

COUNTY COUNCIL OF BEAUFORT COUNTY

ADMINISTRATION BUILDING
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BEAUFORT, SOUTH CAROLINA 29901-1228
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COUNTY ADMINISTRATOR

JOSHUA A. GRUBER
DEPUTY COUNTY ADMINISTRATOR
SPECIAL COUNSEL

SUZANNE M. RAINEY
CLERK TO COUNCIL

AGENDA NATURAL RESOURCES COMMITTEE

Monday, October 13, 2014

1:30 p.m.

Executive Conference Room, Administration Building
100 Ribaut Road, Beaufort

Committee Members:

Brian Flewelling, Chairman
Cynthia Bensch, Vice Chairman
Gerald Dawson
William McBride
Jerry Stewart
Tabor Vaux
Laura Von Harten

Staff Support:

Tony Criscitiello, Division Director

1. CALL TO ORDER – 1:30 P.M.
2. CONSIDERATION OF CONTRACT AWARD
 - A. Stormwater Public Education Contract ([backup](#))
3. AN ORDINANCE AUTHORIZING THE RELINQUISHMENT OF A STORMWATER EASEMENT ON RILEY ROAD ([backup](#))
4. PRESENTATION, INFORMATION AND DISCUSSION / STORMWATER MS4 PERMIT APPLICATION TO BE MADE TO DHEC ([backup](#))
5. TEXT AMENDMENT OF CHAPTER 4 (FUTURE LAND USE) OF THE BEAUFORT COUNTY COMPREHENSIVE PLAN TO INCLUDE A PLACE TYPE OVERLAY FUTURE LAND USE DESIGNATION ([backup](#))
6. DISCUSSION / REAPPOINTMENTS AND APPOINTMENTS
 - A. Northern Corridor Review Board
 - B. Rural and Critical Lands Preservation Review Board
 - C. Southern Corridor Review Board
 - D. Stormwater Management Utility Board
7. EXECUTIVE SESSION
 - A. Discussion of negotiations incident to proposed contractual arrangements and proposed purchase of property
8. ADJOURNMENT

2014 Strategic Plan: Committee Assignments

Community Development Code: Adoption
Comprehensive Plan for County-owned land: Inventory Use and Direction
Greenprint Map Update (*Goal Accomplished July 2014*)
Water Quality Office: Next Steps





COUNTY COUNCIL OF BEAUFORT COUNTY

PURCHASING DEPARTMENT

102 Industrial Village Road, Building 3
Post Office Drawer 1228
Beaufort, South Carolina 29901-1228

TO: Councilman Brian Flewelling, Chairman, Natural Resources Committee

FROM: Dave Thomas, CPPO, Purchasing Director *dt*

SUBJ: **RFP # 08192014 Request for Proposal to provide Education and Outreach Consulting Services for Stormwater Management**

DATE: October 13, 2014

BACKGROUND: Beaufort County Purchasing Department issued a Request for Proposal (RFP) for Education and Outreach Consulting Services for Stormwater Management to assist with the department's programs and projects. The proposal requested that the consultant staff and facilitate stormwater education and outreach within the County and to perform duties and responsibilities necessary to bring and keep Beaufort County compliant with all Federal, State, and local laws/regulation regarding stormwater management for fiscal year 2015, with the option to renew every year for up to four (4) consecutive years. The Evaluation Committee consisted of five (5) representatives of the Beaufort County Stormwater Implementation Committee (SWIC) including Bryan McIlwee with the Town of Hilton Head Island, Kim Jones with the Town of Bluffton, Lamar Taylor with the City of Beaufort, Anthony Maglione representing the Town of Port Royal as a consultant, and Eric Larson with Beaufort County Stormwater Management.

The scope of services to provide stormwater education and outreach is unique and not widely marketed by for-profit businesses. The SWIC wrote the RFP scope of services to solicit non-profit organizations and educational institutions. Many groups such as these exist in Beaufort County and it was a goal to find a consultant that could organize these groups and efficiently utilize our existing resources. Beaufort County received one (1) response to the RFP from Beaufort Soil and Water Conservation District. The Committee reviewed and evaluated the RFP and decided to interview the vendor. Beaufort Soil and Water Conservation District's proposal meets the goals set forth by the SWIC and was unanimously approved by the Evaluation Committee.

The initial contract term is effective October 14, 2014 to June 30, 2015. Contract fee for the term will be a negotiated amount not to exceed \$50,000.00.

FUNDING: Primary Funding - 50250011-51160, Stormwater Fees, as part of the cost share MOU with the Towns of Hilton Head Island, Bluffton, and Port Royal and the City of Beaufort. The County's portion is \$25,218.

PROPOSED YEARLY COST: \$50,000

FOR ACTION: Natural Resources Committee meeting October 13, 2014.

RECOMMENDATION: The Purchasing Department recommends that the Natural Resources Committee approve the contract award to Beaufort Soil and Water Conservation District for Education and Outreach Consulting Services for Stormwater Management.

CC: Gary Kubic, County Administrator *GKubic*
Josh Gruber, Deputy Administrator *JG*
Alicia Holland, Chief Financial Officer *AH*
Robert McFee, Director of Engineering and Infrastructure *JRM*
Eric W Larson, Stormwater Manager *Eric W. Larson*

Stormwater Education and Outreach Consulting Services Proposal by Beaufort Soil and Water Conservation District

A Report to Beaufort County
Stormwater Utility Board
October 1, 2014



Structure of the Beaufort Soil & Water Conservation District

Commissioner Chairperson Appointed by DNR Board	Commissioner Vice-Chairperson Appointed by DNR Board
Alan A. Ulmer, Jr.	Claude M. McLeod, Jr.

Commissioner Sec/Treasurer Elected	Commissioner Elected	Commissioner Elected
Denise M. Parsick Education Chairperson & Educator	Luke Inabinett	Mac Sanders

	Associate Commissioners Voted in by Board	
Art Holland Retired USDA- SCS (NRCS)	Dean Moss Retired Director BJWSA	Carol Murphy Previous SWCD Manager & Educator

Staff Member	Title
Shelby Berry	District Manager, & Educator
Pam Floyd	Education Coordinator
Debra Way	Education Specialist
Kathryn Madden	Education Specialist

**Additional Education
Specialist**

**Laura Lee Rose
Clemson Extension**

Proposed Scope of Work

- Public Survey via internet, email, paper
- Public Open House(s) for MS4 input
- Neighbors for Clean Water campaign
 - Printed booklets
 - Website
- Community Education Programs
- School education program using Enviroscope
- Public/School Fact Sheets and Brochures



Proposed Scope of Work cont.

- Pond Clinic for Public, Staff
- Exhibiting at festivals, community events
 - Giveaways, Flyers, Activities, etc.
- Storm Drain Marker program
- Rain Barrel Program
- Rain Garden workshops
- Training for staff, developers, contractors
- MS4 reporting





BEAUFORT COUNTY STORMWATER UTILITY
120 Shanklin Road
Beaufort, South Carolina 29906
Voice (843) 255-2801 Facsimile (843) 255-9478



TO: Councilman Brian Flewelling Chairman, Natural Resources Committee

FROM: Robert McFee, PE, Division Director for Engineering and Infrastructure
Eric W. Larson, Beaufort County Stormwater Utility *Eric W. Larson*

SUBJECT: Stormwater Drainage Easement Conveyance to Centex Homes - Shadow Moss Phase 4

Date: September 12, 2014

BACKGROUND: The Trask Family conveyed a 25' drainage easement to Beaufort County located in the Shadow Moss, Phase 4 Subdivision in May of 2010. An open ditch was then constructed by Stormwater to handle water runoff from Riley Road onto Phase 4 of the Shadow Moss Subdivision as shown on the attached **Exhibit "A"**. Centex Homes, who has subsequently purchased the property from the Trask Family, has now approached the County to request the return of this drainage easement as they are now developing the property and are designing a storm sewer system to re-route runoff that is currently conveyed by the ditch. It is their desire to re-route the drainage across Phase 4 using a buried pipe.

Upon such conveyance, Centex Homes would be responsible for the construction and maintenance of the re-routed drainage easement and Beaufort County would be released from all responsibility.

FOR ACTION: Natural Resources Committee meeting occurring on October 13, 2014.

RECOMMENDATION: Staff recommends the Natural Resources Committee of County Council endorse the conveyance of the above-referenced drainage easement to Centex Homes with the provision that they are responsible for the construction and ongoing maintenance of same and release Beaufort County for all future responsibility.

CC: Gary Kubic, County Administrator *OK Gary Kubic*



941 Houston Northcutt Blvd, Suite 201
Mt. Pleasant, SC 29464
(843) 414-1040
WWW.APPLIEDTM.COM

August 4, 2014

Mr. Mays Boyd, PE
Thomas & Hutton Engineering
50 Park of Commerce Way
Savannah, GA 31405

Re: Shadow Moss Phase 7 – Riley Road Drainage
Plan Review
Second Submission (First Submittal Comments sent via email on July 7, 2014)
ATM Project # 08-1884

Dear Mays:

Please be advised that we are in receipt (via hardcopy and/or email) of and have reviewed the following materials for the improvements of the above-referenced project for the first review:

1. Memorandum addressed to Michael Klink, PE from Mays Boyd, PE of Thomas & Hutton, entitled "Shadow Moss Phase 7 – Riley Road Drainage," dated July 1, 2014.
2. Construction plan Sheets CO, C3.1, C3.3, C3.4, and C3.5 for "Site Development Plans of Shadow Moss – Phase 7," revised date June 23, 2014.
3. ICPR Pond elevation data result sheet, entitled "Shadow Moss Phase 7 Lagoon 5," date revised July 1, 2014.
4. Drainage master plan exhibit entitled "Shadow Moss, Port Royal, South Carolina, Post-development Drainage Exhibit," dated July 1, 2014 completed by Thomas & Hutton Engineering Co.

Please be advised that we are in receipt (via hardcopy and/or email) of and have reviewed the following materials in conjunction with the above-referenced project for the second review:

1. Memorandum addressed to Michael Klink, PE from Mays Boyd, PE of Thomas & Hutton, entitled "Shadow Moss Phase 7 – Riley Road Drainage Comment Response," dated July 28, 2014.
2. Construction plan detail Sheet C3.4 for "Shadow Moss – Phase 5," dated March 13, 2012.
3. Drainage master plan exhibit entitled "Shadow Moss, Port Royal, South Carolina, Post-development Drainage Exhibit," dated July 24, 2014 completed by Thomas & Hutton Engineering Co.

4. "Shadow Moss Phase 6 and 7 Stormwater Piping and Inlet Design Considerations" (revised date 7/1/2014) and corresponding "Shadow Moss Phase 7 Lagoon 5 Inlet Exhibit."
5. Construction plan Sheet C3.1 for "Site Development Plans of Shadow Moss – Phase 7," revised date June 28, 2014.

I. PROJECT DESCRIPTION

The Shadow Moss Phase 7 is currently under construction. Approximately 15 acres around Riley Road drains by ditch to an area located in Shadow Moss Phase 7 that ponds and infiltrates into the ground. Beaufort County has an existing drainage easement documented for the ditch that collects the 15 acres that flows south onto the Shadow Moss Phase 7 property.

The drainage area of 15 acres north of Shadow Moss Phase 7 was not incorporated into the Shadow Moss Phase 7 drainage system. To avoid flooding problems and drainage issues from occurring in the future, Thomas & Hutton has created a design to account for the flow into the Shadow Moss Phase 7 drainage system and be stored by Lagoon 5.

As discussed on site with Thomas & Hutton, Beaufort County, and the Town of Port Royal representatives, the plan is to eliminate the Beaufort County Easement located in Shadow Moss Phase 7 and the Shadow Moss Development will be responsible to maintain the drainage system conveyance located in Shadow Moss and Beaufort County will maintain the roadside drainage swale of Riley Road up to the right-of-way line.

II. TECHNICAL REVIEW

Based on our review of the submitted documents versus the Port Royal Subdivision Regulations, Flood Hazard Reduction Regulations, Tree Preservation and Zoning Ordinance, Beaufort County Stormwater Management Standards and OCRM "Standards for Stormwater Management and Sediment Reduction Regulations" Regulations we offer the following comments:

1. Please submit documentation that shows that lagoon 5 has the required free broad per OCRM standards for a 100 year storm event.
Completed
2. Lagoon 5 has a water surface elevation of 13'. Please submit the control structure detail that will determine this water surface elevation of Lagoon 5.
Completed
3. Per the construction plans submitted the existing RCP pipe is not upsized, please verify that the additional flow does not require the proposed pipe nor the existing pipe to be increased in size.
Completed

Based on ATM's review, all technical design documents have been submitted and approved; thus, ATM recommends at this time that the improvements of Shadow Moss Phase 7 – Riley Road Drainage be approved.

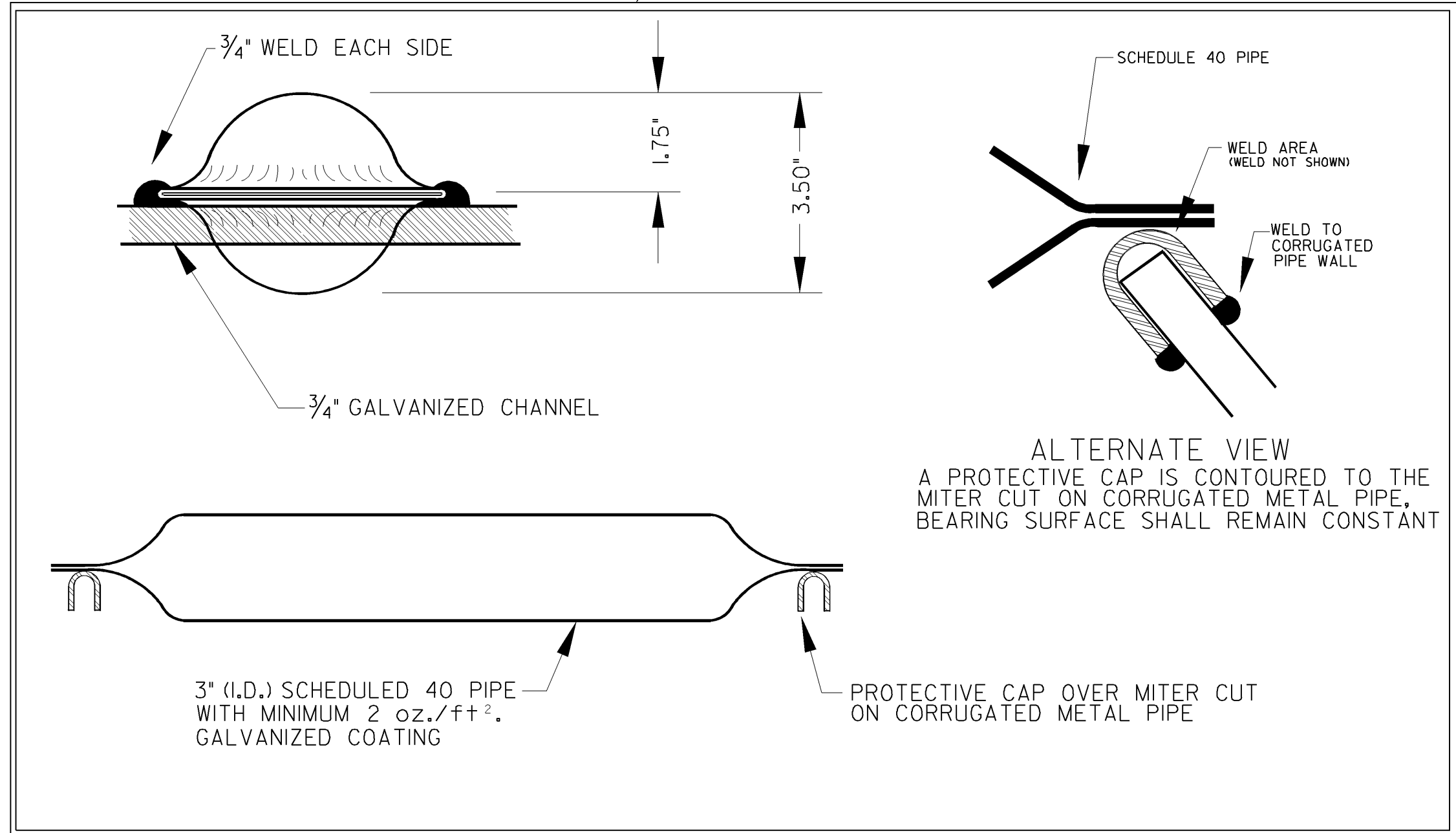
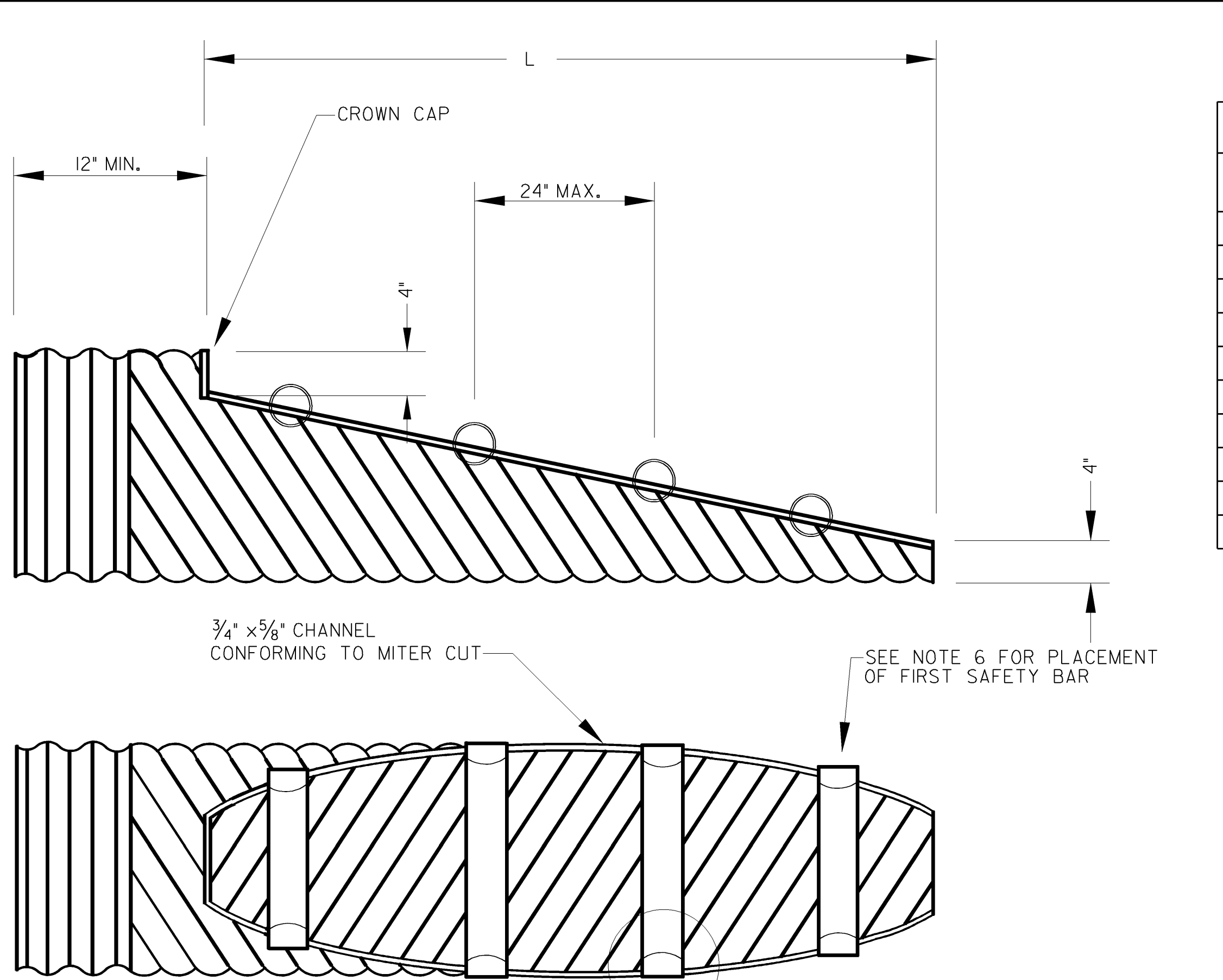
Should you have any questions or require additional information regarding the above, please do not hesitate to contact me at the office.

