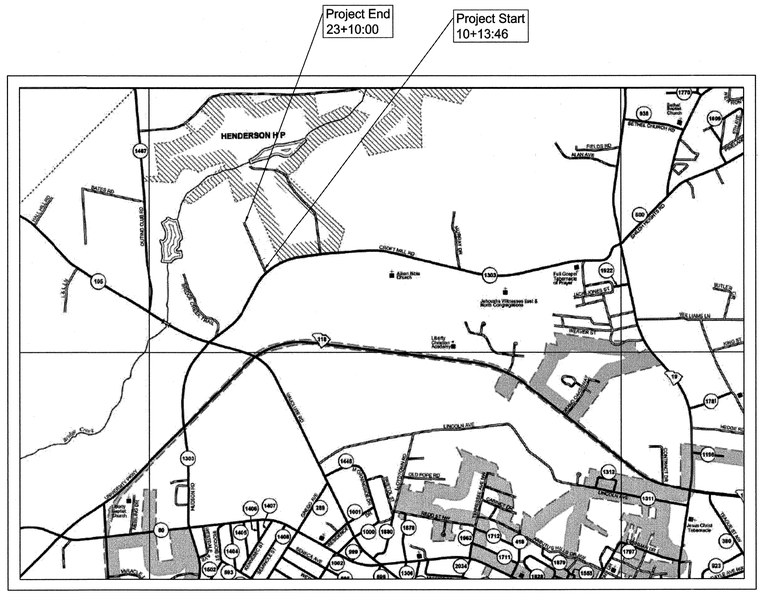
AIKEN COUNTY

CONSTRUCTION PLANS FOR ROADWAY IMPROVEMENTS TO MOUNTAIN LAUREL DRIVE



Vicinity Map
(Not to Scale)

Map Source: SCDOT

Utilities Contacts

Electrical/Gas:
Aiken Electric Co-Op
Bobby McGuire
704-829-3309

Water/Sewer:
City of Aiken, SC
City of Aiken
803-508-9338

Communications:
AT&T/Fontier Communications
Angela Huyck
843-536-7203

AT&T Fiber Optic
Glenn E. Vanevera
706-469-7248

AT&T
Stuart Hightower
803-261-4551

Atlantic Broadband LLC
Steve Fox
803-295-7285

PUPS
PALMETTO UTILITY PROTECTION SERVICES INC

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

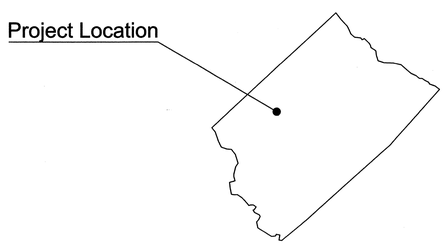
Drawing Index

01	Cover
02-03	Construction Notes & Details
04-05	Erosion Control Details
06-07	Plan & Profile
08	Striping Plan
09	Erosion Control Plan
10-15	Cross-Sections

NPDES PERMIT INFORMATION

Mountain Laurel Road:
Disturbed Area: 0.96 ± acres
Total Area: 1.62 ± acres

Approx. Location:
Longitude: W -81°45'11.4"
Latitude: N 35°39'.2"



Location Map
Aiken County
(Not to Scale)

NOTE:
ALL WORKMANSHIP AND MATERIAL ON THIS PROJECT TO CONFORM WITH THE CONSTRUCTION SPECIFICATIONS AND THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION).

Revision	Date	Description

Engineer: D. Dennis
Drawn By: J.Outlaw
Checked By: M.Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER AND LAND SURVEYOR No. 18510 DANIEL R. DENNIS

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

Roadway Improvements to Mountain Laurel Drive
Aiken County
South Carolina
August 2016

Project

Scale
As Shown

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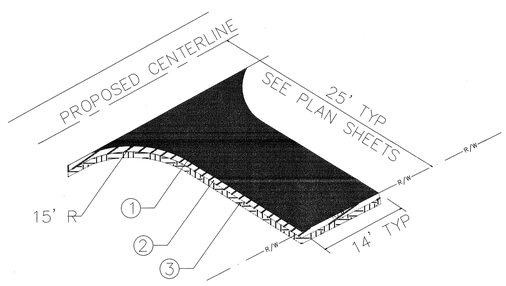
Control Points				
Point #	Elevation	Northing	Easting	Description
1	456.75	641496.48	1770670.54	DEL PK NAIL
2	431.12	641878.01	1770536.40	DEL2
3	441.95	642222.63	1770330.49	DEL3
4	459.27	642694.46	1770167.74	DEL4
7	422.77	641943.81	1770399.30	DEL NAIL
8	416.75	641908.49	1770313.82	DEL NAIL
10	457.73	642663.96	1770124.58	DEL NAIL

DRIVEWAY TYPICAL

N.T.S.

ALL DRIVEWAY RADII WILL BE 15' MINIMUM AND ALL DRIVEWAY WIDTHS WILL BE 14' MINIMUM UNLESS OTHERWISE NOTED ON PLANS.

1. 1.5" ASPHALT SURFACE COURSE TYPE C
2. 4" GRADED AGGREGATE BASE COURSE 100% STANDARD PROCTOR
3. 12" COMPACTED SUBGRADE 100% STANDARD PROCTOR

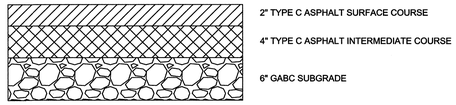


Summary of Estimated Quantities

ITEM NO.	DESCRIPTION	QTY.	UNITS
1	Mobilization	1	LS
2	Construction Stakes, Lines, Grades	1	LS
3	Traffic Control - Includes Construction Signage	1	LS
4	Clearing and Grubbing within Roadway, Drainage Easement and Construction Limits	.96	AC
5	Unclassified Excavation	1068	CY
6	Moving Items: Mailboxes, Street Signs, Etc. to R/W Line or Designated Area	1	LS
7	Subgrade Course - Shape and Compact (To Include Testing Every 800 LF)	3775	SY
8	4" Graded Aggregate Base Course (Includes Testing Every 800 LF)	3775	SY
9	Prime Coat	3775	SY
10	1.5" Minimum Compacted Hot Laid Asphalt Concrete Surface Course, SCDOT Type C (Incl. cost of coring every 800 lf.)	4309	SY
11	Paving Within SCDOT Right Of Way (To Include 2" type C Asphalt Surface Course, 4" Type C Asphalt Intermediate Course, and 6" GABC Base Course)	124	SY
12	Cul-De-Sac Raised Edge - 2 Foot Wide (Includes Items 5, 7, 8, 9 & 10)	235	LF
13	Driveway to ROW (includes items 5, 7, 8, 9 & 10)	15	EA
14	18" Reinforced Concrete Pipe (RCP) (Class III)	368	LF
15	24" Reinforced Concrete Pipe (RCP) (Class III)	48	LF
16	Rip Rap (Class B)	24	SY
17	Geotextile / Erosion Control Under Riprap (Class II, Type B)	24	SY
18	White 24" Stop Bar -Thermo. (125 mil)	26	LF
19	Permanent Raised Yellow Pavement Bi-Directional Markers (4"x4")-every 80 LF	15	EA
20	Permanent Roadway Signs	3	EA
21	Erosion Control Maintenance - Includes Temporary Seeding and Silt Fence	1	LS
22	Silt Fence	601	LF
23	Sediment Tube	63	EA
24	Temporary Erosion Control Blanket (Class B)	1865	SY
25	Stabilized Construction Entrance	332	SY
26	Permanent Grass Cover	0.9	AC
27	6" Perforated Pipe Underdrain With End Protectors if Required	500	LF

GENERAL NOTES:

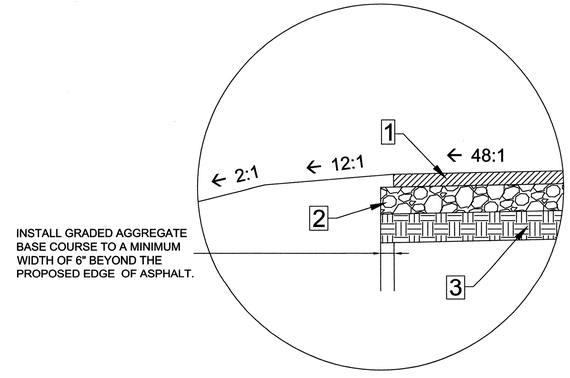
1. THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF PIPE FLOW LINES AND SIDEROAD TIE-INS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY APPARENT DISCREPANCIES OR CONFLICTS IN THE CONSTRUCTION PLANS PRIOR TO COMMENCING CONSTRUCTION.
2. CONTRACTOR SHALL COORDINATE UTILITY LOCATION WITH UTILITY PROVIDER 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.
18. FOR TRAFFIC CONTROL, INSTALL SCHEME-E ON CROFT MILL DR S-1303 IN ACCORDANCE WITH SCDOT STANDARD DRAWINGS STD 605-01-02 , 610-205-00 AND 610-005-10.

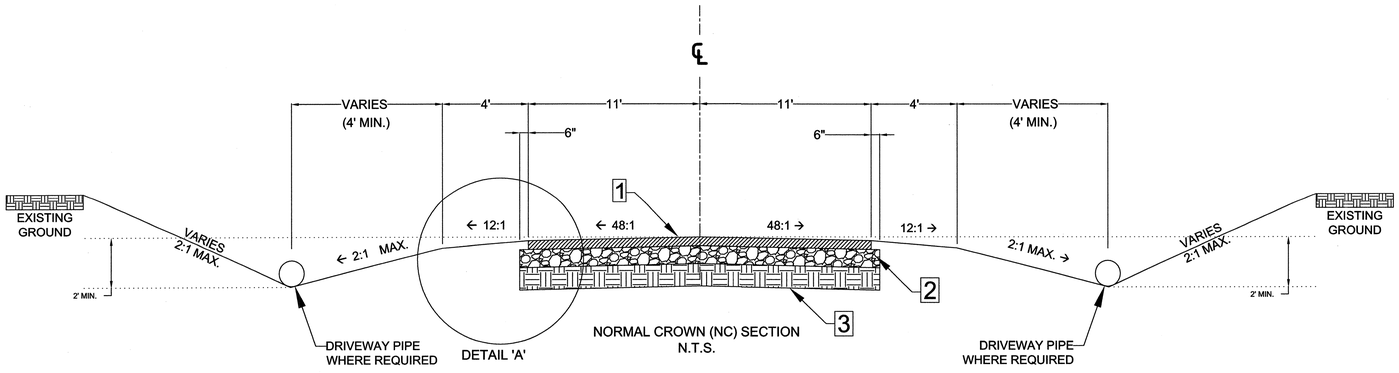


NOTE: CONTRACTOR SHALL USE THE PAVEMENT SECTION ABOVE FOR ALL PAVEMENT WITHIN SCDOT RIGHT-OF-WAY

PAVEMENT SECTION WITHIN SCDOT ROW
N.T.S.

DETAIL 'A'





1. 1.5" ASPHALT SURFACE COURSE TYPE C
2. 4" GRADED AGGREGATE BASE COURSE 100% STANDARD PROCTOR
3. 12" COMPACTED SUBGRADE 100% STANDARD PROCTOR

Engineer	Revision	Date	Description
D.Dennis			
Drawn By			
J.Outlaw			
Checked By			
M.Hines			

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER AND SURVEYOR No. 18310 DANIEL R. DENNIS 8/10/16

DENNIS CORPORATION

Construction Notes & Details

Roadway Improvements to Mountain Laurel Drive
Aiken County, South Carolina

August 2016 | Aiken County | South Carolina

Scale
As Shown

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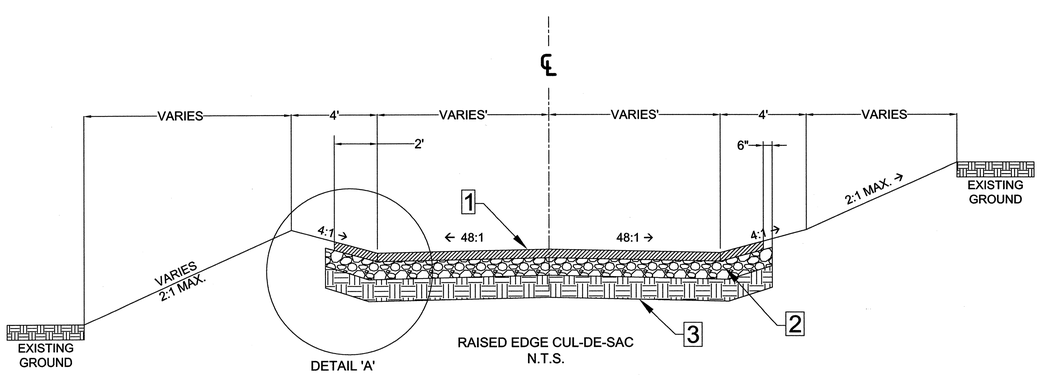
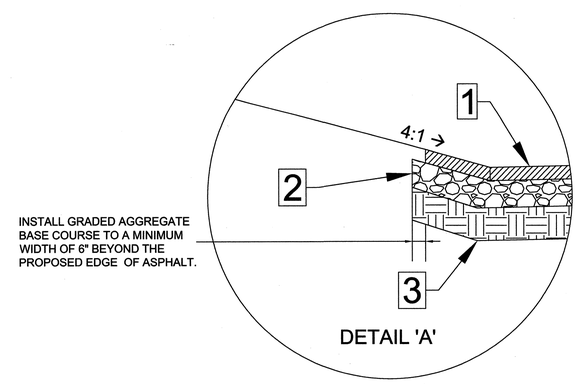
LEGEND

