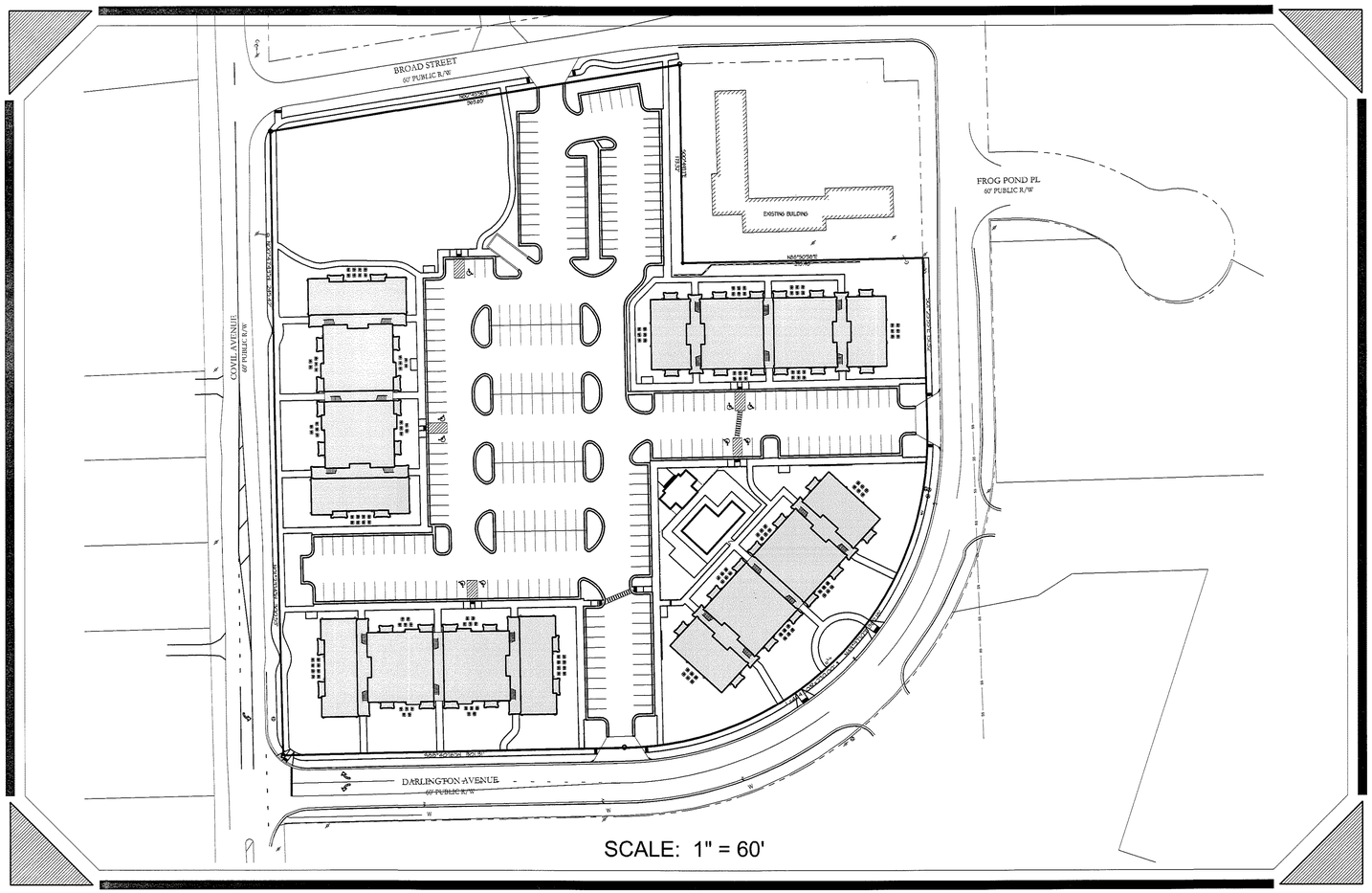
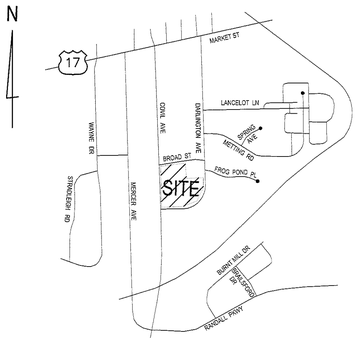
ANNEXE AT THE RESERVE

315 & 323 COVIL AVE.

CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA



SCALE: 1" = 60'



VICINITY MAP SCALE: 1" = 1000'

REVISIONS

1. REV PER CITY COMMENTS 06-16-2015

CPT ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1375
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES P. TRUBY, JR.
06/23/15

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

COVER SHEET
ANNEXE AT THE RESERVE
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

COVER SHEET

SCALE:	NTS
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C1

SHEET INDEX

NO.	TITLE
C1	Cover
C2	Existing Conditions (By Others)
C3	Demolition Plan
C4	Site Inventory Map
C5	Site Plan
C6	Utility Plan
C7	Grading & Drainage Plan
C8	Drainage Area Plan
C9	Stormwater Management Plan
C10	Tree Inventory Map
C11	Off-Site Drainage Area Map
C12	Truck Movement Plan
C13	Trash Compactor Plan & Details
D1	Site Notes & Details
D2	Site Details
D3	Utility Details
PH-01	Site Lighting Plan (By Others)
L1	Landscape Plan (By Others)
L2	Landscape Plan (By Others)
A3.1	Building Elevations (By Others)
A3.2	Building Elevations (By Others)

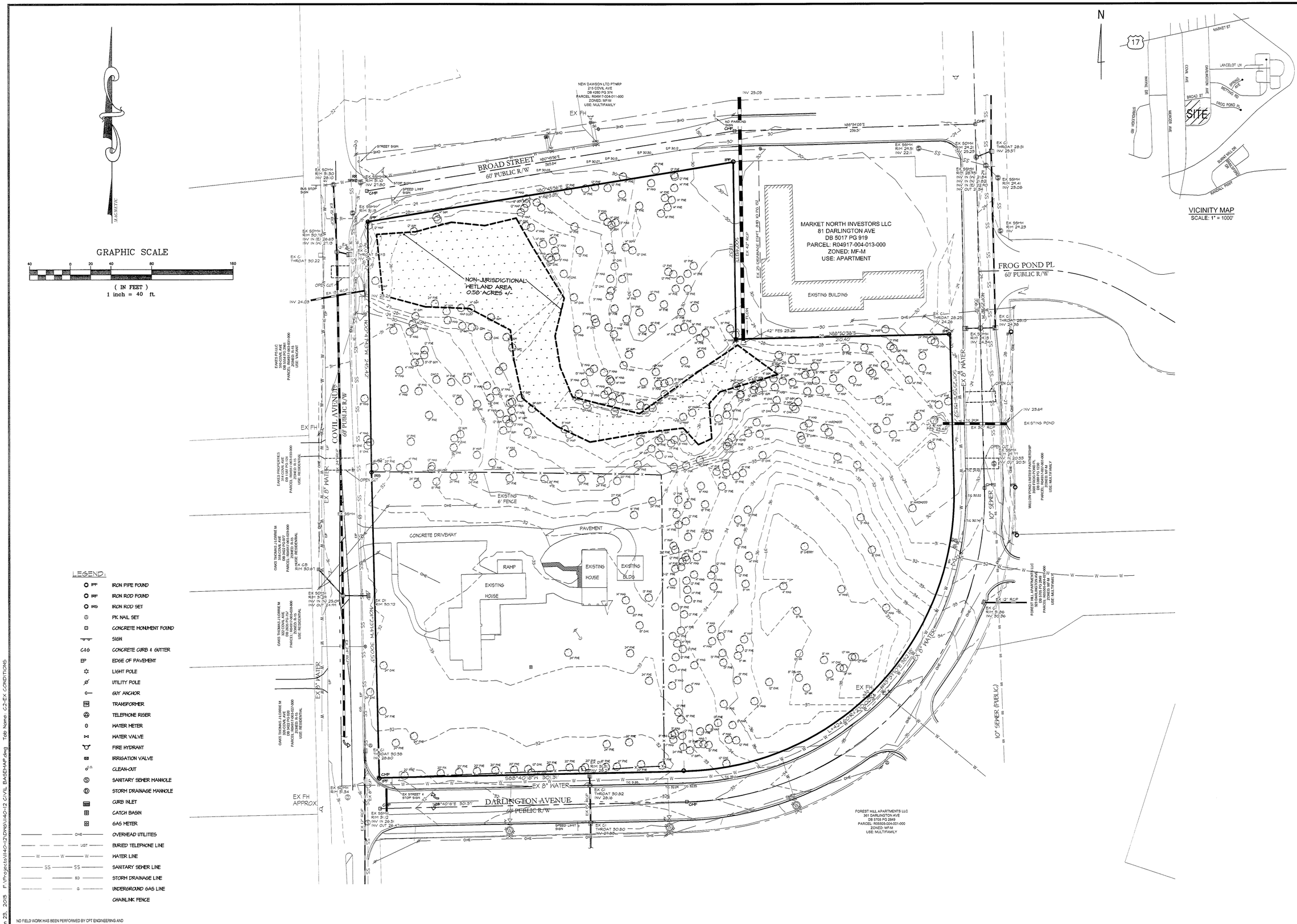
OWNER / DEVELOPER:
BRC WILMINGTON LLC
5826 SAMET DRIVE, SUITE 105
HIGH POINT, NC 27265
PHONE: (336) 889-1512
FAX: (336) 889-1501

ENGINEER:
CPT ENGINEERING & SURVEYING, INC.
4400 TYNING STREET
HIGH POINT, NC 27265
CONTACT: CHUCK TRUBY, P.E.
PHONE: (336) 812-8800 ext:304
FAX: (336) 812-8780

REVISIONS

NO.	DATE	DESCRIPTION
-	-	-

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12 CIVIL BASEMAP.dwg Tab Name: CoverSht1



LEGEND:

- IPF — IRON PIPE FOUND
- IRF — IRON ROD FOUND
- IRS — IRON ROD SET
- PK NAIL SET
- CONCRETE MONUMENT FOUND
- SIGN
- C&G — CONCRETE CURB & GUTTER
- EP — EDGE OF PAVEMENT
- LIGHT POLE
- UTILITY POLE
- GUY ANCHOR
- TRANSFORMER
- TELEPHONE RISER
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- IRRIGATION VALVE
- CLEAN-OUT
- SANITARY SEWER MANHOLE
- STORM DRAINAGE MANHOLE
- CURB INLET
- CATCH BASIN
- GAS METER
- OHE — OVERHEAD UTILITIES
- UGT — BURIED TELEPHONE LINE
- W — WATER LINE
- SS — SANITARY SEWER LINE
- SD — STORM DRAINAGE LINE
- G — UNDERGROUND GAS LINE
- CHAINLINK FENCE

NO FIELD WORK HAS BEEN PERFORMED BY CPT ENGINEERING AND SURVEYING, INC.

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12 CIVIL BASEMAP.dwg Tab Name: C2-EX CONDITIONS

REVISIONS

1. REV PER CITY COMMENTS 06-16-2015

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LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1375
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES P. TRUBY, JR. 06/23/15

EXISTING CONDITIONS (BY OTHERS)

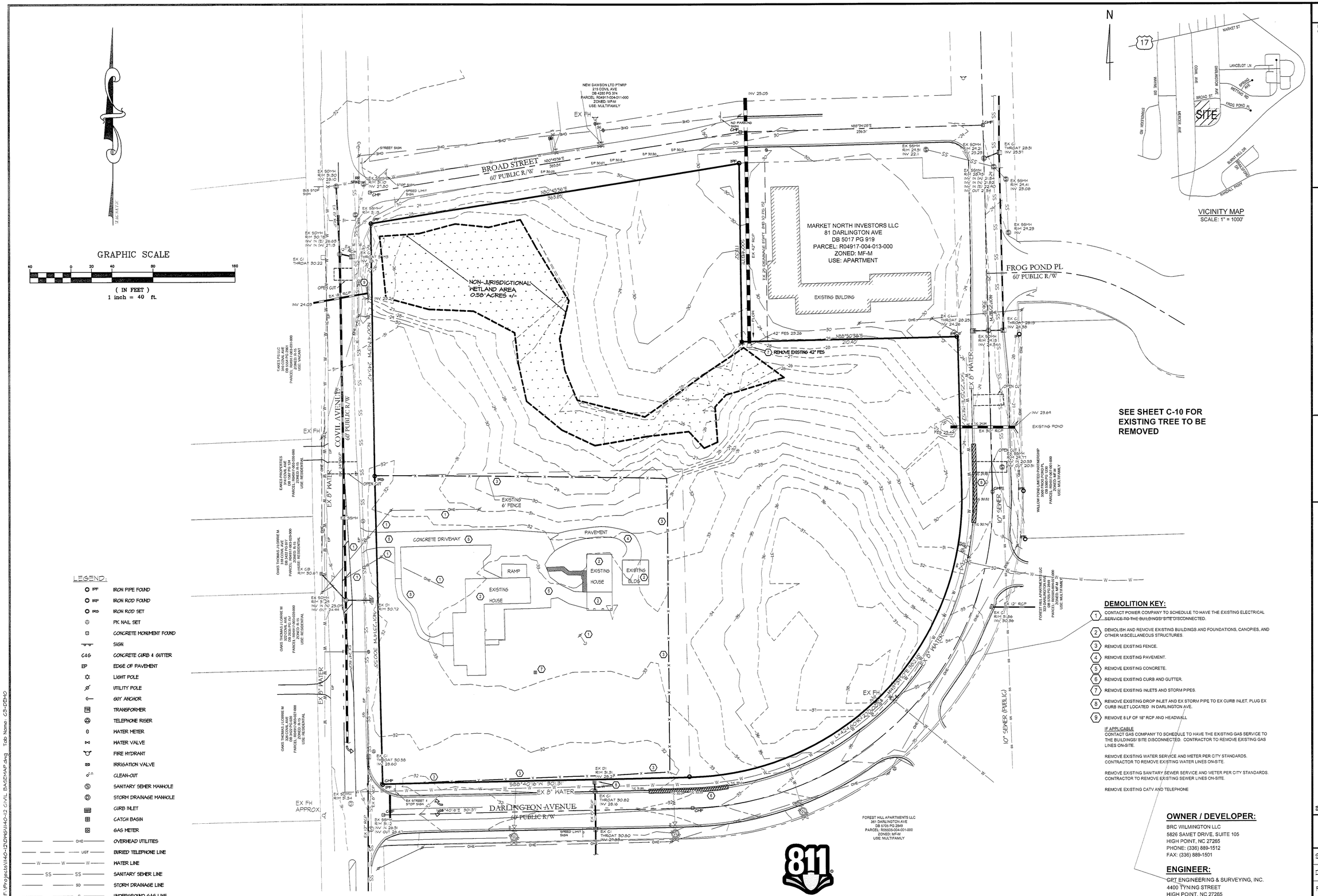
ANNEXE AT THE RESERVE

CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

EXISTING CONDITIONS

SCALE:	1" = 40'
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C2



LEGEND:

IPF	IRON PIPE FOUND
IRF	IRON ROD FOUND
IRS	IRON ROD SET
PK	PK NAIL SET
	CONCRETE MONUMENT FOUND
	SIGN
C&G	CONCRETE CURB & GUTTER
EP	EDGE OF PAVEMENT
	LIGHT POLE
	UTILITY POLE
	GUY ANCHOR
TR	TRANSFORMER
	TELEPHONE RISER
	WATER METER
	WATER VALVE
	FIRE HYDRANT
	IRRIGATION VALVE
CO	CLEAN-OUT
	SANITARY SEWER MANHOLE
	STORM DRAINAGE MANHOLE
	CURB INLET
	CATCH BASIN
	GAS METER
OHE	OVERHEAD UTILITIES
UGT	BURIED TELEPHONE LINE
W	WATER LINE
SS	SANITARY SEWER LINE
SD	STORM DRAINAGE LINE
G	UNDERGROUND GAS LINE
	CHAINLINK FENCE

NO FIELD WORK HAS BEEN PERFORMED BY CPT ENGINEERING AND SURVEYING, INC.

Know what's below.
Call before you dig.

DEMOLITION KEY:

1. CONTACT POWER COMPANY TO SCHEDULE TO HAVE THE EXISTING ELECTRICAL SERVICE TO THE BUILDINGS/ SITE DISCONNECTED.
2. DEMOLISH AND REMOVE EXISTING BUILDINGS AND FOUNDATIONS, CANOPIES, AND OTHER MISCELLANEOUS STRUCTURES.
3. REMOVE EXISTING FENCE.
4. REMOVE EXISTING PAVEMENT.
5. REMOVE EXISTING CONCRETE.
6. REMOVE EXISTING CURB AND GUTTER.
7. REMOVE EXISTING INLETS AND STORM PIPES.
8. REMOVE EXISTING DROP INLET AND EX STORM PIPE TO EX CURB INLET, PLUG EX CURB INLET LOCATED IN DARLINGTON AVE.
9. REMOVE 8 LF OF 18" RCP AND HEADWALL

IF APPLICABLE
CONTACT GAS COMPANY TO SCHEDULE TO HAVE THE EXISTING GAS SERVICE TO THE BUILDINGS/ SITE DISCONNECTED. CONTRACTOR TO REMOVE EXISTING GAS LINES ON-SITE.

REMOVE EXISTING WATER SERVICE AND METER PER CITY STANDARDS. CONTRACTOR TO REMOVE EXISTING WATER LINES ON-SITE.

REMOVE EXISTING SANITARY SEWER SERVICE AND METER PER CITY STANDARDS. CONTRACTOR TO REMOVE EXISTING SEWER LINES ON-SITE.

REMOVE EXISTING CATV AND TELEPHONE

OWNER / DEVELOPER:

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REVISIONS

1. REV PER CITY COMMENTS 06-16-2015

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PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES E. TRUBY, JR.
06/25/15

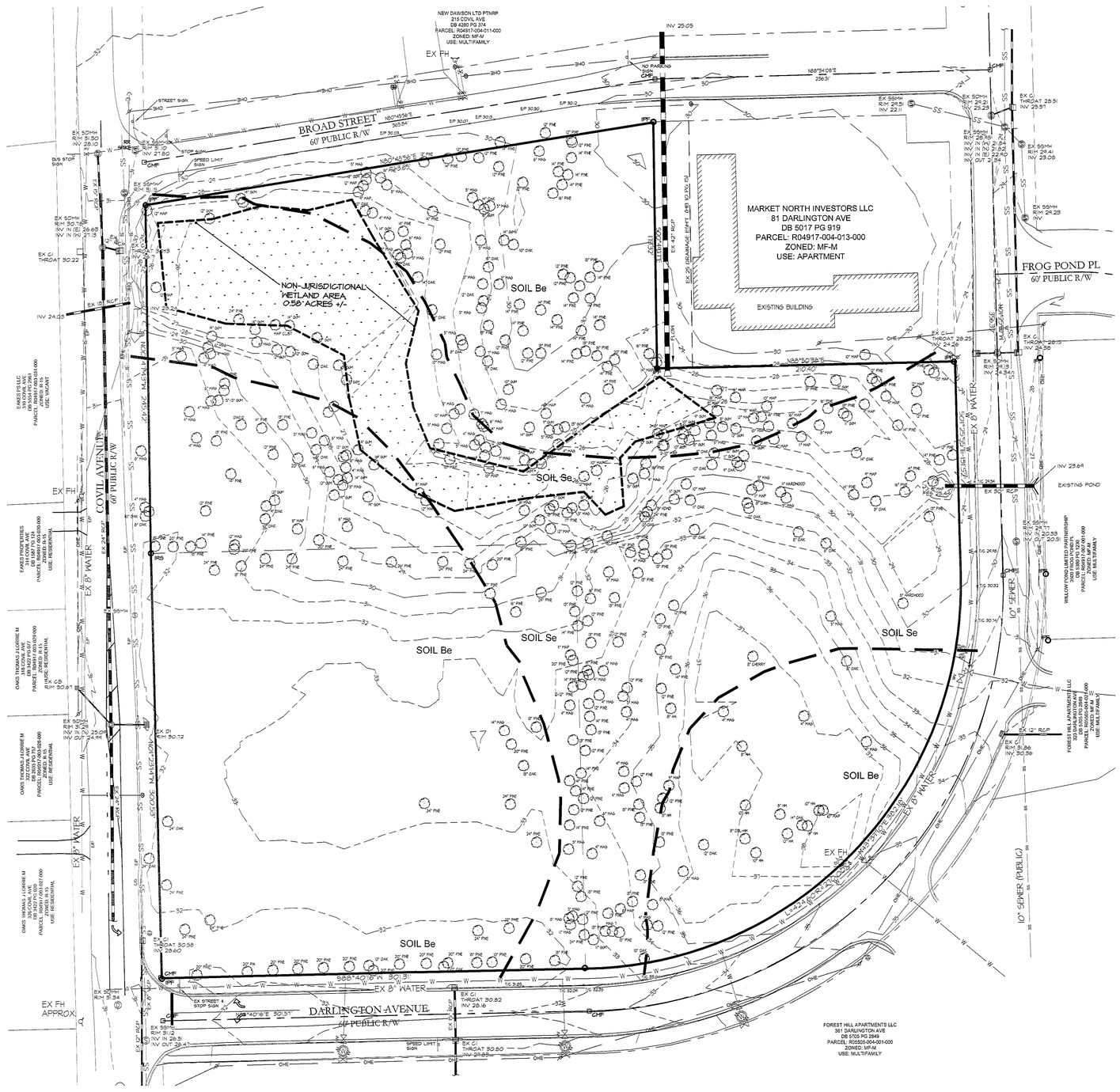
DEMOLITION PLAN
ANNEXE AT THE RESERVE
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

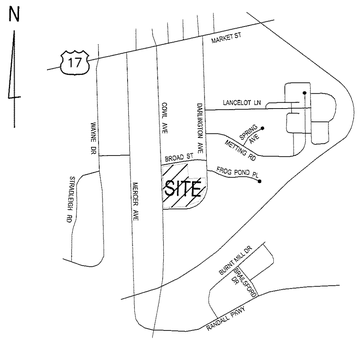
DEMOLITION PLAN

SCALE:	1" = 40'
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C3

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12 CIVIL BASEMAP.dwg Tab Name: C3-DEMO



THIS IS NOT A SURVEY. NO FIELD WORK HAS BEEN PERFORMED BY CPT ENGINEERING AND SURVEYING, INC.



VICINITY MAP
SCALE: 1" = 1000'

SITE INFORMATION:

SITE ACREAGE: 6.4± Ac.

EXISTING ZONING: MF-MH (CD)

SITE ADDRESS: 315 & 323 COVIL AVE.

PARCEL ID: R05505-004-015-000 & R04917-004-012-000

DEED REFERENCE: DEED BOOK 5673, PAGE 2248

ACCORDING TO WWW.NCHISTORICSITES.ORG AND WWW.NATIONALREGISTEROFHISTORICPLACES.COM, THE SITE DOES NOT CONTAIN A RECOGNIZED STATE OR FEDERAL HISTORIC SITE.

ACCORDING TO WWW.NCGENWEB.US/NEWHANOVER/CEMETERIES3.HTML THERE ARE NO CEMETERIES, BURIAL SITES OR BURIAL GROUNDS LOCATED ON THE SITE.

ACCORDING TO WWW.FWS.GOV THERE ARE NO PROTECTED SPECIES HABITATES LOCATED ON THE SITE.

THERE ARE NO PROPOSED THOROUGHFARES, BIKE ROUTES, TRAILS OR TRANSIT FACILITIES LOCATED ON SITE.

CAMA LAND USE CLASSIFICATION: URBAN

SITE DRAINS TO EXISTING STORM LOCATED ON COVIL AVENUE

TREE LEGEND:

MAP = MAPLE
MAG = MAGNOLIA
HW = HARDWOOD
DBL = DOUBLE

REVISIONS

1. REV PER CITY COMMENTS 06-16-2015

ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1375
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8600 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES E. TRUSTY, JR.
06/25/15

SITE INVENTORY MAP

ANNEXE AT THE RESERVE

CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

SITE INVENTORY MAP

SCALE:	1" = 40'
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C-4

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12 CIVIL BASEMAP.dwg Tab Name: C4-SITE INVENTORY MAP

1. Prior to any clearing, grading or construction activity, tree protection fencing shall be installed around protected trees or groves of trees. No construction workers, tools, materials, or vehicles are permitted within the tree protection fencing.
2. 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.
3. 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 instruction on tree protection methods.
4. All pavement markings in public rights-of-way and for driveways are to be thermoplastic and meet City and/or NCDOT standards.
5. Once streets are open to traffic, contact Traffic Engineering regarding the installation of traffic and street name signs. Proposed street names must be approved prior to installation of street name signs.
6. 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.
7. Contact Traffic Engineering at 910-341-7888 to ensure that all traffic signal facilities and equipment are shown on the plan.
8. Call Traffic Engineering at 910-341-7888 forty-eight (48) hours prior to any excavation in the right-of-way.
9. Traffic Engineering must approve of pavement marking prior to actual striping.
10. All parking stall markings and lane arrows within the parking areas shall be white.
11. All traffic control signs and markings off the right-of-way are to be maintained by the property owner in accordance with MUTCD standards.
12. Stop signs and street signs to remain in place during construction.
13. Tactile warning mats will be installed on all wheelchair ramps.
14. A utility cut permit is required for each open cut of a city street. Contact 341-5888 for more details.
15. Any broken or missing sidewalk panels, driveway panels and curbing will be replaced.
16. Contact Traffic Engineering at 910-341-7888 to discuss street lighting options.
17. Water and sewer service shall meet Cape Fear Public Utility Authority (CFPUA) details and specifications.
18. Project shall comply with CFPUA Cross Connection Control requirements. Water meter(s) cannot be released until all requirements are met and the State has given their final approval. Call 910-343-3910 for information.
19. If the contractor installs CFPUA water for construction, he shall apply in advance for this service and must provide a reduced pressure zone (RPZ) backflow prevention device on the developer's side of the water meter box.
20. Any irrigation system supplied by CFPUA water shall comply with the CFPUA Cross Connection Control regulations. Call 910-343-3910 for information.
21. Any irrigation system shall be equipped with a rain and freeze sensor.
22. Any backflow prevention devices required by the CFPUA will need to be on the list of approved devices by USCFCCCHR or ASSE.
23. Contractor to field verify existing water and sewer service locations, sizes and materials prior to construction. Engineer to be notified of any conflicts.
24. Contractor shall maintain all-weather access for emergency vehicles at all times during construction.
25. Underground fire line(s) 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 910-341-0696.
26. No obstructions are permitted in the space between thirty (30) inches and ten (10) feet above the ground within the triangular sight distance.
27. Contact the North Carolina One Call Center at 1-800-632-4949 prior to doing any digging, clearing, or grading

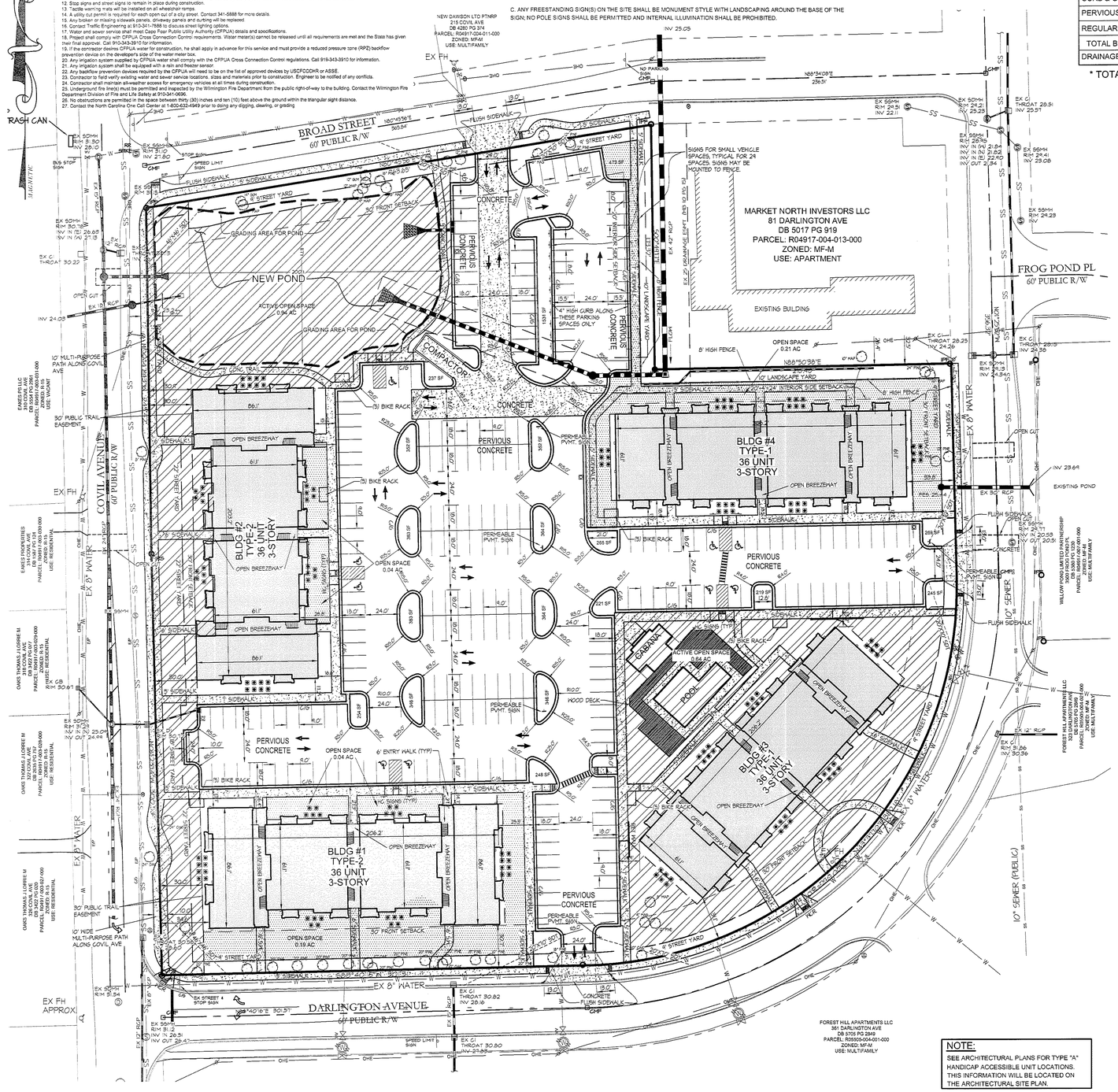
GENERAL NOTES:

A. ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.

B. 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.

C. ANY FREESTANDING SIGN(S) ON THE SITE SHALL BE MONUMENT STYLE WITH LANDSCAPING AROUND THE BASE OF THE SIGN; NO POLE SIGNS SHALL BE PERMITTED AND INTERNAL ILLUMINATION SHALL BE PROHIBITED.

