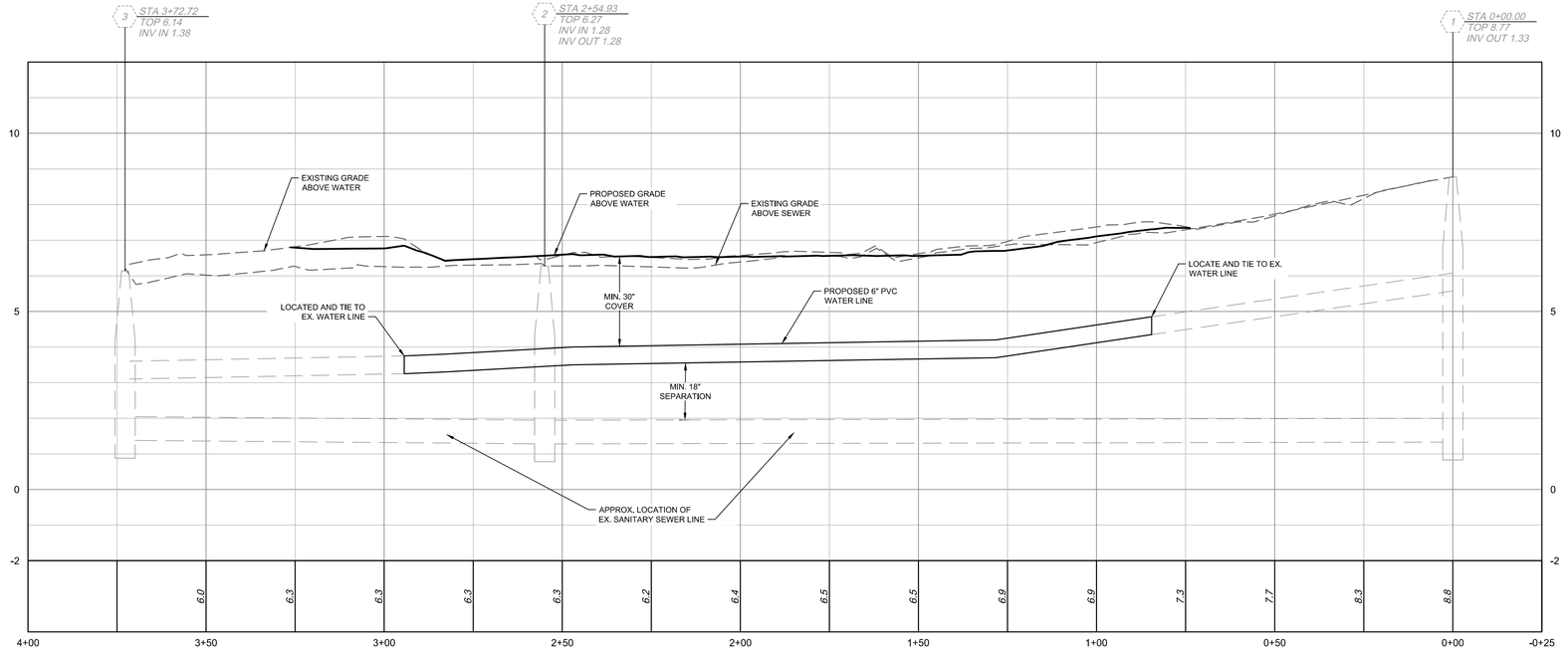

PROFILE SCALE
20
0
0 2

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- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- EX. FLOOD ZONE LIMITS
- EX. UNDERGROUND POWER LINE (UGP)
- EX. WATER LINE (W)
- EX. SANITARY SEWER LINE (SAN)
- PROP. MAJOR CONTOUR
- PROP. MINOR CONTOUR
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10. THE CONTRACTOR SHALL SATISFY ALL BOND REQUIREMENTS OF THE DEPARTMENT OF TRANSPORTATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

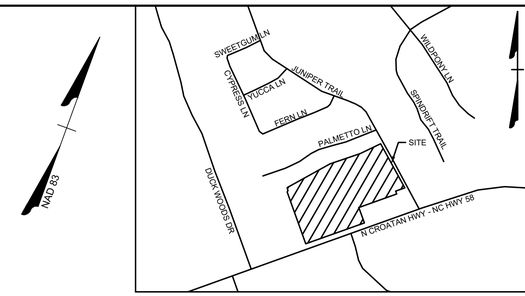
11. ALL WATERMAINS SHALL HAVE A MINIMUM OF 30" COVER.

12. ALL PIPES AND SERVICES TO HAVE RUNNING ALONG AND WITH THE PIPE A CONTINUOUS LENGTH OF #12 SOLID COPPER WIRE AND A 3" WIDE TRACER TAPE AT ONE (1) FOOT BELOW THE FINISHED GRADE OF THE EXCAVATION FOR THE PIPE.

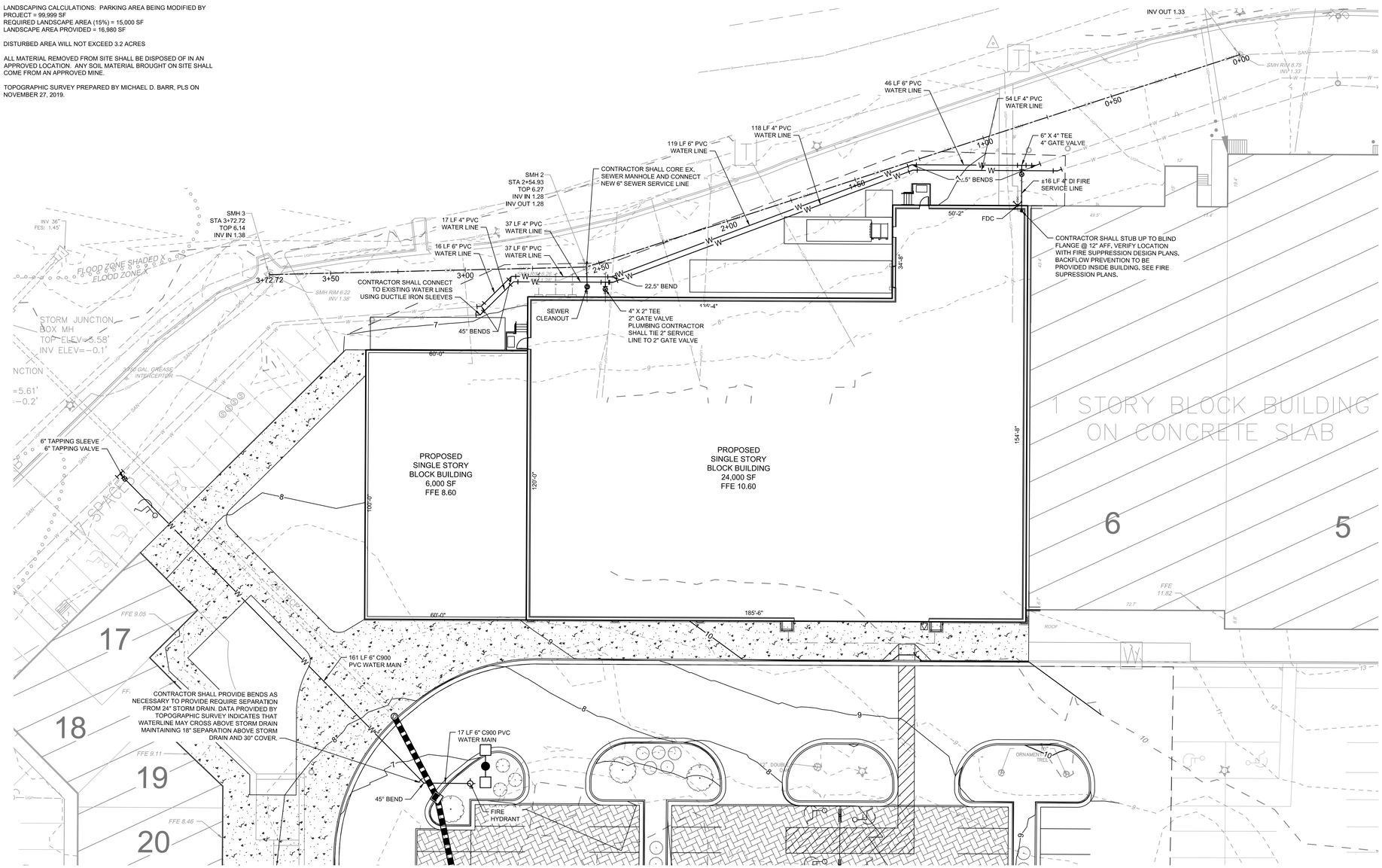
13. WATERLINES SHALL BE PRESSURE TESTED AND CHLORINATED AS REQUIRED BY NCDEQ AND AS DETAILED IN THE COUNTY'S SPECIFICATIONS. TESTING SHALL BE INSPECTED BY A REPRESENTATIVE OF DARE COUNTY WATER SYSTEM AND/OR THE ENGINEER.

14. UNDERGROUND WATERLINES SHALL BE INSTALLED PER NFPA REQUIREMENTS FOR THE SPRINKLER SYSTEM. THESE LINES SHALL BE PRESSURE TESTED AT 200 PSI FOR TWO HOURS, AFTER WHICH, THEY SHALL BE THOROUGHLY FLUSHED. THIS TESTING SHALL BE DONE IN THE PRESENCE OF THE FIRE MARSHAL.

NOTE: THERE ARE TWO WATERLINES CROSSING BEHIND THIS SHOPPING CENTER COMPLEX. BASED ON DATA PROVIDED BY DARE COUNTY, ONE LINE IS A 6" MAIN AND THE OTHER IS A 4" DOMESTIC SERVICE LINE. THE LOCATION DATA PROVIDED DOES NOT DISTINGUISH WHICH LINE IS CLOSEST TO THE BUILDING AND IT DOES NOT IDENTIFY WHICH LINES HAVE ISOLATION VALVES IN THE VICINITY. CONTRACTOR SHALL FIELD VERIFY LOCATION OF EACH LINE AND INSURE CONNECTION MADE TO CORRECT WATERLINES.



VICINITY MAP
NO SCALE



LEGEND

- BENCHMARK
- EX. IRON ROD
- EX. SEWER MANHOLE
- EX. LIGHT POLE
- EX. WATER VALVE
- EX. FIRE HYDRANT
- EX. WATER METER
- EX. BOLLARD
- EX. CATCH BASIN
- EX. STORMWATER MANHOLE
- PROP. SEWER CLEANOUT
- PROP. WATER VALVE
- PROP. FIRE HYDRANT
- BOUNDARY
- RIGHT-OF-WAY
- ADJOINING PROPERTY BOUNDARY
- BUILDING SETBACK
- EX. EDGE OF PAVEMENT
- EX. CENTERLINE
- EX. FENCE
- EX. CULVERT PIPE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- EX. FLOOD ZONE LIMITS
- EX. UNDERGROUND POWER LINE
- EX. WATER LINE
- EX. SANITARY SEWER LINE
- PROP. MAJOR CONTOUR
- PROP. MINOR CONTOUR
- PROP. WATER LINE
- PROP. SANITARY SEWER LINE
- PROP. CONCRETE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042614 8-9-21 KIMBERLY D. HAMBY

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DATE	REVISION DESCRIPTION
08/09/2021	REVISED PER TRC/TOWN COMMENTS

DATE 06/15/21
DRAWN BY BCD
DESIGNED BY KDH
CHECKED BY KDH
SCALE 1" = 20'

TIMMONS GROUP

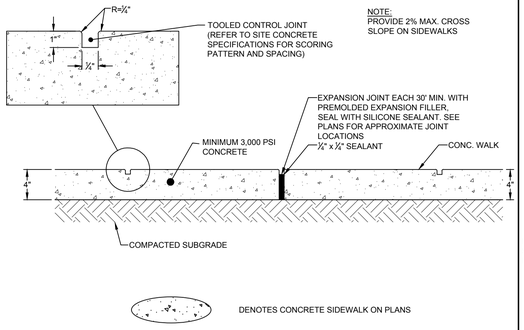
NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE

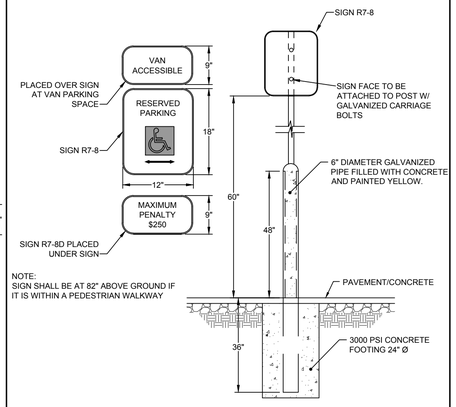
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA

UTILITY PLAN

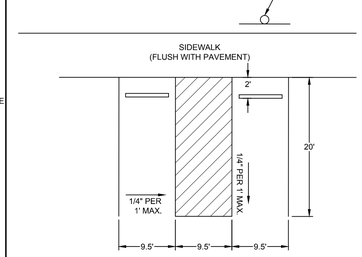
JOB NO. 44588
SHEET NO. C4.1



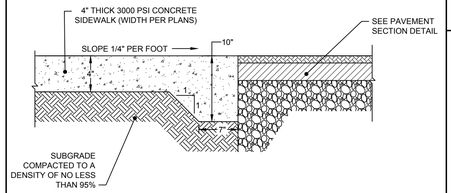
CONCRETE SIDEWALKS
NO SCALE



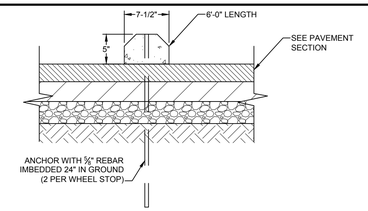
HANDICAP PARKING SIGN IN BOLLARD
NO SCALE



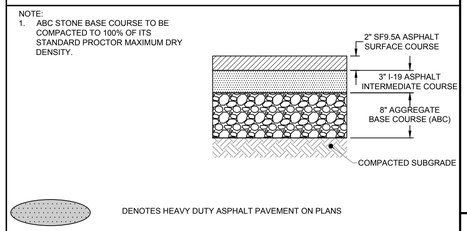
HANDICAP PARKING DETAIL
NO SCALE



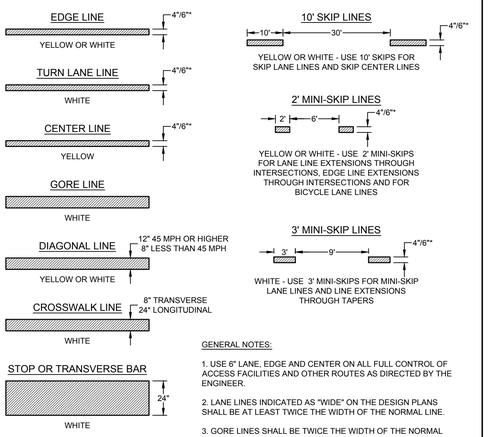
FLUSH SIDEWALK
NO SCALE



PRECAST BUMPER BLOCK (WHEEL STOP)
NO SCALE



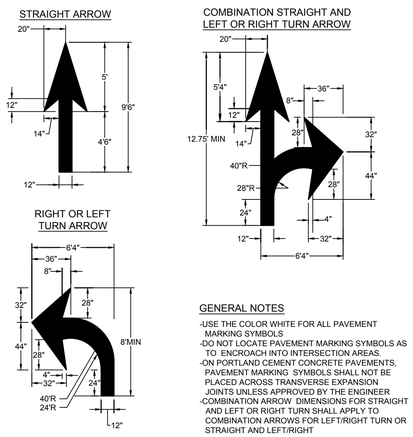
HEAVY DUTY PAVEMENT
NO SCALE



GENERAL NOTES:

1. USE 6" LANE, EDGE AND CENTER ON ALL FULL CONTROL OF ACCESS FACILITIES AND OTHER ROUTES AS DIRECTED BY THE ENGINEER.
2. LANE LINES INDICATED AS "WIDE" ON THE DESIGN PLANS SHALL BE AT LEAST TWICE THE WIDTH OF THE NORMAL LINE.
3. GORE LINES SHALL BE TWICE THE WIDTH OF THE NORMAL LINE.

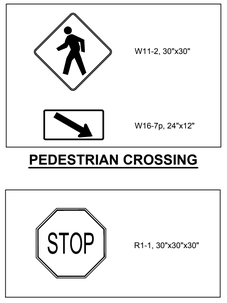
PAVEMENT MARKINGS - LINE TYPES
NO SCALE



GENERAL NOTES

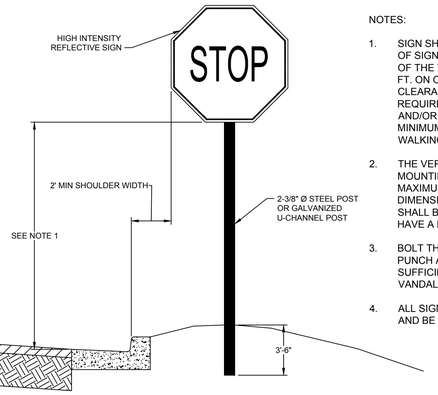
-USE THE COLOR WHITE FOR ALL PAVEMENT MARKING SYMBOLS
-DO NOT LOCATE PAVEMENT MARKING SYMBOLS AS TO ENCROACH INTO INTERSECTION AREAS.
-ON PORTLAND CEMENT CONCRETE PAVEMENTS, PAVEMENT MARKING SYMBOLS SHALL NOT BE PLACED ACROSS TRANSVERSE EXPANSION JOINTS UNLESS APPROVED BY THE ENGINEER
-COMBINATION ARROW DIMENSIONS FOR STRAIGHT AND LEFT OR RIGHT TURN SHALL APPLY TO COMBINATION ARROWS FOR LEFT/RIGHT TURN OR STRAIGHT AND LEFT/RIGHT

PAVEMENT MARKINGS - ARROWS
NO SCALE



PEDESTRIAN CROSSING

STOP

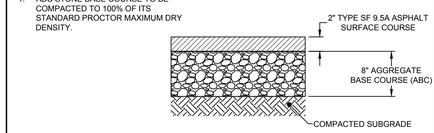


NOTES:

1. SIGN SHALL BE ERECTED WITH THE BOTTOM OF SIGN ASSEMBLY 6 FT. ABOVE THE EDGE OF THE TRAVEL LANE ON FREEWAYS AND 5 FT. ON OTHER ROUTES. THE VERTICAL CLEARANCE SHALL BE 7 FT. WHERE REQUIRED FOR PEDESTRIAN TRAFFIC AND/OR PARKED VEHICLES, OR A 6 FT. +, MINIMUM CLEARANCE TO THE SIDEWALK OR WALKING SURFACE.
2. THE VERTICAL DIMENSIONS BETWEEN MOUNTING HOLE CENTERS SHALL BE 30" MAXIMUM. THE VERTICAL AND HORIZONTAL DIMENSIONS BETWEEN MOUNTING HOLES SHALL BE TO THE WHOLE INCH. SIGN SHALL HAVE A MINIMUM OF 2 BOLTS PER SUPPORT.
3. BOLT THREADS SHALL BE DEFORMED WITH PUNCH AND CHISEL AFTER INSTALLATION SUFFICIENTLY TO REDUCE REMOVAL BY VANDALS.
4. ALL SIGNS SHALL MEET MUTCD STANDARDS AND BE HIGH INTENSITY REFLECTIVE

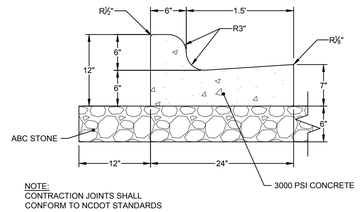
TYPICAL SIGN DETAIL
NO SCALE

NOTE:
1. ABC STONE BASE COURSE TO BE COMPACTED TO 100% OF ITS STANDARD PROCTOR MAXIMUM DRY DENSITY.



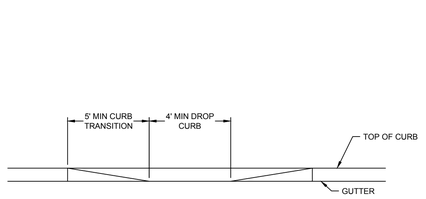
DENOTES LIGHT DUTY ASPHALT PAVEMENT ON PLANS

LIGHT DUTY PAVEMENT
NO SCALE



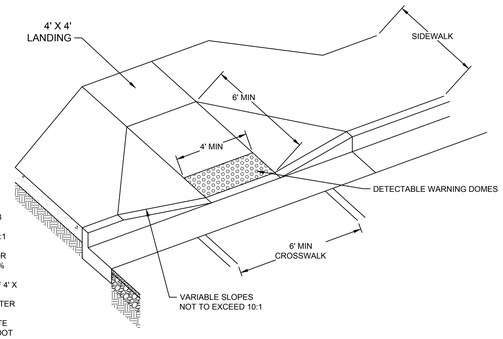
NOTE:
CONTRACTION JOINTS SHALL CONFORM TO NCDOT STANDARDS

24" STANDARD CURB & GUTTER
NO SCALE

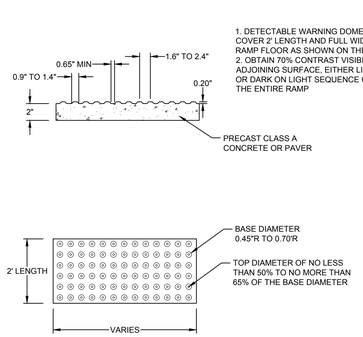


NOTES:

1. CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN ON PLANS OR DIRECTED BY THE ENGINEER.
2. LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS WHERE SHOWN ON PLANS. WHEN FIELD ADJUSTMENTS REQUIRE MOVING RAMPS OR MARKINGS, CONTACT AND LOCATE AS DIRECTED BY ENGINEER.
3. COORDINATE THE CURB RAMP AND CROSSWALK MARKING SO A 4' X 4' CLEAR SPACE AT THE BASE OF THE RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
4. SETBACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4' MINIMUM.
5. CONSTRCT THE RUNNING SLOPE OF THE RAMP 12:1 (8.33%) MAXIMUM SLOPE.
6. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
7. CONSTUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10:1 (10%) MEASURED ALONG THE CURB LINE.
8. CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
9. CONSTRUCT LANDINGS FOR SIDEWALK A MINIMUM OF 4' X 4' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
10. CONSTRUCT WHEELCHAIR RAMPS 40" (3'-4") OR GREATER FOR DUAL RAMPS.
11. PLACE A 1/2" EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB AND AS SHOWN ON NCDOT 848.01.

