

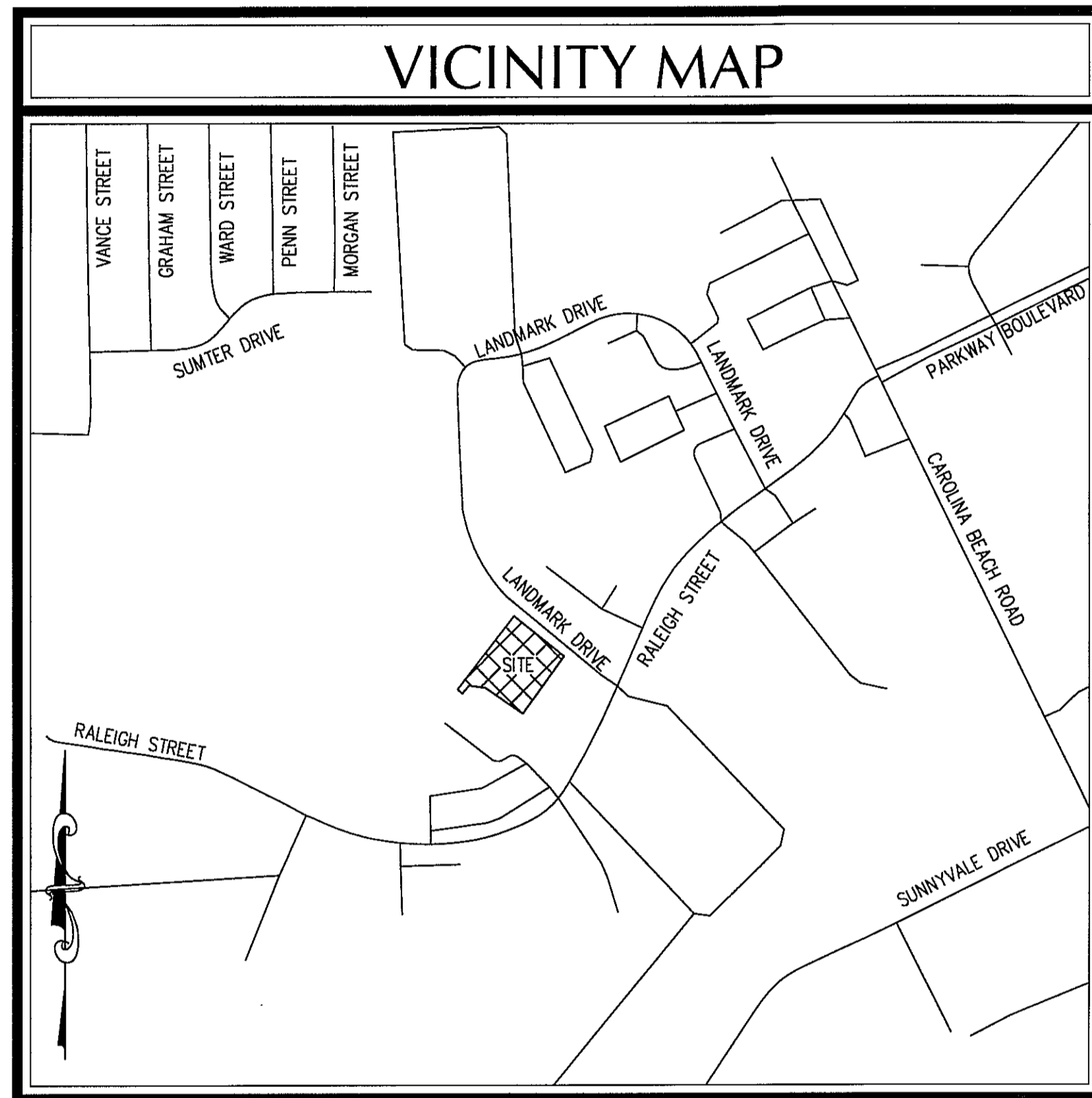
SITE DEVELOPMENT PLAN

FOR

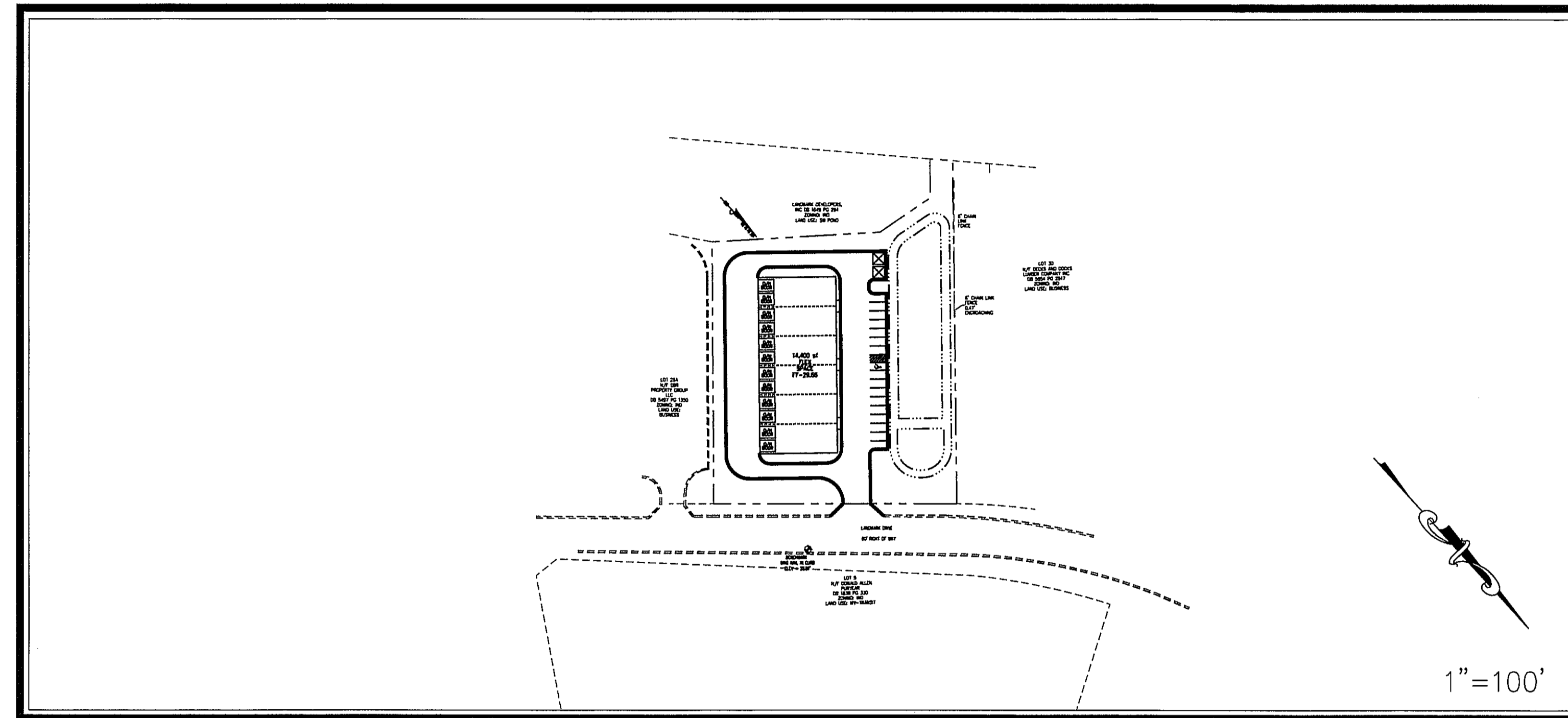
BRITTANY DEL FLEX SPACE

WILMINGTON, NORTH CAROLINA

NOVEMBER 2017



VICINITY MAP
(NTS)



DESCRIPTION	EXISTING	PROPOSED
1' CONTOUR INTERVAL	_____	_____
5' CONTOUR INTERVAL	-----	-----
PROPERTY LINE	-----	-----
ROADWAY CENTERLINE	-----	-----
RIGHT OF WAY LIMITS	-----	-----
EASEMENT LINE	-----	-----
CURB & GUTTER	-----	-----
SANITARY SEWER FACILITIES	-----○-----	-----●-----
STORM SEWER FACILITIES	-----■-----	-----■-----
WATERLINE	-----	-----
FIRE HYDRANT ASSEMBLY	⊕	⊕
WATERWAYS	-----	N/A
PROPOSED LOT AND S.F.	x 5,000 s.f.	
OPEN SPACE LABEL	ⓐ	
OPEN SPACE	▨	404 WETLANDS
BUILDING SET BACKS	---	FLOW DIRECTION
PRIVATE SANITARY SET BACKS	---	

DEVELOPER/OWNER

BRITTANY DEL INVESTMENTS, LLC
419B RALEIGH STREET
WILMINGTON, NC 28412

PREPARED BY:

GSP CONSULTING, PLLC
ENGINEERING
6626 Gordon Road, Unit C, Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659 License # P-0718

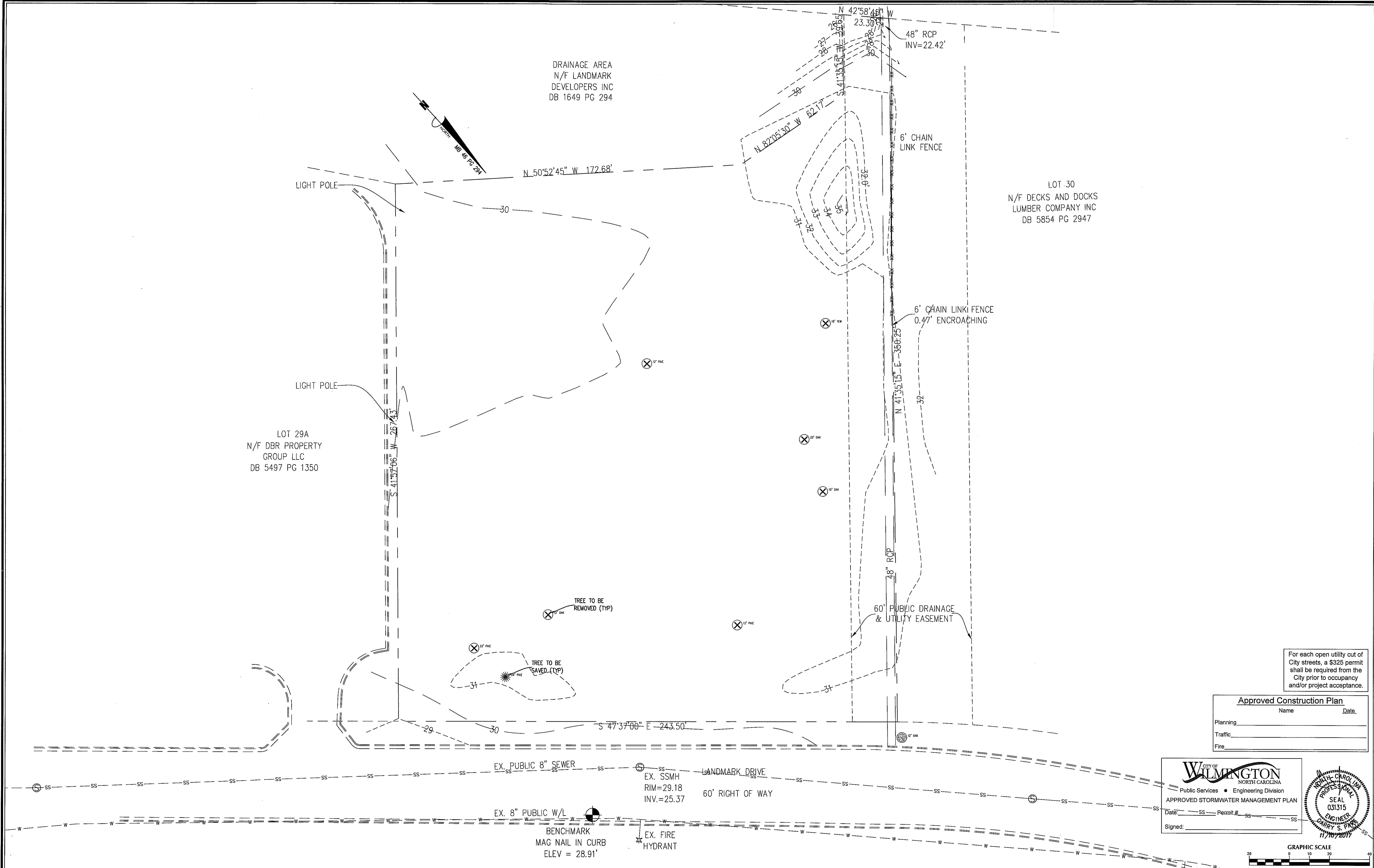
INDEX OF SHEETS	
SHT C-0	COVER SHEET
SHT C-1	GENERAL NOTES
SHT C-2	EXISTING CONDITIONS PLAN
SHT C-3	SITE PLAN
SHT C-4	UTILITY PLAN
SHT C-5	GRADING, DRAINAGE & EROSION & SEDIMENT CONTROL PLAN

SITE DATA TABLE									
GENERAL NOTES:									
1.	NEW HANOVER COUNTY PARCEL NOS: PIN# R06500-002-048-000 SITE ADDRESS: 403 LANDMARK DRIVE								
2.	TOTAL AREA: 70,615 SF = 1.62 AC.±								
3.	ZONING: INDUSTRIAL DISTRICT SETBACKS - <table style="display: inline-table; vertical-align: top;"> <tr> <th>REQUIRED</th> <th>PROPOSED</th> </tr> <tr> <td>50' FRONT</td> <td>20' FRONT</td> </tr> <tr> <td>0' REAR*</td> <td>10' REAR*</td> </tr> <tr> <td>0' SIDE**</td> <td>10' SIDE**</td> </tr> </table> <p>*(50' WHERE ABUTTING A RESIDENTIAL DISTRICT OR STREET) **(20' WHERE ABUTTING A RESIDENTIAL DISTRICT)</p>	REQUIRED	PROPOSED	50' FRONT	20' FRONT	0' REAR*	10' REAR*	0' SIDE**	10' SIDE**
REQUIRED	PROPOSED								
50' FRONT	20' FRONT								
0' REAR*	10' REAR*								
0' SIDE**	10' SIDE**								
4.	CAMA LAND CLASSIFICATION: URBAN								
5.	THIS PROPERTY IS <u>NOT</u> WITHIN A SPECIAL FLOOD HAZARD ZONE PER FEMA DFIRM 3720312500J EFFECTIVE DATE 04/03/06.								
DEVELOPMENT DATA:									
TOTAL TRACT AREA = 70,615 SF = 1.62 AC.±									
PROPOSED USE: FLEX SPACE									
NUMBER OF BUILDINGS: 1 (1-STORY)									
UNITS PROPOSED: 6 (14,400 SF)									
CONSTRUCTION TYPE: S1									
MAX BUILDING HEIGHT	<table style="display: inline-table; vertical-align: top;"> <tr> <th>REQUIRED</th> <th>PROPOSED</th> </tr> <tr> <td>35'</td> <td>35'</td> </tr> </table>	REQUIRED	PROPOSED	35'	35'				
REQUIRED	PROPOSED								
35'	35'								
MAX BUILDING COVERAGE	<table style="display: inline-table; vertical-align: top;"> <tr> <th>REQUIRED</th> <th>PROPOSED</th> </tr> <tr> <td>N/A</td> <td>14,400/70,615=(20.4%)</td> </tr> </table>	REQUIRED	PROPOSED	N/A	14,400/70,615=(20.4%)				
REQUIRED	PROPOSED								
N/A	14,400/70,615=(20.4%)								
BUILDING HEIGHT: MAXIMUM - 35' MEAN ROOF PROPOSED MAXIMUM - 35' MEAN ROOF									
PARKING: WAREHOUSING GENERAL 1 SPACE/1,000 GFA = 14,400/1,000 = 14.4 SPACES REQUIRED ***17 TOTAL SPACES PROVIDED. (1 H/C) ** PER ADA REGULATIONS FOR PARKING FACILITY WITH 1-25 SPACES 1 H/C SPACE REQUIRED									
IMPERVIOUS SURFACES -									
BUILDINGS -	14,400 S.F.								
PAVEMENT -	22,548 S.F.								
SIDEWALKS -	144 S.F.								
TOTAL -	37,092 S.F. (52.5%)								
UTILITY CAPACITY REQUESTS: PROPOSED SEWER CAPACITY - 14,400 SF @ 60 GPD/100 SF = 8,640 GPD PROPOSED WATER CAPACITY - 14,400 SF @ 60 GPD/100 SF = 8,640 GPD									
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.									
Approved Construction Plan									
Name _____ Date _____									
Planning _____									
Traffic _____									
Fire _____									
<table style="width: 100%;"> <tr> <td style="text-align: center;"> CITY OF WILMINGTON NORTH CAROLINA Public Services • Engineering Division APPROVED STORMWATER MANAGEMENT PLAN Date: _____ Permit # _____ Signed: _____ </td> <td style="text-align: center;"> GARRY S. PAPE ENGINEER 11/10/2017 </td> </tr> </table>		 CITY OF WILMINGTON NORTH CAROLINA Public Services • Engineering Division APPROVED STORMWATER MANAGEMENT PLAN Date: _____ Permit # _____ Signed: _____	 GARRY S. PAPE ENGINEER 11/10/2017						
 CITY OF WILMINGTON NORTH CAROLINA Public Services • Engineering Division APPROVED STORMWATER MANAGEMENT PLAN Date: _____ Permit # _____ Signed: _____	 GARRY S. PAPE ENGINEER 11/10/2017								
NOTE: ALL DESIGN AND CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE, TECHNICAL STANDARDS MANUAL & THE STATE OF NORTH CAROLINA									