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Klink', with a stylized flourish at the end.

Michael R. Klink, P.E.
Project Engineer
Applied Technology & Management, Inc.

Cc (via email): Linda Bridges, Town of Port Royal Planning and Operations Administrator
Tony Maglione, ATM
Ryan Smith, PE, Thomas & Hutton Engineering



NOTE: ENDS OF BARS SHALL BE WELDED SOLID TO PREVENT SOIL AND WATER INFILTRATION

ALTERNATE 2

END TREATMENT DIMENSIONS FOR ARCHED METAL PIPE				
PIPE DIA. (INCHES)	GAGE	SHEET THICKNESS (INCHES)	* 4:1 SLOPE L DIMENSION	* 6:1 SLOPE L DIMENSION
17"x13"	16	.064"	1'-8"	2'-6"
21"x15"	16	.064"	2'-4"	3'-6"
24"x18"	16	.064"	3'-4"	5'-0"
28"x20"	16	.064"	4'-0"	6'-0"
35"x24"	14	.079"	5'-4"	8'-0"
42"x29"	14	.079"	7'-0"	10'-6"
49"x33"	14	.079"	8'-4"	12'-6"
57"x38"	12	.109"	10'-0"	15'-0"
64"x43"	12	.109"	11'-8"	17'-6"
71"x47"	10	.138"	13'-0"	19'-6"

* SEE STD. NO. 903IT FOR SLOPES AT SIDE ROAD OR AT DRIVES.

END TREATMENT DIMENSIONS FOR CIRCULAR METAL AND CIRCULAR CONCRETE PIPES				
PIPE DIA. (INCHES)	GAGE	SHEET THICKNESS (INCHES)	* 4:1 SLOPE L DIMENSION	* 6:1 SLOPE L DIMENSION
15"	16	.064"	2'-4"	3'-6"
18"	16	.064"	3'-4"	5'-0"
21"	16	.064"	4'-4"	6'-6"
24"	16	.064"	5'-4"	8'-0"
30"	16	.064"	7'-4"	11'-0"
36"	16	.064"	9'-4"	14'-0"
42"	14	.079"	11'-4"	17'-0"
48"	14	.079"	13'-4"	20'-0"
54"	14	.079"	15'-4"	23'-0"
60"	12	.109"	17'-4"	26'-0"

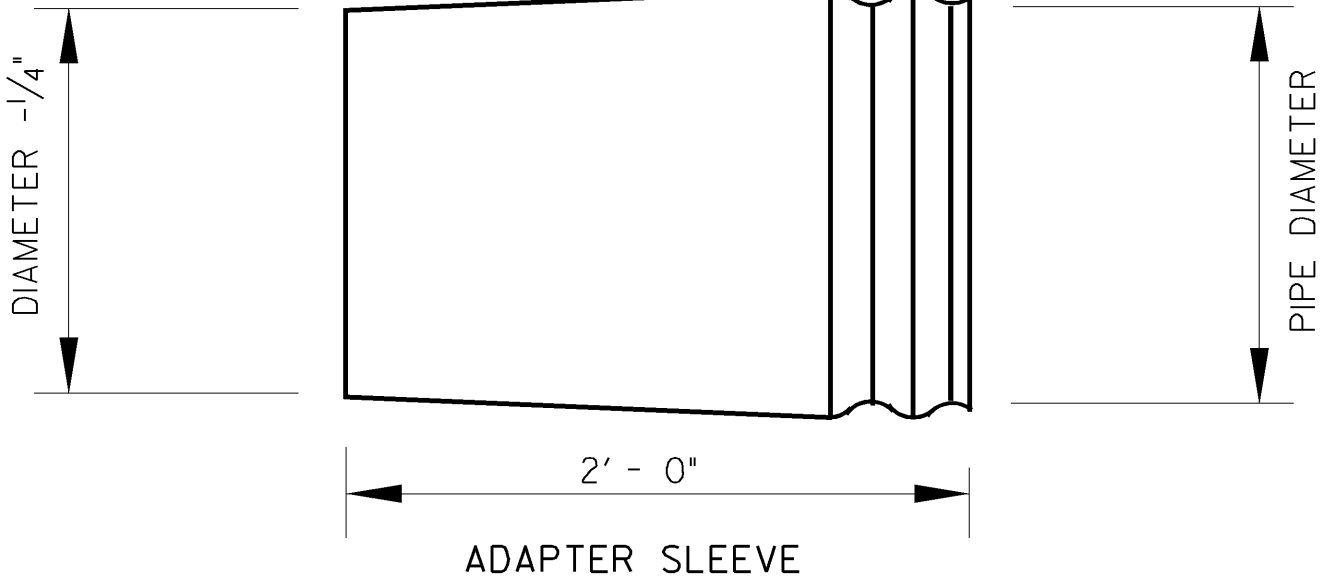
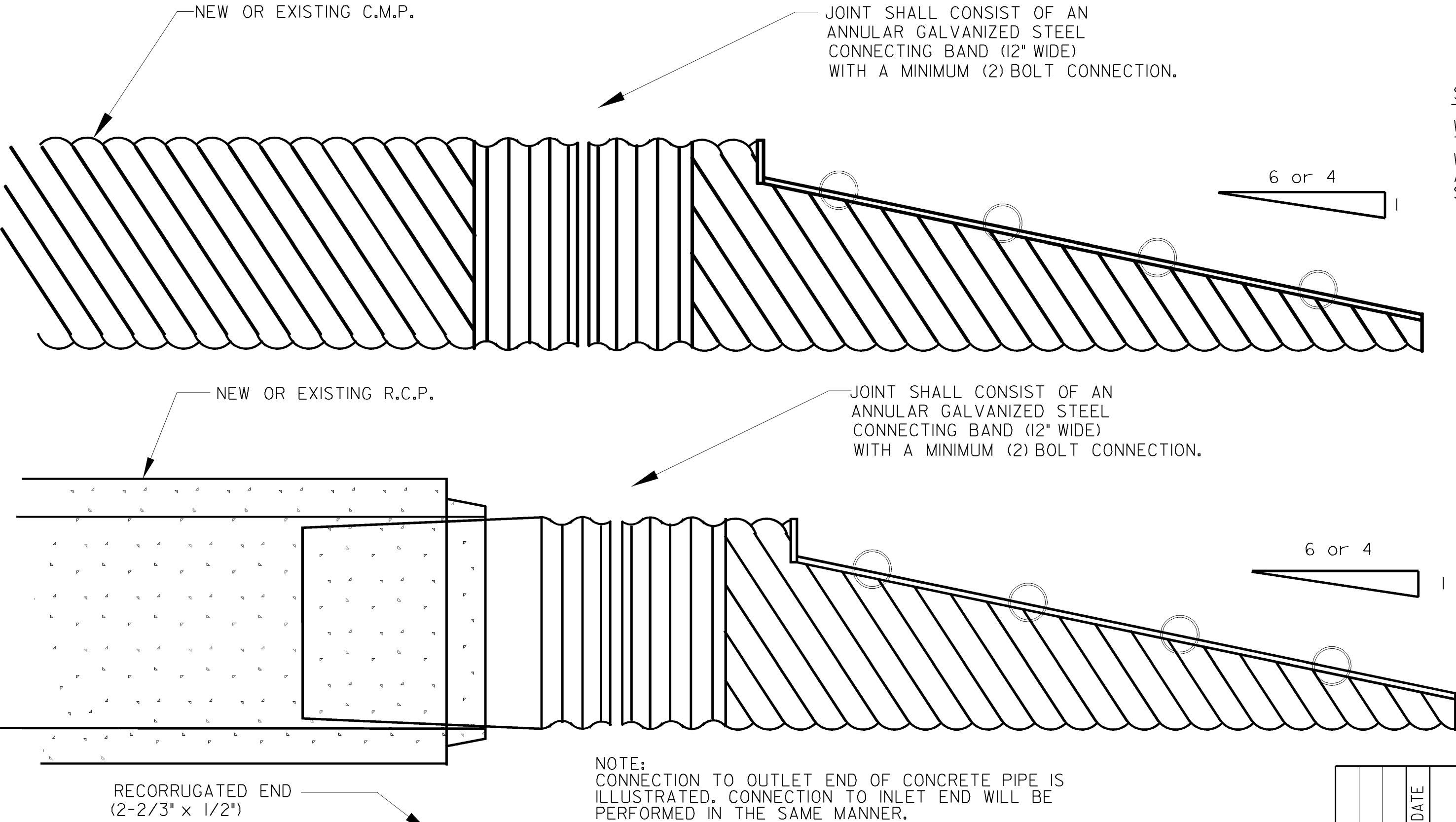
* SEE STD. NO. 903IT FOR SLOPES AT SIDE ROAD OR AT DRIVES.

GENERAL NOTE ALTERNATE 2:

- THE MATERIAL USED IN FABRICATION OF SLOPED END SECTION SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M 218 (GALVANIZED STEEL)
- SLOPED END SECTIONS SHALL BE FORMED FROM FULL CIRCLE PIPE, MAY BE FORMED INTO PIPE ARCHES, WHERE SPECIFIED, AND SHALL MEET ALL REQUIREMENTS FOR CORRUGATION, GAGE, AND OTHER FABRICATION REQUIREMENTS.
- THE EXPOSED EDGE CUT ON THE TOP SHALL BE COVERED WITH A PROTECTIVE CAP OVERLAPPING THE TOP OF THE ARCH BY NOT LESS THAN 3/8 INCH. THE 4 TO 1 OR 6 TO 1 BEVEL SHALL BE ENCASED WITH A PROTECTIVE CAP OVERLAPPING EACH SIDE OF THE CUT BY NOT LESS THAN 3/8 INCH. THE PROTECTIVE CAP IS TO BE THE SAME MATERIAL AS THE PIPE AND MINIMUM 14 GAGE (.079"). PROTECTIVE CAPS SHALL BE WELDED WITH 1/2 INCH WELDS ALTERNATING FROM SIDE TO SIDE OF THE CAP AT 12 INCH INTERVALS. WELDS SHALL BE AT THE ENDS OF ALL CAPS, REGARDLESS OF SPACING. REPAIR DAMAGED GALVANIZED COATINGS IN ACCORDANCE WITH GDOT STANDARD SPECIFICATIONS SECTION 645.
- CONNECTIONS OF GALVANIZED STEEL END TREATMENTS TO CORRUGATED ALUMINUM OR ALUMINIZED STEEL PIPE MUST UTILIZED A POLYMER COATED GALVANIZED STEEL BAND MEETING THE REQUIREMENTS OF AASHTO M 256 84.
- ADAPTER SLEEVE IS TO BE CONSTRUCTED OF GALVANIZED STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M 218, MINIMUM 12 GAGE (.109") MATERIAL.
- BOTTOM SAFETY BAR SHALL HAVE A MAXIMUM CLEARANCE OF 5" WHEN MEASURED FROM THE BOTTOM OF THE INSTALLED BAR TO INSIDE CREST OF PIPE CORRUGATION.

SPECIAL NOTE:

WHERE THE LENGTH OF DITCH OR THE DISTANCE BETWEEN TOE POINTS OF THE END SECTION ON SEPARATE INSTALLATIONS WOULD BE LESS THAN 30 FT., CONTINUED S.D. PIPE WITH AN INTERMEDIATE INLET OR OTHER ALTERANTE MAY BE SPECIFIED INSTEAD.



	DATE	DEPARTMENT OF TRANSPORTATION	
		STATE OF GEORGIA	
	REVISION	STANDARD SAFETY END SECTION (METAL)	
		(FOR SIDE DRAIN PIPE-OR FOR STORM DRAIN PIPE PARALLEL TO MAINLINE)	
		ALTERNATE 2	
		NO SCALE	JAN. 2005
BY	DESIGNED	(SUBMITTED) <i>B. A. S.</i>	NUMBER
	DRAWN	STATE ROAD & AIRPORT DESIGN ENGINEER	1122
	TRACED	(APPROVED) <i>O. S. H.</i>	SHEET 2 OF 3
	CHECKED	CHIEF ENGINEER	

R112-28-721
Shadow Moss Ph VII

RILEY RD

Existing 10ft Drainage Easement
Owner: Beaufort County
Recorded in Book - 2969 Page - 2263



Easements

Drainage

River

Stream

Outfall

Lateral

Lateral Pipe

Roadside

Roadside Pipe

Road Pipe

Crossline

DW

Access

Piped

Bleeder

Parcels

2013 DEM

Value

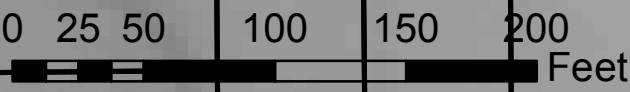
High

Low

BRASSTOWN WAY

TUGALOO DR

CATAWBA WAY




THOMAS & HUTTON

50 PARK OF COMMERCE WAY | SAVANNAH, GA 31405
912.234.5300 | WWW.THOMASANDHUTTON.COM

MEMORANDUM

TO: Mr. Michael Klink, PE

FROM: Mays Boyd, PE 

CC: Ms. Linda Bridges, Town of Port Royal
Ms. Allison Tucker, PulteGroup
Mr. Todd Doupona, PulteGroup

DATE: July 1, 2014

SUBJECT: Shadow Moss Phase 7 – Riley Road Drainage

JOB NO: 18683.1700

Site development plans and Stormwater calculations have been revised for Phase 7 of Shadow Moss to account for existing drainage from an off-site basin north of Riley Road. Drainage basin DA-OS2B includes approximately 15 acres of off-site property draining to an existing roadside ditch at Riley Road. The Riley Road ditch currently connects to a ditch running through Phase 7 and connecting to the Stormwater system within Shadow Moss. Revised basin information is included on the attached Post-Development Drainage Exhibit for Shadow Moss. Site development plans have been revised to include an inlet at the Riley Road that connects through Phase 7 to existing Lagoon 5. ICPR model has been revised to include the connection between basin DA-OS2B and Lagoon 5. Attached ICPR results include peak pond stages in Lagoon 5 for the 2, 10 and 25-year, 24 hour storm events. Post-developed runoff for the revised model is detained on site and is released at less than pre-developed rates.

DMB/ks
Enclosures

THOMAS & HUTTON

50 PARK OF COMMERCE WAY | SAVANNAH, GA 31405
912.234.5300 | WWW.THOMASANDHUTTON.COM

MEMORANDUM

TO: Mr. Michael Klink, PE
FROM: Mays Boyd, PE *DMB*
CC: Linda Bridges, Town of Port Royal
Allison Tucker, PulteGroup
Todd Doupona, PulteGroup
DATE: July 28, 2014
SUBJECT: Shadow Moss Phase 7 – Riley Road Drainage Comment Response
JOB NO: 18683.1700

On behalf of our client, Centex Homes, please accept the following in response to comments received from your office by e-mail dated July 7, 2014.