HVAC EQUIPMENT, AIR CONDITIONING WINDOW UNITS, ELECTRICAL EQUIPMENT, FIRE ESCAPES, SOLID WASTE FACILITIES AND OTHER UTILITY EQUIPMENT SHALL NOT BE LOCATED ALONG FACADES WITH STREET FRONTAGE.



GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

THIS IS NOT A SURVEY. NO FIELD WORK HAS BEEN PERFORMED BY CPT ENGINEERING AND SURVEYING, INC.

SIGHT DISTANCE TRIANGLE NOTE:
ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30" TO 10'.

CONSTRUCTION ACCESS NOTE:
THE USE OF COVIL AVE FOR DRIVEWAY ACCESS TO THE SITE BY COMMERCIAL VEHICLES DURING CONSTRUCTION SHALL BE PROHIBITED.

NOTE:
SEE ARCHITECTURAL PLANS FOR TYPE "A" HANDICAP ACCESSIBLE UNIT LOCATIONS. THIS INFORMATION WILL BE LOCATED ON THE ARCHITECTURAL SITE PLAN.

IMPERVIOUS SURFACE CALCULATIONS

	PARKING AREA # 1	PARKING AREA # 2	PARKING AREA # 3	IMPERVIOUS TOTALS
	ACRES / SQ. FT.	ACRES / SQ. FT.	ACRES / SQ. FT.	ACRES / SQ. FT.
BUILDINGS	0.193 AC. / 8,403 SF	0.97 AC. / 42,116 SF	0.177 AC. / 7,711 SF	→ 1.34 AC. / 58,230 SF
SIDEWALK	0.035 AC. / 1,522 SF	0.234 AC. / 10,198 SF	0.041 AC. / 1,792 SF	→ 0.31 AC. / 13,512 SF
CURB & GUTTER	0.014 AC. / 610 SF	0.137 AC. / 5,983 SF	0.014 AC. / 605 SF	→ 0.165 AC. / 7,198 SF
PERVIOUS CONCRETE	0.144 AC. / 6,294 SF	1.570 AC. / 68,380 SF	0.152 AC. / 6,609 SF	→ 1.866 AC. / 81,283 SF
REGULAR CONCRETE	0 ↓	0.217 AC. / 9,472 SF ↓	0 ↓	→ 0.217 AC. / 9,472 SF ↓
TOTAL BUA	0.386 AC. / 16,829 SF	3.126 AC. / 136,149 SF	0.384 AC. / 16,717 SF	→ 3.90 AC. / 169,695 SF
DRAINAGE AREA	0.443 AC.	3.740 AC.	0.495 AC.	→ 4.68 AC.

* TOTAL DRAINAGE AREA: 4.68 ACRES

TREE LEGEND:

MAP = MAPLE
MAG = MAGNOLIA
HW = HARDWOOD
DBL = DOUBLE

SITE INFORMATION:

SITE ACREAGE: 6.4± Ac.

EXISTING ZONING: MF-MH (CD)

SITE ADDRESS: 315 & 323 COVIL AVE.

PARCEL ID: R05505-004-015-000 & R04917-004-012-000

DEED REFERENCE: DEED BOOK 5673, PAGE 2248

TOTAL NUMBER OF BUILDINGS: 4 (3 STORY)

TOTAL NUMBER OF UNITS: 144

USE: APARTMENTS

UNIT MIX:
48 (1 BEDROOM)
72 (2 BEDROOM)
24 (3 BEDROOM)

MAXIMUM DENSITY ALLOWED PER ZONING: 25 UNITS / AC

DENSITY SHOWN: 22.5 UNITS / AC

BUILDING HEIGHT: 45 FT

PARKING CALCULATION:

PARKING REQUIRED:
48 (1 BEDROOM) X 1.5 = 72
72 (2 BEDROOM) X 2.0 = 144
24 (3 BEDROOM) X 2.25 = 54
TOTAL REQUIRED = 270

TOTAL PARKING SPACES PROVIDED = 274
(INCLUDES 9 HC SPACES)

ADA PARKING:

ADA PARKING REQUIRED:
201 - 300 = 7 SPACES
(1 REQUIRED TO BE VAN SPACE)

TOTAL ADA SPACES PROVIDED: 9 SPACES

BUILDING SETBACKS (MF-MH):

FRONT: 30 FT
REAR: 25 FT
INTERIOR SIDE: 20 FT

ADDITIONAL REAR AND SIDE YARD SETBACKS FOR BLDG HEIGHT ABOVE 35 FEET
FIRST 10 FEET ABOVE 35 FEET: 4 FEET FOR EACH 10 FOOT INCREMENT, OR PORTION THEREOF

10.1 FEET TO 30 FEET ABOVE 35 FEET: 6 FEET FOR EACH 10 FOOT INCREMENT

30.1 FEET OR MORE ABOVE 35 FEET: 8 FEET FOR EACH 10 FOOT INCREMENT

SETBACK TABLE:

BLDG #1 FRONT: 30' MIN. 30.7' ACTUAL (DARLINGTON) 34.6' (COVIL)
BLDG #2 FRONT: 30' MIN. 30.0' - 30.9' ACTUAL (COVIL)
BLDG #3 FRONT: 30' MIN. 31.1' ACTUAL (DARLINGTON)
BLDG #4 FRONT: 30' MIN. 33.8' ACTUAL (DARLINGTON)
INTERIOR SIDE: 20 ÷ 4 = 24' MIN. 26.4' - 32.5' ACTUAL

OPEN SPACE:

TOTAL OPEN SPACE REQUIRED: 6.4 X 0.35 = 2.24 AC
REQUIRED ACTIVE OR PASSIVE: 2.24 X 0.5 = 1.12 AC
REQUIRED ACTIVE, PASSIVE, OR OPEN SPACE: 2.24 X 0.5 = 1.12 AC

PROVIDED (ACTIVE): 1.58 AC
PROVIDED (OPEN SPACE): 0.44 AC
TOTAL PROVIDED: 2.02 AC
(THIS SITE IS 9.583 SF UNDER THE REQUIRED OPEN SPACE, FEE IN LIEU OF WILL BE REQUIRED)

BUILT-UPON CALCULATION:

EXISTING BUA: 14,039 SF (TO BE REMOVED)

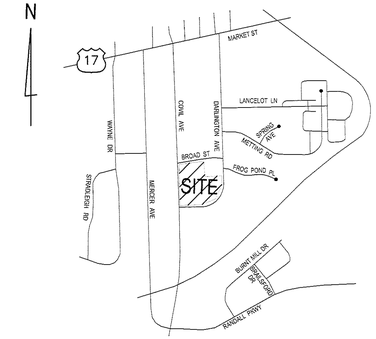
PROPOSED:
BUILDINGS: 58,230 SF (20.9 % LOT COVERAGE)
PARKING LOT AND DRIVES: 81,283 SF (PERVIOUS CONCRETE)
SIDEWALKS & POOL: 38,339 SF
TOTAL: 177,852 SF OR 4.08 AC
(INCLUDES PERVIOUS CONCRETE)

WITH PERVIOUS CONCRETE CREDIT:
58,230 + 81,283 (0.25) + 38,339 SF = 116,890 SF OR 2.68 AC
BUILT UPON AREA % = 2.68 AC / 6.4 AC = 41.87 %

ALL THE NECESSARY APPROVALS HAVE BEEN/ WILL BE OBTAINED FROM THE STATE/ CORPS FOR ANY WETLAND DISTURBANCE AND STREAM CROSSING/DISTURBANCE

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____



VICINITY MAP
SCALE: 1" = 1000'

RETAINING WALL NOTES:

1. PROPOSED RETAINING WALLS ARE FOR ILLUSTRATION PURPOSES ONLY DEPICTING CHANGE IN GRADE REQUIREMENTS. CPT ENGINEERING AND SURVEYING, INC. IS NOT RESPONSIBLE FOR RETAINING WALL DESIGNS.

2. RETAINING WALL PERMITS WILL BE REQUIRED BY THE CITY OF WILMINGTON INSPECTIONS DEPARTMENT.

3. ANY RETAINING WALL > 4' REQUIRE A BUILDING PERMIT FROM BUILDING INSPECTIONS.

GENERAL H.C. ACCESSIBILITY NOTES:

1. LANDINGS OUTSIDE ALL DOORS SHALL BE SIZED PER NCBC, BE AT THE SAME ELEVATION AS THE FFE, AND SHALL HAVE A MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL.

2. THE SLOPES IN THE H.C. PARKING SPACE/ACCESS AISLE AREA SHALL NOT EXCEED 2 % IN ANY DIRECTION INCLUDING IN THE DIAGONAL.

3. THERE SHALL BE NO DESIGNATED PEDESTRIAN ROUTES/SIDEWALKS WITHIN THE SITE, EXCEPT WHERE LABELED AS A RAMP WITH RAILS, WHICH EXCEED A 5 % SLOPE IN THE DIRECTION OF TRAVEL AND A 2 % CROSSLOPE.

4. ALL PEDESTRIAN ROUTES >5 % (1:20), IF ANY, ARE LABELED AS 'RAMPS' SHOWING SLOPES, LEVEL LANDINGS AT TOP AND BOTTOM (MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL), RAILINGS/GUARDRAILS, AND SHALL COMPLY WITH NCBC.

5. THERE SHALL BE LEVEL TURNING AREAS (MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL) ON ALL SIDEWALKS (INCLUDING SIDEWALKS ALONG STREETS) WHERE AN INTERSECTING SIDEWALK CONNECTS WITH IT.

6. ALL STAIRS SHALL HAVE SLIGHTLY SLOPED LANDINGS (MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL), AT THE TOP AND BOTTOM AND SHALL COMPLY WITH NCBC.

7. STAIRS / STEPS WITH LESS THAN A 12" ELEVATION CHANGE SHALL COMPLY WITH NCBC 1003.5

8. THE SLOPES AT THE PASSENGER LOADING ZONE AND ADJACENT VEHICLE PULL UP SPACE SHALL NOT EXCEED 2 % IN ANY DIRECTION INCLUDING IN THE DIAGONAL.

NOTE:

ALL FILL PLACED BETWEEN EXISTING GROUND AND BOTTOM OF STONE BEDDING IN PERVIOUS PARKING AREAS SHALL BE CLEAN SAND.

MEDIA REQUIREMENTS NOTE:

ALL FILL MATERIAL PLACED WITHIN THE INFILTRATION BASINS OR UNDER PERVIOUS CONCRETE SHALL BE CLEANED, WASHED, COURSE MASONRY SAND SUCH AS ASTM C33. THE SAND PARTICLES SHALL BE LESS THAN 2 mm AVERAGE DIAMETER.

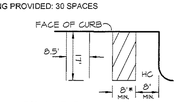
BICYCLE PARKING:

EACH NEW COMMERCIAL OR OFFICE DEVELOPMENT REQUIRING 25 OR MORE AUTO PARKING SPACES SHALL MAKE PROVISIONS FOR PARKING A MINIMUM OF 5 BICYCLES. EACH ADDITIONAL 100 AUTO PARKING SPACES ABOVE THE MINIMUM 25 SPACES SHALL REQUIRE PROVISIONS FOR PARKING OF 5 ADDITIOAN BICYCLES UP TO A MAXIMUM OF 25 BICYCLES. BICYCLE PARKING FACILITIES SHALL BE PROVIDED WITHIN 20 FEET OF THE PRIMARY ENTRANCE TO THE FACILITY. (SEE LOCATIONS ON PLAN)

AUTO PARKING SPACES:	BICYCLES REQUIRED:
25	5
+ 100	5
+ 100	5
+ 100	5
+ 26	5
= 351 AUTO SPACES	25 MAX.

** DUE TO A CONDITION ON THIS SITE, REQUIRED BICYCLE PARKING IS: 30 SPACES

BICYCLE PARKING PROVIDED: 30 SPACES



- *8' MIN. FOR VAN ACCESSIBLE SPACE
- HC SPACES & AISLES TO BE 1/4" PER FT. MAX.
- HC SPACES & AISLES SHALL BE PAVED.

TYPICAL PARKING SPACE DETAIL
N.T.S.

OWNER / DEVELOPER:

BRC WILMINGTON LLC
5826 SAMET DRIVE, SUITE 105
HIGH POINT, NC 27265
PHONE: (336) 889-1512
FAX: (336) 889-1501

ENGINEER:

CPT ENGINEERING & SURVEYING, INC.
4400 TYNING STREET
HIGH POINT, NC 27265
CONTACT: CHUCK TRUBY, P.E.
PHONE: (336) 812-8800 ext:304
FAX: (336) 812-8780

REVISIONS
1. REV PER CITY COMMENTS 06-8-2015

CPT ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1875
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES R. TRUBY, JR.
06/23/15

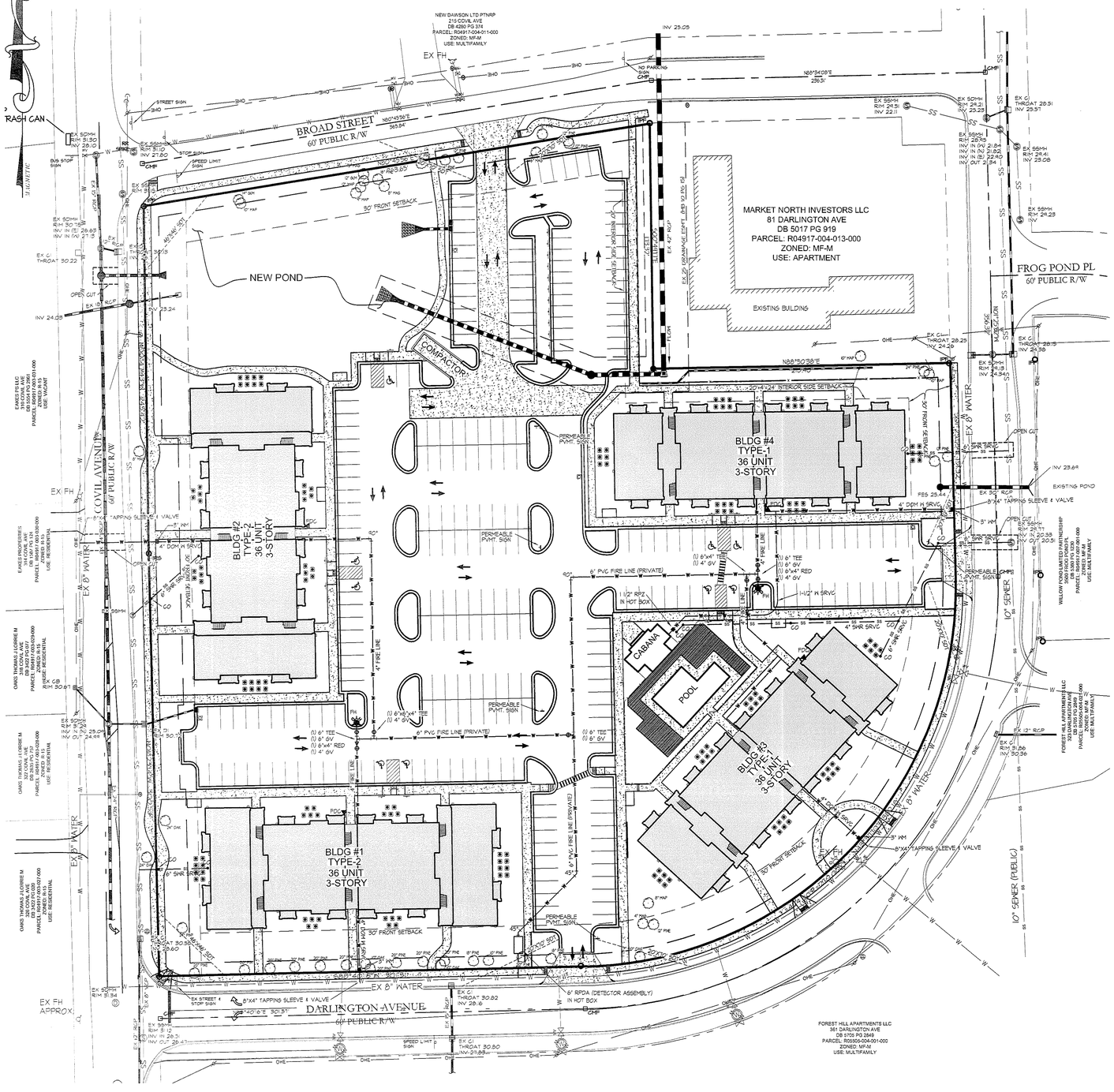
SITE PLAN
ANNEXE AT THE RESERVE
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

SITE PLAN

SCALE:	1" = 40'
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C-5

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12 CIVIL BASEMAP.dwg Tab Name: C5-SITE PLAN



GRAPHIC SCALE

40 0 20 40 80 150

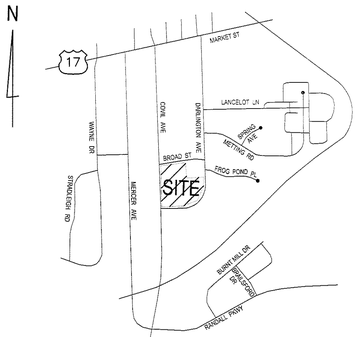
(IN FEET)
1 inch = 40 ft.

THIS IS NOT A SURVEY. NO FIELD WORK HAS BEEN PERFORMED BY CPT ENGINEERING AND SURVEYING, INC.

CONSTRUCTION ACCESS NOTE:
THE USE OF COVIL AVE FOR DRIVEWAY ACCESS TO THE SITE BY COMMERCIAL VEHICLES DURING CONSTRUCTION SHALL BE PROHIBITED.

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____



VICINITY MAP
SCALE: 1" = 1000'

FIRE DEPARTMENT REQUIREMENT NOTES:

a. FDC NO FURTHER 150' FROM A HYDRANT.

b. FDC CANNOT BE FURTHER THAN 40' FROM FIRE DEPARTMENT VEHICLE ACCESS.

c. HYDRANTS MUST BE OPERATIONAL AT TIME OF CONSTRUCTION

d. PRIVATE FIRE MAINS REQUIRE A SEPARATE PERMIT FROM WILMINGTON FIRE AND LIFE SAFETY. PLEASE CALL (910) 343-0696 FOR FURTHER INFORMATION.

e. HYDRANTS CANNOT BE FURTHER THAN 8' FROM A CURB.

f. FDC's AND FIRE HYDRANTS CANNOT BE BLOCKED BY LANDSCAPING OR PARKING.

g. ALL PROPOSED HYDRANTS MUST BE IN SERVICE PRIOR TO COMMENCING OF CONSTRUCTION.

CONTACT FOR QUESTIONS: CAPTAIN CHRIS ELROD,
WILMINGTON FIRE DEPARTMENT
Tele: (910) 343-3917
Email: chris.elrod@wilmingtonnc.gov

LOCATION OF HOT BOXES FOR FIRE LINE:
IF THE HOT BOXES ARE TO BE LOCATED ABOVE GROUND THE VALVES HAVE TO BE ELECTRICALLY SUPERVISED. IF THE VALVES ARE IN A ROADWAY BOX PROVIDED BY A PUBLIC UTILITY, VALVE SUPERVISION IS NOT REQUIRED.

THIS SITE APPEARS TO BE USING ABOVE GROUND BOXES SO IT WILL BE IMPORTANT TO NOTE TO THE ALARM CONTRACTOR THAT THE CONDUIT WILL HAVE TO BE RUN UNDER THE PARKING SURFACE FOR WIRING FOR THE VALVE TAMPER SWITCHES.

CONTACT FOR QUESTIONS: CAPTAIN CHRIS ELROD,
WILMINGTON FIRE DEPARTMENT
Tele: (910) 343-3917
Email: chris.elrod@wilmingtonnc.gov

OWNER / DEVELOPER:
BRC WILMINGTON LLC
5826 SAMET DRIVE, SUITE 105
HIGH POINT, NC 27265
PHONE: (336) 889-1512
FAX: (336) 889-1501

ENGINEER:
CPT ENGINEERING & SURVEYING, INC.
4400 TYNING STREET
HIGH POINT, NC 27265
CONTACT: CHUCK TRUBY, P.E.
PHONE: (336) 812-8800 ext:304
FAX: (336) 812-8780

REVISIONS
1. REV PER CITY COMMENTS 06-16-2015

CPT ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1975
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES E. TRUBY, JR.
06/25/15

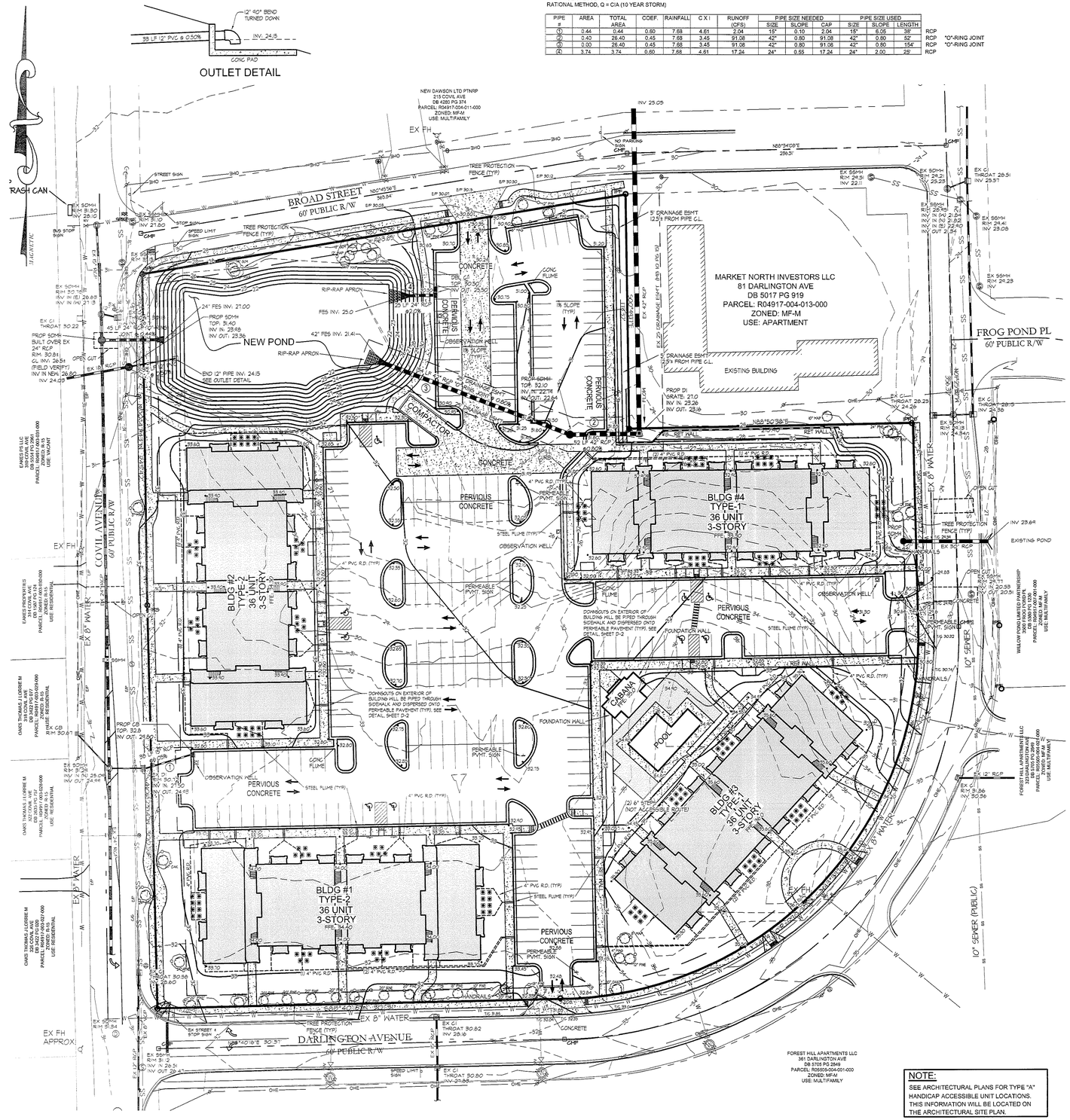
UTILITY PLAN
ANNEXE AT THE RESERVE
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

UTILITY PLAN

SCALE:	1" = 40'
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C-6

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12 CIVIL BASEMAP.dwg Tab Name: C6-UTILITY PLAN



DRAINAGE CALCULATIONS
RATIONAL METHOD, Q = CIA (10 YEAR STORM)

PIPE #	AREA	TOTAL AREA	COEF.	RAINFALL	C X I	RUNOFF (CFS)	PIPE SIZE NEEDED SIZE	SLOPE	CAP	PIPE SIZE USED SIZE	SLOPE	LENGTH		
①	0.44	0.44	0.60	7.68	4.61	2.04	15"	0.10	2.04	15"	0.05	39'	RCP	
②	0.40	26.40	0.45	7.68	3.45	91.08	42"	0.80	91.08	42"	0.80	52'	RCP	"O"-RING JOINT
③	0.00	26.40	0.45	7.68	3.45	91.08	42"	0.80	91.08	42"	0.80	154'	RCP	"O"-RING JOINT
④	3.74	3.74	0.60	7.68	4.61	17.24	24"	0.55	17.24	24"	2.00	29'	RCP	

IMPERVIOUS SURFACE CALCULATIONS

	PARKING AREA # 1	PARKING AREA # 2	PARKING AREA # 3	IMPERVIOUS TOTALS
	ACRES / SQ. FT.	ACRES / SQ. FT.	ACRES / SQ. FT.	ACRES / SQ. FT.
BUILDINGS	0.193 AC. / 8,403 SF	0.97 AC. / 42,116 SF	0.177 AC. / 7,711 SF	→ 1.34 AC./ 58,230 SF
SIDEWALK	0.035 AC. / 1,522 SF	0.234 AC. / 10,198 SF	0.041 AC. / 1,792 SF	→ 0.31 AC./ 13,512 SF
CURB & GUTTER	0.014 AC. / 610 SF	0.137 AC. / 5,983 SF	0.014 AC. / 605 SF	→ 0.165 AC./ 7,198 SF
PERVIOUS CONCRETE	0.144 AC. / 6,294 SF	1.570 AC. / 68,380 SF	0.152 AC. / 6,609 SF	→ 1.866 AC./ 81,283 SF
REGULAR CONCRETE	0 ↓	0.217 AC. / 9,472 SF ↓	0 ↓	→ 0.217 AC./ 9,472 SF ↓
TOTAL BUA	0.386 AC. / 16,829 SF	3.126 AC. / 136,149 SF	0.384 AC. / 16,717 SF	→ 3.90 AC./ 169,695 SF
DRAINAGE AREA	0.443 AC.	3.740 AC.	0.495 AC.	→ 4.68 AC.

