

AGREEMENT

**PI No. 0011436, Muscogee County
RR File #: BR1112131**

THIS AGREEMENT, made and entered into _____, by and between,

CENTRAL OF GEORGIA RAILROAD COMPANY, a Corporation, chartered in the State of Georgia, hereinafter styled the RAILROAD, party of the first part.

COLUMBUS CONSOLIDATED GOVERNMENT, a political subdivision of the State of Georgia, hereinafter styled the LOCAL GOVERNMENT, party of the second part.

WITNESSETH that:

WHEREAS, the LOCAL GOVERNMENT proposes under the above written project number to grade separate the existing Buena Vista Road at-grade railroad crossing in Columbus, Muscogee County, Georgia. A temporary at-grade crossing will be constructed to maintain vehicular traffic during bridge construction; and

WHEREAS, work will be required on RAILROAD property including removing the existing at-grade crossing and the construction of a new bridge to carry Buena Vista road above the tracks of the railroad at railroad inventory number 718915T and make improvements to the existing Ace Way at-grade crossing at railroad inventory number 726273C, in the vicinity of RAILROAD Mileposts M-288.10 & M-287.95; and

WHEREAS, said work will require the RAILROAD to perform construction engineering, track work, signal work, flagging, and accounting/billing, which the RAILROAD is willing to perform in accordance with the estimate attached hereto; and

WHEREAS, the RAILROAD is in agreement with the LOCAL GOVERNMENT’S project and plans; and

WHEREAS, the New Overpass Bridge will be owned by the LOCAL GOVERNMENT and will be maintained by the LOCAL GOVERNMENT; and

WHEREAS, the RAILROAD is willing to grant the LOCAL GOVERNMENT temporary easement(s) for this work as provided for herein as necessary for roadway construction and maintenance during construction of grade separation structures in accordance with O.C.GA. 32-6-196; and

WHEREAS, acquisition of RAILROAD property required for roadway right-of-way and easements is being handled separate from this agreement; and

NOW THEREFORE, the PARTIES HERETO, each in consideration of the premises above and of the covenants of the other as hereinafter expressed and contained, do hereby contract and agree each with the other as follows:

AGREEMENT

- 1) It is specifically understood that the project number shown above is for the LOCAL GOVERNMENT's identification purposes only and may be subject to change by the LOCAL GOVERNMENT. In the event it becomes necessary for the LOCAL GOVERNMENT to assign a different project number, the LOCAL GOVERNMENT will notify the RAILROAD and the LOCAL GOVERNMENT of the new project designation. Such change in project designation shall have no effect whatsoever on any other terms of this agreement.

- 2) RAILROAD to the extent that its present right, title and interest permits or enables it so to do and without warranty hereby grants to LOCAL GOVERNMENT an easement across its right-of-way for the purpose of constructing said overpass(es) and approaches thereto, all as shown on the project plans and in accord with the specifications and special provisions. Said project plans, specifications and special provisions, which are identified by the project number shown above, as finally approved by the RAILROAD and the LOCAL GOVERNMENT, are hereby made a part hereof by reference. Said easement for construction is more particularly described as shown on project plan sheets which are attached hereto and made a part hereof. Such temporary easements shall be provided by RAILROAD to LOCAL GOVERNMENT at no cost, charge or expense, whatsoever.
 - a) Such temporary easements hereby granted at no cost, charge or expense to the LOCAL GOVERNMENT by the RAILROAD are limited to the use for highway purposes of space required for approaches to said bridge(s) and for columns, foundations and other parts of the bridge(s) and is limited vertically by a horizontal surface 20 feet above the roadway surface of said bridge and approaches, together with the use of additional space for aforesaid purpose and for access to the highway facilities for maintenance purposes, it being understood that the easement shall not restrict the RAILROAD from utilizing the air space under said bridge(s) for railroad operations and for wire lines or other facilities which will not encroach on the reasonable requirements for maintaining the highway facilities. All other rights are reserved unto the RAILROAD.
 - b) LOCAL GOVERNMENT, in its maintenance of the highway facilities, agrees to obtain permission from the RAILROAD before undertaking any work which may interfere with or be a real or potential hazard to the passage of trains or other railroad operations.
 - c) RAILROAD agrees to notify the LOCAL GOVERNMENT prior to undertaking the use of air space over the easement and prior to starting the construction of any fixed installation, other than its customary signal and communication facilities, within 8 feet of the underside of said bridge(s) or within 15 feet of said easement, it being understood that such use will afford reasonable protection and safety to the highway facilities and highway traffic and will not unreasonably interfere with lighting, ventilation and maintenance of the highway facilities by the LOCAL GOVERNMENT.