EX. ROAD CENTERLINE
EX. OVERHEAD UTILITY — OHP —
EX. UNDER GROUND UTILITY — UGT —
EX. DRAINAGE PIPE
NEW DRAINAGE PIPE
NEW CENTER LINE ROAD
NEW EDGE OF PAVEMENT
EX. WATER METER — WM
EX. FIRE HYDRANT
EX. MAILBOX — MB
EX. TREE
EX. UTILITY BOX
EX. UTILITY POLE
EX. GUY WIRE
EX. SIGN
IRON PIPE FOUND
CONTROL POINT
SPOT ELEVATION — +438.18
EX. PROPERTY LINE — PL —
A. ROW — A/R —
PR. ROW — A/R —
NEW ROAD HIGH/LOW POINT
EASEMENT — EASEMENT —
FIBER OPTIC LINE — FOL —
LIMIT OF DISTURBANCE — L/D —
EX. TELEPED — T —
SILT FENCE — SF —
SEDIMENT TUBE
10'CONST. EASEMENT — 10' TEMP CONSTRUCTION EASEMENT —
EX. CONTOURS
DRAINAGE FLOW PATH
SCDOT ROW — SCDOT R/W —





1 1.5" ASPHALT SURFACE COURSE TYPE C

2 4" GRADED AGGREGATE BASE COURSE 100% STANDARD PROCTOR

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Construction Notes & Details (2 of 2)

DENNIS CORPORATION

Roadway Improvements to Mountain Laurel Drive Aiken County, South Carolina

August 2016 | Aiken County | South Carolina

Project

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NOTES:
1. PROPOSED PIPE LOCATIONS MAY BE FIELD ADJUSTED AS NECESSARY.
2. WATER METER AT CROFT MILL SUPPLIES WATER TO TMS# 103 17 02 002 ONLY. ALL OTHER HOUSES ARE SUPPLIED WATER BY PRIVATE WELLS. 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 1.5" ASPHALT SURFACE COURSE TYPE C, 4"GABC 100% STANDARD PROCTOR AND 12" COMPACTED SUBGRADE 100% STANDARD PROCTOR.

SILT FENCE – POST REQUIREMENTS

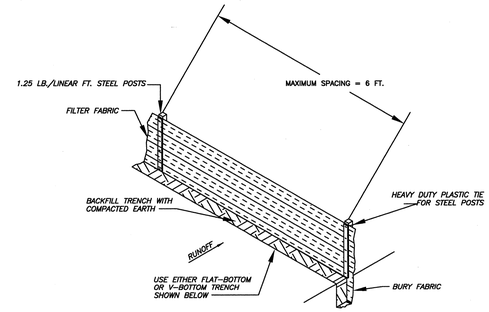
1. *Silt Fence posts must be 48–inch long steel posts that meet, at a minimum, the following physical characteristics.*
   - *Composed of a high strength steel with a minimum yield strength of 50,000 psi.*
   - *Include a standard "T" section with a nominal face width of 1.38–inches and a nominal "T" length of 1.48–inches.*
   - *Weigh 1.25 pounds per foot (± 8%)*
2. *Posts shall be equipped with projections to aid in fastening of filter fabric.*
3. *Steel posts may need to have a metal soil stabilization plate welded near the bottom when installed along steep slopes or installed in loose soils. The plate should have a minimum cross section of 17–square inches and be composed of 15 gauge steel, at a minimum. The metal soil stabilization plate should be completely buried.*
4. *Install posts to a minimum of 24–inches. A minimum height of 1– to 2–inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.*
5. *Post spacing shall be at a maximum of 6–feet on center.*

SILT FENCE – FABRIC REQUIREMENTS

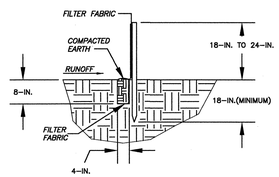
1. *Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:*
   - *Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments 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 any defects or flaws that significantly affect its physical and/or filtering properties; and,*
   - *Have a minimum width of 36–inches.*
2. *Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.*
3. *12–inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.*
4. *Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.*
5. *Filter Fabric shall be installed at a minimum of 24–inches above the ground.*

SILT FENCE – INSPECTION & MAINTENANCE

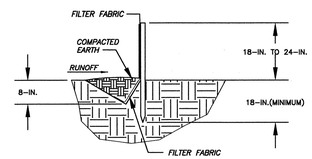
1. *The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.*
2. *Regular inspections of silt fence shall be conducted once every calendar week and, as recommended, within 24–hours after each rainfall even that produces 1/2–inch or more of precipitation.*
3. *Attention to sediment accumulations along the silt fence is extremely important. Accumulated sediment should be continually monitored and removed when necessary.*
4. *Remove accumulated sediment when it reaches 1/3 the height of the silt fence.*
5. *Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.*
6. *Check for areas where stormwater runoff has eroded a channel beneath the silt fence, or where the fence has sagged or collapsed due to runoff overtopping the silt fence. Install checks/tie–backs and/or reinstall silt fence, as necessary.*
7. *Check for tears within the silt fence, areas where silt fence has begun to decompose, and for any other circumstance that may render the silt fence ineffective. Removed damaged silt fence and reinstall new silt fence immediately.*
8. *Silt fence should be removed within 30 days after final stabilization is achieved and once it is removed, the resulting disturbed area shall be permanently stabilized.*



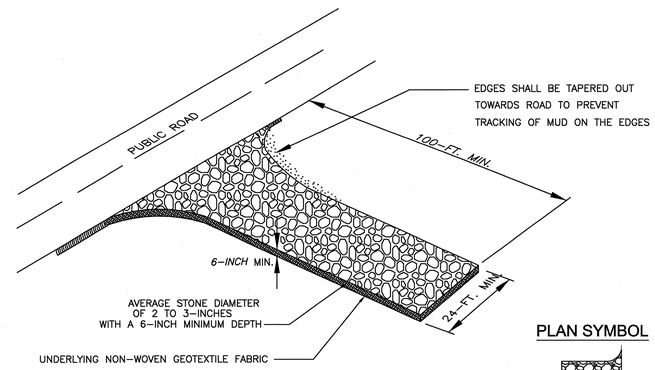
SILT FENCE INSTALLATION



FLAT-BOTTOM TRENCH DETAIL



V-SHAPED TRENCH DETAIL



PLAN SYMBOL

SPECIFICATION	SIZE
ROCK PAD THICKNESS	6 INCHES
ROCK PAD WIDTH	24 FEET
ROCK PAD LENGTH	100 FEET
ROCK PAD STONE SIZE	D = 2–3 INCHES

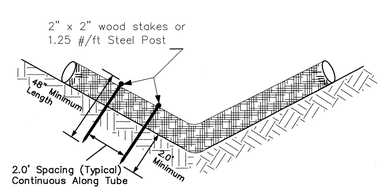
SEDIMENT TUBES – GENERAL NOTES

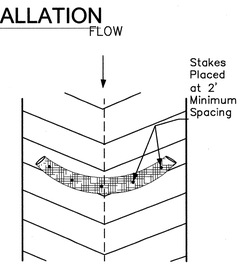
1. *Sediment tubes may be installed along contours, in drainage conveyance channels, and around inlets to help prevent off–site discharge of sediment–laden stormwater runoff.*
2. *Sediment tubes are elongated tubes of compacted geotextiles, curled excelsior wood, natural coconut fiber, or hardwood mulch. Straw, pine needle, and leaf mulch–filled sediment tubes are not permitted.*
3. *The outer netting of the sediment tube should consist of seamless, high–density polyethylene photodegradable materials treated with ultraviolet stabilizers or a seamless, high–density polyethylene non–degradable material.*
4. *Sediment tubes, when used as checks within channels, should range between 18–inches and 24–inches depending on channel dimensions. Diameters outside this range may be allowed where necessary when approved.*
5. *Curled excelsior wood, or natural coconut products that are rolled up to create a sediment tube are not allowed.*
6. *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) at a minimum of 48–inches in length placed on 2–foot centers.*
7. *Install all sediment tubes to ensure that no gaps exist between the soil and the bottom of the tube. Manufacturer's recommendations should always be consulted before installation.*
8. *The ends of adjacent sediment tubes should be overlapped 6–inches to prevent flow and sediment from passing through the field joint.*
9. *Sediment tubes should not be stacked on top of one another, unless recommended by manufacturer.*
10. *Each sediment tube should be installed in a trench with a depth equal to 1/5 the diameter of the sediment tube.*
11. *Sediment tubes should continue up the side slopes a minimum of 1–foot above the design flow depth of the channel.*
12. *Install stakes at a diagonal facing incoming runoff.*

SEDIMENT TUBES – INSPECTION & MAINTENANCE

1. *The key to functional sediment tubes is weekly inspections, routine maintenance, and regular sediment removal.*
2. *Regular inspections of sediment tubes shall be conducted once every calendar week and, as recommended, within 24–hours after each rainfall even that produces 1/2–inch or more of precipitation.*
3. *Attention to sediment accumulations in front of the sediment tube is extremely important. Accumulated sediment should be continually monitored and removed when necessary.*
4. *Remove accumulated sediment when it reaches 1/3 the height of the sediment tube.*
5. *Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.*
6. *Large debris, trash, and leaves should be removed from in front of tubes when found.*
7. *If erosion causes the edges to fall to a height equal to or below the height of the sediment tube, repairs should be made immediately to prevent runoff from bypassing tube.*
8. *Sediment tubes should be removed after the contributing drainage area has been completely stabilized. Permanent vegetation should replace areas from which sediment tubes have been removed.*

SEDIMENT TUBE INSTALLATION

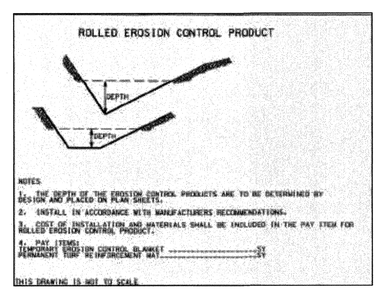




PLAN SYMBOL

SEDIMENT TUBE SPACING

SLOPE	MAX. 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



CONSTRUCTION ENTRANCE – GENERAL NOTES

1. *Stabilized construction entrances should be used at all points where traffic will egress/ingress a construction site onto a public road or any impervious surfaces, such as parking lots.*
2. *Install a non–woven geotextile fabric prior to placing any stone.*
3. *Install a culvert pipe across the entrance when needed to provide positive drainage.*
4. *The entrance shall consist of 2–inch to 3–inch D50 stone placed at a minimum depth of 6–inches.*
5. *Minimum dimensions of the entrance shall be 24–feet wide by 100–feet long, and may be modified as necessary to accommodate site constraints.*
6. *The edges of the entrance shall be tapered out towards the road to prevent tracking at the edge of the entrance.*
7. *Divert all surface runoff and drainage from the stone pad to a sediment trap or basin or other sediment trapping structure.*
8. *Limestone may not be used for the stone pad.*

CONSTR. ENTRANCE – INSPECTION & MAINTENANCE

1. *The key to functional construction entrances is weekly inspections, routine maintenance, and regular sediment removal.*
2. *Regular inspections of construction entrances shall be conducted once every calendar week and, as recommended, within 24–hours after each rainfall even that produces 1/2–inch or more of precipitation.*
3. *During regular inspections, check for mud and sediment buildup and pad integrity. Inspection frequencies may need to be more frequent during long periods of wet weather.*
4. *Reshape the stone pad as necessary for drainage and runoff control.*
5. *Wash or replace stones as needed and as directed by site inspector. The stone in the entrance should be washed or replaced whenever the entrance fails to reduce the amount of mud being carried off–site by vehicles. Frequent washing will extend the useful life of stone pad.*
6. *Immediately remove mud and sediment tracked or washed onto adjacent impervious surfaces by brushing or sweeping. Flushing should only be used when the water can be discharged to a sediment trap or basin.*
7. *During maintenance activities, any broken pavement should be repaired immediately.*
8. *Construction entrances should be removed after the site has reached final stabilization. Permanent vegetation should replace areas from which construction entrances have been removed, unless area will be converted to an impervious surface to serve post–construction.*

Rev.	Date	Description

Engineer: D.Dennis
Drawn By: J.Outlaw
Checked By: M.Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL LAND SURVEYOR No. 18310 8/10/16 DANIEL R. DENNIS

EROSION CONTROL DETAILS (1 OF 2)

