

Sediment Trap Chart

Sediment Trap	Disturbed Area (Acres)	Volume (Cubic Yards)	Size (Length x Width x Depth)
#2	0.21	28	21'L x 9'W x 4'D
#3	0.41	55	31'L x 12'W x 4'D
#4	0.18	24	18'L x 9'W x 4'D
#5	0.24	33	23'L x 10'W x 4'D
#6	0.19	26	20'L x 9'W x 4'D
#7	0.18	24	18'L x 9'W x 4'D
#8	0.12	17	17'L x 7'W x 4'D
#9	0.28	38	24'L x 11'W x 4'D
#10	0.27	37	23'L x 11'W x 4'D
#11	0.24	33	23'L x 10'W x 4'D
#12	0.32	43	25'L x 12'W x 4'D
#13	0.12	17	17'L x 7'W x 4'D
#14	0.21	29	22'L x 9'W x 4'D
#15	0.38	51	27'L x 13'W x 4'D
#16	0.29	39	24'L x 11'W x 4'D
#17	0.23	31	21'L x 10'W x 4'D
#18	0.20	27	21'L x 9'W x 4'D

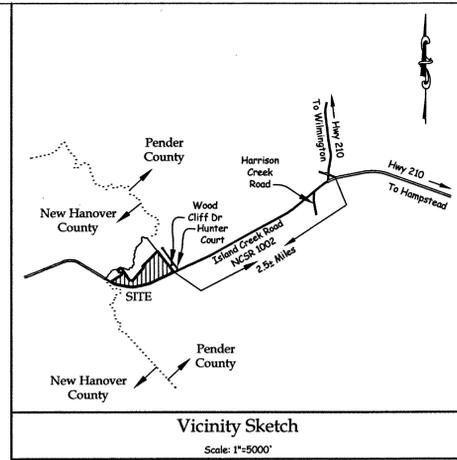
Design Standard - 133.3 CY Sediment Trap Volume per Disturbed Acre.

General Notes

- Topographic information was created from a combination of Lidar elevation data obtained from the N.C. flood mapping program, and ground topographic survey by Parker & Associates, Inc. on 04/29/14, NAVD'88 Datum. Lidar contour lines are not adjusted to match ground shots.
- Boundary information taken from a partial survey by Parker & Associates, Inc. dated 4-16-14, and rezoning data provided by Stroud Engineering, P.A.
- Development area is wooded.
- All easements to be drainage and utility at dimensions shown, unless otherwise noted.
- There are no Areas of Environmental Concern (AEC) as defined by Coastal Area Management Act (CAMA) on this site.
- Wetlands lines taken from a map prepared by Stroud Engineering, P.A., and Dated 07-22-14.
- Surface water classification to Northeast Cape Fear River is C.Sw
- Lot layout based on soils information received on 4-18-14 from Pittman Soil Consultants.
- There are no historical structures and sites recognized as significant by The County Commissioners or as identified on any historical landmarks survey for Pender County.
- The developer is building houses on all lots. The typical footprint shown is to denote driveway and house construction. The actual size and location of the structures may vary.
- Flood lines drawn from an electronic overlay of the digital flood map 37034 3252 K and 370344 3252 K (Pender County) effective Nov. 3, 2005.
- Pipe, Swale, and Sediment Trap Charts are located on Sheets 4 and 5 of 15.
- For additional information, see plan and profile and detail sheets.

Legend:

- Ac - Acreage
- C - Centerline
- D.B. - Deed Book
- cop - Edge of Pavement
- ex - Existing
- HOA - Home Owners Association
- Hwy - Highway
- Inv. - Invert
- M.B. - Map Book
- Pg - Page
- R/W - Right-of-way
- RCD - Rock Check Dam
- RRA - Rip Rap Apron
- ST - Sediment Trap
- Typ. - Typical
- WMSO - Wire Mesh Stone Outlet
- Existing Entranchment Area
- Flow Arrow
- Lot Number
- Pipe Label
- Proposed Spot Elevation
- Swale Label
- Wetlands Line
- Existing Ditch/Swale
- Proposed Ditch/Swale
- Silt Fence
- Wetlands
- Zone Line



Erosion and Sedimentation Control Notes:

