SITE DEVELOPMENT PLANS

FOR

PROGRESS 910

4055 EMERSON STREET

CITY OF WILMINGTON, NORTH CAROLINA

PREPARED FOR:

PROGRESS BUILDERS, LLC

709 NORTH MAIN STREET
PO BOX 303
AYNOR, SOUTH CAROLINA 29511

SEPTEMBER 24, 2013

J-24436.0000

PREPARED BY:

THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting

Savannah, GA | Brunswick, GA | Charleston, SC | Myrtle Beach, SC | Wilmington, NC

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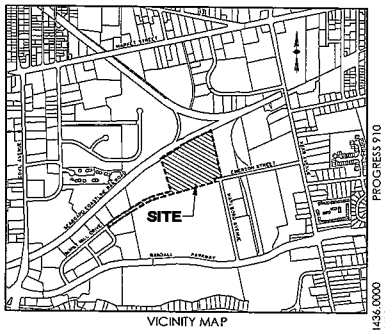

VICINITY MAP
SCALE: 1" = 1000'

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

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

Preliminary
For Review Only

REVISION HISTORY

REV. NO.	REVISION	BY	DATE

SUBMITTAL HISTORY

CITY OF WILMINGTON	9-24-13
SUBMITTED TO	DATE

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Wilmington, NC 28403
p.910.332.3360 f.910.332.3361

DRAINAGE LEGEND

DESCRIPTION	EXISTING	PROPOSED
PIPE		
DITCH		
CURB INLET		
GRATE INLET		
JUNCTION BOX		
OUTLET STRUCTURE		

OTHER UTILITIES LEGEND

DESCRIPTION	EXISTING
NATURAL GAS	
TELEPHONE	
UNDERGROUND TELEPHONE	
ELECTRICITY	
UNDERGROUND ELECTRICITY	

WATER LEGEND

DESCRIPTION	EXISTING	PROPOSED
WATER MAIN	10"W	10"W
SINGLE SERVICE LATERAL		
DOUBLE SERVICE LATERAL		
VALVE AND BOX		
FIRE HYDRANT W/VALVE & BOX		
POST HYDRANT		
REDUCER		
BACKFLOW PREVENTOR		
CROSS		
TEE		
90° BEND - HORIZONTAL		
45° BEND - HORIZONTAL		
22-½° BEND - HORIZONTAL		
11-¼° BEND - HORIZONTAL		
BEND - VERTICAL		
CAP		

SEWER LEGEND

DESCRIPTION	EXISTING	PROPOSED
GRAVITY PIPE	SS	
SINGLE SERVICE LATERAL		
DOUBLE SERVICE LATERAL		
MANHOLE		
CLEANOUT		
FORCEMAIN	10"FM	10"FM
VALVE AND BOX		
FLUSH HYDRANT		
REDUCER		
BACKFLOW PREVENTOR		
CROSS		
TEE		
90° BEND - HORIZONTAL		
45° BEND - HORIZONTAL		
22-½° BEND - HORIZONTAL		
11-¼° BEND - HORIZONTAL		
BEND - VERTICAL		
PLUG		

ABBREVIATIONS

HDPE	HIGH DENSITY POLYETHELENE	LF	LINEAR FEET	SD	STORM DRAINAGE
BOT	BOTTOM	INV	INVERT ELEVATION	SDMH	STORM DRAINAGE MANHOLE
CI	CURB INLET	JB	JUNCTION BOX	SF	SQUARE FEET
CPP	CORRUGATED PLASTIC PIPE	MAX	MAXIMUM	SS	SANITARY SEWER
DIP	DUCTILE IRON PIPE	MIN	MINIMUM	TC	TOP OF CURB
EL	ELEVATION	MH	MANHOLE	TG	TOP OF GUTTER
FF	FINISH FLOOR	OC	ON CENTER	TP	TOP OF PAVEMENT
FG	FINISH GRADE	PC	POINT OF CURVE	TW	TOP OF WALK
FH	FIRE HYDRANT	PH	POST HYDRANT	TYP	TYPICAL
FM	FORCE MAIN (SANITARY SEWER)	PT	POINT OF TANGENT	W	WATER
FP	FINISH PAD	PVC	POLYVINYL CHLORIDE	W/	WITH
FR	FRAME	RCP	REINFORCED CONCRETE PIPE	WV	WATER VALVE
GI	GRATE INLET	RJP	RESTRAINED JOINT PIPE	YI	YARD INLET
GV	GATE VALVE	R/W	RIGHT-OF-WAY		

PAVMENT LEGEND

- LIGHT DUTY ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- PERVIOUS PAVEMENT MATERIAL

GENERAL NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER 48 HOURS IN ADVANCE OF ALL REQUIRED TESTS AND INSPECTIONS
2. THE CONTRACTOR WILL NOTIFY THE ENGINEER IF UNSUITABLE MATERIAL IS DISCOVERED PRIOR TO BEGINNING ANY REMOVAL OPERATION
3. ALL ELEVATIONS SHOWN ARE BASED ON NAVD88
4. ALL BEARINGS AND COORDINATES SHOWN ARE BASED ON THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM NAD83
5. CONTRACTOR IS TO VERIFY ACCURACY OF ANY TEMPORARY BENCHMARKS SHOWN PRIOR TO UTILIZING THEM FOR CONSTRUCTION
6. THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES OTHER THAN THOSE SHOWN ARE ENCOUNTERED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND TAKE STEPS TO PROTECT THE LINE(S) AND ENSURE CONTINUED SERVICE. DAMAGE CAUSED TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR. ADDITIONALLY, THE CONTRACTOR SHALL CONFIRM THE CONNECTION POINTS OF NEW UTILITIES TO EXISTING UTILITIES PRIOR TO BEGINNING NEW CONSTRUCTION.
7. CONTACT NORTH CAROLINA ONE CALL CENTER PRIOR TO ANY DIGGING 1-800-632-4949
8. 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.
9. IF WORK IS SUSPENDED OR DELAYED FOR 14 DAYS, THE CONTRACTOR SHALL TEMPORARILY STABILIZE THE DISTURBED AREA AT NO ADDITIONAL COST TO THE OWNER.
10. THE CONTRACTOR SHALL INSTALL ANY BARRICADES PRIOR TO BEGINNING CONSTRUCTION
11. ANY DAMAGE TO EXISTING PAVEMENT MUST BE REPAIRED AT CONTRACTORS EXPENSE AND TO THE SATISFACTION OF NCDOT
12. ALL PAVEMENTS MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS
13. IT IS THE RESPONSIBILITY OF THE SUBDIVIDER TO ERECT OFFICIAL STREET NAME SIGNS AT ALL INTERSECTIONS ASSOCIATED WITH THE SUBDIVISION IN ACCORDANCE WITH THE CITY OF WILMINGTON TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL. THE SUBDIVIDER MAY ACQUIRE AND ERECT OFFICIAL STREET NAME SIGNS OR MAY CHOOSE TO CONTRACT WITH THE CITY TO INSTALL THE STREET SIGNS. SUBDIVIDER SHALL PAY THE COST OF SUCH INSTALLATION.
14. ALL TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL ON "UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", CURRENT EDITION
15. CONTACT CITY OF WILMINGTON TRAFFIC ENGINEERING, 341-7888, TO ENSURE ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN
16. CONTACT TRAFFIC ENGINEERING AT 341-7888 48 HOURS IN ADVANCE PRIOR TO ANY EXCAVATION IN THE PUBLIC RIGHT-OF-WAY
17. ANY BROKEN OR MISSING SIDEWALK PANELS WILL BE REPLACED
18. CONTACT KAREN DIXON AT 341-7886 TO DISCUSS STREET LIGHTING OPTIONS
19. ALL RIGHT-OF-WAY SHALL MEET NCDOT STANDARD SPECIFICATIONS. A PRE-CONSTRUCTION MEETING MUST BE HELD WITH NCDOT PRIOR TO BEGINNING ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY
20. ALL LOTS WITHIN THE DEVELOPMENT SHALL BE FILLED AND HAVE POSITIVE DRAINAGE TO THE APPROPRIATE EASEMENT OR RIGHT-OF-WAY AS APPROVED ON THE PLANS PRIOR TO THE ISSUANCE OF ANY BUILDING PERMITS OR FINAL ACCEPTANCE OF THE RIGHT-OF-WAYS BY THE CITY/COUNTY WHERE FIELD INSPECTIONS ARE REQUIRED. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS IN ADVANCE TO SCHEDULE SUCH INSPECTIONS.
21. A COMPLETE SET OF APPROVED DRAWINGS AND SPECIFICATIONS MUST BE MAINTAINED ON SITE AT ALL TIMES THAT THE CONTRACTOR IS PERFORMING WORK. THESE DRAWINGS SHALL BE MADE AVAILABLE UPON REQUEST.
22. ANY REVISIONS DURING CONSTRUCTION WHICH ALTER THE LAYOUT, CONSTRUCTION METHODS, RIGHT-OF-WAY LOCATION OR UTILITIES MUST BE SUBMITTED AND APPROVED IN WRITING BY THE ENGINEER.
23. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL CONSTRUCTION PERMITS NECESSARY FROM OTHER RESPONSIBLE AGENCIES
24. ALL TREES SHOWING DISTURBANCE WITHIN THE PROTECTED ROOT ZONE SHALL BE PRUNED AND FERTILIZED AT THE DIRECTION OF A CERTIFIED ARBORIST
25. STORMWATER POND CONTOURS SHOWN HEREIN WILL PROVIDE A DEPTH ONE FOOT GREATER THAN NECESSARY FOR STORM WATER MANAGEMENT. THIS IS TO PROVIDE FOR ONE FOOT OF SILT BUILDUP DURING CONSTRUCTION OF ANY AREA OF ANY POND WHICH SILTS MORE THAN ONE FOOT ABOVE DESIGNED BOTTOM ELEVATION SHALL BE RESTORED TO THE MINIMUM ACCEPTABLE DEPTH OF ONE FOOT LESS THAN ORIGINAL CONSTRUCTED DEPTH.
26. ALL AT GRADE UTILITIES ARE TO BE OUT OF THE CURB LINE.
27. CONTRACTOR WILL BE REQUIRED TO ADJUST MANHOLE FRAMES TO MATCH FINAL GRADE AT NO ADDITIONAL COST.
28. CONTRACTOR SHALL GRADE AREAS TO DRAIN FOR POSITIVE FLOW PRIOR TO FINAL APPROVAL.
29. ALL DRAINAGE WILL BE MADE FUNCTIONAL DAILY AS WORK PROGRESSES.
30. EACH EXISTING ROAD WILL BE CLEANED UP AND RESTORED DAILY.
31. NEW PAVEMENT TO BE FLUSH WITH EDGE OF EXISTING PAVEMENT.
32. ALL STORM DRAIN PIPE INVERTS IN AND OUT ARE THE SAME AS THE BOX INVERT UNLESS OTHERWISE NOTED ON THE PLAN SHEETS AND/OR PROFILES
33. ALL WATER AND SEWER MATERIALS AND CONSTRUCTION SHALL COMPLY WITH CFPUA STANDARDS AND SPECIFICATIONS
34. DRY UTILITY PLACEMENT SEQUENCE:
    - 29.1. COORDINATE SCHEDULE WITH ALL UTILITY PROVIDERS;
    - 29.2. ESTABLISH FINAL GRADE;
    - 29.3. PSNC WILL PLACE THEIR CABLE FIRST (APPROX. 36" COVER)
    - 29.4. CABLE/TELEPHONE WILL THEN PLACE THEIR CABLE (APPROX. 24" COVER)
35. SEE INDIVIDUAL PLAN SHEETS FOR ADDITIONAL NOTES

City of Wilmington
NORTH CAROLINA
Public Services ◆ Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

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Know what's below.
Call before you dig.

PROJECT CONTACTS:

OWNER:
PROGRESS BUILDERS, LLC
704 NORTH MAIN STREET
AYNOR, SOUTH CAROLINA 29511
843-260-3790

ENGINEER:
THOMAS & HUTTON
215 SOUTH KERR AVENUE
WILMINGTON, NC 28403
(910) 332-3360

SURVEYOR:
THOMAS & HUTTON
215 SOUTH KERR AVENUE
WILMINGTON, NC 28403
(910) 332-3360

PLANNING & ZONING:
CITY OF WILMINGTON
305 CHESTNUT STREET
WILMINGTON, NC 28402
(910) 234-0900

STORMWATER:
CITY OF WILMINGTON
305 CHESTNUT STREET
WILMINGTON, NC 28402
(910) 341-5818

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

EROSION CONTROL:
NEW HANOVER COUNTY
230 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
(910) 798-7139

AT&T:
LINDA LASHLEY - (910) 341-1624
STEVE DATYAULT - (910) 392-8712
102 NORTH 4TH STREET
WILMINGTON, NC 28401

TIME WARNER:
BILL DYKES
3809 SHIPYARD BOULEVARD
WILMINGTON, NC 28403
(910) 772-5771

PROGRESS ENERGY:
KEVIN LEATHERWOOD
5700 HOLLY SHELTER ROAD
CASTLE HAYNE, NC 28429
(910) 602-4304

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NO	DATE
1	9/24/13

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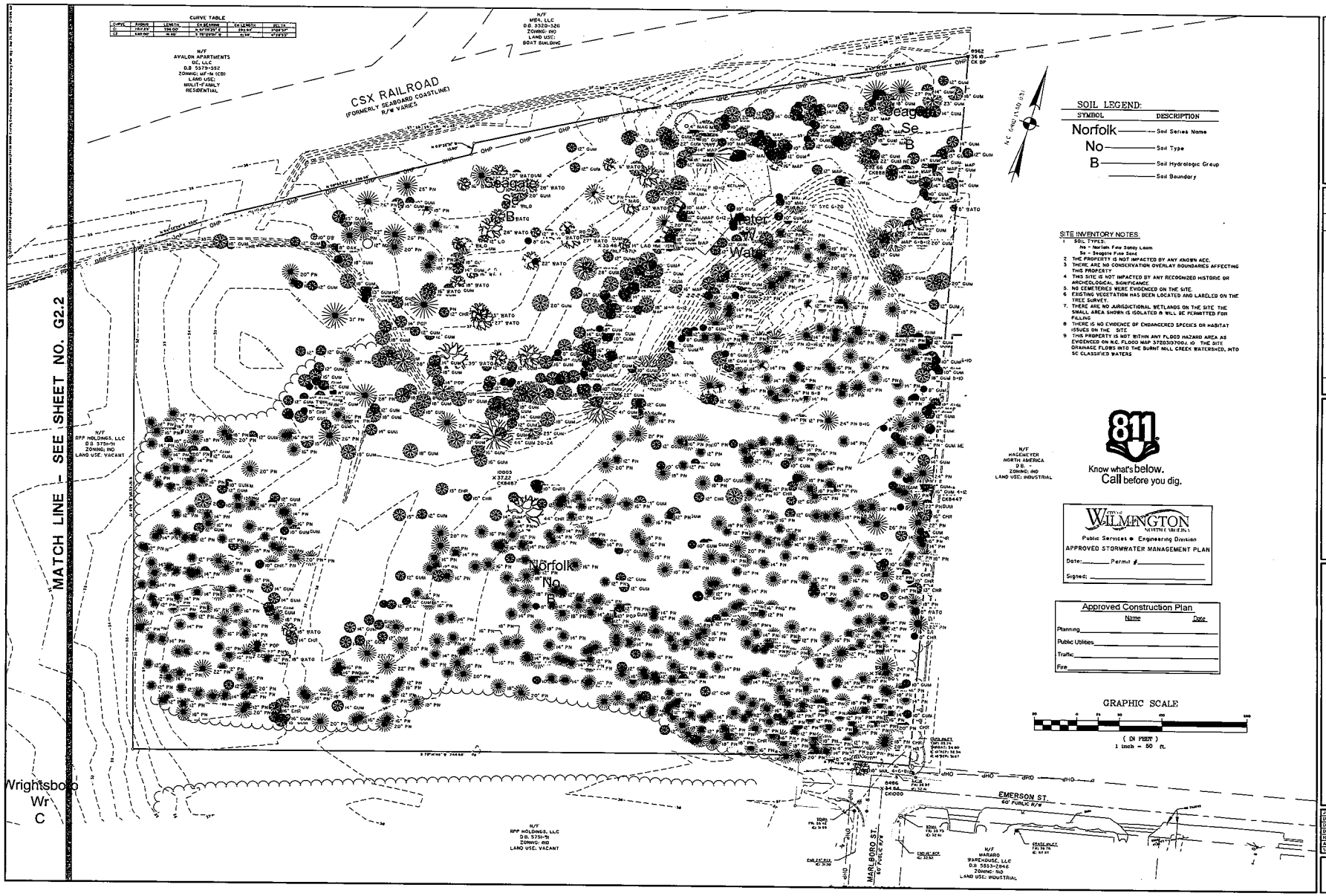
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA
PROGRESS BUILDERS, LLC
GENERAL NOTES AND LEGEND

JOB NO.	J-14436.0000
DATE	9/24/13
DRAWN	KJ
DESIGNED	SKM
REVIEWED	JDR
APPROVED	JDR
SCALE	NOT TO SCALE

G1.2



SOIL LEGEND:

SYMBOL	DESCRIPTION
Norfolk	Soil Series Name
No	Soil Type
B	Soil Hydrologic Group
	Soil Boundary

SITE INVENTORY NOTES:

1. SOIL TYPES:
   No - Norfolk Fine Sandy Loam
   Se - Seagate Fine Sand
2. THE PROPERTY IS NOT IMPACTED BY ANY KNOWN AEC.
3. THERE ARE NO CONSERVATION OVERLAY BOUNDARIES AFFECTING THIS PROPERTY
4. THIS SITE IS NOT IMPACTED BY ANY RECOGNIZED HISTORIC OR ARCHEOLOGICAL SIGNIFICANCE.
5. NO CEMETERIES WERE EVIDENCED ON THE SITE.
6. EXISTING VEGETATION HAS BEEN LOCATED AND LABELED ON THE TREE SURVEY.
7. THERE ARE NO JURISDICTIONAL WETLANDS ON THE SITE. THE SMALL AREA SHOWN IS ISOLATED & WILL BE PERMITTED FOR FILLING
8. THERE IS NO EVIDENCE OF ENDANGERED SPECIES OR HABITAT ISSUES ON THE SITE.
9. THIS PROPERTY IS NOT WITHIN ANY FLOOD HAZARD AREA AS EVIDENCED ON N.C. FLOOD MAP 3720313700J. 10. THE SITE DRAINAGE FLOWS INTO THE BURNT MILL CREEK WATERSHED, INTO SC CLASSIFIED WATERS

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

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

Preliminary
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NO.	REVISIONS	BY	DATE

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PROGRESS 910
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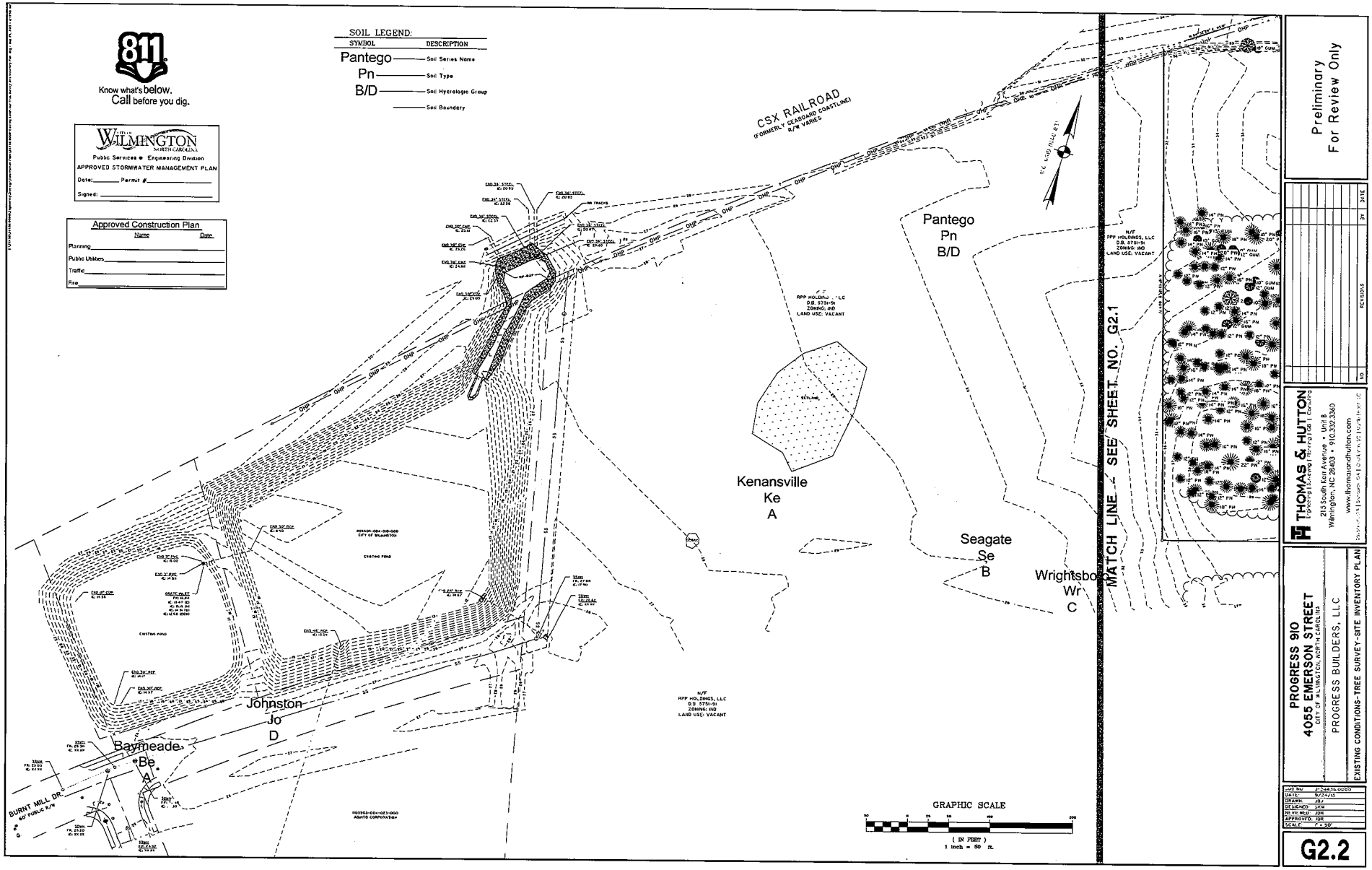
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

EXISTING CONDITIONS-TREE SURVEY-SITE INVENTORY PLAN

JOB NO.	J-24436.0000
DATE:	9/24/15
DRAWN:	JBJ
DESIGNED:	SKM
REVIEWED:	JDH
APPROVED:	JDR
SCALE:	1" = 50'

G2.1



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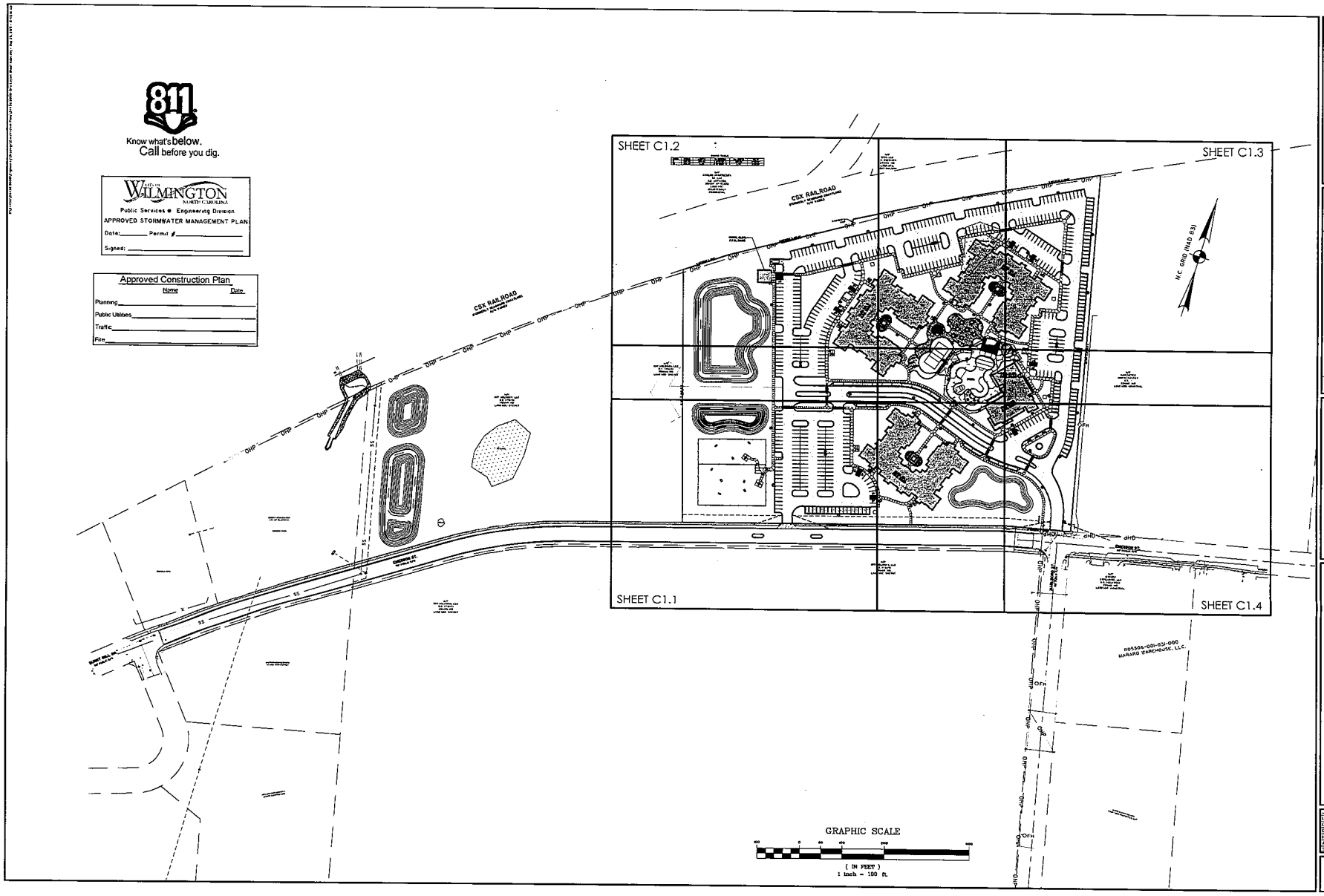
G2.2



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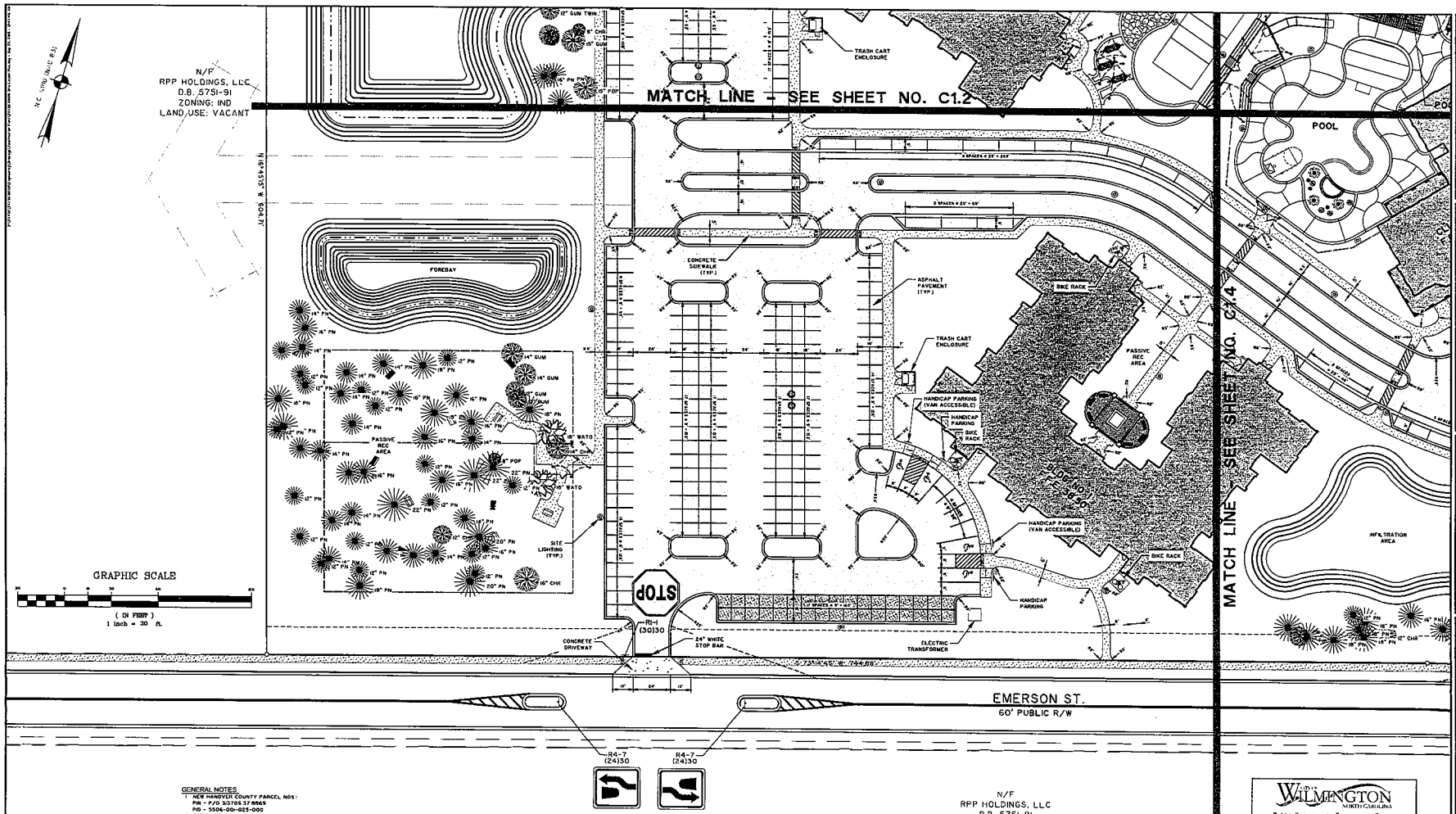
PROGRESS BUILDERS, LLC

SITE LAYOUT SHEET INDEX

JOB NO.	J-24436.0000
DATE	9/24/12
DRAWN	JRJ
DESIGNED	SKM
REVIEWED	JDR
APPROVED	JDR
SCALE	1" = 100'

C1.0



GENERAL NOTES:

1. NEW HANOVER COUNTY PARCEL NOS:
   PIN - P/O 3-3706 37 8869
   PID - 5506-00-025-000
2. TOTAL TRACT AREA: 16.00 AC.±
3. EXISTING ZONING DISTRICT: IND
   PROPOSED ZONING DISTRICT: MF-M (CD)
   SETBACKS - 35' FRONT
   30' CORNER
   25' REAR
   20' INTERIOR SIDE
4. CAMA LAND CLASSIFICATION: URBAN

DEVELOPMENT NOTES:

1. ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH CITY OF WILMINGTON TECHNICAL STANDARDS AND SUBDIVISION REGULATIONS
2. ALL DEVELOPMENT SHALL MEET APPLICABLE COUNTY, STATE, AND/OR FEDERAL REGULATIONS REQUIRED FOR CONSTRUCTION
3. PROPOSED STREETS AND INTERNAL DRIVE AISLES TO BE PRIVATELY MAINTAINED
4. ALL COMMON AREAS INCLUSIVE OF RECREATIONAL AREAS SHALL BE PRIVATELY MAINTAINED
5. THE PROPOSED DEVELOPMENT WILL BE COMPLETED IN ONE PHASE.

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

Approved Construction Plan

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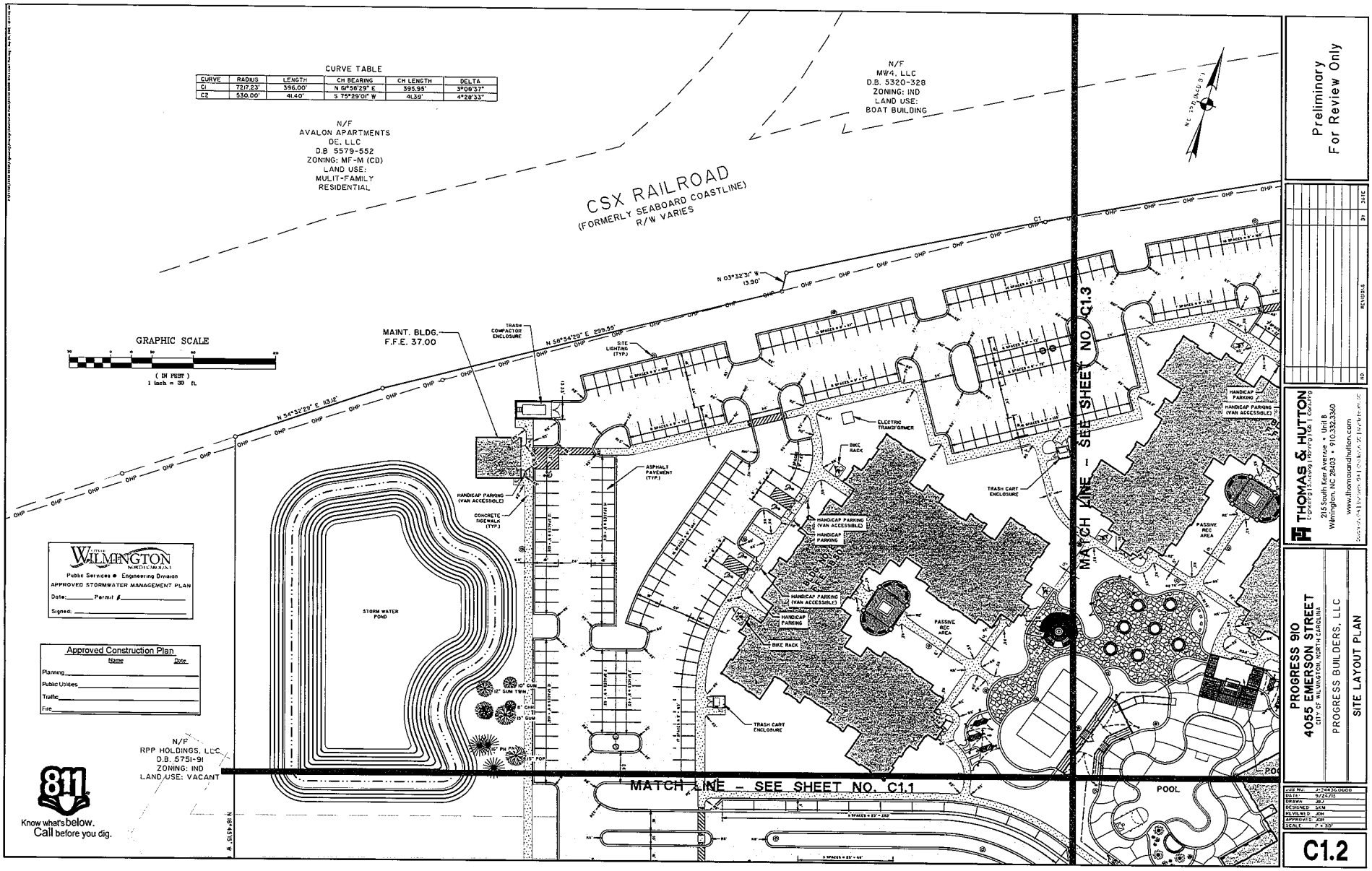
C1.1


CURVE TABLE
CURVE | RADIUS | LENGTH | CH BEARING | CH LENGTH | DELTA
C1 | 7217.23' | 396.00' | N 6°56'29" E | 395.95' | 3°08'37"
C2 | 530.00' | 41.40' | S 75°29'01" W | 41.39' | 4°28'33"
N/F
AVALON APARTMENTS
DE, LLC
D.B 5579-552
ZONING: MF-M (CD)
LAND USE:
MULIT-FAMILY
RESIDENTIAL
CSX RAILROAD
(FORMERLY SEABOARD COASTLINE)
R/W VARIES
N/F
MW4, LLC
D.B. 5320-328
ZONING: IND
LAND USE:
BOAT BUILDING
GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.
MAINT. BLDG.
F.F.E. 37.00
TRASH COMPACTOR ENCLOSURE
SITE LIGHTING (TYP.)
ELECTRIC TRANSFORMER
BIKE RACK
ASPHALT PAVEMENT (TYP.)
HANDICAP PARKING (VAN ACCESSIBLE)
CONCRETE SIDEWALK (TYP.)
HANDICAP PARKING
TRASH CART ENCLOSURE
PASSIVE REC AREA
STORM WATER POND
MATCH LINE - SEE SHEET NO. C1.3
MATCH LINE - SEE SHEET NO. C1.1
POOL
CITY OF WILMINGTON
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: Permit #
Signed:
Approved Construction Plan
Name Date
Planning
Public Utilities
Traffic
Fire
N/F
RPP HOLDINGS, LLC
D.B. 5751-91
ZONING: IND
LAND USE: VACANT
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DRAWN: JBJ
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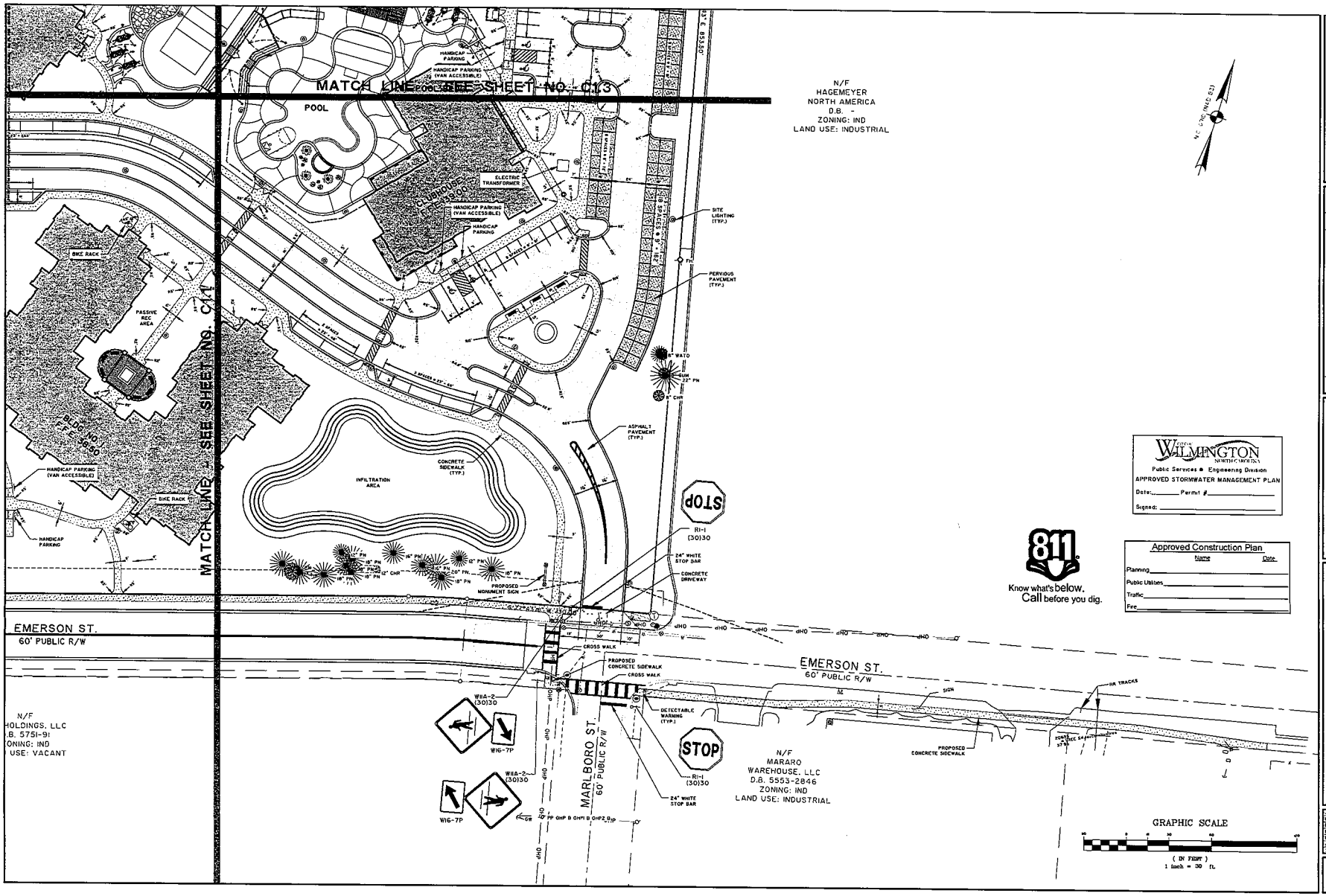
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

SITE LAYOUT PLAN

JOB NO.	P-24436.0000
DATE:	9/24/15
DRAWN:	JBJ
DESIGNED:	SKM
REVIEWED:	JDH
APPROVED:	JDH
SCALE:	1" = 30'

C1.3



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Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

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

Preliminary
For Review Only

NO.	REVISIONS	BY	DATE

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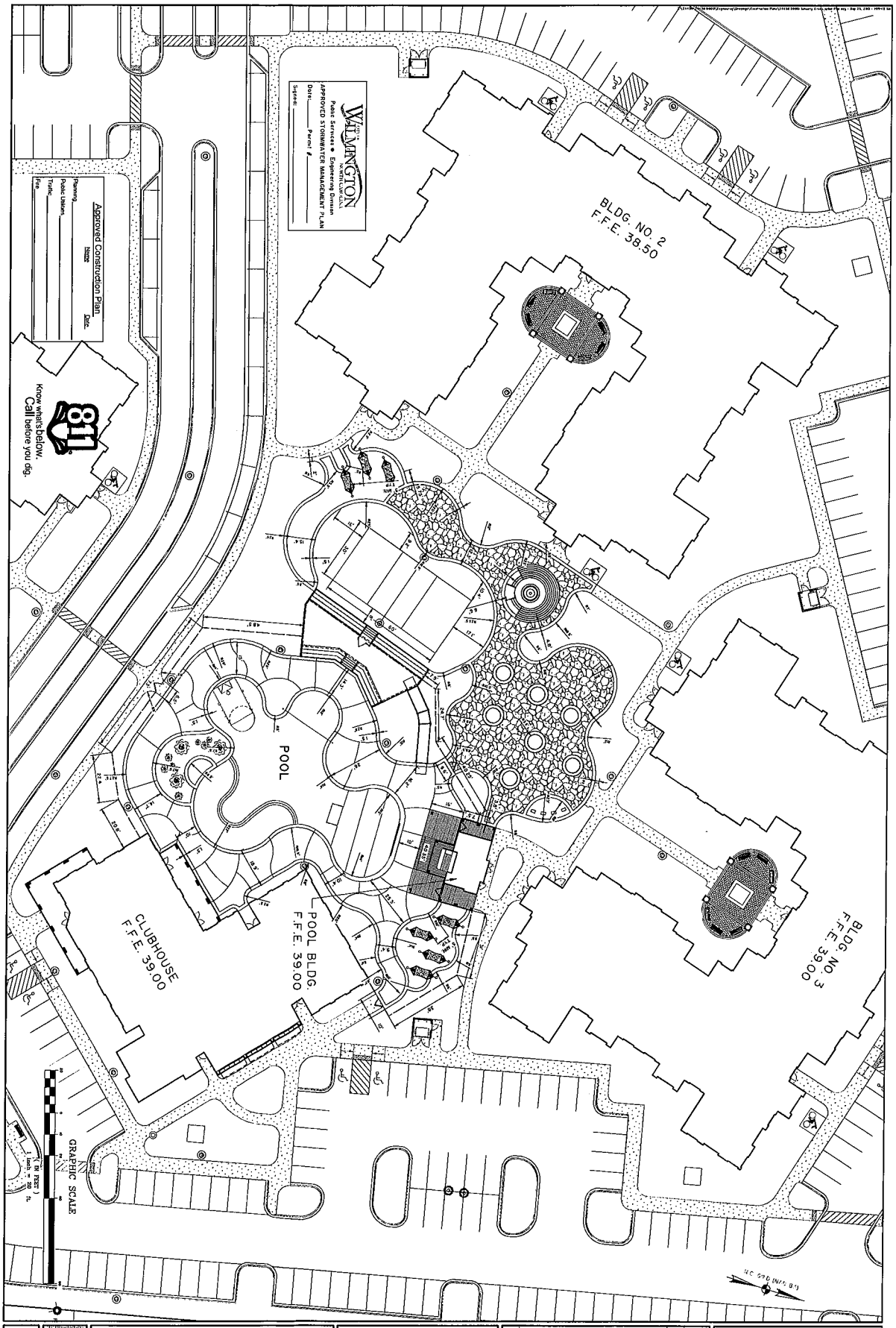
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

SITE LAYOUT PLAN

JOB NO.	J-24436.0000
DATE	9/24/13
DRAWN	JBJ
DESIGNED	SKM
REVIEWED	JDR
APPROVED	JDR
SCALE	1" = 30'

C1.4



C1.5

PROGRESS 910
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CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

AMENITY AREA LAYOUT PLAN

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UTILITY NOTES:

1. EXISTING WATER AND SANITARY SEWER SERVICES ARE CURRENTLY AVAILABLE TO THE SITE FROM CAPE FEAR PUBLIC UTILITY AUTHORITY PUBLIC MAINS.
2. ALL UTILITY SERVICES, SUCH AS ELECTRIC POWER, CATV, GAS & TELEPHONE SHALL BE INSTALLED UNDERGROUND.
3. ALL WATER & SEWER UTILITIES TO BE INSTALLED PER CFPUA TECHNICAL SPECIFICATIONS & STANDARDS.
4. PROJECT SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND N.C.D.E.N.R. HAS ISSUED THEIR "FINAL APPROVAL". CALL 343-3310 FOR INFORMATION
5. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CFPUA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCCCHR OR ASSE.
6. WATER & SEWER SERVICES CAN NOT BE ACTIVATED ON NEW MAINS UNTIL THE ENGINEER'S CERTIFICATION AND AS-BUILTS ARE RECEIVED AND "FINAL APPROVAL" ISSUED BY THE PUBLIC WATER SUPPLY SECTION OF NCDENR, AND "FINAL ENGINEERING CERTIFICATION" ISSUED BY DIVISION OF WATER QUALITY SECTION OF NCDENR
7. IF 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
8. WHEN PVC WATER MAINS AND SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO 10 INSULATED, SINGLE-STRAND COPPER WIRE INSTALLED & STRAPPED TO THE PIPES WITH DUCT TAPE. THIS IS TO BE ACCESSIBLE IN ALL VALVES AND METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES
9. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OR EXISTING UTILITIES DURING CONSTRUCTION. CALL U-LOCO AT 1-800-632-4949
10. CONTRACTOR IS RESPONSIBLE FOR THE REPAIR AND REPLACEMENT OF ANY UTILITIES, CURB & GUTTER, PAVEMENT, ETC THAT MAY BE BE DAMAGED DURING CONSTRUCTION. DAMAGED ITEMS SHALL BE REPAIRED TO AT LEAST THE QUALITY OR WORKMANSHIP FOUND IN THE ORIGINAL ITEM
11. THE BELLSOUTH CONTACT IS STEVE DAYVAULT, BUILDING INDUSTRY CONSULTANT, AT 910-392-8712. CONTACT HIM PRIOR TO STARTING THE PROJECT IN ORDER TO FACILITATE GOOD COMMUNICATION AND MAXIMUM FLEXIBILITY.
12. THE PROCESS FOR TELEPHONE CABLE PLACEMENT:
    - FINAL GRADE WILL NEED TO BE ESTABLISHED
    - POWER WILL PLACE THEIR CABLE FIRST - APPROXIMATELY 3' DEEP
    - BELLSOUTH & CABLE TV WILL THEN PLACE THEIR CABLE AT APPROXIMATELY 2' DEEP
13. SOLID WASTE DISPOSAL WILL BE HANDLED BY AN ON-SITE COMPACTOR & SERVICED BY A PRIVATELY CONTRACTED HAULER.