Each comment is stated below followed by our response in *italics*.

1. Please submit documentation that shows that Lagoon 5 has the required free board per OCRM standards for a 100 year storm event.
100-year storm elevation in Lagoon 5 is 17.00. Minimum top of bank has been revised to 17.50 to meet OCRM free board requirements. Lagoon 5 is bordered by existing development (Phase 5), proposed development (Phase 7) and existing ground elevations (eastern site boundary). Constructed elevations in Phase 5 and existing ground elevations to the east are greater than or equal to elevation 17.50. Proposed elevations of lots and right-of-way within Phase 7, adjacent to Lagoon 5, will also be greater than or equal to elevation 17.50.
2. Lagoon 5 has a water surface elevation of 13'. Please submit the control structure detail that will determine this water surface elevation of Lagoon 5.
Lagoon 5 was initially permitted and constructed with Phase 5. Lagoon 5 control structure (Control Structure No. 15) was included in Phase 5. There are no proposed improvements to Lagoon 5 or Control Structure No. 15 as part of the Phase 7 site development. Control structure detail from the approved plans for Phase 5 is attached for reference.
The post-development drainage exhibit submitted for review on July 1, 2014 was from an old plan. Current exhibit, revised for Riley Road Improvements, is attached for reference.
3. Per the construction plan submitted, the existing RCP pipe is not upsized, please verify that the additional flow does not require proposed pipe in Phase 7 nor the existing pipe in other phases to be increased in size.
Inlet and pipe size design considerations have been revised for existing pipes in Phases 5 and 6, proposed pipes in Phase 7 and the driveway crossing pipe at Riley Road. One proposed pipe size in Phase 7 has been increased. Remaining pipes are unchanged. Existing, proposed and proposed revisions to pipe sizes are identified on the stormwater piping and inlet design considerations. Attached exhibit, 'Lagoon 5 Inlet Exhibit', was created to show inlet and pipe locations from multiple phases on one sheet. Inlets labeled correspond to revised inlet and pipe size design considerations.

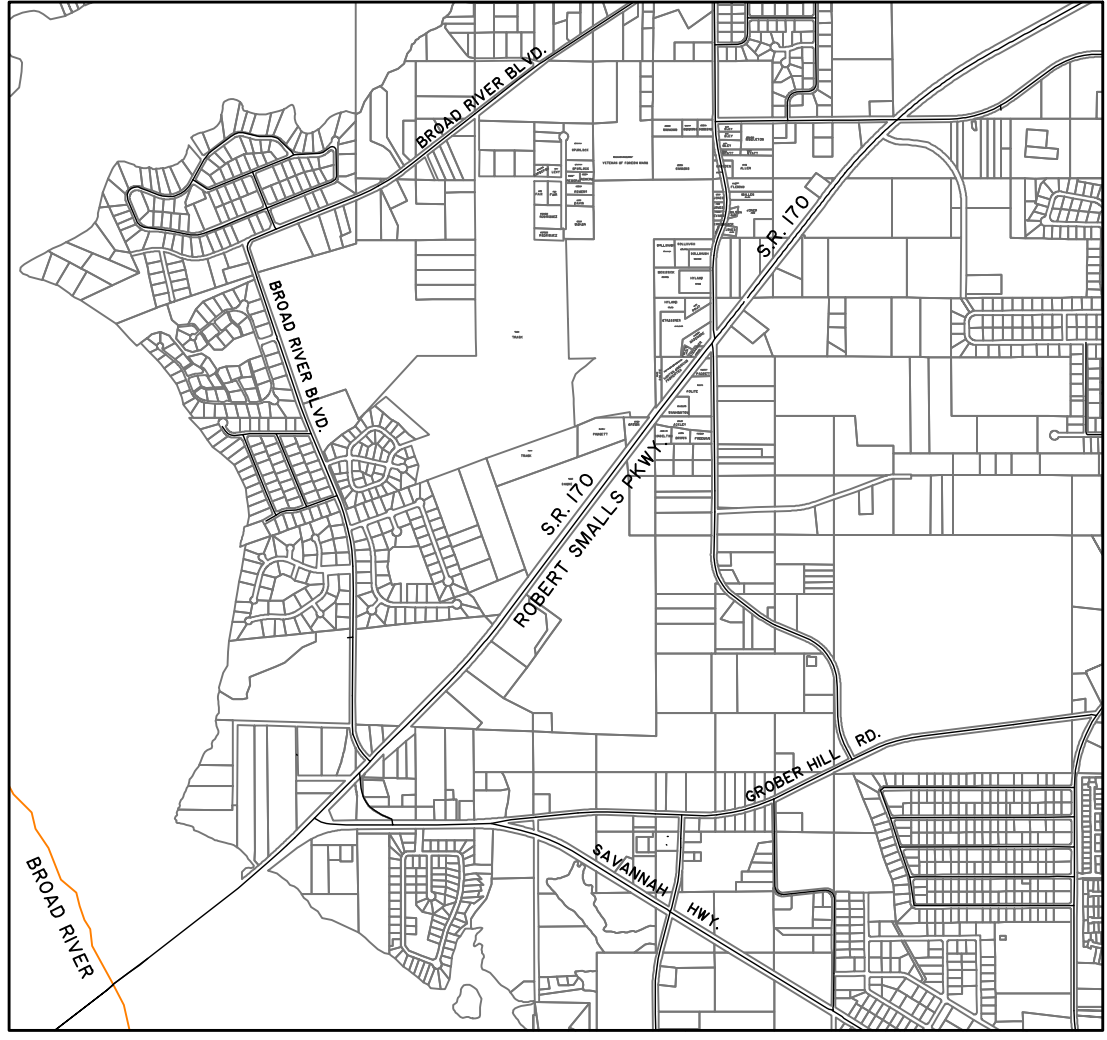
DMB/mbw

Enclosures

Shadow Moss Phase 7 Lagoon 5
Node Maximum Results
Revised 7/1/2014

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
POND5	POST	10YR	13.16	14.908	17.000	0.0026	40854	12.25	42.8	12.27	16.0
POND5	POST	25YR	13.27	15.549	17.000	0.0029	43017	12.25	52.9	12.89	17.1
POND5	POST	2YR	12.63	13.837	17.000	0.0015	37238	12.25	21.2	12.63	9.8

I:\Centex\Port Royal\Shadow Moss\8663700\Design\Stormwater\Port\8663700 - Post Development Stormwater Exhibit.dwg - Jul 1, 2014 - 3:03:10 PM



SHADOW MOSS

PORT ROYAL, SOUTH CAROLINA

POST - DEVELOPMENT DRAINAGE EXHIBIT

PREPARED FOR

CENTEX HOMES

PREPARED BY

THOMAS & HUTTON ENGINEERING CO.

JULY 24, 2014

PORT ROYAL, SOUTH CAROLINA

TM# R100-031-000-017C-0000

AUGUST 16, 2012

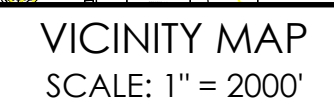
LAST REVISED: JUNE 23, 2014

J-18683.1700

PREPARED BY:



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

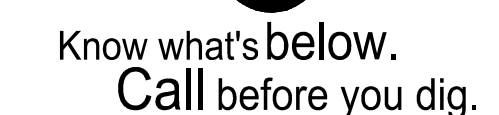
SHADOW MOSS - PHASE 7
BJWSA #2013-017

Sheet List Table

Sheet List Table	
Sheet Number	Sheet Title
C0	COVER SHEET
C1.1	GENERAL NOTES AND INDEX
C1.2	PROJECT MAP
C1.3	CONDUIT PLAN
C2.1	WATER AND SEWER PLAN
C2.2	SEWER PROFILES
C2.3	WATER DETAILS
C2.4	WATER DETAILS
C2.5	SEWER DETAILS
C3.1	PAVING GRADING AND DRAINAGE PLAN
C3.2	ROAD PROFILES
C3.3	PAVING GRADING AND DRAINAGE DETAILS
C3.4	PAVING GRADING AND DRAINAGE DETAILS
C3.5	LOT GRADING PLAN
EC1.1	PHASE 1 - INITIAL LAND DISTURBANCE
EC1.2	PHASE 2 - STABILIZATION
EC1.3	EROSION AND SEDIMENTATION CONTROL DETAILS
EC1.4	STORMWATER POLLUTION PREVENTION NOTES
EC1.5	STORMWATER POLLUTION PREVENTION NOTES

REVISION HISTORY				
REV. NO.	REVISION	BY	DATE	
3	RILEY ROAD DRAINAGE REVISIONS	MCS	06/23/13	
2	ADDED DRAINAGE EASEMENT TO LOTS 318/319	JJB	05/29/13	
1	ADD DRAINAGE EASEMENTS LOTS 313-321,244-250,322	JJB	05/06/13	

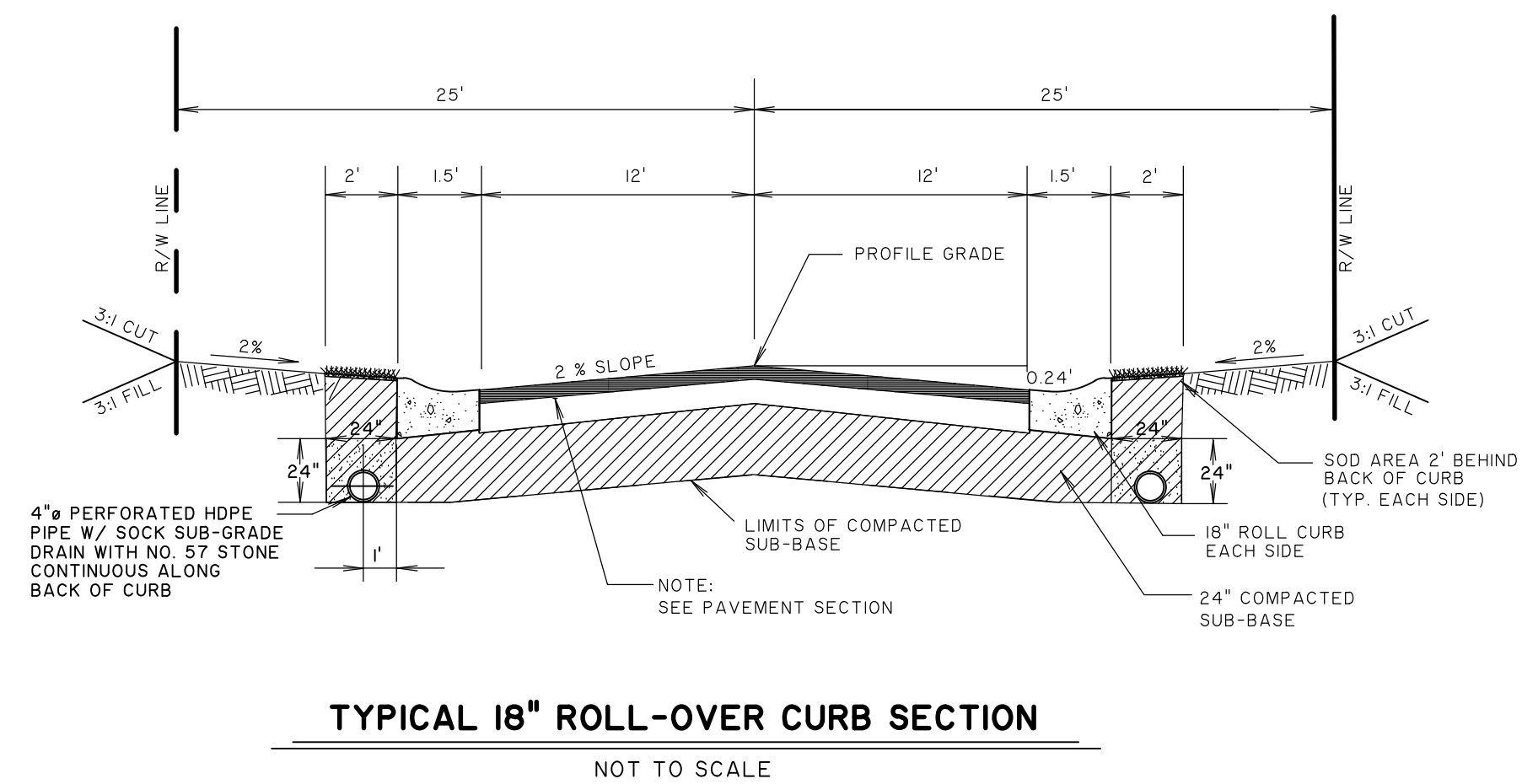
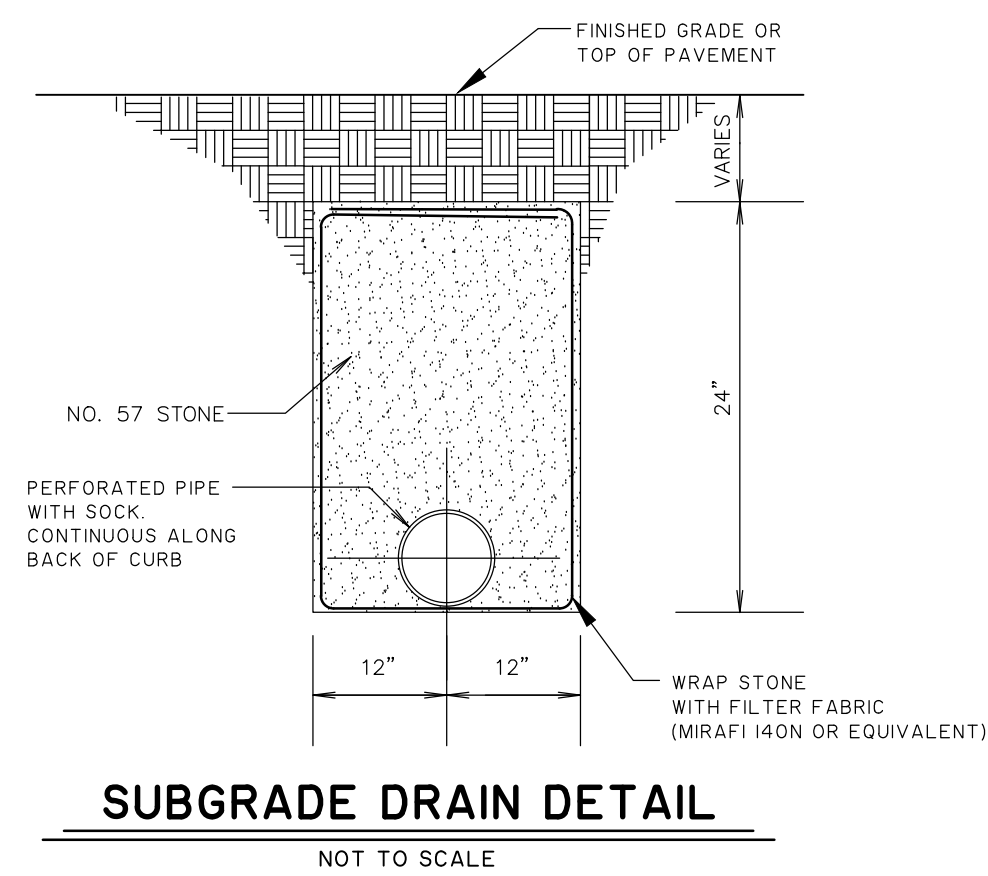
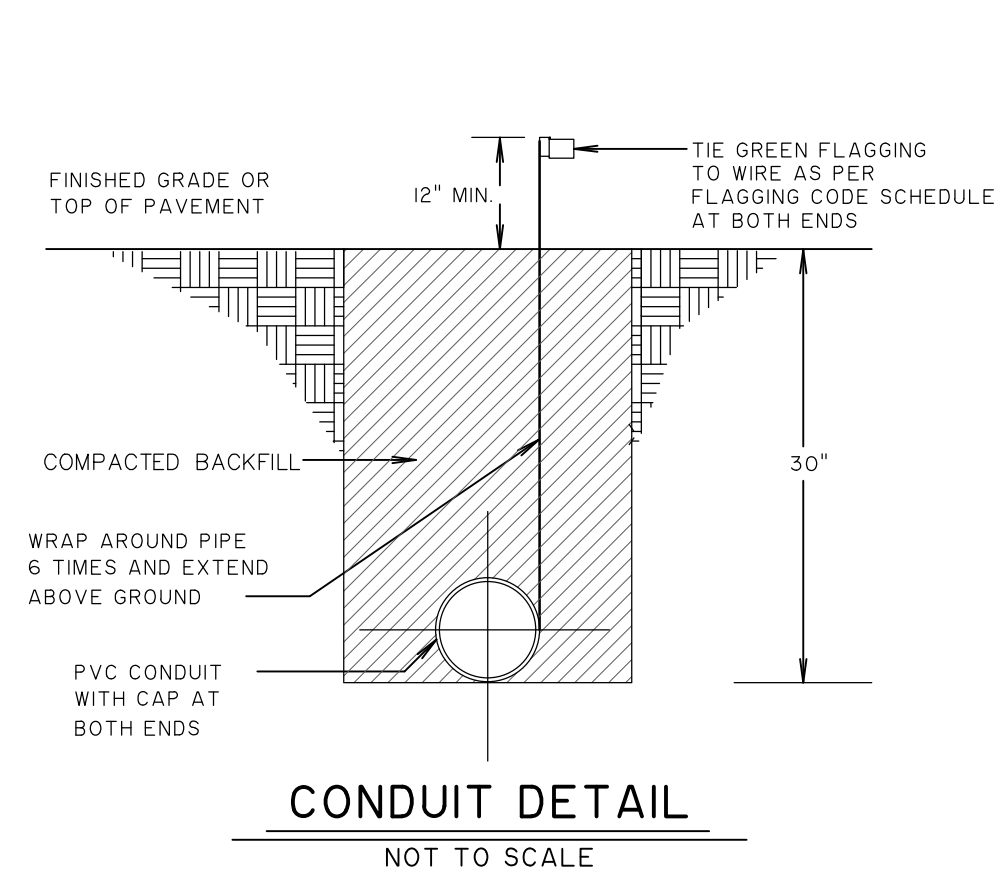
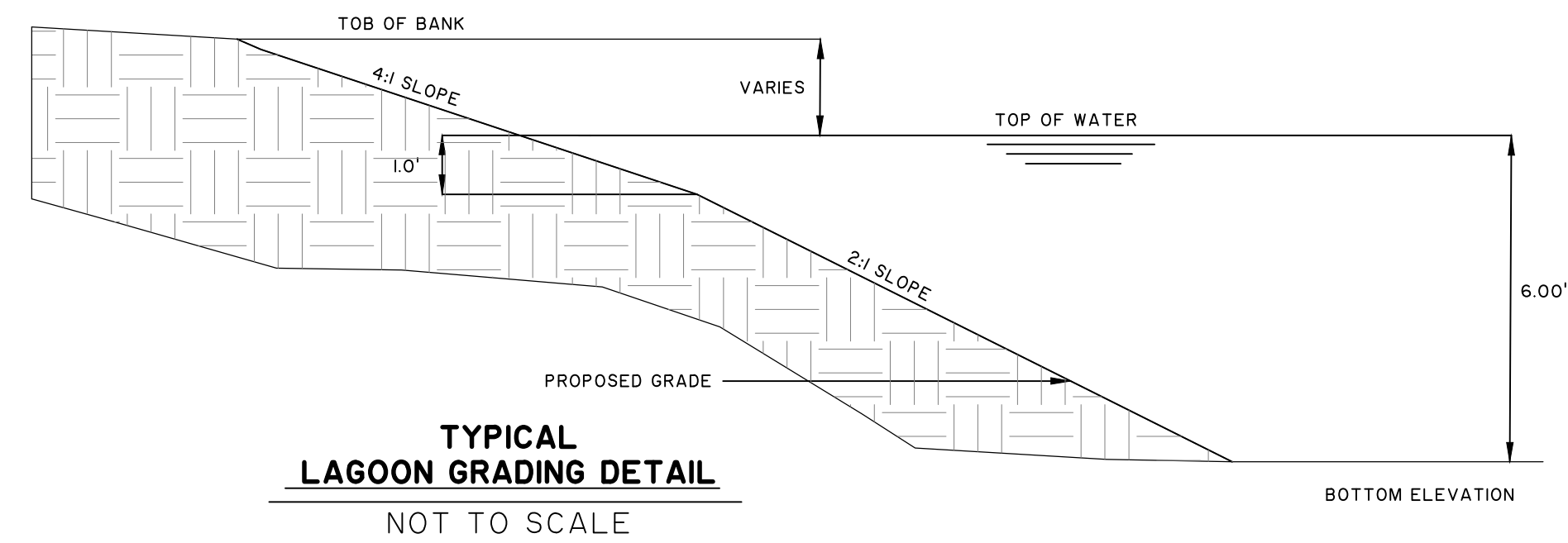
SUBMITTAL HISTORY	
TOWN OF PORT ROYAL DEVELOPMENT PERMIT	04/22/13
OCRM NOI - NPDES	01/31/13
SCDHEC WATER/WASTEWATER CONSTRUCTION PERMITS VIA BJWSA DRP	01/28/13
OCRM CZC	11/14/12
BJWSA PLAN REVIEW	11/02/12
SUBMITTED TO	DATE



