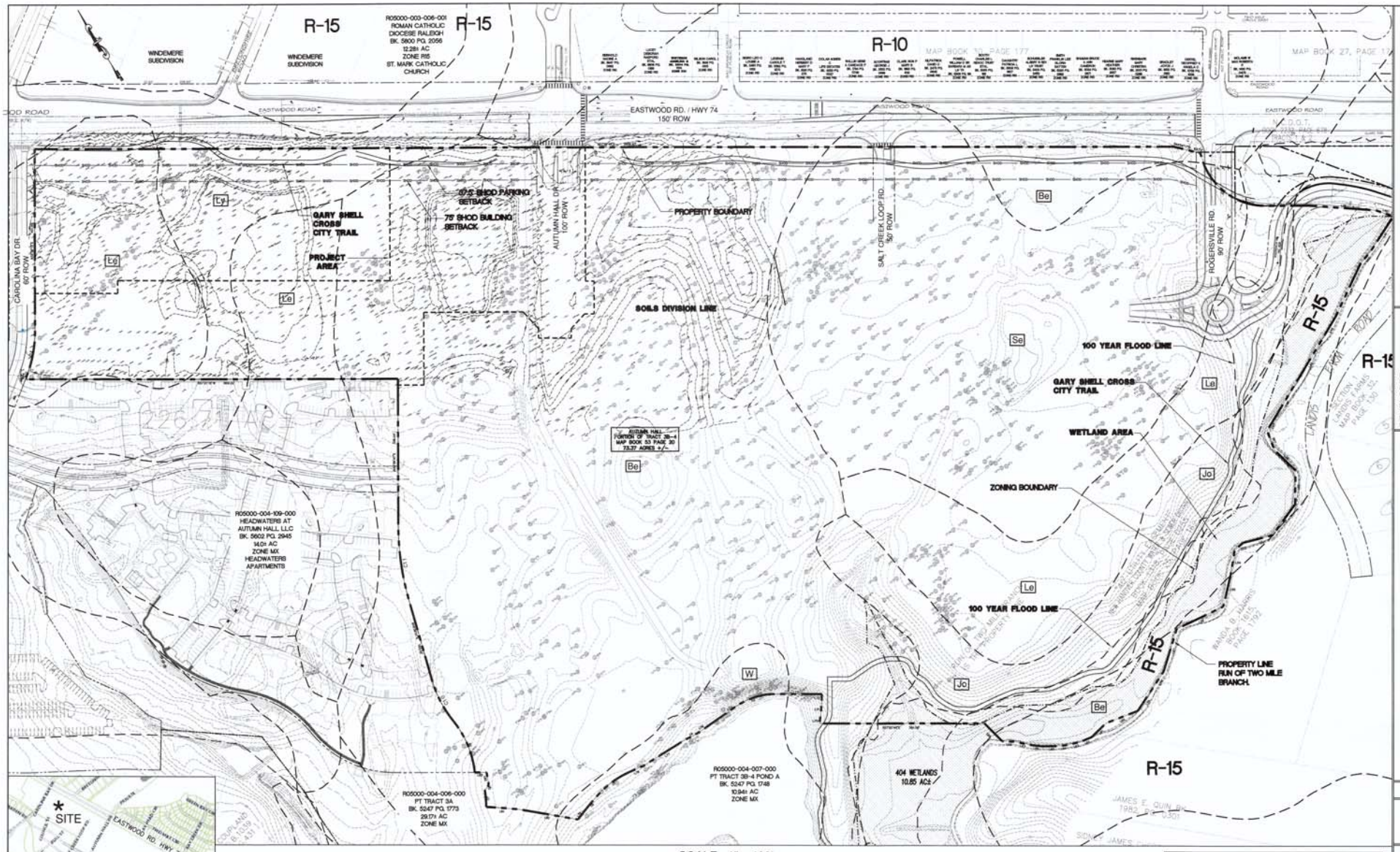


LOCATION MAP NTS

SCALE: 1" = 100'

0 100 200 300

PARCEL ADDRESS:	1202 EASTWOOD ROAD
PARCEL ID#:	R05000-004-147-000
MAP ID#:	314708.97.1975.000
PARCEL OWNER:	TRASK D WEBSTER REVOCABLE TRUST
PARCEL AREA:	73.37 ACRES (3,196,000 SF)
ZONING:	MX/R15/SHOD
SOIL TYPES:	Le, Ly, Be, Se, Jo, W

CAMA LAND USE: WATERSHED RESOURCE PROTECTION
WETLANDS: SEE PLAN
NO CAMA AEC OR SETBACKS WITHIN SITE AREA

HISTORICAL SITE:	NONE
CEMETERY:	NONE
FORESTED AREA:	SEE PLAN FOR TREE SURVEY
ENDANGERED SPECIES/HABITAT:	NONE REPORTED

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NCDENR PWSS WATER PERMIT #: _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

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

SITE INVENTORY PLAN
AUTUMN HALL COMMERCIAL PH I
1202 EASTWOOD ROAD
WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
WEB TRASK COMMERCIAL, LLC
ATTN: JAMIE BROWN
1051 MILITARY CUTOFF RD.
SUITE 200
WILMINGTON, NC 28405
344-1010 (P) 622-4687 (CELL)

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1900 EASTWOOD RD., SUITE #11
WILMINGTON, N.C. 28403
PHONE: (910) 343-9633
1429 ASH-LITTLE RIVER RD., NW
FAYETTEVILLE, N.C. 28304
PHONE: (910) 267-0000

Licence #C-3641

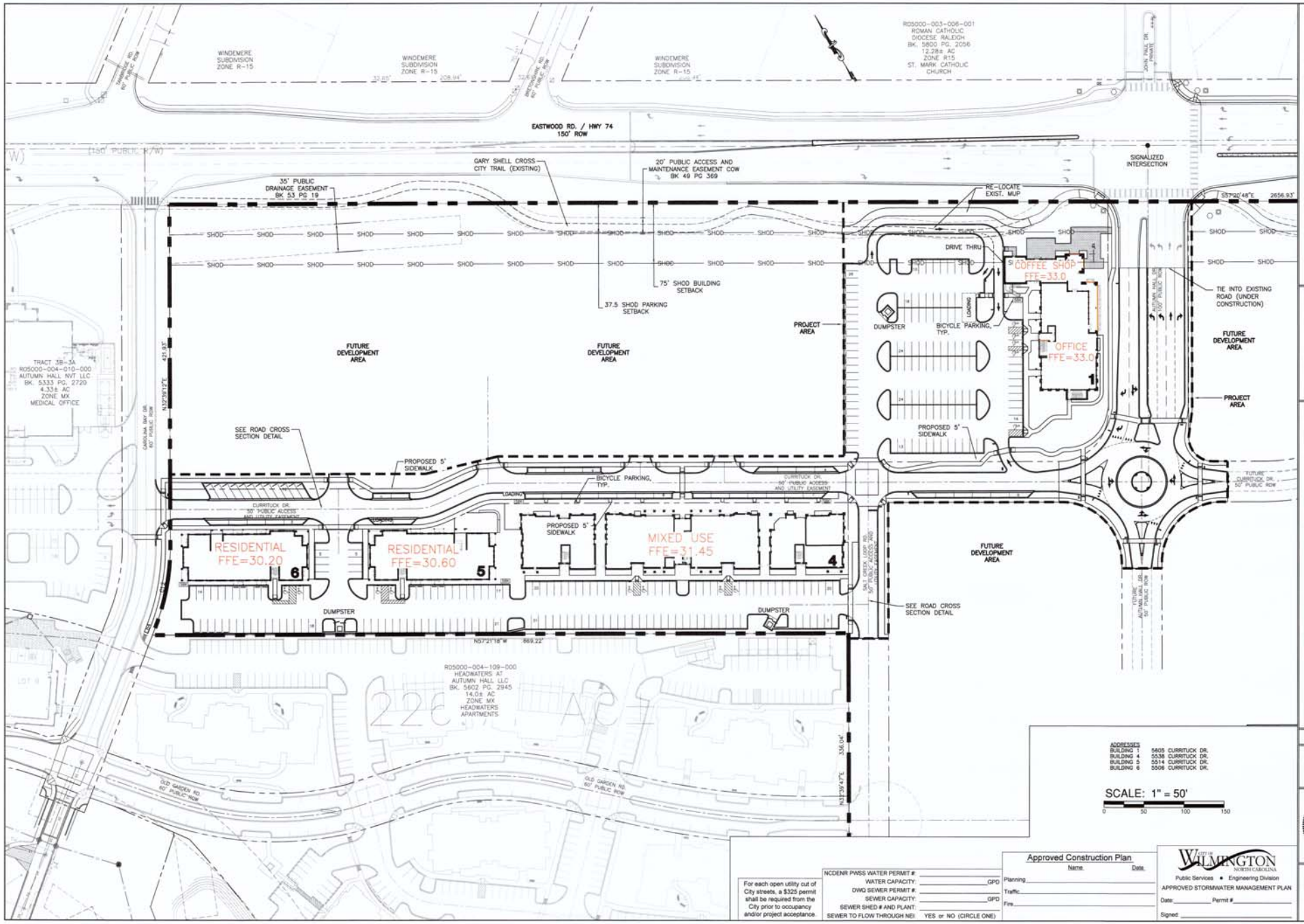
18128

DES. JST
DKD. JPN
DRWN. NKS

DATE: 7/26/19

NORTH CAROLINA PROFESSIONAL SEAL 5951 ENGINEER JOHN S. TUNSTALL

11



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

NCDENR PWSS WATER PERMIT #: _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI YES or NO (CIRCLE ONE)

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

OVERALL SITE PLAN
AUTUMN HALL COMMERCIAL PH I
1202 EASTWOOD ROAD
WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
WEB TRASK C/O MIKE BROWN
CAPE FEAR COMMERCIAL, LLC
1051 MILITARY CUTOFF RD.,
SUITE 200
WILMINGTON, NC 28405
344-1010 (P) 622-4657 (CELL)

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1900 EASTWOOD RD., SUITE #11
WILMINGTON, NC 28403
PHONE (910) 343-9633
1429 ASH-LITTLE RIVER RD. S.W.
ASH, NC 28420
PHONE (910) 287-5900
Licence #C-3641

18128

DES. JST
CKD. JPN
DRWN. NKS
DATE 10/01/19

NORTH CAROLINA PROFESSIONAL SEAL 19855 ENGINEER JOHN S. TUNSTALL

C1.1

PRELIMINARY

LOCATION MAP NTS

SITE DATA TABLE	
USE:	OFFICE/RETAIL/RESTAURANT/RESIDENTIAL
PARCEL AREA:	73.37 ACRES (3,196,000 SF)
PARCEL ID#:	R05000-004-147-000
PARCEL OWNER:	TRASK O WEBSTER REVOCABLE TRUST
MAP ID#:	314708.87,1975.000
ADDRESS:	1202 EASTWOOD ROAD
ZONING:	MX/SHOD
CAMA LAND USE:	WATERSHED RESOURCE PROTECTION
BUILDING SETBACKS MX: (REQUIRED)	20' MIN. FROM MX BOUNDARY 50' MIN. FROM US AND NC HIGHWAYS AND MAJOR THOROUGHFARES INTERIOR: NO MINIMUM, WITHIN 10' OF INTERNAL STREET R/W PREFERED.
BUILDING SETBACKS: (PROPOSED)	75' MIN. WITH 25% SHOD REDUCTION
SHOD SETBACKS:	BUILDING: 100' (75' MIN. WITH 25% SHOD REDUCTION) PARKING: 50' (37.5' MIN. WITH 25% SHOD REDUCTION) INTERIOR SIDE: 20' *ADDITIONAL STREETYARD PLANTINGS ARE REQUIRED WHEN TAKING THE SHOD 25% REDUCTION
PROJECT AREA PHASE I:	356,943 SF (8.19 AC)
BUILDING LOT COVERAGE:	16.18% ±

LANDSCAPING: SEE PLANS BY MIHALY LAND DESIGN
--FOUNDATION PLANTINGS (12%)
--LANDSCAPING REQ'D INTERIOR (AS PER O&I REGULATIONS):
--STREET TREES ARE REQUIRED ALONG ALL STREETS AND SHALL BE A MIN. 3" CALIPER LOCATED AT MIN. 50' O.C.

OPEN SPACE FOR MX DEVELOPMENT: 35% (10% COMMON/25% OPEN)

TRASH SERVICE: DUMPSTER/HANDICART

DISTURBED AREA LIMITS: 8.78 ACRES

WATER/SEWER DEMANDS

COFFEE/OFFICE/RESTAURANT = 6,721 GPD
OFFICE 8,995 SF (100 GPD/1,000 SF)=1,000 GPD
OFFICE 8,020 SF (100 GPD/1,000 SF)=802 GPD
RESTAURANT 5,000 SF WITH 100 SEATS (40 GPD/SEAT)=4,000 GPD
COFFEE 2,237 SF (50 GPD/100 SF)=1,119 GPD
MIXED USE = 16,787 GPD
RESIDENTIAL: 60 UNITS 1&2 BEDROOM (240 GPD/UNIT)=14,400 GPD
RETAIL: 23,873 SF (100 GPD/1,000 SF)=2,387 GPD
RESIDENTIAL = 13,440 GPD
56 UNITS 1&2 BEDROOM (240 GPD/UNIT)=13,440 GPD

TOTAL = 36,948 GPD

Autumn Hall Commercial Phase I	
Total Project Area:	356943 SF
Existing Impervious	
MUP:	3030 SF
Sidewalk:	950 SF
Asphalt C&G:	6700 SF
Total:	10680 SF
Existing Impervious to Remain	
MUP:	660 SF
Total:	660 SF
NEW Impervious Area	
Buildings:	54583 SF
Sidewalk, C&G:	70651 SF
Asphalt:	144872 SF
TOTAL NEW IMP	270106 SF
TOTAL IMPERVIOUS (NEW AND EXISTING TO REMAIN)	270766
	75.9 % IMPERVIOUS
New IMP Off-Site:	5325 SF

BUILDING DATA PHASE I

#	BUILDING	USE	STORIES	UNITS	GROUND FLOOR (SF)	2ND FLOOR (SF)	3RD FLOOR (SF)	4TH FLOOR (SF)	GBA (SF)	FOOTPRINT (SF)	# OF BUILDINGS	HEIGHT	CONSTRUCTION TYPE
1	COFFEE SHOP/OFFICE *	RESTAURANT/OFFICE	2		11,020	9,995			21,015	13,070	1	21'-6"/44'-8"/68'-0"	V-A
4	MIXED USE	RETAIL/RESIDENTIAL	4	60	23,873**	24,714***	24,714***	24,714***	98,015	27,500	1	14'-8"/63'-0"	V-A
5,6	RESIDENTIAL	RESIDENTIAL	4	56	7,940	7,493	7,493	7,493	30,419	8,600	2	64'-8"	V-A
	TOTAL			116	–	–	–	–	179,868	57,770	4		

* RESTAURANT/BAR SPACE ALLOCATION
** RETAIL
***RESIDENTIAL

OFFICE:	18,778 SF
RETAIL:	23,873 SF
RESTAURANT:	2,237 SF
RESIDENTIAL:	134,980 SF
TOTAL:	179,868 SF

PARKING DATA PHASE I

#	BUILDING	USE	SF RESTAURANT	SF OFFICE	SF RETAIL	1 BR UNITS	2 BR UNITS	MAX. PARKING REQD.	MIN. PARKING REQD.	PARKING PROVD.	HC ACESSIBLE PARKING	TOTAL PARKING
1	COFFEE SHOP/OFFICE *	RESTAURANT/OFFICE	2,237±(1,500)	18,778				23/94 (117)	19/63 (82)	98	5	
4	MIXED USE	RETAIL/RESIDENTIAL			23,873	30	30	119/75/75 (269)	60/45/60 (165)	34 RET./111	10	
5,6	RESIDENTIAL	RESIDENTIAL				24	32	60/80 (140)	30/64 (94)	94	4	
	BICYCLE PARKING									(45)		
	TOTAL					54	62	526	341	337	19	355

PARKING REQUIREMENTS

PARKING REQUIREMENT PER USE, NO MINIMUM REQUIREMENT IN MX ZONE

OFFICE: 1 PER 200 SF GFA MAX.
1 PER 300 SF GFA MIN.

RETAIL: 1 PER 200 SF GFA MAX.
1 PER 400 SF GFA MIN.

RESTAURANT: 1 PER 2.5 SEATS OR 1 PER 65 SQ FT GFA EXCLUSIVE OF KITCHEN AND RESTROOM FACILITIES MAX.

1 PER 4 SEATS OR 1 PER 80 SQ FT GFA EXCLUSIVE OF KITCHEN RESTROOM FACILITIES MIN.

RESIDENTIAL: 2.5 SPACES PER UNIT MAX.
1.5 SPACE PER UNIT MIN. (1 BR)
2.0 SPACES PER UNIT MIN. (2 BR)
2.25 SPACES PER UNIT MIN. (3+ BR)

BICYCLE PARKING: 5 BICYCLE PARKING FOR THE FIRST 25 CAR PARKING SPACES. EACH ADDITIONAL ONE HUNDRED (100) AUTOMOBILE PARKING SPACES ABOVE THE TWENTY-FIVE (25) MINIMUM SHALL REQUIRE PROVISIONS FOR PARKING AN ADDITIONAL FIVE (5) BICYCLES UP TO A BICYCLE PARKING SYSTEM THAT CAN ACCOMMODATE A MAXIMUM OF TWENTY (20) BICYCLES.

LEGEND

	PROPERTY LINE
	DISTURBED AREA LIMITS
25	PROPOSED CONTOUR
—x—x—TSF—	TEMPORARY SILT FENCE
—SS—SS—	PROPOSED STORMDRAIN PIPE
—SW—SW—	PROPOSED WATERLINE
—SS—SS—	PROPOSED SANITARY SEWER (GRAVITY)
x32.25	PROPOSED FINISH GRADE SPOT ELEVATION
	FLARED END SECTION WITH RIP-RAP ENERGY DISSIPATOR
DI	DROP INLET WITH INLET PROTECTION (DI)
CI	CURB INLET WITH INLET PROTECTION (CI)
JB	JUNCTION BOX WITH INLET PROTECTION (JB)
	PROPOSED FIRE HYDRANT
21	EXISTING CONTOUR
15"P	EXISTING TREE TO BE SAVED
X 15"P	EXISTING TREE TO BE REMOVED
—TP—TP—TP—	TREE PROTECTION FENCING
	PROPOSED ASPHALT
	PROPOSED CONCRETE

PRELIMINARY

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

NCDENR PWSS WATER PERMIT #: _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

Approved Construction Plan
Name Date
Planning _____
Traffic _____
Fire _____

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

SITE DATA
AUTUMN HALL COMMERCIAL PH I
1202 EASTWOOD ROAD
WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
WEB TRASK C/O MIKE BROWN
CAPE FEAR COMMERCIAL, LLC
1051 MILITARY CUTOFF RD.,
SUITE 200
WILMINGTON, NC 28405
344-1010 (P) 622-4667 (CELL)

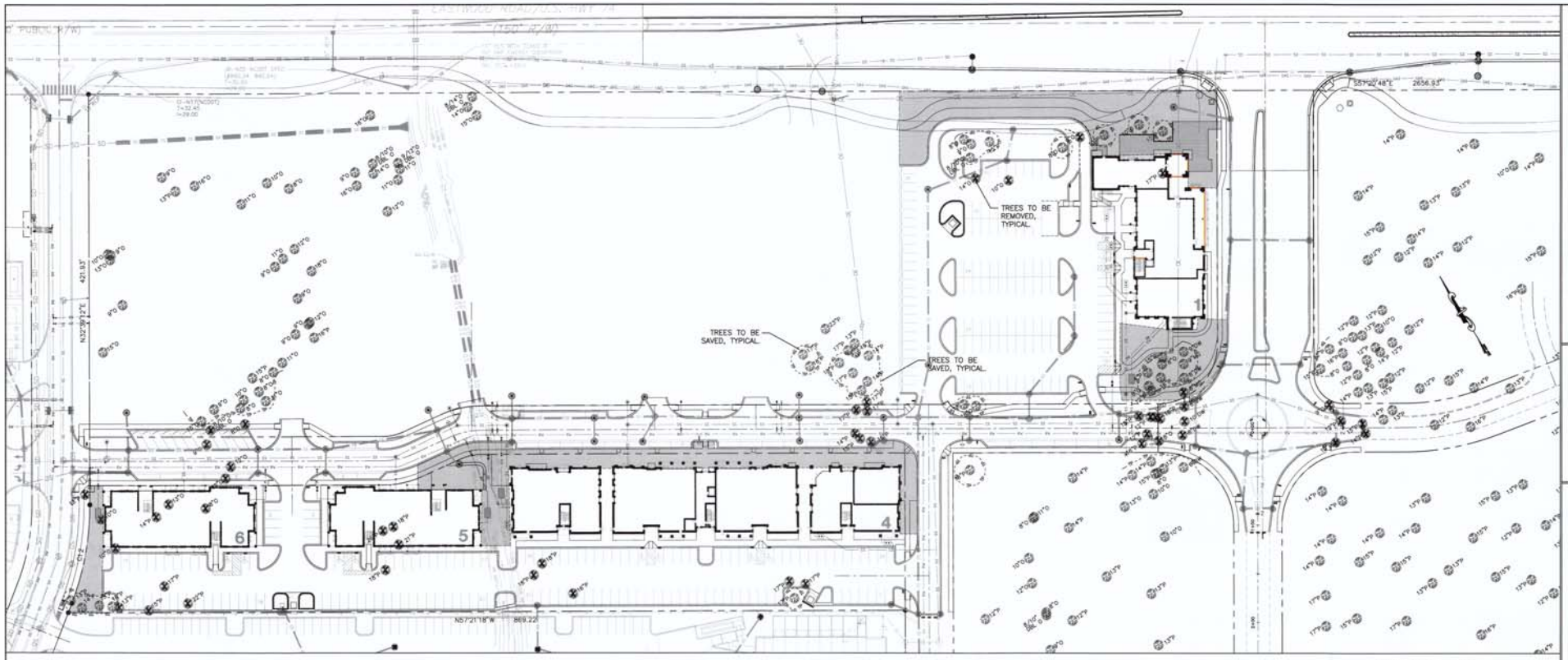
NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1900 EASTWOOD RD., SUITE #11
WILMINGTON, NC 28403
PHONE: (910) 343-9653
1429 ASH-LITTLE RIVER RD. NW
ASH, NC 28420
PHONE: (910) 287-5900
Licence #C-3641

18128

DES. JST
CKD. JPN
DRWN. NKS
DATE 10/01/19

NORTH CAROLINA PROFESSIONAL SEAL 19855 ENGINEER JOHN S. TUNSTALL

C1.2



SCALE: 1" = 50'

0 50 100 150

TREE REMOVAL TABLE - REGULATED

REGULATED PINES	REGULATED OAKS	REGULATED DOGWOOD
12" (3)	8" (4)	6" (1)
13" (2)	9" (3)	
14" (3)	10" (6)	
15" (4)	12" (2)	
16" (4)	13" (1)	
17" (7)	14" (1)	
18" (4)		
21" (1)		
22" (1)		

TREE REMOVAL TABLE - SIGNIFICANT

SIGNIFICANT PINES	SIGNIFICANT DOGWOODS	SIGNIFICANT MAGNOLIA
26" (1)	8" (1)	8" (1)
	10" (1)	

LEGEND

15"P	EXISTING TREE TO BE SAVED
15"P	EXISTING TREE TO BE REMOVED
	PRELIMINARY OPEN SPACE AREA AVAILABLE FOR DESIGNATION AS ACTIVE OR PASSIVE RECREATION AREAS AND OPEN SPACE. (1.00 AC±)

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NCDENR PWSS WATER PERMIT #: _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

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

TREE REMOVAL PLAN AND OPEN SPACE
AUTUMN HALL COMMERCIAL PH I
1202 EASTWOOD ROAD
WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
WEB TRASK C/O MIKE BROWN
CAPE FEAR COMMERCIAL, LLC
1051 MILITARY CUTOFF RD.,
SUITE 200
WILMINGTON, NC 28405
344-1010 (P) 622-4657 (CELL)

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1900 EASTWOOD RD., SUITE #11
WILMINGTON, NC 28403
PHONE: (910) 343-9653
1429 ASH-LITTLE RIVER RD., NW
ASH, NC 28420
PHONE: (910) 245-5000
Licence #C-3641