FIRE AND LIFE SAFETY NOTES:

1. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS WITHIN ANY DEVELOPMENT
2. HYDRANTS MUST BE LOCATED WITHIN 6' OF THE CURB
3. TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES.
4. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION
5. A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
6. UNDERGROUND FIRE LINE & PRIVATE WATER MAINS MUST BE PERMITTED & INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WFD - DIVISION OF FIRE & LIFE SAFETY AT 910-343-0696 FOR ADDITIONAL INFORMATION
7. CONSTRUCTION TYPE - 5B
8. BUILDINGS WILL BE SPRINKLED.
9. THE FDC MUST BE WITHIN 100' OF A FIRE HYDRANT & WITHIN 40' OF FIRE APPARATUS PLACEMENT
10. LANDSCAPING OR PARKING CAN NOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT (3') CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF HYDRANTS AND FDC
11. INSTALLATION OF SECURITY GATES ACROSS A FIRE APPARATUS ROAD OF PARKING LOT SHALL BE APPROVED BY THE FIRE DEPARTMENT.

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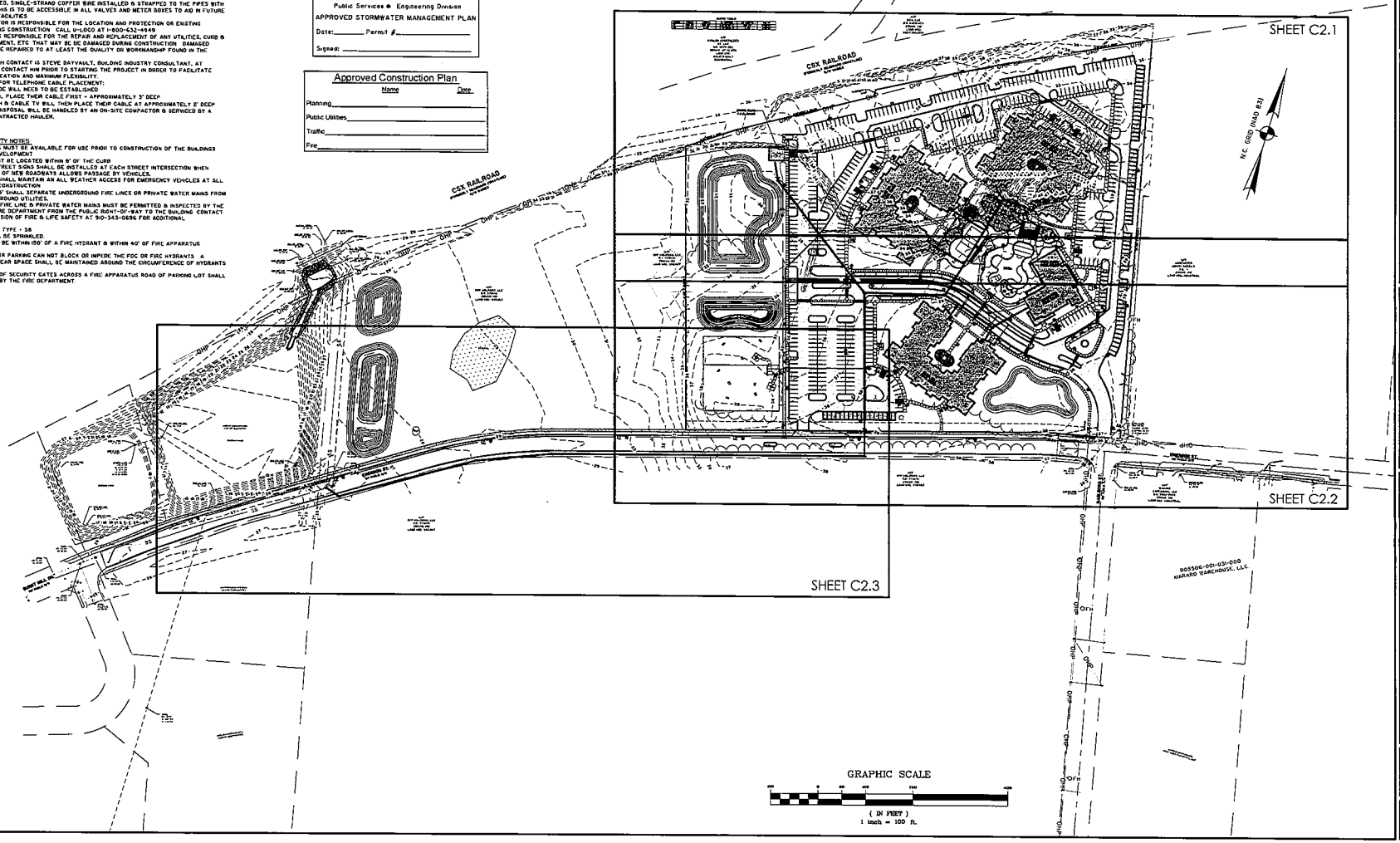
Public Services ● Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		



Preliminary
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NO.	REVISIONS	DATE

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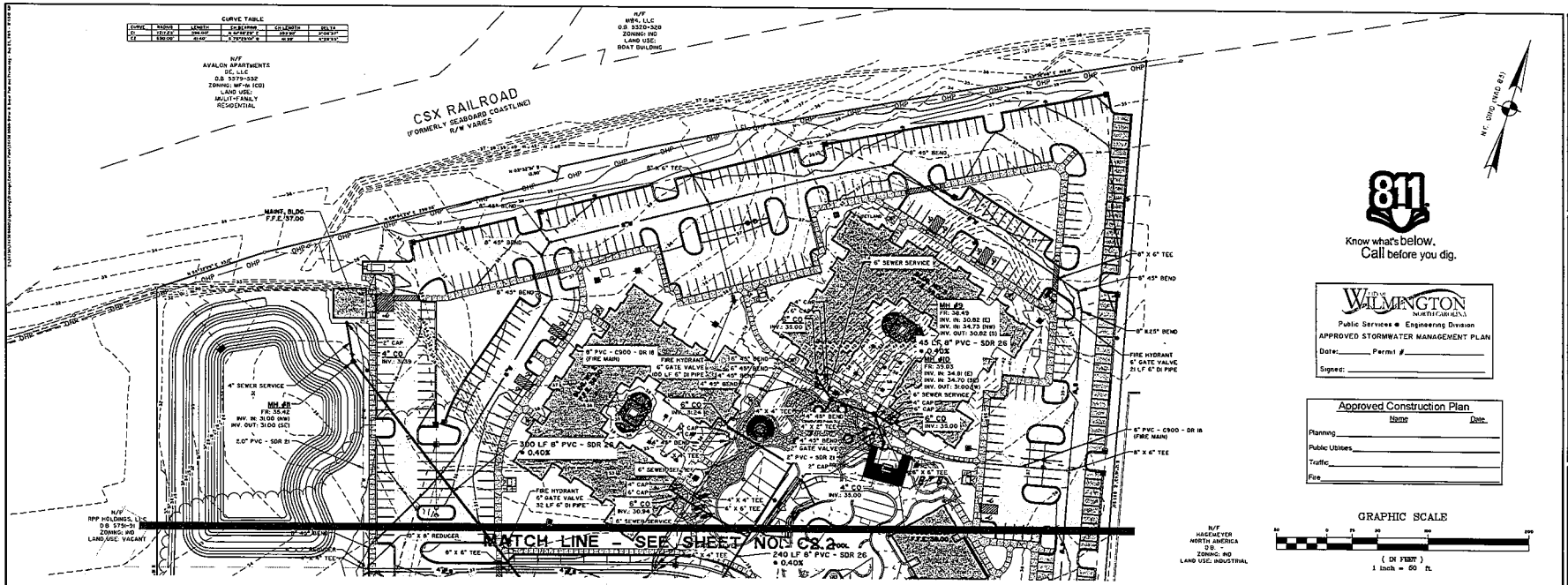
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

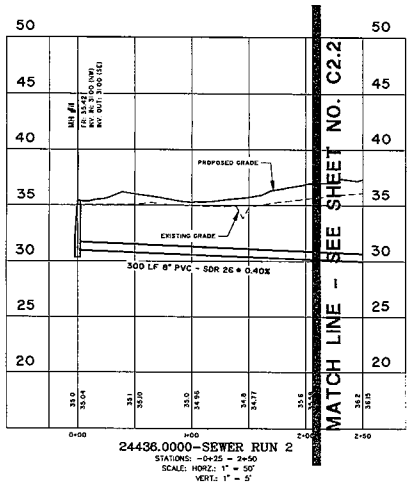
PROGRESS BUILDERS, L.L.C

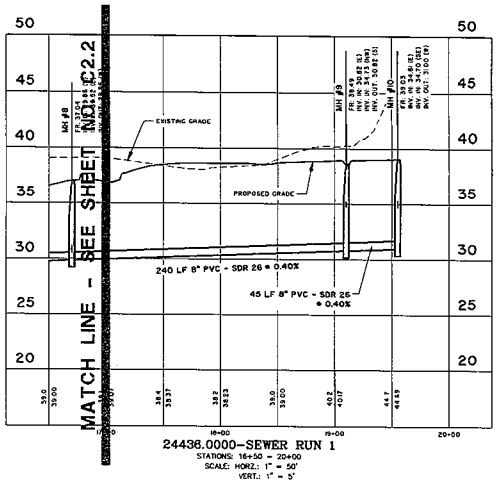
WATER & SEWER SHEET INDEX

JOB NO.	J-12436.0000
DATE:	9/24/15
DRAWN:	JDJ
DESIGNED:	SKM
MYL/WLD:	JDK
APPROVED:	JDK
SCALE:	1" = 100'

C2.0







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APPROVED STORMWATER MANAGEMENT PLAN
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Fire		

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PROGRESS 910
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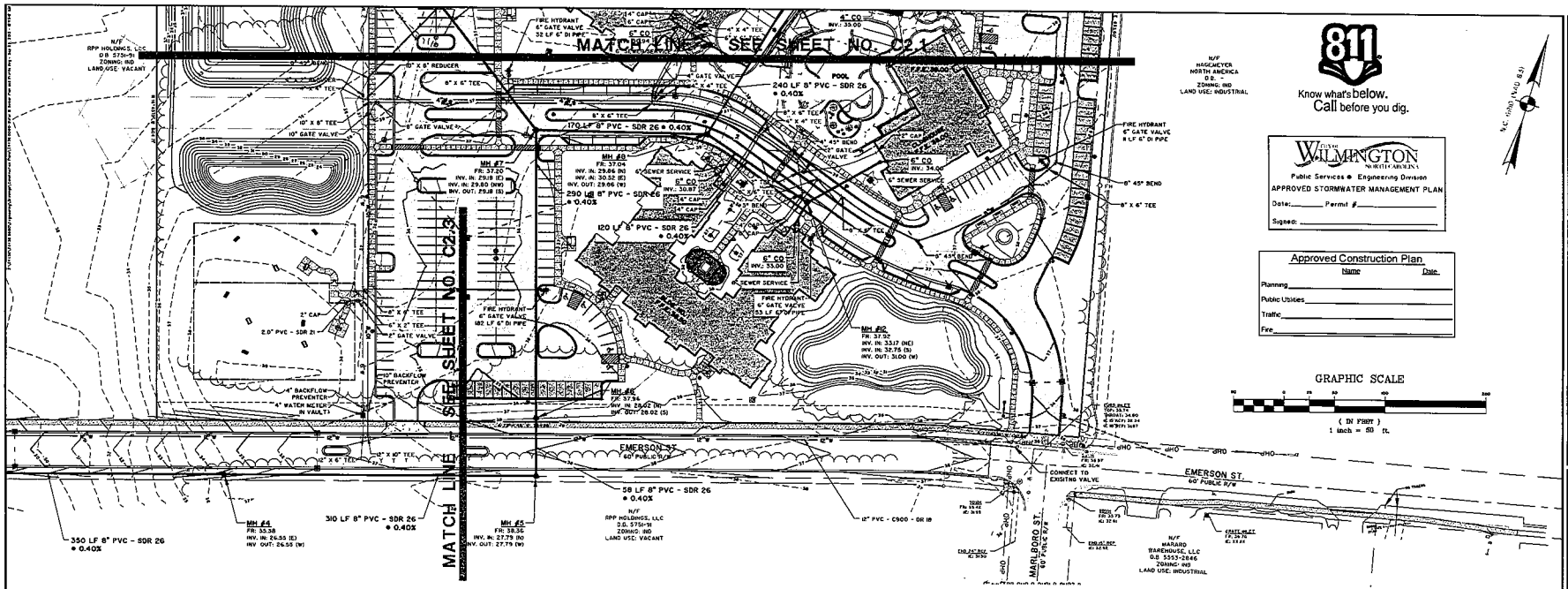
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

WATER & SEWER PLAN AND PROFILE

JOB NO:	J-24436.0000
DATE:	9/24/25
DRAWN:	JBJ
DESIGNED:	MKM
REVIEWED:	JDH
APPROVED:	JDH
SCALE:	

C2.1



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APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
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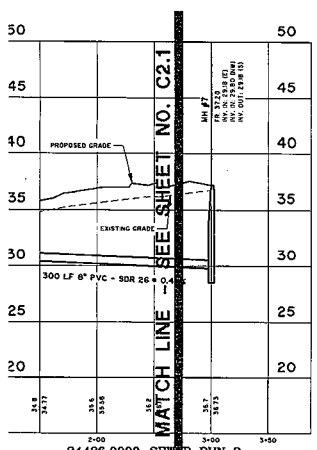
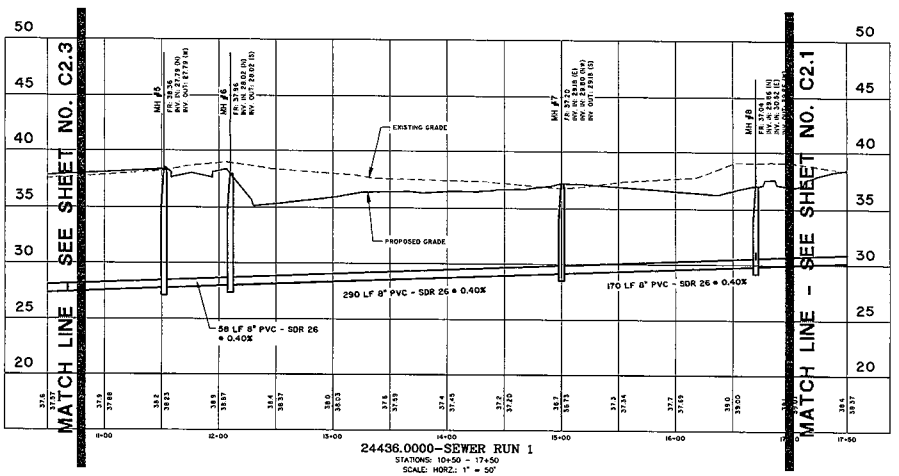
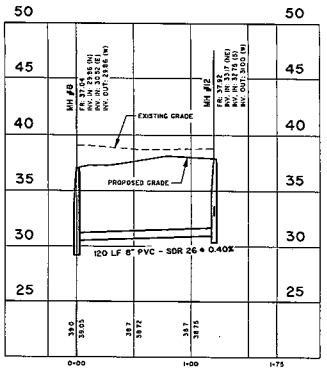


24436.0000-SEWER RUN 2
STATIONS: 1+50 - 3+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000-SEWER RUN 1
STATIONS: 10+50 - 17+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000-SEWER RUN 3
STATIONS: -0+25 - 1+75
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

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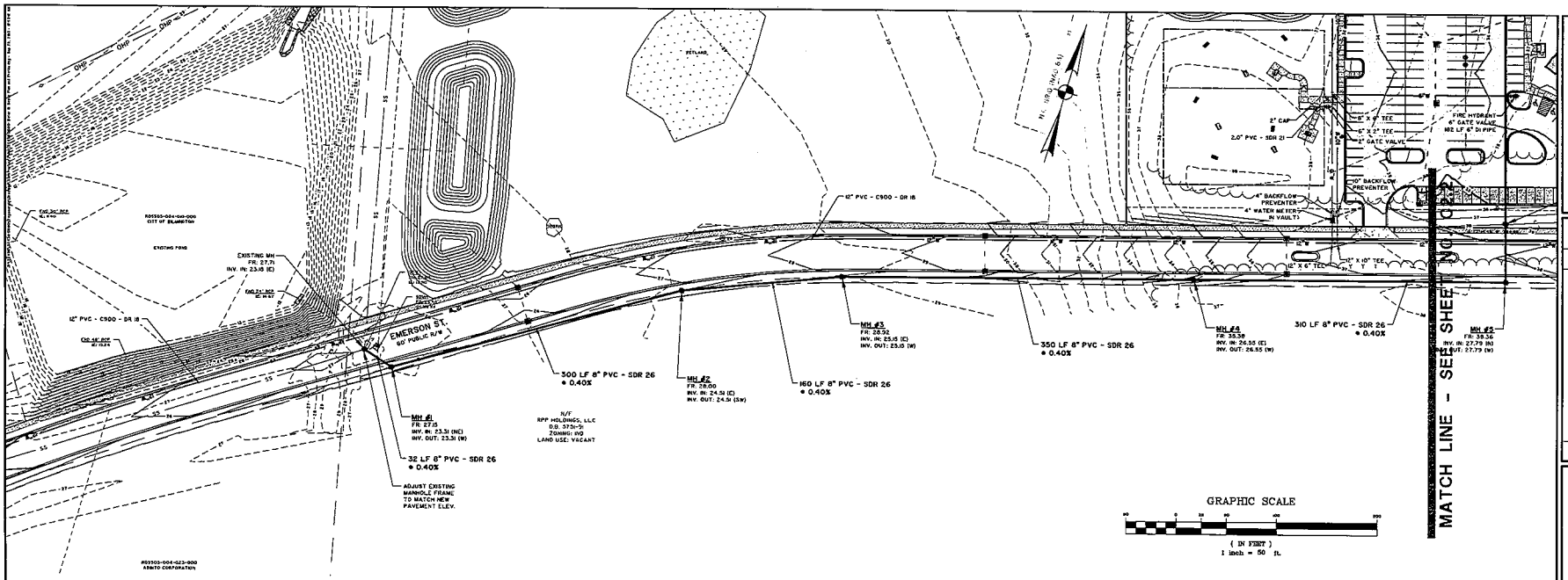
CITY OF WILMINGTON, NORTH CAROLINA

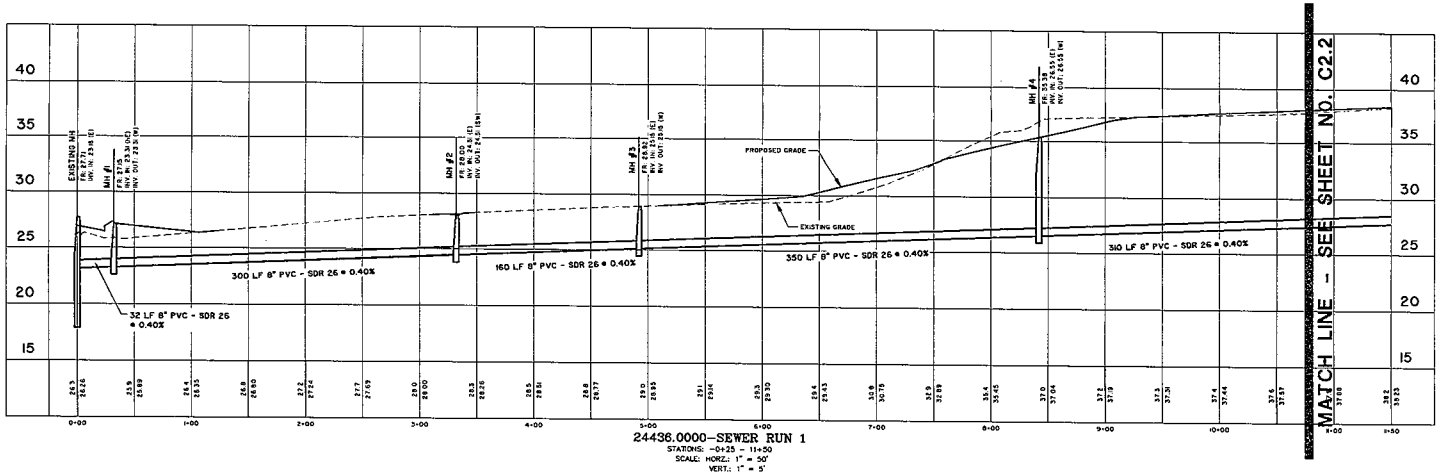
PROGRESS BUILDERS, LLC

WATER & SEWER PLAN AND PROFILE

JOB NO.	J-24436.0000
DATE	9/24/13
DRAWN	JBJ
DESIGNED	SAM
REVIEWED	JDR
APPROVED	JDR
SCALE	########

C2.2





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APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

Preliminary
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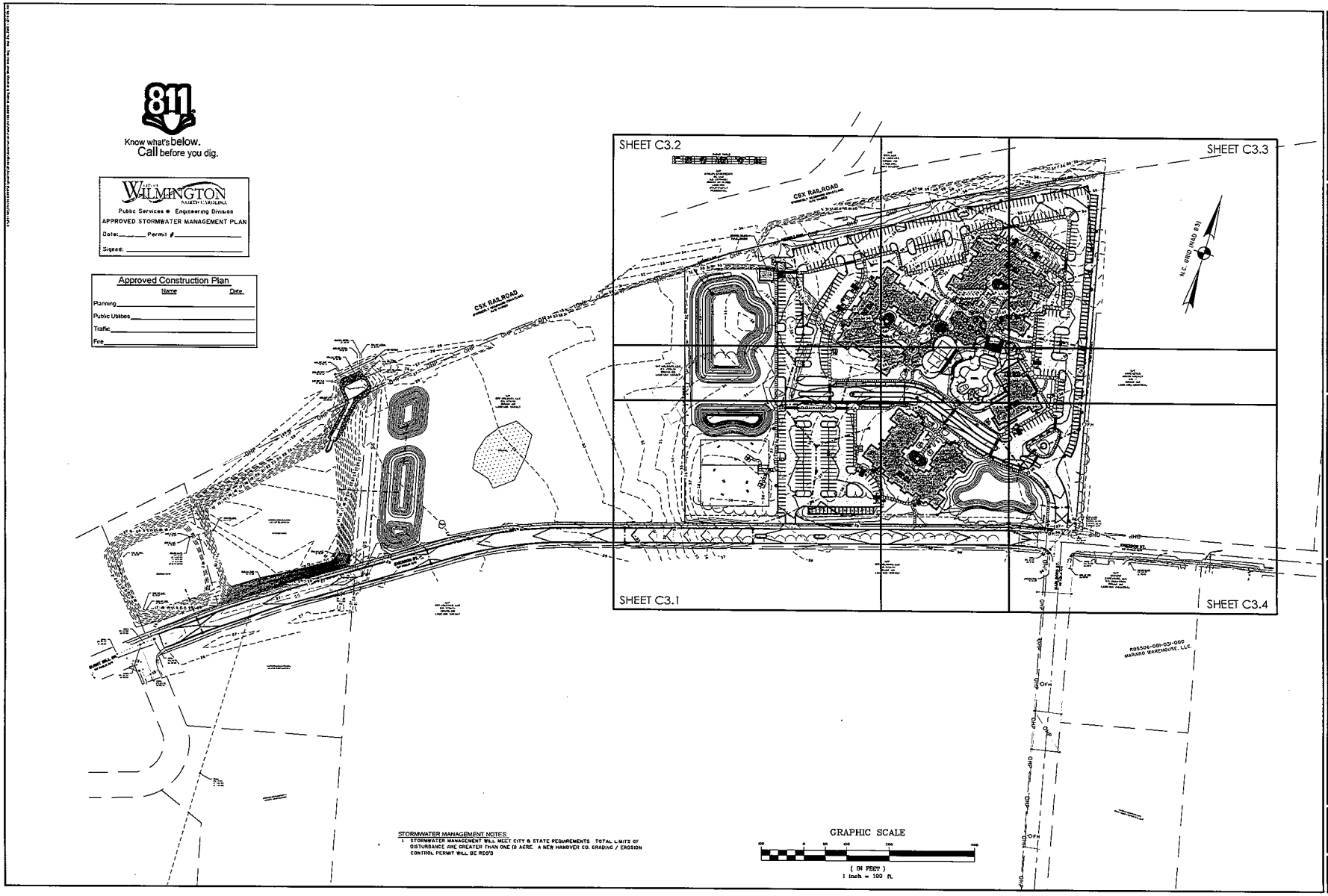
CITY OF WILMINGTON, NORTH CAROLINA
PROGRESS BUILDERS, LLC
WATER & SEWER PLAN AND PROFILE

JOB NO.	J-24436.0000
DATE:	9/24/15
DRAWN:	JRJ
DESIGNED:	SKM
REVIEWED:	JDH
APPROVED:	JDH
SCALE:	########

C2.3



STORMWATER MANAGEMENT NOTES:

1. STORMWATER MANAGEMENT WILL MEET CITY & STATE REQUIREMENTS. TOTAL LIMITS OF DISTURBANCE ARE GREATER THAN ONE (8 ACRE. A NEW HANOVER CO. GRADING / EROSION CONTROL PERMIT WILL BE REQ'D

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4055 EMERSON STREET
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PROGRESS BUILDERS, LLC

GRADING & DRAINAGE SHEET INDEX

JOB NO:	J-24436.0000
DATE:	9/24/15
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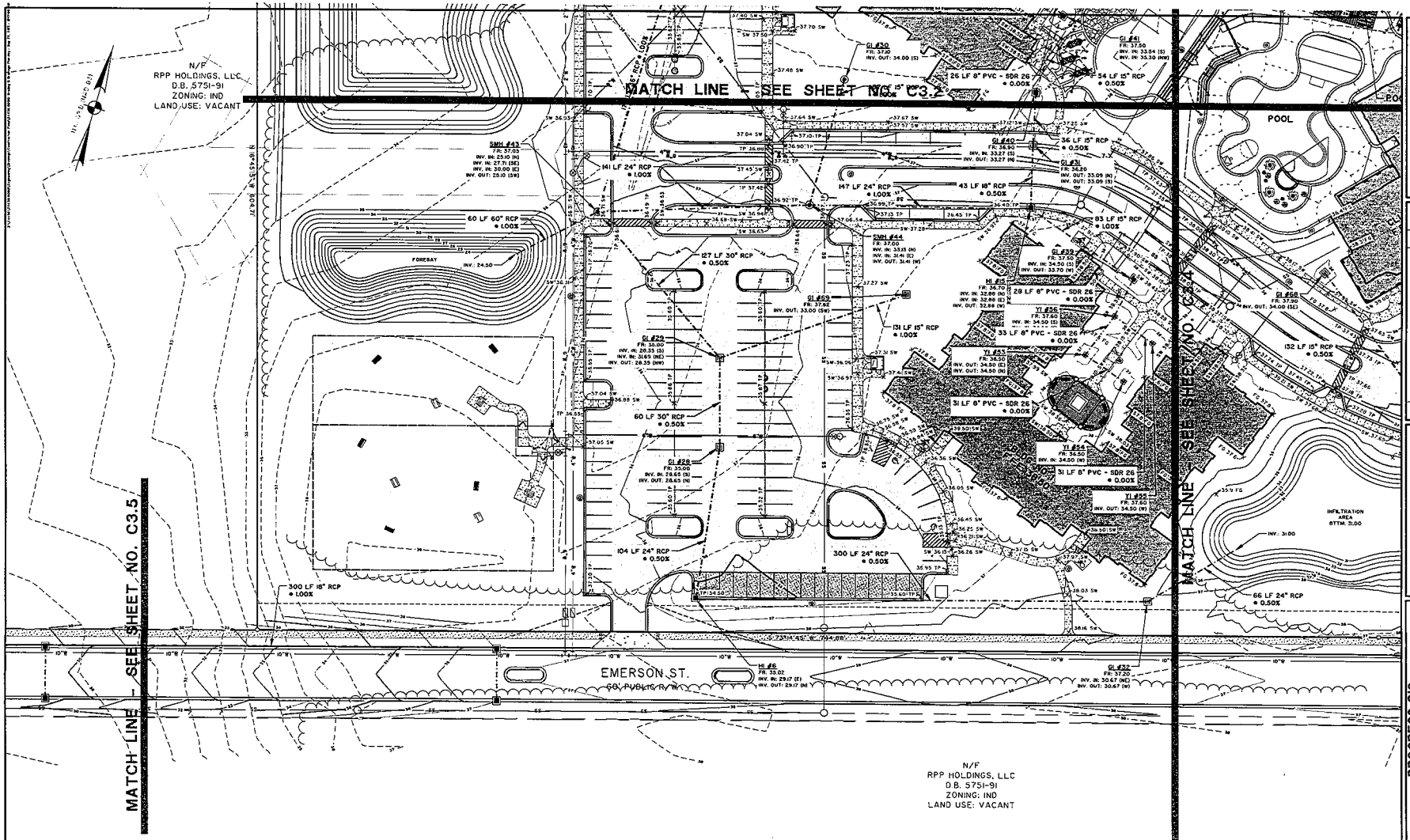
REVIEWED:	JDH
APPROVED:	JDH
SCALE:	1" = 100'

C3.0



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Approved Construction Plan	
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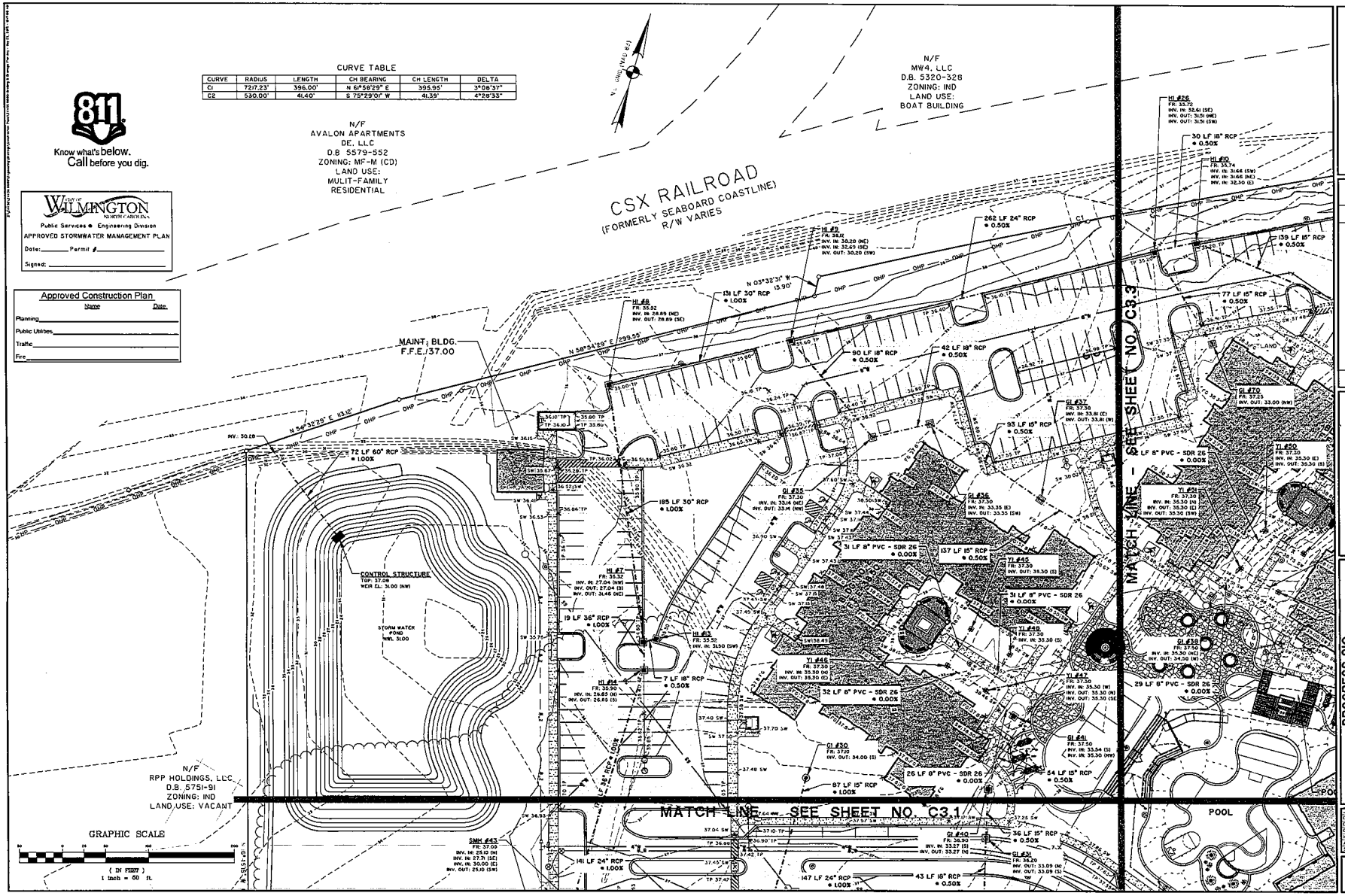
GRADING & DRAINAGE PLAN

JOB NO:	J-24436.00.00
DATE:	9/24/13
DRAWN:	JBJ
DESIGNED:	SKM
REVIEWED:	JBR
APPROVED:	JDR30
SCALE:	

C3.1



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PROGRESS 910
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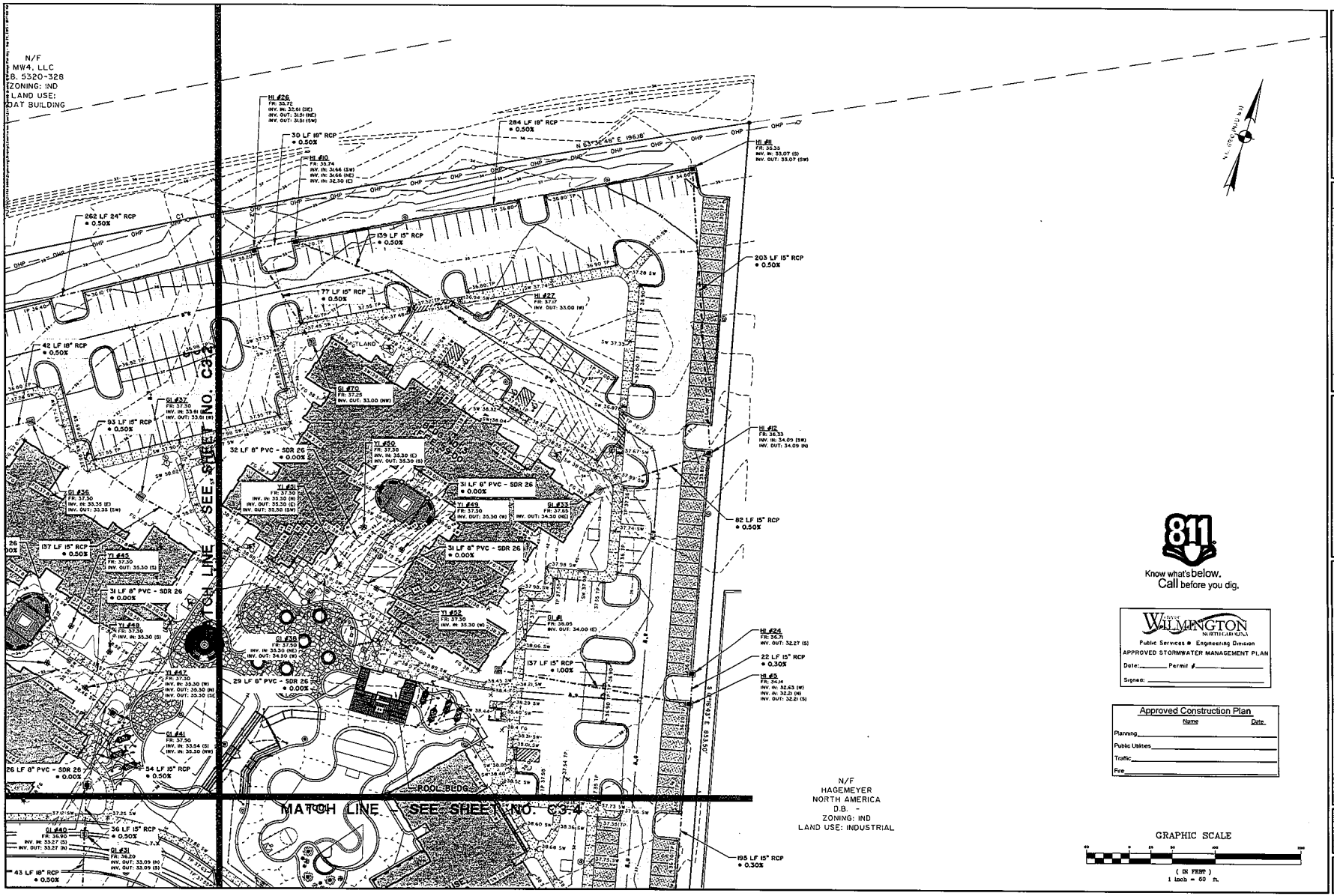
GRADING & DRAINAGE PLAN

JOB NO: J-24436.0000
DATE: 9/24/15
DRAWN: JRJ
DESIGNED: SKM
REVIEWED: JDH
APPROVED: JDH
SCALE: 1" = 30'

C3.2



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PROGRESS 910
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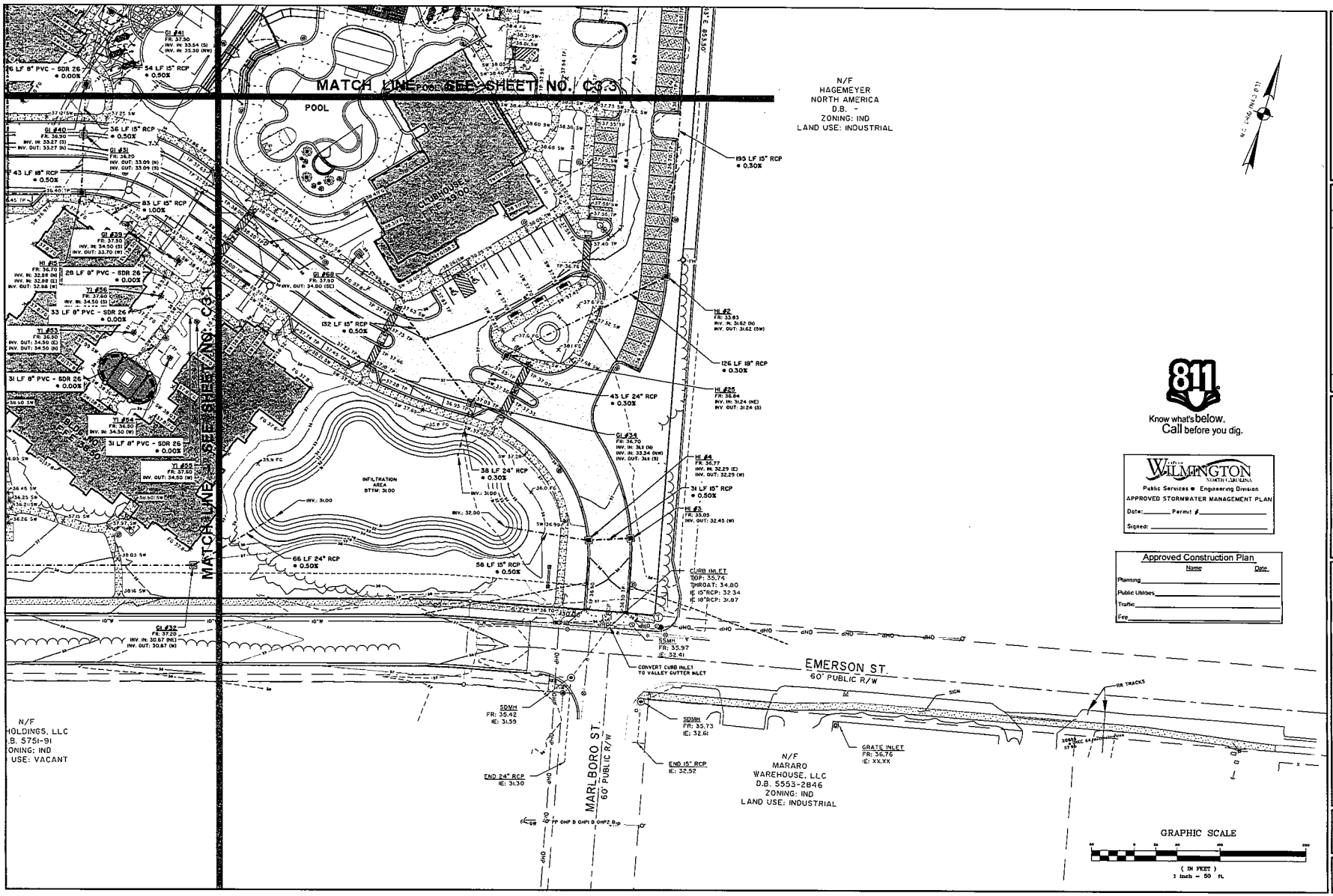
PROGRESS BUILDERS, LLC

GRADING & DRAINAGE PLAN

JOB NO:	J-24836.0000
DATE:	9/24/12
DRAWN:	JRJ
DESIGNED:	SKM
REVIEWED:	JDR
APPROVED:	JDR
SCALE:	1" = 30'

