

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.  
Contact 910-341-5888

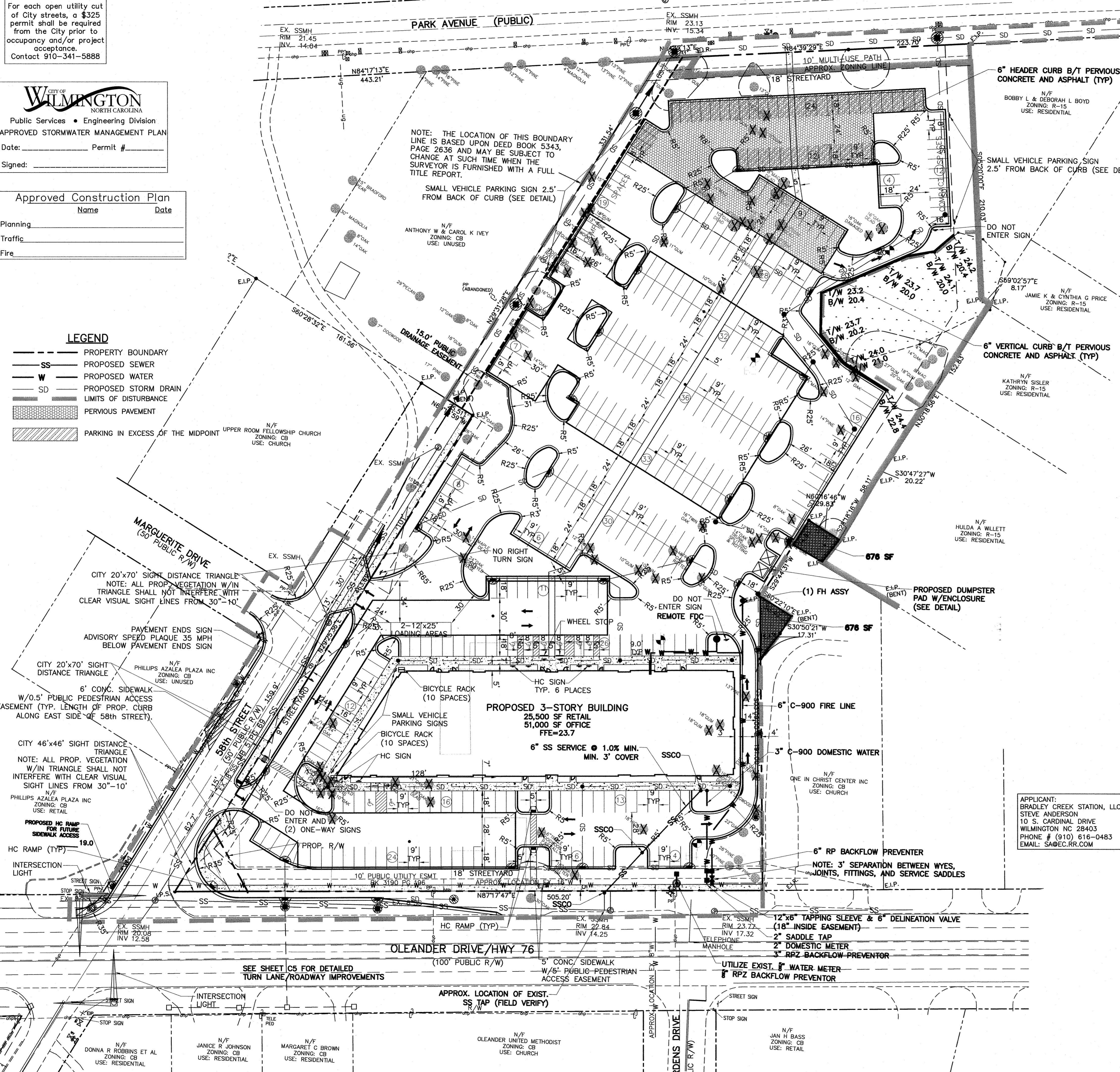
**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

**LEGEND**

- PROPERTY BOUNDARY
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED STORM DRAIN
- LIMITS OF DISTURBANCE
- PERVIOUS PAVEMENT
- PARKING IN EXCESS OF THE MIDPOINT



- ZONING**
- 1) TOPOGRAPHY COMPLETED BY PATRICK C. BRISTOW LAND SURVEYING, P.C.
  - 2) PERMITTING OF BUSINESS IDENTIFICATION SIGNAGE IS A SEPARATE PROCESS. CITY OF WILMINGTON WILL NOT ALLOW OBSTRUCTIONS WITHIN THE RIGHT-OF-WAY.
  - 3) CONTRACTOR SHALL FIELD VERIFY SIZE, MATERIAL, INVERTS AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO INSTALLATION OF PROPOSED CONNECTIONS.
  - 4) EXISTING EASEMENTS AS SHOWN
  - 5) CONTRACTOR SHALL MAINTAIN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
  - 6) UNDERGROUND FIRE LINES SHALL BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE SAFETY AT 910-341-0696.
  - 7) BUILDING IS TYPE IIB

- TRAFFIC**
- 1) SITE TO USE DUMPSTER.
  - 1) ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
  - 2) TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) ARE OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
  - 3) CONTACT TRAFFIC ENGINEERING AT 910-341-7888 TO ENSURE THAT ALL TRAFFIC SIGNALS FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.
  - 4) CALL TRAFFIC ENGINEERING AT 910-341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
  - 5) ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING WILL BE REPLACED.
  - 6) CONTACT 910-341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
  - 7) ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
  - 8) NO ROWS TO BE CLOSED.
  - 9) NO STREETS PROPOSED.
  - 10) OFF SITE PARKING PROPOSED AS SHOWN.
  - 11) DRIVEWAYS TO MEET CITY STANDARDS.
  - 13) ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
  - 14) STOP SIGNS AND STREET SIGNS TO REMAIN IN PLACE DURING CONSTRUCTION.
  - 15) TACTILE WARNING MATS WILL BE INSTALLED ON ALL WHEELCHAIR RAMPS.
  - 16) INSTALL REFLECTORS PER CITY AND NCDOT STANDARDS ON 58TH STREET. TRAFFIC ENGINEERING MUST APPROVE PAVEMENT MARKING LAYOUT PRIOR TO ACTUAL STRIPING.

- LANDSCAPING**
- 1) A LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND THE PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAN.
  - 2) NO OBSTRUCTIONS ARE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES AND TEN (10) FEET ABOVE THE GROUND WITHIN THE TRIANGULAR SITE DISTANCE.
  - 3) PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION MATERIALS, TOOLS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
  - 4) ANY TREES AND/OR AREAS DESIGNATED TO BE PROTECTED MUST BE PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING, GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS.
  - 5) NO EQUIPMENT IS ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING IS INSTALLED AND APPROVED. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT AND CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTIONS ON TREE PROTECTION METHODS.
  - 6) ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30'-10'.