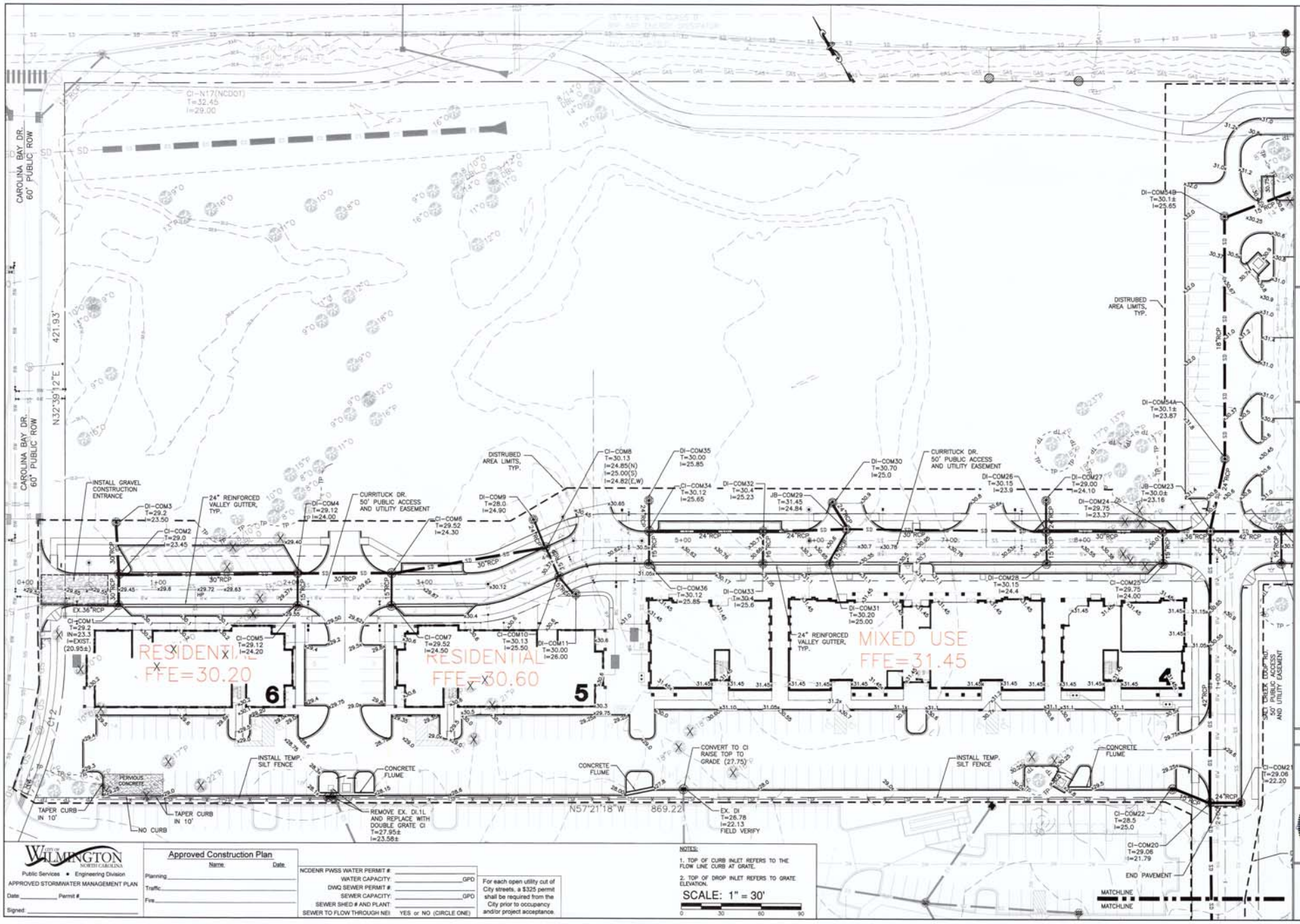
18128

DES. JST
CKD. JPN
DRWN. NKS
DATE 10/01/19

NORTH CAROLINA PROFESSIONAL SEAL 19653 ENGINEER JOHN S. TUNSTALL

C1.3

PRELIMINARY



NOTES:

1. TOP OF CURB INLET REFERS TO THE FLOW LINE CURB AT GRATE.
2. TOP OF DROP INLET REFERS TO GRATE ELEVATION.

SCALE: 1" = 30'

0 30 60 90

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NCDENR PWSS WATER PERMIT #: _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI YES or NO (CIRCLE ONE)

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

GRADING, DRAINAGE AND EROSION CONTROL PLAN
AUTUMN HALL COMMERCIAL PH I
1202 EASTWOOD ROAD
WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
WEB TRASK C/O MIKE BROWN
CAPE FEAR COMMERCIAL, LLC
1051 MILITARY CUTOFF RD.,
SUITE 200
WILMINGTON, NC 28405
344-1010 (P) 822-4657 (CELL)

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1900 EASTWOOD RD., SUITE #111
WILMINGTON, NC 28403
PHONE: (910) 343-9033
1425 ASH-LITTLE RIVER RD. NW
ASH, NC 28420
PHONE: (910) 281-3900
Licence #C-3641

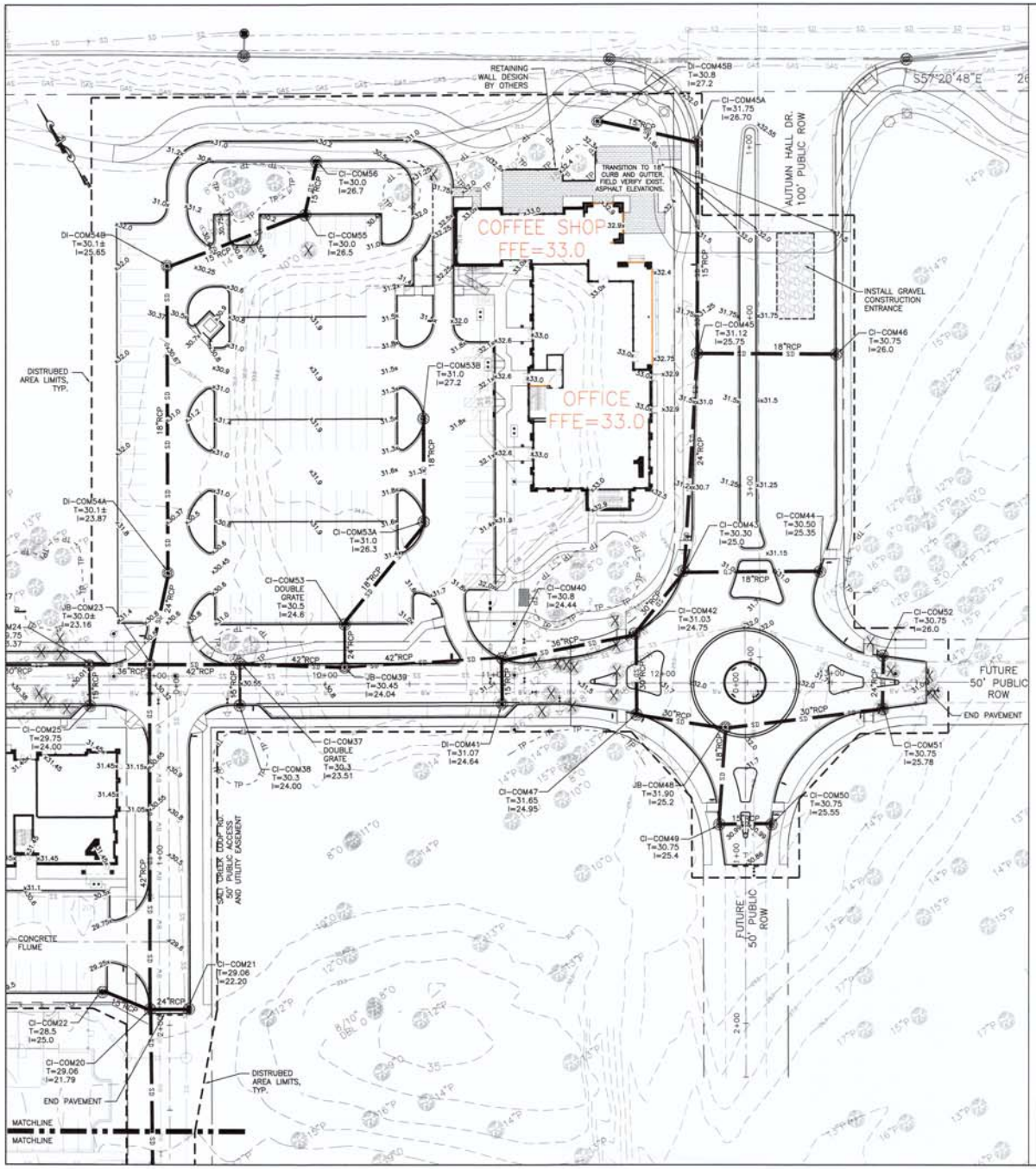
18128

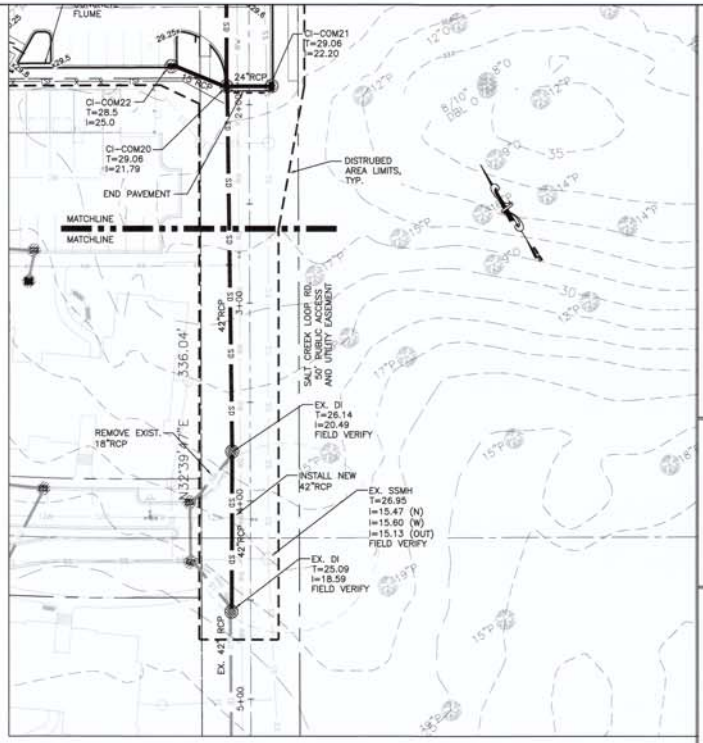
DES. JST
CKD. JPN
DRWN. NKS
DATE 10/01/19

NORTH CAROLINA PROFESSIONAL SEAL 19001 ENGINEER JOHN P. NORRIS
JOHN P. NORRIS, TUNSTALL

C2.1

PRELIMINARY





NOTES:

1. TOP OF CURB INLET REFERS TO THE FLOW LINE CURB AT GRATE.
2. TOP OF DROP INLET REFERS TO GRATE ELEVATION.

SCALE: 1" = 30'

0 30 60 90

PRELIMINARY

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

NCDENR PWSS WATER PERMIT #	
WATER CAPACITY:	GPD
DWQ SEWER PERMIT #	
SEWER CAPACITY:	GPD
SEWER SHED # AND PLANT:	
SEWER TO FLOW THROUGH NEI:	YES or NO (CIRCLE ONE)

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

GRADING, DRAINAGE AND EROSION CONTROL PLAN
AUTUMN HALL COMMERCIAL PH I
1202 EASTWOOD ROAD
WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
WEB TRASK C/O MIKE BROWN
CAPE FEAR COMMERCIAL, LLC
1051 MILITARY CUTOFF RD.,
SUITE 111
WILMINGTON, NC 28405
344-1010 (P) 622-4657 (CELL)

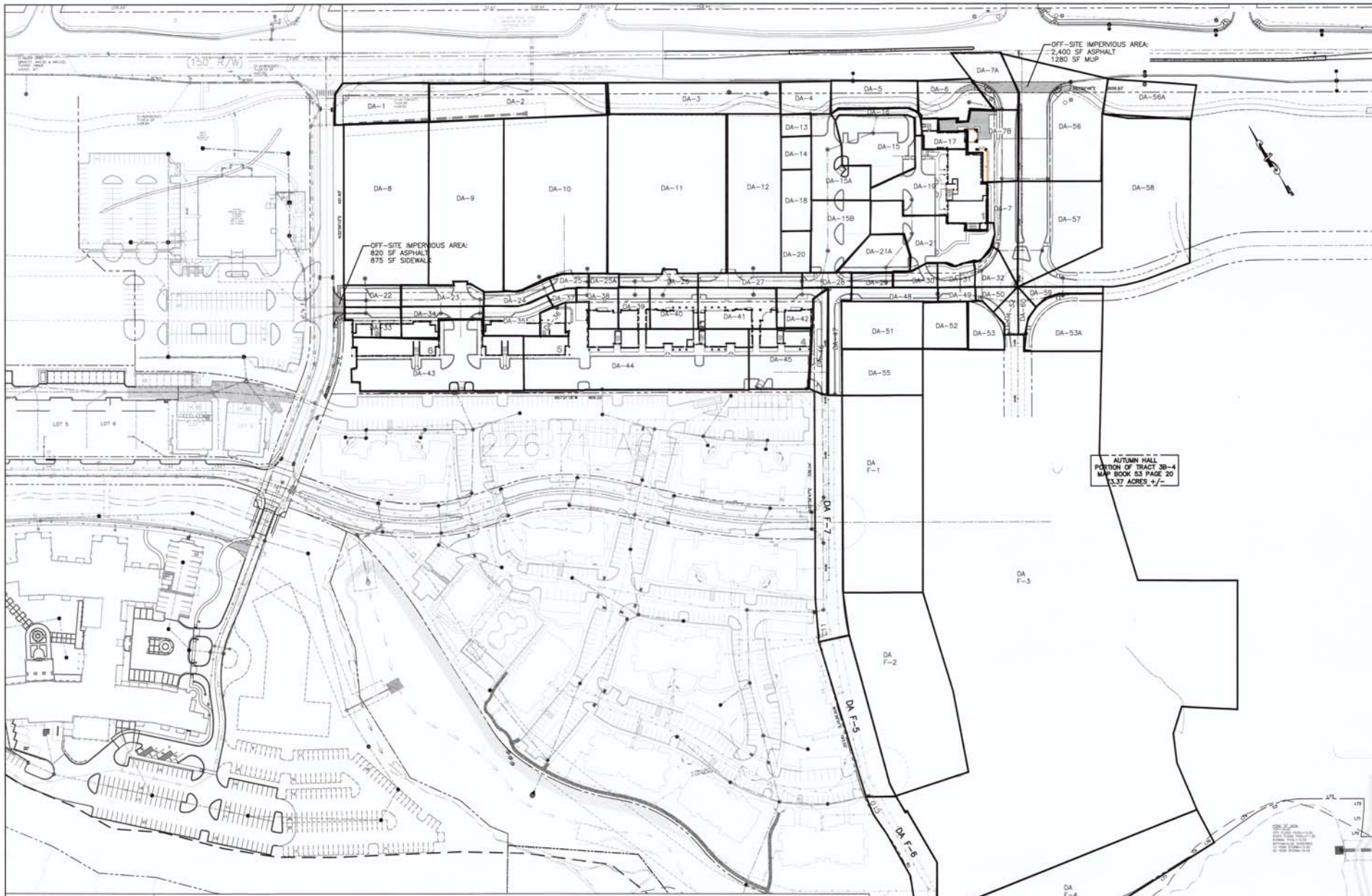
NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1000 EASTWOOD RD., SUITE #11
WILMINGTON, NC 28403
PHONE (910) 343-9633
1429 ASH-LITTLE RIVER RD. NW
ASH, NC 28420
PHONE (910) 28-5000
Licence #C-3641

18128

DES. JST
CKD. JPN
DRWN. NKS
DATE 10/01/19

NORTH CAROLINA PROFESSIONAL SEAL 19851 ENGINEER JOHN S. TUNSTALL

C2.2



SCALE: NOT TO SCALE

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NCDENR PWSS WATER PERMIT #: _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NE: YES or NO (CIRCLE ONE)

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

DRAINAGE AREA PLAN
AUTUMN HALL COMMERCIAL PH I
1202 EASTWOOD ROAD
WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
WEB TRASK C/O MIKE BROWN
CAPE FEAR COMMERCIAL, LLC
1508 MILITARY CUTOFF RD.,
SUITE 200
WILMINGTON, NC 28405
344-1010 (P) 622-4657 (CELL)

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1900 EASTWOOD RD., SUITE #11
WILMINGTON, N.C. 28403
PH/FAX: (910) 343-0651
1429 ASH-LITTLE RIVER RD., N.W.
FAYETTEVILLE, N.C. 28303
PH/FAX: (910) 867-5000

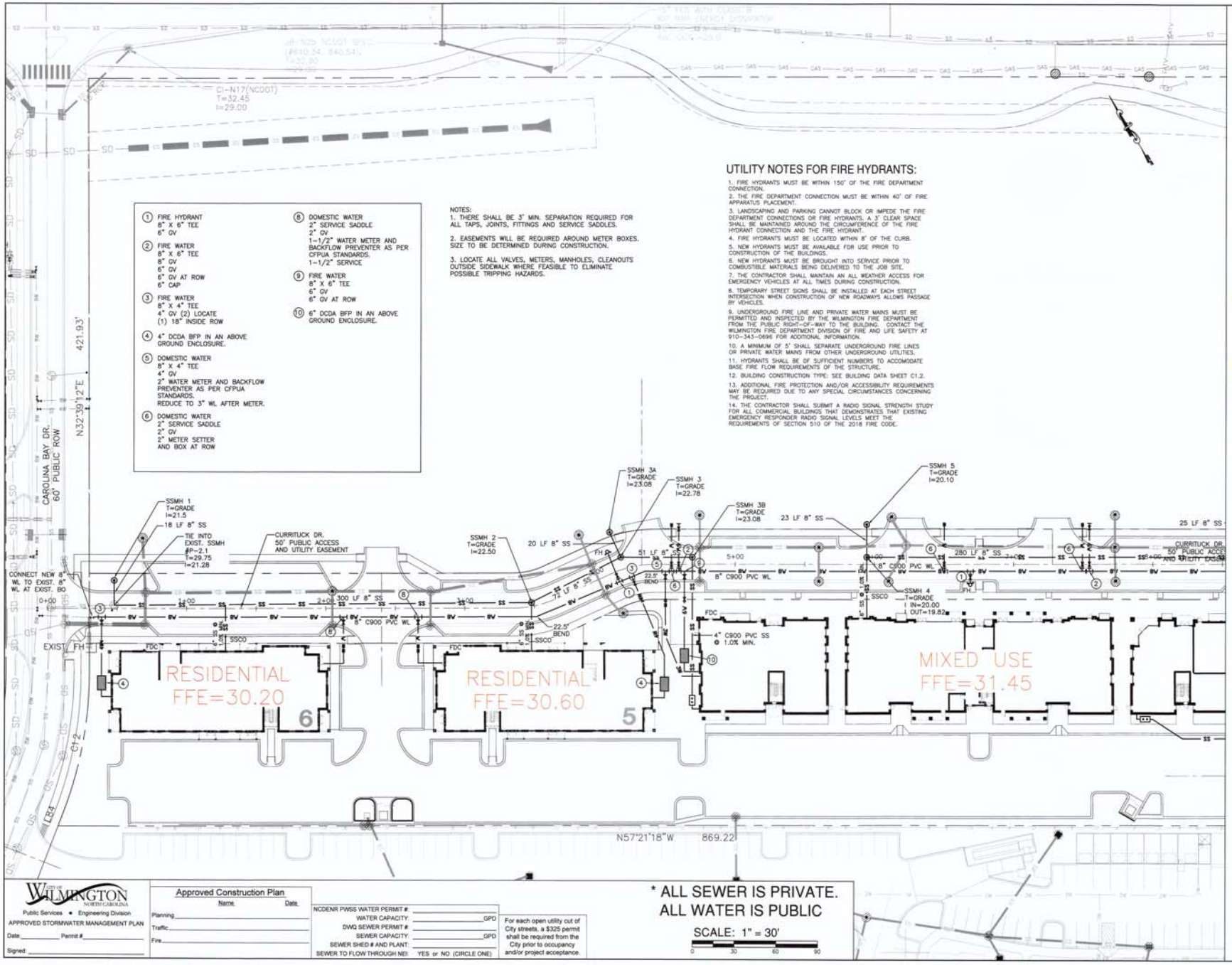
License #C-3641

18128

DES. JST
CKD. JPN
DRWN. NKS
DATE 8/28/19

NORTH CAROLINA PROFESSIONAL SEAL 19601 ENGINEER JOHN S. TUNSTALL

C2.3



1 FIRE HYDRANT
8" X 6" TEE
6" GV

2 FIRE WATER
8" X 6" TEE
8" GV
6" GV
6" GV AT ROW
6" CAP

3 FIRE WATER
8" X 4" TEE
4" GV (2) LOCATE
(1) 18" INSIDE ROW

4 4" DCDA BFP IN AN ABOVE GROUND ENCLOSURE.

5 DOMESTIC WATER
8" X 4" TEE
4" GV
2" WATER METER AND BACKFLOW PREVENTER AS PER CFPUA STANDARDS.
REDUCE TO 3" WL AFTER METER.

6 DOMESTIC WATER
2" SERVICE SADDLE
2" GV
2" METER SETTER
AND BOX AT ROW

8 DOMESTIC WATER
2" SERVICE SADDLE
2" GV
1-1/2" WATER METER AND BACKFLOW PREVENTER AS PER CFPUA STANDARDS.
1-1/2" SERVICE

9 FIRE WATER
8" X 6" TEE
6" GV
6" GV AT ROW

10 6" DCDA BFP IN AN ABOVE GROUND ENCLOSURE.

NOTES:
1. THERE SHALL BE 3' MIN. SEPARATION REQUIRED FOR ALL TAPS, JOINTS, FITTINGS AND SERVICE SADDLES.

2. EASEMENTS WILL BE REQUIRED AROUND METER BOXES. SIZE TO BE DETERMINED DURING CONSTRUCTION.

3. LOCATE ALL VALVES, METERS, MANHOLES, CLEANOUTS OUTSIDE SIDEWALK WHERE FEASIBLE TO ELIMINATE POSSIBLE TRIPPING HAZARDS.

UTILITY NOTES FOR FIRE HYDRANTS:

1. FIRE HYDRANTS MUST BE WITHIN 150' OF THE FIRE DEPARTMENT CONNECTION.
2. THE FIRE DEPARTMENT CONNECTION MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.
3. LANDSCAPING AND PARKING CANNOT BLOCK OR IMPEDE THE FIRE DEPARTMENT CONNECTIONS OR FIRE HYDRANTS. A 3' CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE FIRE HYDRANT CONNECTION AND THE FIRE HYDRANT.
4. FIRE HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
5. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS.
6. NEW HYDRANTS MUST BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIALS BEING DELIVERED TO THE JOB SITE.
7. THE CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
8. TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES.
9. UNDERGROUND FIRE LINE AND PRIVATE WATER MAINS MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0696 FOR ADDITIONAL INFORMATION.
10. A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
11. HYDRANTS SHALL BE OF SUFFICIENT NUMBERS TO ACCOMODATE BASE FIRE FLOW REQUIREMENTS OF THE STRUCTURE.
12. BUILDING CONSTRUCTION TYPE: SEE BUILDING DATA SHEET C1.2.
13. ADDITIONAL FIRE PROTECTION AND/OR ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.
14. THE CONTRACTOR SHALL SUBMIT A RADIO SIGNAL STRENGTH STUDY FOR ALL COMMERCIAL BUILDINGS THAT DEMONSTRATES THAT EXISTING EMERGENCY RESPONDER RADIO SIGNAL LEVELS MEET THE REQUIREMENTS OF SECTION 510 OF THE 2018 FIRE CODE.