C3.3



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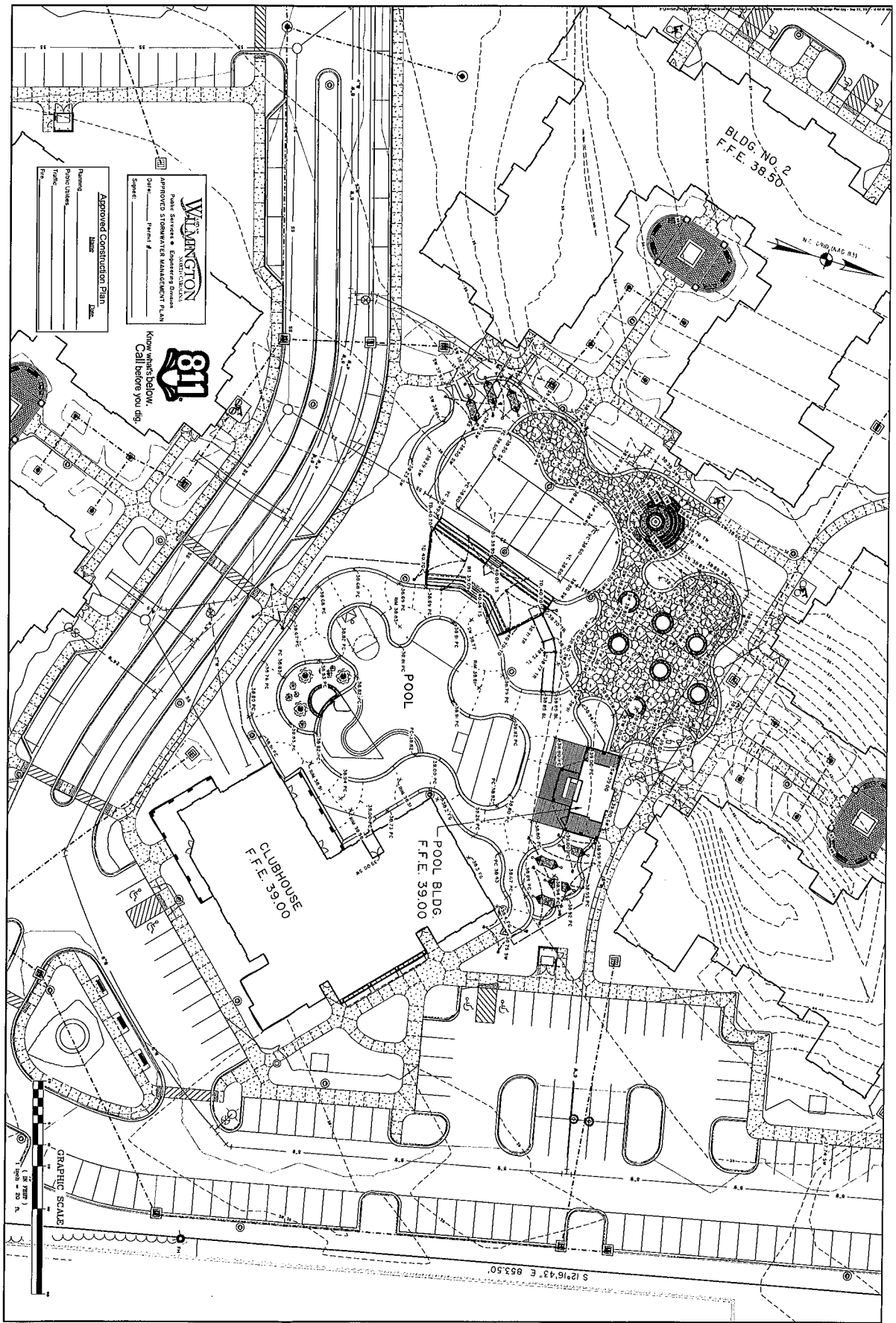

C3.5

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AMENITY AREA GRADING & DRAINAGE PLAN

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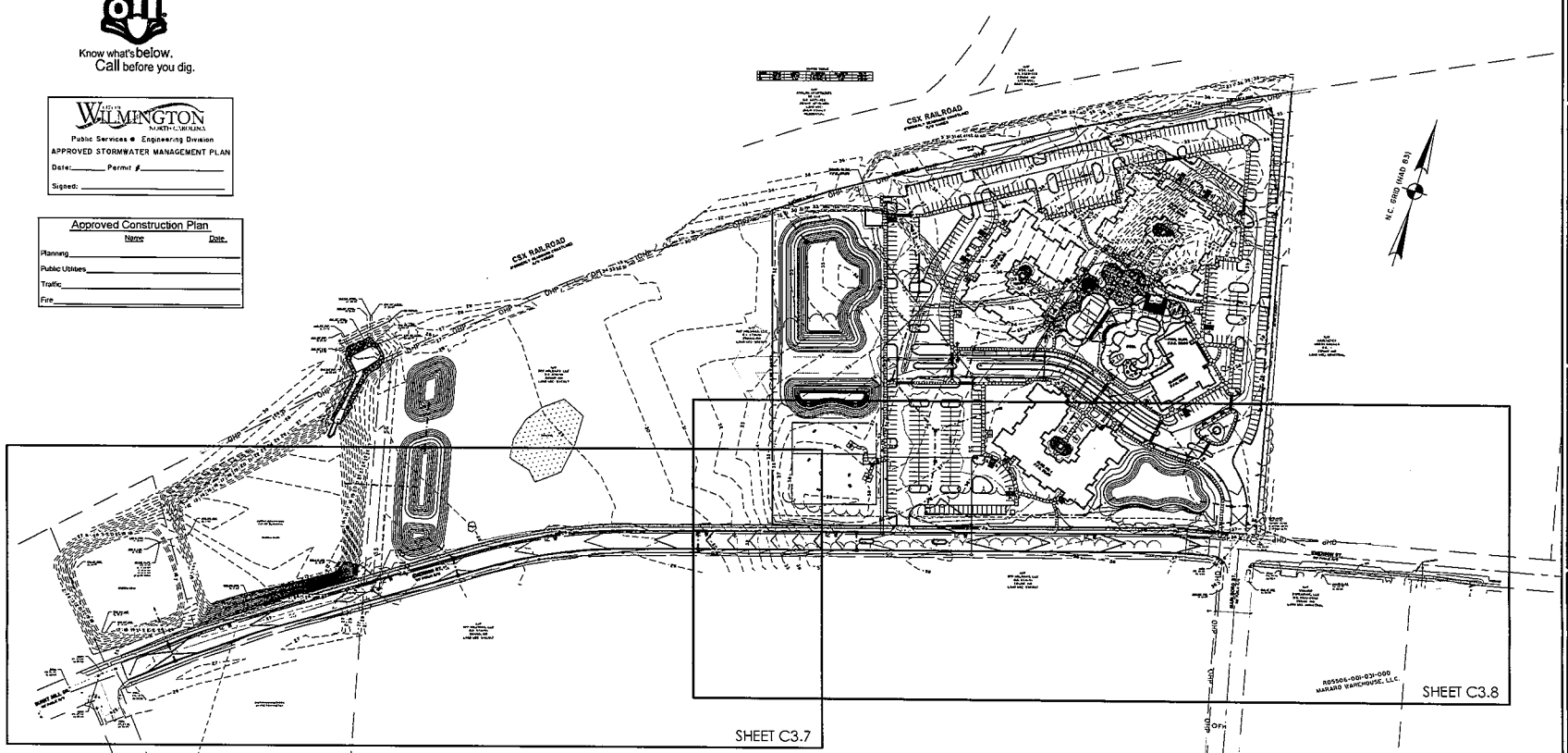

TRAFFIC NOTES

1. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY & FOR DRIVEWAY ARE TO BE THERMOPLASTIC & MEET CITY AND/OR NCDOT STANDARDS
2. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS
3. CONTACT WILMINGTON TRAFFIC ENGINEERING, AT 341-7888, TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN ADD A NOTE TO CALL TRAFFIC ENGINEERING FORT-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION IN THE R/W.
4. ANY BROKEN OR MISSING SIDEWALK PANELS AND/OR CURBING SHALL BE REPLACED
5. CONTACT KAREN DIXON AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS THE LANDSCAPING PLAN WILL BE NEEDED TO DETERMINING STREET LIGHT LOCATIONS
6. TACTILE WARNING MATS TO BE INSTALLED AT ALL WHEELCHAIR RAMPS
7. ONCE STREETS ARE READY TO BE OPEN TO PUBLIC TRAFFIC, CONTACT THE TRAFFIC ENGINEERING DIVISION TO REQUEST INSTALLATION OF TRAFFIC AND STREET NAME SIGNS PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
8. A LANDSCAPING PLAN, INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE TRAFFIC ENGINEERING DIVISION AND PARKS & RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT. PLAN SHALL ADHERE TO SD 15-17.
9. ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30"-10'.

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

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PROGRESS 910
4055 EMERSON STREET
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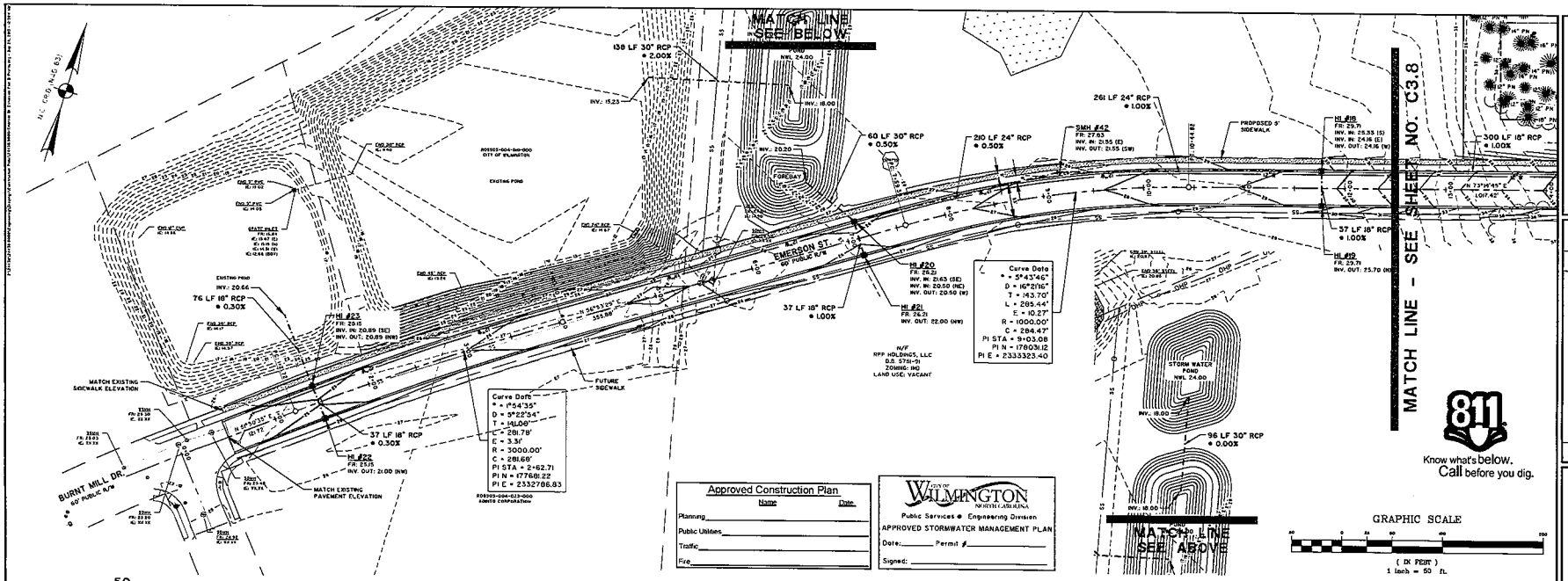
PROGRESS BUILDERS, LLC

EMERSON ST. EXTENSION SHEET INDEX

JOB NO:	J-24436.0000
DATE:	9/24/16
DRAWN:	JBJ
DESIGNED:	SKM
REVIEWED:	JDH
APPROVED:	JDH
SCALE:	1" = 100'

C3.6



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Name	Date
Planning	
Public Utilities	
Traffic	
Fire	

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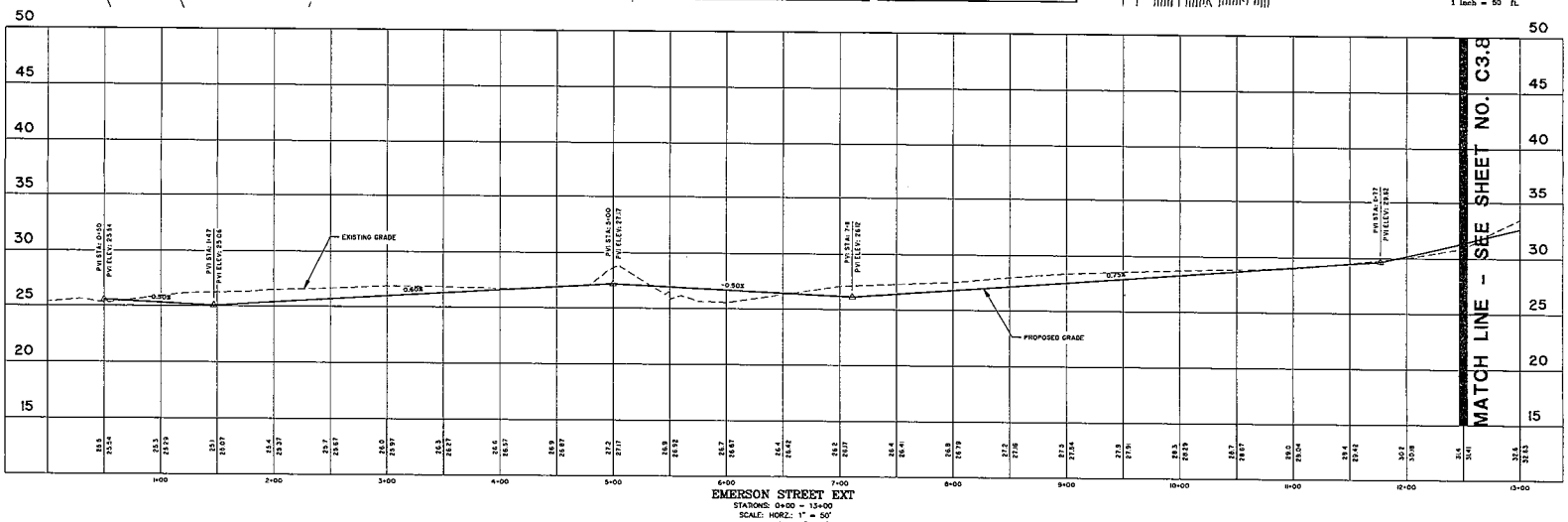
Date: _____ Permit # _____
Signed: _____



EMERSON STREET EXT
STATIONS: 0+00 - 13+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

Preliminary
For Review Only

NO	REVISIONS	BY	DATE

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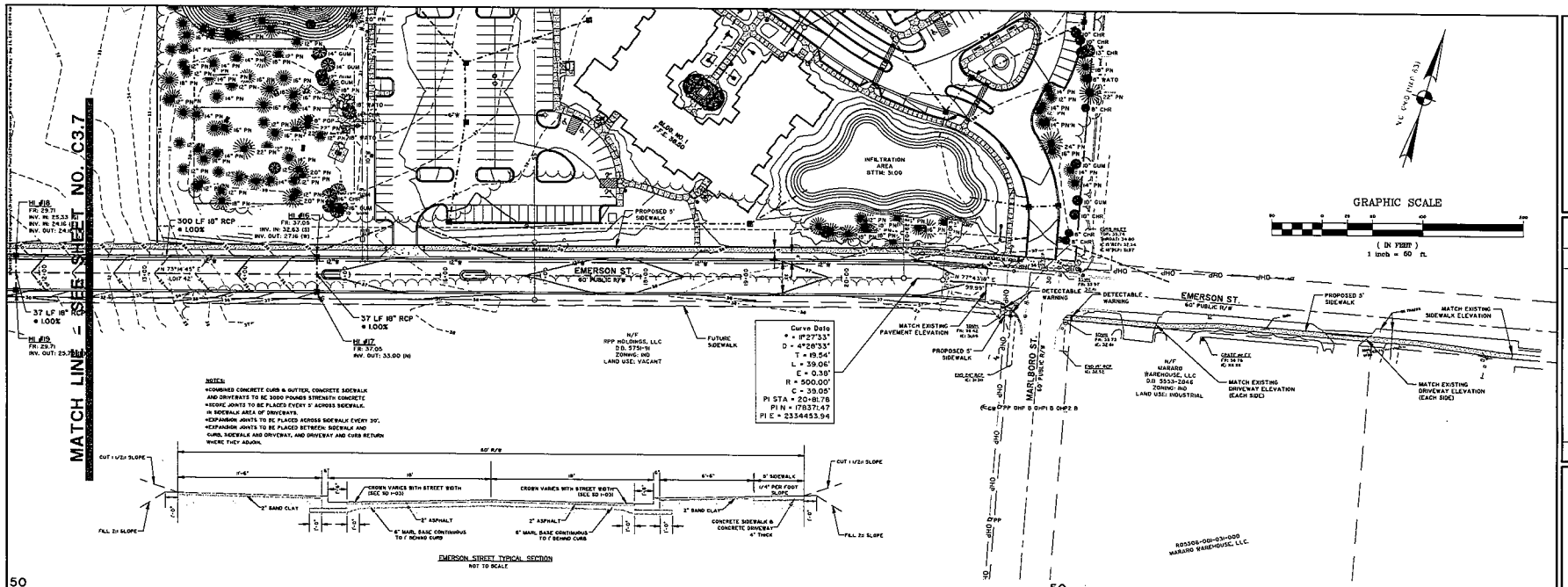
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

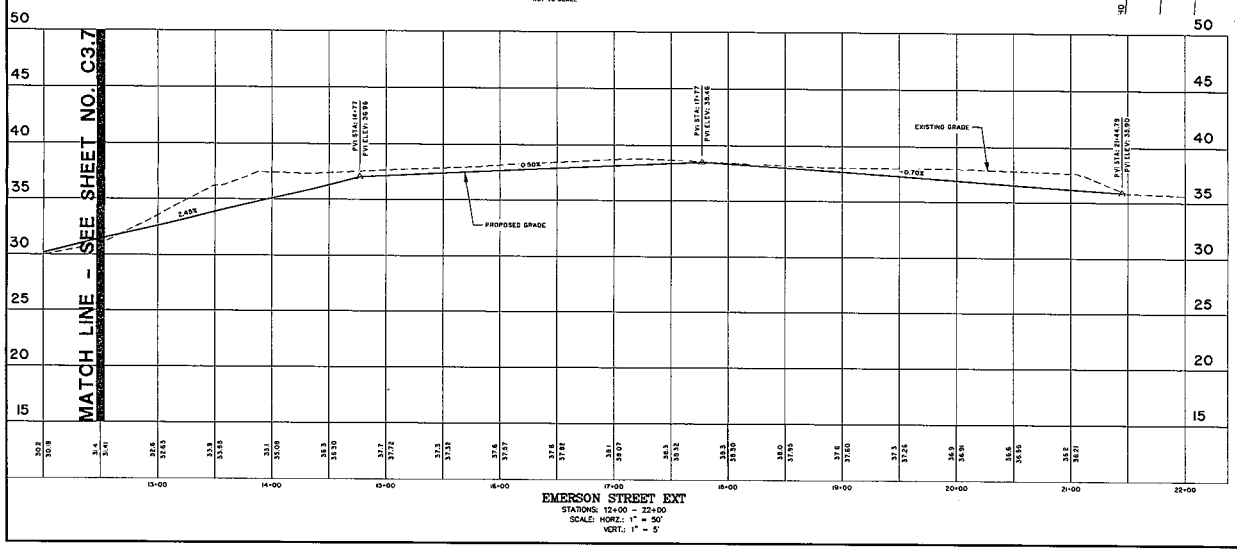
PROGRESS BUILDERS, LLC

EMERSON ST. EXTENSION PLAN & PROFILE

JOB NO:	J-24436-0000
DATE:	9/24/15
DRAWN:	JBJ
DESIGNED:	SKM
REVIEWED:	JDH
APPROVED:	JDR
SCALE:	########

C3.7





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

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

Preliminary
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NO	REVISIONS	BY	DATE

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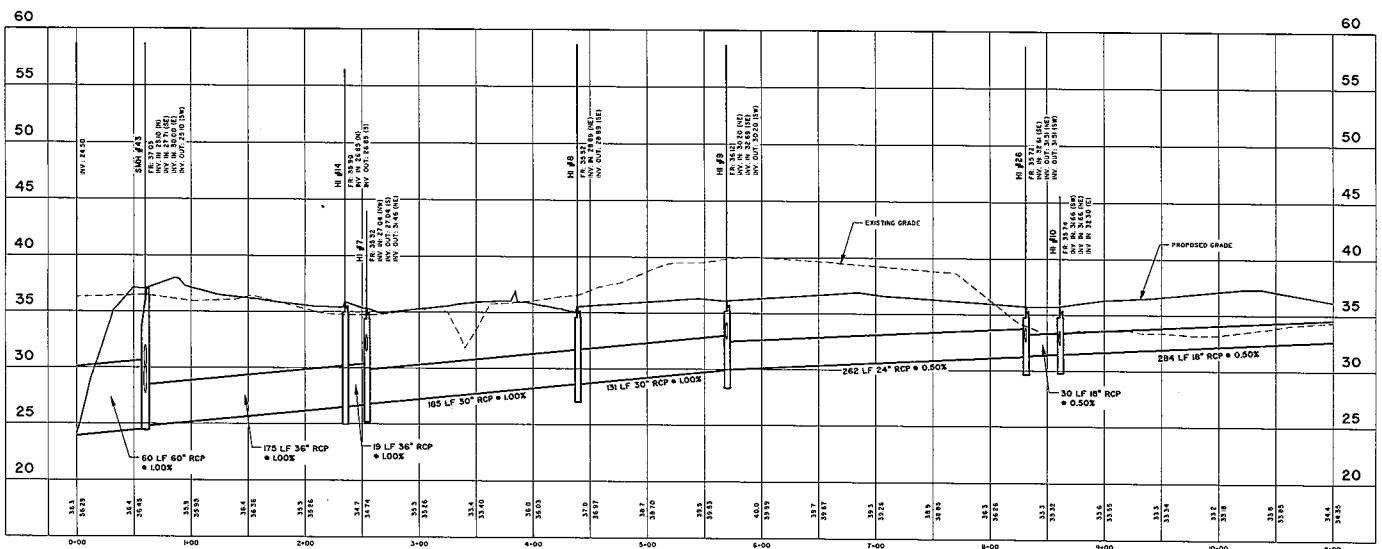
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

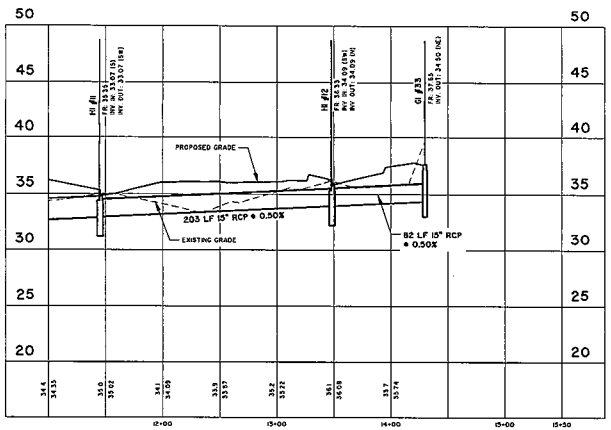
EMERSON ST. EXTENSION PLAN & PROFILE

JOB NO:	J-24436-0000
DATE:	9/24/15
DRAWN:	JBJ
DESIGNED:	SKM
REVIEWED:	JDH
APPROVED:	JDR
SCALE:	########

C3.8



24436.0000-DRAINAGE RUN1
STATIONS: -0+25 - 11+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000-DRAINAGE RUN1
STATIONS: 11+00 - 15+50
SCALE: HORZ.: 1" = 50'
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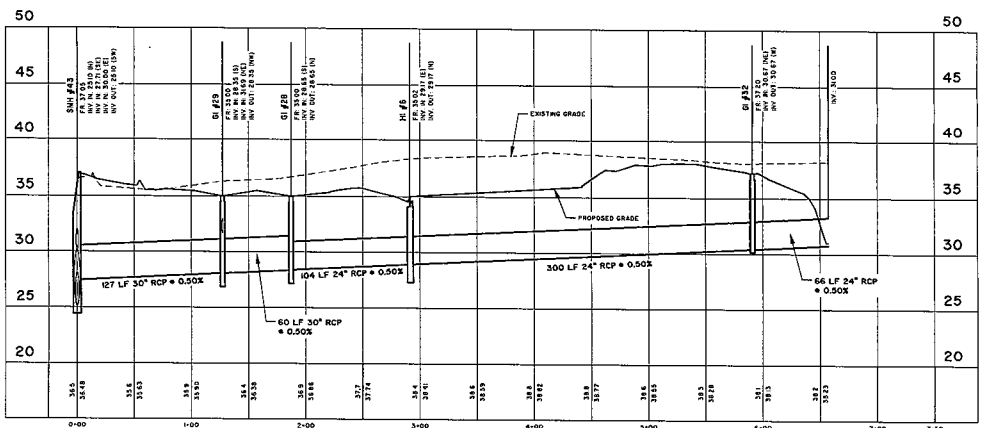

24436.0000-DRAINAGE RUN2
STATIONS: -0+25 - 7+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

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Know what's below.
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CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
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Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

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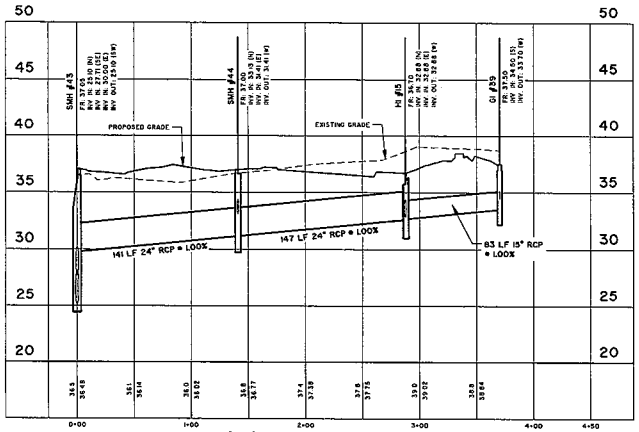
PROGRESS BUILDERS, LLC

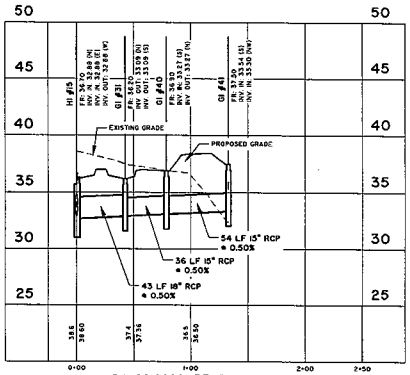
STORM DRAINAGE PROFILES

JOB NO.	J-24436.0000
DATE	9/24/15
DRAWN	JBJ
DESIGNED	SKM
REVIEWED	JDH
APPROVED	JDR
SCALE	AS NOTED

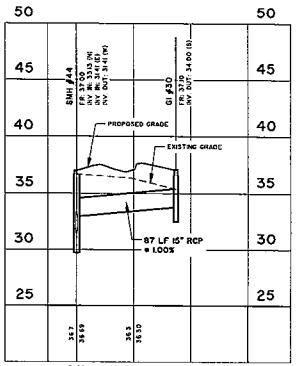
C3.9



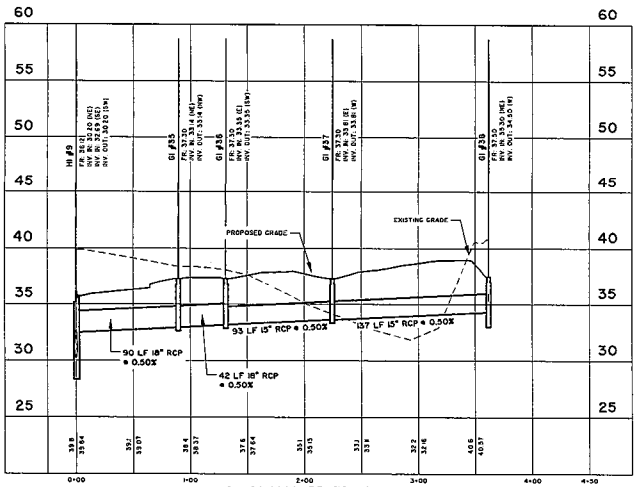
24436.0000–DRAINAGE RUN3
STATIONS: -0+25 – 4+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



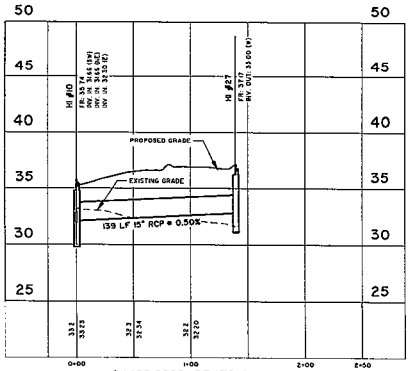
24436.0000–DRAINAGE RUN4
STATIONS: -0+25 – 2+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



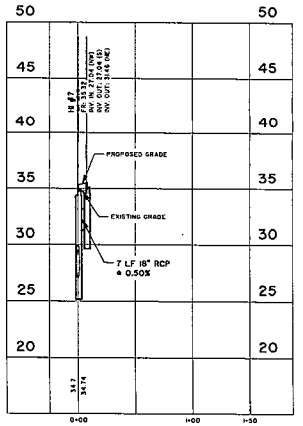
24436.0000–DRAINAGE RUN5
STATIONS: -0+25 – 1+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000–DRAINAGE RUN6
STATIONS: -0+25 – 4+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000–DRAINAGE RUN7
STATIONS: -0+25 – 2+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000–DRAINAGE RUN8
STATIONS: -0+25 – 1+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

811
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CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit #_____
Signed: _____

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

Preliminary
For Review Only

NO	REVISIONS	BY	DATE

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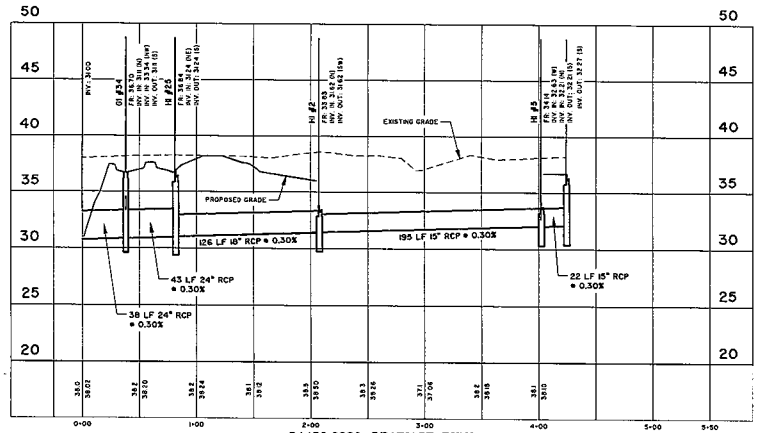
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

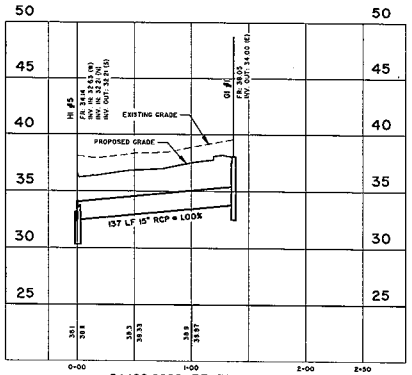
STORM DRAINAGE PROFILES

JOB NO.	J-24436.00/01
DATE	5/26/25
DRAWN	JBJ
DESIGNED	SKM
HELVIELD	JDH
APPROVED	JDH
SCALE	AS NOTED

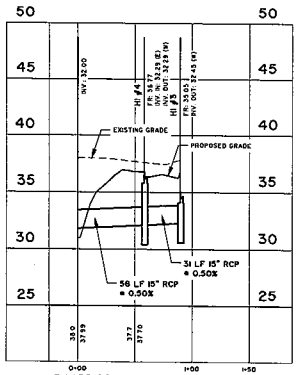
C3.10



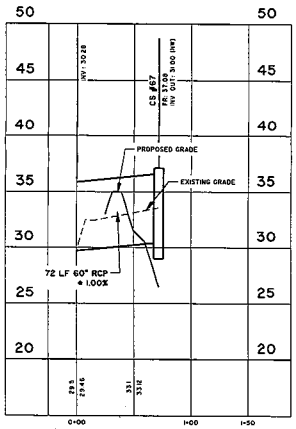
24438.0000–DRAINAGE RUN9
STATIONS: -0+25 ~ 5+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



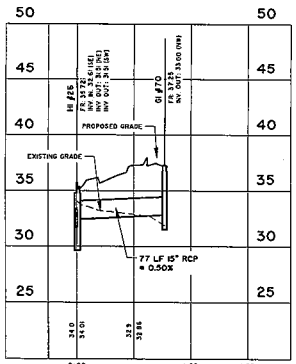
24436.0000–DRAINAGE RUN10
STATIONS: -0+25 ~ 2+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



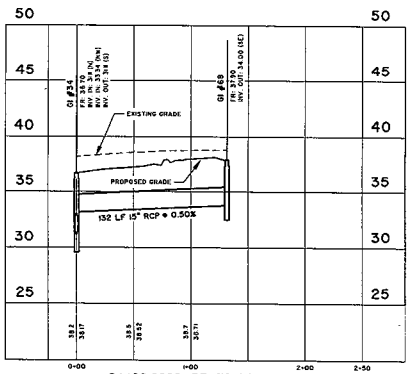
24436.0000–DRAINAGE RUN11
STATIONS: -0+25 ~ 1+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



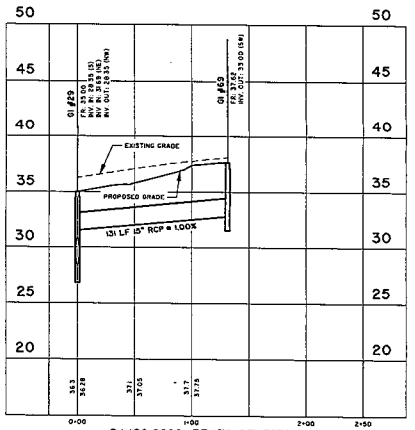
24436.0000–DRAINAGE RUN12
STATIONS: -0+25 ~ 1+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000–DRAINAGE RUN13
STATIONS: -0+25 ~ 1+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000–DRAINAGE RUN14
STATIONS: -0+25 ~ 2+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000–DRAINAGE RUN15
STATIONS: -0+25 ~ 2+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

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

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

Preliminary
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PROGRESS 910
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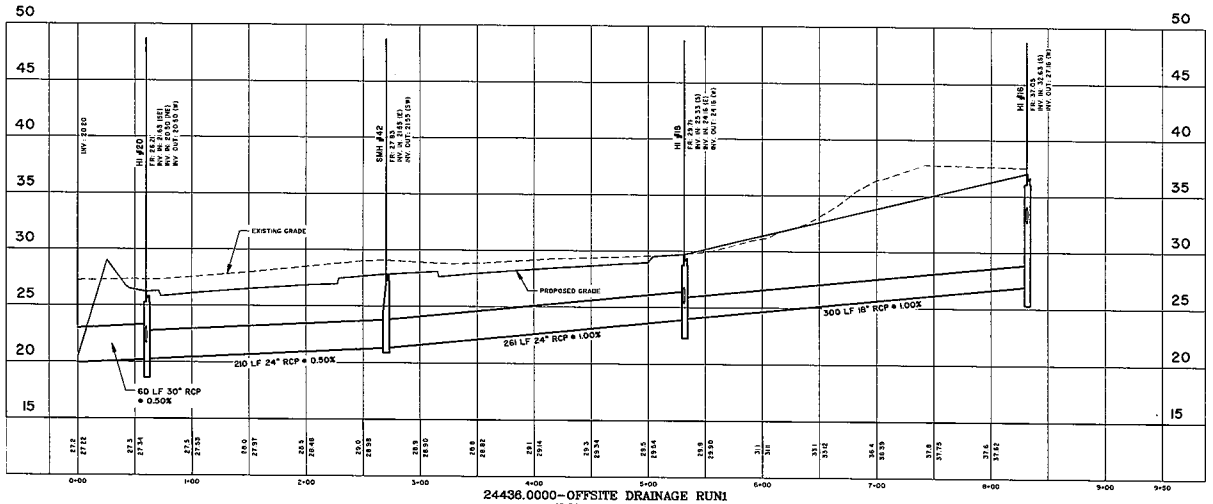
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

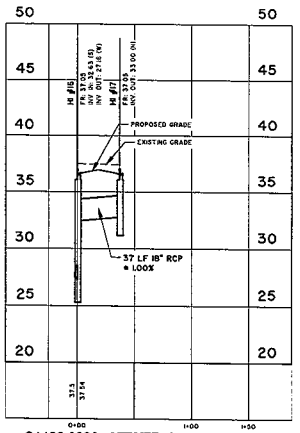
STORM DRAINAGE PROFILES

JOB NO.	24436.0000
DATE:	9/24/13
DRAWN:	HJ
DESIGNED	SKK
HS/WL/WLO	JDH
APPROVED	JDH
SCALE:	AS NOTED

C3.11



24436.0000–OFFSITE DRAINAGE RUN1
STATIONS: -0+25 – 9+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000–OFFSITE DRAINAGE RUN2
STATIONS: -0+25 – 1+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

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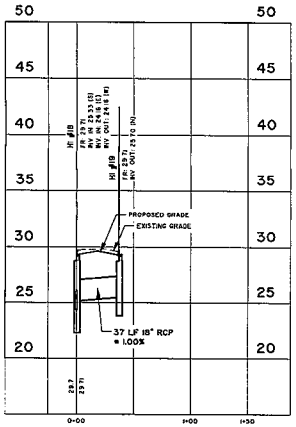
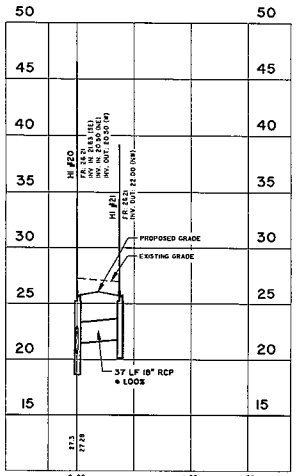


24436.0000–OFFSITE DRAINAGE RUN3
STATIONS: -0+25 – 1+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000–OFFSITE DRAINAGE RUN4
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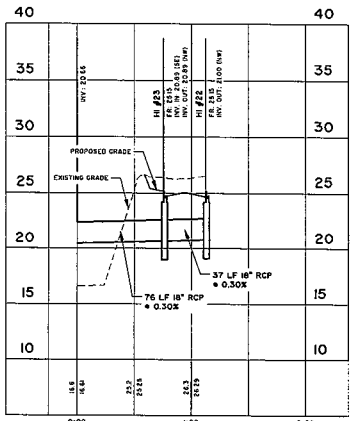
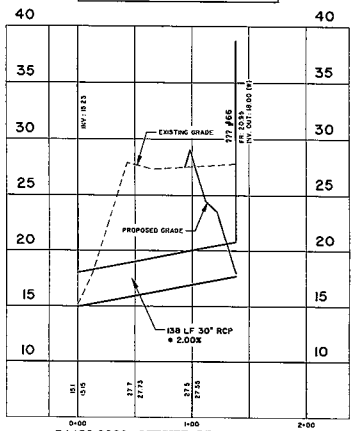
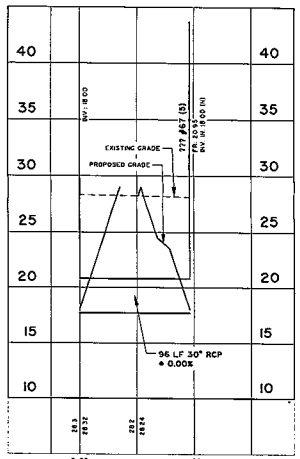
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000–OFFSITE DRAINAGE RUN5
STATIONS: -0+25 – 2+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000–OFFSITE DRAINAGE RUN6
STATIONS: -0+25 – 2+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



24436.0000–OFFSITE DRAINAGE RUN7
STATIONS: -0+25 – 1+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

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PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

STORM DRAINAGE PROFILES

JOB NO.	24436.0000
DATE	9/24/15
DRAWN	JBJ
DESIGNED	SAM
REVIEWED	JDH
APPROVED	JDH
SCALE	AS NOTED

C3.12

NOTES:

1. ACCESSIBLE ROUTE - EXTERIOR:
   MINIMUM CLEAR WIDTH IS 3'. IF ACCESSIBLE ROUTE HAS LESS THAN 5' CLEAR WIDTH, THEN PASSING SPACES AT LEAST 5'x5' SHALL BE LOCATED EVERY 200' OR LESS (INTERSECTING SIDEWALKS MEET THIS REQUIREMENT). LONGITUDINAL (RUNNING) SLOPE MAY NOT EXCEED 5% UNLESS RAMP WITH HANDRAIL IS INSTALLED WITH COMPLIANT LANDING (RAMPS MAY NOT EXCEED 8.33% & COMPLIANT LANDING MAY NOT EXCEED 2% SLOPE IN ALL DIRECTIONS). CROSS SLOPE ALONG ACCESSIBLE ROUTE MAY NOT EXCEED 2%. GAPS IN ROUTE MAY NOT EXCEED 1/2" IN WIDTH.

2. FINISHED SURFACE HEIGHT DIFFERENCE REQUIREMENTS:
   A. 0 TO 1/4" : NO REQUIREMENTS
   B. 1/4" TO 1/2" : BEVEL WITH 50 SLOPE
   C. LARGER THAN 1/2" : CONFORM TO REQUIREMENTS FOR RAMP

3. RAMPS:
   - MAX RAMP SLOPE 8.33% (1:12).
   - RAMPS STEEPER THAN 8.33% ARE NOT ACCEPTABLE
   - MAX RISE FOR ANY RAMP RUN IS 30" (AT 8.33% SLOPE, MAXIMUM RUN OF RAMP IS 30')
   - MAX CROSS SLOPE OF RAMP 2% (1:50)

   A. LANDINGS:
   - RAMPS SHALL HAVE LEVEL LANDINGS AT BOTTOM AND TOP OF EACH RAMP
   - LANDING SHALL BE AT LEAST AS WIDE AS RAMP LEADING TO IT
   - LANDING LENGTH SHALL BE MINIMUM 5' CLEAR.
   - IF RAMPS CHANGE DIRECTION AT LANDING, MINIMUM LANDING SIZE SHALL BE 5'x5'.
   - ALL LANDINGS ARE TO BE NO MORE THAN 2% SLOPE IN ANY DIRECTION

   B. HANDRAILS:
   - HANDRAILS REQUIRED ON BOTH SIDES (MIN. 36" CLEAR BETWEEN HANDRAILS) WHEN RAMP RISE IS GREATER THAN 6"
   - PROVIDE MINIMUM 12" LONG HANDRAIL EXTENSIONS AT TOP AND BOTTOM LANDINGS.
   - PROVIDE MINIMUM 2" HIGH EDGE PROTECTION OR RAIL WITH LESS THAN 4" CLEAR TO RAMP IF RAMP HAS DROP-OFFS
   - ROUTES BETWEEN BUILDINGS WITH ONLY DWELLING UNITS DO NOT HAVE TO HAVE HANDRAILS
   - STAIRS NOT ALLOWED AS PART OF ACCESSIBLE ROUTE BUT IF ADJACENT TO ROUTE OR PART OF TENANT SPACE MUST MEET REQUIREMENTS FOR STAIR RAILS

4. CURB RAMPS:
   - MAX CROSS SLOPE 2% FOR ALL CURB RAMPS
   - MAX LONGITUDINAL SLOPE OF CURB RAMP 8.33%
   - MAX LONGITUDINAL SLOPE OF SIDE FLARES 8.33%, OR 10% WITH A 4' WIDE PASSING SPACE.
   - MAX LONGITUDINAL SLOPE OF ADJOINING GUTTERS, ROAD SURFACE, OR ACCESSIBLE ROUTE 5%.
   - MIN WIDTH 36" (NOT INCLUDING SIDE FLARES)
   - DETECTABLE WARNING IS REQUIRED ON CURB RAMPS IN PUBLIC RIGHTS OF WAY, AND SHALL BE 24" MINIMUM IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE. DETECTABLE WARNINGS SHALL BE LOCATED SO THE EDGE NEAREST THE CURB LINE IS 6" TO 8" FROM THE CURB LINE

5. PAVEMENT MARKINGS:
   AS REQUIRED BY LOCAL JURISDICTIONAL AUTHORITY (RECOMMENDED CROSSWALK MARKING TO DESIGNATE ACCESSIBLE PEDESTRIAN ROUTE)

6. PARKING SPACES:
   - MINIMUM 8' WIDE ACCESSIBLE PARKING SPACE
   - MINIMUM 5' WIDE ACCESS AISLE AT STANDARD SPACES
   - MINIMUM 8' WIDE ACCESS AISLE AT VAN ACCESSIBLE SPACES
   - MAXIMUM 2% (1:50) SLOPE IN ANY DIRECTION

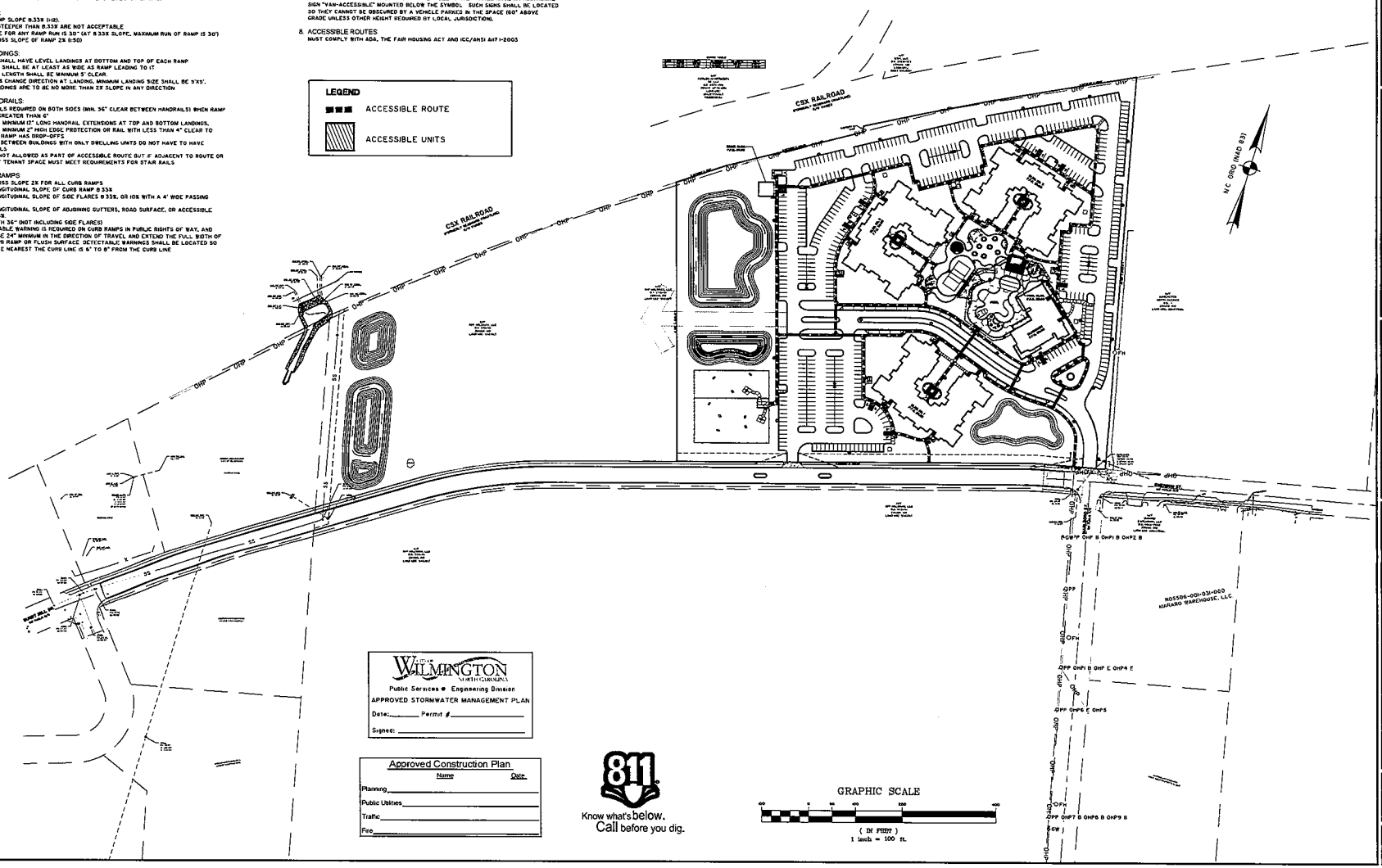
7. SIGNAGE:
   ACCESSIBLE PARKING SPACES SHALL BE DESIGNATED AS RESERVED BY A SIGN SHOWING THE SYMBOL OF ACCESSIBILITY. VAN ACCESSIBLE SPACES SHALL HAVE AN ADDITIONAL SIGN "VAN-ACCESSIBLE" MOUNTED BELOW THE SYMBOL. SUCH SIGNS SHALL BE LOCATED SO THEY CANNOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE (60" ABOVE GRADE UNLESS OTHER HEIGHT REQUIRED BY LOCAL JURISDICTION).

