

LEGEND

	LIGHT POLE
	UTILITY POLE
	CURB AND GUTTER
	STORM DRAIN MANHOLE
	SANITARY SEWER MANHOLE
	FIRE HYDRANT
	WATER VALVE
	SEWER LINE
	WATER LINE
	FENCE
	UNDERGROUND UTILITY ELECTRIC
	STORM DRAINAGE
	CONCRETE PAVEMENT
	EXISTING IRON PIPE
	IRON PIPE SET
	POWER POLE
	TELEPHONE POLE
	CLEANOUT
	OVERHEAD ELECTRIC
	OVERHEAD TELEPHONE

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

CITY OF WILMINGTON
NORTH CAROLINA

Public Services • Engineering Division
APPROVED DRAINAGE PLAN

Date: _____ Permit # _____

Signed: _____



SCALE: 1" = 40'

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NOT FOR CONSTRUCTION

REVISIONS

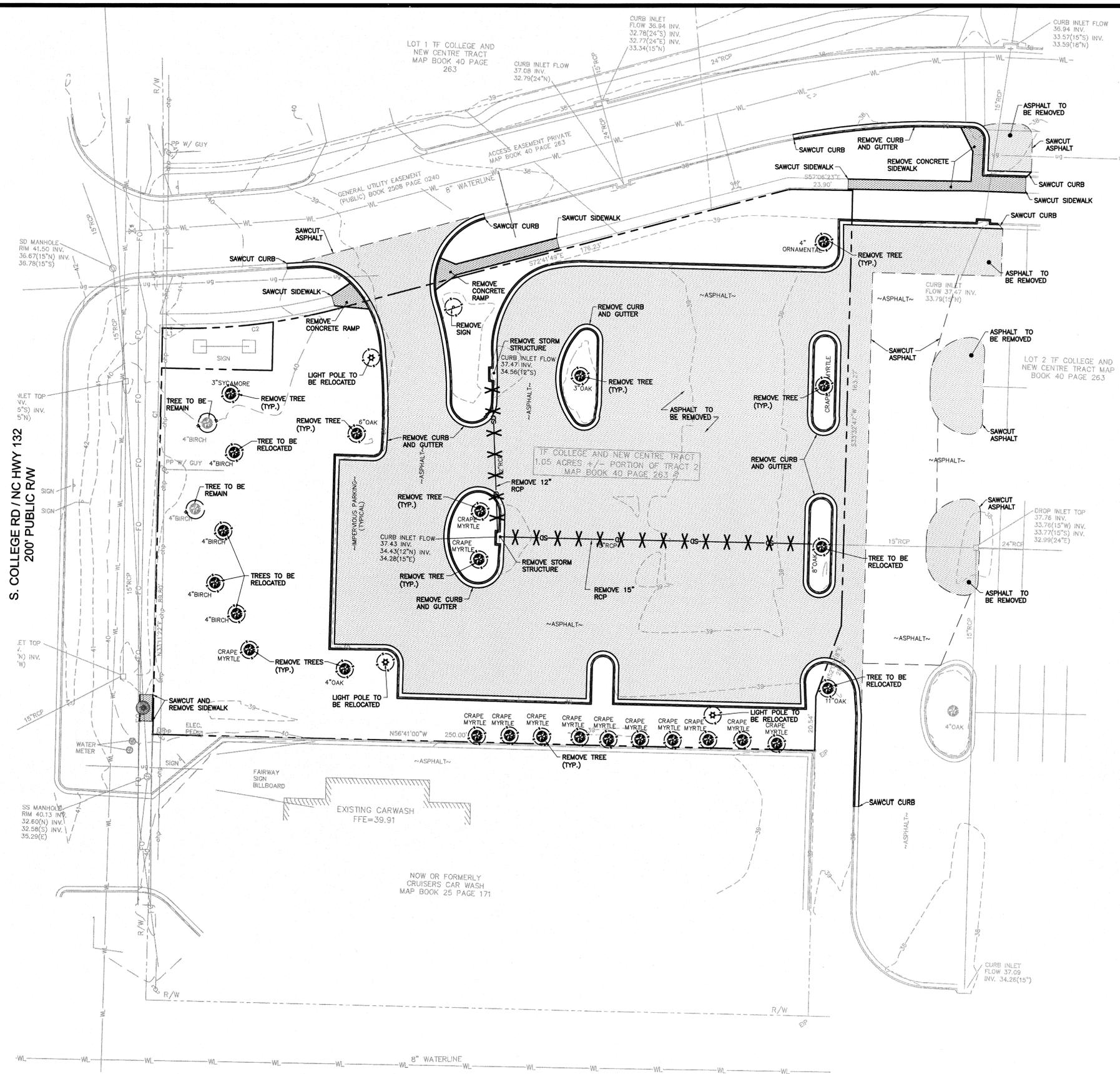
DATE: OCTOBER, 2013
FILE NO. 2013 - 007
HORZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 40'
ORIG. SHEET SIZE: 24 x 36

SHOPS AT COLLEGE RD. - WILMINGTON, NC
OVERALL EXISTING CONDITIONS

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27526
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NC LIC. NO. P-0709

The Curry Engineering Group, PLLC
www.curryeng.com
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DEMO NOTES:

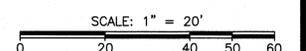
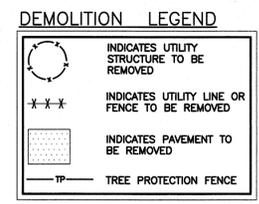
1. ANY ITEM THAT MAY BE ENCOUNTERED DURING BUILDING DEMOLITION THAT MAY BE OF INTEREST OR VALUE TO THE OWNER SHALL REMAIN THE OWNER'S PROPERTY. COORDINATE PROCEDURE FOR REMOVAL AND SALVAGE WITH OWNER.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING PRE-DEMOLITION PHOTOGRAPHS AND/OR VIDEOTAPE SHOWING EXISTING CONDITIONS OF ADJOINING CONSTRUCTION AND SITE IMPROVEMENTS PRIOR TO ANY DEMOLITION WORK.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH COVERING EPA REGULATIONS AND HAULING AND DISPOSAL REGULATIONS OF LOCAL JURISDICTION, INCLUDING OBTAINING ALL REQUIRED PERMITS.
4. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER IN THE EVENT THAT UN-ANTICIPATED HAZARDOUS MATERIALS ARE ENCOUNTERED. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS AND REGULATIONS REGARDING THE HANDLING AND DISPOSAL OF HAZARDOUS MATERIALS.
5. CONTRACTOR RESPONSIBLE FOR LOCATING, IDENTIFYING, DISCONNECTING AND SEALING OR CAPPING UTILITIES SERVING BUILDINGS AND STRUCTURES TO BE DEMOLISHED.
6. UNLESS OTHERWISE NOTED ON DRAWINGS, DEMOLITION SHALL INCLUDE REMOVAL OF EXISTING OBJECTS OR IMPROVEMENTS (WITH THE EXCEPTION OF TREES) THAT WOULD INTERFERE WITH PROGRESS OR COMPLETION OF PROPOSED WORK.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION CONTROL DURING DEMOLITION.
8. CONTRACTOR SHALL NOTIFY OWNER AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF DEMOLITION ACTIVITIES.
9. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTION TO ENSURE THAT UTILITY SERVICES OF ADJOINING PROPERTIES ARE NOT DISTURBED DURING SITE DEMOLITION.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL OFFSITE IMPROVEMENTS DURING DEMOLITION AND COORDINATING RELOCATION OF ANY UTILITY SERVICES DISRUPTED BY DEMOLITION ACTIVITIES.
11. PAVEMENT REMOVAL INCLUDES THE REMOVAL OF ANY ASSOCIATED BASE COURSE AND CURBING.
12. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES BEFORE COMMENCING DEMOLITION ACTIVITIES.
13. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER SHOULD ANY DISCREPANCIES OR CONFLICTS ARISE.
14. REMOVE ALL EXISTING STRUCTURES INCLUDING FOUNDATIONS.
15. REMOVE ALL ITEMS SHOWN ON EXISTING CONDITIONS PLAN AS NEEDED FOR INSTALLATION OF NEW WORK.
16. NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION AND SILT FENCING HAS BEEN INSTALLED AND APPROVED.

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

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

Date: _____ Permit # _____
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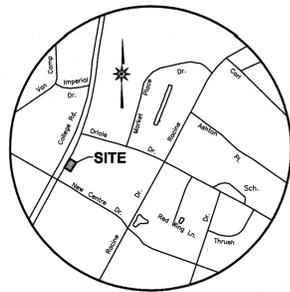
REVISIONS			
DATE	10/25/2013	FILE NO.	2013 - 007
HORIZ. SCALE	1" = 20'	CROSS. SHEET SIZE	24 x 36

SHOPS AT COLLEGE RD. - WILMINGTON, NC
DEMOLITION PLAN

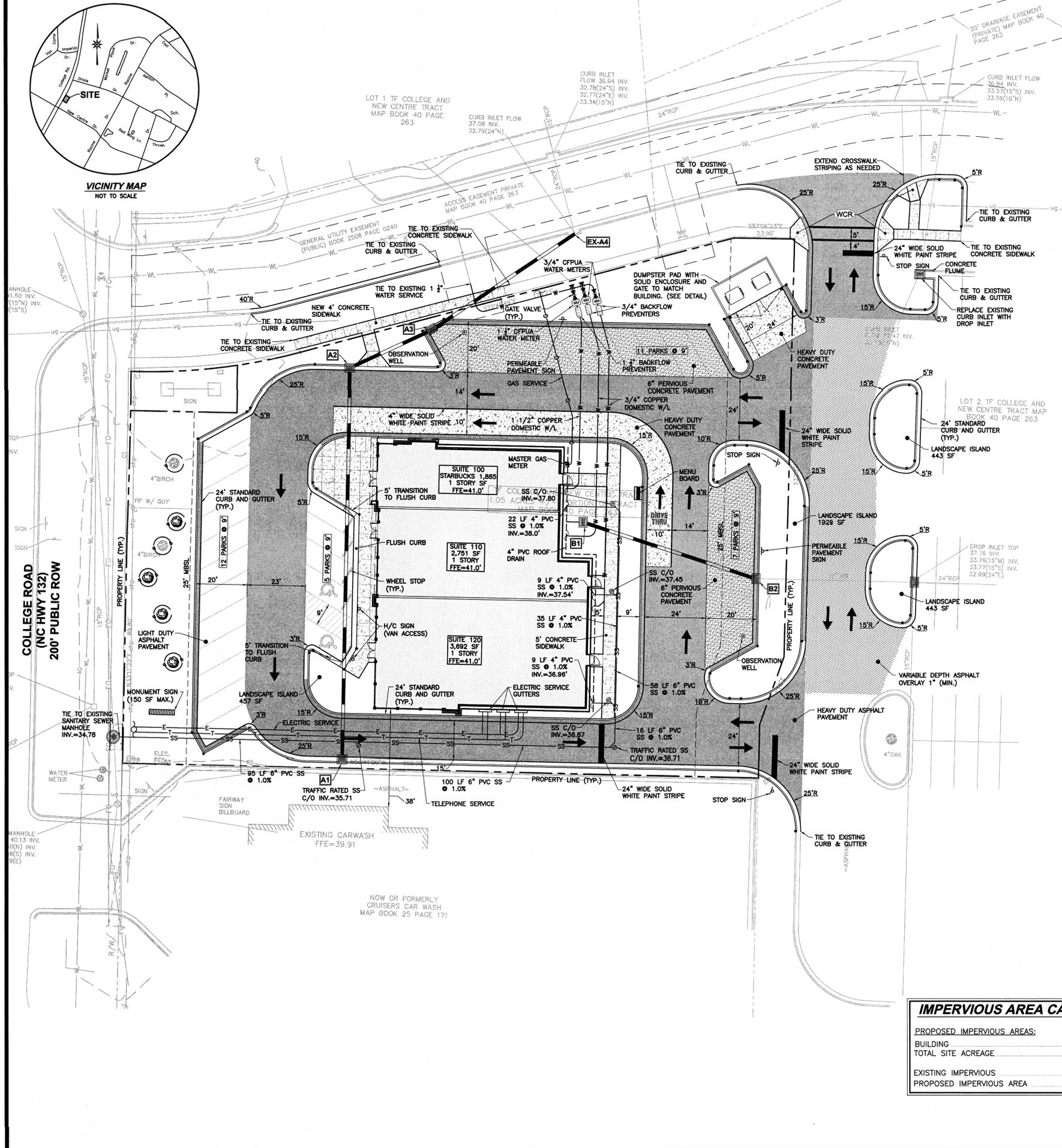
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C-03



VICINITY MAP
NOT TO SCALE



- NOTES:**
1. ALL PROPOSED SIGNAGE SHALL COMPLY WITH CITY OF WILMINGTON SIGN ORDINANCE.
 2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ANY PERMITS AND/OR CONNECTION FEES REQUIRED TO CARRY OUT THE WORK.
 3. ALL DIMENSIONS ARE TO THE EDGE OF PAVEMENT, FACE OF CURB, FACE OF BUILDING, OR PROPERTY LINE UNLESS SHOWN OTHERWISE.
 4. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH CITY OF WILMINGTON, NEW HANOVER COUNTY, AND CAPE FEAR PUBLIC UTILITY AUTHORITY AS APPLICABLE.
 5. THIS SITE IS SERVED BY CAPE FEAR PUBLIC UTILITY AUTHORITY.
 6. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FDC POINTS, OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN THE WATER METER AND ITS CITY OF WILMINGTON REQUIRED BACKFLOW PREVENTERS.
 7. REDUCED PRESSURE PRINCIPLE-DETECTOR ASSEMBLIES TO BE INSTALLED ABOVE GROUND WITH INSULATED ENCLOSURE PER CITY REQUIREMENTS. THE FOLLOWING MODEL NUMBERS SHALL BE PROVIDED: - 3/4" AND 1.5" BACKFLOW-WATTS MODEL 909M1QT
 8. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL GRADES PRIOR TO THE START OF CONSTRUCTION.
 9. MAINTAIN MINIMUM 3' COVER FOR ALL WATER PIPE.
 10. ALL SANITARY SEWER CLEANOUTS IN PAVEMENT AREAS SHALL BE TRAFFIC RATED.
 11. ALL PAINT MARKINGS SHALL BE THERMOPLASTIC WITH THE EXCEPTION OF PARKING STALLS.
 12. CROSSWALKS SHALL BE 8" WIDE SOLID WHITE THERMOPLASTIC.
 13. STOP BARS SHALL BE 4" BEHIND THE CROSSWALK, AND 24" WIDE, SOLID WHITE THERMOPLASTIC.
 14. MAX. SIDEWALK CROSS-SLOPE IS 2%.
 15. FINAL SURFACE COARSE SHALL OVERLAP SAWCUT JOINT AND INTERFACE OF ASPHALT OVERLAY AND NEW/EXISTING ASPHALT PAVEMENT. (2' MIN.)
 16. SCARIFY EXISTING ASPHALT AND APPLY TACK COAT PRIOR TO INSTALLING OVERLAY.
 17. TACTILE WARNING MATS ARE TO BE INSTALLED ON ALL WHEELCHAIR RAMPS.
 18. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
 19. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
 20. INSTALL REFLECTORS PER CITY & NCDOT STANDARDS. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.
 21. PERMEABLE PAVEMENT SHALL NOT BE INSTALLED UNTO ADJACENT AREAS HAVE BEEN STABILIZED.

