

# CONSTRUCTION PLANS

## GOVERNMENT RESOURCE CENTER

### 123 CARDINAL DRIVE EXTENSION

### SITE PLAN

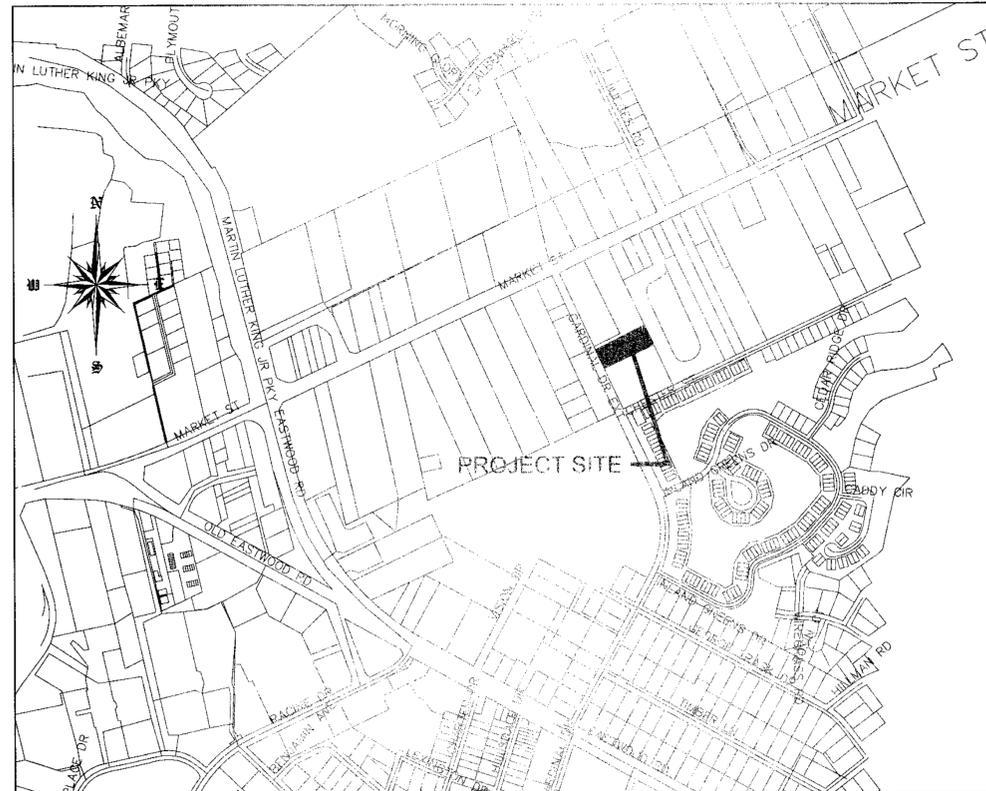
**NOTES**

1. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING (IF REQUIRED) WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION.
2. ANY TREES AND/OR AREAS DESIGNATED TO BE PROTECTED MUST BE PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING, GRADING OR STAGING OF MATERIALS OCCUR IN THOSE AREAS.
3. NO EQUIPMENT IS ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING IS INSTALLED AND APPROVED. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, AND CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION METHODS.
4. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS OF WAY AND FOR DRIVEWAY ARE TO BE THERMO PLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
5. ONCE STREETS ARE OPEN TO TRAFFIC, CONTACT TRAFFIC ENGINEERING REGARDING THE INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET SIGN NAMES.
6. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD STANDARDS AND BE MAINTAINED BY THE OWNER.
7. CONTACT TRAFFIC ENGINEERING AT 910-341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.
8. TRAFFIC ENGINEERING TO BE NOTIFIED AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
9. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.
10. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN PARKING AREAS SHALL BE WHITE. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS OF WAY FOR DRIVEWAY ARE TO BE THERMO PLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
11. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT OF WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER.
12. STOP SIGNS AND STREET SIGNS TO REMAIN IN PLACE DURING CONSTRUCTION.
13. TACTILE WARNING MATS WILL BE INSTALLED ON ALL WHEEL CHAIR RAMPS.
14. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET.
15. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING WILL BE REPLACED.
16. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
17. WATER AND SEWER SERVICE SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY DETAILS AND SPECIFICATIONS.
18. PROJECT SHALL COMPLY WITH CFPWA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METERS CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL.
19. IF THE CONTRACTOR DESIRES CFPWA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST SUPPLY A RPZ BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
20. ANY IRRIGATION SYSTEM SUPPLIED BY CFPWA SHALL COMPLY WITH THE CFPWA CROSS CONNECTION REGULATIONS.
21. ANY IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN AND FREEZE SENSOR.
22. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CFPWA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCCOHR.
23. CONTRACTOR TO FILED VERIFY EXISTING WATER AND SEWER LOCATIONS, SIZES AND MATERIALS PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED OF CONFLICTS.
24. AN ALL WEATHER DRIVING SURFACE FOR EMERGENCY VEHICLES MUST BE MAINTAINED DURING CONSTRUCTION.
25. UNDERGROUND FIRE LINE(S) MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC ROW TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-341-0656.
26. NO OBSTRUCTIONS ARE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES AND TEN (TEN) FEET ABOVE THE GROUND WITHIN THE TRIANGLE SIGHT DISTANCE.
27. CONTRACTOR IS TO NOTIFY (AT A MINIMUM) THE FOLLOWING COMPANIES FOR LOCATION SERVICES:  
 ULOCO .....1-800-632-4949, 48 HOURS IN ADVANCE  
 BELL SOUTH.....1-800-392-8712 (STEVIE DAYVAULT)  
 CAROLINA ONE CALL CENTER 1-800-632-4949
28. THERE SHALL BE NO ENCUMBRANCES WITHIN THE NCDOT RIGHT OF WAY.
29. A LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT (SD 15-14 CoFw TECH STDS)
30. FIRE HYDRANTS CANNOT BE FURTHER THAN 8' FROM THE CURB.
31. PARKING AND LANDSCAPING CANNOT BLOCK FIRE HYDRANTS OF FDC'S
32. FDC'S CAN BE NO FURTHER THAN 40' FROM FIRE DEPARTMENT VEHICLE PLACEMENT
33. FDC'S CAN BE NO FURTHER THAN 150' FROM A FIRE HYDRANT
34. BICYCLE PARKING IS PROVIDED ON THE SOUTHWEST CORNER OF PROPOSED BUILDING

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

STORMWATER MANAGEMENT PLAN	
APPROVED	
CITY OF WILMINGTON	
ENGINEERING DEPARTMENT	
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.



SCALE 1" = 600'  
**VICINITY MAP**  
**FEBRUARY, 2015**  
**REVISED MARCH, 2016**

**LIST OF DRAWINGS**

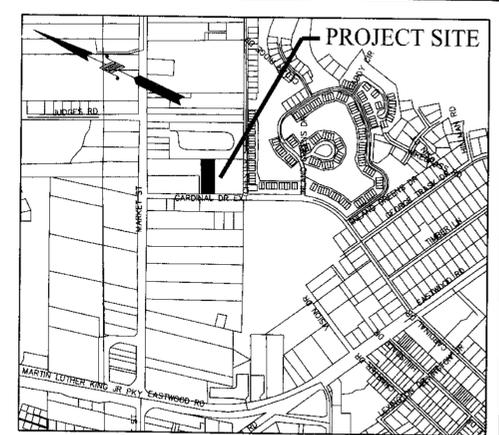
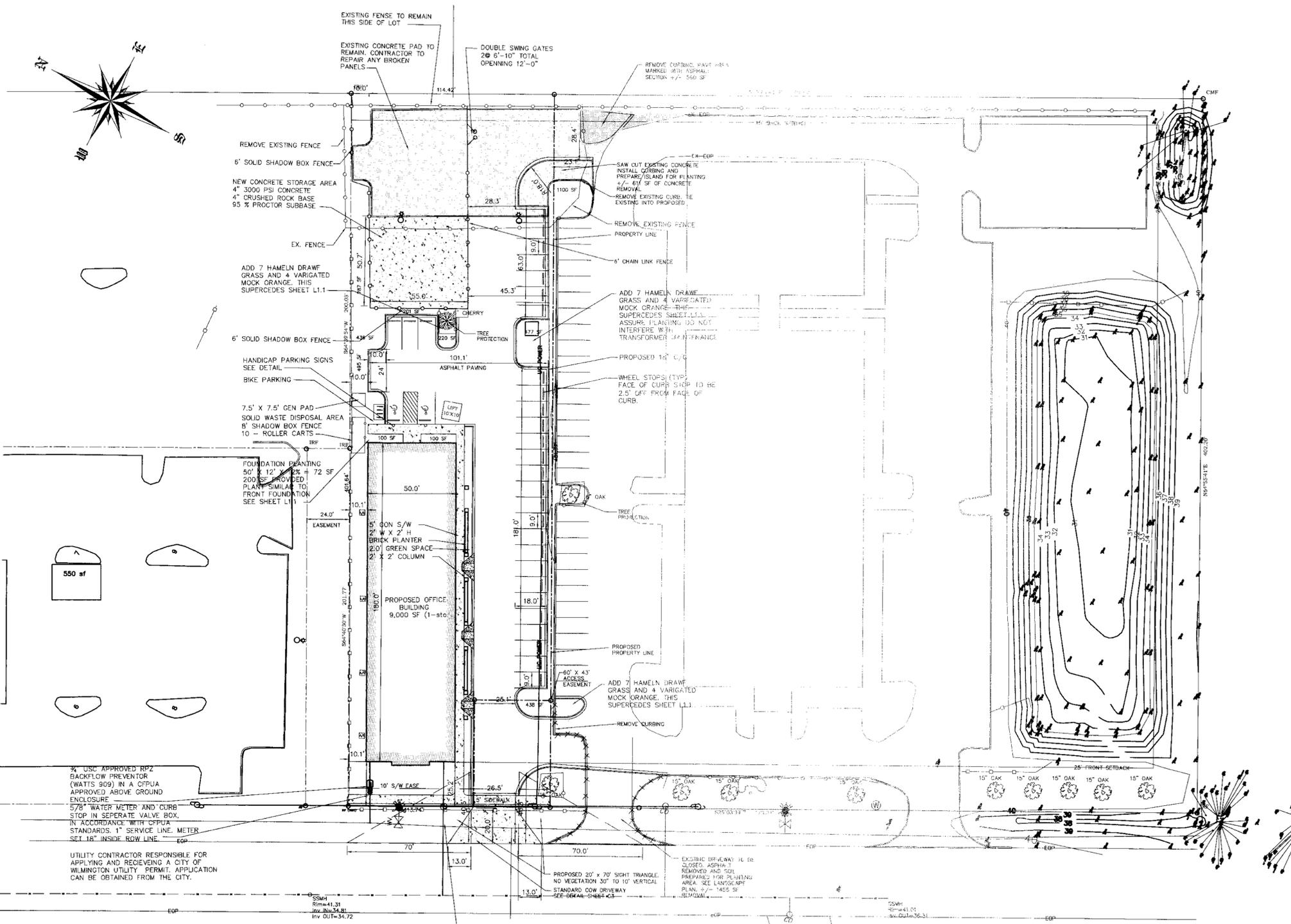
XX	COVER SHEET
C1	SITE PLAN
C2	GRADING, DRAINAGE & EROSION CONTROL
C2A	STORM DETAILS
C3	DETAILS
C4	TREE SURVEY
C5	DRAINAGE BASINS
L1	LANDSCAPE PLAN
A201	PRELIMINARY BLDG ELEVATION & PLAN VIEW
WSD-1	CFPUA WATER - STANDARD DETAILS
SSD-2	CFPUA SEWER - STANDARD DETAILS

**OWNER/DEVELOPER**  
**CARD HOLDINGS, LLC**  
**MR. EARL WORSLEY**  
**1135 MILITARY CUTOFF**  
**WILMINGTON, NC 28405**  
**1-910-256-0044**

**CIVIL ENGINEER**  
**JBS CONSULTING, PA**  
**BRAD SEDGWICK, PE**  
**7332 COTESWORTH DRIVE**  
**WILMINGTON, NC 28405**  
**1-910-619-9990**

**SURVEYOR**  
**GEOINNOVATION, PC**  
**MR. DEAN EXLINE, PLS**  
**311 JUDGES ROAD**  
**SUITE 3D**  
**WILMINGTON, NC 28405**  
**1-910-367-2110**





VICINITY MAP  
NTS

**SITE DATA**

ADDRESS ..... 123 CARDINAL DRIVE EXTENSION  
WILMINGTON, NC 28405

PARCEL ID NUMBERS ..... R05010-001-022-000

DEED BOOK & PAGE ..... D.B. 5295 PG. 293

MAP BOOK & PAGE ..... M.B. 60 PG. 239

ZONING ..... RB-REGIONAL BUSINESS  
CITY OF WILMINGTON

TOTAL LOT AREA ..... 4.42 ACRES

CAMA LAND USE CLASSIFICATION .. URBAN

PROPOSED USE.....OFFICE

NUMBER OF BUILDINGS ..... 1 PROPOSED 1 EXISTING

BUILDING SQUARE FOOTAGE

TOTAL..... 9,000 SF

RB - REGIONAL BUSINESS

	REQUIRED	PROPOSED
MIN. LOT AREA	1 ACRE	1.04 ACRES
MIN. LOT WIDTH	100'	113.74'
MAX. LOT COVERAGE	40%	20.05% (9000/45,302)
FRONT BUILDING SETBACK	25'	25'
REAR BUILDING SETBACK	25'	30'
SIDE BUILDING SETBACK	0'	10.25'
MAX. BUILDING HEIGHT	35'	EAVE HEIGHT = 11' PEAK HEIGHT = 21.5'

**PARKING REQUIREMENTS**

NUMBER OF SPACES ..... 1 PER 300 MIN (9000/300) = 30 SPACES  
1 PER 200 MAX (9000/200) = 45 SPACES

PROPOSED SPACES.....30 SPACES + 2 H/C = 32

**BUA CALCULATIONS**

NCDENR PERMIT SW8 920211 (EXISTING)	124,200 SF ALLOWABLE BUA
PRE PROJECT BUA	83,706 SF
CONCRETE PAD REMOVED	-611 SF
DRIVEWAY APRON REMOVED	-1,465 SF
PRO. CONCRETE PAD	2,761 SF
PRO. BUILDING	9,000 SF
PRO. CONCRETE SIDEWALK	2,002 SF
PRO. ASPHALT	16,908 SF
FUTURE DEVELOPMENT (REMAINING IN PERMIT)	10,000 SF
SUB TOTAL	40,761 SF
EXISTING + PROPOSED	122,401 SF
PRO CONCRETE IN ROW	790 SF

% IMPERVIOUS (122,401/192,730) ..... 64%

**OVERLAY DISTRICTS**

THE SITE IS NOT IN A KNOWN OVERLAY DISTRICT

**FLOOD INFORMATION**

PER FLOOD MAP 3720.3314800J THIS SITE IS IN A "X" ZONE.