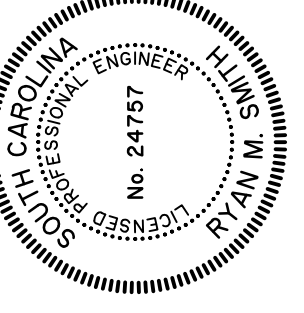
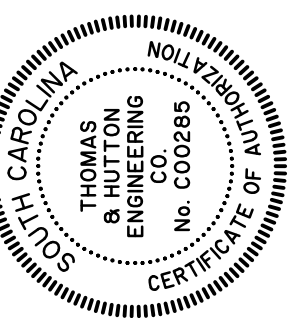
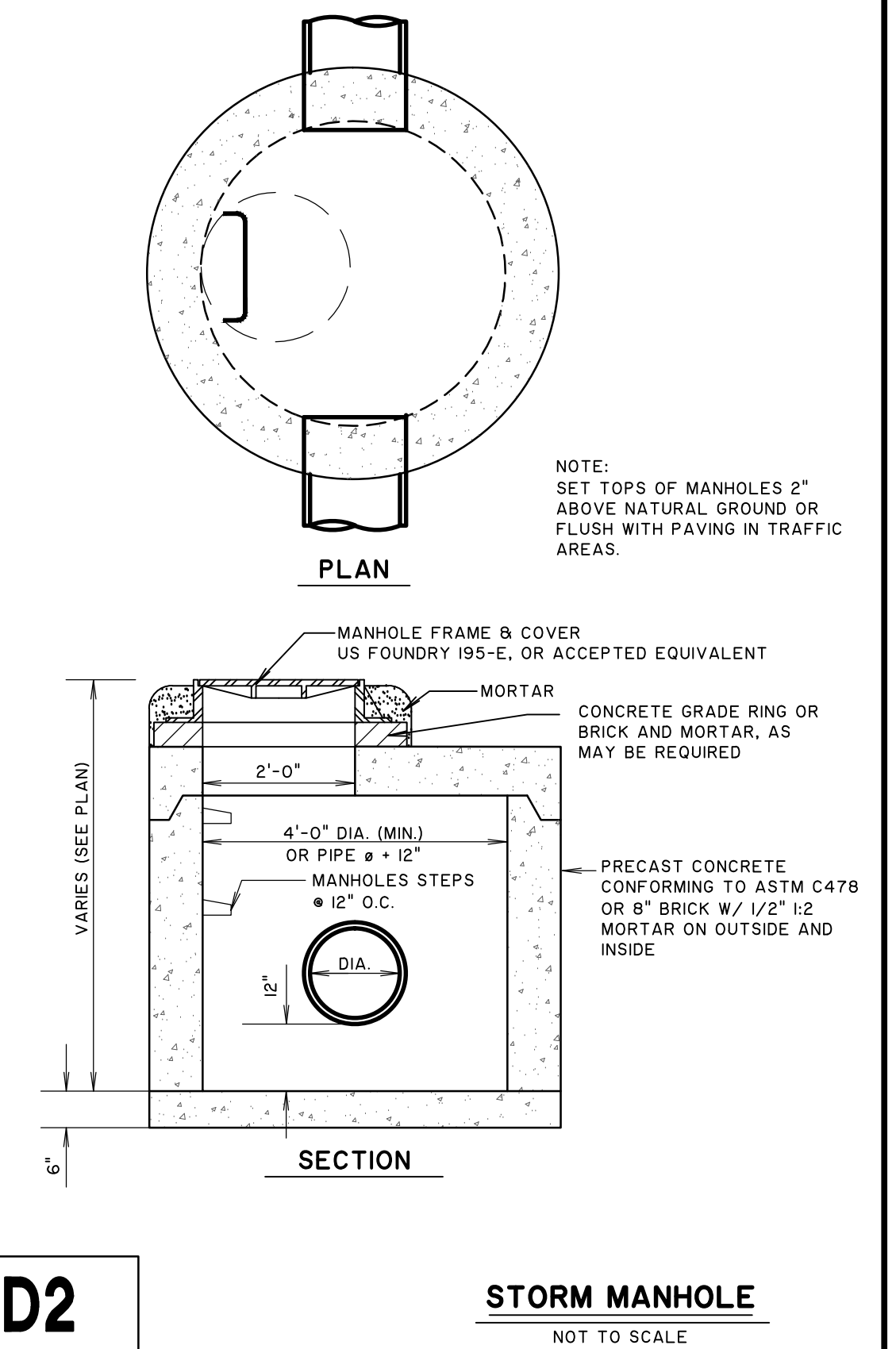
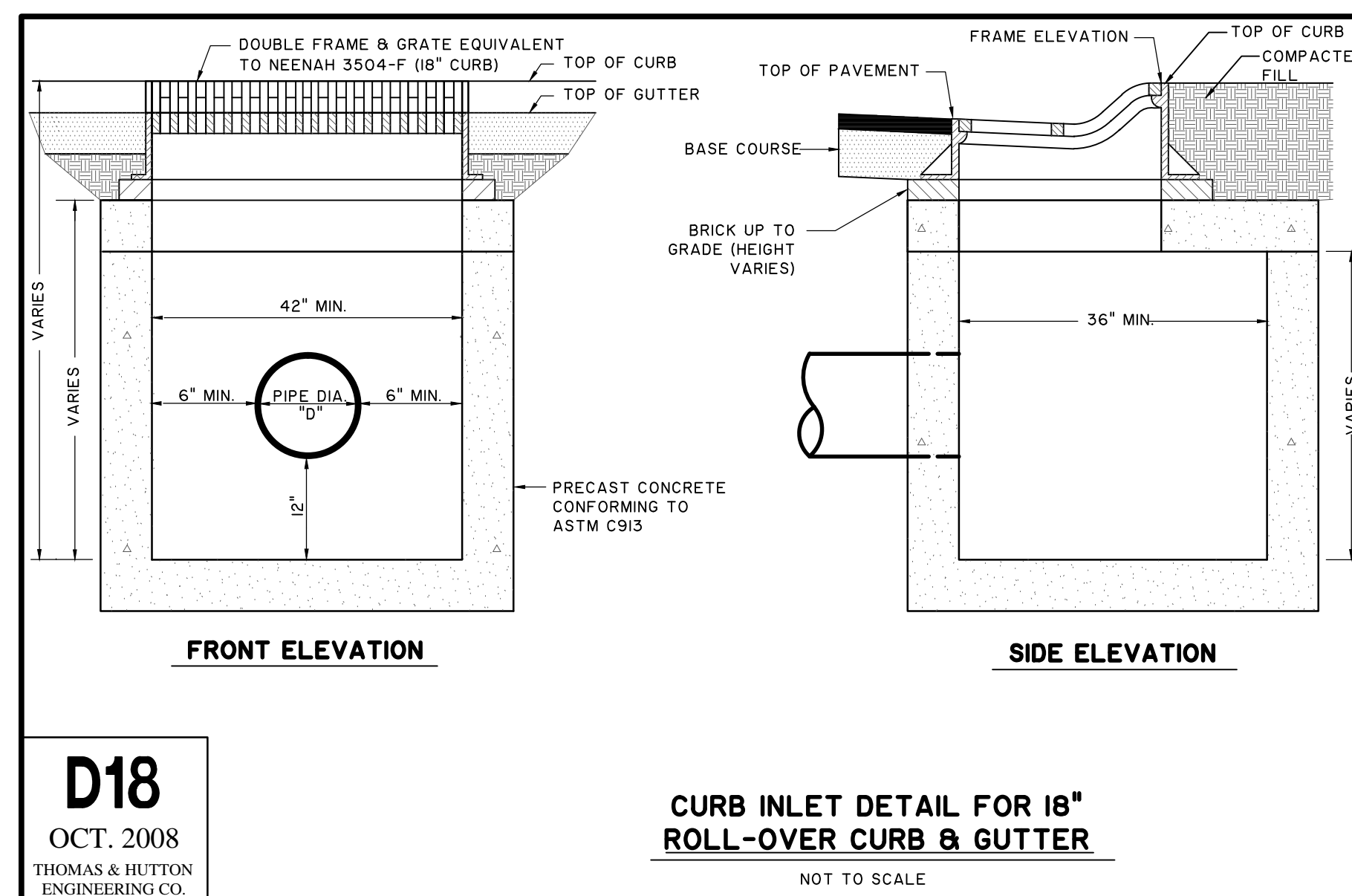
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p.912.234.5300 f.912.234.2950

www.thomasandhutton.com

J-18883.1700
 SHADOW MOSS - PHASE 7
 PORT ROYAL, SOUTH CAROLINA
 08/16/12



- NOTES:
1. SEED & MULCH DISTURBED SLOPES FROM 6:1 TO 3:1.
 2. SOD & STAKE DISTURBED SLOPES FROM 3:1 TO 2:1.
 3. REFER TO PAVEMENT SECTION DETAILS.

[illegible]

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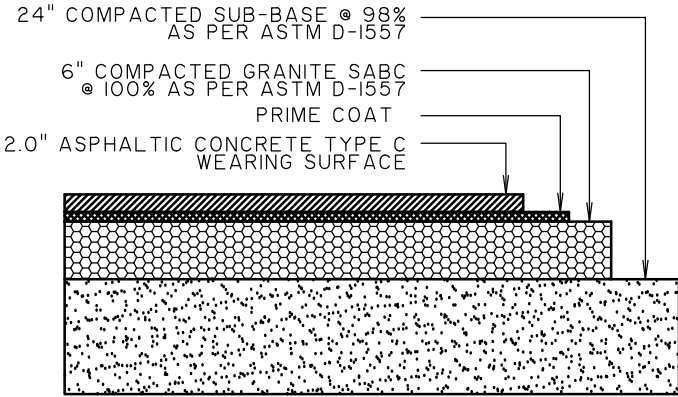
SHADOW MOSS - PHASE 7
 PORT ROYAL, SOUTH CAROLINA

CENTEX HOMES

PAVING GRADING AND DRAINAGE DETAILS

JOB NO:	J-18683.1700
DATE:	08/16/12
DRAWN:	JRC
DESIGNED:	DMB
REVIEWED:	RMS
APPROVED:	RMS
SCALE:	1" = 1'

\\C:\Data\Proj\Royal\Shadow Moss\166831700\Drawings\Construction\166831700 - Paving Grading and Drainage Details.dwg - Jan 25, 2016 - 04:55:53 AM



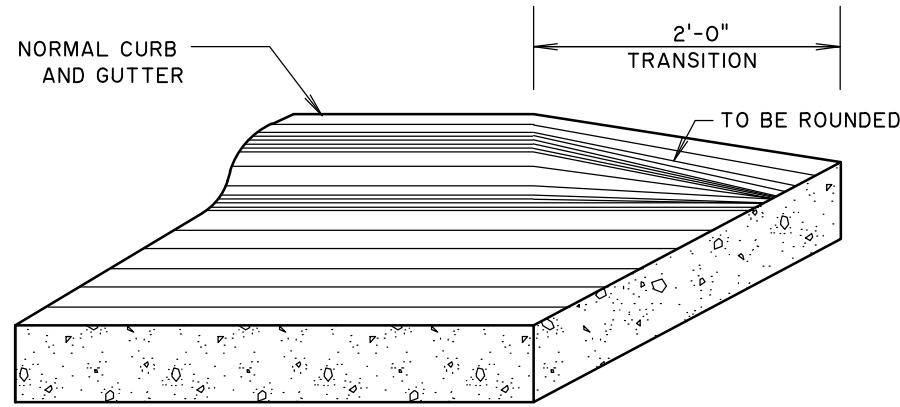
TYPICAL SUBDIVISION PAVEMENT SECTION

NOT TO SCALE

P11

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NOTE:
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BE VERIFIED BY A GEOTECHNICAL ENGINEER. THOMAS AND
HUTTON IS NOT RESPONSIBLE FOR PAVEMENT SECTION DESIGN.