DRAINAGE AREA
N/F LANDMARK
DEVELOPERS INC
DB 1649 PG 294

LOT 30
N/F DECKS AND DOCKS
LUMBER COMPANY INC
DB 5854 PG 2947

LOT 29A
N/F DBR PROPERTY
GROUP LLC
DB 5497 PG 1350



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

Approved Construction Plan

Name _____ Date _____

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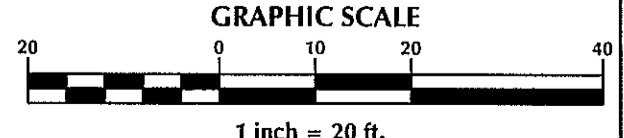
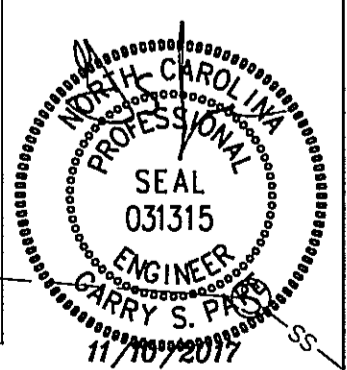
CITY OF WILMINGTON
NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____



No.	Revision	Date	By

Designer	GSP	Scale	1" = 20'
Drawn By	GSP	Date	November 2017
License #	P-0718	Job No.	2017-0010

BRITTANY DEL FLEX SPACE

Wilmington New Hanover County North Carolina

EXISTING CONDITIONS

PREPARED FOR:
BRITTANY DEL INVESTMENTS, LLC
419B RALEIGH STREET
WILMINGTON, NC 28412

GSP CONSULTING, PLLC
ENGINEERING

6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-2.1

DRAINAGE AREA
N/F LANDMARK
DEVELOPERS INC
DB 1649 PG 294

LOT 30
N/F DECKS AND DOCKS
LUMBER COMPANY INC
DB 5854 PG 2947

TREES TO BE SAVED

24" PINE	1
----------	---

TREES TO BE REMOVED

12" OAK	1
16" OAK	1
20" OAK	1
18" YEW	1
12" PINE	2
22" PINE	1

LIGHT POLE

LIGHT POLE

LOT 29A
N/F DBR PROPERTY
GROUP LLC
DB 5497 PG 1350

14,400 sf
FLEX-SPACE
FF-29.66

O/H DOOR

O/H DOOR

O/H DOOR

O/H DOOR

O/H DOOR

O/H DOOR

O/H DOOR

O/H DOOR

O/H DOOR

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O/H DOOR

O/H DOOR

TREE TO BE REMOVED (TYP)

TREE PROTECTION (TYP)

BENCHMARK
MAG NAIL IN CURB
ELEV = 28.91'

EX. FIRE HYDRANT

EX. PUBLIC 8" SEWER

EX. 8" PUBLIC W/L

EX. SSMH
RIM=29.18
INV.=25.37

LANDMARK DRIVE
60' RIGHT OF WAY

15' REAR SETBACK

50' FRONT SETBACK

48" RCP
INV=22.42'

6' CHAIN LINK FENCE

6' CHAIN LINK FENCE
0.47' ENCROACHING

60' PUBLIC DRAINAGE
& UTILITY EASEMENT

11-28-2017
NORTH CAROLINA
PROFESSIONAL
SEAL
AND SURVEYOR
CARRIE S. PERRY
11/18/2017
FOR TREE LOCATION ONLY

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

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

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

NORTH CAROLINA
PROFESSIONAL
SEAL
031315
ENGINEER
CARRIE S. PERRY
11/18/2017

GRAPHIC SCALE
1 inch = 20 ft.

No.	Revision	Date	By

Designer	GSP	Scale	1" = 20'
Drawn By	GSP	Date	November 2017
License #	P-0718	Job No.	2017-0010

BRITTANY DEL FLEX SPACE
Wilmington New Hanover County North Carolina

SITE INVENTORY PLAN

PREPARED FOR:
BRITTANY DEL INVESTMENTS, LLC
419B RALEIGH STREET
WILMINGTON, NC 28412

GSP CONSULTING, PLLC
ENGINEERING
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-2.2

GENERAL UTILITY NOTES:

- PROJECT SHALL COMPLY WITH CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) CROSS CONNECTION REQUIREMENTS. WATER METERS(S) CANNOT BE SET AND ACTIVATED ON NEW MAINS UNTIL ALL REQUIREMENTS ARE MET AND INCENR HAS ISSUED THEIR "FINAL APPROVAL". CALL 332-6558 FOR INFORMATION.
- 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.
- TO USE CFPUA WATER FOR IRRIGATION IT MUST BE METERED SEPARATELY.
- WHEN PVC WATER MAINS AND/OR POLYETHYLENE SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED COPPER WIRE INSTALLED THE ENTIRE LENGTH AND STRIPPED TO THE PIPES WITH DUCT TAPE. THE INSULATED WIRE IS TO BE STRIPPED TO BARE WIRE AND SECURED TO ALL VALVES AND FITTINGS. THIS WIRE IS TO BE ACCESSIBLE AT ALL VALVES, FIRE HYDRANTS, AND WATER METER BOXES TO AID IN FUTURE LOCATIONS OF FACILITIES.
- TREES ARE NOT TO BE PLANTED OVER WATER MAINS OR WITHIN UTILITY EASEMENTS.
- STATE WATER AND SEWER PERMITS SHALL BE OBTAINED PRIOR TO RELEASE OF THE PROJECT FOR CONSTRUCTION.
- ALL WATERMANS WITHIN PUBLIC RIGHT OF WAY TO BE PUBLIC AND ALL WATERMANS LOCATED ON PRIVATE PROPERTY TO BE PRIVATE.
- ALL WATERLINES TO HAVE MINIMUM 10' SEPARATION FROM ALL SEWER LINES, MANHOLES AND CLEANOUTS & TO HAVE 3' OF COVER AND 18" CLEARANCE WHERE WATER CROSSES OTHER UTILITY LINES.
- ANY SANITARY SEWER SYSTEM OR ANY PORTION THEREOF SHALL BE LOCATED AT LEAST A MINIMUM OF 10- FEET FROM ANY WATER LINE. SEWER LINES MAY CROSS A WATER LINE IF 18-INCH CLEAR SEPARATION DISTANCE IS MAINTAINED, WITH THE SEWER LINE CROSSING UNDER THE WATER LINE. WHEN CONDITIONS PREVENT AN 18-INCH CLEAR SEPARATION FROM BEING MAINTAINED OR WHENEVER IT IS NECESSARY FOR THE WATER LINE TO CROSS UNDER THE SEWER, THE SEWER LINE SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE OR ITS EQUIVALENT AND THE WATER LINE SHALL BE CONSTRUCTED OF FERROUS MATERIALS EQUIVALENT TO WATER MAIN STANDARDS WITH FOR A DISTANCE OF AT LEAST TEN FEET ON EACH SIDE OF THE POINT OF CROSSING, WITH FULL SECTIONS OF PIPE CENTERED AT THE POINT OF CROSSING.

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

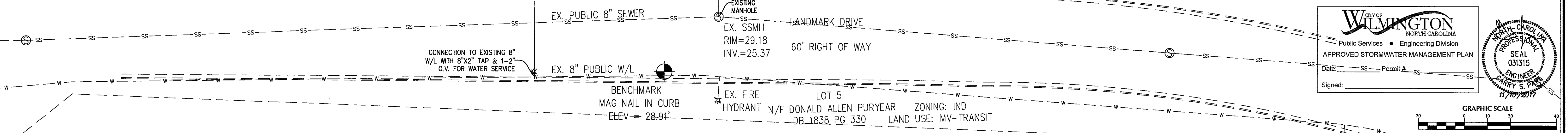
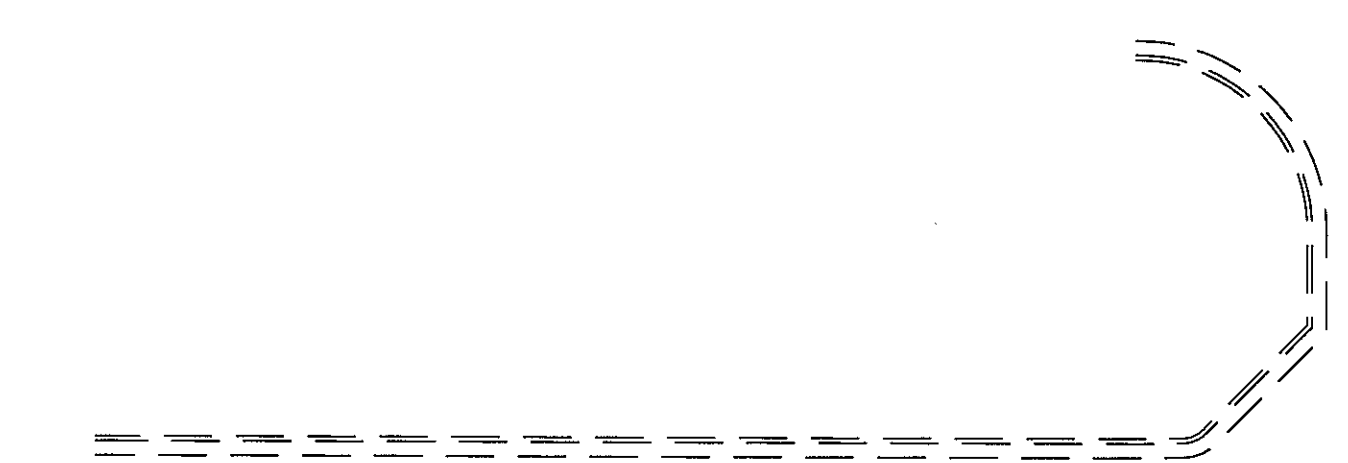
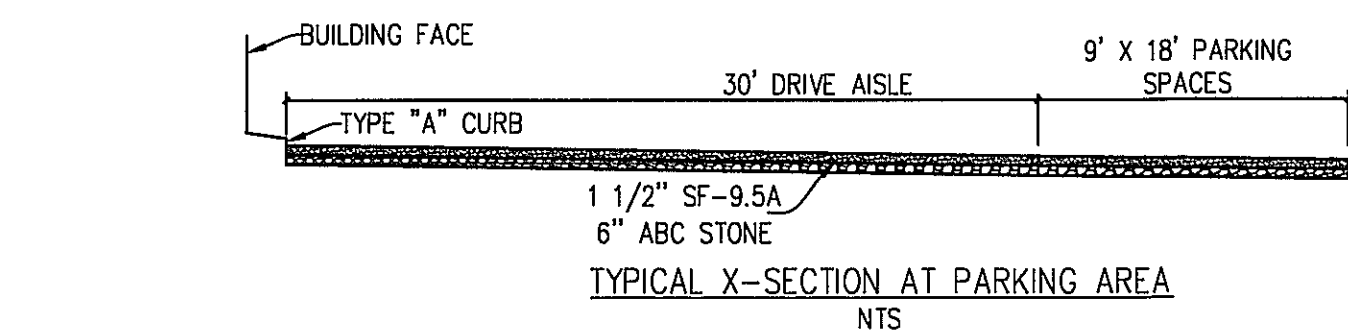
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
- WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF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

FIRE DEPARTMENT NOTES:

- HYDRANT MUST BE WITHIN 150' OF THE FDC.
- THE FDC MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.
- LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT AND FDC.
- HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
- NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDING(S).
- CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
- UNDERGROUND FIRE LINE AND PRIVATE WATER MAINS MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PRIVATE RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0696 FOR ADDITIONAL INFORMATION.

TRAFFIC NOTES:

- ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY & FOR DRIVEWAY ARE TO BE THERMOPLASTIC & MEET CITY AND/OR NCDOT STANDARDS.
- 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.
- CONTACT TRAFFIC ENGINEERING AT (910) 341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.
- ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING WILL BE REPLACED
- CONTACT TRAFFIC ENGINEERING AT (910) 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
- TACTILE WARNING MATS TO BE INSTALLED AT ALL WHEELCHAIR RAMPS.
- ONCE STREETS ARE READY TO BE OPEN TO PUBLIC TRAFFIC, CONTACT THE TRAFFIC ENGINEERING DIVISION TO REQUEST INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
- A LANDSCAPING PLAN, INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE TRAFFIC ENGINEERING DIVISION AND PARKS & RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT. PLAN SHALL ADHERE TO SD 15-17.
- ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
- ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
- 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.
- CONTACT TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
- CONTACT TRAFFIC ENGINEERING TO DISCUSS PAVEMENT MARKINGS AND TRAFFIC SIGNAL/ LOOP CHANGES.
- REFLECTORS TO BE INSTALLED ON GREENVILLE LOOP ROAD PER CITY AND NCDOT GUIDELINES.
- DEVELOPER/CONTRACTOR TO CONTACT TRAFFIC ENGINEERING SIGN DEPARTMENT TO DISCUSS THE COLOR OF THE PAVEMENT MARKINGS OF THE HATCHED AREA AT THE END OF THE RIGHT TURN LANES AT RICHARD BRADLEY DR. AND TAMARISK LANE.
- ALL UNITS TO BE HANDICAP ACCESSIBLE.



No.	Revision	Date	By

BRITTANY DEL FLEX SPACE
 New Hanover County North Carolina

SITE & UTILITY PLAN

PREPARED FOR:
 BRITTANY DEL INVESTMENTS, LLC
 419B RALEIGH STREET
 WILMINGTON, NC 28412

GSP CONSULTING, PLLC
 ENGINEERING
 6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-3

Approved Construction Plan

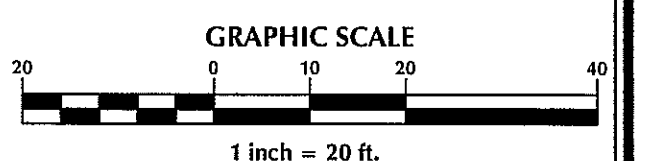
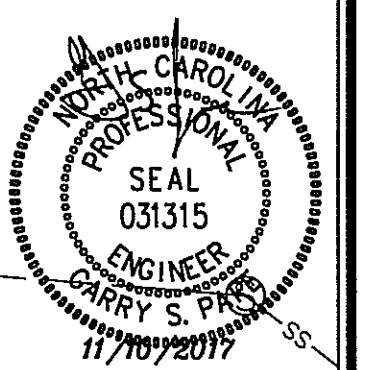
Name _____ Date _____

Planning _____

Traffic _____

Fire _____

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



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

SEDIMENT BASIN CALCULATIONS

SEDIMENT TRAPPING DEVICE	DRAINAGE AREA (AC)	REQUIRED STORAGE (1,800CF/AC)	PROVIDED STORAGE (CF)	PEAK Q ₁₀ FLOW (CFS)	REQUIRED AREA (325 SF/CFS)	PROVIDED AREA (SF)	SKIMMER SIZE (in)
SEDIMENT BASIN #1	1.36	2,446	4,577	2.57	835	11,441	1.5

EROSION CONTROL NOTES

1. SEDIMENT BASIN WILL BE PUMPED DOWN BY MECHANICAL MEANS WHEN SEDIMENT REACHES 50% STORAGE ELEVATION AND MUCKED OUT.
2. PRIOR TO USE AS AN WET DETENTION BASIN, SEDIMENT BASIN WILL BE MUCKED OUT.
3. PRIOR TO THE CREATION OF ANY IMPERVIOUS SURFACES THE FINAL POND DESIGN SHOULD BE BUILT. SEE SHEET C-5 FOR BASIN DETAILS.
4. ALL OUTLET STRUCTURE OPENINGS TO BE CLOSED UNTIL SKIMMERS ARE REMOVED.

DRAINAGE NOTES

1. ALL IMPERVIOUS SURFACES TO DRAIN TO PROPOSED WET DETENTION BASINS.

GRADING NOTES:

1. ALL STORM INLETS WITHIN DISTURBANCE AREA TO HAVE EITHER INLET PROTECTION OR A SILT SACK INSTALLED SEE DETAILS ON SHEET C-8.

