

# RANKIN PLACE TERRACE APARTMENTS REHAB

WILMINGTON HOUSING AUTHORITY

WILMINGTON, NORTH CAROLINA

## PROJECT TEAM

<u>OWNER</u>	WILMINGTON HOUSING AUTHORITY 1524 SOUTH 16TH STREET WILMINGTON, NC 28401 CONTACT: GLENN FLOYD (910) 341-7700	<u>CIVIL &amp; LANDSCAPE</u>	MCKIM & CREED 243 NORTH FRONT STREET WILMINGTON, NC 28401 CONTACT: MARGARET GREY (910) 251-6665
<u>ARCHITECT</u>	AXIOM ARCHITECTURE, PA 333 W. TRADE ST. STE. 200 CHARLOTTE, NC 28202 CONTACT: STEVE BARTON (704) 927-9900	<u>MEP ENGINEER</u>	McVEIGH & MANGUM ENGINEERING, INC. 1610 E. MOREHEAD STREET, SUITE 100 CHARLOTTE, NC 28207 CONTACT: SCOTT CAMPAGNA (704) 927-9900
<u>STRUCTURAL ENGINEER</u>	WOODS ENGINEERING, PA 254 N. FRONT ST. STE. 201 WILMINGTON, NC 28401 CONTACT: DON WOODS (910) 343-8007	<u>CONTRACTOR</u>	

## ISSUE DATE/REVISIONS

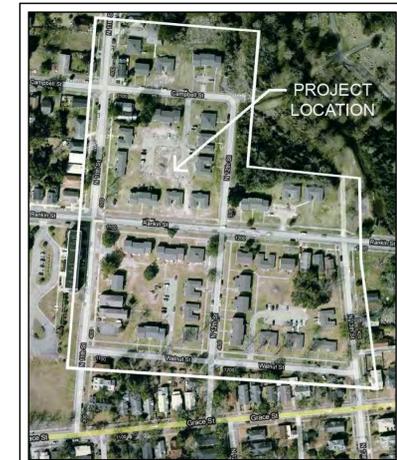
DESCRIPTION	DATE
OWNER REVIEW SET	January 21, 2013
PRELIMINARY TAX CREDIT SET	January 25, 2013
FINAL TAX CREDIT SET	May 15, 2013
BID SET	February 3, 2013
RE-ISSUED TO CITY OF WILMINGTON	JUNE 30, 2014



**WILMINGTON  
HOUSING  
AUTHORITY**



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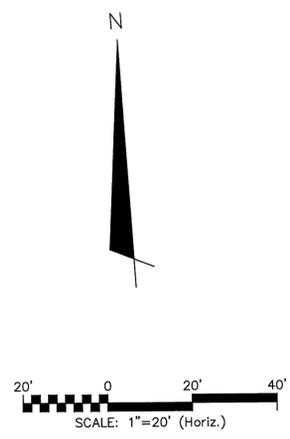
VICINITY MAP



NOTE: GENERAL CONTRACTOR TO COMPLY WITH ALL NC QAP APPENDIX B GUIDELINES

**ENGINEER:**  
 McKim & Creed, Inc.  
 243 N Front St.  
 Wilmington, NC 28401  
 (910)-343-1048

**OWNER:**  
 Wilmington Housing  
 Authority  
 1524 S 16th St.  
 Wilmington, NC 28401



**LEGEND**

RBC	= REBAR & CAP		= TELEPHONE PEDESTAL
	= CONCRETE MONUMENT FOUND		= FIRE HYDRANT
IPF	= IRON PIPE FOUND		= WATER VALVE
R/W	= RIGHT OF WAY		= WATER METER
DB	= DEED BOOK	LP	= LIGHT POLE
PG	= PAGE	PP	= POWER POLE
N/F	= NOW/FORMERLY		= GUY WIRE
CMP	= CORRUGATED METAL PIPE		= GAS VALVE
RCP	= REINFORCED CONCRETE PIPE		= SANITARY SEWER MANHOLE
DIP	= DUCTILE IRON PIPE		= SANITARY SEWER VALVE
INV.	= INVERT		= CLEANOUT
EL	= ELEVATION		= SIGN
LSA	= LANDSCAPE AREA		= YARD INLET
	= SPRINKLER		= STORM DRAIN MANHOLE
	= GROUND SHOT ELEVATION		= CURB INLET
	= CONCRETE		= YARD LIGHT
	= ASPHALT PAVEMENT		= ELECTRIC HANDHOLE
	= LINES PER NEW HANOVER GIS		= TELEPHONE MANHOLE
	= UNKNOWN UTILITY LINE		= UNDERGROUND CABLE LINE
	= UNDERGROUND GAS LINE		= UNDERGROUND TELEPHONE LINE
	= UNDERGROUND WATER LINE		= UNDERGROUND FIBER OPTIC LINE
	= OVERHEAD ELECTRIC LINE		= CHAIN LINK FENCE
	= UNDERGROUND ELECTRIC LINE		= UNDERGROUND STORM LINE
	= WOODSLIME		= UNDERGROUND SANITARY LINE

- SURVEY NOTES:**
- ALL DISTANCES ARE HORIZONTAL GROUND IN U.S. SURVEY FEET UNLESS OTHERWISE SHOWN.
  - SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP, TITLE EVIDENCE, OR ANY OTHER FACTS OUTSIDE THE CURRENT TITLE COMMITMENT DOCUMENTS PROVIDED BY MURCHISON, TAYLOR, & GIBSON, PLLC LEGAL SERVICES. AN ALTA MAP IS BEING PREPARED AT A LATER DATE FOR THE OWNER.
  - UNDERGROUND UTILITIES ARE SHOWN ONLY WHERE ABOVEGROUND SERVICES WERE VISIBLE. ALL WATER LINES SHOWN WERE DRAWN APPROXIMATE TO THE CPWA GIS SYSTEM.
  - SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT.
  - THE EXISTENCE OR NONEXISTENCE OF WETLANDS ON SUBJECT PROPERTY HAS NOT BEEN DETERMINED BY THIS SURVEY.
  - SUBJECT TO ALL EASEMENTS, RIGHT OF WAYS, AND OR ENCUMBRANCES THAT MAY EFFECT THIS PROPERTY.

**LEGEND**

	= CEDAR
	= CHERRY
	= GRAPE
	= DOGWOOD
	= GUM
	= HICKORY
	= HOLLY
	= OAK
	= MAGNOLIA
	= MAPLE
	= MIMOSA
	= PECAN
	= PINE
	= POPLAR
	= SYCAMORE
	= MISC HARDWOOD

