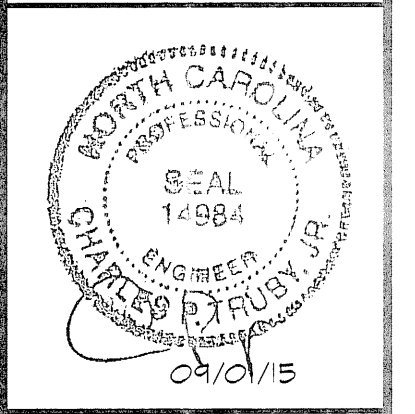






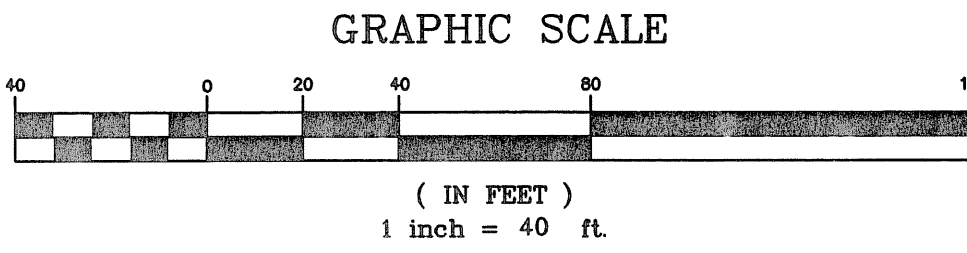
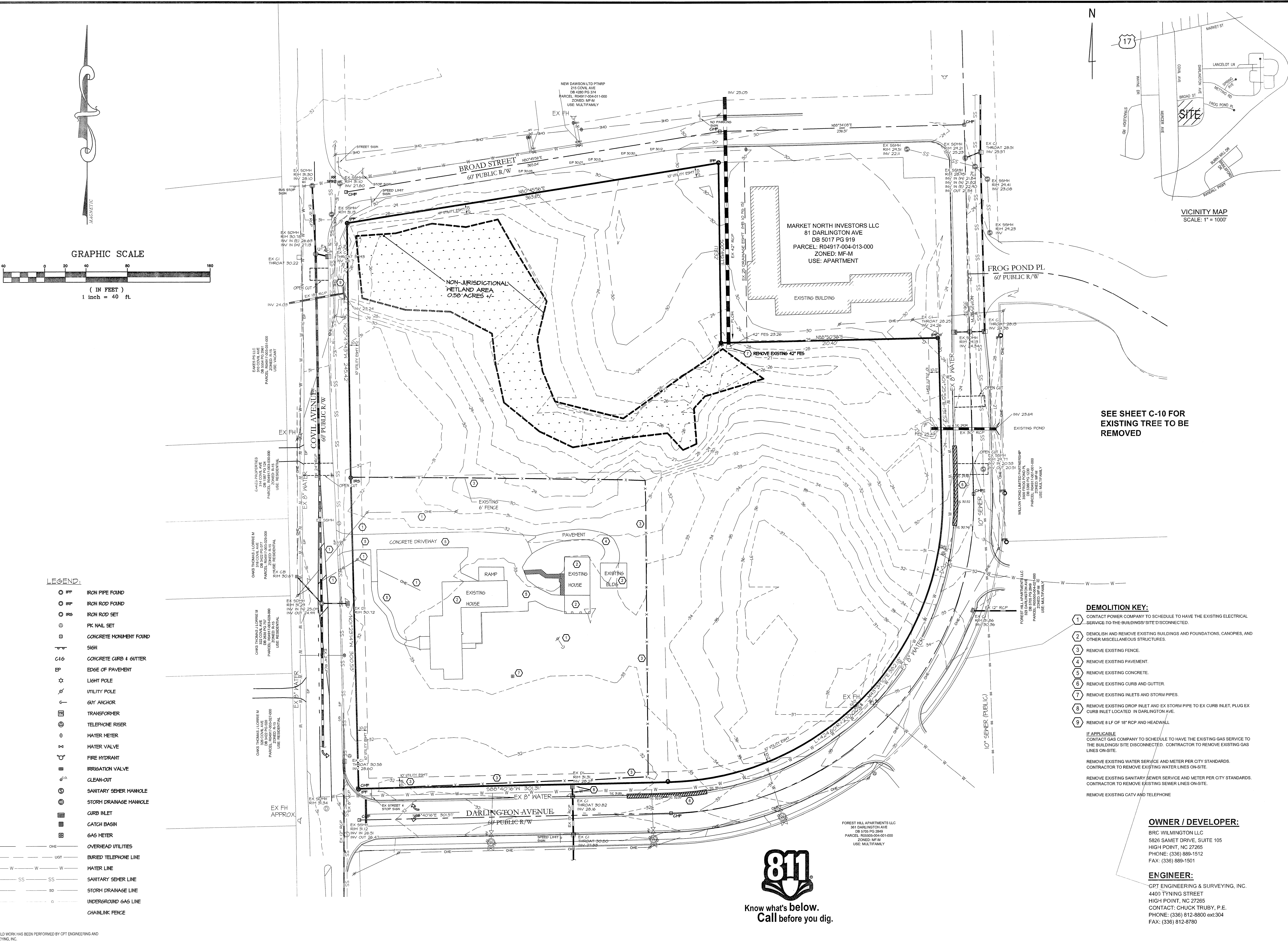
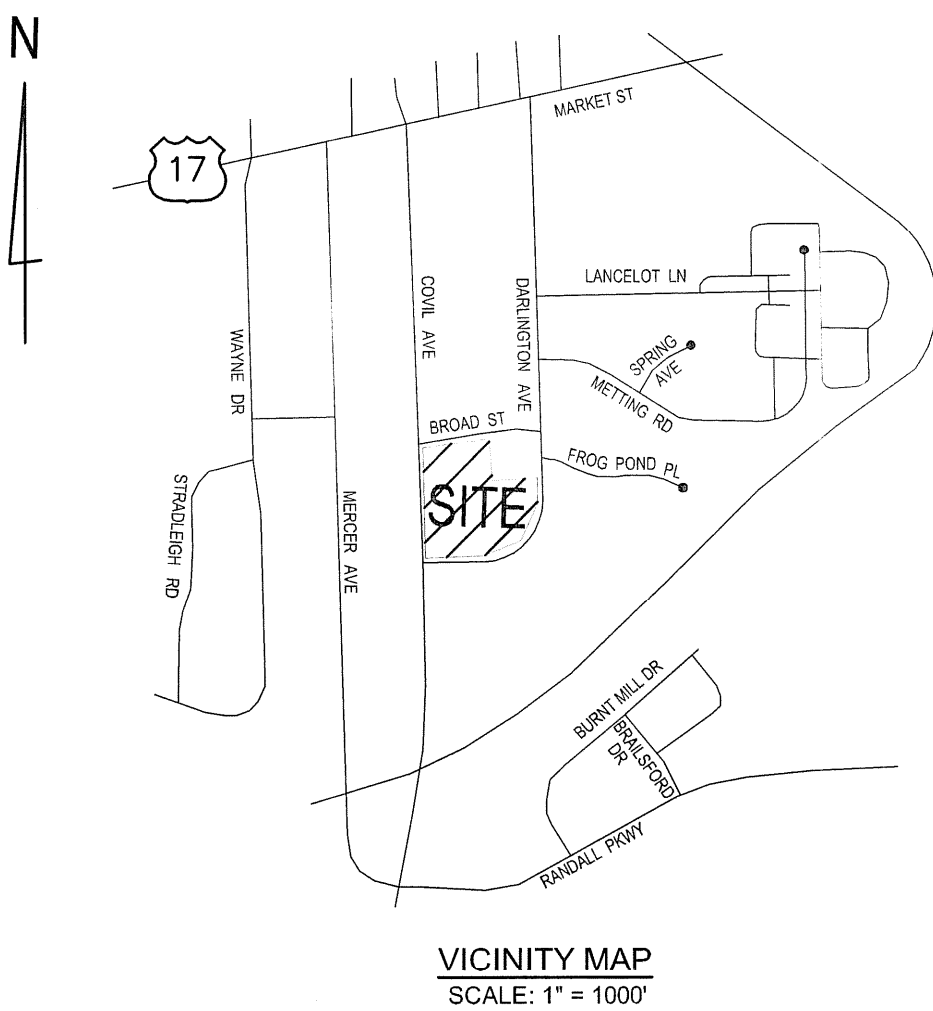
REVISIONS	
1.	REV PER CITY COMMENTS 06-16-2015
2.	REV PER CITY COMMENTS 08-01-2015

**ENGINEERING AND SURVEYING, INC.**  
 CPT ENGINEERING AND SURVEYING, INC.  
 CORPORATE LICENSE NUMBER C-1875  
 4400 TYNING STREET  
 HIGH POINT, NORTH CAROLINA 27345  
 PHONE: (866) 812-8800 ~ FAX: (336) 812-8180



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

315 & 323 COVIL AVE.
<b>DEMOLITION PLAN</b>
SCALE: 1" = 40'
DATE: 03/17/15
PROJECT: 1140-12
DRAWN BY: TGL
SHEET <b>C3</b>



- LEGEND:**
- PF IRON PIPE FOUND
  - RF IRON ROD FOUND
  - RS IRON ROD SET
  - PK NAIL SET
  - CM CONCRETE MONUMENT FOUND
  - SIGN
  - C46 CONCRETE CURB & GUTTER
  - EP EDGE OF PAVEMENT
  - LP LIGHT POLE
  - UP UTILITY POLE
  - GA GUY ANCHOR
  - TR TRANSFORMER
  - TR TELEPHONE RISER
  - WM WATER METER
  - WV WATER VALVE
  - FH FIRE HYDRANT
  - IR IRRIGATION VALVE
  - CO CLEAN-OUT
  - SM SANITARY SEWER MANHOLE
  - SD STORM DRAINAGE MANHOLE
  - GI CURB INLET
  - CB CATCH BASIN
  - GM GAS METER
  - OHE OVERHEAD UTILITIES
  - UOT BURIED TELEPHONE LINE
  - W WATER LINE
  - SS SANITARY SEWER LINE
  - SD STORM DRAINAGE LINE
  - G UNDERGROUND GAS LINE
  - CH CHAINLINK FENCE

SEE SHEET C-10 FOR EXISTING TREE TO BE REMOVED

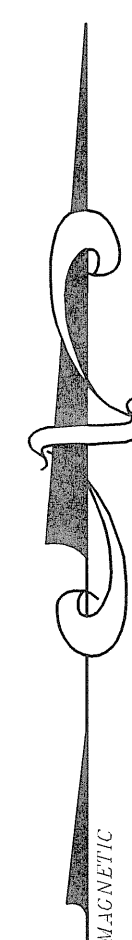
- DEMOLITION KEY:**
- 1 CONTACT POWER COMPANY TO SCHEDULE TO HAVE THE EXISTING ELECTRICAL SERVICE TO THE BUILDINGS/ SITE DISCONNECTED.
  - 2 DEMOLISH AND REMOVE EXISTING BUILDINGS AND FOUNDATIONS, CANOPIES, AND OTHER MISCELLANEOUS STRUCTURES.
  - 3 REMOVE EXISTING FENCE.
  - 4 REMOVE EXISTING PAVEMENT.
  - 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:**  
 BRC WILMINGTON LLC  
 5826 SAMET DRIVE, SUITE 105  
 HIGH POINT, NC 27265  
 PHONE: (336) 889-1512  
 FAX: (336) 889-1501

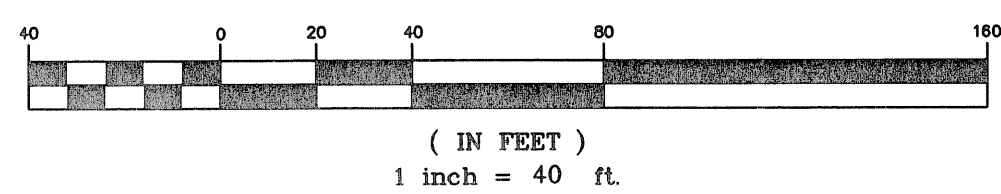
**ENGINEER:**  
 CPT ENGINEERING & SURVEYING, INC.  
 4400 TYNING STREET  
 HIGH POINT, NC 27265  
 CONTACT: CHUCK TRUBY, P.E.  
 PHONE: (336) 812-8800 ext:304  
 FAX: (336) 812-8780



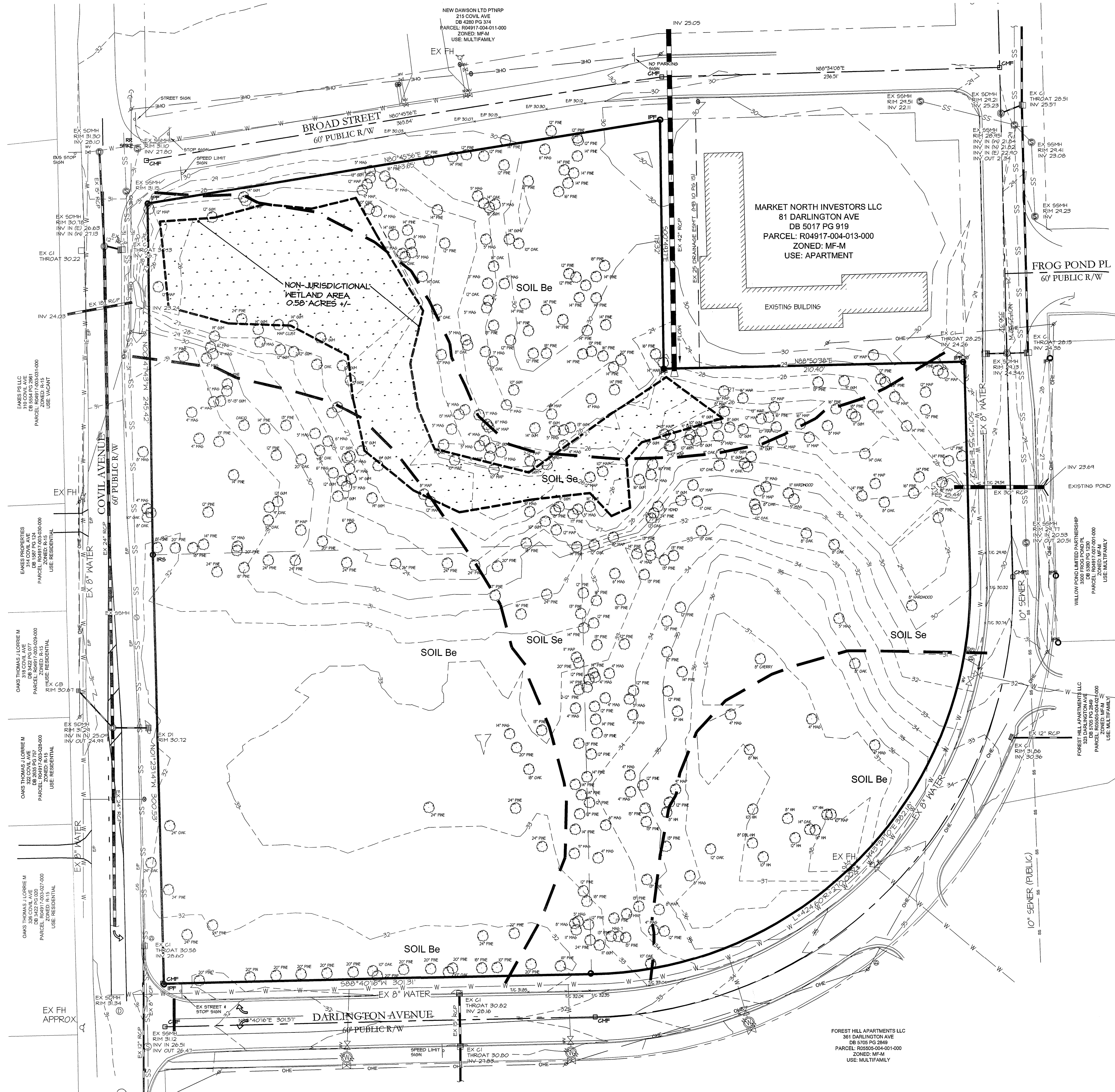
NO FIELD WORK HAS BEEN PERFORMED BY CPT ENGINEERING AND SURVEYING, INC.



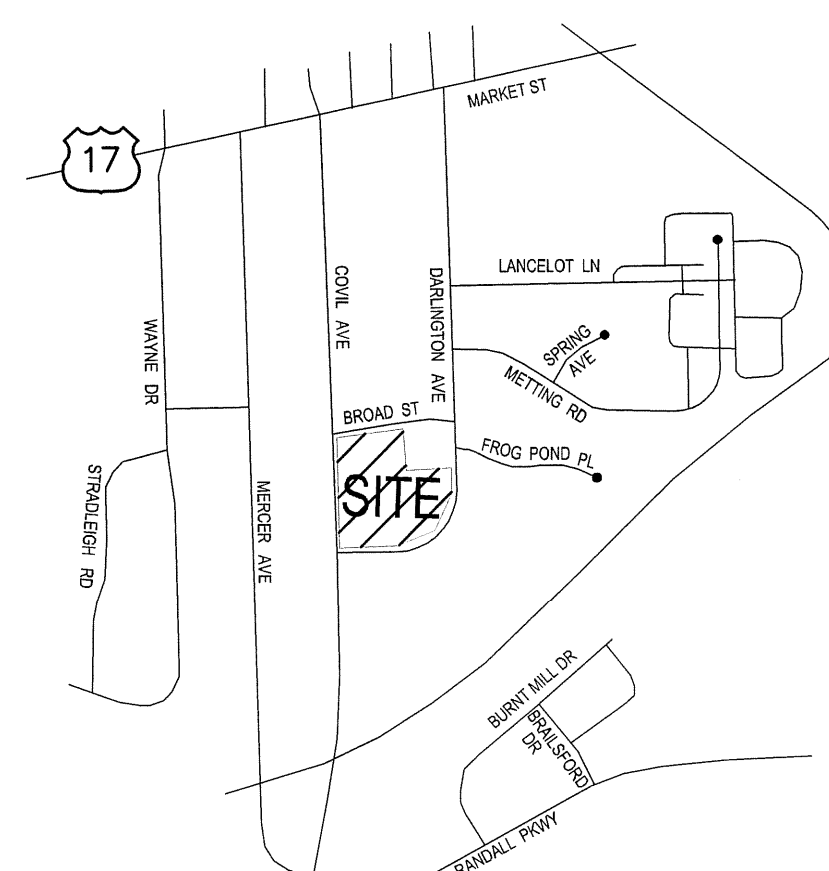
GRAPHIC SCALE



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



N



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

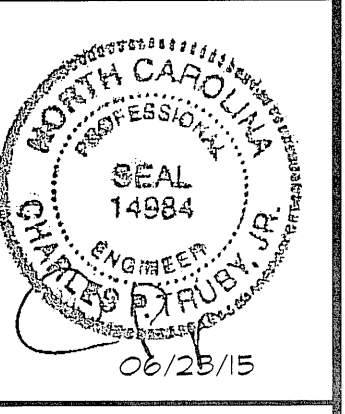
**TREE LEGEND:**

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

REVISIONS

REV	PER	CITY COMMENTS
02-16-2015		

ENGINEERING AND SURVEYING, INC.  
LAND DEVELOPMENT CONSULTING  
CORPORATE LICENSE NUMBER C-1975  
4400 TYNNS STREET  
HIGH POINT, NORTH CAROLINA 27265  
PHONE: (336) 812-8800 ~ FAX: (336) 812-8180



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

915 & 323 COVIL AVE.

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

- 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.
- 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.
- No equipment is allowed on site until all tree protection fencing and all fencing is installed and approved. Protective fencing is to be maintained throughout the duration of the project and construction shall proceed in accordance with the tree protection methods.
- All pavement markings in public rights-of-way and for driveways are to be thermostatic and meet City and/or MCDOT standards.
- 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.
- 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.
- Contact Traffic Engineering at 910-341-7000 to ensure that all traffic signal facilities and equipment are shown on the plan.
- Call Traffic Engineering at 910-341-7888 (ext. 488) hours prior to any excavation in the right-of-way.
- Traffic Engineering must approve of pavement markings prior to actual striping.
- All parking stall markings and lane arrows within the parking area shall be white.
- All traffic control signs and markings of the right-of-way are to be maintained by the property owner in accordance with MUTCD standards.
- Strip signs and street signs to be replaced by the property owner.
- Traffic warning mats shall be installed on all wheelchair ramps.
- A utility permit is required for each open cut of any street. Contact 341-5888 for more details.
- Any broken or missing sidewalk panels, driveway aprons and curbing will be replaced.
- Contact Traffic Engineering at 910-341-7888 to discuss street lighting options.
- Water and sewer service shall meet Code Fair Public Utility Authority (CFPUA) standards and specifications.
- Project shall comply with CFPUA Cross Connection Control requirements. Water meters cannot be released until all requirements are met and the State has given their final approval. Call 910-341-3910 for information.
- If the contractor drains 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 case.
- Any irrigation system supplied by CFPUA water shall comply with the CFPUA Cross Connection Control regulations. Call 910-341-3910 for information.
- Any irrigation system shall be designed to be compatible with the water meter case.
- Any backflow prevention device required by the CFPUA will need to be on the list of approved devices by USBC/CDCH or ASSE.
- Contractor to field verify existing water and sewer locations, sizes and materials prior to construction. Engineer to be notified of any conflicts.
- Contractor shall maintain all-weather access for emergency vehicles at all times during construction.
- Underground fire hydrant 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 910-341-1096.
- No obstructions are permitted in the space between thirty (30) inches and ten (10) feet above the ground within the triangular sight distance.
- Contact the North Carolina Dept. of Transportation at 1-800-332-6269 prior to doing any clearing, grading, or grading.

