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PHASE I IMPROVEMENTS

FOR THE

FLORENCE COUNTY INDUSTRIAL PARK EAST

FLORENCE COUNTY, SC

PREPARED FOR:

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP

1951 PISGAH ROAD
FLORENCE, SC 29501

TMS# 306-01-042

06/07/2021

J-28601.0001

PREPARED BY:

THOMAS & HUTTON

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29061 ROSS S. OAKLEY

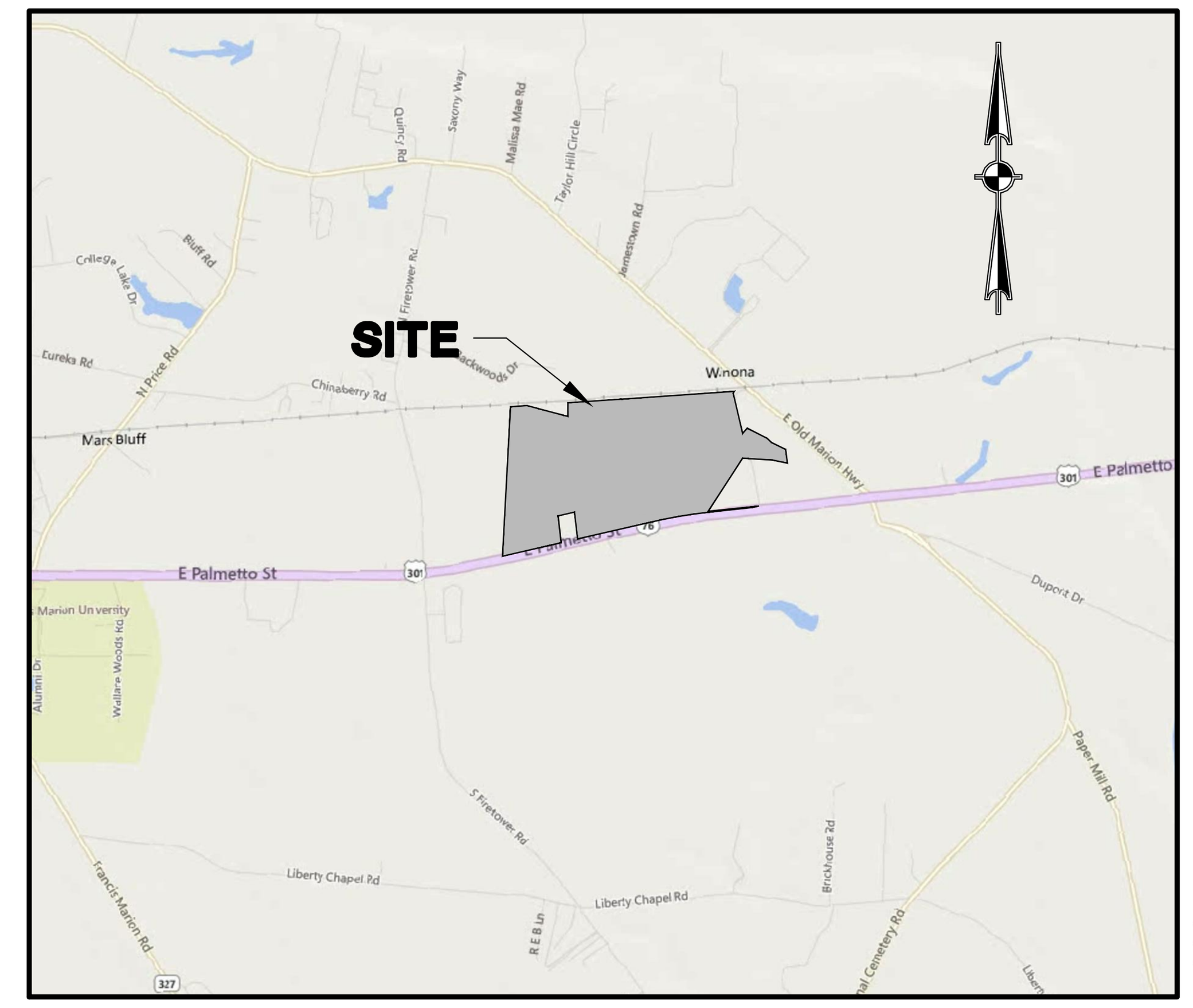
[illegible]

SOUTH CAROLINA THOMAS & HUTTON ENGINEERING CO. No. C00285 CERTIFICATE OF AUTHORIZATION

6/7/21

BID SET - NOT FOR CONSTRUCTION

I HAVE PLACED MY SIGNATURE AND SEAL ON THE DESIGN DOCUMENTS SUBMITTED SIGNIFYING THAT I ACCEPT RESPONSIBILITY FOR THE DESIGN OF THE SYSTEM. FURTHER, I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE DESIGN IS CONSISTENT WITH THE REQUIREMENTS OF TITLE 48, CHAPTER 14 OF THE CODE OF LAWS OF SC, 1976 AS AMENDED, PURSUANT TO REGULATION 72-300 ET SEQ.(IF APPLICABLE, AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF SCR100000



VICINITY MAP
SCALE: 1" = 4000'

FLORENCE COUNTY INDUSTRIAL PARK EAST

J-28601.0001
06/07/2021

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REVISION HISTORY

REV. NO.	REVISION	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

SUBMITTAL HISTORY

SUBMITTED TO	DATE
RESUBMITTAL TO FLORENCE COUNTY	2021/06/07
RESUBMITTAL TO SCDOT	2021/06/07
FLORENCE COUNTY, SCDHEC, SCDOT	2021/04/28

811
Know what's below.
Call before you dig.

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Columbia, SC 29201
p.803.451.6789
www.thomasandhutton.com

C:\Documents and Settings\nhutton\Desktop\Florence Co\Florence Co Industrial Park East\Drawing.dwg Jul 21, 2008 - 3:25:51 PM

ABBREVIATIONS

DBL	DOUBLE		FM	FORCE MAIN (SANITARY SEWER)		PC	POINT OF CURVE		TC	TOP OF CURB
BOT	BOTTOM		FP	FINISH PAD		PH	POST HYDRANT		TH	THROAT ELEVATION
CB	CATCH BASIN		FR	FRAME		PT	POINT OF TANGENT		TG	TOP OF GUTTER
CI	CURB INLET		GI	GRATE INLET		PVC	POLYVINYL CHLORIDE		TP	TOP OF PAVEMENT
CO	CLEAN OUT		GV	GATE VALVE		RCP	REINFORCED CONCRETE PIPE		TW	TOP OF WALK
CPP	CORRUGATED PLASTIC PIPE		HDPE	HIGH DENSITY POLYETHYLENE		RC	ROLL CURB INLET		TYP	TYPICAL
DBL	DOUBLE		HI	HOODED INLET		RCP	REINFORCED CONCRETE PIPE		VI	VALLEY INLET
DI	DITCH INLET		INV	INVERT ELEVATION		RI	ROOF INLET		W	WATER
DIP	DUCTILE IRON PIPE		JB	JUNCTION BOX		RJP	RESTRAINED JOINT PIPE		W/	WITH
EL	ELEVATION		LF	LINEAR FEET		R/W	RIGHT-OF-WAY		WV	WATER VALVE
ES	END SECTION		MAX	MAXIMUM		SD	STORM DRAINAGE		YI	YARD INLET
FES	FLARED END SECTION		MIN	MINIMUM		SDMH	STORM DRAINAGE MANHOLE		YI	YARD INLET
FG	FINISH GRADE		MH	MANHOLE		SF	SQUARE FEET			
FH	FIRE HYDRANT		OC	ON CENTER		SS	SANITARY SEWER			

DRAINAGE LEGEND

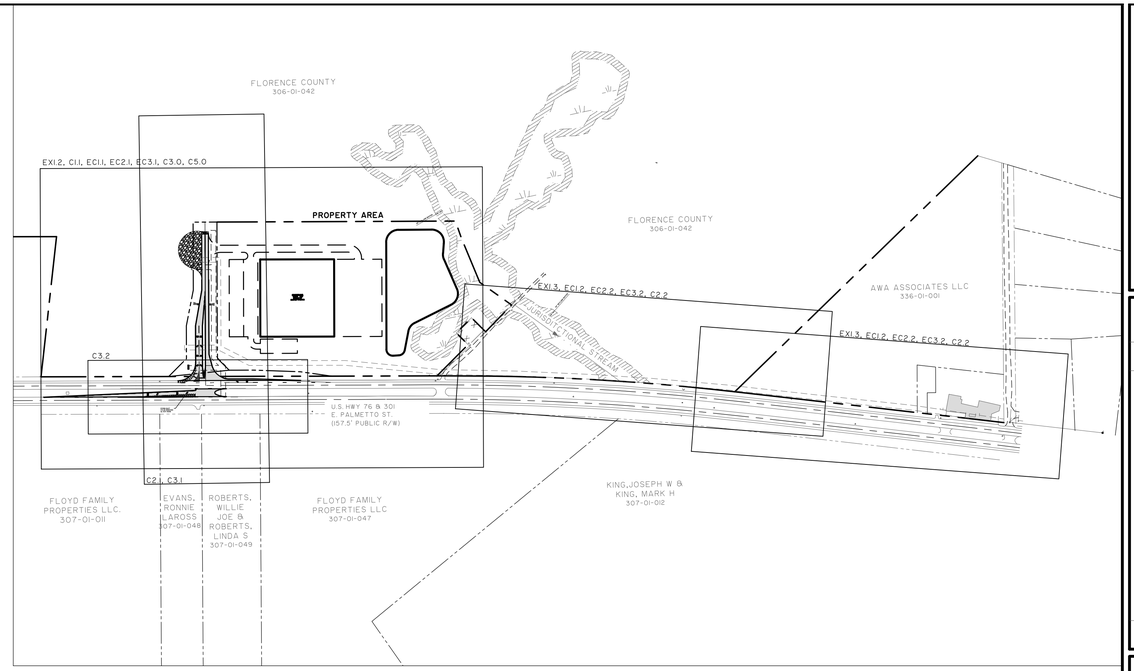
DESCRIPTION	EXISTING	PROPOSED
PIPE		
DITCH		
CURB INLET (CI) CATCH BASIN (CB)		
CONTROL STRUCTURE (CS)		
JUNCTION BOX (JB)		
MANHOLE (SDMH)		
ROOF INLET (RI)		
FLARED END SECTION (FES)		

WATER LEGEND

DESCRIPTION	EXISTING	PROPOSED
WATER MAIN	10"W	10"W
SINGLE SERVICE LATERAL		
DOUBLE SERVICE LATERAL		
VALVE AND BOX		
FIRE HYDRANT W/VALVE & BOX		
POST HYDRANT		
REDUCER		
BACKFLOW PREVENTOR		
CROSS		
TEE		
90° BEND - HORIZONTAL		
45° BEND - HORIZONTAL		
22-½° BEND - HORIZONTAL		
11-¼° BEND - HORIZONTAL		
BEND - VERTICAL		
CAP		

SEWER LEGEND

DESCRIPTION	EXISTING	PROPOSED
GRAVITY PIPE	SS	
SINGLE SERVICE LATERAL		
DOUBLE SERVICE LATERAL		
MANHOLE		
CLEANOUT	CO	CO
FORCEMAIN	10"FM 10"FM	10"FM 10"FM
PLUG \ CAP		



OTHER UTILITIES LEGEND

DESCRIPTION	EXISTING
NATURAL GAS	UGG UGG
TELEPHONE	OHT OHT
UNDERGROUND TELEPHONE	UTL UTL
ELECTRICITY	OHP OHP
UNDERGROUND ELECTRICITY	UGP UGP

INDEX

SCALE: 1" = 300'

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE TIE-IN OF NEW WATER AND SEWER FACILITIES TO CITY OF FLORENCE WATER AND SEWER.
2. CONTRACTOR SHALL MAINTAIN MINIMUM COVER OVER THE WATER MAIN PIPE BARREL OF 3'-0" UNLESS OTHERWISE INDICATED. TOP OF PIPE ELEVATIONS ARE SHOWN FOR CASES WHERE FUTURE STORM SEWERS ARE TO BE INSTALLED. IN NO CASE SHALL THE WATER MAIN BE INSTALLED AT A LOWER ELEVATION THAN THAT SHOWN.
3. SHOULD PIPE, FITTINGS, AND OTHER MATERIALS BE NEEDED IN ADDITION TO THAT SHOWN ON THE DRAWINGS BECAUSE PIPELINE WAS NOT INSTALLED TO THE ALIGNMENT AND PROFILE SHOWN, THEN THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THOSE NECESSARY MATERIALS AND PROVIDING THE EQUIPMENT AND LABOR TO INSTALL THEM TO MEET THE DESIGN INTENT OF THE WATERMAIN AT NO ADDITIONAL COST TO THE OWNER.
4. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER 48 HOURS IN ADVANCE OF ALL REQUIRED TESTS AND INSPECTIONS.
5. THE CONTRACTOR WILL NOTIFY THE ENGINEER IF UNSUITABLE MATERIAL IS DISCOVERED PRIOR TO BEGINNING ANY REMOVAL OPERATION.
6. TOPOGRAPHIC SURVEYING AND BOUNDARY INFORMATION BY THOMAS AND HUTTON
7. ALL ELEVATIONS SHOWN ARE BASED ON NAVD88.
8. CONTRACTOR IS TO VERIFY ACCURACY OF ANY TEMPORARY BENCHMARKS SHOWN PRIOR TO UTILIZING THEM FOR CONSTRUCTION.
9. THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES OTHER THAN THOSE SHOWN ARE ENCOUNTERED DURING CONSTRUCTION , THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND TAKE STEPS TO PROTECT THE LINE(S) AND ENSURE CONTINUED SERVICE. DAMAGE CAUSED TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR. ADDITIONALLY, THE CONTRACTOR SHALL CONFIRM THE CONNECTION POINTS OF NEW UTILITIES TO EXISTING UTILITIES PRIOR TO BEGINNING NEW CONSTRUCTION.
10. IF WORK IS SUSPENDED OR DELAYED FOR 14 DAYS, THE CONTRACTOR SHALL TEMPORARILY STABILIZE THE DISTURBED AREA AT NO ADDITIONAL COST TO THE OWNER.
11. THE CONTRACTOR SHALL INSTALL ANY BARRICADES PRIOR TO BEGINNING CONSTRUCTION
12. ANY DAMAGE TO EXISTING PAVEMENT MUST BE REPAIRED AT CONTRACTORS EXPENSE AND TO THE SATISFACTION OF THE COUNTY ENGINEER AND THE PROJECT ENGINEER.
13. WHERE FIELD INSPECTIONS ARE REQUIRED BY THE COUNTY, THE CONTRACTOR SHALL NOTIFY THE ENGINEERING DIVISION A MINIMUM OF 48 HOURS IN ADVANCE TO SCHEDULE SUCH INSPECTIONS.
14. A COMPLETE SET OF APPROVED DRAWINGS AND SPECIFICATIONS MUST BE MAINTAINED ON SITE AT ALL TIMES THAT THE CONTRACTOR IS PERFORMING WORK. THESE DRAWINGS SHALL BE MADE AVAILABLE UPON REQUEST.
15. ANY REVISIONS DURING CONSTRUCTION WHICH ALTER THE ROAD LAYOUT, CONSTRUCTION METHODS, RIGHT-OF-WAY LOCATION OR DRAINAGE MUST BE SUBMITTED AND APPROVED IN WRITING BY THE ENGINEER.
16. THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL AND PREVENTION STRUCTURES SHOWN ON THE PLANS. BOTH MUST BE APPROVED BY FLORENCE COUNTY PRIOR TO BEGINNING ANY LAND DISTURBING ACTIVITIES.
17. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF UNSUITABLE MATERIAL IS DISCOVERED PRIOR TO BEGINNING ANY REMOVAL OPERATION.
18. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH THE DISTURBANCE OF THE LAND AND SHALL REMAIN FUNCTIONAL UNTIL THE CONTRIBUTING DISTURBED AREAS ARE STABILIZED. SILT BARRIERS WILL BE INSTALLED AS NECESSARY TO PREVENT EXCESSIVE SEDIMENTATION OF DOWNSTREAM AREAS. DEVICES SHALL BE IN ACCORDANCE WITH SCDHEC REGULATIONS.
19. CONTRACTOR SHALL GRADE AREAS TO DRAIN FOR POSITIVE FLOW PRIOR TO FINAL APPROVAL.
20. ALL TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON "UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" CURRENT EDITION.
21. ALL AREAS DISTURBED WILL BE GRASSED IMMEDIATELY AFTER THE INSTALLATION. GRASSING SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
22. ALL DRAINAGE WILL BE MADE FUNCTIONAL DAILY AS WORK PROGRESSES.
23. EACH EXISTING ROAD WILL BE CLEANED UP AND RESTORED DAILY.
24. NEW PAVEMENT TO BE FLUSH WITH EDGE OF EXISTING PAVEMENT, AND MATCH EXISTING EDGE ELEVATION.
25. ALL STORM DRAIN PIPE INVERTS IN AND OUT ARE THE SAME UNLESS OTHERWISE NOTED ON THE PLAN SHEETS AND/OR PROFILES.
26. ONLY TYPE S AND M MORTAR IS TO BE USED IN STORMWATER SYSTEM CONSTRUCTION AND ALL BRICKWORK AND BRICK MUST MEET SCDOT SPECIFICATIONS.
27. THE DESIGN OF THE PAVEMENT AND EARTHWORK MATERIALS, PROCEDURES AND METHODS SPECIFIED ARE BASED ON THE CRITERIA AND RECOMMENDATIONS ESTABLISHED IN THE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY SBME, DATED 11-12-2020 AND SUBSEQUENT ADDENDUMS.

GENERAL INFORMATION

COUNTY FLORENCE
TOWN FLORENCE
ZONING N/A

OWNER:
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARNTNERSHIP
1951 PISGAH ROAD
(843) 676-8796

ENGINEER:
THOMAS & HUTTON
1501 MAIN STREET
COLUMBIA, SC 29201
(803) 451-6789

SURVEYOR:
THOMAS & HUTTON
611 BURROUGHS & CHAPIN BLVD.
SUITE 202
MYRTLE BEACH, SC 29577
(843) 839-3545

UTILITY:
CITY OF FLORENCE WATER & SEWER
324 W. EVANS STREET, FLORENCE SC 29501
(843) 665-3155

DUKE ENERGY - PROGRESS
1755 MECHANICSVILLE RD, FLORENCE SC 29501
(800) 452-2777

PREPARED FOR:
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
1951 PISGAH RD FLORENCE, SC 29501
(843)676-8796

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23906 — THOMAS B HUTTON ENGINEERING CO No C00285 — CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23906 — CERTIFICATE OF AUTHORIZATION

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

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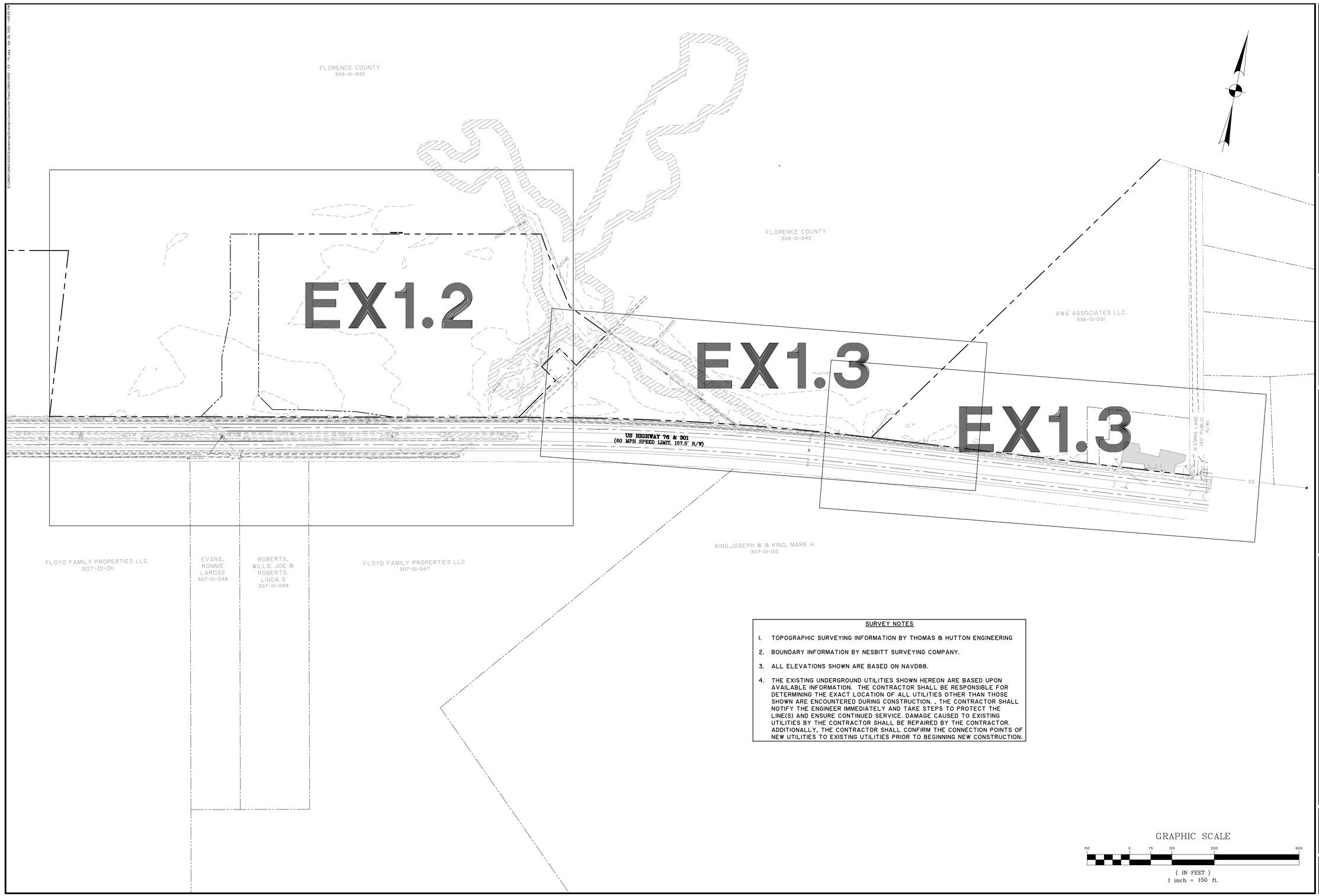
www.thomasandhutton.com

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC
FLORENCE COUNTY INDUSTRIAL PARK EAST
GENERAL NOTES & INDEX

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	NA

G0.1



SURVEY NOTES

1. TOPOGRAPHIC SURVEYING INFORMATION BY THOMAS & HUTTON ENGINEERING
2. BOUNDARY INFORMATION BY NESBITT SURVEYING COMPANY.
3. ALL ELEVATIONS SHOWN ARE BASED ON NAVD88.
4. THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES OTHER THAN THOSE SHOWN ARE ENCOUNTERED DURING CONSTRUCTION. , THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND TAKE STEPS TO PROTECT THE LINE(S) AND ENSURE CONTINUED SERVICE. DAMAGE CAUSED TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR. ADDITIONALLY, THE CONTRACTOR SHALL CONFIRM THE CONNECTION POINTS OF NEW UTILITIES TO EXISTING UTILITIES PRIOR TO BEGINNING NEW CONSTRUCTION.

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

NORTH CAROLINA PROFESSIONAL ENGINEER — THOMAS & HUTTON ENGINEERING CO. — No. C00285 — CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA PROFESSIONAL ENGINEER — No. 23906 — ROBERT S. OLSEN — 07/21

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/08/03
2	REVISED PER FLORENCE COUNTY	NJH	2021/08/03
1	REVISED PER SCDOT	NJH	2021/08/03

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FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

OVERALL EXISTING CONDITIONS PLAN

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 150'

EX1.1

SURVEY NOTES

1. TOPOGRAPHIC SURVEYING INFORMATION BY THOMAS & HUTTON ENGINEERING
2. BOUNDARY INFORMATION BY NESBITT SURVEYING COMPANY.
3. ALL ELEVATIONS SHOWN ARE BASED ON NAVD88.
4. THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES OTHER THAN THOSE SHOWN ARE ENCOUNTERED DURING CONSTRUCTION. , THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND TAKE STEPS TO PROTECT THE LINE(S) AND ENSURE CONTINUED SERVICE. DAMAGE CAUSED TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR. ADDITIONALLY, THE CONTRACTOR SHALL CONFIRM THE CONNECTION POINTS OF NEW UTILITIES TO EXISTING UTILITIES PRIOR TO BEGINNING NEW CONSTRUCTION.

FLORENCE COUNTY
306-01-042

PROJECT AREA

JURISDICTIONAL WETLAND (TYP.)

30' WETLAND BUFFER

100' R/W

PROPOSED ROAD R/W

150' R/W

FLORENCE COUNTY INDUSTRIAL PARK EAST BOUNDARY

EXISTING OVERHEAD POWER LINE (TYP.)

EXISTING EDGE OF PAVEMENT (TYP.)

EXISTING 12" FORCE MAIN

EXISTING 8" WATER MAIN

EXISTING TRAVEL WAY

EXISTING PAVED SHOULDER

BENCHMARK
N: 863287.9433
E: 2418981.8001
ELEV: 97.73'

BENCHMARK
N: 863428.6729
E: 2419592.1871
ELEV: 96.92'

BENCHMARK
N: 863546.0327
E: 2420108.9979
ELEV: 96.47'

BENCHMARK
N: 863568.5551'
E: 2420117.0461'
ELEV: 95.55'

AMERICAN TOWER LEASE LINE

EXISTING EDGE OF WETLANDS (TYP.)

AMERICAN TOWER CELL TOWER SITE

US HIGHWAY 76 & 301
(60 MPH SPEED LIMIT. 107.5' R/W)

GRATE INLET
FR: 94.90
I.E. OUT: 93.37

STORM INLET
(TO BE REMOVED)
I.E. OUT: 92.98

I.E.: 92.39
I.E.: 92.79
I.E.: 91.12
I.E.: 89.53
I.E.: 89.63
I.E.: 92.37
I.E.: 90.43
I.E.: 90.35
I.E.: 89.06

24" CPP
15" RCP
36" RCP
45° BEND

FLOYD FAMILY PROPERTIES, LLC.
307-01-011

EVANS, RONNIE LAROSS
307-01-048

ROBERTS, WILLIE JOE & ROBERTS, LINDA S
307-01-049

FLOYD FAMILY PROPERTIES LLC
307-01-047

MATCH LINE - SEE SHEET NO. EX1.3

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040285 THOMAS & HUTTON ENGINEERING CO. CERTIFICATE No. C00285

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23406 NATHAN J. HOLLAND REGISTERED ENGINEER

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

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FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

EXISTING CONDITIONS PLAN

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 60'

EX1.2

SURVEY NOTES

1. TOPOGRAPHIC SURVEYING INFORMATION BY THOMAS & HUTTON ENGINEERING
2. BOUNDARY INFORMATION BY NESBITT SURVEYING COMPANY.
3. ALL ELEVATIONS SHOWN ARE BASED ON NAVD88.
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REMOVE AND REPLACE W/ 2 x 18" CLASS V RCP (SEE INSET ON SHEET C3.0)

I.E.: 90.88

I.E.: 90.63

30' WETLAND BUFFER

JURISDICTIONAL WETLAND (TYP.)

AMERICAN TOWER LEASE LINE

AMERICAN TOWER CELL TOWER SITE

JURISDICTIONAL STREAM

MATCH LINE - SEE SHEET NO. EX1.2

MATCH LINE THIS SHEET

FLORENCE COUNTY
306-01-042

AWA ASSOCIATES LLC
336-01-001

PROPERTY BOUNDARY

EXISTING OVERHEAD POWER LINE (TYP.)

EXISTING EDGE OF PAVEMENT (TYP.)

EXISTING POWER POLE AND GUY (TYP.)

EXISTING COMMUNICATIONS STRUCTURE (TYP.)

US HIGHWAY 76 & 301
(60 MPH SPEED LIMIT, 107.5' R/W)

END 4'X4' BOX CULVERT
HEADWALL: 92.37
I.E. IN: 86.56

GRATE INLET
FR: 92.00
BOTTOM: 86.57

END 4'X4' BOX CULVERT
HEADWALL: 91.93
I.E. OUT: 86.37

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

MATCH LINE THIS SHEET

FLORENCE COUNTY
306-01-042

AWA ASSOCIATES LLC
336-01-001

PROPERTY BOUNDARY

EXISTING POWER POLE AND GUY (TYP.)

EXISTING COMMUNICATIONS STRUCTURE (TYP.)

EXISTING OVERHEAD POWER LINE (TYP.)

EXISTING EDGE OF PAVEMENT (TYP.)

US HIGHWAY 76 & 301
(60 MPH SPEED LIMIT, 107.5' R/W)

JOSEPH C. WATFORD
306-01-130

JOSEPH C. WATFORD
306-01-043

EXISTING PARKING LOT (TYP.)

EXISTING FENCE LINE (TYP.)

EXISTING MONITORING WELLS (TYP.) TO BE REMOVED

N EMMA LANE
(50' PUBLIC R/W)

PALMETTO PULPWOOD TIMBER INC.
336-01-029

SMH
FR: 92.19
I.E. IN: 86.37
I.E. OUT : 78.03

I.E.: 89.56

I.E.: 89.43

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NORTH CAROLINA
THOMAS & HUTTON ENGINEERING CO.
No. C00285
CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA
PROFESSIONAL ENGINEER SEAL
No. 23696
ROBERT S. OLIVER

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

THOMAS & HUTTON

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP

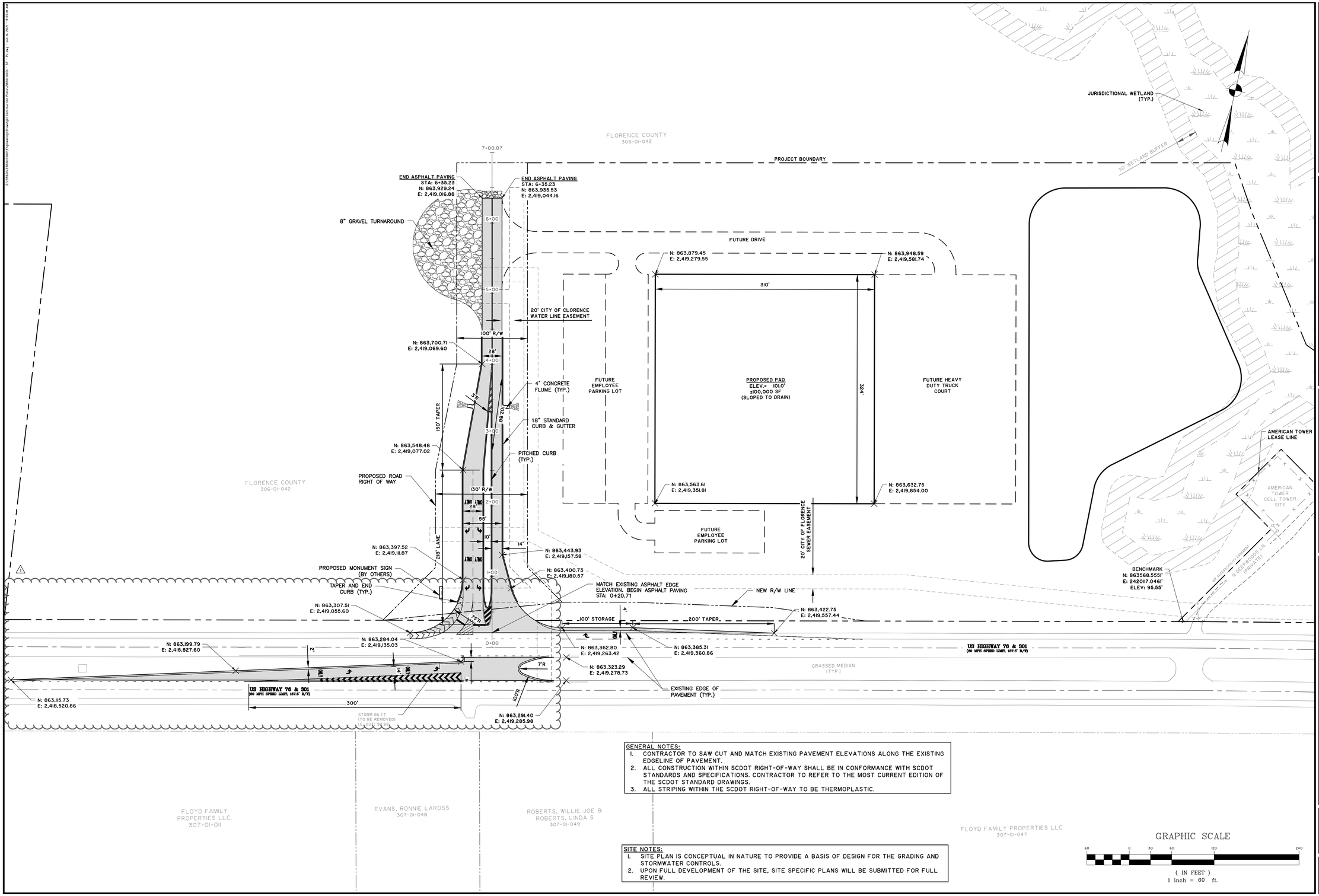
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

EXISTING CONDITIONS PLAN

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	AS NOTED

EX1.3



GENERAL NOTES:
1. CONTRACTOR TO SAW CUT AND MATCH EXISTING PAVEMENT ELEVATIONS ALONG THE EXISTING EDGELINE OF PAVEMENT.
2. ALL CONSTRUCTION WITHIN SCDOT RIGHT-OF-WAY SHALL BE IN CONFORMANCE WITH SCDOT STANDARDS AND SPECIFICATIONS. CONTRACTOR TO REFER TO THE MOST CURRENT EDITION OF THE SCDOT STANDARD DRAWINGS.
3. ALL STRIPING WITHIN THE SCDOT RIGHT-OF-WAY TO BE THERMOPLASTIC.

SITE NOTES:
1. SITE PLAN IS CONCEPTUAL IN NATURE TO PROVIDE A BASIS OF DESIGN FOR THE GRADING AND STORMWATER CONTROLS.
2. UPON FULL DEVELOPMENT OF THE SITE, SITE SPECIFIC PLANS WILL BE SUBMITTED FOR FULL REVIEW.

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

BID SET - NOT FOR CONSTRUCTION
6/7/21

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

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FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

SITE PLAN

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 60'

C1.1

STORMWATER POLLUTION PREVENTION PLAN

I. SITE DESCRIPTION

A. PROJECT DESCRIPTION

A.1.	PROJECT AREA	330 ACRES
A.2.	AREA DISTURBED	18.5 ACRES
A.3.	PERCENT IMPERVIOUS AREA BEFORE CONSTRUCTION	0 %
A.4.	RUNOFF COEFFICIENT BEFORE CONSTRUCTION	72.02 CN
A.5.	PERCENT IMPERVIOUS AREA AFTER CONSTRUCTION	35.5 %
A.6.	RUNOFF COEFFICIENT AFTER CONSTRUCTION	71.97 CN (CURRENT PHASE) 81.56 CN (FULL BUILD OUT)

B. DESCRIPTION OF CONSTRUCTION ACTIVITY

WORK CONSISTS OF CLEARING AND GRUBBING THE PROJECT SITE, CONSTRUCTION OF A ±620 LF ROADWAY ENTRANCE TO THE PARK, MASS GRADING OF A 100,000 SF BUILDING PAD, INSTALLATION OF STORMWATER MANAGEMENT STRUCTURES, AND DRAINAGE SWALES ALONG WITH THE ASSOCIATED STORM DRAINAGE PIPES, INSTALLATION OF UTILITIES TO SERVE THE PARK, AND CONSTRUCTION OF A ENTRANCE SIGN FOR THE PARK.

C. RUNOFF DATA

C.1.	SOIL CLASSIFICATIONS:	(HSG) A, C/D
C.2.	LAND USE(S):	WOODS/BRUSH/UNDEVELOPED

D. RECEIVING WATERS

D.1.	CLOSEST RECEIVING WATERS:	Long Branch
D.2.	ULTIMATE RECEIVING WATERS:	Great Pee Dee River

E. FLOOD

E.1.	FEMA FLOOD ZONE(S):	X
E.2.	FEMA FLOOD INSURANCE MAP(S):	45041C0180E

II. CONTROL MEASURES

1. EROSION AND SEDIMENT CONTROLS

PRIOR TO START OF CONSTRUCTION, ALL EXTERIOR SILT FENCE WILL BE INSTALLED AS SHOWN ON THE PLANS.

1.1. CLEARING

1.1.1. AS CLEARING IS COMPLETED, ADDITIONAL SILT FENCE WILL BE INSTALLED WHERE NECESSARY, SUCH AS POINTS WHERE FLOWS BECOME CHANNELIZED, AND OTHER POINTS WHERE EXCESSIVE RUNOFF VELOCITIES MAY OCCUR.
1.1.2. INSTALL CONSTRUCTION ENTRANCES / EXITS BEFORE BEGINNING CLEARING
1.1.3. CONSTRUCTION DELAYS IN ANY ONE AREA GREATER THAN 14 DAYS PRIOR TO START OF ROUGH GRADING WILL MANDATE STABILIZATION PROCEDURES. ACCEPTABLE METHODS OF STABILIZATION INCLUDE MULCHING AND TEMPORARY SEEDING.
1.1.4. MAINTAIN EXISTING VEGETATION WHENEVER POSSIBLE AND MINIMIZE THE AREA OF DISTURBANCE. RETAIN AND PROTECT TREES TO ENHANCE FUTURE LANDSCAPING EFFORTS AND REDUCE RAINDROP IMPACT.
1.1.5. INSTALL ALL SEDIMENT CONTROL PRACTICES PRIOR TO ANY UP-SLOPE SOIL DISTURBING ACTIVITIES.
1.1.6. PHASE CONSTRUCTION ACTIVITIES TO MINIMIZE THE AREAS DISTURBED AT ONE TIME. THIS WILL ALSO ALLOW COMPLETED AREAS TO BE STABILIZED AND RE-VEGETATED BEFORE DISTURBING ADJACENT SITES. THE NEED FOR TEMPORARY EROSION CONTROL MEASURES MAY BE AVOIDED BY COMPLETING A PHASE AND INSTALLING PERMANENT EROSION CONTROL MEASURES WHEN THE FINAL GRADE IS ATTAINED.
1.1.7. MAINTAIN AND PROTECT ALL NATURAL WATERWAYS. RETAIN AT LEAST A 35-FOOT UNDISTURBED BUFFER OF NATURAL VEGETATION ALONG ALL WATERWAYS TO FILTER OUT SEDIMENT AND OTHER POLLUTANTS. MAINTAIN A 45-FOOT UNDISTURBED BUFFER AROUND SENSITIVE WATERS.
1.1.8. INSTALL SILT FENCE (OR BIO ROLLS/ROCK SOCK PRODUCTS) ON THE DOWN-SLOPE PERIMETER OF ALL DISTURBED AREAS PRIOR TO ANY SOIL DISTURBING ACTIVITIES (INCLUDING CLEARING AND GRUBBING). SILT FENCE CAN TREAT A MAXIMUM OF 100 SQUARE FEET PER LINEAL FOOT OF FENCE. INSTALL SILT FENCE IN SHORTER REACHES ON THE CONTOUR WITH EACH END TURNED UP-SLOPE . SWALES AND SHORELAND AREAS SHOULD ALSO BE PROTECTED WITH SILT FENCE, BIO ROLLS, OR ROCK SOCKS.
1.1.9. IN AREAS OF CONCENTRATED FLOW INSTALL STRAW BALE CHECKS, ROCK CHECK DAMS, TRIANGULAR DIKES, BIO ROLL BLANKETS, OR ROCK SOCKS TO SLOW RUNOFF AND TRAP SEDIMENT.

1.1.10. USE TEMPORARY SLOPE DRAINS OR ROCK CHUTES TO MOVE WATER DOWN STEEP SLOPES.

1.1.11. CONSTRUCT SEDIMENT BASINS FOR DRAINAGE AREAS GREATER THAN 10 ACRES

1.2. ROUGH GRADING

1.2.1. ALL EXISTING CONTROLS WILL BE MAINTAINED DURING ROUGH GRADING, DELAYS OF GREATER THAN 14 DAYS PRIOR TO START OF NEXT ACTIVITY WILL MANDATE STABILIZATION PROCEDURES. ACCEPTABLE METHODS OF STABILIZATION INCLUDE MULCHING AND TEMPORARY SEEDING.
1.2.2. ALL AREAS NOT SUBJECT TO FURTHER CONSTRUCTION (DRAINAGE, SANITARY SEWER, ROADS, WATER DISTRIBUTION SYSTEMS, OR STORM WATER FACILITIES) SHALL BE GRASSED WITH A PERMANENT COVER.
1.2.3. COVER ANY STOCK PILED TOPSOIL WITH PLASTIC (OR OTHER IMPERVIOUS COVERING) OR USE A TEMPORARY SEED MIX. USE STOCKPILED TOPSOIL AS EARTHEN BERMS TO SERVE AS TEMPORARY SEDIMENT BASINS.

1.3. DRAINAGE

1.3.1. ALL EXISTING CONTROLS WILL BE MAINTAINED DURING DRAINAGE INSTALLATION.
1.3.2. CONSTRUCTION DRAINAGE WILL BE ROUTED THROUGH LAKES, WHICH WILL ACT AS SEDIMENT BASINS OR OTHER ACCEPTABLE SEDIMENT BASINS/TRAPS.
1.3.3. STORM DRAIN INLET PROTECTION AS SHOWN ON DETAIL SHEET SHALL BE INSTALLED ON ALL CURB INLETS, STORM DRAIN MANHOLES, JUNCTION BOXES, AND GRATE INLETS.
1.3.4. DELAYS OF GREATER THAN 14 DAYS PRIOR TO START OF THE NEXT CONSTRUCTION SEQUENCE WILL MANDATE STABILIZATION PROCEDURES. ACCEPTABLE METHODS OF STABILIZATION INCLUDE MULCHING AND TEMPORARY SEEDING.
1.3.5. ALL STORM LINES NOT IN STREETS OR OTHER PAVED AREAS ARE TO BE MULCHED AND SEEDED WITHIN 5 DAYS AFTER BACKFILL.

1.4. WASTE DISTRIBUTION SYSTEM INSTALLATION

1.4.1. ALL EXISTING CONTROLS WILL BE MAINTAINED DURING INSTALLATION OF THE WATER DISTRIBUTION SYSTEM.
1.4.2. DELAYS OF GREATER THAN 14 DAYS PRIOR TO START OF NEXT ACTIVITY WILL MANDATE STABILIZATION PROCEDURES. ACCEPTABLE METHODS OF STABILIZATION INCLUDE MULCHING AND TEMPORARY SEEDING.

1.5. WASTEWATER COLLECTION SYSTEM INSTALLATION

1.5.1. ALL EXISTING CONTROLS WILL BE MAINTAINED DURING INSTALLATION OF THE WASTEWATER SYSTEM.
1.5.2. DELAYS OF GREATER THAN 14 DAYS PRIOR TO START OF NEXT ACTIVITY WILL MANDATE STABILIZATION PROCEDURES. ACCEPTABLE METHODS OF STABILIZATION INCLUDE MULCHING AND TEMPORARY SEEDING.

1.6. CONSTRUCTION OF ROADS

1.6.1. ALL EXISTING CONTROLS WILL BE MAINTAINED DURING ROAD CONSTRUCTION.
1.6.2. DELAYS OF GREATER THAN 14 DAYS PRIOR TO START OF NEXT ACTIVITY WILL MANDATE STABILIZATION PROCEDURES. ACCEPTABLE METHODS OF STABILIZATION INCLUDE MULCHING AND TEMPORARY SEEDING.

1.7. GRASSING

1.7.1. ALL EXISTING CONTROLS WILL BE MAINTAINED UNTIL GRASSING IS ESTABLISHED
1.7.2. ANY AREAS THAT ERODE OR WHERE GRASS DOES NOT ESTABLISH ITSELF SHALL BE RE-GRADED AND RE-GRASSED.

2. STORM WATER MANAGEMENT

RUNOFF FROM THIS PROJECT WILL DISCHARGE INTO A STORM WATER MANAGEMENT SYSTEM. TREATMENT WILL OCCUR IN STORM WATER DETENTION PONDS.

3. OTHER CONTROLS

3.1. WASTE DISPOSAL

3.1.1. NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, SHALL BE DISCHARGED TO ANY RECEIVING WATERS.
3.1.2. OFFSITE VEHICLE TRACKING OF SEDIMENTS AND THE GENERATION OF DUST SHALL BE MINIMIZED.
3.1.3. THIS PLAN SHALL COMPLY WITH STATE AND/OR LOCAL WASTE DISPOSAL, SANITARY SEWER OR SEPTIC SYSTEM REGULATIONS.
3.1.4. DUST CONTROL ON DISTURBED AREAS - CONTROLLING SURFACE AND AIR MOVEMENT OF DUST ON CONSTRUCTION SITE AND HAUL ROUTES. THE PURPOSE OF THE MEASURE IS TO REDUCE THE PRESENCE OF AIRBORNE SUBSTANCES, WHICH MAY BE HARMFUL OR INJURIOUS TO HUMAN HEALTH, WELFARE OR SAFETY, OR TO ANIMALS OR PLANT LIFE.

III. MAINTENANCE

1. MAINTENANCE PROGRAM
1.1. THE SITE SUPERINTENDENT, OR HIS/HER REPRESENTATIVE, SHALL MAKE VISUAL INSPECTIONS OF ALL MECHANICAL CONTROLS AND NEWLY STABILIZED AREAS (I.E. SEEDED AND MULCHED AND/OR SODDED AREAS) ON A DAILY BASIS; ESPECIALLY AFTER HEAVY RAINFALL EVENT TO INSURE THAT ALL CONTROLS ARE MAINTAINED AND PROPERLY FUNCTIONING. ANY DAMAGED CONTROLS SHALL BE REPAIRED PRIOR TO THE END OF THE WORK DAY INCLUDING RE-SEEDING AND MULCHING OR RE-SODDING IF NECESSARY.

1.2. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE. ALL DRAINAGE SWALES, POCKETS, DEPRESSION, LOW LINES, AND OUTLET DITCHES SHALL DRAIN EFFECTIVELY AT ALL TIMES. SETTLEMENT OR WASHING THAT MAY OCCUR SHALL BE REPAIRED BY THE CONTRACTOR. SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT REACHES 1/3 THE HEIGHT OF THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN AN EFFECTIVE BARRIER. MAINTAIN THE CONSTRUCTION EXIT IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TACKED ONTO PUBLIC ROADWAYS. RESEED AND MULCH AREA WHERE SEEDING EMERGENCE IS POOR, OR WHERE EROSION OCCURS. PROTECT FROM TRAFFIC AS MUCH AS POSSIBLE. INSPECT ALL MULCHES PERIODICALLY, AND AFTER RAINSTORMS TO CHECK FOR EROSION, DISLOCATION OR FAILURE. IF WASHOUT OCCURS, REPAIR THE SLOPE GRADE, RESEED AND REINSTALL MULCH. FOLLOW THE CONSTRUCTION SEQUENCE THROUGHOUT THE PROJECT DEVELOPMENT. WHEN CHANGES IN CONSTRUCTION ACTIVITIES ARE NEEDED, AMEND THE SEQUENCE SCHEDULE IN ADVANCE TO MAINTAIN MANAGEMENT CONTROL. IF MAJOR CHANGES ARE NECESSARY, SEND A COPY OF THE MODIFIED SCHEDULE TO THE ENGINEER, SEDIMENT AND EROSION CONTROL MEASURES WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE DISTURBED AREAS ARE STABILIZED.

2. SILT FENCE

SILT FENCES WILL BE MONITORED DURING CONSTRUCTION. ANY SILT FENCE WHICH IS NOT FUNCTIONING PROPERLY WILL BE PROMPTLY REPAIRED. CLEAN OUT THE SILT FENCE WHEN IT REACHES 1/3 THE HEIGHT OF THE FENCE OR REPLACE WITH FUNCTIONAL SILT FENCE WITHIN 24 HOURS. USE OF HOSES AND WATER TO FLUSH THE SEDIMENT INTO THE STORM INLETS IS UNACCEPTABLE.

3. SEDIMENTATION BASINS

SEDIMENTATION BASINS WHICH ARE AT 50% USED CAPACITY OR APPROACHING SUCH CAPACITY SHALL BE RE-EXCAVATED TO ORIGINAL DIMENSIONS AND THE SILT PROPERLY DISPOSED OF.

4. SEDIMENT LOGS/ROLLS

SEDIMENT LOGS/ROLLS OR OTHER CONTROL MEASURES WHICH BEGIN TO DISINTEGRATE OR FUNCTION INEFFECTIVELY SHALL BE PROMPTLY REPLACED.

5. VEGETATION COVER

ANY VEGETATION COVER SERVING TO STABILIZE DISTURBED SOILS WHICH IS ITSELF DISTURBED SHALL IMMEDIATELY BE REPLACED.

6. CONSTRUCTION ENTRANCE

MAINTAIN ROCK CONSTRUCTION ENTRANCE AND CLEAN ADJACENT ROADS OF ANY MUD TRACKED ONTO THEM.

IV. INSPECTIONS

1. QUALIFIED PERSONNEL WILL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE, AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION THAT HAVE NOT BEEN FINALLY STABILIZED, STRUCTURAL CONTROL MEASURES, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AT LEAST ONCE EVERY SEVEN CALENDAR DAYS. WHERE SITES HAVE BEEN FINALLY STABILIZED SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH DURING THE WARRANTY PERIOD.

2. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATERS. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFFSITE SEDIMENT TRACKING.

3. A WRITTEN REPORT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME(S) AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION, THE DATE(S) OF THE INSPECTION, WEATHER INFORMATION FOR THE PERIOD SINCE THE LAST INSPECTION (OR SINCE COMMENCEMENT OF CONSTRUCTION ACTIVITY) INCLUDING A BEST ESTIMATE OF THE BEGINNING OF EACH STORM EVENT, DURATION OF EACH STORM EVENT, APPROXIMATE AMOUNT OF RAINFALL FOR EACH STORM EVENT (IN INCHES) AND WHETHER ANY DISCHARGES OCCURRED, LOCATION(S) OF DISCHARGES OF SEDIMENT OR OTHER POLLUTANTS FROM THE SITE, LOCATION(S) OF BMP'S THAT NEED MAINTENANCE, LOCATION(S) OF BMP'S THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, LOCATION(S) WHERE ADDITIONAL BMP'S ARE NEEDED THAT DID NOT EXIST AT THE TIME OF INSPECTION AND ANY CORRECTIVE ACTION REQUIRED INCLUDING ANY CHANGES TO SWPPP NECESSARY AND IMPLEMENTATION DATES.

4. THE REPORT SHALL BE MAINTAINED AT LEAST THREE YEARS FROM THE DATE THE SITE IS FINALLY STABILIZED. THE REPORT MUST BE SIGNED AND SHALL CONTAIN A CERTIFICATION THAT THE FACILITY IS IN COMPLIANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN AND THE NPDES PERMIT REFERENCED ABOVE. THE CONTRACTOR SHALL MAINTAIN THIS REPORT. THE REPORT SHALL BE SUBMITTED TO THE ENGINEER AND OWNER.

V. LONG TERM MAINTENANCE OF DRAINAGE AND STORM WATER MANAGEMENT SYSTEM

THE ROADS AND DRAINAGE SYSTEM WILL BE OWNED AND MAINTAINED BY FLORENCE COUNTY AFTER CONSTRUCTION IS COMPLETE.

VI. SC DHEC STANDARD NOTES

1. IF NECESSARY, SLOPES WHICH EXCEED EIGHT (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS, IN ADDITION TO GRASSING / HYDROSEEDING. IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINS DURING CONSTRUCTION. TEMPORARY BERMS MAY BE NEEDED UNTIL THE SLOPE IS BROUGHT TO GRADE.

2. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED, EXCEPT AS STATED BELOW:

2.1. WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.
2.2. WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH-DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 14 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.

3. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED ONCE EVERY CALENDAR WEEK. IF SITE INSPECTIONS IDENTIFY BMP'S THAT ARE DAMAGED OR ARE NOT OPERATING EFFECTIVELY, MAINTENANCE MUST BE PERFORMED AS SOON AS PRACTICAL OR AS REASONABLY POSSIBLE BEFORE THE NEXT STORM EVENT WHENEVER PRACTICAL.

4. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION. FILL, COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER IS ENCOUNTERED WHILE TRENCHING, THE WATER SHOULD BE FILTERED TO REMOVE ANY SEDIMENTS BEFORE BEING PUMPED INTO ANY WATERS OF THE STATE.

5. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.

6. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO THE PAVED ROADWAY FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT AS MAY BE REQUIRED.

7. RESIDENTIAL SUBDIVISIONS REQUIRE EROSION CONTROL FEATURES FOR INFRASTRUCTURE AS WELL AS FOR INDIVIDUAL LOT CONSTRUCTION. INDIVIDUAL PROPERTY OWNERS SHALL FOLLOW THESE PLANS DURING CONSTRUCTION OR OBTAIN APPROVAL OF AN INDIVIDUAL PLAN IN ACCORDANCE WITH S.C. REG. 72-300 AND SCR100000.

8. TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS.

9. ALL WATERS OF THE STATE (WOS), INCLUDING WETLANDS, ARE TO BE FLAGGED OR OTHERWISE CLEARLY MARKED IN THE FIELD. A DOUBLE ROW OF SILT FENCE IS TO BE INSTALLED IN ALL AREAS WHERE A 50-FOOT BUFFER CAN NOT BE MAINTAINED BETWEEN THE DISTURBED AREA AND ALL WOS. A 10-FOOT BUFFER SHOULD BE MAINTAINED BETWEEN THE LAST ROW OF SILT FENCE AND ALL WOS

10. LITTER, CONSTRUCTION DEBRIS, OILS, FUELS, AND BUILDING PRODUCTS WITH SIGNIFICANT POTENTIAL FOR IMPACT (SUCH AS STOCKPILES OF FRESHLY TREATED LUMBER) AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORM WATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE IN STORM WATER DISCHARGES.

11. A COPY OF THE SWPPP, INSPECTION RECORDS AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR A NEARBY LOCATION EASILY ACCESSIBLE DURING NORMAL BUSINESS HOURS, FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO THE DATE THAT FINAL STABILIZATION IS REACHED.

12. INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3H:1V OR GREATER) WHERE LAND DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 7 CALENDAR DAYS.

13. MINIMIZE SOIL COMPACTION IN AREAS NOT UNDER PAVEMENTS AND /OR STRUCTURES AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.

14. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER AND OTHER WASH WATERS. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN OR ALTERNATIVE CONTROL THAT PROVIDES EQUAL OR BETTER TREATMENT PRIOR TO DISCHARGE.

15. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING OF TRENCHES AND EXCAVATED AREAS. THESE DISCHARGES ARE TO BE ROUTED THROUGH APPROPRIATE BMPS (SEDIMENT BASIN, FILTER BAG, ETC.).

16. THE FOLLOWING DISCHARGES ARE PROHIBITED:

16.1. WASTEWATER FROM WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL;
16.2. WASTEWATER FROM WASHOUT AND CLEANOUT OF OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS;
16.3. FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE; AND
16.4. SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING.

17. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS MUST BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE.