PUMPING NOTES:

1. SEDIMENT LADEN PUMP DISCHARGE IS ONLY ALLOWED IF ITS DISCHARGED AT OR BELOW 50 NTU'S WITHOUT EROSIIVE VELOCITY AT THE POINT OF DISCHARGE, INFILTRATED ONSITE OUTSIDE ANY WETLANDS WITH NO RUNOFF, OR BY USING PAMS WITH A LIQUID INJECTION SYSTEM DISCHARGING INTO A DIRT BAG PLACED ON A STABLE SURFACE.

PER THE REQUIREMENTS OF THE STORMWATER PERMIT, THE FOLLOWING SHALL OCCUR PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY OR OPERATION OF THE PERMITTED FACILITY.

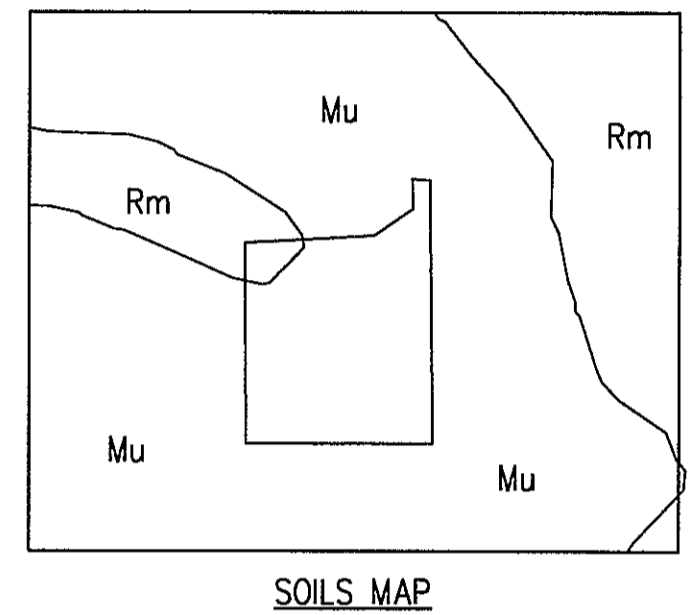
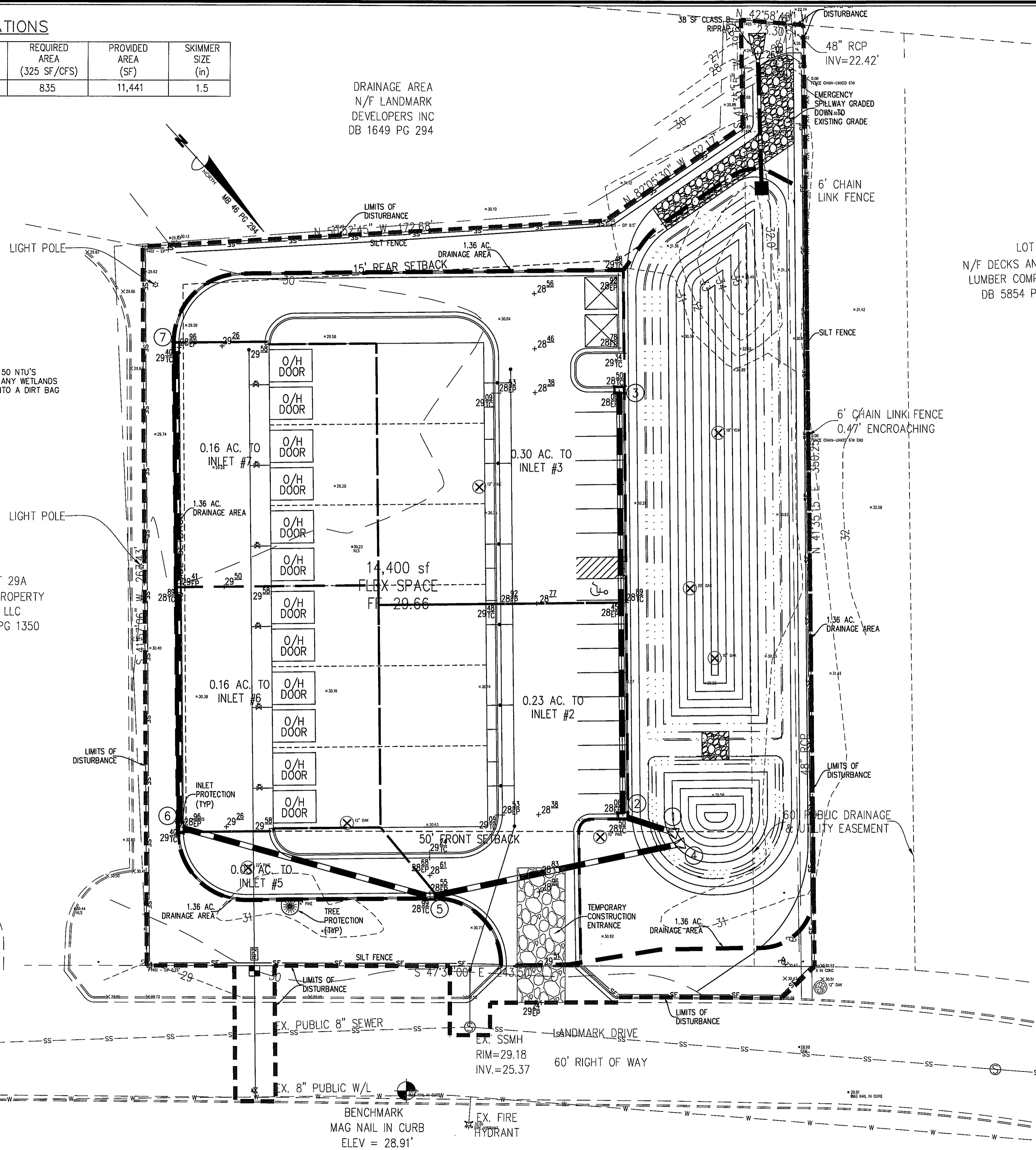
- AS-BUILT DRAWINGS FOR ALL STORMWATER MANAGEMENT FACILITIES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON ENGINEERING DIVISION.
- AN ENGINEER'S CERTIFICATION SHALL ALSO BE SUBMITTED, ALONG WITH ALL SUPPORTING DOCUMENTATION THAT SPECIFIES, UNDER SEAL THAT THE AS-BUILT STORMWATER MEASURES, CONTROLS AND DEVICES ARE IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLANS.
- A FINAL INSPECTION BY CITY OF WILMINGTON ENGINEERING PERSONNEL.

ALL REQUIRED EASEMENT MAPS SHALL BE REVIEWED BY CITY STAFF AND RECORDED PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

DRAINAGE AREA
N/F LANDMARK
DEVELOPERS INC
DB 1649 PG 294

LOT 30
N/F DECKS AND DOCKS
LUMBER COMPANY INC
DB 5854 PG 2947

LOT 29A
N/F DBR PROPERTY
GROUP LLC
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Planning _____

Traffic _____

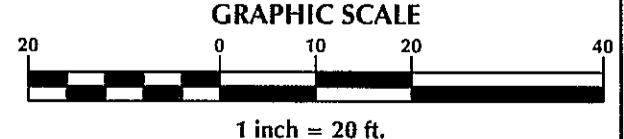
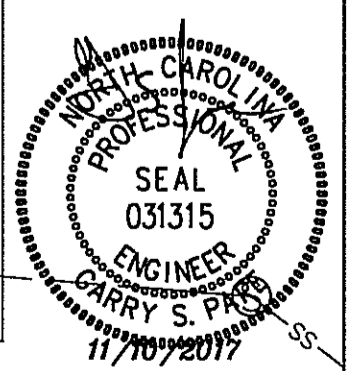
Fire _____

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____



No.	Revision	Date	By

Designer	GSP	Scale	1" = 20'
Drawn By	GSP	Date	November 2017
License #	P-0718	Job No.	2017-0010

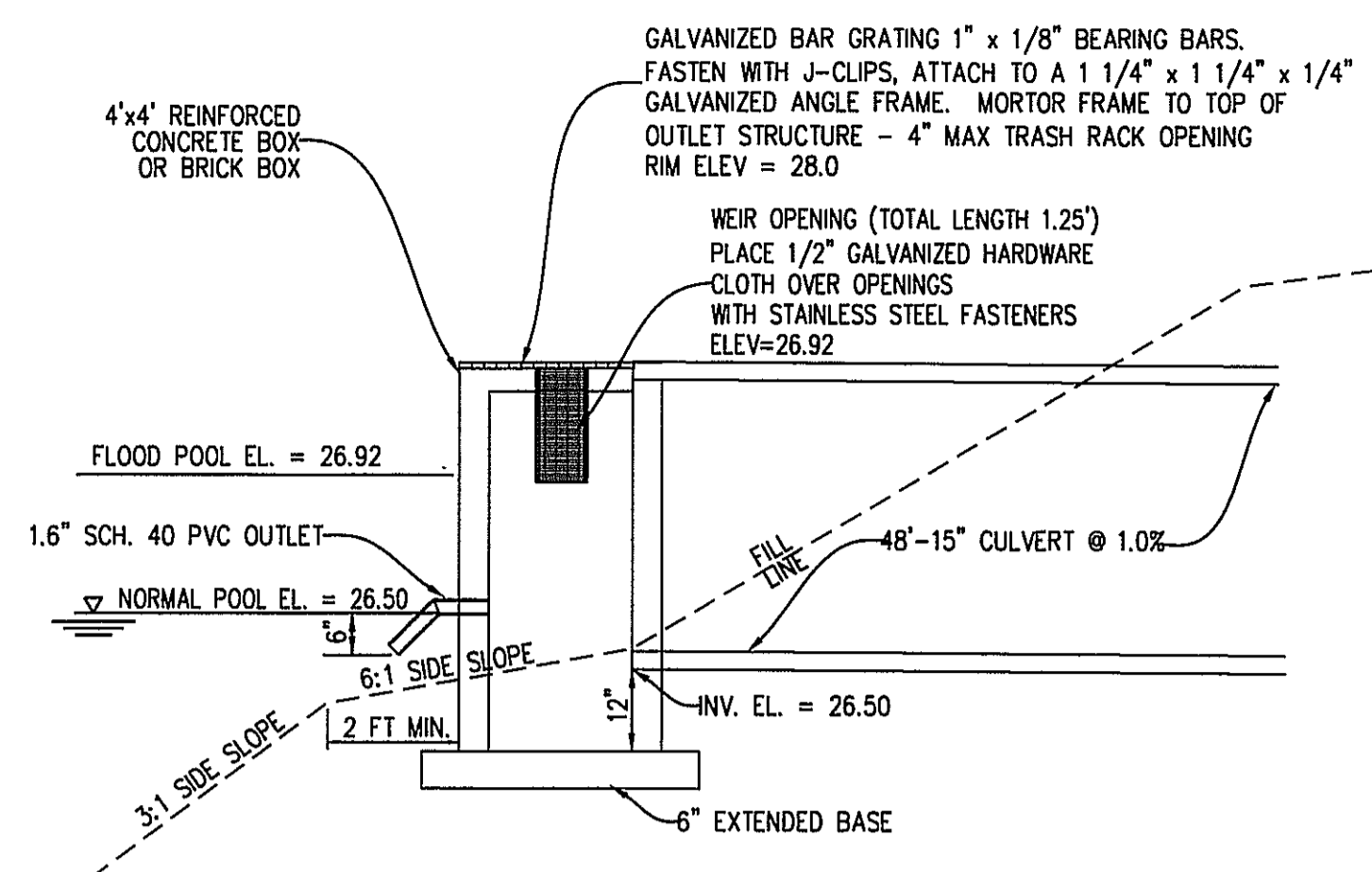
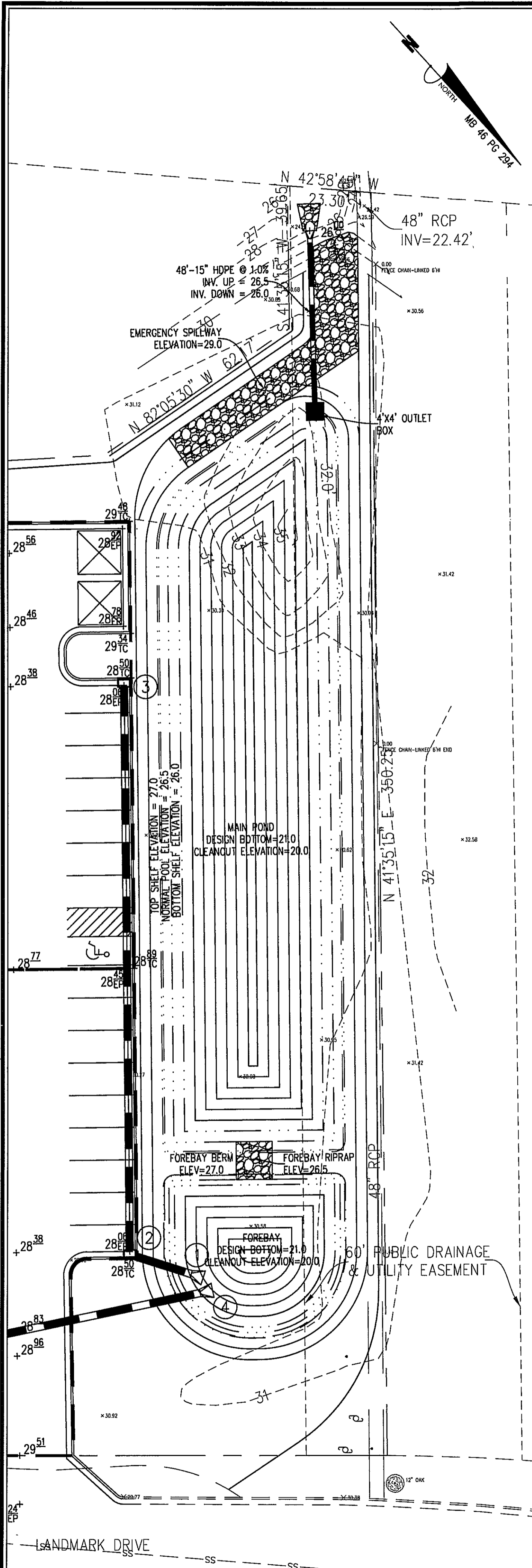
BRITTANY DEL FLEX SPACE
Wilmington New Hanover County North Carolina

GRADING, DRAINAGE & EROSION & SEDIMENT CONTROL PLAN

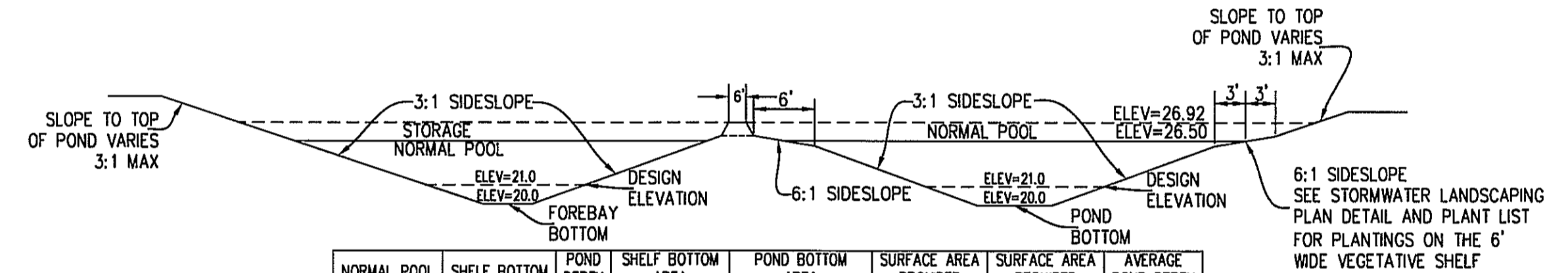
PREPARED FOR:
BRITTANY DEL INVESTMENTS, LLC
4198 RALEIGH STREET
WILMINGTON, NC 28412

GSP CONSULTING, PLLC
ENGINEERING
6626 Gordon Road Unit C. Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