SITE INFORMATION

LOCATION: 309 S. COLLEGE RD.
WILMINGTON, NC

COUNTY: NEW HANOVER COUNTY

TOWNSHIP: WILMINGTON

TOTAL PROP. ACREAGE: 1.05 AC

PARCEL ID: R04920-003-005-000

DEED BOOK/PAGE: 2882/1910

ZONING: RB

LAND CLASS: CURRENT = COM

EXISTING USE: 528 - NEIGHBORHOOD RETAIL

WATERSHED: BRADLEY CREEK

CAMA CLASSIFICATION: URBAN

MUNICIPALITY: CITY OF WILMINGTON

AREA DISTURBED: 1.43 AC

MINIMUM BUILDING SETBACKS:

FRONT: 25'

REAR: 15'

SIDE: 0'

MAX. BLDG. HT: 35'

MAX. LOT COVERAGE: 40%

PROPOSED BUILDING SETBACKS:

FRONT (COLLEGE): 97'

REAR: 68'

SIDE: 43', 21'

BLDG. HT: 21'4"

LOT COVERAGE: 18.2%

BUILDING DATA:

PROPOSED USE: RETAIL/RESTAURANT/FURNITURE STORE

TOTAL BUILDING SIZE: 8,328 SF

CONSTRUCTION TYPE: IIB

PARKING:

TOTAL REQUIRED PARKING: 1 SPACE/80 SF RESTAURANT MIN.*
=> 900SF*/80SF = 12 SPACES

1 SPACE/1,000 SF FURNITURE
=> 3,692SF/1,000SF = 4 SPACES

1 SPACE/400 SF RETAIL
=> 2,751SF/400SF = 7 SPACES

TOTAL PARKING REQUIRED = 23 SPACES

LOADING SPACES REQUIRED 0

HANDICAP SPACES REQUIRED 2

BICYCLE PARKING REQUIRED 0

PARKING PROVIDED:

REGULAR 9x18' 33

H.C. (REGULAR) 0

H.C. (VAN ACCESSIBLE) 2

LOADING AREA 0

TOTAL: 35

BICYCLE PARKING PROVIDED 0

*DOES NOT INCLUDE KITCHEN AND BATHROOM AREA

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

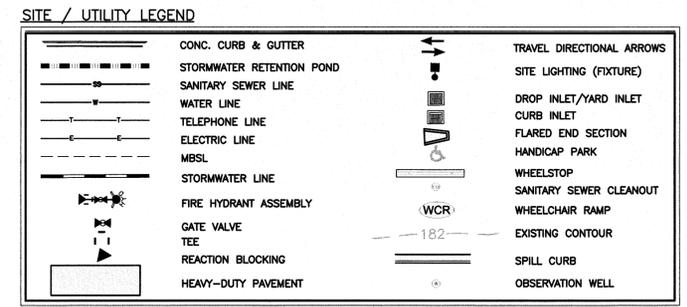
CITY OF WILMINGTON
NORTH CAROLINA

Public Services • Engineering Division

APPROVED DRAINAGE PLAN

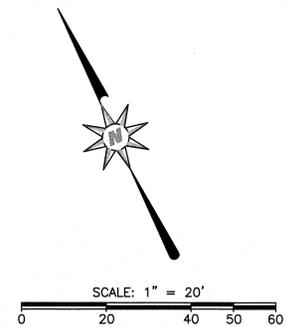
Date: _____ Permit # _____

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IMPERVIOUS AREA CALCULATIONS

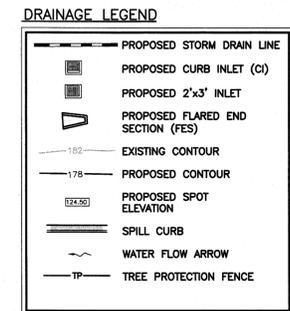
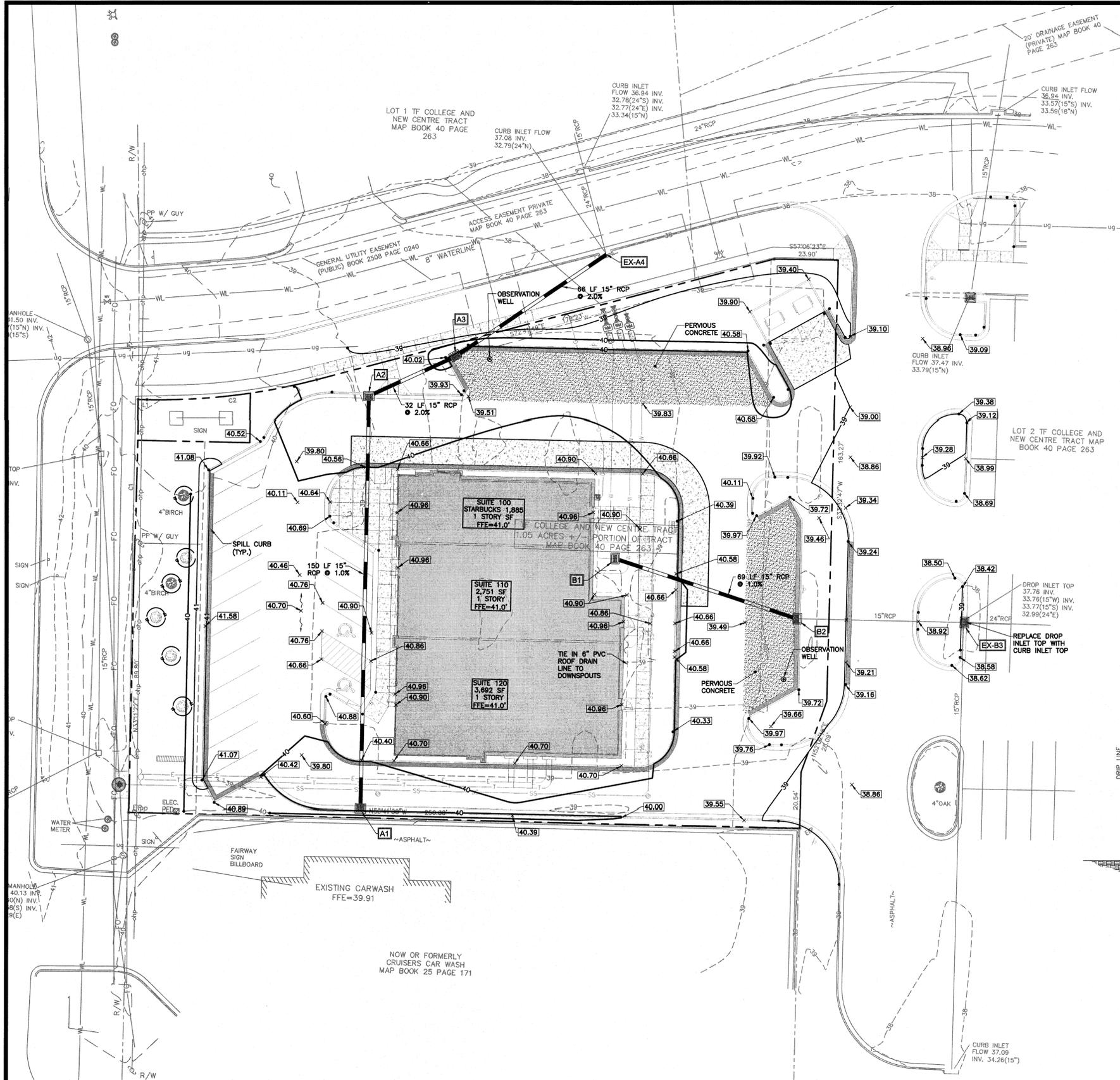
PROPOSED IMPERVIOUS AREAS:	
BUILDING	8,328 SF
TOTAL SITE ACREAGE	45,738 SF (1.05 AC)
EXISTING IMPERVIOUS	27,156 SF
PROPOSED IMPERVIOUS AREA	33,948 SF



SHOPS AT COLLEGE RD. - WILMINGTON, NC
SITE / UTILITY PLAN

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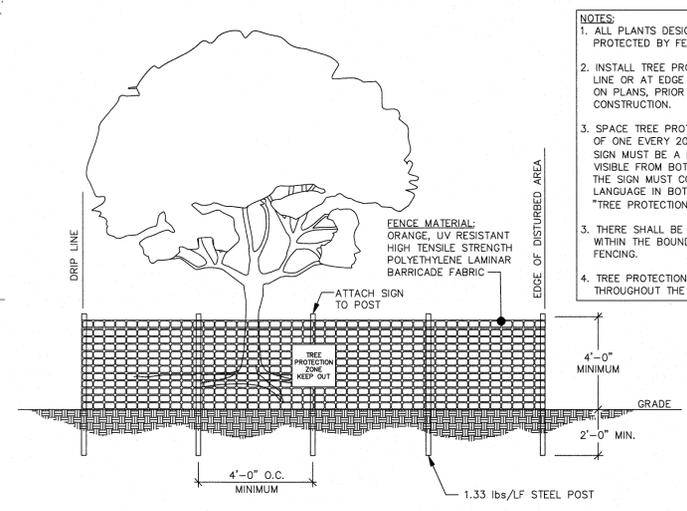
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- NOTES:**
- ALL STORM DRAINAGE PIPING SHALL BE CLASS III RCP UNLESS NOTED OTHERWISE.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NCDENR, NEW HANOVER COUNTY, AND CITY OF WILMINGTON STANDARDS AND SPECIFICATIONS.
 - CONTRACTOR SHALL COORDINATE ALL GRADING OPERATIONS WITH THE OWNER'S GEOTECHNICAL ENGINEER, AS APPROPRIATE.
 - CONTRACTOR SHALL MAINTAIN POSITIVE SLOPE AND OUTFALL OF ANY FOUNDATION DRAIN SYSTEMS.
 - SPOT ELEVATIONS ON CURB REFER TO THE BACK OR TOP OF CURB (TOC) ELEVATION. ELEVATIONS ON STORM DRAINAGE TABULATIONS (SEE DETAIL SHEET) REFER TO EDGE OF PAVEMENT (EOP) ELEVATION.
 - CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL GRADES PRIOR TO THE START OF CONSTRUCTION.
 - PROPOSED BMP COMPLIES WITH NCDENR AND CITY OF WILMINGTON STORMWATER ORDINANCE.
 - MAXIMUM SLOPE OF PERVIOUS CONCRETE SUBGRADE IS 0.50%.

INLET #	CATCH BASIN TYPE	GRATE TYPE	ROADWAY	RIM ELEV (EOP)	PIPE SIZE (in) & INV. IN	PIPE SIZE (in) & INV. OUT
A1	NCDOT STD. 840.02	TYPE 'E'	SOUTH - CURB INLET	39.40	N/A	15 36.15
A2	NCDOT STD. 840.02	TYPE 'E'	WEST - CURB INLET	39.16	15 34.85	15 34.55
A3	NCDOT STD. 840.02	TYPE 'E'	PERV. CONC. OVERFLOW	39.49	15 33.91	15 33.81
B1	2'x2' YARD INLET	STD. TOP	NORTH - YARD INLET	40.00	N/A	15 34.75
B2	NCDOT STD. 840.02	TYPE 'E'	PERV. CONC. OVERFLOW	39.14	15 34.06	15 33.94

1 STORM DRAINAGE TABULATIONS
SCALE: N.T.S.



- NOTES:**
- ALL PLANTS DESIGNATED TO BE SAVED SHALL BE PROTECTED BY FENCING, AS ILLUSTRATED.
 - INSTALL TREE PROTECTION FENCE AT TREE DRIP LINE OR AT EDGE OF DISTURBED AREA, AS SHOWN ON PLANS, PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE SIGN MUST CONTAIN THE FOLLOWING LANGUAGE IN BOTH ENGLISH & SPANISH: "TREE PROTECTION AREA - DO NOT ENTER".
 - THERE SHALL BE NO STORAGE OF MATERIAL WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING.
 - TREE PROTECTION FENCING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