### GENERAL NOTES:

- ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
- IT SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER TO ERECT OFFICIAL STREET NAME SIGNS AT ALL INTERSECTIONS ASSOCIATED WITH THE SUBDIVISION IN ACCORDANCE WITH THE TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL. THE SUBDIVIDER MAY ACQUIRE AND ERECT OFFICIAL STREET NAME SIGNS OR MAY CHOOSE TO CONTRACT WITH THE CITY TO INSTALL THE STREET SIGNS AND THE SUBDIVIDER SHALL PAY THE COST OF SUCH INSTALLATION. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
- 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.**

	PARKING AREA #1		PARKING AREA #2		PARKING AREA #3		TOTALS
	ACRES / SQ. FT.	ACRES / SQ. FT.	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	0.177 AC / 7,711 SF	1.34 AC / 58,230 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	0.041 AC / 1,792 SF	0.31 AC / 13,512 SF	0.31 AC / 13,512 SF	
CURB & GUTTER	0.014 AC / 610 SF	0.137 AC / 6,144 SF	0.014 AC / 610 SF	0.014 AC / 610 SF	0.156 AC / 7,198 SF	0.156 AC / 7,198 SF	
PERVIOUS CONCRETE	0.144 AC / 6,294 SF	1.743 AC / 75,948 SF	0.152 AC / 6,609 SF	0.152 AC / 6,609 SF	2.039 AC / 88,851 SF	2.039 AC / 88,851 SF	
REGULAR CONCRETE	0	0.043 AC / 1,904 SF	0	0	0.043 AC / 1,904 SF	0.043 AC / 1,904 SF	
TOTAL BUA	0.386 AC / 16,229 SF	3.126 AC / 136,149 SF	0.384 AC / 16,717 SF	0.384 AC / 16,717 SF	3.90 AC / 169,695 SF	3.90 AC / 169,695 SF	
DRAINAGE AREA	0.443 AC / 3,740 AC, 0.495 AC		0.495 AC / 4,680 AC		0.468 AC / 4,680 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

### ADA PARKING:

ADA PARKING REQUIRED:  
 201 - 300 = 7 SPACES  
 (1 REQUIRED TO BE VAN SPACE)  
 TOTAL ADA SPACES PROVIDED: 9 SPACES

TOTAL PARKING SPACES PROVIDED = 279 (INCLUDES 9 HC 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, 30.6' ACTUAL (DARLINGTON) 35.1' (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, 25.6' - 31.7' 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)

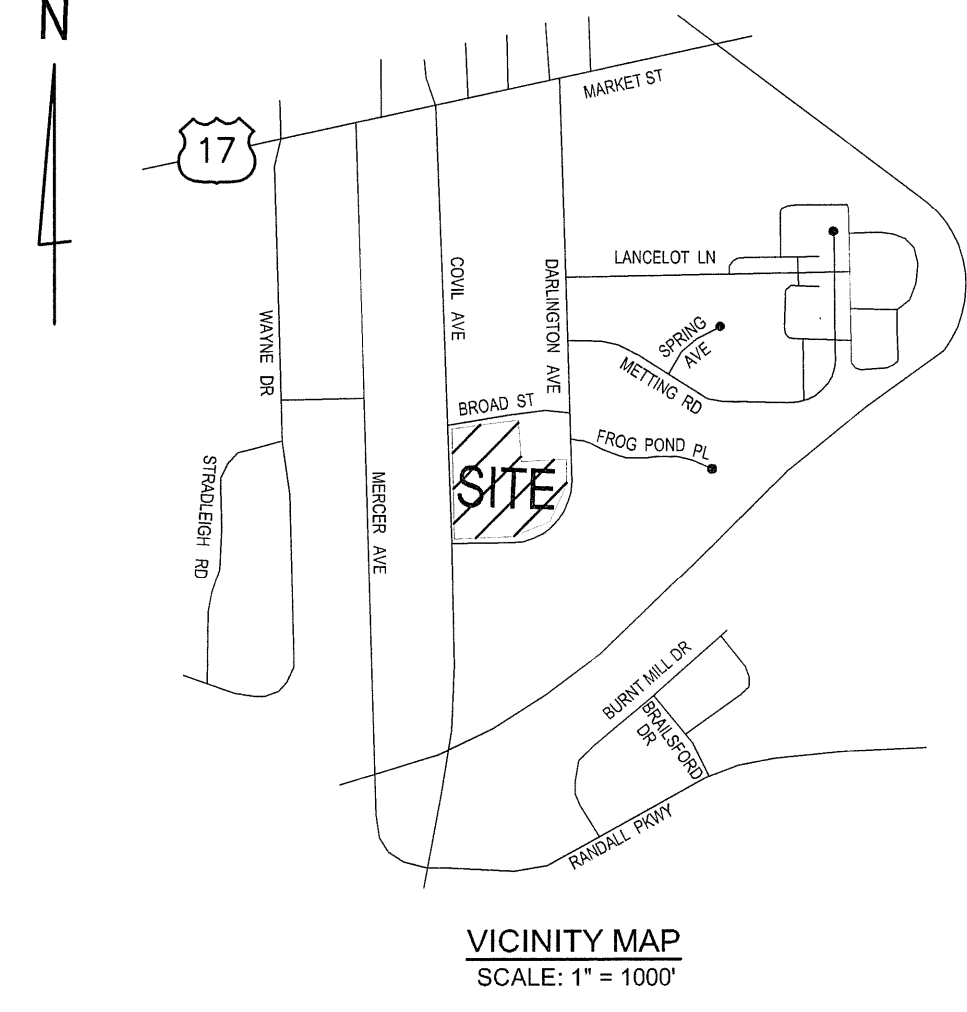
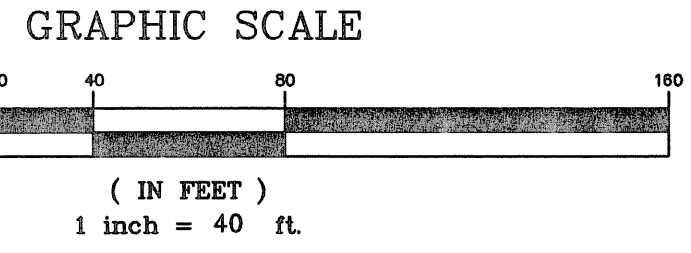
WITH PERVIOUS CONCRETE CREDIT:  
 58,230 + 81,283 (0.25) + 38,339 SF = 116,890 SF OR 2.68 AC  
 BUILT UPON AREA % = 2.68 AC / 6.4 AC = 41.87 %

ALL THE NECESSARY APPROVALS HAVE BEEN 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.

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

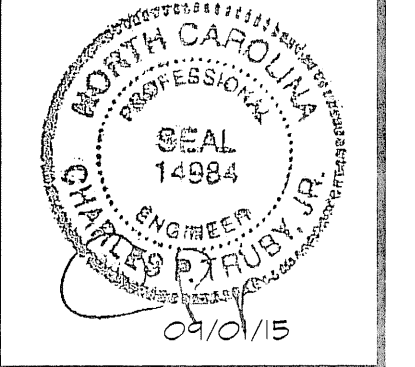
**SIGHT DISTANCE TRIANGLE NOTE:**  
 ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30' TO 10'.



### REVISIONS

1. REV PER CITY COMMENTS	02-16-2015
2. REV PER CITY COMMENTS	02-01-2015

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



**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: 03/11/15  
 PROJECT: 1140-12  
 DRAWN BY: TGL  
 SHEET: C-5

**OWNER / DEVELOPER:**  
 BRG 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 TYNINGS STREET  
 HIGH POINT, NC 27265  
 CONTACT: CHUCK TRUBY, P.E.  
 PHONE: (336) 812-8800 ext: 304  
 FAX: (336) 812-8780

**Approved Construction Plan**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Planning: \_\_\_\_\_

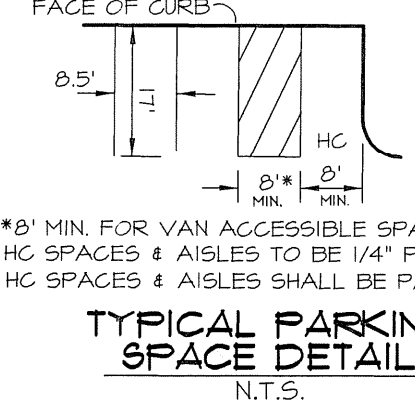
Traffic: \_\_\_\_\_

Fire: \_\_\_\_\_

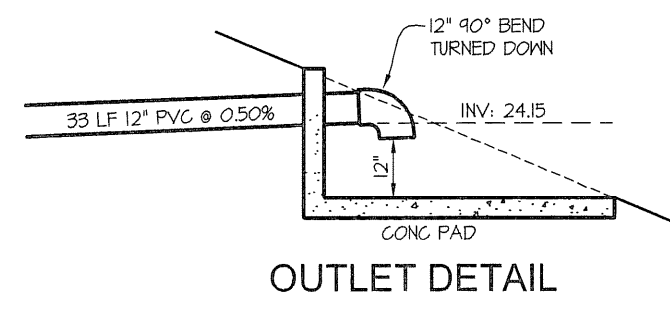
**City of Wilmington**  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN

Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_







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

PIPE #	AREA	TOTAL	COEF.	RAINFALL	C X I	RUNOFF (CFS)	PIPE SIZE NEEDED	PIPE SIZE USED	LENGTH	RCP
(1)	0.44	0.44	0.80	7.58	4.61	2.04	15"	15"	2.04	RCP
(2)	0.40	26.40	0.45	7.58	3.45	81.08	42"	42"	91.08	RCP
(3)	0.00	26.40	0.45	7.58	3.45	81.08	42"	42"	91.08	RCP
(4)	3.74	3.74	0.80	7.58	4.61	17.24	24"	24"	2.00	RCP

**IMPERVIOUS SURFACE CALCULATIONS**

	PARKING AREA #1	PARKING AREA #2	PARKING AREA #3	IMPERVIOUS TOTALS
BUILDINGS	0.153 AC / 8,403 SF	0.234 AC / 16,224 SF	0.041 AC / 2,881 SF	0.428 AC / 27,508 SF
SIDEWALK	0.035 AC / 2,415 SF	0.196 AC / 14,088 SF	0.017 AC / 1,237 SF	0.248 AC / 17,740 SF
CURB & GUTTER	0.014 AC / 1,028 SF	0.137 AC / 9,948 SF	0.014 AC / 1,028 SF	0.165 AC / 12,004 SF
PERVIOUS CONCRETE	0.144 AC / 10,368 SF	1.743 AC / 126,804 SF	0.152 AC / 11,184 SF	2.039 AC / 148,356 SF
REGULAR CONCRETE	0	0.043 AC / 3,122 SF	0	0.043 AC / 3,122 SF
TOTAL BUA	0.389 AC / 28,208 SF	3.128 AC / 226,864 SF	0.204 AC / 15,123 SF	3.721 AC / 270,295 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.  
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PARCEL ID: R05505-004-015-000 & R04917-004-012-000  
DEED REFERENCE: DEED BOOK 5673, PAGE 2248

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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

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TOTAL REQUIRED = 270

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201 - 300 = 7 SPACES  
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TOTAL PARKING SPACES PROVIDED = 279  
(INCLUDES 9 HC SPACES)

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FRONT: 30 FT  
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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)

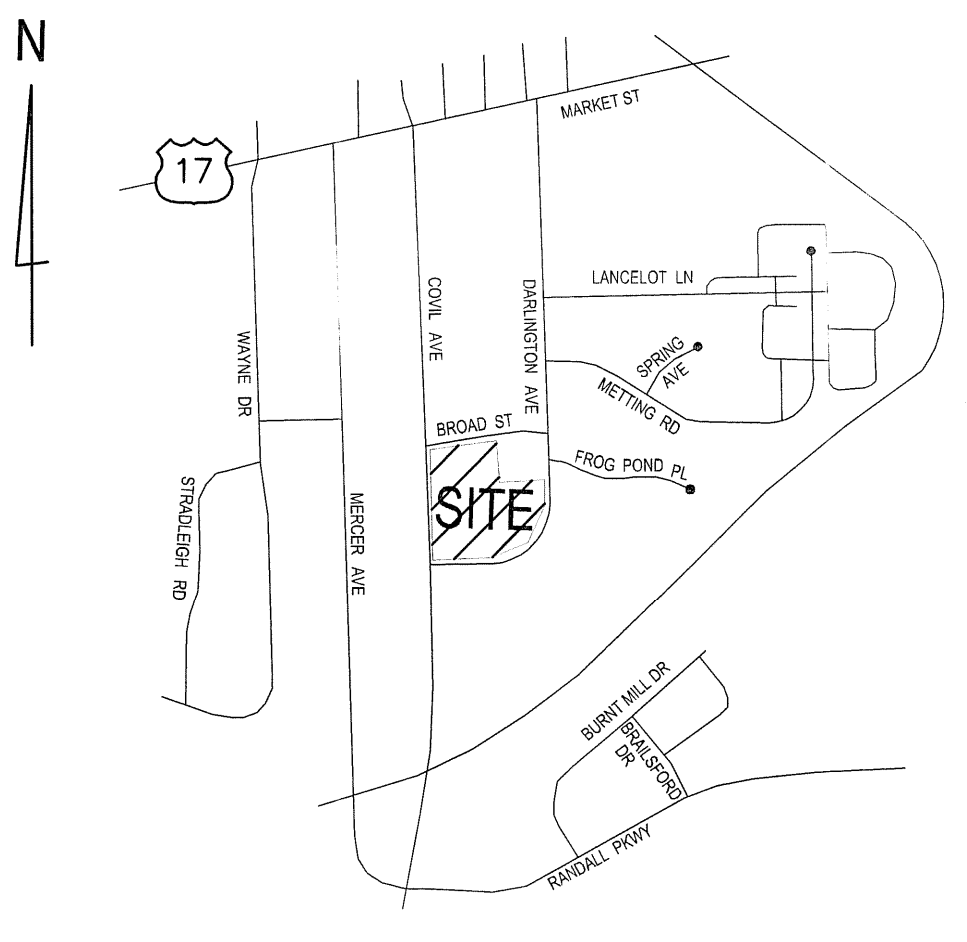
WITH PERVIOUS CONCRETE CREDIT:  
58,230 + 81,283 (0.25) + 38,339 SF = 116,890 SF OR 2.68 AC  
BUILT UPON AREA % = 2.68 AC / 6.4 AC = 41.87 %

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.

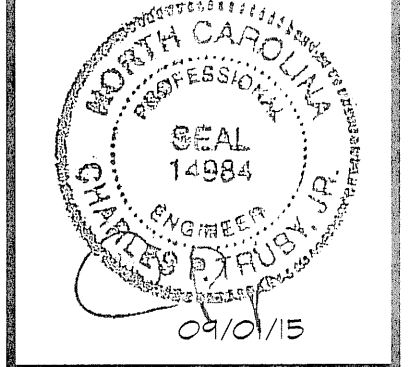
**CONSTRUCTION ACCESS NOTE:**  
THE USE OF COVIL AVE FOR DRIVEWAY ACCESS TO THE SITE BY COMMERCIAL VEHICLES DURING CONSTRUCTION SHALL BE PROHIBITED.



**REVISIONS**

- REV PER CITY COMMENTS 02-18-2015
- REV PER CITY COMMENTS 02-01-2015

**ENGINEERING AND SURVEYING, INC.**  
LAND DEVELOPMENT CONSULTING  
CORPORATE LICENSE NUMBER C-1515  
4400 TYNING STREET  
HIGH POINT, NORTH CAROLINA 27265  
PHONE: (336) 812-8800 ~ FAX: (336) 812-8180



**RETAINING WALL NOTES:**

- 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.
- ANY RETAINING WALL > 4' REQUIRE A BUILDING PERMIT.
- RETAINING WALLS SHALL BE INSPECTED BY A GEOTECHNICAL ENGINEER.

**GENERAL H.C. ACCESSIBILITY NOTES:**

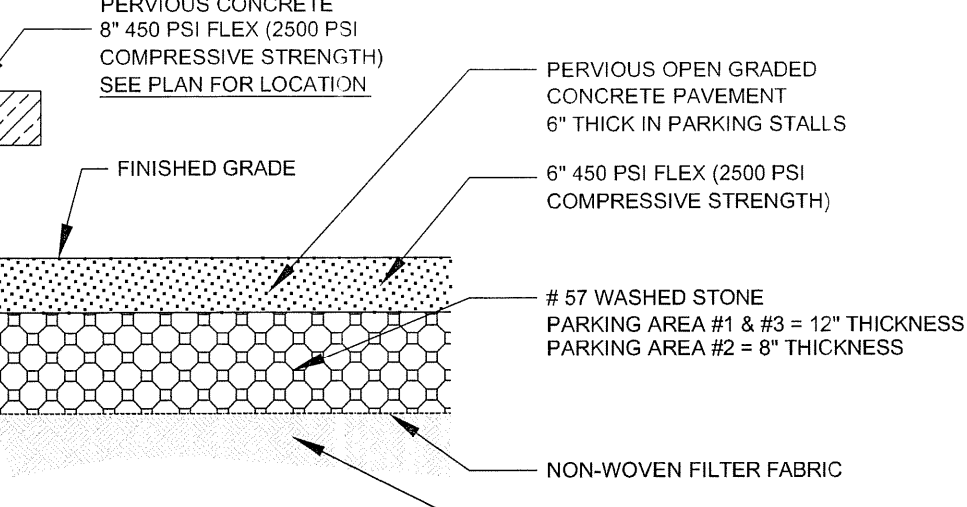
- LANDINGS OUTSIDE ALL DOORS SHALL BE SIZED PER NBC, BE AT THE SAME ELEVATION AS THE FFE, AND SHALL HAVE A MAX. 2 % SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL.
- THE SLOPES IN THE H.C. PARKING SPACE/ACCESSIBLE AISLE AREA SHALL NOT EXCEED 2 % IN ANY DIRECTION INCLUDING IN THE DIAGONAL.
- THERE SHALL BE NO DESIGNATED PEDESTRIAN ROUTES/SIDEWALKS WITHIN THE SITE, EXCEPT WHERE LABELED AS A RAMPS WITH RAILS, WHICH EXCEED A 5 % SLOPE IN THE DIRECTION OF TRAVEL AND A 2 % CROSS-SLOPE.
- 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 NBC.
- 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.
- 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 NBC.
- STAIRS / STEPS WITH LESS THAN A 12" ELEVATION CHANGE SHALL COMPLY WITH NBC 1003.5
- 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 NC MATERIAL STORAGE IN ENGLISH AND SPANISH THROUGHOUT CONSTRUCTION.  
SEE SHEET C-10 FOR TREE PROTECTIONS DETAILS

**OWNER / DEVELOPER:**

BRC WILMINGTON LLC  
5626 SAMET DRIVE, SUITE 105  
HIGH POINT, NC 27285  
PHONE: (336) 889-1512  
FAX: (336) 889-1501

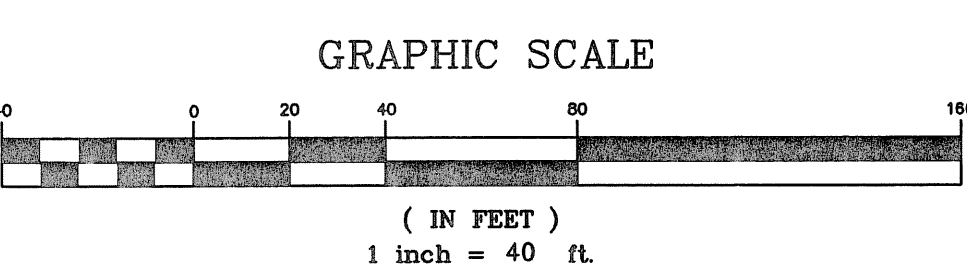
**ENGINEER:**

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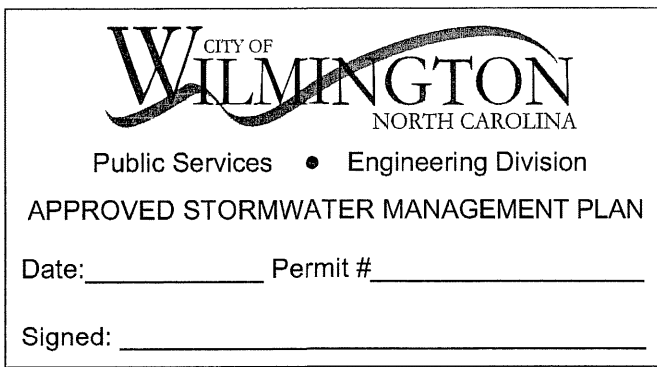
**GRADING PLAN**  
**ANNEXE AT THE RESERVE**  
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP  
NEW HANOVER COUNTY, NORTH CAROLINA

315 & 323 COVIL AVE.

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



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



**Approved Construction Plan**

Name \_\_\_\_\_ Date \_\_\_\_\_

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

Date: \_\_\_\_\_ Permit #: \_\_\_\_\_

Signed: \_\_\_\_\_

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

PIPE	AREA	TOTAL	COEF.	RAINFALL	C X I	RUNOFF	PIPE SIZE NEEDED	PIPE SIZE USED	LENGTH	NOTES
(1)	0.44	0.44	0.60	7.68	4.61	2.04	15"	15"	38'	RCP
(2)	0.40	26.40	0.45	7.68	3.45	91.08	42"	42"	82'	RCP
(3)	0.00	26.40	0.45	7.68	3.45	91.08	42"	42"	154'	RCP
(4)	3.74	3.74	0.60	7.68	4.61	17.24	24"	24"	22'	RCP

**IMPERVIOUS SURFACE CALCULATIONS**

	PARKING AREA #1	PARKING AREA #2	PARKING AREA #3	IMPERVIOUS TOTALS
BUILDINGS	0.183 AC / 8,403 SF	0.177 AC / 8,403 SF	0.177 AC / 8,403 SF	0.537 AC / 25,209 SF
SIDEWALK	0.035 AC / 1,522 SF	0.234 AC / 10,198 SF	0.041 AC / 1,792 SF	0.310 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	1.743 AC / 75,949 SF	0.152 AC / 6,809 SF	2.039 AC / 88,052 SF
REGULAR CONCRETE	0	0.043 AC / 1,904 SF	0	0.043 AC / 1,904 SF
TOTAL BUA	0.366 AC / 16,829 SF	3.126 AC / 136,148 SF	0.383 AC / 16,717 SF	3.875 AC / 169,694 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: 6.42 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 = 279  
(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.

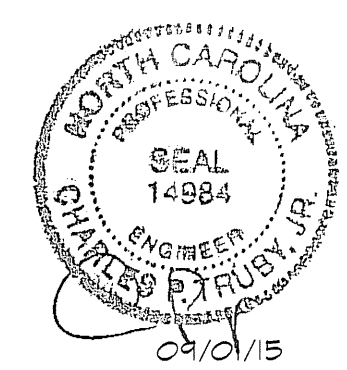
**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_

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

**OWNER / DEVELOPER:**  
BRC WILLMINGTON 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  
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CONTACT: CHUCK TRUBY, P.E.  
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FAX: (336) 812-8780

315 & 323 COVIL AVE.  
**DRAINAGE AREA PLAN**  
SCALE: 1" = 40'  
DATE: 03/17/15  
PROJECT: 1140-12  
DRAWN BY: TGL  
SHEET C-8