STORMWATER - THIS SITE IS COVERED UNDER AN EXISTING NCDENR STORMWATER PERMIT # SW8 920211 AND OFF-SITE SUPPLEMENT SW8 970715. ACCORDING TO THE PERMIT THERE IS EXTRA ALLOWABLE BUA ALLOWED FOR THIS DEVELOPMENT. THIS DEVELOPMENT CAN BE COVERED BY THE EXTRA ALLOWABLE BUA IN THE PERMIT. PERMIT FROM CITY OF WILMINGTON WILL BE REQUESTED.

**WATER/SEWER INFO**

GENERAL OFFICE 25 GPD/EMPLOYEE/SHIFT  
3 EMPLOYEES/4 OFFICES/1 SHIFT = 300 GPD

WATER USE - CURRENT - 0 GPD  
WATER USE - PROPOSED - 300 GPD  
SEWER USE - CURRENT - 0 GPD  
SEWER USE - PROPOSED - 300 GPD

DESIGN BY: BOS  
DRAWN BY: BOS  
CHECKED BY: BOS  
DATE: FEBRUARY, 2015

JBS CONSULTING, PA  
7332 Coresworth Drive  
Wilmington, NC 28045  
(910) 619-9990  
LICENSE NUMBER C-2525



**SITE PLAN**  
**GOVERNMENT RESOURCE CENTER**  
123 CARDINAL DRIVE EXTENSION  
WILMINGTON, NORTH CAROLINA 28405

**CARD HOLDINGS, LLC**  
1135 MILITARY CUTOFF ROAD  
WILMINGTON, NC 28405  
1-910-256-0044

SHEET  
**C1**  
of 6  
JOB NO. 051-004

NO.	DATE	REVISION
1	5-22-16	REVISED PER TRC VERSION 1.1 COMMENTS
2	5-23-16	REVISED PER PLANNING AND TRAFFIC COMMENTS
3	5-24-16	REVISED PER PLANNING AND TRAFFIC COMMENTS
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Approved Construction Plan

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

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

STORMWATER MANAGEMENT PLAN  
**APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT

DATE \_\_\_\_\_ PERMIT # \_\_\_\_\_

SIGNED \_\_\_\_\_

PROPOSED  
4" SEWER SERVICE MAIN  
DRY/COMPACTED SORE UNDER PAVEMENT  
SEE DETAIL SHEET SSD-2  
CLEANOUT SET 18" INSIDE ROW

**SITE PLAN**  
SCALE 1" = 30'



NO WETLAND WITHIN PROJECT AREA

**LEGEND**

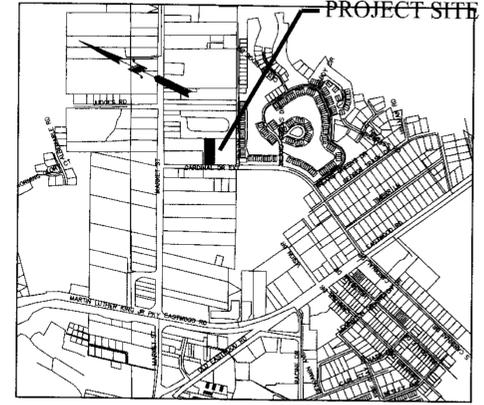
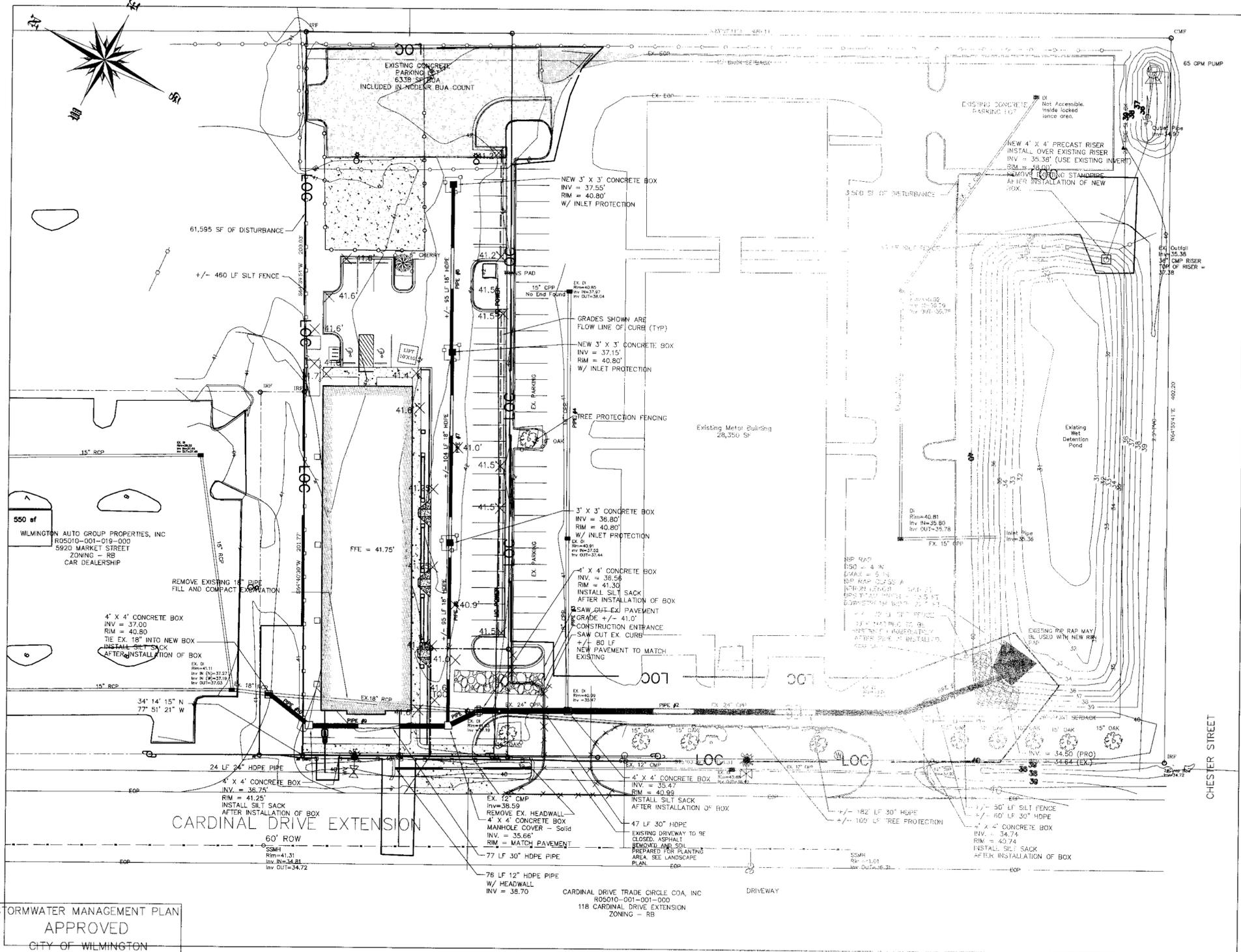
PRO. ASPHALT PAVEMENT	[Symbol]
EX. SPOT ELEVATION	-29
PROPOSED SPOT ELEVATION	x 33.33
SILT FENCE	[Symbol]
TREE PROTECTION FENCE	[Symbol]
PRO. CONC. PAVEMENT	[Symbol]

- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES**
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GAURDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
  - SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY. SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR OR ORIGINATE IN MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
  - ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
  - MINIMUM 10' UTILITY EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
  - NO FLEXIBLE COUPLINGS SHALL BE USED.
  - ALL STAINLESS STEEL FASTENERS SHALL BE 316.

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

NO WETLAND WITHIN PROJECT AREA





**GRADING NOTES**

1. INITATE EROSION CONTROL. SEQUENCE BEFORE BEGINNING CLEARING, GRUBBING AND GRADING OPERATIONS.
2. CLEAR AREAS TO BE GRADED OF ALL VEGETATION. PROTECT VEGETATION BEYOND GRADING LIMITS.
3. STRIP TOPSOIL TO FULL DEPTH IN AREAS TO BE GRADED AND STOCKPILE.
4. COMPACT ALL FILL AREAS TO 95% OF MAXIMUM DENSITY.
5. ALL BANKS AND SWALE SIDE SLOPES SHALL BE GRADED WITH NO GREATER THAN 3:1 SLOPES.
6. ALL AREAS ARE TO BE GRADED SO THAT NO AREAS OF STANDING WATER OCCUR.
7. PROPOSED SPOT ELEVATIONS ARE SHOWN AT FINISHED GRADE.
8. OPERATOR SHALL FIELD VERIFY EXISTING TOPOGRAPHY IN RELATION TO THE PROPOSED GRADES TO ENSURE DRAINAGE IN THE DIRECTIONS INDICATED ON THE PLAN.

**CONSTRUCTION SEQUENCE**

1. OBTAIN ALL NECESSARY PERMIT APPROVALS PRIOR TO ANY LAND DISTURBING ACTIVITY.
2. HOLD A PRE-CONSTRUCTION MEETING WITH THE EROSION CONTROL INSPECTOR.
3. INSTALL GRAVEL CONSTRUCTION ENTRANCE AND SILT FENCE. COMMENCE CLEARING AND ROUGH GRADING OPERATIONS TO ESTABLISH DIVERSION SWALES AND SEDIMENT TRAPS AND BASIN.
4. ROUGH GRADE SITE AND INSTALL UNDERGROUND UTILITIES.
5. PROVIDE TEMPORARY PROTECTION MEASURES AND DEVICES AS REQUIRED UNTIL UNDERGROUND UTILITIES AND PAVEMENT SECTION IS COMPLETE AND FINAL GRADES ARE STABILIZED WITH TEMPORARY VEGETATIVE COVER.
6. STABILIZE (FERTILIZE, SEED, AND MULCH) ALL DISTURBED AREAS AS SOON AS FINAL GRADES ARE ESTABLISHED.
7. ONCE CONSTRUCTION IS COMPLETE AND ALL DISTURBED AREAS ARE STABILIZED, REMOVE TEMPORARY EROSION CONTROL MEASURES.

**EROSION CONTROL MAINTENANCE PLAN**

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RAINFALL - PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. INSPECT SEDIMENT TRAPS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT, AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN DESIGNATED DISPOSAL AREA, AND REPLACE THE PART OF THE GRAVEL FACING THAT IS IMPAIRED BY SEDIMENT.
3. SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES ABOUT 0.5 FEET DEEP AT THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED OR REPLACED AS NECESSARY TO MAINTAIN A BARRIER.
4. ALL AREAS WILL BE FERTILIZED, RESEED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
5. GRAVEL CONSTRUCTION ENTRANCE TO BE CLEANED WHEN SEDIMENT ACCUMULATIONS ARE VISIBLE OR SEDIMENT IS DEPOSITED ON THE ASPHALT AND STONE WILL BE PERIODICALLY TOP DRESSED WITH 2 INCHES OF #4 STONE TO MAINTAIN 6 INCH DEPTH.
6. INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (3" OR GREATER) RAINFALL EVENT. CLEAR THE WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REPLACE STONE AS NEEDED.