18. IF EXISTING BMPS NEED TO BE MODIFIED OR IF ADDITIONAL BMPS ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS OF PERMIT SCR100000 AND/OR SC'S WATER QUALITY STANDARDS, IMPLEMENTATION MUST BE COMPLETED BEFORE THE NEXT STORM EVENT WHENEVER PRACTICABLE. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICABLE, THE SITUATION MUST BE DOCUMENTED IN THE SWPPP AND ALTERNATIVE BMPS MUST BE IMPLEMENTED AS SOON AS REASONABLY POSSIBLE.

19. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD FOR EACH CONSTRUCTION SITE WITH AN APPROVED ON-SITE SWPPP PRIOR TO THE IMPLEMENTATION OF CONSTRUCTION ACTIVITIES. FOR NON-LINEAR PROJECTS THAT DISTURB 10 ACRES OR MORE, THIS CONFERENCE MUST BE HELD ON-SITE UNLESS THE DEPARTMENT HAS APPROVED OTHERWISE.

VII. EROSION, SEDIMENTATION & POLLUTION CONTROL NOTES

1. THE IMPLEMENTATION OF THESE EROSION SEDIMENT CONTROL (ESC) PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.

2. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.

3. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE SITE.

4. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.

5. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 24 HOURS FOLLOWING A MAJOR STORM EVENT.

6. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING AND PRIOR TO FINAL INSPECTION. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.

7. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

8. BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY, THE EXISTING STORM WATER INLET(S) THAT RECEIVING RUNOFF FROM THE PROPOSED WORK AREA SHALL BE PROTECTED. THE TEMPORARY INLET PROTECTION MUST REMAIN IN PLACE UNTIL THE CONSTRUCTION ACTIVITY IS COMPLETED, THE STREET HAS BEEN SWEPT AND ANY EXPOSED SOILS ARE STABILIZED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR REMOVING ANY TEMPORARY INLET PROTECTION INSTALLED; AFTER ALL DISTURBED AREAS ARE STABILIZED. TEMPORARY PROTECTION OF THE INLETS MAY BE ACCOMPLISHED BY ONE OR MORE OF THE FOLLOWING:

8.1. USE OF GRAVEL BAGS TO FILTER THE SEDIMENT FROM ANY RUNOFF. TO MAKE A GRAVEL BAG, USE A BAG MADE OF GEOTEXTILE FABRIC (NOT BURLAP) AND FILL WITH EITHER 3/4 INCH ROCK OR 1/4 INCH PEA GRAVEL.
8.2. USE OF SEDIMENT LOGS TO FILTER THE SEDIMENT FROM ANY RUNOFF (AVAILABLE THROUGH LOCAL EROSION CONTROL SUPPLIERS).
8.3. USE OF ABOVE OR UNDER-GRATE FILTER BAGS OR DEVICES TO FILTER THE SEDIMENT FROM ANY RUNOFF (AVAILABLE THROUGH EROSION CONTROL SUPPLIERS).

9. WATER MAY NOT BE DISCHARGED IN A MANNER THAT CAUSES EROSION, SEDIMENTATION, OR FLOODING ON THE SITE, ON DOWNSTREAM PROPERTIES, IN THE RECEIVING CHANNELS, OR IN ANY STORM WATER INLET. WHEN SITE DEWATERING, WATER PUMPED FROM THE SITE, INCLUDING TRENCHES, SHALL BE TREATED BY ONE OF THE FOLLOWING:

9.1. TEMPORARY SEDIMENTATION BASINS
9.2. SEDIMENT FILTERING BAGS

10. THE CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL EXISTING UTILITIES. EXISTING UTILITIES ARE ALL UTILITIES THAT EXIST ON THE PROJECT IN AN ORIGINAL, RELOCATED OR NEWLY INSTALLED POSITION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE COST OF REPAIRS TO DAMAGED UNDERGROUND OR OVERHEAD FACILITIES, EVEN IF THE UTILITY IS NOT SHOWN ON THE SITE DEVELOPMENT PLANS. THE CONTRACTOR SHALL CONTACT THE LOCAL UTILITIES PROTECTION CENTER TO COORDINATE THE MARKING OF EXISTING UTILITY LINES A MINIMUM OF 96 HOURS PRIOR TO COMMENCEMENT OF ANY WORK.

11. THE CONTRACTOR SHALL FLUSH ALL INLETS AND PIPE AT THE COMPLETION OF CONSTRUCTION TO REMOVE SILT AND DEBRIS. THE CLEANING AND FLUSHING OF INLETS AND PIPE (EXISTING AND PROPOSED) SHALL BE CONSIDERED PART OF THE COST FOR THE PROJECT.

12. EGRESS FROM THE SITE SHALL BE CONTROLLED SUCH THAT VEHICLES LEAVING THE SITE MUST TRAVERSE CONSTRUCTION EXITS TO REMOVE MUD FROM TIRES.

13. SCHEDULE CONSTRUCTION ACTIVITIES TO MINIMIZE THE EXPOSED AREA AND DURATION OF EXPOSURE. IN SCHEDULING, TAKE INTO ACCOUNT THE SEASON AND THE WEATHER FORECAST.

14. EROSION CONTROL MEASURES ARE THE MINIMUM REQUIRED. THE CONTRACTOR SHALL PROVIDE ADDITIONAL CONTROL MEASURES AS DICTATED BY ACTUAL FIELD CONDITIONS AT THE TIME OF CONSTRUCTION IN ORDER TO PREVENT EROSION AND CONTROL SEDIMENT. EROSION AND SEDIMENT CONTROL MEASURES WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE ENTIRE PROJECT IS TERMINATED OR SUSPENDED FOR AND INDEFINITE LENGTH OF TIME, ALL DISTURBED AREAS SHALL BE PLANTED WITH PERMANENT VEGETATION.

15. THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS, OR IN ANY WAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, IS BASED UPON FIELD INVESTIGATIONS AND IS BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS. HOWEVER, THE SAME IS SHOWN AS INFORMATION ONLY, IS NOT GUARANTEED AND DOES NOT BIND THOMAS & HUTTON, OR THE OWNER IN ANY WAY.

16. CONTRACTOR SHALL MAINTAIN SITE ON A DAILY BASIS TO PROVIDE FOR POSITIVE DRAINAGE. CONTRACTOR, AT HIS COST, SHALL GRADE SITE AND PROVIDE NECESSARY TEMPORARY DRAINAGE SWALES TO INSURE STORM WATER DOES NOT POND ON SITE.

17. SITE DRAINAGE SHALL BE ESTABLISHED TO PREVENT ANY PONDED WATER CONDITIONS WITHIN THE CONSTRUCTION AREA AND TO FACILITATE STORM WATER DISCHARGE.

18. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES.

19. LIME RATES AND ANALYSIS:
19.1. AGRICULTURAL LIME SHALL BE APPLIED AT THE RATE SHOWN IN THE SEEDING SECTION UNLESS SOIL TESTS INDICATE OTHERWISE. GRADED AREAS REQUIRE LIME APPLICATION. IF LIME IS APPLIED WITHIN SIX MONTHS OF PLANTING PERMANENT PERENNIAL VEGETATION, ADDITIONAL LIME IS NOT REQUIRED. AGRICULTURAL LIME APPLICATION SHALL BE WITHIN THE SPECIFICATIONS OF THE SOUTH CAROLINA DEPARTMENT OF AGRICULTURE.

20. MULCHING:

MULCHING IS REQUIRED FOR ALL PERMANENT VEGETATION APPLICATIONS. MULCH APPLIED TO SEEDED AREAS SHALL ACHIEVE 75% SOIL COVER. SELECT THE MULCHING MATERIAL FROM THE FOLLOWING AND APPLY AS INDICATED:

20.1. DRY STRAW OR DRY HAY OF GOOD QUALITY AND FREE OF WEED SEEDS CAN BE USED. DRY STRAW SHALL BE APPLIED AT THE RATE OF TWO TONS PER ACRE. DRY HAY SHALL BE APPLIED AT THE RATE OF 2 1/2 TONS PER ACRE.
20.2. WOOD CELLULOSE MULCH OR WOOD PULP FIBER SHALL BE USED WITH HYDRAULIC SEEDING. IT SHALL BE APPLIED AT A RATE OF 500 POUNDS PER ACRE. DRY STRAW OR DRY HAY SHALL BE APPLIED (AT THE RATE INDICATED ABOVE) AFTER HYDRAULIC SEEDING.
20.3. ONE THOUSAND POUNDS OF WOOD CELLULOSE OR WOOD PULP FIBER, WHICH INCLUDES A TACKIFIER, SHALL BE USED WITH HYDRAULIC SEEDING ON SLOPES 3/4:1 OR STEEPER.
20.4. SERICEA LESPEDEZA HAY CONTAINING MATURE SEED SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE.
20.5. PINE STRAW OR PINE BARK SHALL BE APPLIED AT A THICKNESS OF 3 INCHES FOR BEDDING PURPOSES. OTHER SUITABLE MATERIALS IN SUFFICIENT QUANTITY MAY BE USED WHERE ORNAMENTALS OR OTHER GROUND COVERS ARE PLANTED. THIS IS NOT APPROPRIATE FOR SEEDED AREAS.
20.6. WHEN USING TEMPORARY EROSION CONTROL BLANKETS OR BLACK SOD, MULCH IS NOT REQUIRED.
20.7. ON SLOPES GREATER THAN 10 FEET IN LENGTH AND 4:1 OR STEEPER, USE THE FOLLOWING EROSION CONTROL BLANKETS THAT HAVE BEEN PROPERLY ANCHORED TO THE SLOPE ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS:

- 2:1 SLOPES OR STEEPER: - STRAW/COCONUT BLANKET OR HIGH VELOCITY WOOD BLANKET
- 3:1 SLOPES OR STEEPER: - WOOD OR STRAW BLANKET WITH NET ON BOTH SIDES
- 4:1 SLOPES OR FLATTER: - WOOD OR STRAW MULCH BLANKET WITH NET ON ONE SIDE

VIII. HOUSEKEEPING

THESE PERFORMANCE STANDARDS APPLY TO ALL SITES.

1. PETROLEUM PRODUCTS: INCLUDING OIL, GASOLINE, LUBRICANTS AND ASPHALTIC SUBSTANCES.

1.1. HAVE EQUIPMENT TO CONTAIN AND CLEAN UP PETROLEUM SPILLS IN FUEL STORAGE AREAS OR ON MAINTENANCE AND FUELING VEHICLES
1.2. STORE IN COVERED AREAS PROTECTED WITH DIKES

2. SPILLS: PREVENTION AND RESPONSE.

2.1. STORE AND HANDLE MATERIALS TO PREVENT SPILLS
2.2. TIGHTLY SEALED CONTAINERS, NEAT AND SECURE STACKING, ETC.
2.3. REDUCE STORM WATER CONTACT IF SPILL OCCURS
2.3.1. CLEANUP PROCEDURES SHOULD BE CLEARLY POSTED.
2.3.2. CLEANUP MATERIALS SHOULD BE READILY AVAILABLE
2.3.3. STOP THE SOURCE
2.3.4. CONTAIN THE SPILL

3. NON-STORM WATER DISCHARGES

THE FOLLOWING NON-STORMWATER DISCHARGES MUST BE PROTECTED FROM CAUSING POLLUTION OR EROSION:

3.1. DISCHARGES FROM FIRE-FIGHTING ACTIVITIES
3.2. FIRE HYDRANT FLUSHINGS
3.3. WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED
3.4. WATER USED TO CONTROL DUST
3.5. POTABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHINGS
3.6. ROUTINE EXTERNAL BUILDING WASH DOWN THAT DOES NOT USE DETERGENTS
3.7. PAVEMENT WASH WATERS WHERE SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED (UNLESS ALL SPILLED MATERIAL HAS BEEN REMOVED) AND WHERE DETERGENTS ARE NOT USED
3.8. UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE
3.9. UNCONTAMINATED GROUND WATER OR SPRING WATER
3.10. FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH PROCESS MATERIALS SUCH AS SOLVENTS
3.11. UNCONTAMINATED EXCAVATION DEWATERING
3.12. LANDSCAPE IRRIGATION
3.13. DECHLORINATED SWIMMING POOL DISCHARGES.

4. CONSTRUCTION WASTES: DEMOLITION RUBBLE, PACKAGING MATERIALS, SCRAP BUILDING SUPPLIES, ETC.

4.1. SELECT A DESIGNATED WASTE COLLECTION AREA
4.2. PROVIDE LIDS FOR WASTE CONTAINERS
4.3. WHEN POSSIBLE LOCATE CONTAINERS IN COVERED AREA
4.4. MAINTAIN CONSISTENT REMOVAL SCHEDULE FOR WASTE

5. PESTICIDES: REDUCE THE AMOUNT OF PESTICIDES AVAILABLE FOR CONTACT WITH STORM WATER.

5.1. STORE IN A DRY COVERED AREA
5.2. INSTALL CURBS OR DIKES AROUND STORAGE AREA TO PROTECT AGAINST SPILLS
5.3. STRICTLY FOLLOW RECOMMENDED APPLICATION RATES

6. FERTILIZERS AND DETERGENTS: REDUCE THE AMOUNT OF FERTILIZERS AND DETERGENTS AVAILABLE FOR CONTACT WITH STORM WATER.

6.1. LIMIT APPLICATION OF FERTILIZERS TO THE MINIMUM NEEDED
6.2. APPLY MORE FREQUENTLY BUT AT LOWER APPLICATION RATES
6.3. LIMIT USE OF DETERGENTS ON-SITE
6.4. DO NOT DISCHARGE WASH WATER INTO STORM WATER SYSTEM
6.5. MAINTAIN STRUCTURAL AND VEGETATIVE BMP'S
6.6. APPLY ACCORDING TO SOIL TEST RECOMMENDATIONS PRIOR TO SEEDING.

IX. GRASSING NOTES

1. SOD:

ALL SOD SHALL BE NURSERY GROWN AS CLASSIFIED IN THE ASPS GSS. MACHINE CUT SOD AT A UNIFORM THICKENS OF 3/4" WITHIN A TOLERANCE OF 1/4", EXCLUDING TOP GROWTH AND THATCH. EACH INDIVIDUAL SOD PIECE SHALL BE STRONG ENOUGH TO SUPPORT ITS OWN WEIGHT WHEN LIFTED BY THE ENDS. BROKEN PODS, IRREGULARLY SHAPED PIECES, AND TORN OR UNEVEN ENDS WILL BE REJECTED. WOOD PEGS AND / OR WIRE STAPLES SHALL REPLACE SOD WITH AN EQUAL SOD COMPOSITION AS THAT WHICH IS EXISTING. IF NO SOD TYPE EXIST. THEN THE FOLLOWING SOD COMPOSITION SHALL BE USED.

2. SODDING SCHEDULE:

LAY SOD FROM MAY 1 TO SEPTEMBER 15 FOR SPRING PLANTING AND FROM SEPTEMBER 15 TO NOVEMBER 1 FOR FALL PLANTING.

3. SEED:

ALL SEED SHALL CONFORM TO ALL STATE LAWS AND TO ALL REQUIREMENTS AND REGULATIONS OF THE SOUTH CAROLINA DEPARTMENT OF AGRICULTURE. THE SEVERAL VARIETIES OF SEED SHALL BE INDIVIDUALLY PACKAGED OR BAGGED, AND TAGGED TO SHOW NAME OF SEED, NET WEIGHT, ORIGIN, GERMINATION, LOT NUMBER, AND OTHER INFORMATION REQUIRED BY THE DEPARTMENT OF AGRICULTURE.

3.1. PENNISETUM GLAUCIUM (BROWNTOP MILLET): TESTING 98 PERCENT PURITY AND 85 PERCENT GERMINATION.
3.2. BERMUDA COMMON: TESTING 98 PERCENT PURITY AND 85 PERCENT GERMINATION.
3.3. DOMESTIC ITALIAN RYE: TESTING 98 PERCENT PURITY AND 90 PERCENT GERMINATION.

4. MISCELLANEOUS:

4.1. PERMANENT SEEDING SHALL COVER ALL DISTURBED AREA NOT TO BE COVERED BY LANDSCAPE PLANTING BEDS, STRUCTURE, OR PAVEMENT.
4.2. SEED ALL DISTURBED AREAS WITHIN SEVEN DAYS OF FINAL GRADING AND TEMPORARY SEED/MULCH ALL AREAS THAT WILL BE LEFT INACTIVE FOR MORE THAN FOURTEEN (14) DAYS.
4.3. ALL PERMANENT GRASS PLANTINGS SHALL BE MULCHED
4.4. CENTIPEDE SOD CAN BE USED AS PERMANENT COVER ANYTIME EXCEPT JUNE THRU OCTOBER
4.5. IF GRASSING OCCURS DURING A MONTH REQUIRING TEMPORARY COVER, THE CONTRACTOR SHALL APPLY PERMANENT COVER (IN ADDITION TO THE TEMPORARY COVER) AT THE APPROPRIATE TIME AT NO NO ADDITIONAL COST. THE CONTRACTOR MUST ACHIEVE A STRAND OF PERMANENT GRASS WITH AT LEAST 95% COVER. BARE SPOTS CAN NOT BE MORE THAN 1 INCH SQUARE IN ANY 10 SF.

X. PERMANENT STABILIZATION

NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC,EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL ESTABLISHED. IF NECESSARY, AREAS MUST BE RE-WORKED AND RE-STABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY ,OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO THE SITE.

4.1. SEEDED AREAS

FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

4.2. SODDED AREAS

FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE APPROVED MULCH MATERIAL.

4.3. PERMANENT MULCH

FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL.

4.4. RIPRAP

FOR AREAS STABILIZED WITH RIPRAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIPRAP HAVE AN APPROPRIATE BACKING OF AN APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIPRAP.

4.5. DITCHES, CHANNELS, AND SWALES

FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH WELL-GRADED RIPRAP LINING, OR WITH ANOTHER NON-EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE LINING, UNDERCUTTING OF THE BANKS, OR DOWN CUTTING OF THE CHANNEL.

XI. FERTILIZER REQUIREMENTS

1. TEMPORARY SEEDING FERTILIZER

APPLY A MINIMUM OF 500 LBS PER ACRE OF A COMPLETE 10-10-10 FERTILIZER (11.5 POUNDS PER 1000 SQUARE FEET) OR EQUIVALENT DURING TEMPORARY SEEDING OF GRASSES UNLESS A SOIL TEST INDICATES A DIFFERENT REQUIREMENT. INCORPORATE FERTILIZER AND LIME (IF USED) INTO THE TOP 4-6 INCHES OF THE SOIL BY DISKING OR OTHER MEANS WHERE CONDITIONS ALLOW. LIME IS NOT REQUIRED FOR TEMPORARY SEEDING UNLESS A SOIL TEST SHOWS THAT THE SOIL PH IS BELOW 5.0. IT IS DESIRABLE TO APPLY LIME DURING THE TEMPORARY SEEDING OPERATION TO BENEFIT THE LONG-TERM PERMANENT SEEDING. APPLY A MINIMUM OF 1.5 TONS OF LIME / ACRE (70LBS. / 1000 SQ. FT.).

2. PERMANENT SEEDING FERTILIZER

APPLY A MINIMUM OF 1000 LBS PER ACRE OF A COMPLETE 10-10-10 FERTILIZER (23 POUNDS PER 1000 SQUARE FEET) OR EQUIVALENT DURING PERMANENT SEEDING OF GRADES UNLESS A SOIL TEST INDICATES A DIFFERENT REQUIREMENT. INCORPORATE FERTILIZER AND LIME (IF USED) INTO THE TOP 4-6 INCHES OF THE SOIL BY DISKING OR OTHER MEANS WHERE CONDITIONS ALLOW. DO NOT MIX THE LIME AND THE FERTILIZER PRIOR TO THE FIELD APPLICATION. UNLESS A SPECIFIC SOIL TEST INDICATES OTHERWISE, APPLY 1 & 1/2 TONS OF GROUND COARSE TEXTURED AGRICULTURAL LIMESTONE PER ACRE (70 LBS. / 1000 SQ.FT.).

XII. SWPP PREPARER CERTIFICATION

I HAVE PLACED MY SIGNATURE AND SEAL ON THE DESIGN DOCUMENTS SUBMITTED SIGNIFYING THAT I ACCEPT RESPONSIBILITY FOR THE DESIGN OF THE SYSTEM. FURTHER, I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE DESIGN IS CONSISTENT WITH THE REQUIREMENTS OF TITLE 48, CHAPTER 14 OF THE CODE OF LAWS OF SC, 1976 AS AMENDED, PURSUANT TO REGULATION 72-300 ET SEQ. (IF APPLICABLE), AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF SCR100000.

SOUTH CAROLINA
THOMAS & HUTTON ENGINEERING CO.
No. C00285
CERTIFICATE OF AUTHORIZATION
6/7/21

SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. 29061
ROSS S. OAKLEY

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

THOMAS & HUTTON
1501 Main Street • Suite 760
Columbia, SC 29201 • 803.451.6789
www.thomasandhutton.com

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

EROSION CONTROL NOTES

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	N/A

EC0.1

TEMPORARY SEEDING - COASTAL

SPECIES	LBS/AC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SANDY, DROUGHTY SITES													
BROWNTOP MILLET	40			■	■	■	■	■	■				
RYE, GRAIN	56	■	■	■						■	■	■	■
RYEGRASS	50	■	■	■	■					■	■	■	■
WELL DRAINED, CLAYEY/LOAMEY SITES													
BROWNTOP MILLET	40				■	■	■	■	■				
JAPANESE MILLET	40				■	■	■	■	■				
RYE, GRAIN	56	■	■	■						■	■	■	■
OATS	75	■	■	■						■	■	■	■
RYEGRASS	50	■	■	■	■					■	■	■	■

PERMANENT SEEDING - COASTAL

SPECIES	LBS/AC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SANDY, DROUGHTY SITES													
BROWNTOP MILLET	10			■	■	■	■	■	■				
BAHIAGRASS	40			■	■	■	■	■	■				
BROWNTOP MILLET	10												
BAHIAGRASS	30			■	■	■	■	■	■				
SERICEA LESPEDEZA	40												
BROWNTOP MILLET	10												
ATLANTIC COASTAL	15			■	■	■	■						
PANICGRASS	PLS												
BROWNTOP MILLET	10												
SWITCHGRASS	8												
(ALAMO)	PLS			■	■	■	■						
LITTLE BLUESTEM	4												
SERICEA LESPEDEZA	20												
BROWNTOP MILLET	10												
WEEPING LOVEGRASS	8			■	■	■	■						
WELL DRAINED, CLAYEY/LOAMEY SITES													
BROWNTOP MILLET	10												
BAHIAGRASS	40			■	■	■	■	■	■				
RYE, GRAIN	10												
BAHIAGRASS	40									■	■	■	
CLOVER, CRIMSON (ANNUAL)	5												
BROWNTOP MILLET	10												
BAHIAGRASS	30			■	■	■	■	■	■				
SERICEA LESPEDEZA	40												
BROWNTOP MILLET	10												
BERMUDA, COMMON	10			■	■	■	■	■	■				
SERICEA LESPEDEZA	40												
BROWNTOP MILLET	10												
BERMUDA, COMMON	12			■	■	■	■	■	■				
KOBE LESPEDEZA (ANNUAL)	10												
BROWNTOP MILLET	10												
BAHIAGRASS	20												
BERMUDA, COMMON	6			■	■	■	■	■	■				
SERICEA LESPEDEZA	40												
BROWNTOP MILLET	10												
SWITCHGRASS	8												
LITTLE BLUESTEM	PLS			■	■	■	■	■	■				
INDIANGRASS	3												

EROSION CONTROL LEGEND

DESCRIPTION	PLAN SYMBOL
SILT FENCE	
LIMITS OF DISTURBANCE	LOD
DIVERSION BERM	DB
TEMPORARY SEEDING	TS
PERMANENT SEEDING	PS
RIPRAP	
STORM DRAIN INLET PROTECTION - TYPE A FILTER FABRIC	A
OUTLET PROTECTION - RIP RAP	
SEDIMENT TRAP	
SEDIMENT TUBE	
ROCK CHECK DAM	
STABILIZED CONSTRUCTION ENTRANCE	
CONCRETE WASHOUT	

LIST OF ACRONYMS FOR SEDIMENT AND EROSION CONTROL

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AMD	ACRYLAMIDE POLYMER
BFM	BONDED FIBER MATRIX
BMP(S)	BEST MANAGEMENT PRACTICE(S)
CFS	CUBIC FEET PER SECOND
CMP	CORRUGATED METAL PIPE
DHEC	DEPARTMENT OF HEATH AND ENVIRONMENTAL CONTROL
ECB	EROSION CONTROL BLANKET
EPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
EPSC	EROSION PREVENTION AND SEDIMENTATION CONTROL
FDA	UNITED STATES FOOD AND DRUG ADMINISTRATION
FGM	FLEXIBLE GROWTH MATRIX
HDPE	HIGH DENSITY POLYETHYLENE
MS4	MUNICIPAL SEPARATE STORM SEWER SYSTEM
MSDS	MATERIAL SAFETY DATA SHEETS
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PAM	POLYACRYLAMIDE OR POLYMER
RCP	REINFORCED CONCRETE PIPE
SCS	SOIL CONSERVATION SERVICE
SWPPP	STORMWATER POLLUTION PREVENTION PROGRAM
TRM	TURF REINFORCEMENT MAT
VFS	VEGETATED FILTER STRIP

CONSTRUCTION SEQUENCE

	CONSTRUCTION ACTIVITY
	INITIAL PHASE
1	RECEIVE NPDES COVERAGE FROM SCDHEC.
2	PRE-CONSTRUCTION MEETING WITH SCDHEC.
3	NOTIFY DHEC EQC REGIONAL OFFICE PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.
4	INSTALLATION OF CONSTRUCTION ENTRANCES.
5	CLEARING & GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS.
6	INSTALLATION OF PERIMETER CONTROLS (E.G., SILT FENCE).
7	CLEARING & GRUBBING ONLY IN AREAS OF POND.
8	INSTALLATION OF POND & INSTALLATION OF DIVERSIONS TO THAT STRUCTURE (AREAS DRAINING TO THIS STRUCTURE CANNOT BE DISTURBED UNTIL THE DIVERSIONS TO THE STRUCTURES ARE COMPLETELY INSTALLED).
	CONSTRUCTION PHASE
9	CLEARING & GRUBBING OF SITE OR DEMOLITION (SEDIMENT & EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).
10	ROUGH GRADING.
11	INSTALLATION OF STORM DRAIN SYSTEM & PLACEMENT OF INLET PROTECTION AS EACH INLET IS INSTALLED.
12	BUILDING PAD CONSTRUCTION.
13	FINE GRADING, PAVING, ETC.
	STABILIZATION PHASE
14	PERMANENT/FINAL STABILIZATION.
15	CLEAN-OUT OF DETENTION BASIN THAT WAS USED AS A SEDIMENT CONTROL STRUCTURE & RE-GRADING OF DETENTION POND BOTTOM; IF NECESSARY, MODIFICATION OF SEDIMENT BASIN RISER TO CONVERT TO DETENTION BASIN OUTLET STRUCTURE.
16	REMOVAL OF TEMPORARY SEDIMENT & EROSION CONTROL MEASURES AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED.
17	PERFORM AS-BUILT SURVEY OF DETENTION STRUCTURE & SUBMIT TO SCDHEC FOR ACCEPTANCE.
18	SUBMIT NOTICE OF TERMINATION (NOT) TO DHEC AS APPROPRAITE.

NORTH CAROLINA — THOMAS & HUTTON ENGINEERING CO. — No C00285 — CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA — REGISTERED PROFESSIONAL ENGINEER — No. 23906 — NATHAN J. HOLLAND — 6/21/21

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

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www.thomasandhutton.com

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

EROSION CONTROL CHARTS

JOB NO:	J-286010001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	N/A

EC0.2

CONSTRUCTION SEQUENCE	
CONSTRUCTION ACTIVITY	
INITIAL PHASE	
1	RECEIVE NPDES COVERAGE FROM SCDHEC.
2	PRE-CONSTRUCTION MEETING WITH SCDHEC.
3	NOTIFY DHEC EQC REGIONAL OFFICE PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.
4	INSTALLATION OF CONSTRUCTION ENTRANCES.
5	CLEARING & GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS.
6	INSTALLATION OF PERIMETER CONTROLS (E.G., SILT FENCE).
7	CLEARING & GRUBBING ONLY IN AREAS OF POND.
8	INSTALLATION OF POND & INSTALLATION OF DIVERSIONS TO THAT STRUCTURE (AREAS DRAINING TO THIS STRUCTURE CANNOT BE DISTURBED UNTIL THE DIVERSIONS TO THE STRUCTURES ARE COMPLETELY INSTALLED).

CO	
DESCRIPTION	PLAN SYMBOL
SILT FENCE	
LIMITS OF DISTURBANCE	LOD
RIPRAP	
ROCK CHECK DAM	
STABILIZED CONSTRUCTION ENTRANCE	
STORM DRAIN INLET PROTECTION - TYPE A FILTER FABRIC	A

LIMITS OF DISTURBANCE (TYP.)(±18.5 AC.)

TEMPORARY STOCKPILE AREA (SEE DETAIL SHEET EC4.2)

JURISDICTIONAL WETLAND (TYP.)

30' WETLAND BUFFER

FOREBAY BERM (SEE SHEET EC4.2) (TYP.)

DOUBLE ROW SILT FENCE (TYP.)

INSTALL EMERGENCY SPILLWAY (SEE DETAIL SHEET EC4.2)

INSTALL TWO (2) 8" FAIRCLOTH SKIMMERS (SEE DETAIL SHEET EC4.3)

PROPOSED SEDIMENT BASIN (SEE DETAIL SHEET EC4.2)

TURBIDITY CURTAIN (SEE SHEET EC4.2)

OUTLET PROTECTION

AMERICAN TOWER LEASE LINE

SILT FENCE (TYP.)

STABILIZED CONSTRUCTION ENTRANCE (SEE SHEET EC4.1) (TYP.)

INSTALL TYPE A INLET FILTER (SEE SHEET EC4.2)

INSTALL 12SY OF RIPRAP (TYP.)

US HIGHWAY 76 & 301 (60 MPH SPEED LIMIT, 107.5' R/W)

MATCH LINE - SEE SHEET NO. EC1.2

FLORENCE COUNTY 306-01-042

FLOYD FAMILY PROPERTIES LLC. 307-01-011

EVANS, RONNIE LAROSS 307-01-048

ROBERTS, WILLIE JOE & ROBERTS, LINDA S 307-01-049

FLOYD FAMILY PROPERTIES LLC 307-01-047

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

SOUTH CAROLINA PROFESSIONAL ENGINEER THOMAS & HUTTON ENGINEERING CO No. C00285 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 23906 NATHAN J. HOLLAND 06/07/2021 REGISTERED

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

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1501 Main Street • Suite 760
Columbia, SC 29201 • 803.451.6789
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FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

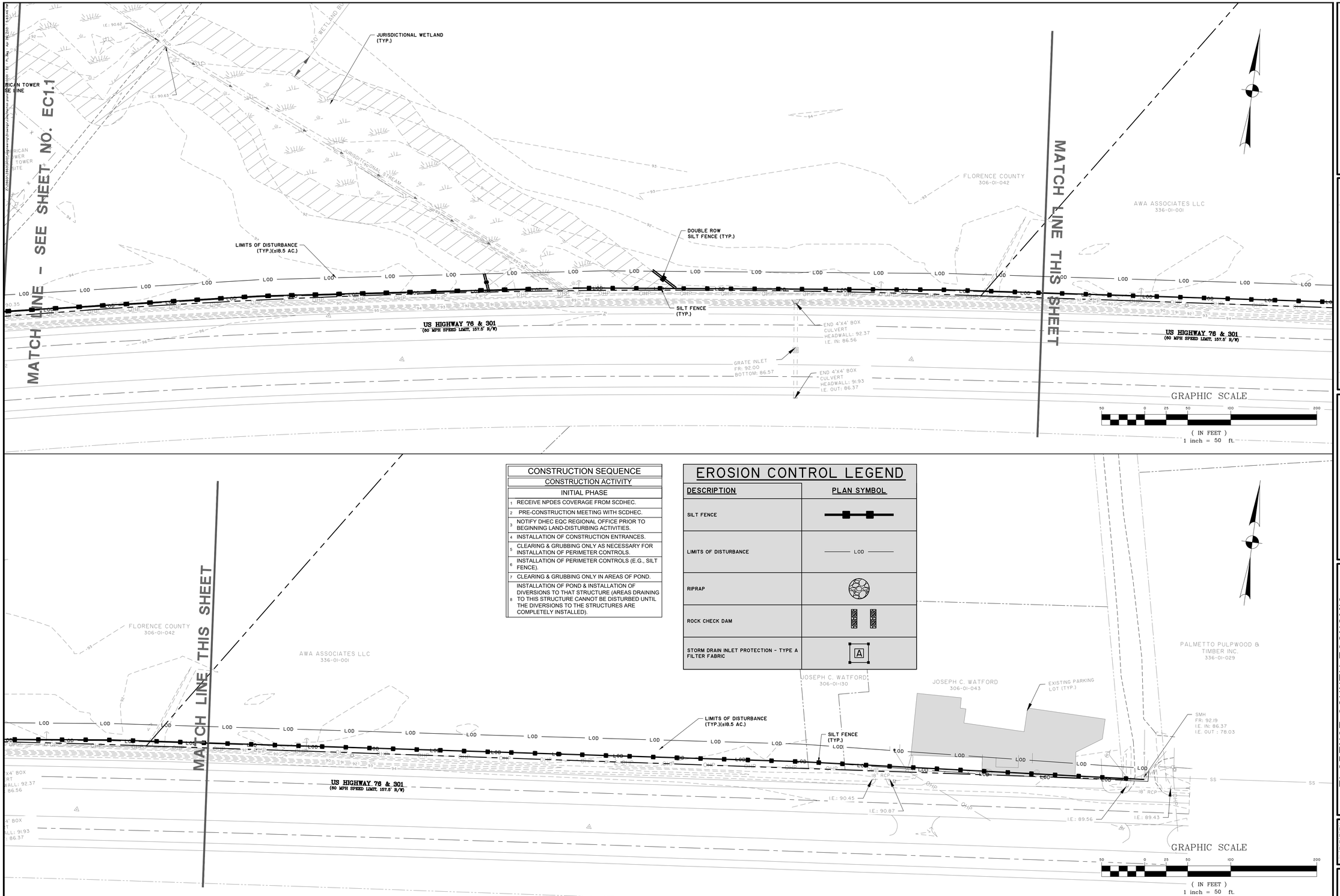
FLORENCE COUNTY INDUSTRIAL PARK EAST

EROSION CONTROL PLAN - INITIAL PHASE

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 60'

EC1.1

Z:\28601\0001\001\engineering\Drawings\construction plans\28601001 - EC - PLAN - Apr 26, 2021 - 1:45:43 PM



CONSTRUCTION SEQUENCE	
CONSTRUCTION ACTIVITY	
INITIAL PHASE	
1	RECEIVE NPDES COVERAGE FROM SCDHEC.
2	PRE-CONSTRUCTION MEETING WITH SCDHEC.
3	NOTIFY DHEC EQC REGIONAL OFFICE PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.
4	INSTALLATION OF CONSTRUCTION ENTRANCES.
5	CLEARING & GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS.
6	INSTALLATION OF PERIMETER CONTROLS (E.G., SILT FENCE).
7	CLEARING & GRUBBING ONLY IN AREAS OF POND.
8	INSTALLATION OF POND & INSTALLATION OF DIVERSIONS TO THAT STRUCTURE (AREAS DRAINING TO THIS STRUCTURE CANNOT BE DISTURBED UNTIL THE DIVERSIONS TO THE STRUCTURES ARE COMPLETELY INSTALLED).

EROSION CONTROL LEGEND

DESCRIPTION	PLAN SYMBOL
SILT FENCE	
LIMITS OF DISTURBANCE	LOD
RIPRAP	
ROCK CHECK DAM	
STORM DRAIN INLET PROTECTION - TYPE A FILTER FABRIC	A

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 23906 CERTIFICATE OF AUTHORIZATION THOMAS & HUTTON ENGINEERING CO No. C00285 CERTIFICATE OF AUTHORIZATION NORTH CAROLINA

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/08/03
2	REVISED PER FLORENCE COUNTY	NJH	2021/08/03
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THOMAS & HUTTON

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

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DESIGNED:	NJH
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APPROVED:	RSO
SCALE:	AS NOTED

EC1.2

BID SET - NOT FOR CONSTRUCTION

CONSTRUCTION SEQUENCE	
CONSTRUCTION ACTIVITY	
CONSTRUCTION PHASE	
9	CLEARING & GRUBBING OF SITE OR DEMOLITION (SEDIMENT & EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).
10	ROUGH GRADING.
11	INSTALLATION OF STORM DRAIN SYSTEM & PLACEMENT OF INLET PROTECTION AS EACH INLET IS INSTALLED.
12	BUILDING PAD CONSTRUCTION.
13	FINE GRADING, PAVING, ETC.

EROSION CONTROL LEGEND

DESCRIPTION	PLAN SYMBOL
SILT FENCE	
LIMITS OF DISTURBANCE	LOD
DIVERSION BERM	DB
TEMPORARY SEEDING	TS
RIPRAP	
STORM DRAIN INLET PROTECTION - TYPE A FILTER FABRIC	A
OUTLET PROTECTION - RIP RAP	
SEDIMENT TUBE	
ROCK CHECK DAM	
STABILIZED CONSTRUCTION ENTRANCE	
CONCRETE WASHOUT	

LIMITS OF DISTURBANCE (TYP.)(±18.5 AC.)
CONCRETE WASHOUT (SEE SHEET EC4.2) (TYP.)
TEMPORARY STOCKPILE AREA (SEE DETAIL SHEET EC4.2)
DIVERSION BERM (SEE SHEET EC4.2) (TYP.)
INSTALL EROSION CONTROL BLANKET IN AREAS WHERE SLOPES ARE ≥3:1 OR STEEPER (SEE DETAIL SHEET EC4.2, TYP.)
SEDIMENT TUBES (SEE DETAIL SHEET EC4.3)
RIPRAP AT CHANNEL ENDS (TYP.)
JURISDICTIONAL WETLAND (TYP.)
30' WETLAND BUFFER
PERMANENT MAINTENANCE ACCESS
FOREBAY BERM (SEE SHEET EC4.2) (TYP.)
EROSION CONTROL BLANKET (TYP.)
DOUBLE ROW SILT FENCE (TYP.)
INSTALL EMERGENCY SPILLWAY (SEE DETAIL SHEET EC4.2)
INSTALL TWO (2) 6" FAIRCLOTH SKIMMERS (SEE DETAIL SHEET EC4.3)
PROPOSED STORMWATER POND I (SEE DETAIL SHEET EC4.2)
PROPOSED PAD ELEV.= 101.5 ±100,000 SF (SLOPED TO DRAIN)
TURBIDITY CURTAIN (SEE SHEET EC4.2)
OUTLET PROTECTION
AMERICAN TOWER LEASE LINE
AMERICAN TOWER CELL TOWER SITE
RIPRAP AT FLUME ENDS (TYP.)
TEMPORARY SEEDING (TYP.)
INSTALL 12 SY OF RIP RAP (SEE SHEET EC4.1)
INSTALL 20 SY OF RIP RAP (SEE SHEET EC4.1)
STABILIZED CONSTRUCTION ENTRANCE (SEE SHEET EC4.1) (TYP.)
INSTALL TYPE A INLET FILTER (SEE SHEET EC4.2)
INSTALL ROCK CHECK DAM (SEE DETAIL SHEET EC4.2)
INSTALL EARTHEN FLOW CONTROL STRUCTURES (SEE DETAIL SHEET EC4.3)
US HIGHWAY 76 & 301 (60 MPH SPEED LIMIT, 107.5' R/W)
MATCH LINE - SEE SHEET NO. EC2.2
FLORENCE COUNTY 306-01-042
FLOYD FAMILY PROPERTIES LLC. 307-01-011
EVANS, RONNIE LAROSS 307-01-048
ROBERTS, WILLIE JOE & ROBERTS, LINDA S 307-01-049
FLOYD FAMILY PROPERTIES LLC 307-01-047

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

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EROSION CONTROL PLAN - CONSTRUCTION PHASE

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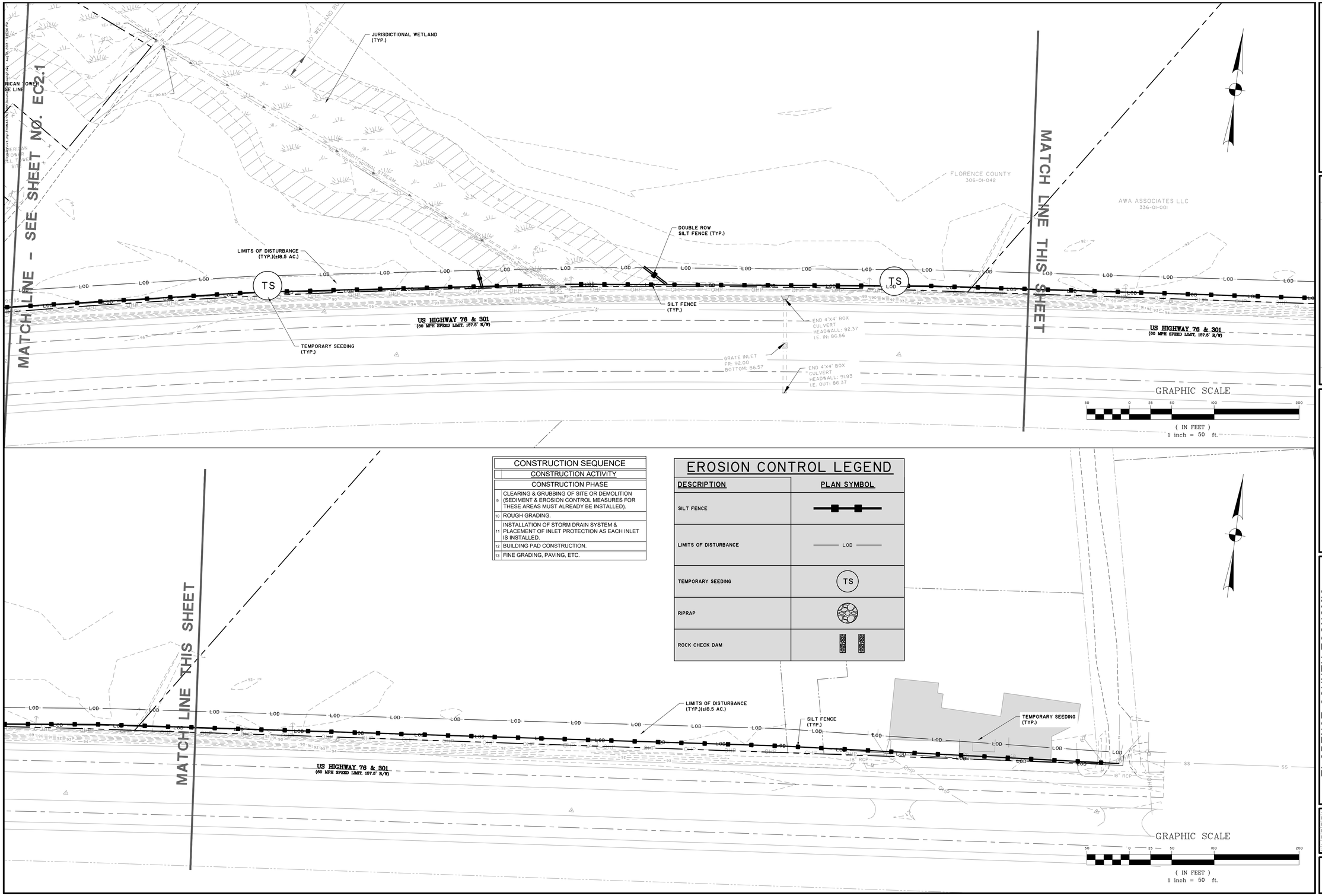
SCALE:	1" = 60'

EC2.1



CONSTRUCTION SEQUENCE	
CONSTRUCTION ACTIVITY	
CONSTRUCTION PHASE	
9	CLEARING & GRUBBING OF SITE OR DEMOLITION (SEDIMENT & EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).
10	ROUGH GRADING.
11	INSTALLATION OF STORM DRAIN SYSTEM & PLACEMENT OF INLET PROTECTION AS EACH INLET IS INSTALLED.
12	BUILDING PAD CONSTRUCTION.
13	FINE GRADING, PAVING, ETC.

EROSION CONTROL LEGEND

DESCRIPTION	PLAN SYMBOL
SILT FENCE	
LIMITS OF DISTURBANCE	LOD
TEMPORARY SEEDING	TS
RIPRAP	
ROCK CHECK DAM	

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23606 — THOMAS & HUTTON ENGINEERING CO. — No. C00285 — CERTIFICATE OF AUTHORIZATION

9/7/21

BID SET - NOT FOR CONSTRUCTION

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THOMAS & HUTTON

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP

FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

EROSION CONTROL PLAN - CONSTRUCTION PHASE

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DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	AS NOTED

EC2.2

CONSTRUCTION SEQUENCE	
CONSTRUCTION ACTIVITY	
STABILIZATION PHASE	
14	PERMANENT/FINAL STABILIZATION.
15	CLEAN-OUT OF DETENTION BASIN THAT WAS USED AS A SEDIMENT CONTROL STRUCTURE & RE-GRADING OF DETENTION POND BOTTOM; IF NECESSARY, MODIFICATION OF SEDIMENT BASIN RISER TO CONVERT TO DETENTION BASIN OUTLET STRUCTURE.
16	REMOVAL OF TEMPORARY SEDIMENT & EROSION CONTROL MEASURES AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED.
17	PERFORM AS-BUILT SURVEY OF DETENTION STRUCTURE & SUBMIT TO SCDHEC FOR ACCEPTANCE.
18	SUBMIT NOTICE OF TERMINATION (NOT) TO DHEC AS APPROPRAITE.

EROSION CONTROL LEGEND

DESCRIPTION	PLAN SYMBOL
SILT FENCE	
LIMITS OF DISTURBANCE	LOD
DIVERSION BERM	DB
PERMANENT SEEDING	PS
RIPRAP	
OUTLET PROTECTION - RIP RAP	
SEDIMENT TUBE	
ROCK CHECK DAM	OR
STABILIZED CONSTRUCTION ENTRANCE	
CONCRETE WASHOUT	

FLORENCE COUNTY
306-01-042

CONCRETE WASHOUT (SEE SHEET EC4.2) (TYP.)

TEMPORARY STOCKPILE AREA (SEE DETAIL SHEET EC4.2)

DIVERSION BERM (SEE SHEET EC4.2) (TYP.)

INSTALL EROSION CONTROL BLANKET IN AREAS WHERE SLOPES ARE 3:1 OR STEEPER (SEE DETAIL SHEET EC4.2, TYP.)

SEDIMENT TUBES (SEE DETAIL SHEET EC4.3)

RIPRAP AT CHANNEL ENDS (TYP.)

JURISDICTIONAL WETLAND (TYP.)

30' WETLAND BUFFER

EROSION CONTROL BLANKET (TYP.)

FOREBAY BERM (SEE SHEET EC4.2) (TYP.)

DOUBLE ROW SILT FENCE (TYP.)

INSTALL EMERGENCY SPILLWAY (SEE DETAIL SHEET EC4.2)

INSTALL TWO (2) 8" FAIRCLOTH SKIMMERS (SEE DETAIL SHEET EC4.3)

PROPOSED STORMWATER POND I (SEE DETAIL SHEET EC4.2)

18" RCP

TURBIDITY CURTAIN (SEE SHEET EC4.2)

OUTLET PROTECTION

AMERICAN TOWER LEASE LINE

AMERICAN TOWER CELL TOWER SITE

PROPOSED PAD ELEV.= 101.5' ±100,000 SF (SLOPED TO DRAIN)

RIPRAP AT FLUME ENDS (TYP.)

PERMANENT SEEDING (TYP.)

INSTALL 12 SY OF RIP RAP (SEE SHEET EC4.I)

INSTALL 20 SY OF RIP RAP (SEE SHEET EC4.I)

INSTALL ROCK CHECK DAM (SEE DETAIL SHEET EC4.2)

INSTALL EARTHEN FLOW CONTROL STRUCTURES (SEE DETAIL SHEET EC4.3)

US HIGHWAY 76 & 301
(60 MPH SPEED LIMIT. 107.5' R/W)

MATCH LINE - SEE SHEET NO. EC3.2

FLOYD FAMILY PROPERTIES LLC.
307-01-011

EVANS, RONNIE LAROSS
307-01-048

ROBERTS, WILLIE JOE & ROBERTS, LINDA S
307-01-049

FLOYD FAMILY PROPERTIES LLC
307-01-047

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23606 THOMAS & HUTTON ENGINEERING CO. CERTIFICATE No. C00285

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23606 NATHAN J. HUTTON

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EROSION CONTROL PLAN - STABILIZATION PHASE

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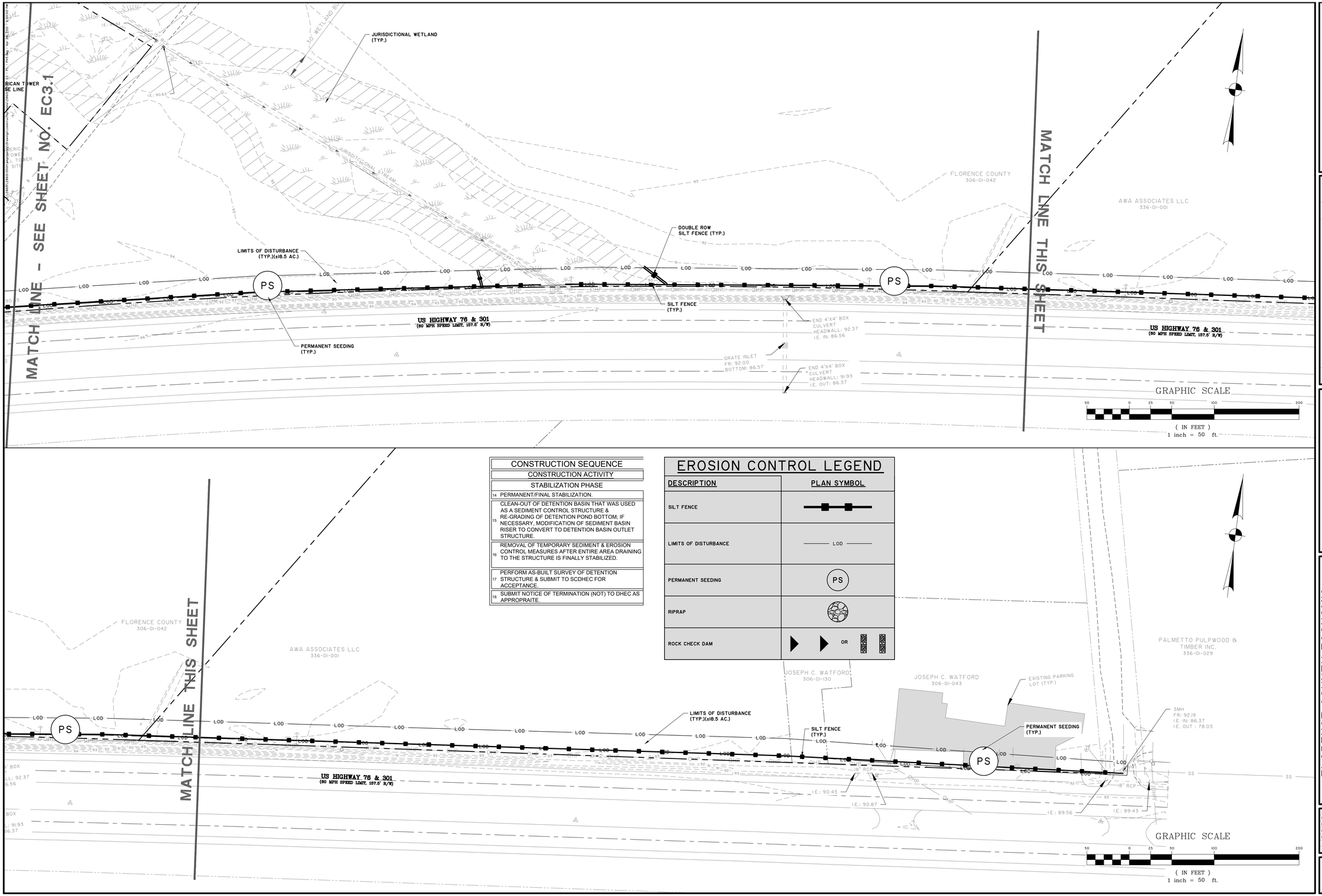
EC3.1



CONSTRUCTION SEQUENCE	
CONSTRUCTION ACTIVITY	
STABILIZATION PHASE	
14	PERMANENT/FINAL STABILIZATION.
15	CLEAN-OUT OF DETENTION BASIN THAT WAS USED AS A SEDIMENT CONTROL STRUCTURE & RE-GRADING OF DETENTION POND BOTTOM; IF NECESSARY, MODIFICATION OF SEDIMENT BASIN RISER TO CONVERT TO DETENTION BASIN OUTLET STRUCTURE.
16	REMOVAL OF TEMPORARY SEDIMENT & EROSION CONTROL MEASURES AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED.
17	PERFORM AS-BUILT SURVEY OF DETENTION STRUCTURE & SUBMIT TO SCDHEC FOR ACCEPTANCE.
18	SUBMIT NOTICE OF TERMINATION (NOT) TO DHEC AS APPROPRIATE.

EROSION CONTROL LEGEND

DESCRIPTION	PLAN SYMBOL
SILT FENCE	
LIMITS OF DISTURBANCE	LOD
PERMANENT SEEDING	PS
RIPRAP	
ROCK CHECK DAM	OR

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23606 THOMAS & HUTTON ENGINEERING CO. No. C00285 CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23606 NATHAN J. HOLLAND 07/07/2021

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THOMAS & HUTTON

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP

FLORENCE COUNTY, SC

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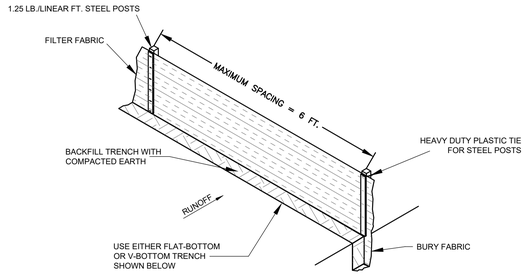
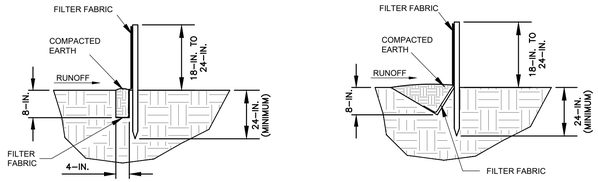
SCALE:	AS NOTED

EC3.2

STORMWATER POLLUTION PREVENTION PLAN



SILT FENCE INSTALLATION



FLAT-BOTTOM TRENCH DETAIL

V-SHAPED TRENCH DETAIL

WHEN AND WHERE TO USE IT:
SILT FENCE IS APPLICABLE IN AREAS:

WHERE THE MAXIMUM SHEET OR OVERLAND FLOW PATH LENGTH TO THE FENCE IS 100-FEET.
WHERE THE MAXIMUM SLOPE STEEPNESS (NORMAL [PERPENDICULAR] TO FENCE LINE) IS 2H:1V.
THAT DO NOT RECEIVE CONCENTRATED FLOWS GREATER THAN 0.5 CFS.