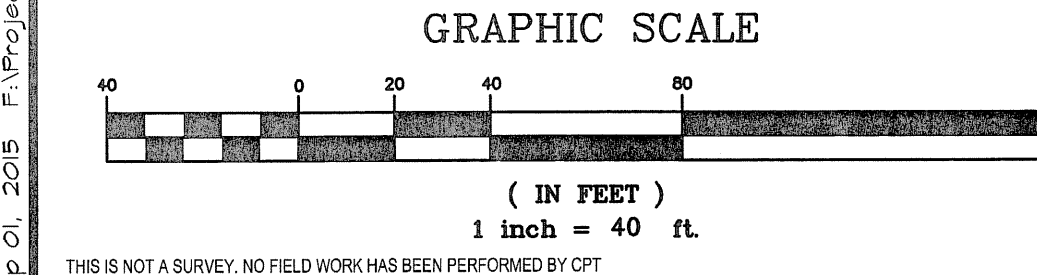
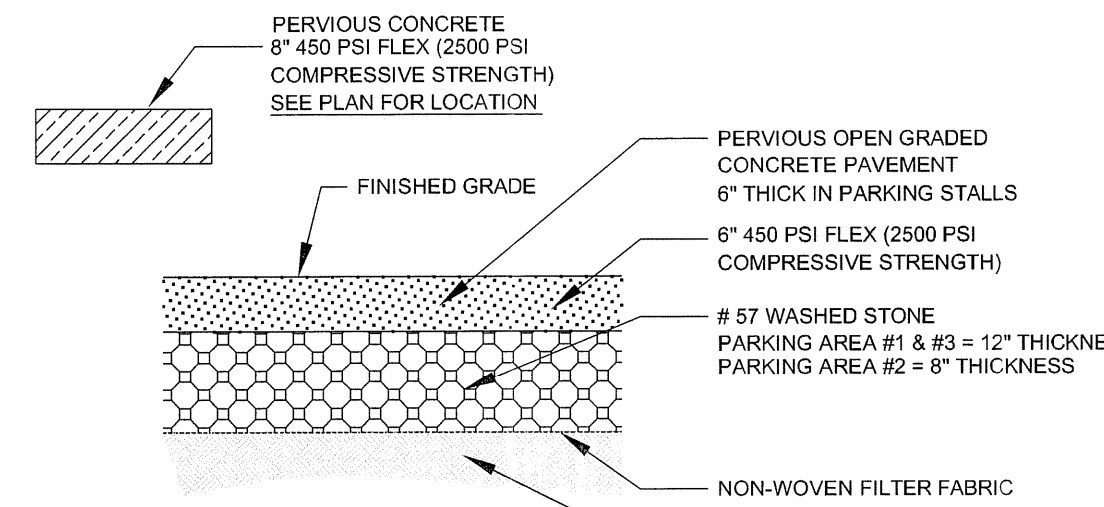
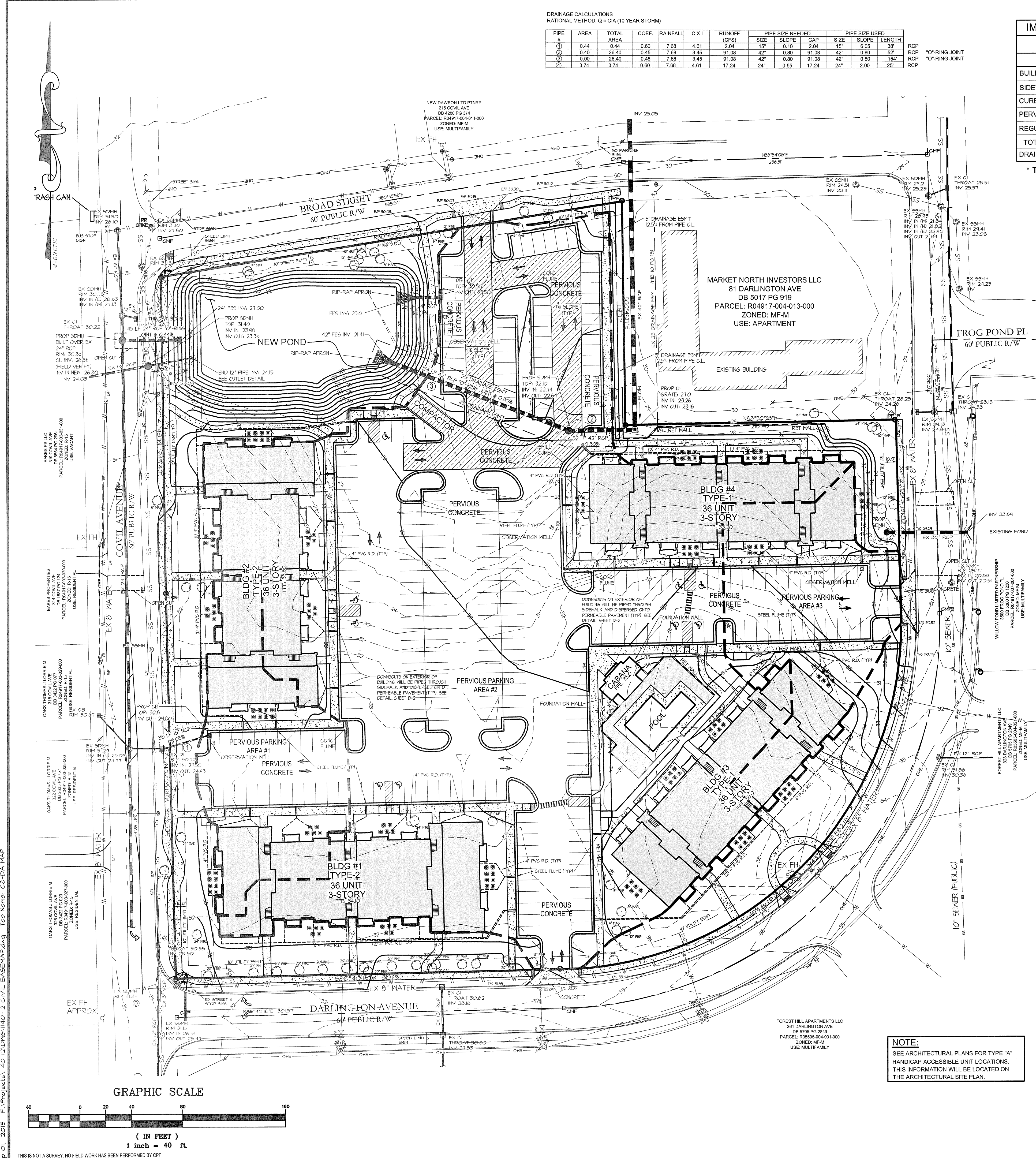
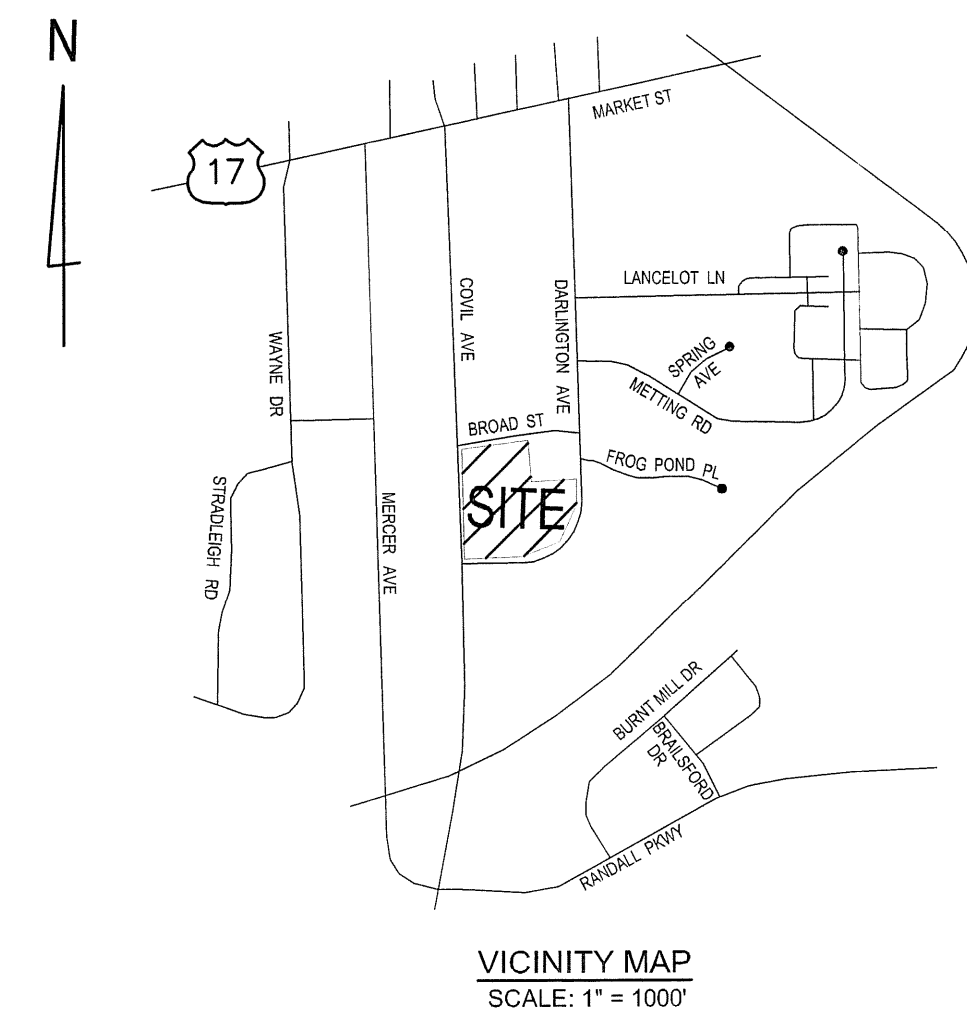
**ENGINEERING AND SURVEYING, INC.**  
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**DRAINAGE AREA PLAN**  
**ANNEXE AT THE RESERVE**  
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP  
NEW HANOVER COUNTY, NORTH CAROLINA

**REVISIONS**

1	REV PER CITY COMMENTS	02-18-2015
2	REV PER CITY COMMENTS	02-20-2015



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**DRAINAGE CALCULATIONS**  
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PIPE #	AREA	TOTAL AREA	COEF.	RAINFALL	C X I	RUNOFF (CFS)	PIPE SIZE NEEDED	PIPE SIZE USED	PIPE SIZE LENGTH	RCP
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(2)	0.40	26.40	0.45	7.68	3.45	91.08	42"	42"	91.08	52'
(3)	0.00	26.40	0.45	7.68	3.45	91.08	42"	42"	91.08	154'
(4)	3.74	3.74	0.60	7.68	4.81	17.24	24"	24"	2.90	25'

**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.
<b>BUILDINGS</b>	0.189 AC / 8,403 SF	0.37 AC / 42,118 SF	0.177 AC / 7,711 SF	1.34 AC / 58,230 SF
<b>SIDEWALK</b>	0.035 AC / 1,522 SF	0.234 AC / 10,198 SF	0.041 AC / 1,792 SF	0.31 AC / 13,512 SF
<b>CURB &amp; GUTTER</b>	0.014 AC / 610 SF	0.137 AC / 5,983 SF	0.014 AC / 605 SF	0.165 AC / 7,188 SF
<b>PERVIOUS CONCRETE</b>	0.144 AC / 6,294 SF	1.743 AC / 75,948 SF	0.152 AC / 6,609 SF	2.039 AC / 88,851 SF
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TOTAL NUMBER OF UNITS: 144  
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24 (3 BEDROOM)  
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FRONT: 30 FT  
REAR: 25 FT  
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ADDITIONAL REAR AND SIDE YARD SETBACKS FOR BLDG HEIGHT ABOVE 35 FEET  
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REQUIRED ACTIVE, PASSIVE, OR OPEN SPACE: 2.24 X 0.5 = 1.12 AC  
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**NOTE:**  
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**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_

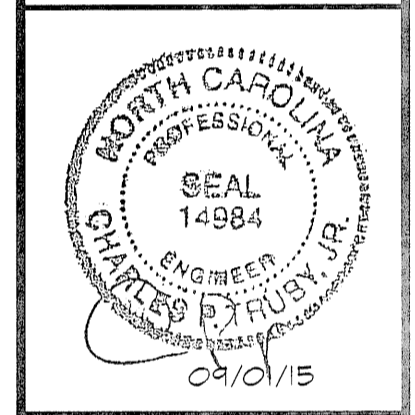
**Approved Construction Plan**  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Planning: \_\_\_\_\_  
Traffic: \_\_\_\_\_  
Fire: \_\_\_\_\_

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**REVISIONS**

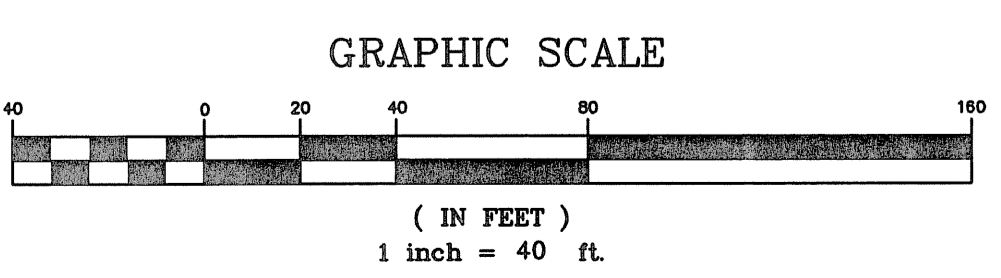
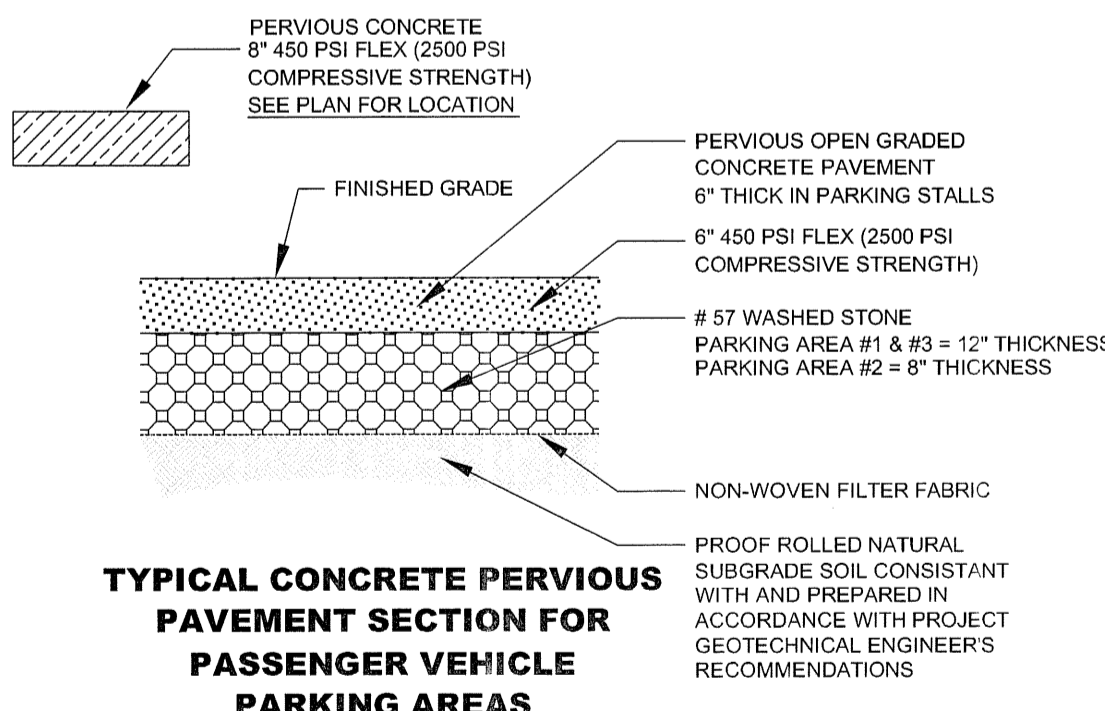
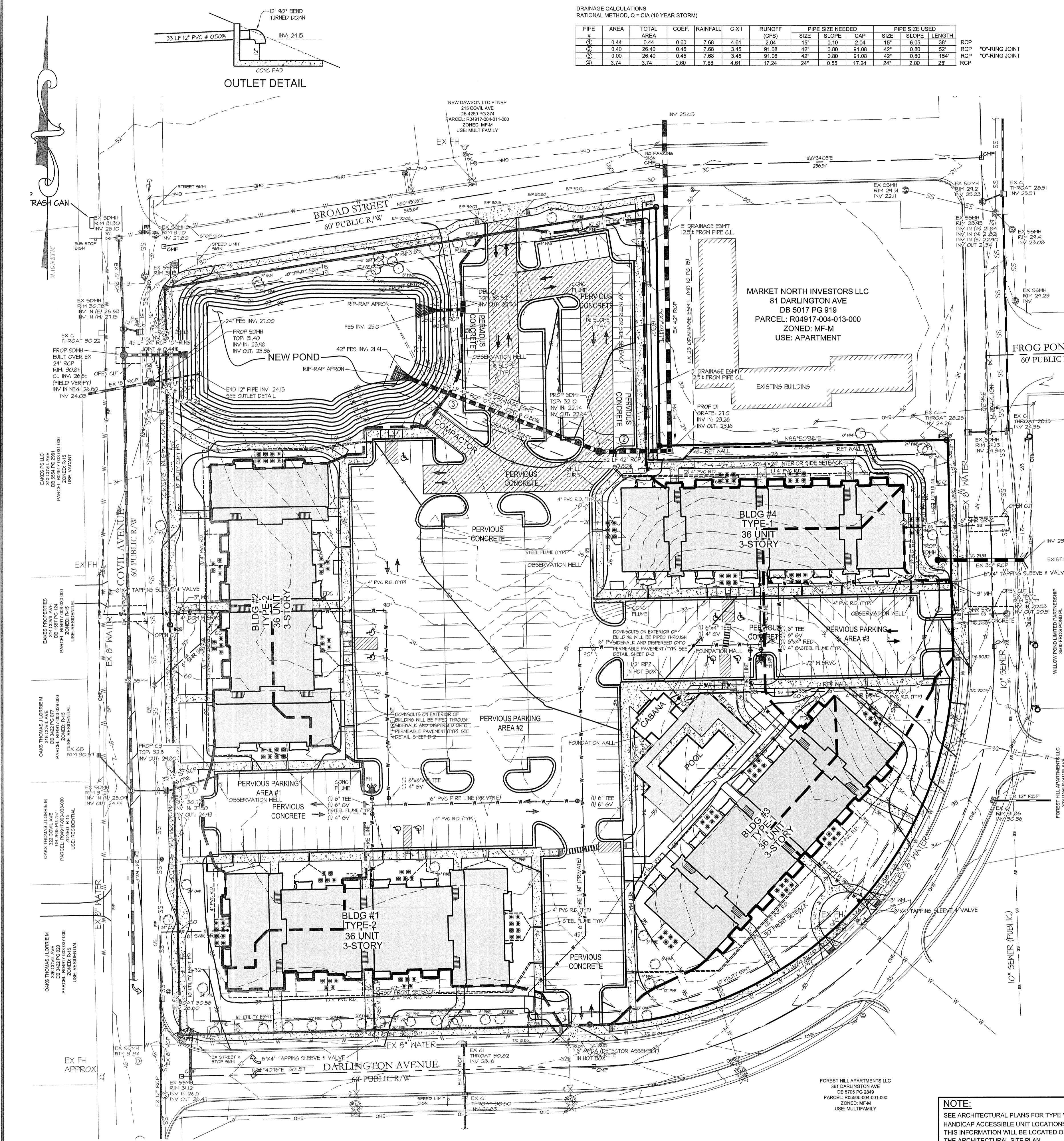
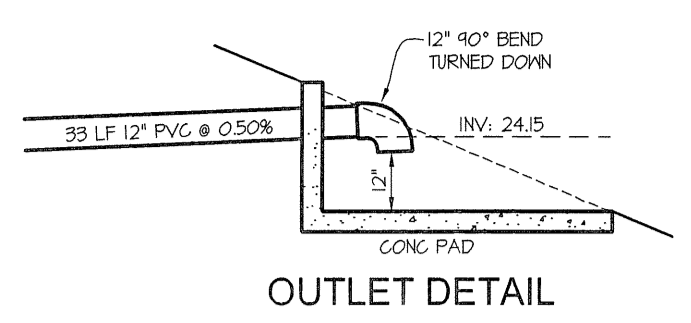
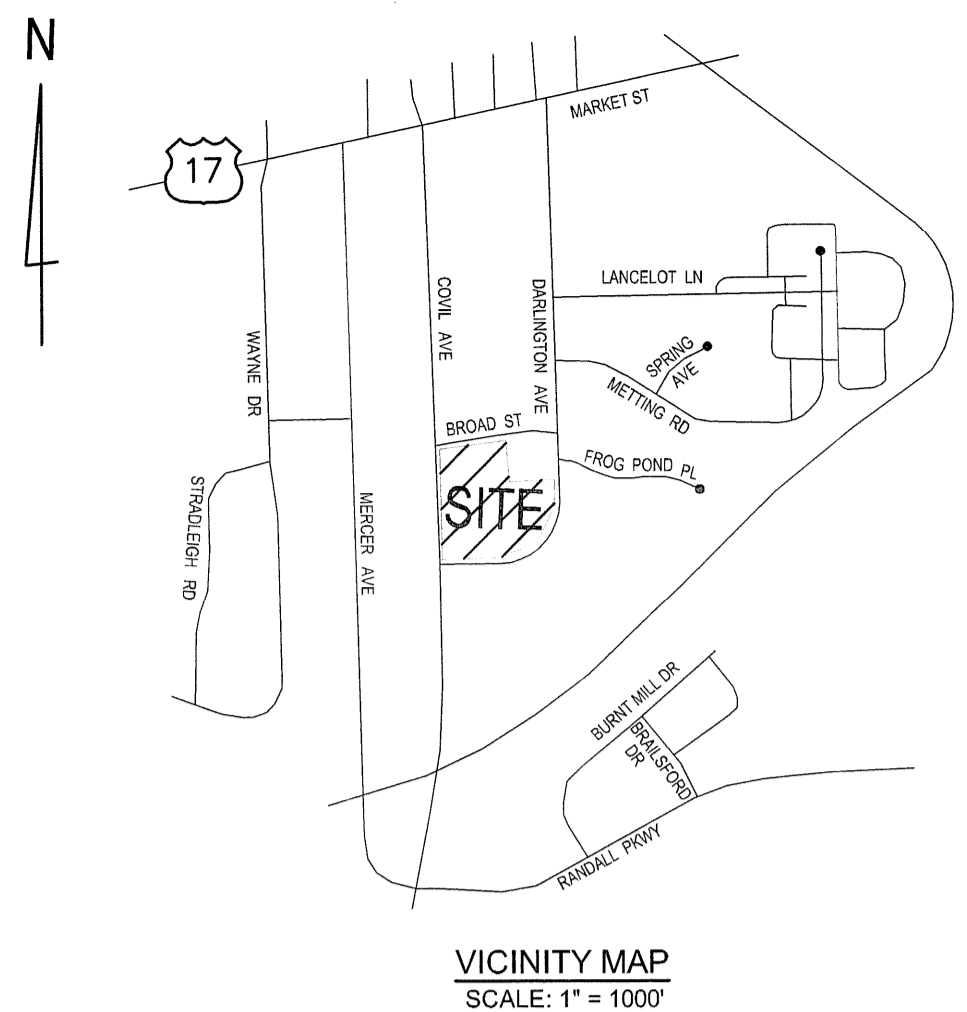
1.	REV PER CITY COMMENTS 06-16-2015
2.	REV PER CITY COMMENTS 08-01-2015

**ENGINEERING AND SURVEYING, INC.**  
LAND DEVELOPMENT CONSULTING  
CORPORATE LICENSE NUMBER C-1315  
4400 TYNING STREET  
HIGH POINT, NORTH CAROLINA 27285  
PHONE: (336) 812-8800 ~ FAX: (336) 812-8780



**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

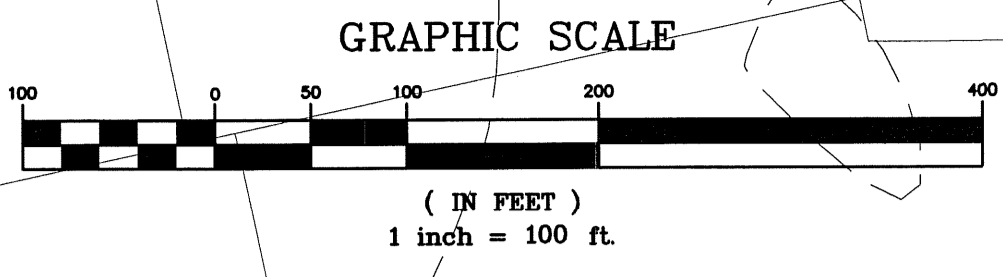
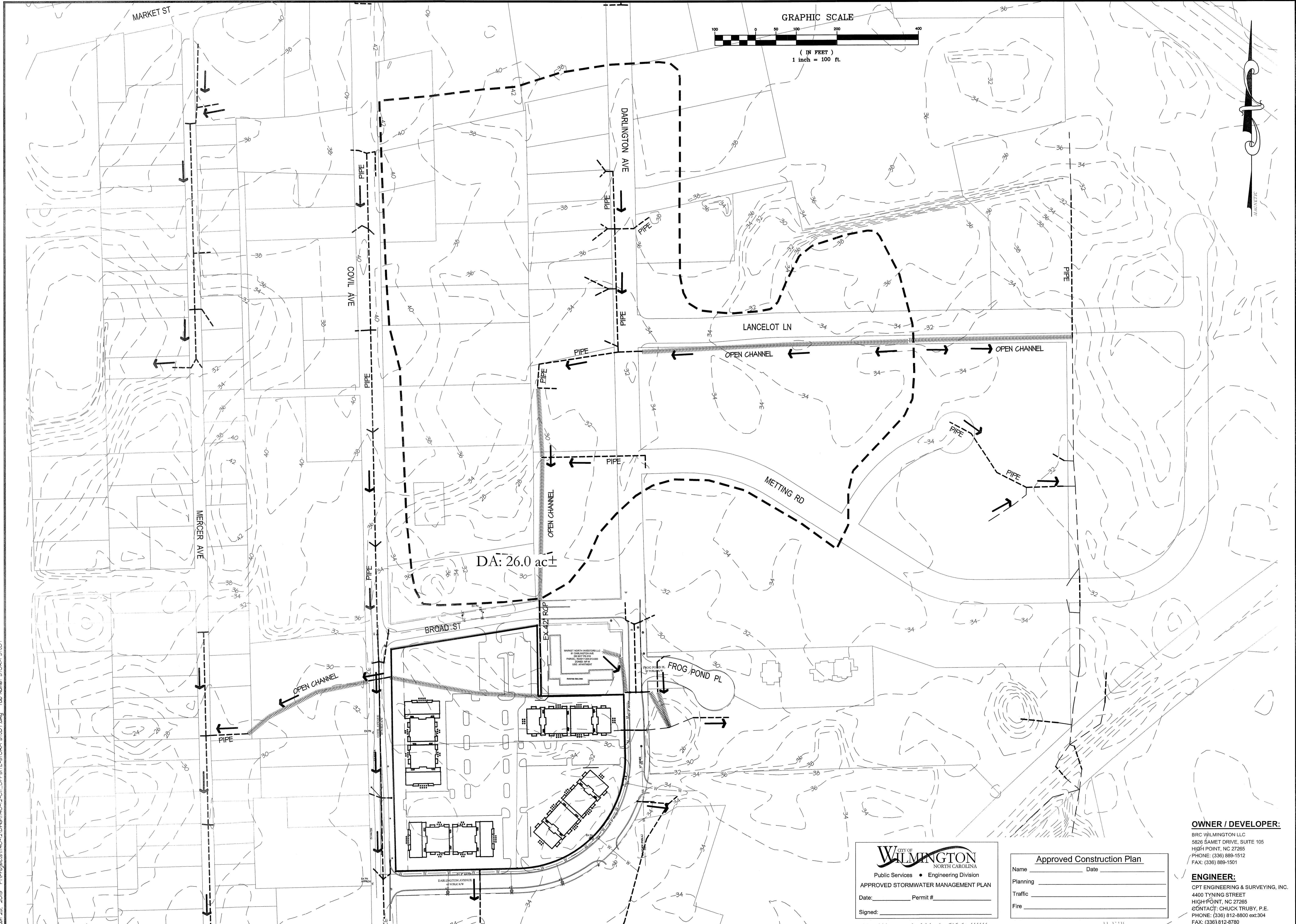


THIS IS NOT A SURVEY. NO FIELD WORK HAS BEEN PERFORMED BY CPT ENGINEERING AND SURVEYING, INC.