**EROSION CONTROL NOTES**

1. ANY CONSTRUCTION ACTIVITY BEYOND THE 1.5 ACRE LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO FINES.
2. CONTRACTOR SHALL REMOVE ALL TREES AND VEGETATION WITHIN ROAD RIGHT OF WAYS UNLESS OTHERWISE DESIGNATED TO REMAIN.
3. CONTRACTOR SHALL RAKE AND REMOVE ROOTS, STUMPS, VEGETATION, DEBRIS, EXISTING STRUCTURES ABOVE AND BELOW GRADE, ORGANIC MATERIAL OR ANY OTHER UNSUITABLE MATERIAL WITHIN THE LIMITS OF CONSTRUCTION.
4. CONTRACTOR SHALL COORDINATE WITH OWNER AND THEIR GEOTECHNICAL REPRESENTATIVE TO COORDINATE REMOVAL OF ANY UNSUITABLE SOILS.
5. CLEARED, GRUBBED, STRIPPED OR OTHER WASTE MATERIALS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A PROPERLY PERMITTED FACILITY.
6. THE CONTRACTOR SHALL FURNISH ANY REQUIRED BORROW MATERIALS FROM A PROPERLY PERMITTED OFF-SITE FACILITY.
7. ALL GRADED SLOPES MUST BE SEED AND MULCHED WITHIN 21 CALENDAR DAYS OF COMPLETION OF GRADING. STABILIZE AREAS OTHER THAN SLOPES WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS, WHICHEVER IS SHORTER.
8. ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY A REPRESENTATIVE OF THE COUNTY ENGINEERING DEPARTMENT.
9. SLOPES SHALL BE GRADED NO STEEPER THAN 3:1.
10. ADDITIONAL DEVICES MAY BE REQUIRED AS AGREED UPON BY THE FIELD INSPECTOR, ENGINEER, AND OWNER.
11. IF ACTIVE CONSTRUCTION CEASES IN ANY AREA FOR MORE THAN 15 CALENDAR DAYS, ALL DISTURBED AREAS MUST BE SEED, MULCHED, AND TACKED.

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

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

**GRADING, DRAINAGE, EROSION CONTROL**  
 SCALE 1" = 30'

1. INSPECT SKIMMER SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BATTLE. FULL THE SKIMMER TO ONE OVER TO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER.

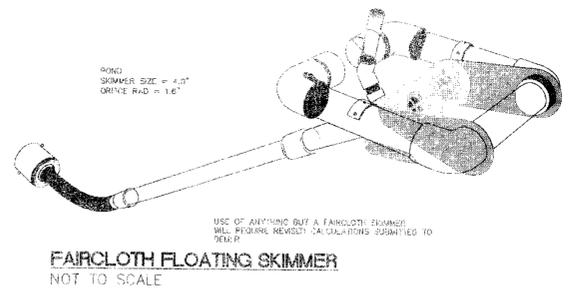
REPAIR THE BATTERIES IF THEY ARE DAMAGED. RE-ANCHOR THE BATTERIES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM.

IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERRING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED. IF SO REMOVE DEBRIS.

IF THE SKIMMER ARM OR BARRIL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE TO REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER.

CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE AND INSPECT THE EMBANKMENT FOR PONDING AND SETTLEMENT. MAKE ANY NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER POOL AREA.

FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.



**LEGEND**

PRO. ASPHALT PAVEMENT	[Symbol]
EX. CONTOUR	-29
PROPOSED SPOT ELEVATION	x 33.33
SILT FENCE	[Symbol]
TREE PROTECTION FENCE	[Symbol]
PRO. CONC. PAVEMENT	[Symbol]
JUTE MATTING	[Symbol]
INLET PROTECTION	[Symbol]

**NO WETLAND WITHIN PROJECT AREA**  
 SCALE: 1" = 30' (Horiz.)

REVISION	DATE	BY	DESCRIPTION



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

DESIGNED BY: BDS  
 DRAWN BY: BDS  
 CHECKED BY: BDS  
 DATE: FEBRUARY, 2015

**JBS CONSULTING, PA**  
 7332 Colesworth Drive  
 Wilmington, NC 28045  
 (910) 619-9990  
 LICENSE NUMBER C-2525  
 PLANNING - ENGINEERING - PROJECT MANAGEMENT

**GRADING, DRAINAGE, EROSION CONTROL**

**GOVERNMENT RESOURCE CENTER**  
 127 CARDINAL DRIVE EXTENSION  
 WILMINGTON, NORTH CAROLINA 28405

**CARD HOLDINGS, LLC**  
 1135 MILITARY CUTOFF ROAD  
 WILMINGTON, NC 28405  
 1-910-256-0044

SHEET  
**C2**  
 of 6  
 JOB NO. 051-004

DRAWN BY: BDS  
 CHECKED BY: BDS  
 DATE: NOVEMBER, 2015

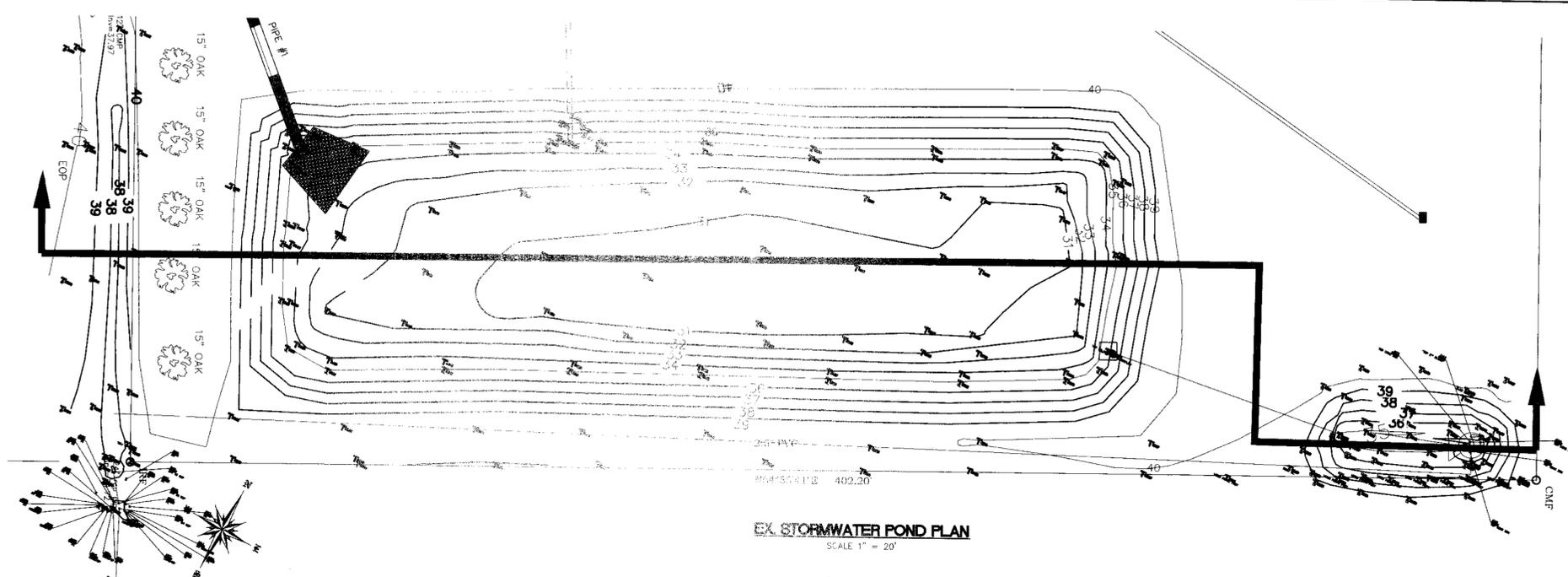
**JBS**  
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 PLANNING - ENGINEERING - PROJECT MANAGEMENT



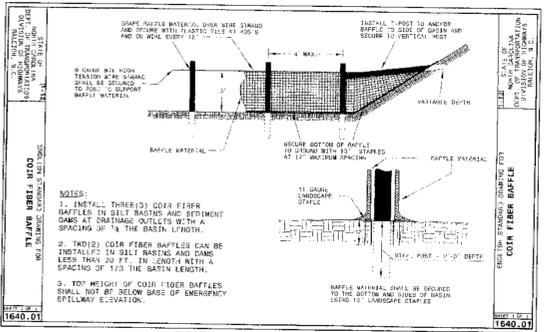
**STORMWATER DETAILS**  
 GOVERNMENT RESOURCE CENTER  
 127 CARDINAL DRIVE EXTENSION  
 WILMINGTON, NORTH CAROLINA 28405

**CARD HOLDINGS, LLC**  
 1135 MILITARY CUTOFF ROAD  
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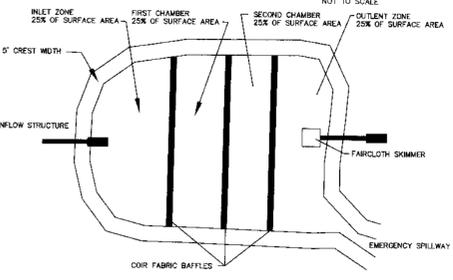
SHEET  
**C2A**  
 JOB NO. 051-004



**EX. STORMWATER POND PLAN**  
 SCALE 1" = 20'



**COIR FABRIC BAFFLE DETAIL**



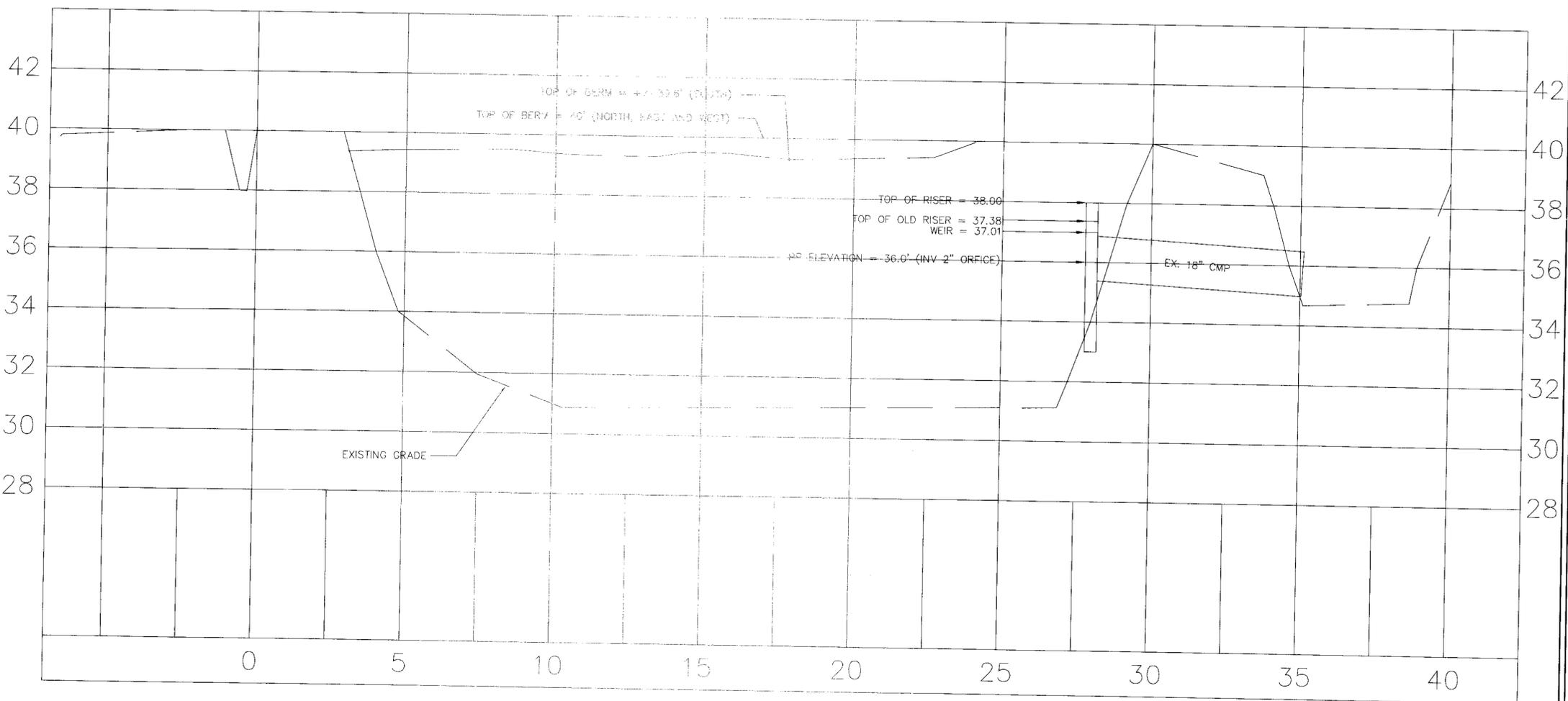
**BAFFLES IN SEDIMENTATION BASIN/SWM POND**  
 NOT TO SCALE

**BAFFLE MAINTENANCE PLAN**  
 INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.  
 BE SURE TO MAINTAIN ACCESS TO BAFFLES. SHOULD FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.  
 REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL. PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT, AND REPLACE IS DAMAGED DURING CLEANOUT OPERATIONS. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH.  
 AFTER THE CONTRIBUTING DRAINAGE BASIN IS STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO PERMITS GRADE, AND STABILIZE.