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

Approved Construction Plan		
	Name	Date
Planning		
Traffic		
Fire		

NCDENR PWSS WATER PERMIT #: _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

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

* ALL SEWER IS PRIVATE.
ALL WATER IS PUBLIC

SCALE: 1" = 30'
0 30 60 90

UTILITY PLAN
AUTUMN HALL COMMERCIAL PH I
1202 EASTWOOD ROAD
WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
WEB TRASK C/O MIKE BROWN
CAPE FEAR COMMERCIAL, LLC
1051 MILITARY CUTOFF RD.
SUITE 201
WILMINGTON, NC 28405
344-1010 (P) 622-4657 (CELL)

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1900 EASTWOOD RD., SUITE #11
WILMINGTON, NC 28403
PHONE: (910) 343-0833
1429 ASH LITTLE RIVER RD. NW
ASH, NC 28420
PHONE: (910) 287-5900
Licence #C-3641

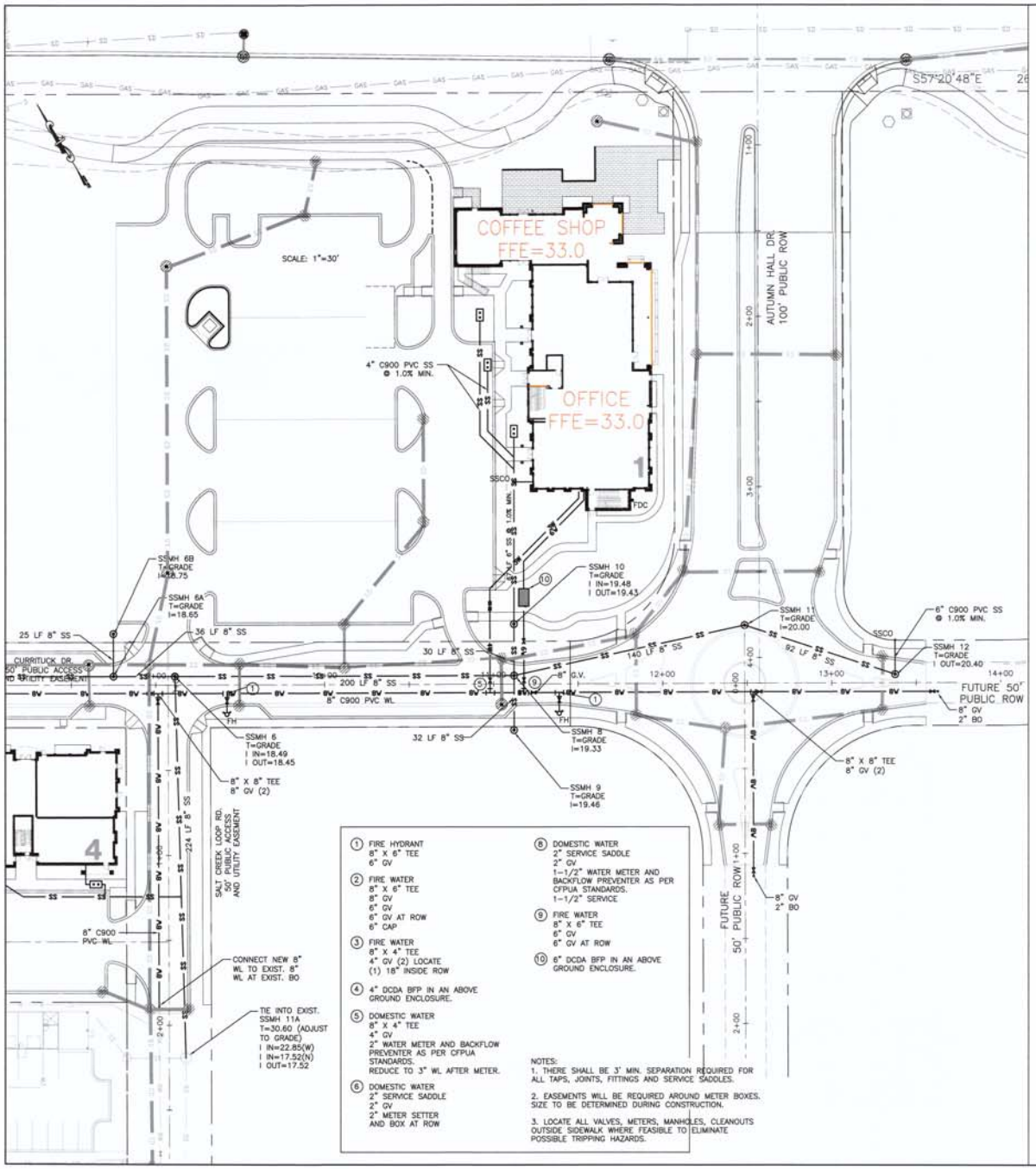
18128

DES. JST
DKD. JPN
DRWN. NKS
DATE 10/01/19

NORTH CAROLINA PROFESSIONAL SEAL 9601 ENGINEER JOHN S. TUNSTALL

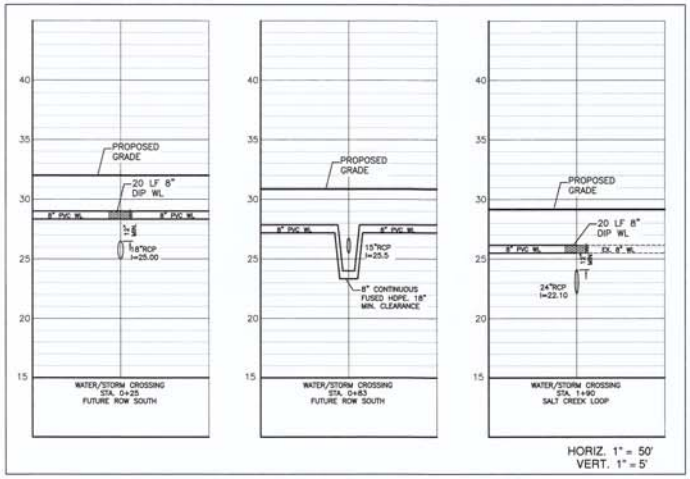
C3.1

PRELIMINARY



1. FIRE HYDRANT
   8" X 6" TEE
   6" GV
2. FIRE WATER
   8" X 6" TEE
   8" GV
   6" GV
   6" GV AT ROW
   6" CAP
3. FIRE WATER
   8" X 4" TEE
   4" GV (2) LOCATE
   (1) 18" INSIDE ROW
4. 4" DCDA BFP IN AN ABOVE GROUND ENCLOSURE.
5. DOMESTIC WATER
   8" X 4" TEE
   4" GV
   2" WATER METER AND BACKFLOW PREVENTER AS PER CFPUA STANDARDS.
   REDUCE TO 3" WL AFTER METER.
6. DOMESTIC WATER
   2" SERVICE SADDLE
   2" GV
   2" METER SETTER
   AND BOX AT ROW
8. DOMESTIC WATER
   2" SERVICE SADDLE
   2" GV
   1-1/2" WATER METER AND BACKFLOW PREVENTER AS PER CFPUA STANDARDS.
   1-1/2" SERVICE
9. FIRE WATER
   8" X 6" TEE
   6" GV
   6" GV AT ROW
10. 6" DCDA BFP IN AN ABOVE GROUND ENCLOSURE.

NOTES:
1. THERE SHALL BE 3' MIN. SEPARATION REQUIRED FOR ALL TAPS, JOINTS, FITTINGS AND SERVICE SADDLES.
2. EASEMENTS WILL BE REQUIRED AROUND METER BOXES. SIZE TO BE DETERMINED DURING CONSTRUCTION.
3. LOCATE ALL VALVES, METERS, MANHOLES, CLEANOUTS OUTSIDE SIDEWALK WHERE FEASIBLE TO ELIMINATE POSSIBLE TRIPPING HAZARDS.



UTILITY PLAN
AUTUMN HALL COMMERCIAL PH I
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WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
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CAPE FEAR COMMERCIAL, LLC
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SUITE 200
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344-1010 (P) 622-4657 (CELL)

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PHONE (910) 343-9653
1429 ASH-LITTLE RIVER RD. NW
ASH, NC 28420
PHONE (910) 287-5900
Licence #C-3643

18128

DES. JST
CKD. JPN
DRWN. NKS
DATE 10/01/19

NORTH CAROLINA PROFESSIONAL SEAL 19863 ENGINEER JOHN P. NORRIS & TUNSTALL

C3.2

PRELIMINARY

SCALE: 1" = 30'
0 30 60 90

* ALL SEWER IS PRIVATE.
ALL WATER IS PUBLIC

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

NCDENR PWSS WATER PERMIT #: _____
WATER CAPACITY: _____ GPD
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SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

Approved Construction Plan

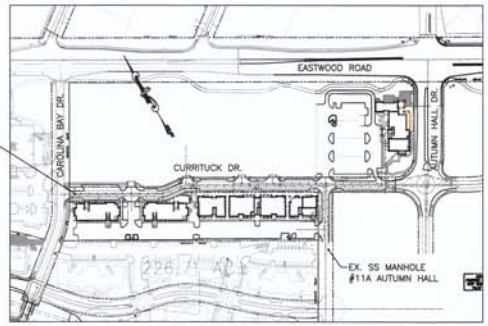
	Name	Date
Planning		
Traffic		
Fire		

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

AUTUMN HALL COMMERCIAL PH 1

WATER AND SANITARY SEWER
WILMINGTON, NC
NEW HANOVER COUNTY
07/26/19

LOCATION MAP NTS



SCALE: 1" = 200'

0 200 400 800

INDEX OF SHEETS

COVER SHEET
PR1 WATER AND SEWER PLAN AND PROFILE
PR2 WATER AND SEWER PLAN AND PROFILE
SS1: UTILITY DETAILS – SEWER
SS2: UTILITY DETAILS – SEWER
W1: UTILITY DETAILS – WATER
W2: UTILITY DETAILS – WATER
WS1: UTILITY DETAILS TYPICAL WATER AND SEWER
WS2: UTILITY DETAILS TYPICAL WATER AND SEWER

WATER/SEWER DEMANDS

COFFEE/OFFICE/RESTAURANT = 6,721 GPD
OFFICE 9,995 SF (100 GPD/1,000 SF)=1,000 GPD
OFFICE 6,020 SF (100 GPD/1,000 SF)=602 GPD
RESTAURANT 5,000 SF WITH 100 SEATS (40 GPD/SEAT)=4,000 GPD
COFFEE 2,237 SF (50 GPD/100 SF)=1,119 GPD
MIXED USE = 16,787 GPD
RESIDENTIAL: 60 UNITS 1&2 BEDROOM (240 GPD/UNIT)=14,400 GPD
RETAIL: 23,873 SF (100 GPD/1,000 SF)=2,387 GPD
RESIDENTIAL = 13,440 GPD
56 UNITS 1&2 BEDROOM (240 GPD/UNIT)=13,440 GPD

TOTAL = 36,948 GPD

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.

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SUITE 200
WILMINGTON, NC 28405
344-1010 (P) 622-4657 (CELL)

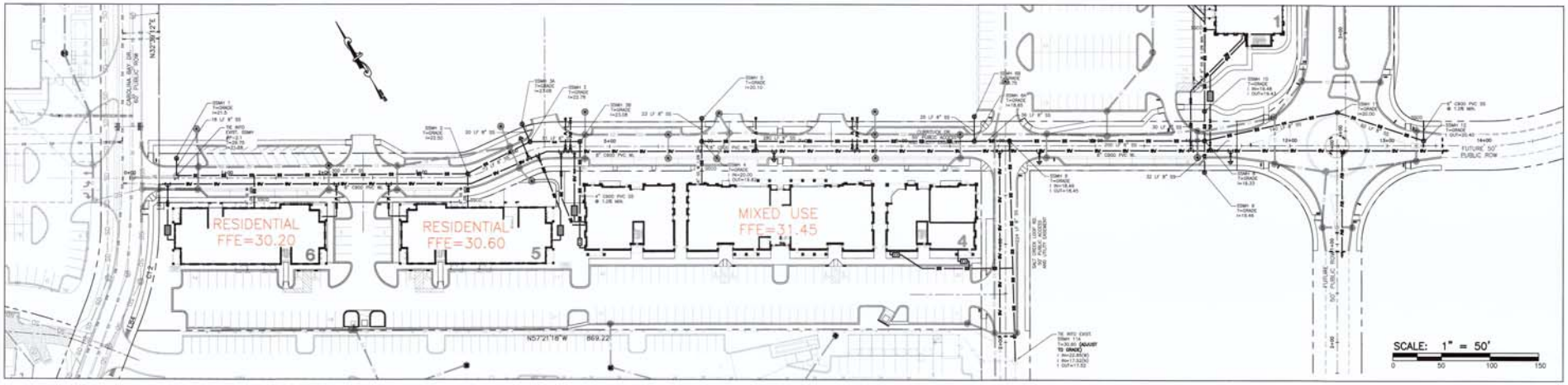
Cape Fear Public Utility Authority

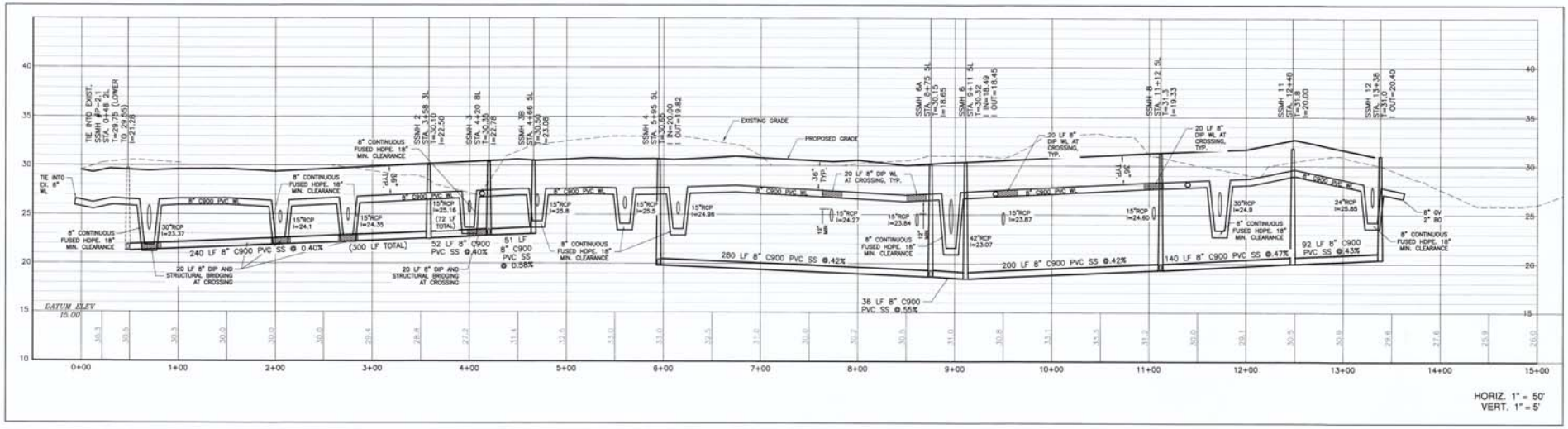
QUANTITIES

	SIZE	LENGTH
SEWER (PRIVATE)	8"	1,547 LF
WATER (PUBLIC)	8"	1,660 LF
	6" FH	35 LF

ALL SANITARY SEWER LINE IS PRIVATE
ALL WATER LINE IS PUBLIC
NOT PART OF A PHASED PROJECT

18128





CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
2. WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE.
3. ALL SEWER SERVICES CONNECTING INTO DUCTILE IRON MAINS SHALL ALSO BE CONSTRUCTED OF DIP.
4. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
5. NO FLEXIBLE COUPLINGS SHALL BE USED.
6. ALL MANHOLE BOLTED FASTENERS SHALL BE TYPE 316.
7. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS.
8. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.
9. UNUSED SERVICES SHALL BE ABANDONED. ABANDONED WATER SERVICES SHALL BE DISCONNECTED FROM MAIN.
10. A MINIMUM OF 10' OF MAIN LINE SHALL BE REPLACED FOR NEW CONNECTIONS TO EXISTING CLAY GRAVITY SEWER MAINS.

* ALL SEWER IS PRIVATE.
ALL WATER IS PUBLIC

REV. NO.	DESCRIPTION	DATE
	REVISIONS	

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19851 JOHN S. TUNSTALL

Cape Fear Public Utility Authority

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.

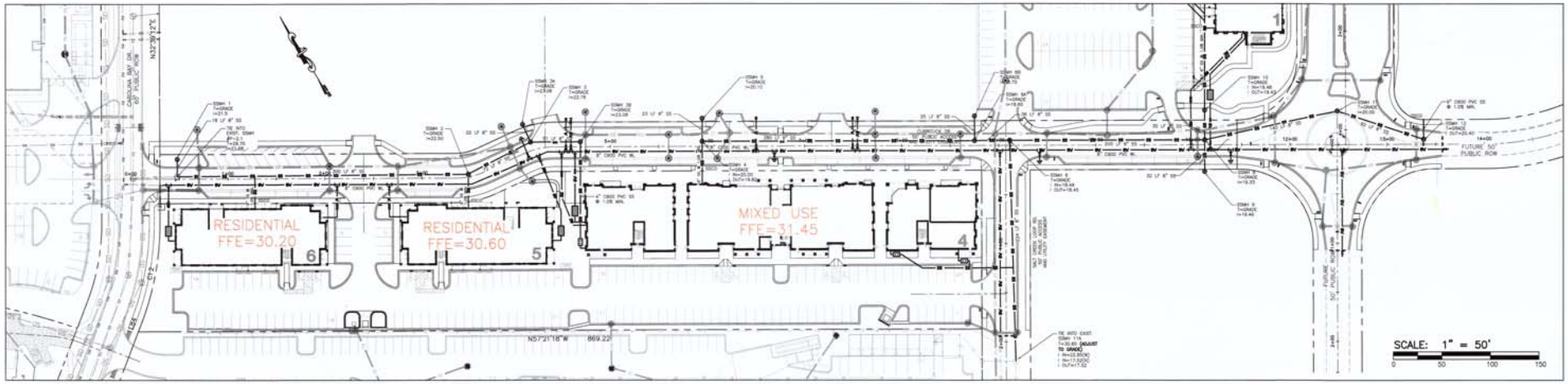
AUTUMN HALL COMMERCIAL PH 1
WATERLINE LAYOUT AND SANITARY SEWER
PLAN & PROFILE

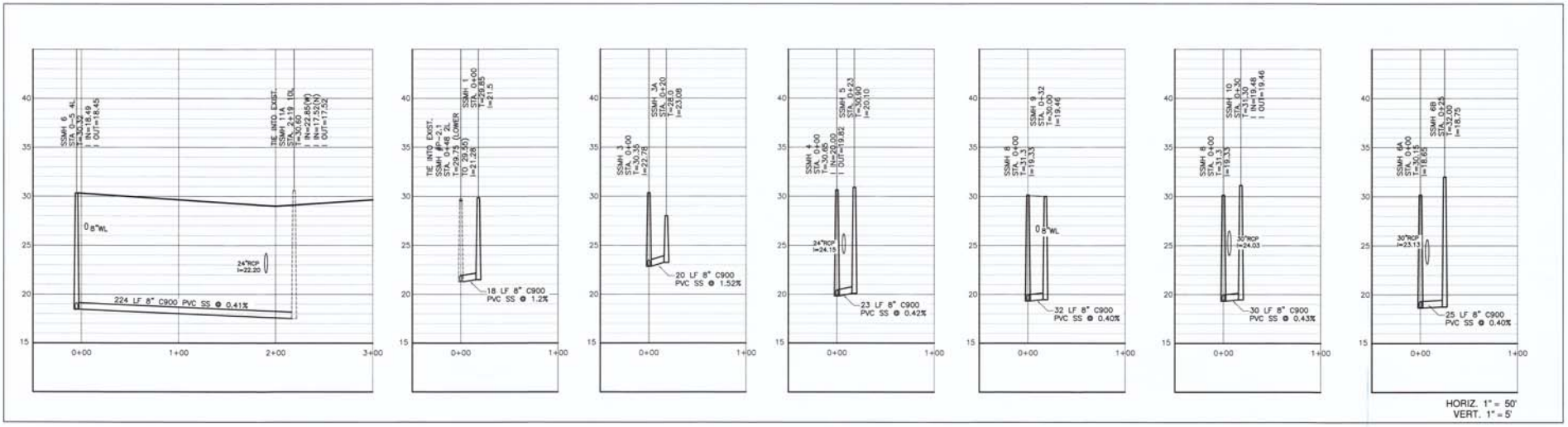
CURRITUCK DR.

DATE: 10/01/19
SCALE: 1" = 50' / 1" = 5'
DRAWN: NKS
CHECKED: JST
PROJECT NO: 18028

SHEET NO: PR1

PRELIMINARY





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3. ALL SEWER SERVICES CONNECTING INTO DUCTILE IRON MAINS SHALL ALSO BE CONSTRUCTED OF DIP.
4. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
5. NO FLEXIBLE COUPLINGS SHALL BE USED.
6. ALL STAINLESS STEEL FASTENERS SHALL BE TYPE 316.
7. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS.
8. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.
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REV NO.	DESCRIPTION	DATE
	REVISIONS	

NORTH CAROLINA PROFESSIONAL SEAL 19865 ENGINEER SMITH TUNSTALL

Cape Fear Public Utility Authority

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.

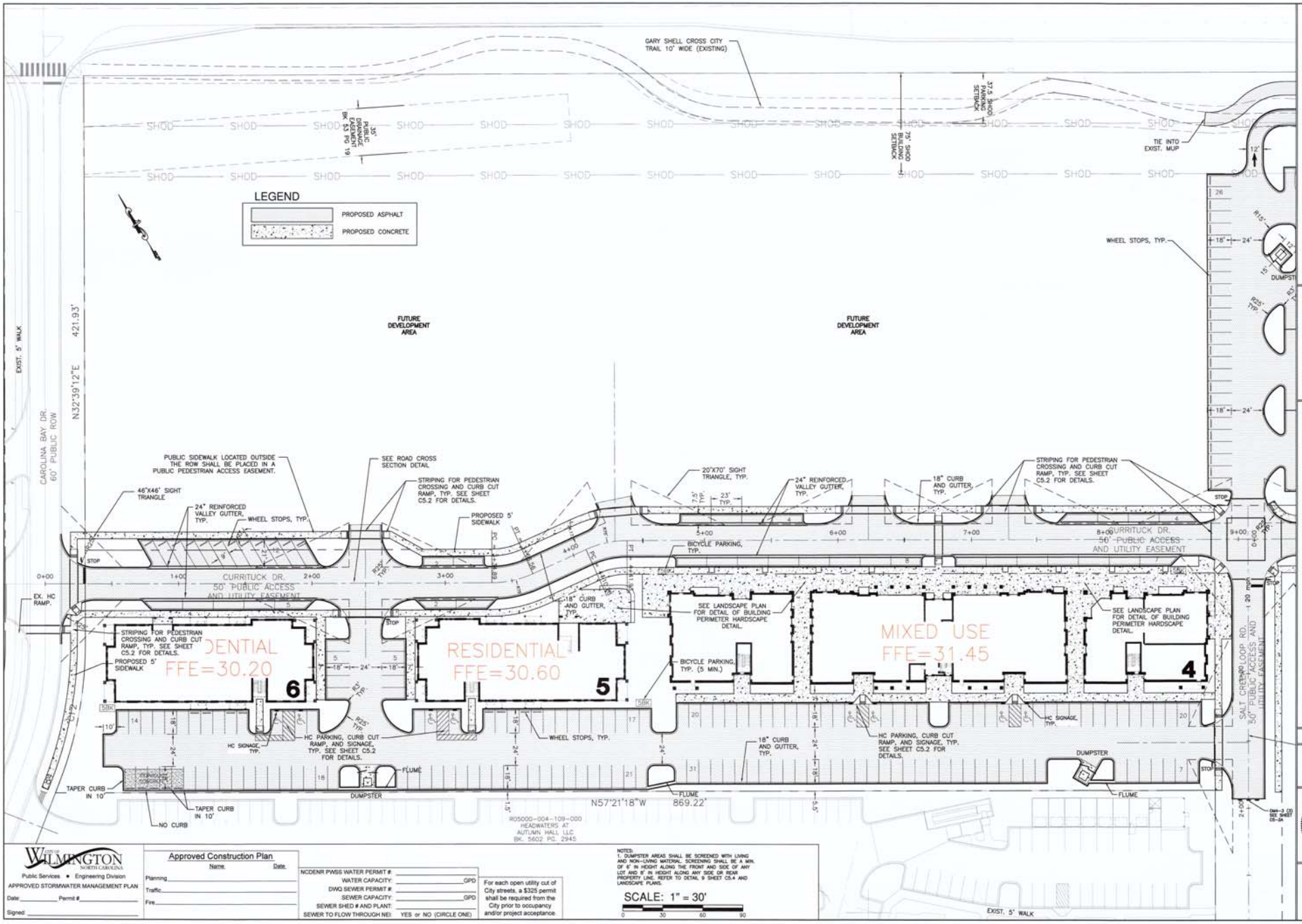
AUTUMN HALL COMMERCIAL PH 1
WATERLINE LAYOUT AND SANITARY SEWER
PLAN & PROFILE

CURRITUCK DR.

DATE: 10/01/19
SCALE: 1" = 50' 1" = 5'
DRAWN: NKS
CHECKED: JST
PROJECT NO: 18028

SHEET NO:
PR2

PRELIMINARY



NOTES:
1. DUMPSTER AREAS SHALL BE SCREENED WITH LIVING AND NON-LIVING MATERIAL. SCREENING SHALL BE A MIN. OF 6' IN HEIGHT ALONG THE FRONT AND SIDE OF ANY LOT AND 8' IN HEIGHT ALONG ANY SIDE OR REAR PROPERTY LINE. REFER TO DETAIL 9 SHEET C5.4 AND LANDSCAPE PLANS.