* TOTAL DRAINAGE AREA: 4.68 ACRES

TREE LEGEND:

MAP = MAPLE
MAG = MAGNOLIA
HW = HARDWOOD
DBL = DOUBLE

SITE INFORMATION:

SITE ACREAGE: 6.4± Ac.

EXISTING ZONING: MF-MH (CD)

SITE ADDRESS: 315 & 323 COVIL AVE.

PARCEL ID: R05505-004-015-000 & R04917-004-012-000

DEED REFERENCE: DEED BOOK 5673, PAGE 2248

TOTAL NUMBER OF BUILDINGS: 4 (3 STORY)

TOTAL NUMBER OF UNITS: 144

USE: APARTMENTS

UNIT MIX:
48 (1 BEDROOM)
72 (2 BEDROOM)
24 (3 BEDROOM)

MAXIMUM DENSITY ALLOWED PER ZONING: 25 UNITS / AC

DENSITY SHOWN: 22.5 UNITS / AC

BUILDING HEIGHT: 45 FT

PARKING CALCULATION:

PARKING REQUIRED:
48 (1 BEDROOM) X 1.5 = 72
72 (2 BEDROOM) X 2.0 = 144
24 (3 BEDROOM) X 2.25 = 54
TOTAL REQUIRED = 270

TOTAL PARKING SPACES PROVIDED = 274
(INCLUDES 9 HC SPACES)

ADA PARKING:

ADA PARKING REQUIRED:
201 - 300 = 7 SPACES
(1 REQUIRED TO BE VAN SPACE)

TOTAL ADA SPACES PROVIDED: 9 SPACES

BUILDING SETBACKS (MF-MH):

FRONT: 30 FT
REAR: 25 FT
INTERIOR SIDE: 20 FT

ADDITIONAL REAR AND SIDE YARD SETBACKS FOR BLDG HEIGHT ABOVE 35 FEET
FIRST 10 FEET ABOVE 35 FEET: 4 FEET FOR EACH 10 FOOT INCREMENT, OR PORTION THEREOF

10.1 FEET TO 30 FEET ABOVE 35 FEET: 6 FEET FOR EACH 10 FOOT INCREMENT

30.1 FEET OR MORE ABOVE 35 FEET: 8 FEET FOR EACH 10 FOOT INCREMENT

OPEN SPACE:

TOTAL OPEN SPACE REQUIRED: 6.4 X 0.35 = 2.24 AC
REQUIRED ACTIVE OR PASSIVE: 2.24 X 0.5 = 1.12 AC
REQUIRED ACTIVE, PASSIVE, OR OPEN SPACE: 2.24 X 0.5 = 1.12 AC

PROVIDED (ACTIVE): 1.58 AC
PROVIDED (OPEN SPACE): 0.44 AC
TOTAL PROVIDED: 2.02 AC
(THIS SITE IS 9,583 SF UNDER THE REQUIRED OPEN SPACE, FEE IN LIEU OF WILL BE REQUIRED)

BUILT-UPON CALCULATION:

EXISTING BUA: 14,039 SF (TO BE REMOVED)

PROPOSED:
BUILDINGS: 58,230 SF (20.9 % LOT COVERAGE)
PARKING LOT AND DRIVES: 81,283 SF (PERVIOUS CONCRETE)
SIDEWALKS & POOL: 38,339 SF
TOTAL: 177,852 SF OR 4.08 AC
(INCLUDES PERVIOUS CONCRETE)

WITH PERVIOUS CONCRETE CREDIT:
58,230 + 81,283 (0.25) + 38,339 SF = 116,890 SF OR 2.68 AC
BUILT UPON AREA % = 2.68 AC / 6.4 AC = 41.87 %

ALL THE NECESSARY APPROVALS HAVE BEEN/ WILL BE OBTAINED FROM THE STATE/ CORPS FOR ANY WETLAND DISTURBANCE AND STREAM CROSSING/DISTURBANCE

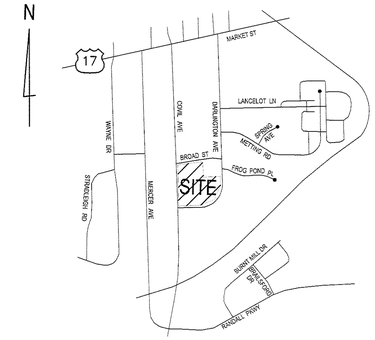
NOTE:
SEE ARCHITECTURAL PLANS FOR TYPE "A" HANDICAP ACCESSIBLE UNIT LOCATIONS. THIS INFORMATION WILL BE LOCATED ON THE ARCHITECTURAL SITE PLAN.

ACCESSIBLE ROUTE NOTE:
ALL SIDEWALKS WITHIN THIS DEVELOPMENT ARE ACCESSIBLE ROUTES UNLESS OTHERWISE NOTED ON PLAN.

CONSTRUCTION ACCESS NOTE:
THE USE OF COVIL AVE FOR DRIVEWAY ACCESS TO THE SITE BY COMMERCIAL VEHICLES DURING CONSTRUCTION SHALL BE PROHIBITED.

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____



VICINITY MAP
SCALE: 1" = 1000'

RETAINING WALL NOTES:

1. PROPOSED RETAINING WALLS ARE FOR ILLUSTRATION PURPOSES ONLY DEPICTING CHANGE IN GRADE REQUIREMENTS. CPT ENGINEERING AND SURVEYING, INC. IS NOT RESPONSIBLE FOR RETAINING WALL DESIGNS.

2. RETAINING WALL PERMITS WILL BE REQUIRED BY THE CITY OF WILMINGTON INSPECTIONS DEPARTMENT.

3. ANY RETAINING WALL > 4' REQUIRE A BUILDING PERMIT FROM BUILDING INSPECTIONS.

GENERAL H.C. ACCESSIBILITY NOTES:

1. LANDINGS OUTSIDE ALL DOORS SHALL BE SIZED PER NCBC, BE AT THE SAME ELEVATION AS THE FFE, AND SHALL HAVE A MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL.

2. THE SLOPES IN THE H.C. PARKING SPACE/ACCESS AISLE AREA SHALL NOT EXCEED 2 % IN ANY DIRECTION INCLUDING IN THE DIAGONAL.

3. THERE SHALL BE NO DESIGNATED PEDESTRIAN ROUTES/SIDEWALKS WITHIN THE SITE, EXCEPT WHERE LABELED AS A RAMP WITH RAILS, WHICH EXCEED A 5 % SLOPE IN THE DIRECTION OF TRAVEL AND A 2 % CROSSLOPE.

4. ALL PEDESTRIAN ROUTES >5 % (1:20), IF ANY, ARE LABELED AS 'RAMPS' SHOWING SLOPES, LEVEL LANDINGS AT TOP AND BOTTOM (MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL), RAILINGS/GUARDRAILS, AND SHALL COMPLY WITH NCBC.

5. THERE SHALL BE LEVEL TURNING AREAS (MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL) ON ALL SIDEWALKS (INCLUDING SIDEWALKS ALONG STREETS) WHERE AN INTERSECTING SIDEWALK CONNECTS WITH IT.

6. ALL STAIRS SHALL HAVE SLIGHTLY SLOPED LANDINGS (MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL), AT THE TOP AND BOTTOM AND SHALL COMPLY WITH NCBC.

7. STAIRS / STEPS WITH LESS THAN A 12" ELEVATION CHANGE SHALL COMPLY WITH NCBC 1003.5

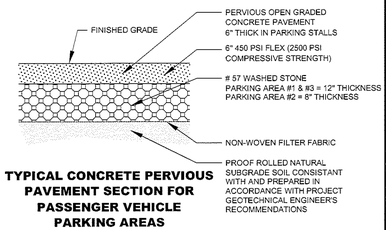
8. THE SLOPES AT THE PASSENGER LOADING ZONE AND ADJACENT VEHICLE PULL UP SPACE SHALL NOT EXCEED 2 % IN ANY DIRECTION INCLUDING IN THE DIAGONAL.

NOTE:

ALL FILL PLACED BETWEEN EXISTING GROUND AND BOTTOM OF STONE BEDDING IN PERVIOUS PARKING AREAS SHALL BE CLEAN SAND.

MEDIA REQUIREMENTS NOTE:

ALL FILL MATERIAL PLACED WITHIN THE INFILTRATION BASINS OR UNDER PERVIOUS CONCRETE SHALL BE CLEANED, WASHED, COURSE MASONRY SAND SUCH AS ASTM C33. THE SAND PARTICLES SHALL BE LESS THAN 2 mm AVERAGE DIAMETER.



TYPICAL CONCRETE PERVIOUS PAVEMENT SECTION FOR PASSENGER VEHICLE PARKING AREAS

TREE PROTECTION NOTE:
TREE PROTECTION FENCING SHALL BE INSTALLED ALONG ALL PROTECTED TREES WITH SIGNAGE OF NO MATERIAL STORAGE IN ENGLISH AND SPANISH THROUGHOUT CONSTRUCTION.

SEE SHEET C-10 FOR TREE PROTECTIONS DETAILS

OWNER / DEVELOPER:

BRC WILMINGTON LLC
5826 SAMET DRIVE, SUITE 105
HIGH POINT, NC 27265
PHONE: (336) 889-1512
FAX: (336) 889-1501

ENGINEER:

CPT ENGINEERING & SURVEYING, INC.
4400 TYNING STREET
HIGH POINT, NC 27265
CONTACT: CHUCK TRUBY, P.E.
PHONE: (336) 812-8800 ext:304
FAX: (336) 812-8780

REVISIONS
1. REV PER CITY COMMENTS 06-16-2015

ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1915
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES E. TRUBY, JR.
06/26/15

GRADING PLAN
ANNEXE AT THE RESERVE
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

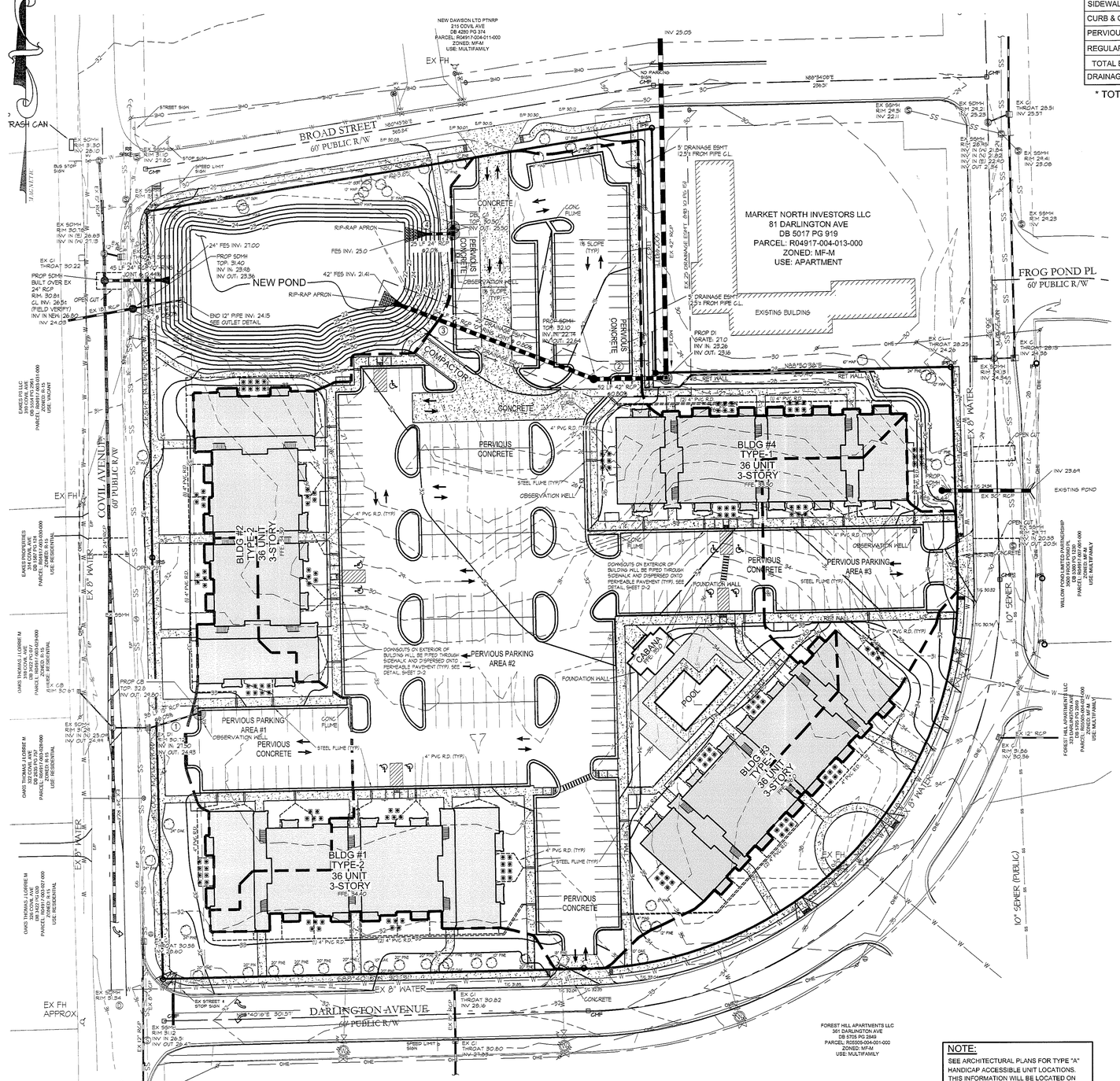
GRADING PLAN

SCALE:	1" = 40'
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C-7

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12 CIVIL BASEMAP.dwg Tab Name: C7-GRADING PLAN
THIS IS NOT A SURVEY. NO FIELD WORK HAS BEEN PERFORMED BY CPT ENGINEERING AND SURVEYING, INC.

DRAINAGE CALCULATIONS
RATIONAL METHOD, Q = CIA (10 YEAR STORM)

PIPE #	AREA	TOTAL AREA	COEF.	RAINFALL	C X I	RUNOFF (CFS)	PIPE SIZE NEEDED SIZE	SLOPE	CAP	PIPE SIZE USED SIZE	SLOPE	LENGTH		
①	0.44	0.44	0.60	7.68	4.61	2.04	15"	0.10	2.04	15"	6.05	38'	RCP	
②	0.40	26.40	0.45	7.68	3.45	91.08	42"	0.80	91.08	42"	0.80	52'	RCP	"O"-RING JOINT
③	0.00	26.40	0.45	7.68	3.45	91.08	42"	0.80	91.08	42"	0.80	154'	RCP	"O"-RING JOINT
④	3.74	3.74	0.60	7.68	4.61	17.24	24"	0.55	17.24	24"	2.00	28'	RCP	



GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

THIS IS NOT A SURVEY. NO FIELD WORK HAS BEEN PERFORMED BY CPT ENGINEERING AND SURVEYING, INC.

NOTE:
SEE ARCHITECTURAL PLANS FOR TYPE "A" HANDICAP ACCESSIBLE UNIT LOCATIONS. THIS INFORMATION WILL BE LOCATED ON THE ARCHITECTURAL SITE PLAN.

IMPERVIOUS SURFACE CALCULATIONS

	PARKING AREA # 1	PARKING AREA # 2	PARKING AREA # 3	IMPERVIOUS TOTALS
	ACRES / SQ. FT.	ACRES / SQ. FT.	ACRES / SQ. FT.	ACRES / SQ. FT.
BUILDINGS	0.193 AC. / 8,403 SF	0.97 AC. / 42,116 SF	0.177 AC. / 7,711 SF	→ 1.34 AC. / 58,230 SF
SIDEWALK	0.035 AC. / 1,522 SF	0.234 AC. / 10,198 SF	0.041 AC. / 1,792 SF	→ 0.31 AC. / 13,512 SF
CURB & GUTTER	0.014 AC. / 610 SF	0.137 AC. / 5,983 SF	0.014 AC. / 605 SF	→ 0.165 AC. / 7,198 SF
PERVIOUS CONCRETE	0.144 AC. / 6,294 SF	1.570 AC. / 68,380 SF	0.152 AC. / 6,609 SF	→ 1.866 AC. / 81,283 SF
REGULAR CONCRETE	0	0.217 AC. / 9,472 SF	0	→ 0.217 AC. / 9,472 SF
TOTAL BUA	0.386 AC. / 16,829 SF	3.126 AC. / 136,149 SF	0.384 AC. / 16,717 SF	→ 3.90 AC. / 169,695 SF
DRAINAGE AREA	0.443 AC.	3.740 AC.	0.495 AC.	→ 4.68 AC.

* TOTAL DRAINAGE AREA: 4.68 ACRES

TREE LEGEND:

MAP = MAPLE
MAG = MAGNOLIA
HW = HARDWOOD
DBL = DOUBLE

SITE INFORMATION:

SITE ACREAGE: 6.4± Ac.

EXISTING ZONING: MF-MH (CD)

SITE ADDRESS: 315 & 323 COVIL AVE.

PARCEL ID: R05505-004-015-000 & R04917-004-012-000

DEED REFERENCE: DEED BOOK 5673, PAGE 2248

TOTAL NUMBER OF BUILDINGS: 4 (3 STORY)

TOTAL NUMBER OF UNITS: 144

USE: APARTMENTS

UNIT MIX:
48 (1 BEDROOM)
72 (2 BEDROOM)
24 (3 BEDROOM)

MAXIMUM DENSITY ALLOWED PER ZONING: 25 UNITS / AC

DENSITY SHOWN: 22.5 UNITS / AC

BUILDING HEIGHT: 45 FT

PARKING CALCULATION:

PARKING REQUIRED:
48 (1 BEDROOM) X 1.5 = 72
72 (2 BEDROOM) X 2.0 = 144
24 (3 BEDROOM) X 2.25 = 54
TOTAL REQUIRED = 270

TOTAL PARKING SPACES PROVIDED = 274
(INCLUDES 9 HC SPACES)

ADA PARKING:

ADA PARKING REQUIRED:
201 - 300 = 7 SPACES
(1 REQUIRED TO BE VAN SPACE)

TOTAL ADA SPACES PROVIDED: 9 SPACES

BUILDING SETBACKS (MF-MH):

FRONT: 30 FT
REAR: 25 FT
INTERIOR SIDE: 20 FT

ADDITIONAL REAR AND SIDE YARD SETBACKS FOR BLDG HEIGHT ABOVE 35 FEET
FIRST 10 FEET ABOVE 35 FEET: 4 FEET FOR EACH 10 FOOT INCREMENT, OR PORTION THEREOF

10.1 FEET TO 30 FEET ABOVE 35 FEET: 6 FEET FOR EACH 10 FOOT INCREMENT

30.1 FEET OR MORE ABOVE 35 FEET: 8 FEET FOR EACH 10 FOOT INCREMENT

OPEN SPACE:

TOTAL OPEN SPACE REQUIRED: 6.4 X 0.35 = 2.24 AC
REQUIRED ACTIVE OR PASSIVE: 2.24 X 0.5 = 1.12 AC
REQUIRED ACTIVE, PASSIVE, OR OPEN SPACE: 2.24 X 0.5 = 1.12 AC

PROVIDED (ACTIVE): 1.58 AC
PROVIDED (OPEN SPACE): 0.44 AC
TOTAL PROVIDED: 2.02 AC
(THIS SITE IS 9,583 SF UNDER THE REQUIRED OPEN SPACE, FEE IN LIEU OF WILL BE REQUIRED)

BUILT-UPON CALCULATION:

EXISTING BUA: 14,039 SF (TO BE REMOVED)

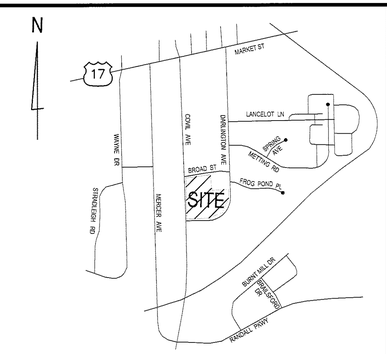
PROPOSED:
BUILDINGS: 58,230 SF (20.9 % LOT COVERAGE)
PARKING LOT AND DRIVES: 81,283 SF (PERVIOUS CONCRETE)
SIDEWALKS & POOL: 38,339 SF
TOTAL: 177,852 SF OR 4.08 AC
(INCLUDES PERVIOUS CONCRETE)

WITH PERVIOUS CONCRETE CREDIT:
58,230 + 81,283 (0.25) + 38,339 SF = 116,890 SF OR 2.68 AC
BUILT UPON AREA % = 2.68 AC / 6.4 AC = 41.87 %

ALL THE NECESSARY APPROVALS HAVE BEEN/ WILL BE OBTAINED FROM THE STATE/ CORPS FOR ANY WETLAND DISTURBANCE AND STREAM CROSSING/DISTURBANCE

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____



VICINITY MAP
SCALE: 1" = 1000'

RETAINING WALL NOTES:

1. PROPOSED RETAINING WALLS ARE FOR ILLUSTRATION PURPOSES ONLY DEPICTING CHANGE IN GRADE REQUIREMENTS. CPT ENGINEERING AND SURVEYING, INC. IS NOT RESPONSIBLE FOR RETAINING WALL DESIGNS.

2. RETAINING WALL PERMITS WILL BE REQUIRED BY THE CITY OF WILMINGTON INSPECTIONS DEPARTMENT.

3. ANY RETAINING WALL > 4' REQUIRE A BUILDING PERMIT FROM BUILDING INSPECTIONS.

GENERAL H.C. ACCESSIBILITY NOTES:

1. LANDINGS OUTSIDE ALL DOORS SHALL BE SIZED PER NCBC, BE AT THE SAME ELEVATION AS THE FFE, AND SHALL HAVE A MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL.

2. THE SLOPES IN THE H.C. PARKING SPACE/ACCESS AISLE AREA SHALL NOT EXCEED 2 % IN ANY DIRECTION INCLUDING IN THE DIAGONAL.

3. THERE SHALL BE NO DESIGNATED PEDESTRIAN ROUTES/SIDEWALKS WITHIN THE SITE, EXCEPT WHERE LABELED AS A RAMP WITH RAILS, WHICH EXCEED A 5 % SLOPE IN THE DIRECTION OF TRAVEL AND A 2 % CROSSLOPE.

4. ALL PEDESTRIAN ROUTES >5 % (1:20), IF ANY, ARE LABELED AS 'RAMPS' SHOWING SLOPES, LEVEL LANDINGS AT TOP AND BOTTOM (MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL), RAILINGS/GUARDRAILS, AND SHALL COMPLY WITH NCBC.

5. THERE SHALL BE LEVEL TURNING AREAS (MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL) ON ALL SIDEWALKS (INCLUDING SIDEWALKS ALONG STREETS) WHERE AN INTERSECTING SIDEWALK CONNECTS WITH IT.

6. ALL STAIRS SHALL HAVE SLIGHTLY SLOPED LANDINGS (MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL), AT THE TOP AND BOTTOM AND SHALL COMPLY WITH NCBC.

7. STAIRS / STEPS WITH LESS THAN A 12" ELEVATION CHANGE SHALL COMPLY WITH NCBC 1003.5

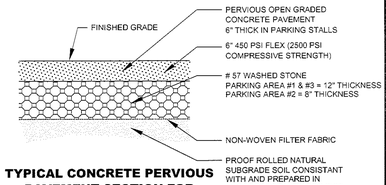
8. THE SLOPES AT THE PASSENGER LOADING ZONE AND ADJACENT VEHICLE PULL UP SPACE SHALL NOT EXCEED 2 % IN ANY DIRECTION INCLUDING IN THE DIAGONAL.

NOTE:

ALL FILL PLACED BETWEEN EXISTING GROUND AND BOTTOM OF STONE BEDDING IN PERVIOUS PARKING AREAS SHALL BE CLEAN SAND.

MEDIA REQUIREMENTS NOTE:

ALL FILL MATERIAL PLACED WITHIN THE INFILTRATION BASINS OR UNDER PERVIOUS CONCRETE SHALL BE CLEANED, WASHED, COURSE MASONRY SAND SUCH AS ASTM C33. THE SAND PARTICLES SHALL BE LESS THAN 2 mm AVERAGE DIAMETER.



