



SENECA RAIL SITE - ROADWAY IMPROVEMENTS

SHILOH ROAD, SENECA, SC 29678

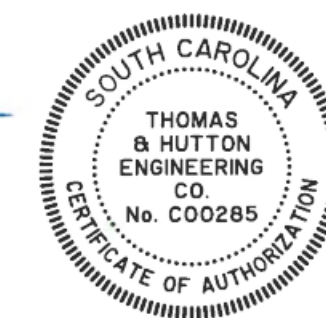
PREPARED FOR:
OCONEE COUNTY
 415 PINE STREET
 WALHALLA, SC 29691

TM# 520-36-10-016 / 520-36-10-017

11/06/2017
 LATEST REVISION: 01/21/2019

J- 26762.0000

PREPARED BY:



VICINITY MAP
 SCALE: 1" = 2000'

Sheet List Table

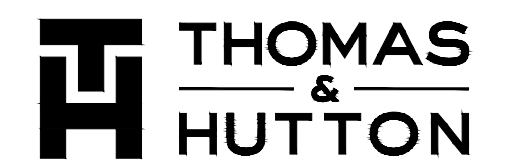
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REVISION HISTORY			
REV. NO.	REVISION	BY	DATE
C	REBID REVISIONS	RWP	1-21-19
B	NORFOLK SOUTHERN REVIEW COMMENTS	RWP	5-31-18
A	SCDOT & SCDHEC REVIEW COMMENTS	RWP	2-5-18

SUBMITTAL HISTORY	
SUBMITTED TO	DATE
NORFOLK SOUTHERN SUBMITTAL	1-31-18
SCDOT	1-5-18
SCDHEC LAND DISTURBANCE SUBMITTAL	12-18-17



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EROSION CONTROL LEGEND

DESCRIPTION	PLAN SYMBOL
SILT FENCE	[Symbol]
CLEARING LIMITS	CL
LIMITS OF DISTURBANCE	LOD
SUBSURFACE DRAIN	SSD
TREE PROTECTION	[Symbol]
TEMPORARY SEEDING	TS
PERMANENT SEEDING	PS
SODDING	SO
RIPRAP	[Symbol]
OUTLET PROTECTION - RIP RAP	[Symbol]
SEDIMENT TRAP	[Symbol]
ROCK CHECK DAM	[Symbol]
STABILIZED CONSTRUCTION ENTRANCE	[Symbol]
STORM DRAIN INLET PROTECTION - TYPE A FILTER FABRIC	A
STORM DRAIN INLET PROTECTION - TYPE E SURFACE COURSE CURB INLET FILTER	E

WATER LEGEND

DESCRIPTION	EXISTING	PROPOSED
WATER MAIN	10"W	10"W
SINGLE SERVICE LATERAL	[Symbol]	[Symbol]
DOUBLE SERVICE LATERAL	[Symbol]	[Symbol]
VALVE AND BOX	[Symbol]	[Symbol]
FIRE HYDRANT W/VALVE & BOX	[Symbol]	[Symbol]
POST HYDRANT	[Symbol]	[Symbol]
REDUCER	[Symbol]	[Symbol]
BACKFLOW PREVENTOR	[Symbol]	[Symbol]
CROSS	[Symbol]	[Symbol]
TEE	[Symbol]	[Symbol]
90° BEND - HORIZONTAL	[Symbol]	[Symbol]
45° BEND - HORIZONTAL	[Symbol]	[Symbol]
22-1/2° BEND - HORIZONTAL	[Symbol]	[Symbol]
11-1/4° BEND - HORIZONTAL	[Symbol]	[Symbol]
BEND - VERTICAL	[Symbol]	[Symbol]
CAP	[Symbol]	[Symbol]

ABBREVIATIONS

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

DRAINAGE LEGEND

DESCRIPTION	EXISTING	PROPOSED
PIPE	[Symbol]	[Symbol]
DITCH	[Symbol]	[Symbol]
CURB INLET	[Symbol]	[Symbol]
GRATE INLET	[Symbol]	[Symbol]
JUNCTION BOX	[Symbol]	[Symbol]
OUTLET STRUCTURE	[Symbol]	[Symbol]

SEWER LEGEND

DESCRIPTION	EXISTING	PROPOSED
GRAVITY PIPE	SS	[Symbol]
SINGLE SERVICE LATERAL	[Symbol]	[Symbol]
DOUBLE SERVICE LATERAL	[Symbol]	[Symbol]
MANHOLE	[Symbol]	[Symbol]
CLEANOUT	[Symbol]	[Symbol]
FORCEMAIN	10"FM	10"FM
VALVE AND BOX	[Symbol]	[Symbol]
FLUSH HYDRANT	[Symbol]	[Symbol]
REDUCER	[Symbol]	[Symbol]
BACKFLOW PREVENTOR	[Symbol]	[Symbol]
CROSS	[Symbol]	[Symbol]
TEE	[Symbol]	[Symbol]
90° BEND - HORIZONTAL	[Symbol]	[Symbol]
45° BEND - HORIZONTAL	[Symbol]	[Symbol]
22-1/2° BEND - HORIZONTAL	[Symbol]	[Symbol]
11-1/4° BEND - HORIZONTAL	[Symbol]	[Symbol]
BEND - VERTICAL	[Symbol]	[Symbol]
PLUG \ CAP	[Symbol]	[Symbol]

OTHER UTILITIES LEGEND

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

NORFOLK SOUTHERN RAILWAY NOTES

- ALL WORK TO BE PERFORMED ON, OVER, UNDER, OR ADJACENT TO THE RAILROAD RIGHT-OF-WAY SHALL COMPLY WITH THE NORFOLK SOUTHERN RAILWAY COMPANY ("RAILROAD," "NSR" OR "NS") PUBLIC PROJECTS MANUAL (APPENDIX E, SPECIAL PROVISIONS FOR THE PROTECTION OF RAILWAY INTERESTS, AND APPENDIX HI, OVERHEAD GRADE SEPARATION DESIGN CRITERIA). WHEN IN CONFLICT WITH OTHER PROJECT SPECIFICATIONS, THE MOST STRINGENT ONE SHALL APPLY. SURVEYING AND BOUNDARY INFORMATION BY DAVIS & FLOYD.
- "ONE CALL" SERVICES DO NOT LOCATE BURIED RAILROAD SIGNAL AND COMMUNICATIONS LINES. THE CONTRACTOR SHALL CONTACT THE RAILROAD'S REPRESENTATIVE 2 DAYS IN ADVANCE OF WORK AT THOSE PLACES WHERE EXCAVATION, PILE DRIVING, OR HEAVY LOADS MAY DAMAGE THE RAILROAD'S UNDERGROUND FACILITIES. UPON REQUEST FROM THE CONTRACTOR OR SPONSOR, RAILROAD FORCES WILL LOCATE AND PAINT MARK OR FLAG THE RAILROAD'S UNDERGROUND FACILITIES. THE CONTRACTOR SHALL AVOID EXCAVATION OR OTHER DISTURBANCE OF THESE FACILITIES. IF DISTURBANCE OR EXCAVATION IS REQUIRED NEAR A BURIED RAILROAD FACILITY, THE CONTRACTOR SHALL COORDINATE WITH THE RAILROAD TO HAVE THE FACILITY POTHOLED MANUALLY WITH CAREFUL HAND EXCAVATION. THE FACILITY SHALL BE PROTECTED BY THE CONTRACTOR DURING THE COURSE OF THE DISTURBANCE UNDER THE SUPERVISION AND DIRECTION OF THE RAILROAD'S REPRESENTATIVE. (SEE NS PUBLIC PROJECTS MANUAL, APPENDIX E, SECTION 3.0).
- ALL UTILITY INSTALLATIONS OR RELOCATIONS THAT ARE REQUIRED IN CONJUNCTION WITH THIS PROJECT CAN BE INSTALLED OR RELOCATED AS PART OF THE PROJECT PROVIDED THE CONSTRUCTION IS PERFORMED BY THE PROJECT CONTRACTOR OR PROJECT CONTRACTOR'S SUB-CONTRACTOR. HOWEVER, THE UTILITY MUST SUBMIT AN APPLICATION FOR THE INSTALLATION OR RELOCATION TO AECOM FOR APPROPRIATE HANDLING FOR LICENSE AGREEMENT AND APPLICABLE FEES. FOR UTILITY APPLICATIONS GO TO: WWW.NSCORP.COM > REAL ESTATE > NS SERVICES > WIRE, PIPELINE, & FIBER OPTIC PROJECTS > AECOM. NOTE: LICENSE AGREEMENT MUST BE EXECUTED PRIOR TO UTILITY BEING INSTALLED OR RELOCATED.
- CONTRACTOR IS TO VERIFY ACCURACY OF ANY TEMPORARY BENCHMARKS SHOWN PRIOR TO UTILIZING THEM FOR CONSTRUCTION.
- THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES OTHER THAN THOSE SHOWN ARE ENCOUNTERED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND TAKE STEPS TO PROTECT THE LINE(S) AND ENSURE CONTINUED SERVICE. DAMAGE CAUSED TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR. ADDITIONALLY, THE CONTRACTOR SHALL CONFIRM THE CONNECTION POINTS OF NEW UTILITIES TO EXISTING UTILITIES PRIOR TO BEGINNING NEW CONSTRUCTION.
- THE CONTRACTOR SHALL NOT COMMENCE ANY WORK ON RAILROAD RIGHTS-OF-WAY UNTIL HE HAS COMPLIED WITH THE CONDITIONS PRESENTED ON NS PUBLIC PROJECTS MANUAL (SEE APPENDIX E, NORFOLK SOUTHERN - SPECIAL PROVISIONS FOR PROTECTION OF RAILWAY INTERESTS).
- THE CONTRACTOR SHALL SO ARRANGE AND CONDUCT HIS WORK THAT THERE WILL BE NO INTERFERENCE WITH RAILROAD'S OPERATIONS. WHENEVER WORK IS LIABLE TO AFFECT THE OPERATIONS OR SAFETY OF TRAINS, THE METHODS OF DOING SUCH WORK SHALL FIRST BE SUBMITTED TO THE RAILROAD ENGINEER FOR APPROVAL, BUT SUCH APPROVAL SHALL NOT RELIEVE THE CONTRACTOR FROM ANY LIABILITY.
- FOR PROJECTS REQUIRING MORE THAN 30 CONSECUTIVE DAYS OF FLAGGING, CONTRACTOR SHALL PROVIDE THE FLAGMAN A SMALL WORK AREA WITH A DESK/COUNTER AND CHAIR WITHIN THE FIELD/SITE TRAILER, INCLUDING THE USE OF BATHROOM FACILITIES, WHERE THE FLAGMAN CAN CHECK IN/OUT WITH THE PROJECT, AS WELL AS TO THE FLAGMAN'S HOME TERMINAL. THE WORK AREA SHOULD PROVIDE ACCESS TO TWO (2) ELECTRICAL OUTLETS FOR RECHARGING RADIO(S), AND A LAPTOP COMPUTER; AND HAVE THE ABILITY TO PRINT OFF NEEDED DOCUMENTATION AND ORDERS AS NEEDED AT THE FIELD/SITE TRAILER. THIS SHOULD AID IN MAXIMIZING THE FLAGMAN'S TIME AND EFFICIENCY ON THE PROJECT.

GENERAL INFORMATION

OWNER: OCONEE COUNTY
415 PINE STREET
WALHALLA, SC 29691
(864) 638-4150

SURVEYOR: DAVIS & FLOYD
1319 HIGHWAY 72/221 EAST
GREENWOOD, SC 29649
(864) 229-5211

ENGINEER: THOMAS & HUTTON
304 NORTH CHURCH STREET
GREENVILLE, SC 29601
(864) 412-2222

WATER: SENECA LIGHT & WATER
250 EAST NORTH SECOND STREET
SENECA, SOUTH CAROLINA 29679
(864) 885-2716

SEWER: SENECA LIGHT & WATER
250 EAST NORTH SECOND STREET
SENECA, SOUTH CAROLINA 29679
(864) 885-2716

GAS: FORT HILL NATURAL GAS AUTHORITY
311 SOUTH PENDLETON STREET
EASLEY, SOUTH CAROLINA 29640
(864) 859-6375

RAILROAD: NORFOLK SOUTHERN CORPORATION
ATTENTION: MR. JACOB WATSON
ENGINEER PUBLIC IMPROVEMENTS
BRIDGES & STRUCTURES
1200 PEACHTREE STREET NE
ATLANTA, GA 30309
TELEPHONE: (404) 529-1225
EMAIL: JACOB.WATSON@NSCORP.COM

PREPARED FOR:
OCONEE COUNTY
415 PINE STREET, WALHALLA, SC 29691
(864) 638-4150

GENERAL NOTES

- ANY REVISIONS DURING CONSTRUCTION WHICH ALTER THE ROAD LAYOUT, CONSTRUCTION METHODS, RIGHT-OF-WAY LOCATION OR DRAINAGE MUST BE SUBMITTED AND APPROVED IN WRITING BY THE COUNTY ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL CONSTRUCTION PERMITS NECESSARY FROM OTHER RESPONSIBLE AGENCIES.
- ALL TREES SHOWING DISTURBANCE WITHIN THE PROTECTED ROOT ZONE SHALL BE PRUNED AND FERTILIZED BY A CERTIFIED ARBORIST PRIOR TO RECEIVING FINAL PLAT APPROVAL. (THIS WORK WILL BE DONE BY THE OWNER OUTSIDE OF THE CONTRACT.)
- LAKE CONTOURS SHOWN HEREIN WILL PROVIDE A DEPTH ONE FOOT GREATER THAN NECESSARY FOR STORM WATER MANAGEMENT. THIS IS TO PROVIDE FOR ONE FOOT OF SILT BUILDUP DURING CONSTRUCTION OF ANY AREA OF ANY POND WHICH SILTS MORE THAN ONE FOOT ABOVE DESIGNED BOTTOM ELEVATION SHALL BE RESTORED TO THE MINIMUM ACCEPTABLE DEPTH OF ONE FOOT LESS THAN ORIGINAL CONSTRUCTED DEPTH.
- ALL ABOVE GROUND UTILITIES ARE TO BE OUTSIDE OF THE R/W AND ALL AT GRADE UTILITIES ARE TO BE OUT OF THE CURB LINE.
- THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL AND PREVENTION STRUCTURES SHOWN ON THE PLANS. BOTH MUST BE APPROVED BY SCDHEC PRIOR TO BEGINNING ANY LAND DISTURBING ACTIVITIES.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF UNSUITABLE MATERIAL IS DISCOVERED PRIOR TO BEGINNING ANY REMOVAL OPERATION.
- CONTRACTOR WILL BE REQUIRED TO ADJUST MANHOLE FRAMES TO MATCH FINAL GRADE AT NO ADDITIONAL COST.
- THE FOLLOWING NOTES ARE SPECIFIED BY THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL AND ARE TO BE EXECUTED BY THE CONTRACTOR:
 - ALL SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AT LEAST EVERY SEVEN CALENDAR DAYS AND AFTER ANY STORM EVENT OF GREATER THAN 0.5 INCHES OF PRECIPITATION DURING ANY 24-HOUR PERIOD. ALL SEDIMENT CONTROL FEATURES SHALL BE MAINTAINED UNTIL FINAL STABILIZATION HAS BEEN OBTAINED.
 - WHERE CONSTRUCTION ACTIVITIES WILL BE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED, UNLESS ACTIVITY IN THAT PORTION OF THE SITE WILL RESUME WITHIN 14 DAYS.
 - RESIDENTIAL SUBDIVISIONS REQUIRE EROSION CONTROL FEATURES FOR INFRASTRUCTURE AS WELL AS FOR INDIVIDUAL LOT CONSTRUCTION. INDIVIDUAL PROPERTY OWNERS SHALL FOLLOW THESE PLANS DURING LOT CONSTRUCTION OR PROVIDE AN INDIVIDUAL PLAN MEETING SECTION R 72-307 OF THE STORM WATER MANAGEMENT AND SEDIMENT REDUCTION ACT REQUIREMENTS.
 - ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH THE
- CONTRACTOR SHALL GRADE AREAS TO DRAIN FOR POSITIVE FLOW PRIOR TO FINAL APPROVAL.
- ALL TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON "UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AND "SOUTH CAROLINA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BOTH CURRENT EDITIONS.
- ALL AREAS DISTURBED WILL BE GRASSED IMMEDIATELY AFTER THE INSTALLATION. GRASSING SHALL BE IN ACCORDANCE WITH SECTION 810 OF THE SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION CURRENT EDITION. PAYMENT SHALL BE AS SHOWN IN THE BID FORM AND SHALL BE COMPENSATION FOR LL NECESSARY WORK AND MATERIALS TO COMPLETE THE SEEDING IN ACCORDANCE WITH THESE SPECIFICATIONS. (SEE SPECIFICATIONS BELOW)
- ALL DRAINAGE WILL BE MADE FUNCTIONAL DAILY AS WORK PROGRESSES.
- EACH EXISTING ROAD WILL BE CLEANED UP AND RESTORED DAILY.
- NEW PAVEMENT TO BE FLUSH WITH EDGE OF EXISTING PAVEMENT.
- ALL STORM DRAIN PIPE INVERTS IN AND OUT ARE THE SAME AS THE BOX INVERT UNLESS OTHERWISE NOTED ON THE PLAN SHEETS AND/OR PROFILES.
- ONLY TYPE S AND M MORTAR IS TO BE USED IN STORMWATER SYSTEM CONSTRUCTION AND ALL BRICKWORK AND BRICK MUST MEET SCDOT SPECIFICATIONS.
- THE DESIGN OF THE PAVEMENT AND EARTHWORK MATERIALS, PROCEDURES AND METHODS SPECIFIED ARE BASED ON THE CRITERIA AND RECOMMENDATIONS ESTABLISHED IN THE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY TERRACON CONSULTANTS INC., DATED JULY 20, 2017 AND SUBSEQUENT ADDENDUMS. 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 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE WILL RESUME WITHIN 14 DAYS.
- ALL WORK WITHIN DUKE ENERGY RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH DUKE ENERGY STANDARDS FOR CONSTRUCTION. CONTRACTOR IS TO FOLLOW THE REQUIREMENTS OF THE ENCROACHMENT PERMIT WHILE WORKING WITHIN THE RIGHT-OF-WAY.
- ALL WORK WITHIN NORFOLK SOUTHERN RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH NORFOLK SOUTHERN STANDARDS AND SPECIFICATIONS. CONTRACTOR IS TO FOLLOW THE REQUIREMENTS OF THE NORFOLK SOUTHERN PERMIT WHILE WORKING WITHIN THE RIGHT-OF-WAY.
- CONTRACTOR IS TO FOLLOW REQUIREMENTS OF SCDOT ENCROACHMENT PERMIT FOR WORK WITHIN THE SCDOT RIGHT-OF-WAY.



NO.	DATE	BY	REVISIONS
B		RWP	5-31-18

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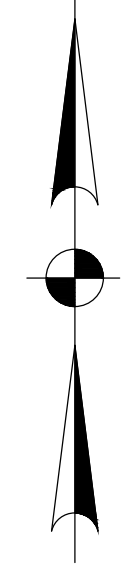
SENECA RAIL SITE - ROADWAY IMPROVEMENTS

GENERAL NOTES AND LEGEND

JOB NO: J-26762.0000
DATE: NOVEMBER 6, 2017
DRAWN: TJP
DESIGNED: RWP
REVIEWED: RWP
SCALE: N/A

G1.1

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NO.	REVISIONS	BY	DATE

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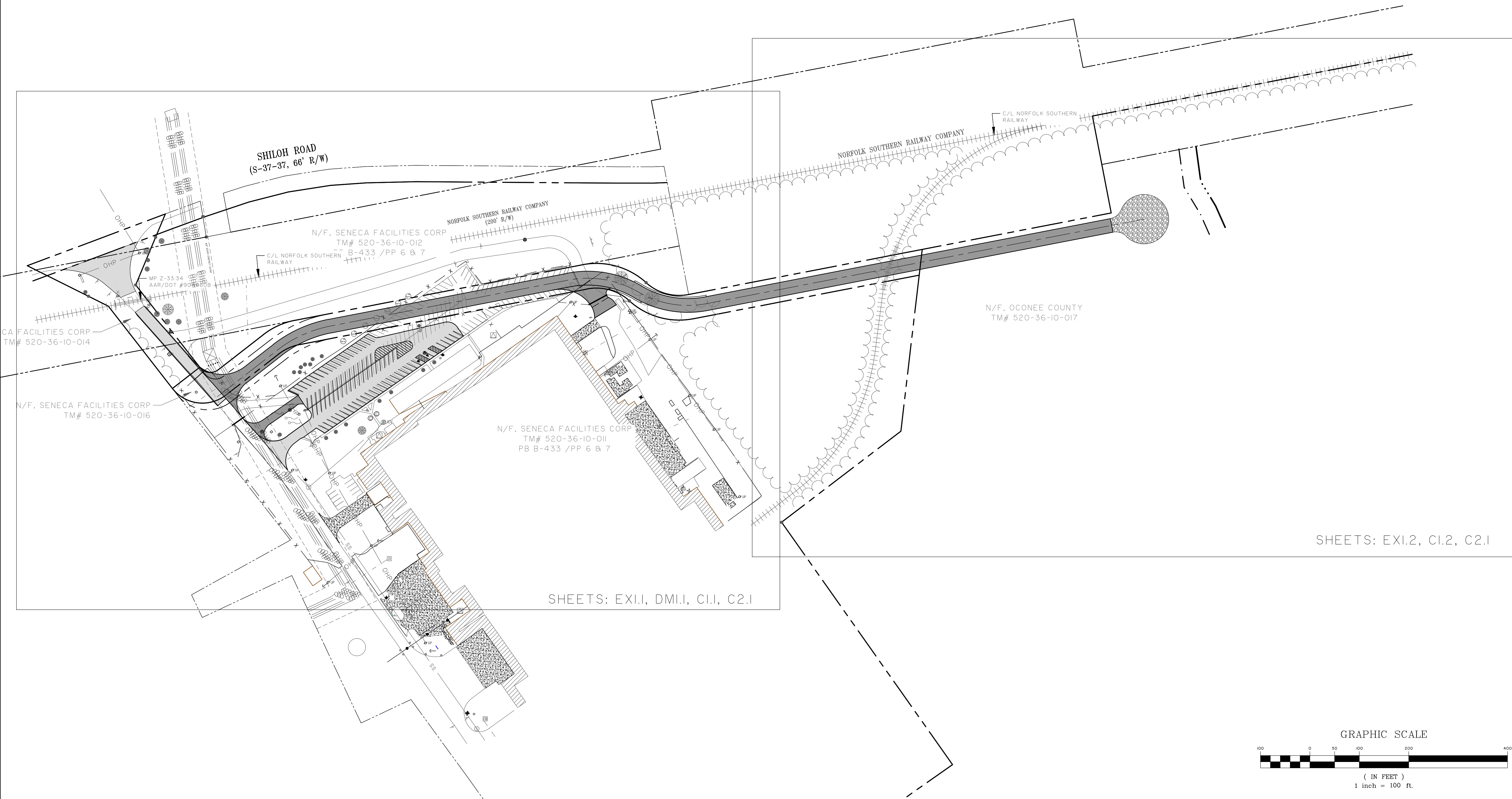
OCONEE COUNTY
 SHILOH ROAD, SENECA, SC 29678

SENECA RAIL SITE - ROADWAY IMPROVEMENTS

INDEX SHEET

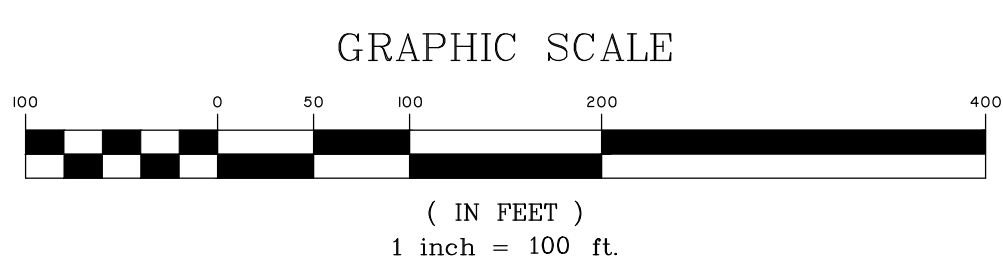
JOB NO: J-26762.0000
 DATE: NOVEMBER 6, 2017
 DRAWN: TJP
 DESIGNED: RWP
 REVIEWED: RWP
 APPROVED: RWP
 SCALE: 1" = 100'

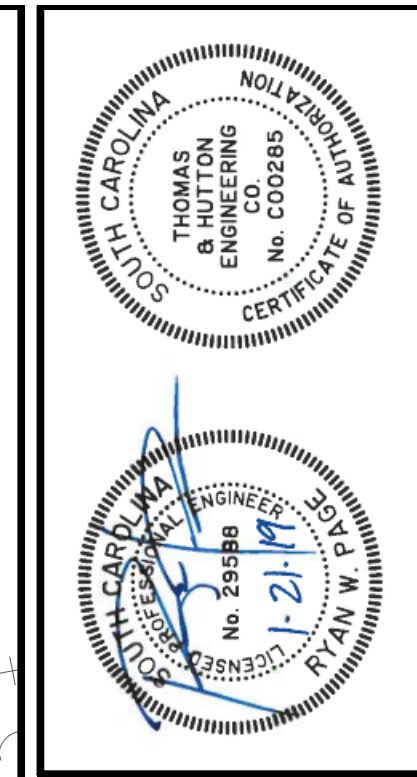
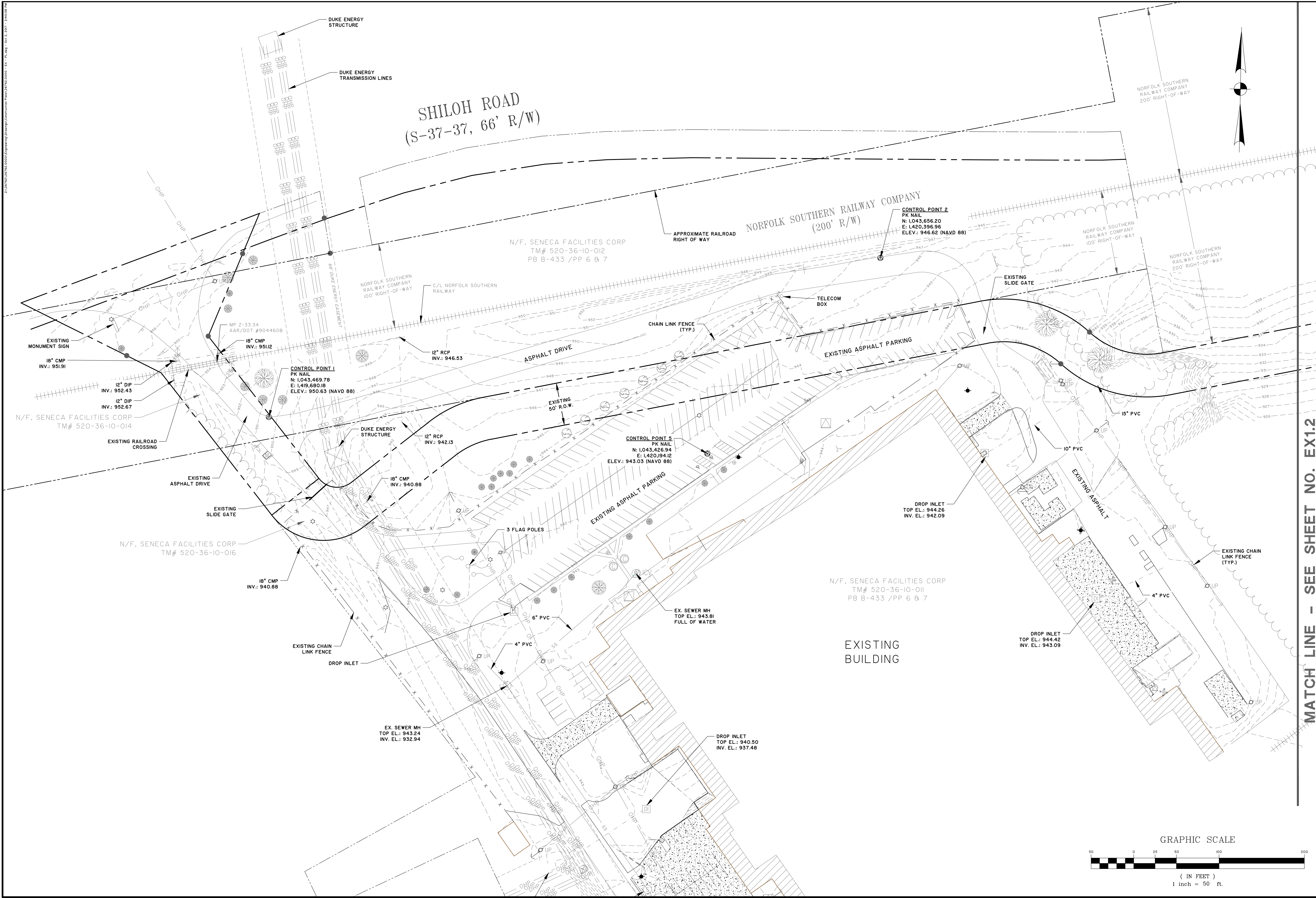
G1.2



SHEETS: EX1.1, DMI.1, CI.1, C2.1

SHEETS: EX1.2, CI.2, C2.1





NO.	REVISIONS	BY	DATE
C	REBID REVISIONS	RWP	1-21-19
B	NORFOLK SOUTHERN REVIEW COMMENTS	RWP	5-31-18

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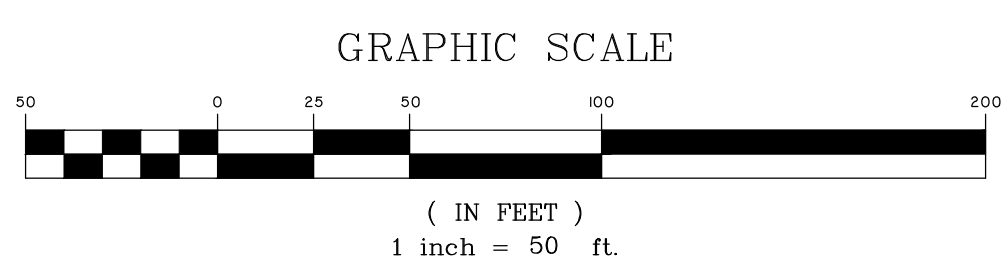
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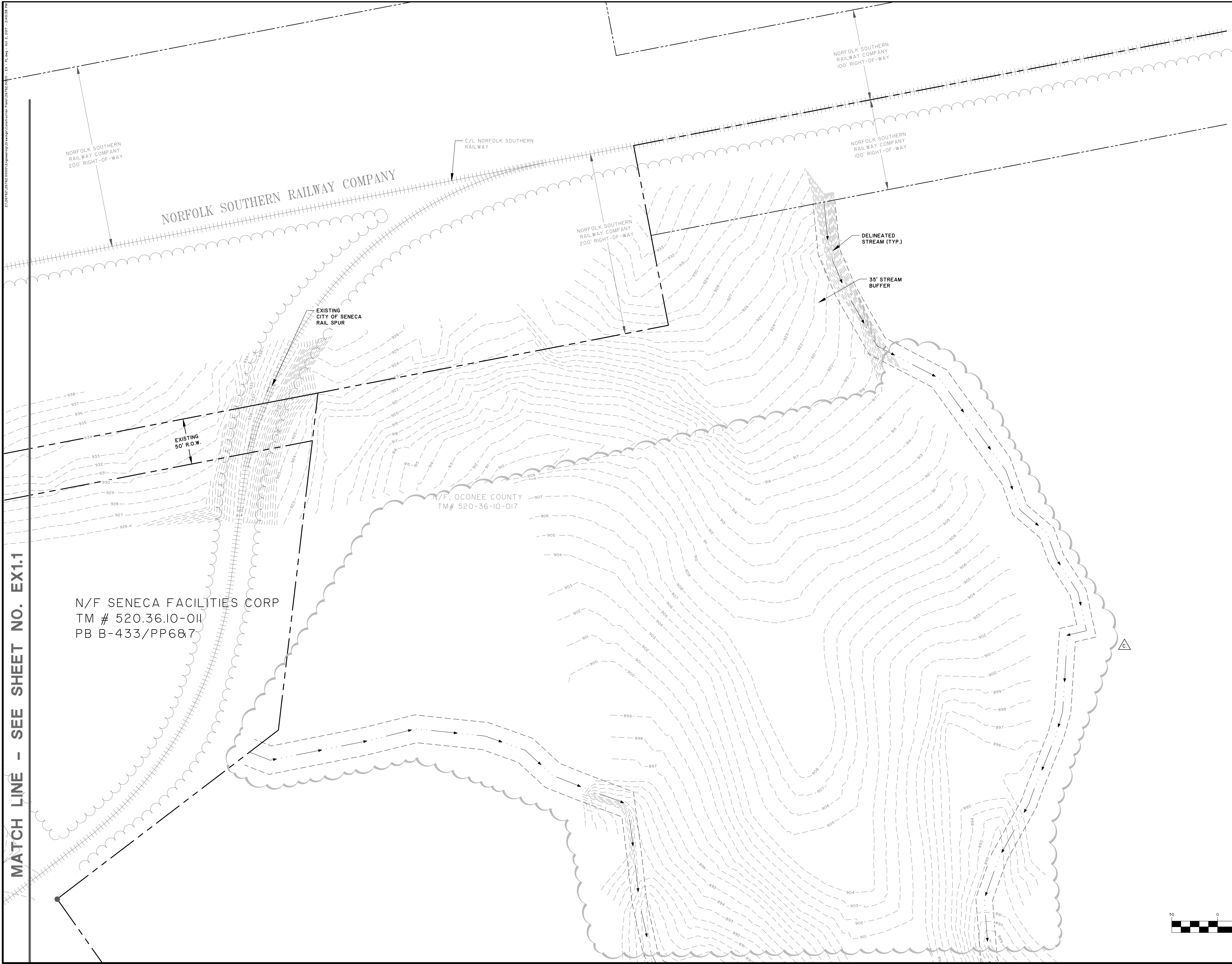
EXISTING CONDITIONS PLAN

JOB NO:	J-26762.0000
DATE:	NOVEMBER 6, 2017
DRAWN:	TJP
DESIGNED:	RWP
REVIEWED:	RWP
APPROVED:	RWP
SCALE:	1" = 50'

EX1.1

MATCH LINE - SEE SHEET NO. EX1.2

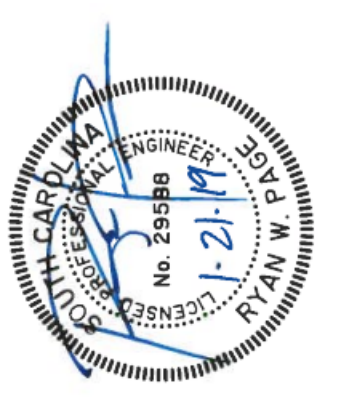
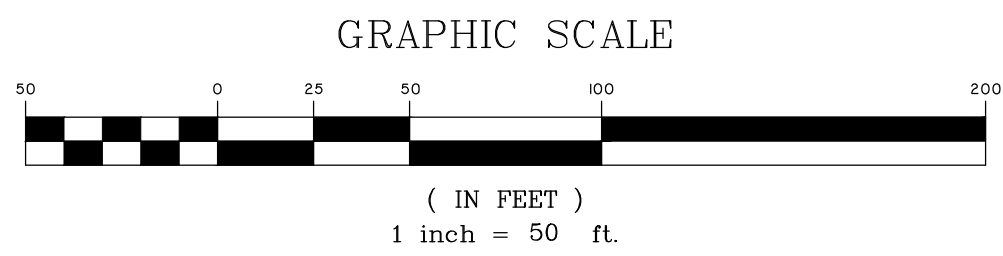




MATCH LINE - SEE SHEET NO. EX1.1

N/F SENECA FACILITIES CORP
 TM # 520.36.10-011
 PB B-433/PP6&7

N/F, OCONEE COUNTY
 TM # 520-36-10-017



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 SHILOH ROAD, SENECA, SC 29678

SENECA RAIL SITE - ROADWAY IMPROVEMENTS

EXISTING CONDITIONS PLAN

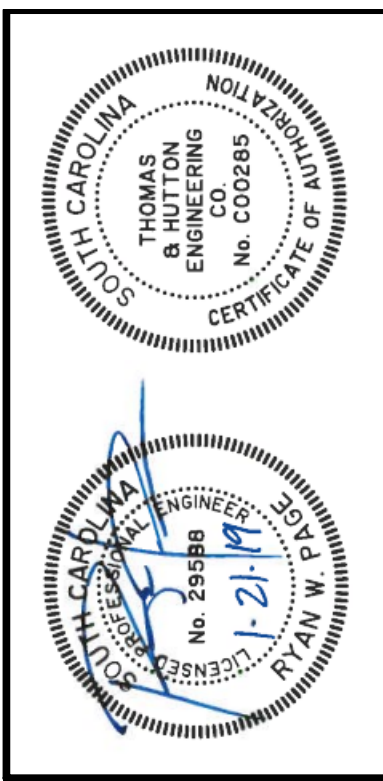
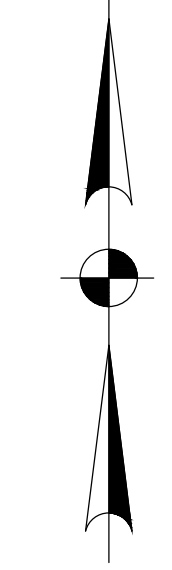
JOB NO: J-26762.0000
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 DRAWN: TJP
 DESIGNED: RWP
 REVIEWED: RWP
 SCALE: 1" = 50'

EX1.2

DATE PLOTTED: 11/06/2017 10:58:00 AM

SHILOH ROAD (S-37-37, 66' R/W)

GENERAL NOTES
1. EXISTING SIGNAGE (STOP SIGNS, RAILROAD CROSSING, FACILITY SIGNS, ETC.) ARE TO REMAIN AND BE PROTECTED THROUGH CONSTRUCTION UNLESS OTHERWISE NOTED.