2 TREE PROTECTION FENCE
SCALE: N.T.S.

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

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

Date: _____ Permit # _____

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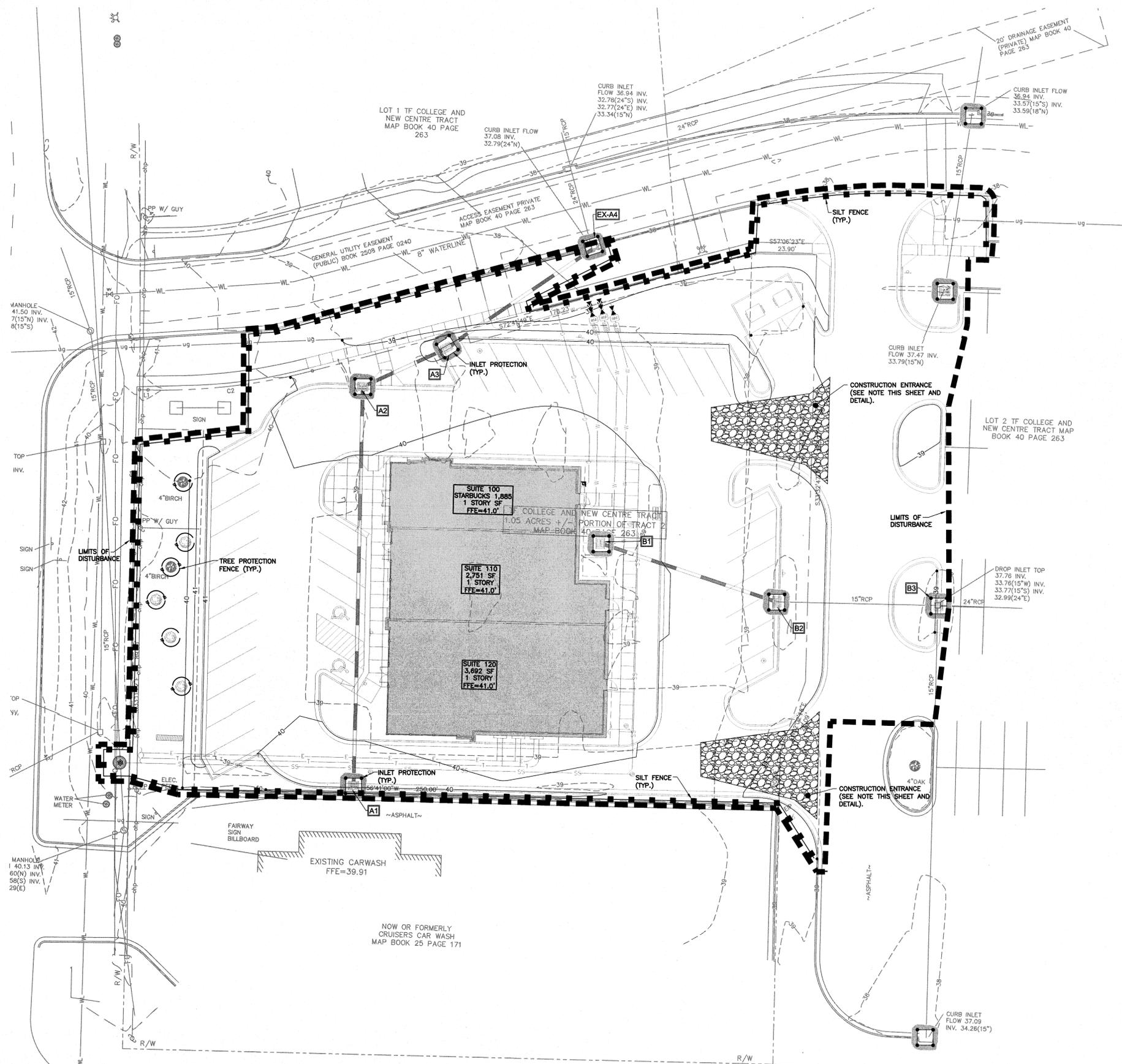


SCALE: 1" = 20'

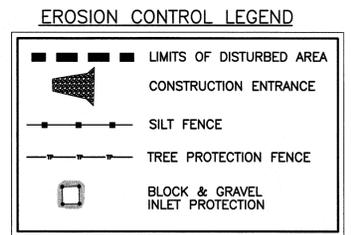
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- EROSION CONTROL NOTES:**
1. THE TEMPORARY DIVERSION DITCHES, SILT FENCE, AND LIMITS OF DISTURBANCE SHOWN ON THIS PLAN ARE GRAPHICAL REPRESENTATIONS OF THE ACTUAL EROSION CONTROL MEASURES THAT WILL BE INSTALLED UNDER THIS PROJECT. DO TO THE SCALE OF THIS DRAWING, THESE MEASURES ARE GRAPHICALLY DEPICTED BEYOND WHERE THEY WILL ACTUALLY BE INSTALLED IN THE FIELD.
 2. DIST AREA = 1.43 AC
 3. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN IN THE PLAN IS A VIOLATION OF THE NEW HANOVER COUNTY EROSION CONTROL ORDINANCE & IS SUBJECT TO A FINE.
 4. GRADING MORE THAN 1 ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF THE NEW HANOVER COUNTY EROSION CONTROL ORDINANCE & IS SUBJECT TO A FINE.
 5. ALL AREAS MUST BE SEEDED & MULCHED WITHIN 7 OR 14 CALENDAR DAYS. REFER TO EROSION CONTROL DETAILS AND EROSION CONTROL ORDINANCE FOR ADDITIONAL REQUIREMENTS.

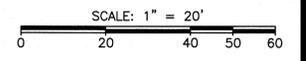


Approved Construction Plan

Name	Date
Planning _____	_____
Traffic _____	_____
Fire _____	_____

WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED DRAINAGE PLAN

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NOT FOR CONSTRUCTION

SHOPS AT COLLEGE RD. - WILMINGTON, NC
EROSION CONTROL PLAN
 REVISIONS
 DATE: OCTOBER 2013
 FILE NO. 2013 - 007
 HORIZ. SCALE: 1" = 20'
 ORIG. SHEET SIZE: 24 x 36
 NC LIC. NO. P-0799
The Curry Engineering Group, PLLC
 www.curryeng.com
C-06

SHOPS AT COLLEGE RD. - WILMINGTON, NC
LANDSCAPING PLAN

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 FUQUAY-VARINA, NC 27356
 PHONE: (919) 552-8849
 MOBILE: (919) 880-9857
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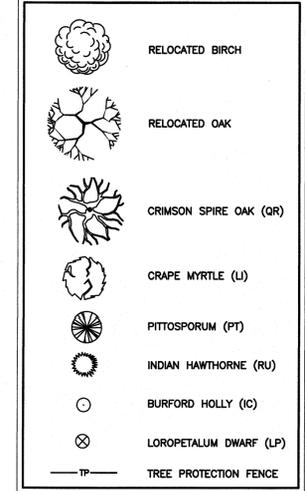
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C-07

NOTES:

- LANDSCAPING SHALL COMPLY WITH THE CITY OF WILMINGTON LANDSCAPING ORDINANCE.
- ALL DISTURBED AREAS NOT IDENTIFIED FOR PLANTINGS AND MULCH SHALL BE SEEDED. SEE DETAIL SHEETS FOR REQUIREMENTS.
- FOR ALL EVERGREEN AND CANOPY TREES, THE MIN. CALIPER INCHES AT PLANTING IS 2".
- MINIMUM HEIGHT FOR SHRUBS AT THE DUMPSTER SCREEN IS 36"
- ALL PLANTED AND RETAINED LIVING MATERIAL, REQUIRED TO MEET THE CITY OF WILMINGTON LANDSCAPING REGULATIONS SHALL BE PERPETUALLY PROTECTED AND MAINTAINED TO PROFESSIONALLY ACCEPTED STANDARDS BY JOINT AND SEVERAL RESPONSIBILITY OF THE OWNER, OCCUPANT, TENANT, AND RESPECTIVE AGENTS OF THE PROPERTY ON WHICH THE MATERIAL IS LOCATED.
- IF AN IRRIGATION SYSTEM IS INSTALLED IT SHALL BE EQUIPPED WITH A RAIN AND FREEZE SENSOR.
- NO OBSTRUCTION SHALL BE PERMITTED BETWEEN 30" AND 10' HIGH WITHIN THE SIGHT DISTANCE TRIANGLES.

KEY	QTY	BOTANICAL NAME	COMMON NAME	TYPE	SIZE	HEIGHT
TREES						
QR	10	Quercus robur x Q. alba chrimschmidt	Crimson Spire Oak	Decid.	2" c	Min. 8'
LI	3	Lagerstroemia indica	Crape Myrtle	Decid.	2" c	Min. 6'
SHRUBS						
IC	28	Ilex cornuta	Burford Holly	Evergm.	18"	Min. 18"
LP	90	Loropetalum chinensis 'daruma'	Loropetalum Dwarf	Decid.	18"	Min. 18"
PT	11	Pittosporum tobira	Pittosporum	Evergm.	18"	Min. 18"
PT	14	Pittosporum tobira	Pittosporum	Evergm.	36"	Min. 36"
RU	32	Rhapholepis indica	Indian Hawthorne	Evergm.	18"	Min. 18"

LANDSCAPE LEGEND:



LANDSCAPING CALCULATIONS:

- PRIMARY STREETYARD (COLLEGE RD.)**
 SEC. 18-477
 REQUIRED (PER 600 SF) = 1 CANOPY SHADE TREE, 6 SHRUBS
 TOTAL SF = 3,450 (138' X 25')
 REQUIRED - 6 CANOPY TREES, 36 SHRUBS
 PROVIDED - 6 CANOPY TREES, 36 SHRUBS
- FOUNDATION PLANTINGS:**
 SEC. 18-490
 REQUIRED PLANTING AREA = 12% * AREA OF BUILDING FACE ADJACENT TO PARKING / DRIVE ISLE. = 0.12 * 23' * 384 LF
 REQUIRED PLANTING AREA = 1,025 SF
 PLANTING AREA PROVIDED = 1,755 SF
- INTERIOR LANDSCAPING:**
 SEC. 18-481
 *PARKING FACILITY SHALL BE SHADED BY CANOPY TREES TO PROVIDE AT LEAST 20% PARKING LOT COVERAGE AT MATURITY.
 *PROVIDE AT LEAST ONE TREE PER 12'X18' PLANTING ISLANDS
 *AT LEAST 75% OF TREES PROVIDED UNDER INTERIOR LANDSCAPING SHALL BE A LARGE SHADE/CANOPY SPECIES.
 *MAX DISTANCE FROM A SHADE TREE TO A PARKING SPACE = 120'
 PARKING LOT AREA = 23,855 SF
 REQUIRED COVERAGE (20%) = 0.20 * 23,855 SF = 4,771 SF
 PROVIDED COVERAGE = 7 TREES * 707 SF/EA = 4,949 SF
- OVERALL SITE REQUIREMENT**
 REQUIRED = 15 TREES/ACRE = 1.05*15 = 16 TREES
 PROVIDED = 16 TREES

Approved Construction Plan

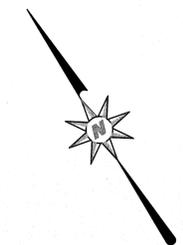
Name _____ Date _____

Planning _____

Traffic _____

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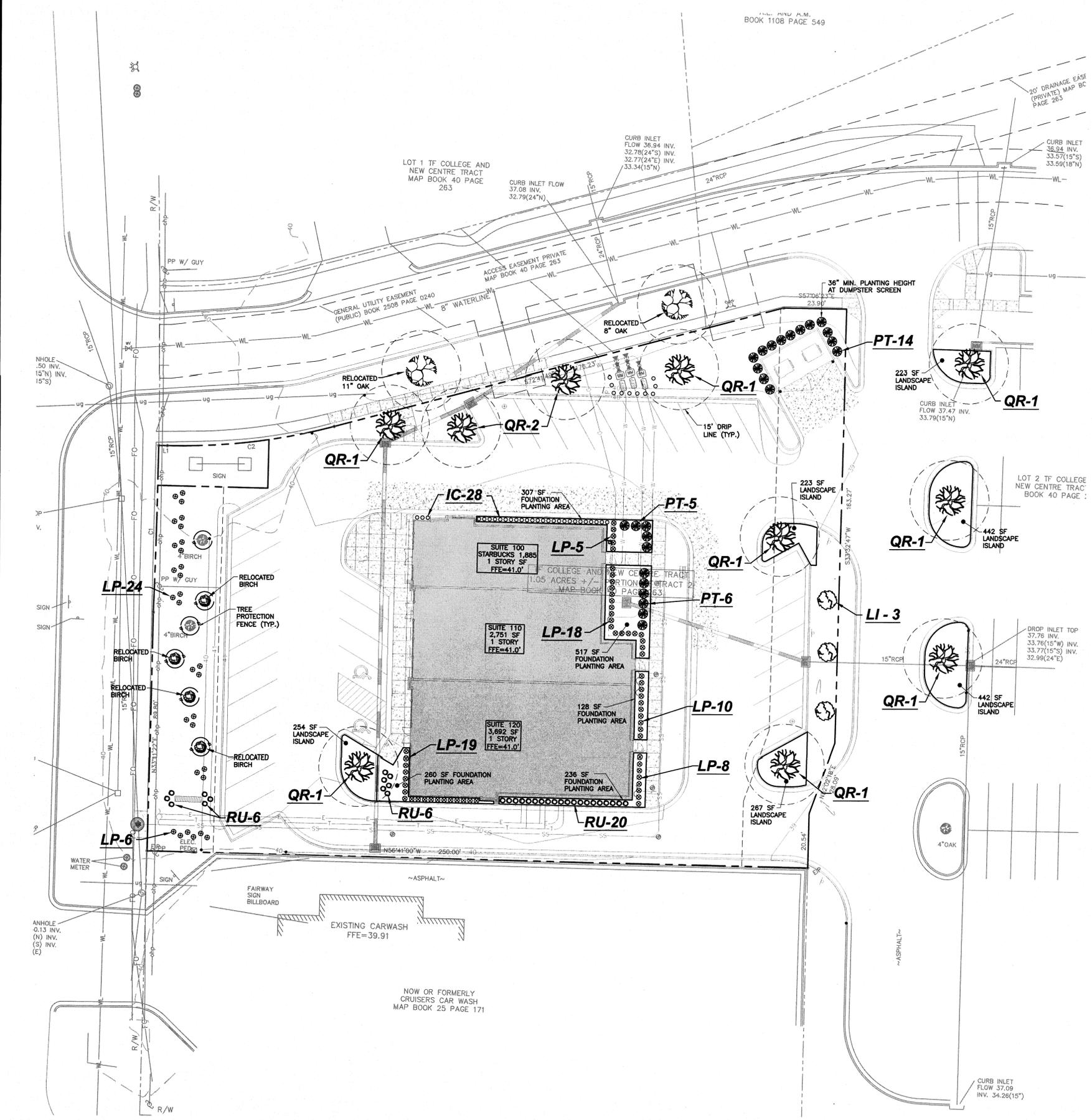
WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
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SCALE: 1" = 20'