8. ACCESSIBLE ROUTES
   MUST COMPLY WITH ADA, THE FAIR HOUSING ACT AND ICC/ANSI A117.1-2003

LEGEND

ACCESSIBLE ROUTE

ACCESSIBLE UNITS



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

Approved Construction Plan

Name	Date
Planning	
Public Utilities	
Traffic	
Fire	

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GRAPHIC SCALE
(IN FEET)
1 inch = 100 ft.

Preliminary
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NO	REVISIONS	BY	DATE

THOMAS & HUTTON
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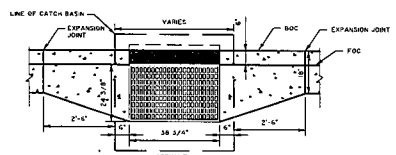
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

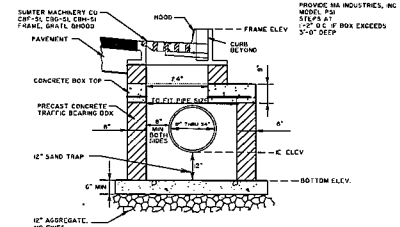
ACCESSIBLE ROUTE PLAN

JOB NO:	J-14434.0000
DATE:	9/24/15
DRAWN:	JBJ
DESIGNED:	SKM
REVIEWED:	JDR
APPROVED:	JDR
SCALE:	1" = 100'

C4.0



PLAN AT CURB INLET

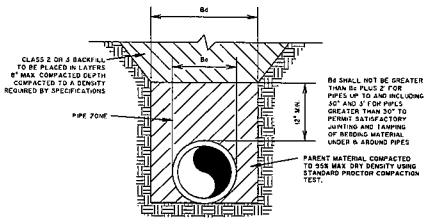


NOTE: THE PRECAST MANUFACTURER IS TO PREPARE AND SUBMIT TO THE ENGINEER DESIGN DETAILS AND CALCULATIONS FOR THE PRECAST STRUCTURES SPECIFIED ON THE DESIGN CRITERIA SPECIFIED. THE DESIGN SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF SOUTH CAROLINA EXPERIENCED IN THE DESIGN OF PRECAST CONCRETE. THE DESIGN SHALL INCLUDE PROVISIONS FOR HANDLING STRESSES AND CONSTRUCTION LOADS REPRODUCED COPIES OF ASTM C789 "STANDARD SPECIFICATION FOR PRECAST REINFORCED CONCRETE BOX SECTIONS FOR CULVERTS, STORM DRAINS, AND SEWERS" WILL NOT BE ACCEPTED AS A SUBSTITUTE FOR DESIGN.

NOTES: USE NCDOT TYPE 3 OR M MORTOR ON ALL BOXES

HOODED INLET

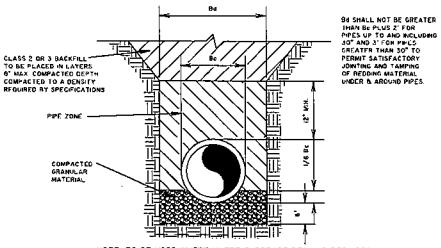
NOT TO SCALE



ALL STORM PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP), CONFORMING TO ASTM C-76 CLASS III UNLESS OTHERWISE NOTED

STORM LINE BEDDING DETAIL

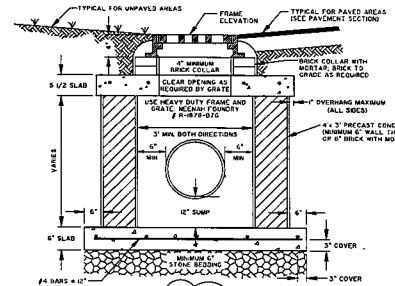
NOT TO SCALE

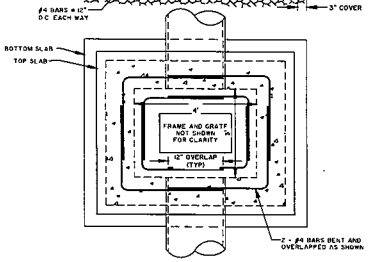


NOTE: TO BE USED WHERE WHERE SUBGRADE DRAIN IS REQUIRED. (SEE GRATE INLET DETAIL)

ALTERNATE STORM LINE BEDDING DETAIL

NOT TO SCALE





NOTES
1. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4"
2. WHERE BRICK IS USED, ALL EXPOSED SURFACES SHALL BE COATED WITH 1/2" L2 MORTAR INSIDE AND OUTSIDE
3. IF PRECAST BOX IS USED, TOP, RISER, AND BASE SHALL CONFORM TO THE LATEST REVISION OF ASTM C-478. THE PRECAST MANUFACTURE IS TO PREPARE AND SUBMIT TO THE ENGINEER DESIGN DETAILS AND CALCULATIONS FOR THE STRUCTURES SHOWN BASED ON THE DESIGN CRITERIA SPECIFIED. THE DESIGN SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH OR SOUTH CAROLINA EXPERIENCED IN THE DESIGN OF PRECAST CONCRETE. THE DESIGN SHALL INCLUDE PROVISIONS FOR HANDLING STRESSES AND CONSTRUCTION LOADS REPRODUCED COPIES OF ASTM C789 "STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE BOX SECTIONS FOR CULVERTS, STORM DRAINS, AND SEWERS" WILL NOT BE ACCEPTED AS A SUBSTITUTE FOR DESIGN.

STANDARD GRATE INLET

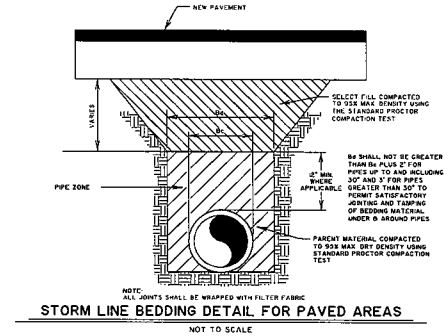
NOT TO SCALE

811 Know what's below. Call before you dig.

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

Approved Construction Plan

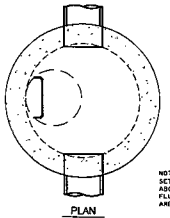
	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		



NOTE:
ALL JOINTS SHALL BE WRAPPED WITH FILTER FABRIC

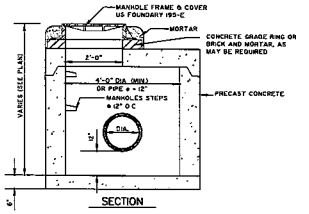
STORM LINE BEDDING DETAIL FOR PAVED AREAS

NOT TO SCALE



PLAN

NOTE:
SET TOPS OF MANHOLES 2" ABOVE NATURAL GROUND OR FLUSH WITH PAVING IN TRAFFIC AREAS

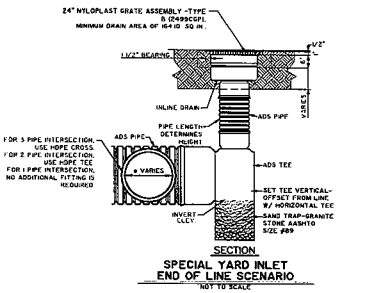


SECTION

NOTE:
THE PRECAST MANUFACTURE IS TO PREPARE AND SUBMIT TO THE ENGINEER DESIGN DETAILS AND CALCULATIONS FOR THE STRUCTURES SHOWN BASED ON THE DESIGN CRITERIA SPECIFIED. THE DESIGN SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA EXPERIENCED IN THE DESIGN OF PRECAST CONCRETE. THE DESIGN SHALL INCLUDE PROVISIONS FOR HANDLING STRESSES AND CONSTRUCTION LOADS REPRODUCED COPIES OF ASTM C789 "STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE BOX SECTIONS FOR CULVERTS, STORM DRAINS, AND SEWERS" WILL NOT BE ACCEPTED AS A SUBSTITUTE FOR DESIGN.

STORM MANHOLE

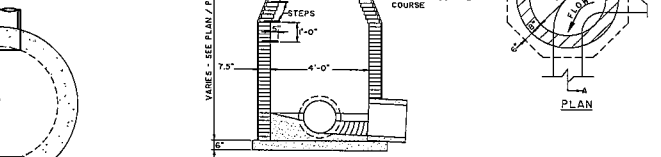
NOT TO SCALE



SECTION

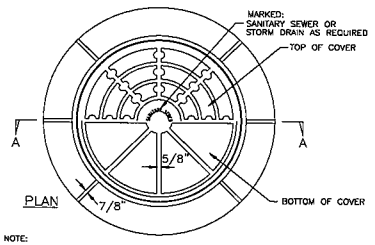
SPECIAL YARD INLET
END OF LINE SCENARIO

NOT TO SCALE



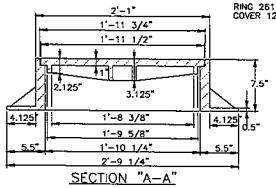
SECTION "A-A"

GUIDELINES FOR STORM DRAIN MANHOLE
SD 2 -03
NOT TO SCALE



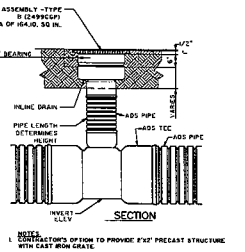
NOTE:
RING & COVER CONTACT SURFACES SHALL BE MACHINED TO INSURE EVEN BEARING OF COVER AND RING

MINIMUM WEIGHTS:
RING 261 LBS.
COVER 120 LBS.



SECTION "A-A"

STANDARD MANHOLE RING & COVER
SD 14-02
NOT TO SCALE



SECTION

NOTES
1. CONTRACTOR'S OPTION TO PROVIDE 8'x2' PRECAST STRUCTURE WITH CAST IRON GRATE.

SPECIAL YARD INLET

NOT TO SCALE

Preliminary
For Review Only

NO	REVISIONS	BY	DATE

THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting
2155 South Kerr Avenue • Unit B
Wilmington, NC 28403 • 910.332.3360
www.thomasandhutton.com

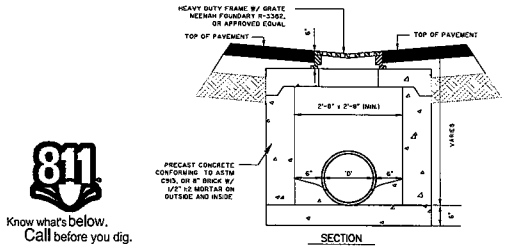
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

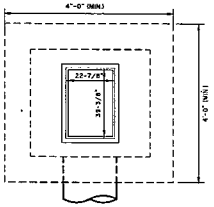
PROGRESS BUILDERS, LLC

SITE DETAILS

JOB NO.	J-20435.0000
DATE	9/22/15
DRAWN	JBJ
DESIGNED	SKW
INLVE WLD.	JDM
APPROVED	JDR
SCALE	1" =

C5.1





VALLEY GUTTER INLET

NOT TO SCALE

811 Know what's below. Call before you dig.

CITY OF WILMINGTON NORTH CAROLINA

Public Services ● Engineering Division

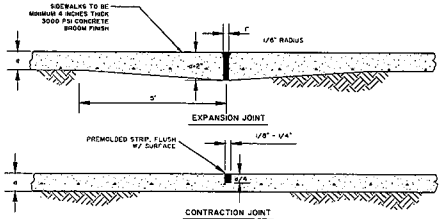
APPROVED STORMWATER MANAGEMENT PLAN

Date:_____ Permit #_____

Signed:_____

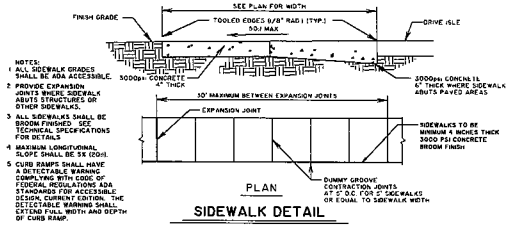
Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		



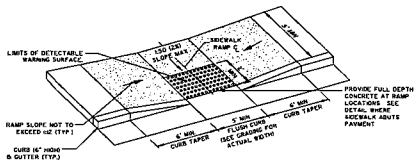
SIDEWALK JOINT DETAILS

NOT TO SCALE



SIDEWALK DETAIL

NOT TO SCALE

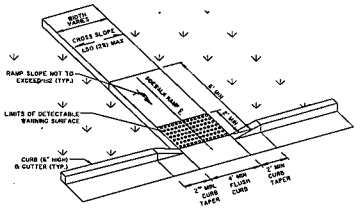


ISOMETRIC VIEW OF RAMP

NOTES:
1. CONSTRUCTION OF ACCESSIBLE CURB RAMP SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES
2. TRANSITIONS FROM RAMPS TO WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. MAXIMUM SLOPES OF ADJOINING GUTTERS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP, OR ACCESSIBLE ROUTE SHALL NOT EXCEED ±20 (5%)
3. CURB RAMP SHALL HAVE A DETECTABLE WARNING THAT EXTENDS THE FULL WIDTH OF CURB RAMP. SEE DETECTABLE WARNING DETAIL

CURB RAMP "TYPE B"

NOT TO SCALE

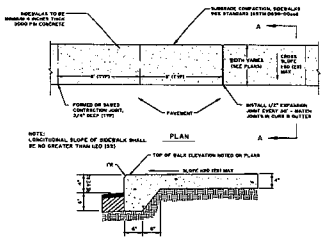


ISOMETRIC VIEW OF RAMP

NOTES:
1. CONSTRUCTION OF ACCESSIBLE CURB RAMP SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES
2. TRANSITIONS FROM RAMPS TO WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. MAXIMUM SLOPES OF ADJOINING GUTTERS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP, OR ACCESSIBLE ROUTE SHALL NOT EXCEED ±20 (5%)
3. CURB RAMP SHALL HAVE A DETECTABLE WARNING THAT EXTENDS THE FULL WIDTH OF CURB RAMP. SEE DETECTABLE WARNING DETAIL
4. LONGITUDINAL SLOPE OF SIDEWALK TO BE NO GREATER THAN ±20 (5%)

CURB RAMP "TYPE B" W/ PERPENDICULAR SIDEWALK

NOT TO SCALE

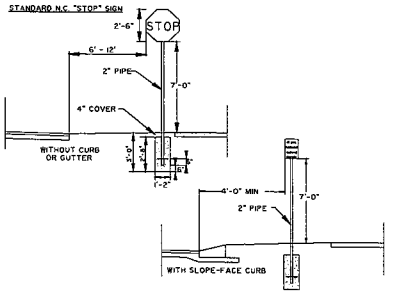


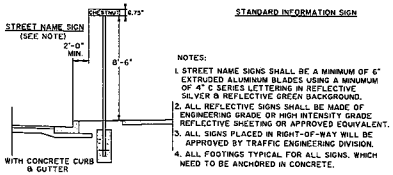
NOTE: LONGITUDINAL SLOPE OF SIDEWALK SHALL BE NO GREATER THAN ±20 (5%)

NOTES:
1. ALL CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND SPECIFICATIONS, AND TO THE TECHNICAL SPECIFICATIONS INCLUDING, BUT NOT LIMITED TO, SECTION 02300 - EARTHWORK AND SECTION 02630 - CAST-IN-PLACE CONCRETE
2. CURB RAMPS SHALL BE INSTALLED AT EACH INTERSECTION OR DESIGNATED CROSSWALK LOCATION AND MUST MEET THE GRADE CHANGE AND SLOPE REQUIREMENTS AT THE TIME OF CONSTRUCTION
3. ON ACCESSIBLE ROUTES WHERE SIDEWALK IS LESS THAN 5' WIDE, PASSING SPACES AT LEAST 5'X5' SHALL BE LOCATED AT REASONABLE INTERVALS NOT TO EXCEED 200'

RAISED SIDEWALK WITH THICKENED EDGE DETAIL

NOT TO SCALE

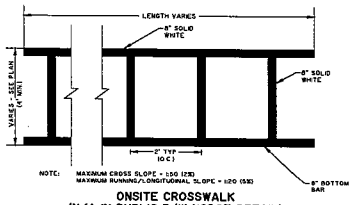




NOTES:
1. STREET NAME SIGNS SHALL BE A MINIMUM OF 6" EXTRUDED ALUMINUM BLADES USING A MINIMUM OF 4" C SERIES LETTERING IN REFLECTIVE SILVER ON A REFLECTIVE GREEN BACKGROUND.
2. ALL REFLECTIVE SIGNS SHALL BE MADE OF ENGINEERING GRADE OR HIGH INTENSITY GRADE REFLECTIVE SHEETING OR APPROVED EQUIVALENT.
3. ALL SIGNS PLACED IN RIGHT-OF-WAY WILL BE APPROVED BY TRAFFIC ENGINEERING DIVISION.
4. ALL FOOTINGS TYPICAL FOR ALL SIGNS, WHICH NEED TO BE ANCHORED IN CONCRETE.

STANDARD SIGN INSTALLATION LOCATION SD 15-03

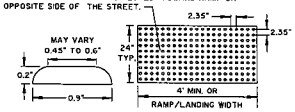
NOT TO SCALE



ONSITE CROSSWALK (N/A IN PUBLIC R/W NCDOT DETAIL)

NOT TO SCALE

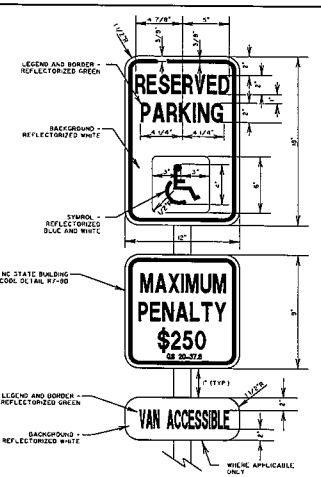
SHALL BE A SQUARE GRID, EQUAL IN BOTH DIRECTIONS. DOMES SHALL BE ALIGNED IN THE DIRECTION OF THE PEDESTRIAN TRAVEL AND DIRECTED TOWARD RAMP ON OPPOSITE SIDE OF THE STREET.



NOTE:
1. DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 INCHES, A HEIGHT OF NOMINAL 0.2 INCHES AND A CENTER TO CENTER SPACING OF NOMINAL 2.35 INCHES AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES. IF THE SIDEWALK AND RAMP ARE CONSTRUCTED OF CONCRETE, THE WARNING AREA SHALL BE RED BRICK IN COLOR. IF THE SIDEWALK AND RAMP ARE CONSTRUCTED OF RED BRICK, THE WARNING AREA SHALL BE GRAY IN COLOR. THE COLOR USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
2. BRICK PAVERS SHALL BE SET IN A WET MORTAR BED ON A 4" MIN. THICK CONCRETE FOUNDATION.

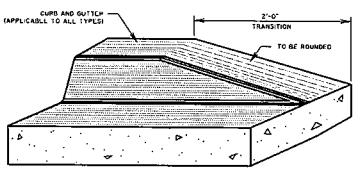
DETECTABLE WARNING DETAIL

NOT TO SCALE



HANDICAPPED PARKING SIGN

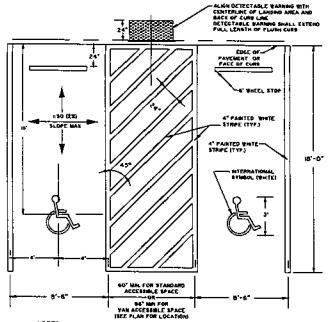
NOT TO SCALE



NOTES:
1. REQUIRED AT ALL SIDEWALK RAMPS AND WHERE INDICATED ON PLANS.

CURB AND GUTTER TAPER DETAIL

NOT TO SCALE



NOTES:
1. STRIPING AND CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND SPECIFICATIONS
2. 2% MAXIMUM SLOPE IN ALL DIRECTIONS WITHIN ACCESSIBLE PARKING SPACE AND ACCESS AISLE.
3. ONE IN EVERY 6 ACCESSIBLE SPACES SHALL BE SERVED BY AN 8' WIDE ACCESS AISLE AND SHALL BE DESIGNATED "VAN ACCESSIBLE"

ACCESSIBLE PARKING SPACE STRIPING DETAIL

NOT TO SCALE

Preliminary
For Review Only

NO	REVISIONS	BY	DATE

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Engineering | Surveying | Planning | GIS | Consulting
215 South Kerr Avenue • Unit B
Wilmington, NC 28403 • 910.332.3360
www.thomasandhutton.com

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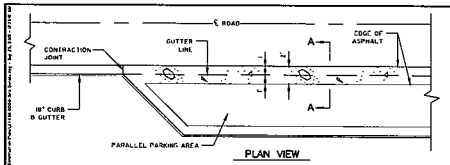
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

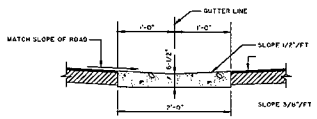
SITE DETAILS

JOB NO:	J-14436.0000
DATE:	9/24/18
DRAWN:	JBJ
DESIGNED:	SKM
MLVFL WLD:	JDH
APPROVED:	JDH
SCALE:	"=1'-0"

C5.2



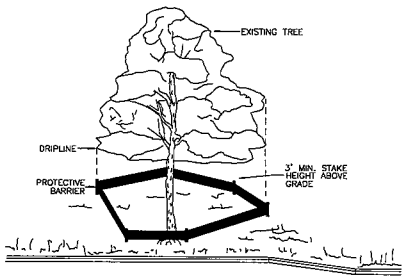
PLAN VIEW



SECTION A–A

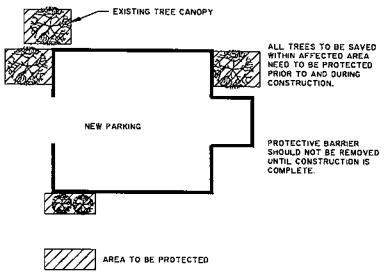
CONCRETE SWALE

NOT TO SCALE

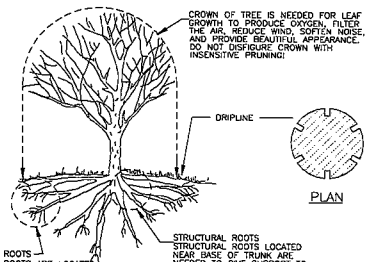


NOTE:
TREES TO BE SAVED WILL BE CLEARLY MARKED PRIOR TO CONSTRUCTION AND A PROTECTIVE BARRIER IS TO BE INSTALLED AT THE DRIPLINE.
DRIP LINE – THE AREA OF SOIL DIRECTLY BENEATH THE TREE EXTENDING OUT TO THE TIPS OF THE OUTERMOST BRANCHES.

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



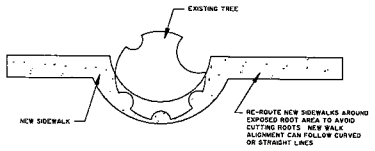
EXISTING TREE PROTECTIVE BARRIERS
SD 15-15



TREE PROTECTION DURING CONSTRUCTION

1. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO HEAVY MATERIALS SHALL BE STORED BENEATH TREES. RESULTS OF COMPACTION CAUSE WATER AND AIR NOT TO REACH THE ROOTS AND THE TREE WILL DIE. THESE FEEDING ROOTS OCCUR WELL AWAY FROM THE BASE OF THE TREE TO THE EDGE OF THE OVERHEAD BRANCH CANOPY. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. APPROTECTIVE BARRIER SHOULD PREVENT DAMAGE FROM OCCURING DURING CONSTRUCTION.
2. NO CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK. THESE ARE ESSENTIAL IN SUPPORTING THE TREE AND HOLDING IT UPRIGHT IN HIGH WINDS. REMOVAL OF THESE ROOTS ALONG ONE SIDE IS OFTEN DONE BECAUSE OF A WALK, PAVING OR BUILDING WHICH IS BEING CONSTRUCTED.
3. AVOID CUT AND FILL WITHIN DIAMETER OF TREE CROWN DURING EXCAVATION.

METHOD OF TREE PROTECTION DURING CONSTRUCTION
SD 15-09
NOT TO SCALE



811
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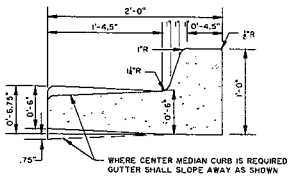
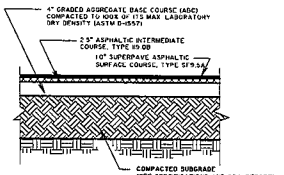
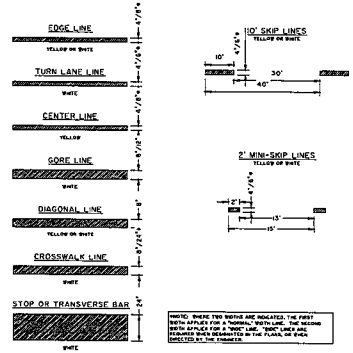


STANDARD CURB SECTION TYPE "A"
SD 7-01
NOT TO SCALE

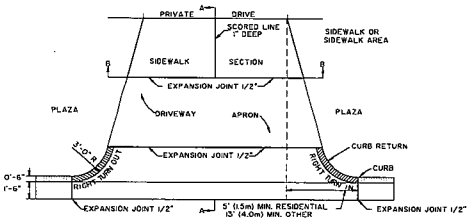


NOTES:
1. PAVEMENT AND AGGREGATE BASE COURSES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, CURRENT EDITION.
2. THE SUBGRADE SHALL BE COMPACTED TO 98% STANDARD PROCTOR (ASTM D-698) AND SHALL BE PREPARED ACCORDING TO NCDOT STANDARD SPECIFICATIONS. SUBGRADE SHALL BE FREE OF ROCKS AND BEHIND LARGER THAN 1" IN DIAMETER. COMPACTION TESTS MUST BE SUBMITTED TO THE ENGINEER PRIOR TO APPLICATION OF ANY BASE MATERIAL.
3. CORE, DENSITY AND GRADATIONS ARE REQUIRED AND SHALL MEET NCDOT SPECIFICATIONS
4. SUBGRADE AND THE CURB/RE MUST PASS PROOF ROLL BEFORE THE CURB IS INSTALLED IF ANY CURB IS SHOWN.

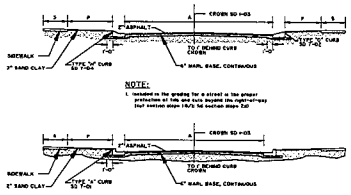
ASPHALT PAVING SECTION
LIGHT DUTY
NOT TO SCALE



PAVEMENT MARKINGS
LINE TYPES
SD 11-01



PAVEMENT PLAN

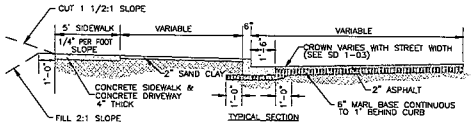


NOTE:
1. Included in the grading for a street is the proper protection of life and cuts beyond the right-of-way that contain slopes 150% for certain slopes 2:1

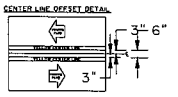
STREET NOTES:
1. Residential collectors may be a minimum of 24' wide. Lane must have to curb face when a roadside bicycle facility is provided.
2. If parallel parking is approved, then add 7' of pavement width per parking lane.
3. Additional width may be required at intersections or major driveways for turn lanes or stops.
4. Pavement markings are required and shall include centerlines, lane lines, and parking lanes, where applicable.
5. Vertical curb (type "A") shall be used on collector streets.

		A-1-03	DIMENSIONS WITH TYPE "A" CURB			DIMENSIONS WITH TYPE "B" CURB			DIMENSIONS WITH TYPE "M" CURB		
			ASPHALT (A)	PLAZA (P)	SIDEWALK (S)	ASPHALT (A)	PLAZA (P)	SIDEWALK (S)	ASPHALT (A)	PLAZA (P)	SIDEWALK (S)
COLLECTOR	NON-RESIDENTIAL	66'	33'	6'	5'	NA	NA	5'	NA	NA	5'
	RESIDENTIAL	66'	29'	6'	5'	NA	NA	5'	NA	NA	5'
LOCAL (RESIDENTIAL)	>80 UNITS	66'	33'	6'	5'	88'	6'	5'	24'	6'	5'
	1-80 UNITS	60'	31'	5'	5'	85'	4'	5'	24'	5'	5'
ALLEY		20'	18' of asphalt with 1' header curb and 1' gravel, additional pavement may be required for utilities								
PRIVATE ACCESS EASEMENT		24' EAS	18' of paved surface, 6' for curb, shall be maintained								

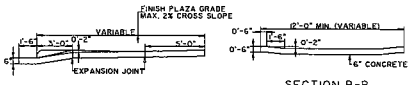
STANDARD STREET SECTION
SD 1-01
NOT TO SCALE



NOTES:
*COMBINED CONCRETE CURB & GUTTER, CONCRETE SIDEWALK AND DRIVEWAYS TO BE 3000 POUNDS STRENGTH CONCRETE.
*SCORE JOINTS TO BE PLACED EVERY 5' ACROSS SIDEWALK, IN SIDEWALK AREA OF DRIVEWAYS.
*EXPANSION JOINTS TO BE PLACED ACROSS SIDEWALK EVERY 30'.
*EXPANSION JOINTS TO BE PLACED BETWEEN: SIDEWALK AND CURB, SIDEWALK AND DRIVEWAY, AND DRIVEWAY AND CURB RETURN WHERE THEY ADJOIN.



PAVEMENT MARKINGS
OFFSETS
SD 11-02



SECTION A-A

SECTION B-B

CONSTRUCTION/EMERGENCY ACCESS
STANDARD DRIVEWAY DETAIL
SD 8-02
NOT TO SCALE

Preliminary
For Review Only

NO	DESCRIPTION	BY	DATE

THOMAS & HUTTON
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2155 South Kerr Avenue • Unit B
Wilmington, NC 28403 • 910.332.3360
www.thomasandhutton.com

PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

SITE DETAILS

JOB NO.	2204436.0000
DATE	9/24/15
DRAWN	JBJ
DESIGNED	SKM
MS/FIELD	JDH
APPROVED	JDH
SCALE	N.T.S.

C5.3

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

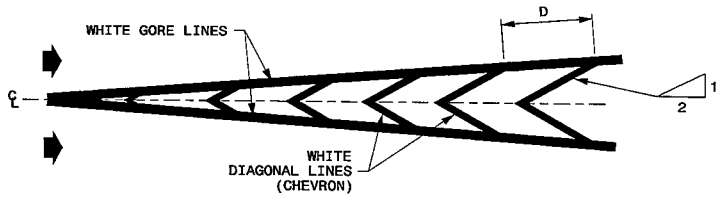
7-06

ENGLISH STANDARD DRAWING FOR
PAVEMENT MARKINGS
PAINTED ISLANDS

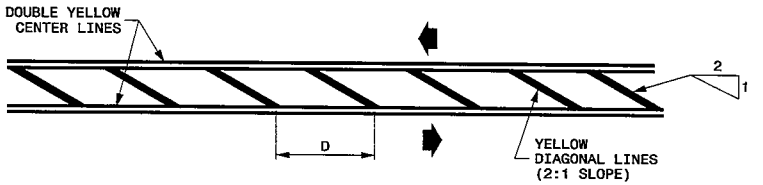
SHEET 1 OF 1
1205.09

CHANNELIZING ISLAND SEPARATING TRAFFIC IN SAME DIRECTION

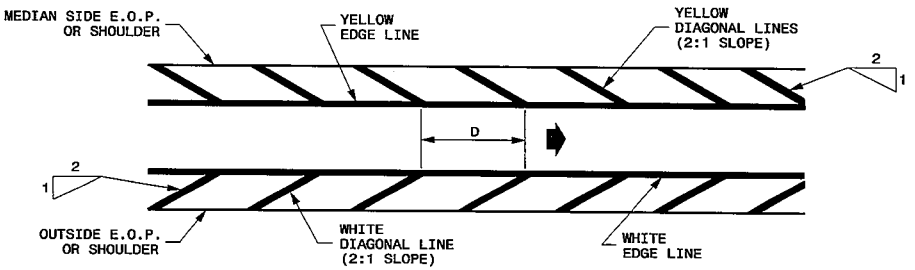
(CHEVRON)



MEDIAN ISLAND SEPARATING TRAFFIC IN OPPOSING DIRECTIONS



EDGE OF PAVEMENT OR SHOULDER ISLAND



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

Approved Construction Plan
Name Date
Planning_____
Public Utilities_____
Traffic_____
Fire_____

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GENERAL NOTES:

1- D=SPACING OF DIAGONAL LINES (TYPICALLY EQUAL IN FEET TO THE POSTED SPEED LIMIT).

2- INCREASE SPACING OF DIAGONALS TO 200' OR MORE ON INTERSTATE ROADWAYS.

3- ADJUST SPACING OF DIAGONALS DEPENDING ON THE LENGTH OF THE ISLAND. SPACING MAY BE ADJUSTED AS DETERMINED BY THE ENGINEER.

7-06

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

ENGLISH STANDARD DRAWING FOR
PAVEMENT MARKINGS
PAINTED ISLANDS

SHEET 1 OF 1
1205.09

Preliminary
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NO.	REVISIONS	BY	DATE

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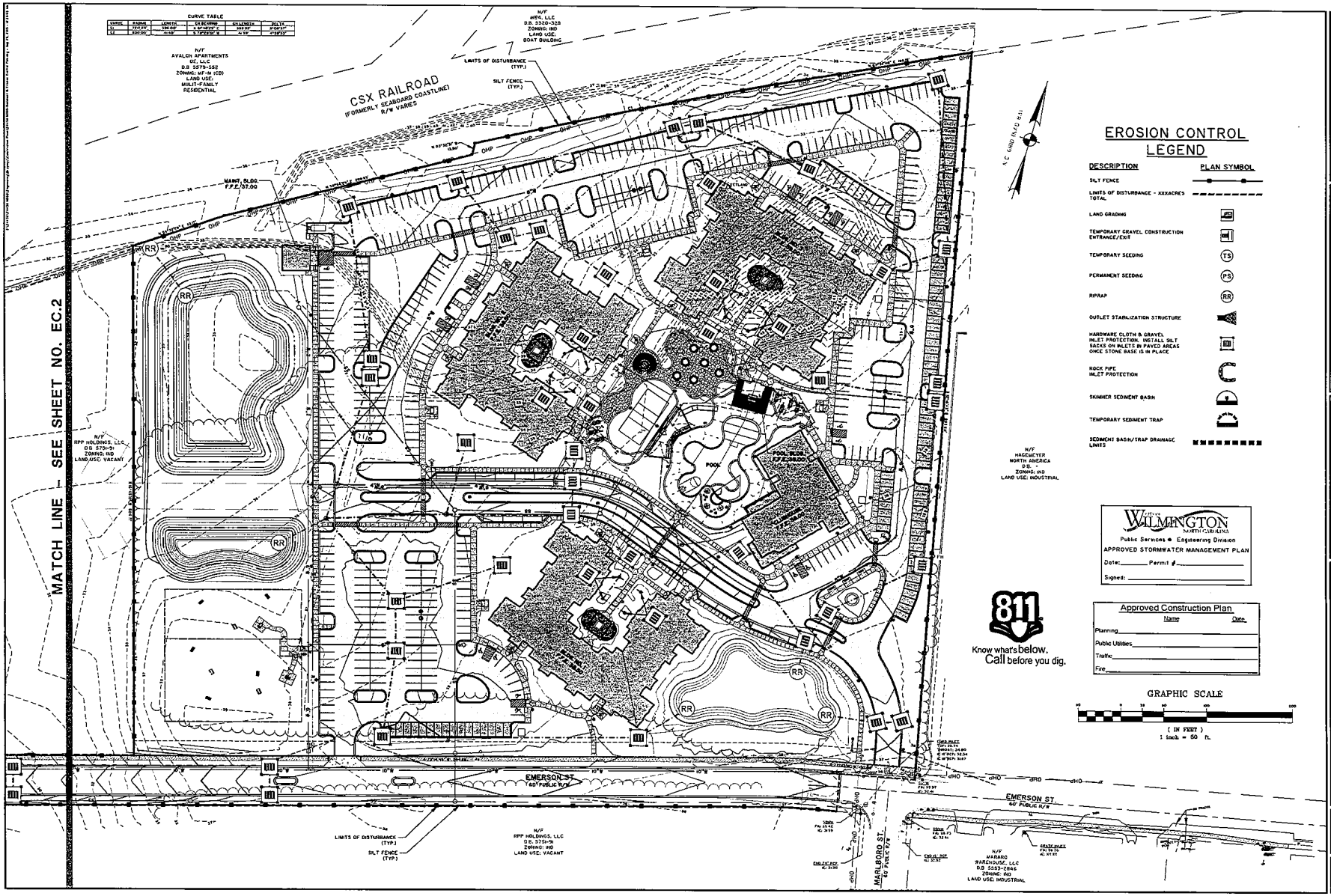
Wilmington, NC 28403 • 910.332.3360
www.thomasandhutton.com

PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA
PROGRESS BUILDERS, LLC
SITE DETAILS

JOB NO. J-24436.0000
DATE: 9/24/15
DRAWN: JBJ
DESIGNED: SKM
REVIEWED: JDH
APPROVED: JDH
SCALE: 1" = 1'

C5.4



EROSION CONTROL LEGEND

DESCRIPTION	PLAN SYMBOL
SILT FENCE	
LIMITS OF DISTURBANCE - XXXACRES TOTAL	
LAND GRADING	
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT	
TEMPORARY SEEDING	TS
PERMANENT SEEDING	PS
RIPRAP	RR
OUTLET STABILIZATION STRUCTURE	
HARDWARE CLOTH & GRAVEL INLET PROTECTION. INSTALL SILT SACKS ON INLETS IN PAVED AREAS ONCE STONE BASE IS IN PLACE	
ROCK PIPE INLET PROTECTION	
SKIMMER SEDIMENT BASIN	
TEMPORARY SEDIMENT TRAP	
SEDIMENT BASIN/TRAP DRAINAGE LIMITS	

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

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

Preliminary
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NO	REVISIONS	BY	DATE

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PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA
PROGRESS BUILDERS, LLC
SEDIMENT & EROSION CONTROL PLAN

JOB NO.	J-24436.0000
DATE	9/24/13
DRAWN	JBJ
DESIGNED	SAM
REVIEWED	JDR
APPROVED	JDR
SCALE	1" = 50'

EC.1

I. GENERAL NOTES

1. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED, UNLESS ACTIVITY IN THAT PORTION OF THE SITE WILL RESUME WITHIN TWENTY-ONE (21) DAYS.
2. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED EVERY SEVEN (7) DAYS OR AFTER EACH RAINFALL OCCURRENCE THAT EXCEEDS ONE-HALF (0.5) INCH. DAMAGED OR INEFFECTIVE DEVICES SHALL BE REPAIRED OR REPLACED, AS NECESSARY.
3. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION.
4. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
5. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO THE PAVED ROADWAY FROM CONSTRUCTION AREAS. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT AS MAY BE REQUIRED.
6. THE FOLLOWING NOTES ARE SPECIFIED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (DENR) AND ARE TO BE EXECUTED BY THE CONTRACTOR.
   A. ALL SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND AFTER ANY STORM EVENT OF GREATER THAN 0.5 INCHES OF PRECIPITATION DURING ANY 24-YEAR PERIOD. ALL SEDIMENT CONTROL FEATURES SHALL BE MAINTAINED UNTIL FINAL STABILIZATION HAS BEEN OBTAINED.
   B. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED, UNLESS ACTIVITY IN THAT PORTION OF THE SITE WILL RESUME WITHIN 21 DAYS.
7. ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY THE CITY, PROJECT ENGINEER AND/OR NCDENR.
8. ANY GRADING BEYOND WHAT IS DEPICTED IN THE APPROVED AND PERMITTED PLANS IS A VIOLATION OF THE STATE'S EROSION CONTROL AND GRADING REQUIREMENTS AND MAY BE SUBJECT TO A FINE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF ALL FINES DUE TO VIOLATIONS.
9. GRADING MORE THAN ONE ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF SEDIMENT POLLUTION CONTROL ACT AND MAY BE SUBJECT TO A FINE.
10. ALL OFF SITE BORROW MUST COME FROM A STATE APPROVED SOURCE. CONTRACTOR TO SUBMIT WRITTEN DOCUMENTATION IDENTIFYING SOURCE.
11. ALL SURPLUS MATERIAL AND DEMOLITION DEBRIS SHALL BE HAULED OFF SITE TO AN APPROVED WASTE SITE. CONTRACTOR TO SUBMIT WRITTEN DOCUMENTATION IDENTIFYING APPROVED WASTE SITE.

II. CONSTRUCTION SEQUENCE

1. INSTALL GRAVEL CONSTRUCTION EXIT, SILT FENCING, TREE PROTECTION
2. CLEARING AND GRUBBING
3. CONSTRUCT SEDIMENT BASIN & TRAPS.
4. INSTALL DRAINAGE CONVEYANCES & EROSION CONTROL
5. ROUGH GRADING & SITE INFRASTRUCTURE
6. BEGIN BUILDING CONSTRUCTION CONCURRENTLY WITH PARKING LOT CONSTRUCTION.
7. PAVING. INSTALL SILT SACKS ON INLETS WITHIN PAVED AREAS ONCE STONE BASE IS IN PLACE.
8. FINAL GRADING, GRASSING & STABILIZATION. CONVERT SEDIMENT BASIN TO INFILTRATION BASIN. RESTORE ALL DRAINAGE CONVEYANCES TO DESIGN SPECIFICATIONS UPON PROJECT COMPLETION & STABILIZATION.