- Clearing or grading operations shall begin at low points of outfall release or other locations where sediment control measures are shown on the plan and the sediment control devices (sediment traps, silt fences, diversions, stormwater treatment areas, etc.) shall be installed before or simultaneously with the disturbance of any area draining to the device.
- Sediment control devices and structures shall be installed, maintained and amended as needed to provide effective control of accelerated erosion and sedimentation until the contributing watersheds are stabilized.
- Construction Sequence:**
 - Notify Engineer, owner and Land Quality Section prior to beginning construction.
 - Install stabilized construction entrance at all points of access.
 - Limits of clearing will be as shown. Owner may lessen the amount to clear. Confirm prior to start of work. Silt fence shall be installed at the down slope edge of clearing immediately after a lot is cleared. Silt fence shall be maintained until the lot is stabilized completely. Silt fences are shown based on topographic information in the locations expected to be needed to trap sediment prior to entering down slope areas. Actual locations of installation shall be adjusted to the actual physical on site topography. That is, where silt fence is not shown on the plan but the actual topography reflects a downward slope, silt fence shall be installed. Where the actual topography reflects an upward slope silt fence is not required.
 - Clear & grub entire area within the clearing limits as shown.
 - Strip topsoil & stockpile for later use.
 - Construct sediment traps and rock check dams where shown. Construct drainage swales. Install storm drainage piping. Immediately sod all roadside swales and outfall ditches that have grades of 1.0% or steeper.
 - Immediately seed, mulch and install temporary liners to swales.
 - Rough grade streets.
 - Install water mains.
 - Maintain erosion control measures as needed to assure full functionality.
 - Final grade street. Place CABC over compacted subgrade. Install asphalt surface course.
 - Complete fine grading of roadside shoulders and swales.
 - Reseed and mulch shoulders and swales. Install liners on all swales, as required.
 - Provide ground stabilization (Temporary or Permanent) on perimeter areas and slopes greater than 3:1 within 7 days following the completion of any phase of grading or construction; and 14 days for all other areas internal to the project.
- Seeding Specifications:**

Apply lime and fertilizer and work into 4 - 6 inches of soil. Seed mixture shall be distributed uniformly and covered with a clean straw mulch. All mulch shall be crimped or asphalt tacked to hold in place. Material and application rates as follows, and are generally considered minimums. *Mulch rate to be doubled is crimped:

Material	Application Rate
Lime	3000 lbs./ac.
Fertilizer (10-10-10)	750 lbs./ac.
Mulch	2 tons/ac.
Asphalt Tack	435 gal./ac. (Max)

Permanent Seeding

Common Bermuda	Application Rate
(Unhulled Sept. 1 - April 1)	100 lbs./ac.
(Hulled April 1 - Sept. 1)	75 lbs./ac.
"Rebel" Fescue	50 lbs./ac.
Rye Grain (Sept. 1 - April 1 only)	50 lbs./ac.
German Millet (April 1 - Sept. 1 only)	50 lbs./ac.

Temporary Seeding

Dec. 1 - April 15	Application Rate
Robe Lespedeza	50 lbs./ac.
Rye Grain	120 lbs./ac.
April 15 - Aug. 15	
German Millet	40 lbs./ac.
Aug. 15 - Dec. 30	
Rye Grain	120 lbs./ac.
- Once all areas have been stabilized, contractor is to remove temporary erosion control measures, regrade, & mulch to restabilize these areas.
- For additional requirements, see the approved erosion and sedimentation permit.

ROADS & DRAINAGE NOTES:

- The streets to be constructed for this project are subject to the Department of Transportation Certification Program and Quality Management System Maintenance Version Requirements. The Contractor, at his expense, shall provide test results on 1) Subgrade, 2) Base and 3) Pavement. The Contractor shall insure that all construction and testing is performed in accordance with the N.C. Department of Transportation "Standard Specifications for Roads and Structures", latest edition, 2006 Hot Mix Asphalt Specifications and Manual, and "Quality Management System Maintenance Version", and shall report the testing and/or core locations, test method, results and D.O.T. allowable range or tolerance, as applicable. Subgrade shall be tested for density and shall be preapproved by the Testing Engineer or the Engineer or Surveyor who will issue the Final Certification. Base and pavement shall both be tested for density and thickness. If Parker & Associates is administering the construction they must also preapprove the stone. Twenty-four (24) hour advance scheduling before preapproval. Testing for pavement shall be certified by either a professional Engineer or properly certified QMS technician and shall be in accordance with QMS criteria. Required thickness for this project is as shown on the plans. Note that thickness for widening or turn lanes is greater than that for internal streets.
- Minimum Densities:**
 - Subgrade 100%
 - Stone Base 100%
 - SF 9.5A 90%
 - S 9.5B 92%
 - I 19.0B 92%
 - B 25.0B 92%
- Notify the Engineer or Surveyor, who will issue the overall Final Certification, of all phases of Roadway Construction.
- All metal used for any type of catch basin or inlet shall be produced in the USA.
- A minimum sight distance of 25'x25' shall be maintained along the right-of-way of all internal intersections.
- 20 foot radii at right-of-way intersections, 30 foot radii at edge of pavement intersections.
- All culverts under streets shall be reinforced concrete per North Carolina Department of Transportation Specifications, unless otherwise specified and/or approved by the Engineer and/or Department of Transportation.
- All roads shall be public and built to NCDOT Standards.
- There shall be no encroachments within the NCDOT Right-of-way.
- All materials and practices shall meet North Carolina Department of Transportation Standards.
- For other detailed construction notes, see plan and profiles.

