

- NOTES**
- BOUNDARY, TOPOGRAPHICAL, & TREE SURVEY PROVIDED BY ARNOLD W. CARSON, PLS (MAP TITLED "COMPOSITE BOUNDARY & TOPOGRAPHIC SURVEY OF THE 1006 BONHAM AVENUE" WITH SEAL DATE OF 10/19/12 & REVISION DATE OF 12/21/12). LOCATION & GRADES OF EXISTING SANITARY SEWER ALONG BONHAM AVENUE AND LOCATION OF ADJACENT DRIVEWAYS ALONG BONHAM AVENUE WERE PROVIDED BY MALPASS ENGINEERING & SURVEYING, P.C. REVISED TREE CALIPER MEASUREMENTS ON THE ORIGINAL TRACT WERE TAKEN ON SEPTEMBER 6, 2012 BY MARK MAYNARD, JR. & PROVIDED TO ARNOLD W. CARSON, PLS PC (REVISED MEASUREMENTS NOT PROVIDED ON ABOVE REFERENCED MAP).
  - LIMITS OF DISTURBANCE = 2.46 ACRES.
  - DISTURBED AREAS WITHIN RIGHT-OF-WAY OF BONHAM AVENUE SHALL BE IMMEDIATELY SEEDED & STABILIZED WITH MULCH PRIOR TO ANY RAINFALL EVENT.
  - UPON COMPLETION OF ANY PHASE OF ACTIVITY SIDE SLOPES WILL BE SEEDED/STABILIZED IN ACCORDANCE WITH GROUND STABILIZATION CHART.
  - LOCATION OF TREE PROTECTION FENCING SHOWN ON PLAN IS APPROXIMATE. TREE PROTECTION FENCING SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL SD 15-08.
  - SLOPE ON HANDICAP SPACES SHALL BE 1:50 OR FLATTER.
  - PROPOSED OFF-SITE IMPERVIOUS SURFACE AREA IS 1,066 SF.
  - TACTILE WARNING MATS ARE TO BE INSTALLED ON ALL WHEELCHAIR RAMPS.
  - ALL PROPOSED VEGETATION WITHIN THE SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30'-10'.
  - ALL ELEVATIONS ARE IN FEET UNLESS OTHERWISE INDICATED.
  - PERVIOUS AREAS (LAWNS, LANDSCAPING, ETC.) SHALL NOT DRAIN TO THE PERMEABLE PAVEMENT EXCEPT FOR INSTANCES WHERE THIS IS UNAVOIDABLE (INTERIOR PARKING LOT ISLANDS).
  - RETAINING WALL SHALL BE DESIGNED BY OTHERS. MALPASS ENGINEERING & SURVEYING, P.C. IS NOT RESPONSIBLE FOR RETAINING WALL DESIGN. BOTTOM ELEVATION SHOWN ON PLAN IS THE PROPOSED GROUND ELEVATION ON THE NORTH SIDE OF THE WALL. RETAINING WALL SHALL BE CONSTRUCTED OF EITHER REINFORCED CONCRETE OR KEYSTONE BLOCK.
  - CONTRACTOR SHALL ABANDON THE EXISTING WATER SERVICE AND SEWER SERVICE AT THE MAINS.
  - ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
  - A PUBLIC ACCESS EASEMENT SHALL BE PROVIDED OVER ANY PORTION OF THE PROPOSED 5' WIDE SIDEWALK ALONG THE FRONTAGE OF THE SITE THAT CROSSES ONTO THE SITE.
  - DOMESTIC WATERLINE SHALL BE PUBLIC FROM THE EXISTING WATER MAIN IN BONHAM AVENUE THROUGH THE WATER METER & PRIVATE AFTER THE WATER METER. FIRELINE SHALL BE PUBLIC FROM THE EXISTING WATER MAIN IN BONHAM AVENUE TO THE BACKFLOW PREVENTER & PRIVATE BEGINNING AT THE BACKFLOW PREVENTER.
  - CONTRACTOR SHALL USE A TRENCH BOX DURING INSTALLATION OF THE SANITARY SEWER MAIN NEAR EXISTING TREES TO REDUCE THE IMPACT ON THE TREES.
  - MINIMUM BUILDING SEPARATION = 10'.
  - ANY EXISTING INTERIOR LOT LINES TO BE ABANDONED BY RECOMBINATION PLAN.
  - ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE & TECHNICAL STANDARDS MANUAL.
  - ALL CITY, STATE, & FEDERAL REGULATIONS SHALL BE FOLLOWED.
  - SITE LIGHTING SHALL BE PROVIDED IN ACCORDANCE WITH SEC. 18-380 OF THE SUBDIVISION REGULATIONS.

**TREES PER DISTURBED ACRE**  
 2.46 ACRES \* 15 = 36.9, 37 TREES REQUIRED  
 \*SEE LANDSCAPING PLAN BY OTHERS FOR PROVIDED TREES

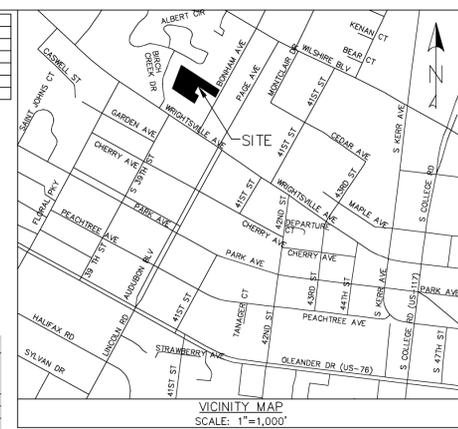
**INTERIOR SHADING**  
 PARKING FACILITY AREA = 29,866 SF  
 REQUIRED INTERIOR SHADING (IS) = 0.2 \* 29,866 = 5,973.2 SF  
 PROVIDED INTERIOR SHADING = 8,073.76 SF  
 \*SEE LANDSCAPING PLAN BY OTHERS FOR PROVIDED TREES

**FOUNDATION PLANTING—SOUTHEAST SIDE OF BUILDING #1**  
 REQUIRED FOUNDATION PLANTING (MAX.) = (42' \* 35') \* 0.12 = 176.4 SF  
 PROVIDED FOUNDATION PLANTING = 186 SF  
 \*SEE LANDSCAPING PLAN BY OTHERS FOR PROVIDED PLANTINGS

**FOUNDATION PLANTING—SOUTHWEST SIDE OF BUILDING #1**  
 REQUIRED FOUNDATION PLANTING (MAX.) = (138' \* 35') \* 0.12 = 579.6 SF  
 PROVIDED FOUNDATION PLANTING = 584.34 SF  
 \*SEE LANDSCAPING PLAN BY OTHERS FOR PROVIDED PLANTINGS

**FOUNDATION PLANTING—SOUTHEAST SIDE OF BUILDING #2**  
 REQUIRED FOUNDATION PLANTING (MAX.) = (184' \* 35') \* 0.12 = 772.80 SF  
 PROVIDED FOUNDATION PLANTING = 792 SF  
 \*SEE LANDSCAPING PLAN BY OTHERS FOR PROVIDED PLANTINGS

INTERIOR LANDSCAPING ISLANDS				
LANDSCAPE ISLAND	TOTAL AREA (SF)	IMPERVIOUS AREA (SF)	PERCENT IMPERVIOUS	INTERIOR SHADING (SF)
LI-1	217.17	0	0	522.38
LI-2	220.39	0	0	525.60
LI-3	250.82	0	0	622.30
LI-4	385.65	0	0	669.22
LI-5	351.65	0	0	661.99
LI-6	226.84	0	0	604.99
LI-7	275.82	0	0	641.25
LI-8	216.07	0	0	546.37
LI-9	216.29	0	0	530.66
LI-10	1,501.91	0	0	2,749