**Approved Construction Plan**

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

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

**WILMINGTON**  
 NORTH CAROLINA  
 Public Services • Engineering Division  
 APPROVED DRAINAGE PLAN

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

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

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

1 inch

**RANKIN PLACE TERRACE**  
**APARTMENTS REHAB**  
 WILMINGTON HOUSING AUTHORITY  
 WILMINGTON, NORTH CAROLINA



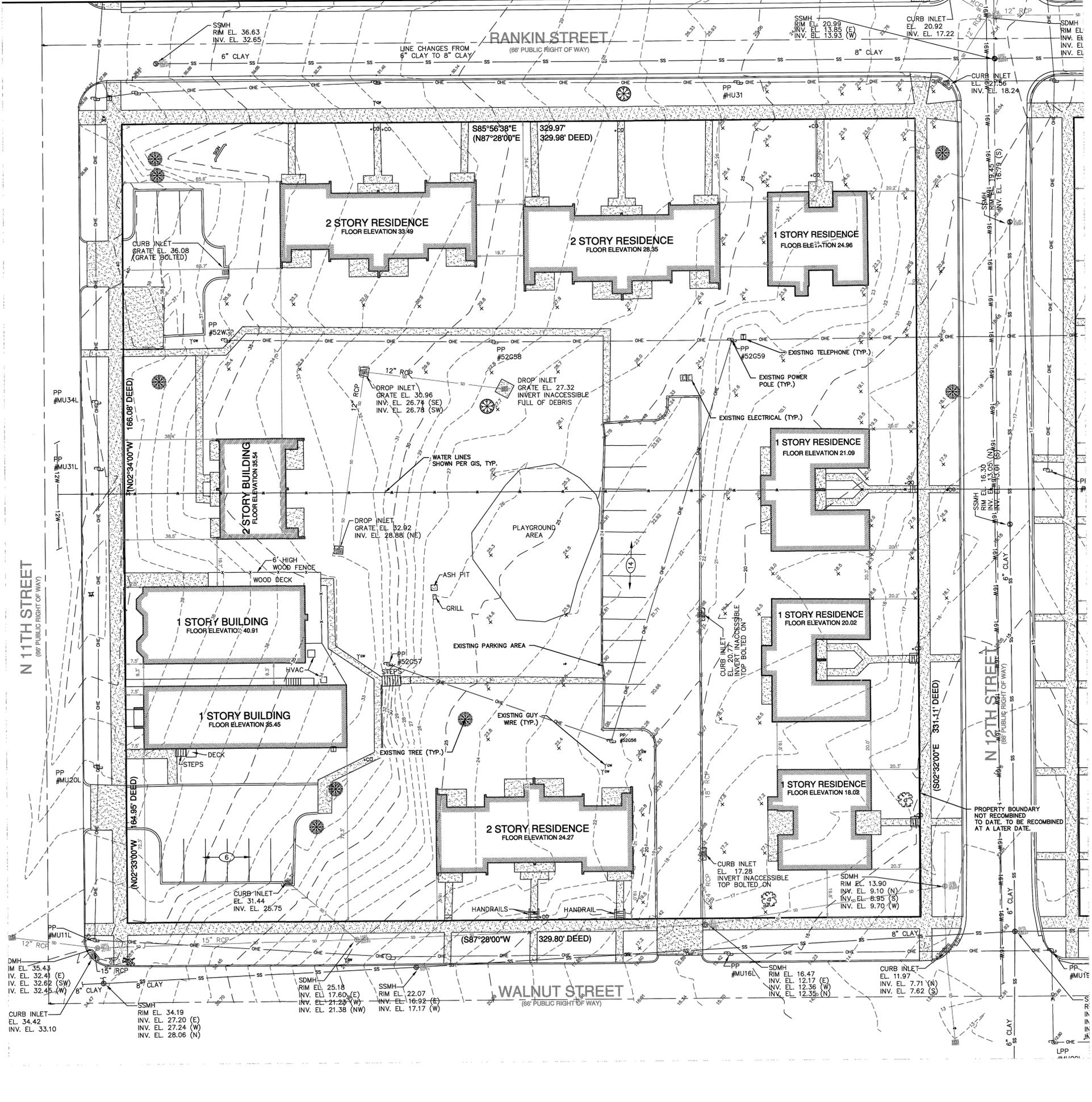
PROJECT #29

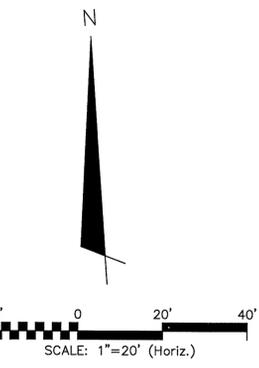
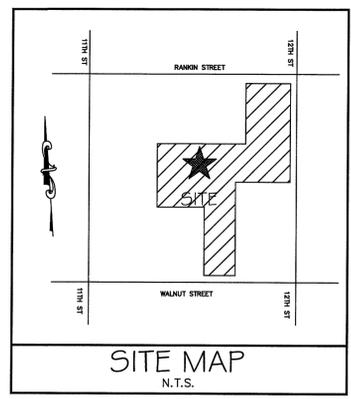
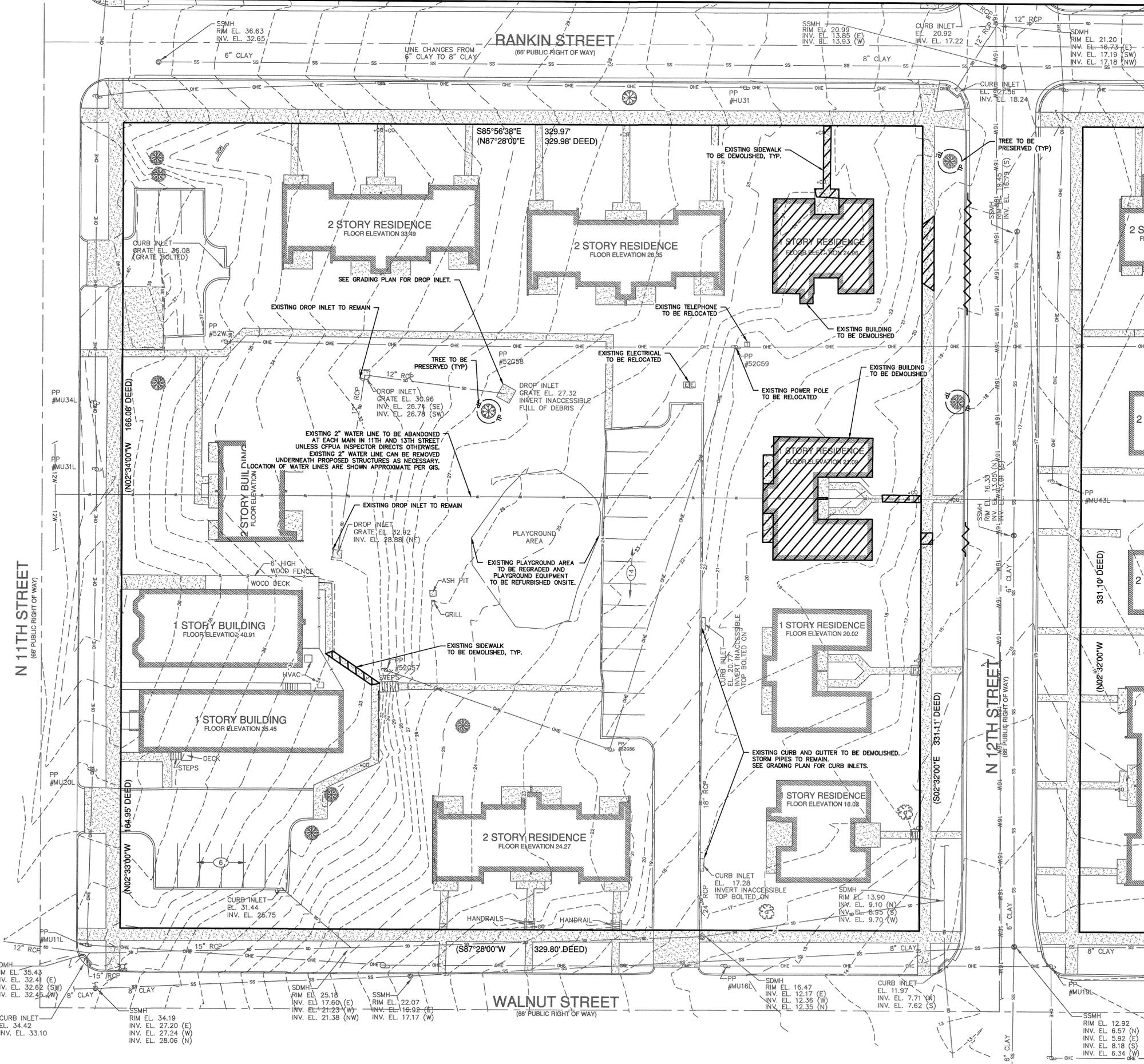
**EXISTING CONDITIONS**

JUNE 30, 2014

ISSUED FOR PERMITTING

**CX-101**





**DEMOLITION NOTES**

1. THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIARIZED WITH FIELD DEMOLITION CONDITIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL DEMOLISHED DEBRIS ASSOCIATED WITH THE PROJECT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
3. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST GENERATED BY THE WORK, INCLUDING BUT NOT LIMITED TO DEMOLITION AND CONSTRUCTION ACTIVITIES, SITE VEHICULAR TRAFFIC AND RELATED OPERATIONS.
4. THE CONTRACTOR IS RESPONSIBLE FOR HAVING ALL EXISTING UTILITIES LOCATED PRIOR TO BEGINNING ANY DEMOLITION. CONTRACTOR SHALL CONTACT NC ONE CALL AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED.
5. EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND, ARE BASED ON FIELD SURVEY AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO BEGINNING RELATED CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE AND ENGINEER IMMEDIATELY.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF DISCONNECTING AND ABANDONING ALL EXISTING UTILITIES WITH THE OWNER UNLESS OTHERWISE NOTED. ALL EXISTING UTILITIES AND ASSOCIATED PIPING, ETC. NOT IN USE ON THE SITE SHALL BE PROPERLY ABANDONED AND REMOVED AS REQUIRED. COORDINATE WITH THE OWNER.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ANY EXISTING UTILITIES THAT REMAIN IN SERVICE DURING DEMOLITION.
8. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS AND SLOPES ON AND OFF SITE IN ACCORDANCE WITH THE EROSION CONTROL MEASURES SPECIFIED ON THE PLANS AND IN THE SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE WHO IS RESPONSIBLE FOR PROVIDING THE PERMANENT STABILIZATION MEASURES AND THE TYPE OF PERMANENT MEASURES PRIOR TO BEGINNING DEMOLITION AND CONSTRUCTION. THE PERMANENT STABILIZATION MEASURES SHALL BE IN PLACE AND ACCEPTABLE TO THE OWNERS REPRESENTATIVE AND ENGINEER PRIOR TO PROJECT CLOSEOUT. COORDINATE INSPECTION WITH THE OWNER AND ENGINEER PRIOR TO PROJECT CLOSEOUT.
9. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND CONTACTING THE ENGINEER FOR THE REQUIRED INSPECTIONS ON THE PROJECT.

**DEMOLITION LEGEND**

- CURB AND GUTTER DEMOLITION
- BUILDINGS AND PAVEMENT DEMOLITION
- TREE PROTECTION FENCING

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1 inch

**Approved Construction Plan**

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

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

**City of WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED DRAINAGE PLAN

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

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

**AXIOM**  
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**RANKIN PLACE TERRACE APARTMENTS REHAB**  
WILMINGTON HOUSING AUTHORITY  
WILMINGTON, NORTH CAROLINA



PROJECT 1129  
**DEMOLITION PLAN**

JUNE 30, 2014

ISSUED FOR PERMITTING  
**CD-101**



# SITE PLAN LEGEND

- SF MF EXISTING STRUCTURES NOT OWNED BY WHA - FOR REFERENCE ONLY  
SF = SINGLE FAMILY PARCEL  
MF = MULTI-FAMILY PARCEL
- DENOTES SECTION 504 TYPE 'A' ACCESSIBLE DWELLING UNIT
- 3D UNIT TYPE
- DENOTES EXISTING LARGE TREE

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1 inch

**Approved Construction Plan**

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

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**WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED DRAINAGE PLAN

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

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

## GENERAL REMOVAL ITEMS:

- SHRUBS (17 TOTAL)
- SATELLITE DISHES (5 TOTAL)
- GARBAGE CAN HOLDERS (3 TOTAL)



### #19 NOTES:

- REPLACE WITH ADA COMPLIANT RAMP DETAIL.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-504 DETAIL 1.



### #18 NOTES:

- ADA TYPE A ACCESSIBLE DWELLING FROM REAR.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-504 INSET 1.



### #17 NOTES:

- EXCESSIVE BACK PORCH DROP AT MAINTENANCE CLOSET. ADD SPLASH PAD TO DOWNSPOUT.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-502 DETAIL 1.



### #16 NOTES:

- EXCESSIVE BACK PORCH DROP AT MAINTENANCE CLOSET. ADD SPLASH PAD TO DOWNSPOUT.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-502 DETAIL 1.



### #15 NOTES:

- REPLACE RAIL.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-501 DETAIL 5 OPTION B.



### #14 NOTES:

- REPLACE WITH ADA COMPLIANT RAMP.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-501 DETAIL 1.



### #13 NOTES:

- REPLACE WITH ADA COMPLIANT RAMP AND REPAIR CRACKED SIDEWALK SECTION.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-501 DETAIL 1.



### #12 NOTES:

- REMOVE AND REPLACE RAILS ALONG N. 12TH ST (UNITS 501,505 AND 509).
- FOR REMEDIATION REFERENCE PLAN SHEET CS-501 DETAIL 5 OPTION A.



### #21 NOTES:

- EXAMPLE OF TYPICAL SHRUB REMOVAL.
- SEE NOTE 1 ON THIS SHEET.



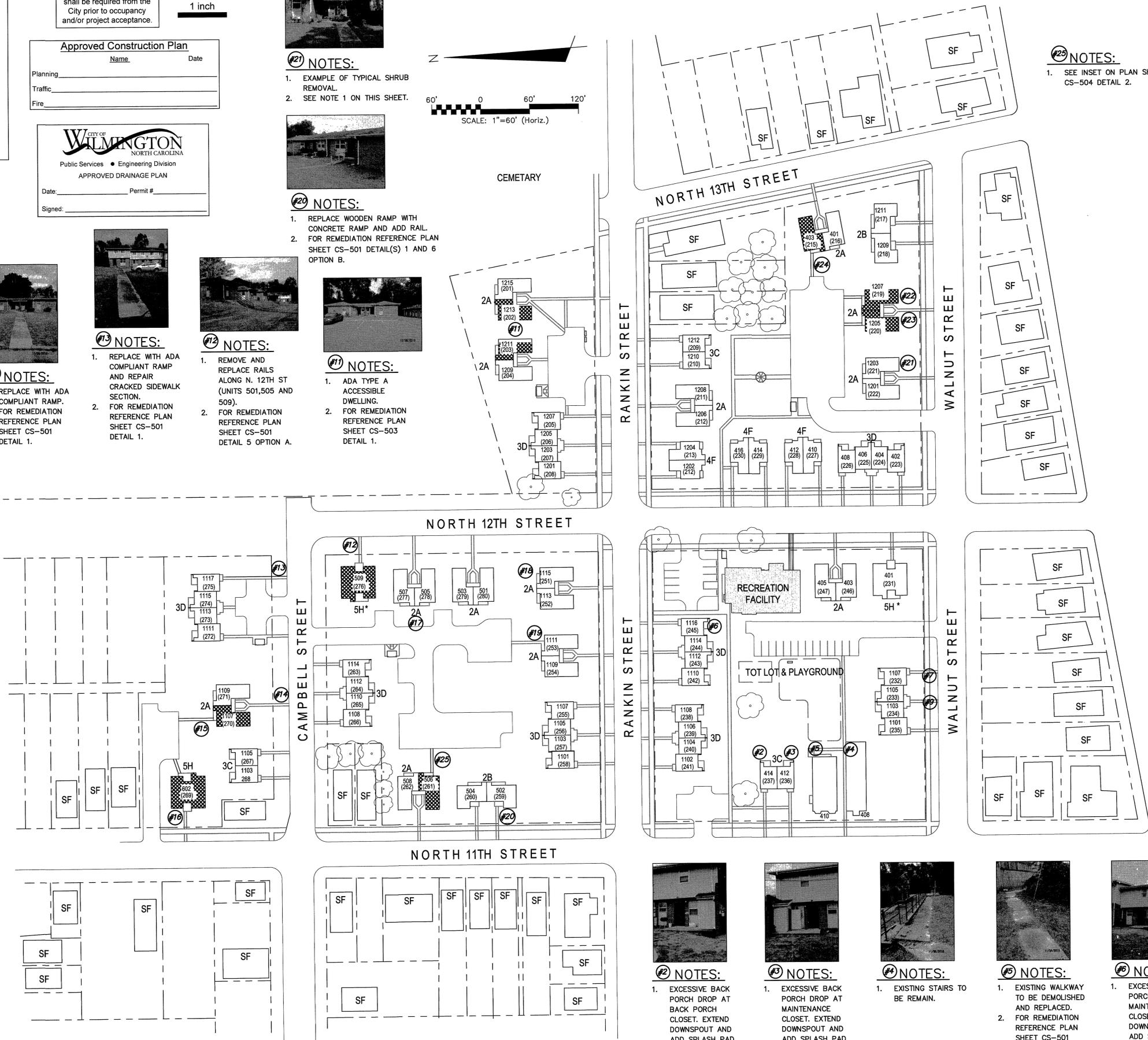
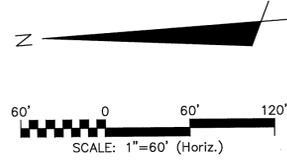
### #20 NOTES:

- REPLACE WOODEN RAMP WITH CONCRETE RAMP AND ADD RAIL.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-501 DETAIL(S) 1 AND 6 OPTION B.