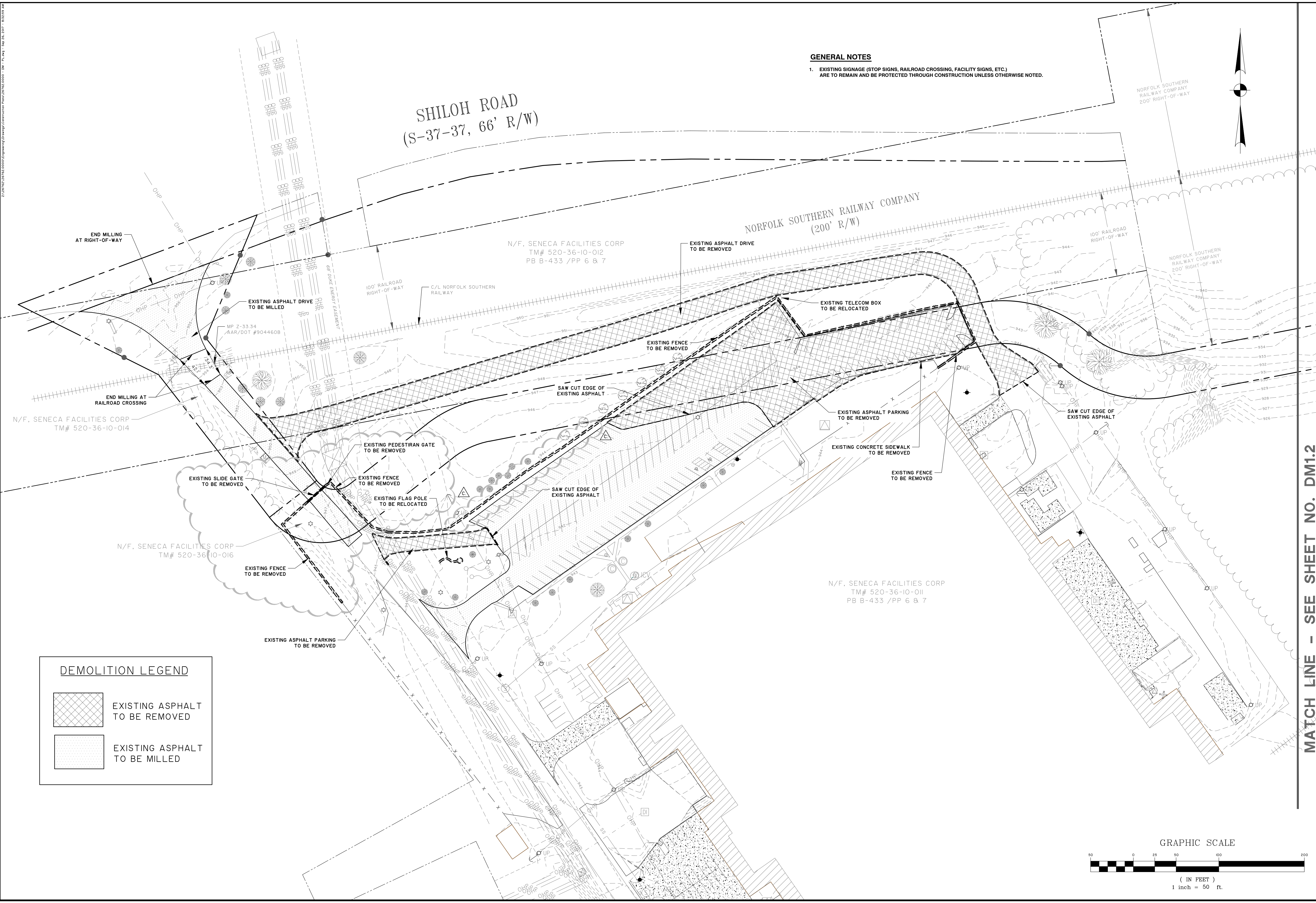
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SENECA RAIL SITE - ROADWAY IMPROVEMENTS
DEMOLITION PLAN

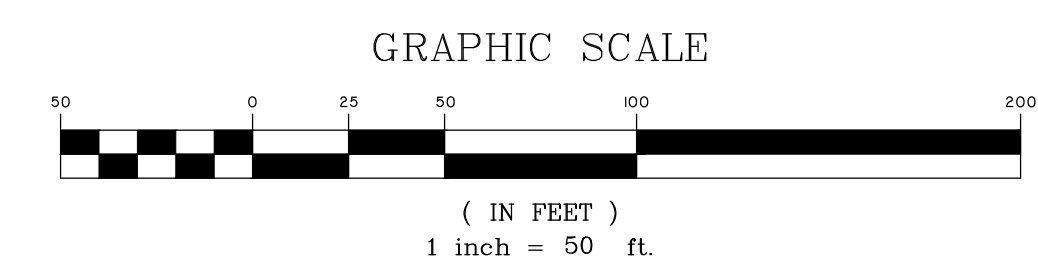
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APPROVED:	RWP
SCALE:	1" = 50'

DM1.1



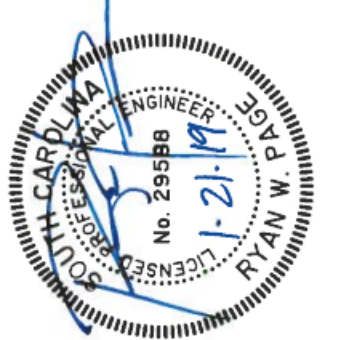
DEMOLITION LEGEND

- EXISTING ASPHALT TO BE REMOVED
- EXISTING ASPHALT TO BE MILLED



MATCH LINE - SEE SHEET NO. DM1.2

SHILOH ROAD
(S-37-37, 66' R/W)



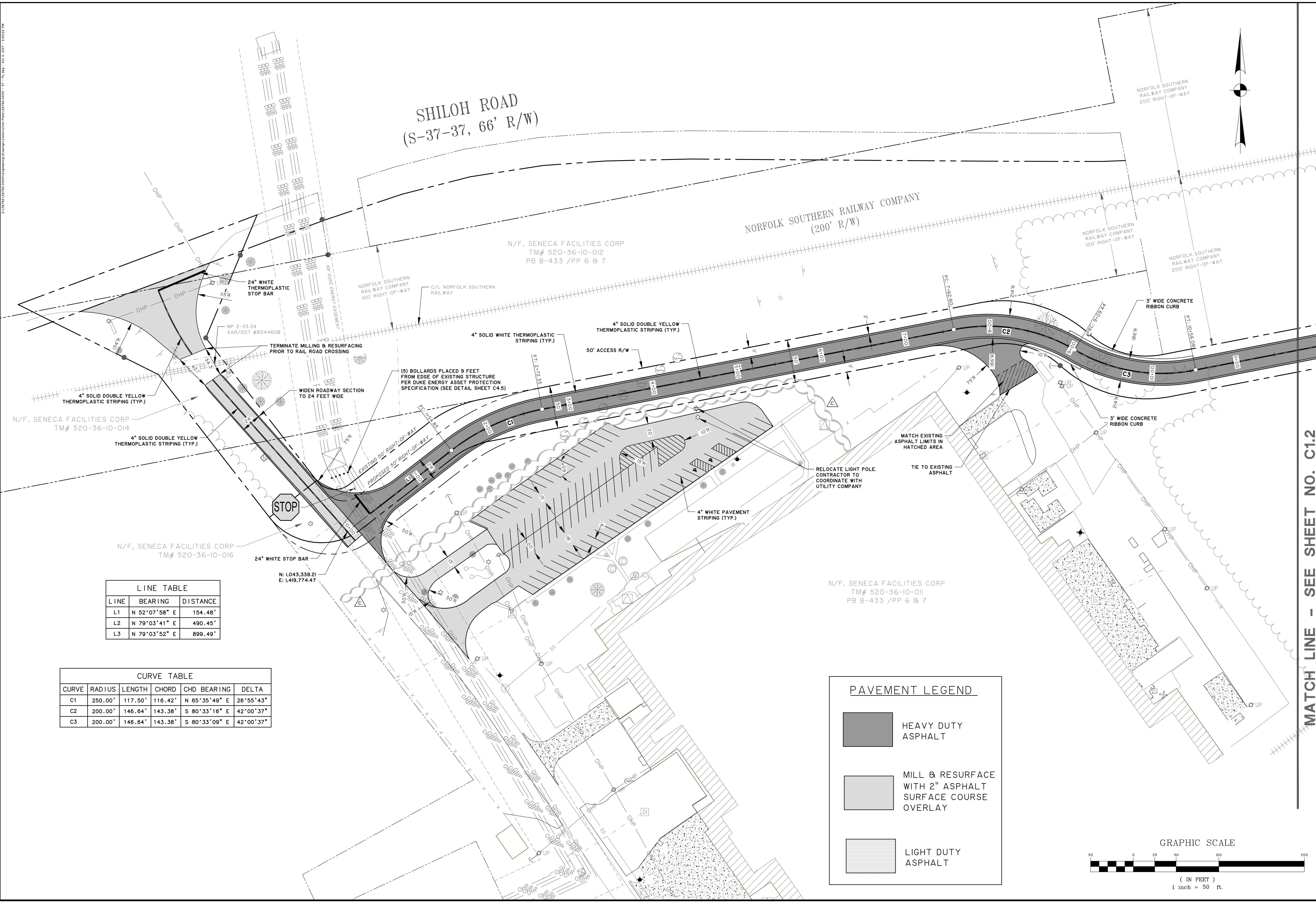
NO.	BY	DATE	REVISIONS
C	RWP	1-21-19	REBID REVISIONS
B	RWP	5-31-18	NORFOLK SOUTHERN REVIEW COMMENTS
A	RWP	2-5-18	SCDOT & SCDHEC REVIEW COMMENTS

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OCONEE COUNTY
SHILOH ROAD, SENECA, SC 29678
SENECA RAIL SITE - ROADWAY IMPROVEMENTS
SITE PLAN

JOB NO: J-26762.0000
DATE: NOVEMBER 6, 2017
DRAWN: TJP
DESIGNED: RWP
REVIEWED: RWP
APPROVED: RWP
SCALE: 1" = 50'

C1.1



LINE TABLE

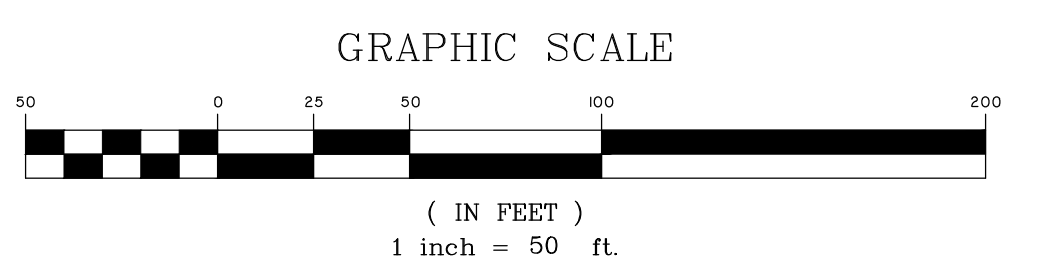
LINE	BEARING	DISTANCE
L1	N 52°07'58" E	154.48'
L2	N 79°03'41" E	490.45'
L3	N 79°03'52" E	899.49'

CURVE TABLE

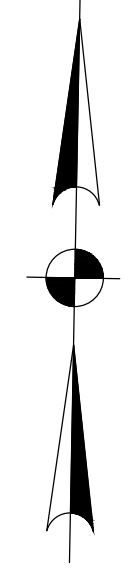
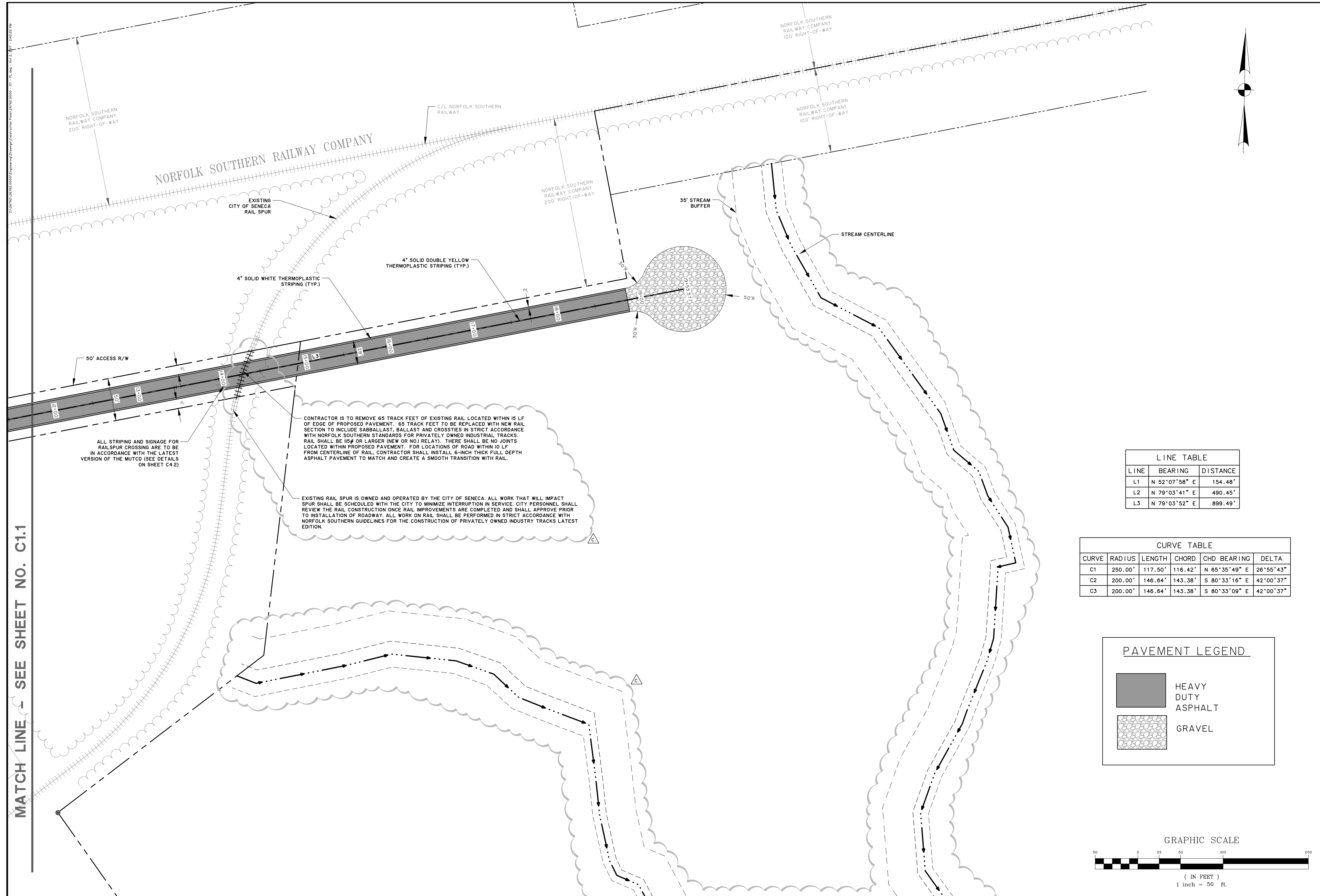
CURVE	RADIUS	LENGTH	CHORD	CHD BEARING	DELTA
C1	250.00'	117.50'	116.42'	N 65°35'49" E	26°55'43"
C2	200.00'	146.64'	143.38'	S 80°33'16" E	42°00'37"
C3	200.00'	146.64'	143.38'	S 80°33'09" E	42°00'37"

PAVEMENT LEGEND

- HEAVY DUTY ASPHALT
- MILL & RESURFACE WITH 2" ASPHALT SURFACE COURSE OVERLAY
- LIGHT DUTY ASPHALT



MATCH LINE - SEE SHEET NO. C1.2

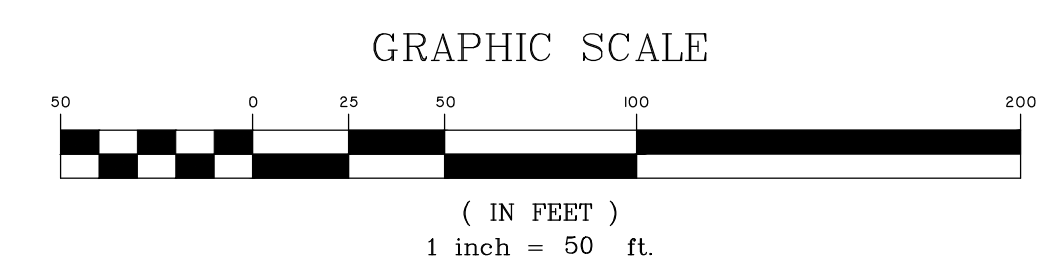
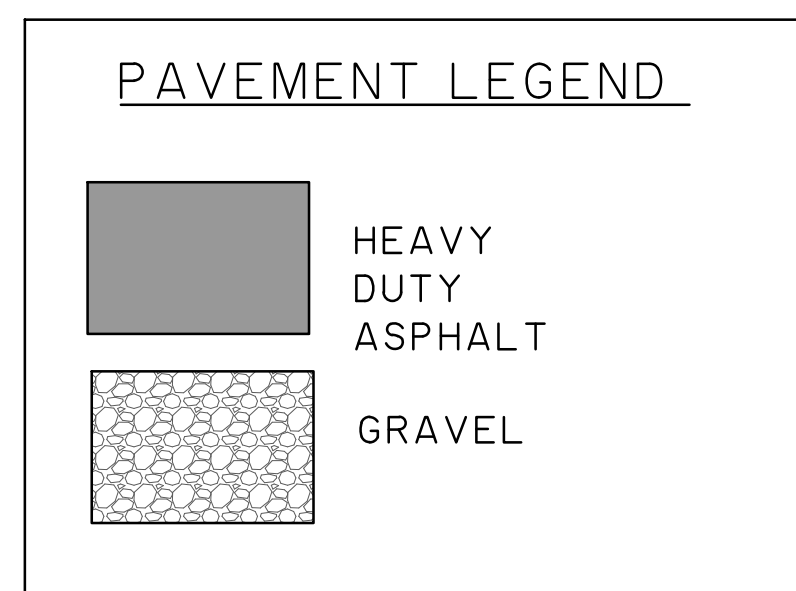


LINE TABLE

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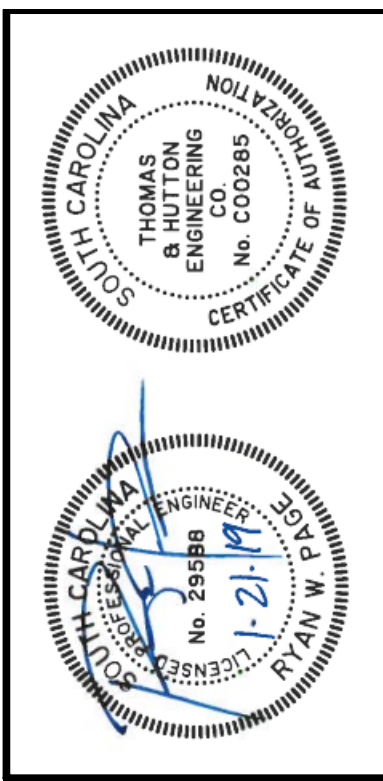
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C3	200.00'	146.64'	143.38'	S 80°33'09" E	42°00'37"



CONTRACTOR IS TO REMOVE 65 TRACK FEET OF EXISTING RAIL LOCATED WITHIN 15 LF OF EDGE OF PROPOSED PAVEMENT. 65 TRACK FEET TO BE REPLACED WITH NEW RAIL SECTION TO INCLUDE SABBALLAST, BALLAST AND CROSSTIES IN STRICT ACCORDANCE WITH NORFOLK SOUTHERN STANDARDS FOR PRIVATELY OWNED INDUSTRIAL TRACKS. RAIL SHALL BE #54 OR LARGER (NEW OR NOI RELAY). THERE SHALL BE NO JOINTS LOCATED WITHIN PROPOSED PAVEMENT. FOR LOCATIONS OF ROAD WITHIN 10 LF FROM CENTERLINE OF RAIL, CONTRACTOR SHALL INSTALL 6-INCH THICK FULL DEPTH ASPHALT PAVEMENT TO MATCH AND CREATE A SMOOTH TRANSITION WITH RAIL.

EXISTING RAIL SPUR IS OWNED AND OPERATED BY THE CITY OF SENECA. ALL WORK THAT WILL IMPACT SPUR SHALL BE SCHEDULED WITH THE CITY TO MINIMIZE INTERRUPTION IN SERVICE. CITY PERSONNEL SHALL REVIEW THE RAIL CONSTRUCTION ONCE RAIL IMPROVEMENTS ARE COMPLETED AND SHALL APPROVE PRIOR TO INSTALLATION OF ROADWAY. ALL WORK ON RAIL SHALL BE PERFORMED IN STRICT ACCORDANCE WITH NORFOLK SOUTHERN GUIDELINES FOR THE CONSTRUCTION OF PRIVATELY OWNED INDUSTRY TRACKS LATEST EDITION.

ALL STRIPING AND SIGNAGE FOR RAILSPUR CROSSING ARE TO BE IN ACCORDANCE WITH THE LATEST VERSION OF THE MUTCD (SEE DETAILS ON SHEET C4.2)



NO.	REVISIONS	BY	DATE
C	REBID REVISIONS	RWP	1-21-19
B	NORFOLK SOUTHERN REVIEW COMMENTS	RWP	5-31-18

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OCONEE COUNTY
 SHILOH ROAD, SENECA, SC 29678

SENECA RAIL SITE - ROADWAY IMPROVEMENTS

SITE PLAN

JOB NO: J-26762.0000
 DATE: NOVEMBER 6, 2017
 DRAWN: TJP
 DESIGNED: RWP
 REVIEWED: RWP
 APPROVED: RWP
 SCALE: 1" = 50'

C1.2

MATCH LINE - SEE SHEET NO. C1.1

CONSTRUCTION SEQUENCE

PHASE 1

1. RECEIVE STORMWATER PERMIT, APPROVED PLANS AND NPDES COVERAGE LETTER FROM DHEC.
2. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD WITH SCHEC AT LEAST 48 HOURS PRIOR TO BEGINNING ANY LAND DISTURBING ACTIVITIES. THE OWNER, DESIGN ENGINEER AND CONTRACTOR MUST BE PRESENT AND HAVE OBTAINED THE STORMWATER PERMIT, STAMPED APPROVED PLANS AND THE N.O.I APPROVAL LETTER FROM SCHEC BEFORE SCHEDULING THIS MEETING.
3. NOTIFY OCONEE COUNTY 48 HOURS PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.
4. INSTALL STABILIZED CONSTRUCTION ENTRANCE, AND PLACE RAIN GAUGE.
5. CLEAR AND GRUB IN AREAS ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS FOR ENTIRE SITE.
6. INSTALL PERIMETER CONTROLS (E.G., SILT FENCE) FOR ENTIRE SITE.
7. CLEAR AND GRUB IN OTHER AREAS INDICATED ON PHASE I PLAN. GRUB ONLY AS NECESSARY FOR INSTALLATION OF INITIAL BMPs AND EQUIPMENT/LAYDOWN/STAGING AREA WITHIN PHASE I LIMITS OF DISTURBANCE.

PORTABLE TOILETS

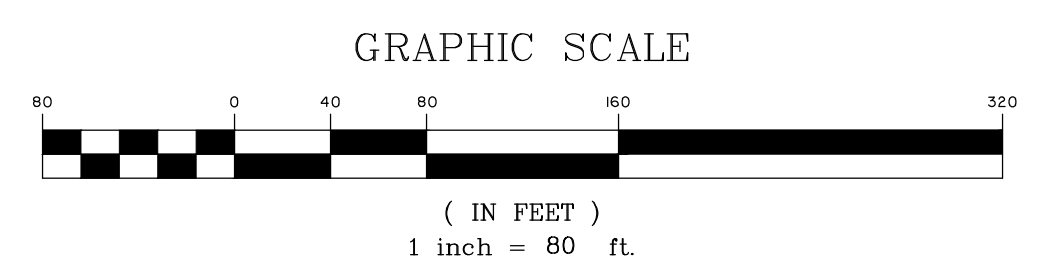
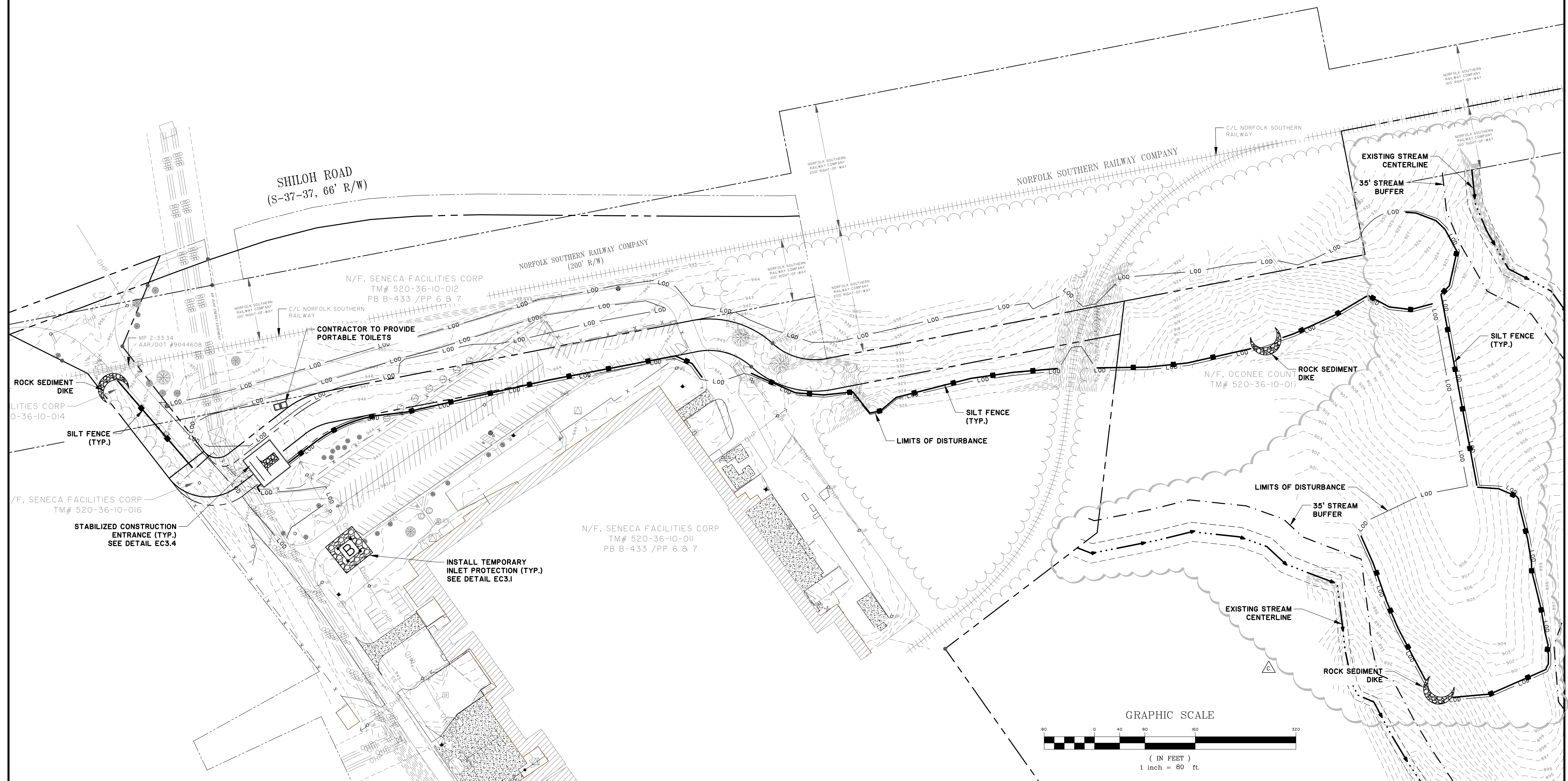
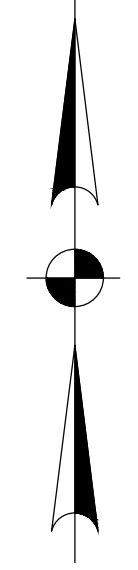
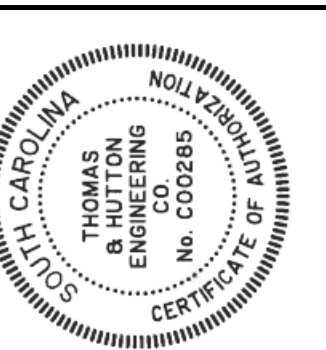
PORTABLE TOILET FACILITIES MUST BE PROVIDED AND MAINTAINED IN A SAFE AND SANITARY MANNER IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS OR PERMIT CONDITIONS.

WHEN PLACED AT A WORK SITE, THE TOILETS MUST BE PLACED IN ACCORDANCE WITH OSHA REQUIREMENTS AND SERVICED IN ACCORDANCE WITH INDUSTRY STANDARDS.

THE TOILET UNIT MUST BE SET ON A LEVEL STABLE BASE MATERIAL AWAY FROM STORM DRAINS, WATERWAYS, AND AREAS WITH HIGH VEHICULAR TRAFFIC. THE PORTABLE TOILET SHALL NOT BE PLACED ON THE PUBLIC ROAD PAVEMENT, A PUBLIC SIDEWALK, SEWER MANHOLE, CATCH BASIN OR CURB INLET.

PORTABLE TOILETS SHALL BE POSTED WITH PROPER SIGNAGE TO DISPLAY THE TELEPHONE NUMBER AND CONTACT INFORMATION FOR THE COMPANY RESPONSIBLE FOR CLEANING, SERVICING OR REPAIR OF THE TOILET UNITS.

LIMITS OF DISTURBANCE = 7.5 AC.



NO.	REVISIONS	BY	DATE
C	REBID REVISIONS	RWP	1-2-19
B	NORFOLK SOUTHERN REVIEW COMMENTS	RWP	5-3-18

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OCONEE COUNTY
 SHILOH ROAD, SENECA, SC 29678
 SENECA RAIL SITE - ROADWAY IMPROVEMENTS
 EROSION CONTROL PLAN - INITIAL LAND DISTURBANCE

JOB NO:	J-26762.0000
DATE:	NOVEMBER 6, 2017
DRAWN:	TJP
DESIGNED:	RWP
REVIEWED:	RWP
APPROVED:	RWP
SCALE:	1" = 80'

EC1.1

CONSTRUCTION SEQUENCE

PHASE 2

1. PERFORM MASS GRADING OPERATIONS.
2. AS TOPSOIL IS REMOVED, STOCKPILE TOPSOIL AT LOCATION DETERMINED AT PRE-CONSTRUCTION MEETING OR AS SHOWN ON PLANS. ALL STOCKPILES AND STAGING AREAS SHALL HAVE SILT FENCING AROUND THEIR PERIMETER AS NECESSARY TO PREVENT SEDIMENT FROM LEAVING SITE.
3. INSTALL STORM DRAINAGE SYSTEM AND PLACE INLET PROTECTIONS AS EACH INLET IS INSTALLED.
4. FINE GRADING AND PAVING OF ROADS.
5. APPLY TOPSOIL AND INITIATE VEGETATIVE STABILIZATION MEASURES AS FINAL GRADE IS REACHED.
6. REMOVE TEMPORARY BMP MEASURES AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS STABILIZED.
7. SUBMIT NOTICE OF TERMINATION (NOT) TO SCDHEC AS APPROPRIATE.