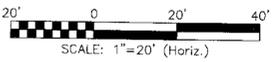
**STORMWATER MANAGEMENT PLAN**  
**APPROVED**  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE \_\_\_\_\_ PERMIT # \_\_\_\_\_  
 SIGNED \_\_\_\_\_

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

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



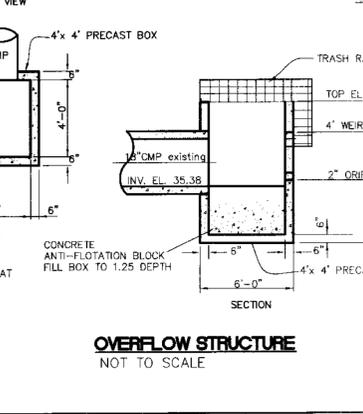
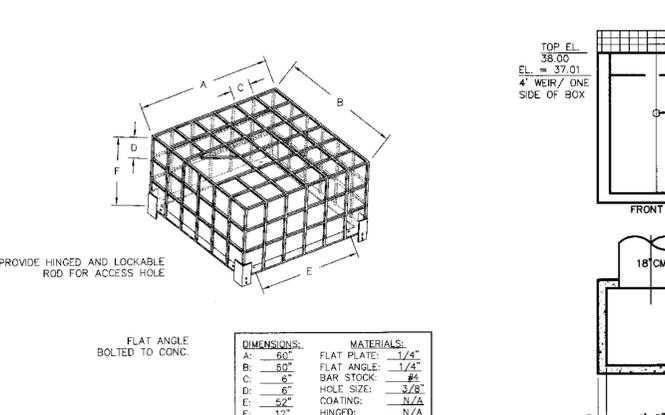
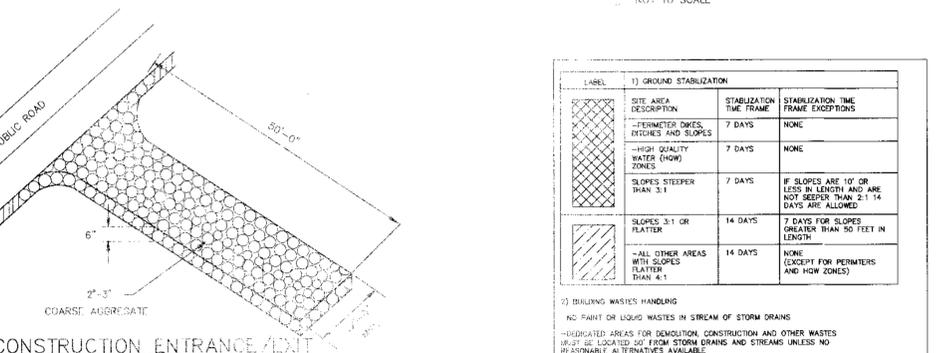
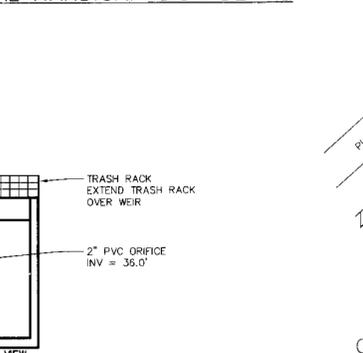
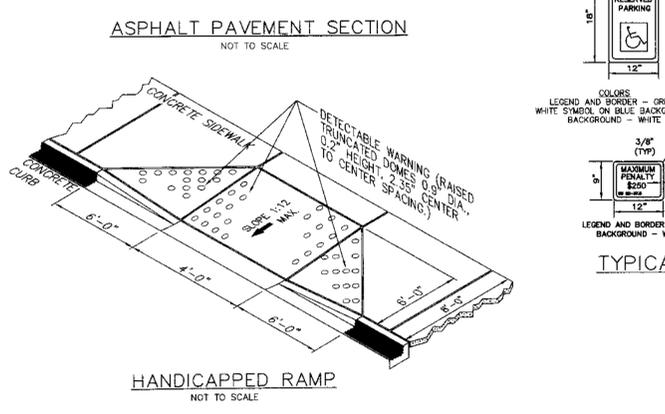
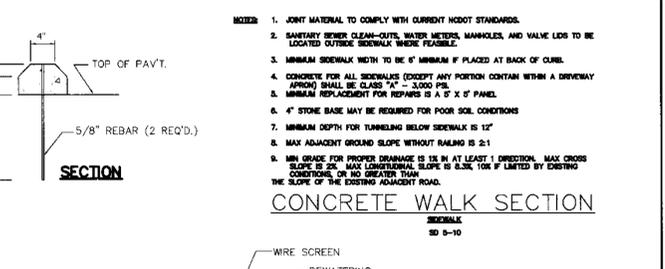
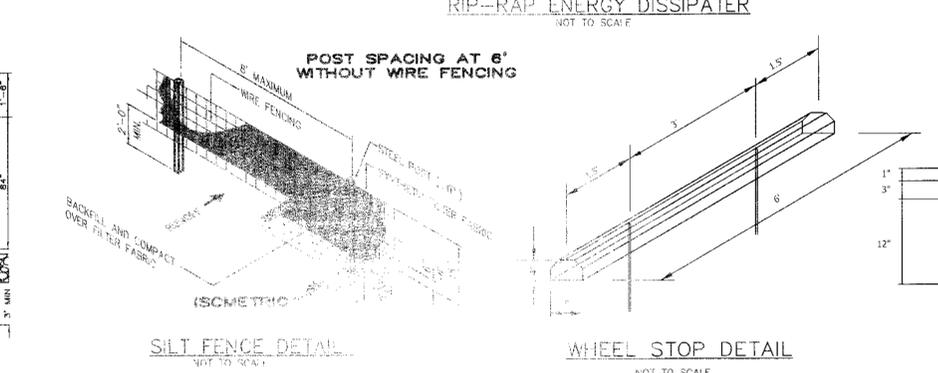
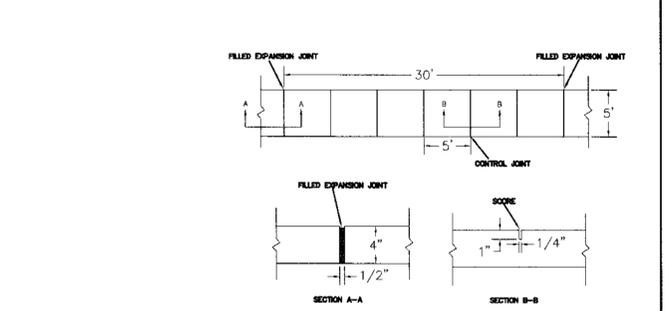
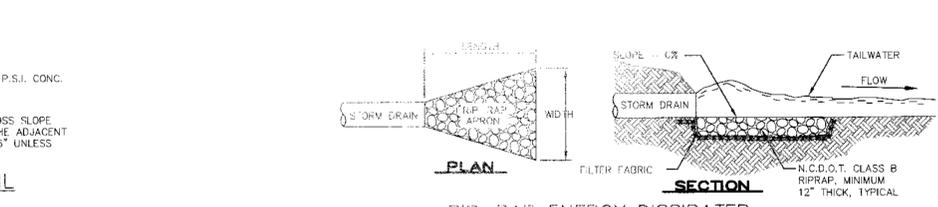
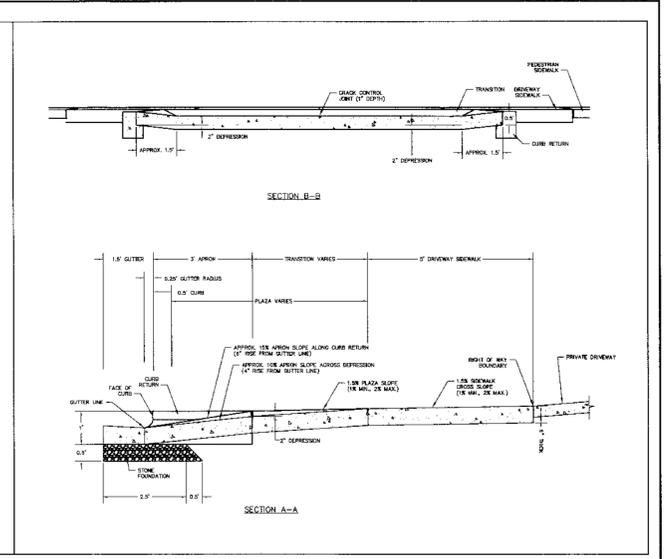
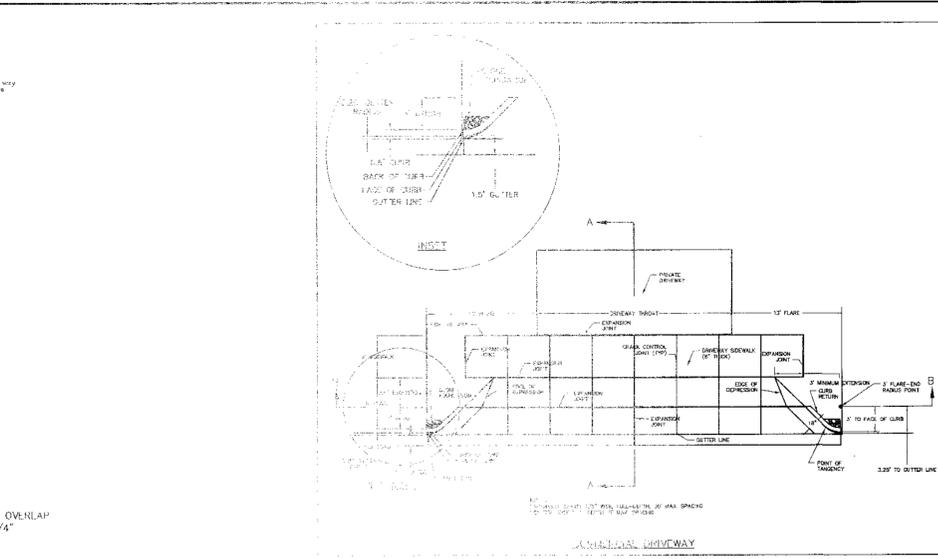
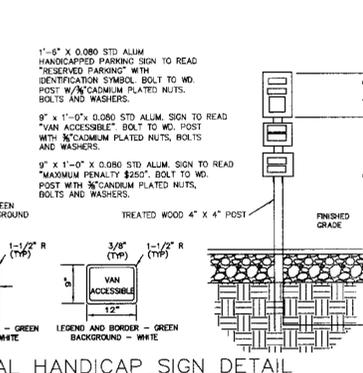
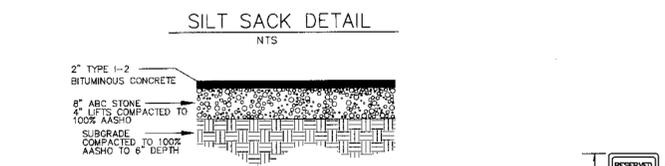
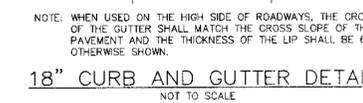
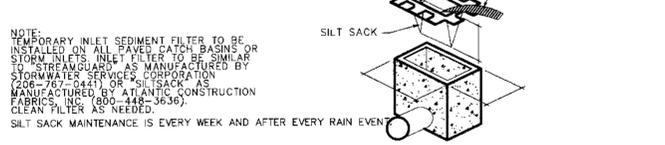
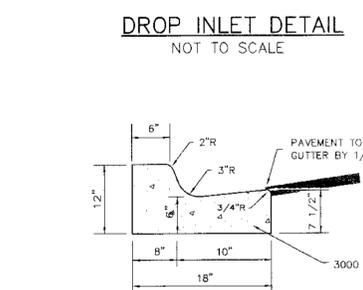
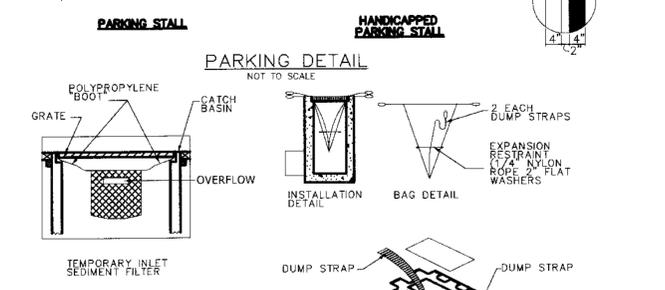
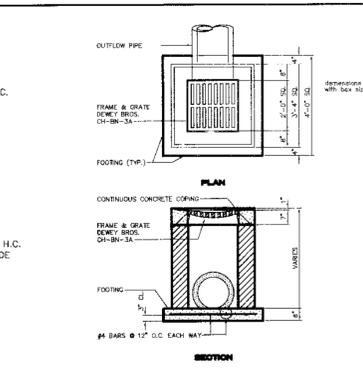
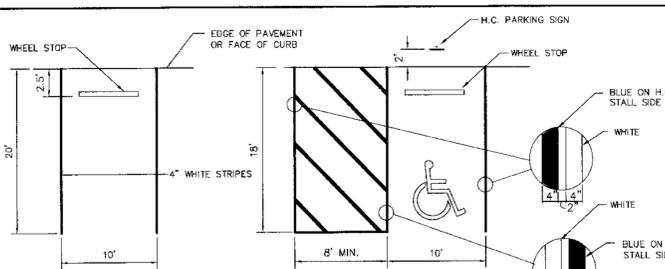
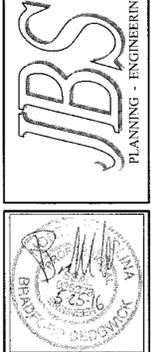
**EX. STORMWATER POND PROFILE**  
 SCALE 1" = 20' H  
 1" = 2' V