- CEILING**
- 1) WATER AND SEWER SERVICE SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY (CPFA) DETAILS AND SPECIFICATIONS.
  - 2) PROJECT SHALL COMPLY WITH THE CPFA CROSS CONNECTION PREVENTION REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL.
  - 3) IF THE CONTRACTOR DESIRES CPFA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPERS SIDE OF THE WATER METER BOX.
  - 4) ANY IRRIGATION SYSTEM SUPPLIED BY CPFA WATER SHALL COMPLY WITH THE CPFA'S CONNECTION CONTROL REGULATION. CALL 910-332-6419 FOR INFORMATION.
  - 5) ANY BACKFLOW PREVENTION DEVICES REQUIRED BY CPFA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES FOR USCFCCHR OR ASSE.
  - 6) PUBLIC WATER MAIN EXTENSION AND WATER SERVICES PROPOSED. SANITARY SEWER SERVICE PROPOSED.
  - 7) CONTACT THE NORTH CAROLINA ORCHARD CENTER AT 1-800-632-4949 PRIOR TO DOING ANY DIGGING, CLEARING OR GRADING.
  - 8) ANY IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN AND FREEZER SENSOR.
  - 9) CONTRACTOR TO FIELD VERIFY EXISTING WATER AND SEWER SERVICE LOCATIONS, SIZES AND MATERIALS PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY OF ANY CONFLICTS.
  - 10) A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. CONTACT 910-341-5888 FOR MORE DETAILS.

- DRAINAGE**
- 1) SHEET FLOW TO PROPOSED INLETS TO UNDERGROUND INFILTRATION SYSTEM.
- UNDERGROUND UTILITIES**
- 1) ALL ELECTRIC, CABLE TELEVISION AND TELEPHONE FACILITIES, FIRE ALARM CONDUITS, STREET LIGHTING WIRING AND OTHER WIRING CONDUITS AND SIMILAR FACILITIES SHALL BE PLACED UNDERGROUND BY THE DEVELOPER OR THE APPROPRIATE UTILITY COMPANY.
  - 2) A MINIMUM COVER OF 30-INCHES OVER ALL PROPOSED WATER LINES SHALL BE PROVIDED.

- FIRE**
- 1) FIRE HYDRANT MUST BE WITHIN 150' OF THE FDC MEASURED AS THE TRUCK DRIVES FOR PRACTICAL USE.
  - 2) FDC MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.
  - 3) LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT CLEAR SPAN SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT AND FDC.
  - 4) IN ADDITION TO THE STANDARD COMMENTS, ADDITIONAL FIRE PROTECTION AND ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.
  - 5) ALL ISOLATION VALVES WITHIN THE "HOT BOX" SHALL BE ELECTRICALLY SUPERVISED. PLEASE WORK CLOSELY WITH YOUR FIRE SPRINKLER AND ALARM INSTALLER IN REGARDS TO RUNNING WIRE FOR TAMPER SWITCH.
  - 6) CONTRACTOR SHALL MAINTAIN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
  - 7) NEW HYDRANTS MUST BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIALS DELIVERED TO THE JOB SITE.
  - 8) PRIVATE UNDERGROUND FIRE LINES REQUIRE A SEPARATE FIRE LINE PERMIT FROM THE WILMINGTON FIRE AND LIFE SAFETY DIVISION 910-343-0696.
  - 9) CONTRACTOR SHALL SUBMIT A RADIO SIGNAL STRENGTH STUDY FOR ALL COMMERCIAL BUILDINGS THAT DEMONSTRATES THAT EXISTING EMERGENCY RESPONDER RADIO SIGNAL LEVELS MEET THE REQUIREMENTS OF SECTION 510 OF THE 2018 NC FIRE CODE.

**SITE DATA:**

PROJECT ADDRESS: 5815 OLEANDER DRIVE  
PROPERTY OWNER: BRADLEY CREEK STATION, LLC  
PIN NUMBER: R06207-004-024-000

AREA NOT IN A FEMA 100-YEAR FLOOD ZONE  
ZONING DISTRICT: CB  
CAMA LAND USE: WATERSHED RESOURCE PROTECTION

PROPOSED BUILDING SETBACKS  
FRONT: 20'  
REAR: 20'  
SIDE: 0/20'  
CORNER SIDE: 20'  
FRONT: 94.5'  
REAR: 507.5'  
SIDE: 21.7'  
CORNER SIDE: 66.5'

TRACT AREA: 256,710 SF (5.89 AC)  
DISTURBED AREA: 6.5 AC  
BUILDING USE: RETAIL AND OFFICE

EXISTING BUILDING AREA	PROPOSED BUILDING AREA (GROSS)
24,715 SF	76,500 SF
BUILDING LOT COVERAGE (26,235/256,710)	10.22%
NUMBER OF BUILDINGS	1
NUMBER OF UNITS	4
BUILDING HEIGHT	3
NUMBER OF STORIES	3
1ST FLOOR (GROSS)	25,500 SF
2ND FLOOR	25,500 SF
3RD FLOOR	25,500 SF

EXISTING IMPERVIOUS AREAS:

EXISTING BUILDING	24,715 SF
EXISTING PAVEMENT	5,600 SF
EXISTING SIDEWALK	0 SF
EXISTING IMPERVIOUS AREA	30,315 SF (11.8%)
PROPOSED ONSITE IMPERVIOUS AREAS:	
PROPOSED BUILDING FOOTPRINT	26,235 SF
PROPOSED PAVEMENT	134,608 SF
PROPOSED PERVIOUS (100% CREDIT)	-15,552 SF
PROPOSED SIDEWALK	6,000 SF
EXISTING IMPERVIOUS TO REMAIN	0 SF
TOTAL IMPERVIOUS	166,843 SF (65%)

PROPOSED OFFSITE IMPERVIOUS AREAS:

PROPOSED PAVEMENT	10,720 SF
PROPOSED SIDEWALK	4,650 SF
TOTAL PROPOSED OFFSITE IMPERVIOUS	15,370 SF
TOTAL PROPOSED ONSITE+OFFSITE IMPERVIOUS	182,213 SF

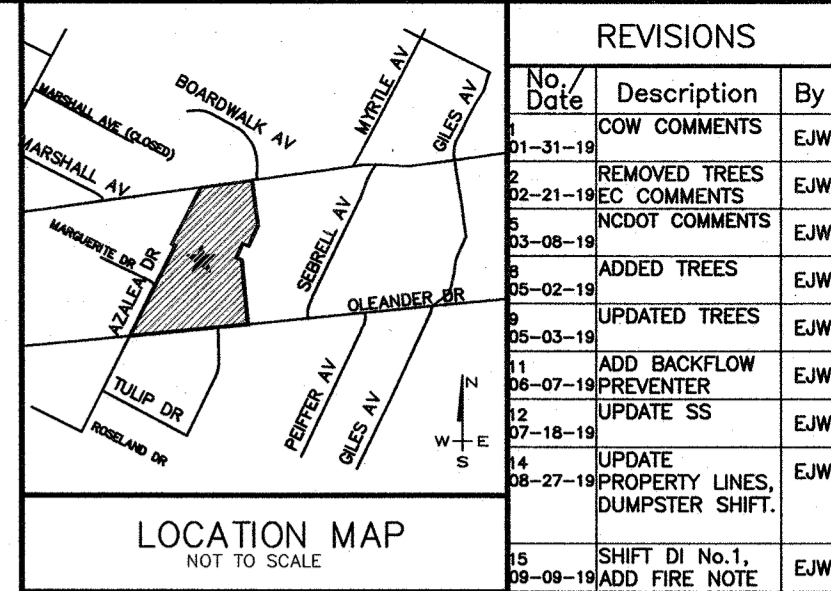
PARKING REQUIRED:

MEDICAL OFFICE	102 SPACES
MINIMUM: 1/250 (25,500/250)	
MAXIMUM: 1/170 (25,500/170)	150 SPACES
PROFESSIONAL OFFICE	85 SPACES
MINIMUM: 1/300 (25,500/300)	
MAXIMUM: 1/200 (25,500/200)	128 SPACES
RETAIL	59 SPACES
MINIMUM: 1/400 (23,500/400)	
MAXIMUM: 1/200 (23,500/200)	118 SPACES
DELI	25 SPACES
MINIMUM: 1/80 (2,000/80)	
MAXIMUM: 1/65 (2,000/65)	31 SPACES
PARKING REQUIRED:	271-427 SPACES
COMPACT PARKING PROVIDED:	31 SPACES
TOTAL PARKING PROVIDED:	388 SPACES

HANDICAP SPACES REQUIRED (301-400 = 8 HANDICAP SPACES)

PROPOSED	8 HANDICAP SPACES
BICYCLE PARKING REQUIRED (388 SPACES)	20
BICYCLE PARKING PROVIDED	20
PUBLIC WATER AND SEWER BY CPFA	
EXISTING WATER FLOW:	2,191 GPD
EXISTING SEWER FLOW:	1,992 GPD
PROPOSED WATER FLOW:	10,098 GPD
(120 GPD/1,000 SF x 110%)	
PROPOSED SEWER FLOW:	9,186 GPD
(120 GPD/1000 SF)	

**SITE PLAN**  
BAR SCALE 1"=40'  
DATE: 01-18-19  
DESIGN: PCT  
DRAWN: MLV  
SHEET 3 OF 10  
15040



**REVISIONS**

No.	Date	Description	By
01-31-19		REV COMMENTS	EJW
02-21-19		REMOVED TREES	EJW
03-08-19		REV COMMENTS	EJW
05-02-19		ADDED TREES	EJW
05-02-19		UPDATED TREES	EJW
07-18-19		ADD BACKFLOW PREVENTER	EJW
07-18-19		UPDATE PROPERTY LINES, DUMPSTER SHIFTS.	EJW
08-01-19		SHIFT DI No.1.	EJW
08-01-19		ADDED FIRE NOTE	EJW
08-01-19		ADDED STEPS	EJW
08-01-19		ADDED ESMT.	EJW
08-01-19		ADDED 20'-10" SIDEWALK	EJW

**TRIPP ENGINEERING, P.C.**  
419 Chestnut Street  
Wilmington, North Carolina 28401  
Phone 910-763-5100  
Fax 910-763-5631  
© 2016 LICENSE NO. 35-1297

**BRADLEY CREEK STATION**  
5815 OLEANDER DRIVE  
WILMINGTON, NORTH CAROLINA

**SITE AND UTILITY PLAN**

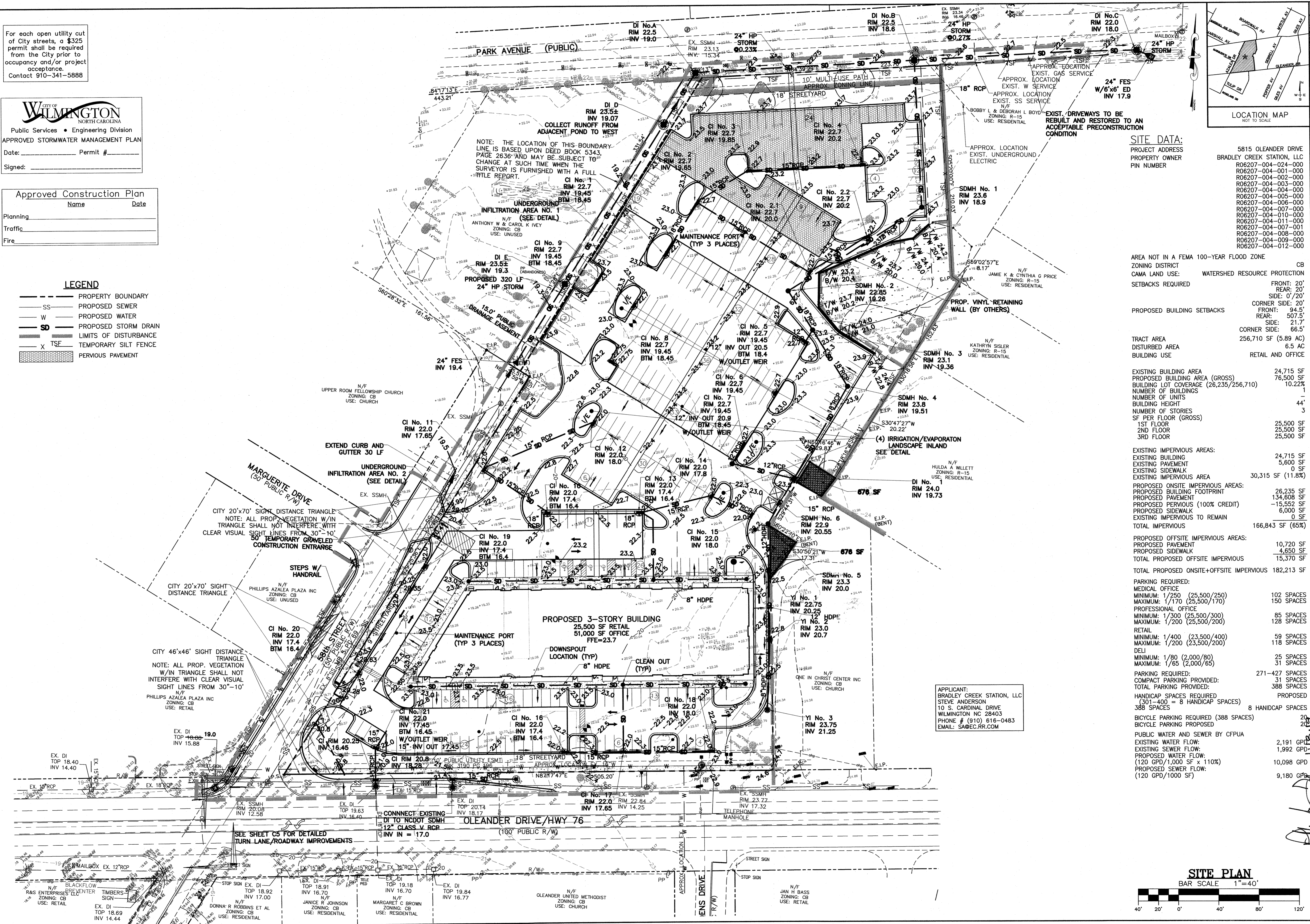
APPLICANT: BRADLEY CREEK STATION, LLC  
STEVE ANDERSON  
10 S. CARDINAL DRIVE  
WILMINGTON NC 28403  
PHONE # (910) 616-0483  
EMAIL: SA@EC.RR.COM