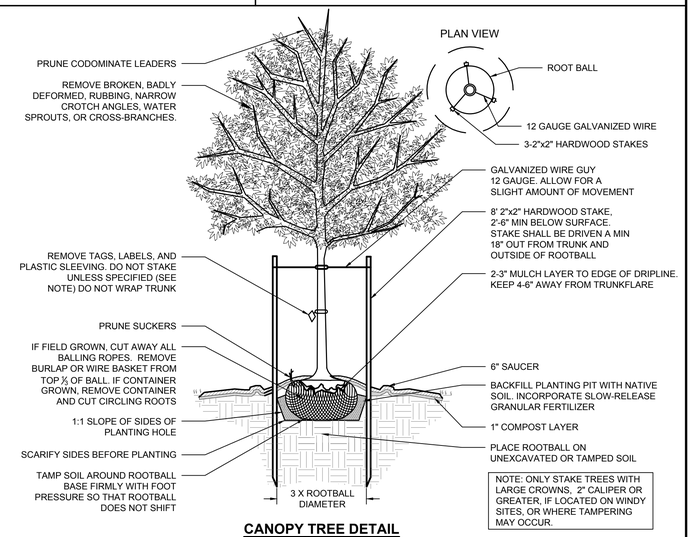


ADA CURB RAMP DETAIL
NO SCALE



1. DETECTABLE WARNING DOMES SHALL COVER 2' LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
2. OBTAIN 70% CONTRAST VISIBILITY WITH ADJOINING SURFACE, EITHER LIGHT ON DARK, OR DARK ON LIGHT SEQUENCE COVERING THE ENTIRE RAMP

DETECTABLE WARNING DOMES
NO SCALE



CANOPY TREE DETAIL
NO SCALE

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA
SITE DETAILS

JOB NO. 44588
SHEET NO. C5.0

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042614 KIMBERLY D. HAMBY
Kimberly D. Hamby
8-9-21

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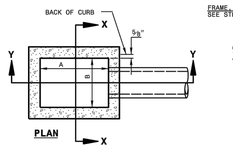
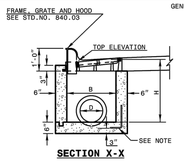
DESIGNED BY KDH
CHECKED BY KDH
SCALE NO SCALE





GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

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

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

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

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

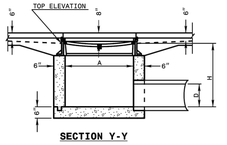
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

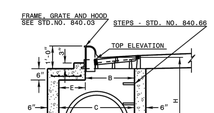
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

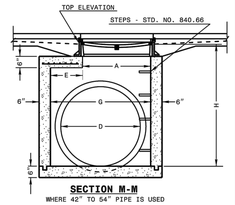
CONSTRUCT WITH PIPE CROWNS MATCHING.

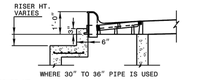
CHAMFER ALL EXPOSED CORNERS 1".

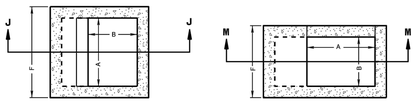
DRAWING NOT TO SCALE.









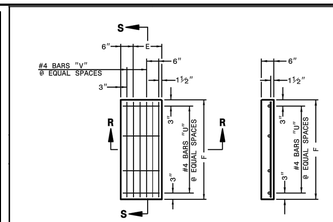


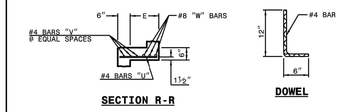
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

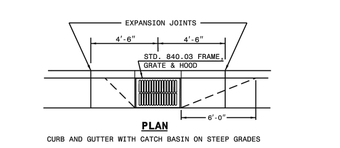
1-18

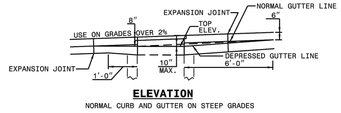
ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 1 OF 2
840.02









MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

DIMENSIONS OF BOX AND PIPE							COVER DIMENSION		BARS-U		BARS-V		BARS-W		TOTAL LBS.	CU.YDS. CONC. IN BOX		DEDUCTIONS ONE PIPE	
PIPE D	SPAN A	WIDTH B	WIDTH C	SPAN G	WIN. HEIGHT H		E	F	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH		TOP SLAB	BOTTOM SLAB (IF CONC. OR ENTIRE BOTT. IF C.M.P.)	C.M.	R.C.
12"	3'-0"	2'-2"	--	--	2'-9"		--	--	--	--	--	--	--	--	--	--	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"			3'-0"												0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"			3'-3"												0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"			3'-9"												0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"		4'-3"		1'-2"	4'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.123	0.321	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"		4'-9"		1'-8"	4'-0"	4	1'-11"	3	3'-9"	3	3'-9"	43	0.161	0.358	1.714	0.132	0.178
42"	3'-0"	2'-2"		4'-5"	5'-3"		1'-5"	3'-2"	4	1'-8"	2	2'-11"	3	2'-11"	32	0.112	0.318	1.738	0.180	0.243
48"	3'-0"	2'-2"		5'-0"	5'-9"		2'-0"	3'-2"	4	2'-3"	3	2'-11"	3	2'-11"	35	0.145	0.352	2.052	0.235	0.317
54"	3'-0"	2'-2"		5'-7"	6'-3"		2'-7"	3'-2"	4	2'-10"	5	2'-11"	3	2'-11"	41	0.180	0.386	2.387	0.297	0.401

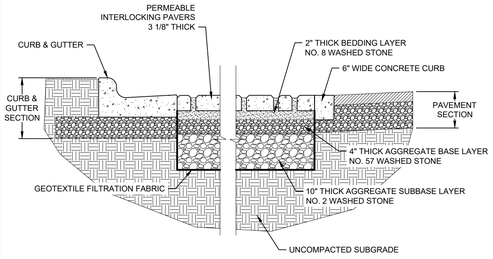
* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

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

1-18

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

SHEET 2 OF 2
840.02



PERMEABLE PAVER SECTION
NO SCALE

PERMIT DRAWING

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SCALE NO SCALE

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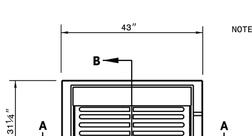
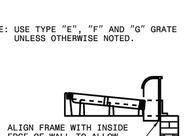
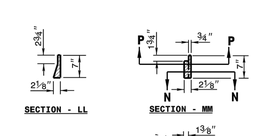
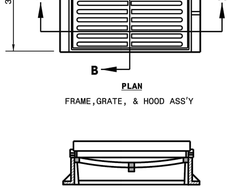
SHEET NO. C5.1

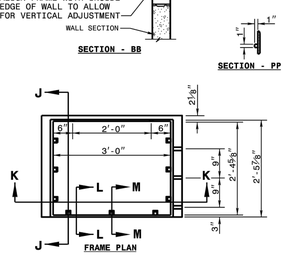


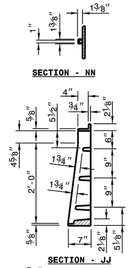
NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.

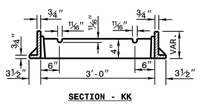


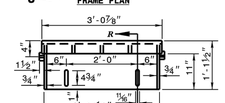


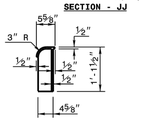










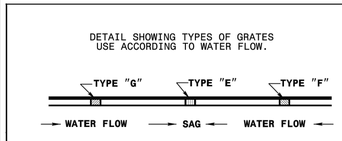


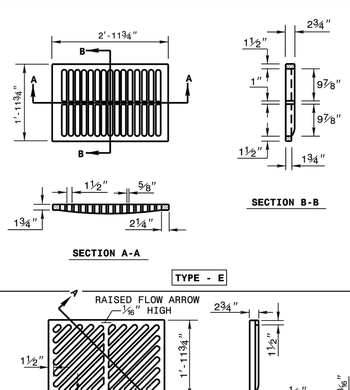
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-18

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

SHEET 1 OF 2
840.03



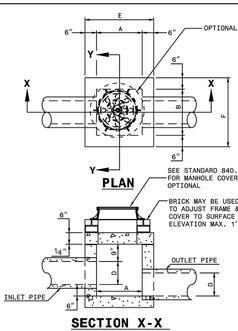


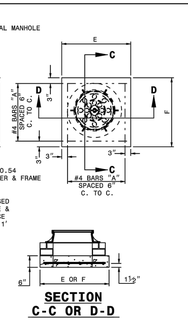
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-18

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

SHEET 2 OF 2
840.03





GENERAL NOTES:

CHAMFER ALL EXPOSED CORNERS 1".

USE CLASS "B" CONCRETE THROUGHOUT.

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

USE FORMS TO CONSTRUCT THE BOTTOM SLAB.

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

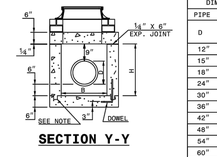
PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.

ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.)

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES

DIMENSIONS OF BOX AND PIPE				REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS		CUBIC YARDS IN BOX			TOTAL QUANTITIES BOX AND SLABS		DEDUCTIONS FOR ONE PIPE CU.YDS.	
PIPE D	SPAN A	WIDTH B	HEIGHT H	NO.	LENGTH	E	F	TOP SLAB	BOTTOM SLAB	WALL/ FT. OF HT.	LBS. REINF	CU. YDS. MIN. "H"	C.S.	R.C.
12"	2'-0"	2'-0"	2'-3"	12	2'-9"	3'-0"	3'-0"	0.167	0.167	0.185	22	0.750	0.015	0.024
15"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"	0.196	0.196	0.204	24	0.902	0.023	0.036
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.222	30	1.065	0.033	0.049
24"	3'-0"	3'-0"	3'-3"	16	3'-9"	4'-0"	4'-0"	0.296	0.296	0.259	40	1.434	0.059	0.085
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.375	0.375	0.296	51	1.860	0.092	0.127
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"	0.463	0.463	0.333	64	2.341	0.132	0.178
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.560	0.560	0.370	77	2.878	0.180	0.243
48"	5'-4"	5'-4"	5'-3"	26	6'-3"	6'-4"	6'-4"	0.743	0.743	0.407	111	3.623	0.235	0.317
54"	5'-10"	5'-10"	5'-9"	28	6'-7"	6'-10"	6'-10"	0.865	0.865	0.444	126	4.283	0.297	0.401
60"	6'-6"	6'-6"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.042	1.042	0.481	145	5.090	0.367	0.495
66"	7'-1"	7'-1"	6'-9"	32	7'-10"	8'-1"	8'-1"	1.210	1.210	0.518	169	5.917	0.444	0.589

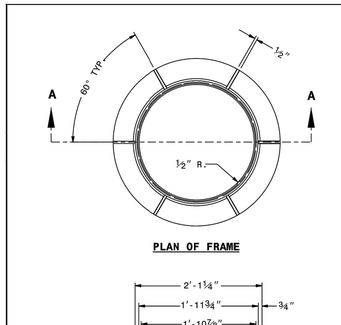


STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

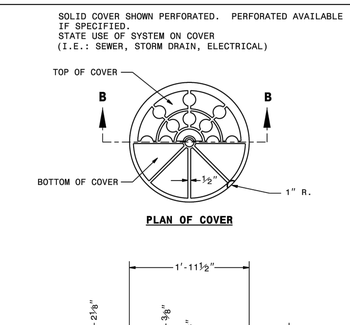
1-18

ROADWAY STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

SHEET 1 OF 1
840.31



SOLID COVER SHOWN PERFORATED. PERFORATED AVAILABLE IF SPECIFIED.
STATE USE OF SYSTEM ON COVER
(I.E.: SEWER, STORM DRAIN, ELECTRICAL)



MINIMUM WEIGHTS - LBS.
FRAME - 180
COVER - 120
TOTAL - 300

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

1-18

ROADWAY STANDARD DRAWING FOR
MANHOLE FRAME AND COVER

SHEET 1 OF 1
840.54

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA
STORMWATER DETAILS

THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS OF THE DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PROVIDED ON ALL AREAS OF THE SITE WHICH ALL DISTURBED OR GRADED.

PROVIDE A GROUNDCOVER (TEMPORARY OR PERMANENT) ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY FOR SLOPES 3:1 OR FLATTER AND LESS THAN 50' IN LENGTH, FOR SLOPES 4:1 OR FLATTER OF ANY LENGTH (EXCEPT FOR PERIMETERS AND HQW ZONES), AND SLOPES NO STEEPER THAN 2:1 AND LESS THAN 10' IN LENGTH.

PROVIDE GROUNDCOVER (TEMPORARY OR PERMANENT) ON EXPOSED SLOPES WITHIN 7 CALENDAR DAYS FOR SLOPES STEEPER THAN 3:1 OR SLOPES 3:1 OR FLATTER GREATER THAN 50' IN LENGTH, FOR HIGH QUALITY WATER (HWQ) ZONES, AND PERIMETER DIKES, SWALES, DITCHES AND SLOPES.

PROVIDE GROUNDCOVER (TEMPORARY OR PERMANENT) ON ALL EXPOSED SLOPES WITH IN 21 CALENDAR DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING; AND, A PERMANENT GROUNDCOVER FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.

THE CONTROL MEASURES SHALL BEGIN PRIOR TO ANY LAND DISTURBING ACTIVITY INCLUDING CLEARING; SHALL CONTINUE DURING CONSTRUCTION AND SHALL CONTINUE WITH THE NECESSARY MAINTENANCE UNTIL THE DISTURBED LAND IS STABILIZED. COMPLIANCE WITH LOCAL AND/OR STATE SOIL EROSION AND SEDIMENTATION CONTROL LAWS SHALL BE THE ENTIRE RESPONSIBILITY OF THE CONTRACTOR. THIS PARAGRAPH IS INTENDED TO SERVE ONLY AS A GUIDE TO THE CONTRACTOR FOR COMPLIANCE WITH SUCH LAWS. ORDERS, RULES AND REGULATIONS CONCERNING EROSION AND SEDIMENTATION CONTROL PROTECTION OF EXISTING STRUCTURES AND FACILITIES FROM SEDIMENTATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ITEMS TO BE PROTECTED SHALL INCLUDE, BUT ARE NOT LIMITED TO, CATCH BASINS, NATURAL WATERWAYS, DRAINAGE DITCHES, WALKS, DRIVES, ROADS, LAWNS, AND STREAMS.

EROSION CONTROL MEASURES

NO SCALE

SEEDBED PREPARATION

CONSTRUCTION SPECIFICATIONS

1. PREPARE SOIL AS NECESSARY TO ESTABLISH AN ADEQUATE SEEDBED FOR RECEIVING SEED USING TILLAGE AND/OR REMOVAL OF DEBRIS (ROCKS, ROOTS, OBSTRUCTIONS), CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2. SOIL SHALL RECEIVE LIME, FERTILIZER,AND/OR SUPERPHOSPHATE UNIFORMLY AS NEEDED PER RECOMMENDATIONS FROM NORTH CAROLINA DEPARTMENT OF AGRICULTURE OR OTHER COMMERCIAL LABORATORY.
3. SEED ON A FRESHLY PREPARED SEEDBED AND ENSURE SEED IS LIGHTLY COVERED FOLLOWING INSTALLATION.
4. MULCH IMMEDIATELY AFTER SEEDING.
5. CONTRACTOR SHALL SEED ALL AREAS THAT ARE DISTURBED WITHIN TWO DAYS. INSPECT ALL SEEDED AREAS AND MAKE SURE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. AFTER ALL CONSTRUCTION ACTIVITIES ARE COMPLETE, AN INSPECTION WILL BE COMPLETED TO DETERMINE IF ADDITIONAL SEEDING WILL BE REQUIRED.

*APPLY:
FERTILIZER, LIME, AND MULCH SHALL BE APPLIED AT RATES RECOMMENDED BY NCDA (OR OTHERS). OTHERWISE, APPLY AS DESCRIBED BELOW.

AGRICULTURAL LIMESTONE - 1-1.5 TONS/ACRE ON COURSE TEXTURED SOILS AND 2-3 TONS/ACRE IN FINE-TEXTURED SOILS.
SOILS WITH PH OF 6 OR HIGHER NEED NOT BE LIMED.
FERTILIZER - 700/1000 LBS/ACRE (10-10-10)
MULCH - 2 TONS/ACRE (SMALL GRAIN STRAW)
ANCHOR - ASPHALT EMULSION AT 450 GAL/ACRE

CONSTRUCTION SEQUENCING

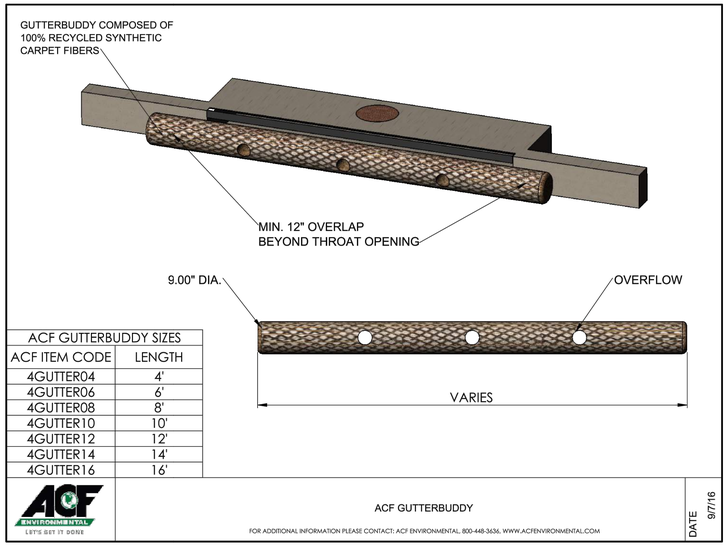
1. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE PADS. (SEE DETAIL)
2. INSTALL EROSION CONTROL DEVICES AT SITE DISCHARGE POINTS AND ALL SILT FENCE TO PREVENT OFF SITE SEDIMENTATION.
3. PERFORM DEMOLITION WORK.
4. INSTALL THE REMAINING SEDIMENT AND EROSION CONTROL PROTECTION.
5. PERFORM GRADE WORK, INSTALL UTILITIES AND THE STONE BASE AND ASPHALT FOR THE PROPOSED STREET.
6. PROVIDE GROUNDCOVER IN ACCORDANCE WITH DETAIL MARKED 'EROSION CONTROL MEASURES', THIS SHEET.
7. MONITOR AND MAINTAIN THE INSTALLED EROSION CONTROL MEASURES AND REPAIR AS NECESSARY.
8. ONCE VEGETATION IS ESTABLISHED THROUGHOUT DEVELOPMENT, REMOVE POROUS BAFFLES AND SEDIMENT FROM DETENTION POND AND RESTORE TO DESIGN DEPTHS. REMOVE SKIMMER FROM DRAWDOWN ORIFICE.
9. REMOVE ANY REMAINING CONTROL DEVICES.

PERMANENT SEEDING SCHEDULE FOR COASTAL PLAIN

DATE	TYPE	BROADCAST SEEDING RATES
OCT 1 - APR 1	SERICEA LESPEDEZA	15 LBS/ACRE
AUG 30 - MAR 15	KY 31 TALL FESCUE	200-250 LBS/ACRE
AUG 15 - APR 15	RYE GRAIN	40 LBS/ACRE
APR 15 - AUG 15	GERMAN MILLET	10 LBS/ACRE

TEMPORARY SEEDING SCHEDULE

DATE	TYPE	PLANTING RATES
DEC 1 - APR 15	ANNUAL LESPEDEZA (KOBE IN PIEDMONT AND COASTAL PLAIN)	50 LBS/ACRE
APR 15 - AUG 15 (COASTAL PLAIN)	GERMAN MILLET	40 LBS/ACRE
AUG 15 - DEC 30 (COASTAL PLAIN)	RYE	120 LBS/ACRE



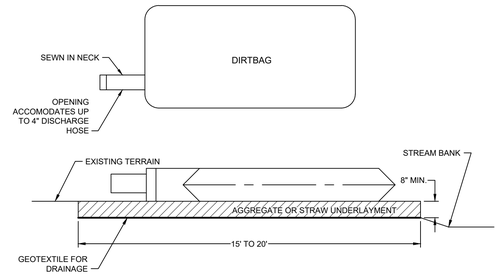
ACF GUTTERBUDDY SIZES	
ACF ITEM CODE	LENGTH
4GUTTER04	4'
4GUTTER06	6'
4GUTTER08	8'
4GUTTER10	10'
4GUTTER12	12'
4GUTTER14	14'
4GUTTER16	16'

ACF ENVIRONMENTAL — LET'S GET IT DONE

ACF GUTTERBUDDY

FOR ADDITIONAL INFORMATION PLEASE CONTACT: ACF ENVIRONMENTAL, 800-448-3636, WWW.ACFENVIRONMENTAL.COM

DATE 9/7/16

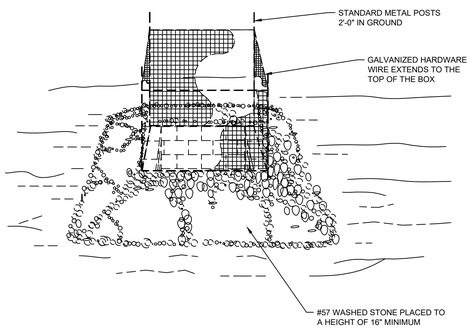


NOTES:
1. FILTER BAG TO BE PLACED ON AGGREGATE OR STRAW.
2. SEAMS MUST BE HIGH STRENGTH DOUBLE STITCHED "J" SEAMS.
3. SEAM MUST BE TESTED UNDER ASTM D-4884.
4. USED FOR ALL DE-WATERING ACTIVIES.