TYPICAL CONCRETE PERVIOUS PAVEMENT SECTION FOR PASSENGER VEHICLE PARKING AREAS

OWNER / DEVELOPER:

BRC WILMINGTON LLC
5826 SAMET DRIVE, SUITE 105
HIGH POINT, NC 27265
PHONE: (336) 889-1512
FAX: (336) 889-1501

ENGINEER:

CPT ENGINEERING & SURVEYING, INC.
4400 TYNING STREET
HIGH POINT, NC 27265
CONTACT: CHUCK TRUBY, P.E.
PHONE: (336) 812-8800 ext:304
FAX: (336) 812-8780

REVISIONS
1. REV PER CITY COMMENTS 06-16-2015

CPT ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1575
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES P. TRUBY, JR.
06/25/15

DRAINAGE AREA PLAN
ANNEXE AT THE RESERVE
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

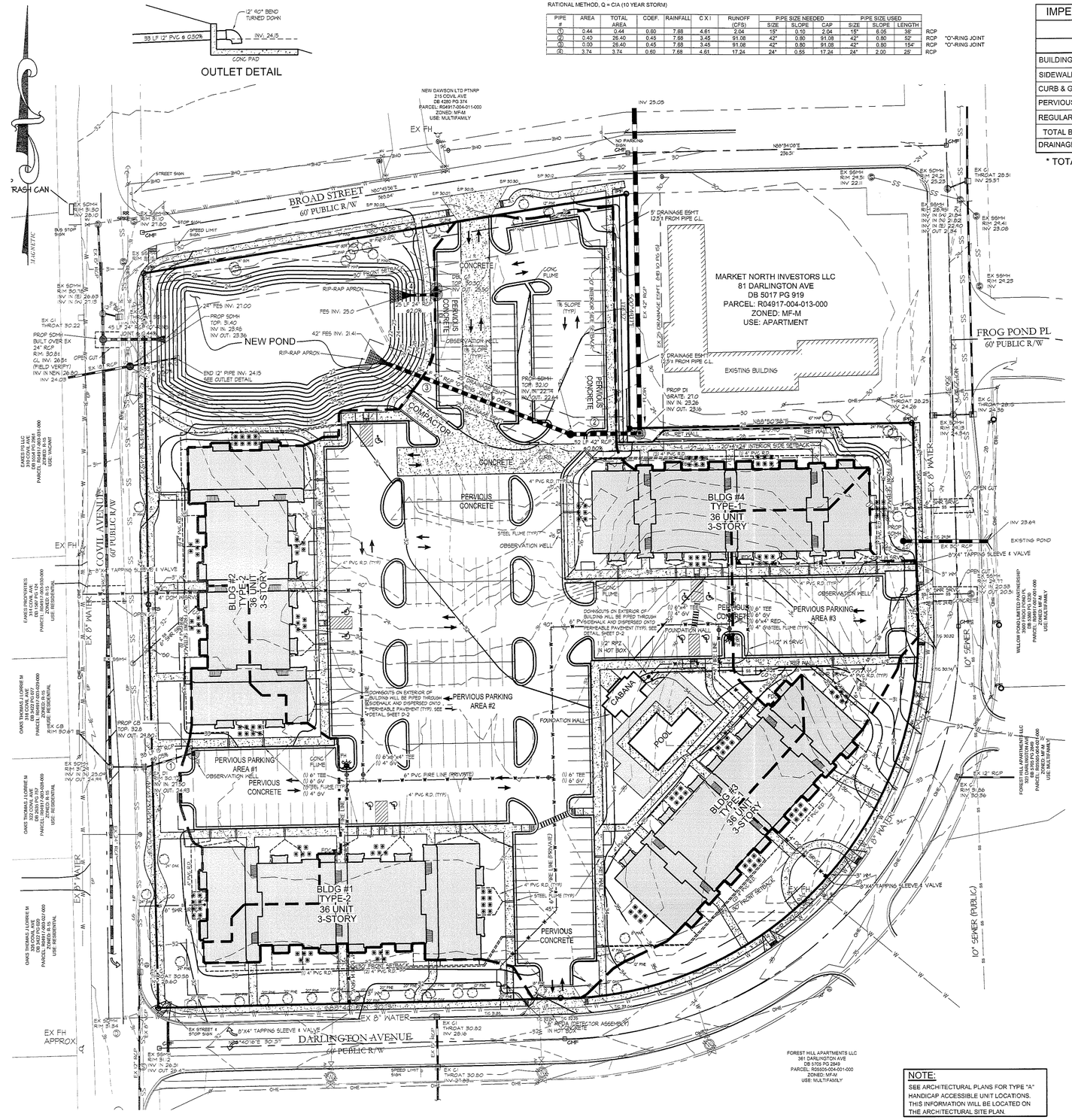
DRAINAGE AREA PLAN

SCALE:	1" = 40'
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C-8

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12 CIVIL BASEMAP.dwg Tab Name: C8-DA MAP

DRAINAGE CALCULATIONS
RATIONAL METHOD, Q = CIA (10 YEAR STORM)

PIPE #	AREA	TOTAL AREA	COEF.	RAINFALL	C X I	RUNOFF (CFS)	PIPE SIZE NEEDED SIZE	SLOPE	CAP	PIPE SIZE USED SIZE	SLOPE	LENGTH	
①	0.44	0.44	0.80	7.68	4.61	2.04	15"	0.10	2.04	15"	6.05	36'	RCP
②	0.40	26.40	0.45	7.68	3.45	91.08	42"	0.80	91.08	42"	0.80	52'	RCP *O"-RING JOINT
③	0.00	26.40	0.45	7.68	3.45	91.08	42"	0.80	91.08	42"	0.80	154'	RCP *O"-RING JOINT
④	3.74	3.74	0.80	7.68	4.61	17.24	24"	0.55	17.24	24"	2.00	29'	RCP



THIS IS NOT A SURVEY. NO FIELD WORK HAS BEEN PERFORMED BY CPT ENGINEERING AND SURVEYING, INC.

IMPERVIOUS SURFACE CALCULATIONS	PARKING AREA # 1	PARKING AREA # 2	PARKING AREA # 3	IMPERVIOUS TOTALS
	ACRES / SQ. FT.	ACRES / SQ. FT.	ACRES / SQ. FT.	ACRES / SQ. FT.
BUILDINGS	0.193 AC. / 8,403 SF	0.97 AC. / 42,116 SF	0.177 AC. / 7,711 SF	→ 1.34 AC. / 58,230 SF
SIDEWALK	0.035 AC. / 1,522 SF	0.234 AC. / 10,198 SF	0.041 AC. / 1,792 SF	→ 0.31 AC. / 13,512 SF
CURB & GUTTER	0.014 AC. / 610 SF	0.137 AC. / 5,883 SF	0.014 AC. / 605 SF	→ 0.165 AC. / 7,198 SF
PERVIOUS CONCRETE	0.144 AC. / 6,294 SF	1.570 AC. / 68,380 SF	0.152 AC. / 6,609 SF	→ 1.866 AC. / 81,283 SF
REGULAR CONCRETE	0 ↓	0.217 AC. / 9,472 SF ↓	0 ↓	→ 0.217 AC. / 9,472 SF ↓
TOTAL BUA	0.386 AC. / 16,829 SF	3.126 AC. / 136,149 SF	0.384 AC. / 16,717 SF	→ 3.90 AC. / 169,695 SF
DRAINAGE AREA	0.443 AC.	3.740 AC.	0.495 AC. →	4.68 AC.

* TOTAL DRAINAGE AREA: 4.68 ACRES

TREE LEGEND:

MAP = MAPLE
MAG = MAGNOLIA
HW = HARDWOOD
DBL = DOUBLE

SITE INFORMATION:

SITE ACREAGE: 6.4± Ac.

EXISTING ZONING: MF-MH (CD)

SITE ADDRESS: 315 & 323 COVIL AVE.

PARCEL ID: R05505-004-015-000 & R04917-004-012-000

DEED REFERENCE: DEED BOOK 5673, PAGE 2248

TOTAL NUMBER OF BUILDINGS: 4 (3 STORY)

TOTAL NUMBER OF UNITS: 144

USE: APARTMENTS

UNIT MIX:
48 (1 BEDROOM)
72 (2 BEDROOM)
24 (3 BEDROOM)

MAXIMUM DENSITY ALLOWED PER ZONING: 25 UNITS / AC

DENSITY SHOWN: 22.5 UNIT / AC

BUILDING HEIGHT: 45 FT

PARKING CALCULATION:

PARKING REQUIRED:
48 (1 BEDROOM) X 1.5 = 72
72 (2 BEDROOM) X 2.0 = 144
24 (3 BEDROOM) X 2.25 = 54
TOTAL REQUIRED = 270

TOTAL PARKING SPACES PROVIDED = 274
(INCLUDES 9 HC SPACES)

ADA PARKING:

ADA PARKING REQUIRED:
201 - 300 = 7 SPACES
(1 REQUIRED TO BE VAN SPACE)

TOTAL ADA SPACES PROVIDED: 9 SPACES

BUILDING SETBACKS (MF-MH):

FRONT: 30 FT
REAR: 25 FT
INTERIOR SIDE: 20 FT

ADDITIONAL REAR AND SIDE YARD SETBACKS FOR BLDG HEIGHT ABOVE 35 FEET
FIRST 10 FEET ABOVE 35 FEET: 4 FEET FOR EACH 10 FOOT INCREMENT, OR PORTION THEREOF

10.1 FEET TO 30 FEET ABOVE 35 FEET: 6 FEET FOR EACH 10 FOOT INCREMENT

30.1 FEET OR MORE ABOVE 35 FEET: 8 FEET FOR EACH 10 FOOT INCREMENT

OPEN SPACE:

TOTAL OPEN SPACE REQUIRED: 6.4 X 0.35 = 2.24 AC
REQUIRED ACTIVE OR PASSIVE: 2.24 X 0.5 = 1.12 AC
REQUIRED ACTIVE, PASSIVE, OR OPEN SPACE: 2.24 X 0.5 = 1.12 AC

PROVIDED (ACTIVE): 1.58 AC
PROVIDED (OPEN SPACE): 0.44 AC
TOTAL PROVIDED: 2.02 AC
(THIS SITE IS 9,583 SF UNDER THE REQUIRED OPEN SPACE, FEE IN LIEU OF WILL BE REQUIRED)

BUILT-UPON CALCULATION:

EXISTING BUA: 14,039 SF (TO BE REMOVED)

PROPOSED:
BUILDINGS: 58,230 SF (20.9 % LOT COVERAGE)
PARKING LOT AND DRIVES: 81,283 SF (PERVIOUS CONCRETE)
SIDEWALKS & POOL: 38,339 SF
TOTAL: 177,852 SF OR 4.08 AC
(INCLUDES PERVIOUS CONCRETE)

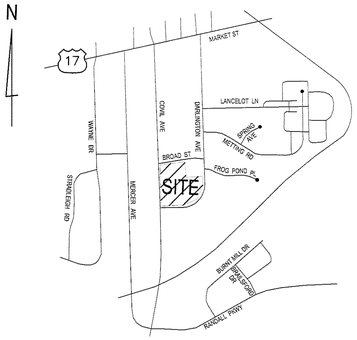
WITH PERVIOUS CONCRETE CREDIT:
58,230 + 81,283 (0.25) + 38,339 SF = 116,890 SF OR 2.68 AC
BUILT UPON AREA % = 2.68 AC / 6.4 AC = 41.87 %

ALL THE NECESSARY APPROVALS HAVE BEEN/ WILL BE OBTAINED FROM THE STATE/ CORPS FOR ANY WETLAND DISTURBANCE AND STREAM CROSSING/DISTURBANCE

NOTE:
SEE ARCHITECTURAL PLANS FOR TYPE "A" HANDICAP ACCESSIBLE UNIT LOCATIONS. THIS INFORMATION WILL BE LOCATED ON THE ARCHITECTURAL SITE PLAN.

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____



VICINITY MAP
SCALE: 1" = 1000'

RETAINING WALL NOTES:

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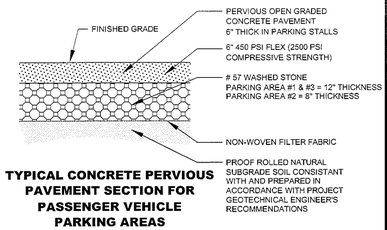

TYPICAL CONCRETE PERVIOUS PAVEMENT SECTION FOR PASSENGER VEHICLE PARKING AREAS

OWNER / DEVELOPER:

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ENGINEER:

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4400 TYNING STREET
HIGH POINT, NC 27265
CONTACT: CHUCK TRUBY, P.E.
PHONE: (336) 812-8800 ext:304
FAX: (336) 812-8780

REVISIONS

REV	REV PER CITY COMMENTS
	08-16-2015

ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1975
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES B. TRUBY, JR.
08/28/15

STORMWATER MANAGEMENT PLAN

ANNEXE AT THE RESERVE

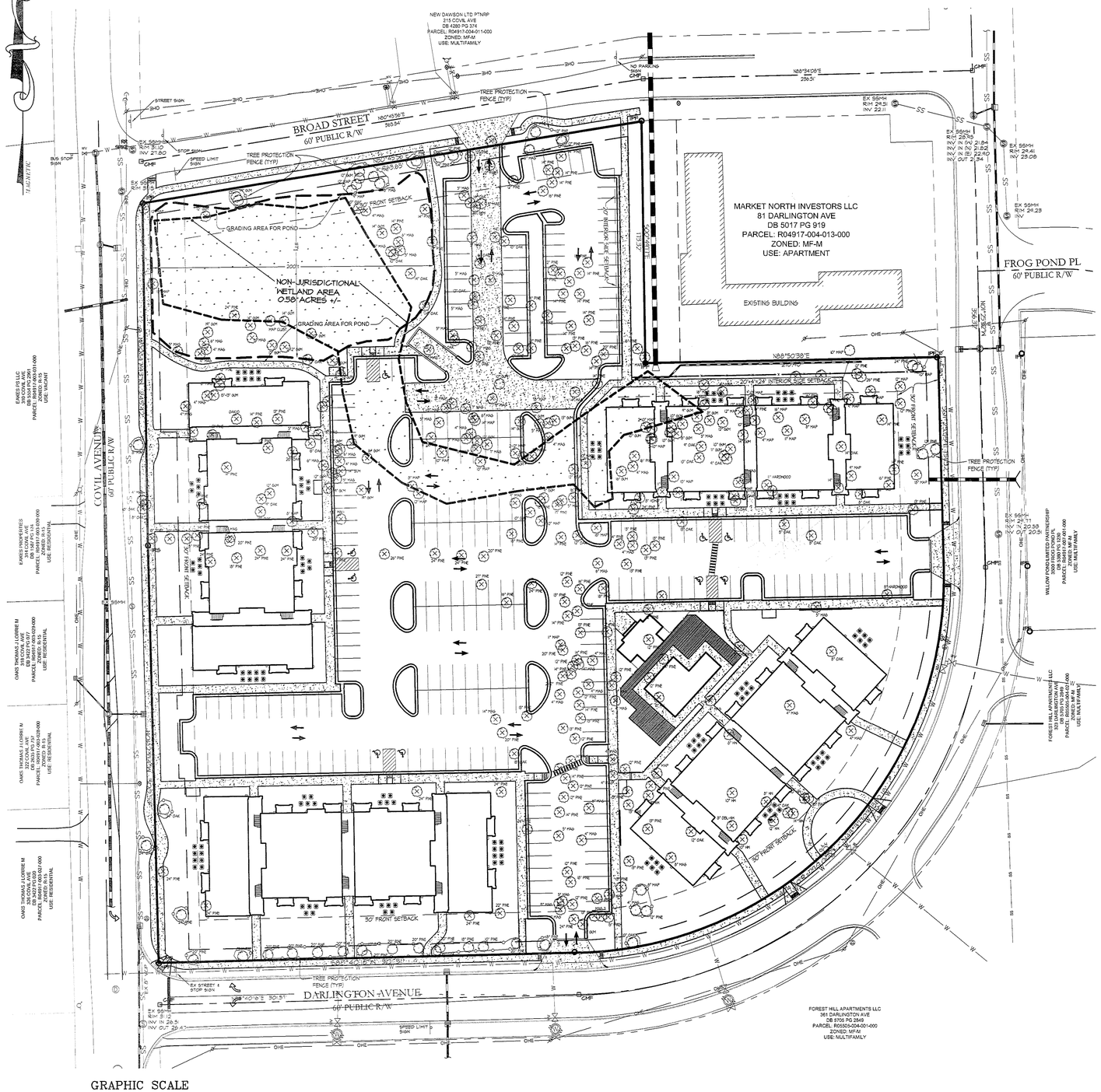
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

STORMWATER MANAGEMENT PLAN

SCALE:	1" = 40'
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C-9

Jan 23, 2015 F:\Projects\1140-12\DWG\1140-12 CIVIL BASEMAP.dwg Tab Name: C4-STORMWATER MAN PLAN



GRAPHIC SCALE

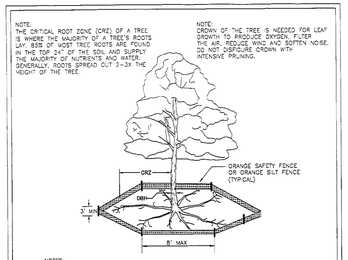
40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

THIS IS NOT A SURVEY. NO FIELD WORK HAS BEEN PERFORMED BY CPT ENGINEERING AND SURVEYING, INC.

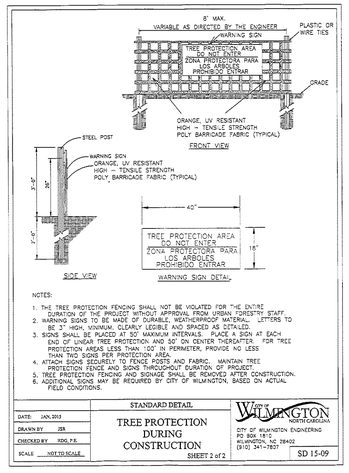
NOTE:
THE CRITICAL ROOT ZONE (CRZ) OF A TREE IS WHERE THE MAJORITY OF A TREE'S ROOTS LAY. 85% OF MOST TREE ROOTS ARE FOUND IN THE TOP 24" OF THE SOIL AND SUPPLY THE MAJORITY OF NUTRIENTS AND WATER. GENERALLY, ROOTS SPREAD OUT 3-4X THE HEIGHT OF THE TREE.

NOTE:
CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE. DO NOT DISFIGURE CROWN WITH INTENSIVE PRUNING.



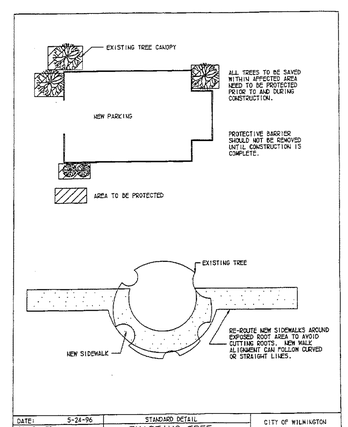
NOTES:
1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
3. IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATTS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
4. WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK SHALL BE ALLOWED WHERE NECESSARY.
5. FOR ALL TREES, OUTSIDE OF THE CRZ, STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TREE ARE PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
6. FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF $500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.

STANDARD DETAIL		
DATE: JAN. 2013	TREE PROTECTION DURING CONSTRUCTION	CITY OF WILMINGTON NORTH CAROLINA CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
DRAWN BY: JSR		
CHECKED BY: RDG, P.E.		
SCALE: NOT TO SCALE	SHEET 1 of 2	SD 15-09



NOTES:
1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.
4. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.
5. TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
6. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

STANDARD DETAIL		
DATE: JAN. 2013	TREE PROTECTION DURING CONSTRUCTION	CITY OF WILMINGTON NORTH CAROLINA CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
DRAWN BY: JSR		
CHECKED BY: RDG, P.E.		
SCALE: NOT TO SCALE	SHEET 2 of 2	SD 15-09

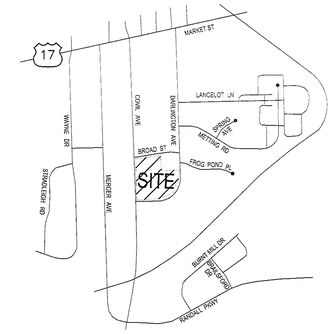


DATE: 5-24-96	STANDARD DETAIL	CITY OF WILMINGTON ENGINEERING DEPARTMENT
SCALE: NTS	EXISTING TREE PROTECTIVE BARRIERS	
DRAWN BY: GC		
CHECKED BY: RGM		
SD 15-15		SD 15-15

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

N



VICINITY MAP
SCALE: 1" = 1000'

TREE LEGEND:

MAP = MAPLE
MAG = MAGNOLIA
HW = HARDWOOD
DBL = DOUBLE

EX TREE
EX TREE (TO BE REMOVED)
TREE PROTECTION FENCE

TREE PROTECTION NOTE:
TREE PROTECTION FENCING SHALL BE INSTALLED ALONG ALL PROTECTED TREES WITH SIGNAGE OF NO MATERIAL STORAGE IN ENGLISH AND SPANISH THROUGHOUT CONSTRUCTION.

A TREE PRESERVATION / REMOVAL PERMIT IS REQUIRED.

OWNER / DEVELOPER:
BRC WILMINGTON LLC
5826 SAMET DRIVE, SUITE 105
HIGH POINT, NC 27265
PHONE: (336) 889-1512
FAX: (336) 889-1501

ENGINEER:
CPT ENGINEERING & SURVEYING, INC.
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REVISIONS
1. REV PER CITY COMMENTS 06-16-2015

ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1975
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES R. TRUBY, JR.
06/25/15

TREE INVENTORY MAP

ANNEXE AT THE RESERVE

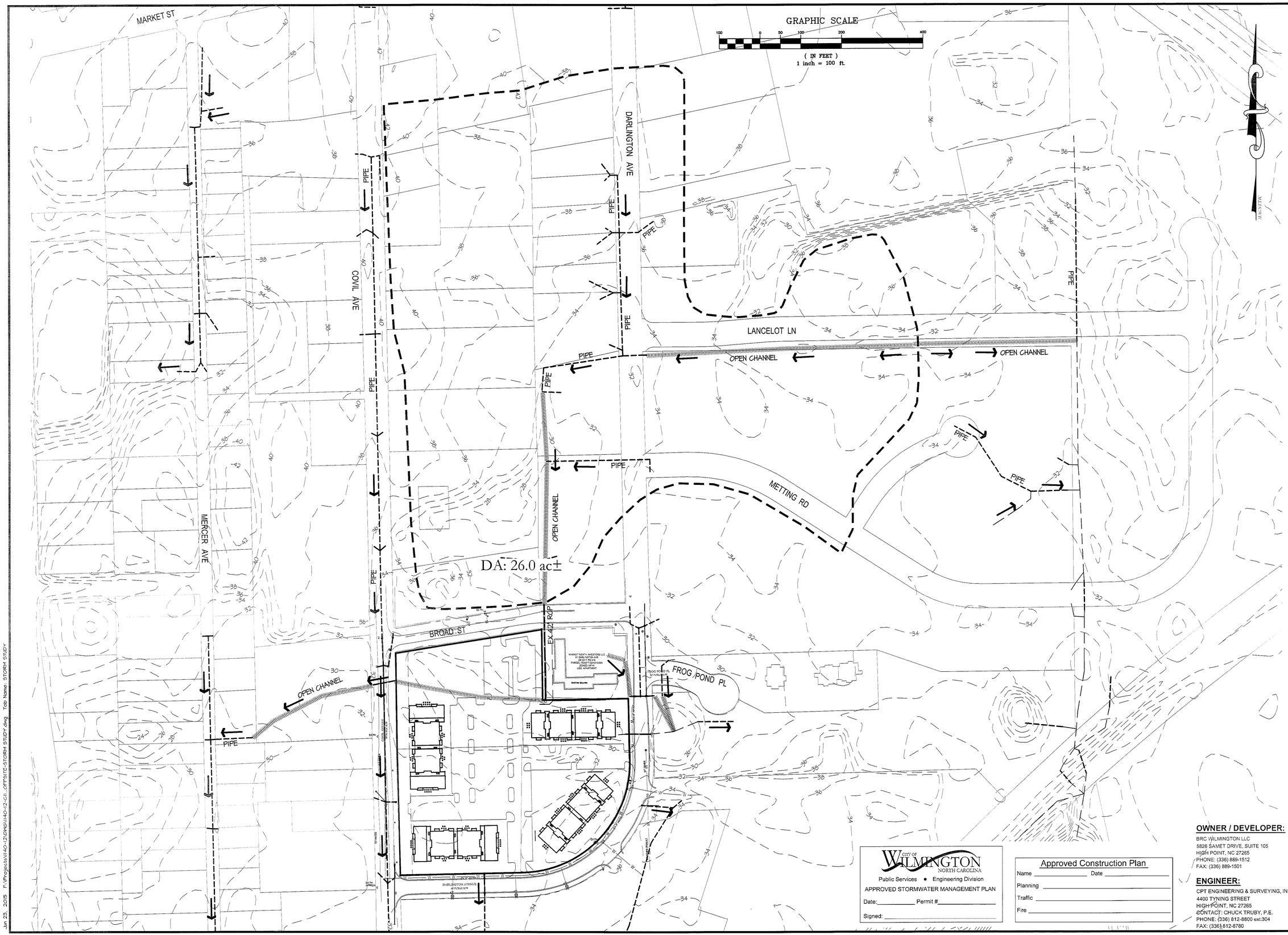
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

TREE INVENTORY MAP

SCALE:	1" = 40'
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C-10

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12 CIVIL BASEMAP.dwg Tab Name: C10-TREE INVENTORY MAP



OWNER / DEVELOPER:

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REVISIONS

1 REV PER CITY COMMENTS 06-16-2015

ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1315
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES E. TRUBY, JR.
06/23/15

OFF-SITE DRAINAGE AREA MAP

ANNEXE AT THE RESERVE

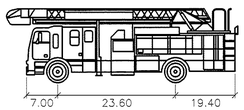
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

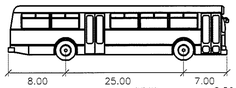
OFF-SITE DRAINAGE AREA MAP

SCALE:	1" = 100'
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C11

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12-C11_OFFSITE-STORM STUDY.dwg Tab Name: STORM STUDY