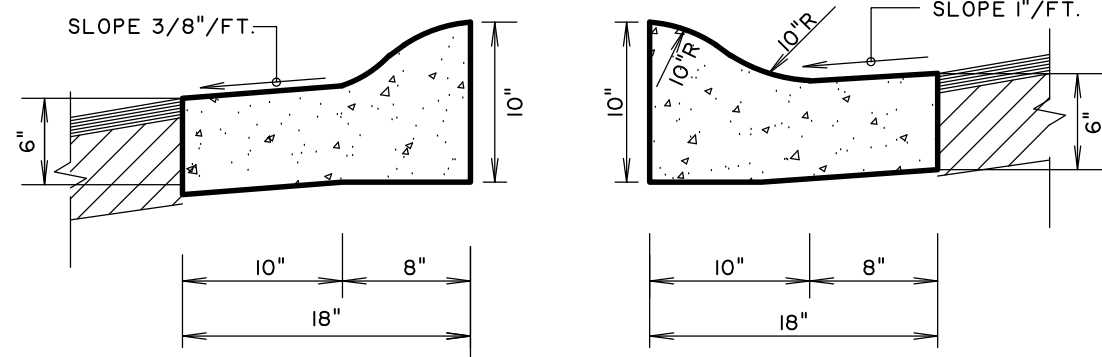


FEATHERING OF CURB AND GUTTER DETAIL

NOT TO SCALE

P22

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PITCH CURB

NORMAL CURB

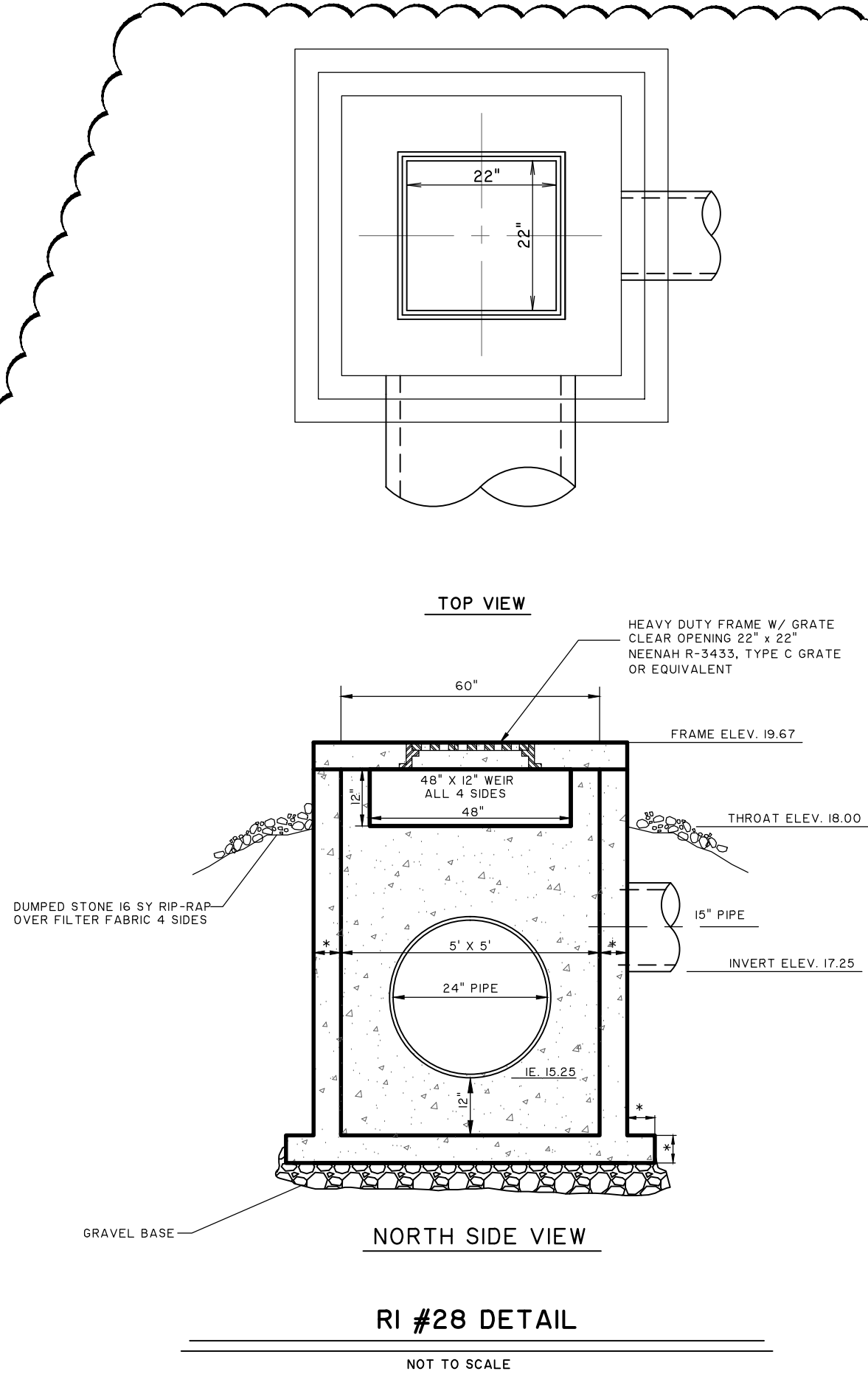
- NOTES:
1. ALL CONCRETE SHALL BE 3,000 PSI.
 2. PROVIDE CONTROL JOINTS EVERY TEN FEET (10').
 3. PROVIDE EXPANSION JOINTS EVERY FIFTY FEET (50).
 4. PROVIDE EXPANSION JOINT WHERE CURB ABUTS SIDEWALKS, OR OTHER STRUCTURES.
 5. PROVIDE LIGHT BROOM FINISH.

18" ROLL-OVER CURB & GUTTER

NOT TO SCALE

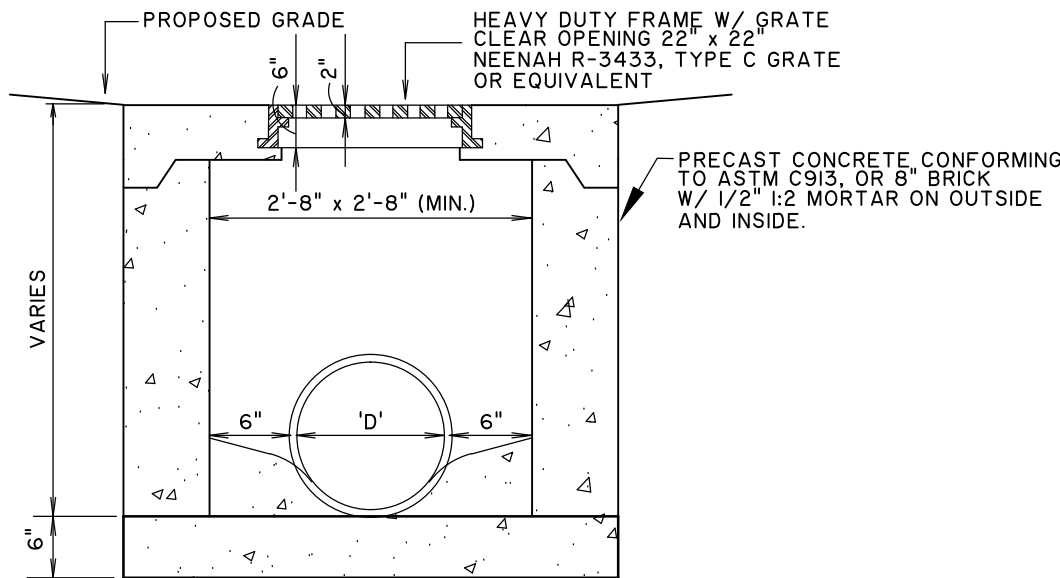
P20

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RI #28 DETAIL

NOT TO SCALE

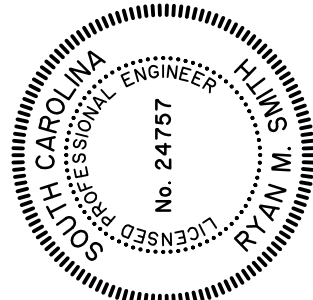
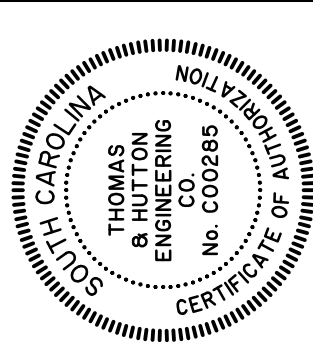


SECTION

PLAN

STANDARD INLET - GRATE TYPE

NOT TO SCALE



NO.	REVISIONS	BY	DATE
3	RILEY ROAD DRAINAGE REVISIONS	MCS	06/23/14

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SHADOW MOSS - PHASE 7

PORT ROYAL, SOUTH CAROLINA

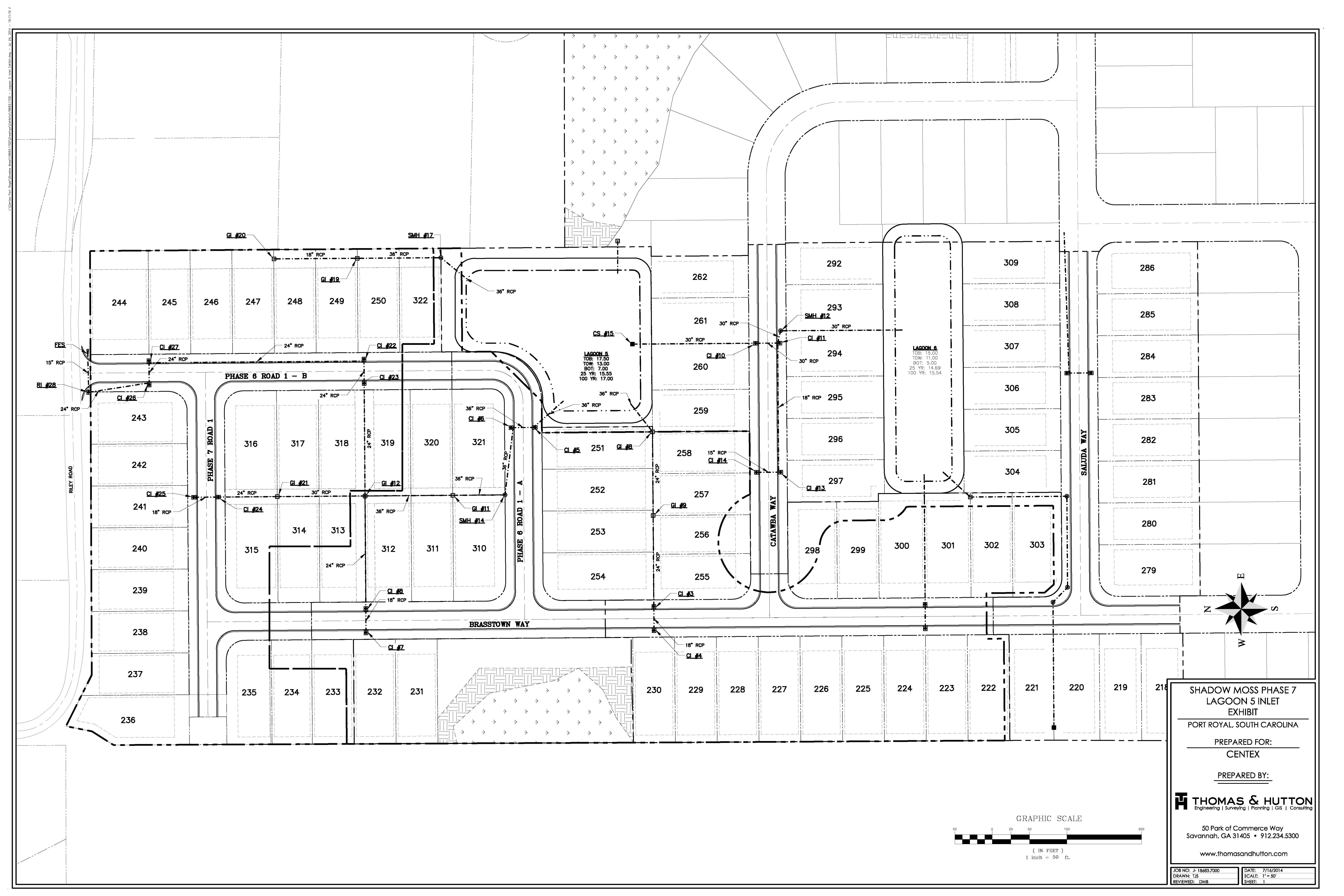
CENTEX HOMES

PAVING GRADING AND DRAINAGE DETAILS

JOB NO: J-16683.1700
DATE: 08/16/12
DRAWN: JRC
DESIGNED: DMB
REVIEWED: RMS
APPROVED: RMS
SCALE: 1" = 1'

C3.4

Shadow Moss Phases 6 and 7 Port Royal, South Carolina Thomas and Hutton Stormwater Piping and Inlet Design Considerations																		Manning's Size Legend												Date: 1/11/2012 By: DMB Job No.: 18683 Revised: 7/1/2014	
																		18	Proposed Pipe												
																		18	Existing Pipe												
																		30	Proposed Change from Initial Phase 7 Design												



SHADOW MOSS PHASE 7
LAGOON 5 INLET
EXHIBIT
PORT ROYAL, SOUTH CAROLINA

PREPARED FOR:
CENTEX

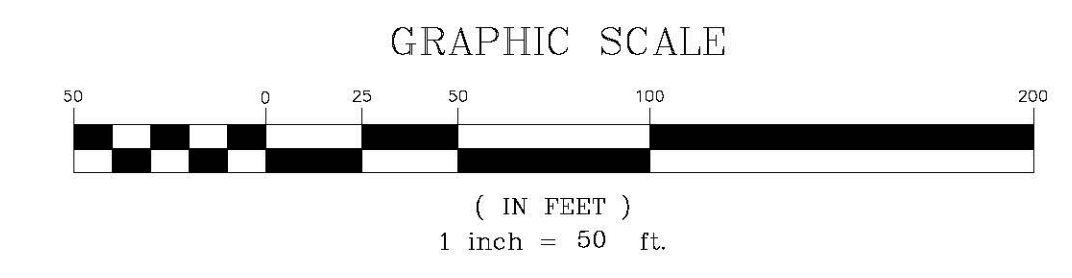
PREPARED BY:

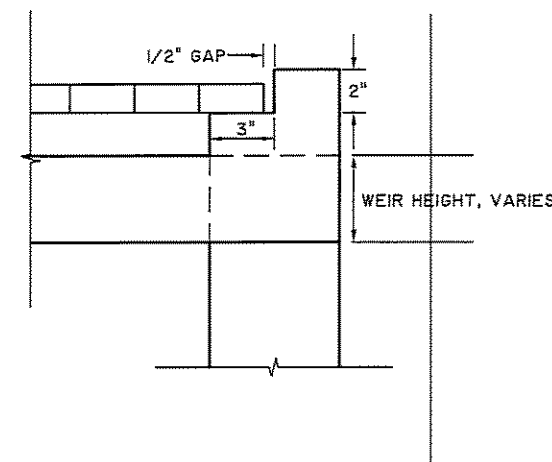


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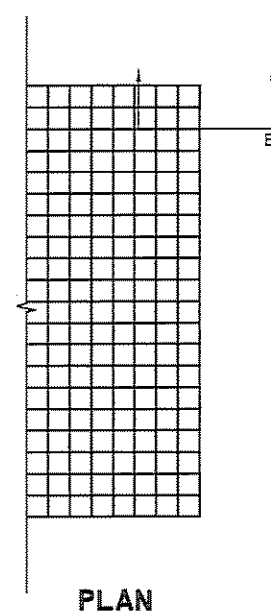
www.thomasandhutton.com