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Contact 910-341-5888

**WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_

**Approved Construction Plan**  
Name \_\_\_\_\_ Date \_\_\_\_\_  
Planning \_\_\_\_\_  
Traffic \_\_\_\_\_  
Fire \_\_\_\_\_

- LEGEND**
- PROPERTY BOUNDARY
  - SS PROPOSED SEWER
  - W PROPOSED WATER
  - SD PROPOSED STORM DRAIN
  - LIMITS OF DISTURBANCE
  - X TEMPORARY SILT FENCE
  - PERVIOUS PAVEMENT



**SITE DATA:**  
PROJECT ADDRESS: 5815 OLEANDER DRIVE  
PROPERTY OWNER: BRADLEY CREEK STATION, LLC  
PIN NUMBER: R06207-004-024-000, R06207-004-001-000, R06207-004-002-000, R06207-004-003-000, R06207-004-004-000, R06207-004-005-000, R06207-004-006-000, R06207-004-007-000, R06207-004-010-000, R06207-004-011-000, R06207-004-007-001, R06207-004-008-000, R06207-004-009-000, R06207-004-012-000

AREA NOT IN A FEMA 100-YEAR FLOOD ZONE  
ZONING DISTRICT: CB  
CAMA LAND USE: WATERSHED RESOURCE PROTECTION  
SETBACKS REQUIRED: FRONT: 20', SIDE: 0'/20', CORNER SIDE: 20', FRONT: 94.5', REAR: 507.5', SIDE: 21.7', CORNER SIDE: 66.5'  
TRACT AREA: 256,710 SF (5.89 AC)  
DISTURBED AREA: 6.5 AC  
BUILDING USE: RETAIL AND OFFICE

EXISTING BUILDING AREA: 24,715 SF  
PROPOSED BUILDING AREA (GROSS): 76,500 SF  
BUILDING LOT COVERAGE (26,235/256,710): 10.22%  
NUMBER OF BUILDINGS: 1  
NUMBER OF UNITS: 4  
NUMBER OF STORIES: 3  
SF PER FLOOR (GROSS): 1ST FLOOR: 25,500 SF, 2ND FLOOR: 25,500 SF, 3RD FLOOR: 25,500 SF

EXISTING IMPERVIOUS AREAS:  
EXISTING BUILDING: 24,715 SF  
EXISTING PAVEMENT: 5,600 SF  
EXISTING SIDEWALK: 0 SF  
EXISTING IMPERVIOUS AREA: 30,315 SF (11.8%)

PROPOSED ONSITE IMPERVIOUS AREAS:  
PROPOSED BUILDING FOOTPRINT: 26,235 SF  
PROPOSED PAVEMENT: 134,808 SF  
PROPOSED PERVIOUS (100% CREDIT): -15,552 SF  
PROPOSED SIDEWALK: 6,000 SF  
EXISTING IMPERVIOUS TO REMAIN: 0 SF  
TOTAL IMPERVIOUS: 166,843 SF (65%)

PROPOSED OFFSITE IMPERVIOUS AREAS:  
PROPOSED PAVEMENT: 10,720 SF  
PROPOSED SIDEWALK: 4,650 SF  
TOTAL PROPOSED OFFSITE IMPERVIOUS: 15,370 SF

TOTAL PROPOSED ONSITE+OFFSITE IMPERVIOUS: 182,213 SF

PARKING REQUIRED:  
MEDICAL OFFICE: MINIMUM: 1/250 (25,500/250) 102 SPACES, MAXIMUM: 1/170 (25,500/170) 150 SPACES  
PROFESSIONAL OFFICE: MINIMUM: 1/300 (25,500/300) 85 SPACES, MAXIMUM: 1/200 (25,500/200) 128 SPACES  
RETAIL: MINIMUM: 1/400 (23,500/400) 59 SPACES, MAXIMUM: 1/200 (23,500/200) 118 SPACES  
DELI: MINIMUM: 1/80 (2,000/80) 25 SPACES, MAXIMUM: 1/65 (2,000/65) 31 SPACES

PARKING PROVIDED:  
COMPACT PARKING PROVIDED: 271-427 SPACES  
TOTAL PARKING PROVIDED: 388 SPACES  
HANDICAP SPACES REQUIRED (301-400 = 8 HANDICAP SPACES): PROPOSED 8 HANDICAP SPACES  
BICYCLE PARKING REQUIRED (388 SPACES): 20  
BICYCLE PARKING PROVIDED: 20

PUBLIC WATER AND SEWER BY CFPWA  
EXISTING WATER FLOW: 2,191 GPD  
EXISTING SEWER FLOW: 1,992 GPD  
PROPOSED WATER FLOW: 10,098 GPD (120 GPD/1,000 SF x 110%)  
PROPOSED SEWER FLOW: 9,180 GPD (120 GPD/1,000 SF)

**SITE PLAN**  
BAR SCALE 1"=40'  
40' 20' 0' 40' 80' 120'

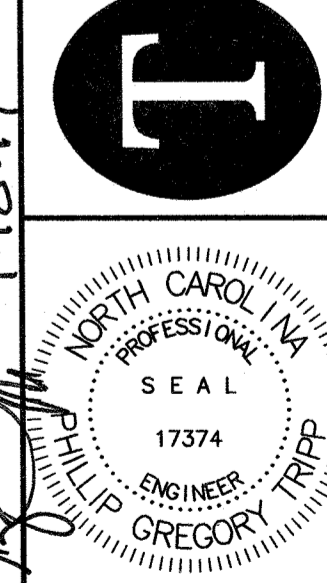
**REVISIONS**

No./Date	Description	By
01-31-19	SHIFT DI No. 1	EJW
02-21-19	REMOVED TREES	EJW
02-21-19	UPDATED SPOT COMMENTS	EJW
02-21-19	W/LEV. REAR	EJW
02-21-19	UPDATE SS	EJW
02-21-19	UPDATE CI 21	EJW
02-21-19	UPDATE	EJW
02-21-19	PROPERTY LINES, DUMPSTER SHFT.	EJW
02-21-19	SHIFT DI No. 1	EJW
02-21-19	ADDED SW	EJW
02-21-19	UPDATE SW	EJW
02-21-19	UPDATE SPOTS	EJW
02-21-19	SHIFT DI No. 1	EJW
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**LOCATION MAP**  
NOT TO SCALE

**TRIPP ENGINEERING, P.C. GRADING, DRAINAGE, EROSION CONTROL, AND STORMWATER MANAGEMENT PLAN**  
419 Chestnut Street  
Wilmington, North Carolina 28401  
Phone 910-763-5100  
Fax 910-763-5631