- LEGEND**
- = EXISTING IRON PIPE
  - = SET IRON ROD
  - = SET PK NAIL
  - = POWER POLE
  - = WATER METER
  - = MAILBOX
  - = LIGHT POLE
  - = FIRE HYDRANT
  - = EXISTING TREE
  - = EXISTING TREE (TO BE REMOVED)
  - = EXISTING CONTOUR
  - = CENTERLINE
  - = R/W
  - = EXISTING OVERHEAD LINE
  - = EXISTING DITCH
  - = EXISTING FENCE
  - = PROPERTY LINE
  - = ADJACENT LOT LINES (APPROX.)
  - = PROPOSED BUFFER/SOLID FENCE
  - = PROPOSED SETBACK
  - = PROPOSED CULVERT
  - = PROPOSED STREET YARD
  - = PROPOSED IMPERVIOUS CONCRETE
  - = PROPOSED FOUNDATION PLANTING
  - = PROPOSED INTERIOR SHADING

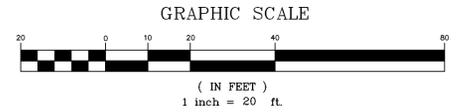
**SITE DATA**  
 PROPERTY OWNER: 12BMM LLC  
 PROJECT ADDRESS: 1006 BONHAM AVENUE  
 PIN NUMBER: R05514-001-022-000, PART OF R05514-001-021-000, PART OF R05514-001-020-000  
 ZONING DISTRICT: MF-M  
 FLOOD AREA: THIS LOT IS LOCATED IN ZONES "X" ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, MAP NUMBER 3720313700 J, DATED: 4-3-06 (PER ARNOLD W. CARSON, PLS)  
 BUILDING SETBACKS, REQUIRED: FRONT-35', REAR-25', INTERIOR SIDE-20', CORNER LOT SIDE-30'  
 BUILDING SETBACKS, PROPOSED: FRONT-268.83', REAR-25', INTERIOR SIDE-20'  
 SITE AREA: 106,955 SF = 2.46 ACRES ±  
 EXISTING BUILDING AREA: 1,911.65 SF = 0.05 ACRES  
 EXISTING BUILDING LOT COVERAGE: 1,911.65 / 106,955 \* 100% = 1.79%  
 PROPOSED BUILDING AREA: 12,804 SF = 0.30 ACRES  
 PROPOSED BUILDING LOT COVERAGE: 12,804 / 106,955 \* 100% = 11.97%  
 ALLOWABLE MAXIMUM BUILDING HEIGHT: 35'  
 PROPOSED MAXIMUM BUILDING HEIGHT: 35'  
 NUMBER OF EXISTING BUILDINGS: 2  
 NUMBER OF PROPOSED BUILDINGS: 2 (42 UNITS TOTAL)  
 BUILDING SIZE:

BUILDING	SQUARE FOOTAGE (PER FLOOR)	NUMBER OF STORIES	NUMBER OF UNITS	NUMBER OF ONE BEDROOM UNITS	NUMBER OF TWO BEDROOM UNITS	NUMBER OF THREE BEDROOM UNITS	EXISTING / PROPOSED
HOUSE	1,510.02	1	N/A	N/A	N/A	N/A	EXISTING (TO BE REMOVED)
SHED	401.63	1	N/A	N/A	N/A	N/A	EXISTING (TO BE REMOVED)
1	5,436	3	18	6	6	6	PROPOSED
2	7,368	3	24	6	12	6	PROPOSED

**TOTAL AMOUNT & PERCENT OF IMPERVIOUS SURFACE AREAS ON-SITE:**

BEFORE DEVELOPMENT		AFTER DEVELOPMENT	
BUILDINGS	% OF SITE	BUILDINGS	% OF SITE
1,911.65	1.79	0	0
977.90	0.91	12,804	11.97
TOTAL	2,889.55	TOTAL	13,721.95

**OFF STREET PARKING CALCULATIONS:**  
 MIN. PARKING REQ. (RESIDENTIAL) = [1.5 x 12] (1 BDRM) + [2 x 18] (2 BDRM) + [2.25 x 12] (3 BDRM) = 81 SPACES  
 MAX. PARKING REQ. (RESIDENTIAL) = 2.5 x 42 = 105 SPACES  
 NUMBER OF PROPOSED PARKING SPACES = 84 (17 SPACES ARE SMALL VEHICLE SPACES)  
 MAX. NUMBER OF ALLOWABLE SMALL VEHICLE SPACES = 0.25 x 81 = 20 SPACES  
 MIN. NUMBER OF REQ. HANDICAPPED SPACES PER ADA STANDARDS FOR ACCESSIBLE DESIGN = 4 SPACES  
 NUMBER OF PROPOSED HANDICAPPED SPACES = 4 SPACES  
 NUMBER OF REQ. BICYCLE PARKING SPACES = 10 SPACES  
 NUMBER OF PROPOSED BICYCLE PARKING SPACES = 10 SPACES  
 THIS SITE IS NOT WITHIN A SPECIAL HIGHWAY OVERLAY DISTRICT OR ANY OTHER ZONING OVERLAY DISTRICT PER THE CITY OF WILMINGTON ZONING MAP (MAP 3137-3, DATED: JULY 30, 2008)  
 CAMA LAND USE CLASSIFICATION PER THE 2006 CAMA PLAN UPDATE LAND CLASSIFICATION MAP IS URBAN.



REV. NO.	DESCRIPTION	DATE

- CITY OF WILMINGTON STANDARD NOTES**
- PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
  - NO LAND DISTURBANCE INCLUDING TREE REMOVAL IS TO OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS.
  - NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED.
  - PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.
  - LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS.
  - ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
  - IT SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER TO ERECT OFFICIAL STREET NAME SIGNS AT ALL INTERSECTIONS ASSOCIATED WITH THE SUBDIVISION IN ACCORDANCE WITH THE TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL. THE SUBDIVIDER MAY ACQUIRE AND ERECT OFFICIAL STREET NAME SIGNS OR MAY CHOOSE TO CONTRACT WITH THE CITY TO INSTALL THE STREET SIGNS AND THE SUBDIVIDER SHALL PAY THE COST OF SUCH INSTALLATION. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
  - TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
  - CALL TOW PLATT WITH TRAFFIC ENGINEERING AT 341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN. CALL TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
  - ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY APRON PANELS, OR CURB AND GUTTER SECTIONS SHALL BE REPLACED.
  - CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
  - PROJECT SHALL COMPLY WITH CFPWA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 332-6558 FOR INFORMATION.
  - IF THE CONTRACTOR DESIRES CFPWA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE & MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
  - ANY IRRIGATION SYSTEM SUPPLIED BY CFPWA WATER SHALL COMPLY WITH THE CFPWA CROSS CONNECTION CONTROL REGULATIONS. CALL 332-6558 FOR INFORMATION.
  - ANY BACKFLOW PREVENTION DEVICES REQUIRED BY CFPWA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USFCOCHR OR ASSE.
  - ALL TRAFFIC CONTROL SIGNS & MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
  - ALL PAVEMENT MARKINGS REGULATING FLOW MUST BE THERMOPLASTIC.
  - A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET (CONTACT 341-5888 FOR MORE DETAILS), IN CERTAIN CASES, AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
  - TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING LAYOUT PRIOR TO ACTUAL STRIPING.
  - A LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAN.
  - CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING ANY DIGGING. 1-800-632-4949.
  - THE BELL SOUTH CONTACT IS STEVE DAYVAULT, BUILDING INDUSTRY CONSULTANT, AT 910-392-8712. CONTACT HIM PRIOR TO STARTING THE PROJECT IN ORDER TO FACILITATE GOOD COMMUNICATION AND MAXIMUM FLEXIBILITY.
  - THE PROCESS FOR TELEPHONE CABLE PLACEMENT:  
 -FINAL GRADE WILL NEED TO BE ESTABLISHED.  
 -POWER WILL PLACE THEIR CABLE FIRST - APPROX. 3' DEEP.  
 -BELL SOUTH/CABLE TV WILL THEN PLACE THEIR CABLE APPROX. 2' DEEP.