Sept 01, 2015 File: Projects\1140-12\DWG\1140-12-CIVIL BASEMAP.dwg User: Name: CPT-STORMWATER MAN PLAN



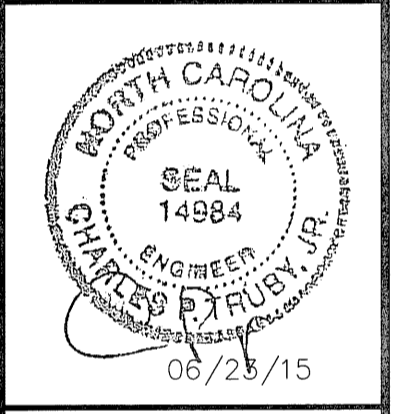
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REVISIONS

1. REV PER CITY COMMENTS  
 08-18-2015

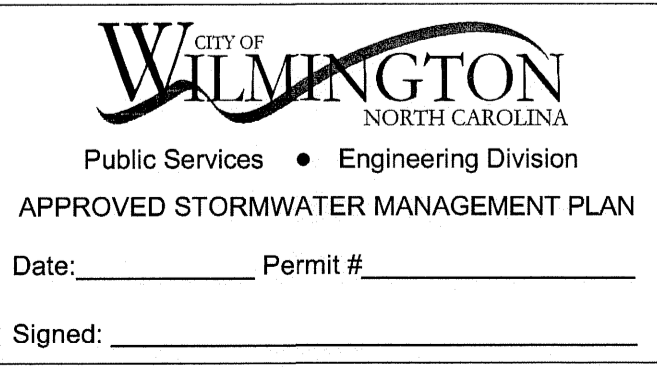
ENGINEERING AND SURVEYING, INC.  
 LAND DEVELOPMENT CONSULTING  
 CORPORATE LICENSE NUMBER C-1875  
 4400 TYNING STREET  
 HIGH POINT, NORTH CAROLINA 27265  
 PHONE: (336) 812-8800 ~ FAX: (336) 812-8780



OFF-SITE DRAINAGE AREA MAP  
**ANNEXE AT THE RESERVE**  
 CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP  
 NEW HANOVER COUNTY, NORTH CAROLINA

915 & 929 COVIL AVE.  
 OFF-SITE DRAINAGE AREA MAP  
 SCALE: 1" = 100'  
 DATE: 03/17/15  
 PROJECT: 1140-12  
 DRAWN BY: TGL  
 SHEET C11

DA: 26.0 ac±

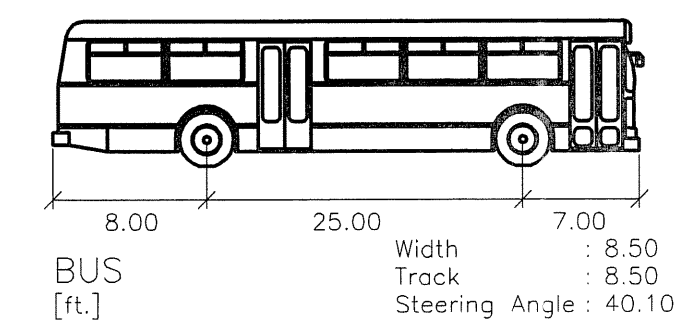
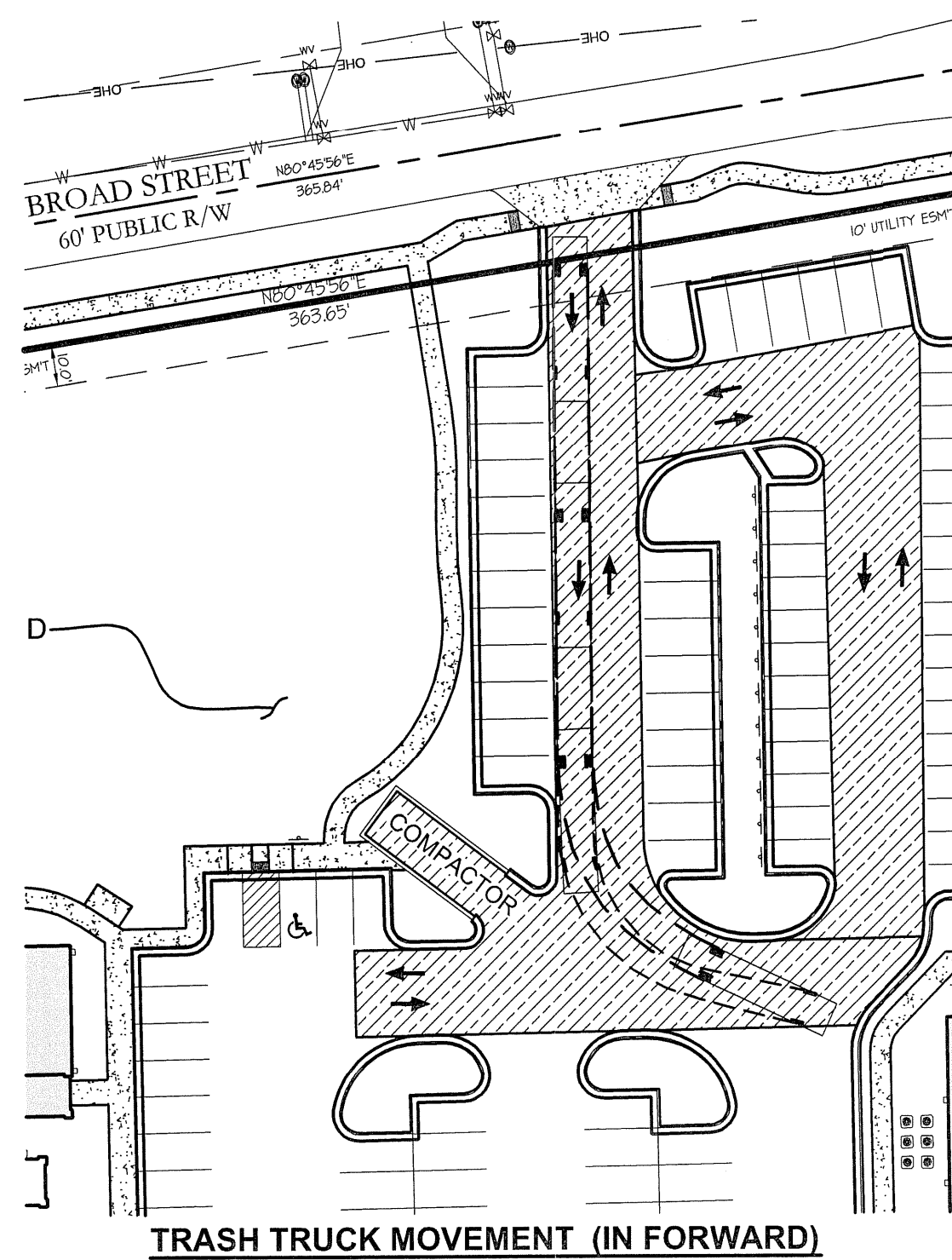
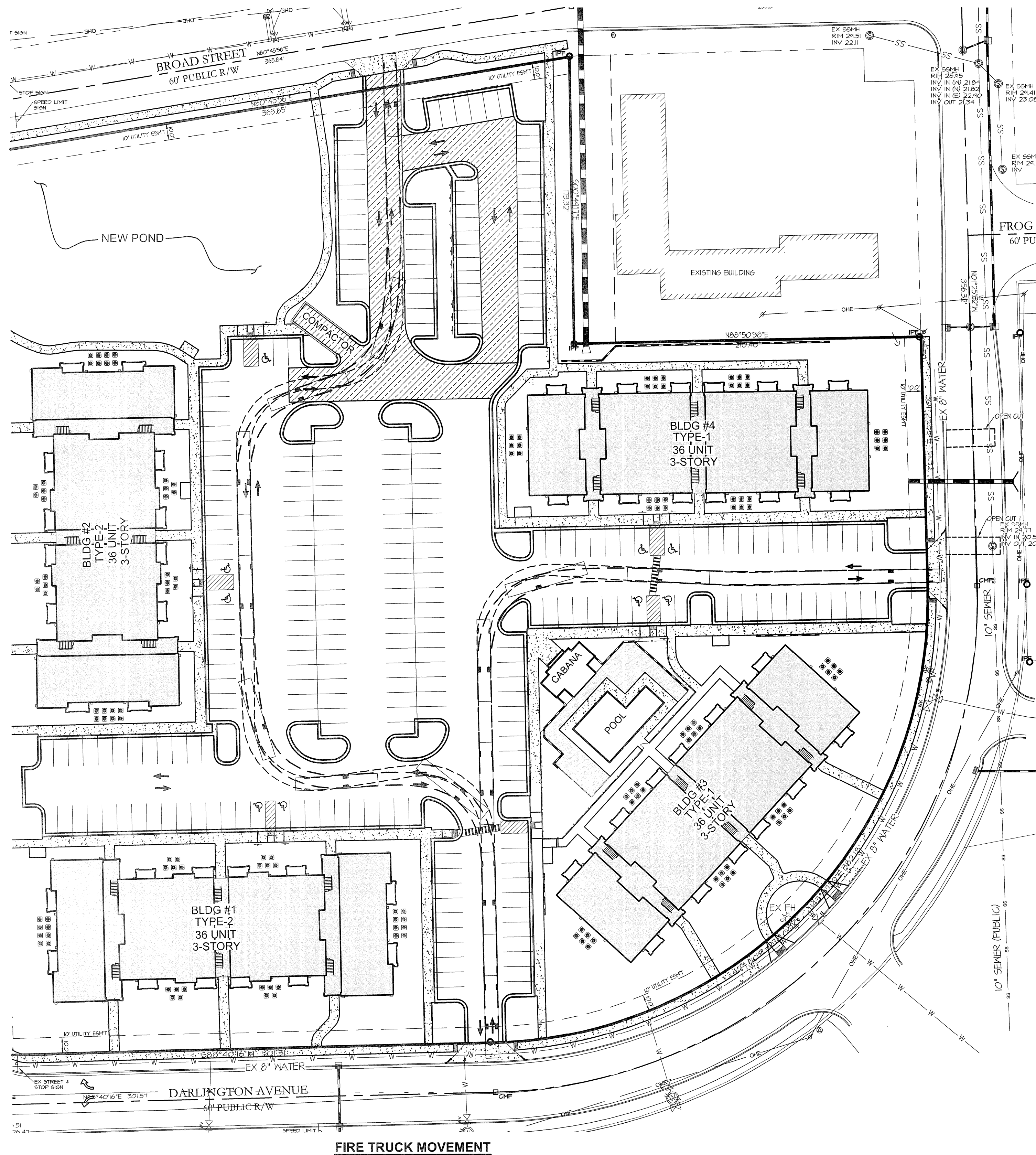
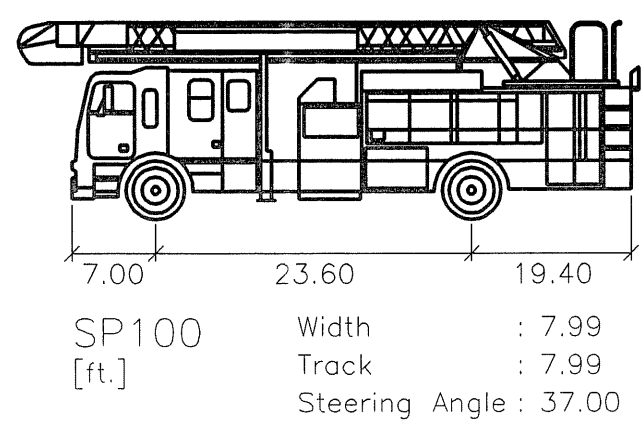


Approved Construction Plan

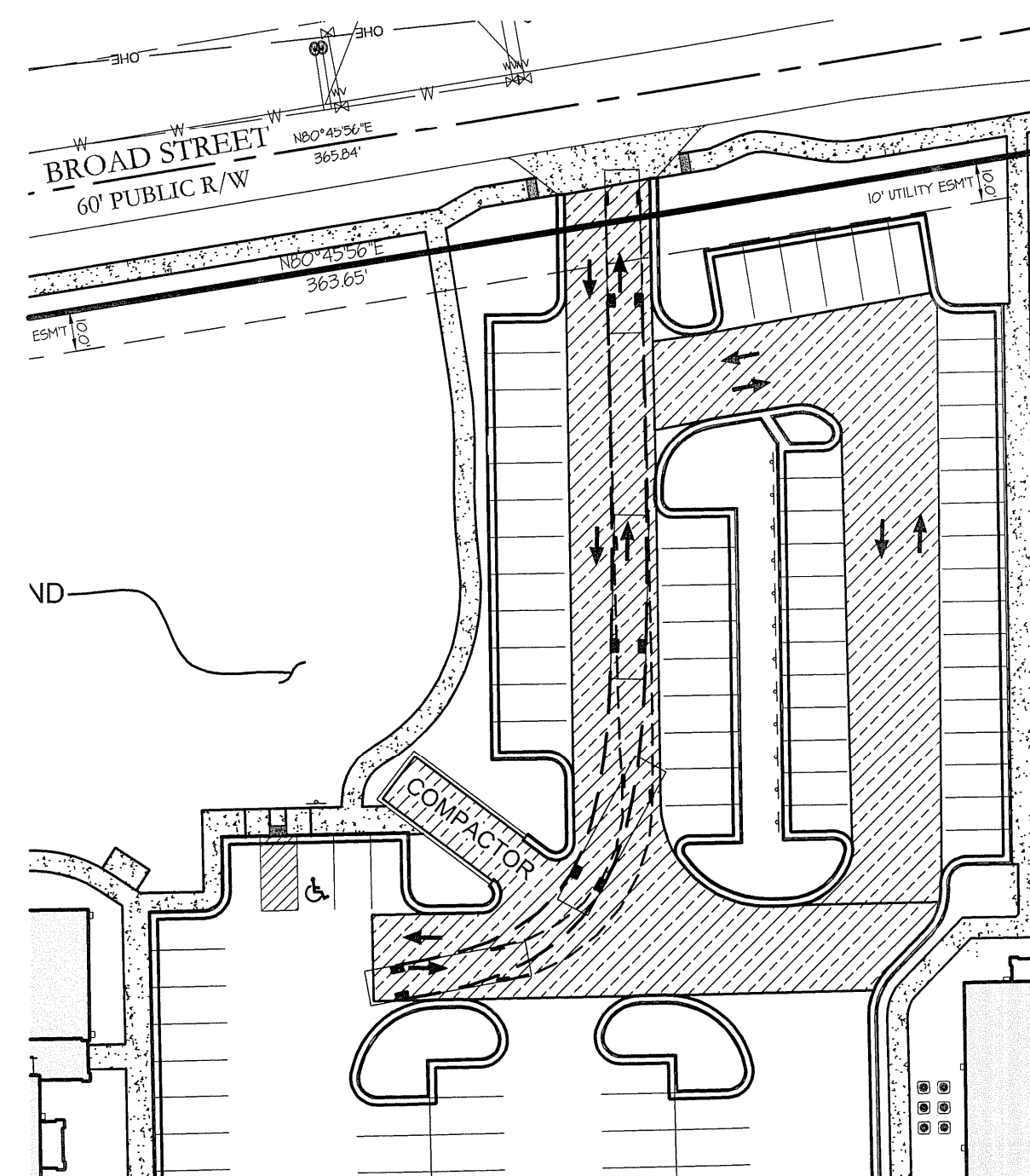
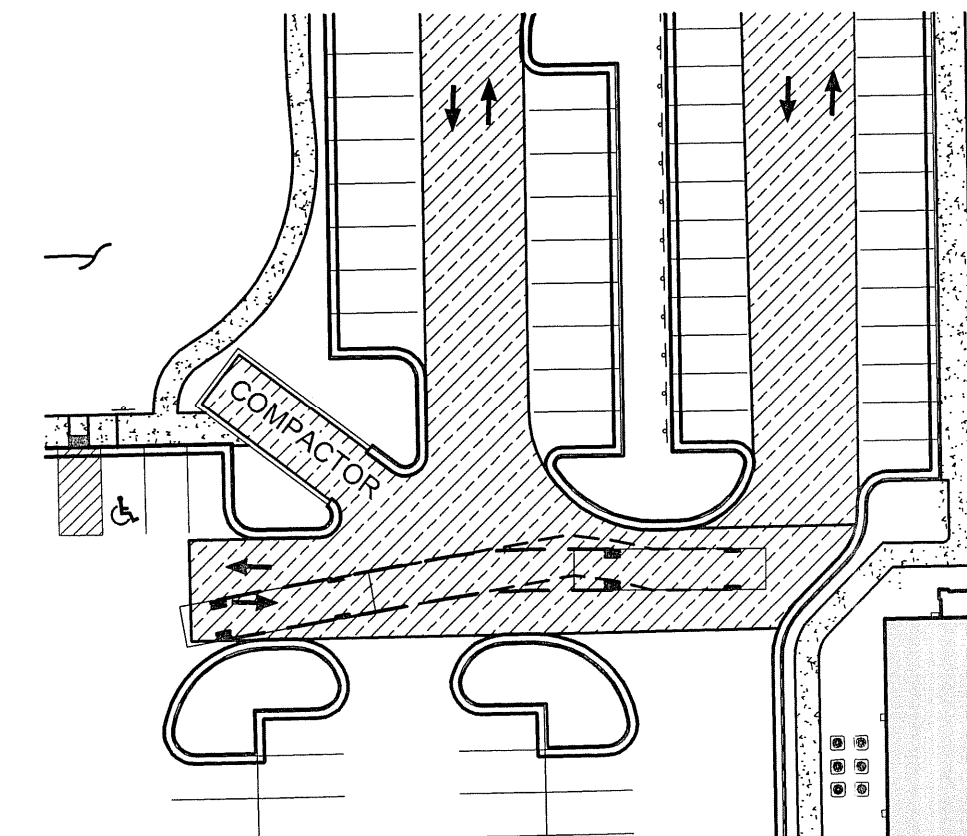
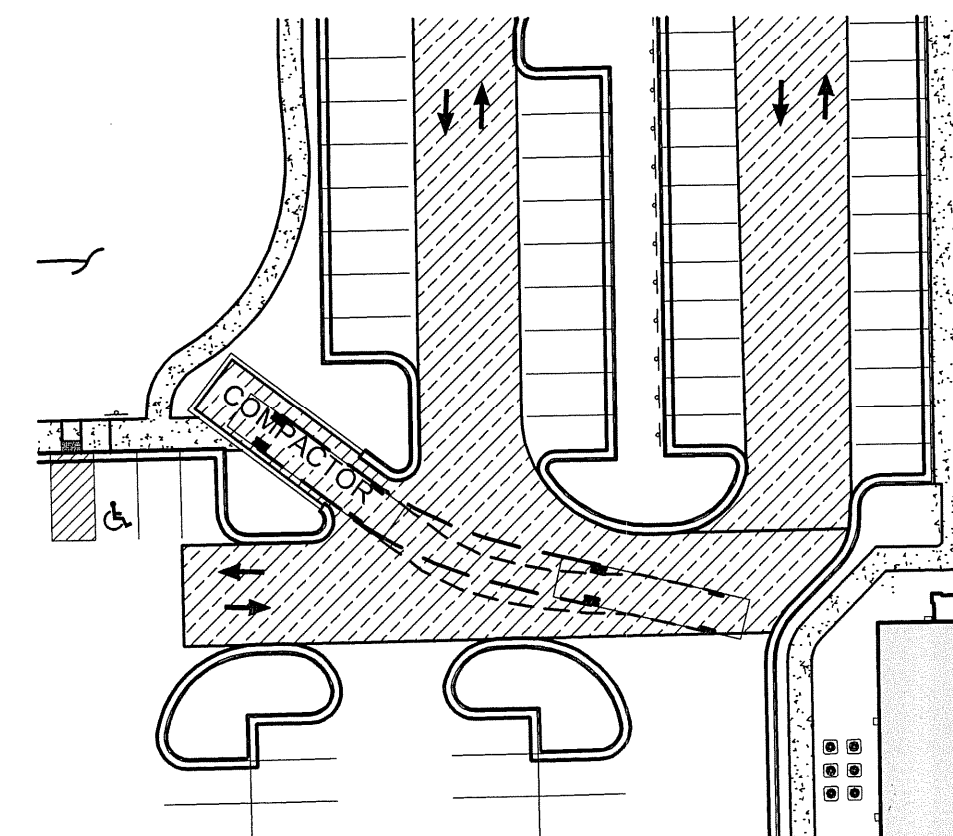
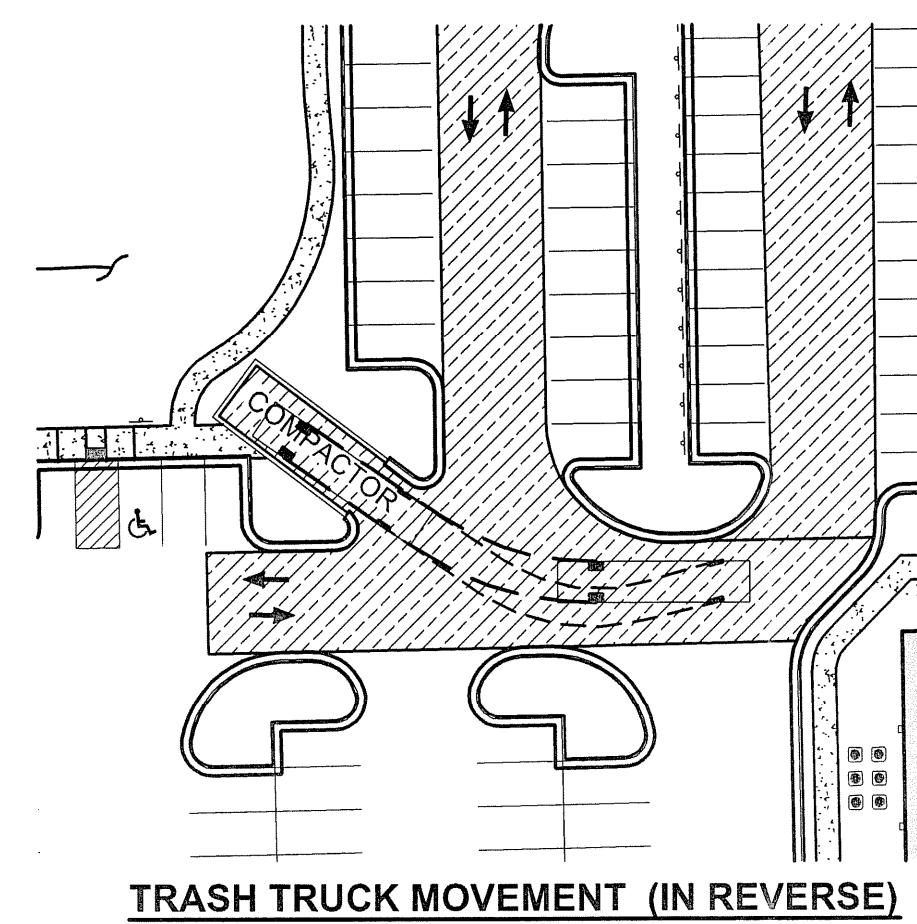
Name \_\_\_\_\_ Date \_\_\_\_\_  
 Planning \_\_\_\_\_  
 Traffic \_\_\_\_\_  
 Fire \_\_\_\_\_

**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



TEMPLATE USED FOR TRASH TRUCK



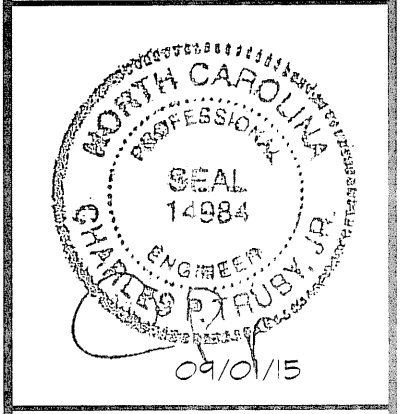
**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_

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

**REVISIONS**

- REV PER CITY COMMENTS 08-18-2015
- REV PER CITY COMMENTS 08-21-2015

**ENGINEERING AND SURVEYING, INC.**  
LAND DEVELOPMENT CONSULTING  
CORPORATE LICENSE NUMBER C-1915  
4400 TRYING STREET  
HIGH POINT, NORTH CAROLINA 27265  
PHONE: (936) 912-8800 ~ FAX: (936) 912-6780



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

315 & 325 COVIL AVE.