DO NOT PLACE SILT FENCE ACROSS CHANNELS OR USE IT AS A VELOCITY CONTROL BMP.

MATERIALS:
STEEL POSTS
USE 48-INCH LONG STEEL POSTS THAT MEET THE FOLLOWING MINIMUM PHYSICAL REQUIREMENTS:
COMPOSED OF HIGH STRENGTH STEEL WITH MINIMUM YIELD STRENGTH OF 50,000 PSI.
HAVE A STANDARD "T" SECTION WITH A NOMINAL FACE WIDTH OF 1.38-INCHES AND NOMINAL "T" LENGTH OF 1.48-INCHES.
WEIGH 1.25 POUNDS PER FOOT (± 8%).
HAVE A SOIL STABILIZATION PLATE WITH A MINIMUM CROSS SECTION AREA OF 17-SQUARE INCHES ATTACHED TO THE STEEL POSTS.
PAINTED WITH A WATER BASED BAKED ENAMEL PAINT.

USE STEEL POSTS WITH A MINIMUM LENGTH OF 4-FEET, WEIGHING 1.25 POUNDS PER LINEAR FOOT (± 8%) WITH PROJECTIONS TO AID IN FASTENING THE FABRIC. EXCEPT WHEN HEAVY CLAY SOILS ARE PRESENT ON SITE, STEEL POSTS WILL HAVE A METAL SOIL STABILIZATION PLATE WELDED NEAR THE BOTTOM SUCH THAT WHEN THE POST IS DRIVEN TO THE PROPER DEPTH, THE PLATE WILL BE BELOW THE GROUND LEVEL FOR ADDED STABILITY.
THE SOIL PLATES SHOULD HAVE THE FOLLOWING CHARACTERISTICS:
BE COMPOSED OF MINIMUM 15 GAUGE STEEL
HAVE A MINIMUM CROSS SECTION AREA OF 17-SQUARE INCHES.

GEOTEXTILE FILTER FABRIC:
FILTER FABRIC IS:
COMPOSED OF FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS COMPOSED OF AT LEAST 85% BY WEIGHT OF POLYOLEFINS, POLYESTERS, OR POLYAMIDES.
FORMED INTO A NETWORK SUCH THAT THE FILAMENTS OR YARNS RETAIN DIMENSIONAL STABILITY RELATIVE TO EACH OTHER.
FREE OF ANY TREATMENT OR COATING WHICH MIGHT ADVERSELY ALTER ITS PHYSICAL PROPERTIES AFTER INSTALLATION.
FREE OF DEFECTS OR FLAWS THAT SIGNIFICANTLY AFFECT ITS PHYSICAL AND/OR FILTERING PROPERTIES.
CUT TO A MINIMUM WIDTH OF 36 INCHES.

USE ONLY FABRIC APPEARING ON SCDOT APPROVAL SHEET #34 MEETING THE REQUIREMENTS OF THE MOST CURRENT EDITION OF THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

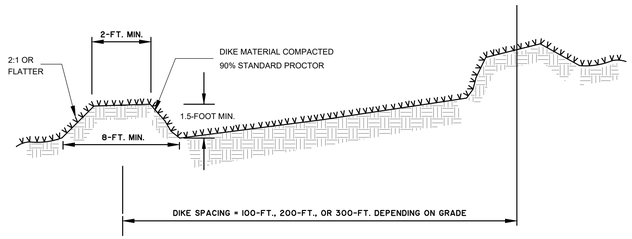
INSTALLATION:
EXCAVATE A TRENCH APPROXIMATELY 6-INCHES WIDE AND 6-INCHES DEEP WHEN PLACING FABRIC BY HAND. PLACE 12-INCHES OF GEOTEXTILE FABRIC INTO THE 6-INCH DEEP TRENCH, EXTENDING THE REMAINING 6-INCHES TOWARDS THE UPSLOPE SIDE OF THE TRENCH. BACKFILL THE TRENCH WITH SOIL OR GRAVEL AND COMPACT. BURY 12-INCHES OF FABRIC INTO THE GROUND WHEN PNEUMATICALLY INSTALLING SILT FENCE WITH A SLICING METHOD. PURCHASE FABRIC IN CONTINUOUS ROLLS AND CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, WRAPPED THE FABRIC TOGETHER AT A SUPPORT POST WITH BOTH ENDS FASTENED TO THE POST, WITH A 6-INCH MINIMUM OVERLAP. INSTALL POSTS TO A MINIMUM DEPTH OF 24-INCHES. INSTALL POSTS A MINIMUM OF 1- TO 2- INCHES ABOVE THE FABRIC, WITH NO MORE THAN 3-FEET OF THE POST ABOVE THE GROUND. SPACE POSTS TO MAXIMUM 6-FEET CENTERS. ATTACH FABRIC TO WOOD POSTS USING STAPLES MADE OF HEAVY-DUTY WIRE AT LEAST 1-1/2-INCH LONG, SPACED A MAXIMUM OF 6-INCHES APART. STAPLE A 2-INCH WIDE LATHE OVER THE FILTER FABRIC TO SECURELY FASTEN IT TO THE UPSLOPE SIDE OF WOODEN POSTS. ATTACH FABRIC TO THE STEEL POSTS USING HEAVY-DUTY PLASTIC TIES THAT ARE EVENLY SPACED AND PLACED IN A MANNER TO PREVENT SAGGING OR TEARING OF THE FABRIC. IN CALL CASES, TIES SHOULD BE AFFIXED IN NO LESS THAN 4 PLACES. INSTALL THE FABRIC A MINIMUM OF 24-INCHES ABOVE THE GROUND. WHEN NECESSARY, THE HEIGHT OF THE FENCE ABOVE GROUND MAY BE GREATER THAN 24-INCHES. IN TIDAL AREAS, EXTRA SILT FENCE HEIGHT MAY BE REQUIRED. THE POST HEIGHT WILL BE TWICE THE EXPOSED POST HEIGHT. POST SPACING WILL REMAIN THE SAME AND EXTRA HEIGHT FABRIC WILL BE 4-, 5-, OR 6-FEET TALL. LOCATE SILT FENCE CHECKS EVERY 100 FEET MAXIMUM AND AT LOW POINTS. INSTALL THE FENCE PERPENDICULAR TO THE DIRECTION OF FLOW AND PLACE THE FENCE THE PROPER DISTANCE FROM THE TOE OF STEEP SLOPES TO PROVIDE SEDIMENT STORAGE AND ACCESS FOR MAINTENANCE AND CLEANOUT.

INSPECTION AND MAINTENANCE:
CHECK FOR SEDIMENT BUILDUP AND FENCE INTEGRITY. CHECK WHERE RUNOFF HAS ERODED A CHANNEL BENEATH THE FENCE, OR WHERE THE FENCE HAS SAGGED OR COLLAPSED BY FENCE OVERTOPPING. IF THE FENCE FABRIC TEARS, BEGINS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE SECTION OF FENCE IMMEDIATELY. REMOVE SEDIMENT ACCUMULATED ALONG THE FENCE WHEN IT REACHES 1/3 THE HEIGHT OF THE FENCE, ESPECIALLY IF HEAVY RAINS ARE EXPECTED. REMOVE TRAPPED SEDIMENT FROM THE SITE OR STABILIZE IT ON SITE. REMOVE SILT FENCE WITHIN 30 DAYS AFTER FINAL STABILIZATION IS ACHIEVED OR

AFTER TEMPORARY BEST MANAGEMENT PRACTICES (BMPS) ARE NO LONGER NEEDED. PERMANENTLY STABILIZE DISTURBED AREAS RESULTING FROM FENCE REMOVAL.

SILT FENCE

NOT TO SCALE



SECTION

INSTALLATION:
SLOPES SHALL BE STABILIZED IMMEDIATELY USING VEGETATION, SOD, AND EROSION CONTROL BLANKETS OR TURF REINFORCEMENT MATS TO PREVENT EROSION.

THE UPSLOPE SIDE OF THE DIKE SHOULD PROVIDE POSITIVE DRAINAGE SO NO EROSION OCCURS AT THE OUTLET. PROVIDE ENERGY DISSIPATION MEASURES AS NECESSARY. SEDIMENT-LADEN RUNOFF MUST BE RELEASED THROUGH A SEDIMENT TRAPPING FACILITY.

SEDIMENT-LADEN RUNOFF SHALL BE DIRECTED TO A SEDIMENT TRAPPING FACILITY.

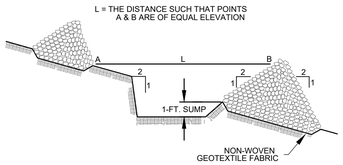
MINIMIZE CONSTRUCTION TRAFFIC OVER DIVERSION DIKES AND BERMS.

INSPECTION AND MAINTENANCE:

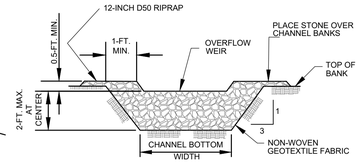
DAMAGE CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY MUST BE REPAIRED BEFORE THE END OF EACH WORKING DAY.

DIVERSION DIKE OR BERM

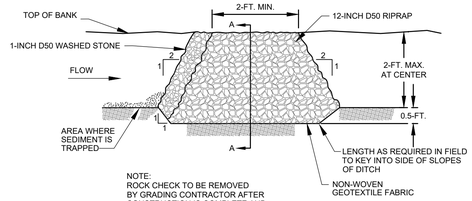
NOT TO SCALE



SPACING BETWEEN DITCH CHECK



CROSS SECTION A-A THRU STONE DITCH CHECK



TYPICAL DITCH CHECK SECTION

WHEN AND WHERE TO USE IT:
A ROCK DITCH CHECK SHOULD BE INSTALLED IN STEEPLY SLOPED SWALES, OR IN SWALES WHERE ADEQUATE VEGETATION CANNOT BE ESTABLISHED. ROCK DITCH CHECKS SHOULD BE USED ONLY IN SMALL OPEN CHANNELS. ROCK DITCH CHECKS SHOULD NOT BE PLACED IN WATERS OF THE COMMONWEALTH OR USGS BLUE-LINE STREAMS.

INSTALLATION:
A NON-WOVEN GEOTEXTILE FABRIC SHALL BE INSTALLED OVER THE SOIL SURFACE WHERE THE ROCK DITCH CHECK IS TO BE PLACED.

THE BODY OF THE ROCK DITCH CHECK SHALL BE COMPOSED OF 12-INCH D50 RIPRAP.

THE UPSTREAM FACE OF THE ROCK DITCH CHECK MAY BE COMPOSED OF 1-INCH D50 WASHED STONE.

ROCK DITCH CHECKS SHOULD NOT EXCEED A HEIGHT OF 2-FEET AT THE CENTERLINE OF THE CHANNEL.

ROCK DITCH CHECKS SHOULD HAVE A MINIMUM TOP FLOW LENGTH OF 2-FEET.

STONE SHOULD BE PLACED OVER THE CHANNEL BANKS TO PREVENT WATER FROM CUTTING AROUND THE DITCH CHECK.

THE ROCK MUST BE PLACED BY HAND OR MECHANICAL PLACEMENT (NO DUMPING OF ROCK TO FORM DAM) TO ACHIEVE COMPLETE COVERAGE OF THE DITCH OR SWALE AND TO ENSURE THAT THE CENTER OF THE CHECK IS LOWER THAN THE EDGES.

THE MAXIMUM SPACING BETWEEN THE DAMS SHOULD BE SUCH THAT THE TOE OF THE UPSTREAM CHECK IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM CHECK.

INSPECTION AND MAINTENANCE:
INSPECT FOR SEDIMENT AND DEBRIS ACCUMULATION. INSPECT DITCH CHECK EDGES FOR EROSION AND REPAIR PROMPTLY AS REQUIRED.

SEDIMENT SHOULD BE REMOVED WHEN IT REACHES 1/3 THE ORIGINAL CHECK HEIGHT.

IN THE CASE OF GRASS-LINED DITCHES AND SWALES, ROCK DITCH CHECKS SHOULD BE REMOVED WHEN THE GRASS HAS MATURED SUFFICIENTLY TO PROTECT THE DITCH OR SWALE UNLESS THE SLOPE OF THE SWALE IS GREATER THAN 4%.

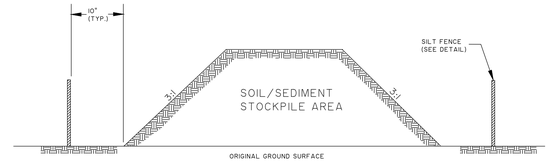
AFTER CONSTRUCTION IS COMPLETE, ALL STONE SHOULD BE REMOVED BY THE GRADING CONTRACTOR IF VEGETATION WILL BE USED FOR PERMANENT EROSION CONTROL MEASURES.

THE AREA BENEATH THE ROCK DITCH CHECKS SHOULD BE SEEDED AND MULCHED IMMEDIATELY AFTER ROCK CHECK DAM REMOVAL.

ROCK DITCH CHECK

NOT TO SCALE

TEMPORARY STOCKPILE AREA



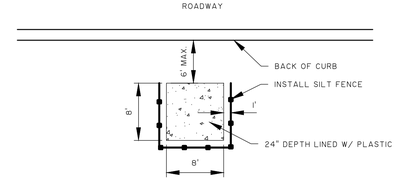
NOTES:
1. SILT FENCE TO EXTEND AROUND ENTIRE PERIMETER OF STOCKPILE, OR IF STOCKPILE AREA IS LOCATED ON/NEAR A SLOP THE SILT FENCE IS TO EXTEND ALONG CONTOURS OF THE DOWN-GRADIENT AREA.
2. IF STOCKPILE IS TO REMAIN FOR MORE THAN 14 DAYS, TEMPORARY STABILIZATION MEASURES MUST BE IMPLEMENTED.
3. SILT FENCE SHALL BE MAINTAINED UNTIL STOCKPILE AREA HAS EITHER BEEN REMOVED OR PERMANENTLY STABILIZED.
4. THE KEY TO FUNCTIONAL TEMPORARY STOCKPILE AREAS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR SEDIMENT REMOVAL.

South Carolina Department of Health and Environmental Control

TEMPORARY STOCKPILE

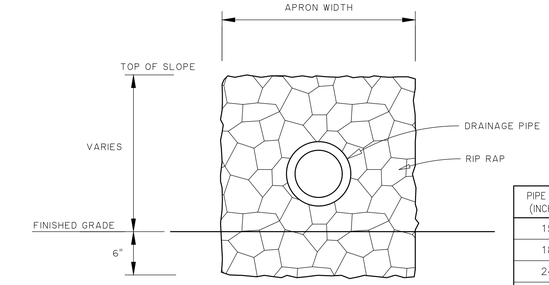
STANDARD DRAWING NO. SC-15 PAGE 1 of 1

NOT TO SCALE — FEBRUARY 2014 DATE

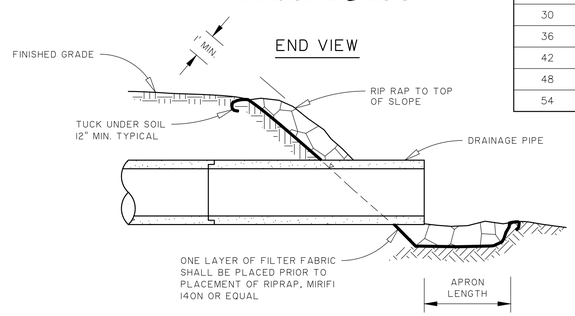


CONCRETE WASHOUT DETAIL

NOT TO SCALE



PIPE SIZE (INCHES)	APRON WIDTH (FEET)	APRON LENGTH (FEET)	QUANTITY (S.Y.)
15	6	18	12
18	6	18	12
24	8	22	20
30	10	28	31
36	12	32	43
42	14	36	68
48	16	44	78
54	18	52	104



SECTION

RIP RAP DETAIL

NOT TO SCALE

SOUTH CAROLINA PROFESSIONAL ENGINEER — THOMAS B. HUTTON — ENGINEERING CO. — No. C00285 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER — No. 23696 — 6/7/21

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

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FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

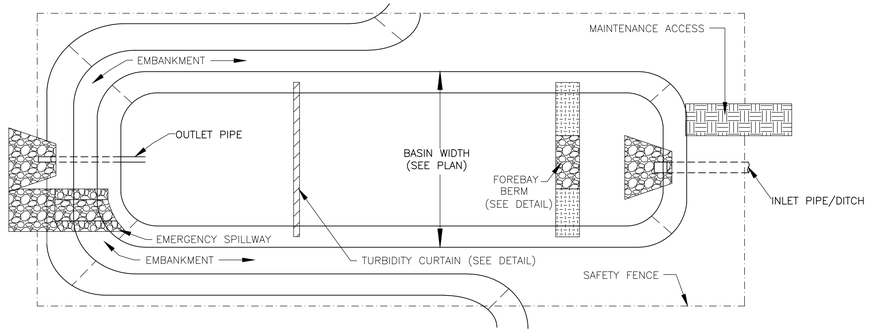
EROSION CONTROL DETAILS

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	N/A

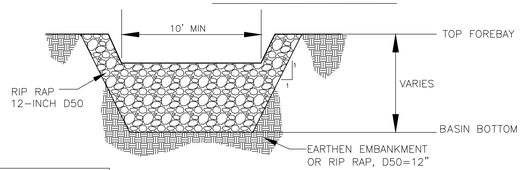
EC4.1

STORMWATER POLLUTION PREVENTION PLAN

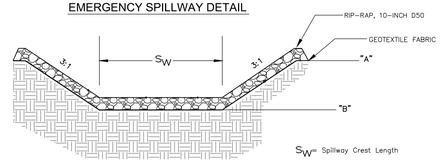
WET DETENTION POND PLAN VIEW (POND 1)



FOREBAY BERM DETAIL

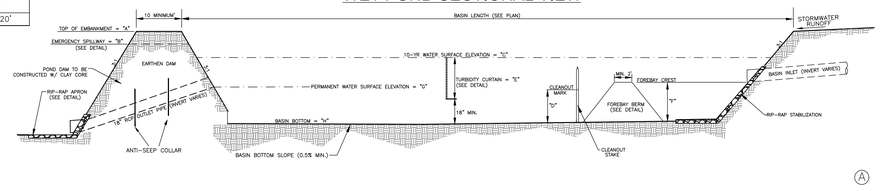


EMERGENCY SPILLWAY DETAIL

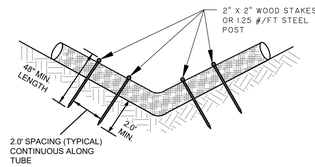


SEDIMENT BASIN DESIGN TABLE									
Sediment Basin Number/Name	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	Sw
#1	95.0'	94.0'	93.08'	2'	3'	5'	92.15'	87.0'	20'

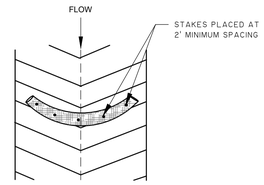
WET POND SECTIONAL VIEW



END VIEW OF DITCH



TOP VIEW OF DITCH



DESCRIPTION:
SEDIMENT TUBES ARE ELONGATED TUBES OF COMPACTED GEOTEXTILES, CURLED EXCELSIOR WOOD, NATURAL COCONUT FIBER OR HARDWOOD MULCH. STRAW, PINE NEEDLE AND LEAF MULCH-FILLED SEDIMENT TUBES ARE NOT PERMITTED UNDER THIS SPECIFICATION.

WHEN AND WHERE TO USE IT:
INSTALL SEDIMENT TUBES ALONG CONTOURS, IN DRAINAGE CONVEYANCE SWALES, AND AROUND INLETS TO HELP REDUCE THE EFFECTS OF SOIL EROSION BY ENERGY DISSIPATION AND RETAIN SEDIMENT.

MATERIALS:
SEDIMENT TUBES FOR DITCH CHECKS AND TYPE A INLET STRUCTURE FILTERS EXHIBIT THE FOLLOWING PROPERTIES:
PRODUCED BY A MANUFACTURER EXPERIENCED IN SEDIMENT TUBE MANUFACTURING. COMPOSED OF COMPACTED GEOTEXTILES, CURLED EXCELSIOR WOOD, NATURAL COCONUT FIBERS, HARDWOOD MULCH OR A MIX OF THESE MATERIALS ENCLOSED BY A FLEXIBLE NETTING MATERIAL. STRAW, STRAW FIBER, STRAW BALES, PINE NEEDLES AND LEAF MULCH ARE NOT ALLOWED UNDER THIS SPECIFICATION.
UTILIZES OUTER NETTING THAT CONSISTS OF SEAMLESS, HIGH-DENSITY POLYETHYLENE PHOTODEGRADABLE MATERIALS TREATED WITH ULTRAVIOLET STABILIZERS OR A SEAMLESS, HIGH-DENSITY POLYETHYLENE NON-DEGRADABLE MATERIALS. DIAMETER RANGING FROM 18-INCHES TO 24-INCHES.
CURLED EXCELSIOR WOOD OR NATURAL COCONUT ROLLED EROSION CONTROL PRODUCTS (RECPS) THAT ARE ROLLED UP TO CREATE A SEDIMENT TUBE ARE NOT ALLOWED UNDER THIS SPECIFICATION.

INSTALLATION:
INSTALL OVER BARE SOIL, MULCHED AREAS OR EROSION CONTROL BLANKETS.
BE COMPOSED OF GEOTEXTILES, CURLED EXCELSIOR WOOD, NATURAL COCONUT FIBER OR HARDWOOD MULCH ENCLOSED BY A FLEXIBLE NETTING MATERIAL. STRAW, STRAW FIBER, STRAW BALES, PINE NEEDLES AND LEAF MULCH ARE NOT ALLOWED.

THE MINIMUM DIAMETER SHOULD BE 18 INCHES.
SEDIMENT TUBES SHOULD BE STAKED USING WOODEN STAKES (2-INCH X 2-INCH) OR STEEL POSTS (STANDARD "U" OR "T" SECTIONS WITH A MINIMUM WEIGHT OF 1.25 POUNDS PER FOOT) A MINIMUM OF 48-INCHES IN LENGTH PLACED ON 2-FOOT CENTERS.

STAKES SHOULD BE INTERTWINED WITH THE OUTER MESH ON THE DOWNSTREAM SIDE AND DRIVEN IN THE GROUND TO A MINIMUM DEPTH OF 1.5 FEET LEAVING LESS THAN 1 FOOT OF STAKE EXPOSED ABOVE THE SEDIMENT TUBE. ALWAYS REFER TO THE MANUFACTURER'S RECOMMENDATIONS FOR THE STAKING DETAIL. INSTALL ALL SEDIMENT TUBES INSURING THAT NO GAPS EXIST BETWEEN THE SOIL AND THE BOTTOM OF THE SEDIMENT TUBE.
THE ENDS OF ADJACENT SEDIMENT TUBES SHOULD BE LAPPED 6-INCH TO PREVENT FLOW AND SEDIMENT FROM PASSING THROUGH THE FIELD JOINT. IN NO SITUATIONS SHOULD SEDIMENT TUBES BE STACKED ON TOP OF ONE ANOTHER.

CONSTRUCT A TRENCH THAT IS 20% OF THE TUBE DIAMETER TO INSTALL THE TUBE IN.
AVOID DAMAGE TO SEDIMENT TUBES WHILE INSTALLING THEM. IF THE SEDIMENT TUBE BECOMES DAMAGED DURING INSTALLATION, A STAKE SHOULD BE PLACED ON BOTH SIDES OF THE DAMAGED AREA TERMINATING THE TUBE SEGMENT AND A NEW TUBE SEGMENT SHOULD BE INSTALLED.
SHOULD BE INSTALLED IN SWALES OR DRAINAGE DITCHES PERPENDICULAR TO THE FLOW OF WATER. SEDIMENT TUBES SHOULD CONTINUE UP THE SIDE SLOPES A MINIMUM OF 1 FOOT ABOVE THE DESIGN FLOW DEPTH. SEDIMENT TUBES SHOULD BE SPACED ACCORDING TO THE FOLLOWING TABLE.

SEDIMENT TUBE SPACING

SLOPE	MAXIMUM SEDIMENT TUBE SPACING
LESS THAN 2%	150-FEET
2%	100-FEET
3%	75-FEET
4%	50-FEET
5%	40-FEET
6%	30-FEET
GREATER THAN 6%	25-FEET

SEDIMENT TUBE LENGTH SELECTED SHOULD MINIMIZE THE NUMBER OF SEDIMENT TUBES NEEDED TO SPAN THE WIDTH OF THE DRAINAGE CONVEYANCE. IF THE DITCH CHECK LENGTH (PERPENDICULAR TO THE WATER FLOW) IS 15 FEET, THEN ONE 15 FOOT SEDIMENT TUBE IS PREFERRED COMPARED TO TWO OVERLAPPING 10 FOOT SEDIMENT TUBES.

SEDIMENT TUBES FOR DITCH CHECKS SHOULD REMAIN IN PLACE UNTIL FULLY ESTABLISHED VEGETATION AND ROOT SYSTEMS HAVE COMPLETELY DEVELOPED AND CAN SURVIVE ON THEIR OWN.

INSPECTION AND MAINTENANCE:
LARGE DEBRIS, TRASH, AND LEAVES SHOULD BE REMOVED.

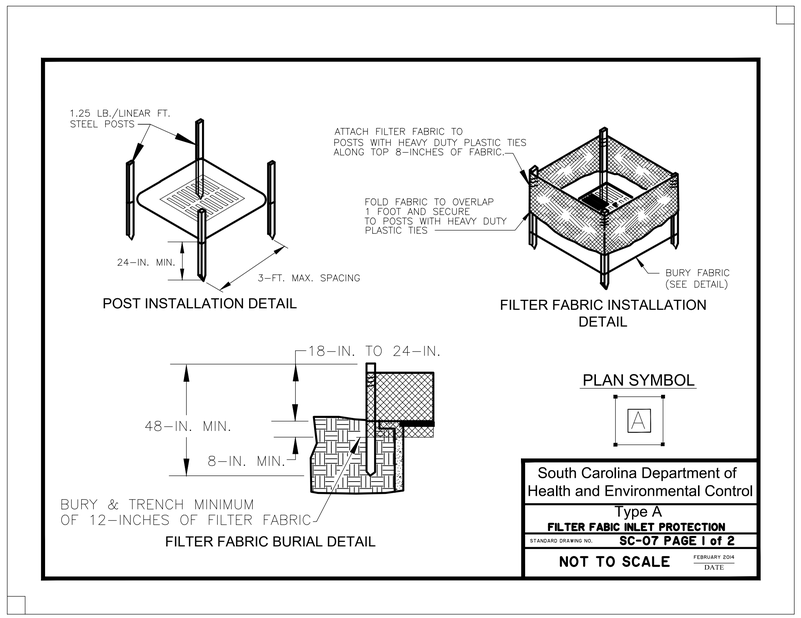
IF EROSION CAUSES THE EDGES TO FALL TO A HEIGHT EQUAL TO OR BELOW THE HEIGHT OF THE CENTER, REPAIRS SHOULD BE MADE IMMEDIATELY.

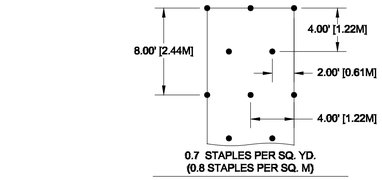
REMOVE ACCUMULATED SEDIMENT FROM THE UPSTREAM SIDE OF THE SEDIMENT TUBE WHEN THE SEDIMENT HAS REACHED A HEIGHT OF APPROXIMATELY ONE-THIRD OF THE EXPOSED HEIGHT OF THE TUBE (MEASURED AT THE CENTER).

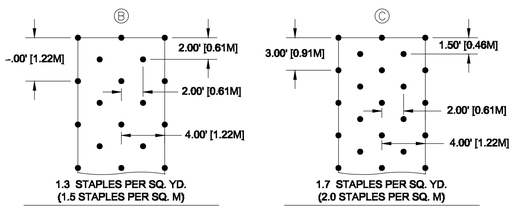
ACCUMULATED SEDIMENT SHOULD BE REMOVED PRIOR TO REMOVING SEDIMENT TUBES.

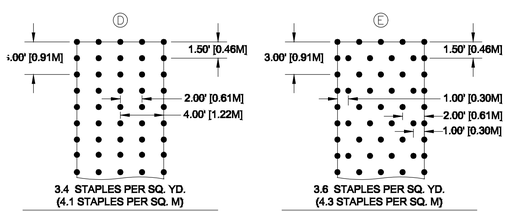
SEDIMENT TUBE REMOVAL SHOULD BE COMPLETED ONLY AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN COMPLETELY STABILIZED. PERMANENT VEGETATION SHOULD REPLACE AREAS FROM WHICH GRAVEL, STONE, SEDIMENT TUBES, OR OTHER MATERIALS HAVE BEEN REMOVED.

SEDIMENT TUBES



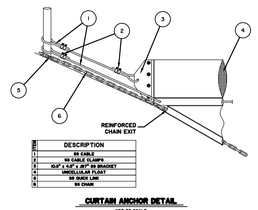






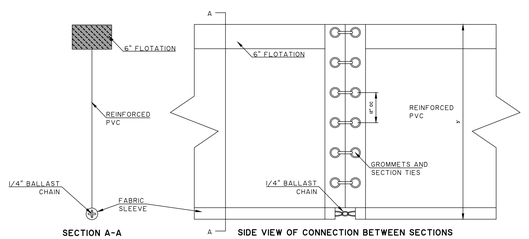
EROSION CONTROL BLANKET

NOT TO SCALE



ITEM	DESCRIPTION
1	66 CABLE
2	66 CABLE CLAMPS
3	8'-0" X 8'-0" X 45° 66 BRACKET
4	UNICELLULAR FLOAT
5	66 QUICK LINK
6	66 CHAIN

CURTAIN ANCHOR DETAIL
NOT TO SCALE



NOTE:
MAINTAIN MINIMUM 1.5' SEPARATION BETWEEN BOTTOM OF CURTAIN AND BOTTOM OF POND

NOTE:
WILL BE GRANITE: TYPE I ECONOMY SILT BARRIER OR EQUIVALENT

TYPICAL BARRIER SPECIFICATIONS							
FLOTATION	FABRIC	SECTION CONNECTION	CONNECTION FABRIC	BOTTOM CHAIN	STANDARD LENGTH	HEIGHT	FLOTATION
6" Marine Grade Foam (depending on MAT depth)	PVC Impermeable Fabric	Bolt Rope Reinforced Fabric Sleeve Section Ties	Poly Rope and Heavy Web Handle	Heavy Ballast Chain	50' or 100'	Sizes 3' to 100' Available	6" Marine Grade Foam (depending on MAT depth)

TURBIDITY CURTAIN
NOT TO SCALE

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

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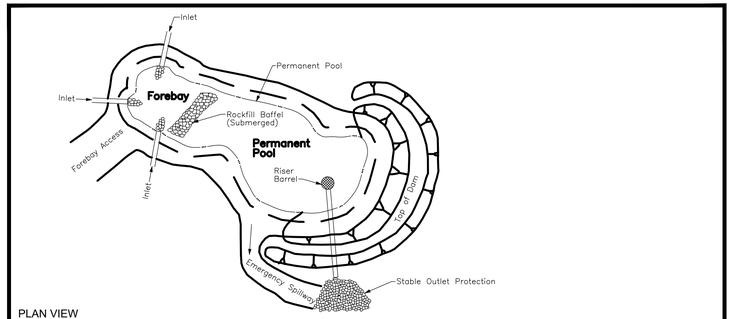
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC
FLORENCE COUNTY INDUSTRIAL PARK EAST
EROSION CONTROL DETAILS

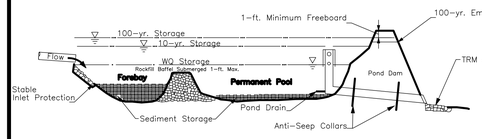
JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	N/A

EC4.2

STORMWATER POLLUTION PREVENTION PLAN



PLAN VIEW



PROFILE

South Carolina Department of Health and Environmental Control

WET DETENTION POND

STANDARD DRAWING NO. **WQ-02 Page 1 of 2**

APPROVED BY: _____ SCDHEC — AUGUST, 2005 DATE

WET DETENTION POND

Installation:

A forebay shall be provided for all inlets to a wet water quality pond and shall be placed upstream of the main wet pond area. The forebay is separated from the larger wet detention pond area by barriers or baffles that may be constructed of earth, stones, riprap, gabions, or geotextiles. The top of the forebay barrier shall be a maximum of one (1)-foot below the normal pool elevation, and may extend above the elevation of the permanent pool.

The permanent pool shall be four (4) to six (6) feet in depth.

Acceptable trash guards include:

Hoods that extend at least 6-inches below the permanent pool water surface elevation.

Reverse flow pipes where the outlet structure inlet is located at least 6-inches below the permanent pool water surface elevation.

Trash boxes made of sturdy wire mesh.

Inspection and Maintenance:

The side slopes of the pond shall be mowed monthly.

Since decomposing vegetation captured in the wetpond can release pollutants, especially nutrients, it may be necessary to harvest dead vegetation annually. Otherwise the decaying vegetation can export pollutants out of the pond and also can cause nuisance conditions to occur.

Debris shall be cleared from all inlet and outlet structures monthly.

All eroded or undercut areas shall be repaired as needed.

A sediment marker shall be placed in the forebay to determine when sediment removal is required.

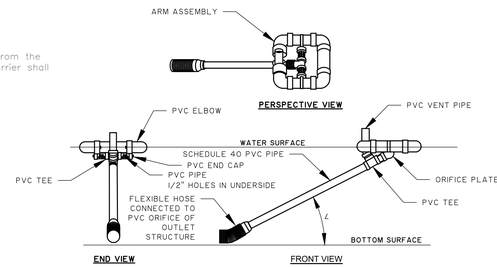
Sediment accumulations in the main pond area shall be monitored and sediment shall be removed when the permanent pool volume has been significantly filled and/or the pond becomes eutrophic.

South Carolina Department of Health and Environmental Control

WET DETENTION POND

STANDARD DRAWING NO. **WQ-02 Page 2 of 2**

APPROVED BY: _____ SCDHEC — AUGUST, 2005 DATE



NOTES:

1. CONTRACTOR TO CORE 6" HOLES INTO CONTROL STRUCTURE FOR EACH SKIMMER AND GROUT HOLES ONCE SKIMMERS ARE REMOVED.
2. CONTRACTOR TO REMOVE SKIMMER UPON STABILIZATION OF THE CONTRIBUTING DRAINAGE AREA. THE LOW-FLOW ORIFICE IS TO BE 4" IN DETENTION BASIN A AND 3" IN DETENTION BASIN A-1 UPON REACHING FINAL STABILIZATION.

DESIGN CRITERIA

POND NUMBER	SKIMMER SIZE (IN)	VOLUME (CF) *
1	2 X 8"	587,868

*SKIMMER SIZE IS BASED ON THE VOLUME REQUIRED TO DEWATER THE BASIN WITHIN 72 HRS

SKIMMER DETAIL

NOT TO SCALE

SCDOT RIGHT OF WAY DETAILS

TABLE 815-605A

HEIGHT OF FILL (y) IN FEET	FILL SLOPE	MINIMUM SILT FENCE OFFSET FROM TOE OF SLOPE (x) IN FEET	MINIMUM RIGHT OF WAY OFFSET FROM TOE OF SLOPE (WHERE USED) (x) IN FEET	CHECK LENGTH IN FEET**
<6	2:1	2	3	2
	6:1			
6-10	2:1	12*	13*	5
	6:1	3	4	3
>10	2:1	12*	13*	5
	6:1	4	5	4

*THESE MINIMUM OFFSETS MAY BE REDUCED WHEN CURB AND GUTTER OR SOME OTHER FEATURE REDUCES THE FLOW OF WATER DOWN THE SLOPE. THE SMALL OFFSETS OF EACH GROUP OF HEIGHT OF FILL CANNOT BE REDUCED.

**SILT FENCE CHECKS WILL HAVE A MAXIMUM LENGTH OF FIVE (5) FEET OR UNTIL THEY TIE BACK INTO THE SLOPE.

SEE 815-605-10 FOR TEMPORARY DIVERSION DIKE

SEE 815-605-20 FOR TEMPORARY SILT DITCH

SEE 815-605-30 FOR ROLLED EROSION CONTROL PRODUCT

NOTES:
1. SILT FENCE CHECKS MUST BE LOCATED EVERY 100 FEET MAXIMUM AND AT LOW POINTS. FILTER FABRICS SHALL CONFORM TO SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION).

2. USE POSTS CONFORMING TO SCDOT STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS. POSTS SHALL BE A MINIMUM OF 5 FEET LONG AND INSTALLED TO A MINIMUM DEPTH OF 24 INCHES WITH NO MORE THAN 2 FEET OF THE POST ABOVE GROUND. AT LEAST 1 TO 2 INCHES OF THE POSTS SHALL EXTEND ABOVE THE TOP OF THE FABRIC. POST SPACING WILL BE A MAXIMUM OF 6 FEET ON CENTER.

3. POSTS SHALL HAVE PROJECTIONS FOR FASTENING THE FABRIC TO THE POST. POSTS SHALL ALSO HAVE A SOIL PLATE NEAR THE BOTTOM OF THE POST, EXCEPT WHEN HEAVY CLAY SOILS ARE PRESENT ON-SITE.

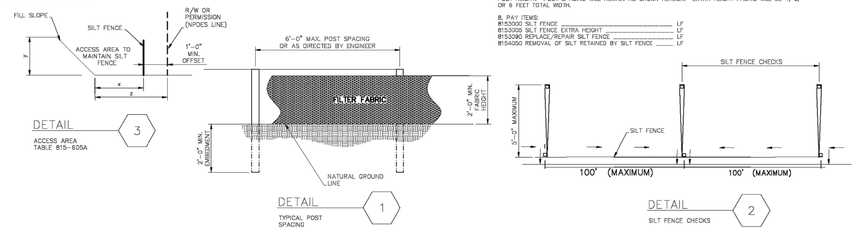
4. ATTACH FABRIC TO POSTS USING HEAVY-DUTY PLASTIC TIES THAT ARE EVENLY SPACED AND PLACED IN A MANNER TO PREVENT SAGGING OR TEARING OF THE FABRIC. IN ALL CASES TIES SHOULD BE AT/OVID IN NO LESS THAN 4 PLACES.

5. SILT SHALL BE REMOVED AND DISPOSED OF WHEN SILT ACCUMULATES TO ½ THE HEIGHT OF THE FENCE. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON-SITE. MAINTENANCE OF SILT FENCE WILL BE MEASURED AND PAID FOR BY THE ITEM OF REMOVAL OF SILT RETAINED BY SILT FENCE.

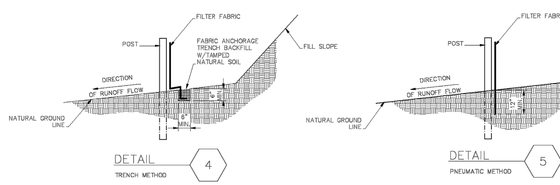
6. TYPICAL SILT FENCE APPLICATIONS REQUIRE 24 INCHES OF THE FABRIC TO BE ABOVE GROUND. WHEN NEEDED, THE HEIGHT OF SILT FENCE FABRIC ABOVE THE GROUND MAY BE GREATER THAN 24". SEE PLANS FOR APPLICATION OF HIGHER SILT FENCE, PAY ITEMS, AND INSTALLATION METHODS.

7. IN TIDAL AREAS, EXTRA SILT FENCE MAY BE REQUIRED. THE LENGTH OF POST WILL BE TWICE THE EXPOSED POST HEIGHT. POST SPACING WILL REMAIN AS SHOWN HEREON. EXTRA HEIGHT FABRIC WILL BE 4, 5, OR 6 FEET TOTAL WIDTH.

8. PAY ITEMS:
8153000 SILT FENCE _____ LF
8153005 SILT FENCE EXTRA HEIGHT _____ LF
8153090 REPLACE/REPAIR SILT FENCE _____ LF
8154050 REMOVAL OF SILT RETAINED BY SILT FENCE _____ LF



12 INCHES OF THE FABRIC SHALL BE BURIED REGARDLESS, IF PLACED PNEUMATICALLY OR WITH A TRENCHER. BOTH METHODS SHOWN BELOW.



NOT TO SCALE

REFERENCES

NATIONAL DOCUMENTS

SCDOT DOCUMENTS
SC-M-815-2, QPL 34

RELATED DRAWINGS & KEYWORDS

THIS DRAWING IS ONLY VALID FOR CONSTRUCTION WHEN SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF SOUTH CAROLINA. CHECK WWW.SCDOT.ORG FOR LATEST UPDATE.

SOUTH CAROLINA — No. 21242 — REGISTERED PROFESSIONAL ENGINEER — JAMES W. KENDALL JR.

James W. Kendall Jr.

SIGNATURE
11/10/2016
DATE

#	DATE	CHK	DESCRIPTION
5			
4			
3	11/2016	DSO	GENERAL REVISIONS
2	8/2016	DSO	GENERAL REVISIONS
1	8/2012	KNB	ADD'D SCDOT DOCUMENTS TO RELATED DRAWINGS & KEYS
0	3/2008	DSO	GENERAL REVISIONS

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING
TEMPORARY SILT FENCE

815-605-00
EFFECTIVE LETTING DATE: JULY, 2017

REFERENCES

NATIONAL DOCUMENTS

SCDOT DOCUMENTS

RELATED DRAWINGS & KEYWORDS

THIS DRAWING IS ONLY VALID FOR CONSTRUCTION WHEN SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF SOUTH CAROLINA. CHECK WWW.SCDOT.ORG FOR LATEST UPDATE.

SOUTH CAROLINA — No. 21242 — REGISTERED PROFESSIONAL ENGINEER — JAMES W. KENDALL JR.

James W. Kendall Jr.

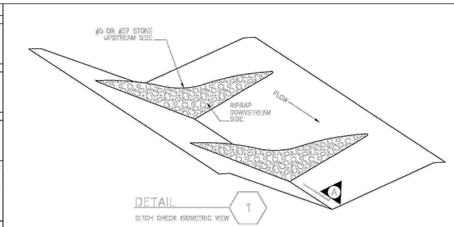
SIGNATURE
09/30/2016
DATE

#	DATE	CHK	DESCRIPTION
6	----	----	----
5	----	----	----
4	----	----	----
3	----	----	----
2	----	----	----
1	----	----	----
0	8/2016	DSO	UPDATE

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

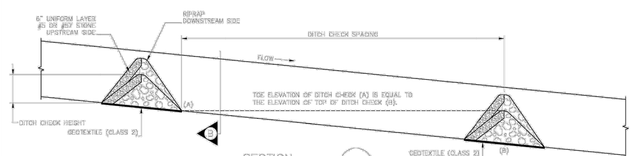
STANDARD DRAWING
DITCH CHECK

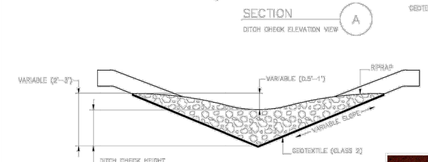
815-105-00
EFFECTIVE LETTING DATE: JULY, 2017

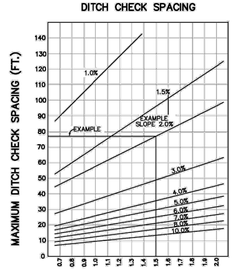


NOTES:

1. DITCH CHECK SHOULD NEVER BE USED IN LIVE STREAM.
2. DITCH CHECK IS NOT ADEQUATE FOR MORE THAN 2 ACRES OF DRAINAGE.
3. PLACE A CLASS 2 NON-WOVEN GEOTEXTILE FABRIC THAT MEETS THE REQUIREMENTS OF SECTION 804 BENEATH THE ROCK PRIOR TO INSTALLATION OF THE ROCK.
4. RIPRAP SHALL BE CLASS A.
5. RIPRAP MAY BE HAND PLACED OR MECHANICALLY PLACED AND SHAPED.
6. PLACE 6" UNIFORM LAYER OF AGGREGATE NO. 5 OR NO. 57 STONE ON THE UPSTREAM FACE OF ROCK DITCH CHECK.
7. SLOPES OF DITCH CHECK SHALL BE NO STEEPER THAN 2:1, BUT MAY BE FLATTENED DUE TO TRAFFIC SAFETY, AS DIRECTED BY THE ENGINEER.
8. HEIGHT OF DITCH CHECK SHALL BE NO MORE THAN 2.0 FEET.
9. DITCH CHECKS SHALL BE INSPECTED EVERY 7 DAYS.
10. REMOVE COLLECTED SEDIMENT IN FRONT OF DITCH CHECK AS DETERMINED BY THE ENGINEER. PAYMENT FOR REMOVAL AND DISPOSAL OF SEDIMENT WILL BE CLEANING SILT BASIN.
11. PAY ITEM SHALL BE:
8041010 RIPRAP (CLASS A) _____ TON
8042800 GEOTEXTILE FOR EROSION CONTROL UNDER RIPRAP (CLASS 2) _____ SY
8115010 CLEANING SILT BASINS _____ CY
8156410 AGGREGATE NO.5 OR NO.57 FOR EROSION CONTROL _____ TON







BID SET - NOT FOR CONSTRUCTION

NO.	DATE	BY	REVISIONS
3	2021/06/07	NJH	REVISED PER CITY OF FLORENCE
2	2021/06/07	NJH	REVISED PER FLORENCE COUNTY
1	2021/06/07	NJH	REVISED PER SCDOT

THOMAS & HUTTON
1501 Main Street • Suite 760
Columbia, SC 29201 • 803.451.6789
www.thomasandhutton.com

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

EROSION CONTROL DETAILS

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	N/A

EC4.3

SCDOT RIGHT OF WAY DETAILS

REFERENCES
NATIONAL DOCUMENTS

SCDOT DOCUMENTS
SC-M-815-8 (SM 5)
RELATED DRAWINGS & KEYWORDS

PRECONSTRUCTION SUPPORT ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 21242 JAMES W. KENDALL, JR.

James W. Kendall, Jr.

SIGNATURE

11/18/2016

DATE

#	DATE	CHK	DESCRIPTION
5			
4			
3			
2	8/2016	DSO	GENERAL REVISIONS
			UPDATED DIMENSIONS AND NOTES
1	8/2012	DSO	
0	5/2008	DSO	GENERAL REVISIONS

SCDOT — SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

TYPE A
INLET STRUCTURE
FILTERS

815-001-01

EFFECTIVE LETTING DATE | JUL 2017 | THIS DRAWING IS NOT TO SCALE

INSTALLATION:

1. FILTER FABRIC IS USED FOR INLET PROTECTION WHEN STORMWATER FLOWS ARE RELATIVELY SMALL (1.0 CFS OR LESS) WATER VELOCITY IS LOW, WHERE THE INLET DRAINS AN AREA OF 1 ACRE OR LESS TO ONE IMMEDIATE DRAINAGE AREA AROUND THE INLET IS FLAT, AND RADIUS) HAS GRADES LESS THAN 1%. DO NOT USE IN AREAS RECEIVING CONCENTRATED FLOW OR WHERE GUTTERS ARE PAVED. A 2 INCH DEEP X 2 INCHES WIDE AND 6 INCHES DEEP AROUND THE OUTER PERIMETER OF THE STAKES UNLESS FABRIC IS PNEUMATICALLY INSTALLED.

2. FILTER FABRIC SHALL CONFORM TO SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION). FILTER FABRIC SHALL EXTEND A MINIMUM OF 10 INCHES INTO THE TRENCH. THE TRENCH SHALL BE BACKFILLED WITH SOIL OR CRUSHED STONE AND COMPACTED OVER THE FILTER FABRIC UNLESS FABRIC IS PNEUMATICALLY INSTALLED.

3. USE STEEL POSTS WITH A MINIMUM POST LENGTH OF 5 FEET CONSISTING OF STANDARD "T" SECTIONS WITH A WEIGHT OF 1.25 POUNDS PER FOOT (LBF/FT). THE HEIGHT OF THE FILTER BARRIER ABOVE GROUND SHALL BE A MINIMUM OF 16 INCHES. THE POSTS SHALL BE SPACED AROUND THE PERIMETER OF THE INLET A MAXIMUM OF 3 FEET APART AND DRIVEN INTO THE GROUND A MINIMUM OF 8 INCHES. SPACE POSTS A MAXIMUM OF 2 FEET APART WHERE STANDARD DUTY PLASTIC TIES. ATTACH AT LEAST 4 EVENLY SPACED TIES IN A MANNER TO PREVENT SAGGING OR TEARING OF THE FABRIC.

4. THE FILTER FABRIC SHOULD BE IN A CONTINUOUS ROLL AND CUT TO THE PROTECTED AREA TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER FABRIC SHOULD BE WRAPPED TOGETHER ONLY AT A SUPPORT POST WITH BOTH ENDS SECURELY FASTENED TO THE POST WITH A MINIMUM 6 INCH OVERLAP.

5. PROVIDE A FILTER FABRIC CAPABLE OF REDUCING EFFLUENT SEDIMENT CONCENTRATIONS BY NOT LESS THAN 80% UNDER TYPICAL SHEET/RILL EROSION CONDITIONS.

INSPECTION AND MAINTENANCE:

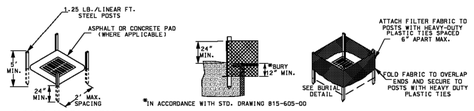
1. INSPECTIONS SHOULD BE MADE EVERY SEVEN (7) CALENDAR DAYS. ANY NEEDED REPAIRS SHOULD BE HANDLED IMMEDIATELY.

2. IF THE FABRIC BECOMES CLOGGED, IT SHOULD BE REPLACED.

3. SEDIMENT SHOULD BE REMOVED WHEN IT REACHES APPROXIMATELY 1/3 THE HEIGHT OF THE FILTER FABRIC. IF A SUMP IS USED, SEDIMENT SHOULD BE REMOVED WHEN IT FILLS APPROXIMATELY 1/3 THE DEPTH OF THE HOLE. MAINTAIN THE POOL AREA; ALWAYS PROVIDING ADEQUATE SEDIMENT STORAGE VOLUME FOR THE NEXT STORM. TAKE CARE NOT TO DAMAGE OR UNDERCUT FABRIC WHEN REMOVING SEDIMENT. CLEANING INLET STRUCTURE FILTERS: PAY ITEM (EACH EA) FILTER CLEANED OF DEPOSITED SEDIMENT FROM THE AREA ADJACENT TO EACH INLET STRUCTURE FILTER.

4. STORM DRAIN INLET PROTECTION STRUCTURES SHOULD BE REMOVED ONLY AFTER THE DISTURBED AREAS ARE PERMANENTLY STABILIZED. REMOVE ALL CONSTRUCTION MATERIAL AND SEDIMENT, AND DISPOSE OF THEM PROPERLY. BLEND GRADES TO ALLOW FREE FLOW TO THE DRAIN. USE APPROPRIATE PERMANENT STABILIZATION METHODS TO STABILIZE BARE AREAS AROUND THE INLET.

5. THE PAY ITEMS SHALL BE:
   8156215 INLET STRUCTURE FILTER TYPE A.....LF
   8154155 CLEANING INLET STRUCTURE FILTERS.....EA



POST INSTALLATION DETAIL

*IN ACCORDANCE WITH STD. DRAWING 815-605-00

FILTER FABRIC BURIAL DETAIL

FILTER FABRIC INSTALLATION DETAIL

TYPE A
LOW FLOW INLET FILTERS
(FILTER FABRIC INLET PROTECTION)

INSTALLATION:

1. INSTALL SEDIMENT TUBES BY LAYING THEM FLAT ON THE GROUND. CONSTRUCT A SMALL TRENCH TO A DEPTH THAT IS 20% OF THE SEDIMENT TUBE DIAMETER. LAY THE SEDIMENT TUBE IN THE TRENCH AND COMPACT THE UPSTREAM SEDIMENT TUBE FOOT/ INTERFACE. INSTALL ALL SEDIMENT TUBES SO NO GAPS EXIST BETWEEN THE GROUND SURFACE/BOTTOM OF ANY SEDIMENT TUBE AND THE SOIL. LAP THE ENDS OF ADJACENT SEDIMENT TUBES A MINIMUM OF 6 INCHES. THIS PREVENTS RUNOFF FROM PASSING THROUGH THE FIELD JOINT. NEVER STACK SEDIMENT TUBES ON TOP OF ONE ANOTHER.

2. SHOULD SEDIMENT TUBE BECOME DAMAGED DURING INSTALLATION, PLACE A STAKE ON BOTH SIDES OF THE DAMAGED AREA TERMINATING THE TUBE SECURELY AND INSTALL A NEW TUBE SECURELY.

3. INSTALL SEDIMENT TUBES USING WOODEN STAKES WITH A MINIMUM POST LENGTH OF 4 FEET AND A MINIMUM MEASURED DIMENSION OF 2" x 2". USE STAKES WITH A MAXIMUM MEASURED DIMENSION OF 2.5" x 2.5", OR USE METAL POSTS. SPACE POSTS BETWEEN 2 FEET AND 4 FEET APART, DEPENDING ON THE INSTALLATION AND SEDIMENT TUBE DIAMETER. SPACE POSTS A MAXIMUM OF 10 FEET APART FOR STAKED CHECK DAMS. DRIVE STAKES FIRMLY INTO THE GROUND TO A MINIMUM DEPTH OF 16 INCHES. INSTALL THE STAKES ON THE DOWNSTREAM SIDE OF THE SEDIMENT TUBE. ENSURE THE AREAS FOR STAKE INSTALLATION ARE COMPACTED SO THE POSTS ARE PROPERLY INSTALLED.

INSPECTION AND MAINTENANCE:

1. INSPECT SEDIMENT TUBES AFTER INSTALLATION FOR GAPS UNDER THE SEDIMENT TUBES AND FOR GAPS BETWEEN THE JOINTS OF ADJACENT ENDS OF SEDIMENT TUBES. REPAIR RILLS, GULLIES, AND ALL UNDERCUTTING NEAR SEDIMENT TUBES. INSPECT SEDIMENT TUBES EVERY 7 DAYS.

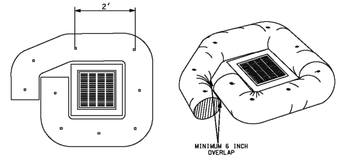
2. REMOVE SEDIMENT WHEN IT REACHES APPROXIMATELY ½ HEIGHT OF THE INLET STRUCTURE FILTER. IF A SUMP IS USED, REMOVE SEDIMENT WHEN IT FILLS APPROXIMATELY ½ THE DEPTH OF THE HOLE. MAINTAIN THE POOL AREA; ALWAYS PROVIDING ADEQUATE SEDIMENT STORAGE VOLUME FOR THE NEXT STORM EVENT. CLEANING INLET STRUCTURE FILTER IS PAID FOR EACH (EA) FILTER CLEANED OF DEPOSITED SEDIMENT FROM THE AREA ADJACENT TO EACH INLET STRUCTURE FILTER.

3. REMOVE AND/OR REPLACE INSTALLED SEDIMENT TUBES AS REQUIRED TO ADAPT TO CHANGING CONSTRUCTION SITE CONDITIONS.

4. REMOVE ALL SEDIMENT TUBES FROM THE SITE WHEN THE FUNCTIONAL LONGEVITY IS EXCEEDED AS DETERMINED BY THE ENGINEER, INSPECTOR, OR MANUFACTURER'S REPRESENTATIVE.