### #11 NOTES:

- ADA TYPE A ACCESSIBLE DWELLING.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-503 DETAIL 1.



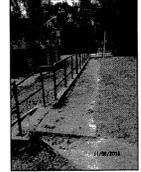
### #2 NOTES:

- EXCESSIVE BACK PORCH DROP AT BACK PORCH CLOSET. EXTEND DOWNSPOUT AND ADD SPLASH PAD.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-502 DETAIL 1.



### #3 NOTES:

- EXCESSIVE BACK PORCH DROP AT MAINTENANCE CLOSET. EXTEND DOWNSPOUT AND ADD SPLASH PAD.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-502 DETAIL 1.



### #4 NOTES:

- EXISTING STAIRS TO BE REMAIN.



### #5 NOTES:

- EXISTING WALKWAY TO BE DEMOLISHED AND REPLACED.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-501 DETAIL 2.



### #6 NOTES:

- EXCESSIVE BACK PORCH DROP AT MAINTENANCE CLOSET. EXTEND DOWNSPOUT AND ADD SPLASH PAD.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-502 DETAIL 1.



### #22 NOTES:

- REPLACE WITH ADA COMPLIANT ACCESS AND RAIL DETAIL.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-503 DETAIL 2.



### #23 NOTES:

- RETROFIT SIDEWALK FOR HANDICAP ACCESS.
- FOR REMEDIATION REFERENCE PLAN SHEET CS-503 DETAIL 2.



### #24 NOTES:

- SEE CS-503 DETAIL 2.



### #25 NOTES:

- REPLACE EXISTING RAIL. NEW RAIL WILL BE INSTALLED ON BOTH SIDES AND FLANGED MOUNTED.
- REFERENCE PLAN SHEET CS-501 DETAIL 5 OPTION B.



### #7 NOTES:

- REPLACE EXISTING RAIL. NEW RAIL WILL BE INSTALLED ON BOTH SIDES AND FLANGED MOUNTED.
- REFERENCE PLAN SHEET CS-501 DETAIL 5 OPTION B.

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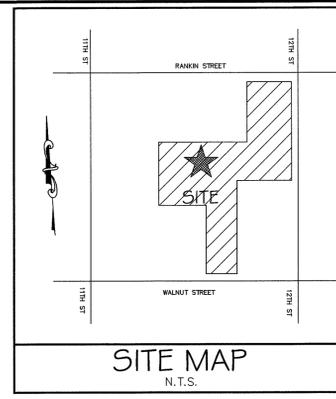
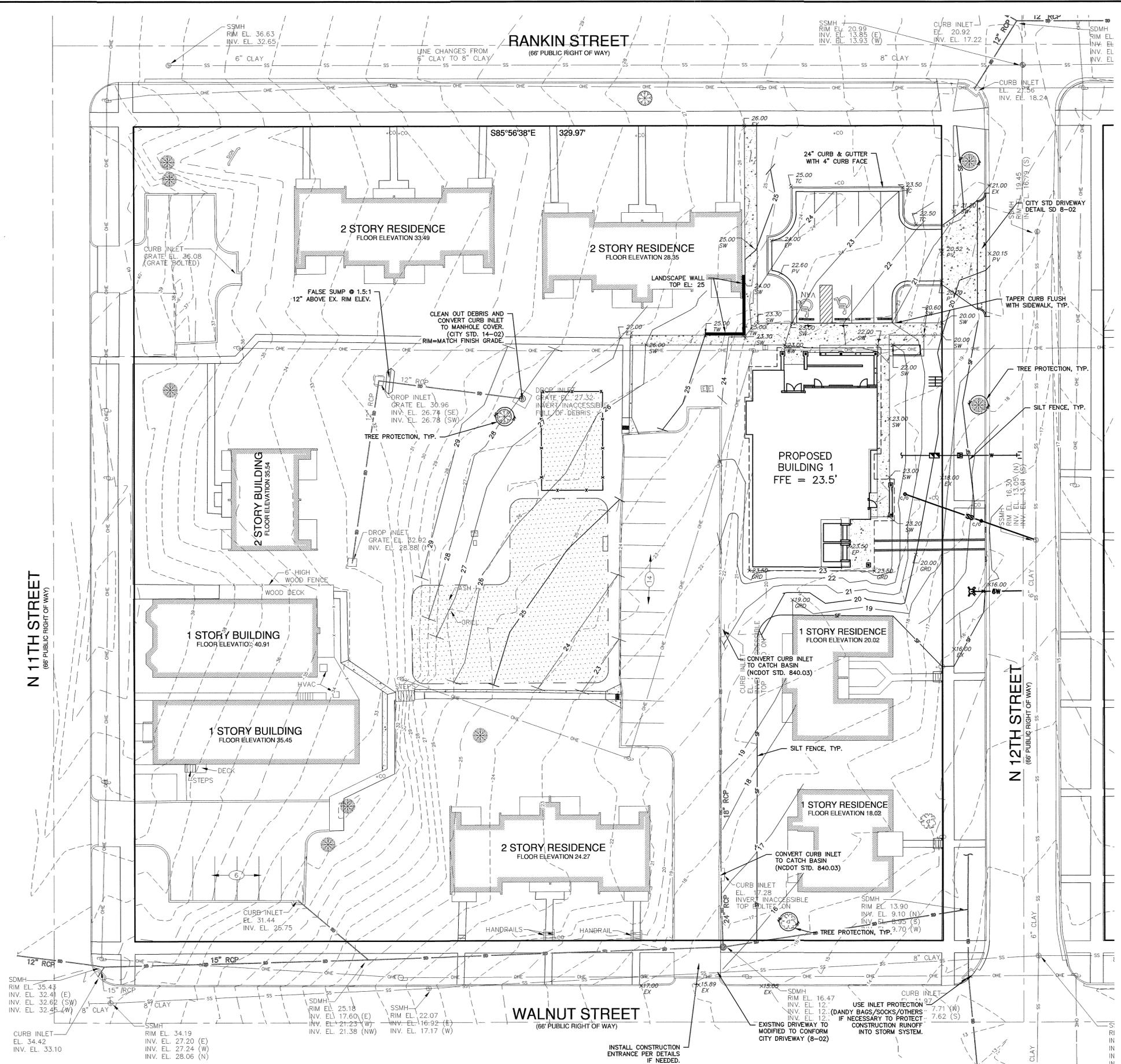
**RANKIN PLACE TERRACE**  
**APARTMENTS REHAB**  
WILMINGTON HOUSING AUTHORITY  
WILMINGTON, NORTH CAROLINA



PROJECT 1129  
**SITE INVENTORY PLAN**

JUNE 30, 2014

ISSUED FOR PERMITTING  
**CS-102**



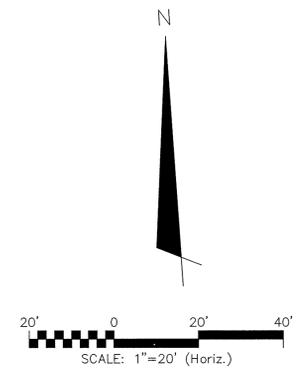
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**SPOT GRADE LEGEND:**

X 292.00	EDGE OF BUILDING
EB	
X 285.00	EDGE OF PAVEMENT
EP	
X 284.14	SIDEWALK
SW	
X 283.13	PAVEMENT GRADE
PV	
X 295.50	TOP OF CURB (BACK OF CURB)
TC/BC	



**1 inch**

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**Approved Construction Plan**

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

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

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

**APPROVED DRAINAGE PLAN**

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

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

**RANKIN PLACE TERRACE**  
**APARTMENTS REHAB**  
WILMINGTON HOUSING AUTHORITY  
WILMINGTON, NORTH CAROLINA



PROJECT 1129  
**GRADING, DRAINAGE, & EROSION CONTROL PLAN**

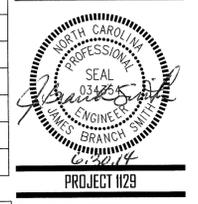
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**CG-101**

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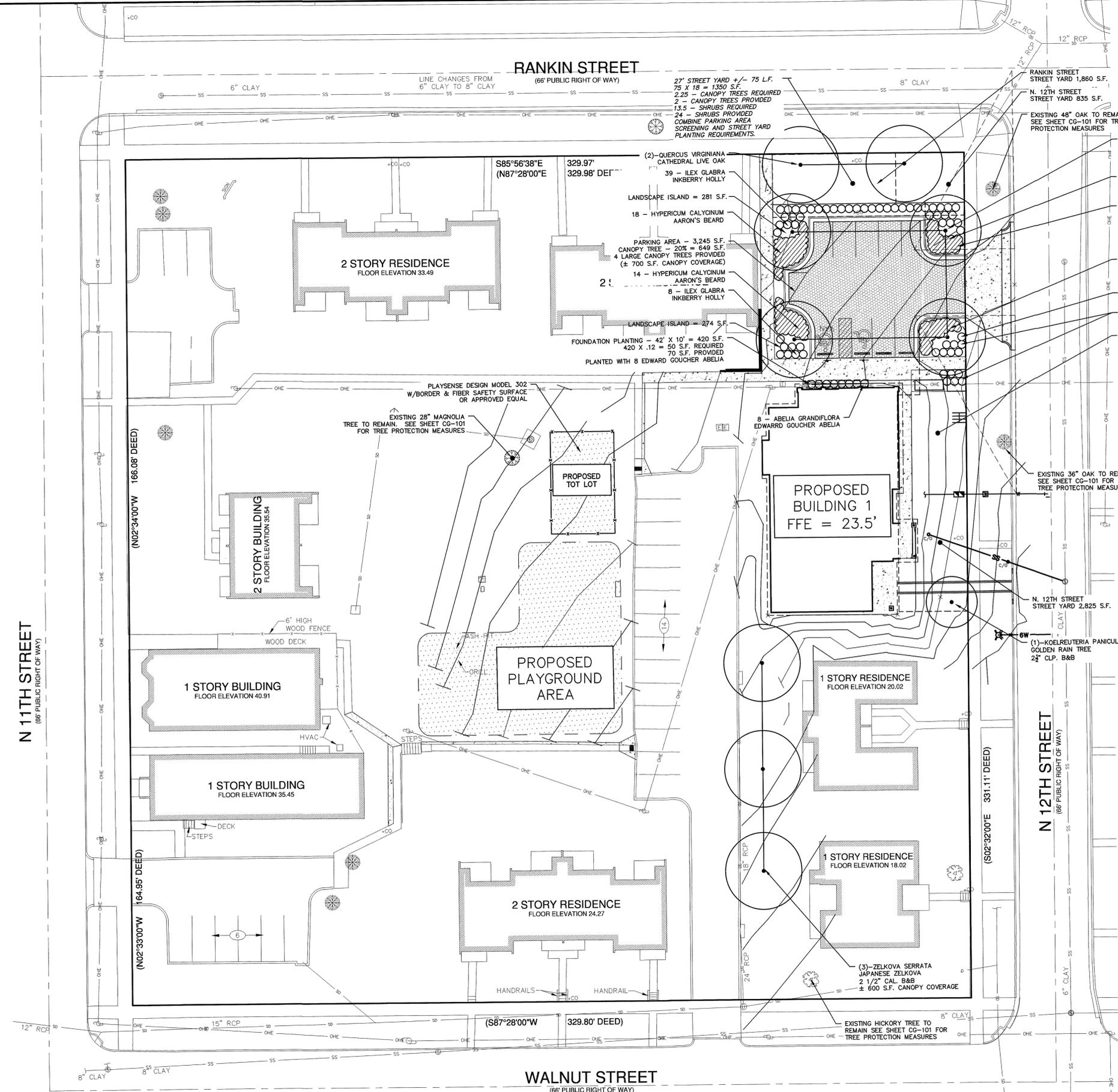
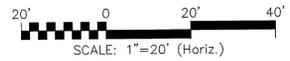
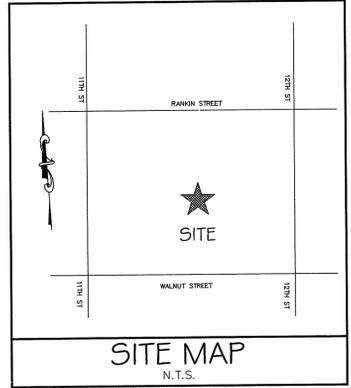