**TRUCK MOVEMENT PLAN**

SCALE: 1" = 40'

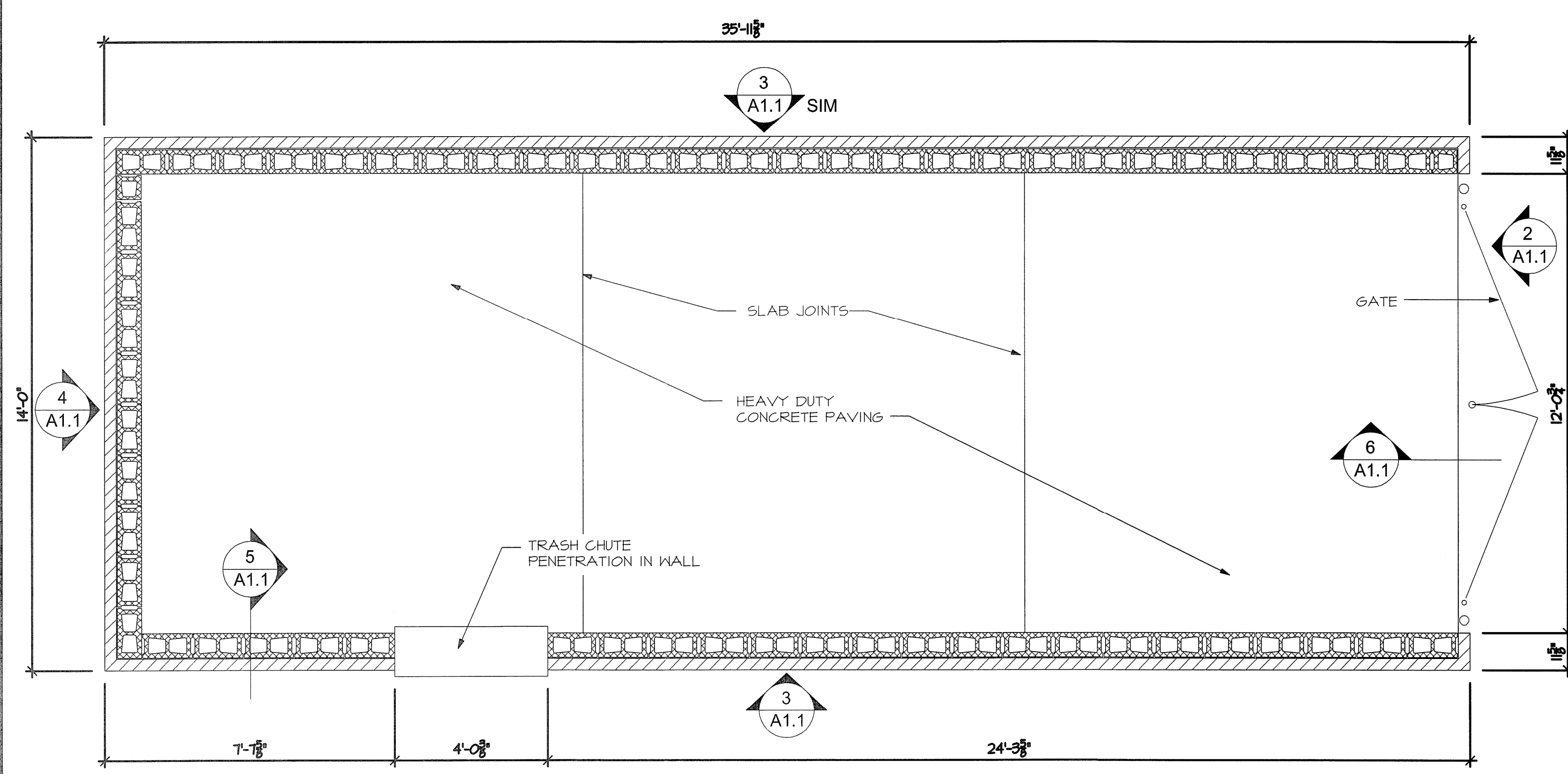
DATE: 03/17/15

PROJECT: 1140-12

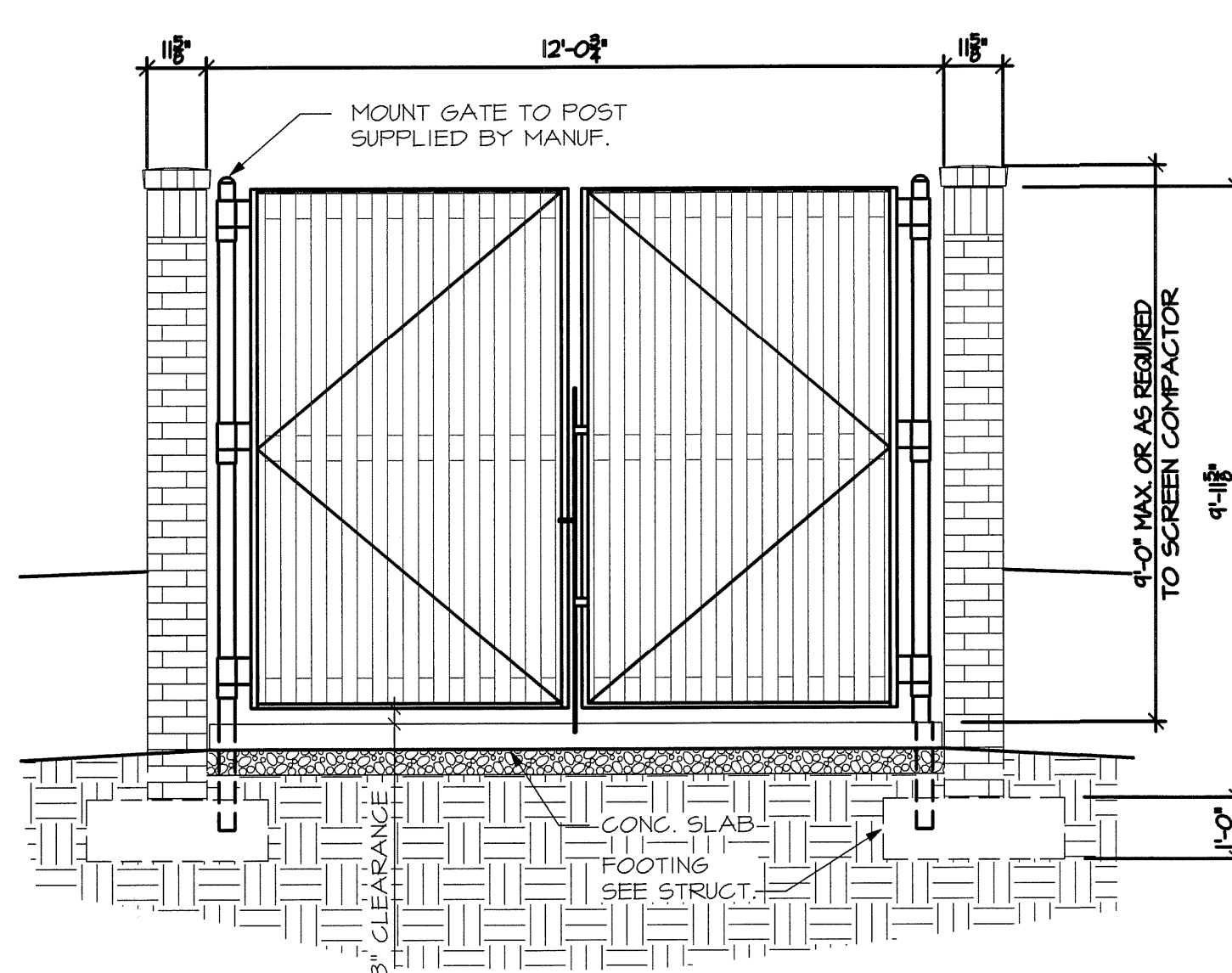
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SHEET **C-12**

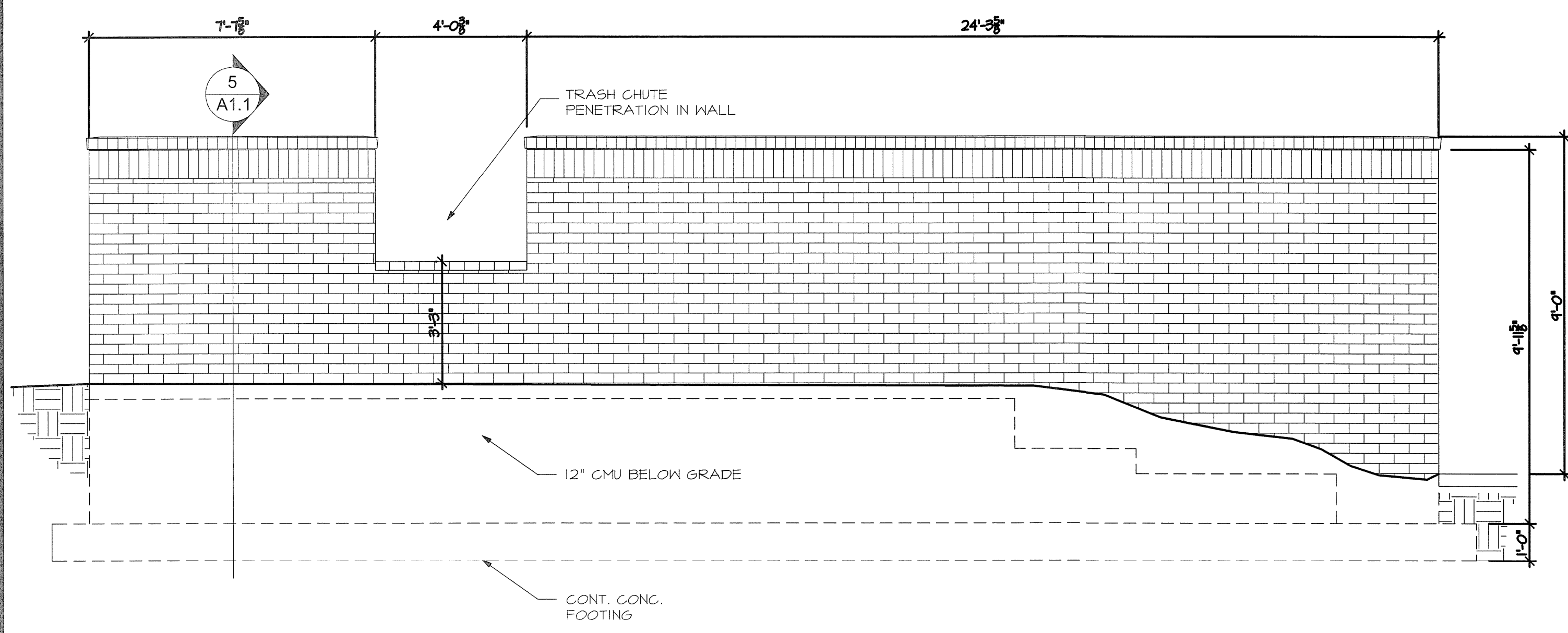
SEP 01, 2015 F:\PROJECTS\1140-12 CIVIL BASEMAP.dwg T26 North C-12-AUTOPRN



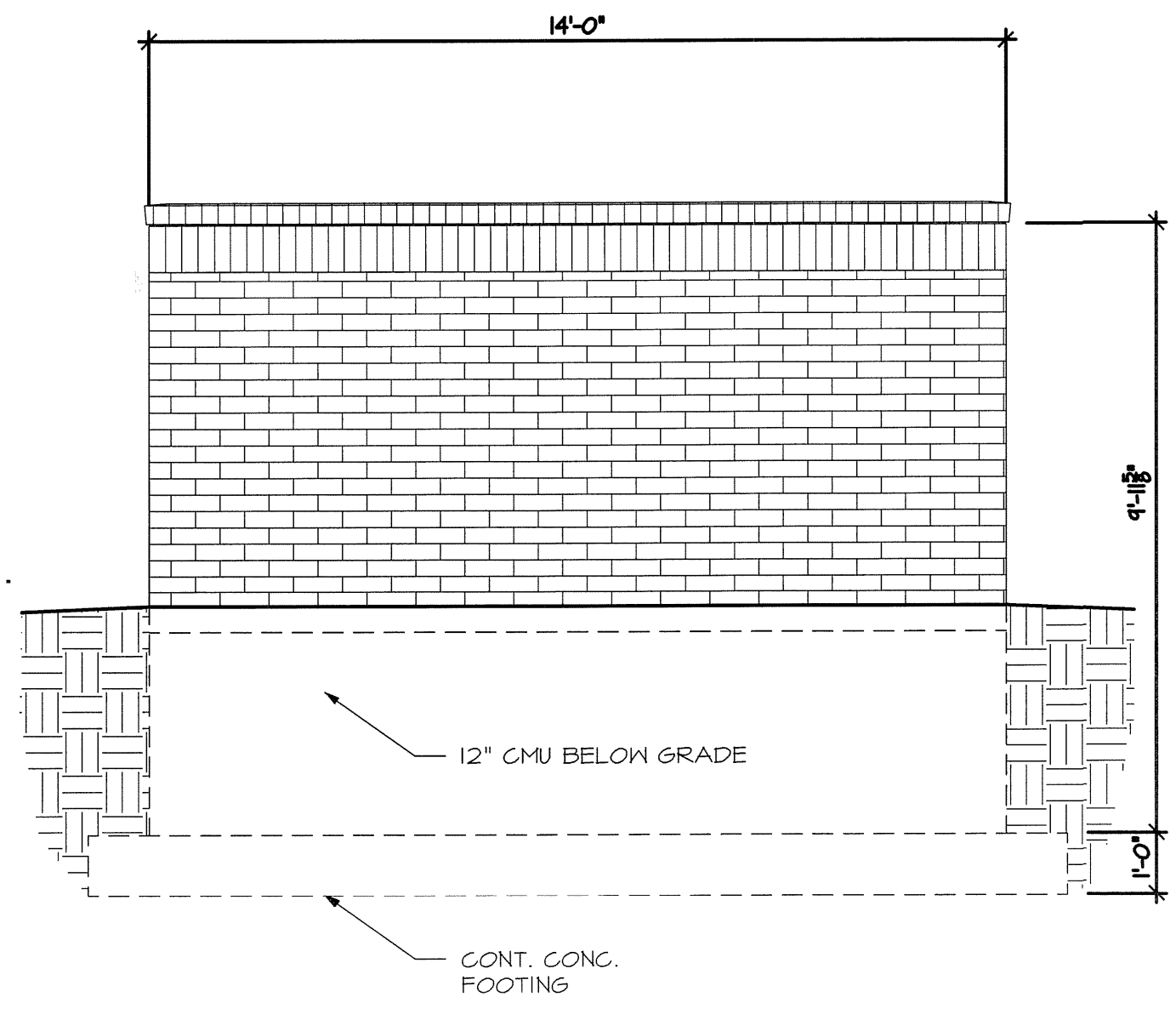
**TRASH COMPACTOR PLAN**  
SCALE: 3/8" = 1'-0"  
1 A1.1



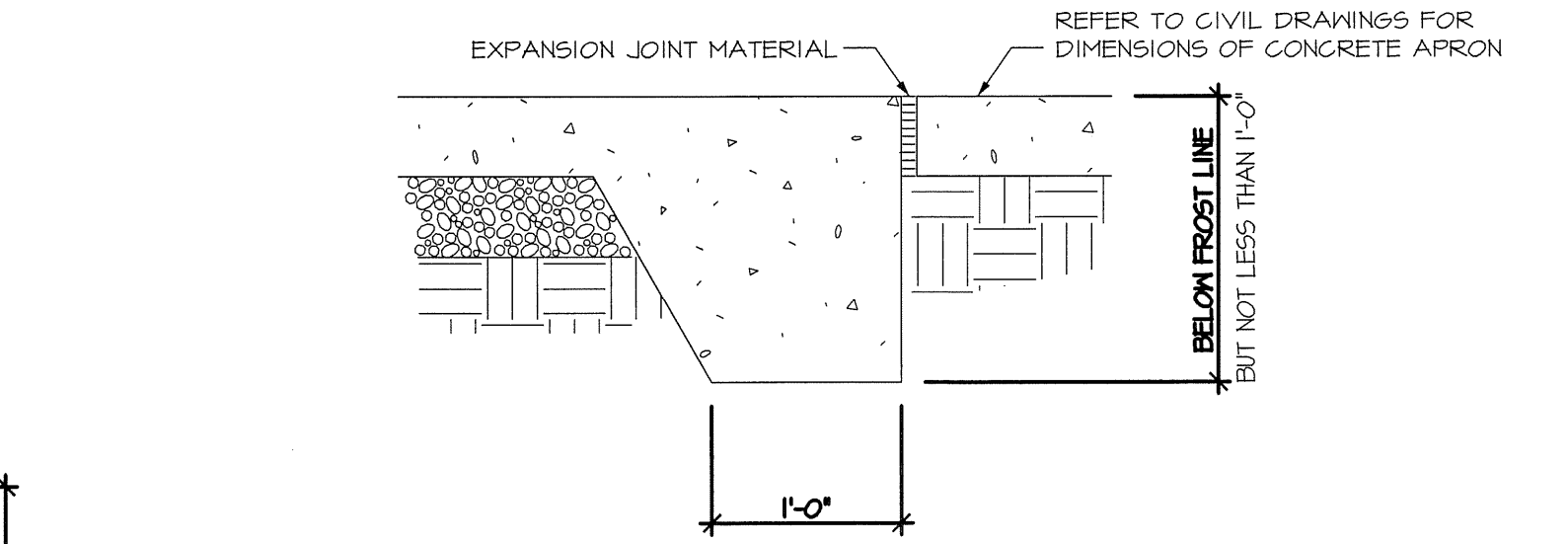
**FRONT ELEVATION**  
SCALE: 3/8" = 1'-0"  
2 A1.1



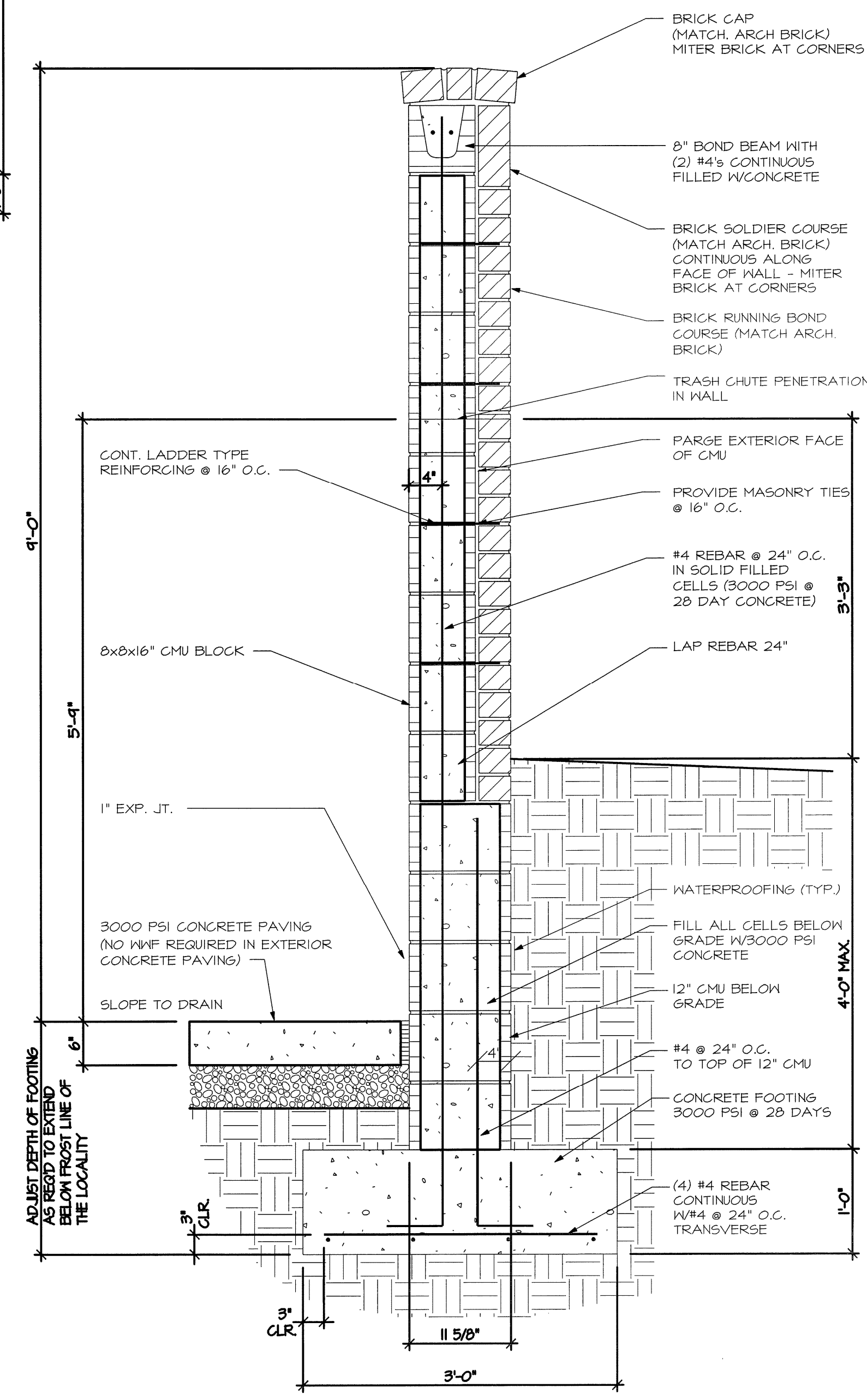
**SIDE ELEVATION**  
SCALE: 3/8" = 1'-0"  
3 A1.1



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



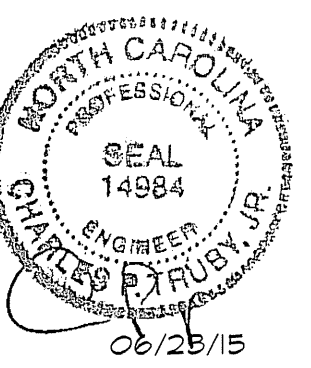
**CROSS SECTION**  
SCALE: 1" = 1'-0"  
6 A1.1



**CROSS SECTION**  
SCALE: 1" = 1'-0"  
5 A1.1

REVISIONS	
REV	PER CITY COMMENTS
02-16-2015	

**ENGINEERING AND SURVEYING, INC.**  
LAND DEVELOPMENT CONSULTING  
CORPORATE LICENSE NUMBER C-1515  
4400 TYNING STREET  
HIGH POINT, NORTH CAROLINA 27265  
PHONE: (856) 812-8800 ~ FAX: (856) 812-8760



**TRASH COMPACTOR PLAN & DETAILS**  
**ANNEXE AT THE RESERVE**  
CITY OF WILMINGTON ~ WILMINGTON TOWNSHIP  
NEW HANOVER COUNTY, NORTH CAROLINA

915 & 925 COVIL AVE.