0 20 40 50 60

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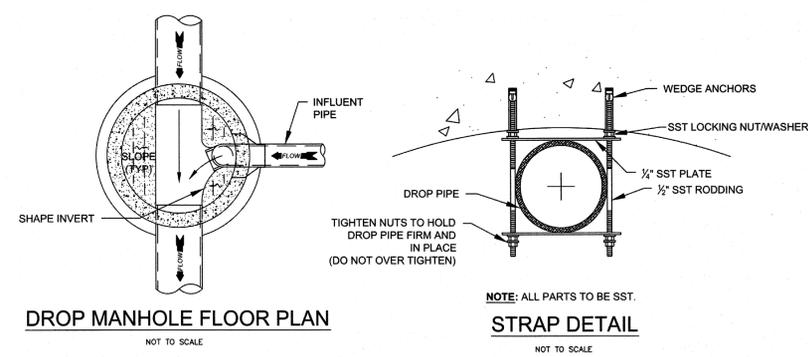
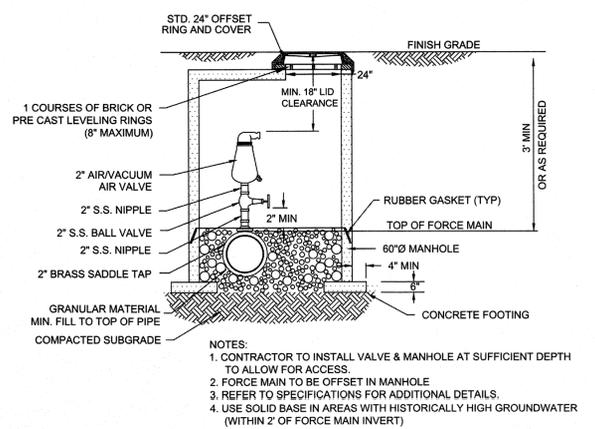
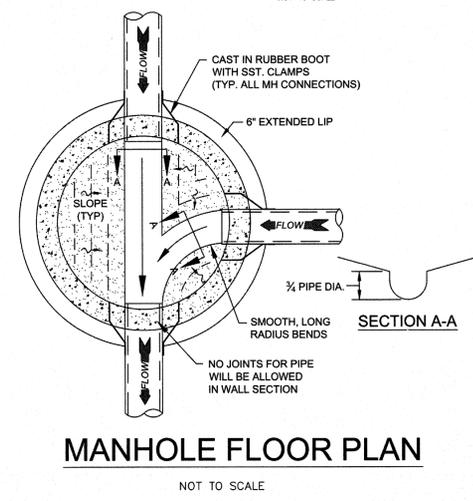
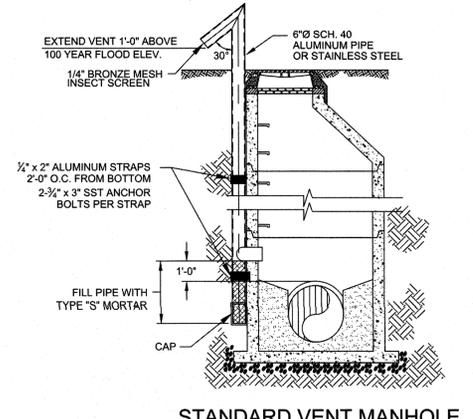
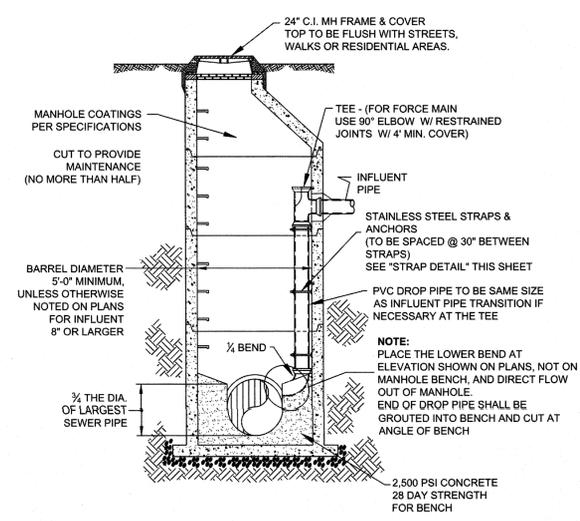
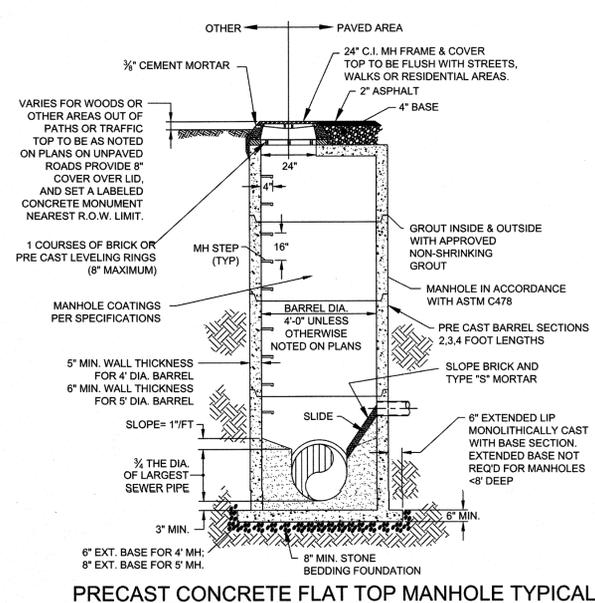
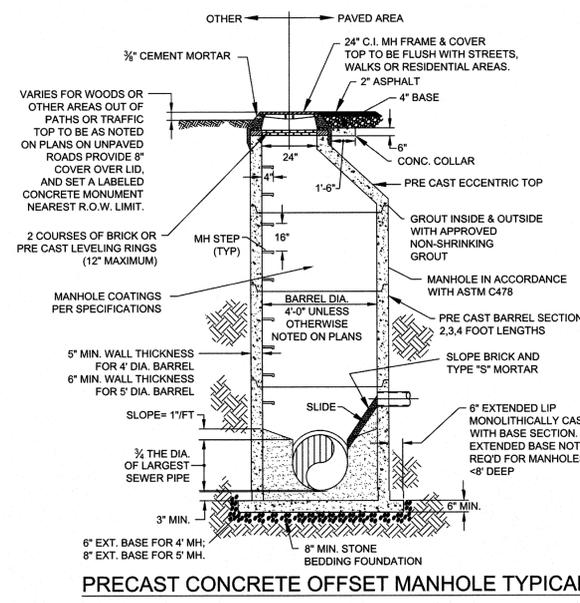


REVISIONS	DATE	DESCRIPTION
	OCTOBER, 2013	HORZ. SCALE: NONE
	FILE NO. 2013 - 007	ORIG. SHEET SIZE: 24" x 36"

SHOPS AT COLLEGE RD. - WILMINGTON, NC
SANITARY SEWER DETAILS 1

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PHONE: (910) 552-0849
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WWW.CURRYENG.COM
NC LIC. NO. P-47599

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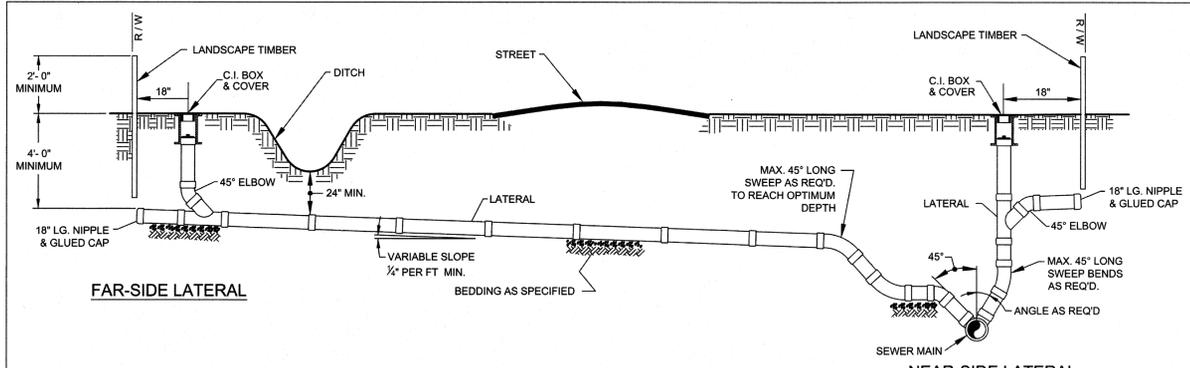
- STANDARD SEWER NOTES**
(REQUIRED ON ALL SEWER PLAN AND PROFILE SHEETS)
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
 - SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RW LINE. SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
 - ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
 - MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
 - NO FLEXIBLE COUPLINGS SHALL BE USED.
 - ALL STAINLESS STEEL FITTINGS SHALL BE 3/16".

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

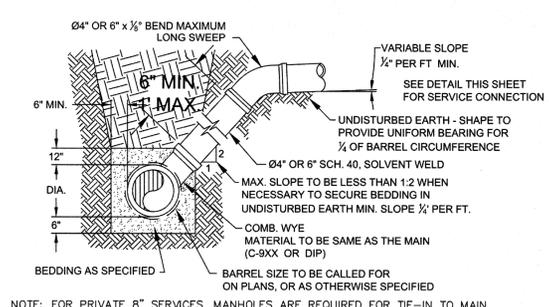
**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA
WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

REV:	DESCRIPTION:	DATE:

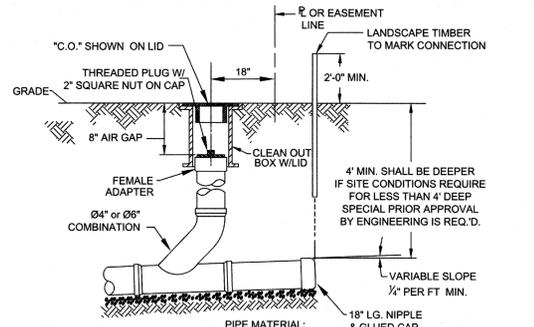
SANITARY SEWER STANDARD DETAILS		DATE: 1/9/12
SANITARY SEWER STANDARD DETAILS SS-1		SCALE: N/A
CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560		DRAWN BY: CFPUA
STewardship, Sustainability, Service.		CHECKED BY: CFPUA
NORTH CAROLINA PROFESSIONAL ENGINEER D. CURRY, No. 028970		PROJECT NO.:
1/25/13		SHEET NO.:
1		4



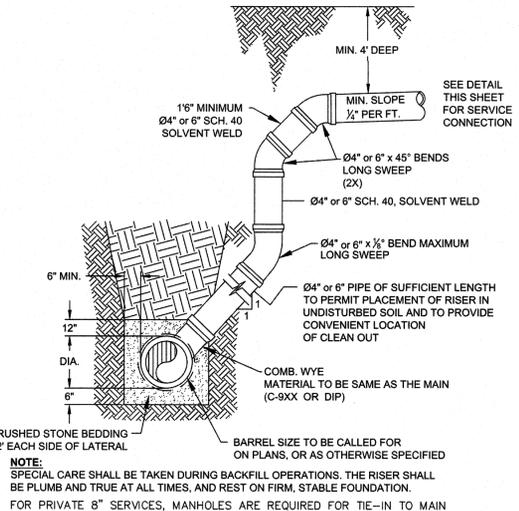
STANDARD SERVICE CONNECTION TO SANITARY SEWER
NOT TO SCALE



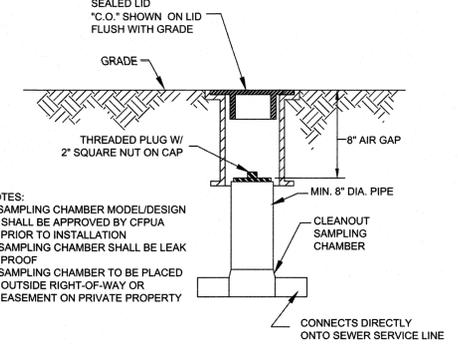
STANDARD SERVICE LATERAL (MAIN DEPTH LESS THAN 8ft)
NOT TO SCALE



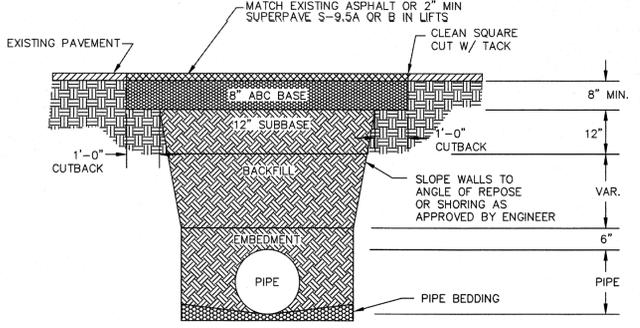
SERVICE CONNECTION & CLEAN-OUT
NOT TO SCALE



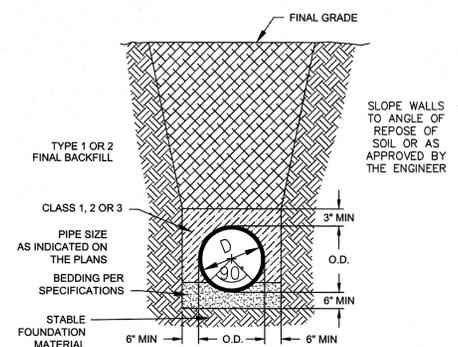
DEEP SERVICE LATERAL (MAIN DEPTH GREATER THAN 8ft)
NOT TO SCALE



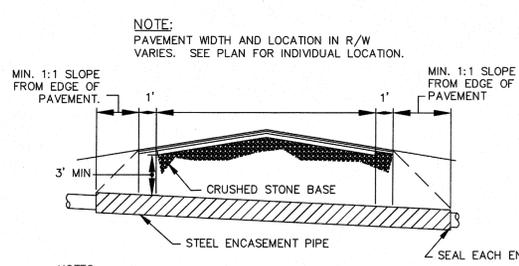
SAMPLING CHAMBER
NOT TO SCALE



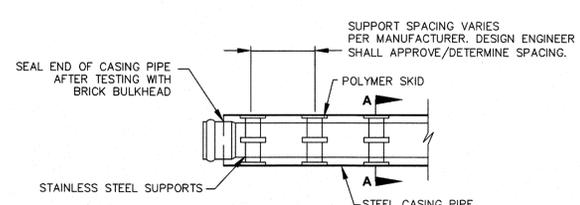
PAVEMENT REPAIR WHERE PIPE INSTALLED (FOR PRIVATE ROADS AND PAVED AREAS; CONTRACTOR TO MEET MIN. REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)
NOT TO SCALE



CL 50 DUCTILE IRON DR 18 PVC PIPE TRENCH DETAIL
NOT TO SCALE



TYPICAL BORING/JACKING DETAIL
NOT TO SCALE



PIPE CASING SUPPORT DETAIL
NOT TO SCALE

REV.	DESCRIPTION:	DATE:

GENERAL NOTES:

- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
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- THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN & STOCKPILE AREAS (TO ARRANGE AND INSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

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

SANITARY SEWER STANDARD DETAILS

SANITARY SEWER STANDARD DETAILS SS-2

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

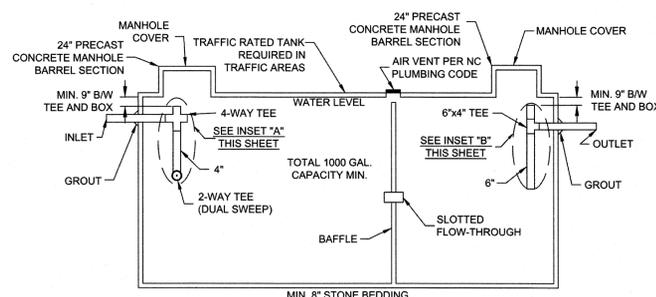
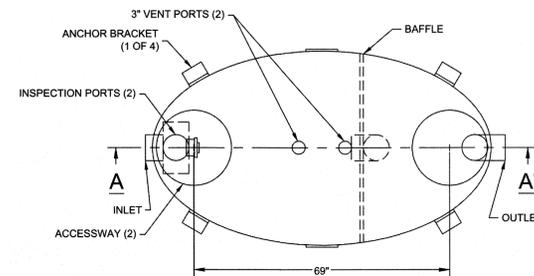
DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED BY: CFPUA
PROJECT NO.:
SHEET NO: 2 / 4