PROJECT 1129  
**LANDSCAPE PLAN**

JUNE 30, 2014

ISSUED FOR PERMITTING

**CL-101**



- (4) - ZELKOVA SERRATA JAPANESE ZELKOVA  
2 1/2" CAL. B&B  
(± 700 S.F. CANOPY COVERAGE)
- 12 - HYPERICUM CALYCNINUM AARON'S BEARD
- LANDSCAPE ISLAND = 235 S.F.
- 14 - HYPERICUM CALYCNINUM AARON'S BEARD
- LANDSCAPE ISLAND = 271 S.F.
- 12 - ILEX GLABRA INKBERRY HOLLY
- STREET YARD +/- 150 L.F. (WIDTH VARIES)  
150' X 18' = 2,700 S.F.  
4.5 - CANOPY TREES REQUIRED  
3 SMALL CANOPY TREES PROVIDED IN ADDITION TO THE EXISTING 48" OAK AND 36" OAK APPLIED TO TREE REQUIREMENT  
27 - SHRUBS REQUIRED  
33 - SHRUBS PROVIDED

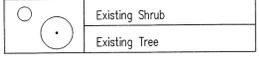
**NOTES:**

1. TOTAL SQUARE FOOTAGE OF STRUCTURES = 4,325 SF.
2. TOTAL SQUARE FOOTAGE OF VEHICULAR SURFACE AREA = 11,679 SF.
3. NO SIGNIFICANT TREES WILL BE REMOVED AS A RESULT OF THE PROPOSED SITE IMPROVEMENTS.
4. CANOPY COVERAGE CALC.:  
 707 SF = CANOPY TREE/15' RADIUS  
 314 SF = SMALLER CANOPY TREE/10' RADIUS  
 PERIMETER TREES BASED ON % OVERHANG  
 11,679 S.F. OF VEHICULAR SURFACE AREA  
 2,336 S.F. OF CANOPY COVERAGE REQUIRED (20%)  
 2,590 S.F. OF CANOPY COVERAGE PROVIDED (22%)
5. TREE REQUIREMENT CALC.:  
 .92 ACRES DISTURBED X 15 TREES/ACRE = 14 REQUIRED TREES  
 PROPOSED: 15 NEW LARGE CANOPY AND SMALL CANOPY TREES  
 PRESERVED: 5  
 TOTAL: 20 TREES  
 42' X 10' = 420 S.F.  
 420 X .12 = 50 S.F. PROVIDED  
 70 S.F. PROVIDED (8 EDWARD GOUCHER ABELIA)
6. FOUNDATION PLANTING CALC.:  
 27' WIDE STREET YARD ± 75 L.F.  
 75' X 18' = 1,350 S.F.  
 2.25 CANOPY TREES REQUIRED / 2 CANOPY TREES PROVIDED  
 13.5 SHRUBS REQUIRED / 24 SHRUBS PROVIDED  
 (COMBINE PARKING AREA SCREENING WITH STREET YARD REQ.)
7. STREET YARD CALCULATIONS:  
 RANKIN STREET  
 WIDTH VARIES X 150 L.F.  
 150' X 18' = 2,700 S.F.  
 4.5 CANOPY TREES REQUIRED / 2 LARGE CANOPY AND 1 SMALL CANOPY TREE PROVIDED WITH EXISTING 48" AND 36" OAKS TO REMAIN  
 27 SHRUBS REQUIRED / 33 SHRUBS PROVIDED
8. 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.
9. ALL PLANTED AND RETAINED LIVING MATERIAL REQUIRED TO MEET THE PROVISIONS OF THE CITY OF WILMINGTON LAND DEVELOPMENT CODE, SHALL BE PERPETUALLY PROTECTED AND MAINTAINED TO PROFESSIONALLY ACCEPTED STANDARDS BY JOINT AND SEVERAL RESPONSIBILITY OF THE OWNER, OCCUPANT, TENANT, AND REPRESENTATIVE AGENTS OF THE PROPERTY ON WHICH THE MATERIAL IS LOCATED.

**PLANT SCHEDULE**

Symbol	Plant Type	Quantity	Scientific Name	Common Name	Size	Root Type	Remarks
○	Large Shade Tree	2	QUERCUS VIRGINIANA	CATHEDRAL LIVE OAK	2 1/2" Clp.	B&B	
○	Large Shade Tree	7	ZELKOVA SERRATA	JAPANESE ZELKOVA	2 1/2" Clp.	B&B	
○	Small Shade Tree	1	KOELREUTERIA PANICULATA	GOLDEN RAIN TREE	2 1/2" Clp.	B&B	
○	Evergreen Shrub	8	ABELIA GRANDIFLORA "EDWARD GOUCHER"	EDWARD GOUCHER ABELIA	15 - 18" HT.	#3 CONT.	36" O.C.
○	Evergreen Shrub	59	ILEX GLABRA NANA	INKBERRY HOLLY	48 - 60" HT.	#3 CONT.	48" O.C.
○	Groundcover	58	HYPERICUM CALYCNINUM	AARON'S BEARD	12 - 15" SPR.	#1 CONT.	36" O.C.

**EXISTING PLANT LEGEND**



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**Approved Construction Plan**

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

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

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

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

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

1 inch



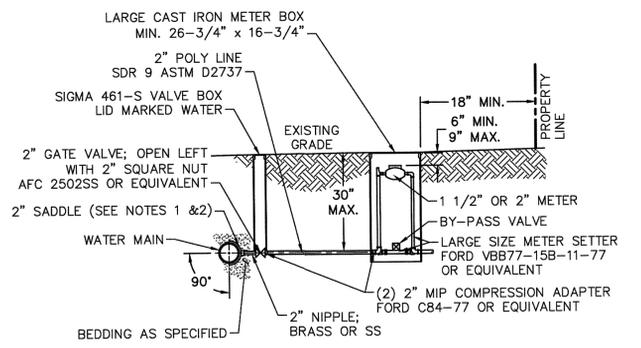
PROJECT #129

**CFPUA UTILITY DETAILS**

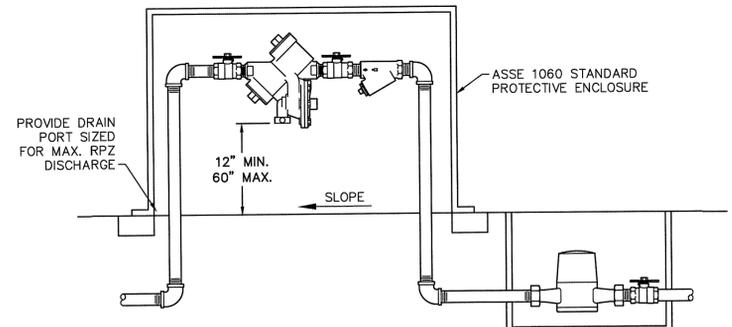
JUNE 30, 2014

ISSUED FOR PERMITTING

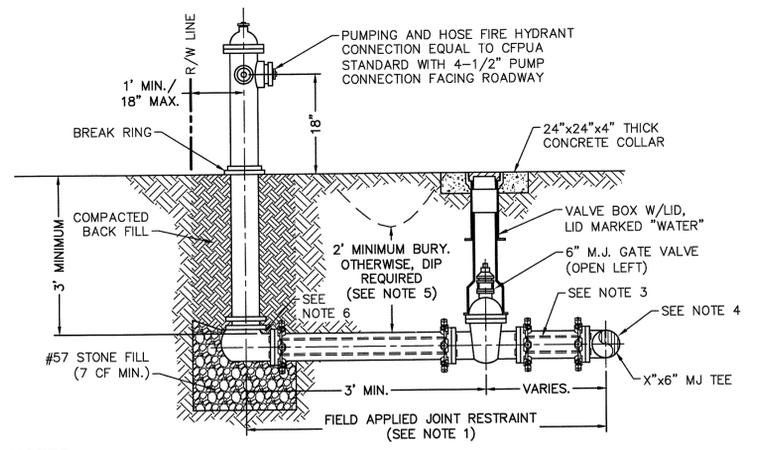
**CU-501**



- NOTES:**
1. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
  2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: McDONALD 3800, FORD S90 (DOUBLE STRAP) OR EQUIVALENT.
  3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (OLDCASTLE PRECAST MODEL B1730 OR APPROVED EQUIVALENT).
  4. METER BOXES SUSCEPTIBLE TO INCIDENTAL, NON-DELIBERATE TRAFFIC SHALL CONFORM TO ANSI/SCTE 77 TIER 15 LOAD RATING STANDARDS (SYNERTECH MODEL DUO 17x30 OR APPROVED EQUIVALENT).
  5. NON-TRAFFIC METER BOXES SHALL BE SIGMA MB2203 OR APPROVED EQUIVALENT.
  6. 3" CLEAN FILL REQUIRED ALL AROUND 2" POLY SERVICE LINE.



- NOTE:**
1. MUST BE MIN. 36" AWAY FROM ANY ELECTRICAL PANEL.
  2. VALVE REQUIRED DOWNSTREAM OF BACKFLOW ASSEMBLY.
  3. VERTICAL INSTALLATION SHALL BE DESIGNED AND SUBMITTED TO CFPUA ESMD FOR APPROVAL.



- NOTES:**
1. JOINT RESTRAINT SYSTEMS SHALL BE WEDGE ACTION STYLE FOR DI OR C-900 PVC PIPE AS MANUFACTURED BY EBAA IRON, SIGMA, STAR PIPE PRODUCTS OR APPROVED EQUAL.
  2. WHEN HYDRANT LEGS REQUIRE FULL LENGTH PIPE SECTIONS, OVER BELL RESTRAINT SYSTEM SHALL HAVE 316 STAINLESS STEEL HARNESS AND FASTENERS.
  3. CONTINUOUS 316 STAINLESS STEEL RODS (TEE TO VALVE AND VALVE TO HYDRANT) MAY BE USED WITH COR-BLUE MJ T-BOLT AND GASKET KITS, AS AN ALTERNATIVE.
  4. HYDRANT TEE SHALL BE RESTRAINED ON EACH SIDE OF MAIN PLUS ANY VALVE, FITTING, OR JOINT IN MAIN WITHIN 10'-FEET OF HYDRANT TEE.
  5. HYDRANT AND VALVE SHALL BE PLACED OUTSIDE DITCH LIMITS.
  6. WEEP HOLES OPEN AND UNBLOCKED TO DRAIN.

