GRIFFITH LANE IMPROVEMENTS

FOR

CALHOUN COUNTY, SOUTH CAROLINA

UTILITIES:

WINDSTREAM COMMUNICATIONS
855-575-7625

TIME WARNER CABLE
1-800-892-4357

SCE&G
1-800-251-7234

TRI-COUNTY ELECTRIC CO-OP
877-874-1215

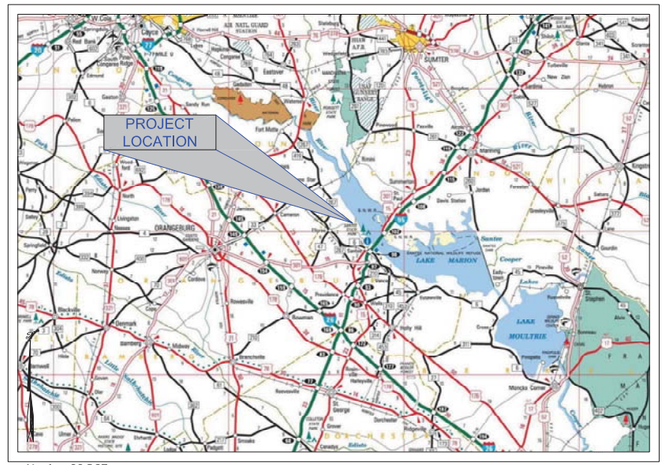
AT&T
1-800-331-0500

FRONTIER COMMUNICATIONS
1-800-921-8101

OWNER:

CALHOUN COUNTY
102 COURTHOUSE DRIVE
ST MATTHEWS, SC 29135

RAILROAD INVOLVEMENT?
YES / NO



Map from SC-DOT

Vicinity Map

Scale: 1" = 10 mile

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01-02	Construction Notes & Details
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04-10	Plan & Profile
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PROJECT START
STA 10+10

PROJECT END
STA 81+75.86

Location Map

Scale: NTS

NPDES PERMIT INFORMATION

Project Areas:
Disturbed Area: ±2.0 acres
Total Area: ±8.4 acres

Approximate Location:
Longitude: 80°31'27.01" W
Latitude: 33°33'40.73" N

PUPS
PALMETTO UTILITY PROTECTION SERVICES INC

Please Call
Palmetto Utility Protection Service
1-888-721-7877
72 Hours Prior to Beginning Construction

Engineer	D. Dennis
Drawn By	M. Armfield
Checked By	M. Hines

Revision	Date	Description

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL SURVEYOR SEAL No. 15810 DANIEL R. DENNIS

DENNIS CORPORATION
Engineering • Surveying • Construction Services
www.DennisCorporation.com
1800 Huger Street
Columbia, SC 29201
Office: (803) 252-0991
Fax: (803) 733-6787

CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Sheet
00

Horizontal Alignment Station and Curve Report
Alignment: Griffith Lane - Proposed Centerline

Tangent Data

Description	PT Station	Northing	Easting
Start:	10+00.000	626697.9010	2142359.6040
End:	48+99.004	629317.2050	2145247.7660

Tangent Data

Parameter	Value	Parameter	Value
Length:	3899.0040	Course:	N 47° 47' 41.2501" E

Curve Point Data

Description	Station	Northing	Easting
PC:	48+99.004	629317.2050	2145247.7660
RP:		629280.1680	2145281.3560
PT:	49+77.722	629313.6250	2145318.5130

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	90° 12' 16.4250"	Type:	RIGHT
Radius:	50.0000	DOC:	114° 35' 29.6160"
Length:	78.7180	Tangent:	50.1790
Mid-Ord:	14.7080	External:	20.8370
Chord:	70.8370	Course:	S 87° 06' 10.5374" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	49+77.722	629313.6250	2145318.5130
End:	53+00.395	629073.8340	2145534.4260

Tangent Data

Parameter	Value	Parameter	Value
Length:	322.6730	Course:	S 42° 00' 02.3248" E

Curve Point Data

Description	Station	Northing	Easting
PC:	53+00.395	629073.8340	2145534.4260
RP:		629107.2910	2145571.5820
PT:	53+79.113	629070.2540	2145605.1720

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	90° 12' 16.8090"	Type:	LEFT
Radius:	50.0000	DOC:	114° 35' 29.6160"
Length:	78.7180	Tangent:	50.1790
Mid-Ord:	14.7080	External:	20.8370
Chord:	70.8370	Course:	S 87° 06' 10.7294" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	53+79.113	629070.2540	2145605.1720
End:	62+34.039	629644.5840	2146238.4510

Tangent Data

Parameter	Value	Parameter	Value
Length:	854.9250	Course:	N 47° 47' 40.8661" E

Curve Point Data

Description	Station	Northing	Easting
PC:	62+34.039	629644.5840	2146238.4510
RP:		629607.5470	2146272.0410
PT:	63+12.719	629641.0320	2146309.1720

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	90° 09' 39.8090"	Type:	RIGHT
Radius:	50.0000	DOC:	114° 35' 29.6160"
Length:	78.6800	Tangent:	50.1410
Mid-Ord:	14.6940	External:	20.8100
Chord:	70.8100	Course:	S 87° 07' 29.2294" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	63+12.719	629641.0320	2146309.1720
End:	68+12.260	629270.0590	2146643.7170

Tangent Data

Parameter	Value	Parameter	Value
Length:	499.5410	Course:	S 42° 02' 39.3248" E

Curve Point Data

Description	Station	Northing	Easting
PC:	68+12.260	629270.0590	2146643.7170
RP:		629296.8470	2146673.4220
PT:	68+89.411	629278.4110	2146708.9200

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	110° 30' 36.5315"	Type:	LEFT
Radius:	40.0000	DOC:	143° 14' 22.0200"
Length:	77.1510	Tangent:	57.6710
Mid-Ord:	17.2030	External:	30.1850
Chord:	65.7360	Course:	N 82° 42' 02.4094" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	68+89.411	629278.4110	2146708.9200
End:	75+56.443	629870.3680	2147016.3590

Tangent Data

Parameter	Value	Parameter	Value
Length:	667.0320	Course:	N 27° 26' 44.1436" E

Curve Point Data

Description	Station	Northing	Easting
PC:	75+56.443	629870.3680	2147016.3590
RP:		629823.7400	2147106.1380
PT:	76+08.926	629908.7480	2147051.2910

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	29° 43' 27.5107"	Type:	RIGHT
Radius:	101.1650	DOC:	56° 38' 08.7937"
Length:	52.4830	Tangent:	26.8460
Mid-Ord:	3.3840	External:	3.5020
Chord:	51.8970	Course:	N 42° 18' 27.8990" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	76+08.926	629908.7480	2147051.2910
End:	79+83.528	630111.8380	2147366.0630

Tangent Data

Parameter	Value	Parameter	Value
Length:	374.6020	Course:	N 57° 10' 11.6543" E

Curve Point Data

Description	Station	Northing	Easting
PC:	79+83.528	630111.8380	2147366.0630
RP:		630153.8520	2147338.9550
PT:	80+57.760	630177.2430	2147383.1460

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	85° 03' 47.2668"	Type:	LEFT
Radius:	50.0000	DOC:	114° 35' 29.6160"
Length:	74.2320	Tangent:	45.8670
Mid-Ord:	13.1550	External:	17.8510
Chord:	67.6000	Course:	N 14° 38' 18.0209" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	80+57.760	630177.2430	2147383.1460
End:	81+75.860	630281.6230	2147327.8960

Tangent Data

Parameter	Value	Parameter	Value
Length:	118.1010	Course:	N 27° 53' 35.6125" W

GEODETIC AND SC STATE PLANE COORDINATE POINT DATA

HORIZONTAL DATUM: NAD83
VERTICAL DATUM: NAVD88

GEODETIC CONTROL SOUTH CAROLINA GEODETIC SURVEY VRS NETWORK

DISTANCES SHOWN ARE GROUND DISTANCES

Control Points

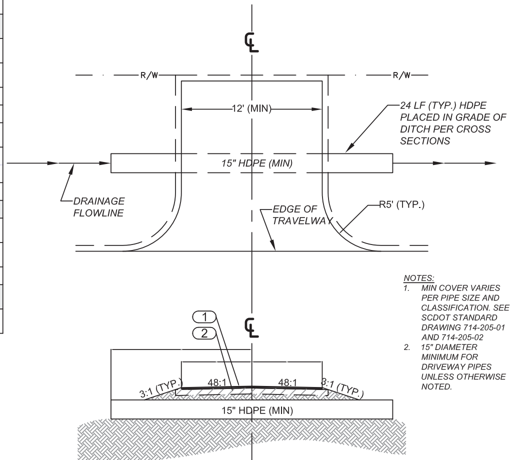
305 CP REBAR	N: 629190.682 E: 2147184.718 EL: 97.63	1570 CP NAIL	N: 629688.445 E: 2146262.839 EL: 94.55
306 CP REBAR	N: 629493.949 E: 2146859.383 EL: 104.04	1695 CP NAIL	N: 629312.188 E: 2145853.966 EL: 106.05
307 CP REBAR	N: 630238.357 E: 2147555.873 EL: 96.89	1696 CP NAIL	N: 629030.263 E: 2145582.681 EL: 115.52
1117 CP NAIL	N: 629227.484 E: 2146693.591 EL: 103.79	2022 CP NAIL	N: 629346.268 E: 2145290.888 EL: 104.46
1033 CP NAIL	N: 629895.517 E: 2147023.972 EL: 90.66	2114 CP NAIL	N: 628889.054 E: 2144814.310 EL: 124.81
1249 CP NAIL	N:630149.904 E: 2147409.483 EL: 91.82	2338 CP NAIL	N: 628297.844 E: 2144161.292 EL: 133.58
1250 CP NAIL	N: 630012.437 E: 2147240.646 EL: 94.47	2499 CP NAIL	N: 627812.397 E: 2143563.770 EL: 142.63

Moving Items

ITEM NO.	LOCATION		DESCRIPTION	WORK TO BE DONE	OWNER
	STATION	RT OR LT			
1.0000					
2.0000					
3.0000					
4.0000					

Reset Fence

ITEM NO.	LOCATION		DESCRIPTION	WORK TO BE DONE	OWNER
	STATION	RT OR LT			
1.0000					
2.0000					
3.0000					
4.0000					

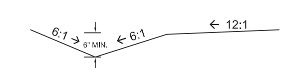


1 2" Asphalt Surface Course - Type C
2 12" Compacted Earth

Typical Driveway Detail
N.T.S.

SUMMARY OF ESTIMATED QUANTITIES

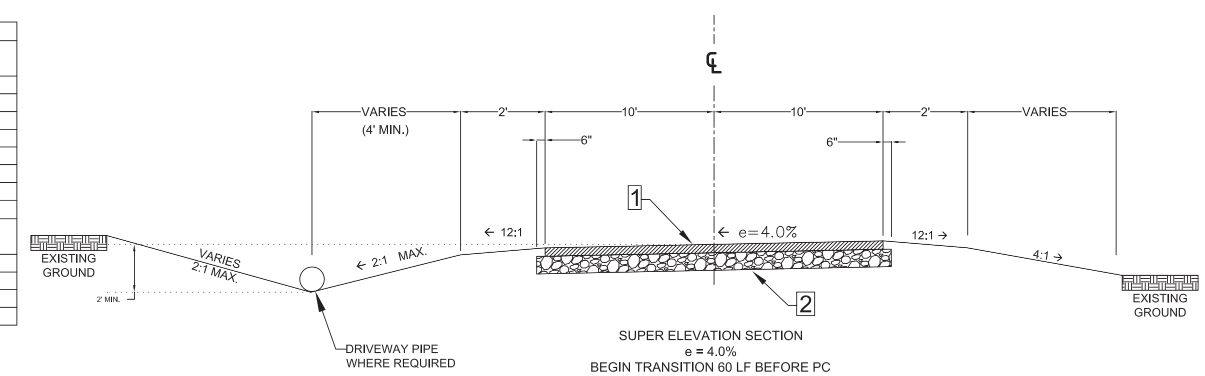
Item No.	Description	Quantity	Units
1	Mobilization	1	LS
2	Construction Stakes, Lines, and Grades	1	LS
3	Maintenance of Traffic	1	LS
4	Clearing and Grubbing Within Roadway	1	LS
5	Unclassified Excavation	1	LS
6	Erosion Control Maintenance	1	LS
7	Cement-Modified Subbase (8" Uniform)	16,910	SY
8	Portland Cement for Cement-Modified Subbase (5.0%)	11.1	TON
9	HMA Surface Course - Type C (Including Binder)	2,085	TON
10	15" HDPE, Smooth Core, 24' Lengths	360	LF
11	15" RC Pipe Culvert - Class III	128	LF
12	18" RC Pipe Culvert - Class III	200	LF
13	RipRap (Class B)	100	TON
14	Geotextile For Erosion Control Under Riprap (Class 2) Type C	120	SY
15	Silt Fence	2,212	LF
16	Sediment Tubes	1,016	LF
17	Permanent Vegetation	3.9	ACRE
18	Maintenance Stone	140	TON
19	Raised Pavement Markers	179	EA



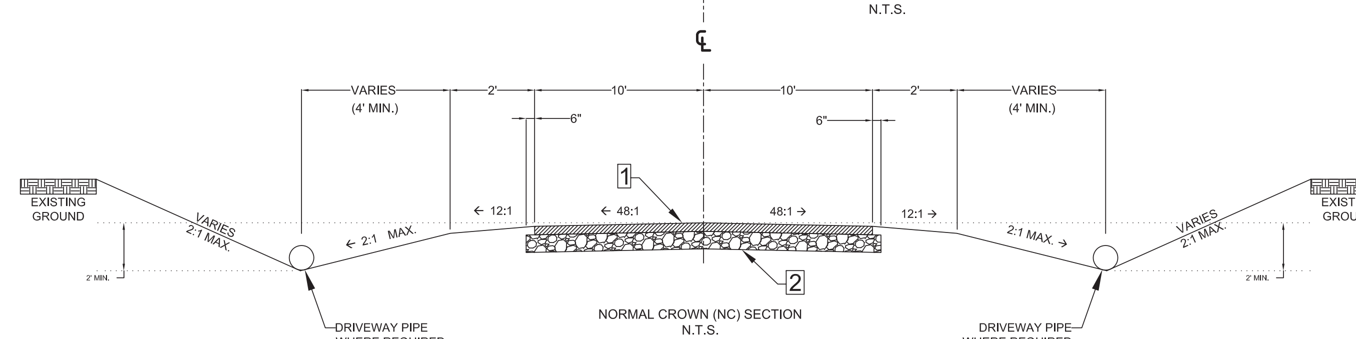
TYPICAL SWALE
N.T.S.

GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF PIPE FLOW LINES AND SIDEROAD TIE-INS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY APPARENT DISCREPANCIES OR CONFLICTS IN THE CONSTRUCTION PLANS PRIOR TO COMMENCING CONSTRUCTION.
2. CONTRACTOR SHALL COORDINATE UTILITY LOCATION WITH UTILITY PROVIDER DURING CONSTRUCTION.
3. RELOCATION AND / OR ADJUSTMENT OF ANY UTILITY IS TO BE COMPLETED BY THE OWNER OF THE THE UTILITY.
4. CHANGES INVOLVING INCREASED COST OF PROJECT OR CHANGES IN ALIGNMENT MUST BE SPECIFICALLY AUTHORIZED BY THE OWNER AND ENGINEER.
5. PIPE LENGTHS THAT ARE SHOWN ON THE PLANS ARE HORIZONTAL DISTANCES. FIELD ADJUSTMENT OF THE ACTUAL PIPE LENGTHS MAY BE NECESSARY.
6. THE CONTRACTOR SHALL STAGE HIS CLEARING AND GRUBBING WORK ALONG WITH HIS CONSTRUCTION WORK TO MINIMIZE THE AMOUNT OF EROSION AND SEDIMENTATION.
7. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION SIGNING AND MAINTENANCE OF EXISTING PERMANENT SIGNS DURING CONSTRUCTION.
8. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR IN AN EXPEDIENT MANNER ANY DAMAGE THAT OCCURS TO THE CROSS ROADS DUE TO THESE ROADS BEING USED IN THE HAULING PROCESS.
9. THE LOCATION OF THE UTILITIES IN THE PLANS IS BASED ON LIMITED INVESTIGATION TECHNIQUES AND INFORMATION PROVIDED BY OTHERS. THE LOCATIONS OF THE SHOWN UTILITIES SHOULD BE CONSIDERED APPROXIMATE. THE ELEVATIONS APPLY ONLY AT THE POINTS SHOWN. THERE MAY OR MAY NOT BE OTHER UTILITIES WITHIN THE LIMITS OF PROJECT. THE CONTRACTOR SHALL TAKE ALL APPROPRIATE STEPS TO SATISFY THEMSELVES AS TO THE NUMBER, TYPE, OWNER AND LOCATION (BOTH HORIZONTAL AND VERTICAL) OF ALL ABOVE AND BELOW GRADE UTILITIES WITHIN THE LIMITS OF THE PROJECT.
10. ALL CURVE RADII ARE SHOWN TO THE EDGE OF PAVEMENT.
11. ALL DRAINAGE STRUCTURES AND PIPE ARE TO BE IN ACCORDANCE WITH THE SCDOT STANDARD DRAWINGS FOR HIGHWAY CONSTRUCTION AND STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION UNLESS OTHERWISE NOTED.
12. COORDINATE REMOVAL AND REPLACEMENT OF ANY FENCE WITH THE OWNER OR DESIGNATED REPRESENTATIVE.
13. CONTRACTOR TO PREPARE A TRAFFIC CONTROL PLAN AND A WORKZONE SAFETY PLAN WHICH ARE TO BE SUBMITTED TO THE COUNTY ENGINEER OR DESIGNATED REPRESENTATIVE FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION. THE WORKZONE SAFETY PLAN IS TO BE IN ACCORDANCE WITH THE STANDARDS AND REQUIREMENTS AS MAY BE DIRECTED BY THE OWNER OR DESIGNATED REPRESENTATIVE. THE TRAFFIC CONTROL PLAN SHALL COMPLY WITH THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
14. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE CONCURRENCE OF THE ENGINEER IN REGARDS TO LOCATING THE LIMITS OF CLEARING AND GRUBBING.
15. RIGHT-OF-WAY INFORMATION PROVIDED BY THE COUNTY, INCLUDING PLATS WHERE AVAILABLE. WHERE RIGHT-OF-WAY IS SHOWN FROM THE CENTERLINE OF EXISTING DIRT ROAD, NOTE THAT THE EXISTING AND PROPOSED CENTERLINE MAY NOT COINCIDE. THE SHOWN LOCATION OF ROAD RIGHT-OF-WAY IS BASED UPON INFORMATION PROVIDED BY THE COUNTY TO THE ENGINEER. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR IS ADVISED TO REQUEST FROM THE COUNTY, CONFIRMATION OF THE SHOWN RIGHT-OF-WAY AND ANY CHANGES THERETO, AS WELL AS RECEIVE DELIVERY OF PERTINENT EASEMENTS AND PERMISSIONS TO ENTER PRIVATE PROPERTY.
16. ALL PERMANENT SIGNAGE TO BE PROVIDED BY THE COUNTY (IE. STOP, STREET, SPEED, ETC.). THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF SIGNS PROVIDED BY THE COUNTY.
17. ERECT BMP'S IN ACCORDANCE WITH THE CONSTRUCTION PLANS AND DETAILS OR AS DIRECTED BY THE ENGINEER. TO THE MAXIMUM EXTENT POSSIBLE, ERECT BMP'S WITHIN THE LIMITS OF THE RIGHT-OF-WAY, AND / OR EASEMENTS. SECURE PERMISSION OF THE OWNER PRIOR TO PLACING BMP'S ON PRIVATE PROPERTY.



SUPER ELEVATION SECTION
e = 4.0%
BEGIN TRANSITION 60 LF BEFORE PC
BEGIN FULL SUPERELEVATION 30 LF AFTER PC
N.T.S.



NORMAL CROWN (NC) SECTION
N.T.S.

1 - HMA SURFACE COURSE: 2" UNIFORM
2 - CEMENT MODIFIED SUBBASE: 8" UNIFORM
(5.0% PORTLAND CEMENT, 35 #/SY)

Description	Date	Rev.

Engineer: D. Dennis
Drawn By: M. Armfield
Checked By: M. Hines

DENNIS CORPORATION

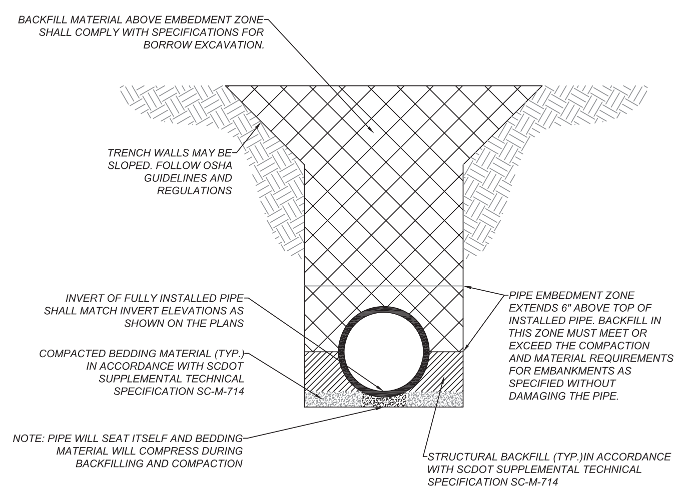
Construction Notes & Details (Sheet 1 of 2)

CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

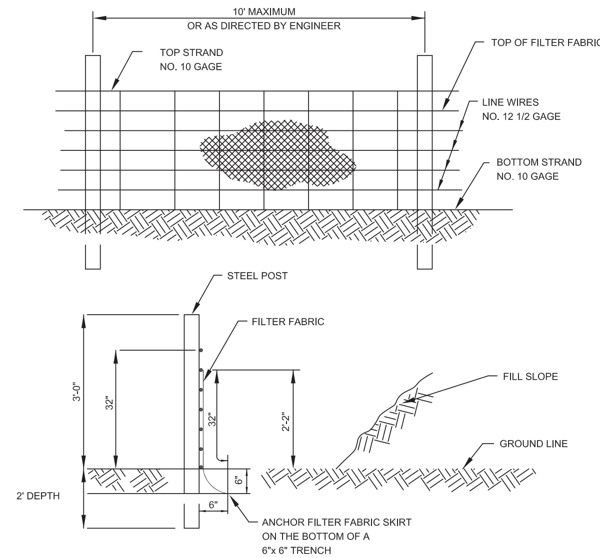
Scale
As Shown

Sheet
01



PIPE BEDDING DETAIL

N.T.S.



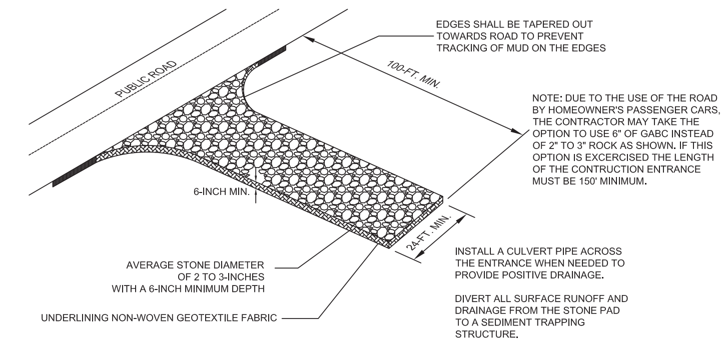
TEMPORARY SILT FENCE DETAIL

N.T.S.

SILT FENCES NOTES:

1. FILTER FABRICS SHALL CONFORM TO SCDOT APPROVED LIST FOR FILTER FABRIC.
2. WOVEN WIRE FENCE SHALL BE REQUIRED AS A BACKING FOR FILTER FABRIC WITH AN ELONGATION AS DETERMINED BY ASTM D 1682 OF 50% OR GREATER. THE WIRE FENCE SHALL BE A MINIMUM OF 32 INCHES IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12 INCH STAY SPACING.
3. STEEL POST SHALL BE A MINIMUM OF 5 FEET LONG, WEIGH A MINIMUM OF 1.3 POUNDS/FOOT, AND HAVE PROJECTIONS FOR FASTENING THE WIRE OR THE FABRIC TO THE POST. STEEL POST SHALL ALSO HAVE A METAL PLATE SECURELY ATTACHED SUCH THAT WHEN THE POST IS DRIVEN TO THE PROPER DEPTH, THE PLATE WILL BE BELOW GROUND LEVEL FOR ADDITIONAL STABILITY. POSTS SHALL BE INSTALLED TO A DEPTH DIRECTED BY THE ENGINEER, WITH 1 TO 2 INCHES OF THE POST PROTRUDING ABOVE THE TOP OF THE WIRE FENCE OR FABRIC BEING IDEAL, BUT IN ANY CASE, NO MORE THAN 3 FEET OF THE POST SHALL PROTRUDE ABOVE THE GROUND.
4. WHEN WOVEN WIRE IS NOT REQUIRED POST SPACING WILL BE REDUCED TO A MAXIMUM OF 6 FEET ON CENTER. FABRIC SHALL BE ATTACHED TO STEEL POSTS USING TIE WIRES. NUMBERS AND LOCATION OF FASTENERS WILL BE AS DIRECTED BY THE ENGINEER IN A MANNER TO PREVENT SAGGING OR TEARING OF THE FABRIC, BUT IN ALL CASES AFFIXED TO THE POST IN NO LESS THAN FOUR PLACES. WHEN WOVEN WIRE IS USED, THE WIRE WILL BE ATTACHED TO THE POST AS DESCRIBED ABOVE AND THE FILTER FABRIC WILL BE TIED TO THE FENCE AS DIRECTED BY THE ENGINEER IN SUCH A MANNER TO PREVENT SAGGING OR TEARING OF THE FABRIC.
5. SILT FENCE CHECKS ARE TO BE LOCATED EVERY 100' MAXIMUM AND AT LOW POINTS AS DIRECTED BY THE ENGINEER.

HEIGHT OF FILL (FT)	MIN. SILT FENCE OFFSET FROM TOE OF SLOPE (FT)
<5	0
5-10	3
>10	5



CONSTRUCTION ENTRANCE DETAIL

N.T.S.

INSPECTION AND MAINTENANCE OF CONSTRUCTION ENTRANCE

INSPECT CONSTRUCTION ENTRANCES EVERY SEVEN (7) DAYS. CHECK FOR MUD AND SEDIMENT BUILDUP AND PAD INTEGRITY. MAKE DAILY INSPECTIONS DURING PERIODS OF WET WEATHER. MAINTENANCE IS REQUIRED MORE FREQUENTLY IN WET WEATHER CONDITIONS. RESHAPE THE STONE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL. WASH OR REPLACE STONES AS NEEDED AND AS DIRECTED BY THE INSPECTOR. THE STONE IN THE ENTRANCE SHOULD BE WASHED OR REPLACED WHENEVER THE ENTRANCE FAILS TO REDUCE MUD BEING CARRIED OFF-SITE BY VEHICLES. FREQUENT WASHING WILL EXTEND THE USEFUL LIFE OF STONE. 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. REPAIR ANY BROKEN PAVEMENT IMMEDIATELY.

WHEN AND WHERE TO USE IT

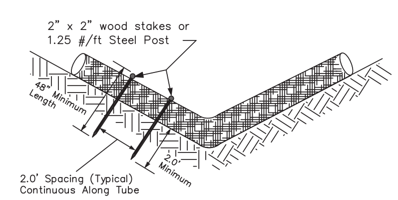
STABILIZED CONSTRUCTION ENTRANCES SHOULD BE USED AT ALL POINTS WHERE TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE AND MOVING DIRECTLY ONTO A PUBLIC ROAD.

IMPORTANT CONSIDERATIONS

IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFFSITE. WASHDOWN FACILITIES SHALL BE REQUIRED AS DIRECTED BY SCDHEC AS NEEDED. WASHDOWN AREAS IN GENERAL MUST BE ESTABLISHED WITH CRUSHED GRAVEL AND DRAIN INTO A SEDIMENT TRAP OR SEDIMENT BASIN. CONSTRUCTION ENTRANCES SHOULD BE USED IN CONJUNCTION WITH THE STABILIZATION OF CONSTRUCTION ROADS TO REDUCE THE AMOUNT OF MUD PICKED UP BY VEHICLES.

INSTALLATION

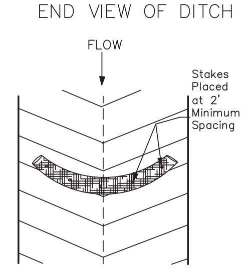
1) REMOVE ALL VEGETATION AND ANY OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA.
2) DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM STONES TO A SEDIMENT TRAP OR BASIN.
3) INSTALL A NON-WOVEN GEOTEXTILE FABRIC PRIOR TO PLACING ANY STONE.
4) INSTALL A CULVERT PIPE ACROSS THE ENTRANCE WHEN NEEDED TO PROVIDE POSITIVE DRAINAGE.
5) THE ENTRANCE SHALL CONSIST OF 1-INCH TO 3-INCH D50 STONE PLACED AT A MINIMUM DEPTH OF 6-INCHES. MINIMUM DIMENSIONS OF THE ENTRANCE SHALL BE 20-FEET WIDE BY 100-FEET LONG, AND MAY BE MODIFIED AS NECESSARY TO ACCOMMODATE SITE CONSTRAINTS.



SEDIMENT TUBE SPACING

SLOPE	MAXIMUM SEDIMENT TUB 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

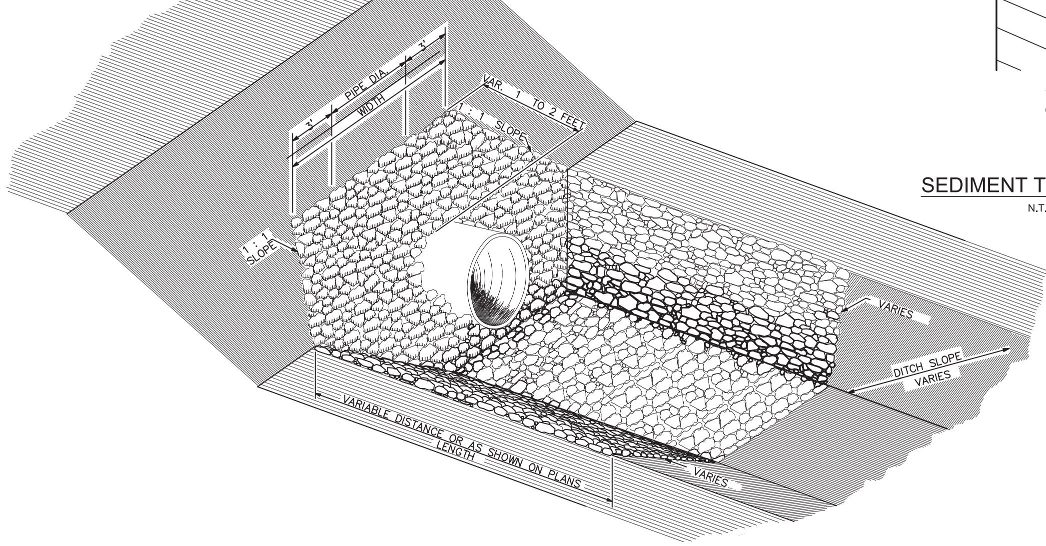
END VIEW OF DITCH



TOP VIEW OF DITCH

SEDIMENT TUBE DETAIL

N.T.S.



RIPRAP OUTLET DETAIL

N.T.S.

SEDIMENT TUBE NOTES:

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, IGH-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.

CONSTUCT A TRENCH THAT IS 20% OF THE TUBE DIAMATER TO INTALL 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 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:

CHECK DAMS SHOULD BE INSPECTED EVERY 7 CALENDAR DAYS AND WITHIN 24-HOURS AFTER EACH STORM THAT PRODUCES ½-INCHES OR MORE OF RAIN TO ENSURE CONTINUED EFFECTIVENESS.