SCALE: 1" = 30'

0 30 60 90

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

Approved Construction Plan		
	Name	Date
Planning		
Traffic		
Fire		

NCDENR PWSS WATER PERMIT #: _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

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

LAYOUT PLAN
AUTUMN HALL COMMERCIAL PH I
1202 EASTWOOD ROAD
WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
WEB TRASK C/O MIKE BROWN
CAPE FEAR COMMERCIAL, LLC
1051 MILITARY CUTOFF RD.,
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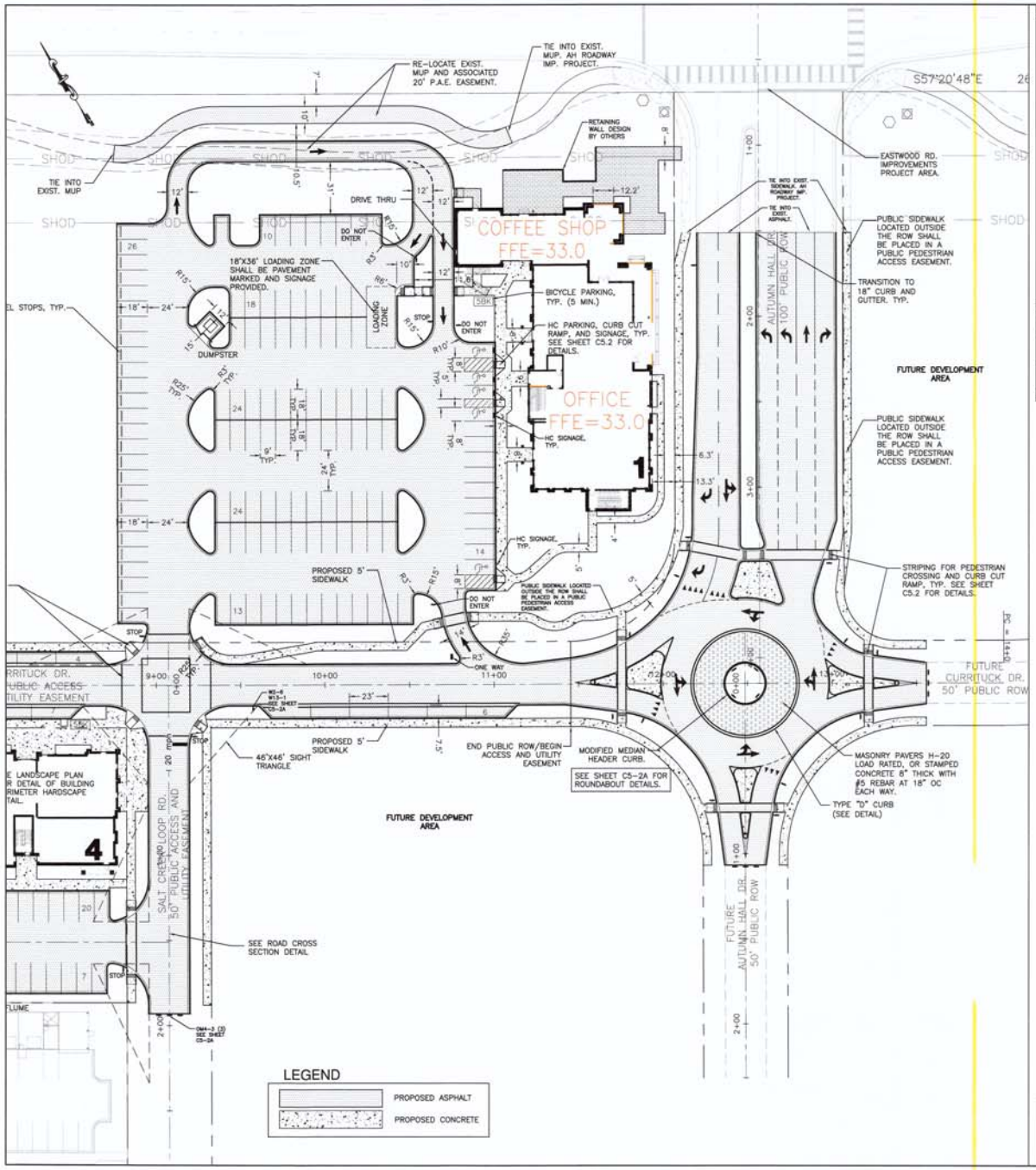
18128

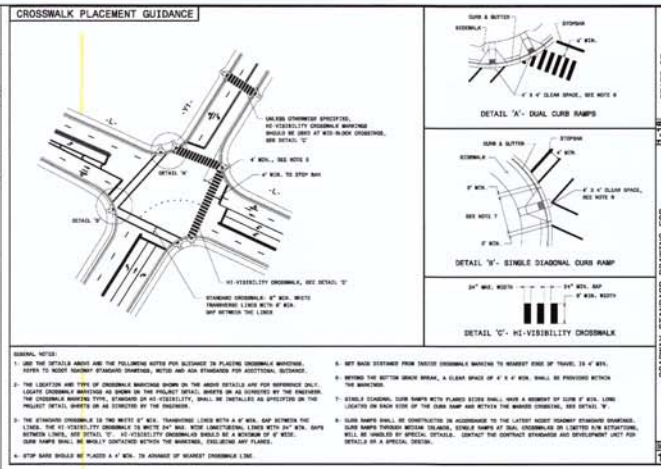
DES.	JST
CKD.	JPN
DRWN.	NKS
DATE	10/01/19

NORTH CAROLINA PROFESSIONAL SEAL 9968 ENGINEER JOHN P. TUNSTALL

C4.1

PRELIMINARY





GENERAL NOTES:

1- USE THE DETAILS ABOVE AND THE FOLLOWING NOTES FOR GUIDANCE IN PLACING CROSSWALK MARKINGS. REFER TO NCDOT ROADWAY STANDARD DRAWINGS, MUTCD AND ADA STANDARDS FOR ADDITIONAL GUIDANCE.

2- THE LOCATION AND TYPE OF CROSSWALK MARKINGS SHOWN ON THE ABOVE DETAILS ARE FOR REFERENCE ONLY. LOCATE CROSSWALK MARKINGS AS SHOWN ON THE PROJECT DETAIL SHEETS OR AS DIRECTED BY THE ENGINEER. THE CROSSWALK MARKING TYPE, STANDARD OR HI-VISIBILITY, SHALL BE INSTALLED AS SPECIFIED ON THE PROJECT DETAIL SHEETS OR AS DIRECTED BY THE ENGINEER.

3- THE STANDARD CROSSWALK IS TWO NOTED 6" WIDE TRANSVERSE LINES WITH A 6' MIN. GAP BETWEEN THE LINES. THE HI-VISIBILITY CROSSWALK IS WHITE 24" WIDE WIDE LONGITUDINAL LINES WITH 24" WITE. GAPS BETWEEN LINES, SEE DETAIL 'C'. HI-VISIBILITY CROSSWALKS SHOULD BE A MINIMUM OF 6' WIDE. CURB RAMPS SHALL BE WIDLY CONTAINED WITHIN THE MARKING, EXCLUDING ANY FLARES.

4- STOP BARS SHOULD BE PLACED A 4' MIN. IN ADVANCE OF NEAREST CROSSWALK LINE.

5- SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL IS 4' MIN.

6- BEYOND THE BOTTOM GRADE BREAK, A CLEAR SPACE OF 4' X 4' MIN. SHALL BE PROVIDED WITHIN THE MARKINGS.

7- SINGLE DIAGONAL CURB RAMPS WITH FLARED SIDES SHALL HAVE A SEGMENT OF CURB 2' MIN. LONG LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING, SEE DETAIL 'B'.

8- CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE TO THE LATEST NCDOT ROADWAY STANDARD DRAWINGS. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS. CONTACT THE CONTRACT STANDARDS AND DEVELOPMENT UNIT FOR DETAILS OR A SPECIAL DESIGN.

NOTES:
1. DUMPSTER AREAS SHALL BE SCREENED WITH LIVING AND NON-LIVING MATERIAL. SCREENING SHALL BE A MIN. OF 8' IN HEIGHT ALONG THE FRONT AND SIDE OF ANY LOT AND 8' IN HEIGHT ALONG ANY SIDE OR REAR PROPERTY LINE. REFER TO DETAIL 9 SHEET C5.4 AND LANDSCAPE PLANS.

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SEWER CAPACITY: GPD
SEWER SHED # AND PLANT:
SEWER TO FLOW THROUGH NB: YES or NO (CIRCLE ONE)

Approved Construction Plan
Name Date
Planning
Traffic
Fire

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

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

T-3B

ROADWAY STANDARD DRAWING FOR
PAVEMENT MARKINGS
PEDESTRIAN CROSSWALKS

SHEET 1 OF 1
1205.07

LAYOUT PLAN
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Licence #C-3641

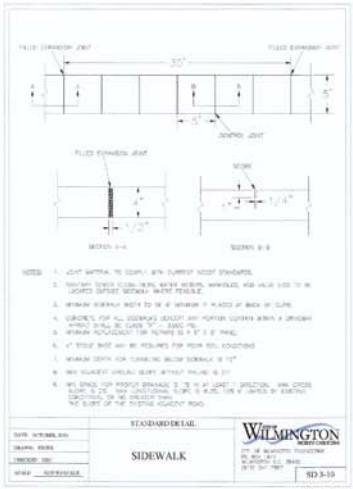
18128

DES. JST
CKD. JPN
DRWN. NKS
DATE 10/01/19

NORTH CAROLINA PROFESSIONAL SEAL 18053 ENGINEER JOHN B. TUNSTALL

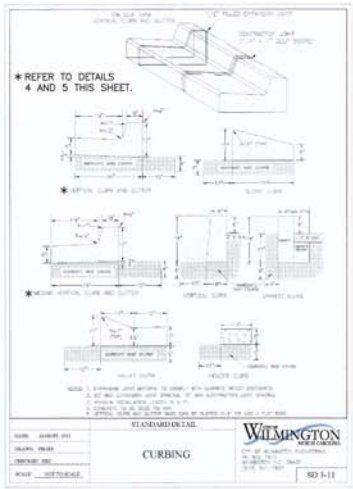
C4.2

PRELIMINARY



NOT TO SCALE

1 C.O.W. STANDARD SIDEWALK DETAIL



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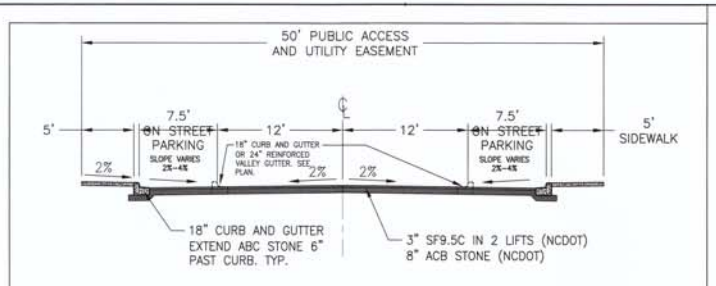
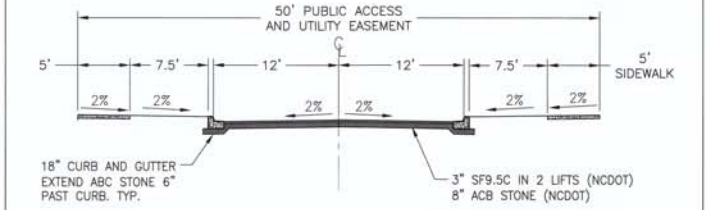


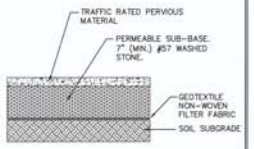
NOTE: ON STREET PARKING VARIES, SEE PLAN.

CURRITUCK DRIVE SECTION



NOTE: ON STREET PARKING VARIES, SEE PLAN.

SALT CREEK LOOP ROAD SECTION

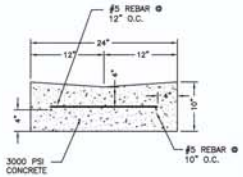


NOTES:

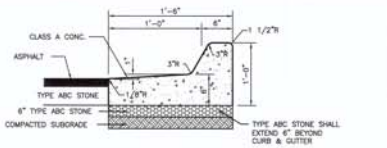
1. TRAFFIC RATED PERVIOUS MATERIALS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.

2. PERVIOUS MATERIALS SECTION MAY VARY DEPENDING UPON FIELD CONDITIONS. THE CONTRACTOR SHALL COORDINATE WITH HOME OWNERS ASSOCIATION ARCHITECTURAL REVIEW BOARD TO DETERMINE ACTUAL PAVEMENT SECTION.

7 PERVIOUS PAVEMENT SECTION



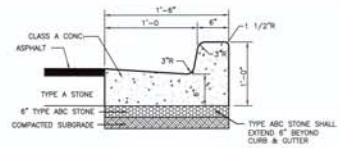
6 REINFORCED VALLEY GUTTER DETAIL



NOTE: CURB TYPE DEPENDS ON GRADES SHOWN ON GRADING PLAN. GRADES INDICATING FALL AWAY FROM CURB SHALL BE SPILL, OFF TYPE CURB. GRADES INDICATING CURB ACCEPTING FLOW SHALL BE FLOW LINE TYPE.

NOT TO SCALE

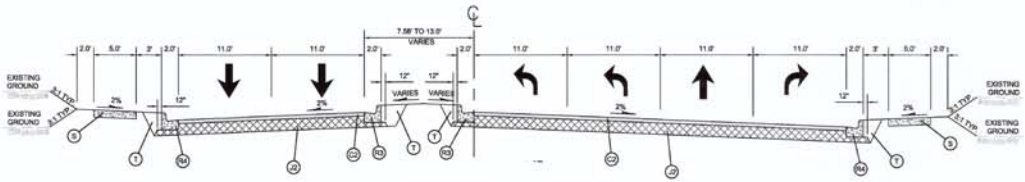
4 SPILL-OFF CURB SECTION



NOTE: CURB TYPE DEPENDS ON GRADES SHOWN ON GRADING PLAN. GRADES INDICATING FALL AWAY FROM CURB SHALL BE SPILL, OFF TYPE CURB. GRADES INDICATING CURB ACCEPTING FLOW SHALL BE FLOW LINE TYPE.

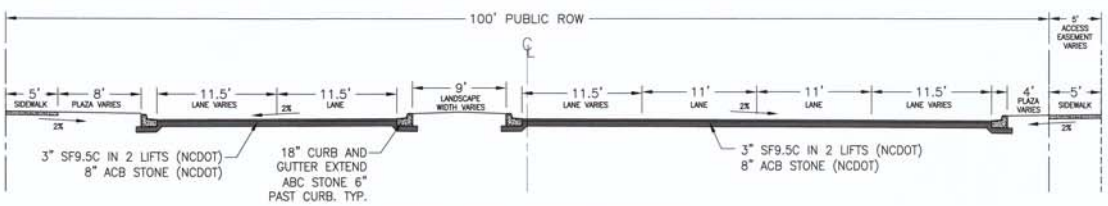
NOT TO SCALE

5 FLOW LINE CURB SECTION

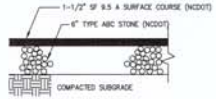


AUTUMN HALL DRIVE ENTRANCE SECTION (EXISTING)

NOTE: DESIGN BY OTHERS AS PART OF EASTWOOD ROAD IMPROVEMENTS PROJECT.



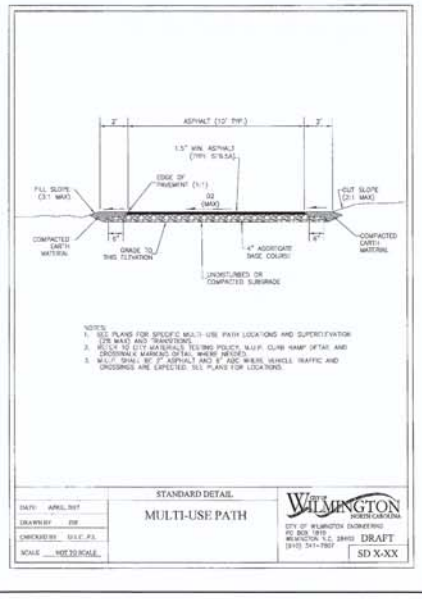
AUTUMN HALL DRIVE SECTION



NOTE: PAVEMENT SECTION MAY VARY DEPENDING UPON FIELD CONDITIONS. CONTRACTOR SHALL COORDINATE w/OWNER & GEOTECHNICAL ENGINEER TO DETERMINE ACTUAL PAVEMENT SECTION.

TYPICAL PARKING LOT PAVEMENT SECTION

NOT TO SCALE



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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NCDENR PWSS WATER PERMIT # _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT # _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

NOTES AND DETAILS
AUTUMN HALL COMMERCIAL PH I
1202 EASTWOOD ROAD
WILMINGTON, NC
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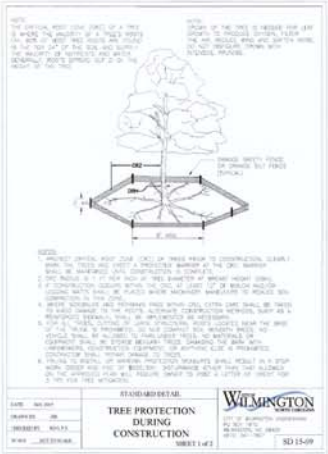
18128

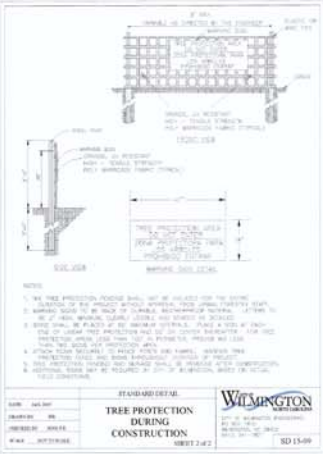
DES. JST
CKD. JPN
DRWN. NKS
DATE 10/01/19

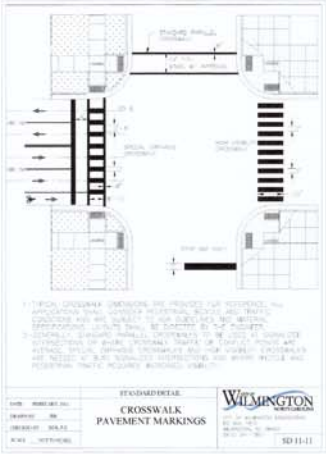
NORTH CAROLINA PROFESSIONAL SEAL 19861 ENGINEER JOHN S. TUNSTALL

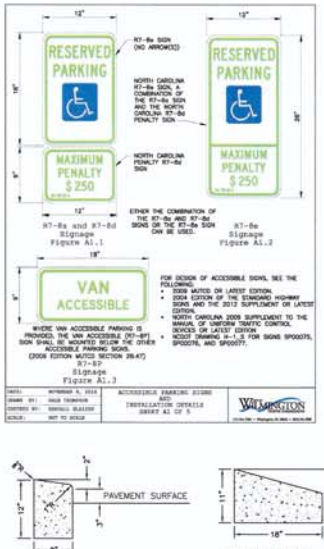
C5.1

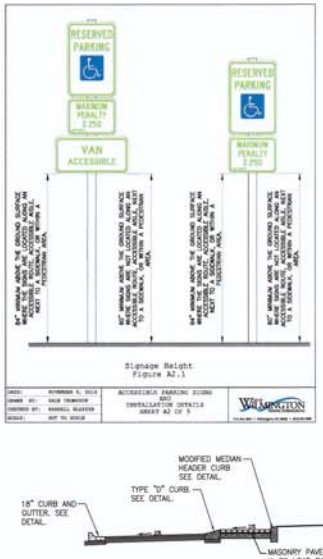
PRELIMINARY

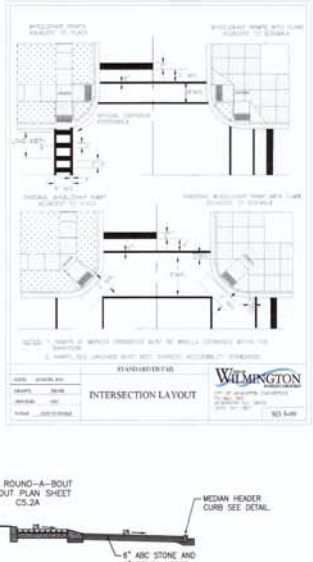


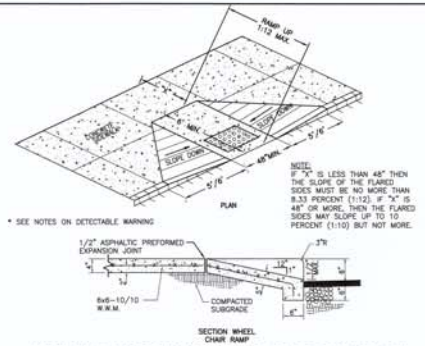




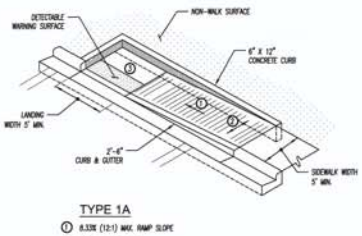








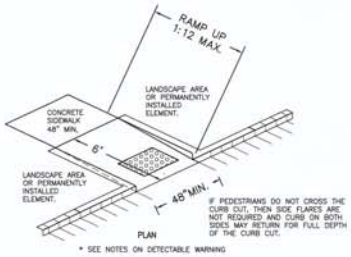
SIDEWALK, CURB CUT AND WHEEL CHAIR RAMP DETAIL



TYPE 1A

1. 8.33% (12:1) MAX. RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. CURB RAMPS REQUIRE A (4'-0") MIN. LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

NCDOT TYPE 1A CURB RAMP



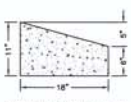
SIDEWALK, CURB CUT AND WHEEL CHAIR RAMP DETAIL

NOTE:
1. RAMP SHALL HAVE A DETECTABLE WARNING COMPLYING WITH ADA GUIDELINES.
2. THE DETECTABLE WARNINGS AT CURB RAMPS SHALL BE 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
3. MARKED CROSSINGS THAT ARE RAISED TO THE SAME LEVEL AS THE ADJOINING SIDEWALK SHALL BE PRECEDED BY A 24 INCH DEEP DETECTABLE WARNING EXTENDING THE FULL WIDTH OF THE MARKED CROSSING.
4. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 IN (23 MM), A HEIGHT OF NOMINAL 0.2 IN (5 MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 IN (60 MM) AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHOULD CONTRAST BY AT LEAST 70% - REFER TO ADA GUIDELINES FOR DEFINITION OF "CONTRAST".
5. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.

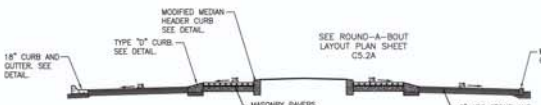
CITY OF WILMINGTON STANDARD NOTES:

1. CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING ANY DIGGING AT 1-800-632-4949.
2. 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.
3. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
4. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
5. INSTALL REFLECTORS PER CITY AND NCDOT STANDARDS. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING LAYOUT PRIOR TO ACTUAL STRIPING.
6. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
7. 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.
8. IT SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER TO ERECT OFFICIAL STREET NAME SIGNS AT ALL INTERSECTIONS ASSOCIATED WITH THE SUBDIVISION IN ACCORDANCE WITH THE TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL. THE SUBDIVIDER MAY ACQUIRE AND ERECT OFFICIAL STREET NAME SIGNS OR MAY CHOOSE TO CONTRACT WITH THE CITY TO INSTALL THE STREET SIGNS AND THE SUBDIVIDER SHALL PAY THE COST OF SUCH INSTALLATION. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. POSTED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
9. CONTACT TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
10. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. CONTACT 341-5888 FOR MORE DETAILS. IN CERTAIN CASES AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
11. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS, AND CURBING WILL BE REPLACED.
12. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
13. PROJECT SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 343-3910 FOR INFORMATION.
14. IF THE CONTRACTOR DESIRES CFPUA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
15. ANY IRRIGATION SYSTEM SUPPLIED BY CFPUA WATER SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REGULATIONS. CALL 332-6558 FOR INFORMATION.
16. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY CFPUA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCCCHR OR ASSE.
17. WHEN PVC WATER MAINS AND/OR POLYETHYLENE SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED SINGLE STRAND COPPER WIRE INSTALLED THE ENTIRE LENGTH AND SECURED TO ALL VALVES. THIS WIRE IS TO BE ACCESSIBLE AT ALL FIRE HYDRANTS AND WATER METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.
18. THE NUMBER AND SPACING OF DRIVEWAYS FOR ALL INTERCONNECTED SITES WILL BE DETERMINED BY THE COMBINED FRONTAGE OF THE INTERCONNECTED PROPERTIES.
19. UNDERGROUND FIRE LINE MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC ROW TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0696 FOR ADDITIONAL INFORMATION.
20. A LANDSCAPE PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEER DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT.
21. IF AND IRRIGATION SYSTEM IS PLANNED FOR THE SITE, UTILIZE MOISTURE SENSORS.
22. ALL PROPOSED VEGETATION WITHIN THE SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30"-10'.
23. PLEASE CONSIDER INCORPORATING XERIC LANDSCAPING FOR ALL NEW LANDSCAPING.
24. THE CONTRACTOR WILL MAINTAIN ALL-WEATHER EMERGENCY ACCESS TO CONSTRUCTION SITE AT ALL TIMES.