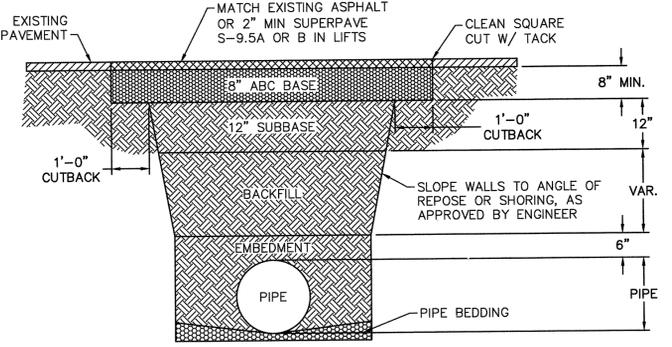
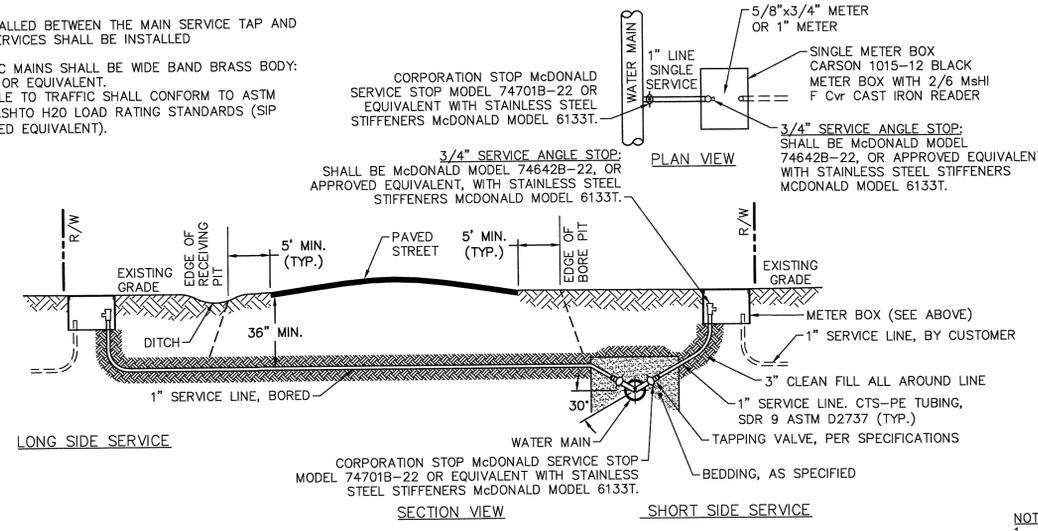
**FIRE PROTECTION NOTES:**

1. HYDRANT MUST BE WITHIN 150' OF THE FDC.
2. THE FDC MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.
3. LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT AND FDC.
4. COMBUSTIBLE MATERIALS MAY NOT BE STORED OR ERECTED ONSITE WITHOUT CITY FIRE INSPECTOR APPROVAL.
5. UNDERGROUND FIRE LINE AND PRIVATE WATER MAINS MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0696 FOR ADDITIONAL INFORMATION.
6. A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM UNDERGROUND UTILITIES.
7. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
8. HYDRANTS MUST BE LOCATED WITHIN 8' OF CURB.
9. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDING(S).
10. TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES.

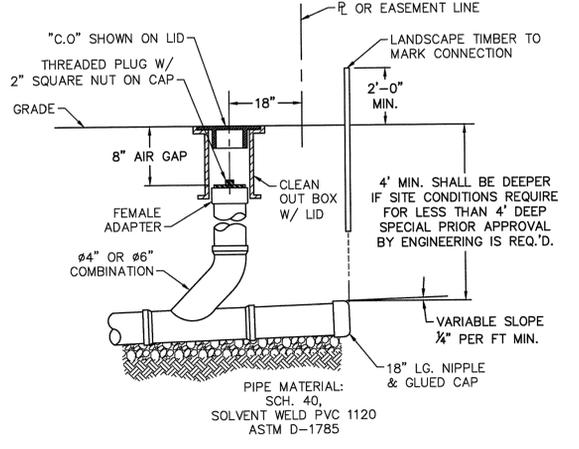
**UTILITY NOTES:**

1. SCHEDULE A PRECONSTRUCTION MEETING WITH CAPE FEAR PUBLIC UTILITY AUTHORITY 48 HOURS PRIOR TO CONSTRUCTION OF WATER AND SEWER LINES.
2. WATER AND SANITARY SEWER UTILITY MAINS ARE PRIVATE BEYOND THE PUBLIC STREET RIGHT-OF-WAY.
3. THIS PROJECT SHALL COMPLY WITH THE CFPUA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND NCDENR HAS ISSUED THE "FINAL APPROVAL".
4. ALL COMMERCIAL WATER SERVICES AND ANY IRRIGATION SYSTEMS SUPPLIED BY CFPUA WATER SHALL HAVE A BACKFLOW PREVENTION DEVICE ACCEPTABLE TO CFPUA AND APPROVED BY USCFCOCHR OR ASSE.
5. BACKFLOW PREVENTION AND METERS WILL BE PROVIDED FOR BOTH FIRE LINES (RPDA) AND DOMESTIC SERVICE (RPZ). FIRE LINE BACKFLOW PREVENTER AND DOMESTIC SERVICE BACKFLOW PREVENTER WILL BE LOCATED AS SHOWN ON THE UTILITY PLANS. INSTALLER OF BACKFLOW PREVENTERS MUST CONTACT CFPUA PRIOR TO INSTALLING UNITS TO GIVE CFPUA THE OPTION TO VERIFY INSTALLATION PROCEDURES.
- 5.1. **REDUCED PRESSURE PRINCIPLE ASSEMBLY** FOR DOMESTIC WATER SERVICE
- 5.2. **REDUCED PRESSURE DETECTOR ASSEMBLY** WILL BE UTILIZED FOR THE BACKFLOW PREVENTER ON THE FIRE SERVICE.
6. IF THE CONTRACTOR DESIRES 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.
7. WATER: 1.5" & 2" PVC MAINS SHALL BE CONSTRUCTED USING ASTM D2241, IPS, GASKETED PIPE, SDR 21. 4"-12" PVC MAINS AND SERVICES SHALL BE CONSTRUCTED USING AWWA C-900 PVC, CL235 (DR-18).
8. SANITARY SEWER: FOR PIPE SIZES 4" AND 6" PIPE SHALL BE SCH 40 CONFORMING TO THE REQUIREMENTS OF ASTM D1785 WITH SOLVENT WELD JOINTS CONFORMING TO ASTM D2672. FOR PIPE SIZES 8" THROUGH 12", PIPE SHALL BE CLASS 150, DR18 CONFORMING TO THE REQUIREMENTS OF AWWA C900 WITH ELASTOMERIC PUSH-ON JOINTS CONFORMING TO ASTM D3212 OR ASTM D3139.
9. PVC WATER MAINS AND POLYETHYLENE SERVICES ARE TO BE MARKED WITH NO. 10 SINGLE STRAND INSULATED COPPER WIRE INSTALLED THE ENTIRE LENGTH AND STRAPPED TO THE PIPES WITH DUCT TAPE. THE INSULATED WIRE IS TO BE STRIPPED TO BARE WIRE AND SECURED TO ALL VALVES. THIS WIRE IS TO BE ACCESSIBLE AT ALL FIRE HYDRANTS AND WATER METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.

**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**



- NOTES:**
1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
  2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
  3. 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.
  4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12" MINIMUM LIFTS
  5. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.
  6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.
  7. ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T-99.
  8. 1-FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.



**NOTE:** FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE-IN TO MAIN

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

**Approved Construction Plan**

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

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

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

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

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

1 inch

**GENERAL HANDICAP NOTES**

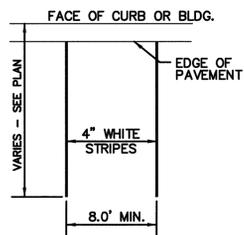
1. IN ACCORDANCE WITH N.C.G.S. 136-44.14, ALL STREET CURBS BEING CONSTRUCTED OR RECONSTRUCTED SHALL PROVIDE WHEELCHAIR RAMPS FOR THE PHYSICALLY HANDICAPPED ON EACH SIDE OF ANY STREET OR ROAD, WHERE CURBS AND SIDEWALKS ARE PROVIDED AND AT OTHER MAJOR POINTS OF PEDESTRIAN FLOW.
2. WHEELCHAIR RAMPS SHALL 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 HANDICAP NOTES**

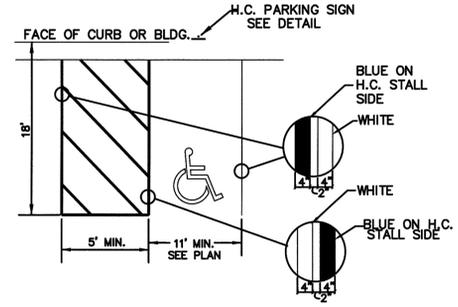
1. CONSTRUCTION SHALL CONFORM WITH CONSTRUCTION STANDARDS OF THE GOVERNING BODY WHICH HAS JURISDICTION OF THE PARTICULAR STREET.
2. WHEELCHAIR RAMPS SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE WITH THE SURFACE HAVING A ROUGH, NON-SKID TYPE FINISH.
3. A 1/2"-IN. EXPANSION JOINT SHALL BE REQUIRED WHERE 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 HANDICAP NOTES**

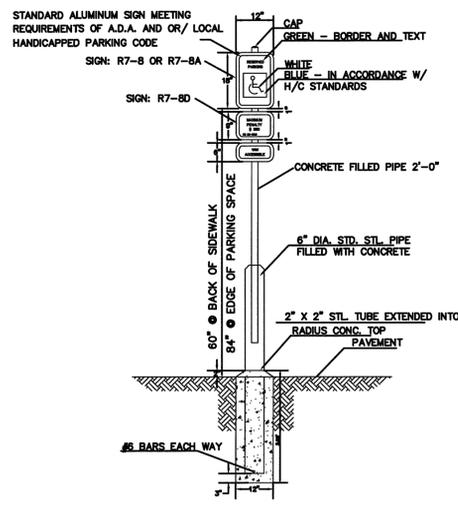
1. STOP BARS SHALL BE USED WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN OR OTHER LEGAL REQUIREMENT.
2. PARKING SHALL BE ELIMINATED A MINIMUM OF 20 FEET BACK OF THE PEDESTRIAN CROSSWALK.
3. ALL PAVEMENT MARKINGS SHALL 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.



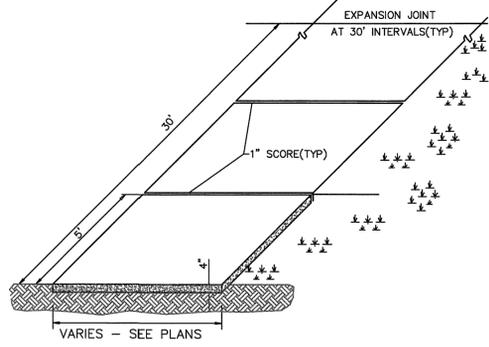
**1 TYPICAL PARKING STALL**  
NOT TO SCALE



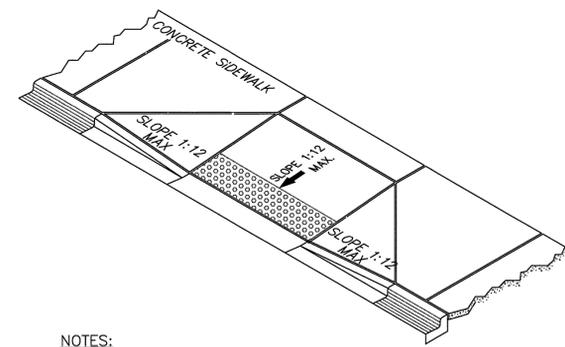
**4 TYPICAL HANDICAP PARKING STALL**  
CS-501 NOT TO SCALE



**3 TYPICAL HANDICAP PARKING STALL**  
CS-501 NOT TO SCALE

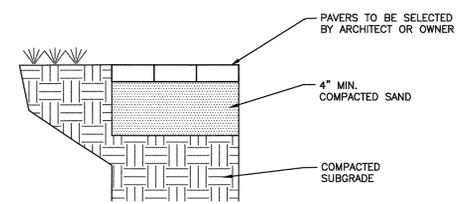


**2 STANDARD SIDEWALK DETAIL**  
CS-501 NOT TO SCALE

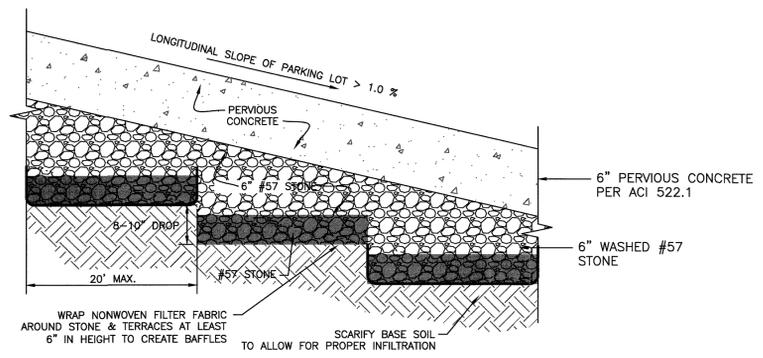


**1 SIDEWALK HC RAMP**  
CS-501 NOT TO SCALE

- NOTES:**
1. DETECTABLE WARNING PADS ARE TO BE INSTALLED WHERE RAMPS LEAD TO VEHICULAR TRAFFIC AREAS.
  2. DETECTABLE WARNING PADS SHALL BE CONFORM TO ADA STANDARDS FOR ACCESSIBLE DESIGN, LATEST EDITION.