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.

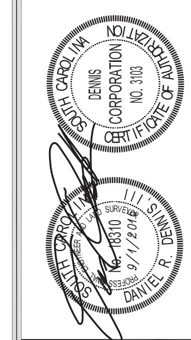
REMOVE ACCUMULATED SEDIMENT FROM THE UPSTREAM SIDE OF THE SEDIMENT TUBE WHEN THE SEDIMENT HAS REACHED A HEIGHT OF APPROXIMATELY ONE-THIRD OF THE EXPOSED HEIGHT OF THE TUBE (MEASURED AT THE CENTER).

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.

Rev.	Date	Description

Engineer: D. Dennis
Drawn By: M. Armfield
Checked By: M. Hines



Construction Notes & Details (Sheet 2 of 2)

DENNIS CORPORATION

CTC Package 2014-12
for
Calhoun County, South Carolina

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Silt Fence				
ITEM NO.	LOCATION		LENGTH (LF)	COMMENTS
	STATION	RT OR LT		
1	12+12 to 15+00	BOTH	288	
2	36+24 to 37+26	RT	102	
3	46+50 to 51+50	BOTH	500	
4	56+24 to 58+02	LT	138	
5	69+16 to 70+32	RT	116	
6	75+60 to 76+80	BOTH	120	
7	79+95 to 80+35	RT	40	
TOTAL				

SEDIMENT TUBES FOR DITCH CHECKS					
ITEM NO.	LOCATION		DEPTH	SLOPE	TYP. SPACING
	STATION	RT OR LT			
1	10+10 to 22+27	BOTH	18"	0.50%	150 LF
2	22+27 to 28+76	BOTH	18"	2.03%	100 LF
3	28+76 to 33+10	BOTH	18"	0.95%	150 LF
4	33+10 to 37+20	BOTH	18"	1.73%	150 LF
5	37+20 to 41+39	BOTH	18"	0.88%	150 LF
6	41+39 to 49+47	BOTH	18"	2.14%	100 LF
7	49+47 to 53+52	BOTH	18"	3.16%	75 LF
8	53+52 to 62+81	BOTH	18"	2.16%	100 LF
9	62+81 to 68+74	BOTH	18"	1.39%	150 LF
10	68+74 to 73+28	BOTH	18"	0.56%	150 LF
11	73+28 to 76+54	BOTH	18"	4.07%	50 LF
12	76+54 to 78+80	BOTH	18"	2.50%	100 LF
13	78+80 to 81+76	BOTH	18"	1.89%	150 LF

SCDHEC STANDARD SEDIMENT & EROSION CONTROL NOTES:

1. AS NECESSARY, SLOPES, WHICH EXCEED EIGHT (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS, IN ADDITION TO 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.
   - WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS, STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.
   - 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 IN INITIATED ON THAT PORTION OF THE SITE.
3. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED ONCE EVERY CALENDAR WEEK. IF PERIODIC INSPECTION OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN INSTALLED INAPPROPRIATELY, OR INCORRECTLY, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION.
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 INSTALLATION OF UTILITIES. 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 SEDIMENT BEFORE BEING PUMPED BACK 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 PAVED ROADWAY(S) 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 ET SEQ. 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'T 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, INSPECTIONS 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 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 EQUIVALENT 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 FROM SITES ARE PROHIBITED:
   - WASTEWATER FROM WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL
   - WASTEWTER FROM WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASING OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS
   - FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE
   - SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING
16. 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.
17. IF EXISTING BMPS NEED TO BE MODIFIED OR IF ADDITIONAL BMPS ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS OF THE NPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES 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.
18. A PRECONSTRUCTION CONFERENCES 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 SC DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL HAS APPROVED OTHERWISE.
19. CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SCDHEC STANDARD CONSTRUCTION SEQUENCE:

1. RECEIVE NPDES COVERAGE FROM SC-DHEC.
2. PRE-CONSTRUCTION MEETING (ON-SITE IF MORE THAN 10 DISTURBED ACRES AND NON-LINEAR).
3. NOTIFY SC-DHEC EQC REGIONAL OFFICE OR OCRM OFFICE 48 HOURS PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES.
4. INSTALLATION OF CONSTRUCTION ENTRANCE(S).
5. CLEARING AND GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS.
6. INSTALLATION OF PERIMETER CONTROLS (E.G. SILT FENCE).
7. CLEARING AND GRUBBING ONLY IN AREAS OF BASINS, TRAPS, PONDS.
8. INSTALLATION OF BASINS, TRAPS, PONDS AND INSTALLATION OF DIVERSIONS TO THOSE STRUCTURES, OUTLET STRUCTURES MUST BE COMPLETELY INSTALLED AS SHOWN ON THE DETAILS BEFORE PROCEEDING TO THE NEXT STEP; AREAS DRAINING TO THESE STRUCTURES CANNOT BE DISTURBED UNTIL THE STRUCTURES AND DIVERSIONS ARE COMPLETELY INSTALLED.
9. CLEARING AND GRUBBING OF SITE OR DEMOLITION.
10. ROUGH GRADING.
11. INSTALLATION OF STORM DRAINAGE SYSTEM AND PLACEMENT OF INLET PROTECTION AS EACH INLET IS INSTALLED.
12. FINE GRADING, PAVING, ETC.
13. PERMANENT/FINAL STABILIZATION.
14. CLEAN-OUT OF DETENTION BASINS THAT WERE USED AS SEDIMENT CONTROL STRUCTURES AND REGRADING OF DETENTION POND BOTTOMS. IF NECESSARY, MODIFY SEDIMENTATION BASIN RISER TO CONVERT TO DETENTION BASIN OUTLET STRUCTURE.
15. REMOVAL OF TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED.
16. PERFORM AS-BUILT SURVEYS OF ALL DETENTION STRUCTURES AND SUBMIT TO DHEC OR MS-4 FOR ACCEPTANCE.
17. SUBMIT NOTICE OF TERMINATION (NOT) TO SC-DHEC AS APPROPRIATE.

SEEDING SCHEDULE NOTES:

1. CONTRACTOR SHALL ADHERE TO SCDOT SUPPLEMENTAL TECHNICAL SPECIFICATION SC-M-810-2(04/11) WHICH REPLACES SECTION 810, *SEEDING*, IN THE SCDOT *STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2007 EDITION*, REGARDING TEMPORARY AND PERMANENT COVER, GRASSING, LIMING, FERTILIZING, AND MULCHING.
2. CONTRACTOR SHALL PERFORM TEMPORARY COVER WITH MULCH OR SEEDING AS OUTLINED IN SC-M-810-2(04/11) WITHIN SEVEN (7) DAYS WHEN A SITE WILL NOT BE WORKED FOR 14 DAYS OR MORE.
3. CONTRACTOR SHALL PERFORM PERMANENT COVER WITH SEEDING WITHIN 14 DAYS OF WHEN THE SITE WAS LAST WORKED.

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Armfield
Checked By	M. Hines

Erosion Control Data Sheet

DENNIS CORPORATION

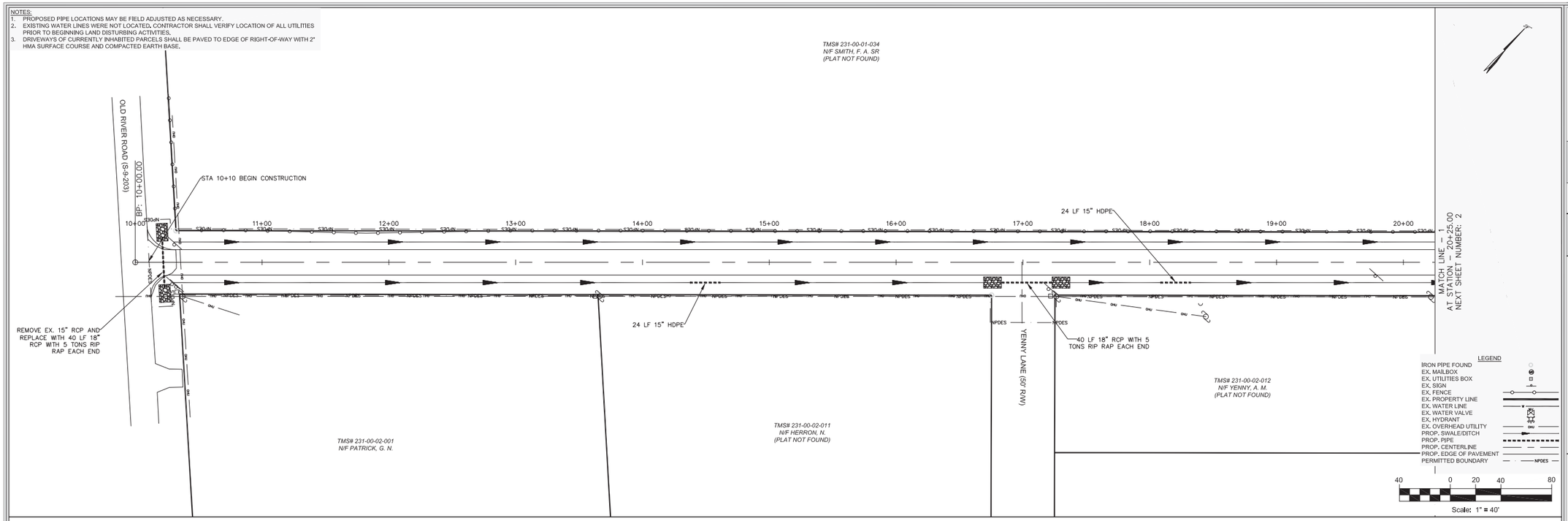
CTC Package 2014-12
for
Calhoun County, South Carolina

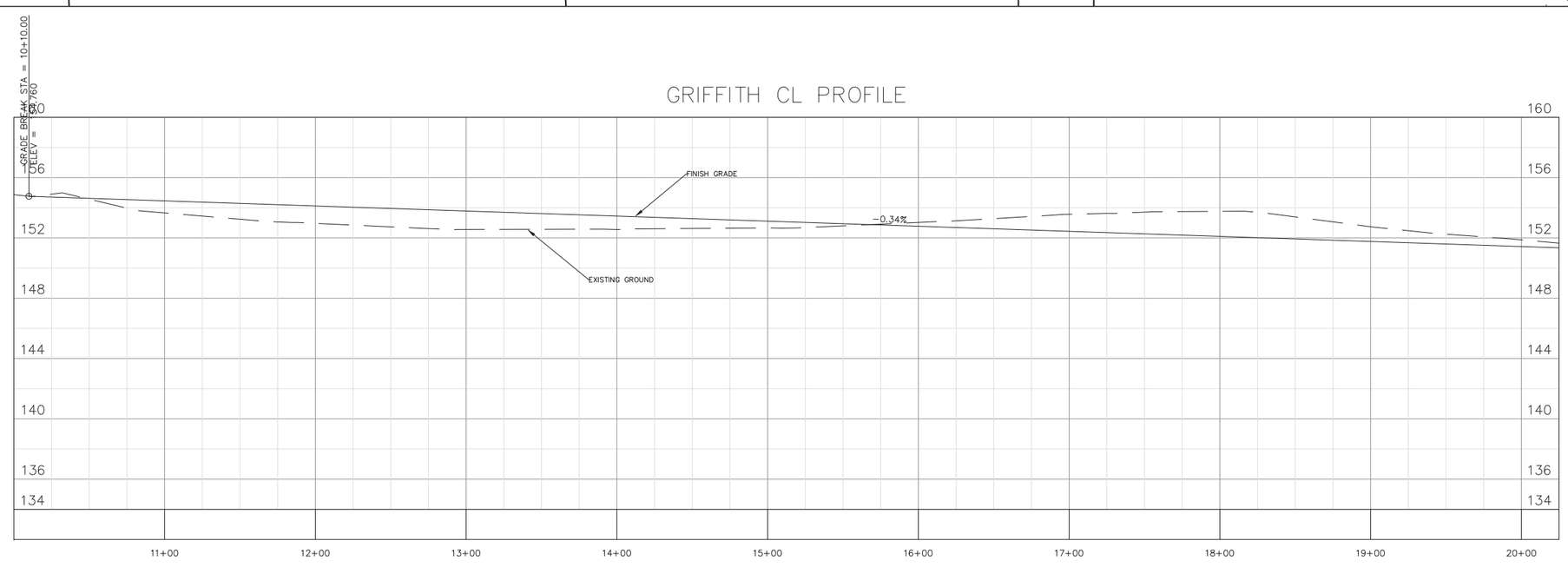
August 2015 | Calhoun County | South Carolina

Scale
As Shown

Sheet
03

NOTES:
1. PROPOSED PIPE LOCATIONS MAY BE FIELD ADJUSTED AS NECESSARY.
2. EXISTING WATER LINES WERE NOT LOCATED. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES.
3. DRIVEWAYS OF CURRENTLY INHABITED PARCELS SHALL BE PAVED TO EDGE OF RIGHT-OF-WAY WITH 2" HMA SURFACE COURSE AND COMPACTED EARTH BASE.





HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Armfield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION CERTIFICATE OF AUTHORIZATION NO. 3103

SOUTH CAROLINA DANIEL R. DENNIS NO. 18310 9/1/2015 REGISTERED PROFESSIONAL ENGINEER

Griffith Lane
Plan & Profile
(Sheet 1 of 7)

DENNIS CORPORATION

CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 40'

Sheet
04

NOTES:
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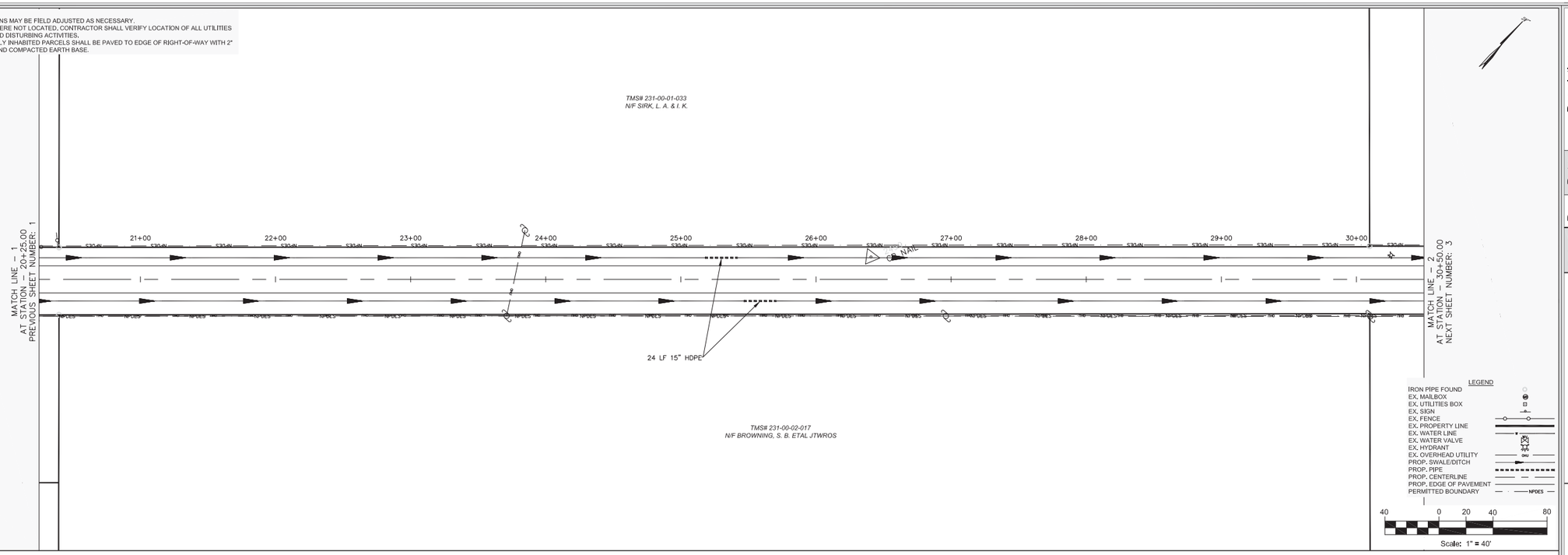