REVISIONS	DATE	DESCRIPTION

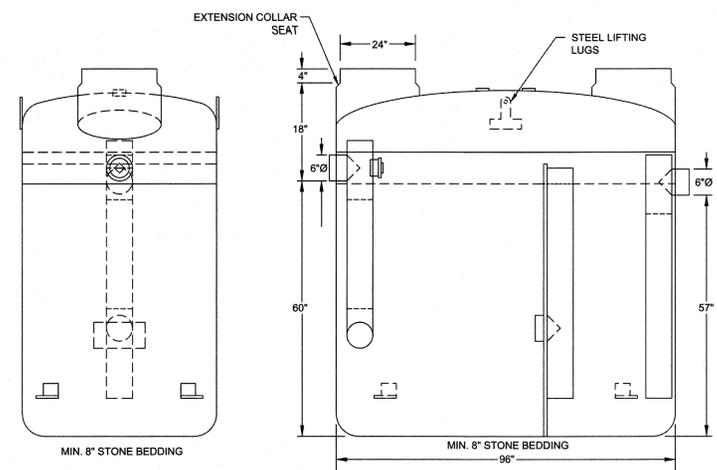
SHOPS AT COLLEGE RD. - WILMINGTON, NC
SANITARY SEWER DETAILS 2

PO BOX 2016
FLOYD AVENUE
FLOYD AVENUE
27526
PHONE: (910) 552-6849
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NC LIC. NO. P-0709

The Curry Engineering Group, PLLC
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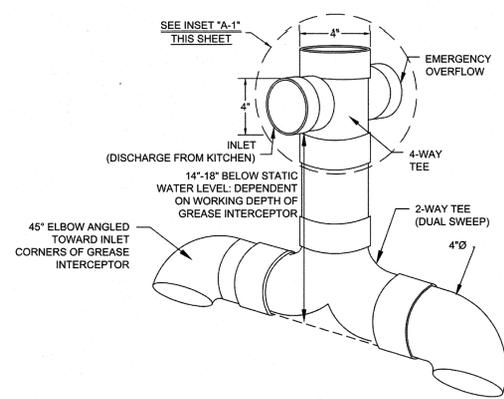
CONCRETE GREASE INTERCEPTOR
NOT TO SCALE



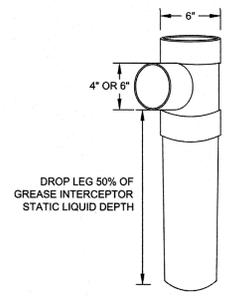
SECTION A-A'

- NOTES:
1. FOR GRAVITY APPLICATIONS ONLY
 2. MIN. THICKNESS: 1/4" WALL AND 3/8" TOP AND BOTTOM BOWLS
 3. STANDARD PIPE STUBS ARE SOCKET SDR 35 PVC
 4. EXTENSION COLLARS SHALL BE CAULKED WITH SIKAFLEX OR EQUIVALENT FOR WATERTIGHT SEAL
 5. FOLLOW MANUFACTURE'S SPECS FOR TRAFFIC OR PEDESTRIAN LOADING

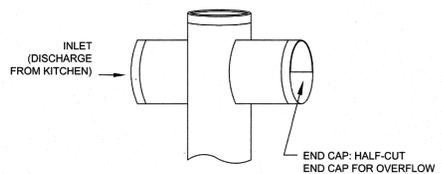
FIBERGLASS GREASE INTERCEPTOR
NOT TO SCALE



GREASE INTERCEPTOR INSET "A" 4" SANITARY TEE
NOT TO SCALE



GREASE INTERCEPTOR INSET "B" 6" X 6" X 4" OUTLET SANITARY TEE
NOT TO SCALE



GREASE INTERCEPTOR INSET "A-1" EMERGENCY OVERFLOW CLOSE-UP
NOT TO SCALE

REV:	DESCRIPTION:	DATE:

NOTES:

1. SAMPLING CHAMBER SHALL BE APPROVED BY CFPWA PRIOR TO INSTALLATION
2. SAMPLING CHAMBER SHALL BE LEAK PROOF
3. SAMPLING CHAMBER TO BE PLACED OUTSIDE RIGHT-OF-WAY OR EASEMENT ON PRIVATE PROPERTY

ECCENTRIC REDUCING FITTING, MATCH SIZE OF SERVICE LINE PLUMBING AS NECESSARY. INSTALL TO MATCH INVERT.

SAMPLING CHAMBER
NOT TO SCALE

PRELIMINARY SEWER SAMPLING CHAMBER STANDARD DETAIL

DATE: 5/8/12
SCALE: N/A
DRAWN BY: JMT
CHECKED BY: JMT
PROJECT NO.:
SHEET NO.: 1/1

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

- GENERAL NOTES:**
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
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THE DETAILS SHOWN HEREON SUPERCEDE CFPWA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV:	DESCRIPTION:	DATE:

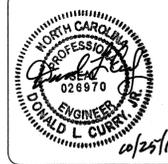
SANITARY SEWER STANDARD DETAILS

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

SANITARY SEWER STANDARD DETAILS SS-4

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

SHEET NO.: 4/4



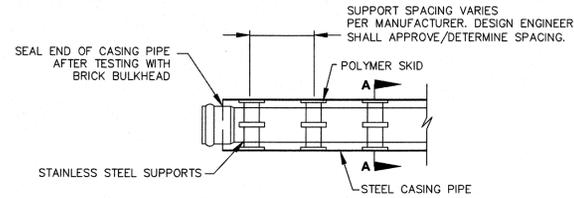
REVISIONS	DATE:	DESCRIPTION:

DATE:	OCTOBER 2013
FILE NO.:	2013 - 007
HORIZ. SCALE:	NONE
VERT. SCALE:	NONE
ORIG. SHEET SIZE:	24 x 36

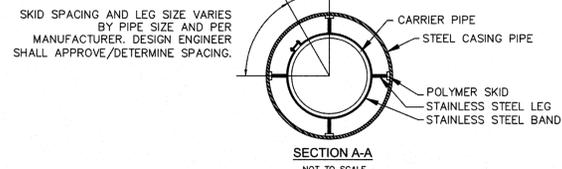
SHOPS AT COLLEGE RD. - WILMINGTON, NC
SANITARY SEWER DETAILS 4

PO BOX 2018
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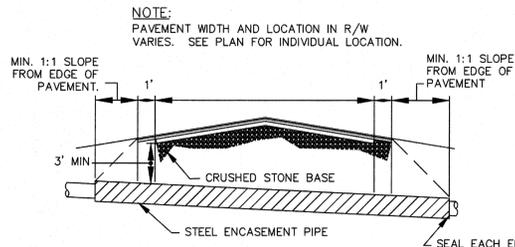


NOTE: PIPE SUPPORT TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED. CONTINUOUS SUPPORTS MAY BE USED AS ALTERNATIVE. OIL, GREASE, OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.



PIPE CASING SUPPORT DETAIL

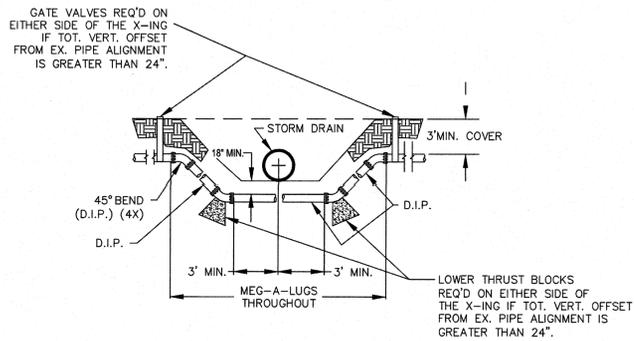
NOT TO SCALE



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

TYPICAL BORING/JACKING DETAIL

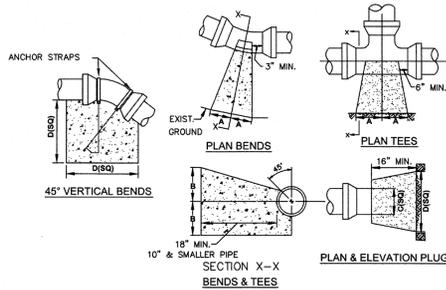
NOT TO SCALE



NOTE: USE D.I.P. (CL50 OR BETTER)

WATER MAIN DITCH & STORM DRAIN CROSSING

NOT TO SCALE

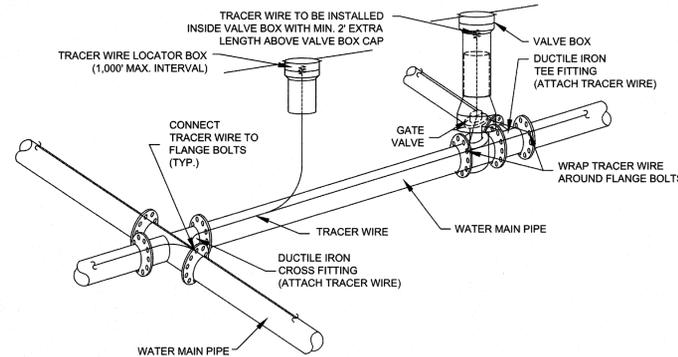


SIZE	90° BENDS		45° BENDS		22 1/2° BENDS		TEES/PLUGS		45° VERT. BENDS
	A	B	A	B	A	B	A	B	
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
4"	8"	9"	5"	8"	3"	11"	6"	9"	28"
6"	14"	11"	9"	9"	8"	8"	12"	9"	36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	28"	18"	17"	16"	16"	22"	18"	62"
14"	26"	29"	21"	19"	18"	18"	26"	20"	72"
16"	33"	29"	25"	21"	20"	21"	32"	21"	83"
18"	40"	30"	28"	24"	22"	23"	36"	24"	88"

NOTES:
1. BASED ON 160 PSI TEST PRESSURE AND 2000 PSF SOIL BEARING CAPACITY.
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
3. USE MEG-A-LUG (PREFERRED) IN LIEU OF BLOCKING AND RODDING.

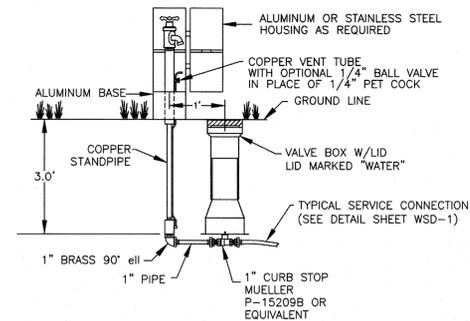
THRUST BLOCK DETAIL

NOT TO SCALE



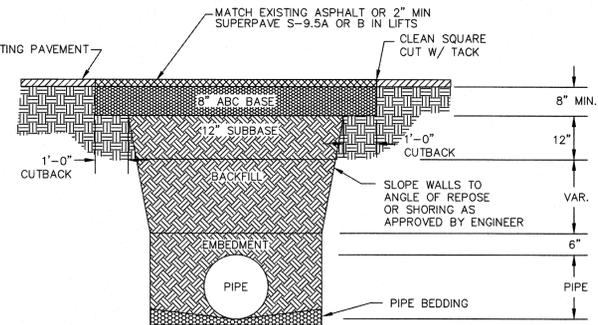
NOTES:
1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE WITH GAS AND OIL RESISTANT INSULATION.
2. WIRE SHALL BE STRAPPED TO ALL PVC WATER MAIN PIPING WITH DUCT TAPE AT 12-FT. INTERVALS.
3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS.
4. ALL WIRE SPLICES SHALL HAVE WATER PROOF WIRE CONNECTIONS.

TRACER WIRE DETAIL



SAMPLING STATION

NOT TO SCALE



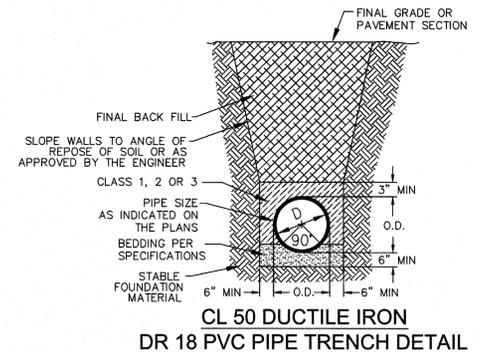
NOTES:

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

PAVEMENT REPAIR WHERE PIPE INSTALLED

(FOR PRIVATE ROADS AND PAVED AREAS; CONTRACTOR TO MEET MIN. REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)

NOT TO SCALE



CL 50 DUCTILE IRON DR 18 PVC PIPE TRENCH DETAIL

NOT TO SCALE

GENERAL NOTES:

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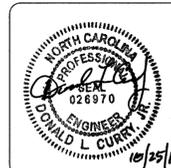
WATER DISTRIBUTION SYSTEM STANDARD DETAILS

WATER STANDARD DETAILS WSD-2

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

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

SHEET NO: 2/2



REV:	DESCRIPTION:	DATE:

SHOPS AT COLLEGE RD. - WILMINGTON, NC
WATER DETAILS 2

NO. 1000 W. WAREHOUSING AVE.
FURQUAY-VARINA, NC 27536
PHONE: (919) 552-0849
MOBILE: (919) 880-9857
NC LIC. NO. P-0709

The Curry Engineering Group, PLLC
www.curryeng.com

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

7-208
ENGLISH STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 2'-0" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC FORM, 2" KEYWAY, OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.05.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
FOR 6" TO 18" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 6" TO 18" IN HEIGHT USE 6" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
CONSTRUCT WITH PIPE CORING MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

FRAME, GRATE AND HOOD
SEE STD. NO. 840.05

STEPS - STD. NO. 840.66

WHERE 30" TO 36" PIPE IS USED

WHERE 42" TO 54" PIPE IS USED

DETAIL SHOWING METHOD OF RISER CONSTRUCTION

SHEET 1 OF 2
840.02

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

7-208
ENGLISH STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

EXPANSION JOINTS
STD. 840.05 FRAME, GRATE AND HOOD

PLAN OF TOP SLAB

SECTION S-S

SECTION R-R

DOWEL

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

PIPE DIMS	SPAN		MIN. HEIGHT	REINFORCING		SLAB		TOTAL		DEDUCTIONS		DES. ONE PIPE	
	D	A		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	CU. YDS.	CONC.		CU. YDS.
12"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056	0.037
15"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056	0.037
18"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056	0.037
24"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056	0.037
30"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056	0.037
36"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056	0.037
42"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056	0.037
48"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056	0.037

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

SHEET 2 OF 2
840.02

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

7-208
ENGLISH STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.