**NO WETLAND WITHIN PROJECT AREA**



NO.	DATE	REVISION	REVISION BY	COMMENTS
1	5/25/2016	10:08:35 AM		



Approved Construction Plan

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

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

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

File: \_\_\_\_\_

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

LABEL	1) GROUND STABILIZATION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
[Symbol]	SITE AREA DESCRIPTION	7 DAYS	NONE
[Symbol]	-FERMENTED DATES, DECIDUES AND SLOPES	7 DAYS	NONE
[Symbol]	-HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
[Symbol]	SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1 14 DAYS ARE ALLOWED
[Symbol]	SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH
[Symbol]	-ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERMITTERS AND HOW ZONES)

2) BULKING WASTES HANDLING

NO PAINT OR LIQUID WASTES IN STREAM OF STORM DRAINS

-DISGATED AREAS FOR DEMOLITION, CONSTRUCTION AND OTHER WASTES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO RESPONSIBLE ALTERNATIVES AVAILABLE

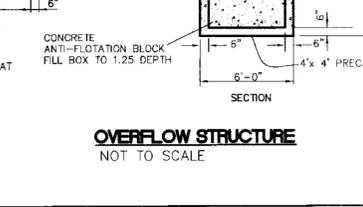
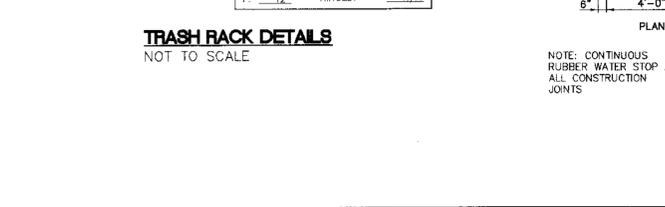
-PAINTS, MATERIALS STOCKPILES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO RESPONSIBLE ALTERNATIVES AVAILABLE

-CONCRETE MATERIALS MUST BE CONTROLLED TO AVOID CONTACT WITH STREAMS, WETLANDS, OR BUFFERS.

3) SEDIMENTATION

-FOLLOW RECENT INSPECTION REQUIREMENTS

-SAFETY SIGN GAUGE & INSPECTIONS AFTER 0.5\"/>



Approved Construction Plan

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

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

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

File: \_\_\_\_\_

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

1) SEDIMENTATION

1. THIS PAGE IS SUBMITTED TO COMPLY WITH NPDES GENERAL STORMWATER "P" PLAN REQUIREMENTS.

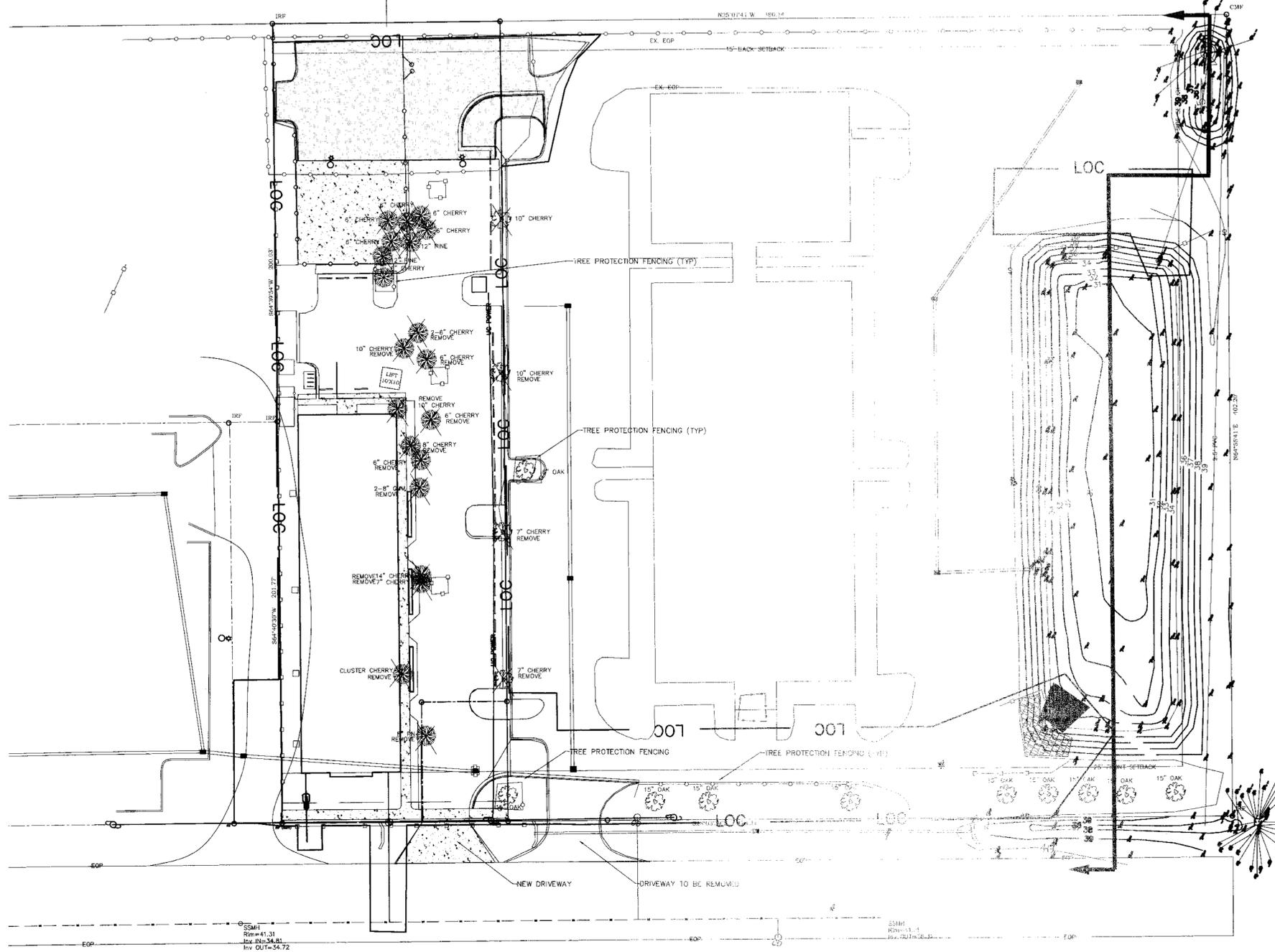
2. THIS PAGE CAN BE APPROVED BY THE COUNTY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NC0010000 ONLY.

3. THIS PAGE OF THE APPROVED PLANS IS ENFORCEABLE EXCLUSIVELY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NC0010000.

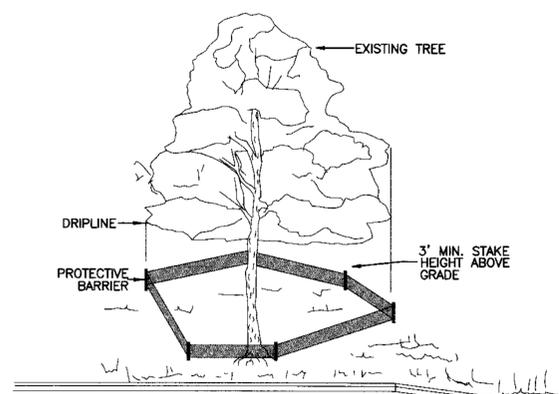
4. THE COUNTY IS NOT AUTHORIZED TO ENFORCE THIS PAGE OF THE PLANS AND IT IS NOT PART OF THE APPROVED PLANS FOR THE PURPOSES OF ENFORCEMENT ACTION UNDER THE CITY CODE.

REVISION	NUMBER	DATE
1	1	5-26-15
2	2	5-12-15
3	3	4-22-15

NO.	DATE	REVISION
15	3-25-16	REVISED PER TRC VERSION 4 COMMENTS
14	5-12-15	REVISED PER PLANNING AND TRAFFIC COMMENTS
13	4-22-15	SUBMITTED TO COM WITH TRC COMMENTS ADDRESSED
12		
11		
10		
9		
8		
7		
6		
5		
4		
3		
2		
1		

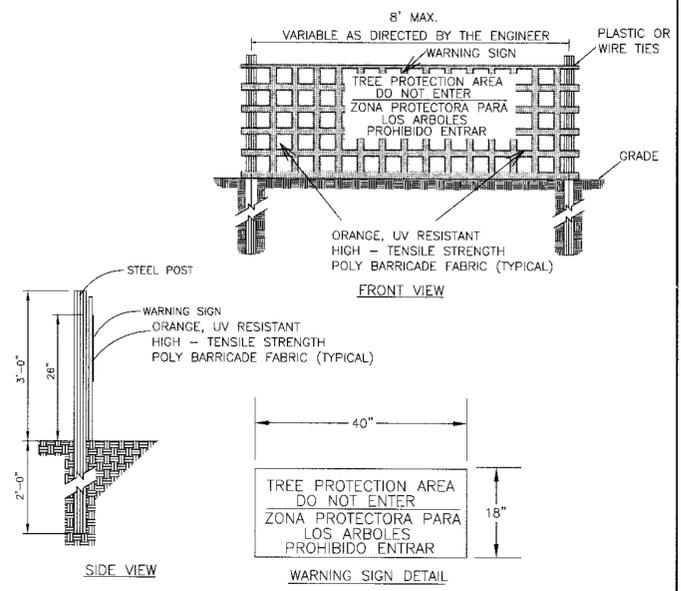


TREE INVENTORY MAP  
SCALE 1" = 30'



TREES TO BE SAVED WILL BE CLEARLY MARKED PRIOR TO CONSTRUCTION AND A PROTECTIVE BARRIER IS TO BE INSTALLED AT THE DRIPLINE.  
DRIPLINE - THE AREA OF SOIL DIRECTLY BENEATH THE TREE EXTENDING OUT TO THE TIPS OF THE OUTERMOST BRANCHES.  
CONTRACTOR TO COMPLY WITH COW SIGN ORDINANCE FOR MARKING FENCING

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



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

TREE PROTECTION DURING CONSTRUCTION  
SD 15-09  
NOT TO SCALE

DESIGN BY: BDS  
DRAWN BY: BDS  
CHECKED BY: BDS  
DATE: FEBRUARY, 2015

JBS CONSULTING, PA  
7332 Cotesworth Drive  
Wilmington, NC 28045  
(910) 619-9990  
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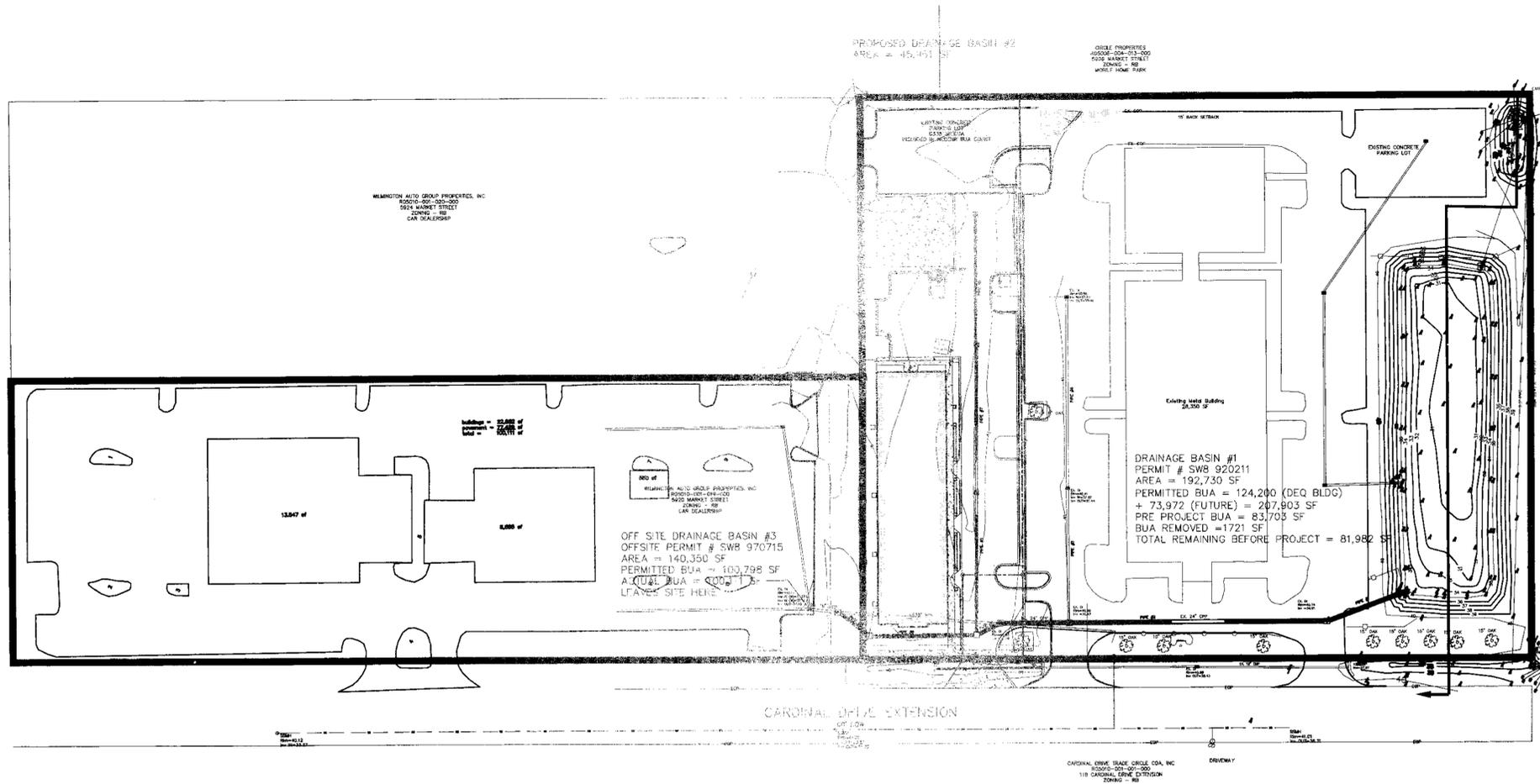
TREE INVENTORY MAP  
GOVERNMENT RESOURCE CENTER  
127 CARDINAL DRIVE EXTENSION  
WILMINGTON, NORTH CAROLINA 28405