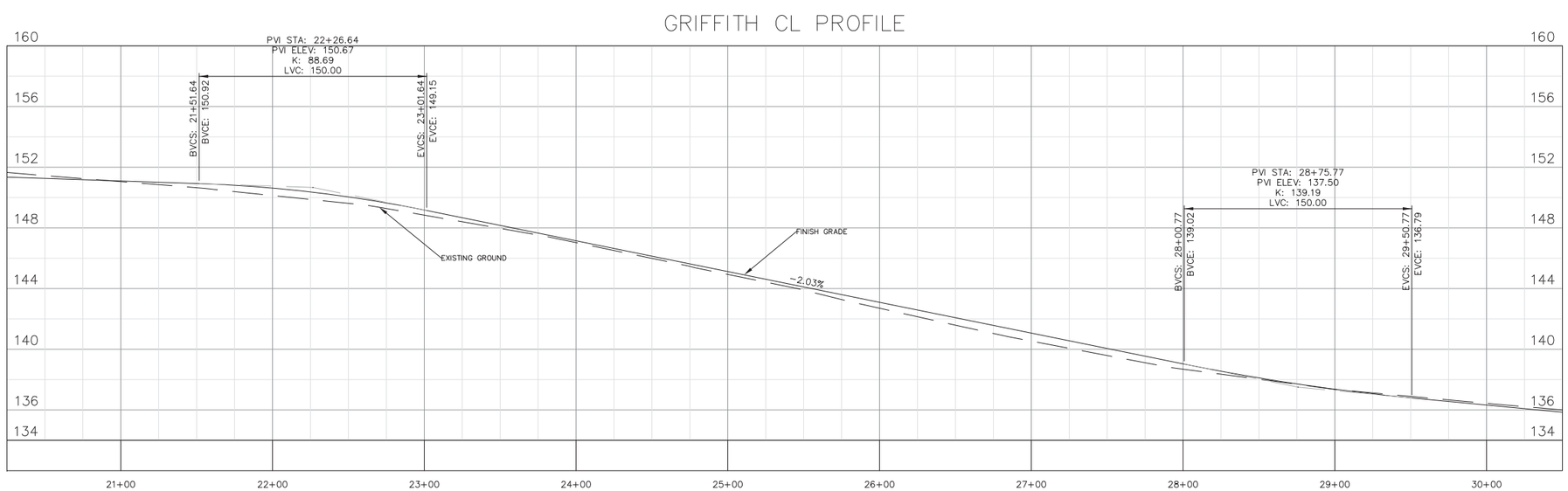

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Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Armfield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION CERTIFICATE OF AUTHORIZATION NO. 3103

SOUTH CAROLINA PROFESSIONAL ENGINEER SEAL 18310 9/1/2015 DANIEL R. DENNIS

Griffith Lane
Plan & Profile
(Sheet 2 of 7)

DENNIS CORPORATION

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05

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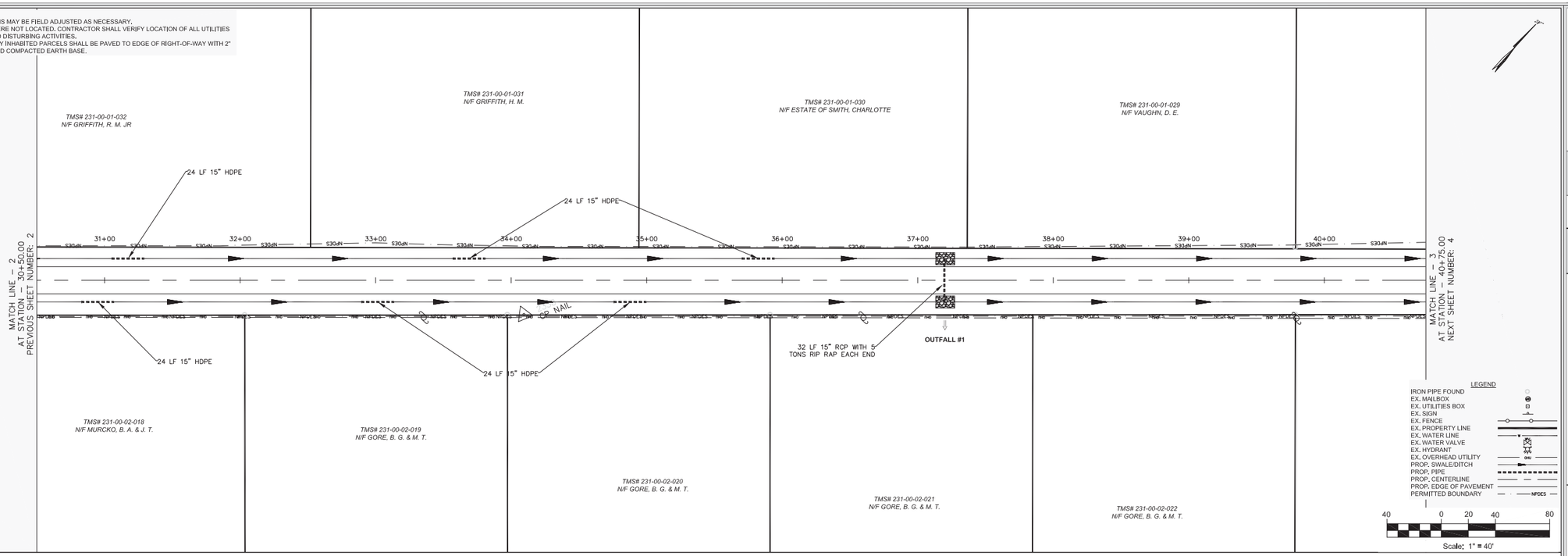

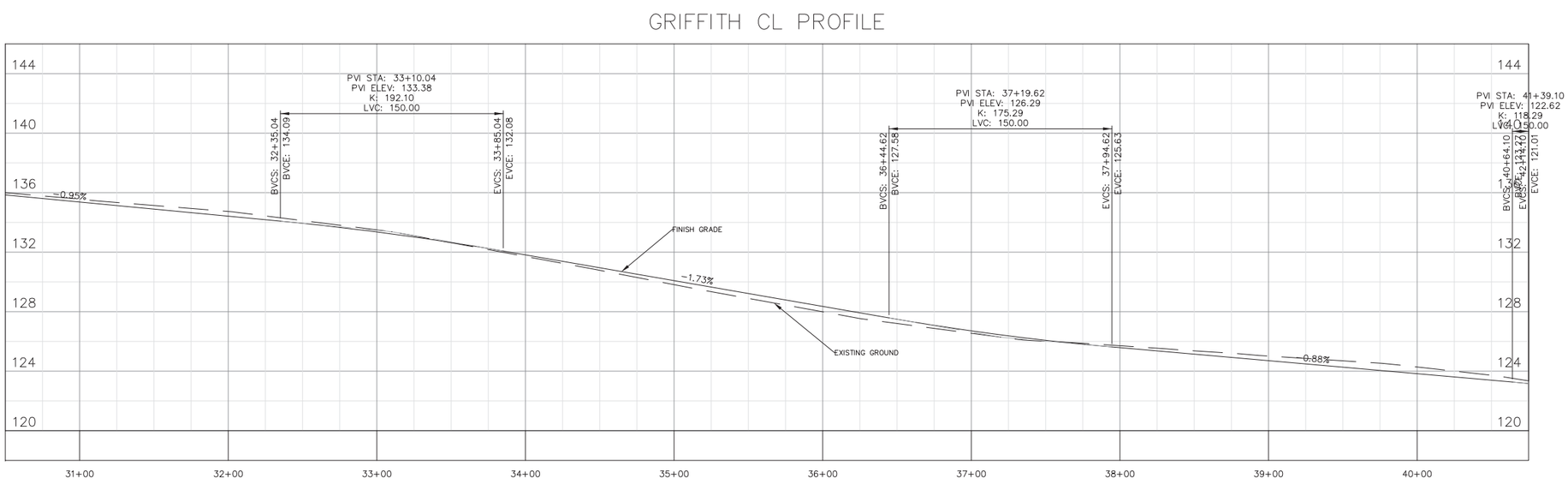

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Armfield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION CERTIFICATE OF AUTHORIZATION NO. 3103

SOUTH CAROLINA DANIEL R. DENNIS NO. 18310 9/1/2015

DENNIS CORPORATION

Griffith Lane
Plan & Profile
(Sheet 3 of 7)

CTC Package 2014-12
for
Calhoun County, South Carolina

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Scale
1" = 40'

Sheet
06

NOTES:
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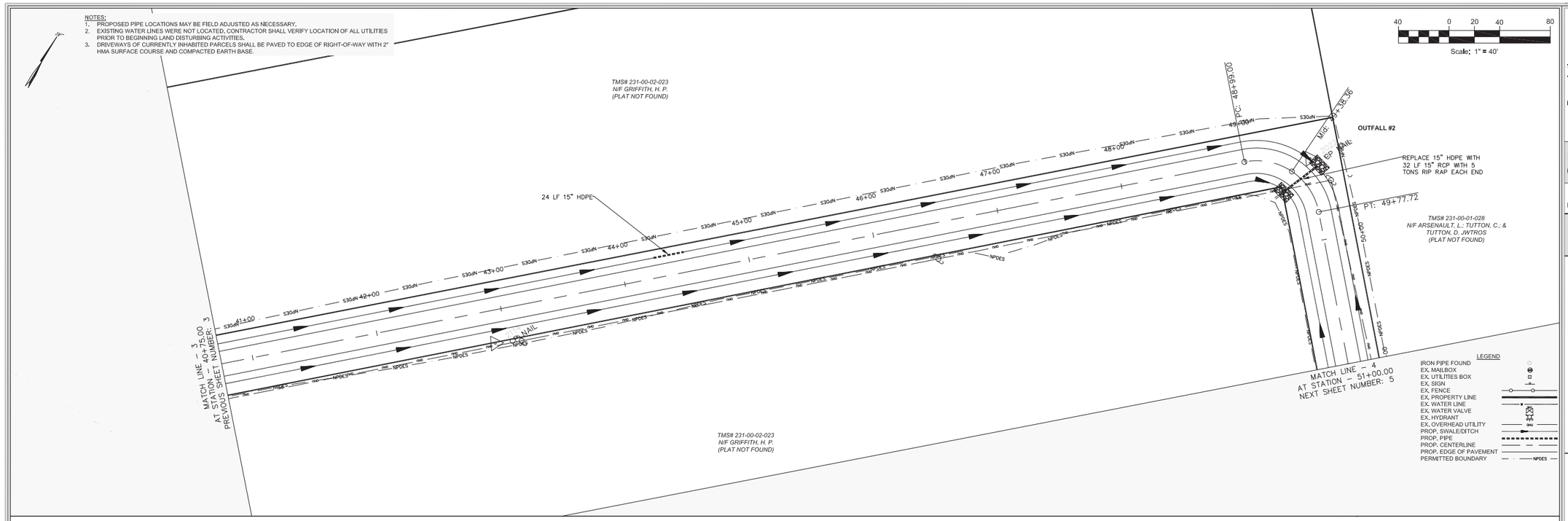

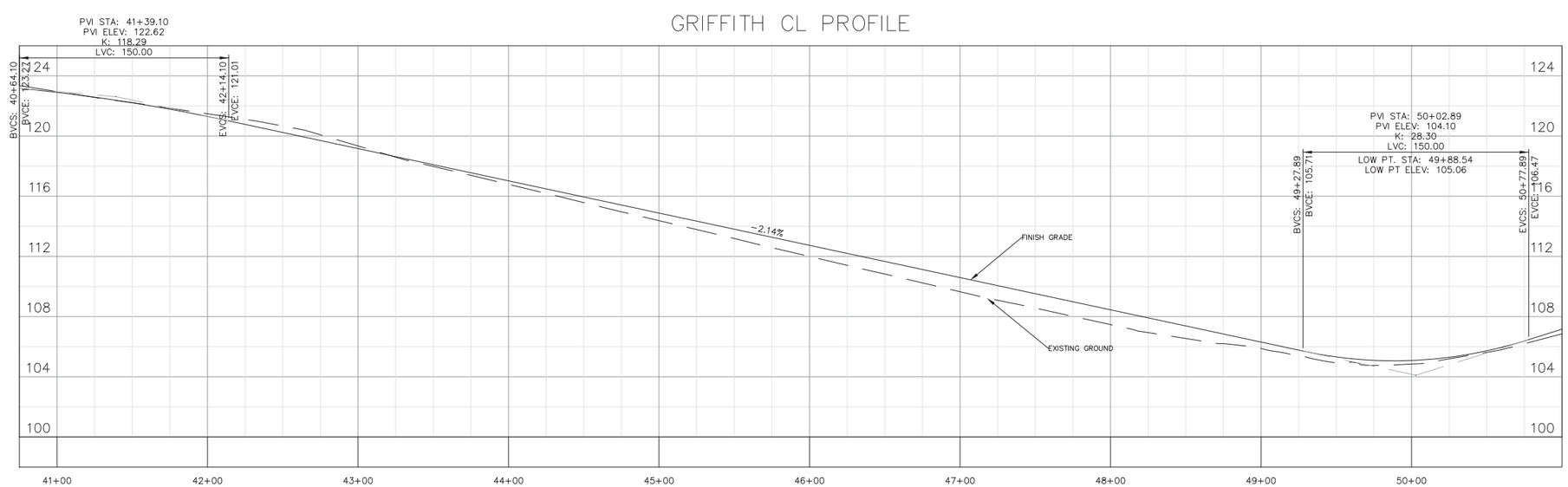

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Arnifield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18310 DATE: 9/1/2015 DANTE P. DENNIS

Griffith Lane
Plan & Profile
(Sheet 4 of 7)

DENNIS CORPORATION

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for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

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07

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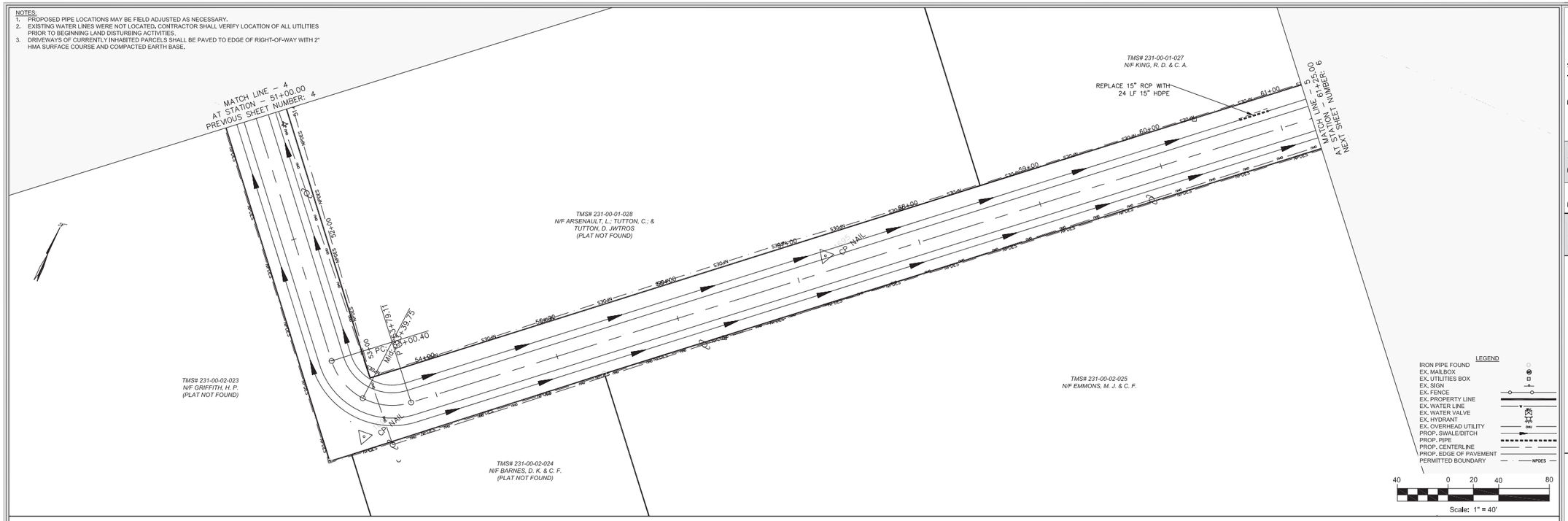