JOB NO: J-18683.7000	DATE: 7/16/2014
DRAWN: TJS	SCALE: 1" = 50'
REVIEWED: DMB	SHEET: 1

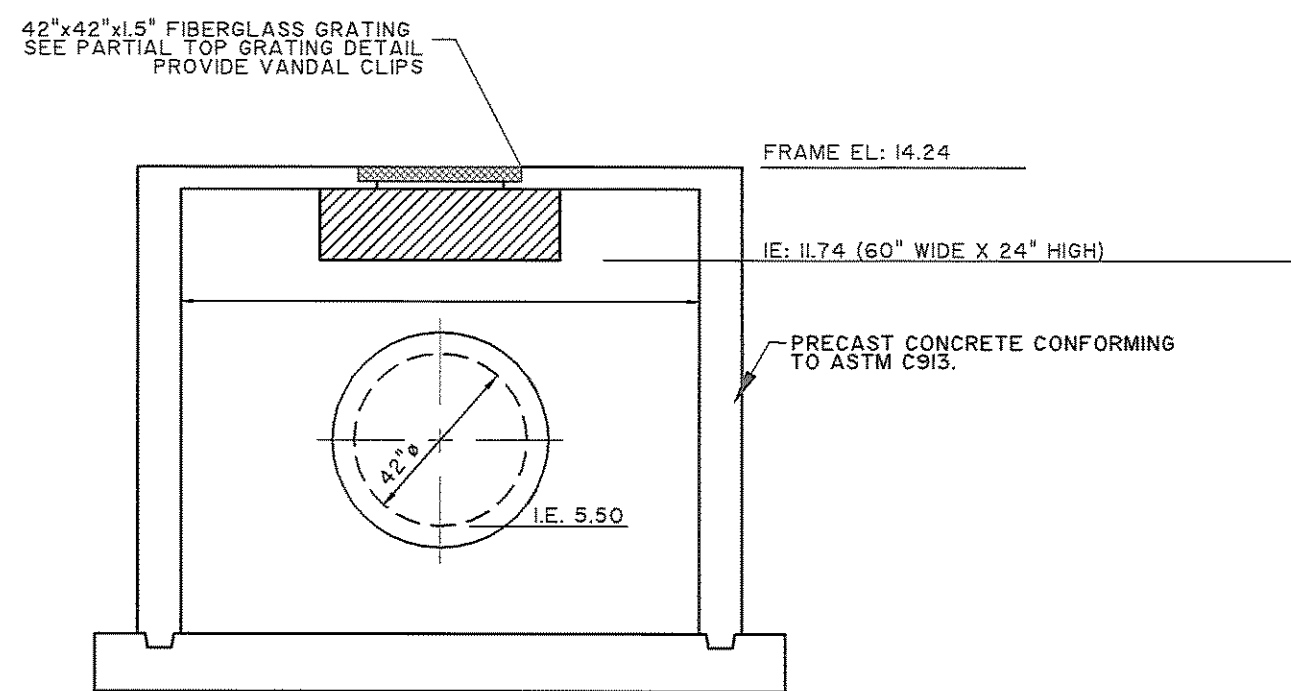




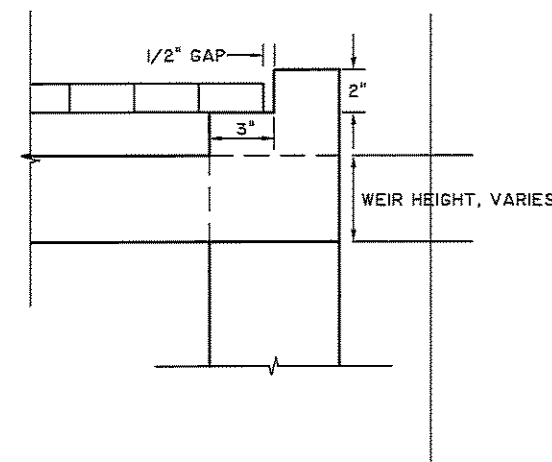
**NOTE: SECTION "B" FOR ALL
CONTROL STRUCTURE DETAILS**



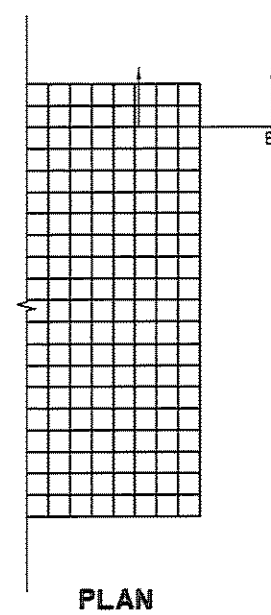
NOTE: GRATING DETAIL "A"
FOR ALL CONTROL STRUCTURE
DETAILS



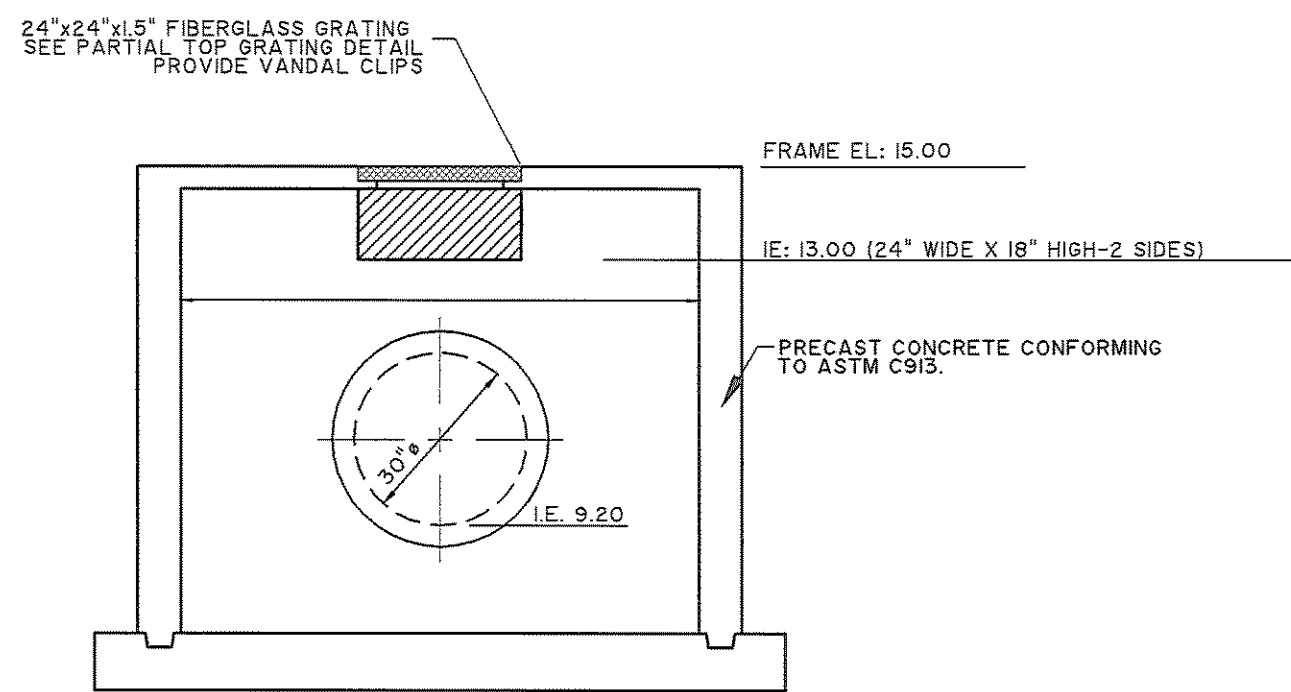
NOT TO SCALE



**NOTE: SECTION "B" FOR ALL
CONTROL STRUCTURE DETAILS**



NOTE: GRATING DETAIL "A"
FOR ALL CONTROL STRUCTURE
DETAILS



The diagram shows a square divided into four quadrants by a horizontal and a vertical dashed line. The entire square is enclosed within a double-line border. On the left side, four arrows point from the outer border towards the center of the square, indicating a 180-degree rotation.

NOT TO SCALE

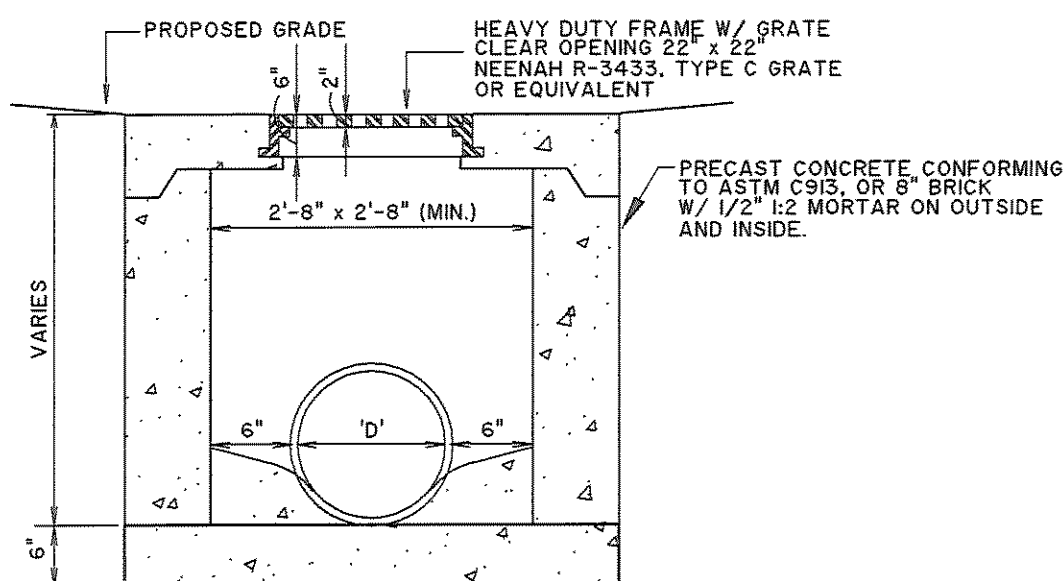
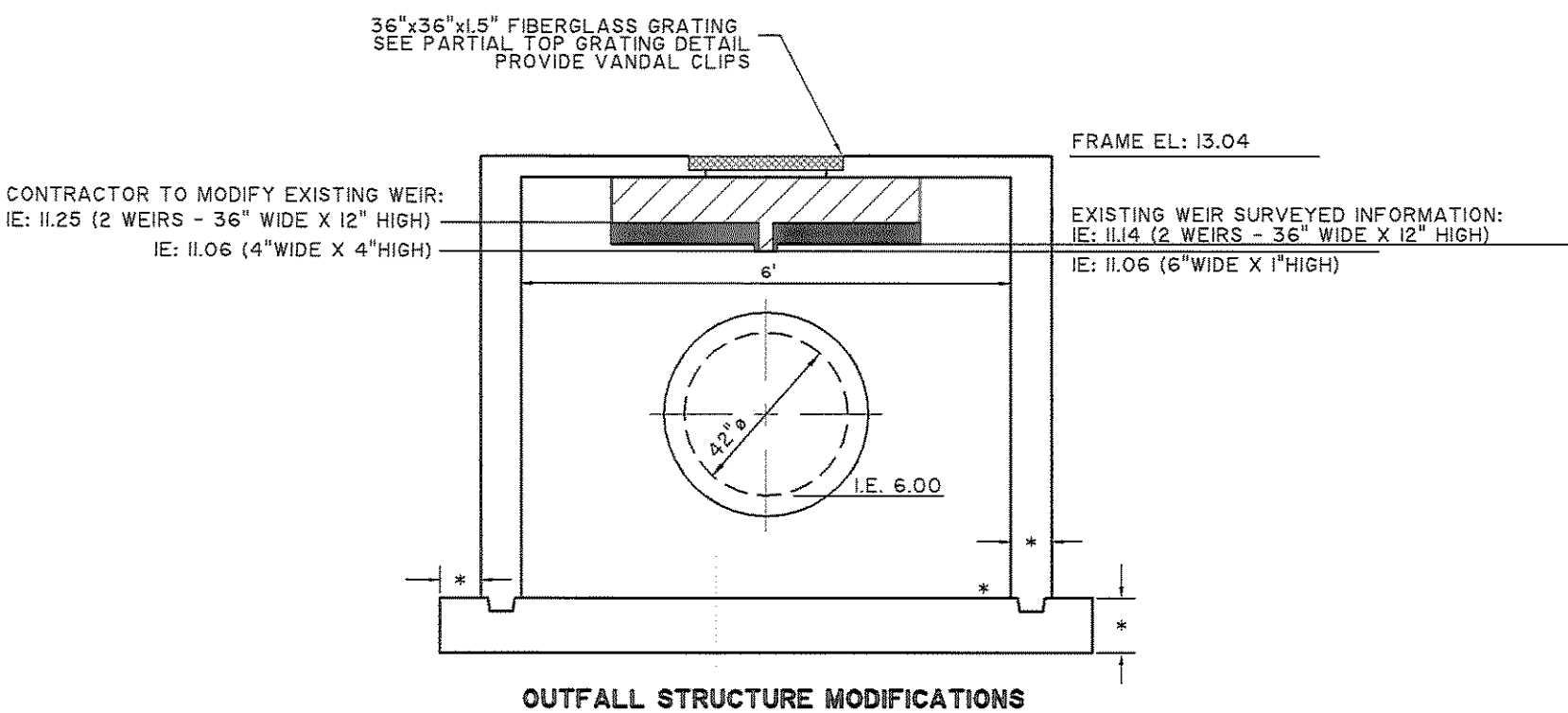
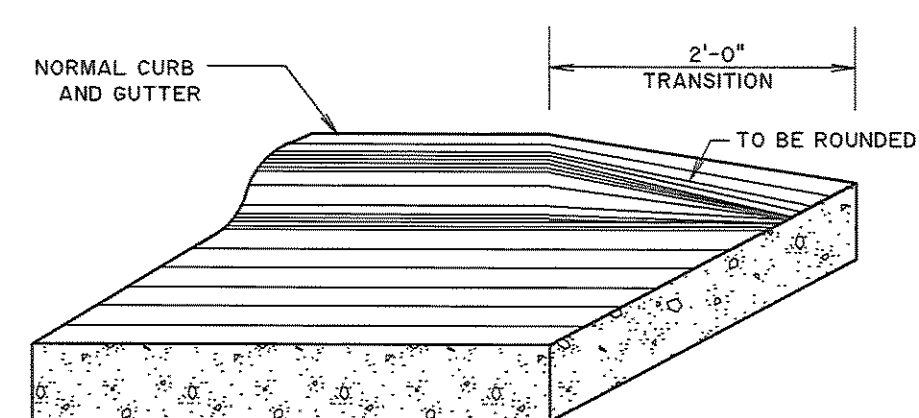


Diagram illustrating a square panel with a central square. The central square is labeled 22" x 22". The surrounding square panel is labeled 4'-0" (MIN.).

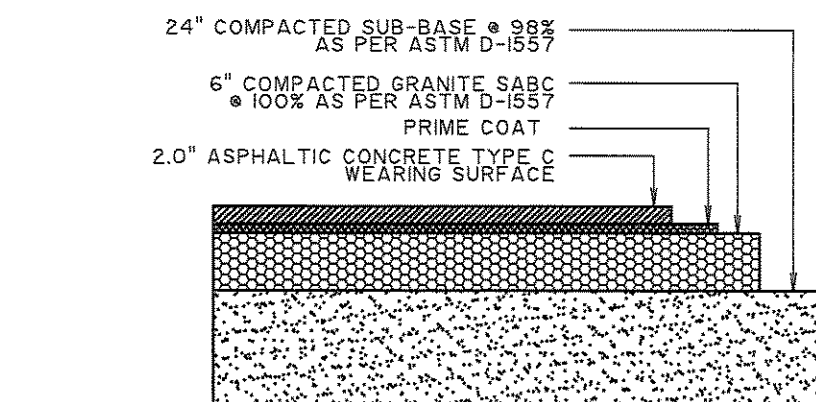
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OUTFALL STRUCTURE MODIFICATIONS

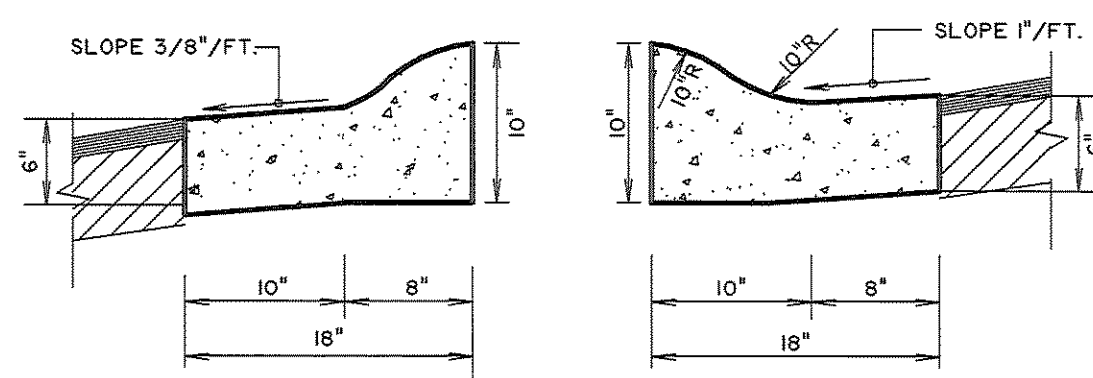


OCT. 2008
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NOTES:

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4. PROVIDE EXPANSION JOINT WHERE CURB ABUTS SIDEWALKS, OR OTHER STRUCTURES.
5. PROVIDE LIGHT BROOM FINISH.

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[illegible]

9
PB
NC
Prepared by and return to:
Beaufort County Staff Attorney
P.O. Drawer 1228
Beaufort, SC 29901-1228
(843) 255-2055, (843) 470-5383 FAX

Riley/Fair Road (drainage easement)

STATE OF SOUTH CAROLINA

DRAINAGE EASEMENT

COUNTY OF BEAUFORT

KNOW ALL MEN BY THESE PRESENTS, THAT We William Davis Trask, James Heide Trask, John Donald Trask, Harold E. Trask, Jr., Margaret Scheper Trask, and Robert Edward L. Holt, III, (collectively, the "Grantor") in the State aforesaid, for and in consideration of the sum of ONE AND NO/100 DOLLARS (\$1.00) and improvement of drainage on Grantor's land, the receipt whereof is hereby acknowledged, to us in hand paid at and before the sealing of these presents by Beaufort County, P.O. Drawer 1228, Beaufort, South Carolina 29901-1228, have granted and conveyed unto the said Beaufort County (the "Grantee") its Successors and Assigns, a non-exclusive 25' drainage easement (the "Easement") as set forth on that certain plat entitled "TRACT 1, TRACT 2 & A 25' DRAINAGE EASEMENT BEING A PORTION OF SHADOW MOSS PHASE 4" prepared by Thomas & Hutton Engineering Co., dated September 16, 2009 and recorded in the Beaufort County Register of Deeds Office in Plat Book 130 at Page 37 (the "Easement Map"), said property being situated in the Town of Port Royal, County of Beaufort, State of South Carolina.

For or in connection with the construction of a ditch to improve the drainage on the above described lands, such construction to include excavation, widening, or deepening, etc. for or in connection with the operation, maintenance, and inspection of such a ditch.

1. This easement includes the right of ingress and egress at any time over and upon the above described land, for the purpose of construction, inspection, and maintenance of ditches as referred to above.
2. There is reserved to the Grantee, Beaufort County, the right and privilege to use the above described land of the Grantor for the purposes of maintaining the drainage ditch system.
3. The Grantee is responsible for operating and maintaining the work of improvement herein described, and shall remove and dispose of all excess material, soil, and debris generated by the construction or maintenance of the ditch by Grantee.
4. Special Provisions
 - a. The Grantee shall have the right to clear and remove all brush and trees to a width necessary to excavate and/or improve the above drainage ditches. Provided, however, if the Grantor desires to salvage merchantable timber from the area to be cleared, he will do so prior to the time the contractor begins work. It is understood that the Grantee will advise the Grantor at least 10 days in advance of construction.
 - b. Proposed drainage ditches will be constructed within the boundaries of the Easement location shown on the Easement Map.


- c. If the Grantor desires to salvage levees, fences, culverts, or bridges that interfere with the construction or maintenance of drainage ditches, he will have the opportunity to do so prior to construction and maintenance work.
- d. The Grantee acknowledges and agrees that the real property owned by Grantor and burdened by the Easement granted herein is shown as "Tract 3" on a plat recorded in Plat Book 129, at Page 13, in the office of the Register of Deeds for Beaufort County, South Carolina ("Grantor's Parcel"). Grantor (or its successors in title to Grantor's Parcel) intends to develop Grantor's Parcel as an additional phase of a residential subdivision, and has the right to apply to Beaufort County for a development permit based upon construction plans which could potentially change the location and design of the drainage facilities to be constructed on Grantor's Parcel for such development from the location and design of the facilities to be constructed by Grantee as shown on the Easement Map.
- e. Upon the later to occur of (i) the date upon which Grantor (or its successors in title) records a final subdivision plat for Grantor's Parcel on which a street right-of-way is shown to connect to Riley Road, or (ii) the completion by Grantor of street and drainage improvements on Grantor's Parcel that are sufficient in design and capacity to accommodate storm water run-off from Riley Road, the location of the Easement herein granted shall be deemed amended and relocated to and within the street right-of-way shown on such final subdivision plat, without the necessity of any further action by either party.
- f. It is agreed that buildings, fences, signs or other obstructions will not be erected by Grantee, its successors, assigns, or administrators within the limits of the easement herein conveyed.