TRASH COMPACTOR PLAN & DETAILS
SCALE: AS SHOWN
DATE: 03/17/15
PROJECT: 1140-12
DRAWN BY: TGL
SHEET <b>C-13</b>

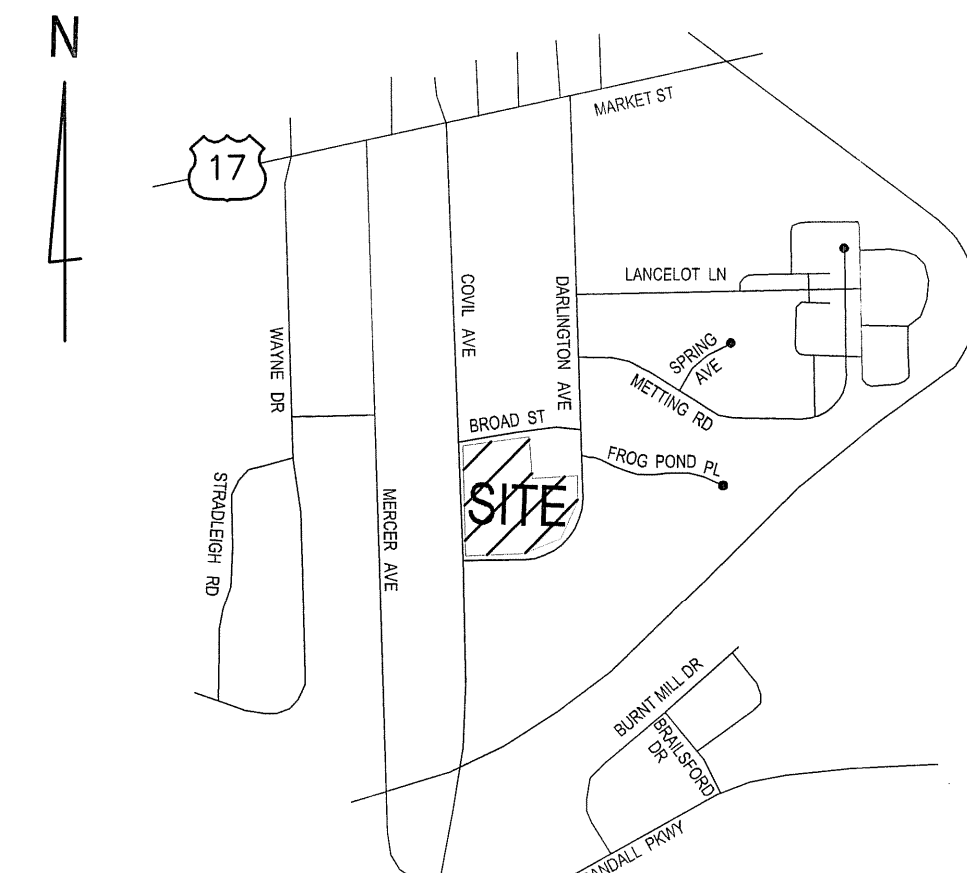
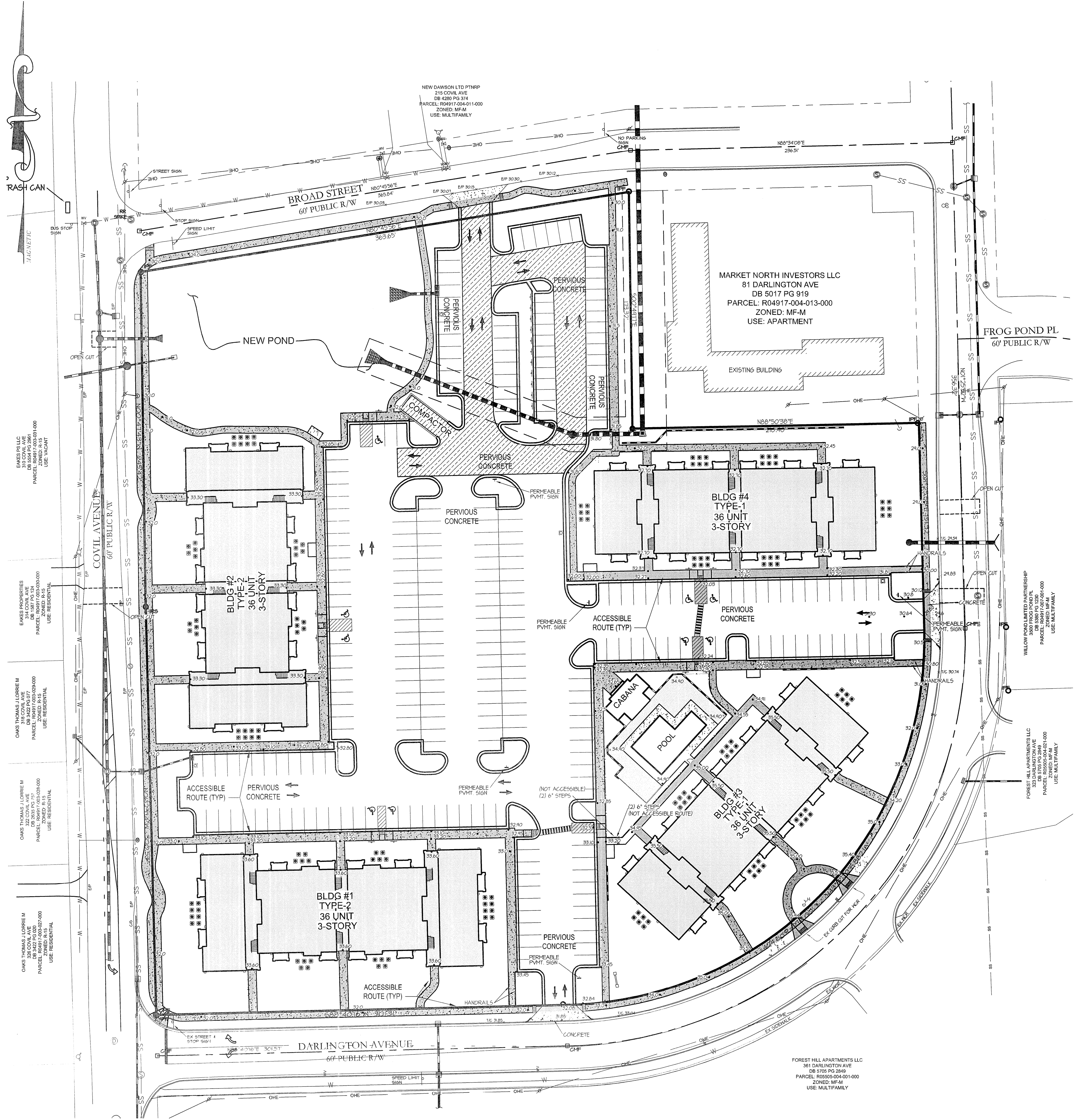
**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN

Date: \_\_\_\_\_ Permit #: \_\_\_\_\_  
Signed: \_\_\_\_\_

**Approved Construction Plan**

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Planning: \_\_\_\_\_  
Traffic: \_\_\_\_\_  
Fire: \_\_\_\_\_

Jun 23, 2015 11:40:23 AM Projects\1140-2\DWG\1140-12-C13\_Trash-Compactor.dwg Tab Name Layout1



VICINITY MAP  
SCALE: 1" = 1000'

**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 = 279  
 (INCLUDES 9 HC SPACES)

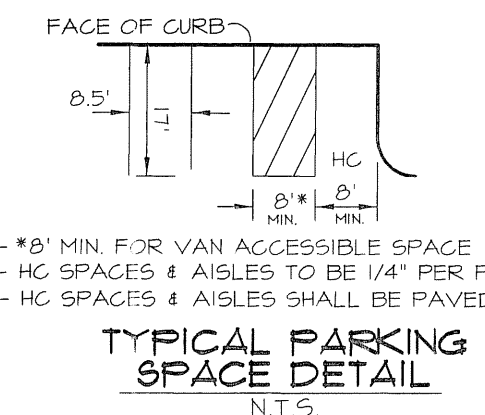
**ADA PARKING:**  
 ADA PARKING REQUIRED:  
 201 - 300 = 7 SPACES  
 (1 REQUIRED TO BE VAN SPACE)  
 TOTAL ADA SPACES PROVIDED: 9 SPACES

- GENERAL H.C. ACCESSIBILITY NOTES:**
- LANDINGS OUTSIDE ALL DOORS SHALL BE SIZED PER NBC. BE AT THE SAME ELEVATION AS THE FFE, AND SHALL HAVE A MAX. 2% SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL.
  - THE SLOPES IN THE H.C. PARKING SPACE/ACCESS AISLE SHALL NOT EXCEED 2% IN ANY DIRECTION INCLUDING IN THE DIAGONAL.
  - 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.
  - 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 NBC.
  - 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.
  - 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 NBC.
  - STAIRS / STEPS WITH LESS THAN A 12" ELEVATION CHANGE SHALL COMPLY WITH NBC 1003.5
  - THE SLOPES AT THE PASSENGER LOADING ZONE AND ADJACENT VEHICLE PULL UP SPACE SHALL NOT EXCEED 2% IN ANY DIRECTION INCLUDING IN THE DIAGONAL.

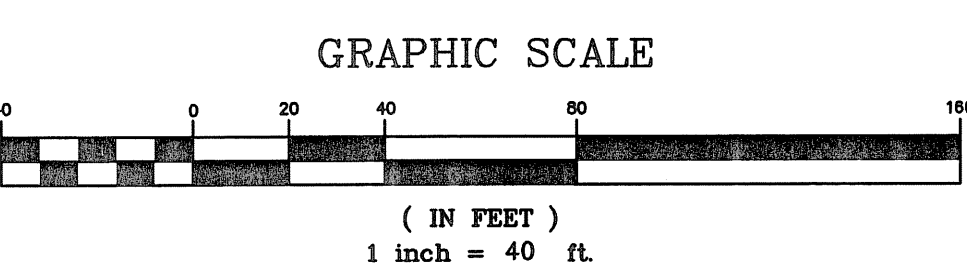
**BICYCLE PARKING:**  
 EACH NEW COMMERCIAL OR OFFICE DEVELOPMENT REQUIRING 25 OR MORE AUTO PARKING SPACES SHALL MAKE PROVISIONS FOR PARKING A MINIMUM OF 5 BICYCLES. EACH ADDITIONAL 100 AUTO PARKING SPACES ABOVE THE MINIMUM 25 SPACES SHALL REQUIRE PROVISIONS FOR PARKING OF 5 ADDITIONAL BICYCLES UP TO 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
+20	5
= 351 AUTO SPACES	25 MAX.

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



**LEGEND**  
 ALL SHADED WALKS ARE ACCESSIBLE ROUTES



( IN FEET )  
 1 inch = 40 ft.

**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: \_\_\_\_\_

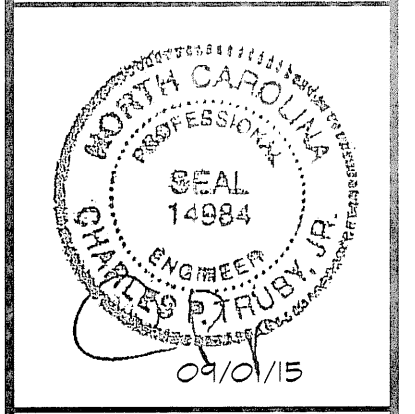
**OWNER / DEVELOPER:**  
 BRC WILMINGTON LLC  
 5826 SAMET DRIVE, SUITE 105  
 HIGH POINT, NC 27285  
 PHONE: (336) 889-1512  
 FAX: (336) 889-1501

**ENGINEER:**  
 CPT ENGINEERING & SURVEYING, INC.  
 4400 TYNING STREET  
 HIGH POINT, NC 27285  
 CONTACT: CHUCK TRUBY, P.E.  
 PHONE: (336) 812-8800 ext:304  
 FAX: (336) 812-8780

**REVISIONS**

NO.	REV.	PER CITY COMMENTS
1	REV PER CITY COMMENTS	04-21-2015

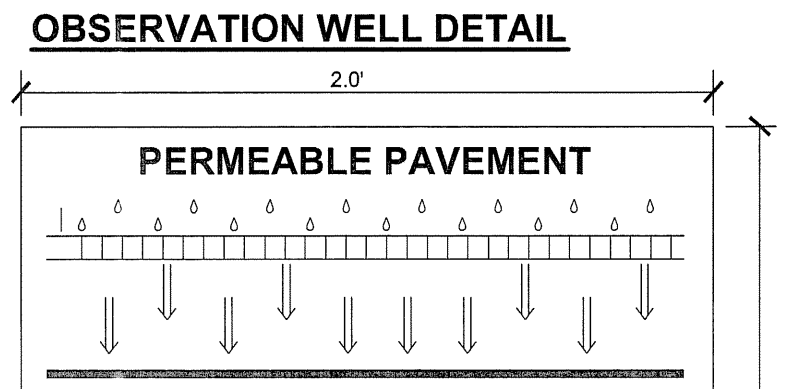
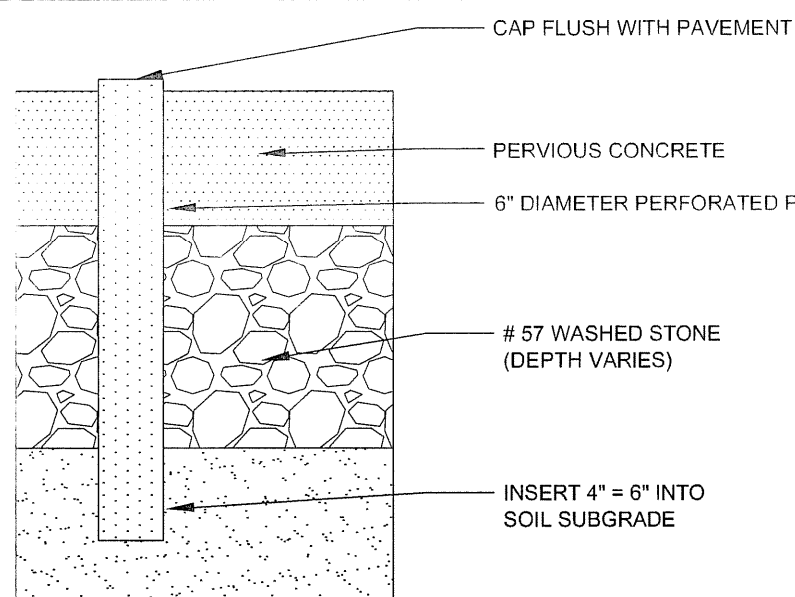
**ENGINEERING AND SURVEYING, INC.**  
 LAND DEVELOPMENT CONSULTING  
 CORPORATE LICENSE NUMBER C-1575  
 4400 TYNING STREET  
 HIGH POINT, NORTH CAROLINA 27285  
 PHONE: (336) 812-8800 ~ FAX: (336) 812-8780



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

315 & 325 COVIL AVE.  
**ACCESSIBLE ROUTE SITE PLAN**  
 SCALE: 1" = 40'  
 DATE: 04/28/15  
 PROJECT: 1140-12  
 DRAWN BY: TGL  
 SHEET C14





**ACTIVITIES PROHIBITED:**  
 SANDING  
 RE-SEALING  
 RE-SURFACING  
 POWER WASHING  
 STORAGE OF MULCH OR SOIL  
 STORAGE OF SNOW PILES  
 STORAGE OF HEAVY LOADS

TO BE PLACED ON 4" x 4" POST  
 TOP OF SIGN TO BE 18" ABOVE GROUND.

**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.  A vegetated area drains toward the pavement.	Regrade the soil if necessary to remove the gully, then plant a ground cover and water until it is established.  Regrade the area so that it drains away from the pavement, then plant a ground cover and water until it is established.
The surface of the permeable pavement	Trash / debris is present.  Weeds are growing on the surface of the permeable pavement.  Sediment is present on the surface.  The structure is deteriorating or damaged.  The pavement is rutting, cracking or slumping.	Remove the trash / debris.  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.)  Vacuum sweep the pavement.  Consult an appropriate professional.  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 TO COMPACTING 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 PERMEABLE PAVEMENT. IT IS HIGHLY RECOMMENDED THAT THE CONSTRUCTION PROCESS BE OVERSEEN BY A DESIGN PROFESSIONAL FAMILIAR 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 BEGIN 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, SOIL, 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 FRY 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.  
 - HOLDING THE FINAL 9-12 INCHES BY USING THE TEETH OF THE EXCAVATOR BUCKET TO LOOSEN SOIL SO AS NOT TO SMEAR THE SUBGRADE 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 1/2 INCH OF CLEAN COARSE SAND AND 1.5 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 SUBJECT 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**

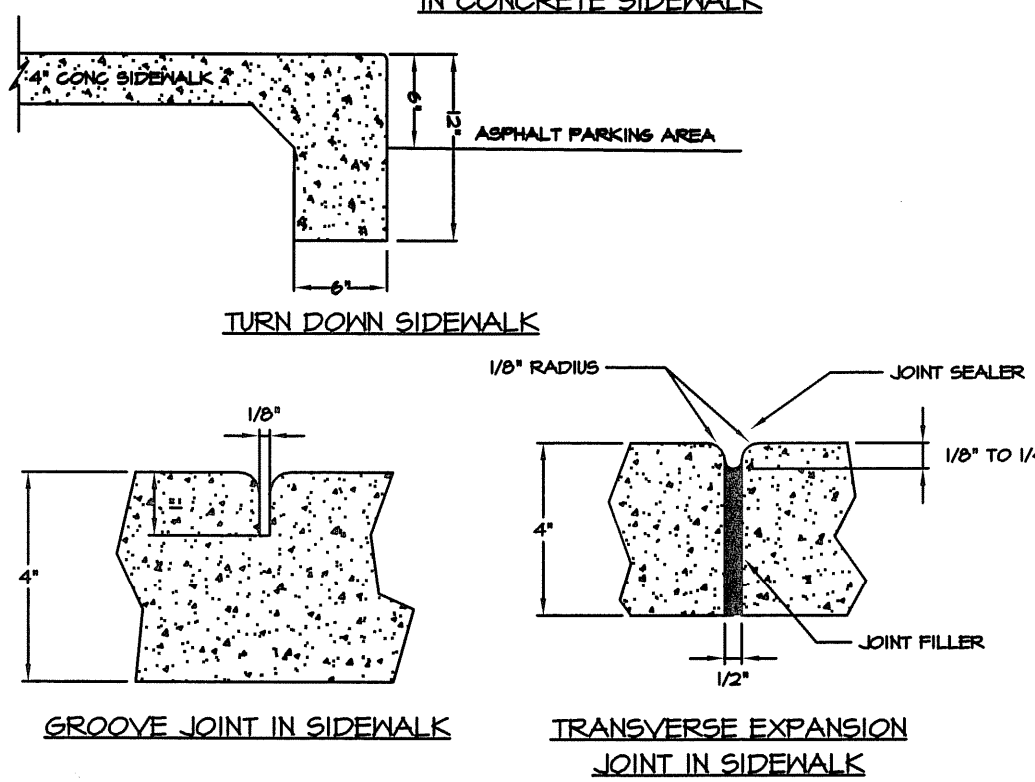
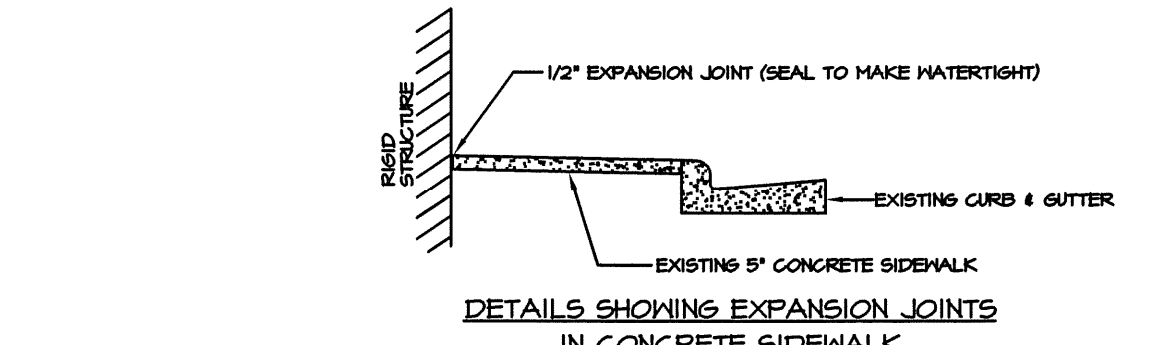
PC PAVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST VERSION OF ACI 522.1 SPECIFICATION FOR PERVIOUS CONCRETE. IT IS REQUIRED THAT THE CONTRACTOR INSTALLING THE PERVIOUS CONCRETE MEET THE REQUIREMENTS OUTLINED IN THE LATEST VERSION OF ACI 522.1. INSTALLATION OF PC CAN BE ACCOMPLISHED USING 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 SCORPED 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.

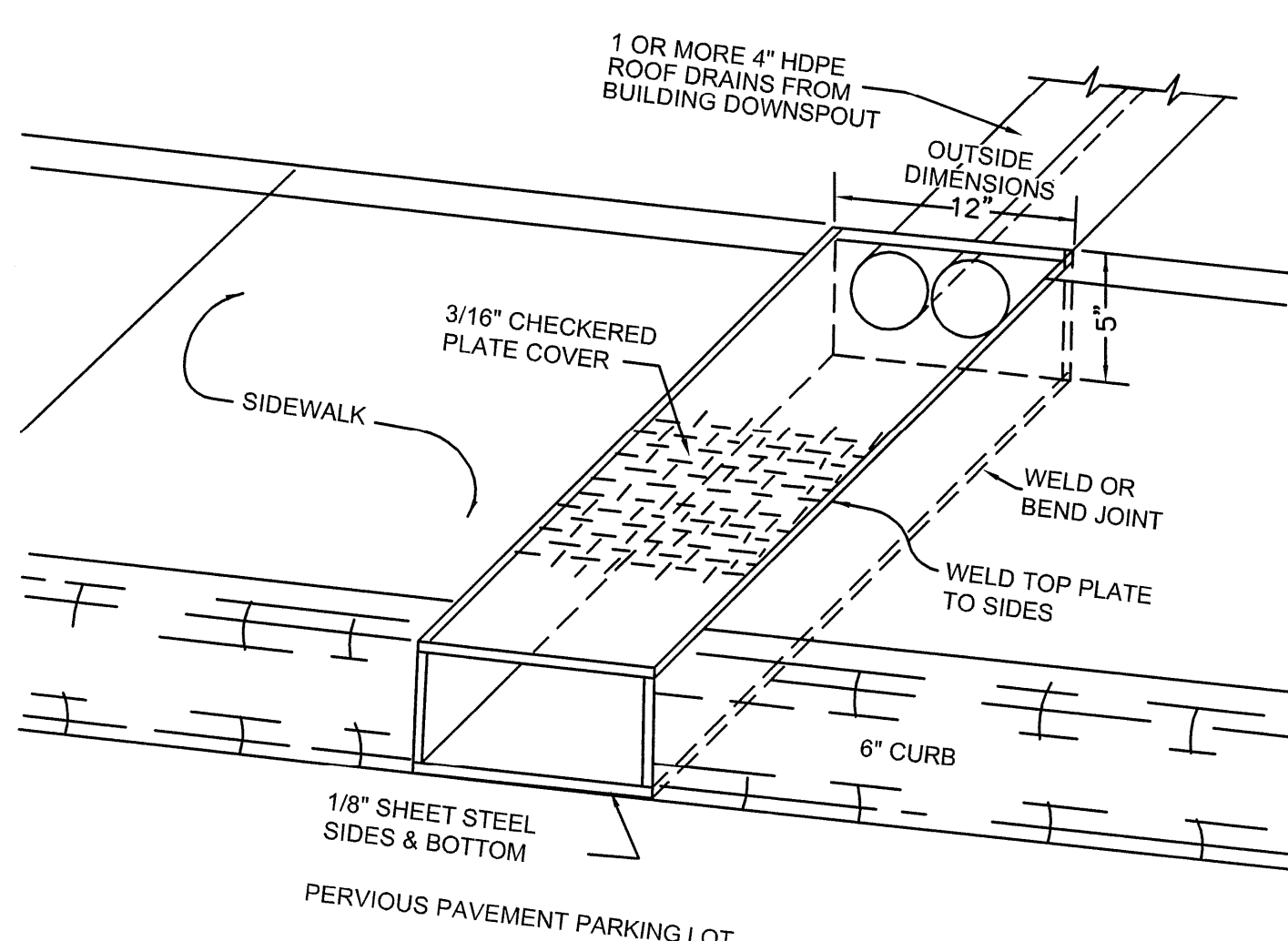
**CONSTRUCTION STEP 11: AS-BUILT INSPECTION**

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 1701 STANDARD TEST METHOD FOR INFILTRATION RATE OF IN-PLACE PERVIOUS CONCRETE. ANY DEFICIENCIES FOUND DURING THE AS-BUILT INSPECTION SHALL BE PROMPTLY ADDRESSED.