III. MAINTENANCE PLAN

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-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. ALL CONSTRUCTION ENTRANCES WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL TWO (2) INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. ANY SEDIMENT THAT IS TRACKED INTO THE STREET WILL BE IMMEDIATELY REMOVED.
3. SEDIMENT WILL BE REMOVED FROM THE SEDIMENT TRAPS AND BASINS WHEN STORAGE CAPACITY HAS BEEN APPROXIMATELY 50% FILLED. GRAVEL WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS PROPERLY.
4. SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES 0.5 FEET DEEP AT THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. SILT FENCE STAKES WILL BE SPACED 6 FEET APART UNLESS A WIRE BACKING IS USED WITH 8 FOOT STAKE SPACING.
5. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE COVER.
6. SEDIMENT, STRAW, LIMBS OR OTHER DEBRIS WILL BE REMOVED FROM THE CHECK DAMS TO PREVENT CLOGGING. STONES WILL BE ADDED AS NECESSARY TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.
7. SILT SACKS MUST BE INSPECTED ONCE A WEEK AND AFTER EVERY RAINFALL. REMOVE SEDIMENT BUILD UP AFTER EACH INSPECTION OR AT THE INTERVAL SPECIFIED BY THE MANUFACTURER, WHICH EVER IS MORE RESTRICTIVE.

IV. STABILIZATION NOTES

NEW HANOVER COUNTY REQUIREMENTS - DENUDED AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS OF CEASE OF ANY PHASE OF ACTIVITY. ALL SLOPES WILL BE STABILIZED WITHIN 21 CALENDARS OF CEASE OF ANY PHASE OF ACTIVITY. THIS INCLUDES SLOPES, SWALES, STOCKPILES AND ANY OTHER UNSTABILIZED AREAS.

NPDES REQUIREMENTS - ALL DISTURBED AREAS WILL BE STABILIZED WITHIN THE TIMEFRAME SPECIFIED BELOW:
- PERIMETER DIKES, SWALES, DITCHES & SLOPES - 7 DAYS OF LAST LAND DISTURBING ACTIVITY
- SLOPES STEEPER THAN 3:1 WITHIN 7 DAYS OF LAST LAND DISTURBING ACTIVITY
- ALL OTHER DENUDED AREAS - WITHIN 14 DAYS OF LAST LAND DISTURBING ACTIVITY.

NOTES:
1. ALL SLOPES EXCEEDING 6:1 OR GREATER SHALL BE STABILIZED WITH EROSION CONTROL MATTING. CONTRACTOR RESPONSIBLE FOR MAINTENANCE, REPAIR AND/OR REPLACEMENT OF ALL EROSION CONTROL MEASURES AS REQUIRED THROUGHOUT CONSTRUCTION.
2. ALL TREES WITHIN DISTURBANCE LIMITS ARE TO BE REMOVED UNLESS OTHERWISE NOTED.

V. INSPECTIONS

QUALIFIED PERSONNEL (PROVIDED BY THE DISCHARGER) WILL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE, AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION THAT HAVE NOT BEEN FINALLY STABILIZED, STRUCTURAL CONTROL MEASURES, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER. WHERE SITES HAVE BEEN FINALLY STABILIZED SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH.

DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATERS. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFFSITE SEDIMENT TRACKING.

BASED ON THE RESULTS OF THE INSPECTION, THE SITE DESCRIPTION IDENTIFIED IN THE PLAN IN ACCORDANCE WITH PARAGRAPH IV.D.1. OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT, AND NATURAL RESOURCES NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES THAT ARE CLASSIFIED AS "ASSOCIATED WITH INDUSTRIAL ACTIVITY" BY EPA REGULATION, HEREINAFTER REFERRED TO AS THE NPDES PERMIT. POLLUTION PREVENTION MEASURES IDENTIFIED IN THE PLAN IN ACCORDANCE WITH PARAGRAPH IV.D.2 OF THE NPDES PERMIT SHALL BE REVISED AS APPROPRIATE, BUT IN NO CASE LATER THAN 7 CALENDAR DAYS FOLLOWING THE INSPECTION. SUCH MODIFICATIONS SHALL PROVIDE FOR TIMELY IMPLEMENTATION OF ANY CHARGES TO THE PLAN WITHIN 7 CALENDAR DAYS FOLLOWING THE INSPECTION.

A REPORT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME(S) AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION, THE DATE(S) OF THE INSPECTION, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE STORM WATER POLLUTION PREVENTION PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PARAGRAPH IV.D.4.B OF THE NPDES PERMIT SHALL BE MADE AND RETAINED AS PART OF THE STORM WATER POLLUTION PREVENTION PLAN FOR AT LEAST THREE YEARS FROM THE DATE THE SITE IS FINALLY STABILIZED. SUCH REPORTS SHALL IDENTIFY ANY INCIDENTS OF NONCOMPLIANCE WHERE A REPORT DOES NOT IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE. WHERE A REPORT DOES NOT IDENTIFY ANY INCIDENTS OF NONCOMPLIANCE, THE REPORT SHALL CONTAIN A CERTIFICATION THAT THE FACILITY IS IN COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN AND THE NPDES PERMIT REFERENCED ABOVE. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART VI.G. OF THE NPDES PERMIT.

5. LONG TERM MAINTENANCE OF DRAINAGE AND STORMWATER MANAGEMENT SYSTEM

THE DRAINAGE SYSTEM WILL BE OWNED AND MAINTAINED BY OWNER AFTER CONSTRUCTION IS COMPLETE.

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

Approved Construction Plan	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

Preliminary
For Review Only

NO.	REVISIONS	BY	DATE

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PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA
PROGRESS BUILDERS, LLC
SEDIMENT & EROSION CONTROL PLAN

JOB NO:	J-24436.0000
DATE:	9/24/13
DRAWN:	JBJ
DESIGNED:	SKM
REVIEWED:	JDR
APPROVED:	JDR
SCALE:	1" = 50'

EC.2

NOTE:

1. IT IS RECOMMENDED THAT THE ENTRANCE AREA BE EXCAVATED TO A DEPTH OF 3 INCHES AND BE CLEARED OF ALL VEGETATION AND ROOTS.
2. ON SITES WHERE THE GRADE TOWARD THE PAVED AREA IS GREATER THAN 2%, A DIVERSION RIDGE 6 TO 8 INCHES HIGH WITH 3:1 SIDE SLOPES SHALL BE CONSTRUCTED ACROSS THE FOUNDATION APPROXIMATELY 15 FEET ABOVE THE ROAD.
3. IF THE ACTION OF THE VEHICLE TRAVELING OVER THE GRAVEL PAD DOES NOT SUFFICIENTLY REMOVE THE MUD, THE TIRES SHOULD BE WASHED PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND PROVISIONS THAT INTERCEPT THE SEDIMENT-LADEN RUNOFF AND DIRECT IT INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2 TO 3 INCH STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES OR SITE ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

TEMPORARY CONSTRUCTION EXIT

NOT TO SCALE

NOTES:
1. CONTRACTOR TO REMOVE SKIMMER UPON STABILIZATION OF THE CONTRIBUTING DRAINAGE AREA AND INSTALL PERMANENT PVC ORFICE PER OUTLET STRUCTURE DETAILS

DESIGN CRITERIA:

POND NUMBER	SKIMMER SIZE (IN)	ORFICE RADIUS (IN)	ORFICE DIA. (IN)	VOLUME* (CF)
1	4	1.8	3.6	49,270
2	1.5	0.3	0.7	10,057
3	TBD	TBD	TBD	TBD

*SKIMMER SIZE IS BASED ON THE VOLUME OF THE NEXT HIGHEST WEIR ELEVATION ABOVE NORMAL POOL WHICH IS GREATER THAN THE REQUIRED SEDIMENT BASIN VOLUME

(BY J.W. FAIRCLOTH & SON, INC.)

SKIMMER DETAIL

NOT TO SCALE

CURB INLET PROTECTION

SD 13-02
NOT TO SCALE

TO BE USED FOR INLETS IN PAVED AREAS ONCE PAVING IS COMPLETED AND UNTIL CONTRIBUTING DRAINAGE AREA IS PERMANENTLY STABILIZED

NOTE:
TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS. INLET FILTER TO BE SIMILAR TO "STREAMGUARD" AS MANUFACTURED BY STORMWATER SERVICES CORPORATION (206-767-0441) OR "SILTSACK" AS MANUFACTURED BY ATLANTIC CONSTRUCTION FABRICS, INC. (800-448-3636). CLEAN FILTER AS NEEDED.

SILT SACK DETAIL

NO SCALE

D-SESC- silt sack.pdf

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

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Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

CROSS SECTION

ELEVATION

NOTES:
FILTER CLOTH FOR SILT FENCE SHALL BE A TREVIRA TYPE II PRODUCT, CATALOG NO. 1120 AS MANUFACTURED BY THE HOECHST CELANESE CORP.

WOVEN WIRE FENCE SHALL BE REQUIRED AS A BACKING FOR FILTER FABRIC WITH AN ELONGATION AS DETERMINED BY ASTM D 1682, OF 50% OR GREATER. THE WIRE FENCE SHALL BE A MINIMUM OF 32 INCHES IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12 INCH STAY SPACING. (WIRE BACKING MAY BE OMITTED IF STAKES ARE MAXIMUM OF 6' APART.)

ONLY STEEL POST MAY BE USED. STEEL POST SHALL BE A MINIMUM OF 5 FEET LONG, WEIGH A MINIMUM OF 1.3 POUNDS/FOOT, AND HAVE PROJECTIONS FOR FASTENING THE WIRE OR THE FABRIC TO THE POST. STEEL POST SHALL ALSO HAVE A METAL PLATE SECURELY ATTACHED SUCH THAT WHEN THE POST IS DRIVEN TO THE PROPER DEPTH, THE PLATE WILL BE BELOW GROUND LEVEL FOR ADDITIONAL STABILITY. POSTS SHALL BE INSTALLED TO A DEPTH DIRECTED BY THE ENGINEER, WITH 1 TO 2 INCHES OF THE POST PROTRUDING ABOVE THE TOP OF THE WIRE FENCE OR FABRIC BEING IDEAL, BUT IN ANY CASE, NO MORE THAN 3 FEET OF THE POST SHALL PROTRUDE ABOVE THE GROUND.

TEMPORARY SILT FENCE DETAIL

NOT TO SCALE

PLAN

SECTION

NOTE
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT, LESS THAN 1 ACRE) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 CFS) ARE TYPICAL.

INLETS IN PAVED AREAS - ONCE PAVED, PROTECT INLET USING A SILT SACK UNTIL THE CONTRIBUTING DRAINAGE AREA IS PERMANENTLY STABILIZED. SEE DETAIL ON SHEET C6.1.

CONSTRUCTION SPECIFICATIONS

DROP INLET SEDIMENT FILTER

1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4' APART.
3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2-FOOT FLAP OF WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE LEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16" AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT AND ESTABLISH FINAL GRADING ELEVATIONS.
6. COMPACT THE AREA PROPERLY AND STABILIZE IT WITH GROUNDCOVER.

HARDWARE CLOTH AND GRAVEL INLET PROTECTION

NOT TO SCALE

FERTILIZER REQUIREMENTS

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
1. COOL SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500lbs./ac. 1000lbs./ac. 400 lbs./ac.	50-100 lbs./ac. * 1 & 2 - 30
2. COOL SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500lbs./ac. 1000lbs./ac. 400 lbs./ac.	50-100 lbs./ac. * 1 - -
3. GROUND COVERS	FIRST SECOND MAINTENANCE	10-10-10 10-10-10 10-10-10	1300lbs./ac. * 3 1300lbs./ac. * 3 1100 lbs./ac.	- - -
4. PINE SEEDLINGS	FIRST	20-10-5	ONE 21-GRAM PELLET PER SEEDLING PLACED IN THE CLOSING HOLE	-
5. SHRUB LESPEDEZA	FIRST MAINTENANCE	0-10-10 0-10-10	700lbs./ac. 700lbs./ac. * 4	-
6. TEMPORARY COVER CROPS SEEDED ALONE	FIRST	10-10-10	500lbs./ac.	30 lbs./ac. * 5
7. WARM SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500lbs./ac. 800lbs./ac. 400 lbs./ac.	50-100 lbs./ac. * 2 & 6 50-100 lbs./ac. 30 lbs./ac. * 2
8. WARM SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500lbs./ac. 1000lbs./ac. 400 lbs./ac.	50-100 lbs./ac. * 6

** 1 APPLY IN SPRING FOLLOWING SEEDING.*
** 2 APPLY IN SPLIT APPLICATIONS WHEN HIGH RATES ARE USED.*
** 3 APPLY IN 3 SPLIT APPLICATIONS.*
** 4 APPLY WHEN PLANTS ARE PRUNED.*
** 5 APPLY TO GRASS SPECIES ONLY.*
** 6 APPLY WHEN PLANTS GROW TO A HEIGHT OF 2 TO 4 INCHES.*

NOTE: SPREAD AGRICULTURAL LIMESTONE EVENLY OVER ALL SEEDED AREAS AT A RATE OF 1.5 TONS/ACRE.

SEEDING RATES FOR TEMPORARY & PERMANENT COVER

MONTH	TEMPORARY COVER	RATE PER ACRE: SEEDED ALONE	RATE PER ACRE: ADDED TO MIX	PERMANENT COVER	RATE PER ACRE: SEEDED ALONE	RATE PER ACRE: ADDED TO MIX
JANUARY	* LESPEDEZA, ANNUAL * RYE * RYE GRASS, ANNUAL * WHEAT	40 lbs. 3 bu. 40 lbs. 3 bu.	10 lbs. .5 bu. - .5 bu.	* BAHIA, PENSACOLA BERMUDA, UNHULLED CENTIPEDE, SOD LESPEDEZA, SERICEA 1	60 lbs. 10 lbs. - 75 lbs.	30 lbs. 6 lbs. - -
FEBRUARY	LESPEDEZA, ANNUAL * RYE * RYE GRASS, ANNUAL	40 lbs. 3 bu. 40 lbs.	10 lbs. .5 bu. -	* BAHIA, PENSACOLA CENTIPEDE, SOD LESPEDEZA, SERICEA 1 * LESPEDEZA, SERICEA 2	60 lbs. - 75 lbs. 75 lbs.	30 lbs. - - -
MARCH	* LESPEDEZA, ANNUAL * RYE GRASS, ANNUAL * SUDAN GRASS	40 lbs. 40 lbs. 60 lbs.	10 lbs. - -	BAHIA, PENSACOLA BERMUDA, UNHULLED CENTIPEDE, SOD * LESPEDEZA, SERICEA 1 LESPEDEZA, SERICEA 2	60 lbs. 10 lbs. - 75 lbs. 75 lbs.	30 lbs. 6 lbs. - - -
APRIL	MILLET, BROWN TOP * MILLET, PEARL SUDAN GRASS	40 lbs. 50 lbs. 60 lbs.	10 lbs. - -	BAHIA, PENSACOLA BERMUDA, UNHULLED CENTIPEDE, SOD * LESPEDEZA, SERICEA 1 LESPEDEZA, SERICEA 2	60 lbs. 10 lbs. - 75 lbs. 75 lbs.	30 lbs. 6 lbs. - - -
MAY	MILLET, BROWN TOP MILLET, PEARL SUDAN GRASS	40 lbs. 50 lbs. 60 lbs.	10 lbs. - -	BAHIA, PENSACOLA BERMUDA, UNHULLED CENTIPEDE, SOD * LESPEDEZA, SERICEA 1 LESPEDEZA, SERICEA 2	60 lbs. 10 lbs. - 75 lbs. 75 lbs.	30 lbs. 6 lbs. - - -
JUNE	MILLET, BROWN TOP MILLET, PEARL SUDAN GRASS	40 lbs. 50 lbs. 60 lbs.	10 lbs. - -	BAHIA, PENSACOLA * BERMUDA, UNHULLED * LESPEDEZA, SERICEA 1 * LESPEDEZA, SERICEA 2	60 lbs. 10 lbs. 75 lbs. 75 lbs.	30 lbs. 6 lbs. - -
JULY	* MILLET, BROWN TOP MILLET, PEARL SUDAN GRASS	40 lbs. 50 lbs. 60 lbs.	10 lbs. - -	* BAHIA, PENSACOLA * LESPEDEZA, SERICEA 1	60 lbs. 75 lbs.	30 lbs. -
AUGUST	* MILLET, PEARL * RYE GRASS, ANNUAL	50 lbs. 40 lbs.	- -	* BAHIA, PENSACOLA * LESPEDEZA, SERICEA 1	60 lbs. 75 lbs.	30 lbs. -
SEPTEMBER	* BARLEY * OATS * RYE RYE GRASS, ANNUAL * WHEAT	3 bu. 4 bu. 3 bu. 40 lbs. 3 bu.	.5 bu. 1 bu. .5 bu. - .5 bu.	* BAHIA, PENSACOLA LESPEDEZA, SERICEA 1	60 lbs. 75 lbs.	30 lbs. -
OCTOBER	BARLEY OATS RYE RYE GRASS, ANNUAL WHEAT	3 bu. 4 bu. 3 bu. 40 lbs. 3 bu.	.5 bu. 1 bu. .5 bu. - .5 bu.	* BAHIA, PENSACOLA LESPEDEZA, SERICEA 1	60 lbs. 75 lbs.	30 lbs. -
NOVEMBER	BARLEY OATS RYE RYE GRASS, ANNUAL WHEAT	3 bu. 4 bu. 3 bu. 40 lbs. 3 bu.	.5 bu. 1 bu. .5 bu. - .5 bu.	* BAHIA, PENSACOLA BERMUDA, UNHULLED CENTIPEDE, SOD LESPEDEZA, SERICEA 1	60 lbs. 10 lbs. - 75 lbs.	30 lbs. 6 lbs. - -
DECEMBER	BARLEY OATS RYE RYE GRASS, ANNUAL WHEAT	3 bu. 4 bu. 3 bu. 40 lbs. 3 bu.	.5 bu. 1 bu. .5 bu. - .5 bu.	* BAHIA, PENSACOLA BERMUDA, UNHULLED CENTIPEDE, SOD LESPEDEZA, SERICEA 1	60 lbs. 10 lbs. - 75 lbs.	30 lbs. 6 lbs. - -

NOTES
ALL PERMANENT GRASS PLANTINGS SHALL BE MULCHED AND CRIMPED IN PLACE OR PROTECTED WITH EROSION MATTING TO ENSURE PROPER STABILIZATION. (SLOPES 6:1 OR GREATER MUST BE PROTECTED WITH EROSION MATTING)
** INDICATES MARGINAL (BUT PERMISSIBLE) PLANTING DATE*
1. UNSCARIFIED
2. SCARIFIED
3. CENTIPEDE SOD CAN BE USED AS PERMANENT COVER ANYTIME EXCEPT JUNE THRU OCTOBER

Preliminary
For Review Only

NO.	REVISIONS	BY	DATE

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www.thomasandhutton.com

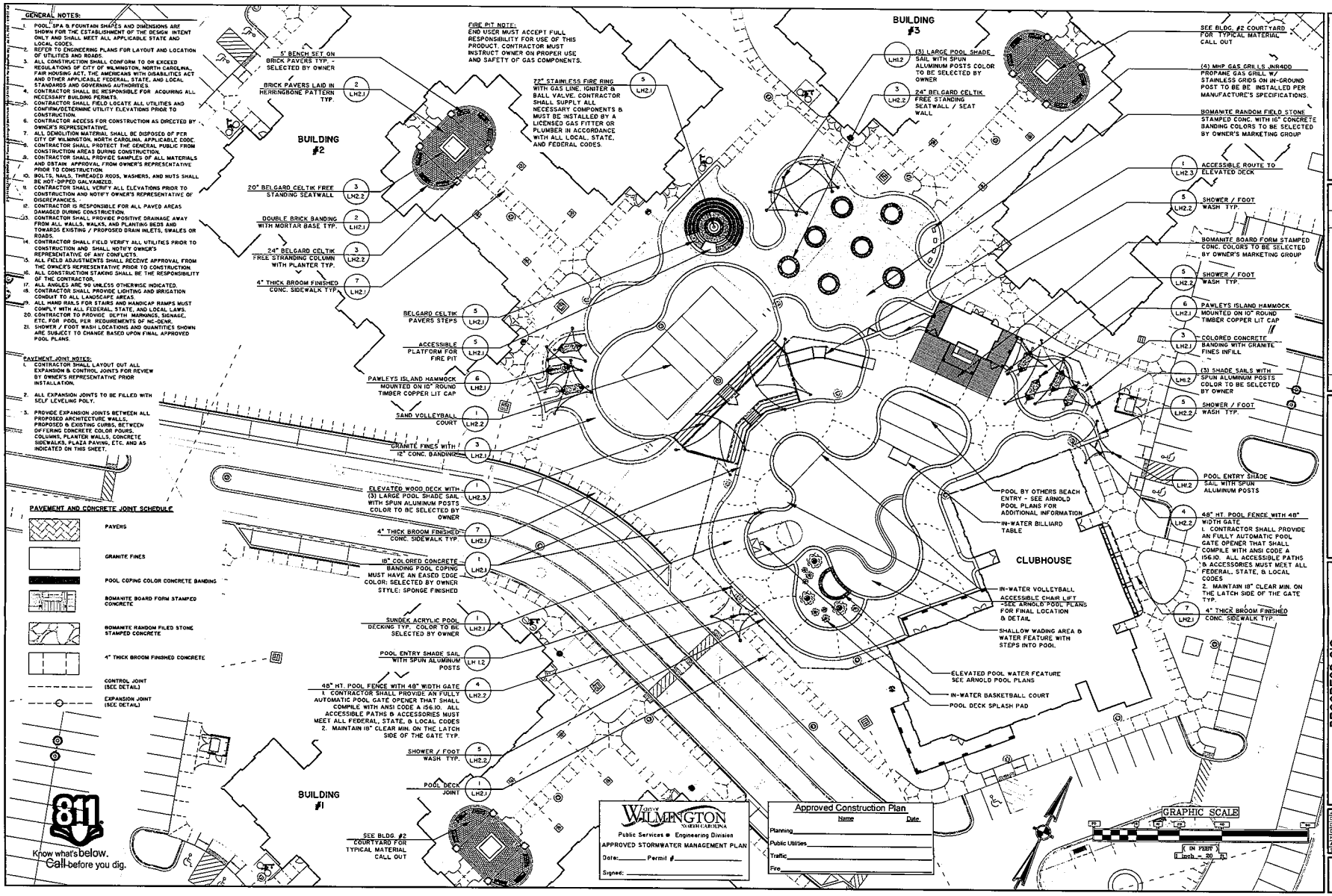
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

SEDIMENT & EROSION CONTROL DETAILS

JOB NO.	J-24436.0000
DATE:	9/24/15
DRAWN:	JBJ
DESIGNED:	SKM
REVIEWED:	JDH
APPROVED:	JDR
SCALE:	1" = 1'

EC2.1



Preliminary
Not for Construction

NO	REVISIONS	BY	DATE

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Wilmington, NC 28403 • 910.332.3360
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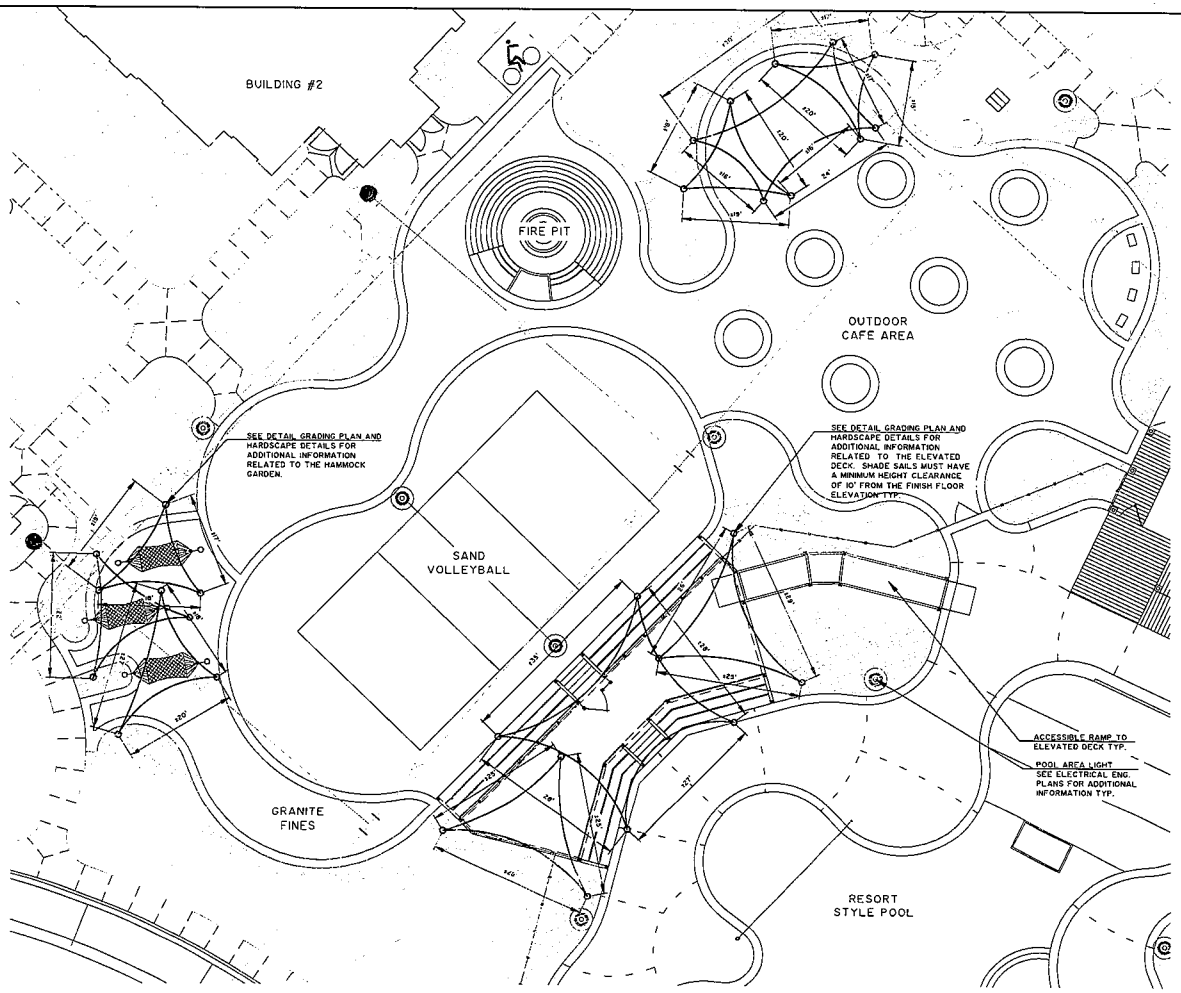
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

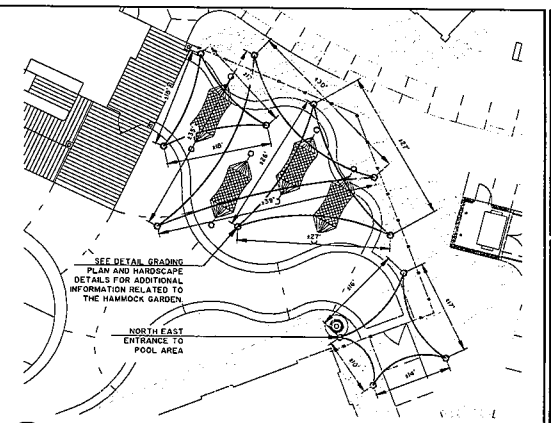
HARDSCAPE CALL-OUT PLAN

JOB NO.	P-0435.0000
DATE:	9/24/12
DRAWN:	JLG
DESIGNED:	JLG
REVIEWED:	BHB
APPROVED:	JDR
SCALE:	1" = 20'

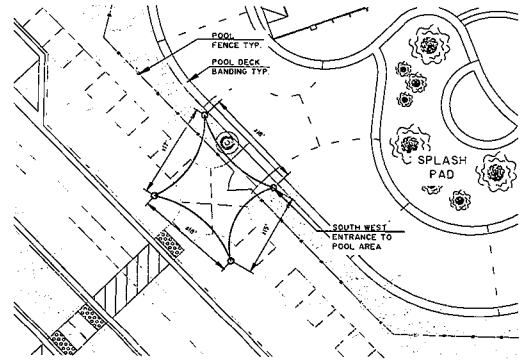
LH1.1



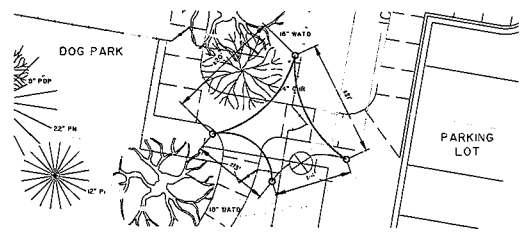
CONCEPTUAL SHADE SAIL LAYOUT (HAMMOCK GARDEN, RAISED DECK & CAFE AREAS)
SCALE: 1" = 10'-0"



CONCEPTUAL SHADE SAIL (AMENITY-NORTH EAST)
SCALE: 1" = 10'-0"



CONCEPTUAL SHADE SAIL (AMENITY- SOUTH WEST)
SCALE: 1" = 10'-0"



CONCEPTUAL SHADE SAIL (DOG PARK)
SCALE: 1" = 10'-0"

GRAPHIC SCALE
IN FEET
1 inch = 10 ft.

NOTES:
1. CONTRACTOR SHALL SUBMIT MANUFACTURE'S SHOP DRAWINGS FOR REVIEW AND ACCEPTANCE FOR ALL SHADE SAILS AND STEEL SUPPORT ELEMENTS FOR GENERAL DESIGN INTENT.
2. CONTRACTOR IS RESPONSIBLE FOR STRUCTURAL ENGINEERING TO MEET ALL APPLICABLE BUILDING CODES.
3. COORDINATE WITH OWNER FINAL SHADE SAIL FABRIC AND POST COLOR.
4. FINAL POST LOCATIONS SHALL MAINTAIN 5' CLEAR MIN. PATH FOR ACCESSIBLE ROUTE TYP.

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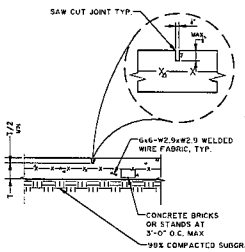
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

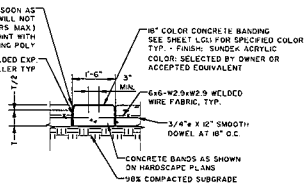
PROGRESS BUILDERS, LLC

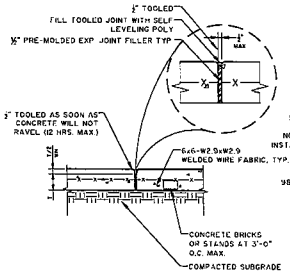
SHADE-SAIL CALL-OUT PLAN

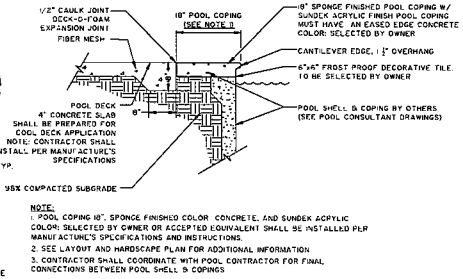
JOB NO:	J-24436.0000
DATE:	9/24/15
DRAWN:	JLG
DESIGNED:	JLG
REVIEWED:	BHB
APPROVED:	JDR
SCALE:	1" = 10'

LH1.2



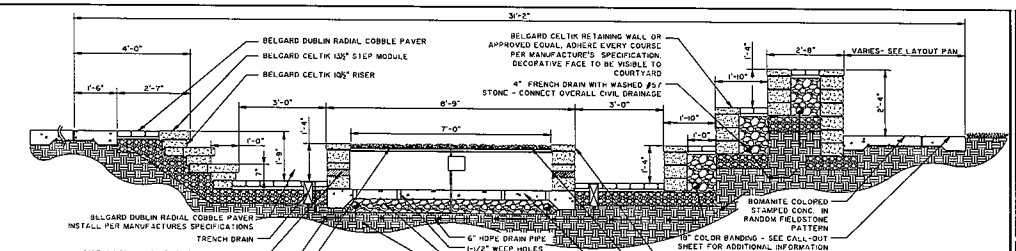






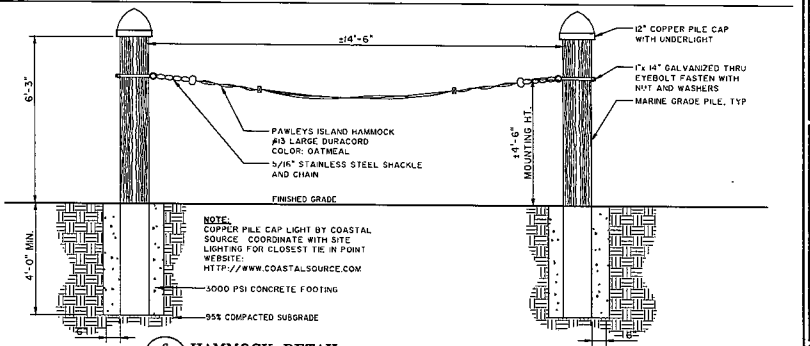
NOTE:
1. POOL COPING 18", SPONGE FINISHED COLOR CONCRETE, AND SUNDEK ACRYLIC COLOR: SELECTED BY OWNER OR ACCEPTED EQUIVALENT SHALL BE INSTALLED PER MANUFACTURE'S SPECIFICATIONS AND INSTRUCTIONS.
2. SEE LAYOUT AND HARDSCAPE PLAN FOR ADDITIONAL INFORMATION.
3. CONTRACTOR SHALL COORDINATE WITH POOL CONTRACTOR FOR FINAL CONNECTIONS BETWEEN POOL SHELL & COPINGS.

1 POOL DECK JOINT DETAILS
LH2.1 SCALE: 3/4" = 1'-0"



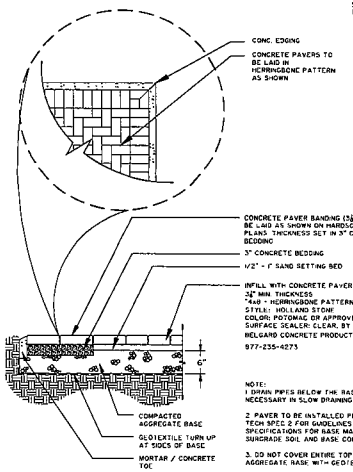
NOTE:
1. CONTRACTOR TO PROVIDE CIRCULAR FIRE GRATE, SUBMIT SPECIFICATIONS OR SHOP DWG. PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL SUPPLY ALL NECESSARY COMPONENTS (GAS LINE, ELECTRONIC IGNITER & BALL VALVE, & ETC) & MUST BE INSTALLED BY A LICENSED GAS FITTER OR PLUMBER IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL CODES
3. END USER MUST ACCEPT FULL RESPONSIBILITY FOR USE OF THIS PRODUCT. CONTRACTOR MUST INSTRUCT OWNER ON PROPER USE OF GAS COMPONENTS.

5 GAS FIRE PIT
LH2.1 SCALE: 1/2" = 1'-0"



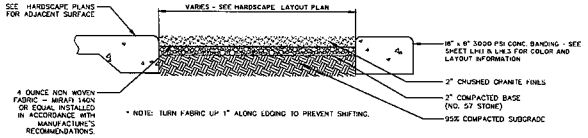
NOTE:
COPPER PILE CAP LIGHT BY COASTAL SOURCE. COORDINATE WITH SITE LIGHTING FOR CLOSEST TIE IN POINT
WEBSITE:
HTTP://WWW.COASTALSOURCE.COM

6 HAMMOCK DETAIL
LH2.1 SCALE: 1/2" = 1'-0"

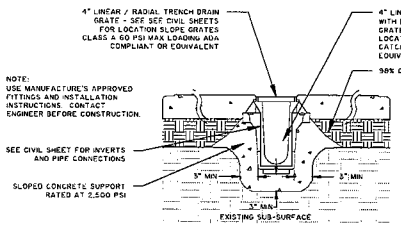


NOTE:
1 DRAIN PIPES BELOW THE BASE MAY BE NECESSARY IN SLOW DRAINING SUBGRADE
2. PAVER TO BE INSTALLED PER ICPI TECH SPEC 2 FOR GUIDELINES AND SPECIFICATIONS FOR BASE MATERIALS, SUBGRADE SOIL AND BASE COMPACTION.
3. DO NOT COVER ENTIRE TOP OF AGGREGATE BASE WITH GEOTEXTILE

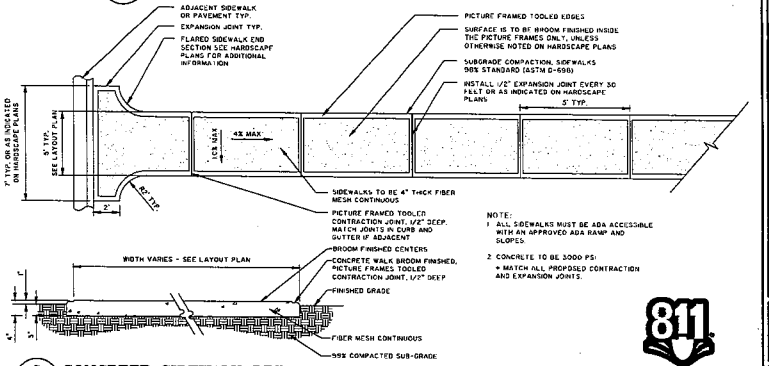
2 CONCRETE PAVERS
LH2.1 SCALE: 1/2" = 1'-0"



4 CONCRETE PAVER BANDING & GRANITE FINES INFILL
LH2.1 SCALE: NOT TO SCALE



3 PERVIOUS CONCRETE WALKING SURFACE
LH2.1 SCALE: 1/2" = 1'-0"



NOTE:
1. ALL SIDEWALKS MUST BE ADA ACCESSIBLE WITH AN APPROVED ADA RAMP AND SLOPES.
2. CONCRETE TO BE 3000 PSI
* MATCH ALL PROPOSED CONTRACTION AND EXPANSION JOINTS.

7 CONCRETE SIDEWALK DETAIL
LH2.1 SCALE: 1/2" = 1'-0"

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NO	REVISIONS	DATE
3		7/18/13

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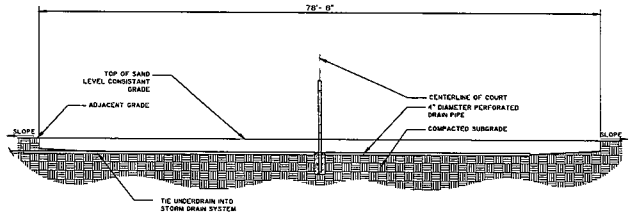
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

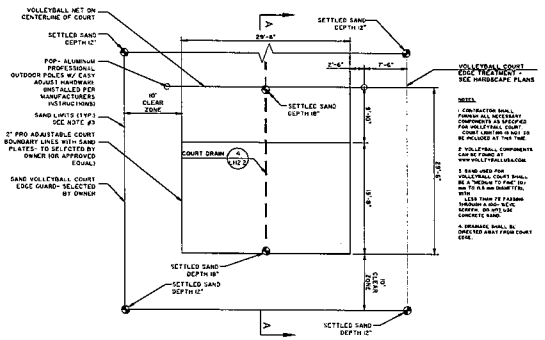
HARDSCAPE DETAILS

JOB NO.	P-24436.0000
DATE:	7/18/13
DRAWN:	JLG
DESIGNED	JLG
REVIEWED	SMB
APPROVED	JDR
SCALE:	AS SHOWN

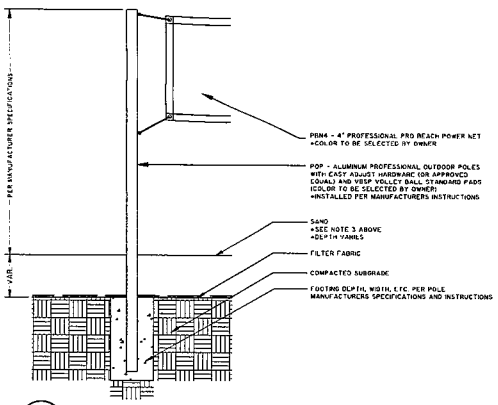
LH2.1



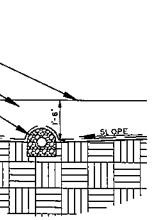
1 LH2.2 **VOLLEYBALL COURT SECTION A–A'**
SCALE: 1/8" = 1'-0"



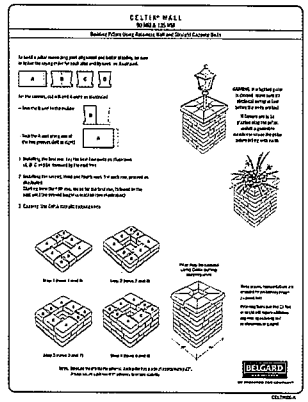
2 LH2.2 **VOLLEYBALL COURT SECTION A–A'**
SCALE: 1" = 10'-0"

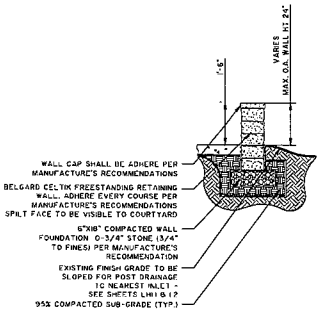


3 LH2.2 **VOLLEYBALL COURT POLE DETAIL**
SCALE: 1/8" = 1'-0"

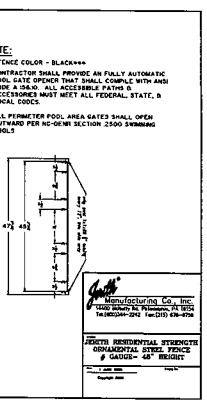


4 LH2.2 **VOLLEYBALL COURT CENTER DRAIN DETAIL**
SCALE: 1/8" = 1'-0"

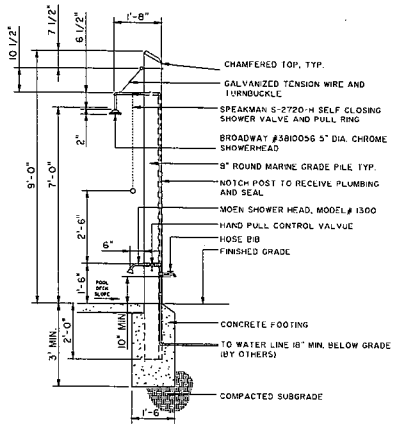


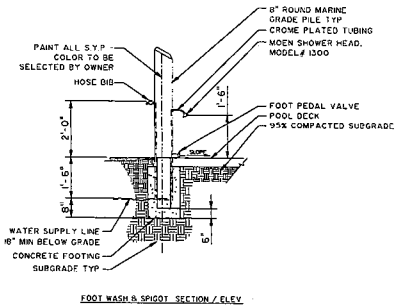


1 LH2.2 **FREE STANDING RAISED PLANTER**
SCALE: 1/2" = 1'-0"



1 LH2.2 **48" POOL FENCE**
SCALE: 1/2" = 1'-0"





FOOT WASH & SPIGOT SECTION / ELEV.