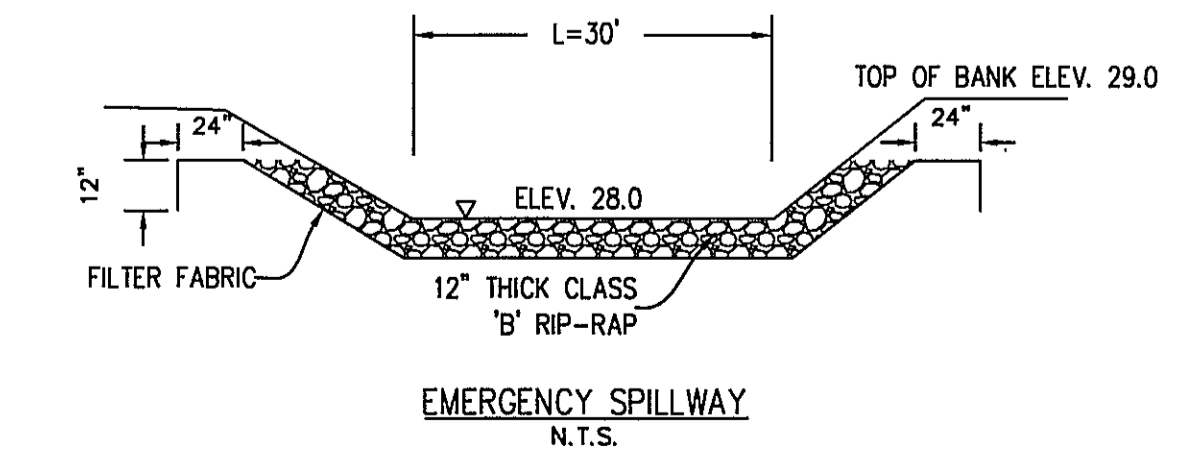
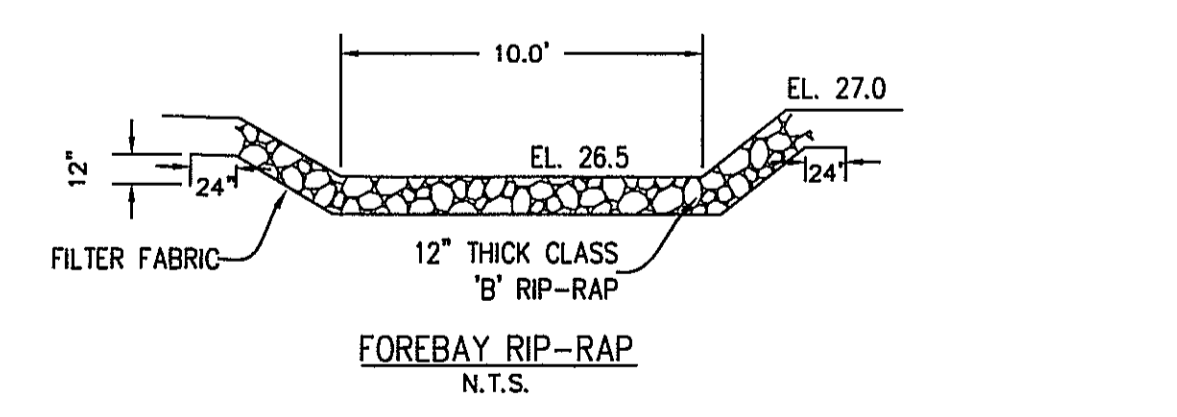
Sheet No.
C-4



- NOTES:**
- DESIGN ELEVATIONS FOR WET DETENTION BASIN ARE TO AN ELEVATION OF 21.0 IN THE MAIN POND AND FOREBAY WITH SEDIMENT STORAGE DOWN TO 20.0 IN THE MAIN POND AND FOREBAY.
 - ALL IMPERVIOUS SITE AREA TO BE DRAINED TO PROPOSED STORM SYSTEM AND DISCHARGED TO THE WET DETENTION POND.
 - POND WILL BE PUMPED DOWN BY MECHANICAL MEANS IN CASE OF EMERGENCY.
 - PRIOR TO USE AS A WET DETENTION BASIN, SEDIMENT BASIN WILL BE MUCKED OUT.
 - POND SIDE SLOPES TO BE SODDED WITH CENTIPEDE GRASS OR EQUIVALENT.
 - ALL SLOPES ABOVE PERMANENT POOL TO BE 3:1 MAX.



NORMAL POOL ELEVATION	SHELF BOTTOM ELEVATION	POND DEPTH (FT)	SHELF BOTTOM AREA (SF)	POND BOTTOM AREA (SF)	SURFACE AREA PROVIDED (SF)	SURFACE AREA REQUIRED (SF)	AVERAGE POND DEPTH (FT)
26.5	26.0	5.0	7,064	1,283	8,436	2,712	3.35



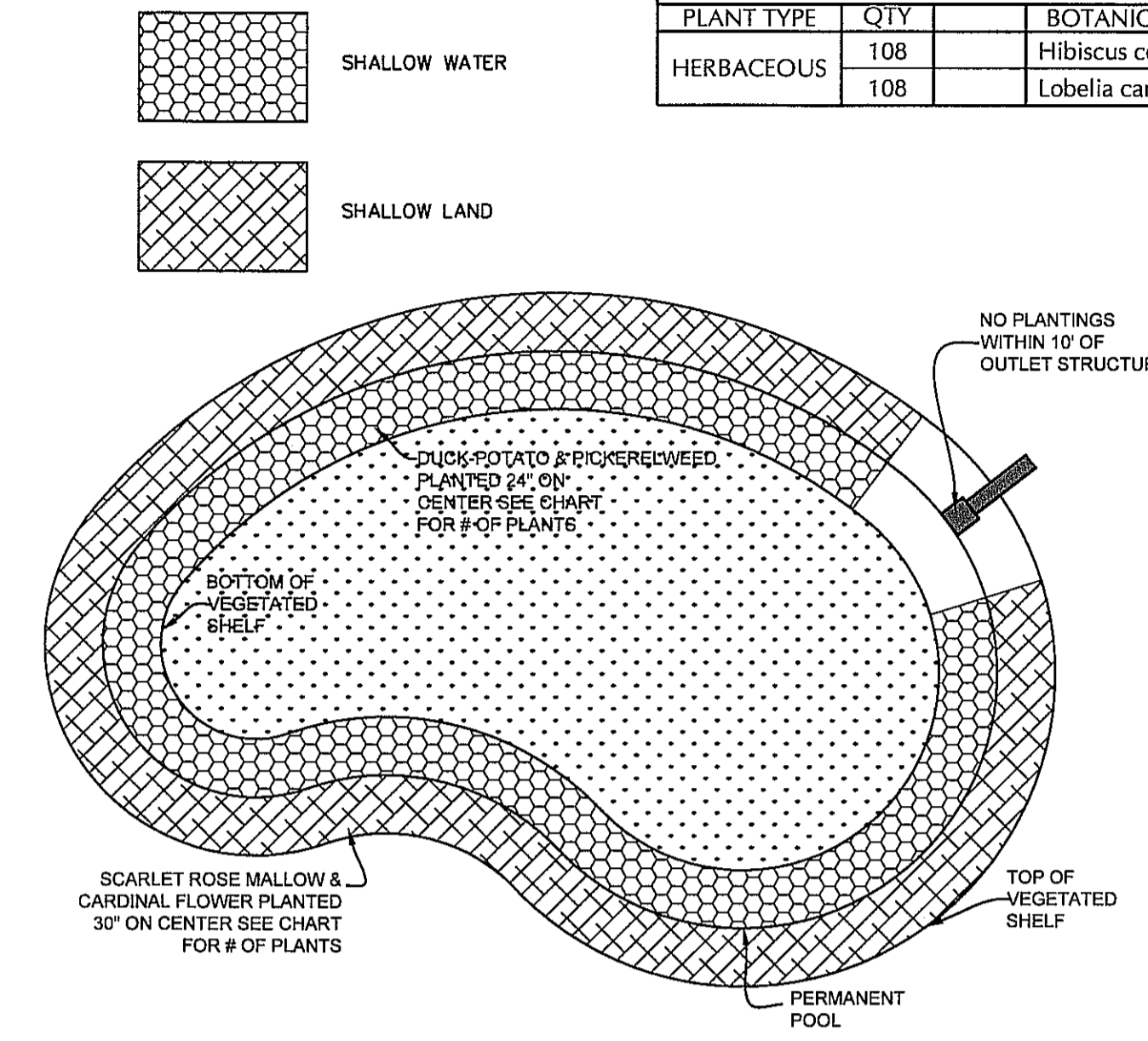
SHALLOW WATER COMMUNITY (NORMAL POOL TO SHELF BOTTOM) = 1,304 S.F.
@ 1 PLANT PER 4 SF (24" O.C.) = 326 PLANTS

PLANT TYPE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CALIPER	HEIGHT	NOTES
HERBACEOUS	163	Sagittaria latifolia	Duck Potato	CONT.	4" Pot		24" O.C.
HERBACEOUS	163	Pontederia cordata	Pickereelweed	CONT.	4" Pot		24" O.C.

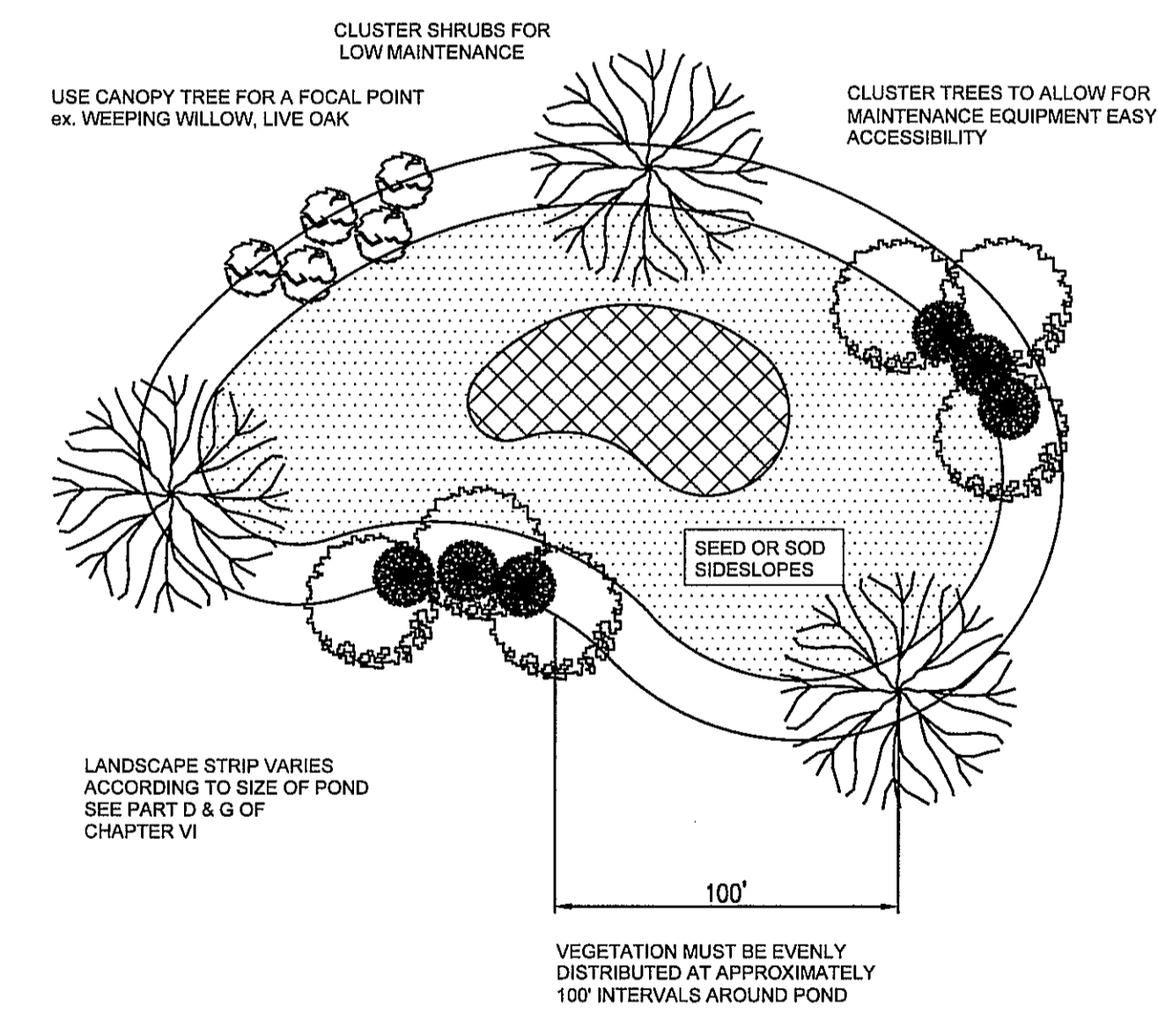
SHALLOW LAND COMMUNITY (NORMAL POOL TO SHELF TOP) = 1,350 S.F.
@ 1 PLANT PER 6.25 SF (30" O.C.) = 216 PLANTS

PLANT TYPE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CALIPER	HEIGHT	NOTES
HERBACEOUS	108	Hibiscus coccineus	Scarlet Rose Mallow	CONT.	4" Pot		30" O.C.
HERBACEOUS	108	Lobelia cardinalis	Cardinal Flower	CONT.	4" Pot		30" O.C.

- NOTES:**
- NO PLANTINGS WITHIN 10' OF OUTLET STRUCTURE.
 - BECAUSE MOST STORMWATER BASINS ARE EXCAVATED TO DEEP SUB-SOILS, THEY OFTEN LACK THE NUTRIENTS AND ORGANIC MATTER NEEDED TO SUPPORT VIGOROUS GROWTH OF PLANTS. ALL LANDSCAPE MATERIAL, INCLUDING GRASS, SHOULD BE PLANTED IN GOOD TOPSOIL. NATIVE UNDERLYING SOILS MAY BE SUITABLE FOR PLANTING IF AMENDED WITH 4 INCHES OF WELL-AGED COMPOST TILLED INTO THE SUBGRADE. COMPOST SHOULD MEET SPECIFICATIONS FOR GRADE A COMPOST QUALITY.
 - A MINIMUM TWO-YEAR WARRANTY PERIOD STIPULATING REQUIREMENTS FOR PLANT SURVIVAL/REPLACEMENT.



TYPICAL VEGETATED SHELF LANDSCAPING PLAN



- Notes:**
- If possible, locate pond where vegetation exists.
 - Suggest minimal clearing to conserve visual quality of site and minimize the additional of tree planting. An irregular shape provides a more natural appearance.
 - Landscape strip shall be a maximum slope of 7:1 in order to plant vegetation.
 - Provide a minimum of 3 inches of mulch around all vegetation.

TYPICAL STORM WATER FACILITY LANDSCAPING PLAN

SD 15-16
*LANDSCAPING TO BE DONE PER APPROVED LANDSCAPE PLAN

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

Approved Construction Plan

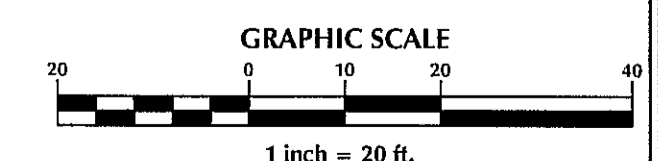
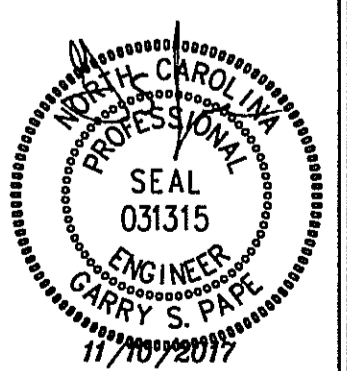
Name _____ Date _____

Planning _____

Traffic _____

Fire _____

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



No.	Revision	Date	By	Designer	Scale
				GSP	1" = 20'
				GSP	November 2017
				P-0718	2017-0010

BRITTANY DEL FLEX SPACE
New Hanover County North Carolina

WET DETENTION BASIN DETAILS

PREPARED FOR:
BRITTANY DEL INVESTMENTS, LLC
419B RALEIGH STREET
WILMINGTON, NC 28412

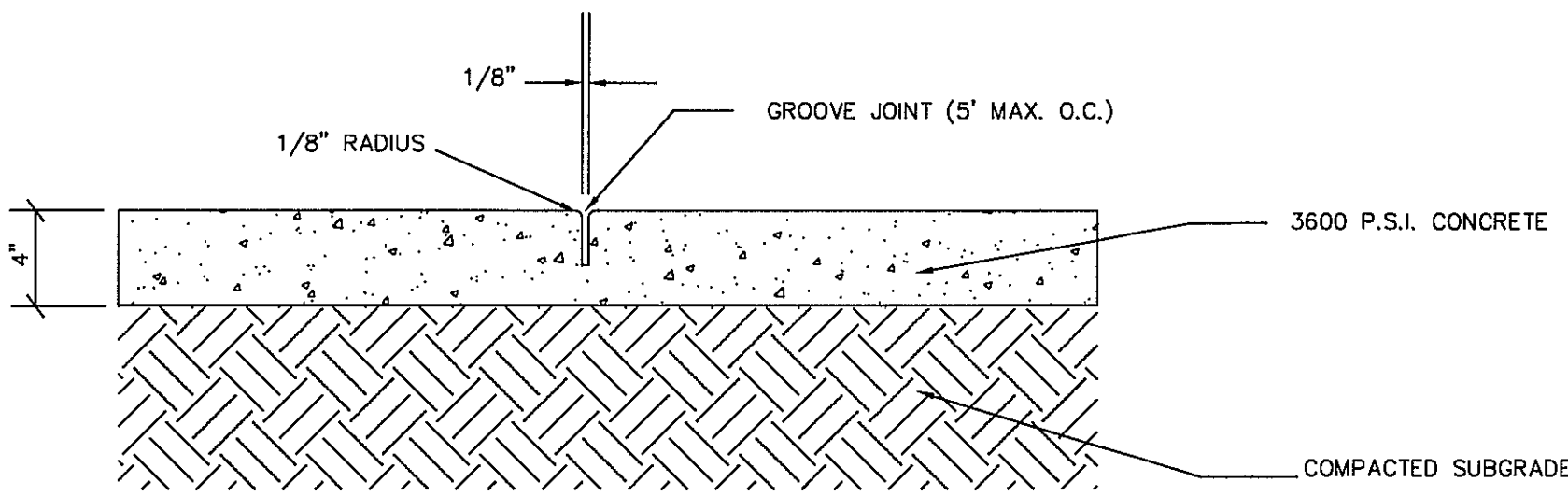
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6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-5