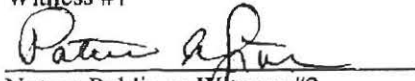
TO HAVE AND TO HOLD the aforesaid easement in, over and upon the above described land of the Grantor, with all the rights, privileges and appurtenances thereto belonging or in any wise appertaining, unto the Grantee, its successors and assigns, forever, subject to the relocation (if applicable) by Grantor as provided in paragraph (e) above.

IN WITNESS WHEREOF, I (or we) have hereunto set my (or our) hand and seal this
13th day of May, 2010.

Signed, Sealed and Delivered in the Presence of:

WITNESSES:


Witness #1


Notary Public as Witness #2

GRANTOR:


William Davis Trask

I, the undersigned notary public, do hereby certify that the within named Grantor personally appeared before me this 13th day of May, 2010, and acknowledged the due execution of the foregoing instrument.

Peter A. Johnson (L.S.)
Notary Public for the State of South Carolina

My Commission expires: 6-27-2015

~~Notary Public as Witness #2~~

STATE OF SOUTH CAROLINA

ACKNOWLEDGEMENT

COUNTY OF BEAUFORT

I, the undersigned notary public, do hereby certify that the within named Grantor personally appeared before me this 25th day of May, 2010, and acknowledged the due execution of the foregoing instrument.

Mary L McJannet (L.S.)
Notary Public for the State of South Carolina

My Commission expires: June 16, 2019

IN WITNESS WHEREOF, I (or we) have hereunto set my (or our) hand and seal this
25th day of May, 2010.

Signed, Sealed and Delivered in the Presence of:

WITNESSES:

GRANTOR:

[Signature]
Witness #1

[Signature]
James Heide Trask

Mary L McJannet
Notary Public as Witness #2

STATE OF South Carolina

~~ACKNOWLEDGEMENT~~

I, ~~the undersigned notary public, do hereby certify that the within named Grantor personally~~
appeared before me this _____ day of _____, 2009, and
acknowledged the due execution of the foregoing instrument.

Notary Public for the State of South Carolina (L.S.)

~~My Commission expires: _____~~

IN WITNESS WHEREOF, I (or we) have hereunto set my (or our) hand and seal this
26th day of MAY, 2010.

Signed, Sealed and Delivered in the Presence of:

WITNESSES:

GRANTOR:

Janette Wagon
Witness #1

Robert Edward L. Holt III
Robert Edward L. Holt, III

Bernard L. Buchheiser
Notary Public as Witness #2

STATE OF South Carolina
COUNTY OF Charleston

ACKNOWLEDGEMENT

I, the undersigned notary public, do hereby certify that the within named Grantor personally appeared before me this 26th day of MAY, ^{2010 (BKA)}~~2009~~, and acknowledged the due execution of the foregoing instrument.

Bernard F. Buckheiser (L.S.)
Notary Public for the State of South Carolina

My Commission expires: My Commission Expires
November 19, 2019

I, the undersigned notary public, do hereby certify that the within named Grantor personally appeared before me this 13th day of May, 2009, and acknowledged the due execution of the foregoing instrument.

Peter A. Jeter (L.S.)
Notary Public for the State of South Carolina

My Commission expires: 6-27-2015

IN WITNESS WHEREOF, I (or we) have hereunto set my (or our) hand and seal this
13th day of May, 2009.

Signed, Sealed and Delivered in the Presence of:

WITNESSES:

Paul Lucisall
Witness #1

Peter A. Jeter
Notary Public as Witness #2

GRANTOR:

Margaret Scheper Trask
Margaret Scheper Trask

STATE OF South Carolina
COUNTY OF Beaufort

ACKNOWLEDGEMENT

IN WITNESS WHEREOF, I (or we) have hereunto set my (or our) hand and seal this

11 day of May, 2009/2010

Signed, Sealed and Delivered in the Presence of:

WITNESSES:

GRANTOR:

Betty Harvey
Witness #1

John Donald Trask
John Donald Trask

Allyson J. Warriner
Notary Public as Witness #2

STATE OF North Carolina

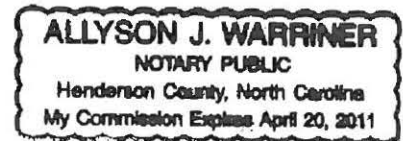
ACKNOWLEDGEMENT

COUNTY OF Brunswick

I, the undersigned notary public, do hereby certify that the within named Grantor personally appeared before me this 11 day of May, 2009, and acknowledged the due execution of the foregoing instrument.

Allyson J. Warriner (L.S.)
Notary Public for the State of ~~South Carolina~~ North Carolina

My Commission expires: April 20, 2010



I, the undersigned notary public, do hereby certify that the within named Grantor personally appeared before me this 13th day of May, ~~2009~~, and 2010 acknowledged the due execution of the foregoing instrument.

Linda E Sanchez (L.S.)
Notary Public for the State of South Carolina

My Commission expires: 8/14/2016

Approved by County Attorney

[Signature]
Landon P. Howell

IN WITNESS WHEREOF, I (or we) have hereunto set my (or our) hand and seal this 13th day of May, ~~2009~~, 2010

Signed, Sealed and Delivered in the Presence of:

WITNESSES:

[Signature]
Witness #1

Linda E Sanchez
Notary Public as Witness #2

GRANTOR:

[Signature]
Harold E. Trask, Jr.

STATE OF South Carolina
COUNTY OF Charleston

ACKNOWLEDGEMENT

South Carolina Department of Health and Environmental Control's Small Municipal Separate Storm Sewer System (SMS4) Notice of Intent (NOI)

A Summary of Beaufort County
Stormwater Utility's permit
application

SWUB - October 1, 2014



Attachments included with permit application

- Current map of the MS4 system showing critical facilities, outfalls, etc.
- Current ordinances and regulations related to stormwater management, if applicable
- Listing of current stream impairments
- List of staff certifications for plan review, inspections
- Inventory of Municipal Facilities



Section 1 – Public Ed. & Outreach

Proposed Best Management Practices

- Brochures, printed guidance – used in various ways to educate citizens
- Website – provides education and input from citizens
- Event Participation – festivals, volunteer events, speaking engagements
- School Stormwater programs – Enviroscape, etc.
- Surveys – measure citizen knowledge of issues
- Data Management



Section 2 – Public Involvement

Proposed Best Management Practices

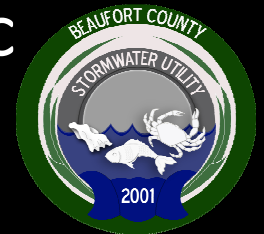
- Storm Drain Stenciling
- Public Meetings – seek input on permit, programs, guidance development
- Community Clean Ups
- Volunteer Speakers – create a “Speakers Bureau” to educate others
- Data Management



Section 3 – Illicit Discharge, Detection, and Elimination

Proposed Best Management Practices

- Adequate Legal Authority – develop written guidance and establish enforcement
- Outfall Inventory Map
- Outfall Screening for illicit discharges – field inspection
- Prioritize other potential illicit discharges and non-stormwater discharges – monitor “hot spots”
- Education on illicit discharge – staff and public
- Enforcement program / data management



Section 4 – Construction Site Runoff

Proposed Best Management Practices

- Revise Stormwater Management Ordinance – add to BMP Manual to provide guidance and legal authority
- Develop Construction site control Best Management Practices – erosion & sediment and waste
- Create plan review procedures
- Define site inspection procedures and enforcement
- Receipt of Public Inquiries – website / hot line
- Data Management



Section 5 – Post Construction Stormwater Management

Proposed Best Management Practices

- Revise Stormwater Management Ordinance – add to BMP Manual to provide legal authority
- Review and Revise practices defined in BMP Manual
- Mechanism for long term O&M of BMPs – agreements / contracts / deed restrictions
- Define inspection procedures
- Enforcement
- Data Management



Section 6 – Pollution Prevention / Good Housekeeping for Municipal Operations

Proposed Best Management Practices

- Create / modify Spill Prevention plans for critical facilities
- Training of staff
- Create a spill response plan and train staff
- Parking lot and street cleaning – reduce amount of pollutants in stormwater runoff
- Inventory system condition, prioritize needs
- Data Management





MEMORANDUM

To: Natural Resources Committee of County Council
From: Anthony J. Criscitiello, Planning & Development Director *T.C.*
Date: October 7, 2014
Subject: Text Amendment to Chapter 4 (Future Land Use) of the Beaufort County Comprehensive Plan to include a Place Type Overlay Future Land Use Designation

Excerpt of PLANNING COMMISSION RECOMMENDATION from its October 7, 2014, draft meeting minutes:

Mr. Robert Merchant, County Long-range Planner, briefed the Commission. He noted that a new Code is in the process of adoption. That code emphasizes walkable communities and maps were made showing such communities. Such place types should be included in the Comprehensive Plan, another level for regional planning. This text amendment includes another chapter explaining place types and their related uses.

Discussion included how property is included in the place types or not, a recommendation to include language regarding the Planning staff making the determination whether a property is in or out of a place type, the rationale for the place type locations, the municipalities having their own codes that are similar to the proposed County code, the Code having mechanisms for growth via the place types, concern for single-family neighborhoods being encroached by apartment complexes, and the diverseness of the unincorporated County.

Motion: Mr. Randolph Stewart made a motion, and Mr. John Thomas seconded the motion, **to recommend to County Council to approve the Text Amendment of Chapter 4 (Future Land Use) of the Beaufort County Comprehensive Plan to include a Place Type Overlay Future Land Use Designation.** The motion passed (FOR: Chmelik, Davis, Fireall, Johnston, Riley, Semmler, Stewart, and Thomas; ABSENT: Brown).



MEMORANDUM

To: Beaufort County Planning Commission
From: Anthony J. Criscitiello, Planning & Development Director
Date: September 4, 2014
Subject: Text Amendment to Chapter 4 (Future Land Use) of the Beaufort County Comprehensive Plan to include a Place Type Overlay Future Land Use Designation

Comprehensive Plan Sections: The following additions are being proposed to Chapter 4: Future Land Use of the Beaufort County Comprehensive Plan:

- Amend Future Land Use Plan Division to include a Place Type Overlay Future Land Use Designation. This new language will be inserted immediately following the subsection “Special Land Use Designation” on Page 4-30.
- Amend Recommendation 4.4 include language that calls for the adoption of form-based zoning districts to implement the Place Type Overlay designation.
- Add Maps 4-9 and 4-10 which show the location of place types in Beaufort County.
- Add Appendix 4-I: Beaufort County Place Types, which further defines the appropriate character, form, scale, intensity, and mix of uses for each of the place types in Beaufort County.

Summary of the Proposed Amendment: The proposed amendments will create a Place Type Overlay Designation in the Future Land Use chapter of the Comprehensive Plan. The purpose of the Place Type Overlay is to identify locations in the County to promote appropriately scaled walkable environments with a mix of housing, civic, retail, and service choices. The proposed language establishes five place types going from the most rural to the most urban – rural crossroad, hamlet, village, town, and city. The plan then recommends that the County adopt form-based zoning districts to implement the various place types.

Source of Proposed Amendment: The origin of this proposal came from the Beaufort County Planning Department. The maps and definitions of various place types were developed as part of the early work performed by Opticos to draft a new Community Development Code for the County. The descriptions of the place types and the maps are already incorporated into the Preamble of the new Code and were reviewed by the Planning Commission when they forwarded the Code to the Natural Resources Committee at their May 5, 2014 meeting. Also, the place type maps were coordinated with the Town of Bluffton, Town of Port Royal, and City of Beaufort as a way to define locations to promote walkable, mixed-use communities.

Justification: While the place type definitions and maps were developed during the drafting of the Community Development Code and are contained in the Preamble to that draft Code, the concept rests more appropriately at the comprehensive planning level.

- Additional Layer of Regional Land Use Planning: The Place Type Overlay Designation represents an additional layer of regional, intergovernmental land use planning in Beaufort County. The Northern and Southern Regional Plans established a general framework of where to direct future growth in the County. The Future Land Use Plan in the Comprehensive Plan, which was coordinated with the municipalities, provides further specifics of the types of land uses and intensity of development that should occur inside and outside of the growth areas. The Place Type Overlay Designation further defines specific locations where it is suitable to encourage the growth of mixed-use walkable communities.
- Guidance for where to apply Future Transect Zones: The draft Community Development Code has several areas within the County where transect zones are being proposed to foster the development of mixed-use walkable communities. Within each of these communities the County held a charrette to determine the appropriate character, intensity, and mix of land uses. The Place Type Maps (Maps 4-9 and 4-10), however, identify many more areas of the County to encourage and reinforce the development of these communities. The Place Type Overlay Designation provides a framework for the overall scale, intensity, and mix of transect zones appropriate for these places to guide future community planning efforts.

Proposed Amendments: See attached.

Recommendation: The Beaufort County Planning staff recommends approval for the herein attached sections of the Beaufort County Comprehensive Plan.

Place Type Overlay

Both within and outside of Growth Areas the policies of this plan encourage the development and reinforcement of pedestrian scaled mixed-use communities. The purpose of the Place Type Overlay future land use is to identify locations in the County to promote appropriately scaled walkable environments with a mix of housing, civic, retail, and service choices and that achieve the following:

- Improve the built environment and human habitat.
- Promote development patterns that support safe, effective, and multi-modal transportation options, including auto, pedestrian, bicycle, and ultimately transit. This will minimize vehicle traffic by providing for a mix of land uses, walkability, and compact community form.
- Provide neighborhoods with a variety of housing types to serve the needs of a diverse population.
- Remove barriers and provide incentives for walkable urban projects.
- Promote the greater health benefits of a pedestrian-oriented environment.
- Reinforce the character and quality of local communities, including rural crossroads, neighborhoods, hamlets, and villages.
- Reduce sprawling, auto-dependent development.
- Protect and enhance real property values.
- Reinforce the unique identity of Beaufort County that builds upon the local context, climate, and history.

Rural Place Types: While rural landscapes consist largely of natural areas, agricultural and forestry uses, and low-density residential development, historically, small walkable communities served as retail, service and civic hubs for the surrounding rural hinterlands.

Rural Place types consist of Rural Crossroads and Hamlets (See Map 4-9 and 4-10). Appendix 4-I further defines the appropriate character, form, scale, intensity, and mix of uses for each of the place types in Beaufort County so that suitable zoning districts and other tools can be developed and applied to implement these places.

- **Rural Crossroad Place Types.** Rural crossroads are typically located at the intersection of two or more rural roads. They provide a small amount of pedestrian-oriented, locally-serving retail in a rural context, and transition quickly into agricultural uses and/or the natural environment as one moves away from the intersection. Historic examples of rural crossroads include Pritchardville in southern Beaufort County and the Corners Community on St. Helena Island.
- **Hamlet Place Types.** Hamlets are typically larger and more intense than rural crossroads and are often located at the edge of the rural and urban condition. A hamlet often has a small, pedestrian-oriented main street with surrounding and supporting residential fabric that is scaled to the size of a pedestrian shed. The main street and surrounding residential fabric transitions quickly into agricultural uses and/or the natural environment. A historic example of a hamlet includes the original settlement of Bluffton along Calhoun Street. The size and scale of the Habersham community would currently be classified as a hamlet, but could develop into a village if existing development plans are realized.

Urban Place Types: Urban places are more complex with concentrations of public infrastructure, community services, and existing homes and businesses. They are located within urbanized areas, and are organized within an interconnected network of streets and blocks in multiple pedestrian sheds. They include areas where one has the opportunity to walk, bike, or ride transit to work, to fulfill daily shopping needs (such as groceries), and to access other amenities within close proximity. These places are composed of elements that create complete walkable places, including downtowns, neighborhood main streets, neighborhood centers, and residential neighborhoods of varying densities and intensities.

Urban Place types consist of Villages, Towns, and Cities (See Map 4-9 and 4-10). Appendix 4-I further defines the appropriate character, form, scale, intensity, and mix of uses for each of the place types in Beaufort County so that suitable zoning districts and other tools can be developed and applied to implement these places.

- **Villages** are made up of clusters of residential neighborhoods of sufficient intensity to support a central, mixed-use environment. The mixed-use environment can be located at the intersection of multiple neighborhoods or along a corridor between multiple neighborhoods. Habersham is a good example of a place that is evolving into a village.
- **Towns** are made up of clusters of neighborhoods or villages that can support a larger, more complex mixed-use environment. Buildings at the core of a town are attached and may be up to four stories tall. Towns are important centers of the County. The Town of Port Royal represents the local archetype.
- **Cities** are made up of clusters of neighborhoods or villages that can support the most intense, complex mixed-use environments. Buildings within the cores of a city are attached and may be taller than four stories in height. Cities are regional centers of the County and contain primary commercial and civic destinations. The City of Beaufort represents the local archetype.

Implementing the Place Type Overlay: The place types should be implemented with form-based zoning districts that focus firstly on the intended character and intensity of development and secondly on the mix of uses within. The form-based districts should be organized on the principle of the Transect (Figure 4-5).