PORTABLE TOILETS

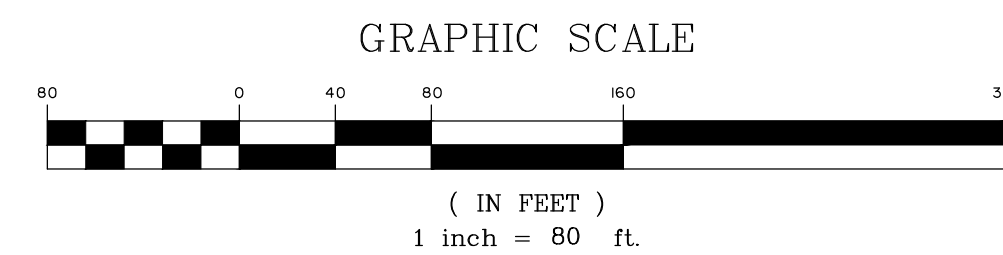
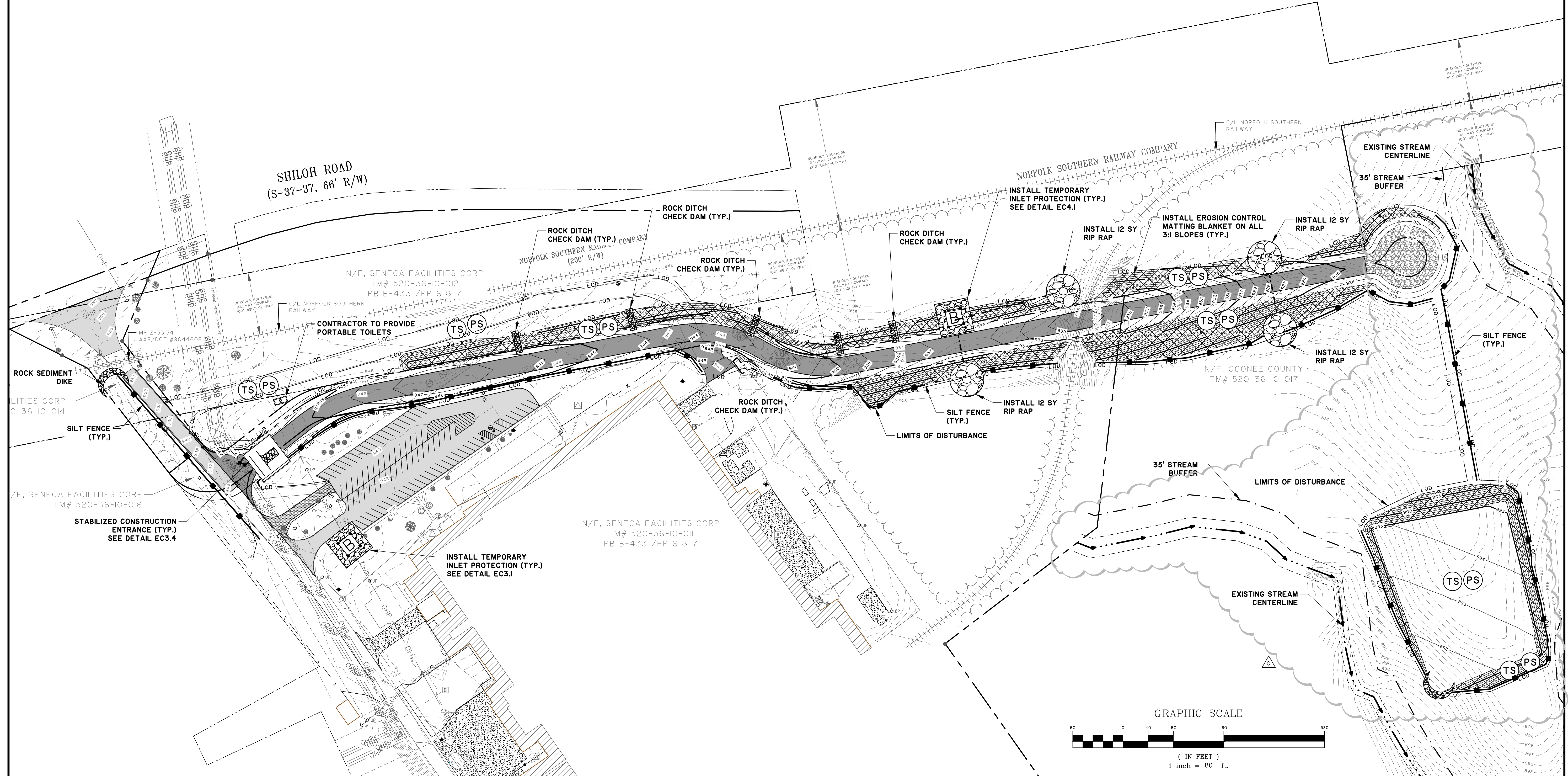
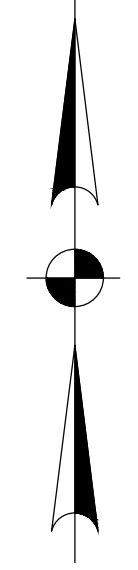
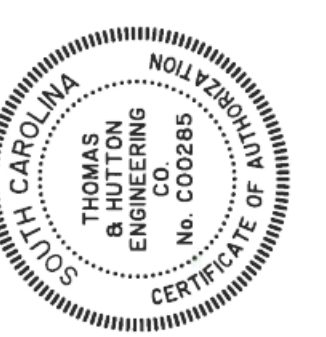
PORTABLE TOILET FACILITIES MUST BE PROVIDED AND MAINTAINED IN A SAFE AND SANITARY MANNER IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS OR PERMIT CONDITIONS.

WHEN PLACED AT A WORK SITE, THE TOILETS MUST BE PLACED IN ACCORDANCE WITH OSHA REQUIREMENTS AND SERVICED IN ACCORDANCE WITH INDUSTRY STANDARDS.

THE TOILET UNIT MUST BE SET ON A LEVEL STABLE BASE MATERIAL AWAY FROM STORM DRAINS, WATERWAYS, AND AREAS WITH HIGH VEHICULAR TRAFFIC. THE PORTABLE TOILET SHALL NOT BE PLACED ON THE PUBLIC ROAD PAVEMENT, A PUBLIC SIDEWALK, SEWER MANHOLE, CATCH BASIN OR CURB INLET.

PORTABLE TOILETS SHALL BE POSTED WITH PROPER SIGNAGE TO DISPLAY THE TELEPHONE NUMBER AND CONTACT INFORMATION FOR THE COMPANY RESPONSIBLE FOR CLEANING, SERVICING OR REPAIR OF THE TOILET UNITS.

LIMITS OF DISTURBANCE = 7.5 AC.



NO.	REVISIONS	BY	DATE
C	REBID REVISIONS	RWP	1-2-19
B	NORFOLK SOUTHERN REVIEW COMMENTS	RWP	5-3-18

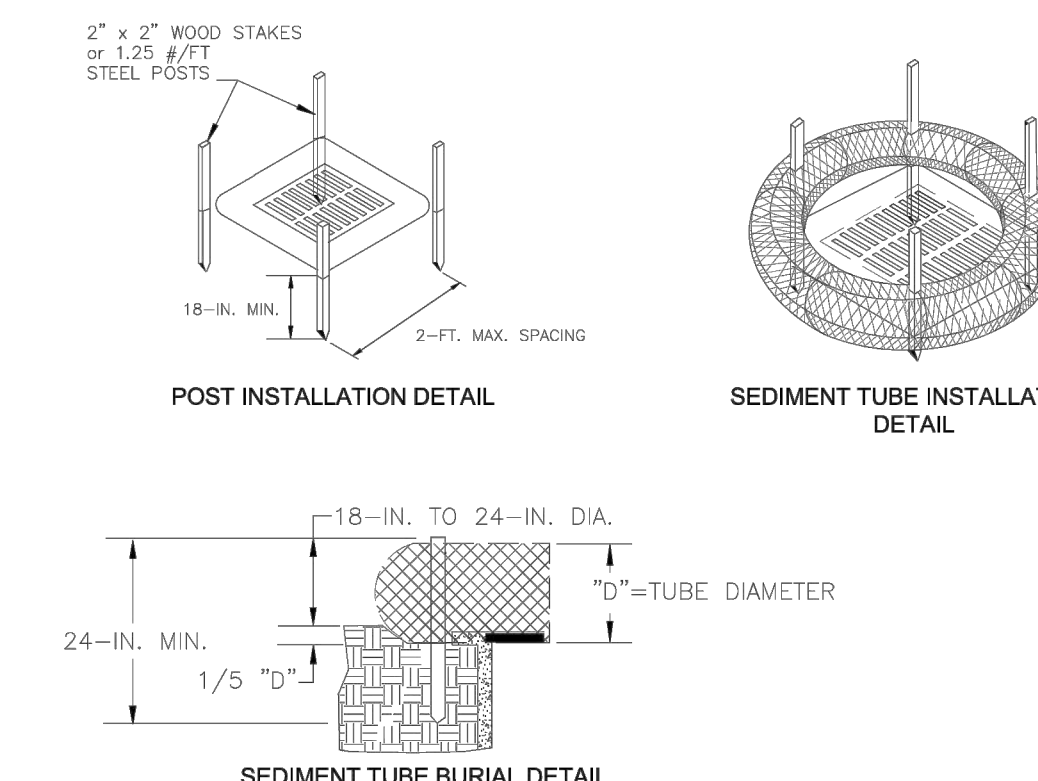
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OCONEE COUNTY
 SHILOH ROAD, SENECA, SC 29678
 SENECA RAIL SITE - ROADWAY IMPROVEMENTS
 EROSION CONTROL PLAN - CONSTRUCTION

JOB NO: J-26762.0000
 DATE: NOVEMBER 6, 2017
 DRAWN: TJP
 DESIGNED: RWP
 REVIEWED: RWP
 SCALE: 1" = 80'

EC2.1

STORMWATER POLLUTION PREVENTION PLAN

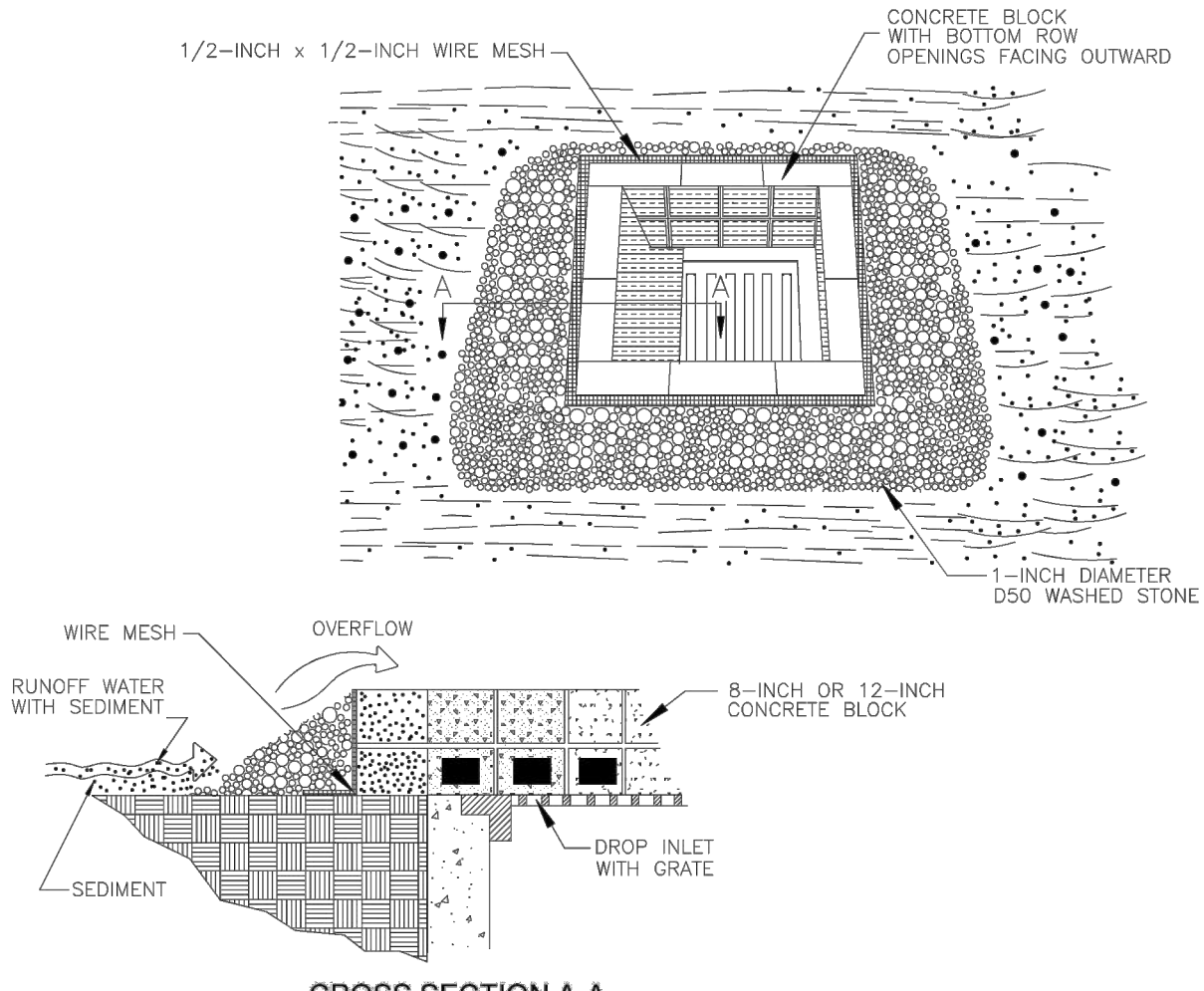


- TYPE A - SEDIMENT TUBE INLET PROTECTION**
- GENERAL NOTES**
- Sediment tubes are elongated tubes of compacted geotextiles, cured exterior wood, natural coconut fiber, or hardwood mulch. Straw, pine needles, and leaf mulch-filled sediment tubes are not permitted.
 - The outer netting of the sediment tube should consist of seamless, high-density polyethylene photodegradable material treated with ultraviolet stabilizers or a seamless, high-density polyethylene non-degradable material.
 - Sediment tube diameters shall range from 18-inches to 24-inches. Sediment tubes with smaller diameters are prohibited when used as inlet protection.
 - Curled exterior wood, or natural coconut products that are rolled up to create a sediment tube are not allowed.
 - Sediment tubes should be staked using wooden oak stakes (2-inch x 2-inch) or steel posts (standard "U" or "T" section) with a minimum weight of 1.25 pounds per foot at a minimum of 48-inches in length placed on 2-foot centers.
 - 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.
 - The ends of adjacent sediment tubes should be overlapped 6-inches to prevent flow and sediment from passing through the field joint.
 - Sediment tubes should not be stacked on top of one another.
 - Each sediment tube should be installed in a trench with a depth equal to 1/5 the diameter of the sediment tube.
 - Install stakes at a diagonal facing incoming runoff.

- INSPECTION & MAINTENANCE**
- The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
 - Regular inspections of sediment tube inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
 - Attention to sediment accumulations in front of the sediment tube is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
 - Remove accumulated sediment when it reaches 1/3 the height of the sediment tube. When a sump is installed in front of the inlet protection, sediment shall be removed when it fills approximately 1/3 the depth of the sump.
 - Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
 - Large debris, trash, and leaves should be removed from in front of tubes when found.
 - Inlet protection structures should be removed after the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

SEDIMENT TUBE INLET PROTECTION (TYPE A)

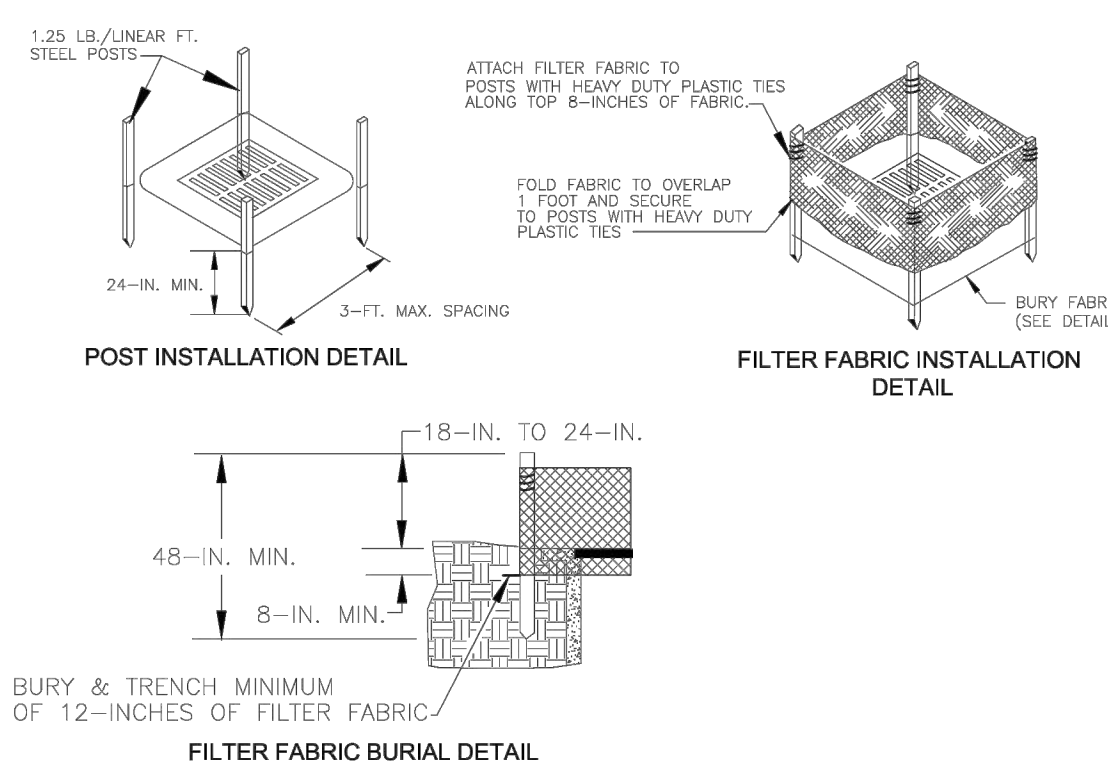
NOT TO SCALE



- BLOCK AND GRAVEL DROP INLET PROTECTION**
- GENERAL NOTES**
- Block and gravel filters can be used where heavy flows and higher velocities are expected and where an overflow capacity is necessary to prevent excessive ponding around the structure.
 - Gravel shall consist of 1-inch D50 Washed Stone and should extend to height equal to the elevation of the top of the blocks.
 - Place the bottom row of the concrete blocks lengthwise on their side so that the open faces outward, not upward.
 - The height of the barrier can be varied, depending upon design needs by stacking a combination of blocks that are 8- to 12-inches wide.
 - Wire mesh should be placed over the outside vertical face of the concrete blocks to prevent stones from being washed through the holes in the blocks. Hardware cloth or comparable wire mesh with 1/2-inch x 1/2-inch openings should be used.
- INSPECTION AND MAINTENANCE**
- The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
 - Regular inspections of all inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
 - Attention to sediment accumulations in front of the inlet protection is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
 - Remove accumulated sediment when it reaches 1/3 the height of the blocks. If a sump is used, sediment should be removed when it fills approximately 1/3 the depth of the hole.
 - Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
 - Large debris, trash, and leaves should be removed from in front of tubes when found.
 - If the stone filter becomes clogged with sediment, the stones must be pulled away from the inlet and cleaned or replaced with fresh stone.
 - Inlet protection structures should be removed after the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

BLOCK AND GRAVEL DROP INLET PROTECTION (TYPE C)

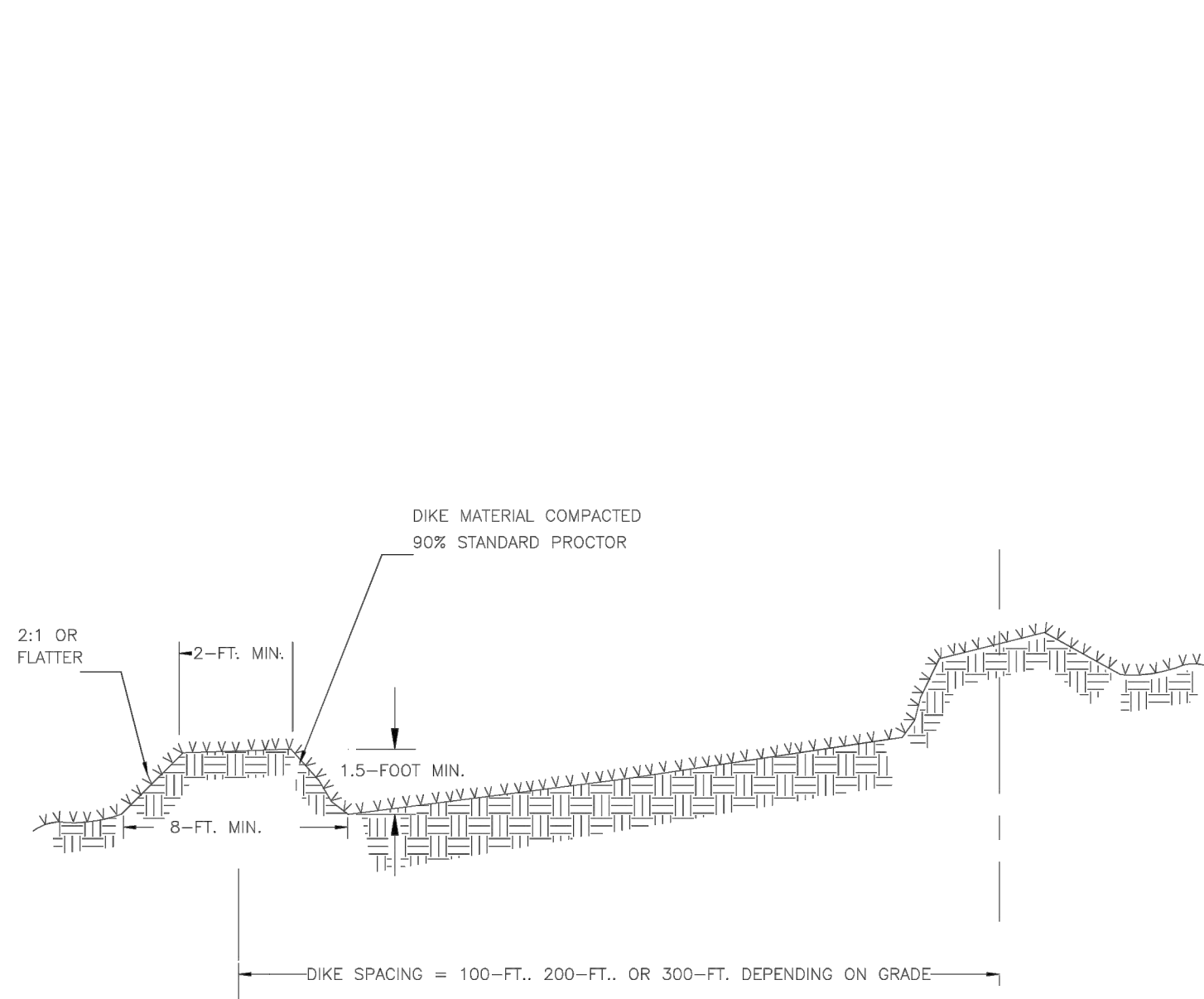
NOT TO SCALE



- TYPE A - FILTER FABRIC REQUIREMENTS**
- Silt fence must be composed of seven geotextile filter fabric that consists of the following requirements:
 - Composed of fibers consisting of long chain synthetic polymers of at least 80% by weight of polypropylene, 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.
 - 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.
 - 12-inches of the fabric should be placed within excavated trench and used in when the trench is backfilled.
 - Filter fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
 - Filter fabric shall be installed at a minimum of 24-inches above the ground.
- TYPE A - POST REQUIREMENTS**
- 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;
 - Weight 1.25 pounds per foot (± 8%).
 - Posts shall be equipped with projections to aid in fastening of filter fabric.
 - 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.
 - Post spacing shall be at a maximum of 3-feet on center.

FILTER FABRIC INLET PROTECTION (TYPE A)

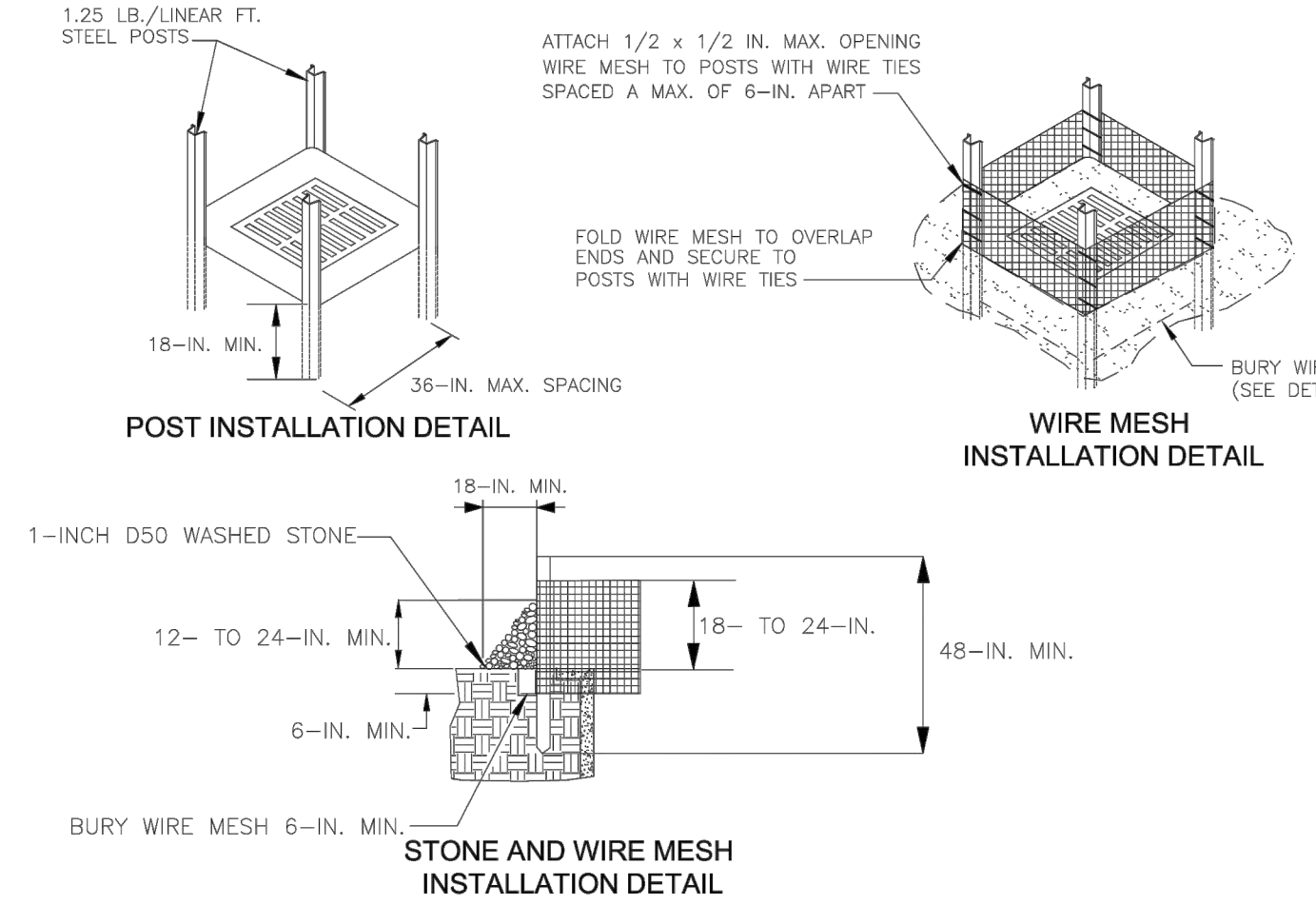
NOT TO SCALE



- DIVERSION DIKES AND BERMS**
- Installation**
- Slopes shall be stabilized immediately using vegetation, sod, and erosion control blankets or turf reinforcement mats to prevent erosion. The upslope side of the dike should provide positive drainage so no erosion occurs at the outlet. Provide energy dissipation measures as necessary. Sediment-laden runoff must be released through a sediment trapping facility. Sediment-laden runoff shall be directed to a sediment trapping facility. Minimize construction traffic over diversion dikes and berms.
- Inspection and Maintenance:**
- Dikes and Berms should be inspected, every seven (7) calendar days and within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation and repairs made as necessary.
- Damage caused by construction traffic or other activity must be repaired before the end of each working day.

DIVERSION DIKE OR BERM

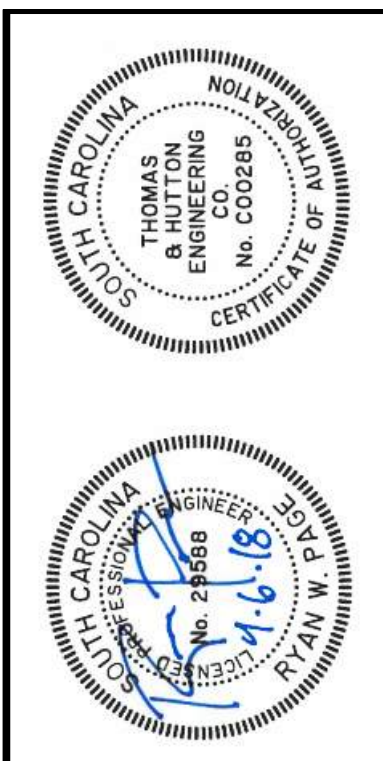
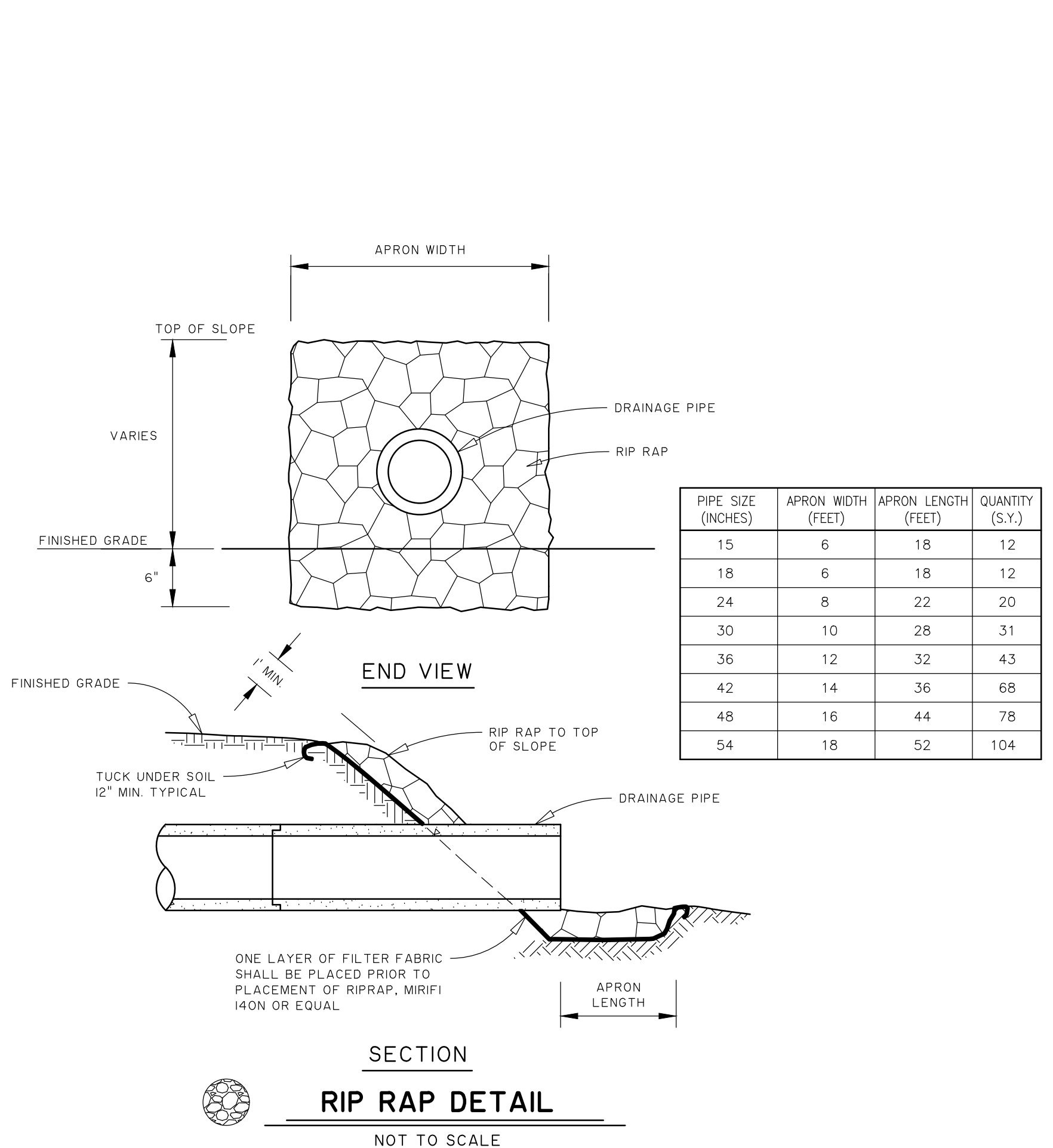
NOT TO SCALE



- TYPE B - INSPECTION & MAINTENANCE**
- The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
 - Regular inspections of inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
 - Attention to sediment accumulations along the filter fabric is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
 - Remove accumulated sediment when it reaches 1/3 the height of the filter fabric. When a sump is installed in front of the fabric, sediment should be removed when it fills approximately 1/3 the depth of the sump.
 - Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
 - Check for areas where stormwater runoff has eroded a channel beneath the filter fabric, or where the fabric has sagged or collapsed due to runoff overtopping the inlet protection.
 - Check for tears within the filter fabric, areas where fabric has begun to decompose, and for any other circumstance that may render the inlet protection ineffective. Removed damaged fabric and reinstall new filter fabric immediately.
 - Inlet protection structures should be removed after all the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

HARDWARE FABRIC AND STONE INLET PROTECTION (TYPE B)

NOT TO SCALE



NO.	REVISIONS	DATE

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OCONEE COUNTY
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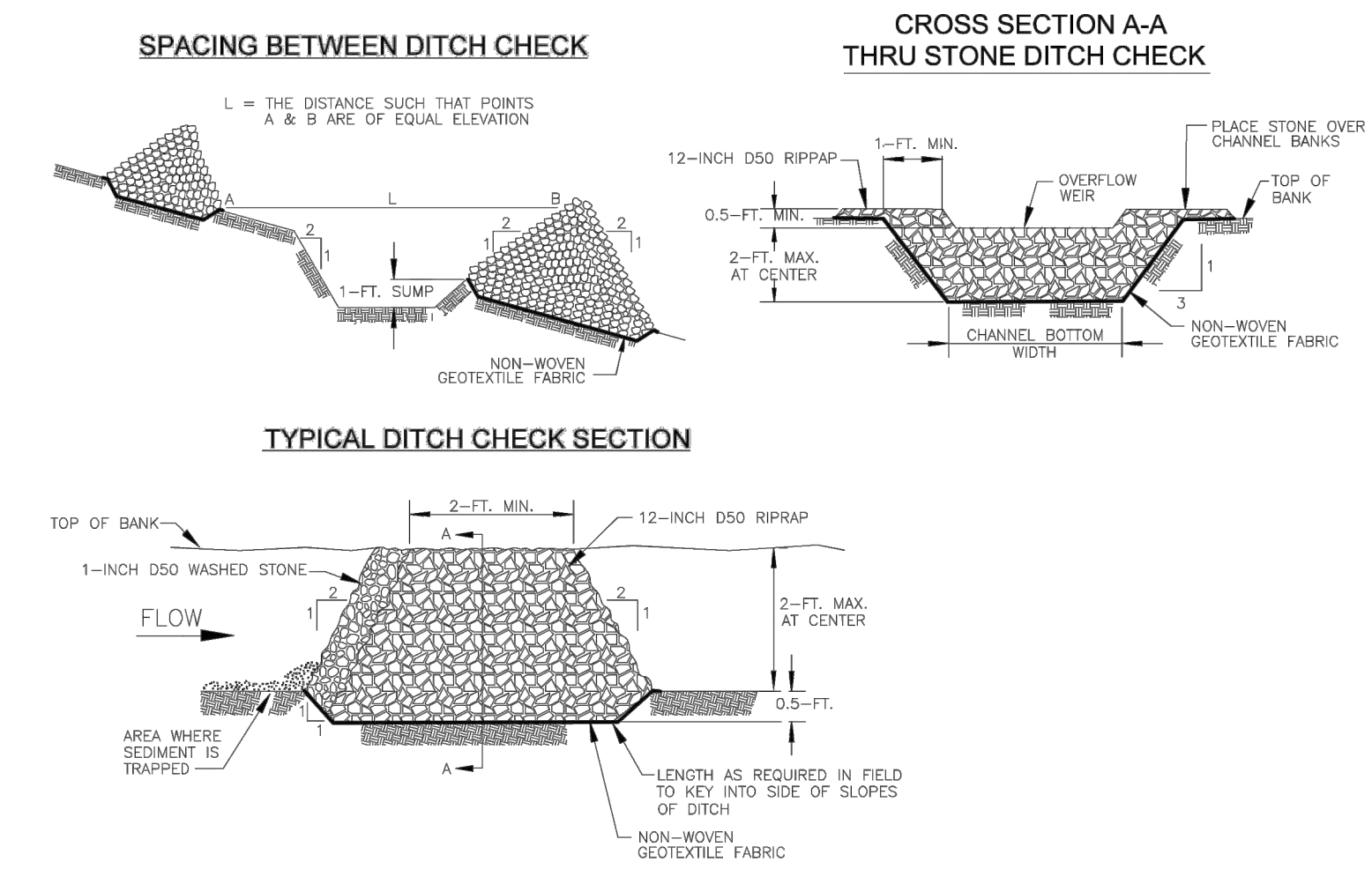
SENECA RAIL SITE - ROADWAY IMPROVEMENTS