**STREET YARD ALONG BONHAM AVENUE**  
 STREET FRONTAGE = 94.80 - 24 = 70.80 FT  
 REQUIRED STREET YARD = 18 \* 70.80 = 1,274.40 SF  
 PROVIDED STREET YARD = 382.57 + 1,010.85 = 1,393.42 SF  
 IMPERVIOUS AREA = 19.41 SF  
 PERCENT IMPERVIOUS = 19.41 / 1,393.42 \* 100% = 1.39%  
 REQUIRED PLANTING = 1,393.42 / 600 = 2.32, 3 CANOPY TREES (OR 3 UNDERSTORY TREES PER 1 CANOPY TREE)  
 2.32 \* 6 = 13.92, 14 SHRUBS  
 \*SEE LANDSCAPING PLAN BY OTHERS FOR PROVIDED PLANTINGS

**OPEN SPACE**  
 REQUIRED OPEN SPACE = 0.35 \* 106,955 = 37,434.25 SF = 0.86 ACRES  
 REQUIRED RECREATION AREA = 0.5 \* 37,434.25 = 18,717.13 SF  
 PROVIDED ACTIVE RECREATION AREA = 0.5 \* 18,717.13 = 9,358.57 SF  
 PROVIDED ACTIVE RECREATION AREA = 9,558.74 SF  
 PROVIDED PASSIVE RECREATION AREA = 0.5 \* 18,717.13 = 9,358.57 SF  
 PROVIDED PASSIVE RECREATION AREA = 9,799.58 SF  
 PROVIDED TOTAL RECREATION AREA = 19,358.32 SF  
 PROVIDED OPEN SPACE = 55,252.63 SF = 1.27 ACRES (TOTAL SITE AREA MINUS STREET YARD AREAS, INTERIOR LANDSCAPING ISLANDS, FOUNDATION PLANTING AREAS, & IMPERVIOUS SURFACE AREAS)

**Approved Construction Plan**

Name	Date
Planning	
Public Utilities	
Traffic	
Fire	

**STORMWATER MANAGEMENT PLAN**  
**APPROVED**  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE \_\_\_\_\_ PERMIT # \_\_\_\_\_  
 SIGNED \_\_\_\_\_

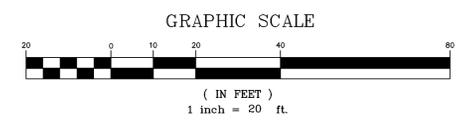
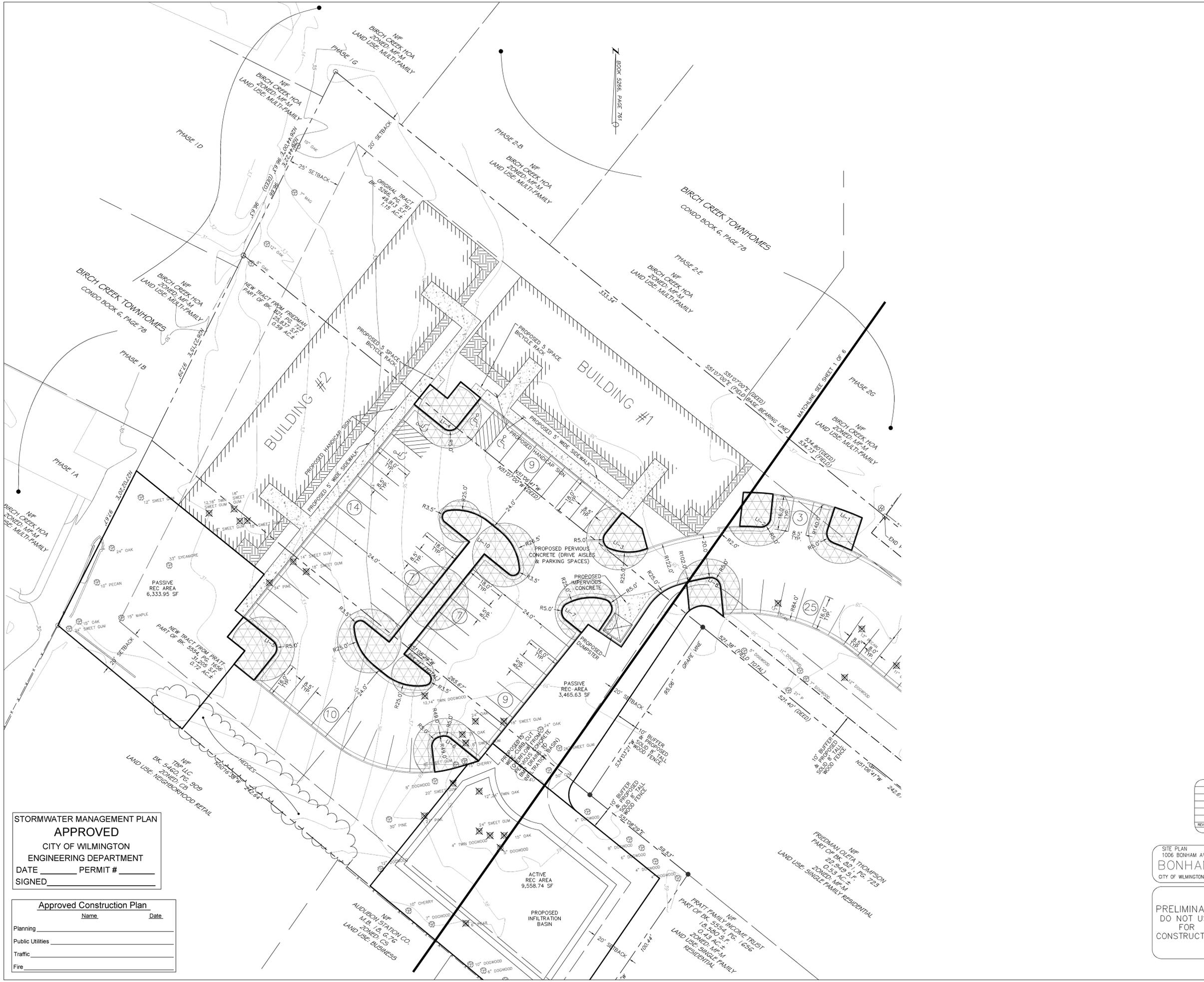
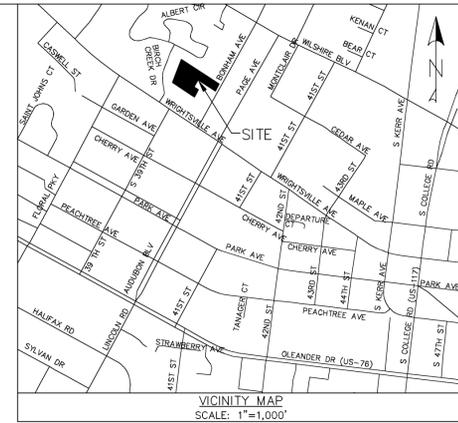
**PRELIMINARY**  
 DO NOT USE  
 FOR  
 CONSTRUCTION

**SITE PLAN**  
 1006 BONHAM AVENUE  
**BONHAM APARTMENTS**  
 CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

**MALPASS ENGINEERING & SURVEYING, P.C.**  
 1134 SHIPYARD BOULEVARD  
 WILMINGTON, NORTH CAROLINA 28412  
 Phone 910-392-8243  
 Fax 910-392-5205 License No. C-2320

Owner: 12BMM LLC  
 P.O. BOX 1229  
 WILMINGTON, NORTH CAROLINA 28402

DATE: 1-7-13  
 SCALE: 1"=20'  
 DRAWN: JCB  
 CHECKED: JEM  
 PROJECT NO: 219  
 SHEET NO: 1  
 OF: 6



STORMWATER MANAGEMENT PLAN  
**APPROVED**  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE \_\_\_\_\_ PERMIT # \_\_\_\_\_  
 SIGNED \_\_\_\_\_