PLAN

SECTION - AA

SECTION - BB

SECTION - LL

SECTION - MM

SECTION - NN

SECTION - PP

SECTION - JJ

SECTION - KK

SECTION - RR

FRAME, GRATE, & HOOD ASSY

FRAME PLAN

HOOD ELEVATION

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

SHEET 1 OF 2
840.03

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

7-208
ENGLISH STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

DETAIL SHOWING TYPES OF GRATES
USE ACCORDING TO WATER FLOW.

TYPE "G"

TYPE "E"

TYPE "F"

SECTION A-A

SECTION B-B

SECTION C-C

RAISED FLOW ARROW
1/8" HIGH

TYPE - E

TYPE - F

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

SHEET 2 OF 2
840.03

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

7-208
ENGLISH STANDARD DRAWING FOR
BRICK OPEN THROAT CATCH BASIN
12" THRU 48" PIPE

NOTES: MORTAR JOINTS 1/2" +/- 1/8" THICK.
USE CLASS "B" CONCRETE THROUGHOUT.
USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB.
USE #4 BAR DOMELS AT 12" CENTERS.
DEDUCT FOR PIPE(S) FROM TOTAL CU. YDS. OF BRICK MASONRY.
PROVIDE ALL CATCH BASINS OVER 2'-0" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
CONCRETE TOOL ALL EXPOSED MORTAR JOINTS.
USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.05.
FOR 6" TO 18" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 6" TO 18" IN HEIGHT USE 6" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.
INCREASE THE SIZE OF THE 6" OPENING TO 8" MAX., AS DIRECTED BY THE ENGINEER BY ADDING 2" TO THE WALL HEIGHT ABOVE THE TOP ELEVATION. ADJUST QUANTITIES ACCORDINGLY.

PLAN

SECTION X-X

SECTION Y-Y

MIN. DIMENSIONS AND QUANTITIES FOR BRICK OPEN THROAT CATCH BASIN (BASED ON MIN. HEIGHT, H)

PIPE DIMS	SPAN		MIN. HEIGHT	REINFORCING		SLAB		TOTAL		DEDUCTIONS		DES. ONE PIPE
	D	A		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	CU. YDS.	CONC.	
12"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056
15"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056
18"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056
24"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056
30"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056
36"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056
42"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056
48"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056

SHEET 1 OF 2
840.05

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

7-208
ENGLISH STANDARD DRAWING FOR
CONCRETE DROP INLET
12" THRU 30" PIPE

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL DROP INLETS OVER 3'-0" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC FORM, 2" KEYWAY OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.05.
CONSTRUCT WITH PIPE CORING MATCHING.
INSTALL 2" WEEP HOLES AS DIRECTED BY THE ENGINEER.
INSTALL STONE DRAINAGE OF A MINIMUM OF 1 CUBIC FOOT OF NO. 20 STONE IN A POWER FRENCH BARS OR MAT, AT EACH WEEP HOLE AS DIRECTED BY THE ENGINEER.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

PLAN
WITH GRATE & FRAME REMOVED

SECTION X-X

SECTION Y-Y

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

PIPE DIMS	SPAN		MIN. HEIGHT	REINFORCING		SLAB		TOTAL		DEDUCTIONS		DES. ONE PIPE
	D	A		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	CU. YDS.	CONC.	
12"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056
15"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056
18"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056
24"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056
30"	3'-0"	2'-3"	1'-0"	3	4.7	28	4'-10"	3'-7"	0.214	0.321	0.535	0.056

SHEET 1 OF 1
840.14

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

7-208
ENGLISH STANDARD DRAWING FOR
BRICK CATCH BASIN WITH
SINGLE AND MULTIPLE PIPES
12" THRU 48" PIPE

DETAIL OF HANDLE

PART SECTION

DOWEL

ENGLISH STANDARD DRAWING FOR
BRICK CATCH BASIN WITH
SINGLE AND MULTIPLE PIPES
12" THRU 48" PIPE

SHEET 2 OF 2
840.05

Approved Construction Plan

Name _____ Date _____

Planning _____

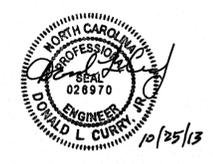
Traffic _____

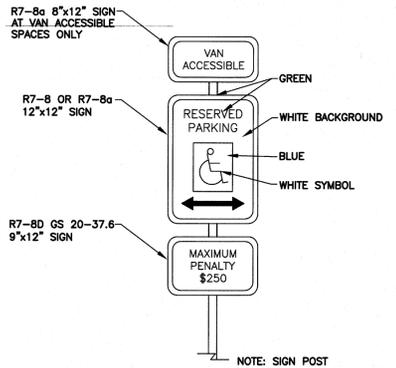
Fire _____

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

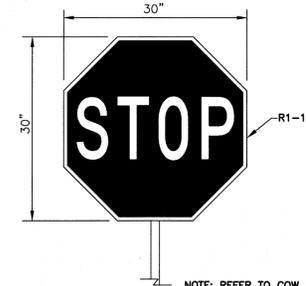
Date: _____ Permit # _____

Signed: _____

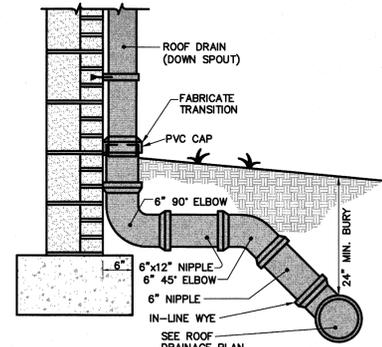




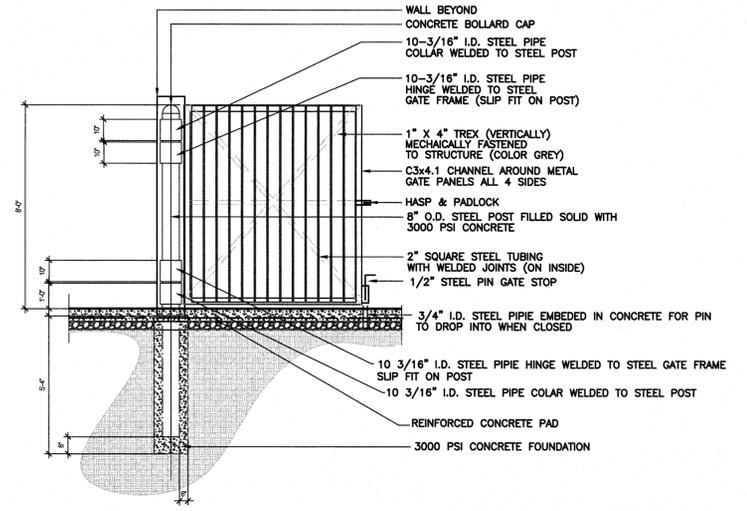
1 ACCESSIBLE PARKING SIGNAGE
D-08 SCALE: N.T.S.



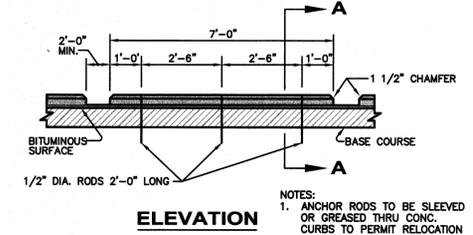
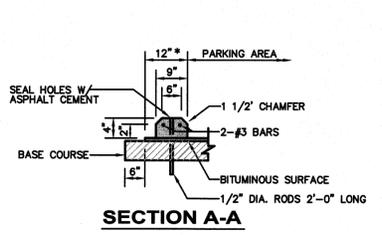
2 STOP SIGN
D-08 SCALE: N.T.S.



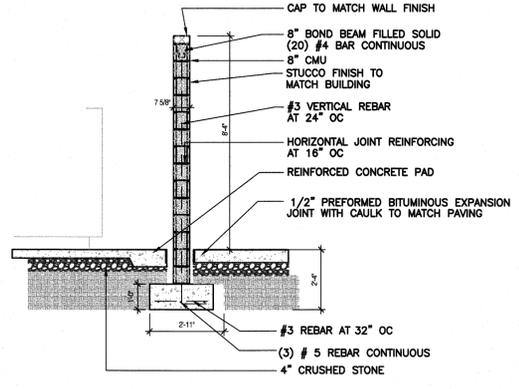
3 ROOF DRAIN TIE-IN
D-08 SCALE: N.T.S.



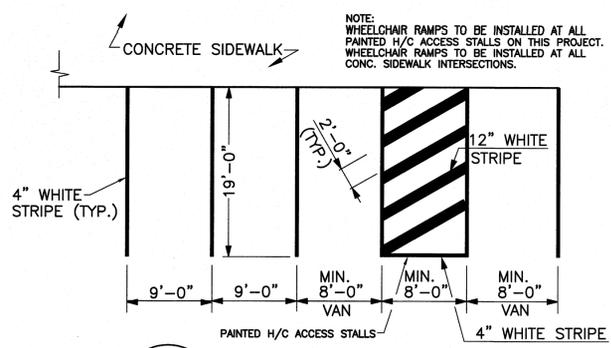
4 DUMPSTER ENCLOSURE GATE
D-08 SCALE: N.T.S.



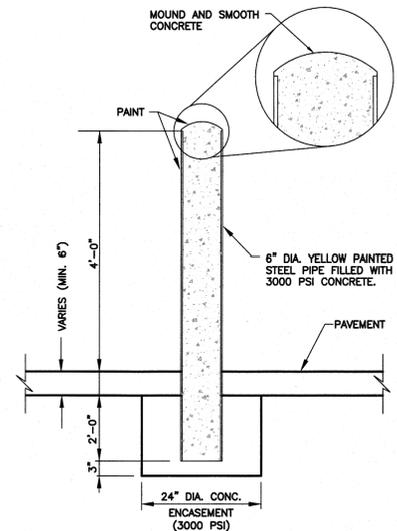
5 WHEEL STOP DETAIL
D-08 SCALE: N.T.S.



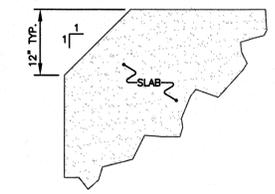
6 DUMPSTER ENCLOSURE
D-08 SCALE: N.T.S.



7 90° HANDICAP STALLS - TYPICAL
D-08 SCALE: N.T.S.



8 BOLLARD
D-08 SCALE: N.T.S.



9 CONCRETE CORNER DETAIL
D-08 SCALE: N.T.S.

CITY OF WILMINGTON
NORTH CAROLINA
Public Services - Engineering Division
APPROVED DRAINAGE PLAN
Date: _____ Permit # _____
Signed: _____

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



SHOPS AT COLLEGE RD. - WILMINGTON, NC
SITE DETAILS 1

PO BOX 2019
FAYETTEVILLE, NC 27526
PHONE: (919) 552-0849
MOBILE: (919) 880-9857
NC LIC. NO. P-0799

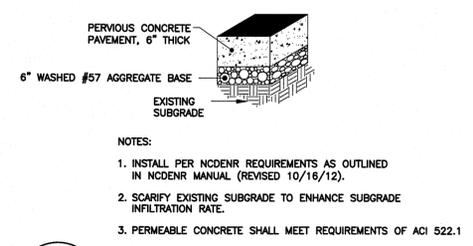
The Curry Engineering Group, PLLC
www.curryeng.com

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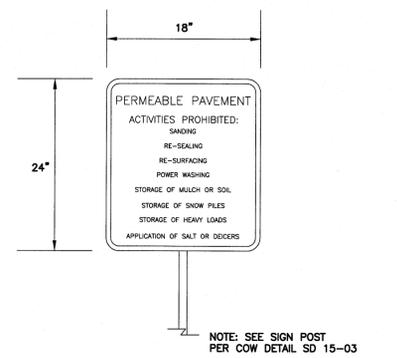
D-08



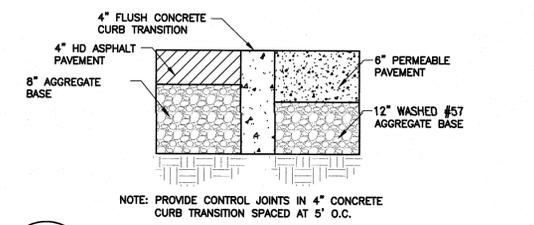
1 PERMEABLE PAVEMENT OBSERVATION WELL
D-09 SCALE: N.T.S.



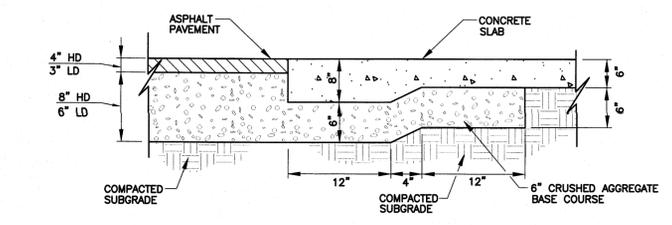
2 PERMEABLE CONCRETE PAVEMENT
D-09 SCALE: N.T.S.



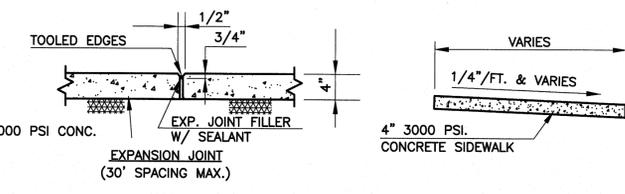
3 PERMEABLE PAVEMENT SIGNAGE
D-09 SCALE: N.T.S.



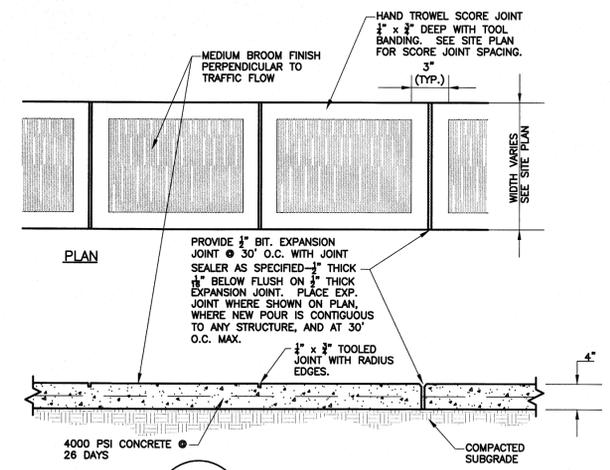
4 PERM./ASPHALT PAVEMENT INTERFACE
D-09 SCALE: N.T.S.