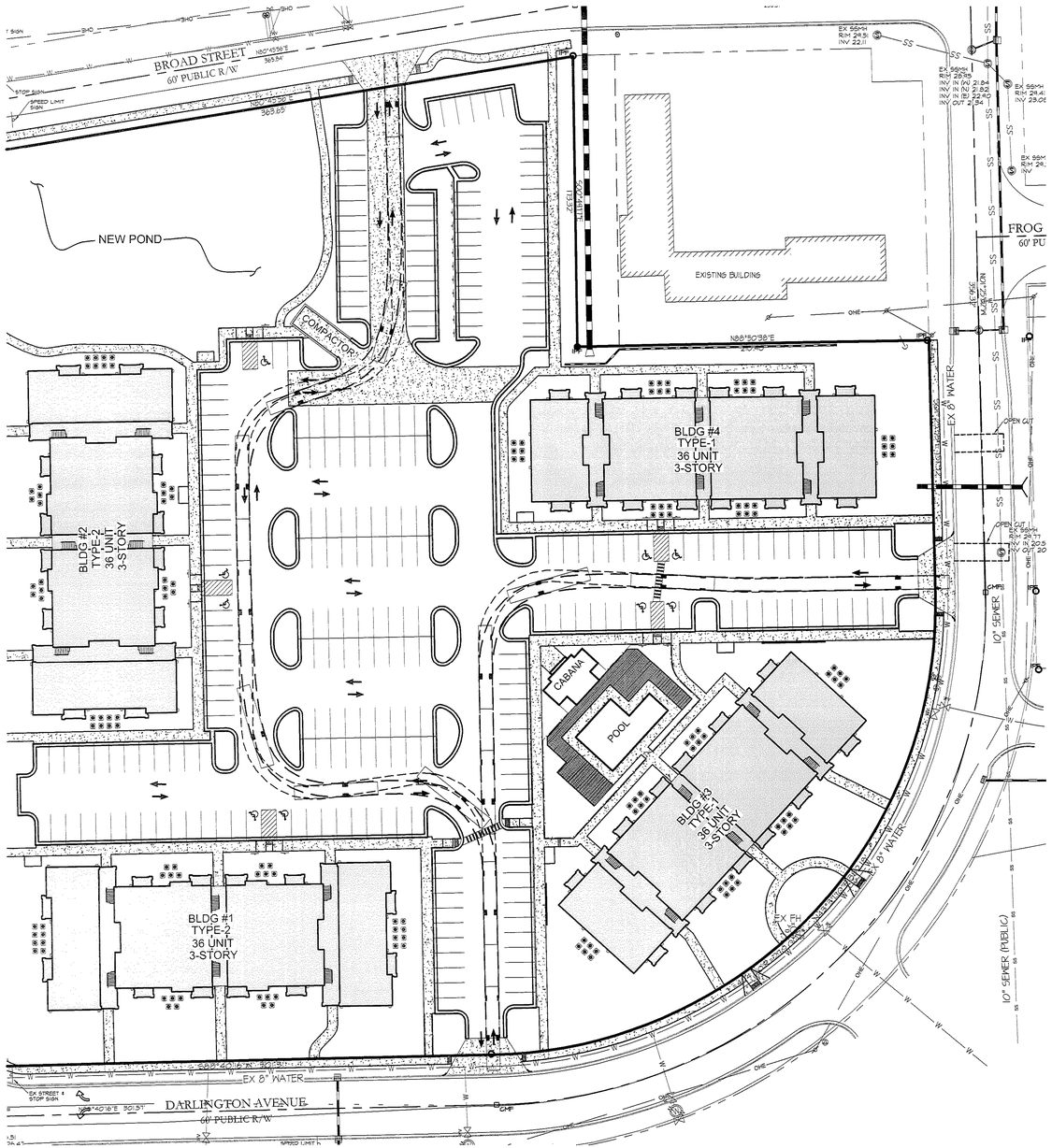


SP100 [ft.]
Width : 7.99
Track : 7.99
Steering Angle : 37.00

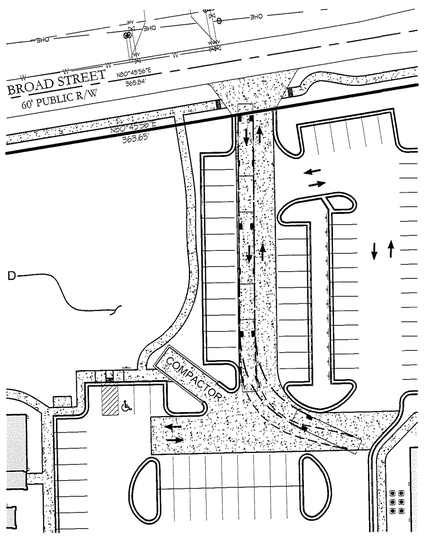


BUS [ft.]
Width : 8.50
Track : 8.50
Steering Angle : 40.10

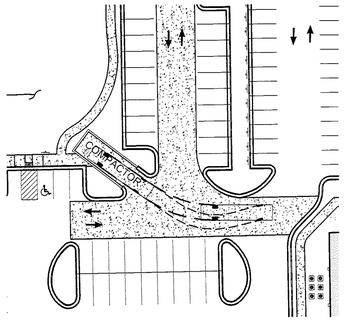
TEMPLATE USED FOR TRASH TRUCK



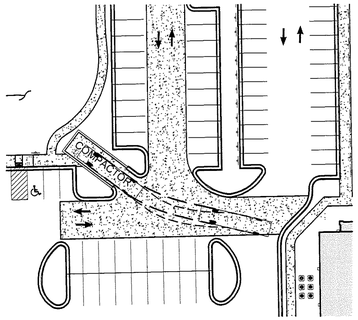
FIRE TRUCK MOVEMENT



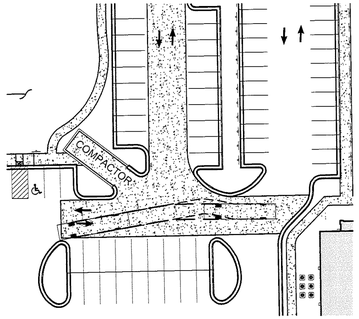
TRASH TRUCK MOVEMENT (IN FORWARD)



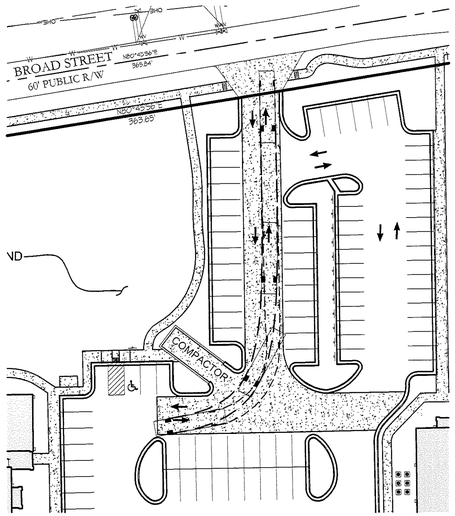
TRASH TRUCK MOVEMENT (IN REVERSE)



TRASH TRUCK MOVEMENT (OUT FORWARD-1)



TRASH TRUCK MOVEMENT (OUT REVERSE)



TRASH TRUCK MOVEMENT (OUT FORWARD-2)

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

REVISIONS
1. REV PER CITY COMMENTS 06-16-2015

ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1375
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES P. TRUBY, JR.
06/23/15

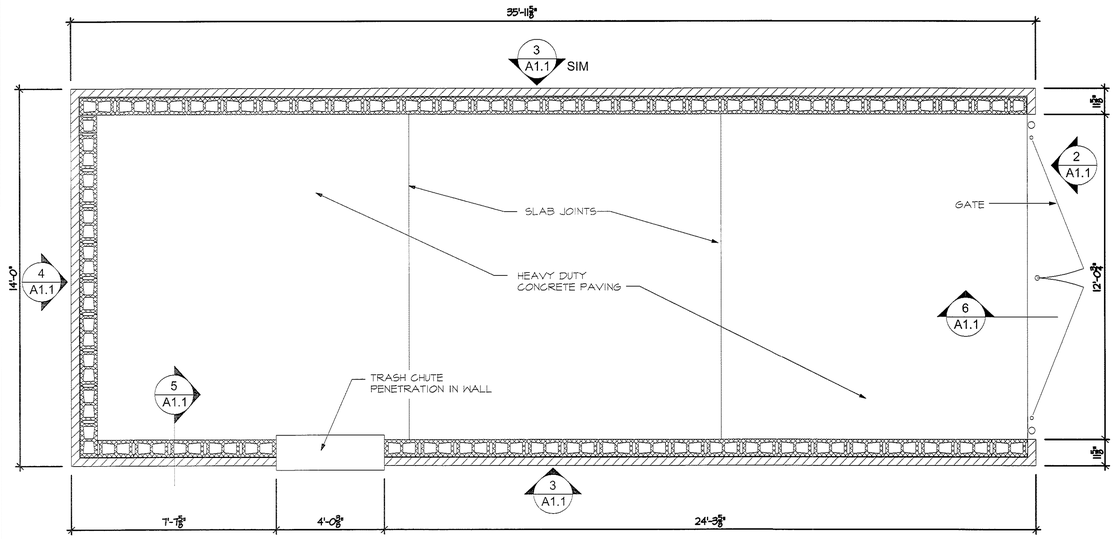
TRUCK MOVEMENT PLAN
ANNEXE AT THE RESERVE
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

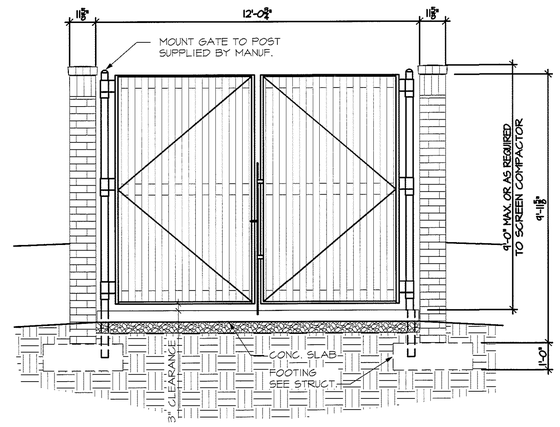
TRUCK MOVEMENT PLAN

SCALE:	1" = 40'
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C-12

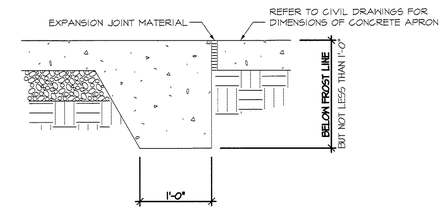
Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12 CIVIL BASEMAP.dwg Tab Name: C12-AUTOTURN



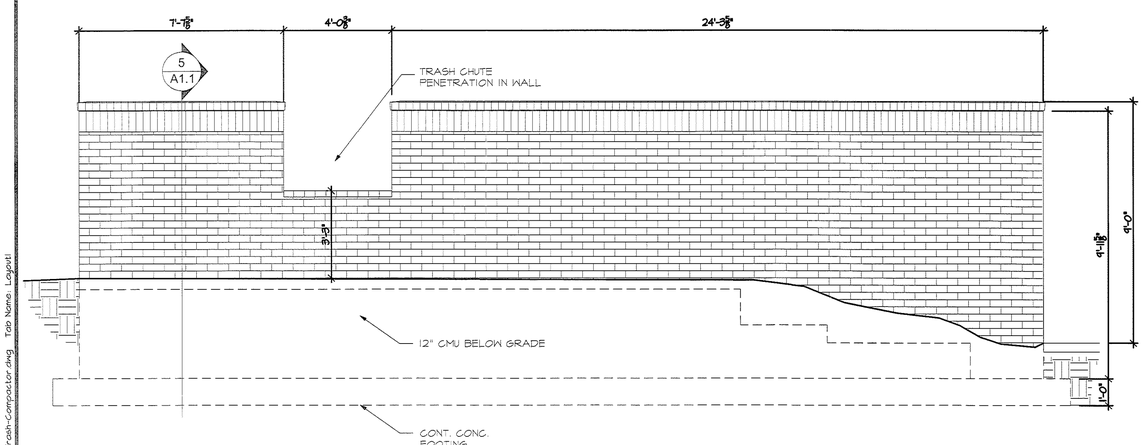
TRASH COMPACTOR PLAN (1 / A1.1)
SCALE: 3/8" = 1'-0"



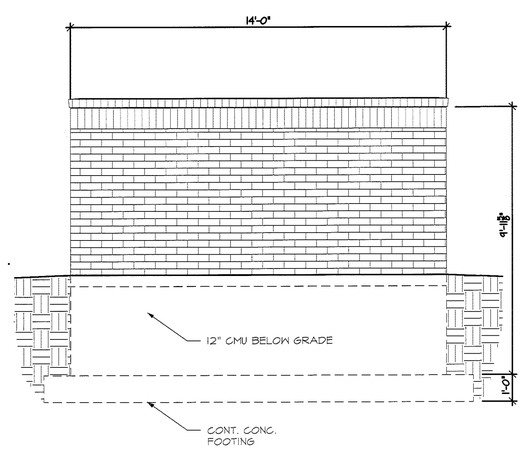
FRONT ELEVATION (2 / A1.1)
SCALE: 3/8" = 1'-0"



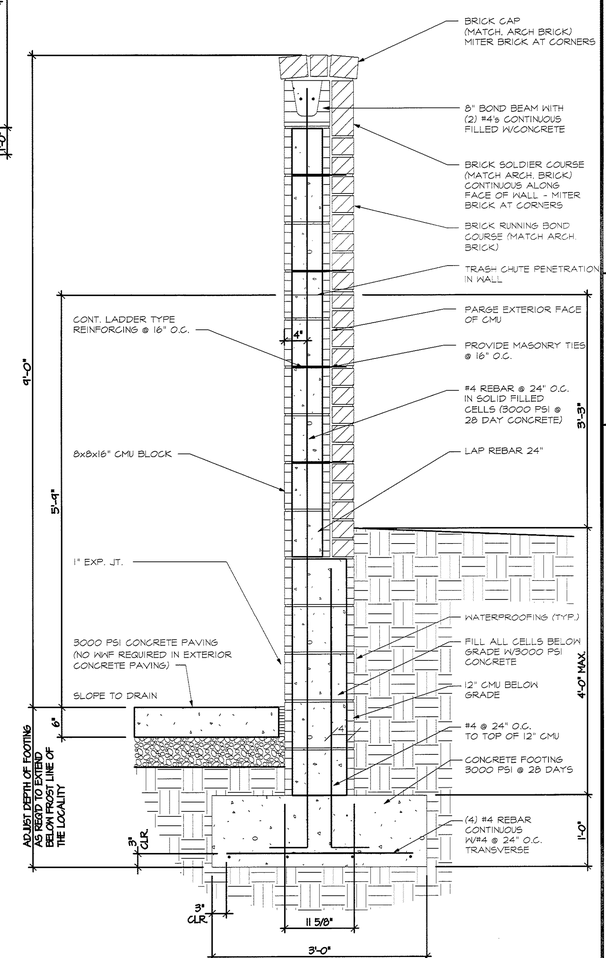
CROSS SECTION (6 / A1.1)
SCALE: 1" = 1'-0"



SIDE ELEVATION (3 / A1.1)
SCALE: 3/8" = 1'-0"



REAR ELEVATION (4 / A1.1)
SCALE: 3/8" = 1'-0"



CROSS SECTION (5 / A1.1)
SCALE: 1" = 1'-0"

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

REVISIONS
1 REV PER CITY COMMENTS 06-16-2015

GPL ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1375
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES G. PATRUSKY, JR.
06/23/15

TRASH COMPACTOR PLAN & DETAILS

ANNEXE AT THE RESERVE

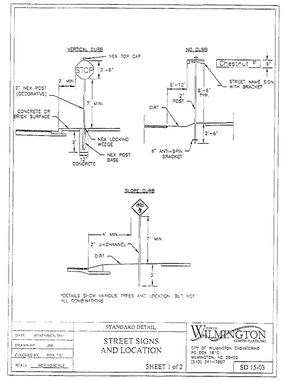
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

TRASH COMPACTOR PLAN & DETAILS

SCALE:	AS SHOWN
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	C-13

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12-C13_Trash-Compactor.dwg Tab Name: Layout1

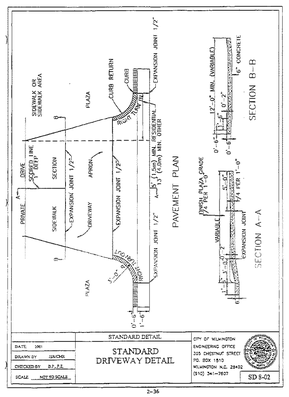


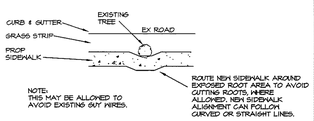
SIGNS

1. All signs shall meet the requirements of MUTCD and City Traffic Engineering in effect at the time of construction.
2. All Traffic Control Signs including multi-use paths shall be fabricated with 0.080 inch aluminum blanks using high intensity prismatic reflective sheeting Type IV or better. STOP signs shall be a minimum of 30"x30".
3. SPECIAL DESIGNATION signs by location and type shall adhere to City of Wilmington signage plan (ex. downtown, historic, streetcity trail, parks, riverfront, scenic byway, parking, etc.) and all associated policies.
4. POST MOUNTED STREET NAME SIGNS shall be fabricated with 9" extruded aluminum blanks with 1" radius corners and 3/4" reflective engineer grade (white). Minimum sign length is 18" long and increasing in 6" increments to 54" maximum as dictated by the number of letters in the name. The color scheme shall be white letters on green (Highway) reflective background without a border. Generally, in the downtown and historic areas or as designated in the City of Wilmington signage plan the background shall be blue and contain a topper.
5. Decorative sign poles shall consist of the NEX sign support system, 2" octagonal tube, 14 gauge, powder coated glossy black and include cap, post, base and wedge.
6. All other sign poles shall be u-channel poles made of galvanized steel with 8' poles 2lbs/ft or 12' poles 3lbs/ft. Galvanized NEX post may be substituted with approval from the City Signs and Markings Engineer.
7. OVERHEAD STREET NAME SIGNS shall be fabricated with 0.080 inch aluminum flat sign blanks 18" in height using a standard cutout. Sign length will be dictated by the number of letters in the name. For mast-arm type traffic signal supports and other overhead support systems refer to the design plans for maximum sign length.
8. All sign lettering, colors and fonts shall adhere to the MUTCD in effect at the time of construction. Florescent Yellow-Green shall be used on signs, in place of Yellow, when dated as an optional color in the MUTCD. Generally, the font will be FHWA series fonts (Highway Gothic). Other fonts types require prior City Signs and Markings Engineer approval.

LOCATION

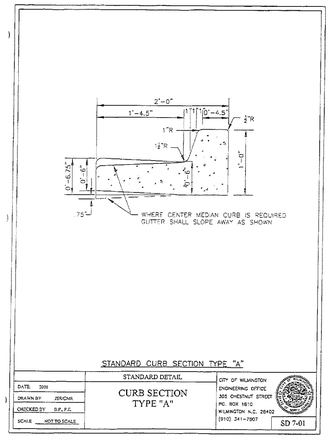
9. Sign locations depend on the edge of road condition. Generally, signs shall be a minimum 2' from face of a vertical curb, 4' from front of slope back curb, and 6' from edge of pavement without curb. Signs shall not be located more than 12' from any of these locations.
10. Sign posts installed in dirt shall be buried a minimum of 30". Octagonal posts shall utilize a base cast in place of the concrete footing. Sign posts installed in concrete or brick shall utilize a base cast in concrete 24" x 12" diameter.
11. Street name signs shall be installed 8'-6" from the ground to the bottom of the sign. Street name signs co-located with STOP signs shall be installed above the STOP sign. A 6" space shall be maintained between the STOP sign and a Street name sign that is parallel to the STOP sign face. All other signs should be mounted per MUTCD guidelines for Urban Areas.

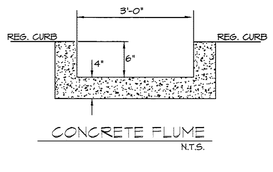


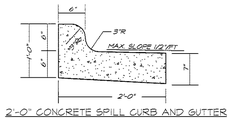


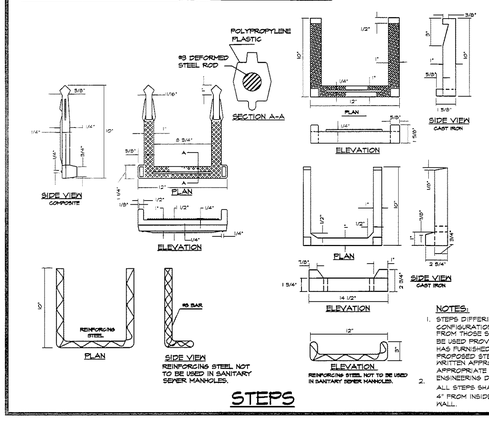
SIDEWALK MEANDERING DETAIL

(NOT TO SCALE)









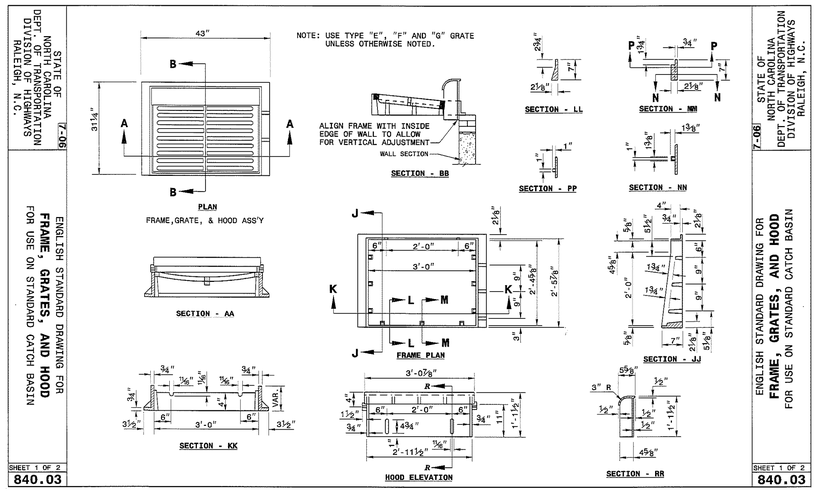
NOTES:

1. STEPS DIFFERING IN DIMENSIONS, CONFIGURATION, OR MATERIALS FROM THOSE SHOWN MAY ALSO BE USED PROVIDED THE CONTRACTOR HAS FURNISHED DETAILS OF THE PROPOSED STEPS AND HAS RECEIVED WRITTEN APPROVAL FROM THE APPROPRIATE CITY/COUNTY ENGINEERING DEPARTMENT.
2. ALL STEPS SHALL PROTRUDE 4" FROM INSIDE FACE OF STRUCTURE WALL.

STEPS

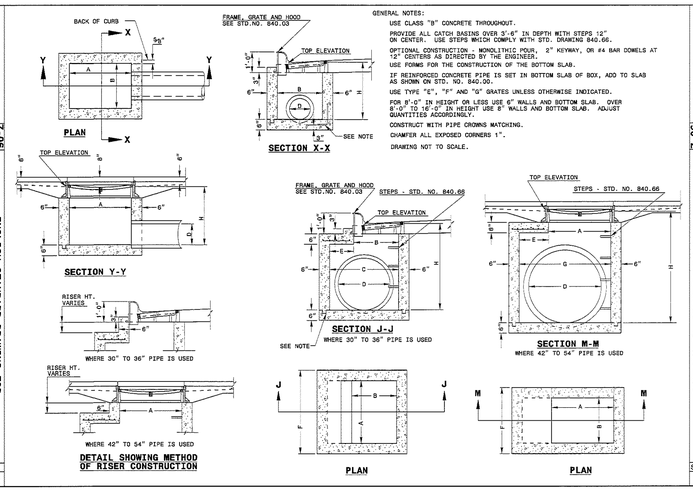
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

7-06



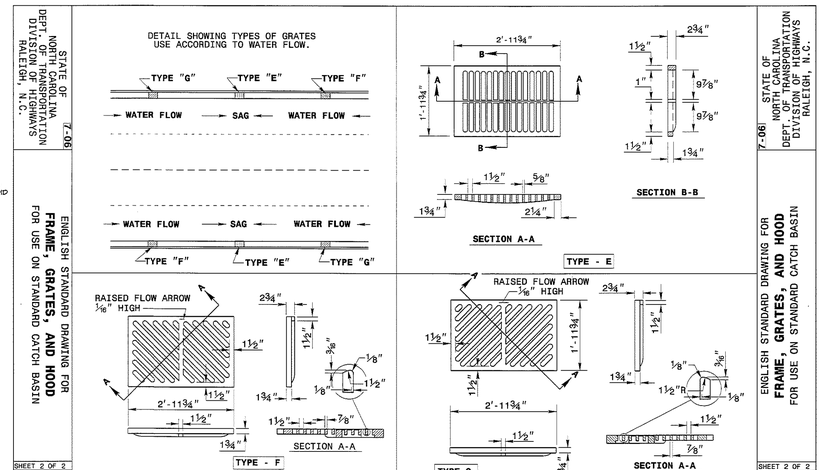
ENGLISH STANDARD DRAWING FOR **FRAME, GRATES, AND HOOD** FOR USE ON STANDARD CATCH BASIN

SHEET 1 OF 2 **840.03**



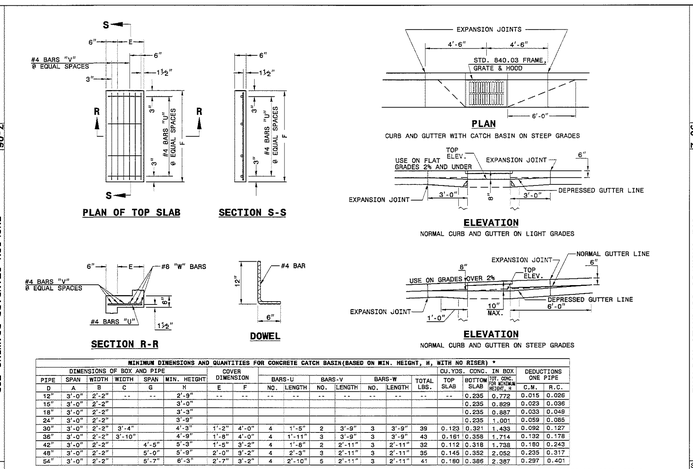
ENGLISH STANDARD DRAWING FOR **CONCRETE CATCH BASIN** 12" THRU 54" PIPE

SHEET 1 OF 2 **840.02**



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

SHEET 2 OF 2 **840.03**



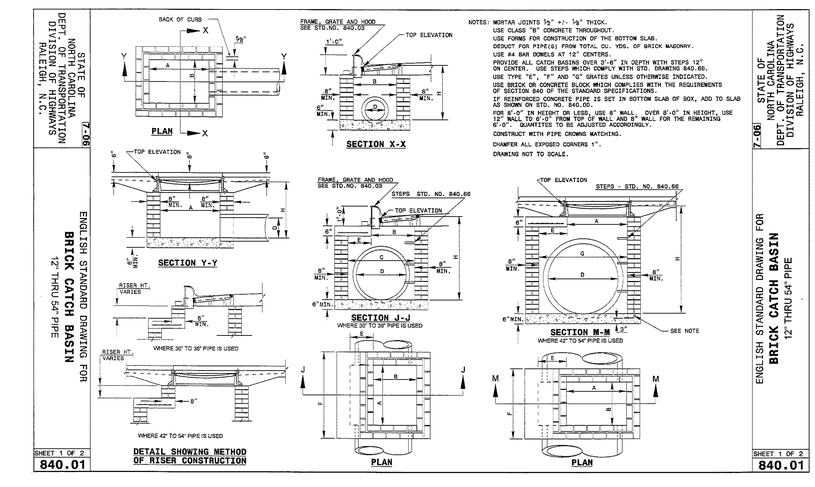
MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		BARS-U		BARS-V		BARS-W		TOTAL LBS.	CU.YDS. CONC. IN BOX		DEDUCTIONS ONE PIPE	
PIPE	SPAN	WIDTH	WIDTH	SPAN	MIN. HEIGHT			NO.	LENGTH	NO.	LENGTH	NO.	LENGTH		TOP SLAB	BOTTOM SLAB	C.R.	R.C.
D	A	B	C	E	H	E	F											
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'-3"			3'-9"										0.235	1.001	0.059	0.085
30"	3'-0"	2'-3"	3'-4"		4'-3"	1'-2"	4'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.193	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'-0"		4'-5"	5'-3"	1'-3"	3'-2"	4	1'-8"	3	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

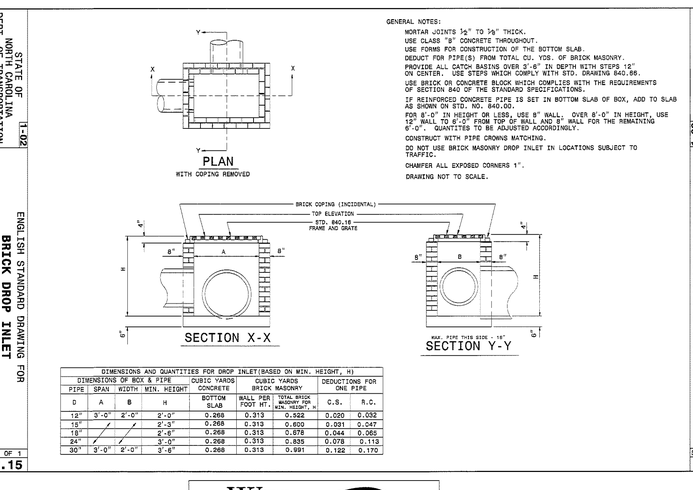
ENGLISH STANDARD DRAWING FOR **CONCRETE CATCH BASIN** 12" THRU 54" PIPE

SHEET 2 OF 2 **840.02**



ENGLISH STANDARD DRAWING FOR **BRICK CATCH BASIN** 12" THRU 54" PIPE

SHEET 1 OF 2 **840.01**



DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)

DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONCRETE	CUBIC YARDS BRICK MASONRY		DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	MIN. HEIGHT	BOTTOM SLAB	WALL PER FOOT HT.	TOTAL BRICK MASONRY FOR MIN. HEIGHT, H	C.S.	R.C.
D	A	B	H					
12"	3'-0"	2'-0"	2'-0"	0.268	0.313	0.522	0.020	0.032
15"	/	/	2'-3"	0.268	0.313	0.600	0.031	0.047
18"	/	/	2'-6"	0.268	0.313	0.678	0.044	0.065
24"	/	/	3'-0"	0.268	0.313	0.835	0.078	0.113
30"	3'-0"	2'-0"	3'-6"	0.268	0.313	0.991	0.122	0.170

ENGLISH STANDARD DRAWING FOR **BRICK DROP INLET** 12" THRU 30" PIPE

SHEET 1 OF 1 **840.15**

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

REVISIONS

1 REV PER CITY COMMENTS 06-18-2015

ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1375
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8200 ~ FAX: (336) 812-8180

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES R. TRUEY, JR. 06/23/15

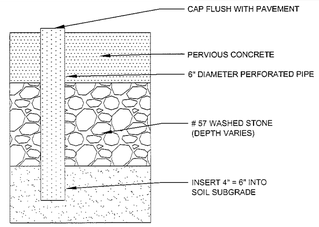
SITE DETAILS

ANNEXE AT THE RESERVE

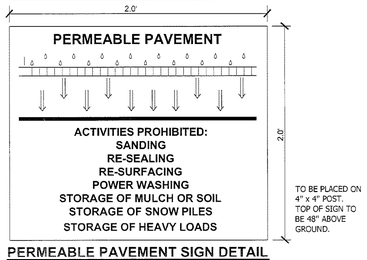
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

SITE DETAILS

SCALE:	N.T.S.
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	D1



OBSERVATION WELL DETAIL



PERMEABLE PAVEMENT SIGN DETAIL

OPERATION AND MAINTENANCE PROVISIONS FOR PERMEABLE PAVEMENT

BMP element:	Potential problem:	How to remediate the problem:
The perimeter of the permeable pavement	Areas of bare soil and / or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, then plant a ground cover and water until it is established.
	A vegetated area drains toward the pavement.	Regrade the area so that it drains away from the pavement, then plan a ground cover and water until it is established.
The surface of the permeable pavement	Trash / debris is present.	Remove the trash / debris.
	Weeds are growing on the surface of the permeable pavement.	Do not pull the weeds (may pull out media as well). Spray them with a systemic herbicide such as glyphosate and then return within the week to pull them by hand. (Another option is to pour boiling water on them or steam them.)
	Sediment is present on the surface.	Vacuum sweep the pavement.
	The structure is deteriorating or damaged.	Consult an appropriate professional.
	The pavement is rutting, cracking or slumping.	Consult an appropriate professional.
Observation well	Water is present more than five days after a storm event.	Vacuum sweep the pavement. If the pavement still does not dewater, consult a professional.
Educational Sign	The educational sign is missing or has been damaged.	Replace the sign.