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FREDMAN OLETA THOMPSON  
 PART OF BK 5554, PG. 725  
 0.25 AC ±  
 ZONED MF-M  
 LAND USE: SINGLE FAMILY RESIDENTIAL

PRATT FAMILY INCOME TRUST  
 PART OF BK 5554, PG. 1656  
 0.43 AC ±  
 ZONED MF-M  
 LAND USE: SINGLE FAMILY RESIDENTIAL

AUDUBON NF  
 M.B. 112, G. 76  
 LAND USE: BUSINESS

NF TRP LC 909  
 ZONED CS  
 LAND USE: NEIGHBORHOOD RETAIL

NEW TRACT FROM PRATT  
 PART OF BK 1656  
 3.205 AC ±  
 0.12 AC ±

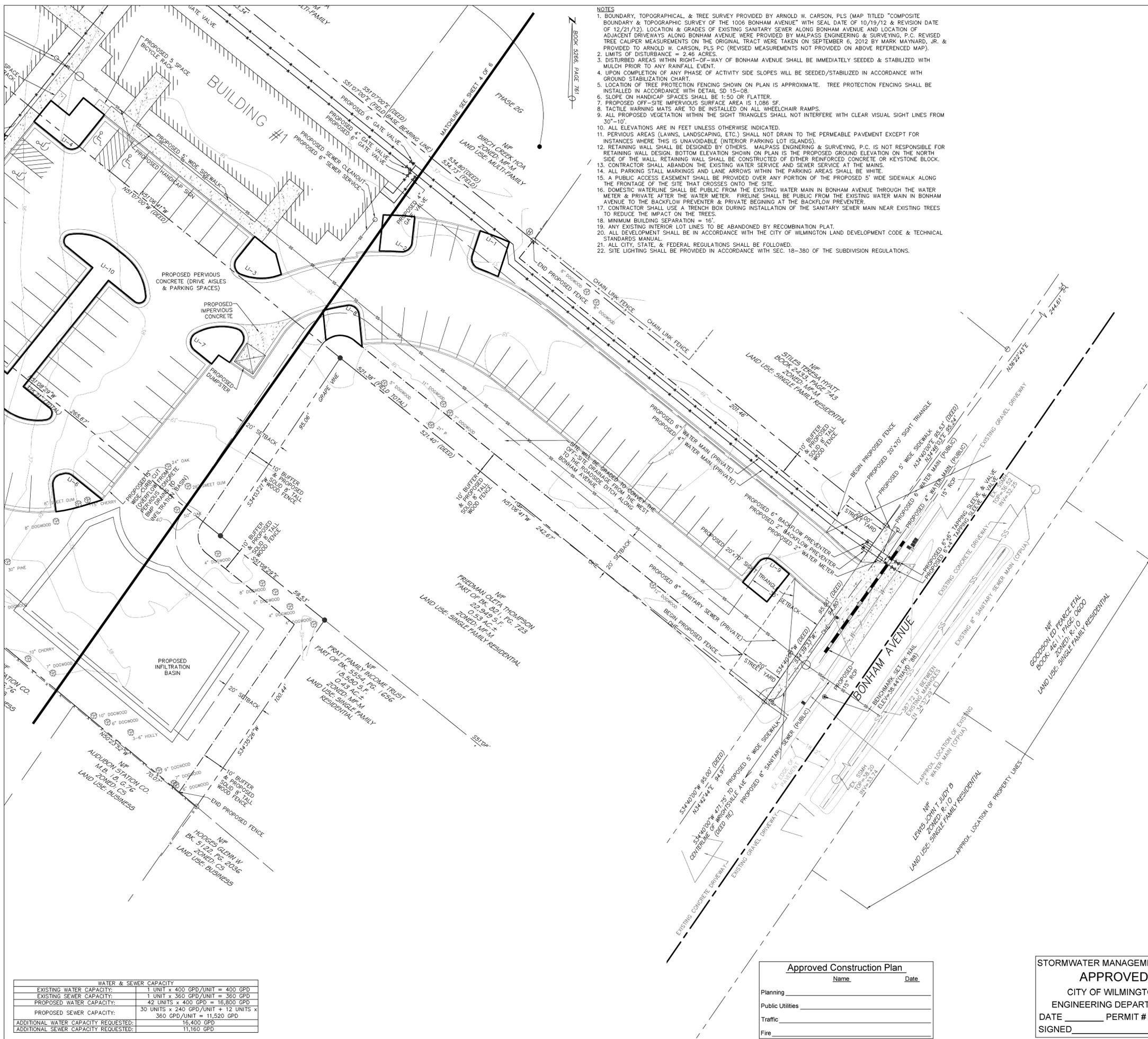
PASSIVE REC AREA  
 6,333.95 SF

PASSIVE REC AREA  
 3,465.63 SF

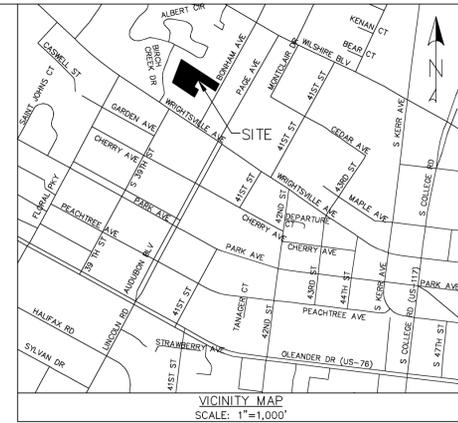
ACTIVE REC AREA  
 9,558.74 SF

GRAPE VINE

10' BUTTER & PROPOSED SOLID BALL WOOD FENCE



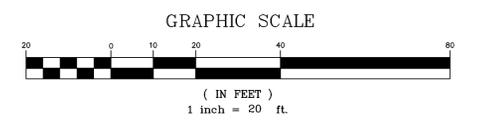
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  - A PUBLIC ACCESS EASEMENT SHALL BE PROVIDED OVER ANY PORTION OF THE PROPOSED 5' WIDE SIDEWALK ALONG THE FRONTAGE OF THE SITE THAT CROSSES ONTO THE SITE.
  - DOMESTIC WATERLINE SHALL BE PUBLIC FROM THE EXISTING WATER MAIN IN BONHAM AVENUE THROUGH THE WATER METER & PRIVATE AFTER THE WATER METER. FIRELINE SHALL BE PUBLIC FROM THE EXISTING WATER MAIN IN BONHAM AVENUE TO THE BACKFLOW PREVENTER & PRIVATE BEGINNING AT THE BACKFLOW PREVENTER.
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  - = PROPOSED WATER MAIN
  - = PROPOSED SANITARY SEWER
  - = PROPOSED GATE VALVE
  - = PROPOSED FIRE HYDRANT

- FIRE AND LIFE SAFETY NOTES**
- LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT AND FDC.
  - HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
  - NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDING(S).
  - CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
  - UNDERGROUND FIRE LINE AND PRIVATE WATER MAINS MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0696 FOR ADDITIONAL INFORMATION.
  - A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
  - HYDRANT MUST BE WITHIN 150' OF THE FDC.
  - THE FDC MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.