Figure 4-5: A Typical Rural-Urban Transect with Transect Zones



Source: The Smart Code Version 9.2

The Transect, as a framework, identifies a range of settlement patterns from the most natural to the most urban. Its continuum, when subdivided, lends itself to the creation of zoning categories with standards that prescribe appropriate intensity, character and mix of uses. The following are generalized zoning categories based on the Transect.

- **T-1 Natural Zone** consists of lands approximating or reverting to a wilderness condition, including lands unsuitable for settlement due to topography, hydrology or vegetation.
- **T-2 Rural Zone** consists of sparsely settled lands in open or cultivated state. These include woodland, agricultural land, and natural areas. Typical buildings are farmhouses, agricultural buildings, and low density houses.
- **T-3 Sub-Urban Zone** consists of low density residential areas, adjacent to higher zones that contain some mixed use. Home occupations and outbuildings are allowed. Planting is naturalistic and setbacks are relatively deep. Blocks may be large and the roads irregular to accommodate natural conditions.
- **T-4 General Urban Zone** consists of a mixed use but primarily residential urban fabric. It may have a wide range of building types: single, sideyard, and rowhouses. Setbacks and landscaping are variable. Streets with curbs and sidewalks define medium-sized blocks.
- **T-5 Urban Center Zone** consists of higher density mixed use buildings that accommodate retail, offices, rowhouses and apartments. It has a tight network of streets, with wide sidewalks, steady street tree planting and buildings set close to the sidewalks.
- **T-6 Urban Core Zone** consists of the highest density and height, with the greatest variety of uses, and civic buildings of regional importance. There are no locations within Beaufort County where T-6 Urban Core is appropriate. Typically only large towns and cities have an Urban Core Zone.

In order to be an effective tool to implement the Place Type Overlay District the specific mix of uses, intensity and character of these districts should be calibrated to fit the unique natural and built environment of Beaufort County.

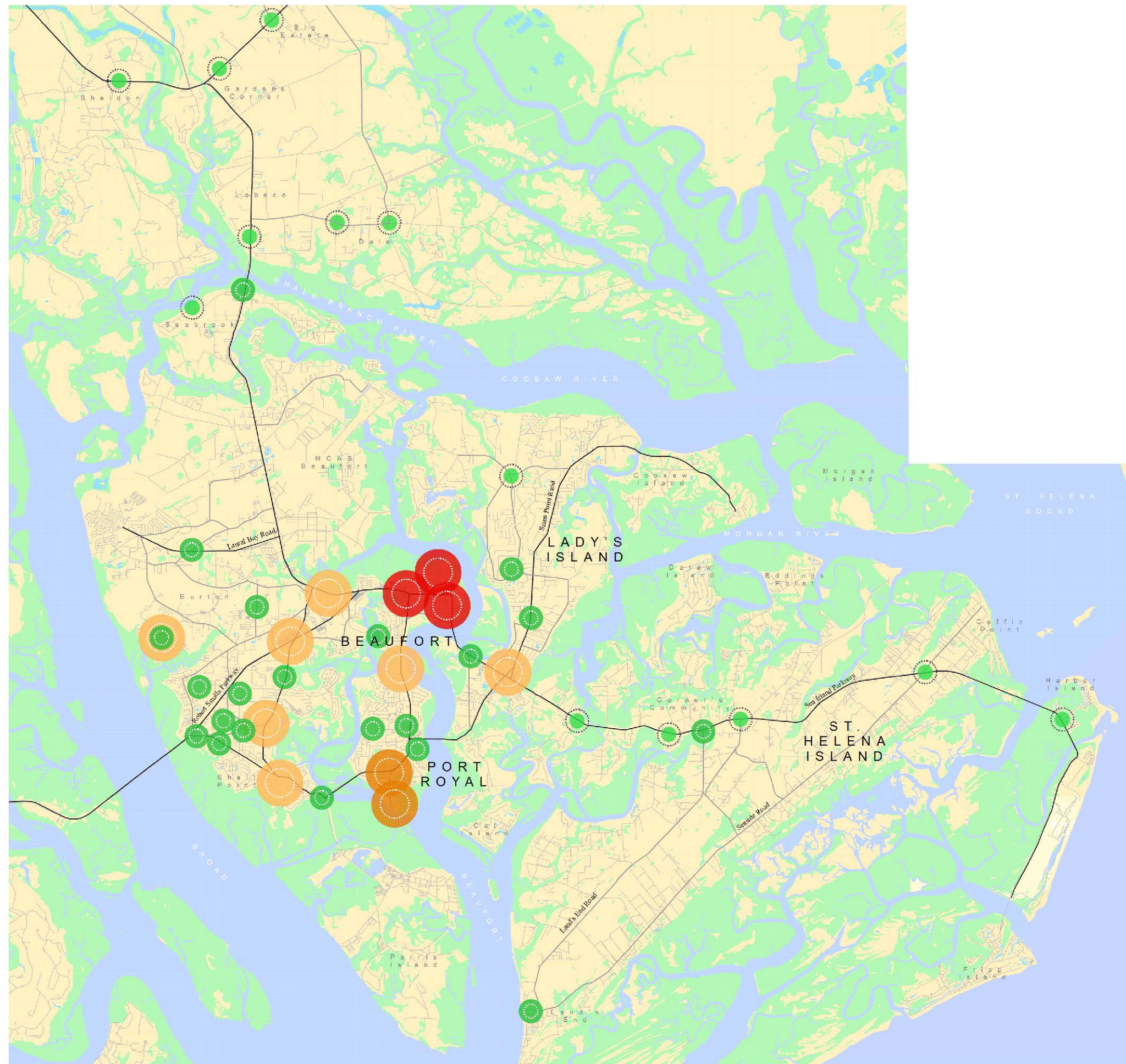
Recommendation 4-4: Update the County Land Use Regulations

Beaufort County will update the county's zoning and development standards ordinance to incorporate the related recommendations of the regional plans and to facilitate the Future Land Use element of this comprehensive plan. In particular, the county will consider incorporating the following recommendations:

- Incorporate the development guidelines and recommendations established in this plan and in the regional plans; and
- Encourage mixed-use developments, where proposed, through revisions that will expedite review procedures and provide density incentives.
- Codify requirements that allow for the county, municipalities, the school district, and where involved, the military, to review and comment on major development proposals and annexations. This action would require that any application for an annexation or proposed rezoning will be sent to the planning directors, or similar official, of the relevant review body prior to the public hearing on the application. Any comments provided by such planning official will be included in the review packets for the subject annexation or rezoning.
- Implement the Place Type Overlay by developing form-based zoning districts that focus firstly on the intended character and intensity of development and secondly on the mix of uses within. The form-based districts should be organized on the principle of the Transect. The specific mix of uses, intensity and character of the form-based districts should be calibrated to fit the unique natural and built environment of Beaufort County.

Chapter 4 Land Use

Map 4-9
**Place Type
Overlay**
Northern Beaufort
County








- City Place Type
- Town Place Type
- Village Place Type
- Hamlet Place Type
- Rural Crossroad Place Type

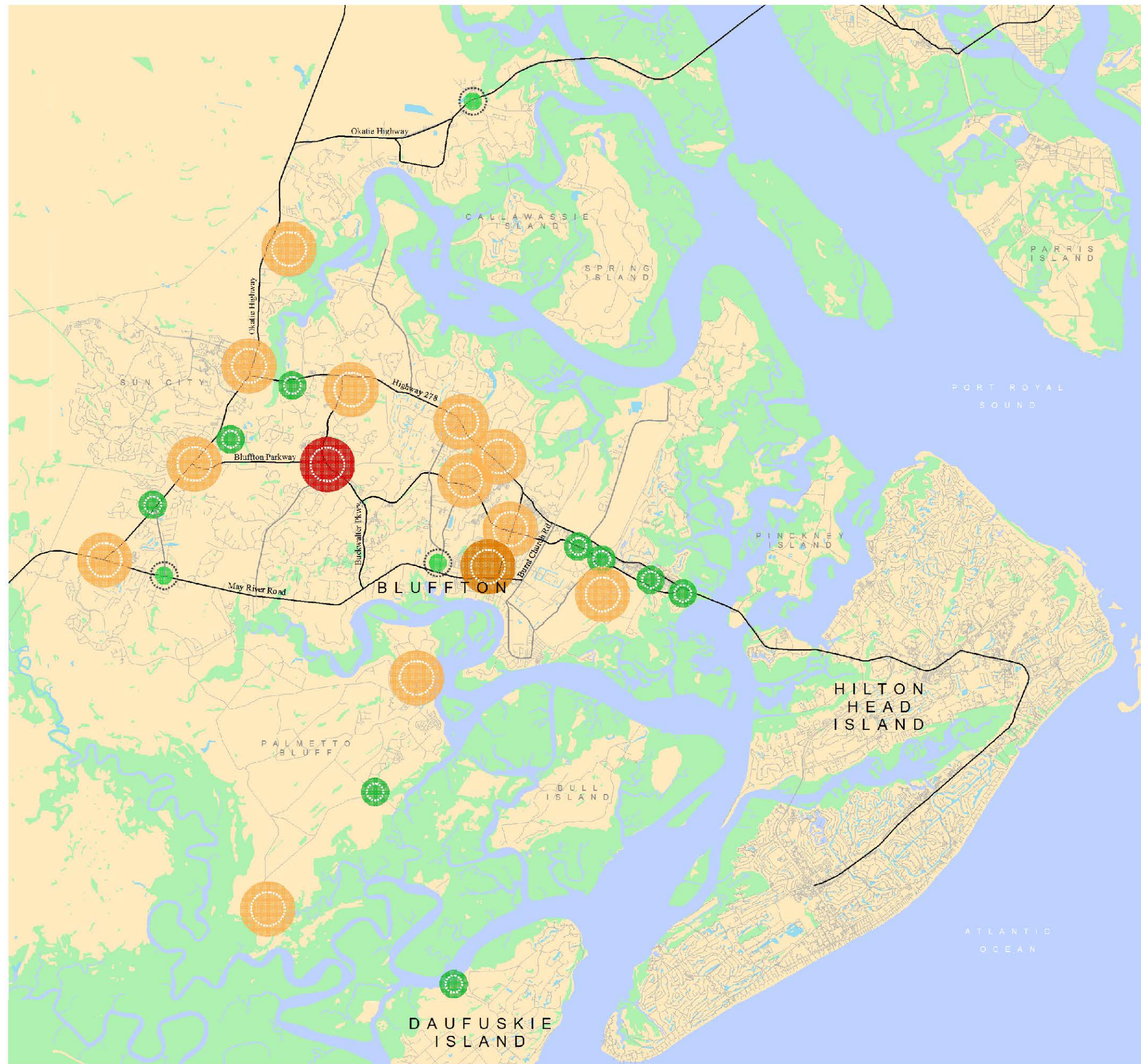
2010
Beaufort County
Comprehensive
Plan

Chapter 4 Land Use

Map 4-10 Place Type Overlay Southern Beaufort County

-  City Place Type
-  Town Place Type
-  Village Place Type
-  Hamlet Place Type
-  Rural Crossroad Place Type

2010
Beaufort County
Comprehensive
Plan



Appendix 4-I

Beaufort County Place Types

Overview

The Place Type Overlay identifies locations in the County to promote appropriately scaled walkable environments with a mix of housing, civic, retail, and service choices. The scale, intensity and character of these walkable communities vary greatly from small rural crossroads that serve neighboring agricultural communities to cities with a diversity of uses and housing types. This Appendix further defines the appropriate character, form, scale, intensity, and mix of uses for each of the place types in Beaufort County so that suitable zoning districts and other tools can be developed and applied to implement these places.

Table 1: Rural Place Types in Beaufort County





			Rural Crossroads	Hamlet
				
Form				
Type of Settlement	Significant intersection or node.		Low to medium intensity main street.	
Level of Urbanization	Minimal to Mild		Mild to Medium	
Transect Zones	T2 and T3		T2, T3, and T4	
Scale	Primarily auto scale with human scale development at center - 1/4 to 1/4 mile pedestrian shed.		Transitioning from auto to human scale. 1/4 mile pedestrian shed.	
Acres	10 acres minimum. 80 acres maximum.		40 acres minimum. 200 acres maximum.	
Intensity of Settlement	1 to 2 dwelling units per acre gross.		3 to 6 dwelling units per acre gross.	
Character of Buildings	1–2 story detached buildings containing various uses that are primarily residential or agricultural in form.		1–3 story detached buildings containing various uses that are primarily residential or agricultural in form.	
Infrastructure				
Stormwater Management	Low impact watershed management at the lot level.		Low impact watershed management at lot, neighborhood and community level.	
Water & Sewer Service	Septic systems and wells transitioning to package wastewater systems and regional water and sewer service.		Septic systems and wells transitioning to package wastewater systems and regional water and sewer service.	
Electricity and Communications	Standard voltage electric utility and communication lines shall be buried when they are new; or when significant alterations to an existing thoroughfare ROW occurs.			
Services				
Fire, EMS, Police	Professionally manned fire and EMS stations, and police sub-stations may be sited. Fire hydrants may be sparse and shall be required of all new development.		Professionally manned fire and EMS stations, and police sub-stations are appropriate. Fire hydrants shall be required of all new development.	
Transportation				
Street Network	Simple organic network of large irregular blocks. "Crossroads" intersection shall not be widened, but rather pedestrianized.		Simple organic network. Medium to large blocks with 'complete' main street. Streets and intersections shall not be widened.	
Street Surface	Only public streets shall be paved.		All streets except alleys shall be paved.	
Transit	Regional transportation service only.		Regional transportation service only.	
Common Destinations				
Health Care	office/clinic	Appropriate	Appropriate	
	hospital	Not appropriate	Not appropriate	
Schools	Primary	Not appropriate	Appropriate	
	Secondary	Not appropriate	Appropriate	
	College	Not appropriate	Not appropriate	
Civic Space	Primarily neighborhood and community scaled greenways, greens, pocket parks, playgrounds, gardens, and preserves.		Primarily neighborhood and community parks, greenways, greens, squares, plazas, playgrounds, gardens, and preserves.	
Civic Structures	Primarily range from neighborhood to small community scaled facilities (e.g. rec. center, meeting hall, church, etc.). Regional scaled facilities shall locate in Town or City Place Types (e.g. cultural facilities, County govt. buildings, post office, library, DMV, Social Security Administration, etc.).		Primarily range from neighborhood to large community scaled facilities (e.g. rec. center, meeting hall, post office, church, library, etc.). Regional scaled facilities shall locate in Town or City Place Types (e.g. cultural facilities, County govt. bldgs., state and federal agencies.).	

Table 2: Urban Place Types in Beaufort County

Village		Town and City	
			
Form			
Type of Settlement	Cluster of neighborhoods and hamlets support a mixed-use village center and main street within County, Town, or City.	Neighborhoods and districts that are interconnected by mixed-use streets form these town and city "centers" of the County.	
Level of Urbanization	Med. to High. Enhanced services provide countywide economies of agglomeration.	High. Enhanced services provide multi-county region economies of agglomeration.	
Zoning Districts	T3 and T4	T3, T4 and T5	
Scale	Human scale. ½ mile pedestrian shed.	Human scale. ½ mile pedestrian shed.	
Acres	120 acres minimum. 500 acres maximum.	320 acres minimum.	
Intensity of Settlement	4 to 12 dwelling units per acre gross.	6 to 24 dwelling units per acre gross.	
Character of Buildings	1–3 story attached and detached buildings appear residential or commercial in form.	1–4 story attached and detached buildings appear residential or commercial in form.	
Infrastructure			
Stormwater Management	Low impact watershed management at lot, neighborhood, community, district level.	Low impact watershed management at lot, neighborhood, community, district level.	
Water & Sewer Service	Regional water and sewer shall be required of all new development.	Regional water & sewer shall be required of all new development.	
Electricity and Communications	Standard voltage electric utility and communication lines shall be buried when they are new; or when significant alterations to an existing thoroughfare ROW occurs.		
Services			
Fire, EMS, Police	Professionally manned fire and EMS stations, and police sub-stations are appropriate. Fire hydrants shall be required of all new development.	The main City or Town fire and EMS station, and the main stand-alone police station shall locate here. Fire hydrants shall be required of all new development.	
Transportation			
Street Network	Complex semi-formal network with small to med. blocks and 'complete' main street. Existing street network shall not be widened, but rather "dieted" and pedestrianized.	Complex network, formal, grid, 'Complete' streets, and a prominent main street. Existing street network shall not be widened, but rather "dieted" and pedestrianized.	
Street Surface	All streets and alleys shall be paved.	All streets and alleys shall be paved.	
Transit	Plan for Regional or Local transit service.	Multi-modal transit hub shall locate here.	
Common Destinations			
Health Care	office/clinic	Appropriate	Appropriate
	hospital	Not appropriate	Appropriate
Schools	Primary	Appropriate	Appropriate
	Secondary	Appropriate	Appropriate
	College	Not appropriate	Appropriate
Civic Space	Primarily neighborhood and community scale parks, greenways, greens, squares, plazas, playgrounds, gardens, and preserves.	Neighborhood, community and regional scale parks, greenways, greens, squares, plazas, playgrounds, gardens, and preserves.	
Civic Structures	Primarily range from neighborhood to large community scaled facilities (e.g. rec./community center, meeting hall, post office, church, library, etc.). Regional scale facilities shall locate in Town or City Place Types (e.g. cultural facilities, County govt. bldgs., state and federal agencies).	Address civic needs at the neighborhood/ community scale (e.g. meeting hall, rec. center, community center); at the town or city scale (e.g. main library, main post office, town hall, theater, museum); and at the regional scale (e.g. cultural facilities, County govt. bldgs., state and federal agencies).	