- 3) LOCAL GOVERNMENT will construct and maintain said overpass bridge(s) together with approaches thereto in accordance with the plans, specifications and special provisions which are identified by the project number shown above, approved by all parties, and made a part of this agreement by reference. LOCAL GOVERNMENT further agrees that said work shall be done and performed in accordance with the reasonable requirements of RAILROAD in such manner as to prevent interruption of, interference with, or danger or delay to railroad operations.

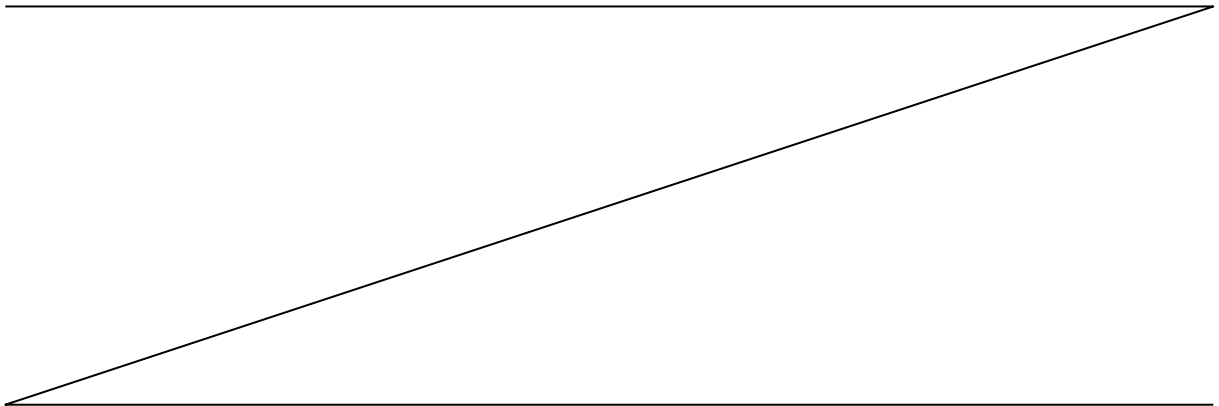
AGREEMENT

- 4) The LOCAL GOVERNMENT will construct and maintain, including necessary grading and drainage, in good and safe condition the temporary highway crossing covered hereby, except for the portion between the rails of said tracks and for two feet on the outer side of the cross ties where RAILROAD will install / adjust the crossing and thereafter this area shall be maintained and the expense thereof shall be borne by such party as may be required to do so under the provisions of applicable law as the same may be amended from time to time.
- 5) The RAILROAD, with its regular construction or maintenance forces and personnel and at its standard schedule of wages and working hours and working in accordance with the terms of its agreements with such employees, will do and perform the work as described in the detailed estimate dated November 6, 2019 for \$ 1,787,737.00, said estimate being attached hereto and made a part of this agreement. Any work to be done and performed by the RAILROAD not to be done and performed by the regular organized forces of the RAILROAD working under current agreements with its employees, shall be subject to the labor regulations applicable to construction contracts for grade separation projects. The amount of the detailed cost estimate(s) attached hereto will be allotted from available funds and written notice given to RAILROAD by LOCAL GOVERNMENT before RAILROAD is authorized to proceed with the work to be performed by RAILROAD under this agreement.
- 6) The LOCAL GOVERNMENT shall pay monthly bills promptly upon receipt and verification thereof by the LOCAL GOVERNMENT. Upon completion of the work the RAILROAD shall submit one final bill to the LOCAL GOVERNMENT and the LOCAL GOVERNMENT shall make a conditional final payment promptly upon verification of the final bill by the LOCAL GOVERNMENT. The RAILROAD will notify the LOCAL GOVERNMENT prior to invoicing any amount that is over the provided estimate.
- 7) The RAILROAD shall provide construction engineering including inspection services as identified and included in the attached estimate. The anticipated scope of services to be provided in connection with construction engineering by consulting engineering firms for the RAILROAD is attached hereto and made a part hereof.