- UTILITY SEPARATION NOTES**
- WATER MAINS SHALL HAVE A MINIMUM COVER OF 3'.
  - SANITARY SEWER MAINS SHALL HAVE A MINIMUM COVER OF 3' OR D.I.P. SHALL BE USED.
  - HORIZONTAL SEPARATION BETWEEN WATER AND SANITARY SEWER SHALL BE 10' BETWEEN EDGE OF PIPES.
  - VERTICAL SEPARATION BETWEEN WATER AND SANITARY SEWER:
    - WATER OVER SANITARY SEWER: >18" OR USE D.I.P. (ON BOTH)
    - 10' ON EITHER SIDE OF CROSSING.
    - SANITARY SEWER OVER WATER: USE D.I.P. (ON BOTH) 10' ON EITHER SIDE OF CROSSING.
  - A 24" VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER OR USE D.I.P. ON SANITARY SEWER 10' ON EITHER SIDE OF CROSSING.
  - VERTICAL SEPARATION BETWEEN WATER AND STORM SEWER:
    - WATER OVER STORM SEWER: >18" OR USE D.I.P. ON WATER 10' ON EITHER SIDE OF CROSSING.
    - STORM SEWER OVER WATER: USE D.I.P. ON WATER 10' ON EITHER SIDE OF CROSSING.
  - ALL SANITARY SEWER MANHOLES WITH A DROP OF 30" OR GREATER SHALL HAVE AN INSIDE DIAMETER OF 5' WITH AN INSIDE DROP STRUCTURE.
  - GRAVITY SANITARY SEWER WITHIN 50' OF WETLANDS SHALL BE D.I.P. AND MEET WATER MAIN MATERIALS, TESTING METHODS AND ACCEPTABILITY STANDARDS (15A NCAC 18C).
  - SANITARY SEWER MANHOLES MUST BE GREATER THAN 50' FROM WETLANDS, AS MEASURED TO THE CLOSEST OUTSIDE EDGE.



REV. NO.	DESCRIPTION	DATE

**WATER & SEWER CAPACITY**

EXISTING WATER CAPACITY:	1 UNIT x 400 GPD/UNIT = 400 GPD
EXISTING SEWER CAPACITY:	1 UNIT x 360 GPD/UNIT = 360 GPD
PROPOSED WATER CAPACITY:	42 UNITS x 400 GPD = 16,800 GPD
PROPOSED SEWER CAPACITY:	30 UNITS x 240 GPD/UNIT + 12 UNITS x 360 GPD/UNIT = 11,520 GPD
ADDITIONAL WATER CAPACITY REQUESTED:	16,400 GPD
ADDITIONAL SEWER CAPACITY REQUESTED:	11,160 GPD

**Approved Construction Plan**

Name	Date
Planning	
Public Utilities	
Traffic	
Fire	

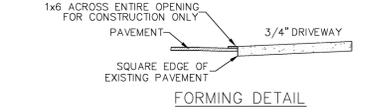
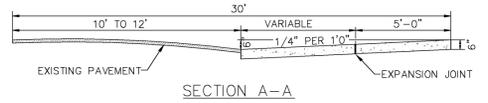
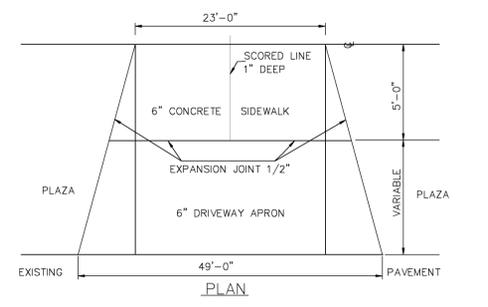
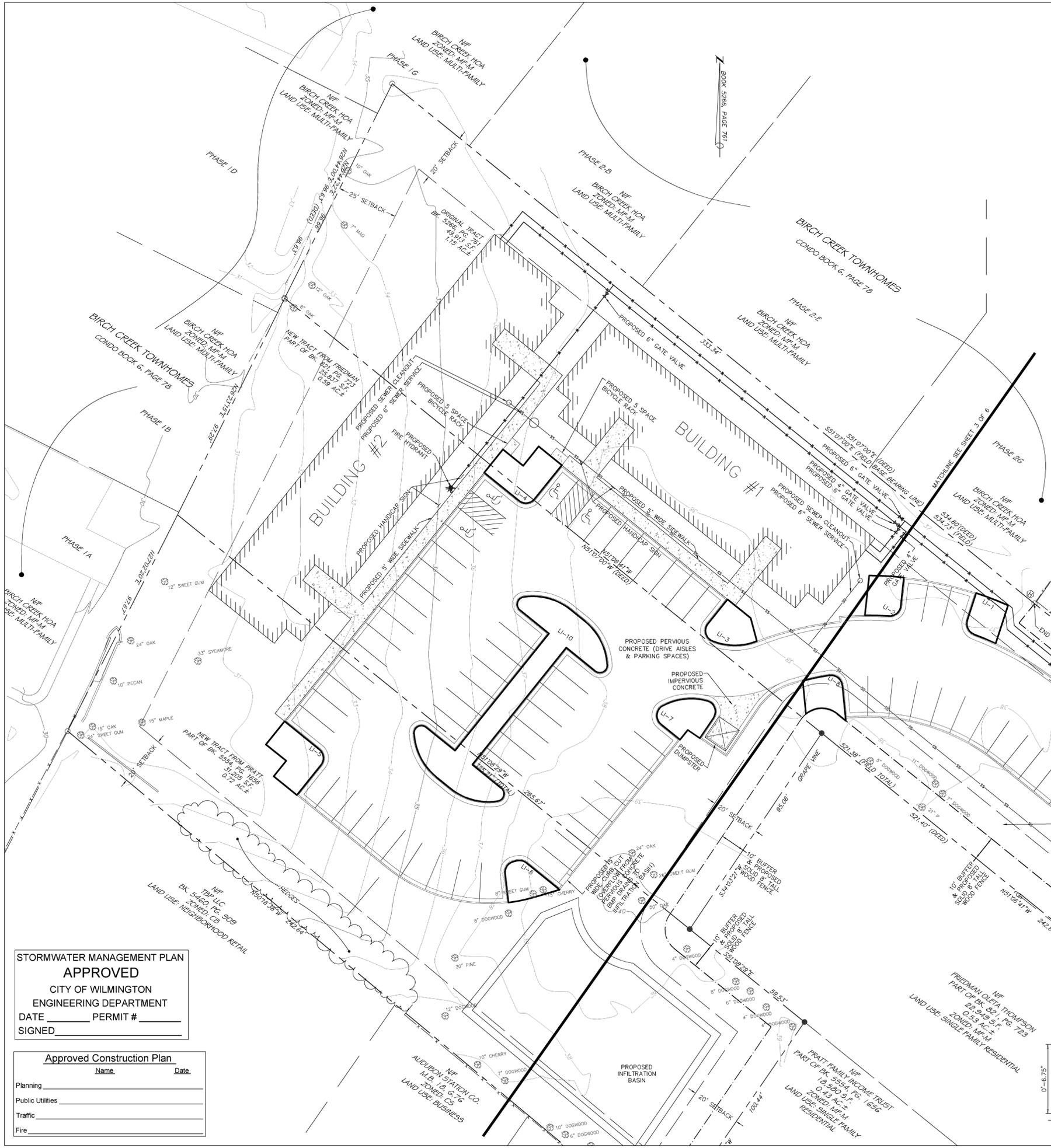
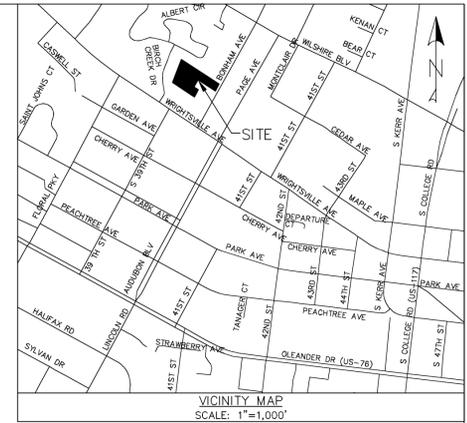
**STORMWATER MANAGEMENT PLAN**  
**APPROVED**  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE \_\_\_\_\_ PERMIT # \_\_\_\_\_  
 SIGNED \_\_\_\_\_