CONSTRUCTION SPECIFICATIONS:
1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (STRAW OR #57 STONE) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPE SURFACE, DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES
6. DURING OPERATION KEEP CONNECTION BETWEEN PUMO HOSE AND FILTER BAG WATER TIGHT.
7. REPLACE BEDDING IF IT BECOMES DISPLACED.

DE-WATERING FILTER BAG

NO SCALE

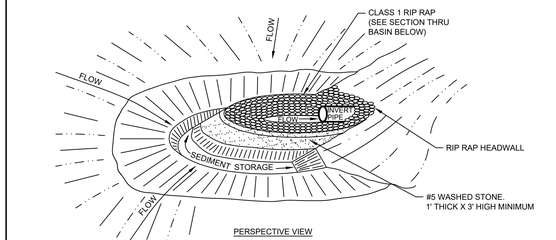


MAINTENANCE

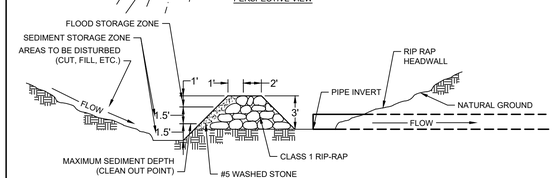
INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REPLACE STONE AS NEEDED.

INLET PROTECTION

NO SCALE



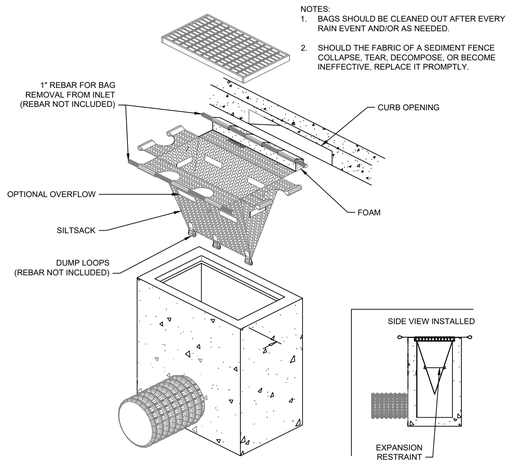
PERSPECTIVE VIEW



HORSESHOE INLET PROTECTION

NO SCALE

NOTES:
1. BAGS SHOULD BE CLEANED OUT AFTER EVERY RAIN EVENT AND/OR AS NEEDED.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.



INLET PROTECTION INSERT

NO SCALE

PERMIT DRAWING
NOT FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 042614 8-9-21 ENGINEER KIMBERLY D. HANEY

THIS DRAWING PREPARED AT THE
ELIZABETH CITY OFFICE
1805 West City Drive, Unit E | Elizabeth City, NC 27909
TEL 252.621.5030 FAX. 252.562.6974 www.timmonsgroup.com

YOUR VISION ACHIEVED THROUGH OURS.

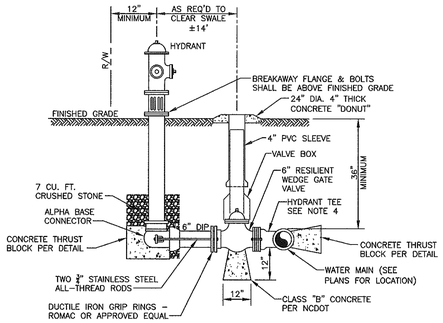
REVISION DESCRIPTION	DATE
REVISED PER TRC/TOWN COMMENTS	08/09/2021

DATE 06/15/21
DRAWN BY BCD
DESIGNED BY KDH
CHECKED BY KDH
SCALE NO SCALE

TIMMONS GROUP

MODIFICATIONS TO THE MARKETPLACE
NORTH CAROLINA LICENSE NO. C-1652
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA
EROSION CONTROL DETAILS

JOB NO. 44588
SHEET NO. C5.2

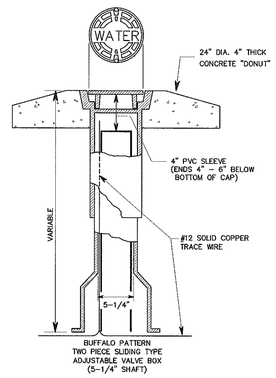


NOTES

1. DO NOT BLOCK HYDRANT DRAIN WITH THRUST BLOCKING.
2. DO NOT SUPPORT VALVE BOX DIRECTLY ON VALVE.
3. INSTALL REFLECTIVE HYDRANT MARKER, STIMPSONITE, MODEL 88AB, TWO-WAY BLUE REFLECTOR IN CENTERLINE OF PAVEMENT PERPENDICULAR TO HYDRANT LOCATION USING E-BOND EPOXY ADHESIVE 1240/1241 PER MANUFACTURER'S SPECIFICATIONS.
4. A HYDRANT TEE MAY BE USED UNLESS IT PLACES THE HYDRANT VALVE IN A LOCATION THAT IS DEEMED BY THE COUNTY TO BE UNDESIRABLE (IN DITCH, ETC.), IN WHICH CASE A REGULAR TEE SHALL BE USED AND THE HYDRANT VALVE SHALL BE SEPARATELY RODDED TO THE TEE WITH TO ¾" STAINLESS STEEL ALL-THREAD RODS.
5. HYDRANT TO BE WATEROUS WB67 FOR 3.5' BURY (MINIMUM) WITH 5¼" VALVE OPENING AND ALPHA BASE CONNECTOR.
6. HYDRANT MUST BE REPAINTED BY CONTRACTOR AFTER INSTALLATION. PAINT WITH RUSTOLEUM ENAMEL; "SAFETY RED".

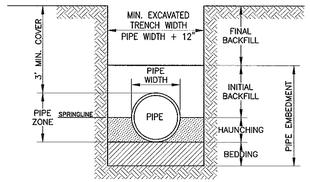
FIRE HYDRANT ASSEMBLY

NOT TO SCALE | ISSUED: 7/31/18 | DETAIL NUMBER 8



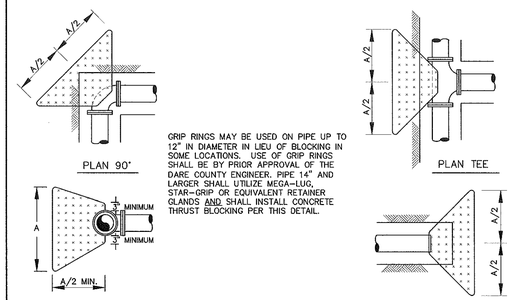
VALVE BOX DETAIL

NOT TO SCALE | ISSUED: 7/31/18 | DETAIL NUMBER 14



TRENCH DETAIL

NOT TO SCALE | ISSUED: 7/31/18 | DETAIL NUMBER 16



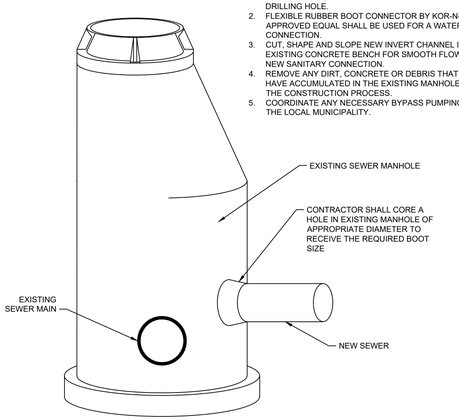
CONCRETE THRUST BLOCK SCHEDULE

FITTING	PIPE SIZE (NOM. DIA. IN INCHES)								
	2"	4"	6"	8"	10"	12"	16"	18"	20"	24"
TEE	1.6	1.9	2.8	3.8	4.7	5.9	7.5	8.5	9.4	11.3
90° BEND	1.5	1.9	2.8	3.8	4.7	5.9	7.5	8.5	9.4	11.3
45° BEND	1.0	1.4	2.1	2.8	3.5	4.3	5.5	6.2	6.9	7.7
22 1/2° BEND	.8	1.0	1.5	2.0	2.5	3.1	4.0	4.5	4.9	5.5

TABLE "A" DIMENSIONS (IN FEET)

THRUST BLOCK DETAIL

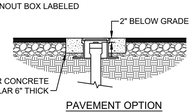
NOT TO SCALE | ISSUED: 7/31/18 | DETAIL NUMBER 11



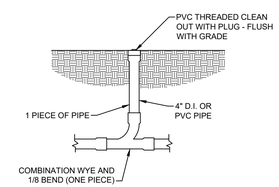
NOTES:
1. IF NECESSARY, REMOVE BENCHING PRIOR TO CORE DRILLING HOLE.
2. FLEXIBLE RUBBER BOOT CONNECTOR BY KOR-N-SEAL OR APPROVED EQUAL SHALL BE USED FOR A WATERTIGHT CONNECTION.
3. CUT, SHAPE AND SLOPE NEW INVERT CHANNEL IN THE EXISTING CONCRETE BENCH FOR SMOOTH FLOW FROM NEW SANITARY CONNECTION.
4. REMOVE ANY DIRT, CONCRETE OR DEBRIS THAT MAY HAVE ACCUMULATED IN THE EXISTING MANHOLE DURING THE CONSTRUCTION PROCESS.
5. COORDINATE ANY NECESSARY BYPASS PUMPING WITH THE LOCAL MUNICIPALITY.

CONNECTION TO EXISTING MANHOLE
NO SCALE

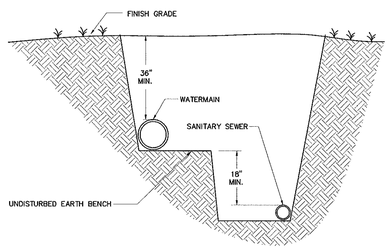
WHEN SEWER CLEAN OUT IS IN PAVEMENT OR IMPERVIOUS SURFACE, IT MUST BE INSTALLED INSIDE A D.I. CLEANOUT BOX LABELED "SEWER".



PAVEMENT OPTION

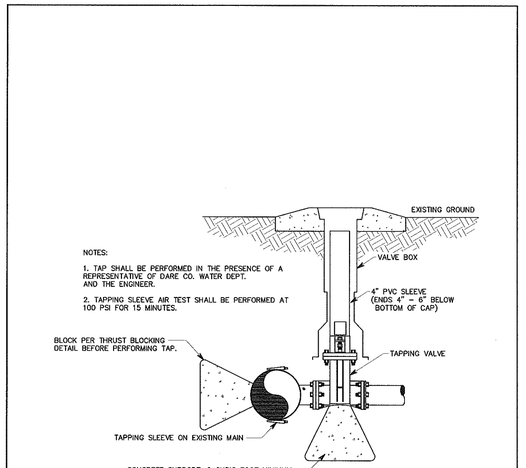


SEWER LATERAL CLEANOUT
NO SCALE



BENCHED WATER & SEWER PLACEMENT

NOT TO SCALE | ISSUED: 7/31/18 | DETAIL NUMBER 21



TAPPING DETAIL

NOT TO SCALE | ISSUED: 7/31/18 | DETAIL NUMBER 7

NORTH CAROLINA PROFESSIONAL SEAL 042614 8-9-21 ENGINEER KIMBERLY D. HAMBY

PERMIT DRAWING
NOT FOR CONSTRUCTION

THIS DRAWING PREPARED AT THE **ELIZABETH CITY OFFICE**
1805 West City Drive, Unit E | Elizabeth City, NC 27909
TEL 252.621.5030 FAX 252.562.6974 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE
REVISED PER TRC/TOWN COMMENTS	08/09/2021

DATE 06/15/21
DRAWN BY BCD
DESIGNED BY KDH
CHECKED BY KDH
SCALE NO SCALE

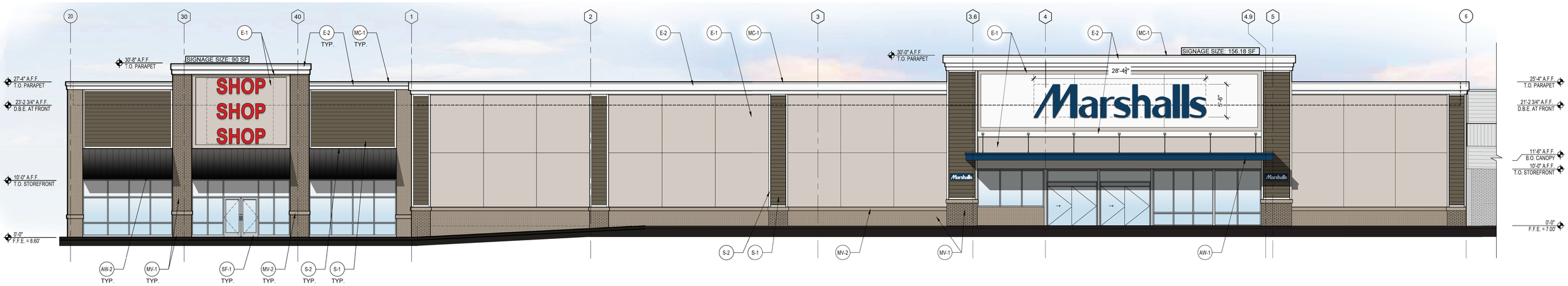
TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

MODIFICATIONS TO THE MARKETPLACE
SOUTHERN SHORES TNSP - DARE COUNTY - NORTH CAROLINA

UTILITY DETAILS

JOB NO. 44588
SHEET NO. C5.3

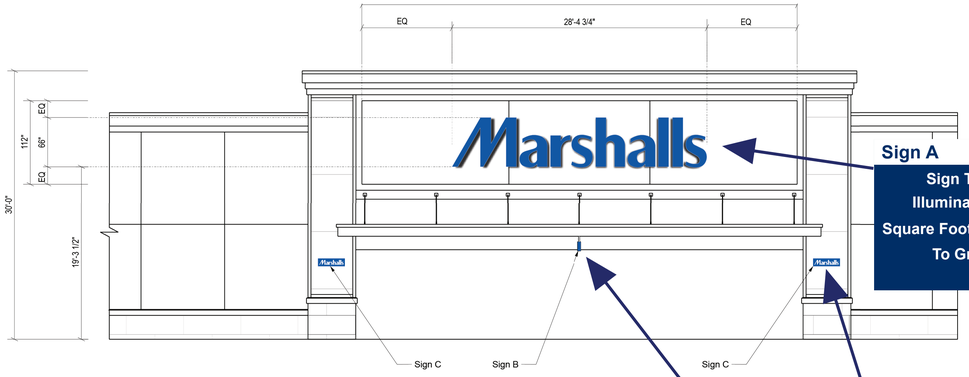


GENERAL SIGNAGE FOR

MARKETPLACE AT SOUTHERN SHORES:

- Tenant signage shall comply with Section 36-165 of the Southern Shores, NC Zoning Ordinance which states:
  1. Tenant shall be allowed one square foot of signage for each linear foot of its frontage.
  2. Stores which are corner stores or end stores shall be entitled to the amount of linear footage based on the total frontage of the store front and adjacent exterior side.
  3. Wall signs shall be placed on the exterior wall of the building which it advertises and shall not extend more than 15 inches beyond the wall surfaces.
- Owner further requests that:
  1. Tenants shall be permitted to utilize its signage allowance in one or more signs.
  2. In order to provide for a more uniform and complementary signage presence within the Marketplace at Southern Shores, the shopping center shall, as a vested right, be allowed signage that complies with the above-stated Ordinance as it exists at the time of this submittal.

FINISH SCHEDULE	
AW-1	PRE-FINISHED FLAT METAL CANOPY SIMILAR TO AWNINGS ABOVE - FINISH COLOR TO MATCH BENJAMIN MOORE 2061-20 "CHAMPION COBALT"
AW-2	AWNING - ALUMINUM FRAMED, STANDING SEAM METAL AWNING SIMILAR TO AWNINGS ABOVE - FINISH COLOR TO MATCH PAC-CLAD 'MATTE BLACK'
E-1	EIFS VENEER - COLOR TO MATCH SW 6071 "POPULAR GRAY"
E-2	EIFS VENEER - COLOR TO MATCH SW 7005 "PURE WHITE"
MC-1	PRE-FINISHED METAL COPING - SIMILAR TO PAC-CLAD - FINISH COLOR TO MATCH "BONE WHITE"
MV-1	BRICK MASONRY VENEER - PAINT COLOR TO MATCH SHERWIN WILLIAMS SW 7038 "TONY TAUPE"
MV-2	PRECAST STONE WATER TABLE - PAINT COLOR TO MATCH SHERWIN WILLIAMS SW 7038 "TONY TAUPE"
S-1	INTEGRALLY COLORED JAMES HARDIE HARDIE PANEL SIDING - FINISH COLOR "TIMBER BARK"
S-2	INTEGRALLY COLORED HARDIE ARTISAN TRIM, SMOOTH - FINISH COLOR "SUMMER WHITE"
SF-1	ALUMINUM STOREFRONT SYSTEM - BY KAWNEER FINISH COLOR: CLEAR ANODIZED



Sign A

	66" Marshalls
Sign Type:	Individual Channel Letters
Illumination:	Internally Illuminated w/ LEDs
Square Footage:	156.18
To Grade:	Top of Sign to Grade = 24'-8 1/2" Bottom of Sign to Grade = 19'-3 1/2"

Allowable Square Footage:	**185.00**
Formula:1 sqft per linear foot	
Actual Square Footage this Elevation:	**168.02**

SIGN C Marshalls **QTY: 2**

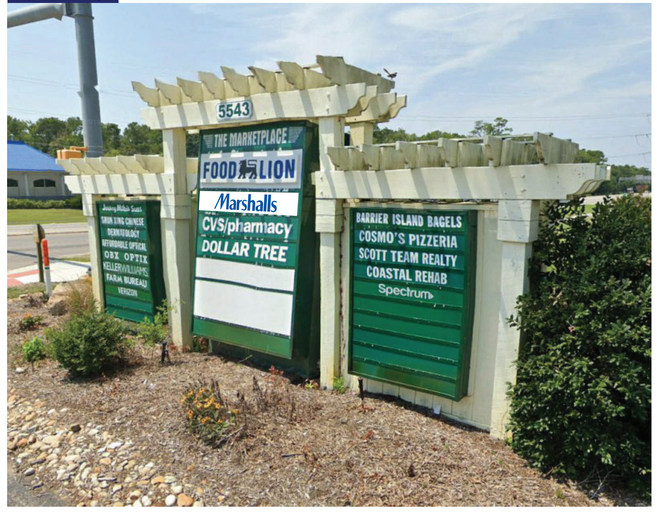
Sign Type:	Column Sign
Illumination:	Non-Illuminated
Square Footage:	4.67
To Grade:	Bottom of Sign to Grade = 8'-0"

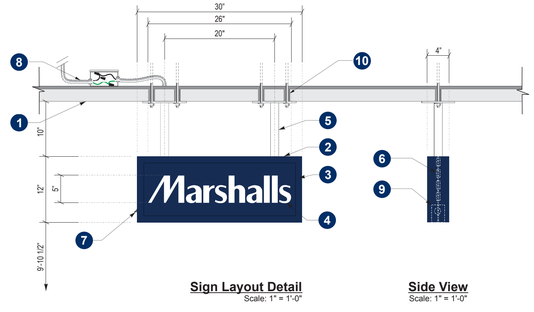
SIGN B Marshalls

Sign Type:	D/F Under Canopy Sign
Illumination:	Internally Illuminated w/ LEDs
Square Footage:	2.50
To Grade:	Bottom of Sign to Grade = 9'-10 1/2"

SIGN D Marshalls

Sign Type:	New Lexan Panel w/ Applied Vinyl
Actual Size:	TBD
Viewable Size:	TBD
Square Footage:	TBD





Sign Layout Detail
Scale: 1" = 1'-0"

Side View
Scale: 1" = 1'-0"

REDEVELOPMENT OF:

MARKETPLACE AT SOUTHERN SHORES

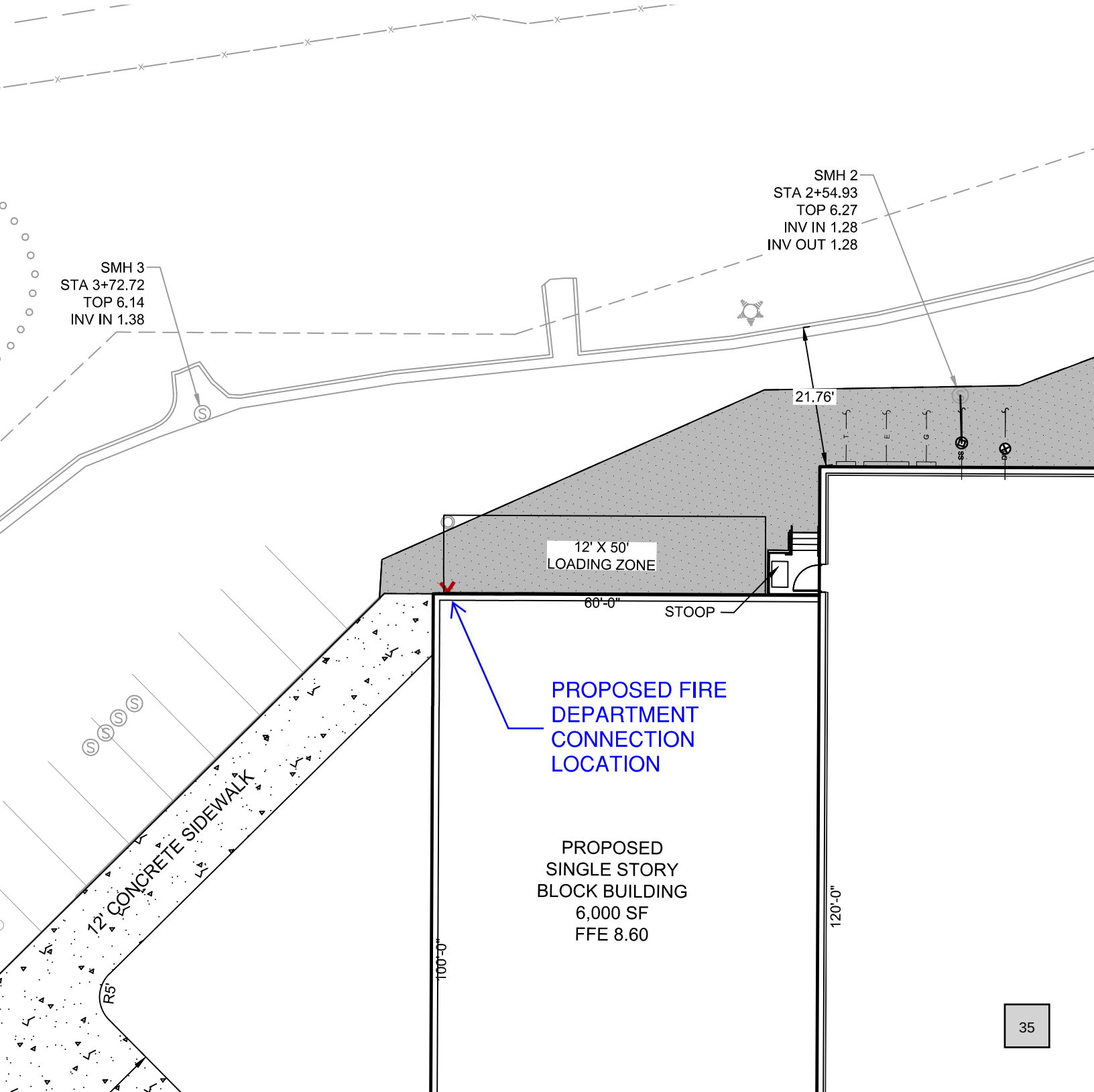
5531-5597 N CROATAN HWY
SOUTHERN SHORES NC 27949

REDEVELOPED BY:

ASTON properties

610 E MOREHEAD ST STE 100
CHARLOTTE NC 28202

EXHIBIT FOR MARKETPLACE AT SOUTHERN SHORES
PROPOSED LOCATION OF FIRE DEPARTMENT CONNECTION
AUGUST 16,02021



COUNTY OF DARE
Kill Devil Hills, NORTH CAROLINA 27948

Patrick Irwin
Utilities Director

600 Mustian St.
Phone: (252) 475-5603
Fax: (252) 441-2239
E-mail: pat.irwin@darenc.com

August 6, 2021

Kimberly Hamby, PE
Timmons Group

Marketplace at Southern Shores Water Line Project:

This letter serves as Dare County Water's willingness to serve the water line extension in the Marketplace at Southern Shores and approval of a 30" cover for this water line.