5. DISPOSE OF SEDIMENT TUBES BY REGULAR MEANS AS NON-HAZARDOUS, INERT MATERIAL.

6. THE PAY ITEMS SHALL BE:
   8156219 INLET STRUCTURE FILTER TYPE A.....LF
   8154155 CLEANING INLET STRUCTURE FILTERS.....EA



TYPE A
LOW FLOW INLET FILTERS
(SEDIMENT TUBE INLET PROTECTION)

REFERENCES
NATIONAL DOCUMENTS

SCDOT DOCUMENTS
SC-M-815-10
RELATED DRAWINGS & KEYWORDS

PRECONSTRUCTION SUPPORT ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 21242 JAMES W. KENDALL, JR.

James W. Kendall, Jr.

SIGNATURE

11/09/2016

DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3	11/2016	DSO	GENERAL REVISIONS
2	8/2016	DSO	GENERAL REVISIONS
1	8/2012	DSO	ADDED CHART 815-505
0	5/2008	DSO	GENERAL REVISIONS

SCDOT — SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

STABILIZED
CONSTRUCTION
ENTRANCE

815-505-00

EFFECTIVE LETTING DATE | JUL 2017 | THIS DRAWING IS NOT TO SCALE

NOTES:

1. STABILIZED CONSTRUCTION ENTRANCES SHOULD BE USED AT ALL POINTS WHERE TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE AND MOVING DIRECTLY ONTO A PUBLIC ROAD.

2. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS ALLOWED TO LEAVE THE SITE. WASHDOWN FACILITIES SHOULD BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH SCDOT REQUIREMENTS. A SEDIMENT SUMP IS ESTABLISHED WITH CRUSHED GRAVEL AND DRAIN INTO A SEDIMENT TRAP OR SEDIMENT BASIN. CONSTRUCTION ENTRANCES SHOULD BE USED IN CONJUNCTION WITH THE STABILIZATION CONSTRUCTION ROADS TO REDUCE THE AMOUNT OF MUD PICKED UP BY VEHICLES.

3. REMOVE ALL VEGETATION AND ANY OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA.

4. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM STONES TO A SEDIMENT TRAP OR BASIN.

5. INSTALL A CLASS 2 NON-WOVEN GEOTEXTILE FABRIC THAT MEETS THE REQUIREMENTS OF SECTION 804 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION, PRIOR TO PLACING ANY STONE.

6. MINIMUM DIMENSIONS OF THE ENTRANCE SHALL BE 24-FT WIDE x 100-FT LONG, AND MAY BE MODIFIED AS NECESSARY TO ACCOMMODATE SITE CONSTRAINTS.

7. INSPECT CONSTRUCTION ENTRANCES EVERY SEVEN (7) CALENDAR DAYS AND AFTER EACH RAIN EVENT. ALL BUILDUP AND WASH AS PAD INTEGRITY. MAINTENANCE IS REQUIRED MORE FREQUENTLY IN WET WEATHER CONDITIONS. RESHAPE THE STONE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.

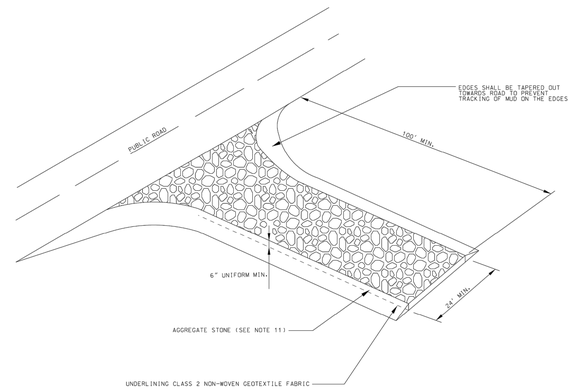
8. WASH OR REPLACE STONES AS NEEDED AND AS DIRECTED BY THE ENGINEER. THE STONE IN THE ENTRANCE SHOULD BE WASHED OR REPLACED WHENEVER SOIL OR OTHER DEBRIS IS TO REDUCE MUD BEING CARRIED OFF ENTRANCE VEHICLES TO A MINIMUM. WASHING WILL EXTEND THE USEFUL LIFE OF STONE.

9. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING. FLUSHING SHOULD ONLY BE USED WHEN THE WATER CAN BE DISCHARGED TO A SEDIMENT TRAP OR BASIN.

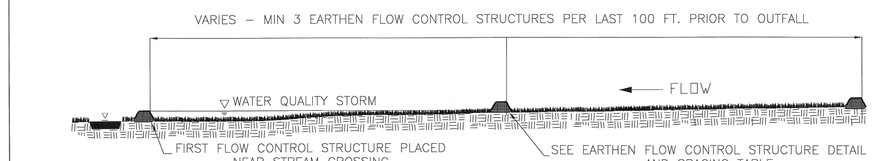
10. REPAIR ANY BROKEN PAVEMENT IMMEDIATELY.

11. USE AGGREGATE No. 1, 2, 24, OR 3 AS CONSTRUCTION ENTRANCE MATERIAL.

12. PAY ITEM:
    8156490 STABILIZED CONSTRUCTION ENTRANCE.....SY

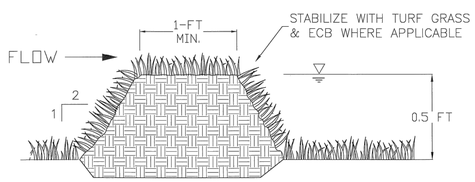


THIS DRAWING IS NOT TO SCALE



PROFILE OF GRASSED CHANNEL/SWALE

Maximum DOT ROW Drainage Area (acres)	Maximum Vegetated Channel Longitudinal Slope	Number of Earthen Flow Control Structures Required	
		Upper State	Lower State
0.25	≤ 0.5%	3 per 100 ft	
	1.0%		
	2.0%	5 per 100 ft	5 per 100 ft
	4.0%		
	6.0%	7 per 100 ft	
0.50	≤ 0.5%	5 per 100 ft	
	1.0%		
	2.0%	6 per 100 ft	
	4.0%		
1.00	≤ 0.5 – 4.0%	6 per 100 ft	
2.00	≤ 0.5 – 4.0%	7 per 100 ft	
3.00	≤ 0.5 – 4.0%	8 per 100 ft	
4.00	≤ 0.5 – 4.0%	9 per 100 ft	
5.00	≤ 0.5 – 1.0%	10 per 100 ft	9 per 100 ft
	2.0 – 4.0%		10 per 100 ft



EARTHEN FLOW CONTROL STRUCTURE

Number of Flow Control Structures	Flow Control Structure Spacing
3	0ft, 50ft, 100ft
5	0ft, 25ft, 50ft, 75ft, 100ft
6	0ft, 20ft, 40ft, 60ft, 80ft, 100ft
7	0ft, 16ft, 33ft, 50ft, 66ft, 83ft, 100ft
8	0ft, 14ft, 29ft, 43ft, 57ft, 71ft, 86ft, 100ft
9	0ft, 13ft, 25ft, 38ft, 50ft, 63ft, 75ft, 88ft, 100ft
10	0ft, 11ft, 22ft, 33ft, 44ft, 56ft, 67ft, 78ft, 89ft, 100ft

REFERENCES
NATIONAL DOCUMENTS

SCDOT DOCUMENTS
RELATED DRAWINGS & KEYWORDS

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 21242 JAMES W. KENDALL, JR.

James W. Kendall, Jr.

SIGNATURE

2-9-2015

DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1			
0			

SCDOT — SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

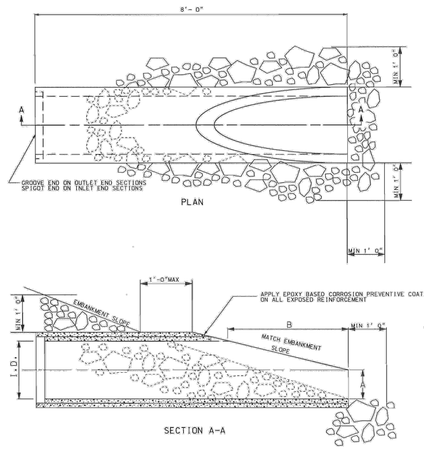
STANDARD DRAWING

GRASSED CHANNELS
AND SWALES

815-008-02

EFFECTIVE LETTING DATE | MAY 2015

THIS DRAWING IS NOT TO SCALE



NOTES:

1. BEVELED END SECTIONS WILL BE MANUFACTURED IN ACCORDANCE WITH SCDOT SUPPLEMENTAL TECHNICAL SPECIFICATIONS SC-M-714. THESE SPECIAL PIPE SECTIONS WILL BE MADE DURING THE MANUFACTURING OF OTHER STATE APPROVED REINFORCED CONCRETE PIPE.
2. THE PIPE BEVEL MAY BE SAWED IN THE FIELD IN LIEU OF BEING MANUFACTURED. IN FIELD SAWING, THE PIPE OPENING MAY COME TO A POINT AT THE PIPE CREST RATHER THAN A RADIUS IF APPROVED BY THE PIPE MANUFACTURER. ALTERNATE PIPE FOR SIDELINES MUST HAVE EACH END BEVELED TO MATCH THE ADJACENT SLOPES.
3. PLACE RIPRAP AS DIRECTED BY THE RCE.
4. PAYMENT FOR BEVELED END SECTIONS WILL BE AS DIRECTED IN SC-M-714.
5. THE PAY ITEM SHALL BE:
   7199100 BEVELING OF PIPE ENDS.....EA.
   8O43XXX RIPRAP(CLASS).....CY.
   8O46XXX GEOTEXTILE FOR EROSION CONTROL UNDER RIPRAP(CLASS 2) TYPE.....S.Y.

CHART 719-610B
RIPRAP PLACEMENT

CLASS	D_{50}(FT)	MINIMUM THICKNESS (FT)
B	0.75	1.50
C	1.30	2.60

TABLE 719-610A

I.D.(IN)	A(IN)	EMBANKMENT SLOPE B (BEVELED LENGTH) (IN)				
		6:1	5:1	4:1	3:1	2:1
		6	5	4	3	2
15	6	54	45	36	27	18
18	9	54	45	36	27	18
24	10	NA	70	56	42	28
30	12	NA	NA	72	54	36
36	15	NA	NA	NA	63	42
42	20	NA	NA	NA	66	44
48	24	NA	NA	NA	72	48
54	24	NA	NA	NA	NA	60
60	24	NA	NA	NA	NA	72

REFERENCES
NATIONAL DOCUMENTS

SCDOT DOCUMENTS
SCDOT SUPPLEMENTAL TECHNICAL SPECIFICATION SC-M-714
RELATED DRAWINGS & KEYWORDS

PRECONSTRUCTION SUPPORT ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 21242 JAMES W. KENDALL, JR.

James W. Kendall, Jr.

SIGNATURE

AUGUST 23, 2012

DATE

#	DATE	CHK	DESCRIPTION
5			
4			
3			PAY ITEMS-RIPRAP,MITERS, SECTION A-A EPOXY
2	1/2010	DSO	GENERAL REVISIONS
1	5/2009	DSN	CHART 719-610B
0	5/2008	DSO	GENERAL REVISIONS

SCDOT — SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

END TREATMENT
(RCP BEVELED
END)

719-610-00

EFFECTIVE LETTING DATE | JAN. 2013

THIS DRAWING IS NOT TO SCALE

SOUTH CAROLINA — JAMES W. KENDALL, JR. — REGISTERED PROFESSIONAL ENGINEER — No. 19045 — CERTIFICATE OF AUTHORIZATION — THOMAS & HUTTON ENGINEERING — NO. C00285 — 6/7/21

BID SET - NOT FOR CONSTRUCTION

NO.	REVISED PER	DATE
3	REVISED PER CITY OF FLORENCE	2021/06/07
2	REVISED PER FLORENCE COUNTY	2021/04/07
1	REVISED PER SCDOT	2021/04/07

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www.thomasandhutton.com

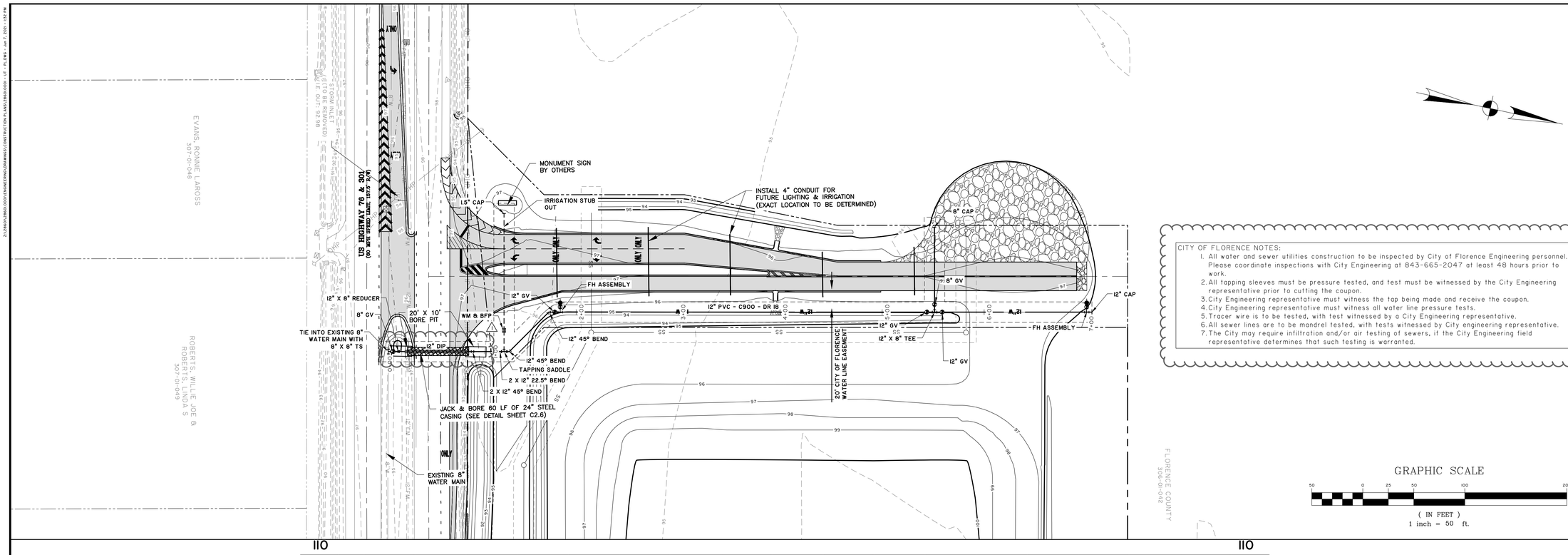
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

EROSION CONTROL DETAILS

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 50'

EC4.4



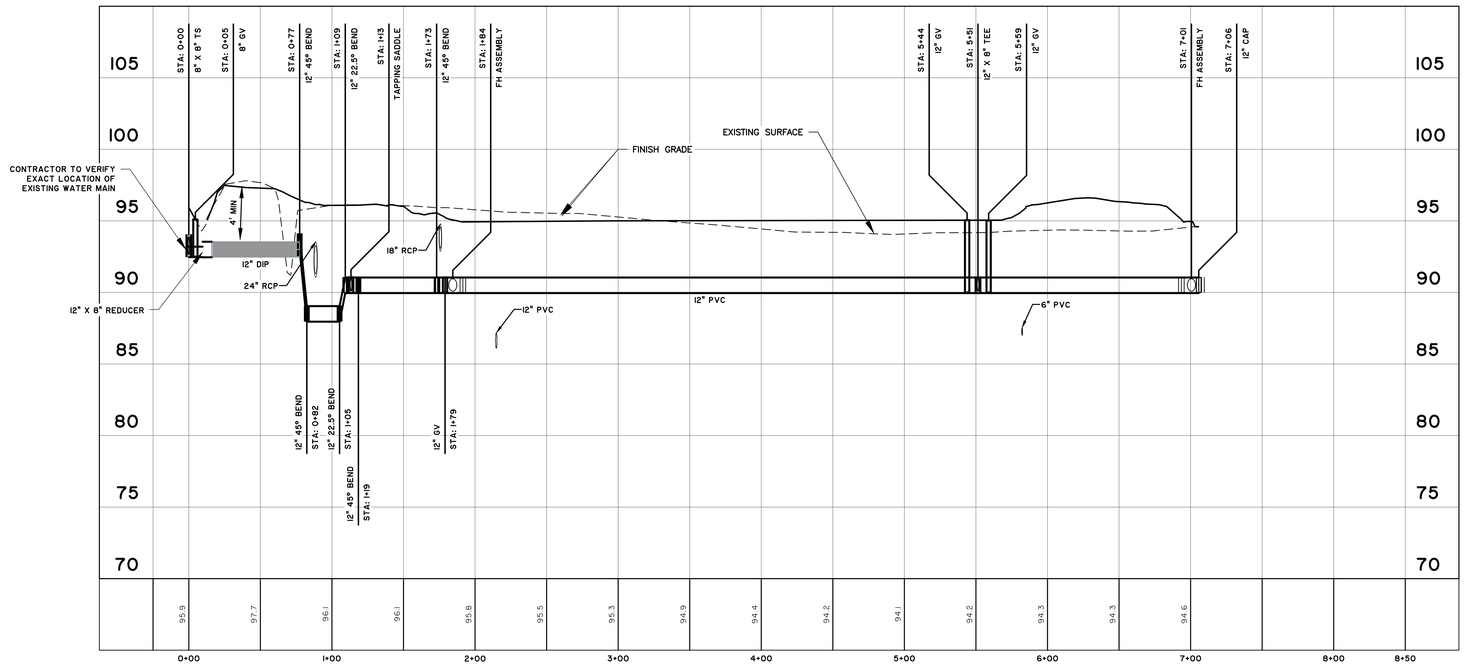
CITY OF FLORENCE NOTES:

1. All water and sewer utilities construction to be inspected by City of Florence Engineering personnel. Please coordinate inspections with City Engineering at 843-665-2047 at least 48 hours prior to work.
2. All tapping sleeves must be pressure tested, and test must be witnessed by the City Engineering representative prior to cutting the coupon.
3. City Engineering representative must witness the tap being made and receive the coupon.
4. City Engineering representative must witness all water line pressure tests.
5. Tracer wire is to be tested, with test witnessed by a City Engineering representative.
6. All sewer lines are to be mandrel tested, with tests witnessed by City engineering representative.
7. The City may require infiltration and/or air testing of sewers, if the City Engineering field representative determines that such testing is warranted.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



WATER – RUN
STATIONS: –0+25 – 8+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23906 — THOMAS & HUTTON ENGINEERING CO. No. C00285 CERTIFICATE OF AUTHORIZATION — 6/7/21

BID SET - NOT FOR CONSTRUCTION

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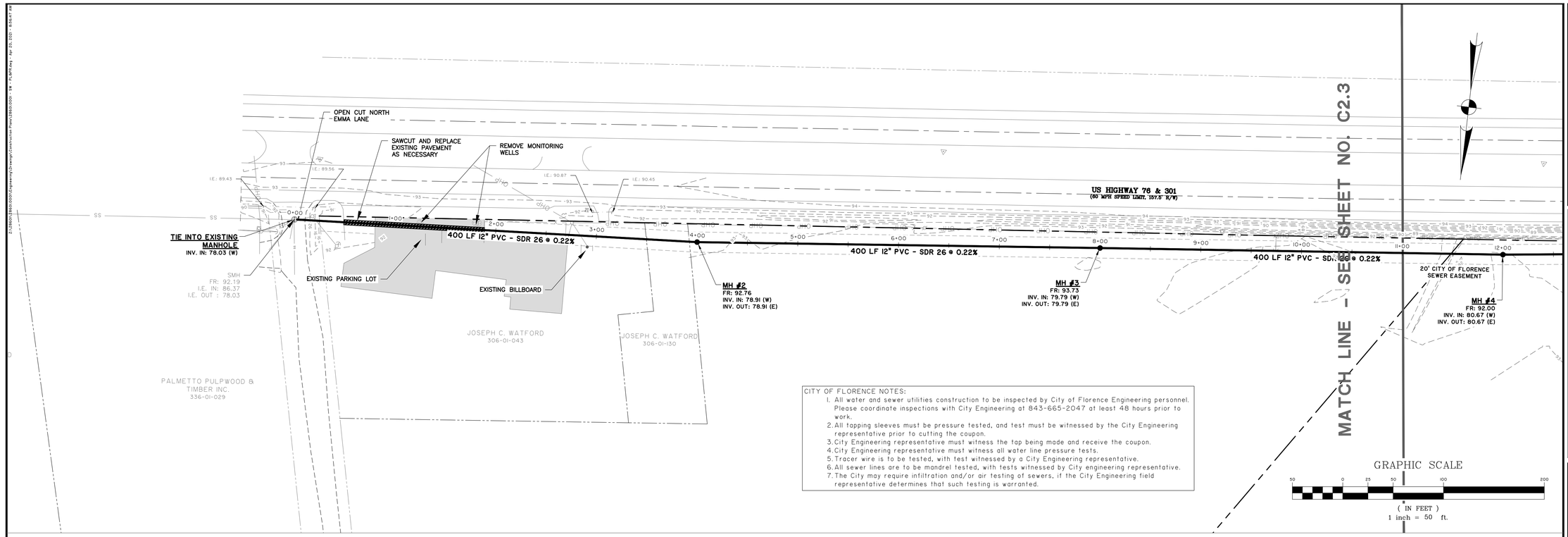
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

WATER PLAN & PROFILE

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	AS NOTED

C2.1



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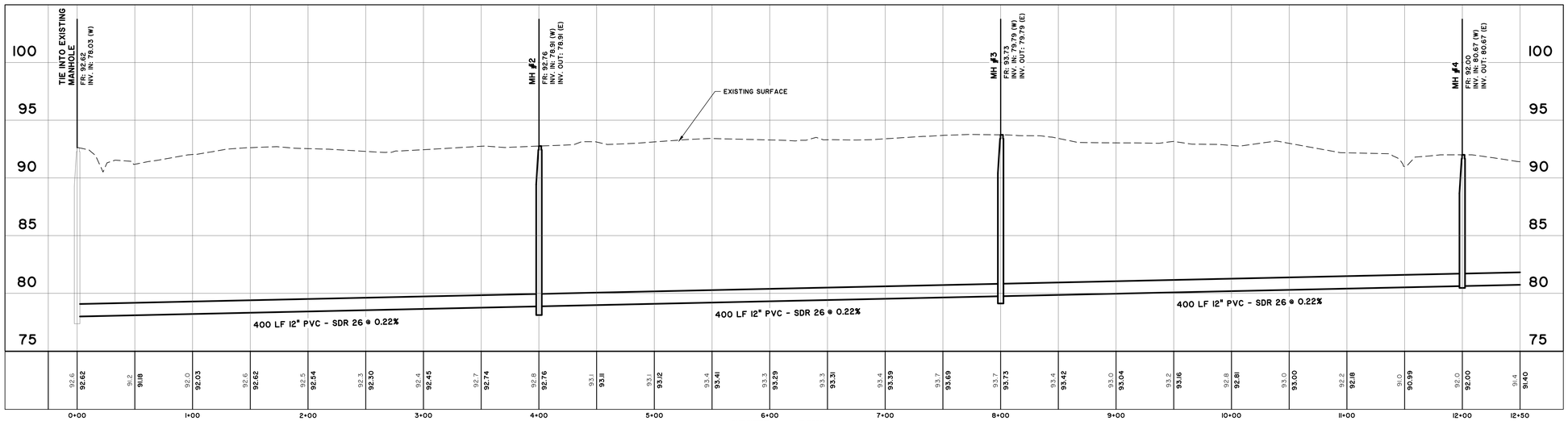

SEWER – RUN 1
STATIONS: −0+25 – 12+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 023721 — THOMAS & HUTTON ENGINEERING CO. — No. C00285 — CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL No. 23696 — NICHOLAS JOSEPH HUTTON — REGISTERED PROFESSIONAL ENGINEER

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/08/03
2	REVISED PER FLORENCE COUNTY	NJH	2021/08/03
1	REVISED PER SCDOT	NJH	2021/08/03

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FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

SEWER PLAN & PROFILE

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	AS NOTED

C2.2

CITY OF FLORENCE NOTES:

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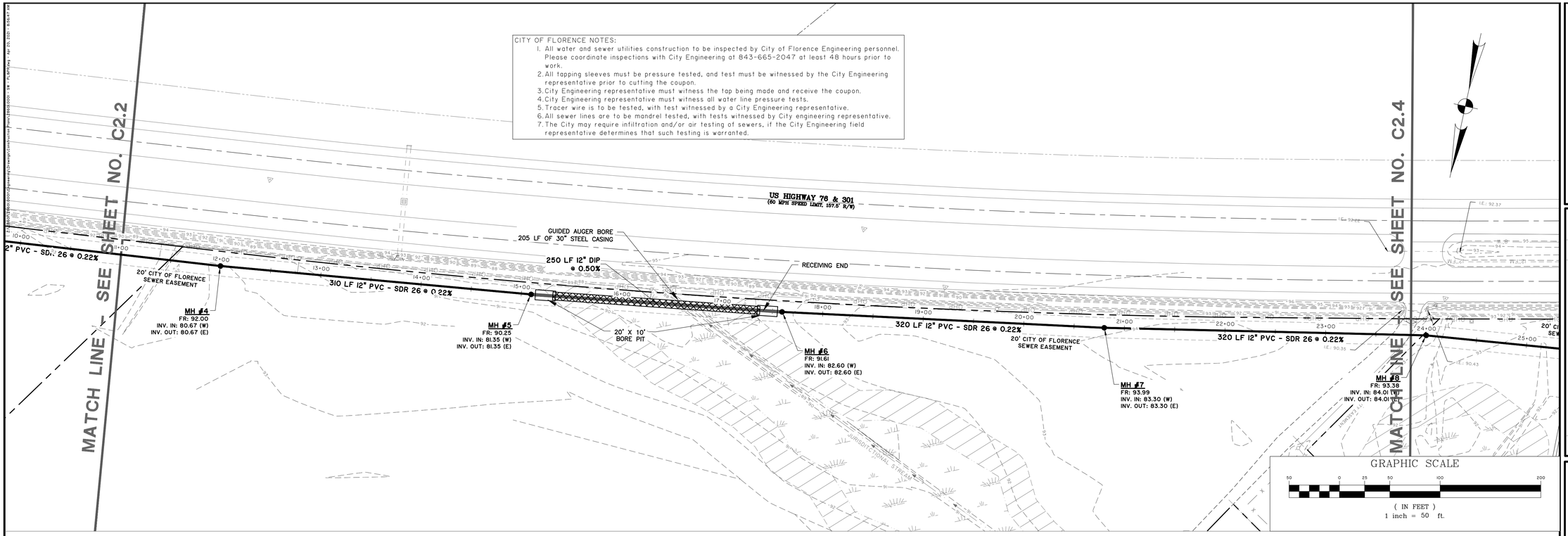

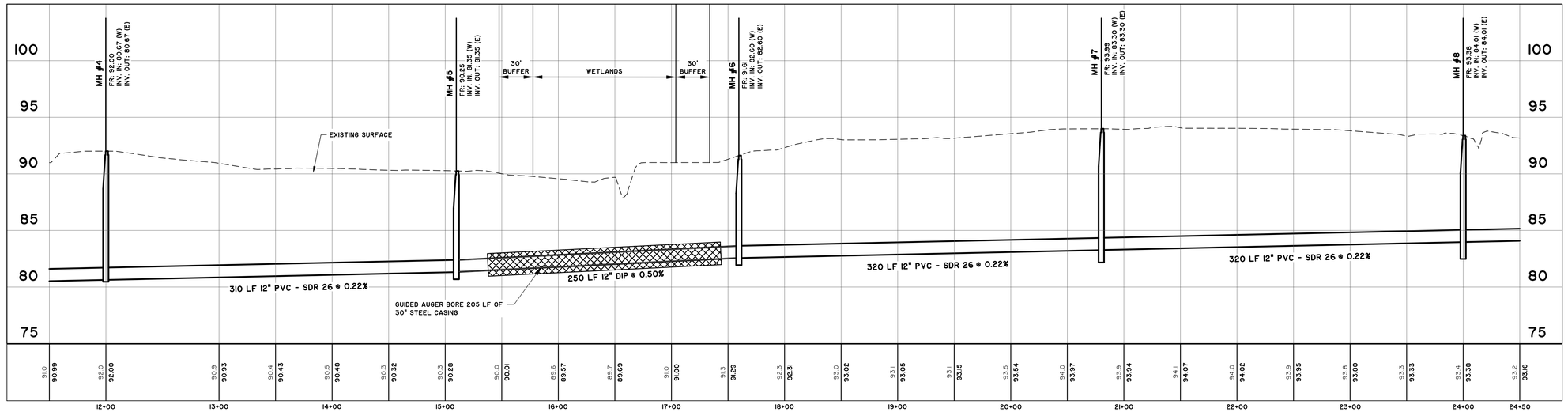

SEWER – RUN 1
STATIONS: 11+50 – 24+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

SOUTH CAROLINA
THOMAS & HUTTON ENGINEERING CO
No. C00285
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
PROFESSIONAL ENGINEER
No. 23696
NATHAN J. HOLLAND

6/7/21

BID SET - NOT FOR CONSTRUCTION

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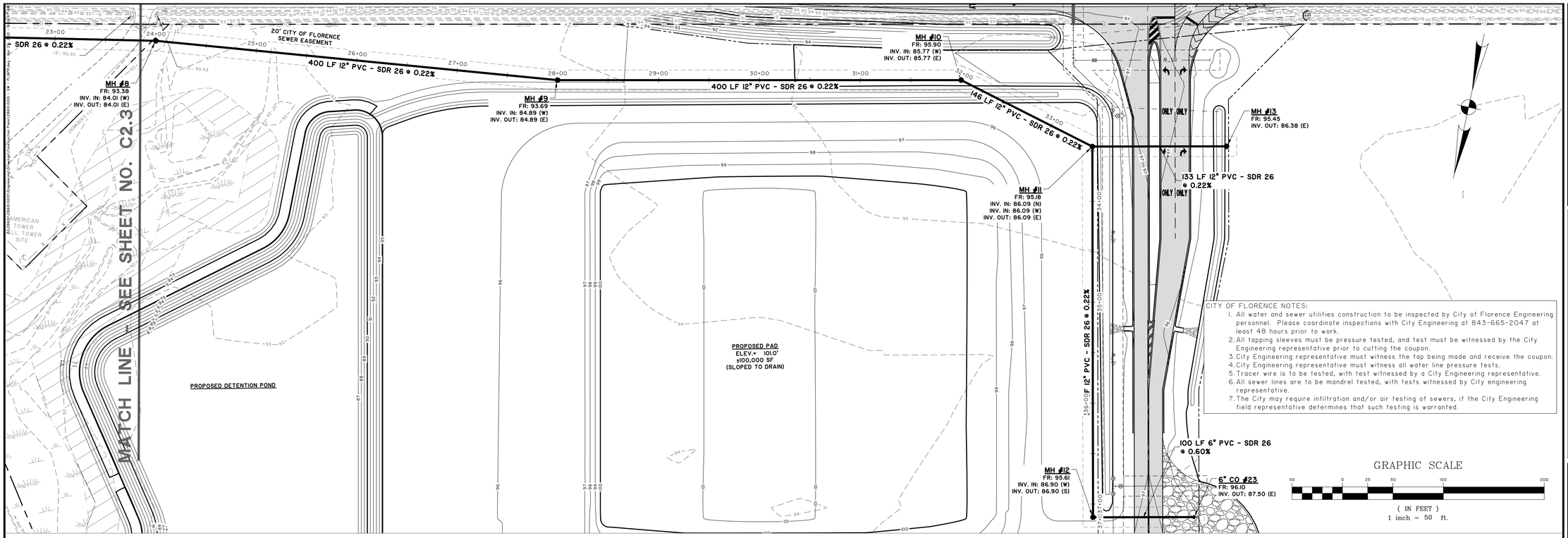
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

SEWER PLAN & PROFILE

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	AS NOTED

C2.3



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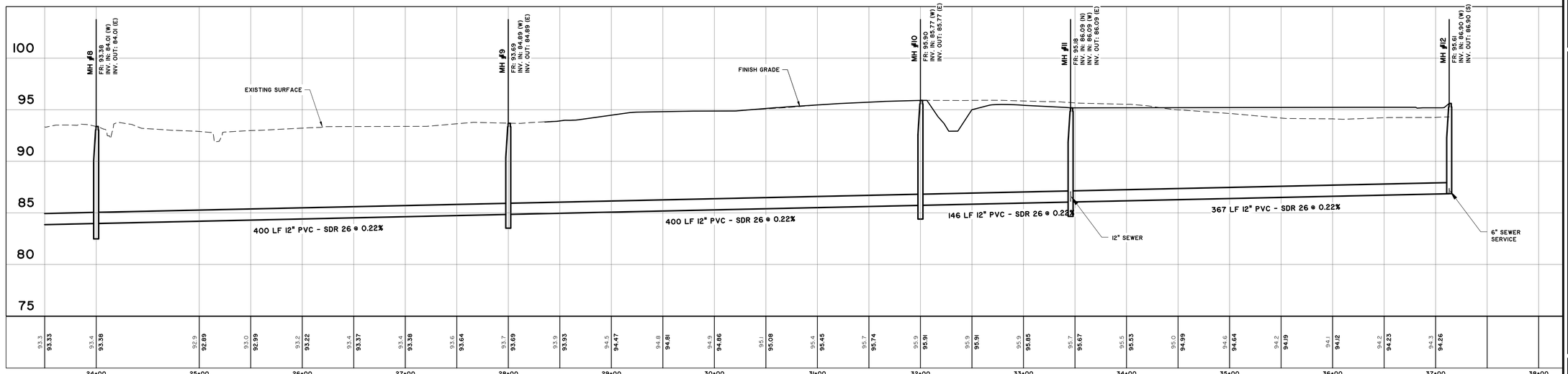
GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



SEWER – RUN 1
STATIONS: 23+50 – 38+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL — THOMAS & HUTTON ENGINEERING CO — No C00285 — CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL — No. 23696 — NATHAN J. HOLLAND — 6/7/21

BID SET - NOT FOR CONSTRUCTION

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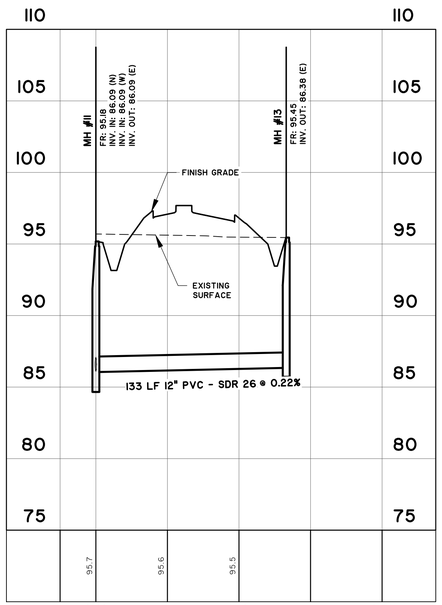
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

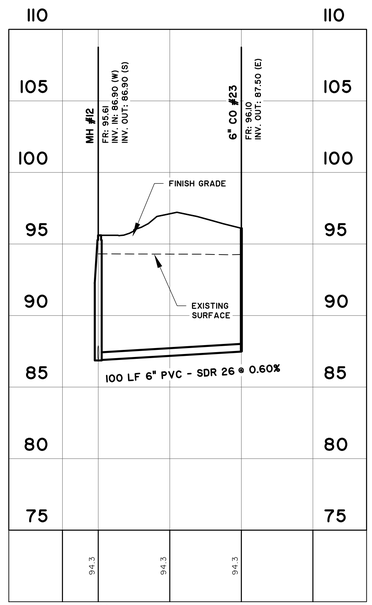
SEWER PLAN & PROFILE

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	AS NOTED

C2.4



SEWER – RUN 2
STATIONS: −0+25 – 2+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



SEWER – RUN 3
STATIONS: −0+25 – 1+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

SOUTH CAROLINA
THOMAS & HUTTON ENGINEERING CO.
No. C00285
CERTIFICATE OF AUTHORIZATION
NOV 2 2021

SOUTH CAROLINA
PROFESSIONAL ENGINEER
No. 23016
NOV 2 2021

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/04/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/04/07
1	REVISED PER SCDOT	NJH	2021/04/07

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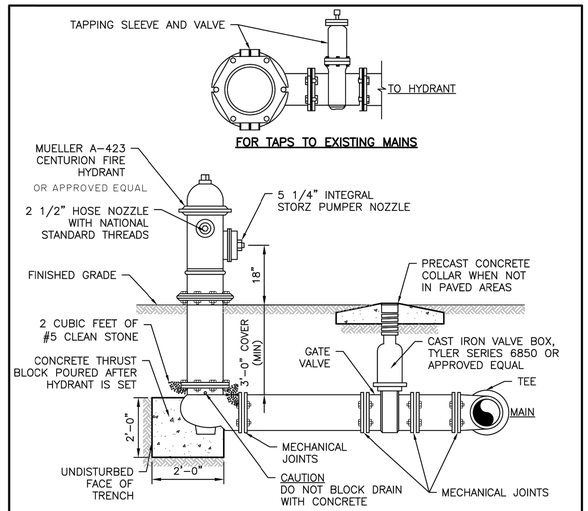
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

SEWER PROFILES

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 50'

C2.5

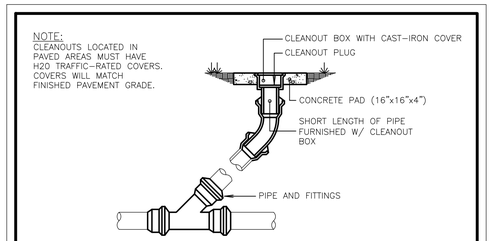


NOTES:

1. ALL FIRE HYDRANT LEADS TO BE DUCTILE IRON WITH MECHANICAL JOINTS RESTRAINTS.
2. PROVIDE MECHANICAL JOINT DUCTILE IRON FITTINGS.
3. HYDRANTS SHALL BE NO LESS THAN 3' NOR MORE THAN 6' FROM THE CURB OR THE EDGE OF A HARD SURFACE STREET OR ACCESS ROAD, EXCEPT THAT ALONG RURAL ROADS THROUGH UNDEVELOPED AREAS THE MAXIMUM DISTANCE MAY BE INCREASED TO 10'.
4. HYDRANT MUST BE LOCATED SO AS TO BE UNOBSTRUCTED FOR 15' EITHER SIDE AS MEASURED ALONG THE CURB OR A HARD SURFACE STREET OR ACCESS ROAD. THE AREA MUST BE FREE OF GROWTH AND OTHER OBSTRUCTIONS WHICH WOULD HINDER THE ACCESS TO THE HYDRANT.
5. MINIMUM DISTANCE BETWEEN VALVE AND HYDRANT SHALL BE 3'.
6. BENDS MAY BE USED IN HYDRANT LEAD TO FACILITATE HYDRANT LOCATION.
7. HYDRANT VALVES TO OPEN COUNTERCLOCKWISE.
8. HYDRANT COLOR SHALL BE A YELLOW BARREL WITH ORANGE BONNET AND NOZZLE CAPS.

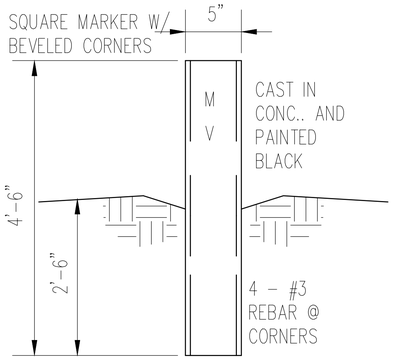
TYPICAL FIRE HYDRANT DETAIL

DWG NO:	W-008	CITY OF FLORENCE	NO.	REVISION	DATE
JOB NO:		CITY CENTER			
DATE:	6/4/14	324 WEST EVANS STREET			
SCALE:	NTS	FLORENCE, SC 29565			

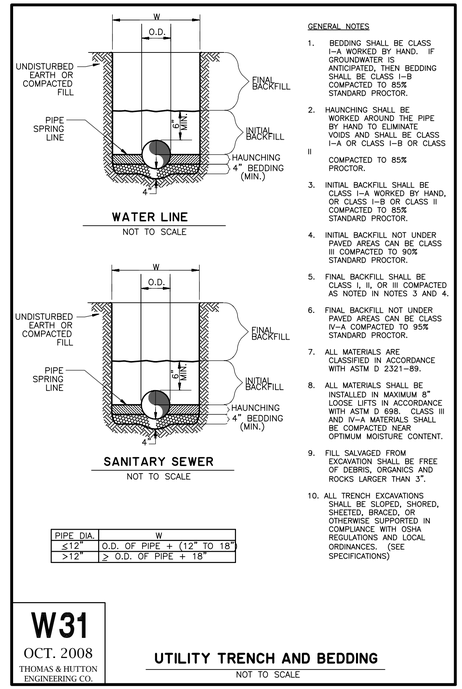


S10
OCT. 2008
THOMAS & HUTTON ENGINEERING CO.

CLEANOUT DETAIL
NOT TO SCALE



TYP. VALVE MARKER



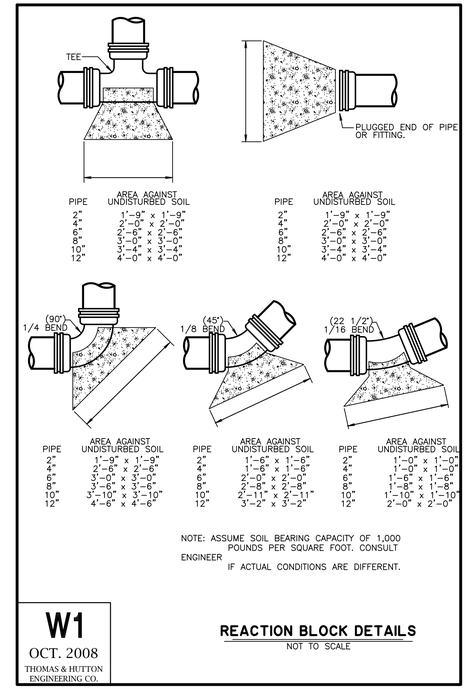
PIPE DIA.	W
≤12"	O.D. OF PIPE + (12" TO 18")
>12"	≥ O.D. OF PIPE + 18"

GENERAL NOTES

1. BEDDING SHALL BE CLASS I-A WORKED BY HAND. IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS I-B COMPACTED TO 85% STANDARD PROCTOR.
2. HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I-A OR CLASS I-B OR CLASS II COMPACTED TO 85% PROCTOR.
3. INITIAL BACKFILL SHALL BE CLASS I-A WORKED BY HAND, OR CLASS I-B OR CLASS II COMPACTED TO 85% STANDARD PROCTOR.
4. INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS III COMPACTED TO 90% STANDARD PROCTOR.
5. FINAL BACKFILL SHALL BE CLASS I, II, OR III COMPACTED AS NOTED IN NOTES 3 AND 4.
6. FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV-A COMPACTED TO 95% STANDARD PROCTOR.
7. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321-89.
8. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 698. CLASS III AND IV-A MATERIALS SHALL BE COMPACTED NEAR OPTIMUM MOISTURE CONTENT.
9. FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
10. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES. (SEE SPECIFICATIONS)

W31
OCT. 2008
THOMAS & HUTTON ENGINEERING CO.

UTILITY TRENCH AND BEDDING
NOT TO SCALE



PIPE	AREA AGAINST UNDISTURBED SOIL
2"	1'-9" x 1'-9"
4"	2'-0" x 2'-0"
6"	2'-6" x 2'-6"
8"	3'-0" x 3'-0"
10"	3'-4" x 3'-4"
12"	4'-0" x 4'-0"

PIPE	AREA AGAINST UNDISTURBED SOIL
2"	1'-9" x 1'-9"
4"	2'-6" x 2'-6"
6"	3'-6" x 3'-6"
8"	3'-10" x 3'-10"
10"	4'-6" x 4'-6"

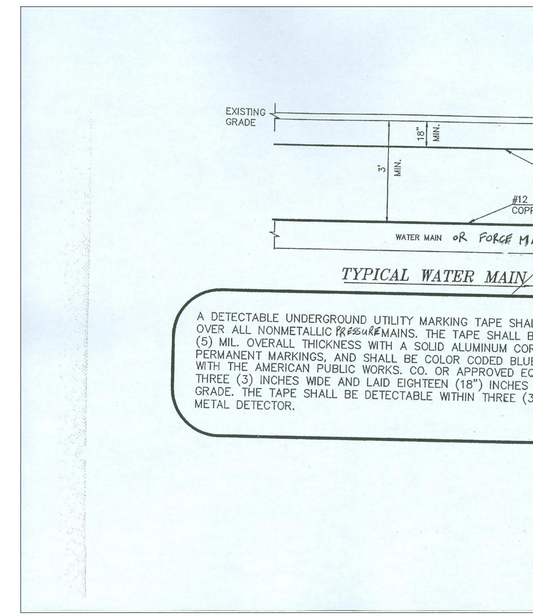
PIPE	AREA AGAINST UNDISTURBED SOIL
2"	1'-6" x 1'-6"
4"	1'-6" x 1'-6"
6"	2'-0" x 2'-0"
8"	2'-8" x 2'-8"
10"	2'-11" x 2'-11"
12"	3'-2" x 3'-2"

PIPE	AREA AGAINST UNDISTURBED SOIL
2"	1'-0" x 1'-0"
4"	1'-0" x 1'-0"
6"	1'-6" x 1'-6"
8"	1'-8" x 1'-8"
10"	1'-10" x 1'-10"
12"	2'-0" x 2'-0"

NOTE: ASSUME SOIL BEARING CAPACITY OF 1,000 POUNDS PER SQUARE FOOT. CONSULT ENGINEER IF ACTUAL CONDITIONS ARE DIFFERENT.

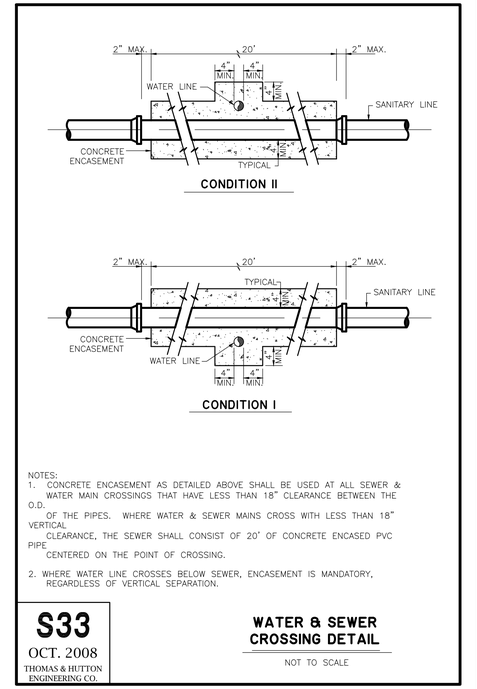
W1
OCT. 2008
THOMAS & HUTTON ENGINEERING CO.

REACTION BLOCK DETAILS
NOT TO SCALE



TYPICAL WATER MAIN/FORCE MAIN MARKING

A DETECTABLE UNDERGROUND UTILITY MARKING TAPE SHALL BE PLACED OVER ALL NONMETALLIC PRESSURE MAINS. THE TAPE SHALL BE A MINIMUM FIVE (5) MIL. OVERALL THICKNESS WITH A SOLID ALUMINUM CORE, SHALL HAVE PERMANENT MARKINGS, AND SHALL BE COLOR CODED BLUE IN ACCORDANCE WITH THE AMERICAN PUBLIC WORKS. CO. OR APPROVED EQUAL, SHALL BE THREE (3) INCHES WIDE AND LAID EIGHTEEN (18") INCHES FROM FINISHED GRADE. THE TAPE SHALL BE DETECTABLE WITHIN THREE (3) FEET WITH A METAL DETECTOR.



NOTES:
1. CONCRETE ENCASEMENT AS DETAILED ABOVE SHALL BE USED AT ALL SEWER & WATER MAIN CROSSINGS THAT HAVE LESS THAN 18" CLEARANCE BETWEEN THE O.D. OF THE PIPES. WHERE WATER & SEWER MAINS CROSS WITH LESS THAN 18" VERTICAL CLEARANCE, THE SEWER SHALL CONSIST OF 20' OF CONCRETE ENCASED PVC PIPE CENTERED ON THE POINT OF CROSSING.
2. WHERE WATER LINE CROSSES BELOW SEWER, ENCASEMENT IS MANDATORY, REGARDLESS OF VERTICAL SEPARATION.

S33
OCT. 2008
THOMAS & HUTTON ENGINEERING CO.

WATER & SEWER CROSSING DETAIL
NOT TO SCALE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL — THOMAS B. HUTTON ENGINEERING CO. — No. C00285 — CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL — No. 23696 — 6/4/21

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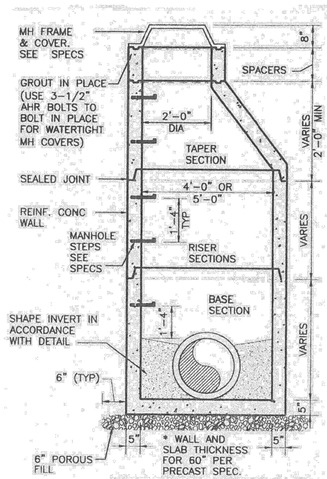
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

UTILITY DETAILS

JOB NO:	J-286010001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 50'

C2.6

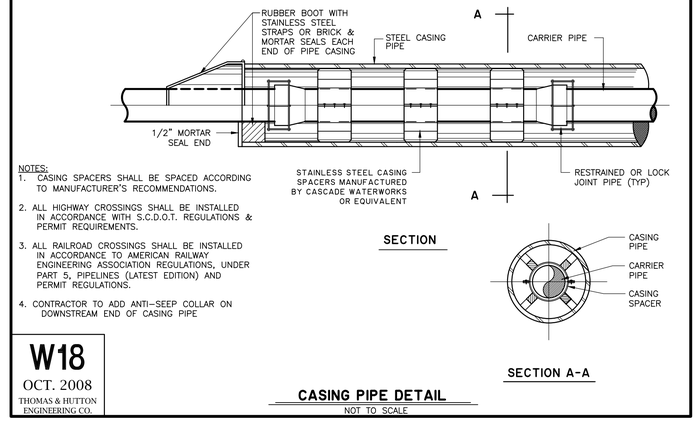


PRECAST MANHOLE 48" OR 60" ID

NO SCALE

NOTES :

1. FRAME & COVER CONTACT SURFACES SHALL BE MACHINED TO PROVIDE EVEN BEARING OF COVER ON FRAME.
2. STANDARD FRAME & COVER SHALL BE MH-RCR-2001 BY DEWEY, OR COVER MC-18 & FRAME MF-11 BY SUMTER, OR EQUAL. (TOTAL WT. = 310 LBS.)
3. MANHOLES SHALL CONFORM TO ASTM C478.
4. SEWER MANHOLES ARE TO BE INSTALLED WITHOUT STEPS PER CITY



NOTES:
1. CASING SPACERS SHALL BE SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
2. ALL HIGHWAY CROSSINGS SHALL BE INSTALLED IN ACCORDANCE WITH S.C.D.O.T. REGULATIONS & PERMIT REQUIREMENTS.
3. ALL RAILROAD CROSSINGS SHALL BE INSTALLED IN ACCORDANCE TO AMERICAN RAILWAY ENGINEERING ASSOCIATION REGULATIONS, UNDER PART 5, PIPELINES (LATEST EDITION) AND PERMIT REGULATIONS.
4. CONTRACTOR TO ADD ANTI-SEEP COLLAR ON DOWNSTREAM END OF CASING PIPE

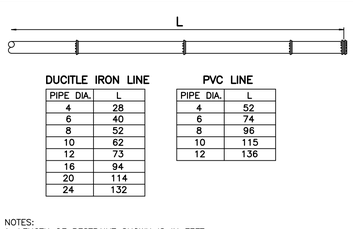
SECTION

SECTION A-A

W18
OCT. 2008
THOMAS & HUTTON ENGINEERING CO.

CASING PIPE DETAIL

NOT TO SCALE



DUCTILE IRON LINE

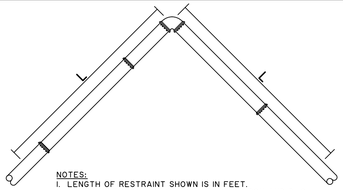
PIPE DIA.	L
4	28
6	40
8	52
10	62
12	73
16	94
20	114
24	132

PVC LINE

PIPE DIA.	L
4	52
6	74
8	96
10	115
12	136

NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.

DEAD END RESTRAINT



NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.

PVC LINE

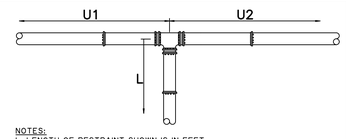
PIPE DIA.	BEND ANGLE 11 1/4°	22 1/2°	45°	90°
4	3	6	12	29
6	4	8	17	41
8	5	11	22	53
10	6	13	26	64
12	7	15	31	75

DUCTILE IRON LINE

PIPE DIA.	BEND ANGLE 11 1/4°	22 1/2°	45°	90°
4	2	4	8	20
6	3	6	12	28
8	4	7	15	36
10	4	9	18	43
12	5	10	21	51
16	6	13	27	65
20	8	16	33	79
24	9	18	38	92

MINIMUM RESTRAINED LENGTH (L)

HORIZONTAL BEND RESTRAINT



NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
3. U1 AND U2 = UNINTERRUPTED STRAIGHT RUNS OF PIPE IN EACH DIRECTION.
4. Ur = THE SMALLER OF U1 OR U2.
5. L = MINIMUM RESTRAINED LENGTH ALONG THE BRANCH.
6. WHERE Ur IS LESS THAN 5', RESTRAIN TEE AS A 90° HORIZONTAL BEND.

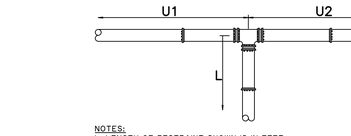
PVC LINE

TEE \ Ur	5'-10'	11'-20'	21'-35'	> 35'
4X4	43	28	4	*
6X4	38	17	*	*
6X6	64	49	25	*
8X4	34	6	*	*
8X6	61	42	10	*
8X8	87	72	48	12
10X4	29	*	*	*
10X6	58	34	*	*
10X8	84	66	35	*
10X10	106	91	67	31
12X4	24	*	*	*
12X6	54	26	*	*
12X8	82	60	23	*
12X10	104	86	57	13
12X12	126	112	87	51

MINIMUM RESTRAINED LENGTH (L)

*RESTRAIN AT TEE ONLY.

TEE RESTRAINT (PVC LINE)



NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
3. U1 AND U2 = UNINTERRUPTED STRAIGHT RUNS OF PIPE IN EACH DIRECTION.
4. Ur = THE SMALLER OF U1 OR U2.
5. L = MINIMUM RESTRAINED LENGTH ALONG THE BRANCH.
6. WHERE Ur IS LESS THAN 5', RESTRAIN TEE AS A 90° HORIZONTAL BEND.