NOTES:
1. SHOWER HEAD SHALL BE MOEN 1300 SHOWER OR EQUAL APPROVAL BY OWNER'S REP
2. LOCATE PLUMBING ON BACK OF POST, AWAY FROM PRIMARY VIEW
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL PLUMBING FIXTURES FOR OWNER'S REP. ACCEPTANCE PRIOR TO CONSTRUCTION

2 LH2.2 **POOL SHOWER ASSEMBLY & FOOT WASH DETAIL**
SCALE: 1/2" = 1'-0"

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Engineering | Surveying | Planning | GIS | Consulting
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PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

HARDSCAPE DETAILS

JOB NO.	P-2443R.0000
DATE:	7/18/13
DRAWN:	A.G.
DESIGNED:	A.G.
REVIEWED:	BHB
APPROVED:	JBR
SCALE:	AS SHOWN

LH2.2

GENERAL NOTES:

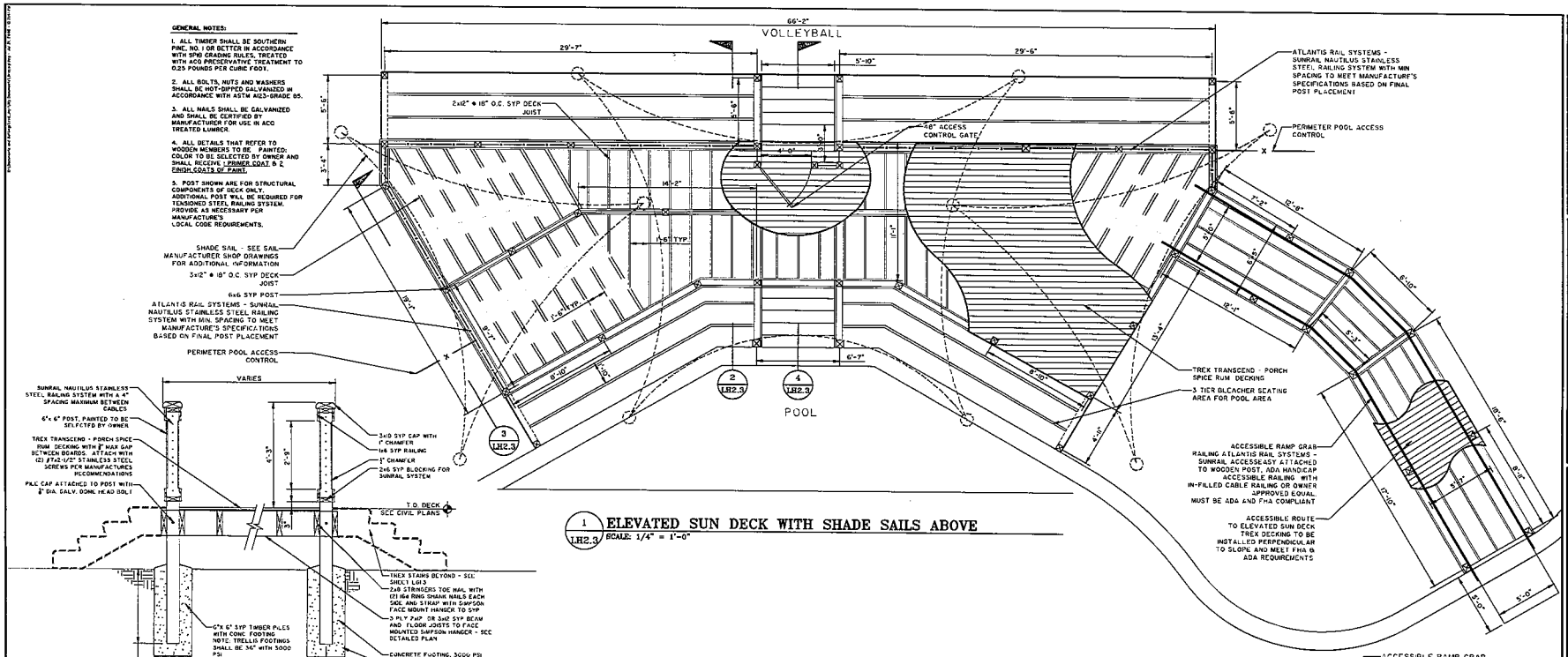
1. ALL TIMBER SHALL BE SOUTHERN PINE NO. 1 OR BETTER IN ACCORDANCE WITH SPIB GRADING RULES, TREATED WITH ACQ PRESERVATIVE TREATMENT TO 0.25 POUNDS PER CUBIC FOOT.

2. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123-GRADE 85.

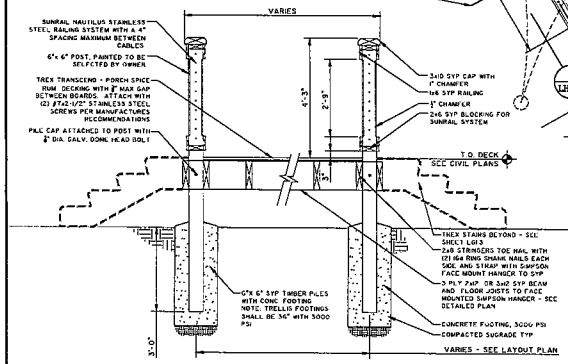
3. ALL NAILS SHALL BE GALVANIZED AND SHALL BE CERTIFIED BY MANUFACTURER FOR USE IN ACQ TREATED LUMBER.

4. ALL DETAILS THAT REFER TO WOODEN MEMBERS TO BE PAINTED: COLOR TO BE SELECTED BY OWNER AND SHALL RECEIVE 1 PRIMER COAT & 2 FINISH COATS OF PAINT.

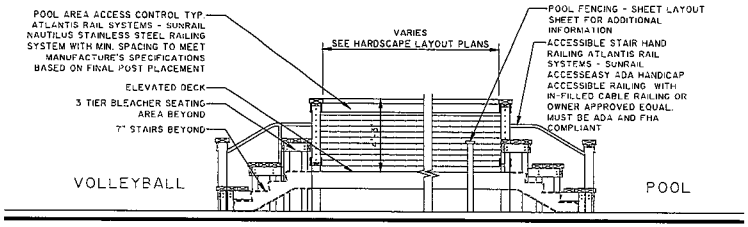
5. POST SHOWN ARE FOR STRUCTURAL COMPONENTS OF DECK ONLY. ADDITIONAL POST WILL BE REQUIRED FOR TENSIONED STEEL RAILING SYSTEM. PROVIDE AS NECESSARY PER MANUFACTURER'S LOCAL CODE REQUIREMENTS.



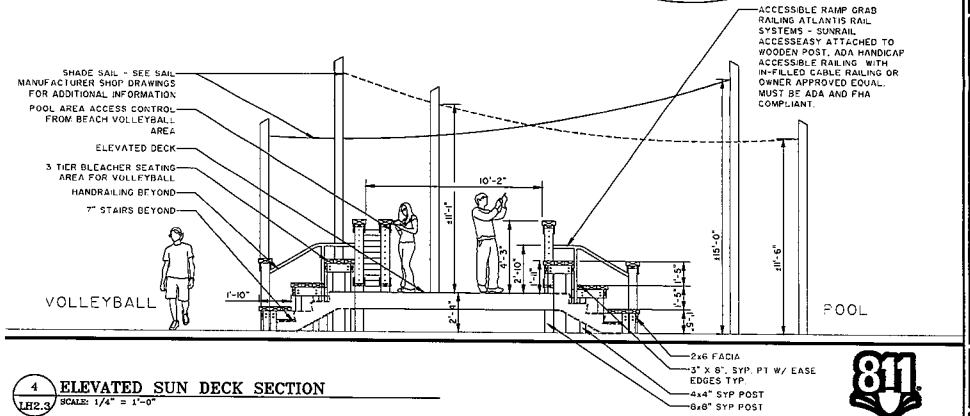
1 LH2.3 **ELEVATED SUN DECK WITH SHADE SAILS ABOVE**
SCALE: 1/4" = 1'-0"



2 LH2.3 **ELEVATED SUN DECK SECTION CABLE RAILING**
SCALE: 1/2" = 1'-0"



3 LH2.3 **ELEVATED SUN DECK SECTION CABLE RAILING**
SCALE: 1/4" = 1'-0"



4 LH2.3 **ELEVATED SUN DECK SECTION**
SCALE: 1/4" = 1'-0"

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PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

HARDSCAPE DETAILS

JOB NO:	P-24436.0000
DATE:	7/18/12
DRAWN:	JLG
DESIGNED:	JLG
REVIEWED:	BHB
APPROVED:	JBM
SCALE:	AS SHOWN

LH2.3

SECTION 03305 - SITE CONCRETE

PARAGRAPH TITLE

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SITE CONCRETE

PART 1 - GENERAL

1.1 SECTION INCLUDES
A. CONCRETE SIDEWALKS AND PARKING AREAS

1.2 RELATED SECTIONS
SEE THOMAS & HUTTON SITE CIVIL SPECIFICATION FOR ADDITIONAL INFORMATION.

A. SECTION 02204 - EARTHWORK: PREPARATION OF SITE FOR PAVING [AND BASE]
B. SECTION [02231 - AGGREGATE BASE COURSE.

1.3 MEASUREMENT AND PAYMENT

A. CONCRETE PAVEMENT AND SIDEWALK, REGARDLESS OF THICKNESS, WILL BE MEASURED BY THE SQUARE YARD OF FINISHED SURFACE COMPLETE IN PLACE AND ACCEPTED.
B. PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING ALL MATERIALS, PLANT, EQUIPMENT, TOOLS, FORMS, INSERTS, AND FOR ALL LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE WORK REQUIRED BY THESE SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR ANY MATERIAL WASTED, USED FOR THE CONVENIENCE OF THE CONTRACTOR, UNUSED OR REJECTED

1.4 REFERENCES (LATEST REVISION)

A. ACI 117 - SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS
B. ACI 301 - SPECIFICATIONS FOR STRUCTURAL CONCRETE.
C. ACI 304R - GUIDE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE.
D. ACI 318 - BUILDING-CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY.
E. ACI 330R - GUIDE FOR THE DESIGN AND CONSTRUCTION OF CONCRETE PARKING LOTS.
F. ASTM A 185 - STEEL WELDED WIRE REINFORCEMENT, PLAIN, FOR CONCRETE.
G. ASTM A 497 - STEEL WELDED WIRE REINFORCEMENT, DEFORMED, FOR CONCRETE.
H. ASTM A 615 - DEFORMED AND PLAIN CARBON-STEEL BARS FOR CONCRETE REINFORCEMENT.
I. ASTM C 31 - MAKING AND CURING CONCRETE TEST SPECIMENS IN THE FIELD.
J. ASTM C 33 - CONCRETE AGGREGATES.
K. ASTM C 39 - COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS.
L. ASTM C 94 - READY-MIXED CONCRETE.
M. ASTM C 150 - PORTLAND CEMENT.
N. ASTM C 172 - SAMPLING FRESHLY MIXED CONCRETE.
O. ASTM C 260 - AIR-ENTRAINING ADMIXTURES FOR CONCRETE.
P. ASTM C 309 - LIQUID MEMBRANE-FORMING COMPOUNDS FOR CURING CONCRETE.
Q. ASTM C 494 - CHEMICAL ADMIXTURES FOR CONCRETE.
R. ASTM C 920 - ELASTOMERIC JOINT SEALANTS.
S. ASTM E 1155 - TEST METHOD FOR DETERMINING FF FLOOR FLATNESS AND FL FLOOR LEVELNESS NUMBERS.
T. ASTM C 1116 - FIBER-REINFORCED CONCRETE.
U. ASTM D 1751 - PREFORMED EXPANSION JOINT FILLER FOR CONCRETE PAVING AND STRUCTURAL CONSTRUCTION. (NONEXTRUDING AND RESILIENT BITUMINOUS TYPE).
V. ASTM D 3740 - MINIMUM REQUIREMENTS FOR AGENCIES ENGAGED IN TESTING AND/OR INSPECTION OF SOIL AND ROCK AS USED IN ENGINEERING DESIGN AND CONSTRUCTION.
W. ASTM E 329 - AGENCIES ENGAGED IN CONSTRUCTION INSPECTION AND/OR TESTING.

1.5 PERFORMANCE REQUIREMENTS

A. PAVING: DESIGNED FOR [PARKING.] [LIGHT DUTY COMMERCIAL VEHICLES.] [RESIDENTIAL STREETS.] [MAIN STREET ARTERIES.] [MOVEMENT OF TRUCKS UP TO 30,000 LBS.]

1.6 SUBMITTALS FOR REVIEW

A. SECTION 01300 - SUBMITTALS: PROCEDURES FOR SUBMITTALS.
B. PRODUCT DATA: PROVIDE DATA ON JOINT FILLER, ADMIXTURES, AND CURING COMPOUNDS.
C. CONCRETE DESIGN MIX.

1.7 QUALITY ASSURANCE

A. PERFORM WORK IN ACCORDANCE WITH ACI 301, ACI 318, AND ACI 330R.
B. OBTAIN CEMENTITIOUS MATERIALS FROM SAME SOURCE THROUGHOUT.
C. CONFORM TO ACI 117 -SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS.
C. METHOD OF MEASUREMENT FOR ACCESSIBLE ROUTE WITH A 24" DIGITAL SMART-LEVEL WILL BE USED TO MEASURE POINTS ALONG THE ACCESSIBLE ROUTE. LINE OF MEASUREMENT SHALL BE PARALLEL TO THE LONG EDGE OF A RAMP OR ACCESSIBLE ROUTE, WHETHER STRAIGHT OR CURVED. LONGITUDINAL MEASUREMENT LINES SHALL BE SPACED 3 FEET APART, BUT IN NO CASE SHALL FEWER THAN TWO LINES BE USED. THE HORIZONTAL MEASUREMENT [CROSS-SLOPE] WILL BE MEASURED EVERY [6] FEET. ENGINEER RESERVES THE RIGHT TO GATHER ADDITIONAL MEASUREMENTS IF FURTHER INVESTIGATION IS NECESSARY. THE 24" SMART-LEVEL SLOPE READINGS GREATER THAN SPECIFIED TOLERANCE WITHIN CONTRACT DOCUMENTS WILL BE IDENTIFIED AS NON-COMPLIANT AND NOT ACCEPTED.
D. ENGINEER RESERVES THE RIGHT TO MARK AND REJECT PORTIONS OF CONCRETE NOT WITHIN TOLERANCE AS SPECIFIED.
E. ACCESSIBLE ROUTE TOLERANCE BY MEASURING FLOOR FLATNESS AND LEVELNESS. TRAFFIC FLOORS [ALL ACCESSIBLE ROUTES] SHALL CONFORM TO THE FOLLOWING SURFACE PROFILE TOLERANCES:

a. FLOOR DESIGNATION: ALL FLOOR AREAS NOT SPECIFIED TO BE PART OF THE "DEFINED TRAFFIC FLOOR"[ACCESSIBLE ROUTE] SHALL BE PART OF A "RANDOM TRAFFIC FLOOR"[NON-ACCESSIBLE ROUTE].
b. FLATNESS AND LEVELNESS TOLERANCES: THE TRAFFIC FLOOR SHALL CONFORM TO THE FOLLOWING SURFACE PROFILE TOLERANCES:

FLOOR FLATNESS NUMBER: FF
SPECIFIED OVERALL VALUE = [38]
MINIMUM LOCAL VALUE = [25]
FLOOR LEVELNESS NUMBER: FL
SPECIFIED OVERALL VALUE = [25]
MINIMUM LOCAL VALUE = [17]

c. FLOOR TOLERANCE MEASUREMENTS: FF AND FL TOLERANCES SHALL BE TESTED IN ACCORDANCE WITH ASTM E 1155. ACTUAL OVERALL F-NUMBERS SHALL BE CALCULATED USING THE INFERIOR / SUPERIOR AREA METHOD
d. TIMELINESS OF FLOOR PROFILE TESTS & REPORTS: ALL FLOOR TOLERANCE MEASUREMENTS SHALL BE MADE WITHIN [48] HOURS AFTER SLAB INSTALLATION. IN ALL CASES, TOLERANCE MEASUREMENTS SHALL PRECEDE THE REMOVAL OF SHORES AND FORMS. RESULTS OF ALL FLOOR PROFILE TESTS (INCLUDING A RUNNING TABULATION OF OVERALL FF AND FL VALUES FOR ALL OF THE TRAFFIC SLABS INSTALLED TO DATE) SHALL BE PROVIDED TO CONTRACTOR WITHIN [72] HOURS AFTER EACH SLAB INSTALLATION.
e. REMEDY FOR OUT-OF-TOLERANCE WORK: FOR PURPOSES OF FLATNESS AND LEVELNESS CONTROL, MINIMUM FLOOR SECTION BOUNDARIES SHALL COINCIDE WITH THE CONTROL JOINTS. PROFILE TEST COMPLIANCE REQUIREMENTS APPLY TO THE TIME PERIOD SPECIFIED ABOVE. CONTRACTOR SHALL REMEDY ANY FLOOR SECTION MEASURING BELOW EITHER THE MINIMUM LOCAL FF NUMBER, OR FL NUMBER ANY FLOOR SECTION MEASURING AT OR ABOVE BOTH THE MINIMUM LOCAL FF AND FL NUMBERS SHALL BE ACCEPTED. IF ACTUAL OVERALL FF OR FL NUMBERS FOR ENTIRE RANDOM-TRAFFIC FLOOR INSTALLATION MEASURE LESS THAN ITS SPECIFIED VALUE, THEN CONTRACTOR SHALL UNDERTAKE REMEDIAL MEASURES ACCEPTABLE TO THE ENGINEER

G. DEFINED RANDOM TRAFFIC FLOORS [NON-ACCESSIBLE ROUTES] SHALL CONFORM TO THE FOLLOWING SURFACE PROFILE TOLERANCES:
a. FLOOR DESIGNATION: ALL FLOOR AREAS SPECIFIED AS "DEFINED RANDOM TRAFFIC FLOOR" INCLUDE ONLY THE [NON-ACCESSIBLE ROUTE]
b. FLATNESS AND LEVELNESS TOLERANCES: THE DEFINED TRAFFIC FLOOR SHALL CONFORM TO THE FOLLOWING SURFACE PROFILE TOLERANCES: FMIN = [25]
c. FLOOR TOLERANCE MEASUREMENTS: FMIN TOLERANCES SHALL BE TESTED IN ACCORDANCE WITH ASTM E 1486.
d. TIMELINESS OF FLOOR PROFILE TESTS & REPORTS: ALL FLOOR TOLERANCE MEASUREMENTS SHALL BE MADE BY THE CONTRACTOR WITHIN [24] HOURS AFTER SLAB INSTALLATION AND BEFORE SAW CUTTING OF CONTROL JOINTS. IN ALL CASES, TOLERANCE MEASUREMENTS SHALL PRECEDE THE REMOVAL OF SHORES AND FORMS. RESULTS OF ALL FLOOR PROFILE TESTS INCLUDING A RUNNING TABULATION OF OVERALL FMIN VALUES FOR ALL OF THE DEFINED-TRAFFIC SLABS INSTALLED TO DATE SHALL BE PROVIDED TO CONTRACTOR WITHIN [48] HOURS AFTER EACH SLAB INSTALLATION.

H. REMEDY FOR OUT-OF-TOLERANCE WORK: FOR PURPOSES OF FLATNESS AND LEVELNESS CONTROL, MINIMUM FLOOR SECTION BOUNDARIES SHALL COINCIDE WITH THE CONSTRUCTION JOINTS. PROFILE TEST COMPLIANCE REQUIREMENTS APPLY TO TIME PERIOD SPECIFIED ABOVE. CONTRACTOR SHALL REMEDY ANY FLOOR SECTION MEASURING BELOW THE FMIN NUMBER, IN ACCORDANCE WITH RECOMMENDATIONS OF ENGINEER. ANY FLOOR SECTION MEASURING AT OR ABOVE THE FMIN NUMBER SHALL BE ACCEPTED. IF ACTUAL OVERALL FMIN NUMBER ENTIRE DEFINED-TRAFFIC FLOOR INSTALLATION MEASURES LESS THAN ITS SPECIFIED VALUE, THEN CONTRACTOR SHALL UNDERTAKE REMEDIAL MEASURES ACCEPTABLE TO THE ENGINEER.

IF A PORTION OF A FLOOR DOES NOT MEET SPECIFIED F-NUMBER THE FOLLOWING REMEDIES ARE RECOMMENDED:
a. LOCAL VALUE IS OUT OF SPEC - GRIND OR REPLACE FLOOR.
b. OVERALL VALUE IS OUT OF SPEC - CONTRACTOR SHALL PAY THE OWNER PER SQUARE FOOT FOR PORTION OF FLOOR NOT MEETING F-NUMBER SPEC. THIS CAN BE OBTAINED BY SPECIFYING A FIGURE IN PROJECT SPECIFICATIONS IN CONJUNCTION WITH SQUARE FOOTAGE OBTAINED FROM READING TAKEN IN THE FIELD.

1.8 REGULATORY REQUIREMENTS

A. CONFORM TO CITY OF HARDEEVILLE AND JASPER COUNTY STANDARDS FOR PAVING WORK ON PUBLIC PROPERTY.

1.9 ENVIRONMENTAL REQUIREMENTS

A. DO NOT PLACE CONCRETE WHEN BASE SURFACE TEMPERATURE IS LESS THAN 40 DEGREES F, OR SURFACE IS WET OR FROZEN.

1.10 GUARANTEE

A. CONTRACTOR SHALL GUARANTEE THE QUALITY OF MATERIALS AND WORKMANSHIP FOR A PERIOD OF 12 MONTHS AFTER ACCEPTANCE. DEFECTS DISCOVERED DURING THIS PERIOD SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.

1.11 TESTING

A. TESTING LABORATORY SHALL OPERATE IN ACCORDANCE WITH ASTM D 3740 AND E 329 AND BE ACCEPTABLE TO THE ENGINEER.
B. TESTING LABORATORY AND PROJECT ENGINEER/PROJECT REPRESENTATIVE SHALL BE GIVEN A MINIMUM OF 48 HOURS NOTICE PRIOR TO TAKING ANY TESTS.
C. OWNER SHALL SELECT AND ENGAGE THE TESTING LABORATORY. TESTING LABORATORY SHALL BE RESPONSIBLE TO THE OWNER AND OWNER'S ENGINEER. PAYMENT FOR LABORATORY AND ALL TESTS SHALL BE BY THE OWNER, EXCEPT THE OWNER SPECIFICALLY RESERVES THE RIGHT TO DEDUCT FROM THE CONTRACTOR'S PAYMENT, THE EXPENSE AND CHARGES OF THE TESTING LABORATORY WHEN:

.1 CONTRACTOR GIVES NOTICE WORK IS READY FOR INSPECTION AND TESTING, AND FAILS TO BE READY FOR THE TEST, AND/OR
.2 TESTING OF THE CONTRACTOR'S WORK, PRODUCTS, OR MATERIALS FAIL, AND RETESTING IS REQUIRED, AND/OR
.3 CONTRACTOR ABUSES THE SERVICES OR INTERFERES WITH THE WORK OF THE TESTING LABORATORY IN THE CONDUCT OF THIS WORK.

D. TEST RESULTS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO CONTINUING WITH ASSOCIATED OR SUBSEQUENT WORK.

PART 2 - PRODUCTS

2.1 FORM MATERIALS
A. WOOD OR STEEL FORM MATERIAL, PROFILED TO SUIT CONDITIONS.
B. JOINT FILLER: ASTM D1751 TYPE: 1/2 INCH THICK.

2.2 REINFORCEMENT
A. REINFORCING STEEL: ASTM A 615, GRADE 60 BILLET STEEL DEFORMED BARS; UNCOATED FINISH.
B. WELDED STEEL WIRE FABRIC: PLAIN TYPE, ASTM A 185; UNCOATED FINISH.
C. FIBER REINFORCEMENT: SHALL CONFORM TO ASTM C 1116 AS MANUFACTURED BY FIBERMESH COMPANY OR EQUIVALENT. CONCRETE MIX DESIGN SHALL UTILIZE BETWEEN 0.5% AND 1.0% FIBER CONTENT.

2.1 FORM MATERIALS
A. WOOD OR STEEL FORM MATERIAL, PROFILED TO SUIT CONDITIONS.
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2.3 CONCRETE MATERIALS
A. CEMENT: ASTM C 150, TYPE I - NORMAL.
B. FINE AND COARSE MIX AGGREGATES: ASTM C 33. COARSE AGGREGATE SHALL CONSIST OF GRANITE STONE.
C. WATER: POTABLE, NOT DETRIMENTAL TO CONCRETE.
D. AIR ENTRAINMENT: ASTM C 260.
E. CHEMICAL ADMIXTURE: ASTM C 494, TYPE A - WATER REDUCING.

2.4 ACCESSORIES
A. CURING COMPOUND: ASTM C309, CLEAR WITH FUGITIVE DYE.
B. SEALANT: JOINTS SHALL BE SEALED PER DETAIL ON PROJECT DRAWINGS, CONFORMING TO ASTM C 920, TYPE S OR M, GRADE P OR NS, CLASS 25.

2.5 CONCRETE MIX - BY PERFORMANCE CRITERIA
A. PROVIDE CONCRETE TO THE FOLLOWING CRITERIA:
.1 FLEXIBLE STRENGTH: 700 PSI.
.2 COMPRESSIVE STRENGTH: 3,500 PSI @ 28 DAYS.
.3 SLUMP: 4 TO 5 INCHES

B. USE ACCELERATING ADMIXTURES IN COLD WEATHER ONLY WHEN APPROVED BY ENGINEER. USE OF ADMIXTURES WILL NOT RELAX COLD WEATHER PLACEMENT REQUIREMENTS.
C. USE CALCIUM CHLORIDE ONLY WHEN APPROVED BY ENGINEER.
D. USE SET RETARDING ADMIXTURES DURING HOT WEATHER ONLY WHEN APPROVED BY ENGINEER

2.6 SOURCE QUALITY CONTROL AND TESTS

A. ALL SAMPLING AND TESTING SERVICES SHALL BE PERFORMED, AT THE [CONTRACTOR'S] [OWNER'S] EXPENSE, BY A TESTING AGENCY THAT OPERATES IN ACCORDANCE TO ASTM D 3740 AND E 329 LATEST EDITION AND ACCEPTED BY THE ENGINEER.
B. CONTRACTOR SHALL SUBMIT TO THE ENGINEER A DESIGN MIX ON EACH CLASS OF CONCRETE PROPOSED FOR USE. THE MIX SHALL BE PREPARED BY AN APPROVED TESTING LABORATORY. COMPRESSIVE STRENGTH OF AT LEAST FOUR SPECIMENS OF THE DESIGN MIX SHALL INDICATE 15% HIGHER THAN 28 DAYS STRENGTHS SPECIFIED. DURING THE WORK, THE CONTRACTOR SHALL MAKE THREE TEST CYLINDERS FOR EACH 50 CUBIC YARDS, OR FRACTION THEREOF, OF CONCRETE PLACED EACH DAY. ONE CYLINDER SHALL BE TESTED AT 7 DAYS AND THE OTHER TWO AT 28 DAYS IN ACCORDANCE WITH ASTM C 39. COPIES OF ALL TEST REPORTS SHALL BE FURNISHED TO THE ENGINEER.

PART 3 - EXECUTION

3.1 EXAMINATION

A. VERIFY SUBGRADE CONDITIONS UNDER PROVISIONS OF SECTION 02204 - EARTHWORK.
B. VERIFY COMPACTED SUBGRADE IS ACCEPTABLE AND READY TO SUPPORT CONCRETE AND IMPOSED LOADS.
C. VERIFY GRADIENTS AND ELEVATIONS OF SUBGRADE ARE CORRECT.

3.2 CONSTRUCTION OBSERVATION

A. THE ENGINEER OR PROJECT REPRESENTATIVE WILL HAVE THE RIGHT TO REQUIRE ANY PORTION OF THE WORK BE COMPLETED IN THEIR PRESENCE AND IF THE WORK IS COVERED UP AFTER SUCH INSTRUCTION, IT SHALL BE EXPOSED BY THE CONTRACTOR FOR OBSERVATION. HOWEVER, IF THE CONTRACTOR NOTIFIES THE ENGINEER SUCH WORK IS SCHEDULED, AND THE ENGINEER FAILS TO APPEAR WITHIN 48 HOURS, THE CONTRACTOR MAY PROCEED. ALL WORK COMPLETED AND MATERIALS FURNISHED SHALL BE SUBJECT TO REVIEW BY THE ENGINEER OR PROJECT REPRESENTATIVE. IMPROPER WORK SHALL BE RECONSTRUCTED. ALL MATERIALS, WHICH DO NOT CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS, SHALL BE REMOVED FROM THE WORK UPON NOTICE BEING RECEIVED FROM THE ENGINEER FOR THE REJECTION OF SUCH MATERIALS. ENGINEER SHALL HAVE THE RIGHT TO MARK REJECTED MATERIALS TO DISTINGUISH THEM AS SUCH.

3.3 SUBGRADE

A. PREPARE SUBGRADE IN ACCORDANCE WITH SECTION 02204 - EARTHWORK

3.4 PREPARATION FOR PLACING

A. WATER SHALL BE REMOVED FROM EXCAVATIONS BEFORE CONCRETE IS DEPOSITED. HARDENED CONCRETE DEBRIS AND OTHER FOREIGN MATERIALS SHALL BE REMOVED FROM THE INTERIOR OF FORMS AND INSIDE OF MIXING AND CONVEYING EQUIPMENT. THE REINFORCEMENT SHALL BE MADE SECURE IN POSITION AND SHALL BE SUBJECT TO EXAMINATION AND ACCEPTANCE.
B. MOISTEN SUBGRADE TO MINIMIZE ABSORPTION OF WATER FROM FRESH CONCRETE.
C. COAT SURFACES OF MANHOLE, INLET, AND CATCH BASIN FRAMES WITH OIL TO PREVENT BOND WITH CONCRETE PAVEMENT.
D. NOTIFY ENGINEER MINIMUM 48 HOURS PRIOR TO COMMENCEMENT OF CONCRETING OPERATIONS.

3.5 FORMING

A. PLACE AND SECURE FORMS TO CORRECT LOCATION, DIMENSION, PROFILE, AND GRADIENT.
B. ASSEMBLE FORMWORK TO PERMIT EASY STRIPPING AND DISMANTLING WITHOUT DAMAGING CONCRETE.
C. PLACE JOINT FILLER IN POSITION, IN STRAIGHT LINES. SECURE TO FORMWORK DURING CONCRETE PLACEMENT.
D. FORMS SHALL BE CONSTRUCTED TO THE SHAPE, LINE, AND GRADE REQUIRED AND SHALL BE MAINTAINED SUFFICIENTLY RIGID TO PREVENT DEFORMATION UNDER LOAD. FORM WORK AND DETAILS OF CONSTRUCTION JOINTS SHALL CONFORM TO ACI-318, CHAPTER 6.

3.6 REINFORCEMENT

A. PLACE REINFORCEMENT AS INDICATED.
B. INTERRUPT REINFORCEMENT AT EXPANSION JOINTS

3.7 PLACING CONCRETE

A. PLACING OF CONCRETE SHALL CONFORM TO CHAPTER 5 OF THE AMERICAN CONCRETE INSTITUTE STANDARD A.C.I. 318. CONCRETE HAVING ATTAINED INITIAL SET OR HAVING CONTAINED WATER FOR MORE THAN 45 MINUTES SHALL NOT BE USED IN THE WORK. CONCRETE SHALL NOT BE DROPPED FREELY MORE THAN 5 FEET. CONCRETE SHALL BE MIXED AND PLACED ONLY WHEN THE TEMPERATURE IS AT LEAST 40 DEGREES F AND RISING. CONCRETE SHALL BE PLACED ONLY UPON SURFACES FREE FROM FROST, ICE, MUD AND OTHER DETRIMENTAL SUBSTANCES OR CONDITIONS. WHEN PLACED ON DRY SOIL OR PERVIOUS MATERIAL, WATER PROOF PAPER OR POLYETHYLENE SHEETING SHALL BE LAID OVER SURFACES TO RECEIVE THE CONCRETE.
B. ENSURE REINFORCEMENT, INSERTS, EMBEDDED PARTS, FORMED JOINTS AND FORMS ARE NOT DISTURBED DURING CONCRETE PLACEMENT.
C. PLACE CONCRETE CONTINUOUSLY OVER THE FULL WIDTH OF THE PANEL AND BETWEEN PREDETERMINED CONSTRUCTION JOINTS. DO NOT BREAK OR INTERRUPT SUCCESSIVE POURS SO COLD JOINTS WILL NOT OCCUR.
D. PLACE CONCRETE TO ELEVATIONS INDICATED ON THE CONTRACT DRAWINGS.

3.8 JOINTS

A. PLACE EXPANSION JOINTS AT 30 FOOT INTERVALS AND RADIUS POINTS.
B. PLACE CONTRACTION JOINTS AT 5 FOOT INTERVALS. ALIGN CURB, GUTTER, AND SIDEWALK JOINTS.
C. PLACE JOINT FILLER BETWEEN PAVING COMPONENTS AND BUILDING OR OTHER APPURTENANCES. RECESS TOP OF FILLER 1/8 INCH.

SAW CUT CONTRACTION JOINTS 3/16 INCH WIDE AT AN OPTIMUM TIME AFTER FINISHING. CUT 1/3 INTO DEPTH OF SLAB.

3.9 FINISHING

A. LIGHT BROOM.
B. SIDEWALK PAVING: LIGHT BROOM, RADIUS TO 1/2 INCH RADIUS, AND TROWEL JOINT EDGES
C. PLACE CURING COMPOUND ON EXPOSED CONCRETE SURFACES IMMEDIATELY AFTER FINISHING. APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
D. ACCESSIBLE ROUTES: SURFACES SHALL BE STABLE, FIRM, AND SLIP RESISTANT. SLAB FINISH TOLERANCES - UNLESS OTHERWISE CALLED OUT IN THE CONTRACT DOCUMENTS, FINISHES SHALL BE TRUE PLANES WITHIN 3/16" INCH IN 10 FEET AS DETERMINED BY A 10-FOOT STRAIGHTEDGE PLACED ANYWHERE ON THE SLAB IN ANY DIRECTION. MAXIMUM VARIATION IN ELEVATION FOR A LEVEL SLAB SHALL NOT EXCEED QUARTER OF AN INCH (1/4") OVER THE ENTIRE SLAB OR ACCESSIBLE ROUTE TOLERANCES.

3.10 JOINT SEALING

A. SEPARATE PAVEMENT FROM VERTICAL SURFACES WITH ½ INCH THICK JOINT FILLER.
B. PLACE JOINT FILLER IN PAVEMENT PATTERN PLACEMENT SEQUENCE. SET TOP TO REQUIRED ELEVATIONS. SECURE TO RESIST MOVEMENT BY WET CONCRETE
C. EXTEND JOINT FILLER FROM BOTTOM OF PAVEMENT TO WITHIN 1/8 INCH OF FINISHED SURFACE.

3.11 TOLERANCES

A. SECTION 01400 - QUALITY ASSURANCE: TOLERANCES.
B. GENERAL SITE CONCRETE:
.1 MAXIMUM VARIATION OF SURFACE FLATNESS: ¼ INCH IN 10 FEET.
.2 MAXIMUM VARIATION FROM TRUE POSITION: ¼ INCH.

C. ACCESSIBLE ROUTES: VARIATION FROM DESIGN ELEVATION SHALL NOT EXCEED ¼ INCH; HOWEVER, ACCESSIBLE ROUTES SHALL NOT EXCEED MAXIMUM ADA ALLOWABLE SLOPES. CONTRACTOR SHALL REMOVE AND REPLACE ANY AND ALL PORTIONS OF THE ACCESSIBLE ROUTE THAT EXCEEDS MAXIMUM ADA ALLOWABLE SLOPES.

3.12 CURB AND GUTTER SECTIONS

A. SHALL BE CONSTRUCTED AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH APPLICABLE DETAILS. SUBGRADE BELOW THE CURB AND GUTTER SECTIONS SHALL BE COMPACTED TO 98% DENSITY. CURB AND GUTTER SECTIONS SHALL BE CONSTRUCTED IN SECTIONS OF UNIFORM LENGTH AND SHALL NOT EXCEED 10 FEET OR BE LESS THAN 5 FEET IN LENGTH. STRAIGHT EDGING ALONG THE EDGE OF THE GUTTER AND TOP OF CURB SHALL CONFORM TO THOSE REQUIREMENTS FOR THE ADJACENT PAVEMENT BUT WITH NO IRREGULARITIES TO EXCEED ¼ INCH IN 10 FEET.
B. IF SLIP-FORM OR EXTRUDED CONSTRUCTION IS USED, CONTRACTION JOINTS SHALL BE LOCATED AT INTERVALS NO GREATER THAN 10 FEET BY SAWING THE HARDENED CONCRETE AT THE PROPER TIME. JOINTS SHALL BE SAWED BETWEEN 4 TO 8 HOURS AFTER PLACING OF CONCRETE. THE DEPTH OF THE SAW-CUT SHALL BE ONE-FOURTH THICKNESS OF THE CURB AND GUTTER SECTION. THE MAXIMUM WIDTH OF CUT SHALL BE ¼ INCH. ALL JOINTS SHALL BE SAWED IN SUCCESSION.
C. HALF INCH THICK PREMOLDED EXPANSION JOINTS SHALL BE INSTALLED COMPLETELY THROUGH THE JOINTS AT SPACES NOT TO EXCEED 50 FEET AND AT ALL STRUCTURES AND WALKS.
D. WHEN THE CURB FORMS ARE REMOVED, BACKFILL SHALL BE IMMEDIATELY PLACED, TAMPED, AND GRADED BEHIND THE NEW CURB TO HELP PROTECT THE LINE AND GRADE. MACHINE METHODS OF PLACING AND FORMING MAY BE USED PROVIDED THE FINISHED PRODUCT IS SATISFACTORY TO THE ENGINEER.
E. CONTRACTOR SHALL PLACE A CONCRETE DEPRESSED CURB AT ALL DRIVEWAYS SHOWN ON THE DRAWINGS OR WHERE A DRIVEWAY IS IN USE
F. CRACKED CURB AND GUTTER WILL NOT BE ACCEPTED.

3.13 CONCRETE CURING

A. IMMEDIATELY AFTER PLACEMENT AND FINISHING, CONCRETE SHALL BE PROTECTED FROM MOISTURE LOSS FOR NOT LESS THAN 7 DAYS. FOR SURFACES NOT IN CONTACT WITH FORMS, CURING COMPOUND SHALL BE UNIFORMLY APPLIED AFTER WATER SHEEN DISAPPEARS FROM THE CONCRETE. FORMED SURFACES SHALL RECEIVE AN APPLICATION OF CURING COMPOUND IF FORMS ARE REMOVED DURING THE 7 DAY CURING PERIOD. CURING COMPOUND SHALL NOT BE APPLIED DURING RAINFALL.
B. CURING COMPOUND SHALL BE APPLIED UNDER PRESSURE AT THE RATE OF 1 GALLON PER 150 SQUARE FEET BY MECHANICAL SPRAYERS. THE SPRAYING EQUIPMENT SHALL BE OF THE FULLY ATOMIZING TYPE. AT THE TIME OF USE, THE COMPOUND SHALL BE THOROUGHLY MIXED WITH A FUGITIVE DYE UNIFORMLY DISPERSED THROUGHOUT THE SPRAYER. CARE SHALL BE TAKEN TO PREVENT APPLICATION TO JOINTS WHERE CONCRETE BOND IS REQUIRED, TO REINFORCEMENT STEEL AND TO JOINTS WHERE JOINT SEALER IS TO BE PLACED. THE COMPOUND SHALL FORM A UNIFORM CONTINUOUS COHERENT FILM THAT WILL NOT CRACK OR PEEL AND SHALL BE FREE.
C. NO PEDESTRIAN OR VEHICULAR TRAFFIC SHALL BE ALLOWED OVER THE SURFACE FOR SEVEN DAYS UNLESS THE SURFACE IS PROTECTED BY PLANKS, PLYWOOD, OR SAND. THE PROTECTION SHALL NOT BE PLACED UNTIL AT LEAST 12 HOURS AFTER THE APPLICATION OF THE CURING COMPOUND.
D. PROTECT CONCRETE BY SUITABLE METHODS TO PREVENT DAMAGE BY MECHANICAL INJURY OR EXCESSIVELY HOT OR COLD TEMPERATURES.

3.14 FIELD QUALITY CONTROL

A. SECTION 01400 - QUALITY CONTROL: FIELD OBSERVATIONS AND TESTING.
B. THREE CONCRETE TEST CYLINDERS WILL BE TAKEN FOR EVERY 50 OR LESS CUBIC YARDS OF EACH CLASS OF CONCRETE PLACED EACH DAY.
C. ONE ADDITIONAL TEST CYLINDER WILL BE TAKEN DURING COLD WEATHER AND CURED ON SITE UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS.
D. ONE SLUMP TEST WILL BE TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN
E. MAINTAIN RECORDS OF PLACED CONCRETE ITEMS. RECORD DATE, LOCATION OF POUR, QUANTITY, AIR TEMPERATURE, AND TEST SAMPLES TAKEN.

3.15 PROTECTION

A. IMMEDIATELY AFTER PLACEMENT, PROTECT PAVEMENT FROM PREMATURE MOISTURE LOSS, EXCESSIVE HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY.
B. DO NOT PERMIT VEHICULAR TRAFFIC OVER PAVEMENT OR CURB FOR SEVEN DAYS MINIMUM AFTER FINISHING. DO NOT PERMIT PEDESTRIAN TRAFFIC OVER CONCRETE FOR THREE DAYS.