Sincerely:

Patrick Irwin

Patrick Irwin, Utilities Director

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

RE: [External] Market Place- SS; Change of use request

mstrader@quible.com

RE: [External] Market Place- SS; Change of use request

Received:	Aug 13, 2021 5:19 PM
Expires:	Oct 12, 2021 5:19 PM
From:	steven.berkowitz@dhhs.nc.gov
To:	joshc@darenc.com
Cc:	mstrader@quible.com, tim.crissman@dhhs.nc.gov
Subject:	RE: [External] Market Place- SS; Change of use request

Attachments: image001.png

Josh: As we just discussed by phone, we do not object to the proposed Change of Use to allow for the construction of the Michael's Retail store in The Market Place in Southern Shores. Conditions to incorporate should be:

1. Use of low-flow fixtures (compliant with EPA WaterSense capacities, including urinals which use now more than 0.5 gallons per flush, water closets which use not more than 1.28 gallons/flush and faucets that use no more than 1.5 gallons per minute.) This would apply to any new construction (e.g., Marshall's) or relocations (e.g., Coastal Rehabilitation).
2. Any proposed new food service facilities would require separate approval on a case-by-case basis to confirm capacity of the system to handle estimate flow, assessment of impact on wastewater strength, and ability to tie into an existing or newly-proposed grease trap.

Please feel free to contact us if you have any questions about this response, or if we can assist further with this project.

Steven

Steven Berkowitz, PE

Senior Engineer

Division of Public Health, On-Site Water Protection Branch

North Carolina Department of Health and Human Services

919-707-5876 office

919-845-3973 fax

Steven.Berkowitz@dhhs.nc.gov

5605 Six Forks Road

Raleigh NC 27609

1642 Mail Service Center

Raleigh, NC 27699

From: Josh Coltrain <joshc@darenc.com>
Sent: Thursday, August 12, 2021 4:57 PM
To: Berkowitz, Steven <steven.berkowitz@dhhs.nc.gov>

Cc: Michael Strader <MStrader@quible.com>
Subject: [External] Market Place- SS; Change of use request

Good afternoon Steven,

Attached is a change of use request for Market Place in Southern Shores with supporting flow data for additional retail space. Please review as soon as possible and provide feedback/approval. The town needs an answer as soon as possible before the planning department can grant approval.

Sincerely,

Josh Coltrain, REHS
Environmental Health Supervisor
Department of Health & Human Services
Public Health Division
P.O. Box 669, Manteo, NC 27954
252.475. 5014 phone
252.441.6921 _fax
www.darenc.com

OSQ Series

OSQ™ High Output LED Area/Flood Luminaire featuring Cree TrueWhite® Technology

Rev. Date: V12 04/14/2020

Product Description

The OSQ™ High Output Area/Flood luminaire blends extreme optical control, advanced thermal management and modern, clean aesthetics. Built to last, the housing is rugged cast aluminum with an integral, weathertight LED driver compartment. Versatile mounting configurations offer simple installation. Its slim, low-profile design minimizes wind load requirements and blends seamlessly into the site providing even, quality illumination. The OSQ high output luminaire is a suitable upgrade for HID applications with one or even multiple 1000 Watt luminaires.

Applications: Auto dealerships, parking lots, campuses, facade lighting, high-mast and general site lighting applications

Performance Summary

Utilizes Cree TrueWhite® Technology on 5000K Luminaires

NanoOptic® Precision Delivery Grid™ optic

Assembled in the U.S.A. of U.S. and imported parts

Initial Delivered Lumens: Up to 68,691

Efficacy: Up to 125 LPW

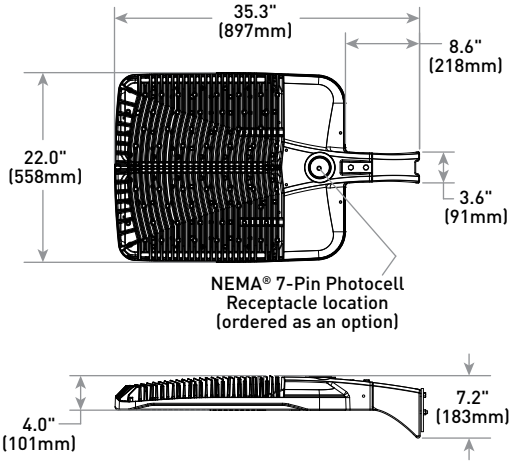
CRI: Minimum 70 CRI (3000K, 4000K & 5700K); 90 CRI (5000K)

CCT: 3000K (+/- 300K), 4000K (+/- 300K), 5000K (+/- 300K), 5700K (+/- 500K)

Limited Warranty†: 10 years on luminaire; 10 years on Colorfast DeltaGuard® finish; up to 5 years for Synapse® accessories; 1 year on luminaire accessories

† See http://creelighting.com/warranty for warranty terms. For Synapse accessories, consult Synapse spec sheets for details on warranty terms.

DA Mount



Lumen Package	Voltage	Weight
40/50L	120-480V	70.0 lbs. (31.8kg)
65L	120-480V	72.0 lbs. (32.7kg)

Ordering Information

Fully assembled luminaire is composed of two components that must be ordered separately:
Example: **Mount:** OSQ-HO-AA-SV + **Luminaire:** OSQ-HO-A-NM-2ME-40L-40K-UL-SV

Mount (Luminaire must be ordered separately)	
OSQ-HO-	
OSQ-HO-AA Adjustable Arm **OSQ-HO-DA** Direct Arm	**Color Options:** **SV** Silver **BK** Black **BZ** Bronze **WH** White

Luminaire (Mount must be ordered separately)

OSQ-HO	A	NM						
Product	**Version**	**Mounting**	**Optic**	**Lumen Package****	**CCT**	**Voltage**	**Color Options**	**Options**
OSQ-HO	A	**NM** No Mount	**Asymmetric** **2ME*** Type II Medium **4ME*** Type IV Medium **3ME*** Type III Medium **AF*** Automotive FrontlineOptic™ **Symmetric** **5ME** Type V Medium **40D** 40˚ Flood **5SH** Type V Short **60D** 60˚ Flood **15D** 15˚ Flood **120D** 120˚ Flood **25D** 25˚ Flood **WSN** Wide Sign	**40L** **50L** **65L**	**30K** 3000K - 70 CRI **40K** 4000K - 70 CRI **50K** 5000K - 90 CRI **57K** 5700K - 70 CRI	**UL** Universal 120-277V - All lumen packages **UH** Universal 347-480V - 40L & 50L lumen packages only **UM** Universal 208-480V - 65L lumen package only	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**PML Programmable Multi-Level, up to 40' Mounting Height** - Refer to PML spec sheet for details - Not available with 65L - Intended for downlight applications at 0˚ tilt **Q9/Q8/Q7/Q6/Q5/Q4/Q3/Q2/Q1 Field Adjustable Output** - Must select Q9, Q8, Q7, Q6, Q5, Q4, Q3, Q2, or Q1 - Not available with 65L when ordered w/R option - Offers full range adjustability - Refer to pages 14-16 for power and lumen values **R** NEMA® 7-Pin Photocell Receptacle - 7-pin receptacle per ANSI C136.41 - Intended for downlight applications with maximum 45˚ tilt - Factory connected 0-10V dim leads - 12" (305mm) seven-conductor leads exit luminaire - Requires photocell and shorting cap by others - Not available with 65L when ordered w/Q option **RL** **Rotate Left** - LED and optic are rotated to the left - Refer to RR/RL configuration diagram on page 13 for optic directionality **RR** **Rotate Right** - LED and optic are rotated to the right - Refer to RR/RL configuration diagram on page 13 for optic directionality

* Available with Backlight Shield when ordered with field-installed accessory (see table above)
** Lumen Package selection codes identify approximate light output only. Actual lumen output levels vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

Product Specifications

CREE TRUEWHITE® TECHNOLOGY

A revolutionary way to generate high-quality white light, Cree TrueWhite® Technology is a patented approach that delivers an exclusive combination of 90+ CRI, beautiful light characteristics and lifelong color consistency, all while maintaining high luminous efficacy – a true no compromise solution.

CONSTRUCTION & MATERIALS

- Slim, low profile design minimizes wind load requirements
- Luminaire housing is rugged die cast aluminum with an integral, weathertight LED driver compartment and high-performance heat sink
- Convenient interlocking mounting method on direct arm mount. Mounting adaptor is rugged die cast aluminum and mounts to 3" (76mm) or larger square or round pole, secured by two 5/16-18 UNC bolts spaced on 2" (51mm) centers
- Adjustable arm that mounts to a horizontal or vertical 2" (51mm) IP, 2.375-2.50" (60-64mm) O.D. steel tenon. Tenon length must be a minimum of 3.75" (95mm)
- Adjustable arm mount can be adjusted 180˚ in 5.0˚ increments
- Includes 12" (305mm) 18/5 or 16/5 leads exiting the luminaire. When ordered with R option, 12" (305mm) 18/7 or 16/7 leads are provided
- Designed for uplight and downlight applications
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Silver, bronze, black, and white are available
- **Weight:** See Dimension and Weight Chart on pages 1 and 13

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V, 208-480V or 347-480V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Consult factory if in-luminaire fusing is required
- Designed with 0-10V dimming capabilities. For 65L SKUs with UL voltage, dimming control lines must be >1V when operated at 277V. Controls by others
- Refer to Dimming spec sheet for details
- **Maximum 10V Source Current:** 0.30mA
- **Operating Temperature Range:** -40˚C to 40˚C (-40˚ F to 104˚ F)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Consult factory for CE Certified products
- ANSI C136.2 10kV surge protection, tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA
- RoHS compliant. Consult factory for additional details
- DLC and DLC Premium qualified versions available. Some exceptions apply. Please refer to https://www.designlights.org/search/ for most current information
- OSQ-HO luminaires are enclosure rated IP66 per IEC 60598-1 when ordered without the R option
- Dark Sky Friendly, IDA Approved when ordered with 30K CCT and DA mount only. Please refer to https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/ for most current information
- **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Product Specifications

SYNAPSE® SIMPLYSNAP INTELLIGENT CONTROL

The Synapse SimplySNAP platform is a highly intuitive connected lighting solution featuring zone dimming, motion sensing, and daylight harvesting with utility-grade power monitoring and support of up to 1000 nodes per gateway. The system features a reliable and robust self-healing mesh network with a browser-based interface that runs on smartphones, tablets, and PCs. The Twist-Lock Lighting Controller (TL7-B2) and Site Controller (SS450-002) take the OSQ Series to a new performance plateau, providing extreme energy productivity, code compliance and a better light experience.

Electrical Data*

Lumen Package	System Watts 120-480V	Total Current (A)					
		120V	208V	240V	277V	347V	480V
40L	341	2.93	1.65	1.43	1.23	1.00	0.71
50L	420	3.61	2.03	1.76	1.51	1.23	0.87
65L	550	4.73	2.66	2.30	1.98	1.59	1.15

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347-480V +/- 10%

OSQ Series (OSQ-HO) Ambient Adjusted Lumen Maintenance[1]

Ambient	Optic	Initial LMF	25K hr Reported[2] LMF	50K hr Reported[2] LMF	75K hr Reported[2] LMF	100K hr Reported[2] LMF
5˚C (41˚F)	Asymmetric	1.04	1.03	1.01	0.99	0.97
	Symmetric	1.05	1.04	1.03	1.03	1.02
10˚C (50˚F)	Asymmetric	1.03	1.02	1.00	0.98	0.96
	Symmetric	1.04	1.03	1.02	1.01	1.00
15˚C (59˚F)	Asymmetric	1.02	1.01	0.99	0.97	0.95
	Symmetric	1.02	1.02	1.01	1.00	0.99
20˚C (68˚F)	Asymmetric	1.01	1.00	0.98	0.96	0.94
	Symmetric	1.01	1.01	1.00	0.99	0.98
25˚C (77˚F)	Asymmetric	1.00	0.99	0.97	0.95	0.93
	Symmetric	1.00	0.99	0.98	0.98	0.97

[1] Lumen maintenance values at 25˚C (77˚F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions.
[2] In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED.

Accessories

Field-Installed

Backlight Shield (One pair)
OSQ-HO-BLSF
– Front facing optics
OSQ-HO-BLSR
– Rotated optics

Shorting Cap
XA-XSLSHRT

Hand-Held Remote
XA-SENSREM
- For successful implementation of the programmable multi-level option, a minimum of one hand-held remote is required

Synapse Wireless Control Accessories

Twist-Lock Lighting Controller
TL7-B2
- Suitable for 120-277V (UL) voltage only
- Requires NEMA/ANSI C136.41 7-Pin Dimming Receptacle
- Not for use with PML or Q options
- Provides On/Off switching, dimming, power metering, digital sensor input, and status monitoring of luminaires
- Refer to TL7-B2 spec sheet for details

SimplySNAP Central Base Station
CBSSW-450-002
- Includes On-Site Controller (SS450-002) and 5-button switch
- Indoor and Outdoor rated

Synapse Wireless Sensor
WSN-DPM
-Motion and light sensor
-Control multiple zones
- Refer to WSN-DPM spec sheet for details

SimplySNAP On-Site Controller
SS450-002
- Verizon® LTE-enabled
- Designed for indoor applications
- Refer to SS450-002 spec sheet for details

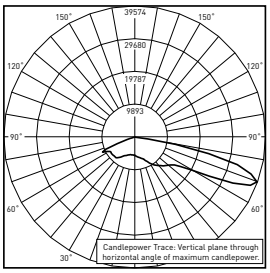
Building Management System (BMS) Gateway
BMS-GW-002
- Required for BACnet integration
- Refer to BMS-GW-002 spec sheet for details

Outdoor Antennas
(Optional, for increased range, 8dB gain)
KIT-ANT420SM
- Kit includes antenna, 20' cable and bracket
KIT-ANT360
- Kit includes antenna, 30' cable and bracket
KIT-ANT600
- Kit includes antenna, 50' cable and bracket
- Refer to Outdoor antenna spec sheet for details

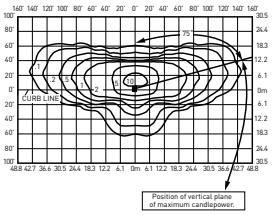
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/outdoor/area/area-osq-high-output

2ME



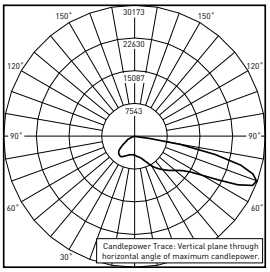
CESTL Test Report #: PL10951-001A
OSQ-HO-A-**-2ME-40L-40K-UL
Initial Delivered Lumens: 45,012



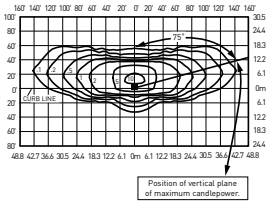
OSQ-HO-A-**-2ME-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 41,880
Initial FC at grade

Type II Medium Distribution								
Lumen Package	3000K/70 CRI		4000K/70 CRI		5000K/90 CRI		5700K/70 CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
40L	39,751	B4 U0 G4	41,880	B4 U0 G5	33,920	B4 U0 G4	42,702	B4 U0 G5
50L	48,950	B4 U0 G5	51,571	B4 U0 G5	41,434	B4 U0 G5	52,583	B4 U0 G5
65L	63,945	B5 U0 G5	67,369	B5 U0 G5	53,848	B4 U0 G5	68,691	B5 U0 G5

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: PL10952-001A
OSQ-HO-A-**-2ME-40L-40K-UL
w/OSQ-HO-BLSF
Initial Delivered Lumens: 35,531



OSQ-HO-A-**-2ME-40L-40K-UL
w/OSQ-HO-BLSF
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 33,504
Initial FC at grade

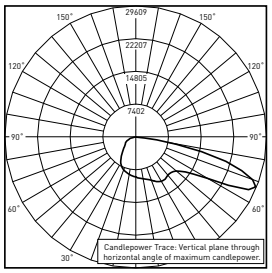
Type II Medium w/BLS Distribution								
Lumen Package	3000K/70 CRI		4000K/70 CRI		5000K/90 CRI		5700K/70 CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
40L	31,801	B3 U0 G4	33,504	B3 U0 G4	27,136	B3 U0 G4	34,162	B3 U0 G4
50L	39,160	B3 U0 G4	41,257	B3 U0 G5	33,147	B3 U0 G4	42,066	B3 U0 G5
65L	51,156	B3 U0 G5	53,895	B3 U0 G5	43,078	B3 U0 G5	54,953	B3 U0 G5

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

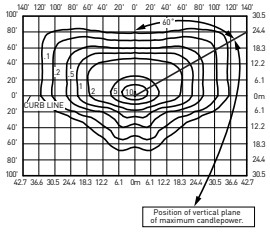
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/outdoor/area/area-osq-high-output

3ME



CESTL Test Report #: PL10953-001A
OSQ-HO-A-**-3ME-40L-40K-UL
Initial Delivered Lumens: 44,770



OSQ-HO-A-**-3ME-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 41,880
Initial FC at grade

Type III Medium Distribution								
Lumen Package	3000K/70 CRI		4000K/70 CRI		5000K/90 CRI		5700K/70 CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
40L	39,751	B4 U0 G5	41,880	B4 U0 G5	33,920	B4 U0 G4	42,702	B4 U0 G5
50L	48,950	B4 U0 G5	51,571	B4 U0 G5	41,434	B4 U0 G5	52,583	B4 U0 G5
65L	63,945	B4 U0 G5	67,369	B5 U0 G5	53,848	B4 U0 G5	68,691	B5 U0 G5

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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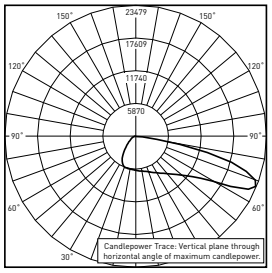
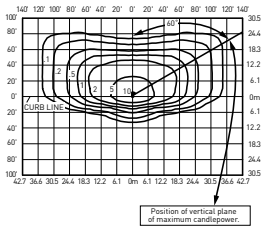


CESTL Test Report #: PL10954-001A
OSQ-HO-A-**-3ME-40L-40K-UL
w/OSQ-HO-BLSF
Initial Delivered Lumens: 32,977



OSQ-HO-A-**-3ME-40L-40K-UL
w/OSQ-HO-BLSF
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 34,342
Initial FC at grade

Type III Medium w/BLS Distribution								
Lumen Package	3000K/70 CRI		4000K/70 CRI		5000K/90 CRI		5700K/70 CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
40L	32,596	B3 U0 G4	34,342	B3 U0 G5	27,814	B3 U0 G4	35,016	B3 U0 G5
50L	40,139	B3 U0 G5	42,288	B4 U0 G5	33,976	B3 U0 G5	43,118	B4 U0 G5
65L	52,435	B4 U0 G5	55,243	B4 U0 G5	44,155	B4 U0 G5	56,327	B4 U0 G5

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

Photometry

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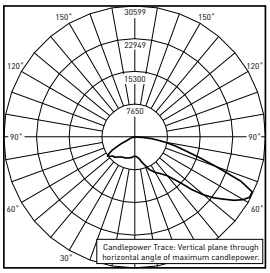
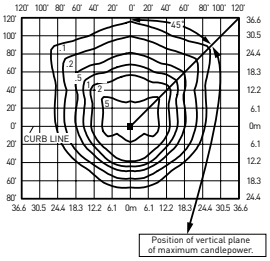
4ME