DUCTILE IRON LINE

TEE \ Ur	5'-10'	11'-20'	21'-35'	36'-50'	50'-75'	75'-100'
4X4	23	15	2	*	*	*
6X4	21	9	*	*	*	*
6X6	35	27	14	*	*	*
8X4	18	3	*	*	*	*
8X6	33	23	5	*	*	*
8X8	47	39	26	6	*	*
10X4	16	*	*	*	*	*
10X6	31	18	*	*	*	*
10X8	46	36	19	*	*	*
10X10	57	49	36	17	*	*
12X4	13	*	*	*	*	*
12X6	30	14	*	*	*	*
12X8	44	32	13	*	*	*
12X10	56	47	31	7	*	*
12X12	68	60	47	28	*	*
16X6	26	4	*	*	*	*
16X8	41	25	*	*	*	*

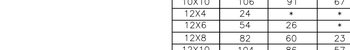
DUCTILE IRON LINE

TEE \ Ur	5'-10'	11'-20'	21'-35'	36'-50'	50'-75'	75'-100'
16X10	54	41	20	*	*	*
16X12	66	56	38	*	*	*
16X16	89	81	38	*	*	*
20X6	22	*	*	*	*	*
20X8	38	18	*	*	*	*
20X10	51	35	8	*	*	*
20X12	64	51	28	*	*	*
20X16	87	77	60	35	10	*
20X20	108	100	87	67	48	*
24X6	18	*	*	*	*	*
24X8	35	10	*	*	*	*
24X10	49	29	*	*	*	*
24X12	62	45	17	*	*	*
24X16	86	73	53	22	*	*
24X20	107	97	81	57	33	*
24X24	127	119	106	86	66	33

MINIMUM RESTRAINED LENGTH (L)

*RESTRAIN AT TEE ONLY.

TEE RESTRAINT (DUCTILE IRON LINE)



DUCTILE IRON LINE

REDUCER	U	L
6X4	30	21
8X4	72	38
8X6	29	22
10X4	123	51
10X6	63	38
10X8	26	21
12X4	186	64
12X6	106	53
12X8	59	39
12X10	26	21
16X6	214	79
16X8	141	68
16X10	91	56
16X12	54	40
20X10	174	84
20X12	123	71
20X16	51	40
24X12	207	97
24X16	113	72
24X20	48	39

PVC LINE

REDUCER	U	L
6X4	56	38
8X4	134	69
8X6	53	40
10X4	227	94
10X6	117	71
10X8	49	39
12X4	343	118
12X6	196	99
12X8	109	72
12X10	48	40

U = MINIMUM UNINTERRUPTED STRAIGHT RUN OF PIPE ON SMALL SIDE OF REDUCER.

L = MINIMUM RESTRAINED LENGTH.

* WHERE MINIMUM "U" IS NOT MET, PIPE ON LARGE SIDE OF REDUCER SHALL BE RESTRAINED FOR A MINIMUM OF "L" FEET.

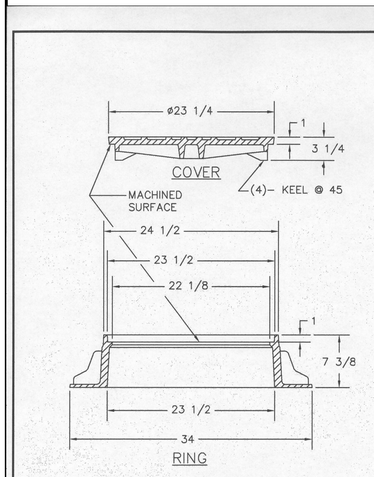
NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.

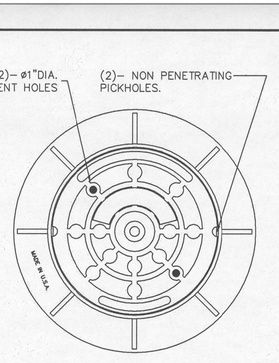
REDUCER RESTRAINT

W32
OCT. 2008
THOMAS & HUTTON ENGINEERING CO.

RESTRAINED JOINTS DETAILS

NOT TO SCALE





USF 678-KM RING & COVER OR APPROVED EQUAL.

MATERIAL: ASTM-A48 GRAY IRON CLASS: 35B
RING WEIGHT: 200 COVER WEIGHT: 130

DATE: 11-9-05
SCALE: NTS
DESCRIPTION: SANITARY SEWER MANHOLE RING & COVER
DWG. NO. SS-001
JOB NO.

CITY OF FLORENCE
CITY-COUNTY COMPLEX RR
180 N. IRBY ST.
FLORENCE, S.C. 29501

DEPT. OF PUBLIC WORKS & UTILITIES
1440 McCURDY ROAD
FLORENCE, S.C. 29501
PHONE: 843-665-3236 FAX: 843-665-3200

3

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

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1501 Main Street • Suite 760
Columbia, SC 29201 • 803.451.6789
www.thomasandhutton.com

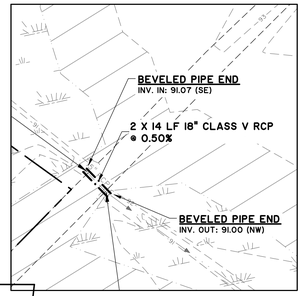
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

UTILITY DETAILS

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 50'

C2.7



INSET
SCALE: 1" = 30'

PAVING LEGEND
(SEE DETAIL SHEET C3.3 FOR PAVEMENT THICKNESS)

HEAVY DUTY ASPHALT	
FULL DEPTH REMOVAL	
2" MILL & RESURFACE	

FLORENCE COUNTY
306-01-042

7+00.07

PROPOSED TEMPORARY GRAVEL TURNAROUND (8" GABC)

PROPOSED HEAVY DUTY PAVING (SEE SHEET C3.4)

JURISDICTIONAL WETLAND (TYP.)

30' WETLAND BUFFER

PROPOSED PAD
ELEV= 101.5'
±100,000 SF
(SLOPED TO DRAIN)

PROPOSED DETENTION POND
TOP OF POND: 95.00'
BOTTOM OF POND: 87.0'
WSEL: 92.15'
2-YR PEAK STAGE: 92.66'
10-YR PEAK STAGE: 93.08'
25-YR PEAK STAGE: 93.36'
100-YR PEAK STAGE: 93.93'

EMERGENCY SPILLWAY
ELEV: 94.0'

PIPE END
INV. IN: 92.15 (E)
2 X 27 LF 18" RCP
@ 0.55%
BEVELED PIPE END
INV. OUT: 92.00 (W)

AMERICAN TOWER CELL TOWER SITE
AMERICAN TOWER LEASE LINE

SEE INSET THIS SHEET

N DEERWOOD LN (PRIVATE)

MONUMENT SIGN BY OTHERS

CULVERT 2

CULVERT 1

END CONSTRUCTION
N: 863,295.41
E: 2,419,037.94

BEGIN CONSTRUCTION
N: 863,453.63
E: 2,419,729.46

SWALE WITH 4' BOTTOM, 3:1 SIDES

CONTRACTOR TO MATCH EXISTING PAVEMENT ELEVATIONS ALONG US HWY 76/301 (TYP.)

FULL DEPTH ASPHALT REMOVAL

2" MILL & RESURFACE

MEDIAN CROSSOVER CULVERT

US HIGHWAY 76 & 301
(40 MPH SPEED LIMIT, 107.0' R/W)

GRATE INLET
FR: 94.90
I.E. OUT: 93.37

STORM INLET
(TO BE REMOVED)
I.E. OUT: 92.98

APPROXIMATE LOCATION OF PIPE INVERT (CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES)

I.E.: 92.39
I.E.: 92.79
I.E.: 91.12
I.E.: 89.53
I.E.: 89.63
I.E.: 89.06
I.E.: 92.22
I.E.: 90.43
I.E.: 90.35

FLOYD FAMILY PROPERTIES LLC.
307-01-011

EVANS, RONNIE LAROSS
307-01-048

ROBERTS, WILLIE JOE & ROBERTS, LINDA S
307-01-049

FLOYD FAMILY PROPERTIES LLC
307-01-047

NOTES:
1. CONTRACTOR TO SAW CUT AND MATCH EXISTING PAVEMENT ELEVATIONS ALONG THE EXISTING EDGELINE OF PAVEMENT.
2. ALL CONSTRUCTION WITHIN SCDOT RIGHT-OF-WAY SHALL BE IN CONFORMANCE WITH SCDOT STANDARDS AND SPECIFICATIONS. CONTRACTOR TO REFER TO THE MOST CURRENT EDITION OF THE SCDOT STANDARD DRAWINGS.

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23906 THOMAS & HUTTON ENGINEERING CO. CERTIFICATE No. C00285

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23906 CERTIFICATE OF AUTHORIZATION

9/7/21

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/08/03
2	REVISED PER FLORENCE COUNTY	NJH	2021/08/03
1	REVISED PER SCDOT	NJH	2021/08/03

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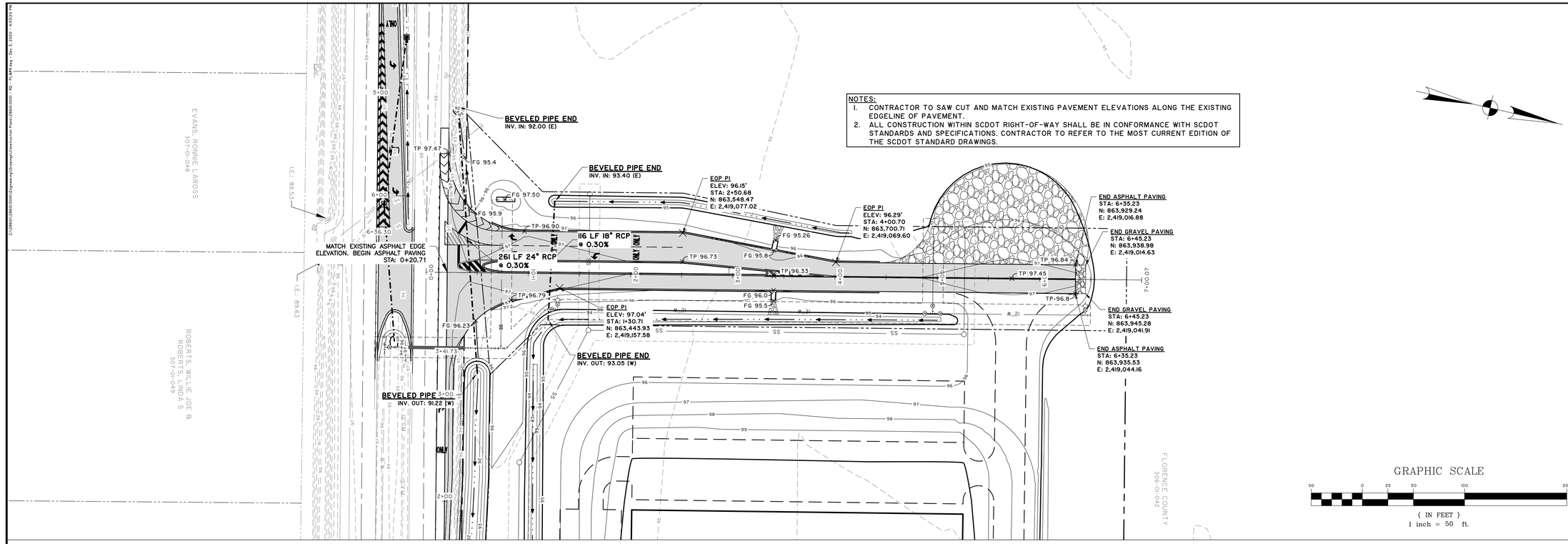
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

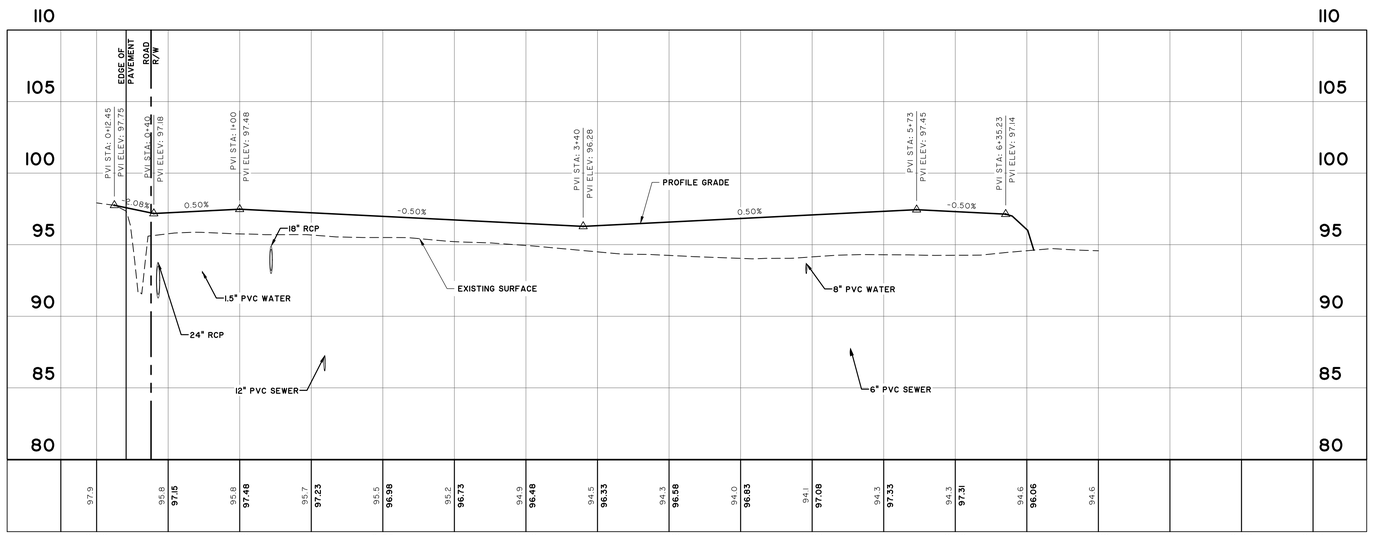
FLORENCE COUNTY INDUSTRIAL PARK EAST

PAVING, GRADING, & DRAINAGE PLAN

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 60'

C3.0





ENTRANCE ROADWAY
STATIONS: −0+25 − 8+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
1	REVISED PER SCDOT	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07

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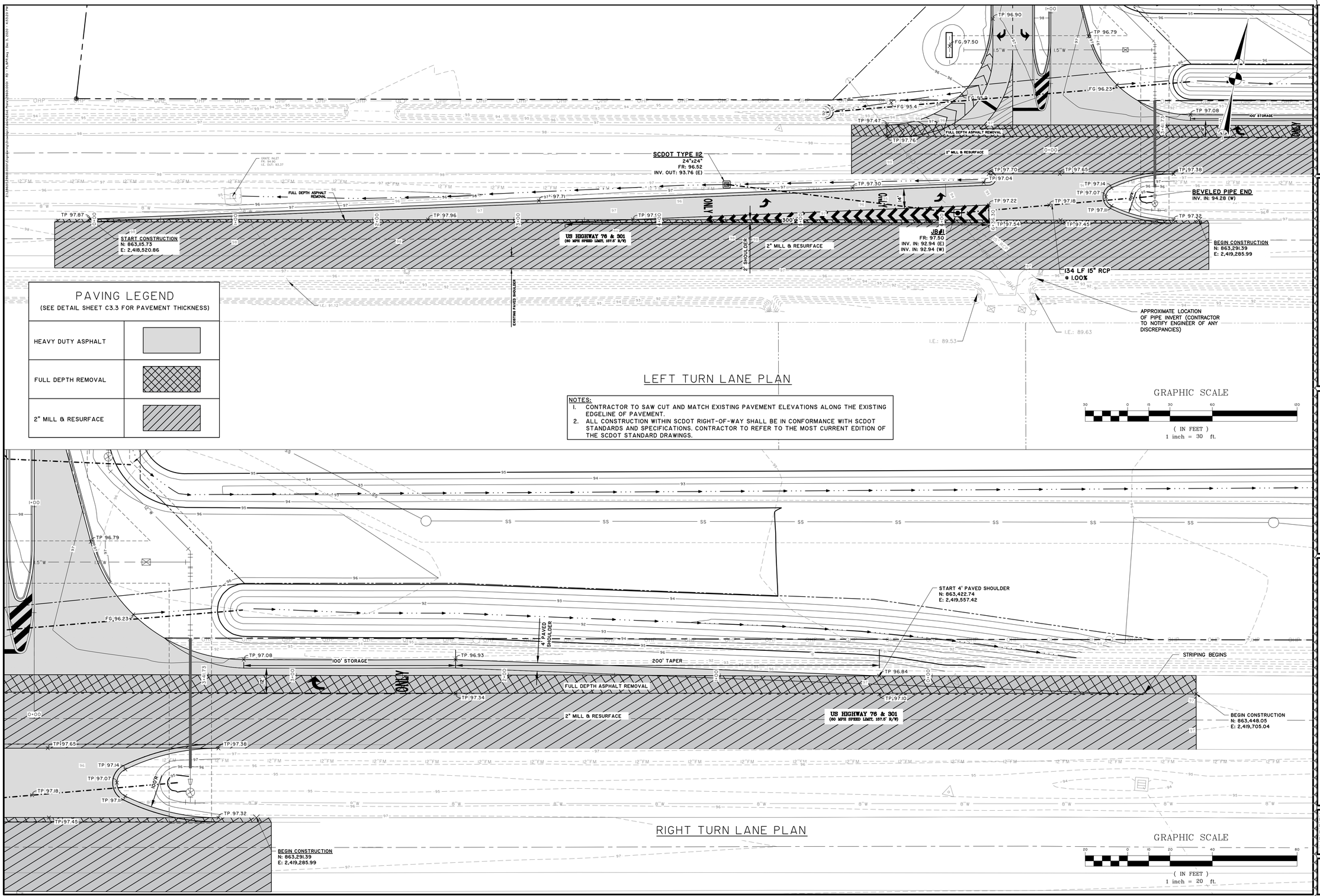
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

ROAD PLAN AND PROFILE

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	AS NOTED

C3.1



PAVING LEGEND

(SEE DETAIL SHEET C3.3 FOR PAVEMENT THICKNESS)

HEAVY DUTY ASPHALT	
FULL DEPTH REMOVAL	
2" MILL & RESURFACE	

LEFT TURN LANE PLAN

NOTES:
1. CONTRACTOR TO SAW CUT AND MATCH EXISTING PAVEMENT ELEVATIONS ALONG THE EXISTING EDGELINE OF PAVEMENT.
2. ALL CONSTRUCTION WITHIN SCDOT RIGHT-OF-WAY SHALL BE IN CONFORMANCE WITH SCDOT STANDARDS AND SPECIFICATIONS. CONTRACTOR TO REFER TO THE MOST CURRENT EDITION OF THE SCDOT STANDARD DRAWINGS.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

RIGHT TURN LANE PLAN

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

SOUTH CAROLINA PROFESSIONAL ENGINEER — THOMAS & HUTTON ENGINEERING CO. — No. C00285 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER — No. 29696 — NJH — 6/7/21

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
1	REVISED PER SCDOT	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07

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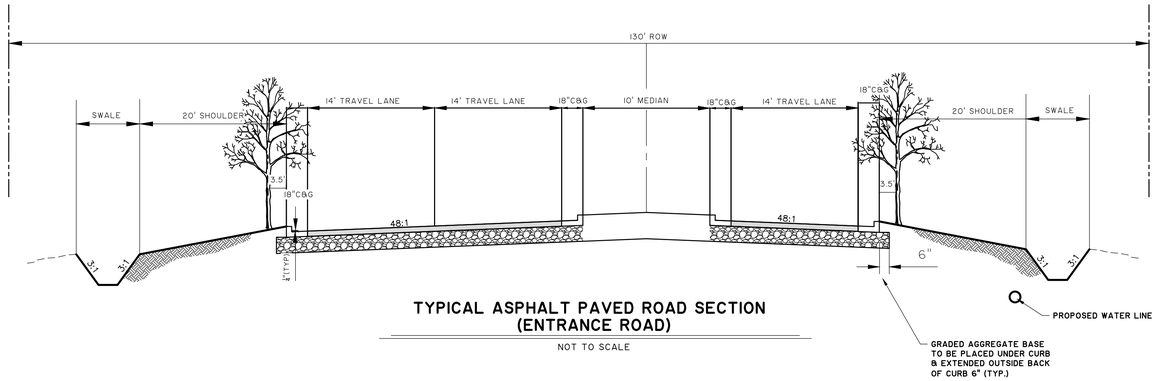
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

OFF-SITE ROADWAY PLAN

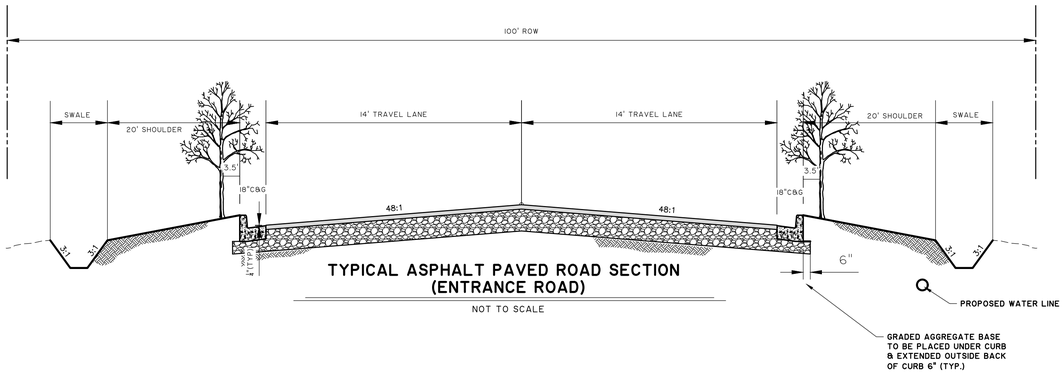
JOB NO:	J-286010001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	AS NOTED

C3.2



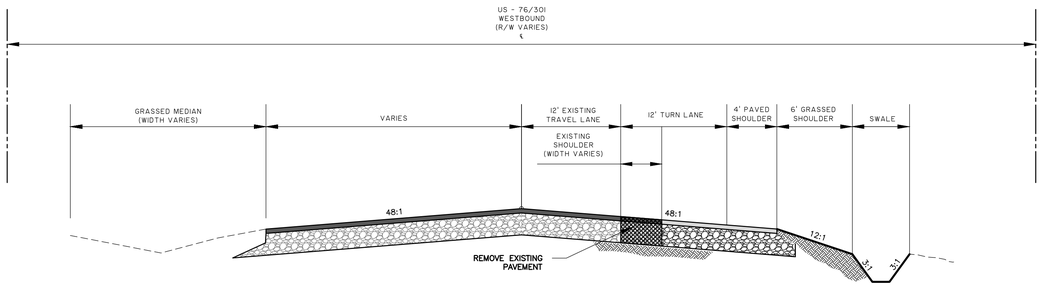
TYPICAL ASPHALT PAVED ROAD SECTION (ENTRANCE ROAD)

NOT TO SCALE



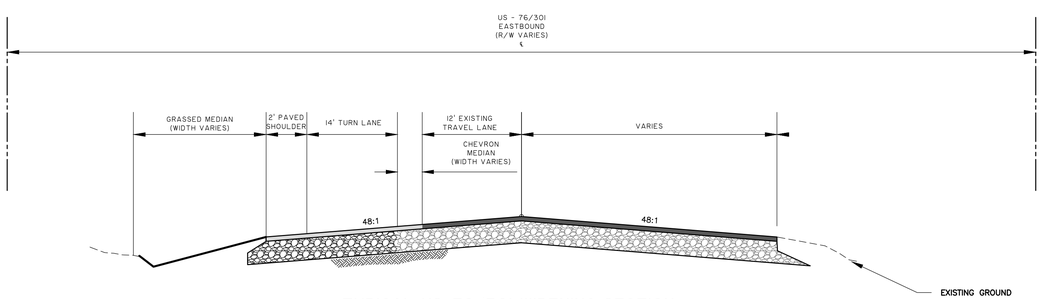
TYPICAL ASPHALT PAVED ROAD SECTION (ENTRANCE ROAD)

NOT TO SCALE



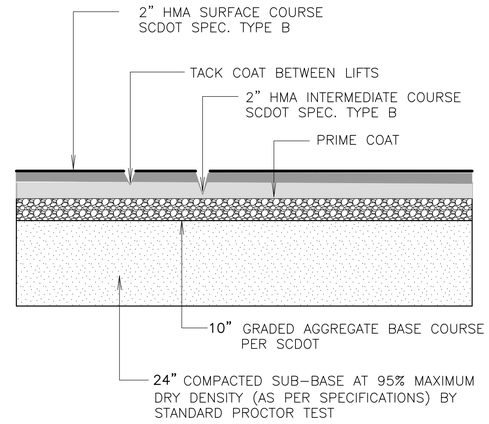
TYPICAL US-76/301 WIDENING SECTION (DECEL LANE)

NOT TO SCALE



TYPICAL US-76/301 WIDENING SECTION (LEFT TURN LANE)

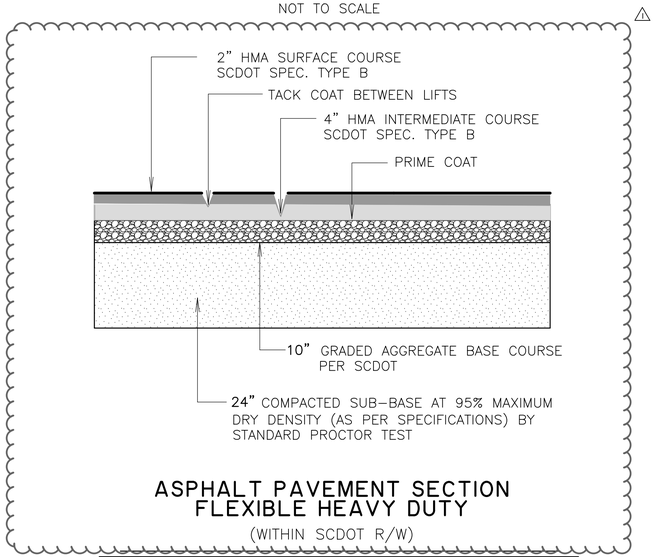
NOT TO SCALE



ASPHALT PAVEMENT SECTION FLEXIBLE HEAVY DUTY

(REFER TO GEOTECHNICAL REPORT)

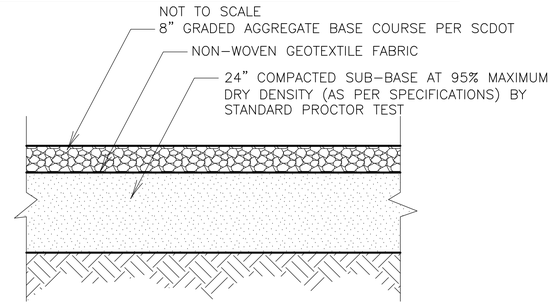
NOT TO SCALE



ASPHALT PAVEMENT SECTION FLEXIBLE HEAVY DUTY

(WITHIN SCDOT R/W)

NOT TO SCALE



GRAVEL ROAD SECTION

NOT TO SCALE

NORTH CAROLINA PROFESSIONAL ENGINEER THOMAS B HUTTON ENGINEERING CO No C00285 CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA PROFESSIONAL ENGINEER No 23696 CERTIFICATE OF AUTHORIZATION

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

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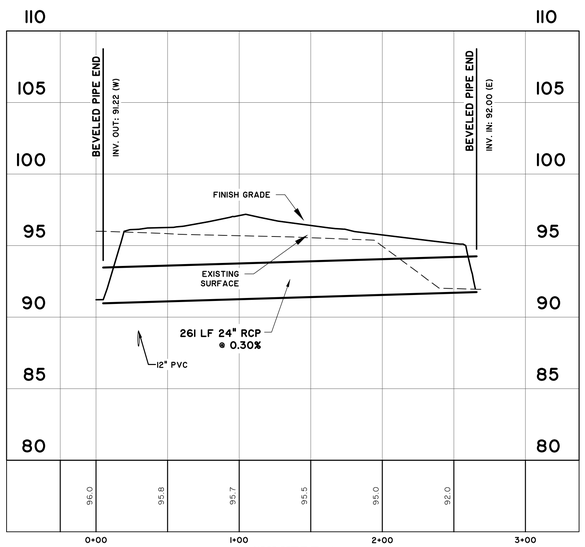
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

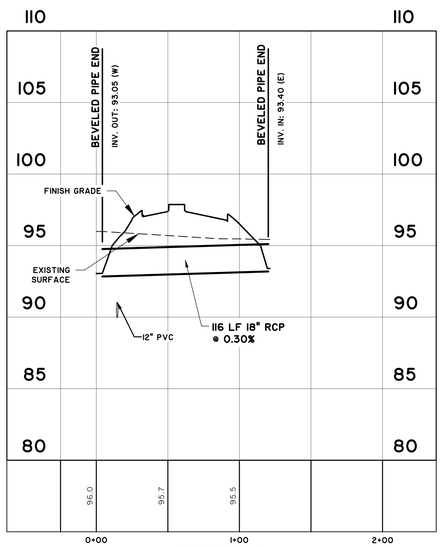
TYPICAL ROADWAY SECTIONS

JOB NO:	J-286010001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	N/A

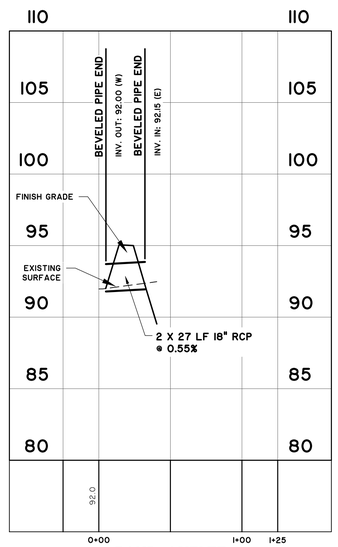
C3.3



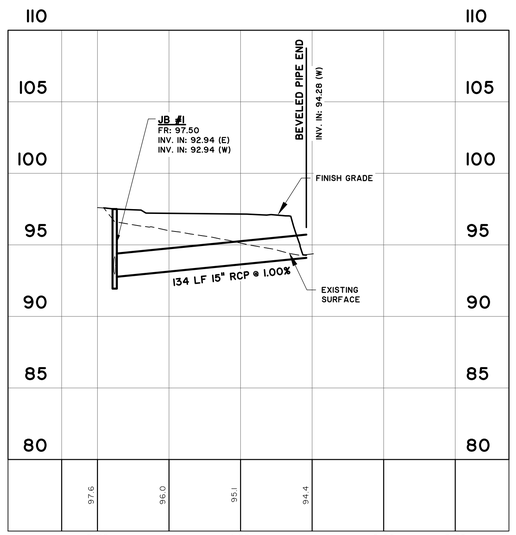
CULVERT 1
STATIONS: −0+25 – 3+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



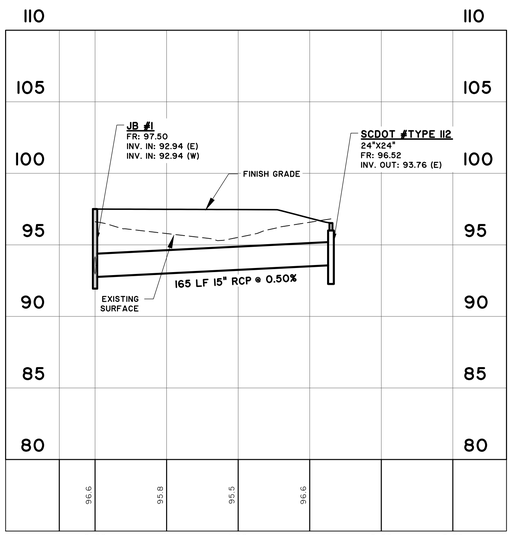
CULVERT 2
STATIONS: −0+25 – 2+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



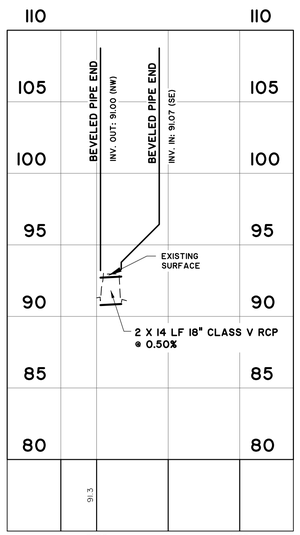
POND OUTLET
STATIONS: −0+25 – 1+25
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



MEDIAN CROSSOVER CULVERT
STATIONS: −0+25 – 2+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



MEDIAN CROSSOVER CULVERT 2
STATIONS: −0+25 – 2+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



DEEPWOODS CULVERTS
STATIONS: −0+25 – 1+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

NORTH CAROLINA
PROFESSIONAL ENGINEER
THOMAS & HUTTON ENGINEERING CO
No. C00285
CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA
PROFESSIONAL ENGINEER
No. 23906
REGISTERED

7/21

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
1	REVISED PER SCDOT	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07

THOMAS & HUTTON
1501 Main Street • Suite 760
Columbia, SC 29201 • 803.451.6789
www.thomasandhutton.com

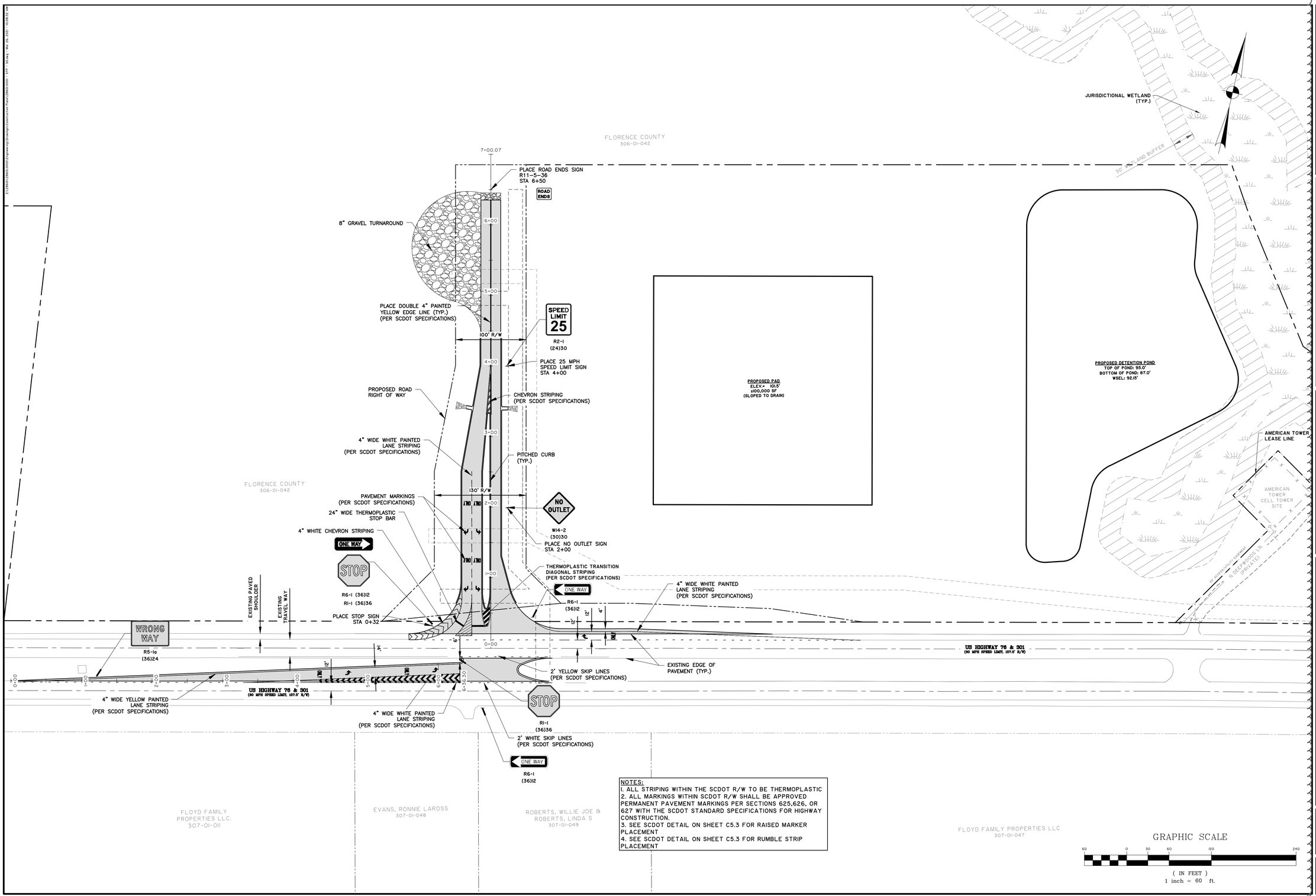
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

DRAINAGE PROFILES

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 50'

C3.4



NOTES:
1. ALL STRIPING WITHIN THE SCDOT R/W TO BE THERMOPLASTIC
2. ALL MARKINGS WITHIN SCDOT R/W SHALL BE APPROVED PERMANENT PAVEMENT MARKINGS PER SECTIONS 625,626, OR 627 WITH THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
3. SEE SCDOT DETAIL ON SHEET C5.3 FOR RAISED MARKER PLACEMENT
4. SEE SCDOT DETAIL ON SHEET C5.3 FOR RUMBLE STRIP PLACEMENT

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL
No 23906
CERTIFICATE OF AUTHORIZATION
THOMAS & HUTTON ENGINEERING CO
No C00285
NORTH CAROLINA
CERTIFICATE OF AUTHORIZATION
No C00285

9/7/21

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/08/31
2	REVISED PER FLORENCE COUNTY	NJH	2021/08/31
1	REVISED PER SCDOT	NJH	2021/08/31

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FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

STRIPING AND SIGNAGE PLAN

JOB NO:	J-286010001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 60'

C5.0

Z:\28601\28601.0001\Engineering\Drawings\Construction Plans\28601.0001 - ST - DT.dwg - Apr 27, 2021 - 9:26:03 AM

REFERENCES

NATIONAL DOCUMENTS
AASHTO M31, M170, M198, M295, M302, M315, M336, T96, T104
ASTM C443, C990

SCDOT DOCUMENTS
SC-M-714
PCDM-05
QPL 60
QPL 69

RELATED DRAWINGS & KEYWORDS
714-005-00
714-020-00
714-105-00
714-120-00
714-990-MO

THIS DRAWING IS ONLY VALID FOR CONSTRUCTION WHEN SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF SOUTH CAROLINA. CHECK WWW.SCDOT.ORG FOR LATEST UPDATE.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 19782 GEORGE ROBERT BEDENBAUGH, JR.

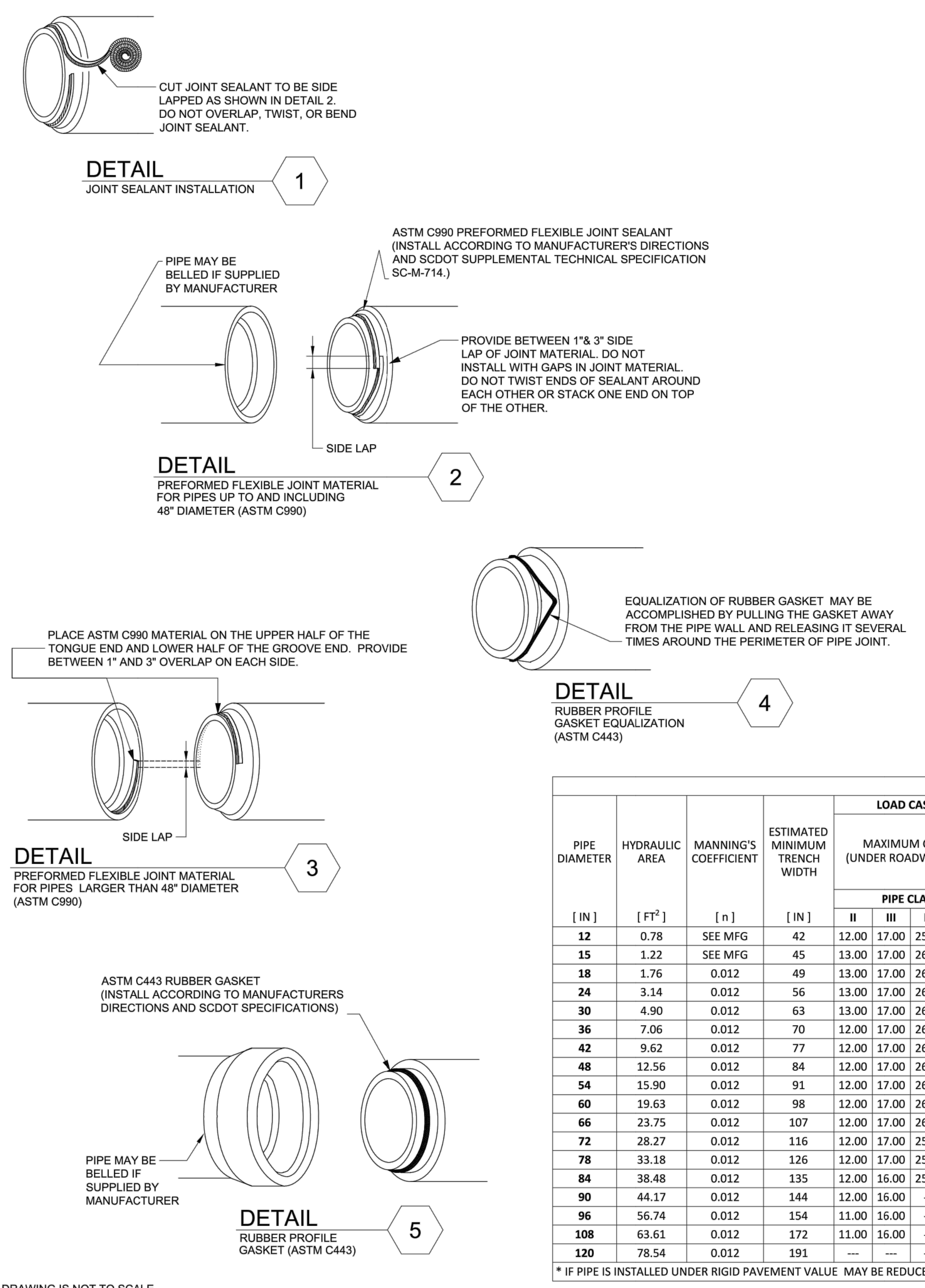
SIGNATURE
11/09/20
DATE

#	DATE	CHK	DESCRIPTION
6	---	---	---
5	3/2020	DSO	GENERAL REVISIONS
4	8/2012	DSO	SCDOT LETTER 3/12
3	3/2010	JBH	GENERAL REVISIONS
2	3/2009	HJC	COMPLETE TABLE
1	7/2008	HJC	GENERAL REVISIONS
0	3/2008	DSO	NEW STANDARD

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING
PIPE CULVERTS SMOOTH WALL (RIGID REINFORCED CONCRETE PIPE (RCP) DETAILS & FILL HEIGHT)

714-205-01
EFFECTIVE LETTING DATE JULY 2020 THIS DRAWING IS NOT TO SCALE.



1. SEE SHEET 714-005-00, 714-020-00, 714-105-00, & 714-120-00 FOR GENERAL NOTES, AND TRENCH INSTALLATION REQUIREMENTS.
2. USE ONLY REINFORCED CONCRETE PIPE AND JOINT MATERIAL FROM MANUFACTURERS LISTED ON QUALIFIED PRODUCT LIST 69. USE ONLY PIPE CLASSES LISTED IN TABLE 714-205A.
3. FLEXIBLE PIPE CULVERTS ARE PROHIBITED FROM USE ON ALL INTERSTATE AND SCDOT EVACUATION ROUTES. USE ONLY RIGID PIPE CULVERTS FOR ALL INTERSTATE AND SCDOT EVACUATION ROUTES STATEWIDE.
4. MANUFACTURERS MAY SUBSTITUTE A HIGHER CLASS PIPE THAN THE PIPE CLASS SPECIFIED ON THE PLANS, HOWEVER, INSTALLATION DEPTH SHALL NOT EXCEED THE DEPTH SHOWN ON THE PLANS OR VIOLATE THE FILL HEIGHTS IDENTIFIED IN TABLE 714-205A. NO ADDITIONAL PAYMENT WILL BE MADE FOR HIGHER CLASS PIPE SUBSTITUTION.
5. SITE CONDITIONS OTHER THAN TYPICAL INSTALLATION MAY REQUIRE SPECIAL DESIGNED PIPE. SPECIAL DESIGN PIPE MAY ALSO BE REQUIRED FOR INSTALLATIONS OUTSIDE OF SCDOT RIGHT OF WAY - SEE RIGHT OF WAY/UTILITY/MUNICIPAL AGREEMENT FOR THESE INSTALLATIONS. WHEN REQUIRED, ALL SPECIAL DESIGN PIPES MUST BE DESIGNED IN ACCORDANCE WITH PCDM-05.
6. THIS FILL HEIGHT TABLE IS FOR USE IN SCDOT ROADWAY APPLICATIONS ONLY AND SHOULD NOT BE USED FOR ANY OTHER TRANSPORTATION FACILITY.
7. THE REINFORCED CONCRETE PIPE FILL HEIGHT VALUES IN TABLE 714-205A ARE BASED ON CALCULATIONS PROVIDED BY THE AMERICAN CONCRETE PIPE ASSOCIATION. FILL HEIGHT VALUES IN TABLE 714-205A ARE APPLICABLE FOR THE FOLLOWING LOAD CASE CRITERIA:

   LOAD CASE 1 - STANDARD MAXIMUM COVER INSTALLATION UNDERNEATH ROADWAY. ANY PIPE REQUIRING INSTALLATION DEPTHS GREATER THAN THIS VALUE WILL REQUIRE A SPECIAL DESIGNED PIPE.

   LOAD CASE 2 - STANDARD MINIMUM COVER INSTALLATION UNDERNEATH ROADWAY. THIS VALUE IS SET BY AASHTO LRFD MINIMUM COVER REQUIREMENTS, REGARDLESS OF PIPE STRUCTURAL CAPACITY. PIPE INSTALLATIONS AT DEPTHS SHALLOWER THAN THIS VALUE ARE NOT PERMITTED FOR LOAD CASE 2.

   LOAD CASE 3 - STANDARD MINIMUM COVER INSTALLATION FOR CONSTRUCTION VEHICLE LOADING. THIS VALUE INCLUDES AASHTO BRIDGE CONSTRUCTION SPECIFICATION MINIMUM (75 KIP/AXLE) CONSTRUCTION LOAD. WHERE POSSIBLE, AVOID DRIVING CONSTRUCTION VEHICLES OVER INSTALLED PIPE. EXTEND CONSTRUCTION FILL HEIGHT BEYOND SIDES OF PIPE BY THE LARGER OF 3 FEET OR ONE PIPE DIAMETER. IN ORDER TO MINIMIZE LATERAL DISPLACEMENT, PERIODICALLY CHANGE THE LOCATION OF EQUIPMENT CROSSING OVER PIPE.

   LOAD CASE 4 - NON-RESIDENTIAL DRIVEWAY (LIGHT COMMERCIAL) SAME STRUCTURAL DESIGN LOADING AS LOAD CASE 2 BUT MINIMUM COVER OVER PIPE IS NOT LIMITED BY AASHTO LRFD (MOST CURRENT EDITION ADOPTED BY THE DEPARTMENT) SECTION 12 MINIMUM COVER REQUIREMENT. FOR THIS CONDITION SCDOT WILL PERMIT PIPE TO BE INSTALLED AT A DEPTH THAT IS SHALLOWER THAN THE AASHTO MINIMUM. THE VALUE USED FOR MINIMUM COVER WILL ONLY BE LIMITED BY THE PIPES STRUCTURAL CAPACITY DETERMINED FROM THE STRUCTURAL DESIGN. USE LOAD CASE 2 FOR HEAVY COMMERCIAL DRIVEWAYS. SEE 714-990-MO FOR RESIDENTIAL DRIVEWAY INSTALLATION FOR MAINTENANCE APPLICATIONS.

   LOAD CASE 6 - STANDARD MAXIMUM COVER INSTALLATION BELOW GROUNDWATER TABLE. MAXIMUM DEPTH PIPE CAN BE INSTALLED WITH GROUNDWATER TABLE ELEVATION AT 2 X O.D. ABOVE PIPE INVERT.
8. ALL VALUES NOTED AS "---" TYPICALLY INDICATE THAT PIPE SIZE IN NOT AVAILABLE OR THAT A SPECIAL DESIGN PIPE IS REQUIRED FOR THIS SIZE. CHECK WITH PIPE MANUFACTURE FOR SPECIAL DESIGN PIPE.

PAY ITEMS:
714XXXX (SIZE) SMOOTH WALL PIPE CULVERT.....LF
714XXXX (SIZE) RC PIPE CULVERT (RCP) - (CLASS).....LF
714XXXX (SIZE) RC PIPE CULVERT (RCP) - (CLASS) AASHTO M198 JOINT (ASTM C990).....LF
714XXXX (SIZE) RC PIPE CULVERT (RCP) - (CLASS) AASHTO M315 JOINT (ASTM C443).....LF
20345XX (DIAMETER) PIPE ADDITIONAL FOUNDATION WORK.....LF

TABLE 714-205A: REINFORCED CONCRETE PIPE ALLOWABLE FILL HEIGHTS

PIPE DIAMETER	HYDRAULIC AREA	MANNING'S COEFFICIENT	ESTIMATED MINIMUM TRENCH WIDTH	LOAD CASE 1 MAXIMUM COVER (UNDER ROADWAY) [FT]				LOAD CASE 2 MINIMUM COVER (UNDER ROADWAY) [FT]				LOAD CASE 3 MINIMUM COVER (CONSTRUCTION VEHICLE) [FT]				LOAD CASE 4 MINIMUM COVER (NON-RESIDENTIAL DRIVEWAY) NOT FOR USE UNDER ROADWAY [FT]				LOAD CASE 6 MAXIMUM COVER (INVERT AT 2 X OD BELOW GROUNDWATER TABLE) [FT]			
				PIPE CLASS				PIPE CLASS				PIPE CLASS				PIPE CLASS				PIPE CLASS			
[IN]	[FT^2]	[n]	[IN]	II	III	IV	V	II	III	IV	V	II	III	IV	V	II	III	IV	V	II	III	IV	V
12	0.78	SEE MFG	42	12.00	17.00	25.00	38.00	2.75	1.25	1.00*	1.00*	5.00	4.00	3.00	1.00	2.75	1.25	0.00	0.00	12.00	17.00	25.00	38.00
15	1.22	SEE MFG	45	13.00	17.00	26.00	39.00	2.75	1.25	1.00*	1.00*	5.00	4.00	3.00	1.00	2.75	1.25	0.00	0.00	12.00	17.00	26.00	39.00
18	1.76	0.012	49	13.00	17.00	26.00	40.00	2.50	1.25	1.00*	1.00*	5.00	4.00	3.00	1.00	2.50	1.25	0.00	0.00	12.00	17.00	26.00	40.00
24	3.14	0.012	56	13.00	17.00	26.00	40.00	2.50	1.00*	1.00*	1.00*	5.00	4.00	3.00	1.00	2.50	0.00	0.00	0.00	12.00	17.00	26.00	40.00
30	4.90	0.012	63	13.00	17.00	26.00	40.00	2.50	1.00*	1.00*	1.00*	5.00	4.00	3.00	1.00	2.50	0.00	0.00	0.00	12.00	17.00	26.00	40.00
36	7.06	0.012	70	12.00	17.00	26.00	40.00	2.50	1.00*	1.00*	1.00*	5.00	3.00	3.00	1.00	2.50	0.00	0.00	0.00	12.00	17.00	26.00	39.00
42	9.62	0.012	77	12.00	17.00	26.00	40.00	2.25	1.00*	1.00*	1.00*	4.00	3.00	2.00	1.00	2.25	0.00	0.00	0.00	12.00	17.00	26.00	39.00
48	12.56	0.012	84	12.00	17.00	26.00	40.00	1.00*	1.00*	1.00*	1.00*	4.00	3.00	2.00	1.00	0.00	0.00	0.00	0.00	12.00	16.00	25.00	39.00
54	15.90	0.012	91	12.00	17.00	26.00	40.00	1.00*	1.00*	1.00*	1.00*	4.00	3.00	2.00	1.00	0.00	0.00	0.00	0.00	11.00	16.00	25.00	39.00
60	19.63	0.012	98	12.00	17.00	26.00	39.00	1.00*	1.00*	1.00*	1.00*	4.00	3.00	1.00	1.00	0.00	0.00	0.00	0.00	11.00	16.00	25.00	39.00
66	23.75	0.012	107	12.00	17.00	26.00	39.00	1.00*	1.00*	1.00*	1.00*	4.00	3.00	1.00	1.00	0.00	0.00	0.00	0.00	11.00	16.00	25.00	38.00
72	28.27	0.012	116	12.00	17.00	25.00	39.00	1.00*	1.00*	1.00*	1.00*	4.00	3.00	1.00	1.00	0.00	0.00	0.00	0.00	11.00	16.00	24.00	38.00
78	33.18	0.012	126	12.00	17.00	25.00	---	1.00*	1.00*	1.00*	---	3.00	3.00	1.00	---	0.00	0.00	0.00	---	11.00	15.00	24.00	---
84	38.48	0.012	135	12.00	16.00	25.00	---	1.00*	1.00*	1.00*	---	3.00	3.00	1.00	---	0.00	0.00	0.00	---	10.00	15.00	24.00	---
90	44.17	0.012	144	12.00	16.00	---	---	1.00*	1.00*	---	---	3.00	3.00	---	---	0.00	0.00	---	---	10.00	15.00	---	---
96	56.74	0.012	154	11.00	16.00	---	---	1.00*	1.00*	---	---	3.00	3.00	---	---	0.00	0.00	---	---	10.00	15.00	---	---
108	63.61	0.012	172	11.00	16.00	---	---	1.00*	1.00*	---	---	3.00	3.00	---	---	0.00	0.00	---	---	9.00	15.00	---	---
120	78.54	0.012	191	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

* IF PIPE IS INSTALLED UNDER RIGID PAVEMENT VALUE MAY BE REDUCED TO 0.75-FT

REFERENCES

NATIONAL DOCUMENTS

SCDOT DOCUMENTS
QUALIFIED PRODUCT LIST 14

RELATED DRAWINGS & KEYWORDS
719-012-02, 719-305-00, 719-310-00

PRECONSTRUCTION SUPPORT ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 8858 EDWIN SYLVESTER EARGLE, II

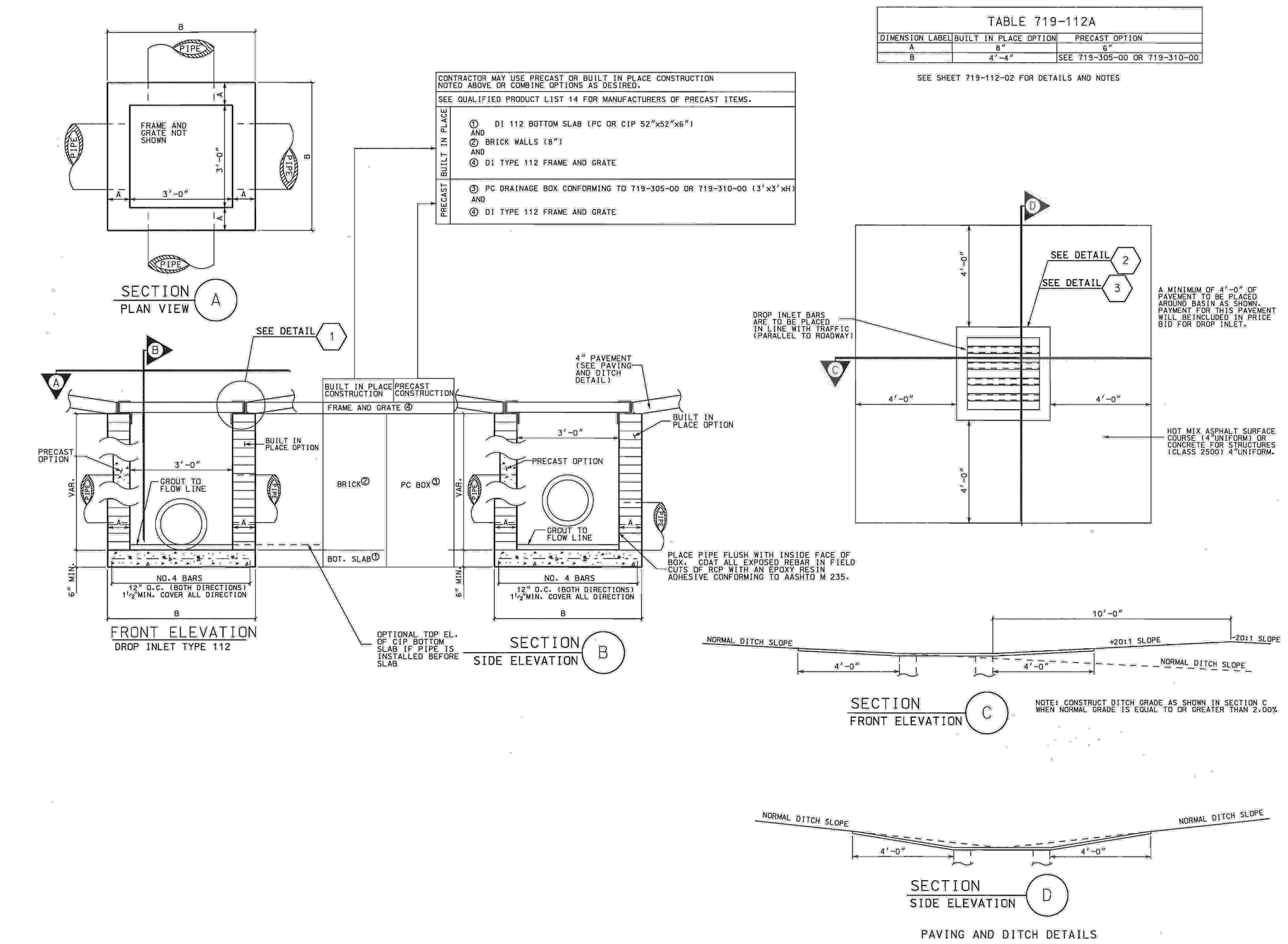
SIGNATURE
MARCH 3, 2008
DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1			
0	3/2008	DSO	GENERAL REVISIONS

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING
DROP INLET TYPE 112 DETAIL

719-112-01
EFFECTIVE LETTING DATE MAY, 2008 THIS DRAWING IS NOT TO SCALE



REFERENCES

NATIONAL DOCUMENTS
OSHA

SCDOT DOCUMENTS
SC-M-714
PCDM-05

RELATED DRAWINGS & KEYWORDS
714-020-00
714-105-00
714-505-00

THIS DRAWING IS ONLY VALID FOR CONSTRUCTION WHEN SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF SOUTH CAROLINA. CHECK WWW.SCDOT.ORG FOR LATEST UPDATE.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 19782 GEORGE ROBERT BEDENBAUGH, JR.