**BRADLEY CREEK STATION**  
5815 OLEANDER DRIVE  
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DATE: 01-18-19  
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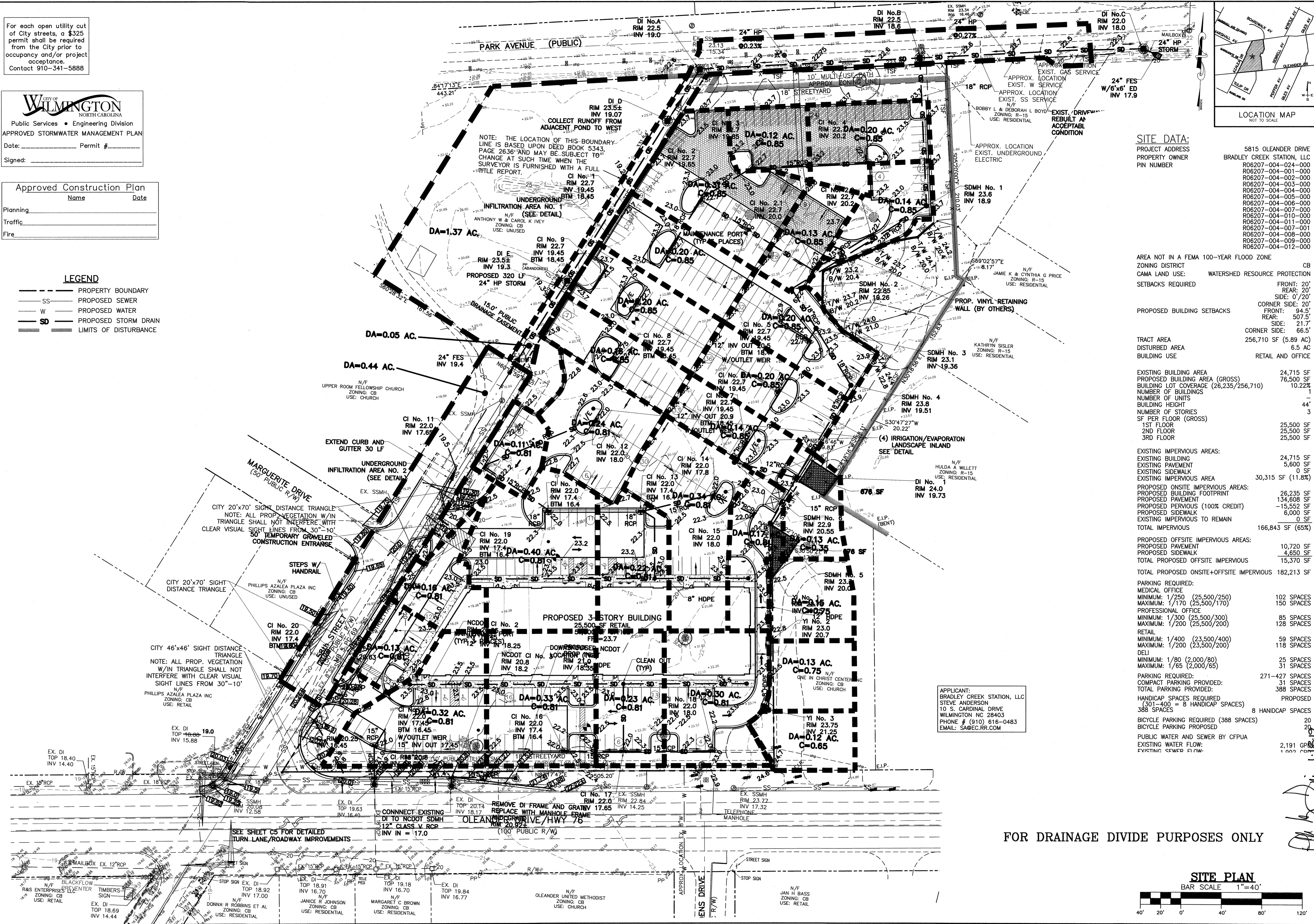
**CITY OF WILMINGTON**  
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APPROVED STORMWATER MANAGEMENT PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
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Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

**LEGEND**

---	PROPERTY BOUNDARY
SS	PROPOSED SEWER
W	PROPOSED WATER
SD	PROPOSED STORM DRAIN
---	LIMITS OF DISTURBANCE



**SITE DATA:**

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BUILDING USE	RETAIL AND OFFICE

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	388 SPACES	8 HANDICAP SPACES
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BICYCLE PARKING PROVIDED	20	
PUBLIC WATER AND SEWER BY CFWA	2,191 GPD	
EXISTING WATER FLOW:	1,000 GPD	
SYSTEMIC SEWER FLOW:		

APPLICANT:  
BRADLEY CREEK STATION, LLC  
STEVE ANDERSON  
10 S. CARDINAL DRIVE  
WILMINGTON NC 28403  
PHONE # (910) 616-0483  
EMAIL: SA@EC.RR.COM

**SITE PLAN**  
BAR SCALE 1"=40'  
40' 20' 0' 40' 80' 120'

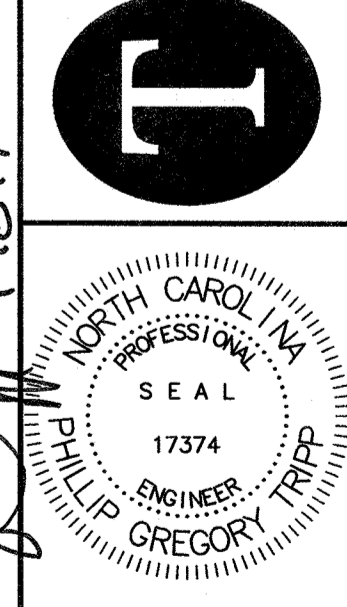
REVISIONS

No.	Date	Description	By
01	03-19-20	ADD COMMENTS	EJW
02	03-23-20	ADD COMMENTS	EJW
03	03-21-20	UPDATE DRAINAGE	EJW



**INLET DRAINAGE AREA MAP**  
**BRADLEY CREEK STATION**  
 5815 OLEANDER DRIVE  
 WILMINGTON, NORTH CAROLINA

**TRIPP ENGINEERING, P.C.**  
419 Chestnut Street  
Wilmington, North Carolina 28401  
Phone 910-763-6100  
Fax 910-763-6631  
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DATE 1-18-19  
DESIGN PGT  
DRAWN MLV