CESTL Test Report #: PL09256-001A
OSQ-HO-A-**-4ME-40L-40K-UL
Initial Delivered Lumens: 44,936



OSQ-HO-A-**-4ME-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 41,880
Initial FC at grade

Type IV Medium Distribution								
Lumen Package	3000K/70 CRI		4000K/70 CRI		5000K/90 CRI		5700K/70 CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
40L	39,751	B4 U0 G4	41,880	B5 U0 G4	33,920	B4 U0 G4	42,702	B5 U0 G4
50L	48,950	B5 U0 G5	51,571	B5 U0 G5	41,434	B4 U0 G4	52,583	B5 U0 G5
65L	63,945	B5 U0 G5	67,369	B5 U0 G5	53,848	B5 U0 G5	68,691	B5 U0 G5

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
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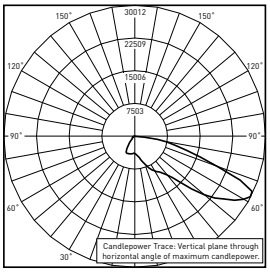
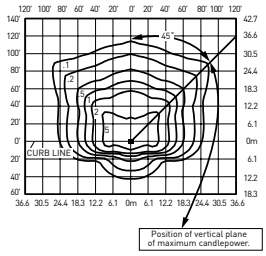


CESTL Test Report #: PL09256-002A
OSQ-HO-A-**-4ME-40L-40K-UL
w/OSQ-HO-BLSF
Initial Delivered Lumens: 35,406



OSQ-HO-A-**-4ME-40L-40K-UL
w/OSQ-HO-BLSF
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 33,085
Initial FC at grade

Type IV Medium w/BLS Distribution								
Lumen Package	3000K/70 CRI		4000K/70 CRI		5000K/90 CRI		5700K/70 CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
40L	31,403	B3 U0 G4	33,085	B3 U0 G4	26,797	B3 U0 G4	33,735	B3 U0 G4
50L	38,671	B3 U0 G5	40,741	B3 U0 G5	32,733	B3 U0 G4	41,541	B3 U0 G5
65L	50,517	B4 U0 G5	53,222	B4 U0 G5	42,540	B3 U0 G5	54,266	B4 U0 G5

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

Photometry

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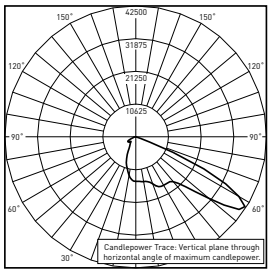
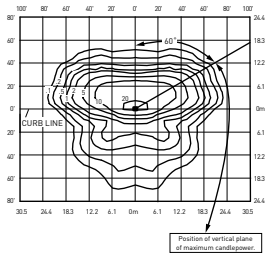
AF



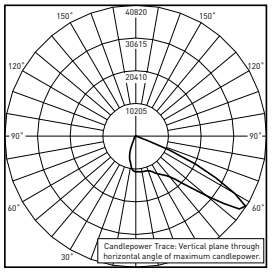
CESTL Test Report #: PL10910-001A
OSQ-HO-A-**-AF-40L-40K-UL
Initial Delivered Lumens: 44,921



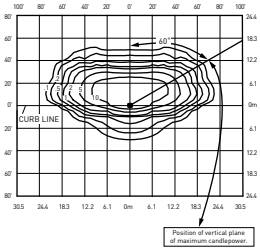
OSQ-HO-A-**-AF-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 41,880
Initial FC at grade

Automotive FrontLineOptic™ Distribution								
Lumen Package	3000K/70 CRI		4000K/70 CRI		5000K/90 CRI		5700K/70 CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
40L	39,751	B4 U0 G3	41,880	B4 U0 G3	33,920	B3 U0 G3	42,702	B4 U0 G3
50L	48,950	B4 U0 G3	51,571	B4 U0 G3	41,434	B4 U0 G3	52,583	B4 U0 G3
65L	63,945	B4 U0 G4	67,369	B4 U0 G4	53,848	B4 U0 G3	68,691	B4 U0 G4

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt



CESTL Test Report #: PL10911-001A
OSQ-HO-A-**-AF-40L-40K-UL
w/OSQ-HO-BLSF
Initial Delivered Lumens: 35,558



OSQ-HO-A-**-AF-40L-40K-UL
w/OSQ-HO-BLSF
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 33,151
Initial FC at grade

Automotive FrontLineOptic™ w/BLS Distribution								
Lumen Package	3000K/70 CRI		4000K/70 CRI		5000K/90 CRI		5700K/70 CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
40L	31,466	B3 U0 G2	33,151	B3 U0 G2	26,850	B3 U0 G2	33,802	B3 U0 G2
50L	38,747	B3 U0 G2	40,822	B3 U0 G3	32,798	B3 U0 G2	41,623	B3 U0 G3
65L	50,617	B4 U0 G3	53,327	B4 U0 G3	42,625	B3 U0 G3	54,374	B4 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

Photometry

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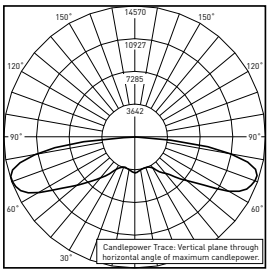
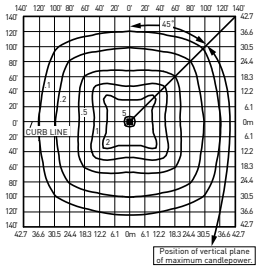
5ME



CESTL Test Report #: PL09257-001A
OSQ-HO-A-**-5ME-40L-40K-UL
Initial Delivered Lumens: 35,159

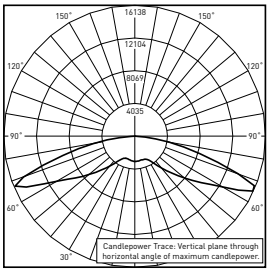


OSQ-HO-A-**-5ME-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 39,332
Initial FC at grade

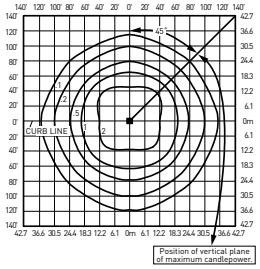
Type V Medium Distribution								
Lumen Package	3000K/70 CRI		4000K/70 CRI		5000K/90 CRI		5700K/70 CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
40L	37,169	B5 U0 G5	39,332	B5 U0 G5	31,689	B5 U0 G5	40,155	B5 U0 G5
50L	45,389	B5 U0 G5	48,031	B5 U0 G5	38,871	B5 U0 G5	49,035	B5 U0 G5
65L	59,011	B5 U0 G5	62,445	B5 U0 G5	49,959	B5 U0 G5	63,751	B5 U0 G5

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

5SH



CESTL Test Report #: PL09258-001A
OSQ-HO-A-**-5SH-40L-40K-UL
Initial Delivered Lumens: 42,362



OSQ-HO-A-**-5SH-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 41,542
Initial FC at grade

Type V Short Distribution								
Lumen Package	3000K/70 CRI		4000K/70 CRI		5000K/90 CRI		5700K/70 CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
40L	39,258	B5 U0 G5	41,542	B5 U0 G5	33,469	B5 U0 G5	42,411	B5 U0 G5
50L	47,939	B5 U0 G5	50,729	B5 U0 G5	41,055	B5 U0 G5	51,790	B5 U0 G5
65L	62,326	B5 U0 G5	65,953	B5 U0 G5	52,766	B5 U0 G5	67,332	B5 U0 G5

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf. Valid with no tilt

Photometry

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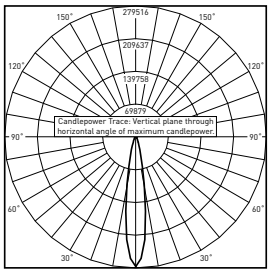
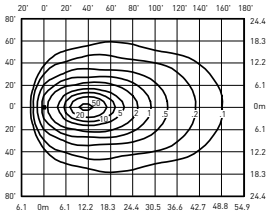
15D



CESTL Test Report #: PL09259-001A
OSQ-HO-A-**-15D-40L-40K-UL
Initial Delivered Lumens: 43,172

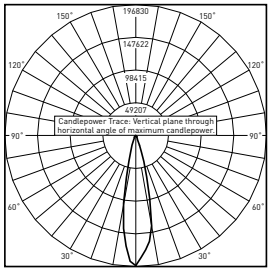


OSQ-HO-A-**-15D-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G., 60° Tilt
Initial Delivered Lumens: 41,542
Initial FC at grade

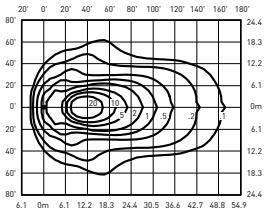
15° Flood Distribution				
Lumen Package	3000K/70 CRI	4000K/70 CRI	5000K/90 CRI	5700K/70 CRI
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
40L	39,258	41,542	33,469	42,411
50L	47,939	50,729	41,055	51,790
65L	62,326	65,953	52,766	67,332

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens

25D



CESTL Test Report #: PL09260-001A
OSQ-HO-A-**-25D-40L-40K-UL
Initial Delivered Lumens: 43,263



OSQ-HO-A-**-25D-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G., 60° Tilt
Initial Delivered Lumens: 41,542
Initial FC at grade

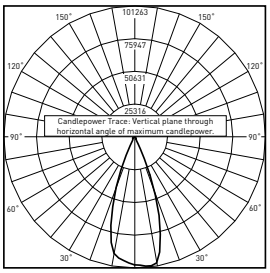
25° Flood Distribution				
Lumen Package	3000K/70 CRI	4000K/70 CRI	5000K/90 CRI	5700K/70 CRI
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
40L	39,258	41,542	33,469	42,411
50L	47,939	50,729	41,055	51,790
65L	62,326	65,953	52,766	67,332

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens

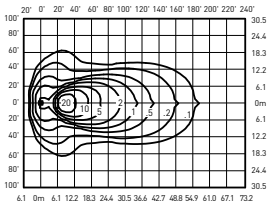
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/outdoor/area/area-osq-high-output

40D



CESTL Test Report #: PL09261-001A
OSQ-HO-A-**-40D-40L-40K-UL
Initial Delivered Lumens: 43,698

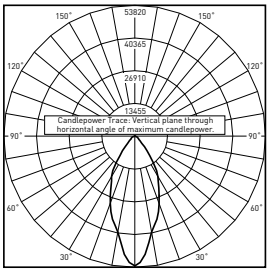


OSQ-HO-A-**-40D-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G., 60° Tilt
Initial Delivered Lumens: 41,542
Initial FC at grade

40° Flood Distribution				
Lumen Package	3000K/70 CRI	4000K/70 CRI	5000K/90 CRI	5700K/70 CRI
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
40L	39,258	41,542	33,469	42,411
50L	47,939	50,729	41,055	51,790
65L	62,326	65,953	52,766	67,332

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens

60D



CESTL Test Report #: PL09262-001A
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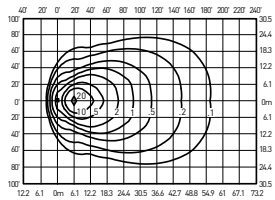
Initial Delivered Lumens: 42,715



OSQ-HO-A-**-60D-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G., 60° Tilt
Initial Delivered Lumens: 41,542
Initial FC at grade

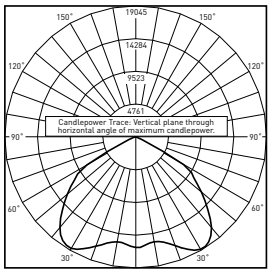
60° Flood Distribution				
Lumen Package	3000K/70 CRI	4000K/70 CRI	5000K/90 CRI	5700K/70 CRI
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
40L	39,258	41,542	33,469	42,411
50L	47,939	50,729	41,055	51,790
65L	62,326	65,953	52,766	67,332

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens

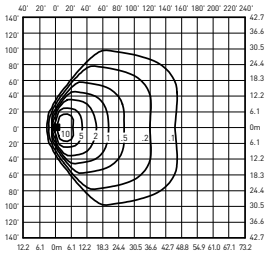
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/outdoor/area/area-osq-high-output

120D



CESTL Test Report #: PL09725-001A
OSQ-HO-A-**-120D-40L-40K-UL
Initial Delivered Lumens: 43,044

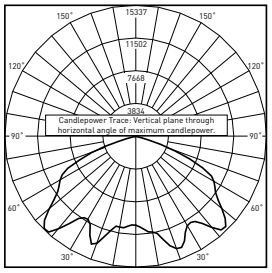


OSQ-HO-A-**-120D-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G., 60° Tilt
Initial Delivered Lumens: 41,542
Initial FC at grade

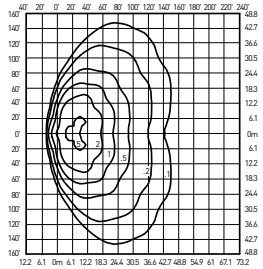
120° Flood Distribution				
Lumen Package	3000K/70 CRI	4000K/70 CRI	5000K/90 CRI	5700K/70 CRI
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
40L	39,258	41,542	33,469	42,411
50L	47,939	50,729	41,055	51,790
65L	62,326	65,953	52,766	67,332

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens

WSN



CESTL Test Report #: PL07695-001A
OSQ-A-**-WSN-U-30K-UL
Initial Delivered Lumens: 23,116



OSQ-HO-A-**-WSN-40L-40K-UL
Mounting Height: 25' (7.6m) A.F.G., 60° tilt
Initial Delivered Lumens: 41,542
Initial FC at grade

Wide Sign Distribution				
Lumen Package	3000K/70 CRI	4000K/70 CRI	5000K/90 CRI	5700K/70 CRI
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
40L	39,258	41,542	33,469	42,411
50L	47,939	50,729	41,055	51,790
65L	62,326	65,953	52,766	67,332

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens

Luminaire EPA

Adjustable Arm Mount – OSQ-HO-AA Weight: 40L/50L, 120-480V: 73.0 lbs. (33.1kg); 65L, 120-480V: 75.0 lbs. (34.0kg)							
Single	2 @ 180˚	2 @ 90˚	3 @ 90˚	3 @ 120˚	3 @ 180˚	4 @ 180˚	4 @ 90˚
Tenon Configuration (0˚-90˚ Tilt); If used with Cree Lighting tenons, please add tenon EPA with Luminaire EPA							
 PB-1A*; PW-1A3**	 PB-2A*; PB-2R2.375; PW-2A3**	 PB-2A*; PB-2R2.375; PW-2A3**	 PB-3A*; PB-3R2.375	 PB-3A*; PB-3R2.375	 PB-3A*; PB-3R2.375	 PB-4A*(180); PB-4R2.375	 PB-4A*(90); PB-4R2.3(90)
0˚ Tilt							
1.16	2.03	2.03	2.90	2.63	2.90	3.77	3.77
10˚ Tilt							
1.67	3.06	3.06	4.45	4.27	4.45	5.83	5.83
20˚ Tilt							
2.35	4.41	4.41	6.48	6.34	6.48	8.54	8.54
30˚ Tilt							
2.99	5.70	5.70	8.41	8.29	8.41	11.12	11.12
45˚ Tilt							
3.85	7.41	7.41	10.98	10.89	10.98	14.54	14.54
60˚ Tilt							
4.51	8.73	8.73	12.95	12.91	12.95	17.18	17.18
70˚ Tilt							
4.83	9.37	9.37	13.91	13.88	13.91	18.45	18.45
80˚ Tilt							
5.02	9.76	9.76	14.50	14.44	14.50	19.24	19.24
90˚ Tilt							
5.02	9.76	9.76	14.50	14.44	14.50	19.24	19.24

* Specify pole size: 3 (3"), 4 (4"), 5 (5"), or 6 (6") for single, double or triple luminaire orientation or 4 (4"), 5 (5"), or 6 (6") for quad luminaire orientation
** These EPA values must be multiplied by the following ratio: Fixture Mounting Height/Total Pole Height. Specify pole size: 3 (3"), 4 (4"), 5 (5"), or 6 (6")

Tenon EPA

Part Number	EPA
PB-1A*	None
PB-2A*	0.82
PB-3A*	1.52
PB-4A*(180)	2.22
PB-4A*(90)	1.11
PB-2R2.375	0.92
PB-3R2.375	1.62
PB-4R2.375	2.32
PW-1A3**	0.47
PW-2A3**	0.94
WM-2	0.08
WM-4	0.25
WM-DM	None

* Specify pole size: 3 (3"), 4 (4"), 5 (5"), or 6 (6") for single, double or triple luminaire orientation or 4 (4"), 5 (5"), or 6 (6") for quad luminaire orientation
** These EPA values must be multiplied by the following ratio: Fixture Mounting Height/Total Pole Height. Specify pole size: 3 (3"), 4 (4"), 5 (5"), or 6 (6")

Tenons and Brackets‡ (must specify color)

Square Internal Mount Vertical Tenons (Steel)
- Mounts to 3-6" (76-152mm) square aluminum or steel poles

PB-1A* – Single
PB-2A* – 180˚ Twin
PB-3A* – 180˚ Triple
PB-4A*(90) – 90˚ Quad
PB-4A*(180) – 180˚ Quad

Wall Mount Brackets
- Mounts to wall or roof

WM-2 – Horizontal for OSQ-HO-AA mount
WM-4 – L-Shape for OSQ-HO-AA mount
WM-DM – Plate for OSQ-HO-DA mount

Round External Mount Vertical Tenons (Steel)
- Mounts to 2.375" (60mm) O.D. round aluminum or steel poles or tenons

PB-2R2.375 – Twin
PB-3R2.375 – Triple
PB-4R2.375 – Quad

Mid-Pole Bracket
- Mounts to square pole

PW-1A3** – Single
PW-2A3** – Double

‡ Refer to the Bracket and Tenons spec sheet for more details

Luminaire EPA

Fixed Arm Mount – OSQ-HO-DA Weight: 40L/50L, 120-480V: 70.0 lbs. (31.8kg); 65L, 120-480V: 72.0 lbs. (32.7kg)					
Single	2 @ 180˚	2 @ 90˚	3 @ 90˚	3 @ 120˚	4 @ 90˚
1.06	1.93	1.93	2.80	2.53	3.67

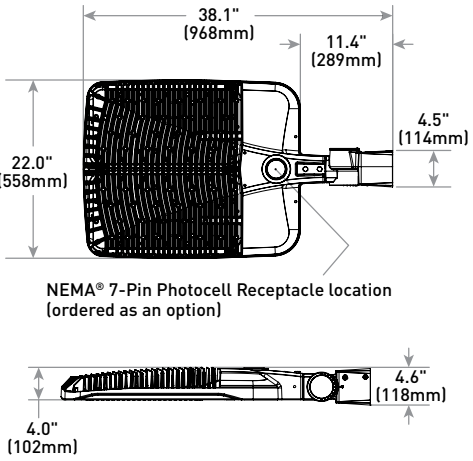
Direct Mount Configurations

Compatibility with OSQ-HO-DA Direct Arm Mount					
Input Delivered Lumens	2 @ 90˚	2 @ 180˚	3 @ 90˚	3 @ 120˚	4 @ 90˚
3" Square					
40L/50L/65L	N/A	✓	N/A	N/A	N/A
3" Round					
40L/50L/65L	N/A	✓	N/A	✓	N/A
4" Square					
40L/50L/65L	✓	✓	✓	N/A	✓
4" Round*					
40L/50L/65L	✓	✓	✓	✓	✓
5" Square					
40L/50L/65L	✓	✓	✓	N/A	✓
5" Round					
40L/50L/65L	✓	✓	✓	✓	✓
6" + Square					
40L/50L/65L	✓	✓	✓	N/A	✓
6" + Round					
40L/50L/65L	✓	✓	✓	✓	✓

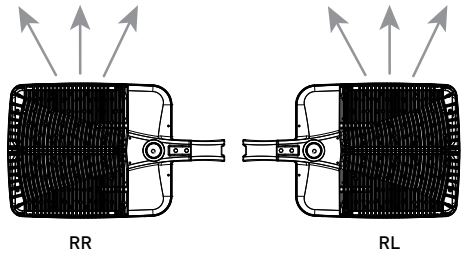
* Note: only 0.10" clearance between mounts on 4 @ 90˚

AA Mount

Lumen Package	Voltage	Weight
40/50L	120-480V	73.0 lbs. (33.1kg)
65L	120-480V	75.0 lbs. (34.0kg)



RR/RL Configuration



Town of Southern Shores

5375 N. Virginia Dare Trail, Southern Shores, NC 27949
Phone 252-261-2394 / Fax 252-255-0876
info@southernshores-nc.gov
www.southernshores-nc.gov

PLANNING BOARD
GENERAL APPLICATION FORM
TOWN OF SOUTHERN SHORES, NC 27949

Date: 6/15/21 **Filing Fee:** $.10/SF **Receipt No.** 964735 **Application No.** SPR-2101

NOTE: The Planning Board will follow the specific provisions of the Zoning Ordinance Chapter 36. Article X Administration and Enforcement, Section 36-299.

Please check the applicable Chapter/Article:

- ☐ **Chapter 30. Subdivisions-Town Code**
- ☐ **Chapter 36. Article VII. Schedule of District Regulations. Section 36-207 C-General Commercial District**
- ☐ **Chapter 36. Article IX. Planned Unit Development (PUD)**
- ☒ **Chapter 36. Article X. Administration and Enforcement, Section 36-299 (b) Application for Building Permits and Site Plan Review other than one and two family dwelling units ***
- ☐ **Chapter 36. Article X. Section 36-300-Application for Permit for Conditional Use**
- ☐ **Chapter 36. Article X. Section 36-303 Fees**
- ☐ **Chapter 36. Article X. Section 36-304-Vested Rights**
- ☐ **Chapter 36. Article XIV. Changes and Amendments**

Certification and Standing: As applicant of standing for project to be reviewed I certify that the information on this application is complete and accurate.