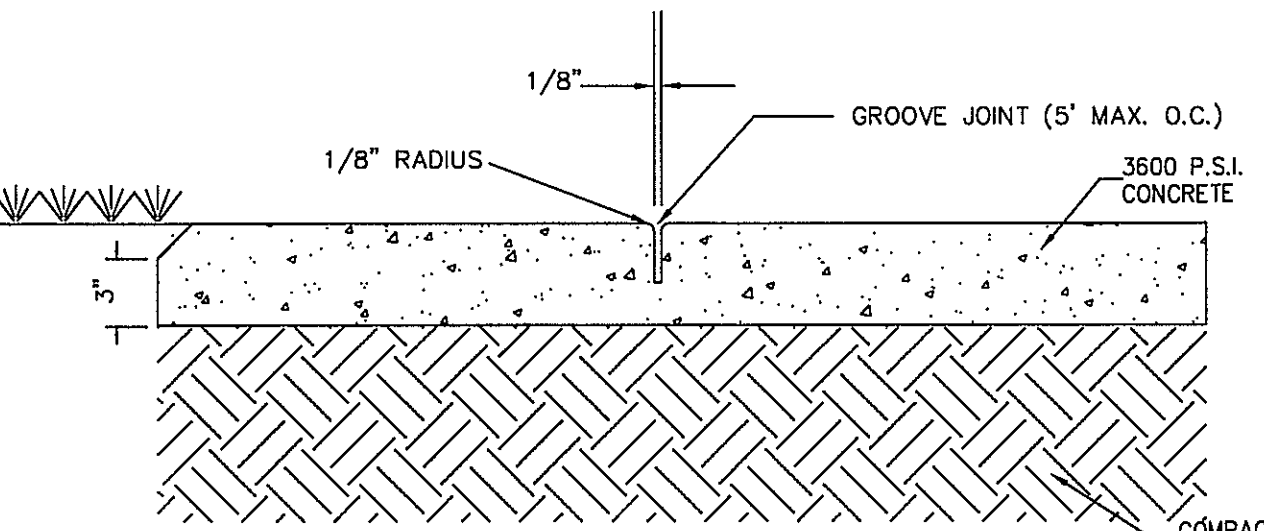
GENERAL NOTES

- LOCATION OF WHEELCHAIR RAMPS:
 - IN ACCORDANCE WITH THE RATIFIED HOUSE BILL 1296, ALL STREET CURBS IN NORTH CAROLINA BEING CONSTRUCTED OR RECONSTRUCTED FOR MAINTENANCE PROCEDURES, TRAFFIC OPERATIONS, REPAIRS, CORRECTION OF UTILITIES OR ALTERED FOR ANY REASON AFTER SEPTEMBER 1, 1973 SHALL PROVIDE WHEELCHAIR RAMPS FOR THE PHYSICALLY HANDICAPPED AT ALL INTERSECTIONS WHERE BOTH CURB AND GUTTERS AND SIDEWALKS ARE PROVIDED AND AT OTHER MAJOR POINTS OF PEDESTRIAN FLOW.
 - WHEELCHAIR RAMPS SHOULD BE LOCATED AS INDICATED IN DETAIL DRAWINGS, HOWEVER EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. MAY AFFECT PLACEMENT.
- CONSTRUCTION NOTES:
 - NO SLOPE SHALL EXCEED 1"=1" (12:1) ON THE RAMP OR SIDEWALK.
 - IN NO CASE SHALL THE WIDTH OF WHEELCHAIR RAMPS BE LESS THAN 4' (3'-4"), WIDTHS MAY EXCEED 4' IF NECESSARY.
 - USE CLASS "A" CONCRETE WITH THE SURFACE HAVING A ROUGH, NON-SKID TYPE FINISH.
 - 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE CONCRETE WHEELCHAIR RAMP JOINS ANY RIGID PAVEMENT OR STRUCTURE.
- ADDITIONAL NOTES:
 - THE INSIDE PEDESTRIAN CROSSWALK LINES SHALL BE ESTABLISHED BY BISECTING THE INTERSECTION RADII WHERE MARKED (SEE NOTE 6).
 - THE WHEELCHAIR RAMP SHALL BE LOCATED SO THAT THE BEGINNING OF THE WHEEL CHAIR RAMP WILL BE TWO FEET FROM THE INSIDE PEDESTRIAN CROSSWALK LINE.
 - THE WIDTH OF THE PEDESTRIAN CROSSWALK SHALL BE 10 FEET UNLESS A GREATER WIDTH IS REQUIRED TO ACCOMMODATE THE PEDESTRIAN TRAFFIC.
 - STOP BARS SHALL BE USED WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN, OR OTHER LEGAL REQUIREMENTS.
 - PARKING SHALL BE ELIMINATED A MINIMUM OF 20 FEET BACK OF PEDESTRIAN CROSSWALK.
 - ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION. THIS IS AVAILABLE FROM THE SUPERINTENDENT OF DOCUMENTS, U.S GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C. 20402.

GUIDELINES FOR WHEELCHAIR RAMPS



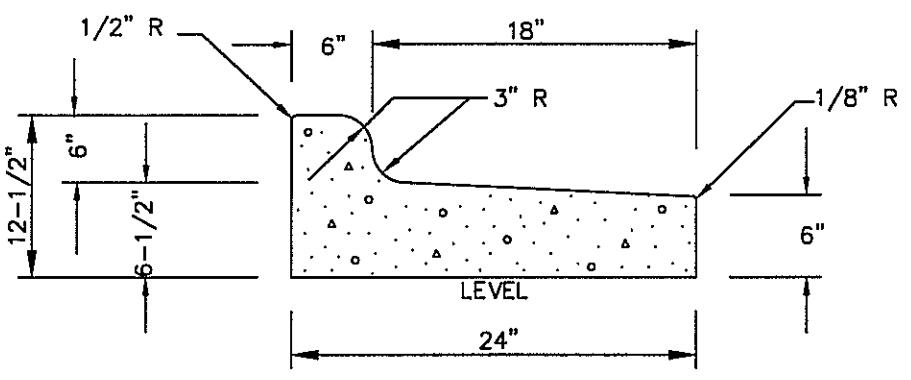
CONCRETE SIDEWALK DETAIL



CONCRETE SIDEWALK

N.T.S.

GENERAL NOTES:
A GROOVE JOINT 1" DEEP WITH 1/8" RADI SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK ABUTS ANY CURB & GUTTER AND ANY RIGID STRUCTURES. IN SIDEWALKS & PLAZA AREAS EXPANSION JOINTS ARE REQUIRED AT NO GREATER THAN 30' INTERVALS CONCRETE SHALL BE 3600 PSI. IN 28 DAYS.

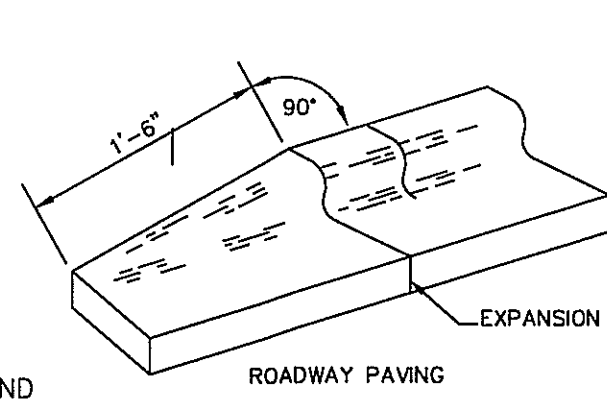


24" CURB AND GUTTER (REVERSE SLOPE)

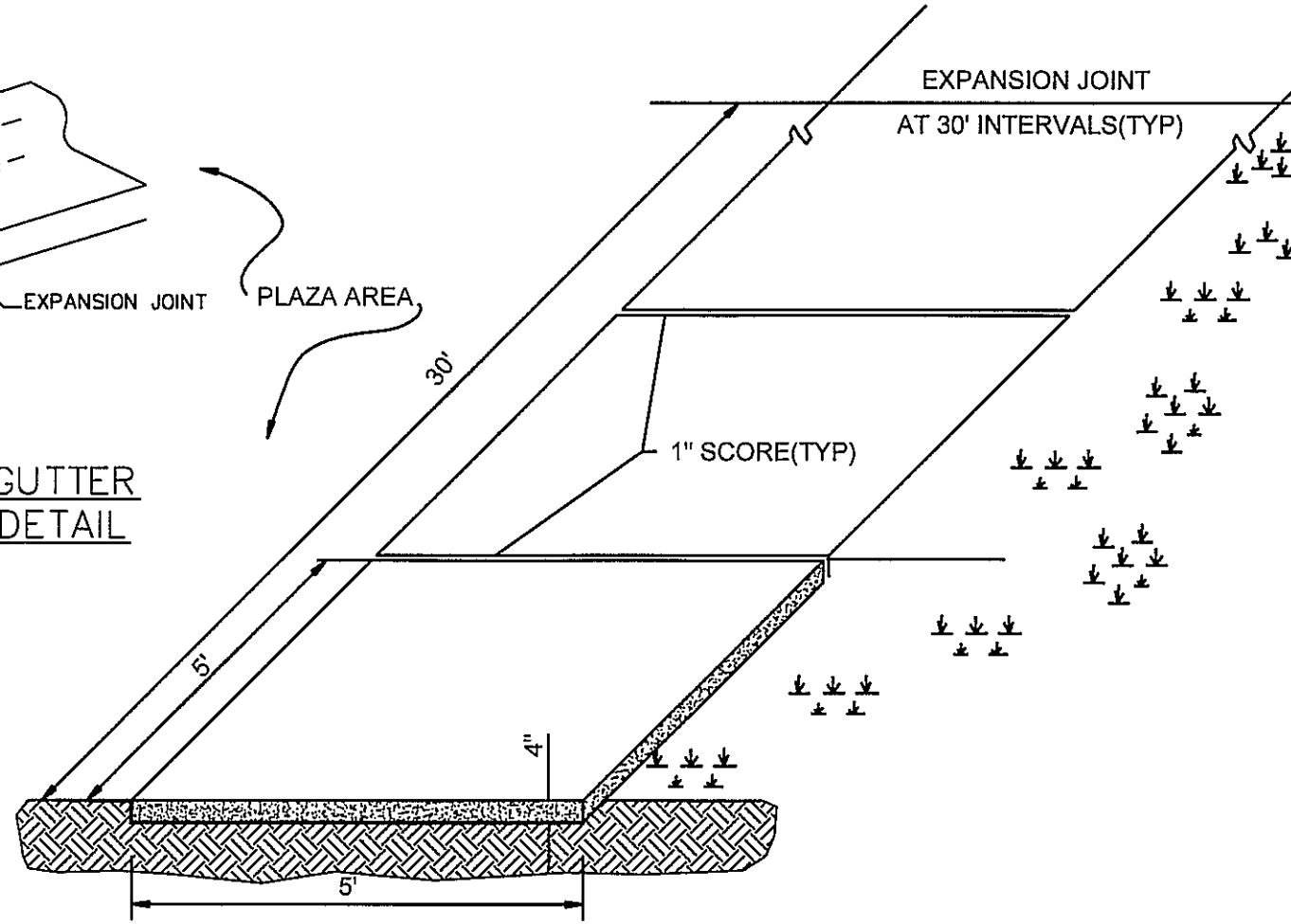
CURB AND GUTTER

N.T.S.

GENERAL NOTES:
CONTRACTION JOINTS SHALL BE SPACED AT MAX. 10' INTERVALS, EXCEPT THAT A 15 FOOT SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10 FOOT INTERVALS. JOINT SPACING MAY BE ALTERED BY THE ENGINEER TO PREVENT UNCONTROLLED CRACKING. CONTRACTION JOINTS MAY BE INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1-1/2" SHALL BE OBTAINED. ALL CONTRACTION JOINTS EXCEPT IN 8" X 6" MEDIAN CURB SHALL BE FILLED WITH JOINT SEALER. EXPANSION JOINTS SHALL BE SPACED AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.

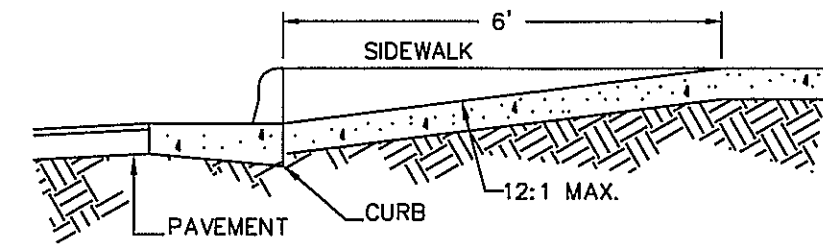
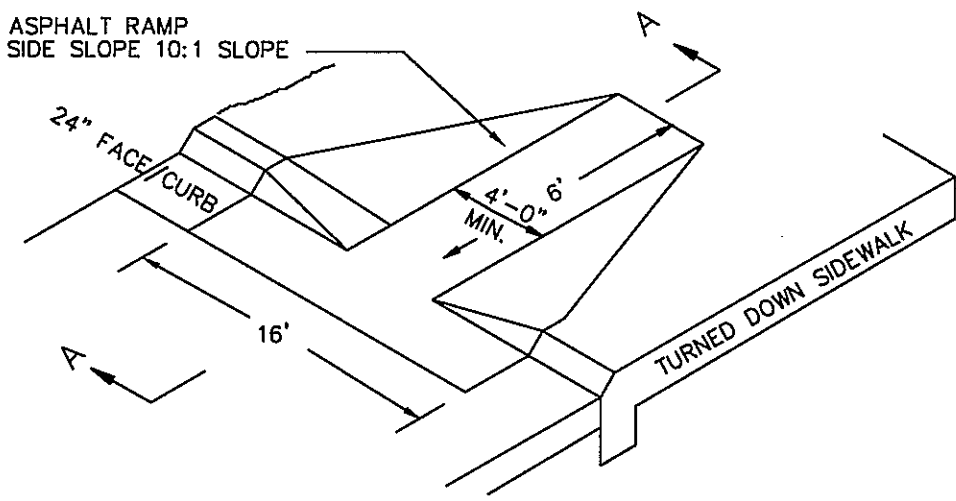


24" CURB & GUTTER TERMINATION DETAIL



STANDARD SIDEWALK DETAIL

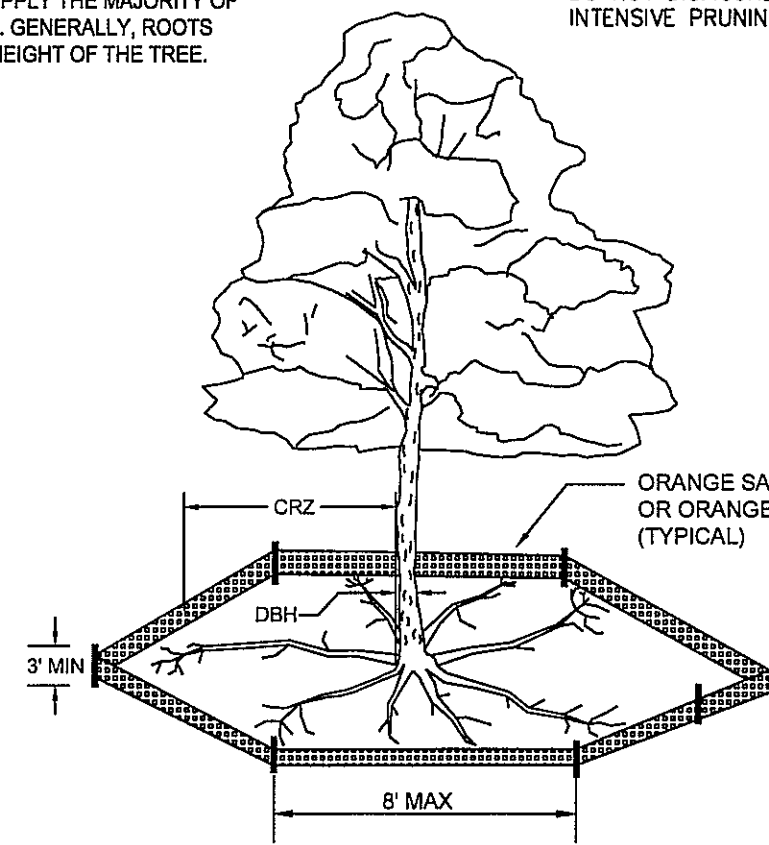
SD 8-15
NOT TO SCALE



SECTION A-A WHEELCHAIR RAMP (DROP CURB)

WHEELCHAIR RAMP N.T.S.