EROSION CONTROL - DETAILS

JOB NO: J-26762.0000
 DATE: NOVEMBER 6, 2017
 DRAWN: TJP
 DESIGNED: RWP
 REVIEWED: RWP
 SCALE: N/A

EC3.1

STORMWATER POLLUTION PREVENTION PLAN

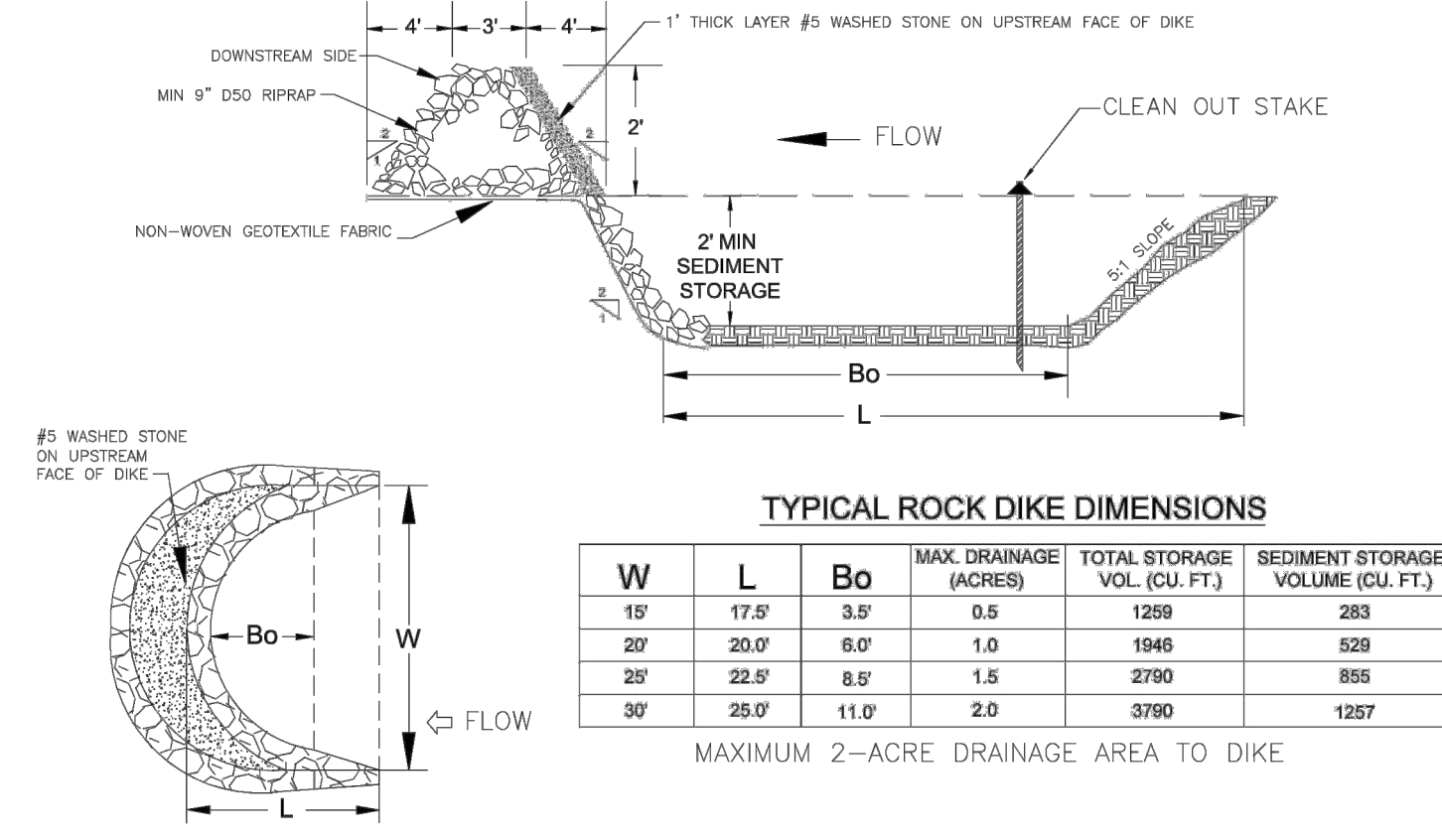


ROCK DITCH CHECK — GENERAL NOTES

1. Rock Ditch Checks should not be placed in Waters of the State or USGS blue-line streams (unless approved by Federal Authorities).
2. Rock Ditch Checks should be installed in steeply sloped channels where adequate vegetation cannot be established. This BMP measure should only be used in small open channels.
3. A non-woven geotextile fabric shall be installed over the soil surface where the rock ditch check is to be placed.
4. The body of the rock ditch check shall be composed of 12-inch D50 Riprap. The upstream face may be composed of 1-inch D50 washed stone.
5. Rock Ditch Checks should not exceed a height of 2-feet at the centerline of the channel.
6. Rock Ditch Checks should have a minimum top flow length of 2-feet.
7. Riprap should be placed over channel banks to prevent water from cutting around the ditch check.
8. The riprap should be placed by hand or mechanical placement (no dumping of rock to form dam) to achieve complete coverage of the channel. Doing so will also ensure that the center of the check is lower than the edges.
9. The maximum spacing between the dams should be such that the toe of the upstream check is at the same elevation as the top of the downstream check.

ROCK DITCH CHECK — INSPECTION & MAINTENANCE

1. The key to functional rock ditch check is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of rock ditch checks shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations in front of the rock ditch check 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 rock ditch check.
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. Inspect Rock Ditch Checks' edges for erosion and evidence of runoff bypassing the installed check. If evident repair promptly as necessary to prevent erosion and bypassing.
7. In the case of grass-lined ditches, channels, and swales, rock ditch checks should be removed when the grass has matured sufficiently to protect the ditch or swale unless the slope of the swale is greater than 4%.
8. After construction is completed and final stabilization is reached, the entirety of the rock ditch check should be removed if vegetation will be used for permanent erosion control measures. The area beneath the removed rock ditch check must be addressed with permanent stabilization measures.



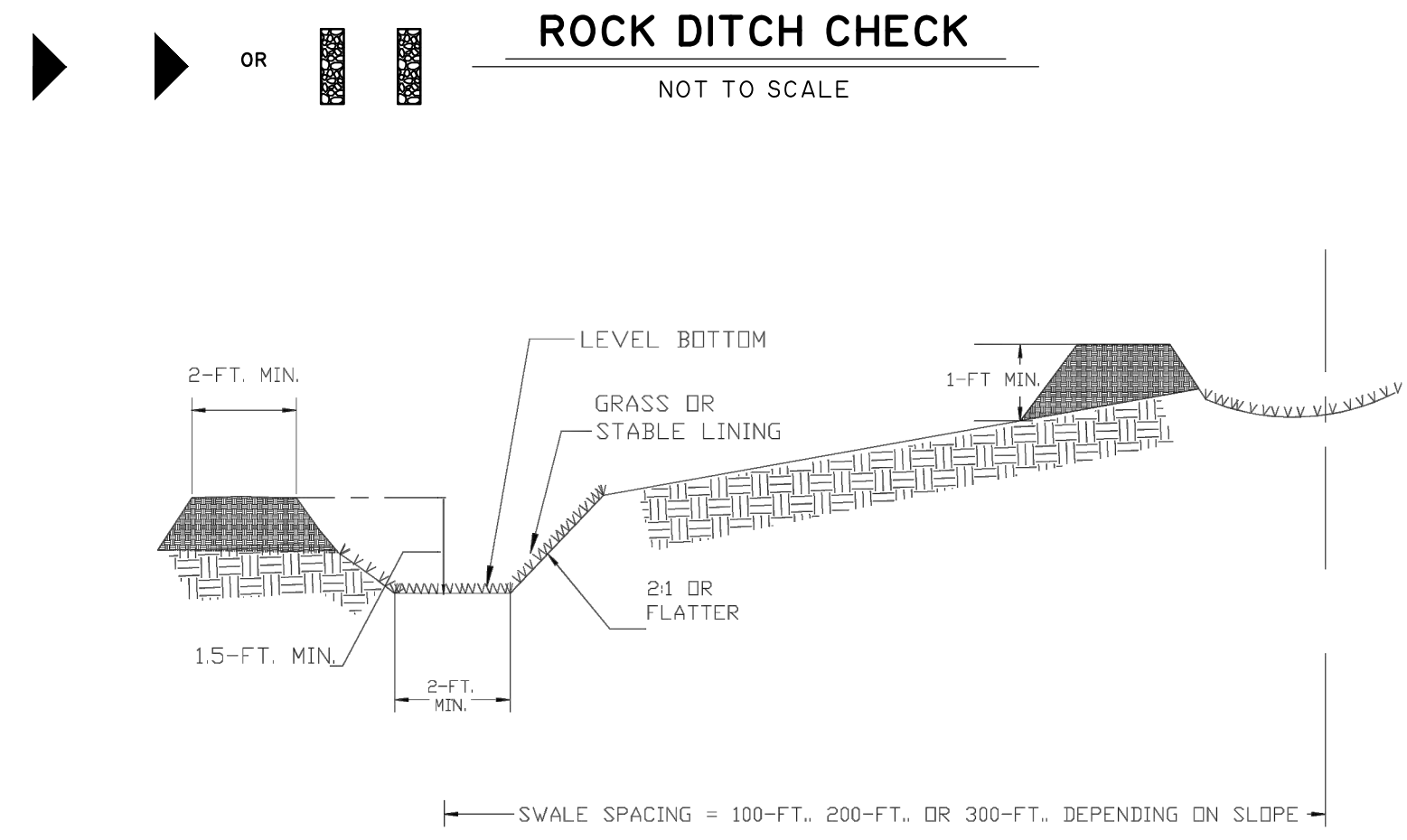
ROCK SEDIMENT DIKE — GENERAL NOTES

1. Rock sediment dikes should not be placed in Waters of the State or USGS blue-line streams (unless approved by Federal Authorities).
2. A non-woven geotextile fabric shall be installed over the soil surface where the rock sediment dike is to be placed.
3. The body of a rock sediment dike shall be composed of 9-inch D50 riprap at a minimum.
4. The upstream face of the rock sediment dike shall be composed of a 1-foot thick layer of 3/4-inch to 1-inch D50 washed stone placed at a slope of 2H:1V.
5. Rock sediment dikes shall have a minimum top flow length of 3-feet (2-foot flow length through the riprap and 1-foot flow length through the washed stone).
6. The rock must be placed by hand or mechanical placement (no dumping of rock to form the sediment dike) to achieve proper dimensions.
7. A sediment sump shall be located on the upstream side of the structure to provide sediment storage. The upstream side of the sump shall have a slope of 5H:1V to inhibit erosion of the sediment storage area. The minimum depth of the sump shall be 2-feet.
8. Mark the sediment clean-out level of the sediment dike with a stake in the field.
9. Seed and mulch all disturbed areas.

ROCK SEDIMENT DIKE — INSPECTION AND MAINTENANCE

1. The key to a functional rock sediment dike is weekly inspection, routine maintenance and regular sediment removal.
2. Attention to sediment accumulations within the rock sediment dike is extremely important. Accumulated sediment deposition should be continually monitored in the trap and removed when necessary.
3. Remove accumulated sediment when it reaches 50% of the designed sediment storage volume as marked by the clean-out stake.
4. Removed sediment from the rock sediment dike shall be placed in stockpile storage areas or spread thinly across the disturbed area. Stabilize the removed sediment after it is relocated.
5. Regular inspections of rock sediment dikes should be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
6. All rock sediment dikes should be removed within 30 days after final stabilization is achieved. Dispose of all construction materials appropriately. Disturbed area resulting from removal shall be permanently stabilized.

ROCK SEDIMENT DIKES NOT TO SCALE

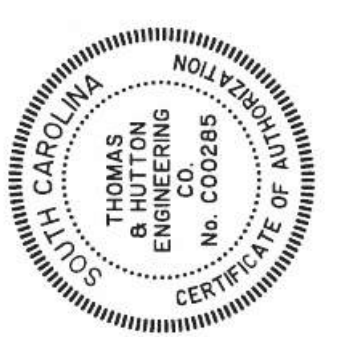


DIVERSION SWALE

Installation
The bottom width should be a minimum of 2-feet, and the bottom should be level. The depth should be a minimum of 1.5-feet and the side slopes should be 2H:1V or flatter. The maximum grade shall be 5%, with positive drainage to a suitable outlet. Slopes shall be stabilized immediately using vegetation, sod, and erosion control blankets or turf reinforcement mats to prevent erosion. The upslope side of the swale should provide positive drainage so no erosion occurs at the outlet. Provide energy dissipation measures as necessary. Sediment-laden runoff shall be directed to a sediment trapping facility.

Inspection and Maintenance:
Swales should be inspected, every seven (7) calendar days and within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation and repairs made as necessary. Damage caused by construction traffic or other activity must be repaired before the end of each working day.

TEMPORARY DIVERSION DITCH OR SWALE NOT TO SCALE



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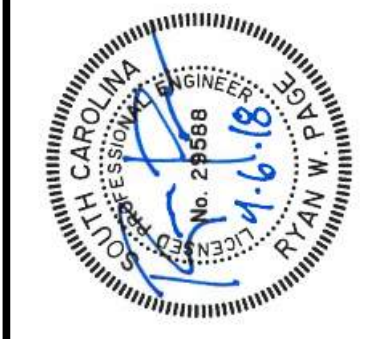
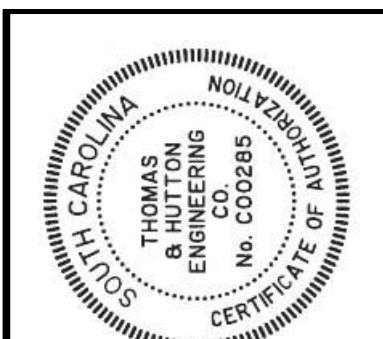
SENECA RAIL SITE - ROADWAY IMPROVEMENTS

EROSION CONTROL - DETAILS

JOB NO: J-26762.0000
DATE: NOVEMBER 6, 2017
DRAWN: TJP
DESIGNED: RWP
REVIEWED: RWP
APPROVED: RWP
SCALE: N/A

EC3.2

STORMWATER POLLUTION PREVENTION PLAN



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SENECA RAIL SITE - ROADWAY IMPROVEMENTS
EROSION CONTROL - DETAILS

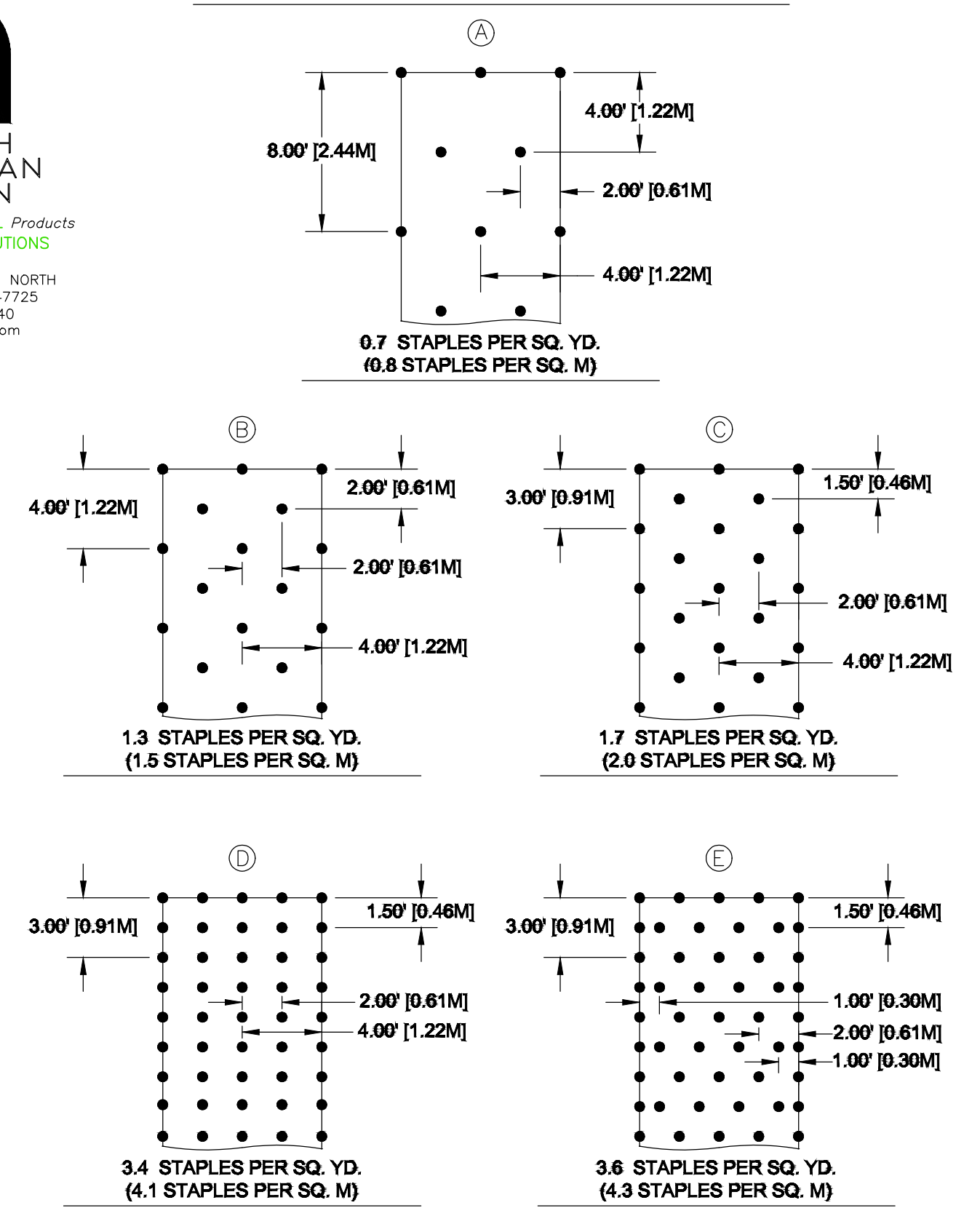
JOB NO: J-26762.0000
 DATE: NOVEMBER 6, 2017
 DRAWN: TJP
 DESIGNED: RWP
 REVIEWED: RWP
 APPROVED: RWP
 SCALE: N/A

EC3.3



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STAPLE PATTERN GUIDE
 8' (2.4 M) WIDE ROLLS

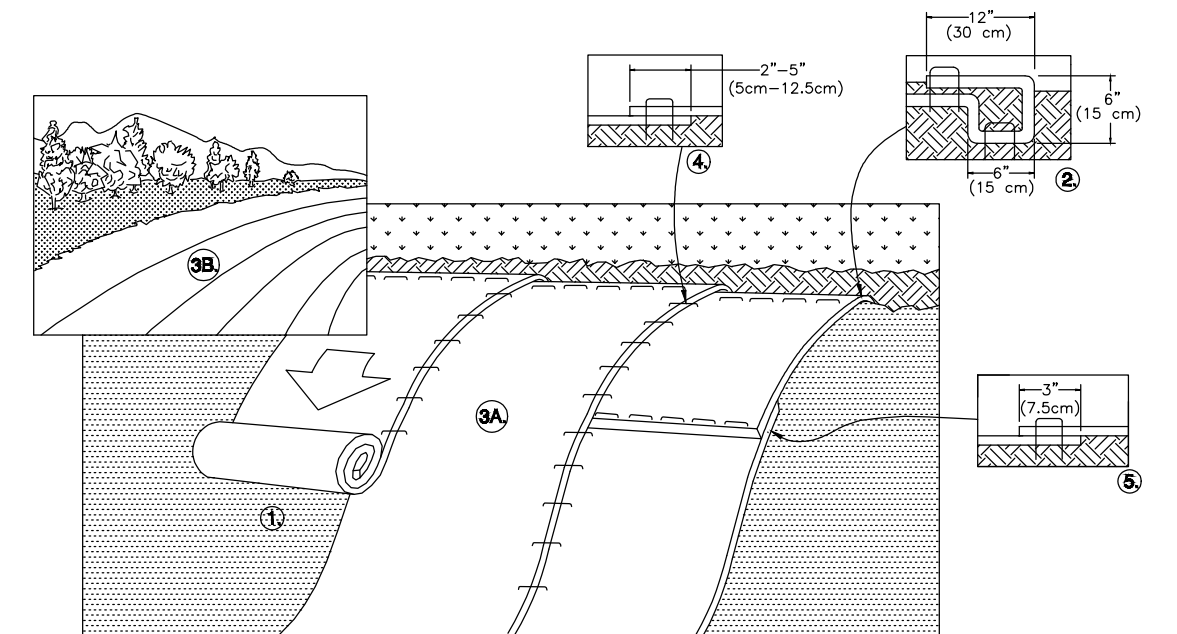


REV. 01/05



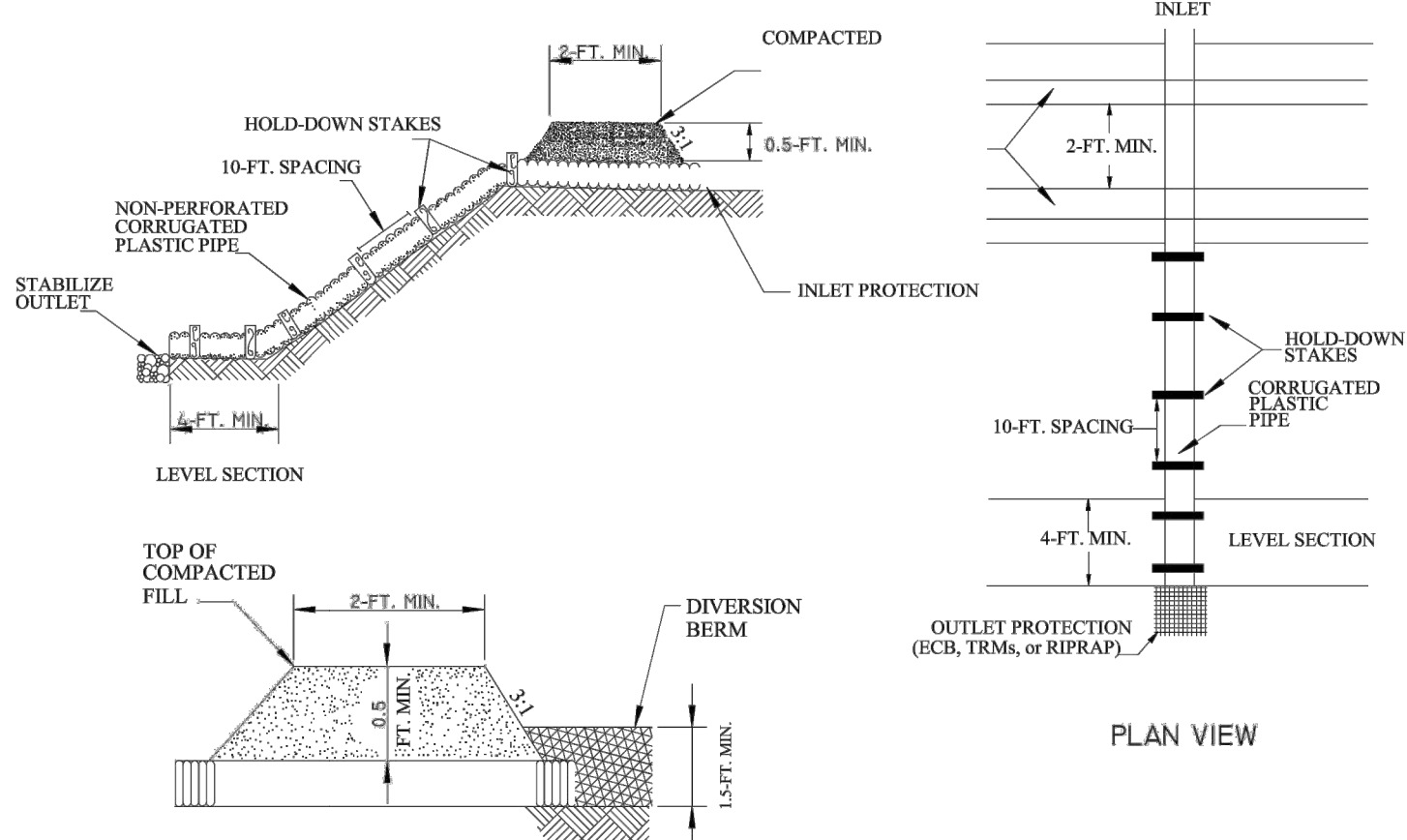
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SLOPE INSTALLATION



- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECIP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
 - NOTE: WHEN USING CELL-0-SEED DO NOT SEED PREPARED AREA. CELL-0-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
 - BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECIP'S IN A 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECIP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECIP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECIP'S BACK OVER SEED AND COMPACTED SOIL. SECURE THE RECIP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECIP'S.
 - ROLL THE RECIP'S (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECIP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECIP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
 - THE EDGES OF PARALLEL RECIP'S MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECIP'S TYPE.
 - CONSECUTIVE RECIP'S SPLIZED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECIP'S WIDTH.
- NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECIP'S.

REV. 01/05



PIPE SLOPE DRAIN

When and Where to Use It

Pipe slope drains are used when it is necessary for water to flow down a slope without causing erosion, especially before a slope has been stabilized or before permanent drainage structures are installed.

Installation:

Typical pipe slope drains are made of non-perforated corrugated plastic pipe.

Slope drain sections should be securely fastened together, have gasket watertight fittings, and be securely anchored into the soil.

Diversion berms or dikes should direct runoff to slope drains. The minimum depth of these berms should be 1.5-feet. The height of the berm around the pipe inlet should be a minimum of 1.5-feet high and at least 0.5-feet higher than the top of the pipe. The berm at the pipe inlet shall be compacted around the pipe. The area around the inlet shall be properly stabilized with ECBs, TRMs, riprap or other appropriate stabilization techniques.

The area below the outlet must be properly stabilized with ECBs, TRMs, riprap or other applicable stabilization technique.

If the pipe slope drain is conveying sediment-laden water, direct all flows into the sediment trapping facility.

Permanent slope drains should be buried beneath the soil surface a minimum 1.5-feet.

Inspection and Maintenance:

Inspect pipe slope drain inlet and outlet points every seven (7) calendar days and within 24-hours after each rainfall event that produces 1/2-inches or more of precipitation.

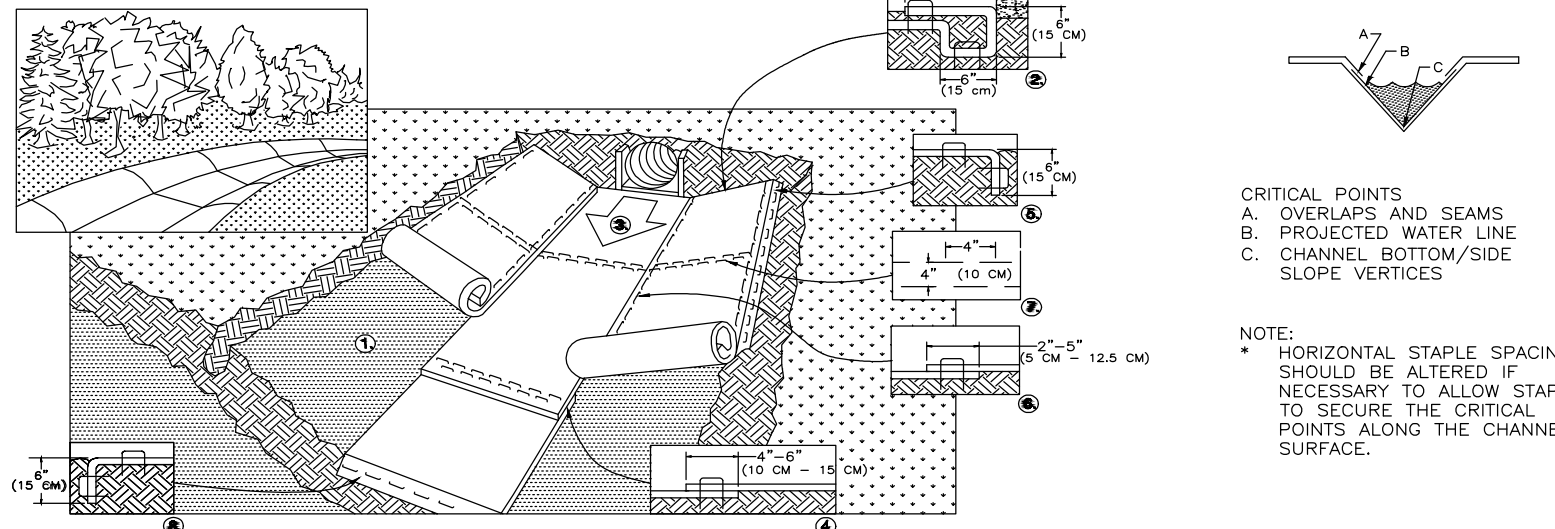
The inlet should be free from undercutting, and no water should be going around the point of entry. If there are problems, the headwall should be reinforced with compacted earth or sandbags. The outlet point should be free of erosion and installed with appropriate outlet protection.

All temporary pipe slope drains should be removed within 30 days after final site stabilization is achieved or after the temporary BMP is no longer needed. Disturbed soil areas resulting from removal should be permanently stabilized.

PIPE SLOPE DRAIN

NOT TO SCALE

CHANNEL INSTALLATION



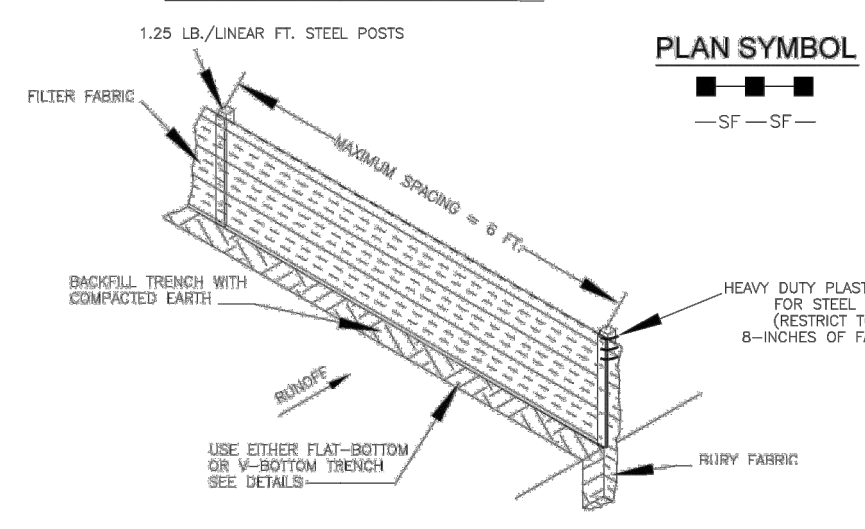
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- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECIP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
 - NOTE: WHEN USING CELL-0-SEED DO NOT SEED PREPARED AREA. CELL-0-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
 - BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECIP'S IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECIP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECIP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECIP'S BACK OVER SEED AND COMPACTED SOIL. SECURE THE RECIP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECIP'S.
 - ROLL CENTER RECIP'S IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECIP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECIP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
 - PLACE CONSECUTIVE RECIP'S END OVER END (SHINGLE STYLE) WITH A 4" - 6" (10 CM - 15 CM) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER TO SECURE RECIP'S.
 - FULL LENGTH EDGE OF RECIP'S AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
 - ADJACENT RECIP'S MUST BE OVERLAPPED APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) (DEPENDING ON RECIP'S TYPE) AND STAPLED.
 - IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FEET (9 M - 12 M) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
 - THE TERMINAL END OF THE RECIP'S MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
- NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECIP'S.

CRITICAL POINTS
 A. OVERLAPS AND SEAMS
 B. PROJECTED WATER LINE
 C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTE:
 HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

SILT FENCE INSTALLATION



SILT FENCE - GENERAL NOTES

- 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 (4 lbs).
- Maximum slope steepness (normal [perpendicular] to the fence line) shall be 2:1.
- Maximum sheet or overlap flow path length to the silt fence shall be 100-feet.
- Silt fence joints, when necessary, shall be completed by one of the following options:
 - Wrap each fabric together at a support post with both ends fastened to the post, with a 1-foot minimum overlap.
 - Overlap silt fence by installing 3-feet, passed the support post to which the new silt fence roll is attached. Attach old roll to new roll with heavy-duty plastic ties, or
 - Overlap entire width of each silt fence roll from one support post to the next support post.
- Attach filter fabric to the steel posts using heavy-duty plastic ties that are evenly spaced within the top 8-inches of the fabric.
- Install the silt fence perpendicular to the direction of the stormwater flow and place the silt fence the proper distance from the top of slope to provide sediment storage and access for maintenance and cleanup.
- Install Silt Fence Checks (Tie-Backs) every 50-100 feet, dependent on slope, along silt fence that is installed with slope and where concentrated flows are expected or are documented along the proposed/installed silt fence.

SILT FENCE - POST REQUIREMENTS

- 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 (4 lbs).
- Posts shall be equipped with projections to aid in fastening of filter fabric.
- 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 1/2 inch steel, at a minimum. The metal soil stabilization plate should be completely buried.
- 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.
- Post spacing shall be at a maximum of 6-feet on center.

SILT FENCE - FABRIC REQUIREMENTS

- 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 80% by weight of polypropylene, polyethylene, or polyamide that are formed into a network such that the filaments or yarns retain dimensional stability after installation.
 - Free of any treatment or coating which might adversely affect 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.
- Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #54, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
- 12-inches of the fabric should be placed within excavated trench and used in when the trench is backfilled.
- Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
- Filter Fabric shall be installed at a minimum of 24-inches above the ground.