Applicant

Name Southern Shores Owner, LLC *(Applicant must be property owner by Town policy)*

Address: 610 E. Morehead St., Suite 100
Charlotte, NC 28202

Phone 704.319.4922 Email lkpartee@astonprop.com

Junior Box = 24,000sf
Small Shop = 6,000sf
Total = 30,000sf

Applicant's Representative (if any)

Name Aston Properties, L. Karen Partee, VP Const & Dev
Agent, Contractor, Other (Circle one)

Address 610 E. Morehead St., Suite 100
Charlotte, NC 28202

Fee Due = $3,000.00

Phone 704.319.4922 Email lkpartee@astonprop.com

Property Involved: X Southern Shores ___Martin's Point (Commercial only)

Address: 5539 N. Croatan Highway Zoning district C
PIN 986720717057

Section _____ Block _____ Lot _____ Lot size (sq.ft.) 18.1 Ac

Request: X Site Plan Review __Final Site Plan Review __Conditional Use __Permitted Use
__PUD (Planned Unit Development) __ Subdivision Ordinance __Vested Right __ Variance

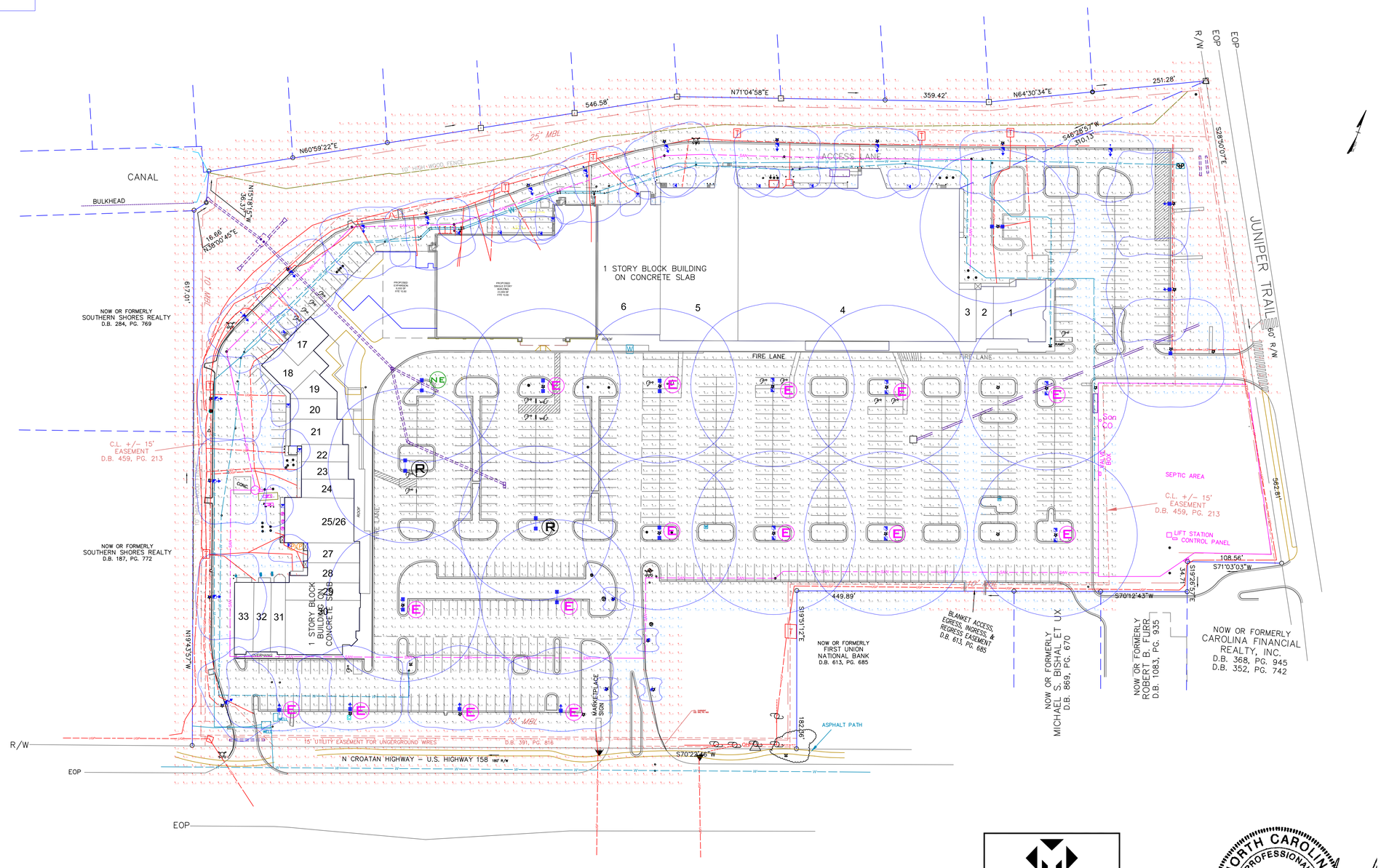
Change To: __Zoning Map __ Zoning Ordinance

L. Karen Partee
Signature

June 14, 2021
Date

*** Attach supporting documentation and twelve copies of the site plan.**

REVISIONS		
Rev #	Date	BY:



(E) EXISTING POLE AND FIXTURES

(R) RELOCATED POLE AND FIXTURES

(NE) NEW POLE AND EXISTING FIXTURES

M Consultants, PLLC
750 Brooksedge Blvd.
Westerville, Ohio 43081
phone: 614.839.4639
fax: 614.839.2222
North Carolina Firm # P-1046

NORTH CAROLINA PROFESSIONAL SEAL 037711 ENGINEER MARK P. HUFFMAN

Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine applicability of the layout to existing or future field conditions.

This lighting pattern represents illumination levels calculated from laboratory data taken under controlled conditions utilizing current industry standard lamp ratings in accordance with Illuminating Engineering Society approved methods. Actual performance of any manufacturer's luminaire may vary due to variation in electrical voltage, tolerance in lamps and other variable field conditions.

OPTION 2

Calculation Summary								
Label	Units	Avg	Max	Min	Avg/Min	Max/Min	PtSpcLr	PtSpcTb
FOOD LION PARKING SUMMARY	Fc	4.31	7.4	1.5	2.87	4.93	10	10
JUNIPER TRAIL ENTRANCE	Fc	2.40	3.5	1.0	2.40	3.50	10	10
MAIN ENTRANCES	Fc	1.88	5.5	0.1	18.80	55.00	10	10
MAIN PARKING	Fc	3.94	6.9	1.2	3.28	5.75	10	10
REAR AND SIDE	Fc	3.25	8.3	0.6	5.42	13.83	10	10

Luminaire Schedule

WLS16569 THE MARKETPLACE AT SOUTHERN SHORES SOUTHERN SHORES, NC PM: ROBBY PLEASE EMAIL ROBBY AT RRUDASILL@WLSLIGHTING.COM FOR PRICING.

Symbol	Qty	Label	Lumens	LLF	Description	Lum. Watts
	4	X5	5200	0.600	LSI-ENS-SA-H-5-70-CMH-F 14' MOUNTING HEIGHT	82
	9	A	N.A.	0.980	WLS-OSQ-HO-A-5SH-40L-57K 33' MOUNTING HEIGHT	341
	1	B	N.A.	0.980	WLS-OSQ-HO-A-5SH-40L-57K 33' MOUNTING HEIGHT	341
	6	C	N.A.	0.980	WLS-OSQ-HO-A-4ME-40L-57K-BLSF 33' MOUNTING HEIGHT	341
	15	D	N.A.	0.980	WLS-OSQ-A-4ME-U-57K-BLS 28' MOUNTING HEIGHT	215
	14	E	N.A.	0.980	WLS-XSPW-A-3MC-U-57K ASST MOUNTING HEIGHT	42
	6	R	N.A.	0.980	WLS-OSQ-HO-A-5SH-50L-57K 33' MOUNTING HEIGHT	420

1919 WINDSOR PLACE
FORT WORTH, TX 76110
WWW.WLSLIGHTING.COM
800-633-8711

WLS LIGHTING SYSTEMS
Consider the Impact!

THE MARKETPLACE AT SOUTHERN SHORES
SOUTHERN SHORES, NC

WLS-165698 | DATE - 6/10/21 | SCALE: 1"=60' | BY: TO | PM: ROBBY | SHEET 1 OF 1

XSP Series

XSPW™ LED Wall Mount Luminaire featuring Cree TrueWhite® Technology

Product Description

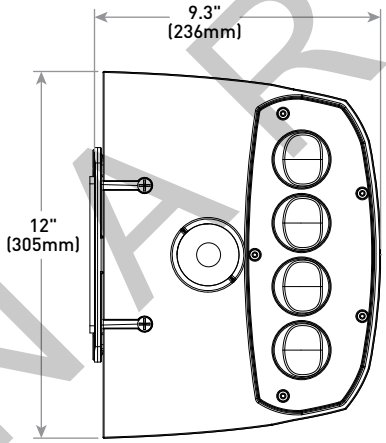
The XSPW™ LED wall mount luminaire has a slim, low profile design intended for outdoor wall mounted applications. The rugged lightweight aluminum housing and mounting box are designed for installation over standard single gang J-Boxes and mud ring single gang J-Boxes. The luminaire allows for through-wired or conduit entry from the top, bottom, sides and rear. The housing design is intended specifically for LED technology including a weathertight LED driver compartment and thermal management. Optic design features industry-leading NanoOptic® Precision Delivery Grid™ system in multiple distributions.

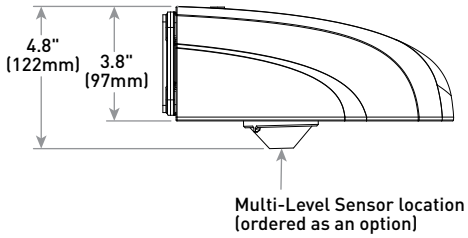
Applications: General area and security lighting

Performance Summary

- NanoOptic® Precision Delivery Grid™ optic
- Assembled in the U.S.A. of U.S. and imported parts
- **CRI:** Minimum 70 CRI (3000K, 4000K & 5700K); 90 CRI (5000K)
- **CCT:** 3000K, 4000K, 5000K, 5700K
- **Limited Warranty†:** 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

†See http://lighting.cree.com/warranty for warranty terms





Multi-Level Sensor location
(ordered as an option)

Accessories

Field-Installed
Beauty Plate WM-PLT12** - 12" (305mm) Square WM-PMT14** - 14" (356mm) Square - Covers holes left by incumbent wall packs

** Must specify color

Weight
9.5 lbs. (4.3kg)

Ordering Information

Example: XSPW-B-WM-2ME-2L-30K-UL-BK

XSPW	B	WM						
Product	**Version**	**Mounting**	**Optic**	**Lumen Package***	**CCT**	**Voltage**	**Color Options**	**Options**
XSPW	B	**WM** Wall	**2ME** Type II Medium **3ME** Type III Medium **4ME** Type IV Medium	**2L** 2,500 lumens **4L** 4,200 lumens **6L** 6,000 lumens **8L** 8,425 lumens	**30K** 3000K - 70 CRI **40K** 4000K - 70 CRI **50K** 5000K - 90 CRI **57K** 5700K - 70 CRI	**UL** Universal 120-277V **UH** Universal 347-480V **34** 347V	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**ML Multi-Level** - Refer to ML spec sheet for details - Available with UL voltage only **P Button Photocell** - Not available with ML or PML option - Available with UL and 34 voltages only **PML Prgrammable Multi-Level** - Refer to PML spec sheet for details - Available with UL voltage only

* Lumen Package selection codes identify approximate light output only. Actual lumen output levels vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

Product Specifications

CREE TRUEWHITE® TECHNOLOGY

A revolutionary way to generate high-quality white light, Cree TrueWhite® Technology is a patented approach that delivers an exclusive combination of 90+ CRI, beautiful light characteristics and lifelong color consistency, all while maintaining high luminous efficacy – a true no compromise solution.

CONSTRUCTION & MATERIALS

- Slim, low profile design
- Luminaire housing specifically designed for LED applications with advanced LED thermal management and driver
- Luminaire mounting box designed for installation over standard single gang J-Boxes and mud ring single gang J-Boxes
- Luminaire can also be direct mounted to a wall and surface wired
- Secures to wall with four 3/16" (5mm) screws (by others)
- Conduit entry from top, bottom, sides, and rear
- Exclusive Colorfast DeltaGuard® finish features an E-coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Silver, black, white and bronze are available
- **Weight:** 9.5lbs. (4.3kg)

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V, 50/60Hz
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Designed with 0-10V dimming capabilities. Controls by others
- **10V Source Current:** 0.15 mA

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed (pending)
- Suitable for wet locations
- Designed for downlight applications only
- Designed and suitable for easy through-wiring Enclosure rated IP66 per IEC 60529 (pending)
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2 (pending)
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions (pending)
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA

Delivered Lumens & Electrical Data*

Lumen Package	CCT/CRI	System Watts 120-480V	Efficacy	Total Current (A) 120V	208V	240V	277V	347V	480V
2L	30K/70 CRI	20	125	0.19	0.11	0.09	0.08	0.06	0.05
	40K/70 CRI	19	132	0.18	0.10	0.09	0.08	0.06	0.04
	50K/90 CRI	24	104	0.22	0.13	0.11	0.10	0.08	0.06
	57K/70 CRI	19	132	0.18	0.10	0.09	0.08	0.06	0.04
4L	30K/70 CRI	33	127	0.31	0.18	0.15	0.13	0.11	0.08
	40K/70 CRI	32	131	0.30	0.17	0.15	0.13	0.10	0.07
	50K/90 CRI	41	102	0.38	0.22	0.19	0.16	0.13	0.09
	57K/70 CRI	31	135	0.29	0.17	0.14	0.12	0.10	0.07
6L	30K/70 CRI	50	120	0.46	0.27	0.23	0.20	0.16	0.12
	40K/70 CRI	48	125	0.44	0.26	0.22	0.19	0.15	0.11
	50K/90 CRI	63	95	0.58	0.34	0.29	0.25	0.20	0.15
	57K/70 CRI	46	130	0.43	0.25	0.21	0.18	0.15	0.11
8L	30K/70 CRI	77	109	0.71	0.41	0.36	0.31	0.25	0.18
	40K/70 CRI	73	115	0.68	0.39	0.34	0.29	0.23	0.17
	50K/90 CRI	77	93	0.71	0.41	0.36	0.31	0.25	0.18
	57K/70 CRI	72	117	0.67	0.38	0.33	0.29	0.23	0.17

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-480V +/- 10%

XSPW Series Lumen Maintenance Factors[1]

Ambient	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Projected[2] LMF	100K hr Calculated[3] LMF
5˚C (41˚F)	1.04	1.00	0.96	0.92	0.88
10˚C (50˚F)	1.03	0.99	0.95	0.91	0.87
15˚C (59˚F)	1.02	0.98	0.94	0.90	0.86
20˚C (68˚F)	1.01	0.97	0.93	0.89	0.85
25˚C (77˚F)	1.00	0.96	0.92	0.88	0.84

[1] Lumen maintenance values at 25˚C (77˚F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing. . Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors

[2] In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT) i.e. the packaged LED chip)

[3] In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ([DUT) i.e. the packaged LED chip)

Type II Medium Distribution

Lumen Package	3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
2L	2,500	TBD	2,500	TBD	2,500	TBD	2,500	TBD
4L	4,200	TBD	4,200	TBD	4,200	TBD	4,200	TBD
6L	6,000	TBD	6,000	TBD	6,000	TBD	6,000	TBD
8L	8,425	TBD	8,425	TBD	7,125	TBD	8,425	TBD

Type III Medium Distribution

Lumen Package	3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
2L	2,500	TBD	2,500	TBD	2,500	TBD	2,500	TBD
4L	4,200	TBD	4,200	TBD	4,200	TBD	4,200	TBD
6L	6,000	TBD	6,000	TBD	6,000	TBD	6,000	TBD
8L	8,425	TBD	8,425	TBD	7,125	TBD	8,425	TBD

Type IV Medium Distribution

Lumen Package	3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
2L	2,500	TBD	2,500	TBD	2,500	TBD	2,500	TBD
4L	4,200	TBD	4,200	TBD	4,200	TBD	4,200	TBD
6L	6,000	TBD	6,000	TBD	6,000	TBD	6,000	TBD
8L	8,425	TBD	8,425	TBD	7,125	TBD	8,425	TBD

County of Dare
PO Box 669
Manteo NC 27954

S22-5507

Phone: (252) 475-5080

DARE COUNTY DEPARTMENT OF PUBLIC HEALTH
Authorization for Wastewater System Construction

Parcel: 022510000 PIN: 986720717057 Permit: S22-5507

Owner Name: SOUTHERN SHORES OWNER LLC Permit Date: 08/16/2021
Owner Address: 610 E MOREHEAD ST STE 100
CHARLOTTE, NC 28202

Location: 5500 N CROATAN HWY – SOUTHERN SHORES
Subdivision: SUBDIVISION - NONE LOT: BLK: SEC:

1. Issued by _____ JDC
2. Any alteration in soil conditions (including location of structures and appurtenances) or modification in use, design wastewater flow or wastewater characteristics as specified in the associated improvement permit and application, may subject this authorization and associated permit(s) to revocation.
3. Comments:
PERMIT ALLOW FOR RENOVATIONS TO EXISTING COMMERCIAL BUILDING TO ALLOW FOR MARSHALLS DEPARTMENT STORE. OTHER USES FOR EXISTING SPACE REASSIGNED. USE OF LOW FLOW FIXTURES TO INCLUDE 0.5 GALLON PER FLUSH URINALS, 1.28 GALLONS PER FLUSH WATER CLOSETS AND 1.5 GPM FAUCETS TO BE INCORPORATED IN RENOVATIONS. ANY NEW PROPOSED FOOD SERVICE FACILITIES WILL REQUIRE SEPARATE APPROVAL FOR CONFIRMATION OF SEATING CAPACITY AND ABILITY TO CONNECT TO EXISTING GREASE TRAP OR ABILITY TO INSTALL NEW GREASE TRAP(S). EXISTING TREATMENT SYSTEM IS SUFFICIENT FOR CURRENT PROPOSED DEVELOPMENT. OTHER PERMITS REQUIRED BY THE TOWN OF SS.

This CA is valid for 60 months from the date of issuance.
Disclaimer: This permit does not relieve you of the responsibility to obtain any other necessary Federal, State or Local permit(s).

Owner Certification

X L Karen Partee August 16, 2021
Applicant or Owner Signature Date
Applicant: QUIBLE & ASSOCIATES PC

Application Reference# 4425

AGENDA ITEM SUMMARY

MEETING DATE: September 7, 2021

ITEM TITLE: Financial Advisory Agreement and Budget Amendment #11

ITEM SUMMARY: The attached Financial Advisory Agreement details the services provided by DEC Associates, INC for financial closing of the Town's Beach Nourishment/Shoreline Protection project. Prior to this agreement, the Town previously contracted with DEC Associates for planning purposes.

STAFF RECOMMENDATION: Staff recommends Approval

REQUESTED ACTION: A motion to approve the attached Financial Advisory Agreement and associated budget amendment #11

ATTACHMENTS: DEC Associates Inc. Financial Advisory Agreement

Budget Amendment #11

FINANCIAL ADVISORY AGREEMENT

The Financial Advisory Agreement (the "Agreement") is entered into on July 29, 2021, between the Town of Southern Shores, NC ("the Town") and DEC Associates, Inc. ("the Advisor"). The Agreement is specific to a Beach Nourishment/Shoreline Protection project financing specifically "the Financing" closing on or about October 2021.

In connection with the Financing, the Advisor will perform the following services:

1. Review financial and other information related to the Town and the project,
2. Evaluate alternative approaches and structures (GOs, COPs, Special Obligation, other structures, if available) for the Financing,
3. Assist in directing and coordinating credit processes to maximize the credit rating with lenders,
4. Assist in the development of a well-defined marketing strategy to achieve the best possible financing terms including the lowest cost, interest rate, and total debt service for the Financing,
5. Assist and advise in the selection of financing mode(s) and lender(s) and the negotiation of terms,
6. Assist the Town in working with the Local Government Commission, Bond Counsel, Town Attorney and others to implement the Financing,
7. Make presentations to Town Council, as requested, to discuss the FEMA Special Obligation Bonds.
8. Assist in the closing of the Financing by coordinating, reviewing, monitoring, and following-through on all elements of the financing process to insure timely and proper closing of the financing.

For these services DEC Associates, Inc will charge as the fee a sum of $30,000, plus out of pocket expenses. Actual out of pocket expenses will be billed with the fee invoice. This Agreement is cancellable by the Town or the Advisor with thirty (30) days' notice. Upon notice by either party, services provided by DEC will be prorated and billed to the Town. This fee does not include services rendered by others.

Our firm is registered with the Securities and Exchange Commission (SEC) as a Municipal Advisor and has MA and MA-I filings with the SEC. Pursuant to our best practices and registration requirements, our firm, after reasonable diligence, has no known conflicts of interest pursuant to this contract. Additionally, our firm is not aware of any material legal or disciplinary events applying to it.

Town of Southern Shores, North Carolina	**DEC Associates, Inc.**
Cliff Ogburn	Andrew Carter
Town Manager	Director
Title	Title
	July 29, 2021
Date	Date

2133 Southend Drive Unit 306 Charlotte, NC 28203
(704) 334 – 7478 (o) (704) 334-7481 (f)

Town of Southern Shores
Budget Amendment Number # 11

Streets, Beaches, etc

Increases			Decreases		
Account Number	**Description**	**Amount**	**Account Number**	**Description**	**Amount**
	Revenues				
40-39909	Unassigned Fund Balance	$32,500			
	Expenditures				
57-50137	BN-Financial Planning	$32,500			

Explanation: Cost of DEC Associates, Inc. to provide financial advising to the Town for the Beach Nourishment Project.
The expected closing date to be October 2021.