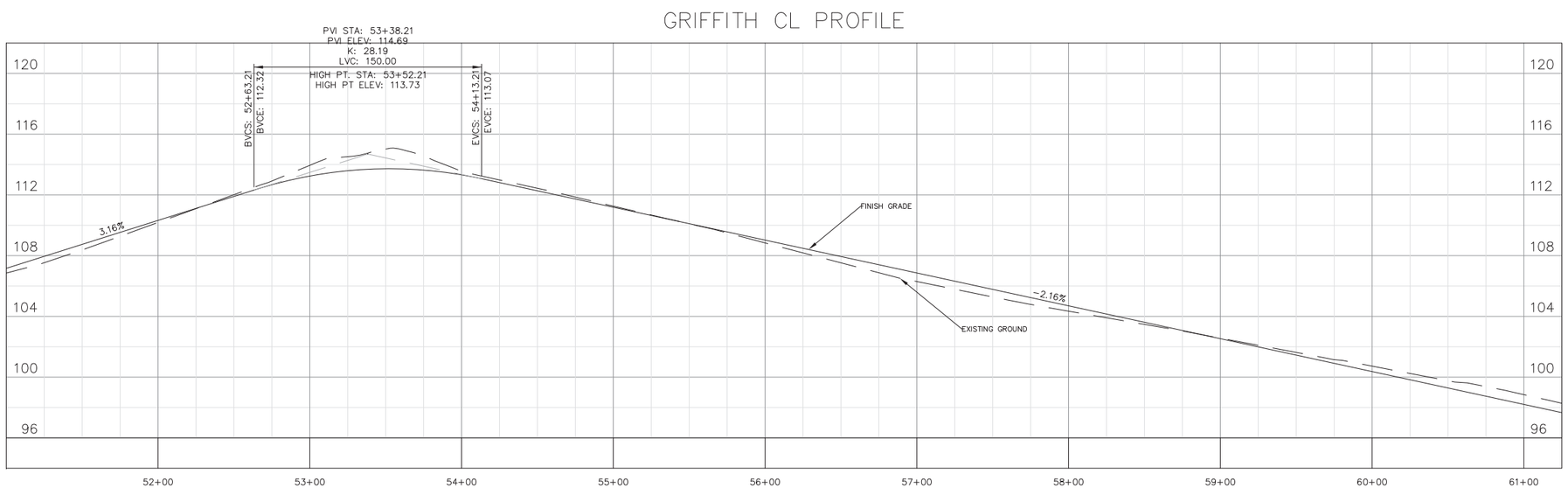

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Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Armfield
Checked By	M. Hines

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION DENNIS CORPORATION NO. 3103

SOUTH CAROLINA PROFESSIONAL ENGINEER SEAL 18310 9/1/2015 DANTE P. DENNIS

DENNIS CORPORATION

Griffith Lane
Plan & Profile
(Sheet 5 of 7)

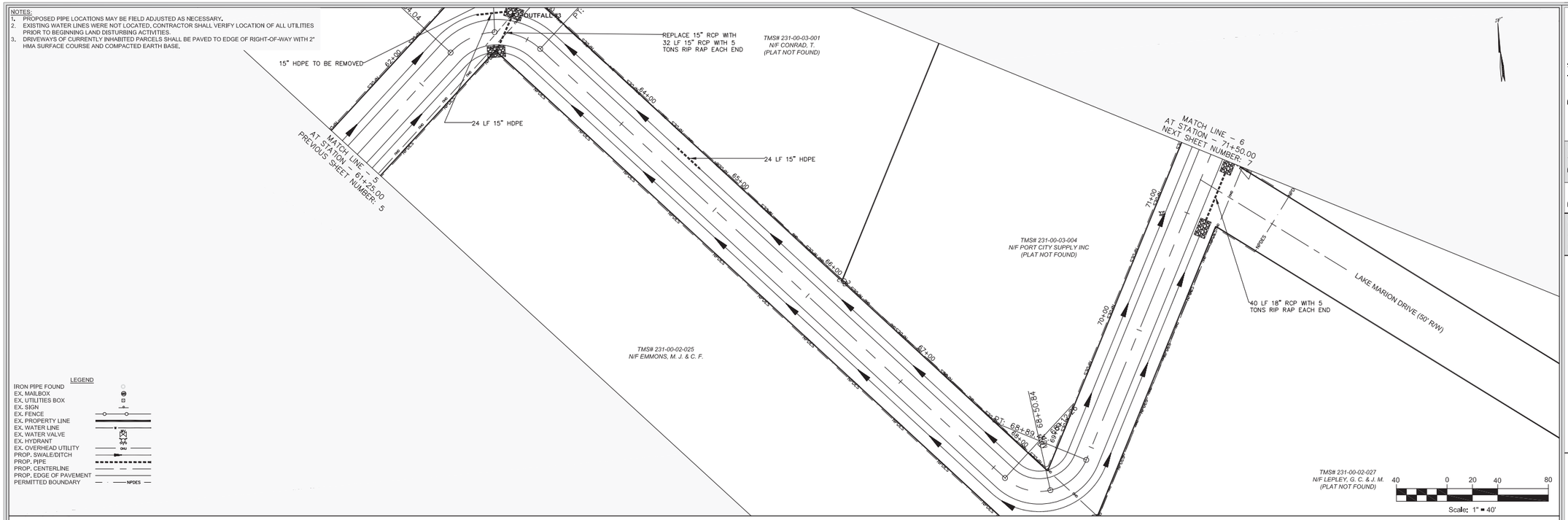
CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 40'

Sheet
08

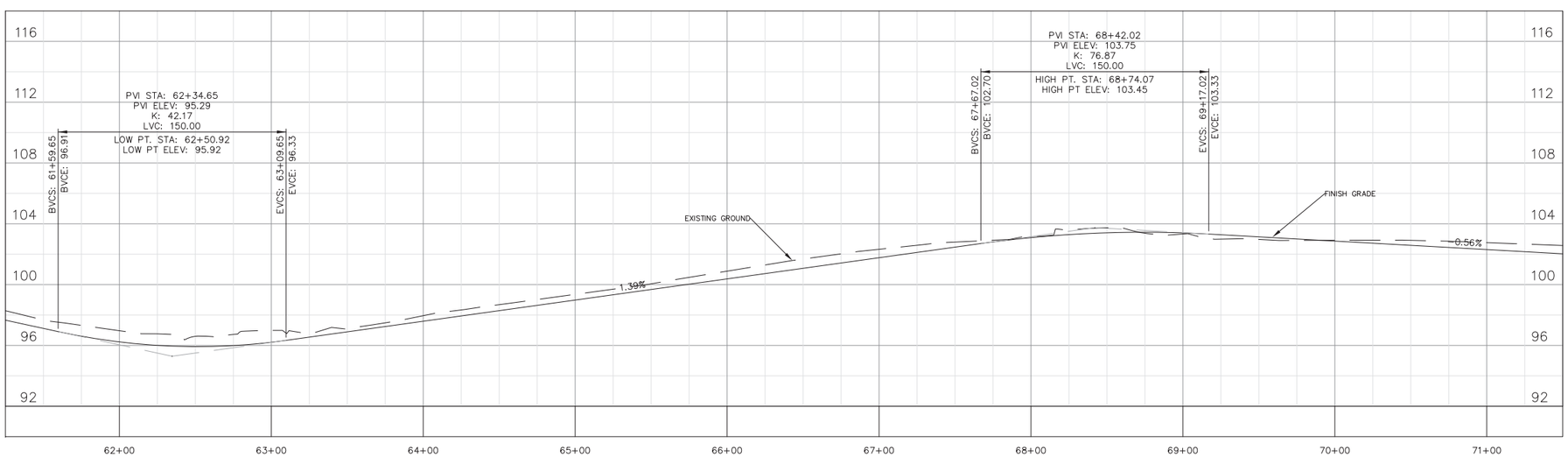
NOTES:
1. PROPOSED PIPE LOCATIONS MAY BE FIELD ADJUSTED AS NECESSARY.
2. EXISTING WATER LINES WERE NOT LOCATED, CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES.
3. DRIVEWAYS OF CURRENTLY INHABITED PARCELS SHALL BE PAVED TO EDGE OF RIGHT-OF-WAY WITH 2" HMA SURFACE COURSE AND COMPACTED EARTH BASE.



LEGEND

- IRON PIPE FOUND
- EX. MAILBOX
- EX. UTILITIES BOX
- EX. SIGN
- EX. FENCE
- EX. PROPERTY LINE
- EX. WATER LINE
- EX. WATER VALVE
- EX. HYDRANT
- EX. OVERHEAD UTILITY
- PROP. SWALE/DITCH
- PROP. PIPE
- PROP. CENTERLINE
- PROP. EDGE OF PAVEMENT
- PERMITTED BOUNDARY — NPDES —

GRIFFITH CL PROFILE



HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Armfield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION CERTIFICATE OF AUTHORIZATION NO. 3103

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18310 9/1/2015 DANTE P. DENNIS

DENNIS CORPORATION

Griffith Lane
Plan & Profile
(Sheet 6 of 7)

CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 40'

Sheet
09

NOTES:
1. PROPOSED PIPE LOCATIONS MAY BE FIELD ADJUSTED AS NECESSARY.
2. EXISTING WATER LINES WERE NOT LOCATED. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES.
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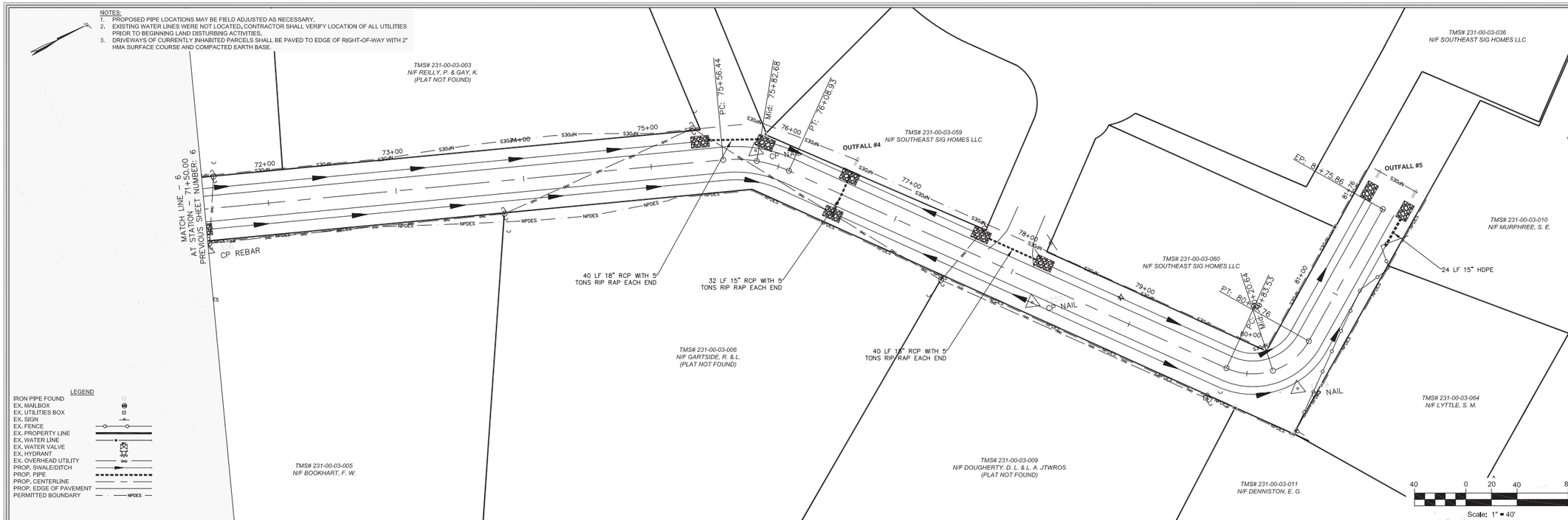
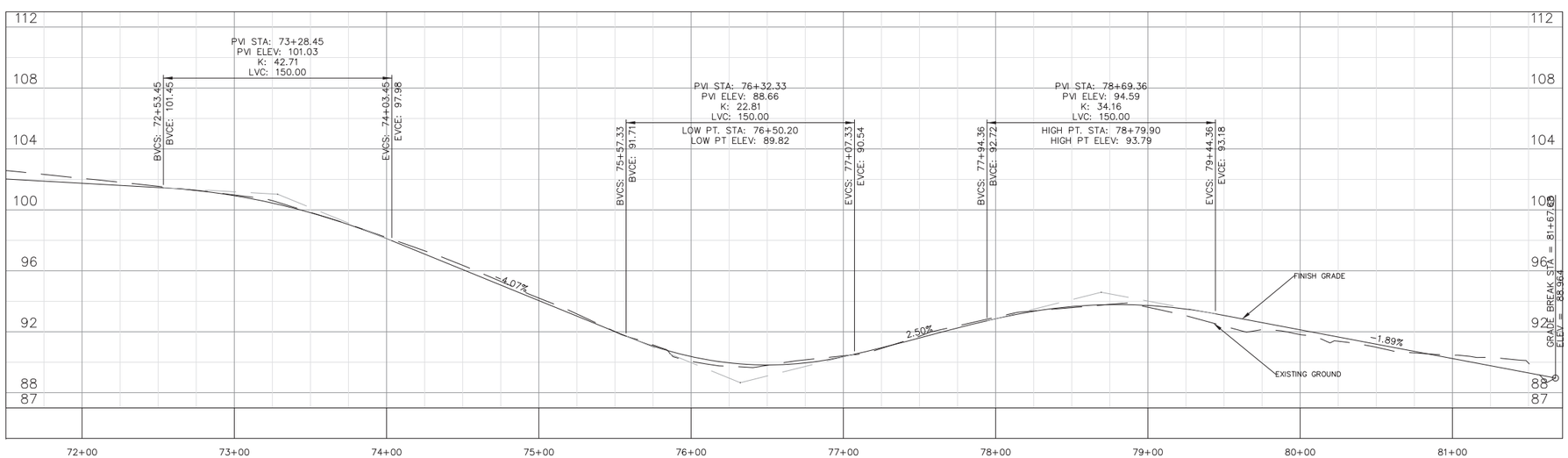


LEGEND

IRON PIPE FOUND	
EX. MAILBOX	
EX. UTILITIES BOX	
EX. SIGN	
EX. FENCE	
EX. PROPERTY LINE	
EX. WATER LINE	
EX. WATER VALVE	
EX. HYDRANT	
EX. OVERHEAD UTILITY	
PROP. SWALE/DITCH	
PROP. PIPE	
PROP. CENTERLINE	
PROP. EDGE OF PAVEMENT	
PERMITTED BOUNDARY	NPDES

GRIFFITH CL PROFILE



HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Armfield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER DANIEL R. DENNIS 9/1/2015

Griffith Lane
Plan & Profile
(Sheet 7 of 7)

DENNIS CORPORATION

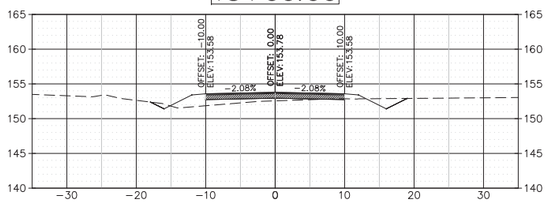
CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 40'

Sheet
10

13+00.00



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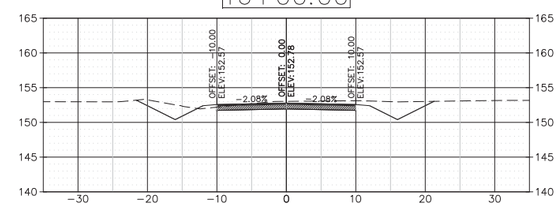