DRAINAGE & UTILITY PLAN  
 1006 BONHAM AVENUE  
**BONHAM APARTMENTS**  
 CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

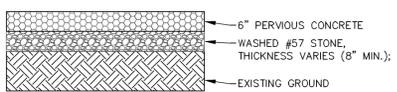
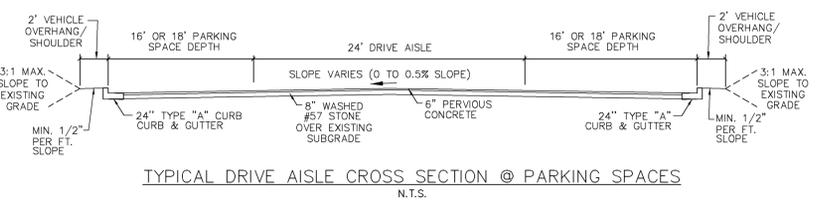
DATE: 1-7-13  
 SCALE: 1"=20'  
 DRAWN: JCB  
 CHECKED: JEM  
 WILMINGTON, NORTH CAROLINA 28412  
 PROJECT NO: 219  
 SHEET NO: 3  
 OF: 6

MALPASS ENGINEERING & SURVEYING, P.C.  
 1134 SHEPARD BOULEVARD  
 WILMINGTON, NORTH CAROLINA 28412  
 Phone 910-392-0243  
 Fax 910-392-0203 License No. C-2320

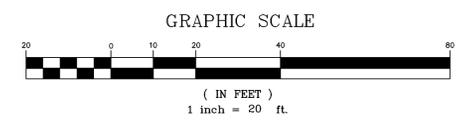
Owner: 1200W LLC  
 P.O. BOX 1229  
 WILMINGTON, NORTH CAROLINA 28402



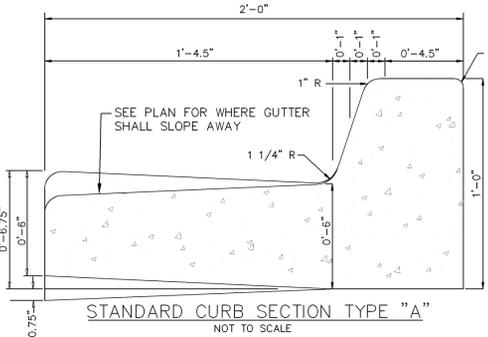
**RESIDENTIAL DRIVEWAY STREETS WITH NO CURB**  
SD 8-05  
NOT TO SCALE



NOTE: CONTRACTOR & DEVELOPER SHALL CONSULT WITH & INSTALL PERVIOUS CONCRETE PER MANUFACTURER'S RECOMMENDATIONS/SPECIFICATIONS (INCLUDING CONCRETE & STONE THICKNESSES IF GREATER THAN SHOWN).  
PERVIOUS CONCRETE DETAIL-DRIVE AISLES & PARKING  
NOT TO SCALE



REV. NO.	DESCRIPTION	DATE



**STORMWATER MANAGEMENT PLAN**  
**APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE \_\_\_\_\_ PERMIT # \_\_\_\_\_  
SIGNED \_\_\_\_\_

Approved Construction Plan

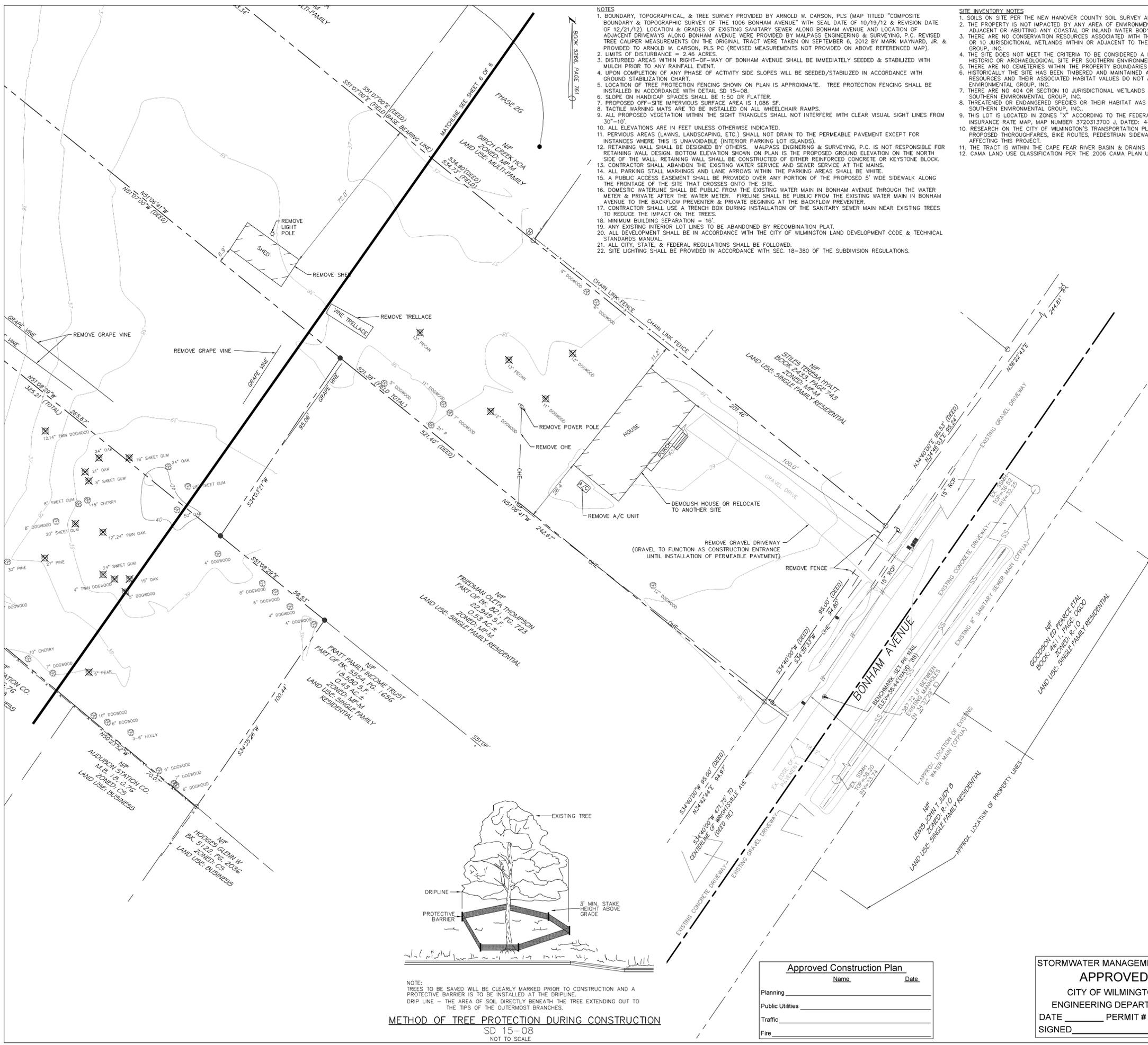
Name	Date
Planning _____	_____
Public Utilities _____	_____
Traffic _____	_____
Fire _____	_____

DRAINAGE & UTILITY PLAN  
1006 BONHAM AVENUE  
**BONHAM APARTMENTS**  
CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

**PRELIMINARY**  
DO NOT USE  
FOR  
CONSTRUCTION

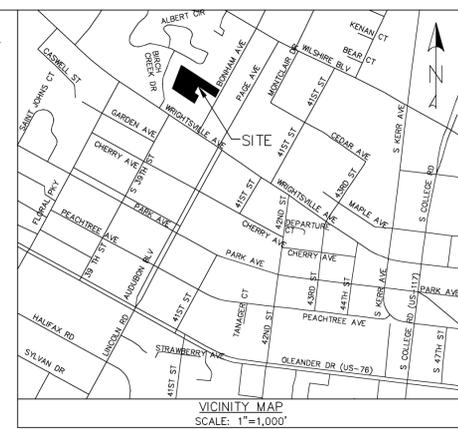
MALPASS ENGINEERING & SURVEYING, P.C.  
1134 SHEPARD BOULEVARD  
WILMINGTON, NORTH CAROLINA 28412  
Phone 910-392-8243  
Fax 910-392-8203 License No. C-2320