SILT FENCE - INSPECTION & MAINTENANCE

- The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.
- Regular inspections of silt fence shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
- Attention to sediment accumulations along the silt fence is extremely important. Accumulated sediment should be continuously monitored and removed when necessary.
- Remove accumulated sediment when it reaches 1/3 the height of the silt fence.
- Removed sediment shall be placed in stockpile storage area or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
- 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 overlapping the silt fence. Install checks/tie-backs and/or reinstall silt fence, as necessary.
- 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.
- 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

NOT TO SCALE

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SHILOH ROAD (S-37-37, 66' R/W)

NORFOLK SOUTHERN RAILWAY COMPANY
(200' R/W)

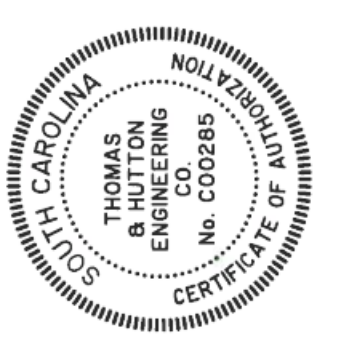
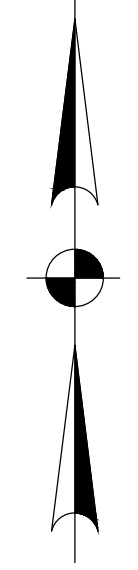
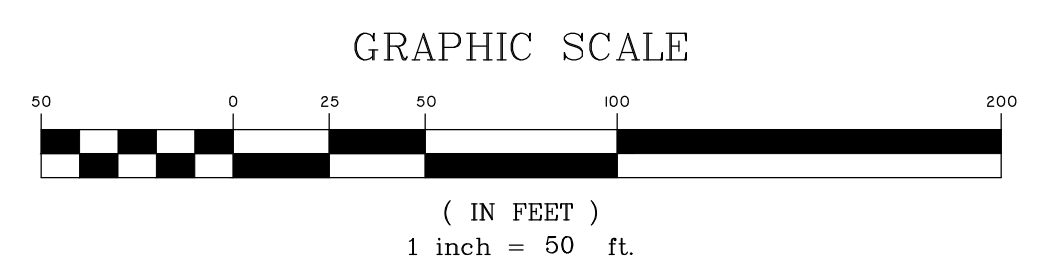
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TM# 520-36-10-011
PB B-433 /PP 6 & 7

- NOTES:**
- SEE ROADWAY PROFILE SHEET C3.1 FOR CENTERLINE ELEVATIONS.
 - THERE WILL BE NO INCREASE IN STORMWATER QUANTITY AND OR CHARACTER OF FLOW TO THE RAILWAY'S DITCHES AND/OR DRAINAGE STRUCTURES.



NO.	REVISIONS	BY	DATE
C	REBID REVISIONS	RWP	1-21-19
B	NORFOLK SOUTHERN REVIEW COMMENTS	RWP	5-31-18

MATCH LINE - SEE SHEET NO. C2.2

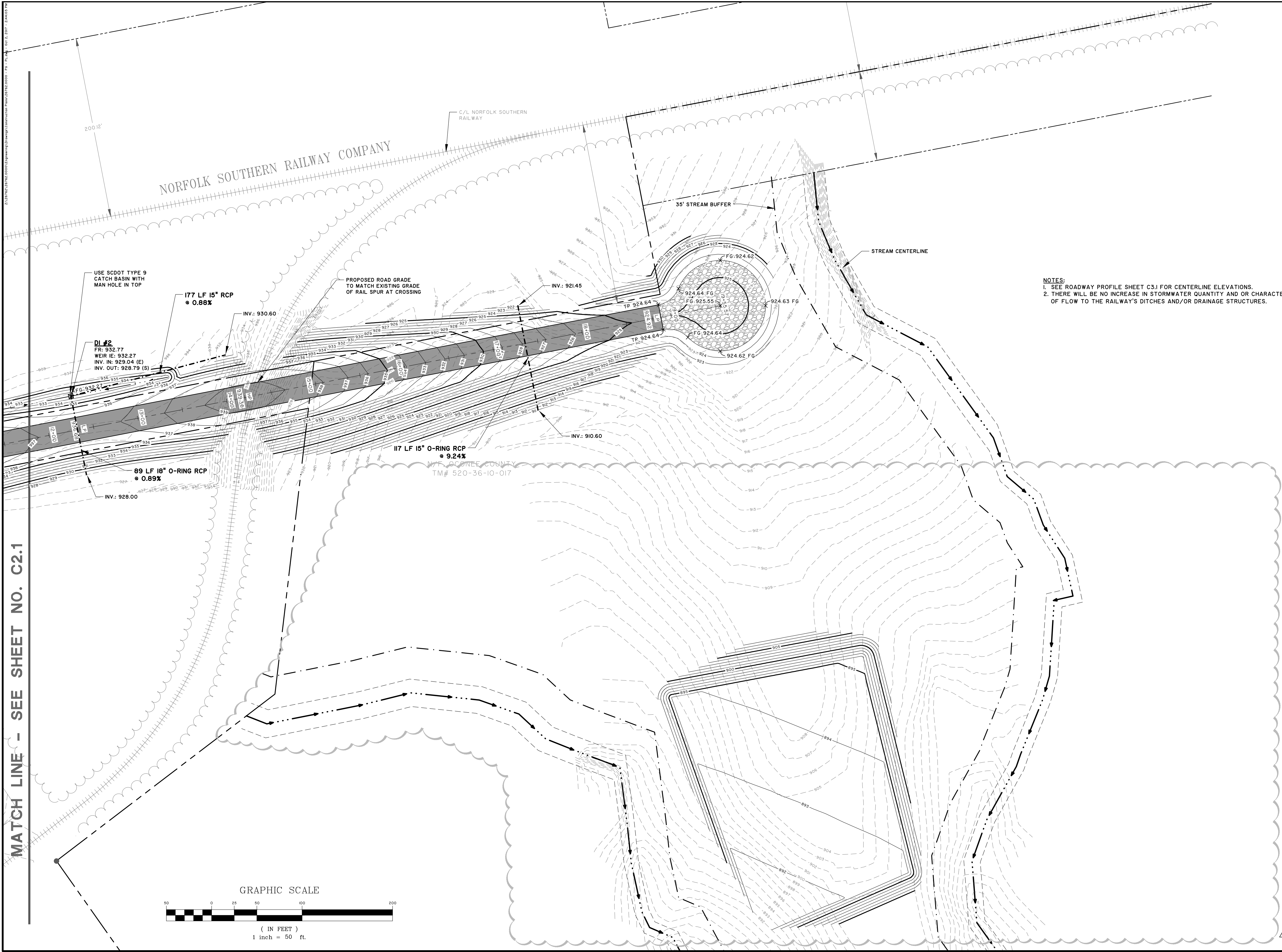
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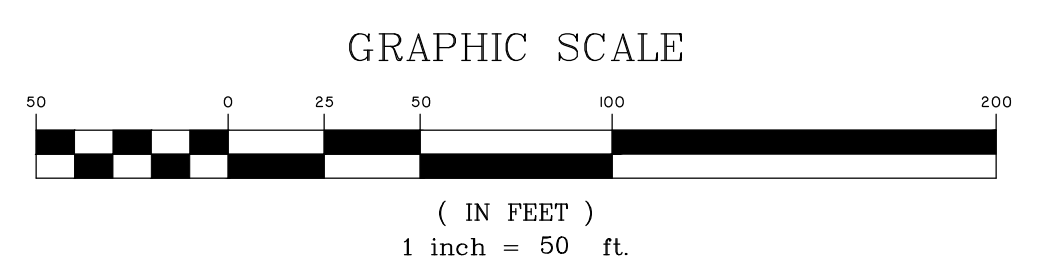
SENECA RAIL SITE - ROADWAY IMPROVEMENTS
 GRADING & DRAINAGE PLAN

JOB NO:	J-26762.0000
DATE:	NOVEMBER 6, 2017
DRAWN:	TJP
DESIGNED:	RWP
REVIEWED:	RWP
APPROVED:	RWP
SCALE:	1" = 50'

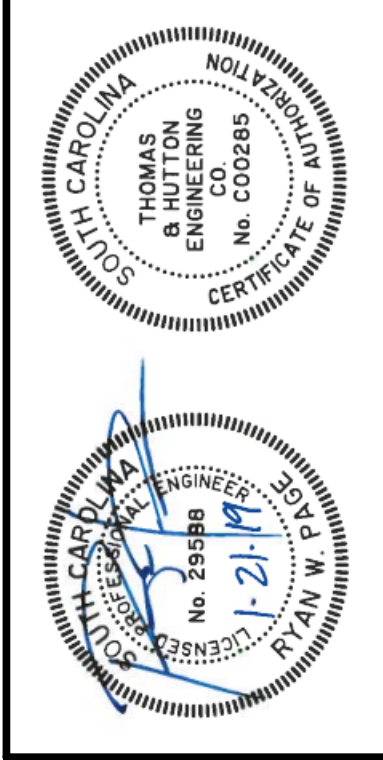
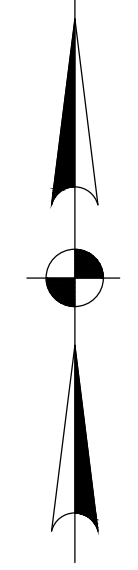
C2.1



MATCH LINE - SEE SHEET NO. C2.1



NOTES:
 1. SEE ROADWAY PROFILE SHEET C3.1 FOR CENTERLINE ELEVATIONS.
 2. THERE WILL BE NO INCREASE IN STORMWATER QUANTITY AND OR CHARACTER OF FLOW TO THE RAILWAY'S DITCHES AND/OR DRAINAGE STRUCTURES.



NO.	REVISIONS	BY	DATE
C	REBID REVISIONS	RWP	1-21-19
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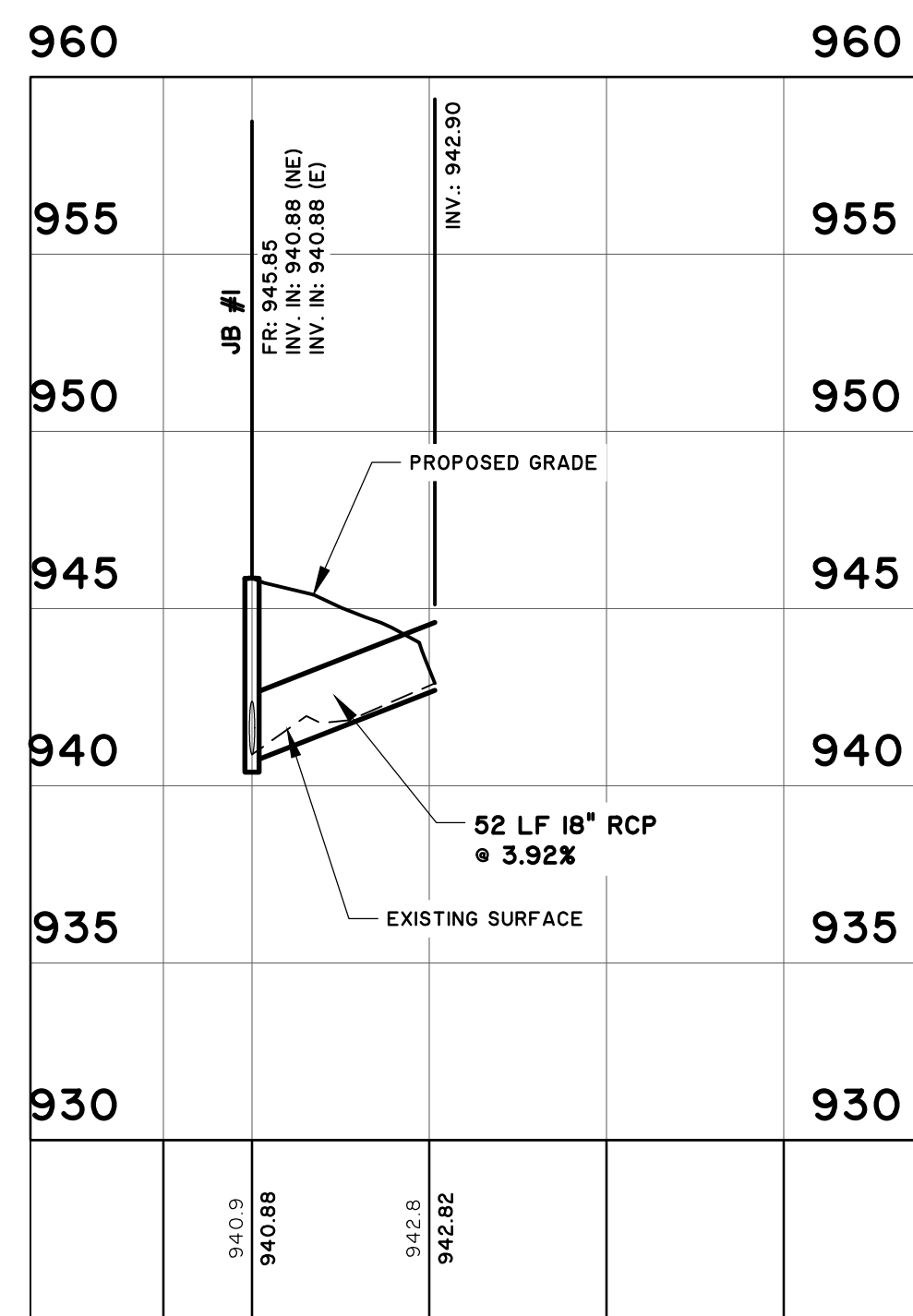
SENECA RAIL SITE - ROADWAY IMPROVEMENTS

GRADING & DRAINAGE PLAN

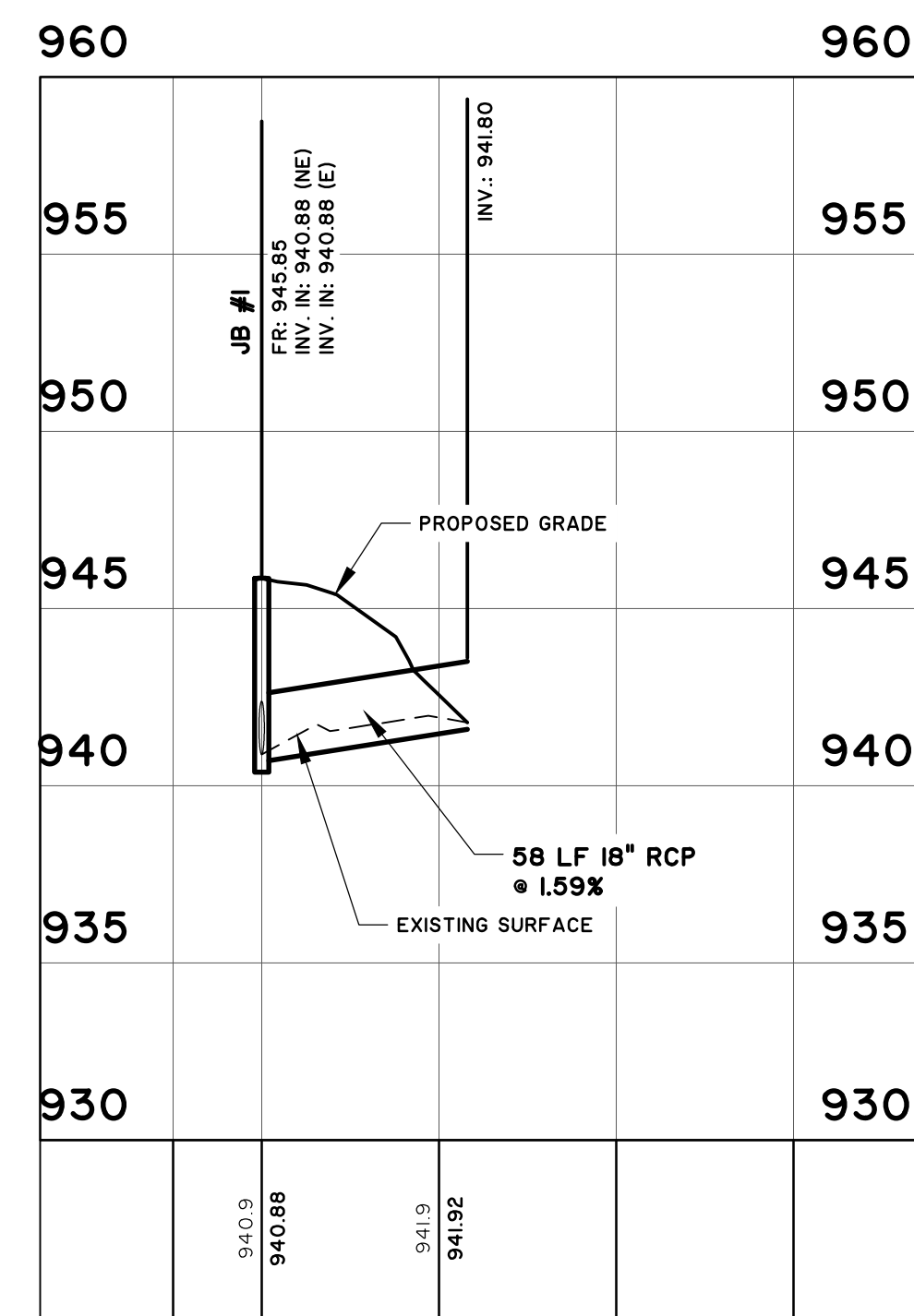
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 DATE: NOVEMBER 6, 2017
 DRAWN: TJP
 DESIGNED: RWP
 REVIEWED: RWP
 SCALE: 1" = 50'

C2.2

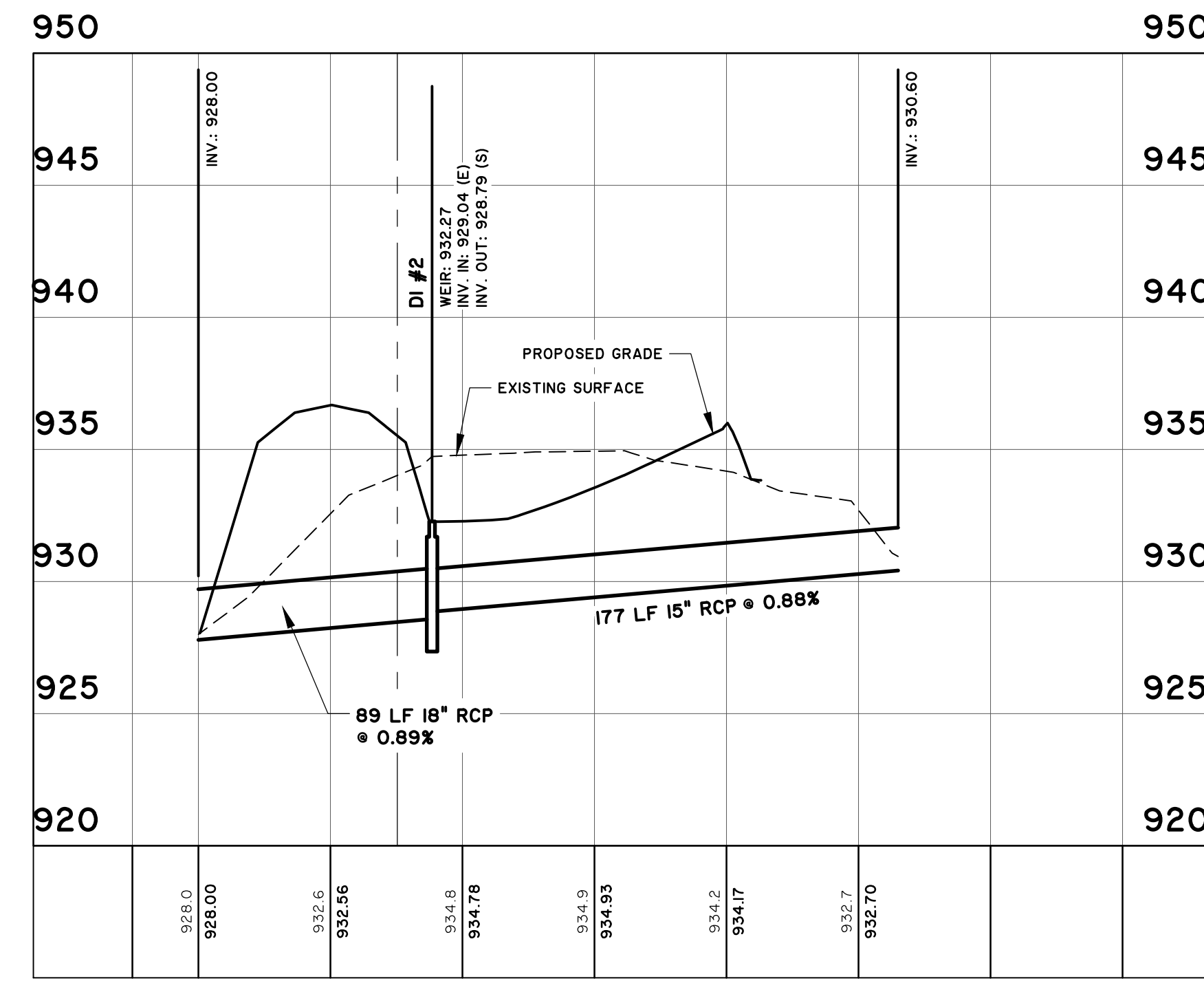
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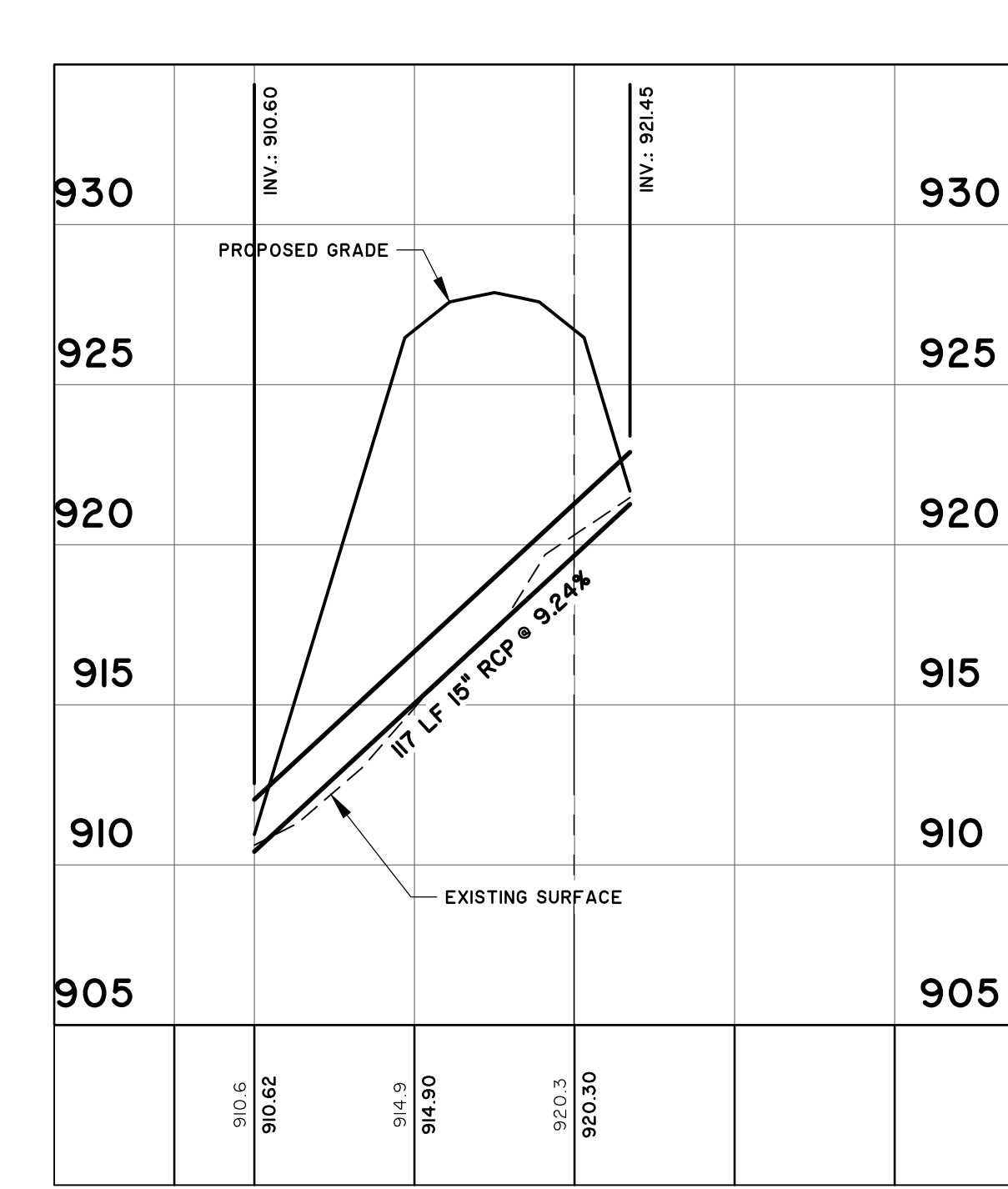
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 SCALE: HORZ.: 1" = 50'
 VERT.: 1" = 5'



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 STATIONS: -0+25 - 1+50
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 VERT.: 1" = 5'



26762.0000 - DRAINAGE - RUN 4
 STATIONS: -0+25 - 2+00
 SCALE: HORZ.: 1" = 50'
 VERT.: 1" = 5'