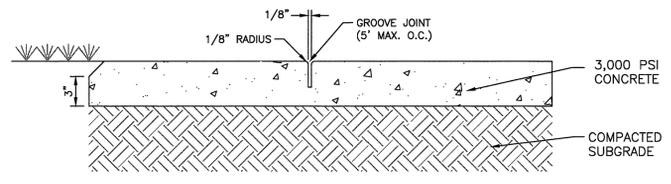


**BRICK PAVER SIDEWALK DETAIL**  
NOT TO SCALE



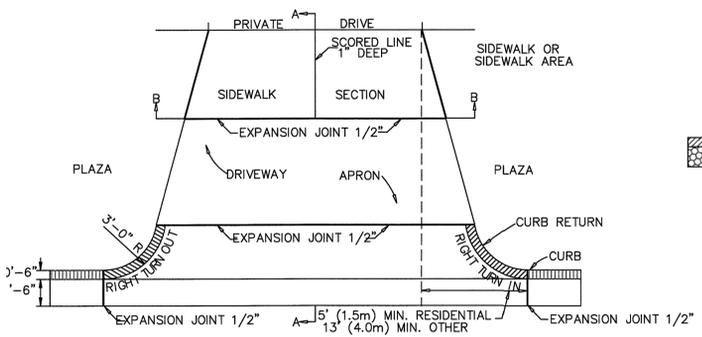
**PERVIOUS CONCRETE TERRACED PARKING SECTION**  
NOT TO SCALE

- NOTES:**
1. DO NOT PLACE PERVIOUS CONCRETE UNTIL SITE HAS REACHED FINISH GRADE AND IS STABILIZED.
  2. INSTALL NON-WOVEN FILTER FABRIC BETWEEN STONE/EARTH WHEN TRANSITIONING BETWEEN CONCRETE PAVEMENT AND PERVIOUS CONCRETE.

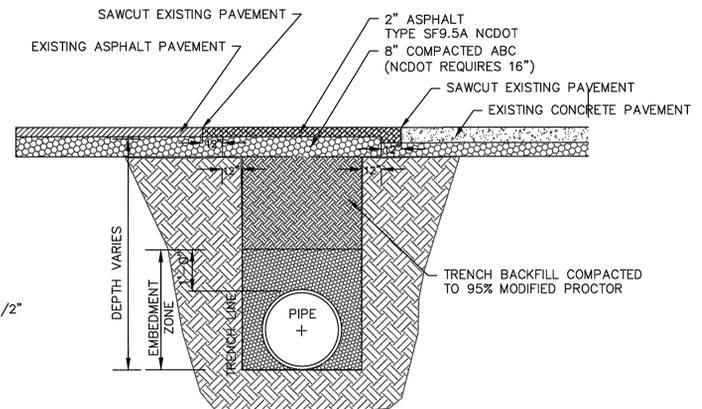


**CONCRETE SIDEWALK SECTION**  
NOT TO SCALE

- GENERAL NOTES:**
1. A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS.
  2. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS.
  3. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK ABUTS ANY CURB AND GUTTER AND ANY RIGID STRUCTURES.
  4. IN SIDEWALKS AND PLAZA AREAS EXPANSION JOINTS ARE REQUIRED AT NO GREATER THAN 30' INTERVALS.



**PAVEMENT PLAN**



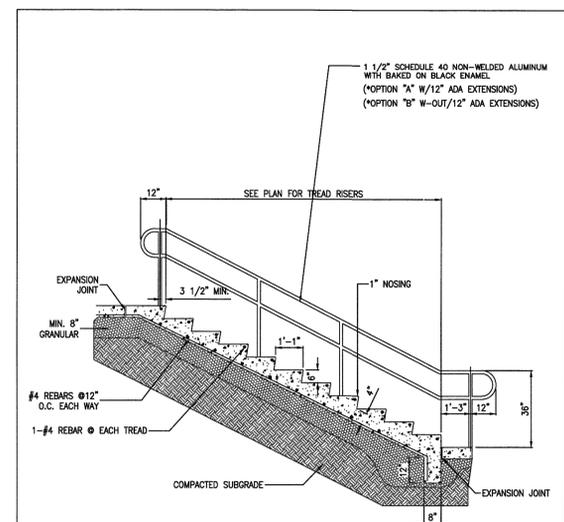
**STANDARD DRIVEWAY DETAIL**

SD 8-02  
NOT TO SCALE

- 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**  
**PAVEMENT REPAIR DETAIL**

SD 1-16  
NOT TO SCALE



**5 CONCRETE STAIR & RAIL SECTION**  
CS-501 WITH METAL HANDRAIL

- NOTES:**
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
  2. DO NOT SCALE DRAWINGS.
  3. TREADS TO BE BROOM FINISHED.
  4. POSTS TO BE FLANGE-MOUNTED.

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

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

**STANDARD CURB SECTION TYPE "A"**  
SD 7-01  
NOT TO SCALE

NOTE: WHERE CURB AND GUTTER IS USED FOR PARKING SPACES CURB FACE SHALL BE 4" FACE INSTEAD OF TYP. 6" FACE.

**Approved Construction Plan**

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

Planning: \_\_\_\_\_  
Traffic: \_\_\_\_\_  
Fire: \_\_\_\_\_

**ENGINEER:**  
McKim & Creed, Inc.  
243 N Front St.  
Wilmington, NC 28401  
(910)-343-1048

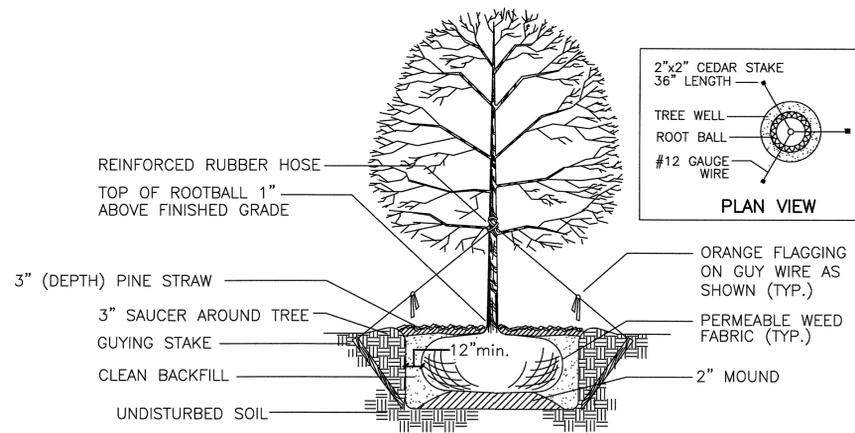
**OWNER:**  
Wilmington Housing  
Authority  
1524 S 16th St.  
Wilmington, NC 28401



PROJECT 1129  
**SITE DETAILS**

JUNE 30, 2014

ISSUED FOR PERMITTING  
**CS-501**



**TREE PLANTING DETAIL**

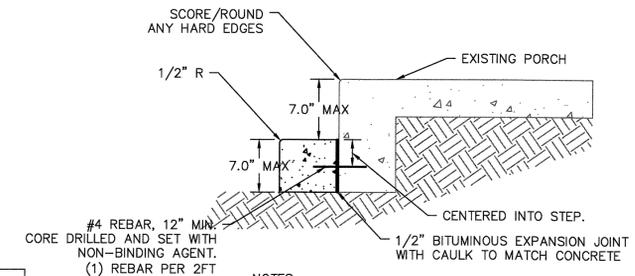
NO SCALE

**SEEDBED PREPARATION:**

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2. RIP THE ENTRANCE AREA TO 6 INCHES DEPTH.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW\*).
5. CONTINUE TILLAGE UNTIL A WELL - PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.
10. APPLY:
  - AGRICULTURAL LIMESTONE - 2 TONS/ACRE
  - FERTILIZER - 1000 LBS/ACRE (10-10-10)
  - SUPERPHOSPHATE - 500 LBS/ACRE (20%)
  - MULCH - 2 TONS/ACRE (SMALL GRAIN STRAW)
  - ANCHOR - ASPHALT EMULSION AT 450 GAL/ACRE

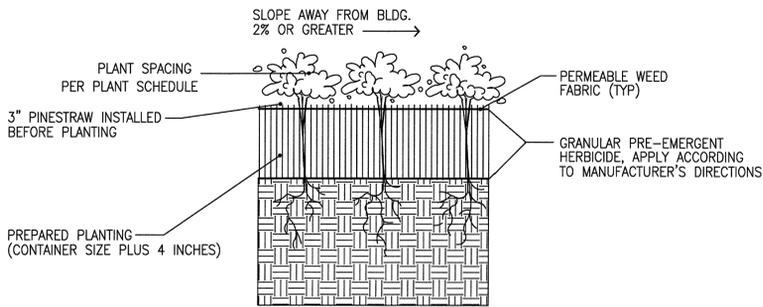
TEMPORARY SEEDING				
GRASS TYPE	AMOUNT/1000 S.F.	TIME OF SEEDING	INITIAL	
RYE GRASS	1-2 LBS.	APRIL - JUNE	25 LBS.	10-10-10
BROWNTOP MILLET	1-2 LBS.	JUNE - AUGUST	25 LBS.	10-10-10
PERMANENT SEEDING				
GRASS TYPE	AMOUNT/1000 S.F.	TIME OF SEEDING	INITIAL	
BERMUDA, COMMON	1-2 LBS.	APRIL - JUNE	25 LBS.	10-10-10
FESCUE, TALL (KENTUCKY 31)	5-7 LBS.	JUNE - AUGUST FEB. - OCT.	25 LBS.	10-10-10
SERICEA LESPEDEZA (SLOPES)	1-2 LBS.	MARCH - APRIL	25 LBS.	10-10-10

GROUND STABILIZATION CRITERIA		
SITE AREA DESCRIPTION	STABILIZATION TIMEFRAME	STABILIZATION TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10 FT OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50 FT IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HIGH ZONES)



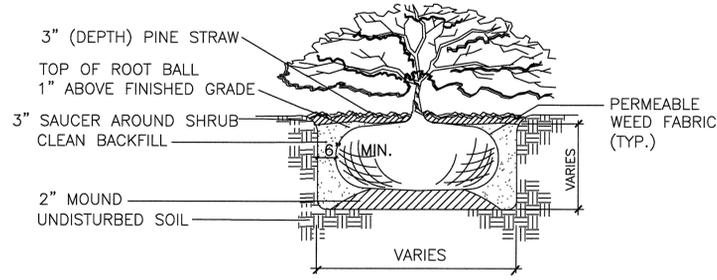
**PORCH CONCRETE STEP ADDITION**

NOT TO SCALE



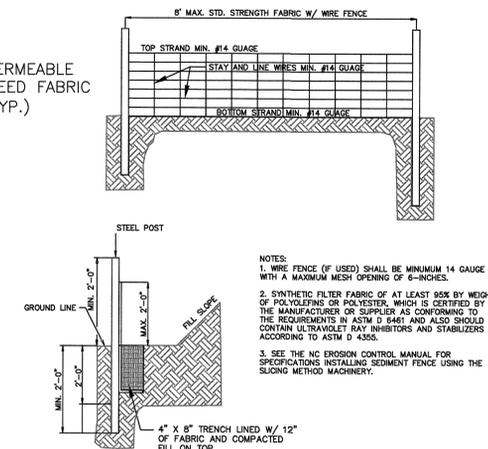
**GROUND COVER/PERENNIAL PLANTING DETAIL**