CONSTRUCTION NOTE:

CONTRACTORS WHO ARE NOT FAMILIAR WITH PERMEABLE PAVEMENT ARE ACCUSTOMED TOCOMPACTING PAVEMENT SUBGRADES TO INCREASE STRUCTURAL STRENGTH. HOWEVER, THIS IS IN DIRECT OPPOSITION TO THE CORRECT TREATMENT OF SOIL BENEATH PERMEABLE PAVEMENT (FOR AN INFILTRATING DESIGN). IT IS HIGHLY RECOMMENDED TO HOLD A PRECONSTRUCTION MEETING TO ENSURE CONTRACTORS UNDERSTAND THE NEED TO PREVENT SUBGRADE COMPACTION AND CLOGGING OF THE PAVEMENT SURFACE AS WELL AS THE OTHER UNIQUE CONSTRUCTION CONSIDERATIONS FOR PWERMEABLE PAVEMENT. IT IS HIGHLY RECOMMENDED THAT THE CONSTRUCTION PROCESS BE OVERSEEN BY A DESIGN PROFESSIONALFAMILIAR WITH PERMEABLE PAVEMENT INSTALLATION TO INSURE THAT THE INVESTMENT IN MATERIALS WILL RESULT IN A FUNCTIONING PERMEABLE PAVEMENT SYSTEM.

PERVIOUS CONCRETE CONSTRUCTION SEQUENCE:

CONSTRUCTION STEP 1: ENSURE ACCEPTABLE CONDITIONS FOR CONSTRUCTION

DO NOT BEGING CONSTRUCTION ON PERMEABLE PAVEMENT UNTIL ACCEPTABLE CONDITIONS ARE PRESENT. THIS INCLUDES THE FOLLOWING ITEMS:

- PERVIOUS SURFACES MUST BE GRADED SO THAT THEY DO NOT DISCHARGE TO THE PERMEABLE PAVEMENT, EXCEPT FOR INSTANCES WHEN THIS IS UNAVOIDABLE, SUCH AS PARKING LOT ISLANDS.
- IMPERVIOUS AREAS THAT WILL DRAIN TO THE PERMEABLE PAVEMENT MUST BE COMPLETED.
- AREAS OF THE SITE ADJACENT TO OR DRAINING TOWARDS THE PERMEABLE PAVEMENT MUST BE STABILIZED WITH VEGETATION, MULCH, STRAW, SEED, SOD, FIBER BLANKETS OR OTHER APPROPRIATE COVER IN ORDER TO PREVENT EROSION AND POSSIBLE CONTAMINATION WITH SEDIMENTS.
- CONSTRUCTION ACCESS TO OTHER PORTIONS OF THE SITE MUST BE ESTABLISHED SO THAT NO CONSTRUCTION TRAFFIC PASSES THROUGH THE PERMEABLE PAVEMENT SITE DURING INSTALLATION. INSTALL BARRIERS OR FENCES AS NEEDED.
- THE FORECAST SHOULD BE FOR A WINDOW OF DRY WEATHER TO PREVENT EXCESS COMPACTION OR SMEARING OF THE SUBGRADE WHILE IT IS EXPOSED.
- ALL PERMEABLE PAVEMENT AREAS MUST BE CLEARLY MARKED ON THE SITE.

CONSTRUCTION STEP 2: EXCAVATE THE PAVEMENT AREA AND PREPARE SUBGRADE SURFACE

CLEAR AND EXCAVATE THE AREA FOR PAVEMENT AND BASE COURSES IN A MANNER THAT PROTECTS AND MAINTAINS SUBGRADE INFILTRATION RATES BY:

- EXCAVATING IN DRY SUBGRADE CONDITIONS AND AVOIDING EXCAVATING IMMEDIATELY AFTER STORMS WITHOUT A SUFFICIENT DRYING PERIOD.
- NOT ALLOWING EQUIPMENT TO CROSS THE PAVEMENT AREA AFTER EXCAVATION HAS BEGUN.
- OPERATING EXCAVATION EQUIPMENT FROM OUTSIDE THE PAVEMENT AREA OR FROM UNEXCAVATED PORTIONS OF THE AREA USING AN EXCAVATION STAGING PLAN.
- USING EQUIPMENT WITH TRACKS RATHER THAN TIRES TO MINIMIZE SOIL COMPACTION WHEN EQUIPMENT ON THE SUBGRADE SURFACE IS UNAVOIDABLE.
- DIGGING THE FINAL 9–12 INCHES BY USING THE TEETH OF THE EXCAVATOR BUCKET TO LOOSEN SOIL SO AS NOT TO SMEAR THE SUB GRADE SOIL SURFACE. FINAL GRADING OR SMOOTHING OF THE SUBGRADE SHOULD BE DONE BY HAND IF POSSIBLE.
- MINIMIZING THE TIME BETWEEN EXCAVATION AND PLACEMENT OF THE AGGREGATE.

THE FINAL SUBGRADE SLOPE MAY NOT EXCEED 0.5%. SEE DESIGN STEP 6: SUBGRADE GRADING FOR MORE INFORMATION ON ACHIEVING FLAT SUBGRADE SLOPES. THE SLOPE OF THE SUBGRADE SHOULD BE CHECKED BEFORE PROCEEDING.

AFTER THE SUBGRADE SLOPE IS VERIFIED, THE SUBGRADE SURFACE OF INFILTRATING PERMEABLE PAVEMENT SYSTEMS SHOULD BE SCARIFIED, RIPPED OR TRENCHED TO MAINTAIN ITS PREDISTURBANCE INFILTRATION RATE. IF THE PAVEMENT IS TO BE SCARIFIED, THEN THE DEPTH OF THE SCARIFICATION SHOULD BE SIX TO NINE INCHES. TO RIP THE SUBGRADE, USE A SUBSOIL RIPPER TO MAKE PARALLEL RIPS SIX TO NINE INCHES DEEP SPACED THREE FEET APART ALONG THE LENGTH OF THE PERMEABLE PAVEMENT EXCAVATION. IN SILTY OR CLAYEY SOILS, CLEAN COARSE SAND MUST BE POURED OVER THE RIPPED SURFACE TO KEEP IT FREE–FLOWING (BROWN AND HUNT 2009). AN ALTERNATIVE TO RIPPING IS TRENCHING. IF TRENCHING IS CHOSEN, THEN PARALLEL TRENCHES 12 INCHES WIDE BY 12 INCHES DEEP SHALL BE MADE ALONG THE LENGTH OF THE PERMEABLE PAVEMENT EXCAVATION. EXCAVATE TRENCHES EVERY 6 FEET (MEASURED FROM CENTER TO CENTER OF EACH TRENCH) AND FILL WITH ½ INCH OF CLEAN COURSE SAND AND 11.5 INCHES OF #57 STONE AGGREGATE (BROWN AND HUNT 2009).

CONSTRUCTION STEP 3: TEST THE SUBGRADE SOIL INFILTRATION RATE (INFILTRATION SYSTEMS ONLY)

A DIRECT MEASUREMENT OF THE SOIL'S INFILTRATION RATE MUST BE CONDUCTED IMMEDIATELY AFTER EXCAVATION AND BEFORE THE AGGREGATE IS PLACED. INFILTRATION RATE TESTING MUST BE CONDUCTED BY AN APPROPRIATELY–QUALIFIED PROFESSIONAL. THE RESULTS OF THE TESTING MUST BE GIVEN TO THE DESIGNER OF RECORD FOR REVIEW.

CONSTRUCTION STEP 4: TEST THE SUBGRADE SOIL INFILTRATION RATE (INFILTRATION SYSTEMS ONLY)

IF THE SOIL TEST SHOWS AN INFILTRATION RATE(S) THAT ARE LOWER THAN THE RATE(S) USED IN THE FINAL DESIGN, THEN THE DESIGNER MUST CHECK THE CALCULATIONS AND MAY NEED TO ADJUST THE DESIGN. THE CONSTRUCTION DOCUMENTS WILL BE REVISED TO ACCOUNT FOR THESE CHANGES.

CONSTRUCTION STEP 5: PLACE GEOTEXTILES AND GEOMEMBRANE (IF APPLICABLE)

IF THE SOILS ENGINEER REQUIRES USING GEOTEXTILES OR GEOMEMBRANES, THEN FOLLOW THE MANUFACTURER'S RECOMMENDATIONS SO FOR THE APPROPRIATE OVERLAP BETWEEN ROLLS OF MATERIAL. SECURE GEOTEXTILE OR GEOMEMBRANE SO THAT IT WILL NOT MOVE OR WRINKLE AS AGGREGATE IS PLACED.

CONSTRUCTION STEP 6: PLACE OBSERVATION WELL(S)

PLACE OBSERVATION WELLS ACCORDING TO THE DESIGN PLANS AND VERIFY THAT THE ELEVATIONS ARE CORRECT.

CONSTRUCTION STEP 7: PLACE AGGREGATE BASE

INSPECT ALL STONE TO INSURE THAT IT IS CLEAN, FREE OF FINES AND CONFORMS TO THE SPECIFICATIONS OF THE DESIGN PLANS. ALL AGGREGATES SHOULD BE STOCKPILED ON AN IMPERVIOUS SURFACE, A GEOTEXTILE OR OTHER IMPERVIOUS MATERIAL TO KEEP THE AGGREGATE FREE OF SEDIMENT. IF AGGREGATE BECOMES CONTAMINATED WITH SEDIMENT, THEN IT SHALL BE REPLACED WITH CLEAN MATERIALS. BEFORE PLACING THE AGGREGATE BASE, REMOVE ANY ACCUMULATION OF SEDIMENTS ON THE FINISHED SUBGRADE WITH LIGHT EQUIPMENT. IF THE EXCAVATED SUBGRADE SURFACE IS SUBJECTED TO RAINFALL BEFORE THE PLACEMENT OF THE AGGREGATE BASE, THE RESULTING SURFACE CRUST MUST BE EXCAVATED (TO AT LEAST AN ADDITIONAL TWO INCHES IN DEPTH), RAKED OR SCARIFIED TO BREAK UP THE CRUST. FOR SITES WITH AN IMPERMEABLE LINER OR GEOTEXTILES, REMOVE ANY ACCUMULATED SEDIMENTS AND CHECK THE PLACEMENT, SLOPES AND ELEVATIONS SHOULD BE CHECKED ON THE SOIL SUBGRADE AND THE FINAL BEDDING MATERIAL TO ASSURE THAT THEY CONFORM TO THE DESIGN SPECIFICATIONS.

ALL AGGREGATE SHOULD BE SPREAD (NOT DUMPED) BY A FRONT–END LOADER. MOISTEN AND SPREAD SIX INCH LIFTS OF THE WASHED STONE WITHOUT DRIVING ON THE SUBGRADE AND BEING CAREFUL NOT TO DAMAGE UNDERDRAINS AND THEIR FITTINGS, CATCH BASINS, OR OBSERVATION WELLS. THE AGGREGATE LAYER SHOULD BE LIGHTLY COMPACTED.

CONSTRUCTION STEP 8: INSTALL CURB RESTRAINTS AND PAVEMENT BARRIERS

EDGE RESTRAINTS AND BARRIERS BETWEEN PERMEABLE AND IMPERVIOUS PAVEMENT SHALL BE INSTALLED PER DESIGN. BEFORE MOVING ON TO CONSTRUCTION STEP 9, BE CERTAIN THAT THE DESIGN AND INSTALLATION ARE CONSISTENT.

CONSTRUCTION STEP 9: INSTALL BEDDING AND PAVEMENT COURSES

PC PAVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST VERSION OF ACI 522.1 SPECIFICATION FOR PERVIOUS CONCRETE. IT IS REQUIRED THAT THE CONTRACTOR INSTALLING THE PERVIOUS CONCRETE MEET THE REQUIREMENTS OUTLINED IN THE LATEST VERSION OF ACI 522.1. INSTALLATION OF PC CAN BE ACCOMPLISHED USING EITHER THE ONE–STEP OR THE TWO–STEP METHOD. THE TWO–STEP METHOD IS THE MORE TRADITIONAL METHOD AND UTILIZES SEPARATE STEPS TO STRIKE–OFF THEN COMPACT THE PERVIOUS CONCRETE. IN THIS METHOD, THE PERVIOUS CONCRETE WILL USUALLY REQUIRE A SLUMP OF APPROXIMATELY 1–3 INCHES. THE ONE–STEP METHOD USES A COUNTER–ROTATING ROLLER SCREED TO BOTH STRIKE–OFF AND COMPACT THE PERVIOUS CONCRETE IN ONE STEP. THIS METHOD REQUIRES THE USE OF A PERVIOUS CONCRETE WITH A SLUMP IN THE RANGE OF 4–8 INCHES. IN THE CASE OF EITHER METHOD, THE USE OF DENSE–PASTE PERVIOUS CONCRETE MIXTURES IS REQUIRED. THESE MIXES ARE DEFINED BY THE USE OF CHEMICAL ADMIXTURES WHICH MODIFY THE VISCOSITY OF THE CEMENT PASTE TO A CONSISTENCY THAT WILL NOT RUN OFF OF THE AGGREGATE, BUT "STICK" TO THE AGGREGATE. THESE MIXES PROVIDE MORE COHESIVITY WHICH INCREASES STRENGTH AND DURABILITY. PC MIXES SHOULD ALSO INCLUDE A HYDRATION STABILIZER BUT SHALL BE REQUIRED TO INCLUDE A HYDRATION STABILIZER WHEN THE AMBIENT TEMPERATURE EXCEEDS 90 DEGREES F.

CONSTRUCTION STEP 10: PROTECT THE PAVEMENT THROUGH PROJECT COMPLETION

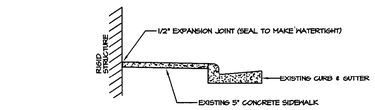
THE PERMEABLE PAVEMENT SHALL BE INSTALLED AT THE END OF THE SITE CONSTRUCTION TIMELINE. THE CONTRACTOR MUST PROTECT THE PERMEABLE PAVEMENT THROUGH PROJECT COMPLETION. THIS MUST BE DONE BY:

- ROUTE CONSTRUCTION ACCESS THROUGH OTHER PORTIONS OF THE SITE SO THAT NO CONSTRUCTION TRAFFIC PASSES THROUGH THE PERMEABLE PAVEMENT SITE. INSTALL BARRIERS OR FENCES AS NEEDED.
- PROTECT THE PAVEMENT PER THE CONSTRUCTION DOCUMENTS. PROTECTION TECHNIQUES THAT MAY BE SPECIFIED INCLUDE MATS, PLASTIC SHEETING, BARRIERS TO LIMIT ACCESS, OR MOVING THE STABILIZED CONSTRUCTION ENTRANCE
- SCHEDULE STREET SWEEPING DURING AND AFTER CONSTRUCTION TO PREVENT SEDIMENT FROM ACCUMULATING ON THE PAVEMENT.

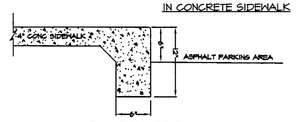
CONSTRUCTION STEP 11: AS-BUILT INSPECTION

AFTER INSTALLATION, AN APPROPRIATELY LICENSED NC PROFESSIONAL MUST PERFORM A FINAL ASBUILT INSPECTION AND CERTIFICATION THAT INCLUDES:

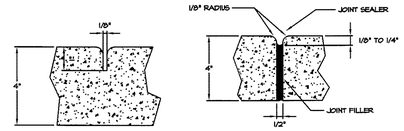
- ENSURING THAT THE INSTALLATION REMAINS IN GOOD CONDITION AND THE SURFACE IS FREE OF FINES.
- CHECKING THAT ALL PERVIOUS SURFACES ARE DRAINING AWAY FROM THE PAVEMENT AND THAT THE OVERALL SITE IS STABILIZED.
- VERIFYING THAT THE PAVEMENT WAS INSTALLED PER THE DESIGN.
- PREPARING THE AS-BUILT PLANS THAT INCLUDE ANY CHANGES THE UNDERDRAINS, OBSERVATION WELL LOCATIONS, TERRACE LAYOUTS, AGGREGATE DEPTH OR STORAGE STRUCTURES, ANY REVISED CALCULATIONS, ETC.
- TESTING THE PERMEABILITY OF THE PAVEMENT SURFACE USING THE NCSU SHALLOW HEAD INFILTRATION TEST (SEE MAINTENANCE SECTION 18.5.5) OR OTHER APPROPRIATE TEST SUCH AS ASTM C1701 STANDARD TEST METHOD FOR INFILTRATION RATE OF IN-PLACE PERVIOUS CONCRETE. ANY DEFICIENCIES FOUND DURING THE AS-BUILT INSPECTION SHALL BE PROMPTLY ADDRESSED.



DETAILS SHOWING EXPANSION JOINTS IN CONCRETE SIDEWALK



TURN DOWN SIDEWALK



GROOVE JOINT IN SIDEWALK

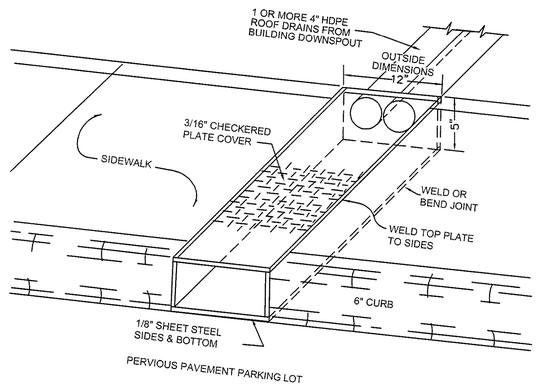
TRANSVERSE EXPANSION JOINT IN SIDEWALK

GENERAL NOTES:

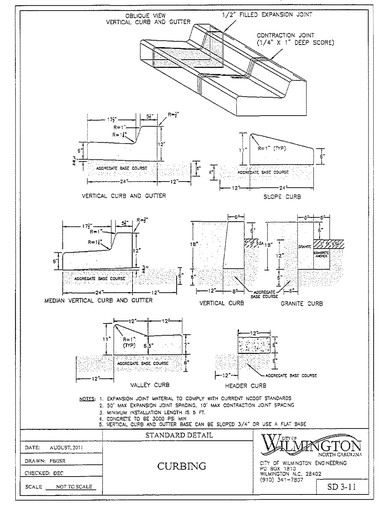
1. A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS NOT TO EXCEED 50' AND MATCHING EXPANSION/CONSTRUCTION JOINT IN ADJACENT CURB. A SEALED 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.
2. SIDEWALK AT DRIVEWAY ENTRANCES TO BE 6" THICK.
3. ALL SIDEWALKS ADJACENT TO STREETS AND PARKING AREAS ARE 5'
4. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 PSI. IN 28 DAYS.

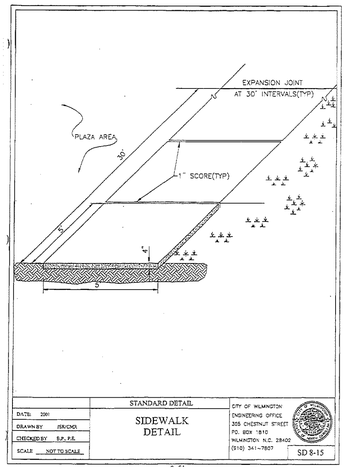
CONCRETE SIDEWALKS

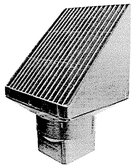
N.T.S.



STANDARD 5" X 12" GALVANIZED STEEL FLUME



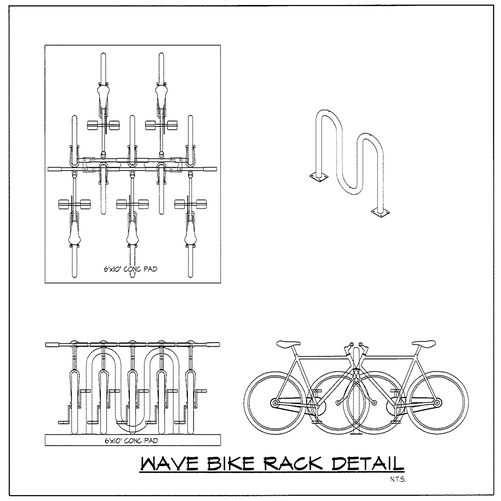




"THE ULTIMATE DOWN SPOUT SCREEN" BY ANDERSON WINDOW AND GUTTER CLEANING SHALL BE INSTALLED AT EACH DOWN SPOUT LOCATION. CONTRACTOR MAY SUBMIT EQUIVALENT PRODUCT FOR SUBSTITUTION APPROVAL. MODEL AND SIZE SHALL BE AS REQUIRED BASED ON DOWN SPOUT SIZE SPECIFIED BY THE ARCHITECT. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION. THE GAP BETWEEN THE DOWN SPOUT END AND THE SCREEN SHALL BE MINIMIZED TO THE EXTENT PRACTICAL TO AVOID SLASH OUT, 4" MAXIMUM SEPARATION. OWNER NOTE: MAINTENANCE STAFF AT THE FACILITY SHALL ROUTINELY INSPECT THESE DEVICES FOR BUILDUP AND SCREEN DAMAGE OR REMOVAL. CLEAN, REPAIR, OR REPLACE AS REQUIRED. THESE DEVICES ARE A PART OF THE STORMWATER MANAGEMENT PERMIT APPROVAL AND MUST REMAIN IN PLACE AND OPERATIONAL AT ALL TIMES.

DOWNSPOUT SCREEN

N.T.S.



WAVE BIKE RACK DETAIL

N.T.S.

*** ALL NOTES ARE TAKEN FROM NCDENR STORMWATER BMP MANUAL**
Chapter Revised: 06-01-12

OWNER / DEVELOPER:
BRC WILMINGTON LLC
5826 SAMET DRIVE, SUITE 105
HIGH POINT, NC 27265
PHONE: (336) 889-1512
FAX: (336) 889-1501

ENGINEER:
CPT ENGINEERING & SURVEYING, INC.
4400 TYNING STREET
HIGH POINT, NC 27265
CONTACT: CHUCK TRUBY, P.E.
PHONE: (336) 812-8800 ext:304
FAX: (336) 812-8780

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

REVISIONS
1. REV PER CITY COMMENTS 06-16-2015

ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1375
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES P. TRUBY, JR. 06/23/15

NOTES and DETAILS
ANNEXE AT THE RESERVE
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

NOTES and DETAILS

SCALE:	N.T.S.
DATE:	03/17/15
PROJECT:	1140-12
DRAWN BY:	TGL
SHEET	D2

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12 Detail sheets.dwg Tab: None T23 SITE DETAILS (2)

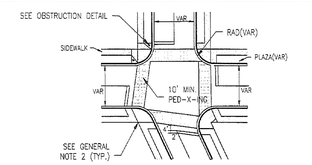
GENERAL NOTES
1. In accordance with N.C.G.S. 136-44.14, all street curbs being constructed or reconstructed shall provide wheelchair ramps for the physically handicapped on each side of any street or road, where curbs and sidewalks are provided and at other major points of pedestrian flow.
2. Wheelchair ramps shall be located as indicated in detail drawings; however, existing light poles, fire hydrants, drop inlets, etc. may affect placement.
3. Curb ramps shall have detectable warnings extending the full width of the ramp and a minimum of 2-ft. in length.

CONSTRUCTION NOTES
1. Construction shall conform with construction standards of the governing body which has jurisdiction of the particular street.
2. Wheelchair ramps shall be constructed of Class "A" concrete with the surface having a rough, non-skid type finish.
3. A ½-in. expansion joint shall be required where the concrete wheelchair ramp joins any rigid pavement or structure.
4. In no case shall the width of a curb ramp or curb cut be less than 40-in. (3-ft. 4-in.), not including the flared sides.
5. Transitions from ramps to walks, gutters or streets shall be flush and free of abrupt changes.
6. The maximum slope on the curb ramp run is 1:12
7. The maximum cross slope of the curb ramp is 1:50.
8. Maximum slopes of adjoining gutters, road surface immediately adjacent to the curb ramp, or accessible route shall not exceed 1:20.
9. Any raised islands in crossings shall be cut through level with the street or have curb ramps at both sides and a level area at least 48-in. long between the curb ramps.
10. Detectable warnings shall consist of raised truncated domes with a diameter of nominal 0.9-in., a height of nominal 0.2-in. and a center-to-center spacing of nominal 2.35-in. and shall contrast visually with adjoining surfaces, either light-on-dark, or dark-on-light.

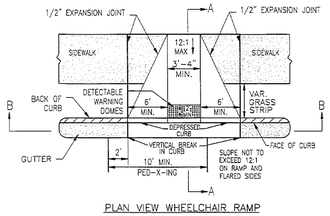
ADDITIONAL NOTES
1. Stop bars shall be used where it is important to indicate the point behind which vehicles are required to stop in compliance with a traffic signal, stop sign or other legal requirement.
2. Parking shall be eliminated a minimum of 20 feet back of the pedestrian crosswalk.
3. All pavement markings shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices, published by the Federal Highway Administration. This document is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
4. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.
5. The bottom of diagonal (corner type) curb ramps at marked crossings shall have 48-in. minimum clear space within the markings.
6. If diagonal curb ramps have flared sides, they shall have at least a 24-in. long segment of straight curb located on each side of the curb ramp and within the marked crossing.