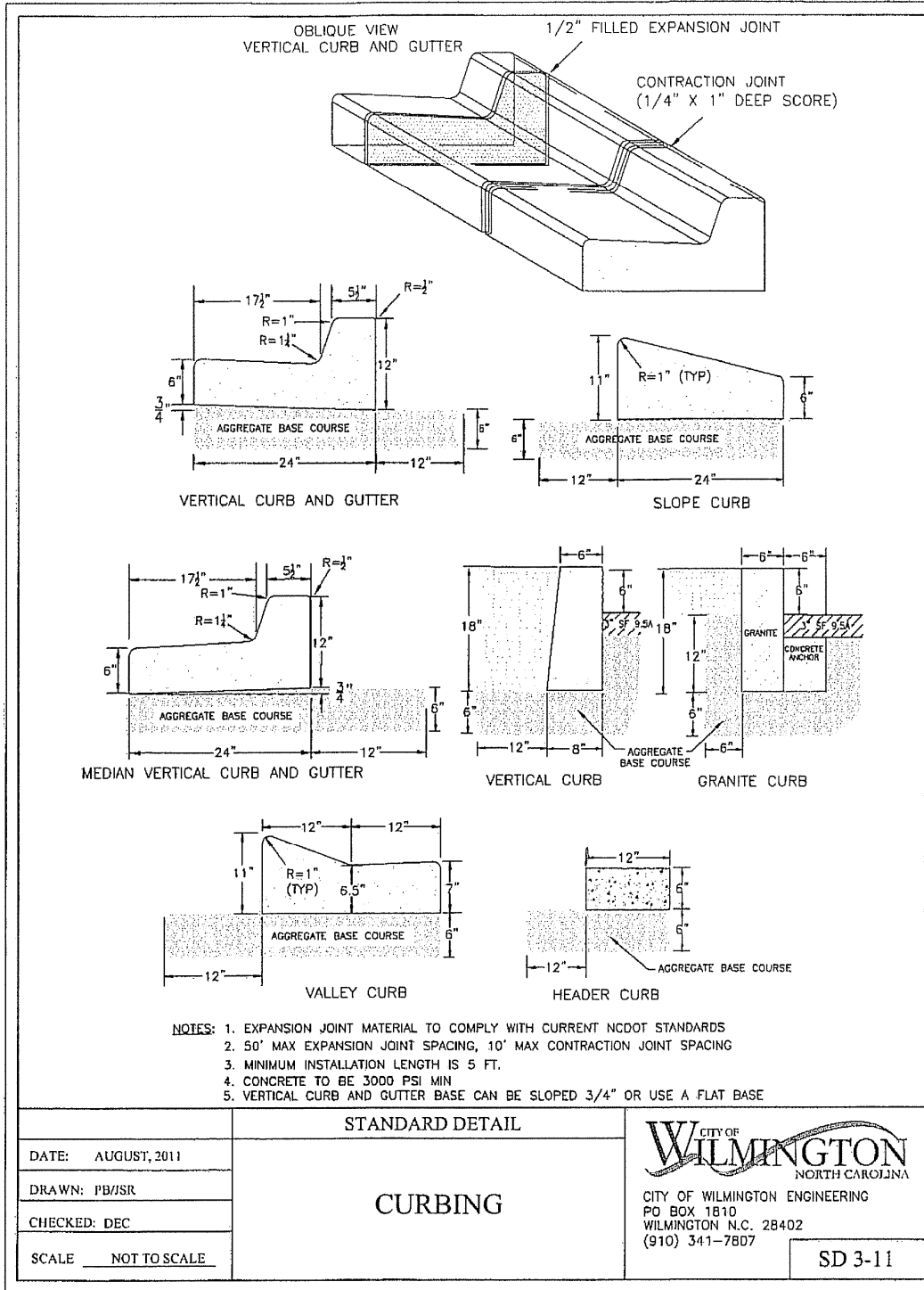


- GENERAL NOTES:**
- A GROOVE JOINT 1" DEEP WITH 1/8" RADI SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS NOT TO EXCEED 50' AND MATCHING EXPANSION JOINT IN ADJACENT CURB. A SEALED 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK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

**CONCRETE SIDEWALKS**



**STANDARD 5' X 12' GALVANIZED STEEL FLUME**

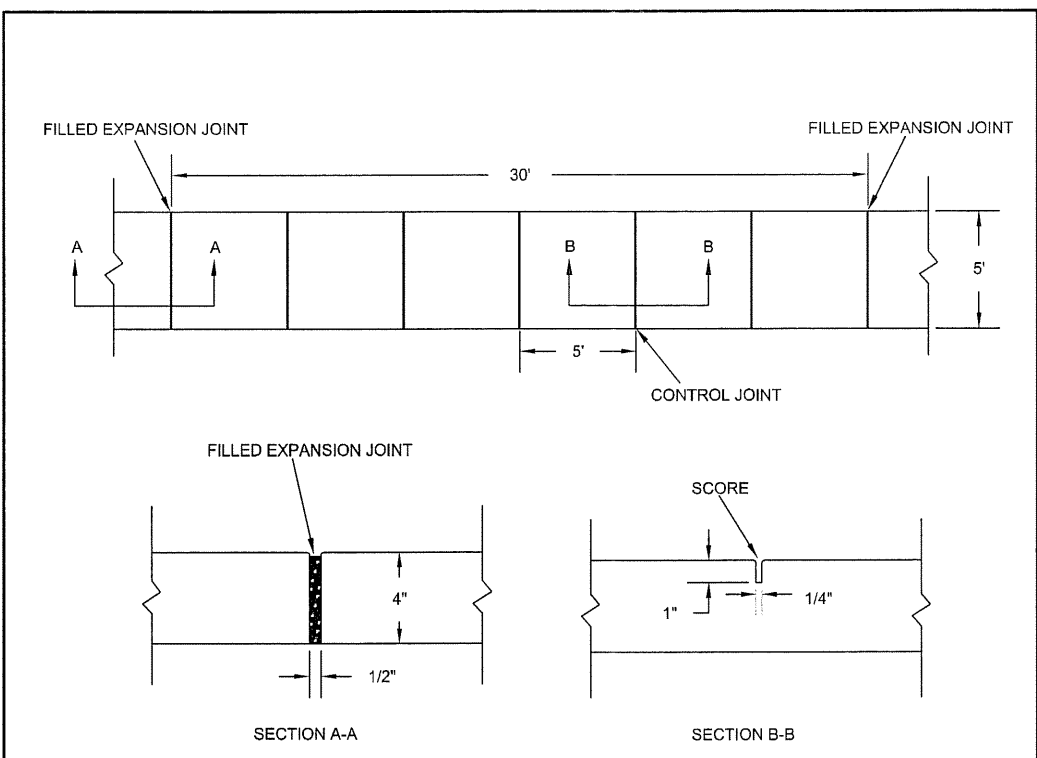


**STANDARD DETAIL CURBING**

DATE: AUGUST, 2011  
 DRAWN: PFSR  
 CHECKED: EDC  
 SCALE: NOT TO SCALE

CITY OF WILMINGTON  
 NORTH CAROLINA  
 CITY OF WILMINGTON ENGINEERING  
 PO BOX 1818  
 WILMINGTON, N.C. 28402  
 (910) 341-7807

SD 3-11

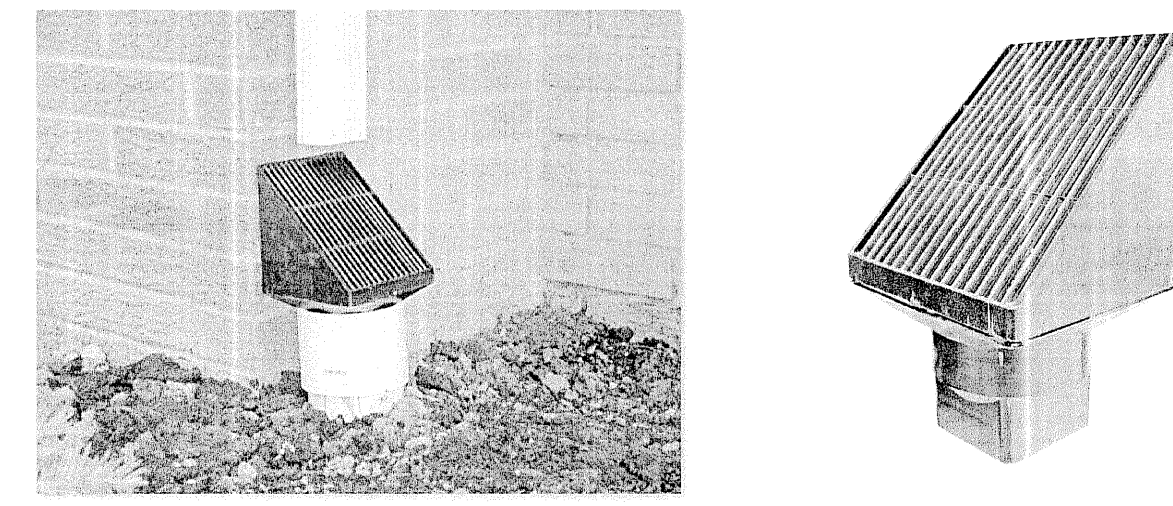


**STANDARD DETAIL SIDEWALK**

DATE: OCTOBER 2010  
 DRAWN: PFSR  
 CHECKED: EDC  
 SCALE: NOT TO SCALE

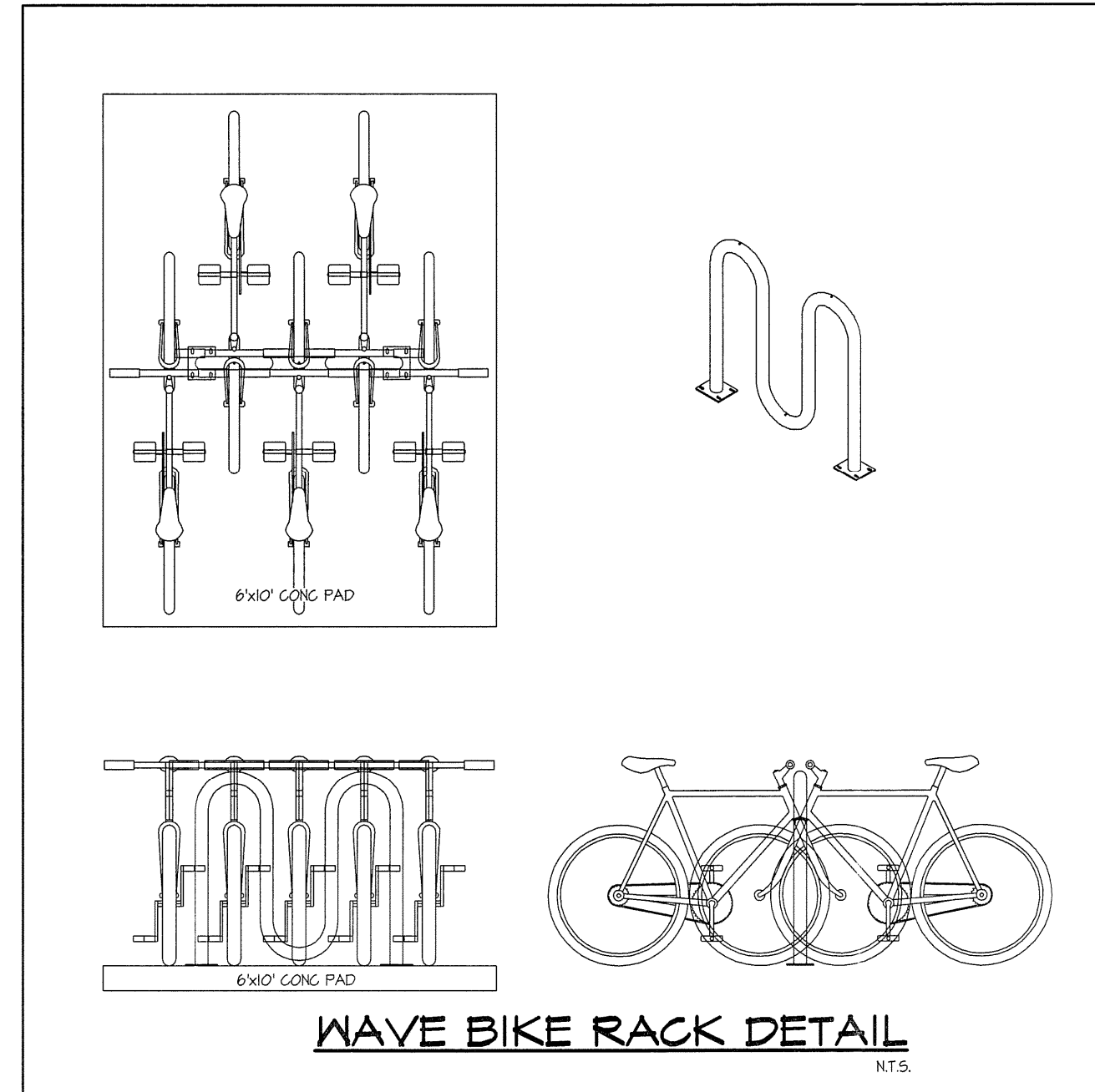
CITY OF WILMINGTON  
 NORTH CAROLINA  
 CITY OF WILMINGTON ENGINEERING  
 PO BOX 1818  
 WILMINGTON, N.C. 28402  
 (910) 341-7807

SD 3-10



"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**



**WAVE BIKE RACK DETAIL**

CITY OF WILMINGTON  
 NORTH CAROLINA  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN

Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
 Signed: \_\_\_\_\_

**Approved Construction Plan**

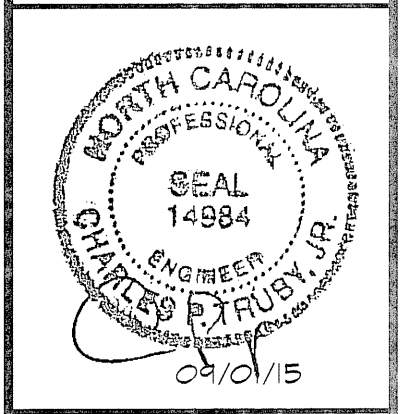
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Planning: \_\_\_\_\_  
 Traffic: \_\_\_\_\_  
 Fire: \_\_\_\_\_

**REVISIONS**

- REV PER CITY COMMENTS 08-16-2015
- REV PER CITY COMMENTS 04-01-2015

ENGINEERING AND SURVEYING, INC.  
 LAND DEVELOPMENT CONSULTING  
 CORPORATE LICENSE NUMBER: 01575

4400 TYNING STREET  
 HIGH POINT, NORTH CAROLINA 27265  
 PHONE: (336) 812-8800 ~ FAX: (336) 812-8180



**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



**GENERAL NOTES**

- In accordance with N.C.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.
- Wheelchair ramps shall be located as indicated in detail drawings; however, existing light poles, fire hydrants, drop inlets, etc. may affect placement.
- Curbs shall have detectable warnings extending the full width of the ramp and a minimum of 2'-ft. in length.

**CONSTRUCTION NOTES**

- Construction shall conform with construction standards of the governing body which has jurisdiction of the particular street.
- Wheelchair ramps shall be constructed of Class  $M^m$  concrete with the surface having a rough, non-skid type finish.
- A  $\frac{1}{2}$ -in. expansion joint shall be required where the concrete wheelchair ramp joins any rigid structure.
- 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.
- Transitions from ramps to walks, gutters or streets shall be flush and free of abrupt changes.
- The maximum slope on the curb ramp run is 1:12.
- The maximum cross slope of the curb ramp is 1:50.
- Maximum slopes of adjoining gutters, road surface immediately adjacent to the curb ramp, or accessible route shall not exceed 1:20.
- 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.
- 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**

- 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.
- Parking shall be eliminated a minimum of 20 feet back of the pedestrian crosswalk.
- 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.
- Curbs of marked crossings shall be wholly contained within the markings, excluding any flared sides.
- The bottom of diagonal (corner type) curb ramps at marked crossings shall have 48-in. minimum clear space within the markings.
- 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.

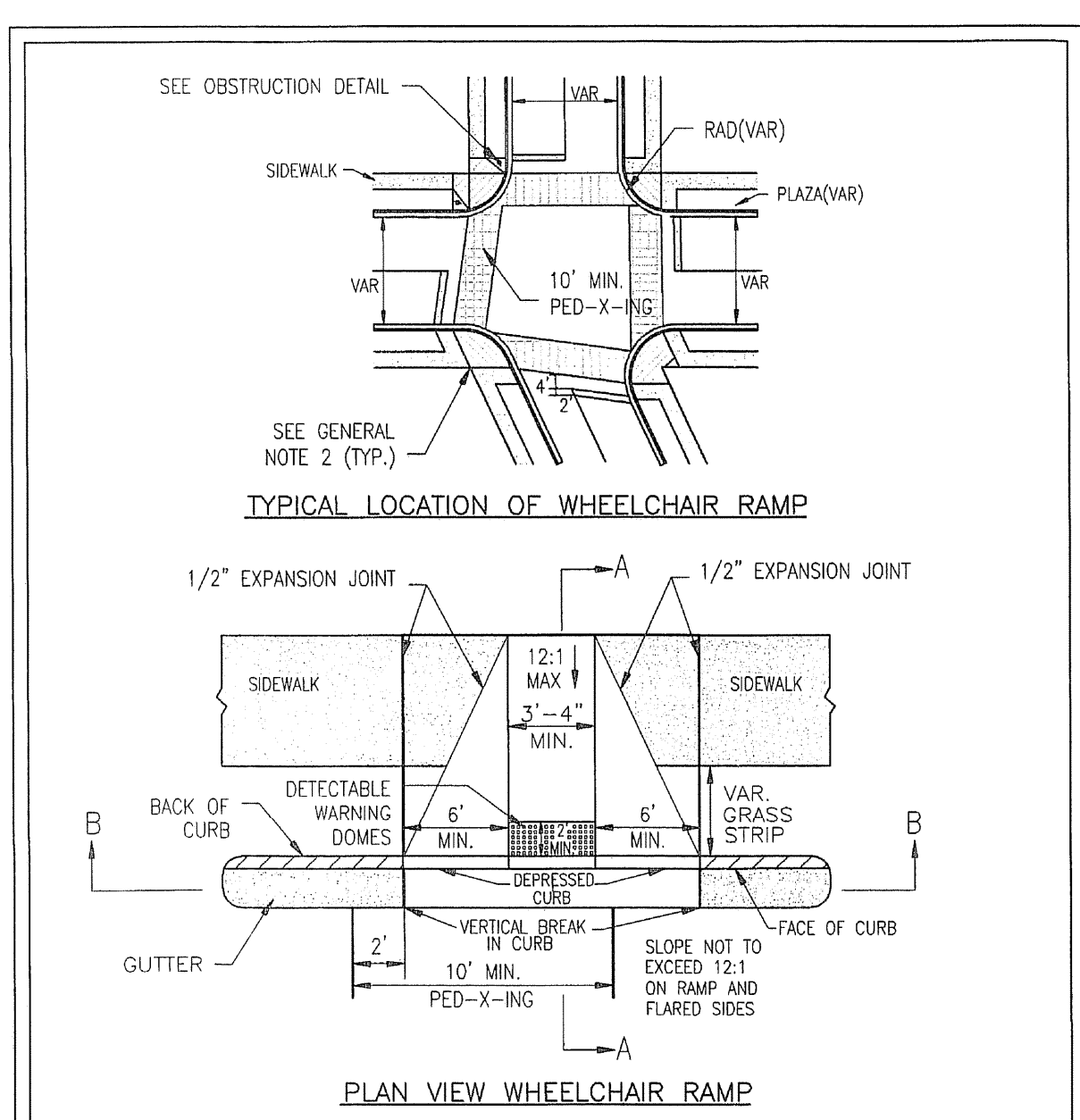
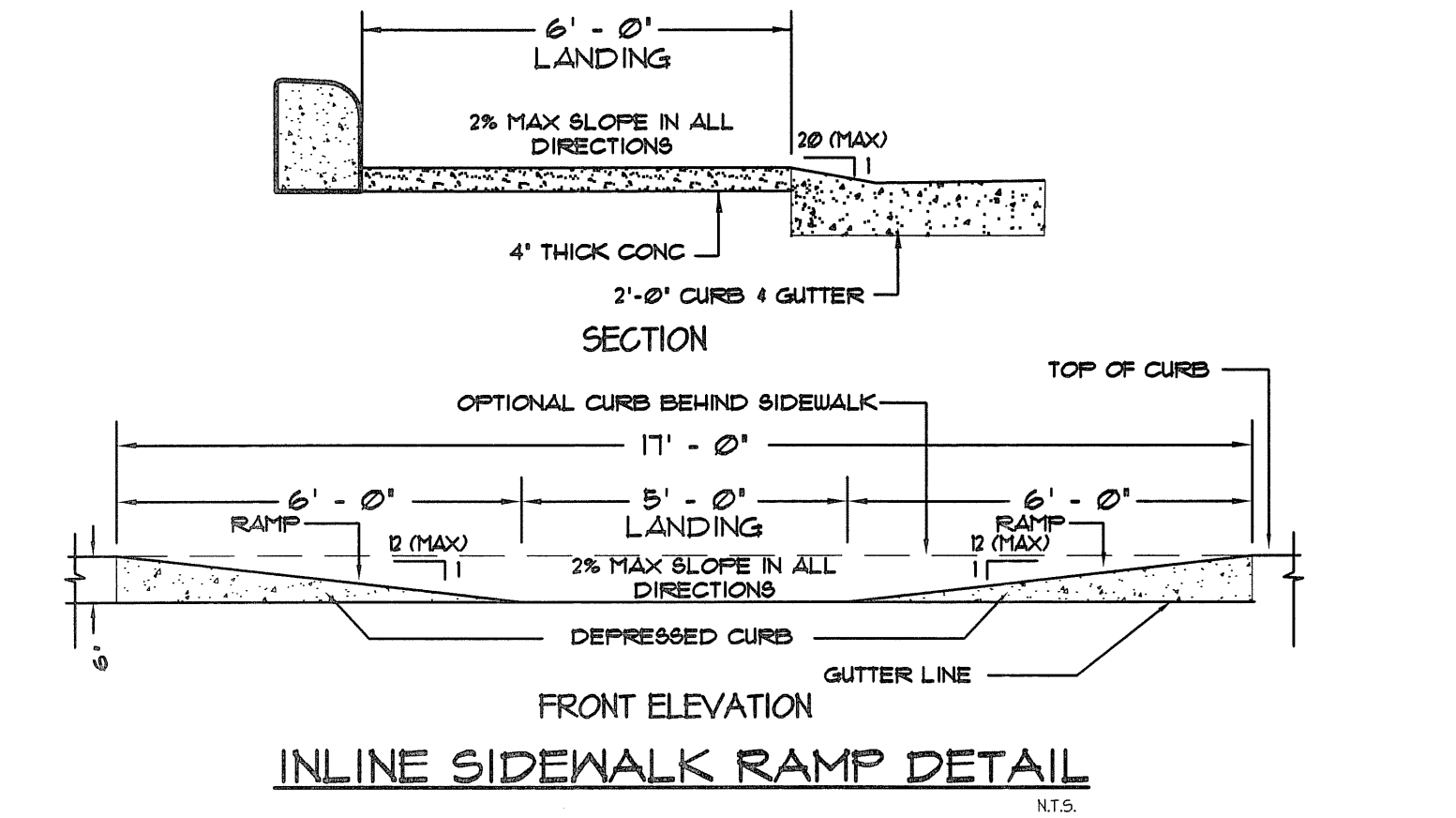
**STANDARD DETAIL**