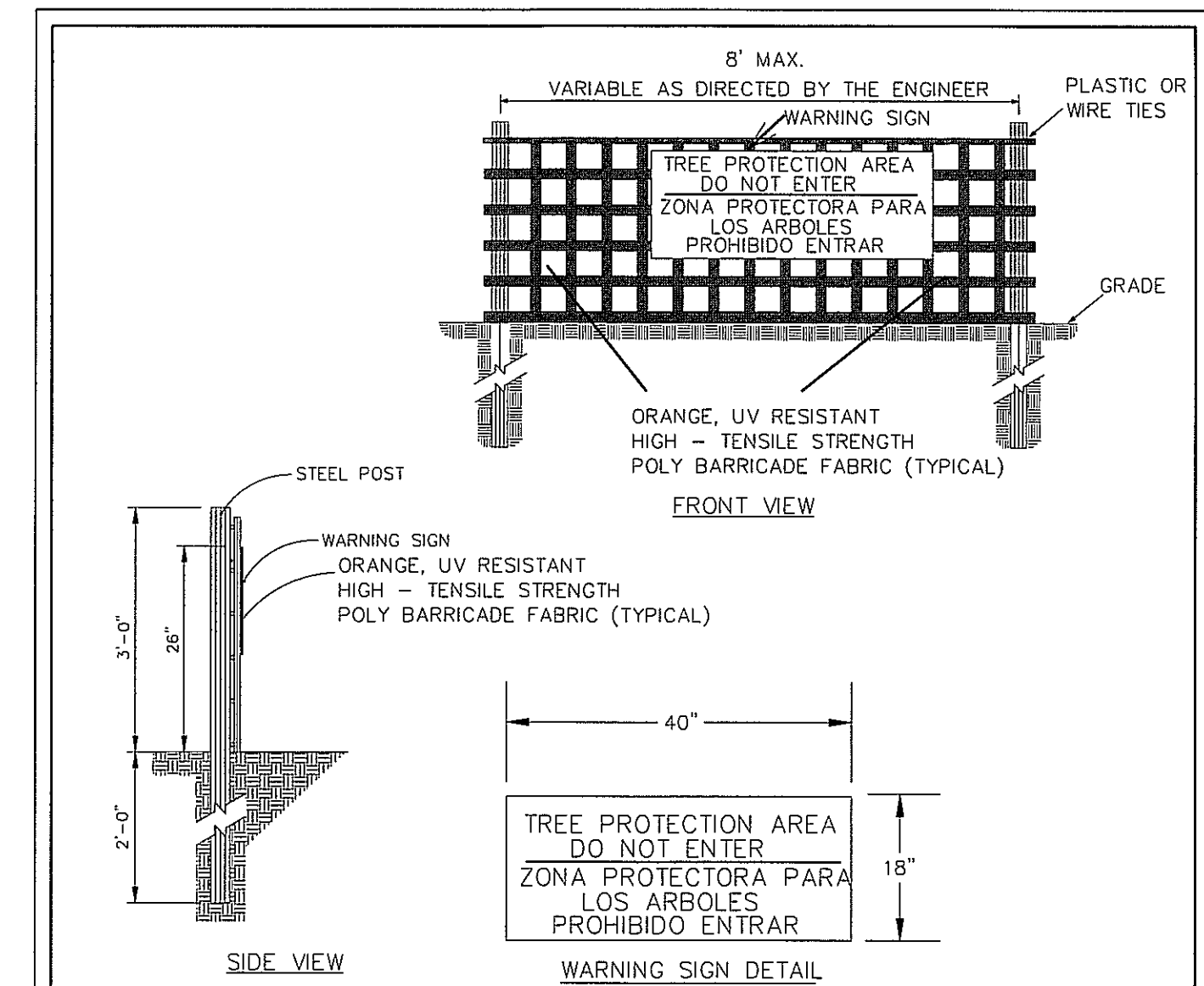
NOTE:
THE CRITICAL ROOT ZONE (CRZ) OF A TREE IS WHERE THE MAJORITY OF A TREE'S ROOTS LAY. 85% OF MOST TREE ROOTS ARE FOUND IN THE TOP 24" OF THE SOIL AND SUPPLY THE MAJORITY OF NUTRIENTS AND WATER. GENERALLY, ROOTS SPREAD OUT 2-3X THE HEIGHT OF THE TREE.



NOTE:
CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE. DO NOT DISFIGURE CROWN WITH INTENSIVE PRUNING.

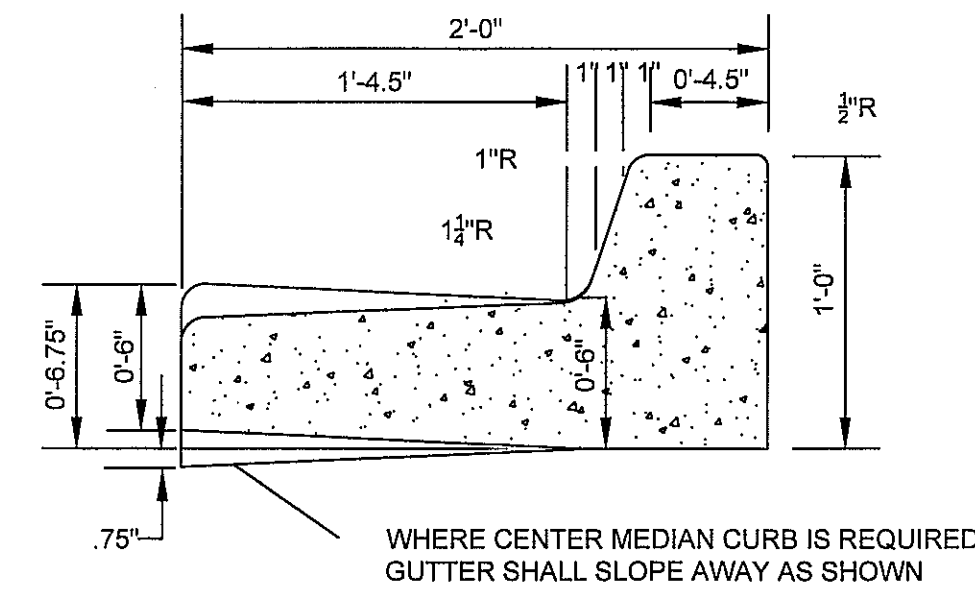
- NOTES:
- PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
 - CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
 - IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
 - WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.
 - FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES, DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
 - FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF \$500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.

DATE: JAN, 2015	STANDARD DETAIL	<p>CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7827</p>
DRAWN BY JSR	TREE PROTECTION DURING CONSTRUCTION	
CHECKED BY RDG, P.E.	SHEET 1 of 2	
SCALE NOT TO SCALE	SD 15-09	



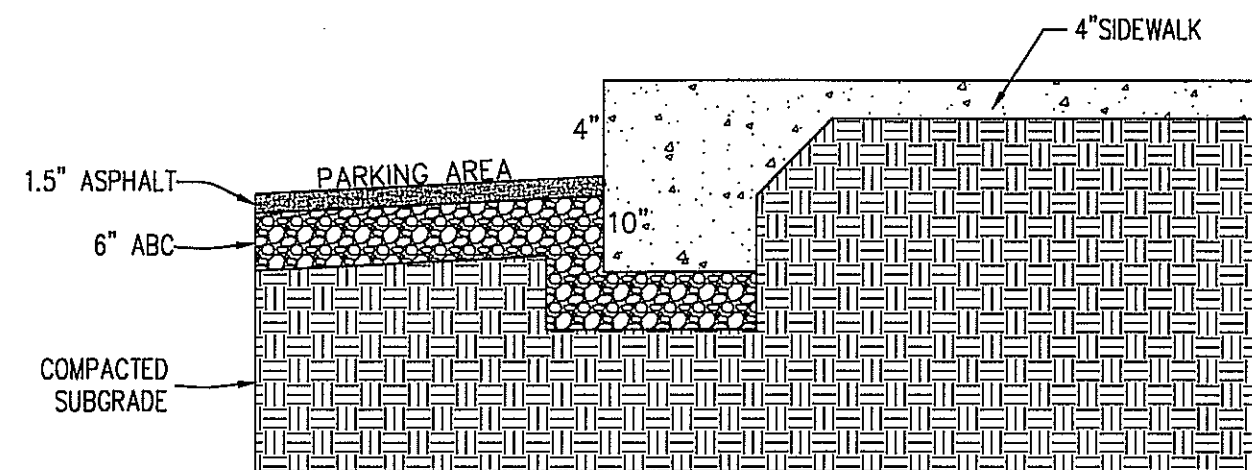
- NOTES:
- THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
 - WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
 - SIGNS SHALL BE PLACED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

DATE: JAN, 2015	STANDARD DETAIL	<p>CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7827</p>
DRAWN BY JSR	TREE PROTECTION DURING CONSTRUCTION	
CHECKED BY RDG, P.E.	SHEET 2 of 2	
SCALE NOT TO SCALE	SD 15-09	



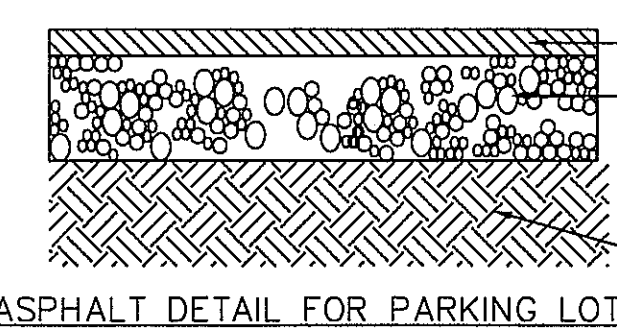
STANDARD CURB SECTION TYPE "A"

SD 7-01
NOT TO SCALE



TURNDOWN SIDEWALK DETAIL

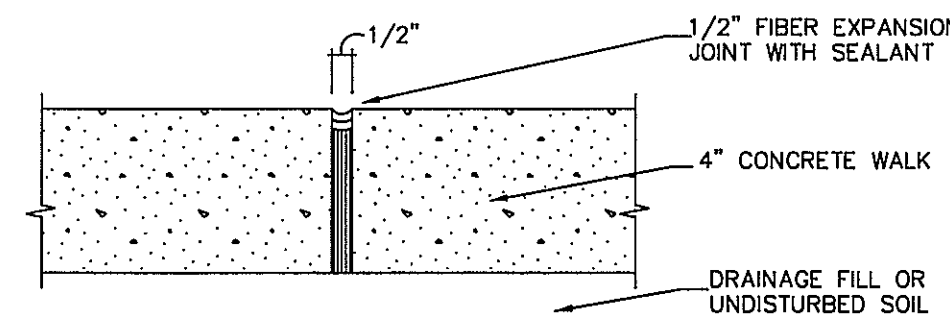
N.T.S.



ASPHALT DETAIL FOR PARKING LOT

PAVEMENT DETAIL

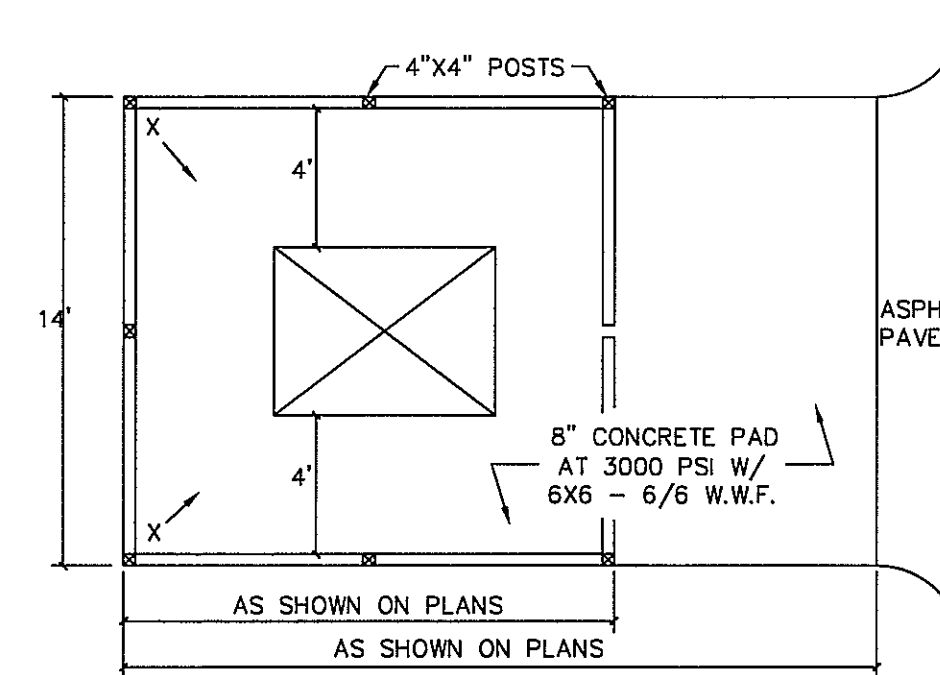
N.T.S.



CONSTRUCTION JOINT

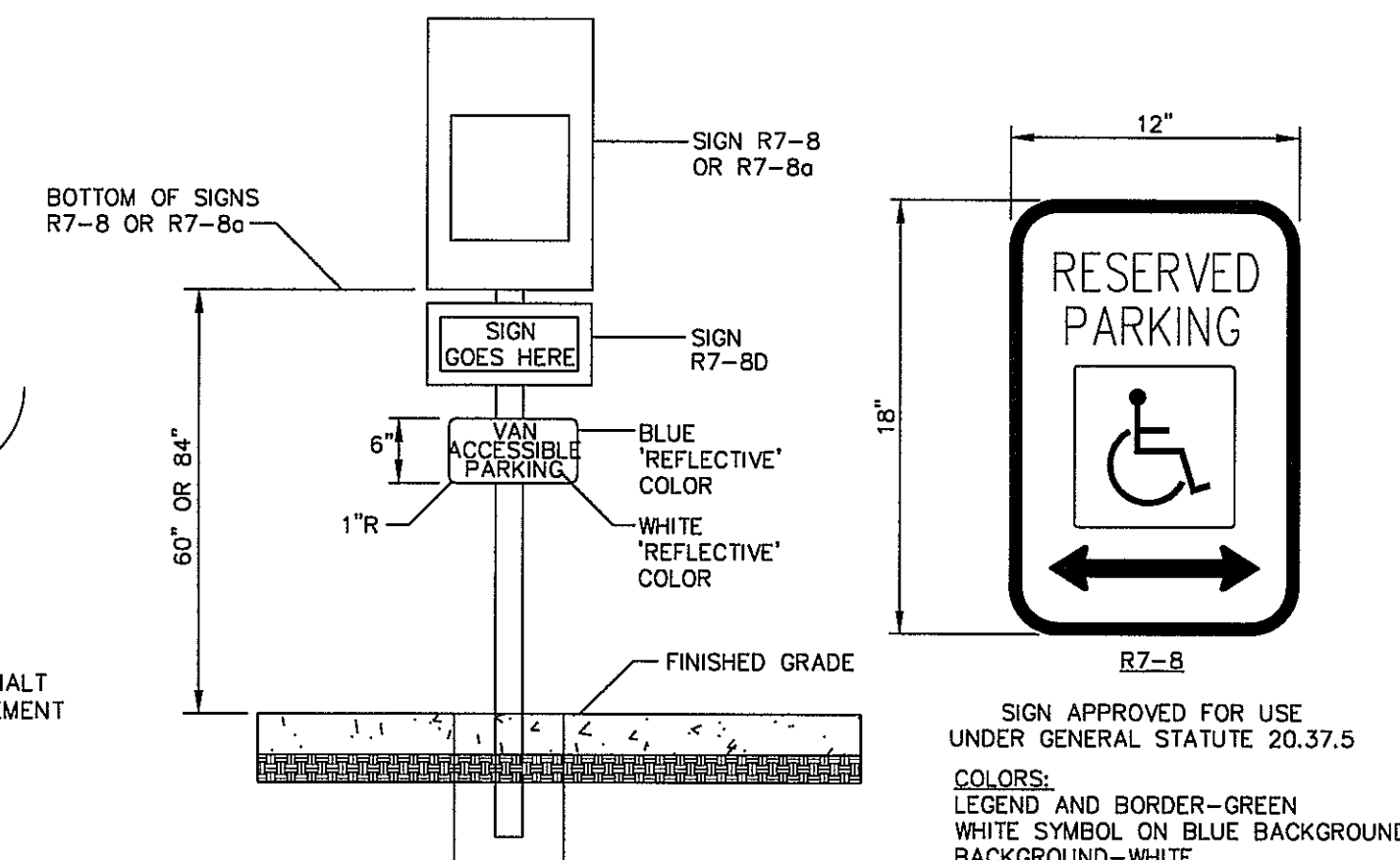
N.T.S.