DATE: 1-7-13  
SCALE: 1"=20'  
DRAWN: JCB  
CHECKED: JEM  
PROJECT NO: 219  
SHEET NO: 4  
OF: 6



- NOTES**
- BOUNDARY, TOPOGRAPHICAL, & TREE SURVEY PROVIDED BY ARNOLD W. CARSON, PLS (MAP TITLED "COMPOSITE BOUNDARY & TOPOGRAPHIC SURVEY OF THE 1006 BONHAM AVENUE" WITH SEAL DATE OF 10/19/12 & REVISION DATE OF 12/21/12). LOCATION & GRADES OF EXISTING SANITARY SEWER ALONG BONHAM AVENUE AND LOCATION OF ADJACENT DRIVEWAYS ALONG BONHAM AVENUE WERE PROVIDED BY MALPASS ENGINEERING & SURVEYING, P.C. REVISED TREE CALIPER MEASUREMENTS ON THE ORIGINAL TRACT WERE TAKEN ON SEPTEMBER 6, 2012 BY MARK MAYNARD, JR. & PROVIDED TO ARNOLD W. CARSON, PLS PC (REVISED MEASUREMENTS NOT PROVIDED ON ABOVE REFERENCED MAP).
  - LIMITS OF DISTURBANCE = 2.46 ACRES.
  - DISTURBED AREAS WITHIN RIGHT-OF-WAY OF BONHAM AVENUE SHALL BE IMMEDIATELY SEEDED & STABILIZED WITH MULCH PRIOR TO ANY RAINFALL EVENT.
  - UPON COMPLETION OF ANY PHASE OF ACTIVITY SIDE SLOPES WILL BE SEEDED/STABILIZED IN ACCORDANCE WITH GROUND STABILIZATION CHART.
  - LOCATION OF TREE PROTECTION FENCING SHOWN ON PLAN IS APPROXIMATE. TREE PROTECTION FENCING SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL SD 15-08.
  - SLOPE ON HANDICAP SPACES SHALL BE 1:50 OR FLATTER.
  - PROPOSED OFF-SITE IMPERVIOUS SURFACE AREA IS 1,086 SF.
  - TACTILE WARNING MATS ARE TO BE INSTALLED ON ALL WHEELCHAIR RAMPS.
  - ALL PROPOSED VEGETATION WITHIN THE SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30'-10'.
  - ALL ELEVATIONS ARE IN FEET UNLESS OTHERWISE INDICATED.
  - PERVIOUS AREAS (LAWNS, LANDSCAPING, ETC.) SHALL NOT DRAIN TO THE PERMEABLE PAVEMENT EXCEPT FOR INSTANCES WHERE THIS IS UNAVOIDABLE (INTERIOR PARKING LOT ISLANDS).
  - RETAINING WALL SHALL BE DESIGNED BY OTHERS. MALPASS ENGINEERING & SURVEYING, P.C. IS NOT RESPONSIBLE FOR RETAINING WALL DESIGN. BOTTOM ELEVATION SHOWN ON PLAN IS THE PROPOSED ELEVATION ON THE NORTH SIDE OF THE WALL. RETAINING WALL SHALL BE CONSTRUCTED OF EITHER REINFORCED CONCRETE OR KEYSTONE BLOCK.
  - CONTRACTOR SHALL ABANDON THE EXISTING WATER SERVICE AND SEWER SERVICE AT THE MAINS.
  - ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
  - A PUBLIC ACCESS EASEMENT SHALL BE PROVIDED OVER ANY PORTION OF THE PROPOSED 5' WIDE SIDEWALK ALONG THE FRONTAGE OF THE SITE THAT CROSSES ONTO THE SITE.
  - DOMESTIC WATERLINE SHALL BE PUBLIC FROM THE EXISTING WATER MAIN IN BONHAM AVENUE THROUGH THE WATER METER & PRIVATE AFTER THE WATER METER. FIRELINE SHALL BE PUBLIC FROM THE EXISTING WATER MAIN IN BONHAM AVENUE TO THE BACKFLOW PREVENTER & PRIVATE BEGINNING AT THE BACKFLOW PREVENTER.
  - CONTRACTOR SHALL USE A TRENCH BOX DURING INSTALLATION OF THE SANITARY SEWER MAIN NEAR EXISTING TREES TO REDUCE THE IMPACT ON THE TREES.
  - MINIMUM BUILDING SEPARATION = 10'.
  - ANY EXISTING INTERIOR LOT LINES TO BE ABANDONED BY RECOMBINATION PLAN.
  - ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE & TECHNICAL STANDARDS MANUAL.
  - ALL CITY, STATE, & FEDERAL REGULATIONS SHALL BE FOLLOWED.
  - SITE LIGHTING SHALL BE PROVIDED IN ACCORDANCE WITH SEC. 18-380 OF THE SUBDIVISION REGULATIONS.

- SITE INVENTORY NOTES**
- SOILS ON SITE PER THE NEW HANOVER COUNTY SOIL SURVEY ARE Sh (SEAGATE PART).
  - THE PROPERTY IS NOT IMPACTED BY ANY AREA OF ENVIRONMENTAL CONCERN (AEC), AS THE PROPERTY IS ADJACENT OR ABUTTING ANY COASTAL OR INLAND WATER BODY PER SOUTHERN ENVIRONMENTAL GROUP, INC.
  - THERE ARE NO CONSERVATION RESOURCES ASSOCIATED WITH THIS PROJECT, AS THERE ARE NO SECTION 404 OR 10 JURISDICTIONAL WETLANDS WITHIN OR ADJACENT TO THE PROPERTY PER SOUTHERN ENVIRONMENTAL GROUP, INC.
  - THE SITE DOES NOT MEET THE CRITERIA TO BE CONSIDERED A LOCAL, STATE OR FEDERAL RECOGNIZED HISTORIC OR ARCHAEOLOGICAL SITE PER SOUTHERN ENVIRONMENTAL GROUP, INC.
  - THERE ARE NO CEMETERIES WITHIN THE PROPERTY BOUNDARIES PER SOUTHERN ENVIRONMENTAL GROUP, INC.
  - HISTORICALLY THE SITE HAS BEEN TIMBERED AND MAINTAINED AS A RESIDENTIAL YARD; THEREFORE FOREST RESOURCES AND THEIR ASSOCIATED HABITAT VALUES DO NOT APPEAR ON THE SITE PER SOUTHERN ENVIRONMENTAL GROUP, INC.
  - THERE ARE NO 404 OR SECTION 10 JURISDICTIONAL WETLANDS WITHIN THE PROPERTY BOUNDARIES PER SOUTHERN ENVIRONMENTAL GROUP, INC.
  - THREATENED OR ENDANGERED SPECIES OR THEIR HABITAT WAS NOT OBSERVED DURING THE SITE VISIT PER SOUTHERN ENVIRONMENTAL GROUP, INC.
  - THIS LOT IS LOCATED IN ZONES "X" ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, MAP NUMBER 3720313700 J, DATED: 4-3-06 (PER ARNOLD W. CARSON, PLS).
  - RESEARCH ON THE CITY OF WILMINGTON'S TRANSPORTATION PLANNING WEBSITE RESULTED IN NO FINDINGS OF PROPOSED THOROUGHFARES, BIKE ROUTES, PEDESTRIAN SIDEWALKS OR TRAILS, OR TRANSIT FACILITIES AFFECTING THIS PROJECT.
  - THE TRACT IS WITHIN THE CAPE FEAR RIVER BASIN & DRAINS TO BURNT MILL CREEK (C-5w).
  - CAMA LAND USE CLASSIFICATION PER THE 2006 CAMA PLAN UPDATE LAND CLASSIFICATION MAP IS URBAN.