Recommended By:

Cliff Ogburn, Town Manager

Approved By:

Tom Bennett, Mayor

Date

AGENDA ITEM SUMMARY

MEETING DATE: September 7, 2021

ITEM TITLE: Southern Shores Beach Nourishment Projects - Initial Resolution #2021-09-01 Directing the Application to the Local Government Commission for Approval of a Special Obligation Bond; Requesting Local Government Commission Approval of The Town's Special Obligation Bond; and certain related matters

ITEM SUMMARY:

State law G.S. 120 - 157.1 – 157.4 adopted and effective on June 24, 2011 requires that certain capital projects to be financed with debt in an amount exceeding $1,000,000 be reported to the Joint Legislative Committee on Local Government and to the Fiscal Research Division of the North Carolina General Assembly.

Attached please find, for Council consideration, the required "findings" resolution directing the application for 2021 Special Obligation Bonds to the Local Government Commission for approval.

STAFF RECOMMENDATION: Staff recommends approval of the attached initial resolution directing the Town's application for Special Obligation funding be submitted and requesting approval by the Local Government Commission.

REQUESTED ACTION: A motion to approve the attached resolution initiating the Beach Nourishment Special Obligation borrowing process

ATTACHMENTS: Resolution #2021-09-01

TOWN OF SOUTHERN SHORES, NORTH CAROLINA
RESOLUTION 2021-09-01

RESOLUTION OF THE TOWN OF SOUTHERN SHORES, NORTH CAROLINA, DIRECTING THE APPLICATION TO THE LOCAL GOVERNMENT COMMISSION FOR APPROVAL OF A SPECIAL OBLIGATION BOND; REQUESTING LOCAL GOVERNMENT COMMISSION APPROVAL OF THE TOWN'S SPECIAL OBLIGATION BOND; AND CERTAIN RELATED MATTERS

WHEREAS, the Town Council (the "*Town Council*") of the Town of Southern Shores, North Carolina (the "*Town*") hereby determines that it is necessary to provide beach nourishment for the purpose of beach erosion control and flood and hurricane protection works (the "*Project*");

WHEREAS, the Town has created two Municipal Service Districts (the *"MSDs"*), in accordance with Article 23 of Chapter 160A of the North Carolina General Statutes, in which the Project will be located;

WHEREAS, the Town Council is considering the issuance of a special obligation bond to finance the Project and related costs of issuance (the "*2021 Bond*") in an aggregate principal amount currently estimated not to exceed $8,100,000;

WHEREAS, the Town has retained (A) Parker Poe Adams & Bernstein LLP, as bond counsel for the 2021 Bond and (B) DEC Associates Inc., as financial advisor for the 2021 Bond;

WHEREAS, the Town Council wants the Town Finance Officer (1) to file with the North Carolina Local Government Commission (the "*Commission*") an application for its approval of the 2021 Bond, on a form prescribed by the Commission, (2) to request in such application that the Commission approve (a) the negotiation of the sale of the 2021 Bond to a financial institution (the *"Purchaser"*) to be determined by the Authorized Officers, as defined herein, through a private placement and (b) the financing team for the 2021 Bond, (3) to state in such application such facts and to attach thereto such exhibits in regard to the 2021 Bond and to the Town and its financial condition, as may be required by the Commission, and (4) to take all other action necessary for the issuance of the 2021 Bond;

***NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF SOUTHERN SHORES, NORTH CAROLINA, AS FOLLOWS*:**

Section 1. That the 2021 Bond is to be issued by the Town for the purpose of providing funds (1) to finance the costs of the Project and (2) to pay the costs of issuing the 2021 Bond, as set out fully in the documents attached to the Town's application to the Commission. The use of the proceeds of the 2021 Bond, as described, is necessary in order to provide for beach erosion control and flood and hurricane protection works in the MSDs.

Section 2. That the Finance Officer, or her designee, is hereby authorized directed and designated to file an application with the Commission for its approval of the issuance of the 2021 Bond and is hereby authorized to request bids from financial institutions for the purchase of the 2021 Bond.

Section 3. In addition to the bond counsel and the financial advisor, the Authorized Officers are each hereby authorized to retain the services of other professionals as they deem necessary and appropriate to complete the transactions contemplated by this Resolution.

Section 4. The Town Council finds and determines and asks the Commission to find and determine from the Town's application and supporting documentation:

(1) that the issuance of the 2021 Bond is necessary or expedient;

(2) that the not to exceed stated principal amount of the 2021 Bond will be sufficient but is not excessive, when added to other money available to the Town, for the proposed Project;

(3) that the proposed Project is feasible;

(4) that the Town's debt management procedure and policies are good; and

(5) that the 2021 Bond can be marketed at a reasonable interest cost to the Town.

Section 5. The Mayor, the Town Manager, the Finance Officer and the Town Clerk are hereby authorized, individually and collectively (the *"Authorized Officers"*), to do any and all other things necessary to complete the steps necessary for the issuance of the 2021 Bond.

Section 6. This Resolution is effective on the date of its adoption.

_____
Thomas G. Bennett, Mayor
Town of Southern Shores, NC

Attest: _____
Sheila Kane, Town Clerk

STATE OF NORTH CAROLINA)
) SS:
COUNTY OF DARE)

I, *Sheila Kane*, Town Clerk of the Town of Southern Shores, North Carolina, ***DO HEREBY CERTIFY*** that the foregoing is a true and exact copy of a resolution entitled "**RESOLUTION OF THE TOWN OF SOUTHERN SHORES, NORTH CAROLINA, DIRECTING THE APPLICATION TO THE LOCAL GOVERNMENT COMMISSION FOR APPROVAL OF A SPECIAL OBLIGATION BOND; REQUESTING LOCAL GOVERNMENT COMMISSION APPROVAL OF THE TOWN'S SPECIAL OBLIGATION BOND; AND CERTAIN RELATED MATTERS**" adopted by the Town Council of the Town of Southern Shores, North Carolina, at a meeting held on the 7th day of September, 2021.

WITNESS my hand and the corporate seal of the Town of Southern Shores, North Carolina, this the 7th day of September 2021.

[Seal]

_____
Sheila Kane
Town Clerk
Town of Southern Shores, North Carolina

AGENDA ITEM SUMMARY

MEETING DATE: September 7, 2021

ITEM TITLE: Consideration of Dare County Tourism Impact Grant

ITEM SUMMARY: Staff is requesting authorization to apply to the Dare County Tourism Board for a Tourism Impact Grant. The grant request would be for funding to secure traffic data that will be instrumental in helping the Town better evaluate and understand the impacts that tourism related traffic generates. Further funding may be requested to purchase equipment used to mitigate the impacts of tourism generated traffic. The town has contracted in previous summers to place signage and barricades along US 158 at South Dogwood to prohibit left hand turns on to South Dogwood. The grant request would be in an amount not to exceed $50,000 and requires no match. The information collected is likely useful on a county wide level.

Companies such as Streelight Data, collect location records from smart phones and navigation devices in connected cars and trucks. Data is derived from navigation-GPS data and Location-Based Services (LBS) data. Adding context from numerous other sources like parcel data and digital road network data, they can develop a view into traffic patterns in Southern Shores as well as all of Dare County.

This data can help us to better understand where the traffic that cuts through the residential streets of Southern Shores originates from including from within the county or out. We can determine the volume of traffic that uses Southern Shores as a cut through by either turning off US 158 or NC 12, and where it exits the residential streets including the turning movements in general. This information would be on a platform that we can access and analyze data to see the routes taken to and through the Town.

STAFF RECOMMENDATION: Staff recommends approval of a grant application for the described purposes.

REQUESTED ACTION: A motion to authorize the Town Manager to apply for a DCTB Tourism Impact Grant.

ATTACHMENTS: Blank copy of Dare County Tourism Impact Grant Application

White paper explaining Streelight Data's Methodology and Data Sources

DARE COUNTY TOURISM BOARD
(DBA OUTER BANKS VISITORS BUREAU)
TOURISM IMPACT GRANT
RULES & QUALIFICATIONS

Created 6/21/2019

Program Intent

Dare County Tourism Board's Tourism Impact Grant (TIG) program was established to financially assist Dare County Governmental Units and other Non-profit Organizations with programs or services needed due to the impact of tourism on the County.

The Dare County Tourism Board (hereinafter "Tourism Board" or "Board") makes funding for TIG grants available by an annual appropriation as approved by the Board from short-term unappropriated funds. Short-term funds accrue from 30% of the ¼ of the 1% occupancy tax and 1% prepared meal tax revenues generated annually in the Special Revenue Fund.

Qualified applicants must submit an application containing an outline of the project, the impact of the project on tourism, a statement of need, a copy of the most recent balance sheet, and a budget overview of the entire project's funding and expenditures; which shall include other grants or secured funding services.

Applicant Assumes This Risk

Should local, state or federal laws prohibit the Dare County Tourism Board's performance, disband the Dare County Tourism Board or repeal the Board's enabling legislation, then the Dare County Tourism Board shall have no obligation to fulfill the terms and obligations of this agreement, including, but not limited to funding and reimbursement of applicant's expenditures. If the Dare County Tourism Board's authority hereunder is limited or terminated, then this Agreement shall be void as of the effective date of said ordinance, law or regulation and the Dare County Tourism Board shall be forgiven all performance obligations that are its responsibility under this agreement that is or are made contrary to law. All applicants must agree to this tremendous limitation to the Dare County Tourism Board's performance obligations, assume the risks associated therewith, including the risk that the Applicant may not be reimbursed for expenditures under this program.

Grant Criteria

A. Applicants shall be Dare County Local Governments or a non-profit entity with its principal place of business in Dare County and having its non-profit status conferred in writing under Section 501 of the U.S. Internal Revenue Code.

B. Project must be located in Dare County

DARE COUNTY TOURISM BOARD
(DBA OUTER BANKS VISITORS BUREAU)
TOURISM IMPACT GRANT
RULES & QUALIFICATIONS

C. Match required for the Tourism Impact Grant shall be based on the amount awarded, as follows:

AWARDED AMOUNT	REQUIRED MATCH AMOUNT
Below $50,000	No match required
$50,000 - $125,000	At least 25% match required from applicant
Over $125,000	At least 50% match required from applicant

D. Tourism Impact Grant Projects must be completed by the end of one full fiscal year from the date of the award. Project extensions must be approved in writing by the Board or staff if the Board has granted that authority to the staff.

E. The Tourism Board will monitor the progress of each project. Should a project not materialize, or should it progress at a rate which would limit its viability (in the sole discretion of the Board), then the Board shall terminate or withdraw the award and grant itself, and the funds will be unencumbered and revert to the Tourism Impact Grant fund for future projects.

F. Matching funds and expenditures must be related to the project covered by this application and not incurred prior to the date of grant submission.

G. Grants will be paid as a reimbursement once the project is complete and all paid receipts (for both grant and match) presented as described under the terms of the Contract Agreement.

H. Expenditures shall not be used for operations customarily funded by Governmental entities (including but not limited to repairs and maintenance).

I. The following items are non-reimbursable: Preliminary architectural, engineering, surveying and other forms of professional services, in-kind services (ex. Administrative salaries of public employees) and any local, state or federal tax.

J. If grant funds will be used to purchase and/or to make improvements to real property, then the real property must be lien and encumbrance free (except as to liens and/or encumbrances that are specifically approved by the Tourism Board in writing). Applicant may be required to provide the Tourism Board with a written "opinion on title" by a North Carolina licensed attorney. The scope and form of the opinion will be determined by the Tourism Board on a case-by-case basis.

DARE COUNTY TOURISM BOARD
(DBA OUTER BANKS VISITORS BUREAU)
TOURISM IMPACT GRANT
RULES & QUALIFICATIONS

K. Property (real or personal) purchased and/or developed with this grant assistance shall be retained for use of the public and the applicant agrees to return the amount of the grant to the Tourism Board should the property or facility be converted to some other use. The Board, in its sole discretion, may require certain restrictions or easements be recorded in the public registry to evidence this requirement and obligation of the applicant or property owner.

L. Grants cannot be transferred or assigned to a third party, unless approved by the Dare County Tourism Board in writing.

M. Requirement for reimbursement for approved project must have the following:

1. Approvals from all organizations directly or indirectly involved in proposed project must agree with all terms and conditions outlined. Burden of compliance rests with the applying organization.

2. Appropriate sign recognition of contribution made by the Dare County Tourism Board. To include Board logo and "Project Funded In Part By The Dare County Tourism Board" or other similar language approved by the Grant Administrator.

3. If not a physical capital project, appropriate recognition of contribution made by the Dare County Tourism Board, including logo, must be in press releases and all associated publicity materials.

4. Approved signage or other appropriate recognition must be maintained permanently.

5. Copies of all invoices and payments related to the project.

N. Applicant may only apply for one TIG grant per project, per Fiscal Year.

O. Funding of phase projects does not obligate the Dare County Tourism Board to funding of any future phases of the same project.

P. **Approved organization must come to the Outer Banks Visitors Bureau to meet with the Grant Administrator prior to submitting an application**. The purpose of this process is to jointly review the application and answer any questions the applicant may have.

DARE COUNTY TOURISM BOARD
(DBA OUTER BANKS VISITORS BUREAU)
TOURISM IMPACT GRANT
RULES & QUALIFICATIONS

Q. Applications may be requested at any time; however, complete applications must be submitted between **September 1 and September 30** by U.S. Postal Service. Personal hand-delivery of applications will be accepted during this period, Monday through Friday 9:00 AM – 4:30 PM (excluding any holiday). A receipt must be signed by a Bureau employee and the delivery person as evidence of delivery within the allotted application period. One original and 15 copies clipped together **(NOT STAPLED)** of the application and any collateral material is required.

R. Applications will be reviewed by the Grant Administrator as they are received. The applicant will be notified within seven days of receiving the application if it does not meet the requirements of the grant. The applicant will have a chance to modify, adjust and correct the application before it is submitted to the Steering Committee. The Grant Administrator and the Executive Director, or his/her designee will be available to assist the applicants.

S. All proposals that meet mechanical guidelines will be forwarded to the Steering Committee for consideration. The Steering Committee will make its recommendations to the full Board of Directors at a regularly scheduled Board meeting. Recommended Tourism Impact Grant projects will then be forwarded to the Dare County Board of Commissioners for consensus.

T. Applying organization will be notified within seven days following presentation to the Dare County Board of Commissioners as to acceptance or rejection of Tourism Impact Grant awards.

I have read and reviewed the documents and understand that our organization bears the responsibility to understand and comply with all terms and conditions. This application vests applicant with no rights or expectations of approval and certainly not receipt of funds.

Name and title of person making application: _____

Name of Local Government or Non-Profit: _____

_____ _____

Signature **Date**

Our Methodology and Data Sources

Updated October 2018

StreetLight InSight® Metrics: Our Methodology and Data Sources

This white paper describes the data sources and methodology employed by StreetLight Data to develop travel pattern Metrics. This document is relevant for all *StreetLight InSight* Metrics, whether they are available via the *StreetLight InSight* platform, via data API, or via custom delivery.

Table of Contents

Locational Data Sources and Probe Technologies

StreetLight Data's Metrics are currently derived from two types of locational "Big Data": navigation-GPS data and Location-Based Services (LBS) data. StreetLight has incorporated and evaluated several other types of mobile data supply in the past, including cellular tower and ad-network derived data.

As the mobile data supply landscape has evolved and matured over time, we have determined that a combination of navigation-GPS data and LBS data is best suited to meet the needs of transportation planners. Our team phased out the use of cellular tower data because its low spatial precision and infrequent pinging frequency did not meet our standards for use in corridor studies, routing analyses, and many other Metrics. LBS data is suitable for these studies and offers a comparable sample size to cellular tower data.

As of July 2018, StreetLight's data repositories process analytics for about 65M devices, or ~23% of the adult US and Canadian population, and about 12% of commercial truck trips. As detailed later in this report, sample size varies regionally, historically and by type of analysis conducted.

Our data supply grows each month as updated data sets are provided by suppliers. We currently use one major navigation-GPS data supplier, INRIX, and one LBS data supplier, Cuebiq. See Table 1, below, for more details on the different locational data sources StreetLight Data has recently evaluated.

Table 1 – Overview of Big Data supply options for transportation analytics. StreetLight recommends and uses a mix-and-match approach currently focused on navigation-GPS and LBS data types.

Type	Pros	Cons	Notes
Cellular Tower: Derived from cellular tower "triangulation" and/or "multi-lateration" (100-2000m spatial precision)	• Large sample size - Most telecom providers have over 30M devices • Ability to infer home and work locations	• Very poor spatial precision (average of several hundred meters) • Infrequent pings for some suppliers • High cost • Consumers typically opt-out of data collection (vs. opt-in) • No differentiation of personal and commercial trips • Poor coverage in rural areas • No capture of short trips • No ability to reliably infer active modes of transportation	We haven't seen the US cellular industry making investments to improve these weaknesses.
In-Vehicle Navigation-GPS: From connected cars and trucks (3-5m spatial precision)	• Excellent spatial precision • Very frequent pings • Separates personal and commercial trips • Opt-in for consumers	• Usually lower sample size • Difficulties inferring home/work (depending on supplier practices) • No non-vehicular modes	This data has been traditionally used for speed products.
Location-Based Services: Mix of navigation-GPS, aGPS, and sensor proximity data from apps that "foreground" and "background" with locational data collection (5-25m spatial precision)	• Very good spatial precision • Frequent ping rate • Superior ability to infer trip purpose and trip chains • Ability to infer modes (walk/bike/transit/Gig Driving) accurately • Large and growing sample size • Opt-in for consumers	• Less mature suppliers • Variation in sample size and characteristics across suppliers requires more sophisticated data processing	Several players are emerging in this new market with very large sample sizes, opening up the possibility of a healthy, competitive supply base.
Ad-Network Derived Data: When user sees an ad on their phone, their location is recorded by the ad-network	• Large sample size of individuals	• Few pings per month mean inference of travel patterns is not feasible	This source should not be used until significant changes are made.

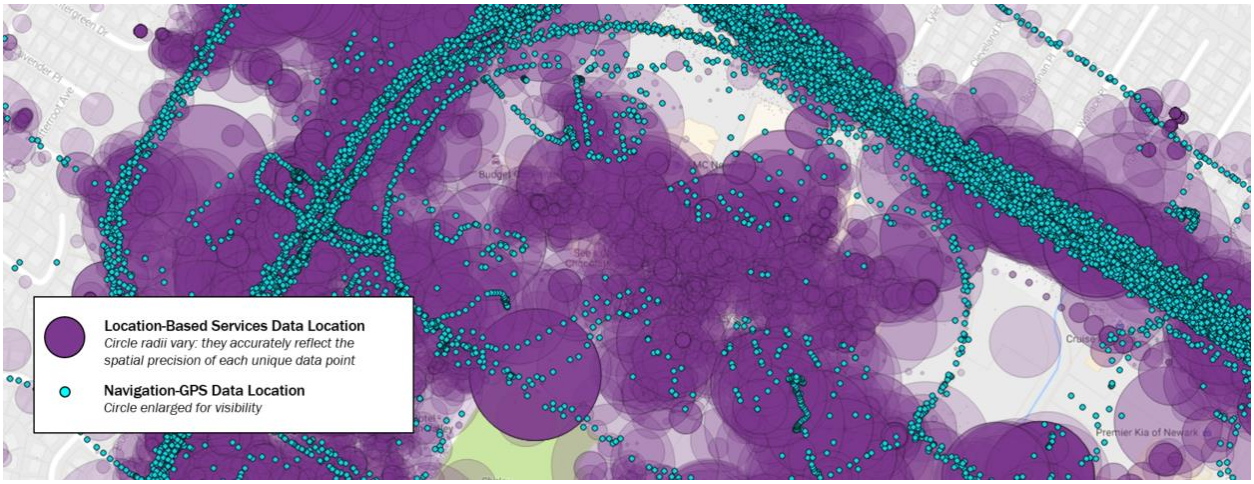
Our Navigation-GPS and LBS Data Sources

In this section, we will explain why access to two different Big Data sources is uniquely beneficial for transportation professionals. First, it is important to note that *StreetLight InSight* is:

- The first and only on-demand platform for planners to process Big Data into customized transportation analytics to their unique specifications, including the type of Big Data they would like to use.
- The first and only online platform that automatically provides comprehensive sample size information for analyses. (See more information on sample size on page 8 of this report.)

We selected navigation-GPS and LBS data because they are complementary resources that provide unique and valuable travel pattern information for transportation planning. See Figure 1 below for a visualization of these data sources.

Figure 1 – Filtered visualization of a subset of unprocessed navigation-GPS and LBS data near a mall in Fremont, California.



Location-Based Services (LBS) Data

LBS data can be processed into personal travel patterns at a comprehensive scale. Its fairly high spatial precision and regular ping rate allow for capturing trips as well as activity patterns (i.e.: home and work locations), trip purpose, and demographics. This makes it an ideal alternative to data derived from cellular towers, which also has a large sample size but unfortunately lacks spatial precision and pings infrequently.

Cuebiq, our LBS data supplier, provides pieces of software (called SDKs) to developers of mobile apps to facilitate Location-Based Services. These smartphone apps include couponing,

dating, weather, tourism, productivity, locating nearby services (i.e.: finding the closest restaurants, banks, or gas stations), and many more apps, all of which utilize their users' location in the physical world as part of their value. The apps collect anonymous user locations when they are operating in the foreground. In addition, these apps may collect anonymous user locations when operating in the background. This "background" data collection occurs when the device is moving. LBS software collects data with WiFi proximity, a-GPS and several other technologies. In fact, locations may be collected when devices are without cell coverage or in airplane mode. Additionally, all the data that StreetLight uses has better than 20-meter spatial precision. (Similarly, our partner INRIX collects some LBS data from navigation-oriented smart phone apps).

Navigation-GPS Data

Navigation-GPS data has a smaller sample size than LBS data, but it does differentiate commercial truck trips from personal vehicle trips. This makes navigation-GPS data ideal for commercial travel pattern analyses. Navigation-GPS data is also suitable for very fine resolution personal vehicle travel analyses (e.g.: speed along a very short road segment) because of its extremely high spatial precision and very frequent ping rate.