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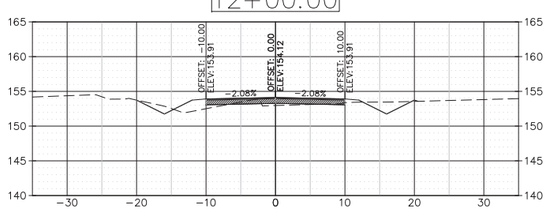

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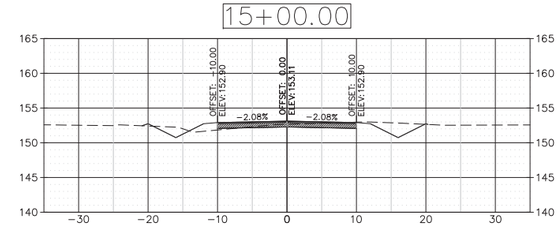

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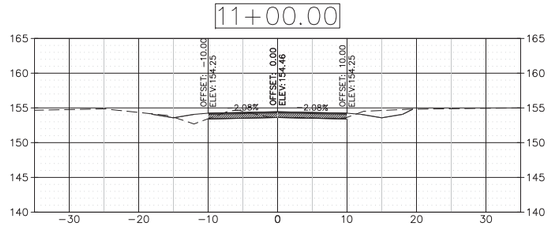

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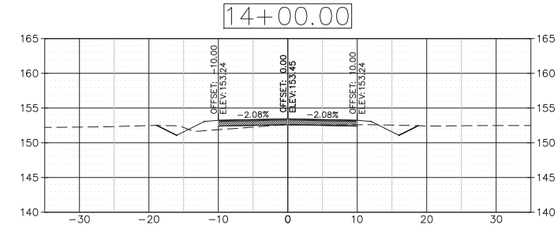
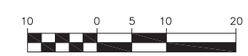




SCALE: 1" = 10'

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Arnifield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION CERTIFICATE OF AUTHORIZATION NO. 3103

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18310 DATE: 9/1/2015 DANIEL R. DENNIS

Cross Sections
(Sheet 1 of 16)

DENNIS CORPORATION

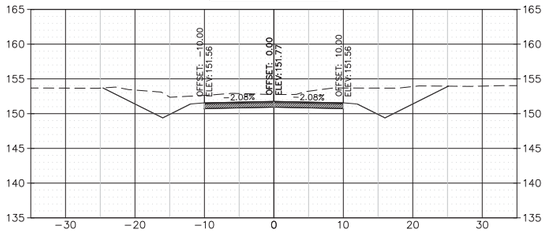
CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 10'

Sheet
XS-01

19+00.00



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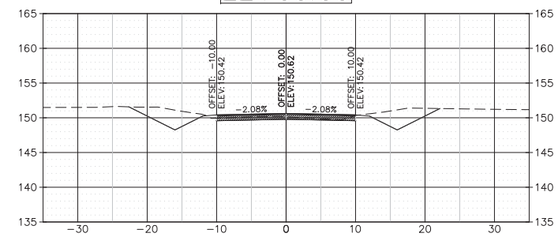

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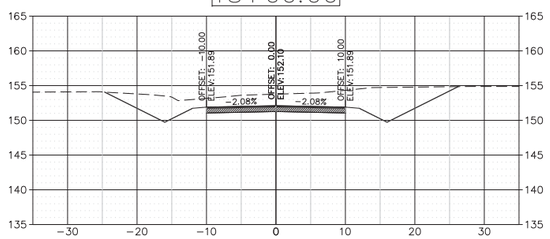

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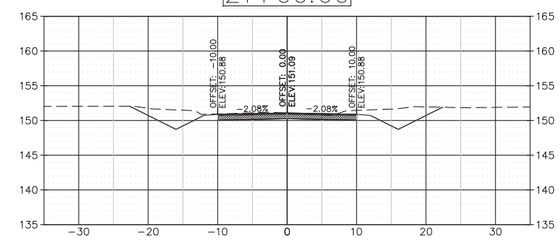

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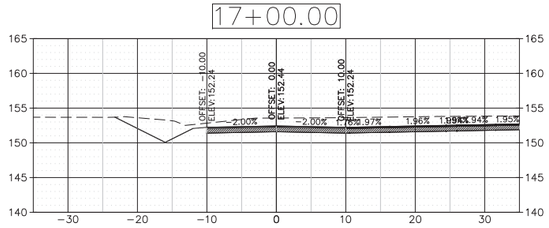

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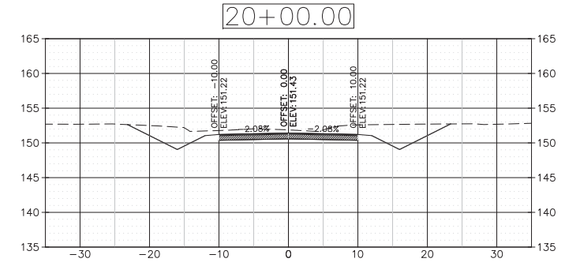
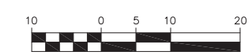




SCALE: 1" = 10'

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Arnifield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION CERTIFICATE OF AUTHORIZATION NO. 3103

SOUTH CAROLINA DANIEL R. DENNIS NO. 18310 9/1/2015

Cross Sections
(Sheet 2 of 16)

DENNIS CORPORATION

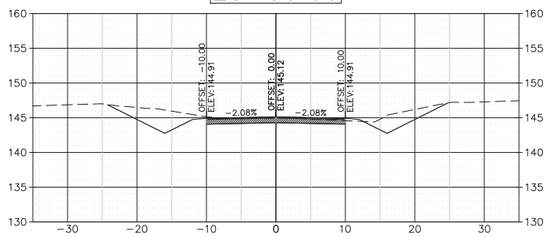
CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 10'

Sheet
XS-02

25+00.00



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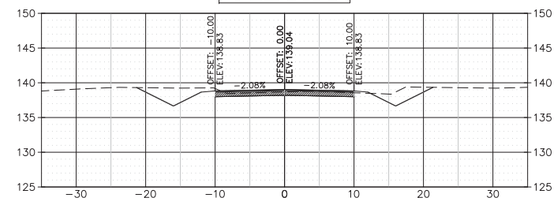

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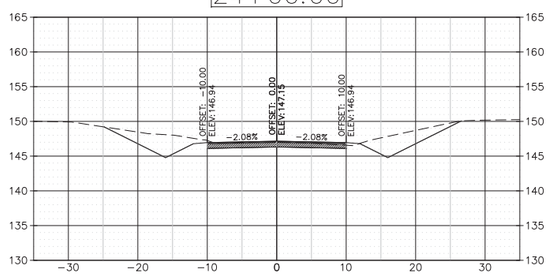

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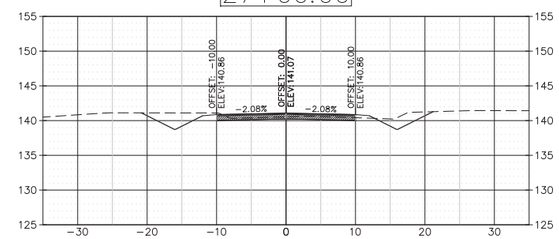

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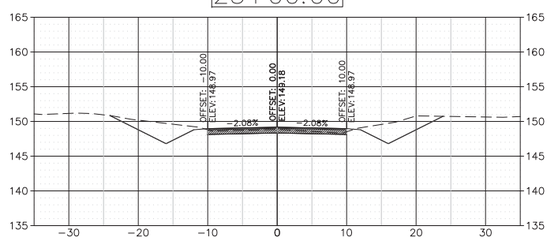

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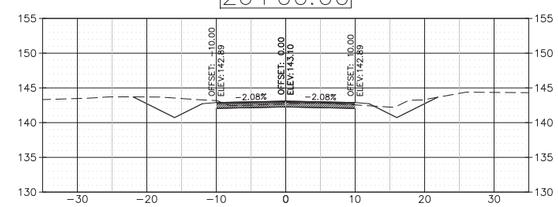
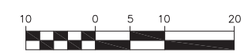




SCALE: 1" = 10'

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Armfield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18310 DANIEL R. DENNIS 9/1/2015

DENNIS CORPORATION

Cross Sections (Sheet 3 of 16)

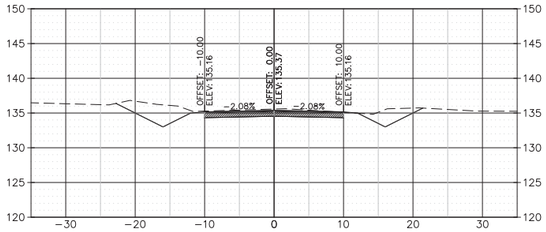
CTC Package 2014-12 for Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale 1" = 10'

Sheet XS-03

31+00.00



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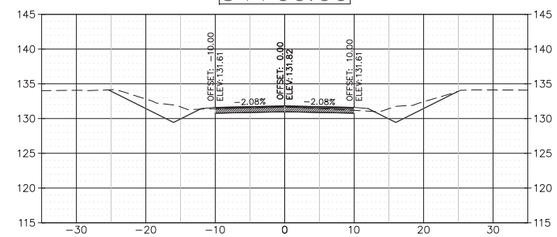

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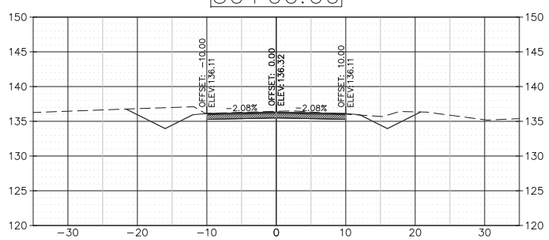

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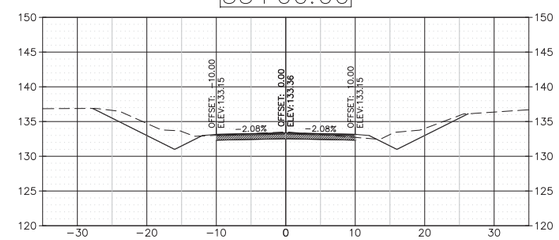

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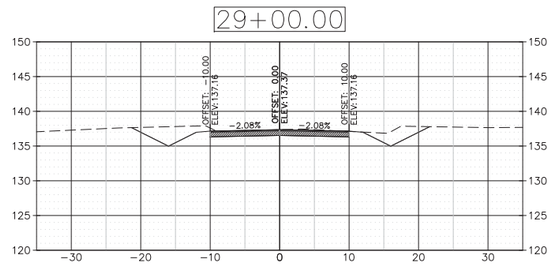

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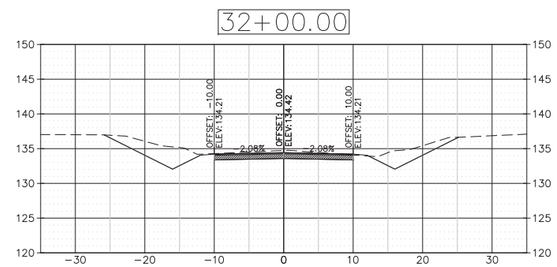


SCALE: 1" = 10'

Rev.	Date	Description

Engineer: D. Dennis
Drawn By: M. Arnifield
Checked By: M. Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18310 DANIEL R. DENNIS 9/1/2015

Cross Sections
(Sheet 4 of 16)

DENNIS CORPORATION

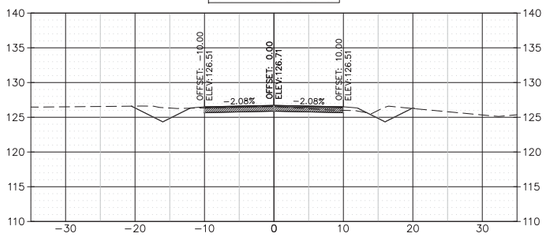
CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 10'

Sheet
XS-04

37+00.00



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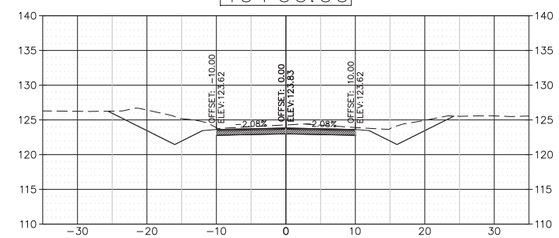

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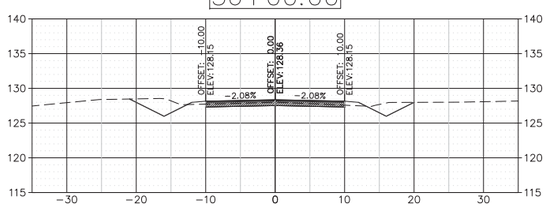

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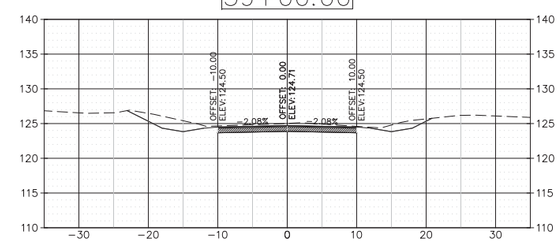

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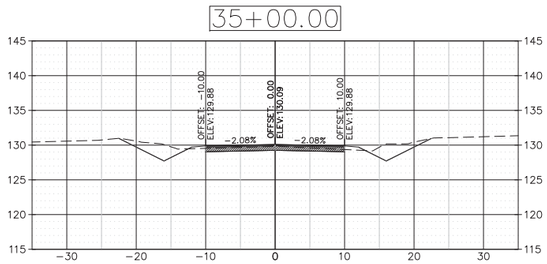

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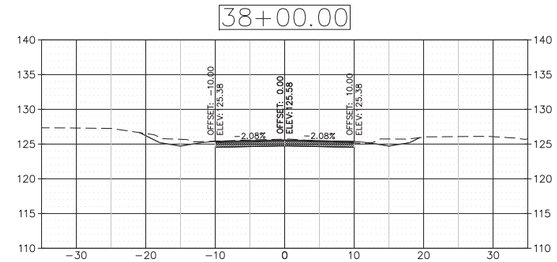
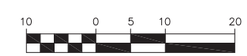




SCALE: 1" = 10'

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Arnifield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA DANIEL R. DENNIS III NO. 18310 9/1/2015

Cross Sections
(Sheet 5 of 16)

DENNIS CORPORATION

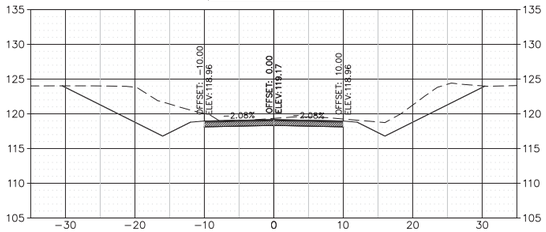
CTC Package 2014-12
for
Calhoun County, South Carolina

South Carolina | Calhoun County | August 2015

Scale
1" = 10'

Sheet
XS-05

43+00.00



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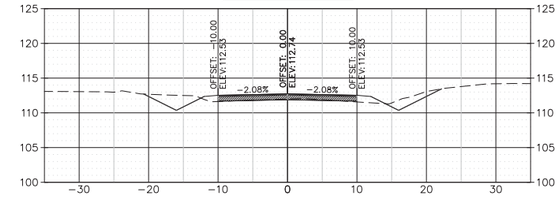

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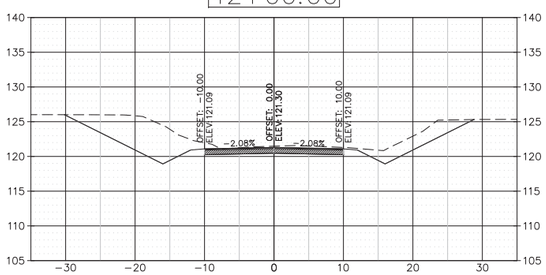

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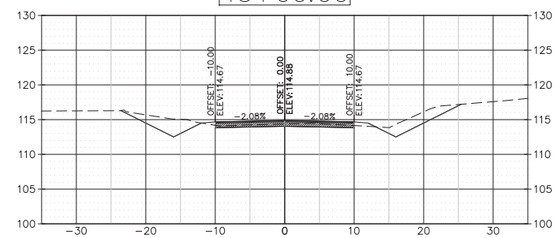