CARD HOLDINGS, LLC  
1135 MILITARY CUTOFF ROAD  
WILMINGTON, NC 28405  
1-910-256-0044

SHEET  
C4  
JOB NO. 051-004

REVISION NUMBER	DATE	DESCRIPTION
R5	5/25/16	REVISED PER TRC VERSION 4 COMMENTS
R2	4/22/15	SUBMITTED TO COM WITH TRC COMMENTS ADDRESSED
R1		REVISION

5/25/2016 10:08:50 AM



DRAINAGE BASIN  
SCALE 1" = 50'

DESIGN BY:	BDS
DRAWN BY:	BDS
CHECKED BY:	BDS
DATE:	FEBRUARY, 2015

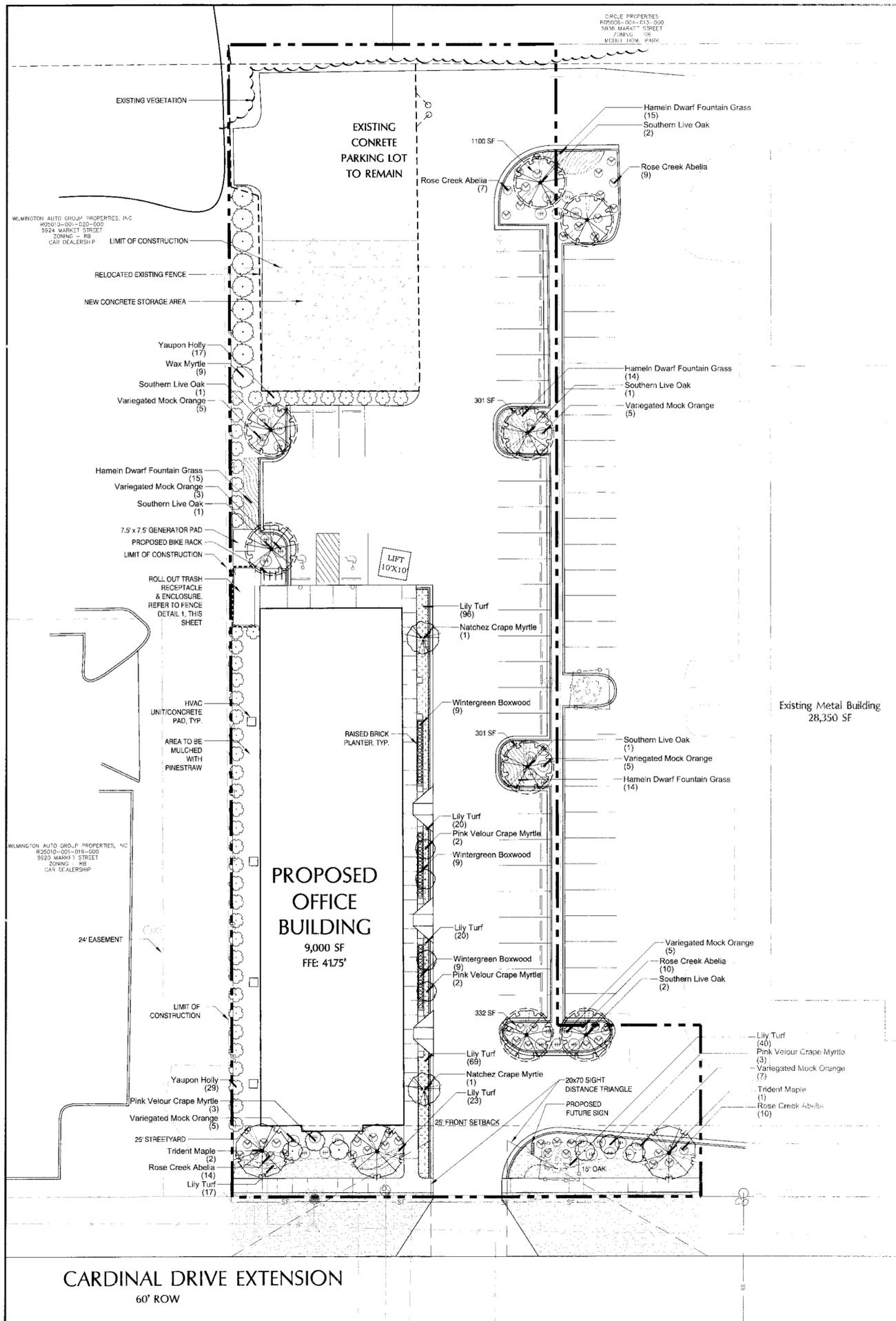
**JBS CONSULTING, PA**  
7332 Colesworth Drive  
Wilmington, NC 28045  
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**DRAINAGE BASIN**  
**GOVERNMENT RESOURCE CENTER**  
127 CARDINAL DRIVE EXTENSION  
WILMINGTON, NORTH CAROLINA 28405

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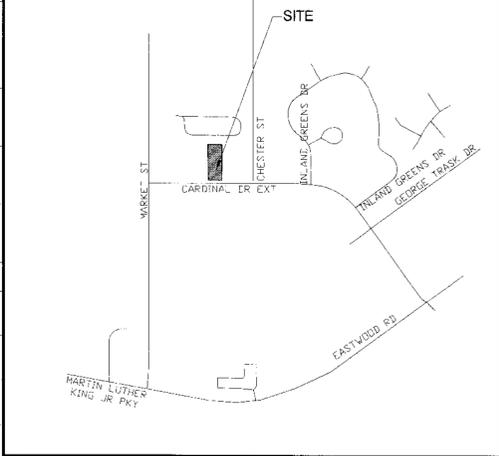
SHEET	C5
JOB NO.	051-004



**PLANT SCHEDULE**

TREES	BOTANICAL NAME / COMMON NAME	CONT	CAL	RANGE	HT	QTY
	Redbud (1) / Trident Maple	B & B	3" CAL	10-12'	HT	3
	Largemouth / Pink Veilour / Pink Veilour Cape Myrtle	25 GAL	1-1.5'	8-10'	HT	10
	Largemouth / Natchez / Natchez Cape Myrtle	B & B	3" CAL	8-10'	HT	2
	Quercus virginiana / Southern Live Oak	B & B	3" CAL	10-12'	HT	8
SHRUBS	BOTANICAL NAME / COMMON NAME	SIZE	RANGE	HT	QTY	
	Abelia x grandiflora / Rose Creek / Rosa Creek Abelia	3 gal	18-24"	HT	50	
	Buxus fl. / Wintergreen / Wintergreen Boxwood	3 gal	12-18"	HT	27	
	Yucca filamentosa / Yucca Holly	3 gal	18-24"	HT	46	
	Muhlenbergia / Wax Myrtle	7 gal	36"	HT	9	
	Prospiceum l. / Variegata / Variegated Mock Orange	3 gal	18-24"	HT	40	
SPREADER PLANTS	BOTANICAL NAME / COMMON NAME	SIZE	RANGE	HT	SPACING	QTY
	Crape Myrtle / Lily Turf	1 GAL	6-12"	HT	18" o.c.	285
	Prospiceum l. / Hameln / Hameln Dwarf Fountain Grass	3 GAL	12-15"	HT	36" o.c.	58
SOILS	BOTANICAL NAME / COMMON NAME	SIZE	RANGE	HT	SPACING	QTY
	Compost / Sod	sod				3,422 sf

**SITE MAP NOT TO SCALE**



**LANDSCAPE REQUIREMENTS**

ADDRESS:	123 CARDINAL DRIVE EXTENSION
PARCEL ID:	R05010-001-022-000
TOTAL LOT AREA:	1.06 ACRES
EXISTING ZONING:	RB - REGIONAL BUSINESS
CAMA LAND CLASSIFICATION:	URBAN
PROPOSED USE:	OFFICE
NUMBER OF BUILDINGS:	1; (4) 2,250 SF UNITS

STREET YARD*	REQUIRED	PROVIDED
PRIMARY STREET YARD (CARDINAL DRIVE EXT.)		
(140 LF X 25')	3500 SF	3500 SF
TREES: 3,500 SF/600	6	1 EXISTING, 3 CANOPY TREES, 6 UNDERSTORY TREES
SHRUBS: (3,500 /600)*6	36	36

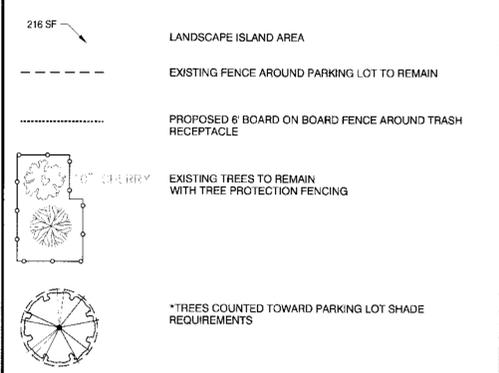
  

FOUNDATION PLANTINGS	REQUIRED	PROVIDED
(230 LF*12")*12	331 SF	528 SF

PARKING LOT SHADE REQUIREMENTS	REQUIRED	PROVIDED
16,496 SF* .20 =	3,299 SF	5,656 SF, 8 CANOPY TREES

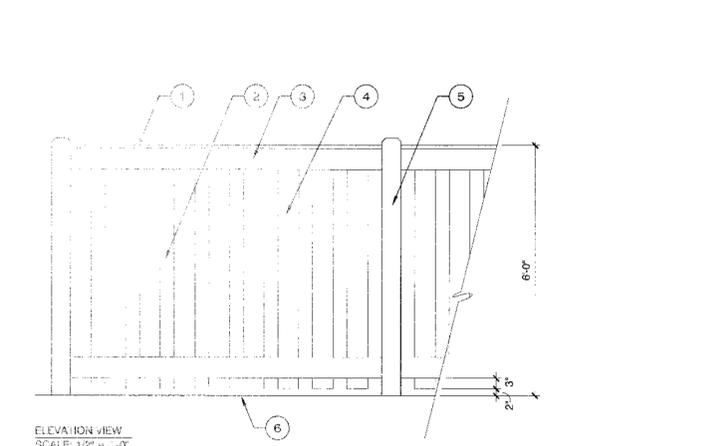
**SYMBOL LEGEND**



**GENERAL PLANTING NOTES**

- THIS WORK INCLUDES, BUT IS NOT LIMITED TO THE FURNISHING OF ALL LABOR, MATERIALS, EQUIPMENT, FINAL GRADING, SEEDING, SOIL AMENDMENTS, ETC., AS MAY BE REQUIRED FOR A COMPLETE INSTALLATION.
- QUANTITIES SHOWN IN PLANT LISTS ARE FOR CONVENIENCE ONLY. PLANS SHALL GOVERN.
- THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES IN PLANT LOCATIONS OR INSUFFICIENT PLANT QUANTITIES DUE TO DIFFERENCES IN PLAN AND ACTUAL FIELD CONDITIONS.
- ALL TREE AND SHRUB MATERIAL SPECIFIED MUST MEET STANDARD INDUSTRY SPECIFICATIONS FOR THE CONTAINER SIZE INDICATED. DOWNIZING OR SUBSTITUTION OF PLANT MATERIAL WITHOUT PRIOR APPROVAL OF LANDSCAPE ARCHITECT WILL NOT BE ALLOWED.
- ALL LANDSCAPE AREAS SHALL BE GRADED TO A SMOOTH EVEN SURFACE PRIOR TO ANY PLANT INSTALLATION. ALL PLANT MATERIALS SHALL BE INSTALLED USING GOOD HORTICULTURAL PRACTICES IN ACCORDANCE WITH THE PLANS AND DETAILS.
- TREES SHALL NOT BE PLANTED CLOSER THAN FOUR (4) FEET FROM ANY WALKWAY OR PUBLIC SIDEWALK EXCEPT WHERE TREE WELLS OR PARKWAYS ARE PROVIDED IN THE SIDEWALK AREA. ALL TREE PLANTED WITHIN FIVE (5) FEET OF WALKS OR PUBLIC UTILITIES SHALL RECEIVE DEEP ROOT BARRIERS.
- TREE LOCATIONS SHOWN ON PLAN MAY REQUIRE ADJUSTMENT IN THE FIELD. WHENEVER FEASIBLE, TREES SHOULD BE PLANTED A MINIMUM OF TEN (10) FEET FROM ALL UNDERGROUND UTILITIES, STREET LIGHTS, HYDRANTS, AND OUT OF DRAINAGE FLOW LINES. SHOULD THIS NOT BE POSSIBLE, CONTACT THE LANDSCAPE ARCHITECT FOR DECISION ON PLACEMENT.
- ALL TREES IN TURF AREAS SHALL HAVE 12" MIN. CLR. CIRCUMFERENCE AROUND THE TRUNK BASE. PROVIDE 2" MIN. THK. MULCH AT BASE OF TRUNK.
- GROUNDCOVER TYPE SHOWN SHALL BE PLANTED IN ALL SHRUB AREAS AS SPECIFIED ON PLANS. GROUNDCOVER SHALL BE PLANTED AT 8" ON-CENTER UNIFORM TRIANGULAR SPACING, AND SHALL BE CONTINUOUS UNDER ALL TREE AND SHRUB MASSES AS SHOWN ON PLAN.
- MATURE PLANTINGS SHALL NOT INTERFERE WITH UTILITIES AND TRAFFIC SIGHT LINES.
- ALL PLANTING AREAS SHALL BE MULCHED WITH PINESTRAW, EXCEPT FOR AREAS PLANTED WITH GROUNDCOVER. ALL AREAS PLANTED WITH GROUNDCOVER SHALL BE MULCHED WITH HARDWOOD MULCH. PRIOR TO ANY CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING (SEC. 18-462D).
- ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30'-10" (SEC. 18-566).