Drainage Pipe Chart

PIPE	AREA (acres)	Q10 (cfs)	DIAMETER (inches)	GRADE (%)	LENGTH (lf)	VELOCITY (fps)	OUTLET
A	2.6	9.4	24" RCP	0.55	90	5.5	RCP
B	4.4	15.9	30" RCP	0.54	44	6.2	RCP
C	19.8	71.0	42" RCP	0.56	44	8.9	RCP
J	0.1	0.4	15" RCP	1.19	42	3.1	RCP

Q=CiA
C=0.5
t=5 min.
i10=7.2 in/hr.

RCP = Reinforced Concrete Pipe
CFS = Cubic Feet per Second
LF = Linear Feet
FPS = Feet per Second

Swale Calculations Chart

Section	Area (acres)	Q10 (cfs)	Side Slope	Channel Slope (%)	V10 (bare) (fps)	V10 (grassed) (fps)
1 - 1	1.0	3.6	3:1	0.5	2.5	1.3
2 - 2	0.24	0.9	3:1	5.57	4.3	2.2
3 - 3	0.22	0.8	3:1	5.10	4.1	2.1

Q=CiA
C=Varies
i10=7.2 in/hr.

Friction Factors
n=0.02 Bare Earth
n=0.05 Grass
v=1.49 R 2/3 s 1/2

- Note:**
- See grading plan for typical section locations.
 - Sections selected are worse case sections: All swales and ditches that are 1.0% or steeper in grade are to be immediately sodded and shaped.

Note:

Contractor shall insure that he and all his workers (contractors, subcontractors and other site personnel) do not damage construction stakes or other measures used in laying out the project whether by the Engineer or another entity including those under the employ of the contractor. Contractor shall cause his workers to observe and verify to the fullest extent practicable that stakes, other measures and grades are, or appear to be, accurate and correct, and immediately, but prior to any associated work, notify the staking entity of any potential conflict, error or question regarding the work. The Engineer shall not be responsible if all of the above measures are not strictly adhered to. The Engineer shall not be responsible where due to damage, his staking can not be verified. For critical or costly components of the work, where the contractor believes that staking may not be preserved, the contractor shall request the staking entity to place staking in an area where its preservation can be insured.

Field Book: Island Creek, Pg. 1-13, Island Creek 2 Pg. 1-7
Data Collector: ISLAND CREEK, ISLAND CREEK 2, ISLAND CREEK 3, ISLAND CREEK 4, ISLAND CREEK 5, ISLAND CREEK 6, ISLAND CREEK 7, ISLAND CREEK 8
Disk Name: Acad #2201
Filename: IC-Preliminary Gen.dwg BLD
Job No.: S140217-5746



Grading, Drainage, Erosion and Sedimentation Control Plan

THE RESERVE ON ISLAND CREEK

Topsail Twp., Pender Co., North Carolina

Owner/Developer: **IC3 Partners, LLC**
PO Box 7122
Jacksonville, NC 28541
(910) 455-6956

DATE: 10/17/14
SCALE: 1"=100'

Parker & Associates, Inc.
Consulting Engineers - Land Surveyors - Land Planners
P.O. Box 978 - 28541-0978
306 New Bridge Street - 28540
Jacksonville, North Carolina
Phone (910) 455-2414 - Fax (910) 455-3441
Firm License Number: F-0108

GRAPHIC SCALE: 1"=100'
0 50 100 200 300 FEET

Sheet 4 of 15