DENNIS CORPORATION

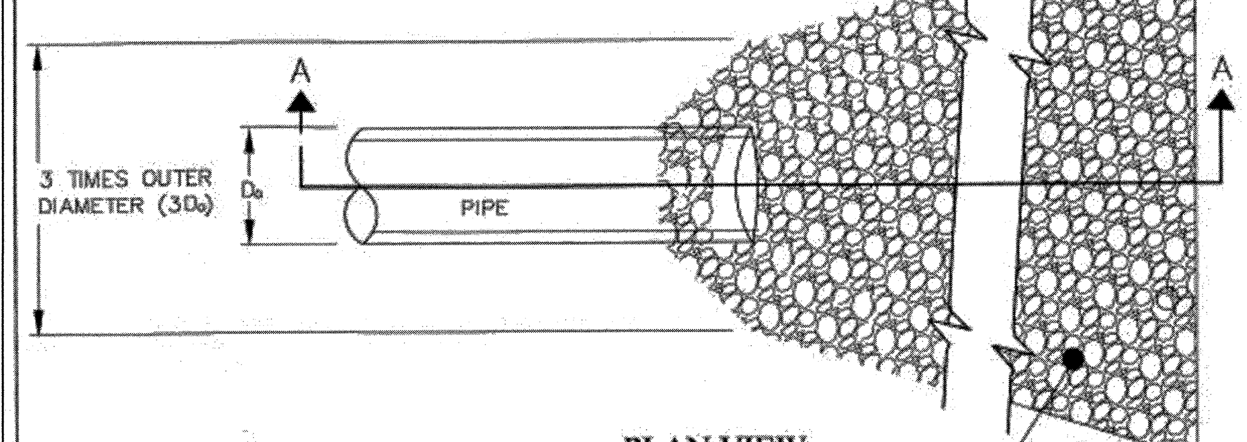
Roadway Improvements to Mountain Laurel Drive
Aiken County, South Carolina

August 2016 | Aiken County | South Carolina

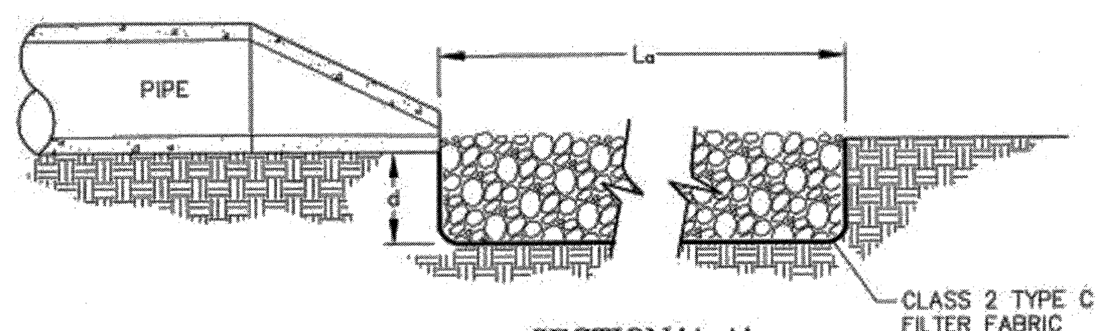
Scale: As Shown

Sheet 4 of 15

NOTES:
1. PROPOSED PIPE LOCATIONS MAY BE FIELD ADJUSTED AS NECESSARY.
2. WATER METER AT CROFT MILL SUPPLIES WATER TO TMS# 103 17 02 002 ONLY. ALL OTHER HOUSES ARE SUPPLIED WATER BY PRIVATE WELLS. 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 1.5" ASPHALT SURFACE COURSE TYPE C, 4"GABC 100% STANDARD PROCTOR AND 12" COMPACTED SUBGRADE 100% STANDARD PROCTOR.



PLAN VIEW



SECTION 'A-A'

NOTES:

1) La = THE LENGTH OF THE RIP RAP APRON. SEE PLANS FOR La.

2) Do = OUTLET PIPE DIAMETER.

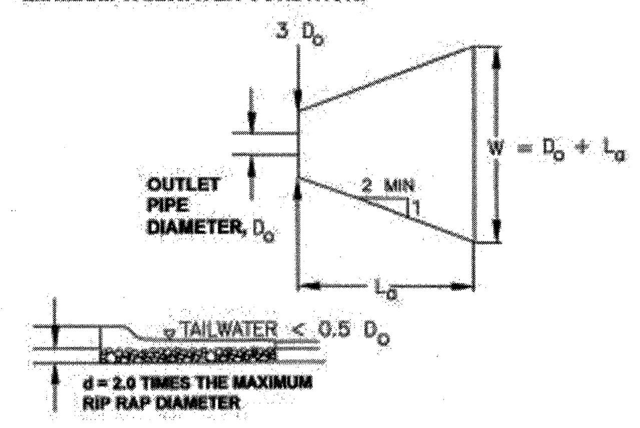
3) D_{50} = MEDIAN STONE SIZE.

4) d = 2.0 TIMES THE MAXIMUM RIP RAP DIAMETER.

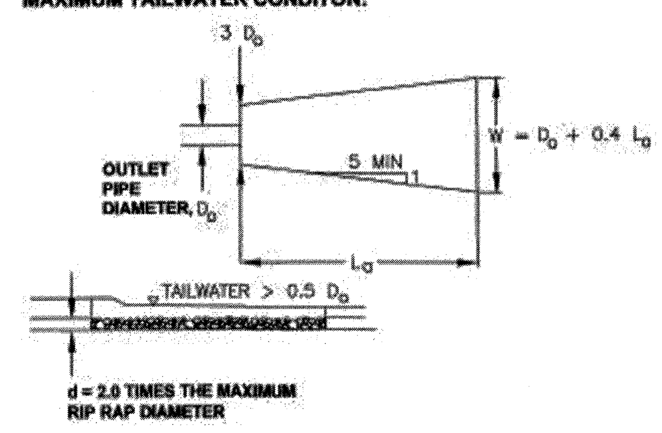
5) INSTALL A FILTER BLANKET OR FILTER FABRIC BETWEEN THE RIP RAP AND SOIL FOUNDATION.

6) SEE DRAWING # 804-305-01 FOR DIMENSIONS.

PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL MINIMUM TAILWATER CONDITION:



PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL MAXIMUM TAILWATER CONDITON:



REFERENCES
NATIONAL DOCUMENTS
SCDOT DOCUMENTS
RELATED DRAWINGS & KEYWORDS

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 21242 JAMES W. KENDALL, JR.
SIGNATURE
2-9-2015
DATE

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

STANDARD DRAWING
OUTLET PROTECTION WITH NO DEFINED CHANNEL
804-305-02
EFFECTIVE LETTING DATE MAY 2015

REFERENCES
NATIONAL DOCUMENTS
SCDOT DOCUMENTS
RELATED DRAWINGS & KEYWORDS

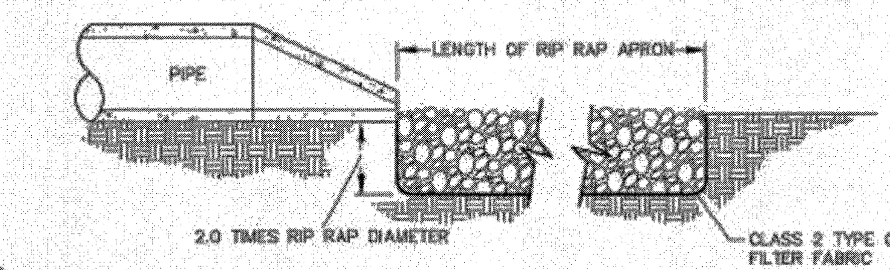
SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 21242 JAMES W. KENDALL, JR.
SIGNATURE
2-9-2015
DATE

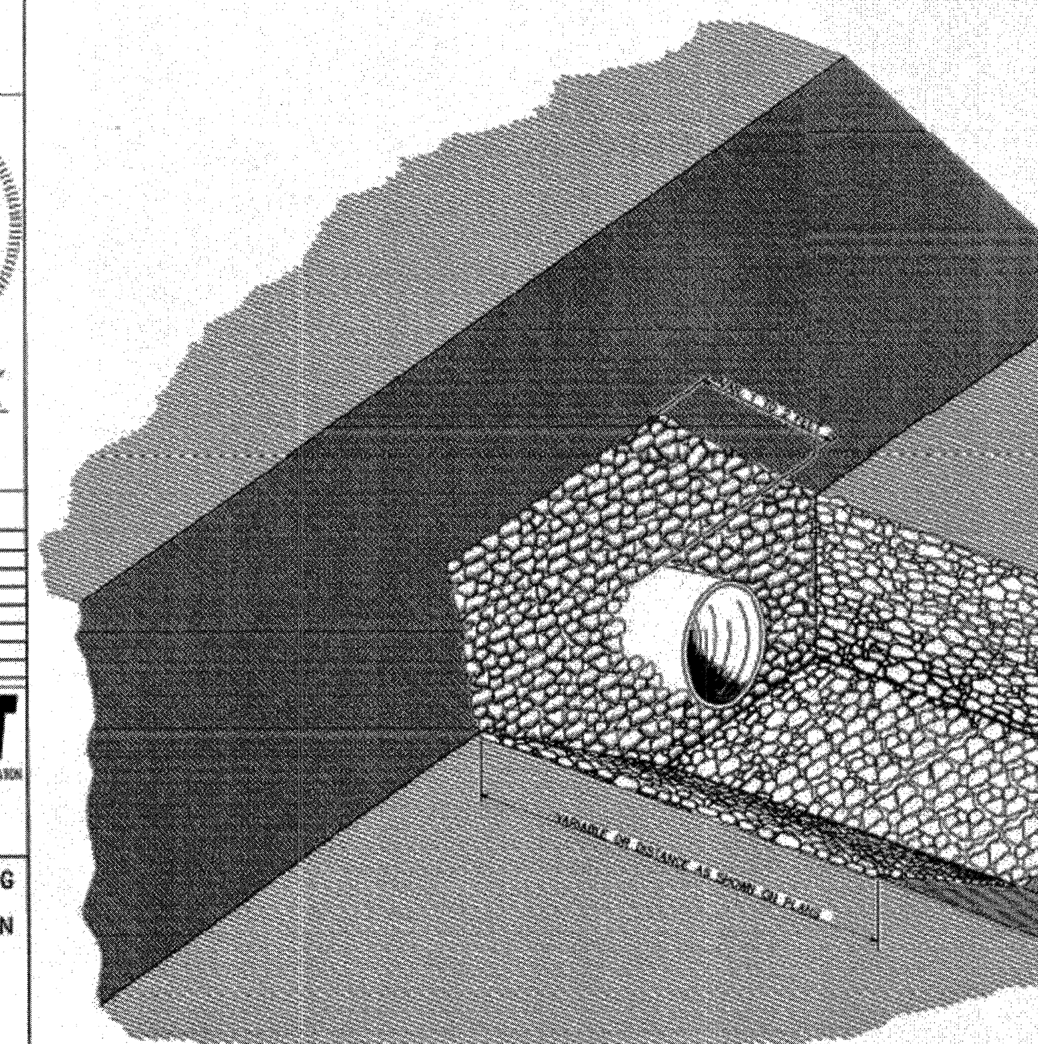
SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING
OUTLET PROTECTION WITH DEFINED CHANNEL
804-310-00
EFFECTIVE LETTING DATE MAY 2015

NOTES:
1. GEOTEXTILE FABRIC TO BE USED UNDER RIPRAP.
2. SEE STANDARD DRAWINGS SECTION 719-600-00 FOR ADDITIONAL PIPE END TREATMENT OPTIONS.

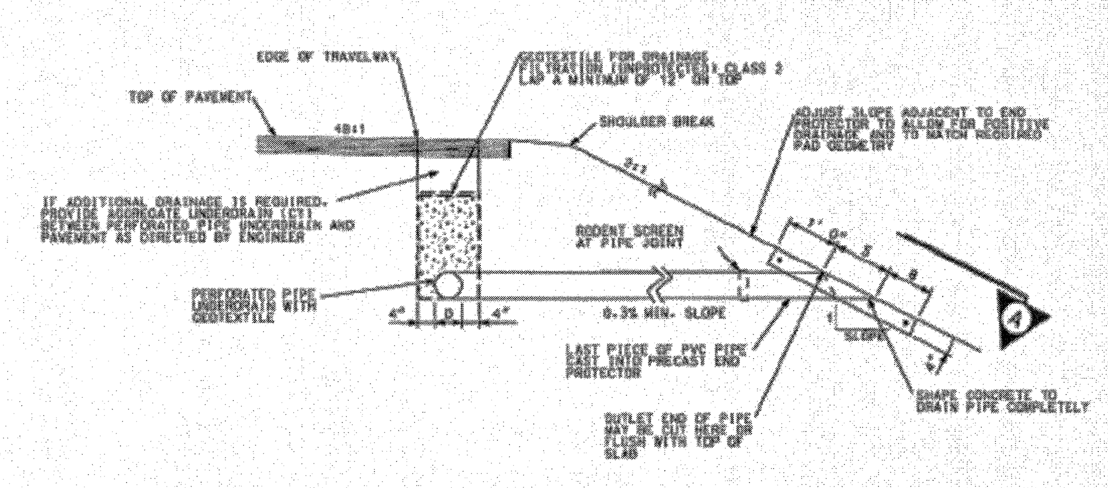
CHART 804-310A RIPRAP PLACEMENT WITH MINIMUM TAILWATER			
MINIMUM CLASS	D_{50}(FT)	MINIMUM THICKNESS (FT)	PIPE DIAMETER
A	0.50	1.00	UP TO 24"
B	0.75	1.50	UP TO 84"
C	1.30	2.60	LARGER THAN 84"





THIS DRAWING IS NOT TO SCALE

REFERENCES
NATIONAL DOCUMENTS
AASHTO M55, AASHTO M221, AASHTO M278, ASTM A706
SCDOT DOCUMENTS
QUALIFIED PRODUCT LIST 14
RELATED DRAWINGS & KEYWORDS



DETAIL (1)

NOTES:

1. PIPE OUTLET SHALL BE CONNECTED INTO DRAINAGE STRUCTURES WHEREVER POSSIBLE. IF NOT CONNECTED TO DRAINAGE STRUCTURE, END OF PIPE SHALL BE PROTECTED BY CONCRETE PAD FOR OUTLET END OF DRAIN.