SIGNATURE
11/09/20
DATE

#	DATE	CHK	DESCRIPTION
6	---	---	---
5	---	---	---
4	3/2020	DSO	REQ'D TRENCH WIDTH
3	3/2010	JBH	DET3 OD
2	3/2009	HJC	DET4 COMPAC. NOTES
1	7/2008	HJC	GENERAL REVISIONS
0	3/2008	DSO	NEW STANDARD

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING
PIPE CULVERTS (PIPE TRENCH TYPICAL PREPARATIONS)

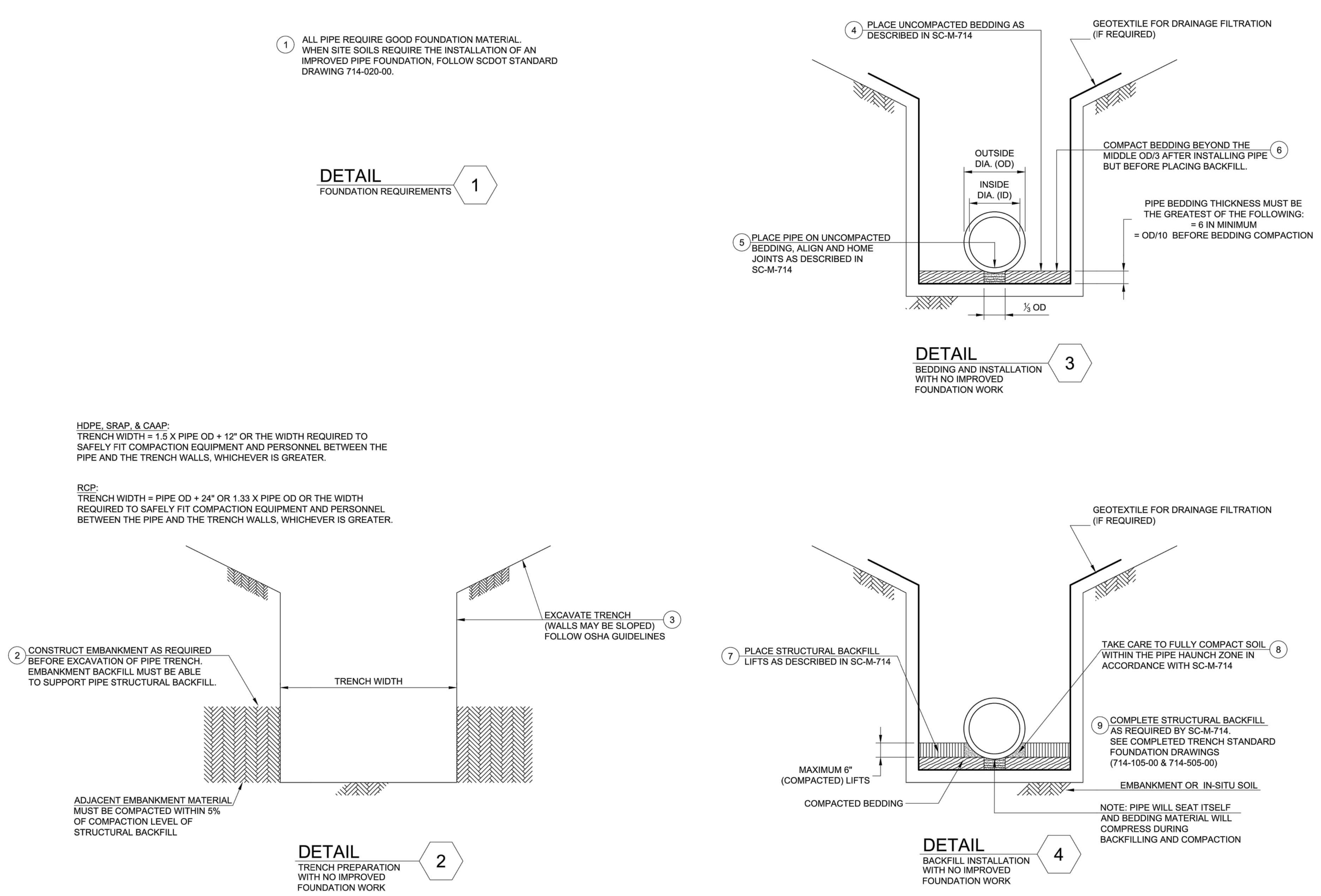
714-005-00
EFFECTIVE LETTING DATE JANUARY 2021 THIS DRAWING IS NOT TO SCALE.

(1) ALL PIPE REQUIRE GOOD FOUNDATION MATERIAL. WHEN SITE SOILS REQUIRE THE INSTALLATION OF AN IMPROVED PIPE FOUNDATION, FOLLOW SCDOT STANDARD DRAWING 714-020-00.

DETAIL 1 FOUNDATION REQUIREMENTS

HDPE, SRAP, & CAAP:
TRENCH WIDTH = 1.5 X PIPE OD + 12" OR THE WIDTH REQUIRED TO SAFELY FIT COMPACTION EQUIPMENT AND PERSONNEL BETWEEN THE PIPE AND THE TRENCH WALLS, WHICHEVER IS GREATER.

RCP:
TRENCH WIDTH = PIPE OD + 24" OR 1.33 X PIPE OD OR THE WIDTH REQUIRED TO SAFELY FIT COMPACTION EQUIPMENT AND PERSONNEL BETWEEN THE PIPE AND THE TRENCH WALLS, WHICHEVER IS GREATER.



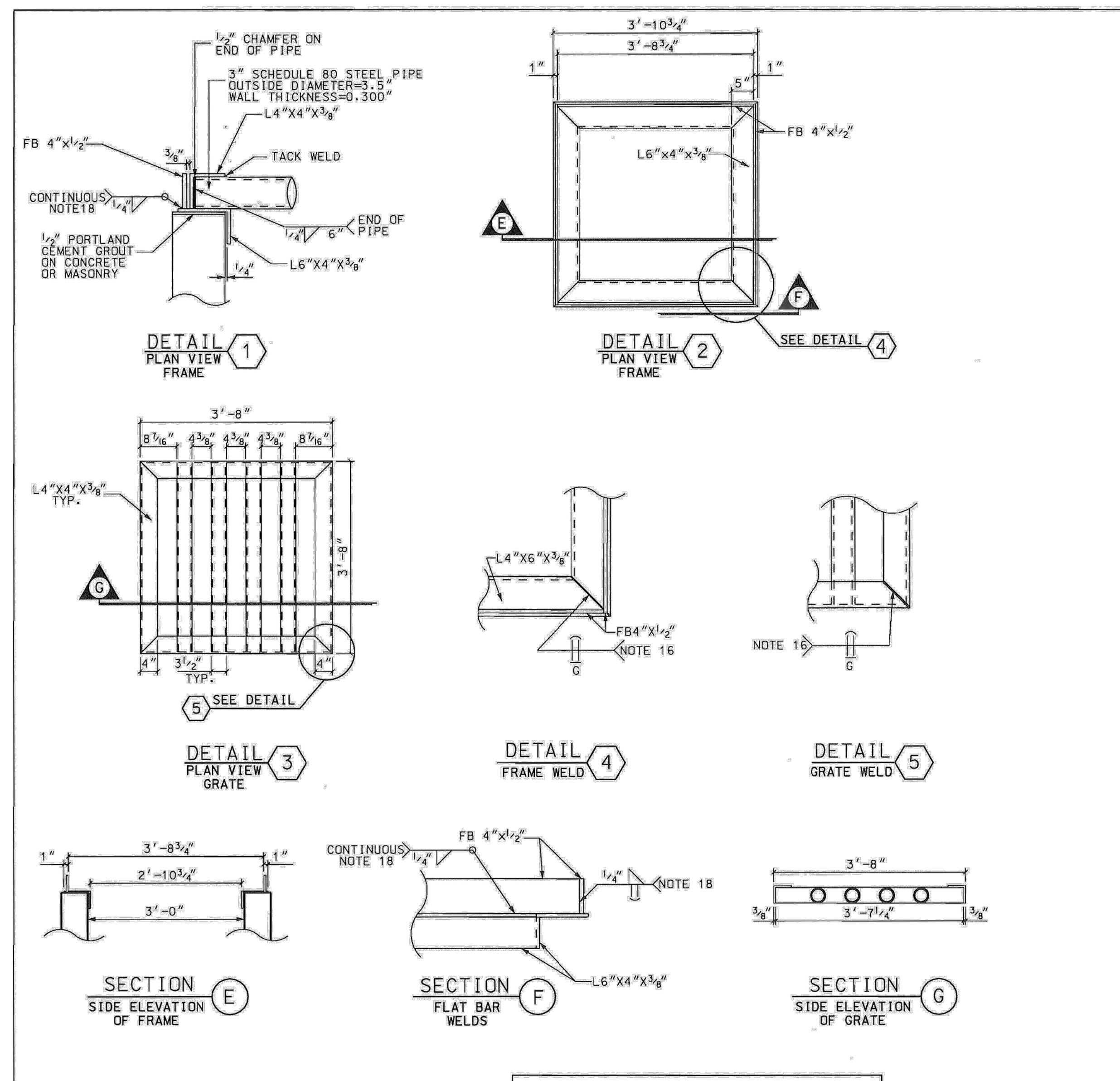


TABLE 719-112B

STANDARD PC ITEMS DI 112
TYPE DI 112 BOTTOM SLAB (52"X52"X6")
SEE ALSO 719-305-00 AND 719-310-00

TABLE 719-112C

DESCRIPTION	ADA	NON ADA BICYCLE	VEHICLE
TYPE DI 112	NO	NO	NO

THIS ITEM MAY ONLY BE USED IN AREAS WHERE PEDESTRIANS ARE PROHIBITED SUCH AS INTERSTATE MEDIANS.

THIS DRAWING IS NOT TO SCALE

GENERAL NOTES:

1. FOR BUILT IN PLACE CONSTRUCTION OF THE DROP INLET, EITHER BRICK MASONRY (WALLS ONLY) OR CIP CLASS 3000 CONCRETE MAY BE USED. FOR PRECAST CONSTRUCTION, A MINIMUM OF CLASS 4000P CONCRETE SHALL BE USED.
2. CONCRETE WALLS ARE TO BE 6" THICK WITH A MINIMUM REINFORCING STEEL AREA OF 0.20 SQUARE INCHES PER FOOT UNLESS NOTED. FOR BRICK, THE WALLS ARE TO BE 8" THICK. CONCRETE BRICK AND SIMILAR SOLID UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 55, GRADE S-II. THE INTERIOR DIMENSIONS ARE TO REMAIN AS SHOWN FOR EITHER TYPE OF CONSTRUCTION.
3. THE BOTTOM SLAB OF THE BOX SHALL BE A MINIMUM OF 6" THICK REINFORCED CONCRETE (CLASS 3000 OR 4000P) WITH A REINFORCING STEEL AREA OF 0.20 SQUARE INCHES PER FOOT. WIRE MESH MAY BE USED IN LIEU OF STEEL BARS PROVIDED A MINIMUM OF 0.20 SQUARE INCHES PER FOOT IS MET.
4. MORTAR SHALL BE TYPE S OR M.
5. REINFORCING STEEL SHALL BE ASTM A-706, LOW-ALLOY STEEL DEFORMED BARS FOR CONCRETE REINFORCEMENT, GRADE 60. WIRE MESH SHALL CONFORM TO AASHTO M 55 AND M 221.
6. SEE STANDARD DRAWING 719-550-00 FOR STEPS, WHICH ARE REQUIRED WHEN STRUCTURE DEPTH EXCEEDS 4'-6".
7. SEE STANDARD DRAWINGS 719-420-00 AND 719-425-00 FOR DEPTHS GREATER THAN 12'. PRECAST CONCRETE CIRCULAR DRAINAGE STRUCTURES ARE REQUIRED WHEN THE DEPTH FROM THE TOP OF THE DRAINAGE BOX BOTTOM SLAB TO THE TOP OF THE GROUND EXCEEDS 12'-0".
8. LOCATION AND SIZE OF PIPES ARE SITE SPECIFIC. (SEE DRAINAGE PLANS). THE BOTTOM OF THE DROP INLET IS TO BE GROUTED TO THE LOWEST FLOW LINE ELEVATION OF ALL PIPES. IF BOTTOM SLAB IS CAST IN PLACE WITH PIPES INSTALLED, BOTTOM SLAB THICKNESS MUST BE ACHIEVED BEYOND PIPE OUTSIDE DIAMETER.
9. SEE STANDARD DRAWING 719-305-00 OR 719-310-00 FOR MAXIMUM PIPE DIAMETERS. THE PIPE SIZES SHOWN ARE MAXIMUM FOR BRICK AND PRECAST BOXES WHEN PIPE ENTERS PERPENDICULAR AND AT THE CENTER OF THE BOX WALL. CONTRACTOR SHOULD CONFIRM THAT PIPE USED FITS APPROPRIATELY INTO BOX.

STEEL FRAME AND GRATE NOTES: (SEE QUALIFIED PRODUCT LIST 15)

10. EXTRA STRONG STEEL PIPE SHALL CONFORM TO ASTM A 53, NPS-3, SCHEDULE 80. SCHEDULE 80 HAS A WALL THICKNESS = 0.300". A MILL TEST CERTIFICATION SHALL BE OBTAINED FOR EACH SHIPMENT AND THE PIPE SHALL BE MARKED 'ASTM A 53' GRADE B.
11. STRUCTURAL STEEL FOR ANGLES AND BARS SHALL CONFORM TO AASHTO M 270, GRADE 36. A MILL TEST CERTIFICATION SHALL BE OBTAINED FOR EACH SHIPMENT AND MADE AVAILABLE TO THE RESIDENT ENGINEER.
12. PAINT SHALL CONSIST OF TWO COATS OF PRIMER AND ONE COAT OF FINISH BLACK. THE PRIMER SHALL BE ZINC-IRON OXIDE BASE. THE FINISH COAT SHALL BE BLACK ALKYD GLOSS ENAMEL. ALL PRODUCTS SHALL BE HIGH QUALITY COMMERCIAL PAINTS. TOTAL PAINT THICKNESS SHALL BE SEVEN MILS.
13. ALL JOINTS SHALL BE PREPARED BY SAWING OR FLAME CUTTING WITH DIMENSIONAL VARIATIONS OF ⅛" MAX.
14. ALL WELDING SHALL BE IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF AASHTO/AWS D1.5 BRIDGE WELDING CODE.
15. JIGS SHALL BE USED DURING THE WELDING PROCESS TO ASSURE SQUARENESS AND FLATNESS OF THE UNITS.
16. CORNERS MAY BE CUT AS SHOWN OR CUT SQUARE AND BUTT WELDED. WELDS THAT ARE PART OF METAL BEARING SURFACES SHALL BE GROUND FLUSH.
17. ENDS OF TUBES SHALL BE BEVELED IN ANGLE CORNER TO ASSURE CONTACT BETWEEN TUBES AND ANGLE LEG.
18. FLAT BAR 4"X½" PLATES SHALL BE SQUARE BUTTED AND WELDED BOTH SIDES AT END JOINTS. EDGE SHALL BE WELDED CONTINUOUSLY ON OUTSIDE OF FRAME WITH ¼" FILLET WELD.
19. BEFORE PAINTING, ALL MILL SCALE, LOOSE RUST, AND OTHER CONTAMINATES SHALL BE REMOVED BY MEANS OF SANDBLASTING OR OTHER MEANS OF POWER CLEANING TO ESTABLISH A CLEAN SURFACE.

PRECAST NOTES:

20. THE USE OF PRECAST UNITS WILL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF OBTAINING SATISFACTORY INSTALLATIONS. SEE STANDARD DRAWINGS FOR PRECAST CONCRETE DRAINAGE BOX OR STRUCTURE FOR ADDITIONAL DETAILS AND SPECIFICATIONS.
21. LIFT HOLES AND/OR DEVICES MAY BE PLACED AS NECESSARY. ALL LIFT HOLES SHALL BE GROUTED SHUT PRIOR TO COMPLETION OF THE INSTALLATION. ALL LIFTING METHODS MUST MEET OSHA REGULATIONS.
22. THE CONTRACTOR SHALL USE A SINGLE SOURCE MANUFACTURER CHOSEN FROM QUALIFIED PRODUCT LIST 14 FOR PRECAST ITEMS ON THIS DRAWING.
23. PRECAST MANUFACTURER SHALL FOLLOW QUALIFIED PRODUCT POLICY 14 BEFORE SUPPLYING THIS ITEM ON SCDOT PROJECTS.
24. CONTRACTOR MAY SUBMIT DESIGN DRAWINGS AND CALCULATIONS FOR MODIFICATIONS TO THIS ITEM ON A PROJECT BY PROJECT BASIS. MODIFICATIONS TO THESE ITEMS WILL NOT BE LISTED ON ANY QUALIFIED PRODUCT LIST. SUBMIT ALL PROPOSALS FOR PROJECT SPECIFIC MODIFICATIONS TO THE RESIDENT ENGINEER FOR REVIEW BY THE ENGINEER OF RECORD.
25. JOINTS BETWEEN INSTALLED PIECES AND PRECAST ITEMS TO BE PLACED SHALL BE SEALED WITH A ½" GROUT LIFT OR AN APPROPRIATE PLASTIC PREFORMED GASKET (FROM QUALIFIED PRODUCT LIST 13.)

PRECAST INSTALLATION NOTES:

26. BED SHALL BE PREPARED AND COMPACTED FOR PRECAST DRAINAGE STRUCTURE AS REQUIRED BY SCDOT STANDARD SPECIFICATIONS FOR PRECAST ITEMS. ELEVATION OF BEDDING MATERIAL SHALL BE APPROPRIATE TO ACCOMMODATE ELEVATIONS OF ALL PIPES AND REQUIRED BOX TOP ELEVATION.
27. PLACE AND LEVEL PRECAST BOX.
28. PIPES SHALL BE INSTALLED AND GROUTED IN PLACE.
29. PIPES AND BOX SHALL BE BACKFILLED AND COMPACTED AS REQUIRED BY SCDOT STANDARD SPECIFICATIONS.
30. ANY LOCATION WHERE THE ABOVE REQUIREMENTS CANNOT BE MET SHALL BE COMPLETED USING CAST IN PLACE MATERIALS MEETING THE REQUIREMENTS OF THIS STANDARD DRAWING. ANY ADDITIONAL MATERIALS OR COSTS ASSOCIATED WITH THE USE OF PRECAST SHALL BE PAID FOR BY THE CONTRACTOR AND MAY NOT BE CHARGED TO SCDOT.
31. THE CONTRACT UNIT PRICE FOR DROP INLETS SHALL INCLUDE THE COST OF FURNISHING ALL MATERIALS, (BUILT IN PLACE OR PRECAST), AND WORK INCIDENTAL TO THE CONSTRUCTION OF THE STRUCTURE COMPLETE IN PLACE AS SHOWN IN ACCORDANCE WITH THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION).
32. THIS ITEM WAS PREVIOUSLY REFERRED TO AS CATCH BASIN TYPE 12. ITEM NAME WAS CHANGED TO MATCH OTHER DRAINAGE STRUCTURE TERMINOLOGY.
33. PRECAST CONCRETE CIRCULAR STRUCTURES (AS SHOWN ON 719-420-00) ARE REQUIRED FOR THE FOLLOWING APPLICATION UNLESS PROHIBITED BY THE PLANS OR SPECIAL PROVISIONS.
(a) ON DRAINAGE STRUCTURES WITH A DEPTH EQUAL TO OR GREATER THAN 12 FEET.
(b) ON DRAINAGE STRUCTURES WHERE THE FLOW LINE ELEVATION OF THE INLET PIPE IS EQUAL TO OR HIGHER THAN THE INSIDE TOP (SOFFIT) OF THE OUTLET PIPE.
(c) AS REQUIRED BY THE PROJECT PLANS.
34. THE PAY ITEMS SHALL BE: DROP INLET TYPE 112 ____________________ EA.

REFERENCES

NATIONAL DOCUMENTS
ASTM C55, ASTM A706, ASTM A53, AASHTO M55, AASHTO M221, AASHTO M270

SCDOT DOCUMENTS
QUALIFIED PRODUCT LIST 14, QUALIFIED PRODUCT LIST 15, QUALIFIED PRODUCT LIST 13.

RELATED DRAWINGS & KEYWORDS
719-550-00, 719-420-00, 719-425-00, 719-305-00, 719-310-00

PRECONSTRUCTION SUPPORT ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 8858 EDWIN SYLVESTER EARGLE, II

SIGNATURE
MARCH 3, 2008
DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1			
0	3/2008	DSO	GENERAL REVISIONS

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING
DROP INLET TYPE 112 FRAME/GRATE

719-112-02
EFFECTIVE LETTING DATE MAY, 2008

SOUTH CAROLINA THOMAS & HUTTON ENGINEERING CO. No. C00285 CERTIFICATE OF AUTHORIZATION
6/7/21

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29061 ROSS S. OAKLEY

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

THOMAS & HUTTON
www.thomasandhutton.com

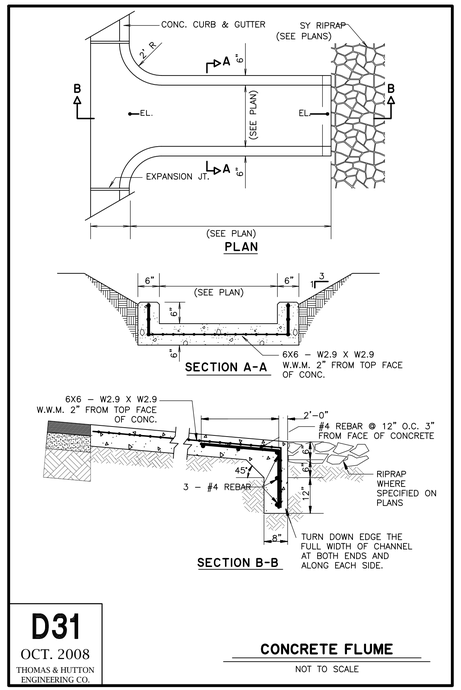
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

SITE DETAILS

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	NA

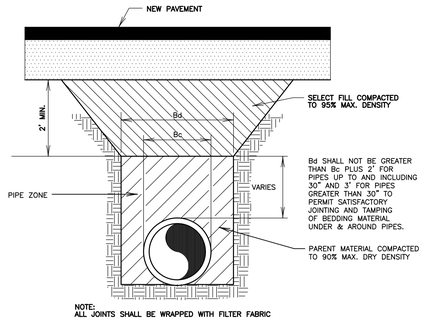
C5.1



D31
OCT. 2008
THOMAS & HUTTON ENGINEERING CO.

CONCRETE FLUME

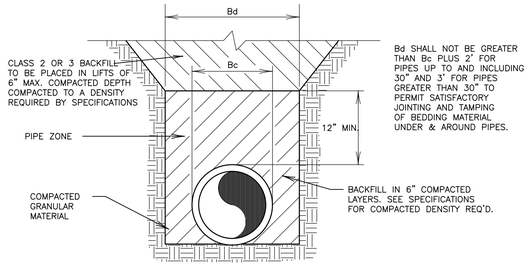
NOT TO SCALE



NOTE:
ALL JOINTS SHALL BE WRAPPED WITH FILTER FABRIC

STORM LINE BEDDING DETAIL FOR PAVED AREAS

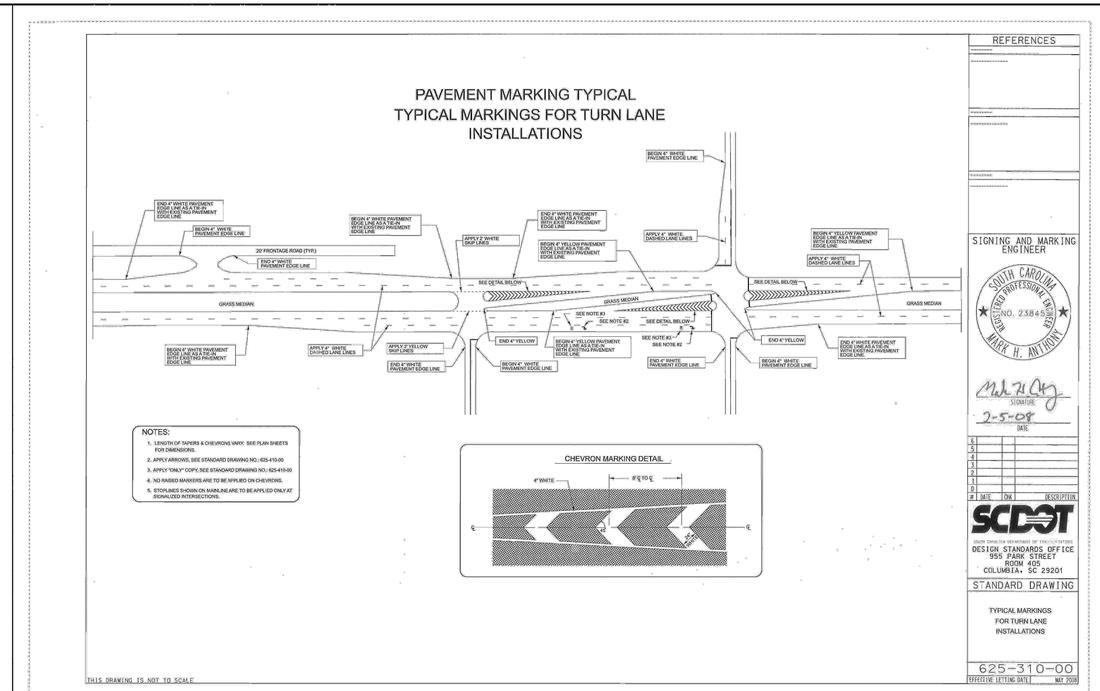
NOT TO SCALE



ALL STORM PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP), CONFORMING TO ASTM C-76 CLASS III, UNLESS OTHERWISE NOTED.

STORM LINE BEDDING DETAIL

NOT TO SCALE



REFERENCES

SIGNING AND MARKING ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 23845 MARK H. ANTHONY

SIGNATURE

2-5-08
DATE

#	DATE	DSN	DESCRIPTION
6			
5			
4			
3			
2			
1			

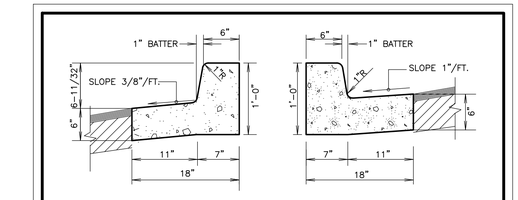
SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

TYPICAL MARKINGS FOR TURN LANE INSTALLATIONS

625-310-00

EFFECTIVE LETTING DATE: MAY 2008

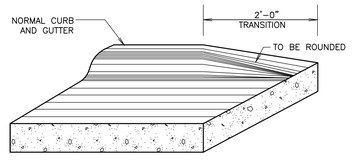


NOTES:
1. ALL CONCRETE SHALL BE 3,000 PSI.
2. PROVIDE CONTROL JOINTS EVERY TEN FEET (10').
3. PROVIDE EXPANSION JOINTS EVERY FIFTY FEET (50).
4. PROVIDE EXPANSION JOINT WHERE CURB ABUTS SIDEWALKS, OR OTHER STRUCTURES.
5. PROVIDE LIGHT BROOM FINISH.

P17
OCT. 2008
THOMAS & HUTTON ENGINEERING CO.

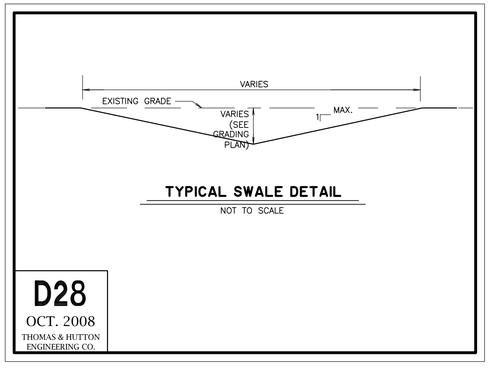
18" STANDARD CURB & GUTTER

NOT TO SCALE



FEATHERING OF CURB AND GUTTER DETAIL

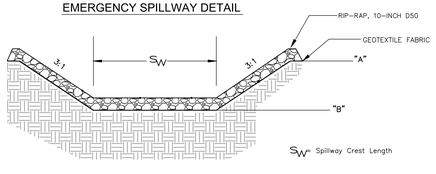
NOT TO SCALE

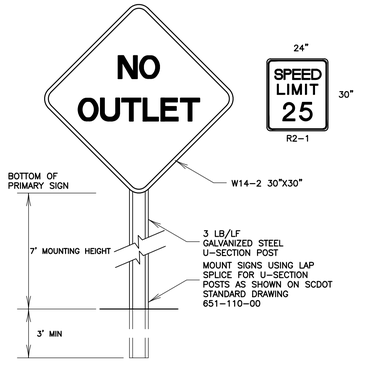


TYPICAL SWALE DETAIL

NOT TO SCALE

D28
OCT. 2008
THOMAS & HUTTON ENGINEERING CO.

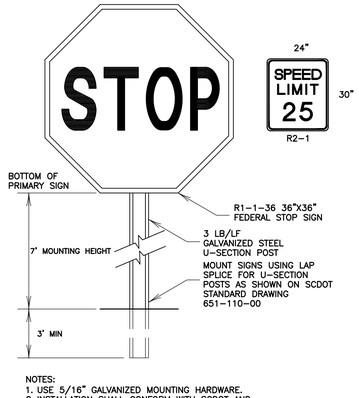




NOTES:
1. USE 5/16" GALVANIZED MOUNTING HARDWARE.
2. INSTALLATION SHALL CONFORM WITH SCDOT AND MUTCD STANDARDS AND SPECIFICATIONS.

TRAFFIC SIGN DETAILS

NOT TO SCALE



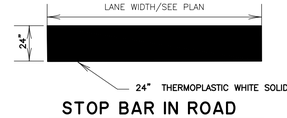
NOTES:
1. USE 5/16" GALVANIZED MOUNTING HARDWARE.
2. INSTALLATION SHALL CONFORM WITH SCDOT AND MUTCD STANDARDS AND SPECIFICATIONS.

TRAFFIC SIGN DETAILS

NOT TO SCALE

STOPLINES

- ALL STOPLINES ARE TO BE MARKED WITH 24" SOLID WHITE LINES.
- WHERE CROSSWALK MARKINGS EXIST, STOPLINES SHOULD BE PLACED IN ADVANCE OF, AND PARALLEL TO, THE NEAREST CROSSWALK LINE. A MINIMUM DISTANCE OF 4' SHOULD EXIST BETWEEN THE CROSSWALK AND STOPBAR.
- IN THE ABSENCE OF A MARKED CROSSWALK, THE STOPLINE SHOULD BE PLACED AT A DISTANCE OF NO LESS THAN 4 FEET AND NO MORE THAN 30 FEET FROM THE PAVEMENT EDGE OF THE INTERSECTING ROUTE.
- STOPLINES ARE TO HAVE A THICKNESS OF 125 MILS.
- INSTALLATION SHALL CONFORM WITH SCDOT AND MUTCD STANDARDS AND SPECIFICATIONS.



STOP BAR IN ROAD

NOT TO SCALE

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER THOMAS B. HUTTON ENGINEERING CO. No. C00285 CERTIFICATE

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 23696 CERTIFICATE

BID SET - NOT FOR CONSTRUCTION

NO.	DESCRIPTION	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

REVISIONS

THOMAS & HUTTON
1501 Main Street • Suite 760
Columbia, SC 29201 • 803.451.6789
www.thomasandhutton.com

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

SITE DETAILS

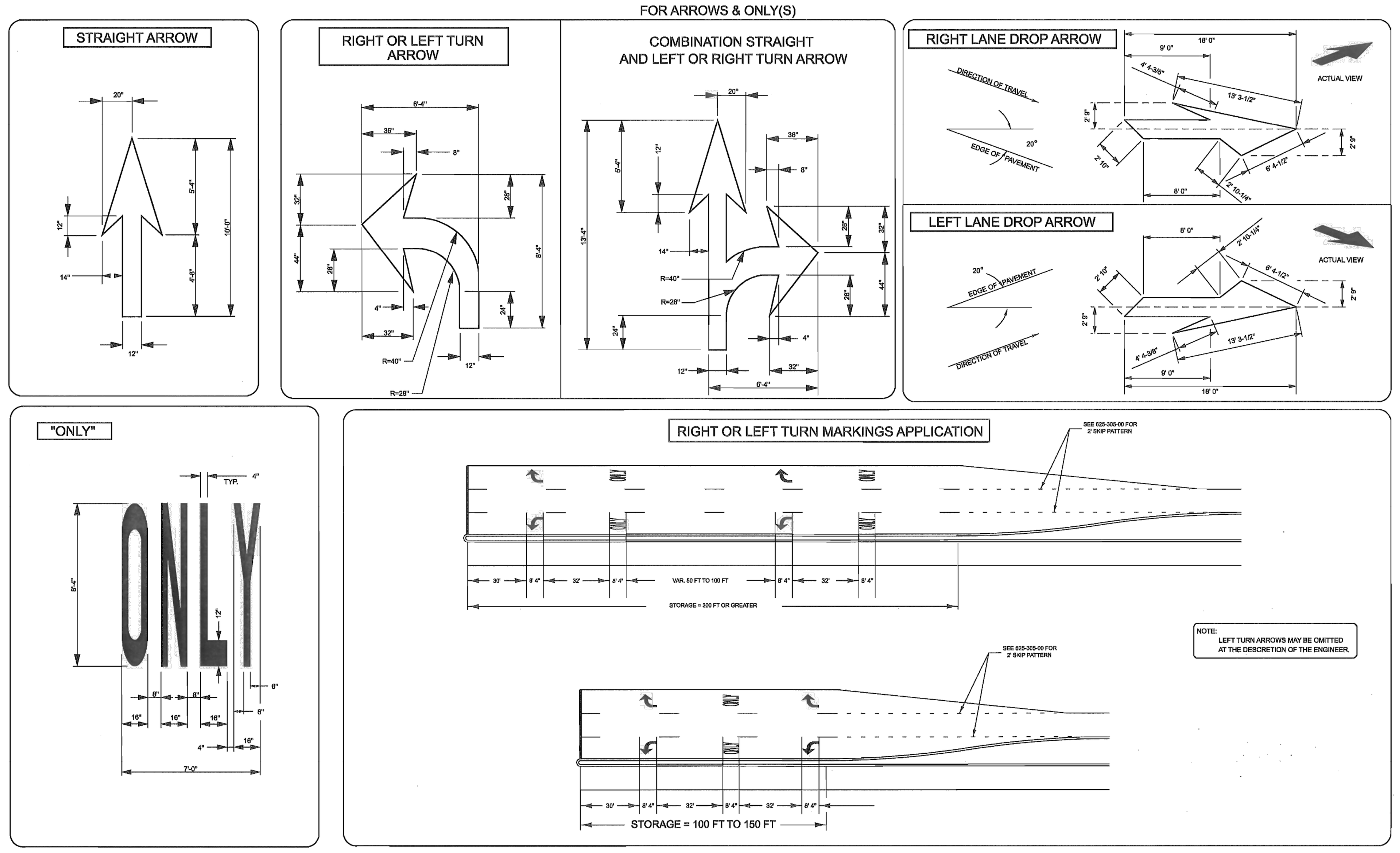
JOB NO:	J-286010001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	NA

C5.2

Z:\28601\28601.0001\ENGINEERING\DRAWINGS\CONSTRUCTION PLANS\28601.0001 - ST - DT.DWG - Jun 7, 2021 - 1:35 PM

STANDARD PAVEMENT MARKINGS

FOR ARROWS & ONLY(S)



NOTE:
LEFT TURN ARROWS MAY BE OMITTED AT THE DESCRETION OF THE ENGINEER.

THIS DRAWING IS NOT TO SCALE

REFERENCES

SIGNING AND MARKING ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 23845 MARK H. ANTHONY

SIGNATURE

1-20-09

DATE

#	DATE	CHK	DESCRIPTION
6			
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SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

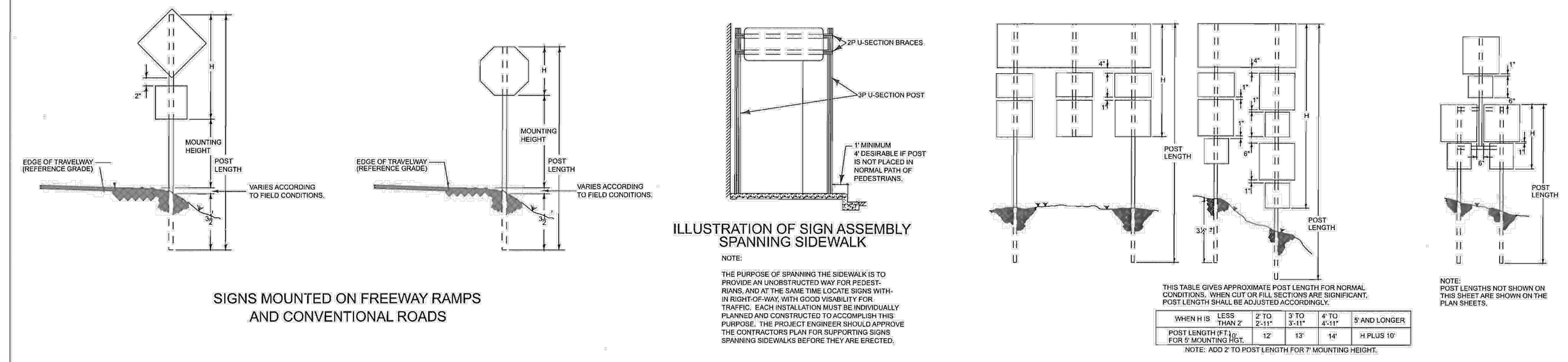
STANDARD DRAWING

FOR ARROWS & ONLY(S)

625-410-00

EFFECTIVE LETTING DATE MAY 2009

FLAT SHEET SIGN MOUNTING DETAILS



SIGNS MOUNTED ON FREEWAY RAMPS AND CONVENTIONAL ROADS

ILLUSTRATION OF SIGN ASSEMBLY SPANNING SIDEWALK

NOTE:

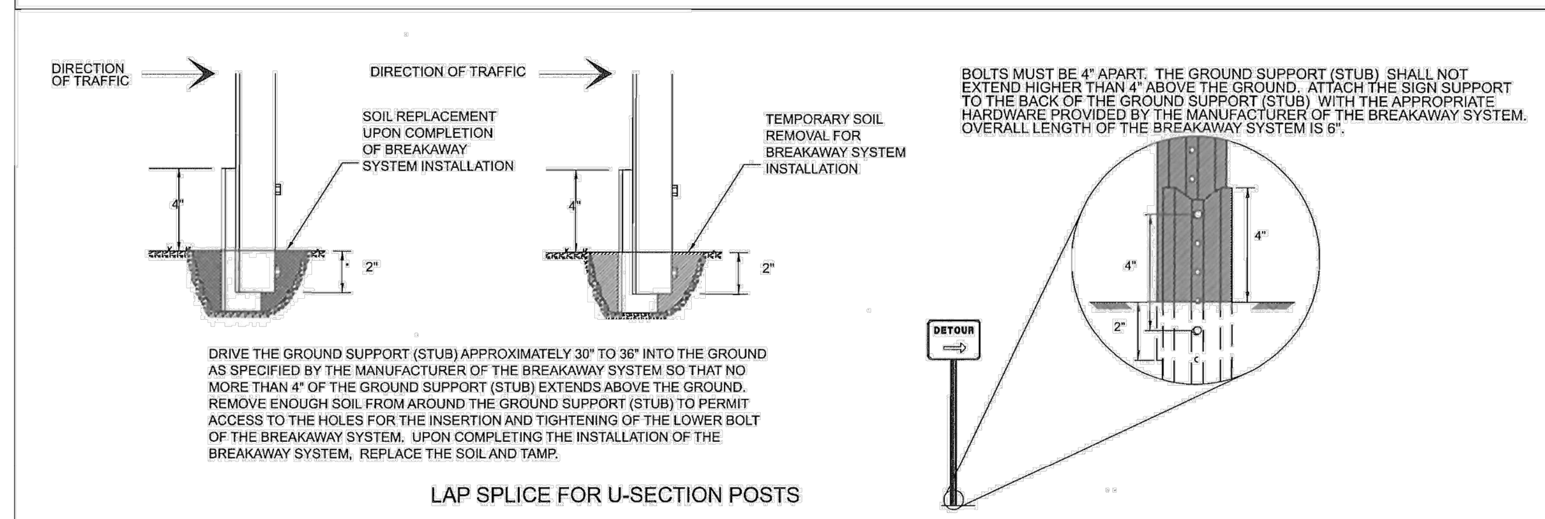
THE PURPOSE OF SPANNING THE SIDEWALK IS TO PROVIDE AN UNOBSTRUCTED WAY FOR PEDESTRIANS, AND AT THE SAME TIME LOCATE SIGNS WITHIN RIGHT-OF-WAY, WITH GOOD VISABILITY FOR TRAFFIC. EACH INSTALLATION MUST BE INDIVIDUALLY PLANNED AND CONSTRUCTED TO ACCOMPLISH THIS PURPOSE. THE PROJECT ENGINEER SHOULD APPROVE THE CONTRACTORS PLAN FOR SUPPORTING SIGNS SPANNING SIDEWALKS BEFORE THEY ARE ERECTED.

THIS TABLE GIVES APPROXIMATE POST LENGTH FOR NORMAL CONDITIONS. WHEN CUT OR FILL SECTIONS ARE SIGNIFICANT, POST LENGTH SHALL BE ADJUSTED ACCORDINGLY.

WHEN H IS	LESS THAN 2'	2' TO 2'-11"	3' TO 3'-11"	4' TO 4'-11"	5' AND LONGER
POST LENGTH (FT.) FOR 5' MOUNTING HGT.	10'	12'	13'	14'	H PLUS 10'

NOTE: ADD 2' TO POST LENGTH FOR 7' MOUNTING HEIGHT.

NOTE:
POST LENGTHS NOT SHOWN ON THIS SHEET ARE SHOWN ON THE PLAN SHEETS.

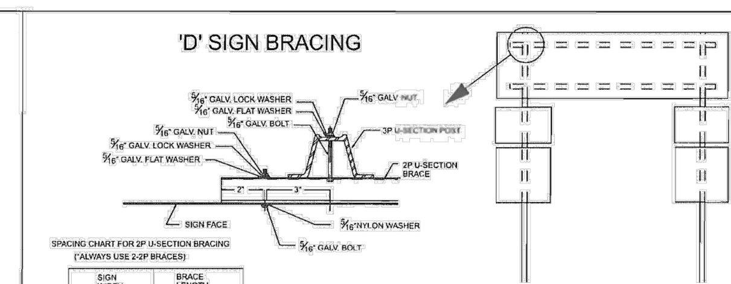


DRIVE THE GROUND SUPPORT (STUB) APPROXIMATELY 30" TO 36" INTO THE GROUND AS SPECIFIED BY THE MANUFACTURER OF THE BREAKAWAY SYSTEM SO THAT NO MORE THAN 4" OF THE GROUND SUPPORT (STUB) EXTENDS ABOVE THE GROUND. REMOVE ENOUGH SOIL FROM AROUND THE GROUND SUPPORT (STUB) TO PERMIT ACCESS TO THE HOLES FOR THE INSERTION AND TIGHTENING OF THE LOWER BOLT OF THE BREAKAWAY SYSTEM. UPON COMPLETING THE INSTALLATION OF THE BREAKAWAY SYSTEM, REPLACE THE SOIL AND TAMP.

BOLTS MUST BE 4" APART. THE GROUND SUPPORT (STUB) SHALL NOT EXTEND HIGHER THAN 4" ABOVE THE GROUND. ATTACH THE SIGN SUPPORT TO THE BACK OF THE GROUND SUPPORT (STUB) WITH THE APPROPRIATE HARDWARE PROVIDED BY THE MANUFACTURER OF THE BREAKAWAY SYSTEM. OVERALL LENGTH OF THE BREAKAWAY SYSTEM IS 6".

LAP SPLICE FOR U-SECTION POSTS

'D' SIGN BRACING



SPACING CHART FOR 2P U-SECTION BRACING
(*ALWAYS USE 2-2P BRACES)

SIGN WIDTH	BRACE LENGTH
72"	56"
78"	60"
84"	64"
90"	68"
96"	72"
102"	76"
108"	80"
114"	84"
120"	88"
126"	92"
138"	100"
144"	104"
150"	108"
156"	112"

1.) ALL "D" TYPE SIGNS ARE TO BE SUPPORTED BY 2 VERTICAL U-SECTION POSTS. ALL "D" TYPE SIGNS WHICH ARE 6' WIDE OR WIDER WILL BE HORIZONTALLY BRACED WITH 2, 2P U-SECTION POSTS. ADDITIONALLY, ANY ASSEMBLY OF SIGNS ATTACHED BETWEEN VERTICAL SUPPORTS WILL BE ATTACHED WITH A PRESCRIBED LENGTH OF U-SECTION POST.

2.) ALL 2P POSTS USED AS CENTER VERTICAL MEMBERS IN SIGN ASSEMBLIES SHALL HAVE HOLES ON 1" CENTERS FOR ENTIRE LENGTH.

SIZE & LENGTH OF U-SECTION POSTS FOR SINGLE SIGNS

POST QUANTITY, SIZE & LENGTH FOR INSTALLATIONS HAVING MORE THAN ONE SIGN ARE SHOWN ON THE PLANS.

SIGN NO.	NO. OF POSTS	POST SIZES 5' MTG. HT. LBS./FT.	5' MTG. HT. LGTH.	7' MTG. HT. LBS./FT.	7' MTG. HT. LGTH.
R1-1-24	1	3P	12	3P	14
R1-1-30	1	3P	12	3P	14
R1-1-48	2	3P	14	3P	16
R1-2-36	1	3P	12	3P	14
R1-2-48	2	3P	13	3P	15
R2-1-24	1	3P	12	3P	14
R2-5c-24	1	3P	12	3P	14
R2-5c-48	2	3P	15	3P	17
R2-6-24	1	3P	12	3P	14
R4-1-24	1	3P	12	3P	14
R4-2-24	1	3P	12	3P	14
R4-3-24	1	3P	12	3P	14
R4-3-36	2	3P	14	3P	16
R4-4-42	2	3P	14	3P	16
R5-1-30	1	3P	12	3P	14
R5-1-36	2	3P	13	3P	15
R5-1a-36	2	3P	12	3P	14
R5-10a-30	1	3P	13		
R6-1-36	1	3P	10	3P	12
R8-4-36	2	3P	12	3P	14
R8-8-42	2	3P	12	3P	14

SIGN NO.	NO. OF POSTS	POST SIZES 5' MTG. HT. LBS./FT.	5' MTG. HT. LGTH.	7' MTG. HT. LBS./FT.	7' MTG. HT. LGTH.
R11-1-24	1	3P	12	3P	14
R11-1-36	2	3P	14	3P	16
R11-1-48	2	3P	12	3P	14
R11-5-36	2	3P	12	3P	14
R11-6-48	2	3P	12	3P	14
R11-7-30	1	3P	12	3P	14
R18-1-30	1	3P	13	3P	15
W1-1-30	1	3P	13	3P	15
W1-1-36	1	3P	14	3P	14
W1-2-30	1	3P	13	3P	15
W1-2-36	1	3P	14	3P	16
W1-3-30	1	3P	13	3P	15
W1-3-36	1	3P	14	3P	16
W1-4-30	1	3P	13	3P	15
W1-4-36	1	3P	14	3P	16
W1-5L-30	1	3P	13	3P	15
W1-6-48	2	3P	12	3P	14
W1-7-48	2	3P	12	3P	14

SIGN NO.	NO. OF POSTS	POST SIZES 5' MTG. HT. LBS./FT.	5' MTG. HT. LGTH.	7' MTG. HT. LBS./FT.	7' MTG. HT. LGTH.
W2-1-24	1	3P	12	3P	14
W2-1-30	1	3P	13	3P	15
W2-1-36	1	3P	14	3P	16
W2-2-24	1	3P	12	3P	14
W2-5-30	1	3P	13	3P	15
W3-1-36	1	3P	14	3P	16
W3-2-36	1	3P	14	3P	16
W5-1-36	1	3P	14	3P	16
W9-1-36	1	3P	14	3P	16
W9-2-36	1	3P	14	3P	16
W8-3-30	1	3P	13	3P	15
W14-1-24	1	3P	12	3P	14
W14-1-30	1	3P	13	3P	15
W6-4-48	2	3P	14	3P	16
W10-1-36	1	3P	13	3P	15

SIGN NO.	NO. OF POSTS	POST SIZES 5' MTG. HT. LBS./FT.	5' MTG. HT. LGTH.	7' MTG. HT. LBS./FT.	7' MTG. HT. LGTH.
THE FOLLOWING TO BE MOUNTED AT 4' HT.					
D10-1-12-XX	1	2P	10		
D10-2-12-XX	1	2P	11		
D10-3-12-XX	1	2P	12		
THE FOLLOWING TO BE MOUNTED AT 6' HT.					
R1-2-60	2	3P			
R4-3-48	2	3P			
R8-4-48	2	3P			
R11-1-48	2	3P			
W13-2-48	2	3P			

NOTE:

POST LENGTHS SHOWN IN THIS CHART ARE GENERAL AND SHOULD BE USED FOR BID PURPOSES ONLY. CONTRACTOR IS REQUIRED TO VERIFY FIELD CONDITIONS TO DETERMINE EXACT LENGTHS OF POSTS NEEDED.

DELINEATOR POSTS SHALL BE 2P U-SECTION POST 7 1/2' LONG.