**DA2**

SHEET 2 OF 2  
15040

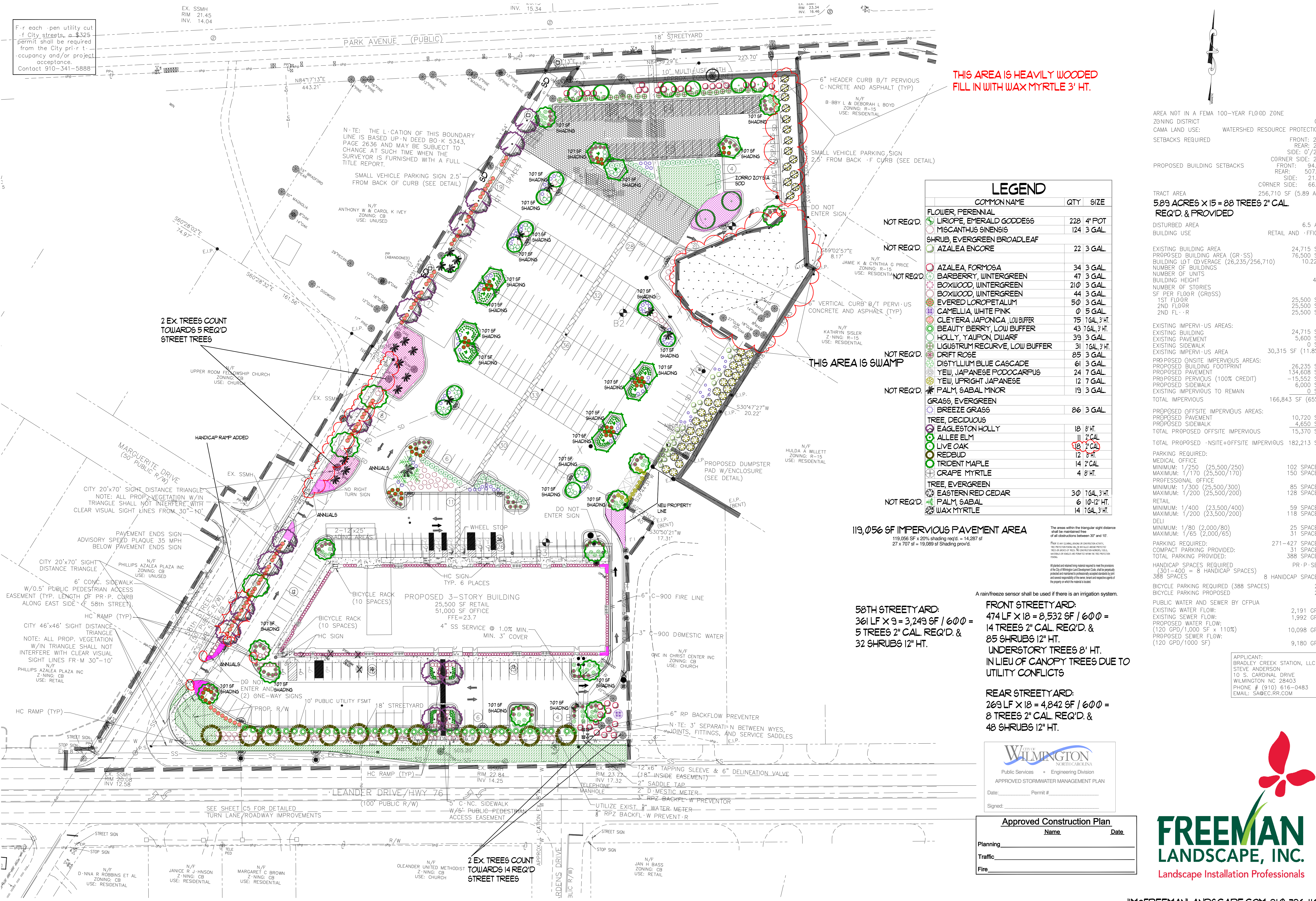
FOR DRAINAGE DIVIDE PURPOSES ONLY

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance. Contact 910-341-5888

EX. SSMH RIM 21.45 INV. 14.04

INV. 15.34

E.A. 33911 RIM 23.34 INV. 16.46



NOTE: THE LOCATION OF THIS BOUNDARY LINE IS BASED UPON DEED BOOK 5343, PAGE 2636 AND MAY BE SUBJECT TO CHANGE AT SUCH TIME WHEN THE SURVEYOR IS FURNISHED WITH A FULL TITLE REPORT.

SMALL VEHICLE PARKING SIGN 2.5' FROM BACK OF CURB (SEE DETAIL)

2 EX. TREES COUNT TOWARDS 5 REQ'D STREET TREES

HANDICAP RAMP ADDED

CITY 20'x70' SIGHT DISTANCE TRIANGLE  
NOTE: ALL PROP. VEGETATION W/IN TRIANGLE SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30'-10'

CITY 20'x70' SIGHT DISTANCE TRIANGLE  
NOTE: ALL PROP. VEGETATION W/IN TRIANGLE SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30'-10'

CITY 46'x46' SIGHT DISTANCE TRIANGLE  
NOTE: ALL PROP. VEGETATION W/IN TRIANGLE SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30'-10'

CITY 46'x46' SIGHT DISTANCE TRIANGLE  
NOTE: ALL PROP. VEGETATION W/IN TRIANGLE SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30'-10'

SEE SHEET C5 FOR DETAILED TURN LANE/ROADWAY IMPROVEMENTS

2 EX. TREES COUNT TOWARDS 14 REQ'D STREET TREES

THIS AREA IS HEAVILY WOODED  
FILL IN WITH WAX MYRTLE 3' HT.

THIS AREA IS SWAMP

119,056 SF IMPERVIOUS PAVEMENT AREA  
119,056 SF x 20% shading req'd = 14,287 sf  
27' x 707' sf = 19,089 of Shading prov'd.

58TH STREETYARD:  
361 LF x 9 = 3,249 SF / 600 =  
5 TREES 2" CAL. REQ'D. &  
32 SHRUBS 12" HT.

FRONT STREETYARD:  
474 LF x 18 = 8,532 SF / 600 =  
14 TREES 2" CAL. REQ'D. &  
85 SHRUBS 12" HT.  
UNDERSTORY TREES 8' HT.  
IN LIEU OF CANOPY TREES DUE TO UTILITY CONFLICTS

REAR STREETYARD:  
263 LF x 18 = 4,842 SF / 600 =  
8 TREES 2" CAL. REQ'D. &  
48 SHRUBS 12" HT.

LEGEND		
COMMON NAME	QTY	SIZE
FLOWER, PERENNIAL		
LIRIOPE, EMERALD GODDESS	228	4" POT
MISCANTHUS SINENSIS	124	3 GAL
SHRUB, EVERGREEN BROADLEAF		
AZALEA ENCORE	22	3 GAL
NOT REQ'D.		
AZALEA, FORMOSA	34	3 GAL
BARBERRY, WINTERGREEN	47	3 GAL
BOXWOOD, WINTERGREEN	210	3 GAL
BOXWOOD, WINTERGREEN	44	3 GAL
EVERED LOROPETALUM	50	3 GAL
CAMELLIA, WHITE PINK	0	5 GAL
CLEYERA JAPONICA, LOW BUFFER	75	1 GAL, 3 HT.
BEAUTY BERRY, LOW BUFFER	43	1 GAL, 3 HT.
HOLLY, YAUPON, DWARF	39	3 GAL
LIGULSTRUM RECURVE, LOW BUFFER	31	1 GAL, 3 HT.
DRIFT ROSE	85	3 GAL
DISTYLLIUM BLUE CASCADE	61	3 GAL
YEW, JAPANESE PODOCARPUS	24	7 GAL
YEW, UPRIGHT JAPANESE	12	7 GAL
NOT REQ'D.		
PALM, SABAL MINOR	19	3 GAL
GRASS, EVERGREEN		
BREEZE GRASS	86	3 GAL
TREE, DECIDUOUS		
EAGLESTON HOLLY	18	8 HT.
ALLEE ELM	11	2" CAL
LIVE OAK	18	2" CAL
REDBUD	12	8 HT.
TRIDENT MAPLE	14	2" CAL
CRAPPE MYRTLE	4	8 HT.
NOT REQ'D.		
TREE, EVERGREEN		
EASTERN RED CEDAR	30	1 GAL, 3 HT.
PALM, SABAL	6	10-12" HT.
WAX MYRTLE	14	1 GAL, 3 HT.