STANDARD DETAIL
GUIDELINES FOR WHEELCHAIR RAMPS
CITY OF WILMINGTON ENGINEERING OFFICE 305 CHESTNUT STREET P.O. BOX 1810 WILMINGTON N.C. 28402 (910) 341-7807
DATE: 2/28/2008 | DRAWN BY: J. REYNE | CHECKED BY: AMS, P.E. | SCALE: NOT TO SCALE
SD 8-09

2-46



TYPICAL LOCATION OF WHEELCHAIR RAMP

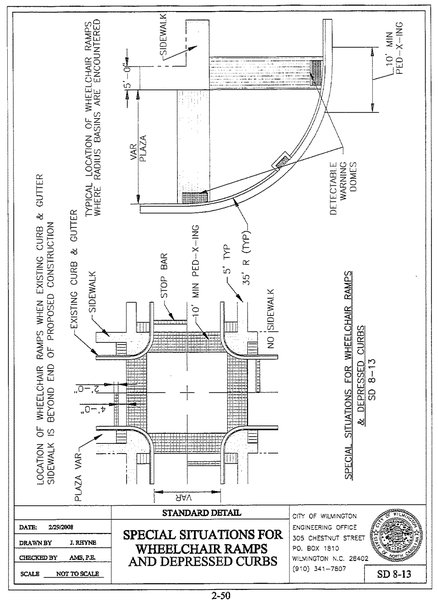


PLAN VIEW WHEELCHAIR RAMP

GUIDELINES FOR WHEELCHAIR RAMPS & DEPRESSED CURBS
SD 8-10

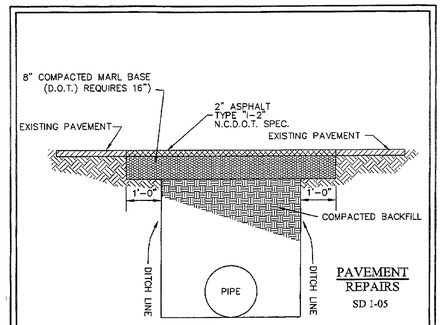
STANDARD DETAIL
GUIDELINES FOR WHEELCHAIR RAMPS & DEPRESSED CURBS SHEET 1 OF 2
CITY OF WILMINGTON ENGINEERING OFFICE 305 CHESTNUT STREET P.O. BOX 1810 WILMINGTON N.C. 28402 (910) 341-7807
DATE: 2/28/2008 | DRAWN BY: J. REYNE | CHECKED BY: AMS, P.E. | SCALE: NOT TO SCALE
SD 8-10

2-47



STANDARD DETAIL
SPECIAL SITUATIONS FOR WHEELCHAIR RAMPS AND DEPRESSED CURBS
CITY OF WILMINGTON ENGINEERING OFFICE 305 CHESTNUT STREET P.O. BOX 1810 WILMINGTON N.C. 28402 (910) 341-7807
DATE: 2/28/2008 | DRAWN BY: J. REYNE | CHECKED BY: AMS, P.E. | SCALE: NOT TO SCALE
SD 8-13

2-50

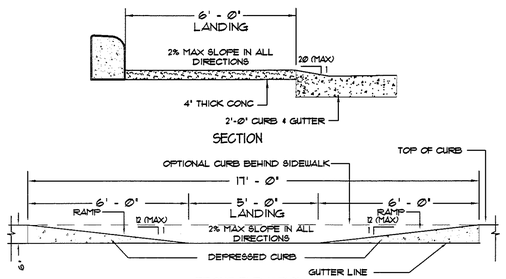


PAVEMENT REPAIRS
SD 1-05

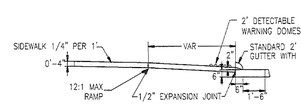
NOTES:
* BACKFILL TO BE INSTALLED IN 6" LIFTS (MAXIMUM) AND COMPACTED TO A MINIMUM DENSITY OF 95% AS DETERMINED BY THE MODIFIED A.A.S.H.T.O. STANDARD METHOD T-99
* CUT - BACK TO BE PREPARED AFTER TRENCH BACKFILLING AND COMPACTION

STANDARD SHOWING METHOD MAKING PAVEMENT REPAIRS WHERE PIPE IS INSTALLED

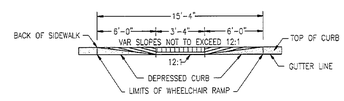
STANDARD DETAIL
PAVEMENT REPAIRS
CITY OF WILMINGTON ENGINEERING OFFICE 305 CHESTNUT STREET P.O. BOX 1810 WILMINGTON NC. 28402 (910) 341-7807
DATE: 2001 | DRAWN BY: JSR/CMR | CHECKED BY: B.P., P.E. | SCALE: NOT TO SCALE
SD 1-05



INLINE SIDEWALK RAMP DETAIL
N.T.S.



SECTION A-A



SECTION B-B

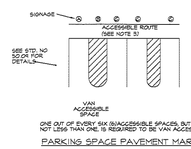
STANDARD DETAIL
GUIDELINES FOR WHEELCHAIR RAMPS & DEPRESSED CURBS SHEET 2 OF 2
CITY OF WILMINGTON ENGINEERING OFFICE 305 CHESTNUT STREET P.O. BOX 1810 WILMINGTON N.C. 28402 (910) 341-7807
DATE: 2/28/2008 | DRAWN BY: J. REYNE | CHECKED BY: AMS, P.E. | SCALE: NOT TO SCALE
SD 8-10

2-47A

ACCESSIBLE PARKING REQUIREMENTS

TOTAL PARKING SPACES PROVIDED	MINIMUM NUMBER OF ACCESSIBLE SPACES SPACES REQUIRED	MINIMUM NUMBER OF ACCESSIBLE SPACES REQUIRED TO BE VAN ACCESSIBLE
1 TO 25	1	1
26 TO 50	2	1
51 TO 75	3	1
76 TO 100	4	1
101 TO 150	5	1
151 TO 200	6	1
201 TO 300	7	1
301 TO 400	8	1
401 TO 500	9	2
501 TO 1000	2% OF TOTAL	1 IN EVERY 8 ACCESSIBLE SPACES
1001 AND OVER	20 PLUS 1 FOR EACH 100 OVER 1000	1 IN EVERY 8 ACCESSIBLE SPACES

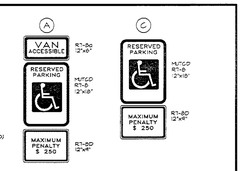
SECTION 4.1.2 (5) OF THE AMERICANS WITH DISABILITIES ACT (ADA). SEE 4.1.2(5) (b) FOR MEDICAL CARE FACILITIES

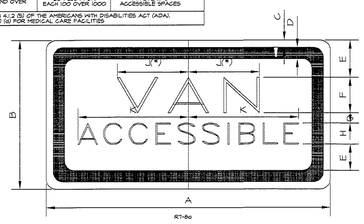


ONE OUT OF EVERY SIX (6)ACCESSIBLE SPACES, BUT NOT LESS THAN ONE, IS REQUIRED TO BE VAN ACCESSIBLE

PARKING SPACE PAVEMENT MARKINGS

NOTES:
1. ALL 12"x18" ACCESSIBLE SIGNS (R1-8 & R7-8) MUST BE MOUNTED SUCH THAT THE DISTANCE TO BOTTOM EDGE OF SIGN PLACE (MUTCD). MOUNTING HEIGHT CAN BE REDUCED TO 5 FEET IF PLACED IN AN AREA BETWEEN SIDEWALK AND BUILDING FACE IN WHICH PEDESTRIANS ARE NOT EXPECTED TO USE.
2. REFER TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (MUTCD) US DEPARTMENT OF TRANSPORTATION AND NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SUPPLEMENT.
3. IF ACCESSIBLE ROUTE IS A RAISED SIDEWALK AREA, THEN RAMPS ARE REQUIRED AT LOADING ZONE AREA.



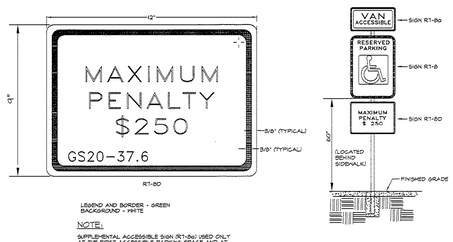


DIMENSIONS (INCHES)											
A	B	C	D	E	F	G	H	J	K	L	
12	6	3/8	3/8	1-1/2	1-1/20	1/2	10	2-1/2	4	1-1/2	

* INCREASE SPACING 50% DURING FEDERAL HIGHWAY ADMINISTRATION(SDOT) REVISES IN LETTERS REVISIONS

LEGEND AND BORDER - GREEN BACKGROUND - WHITE

SUPPLEMENTAL ACCESSIBLE SIGN (R7-8a)



LEGEND AND BORDER - GREEN BACKGROUND - WHITE

NOTE:
SUPPLEMENTAL ACCESSIBLE SIGN R7-8A(USED ONLY AT THE FIRST ACCESSIBLE PARKING SPACE AND AT EACH VAN ACCESSIBLE SPACE.

SIGN APPROVED FOR USE UNDER GENERAL STATUTE 20-37.6

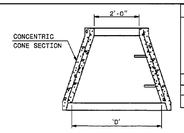
R7-8D PENALTY SIGNS ARE REQUIRED TO ACCOMPANY ALL R7-8 PARKING SIGNS ERECTED AFTER DECEMBER 31,1990

SUPPLEMENTAL ACCESSIBLE SIGN (R7-8D)

ACCESSIBLE PARKING STANDARDS
N.T.S.

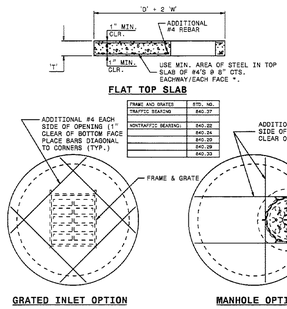
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

GENERAL NOTES
USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.
FABRICATE; ASSEMBLE AND DESIGN PRECAST MANHOLE COMPONENTS ACCORDANCE WITH AASHTO M199.
ASSEMBLE RISER AND GRADE RINGS WITH THE STEPS SPACED 12" FROM THE TOP TO THE BOTTOM OF THE MANHOLE.
WHERE THE MANHOLE IS EXPOSED TO ROAD TRAFFIC, CONSTRUCT THE TOP OF THE MANHOLE FLUSH WITH THE GROUND AND A MINIMUM OF 9" ABOVE THE GROUND AT OTHER LOCATIONS.
LIMIT DEPTH OF FILL TO 30'-0" FROM FINISH GRADE TO TOP OF BOTTOM SLAB.
THE MIN. SLAB THICKNESS 'T' IS THE DIMENSION OF THE THINNEST PORTION OF THE TOP/BOTTOM SLAB.
* TOP MAT OF REINFORCEMENT MAY BE NEGLECTED IF TOP SLAB HAS A DISTINGUISHABLE TOP AND BOTTOM.



ALTERNATE CONE SECTION

D	W	T	As
INTERNAL DIAMETER (FT.)	MIN. WALL THICKNESS (IN.)	MIN. TOP/BOTTOM SLAB THICKNESS (IN.)	MIN. CIRCUMFERENTIAL AREA OF STEEL PER VERTICAL FT. (SQ. IN.)
4	4	6	0.12
5	5	8	0.15
6	6	8	0.18

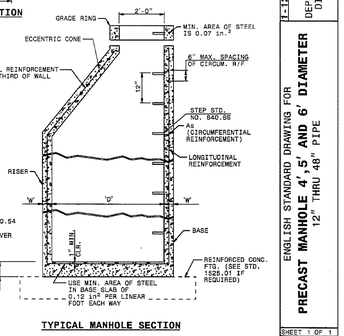


FLAT TOP SLAB

FRAME AND GRATES TRAFFIC BEARING	STD. NO.
	840.37
NON-TRAFFIC BEARING	840.22
	840.24
	840.26
	840.29
	840.33

GRATED INLET OPTION

MANHOLE OPTION



TYPICAL MANHOLE SECTION

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

ENGLISH STANDARD DRAWING FOR PRECAST MANHOLE 4',5' AND 6' DIAMETER 12" THRU 48" PIPE

SHEET 1 OF 1 | 840.52

ENGLISH STANDARD DRAWING FOR PRECAST MANHOLE 4',5' AND 6' DIAMETER 12" THRU 48" PIPE

SHEET 1 OF 1 | 840.52

OWNER / DEVELOPER:
BRC WILMINGTON LLC
5826 SAMET DRIVE, SUITE 105
HIGH POINT, NC 27265
PHONE: (336) 889-1512
FAX: (336) 889-1501

ENGINEER:
CPT ENGINEERING & SURVEYING, INC.
4400 TYNING STREET
HIGH POINT, NC 27265
CONTACT: CHUCK TRUBY, P.E.
PHONE: (336) 812-8800 ext:304
FAX: (336) 812-8780

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

REVISIONS
1. REV PER CITY COMMENTS 08-18-2015

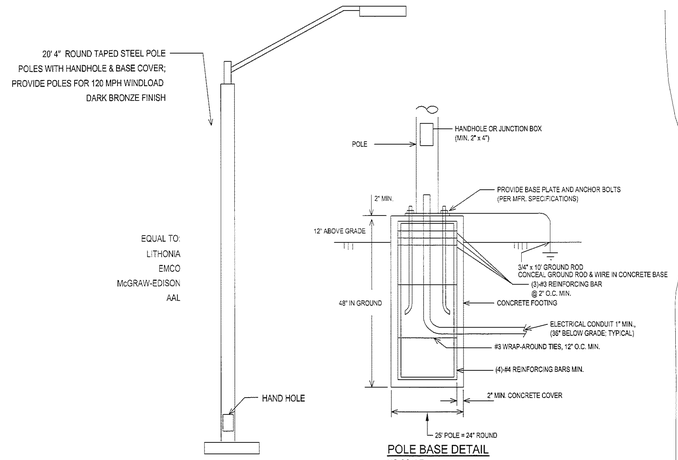
ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENCE NUMBER C-1975
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

NORTH CAROLINA PROFESSIONAL SEAL 14984 ENGINEER CHARLES B. TRUBY, JR.
08/28/15

NOTES and DETAILS
ANNEXE AT THE RESERVE
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HANOVER COUNTY, NORTH CAROLINA

NOTES and DETAILS
SCALE: N.T.S.
DATE: 03/17/15
PROJECT: 1140-12
DRAWN BY: TGL
SHEET D3

Jun 23, 2015 F:\Projects\1140-12\DWG\1140-12 Detail sheets.dwg Tab Name: D3_SITE DETAILS



POLE BASE DETAIL
NO SCALE

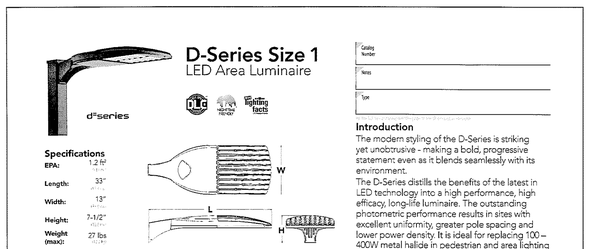
POLE DETAIL
NO SCALE

STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Boundary Line	+	0.0 fc	0.5 fc	0.0 fc	N / A	N / A
Parking Lot	+	1.6 fc	3.2 fc	0.5 fc	6.4:1	3.2:1

LUMINAIRE SCHEDULE

Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
	A	38	DSX1 LED 40C 700 30K TFTM MVOLT HS MA	DSX1 LED WITH (2) 20 LED LIGHT ENGINES, TYPE TFTM OPTIC, 3000K, @ 700mA WITH HOUSE SIDE SHIELD, FOR MAST ARM MOUNTING	LED	DSX1_LED_40C_700_30K_TFTM_MVOLT_HS_MA.ies	Absolute	0.95	88.79



D-Series Size 1
LED Area Luminaire

Catalog Number
Notes
Type

Specifications

EPA: 1.2 ft²
Length: 33"
Width: 13"
Height: 7-1/2"
Weight (max): 27 lbs

Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment.

The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing 100 – 400W metal hallide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX1 LED 60C 1000 40K T3M MVOLT SPA DDBXD

DSX1LED

Series	LEDs	Source output	Color temperature	Distribution		Voltage	Mounting
DSX1 LED	**Forward optics**	530 530 mA	30K 3000 K	T1S Type I Short	TFTM Forward Throw Medium	MVOLT[1]	**Shipped included**
	30C 30 LEDs (one engine)	700 700 mA	40K 4000 K	T2S Type II Short		120[1]	SPA Square pole mounting
	40C 40 LEDs (two engine)	1000 1000 mA (1.A)	50K 5000 K	T2M Type II Medium	T5VS Type V Very Short	208[1]	RPA Round pole mounting
	60C 60 LEDs (two engine)		AMBPC Amber Phosphor converted[2]	T3S Type III Short	T5S Type V Short	240[1]	WBA Wall bracket
	Related option[1]			T3M Type III Medium	T5M Type V Medium	277[1]	SPUMBA Square pole universal mounting adaptor[7]
	80C 80 LEDs (two engine)			T4M Type IV Medium	T5W Type V Wide	347[4]	RPUMBA Round pole universal mounting adaptor[7]
						480[4]	**Shipped separately[8]**
							KMAS DDBXD U Mast arm mounting bracket adaptor (specify finish)[7]

Accessories					
Shipped installed					
PER	NEMA twist-lock receptacle only (no controls)[1]	PIR	Motion sensor, 15-30' mounting height[11]	PIRH	Motion sensor, 15-30' mounting height[11]
PERS	Five-wire receptacle only (no controls)[1,4]	PIRS	Five-wire receptacle only (no controls)[1,4]	BL30	Bi-level switched dimming, 30% [11,12]
PER7	Seven-wire receptacle only (no controls)[1,5]	PIR7	Seven-wire receptacle only (no controls)[1,5]	BL50	Bi-level switched dimming, 50% [11,12]
DMG	0-10V dimming driver (no controls)[1]	PIRH	Motion sensor, 15-30' mounting height[11]	PIRMT3DG	Part night, dim till dawn[10]
DCR	Dimmable and controllable via ROAM® (no controls)[1,10]	PIRMT3D3	Part night, dim 3 hrs[10]	PIRMT6D3	Part night, dim 6 hrs[10]
DS	Dual switching[1,11]	PIRMT6D3	Part night, dim 6 hrs[10]	PIRMT7D3	Part night, dim 7 hrs[10]
PIR	Motion sensor, 8-15' mounting height[11]	PIRMT7D3	Part night, dim 7 hrs[10]		

Shields		Finish	
Shipped installed			
HS	House-side shield[1]	DDBXD	Dark bronze
WTB	Utility terminal block[9]	DBLBXD	Black
SF	Single fuse (120, 277, 347V)[1]	DNAXD	Natural aluminum
DF	Double fuse (208, 240, 480V)[1]	DWHXD	White
LSO	Left-oriented optics[7]	DDBTXD	Textured dark bronze
RSO	Right-oriented optics[7]	DBLBTXD	Textured black
		DNATXD	Textured natural aluminum
		DWHTXD	Textured white

Controls & Shields

Accessories	
DLL127F 1.5 CIR	Photocell - SSL twist-lock (120-277V)[13]
DLL347F 1.5 CIR, BV	Photocell - SSL twist-lock (347V)[13]
DLL480F 1.5 CIR, BV	Photocell - SSL twist-lock (480V)[13]
SCC	Shorting cap[13]
DSHS SVK KIT	House-side shield for 80 LED unit
DSHS SVK 90C	House-side shield for 90 LED unit
DSHS SVK 100C	House-side shield for 100 LED unit
PUMBA DDBXD U	Square and round pole universal mounting bracket (specify finish)
KMAS DDBXD U	Mast arm mounting bracket adaptor (specify finish)[7]

For more general options, visit [illegible] and [illegible] online.

NOTES:
1 Standard series only available with 40C.
2 AMBPC only available with 530mA or 700mA.
3 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options).
4 Not available with single board, 530mA product (30C 530, or 40C 530 DS). Not available with DCR, BL30 or BL50.
5 Available as a separate combination accessory PUMBA (5-wire) or T5-G vibration-load rated (5-wire) fixture.
6 Must be ordered as a separate accessory; see Accessories information. For use with 3.5/8" mast arm (not included).
7 Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Not available with DS option.
8 Mounting bracket ordered and shipped as a separate line item from Acuity Brands Controls. Not available with DDS.
9 24VAC option for 347v or 480v requires 1000mA.
10 Specifies a ROAM® enabled luminaire with 0-10V dimming capability. PER option required. Not available with 347 or 480V. Additional hardware and services required for ROAM® deployment; must be purchased separately. Call 1.800.442.6745 or email sales@roamservices.net. N/A with BL30, BL50, DS, PIR or PIRH.
11 Requires 40C or 60C. Provides 50/50 luminaire operation via two independent drivers on two separate circuits. N/A with PER, DCR, WTB, PIR, or PIRH.
12 Requires an additional switched circuit.
13 PIR specifies the [illegible] control. PIRH specifies the [illegible] for details. Dimming driver standard. Not available with DS or DCR.
14 Dimming driver standard. MVOLT only. Not available with 347, 480, DCR, DS or PIRH.
15 Not available with any other accessory; see Accessories information.
16 WTB not available with DS.
17 Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
18 Available with 60 LEDs (60C option) only.
19 Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item from Acuity Brands Controls.

LITHONIA LIGHTING
One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.279.8041 • Fax: 770.918.1209 • [illegible]
© 2011-2015 Acuity Brands Lighting, Inc. All rights reserved.
DSX1-LED
Rev. 06/13/15

GENERAL NOTES:
1. ALL LIGHTING TO BE INSTALLED PER EXTERIOR LIGHTING STANDARDS (LOCAL ORDINANCE); THOROUGHLY REVIEW STANDARDS PRIOR TO INSTALLATION.
2. DRAWING REFLECTS PROPOSED LIGHTING LOCATIONS; OWNER IS CONSIDERING UTILIZING UTILITY COMPANY TO INSTALL SITE LIGHTING.
3. FIRST ISOMETRIC LINE REPRESENTS .5 FC AND OUTER ISOMETRIC LINE REPRESENTS 1 FC.
4. POLES TO HAVE FINISHED HEIGHT OF 20' AFG.
5. ALL FIXTURES ON ADJACENT TO PROPERLY LINE TO HAVE HOUSE SIDE SHIELD INSTALLED.
6. PHOTOMETRIC STATISTICS REFLECT MAX BOUNDARY LIGHTING TRESPASS TO BE .5 FC.
7. TREE AND LIGHTING POLE LOCATIONS COORDINATED.
8. DOUBLE HEAD POLES IN CENTER OF PARKING LOT SHALL HAVE CONCRETE POLE BASE 36" AFG FOR PROTECTION; TYPICAL OF ALL.

PHOTOMETRIC PLAN
SCALE - 1" = 30'0"

Greensboro Engineering PLLC
NC# Business License #C2147
Corporation No. 2734
Telephone: (336) 273-5446
Email: info@greensboroengineering.net
Website: www.greensboroengineering.net

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029468 CHARLES B. LACKEY 5/28/15

GREENSBORO ENGINEERING PLLC SEAL REGISTERED ENGINEERING CORPORATION P-0385 GREENSBORO, NC

CONSULTING ENGINEER

REVISIONS

GPI
ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTING
CORPORATE LICENSE NUMBER C-1375
4400 TYNING STREET
HIGH POINT, NORTH CAROLINA 27265
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780

SITE LIGHTING PLAN
ANNEXE AT THE RESERVE
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP
NEW HNOVER COUNTY, NORTH CAROLINA

PHOTOMETRIC PLAN

SCALE:	1" = 30'
DATE:	5/28/15
PROJECT:	1140-12
DRAWN BY:	CBL
SHEET	PH-01

LANDSCAPE PLAN & INSTALLATION

Before the issuance of a building permit for the construction, renovation or alteration of any structure, a landscape plan indicating the type, amount and location of any required landscaping prepared in conformance with the provision of this section shall be submitted by the property owner and shall be approved by the city manager.

(b) No certificate of occupancy for any construction or renovations shall be approved by the zoning inspector, until:

(1) The required landscaping is completed in accordance with the approved plan; or

(2) A letter of credit or certified check has been posted, which is available to the city, and in sufficient amount to assure installation of the required landscaping. The amount shall be submitted by the developer and reviewed by the city manager as to acceptability.

(3) No surety or portion thereof, as provided for in this section, shall be released by the city until all landscaping has been installed, inspected, and approved, and until all required certification of such approval has been presented to the city.

(c) The board of adjustment may modify or waive the requirements of Division VII of this article, where it can be demonstrated by the property owner that the specific screening buffer or landscaped open space is not needed for the protection of surrounding residential areas because of intervening streets, roadways, drainageways, or other factors such as natural growth of sufficient height and density to serve the same purpose as the required screening buffer.

(d) If any requirements of this article conflict with other requirements of this ordinance, the more stringent or higher standard shall control over the less stringent or lower standard

TREE PROTECTION DURING CONSTRUCTION

(a) To preserve existing trees specified on the required landscape plan to remain on the site as a function of fulfilling purposes of this section, the critical root zone shall be protected by proper installation of barricades and signage from vehicular movement, material storage, compacting, grading, excavating, and other development related activities during construction and in the final landscape design.

(b) The critical root zone (CRZ) shall be protected during construction by approved tree protection fencing and practices. Tree protective fencing shall be shown on site plans and grading plans around each tree, cluster of trees, at perimeter of tree-save areas, and at limits of disturbance. No equipment is allowed on the site until all tree protection fencing and silt fencing has been installed and approved. Tree protective fencing shall remain in place through completion of construction activities.

(c) If the entire CRZ cannot be preserved, the disturbed area shall extend no closer to the protected tree trunk than one half (½) the radius of the CRZ. In no case can more than forty (40) percent of the CRZ be disturbed.

(d) Disturbance of the CRZ will only be allowed on one (1) side of the retained tree and only with prior approval by the appropriate reviewing agency.

(e) Prior to grading, tree roots shall be pruned using appropriate arboriculture pruning tools and practices.

(f) Disturbance other than that allowed on the approved plan, including incorrectly placed tree protection fencing or improper root pruning constitutes negligence and will require the owner to post an irrevocable letter of credit or other means of financial assurance approved by the reviewing agency for three (3) years to provide for mitigation of the tree per section 18-460 to be released if determined by the reviewing agency that the tree is not at risk of dying due to the disturbance.

(g) Any person who is responsible for failing to properly install or maintain protection measures pursuant to this article shall be subject to a fine of five hundred dollars ($500.00) per day and a stop work order shall be placed on the project. The owner of the property shall also be a jointly and severally responsible party if the improper practices are conducted by an employee, agent, or other person under the control, employ, or direction of the property owner.

MAINTENANCE

(a) All planted and retained living material, required to meet the provisions of this section, shall be perpetually protected and maintained to professionally accepted standards by joint and several responsibility of the owner, occupant, tenant, and respective agents of the property on which the material is located. Maintenance of trees on nonresidential property shall be performed by a professional that has signified that they are knowledgeable of both the ANSI standards and the OSHA standards for tree pruning, removal, and safety and that they are insured against potential damages. Any planted material that becomes damaged or diseased or dies, or is improperly maintained shall be replaced by the owner within sixty (60) days of the occurrence of such condition. If in the opinion of the city manager, there are seasonal conditions which will not permit the timely replacement of the vegetation (e.g., too hot or too cool for successful replanting) this requirement may be administratively waived until a time certain such that the replanting would be safe.