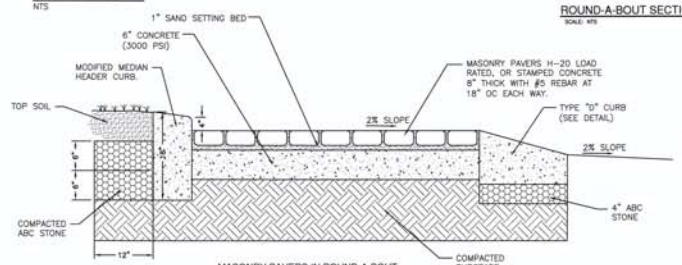
MEDIAN HEADER CURB
NTS



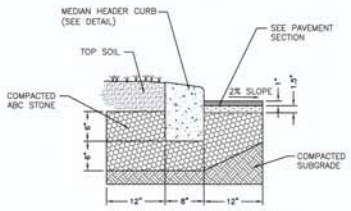
CURB SECTION TYPE "D"
NTS



ROUND-A-BOUT SECTION DETAIL
SCALE: NTS



MASONRY PAVERS IN ROUND-A-BOUT
NTS



MEDIAN HEADER CURB AT ISLANDS
NTS

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NCDENR PWSS WATER PERMIT #: _____
WATER CAPACITY: _____ GPD
DWQ SEWER PERMIT #: _____
SEWER CAPACITY: _____ GPD
SEWER SHED # AND PLANT: _____
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

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NEW HANOVER COUNTY

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SUITE 200
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344-1010 (P) 622-4657 (CELL)

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PHONE: (910) 343-9633
1429 ASH-LITTLE RIVER RD. S.W.
ASH, NC 28420
PHONE: (910) 287-3000
Licence #C-3641

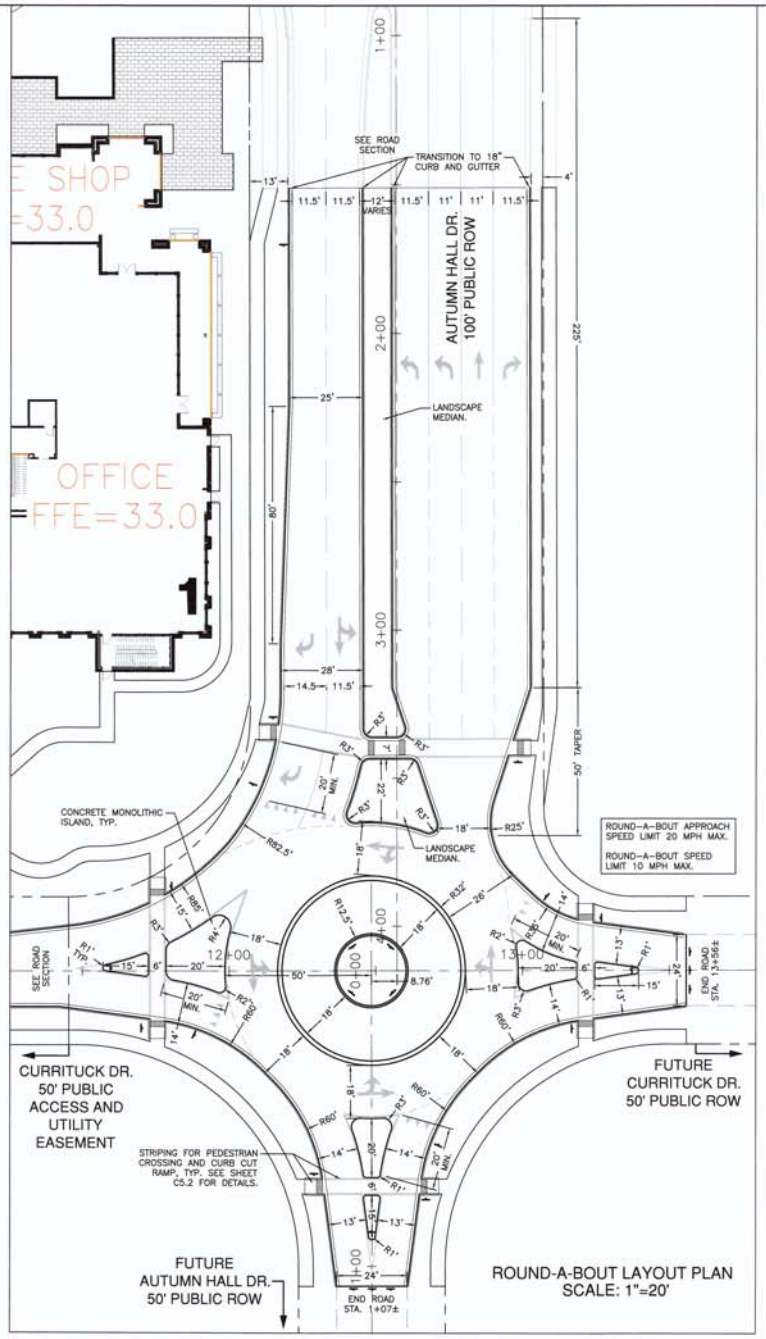
18128

DES.	JST
CKD.	JPN
DRWN.	NKS
DATE	10/01/19

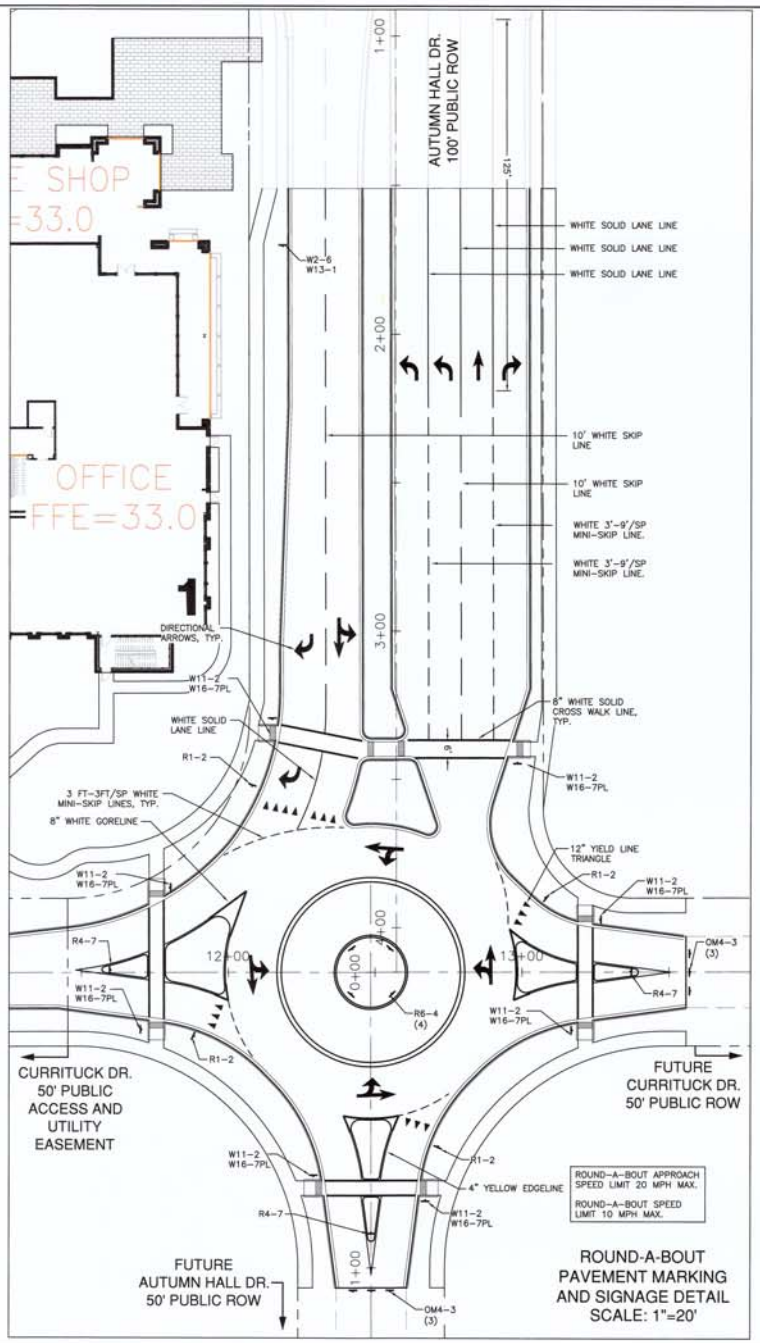
NORTH CAROLINA PROFESSIONAL SEAL 19863 ENGINEER JOHN B. TUNSTALL

C5.2

PRELIMINARY



ROUND-A-BOUT LAYOUT PLAN
SCALE: 1"=20'



ROUND-A-BOUT PAVEMENT MARKING AND SIGNAGE DETAIL
SCALE: 1"=20'

SIGNAGE LEGEND

W2-6	
W13-1	
R1-2	
R4-7	
R6-4	
W11-2	
W16-7PL	
OM4-3	

NOTE: A PRE-MARK LAYOUT INSPECTION SHALL BE REQUIRED PRIOR TO STRIPING.

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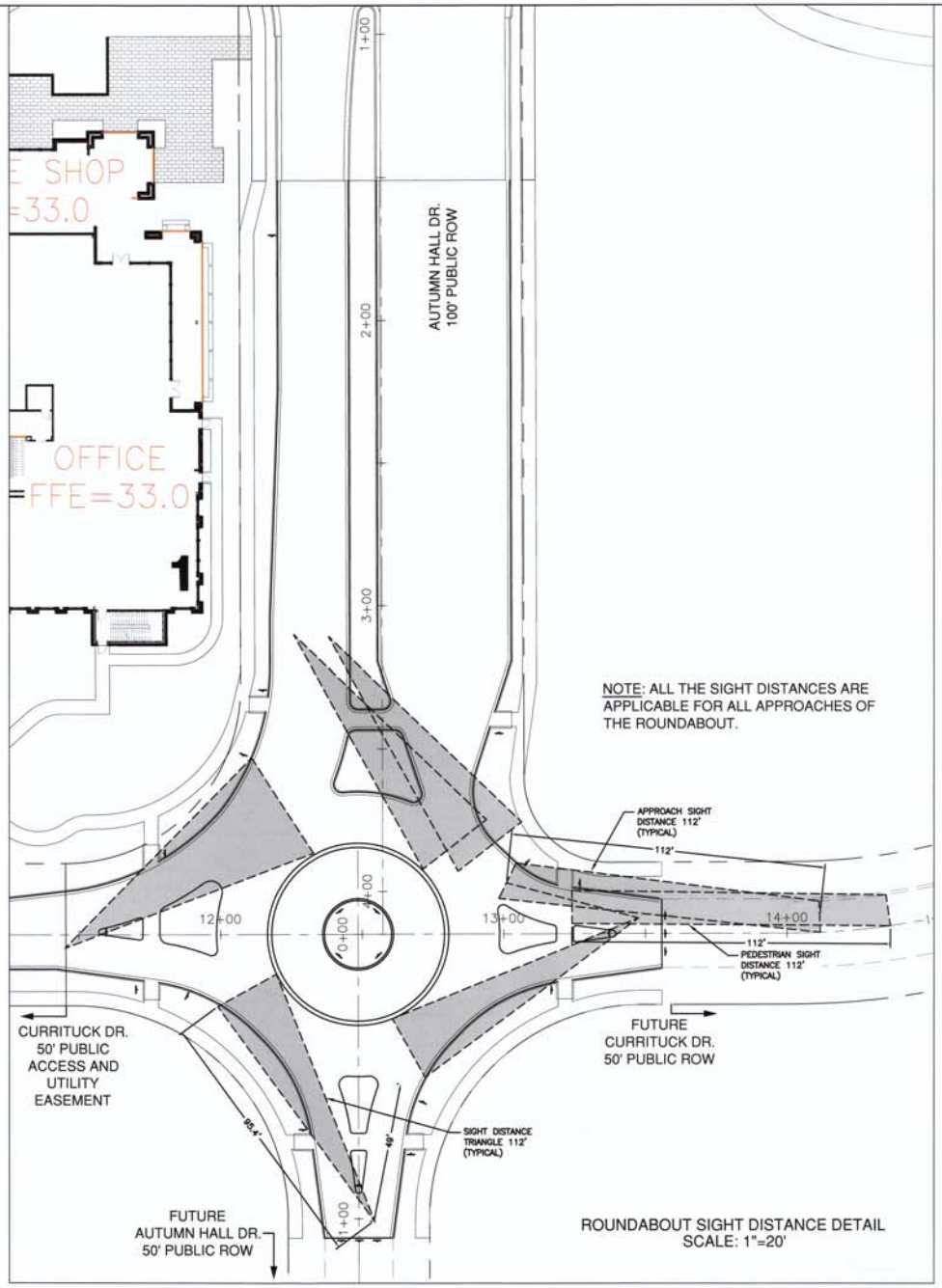
18128

DES.	JST
CKD.	JPN
DRWN.	NKS
DATE	10/01/19

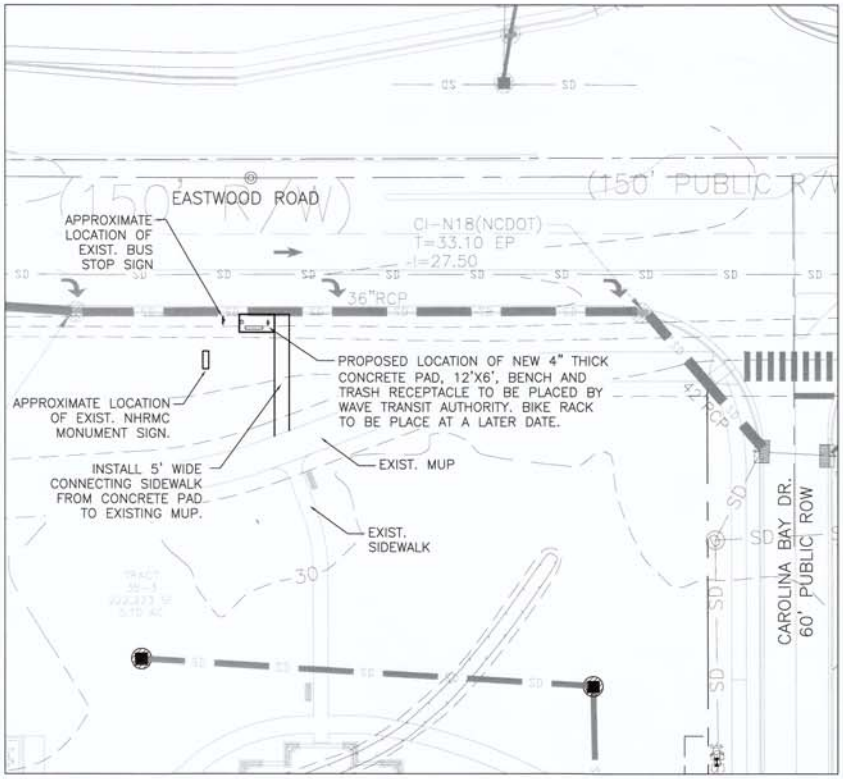
NORTH CAROLINA PROFESSIONAL SEAL 19861 ENGINEER JOHN P. TUNSTALL

C5.2A

PRELIMINARY



ROUNDABOUT SIGHT DISTANCE DETAIL
SCALE: 1"=20'



PROPOSED BUS STOP IMPROVEMENTS
SCALE: 1"=20'

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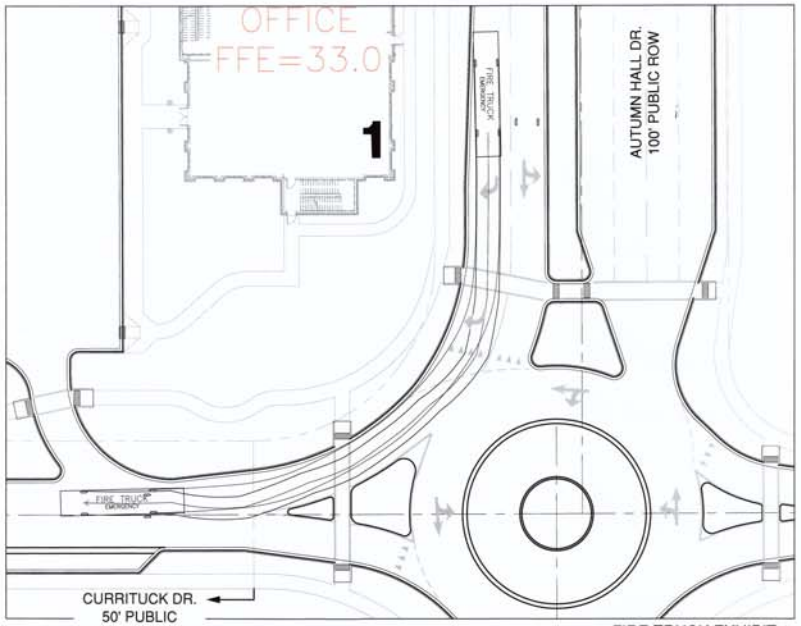
18128

DES. JST
DKS. JPN
DRWN. NKS
DATE 10/01/19

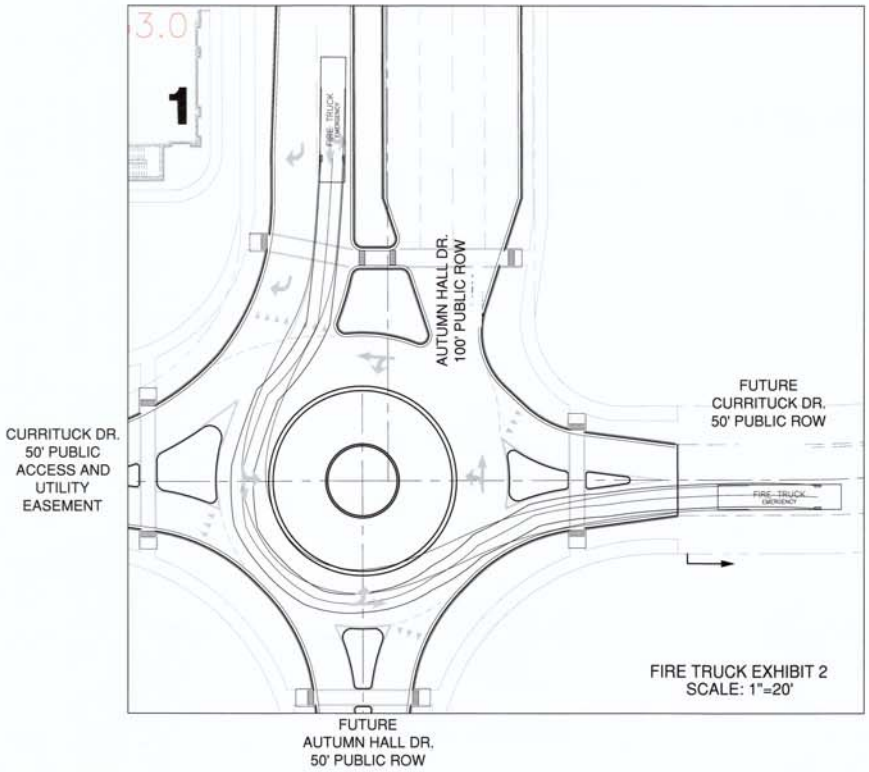
NORTH CAROLINA PROFESSIONAL SEAL 19401 ENGINEER JOHN S. TUNSTALL

C5.2B

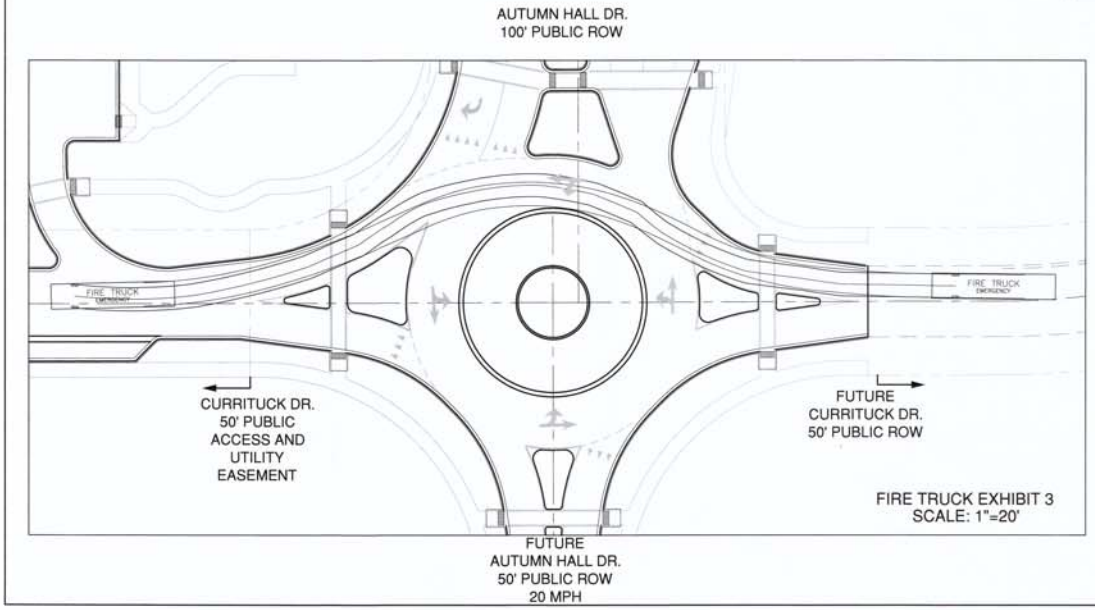
PRELIMINARY



FIRE TRUCK EXHIBIT 1
SCALE: 1"=20'



FIRE TRUCK EXHIBIT 2
SCALE: 1"=20'



FIRE TRUCK EXHIBIT 3
SCALE: 1"=20'

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CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
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	Name	Date
Planning		
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SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

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WILMINGTON, NC
NEW HANOVER COUNTY

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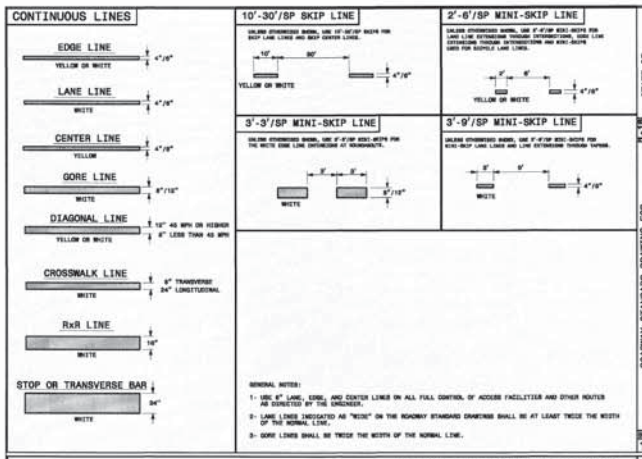
1429 ASH-LITTLE RIVER RD. N.W.
FAYETTEVILLE, N.C. 28303
PHONE: (910) 297-3900
Licence #C-3641

18128

DES. JST
CKD. JPN
DRWN. NKS
DATE 8/28/19

NORTH CAROLINA PROFESSIONAL SEAL 5085 ENGINEER JOHN P. TUNSTALL

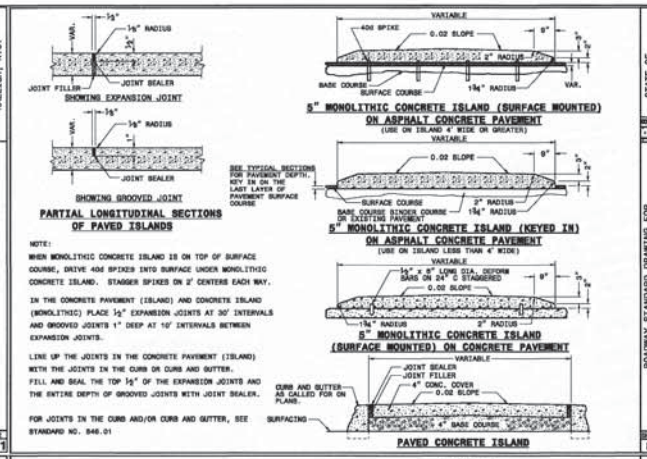
C5.2C



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

ROADWAY STANDARD DRAWING FOR **PAVEMENT MARKINGS** LINE TYPES AND OFFSETS

SHEET 1 OF 3 **1205.01**



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

ROADWAY STANDARD DRAWING FOR **CONCRETE ISLANDS**

SHEET 1 OF 1 **852.01**

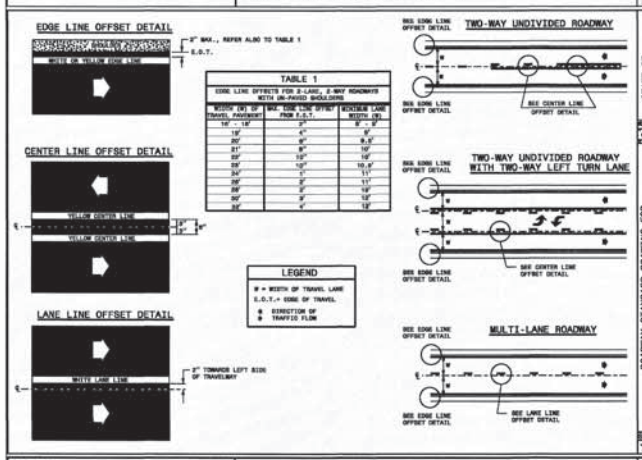


TABLE 1

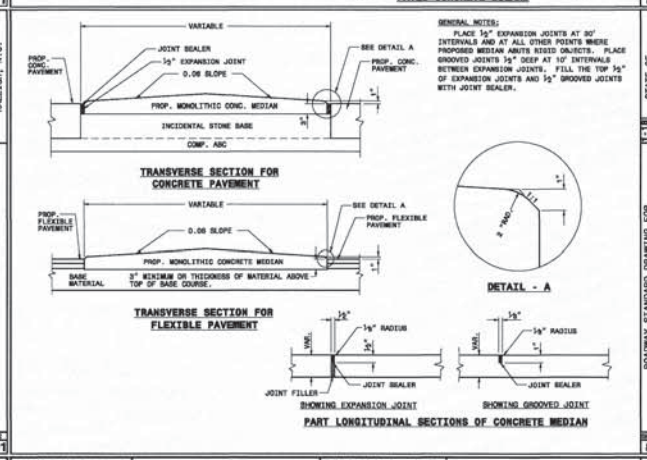
EDGE LINE OFFSETS FOR 2-LANE, 2-WAY ROADWAYS WITH UN-PAVED SHOULDERS

WIDTH (W) OF TRAVEL PAVEMENT	MIN. EDGE LINE OFFSET FROM E.O.T.	MINIMUM LANE WIDTH (W)
16' - 18'	2"	8' - 9'
19'	4"	9'
20'	6"	9.5'
21'	8"	10'
22'	10"	10'
23'	12"	10.5'
24'	1'	11'
25'	2'	11'
26'	3'	11'
27'	3'	12'
28'	4'	12'