NO.	REVISIONS	BY	DATE
C	REBID REVISIONS		
		RWP	1-21-19

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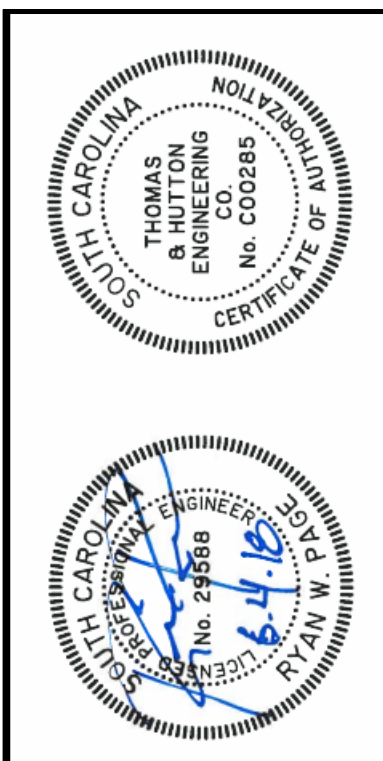
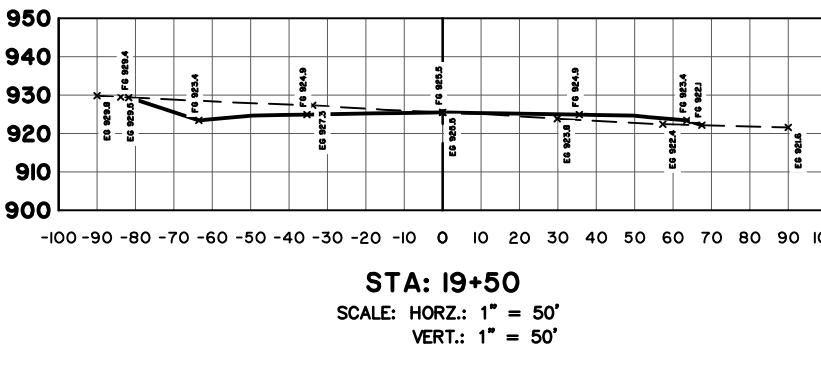
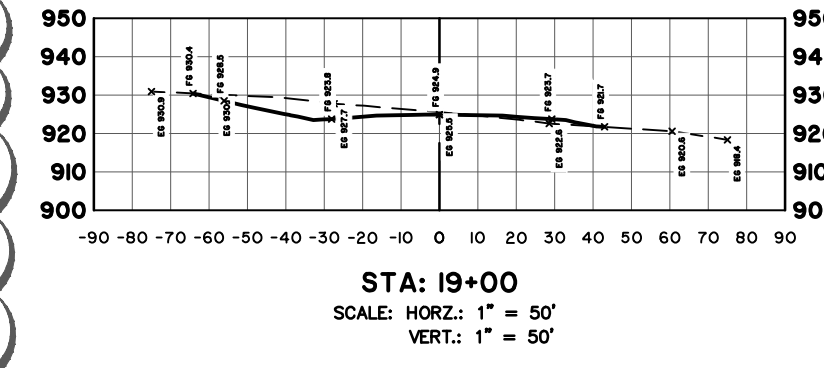
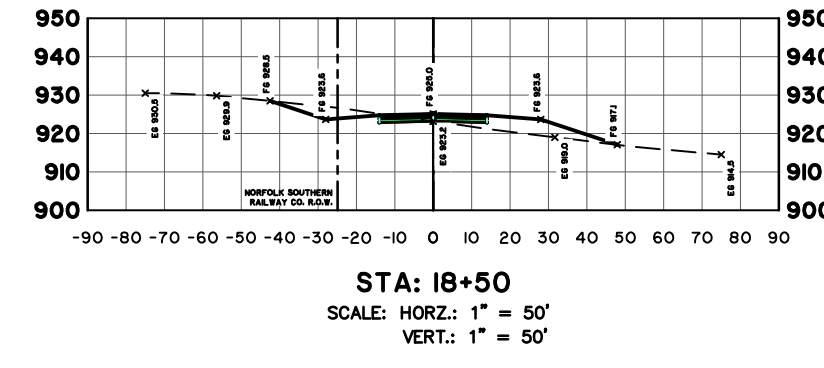
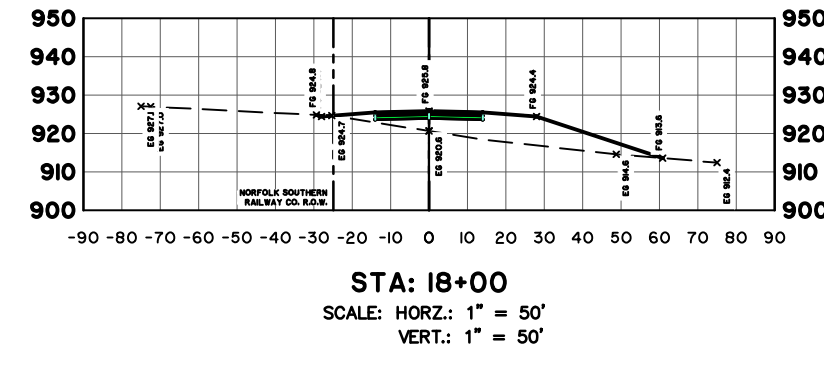
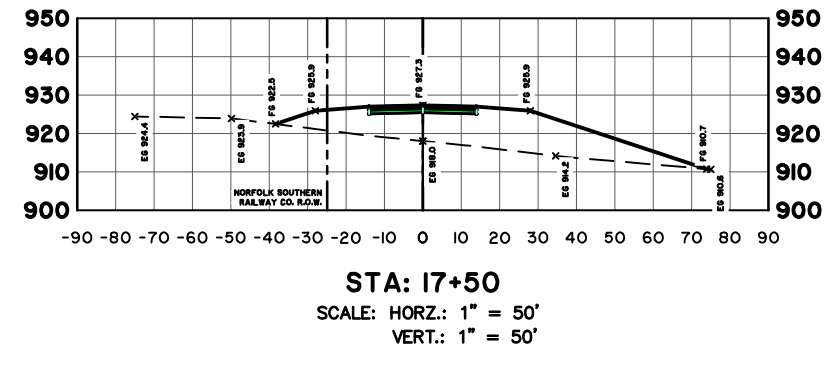
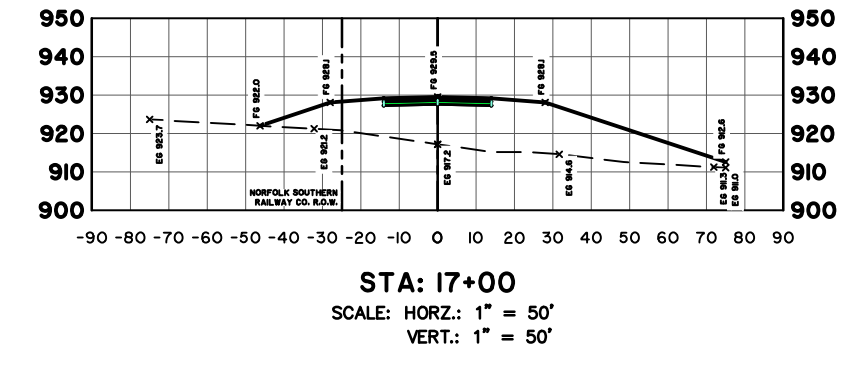
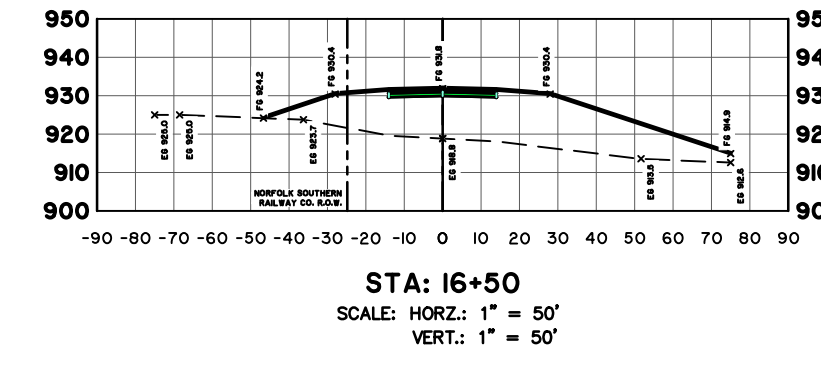
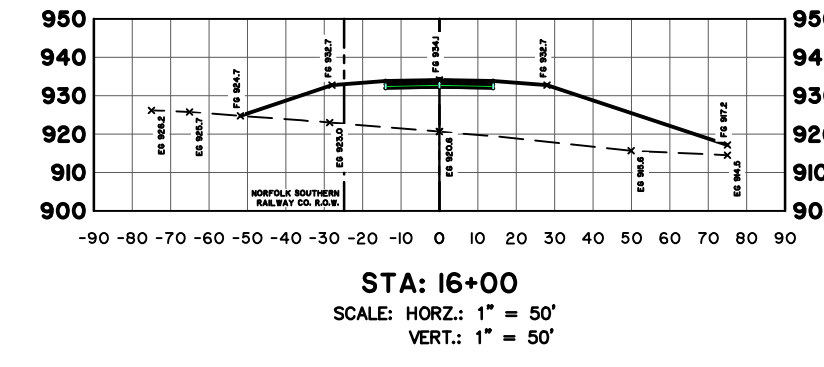
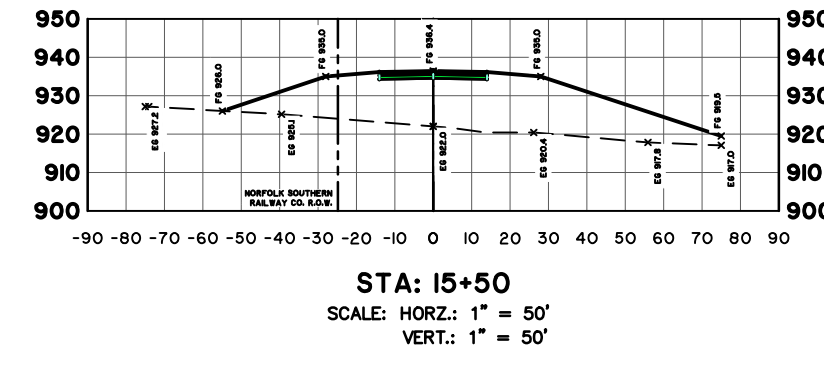
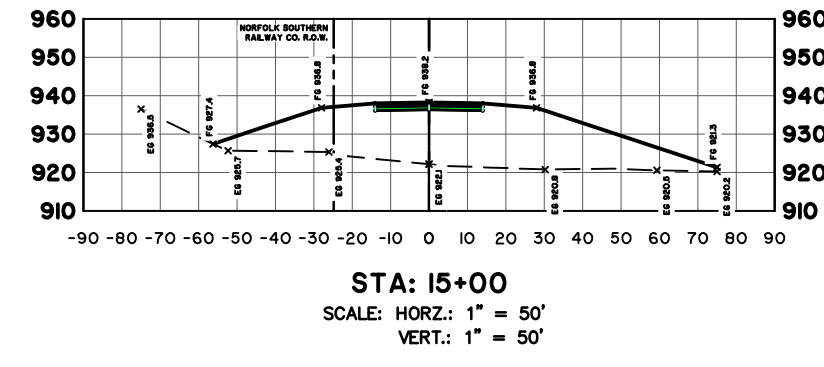
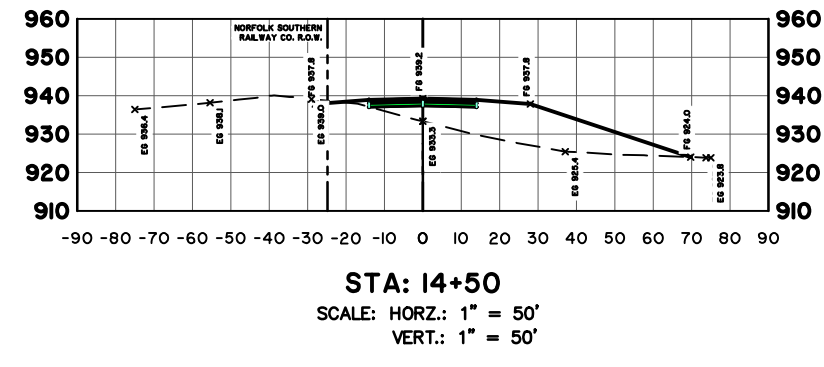
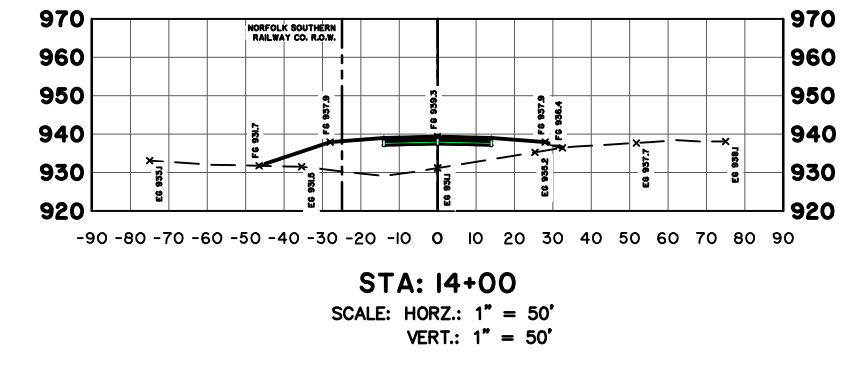
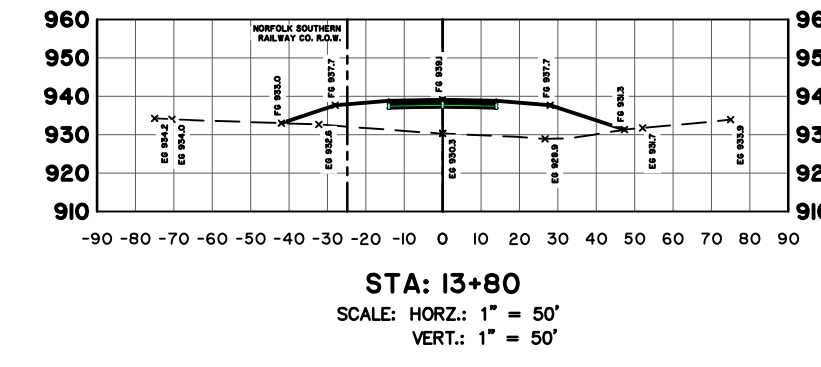
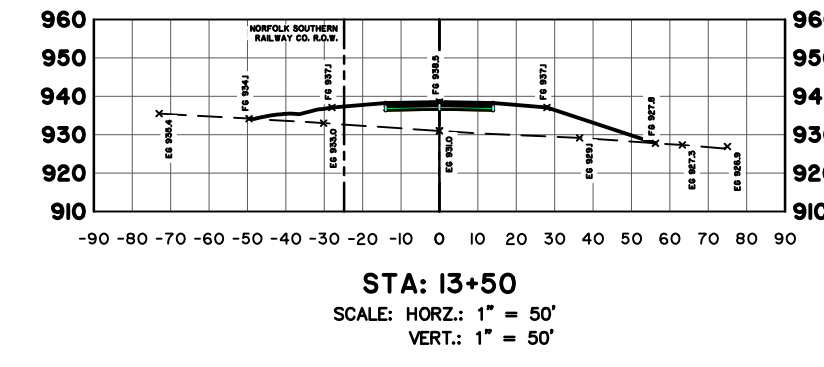
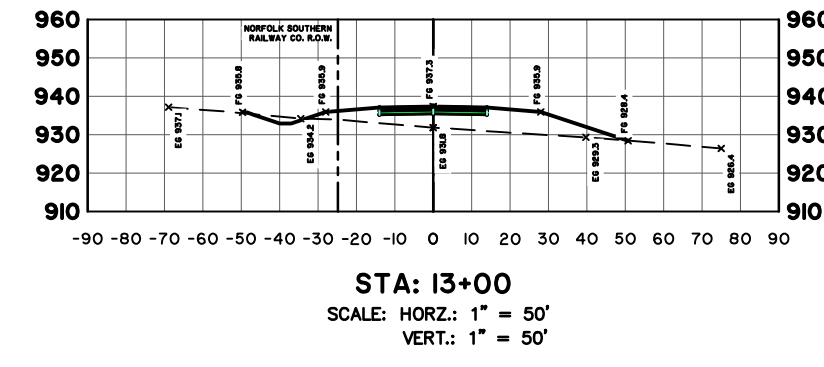
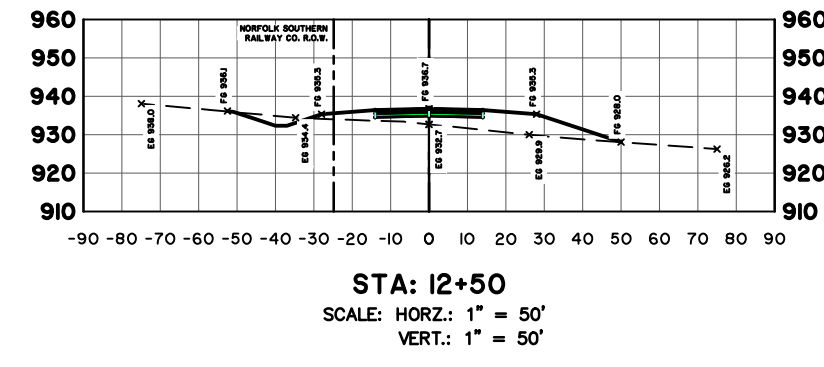
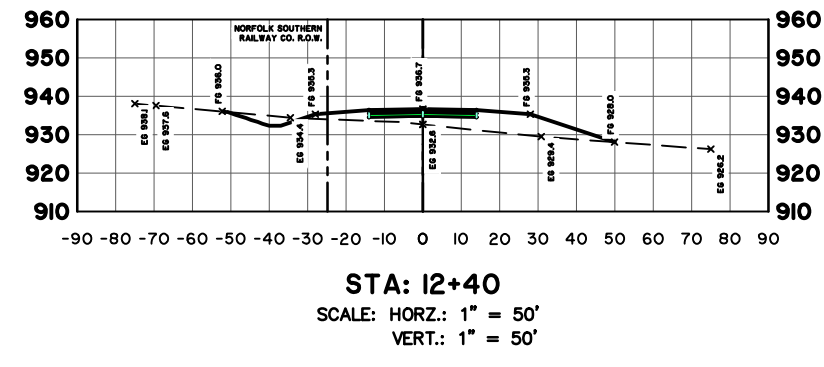
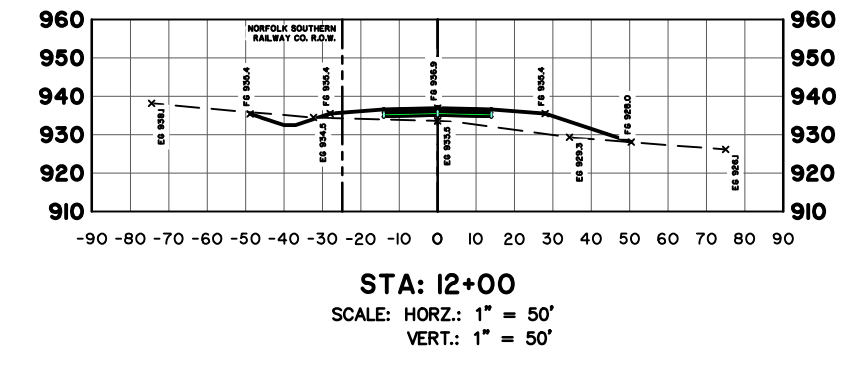
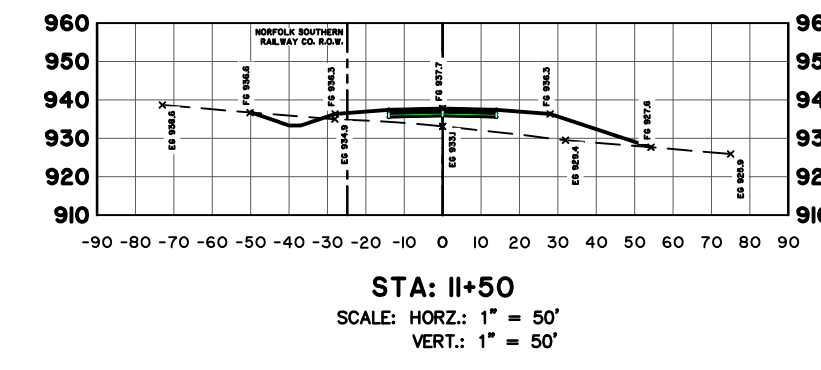
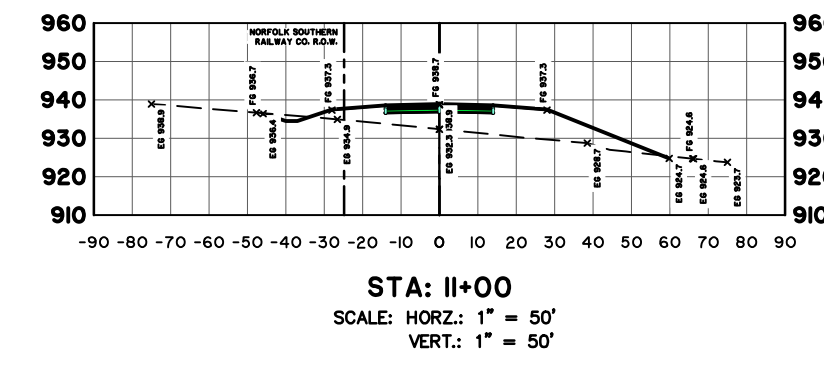
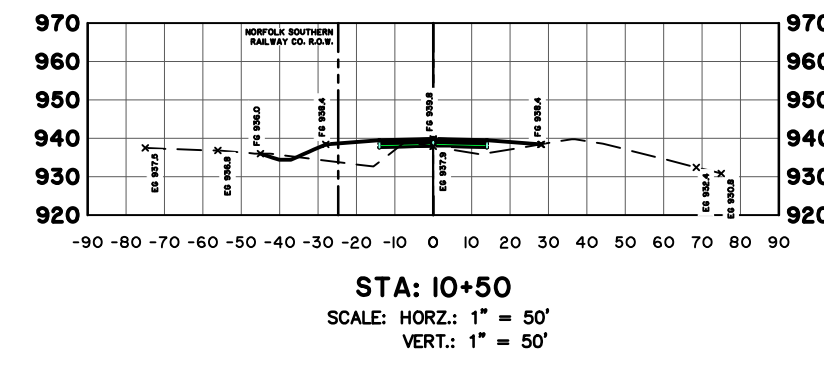
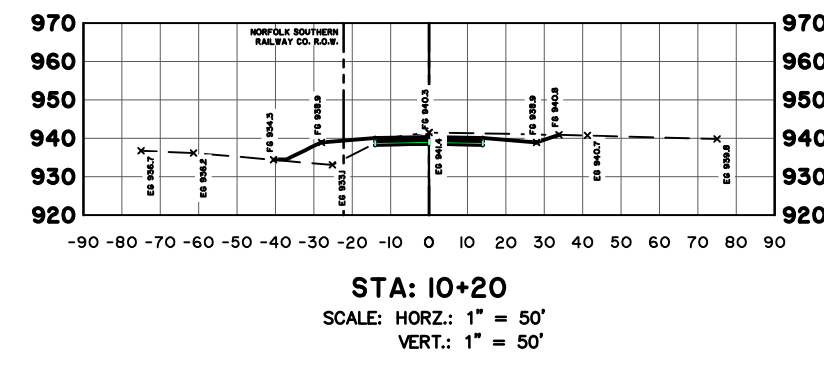
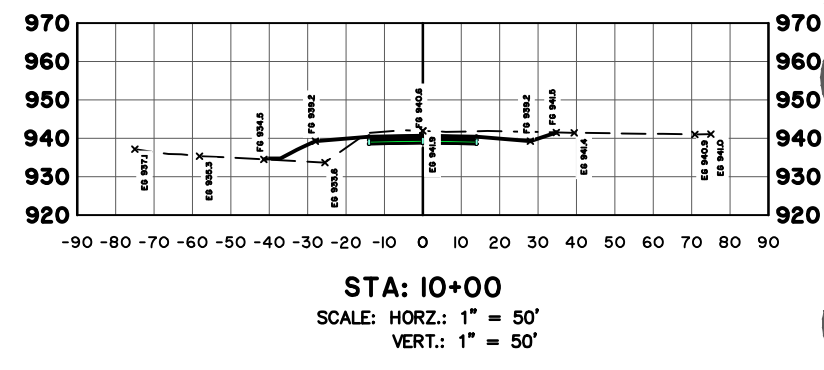
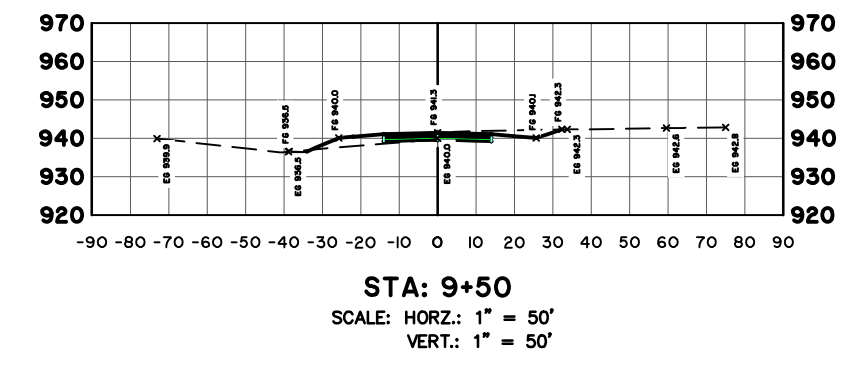
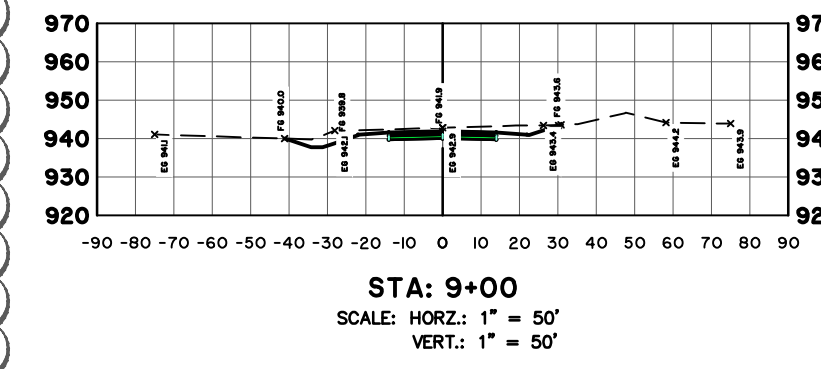
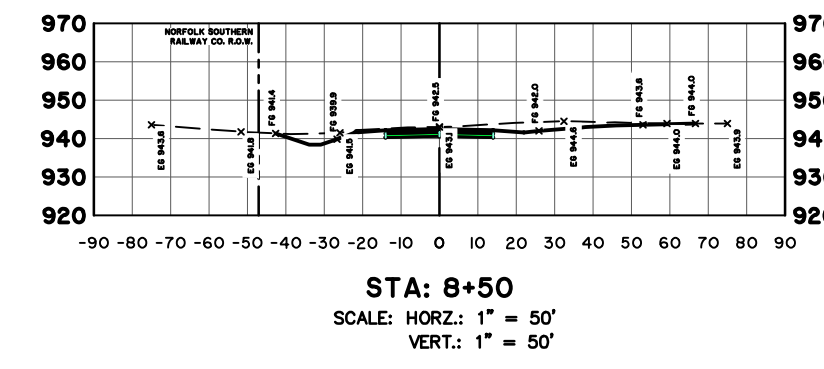
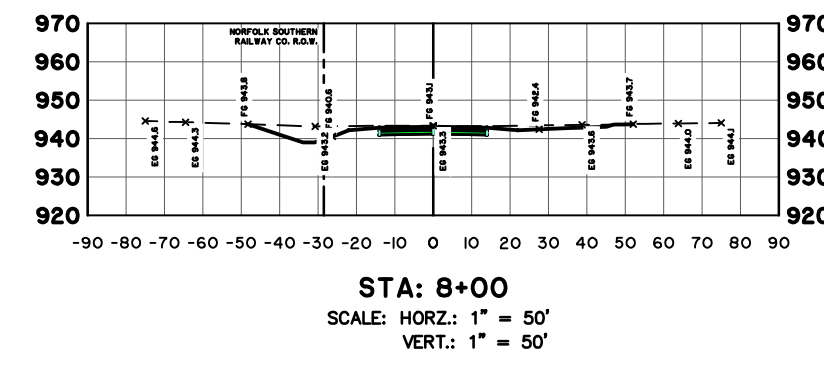
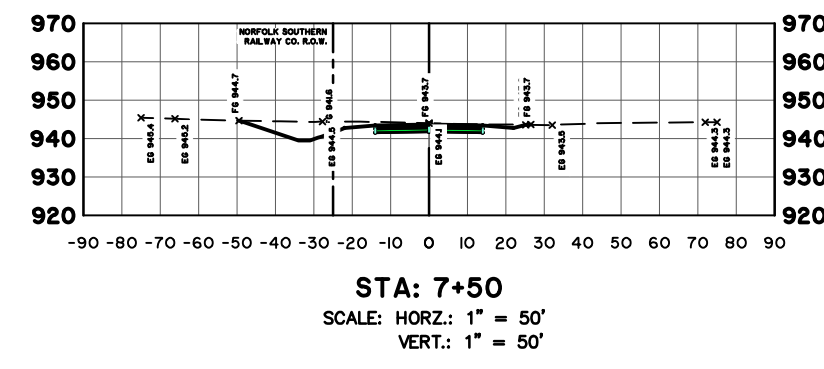
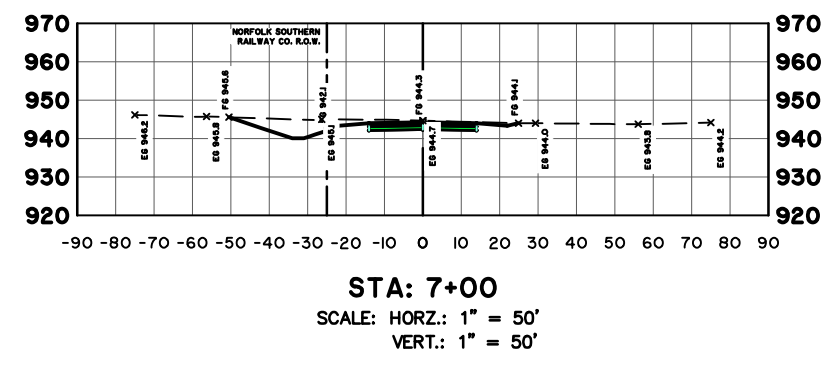
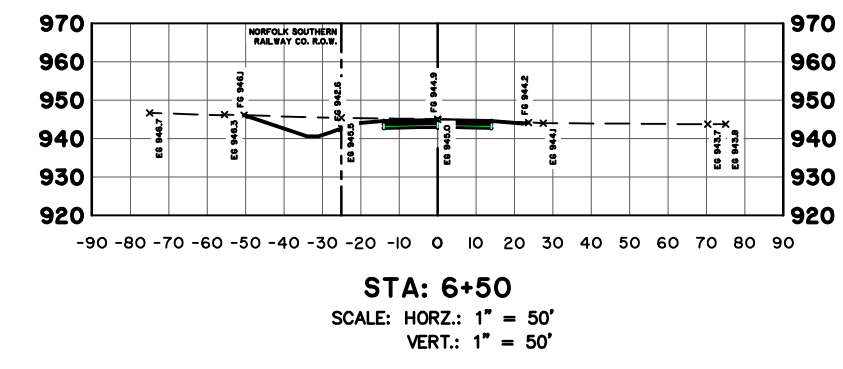
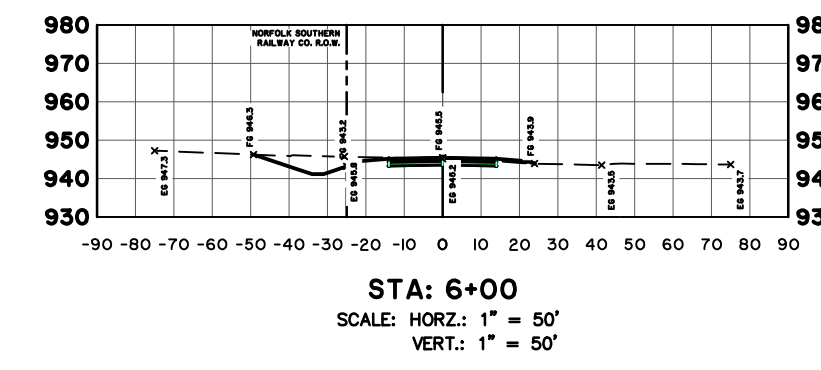
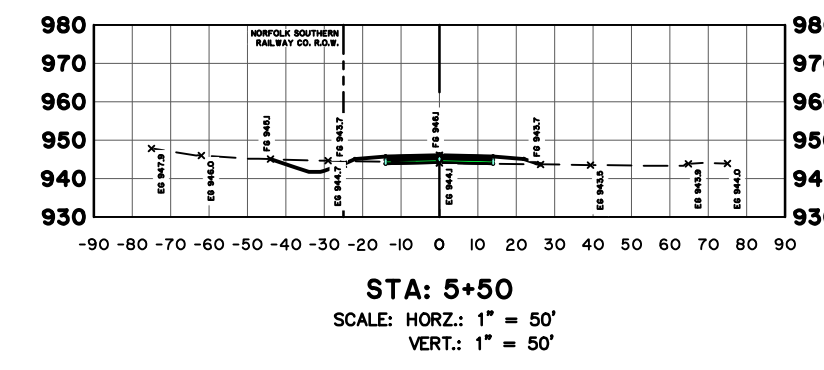
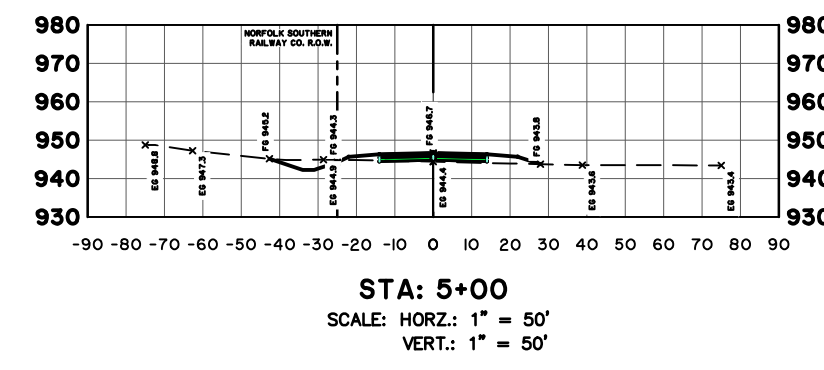
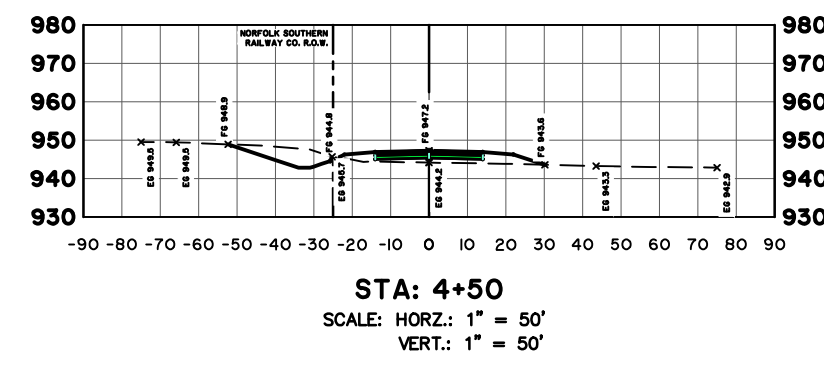
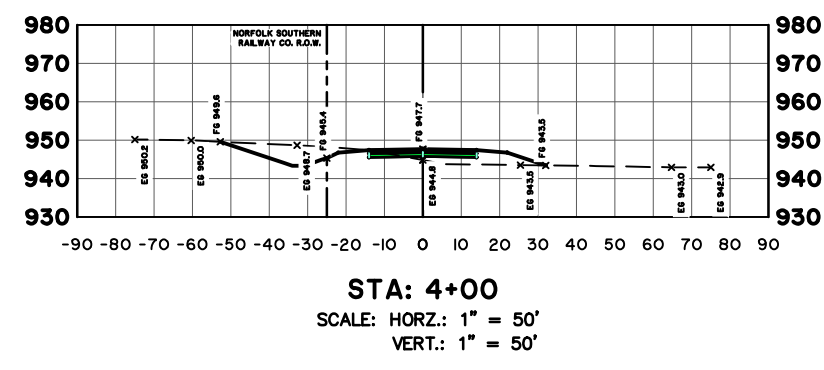
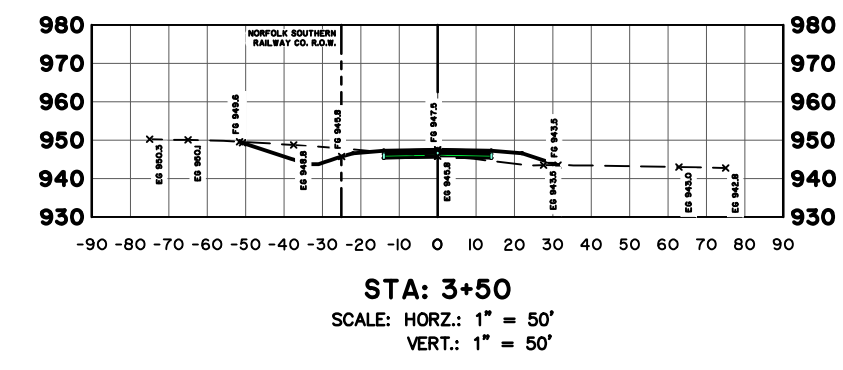
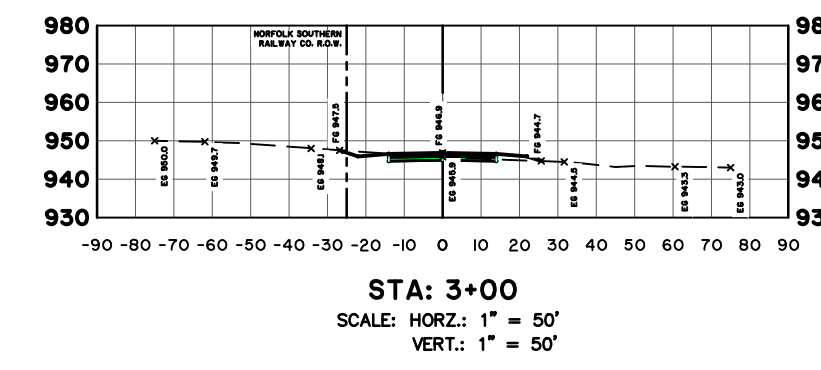
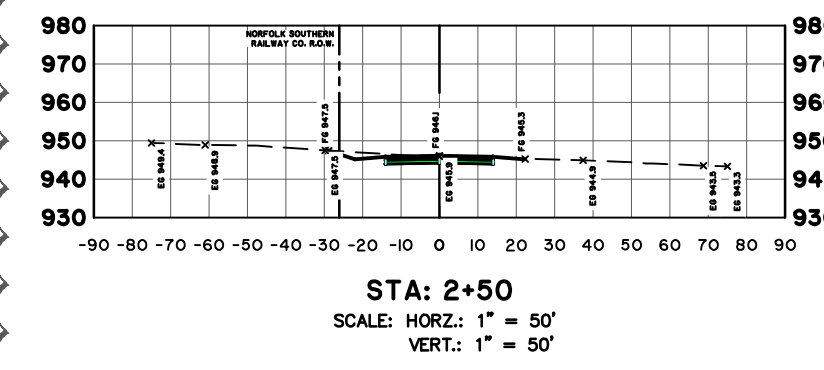
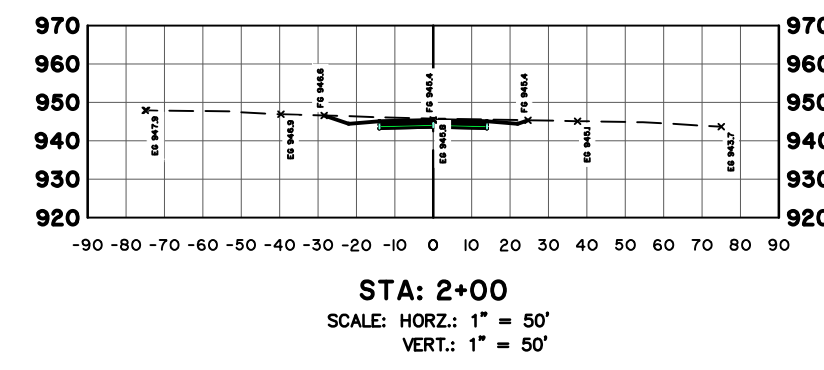
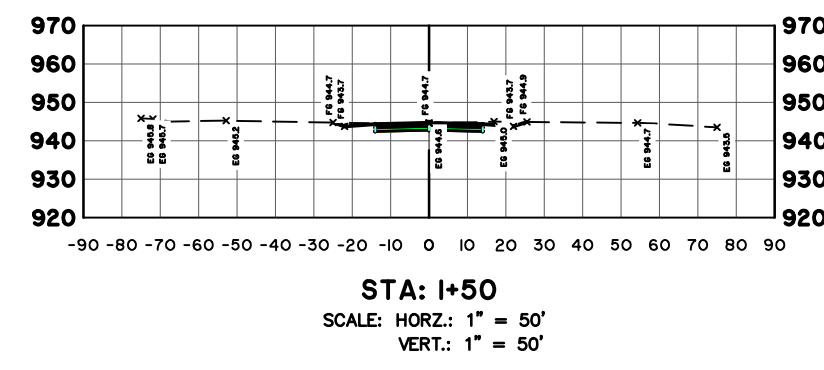
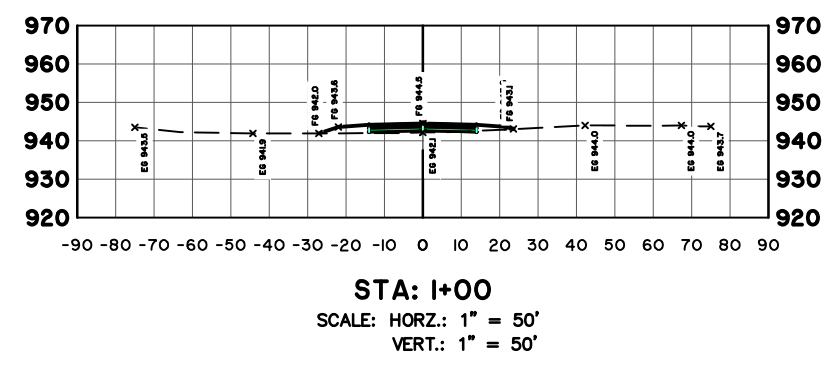
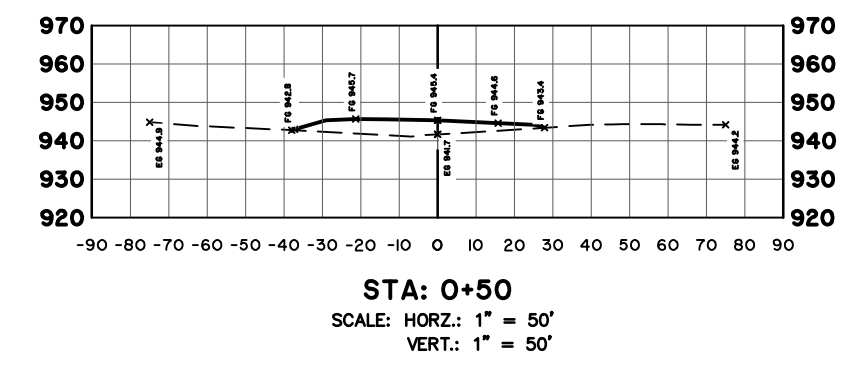
SENECA RAIL SITE - ROADWAY IMPROVEMENTS

DRAINAGE PROFILES

JOB NO: J-26762.0000
 DATE: NOVEMBER 6, 2017
 DRAWN: TJP
 DESIGNED: RWP
 REVIEWED: RWP
 APPROVED: RWP
 SCALE: 1" = 50'