2. PADS MAY BE CAST IN PLACE OR PRECAST.

3. GEOTEXTILE SPECIFICATIONS SHALL MEET GEOTEXTILE FOR DRAINAGE FILTRATION (UNPROTECTED) CLASS 2.

4. FOR BUILT IN PLACE CONSTRUCTION OF THE PIPE UNDERDRAIN END PROTECTOR CIP CLASS 3000 CONCRETE MAY BE USED. FOR PRECAST CONSTRUCTION, A MINIMUM OF CLASS 4000P CONCRETE SHALL BE USED.

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 M221. PVC PIPE UNDERDRAIN SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO M278.

6. A RODENT SCREEN IS TO BE PLACED AT THE END OF EACH PIPE OUTLET. THE RODENT SCREEN DESIGN SHALL BE APPROVED BY THE ENGINEER AND PAID FOR IN THE PAY ITEM OF UNDERDRAIN END PROTECTORS.

PRECAST NOTES:

7. THE USE OF PRECAST UNITS WILL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OBTAINING SATISFACTORY INSTALLATIONS.

8. THE CONTRACTOR SHALL USE MANUFACTURERS LISTED ON QUALIFIED PRODUCT LIST 14 FOR PRECAST ITEMS ON THIS DRAWING. PRECAST MANUFACTURER SHALL MEET THE REQUIREMENTS LIST ON QUALIFIED PRODUCT POLICY 14.

9. 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.

10. PRECAST ITEMS MODIFIED FROM THIS STANDARD SHALL NOT BE LISTED ON QUALIFIED PRODUCT LIST 14. HOWEVER, CONTRACTOR SHALL SUBMIT DESIGN DRAWINGS AND CALCULATIONS TO THE PROJECT DESIGN ENGINEER FOR REVIEW.

11. COST FOR GEOTEXTILE FOR DRAINAGE FILTRATION TO BE INCLUDED IN PRICE PAY FOR PIPE UNDERDRAIN.

12. ADJUST SLOPE ADJACENT TO END PROTECTOR TO ALLOW FOR POSITIVE DRAINAGE AND MATCH REQUIRED PAD GEOMETRY. GRADE ADJUSTMENT TO BE INCLUDED IN COST OF PIPE UNDERDRAIN.

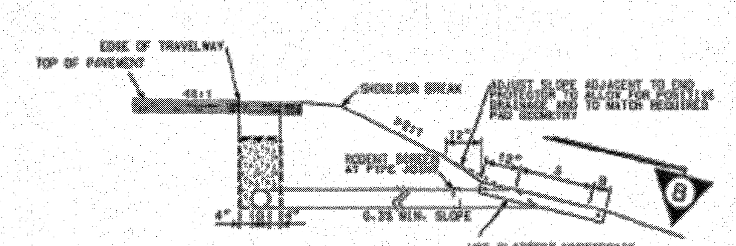
13. THE CONTRACT UNIT PRICE FOR PERFORATED PIPE UNDERDRAIN WITH GEOTEXTILE, UNDERDRAIN END PROTECTOR, AND PIPE UNDERDRAIN SHALL INCLUDE THE COST OF FURNISHING ALL MATERIALS, (BUILT IN PLACE OR PRECAST), AND WORK INCIDENTAL TO THE CONSTRUCTION OF THE STRUCTURE COMPLETE IN PLACE AS SHOWN, IN ACCORDANCE WITH THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST EDITION).

PRECONSTRUCTION SUPPORT ENGINEER
SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 8858 EDWIN SYLVESTER EARGLE, II
SIGNATURE
MARCH 2, 2009
DATE

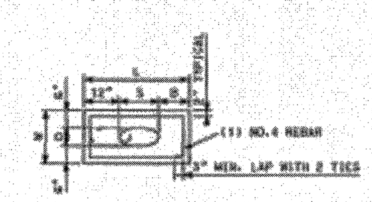
#	DATE	CHK	DESCRIPTION
2	3/2009		GENERAL REVISIONS
1	3/2008		GENERAL REVISIONS

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

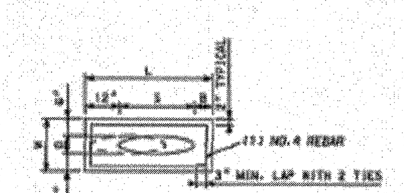
STANDARD DRAWING
PERFORATED PIPE UNDERDRAIN WITH GEOTEXTILE (TYPICAL DETAILS & END PROTECTORS)
802-105-00
EFFECTIVE LETTING DATE MAY, 2009



DETAIL (2)
SCALE 1/2"=1'
SLOPE ADJUSTMENTS AROUND UNDERDRAIN END PROTECTOR



SECTION (A)
SCALE 1/2"=1'
PLAN
END VIEW OF STRUCTURE



SECTION (B)
SCALE 1/2"=1'
END VIEW OF STRUCTURE

TABLE 802-105A

		D	S	W	L	B
6" PVC UNDERDRAIN ON	2:1 SLOPE	6"	13½"	18"	36"	10½"
	4:1 SLOPE	6"	25¾"	18"	43¾"	6"
	6:1 SLOPE	6"	36½"	18"	54½"	6"
4" PVC UNDERDRAIN ON	2:1 SLOPE	4"	9"	16"	36"	15"
	4:1 SLOPE	4"	16½"	16"	36"	7½"
	6:1 SLOPE	4"	24½"	16"	40½"	6"

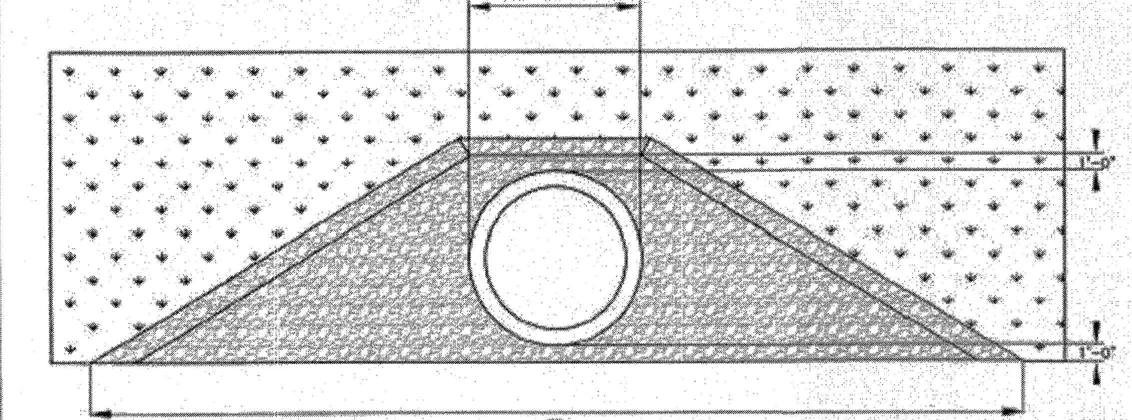
TABLE 802-105B PRECAST ITEMS
UNDERDRAIN END PROTECTOR FOR 6" PVC ON 2:1 SLOPE (36"X18"X4")
UNDERDRAIN END PROTECTOR FOR 6" PVC ON 4:1 SLOPE (43¾"X18"X4")
UNDERDRAIN END PROTECTOR FOR 6" PVC ON 6:1 SLOPE (54½"X18"X4")
UNDERDRAIN END PROTECTOR FOR 4" PVC ON 2:1 SLOPE (36"X16"X4")
UNDERDRAIN END PROTECTOR FOR 4" PVC ON 4:1 SLOPE (36"X16"X4")
UNDERDRAIN END PROTECTOR FOR 4" PVC ON 6:1 SLOPE (40½"X16"X4")

REFERENCES
NATIONAL DOCUMENTS
SCDOT DOCUMENTS
RELATED DRAWINGS & KEYWORDS

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 21242 JAMES W. KENDALL, JR.
SIGNATURE
2-9-2015
DATE

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

STANDARD DRAWING
OUTLET PROTECTION WITH NO DEFINED CHANNEL
804-305-01
EFFECTIVE LETTING DATE MAY 2015



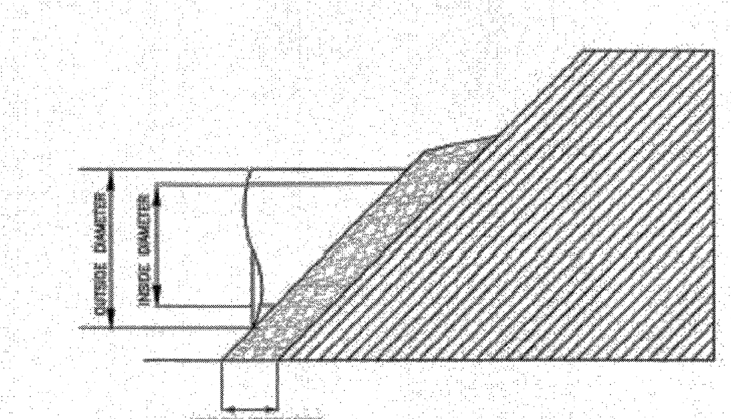
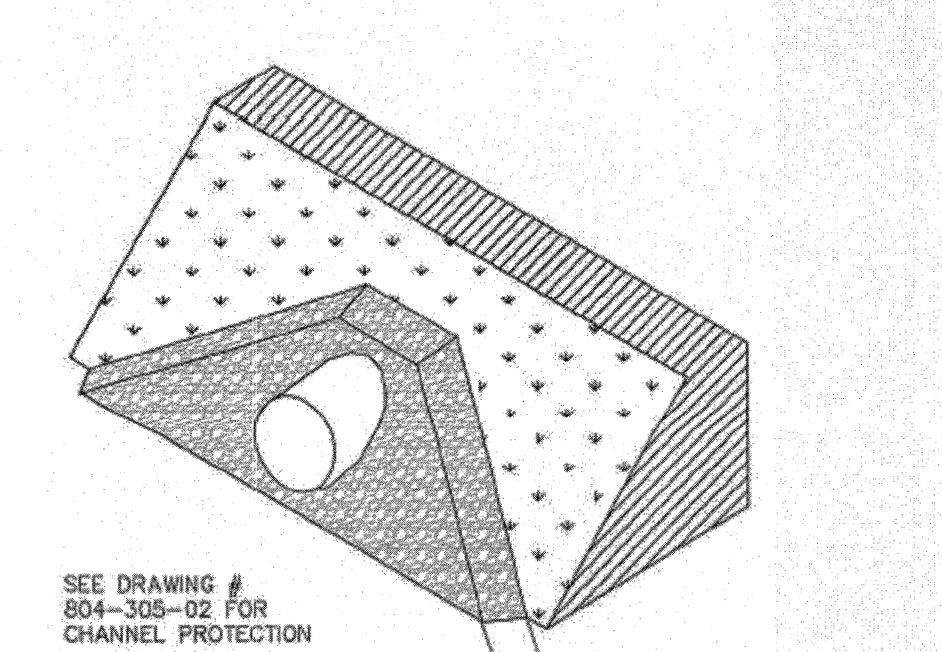


CHART 804-305A RIPRAP PLACEMENT WITH MINIMUM TAILWATER			
MINIMUM CLASS	D_{50}(FT)	MINIMUM THICKNESS (FT)	OUTSIDE PIPE DIAMETER
A	0.50	1.00	UP TO 24"
B	0.75	1.50	UP TO 84"
C	1.30	2.60	LARGER THAN 84"



SEE DRAWING # 804-305-02 FOR CHANNEL PROTECTION

NOTES:

1) DESIGN OUTLET PROTECTION IN ACCORDANCE WITH THE SCDOT WATER QUALITY MANUAL.

2) OUTLET PROTECTION WILL HAVE A WIDTH THREE TIMES THE OUTSIDE DIAMETER OF THE OUTLET PIPE AT TOE OF SLOPE.

3) ADVANCE OUTLET PROTECTION UP THE SLOPE A MINIMUM OF 1 FOOT ABOVE THE PIPE INVERT.