END OF SECTION

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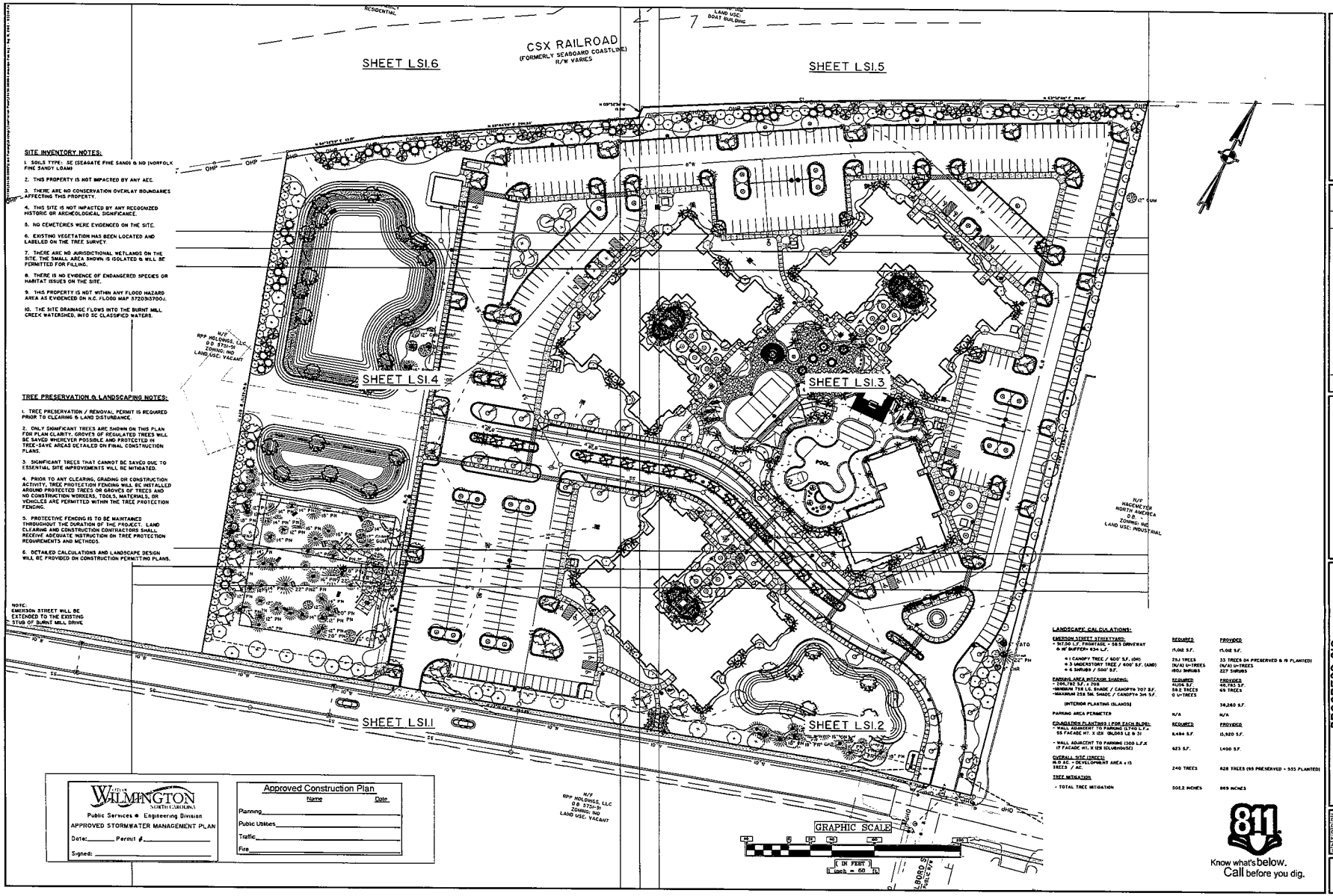
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

MASONARY SPECIFICATION

JOB NO:	J-24436.0000
DATE:	7/18/15
DRAWN:	JLG
DESIGNED:	JLG
REVIEWED:	GHB
APPROVED:	JDR
SCALE:	AS SHOWN

LH2.4


CSX RAILROAD
(FORMERLY SEABOARD COASTLINE)
R/W VARIES
SHEET LSI.6
SHEET LSI.5
SHEET LSI.4
SHEET LSI.3
SHEET LSI.2
SHEET LSI.1
SITE INVENTORY NOTES:
1. SOILS TYPE: SE (SEAGATE FINE SAND) & NO (NORFOLK FINE SANDY LOAM)
2. THIS PROPERTY IS NOT IMPACTED BY ANY AEC.
3. THERE ARE NO CONSERVATION OVERLAY BOUNDARIES AFFECTING THIS PROPERTY.
4. THIS SITE IS NOT IMPACTED BY ANY RECOGNIZED HISTORIC OR ARCHEOLOGICAL SIGNIFICANCE.
5. NO CEMETERIES WERE EVIDENCED ON THE SITE.
6. EXISTING VEGETATION HAS BEEN LOCATED AND LABELED ON THE TREE SURVEY.
7. THERE ARE NO JURISDICTIONAL WETLANDS ON THE SITE. THE SMALL AREA SHOWN IS ISOLATED & WILL BE PERMITTED FOR FILLING.
8. THERE IS NO EVIDENCE OF ENDANGERED SPECIES OR HABITAT ISSUES ON THE SITE.
9. THIS PROPERTY IS NOT WITHIN ANY FLOOD HAZARD AREA AS EVIDENCED ON N.C. FLOOD MAP 3720IJ570OJ.
10. THE SITE DRAINAGE FLOWS INTO THE BURNT MILL CREEK WATERSHED, INTO SC CLASSIFIED WATERS.
TREE PRESERVATION & LANDSCAPING NOTES:
1. TREE PRESERVATION / REMOVAL PERMIT IS REQUIRED PRIOR TO CLEARING & LAND DISTURBANCE.
2. ONLY SIGNIFICANT TREES ARE SHOWN ON THIS PLAN FOR PLAN CLARITY. GROVES OF REGULATED TREES WILL BE SAVED WHENEVER POSSIBLE AND PROTECTED IN TREE-SAVE AREAS DETAILED ON FINAL CONSTRUCTION PLANS.
3. SIGNIFICANT TREES THAT CANNOT BE SAVED DUE TO ESSENTIAL SITE IMPROVEMENTS WILL BE MITIGATED.
4. 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.
5. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS.
6. DETAILED CALCULATIONS AND LANDSCAPE DESIGN WILL BE PROVIDED ON CONSTRUCTION PERMITTING PLANS.
NOTE:
EMERSON STREET WILL BE EXTENDED TO THE EXISTING STUB OF BURNT MILL DRIVE
N/F RPP HOLDINGS, LLC D.B. 5750-59 ZONING: NO LAND USE: VACANT
N/F HANEMEYER NORTH AMERICA D.B. ZONING: NO LAND USE: INDUSTRIAL
LANDSCAPE CALCULATIONS:
EMERSON STREETYARD:
• 967.00 L.F. FRONTAGE - 58.5 DRIVEWAY & 16' BUFFER= 634 L.F.
• 1 CANOPY TREE / 400' S.F. (OR)
• 3 UNDERSTORY TREE / 400' S.F. (AND)
• 6 SHRUBS / 400' S.F.
REQUIRED: 25U TREES (N/A) U-TREES (80U) SHRUBS
PROVIDED: 33 TREES (14 PRESERVED & 19 PLANTED) (N/A) U-TREES 227 SHRUBS
PARKING AREA INTERIOR SHADING:
• 205,782 S.F. / 20%
-MINIMUM 75% LC SHADE / CANOPY= 707 S.F.
-MAXIMUM 25% SM SHADE / CANOPY= 345 S.F.
REQUIRED: 41,156 S.F. 58.0 TREES 0 U-TREES
PROVIDED: 49,782 S.F. 69 TREES
(INTERIOR PLANTING ISLANDS) 38,260 S.F.
PARKING AREA PERIMETER: N/A
REQUIRED: N/A
PROVIDED: N/A
FOUNDATION PLANTINGS (FOR EACH BLDG):
- WALL ADJACENT TO PARKING (1,740 L.F.x 35 FACADE HT. X 02 (BLDGS L2 & 3)
- WALL ADJACENT TO PARKING (300 L.F.X (F FACADE HT. X (2X (CLUBHOUSE)
REQUIRED: 5,484 S.F. 623 S.F.
PROVIDED: 15,520 S.F. 1,400 S.F.
OVERALL SITE (TREES):
N.D.SC - DEVELOPMENT AREA x 15 TREES / AC.
240 TREES
828 TREES (85 PRESERVED + 535 PLANTED)
TREE MITIGATION
- TOTAL TREE MITIGATION
502.2 INCHES
869 INCHES
Approved Construction Plan
Name Date
Planning
Public Utilities
Traffic
Fire
CITY OF WILMINGTON
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: Permit #
Signed:
GRAPHIC SCALE
IN FEET
1 inch = 60 ft.
811
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PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA
PROGRESS BUILDERS, LLC
LANDSCAPE SHEET INDEX, NOTES & MITIGATION
JOB No. J-20436.0000
DATE 9/24/15
DRAWN JLG
DESIGNED JLG
FIELD/FLD BHS
APPROVED JDR
SCALE 1" = 50'
LG1.1

All Regulated Trees to be Removed (Includes Significant Trees as well)	Size																														
Species	1	4	6	8	10	11	12	13	14	15	16	17	18	20	21	22	23	24	25	26	27	28	30	31	33	35	39	41	44	48	Grand Total
CHR				5	14		9	1	1	2	2		1																1		36
CYP																														1	1
DW					1																										1
ELM											1																				1
GUM	1			37	54	1	106	3	38	8	38	2	46	14	3	8	5	1	3	1	1	2		1				1	1		375
LAO					2				1																						3
LO							1																								1
MAG		3	4	1	2		2														1										13
MAP			1	6	20		10		9	1	6		4			2				1		1				1					62
MUL													1																		1
OAK				1																											1
PEC							1																								1
PN							111		152	4	122		94	34	1	10		6	1	5	1	1	1	1	1						545
POP					1		1		2		1			1																	6
RO							2				1			1																	4
SYC																1				1				1							3
WATO				1			1		2		5		2	2		1	2			1	2	2					1				22
WILO					1						1											1									3
Grand Total	1	3	5	51	95	1	244	4	205	15	177	2	148	52	4	22	7	7	4	9	5	7	1	3	1	1	1	1	2	1	1079

Count of Significant Hardwoods to be Removed (24" and greater) Column Labels

Row Labels	24	25	26	27	28	31	35	39	41	44	48	Grand Total
CHR										1		1
CYP											1	1
GUM	1	3	1	1	2	1			1	1		11
MAP			1		1		1					3
SYC			1			1						2
WATO			1	2	2			1				6
WILO					1							1
Grand Total	1	3	4	3	6	2	1	1	1	2	1	25

Mitigation required for removal of Significant Hardwoods (24" and greater)	Caliper Inches													
Row Labels	24	25	26	27	28	31	35	39	41	44	48	Sub-Total	Mitigation % required	Inches of Mitigation required ((Sub-Total * % Mit. Req. * 2 / 3)
CHR										44		44	50%	14.7
CYP											48	48	100%	32
GUM	24	75	26	27	56	31			41	44		324	75%	162.0
MAP			26		28		35					89	100%	59.3
SYC			26			31						57	75%	28.5
WATO			26	54	56			39				175	100%	116.7
WILO					28							28	100%	18.7
Sub-Total	24	75	104	81	168	62	35	39	41	88	48	765		431.8

Count of Significant Pines (32" of greater)to be removed Column Labels

Row Labels	33	Grand Total
PN	1	1
Grand Total	1	1

Mitigation required for removal of Significant Pines (32" and greater)	Caliper Inches			
Row Labels	33	Sub - Total	Mitigation % required	Inches of Mitigation required ((Sub - Total * % Mit. Req.)*2 / 3)
PN	33	33	50%	11
Sub - Total	33	33		11

Count of Significant Small Flowering Trees to be Removed (8" and greater) Column Labels

Row Labels	8	10	12	27	Grand Total
DW		1			1
MAG	1	2	2	1	6
Grand Total	1	3	2	1	7

Mitigation required for removal of Significant Small Flowering Trees (8" and greater)	Caliper Inches					
Row Labels	8	10	12	27	Sub-Total	Mitigation % required	Inches of Mitigation required ((Sub - Total * % Mit. Req. * 2 / 3)
DW		10			10	100%	6.7
MAG	8	20	24	27	79	100%	52.7
Sub-Total	8	30	24	27	89		59.3

All Remaing Trees	Caliper Inches										
Row Labels	8	10	12	13	14	15	16	18	20	22	Grand Total
CHR	3		2		1		1				7
GUM	1	2	4	1	2	1					11
PN			20		13		18	13	3	4	71
POP	1		1			1					3
WATO	1							2			3
Grand Total	6	2	27	1	16	2	19	15	3	4	95

Significant Pine	11.0
Significant Hardwood	431.8
Significant Flowering Tree	59.3
Total Significant Tree Mitigation Required	502.2

Total Regulated Trees removed within area of disturbance necessary for essential site improvements (Exempt from mitigation)	1046

811
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Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:______ Permit #______
Signed: ______

Approved Construction Plan
Name Date
Planning
Public Utilities
Traffic
Fire

Preliminary
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REVISIONS
NO. BY DATE

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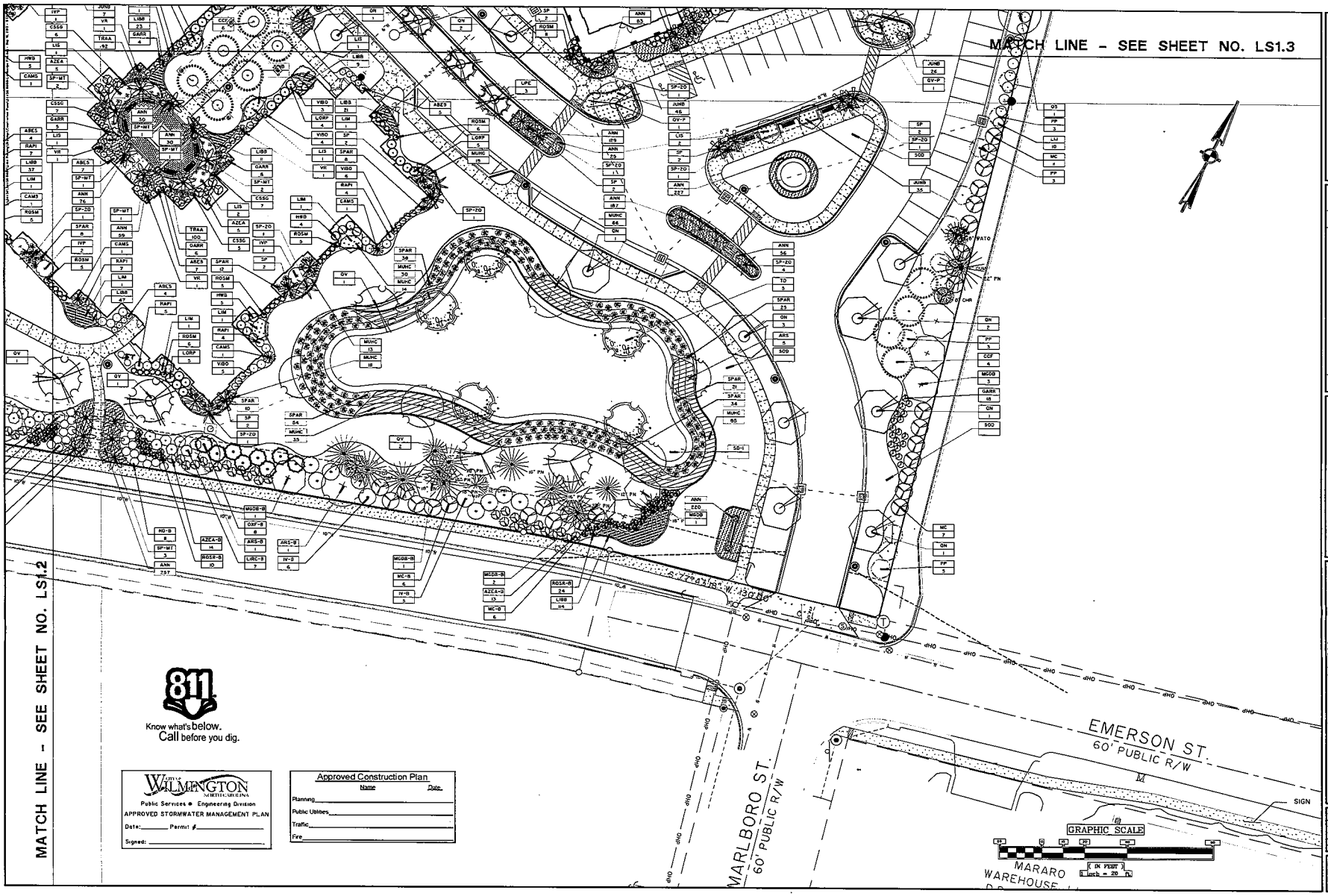
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA
PROGRESS BUILDERS, LLC
TREE SUMMARY & MITIGATION CHARTS

JOB NO:	J-24436.0000
DATE:	9/24/18
DRAWN:	JLG
DESIGNED:	JLG
REVIEWED:	BMB
APPROVED:	JDR
SCALE:	N.T.S.

LG1.2



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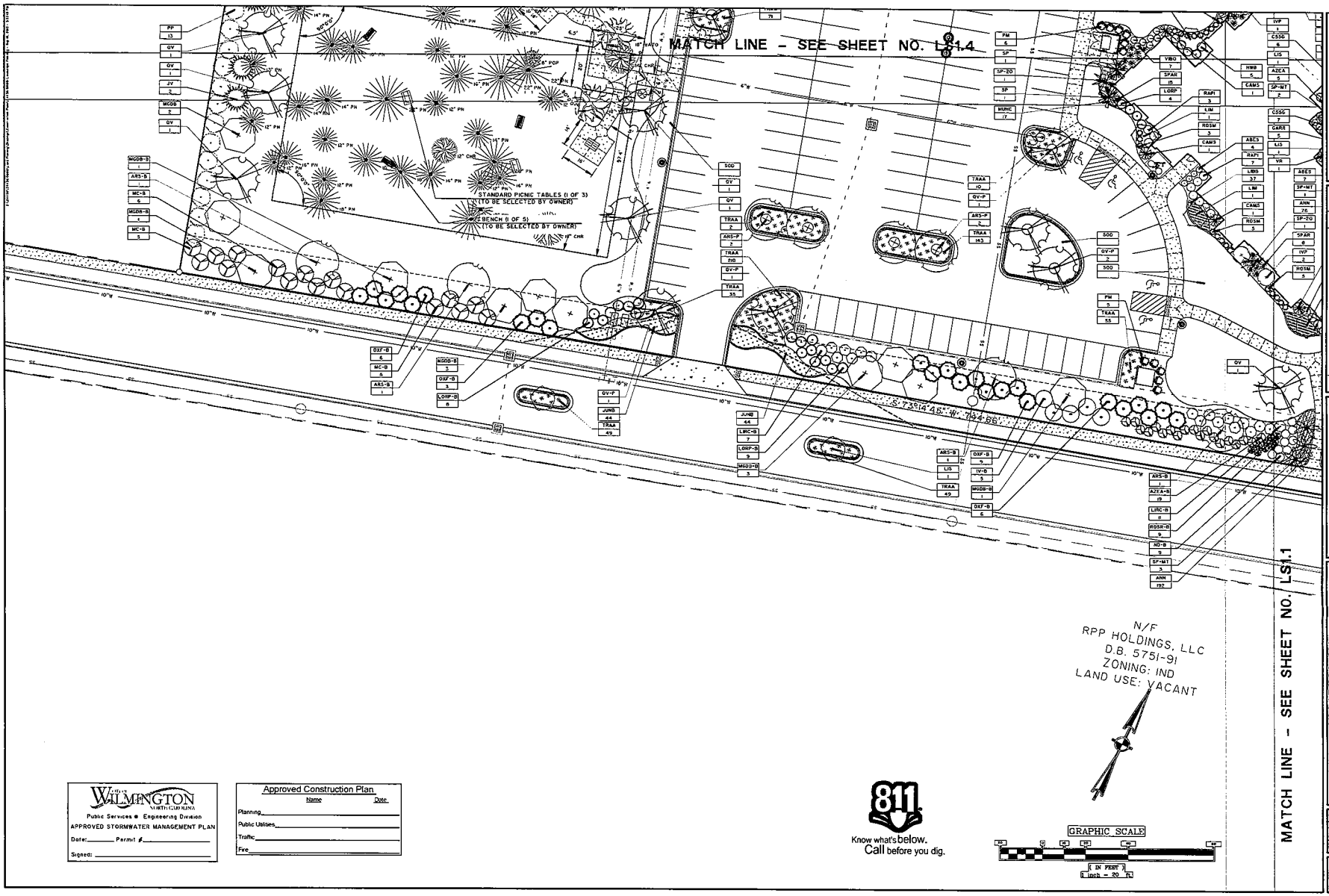
PROGRESS BUILDERS, LLC
LANDSCAPE PLAN

JOB NO:	J-24436.0000
DATE:	9/24/15
DRAWN:	JLG
DESIGNED:	JLG
REVIEWED:	BHB
APPROVED:	JDH
SCALE:	1" = 20'

LS1.1



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CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

LANDSCAPE PLAN

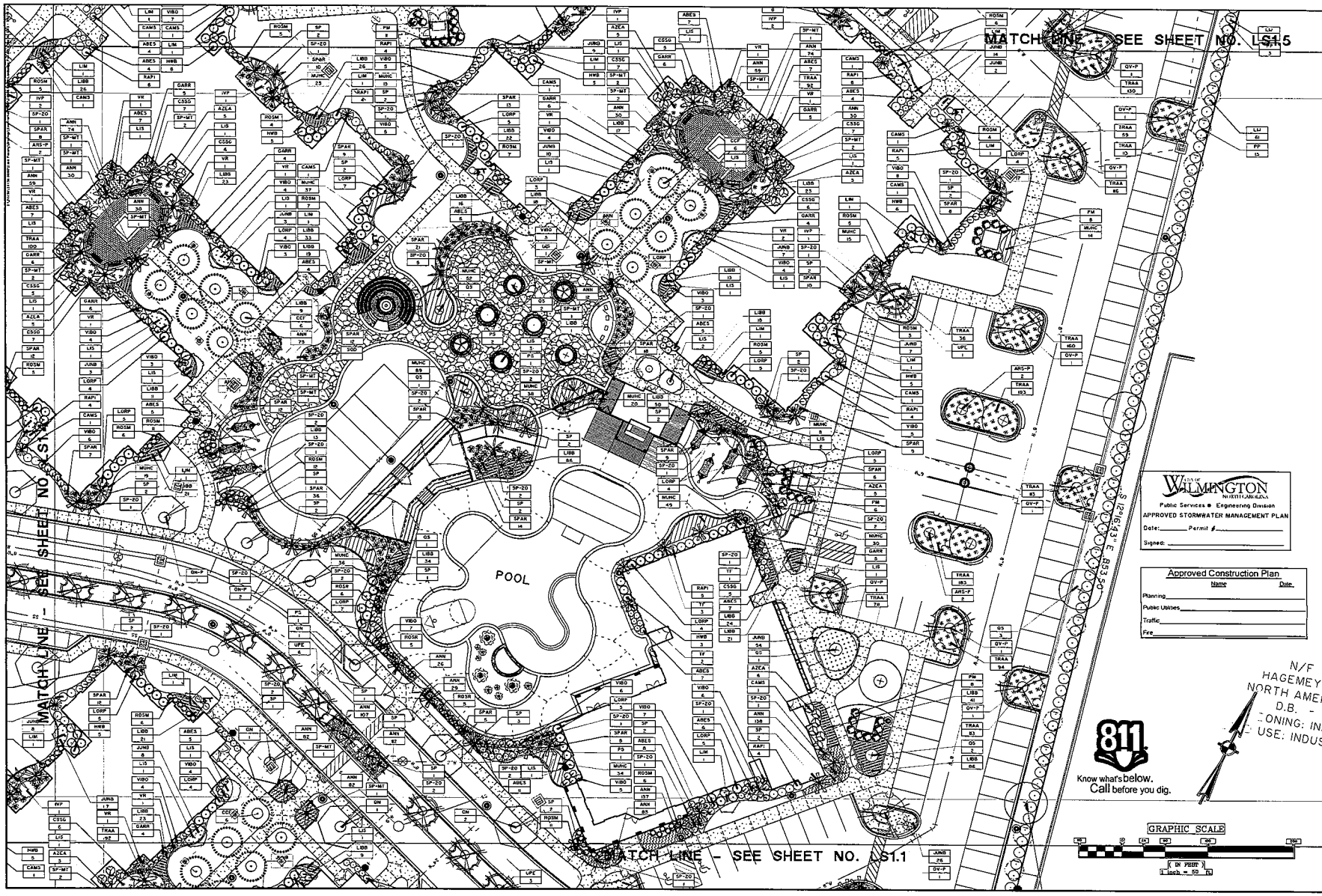
JOB NO.	J-24436.0000
DATE:	9/24/15
DRAWN:	JLG
DESIGNED:	JLG
REVIEWED:	BNB
APPROVED:	JDP
SCALE:	1" = 20.000'

LS1.2

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

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		



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

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

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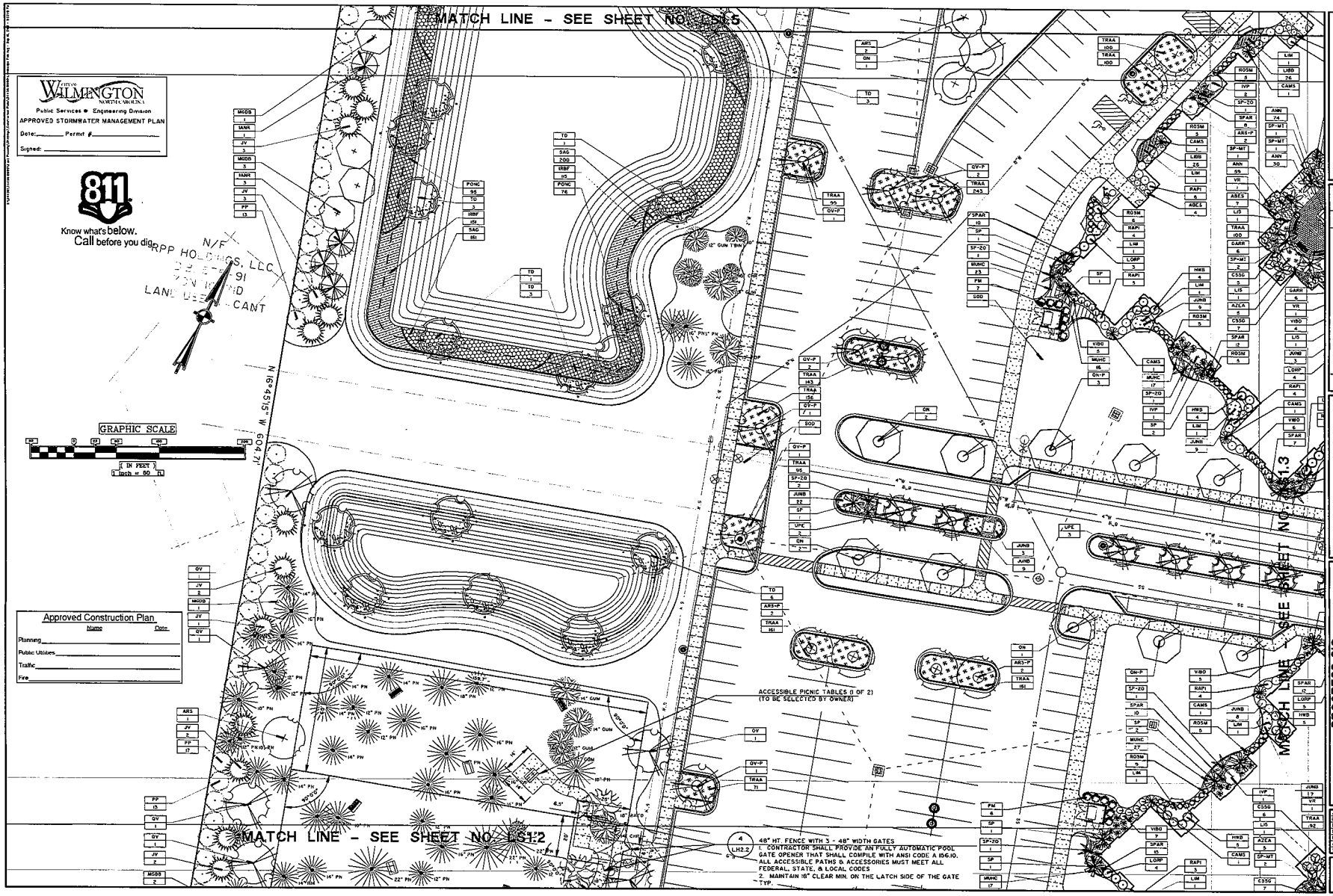
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

LANDSCAPE PLAN

JOB NO.	J-24436.0000
DATE:	9/24/15
DRAWN:	JLG
DESIGNED:	JLG
REVIEWED:	SHB
APPROVED:	JDR
SCALE:	1" = 20'

LS1.3


MATCH LINE - SEE SHEET NO. LS1.5
MATCH LINE - SEE SHEET NO. LS1.2
MATCH LINE - SEE SHEET NO. LS1.3
City of Wilmington
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: Permit #
Signed:
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GRAPHIC SCALE
IN FEET
1 inch = 50 ft
Approved Construction Plan
Name Date
Planning
Public Utilities
Traffic
Fire
ACCESSIBLE PICNIC TABLES (1 OF 2)
(TO BE SELECTED BY OWNER)
48" HT. FENCE WITH 5 - 48" WIDTH GATES
1. CONTRACTOR SHALL PROVIDE AN FULLY AUTOMATIC POOL GATE OPENER THAT SHALL COMPILE WITH ANSI CODE A 156.10. ALL ACCESSIBLE PATHS & ACCESSORIES MUST MEET ALL FEDERAL, STATE, & LOCAL CODES
2. MAINTAIN 18" CLEAR MIN. ON THE LATCH SIDE OF THE GATE TYP.
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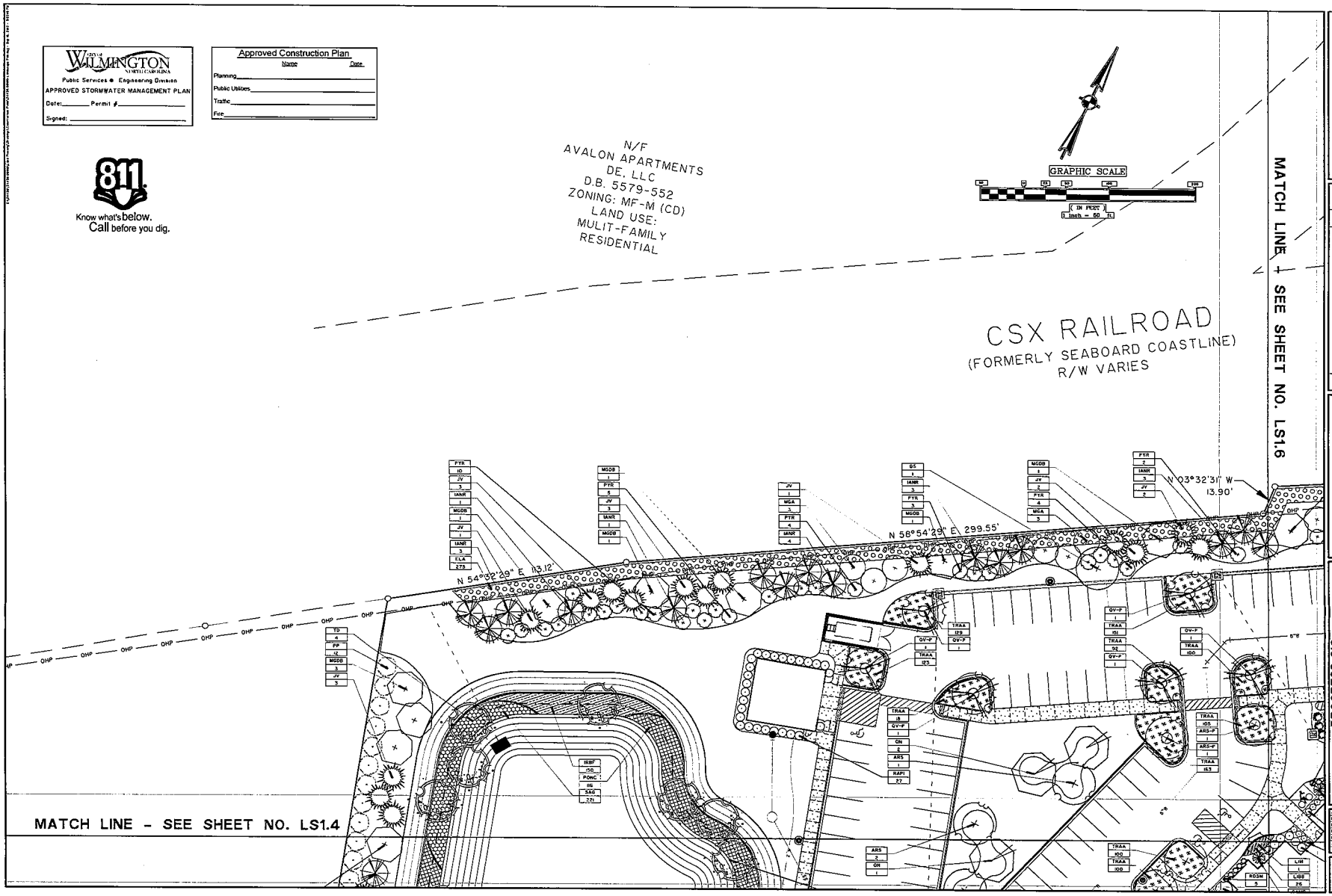
PROGRESS BUILDERS, LLC
LANDSCAPE PLAN AND DOG PARK LAYOUT AND CALLOUT
JOB NO: J-14436.0000
DATE: 9/24/15
DRAWN: JLG
DESIGNED: JLG
REVIEWED: SHB
APPROVED: JBR
SCALE: 1" = 20'
LS1.4



Preliminary
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NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting
215 South Kerr Avenue • Unit 8
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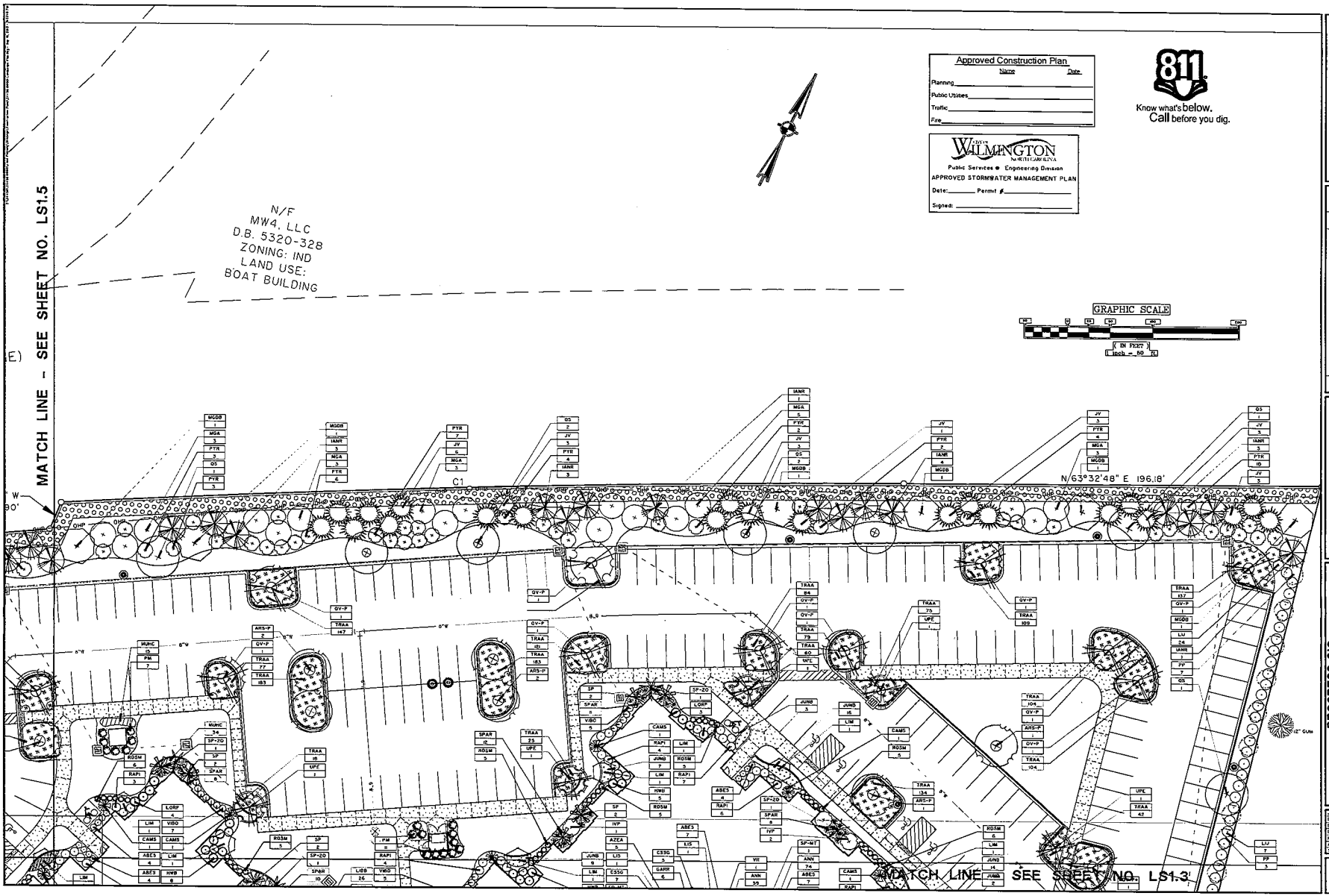
PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

LANDSCAPE PLAN

JOB NO.	J-24456.0000
DATE	9/24/15
DRAWN	JLG
DESIGNED	JLG
REVIEWED	BHB
APPROVED	JOH
SCALE	1" = 20'

LS1.5



Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

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

811 Know what's below. Call before you dig.

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NO.	REVISIONS	BY	DATE

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PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA
PROGRESS BUILDERS, LLC
LANDSCAPE PLAN

JOB NO: P-24436.0000
DATE: 9/24/15
DRAWN: JLG
DESIGNED: JLG
REVIEWED: BHB
APPROVED: JDH
SCALE: 1" = 20'

LS1.6

CITY OF WILMINGTON
NORTH CAROLINA
Public Services ● Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:________ Permit #________________
Signed: ________________________

Approved Construction Plan	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

NOTES:
1) SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.
2) ONLY GUY TREES WHEN SITE CONDITIONS REQUIRE IT.
3) PLANT ROOT BALL FLUSH WITH FINISHED GRADE UNLESS AREA HAS POOR DRAINAGE, IN WHICH CASE PLANT ROOTBALL 2" ABOVE GRADE
4) REMOVE ALL BRANCHES THAT ARE DAMAGED, RUBBING, OR CROSSING OTHER BRANCHES
5) NEVER CUT A CENTRAL LEADER.
6) FINAL TREE STAKING AND PLACEMENT TO BE APPROVED BY OWNER'S REP.
7) CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION

TREE PLANTING ON A SLOPE
NOT TO SCALE

NOTES:
1) SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE
2) PLANT ROOT BALL FLUSH WITH FINISHED GRADE UNLESS AREA HAS POOR DRAINAGE, IN WHICH CASE PLANT ROOTBALL 2" ABOVE GRADE
3) SABAL PALMETTOS SHALL BE DEFOLIATED, PROTECT CABBAGE HEAD FROM DAMAGE. ALL OTHER PALM SPECIES MUST HAVE FRONDS TIED W/BIODEGRADABLE STRAP OR TWINE.
4) FINAL TREE STAKING AND PLACEMENT TO BE APPROVED BY OWNER'S REP
5) CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION

PALM TREE PLANTING
NOT TO SCALE

1) SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE
2) WHEN GROUNDCOVER AND SHRUBS ARE USED IN MASSES, DO NOT FORM SOIL BERMS ON INDIVIDUAL PLANTS AND ENTIRE PLANTING BED SHALL BE EXCAVATED TO RECEIVE PLANTING SOIL AND PLANT MATERIAL
3) PLANT ROOT BALL FLUSH WITH FINISHED GRADE UNLESS AREA HAS POOR DRAINAGE, IN WHICH CASE PLANT ROOTBALL 2" ABOVE GRADE COORDINATE WITH OWNER'S REP PRIOR TO SETTING ROOTBALL ELEVATIONS
4) CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

SHRUB PLANTING
NOT TO SCALE

NOTES:
1) TRENCH EDGE TO BE LOCATED BETWEEN PLANTING BEDS AND ALL LAWN AREAS

SOD TO PLANT BED EDGE
NOT TO SCALE

NOTES:
1) SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE
2) APPLY MULCH IN A +/- 5' DIAMETER WHERE PROPOSED TREE PLANTINGS OCCUR IN SOD OR SEEDED AREA.

TREE RING
NOT TO SCALE

NOTES:
1) EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER PLANTING TO A DEPTH OF 12"

PLANT SPACING DETAIL
NOT TO SCALE

GENERAL PLANTING / IRRIGATION NOTES:

1. REQUIREMENTS FOR THE MEASUREMENTS, BRANCHING, GRADING, QUALITY, BALLING AND BURLAPPING OF PLANTS IN THE PLANT LIST SHOULD FOLLOW OR EXCEED THE STANDARDS CURRENTLY RECOMMENDED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. IN THE AMERICAN STANDARD FOR NURSERY STOCKS (ASNS). UNLESS OTHERWISE SPECIFIED, ANY SIZE SPECIFIED SHALL BE CONSIDERED MINIMUM. MINIMUMS FOR HEIGHT, SPREAD, CALIPER, ETC. SHALL TAKE PRECEDENT OVER A SPECIFIED CONTAINER SIZE. (I.E. - IF 7 GALLON IS REQUIRED, TO PROVIDE A SPECIFIED HEIGHT OR SPREAD THAT IS SPECIFIED AS A 3 GALLON, THEN THE 7 GALLON SHALL BE SHALL BE REQUIRED AND INCLUDED IN THE BASE BID AND SHALL NOT BE CONSIDERED A CHANGE ORDER.

2. ALL PLANTS SHALL HAVE A WELL FORMED HEAD WITH MINIMUM CALIPER, HEIGHT AND SPREAD OF THE SIDE BRANCHES AS SHOWN ON THE PLANT LIST. TRUNKS SHALL BE UNDAMAGED AND SHAPE SHALL BE TYPICAL OF THE SPECIES.

3. MEASUREMENT OF CONIFER HEIGHT SHALL INCLUDE NOT MORE THAN FIFTY (50) PER CENT OF THIS YEARS' VERTICAL GROWTH (TOP CANDLE).

4. THE LANDSCAPE CONTRACTOR IS HEREBY NOTIFIED OF THE EXISTENCE OF UNDERGROUND UTILITIES WITHIN THE LIMITS OF THE PROJECT AREA. THE CONTRACTOR SHOULD VERIFY THE EXACT LOCATION OF ALL UTILITY LINES PRIOR TO COMMENCEMENT OF DIGGING OPERATIONS. CONTRACTOR RESPONSIBLE FOR LOCATING, PROTECTING, AND REPAIRING ALL DAMAGE TO BUILDINGS, UTILITIES, PAVEMENT, AND CURB & GUTTER. ANY REPAIRS SHALL BE DONE PROMPTLY AT CONTRACTOR'S EXPENSE.

5. THE CONTRACTOR WILL BE RESPONSIBLE FOR STAKING AND LAYOUT OF PLANTINGS ON THIS PROJECT. THE LANDSCAPE ARCHITECT OR OWNER SHALL BE ADVISED WHEN STAKES ARE READY FOR INSPECTION ON VARIOUS PLANTING AREAS. ALL LAYOUT WORK SHALL BE INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT AND OWNER PRIOR TO OPENING ANY PLANTING PITS.

6. IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO VERIFY THAT EACH EXCAVATED TREE OR SHRUB PIT WILL PERCOLATE (DRAIN) PRIOR TO ADDING TOPSOIL AND INSTALLING TREES OR SHRUBS. THE CONTRACTOR SHALL FILL THE BOTTOM OF HOLES WITH SIX (6) INCHES OF WATER. THIS WATER SHOULD PERCOLATE WITHIN A TWENTY-FOUR (24) HOUR PERIOD. IF WATER DOESN'T PERC, CONTRACTOR SHALL NOTIFY THE OWNER'S REP PRIOR TO INSTALLING PLANTS.

7. SHOULD THE LANDSCAPE CONTRACTOR ENCOUNTER UNSATISFACTORY SURFACE OR SUBSURFACE DRAINAGE CONDITIONS, SOIL DEPTH, LATENT SOILS, HARD PANS, STEAM OR OTHER UTILITY LINES OR OTHER CONDITIONS THAT WILL JEOPARDIZE THE HEALTH AND VIGOR OF THE PLANTS, HE MUST ADVISE THE LANDSCAPE ARCHITECT IN WRITING OF THE CONDITIONS PRIOR TO INSTALLING THE PLANTS. OTHERWISE, THE LANDSCAPE CONTRACTOR WARRANTS THAT THE PLANTING AREAS ARE SUITABLE FOR PROPER GROWTH AND DEVELOPMENT OF THE PLANTS TO BE INSTALLED.

8. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING UP THE SITE AT THE COMPLETION OF THE PROJECT AND SHALL MAINTAIN THE SITE IN A REASONABLY NEAT AND CLEAN STATE THROUGHOUT THE INSTALLATION PROCESS. STREETS AND PAVED AREAS SHALL BE CLEANED REGULARLY TO REMOVE CONSTRUCTION MATERIALS AND OTHER DEBRIS RESULTING FROM WORK OF THE PROJECT.

9. PLANTS SHALL BE GUARANTEED FOR THE LENGTH OF TIME REQUIRED BY THE LOCAL JURISDICTION (MIN. OF TWO (2) FULL YEARS) AFTER THE FORMAL ACCEPTANCE OF THE PLANTING BY THE OWNER AND SHALL BE ALIVE AND IN SATISFACTORY GROWTH AT THE END OF THE GUARANTEE PERIOD. ANY PLANT NOT IN A HEALTHY AND VIGOROUS STATE AT THE END OF THE GUARANTEE PERIOD SHALL BE REPLACED AT NO COST TO THE OWNER, PLANTS SEVERELY DAMAGED BY VANDALS ARE NOT SUBJECT TO REPLACEMENT BY THE CONTRACTOR.

10. REPLACEMENTS OF DEAD OR UNSATISFACTORY MATERIAL SHALL BE MADE AS SPECIFIED IN THE PLANT LIST. THE OWNER OR LANDSCAPE ARCHITECT SHALL INSPECT REPLACED PLANTS WHEN ALL REPLACEMENTS HAVE BEEN MADE. REPLACEMENTS ARE TO BE ALIVE AND IN A HEALTHY CONDITION WHEN THE REPLACEMENTS ARE COMPLETE. REPLACEMENTS ARE NOT SUBJECT TO AN ADDITIONAL GUARANTEE, BUT THE LANDSCAPE CONTRACTOR SHALL CONSULT WITH THE LANDSCAPE ARCHITECT ON REASON FOR PLANT DECLINE/DEATH AND HOW TO AVOID FUTURE INSTANCES.

11. SHOULD THE CONTRACTOR NOT MAKE REPLACEMENTS IN A SATISFACTORY AND TIMELY FASHION IN ACCORD WITH THE PLANTING NOTES, THE OWNER, AFTER PROPER NOTIFICATION TO THE CONTRACTOR MAY UTILIZE THE FUNDS OF THE RETAINAGE TO HAVE THE REPLACEMENTS MADE IN ACCORDANCE WITH THE SPECIFICATIONS BY ANOTHER CONTRACTOR.

12. NO EXCAVATION OR PLANTING PIT SHALL BE LEFT UNATTENDED OVERNIGHT.

13. PLANT MATERIAL QUANTITIES PROVIDED IN THE PLANT LIST ARE FOR REFERENCE ONLY AND THE CONTRACTOR IS RESPONSIBLE FOR THE ACTUAL PLANT MATERIAL COUNTS. DISCREPANCIES BETWEEN QUANTITIES SHOWN ON THE PLANTING PLAN AND THOSE IN THE PLANT LIST SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. IF CLARIFICATION OF DISCREPANCIES FROM THE LANDSCAPE ARCHITECT IS NOT POSSIBLE, THEN QUANTITIES SHOWN ON THE PLANTING PLAN SHALL TAKE PRECEDENCE.

14. REMOVE BURLAP/STRAPPING AND WIRE BASKET FROM TOP 1/3 OF ROOT BALL ON TREES.

15. REMOVE PAPER, PLASTIC OR METAL AROUND ROOT BALLS OF SHRUBS.

16. DO NOT WRAP TREES.

17. WATER ALL PLANT MATERIAL IMMEDIATELY AFTER PLANTING.

18. TREE GUYING MATERIAL SHALL BE 'ARBOR-TIE' OR EQUIVALENT.

19. ALL PLANT BEDS TO BE MULCHED WITH 3" OF DOUBLE SHREADED HARDWOOD MULCH.

20. ALL AREAS OF PLANTING, INCLUDING AREAS OF GRASS SEEDING AND SOD, SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AND SHALL BE PROVIDED APPROPRIATE SOIL FOR THE PROPOSED PLANTINGS. THE LANDSCAPE CONTRACTOR SHALL ADJUST PH AND / OR SOIL FERTILITY BY UNIFORMLY INCORPORATING REQUIRED SOIL CONDITIONING MATERIALS AT THE RATE AND DEPTH DETERMINED BY THE ANALYSIS OF THE SOIL TEST (AS REQUIRED IN 3.02 AND 3.12 OF THE LANDSCAPING SPECIFICATIONS). EACH SOIL TEST SHALL BE SPECIFIC TO THE PROPOSED PLANT MATERIAL TO BE INSTALLED IN A GIVEN AREA.