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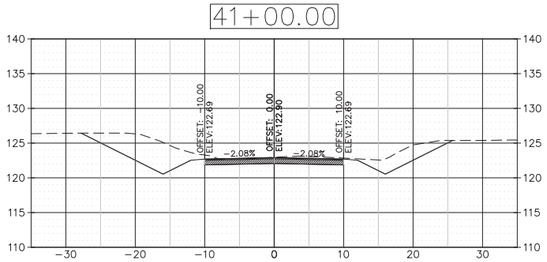

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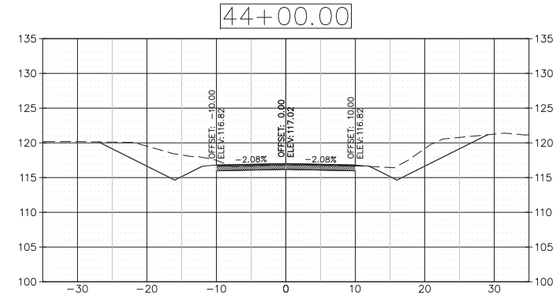
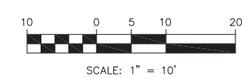




Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Arnifield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18310 DATE: 9/1/2015 DANIEL R. DENNIS

Cross Sections
(Sheet 6 of 16)

DENNIS CORPORATION

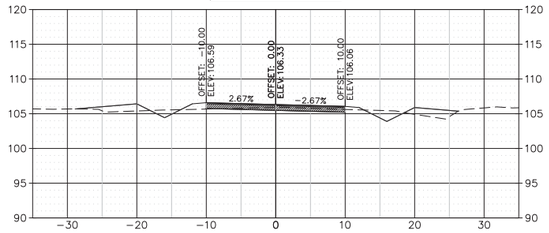
CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 10'

Sheet
XS-06

48+99.00



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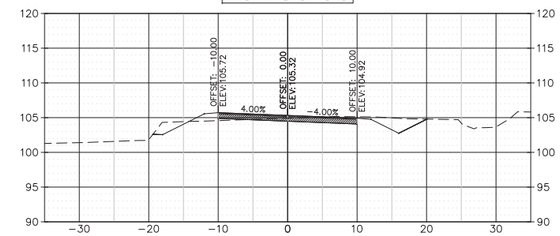

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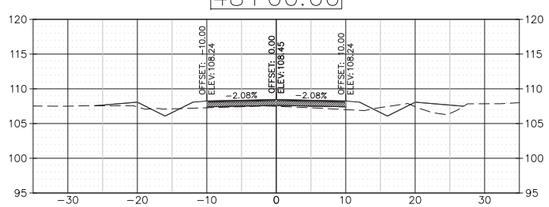

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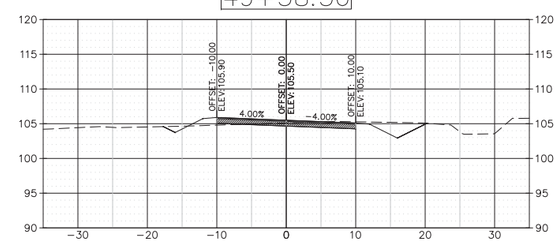

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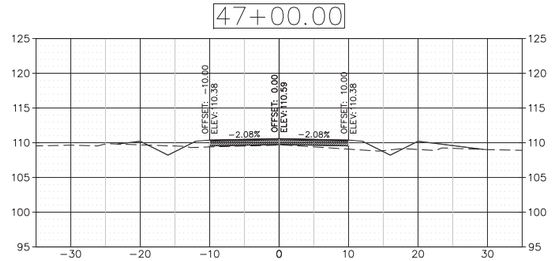

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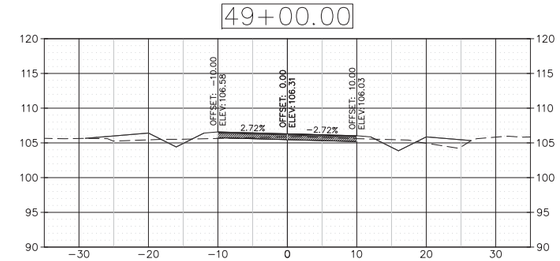
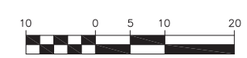




Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Arnifield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION CERTIFICATE OF AUTHORIZATION NO. 3103

SOUTH CAROLINA DANIEL R. DENNIS III No. 18310 Date 9/1/2015

Cross Sections
(Sheet 7 of 16)

DENNIS CORPORATION

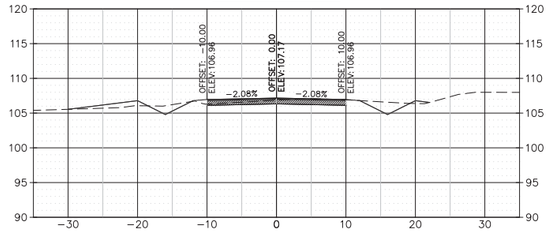
CTC Package 2014-12
for
Calhoun County, South Carolina

South Carolina | Calhoun County | August 2015

Scale
1" = 10'

Sheet
XS-07

51+00.00



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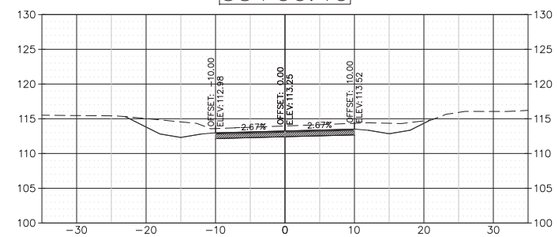

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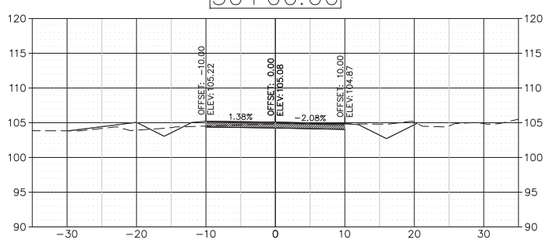

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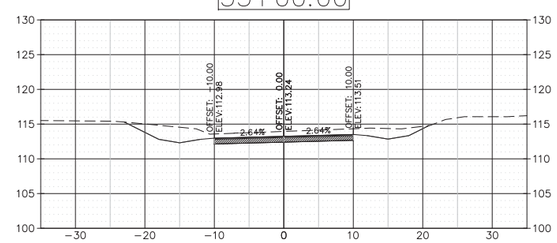

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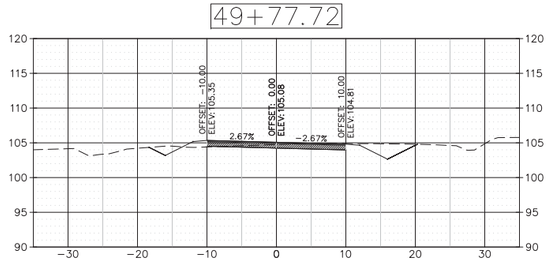

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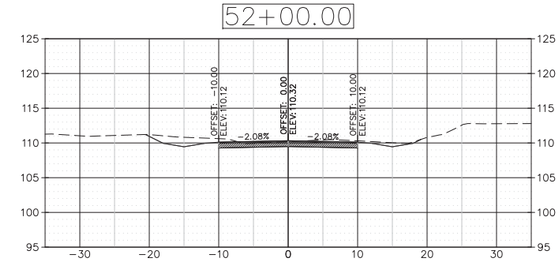
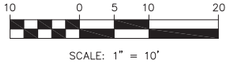




Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Armfield
Checked By	M. Hines

Cross Sections
(Sheet 8 of 16)

DENNIS CORPORATION

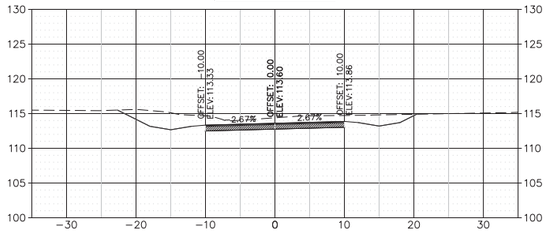
CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 10'

Sheet
XS-08

53+79.11



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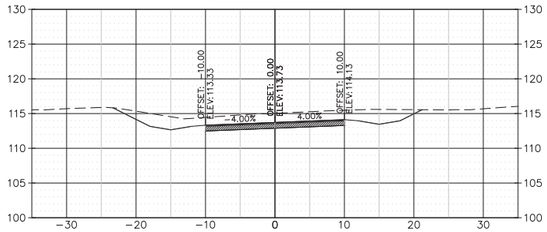

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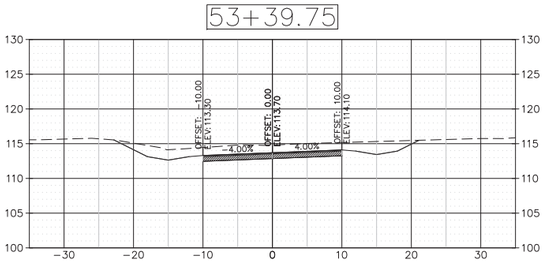

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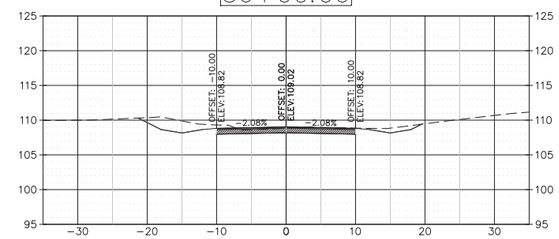

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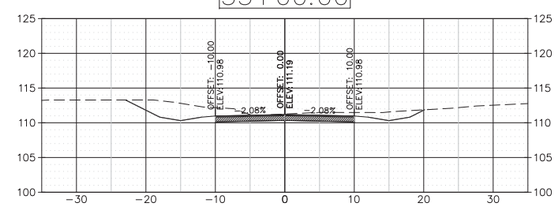

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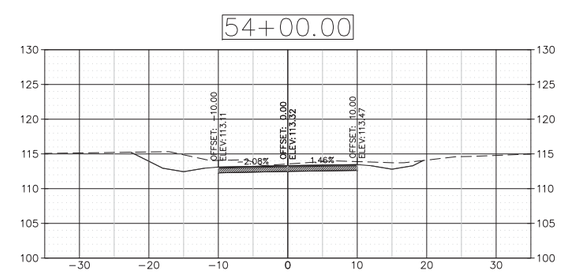

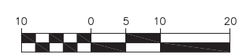

SCALE: 1" = 10'

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Arnifield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION CERTIFICATE OF AUTHORIZATION NO. 3103

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18310 DANIEL R. DENNIS 9/1/2015

Cross Sections
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DENNIS CORPORATION

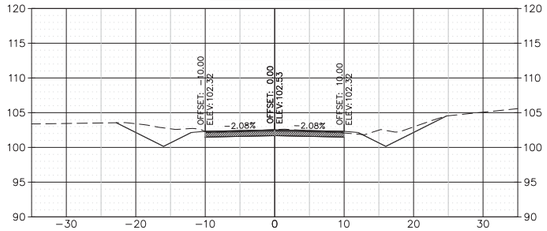
CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 10'

Sheet
XS-09

59+00.00



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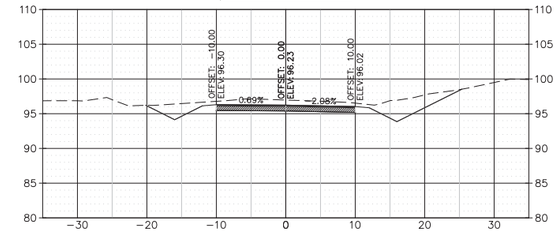

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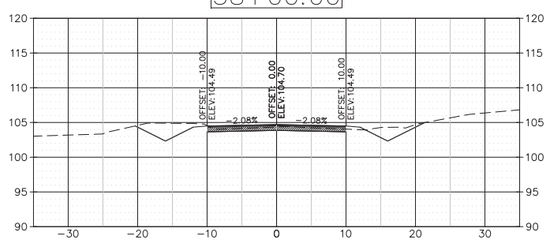

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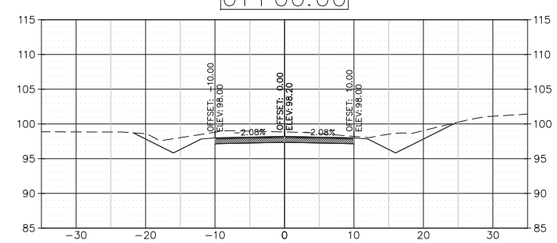

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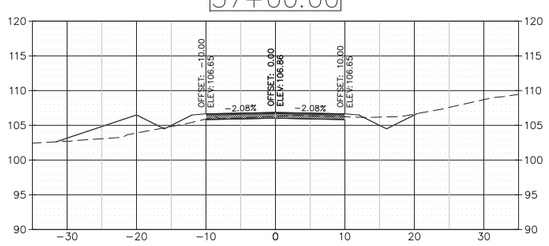

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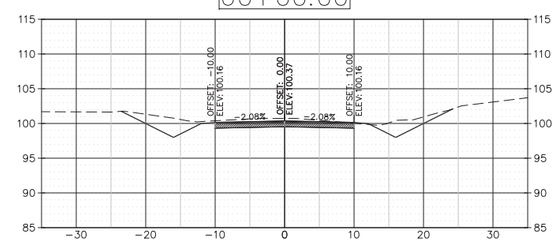


SCALE: 1" = 10'

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Arnifield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18310 DANIEL R. DENNIS 9/1/2015

Cross Sections
(Sheet 10 of 16)

DENNIS CORPORATION

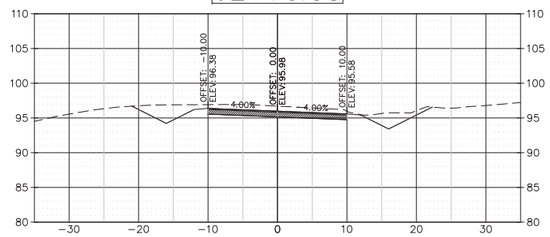
CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 10'

Sheet
XS-10

62+73.38



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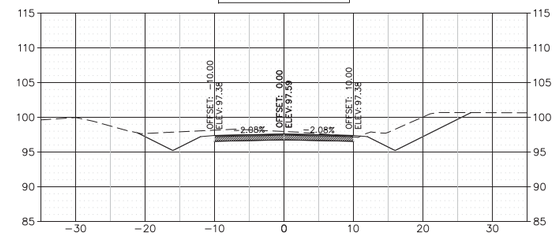

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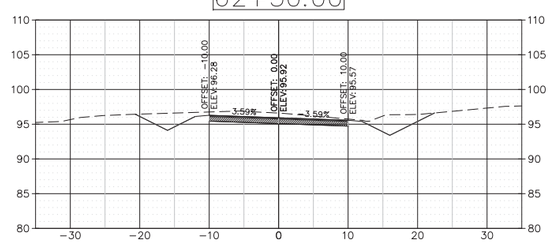

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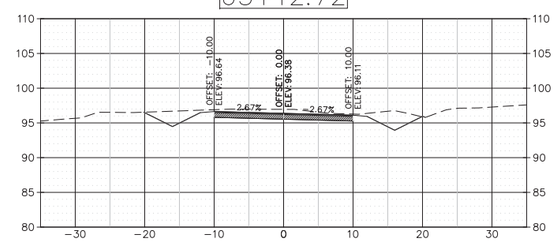

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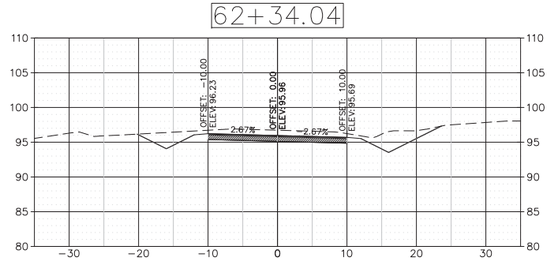