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

ROADWAY STANDARD DRAWING FOR **PAVEMENT MARKINGS** LINE TYPES AND OFFSETS

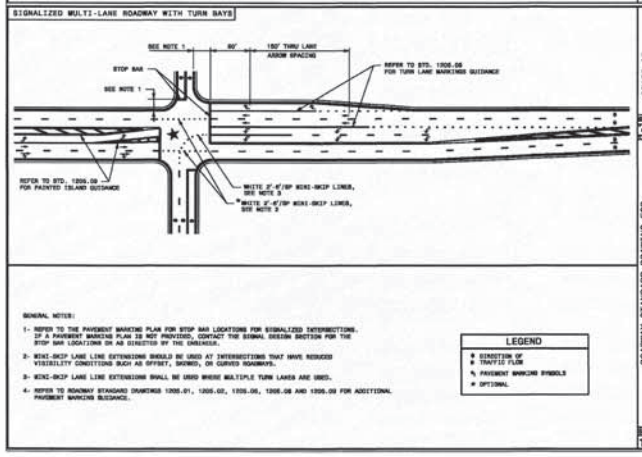
SHEET 2 OF 3 **1205.01**



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

ROADWAY STANDARD DRAWING FOR **CONCRETE MOUNTABLE MEDIAN** FOR USE WITH RIGID OR FLEXIBLE PAVEMENT

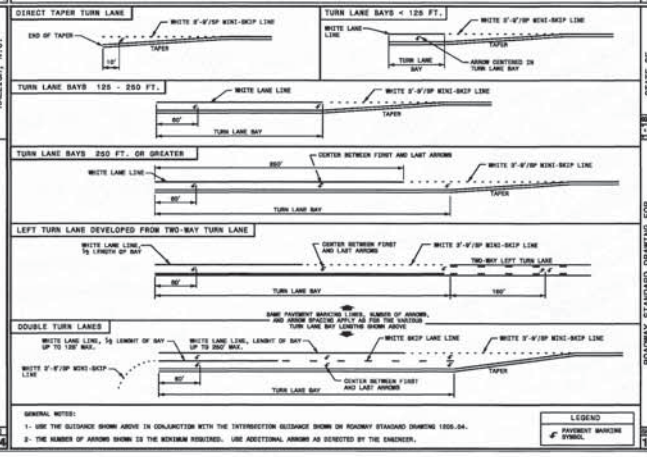
SHEET 3 OF 3 **852.02**



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

ROADWAY STANDARD DRAWING FOR **PAVEMENT MARKINGS** INTERSECTIONS

SHEET 1 OF 1 **1205.04**



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

ROADWAY STANDARD DRAWING FOR **PAVEMENT MARKINGS** TURN LANES

SHEET 1 OF 1 **1205.05**

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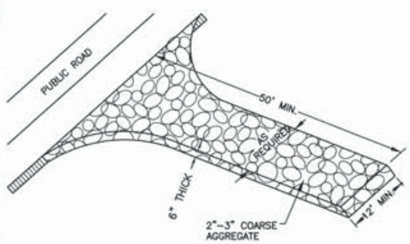
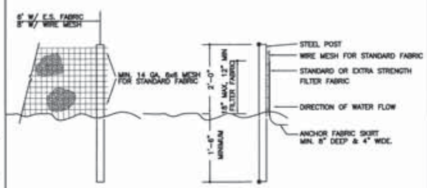


NOT TO SCALE

1 TEMPORARY GRAVELLED CONSTRUCTION ENTRANCE

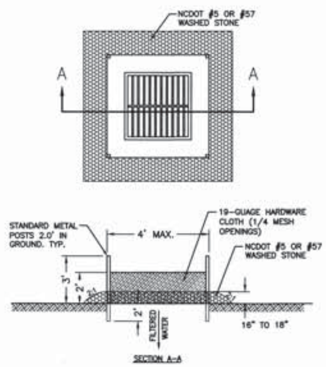


NOTES:

1. SYN. FENCE FABRIC SHALL BE MIN. OF 30" IN WIDTH WITH 30 LB/IN TENSILE STRENGTH FOR STANDARD FABRIC AND 50 LB/IN FOR EXTRA STRENGTH.
2. FABRIC SHALL BE CONTINUOUS LENGTH. IF JOINTS ARE NECESSARY, LAP FABRIC POST TO POST.
3. STEEL POST SHALL BE MIN 4' IN HEIGHT AND BE OF THE SELF-FASTENER STEEL ANGLE TYPE.

NOT TO SCALE

2 TEMPORARY SILT FENCE

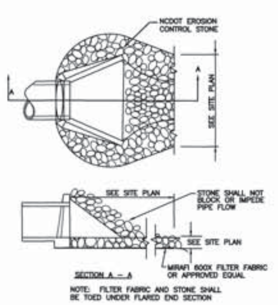


CONSTRUCTION SEQUENCE:
1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5' STEEL POST 2' INTO THE GROUND SURROUNDING THE INLET. SPACE POST EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4' APART.
3. SURROUND THE POST WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POST AT THE TOP, MIDDLE AND BOTTOM. PLACING A 2' FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16" TO 18" 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.

MAINTENANCE:
INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REMOVE SEDIMENT WHEN ACCUMULATION REACHES HALF THE DEPTH OF ROCK. REPLACE STONE WHEN IT NO LONGER DRAINS AS DESIGNED.

NOT TO SCALE

3 HARDWARE CLOTH AND GRAVEL INLET PROTECTION



NOT TO SCALE

4 ENERGY DISSIPATOR DETAIL

TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

SEEDING MIXTURE

SPECIES	RATE (lb/acre)	(lb/1000 sf)
RYE (GRAIN)	120	2.75

SEEDING DATES:
MOUNTAINS – AUG. 15 – DEC. 15
COASTAL PLAIN AND PIEDMONT – AUG. 15 – DEC. 15

SOIL AMENDMENTS:
FOLLOW SOIL TEST OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 1,000 lb/acre 10–10–10 FERTILIZER.

MULCH:
APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
REPAIR AND REFERTILIZE DAMAGE AREAS IMMEDIATELY. TOP DRESS WITH 50 lb/acre OF NITROGEN IN MARCH, IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 lb/acre KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

SEEDING MIXTURE

SPECIES	RATE (lb/acre)	(lb/1000 sf)
GERMAN MILLET	40	0.92

IN THE PIEDMONT AND MOUNTAINS, A SMALL–STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 lb/acre.

SEEDING DATES:
MOUNTAINS – MAY 15 – AUG. 15
PIEDMONT – MAY 1 – AUG. 15
COASTAL PLAIN – APR. 15 – AUG. 15

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10–10–10 FERTILIZER.

MULCH:
APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE

SPECIES	RATE (lb/acre)	(lb/1000 sf)
RYE (GRAIN)	120	2.75
ANNUAL LESPEDEZA (KOBE IN PIEDMONT AND COASTAL PLAIN, KOREAN IN MOUNTAINS)	50	1.15

OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.

SEEDING DATES:

MOUNTAINS –	ABOVE 2,500 FEET:	FEB. 15 – MAY 15
	BELOW 2,500 FEET:	FEB. 1 – MAY 1
PIEDMONT –		JAN. 1 – MAY 1
COASTAL PLAIN –		DEC. 1 – APRIL 15

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10–10–10 FERTILIZER.

MULCH:
APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

PERMANENT SEEDING RECOMMENDATIONS FOR FALL AND EARLY SPRING

SEEDING MIXTURE

SPECIES	RATE (lb/acre)	(lb/1000 sf)
TALL FESCUE	80	1.84
PENSACOLA BAHIAGRASS	50	1.15
SERICEA LESPEDEZA	30	0.69
KOBE LESPEDEZA	10	0.23

SEEDING NOTES:
1. FROM SEPT. 1 THRU MAR. 1, USE UNSCARIFIED SERICEA SEED.
2. ON POORLY DRAINED SITES OMIT SERICEA AND INCREASE KOBE TO 30 lbs/acre.
3. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND INCREASE KOBE TO 40 lbs/acre.

NURSE PLANTS: BETWEEN APR. 15 AND AUG. 15, ADD 10 lbs/acre GERMAN MILLET OR 15 lbs/acre SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG. 15 ADD 25 lbs/acre RYE (GRAIN).

SEEDING DATES:

	BEST	POSSIBLE
EARLY SPRING:	FEB 15–MAR. 20	FEB.15–APR. 30
FALL:	SEPT. 1–SEPT. 30	SEPT. 1–OCT. 31

SOIL AMENDMENTS:
APPLY LIME AND FERTILIZE ACCORDING TO SOIL TESTS, OR APPLY 3,000–5,000 lbs/acre (68.9–114.8 lbs/1,000 sf) GROUND AGRICULTURAL LIMESTONE (USE THE LOWER RATE ON SANDY SOILS) AND 1,000 lbs/acre (22.9 lbs/1,000 sf) 10–10–10 FERTILIZER.

MULCH:
APPLY 4,000 lb/acre (91.8 lbs/1,000 sf) GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR ROVING OR BY CRIMPING WITH A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
IF GROWTH IS LESS THAN FULLY ADEQUATE, REFERTILIZE IN THE SECOND YEAR, ACCORDING TO SOIL TESTS OR TOPDRESS WITH 500 lbs/acre (11.5 lbs/1,000 sf) 10–10–10 FERTILIZER. MOW AS NEEDED WHEN SERICEA IS OMITTED FROM THE MIXTURE. RESEED, FERTILIZE, AND MULCH DAMAGED AREAS IMMEDIATELY.

PERMANENT SEEDING RECOMMENDATIONS FOR LATE SPRING AND EARLY SUMMER

SEEDING MIXTURE

SPECIES	RATE (lb/acre)	(lb/1000 sf)
PENSACOLA BAHIAGRASS	50	1.15
SERICEA LESPEDEZA	30	0.69
COMMON BERMUDA	10	0.23
GERMAN MILLET	10	0.23

SEEDING NOTES:
1. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA.
2. USE COMMON BERMUDAGRASS ONLY ON ISOLATED SITES WHERE IT CANNOT BECOME A PEST. BERMUDAGRASS MAY BE REPLACED WITH 5 lbs/acre CENTIPEDEGRASS.

SEEDING DATES:
APRIL 1–JULY 15

SOIL AMENDMENTS:
APPLY LIME AND FERTILIZE ACCORDING TO SOIL TESTS, OR APPLY 3,000 lbs/acre (68.9 lbs/1,000 sf) GROUND AGRICULTURAL LIMESTONE AND 500 lbs/acre (11.5 lbs/1,000 sf) 10–10–10 FERTILIZER.

MULCH:
APPLY 4,000 lb/acre (91.8 lbs/1,000 sf) GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR ROVING OR BY CRIMPING WITH A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
REFERTILIZE THE FOLLOWING APRIL WITH 50 lbs/acre (1.15 lbs/1,000 sf) NITROGEN. REPEAT AS GROWTH REQUIRES. MAY BE MOWED ONLY ONCE A YEAR. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND MOW AS OFTEN AS NEEDED.

EROSION CONTROL NOTES AND MAINTENANCE PLAN:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF–PRODUCING RAINFALL, BUT IN NO CASE, LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY HALF–INCH RAINFALL.

2. ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP–DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. THEY WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBJECTIONABLE MATERIAL SPILLED WASHED OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAYS.

3. SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTION, BLOCK AND GRAVEL INLET PROTECTION, ROCK DOUGHNUT INLET PROTECTION AND ROCK PIPE INLET PROTECTION WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS AS DESIGNED. DEBRIS WILL BE REMOVED FROM THE ROCK AND HARDWARE CLOTH TO ALLOW PROPER DRAINAGE. SILT SACKS WILL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND WATTLES, BEAVER DAMS, DANDY SACKS AND SOCKS ONCE A WEEK AND AFTER EVERY RAIN EVENT.

4. DIVERSION DITCHES WILL BE CLEANED OUT IMMEDIATELY TO REMOVE SEDIMENT OR OBSTRUCTIONS FROM THE FLOW AREA. THE DIVERSION RIDGES WILL ALSO BE REPAIRED. SWALES MUST BE TEMPORARILY STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY ASSOCIATED WITH A SWALE.

5. SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES HALF FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL. STAKE SPACING WILL BE 6 FEET MAX. WITH THE USE OF EXTRA STRENGTH FABRIC, WITHOUT WIRE BACKING. STAKE SPACING WILL BE 8 FEET MAX. WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. IF ROCK FILTERS ARE DESIGNED AT LOW POINTS IN THE SEDIMENT FENCE, THE ROCK WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF–FULL OF SEDIMENT, NO LONGER DRAINS AS DESIGNED OR IS DAMAGED.

6. SEDIMENT WILL BE REMOVED FROM SEDIMENT TRAPS WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. THE ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS OR WHEN THE ROCK IS DISLODGED. BAFFLES WILL BE REPAIRED OR REPLACED IF THEY COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE. FLOATING SKIMMERS WILL BE INSPECTED AND KEPT CLEAN WEEKLY.

7. SEDIMENT WILL BE REMOVED FROM THE SEDIMENT BASIN WHEN THE DESIGN STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS OR IF THE ROCK IS DISLODGED. BAFFLES WILL BE REPAIRED OR REPLACED IF THEY COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED FROM BAFFLES WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE. FLOATING SKIMMERS WILL BE INSPECTED WEEKLY AND WILL BE KEPT CLEAN.

8. LAND QUALITY REQUIRES:
ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED, ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN, TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL SLOPES WILL BE STABILIZED WITHIN 21 CALENDAR DAYS. ALL OTHER AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS.
WATER QUALITY REQUIRES:
ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, ALL SLOPES STEEPER THAN 3' HORIZONTAL TO 1' VERTICAL (3:1) AND ALL HIGH QUALITY WATER (HQW) ZONES SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN SEVEN (7) CALENDAR DAYS FROM THE LAST LAND–DISTURBING ACTIVITY. ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 CALENDAR DAYS FROM THE LAST LAND–DISTURBING ACTIVITY.

9. FLOCCULANTS WILL BE USED TO ADDRESS TURBIDITY ISSUES. THE PUMPS, TANKS, HOSES AND INJECT SYSTEMS WILL BE CHECKED FOR PROBLEMS OR TURBID DISCHARGES DAILY.

10. BASIN OUTLET STRUCTURES AND SKIMMERS SHALL WITHDRAW WATER FROM THE SURFACE.

11. CONCRETE WASHOUTS SHOULD BE INSPECTED DAILY AND AFTER HEAVY RAINS. DAMAGES SHOULD BE REPAIRED PROMPTLY. IF FILLED TO OVER 75% CAPACITY WITH RAIN WATER IT SHOULD BE VACUUMED OR ALLOWED TO EVAPORATE TO AVOID OVERFLOWS. BEFORE HEAVY RAINS THE CONTAINERS LIQUID LEVEL SHOULD BE LOWERED OR THE CONTAINER COVERED TO AVOID AN OVER FLOW DURING RAIN. WHEN SOLIDS HAVE HARDENED THEY SHOULD BE REMOVED AND RECYCLED.

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WILMINGTON, NC
NEW HANOVER COUNTY

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18128

DES. JST
CKD. JPN
DRWN. NKS
DATE 8/28/19

NORTH CAROLINA SEAL 19XX ENGINEER JOHN S. TUNSTALL

C5.3

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

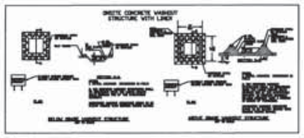
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NORTH CAROLINA *Environmental Quality*

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING | EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be documented in the manner described:

Item to Document	Documentation Requirements
(a) Each E&SC Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC Plan.	Initial and date each E&SC Measure on a copy of the approved E&SC Plan or complete, date and sign an inspection report that lists each E&SC Measure shown on the approved E&SC Plan. This documentation is required upon the initial installation of the E&SC Measures or if the E&SC Measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC Plan.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC Measures.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation

In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This general permit as well as the certificate of coverage, after it is received.

(b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

(c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

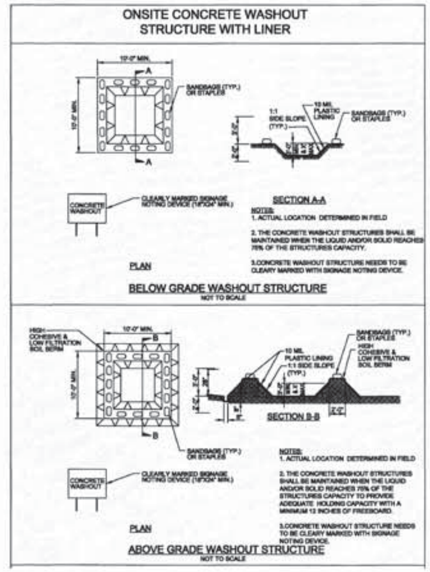
After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• **Within 24 hours**, an oral or electronic notification. • **Within 7 calendar days**, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• **Within 24 hours**, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• **A report at least ten days before the date of the bypass, if possible.** The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• **Within 24 hours**, an oral or electronic notification. • **Within 7 calendar days**, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)]	• **Within 24 hours**, an oral or electronic notification. • **Within 7 calendar days**, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6)]. • Division staff may waive the requirement for a written report on a case-by-case basis.

NORTH CAROLINA *Environmental Quality*

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING | EFFECTIVE: 04/01/19

WITH LINER, NO GRAVEL APPROACH



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

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NCDENR PWSS WATER PERMIT #: ________
WATER CAPACITY: ________ GPD
DWQ SEWER PERMIT #: ________
SEWER CAPACITY: ________ GPD
SEWER SHED # AND PLANT: ________
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

NOTES AND DETAILS
AUTUMN HALL COMMERCIAL PH I
1202 EASTWOOD ROAD
WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
WEB TRASK C/O MIKE BROWN
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16851 JOHN S. TUNSTALL

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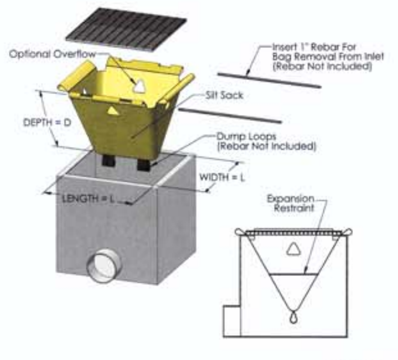
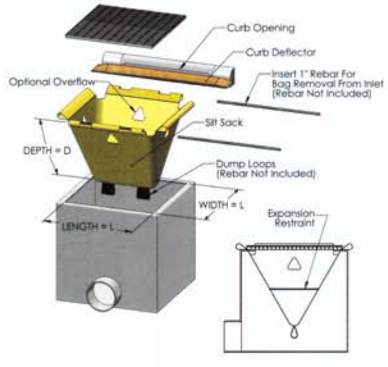


NOT TO SCALE

1 SILT SACK DETAIL FOR DROP INLETS



NOT TO SCALE

2 SILT SACK DETAIL FOR CURB INLETS

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THE OPENING SIZE OF THE EXISTING OR PROPOSED CATCH BASIN OR DROP INLET. THE SILTSACK WILL BE MANUFACTURED TO FIT THE OPENING OF THE EXISTING OR PROPOSED CATCH BASIN OR DROP INLET.

2. TO INSTALL THE SILTSACK IN THE CATCH BASIN, REMOVE THE GRATE AND PLACE THE SACK IN THE OPENING. HOLD OUT APPROXIMATELY SIX INCHES OF THE SACK OUTSIDE THE FRAME. THIS IS THE AREA OF THE LIFTING STRAPS. REPLACE THE GRATE TO HOLD THE SACK IN PLACE.

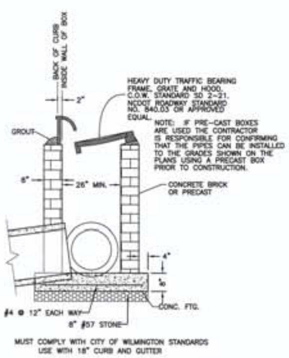
3. THE SILTSACK IS FULL AND SHOULD BE EMPTIED WHEN THE RESTRAINT CORD IS NO LONGER VISIBLE.

4. TO REMOVE THE SILTSACK, TAKE TWO PIECES OF 1" DIAMETER REBAR AND PLACE THROUGH THE LIFTING LOOPS ON EACH SIDE OF THE SACK TO FACILITATE THE LIFTING OF THE SILTSACK.

5. TO EMPTY THE SILTSACK, PLACE IT WHERE THE CONTENTS WILL BE COLLECTED. PLACE THE REBAR THROUGH THE LIFT STRAPS (CONNECTED TO THE BOTTOM OF THE SACK) AND LIFT. THIS WILL TURN THE SILTSACK INSIDE OUT AND EMPTY THE CONTENTS. CLEAN OUT AND RINSE. RETURN THE SILTSACK TO ITS ORIGINAL SHAPE AND PLACE BACK IN THE BASIN.

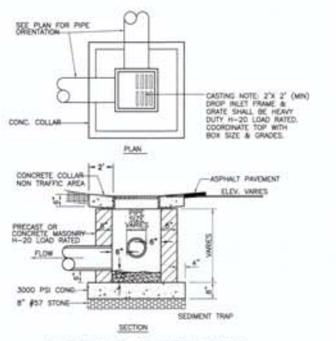
NOT TO SCALE

3 SILT SACK NOTES



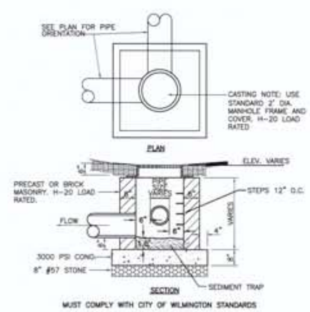
NOT TO SCALE

4 TYPICAL CATCH BASIN



NOT TO SCALE

5 TYPICAL DROP INLET



NOT TO SCALE

6 TYPICAL JUNCTION BOX

SITE WORK NOTES:

1. THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH FIELD CONSTRUCTION CONDITIONS.

2. CONTRACTOR SHALL COORDINATE WORK WITHIN NCDOT AND LOCAL RIGHT OF WAYS WITH PROPER AUTHORITIES AND SHALL MEET ANY REQUIREMENTS AS TO TRAFFIC CONTROL AND CONNECTION TO EXISTING STREETS.

3. CLEARING AND GRUBBING: REMOVE ALL TREES AS REQUIRED UNLESS OTHERWISE NOTED TO REMAIN, STUMPS, ROOTS, SHRUBBERY, ASPHALT, CONCRETE, STRUCTURES, BURIED UTILITIES, STORAGE TANKS, ETC. WITHIN LIMITS OF CONSTRUCTION.

4. STRIPPING: BEFORE EXCAVATING OR FILLING, REMOVE ALL TOPSOIL, WOOD, LEAVES, AND ANY OTHER UNSUITABLE MATERIAL.

5. MUCKING: REMOVE ANY SOFT, ORGANIC SILT MATERIALS AND EXISTING BURIED CONSTRUCTION DEBRIS AS REQUIRED AND FILL TO SUBGRADE ELEVATIONS WITH A CLEAN SELECT-FILL COMPACTED AS SPECIFIED.

6. DISPOSAL: CLEARED, GRUBBED, STRIPPED OR EXCAVATED SPOIL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE CODES.

7. BORROW MATERIAL: THE CONTRACTOR SHALL FURNISH BORROW MATERIAL REQUIRED FROM OFF SITE AND OBTAIN ALL REQUIRED PERMITS ASSOCIATED WITH BORROW OPERATIONS.

8. FILL AND COMPACTION: AFTER STRIPPING THOSE AREAS DESIGNATED TO RECEIVE FILL SHOULD BE PROOFROLLED. THE TOP 8" OF SUBGRADE SHALL BE COMPACTED TO AT LEAST 98% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT. ANY AREA WHICH PUMPS OR RUTS EXCESSIVELY SHOULD BE UNDERCUT AND REPLACED WITH A CLEAN, SILTY OR CLAYEY SAND HAVING A UNIFIED SOIL CLASSIFICATION OF SP, SM, OR SC. FILL MATERIAL 5' OUTSIDE OF BUILDING AREAS SHALL THEN BE PLACED IN LAYERS NOT TO EXCEED 8" AND COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) WITH THE UPPER 12 INCHES OF SUBGRADE BEING COMPACTED TO 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. FILL MATERIALS WITHIN BUILDING AREAS TO A LINE OUTSIDE THE BUILDING AREAS SHALL BE PLACED IN LAYERS NOT TO EXCEED 8" AND COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) WITH THE UPPER 12 INCHES OF SUBGRADE BEING COMPACTED IN 6 INCH LAYERS TO 100% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. IN AREAS WHERE NO STRUCTURAL FILL IS TO BE PLACED THE UPPER 12 INCHES OF IN-PLACE SUBGRADE SHOULD BE COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. IF THE MATERIAL IS TOO DRY TO COMPACT TO THE REQUIRED DENSITY EACH LAYER SHALL BE WETTED IN ACCORDANCE WITH COMPACTION REQUIREMENTS. IF THE MATERIAL IS TOO WET TO SECURE PROPER COMPACTION, IT SHALL BE HARROWED REPEATEDLY OR OTHERWISE AERATED WITH SUITABLE EQUIPMENT UNTIL OPTIMUM MOISTURE CONTENT IS OBTAINED. FILL SHALL BE PLACED IN SUCH A MANNER THAT THE SURFACE WILL DRAIN READILY AT ALL TIMES. SEE STRUCTURAL NOTES AND SOILS REPORT FOR ADDITIONAL REQUIREMENTS.

9. LAYOUT: THE CONTRACTOR SHALL PROVIDE ALL LAYOUT REQUIRED TO CONSTRUCT HIS WORK.

10. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION.

11. EXISTING BOUNDARY AND TOPOGRAPHIC INFORMATION FROM SURVEY BY ARNOLD CARSON AND PROVIDED BY OWNER. tree survey by MICHAEL UNDERWOOD AND ASSOC. PA.