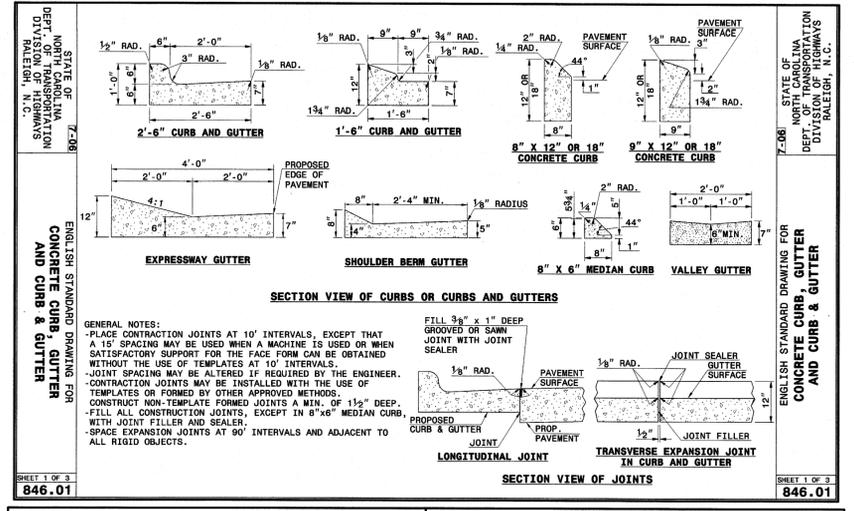
5 CONCRETE/BITUMINOUS PAVEMENT INTERFACE
D-09 SCALE: N.T.S.



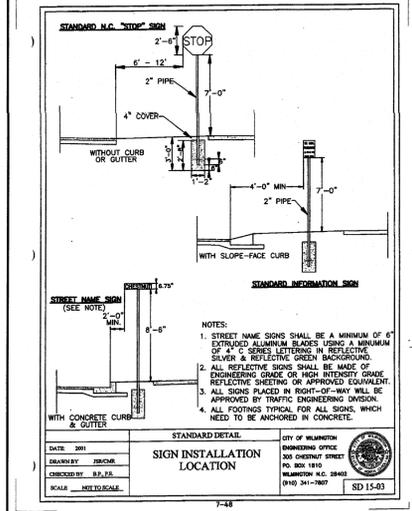
7 CONCRETE SIDEWALK
D-09 SCALE: N.T.S.



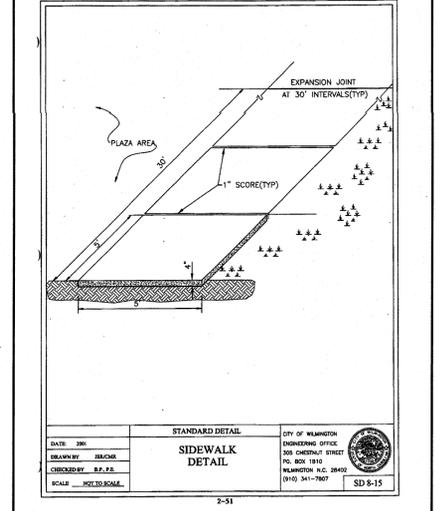
8 CONCRETE SIDEWALK - SITE
D-09 SCALE: N.T.S.



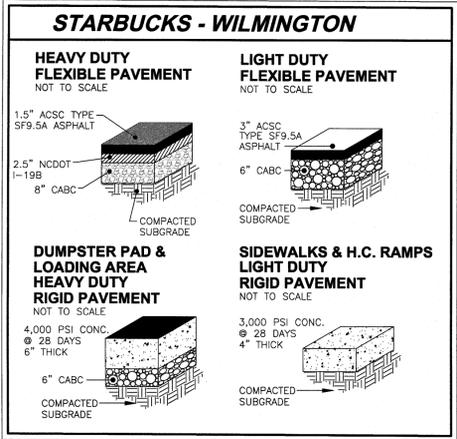
7-08 ENGLISH STANDARD DRAWING FOR CONCRETE CURB, GUTTER AND GUTTER
846.01



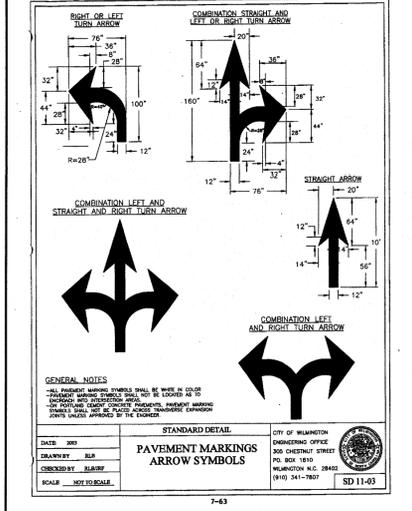
7-48 STANDARD N.C. 'STOP' SIGN



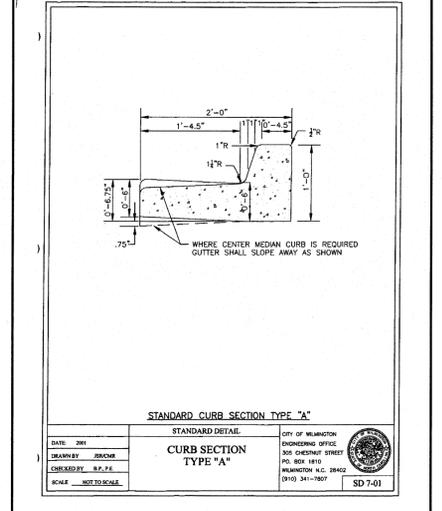
7-51 STANDARD DETAIL SIDEWALK DETAIL



6 PAVEMENT SECTIONS
D-09 SCALE: N.T.S.



7-43 PAVEMENT MARKINGS ARROW SYMBOLS



7-41 STANDARD CURB SECTION TYPE 'A'

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

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

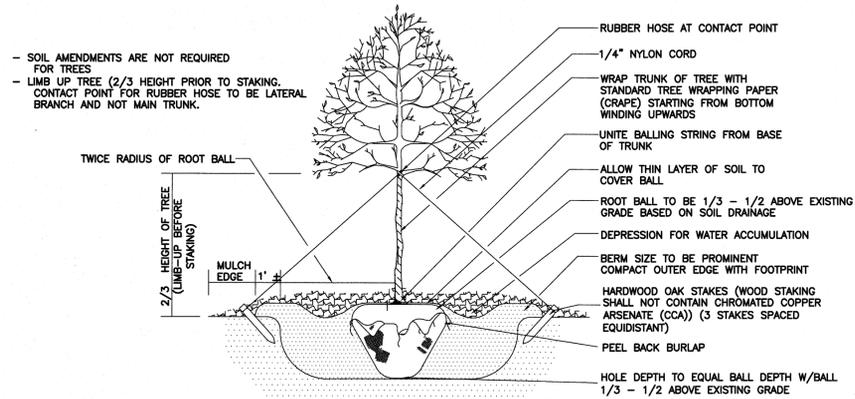


SHOPS AT COLLEGE RD. - WILMINGTON, NC
SITE DETAILS 2
The Curry Engineering Group, PLLC
20 BOX 2015 AVE.
FURQUAY-VARINA, NC 27556
PHONE: (919) 552-0849
MOBILE: (919) 880-9857
www.curryeng.com
don@curryeng.com
N.C. LIC. NO. P-0799

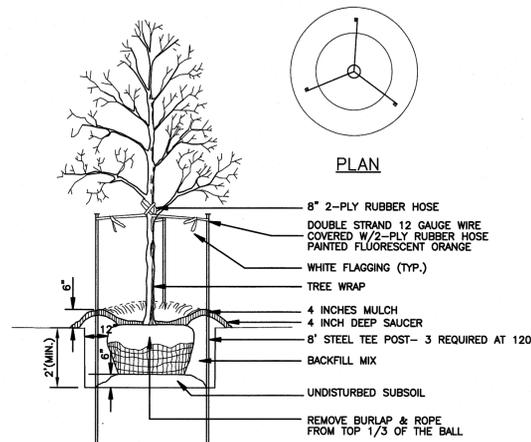
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D-09

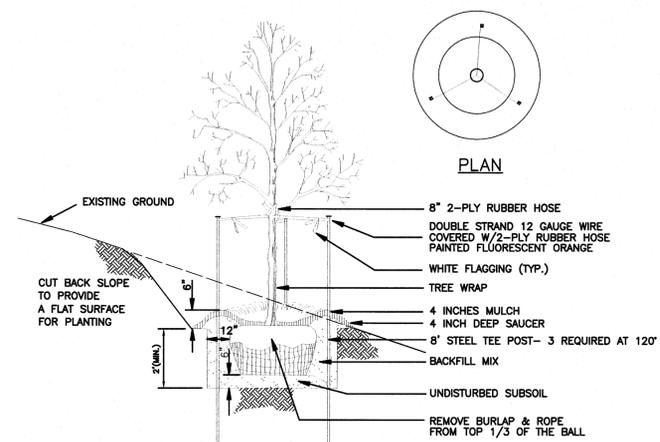
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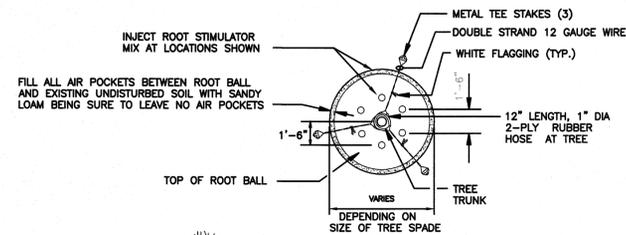
1 TREE STAKING & PLANTING DETAIL
D-10 SCALE: N.T.S.



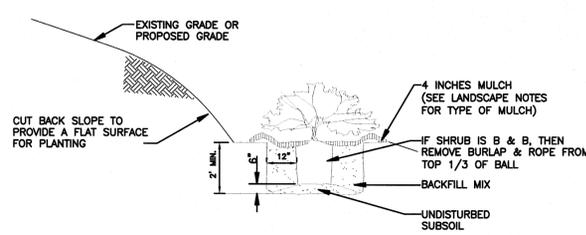
2 TREE PLANTING
D-10 SCALE: N.T.S.



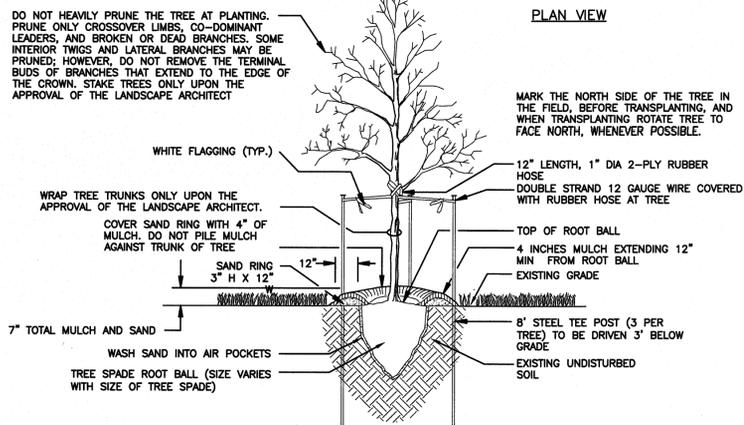
3 TREE PLANTING ON SLOPE
D-10 SCALE: N.T.S.



4 MACHINE DUG TREE PLANTING
D-10 SCALE: N.T.S.



5 SHRUB PLANTING ON SLOPE
D-10 SCALE: N.T.S.



6 SHRUB PLANTING
D-10 SCALE: N.T.S.

- NOTE:**
- PLANT TREES WITH A MINIMUM CALIPER OF TWO INCHES MEASURED SIX INCHES ABOVE THE GROUND AND A ROOT BALL NO SMALLER THAN TWO FEET IN DIAMETER AND 16 INCHES IN DEPTH.
 - THE BEST TIMES FOR PLANTING ARE EARLY SPRING AND EARLY FALL. TREES PLANTED IN THE SUMMER RUN THE RISK OF DEHYDRATION.
 - PLANT ALL TREES AT LEAST THREE-AND-A-HALF FEET FROM THE END OF HEAD-IN PARKING SPACES IN ORDER TO PREVENT DAMAGE FROM CAR OVERHANGS.
 - DIG THE TREE PIT AT LEAST TWO FEET WIDER THAN THE ROOT BALL AND AT LEAST SIX INCHES DEEPER THAN THE BALL VERTICAL DIMENSION.
 - ESPECIALLY IN AREAS WHERE CONSTRUCTION ACTIVITY HAS COMPACTED THE SOIL, THE BOTTOM OF THE PIT SHOULD BE SCARIFIED OR LOOSENED WITH A PICK AX OR SHOVEL.
 - AFTER THE PIT IS DUG, OBSERVE SUB-SURFACE DRAINAGE CONDITIONS. WHERE POOR DRAINAGE EXISTS, THE TREE PIT SHOULD BE DUG AT LEAST AN ADDITIONAL TWELVE INCHES WIDER AND THE SOIL AMENDED TO ALLOW ROOTS GROW PROPERLY.
 - BACKFILL SHOULD INCLUDE A PROPER MIX OF SOIL AND FERTILIZER. ALL ROOTS MUST BE COMPLETELY COVERED. BACKFILL SHOULD BE THOROUGHLY WATERED AS IT IS PLACED AROUND THE ROOTS.
 - IMMEDIATELY AFTER IT IS PLANTED, THE TREE SHOULD BE SUPPORTED WITH STAKES AND STRAPS TO FIRMLY HOLD IT IN PLACE AS ITS ROOT SYSTEM BEGINS TO DEVELOP. REMOVE STAKES AND TIES AFTER ONE YEAR.
 - SPREAD AT LEAST THREE INCHES OF MULCH OVER THE ENTIRE EXCAVATION IN ORDER TO RETAIN MOISTURE AND KEEP DOWN WEEDS. AN ADDITIONAL THREE-INCH SAUCER AND MULCH SHOULD BE PROVIDED TO FORM A BASIN AROUND THE TRUNK OF THE TREE. THIS SAUCER HELPS CATCH AND RETAIN MOISTURE.
 - CONSCIENTIOUS POST-PLANTING CARE, ESPECIALLY WATERING, PRUNING AND FERTILIZING, IS A MUST FOR STREET AND PARKING LOT TREES. PRUNE OFF BROKEN OR DAMAGED BRANCHES.