INRIX, our navigation-GPS data supplier, provides data that comes from commercial fleet navigation systems, navigation-GPS devices in personal vehicles, and turn-by-turn navigation smartphone apps. (These apps produce data that are like the LBS data described above). Segmented analytics for medium-duty and heavy-duty commercial trucks are available. For commercial trucks, if the vehicle's on-board fleet management system is within INRIX's partner system, INRIX (and thus StreetLight) will collect a ping every one to three minutes whenever the vehicle is on, even if the driver is not actively using navigation.

For personal vehicles, if the vehicle is in INRIX's partner system and has a navigation console, INRIX (and thus StreetLight) will collect a "ping" every few seconds whenever the vehicle is on, even if the driver is not actively using the navigation system. This provides a very complete picture of vehicles' travel patterns and certainty that the trips are in vehicles.

Data Processing Methodology

The following section contains an overview of the fundamental methodology that StreetLight Data uses to develop all Metrics. Each *StreetLight InSight* Metric has specific methodological details which can be shared with clients as needed by request.

Step 1 – ETL (Extract Transform and Load)

First, we pull data in bulk batches from our suppliers' secure cloud environments. This can occur daily, weekly, or monthly, depending on the supplier. The data do not contain any personally identifying information. They have been de-identified by suppliers before they are

obtained by StreetLight. StreetLight Data does not possess data that contains any personally identifying information.

The ETL process not only pulls the data from one environment securely to another, but also eliminates corrupted or spurious points, reorganizes data, and indexes it for faster retrieval and more efficient storage.

Step 2 – Data Cleaning and Quality Assurance

After the ETL process, we run several automated, rigorous quality assurance tests to establish key parameters of the data. To give a few examples, we conduct tests to:

- Verify that the volume of data has not changed unexpectedly,
- Ensure the data is properly geolocated,
- Confirm the data shares similar patterns to the previous batch of data from that particular supplier.

In addition, StreetLight staff visually and manually reviews key statistics about each data set. If anomalies or flaws are found, the data are reviewed by StreetLight in detail. Any concerns are escalated to our suppliers for further discussion.

Step 3 – Create Trips and Activities

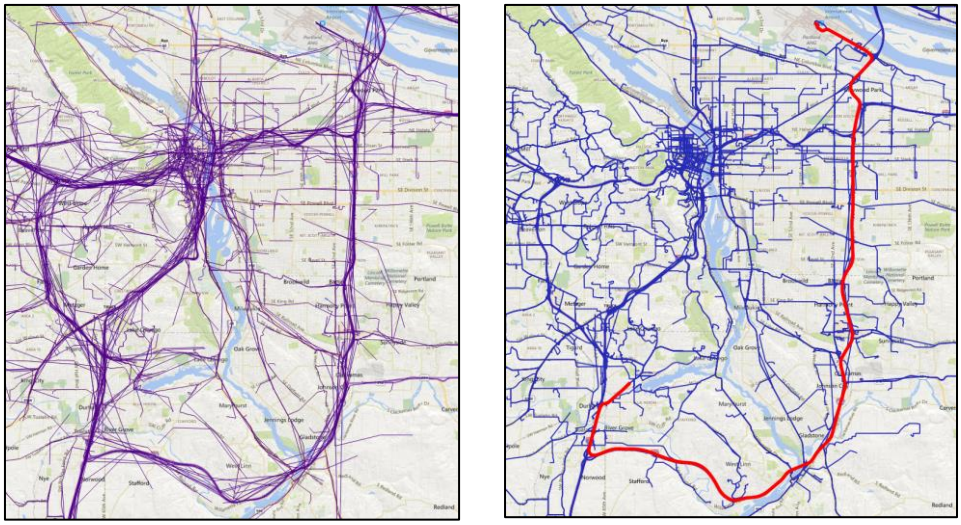
For any type of data supply, the next step is to group the data into key patterns. For example, for navigation-GPS data, a series of data points whose first time stamp is early in the morning, travels at reasonable speeds for a number of minutes, and then stands still for several minutes, could be grouped into a probable "trip." For LBS data, we follow a similar approach. However, since LBS data continues to ping while the device is at the destination, we see clusters of pings in close proximity at the beginnings and ends of trips.

Step 4 – Contextualize

Next, StreetLight integrates other "contextual" data sets to add richness and improve accuracy of the mobile data. These include road networks and information like speed limits and directionality, land use data, parcel data, and census data, and more.

For example, a "trip" from a navigation-GPS or LBS device is a series of connected dots. If the traveler turns a corner but the device is only pinging every 10 seconds, then that intersection might be "missed" when all the device's pings are connected to form a complete trip. StreetLight utilizes road network information including speed limits and directionality, to "lock" the trip to the road network. This "locking" process ensures that the complete route of the vehicle is represented, even though discrepancies in ping frequency may occur. Figure 2, below, illustrates this process.

Figure 2: "Unlocked" Trips becoming locked trips.



As another example, if a device that creates LBS data regularly pings on a block with residential land use, and those pings often occur overnight, there is a high probability that the owner of the device owner lives on that block/block group. This allows us to associate "home-based" trips and a "likely home location" to that device. In addition, we can append distribution of income and other demographics for residents of that census block to that device. That device can then "carry" that distribution everywhere else it goes. (Our demographic data sources for the US are the Census and American Community Surveys. In Canada, our source is Manifold Data.) This allows us to normalize the LBS sample to the population, and to add richness to analytics of travelers such as trip purpose and demographics.

Step 5 – More Quality Assurance

After patterns and context are established, additional automatic quality assurance tests are conducted to flag patterns that appear suspicious or unusual. For example, if a trip appears to start at 50 miles per hour in the middle of a four-lane highway, that start is flagged as "bad." Flagged trips and activities are not deleted from databases altogether, but they are filtered out from *StreetLight InSight* queries and Metrics.

Step 6 – Normalize

Next, the data is normalized along several different parameters to create the StreetLight Index. As all data suppliers change their sample size regularly (usually increasing it), monthly normalization occurs.

For LBS devices, we perform a population-level normalization for each month of data. For each census block, StreetLight measures the number of devices in that sample that appear

to live there, and makes a ratio to the total population that are reported to live there. A device from a census block that has 1,000 residents and 200 StreetLight devices will be scaled differently everywhere in comparison to a device from a census block that has 1,000 residents and 500 StreetLight devices. Thus, the StreetLight Index for LBS data is normalized to adjust for any population sampling bias. It is not yet "expanded" to estimate the actual flow of travel.

For navigation-GPS trips, StreetLight uses a set of public loop counters at certain highway locations to measure the change in trip activity each month. Then it compares this ratio to the ratio of trips at the location, and normalizes appropriately. In addition, StreetLight systemically performs adjustments to best estimate total, normalized trips based on external calibration points. Such calibration points include public, high-quality vehicle count sensors (for example, those in PEMs systems, or the TMAS repository) as well as reports from surveys and other externally validated sources. Thus, the StreetLight Index for GPS data is normalized to adjust for change in our sample size. It is not normalized for population sampling bias (because we cannot infer home blocks for GPS data). This is one of the reasons we recommend LBS data for all personal travel analytics. The StreetLight Index for GPS data is not yet "expanded" to estimate the actual flow of travel.

Step 7 – Store Clean Data in Secure Data Repository

After being made into patterns, checked for quality assurance, normalized, and contextualized, the data is stored in a proprietary format. This enables extremely efficient responses to queries via the *StreetLight InSight* platform. By the time the data reaches this step, it takes up less than 5% of the initial space of the data before ETL. However, no information has been lost, and contextual richness has been added.

Step 8 – Aggregate in Response to Queries

Whenever a user runs a Metric query via *StreetLight InSight*, our platform automatically pulls the relevant trips from the data repository and aggregates the results. For example, if a user wants to know the share of trips from Origin Zone A to Destination Zone B vs. Destination Zone C during September 2017, they specify these parameters in *StreetLight InSight*. Trips that originated in Origin Zone A and ended in either Destination Zone B or Destination C during September 2017 will be pulled from the data repositories, aggregated appropriately, and organized into the desired Metrics.

Results always describe aggregate behavior, never the behavior of individuals.

Step 9 – Final Metric Quality Assurance

Before delivering results to the user, final Metric quality assurance steps are automatically performed. First, *StreetLight InSight* determines if the analysis zones are appropriate. If they

are nonviable polygon shapes, outside of the coverage area (for example, in an ocean) or too small (for example, analyzing trips that end at a single household) the Zone will be flagged for review. If a Metric returns a result with too few trips or activities to be statistically valid or to protect privacy, the result will be flagged. When results are flagged, StreetLight's support team personally reviews the results to determine if they are appropriate to deliver from a statistical/privacy perspective. The support team then personally discusses the best next steps with the user.

In general, *StreetLight InSight* response time varies according to the size and complexity of the user's query. Some runs take two seconds. Some take two minutes. Some take several hours. Users receive email notifications when longer projects are complete, and they can also monitor progress within *StreetLight InSight*. Results can be viewed as interactive maps and charts within the platform, or downloaded as CSV and shapefiles to be used in other tools.

Measuring Sample Size

StreetLight's Big Data resources include about 65M devices in the US and Canada, which covers approximately 23% of these countries' combined adult population. However, clients should not expect a 23% penetration rate for all *StreetLight InSight* analyses they run. Penetration rates for individual analyses can range from as small as 1% to as large as 35%.

As is the case with any Big Data provider, sample size and penetration rate for a given analysis depend on the specific parameters used in the study. The reason is that some data are useful for certain analyses, but are not useful for others. For example, a device may deliver high-quality, clean location data for one study, but messy, unusable location data – or no data at all – for another. Efficiently identifying the data that are "useful" for a particular analysis is a critical component of the data science value that differentiates StreetLight Data. Because penetration rates vary, sample sizes are automatically provided for almost all *StreetLight InSight* analyses[1]. This allows users to calculate penetration rates and to better evaluate the representativeness of the sample. Sample size values also are

[1] Sample sizes are not automatically provided for Visitor Home-Work, AADT, or Traffic Diagnostics Projects. They are available by request. These analyses use a very large volume of location data, so providing sample sizes automatically via *StreetLight InSight* would negatively impact data processing speeds.

useful to clients who wish to normalize *StreetLight InSight* results through additional statistical analysis.

For LBS analyses, sample size is currently provided as the number of unique devices and/or number of trips for LBS analyses, depending on the type of analysis. These values should be thought of as most similar to "person trips." Including both the number of devices and trips for all LBS analyses is in our product roadmap. Sample size is provided as number of trips for navigation-GPS analyses. These should be thought of as "vehicle trips."

In general, though not always, the trip sample size for commercial navigation-GPS data will be higher than the device (truck) sample size. Commercial trucks that are in active use typically take many trips per week that are often on set routes; thus, they are more likely to have up-to-date fleet management tools, and that means they are more likely to be included in StreetLight's navigation-GPS data set. Trucks that are more rarely used are less likely to be included in the data set.

In general, though not always, the trip sample size for LBS data will be lower than the device (person) sample size. The reason is that not all devices in StreetLight's database capture every single trip perfectly. To illustrate, consider this hypothetical example:

- 8:00AM: Device creates location data at expected home location
- 2:00PM: Device creates location data at sports arena

This device has created useful information for analyzing the home locations of visitors to the arena. However, since the device didn't create any location data on the trip to arena, perhaps because it was off, then the route taken and the travel time cannot be calculated with certainty. As result, it could not be used in an analysis of road activity on an arterial near the arena.

As another example, consider a device that generates regular pings for each trip taken over 10 days. However, the user deletes the smart phone app that created that data, and it stops pinging. That device then disappears for the last 20 days of the month. The device's data can still be used, but the trip penetration for the month is only 33% of this person's trips, not 100%.

Typical daily trip penetration rates are between 1 and 5% of all trips on any one specific day. StreetLight's pricing and data structure encourage looking at many days of data. The costs are the same for analyzing an average day across three months and analyzing a single day. Thus, we encourage clients to evaluate the total sample across the entire study period instead of focusing on per-day penetration rates.

AGENDA ITEM SUMMARY

MEETING DATE: September 7, 2021

ITEM TITLE: Consideration of FEMA Building Resilient Infrastructure and Communities (BRIC) Grant and Budget Amendment

ITEM SUMMARY:

The Building Resilient Infrastructure and Communities (BRIC) Program, is funded by FEMA and administered through a partnership with the North Carolina Division of Emergency Management (NCEM). NCEM has the authority and responsibility for developing and maintaining a State Standard Hazard Mitigation Plan, reviewing the Building Resilient Infrastructure and Communities Program sub-applications, recommending technically feasible and cost-effective sub-applications to FEMA and providing pass-thru funding for FEMA-approved and awarded project grants to eligible sub-applicants. Letters of Interest are due no later than October 1, 2021 at 5:00 pm.

The proposed project areas are included in the *NC 12 Drainage Study* completed by VHB Engineering in cooperation with the Town of Duck, and NCDOT, to address potential solutions to flooding throughout the roadway corridor. Staff submitted a Letter of Interest for funding in 2020 for the identified solution at the Sea Oats project and was invited to submit a full application for FEMA's consideration. However, staff was unable to pull together the required documentation and meet the pre-application planning requirements in time to submit a full application. Attached is a contract provided by VHB Engineering NC, P.C. for grant application assistance to better position the town to submit a full and competitive application. The application will require pre-design level of refinement of the initial concepts included in the 2006 report in order to develop construction cost estimates, address potential right-of-way impacts, address grading and drainage issues, and confirm environmental compliance and permitting requirements. However, the preliminary engineering, final design, construction documents, environmental compliance documents and permitting of the drainage projects will be accomplished under a separate contract pending the actual grant award.

The NC12 corridor in Southern Shores has inadequate drainage or stormwater infrastructure in place to provide conveyance of roadway drainage to adequate receiving systems. Instead, the sandy soils within the corridor provide for infiltration of stormwater runoff from the roadway and contributing runoff from public side streets. The roadway floods frequently from storm events of various intensities due to the lack of drainage infrastructure and periods of saturated soils. This situation caused extensive flooding in the lowest areas along the corridor, negatively impacting residents, tourists, and emergency personnel. Although an extreme, this was indicative of sub-standard drainage conditions, and helped reinforce the need for improvements along NC12, thereby leading to this request.

STAFF RECOMMENDATION: Staff recommends approval.

REQUESTED ACTION: A motion to approve the attached Budget Amendment and authorize the town manager to sign the grant application contract with VHB Engineering NC.

ATTACHMENTS:

Agreement for Professional Services with VHB Engineering NC for grant application assistance with the Building Resilient Infrastructure and Communities (BRIC) Grant.

Budget Amendment #12

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act

_____
Finance Officer

AGREEMENT FOR PROFESSIONAL SERVICES BETWEEN
VHB ENGINEERING NC, P.C AND
TOWN OF SOUTHERN SHORES, NORTH CAROLINA
FOR
GRANT APPLICATION ASSISTANCE
BUILDING RESILIENT INFRASTRUCTURE AND COMMUNITIES (BRIC)

VHB CONTRACT NO. 85028.21

August 25, 2021

This Contract includes details of the services to be performed, timing of the services, and compensation for the above-referenced project. This Contract is subject to the attached Terms and Conditions, which contain the general terms of the engagement between the Town of Southern Shores, North Carolina, hereinafter called the "Client," and VHB Engineering NC, P.C. (VHB).

PART I

PROJECT DESCRIPTION

NC 12 through the Town of Southern Shores and the Town of Duck experiences regular flooding from rainwater runoff. In 2006, VHB completed the *NC 12 Drainage Study* in cooperation with the Client, the Town of Duck, and NCDOT, to address potential solutions to flooding throughout the roadway corridor. Since that time, the Client has implemented some of the recommendations, but several areas have not been improved and remain subject to regular flooding. The Client now intends to pursue funding through the Building Resilient Infrastructure and Communities (BRIC) program to implement additional improvements identified in the 2006 report as a comprehensive corridor hazard mitigation project. The BRIC program is administered by the Federal Emergency Management Agency (FEMA)and coordinated through the North Carolina Hazard Mitigation Office.

This Contract details the Scope of Services, Schedule, and Compensation for VHB to assist the Client with development and submittal of a BRIC application. The application will require pre-design level of refinement of the initial concepts included in the 2006 report in order to develop construction cost estimates, address potential right-of-way impacts, address grading and drainage issues, and confirm environmental compliance and permitting requirements. However, the preliminary engineering, final design, construction documents, environmental compliance documents and permitting of the drainage projects will be accomplished by subsequent Contract Amendment pending the actual grant award.

SCOPE OF SERVICES

In order to assist the Client with the BRIC funding application, VHB will undertake the following scope of services:

1.0 LETTER OF INTEREST

To initiate the BRIC application process, the Client will need to submit to the North Carolina Hazard Mitigation a Letter of Interest (LOI) by October 1, 2021. VHB will provide the Client with a project description narrative, vicinity map, concept plans, construction cost estimate, benefit/cost assessment, and other supporting information for inclusion in the LOI to be completed by the Client and submitted by the Client on Town letterhead.

A state-level decision on the LOI will be made by October 15. Should the Town's project be included in the state-level effort moving forward, VHB will undertake the following tasks.

2.0 PRE-DESIGN PLANS

Based on available Geographic Information Systems (GIS) data and the initial improvement concepts developed by VHB in the 2006 report, VHB will develop pre-design drawings to show improvements at the following locations (it should be noted that the Client has previously implemented the 2006 recommendations at East Dogwood Trail):

- Southern Shores Realty
  - Edge drain infiltration system with a drainage inlet that will allow for use of a portable pump
- Skyline Road
  - Infiltration swales adjacent to intersection
- Ocean Boulevard/Duck Road Split
  - Reconstruct the multi-use path and construct infiltration swales with drainage inlets and subsurface infiltration system (French drain system)
- Fourth Avenue
  - Construct swales within the NC 12 right-of-way
- Sea Oats Trail
  - Edge drain infiltration system

Right-of-way
VHB will utilize available GIS parcel boundary data to identify likely needs for private property easements to accommodate the proposed improvements. Actual development of easement exhibits and plats will be accomplished as part of final design under a contract amendment pending award of grant funds.

Construction cost estimate
Based on the pre-design plans, VHB will develop a preliminary opinion of probable construction cost. The primary purpose of the cost opinion will be for use in pursuing project funding. The opinion of cost to be developed by VHB will include individual estimates for each improvement location along with a total project cost encompassing all of the locations; this will form the basis for the requested BRIC funds.

3.0 BRIC APPLICATION

The BRIC application uses an online application as part of the FEMA GO program. The Client will need to add VHB as a user in the Client's FEMA GO system. This will allow VHB to develop a BRIC application for approval and submittal by the Client to the state no later than November 24, 2021. Following this submittal, the State Hazard Mitigation Officer will review the submittal and offer comments prior to resubmittal no later than January 7, 2022. Based on state-level review and comment, this scope includes one round of revisions by VHB to the online BRIC application. VHB anticipates that the funding application will include the following elements:

- A revised project narrative describing the project history, elements, and anticipated benefits. The narrative will respond to the funding solicitation guidance and program goals.
- The pre-design plans and cost estimate developed during the previous task.
- A revised benefit/cost analysis using the benefit/cost tool included in the program guidance.
- Mapping and other support information previously provided as part of the LOI.
- Identification of likely environmental compliance and permitting requirements.

4.0 COORDINATION AND MEETINGS

During development of the LOI and BRIC application, VHB will coordinate our efforts with the Client and the State Hazard Mitigation Officer. To review plan progress and solicit input in developing the funding application, VHB will conduct regular Teams meetings. Assuming a Notice to Proceed on September 7, 2021, this Agreement includes four coordination meetings prior to the November 24 submittal to the state, and one additional meeting prior to the January 7, 2022 final submittal.

SCHEDULE

VHB will begin the work included in this scope of service upon approval of this Agreement. Consistent with the BRIC funding program, VHB will complete the work in accordance with the following schedule milestones:

- Letter of Interest October 1, 2021
- BRIC application November 24, 2021
- Final application January 7, 2022

SERVICES NOT INCLUDED

The following services are not anticipated and, therefore, not included in this Agreement at this time:

- Topographic and boundary survey;
- Subsurface utility locating;
- Geotechnical investigations;
- Final plans for the proposed improvements;
- Permitting of the proposed improvements;
- ALTA survey;
- Traffic or safety data collection or studies;
- Field surveys of threatened and endangered species;
- Cultural resource surveys;
- National Environmental Policy Act (NEPA) documentation;
- Subsurface testing for hazardous materials;
- Variance, special use, or conditional use permit requests or rezoning assistance;
- Design of public or private utility relocations.

COMPENSATION AND PAYMENT FOR VHB SERVICES

I. Fees and Reimbursable Expenses

VHB will complete the Scope of Services described herein for the Lump Sum Fee of $25,000, which includes labor costs and expenses such as: printing and reprographics; travel and subsistence; computer charges; telephone charges; shipping, postage, and courier service charges; purchase of maps and similar documents; etc. These direct expenses will be billed at cost.

VHB Engineering NC, P.C., AUTHORIZATION

By: _____

Title: _____

Date: _____

CLIENT AUTHORIZATION

The Town of Southern Shores, North Carolina, agrees with Part I, which includes the Scope of Services, Schedule, and Compensation, and Part II, which includes the Terms and Conditions of our Agreement. Together they constitute the entire Agreement between VHB Engineering NC, P.C., and the Town of Southern Shores.

TOWN OF SOUTHERN SHORES, NORTH CAROLINA

By: _____

Title: _____

Date: _____

Town of Southern Shores
Budget Amendment Number # 12

Streets Increases			Streets Decreases		
Account Number	Description	Amount	Account Number	Description	Amount
	Revenues				
40-39909	Unassigned Fund Balance	$25,000			
	Expenditures				
57-50987	FEMA BRIC GRANT Application	$ 25,000			

Explanation: The cost to apply for FEMA BRIC Grant

Recommended By:

Cliff Ogburn, Town Manager

Approved By:

Tom Bennett, Mayor

Date