**DETAIL 1. 6" BOARD ON BOARD FENCE**



**LEGEND**

- 1 x 6 TOP PLATE
- 2 x 4 STRINGER
- 1 x 6 STRINGER
- 1 x 6 VERTICAL BOARDS - 1" OVERLAP
- 6 x 6 POSTS AT 8'-0" O.C.
- FINISH GRADE
- CONCRETE FOOTING
- COMPACTED SUBGRADE

- NOTES:**
- ALL CONNECTORS, FASTENERS AND OTHER HARDWARE SHALL BE HOT DIPPED GALVANIZED.
  - ALL WOOD TO BE #2 OR BETTER PRESSURE TREATED SOUTHERN YELLOW PINE
  - ALL WOOD TO BE STAINED
  - COLOR: TO BE SELECTED
  - SAME FENCE DETAIL TO BE UTILIZED AT TRASH CORRAL, BUILT TO HEIGHT OF 5'

**MIHALY**  
LAND DESIGN  
PLANNING + LANDSCAPE ARCHITECTURE  
330 Military Cutoff Rd. Suite A3  
Wilmington, NC 28403 910.392.4355

**REVISIONS:**  
2016-05-12: UPDATED PLANTING PER REVISED FOOTPRINT. ADDED LANDSCAPE SEPARATION  
2016-02-28: UPDATED PLANTING PER REVISED BUILDING AND DRIVEWAY LAYOUT

**CLIENT**  
**WORSLEY REAL ESTATE**  
1133 MILITARY CUTOFF ROAD, SUITE 100  
WILMINGTON, NC 28405  
CONTACT: EARL WORSLEY  
EWORSLEY@WORLDSESTATE.COM

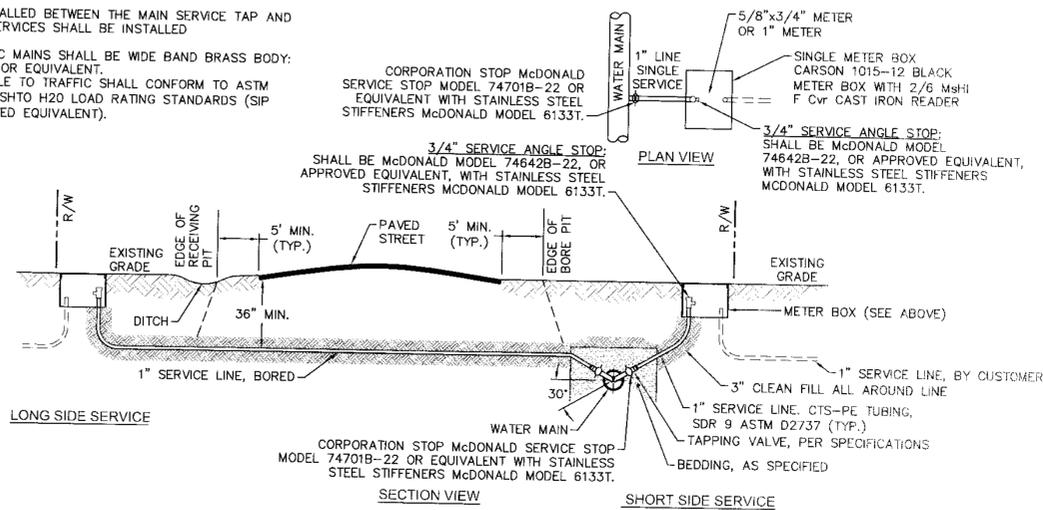
**PROJECT**  
**GOVERNMENT RESOURCE CENTER**  
123 CARDINAL DRIVE EXTENSION  
WILMINGTON, NC 28405  
LANDSCAPE PLAN

Date: 04/13/2015  
Phase: 000  
Job Number: 340-06  
Designed by: MLD  
Drawn by: ALM  
Checked by: JWM

Sheet Title:  
LANDSCAPE PLAN

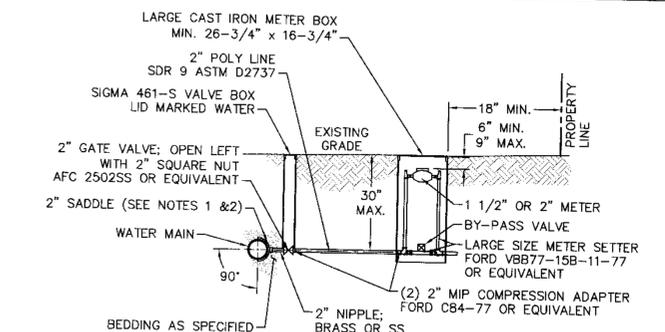
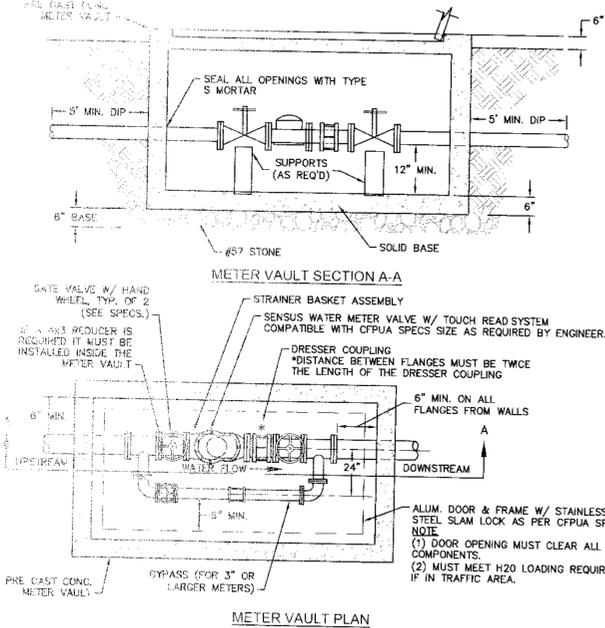
Sheet Number  
**L1.1**  
of 1 sheets

- NOTES:**
- NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
  - SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: SADDLE McDONALD 3801 OR EQUIVALENT.
  - METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (SIP MODEL 4242, OR APPROVED EQUIVALENT).



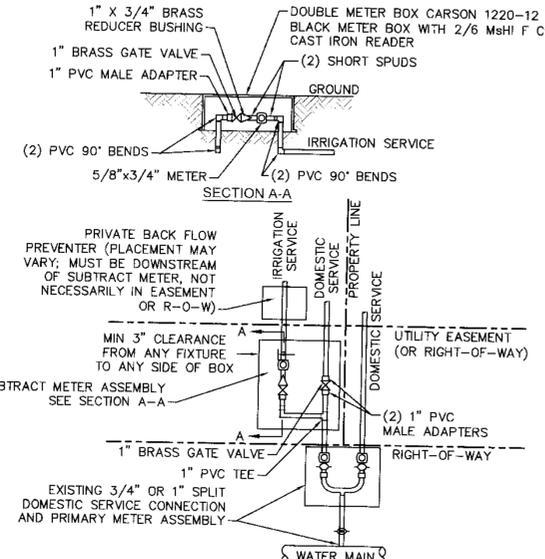
**NOTE:**  
TYPICAL WATER SERVICE CONNECTION FOR RESIDENTIAL SINGLE FAMILY HOME ON CFPUA WATER SYSTEM

**WD-18 SINGLE SERVICE CONNECTION**  
NOT TO SCALE



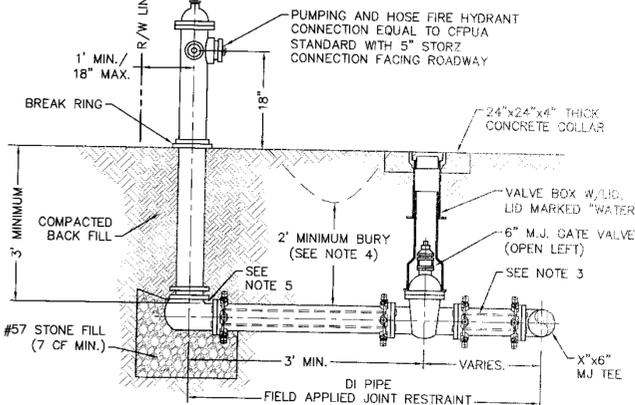
- NOTES:**
- ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
  - SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: McDONALD 3800, FORD S90 (DOUBLE STRAP) OR EQUIVALENT.
  - METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (OLDCASTLE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

FOR 1-1/2" OR 2" WATER SERVICES  
**WD-11 LARGE METER**  
NOT TO SCALE



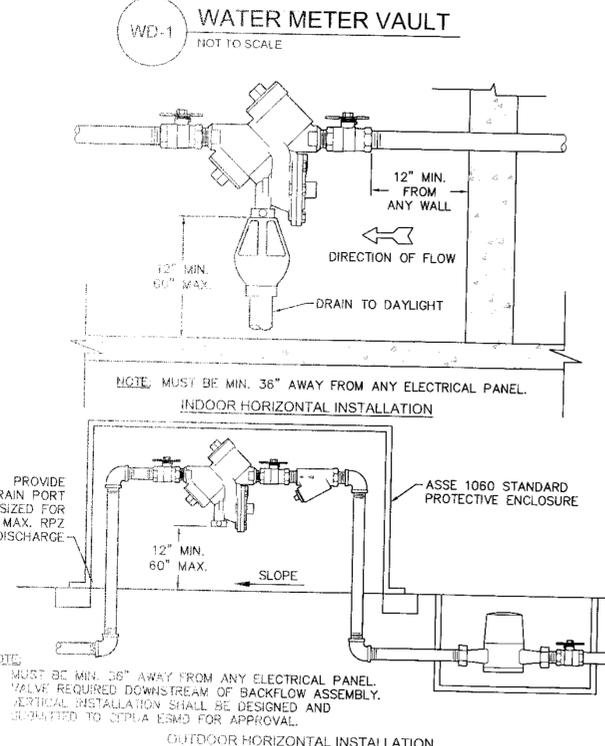
- NOTES:**
- BEYOND THE PRIMARY DOMESTIC METER ASSEMBLY, CFPUA IS ONLY RESPONSIBLE FOR METER AND WASHERS OF SUBTRACT METER ASSEMBLY.
  - ALL PIPE AND FITTINGS UP TO FINAL SERVICE LINE TO BE 1" EXCLUDING METERS.
- PLAN VIEW**
- (MULTIPLE DOMESTIC SERVICES PER TAP)**

**WD-8 DOUBLE SERVICE CONNECTION USING SUBTRACT METER**  
NOT TO SCALE

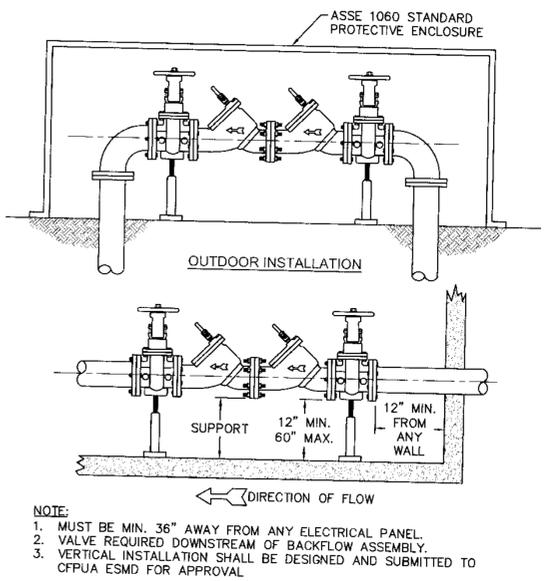


- NOTES:**
- JOINT RESTRAINT SYSTEMS SHALL BE WEDGE ACTION STYLE FOR DI PIPE AS MANUFACTURED BY EBAA IRON, SIGMA, STAR PIPE PRODUCTS OR APPROVED EQUAL.
  - WHEN HYDRANT LEGS REQUIRE FULL LENGTH PIPE SECTIONS, OVER BELL RESTRAINT SYSTEM SHALL HAVE 316 STAINLESS STEEL HARNESS AND FASTENERS.
  - CONTINUOUS 316 STAINLESS STEEL RODS (TEE TO VALVE AND VALVE TO HYDRANT) MAY BE USED WITH COR-BLUE MJ T-TOLT AND GASKET KITS, AS AN ALTERNATIVE.
  - HYDRANT AND VALVE SHALL BE PLACED OUTSIDE DITCH LIMITS.
  - WEEP HOLES OPEN AND UNBLOCKED TO DRAIN.