21. ALL EXISTING VEGETATION WITHIN AREAS TO BE PLANTED / SODDED / SEEDED SHALL BE REMOVED PRIOR TO PLANTING / SODDING / SEEDING. ALL AREAS INDICATED TO BE GRASS SEED SHALL BE HYDROSEEDED PER EROSION SEDIMENT CONTROL SPECIFICATIONS FOR PERMANENT STABILIZATION.

22. CONTRACTOR TO SUPPLY AUTOMATIC IRRIGATION SYSTEMS, COMPLETE AND INSTALLED. SYSTEM TO INCLUDE ALL VALVES, PIPES, HEADS, FITTINGS, RAIN SENSOR, AND CLOCK AND TO PROVIDE 100% COVERAGE OF ALL NEW SODDED AREAS, TREES, SHRUBS AND PLANTING BEDS. COORDINATE IRRIGATION WITH OWNER'S REPRESENTATIVE. (CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF PROPOSED IRRIGATION SYSTEM FOR OWNER ACCEPTANCE)

23. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR AUTOMATIC IRRIGATION SYSTEMS. CONTRACTOR SHALL PROVIDE ELECTRIC METER AND SERVICE IN ACCORDANCE WITH STATE AND LOCAL CODES FOR IRRIGATION SYSTEM. LOCATION OF METERS AND CONTROL PANELS FOR IRRIGATION SHALL BE APPROVED BY OWNER'S REP. PRIOR TO INSTALLATION.

24. ALL TREES SHALL BE INSTALLED PER THE REQUIREMENTS OF THE CITY OF WILMINGTON, NORTH CAROLINA APPLICABLE ORDINANCES.

NOTES:
1) SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE
2) ONLY GUY TREES WHEN SITE CONDITIONS REQUIRE IT
3) PLANT ROOT BALL A MINIMUM OF 2" OR HIGHER AS DICTATED BY BY SITE CONDITIONS TO PREVENT ANY CUT INTO POORLY DRAINING SOILS
4) REMOVE ALL BRANCHES THAT ARE DAMAGED, RUBBING, OR CROSSING OTHER BRANCHES
5) NEVER CUT A CENTRAL LEADER
6) FINAL TREE STAKING AND PLACEMENT TO BE APPROVED BY OWNER'S REP.
7) CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

TREE PLANTING
NOT TO SCALE

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PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA
PROGRESS BUILDERS, LLC
PLANT SCHEDULE, NOTES & DETAILS

JOB NO:	J-24436.0000
DATE:	9/24/13
DRAWN:	JBJ
DESIGNED:	SKM
REVIEWED:	JDR
APPROVED:	JDR
SCALE:	NTS

LS2.1

PLANT SCHEDULE

TREES

QNTY	ABBRV	SCIENTIFIC NAME	COMMON NAME	PLANTING SIZE	SPACING	MISCELLANEOUS / REMARKS	MITIGATION INCHES PROVIDED
22	ARS-P	Acer rubrum 'Summers Red'	'Summers Red' Red Maple	B & B OR CONT. ; 2.5" Cal. Min., 14-16' Ht.	AS SHOWN	Specimen	0
9	ARS	Acer rubrum 'Summers Red'	'Summers Red' Red Maple	B & B OR CONT. ; 2.5" Cal. Min., 14-16' Ht.	AS SHOWN	Specimen	22.5
22	CCF	Cercis canadensis 'Forest Pansy'	'Forest Pansy' Redbud	B & B ; 2.5" Cal. 12' HT. X 4' SPD.	AS SHOWN	Specimen, single trunk	55
34	IANR	Ilex aquifolium x cornuta 'Nellie R. Stevens'	'Nellie R. Stevens Holly	2-1/2" CAL. 12-14' O.A. HT.	AS SHOWN	Specimen, full to ground	0
12	IVP	Ilex vomitoria 'Pendula'	Weeping Youpon Holly	CONT. 60" O.A. HT.	AS SHOWN	Specimen, full to ground	0
50	JV	Juniperus virginiana 'Burkii'	Eastern Red Cedar	B & B OR CONT. ; 2.5" Cal. 10 TO 12' Ht.	AS SHOWN	Full to ground	100
30	LM	Lagerstroemia indica 'Muskogee'	'Muskogee' Crape Myrtle	CONT. 10' - 12' HT.	AS SHOWN	Specimen, multi-trunk, 3 trunk min. 1" Cal. per cane	90
37	LIS	Lagerstroemia indica 'Sarah's Favorite'	Sarah's Favorite Crape Myrtle White	CONT. 2.5" CAL. 12' - 14' HT. O.A.HT.	AS SHOWN	Specimen, Standard	92.5
23	MGA	Magnolia grandiflora 'ALTA'	'ALTA' Southern Magnolia	B & B OR CONT. ; 2.5" Cal. Min., 14-16' Ht.	AS SHOWN	Specimen, Full to Ground	0
25	MGDB	Magnolia grandiflora 'D.D. Blanchard'	'D.D. Blanchard' Southern Magnolia	B & B OR CONT. ; 2.5" Cal. Min., 14-16' Ht.	AS SHOWN	Specimen, Full to Ground	62.5
92	PP	Pinus palustris	Longleaf Pine	B & B OR CONT. ; 2" Cal. Min., 14-16' Ht.	AS SHOWN	Specimen	184
5	PS	Prunus serrulata 'Kwanzan'	Kwanzan Cherry	B & B OR CONT. ; 2.5 CAL. 4' SPD.,12' O.A. HT.	AS SHOWN	Specimen	12.5
8	QN-P	Quercus nuttallii	Nuttall Oak	B & B OR CONT. ; 2.5" Cal. Min., 14-16' Ht.	AS SHOWN	Specimen	0
21	QN	Quercus nuttallii	Nuttall Oak	B & B OR CONT. ; 2.5" Cal. Min., 14-16' Ht.	AS SHOWN	Specimen	52.5
20	QS	Quercus shumardii	Shumard Oak	B & B OR CONT. ; 2.5" Cal. Min., 12-14' Ht.	AS SHOWN	Specimen	50
13	QV	Quercus virginiana 'Cathedral'	'Cathedral' Live Oak	B & B OR CONT. ; 2.5" Cal. Min., 12-14' Ht.	AS SHOWN	Specimen	32.5
39	QV-P	Quercus virginiana 'Cathedral'	'Cathedral' Live Oak	B & B OR CONT. ; 2.5" Cal. Min., 12-14' Ht.	AS SHOWN	Specimen	0
66	SP	Sabal palmetto	Sabal Palm	BR 14-16' OA HT	AS SHOWN	Stagger HTs.	0
62	SP-20	Sabal palmetto	Sabal Palm	BR 20' OA HT	AS SHOWN	Stagger HTs.	0
36	SP-MT	Sabal palmetto	Sabal Palm	BR 20' OA HT.	AS SHOWN	Matching HTs.	0
26	TD	Taxodium distichum	Bald Cypress	B & B or CONT. 2.5" Cal.14' HT. X 6' SPD.	AS SHOWN	Specimen	65
6	TF	Trachycarpus fortunei	Windmill Palm	B & B ; 6-8' OA. HT	AS SHOWN	Multi-stem 2 Stager Ht. trunks	0
20	UPE	Ulmus parvifolia 'BSNUPF' PP17,655	'Everclear' Elm	BBB OR CONT. ; 2.5" CAL. 4'SPD. X12' HT.	AS SHOWN	Specimen	50

BUFFER TREES

QNTY	ABBRV	SCIENTIFIC NAME	COMMON NAME	PLANTING SIZE	SPACING	MISCELLANEOUS / REMARKS	MITIGATION INCHES PROVIDED
6	ARS-B	Acer rubrum 'Summers Red'	'Summers Red' Red Maple	B & B OR CONT. ; 2.5 " Cal. Min., 14-16" Ht.	AS SHOWN	Specimen	0
13	MGDB-B	Magnolia grandiflora 'D.D. Blanchard'	'D.D. Blanchard' Southern Magnolia	B & B OR CONT. ; 2.5" Cal. Min., 14-16' Ht.	AS SHOWN	Specimen, Full to Ground	0

SHRUBS

QNTY	ABBRV	SCIENTIFIC NAME	COMMON NAME	PLANTING SIZE	SPACING	MISCELLANEOUS / REMARKS
159	ABCS	Abelia x grandiflora 'Frances Mason'	'Frances Mason' Abelia	CONT. 18" X 18"	AS SHOWN	Full
41	AZEA	Azalea x 'Conlec' PP#10567	Encore Azalea Autumn Amethyst ™	CONT. 20" X 20"	AS SHOWN	Full to Ground
60	CSSG	Camellia sasanqua 'Shishi Gashira'	Shishi Gashira Camellia	CONT. 24" O.A. HT.	AS SHOWN	Full to ground
22	CAMS	Camellia sasanqua 'White Doves'	White Doves Camellia	CONT. 36" O.A. HT.	AS SHOWN	Full
275	ELA	Elaeagnus pungens	Elaeagnus	7 GAL. ; 30" HT.	5'	Full
96	GARR	Gardenia jasminoides 'Radicans'	Dwarf Gardenia	CONT. 15" X 15"	AS SHOWN	Full
64	HWB	Hebe 'Wiri Blush'	Wiri Blush Hebe	CONT. 24" X 24"	AS SHOWN	Full
102	LIJ	Ligustrum japonicum	Japanese Privet	CONT. 36' O.A. HT	AS SHOWN	Full
108	LLORP	Loropetalum chinense 'Purple Diamond'	Purple Diamond Loropetalum	CONT. 20" X 20"	AS SHOWN	Full
18	MC	Myrica cerifera	Wax Myrtle	CONT. 36' O.A. HT.	AS SHOWN	Full to Ground
58	PM	Podocarpus macrophyllus 'Maki'	Southern Yew	CONT. 36" O.A. HT.	AS SHOWN	Full to Ground
69	PYR	Pyracantha koidzumii	Formosa Firethorn	CONT. 48" O.A. HT	AS SHOWN	Full
138	RAPI	Raphiolepis indica	Indian Hawthorn	CONT. 20" X 20"	AS SHOWN	Full
16	ROSR	Rosa 'Radtko'	The Double Knock Out®Rose	CONT. 18" X 18"	AS SHOWN	Full to Ground
201	ROSM	Rosa 'Meidriture'	Coral Drift®	CONT. 20" X 20"	AS SHOWN	Full to Ground
145	VIBO	Viburnum Obovatum 'Mrs. Schiller's Delight'	Viburnum 'Mrs. Schillers Delight'	CONT. 20" X 20"	AS SHOWN	Full
15	VR	Viburnum rhytidophyllum	Leatherleaf Viburnum	CONT. 48" O.A. HT.	AS SHOWN	Full

BUFFER SHRUBS

QNTY	ABBRV	SCIENTIFIC NAME	COMMON NAME	PLANT SIZE	SPACING	MISCELLANEOUS / REMARKS
46	AZEA-B	Azalea x 'Conlec' PP#10567	Encore Azalea Autumn Amethyst™	CONT. 20" X 20"	AS SHOWN	Full to Ground
16	IV-B	Ilex vomitoria	Youpon Holly	CONT. 36" O.A. HT.	AS SHOWN	Specimen, full to ground
25	LIJC-B	Ligustrum japonicum	Japanese Privet	CONT. 20" X 24"	AS SHOWN	Full
17	LORP-B	Loropetalum chinense 'Purple Diamond'	Purple Diamond Loropetalum	CONT. 20" X 20"	AS SHOWN	Full
28	MC-B	Myrica cerifera	Wax Myrtle	CONT. 36' O.A. HT.	AS SHOWN	Full to Ground
20	ND-B	Nandina domestica 'Harbour Dwarf'	Harbour Dwarf Nandina	CONT. 18" X 18"	AS SHOWN	Full to ground
32	OXF-B	Osmanthus x fortunei	Fortune's Tea Olive	CONT. 48" OA HT.	AS SHOWN	Specimen, full to ground
43	ROSR-B	Rosa 'Radtko'	The Double Knock Out®Rose	CONT. 18" X 18"	AS SHOWN	Full to Ground

ORNAMENTAL GRASSES AND GROUNDCOVERS

QNTY	ABBRV	SCIENTIFIC NAME	COMMON NAME	PLANTING SIZE	SPACING	MISCELLANEOUS / REMARKS
2858 S.F.	ANN	-	Seasonal Color	CONT. 12" O.A. HT.	12"	Species to be selected by owner. Plant at appropriate spacing to create immediate solid mass. Plant on 6 to 9" garden soil mound.
9600 S.F.	SD-1	----------	Rentention Basin Mix	---------- ----------	12"	See Grassing Specifications
155000 S.F.	SOD	Cynodon dactylon 'Celebration'	'Celebration' Bermuda Grass	---------- ----------		Dense roots.
416	IRBF	Iris versicolor	Blue Flag Iris	CONT. 12" O.A. HT.	2'	Full
408	JUNB	Juniperus squamata expansa 'Parsonii'	Parson's Juniper	CONT. 12" X 20"	2.5'	Full
960	LIBB	Liriope muscari 'Big Blue'	Big Blue Liriope	CONT. 6" O.A. HT	18"	Full
927	MUHC	Muhlenbergia capillaris	Pink Muhly Grass	1 GAL ; 6" X 12"	2'	Full
287	PONC	Pontederia Cordata	Pickerelweed	CONT. 3' O.A. HT.	3'	
582	SAG	Sagittaria lancifolia	Bulltongue	CONT. 24" O.A. HT	2'	
536	SPAR	Spartina bakeri	Cord Grass	CONT 12 xtlt"	AS SHOWN	Full
6207	TRAA	Trachelospermum asiaticum	Asiatic Jasmine	CONT. 4" X 8"	18"	Full

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

Approved Construction Plan
Name Date
Planning_____
Public Utilities_____
Traffic_____
Fire_____

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PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

PLANT SCHEDULE

JOB NO.	J-24436.0000
DATE	5/26/15
DRAWN	JLC
DESIGNED	JLC
MK/REVIEW	MP
APPROVED	JOR
SCALE	

LS2.2

LANDSCAPING SPECIFICATION

LANDSCAPING

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work covered in this section consists of soil preparation, fine grading, lawns, trees, shrubs and ground cover plantings, their protection and maintenance of planted areas until acceptance.

1.2 RELATED WORK

A. See Civil and Landscape plans and specifications.

1.3 QUALITY ASSURANCE

A. Qualifications of Workmen: Contractor shall provide at least one person present at all times during execution of work that is thoroughly familiar with the type of materials being installed and proper equipment and methods for their installation and who shall direct all work performed under this section.

B. Standards: All seed, sod, trees, shrubs, and ground covers shall meet or exceed the specifications of Federal, State, County and / or Municipality laws requiring inspection for disease and insect control.

1. Plants and planting methods shall conform to the latest edition of American Standard for Nursery Stock, American Nursery & Landscape Association, 1000 Vermont Avenue, NW, Suite 300, Washington, DC 20005

2. Plants shall be true and representative of their genus, species, cultivar, or variety. Nursery stock shipped in accordance with the required specifications shall be deemed to be acceptable within the terms of this section if it is typical in size and habit for the species in the region of the country in which it is grown unless the specifications include additional details.

3. One of each bundle or lot shall be tagged with name and size of the plant in accordance with American Nursery & Landscape Association standards, in all cases, botanical names shall take precedence over common names. Landscape Architect should be consulted in the event questions arise about nomenclature of plants to be used and their availability.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver grass seed in original containers showing analysis of seed mixture, percentage of pure seed, year of production, net weight, date of packaging and location of packaging. Damaged packages are not acceptable.

B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

C. Deliver sod on pallets.

D. Handling of plants shall be by lifting the root mass or container and not by lifting plant by trunk or branches. Handling of plants in an improper fashion shall be cause for rejection of plant materials. Care must be taken during all phases of the location and planting procedures not to damage root system, trunk or branches. All plant materials shall be planted as soon after arrival at the site as possible. Contractor is responsible for keeping plants safe from injury by the construction activity and watered to prevent drying out before planting. Balled and burlapped plants shall be "Heeled-in" and protected with burlap or other accepted material if they cannot be planted upon delivery. Plants with broken major branches, badly bruised or damaged bark are not acceptable and will be rejected.

1.5 PLANTING DATES

A. The planting season for trees, shrubs and groundcovers is between October 1st and June 1st of the following year. Do not plant if temperature is below freezing or above 90 degrees. Planting at any other time other than the planting season is the Contractor's option and full responsibility and without additional compensation. Planting may, at the option of the Contractor, be postponed into the following planting season but without additional compensation provided the Owner and local governing jurisdiction have approved.

C. Planting dates for sod, sprigging or seeding shall be per the grassing specification.

1.6 MEASUREMENT AND PAYMENT

A. Measurement - The items listed in the proposal shall be considered as sufficient to complete the work in accordance with the plans and specifications. Any portion of the work not listed in bid form, but required to complete the work, shall be deemed to be a part of the item with which it is associated and shall be included in the cost of the unit shown on the bid form.

B. Payment - Payment for the unit shown on the bid form shall be considered to cover the cost of all labor, material, equipment, and performing all operations necessary to complete the work in place. No payment will be made for any material wasted, used for the convenience of the Contractor, unused or rejected.

1. Trees, Shrubs, and Groundcovers - Will be paid for at the contract unit price for planted/installed and accepted trees, shrubs, and groundcovers.

2. Payment for grassing will be made per the grassing specification.

3. Clearing - Will be paid for at the lump sum price for clearing.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Contractor shall, at time of delivery, furnish Owner and / or Landscape Architect with invoices of all materials received; in order the quality and source of materials may be reviewed.

2.2 TOPSOIL

A. See Earthwork specification for topsoil / rootzone soil specification.

2.3 SEED

A. See grassing specification.

2.4 SPRIG

A. See grassing specification.

2.5 SOD

A. See grassing specification.

2.6 PLANT MATERIALS

A. Provide all plant materials as indicated on the plans. In the event of any discrepancies between quantities of plants indicated on the plant schedule and those indicated on the plan, plan quantities shall govern.

B. Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall be free of disease, insect pests, eggs or larvae, and shall have healthy, well developed root systems. Plants shall be from a nursery within 300 miles north or south of the project location and shall have been grown under climate conditions similar to those in the locality of project. Trees for planting in rows shall be uniform in size and shape.

B. Plants shall possess a normal balance between height and width. Plants shall be measured when branches are in their normal position. Height and spread dimensions specified refer to the main body of plant and not from branch tip to tip. Plants larger in size than specified may be used with no change in contract price.

C. Plants shall be dug with firm natural balls of earth, of diameter not less than recommended by American Standard for Nursery Stock and of sufficient depth to include fibrous and feeding roots. Plants will not be accepted if ball is cracked or broken before or during planting operations.

D. Trees specified for Street Tree Grade shall conform to standards of the A.N.L.A.:

1. Suitable for planting as street trees.

2. Free of branches to approximately 50% of height from ground.

3. Crown of tree shall be in good balance with the trunk.

2.7 FERTILIZER

A. Commercial fertilizer shall be slow release 5-10-10 or 6-12-12 (or as recommended by soil test), uniform in composition, free flowing, and suitable for application with appropriate equipment. Deliver to site unopened in manufacturer's standard containers showing weight, analysis and name of manufacturer. If stored on site, protect from the elements.

2.8 PEAT MOSS

A. Peat moss shall be finely shredded, 90% organic moss peat, brown in color and suitable for horticultural purposes. Peat shall be measured in air dry condition, containing not more than 35% moisture by weight. Ash content shall not exceed 10%.

2.9 MULCH FOR TREES, SHRUBS, AND GROUND COVERS

A. Mulch for non bio-retention areas shall be as shown on plans.

B. Mulch for bio-retention areas shall be shredded hardwood.

2.10 STAKING EQUIPMENT

A. Trees and palms shall be staked as shown in landscape plans.

2.11 WATER

A. Permanent water source for this project shall coordinated with the Owner. Contractor shall be responsible for any temporary water needs.

PART 3 - EXECUTION

3.1 FINE GRADING

A. All areas within limits of construction shall be fine graded to the desired grades. All areas within limits of construction are to be fine graded, free of rocks, debris and/or other objectionable material, before planting or grassing commence. Any additional fill material needed to fill low or uneven areas shall be provided by the Contractor. Positive drainage away from structures shall be provided in all plant beds so standing water does not occur. Planting beds shall be raised above adjacent lawn areas to provide good drainage conditions.

B. Planting and grassed areas, if not loose, shall be loosened to a minimum depth of 3-inches before fertilizer, seed or sod is applied.

3.2 FERTILIZER

A. Contractor shall provide Topsoil Analysis tests that has been performed by a State Agricultural Experiment Station, Soil and Water Conservation District, State University, or other qualified private testing laboratory, as approved by Landscape Architect.

B. Apply fertilizer after fine grading and mix thoroughly into upper 2 inches of soil.

C. Fertilizer shall be applied at the rate recommended by Topsoil Analysis Test.

3.3 SODDING

A. See grassing specification.

3.4 SPRIGGING

A. See grassing specification.

3.5 SEEDING

A. See grassing specification.

3.6 SEED PROTECTION

A. See grassing specification.

3.7 LAYOUT OF TREES, SHRUBS, AND GROUND COVERS

A. All plants shall be placed in the proper location as shown on construction plans, allowing Landscape Architect to review all plant locations prior to actual planting. Landscape Architect may make minor adjustments which shall not be cause for changes to the contract price.

3.8 OBSTRUCTIONS BELOW GROUND

A. Prior to excavating planting holes, Contractor shall determine the exact location of electrical, phone, or television cables or conduits, water, drainage or sewer lines, and any other subsurface structures and take precautions to protect them. Any damage to underground utilities shall be repaired immediately at the Contractor's expense.

B. In the event rock, underground construction work, or other obstructions are encountered in any plant hole excavation under this contract alternate locations may be selected. Where locations cannot be changed, the obstructions shall be removed to a depth of not less than three (3) feet below grade and not less than six (6) inches below bottom of ball or roots when plant is properly set at the required grade. The Contractor shall be responsible for the removal of such rock or other underground obstructions encountered.

3.9 PLANTING HOLES

A. For trees, shrubs and ground covers the planting hole shall be as shown on planting details in the plans. Do not leave planting holes open overnight. In the event that plant holes are dug and not planted in a timely manner, install four (4) foot high orange safety fencing around all excavated areas.

3.10 PLANTING TREES AND SHRUBS

A. Shall be same as grown in the nursery and/or container soil level. Adjust bottom soil mix to insure proper planting level with the proposed surrounding grades. Check plants to insure proper vertical alignment.

B. Fill holes to proper height to receive plant, and thoroughly tamp before setting the plant. Set plant in upright position in the center of the hole, and compact the backfill mixture around the ball or roots. Add soil amendments as required to improve fertility of existing soil and plant growing conditions.

1. When balled or burlapped trees are set, compact topsoil around base of ball to fill all voids. All bindings shall be removed and the top half of burlap removed from around root ball. If burlap is made of natural fibers it can be fold back from the root mass or can be cut away. Remove all burlap if it is made of non-degradable material/fabric. All weeds growing on the root mass shall be removed prior to planting.

2. Containerized plants shall have the container removed prior to planting. Care shall be taken to protect root mass from injury and the root mass intact. If root mass shows evidence of being bound or matted, three vertical 1/2" deep cuts shall be made on alternate sides of the root mass and roots pulled away slightly. This is to untangle roots which have begun to "circle" the root mass and to encourage new root growth. All weeds growing in the root mass shall be removed prior to planting.

3. Roots of bare root plants shall be spread out and topsoil carefully worked in among them. Remove with a clean cut, any broken or frayed roots.

3.11 PLANTING GROUND COVERS

A. Planting beds shall be thoroughly worked to a depth of twelve (12) inches incorporating fertilizer at the recommended rate suggest by the soils test. Rake prepared planting bed until level, smooth and free from all soil, lumps, rocks, sticks and other deleterious materials. Bed area should be neatly outlined. Space the plants evenly as indicated on the drawings. Plant only in soil that is moist and friable, and not wet or soggy. In the case of planting in the open on hot days, shorten the time between planting and watering.

3.12 WATERING

A. Thoroughly water each plant when the hole is 1/3 full, again at 2/3 full and then complete backfilling. Once backfilling is complete, water again, then tamp the soil in place until the surface of the backfill is level with the surrounding area and the plant bears the same relation of finished grade as it bore to existing grade before being dug.

B. Earth saucers shall be constructed around the perimeter of planting holes of all trees and all single planted shrubs. Earth saucers shall be minimum 3" high and compacted to retain water. Earth saucers shall not be installed in areas where the subsoil is very poorly drained or around mass shrub / groundcover plantings.

C. All trees and shrubs to be hand watered on a regular basis as necessary during the warranty period.

3.13 SOIL MIX

A. Shall be per Earthwork specification.

3.14 STAKING OF TALL PLANTS

A. Shall be done only if site / environment conditions make it required. If required, trees and palms shall be staked as indicated on the plans.

3.15 MULCHING

A. All plants shall be mulched with an evenly thick layer of clean mulch immediately after planting. Mass plant beds shall be completely mulched to the limits of the bed as shown on the plans. Limit of mulching for individual trees and shrubs shall be slightly beyond the saucer berm. The areas mulched shall be tidy and clean in appearance.

3.16 PRUNING

A. Remove dead, broken or bruised branches after planting using clean, sharp tools.

3.17 WEEDING

A. All planted areas shall be kept free from weeds and undesirable grasses until final acceptance by the Owner. See General notes on plans for additional information.

3.18 INSECT AND DISEASE CONTROL

A. All plant materials shall be disease or insect free upon arrival to the site, however, should any plants show signs of insect or disease infestations, Contractor shall identify nature of infestation and submit to Architect a proposed method of control. Contractor shall treat all infested plants at its expense. Should the infestation be wide spread and uncontrollable, plants affected shall be removed from site. Fresh plants brought in and all other plants treated to prevent infestation of remaining plants at Contractor's expense.

3.19 CLEAN UP

A. Contractor is responsible for removing all trash, debris, rubbish and all other materials associated with the construction from site on a daily basis. All tags, flags, and labels will be removed from plants and trees. The site shall be left broom clean one day. Clean up of the site is a prerequisite to final acceptance by the Owner.

PART 4 - MAINTENANCE AND WARRANTY

4.1 MAINTENANCE

A. Protect all plantings (grass, plants and trees) until accepted by Owner. All damage, regardless of cause, shall be immediately repaired and plants replaced if necessary. Erect temporary fences, barricades, signs and other protection as needed to prevent tramping. Contractor is not responsible for replacement of damaged or missing plants and plant materials due to vandalism or other acts beyond the control of the Contractor if proper barriers or other safeguards have been maintained.

B. Maintenance shall include but is not limited to watering, weeding, cultivating, removal of dead material, mulch reapplication, resetting plants to proper grades or upright position, lawn mowing, fertilizing, and other necessary operations.

C. The Contractor shall repair immediately any areas damaged as a result of construction operations or erosion.

E. The Contractor shall maintain all proposed plantings until substantial completion is issued by the Owner.

F. At the end of the maintenance period, all plants shall be in a healthy growing condition. During the maintenance period, should the appearance of any plant indicate weakness and probability of dying, immediately replace without additional cost to the Owner. Replacements required because of vandalism or other causes beyond the control of the Contractor are not part of this contract.

4.2 WARRANTY

A. All shrubs, ground cover, and trees shall be guaranteed by the Contractor to be alive and healthy for a one year period after substantial completion is issued by the Owner. A final inspection with the Owner shall be conducted at the end of the warranty period to determine if any plants will be required to be replaced.

B. Any lawn, plant, or tree which is dead or not showing satisfactory growth shall be replaced at Contractor's expense at the end of warranty period. All replacements shall be of original quality and of a size equal to adjacent plants or trees of the same kind.

END OF SECTION

City of Wilmington, North Carolina
Public Services ■ Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

811 Know what's below. Call before you dig.

Preliminary
Not for Construction

NO	REVISIONS	BY	DATE

THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting
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PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

LANDSCAPE SPECIFICATIONS

JOB NO	J-24430.0000
DATE	9/24/15
DRAWN	JLG
DESIGNED	JLG
DEVELPED	BNB
APPROVED	JBR
SCALE	

LS2.3

GRASSING SPECIFICATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Seeding, planting grass, and fertilizing graded areas around buildings, structures, soccer fields and sidewalk shoulders and other disturbed areas.

B. Seed protection.

C. Maintaining grassed areas until final acceptance.

1.2 RELATED WORK

A. Civil and Landscape plans and specifications.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Deliver grass seed in original containers showing analysis of seed mixture, percentage of pure seed, year of production, net weight, date of packaging, and location of packaging. Damaged packages are not acceptable. Store in cool, dry locations away from contaminants.

B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer. Damaged bags are not acceptable. Store in cool, dry locations away from contaminants.

C. Deliver sod on pallets.

D. All material shall be acceptable to Engineer prior to use.

1.4 PLANTING DATES

A. This specification provides for establishment of a permanent grass cover between the dates of March 1 and September 30. If finished earth grades are not completed in time to permit planting and establishment of permanent grass during the favorable season between dates specified above unless otherwise accepted, Contractor will be required to plant a temporary cover to protect new graded areas from erosion and to keep windborne dust to a minimum. The temporary cover shall be planted between October 1 and February 28 unless otherwise permitted.

1.5 MEASUREMENT AND PAYMENT

A. When the season or stage of project is such results of grassing work cannot be determined, conditional acceptance will be made on work completed. When conditional acceptance is made for items of work covered, Contractor shall be entitled to 50% of bid price for the actual work placed and shall receive remaining 50% of bid price when final acceptance is made. Conditional acceptance shall not apply to the remaining items of work, and full bid price payment shall be made when work is acceptably placed and completed in accordance with specifications.

B. Payment for grassing will be made at contract unit price for the item "Grassing" and such payment shall constitute full compensation for furnishing and placing seed and fertilizer or sod where directed and protecting and maintaining seed and sod in all graded and disturbed areas.

PART 2 - PRODUCTS

Contractor shall submit source and species certification documents to Engineer and Owner's Representative for review prior to installation. Supply complete information on all analysis / test methodologies and results; laboratory certifications, manufacturer's specifications, and agency approvals to the Landscape Architect prior to placement of soil mixtures. In addition, provide the Landscape Architect with thoroughly mixed sample of soil mixed for approval prior to placement. Landscape Contractor shall make modifications and improvements to soil mixes deemed necessary by the soil analysis to meet requirements specified here in before, and to ensure proper growing medium for plant material.

2.1 SEED

A. All seed shall conform to all State Laws and to all requirements and regulations of the State Department of Agriculture.

B. The varieties of seed, as specified in Section 2.2, shall be individually packaged or bagged, and tagged to show name of seed, net weight, origin, germination, lot number, and other information required by the State Department of Agriculture.

C. The Engineer reserves the right to test, reject, or accept all seed before seeding.

2.2 SEEDING SCHEDULE

A. SEED		RATE	PLANTING DATES
SD-1	Roundstone Seed (or accept equal) Retention basin mix - 133	2.75 lbs/ acre (drilled) 3.5 lbs / acre (hydroseeded)	March 1 - September 30
	Annual Rye (Temp only)	75-lbs/acre	October 1 - February 28

2.3 FERTILIZER

A. Commercial fertilizer of approved type, conforming to state fertilizer laws at the rate as recommended by soils test.

2.4 LIME

A. Agricultural grade, ground limestone at the rate as recommended by soils test.

2.5 SPRIG

A. Healthy living stems, stolons, or rhizomes and attached roots of locally adapted grass without adhering soil, including two to three nodes and from 4 to 6 inches long. Obtain from heavy, dense certified sod. Provide sprigs which have been grown under climatic conditions similar to those in the locality of the project. Coordinate harvesting and planting operations to prevent exposure of sprigs to the sun for more than 30 minutes before covering and moistening. Sprigs showing signs of wilt, mold, containing weeds or other detrimental material or that are heat damaged will be rejected.

B. The varieties of sprig, as specified in section 2.6, shall be individually packaged or bagged, and tagged to show name of sprig, net weight, origin and other information required by the State Department of Agriculture.

C. Sprigs shall be pure to variety specified and shall be free of other grass species, weeds or foreign matter.

D. Sprigs shall be harvested by digging (not collected above soil level) shredding sod, by rototilling sod and raking, by verticutting or by a sprig harvester. Sprigs shall consist of mostly rhizomes and crowns with only a few green leaves.

2.6 SPRIGGING SCHEDULE

A. SPRIG	RATE	PLANTING DATES
Tifway 419 Bermuda (or approved equal)	1,000 bushels / ac. (Coverage in 3 months)	April 1 - August 31
Stabilize site with temporary grass seed (See section 2.2)		September 1 - March 31

B. In areas where existing grass is to be matched, Contractor shall sprig at the rate and dates recommended by sprig distributor.

2.7 SOD

A. Sod shall be premium grade, densely rooted, good quality grass of the species and certified variety as shown on the plans, free from noxious weeds with no surface soil being visible. The sod shall be obtained from areas where the soil is reasonably fertile. Sod of specified species with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed. The sod shall be machine cut to a uniform soil thickness that shall contain practically all of the dense root system and not be less than 1-inch thick.

B. Before cutting, sod shall be mowed to a height of not less that 1-1/2" or more than 2". Sod shall be cut in uniform widths min. 12" and in lengths min. 24 inches.

C. Sod shall be delivered to site in a fresh, moist condition with healthy green foliage. It shall be unloaded from delivery trucks on pallets or rolls and placed in final position within 24 hours of delivery. Sod shall be protected from wind and sun and shall not be allowed to dry out before planting.

D. Sod shall be strong enough to support its own weight and retain its size and shape when suspended vertically from a firm grasp on the upper 10 percent of the section.

2.8 ACCESSORIES

A. Straw Mulch: Oat or wheat straw, reasonably free from weeds, foreign matter detrimental to plant life, and in dry condition.

B. Excelsior Mulch: Excelsior mulch shall consist of wood fibers cut from sound, green timber. The average length of fibers shall be 4 to 6 inches. Cut shall be made in such a manner as to provide maximum strength of fiber, but at a slight angle to natural grain of the wood to cause splintering of fibers when weathering in order to provide adherence to each other and to soil.

C. Wood cellulose fiber shall be made from wood chip particles manufactured particularly for discharging uniformly on the ground surface when dispersed by a hydraulic water sprayer. It shall remain in uniform suspension in water under agitation and blend with grass seed and fertilizer to form a homogeneous slurry. Mulch fibers shall intertwine physically to form a strong moisture holding mat on the ground surface and allow rainfall to percolate into underlying soil. The mulch shall be heat processed to contain no germination or growth-inhibiting factors. It shall be dyed (non-toxic) an appropriate color to facilitate metering of material.

2.9 PRODUCT REVIEW

A. Contractor shall provide the Engineer with a complete description of all products before ordering. The Engineer will review all products before they are ordered.

PART 3 - EXECUTION

3.1 PREPARATION

A. Areas to be seeded or sprigged shall be made smooth and uniform and shall conform to the finished grade indicated on plans.

B. Remove foreign materials, plants, roots, stones, and debris from surfaces to be seeded.

C. Grassing areas, if not loose, shall be loosened to a minimum depth of 3 inches before fertilizer, seed, sprig or sod is applied.

D. Amendments to soils shall be incorporated into loosened 3 inch top soil layer as recommended by soils test.

3.2 STAND OF GRASS

A. Before acceptance of seeding or sprigging is performed for the establishment of permanent vegetation, Contractor will be required to produce a satisfactory stand of perennial grass whose root system shall be developed sufficiently to survive dry periods and winter weather and be capable of re-establishment in spring.

B. Before acceptance of seeding performed for the establishment of temporary vegetation, Contractor will be required to produce a stand of grass sufficient to control erosion for a given area and length of time before the next phase of construction or establishment of permanent vegetation is to commence.

3.3 SEEDING AND SPRIGGING DATES

A. Seeding and sprigging shall be performed during periods and at rates specified in their respective schedules. Seeding and sprigging work may, at discretion of Contractor, be performed throughout the year using schedule prescribed for given period. Seeding and sprigging work shall not be conducted when the ground is frozen or excessively wet. Contractor will be required to produce a satisfactory stand of grass regardless of the period of year work is performed.

3.4 APPLYING LIME AND FERTILIZER

A. Following advance preparation and placing selected material for shoulders and slopes, lime and fertilizer, if called for based on soil tests, shall be spread uniformly over the designated areas, and shall be thoroughly mixed with the soil to a depth of approximately 2 inches. Fertilizer and lime shall be applied at the rate at the rate recommended by required soils test. Unless otherwise provided, lime will not be applied for temporary seeding. In all cases where practicable, acceptable mechanical spreaders shall be used for spreading fertilizer. On steep slopes subject to slides and inaccessible to power equipment, the slopes shall be adequately scarified. Fertilizer may be applied on steep slopes by hydraulic methods as a mixture of fertilizer and seed. When fertilizer is applied with combination seed and fertilizer drills, no further incorporation will be necessary. The fertilizer and seed shall be applied together when Wood Cellulose Fiber Mulch is used. Any stones larger than 2 ½ inches in any dimension, larger clods, roots, or other debris brought to the surface shall be removed.

3.5 SEEDING

A. Seed shall be sown within 24 hours following application of fertilizer and lime and preparation of the seedbed as specified in Section 3.4. Seed shall be uniformly sown at rate specified by the use of acceptable mechanical seed drills. Rotary hand seeders, power sprayers or other satisfactory equipment may be used on steep slopes or on other areas inaccessible to seed drills.

B. Seeds shall be covered and lightly compacted by means of cultipacker or light roller if the drill does not perform this operation. On slopes inaccessible to compaction equipment, the seed shall be covered by dragging spiked chains, by light harrowing or by other satisfactory methods.

C. Apply water with fine spray immediately after each area has been sown.

D. Do not sow seed when ground is too dry, during windy periods or immediately following a rain.

E. If permitted by the special provisions, wood cellulose fiber mulch or excelsior fiber mulch may be used.

3.6 SEED PROTECTION (STRAW MULCH)

A. All seeded areas seeded with permanent grasses shall be uniformly mulched in a continuous blanket immediately following seeding and compacting operations, using at least 2 tons of straw per acre.

3.7 SEED PROTECTION (EXCELSIOR MULCH)

A. Seed shall be sown as specified in Section 3.5. Within 24 hours after covering of seed, excelsior mulch shall be uniformly applied at the rate of 2 tons per acre. The mulch may be applied hydraulically or by other acceptable methods. Should the mulch be placed in a dry condition, it shall be thoroughly wetted immediately after placing. Engineer may require light rolling of the mulch to form a light mat.

3.8 SEED PROTECTION (WOOD CELLULOSE FIBER MULCH)

A. After the lime has been applied and ground prepared as specified in Section 3.4, wood cellulose fiber mulch shall be applied at a rate of 1,500 pounds per acre in a mixture of seed and fertilizer. Hydraulic equipment shall be used for application of fertilizer, seed, and slurry of the prepared wood pulp. This equipment shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry of the specified amount of fiber, fertilizer, seed, and water. The slurry distribution lines shall be large enough to prevent stoppage. The discharge line shall be equipped with a set of hydraulic spray nozzles which will provide an even distribution of slurry on various areas to be seeded. The slurry tank shall have a minimum capacity of 1,000 gallons.

Seed, fertilizer, wood pulp mulch, and water shall all be combined into the slurry tank for distribution of all ingredients in one operation by hydraulic seeding method specified herein. Materials shall be combined in a manner recommended by the manufacturer. The slurry mixture shall be regulated so amounts and rates of application shall result in a uniform application of all materials at rates not less than amount specified. Using the color of wood pulp as a guide, equipment operator shall spray prepared seedbed with a uniform visible coat. The slurry shall be applied in a sweeping motion, in an arched stream to fall like rain, allowing wood fibers to build upon each other until an even coat is achieved.

3.9 SPRIGGING

A. Sprigs shall be placed at the date and rates as shown in section 2.6. The sprigging method shall be by broadcast sprigging, hydroplanting or row planter. Sprigging procedure shall ensure even coverage.

B. Sprigs applied by broadcast over the site with a distributor or hydroseeder shall be planted at the rates listed in section 2.6. Cover broadcast sprigs with straw mulch immediately after broadcast and water in immediately (within 2 hours).

C. Sprigs installed by row planter creating a narrow furrow that covers 50 to 80% of the sprig with soil may use less sprig material. Rate shall be as recommended by sprig supplier to provide a solid stand of turf within the time required in Section 2.6. Water in immediately (within 1 hour).

3.10 SODDING

A. Sod shall be placed between March 1st and December 1st. However, if sod is to be placed during periods of temperatures over 90 degrees F., the contractor shall take extra care for quick placement of sod with adequate, consistent watering necessary to ensure sod thrives as planted.

B. Sod shall be placed within 24 hours of cutting.

C. Place top elevation of sod 1/2 inch below adjoining paving or curbs.

D. All areas to be sodded shall be brought to the proper line grade or cross section as was existing prior to construction. Sod shall be placed so that, upon completion, the edges of the sodded areas will be smooth and will conform to the proposed finished grade. Sod shall be laid smooth, edge to edge, with staggered joints. Sod shall be immediately pressed firmly into contact with the sod bed by tamping or rolling, to eliminate any air pockets. A true and even surface shall be provided, to insure knitting without displacement of the sod or deformation of the surfaces of the sodded areas. Do not stretch or overlap sod pieces. Following compaction, screened soil of good quality shall be used to fill all cracks, and excess soil shall be worked into the grass with rakes or other suitable equipment. On slopes steeper than 3 to 1, the sod shall be fastened in place with suitable wood or metal pins to hold the sod in place. Any damage by erosion or other causes that may have occurred after completion of grading operations shall be repaired, before commencing with the sodding operations.

E. Immediately before sodding, moisten topsoil with a fine spray to a minimum 1" depth. Sod shall not be laid on soil that is dry and powdery.

F. Sod shall be moist when laid and placed on moist ground. The sod shall be carefully placed by hand, beginning at the toe of slopes and working upwards. The length of the strips shall be at right angles to the flow of surface water. All joints shall be tightly butted and end joints shall be staggered at least 12 inches. The sod shall be immediately pressed firmly into the ground by tamping or rolling. Fill all joints between strips with fine screened soil. Sod on slopes shall be pegged with sod pegs to prevent movement. The sod shall be watered, mowed, weeded, repaired, or otherwise maintained, to insure the establishment of a uniform healthy stand of grass until acceptance.

G. Within 2 hours after sod has been placed, thoroughly water to a minimum depth of 4". After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove depressions and irregularities. Roll sodded areas with a roller not exceeding 150 lbs. per foot of roller width.

PART 4 - MAINTENANCE, WARRANTY AND ACCEPTANCE

4.1 MAINTENANCE

A. Maintenance shall consist of providing protection against traffic, watering to ensure uniform seed germination and to keep surface of soil damp, and repairing any areas damaged as a result of construction operations or erosion. Maintenance shall also include, but is not limited to, watering, weeding, cultivating, removal of dead material, lawn mowing, fertilizing, and other necessary operations.

B. The Contractor shall maintain all proposed plantings until the date of final acceptance by the Owner.

4.2 WARRANTY

A. All grassed areas shall be guaranteed by the Contractor to be alive and healthy for a one year period from the date of substantial completion issued by the Owner. A final inspection with the Owner shall be conducted at the end of the warranty period to determine if any areas require replanting. At the end of the warranty period, the sod shall show evidence of rooting to the underlying soil and shall have no competitive weed growth from either the sod or from between the sod joints.

B. Any grassed area which is dead or not showing satisfactory growth shall be replaced at Contractor's expense at the end of warranty period. All replacements shall be of original quality and of a size equal to adjacent plants or trees of the same kind. Replacements required because of vandalism, excessive use or other causes beyond the control of the Contractor are not part of this contract.

4.3 ACCEPTANCE

A. Before acceptance of seeding performed for the establishment of permanent vegetation, Contractor will be required to produce a satisfactory stand of perennial grass whose root system shall be developed sufficiently to survive dry periods and winter weather and be capable of reestablishment in spring.

B. A minimum coverage of 80% density over 100% of the disturbed area is required for seeded areas before project acceptance. Sprig and sod areas shall have 95 % coverage over 100% of the disturbed area prior project acceptance.

END OF SECTION

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

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

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Preliminary
Not for Construction

NO	REVISIONS	BY	DATE

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PROGRESS 910
4055 EMERSON STREET
CITY OF WILMINGTON, NORTH CAROLINA

PROGRESS BUILDERS, LLC

GRASSING SPECIFICATION

JOB NO	J-24636.0000
DATE	9/24/15
DRAWN	JRJ
DESIGNED	SKM
REVIEWED	JDH
APPROVED	JDH
SCALE	

LS2.4