NO SCALE



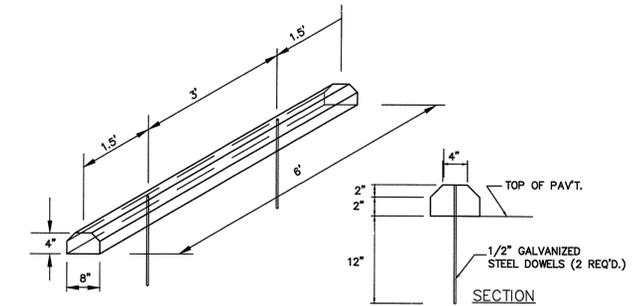
**SHRUB PLANTING DETAIL**

NO SCALE



**TEMPORARY SILT FENCE**

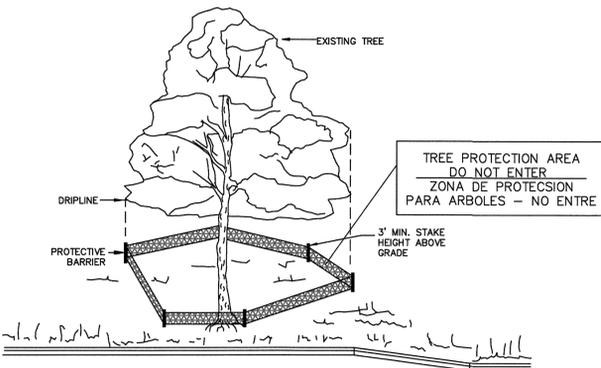
NOT TO SCALE



**CONCRETE WHEEL STOP DETAIL**

NOT TO SCALE

- EXCAVATION FOR STORM DRAINAGE PIPE SHALL BE TO THE LINES AND GRADES AS SHOWN ON THE PLANS.
- THE BEDDING SHALL BE SHAPED IN ACCORDANCE WITH CLASS 'C' BEDDING AS SHOWN ON CITY STANDARD DETAIL SD 2-17.
- THE BEDDING SHALL PROVIDE A FIRM FOUNDATION OF UNIFORM DENSITY ALONG THE ENTIRE LENGTH OF PIPE. RECESSES SHALL BE MADE TO ACCOMMODATE BELLS AND JOINTS.
- WHERE UNSTABLE SOILS ARE ENCOUNTERED AS DETERMINED BY GEOTECHNICAL ENGINEER, A MINIMUM 4-INCH THICK BEDDING OF STONE SHALL BE PLACED, SEE FIGURE 2, SD 2-17.
- THE STONE SHALL BE UNIFORMLY GRADED FROM 3/4 INCH TO NO. 4 IN ACCORDANCE WITH ASTM C-33. CARE SHALL BE TAKEN TO PREVENT UNDERCUTTING IN SUITABLE SOIL.
- AREAS UNDERCUT SHALL BE FILLED WITH SUITABLE SOIL AND COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D 1557 STANDARD TEST METHOD.



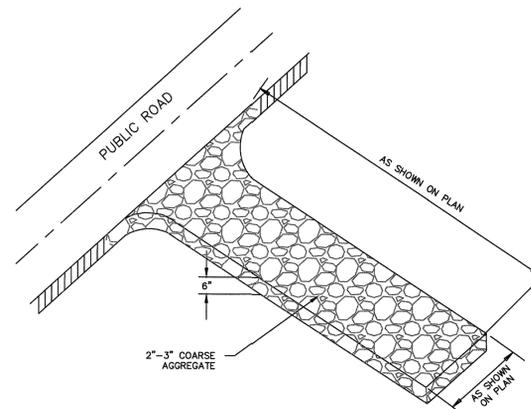
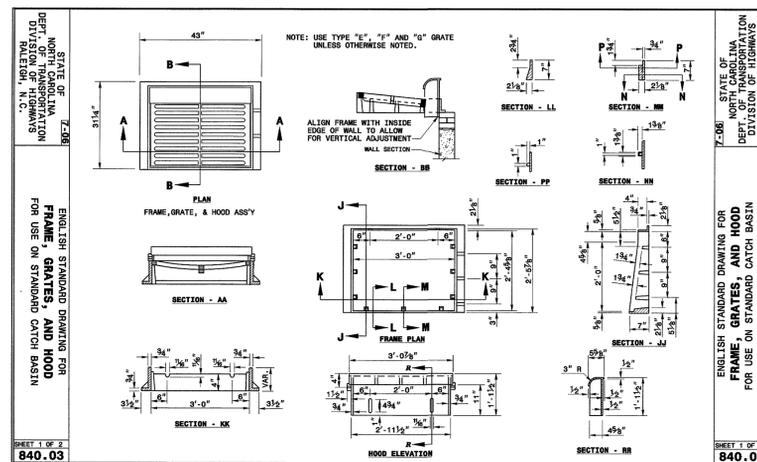
**METHOD OF TREE PROTECTION DURING CONSTRUCTION**

SD 15-08

NOT TO SCALE

**TREE PROTECTION NOTES:**

1. NO LAND DISTURBANCE INCLUDING TREE REMOVAL IS TO OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS. [18-457(b)]
2. PROTECTIVE FENCING IS TO BE PROPERLY MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. [18-458]
3. LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS. [18-457(d)]
4. ANY TREES AND/OR AREAS DESIGNATED TO BE PROTECTED MUST PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING AND GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS. [18-458]
5. NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED. [18-458]
6. REGULATED AND SIGNIFICANT TREES IN THE STREET YARD [18-456(c)] AND ANY TREES IN ANY REQUIRED BUFFERS [18-456(d)] ARE REQUIRED TO BE RETAINED.
7. PRIOR TO ANY CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING. [SEC. 18-462]



**CONSTRUCTION ENTRANCE/EXIT**

SD 13-03

NOT TO SCALE

1 inch

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

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

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

**Approved Construction Plan**

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

Planning \_\_\_\_\_  
Traffic \_\_\_\_\_  
Fire \_\_\_\_\_

**ENGINEER:**  
**McKim & Creed, Inc.**  
243 N Front St.  
Wilmington, NC 28401  
(910)-343-1048

**OWNER:**  
**Wilmington Housing Authority**  
1524 S 16th St.  
Wilmington, NC 28401

**RANKIN PLACE TERRACE**  
**APARTMENTS REHAB**  
WILMINGTON HOUSING AUTHORITY  
WILMINGTON, NORTH CAROLINA



PROJECT 1129

**SITE, EROSION CONTROL, AND LANDSCAPE DETAILS**

JUNE 30, 2014

ISSUED FOR PERMITTING

**CS-502**

**ENGINEER:**  
 McKim & Creed, Inc.  
 243 N Front St.  
 Wilmington, NC 28401  
 (910)-343-1048

**OWNER:**  
 Wilmington Housing  
 Authority  
 1524 S 16th St.  
 Wilmington, NC 28401

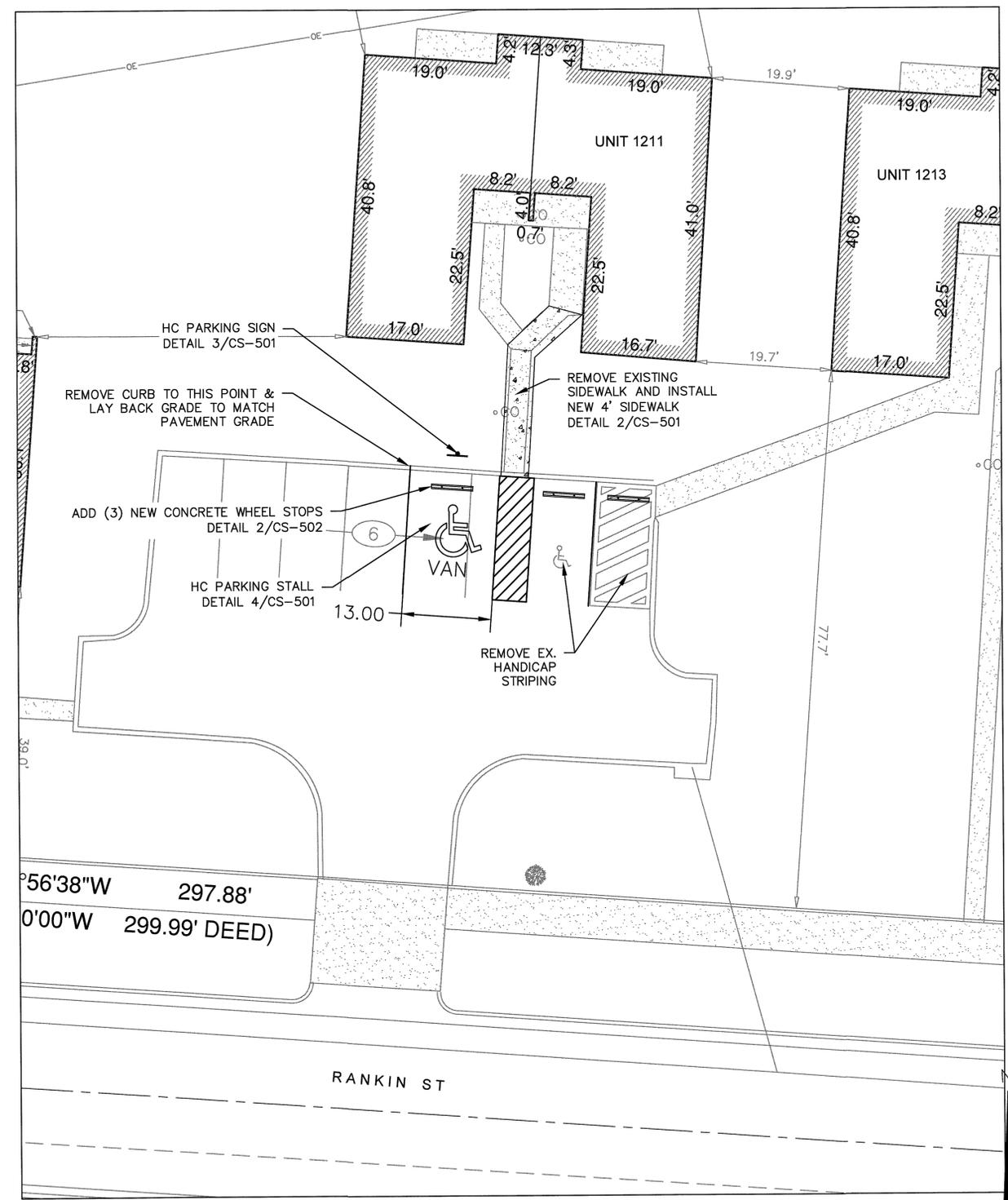
**RANKIN PLACE TERRACE  
 APARTMENTS REHAB**  
 WILMINGTON HOUSING AUTHORITY  
 WILMINGTON, NORTH CAROLINA