REFERENCES

SIGNING AND MARKING ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 23845 MARK H. ANTHONY

SIGNATURE

2-11-08

DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
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0			

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

FLAT SHEET MOUNTING DETAILS

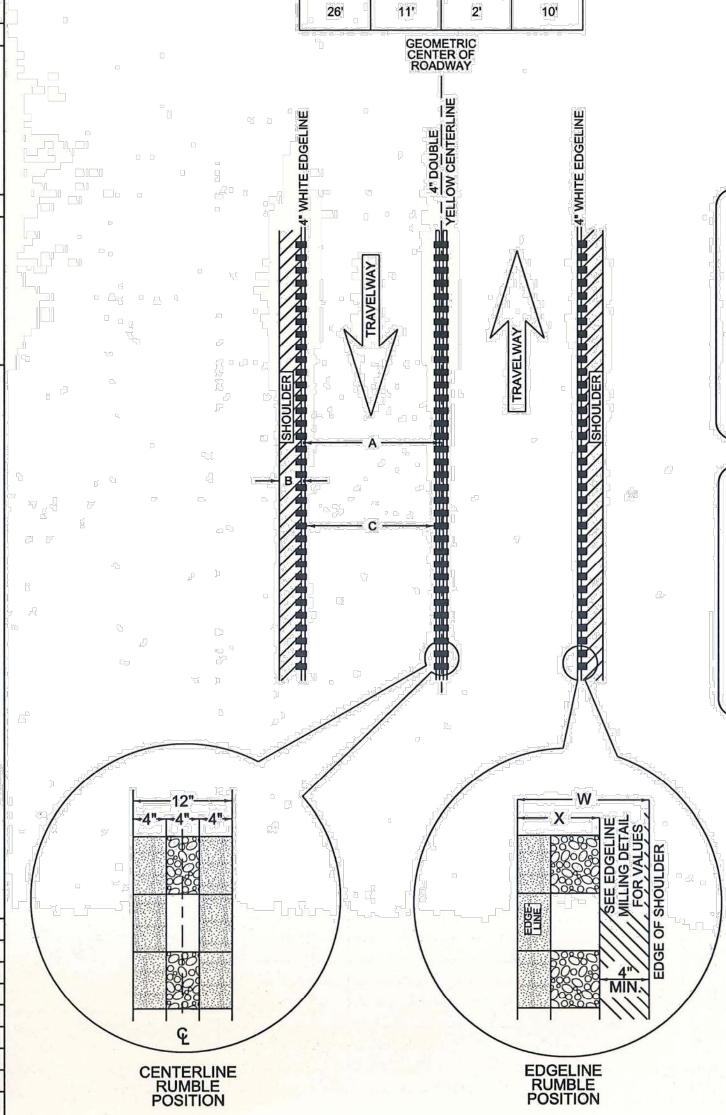
651-110-00

EFFECTIVE LETTING DATE MAY 2008

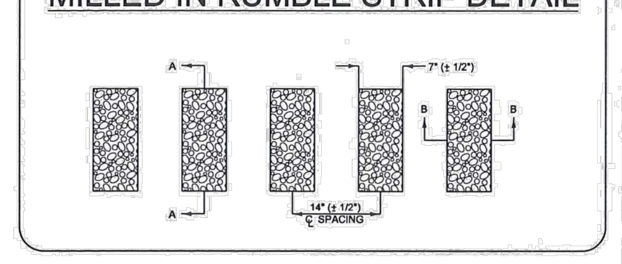
STANDARD PAVEMENT MARKINGS RUMBLE STRIPES

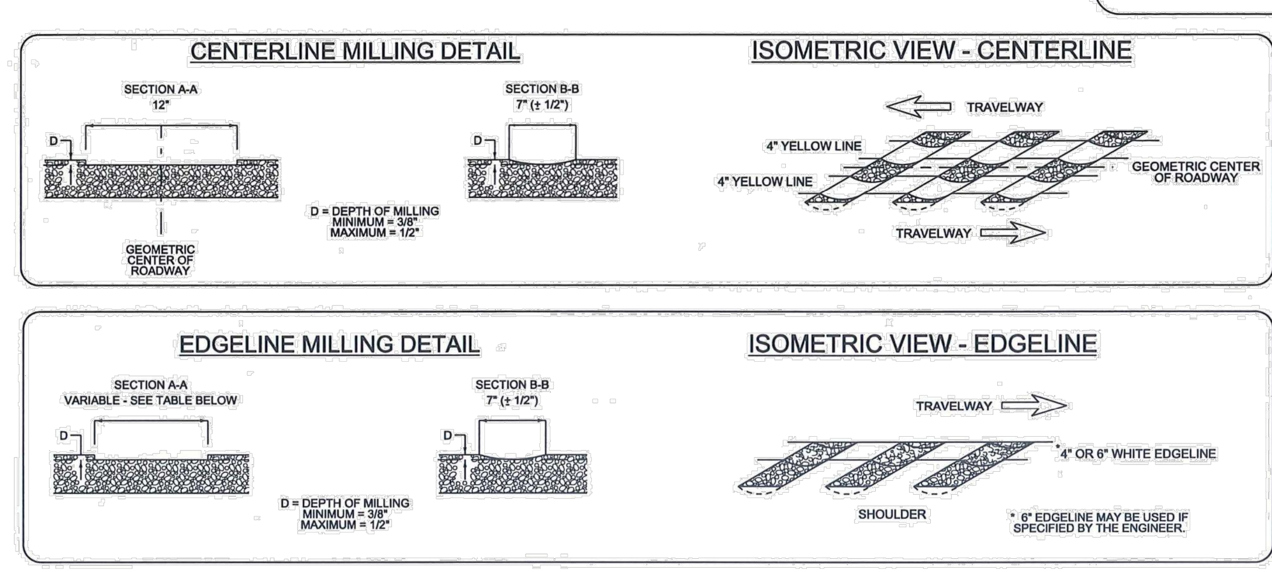
RUMBLE STRIP INSTALLATION LANE DIMENSIONS

ROADWAY WIDTH	A	B	C
28'	12'	2'	11'
26'	11'	2'	10'



MILLED IN RUMBLE STRIP DETAIL





NOTES:

1.) RUMBLE STRIPE SHOULD NOT BE MILLED INTO CONCRETE BRIDGE DECKS, APPROACH SLABS OR CURB AND GUTTER SECTIONS.

2.) RUMBLE STRIPE MAY BE MILLED INTO NEW OR EXISTING SURFACES. FOR EXISTING PAVEMENT, THE SURFACE SHOULD BE IN SUFFICIENTLY GOOD CONDITION TO PREVENT RAVELING OR DETERIORATION.

3.) A 4" UNDISTURBED PAVEMENT AREA SHOULD BE MAINTAINED FROM THE RUMBLE STRIPE TO THE OUTSIDE EDGE OF PAVEMENT.

4.) ON NON FULLY CONTROLLED HIGHWAYS, FREEWAYS OR INTERSTATE HIGHWAYS, A SKIP PATTERN SHOULD BE INSTALLED ON A 60' CYCLE (48' OF RUMBLE STRIPE, 12' GAP) WHERE THE PAVED SHOULDER WIDTH IS 1' OR GREATER.
-SEE ILLUSTRATION BELOW-

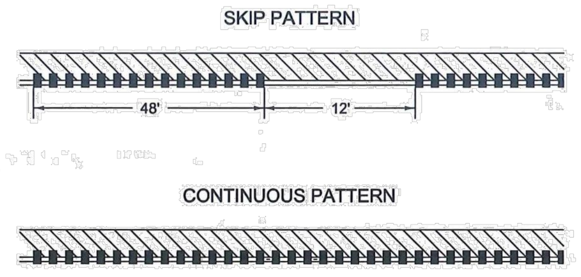
RUMBLE STRIPE DIMENSIONS

W(feet)	X(inches)
0' - 1'	4"
> 1' - < 5'	8"
≥ 5'	12"

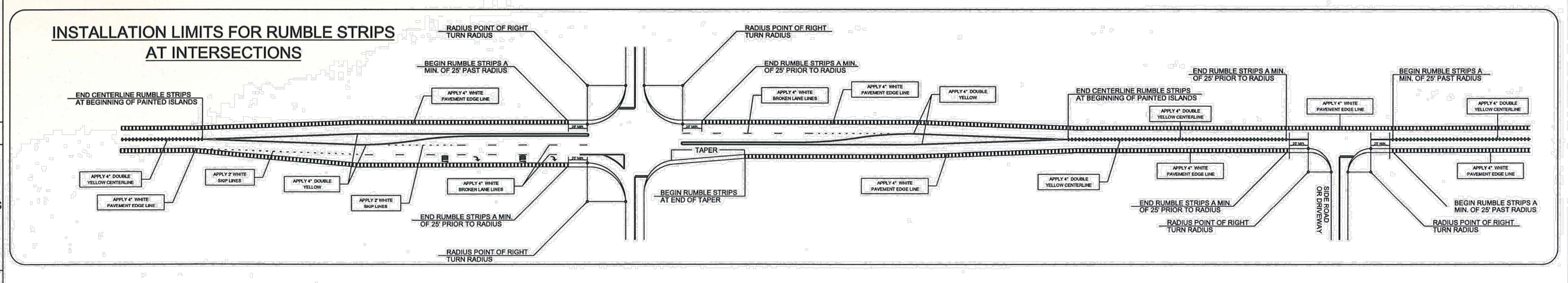
W = PAVED SHOULDER FROM EDGELINE TO EDGE OF PAVEMENT (FEET)

X = WIDTH OF MILLED IN RUMBLE STRIP (INCHES)

SKIP PATTERN



INSTALLATION LIMITS FOR RUMBLE STRIPS AT INTERSECTIONS



REFERENCES

HIGHWAY SAFETY ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 19854 JOEY D. RIDDLE

SIGNATURE

12/16/14

DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1	16-DEC-14	JDR	REVISED DIMENSIONS AND NOTES
0	23-AUG-12	GEM	REVISED "X" AND "Y" DIMENSIONS

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

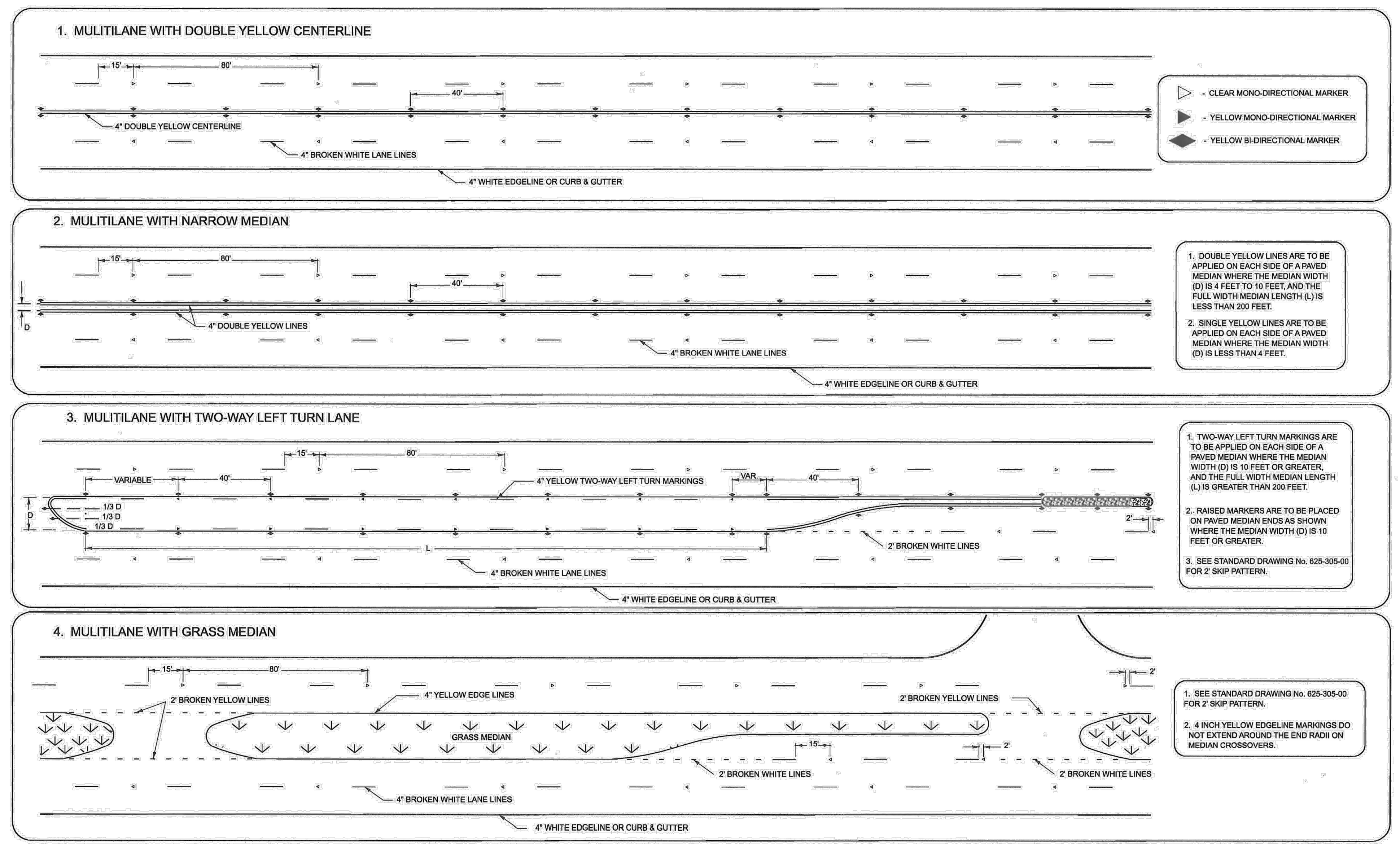
STANDARD PAVEMENT MARKINGS RUMBLE STRIPES

633-105-00

EFFECTIVE LETTING DATE FEBRUARY 2015

THIS DRAWING IS NOT TO SCALE

PAVEMENT MARKING TYPICAL MULTILANE ROADS - RAISED MARKER PLACEMENT



1. DOUBLE YELLOW LINES ARE TO BE APPLIED ON EACH SIDE OF A PAVED MEDIAN WHERE THE MEDIAN WIDTH (D) IS 4 FEET TO 10 FEET, AND THE FULL WIDTH MEDIAN LENGTH (L) IS LESS THAN 200 FEET.

2. SINGLE YELLOW LINES ARE TO BE APPLIED ON EACH SIDE OF A PAVED MEDIAN WHERE THE MEDIAN WIDTH (D) IS LESS THAN 4 FEET.

1. TWO-WAY LEFT TURN MARKINGS ARE TO BE APPLIED ON EACH SIDE OF A PAVED MEDIAN WHERE THE MEDIAN WIDTH (D) IS 10 FEET OR GREATER, AND THE FULL WIDTH MEDIAN LENGTH (L) IS GREATER THAN 200 FEET.

2. RAISED MARKERS ARE TO BE PLACED ON PAVED MEDIAN ENDS AS SHOWN WHERE THE MEDIAN WIDTH (D) IS 10 FEET OR GREATER.

3. SEE STANDARD DRAWING No. 625-305-00 FOR 2' SKIP PATTERN.

1. SEE STANDARD DRAWING No. 625-305-00 FOR 2' SKIP PATTERN.

2. 4 INCH YELLOW EDGELINE MARKINGS DO NOT EXTEND AROUND THE END RADII ON MEDIAN CROSSOVERS.

REFERENCES

SIGNING AND MARKING ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 23845 MARK H. ANTHONY

SIGNATURE

1-20-09

DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1			
0			

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

PAVEMENT MARKING TYPICAL
MULTILANE ROADS -
RAISED MARKER PLACEMENT

630-210-00

EFFECTIVE LETTING DATE MAY 2009 THIS DRAWING IS NOT TO SCALE

SOUTH CAROLINA THOMAS & HUTTON ENGINEERING CO. No. C00285 CERTIFICATE OF AUTHORIZATION

6/7/21

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29061 ROSS S. OAKLEY

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

THOMAS & HUTTON
1501 Main Street • Suite 760
Columbia, SC 29201 • 803.451.6789
www.thomasandhutton.com

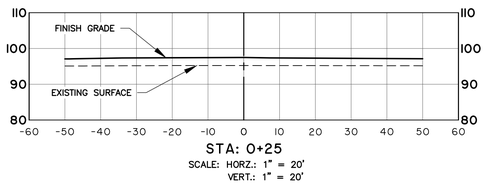
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

SITE DETAILS

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 50'

C5.3



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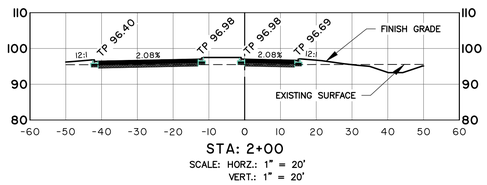

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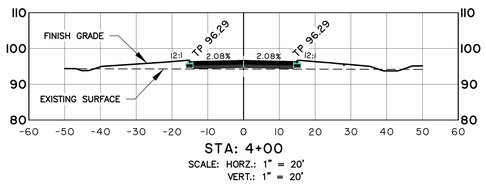

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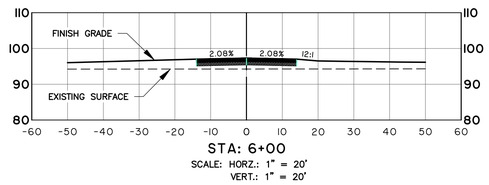

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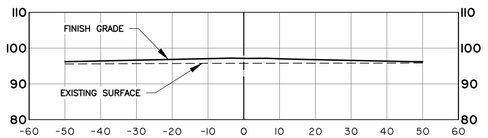

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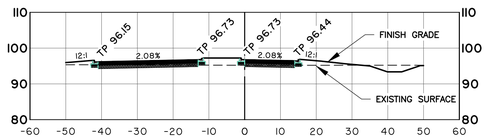

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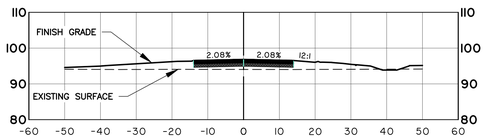

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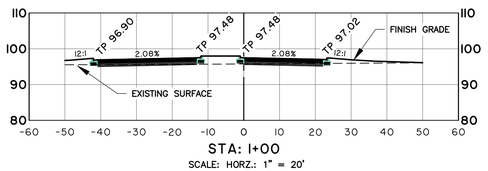

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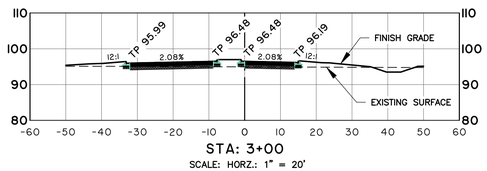

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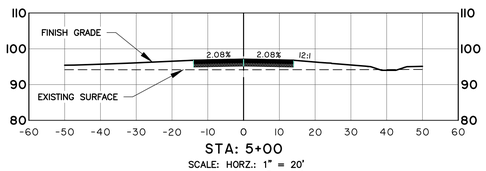

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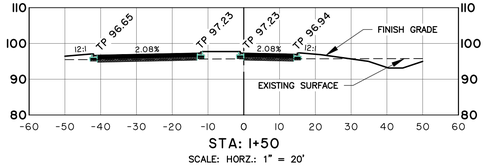

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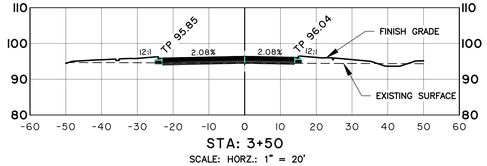

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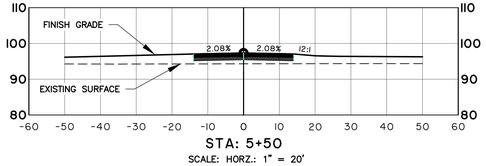

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ENTRANCE ROAD CROSS SECTIONS

NORTH CAROLINA
THOMAS & HUTTON ENGINEERING CO
No. C00285
CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA
PROFESSIONAL ENGINEER
No. 23906
NATHAN J. HOLLAND
6/7/21

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

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FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

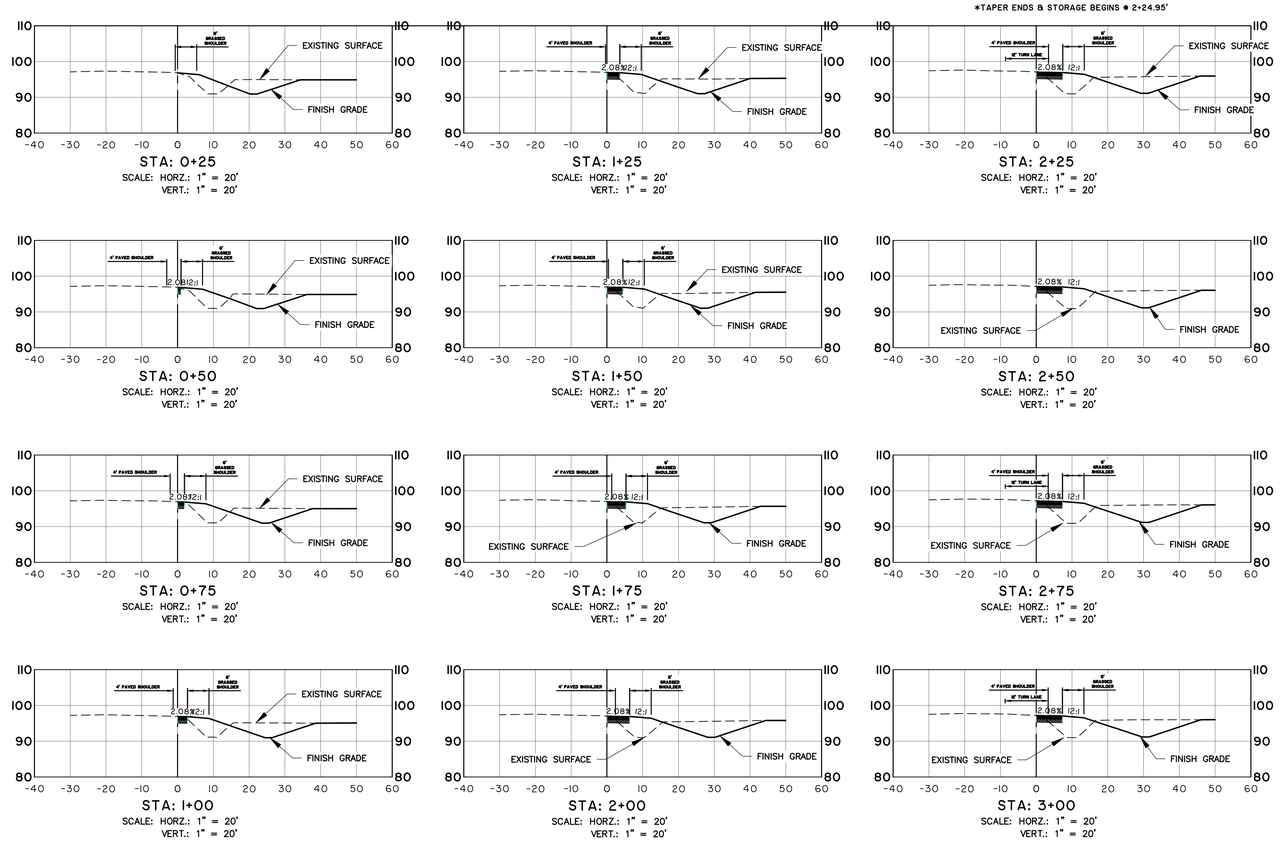
FLORENCE COUNTY INDUSTRIAL PARK EAST

CROSS SECTIONS

JOB NO:	J-136001.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	AS NOTED

C6.1

*TAPER ENDS & STORAGE BEGINS @ 2+24.95'



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STA: 1+25
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'

STA: 2+25
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'

STA: 0+50
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'

STA: 1+50
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'

STA: 2+50
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'

STA: 0+75
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'

STA: 1+75
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'

STA: 2+75
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'

STA: 1+00
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'

STA: 2+00
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'

STA: 3+00
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RIGHT TURN LANE CROSS SECTIONS

SOUTH CAROLINA — THOMAS & HUTTON ENGINEERING CO. — No. C00285 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — PROFESSIONAL ENGINEER — No. 22006 — NATHAN J. HOLLAR

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2024/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2024/06/07
1	REVISED PER SCDOT	NJH	2024/06/07

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Columbia, SC 29201 • 803.451.6789
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FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

CROSS SECTIONS

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
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APPROVED:	RSO
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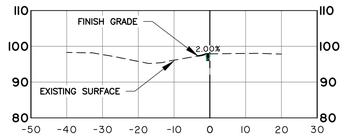
C6.2



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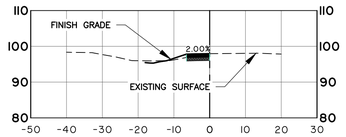

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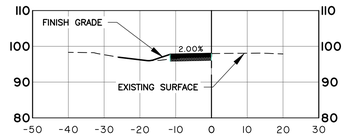

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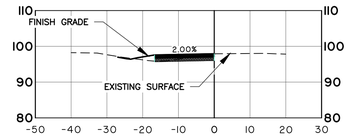

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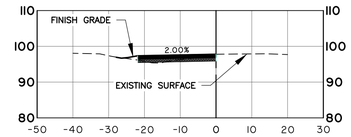

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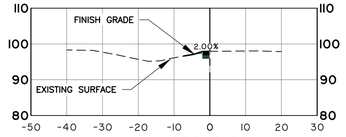

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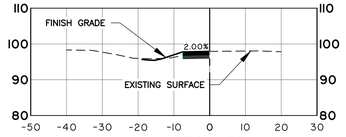

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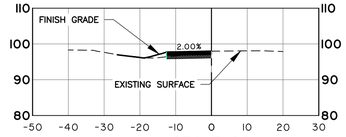

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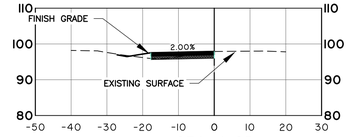

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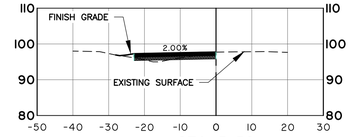

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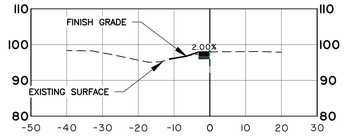

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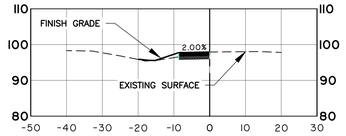

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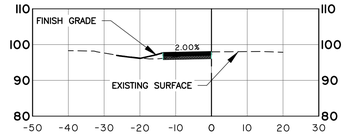

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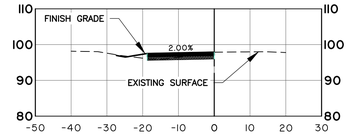

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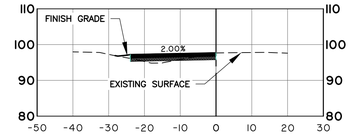

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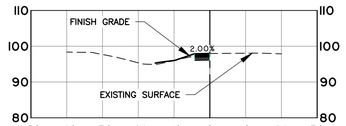

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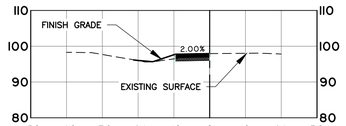

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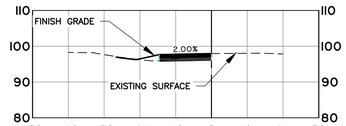
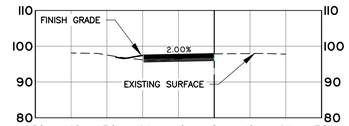
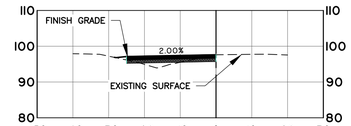


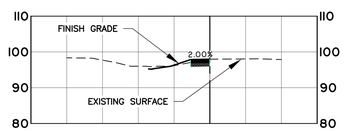
STA: 3+50
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'



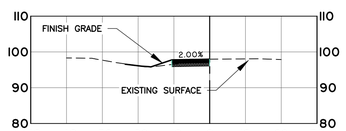
STA: 4+75
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'



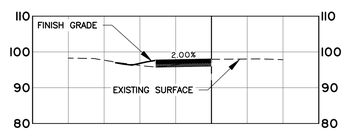
STA: 6+00
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'



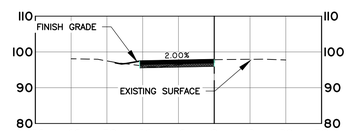
STA: 1+25
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'



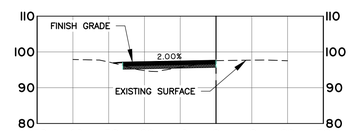
STA: 2+50
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'



STA: 3+75
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'



STA: 5+00
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'



STA: 6+25
SCALE: HORZ.: 1" = 20'
VERT.: 1" = 20'

LEFT TURN LANE CROSS SECTIONS

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

THOMAS & HUTTON
1501 Main Street • Suite 760
Columbia, SC 29201 • 803.451.6789
www.thomasandhutton.com

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

CROSS SECTIONS

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	1" = 20'

C6.3

REFERENCES

STATE TRAFFIC OPERATIONS ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 17609 JOHN N. BOOZER

10-09-2012
DATE

#	DATE	CHK	DESCRIPTION
1			
2			
3			
4			
5			
6			

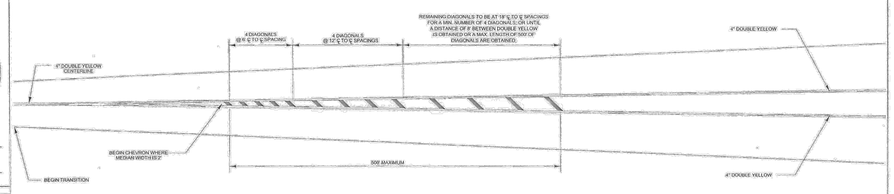
SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

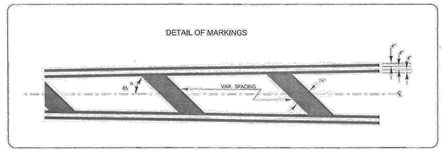
STANDARD DRAWING

TRANSITION DIAGONAL MARKINGS

625-405-00
EFFECTIVE LETTING DATE: JANUARY 2011 THIS DRAWING IS NOT TO SCALE.

PAVEMENT MARKING TYPICAL DIAGONAL MARKINGS FOR TRANSITION FROM 2 LANES TO FIVE LANES





REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL, JR.

SIGNATURE
8/2/12
DATE

#	DATE	CHK	DESCRIPTION
1	8-12-11	JCS	GENERAL UPDATE
2	8-23-07	JCS	STAKING NO. UPDATE
3	DATE	CHK	DESCRIPTION

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

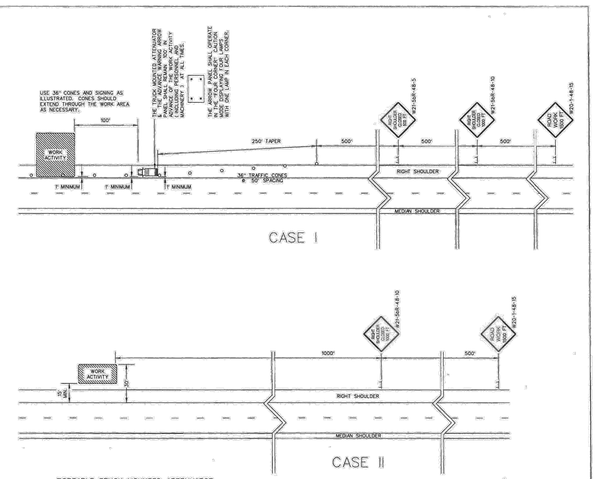
STANDARD DRAWING

RIGHT SHOULDER CLOSURE (CASE I / CASE II) PRIMARY ROUTES

610-205-00
EFFECTIVE LETTING DATE: APRIL 2015 THIS DRAWING IS NOT TO SCALE.

GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CHANNEL POSTS OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENTS WEB SITE AT: www.scdot.org .
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES NECESSARY TO MOUNT SIGNS ON BRIDGE RAILINGS, ON BRIDGE PARAPET WALLS IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS OR DOUBLEFACED GUARDRAIL.
8. REFLECTORIZE ALL PORTABLE PLASTIC DRUMS AND 42" OVERSIZED TRAFFIC CONES WITH TYPE A FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. 42" OVERSIZED TRAFFIC CONES MAY BE SUBSTITUTED FOR THE PORTABLE PLASTIC DRUMS IN THIS TYPICAL TRAFFIC CONTROL SETUP. THE 42" OVERSIZED TRAFFIC CONES SHALL COMPLY WITH ALL REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
9. REFLECTORIZE ALL BARRICADES WITH A TYPE VIII OR IX PRISMATIC RETROREFLECTIVE SHEETING ON ALL PROJECTS LET TO CONTRACT AFTER MAY 1, 2012 UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
10. TYPE III BARRICADES SHALL HAVE A MINIMUM WIDTH OF 3 FEET UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL MINIMIZE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES ONTO AN ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
12. LANE CLOSURES ARE RESTRICTED TO MAXIMUM LENGTHS OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS AND/OR THE DEPARTMENT.
13. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS WITHIN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LANES UNDER TWO SEPARATE LANE CLOSURES WITH A POSTED REGULATORY SPEED LIMIT OF 45 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 2 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE SECOND CLOSURE.
14. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS IN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LANES UNDER TWO SEPARATE LANE CLOSURES WITH A POSTED REGULATORY SPEED LIMIT OF LESS THAN 45 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 1 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
15. UTILIZATION OF A CHANGEABLE MESSAGE SIGN IS OPTIONAL WITH THIS TRAFFIC CONTROL SETUP. HOWEVER, WHEN A CHANGEABLE MESSAGE SIGN IS UTILIZED, INSTALL THE SIGN AS INDICATED IN THE PLANS, AND OPERATE AND MAINTAIN THE SIGN AS SPECIFIED BY THE SPECIAL PROVISIONS, THE PLANS AND/OR THE ENGINEER. INSTALL THE CHANGEABLE MESSAGE SIGN NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE AND SUPPLEMENT THE SIGN LOCATION WITH NO LESS THAN 5 PORTABLE PLASTIC DRUMS FOR CLOSURE AS ILLUSTRATED. 36" STANDARD TRAFFIC CONES OR 42" OVERSIZED TRAFFIC CONES MAY BE SUBSTITUTED FOR THE PORTABLE PLASTIC DRUMS IN THIS TYPICAL TRAFFIC CONTROL SETUP. DURING A RIGHT LANE CLOSURE, THE SIGN SHALL FLASH ALTERNATELY TO READ "RIGHT LANE CLOSED", "MERGE LEFT" AT A RATE THAT WILL PERMIT MOTORISTS TO READ BOTH MESSAGES AT LEAST ONCE.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
17. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF SHOULDER CLOSURES IN THE RIGHT SHOULDER AREAS OF PRIMARY AND SECONDARY ROADWAYS.



PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICULAR WEIGHT (GVW) OF 15,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE. DO NOT EXCEED THE MAXIMUM GVW RATING OF THE TRUCK DURING ADDITION OF THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BAR", OR THE "ALTERNATING DIAMOND" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

LEGEND
○ 36" TRAFFIC CONES

NOTE: NOTHING ON ANY SCDOT STANDARD DRAWING FOR TRAFFIC CONTROL SHOULD BE CONSIDERED OPTIONAL UNLESS THE SCDOT INSPECTOR ASSIGNED TO THE PROJECT DECLARES IT SO. THERE ARE WORK RESTRICTIONS IN PLACE FOR LANE CLOSURES ON US 76. NO WORK WILL BE ALLOWED BETWEEN 7AM TO 7 PM MONDAY -THURSDAY. NO LANE CLOSURES ALLOWED FRIDAY - SUNDAY. THERE ARE ALSO SEASONAL WORK RESTRICTIONS ON HWY 76.

NOTE:
ANY WORK REQUIRING SHOULDER CLOSURE ON US-76/301 IS TO BE DONE USING SCDOT STANDARD DRAWING 610-205-00 FOR ANY SHOULDER CLOSURE.

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL, JR.

SIGNATURE
8/2/12
DATE

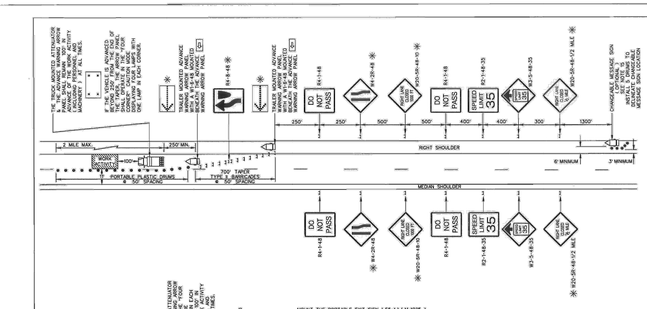
#	DATE	CHK	DESCRIPTION
1	8-15-11	JCS	GENERAL UPDATE
2	8-23-07	JCS	STAKING NO. UPDATE
3	DATE	CHK	DESCRIPTION

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

LANE CLOSURE NIGHTTIME MULTILANE PRIMARY ROUTES

610-030-00
EFFECTIVE LETTING DATE: APRIL 2015



GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. STANDARD INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CHANNEL POSTS OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7' FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENTS WEB SITE AT: www.scdot.org .
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES NECESSARY TO MOUNT SIGNS ON BRIDGE RAILINGS, ON BRIDGE PARAPET WALLS IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS OR DOUBLEFACED GUARDRAIL.
8. REFLECTORIZE ALL PORTABLE PLASTIC DRUMS AND 42" OVERSIZED TRAFFIC CONES WITH TYPE A FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. 42" OVERSIZED TRAFFIC CONES MAY BE SUBSTITUTED FOR THE PORTABLE PLASTIC DRUMS IN THIS TYPICAL TRAFFIC CONTROL SETUP. THE 42" OVERSIZED TRAFFIC CONES SHALL COMPLY WITH ALL REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
9. REFLECTORIZE ALL BARRICADES WITH A TYPE VIII OR IX PRISMATIC RETROREFLECTIVE SHEETING ON ALL PROJECTS LET TO CONTRACT AFTER MAY 1, 2012 UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
10. TYPE III BARRICADES SHALL HAVE A MINIMUM WIDTH OF 3 FEET UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL MINIMIZE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES ONTO AN ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
12. LANE CLOSURES ARE RESTRICTED TO MAXIMUM LENGTHS OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS AND/OR THE DEPARTMENT.
13. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS WITHIN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LANES UNDER TWO SEPARATE LANE CLOSURES WITH A POSTED REGULATORY SPEED LIMIT OF 45 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 2 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE SECOND CLOSURE.
14. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS IN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LANES UNDER TWO SEPARATE LANE CLOSURES WITH A POSTED REGULATORY SPEED LIMIT OF LESS THAN 45 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 1 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
15. UTILIZATION OF A CHANGEABLE MESSAGE SIGN IS OPTIONAL WITH THIS TRAFFIC CONTROL SETUP. HOWEVER, WHEN A CHANGEABLE MESSAGE SIGN IS UTILIZED, INSTALL THE SIGN AS INDICATED IN THE PLANS, AND OPERATE AND MAINTAIN THE SIGN AS SPECIFIED BY THE SPECIAL PROVISIONS, THE PLANS AND/OR THE ENGINEER. INSTALL THE CHANGEABLE MESSAGE SIGN NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE AND SUPPLEMENT THE SIGN LOCATION WITH NO LESS THAN 5 PORTABLE PLASTIC DRUMS FOR CLOSURE AS ILLUSTRATED. 36" STANDARD TRAFFIC CONES OR 42" OVERSIZED TRAFFIC CONES MAY BE SUBSTITUTED FOR THE PORTABLE PLASTIC DRUMS IN THIS TYPICAL TRAFFIC CONTROL SETUP. DURING A RIGHT LANE CLOSURE, THE SIGN SHALL FLASH ALTERNATELY TO READ "RIGHT LANE CLOSED", "MERGE LEFT" AT A RATE THAT WILL PERMIT MOTORISTS TO READ BOTH MESSAGES AT LEAST ONCE.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
17. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF A LANE CLOSURE ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER.

PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICULAR WEIGHT (GVW) OF 15,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE. DO NOT EXCEED THE MAXIMUM GVW RATING OF THE TRUCK DURING ADDITION OF THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
4. DUE TO THE WEIGHT OF A TRUCK MOUNTED ATTENUATOR, THE TRUCK MOUNTED ATTENUATOR SUPPLEMENTED WITH AN ADVANCE WARNING ARROW PANEL MAY BE REPLACED WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL WHEN THIS TRAFFIC CONTROL SETUP IS UTILIZED ON ACTIVE INTERSTATE OR FREEWAY ROADWAYS. USE OF A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL SHALL REQUIRE THE ENGINEER'S APPROVAL.

ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BAR", OR THE "ALTERNATING DIAMOND" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

LEGEND
● PORTABLE PLASTIC DRUMS

NOTE:
ANY WORK REQUIRING LANE CLOSURE ON US-76/301 IS TO BE DONE USING SCDOT STANDARD DRAWING 610-030-00 FOR ANY LANE CLOSURE.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER THOMAS B. HUTTON ENGINEERING CO. No. C00285 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 23696 JOHN N. BOOZER

6/12/21

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
1	REVISED PER SCDOT	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

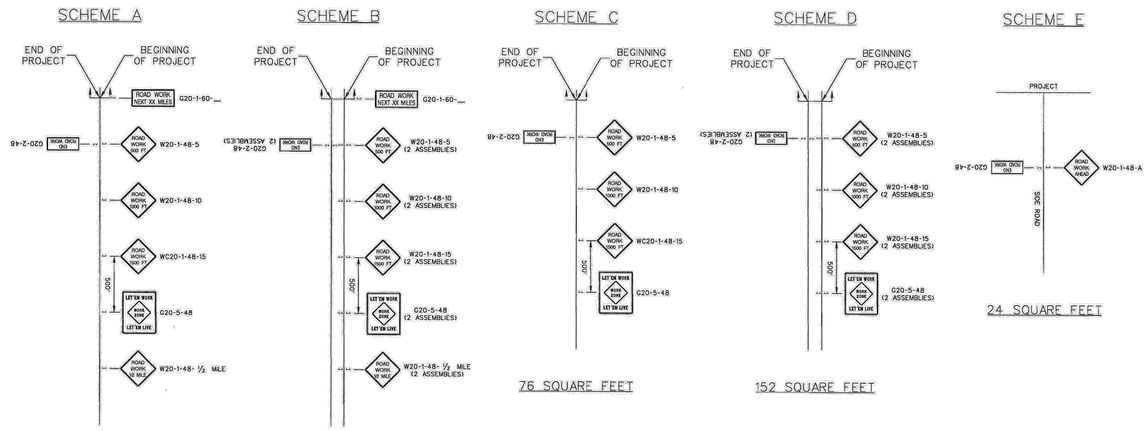
FLORENCE COUNTY INDUSTRIAL PARK EAST

TRAFFIC CONTROL DETAILS

THOMAS & HUTTON
1501 Main Street • Suite 760
Columbia, SC 29201 • 803.451.6789
www.thomasandhutton.com

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	NA

C7.1



GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. THE WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ALL PERMANENT CONSTRUCTION SIGNS ON APPROVED GROUND MOUNTED SIGN POSTS UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. UTILIZE EITHER 3 PPF U-CHANNEL OR SQUARE STEEL TUBE POSTS FOR THESE INSTALLATIONS. INSTALL EACH PERMANENT CONSTRUCTION SIGN ASSEMBLY NO LESS THAN 2 FEET FROM THE NEAR EDGE OF A PAVED SHOULDER OR THE FACE OF A CURB OR 6-12 FEET FROM THE NEAR EDGE OF AN ADJACENT TRAVEL LANE WITHOUT THE PRESENCE OF A PAVED SHOULDER OR A CURB & GUTTER TO THE NEAREST EDGE OF THE SIGN ASSEMBLY. ALSO, MOUNT EACH PERMANENT CONSTRUCTION SIGN ASSEMBLY TO PROVIDE A MOUNTING HEIGHT OF NO LESS THAN 7 FEET OR NO GREATER THAN 8 FEET FROM THE BOTTOM EDGE OF THE PRIMARY SIGN TO THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE. HOWEVER, IF A SECONDARY SIGN IS MOUNTED BELOW THE PRIMARY SIGN, MOUNT THE SIGN ASSEMBLY TO PROVIDE A MOUNTING HEIGHT OF NO LESS THAN 6 FEET FROM THE BOTTOM EDGE OF THE SECONDARY SIGN TO THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE. PROVIDE AND UTILIZE SPECIAL SIGN MOUNTING DEVICES AND HARDWARE AS NECESSARY FOR INSTALLING PERMANENT CONSTRUCTION SIGN ASSEMBLIES IN AREAS WHERE CONCRETE MEDIAN BARRIER WALLS, BRIDGE PARAPET WALLS OR DOUBLEFACED GUARDRAIL ARE PRESENT.
3. MOUNT ALL FLAT SHEET PERMANENT CONSTRUCTION SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
4. REFLECTORIZE ALL ORANGE PERMANENT CONSTRUCTION SIGNS AND ANY ORANGE AREAS OF MULTICOLORED PERMANENT CONSTRUCTION SIGNS WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE ALL WHITE PERMANENT CONSTRUCTION SIGNS AND ANY WHITE AREAS OF MULTICOLORED PERMANENT CONSTRUCTION SIGNS WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
5. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org .
7. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.

THIS DRAWING IS NOT TO SCALE

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL, JR

SIGNATURE

8/2/12
DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1	1-9-12	JCS	GENERAL UPDATE
0	8-13-07	JCS	DRAWING NO. UPDATE

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

CONSTRUCTION SIGNING PERMANENT PRIMARY ROUTES

605-010-02

EFFECTIVE LETTING DATE: JAN. 2013

NOTE
PRIOR TO ANY WORK ON SCDOT RIGHT-OF-WAY THE CONTRACTOR WILL INSTALL PERMANENT CONSTRUCTION SIGNING. CONSTRUCTION SIGNING SHALL BE PLACED ACCORDINGLY: SCDOT STANDARD DRAWING 605-010-02, SCHEME C, BOTH DIRECTIONS US-76/301.

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SOUTH CAROLINA PROFESSIONAL ENGINEER No. 23696 CERTIFICATE OF AUTHORIZATION

9/12

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE
3	REVISED PER CITY OF FLORENCE	NJH	2021/06/07
2	REVISED PER FLORENCE COUNTY	NJH	2021/06/07
1	REVISED PER SCDOT	NJH	2021/06/07

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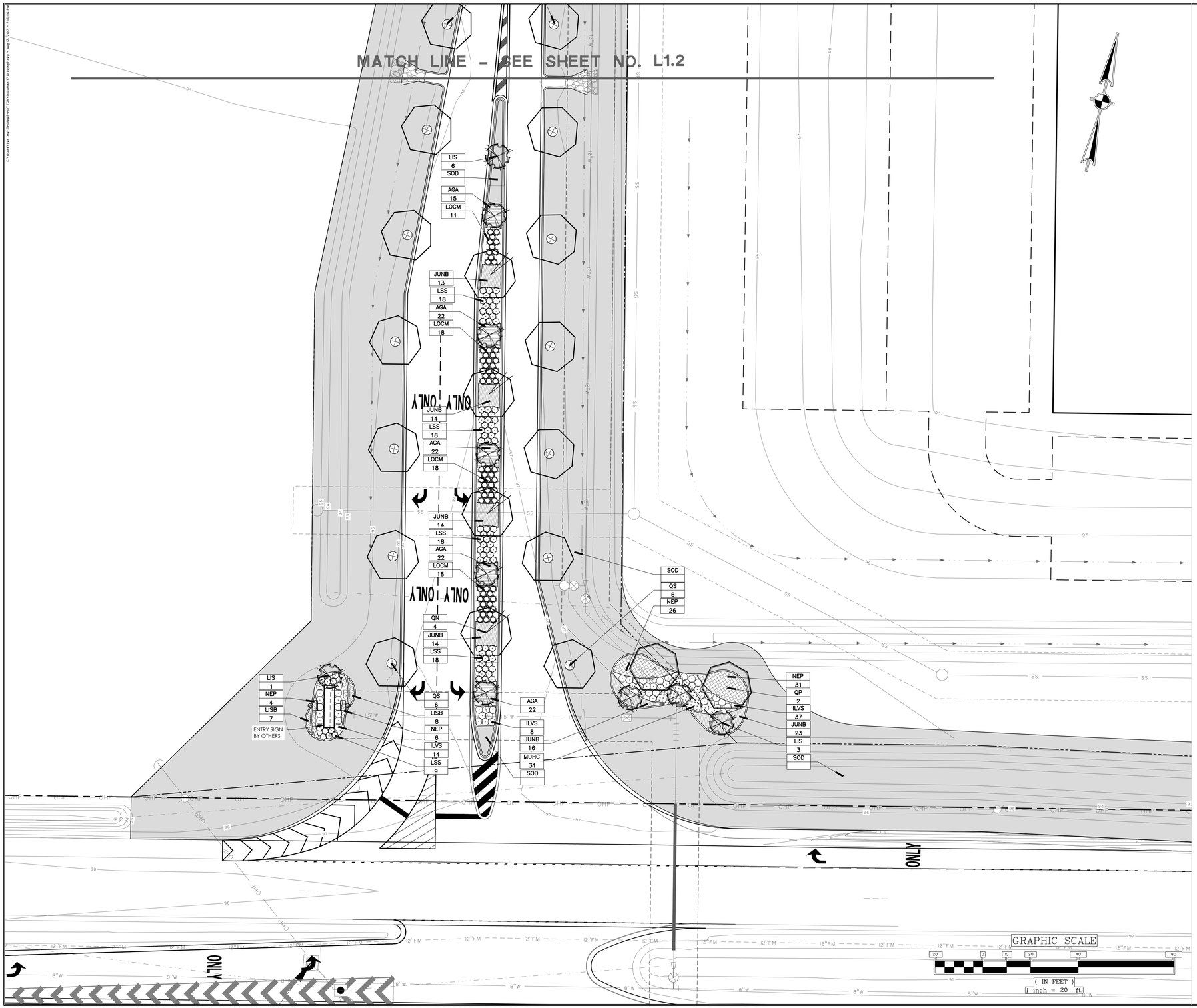
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

TRAFFIC CONTROL DETAILS

JOB NO:	J-286010001
DATE:	06/07/2021
DRAWN:	NJH
DESIGNED:	NJH
REVIEWED:	RSO
APPROVED:	RSO
SCALE:	NA

C7.2



LIGHTING LEGEND

SYMBOL	QTY.	MANUFACTURER	PRODUCT (or Accepted Equals)
	3	VISTA PRO	SIGN LIGHT-GR-5103-B-LED-FR

GENERAL LIGHTING & ELECTRICAL NOTES:

1. THIS PLAN IS FOR OUTDOOR ELECTRICAL FIXTURE LOCATION ONLY - WIRING DIAGRAM, DETAILS AND INSTALLATION SPECIFICATIONS ARE BY CONTRACTOR. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND SPECIFICATIONS TO THE OWNER FOR REVIEW AND ACCEPTANCE.
2. INSTALLATION OF LIGHTING SHALL COMPLY WITH ALL APPLICABLE STATE, COUNTY, AND CITY CODES AND SHALL MEET OR EXCEED THE NATIONAL ELECTRICAL CODE. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ALL PERMITS AND APPROVALS REQUIRED. SYSTEM INSTALLATION SHALL BE GUARANTEED FOR ONE YEAR, PARTS AND LABOR, DUE TO FAILURE BASED ON FAULTY WORKMANSHIP OR EQUIPMENT FAILURE.
3. CONTRACTOR SHALL PROVIDE PHOTOCELL CONTROLLED LIGHTING SYSTEM.
4. ALL EQUIPMENT PANELS SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
5. SHOULD ELECTRICAL DESIGN BE REQUIRED, CONTRACTOR SHALL PROVIDE ELECTRICAL ENGINEER DESIGN.
6. LOCATION OF METERS AND POWER SOURCE BY OTHERS, SEE OWNERS REP FOR FINAL CONNECTION LOCATION.
7. CONTRACTOR SHALL PROVIDE OWNER WITH FIXTURE SAMPLES FOR APPROVAL PRIOR TO INSTALLATION.
8. CONTRACTOR TO INSTALL LIGHT FIXTURES WITH 36-INCH MINIMUM 'PIG-TAIL' TO ALLOW FOR MINOR LIGHT RELOCATION/ADJUSTMENTS.
9. CONTRACTOR TO DESIGN LIGHTING LOOP CIRCUITS AS NECESSARY TO ENSURE CONSISTENCY OF BULB OUTPUT FROM FIXTURE-TO-FIXTURE REGARDLESS OF LOCATION.
10. ELECTRICAL EQUIPMENT PANEL SHALL INCLUDE ALL NECESSARY EQUIPMENT FOR PHOTOCELL SWITCHING, ELECTRICAL PANELS, CONTACT BOX AND METERING. PANEL AND BOX SHALL MEET ALL APPLICABLE CODES. ALL PANELS, BOXES AND OTHER ITEMS FINAL LOCATIONS SHALL BE PLACED IN SUCH A LOCATION TO MINIMIZE VISIBILITY AS MUCH AS POSSIBLE.
11. CONTRACTOR SHALL COORDINATE WITH WITH OWNER'S REPRESENTATIVE FOR PLACEMENT OF FIXTURES. FINAL AIMING AND ADJUSTMENT SHALL BE MADE AT NIGHT WITH OWNER'S REPRESENTATIVE PRESENT TO GIVE FINAL APPROVAL.
12. CONTRACTOR SHALL SUBMIT LANDSCAPE LIGHTING RECORD DRAWINGS TO OWNER FOR REVIEW AND ACCEPTANCE.