Rev.	Date	Description

Engineer: D.Dennis
Drawn By: J.Outlaw
Checked By: M.Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED LAND SURVEYOR NO. 18310 DANIEL R. DENNIS 8/10/16

EROSION CONTROL DETAILS (2 OF 2)

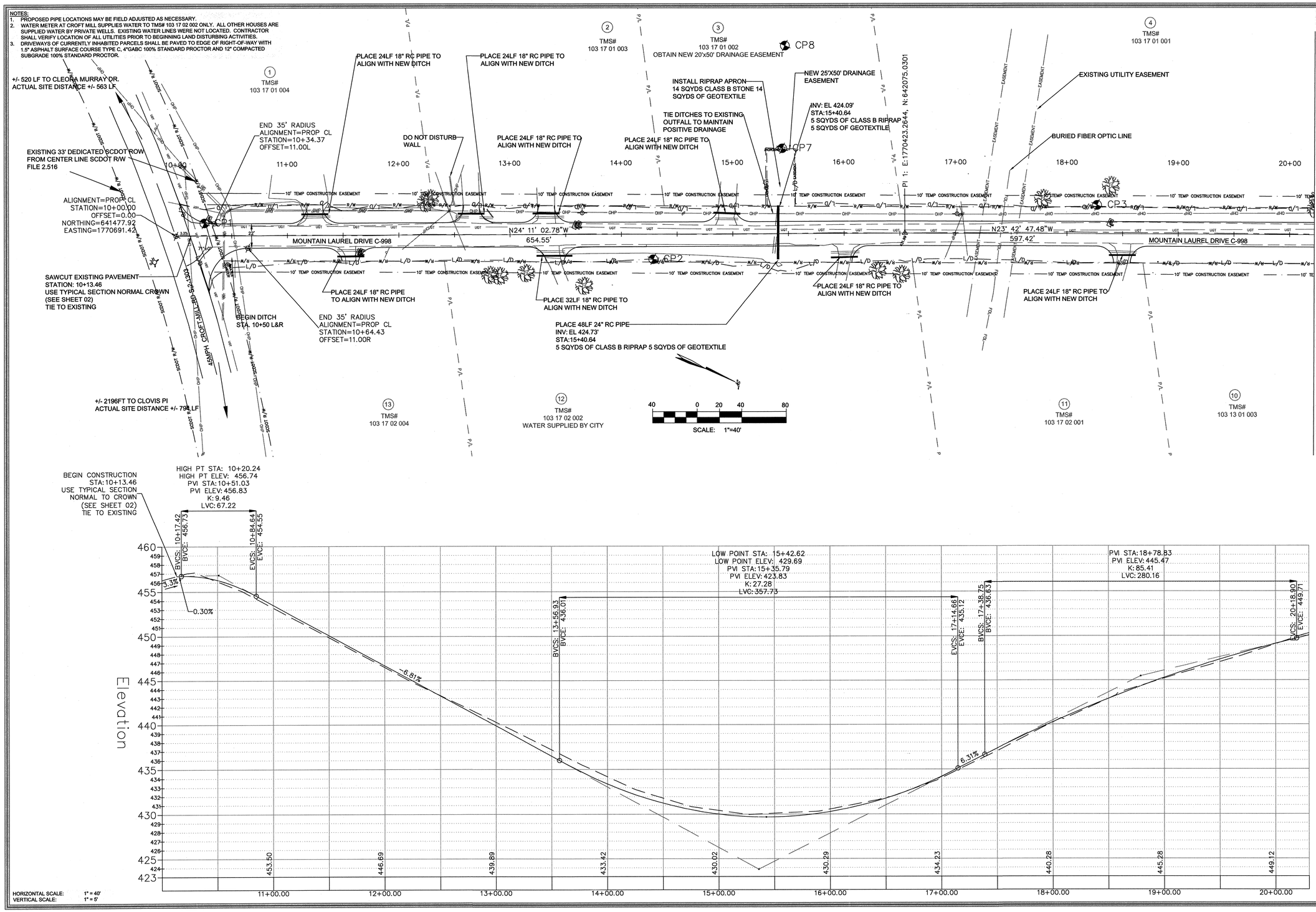
DENNIS CORPORATION

Roadway Improvements to Mountain Laurel Drive
Aiken County, South Carolina
August 2016 | Aiken County | South Carolina

Scale
As Shown

Sheet
5 of 15

NOTES:
1. PROPOSED PIPE LOCATIONS MAY BE FIELD ADJUSTED AS NECESSARY.
2. WATER METER AT CROFT MILL SUPPLIES WATER TO TMS# 103 17 02 002 ONLY. ALL OTHER HOUSES ARE SUPPLIED WATER BY PRIVATE WELLS. 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 1.5" ASPHALT SURFACE COURSE TYPE C, 4"GABC 100% STANDARD PROCTOR AND 12" COMPACTED SUBGRADE 100% STANDARD PROCTOR.



Rev.	Date	Description

Engineer: D.Dennis
Drawn By: J.Outaw
Checked By: M.Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA No. 18310 PROFESSIONAL LAND SURVEYOR DANIEL R. DENNIS

DENNIS CORPORATION

Plan and Profile
(1 of 2)

Roadway Improvements to
Mountain Laurel Drive
Aiken County, South Carolina

August 2016 | Aiken County | South Carolina

Scale
1" = 40'

Sheet
6 of 15

NOTES:
1. PROPOSED PIPE LOCATIONS MAY BE FIELD ADJUSTED AS NECESSARY.
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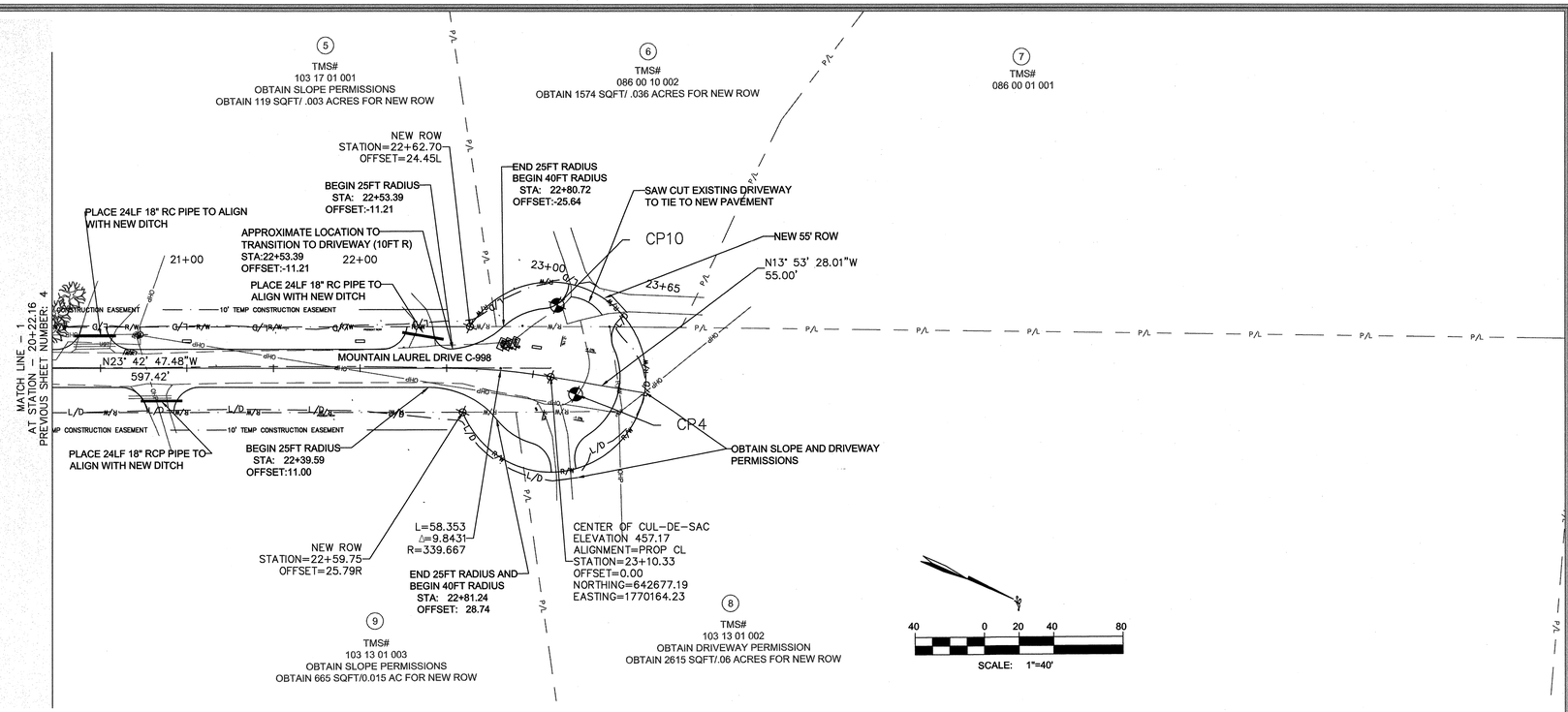

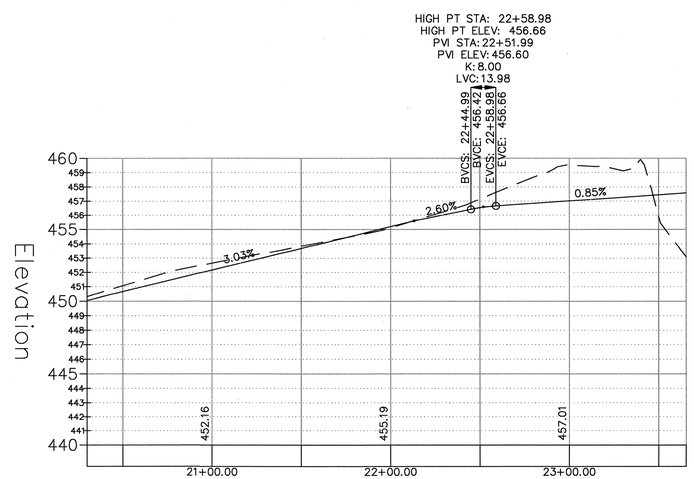

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 5'

Rev.	Date	Description

Engineer	Drawn By	Checked By
D-Dennis	J.Outlaw	M.Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER AND SURVEYOR No. 18310 9/9/16 DANIEL R. DENNIS III

Plan and Profile
(2 of 2)

DENNIS CORPORATION

Roadway Improvements to
Mountain Laurel Drive
Aiken County, South Carolina

August 2016 | Aiken County | South Carolina

Scale
1" = 40'

Sheet
7 of 15

NOTES:
1. PROPOSED PIPE LOCATIONS MAY BE FIELD ADJUSTED AS NECESSARY.
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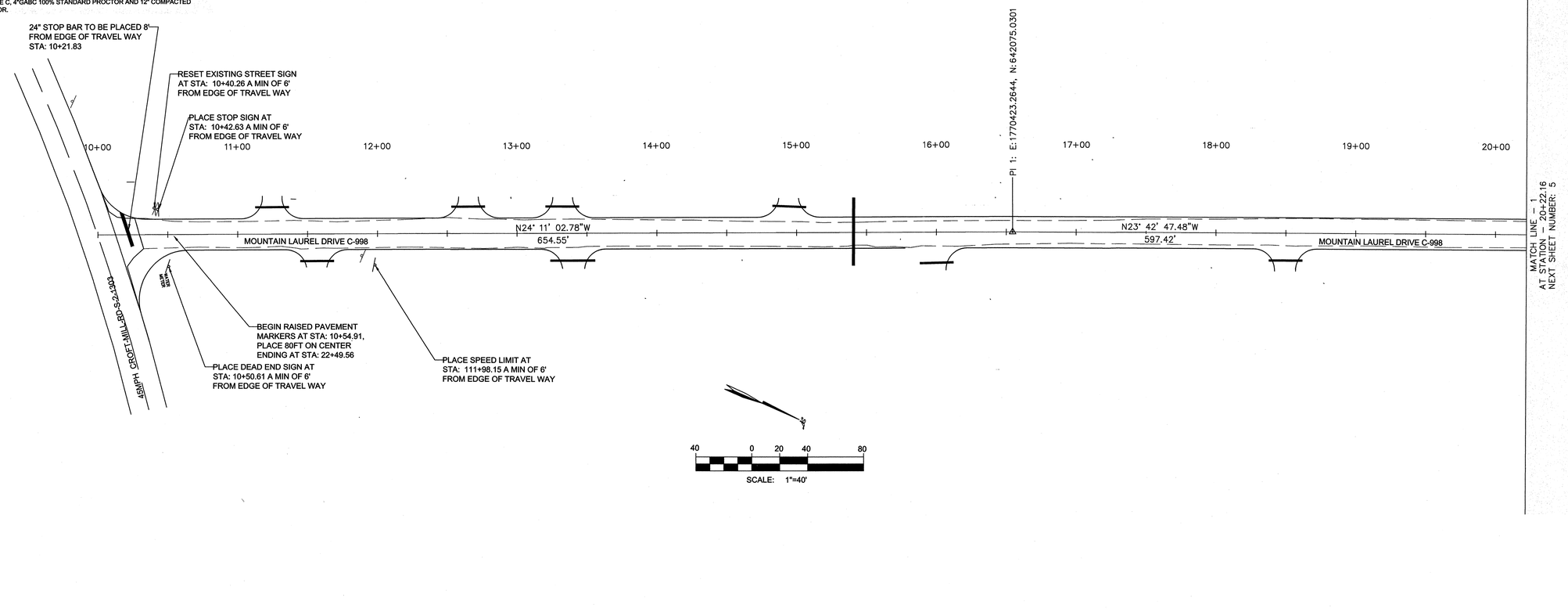
3. DRIVEWAYS OF CURRENTLY INHABITED PARCELS SHALL BE PAVED TO EDGE OF RIGHT-OF-WAY WITH 1.5" ASPHALT SURFACE COURSE TYPE C, 4"GABC 100% STANDARD PROCTOR AND 12" COMPACTED SUBGRADE 100% STANDARD PROCTOR.