NOTE:
PROVIDE CONSTRUCTION JOINTS AT 25' O.C. MAX. IN EITHER DIRECTION WITH SQUARE FOOTAGE LESS THAN 400 S.F. AND AT CURVES, TANGENTS, AND CORNERS (UNLESS NOTED OTHERWISE).



DUMPSTER PAD & ENCLOSURE DETAIL

N.T.S.



HANDICAP PARKING SIGNAGE

N.T.S.

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

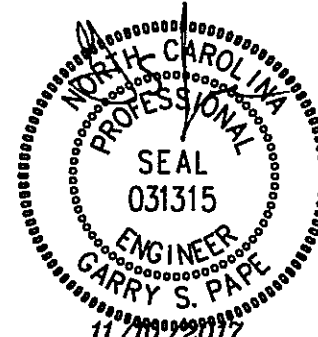
Fire _____

Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

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



No.	Revision	Date	By	Designer	Scale
				GSP	1" = 30'
				GSP	November 2017
				P-0718	2017-0010

BRITTANY DEL FLEX SPACE
New Hanover County
Wilmington North Carolina

STANDARD DETAILS

PREPARED FOR:
BRITTANY DEL INVESTMENTS, LLC
4198 RALEIGH STREET
WILMINGTON, NC 28412

GSP CONSULTING, PLLC
ENGINEERING
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-6

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

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

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.56.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOBELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
FOR 12", 18", 24" AND 30" GRATES UNLESS OTHERWISE INDICATED, USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
FOR 36" TO 54" IN HEIGHT OR LESS USE "B" WALLS AND BOTTOM SLAB. OVER 54" TO 16'-0" IN HEIGHT USE "B" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

SECTION X-X
SECTION Y-Y
SECTION J-J
DETAIL SHOWING METHOD OF RISER CONSTRUCTION

SHEET 1 OF 2
840.02

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

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

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.68.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY OR #4 BAR DOBELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
CONSTRUCT WITH PIPE CROWNS MATCHING.
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.
INSTALL 2" REINFORCER AS DIRECTED BY THE ENGINEER.
INSTALL STEEL BRASS OF A MINIMUM OF 1 CURB FOOT OF THE 7/8" STONE IN A FOREIGN FABRIC BAG OR MAT, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

SECTION X-X
SECTION Y-Y

DIMENSIONS AND QUANTITIES FOR DROP INLET (BASED ON MIN. HEIGHT, H)				CUBIC YARDS CONG. IN BOX		DEDUCTIONS FOR ONE PIPE	
PIPE SPAN	WIDTH	MIN. HEIGHT	H	FT. PER 100' BOX	C.Y.	C.M.	R.C.
12"	3'-0"	2'-0"	2'-0"	0.222	0.222	0.015	0.008
18"	3'-0"	2'-0"	2'-0"	0.243	0.243	0.023	0.016
24"	3'-0"	2'-0"	2'-0"	0.264	0.264	0.033	0.024
30"	3'-0"	2'-0"	2'-0"	0.285	0.285	0.043	0.032

SHEET 1 OF 1
840.14

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

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

STORM TABLE

FROM	TO	LENGTH (ft)	DIAMETER (in)	SLOPE (%)	INV. DN (ft)	INV. UP (ft)	RIM (ft)	MATERIAL
2	1	21	15	0.30%	24.00	24.06	27.87	HDPE
3	2	159	15	0.30%	24.06	24.54	27.87	HDPE
5	4	97	15	0.30%	24.00	24.29	28.36	HDPE
6	5	97	15	0.30%	24.29	24.58	28.77	HDPE
7	6	178	15	0.30%	24.58	25.12	28.77	HDPE

SHEET 1 OF 1
840.14

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

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

NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.
ALIGN FRAME WITH INSIDE EDGE OF WALL TO ALLOW FOR VERTICAL ADJUSTMENT WALL SECTION

SECTION AA
SECTION BB
SECTION LL
SECTION NN
SECTION PP
SECTION MM
SECTION KK
HOOD ELEVATION

SHEET 1 OF 2
840.03

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

ENGLISH STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWG. S 840.14 AND 840.15

SECTION G-G
PLAN OF FRAME
CAST IRON
PLAN OF GRATING
CAST IRON
SECTION H-H
SECTION E-E
SECTION F-F

SHEET 1 OF 1
840.16

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

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

DETAIL SHOWING TYPES OF GRATES USE ACCORDING TO WATER FLOW.
TYPE "G" TYPE "E" TYPE "F"
WATER FLOW SAG WATER FLOW
WATER FLOW SAG WATER FLOW
WATER FLOW SAG WATER FLOW
RAISED FLOW ARROW 1/8" HIGH

SECTION A-A
SECTION B-B
SECTION E
SECTION A-A
SECTION A-A
SECTION A-A
TYPE - F
TYPE G

SHEET 2 OF 2
840.03

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

ENGLISH STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

GENERAL NOTES:
CHAMFER ALL EXPOSED CORNERS 1".
USE CLASS "B" CONCRETE THROUGHOUT.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 3" KEYWAY, OR #4 BAR DOBELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.
PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.
ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE POSITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.)
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

SECTION X-X
SECTION C-C OR D-D
SECTION Y-Y

DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES				REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS		CUBIC YARDS IN BOX		TOTAL QUANTITIES BOX AND SLAB		DEDUCTIONS FOR ONE PIPE		
PIPE SPAN	WIDTH	HEIGHT	H	NO.	LENGTH	E	F	TOP SLAB	BOTTOM SLAB	WALL	REIN. BARS	CU. YDS.	C.S.	R.C.
12"	2'-0"	2'-0"	2'-3"	12	2'-0"	3'-0"	3'-0"	0.167	0.167	0.198	22	0.750	0.015	0.024
18"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"	0.198	0.198	0.204	24	0.802	0.023	0.036
24"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.222	30	1.085	0.033	0.048
30"	3'-0"	3'-0"	3'-3"	16	3'-6"	4'-0"	4'-0"	0.258	0.258	0.259	40	1.434	0.059	0.085
36"	3'-6"	3'-6"	3'-9"	18	4'-0"	4'-6"	4'-6"	0.297	0.297	0.296	51	1.860	0.092	0.127
42"	4'-0"	4'-0"	4'-3"	20	4'-6"	5'-0"	5'-0"	0.463	0.463	0.393	64	2.341	0.133	0.178
48"	4'-6"	4'-6"	4'-9"	22	5'-0"	5'-6"	5'-6"	0.560	0.560	0.370	77	2.878	0.180	0.243
54"	5'-0"	5'-0"	5'-3"	24	5'-6"	6'-0"	6'-0"	0.743	0.743	0.407	111	3.623	0.235	0.317
60"	5'-6"	5'-6"	5'-9"	26	6'-0"	6'-6"	6'-6"	0.885	0.885	0.444	128	4.283	0.297	0.401
66"	6'-0"	6'-0"	6'-3"	30	7'-0"	7'-6"	7'-6"	1.042	1.042	0.481	146	5.090	0.387	0.495
66"	7'-0"	7'-0"	6'-9"	32	7'-6"	8'-0"	8'-0"	1.210	1.210	0.518	169	6.017	0.444	0.589

SHEET 1 OF 1
840.31

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

ENGLISH STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

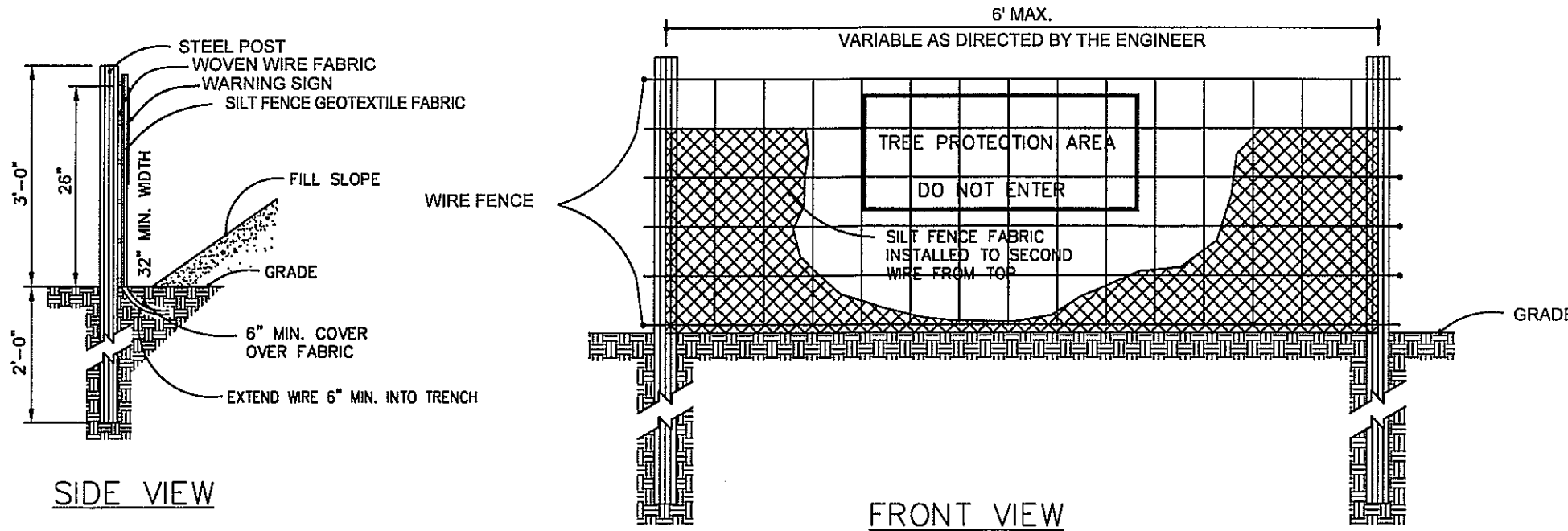
Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

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

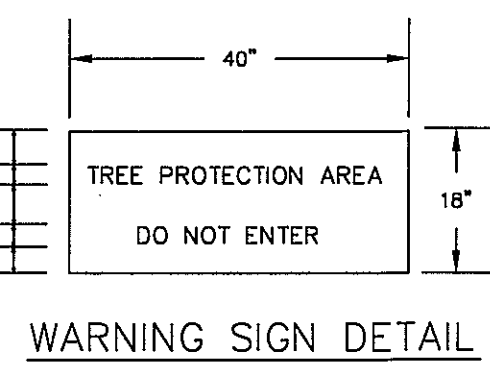
WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

SEAL
031315
ENGINEER
CARRY S. PAFF
11/10/2017

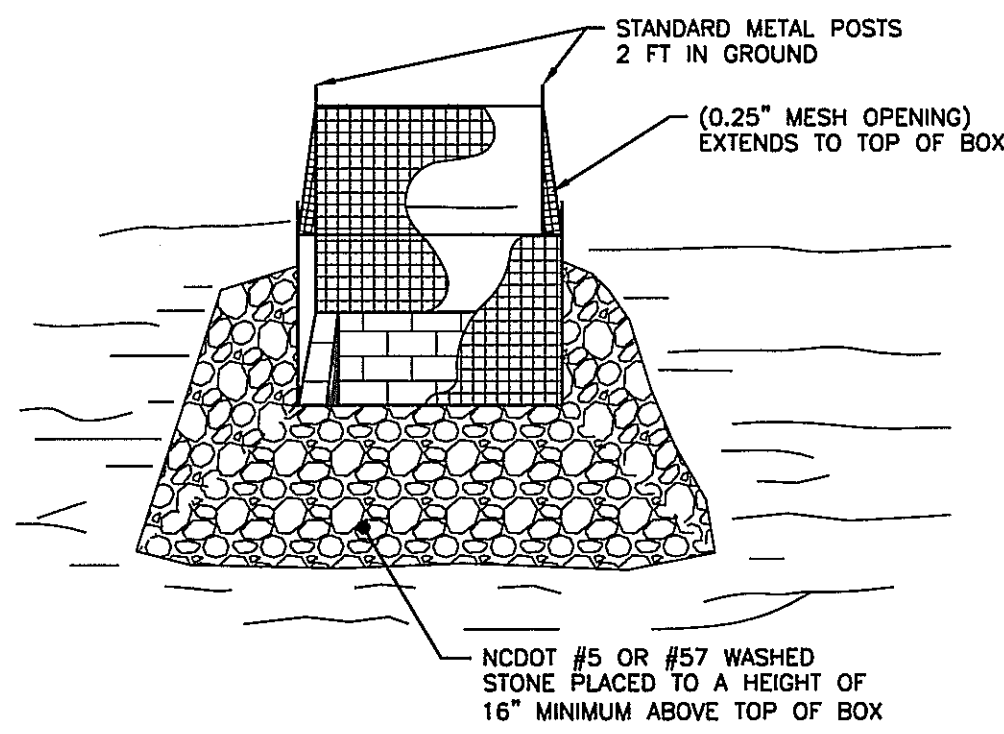
SHEET 1 OF 1
840.31



- NOTES:
1. SYNTHETIC FILTER FABRIC SHOULD BE OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER PER ASTM D 6461 AND SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS PER ASTM D 4355.
 2. WIRE FENCE SHALL BE MINIMUM 14 GAUGE WITH A MAXIMUM MESH OPENING OF 6-INCHES.
 3. SEE THE NC EROSION AND SEDIMENTATION CONTROL MANUAL FOR OTHER SPECIFICATIONS.

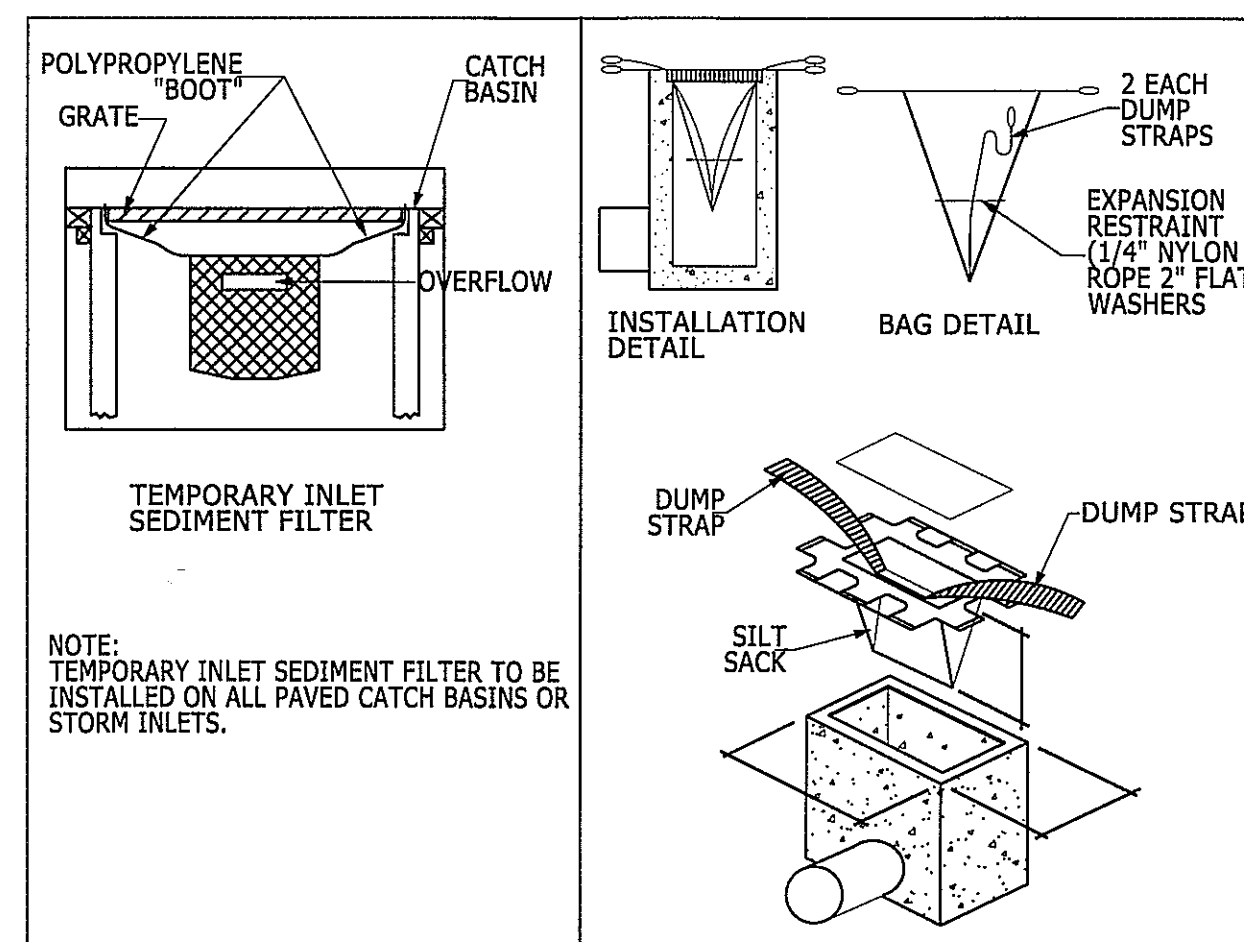


STANDARD TEMPORARY SILT / TREE PROTECTION FENCE
N.T.S.