DATE: 2/29/2008  
 DRAWN BY: J. RHYNE  
 CHECKED BY: AMS, P.E.  
 SCALE: NOT TO SCALE

CITY OF WILMINGTON  
 ENGINEERING OFFICE  
 305 CHESTNUT STREET  
 P.O. BOX 1810  
 WILMINGTON, N.C. 28402  
 (910) 341-7807

**GUIDELINES FOR WHEELCHAIR RAMPS**

SD 8-09



**STANDARD DETAIL**

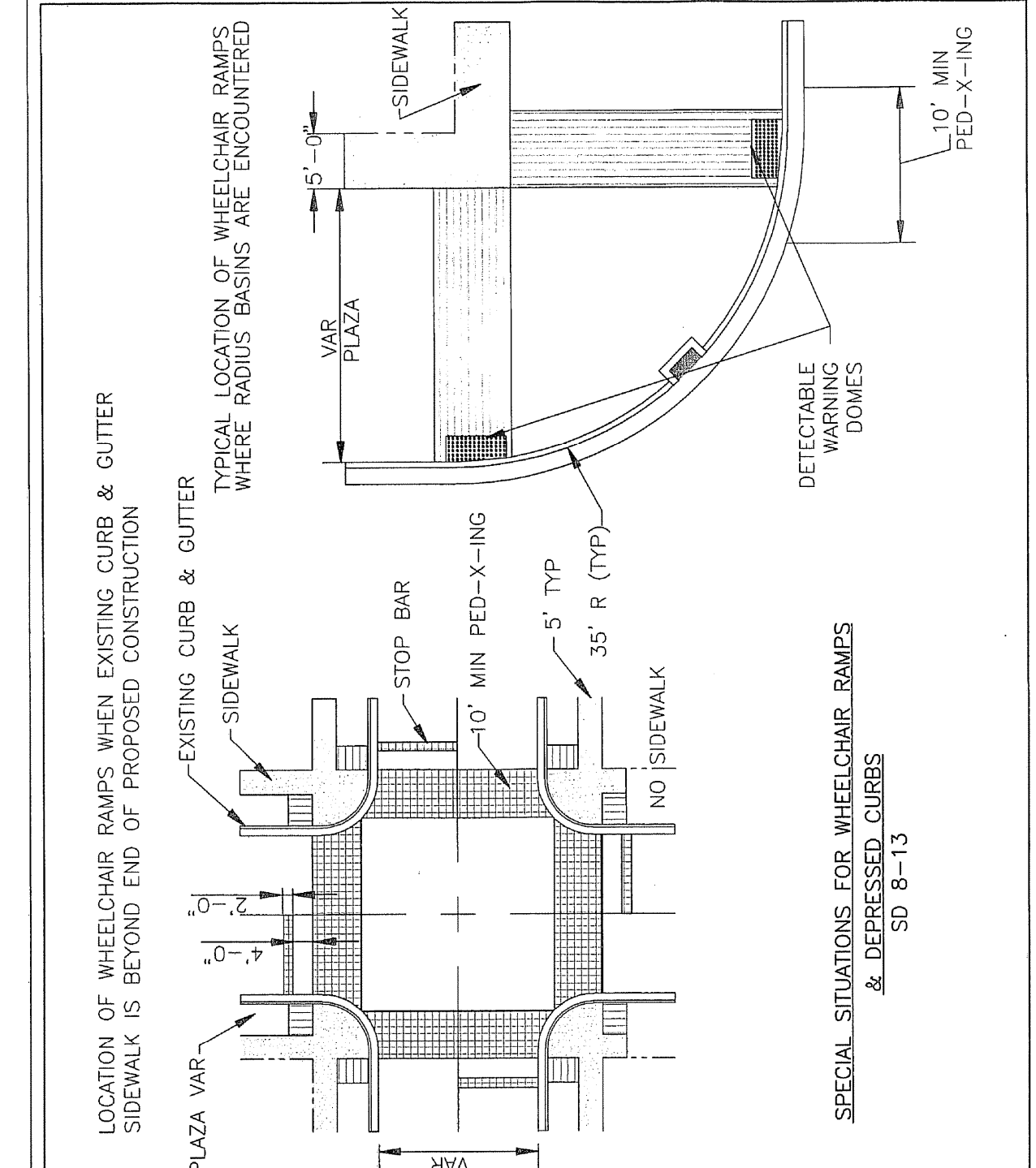
DATE: 2/29/2008  
 DRAWN BY: J. RHYNE  
 CHECKED BY: AMS, P.E.  
 SCALE: NOT TO SCALE

CITY OF WILMINGTON  
 ENGINEERING OFFICE  
 305 CHESTNUT STREET  
 P.O. BOX 1810  
 WILMINGTON, N.C. 28402  
 (910) 341-7807

**GUIDELINES FOR WHEELCHAIR RAMPS & DEPRESSED CURBS**

SHEET 1 OF 2

SD 8-10



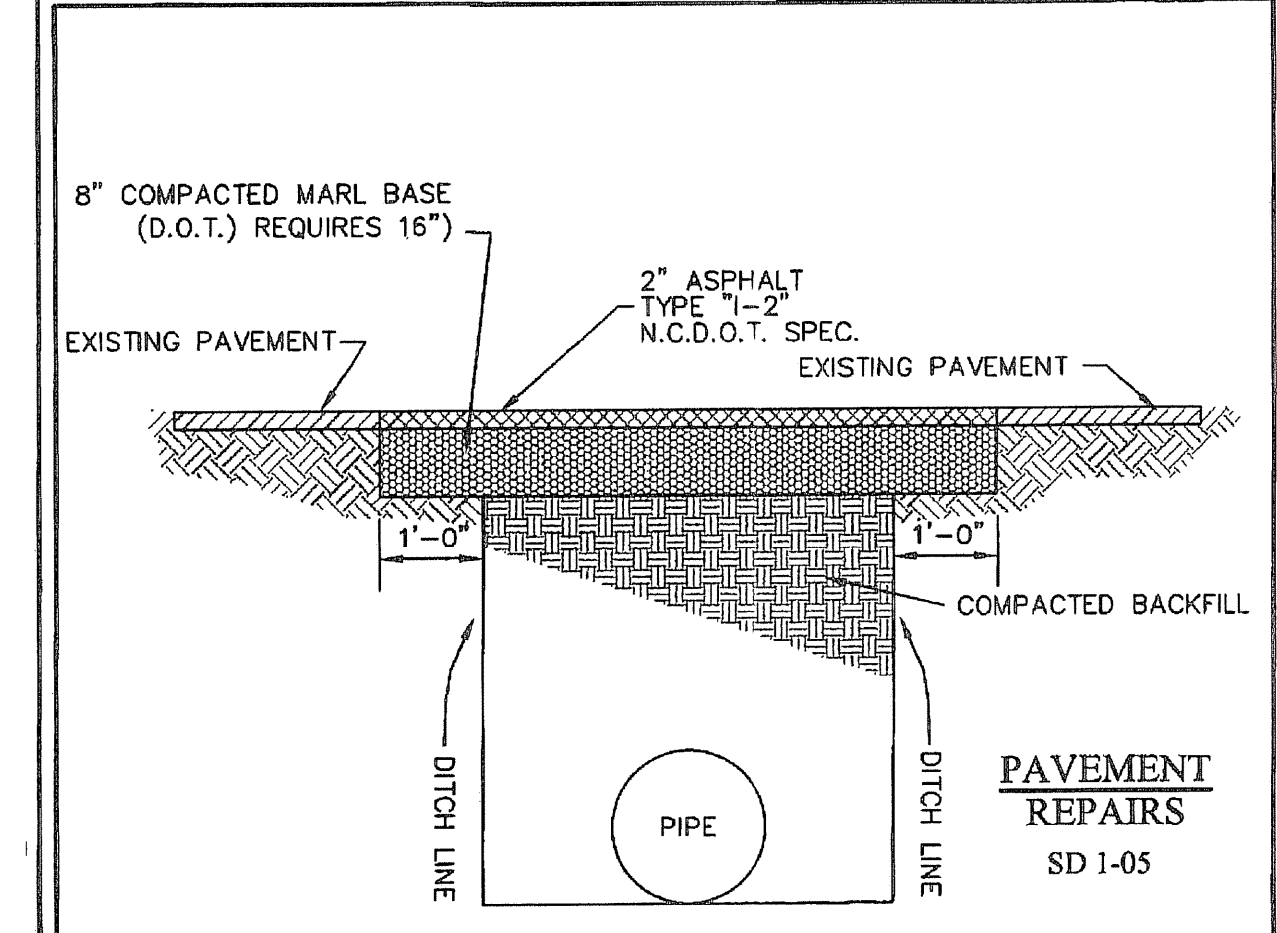
**STANDARD DETAIL**

DATE: 2/29/2008  
 DRAWN BY: J. RHYNE  
 CHECKED BY: AMS, P.E.  
 SCALE: NOT TO SCALE

CITY OF WILMINGTON  
 ENGINEERING OFFICE  
 305 CHESTNUT STREET  
 P.O. BOX 1810  
 WILMINGTON, N.C. 28402  
 (910) 341-7807

**SPECIAL SITUATIONS FOR WHEELCHAIR RAMPS AND DEPRESSED CURBS**

SD 8-13



**STANDARD DETAIL**

DATE: 2009  
 DRAWN BY: JSR/CMR  
 CHECKED BY: B.P., P.E.  
 SCALE: NOT TO SCALE

CITY OF WILMINGTON  
 ENGINEERING OFFICE  
 305 CHESTNUT STREET  
 P.O. BOX 1810  
 WILMINGTON, N.C. 28402  
 (910) 341-7807

**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**

**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 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.

**CONCENTRIC 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**

**MANHOLE OPTION**

**TYPICAL MANHOLE SECTION**

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

SHEET 1 OF 2  
840.52

**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 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.

**SECTION A-A**

**SECTION B-B**

**STANDARD DETAIL**

DATE: 2/29/2008  
 DRAWN BY: J. RHYNE  
 CHECKED BY: AMS, P.E.  
 SCALE: NOT TO SCALE

CITY OF WILMINGTON  
 ENGINEERING OFFICE  
 305 CHESTNUT STREET  
 P.O. BOX 1810  
 WILMINGTON, N.C. 28402  
 (910) 341-7807

**GUIDELINES FOR WHEELCHAIR RAMPS & DEPRESSED CURBS**

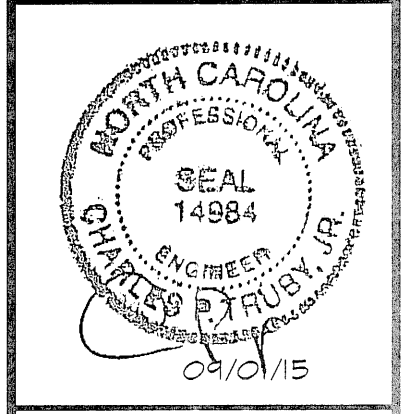
SHEET 2 OF 2

SD 8-10

**REVISIONS**

- REV PER CITY COMMENTS 08-16-2018
- REV PER CITY COMMENTS 08-20-2018

**ENGINEERING AND SURVEYING, INC.**  
 LAND DEVELOPMENT CONSULTING  
 CORPORATE LICENSE NUMBER: C-1515  
 4400 TYNING STREET  
 HIGH POINT, NORTH CAROLINA 27265  
 PHONE: (336) 812-8800 ~ FAX: (336) 812-8180



**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**

**CITY OF WILMINGTON**  
 NORTH CAROLINA  
 Public Services • Engineering Division

**APPROVED STORMWATER MANAGEMENT PLAN**

Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_

**Approved Construction Plan**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Planning: \_\_\_\_\_

Traffic: \_\_\_\_\_

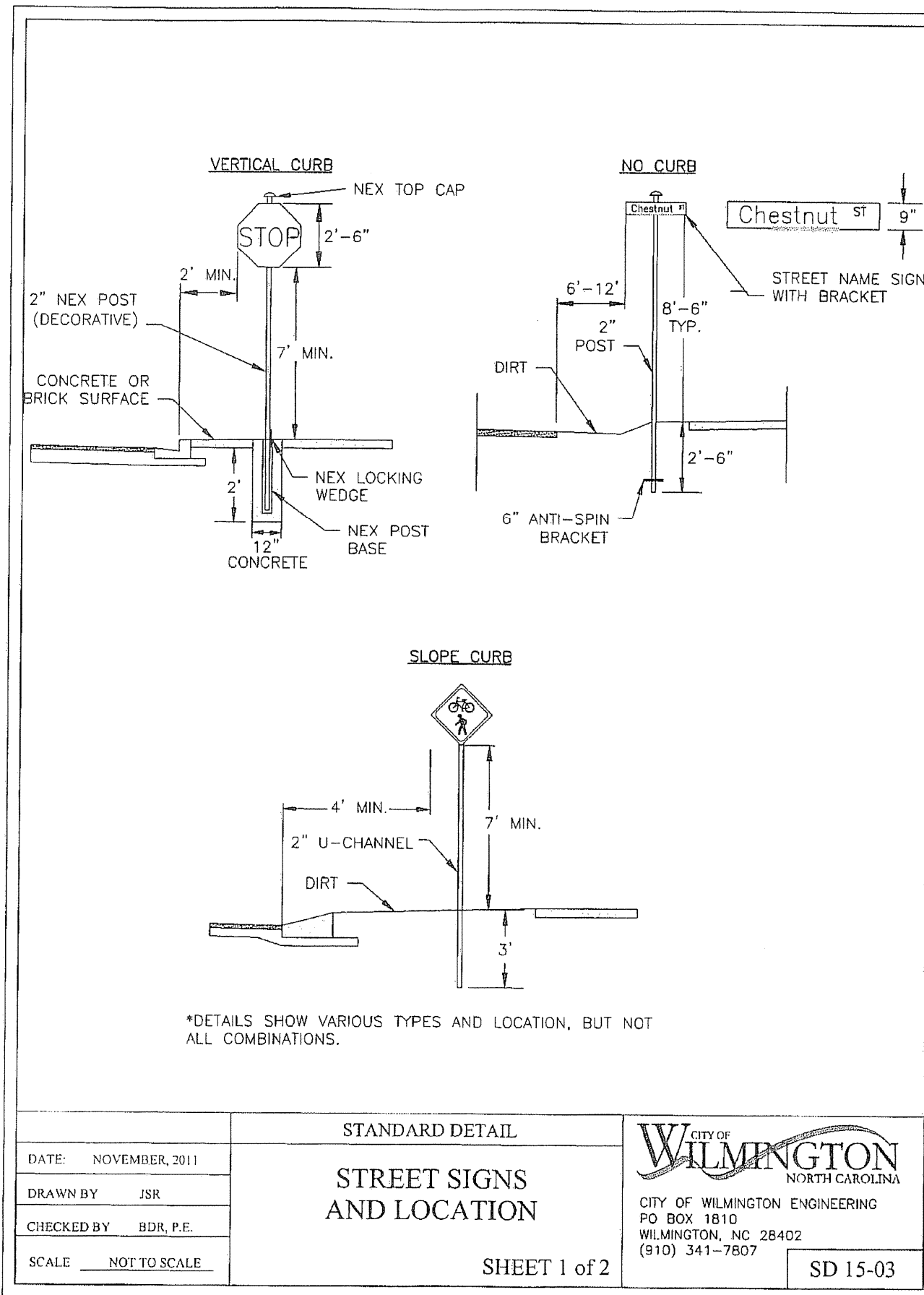
Fire: \_\_\_\_\_

**OWNER / DEVELOPER:**

BRC WILMINGTON LLC  
 5826 SAMET DRIVE, SUITE 105  
 HIGH POINT, NC 27265  
 PHONE: (336) 888-1512  
 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



**SIGNS**

- All signs shall meet the requirements of MUTCD and City Traffic Engineering in effect at the time of construction.
- 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".
- SPECIAL DESIGNATION signs by location and type shall adhere to City of Wilmington signage plan (ie. downtown, historic, cross-city trail, parks, riverfront, scenic by-way, parking, etc.) and all associated policies.
- POST MOUNTED STREET NAME SIGNS shall be fabricated with 9" extruded aluminum street name sign blanks using a standard cut-out. 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 a green 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.
- Decorative sign posts shall consist of the NEX sign support system, 2" octagonal tube, 14 gauge, powder coated glossy black and include cap, post, base and wedge.
- All other sign posts shall be u-channel posts made of galvanized steel with 8' posts 2lbs/ft or 12' posts 3lbs/ft. Galvanized NEX post may be substituted with approval from the City Signs and Markings Engineer.
- OVERHEAD STREET NAME SIGNS shall be fabricated with 0.080 inch aluminum flat sign blanks 18" in height using a standard cut-out. 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.
- All sign lettering, colors and fonts shall adhere to the MUTCD in effect at the time of construction. Fluorescent Yellow-Green shall be used on signs, in place of Yellow, when listed as an optional color in the MUTCD. Generally, the font will be FHWA series fonts (Highway Gothic.) Other font types require prior City Signs and Markings Engineer approval.

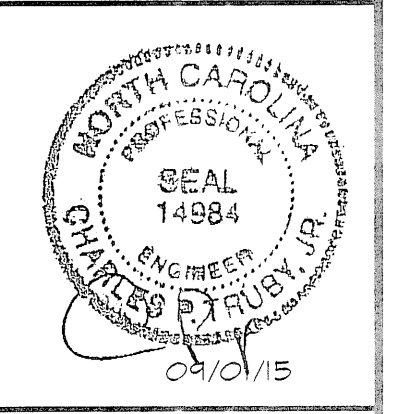
**LOCATION**

- 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 face curb, and 6' from edge of pavement without curb. Signs shall not be located more than 12' from any of these locations.
- Sign posts installed in dirt shall be buried a minimum of 36". Octagonal posts shall utilize an anti-spin device, 6" in length minimum. Sign posts installed in concrete or brick shall utilize a base cast in concrete 24" x 12" diameter.
- 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.

**REVISIONS**

1.	REV PER CITY COMMENTS	08-16-2015
2.	REV PER CITY COMMENTS	08-01-2015

**ENGINEERING AND SURVEYING, INC.**  
 LAND DEVELOPMENT CONSULTING  
 CORPORATE LICENSE NUMBER C-1375  
 4400 TYNINGS STREET  
 HIGH POINT, NORTH CAROLINA 27265  
 PHONE (336) 812-9800 ~ FAX: (336) 812-8780



DATE: NOVEMBER, 2011  
 DRAWN BY: JSR  
 CHECKED BY: BDR, P.E.  
 SCALE: NOT TO SCALE

**STANDARD DETAIL**  
**STREET SIGNS AND LOCATION**

CITY OF WILMINGTON  
 NORTH CAROLINA  
 CITY OF WILMINGTON ENGINEERING  
 PO BOX 1810  
 WILMINGTON, NC 28402  
 (910) 341-7807

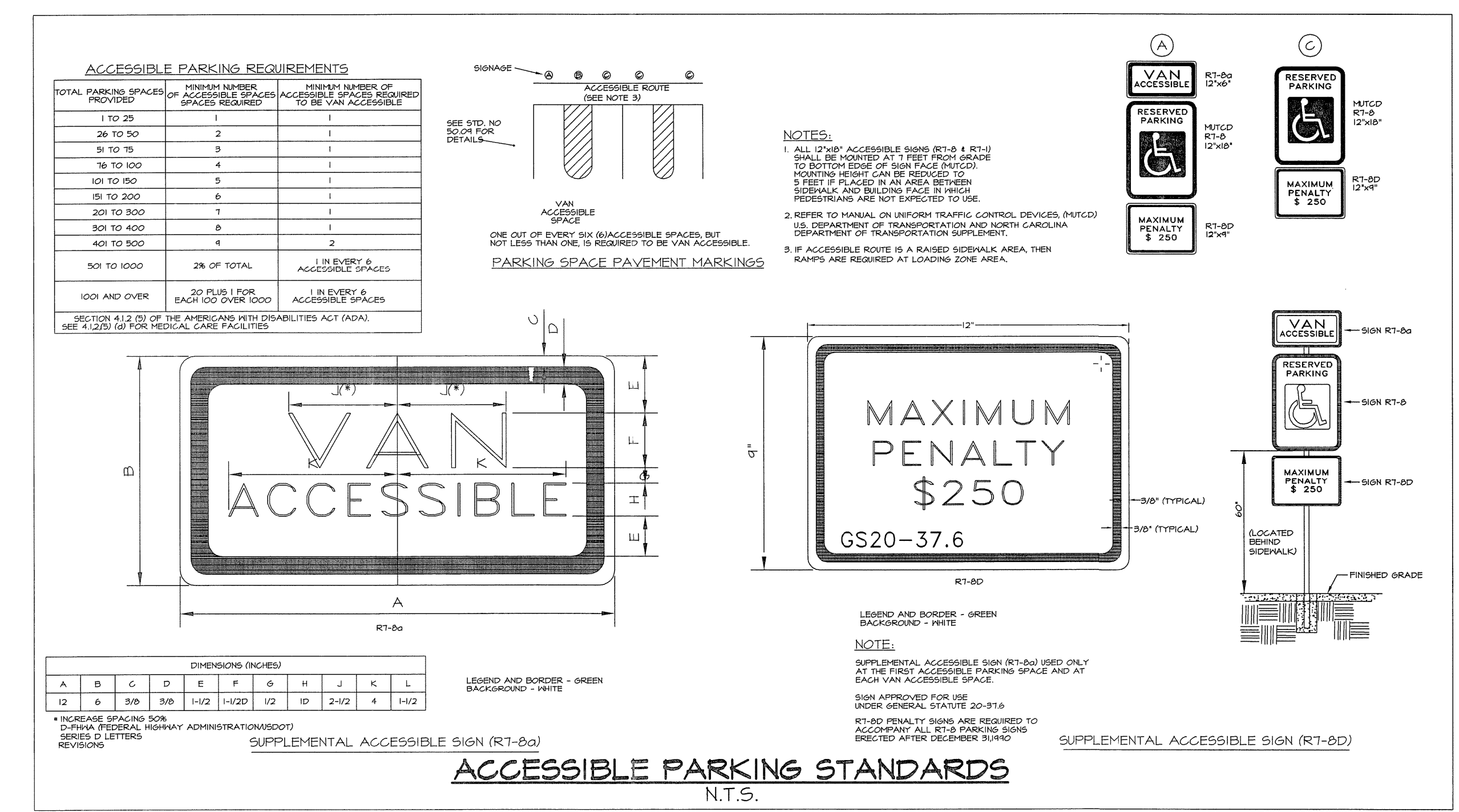
SHEET 1 of 2 SD 15-03

DATE: NOVEMBER, 2011  
 DRAWN BY: JSR  
 CHECKED BY: BDR, P.E.  
 SCALE: NOT TO SCALE

**STANDARD DETAIL**  
**STREET SIGNS AND LOCATION**

CITY OF WILMINGTON  
 NORTH CAROLINA  
 CITY OF WILMINGTON ENGINEERING  
 PO BOX 1810  
 WILMINGTON, NC 28402  
 (910) 341-7807

SHEET 2 of 2 SD 15-03



**SITE DETAILS**

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

**SITE DETAILS**

SCALE: N.T.S.

DATE: 03/11/15

PROJECT: 1140-12

DRAWN BY: TGL

SHEET **D4**

**CITY OF WILMINGTON**  
 NORTH CAROLINA  
 Public Services • Engineering Division

**APPROVED STORMWATER MANAGEMENT PLAN**

Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_

**Approved Construction Plan**

Name \_\_\_\_\_ Date \_\_\_\_\_

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_







ARCHITECTURAL GROUP

704 841.1899 tel 1242 Mann Drive Suite 200  
841.8440 fax Matthews, North Carolina 28105  
www.UrbanAIA.com

Seals:



02 ELEVATION: Building Type I Side  
1/8" = 1'-0"



01 ELEVATION: BUILDING TYPE I

**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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841.8440 fax Matthews, North Carolina 28105  
www.UrbanAIA.com

Seals:



02 ELEVATION: Building Type II Side



01 ELEVATION: Building Type II Front

## 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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