PLANT SCHEDULE

TREES

QNTY	ABBRV	SCIENTIFIC NAME	COMMON NAME	PLANTING SIZE	SPACING	MISCELLANEOUS / REMARKS
10	LIS	Lagerstroemia indica 'Sarah's Favorite'	Sarah's Favorite Crape Myrtle	B & B OR CONT. ; 2.5" CAL. 10'-12" HT. 4" SPD.	AS SHOWN	Specimen, Standard
4	QN	Quercus nuttallii	Nuttall Oak	B & B OR CONT. ; 2.5" CAL. 12'-24" HT. 3" SPD.	AS SHOWN	Specimen
2	QP	Quercus phellos 'RT3' PP#6,444	Upperton® Willow Oak	B & B OR CONT. ; 3" CAL. 12'-14" HT. 4" SPD.	AS SHOWN	Specimen
23	QS	Quercus shumardii	Shumard Oak	B & B OR CONT. ; 2.5" CAL. 10'-12" HT. 4" SPD.	AS SHOWN	Specimen

SHRUBS

QNTY	ABBRV	SCIENTIFIC NAME	COMMON NAME	PLANTING SIZE	SPACING	MISCELLANEOUS / REMARKS
59	ILVS	Ilex vomitoria 'Stokes'	Dwarf Schillings Holly	3 GAL. 18" X 18"	AS SHOWN	Full to ground and well formed
81	LSS	Ligustrum sinense 'Sunshine'	Sunshine Ligustrum	3 GAL. 18" X 18"	AS SHOWN	Full to ground and well formed
65	LOCM	Loropetalum chinense 'RCIJD2'	Carolina Moonlight Loropetalum	3 GAL. 24" X 24"	AS SHOWN	Full to ground and well formed

ORNAMENTAL GRASSES AND GROUNDCOVERS

QNTY	ABBRV	SCIENTIFIC NAME	COMMON NAME	PLANTING SIZE	SPACING	MISCELLANEOUS / REMARKS
103	AGA	Agapanthus 'Blue Globe'	Blue Globe African Lily	3 GAL. 18" X 18"	2'	Full, Well Formed
65,000SF	SOD	Cynodon dactylon 'Tifsport'	Tifsport Bermudagrass	--- ---	---	Dense roots
394	JUNB	Juniperus squamata 'Parsonii'	Parson's Juniper	1 GAL. 24" X 24"	2.5'	Full and well formed
45	LISB	Liriope spicata 'Blue'	Blue Lilyturf	1 GAL. 18" X 18"	18"	Full and well formed
31	MUHC	Muhlenbergia capillaris	Pink Muhly Grass	3 GAL. 24" X 24"	3'	Full and well formed
67	NEP	Nepta Racemosa 'Walker's Low'	Walker's Low Catmint	1 GAL. 24" X 24"	2.5'	Full, Well Formed

PRELIMINARY NOT FOR CONSTRUCTION

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE

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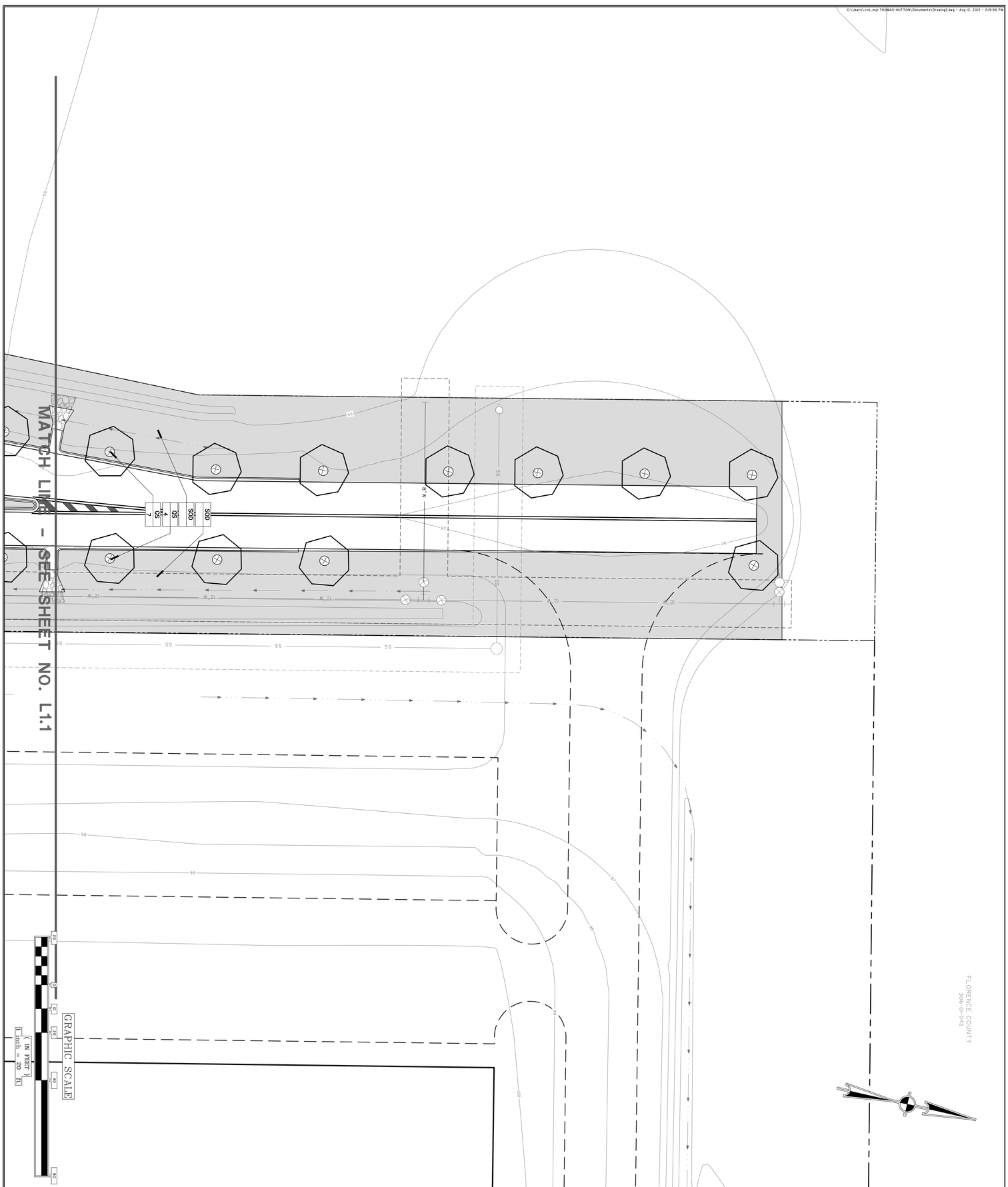
FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

LANDSCAPE PLAN

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	BCG
DESIGNED:	BCG
REVIEWED:	JLG
APPROVED:	JLG
SCALE:	1" = 20'

L1.1



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2	QP	Quercus phellos 'RT3' PP16,444	Upperton® Willow Oak	B & B OR CONT. ; 3" CAL. 12'-14' HT. 4' SPD.	AS SHOWN	Specimen
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65,000SF	SOD	Cynodon dactylon 'Tifsport'	Tifsport Bermudagrass	--- ---		Dense roots
94	JUNB	Juniperus squomata expansa 'Parsonii'	Parson's Juniper	1 GAL. 24" X 24"	2.5'	Full and well formed
15	LISB	Liriope muscari 'Super Blue'	Super Blue Liriope	1 GAL. 18" X 18"	18"	Full and well formed
31	MUHC	Muhlenbergia capillaris	Pink Muhly Grass	1 GAL. 18" X 18"	2'	Full and well formed
67	NEP	Nepta Racemosa 'Walker's Low'	Walker's Low Catmint	3 GAL. 24" X 24"	2.5'	Full, Well Formed

L1.2

JOB NO. J-228261.0001
DATE: 06/07/2021
DESIGNED: BCG
DRAWN: BCG
REVIEWED: JLG
APPROVED: JLG
SCALE: 1" = 20'

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

LANDSCAPE PLAN

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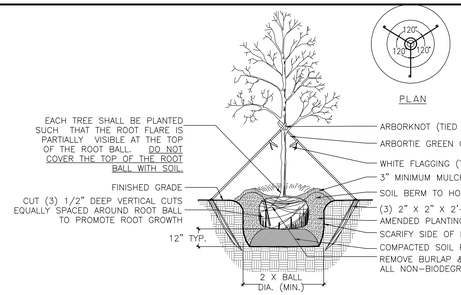
NO.	REVISIONS	BY	DATE

PRELIMINARY
NOT FOR
CONSTRUCTION

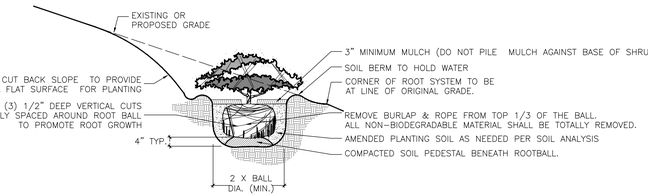
BID SET - NOT FOR CONSTRUCTION

811 Know what's below. Call before you dig.



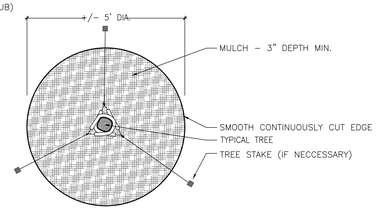
NOTES:
1) SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.
2) ONLY GUY TREES WHEN SITE CONDITIONS REQUIRE IT.
3) PLANT ROOT BALL FLUSH WITH FINISHED GRADE UNLESS AREA HAS POOR DRAINAGE, IN WHICH CASE PLANT ROOTBALL 2" ABOVE GRADE.
4) REMOVE ALL BRANCHES THAT ARE DAMAGED, RUBBING, OR CROSSING OTHER BRANCHES.
5) NEVER CUT A CENTRAL LEADER.
6) FINAL TREE STAKING AND PLACEMENT TO BE APPROVED BY OWNER'S REP.
7) CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

TREE PLANTING
NOT TO SCALE



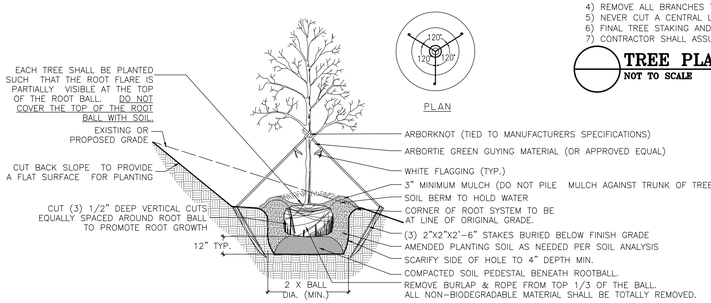
NOTES:
1) SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.
2) WHEN GROUNDCOVER AND SHRUBS ARE USED IN MASSES, DO NOT FORM SOIL BERMS ON INDIVIDUAL PLANTS AND ENTIRE PLANTING BED SHALL BE EXCAVATED TO RECEIVE PLANTING SOIL AND PLANT MATERIAL.
3) PLANT ROOT BALL FLUSH WITH FINISHED GRADE UNLESS AREA HAS POOR DRAINAGE, IN WHICH CASE PLANT ROOTBALL 2" ABOVE GRADE. COORDINATE WITH OWNER'S REP. PRIOR TO SETTING ROOTBALL ELEVATIONS.
4) CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

SHRUB PLANTING ON A SLOPE
NOT TO SCALE



NOTES:
1) SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.
2) APPLY MULCH IN A +/- 5' DIAMETER WHERE PROPOSED TREE PLANTINGS OCCUR IN SOD OR SEEDED AREA.

TREE RING
NOT TO SCALE



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4) REMOVE ALL BRANCHES THAT ARE DAMAGED, RUBBING, OR CROSSING OTHER BRANCHES.
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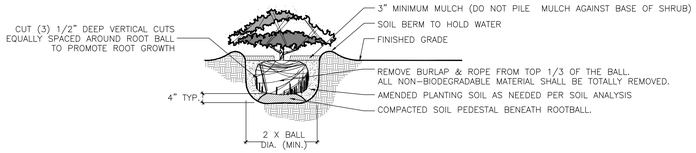
TREE PLANTING ON A SLOPE
NOT TO SCALE



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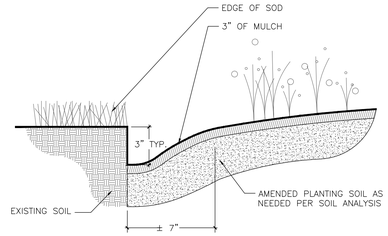
SHRUB PLANTING
NOT TO SCALE



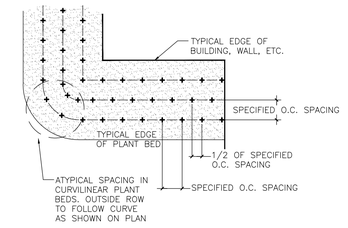
NOTES:
1) TRENCH EDGE TO BE LOCATED BETWEEN PLANTING BEDS AND ALL LAWN AREAS.

SOD TO PLANT BED EDGE
NOT TO SCALE

GENERAL PLANTING / IRRIGATION NOTES:

1. REQUIREMENTS FOR THE MEASUREMENTS, BRANCHING, GRADING, QUALITY, BALLING AND BURLAPPING OF PLANTS IN THE PLANT LIST SHOULD FOLLOW OR EXCEED THE STANDARDS CURRENTLY RECOMMENDED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. IN THE AMERICAN STANDARD FOR NURSERY STOCKS (ASNS). UNLESS OTHERWISE SPECIFIED, ANY SIZE SPECIFIED SHALL BE CONSIDERED MINIMUM. MINIMUMS FOR HEIGHT, SPREAD, CALIPER, ETC. SHALL TAKE PRECEDENT OVER A SPECIFIED CONTAINER SIZE. (I.E. - IF 7 GALLON IS REQUIRED, TO PROVIDE A SPECIFIED HEIGHT OR SPREAD THAT IS SPECIFIED AS A 3 GALLON, THEN THE 7 GALLON SHALL BE SHALL BE REQUIRED AND INCLUDED IN THE BASE BID AND SHALL NOT BE CONSIDERED A CHANGE ORDER.)
2. ALL PLANTS SHALL HAVE A WELL FORMED HEAD WITH MINIMUM CALIPER, HEIGHT AND SPREAD OF THE SIDE BRANCHES AS SHOWN ON THE PLANT LIST. TRUNKS SHALL BE UNDAMAGED AND SHAPE SHALL BE TYPICAL OF THE SPECIES.
3. MEASUREMENT OF CONIFER HEIGHT SHALL INCLUDE NOT MORE THAN FIFTY (50) PER CENT OF THIS YEARS' VERTICAL GROWTH (TOP CANDLE).
4. THE LANDSCAPE CONTRACTOR IS HEREBY NOTIFIED OF THE EXISTENCE OF UNDERGROUND UTILITIES WITHIN THE LIMITS OF THE PROJECT AREA. THE CONTRACTOR SHOULD VERIFY THE EXACT LOCATION OF ALL UTILITY LINES PRIOR TO COMMENCEMENT OF DIGGING OPERATIONS. CONTRACTOR RESPONSIBLE FOR LOCATING, PROTECTING, AND REPAIRING ALL DAMAGE TO BUILDINGS, UTILITIES, PAVEMENT, AND CURB & GUTTER. ANY REPAIRS SHALL BE DONE PROMPTLY AT CONTRACTOR'S EXPENSE.
5. THE CONTRACTOR WILL BE RESPONSIBLE FOR STAKING AND LAYOUT OF PLANTINGS ON THIS PROJECT. THE LANDSCAPE ARCHITECT OR OWNER SHALL BE ADVISED WHEN STAKES ARE READY FOR INSPECTION ON VARIOUS PLANTING AREAS. ALL LAYOUT WORK SHALL BE INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT AND OWNER PRIOR TO OPENING ANY PLANTING PITS.
6. IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO VERIFY THAT EACH EXCAVATED TREE OR SHRUB PIT WILL PERCOLATE (DRAIN) PRIOR TO ADDING TOPSOIL AND INSTALLING TREES OR SHRUBS. THE CONTRACTOR SHALL FILL THE BOTTOM OF HOLES WITH SIX (6) INCHES OF WATER. THIS WATER SHOULD PERCOLATE WITHIN A TWENTY-FOUR (24) HOUR PERIOD. IF WATER DOESN'T PERC, CONTRACTOR SHALL NOTIFY THE OWNER'S REP PRIOR TO INSTALLING PLANTS.
7. SHOULD THE LANDSCAPE CONTRACTOR ENCOUNTER UNSATISFACTORY SURFACE OR SUBSURFACE DRAINAGE CONDITIONS, SOIL DEPTH, LATENT SOILS, HARD PANS, STEAM OR OTHER UTILITY LINES OR OTHER CONDITIONS THAT WILL JEOPARDIZE THE HEALTH AND VIGOR OF THE PLANTS, HE MUST ADVISE THE LANDSCAPE ARCHITECT IN WRITING OF THE CONDITIONS PRIOR TO INSTALLING THE PLANTS. OTHERWISE, THE LANDSCAPE CONTRACTOR WARRANTS THAT THE PLANTING AREAS ARE SUITABLE FOR PROPER GROWTH AND DEVELOPMENT OF THE PLANTS TO BE INSTALLED.
8. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING UP THE SITE AT THE COMPLETION OF THE PROJECT AND SHALL MAINTAIN THE SITE IN A REASONABLY NEAT AND CLEAN STATE THROUGHOUT THE INSTALLATION PROCESS. STREETS AND PAVED AREAS SHALL BE CLEANED REGULARLY TO REMOVE CONSTRUCTION MATERIALS AND OTHER DEBRIS RESULTING FROM WORK OF THE PROJECT.
9. REPLACEMENTS OF DEAD OR UNSATISFACTORY MATERIAL SHALL BE MADE AS SPECIFIED IN THE PLANT LIST. THE OWNER OR LANDSCAPE ARCHITECT SHALL INSPECT REPLACED PLANTS WHEN ALL REPLACEMENTS HAVE BEEN MADE. REPLACEMENTS ARE TO BE ALIVE AND IN A HEALTHY CONDITION WHEN THE REPLACEMENTS ARE COMPLETE. REPLACEMENTS ARE NOT SUBJECT TO AN ADDITIONAL GUARANTEE, BUT THE LANDSCAPE CONTRACTOR SHALL CONSULT WITH THE LANDSCAPE ARCHITECT ON REASON FOR PLANT DECLINE/DEATH AND HOW TO AVOID FUTURE INSTANCES.
10. SHOULD THE CONTRACTOR NOT MAKE REPLACEMENTS IN A SATISFACTORY AND TIMELY FASHION IN ACCORD WITH THE PLANTING NOTES, THE OWNER, AFTER PROPER NOTIFICATION TO THE CONTRACTOR MAY UTILIZE THE FUNDS OF THE RETAINAGE TO HAVE THE REPLACEMENTS MADE IN ACCORDANCE WITH THE SPECIFICATIONS BY ANOTHER CONTRACTOR.
11. NO EXCAVATION OR PLANTING PIT SHALL BE LEFT UNATTENDED OVERNIGHT.
12. PLANT MATERIAL QUANTITIES PROVIDED IN THE PLANT LIST ARE FOR REFERENCE ONLY AND THE CONTRACTOR IS RESPONSIBLE FOR THE ACTUAL PLANT MATERIAL COUNTS. DISCREPANCIES BETWEEN QUANTITIES SHOWN ON THE PLANTING PLAN AND THOSE IN THE PLANT LIST SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. IF CLARIFICATION OF DISCREPANCIES FROM THE LANDSCAPE ARCHITECT IS NOT POSSIBLE, THEN QUANTITIES SHOWN ON THE PLANTING PLAN SHALL TAKE PRECEDENCE.
13. REMOVE BURLAP/STRAPPING AND WIRE BASKET FROM TOP 1/3 OF ROOT BALL ON TREES.
14. REMOVE PAPER, PLASTIC OR METAL AROUND ROOT BALLS OF SHRUBS.
15. DO NOT WRAP TREES.
16. WATER ALL PLANT MATERIAL IMMEDIATELY AFTER PLANTING.
17. TREE GUYING MATERIAL SHALL BE 'ARBOR-TIE' OR EQUIVALENT.
18. ALL PLANT BEDS TO BE MULCHED WITH 3" DEPTH OF PINE STRAW MULCH.
19. ALL AREAS OF PLANTING, INCLUDING AREAS OF GRASS SEEDING AND SOD, SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AND SHALL BE PROVIDED APPROPRIATE SOIL FOR THE PROPOSED PLANTINGS. THE LANDSCAPE CONTRACTOR SHALL ADJUST PH AND / OR SOIL FERTILITY BY UNIFORMLY INCORPORATING REQUIRED SOIL CONDITIONING MATERIALS AT THE RATE AND DEPTH DETERMINED BY THE ANALYSIS OF THE SOIL TEST (AS REQUIRED IN 3.02 AND 3.13 OF THE LANDSCAPING SPECIFICATIONS). EACH SOIL TEST SHALL BE SPECIFIC TO THE PROPOSED PLANT MATERIAL TO BE INSTALLED IN A GIVEN AREA.
20. ALL EXISTING VEGETATION WITHIN AREAS TO BE PLANTED / SODDED / SEEDED SHALL BE REMOVED PRIOR TO PLANTING / SODDING / SEEDING. ALL AREAS INDICATED TO BE GRASS SEED SHALL BE SEEDED PER GRASSING SPECIFICATIONS FOR PERMANENT STABILIZATION.
21. CONTRACTOR TO SUPPLY AUTOMATIC IRRIGATION SYSTEMS, COMPLETE AND INSTALLED. SYSTEM TO INCLUDE ALL VALVES, PIPES, HEADS, FITTINGS, RAIN SENSOR, AND CLOCK AND TO PROVIDE 100% COVERAGE OF ALL NEW SODDED AND IMPROVED EXISTING GRASS AREAS, TREES, SHRUBS AND PLANTING BEDS. COORDINATE IRRIGATION WITH OWNER'S REPRESENTATIVE. (CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF PROPOSED IRRIGATION SYSTEM FOR OWNER ACCEPTANCE)
22. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR AUTOMATIC IRRIGATION SYSTEMS. CONTRACTOR SHALL PROVIDE ELECTRIC METER AND SERVICE IN ACCORDANCE WITH STATE AND LOCAL CODES FOR IRRIGATION SYSTEM. LOCATION OF METERS AND CONTROL PANELS FOR IRRIGATION SHALL BE APPROVED BY OWNER'S REP. PRIOR TO INSTALLATION.
23. WHERE IRRIGATION SYSTEM WILL BE INSTALLED WITH ANY WATER SOURCE OTHER THAN DOMESTIC POTABLE WATER, LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR IRRIGATION WATER TESTING. IRRIGATION WATER SHALL BE TESTED FOR LEVELS OF pH, ALKALINITY AND SOLUBLE SALTS. SUBMIT TEST RESULTS TO OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO INSTALLATION OR ORDERING OF IRRIGATION EQUIPMENT, PUMPS OR WELL DIGGING.
24. ALL TREES SHALL BE INSTALLED PER THE REQUIREMENTS OF THE FLORENCE COUNTY, SC APPLICABLE ORDINANCES.
25. ALL PLANT BEDS TO RECEIVE WEED INHIBITOR OF PREEN OR ACCEPTED ALTERNATE.
26. FOR SUMMERTIME PLANTINGS, CONTRACTOR TO USE EITHER CONTAINERIZED OR PRE-DUG B & B PLANT MATERIAL.
27. AS AN ADD ALTERNATE BID, THE CONTRACTOR SHALL PROVIDE "SOIL MOIST TRANSPLANT" (OR ACCEPTED EQUIVALENT) AT THE APPLICATION RATES SHOWN BELOW FOR ALL NEWLY INSTALLED PLANTINGS.

Container Size/Amount	Caliper Size/Amount
1 Gallon/.75 oz.	1"/3.0 oz.
2 Gallon/1.5 oz.	2"/6.0 oz.
3 Gallon/1.5 oz.	3"/9.0 oz.
5 Gallon/2.0 oz.	4"/12.0 oz.
7 Gallon/3.0 oz.	5"/15.0 oz.
10 Gallon/3.0 oz.	6"/18.0 oz
15 Gallon/5.0 oz.	7"/21.0 oz
20 Gallon/7.0 oz.	8"/24.0 oz
Plant Height/Amount	**Box Size/Amount**
2'/1.5 oz.	16"/5.0 oz.
3'/2.0 oz.	20"/6.0 oz.
4'/3.0 oz.	24"/9.0 oz.
5'/4.0 oz.	30"/12.0 oz.
6'/5.0 oz.	36"/18.0 oz
7'/6.0 oz.	42"/27.0 oz
	60"/30.0 oz.



NOTES:
1) EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER PLANTING TO A DEPTH OF 12".

PLANT SPACING DETAIL
NOT TO SCALE

PRELIMINARY NOT FOR CONSTRUCTION

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
1501 Main Street • Suite 760
Columbia, SC 29201 • 803.451.6789
www.thomasandhutton.com

FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

PLANTING DETAILS & GENERAL NOTES

JOB NO:	J-286010001
DATE:	06/07/2021
DRAWN:	BCG
DESIGNED:	BCG
REVIEWED:	JLG
APPROVED:	JLG
SCALE:	########

L2.1

LANDSCAPING SPECIFICATION

LANDSCAPING

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work covered in this section consists of soil preparation, fine grading, lawns, trees, shrubs and ground cover plantings, their protection and maintenance of planted areas until acceptance.

1.2 RELATED WORK

A. See Civil and Landscape plans and specifications.

1.3 QUALITY ASSURANCE

A. Qualifications of Workmen: Contractor shall provide at least one person present at all times during execution of work that is thoroughly familiar with the type of materials being installed and proper equipment and methods for their installation and who shall direct all work performed under this section.

B. Standards: All seed, sod, trees, shrubs, and ground covers shall meet or exceed the specifications of Federal, State, County and / or Municipality laws requiring inspection for disease and insect control.

1. Plants and planting methods shall conform to the latest edition of American Standard for Nursery Stock, American Nursery & Landscape Association, 1000 Vermont Avenue, NW, Suite 300, Washington, DC 20005

2. Plants shall be true and representative of their genus, species, cultivar, or variety. Nursery stock shipped in accordance with the required specifications shall be deemed to be acceptable within the terms of this section if it is typical in size and habit for the species in the region of the country in which it is grown unless the specifications include additional details.

3. **Prior to ordering any plant material, representative photos of each species shall be provided for review and acceptance.**

4. One of each bundle or lot shall be tagged with name and size of the plant in accordance with American Nursery & Landscape Association standards. In all cases, botanical names shall take precedence over common names. Landscape Architect should be consulted in the event questions arise about nomenclature of plants to be used and their availability.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver grass seed in original containers showing analysis of seed mixture, percentage of pure seed, year of production, net weight, date of packaging and location of packaging. Damaged packages are not acceptable.

B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

C. Deliver sod on pallets.

D. Handling of plants shall be by lifting the root mass or container and not by lifting plant by trunk or branches. Handling of plants in an improper fashion shall be cause for rejection of plant materials. Care must be taken during all phases of the location and planting procedures not to damage root system, trunk or branches. All plant materials shall be planted as soon after arrival at the site as possible. Contractor is responsible for keeping plants safe from injury by the construction activity and watered to prevent drying out before planting. Balled and burlapped plants shall be "Healed-in" and protected with burlap or other accepted material if they cannot be planted upon delivery. Plants with broken major branches, badly bruised or damaged bark are not acceptable and will be rejected.

1.5 PLANTING DATES

A. The planting season for trees, shrubs and groundcovers is between October 1st and June 1st of the following year. Do not plant if temperature is below freezing or above 90 degrees. Planting at any other time other than the planting season is the Contractor's option and full responsibility and without additional compensation. Planting may, at the option of the Contractor, be postponed into the following planting season but without additional compensation provided the Owner and local governing jurisdiction have approved.

C. Planting dates for sod, sprigging or seeding shall be per the grassing specification.

1.6 MEASUREMENT AND PAYMENT

A. Measurement - The items listed in the proposal shall be considered as sufficient to complete the work in accordance with the plans and specifications. Any portion of the work not listed in bid form, but required to complete the work, shall be deemed to be a part of the item with which it is associated and shall be included in the cost of the unit shown on the bid form.

B. Payment - Payment for the unit shown on the bid form shall be considered to cover the cost of all labor, material, equipment, and performing all operations necessary to complete the work in place. No payment will be made for any material wasted, used for the convenience of the Contractor, unused or rejected.

1. Trees, Shrubs, and Groundcovers - Will be paid for at the contract unit price for planted/installed and accepted trees, shrubs, and groundcovers.

2. Payment for grassing will be made per the grassing specification.

3. Clearing - Will be paid for at the lump sum price for clearing.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Contractor shall, at time of delivery, furnish Owner and / or Landscape Architect with invoices of all materials received; in order the quality and source of materials may be reviewed.

2.2 TOPSOIL

A. TOPSOIL SHALL BE FERTILE, FRIABLE SOIL CONTAINING LESS THAN 5% TOTAL VOLUME OF THE COMBINATION OF SUBSOIL, REFUSE, ROOTS LARGER THAN 1 INCH DIAMETER, HEAVY, STICKY OR STIFF CLAY, STONES LARGER THAN 2 INCHES IN DIAMETER, NOXIOUS SEEDS, STICKS, BRUSH, LITTER, OR ANY SUBSTANCES DELETERIOUS TO PLANT GROWTH. THE PERCENT (%) OF THE ABOVE OBJECTS SHALL BE CONTROLLED BY SOURCE SELECTION NOT BY SCREENING THE SOIL. TOPSOIL SHALL BE SUITABLE FOR THE GERMINATION OF SEEDS AND THE SUPPORT OF VEGETATIVE GROWTH. IMPORTED TOPSOIL SHALL NOT CONTAIN WEED SEEDS IN QUANTITIES THAT CAUSE NOTICEABLE WEED INFESTATIONS IN THE FINAL PLANTING BEDS. IMPORTED TOPSOIL SHALL MEET THE FOLLOWING PHYSICAL AND CHEMICAL CRITERIA:

1. SOIL TEXTURE: USDA LOAM, SANDY CLAY LOAM OR SANDY LOAM WITH CLAY CONTENT BETWEEN 15 AND 25%. AND A COMBINED CLAY/SILT CONTENT OF NO MORE THAN 55%.
2. PH VALUE SHALL BE BETWEEN 5.5 AND 7.0.
3. PERCENT ORGANIC MATTER (OM): 2.0-5.0%, BY DRY WEIGHT.
4. SOLUBLE SALT LEVEL: LESS THAN 2 MMHO/CM.
5. SOIL CHEMISTRY SUITABLE FOR GROWING THE PLANTS SPECIFIED.

B. IMPORTED TOPSOIL SHALL BE A HARVESTED SOIL FROM FIELDS OR DEVELOPMENT SITES. THE ORGANIC CONTENT AND PARTICLE SIZE DISTRIBUTION SHALL BE THE RESULT OF NATURAL SOIL FORMATION. MANUFACTURED SOILS WHERE COARSE SAND, COMPOSTED ORGANIC MATERIAL OR CHEMICAL ADDITIVES HAS BEEN ADDED TO THE SOIL TO MEET THE REQUIREMENTS OF THIS SPECIFICATION SECTION SHALL NOT BE ACCEPTABLE. RETAINED SOIL PEDS SHALL BE THE SAME COLOR ON THE INSIDE AS IS VISIBLE ON THE OUTSIDE.

C. IMPORTED TOPSOIL FOR PLANTING SOIL SHALL NOT HAVE BEEN SCREENED AND SHALL RETAIN SOIL PEDS OR CLODS LARGER THAN 2 INCHES IN DIAMETER THROUGHOUT THE STOCKPILE AFTER HARVESTING.

D. STOCKPILED EXISTING TOPSOIL AT THE SITE MEETING THE ABOVE CRITERIA MAY BE ACCEPTABLE.

E. PROVIDE A ONE GALLON SAMPLE FROM EACH IMPORTED TOPSOIL SOURCE(S) WITH REQUIRED SOIL TESTING RESULTS OF ALL EXISTING TOPSOIL TO BE USED. THE SAMPLE SHALL BE A MIXTURE OF THE RANDOM SAMPLES TAKEN AROUND THE SOURCE STOCKPILE OR FIELD.

2.3 SEED

A. See grassing specification.

2.4 SPRIG

A. See grassing specification.

2.5 SOD

A. See grassing specification.

2.6 PLANT MATERIALS

A. Provide all plant materials as indicated on the plans. In the event of any discrepancies between quantities of plants indicated on the plant schedule and those indicated on the plan, plan quantities shall govern.

B. Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall be free of disease, insect pests, eggs or larvae, and shall have healthy, well developed root systems. Plants shall be from a nursery within 300 miles north or south of the project location and shall have been grown under climate conditions similar to those in the locality of project. Trees for planting in rows shall be uniform in size and shape.

B. Plants shall possess a normal balance between height and width. Plants shall be measured when branches are in their normal position. Height and spread dimensions specified refer to the main body of plant and not from branch tip to tip. Plants larger in size than specified may be used with no change in contract price.

C. Plants shall be dug with firm natural balls of earth, of diameter not less than recommended by American Standard for Nursery Stock and of sufficient depth to include fibrous and feeding roots. Plants will not be accepted if ball is cracked or broken before or during planting operations.

D. Trees specified for Street Tree Grade shall conform to standards of the A.N.L.A.:

1. Suitable for planting as street trees.

2. Free of branches to approximately 50% of height from ground.

3. Crown of tree shall be in good balance with the trunk.

2.7 FERTILIZER

A. Commercial fertilizer shall be slow release 5-10-10 or 6-12-12 (or as recommended by soil test), uniform in composition, free flowing, and suitable for application with appropriate equipment. Deliver to site unopened in manufacturer's standard containers showing weight, analysis and name of manufacturer. If stored on site, protect from the elements.

2.8 PEAT MOSS

A. Peat moss shall be finely shredded, 90% organic moss peat, brown in color and suitable for horticultural purposes. Peat shall be measured in air dry condition, containing not more than 35% moisture by weight. Ash content shall not exceed 10%.

2.9 MULCH FOR TREES, SHRUBS, AND GROUND COVERS

A. Mulch for non bio-retention areas shall be as shown on plans.

B. Mulch for bio-retention areas shall be shredded hardwood.

2.10 STAKING EQUIPMENT

A. Trees and palms shall be staked as shown in landscape plans.

2.11 WATER

Contractor shall provide water to the project via the installation of a new irrigation system for the area shown on the plans.

PART 3 - EXECUTION

3.1 FINE GRADING

A. All areas within limits of construction shall be fine graded to the desired grades. All areas within limits of construction are to be fine graded, free of roots, debris and/or other objectionable material, before planting or grassing commence. Any additional fill material needed to fill low or uneven areas shall be provided by the Contractor. Positive drainage away from structures shall be provided in all plant beds so standing water does not occur. Planting beds shall be raised above adjacent lawn areas to provide good drainage conditions.

B. Planting and grassed areas, if not loose, shall be loosened to a minimum depth of 3-inches before fertilizer, seed or sod is applied.

3.2 FERTILIZER AND SOIL AMENDMENTS

A. Contractor shall provide Topsoil Analysis Tests that has been performed by a State Agricultural Experiment Station, Soil and Water Conservation District, State University, or other qualified private testing laboratory, as approved by Landscape Architect.

B. Apply fertilizer and soil amendments after fine grading and mix thoroughly into upper 2 inches of soil.

C. Fertilizer and other necessary soil amendments shall be applied at the rate recommended by Topsoil Analysis Test.

3.3 SODDING

A. See grassing specification.

3.4 SPRIGGING

A. See grassing specification.

3.5 SEEDING

A. See grassing specification.

3.6 SEED PROTECTION

A. See grassing specification.

3.7 LAYOUT OF TREES, SHRUBS, AND GROUND COVERS

A. All plants shall be placed in the proper location as shown on construction plans, allowing Landscape Architect to review all plant locations prior to actual planting. Landscape Architect may make minor adjustments which shall not be cause for changes to the contract price.

3.8 OBSTRUCTIONS BELOW GROUND

A. Prior to excavating planting holes, Contractor shall determine the exact location of electrical, phone, or television cables or conduits, water, drainage or sewer lines, and any other subsurface structures and take precautions to protect them. Any damage to underground utilities shall be repaired immediately at the Contractor's expense.

B. In the event rock, underground construction work, or other obstructions are encountered in any plant hole excavation under this contract, alternate locations may be selected. Where locations cannot be changed, the obstructions shall be removed to a depth of not less than three (3) feet below grade and not less than six (6) inches below bottom of ball or roots when plant is properly set at the required grade. The Contractor shall be responsible for the removal of such rock or other underground obstructions encountered.

3.9 PLANTING HOLES

A. For trees, shrubs and ground covers the planting hole shall be as shown on planting details in the plans. Do not leave planting holes open overnight. In the event that plant holes are dug and not planted in a timely manner, install four (4) foot high orange safety fencing around all excavated areas.

3.10 PLANTING TREES AND SHRUBS

A. Shall be same as grown in the nursery and/or container soil level. Adjust bottom soil mix to insure proper planting level with the proposed surrounding grades. Check plants to insure proper vertical alignment.

B. Fill holes to proper height to receive plant, and thoroughly tamp before setting the plant. Set plant in upright position in the center of the hole, and compact the backfill mixture around the ball or roots. Add soil amendments as required to improve fertility of existing soil and plant growing conditions.

1. When balled or burlapped plants are set, compact topsoil around base of ball to fill all voids. All bindings shall be removed and the top half of burlap removed from around root ball. If burlap is made of natural fibers it can be laid back from the root mass or can be cut away. Remove all burlap if it is made of non-degradable material/fabric. All weeds growing on the root mass shall be removed prior to planting.

2. Containerized plants shall have the container removed prior to planting. Care shall be taken to protect root mass from injury and the root mass intact. If root mass shows evidence of being bound or matted, three vertical 1/2" deep cuts shall be made on alternate sides of the root mass and roots pulled away slightly. This is to untangle roots which have begun to "circle" the root mass and to encourage new root growth. All weeds growing in the root mass shall be removed prior to planting.

3. Roots of bare root plants shall be spread out and topsoil carefully worked in among them. Remove with a clean cut, any broken or frayed roots.

3.11 PLANTING GROUND COVERS

A. Planting beds shall be thoroughly worked to a depth of twelve (12) inches incorporating fertilizer and other soil improvements at the recommended rate suggest by the soils test. Rake prepared planting bed until level, smooth and free from all soil, lumps, rocks, sticks and other deleterious materials. Bed area should be neatly outlined. Space the plants evenly as indicated on the drawings. Plant only in soil that is moist and friable, and not wet or soggy. In the case of planting in the open on hot days, shorten the time between planting and watering.

3.12 WATERING

A. Thoroughly water each plant when the hole is 1/3 full, again at 2/3 full and then complete backfilling. Once backfilling is complete, water again, then tamp the soil in place until the surface of the backfill is level with the surrounding area and the plant bears the same relation of finished grade as it bore to existing grade before being dug.

B. Earth saucers shall be constructed around the perimeter of planting holes of all trees and all single planted shrubs. Earth saucers shall be minimum 3" high and compacted to retain water. Earth saucers shall not be installed in areas where the subsoil is very poorly drained or around mass shrub / groundcover plantings.

C. All trees and shrubs to be hand watered on a regular basis as necessary during the warranty period.

3.13 SOIL MIX

A. Shall be per existing soils on site with recommended amendments from soils test.

3.14 STAKING OF TALL PLANTS

A. Shall be done only if site / environment conditions make if required. If required, trees and palms shall be staked as indicated on the plans.

3.15 MULCHING

A. All plants shall be mulched with an evenly thick layer of clean mulch immediately after planting. Mass plant beds shall be completely mulched to the limits of the bed as shown on the plans. Limit of mulching for individual trees and shrubs shall be slightly beyond the saucer berm. The areas mulched shall be tidy and clean in appearance.

3.16 PRUNING

A. Remove dead, broken or bruised branches after planting using clean, sharp tools.

3.17 WEEDING

A. All planted areas shall be kept free from weeds and undesirable grasses until final acceptance by the Owner. See General notes on plans for additional information.

3.18 INSECT AND DISEASE CONTROL

A. All plant materials shall be disease or insect free upon arrival to the site, however, should any plants show signs of insect or disease infestations, Contractor shall identify nature of infestation and submit to Landscape Architect a proposed method of control. Contractor shall treat all infested plants at its expense. Should the infestation be wide spread and uncontrollable, plants affected shall be removed from site, fresh plants brought in and all other plants treated to prevent infestation of remaining plants at Contractor's expense.

3.19 CLEAN UP

A. Contractor is responsible for removing all trash, debris, rubbish and all other materials associated with the construction from site on a daily basis. All tags, flags, and labels will be removed from plants and trees. The site shall be left broom clean and tidy. Clean up of the site is a prerequisite to final acceptance by the Owner.

PART 4 - MAINTENANCE AND WARRANTY

4.1 MAINTENANCE

A. Protect all plantings (grass, plants and trees) until accepted by Owner. All damage, regardless of cause, shall be immediately repaired and plants replaced if necessary. Erect temporary fences, barricades, signs and other protection as needed to prevent trampling. Contractor is not responsible for replacement of damaged or missing plants and plant materials due to vandalism or other acts beyond the control of the Contractor if proper barriers or other safeguards have been maintained.

B. Maintenance shall include but is not limited to watering, weeding, cultivating, removal of dead material, mulch reapplication, resetting plants to proper grades or upright position, lawn mowing, fertilizing, and other necessary operations.

C. The Contractor shall repair immediately any areas damaged as a result of construction operations or erosion.

E. The Contractor shall maintain all proposed plantings until final acceptance is issued by the Owner.

F. At the end of the maintenance period, all plants shall be in a healthy growing condition. During the maintenance period, should the appearance of any plant indicate weakness and probability of dying, immediately replace without additional cost to the Owner. Replacements required because of vandalism or other causes beyond the control of the Contractor are not part of this contract.

4.2 WARRANTY

A. All shrubs, ground cover, and trees shall be guaranteed by the Contractor to be alive and healthy for a one year period after substantial completion is issued by the Owner. A final inspection with the Owner shall be conducted at the end of the warranty period to determine if any plants will be required to be replaced.

B. Any lawn, plant, or tree which is dead or not showing satisfactory growth shall be replaced at Contractor's expense at the end of warranty period. All replacements shall be of original quality and of a size equal to adjacent plants or trees of the same kind.

END OF SECTION

PRELIMINARY
NOT FOR
CONSTRUCTION

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
1501 Main Street • Suite 760
Columbia, SC 29201 • 803.451.6789
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FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

LANDSCAPE SPECIFICATIONS

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	BCG
DESIGNED:	BCG
REVIEWED:	JLG
APPROVED:	JLG
SCALE:	########

L2.2

GRASSING SPECIFICATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Seeding, planting grass, and fertilizing graded areas around buildings, structures, soccer fields and sidewalk shoulders and other disturbed areas.

B. Seed protection.

C. Maintaining grassed areas until final acceptance.

1.2 RELATED WORK

A. Civil and Landscape plans and specifications.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Deliver grass seed in original containers showing analysis of seed mixture, percentage of pure seed, year of production, net weight, date of packaging, and location of packaging. Damaged packages are not acceptable. Store in cool, dry locations away from contaminants.

B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer. Damaged bags are not acceptable. Store in cool, dry locations away from contaminants.

C. Deliver sod on pallets.

D. All material shall be acceptable to Engineer prior to use.

1.4 PLANTING DATES

A. This specification provides for establishment of a permanent grass cover between the dates of March 1 and September 30. If finished earth grades are not completed in time to permit planting and establishment of permanent grass during the favorable season between dates specified above unless otherwise accepted, Contractor will be required to plant a temporary cover to protect new graded areas from erosion and to keep windborne dust to a minimum. The temporary cover shall be planted between October 1 and February 28 unless otherwise permitted.

1.5 MEASUREMENT AND PAYMENT

A. When the season or stage of project is such results of grassing work cannot be determined, conditional acceptance will be made on work completed. When conditional acceptance is made for items of work covered, Contractor shall be entitled to 50% of bid price for the actual work placed and shall receive remaining 50% of bid price when final acceptance is made. Conditional acceptance shall not apply to the remaining items of work, and full bid price payment shall be made when work is acceptably placed and completed in accordance with specifications.

B. Payment for grassing will be made at contract unit price for the item "Grassing" and such payment shall constitute full compensation for furnishing and placing seed and fertilizer or sod where directed and protecting and maintaining seed and sod in all graded and disturbed areas.

PART 2 - PRODUCTS

Contractor shall submit source and species certification documents to Engineer and Owner's Representative for review prior to installation. Supply complete information on all analysis / test methodologies and results; laboratory certifications, manufacturer's specifications, and agency approvals to the Landscape Architect prior to placement of soil mixtures. In addition, provide the Landscape Architect with thoroughly mixed sample of soil mixes for approval prior to placement. Landscape Contractor shall make modifications and improvements to soil mixes deemed necessary by the soil analysis to meet requirements specified here in before, and to ensure proper growing medium for plant material.

2.1 SEED

A. All seed shall conform to all State Laws and to all requirements and regulations of the State Department of Agriculture.

B. The varieties of seed, as specified in Section 2.2, shall be individually packaged or bagged, and tagged to show name of seed, net weight, origin, germination, lot number, and other information required by the State Department of Agriculture.

C. The Engineer reserves the right to test, reject, or accept all seed before seeding.

2.2 SEEDING SCHEDULE

(EDIT GRASS TYPES, RATES AND PLANTING DATES TO BE CONSISTENT WITH SPECIFIC PROJECT)

A.

SEED	RATE	PLANTING DATES
'Princess 77' Bermuda	75 lbs/ acre	March 1 - September 30
Annual Rye (Temp only)	75 lbs/acre	October 1 - February 28

2.3 FERTILIZER

A. Commercial fertilizer of approved type, conforming to state fertilizer laws at the rate as recommended by soils test.

2.4 LIME

A. Agricultural grade, ground limestone at the rate as recommended by soils test.

2.5 SPRIG

A. Healthy living stems, stolons, or rhizomes and attached roots of locally adapted grass without adhering soil, including two to three nodes and from 4 to 6 inches long. Obtain from heavy, dense certified sod. Provide sprigs which have been grown under climatic conditions similar to those in the locality of the project. Coordinate harvesting and planting operations to prevent exposure of sprigs to the sun for more than 30 minutes before covering and moistening. Sprigs showing signs of wilt, mold, containing weeds or other detrimental material or that are heat damaged will be rejected.

B. The varieties of sprig, as specified in section 2.6, shall be individually packaged or bagged, and tagged to show name of sprig, net weight, origin and other information required by the State Department of Agriculture.

C. Sprigs shall be pure to variety specified and shall be free of other grass species, weeds or foreign matter.

D. Sprigs shall be harvested by digging (not collected above soil level) shredding sod, by rototilling sod and raking, by vericutting or by a sprig harvester. Sprigs shall consist of mostly rhizomes and crowns with only a few green leaves.

2.6 SPRIGGING SCHEDULE

(EDIT GRASS TYPES, RATES AND PLANTING DATES TO BE CONSISTENT WITH SPECIFIC PROJECT)

A.

SPRIG	RATE	PLANTING DATES
'Tifway 419' Bermuda (or approved equal)	1,000 bushels / ac. (Coverage in 3 months)	April 1 - August 31
Stabilize site with temporary grass seed (See section 2.2)		September 1 - March 31

B. In areas where existing grass is to be matched, Contractor shall sprig at the rate and dates recommended by sprig distributor.

2.7 SOD

A. Sod shall be premium grade, densely rooted, good quality grass of the species and certified variety as shown on the plans, free from noxious weeds with no surface soil being visible. The sod shall be obtained from areas where the soil is reasonably fertile. Sod of specified species with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed. The sod shall be machine cut to a uniform soil thickness that shall contain practically all of the dense root system and not be less than 1-inch thick.

B. Before cutting, sod shall be mowed to a height of not less that 1-1/2" or more than 2". Sod shall be cut in uniform widths min. 12" and in lengths min. 24 inches.

C. Sod shall be delivered to site in a fresh, moist condition with healthy green foliage. It shall be unloaded from delivery trucks on pallets or rolls and placed in final position within 24 hours of delivery. Sod shall be protected from wind and sun and shall not be allowed to dry out before planting.

D. Sod shall be strong enough to support its own weight and retain its size and shape when suspended vertically from a firm grasp on the upper 10 percent of the section.

2.8 ACCESSORIES

A. Straw Mulch: Oat or wheat straw, reasonably free from weeds, foreign matter detrimental to plant life, and in dry condition.

B. Excelsior Mulch: Excelsior mulch shall consist of wood fibers cut from sound, green timber. The average length of fibers shall be 4 to 6 inches. Cut shall be made in such a manner as to provide maximum strength of fiber, but at a slight angle to natural grain of the wood to cause splintering of fibers when weathering in order to provide adherence to each other and to soil.

C. Wood cellulose fiber shall be made from wood chip particles manufactured particularly for discharging uniformly on the ground surface when dispersed by a hydraulic water sprayer. It shall remain in uniform suspension in water under agitation and blend with grass seed and fertilizer to form a homogenous slurry. Mulch fibers shall intertwine physically to form a strong moisture holding mat on the ground surface and allow rainfall to percolate into underlying soil. The mulch shall be heat processed to contain no germination or growth-inhibiting factors. It shall be dyed (non-toxic) an appropriate color to facilitate metering of material.

2.9 PRODUCT REVIEW

A. Contractor shall provide the Engineer with a complete description of all products before ordering. The Engineer will review all products before they are ordered.

PART 3 - EXECUTION

3.1 PREPARATION

A. Areas to be seeded or sprigged shall be made smooth and uniform and shall conform to the finished grade indicated on plans.

B. Remove foreign materials, plants, roots, stones, and debris from surfaces to be seeded.

C. Grassing areas, if not loose, shall be loosened to a minimum depth of 3 inches before fertilizer, seed, sprig or sod is applied.

D. Amendments to soils shall be incorporated into loosened 3 inch top soil layer as recommended by soils test.

E. No seeding shall occur until acceptance of the seed bed preparation has occurred. Contractor shall notify owner and landscape architect once seed bed is prepared for review and acceptance.

3.2 STAND OF GRASS

A. Before acceptance of seeding or sprigging is performed for the establishment of permanent vegetation, Contractor will be required to produce a satisfactory stand of perennial grass whose root system shall be developed sufficiently to survive dry periods and winter weather and be capable of re-establishment in spring.

B. Before acceptance of seeding performed for the establishment of temporary vegetation, Contractor will be required to produce a stand of grass sufficient to control erosion for a given area and length of time before the next phase of construction or establishment of permanent vegetation is to commence.

3.3 SEEDING AND SPRIGGING DATES

A. Seeding and sprigging shall be performed during periods and at rates specified in their respective schedules. Seeding and sprigging work may, at discretion of Contractor, be performed throughout the year using schedule prescribed for given period. Seeding and sprigging work shall not be conducted when the ground is frozen or excessively wet. Contractor will be required to produce a satisfactory stand of grass regardless of the period of year work is performed.

3.4 APPLYING LIME AND FERTILIZER

A. Following advance preparation and placing selected material for shoulders and slopes, lime and fertilizer, if called for based on soil tests, shall be spread uniformly over the designated areas, and shall be thoroughly mixed with the soil to a depth of approximately 2 inches. Fertilizer and lime shall be applied at the rate at the rate recommended by required soils test. Unless otherwise provided, lime will not be applied for temporary seeding. In all cases where practicable, acceptable mechanical spreaders shall be used for spreading fertilizer. On steep slopes subject to slides and inaccessible to power equipment, the slopes shall be adequately scarified. Fertilizer may be applied on steep slopes by hydraulic methods as a mixture of fertilizer and seed. When fertilizer is applied with combination seed and fertilizer drills, no further incorporation will be necessary. The fertilizer and seed shall be applied together when Wood Cellulose Fiber Mulch is used. Any stones larger than 2 ½ inches in any dimension, larger clods, roots, or other debris brought to the surface shall be removed.

3.5 SEEDING

A. Seed shall be sown within 24 hours following application of fertilizer and lime and preparation of the seedbed as specified in Section 3.4. Seed shall be uniformly sown at rate specified by the use of acceptable mechanical seed drills. Rotary hand seeders, power sprayers or other satisfactory equipment may be used on steep slopes or on other areas inaccessible to seed drills.

B. Seeds shall be covered and lightly compacted by means of cultipacker or light roller if the drill does not perform this operation. On slopes inaccessible to compaction equipment, the seed shall be covered by dragging spiked chains, by light harrowing or by other satisfactory methods.

C. Apply water with fine spray immediately after each area has been sown.

D. Do not sow seed when ground is too dry, during windy periods or immediately following a rain.

E. If permitted by the special provisions, wood cellulose fiber mulch or excelsior fiber mulch may be used.

3.6 SEED PROTECTION (STRAW MULCH)

A. All seeded areas seeded with permanent grasses shall be uniformly mulched in a continuous blanket immediately following seeding and compacting operations, using at least 2 tons of straw per acre.

3.7 SEED PROTECTION (EXCELSIOR MULCH)

A. Seed shall be sown as specified in Section 3.5. Within 24 hours after covering of seed, excelsior mulch shall be uniformly applied at the rate of 2 tons per acre. The mulch may be applied hydraulically or by other acceptable methods. Should the mulch be placed in a dry condition, it shall be thoroughly wetted immediately after placing. Engineer may require light rolling of the mulch to form a tight mat.

3.8 SEED PROTECTION (WOOD CELLULOSE FIBER MULCH)

A. After the lime has been applied and ground prepared as specified in Section 3.4, wood cellulose fiber mulch shall be applied at a rate of 1,500 pounds per acre in a mixture of seed and fertilizer. Hydraulic equipment shall be used for application of fertilizer, seed, and slurry of the prepared wood pulp. This equipment shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry of the specified amount of fiber, fertilizer, seed, and water. The slurry distribution lines shall be large enough to prevent stoppage. The discharge line shall be equipped with a set of hydraulic spray nozzles which will provide an even distribution of slurry on various areas to be seeded. The slurry tank shall have a minimum capacity of 1,000 gallons.

Seed, fertilizer, wood pulp mulch, and water shall all be combined into the slurry tank for distribution of all ingredients in one operation by hydraulic seeding method specified herein. Materials shall be combined in a manner recommended by the manufacturer. The slurry mixture shall be regulated so amounts and rates of application shall result in a uniform application of all materials at rates not less than amount specified. Using the color of wood pulp as a guide, equipment operator shall spray prepared seedbed with a uniform visible coat. The slurry shall be applied in a sweeping motion, in an arched stream to fall like rain, allowing wood fibers to build upon each other until an even coat is achieved.

3.9 SPRIGGING

A. Sprigs shall be placed at the date and rates as shown in section 2.6. The sprigging method shall be by broadcast sprigging, hydroplanting or row planter. Sprigging procedure shall ensure even coverage.

B. Sprigs applied by broadcast over the site with a distributor or hydroseeder shall be planted at the rates listed in section 2.6. Cover broadcast sprigs with straw mulch immediately after broadcast and water in immediately (within 2 hours).

C. Sprigs installed by row planter creating a narrow furrow that covers 50 to 80% of the sprig with soil may use less sprig material. Rate shall be as recommended by sprig supplier to provide a solid stand of turf within the time required in Section 2.6. Water in immediately (within 1 hour).

3.10 SODDING

A. Sod shall be placed between March 1st and December 1st. However, if sod is to be placed during periods of temperatures over 90 degrees F., the contractor shall take extra care for quick placement of sod with adequate, consistent watering necessary to ensure sod thrives as planted.

B. Sod shall be placed within 24 hours of cutting.

C. Place top elevation of sod 1/2 inch below adjoining paving or curbs.

D. All areas to be sodded shall be brought to the proper line grade or cross section as was existing prior to construction. Sod shall be placed so that, upon completion, the edges of the sodded areas will be smooth and will conform to the proposed finished grade. Sod shall be laid smooth, edge to edge, with staggered joints. Sod shall be immediately pressed firmly into contact with the sod bed by tamping or rolling, to eliminate any air pockets. A true and even surface shall be provided, to insure knitting without displacement of the sod or deformation of the surfaces of the sodded areas. Do not stretch or overlap sod pieces. Following compaction, screened soil of good quality shall be used to fill all cracks, and excess soil shall be worked into the grass with rakes or other suitable equipment. On slopes steeper than 4 to1, the sod shall be fastened in place with suitable wood or metal pins to hold the sod in place. Any damage by erosion or other causes that may have occurred after completion of grading operations shall be repaired, before commencing with the sodding operations.

E. Immediately before sodding, moisten topsoil with a fine spray to a minimum 1" depth. Sod shall not be laid on soil that is dry and powdery.

F. Sod shall be moist when laid and placed on moist ground. The sod shall be carefully placed by hand, beginning at the toe of slopes and working upwards. The length of the strips shall be at right angles to the flow of surface water. All joints shall be tightly butted and end joints shall be staggered at least 12 inches. The sod shall be immediately pressed firmly into the ground by tamping or rolling. Fill all joints between strips with fine screened soil. Sod on slopes shall be pegged with sod pegs to prevent movement. The sod shall be watered, mowed, weeded, repaired, or otherwise maintained, to insure the establishment of a uniform healthy stand of grass until acceptance.

G. Within 2 hours after sod has been placed, thoroughly water to a minimum depth of 4". After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove depressions and irregularities. Roll sodded areas with a roller not exceeding 150 lbs. per foot of roller width. Top dress and roll again as necessary to create a smooth even surface.

PART 4 - MAINTENANCE, WARRANTY AND ACCEPTANCE

4.1 MAINTENANCE

A. Maintenance shall consist of providing protection against traffic, watering to ensure uniform seed germination and to keep surface of soil damp, and repairing any areas damaged as a result of construction operations or erosion. Maintenance shall also include, but is not limited to, watering, weeding, cultivating, removal of dead material, lawn mowing, fertilizing, and other necessary operations.

B. The Contractor shall maintain all proposed plantings until the date of final acceptance by the Owner.

4.2 WARRANTY

A. All grassed areas shall be guaranteed by the Contractor to be alive and healthy for a one year period from the date of substantial completion issued by the Owner. A final inspection with the Owner shall be conducted at the end of the warranty period to determine if any areas require replanting. At the end of the warranty period, the sod shall show evidence of rooting to the underlying soil and shall have no competitive weed growth from either the sod or from between the sod joints.

B. Any grassed area which is dead or not showing satisfactory growth shall be replaced at Contractor's expense at the end of warranty period. All replacements shall be of original quality and of a size equal to adjacent plants or trees of the same kind. Replacements required because of vandalism, excessive use or other causes beyond the control of the Contractor are not part of this contract.

4.3 ACCEPTANCE

A. Before acceptance of seeding performed for the establishment of permanent vegetation, Contractor will be required to produce a satisfactory stand of perennial grass whose root system shall be developed sufficiently to survive dry periods and winter weather and be capable of reestablishment in spring.

B. A minimum coverage of 80% density over 100% of the disturbed area is required for seeded areas before project acceptance. Sprig and sod areas shall have 95 % coverage over 100% of the disturbed area prior project acceptance.

END OF SECTION

PRELIMINARY
NOT FOR
CONSTRUCTION

BID SET - NOT FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
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FLORENCE COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP
FLORENCE COUNTY, SC

FLORENCE COUNTY INDUSTRIAL PARK EAST

GRASSING SPECIFICATIONS

JOB NO:	J-28601.0001
DATE:	06/07/2021
DRAWN:	BCG
DESIGNED:	BCG
REVIEWED:	JLG
APPROVED:	JLG
SCALE:	########

L2.3