AREA NOT IN A FEMA 100-YEAR FLOOD ZONE  
ZONING DISTRICT: CB  
CAMA LAND USE: WATERSHED RESOURCE PROTECTION  
SETBACKS REQUIRED: FRONT: 20', REAR: 20', SIDE: 0'/20', CORNER SIDE: 20', FRONT: 94.5', REAR: 507.5', SIDE: 21.7', CORNER SIDE: 66.5'  
PROPOSED BUILDING SETBACKS: 256,710 SF (5.89 AC)  
TRACT AREA: 256,710 SF (5.89 AC)  
5.89 ACRES X 15 = 88 TREES 2" CAL. REQ'D. & PROVIDED

DISTURBED AREA: 6.5 AC  
BUILDING USE: RETAIL AND OFFICE  
EXISTING BUILDING AREA: 24,715 SF  
PROPOSED BUILDING AREA (GR-SS): 76,500 SF  
BUILDING LOT COVERAGE (26,235/256,710): 10.22%  
NUMBER OF BUILDINGS: 1  
NUMBER OF UNITS: -  
BUILDING HEIGHT: 45'  
NUMBER OF STORIES: 3  
SF PER FLOOR (GROSS): 1ST FLOOR: 25,500 SF, 2ND FLOOR: 25,500 SF, 2ND FLOOR: 25,500 SF

EXISTING IMPERVIOUS AREAS: 24,715 SF  
EXISTING BUILDING: 5,600 SF  
EXISTING PAVEMENT: 134,608 SF  
EXISTING IMPERVIOUS AREA: 30,315 SF (11.8%)  
PROPOSED ONSITE IMPERVIOUS AREAS: PROPOSED BUILDING FOOTPRINT: 26,235 SF, PROPOSED PAVEMENT: 134,608 SF, PROPOSED PERVIOUS (100% CREDIT): -15,552 SF, PROPOSED SIDEWALK: 6,000 SF, EXISTING IMPERVIOUS TO REMAIN: 0 SF  
TOTAL IMPERVIOUS: 166,843 SF (65%)

PROPOSED OFFSITE IMPERVIOUS AREAS: PROPOSED PAVEMENT: 10,720 SF, PROPOSED SIDEWALK: 4,650 SF, TOTAL PROPOSED OFFSITE IMPERVIOUS: 15,370 SF  
TOTAL PROPOSED ONSITE+OFFSITE IMPERVIOUS: 182,213 SF

PARKING REQUIRED:  
MEDICAL OFFICE: 102 SPACES (MINIMUM: 1/250 (25,500/250), MAXIMUM: 1/170 (25,500/170))  
PROFESSIONAL OFFICE: 85 SPACES (MINIMUM: 1/300 (25,500/300), MAXIMUM: 1/200 (25,500/200))  
RETAIL: 59 SPACES (MINIMUM: 1/400 (23,500/400), MAXIMUM: 1/200 (23,500/200))  
DELI: 25 SPACES (MINIMUM: 1/80 (2,000/80), MAXIMUM: 1/65 (2,000/65))  
PARKING PROVIDED:  
COMPACT PARKING PROVIDED: 31 SPACES  
TOTAL PARKING PROVIDED: 388 SPACES  
HANDICAP SPACES REQUIRED (301-400 = 8 HANDICAP SPACES): 8 HANDICAP SPACES  
BICYCLE PARKING REQUIRED (388 SPACES): 20  
BICYCLE PARKING PROPOSED: 20

PUBLIC WATER AND SEWER BY CFPWA  
EXISTING WATER FLOW: 2,191 GPD  
EXISTING SEWER FLOW: 1,992 GPD  
PROPOSED WATER FLOW: (120 GPD/1,000 SF x 110%) 10,098 GPD  
PROPOSED SEWER FLOW: (120 GPD/1000 SF) 9,180 GPD

APPLICANT: BRADLEY CREEK STATION, LLC  
STEVE ANDERSON  
10 S. CARDINAL DRIVE  
WILMINGTON NC 28403  
PHONE # (910) 616-0483  
EMAIL: SA@ECR.COM

WILMINGTON SOUTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_

Approved Construction Plan  
Name \_\_\_\_\_ Date \_\_\_\_\_  
Planning \_\_\_\_\_  
Traffic \_\_\_\_\_  
Fire \_\_\_\_\_

**FREEMAN LANDSCAPE, INC.**  
Landscape Installation Professionals  
JIM@FREEMANLANDSCAPE.COM 910-736-1166

Landscape Design by: James Freeman - NCLC# 71  
Freeman Landscape, Inc.

Landscape Plan: Bradley Creek Station

Scale: 1" = 40'