PROJECT #29  
**SITE INVENTORY  
 LARGER SCALE  
 PLANS**

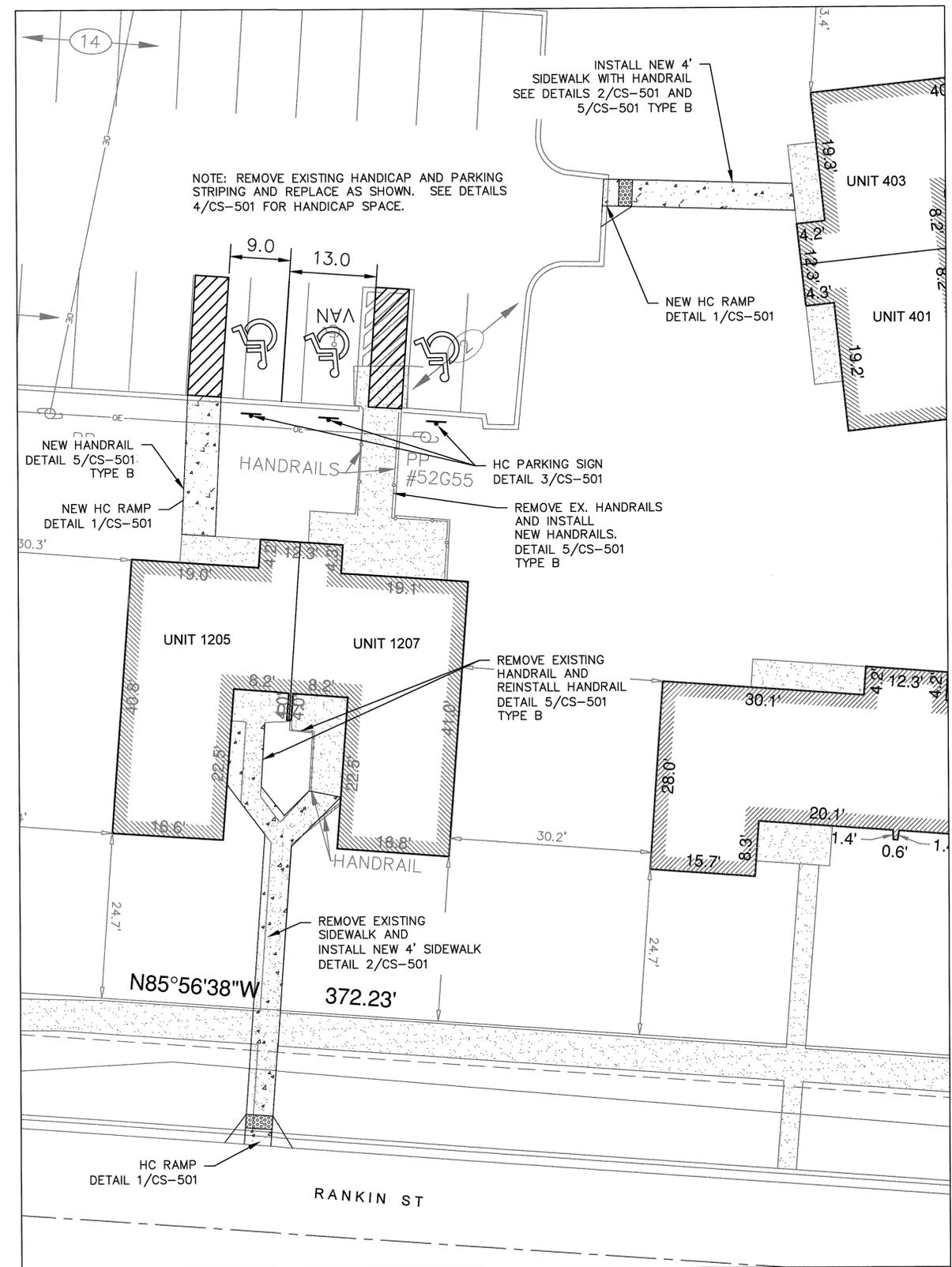
JUNE 30, 2014

ISSUED FOR  
 PERMITTING  
**CS-503**



**1** UNITS 1211 AND 1213 ADA UPGRADES  
 CS-503 NOT TO SCALE

1 inch



**2** UNITS 1205, 1207, AND 403 ADA UPGRADES  
 CS-503 NOT TO SCALE

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

**Approved Construction Plan**

Name	Date
Planning	
Traffic	
Fire	

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

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

**ENGINEER:**  
 McKim & Creed, Inc.  
 243 N Front St.  
 Wilmington, NC 28401  
 (910)-343-1048

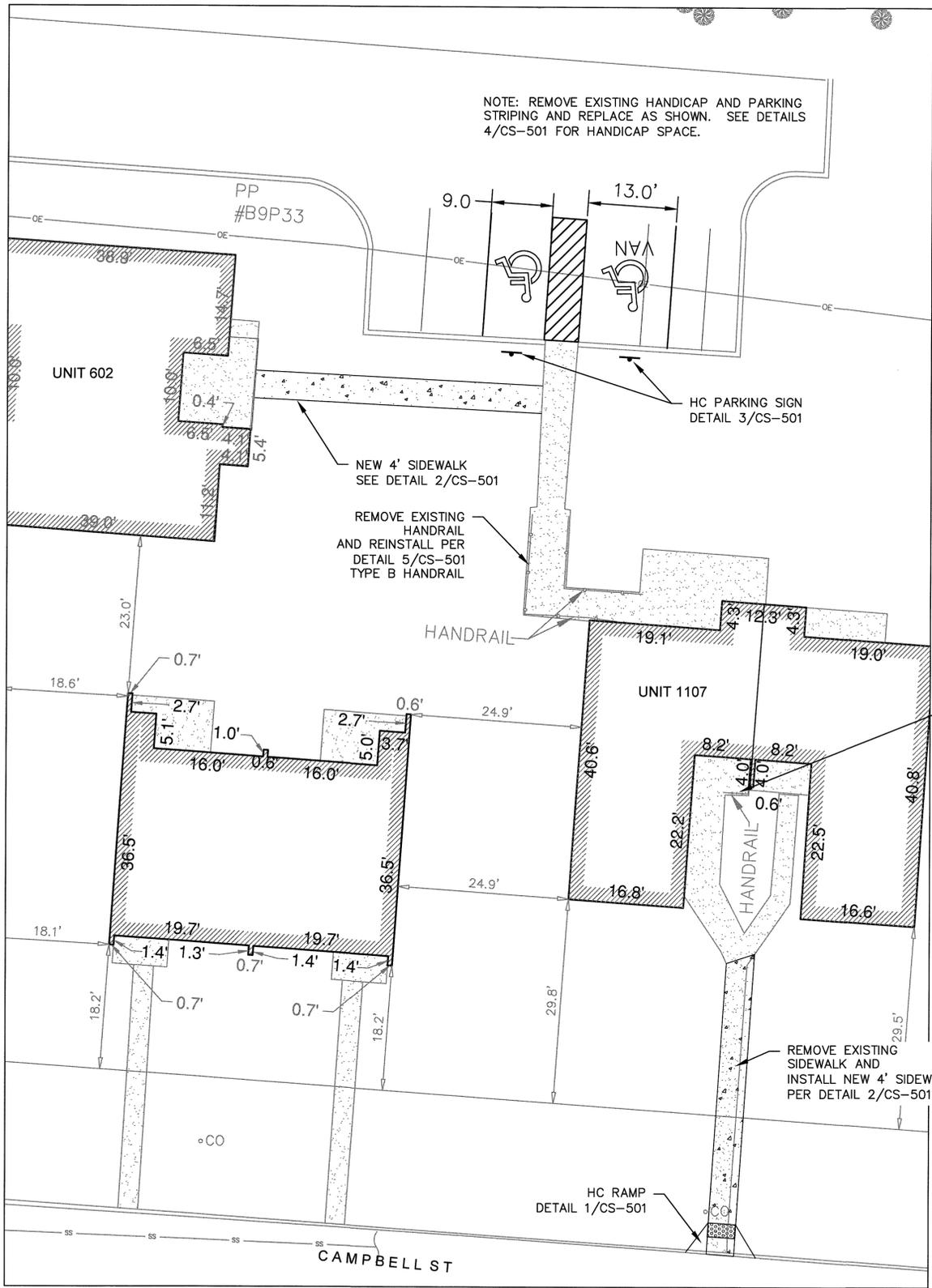
**OWNER:**  
 Wilmington Housing  
 Authority  
 1524 S 16th St.  
 Wilmington, NC 28401

**RANKIN PLACE TERRACE  
 APARTMENTS REHAB**  
 WILMINGTON HOUSING AUTHORITY  
 WILMINGTON, NORTH CAROLINA

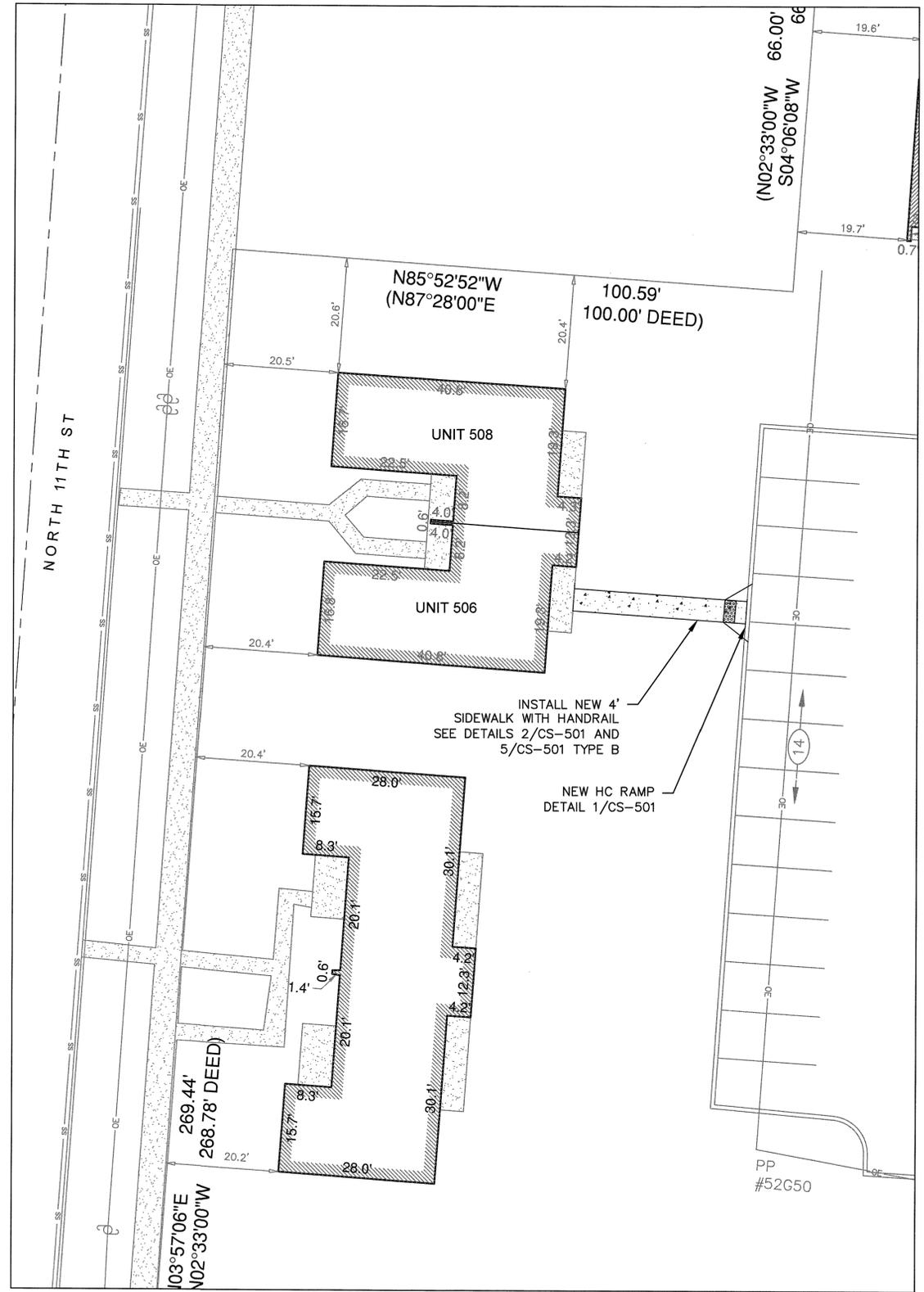


PROJECT 1129  
**SITE INVENTORY  
 LARGER SCALE  
 PLANS**  
 JUNE 30, 2014

ISSUED FOR  
 PERMITTING  
**CS-504**



**1** UNITS 602 AND 1107 ADA UPGRADES  
 CS-504 NOT TO SCALE



**2** UNIT 506 ADA UPGRADES  
 CS-504 NOT TO SCALE

1 inch

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

**Approved Construction Plan**

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

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

**CITY OF WILMINGTON**  
 NORTH CAROLINA

Public Services • Engineering Division

APPROVED DRAINAGE PLAN

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

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