12. THE CONTRACTOR SHALL VERIFY DIMENSIONS AT JOBSITE.

13. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF RELOCATION OR DISCONNECTION OF ALL EXISTING UTILITIES WITH APPLICABLE AGENCIES AND AUTHORITIES.

14. ALL PAVEMENT AND BASE MATERIALS AND WORKMANSHIP SHALL CONFORM TO NCDOT STANDARDS.

15. WATER AND SEWER SERVICES SHALL BE INSTALLED TO MEET LOCAL AND STATE PLUMBING CODES. METER AND TAPS SHALL MEET ALL LOCAL REQUIREMENTS.

16. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE.

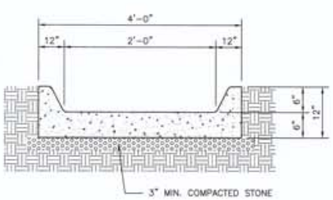
17. SEE SOILS REPORT FOR ADDITIONAL REQUIREMENTS.

18. CONTRACTOR SHALL NOTE THAT EARTHWORK QUANTITIES ARE HIS RESPONSIBILITY. PLANS DO NOT REPRESENT A BALANCED EARTHWORK CONDITION.

19. REINF. CONC. PIPE SHALL BE CLASS III W/RUBBER GASKETED JOINT OR "RAM NECK". INSTALL PER MANUFACTURER'S REQUIREMENTS.

20. USE WHITE LANE MARKING PAINT FOR ALL PAVEMENT MARKINGS. PAINT SHALL BE A CHLORINATED RUBBER ALKYD, FS TT-P-115, TYPE III, FACTORY MIXED, QUICK DRYING, NON-BLEEDING.

21. REFER TO THE PLUMBING DRAWINGS FOR LOCATION AND INVERTS OF NEW WASTE, WATER AND ROOF DRAIN LINES.



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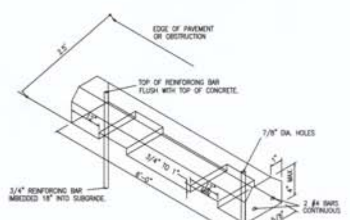
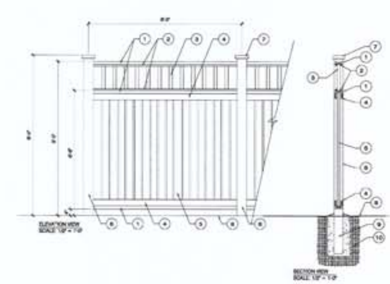
7 CONCRETE FLUME SECTION



NOT TO SCALE

8 CONCRETE WHEEL STOPS



LEGEND
1. 2 x 6 CAP
2. 1 x 1 NAILER
3. 2 x 2 PICKET
4. 2 x 4 STRINGER
5. 1 x 6 VERTICAL BOARDS - 1" OVERLAP
6. 6 x 6 POSTS AT 8'-0" O.C.
7. DECORATIVE POST CAP
8. FINISH GRADE
9. CONCRETE FOOTING
10. COMPACTED SUBGRADE

NOTES:
- PAINT COLOR: TO BE SELECTED
- TREAT ALL EXPOSED SURFACES WITH (2) TWO COATS MOISTURE-PROOF PRIMER AND (2) COATS ENAMEL.
- ALL CONNECTORS, FASTENERS AND OTHER HARDWARE SHALL BE HOT DIPPED GALVANIZED

NOTE: DETAIL SHOWN FOR THE INTENTION OF COMPLIANCE WITH COW CODE. ACTUAL SCREENING USED MAY VARY.

9 TYPICAL DUMPSTER SCREENING DETAIL

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

NCDENR PWSS WATER PERMIT #: ______
WATER CAPACITY: ______ GPD
DWQ SEWER PERMIT #: ______
SEWER CAPACITY: ______ GPD
SEWER SHED # AND PLANT: ______
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

NOTES AND DETAILS
AUTUMN HALL COMMERCIAL PH I
1202 EASTWOOD ROAD
WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
WEB TRASK C/O MIKE BROWN
CAPE FEAR COMMERCIAL, LLC
1051 MILITARY CUTOFF RD.,
SUITE 200
WILMINGTON, NC 28405
344-1010 (P) 622-4657 (CELL)

NORRIS & TUNSTALL
— CONSULTING ENGINEERS P.C. —
1900 EASTWOOD RD., SUITE #11
WILMINGTON, NC 28403
PHONE (910) 343-9653
1429 ASH-LITTLE RIVER RD. NW
ASH, NC 28420
PHONE (910) 287-5900
Licence #C-3641

18128

DES. JST
CKD. JPN
DRWN. NKS
DATE 8/28/19

C5.5

DocuSign Envelope ID: C8ECD8F2-63ED-44D8-ADF8-2C8E3FDT58AF

LEGEND

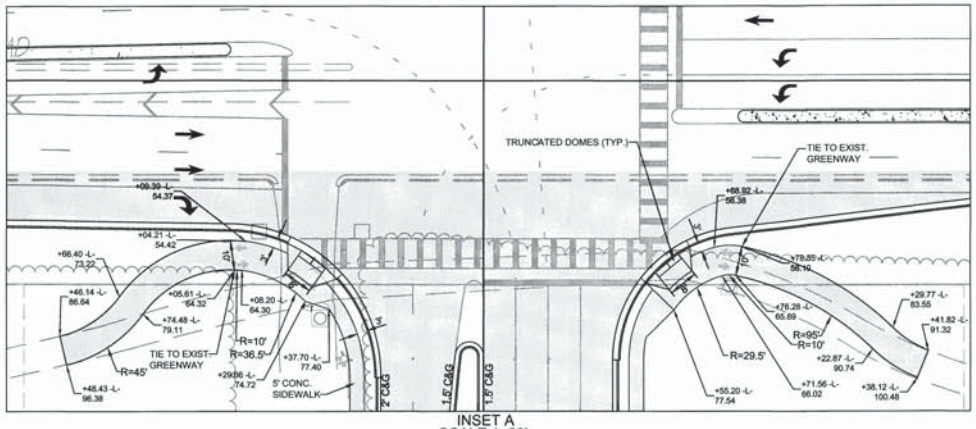
- PROPOSED FULL-DEPTH PAVEMENT CONSTRUCTION
- PROPOSED MONOLITHIC CONCRETE ISLAND
- PROPOSED REMOVAL OF PAVEMENT (DOWN TO SUBGRADE)
- WCR PROPOSED WHEELCHAIR RAMP

NOTE:

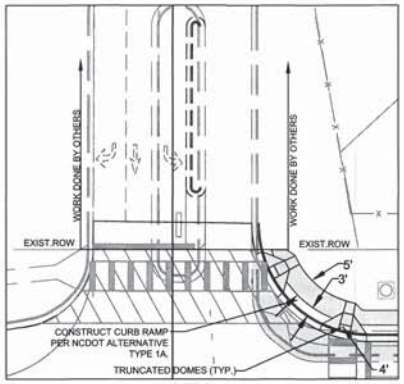
ALL RADIUS CALLOUTS ARE TO THE FACE OF CURB, UNLESS OTHERWISE NOTED.

** MILLING NOTE

MILL 1-1/2" OF EXISTING PAVEMENT ON EASTWOOD ROAD (US HWY. 74) FROM -L- STA. 47+45 TO -L- STA. 68+98



INSET A
SCALE:1=20'



INSET B
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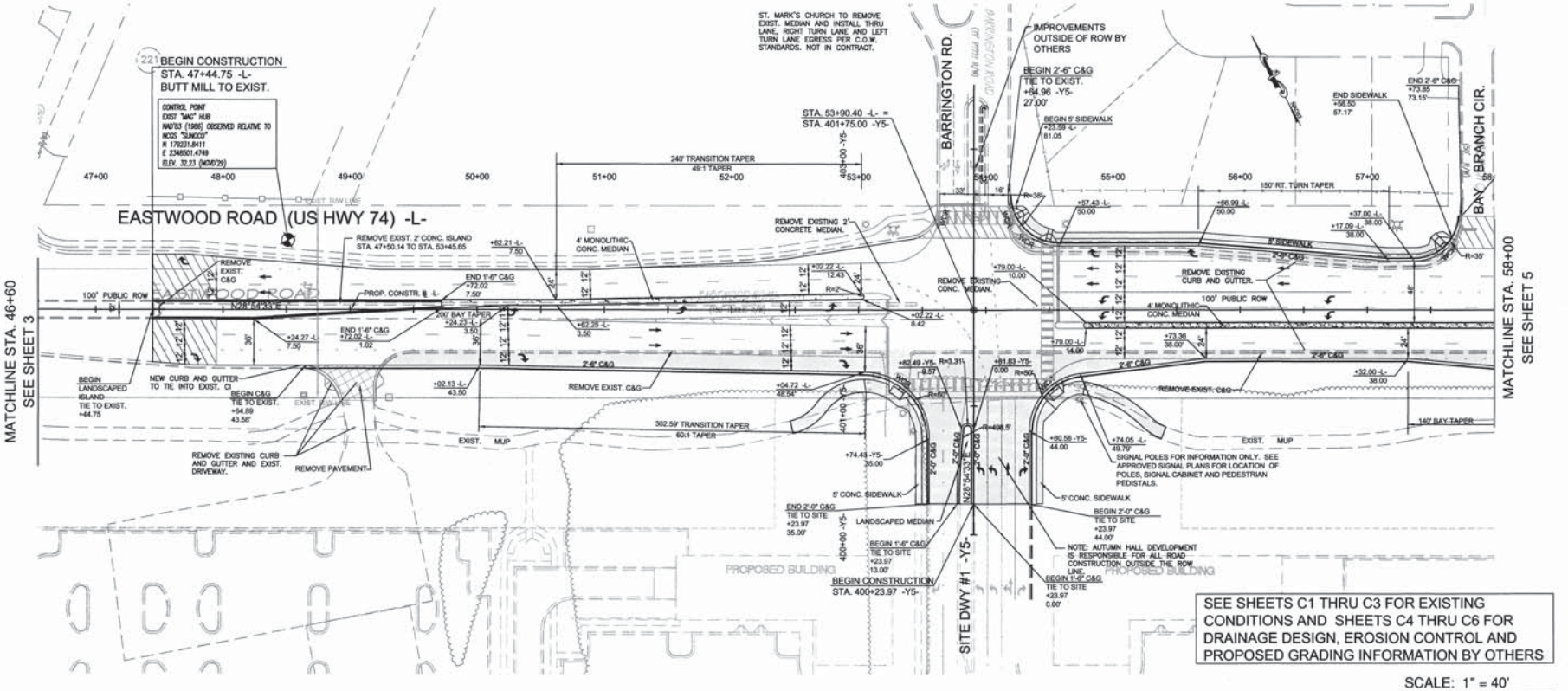


SEE SHEETS C1 THRU C3 FOR EXISTING CONDITIONS AND SHEETS C4 THRU C6 FOR DRAINAGE DESIGN, EROSION CONTROL AND PROPOSED GRADING INFORMATION BY OTHERS

SCALE: 1" = 40'

ROADWAY IMPROVEMENT PLAN

EASTWOOD ROAD IMPROVEMENT PROJECT
WILMINGTON, NC
NEW HANOVER COUNTY

DEVELOPER
AUTUMN HALL, INC.
CONTACT: MR. MIKE BROWN
1202 EASTWOOD RD.
WILMINGTON, NC 28403

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
License #C-3641

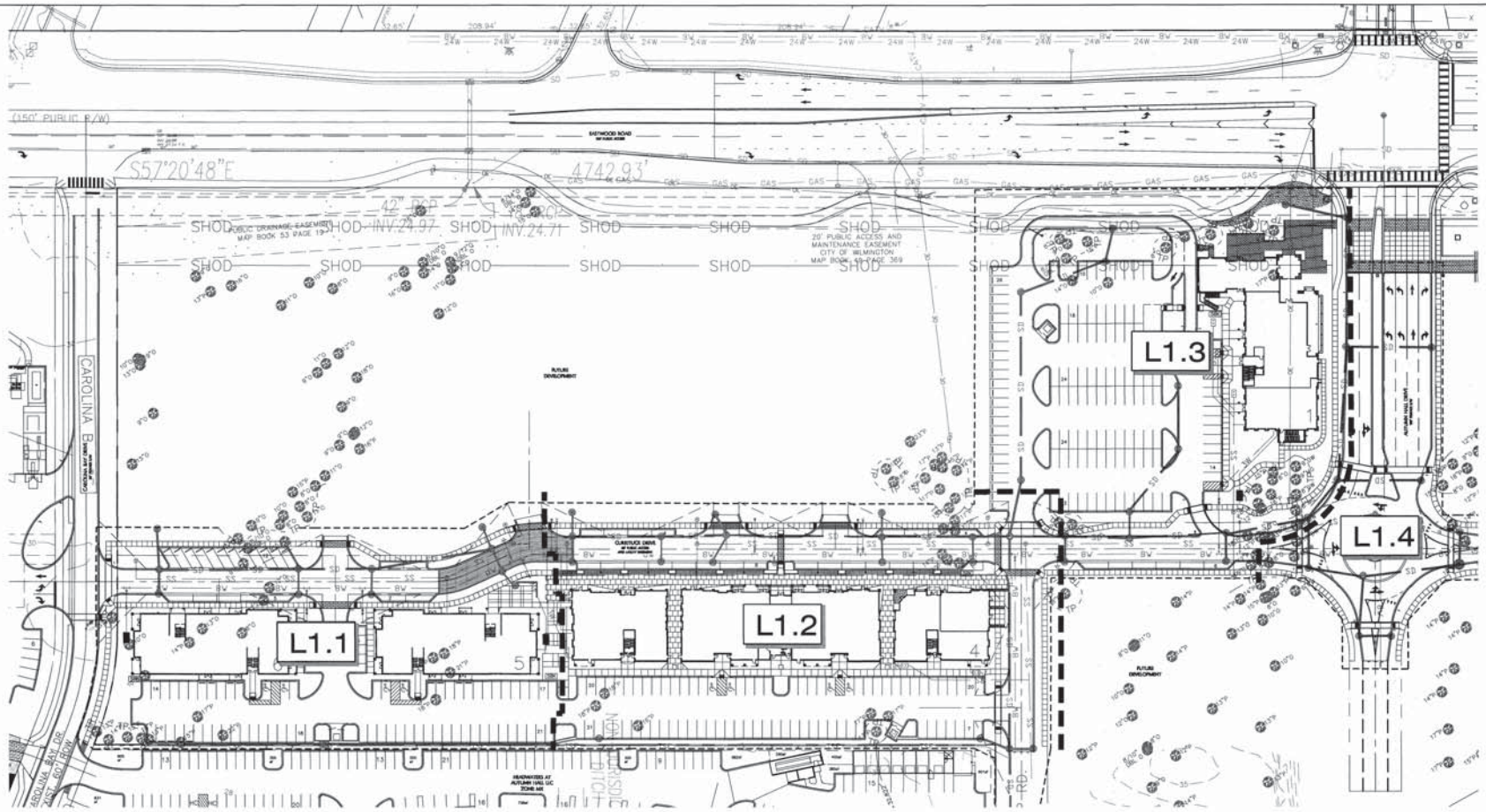
RAMEY KEMP ASSOCIATES
TRANSPORTATION ENGINEERS

50120

DES. DLS
CHG. DLS
DRWN. BBP
DATE 5/10/18

NORTH CAROLINA PROFESSIONAL SEAL 20744 ENGINEER DAVID L. SMITH
5/10/2018
ROADWAY ENGINEER

4



SITE DATA

ADDRESS	1202 EASTWOOD ROAD
PARCEL ID	R05000-004-147-000
EXISTING ZONING	MX / SHOD
PROJECT AREA (PHASE 1)	9.19 AC (356,943 SF)
CAMA LAND USE	WATERSHED RESOURCE PROTECTION
DISTURBED AREA LIMITS	8.78 AC

LANDSCAPE REQUIREMENTS

	REQUIRED	PROVIDED
PARKING LOT CANOPY COVERAGE (40,537 SF X 20%)	8,105 SF, 13 TREES	21 LARGE TREES
STREET YARD PLANTING		
PRIMARY STREET(AND EASTWOOD ROAD (NORTH)	8,174 SF (343 LF x 18)	8,241 SF
TREES REQUIRED	20 (1/600 SF) + (1/40 LF)	20 PROPOSED CANOPY TREES
SHRUBS REQUIRED	82 (6/600 SF)	88 PROPOSED SHRUBS
SECONDARY STREET(AND CAROLINA BAY DRIVE (WEST)	1,602 SF (178 LF x 9)	2,177 SF
TREES REQUIRED	3 (1/600 SF)	1 PROPOSED CANOPY TREES 1 EXISTING TREE 3 UNDERSTORY TREES
SHRUBS REQUIRED	16 (6/600 SF)	21 PROPOSED SHRUBS
FOUNDATION PLANTING 10% FACADE AREA (ADJ. TO PARKING/DRIVE AISLE)		
STARBUCKS		
WEST	706 SF (180 LF x 32'-6" HT x .12)	2,840 SF
EAST	706 SF (180 LF x 32'-6" HT x .12)	2,520 SF
NORTH	450 SF (116 LF x 32'-6" HT x .12)	3,089 SF
RESIDENTIAL BUILDING #1		
NORTH	899 SF (156 LF x 48'-5" HT x .12)	960 SF
SOUTH	899 SF (156 LF x 48'-5" HT x .12)	937 SF
EAST	247 SF (82 LF x 48'-5" HT x .12)	247 SF
WEST	247 SF (82 LF x 48'-5" HT x .12)	375 SF
RESIDENTIAL BUILDING #2		
NORTH	899 SF (156 LF x 48'-5" HT x .12)	2,010 SF
SOUTH	899 SF (156 LF x 48'-5" HT x .12)	1,006 SF
EAST	247 SF (82 LF x 48'-5" HT x .12)	458 SF
MIXED USE BUILDING		
NORTH	2,296 SF (406 LF x 47'-2" HT x .12)	2,330 SF
SOUTH	2,296 SF (406 LF x 47'-2" HT x .12)	2,286SF
WEST	365 SF (88 LF x 47'-2" HT x .12)	561 SF

RETAINED TREES COUNTED TOWARD MINIMUM REQUIRED

QUANTITY	SIZE	COMMON NAME	CREDITS
1	8"	OAK	2
1	8"	DOGWOOD	2
1	8"	DOGWOOD	2
1	8"	MAGNOLIA	2
1	8"	OAK	2
2	10"	OAK	4
1	12"	PINE	3
1	12"	PINE	3
1	13"	PINE	3
1	14"	PINE	4
2	15"	PINE	21
2	16"	PINE	6
1	18"	OAK	3
1	17"	PINE	3
TOTAL TREE CREDITS			67 CREDITS

TREE MITIGATION REQUIREMENTS

REMOVED SIGNIFICANT TREES

QUANTITY	SIZE	COMMON NAME	% MITIGATION
1	36"	PINE	100
1	8"	DOGWOOD	100
1	10"	DOGWOOD	100
1	8"	MAGNOLIA	100

36" x (8) = 36" / 3 = 36 TREES

REMOVED REGULATED TREES

QUANTITY	SIZE	COMMON NAME	% MITIGATION
1	12"	PINE	100
1	13"	PINE	100
1	8"	OAK	100

36" x (1) = 36" / 3 = 13 TREES

TOTAL TREES REQUIRED FOR MITIGATION = 49 TREES
TREE CREDITS USED TO SATISFY MITIGATION = 48 CREDITS

TREE REQUIREMENTS PER DISTURBED ACRE
10 TREES PER DISTURBED ACRE MUST BE RETAINED OR PLANTED ON SITE.

REQUIRED:	8.78 ACRES DISTURBED x 15 TREES = 132 TREES REQUIRED
PROVIDED:	138 TREES PLANTED - REFER TO PLANTING LEGEND
TOTAL:	138 TREES PROVIDED

NOTE:
-ALL PROPOSED VEGETATION WITHIN SIGHT DISTANCES TRIANGLES SHALL NOT INTERFERE WITH CLEAR SIGHT LINES FROM 30" - 10".

-PRIOR TO ANY CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING

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

Approved Construction Plan

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Planning		
Public Utilities		
Traffic		
Fire		

PROPERTY BOUNDARY
MATCHLINE
LIMIT OF DISTURBANCE
STREET LIGHTS, TYP
EXISTING TREES TO BE REMOVED
TREE PROTECTION FENCING
TREES UTILIZED TO MEET PARKING LOT ISLAND SHADE REQUIREMENTS
SITE TRIANGLE, TYP.

NORTH SCALE: 1" = 20'
0 20 40 60 feet

MIHALY LAND DESIGN
PLANNING • LANDSCAPE ARCHITECTURE
330 MILITARY CUTOFF RD., Suite A3
Wilmington, NC 28405 910.392.4303
NORTH CAROLINA 1314 JOSHUA W. MIHALY

Revisions

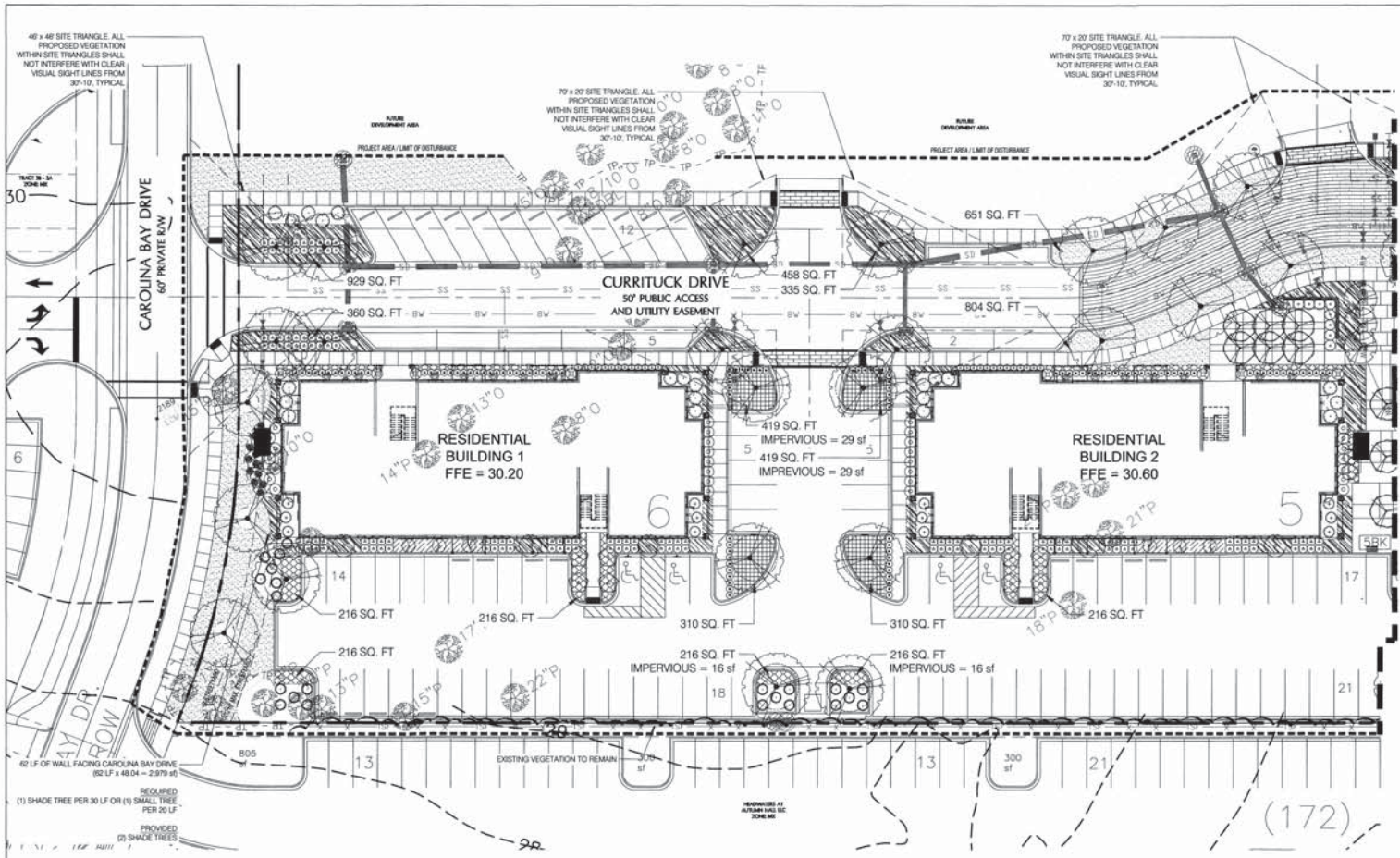
CLIENT
CAPE FEAR COMMERCIALM, LLC
1051 MILITARY CUTOFF RD., SUITE 200
WILMINGTON, NC
CONTACT: MIKE BROWN

PROJECT
AUTUMN HALL COMMERCIAL
1202 EASTWOOD ROAD
WILMINGTON, NC
LANDSCAPE PLAN

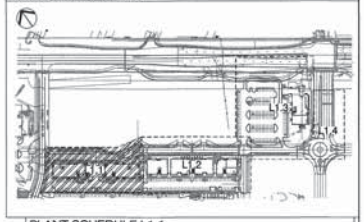
Date:	2019-08-27
Phase:	PHASE 1
Job Number:	400-18
Designed by:	MLD
Drawn by:	MAS
Checked by:	JWM

Sheet Title:
PLANTING PLAN - OVERALL

Sheet Number:
L1.0
of 5 sheets



KEY MAP NOT TO SCALE



PLANT SCHEDULE L1.1

TREES	BOTANICAL / COMMON NAME	CONT	CAL	RANGE		QTY
	Acer p. 'Georgo Kaku' / Coral Bark Maple	B & B	1.5" - 2" CAL	6-8' HT.		5
	Cercis c. 'Forest Pansy' TM / Forest Pansy Redbud	-	3" CAL			9
	Ilex x. 'Berfordii' / Tree Form Burford Holly Dolburn	B & B	2" CAL	7-8' HT.		6
	Lagerstroemia i. 'Pink Velour' / Pink Velour Crape Myrtle	25 GAL	3" CAL	8-7' HT.		11
	Quercus virginiana / Southern Live Oak	B & B	3" CAL			24
SHRUBS	BOTANICAL / COMMON NAME	SIZE	RANGE			QTY
	Aspidistra elatior / Cast Iron Plant	1 gal	15-18" HT			25
	Azalea i. 'Formosa' / Formosa Azalea	3 gal	18-24" HT			22
	Buxus m. 'Wintergreen' / 3 gal. Boxwood	3 gal	12-18" HT			114
	Camellia s. 'Hana Jinsen' / White Camellia	7 gal	24-30" HT			8
	Colocasia gigantea / Giant Elephant Ear	3 gal				15
	Fatsia japonica / Japanese Fatsia	7 gal	24-30" HT			16
	Gardenia j. 'Frostproof' / Frostproof Gardenia	3 gal	18-24" HT			30
	Ilex vomitoria / Tree Form Yaupon Holly	B&B	7-8' HT			3
	Ilex vomitoria 'Nana' / Dwarf Yaupon	3 gal	18-24" HT			86
	Ilex vomitoria 'Nana' / Dwarf Yaupon	7 gal	18-24" HT			40
	Ligustrum japonicum / Tree Form Ligustrum	B&B	6-8' HT			8
	Muhlenbergia capillaris / Pink Muhly	3 gal	18-24" HT			13
	Pittosporum t. 'Variegata' / Variegated Pittosporum	3 gal	18-24" HT			12
	Podocarpus macrophyllus maki / Shrubby Yew	7 gal	3-4' HT			9
	Viburnum suspensum / Sandankwa Viburnum	7 gal	30-36" HT			3
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	RANGE	SPACING		QTY
	Liriope gigantea / Giant Lilitope	1 GAL	12-18" HT	24" o.c.		948
	Liriope m. 'Variegata' / Variegated Lily Turf	1 GAL	6-12" HT	18" o.c.		404
	Ruellia brittoniana / Mexican Petunia	3 gal	15-24" HT	24" o.c.		82
	Trachelospermum a. 'Asiatic' / Asiatic Jasmine	1 qt	6-12" HT	12" o.c.		1,110

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

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

SYMBOL LEGEND

- PROPERTY BOUNDARY
- MATCHLINE
- LIMIT OF DISTURBANCE
- STREET LIGHTS, TYP
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING
- TREES UTILIZED TO MEET PARKING LOT ISLAND SHADE REQUIREMENTS
- SITE TRIANGLE, TYP.