- LEGEND**
- = EXISTING IRON PIPE
  - = SET IRON ROD
  - ⊙ = SET PK NAIL
  - ⊕ = POWER POLE
  - ⊖ = WATER METER
  - ⊗ = MAILBOX
  - ⊙ = LIGHT POLE
  - ⊙ = FIRE HYDRANT
  - ⊙ = EXISTING TREE
  - ⊙ = EXISTING TREE (TO BE REMOVED)
  - ⊙ = EXISTING CONTOUR
  - ⊙ = CENTERLINE
  - ⊙ = R/W
  - ⊙ = OHE = EXISTING OVERHEAD LINE
  - ⊙ = EXISTING DITCH
  - ⊙ = EXISTING FENCE
  - ⊙ = EXISTING WATER MAIN
  - ⊙ = EXISTING SANITARY SEWER MAIN
  - ⊙ = PROPERTY LINE
  - ⊙ = ADJACENT LOT LINES (APPROX.)

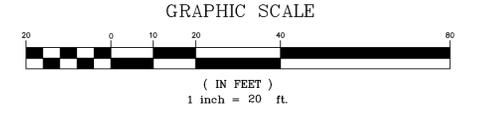
**SITE DATA**  
 PROPERTY OWNER: 12BM LLC  
 PROPERTY ADDRESS: 1006 BONHAM AVENUE  
 PROJECT ADDRESS: 1006 BONHAM AVENUE  
 PIN NUMBER: R05514-001-022-000, PART OF R05514-001-021-000, PART OF R05514-001-020-000  
 ZONING DISTRICT: MF-M  
 FLOOD AREA: THIS LOT IS LOCATED IN ZONES "X" ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, MAP NUMBER 3720313700 J, DATED: 4-3-06 (PER ARNOLD W. CARSON, PLS)  
 BUILDING SETBACKS, REQUIRED: FRONT-35', REAR-25', INTERIOR SIDE-20', CORNER LOT SIDE-30'  
 BUILDING SETBACKS, PROPOSED: FRONT-268.83', REAR-25', INTERIOR SIDE-20'  
 SITE AREA: 106,955 SF = 2.46 ACRES ±  
 EXISTING BUILDING AREA: 1,911.65 SF = 0.05 ACRES  
 EXISTING BUILDING LOT COVERAGE: 1,911.65 / 106,955 \* 100% = 1.79%  
 PROPOSED BUILDING AREA: 12,804 SF = 0.30 ACRES  
 PROPOSED BUILDING LOT COVERAGE: 12,804 / 106,955 \* 100% = 11.97%  
 ALLOWABLE MAXIMUM BUILDING HEIGHT: 35'  
 PROPOSED MAXIMUM BUILDING HEIGHT: 35'  
 NUMBER OF EXISTING BUILDINGS: 2  
 NUMBER OF PROPOSED BUILDINGS: 2 (42 UNITS TOTAL)  
 BUILDING SIZE:

BUILDING	SQUARE FOOTAGE (PER FLOOR)	NUMBER OF STORIES	NUMBER OF UNITS	NUMBER OF ONE BEDROOM UNITS	NUMBER OF TWO BEDROOM UNITS	NUMBER OF THREE BEDROOM UNITS	EXISTING / PROPOSED
HOUSE	1,510.02	1	N/A	N/A	N/A	N/A	EXISTING (TO BE REMOVED)
SHED	401.63	1	N/A	N/A	N/A	N/A	EXISTING (TO BE REMOVED)
1	5,436	3	18	6	6	6	PROPOSED
2	7,368	3	24	6	12	6	PROPOSED

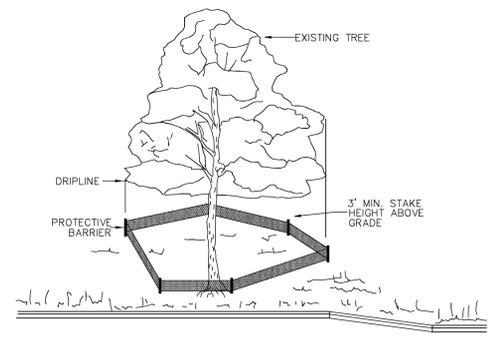
**TOTAL AMOUNT & PERCENT OF IMPERVIOUS SURFACE AREAS ON-SITE:**

BUILDINGS	BEFORE DEVELOPMENT		AFTER DEVELOPMENT	
	AREA (SF)	% OF SITE	EX. (SF)	PROPOSED (SF)
BUILDINGS	1,911.65	1.79	0	12,804
PAVEMENT	977.90	0.91	0	3,485
GRAVEL	977.90	0.91	0	3,485
TOTAL	2,869.55	2.70	0	17,774

**OFF STREET PARKING CALCULATIONS:**  
 MIN. PARKING REQ. (RESIDENTIAL) =  $[1.5 \times 12] (1 \text{ BDRM}) + [2 \times 18] (2 \text{ BDRM}) + [2.25 \times 12] (3 \text{ BDRM}) = 81 \text{ SPACES}$   
 MAX. PARKING REQ. (RESIDENTIAL) =  $2.5 \times 42 = 105 \text{ SPACES}$   
 NUMBER OF PROPOSED PARKING SPACES = 84 (17 SPACES ARE SMALL VEHICLE SPACES)  
 MAX. NUMBER OF ALLOWABLE SMALL VEHICLE SPACES =  $0.25 \times 81 = 20 \text{ SPACES}$   
 MIN. NUMBER OF REQ. HANDICAPPED SPACES PER ADA STANDARDS FOR ACCESSIBLE DESIGN = 4 SPACES  
 NUMBER OF PROPOSED HANDICAPPED SPACES = 4 SPACES  
 NUMBER OF REQ. BICYCLE PARKING SPACES = 10 SPACES  
 NUMBER OF PROPOSED BICYCLE PARKING SPACES = 10 SPACES  
 THIS SITE IS NOT WITHIN A SPECIAL HIGHWAY OVERLAY DISTRICT OR ANY OTHER ZONING OVERLAY DISTRICT PER THE CITY OF WILMINGTON ZONING MAP (MAP 3137-3, DATED: JULY 30, 2008)  
 CAMA LAND USE CLASSIFICATION PER THE 2006 CAMA PLAN UPDATE LAND CLASSIFICATION MAP IS URBAN.



REV. NO.	DESCRIPTION	DATE



**METHOD OF TREE PROTECTION DURING CONSTRUCTION**  
 SD 15-08  
 NOT TO SCALE

NOTE:  
 TREES TO BE SAVED WILL BE CLEARLY MARKED PRIOR TO CONSTRUCTION AND A PROTECTIVE BARRIER IS TO BE INSTALLED AT THE DRIPLINE.  
 DRIPLINE - THE AREA OF SOIL DIRECTLY BENEATH THE TREE EXTENDING OUT TO THE TIPS OF THE OUTERMOST BRANCHES.

**Approved Construction Plan**

Name	Date
Planning	
Public Utilities	
Traffic	
Fire	

**STORMWATER MANAGEMENT PLAN**  
**APPROVED**  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE \_\_\_\_\_ PERMIT # \_\_\_\_\_  
 SIGNED \_\_\_\_\_

**BONHAM APARTMENTS**  
 CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

**MALPASS ENGINEERING & SURVEYING, P.C.**  
 1134 SHIPYARD BOULEVARD  
 WILMINGTON, NORTH CAROLINA 28412  
 Phone 910-392-0243  
 Fax 910-392-0203 License No. C-2320

Owner: 12BM LLC  
 P.O. BOX 1229  
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DATE: 1-7-13  
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