Revision #: 10  
Date: 5/22/2020

BRADLEY CREEK STATION  
DA #2

PGT

10 Year Storm Pipe and HGL Calculations

LOCATION		AREA		RUNOFF COEFF. C	RAIN INT. I (in/hr)	INCREMENTAL FLOW	TOTAL FLOW	PIPE DATA											
FROM	TO	SUB TOTAL (Acre)	TOTAL (Acre)			Q=CIA (C.F.S. REQ'D)	Q=CIA (C.F.S. REQ'D)	TYPE	N	LENGTH (ft)	S %	SIZE (in)	VEL. (fps)	Q AVAIL. (cfs)	Friction Loss (Hf) (ft)	Pond Elev. (ft)	Inlet WS Elev. (ft)	Rim Elev. (ft)	Invert Elev. (ft)
CI No. 19	TRENCH No. 2	0.16	0.16	0.81	7.23	0.94	0.94	RCP	0.013	2	1.00%	12	1.2	3.57	0.0009	20.20	20.20	22.00	17.40
CI No. 20	TRENCH No. 2	0.13	0.13	0.81	7.23	0.76	0.76	RCP	0.013	2	1.00%	12	1.0	3.57	0.0006	20.20	20.20	22.00	17.40
CI No. 21	TRENCH No. 2	0.32	0.32	0.81	7.23	1.87	1.87	RCP	0.013	19	0.37%	12	2.4	2.17	0.0336	20.20	20.23	22.00	17.45
CI No. 12	CI No. 11	0.24	0.24	0.81	7.23	1.41	1.41	RCP	0.013	113	0.31%	15	1.1	3.61	0.0368	20.26	20.30	22.00	18.00
CI No. 11	CI No. 10	0.11	0.35	0.81	7.23	0.64	2.05	RCP	0.013	75	0.33%	15	1.7	3.72	0.0520	20.21	20.26	22.00	17.65
CI No. 10	TRENCH No. 2	0.40	0.75	0.81	7.23	2.34	4.39	RCP	0.013	2	1.00%	15	3.6	6.48	0.0064	20.20	20.21	22.00	17.40
CI No. 15	CI No. 14	0.17	0.17	0.81	7.23	1.00	1.00	RCP	0.013	40	0.50%	15	0.8	4.58	0.0065	20.31	20.32	22.00	18.00
CI No. 14	CI No. 13	0.34	0.51	0.81	7.23	1.99	2.99	RCP	0.013	73	0.55%	15	2.4	4.80	0.1074	20.21	20.31	22.00	17.80
CI No. 13	TRENCH No. 2	0.22	0.73	0.81	7.23	1.29	4.28	RCP	0.013	2	1.00%	15	3.5	6.48	0.0060	20.20	20.21	22.00	17.40
CI No. 18	CI No. 17	0.30	0.30	0.81	7.23	1.76	1.76	RCP	0.013	85	0.41%	15	1.4	4.15	0.0433	20.30	20.34	22.00	18.00
CI No. 17	CI No. 16	0.23	0.53	0.81	7.23	1.35	3.10	RCP	0.013	56	0.45%	15	2.5	4.35	0.0890	20.21	20.30	22.00	17.65
CI No. 16	TRENCH No. 2	0.33	0.86	0.81	7.23	1.93	5.04	RCP	0.013	2	1.00%	15	4.1	6.48	0.0084	20.20	20.21	22.00	17.40
CI No. 21	NCDOT DI				8.87	5.82	5.82	RCP	0.013	35	5.00%	12	7.4	7.99	0.5969	20.20	17.20	22.00	20.20
24" FES	DI E	0.44	0.44	0.81	7.23	2.58	2.58	HP	0.013	70	0.13%	24	0.8	8.18	0.0073	19.19	19.20	23.50	19.30
	DI E	0.05	0.49	0.81	7.23	0.29	2.87	HP	0.013	180	0.13%	24	0.9	8.18	0.0233	19.17	19.19	23.50	19.07
	DI D	1.37	1.86	0.43	7.23	4.26	7.13	HP	0.013	50	0.13%	24	2.3	8.18	0.0400	19.13	19.17	22.50	19.00
	DI A	0.10	1.96	0.81	7.23	0.59	7.71	HP	0.013	215	0.20%	24	2.5	10.14	0.2013	18.93	19.13	22.50	18.60
	DI B	0.53	2.49	0.81	7.23	3.10	10.82	HP	0.013	220	0.27%	24	3.4	11.79	0.4051	18.52	18.93	22.00	18.00
	DI C	0.10	2.59	0.81	7.23	0.59	11.40	HP	0.013	10	1.00%	24	3.6	22.68	0.0205	18.50	18.52	17.90	17.90



*Handwritten signature and date: 5-20-20*

LOCATION		AREA		RUNOFF	RAIN	INCREMENTAL FLOW	TOTAL FLOW	PIPE DATA											
FROM	TO	SUB TOTAL (Acre)	TOTAL (Acre)	COEFF. C	INT. I (in/hr)	Q=CIA (C.F.S. REQ'D)	Q=CIA (C.F.S. REQ'D)	TYPE	N	LENGTH (ft)	S %	SIZE (in)	VEL. (fps)	Q AVAIL. (cfs)	Friction Loss (Hf) (ft)	Pond Elev. (ft)	Inlet WS Elev. (ft)	Rim Elev. (ft)	Invert Elev. (ft)
CI No. 19	TRENCH No. 2	0.16	0.16	0.81	8.87	1.15	1.15	RCP	0.013	2	1.00%	12	1.5	3.57	0.0013	20.20	20.20	22.00	17.40
CI No. 20	TRENCH No. 2	0.13	0.13	0.81	8.87	0.93	0.93	RCP	0.013	2	1.00%	12	1.2	3.57	0.0009	20.20	20.20	22.00	17.40
CI No. 21	TRENCH No. 2	0.32	0.32	0.81	8.87	2.30	2.30	RCP	0.013	19	0.37%	12	2.9	2.17	0.0506	20.20	20.25	22.00	17.45
CI No. 12	CI No. 11	0.24	0.24	0.81	8.87	1.72	1.72	RCP	0.013	113	0.31%	15	1.4	3.61	0.0554	20.29	20.34	22.00	18.00
CI No. 11	CI No. 10	0.11	0.35	0.81	8.87	0.79	2.51	RCP	0.013	75	0.33%	15	2.0	3.72	0.0782	20.21	20.29	22.00	17.65
CI No. 10	TRENCH No. 2	0.40	0.75	0.81	8.87	2.87	5.39	RCP	0.013	2	1.00%	15	4.4	6.48	0.0096	20.20	20.21	22.00	17.40
CI No. 15	CI No. 14	0.17	0.17	0.81	8.87	1.22	1.22	RCP	0.013	40	0.50%	15	1.0	4.58	0.0098	20.37	20.38	22.00	18.00
CI No. 14	CI No. 13	0.34	0.51	0.81	8.87	2.44	3.66	RCP	0.013	73	0.55%	15	3.0	4.80	0.1617	20.21	20.37	22.00	17.80
CI No. 13	TRENCH No. 2	0.22	0.73	0.81	8.87	1.58	5.24	RCP	0.013	2	1.00%	15	4.3	6.48	0.0091	20.20	20.21	22.00	17.40
CI No. 18	CI No. 17	0.30	0.30	0.81	8.87	2.16	2.16	RCP	0.013	85	0.41%	15	1.8	4.15	0.0651	20.35	20.41	22.00	18.00
CI No. 17	CI No. 16	0.23	0.53	0.81	8.87	1.65	3.81	RCP	0.013	56	0.45%	15	3.1	4.35	0.1340	20.21	20.35	22.00	17.65
CI No. 16	TRENCH No. 2	0.33	0.86	0.81	8.87	2.37	6.18	RCP	0.013	2	1.00%	15	5.0	6.48	0.0126	20.20	20.21	22.00	17.40
CI No. 21	NCDOT DI				8.87	5.82	5.82	RCP	0.013	35	5.00%	12	7.4	7.99	0.5969	20.20	17.20	22.00	20.20
24" FES	DI E	0.44	0.44	0.81	8.87	3.16	3.16	HP	0.013	70	0.13%	24	1.0	8.18	0.0110	19.54	19.55	23.50	19.30
	DI E	0.05	0.49	0.81	8.87	0.36	3.52	HP	0.013	180	0.13%	24	1.1	8.18	0.0351	19.50	19.54	23.50	19.07
	DI D	1.37	1.86	0.43	8.87	5.23	8.75	HP	0.013	50	0.13%	24	2.8	8.18	0.0602	19.44	19.50	22.50	19.00
	DI A	0.10	1.96	0.81	8.87	0.72	9.46	HP	0.013	215	0.20%	24	3.0	10.14	0.3030	19.14	19.44	22.50	18.60
	DI B	0.53	2.49	0.81	8.87	3.81	13.27	HP	0.013	220	0.27%	24	4.2	11.79	0.6097	18.53	19.14	22.00	18.00
	DI C	0.10	2.59	0.81	8.87	0.72	13.99	HP	0.013	10	1.00%	24	4.5	22.68	0.0308	18.50	18.53	17.90	17.90