**WD-10 FIRE HYDRANT ASSEMBLY**  
NOT TO SCALE



**WD-12 REDUCED PRESSURE PRINCIPLE ASSEMBLY**  
NOT TO SCALE



**WD-7 DOUBLE CHECK VALVE ASSEMBLY**  
NOT TO SCALE

- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:**
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
  - WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
  - ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
  - MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
  - NO FLEXIBLE COUPLINGS SHALL BE USED.
  - ALL STAINLESS STEEL FASTENERS SHALL BE 316.
  - CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

**WD-19 STANDARD NOTES**  
(REQUIRED ON ALL PLAN AND PROFILE SHEETS)

**CFPUA WATER DISTRIBUTION SYSTEM**



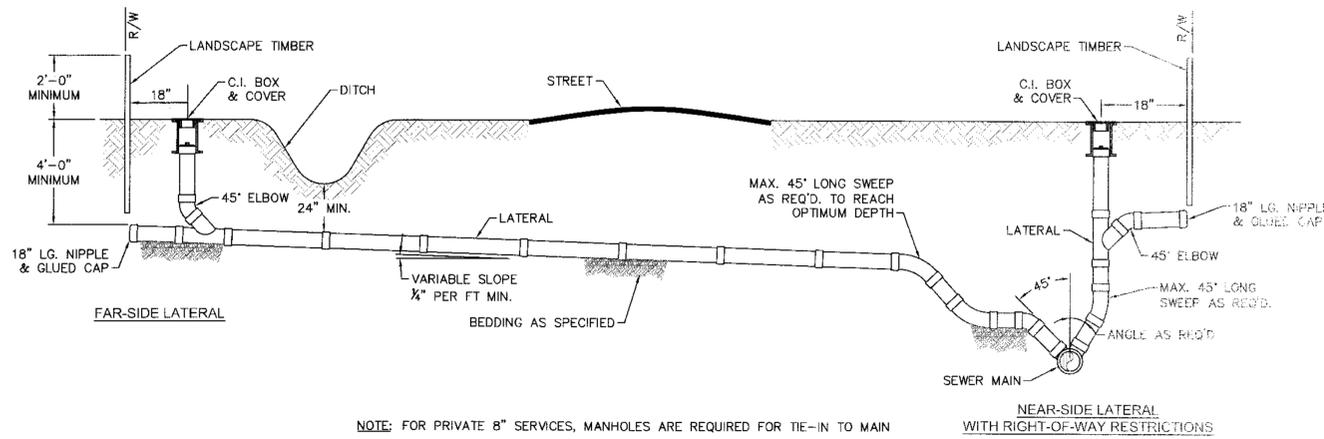
**STANDARD DETAILS**

**CAPE FEAR PUBLIC UTILITY AUTHORITY**  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

DATE:  
1/9/12  
SCALE:  
N/A  
DRAWN BY:  
CFPUA  
CHECKED BY:  
CFPUA  
PROJECT NO.:

**SHEET NO:**  
**WSD-1**

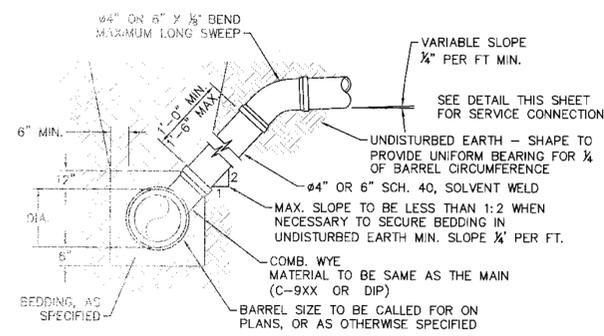
REV.	DESCRIPTION:	DATE:
1	Single Service Connection, Double Service Connection, and Large Meter Revised	10/26/12
2	Single Service Connection and Fire Hydrant Details Revised	7/23/13
3	Fire Hydrant Detail Revised	01/03/14
4	Revised Fire Hydrant Assembly To Show 5" STORZ Connection	04/10/15
5	Revised Fire Hydrant Assembly To Show Full Dip Hydrant Leg	01/19/16
6	Revised Water Meter Vault and Large Meter Details, Added Standard Notes	02/15/16



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

**STANDARD SERVICE CONNECTION TO SANITARY SEWER**

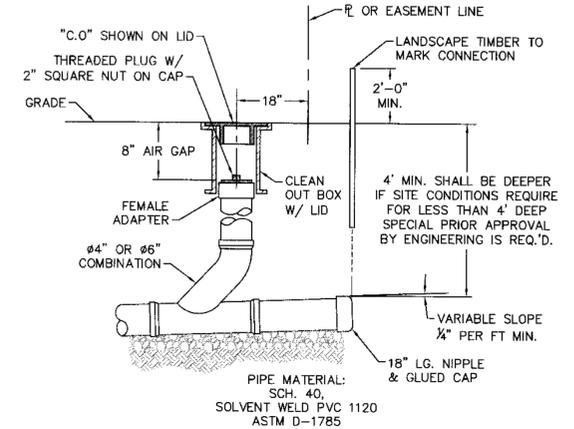
SD-19 NOT TO SCALE



NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

**STANDARD SERVICE LATERAL**

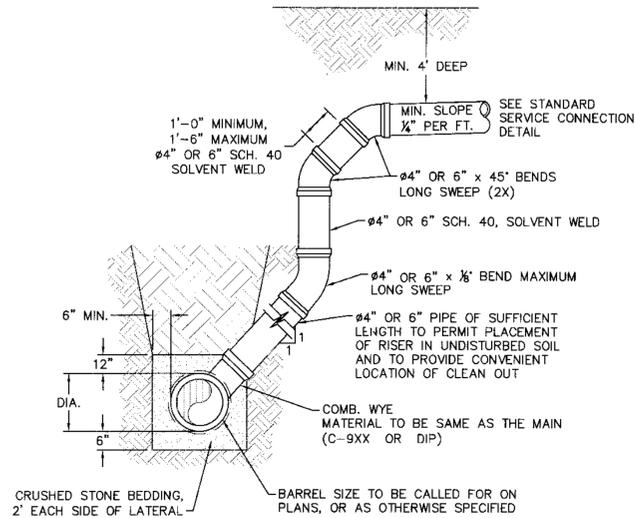
SD-10 NOT TO SCALE



NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

**SERVICE CONNECTION AND CLEAN-OUT**

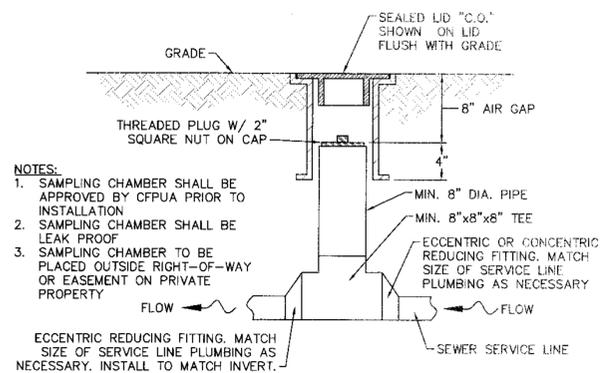
SD-11 NOT TO SCALE



NOTES:  
1. SPECIAL CARE SHALL BE TAKEN DURING BACKFILL OPERATIONS. THE RISER SHALL BE PLUMB AND TRUE AT ALL TIMES, AND REST ON FIRM, STABLE FOUNDATION.  
2. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

**DEEP SERVICE LATERAL**

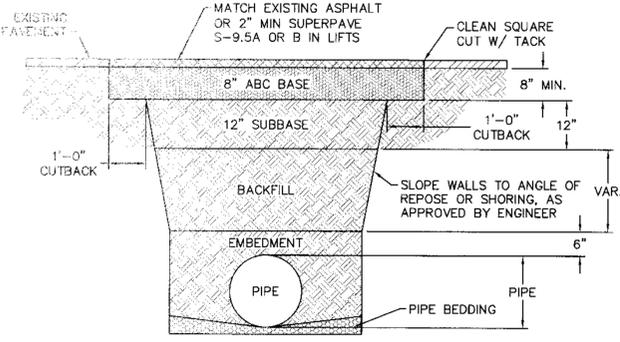
SD-12 NOT TO SCALE



NOTES:  
1. SAMPLING CHAMBER SHALL BE APPROVED BY CFPUA PRIOR TO INSTALLATION.  
2. SAMPLING CHAMBER SHALL BE LEAK PROOF.  
3. SAMPLING CHAMBER TO BE PLACED OUTSIDE RIGHT-OF-WAY OR EASEMENT ON PRIVATE PROPERTY.  
ECCENTRIC REDUCING FITTING. MATCH SIZE OF SERVICE LINE PLUMBING AS NECESSARY. INSTALL TO MATCH INVERT.

**SAMPLING CHAMBER**

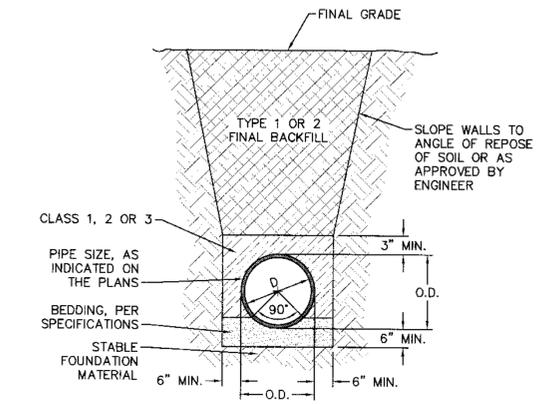
SD-13 NOT TO SCALE



NOTES:  
1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBS, 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%.

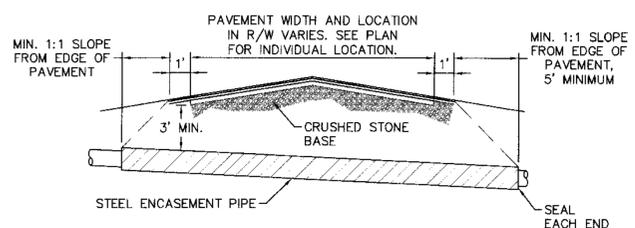
**PAVEMENT REPAIR WHERE PIPE INSTALLED**

SD-14 NOT TO SCALE



**TYPICAL TRENCH DETAIL**

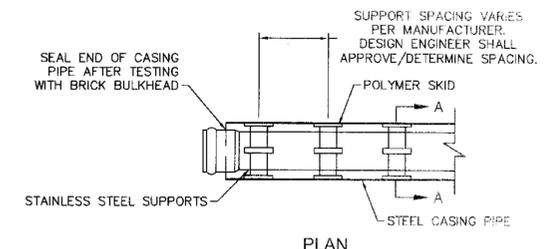
SD-15 NOT TO SCALE



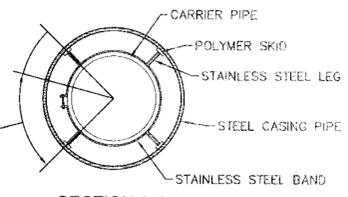
NOTES:  
1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED.  
2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING.

**TYPICAL BORING/JACKING DETAIL**

SD-16 NOT TO SCALE



NOTE: PIPE SUPPORT TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED. CONTINUOUS SUPPORTS MAY BE USED AS ALTERNATIVE. OIL, GREASE, OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.



**PIPE CASING SUPPORT DETAIL**

SD-17 NOT TO SCALE

**GENERAL NOTES:**  
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.  
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.  
3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.  
4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.  
5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

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

REV.	DESCRIPTION:	DATE:
1	SAMPLING CHAMBER REVISED	10/26/12
2	Revised Multiple Details	02/15/16

**CFPUA SANITARY SEWER**

**STANDARD DETAILS**

CAPE FEAR PUBLIC UTILITY AUTHORITY  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

DATE: 1/9/12  
SCALE: N/A  
DRAWN BY: CFPUA  
CHECKED BY: CFPUA  
PROJECT NO.:

SHEET NO:  
**SSD-2**

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