C2.3

Z:\1817\18172\18172.dwg (Drawing) - Thomas & Hutton - 11/06/2017 10:00:00 AM



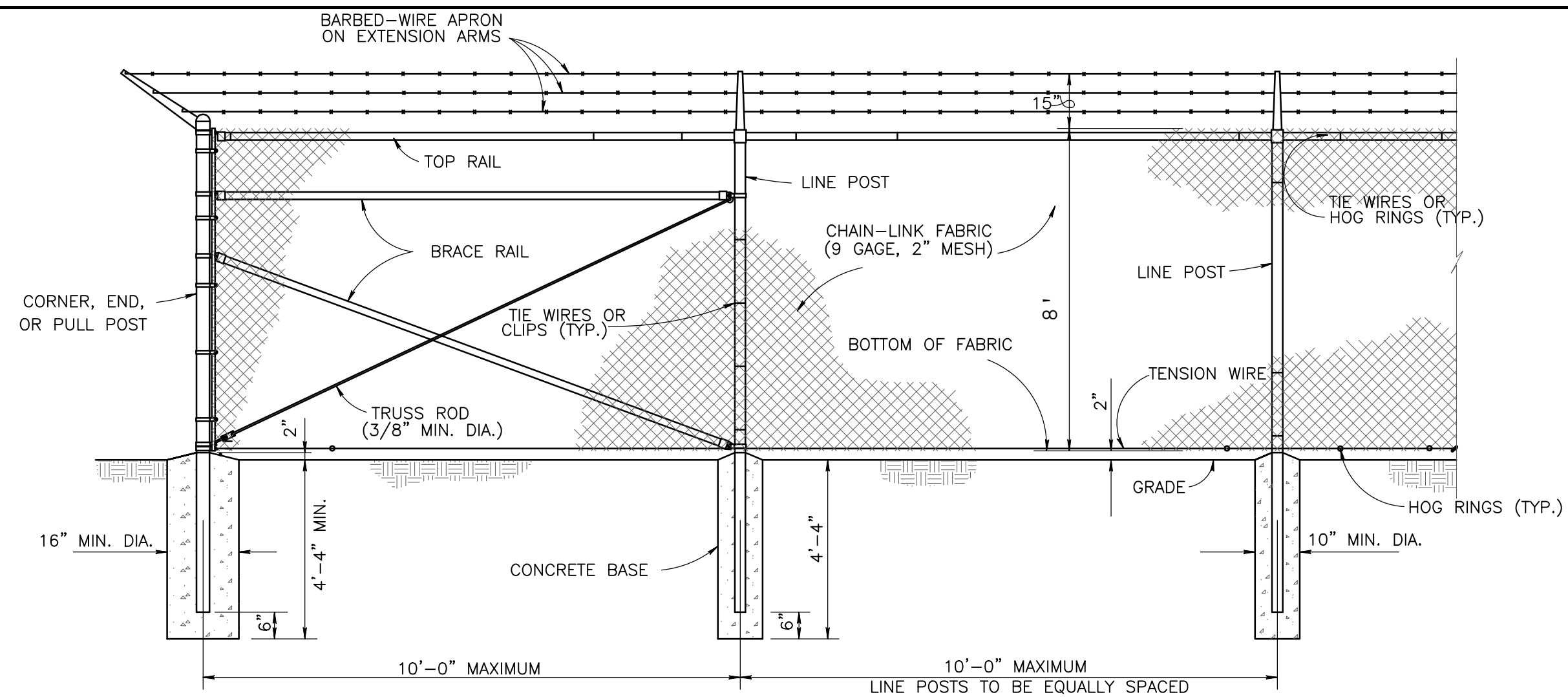
NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
304 North Church Street
Greenville, SC 29601 • 864.412.2222
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OCONEE COUNTY
SHILOH ROAD, SENECA, SC 29678
SENECA RAIL SITE - ROADWAY IMPROVEMENTS
ROAD CROSS-SECTIONS

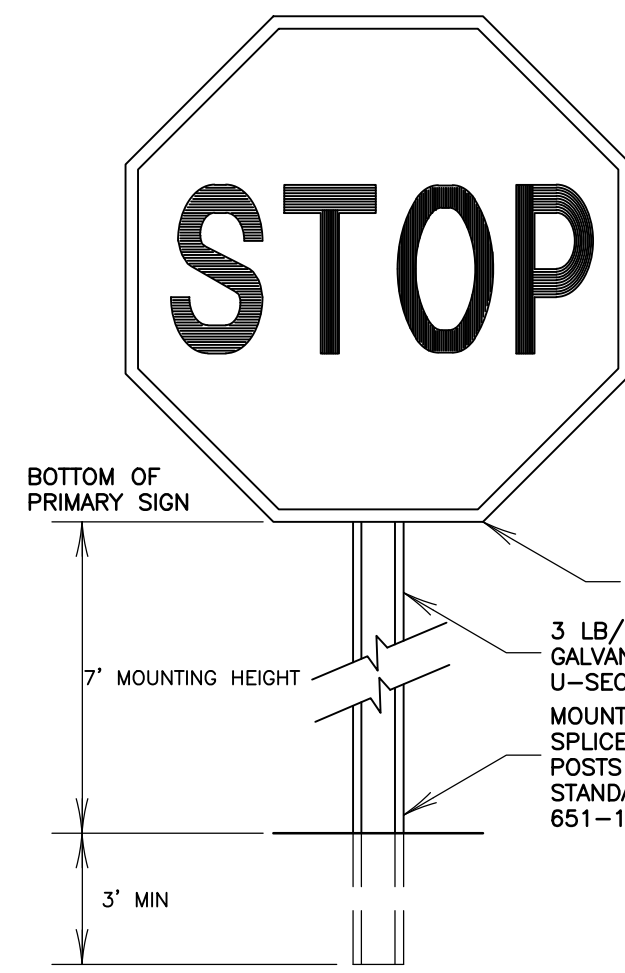
JOB NO: J-26762.0000
DATE: NOVEMBER 6, 2017
DRAWN: TJP
DESIGNED: RWP
REVIEWED: RWP
APPROVED: RWP
SCALE: 1" = 50'

C3.2



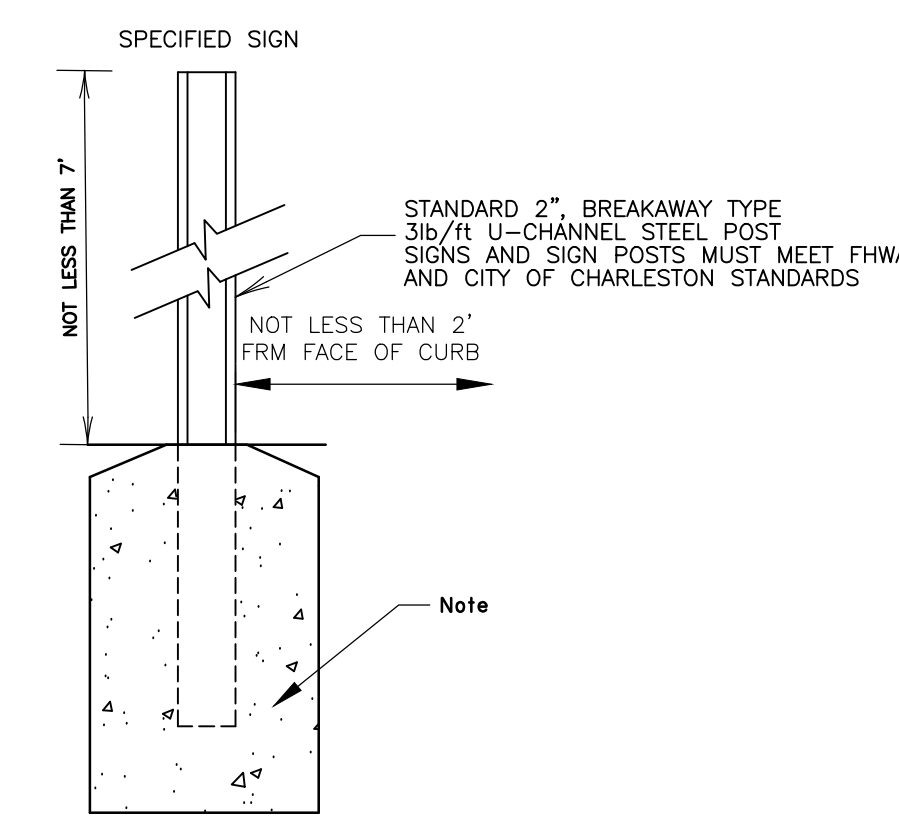
CHAIN-LINK SECURITY FENCE DETAIL

N.T.S.



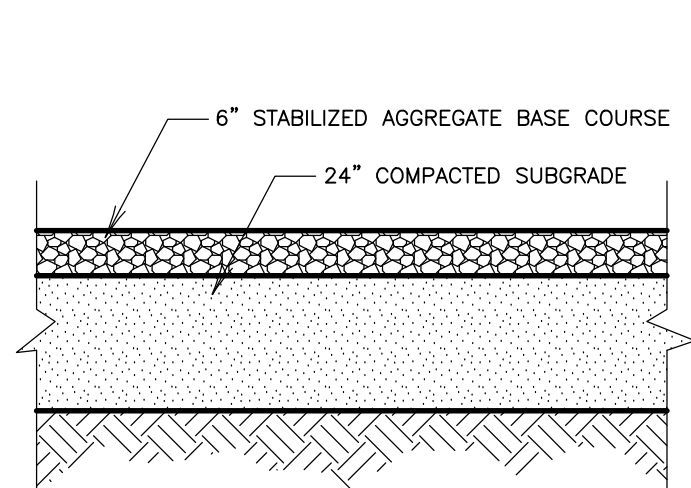
TRAFFIC SIGN DETAILS

NOT TO SCALE



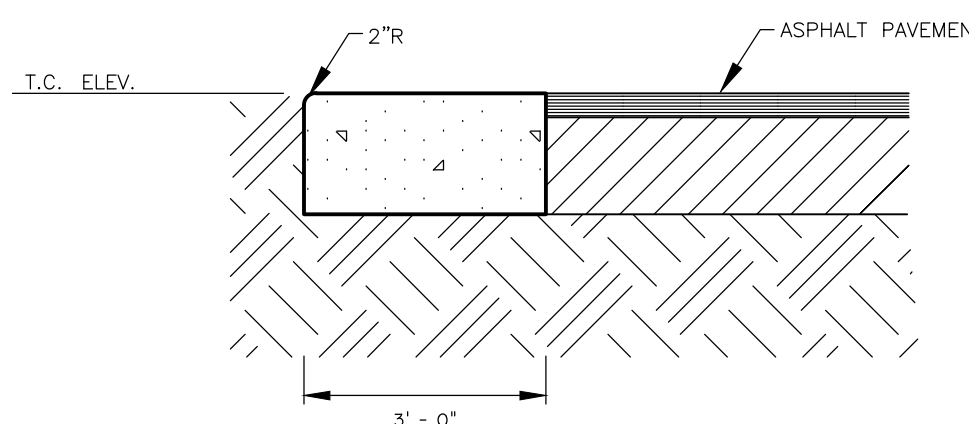
TYPICAL SIGN POST

NOT TO SCALE



TEMPORARY TURNAROUND SECTION

NOT TO SCALE

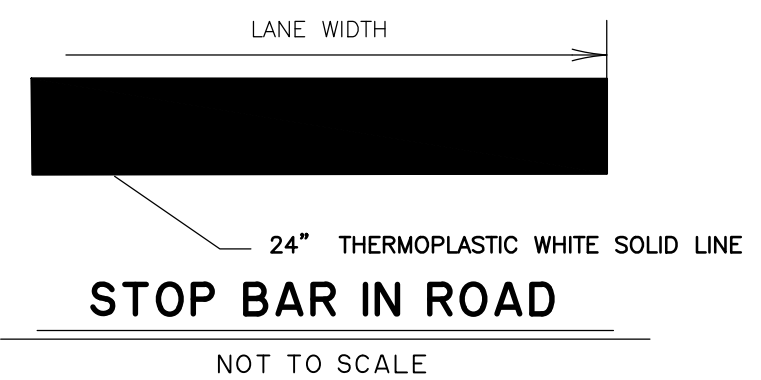


FLUSH RIBBON CURB

NOT TO SCALE

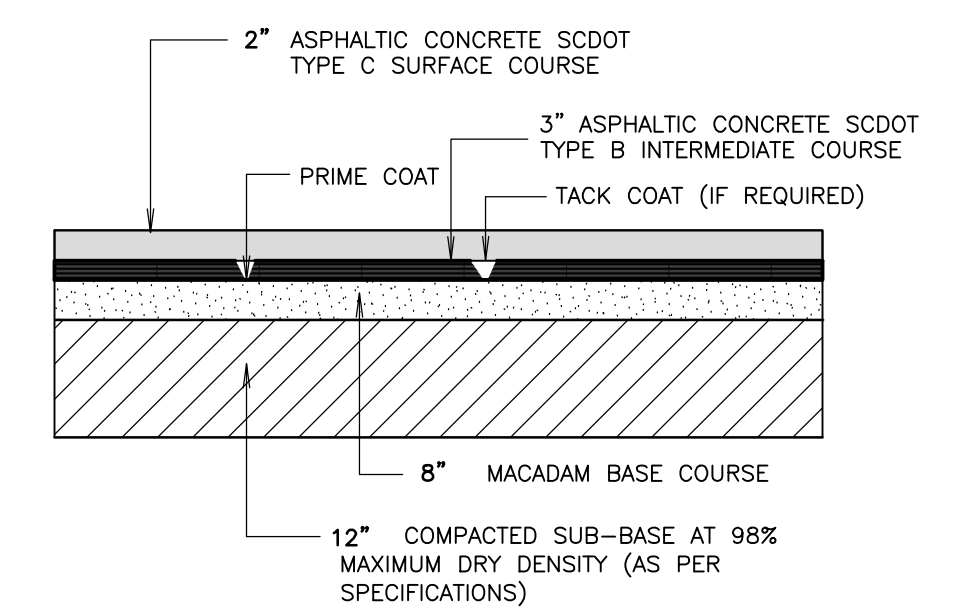
STOPLINES

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



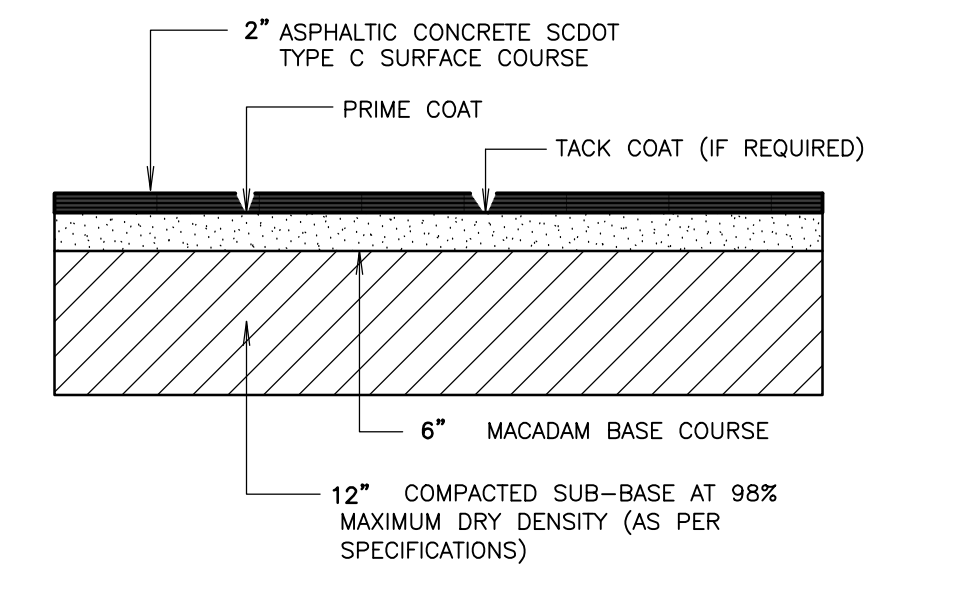
STOP BAR IN ROAD

NOT TO SCALE



ASPHALT PAVEMENT SECTION (HEAVY DUTY)

NOT TO SCALE



ASPHALT PAVEMENT SECTION (LIGHT DUTY)

NOT TO SCALE

PIPE DIA.	FRONT BAR	BACK RODS	SLOPE	A	B	C	L	E	P	R	R
12"	1-#3x5'-4"	NOT REQ'D	2:2:1	4"	2'-0"	4'-1"	6'-1"	2'-0"	1'-8"	10"	9"
15"	1-#3x6'-0"	NOT REQ'D	2:2:1	6"	2'-3"	3'-10"	6'-1"	2'-6"	2'-0"	11"	11"
18"	1-#3x7'-2"	NOT REQ'D	2:2:1	9"	2'-3"	3'-10"	6'-1"	2'-6"	2'-0"	11"	11"
24"	1-#3x9'-10"	NOT REQ'D	2:4:1	10"	3'-8"	2'-6"	2'-4"	0'-12"	9"	5"	2"
30"	1-#4x11'-8"	NOT REQ'D	2:4:1	12"	4'-6"	1'-8"	2'-4"	0'-12"	11"	6"	3"
36"	1-#4x13'-10"	2-#4x6'-3"	2:4:1	15"	5'-3"	2'-11"	2'-6"	0'-4"	0'-12"	11"	8"
42"	1-#4x13'-10"	2-#4x7'-4"	2:4:1	21"	5'-3"	2'-11"	2'-6"	6"	4"	6"	10"

NOTE: SPECIFIED REINFORCING IS MINIMAL AND MAY BE INCREASED AT PRODUCERS OPTION TO AID CASTING & HANDLING. ALTERNATE REINFORCEMENT PERMITTED IF ACCEPTABLE TO ENGINEER.

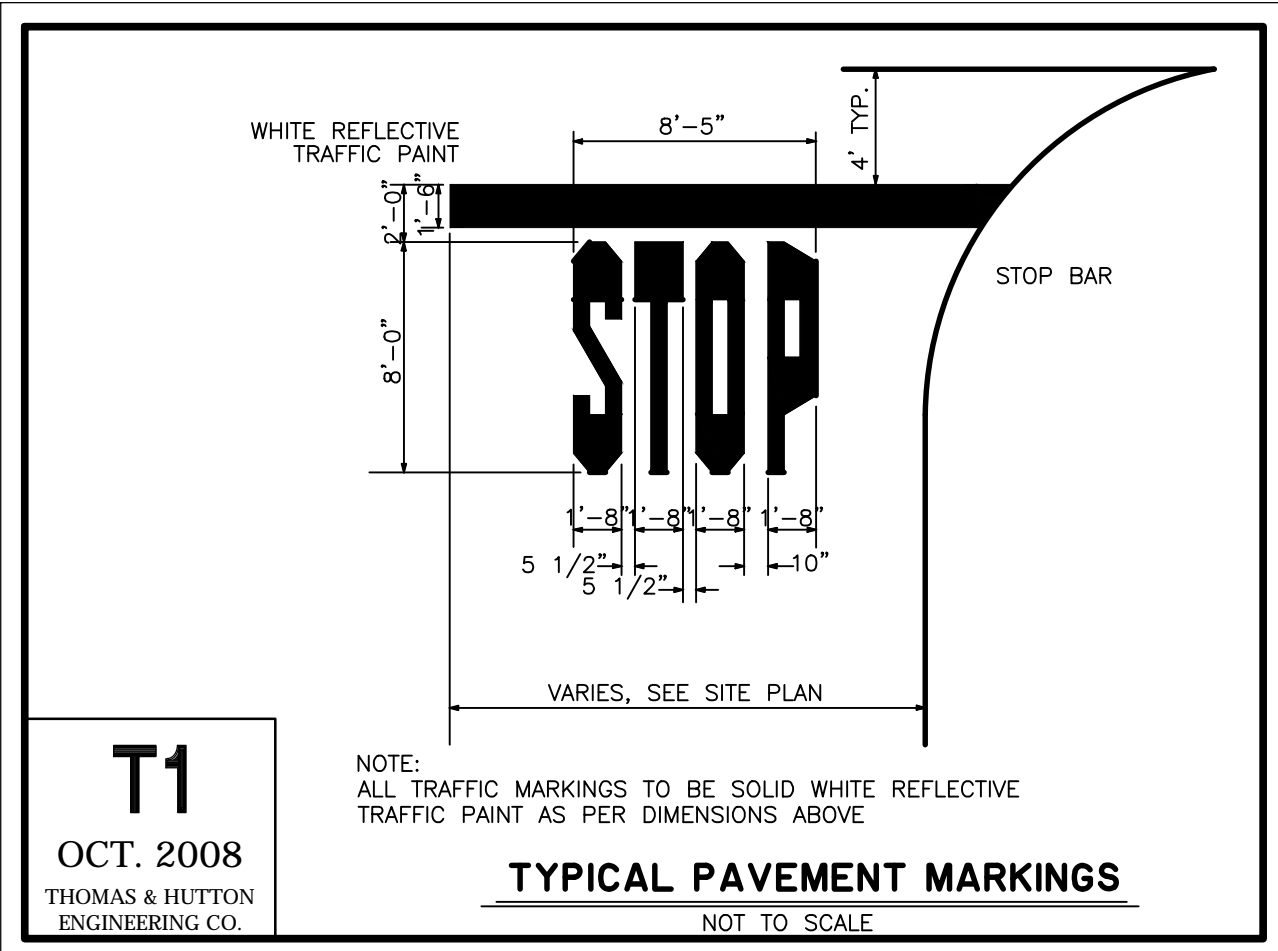
REINFORCING CAGE:
1. WIRE FABRIC HAVING SAME STEEL AREA AS INNER CAGE FOR CL III PIPE, ASHTO M-170, BUT PLACED IN CENTER OF WALL.
2. ALTERNATE: #3 BARS SPACED 12" LONGITUDINALLY WITH #2 BARS TRANSVERSELY AT 6" O.C. MAX. SPACING. SPOT WELDED OR TIED TO FORM CAGE.

NOTE: CONTRACTOR WILL INFORM PRODUCER IF CONCRETE FLARED END SECTION IS FOR INLET OR FOR OUTLET END. SOCKET TONGUE OR SPOUT END IS REQUIRED FOR INLETS. HUB (GROOVE OR BELL) END IS REQUIRED FOR OUTLETS. SOCKET TO SOCKET OR HUB TO HUB JOINT WILL NOT BE ACCEPTED UNLESS A REINFORCED CONCRETE COLLAR IS BUILT AROUND THE JOINT WITH NO PAINTMENT BEING MADE FOR THE COLLAR. FLARED END SECTIONS SHALL BE JOINED TO PIPE WITH ALL SPACE IN THE JOINT FILLED WITH PREFORMED PLASTIC CASSET (SEC.846). WALL THICKNESS (T) IS SHOWN AS NOMINAL AND MAY BE INCREASED AT PRODUCERS OPTION FOR DESIRED JOINT DESIGN OR TO ALLOW A FLAT OUTSIDE BOTTOM ON THE FLARE, WITH INSIDE DIMENSIONS OF FLARE RETAINED AS SHOWN.
T = PIPE WALL THICKNESS (0.0833x14" TYPICAL).

D110
OCT. 2008
THOMAS & HUTTON
ENGINEERING CO.

CONCRETE FLARED END SECTION

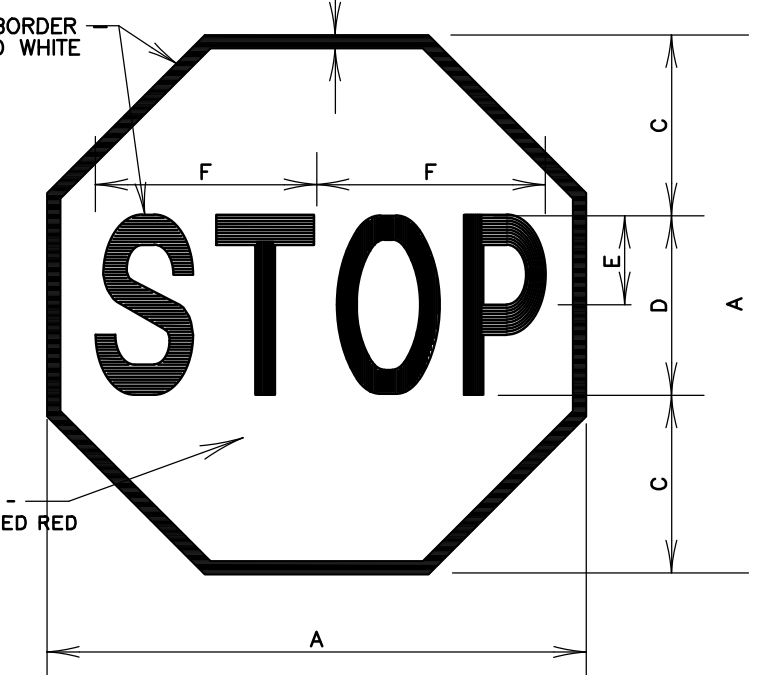
NOT TO SCALE



T1
OCT. 2008
THOMAS & HUTTON
ENGINEERING CO.

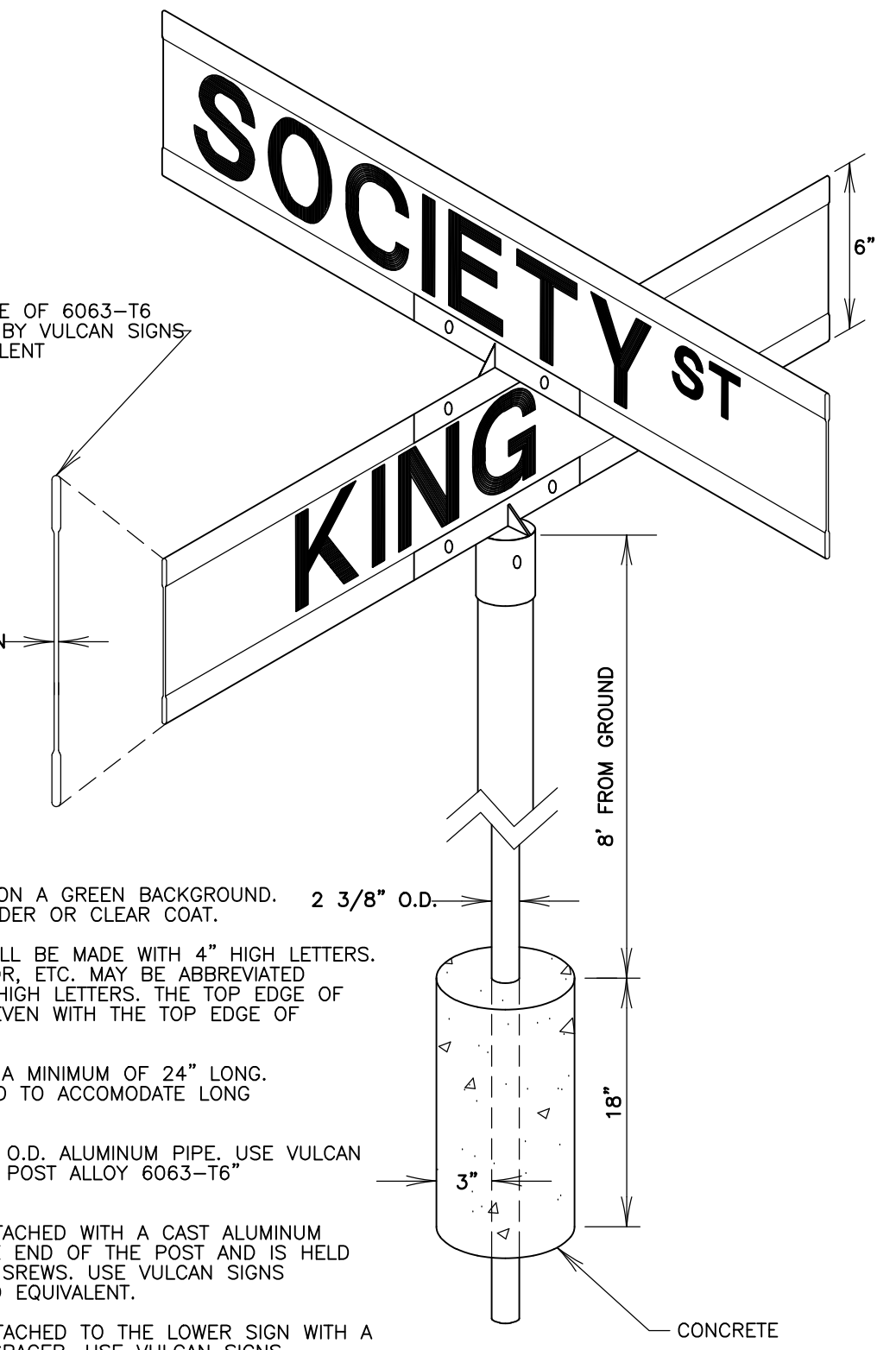
TYPICAL PAVEMENT MARKINGS

NOT TO SCALE



RI-1-30
STOP SIGN DETAIL

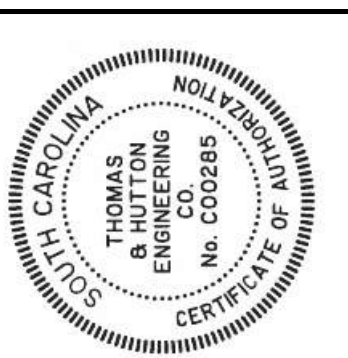
NOT TO SCALE



STREET SIGN NOTES:
1. ALL LETTERS SHALL BE WHITE ON A GREEN BACKGROUND. THE SIGN SHALL HAVE NO BORDER OR CLEAR COAT. 2 3/8" O.D.
2. THE STREET NAME LEGEND SHALL BE MADE WITH 4" HIGH LETTERS. THE DESIGNATION OF ST, RD, DR, ETC. MAY BE ABBREVIATED AND SHALL BE MADE WITH 2" HIGH LETTERS. THE TOP EDGE OF SUCH DESIGNATION SHALL BE EVEN WITH THE TOP EDGE OF THE STREET NAME LEGEND.
3. SIGNS SHALL BE 6" HIGH AND A MINIMUM OF 24" LONG. THE LENGTH MAY BE INCREASED TO ACCOMMODATE LONG STREET NAMES.
4. SIGN POSTS SHALL BE 2 3/8" O.D. ALUMINUM PIPE. USE VULCAN SIGNS 2 3/8" O.D. ALUMINUM POST ALLOY 6063-T6 OR APPROVED EQUIVALENT.
5. THE LOWER SIGN SHALL BE ATTACHED WITH A CAST ALUMINUM BRACKET WHICH FITS OVER THE END OF THE POST AND IS HELD IN PLACE BY ALLEN HEAD SET SCREWS. USE VULCAN SIGNS "VS-LOCKE CAP" OR APPROVED EQUIVALENT.
6. THE UPPER SIGN SHALL BE ATTACHED TO THE LOWER SIGN WITH A CAST ALUMINUM CROSS-TYPE SPACER. USE VULCAN SIGNS "VS-LOCKE CROSS" OR APPROVED EQUIVALENT.
7. ALL SIGNS SHALL BE PLACED BETWEEN 6 AND 12 FEET FROM THE EDGE OF PAVEMENT.
8. INSTALLATION SHALL CONFORM WITH SCDOT AND MUTCD STANDARDS AND SPECIFICATIONS.