SIGNAGE TO BE INSTALLED PER SCDOT STANDARD DRAWINGS AND THE CURRENT EDITION OF MUTCD	
Type of sign	**Model Number**
STOP	R1-1-30
SPEED LIMIT	R2-1-24-25
DEAD END	W-14-1-30
STOP BAR	24" WHITE SOLID LINES (STOP LINES) - THERMOPLASTIC -125 MIL
RAISED PAVEMENT MARKERS	PERMANENT YELLOW PAVEMENT MARKERS BI-DIR. -4"X4"
CONSTRUCTION SIGNING ON CROFT MILL ROAD (S-1303)	STD 605-010-02--SCHEME-E

Rev.	Date	Description

Engineer	D.Dennis
Drawn By	J.Outlaw
Checked By	M.Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR No. 18310 DANIEL R. DENNIS 9/19/16

STRIPING PLAN

DENNIS CORPORATION

Roadway Improvements to Mountain Laurel Drive Aiken County, South Carolina

August 2016 | Aiken County | South Carolina

Scale 1" = 40'

Sheet 8 of 15

NOTES:
1. PROPOSED PIPE LOCATIONS MAY BE FIELD ADJUSTED AS NECESSARY.
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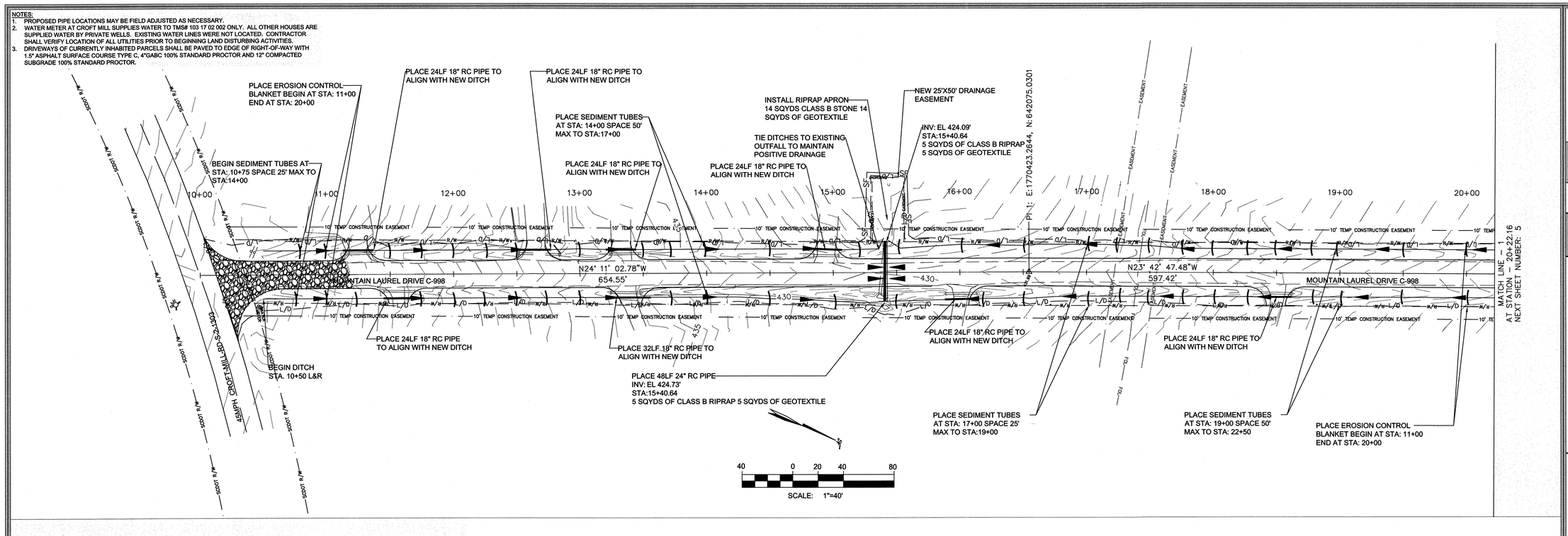
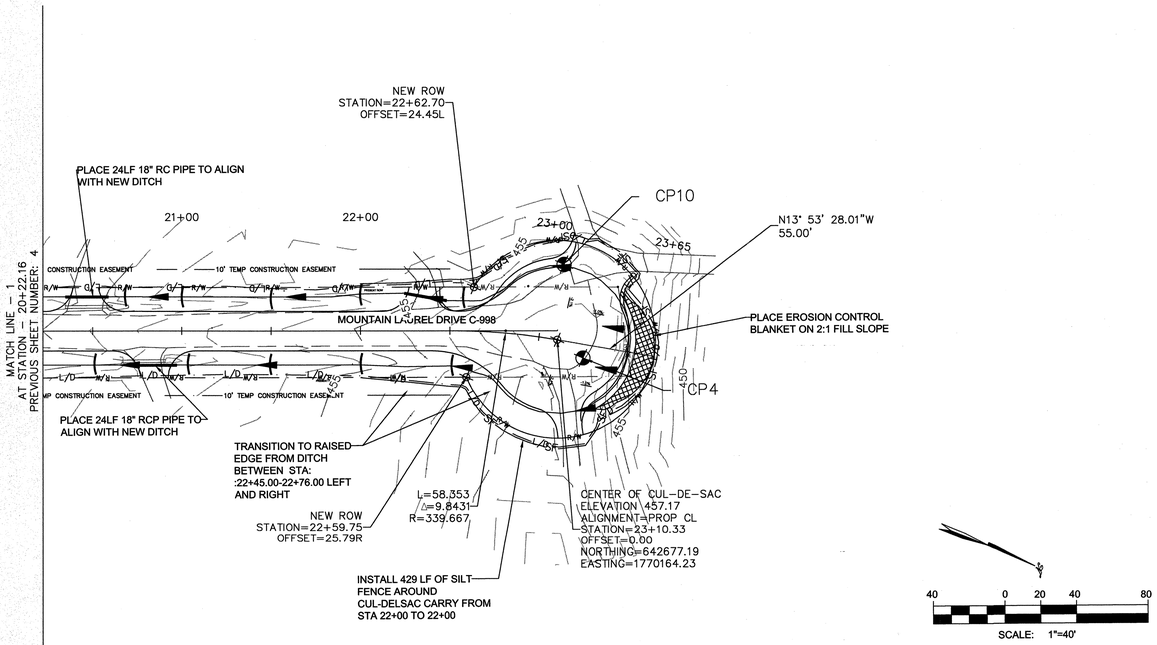




Rev.	Date	Description

Engineer	D.Dennis
Drawn By	J.Outlaw
Checked By	M.Hines

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL LAND SURVEYOR No. 18310 DANIEL R. DENNIS 8/26/16

EROSION CONTROL PLAN

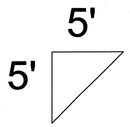
DENNIS CORPORATION

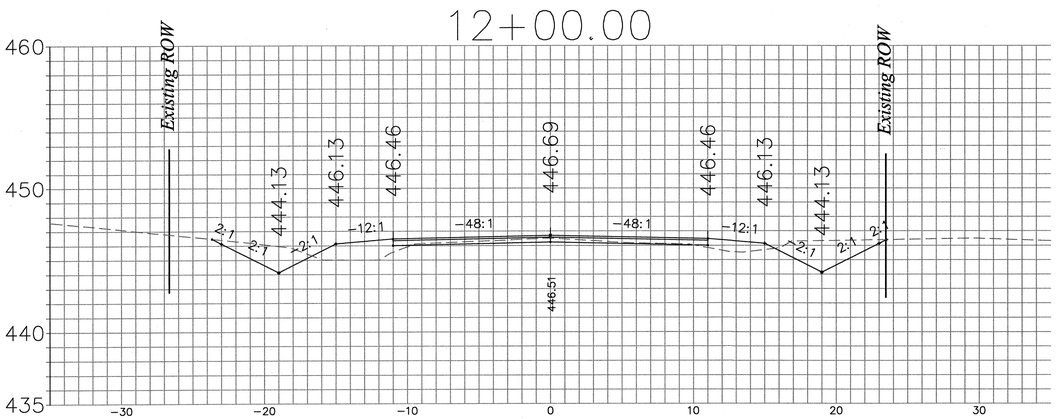
Roadway Improvements to Mountain Laurel Drive Aiken County, South Carolina

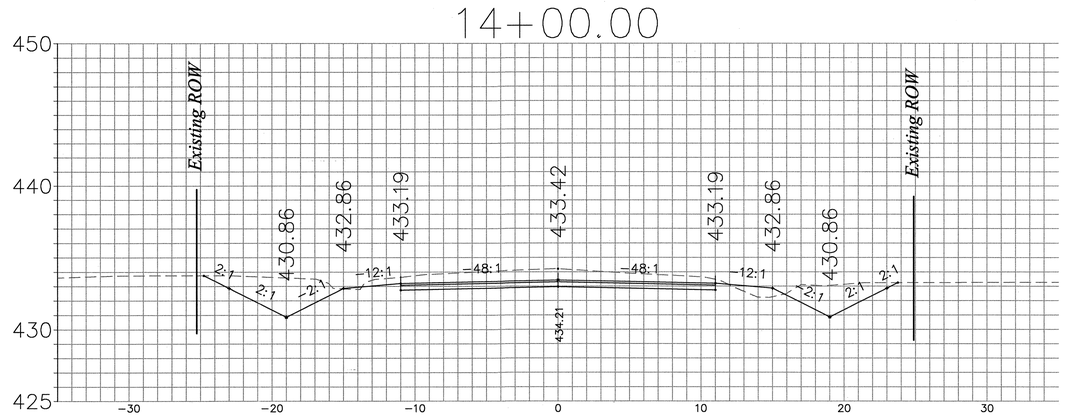
August 2016 | Aiken County | South Carolina

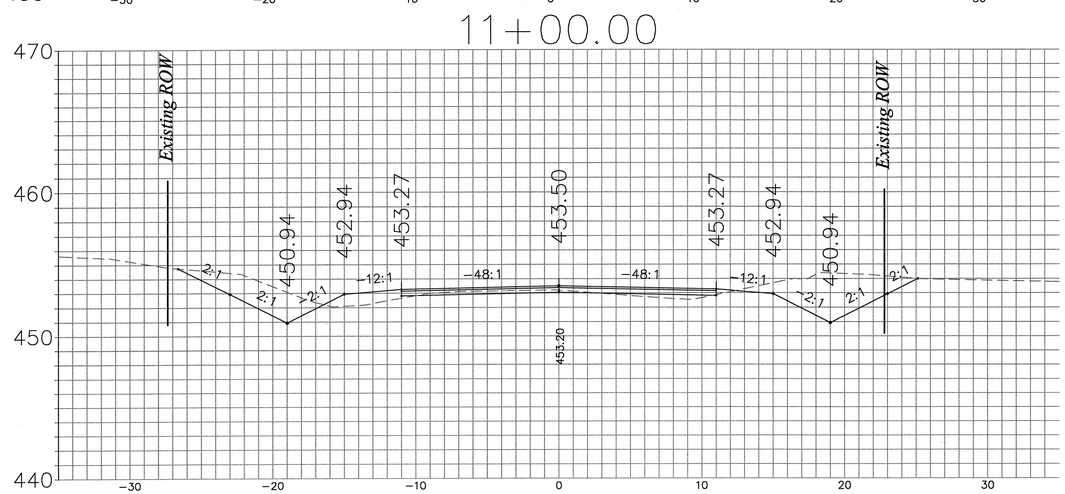
Scale 1" = 40'

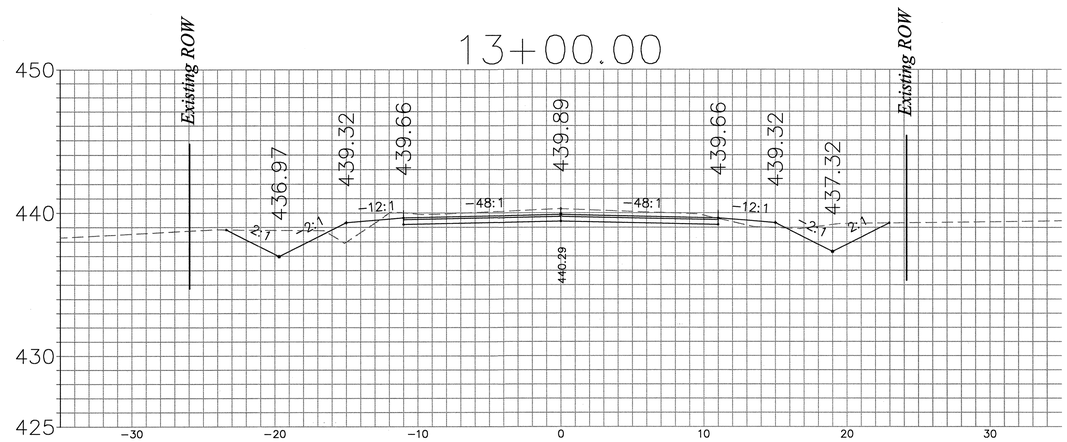
Sheet 9 of 15











Engineer	Revision	Date	Description
D.Dennis			
Drawn By			
J.Outlaw			
Checked By			
M.Hines			

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER AND SURVEYOR No. 18310 DANIEL R. DENNIS

Cross Section (1 of 6)