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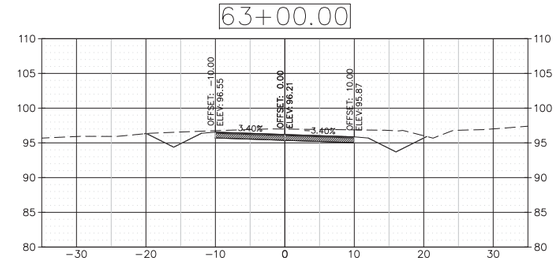
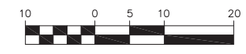




Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Armfield
Checked By	M. Hines

Cross Sections
(Sheet 11 of 16)

DENNIS CORPORATION

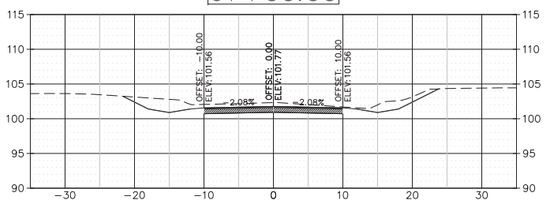
CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 10'

Sheet
XS-11

67+00.00



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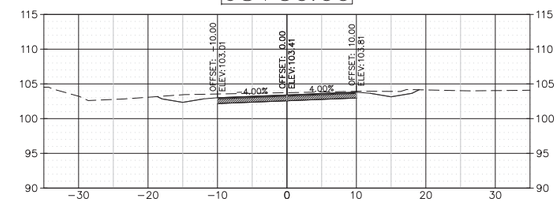

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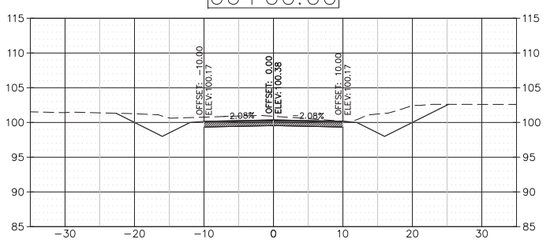

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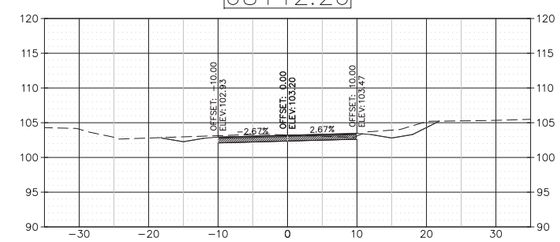

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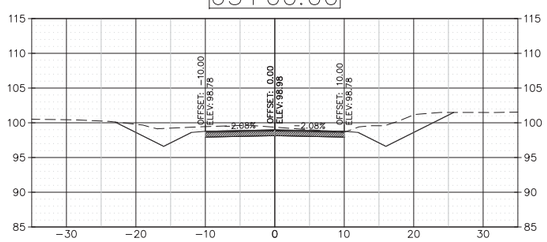

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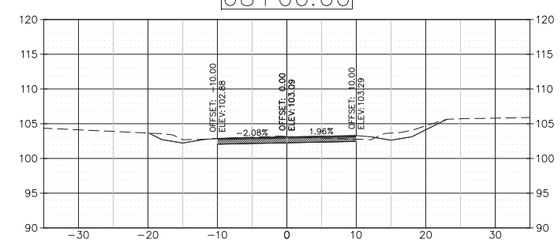
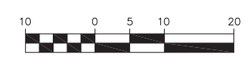




SCALE: 1" = 10'

Rev.	Date	Description

Engineer: D. Dennis
Drawn By: M. Armfield
Checked By: M. Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18310 DATE: 9/1/2016 DANIEL R. DENNIS

DENNIS CORPORATION

Cross Sections (Sheet 12 of 16)

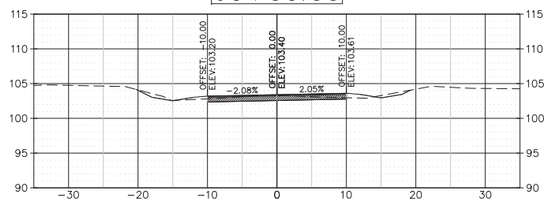
CTC Package 2014-12 for Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale: 1" = 10'

Sheet: XS-12

69+00.00



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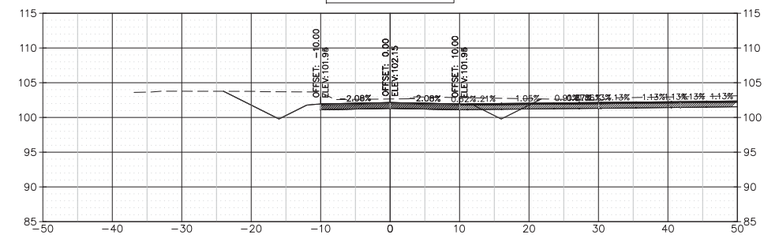

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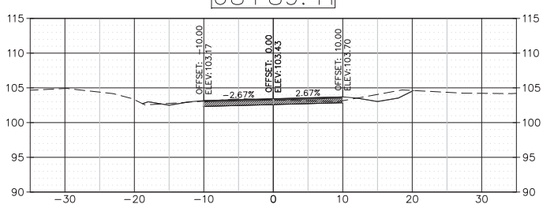

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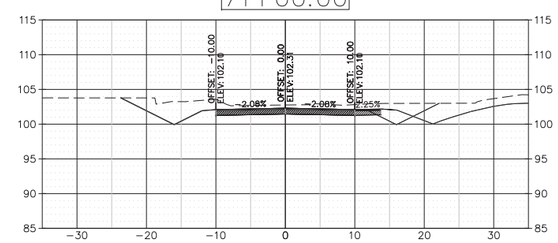

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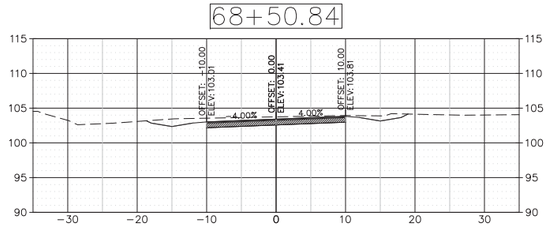

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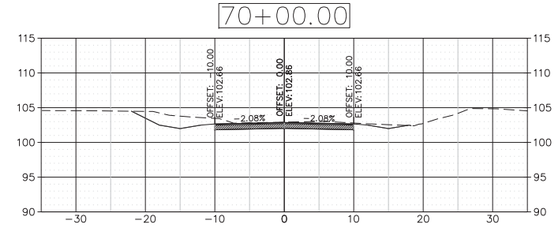
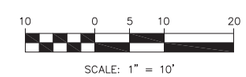




Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Arnifield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION CERTIFICATE OF AUTHORIZATION NO. 3103

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18310 DATE 9/1/2015 DANIEL R. DENNIS

Cross Sections
(Sheet 13 of 16)

DENNIS CORPORATION

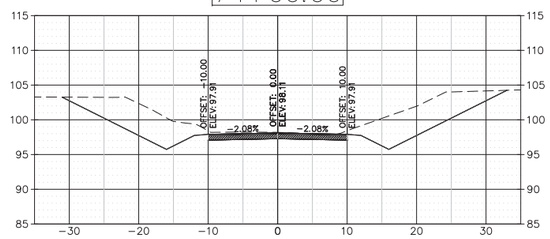
CTC Package 2014-12
for
Calhoun County, South Carolina

August 2015 | Calhoun County | South Carolina

Scale
1" = 10'

Sheet
XS-13

74+00.00



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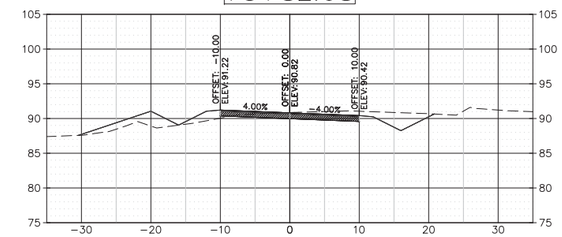

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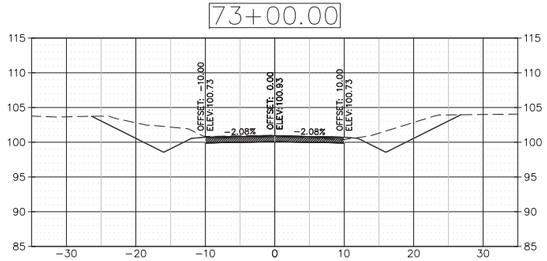

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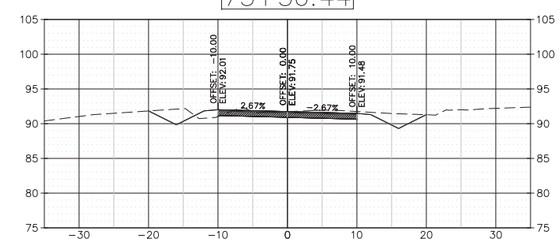

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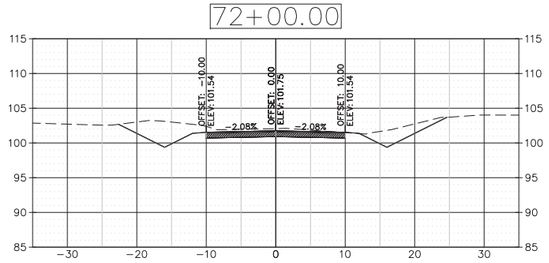

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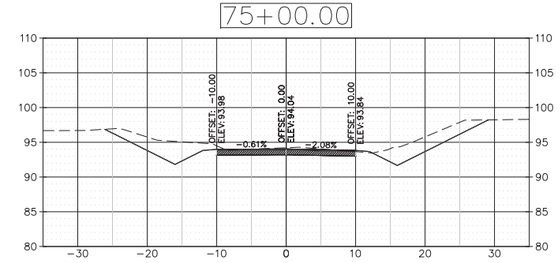

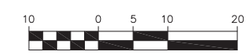

SCALE: 1" = 10'

Rev.	Date	Description

Engineer: D. Dennis
Drawn By: M. Armfield
Checked By: M. Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18310 DANIEL R. DENNIS 9/1/2015

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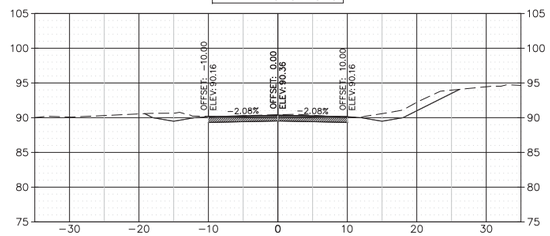
Scale: 1" = 10'

Sheet: XS-14

77+00.00



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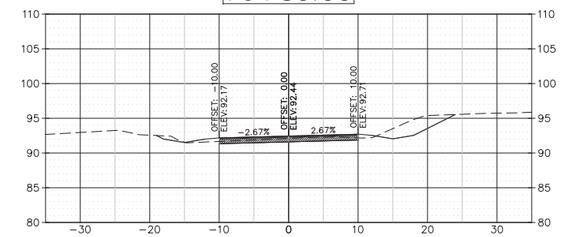

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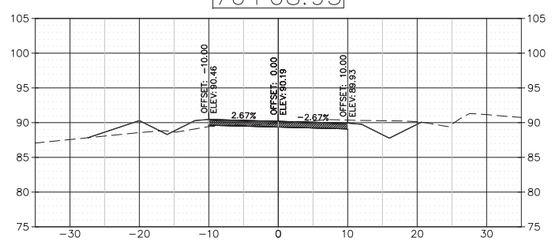

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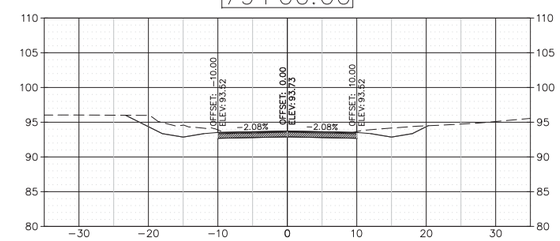

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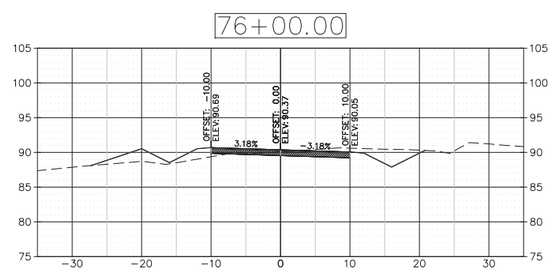

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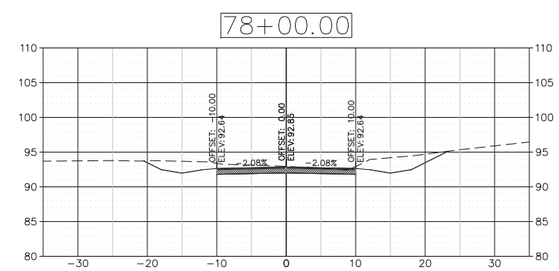

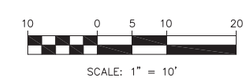

Rev.	Date	Description

Engineer	D. Dennis
Drawn By	M. Arnifield
Checked By	M. Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA DANIEL R. DENNIS III No. 18310 9/1/2015

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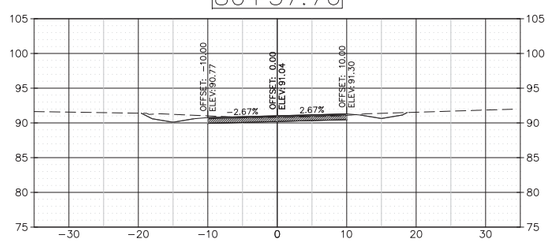
Scale
1" = 10'

Sheet
XS-15

80+57.76



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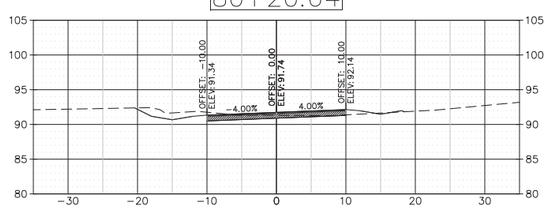

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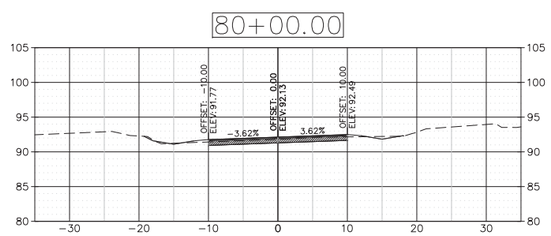

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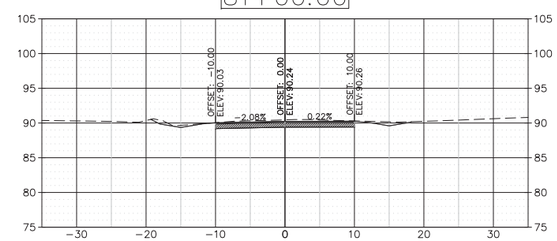

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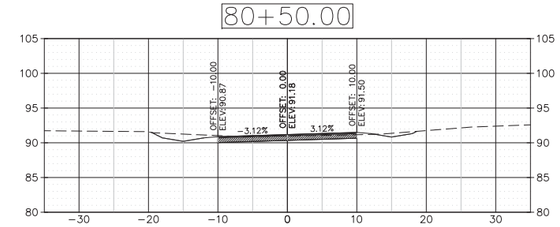

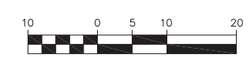

SCALE: 1" = 10'

Engineer	Rev.	Date	Description
D. Dennis			
Drawn By			
M. Arnnfield			
Checked By			
M. Hines			

SOUTH CAROLINA DENNIS CORPORATION CERTIFICATE OF AUTHORIZATION NO. 3103

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18310 DANIEL R. DENNIS 9/1/2015

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Scale
1" = 10'

Sheet
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