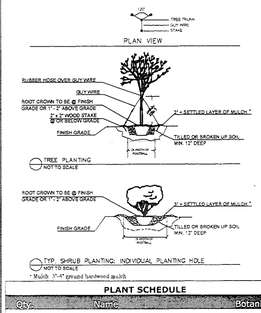
(b) In addition to requirements for replacement, any person who is responsible for improper maintenance practices of trees on private or public property shall be subject to a fine of four hundred dollars ($400.00) per tree. The owner of the property shall also be a responsible party if the improper practices are conducted by an employee, agent, or other person under the control or direction of the property owner. Improper maintenance practices for the purpose of this section means any of the following:

(1) Topping a tree (cutting a significant portion of the terminal growth);

(2) Cutting upon a tree that destroys its natural habit and pattern of growth;

(3) Pruning that leaves stubs or results in a flush cut, or splitting of limbs;

(4) Use of climbing spikes, nails or hooks, except for the purpose of total tree removal or as specified by the American National Standards Institute.



TREES REQUIRED:
DISTURBED AREA: 6.8 acres x 15 trees/ac. = 102 TREES

EXISTING TREES TO BE PRESERVED:
BROAD ST.: 12" Gum, 14" Gum, 9" Maple, 10" Maple, 12" Maple(s), (5) 12" Pine, 14" Pine, 16" Pine, 5" Magnolia, 6" Magnolia, 8" Magnolia
TREE CREDIT: 15 Trees

COVIL AVE.: 8" Magnolia(s), (2) 24" Oak(s), 24" Pine(s)
TREE CREDIT: 4 Trees

DARLINGTON AVE.: 10" Pine, (2) 12" Pine, 14" Pine, (2) 18" Pine, (11) 20" Pine, 24" Pine(s), (2) 10" Oak, 14" Magnolia(s), 8" Maple, 10" Maple
TREE CREDIT: 34 Trees
TOTAL TREE CREDIT = 43 Trees
(s) = Significant tree

TREES TO BE PLANTED:
LARGE/LARGE: 64 Trees (28 Evergreen)
SMALL/UNDERSTORY TREES: 27 Trees (19 Evergreen)

TOTAL TREES TO BE PLANTED: 91
REQUIRED TREES: 102
TOTAL SITE TREES PRESERVED & PLANTED: 134

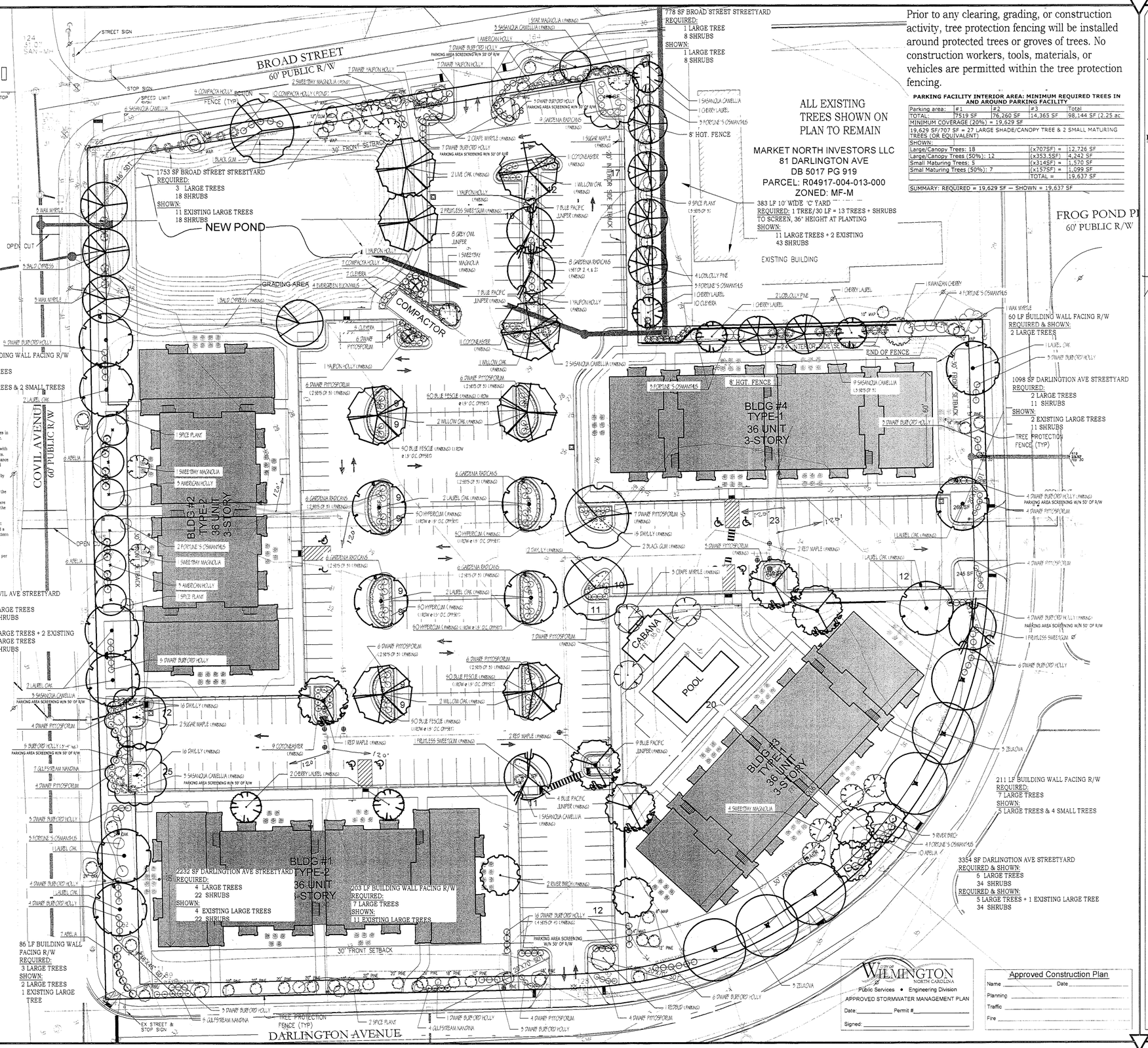
CITY OF WILMINGTON - LANDSCAPE NOTES

1. No plantings over thirty (30) inches in height allowed in vision clearance.
2. Protection from vehicular traffic provided around all landscaping with a minimum height of six (6) inches.
3. Owner is responsible for maintenance to ensure plant material lives and prospers.
4. Planting plans shall be approved by Landscape Designer prior to installation.
5. Landscaping shall be required at the ends of all parking rows.
6. A low buffer shall be required where parking is within fifty (50) feet of the Right-of-Way.
7. Landscaped islands shall be a minimum width of twelve (12) feet (back of curb to back of curb) and a minimum of two hundred and sixteen (216) square feet.
8. A minimum of fifteen (15) trees 2 inches or greater in diameter as measured 6 inches above ground per disturbed acre.
9. For recommended Plant list see "Landscape" T-10.4

PLANT SCHEDULE — **Annexe at the Reserve**

Qty.	Name	Botanical Name	Size
		Large Trees	
7	American Holly	Ilex opaca 'American Holly'	2"-2 1/2" cal., 8'-10' hgt.
4	Bald Cypress	Taxodium distichum	2"-2 1/2" cal., 8'-10' hgt.
3	Black Gum	Nyssa sylvatica	2"-2 1/2" cal., 8'-10' hgt.
4	Fruitless Sweetgum	Liquididambar styraciflua 'Rotundifolia'	2"-2 1/2" cal., 8'-10' hgt.
13	Laurel Oak	Quercus laurifolia	2"-2 1/2" cal., 8'-10' hgt.
2	Live Oak	Quercus virginiana	2"-2 1/2" cal., 8'-10' hgt.
6	Loblolly Pine	Pinus taeda	2"-2 1/2" cal., 8'-10' hgt.
5	Red Maple	Acer rubrum 'October Glory'	2"-2 1/2" cal., 8'-10' hgt.
5	River Birch	Betula nigra 'Heritage'	8'-10' hgt., multi-stem
3	Sugar Maple	Acer saccharum 'Green Mountain' (or sim.)	2"-2 1/2" cal., 10' hgt.
6	Willow Oak	Quercus phellos	2"-2 1/2" cal., 10' hgt.
6	Zelkova	Zelkova serrata 'Village Green'	2"-2 1/2" cal., 8'-10' hgt.
		Understory Trees	
6	Cherry Laurel	Prunus caroliniana	8'-10' hgt.
5	Crape Myrtle	Lagerstroemia indica 'Dynamite'	8'-10' hgt., multi-stem
1	Kwanzan Cherry	Prunus serrulata 'Kwanzan'	8'-10' hgt.
1	Redbud	Cercis canadensis 'Forest Pansy'	8'-10' hgt.
1	Star Magnolia	Magnolia stellata	8'-10' hgt., multi-stem
9	Sweetbay Magnolia	Magnolia virginiana	8'-10' hgt., multi-stem
4	Yaupon Holly	Ilex vomitoria	8'-10' hgt.
		Shrubs	
29	Abelia	Abelia grandiflora 'Edward Goucher'	12" hgt. min., 3 gal.
5	Burford Holly	Ilex cornuta 'Burfordii'	3'-4' hgt.
32	Cleyera	Cleyera japonica	36"+ hgt. min.
22	Compacta Holly	Ilex crenata 'Compacta'	12" hgt. min., 3 gal.
87	Dwarf Burford Holly	Ilex cornuta 'Burfordi Nana'	12" hgt. min., 3 gal.
71	Dwarf Pittosporum	Pittosporum tobira 'Wheeler's Dwarf'	12" hgt. min., 3 gal.
14	Dwarf Yaupon Holly	Ilex vomitoria 'Nana'	12" hgt. min., 3 gal.
4	Evergreen Euonymus	Euonymus japonica	36"+ hgt. min.
25	Fortune's Osmanthus	Osmanthus fortunei	36"+ hgt. min.
8	Grey Owl Juniper	Juniperus virginiana 'Grey Owl'	12" hgt. min., 3 gal.
16	Gulfstream Nandina	Nandina domestica 'Gulfstream'	3 gal., 18" hgt. min
28	Sasanqua Camellia	Camellia sasanqua 'Yuletide' (red & pink var.)	36"+ hgt. min.
13	Spice Plant	Illicium anisatum	36"+ hgt. min.
7	Wax Myrtle	Myrica cerifera	36"+ hgt. min.
		Groundcovers	
200	Blue Fescue	Festuca ovina glauca	1 gal.
27	Blue Pacific Juniper	Juniperus conferta 'Blue Pacific'	3 gal.
31	Cotoneaster, Rockspray	Cotoneaster horizontalis var. perpusillus	3 gal.
59	Daylily	Hemerocallis 'Happy Returns' or 'Suzie Wong'	1 gal.
41	Gardenia Radicans	Gardenia jasminoides 'Radicans'	3 gal.
200	Hypericum, St. John's Wort	Hypericum calycinum	1 gal.

Note: Mulch: 3"-4" ground hardwood mulch



Prior to any clearing, grading, or construction activity, tree protection fencing will be installed around protected trees or groves of trees. No construction workers, tools, materials, or vehicles are permitted within the tree protection fencing.

PARKING FACILITY INTERIOR AREA: MINIMUM REQUIRED TREES IN AND AROUND PARKING FACILITY

Parking area:	#1	#2	#3	Total
TOTAL:	17519 SF	76,260 SF	14,365 SF	98,144 SF (2.25 ac
MINIMUM COVERAGE (20%) = 19,629 SF				
19,629 SF/707 SF = 27 LARGE SHADE/CANOPY TREE & 2 SMALL MATURING TREES (OR EQUIVALENT)				
SHOWN:				
Large/Canopy Trees: 18			(x707SF) =	12,726 SF
Large/Canopy Trees (50%): 12			(x353.5SF)	4,242 SF
Small Maturing Trees: 5			(x314SF) =	1,570 SF
Small Maturing Trees (50%): 7			(x157SF) =	1,099 SF
			TOTAL =	19,637 SF

SUMMARY: REQUIRED = 19,629 SF — SHOWN = 19,637 SF

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

THIS DRAWING IS THE PROPERTY OF DESIGNATURE AND IS NOT TO BE REPRODUCED IN PART OR WHOLE WITHOUT EXPRESSED WRITTEN PERMISSION

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

Designature
RANDAL SCOTT ROMIE, ASLA
LANDSCAPE ARCHITECT
PO BOX 38903
Greensboro, NC 27438
336/282-6582

NORTH CAROLINA LANDSCAPE ARCHITECT 544 RANDAL SCOTT ROMIE

ANNEXE AT THE RESERVE

Wilmington, North Carolina

OWNER/DEVELOPER:
BRC Wilmington LLC
5826 Samet Drive,
Suite 105
High Point,
North Carolina
27265
Phone: (336) 889-1512
Fax: (336) 889-1501

ENGINEERING AND SURVEYING, INC.
LAND DEVELOPMENT CONSULTANTS
LAND SURVEYING • PROJECT MANAGEMENT
1008 TOWNE STREET
HIGH POINT, NORTH CAROLINA 27262
PHONE: (336) 812-8602 — FAX (336) 812-8786

Landscape Plan

DATE: 03/03/2015
PROJECT NO.
SCALE: 1" = 30'
DRAWN BY: SVK
REVISION:
03/11/2015 - Updated 6' wide streetyard
06/09/2015 - Address Review Comments

L1

LANDSCAPE PLAN & INSTALLATION

Before the issuance of a building permit for the construction, renovation or alteration of any structure, a landscape plan indicating the type, amount and location of any required landscaping prepared in conformance with the provision of this section shall be submitted by the property owner and shall be approved by the city manager.

(b) No certificate of occupancy for any construction or renovations shall be approved by the zoning inspector, until:

(1) The required landscaping is completed in accordance with the approved plan; or

(2) A letter of credit or certified check has been posted, which is available to the city, and in sufficient amount to assure installation of the required landscaping. The amount shall be submitted by the developer and reviewed by the city manager as to acceptability.

(3) No surety or portion thereof, as provided for in this section, shall be released by the city until all landscaping has been installed, inspected, and approved, and until all required certification of such approval has been presented to the city.

(c) The board of adjustment may modify or waive the requirements of Division VII of this article, where it can be demonstrated by the property owner that the specific screening buffer or landscaped open space is not needed for the protection of surrounding residential areas because of intervening streets, roadways, drainageways, or other factors such as natural growth of sufficient height and density to serve the same purpose as the required screening buffer.

(d) If any requirements of this article conflict with other requirements of this ordinance, the more stringent or higher standard shall control over the less stringent or lower standard.

TREE PROTECTION DURING CONSTRUCTION

(a) To preserve existing trees specified on the required landscape plan to remain on the site as a function of fulfilling purposes of this section, the critical root zone shall be protected by proper installation of barricades and signage from vehicular movement, material storage, compacting, grading, excavating, and other development related activities during construction and in the final landscape design.

(b) The critical root zone (CRZ) shall be protected during construction by approved tree protection fencing and practices. Tree protective fencing shall be shown on site plans and grading plans around each tree, cluster of trees, at perimeter of tree-save areas, and at limits of disturbance. No equipment is allowed on the site until all tree protection fencing and silt fencing has been installed and approved. Tree protective fencing shall remain in place through completion of construction activities.

(c) If the entire CRZ cannot be preserved, the disturbed area shall extend no closer to the protected tree trunk than one half (½) the radius of the CRZ. In no case can more than forty (40) percent of the CRZ be disturbed.

(d) Disturbance of the CRZ will only be allowed on one (1) side of the retained tree and only with prior approval by the appropriate reviewing agency.

(e) Prior to grading, tree roots shall be pruned using appropriate arboriculture pruning tools and practices.

(f) Disturbance other than that allowed on the approved plan, including incorrectly placed tree protection fencing or improper root pruning constitutes negligence and will require the owner to post an irrevocable letter of credit or other means of financial assurance approved by the reviewing agency for three (3) years to provide for mitigation of the tree per section 18-440 to be released if determined by the reviewing agency that the tree is not at risk of dying due to the disturbance.

(g) Any person who is responsible for failing to properly install or maintain protection measures pursuant to this article shall be subject to a fine of five hundred dollars ($500.00) per day and a stop work order shall be placed on the project. The owner of the property shall also be a jointly and severally responsible party if the improper practices are conducted by an employee, agent, or other person under the control, employ, or direction of the property owner.

MAINTENANCE

(a) All planted and retained living material, required to meet the provisions of this section, shall be perpetually protected and maintained to professionally accepted standards by joint and several responsibility of the owner, occupant, tenant, and respective agents of the property on which the material is located. Maintenance of trees on nontraditional property shall be performed by a professional that has signified that they are knowledgeable of both the ANSI standards and the OSHA standards for tree pruning, removal, and safety and that they are insured against potential damages. Any planted material that becomes damaged or diseased or dies, or is improperly maintained shall be replaced by the owner within sixty (60) days of the occurrence of such condition. If in the opinion of the city manager, there are seasonal conditions which will not permit the timely replacement of the vegetation (e.g., too hot or too cool for successful replanting) this requirement may be administratively waived until a time certain such that the replacing material will be safe.

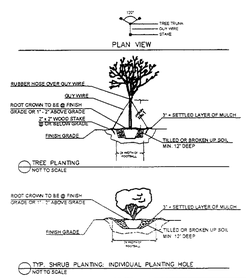
(b) In addition to requirements for replacement, any person who is responsible for improper maintenance practices of trees on private or public property shall be subject to a fine of four hundred dollars ($400.00) per tree. The owner of the property shall also be a responsible party if the improper practices are conducted by an employee, agent, or other person under the control or direction of the property owner. Improper maintenance practices for the purpose of this section means any of the following:

(1) Topping a tree (cutting a significant portion of the terminal growth).

(2) Cutting upon a tree that destroys its natural habit and pattern of growth.

(3) Pruning that leaves stubs or results in a flush cut, or splitting of limbs.

(4) Use of climbing spikes, nails or hooks, except for the purpose of total tree removal or as specified by the American National Standards Institute.



FOUNDATION PLANTINGS:

BUILDING TYPE 1 – FRONT/REAR = 212', BUILDING HGT. = 36'
REQUIRED: 36' X 212' = 7632 SF X 12% minimum = 916 SF+
SHOWN: 970 SF*

BUILDING TYPE 1 – SIDE = 60', BUILDING HGT. = 36'
REQUIRED: 36' X 60' = 2160 SF X 12% minimum = 260 SF+
SHOWN: 300 SF*

BUILDING TYPE 2 – FRONT/REAR = 204', BUILDING HGT. = 36'
REQUIRED: 36' X 204' = 7344 SF X 12% minimum = 882 SF+
SHOWN: 884 SF*

BUILDING TYPE 2 – SIDE = 88', BUILDING HGT. = 36'
REQUIRED: 36' X 88' = 3168 SF X 12% minimum = 381 SF+
SHOWN: 390 SF*

* SF REFLECTS THE AMOUNT OF MULCHED BEDS THAT WILL BE PROVIDED TO HOLD THE PLANTS SHOWN ON L2

PLANT SCHEDULE **Foundation Plantings** **Annexe at the Reserve**

Qty.	Name	Botanical Name	Size
29	Abelia	Abelia grandiflora	12" hgt. min., 3 gal.
6	Aucuba	Aucuba japonica	12" hgt. min., 3 gal.
28	Compacta Holly	Ilex crenata 'Compacta'	12" hgt. min., 3 gal.
23	Dwarf Burford Holly	Ilex cornuta 'Burfordi Nana'	12" hgt. min., 3 gal.
20	Dwarf Yaupon Holly	Ilex vomitoria 'Nana'	12" hgt. min., 3 gal.
2	Evergreen Euonymus	Euonymus japonica	36"+ hgt. min.
22	Gardenia Radicans	Gardenia jasminoides 'Radicans'	12" hgt./spd., 3 gal.
10	Grey Owl Juniper	Juniperus virginiana 'Grey Owl'	12" hgt. min., 3 gal.
24	Gulfstream Nandina	Nandina domestica 'Gulfstream'	12" hgt. min., 3 gal.
16	Indian Hawthorn	Rhaphiolepis indica 'Clara' (or sim.)	12" hgt. min., 3 gal.
10	Inkberry	Ilex glabra 'Nigra'	12" hgt. min., 3 gal.
18	Kurume Azalea	Rhododendron obtusum	12" hgt. min., 3 gal.
2	Spice Plant	Illicium anisatum	36"+ hgt. min.

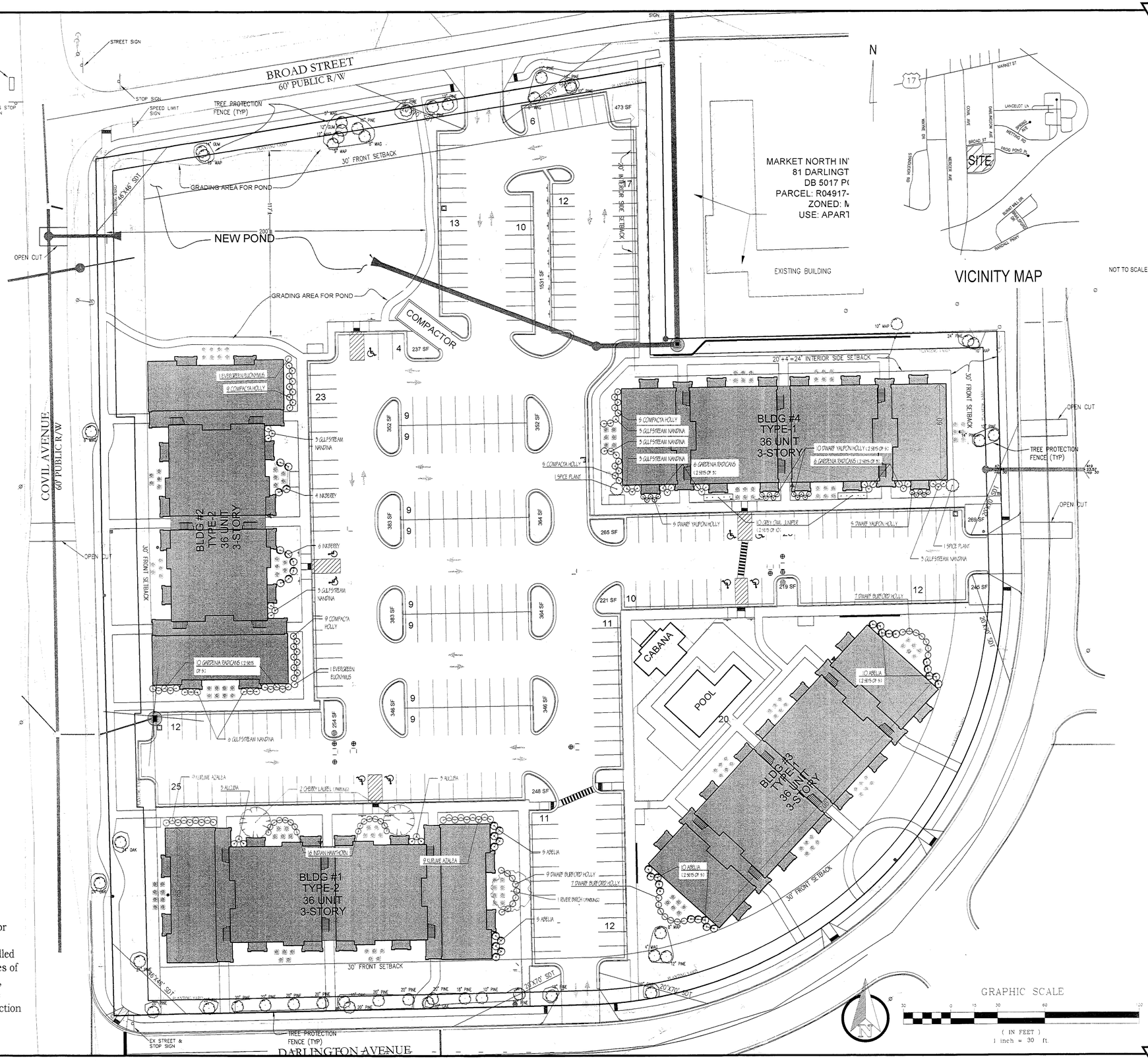
Note: Mulch: 3"-4" ground hardwood mulch

* This Developer will provide foundation plantings for all four sides of the buildings, will be more than what is shown, and will specifically address the architectural features of the buildings. The building landscape design will be completed in the near future and can be submitted to the city if desired. A pool landscape plan will also be provided to show additional plantings.

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

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

Prior to any clearing, grading, or construction activity, tree protection fencing will be installed around protected trees or groves of trees. No construction workers, tools, materials, or vehicles are permitted within the tree protection fencing.



NOT TO SCALE

Designature

RANDAL SCOTT ROMIE, ASLA
LANDSCAPE ARCHITECT
PO BOX 38903
Greensboro, NC 27438
336/282-6582

NORTH CAROLINA REGISTERED 544 RANDAL SCOTT ROMIE

ANNEXE AT THE RESERVE

Wilmington, North Carolina

OWNER/DEVELOPER:
BRC Wilmington LLC
5826 Samet Drive,
Suite 105
High Point,
North Carolina
27265
Phone: (336) 889-1512
Fax: (336) 889-1501

ENGINEERING AND SURVEYING, INC.
LICENSED NORTH CAROLINA FIRM
LICENSE NUMBER: C-0558
AND THIRD STREET
HIGH POINT, NORTH CAROLINA 27260
PHONE: (336) 812-8800 — FAX: (336) 812-8780

Building Foundations Landscape Plan

DATE: 03/03/2015
PROJECT NO.
SCALE: 1" = 30'
DRAWN BY: SVK
REVISION:
03/11/2015 - Updated 6' wide streetyard
06/09/2015 - Address Review Comments

L2

1 OF 2

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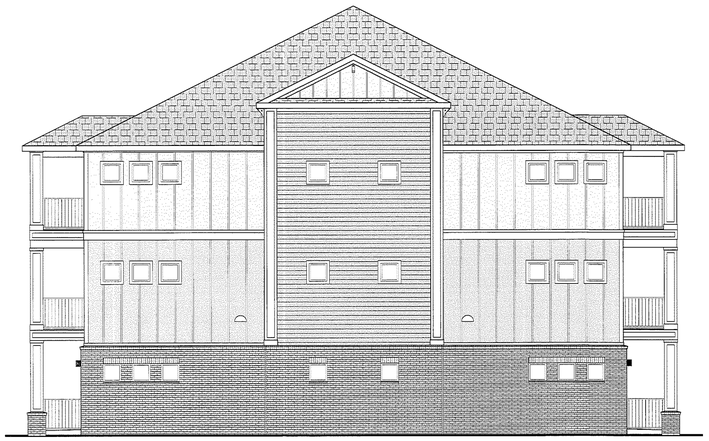

02 **ELEVATION:** Building Type I Side

01 **ELEVATION:**

URBAN ARCHITECTURAL GROUP

704 841.1899 tel
841.8440 fax

1242 Mann Drive Suite 200
Matthews, North Carolina 28105

www.UrbanAIA.com

Seals:

ANNEXE AT THE RESERVE

New Construction

315 Covil Ave
Wilmington, NC 28403

Date:	June 17, 2015
Project Number:	2014-78
Issued For:	
Construction Only:	02.25.15

BUILDING TYPE I
ELEVATION

A3.1

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02 ELEVATION:

01 ELEVATION:

URBAN ARCHITECTURAL GROUP

704 841.1899 tel
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Seals:

ANNEXE AT THE RESERVE

New Construction

315 Covil Ave
Wilmington, NC 28403

Date:	June 17, 2015
Project Number:	2014-78
Issued For:	
Construction Only:	02.25.15

BUILDING TYPE II
ELEVATION

A3.2

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