DENNIS CORPORATION

Roadway Improvements to Mountain Laurel Drive Aiken County, South Carolina

August 2016 | Aiken County | South Carolina

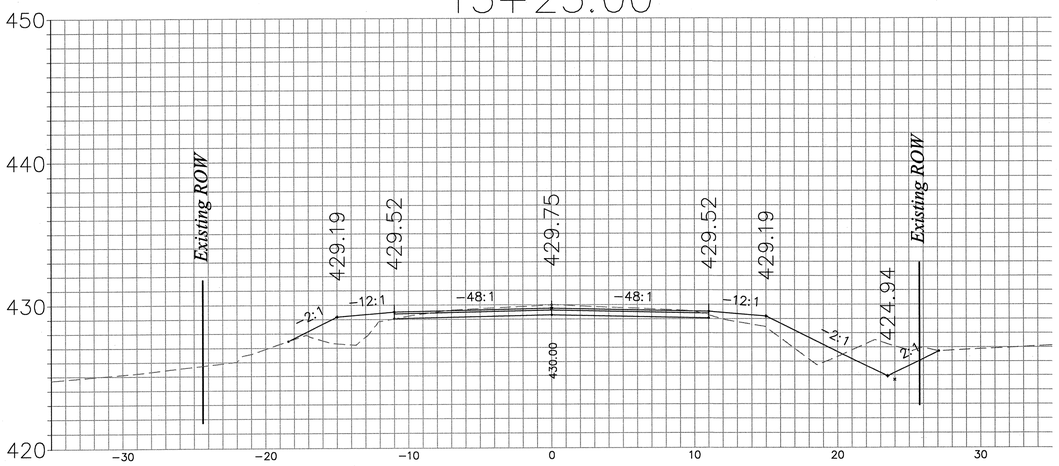
Project

Scale
As Shown

Sheet
10 of 15

5'
5'

15+25.00



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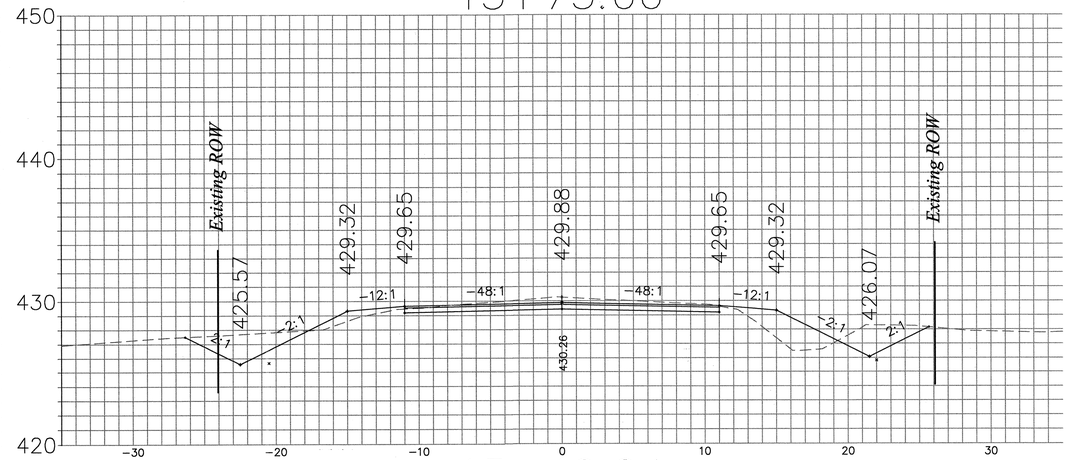

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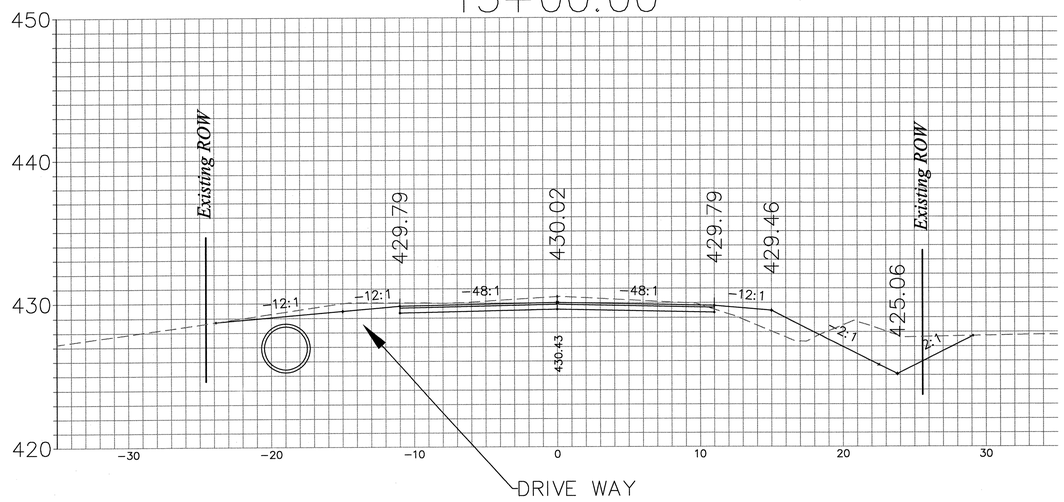

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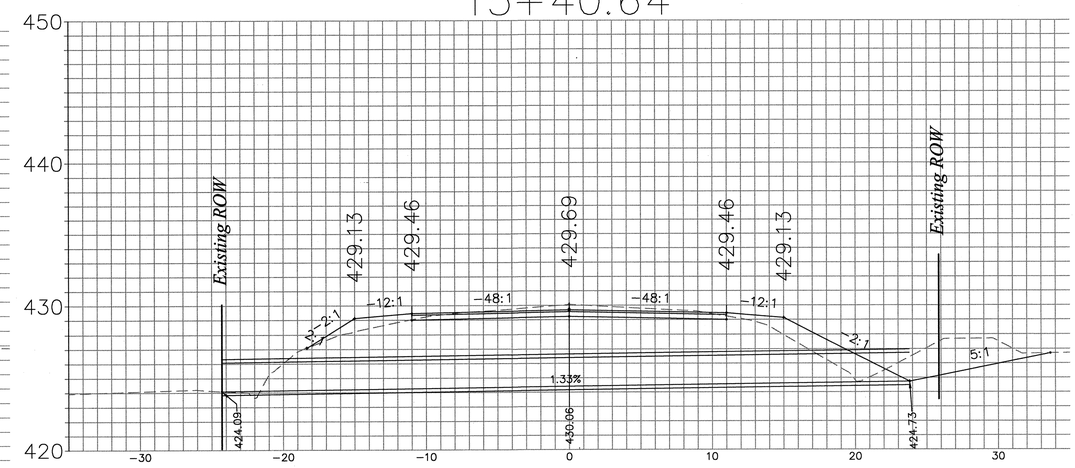

Engineer	Revision	Date	Description
D.Dennis			
Drawn By			
J.Outlaw			
Checked By			
M.Hines			

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER AND SURVEYOR No. 18310 DANIEL R. DENNIS III 8/26/16

Cross Section (2 of 5)

DENNIS CORPORATION

Roadway Improvements to Mountain Laurel Drive Aiken County, South Carolina

August 2016 | Aiken County | South Carolina

Project

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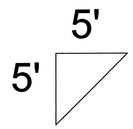

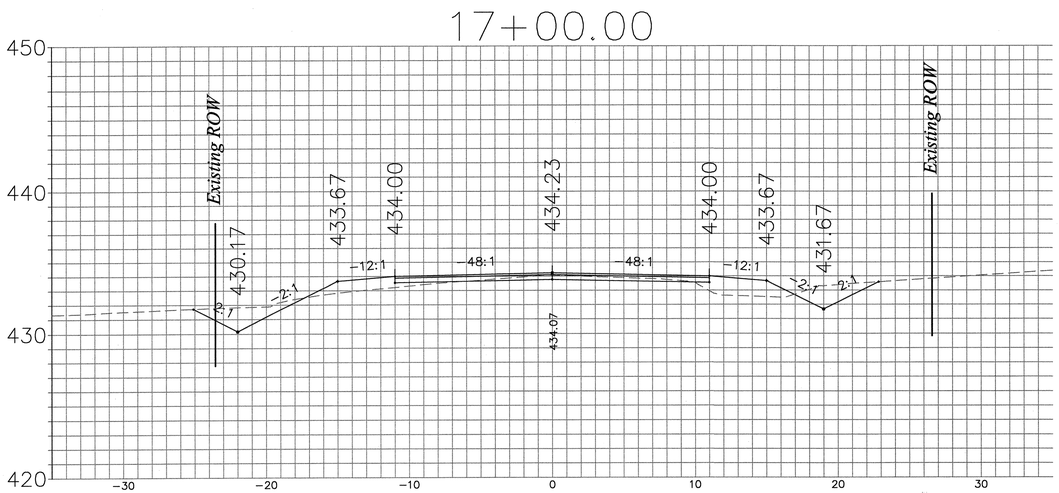

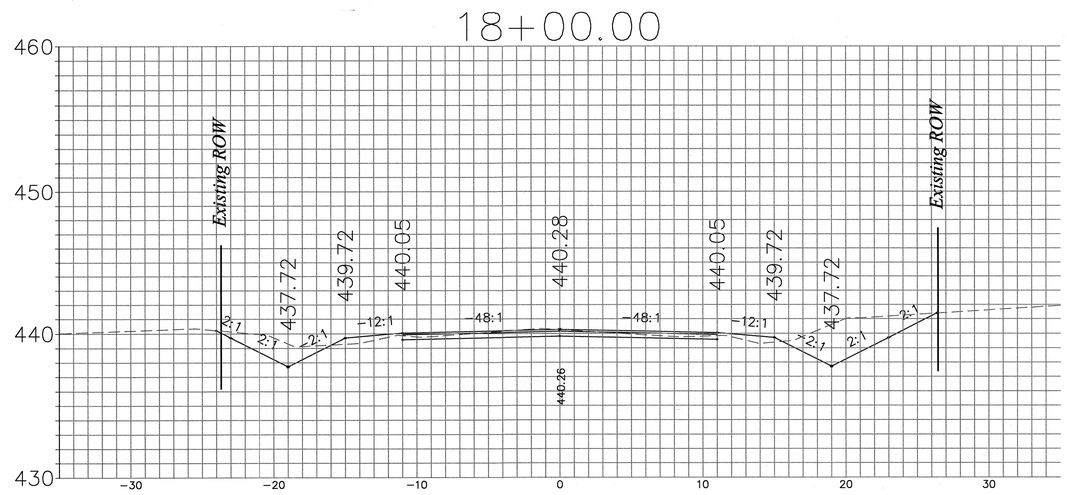

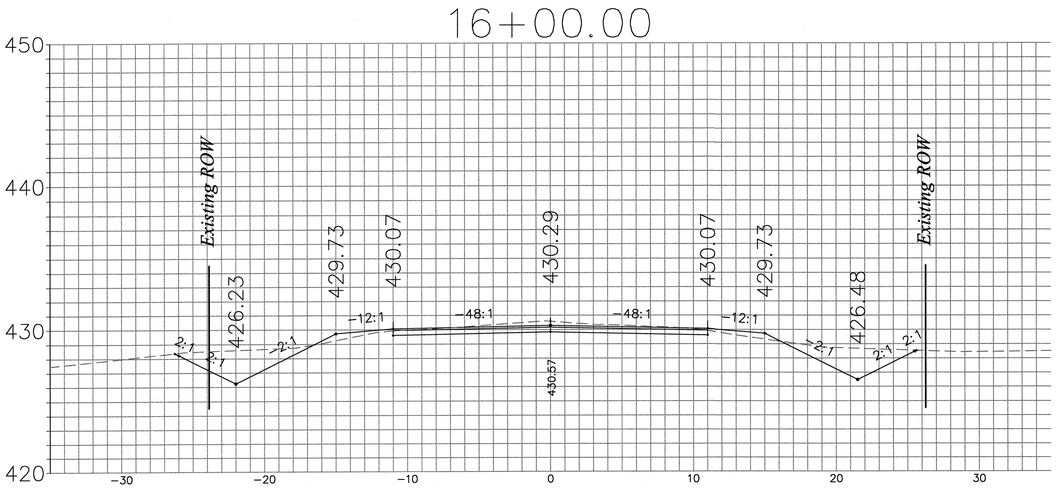

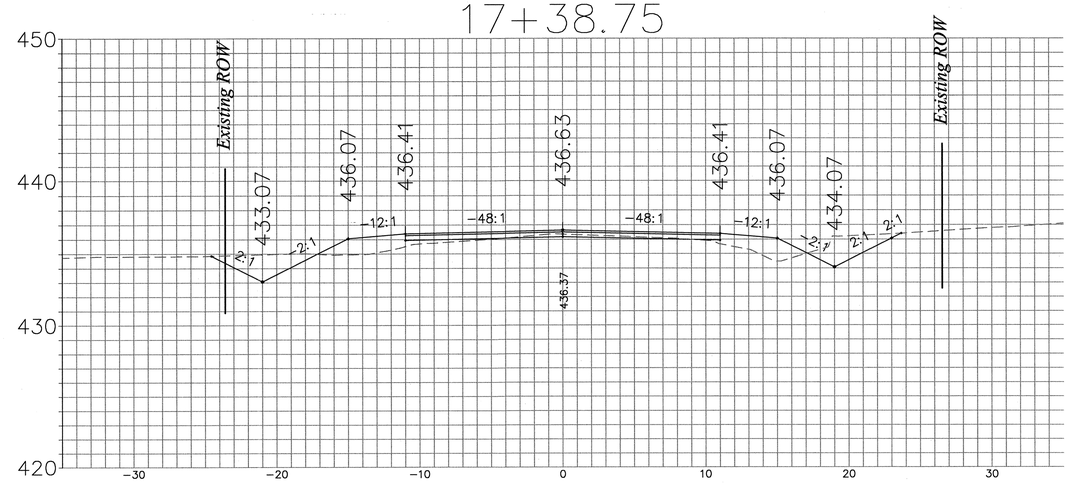

Engineer	Revision	Date	Description
D.Dennis			
Drawn By			
J.Outlaw			
Checked By			
M.Hines			