STREET SIGN DETAIL

NOT TO SCALE



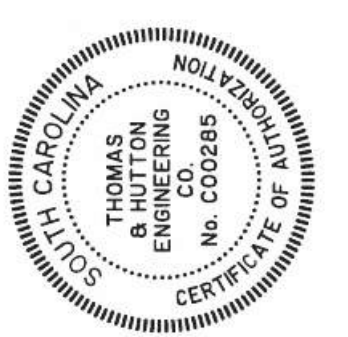
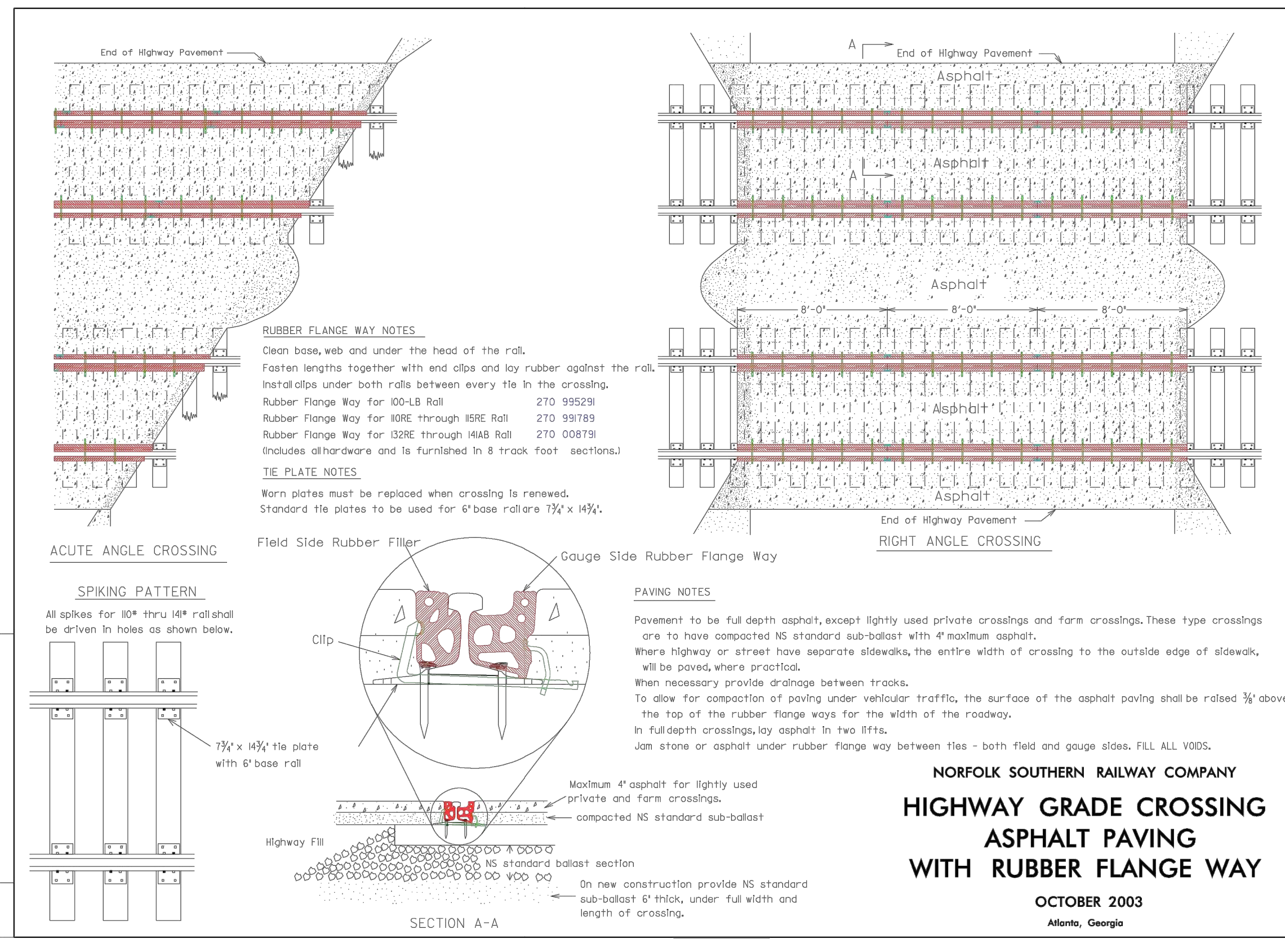
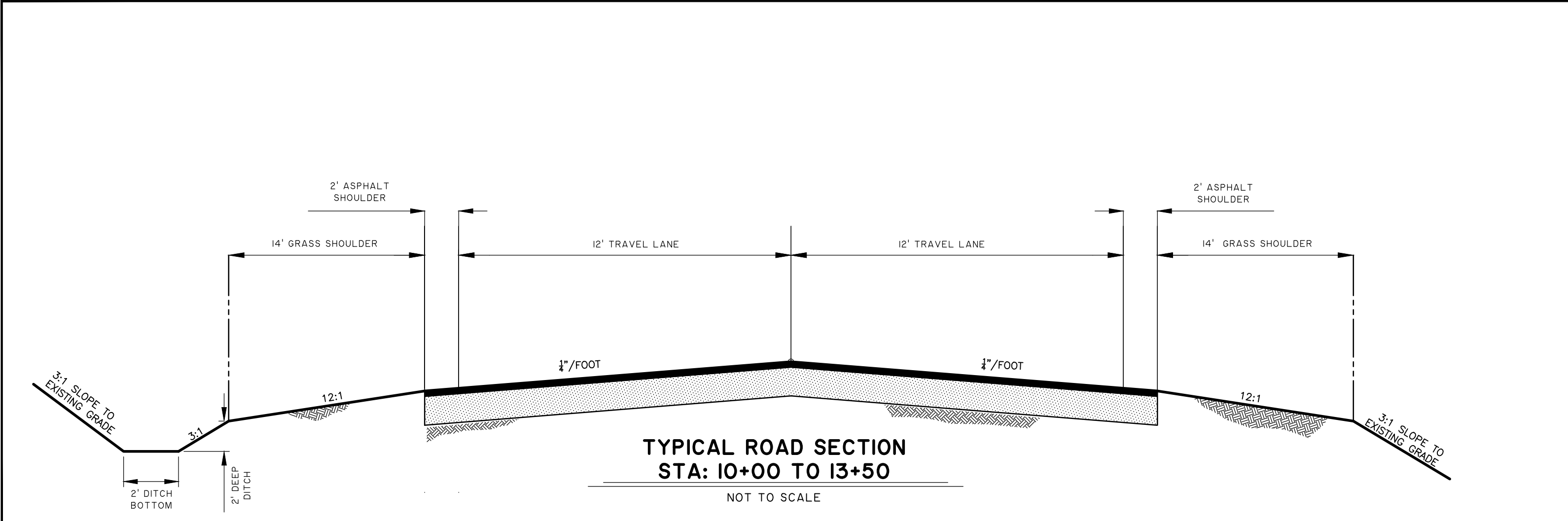
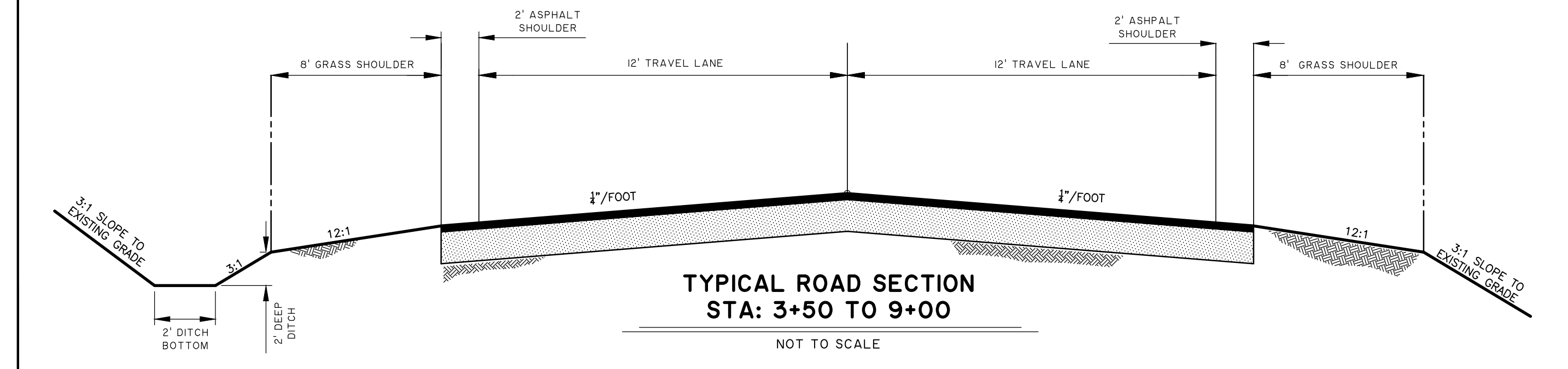
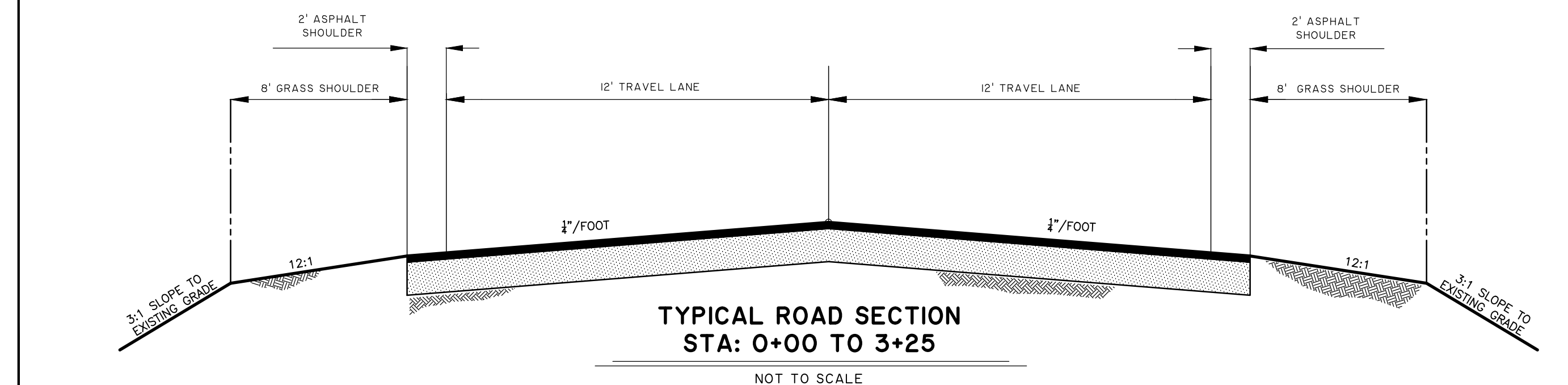
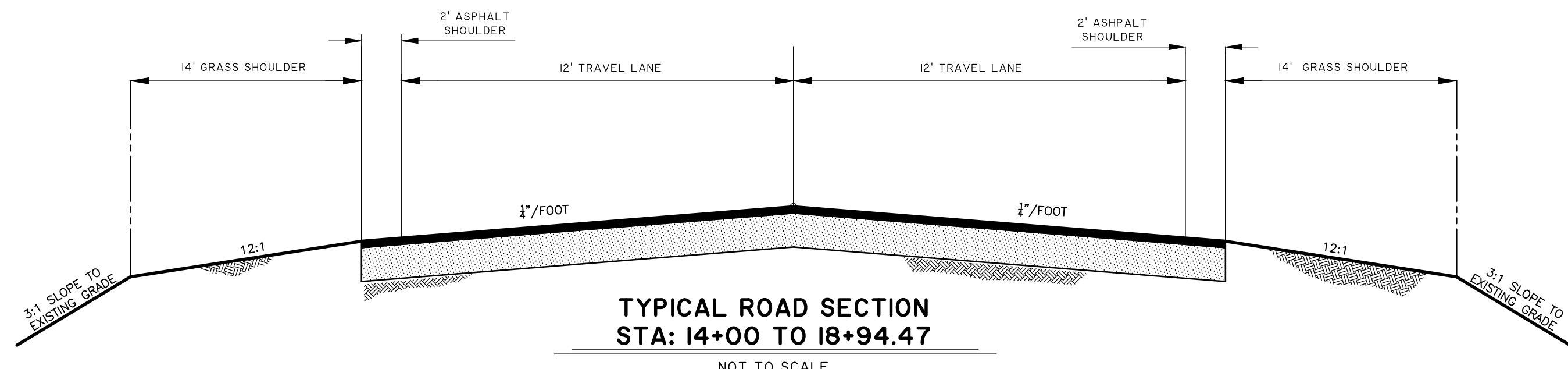
NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
304 North Church Street
Greenville, SC 29601 • 864.412.2222
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OCONEE COUNTY
SHILOH ROAD, SENECA, SC 29678
SENECA RAIL SITE - ROADWAY IMPROVEMENTS
PAVING, GRADING & DRAINAGE - DETAILS

JOB NO: J-26762.0000
DATE: NOVEMBER 6, 2017
DRAWN: TJP
DESIGNED: RWP
REVIEWED: RWP
SCALE: N/A

C4.1



NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
304 North Church Street
Greenville, SC 29601 • 864.412.2222
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OCONEE COUNTY
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SCALE: N/A

C4.3

REFERENCES

NATIONAL DOCUMENTS
 AASHTO M32, M55, M170, M178, M221, M222, M225, M232, M215, M26, M104, ASTM A706

SCDOT DOCUMENTS
 SCOT SUPPLEMENTAL TECHNICAL SPECIFICATION 20-11-14
 SCOT SUPPLEMENTAL TECHNICAL SPECIFICATION 20-11-14
 SCOT SUPPLEMENTAL TECHNICAL SPECIFICATION 20-11-14

RELATED DRAWINGS & KEYWORDS
 714-005-00
 714-100-00
 714-205-02
 714-990-00

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



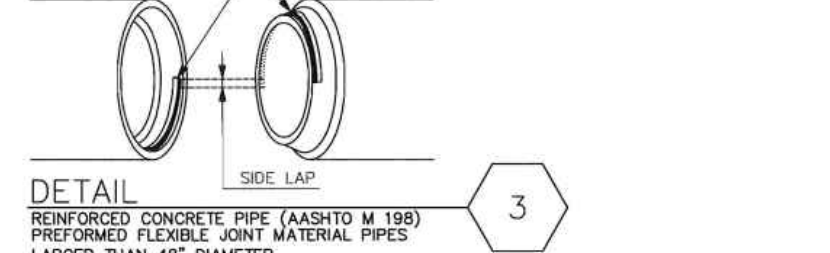
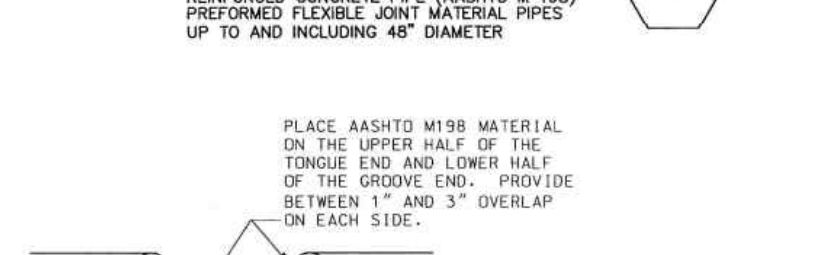
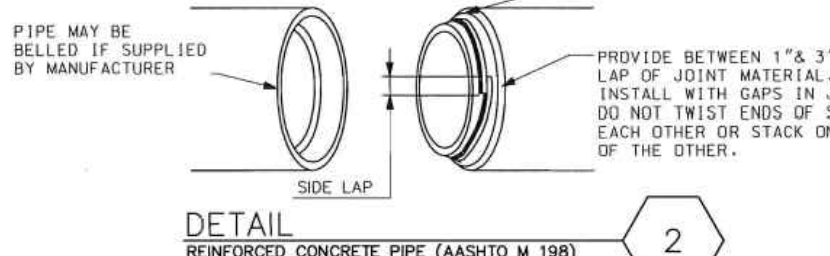
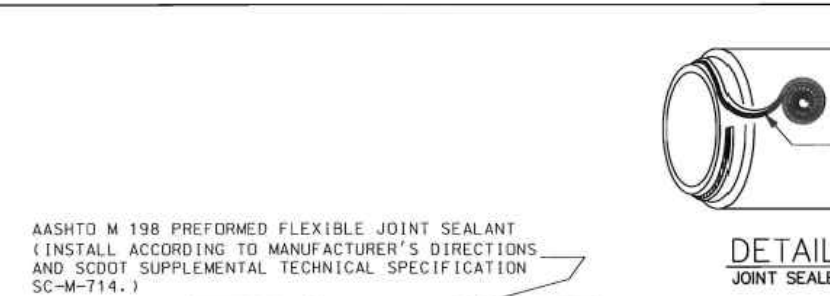
James W. Kendall
 SIGNATURE
 9-26-12
 DATE

NO.	DATE	DESCRIPTION
1	9/26/12	SCDOT LETTER 3/12
2	3/20/10	GENERAL REVISIONS
3	2/20/09	COMPLETE TABLE
4	1/2/2008	GENERAL REVISIONS
5	1/2/2008	NEW STANDARD
6	DATE	CHK

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

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

714-205-01
 EFFECTIVE LETTING DATE: JANUARY, 2013



NOTES

- SEE SHEET 714-005-00, 714-020-00, 714-100-00, & 714-120-00 FOR GENERAL NOTES, AND TRENCH INSTALLATION REQUIREMENTS.
- USE ONLY PIPE CLASSES LISTED IN TABLES 714-205A & 714-205B.
- USE B WALL PIPE FOR SIZES AND CLASSES INDICATED IN TABLES 714-205A & 714-205B. C WALL PIPE MAY BE SUBSTITUTED FOR B WALL PIPE ONLY FOR SIZES AND CLASSES INDICATED IN TABLES 714-205A & 714-205B.
- USE PIPE AND JOINT MATERIAL FROM A MANUFACTURER COMBINATION SHOWN ON QUALIFIED PRODUCT LIST 68.
- WHEN DEFORMED BILLET STEEL REBAR IS USED FOR CUSTOM PIPE, OBTAIN REBAR FROM A MANUFACTURER LISTED ON QUALIFIED PRODUCT LIST 68. FOLLOW INSTRUCTIONS IN BULLETIN 2010-01 AND ENGINEER OF RECORD RECOMMENDATIONS TO DETERMINE LOADS FOR CUSTOM PIPE.
- SEE 714-990-00 FOR RESIDENTIAL DRIVEWAY INSTALLATION FOR MAINTENANCE APPLICATIONS.

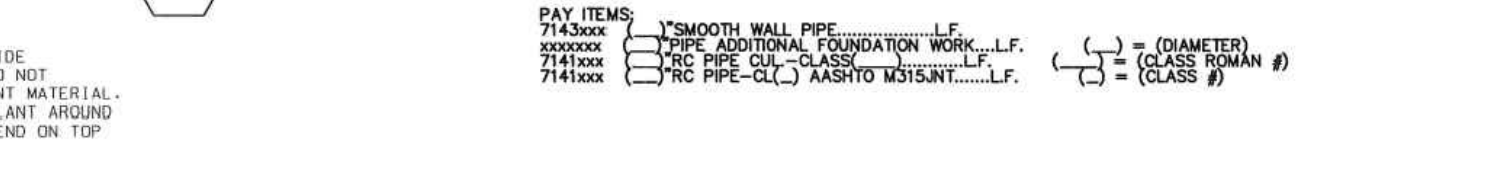


TABLE 714-205A: REINFORCED CONCRETE PIPE FILL HEIGHT TABLE

PIPE DIAMETER (IN)	HYDRAULIC AREA (SQ FT)	MANHOLE PROGRESS (FT)	ESTIMATED TRENCH WIDTH (FT)	CASE 1: REINFORCED CONCRETE PIPE (AASHTO M198) PREFORMED FLEXIBLE JOINT MATERIAL PIPES UP TO AND INCLUDING 48\"/>														
				CLASS III	CLASS IV	CLASS V												
12	0.78	42	18	25	30	1.50	1.00	1.00	3	3	3	1.50	1.00	0.50	---	20	30	
15	1.22	56	18	25	30	1.50	1.00	1.00	3	3	3	1.50	1.00	0	---	13	21	30
18	1.76	70	18	25	30	1.50	1.00	1.00	3	3	3	1.50	0.75	0	---	13	21	30
24	3.14	126	18	25	30	1.50	1.00	1.00	3	3	3	1.00	0	0	---	13	21	30
30	4.49	182	18	25	30	1.50	1.00	1.00	3	3	3	1.00	0	0	---	13	21	30
36	7.06	238	18	25	30	1.50	1.00	1.00	3	3	3	0.50	0	0	---	12	19	25
42	9.82	312	18	25	30	1.50	1.00	1.00	3	3	3	0	0	0	---	14	19	27
48	12.56	396	18	25	30	1.50	1.00	1.00	3	3	3	0	0	0	---	16	20	28
54	15.90	498	18	25	30	1.50	1.00	1.00	3	3	3	0	0	0	---	18	23	30
60	19.83	618	18	25	30	1.50	1.00	1.00	3	3	3	0	0	0	---	10	18	25
66	23.75	756	18	25	30	1.50	1.00	1.00	3	3	3	0	0	0	---	12	15	25
72	28.27	918	18	25	30	1.50	1.00	1.00	3	3	3	0	0	0	---	12	18	23
78	33.18	1098	18	25	30	1.50	1.00	1.00	3	3	3	0	0	0	---	12	17	23
84	38.48	1296	18	25	30	1.50	1.00	1.00	3	3	3	0	0	0	---	12	17	23
90	44.17	1512	18	25	30	1.50	1.00	1.00	3	3	3	0	0	0	---	13	17	23
96	50.24	1746	18	25	30	1.50	1.00	1.00	3	3	3	0	0	0	---	13	17	23
108	63.84	2202	18	25	30	1.50	1.00	1.00	3	3	3	0	0	0	---	13	17	23
120	78.54	2700	18	25	30	1.50	1.00	1.00	3	3	3	0	0	0	---	13	17	23

(B) B WALL ONLY. C WALL IS NOT ALLOWED FOR THIS DIAMETER AND CLASS.
 * TYPICALLY INDICATE THAT PIPE SIZE IS NOT AVAILABLE OR IS NOT RECOMMENDED FOR THIS CONDITION.
 ** INDICATE THAT MINIMUM COVER MAY BE REDUCED TO 3\"/>

STRUCTURAL DESIGN NOTES

- MANUFACTURERS MAY SUBSTITUTE HIGHER CLASS PIPE THAN SPECIFIED IN THE PLANS, HOWEVER, INSTALLATION DEPTH SHALL NOT EXCEED THAT SHOWN FOR THE PIPE INDICATED IN THE PLANS UNLESS APPROVED BY THE ENGINEER OF RECORD. NO ADDITIONAL PAYMENT WILL BE MADE FOR SMALLER SIZE SUBSTITUTION.
- THE REINFORCED CONCRETE PIPE FILL HEIGHT TABLE IS BASED ON THE FOLLOWING CRITERIA:
 LOAD CASE 1 - TYPICAL STANDARD INSTALLATION:
 SCOT DEEP INSTALLATION. FOR ALL INSTALLATIONS BEYOND 30' EMBANKMENT SETTLEMENT MAY CONTROL DESIGN. CONSULT WITH PIPE MANUFACTURERS AND GEOTECHNICAL ENGINEERS BEFORE USING DEEPER THAN 30' NUMBERS PUBLISHED ARE BASED ON AASHTO LRFD DESIGN CALCULATIONS OR AASHTO LRFD TABLE 12.6.3-1 FOR CLASS SPECIFIED OF REINFORCED CONCRETE PIPE UNDER FLEXIBLE PAVEMENT.
 LOAD CASE 2 - TYPICAL MINIMUM COVER INSTALLATION:
 NUMBERS PUBLISHED ARE BASED ON AASHTO LRFD DESIGN CALCULATIONS OR AASHTO LRFD TABLE 12.6.3-1 FOR CLASS SPECIFIED OF REINFORCED CONCRETE PIPE UNDER FLEXIBLE PAVEMENT.
 LOAD CASE 3 - TYPICAL MINIMUM COVER FOR CONSTRUCTION VEHICLE EQUIPMENT LOADS:
 NUMBERS PUBLISHED ARE BASED ON AASHTO LRFD SECTION 27.5.4.4 FOR REINFORCED CONCRETE PIPE. AVOID DRIVING CONSTRUCTION VEHICLES OVER INSTALLED PIPE UNLESS POSITIVE LIFTING MECHANISM IS USED TO MINIMIZE CHANGE OF LATERAL DISPLACEMENT.
 LOAD CASE 4 - UNIVERSAL DRIVEWAY MINIMUM COVER:
 USE ONLY FOR DRIVEWAY APPLICATIONS. NUMBERS PUBLISHED ARE BASED ON CAPACITY OF PIPE USING AASHTO LRFD INSTEAD OF AT COVER. CHOOSE PIPE CLASS BASED ON LOADING OF VEHICLES USING DRIVEWAY.
- SITE CONDITIONS OTHER THAN TYPICAL INSTALLATION MAY ALSO REQUIRE SPECIAL DESIGNED PIPE. FOR THESE CONDITIONS, OTHER PIPE TYPES MAY BE MORE APPROPRIATE. CONTACT PIPE MANUFACTURER BEFORE SPECIFYING THIS PIPE TYPE FOR CUSTOM INSTALLATIONS.
- THIS FILL HEIGHT TABLE IS FOR USE IN ROADWAY APPLICATIONS ONLY AND SHOULD NOT BE USED FOR ANY OTHER TRANSPORTATION FACILITY.
- SPECIAL DESIGN MAY BE REQUIRED FOR INSTALLATIONS OUTSIDE OF SCOT RIGHT OF WAY - SEE RIGHT OF WAY/UTILITY/MUNICIPAL AGREEMENT FOR THESE INSTALLATIONS.

REFERENCES

NATIONAL DOCUMENTS
 AASHTO M21

SCDOT DOCUMENTS
 QUALIFIED PRODUCT LIST 14

RELATED DRAWINGS & KEYWORDS
 719-009-01
 719-009-02
 719-009-03

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



Edwin Sylvester Engle
 SIGNATURE
 APRIL 10, 2013
 DATE

NO.	DATE	DESCRIPTION
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2	3/29/13	REV. BIDS ON
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SCDOT
 SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DESIGN STANDARDS OFFICE
 955 PARK STREET
 COLUMBIA, SC 29201

STANDARD DRAWING
 PIPE CULVERTS
 TYPICAL PREPARATION (PIPE TRENCH)

714-005-00
 EFFECTIVE LETTING DATE: JANUARY 2013 THIS DRAWING IS NOT TO SCALE

REFERENCES

NATIONAL DOCUMENTS
 AASHTO M21

SCDOT DOCUMENTS
 QUALIFIED PRODUCT LIST 14

RELATED DRAWINGS & KEYWORDS
 719-009-01
 719-009-02
 719-009-03

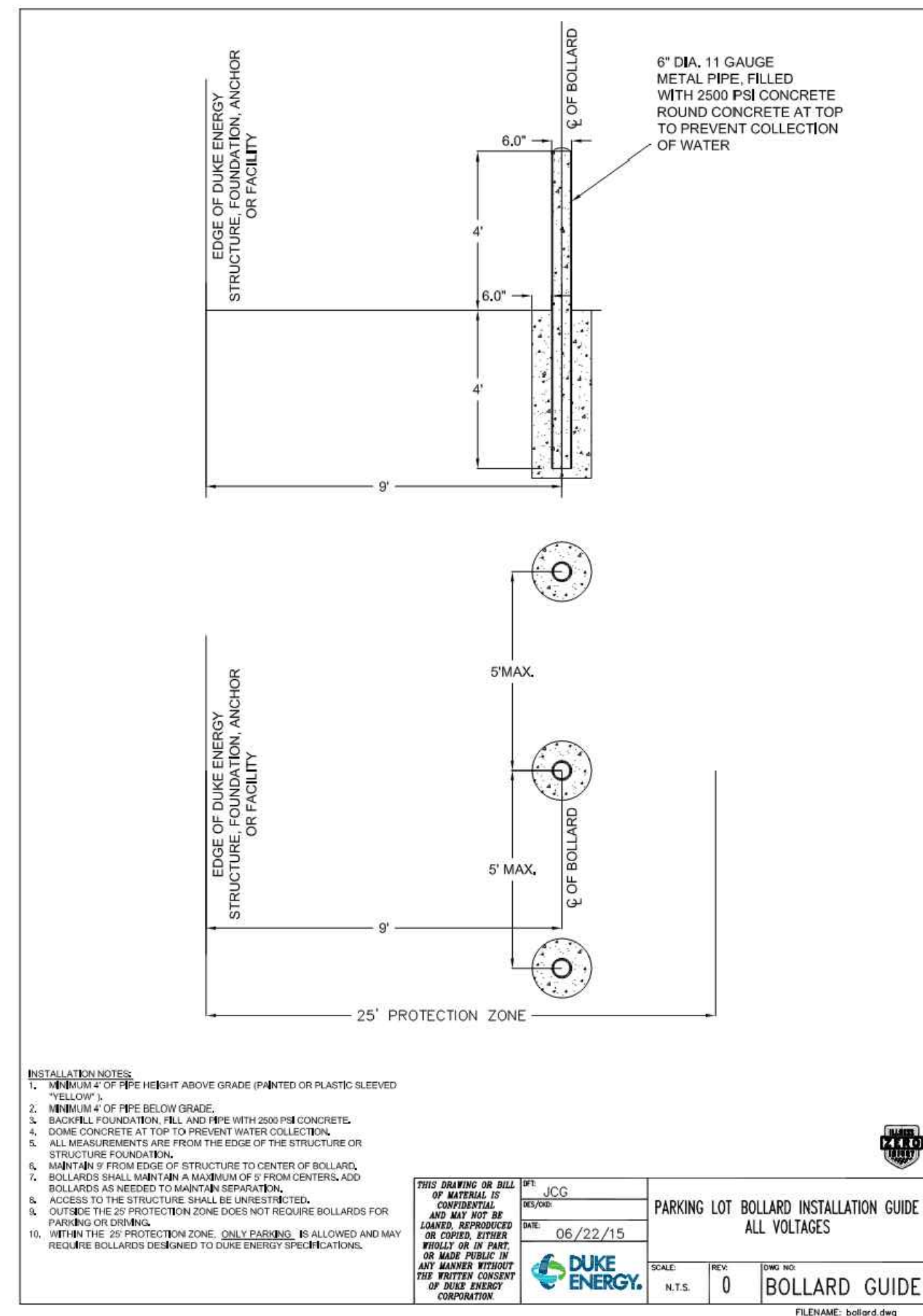
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 APRIL 10, 2013
 DATE

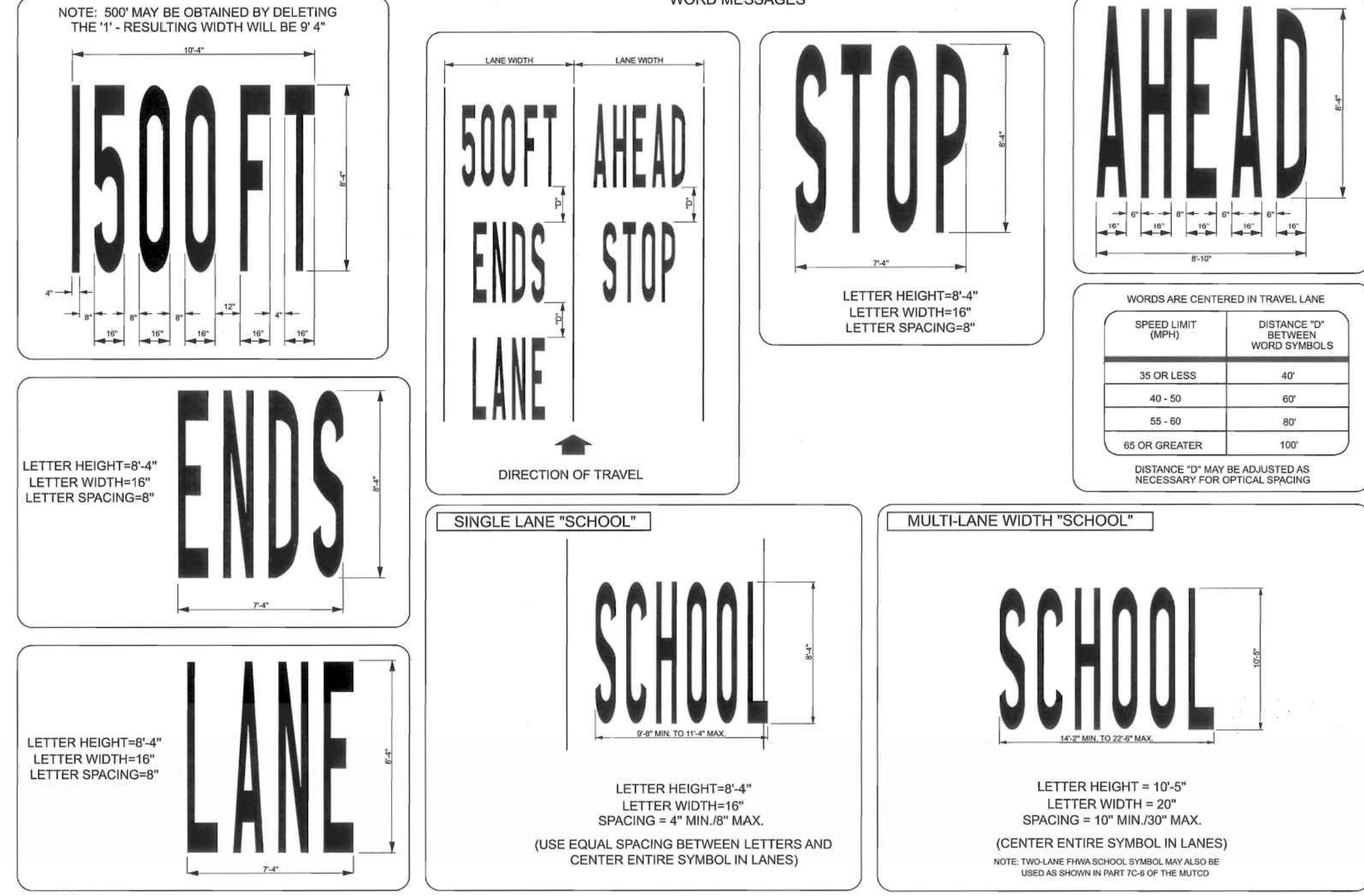
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29	3/29/13	REV. BIDS ON
30	3/29/13	REV. BIDS ON

2. INTERSECTION STANDARD MARKINGS FOR INTERSECTIONS PARKING LOT BOLLARD INSTALLATION GUIDE - 15 - 25' PARKING LOT BOLLARD INSTALLATION GUIDE



STANDARD PAVEMENT MARKINGS

WORD MESSAGES



REFERENCES

STAGING AND MARKING ENGINEER

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

DATE: 2-5-08

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

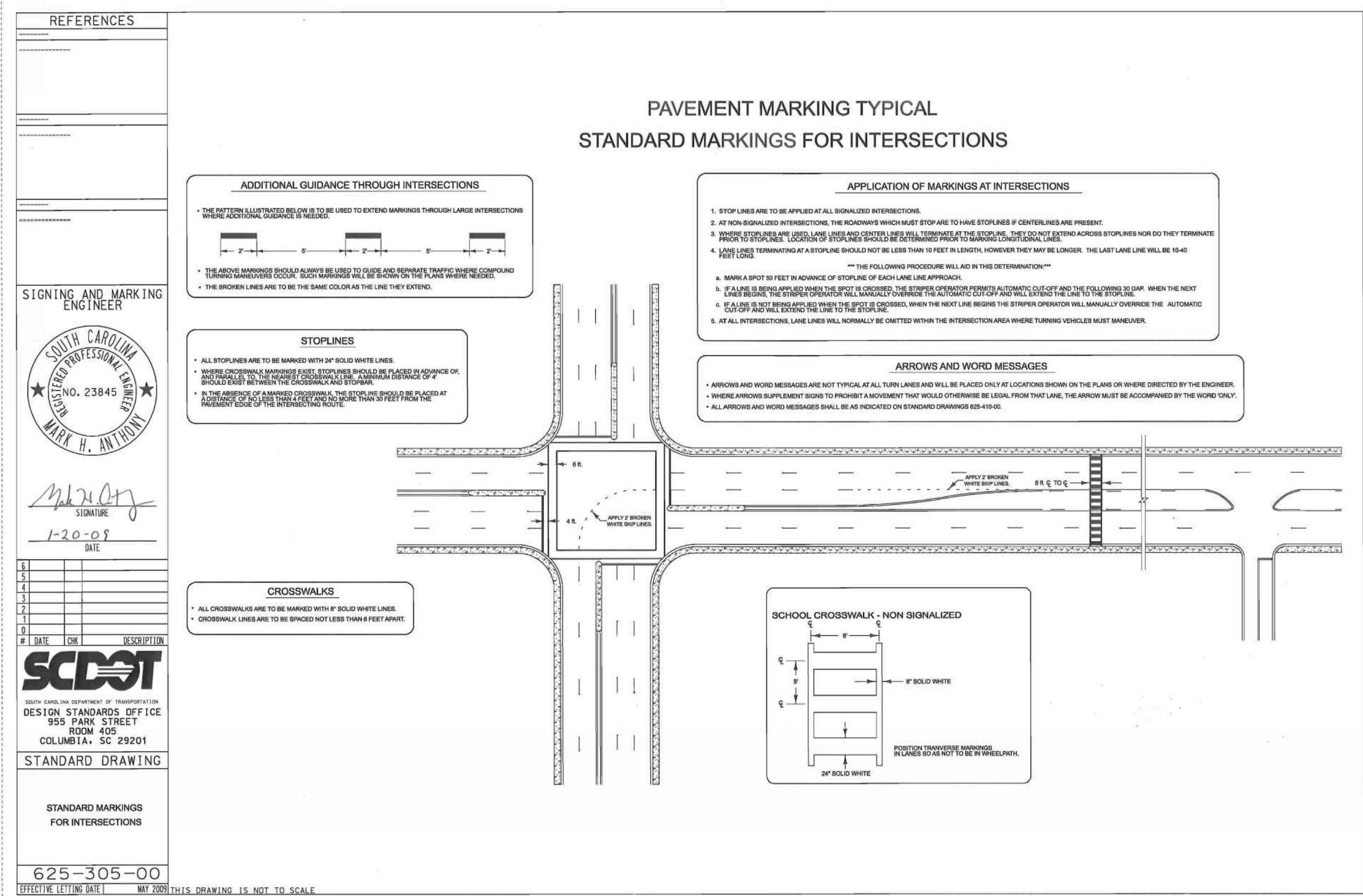
STANDARD DRAWING

WORD MESSAGES

625-420-00
 EFFECTIVE LETTING DATE: MAY 2008

PAVEMENT MARKING TYPICAL

STANDARD MARKINGS FOR INTERSECTIONS



REFERENCES

STAGING AND MARKING ENGINEER

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

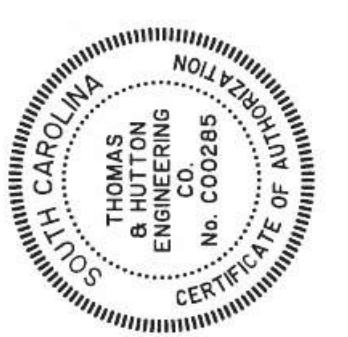
DATE: 1-20-09

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STANDARD DRAWING

STANDARD MARKINGS FOR INTERSECTIONS

625-305-00
 EFFECTIVE LETTING DATE: MAY 2008



NO.	DATE	BY	REVISIONS
1	2-5-08	RWP	2-5-08

THOMAS & HUTTON
 304 North Church Street
 Greenville, SC 29601 • 864.412.2222
 www.thomasandhutton.com

OCONEE COUNTY
 SHILOH ROAD, SENECA, SC 29678

SENECA RAIL SITE - ROADWAY IMPROVEMENTS

PAVING GRADING & DRAINAGE - DETAILS

JOB NO: J-26762.0000
 DATE: NOVEMBER 6, 2017
 DRAWN: TJP
 DESIGNED: RWP
 REVIEWED: RWP
 APPROVED: RWP
 SCALE: N/A

C4.5