NORTH SCALE: 1" = 20'

0 20 40 60 feet

MIHALY LAND DESIGN
PLANNING • LANDSCAPE ARCHITECTURE
330 MILITARY CUTOFF RD., Suite A3
Wilmington, NC 28405 910.392.4355

NORTH CAROLINA 1314 JOSHUA W. MIHALY

Revisions

CLIENT
CAPE FEAR COMMERCIALM, LLC
1051 MILITARY CUTOFF RD., SUITE 200
WILMINGTON, NC
CONTACT: MIKE BROWN

PROJECT
AUTUMN HALL COMMERCIAL
1202 EASTWOOD ROAD
WILMINGTON, NC
LANDSCAPE PLAN

Date:	2019-06-27
Phase:	PHASE 1
Job Number:	400-18
Designed by:	MLD
Drawn by:	MAS
Checked by:	JWM

Sheet Title:
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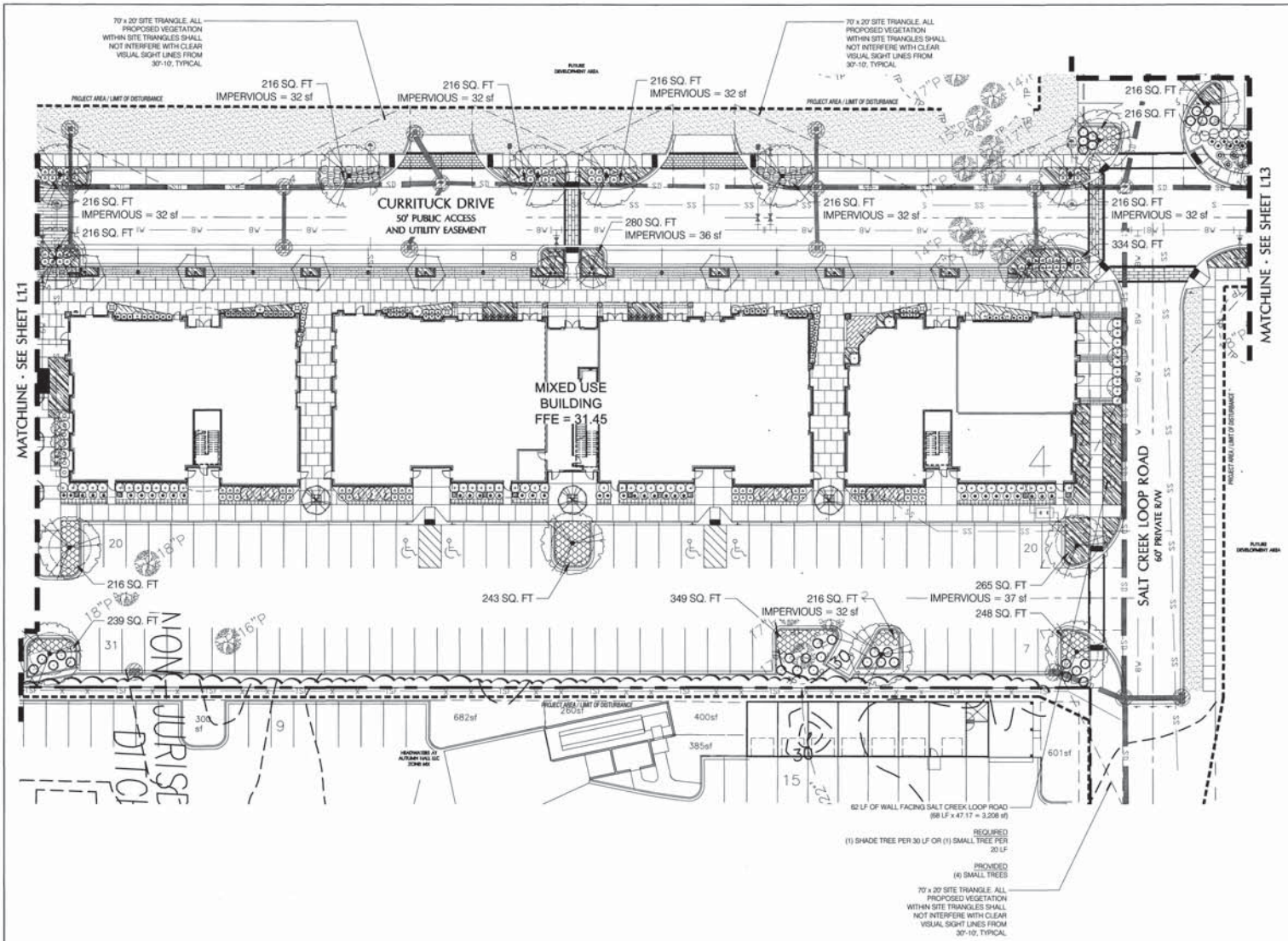

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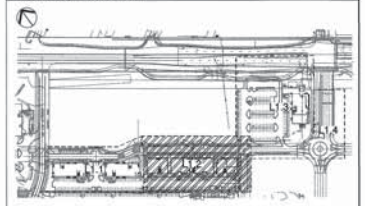

PLANT SCHEDULE L1.2

TREES	BOTANICAL / COMMON NAME	CONT	CAL	RANGE		QTY
	Ilex c. 'Burfordii' / Tree Form Burford Holly Uniform	B & B	3" CAL	7-8' HT		3
	Ilex x a. 'East Palatka' / Single Stem East Palatka Holly	25 GAL		6-8' HT		7
	Lagerstroemia i. 'Muskogee' / Muskogee Crape Myrtle SINGLE STEM	B&B	3" CAL	8-10' HT		3
	Lagerstroemia x 'Natchez' / Natchez Crape Myrtle	B & B	3" CAL	8-10' HT		2
	Quercus virginiana / Southern Live Oak	B & B	3" CAL			17
SHRUBS	**BOTANICAL / COMMON NAME**	**SIZE**	**RANGE**			**QTY**
	Aspidistra elatior / Cast Iron Plant	1 gal	15-18" HT			43
	Azalea i. 'Formosa' / Formosa Azalea	3 gal	18-24" HT			33
	Buxus m. 'Wintergreen' / 3 gal. Boxwood	3 gal	12-18" HT			34
	Camellia s. 'Hana Jinsei' / White Camellia	7 gal	24-30" HT			5
	Fatsia japonica / Japanese Fatsia	7 gal	24-30" HT			2
	Gardenia j. 'Frostproof' / Frostproof Gardenia	3 gal	18-24" HT			7
	Ilex vomitoria / Tree Form Yaupon Holly	B&B	7-8' HT			3
	Ilex vomitoria 'Nana' / Dwarf Yaupon	3 gal	18-24" HT			40
	Ilex vomitoria 'Nana' / Dwarf Yaupon	7 gal	18-24" HT			61
	Ligularia tussilaginea 'Gigantea' / Giant Leopard Plant	3 gal				10
	Ligustrum j. 'Recurvifolium' / Wax leaf ligustrum	7 gal	36" HT			6
	Ligustrum japonicum / Tree Form Ligustrum	B&B	6-8' HT			25
	Miscanthus s. 'Adagio' / Adagio Eulalia Grass	3 gal	18-24" HT			35
	Pittosporum tobira 'Wheeler's Dwarf' / Dwarf Pittosporum	3 gal	12-18" HT			5
	Podocarpus macrophyllus maki / Shrubby Yew	7 gal	3-4' HT			58
	Rosa x 'Knockout' TM / Rose	3 gal	18-24" HT			43
GROUND COVERS	**BOTANICAL / COMMON NAME**	**SIZE**	**RANGE**	**SPACING**		**QTY**
	Liriope gigantea / Giant Liriope	1 GAL	12-18" HT	24" o.c.		663
	Liriope m. 'Variegata' / Variegated Lily Turf	1 GAL	6-12" HT	18" o.c.		178
	Ophiopogon japonicus / Mondo Grass	1 gal	6-12" HT	18" o.c.		136
	Ruellia brittoniana / Mexican Petunia	3 gal	15-24" HT	24" o.c.		84
	Trachelospermum a. 'Asiatic' / Asiatic Jasmine	1 gal	6-12" HT	12" o.c.		916

NORTH SCALE: 1" = 20'

0 20 40 60 feet

WILMINGTON NORTH CAROLINA
Public Services• Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
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Approved Construction Plan

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SYMBOL LEGEND

- PROPERTY BOUNDARY
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- STREET LIGHTS, TYP
- EXISTING TREES TO BE REMOVED
- TP — TREE PROTECTION FENCING
- TREES UTILIZED TO MEET PARKING LOT ISLAND SHADE REQUIREMENTS
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Date:	2019-06-27
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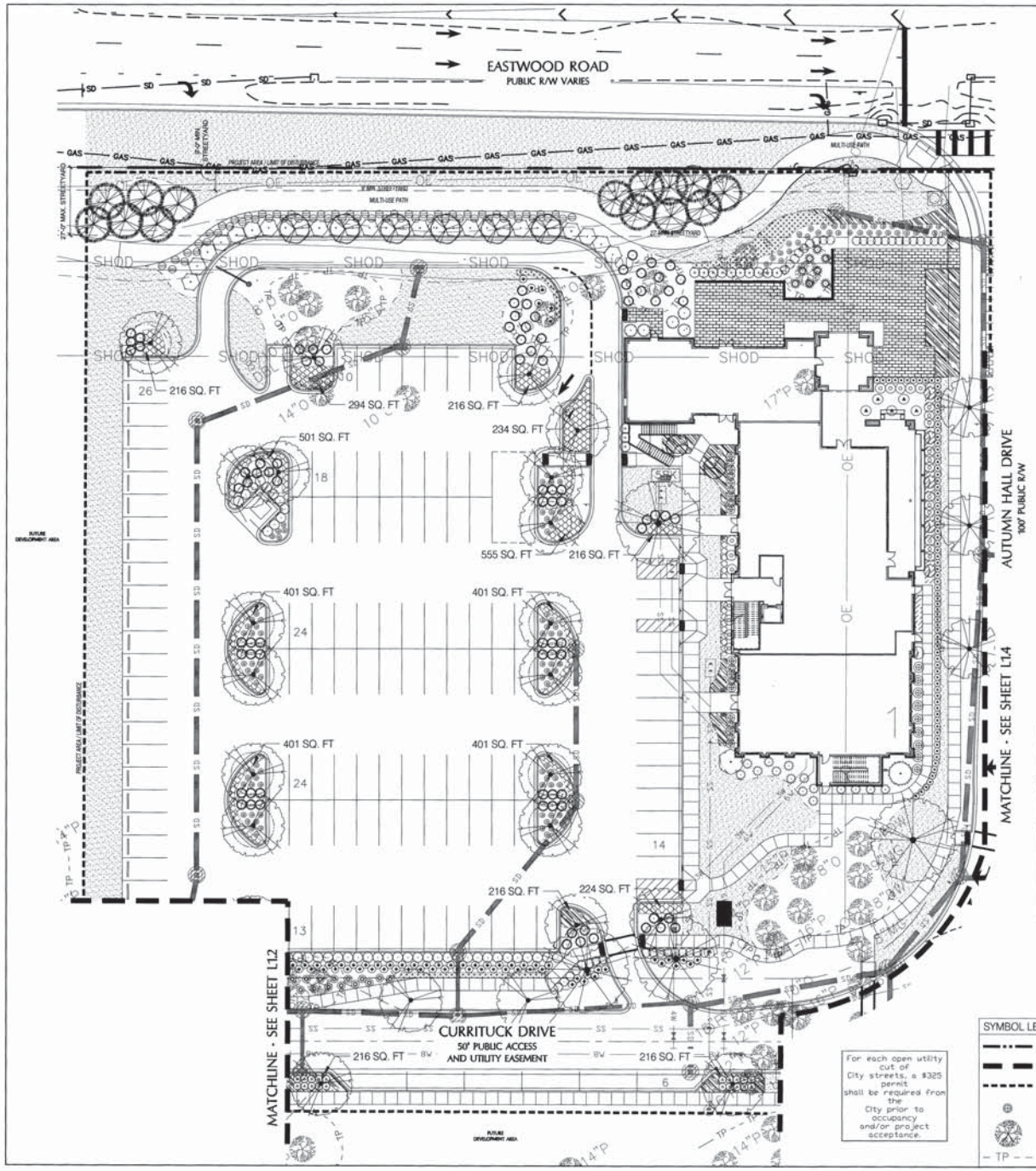

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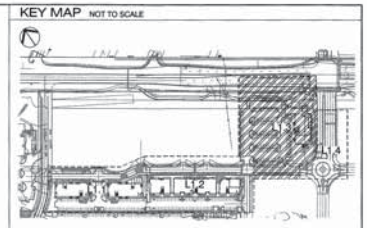
- LIMIT OF DISTURBANCE
- STREET LIGHTS, TYP
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING
- TREES UTILIZED TO MEET PARKING LOT ISLAND SHADE REQUIREMENTS
- SITE TRIANGLE, TYP.

NORTH

0 20 40 60 feet
SCALE: 1" = 20'

KEY MAP NOT TO SCALE



PLANT SCHEDULE L1.3

TREES	BOTANICAL / COMMON NAME	CONT	CAL	RANGE		QTY
	Acer palmatum / Green Leaf Japanese Maple	10 gal	2" CAL	5-6' HT		2
	Cercis c. 'Forest Pansy' TM / Forest Pansy Redbud	–	2" CAL			5
	Ilex x 'Nellie R Stevens' / Nellie Stevens Holly	B & B		8-10' HT		1
	Magnolia g. 'Little Gem' / Dwarf Southern Magnolia	30 GAL	2" CAL	7-8' HT		1
	Pinus palustris / Longleaf Pine	–	3" CAL			14
	Quercus shumardii / Shumard Red Oak	B & B	2" CAL			3
	Quercus virginiana / Southern Live Oak	B & B	2" CAL			22
	Quercus virginiana / Southern Live Oak	B & B	6" CAL	18' -20' HT.		4
SHRUBS	BOTANICAL / COMMON NAME	SIZE	RANGE			QTY
	Azalea i. 'Formosa' / Formosa Azalea	3 gal	18-24" HT			89
	Buxus m. 'Wintergreen' / 10 gal. Boxwood	10 gal	24-30" HT			39
	Buxus m. 'Wintergreen' / 3 gal. Boxwood	3 gal	12-18" HT			80
	Colocasia gigantea / Giant Elephant Ear	3 gal				8
	Distylium myricoides 'Cinnamon Girl'	3 gal	24-30" HT			15
	Fatsia japonica / Japanese Fatsia	7 gal	24-30" HT			5
	Gardenia j. 'Frostproof' / Frostproof Gardenia	3 gal	18-24" HT			24
	Hydrangea p. 'Limelight' TM / Limelight Hydrangea	3 gal	18-24" HT			5
	Ilex vomitoria 'Nana' / Dwarf Yaupon	7 gal	18-24" HT			20
	Ligustrum j. 'Recurvifolium' / Wax leaf ligustrum	7 gal	30" HT			38
	Ligustrum japonicum / Tree Form Ligustrum	B&B	6-8' HT			5
	Miscanthus s. 'Adagio' / Adagio Eulalia Grass	3 gal	18-24" HT			59
	Nandina domestica 'Firepower' / Heavenly Bamboo	3 gal	15-24" HT			11
	Pittosporum tobira 'Wheeler's Dwarf' / Dwarf Pittosporum	3 gal	12-18" HT			14
	Podocarpus macrophyllus maki / Shrubby Yew	7 gal	3-4' HT			13
	Rhaphiolepis x 'Montic' / Mitt Indian Hawthorn	7 gal	24-30" HT			8
	Rosa x 'Knockout' TM / Rose	3 gal	18-24" HT			93
	Rosa x 'Meipujolo' / Red Drift Rose	3 gal	12-15" HT			119
	Sabal minor / Dwarf Palmetto	3 gal	18-24" HT			8
	Viburnum odoratissimum / Sweet Viburnum	15 gal	3-4' HT			28
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	RANGE		SPACING	QTY
	Liriope gigantea / Giant Liriope	1 GAL	12-18" HT		24" o.c.	579
	Liriope muscari / Lily Turf	1 GAL	6-12" HT		18" o.c.	241
	Ruellia brittoniana / Mexican Petunia	3 gal	18-24" HT		24" o.c.	55
	Trachelospermum a. 'Asiatic' / Asiatic Jasmine	1 gal	6-12" HT		12" o.c.	1,462

MIHALY
LAND DESIGN
PLANNING • LANDSCAPE ARCHITECTURE
330 MILITARY CUTOFF RD., Suite A3
Wilmington, NC 28405 910.392.4355

NORTH CAROLINA 1314 JOSHUA W. MIHALY

Revisions

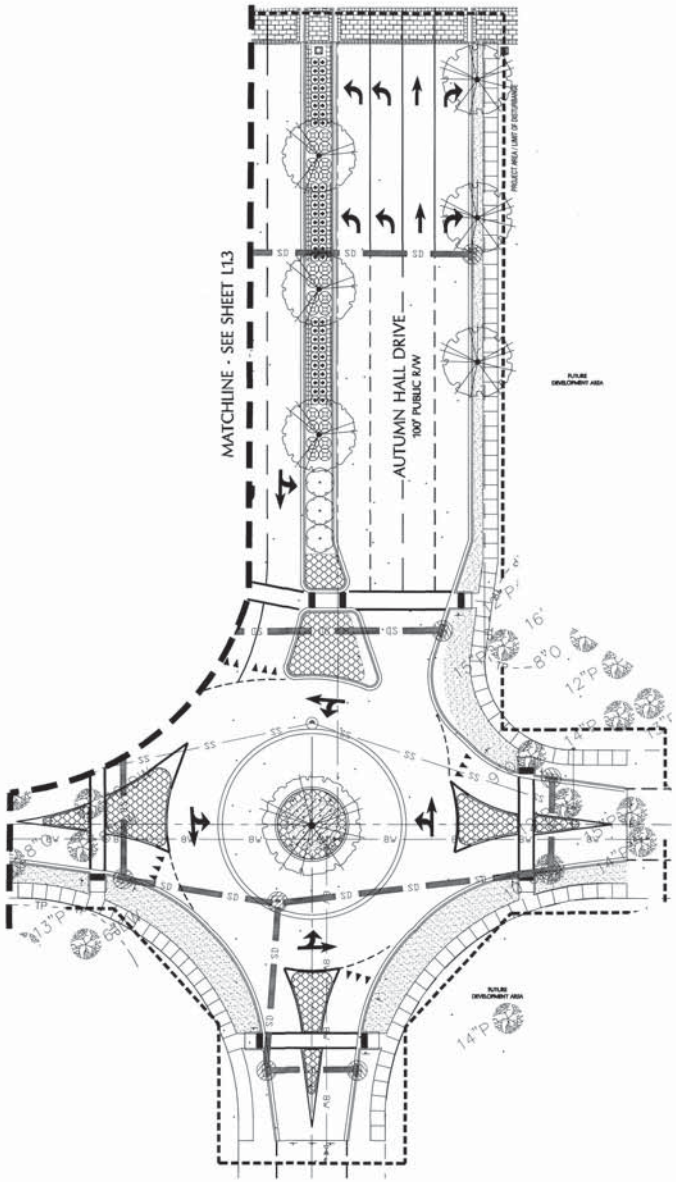
CLIENT
CAPE FEAR COMMERCIALM, LLC
1051 MILITARY CUTTOFF RD., SUITE 200
WILMINGTON, NC
CONTACT: MIKE BROWN

PROJECT
AUTUMN HALL COMMERCIAL
1202 EASTWOOD ROAD
WILMINGTON, NC
LANDSCAPE PLAN

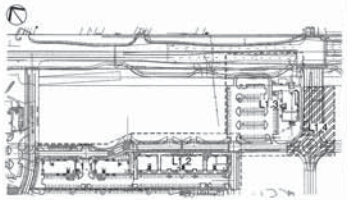
Date:	2019-08-27
Phase:	PHASE 1
Job Number:	400-18
Designed by:	MLD
Drawn by:	MAS
Checked by:	JWM

Sheet Title:
PLANTING PLAN

Sheet Number:
L1.3
of 5 sheets



KEY MAP NOT TO SCALE



PLANT SCHEDULE L1.4

TREES	BOTANICAL / COMMON NAME	CONT	CAL	RANGE		QTY
	Ilex x `Nellie R Stevens` / Nellie Stevens Holly	B & B		8-10` HT		3
	Quercus shumardii / Shumard Red Oak	B & B	3" CAL			3
	Quercus virginiana / Southern Live Oak	B & B	3" CAL			3
	Quercus virginiana / Southern Live Oak	B & B	6" CAL	18`-20` HT.		1
SHRUBS	BOTANICAL / COMMON NAME	SIZE	RANGE			QTY
	Camellia s. `Hana Jinsin` / White Camellia	7 gal	24-36" HT			24
	Rosa x `Knockout` TM / Rose	3 gal	18-24" HT			54
SHRUB AREAS	BOTANICAL / COMMON NAME	SIZE	RANGE		SPACING	QTY
	Muhlenbergia capillaris / Pink Muhly	3 GAL	12-15" HT		24" o.c.	62
GROUND COVERS	BOTANICAL / COMMON NAME	SIZE	RANGE		SPACING	QTY
	Liriope m. `Variegata` / Variegated Lily Turf	1 GAL	6-12" HT		18" o.c.	128
	Trachelospermum a. `Asiatic` / Asiatic Jasmine	1 qt	6-12" HT		12" o.c.	1,753

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

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

Approved Construction Plan

	Name	Date
Planning		
Public Utilities		
Traffic		
Fire		

SYMBOL LEGEND

- PROPERTY BOUNDARY
- MATCHLINE
- LIMIT OF DISTURBANCE
- STREET LIGHTS, TYP
- EXISTING TREES TO BE REMOVED
- TP — TREE PROTECTION FENCING
- TREES UTILIZED TO MEET PARKING LOT ISLAND SHADE REQUIREMENTS
- SITE TRIANGLE, TYP.

NOTE:
-ALL PROPOSED VEGETATION WITHIN SIGHT DISTANCES TRIANGLES SHALL NOT INTERFERE WITH CLEAR SIGHT LINES FROM 30" - 10'.

-PRIOR TO ANY CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.

NORTH

0 20 40 60 feet
SCALE: 1" = 20'

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of 5 sheets