SOUTH CAROLINA DENNIS CORPORATION CERTIFICATE OF AUTHORIZATION NO. 3103

SOUTH CAROLINA REGISTERED LAND SURVEYOR No. 18310 DANIEL R. DENNIS

DENNIS CORPORATION

Cross Section (3 of 6)

Roadway Improvements to Mountain Laurel Drive Aiken County, South Carolina

August 2016 | Aiken County | South Carolina

Project

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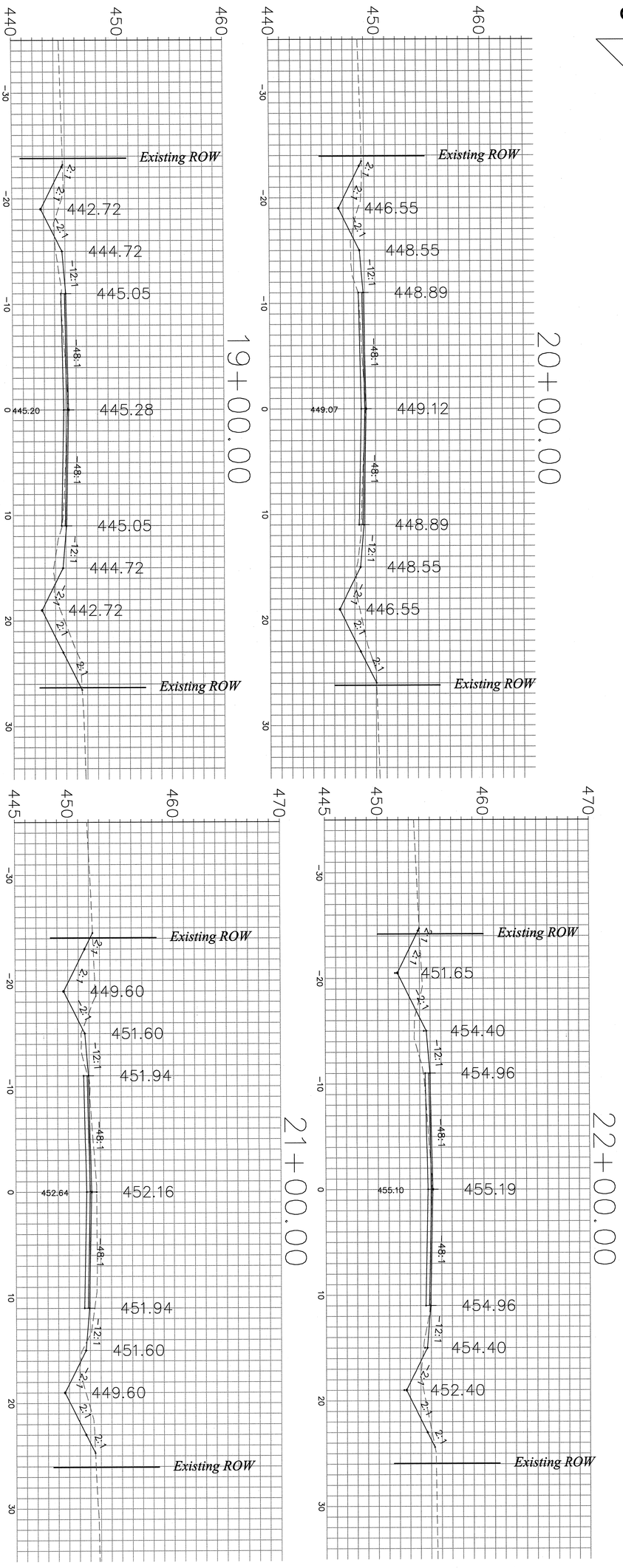

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	August 2016 / Aiken County / South Carolina	DENNIS CORPORATION

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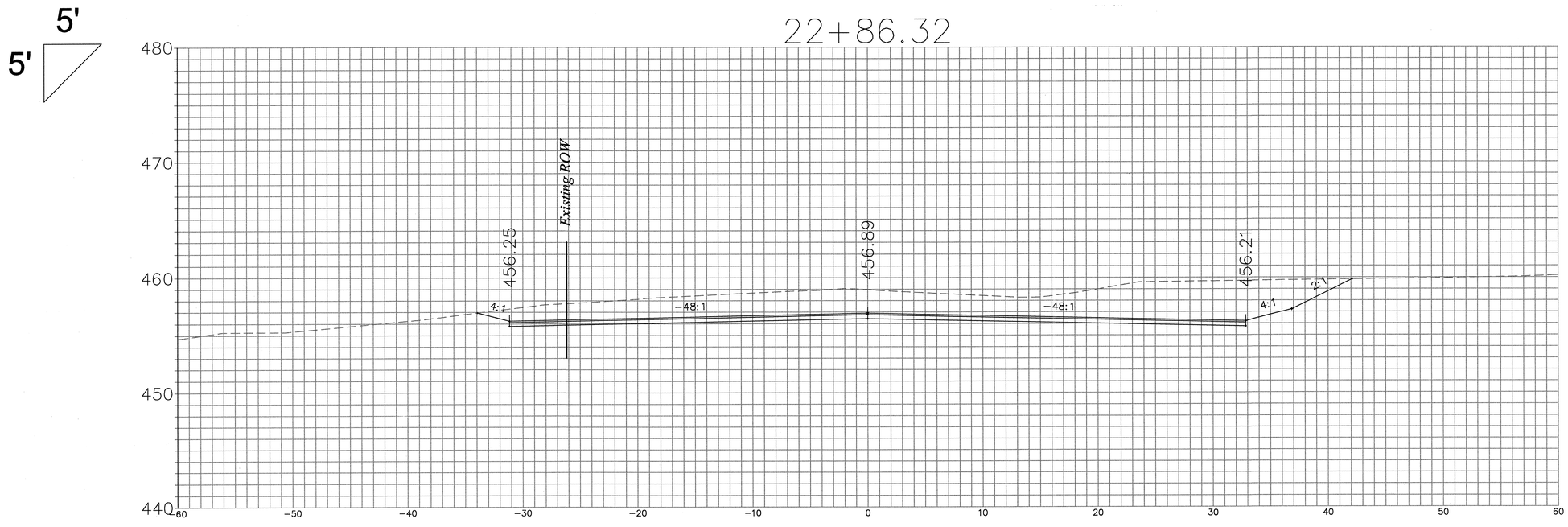
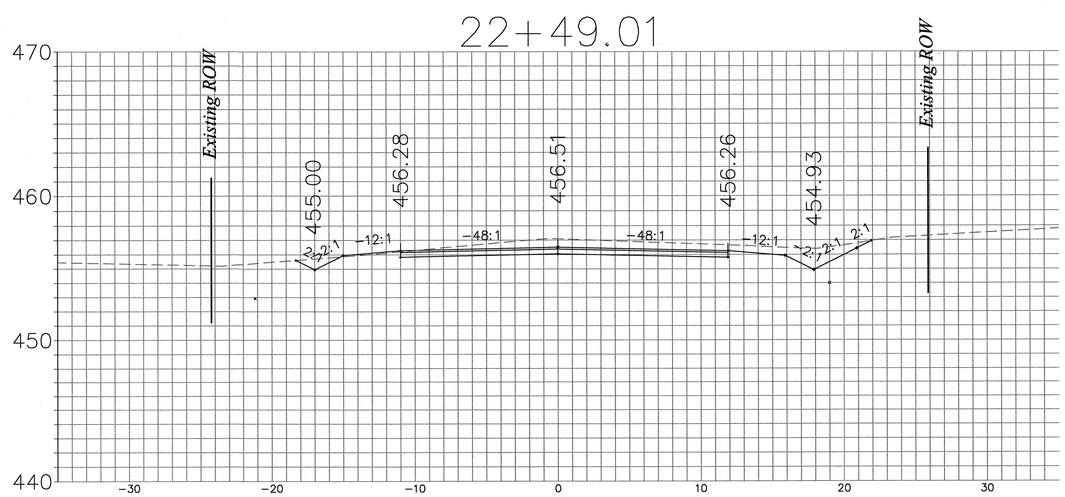
SOUTH CAROLINA PROFESSIONAL ENGINEER AND LAND SURVEYOR No. 18310 DANIEL R. DENNIS III

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

Engineer	Revision	Date	Description
D.Dennis			
Drawn By			
J.Outlaw			
Checked By			
M.Hines			





Engineer	Revision	Date	Description
D.Dennis			
Drawn By			
J.Outlaw			
Checked By			
M.Hines			

SOUTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 18310 PROFESSIONAL LAND SURVEYOR DANIEL R. DENNIS

DENNIS CORPORATION

Cross Section (5 of 6)

Roadway Improvements to Mountain Laurel Drive Aiken County, South Carolina

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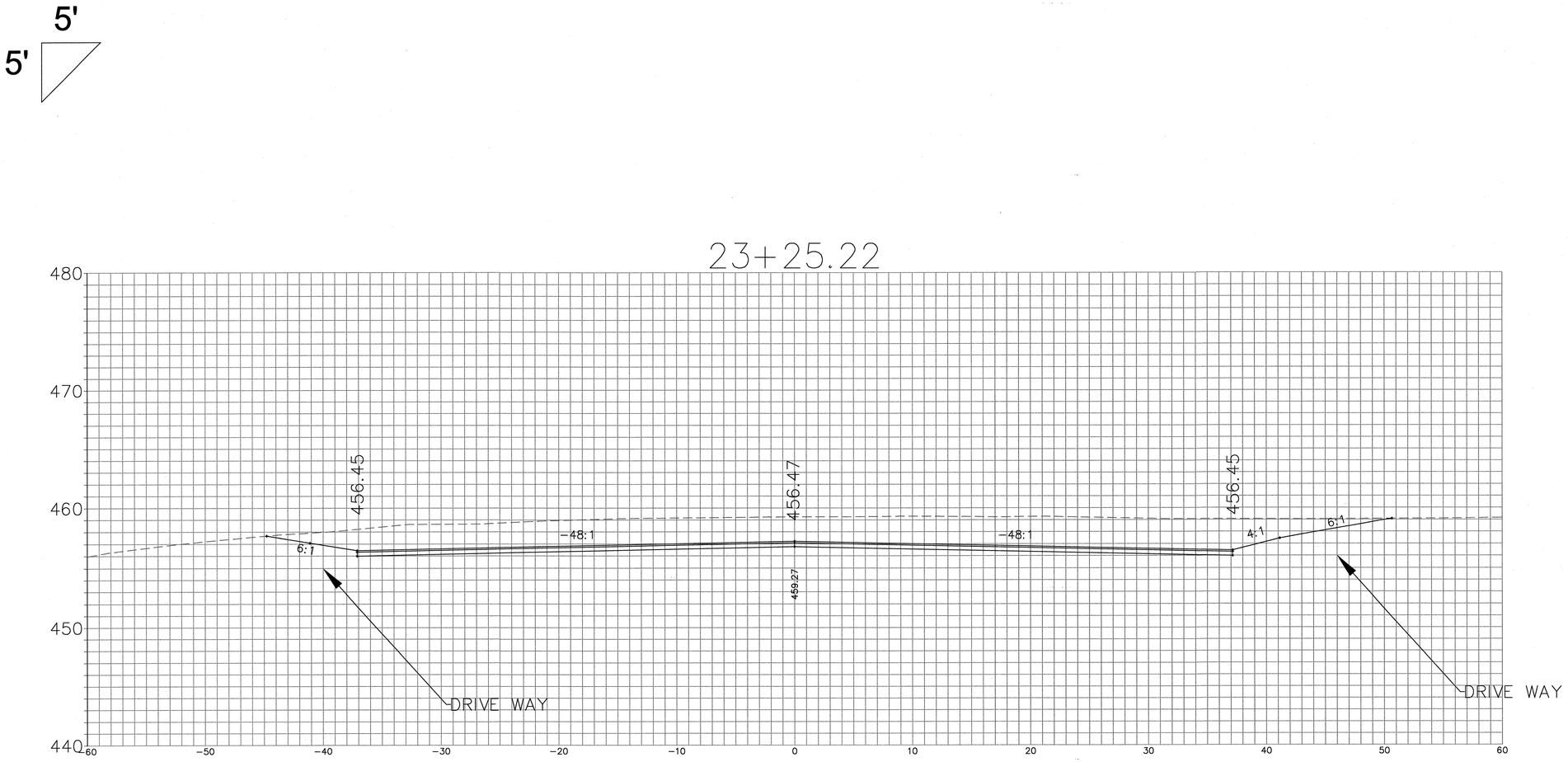

Engineer	Revision	Date	Description
D.Dennis			
Drawn By			
J.Outlaw			
Checked By			
M.Hines			

NORTH CAROLINA DENNIS CORPORATION NO. 3103 CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA PROFESSIONAL ENGINEER AND LAND SURVEYOR No. 18310 DANIEL R. DENNIS

Cross Section (6 of 6)

DENNIS CORPORATION

Roadway Improvements to Mountain Laurel Drive Aiken County, South Carolina

August 2016 | Aiken County | South Carolina

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