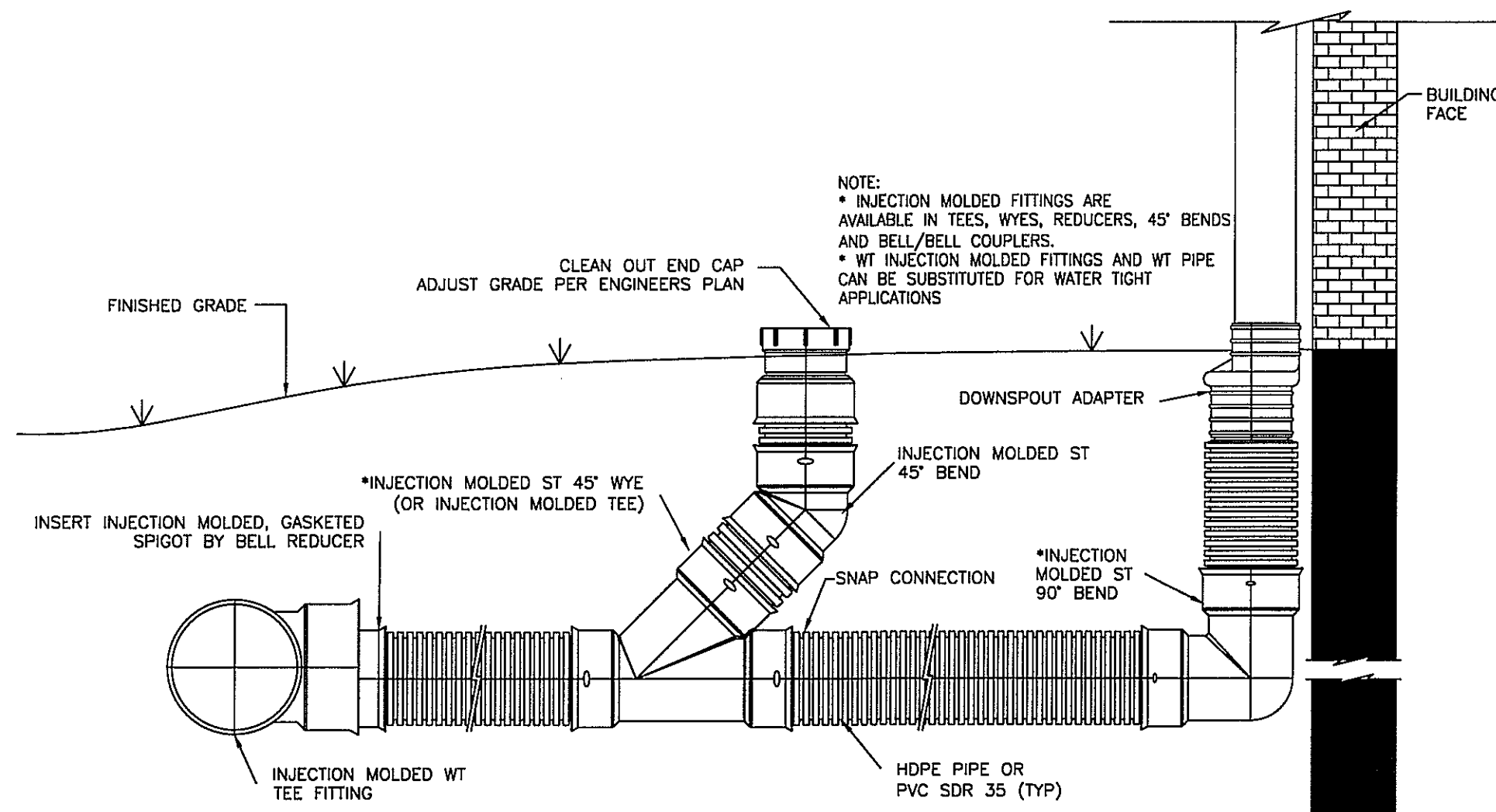
- NOTES:
1. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
 2. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 1-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
 3. PLACE CLEAN GRAVEL (NC DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A MIN HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.

STANDARD INLET PROTECTION
NOT TO SCALE



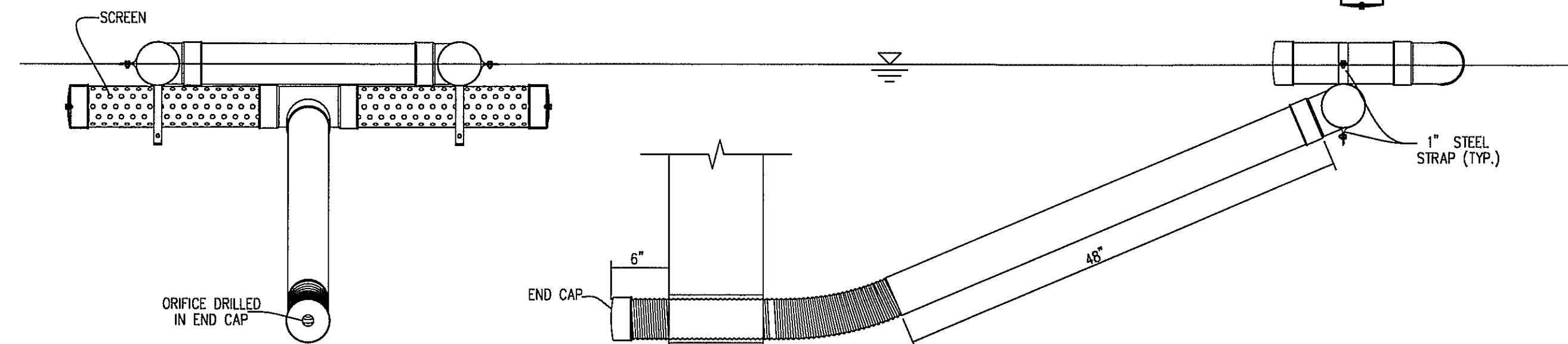
NOTE: TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS.

SILT SACK DETAIL
NOT TO SCALE



ROOF DRAIN DETAIL WITH CLEANOUT
N.T.S.

- NOTES:
1. ALL P.V.C. PIPES ARE TO BE 4" I.D., SCHEDULE 40
 2. ALL JOINTS OF THE FLOATION SECTION SHALL BE SOLVENT WELDED. JOINTS OF SKIMMER SECTION NEED NOT BE WATER-TIGHT.
 3. 4" HDPE FLEXIBLE DRAIN PIPE IS TO BE ATTACHED TO THE POND OUTLET STRUCTURE WITH WATER-TIGHT CONNECTIONS.
 4. ORIFICE IS TO BE SIZED ACCORDING TO STORAGE VOLUME AND TO SLOWLY RELEASE 1" RUNOFF FOR AT LEAST 24-HOURS.

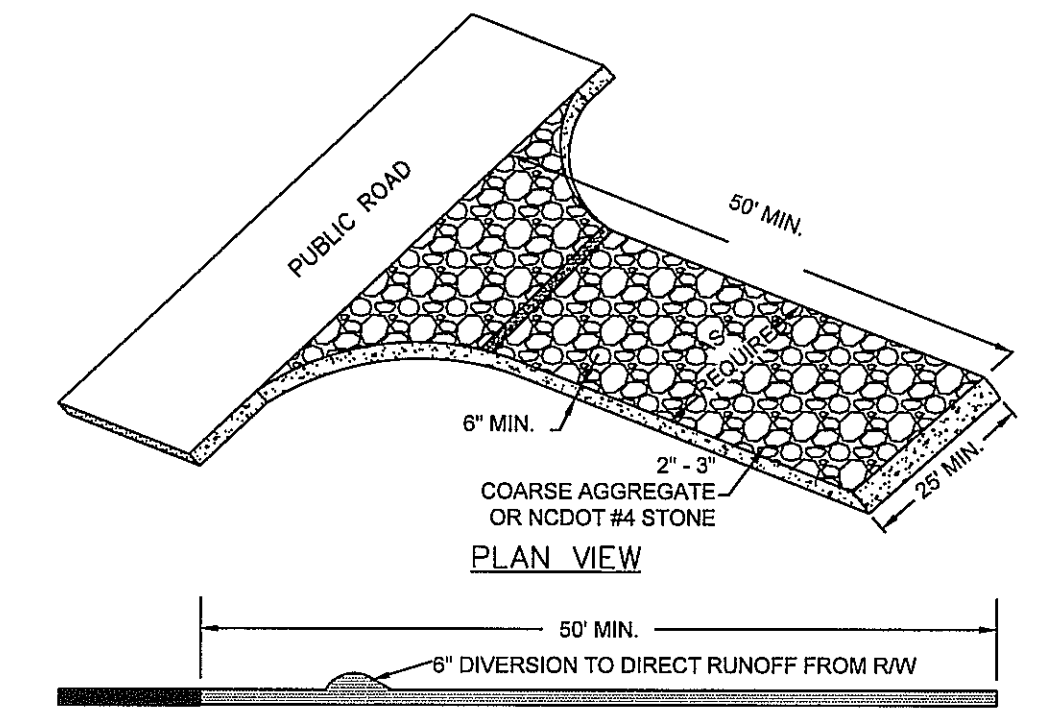


FRONT VIEW

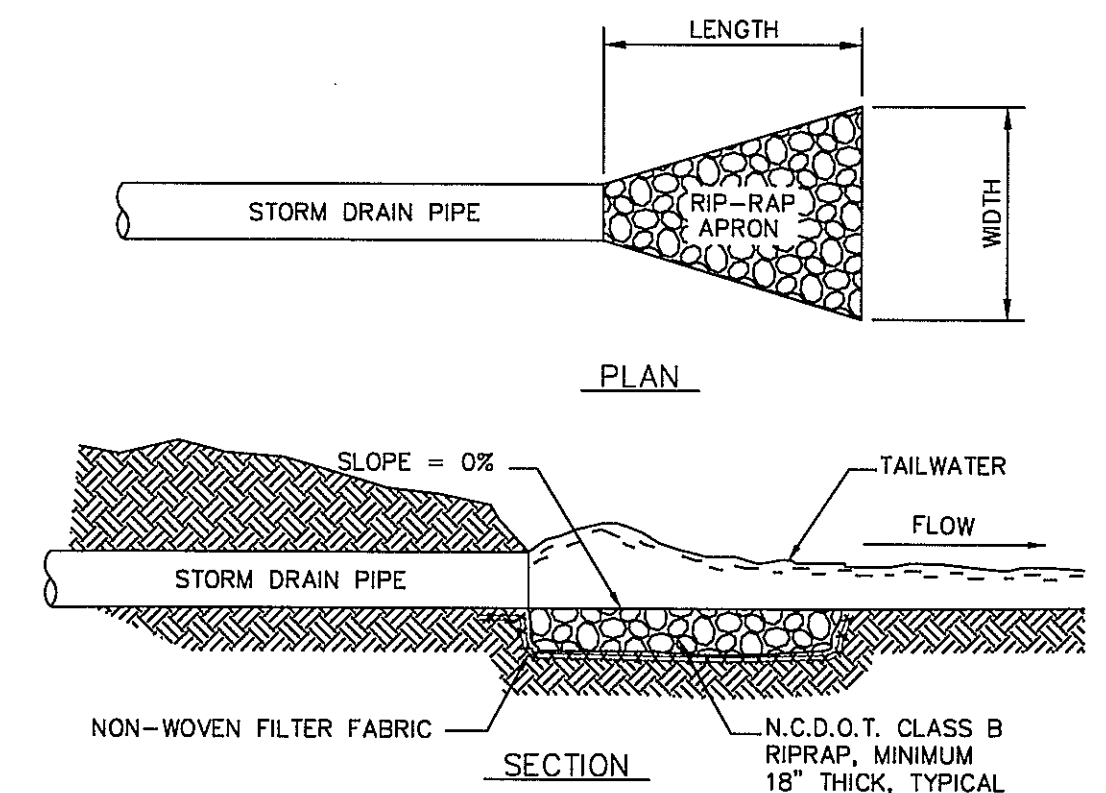
SKIMMER DEWATERING DEVICE
N.T.S.

SEQUENCE OF CONSTRUCTION

- LIMITS OF CONSTRUCTION = 1.64 ACRES
1. INSTALL TEMPORARY CONSTRUCTION ENTRANCE AS SHOWN ON EROSION & SEDIMENT CONTROL PLAN.
 2. INSTALL PERIMETER CONTROLS (TEMPORARY SILT FENCE, TREE PROTECTION FENCING) AS SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN. THIS STEP NEEDS TO BE COMPLETED PRIOR TO UPSLOPE LAND DISTURBING ACTIVITIES.
 3. THE EXISTING WET DETENTION BASIN WILL ACT AS A SEDIMENT BASIN DURING CONSTRUCTION ACTIVITIES.
 4. ONCE PERIMETER CONTROLS AND SEDIMENT TRAPPING MEASURES ARE INSTALLED CLEAR AND GRUB SITE WITHIN LIMITS OF DISTURBANCE. THE SEDIMENT BASIN WILL BE PUMPED DOWN BY MECHANICAL MEANS AS NEEDED TO MUCK OUT SEDIMENT WHEN THE SEDIMENT REACHES 50% CAPACITY.
 5. UPON BRINGING THE SITE TO ROUGH GRADE, STABILIZE ALL AREAS WITH TEMPORARY VEGETATION IF LEFT UNDISTURBED FOR 15 WORKING DAYS AND ALL SLOPES WITHIN 21 CALENDAR DAYS.
 6. ONCE THE PARKING AREAS, SANITARY SEWERS, WATERLINES AND STORM SEWERS ARE IN PLACE, INSTALL INLET PROTECTION AS SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN.
 7. UPON BRINGING THE PARKING AREA TO SUBGRADE ELEVATIONS, STABILIZE THE AREAS BY PLACING STONE BASE AS EARLY AS POSSIBLE.
 8. FOR TEMPORARY VEGETATIVE STABILIZATION OF ALL DENUDED AREAS SEE NOTE REFERENCING THE EROSION CONTROL PROGRAM AND SPECIFICATIONS ON SHEET C-1.
 9. AFTER CONSTRUCTION OPERATIONS HAVE ENDED AND ALL DISTURBED AREAS HAVE BEEN STABILIZED, MECHANICAL SEDIMENT CONTROLS SHALL BE REMOVED. SEDIMENT FROM TEMPORARY SEDIMENT TRAPPING DEVICES SHALL BE DISPOSED OF BY SPREADING ON THE SITE OR HAULING AWAY IF NOT SUITABLE FOR FILL. ALL DENUDED AREAS ARE TO BE PERMANENTLY STABILIZED WITH PERMANENT VEGETATION.



TEMPORARY CONSTRUCTION ENTRANCE
N.T.S.



RIPRAP LOCATIONS	LENGTH (FT.)	UPSTREAM WIDTH (FT.)	DOWNSTREAM WIDTH (FT.)
15" CULVERT	7.5	3.75	5.0
18" CULVERT	9.0	4.5	6.0
24" CULVERT	12.0	6.0	8.0
30" CULVERT	15.0	7.5	10.0
36" CULVERT	18.0	9.0	12.0
48" CULVERT	24.0	12.0	16.0

RIP-RAP OUTLET PROTECTION
N.T.S.

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

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



No.	Revision	Date	By

Designer	GSP	Scale	1" = 30'
Drawn By	GSP	Date	November 2017
License #	P-0718	Job No.	2017-0010

BRITTANY DEL FLEX SPACE
Wilmington New Hanover County North Carolina

STANDARD DETAILS

PREPARED FOR:
BRITTANY DEL INVESTMENTS, LLC
419B RALEIGH STREET
WILMINGTON, NC 28412

GSP CONSULTING, PLLC
ENGINEERING
6626 Gordon Road Unit C Wilmington, North Carolina 28411 tel: 910-442-7870 fax: 910-799-6659

Sheet No.
C-8