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

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

Date: _____ Permit # _____

Signed: _____



NOT FOR CONSTRUCTION

SHOPS AT COLLEGE RD. - WILMINGTON, NC
LANDSCAPING DETAILS

The Curry Engineering Group, PLLC
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10/25/13

D-10

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EROSION AND SEDIMENTATION CONTROL NARRATIVE

PROJECT DESCRIPTION

The purpose of this project is for grading & fill operations. The project is owned by PHD College, LLC. The site is currently not occupied. Approximately 1.43 acres will be disturbed during construction. The maximum fill will be 2-3 feet.

The project is scheduled to begin construction in Winter 2014 with project completion and final stabilization by Spring 2014. The erosion and sediment control program for this project will include the installation of a suitable construction entrance, silt fence and inlet protection. Approximately 6,400sf of existing asphalt will remain through construction and be overlaid prior to completion.

ADJACENT PROPERTY

Adjacent property owners are noted on the Existing Conditions sheet.

SOILS

The soils at this site are silty sand.

EROSION AND SEDIMENT CONTROL MEASURES

All vegetative and structural erosion and sediment control practices shall be constructed and maintained by the contractor according to these plans and specifications and the minimum standards of the Dept. of Environmental Management, Land Quality Section and New Hanover County. The contractor shall also follow any additional requirements as outlined by the Project Engineer.

STRUCTURAL PRACTICES

- Vehicle wheels shall be clean when leaving the site to prevent the tracking of mud on paved roads.
- Construction Road Stabilization: Construction traffic shall be limited to stabilized areas. At a minimum, a temporary gravel construction entrance shall be provided as shown on this drawing.
- Silt Fence: Silt fences shall be provided where shown and as needed on the site plan. These barriers shall be used to contain sediment.
- Rip Rap/Gravel Filter Sediment Basins: Construct basin to the shape and dimensions shown in the details. The basin is to be placed below the existing ditch flow line by 2' with the berm built above as dimensioned.

VEGETATIVE PRACTICES

Temporary Seeding: All denuded areas shall receive temporary seeding within 14 days of completing initial earthwork. Temporary seeding shall also be used to stabilize finished grade areas if the time of year is outside the specified permanent seeding periods. Temporary seeding shall be in accordance with temporary seeding specifications.

MANAGEMENT STRATEGIES

- Perimeter measures are to be installed prior to grubbing or grading.
- Stockpile and/or waste areas must be maintained within the limits of the areas protected by the proposed measures and otherwise temporarily seeded if to be left stockpiled over 14 calendar days.
- Construction shall be planned so that grading operations can begin and end as quickly as possible.
- Silt Fences and tree protection fence shall also be installed prior to or as a first step in construction.
- The Contractor shall be responsible for the installation and maintenance of all erosion and sediment control practices. Vegetative Ground Cover immediately following grading, all areas shall receive either permanent or temporary seeding, as applicable, as follows:

	Feb-May	June-Sept	Oct-Jan
Permanent Seed:	K-31 Fescue 5#/1000 SF	K-31 Fescue 5#/1000 SF	K-31 Fescue 5#/1000 SF
Temporary Seed:	Winter Rye 50#/Ac	German Millet 40#/Ac	Winter Rye 50#/Ac
Fertilizer:	10-10-10 @ 25#/1000 SF	Mulch: Straw @ 90#/1000 SF	
Lime:	100#/1000 SF	Tack: 200 gallons/Ac on all mulching	

MAINTENANCE:

- Re-seed and mulch bare spots larger than 9 square feet (limited to 5% maximum of site area).
- Maintain all seeded areas until uniform stand is acceptable.
- If growth is not established by final project inspection, continue specified attention until the stand is acceptable.
- Correct and repair all undue settling and erosion within 1 year after final inspection.
- Remove from the site, all erosion control structures after complete stabilization at end of construction period.
- Remove silt from sediment pits and from behind check dams when silt is within half depth of the pit or spillway. Dispose of in an area where silt cannot re-enter pit/trap.

CALCULATIONS:

The practice utilized for the proposed site did not require formal calculations.

OWNER: PHD College, LLC, 3930 Max Pl. Boynton Beach, FL 33436

Erosion Control Notes:

- Obtain erosion control plan approval prior to beginning land disturbance. Retain a copy of the approved erosion control plan and permit on site. Call New Hanover County to notify the Inspector of a start date prior to land disturbance.
- Construct the construction entrance as shown on the plan. Maintain the construction entrance daily to ensure that mud and silt will not be tracked onto the paved surface. If mud is tracked onto the road surface, it is to be removed immediately.
- Construction entrance location may not vary without prior approval from Engineer and City of Wilmington.
- Clear the area needed to construct the perimeter erosion control measures including silt fence, and silt fence outlets. Erosion control measures downstream of all pipes shall remain in-place until permanent measures are stabilized.
- Install silt fence and silt fence outlets.
- Begin clearing, grubbing, and topsoil stripping for building pad and surrounding improvements.
- Rough grade the site.
- Construct sanitary sewer system throughout project. Do not excavate more than can be installed in that day's work. Seed, mulch, and tack disturbed areas after each day's work.
- Construct the storm sewer system throughout the project. Install inlet protection devices.
- Seed, straw and tack areas behind the curb and gutter that are graded to their final disposition.
- Contact City of Wilmington Erosion Control for inspection prior to removal of erosion control measures.
- Upon stabilization of seeded areas and approval from City of Wilmington, remove silt fence and silt fence outlets.
- Seed, straw and tack any remaining exposed areas.

MAINTENANCE NOTES:

- DO NOT LET ANY AREA REMAINED EXPOSED FOR MORE THAN 14 CALENDAR DAYS WITHOUT APPLYING TEMPORARY SEEDING.
- MAINTAIN ALL EROSION CONTROL MEASURES DAILY AND RESEED DISTURBED AREAS AS NEEDED.
- INSPECT ALL EROSION CONTROL MEASURES WEEKLY AND AFTER EACH RAINFALL EVENT. REPAIR AS NEEDED.
- AT THE END OF EACH DAY'S STORM DRAINAGE OPERATION, CONSTRUCT A TEMPORARY PIPE INLET PROTECTION DEVICE UNTIL THE NEXT DAY'S OPERATION CONTINUES.

EROSION CONTROL MAINTENANCE PLAN

ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. STRUCTURES THAT SHALL BE INSPECTED INCLUDE BUT ARE NOT LIMITED TO:

SILT FENCE AND FABRIC INLET PROTECTION ANY FABRIC WHICH COLLAPSES, TEARS, DECOMPOSES, OR BECOMES INEFFECTIVE SHALL BE REPLACED IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN SEDIMENT BEHIND THE FENCE REACHES 6".

SEEDING, FERTILIZING, AND MULCHING SEEDED AREAS SHALL BE INSPECTED FOR FAILURE AND NECESSARY REPAIRS AND RE-SEEDING SHALL BE MADE WITHIN THE SAME SEASON.

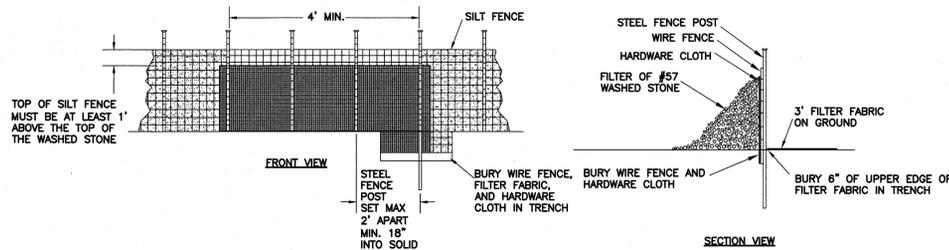
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONE. AFTER A RAINFALL, IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO ROADWAYS.

HARDWARE CLOTH AND GRAVEL INLET PROTECTION INSPECT THE BARRIER AFTER EACH RAIN. REMOVE SEDIMENT WHEN HALF FULL TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS. UPON STABILIZATION OF DRAINAGE AREA, REMOVE ALL MATERIALS AND ANY UNSTABLE SOIL, EITHER SALVAGE OR DISPOSE OF PROPERLY. BRING DISTURBED AREA TO PROPER GRADE, THEN SMOOTH AND COMPACT IT. STABILIZE ALL BARE AREAS AROUND THE INLET.

TEMPORARY PIPE INLET PROTECTION TEMPORARY PIPE INLET PROTECTION MUST BE ROUTINELY INSPECTED AFTER RAINFALL EVENTS AND MAINTAINED AS NEEDED TO ENSURE THE MEASURE IS IN PROPER WORKING CONDITION. METAL POSTS SHALL BE REPLACED IS DAMAGED. ACCUMULATED SEDIMENT SHALL BE REMOVED. ANY SILT WHICH COLLAPSES, TEARS, DECOMPOSES, OR BECOMES INEFFECTIVE SHALL BE REPLACED IMMEDIATELY.

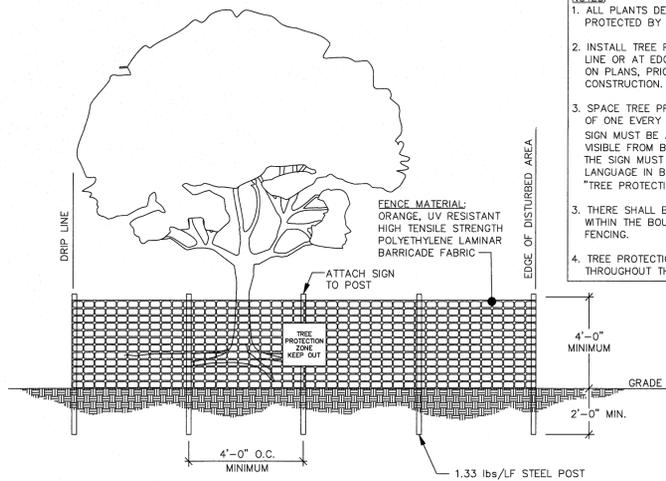
PIPE OUTLET PROTECTION STONE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT. DISLOCATED STONE SHALL BE REPLACED IMMEDIATELY AND ANY SCOUR OR ERODED AREAS SHALL BE REPAIRED IMMEDIATELY.

1 EROSION CONTROL MAINTENANCE PLAN
D-11 SCALE: N.T.S.



- NOTES:
- REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED.
 - REPLACE STONE AS NEEDED TO ENSURE DEWATERING.

2 STD. SILT FENCE OUTLET
D-11 SCALE: N.T.S.



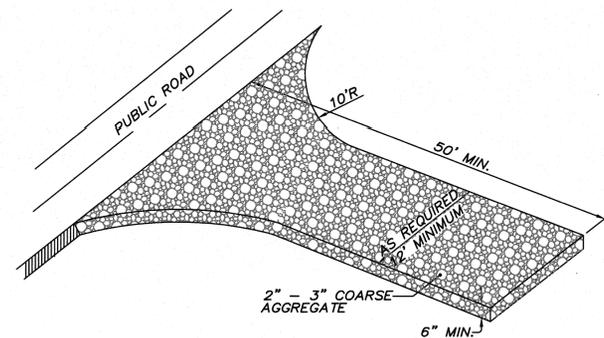
4 TREE PROTECTION FENCE
D-11 SCALE: N.T.S.

CONSTRUCTION SPECIFICATIONS

- CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENING OVER ALL BLOCK OPENING TO HOLD GRAVEL IN PLACE.
- USE WASHED STONE PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE.
- INSTALL 1/4 IN. WIRE MESH HARDWARE CLOTH, AND METAL POSTS THAT ARE 5 FT. TALL. PLACE THE WIRE MESH A MINIMUM OF 3 FT. HIGH, (2' IN GROUND, 3' ABOVE) AND THE STONE 16" HIGH. MAX POST SPACING = 4'.
- BEFORE COMMENCING CLEARING & GRUBBING OPERATIONS, THE CONTRACTOR SHALL FIELD LOCATE ALL EX. INLETS WITHIN THE OPERATIONS AREA AND INSTALL INLET PROTECTION.

(REFERENCE: EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, 6.51)

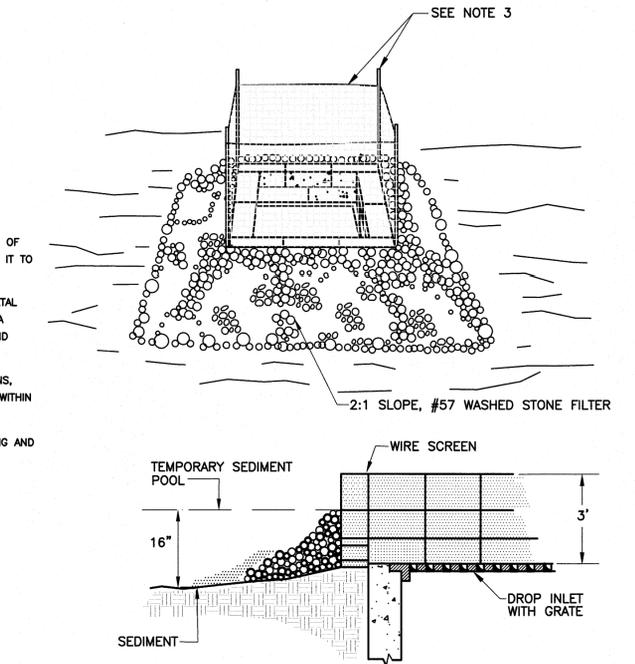
3 HARDWARE CLOTH AND GRAVEL INLET PROTECTION
D-11 SCALE: N.T.S.



GENERAL NOTES:

- INSTALL CONSTRUCTION ENTRANCE OVER EXISTING ASPHALT TAKING CARE TO AVOID DAMAGE AS EXISTING ASPHALT IS TO BE OVERLAYED PRIOR TO PROJECT COMPLETION.
- INSTALL A 1' LAYER OF SOIL OVER EXISTING ASPHALT.
- INSTALL A GEOTEXTILE LINER OVER NEWLY PLACED SOIL.
- PLACE THE GRAVEL OVER THE GEOTEXTILE LINER TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH IT.
- PROVIDE DRAINAGE TO CARRY WATER TO A SUITABLE OUTLET.
- MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING W/2 INCH STONE.

5 CONSTRUCTION ENTRANCE
D-11 SCALE: N.T.S.



Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

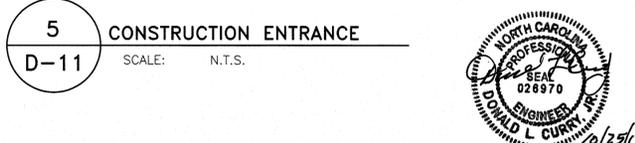
City of Wilmington North Carolina

Public Services • Engineering Division

APPROVED DRAINAGE PLAN

Date: _____ Permit # _____

Signed: _____



NOT FOR CONSTRUCTION

SHOPS AT COLLEGE RD. - WILMINGTON, NC
EROSION CONTROL DETAILS

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