- 8) The LOCAL GOVERNMENT will require its Contractor to abide by the attached Special Provision for Protection of Railway Interests which will be included in his contract and, before commencing said construction on RAILROAD right-of-way or property, to furnish evidence acceptable to the LOCAL GOVERNMENT and the RAILROAD that the Contractor has provided (1) Contractor's Public Liability and Property Damage Liability Insurance, (2) Contractor's Protective Public Liability and Property Damage Liability Insurance and (3) Railroad Protective Liability Insurance in the amounts specified in the Special Provision attached hereto and made a part hereof, all in accord with Part 646, Subpart A, of CFR, current edition, and in a form approved by the LOCAL GOVERNMENT and the RAILROAD.
- 9) The LOCAL GOVERNMENT agrees that it will ensure its Contractor secures any payment or performance bonds required under Section 13-10-60 and 13-10-40 of the Official Code of Georgia Annotated. The LOCAL GOVERNMENT will furnish the RAILROAD a photocopy of the bonds secured for the project upon request. The LOCAL GOVERNMENT

AGREEMENT

will also furnish the RAILROAD with the address of all contractors and sureties that may be a party to the bonds and will notify the RAILROAD of any subsequent address changes upon request.

- 10) In the event it shall be necessary in connection with or incident to the work of said construction to make any adjustment in facilities of tenants of the RAILROAD, such adjustments shall be handled by the LOCAL GOVERNMENT directly with the owner or owners thereof at no expense to the RAILROAD.
- 11) It is agreed that the LOCAL GOVERNMENT will furnish the RAILROAD the name, address and telephone number of its representative who will be in charge of the work as part of its letter of authorization to proceed with the work covered under this agreement. The RAILROAD agrees to give said representative reasonable prior notice of the dates upon which work will be done in order that work may be properly inspected and documented for audit. Further, the work covered under this Agreement shall be completed no less than the overall completion date as indicated in the construction agreement entered into between the LOCAL GOVERNMENT and the lowest responsive bidder. The LOCAL GOVERNMENT will notify the RAILROAD in writing of this final completion date.
- 12) It is mutually agreed between the parties hereto that this document shall be deemed to have been executed in Muscogee County, Georgia, and that all questions of interpretation and construction shall be governed by the laws of the State of Georgia.
- 13) The covenants herein contained shall, except as otherwise provided, accrue to the benefit of and be binding upon the successors and assigns of the parties hereto.
- 14) RAILROAD shall return to the LOCAL GOVERNMENT possession of the warning devices used for the temporary at-grade crossing in the vicinity of the project once the crossing is permanently removed from service.



AGREEMENT

IN WITNESS WHEREOF, the parties have, through duly authorized representatives, entered into this Agreement effective the day and year first written above.

COLUMBUS CONSOLIDATED GOVERNMENT, a Georgia Government Entity

By: _____

Name: _____

Title: _____

Date: _____

CENTRAL OF GEORGIA RAILROAD COMPANY, a Georgia corporation

By: _____

Name: _____

Title: _____

Date: _____

NS File: BR1112131

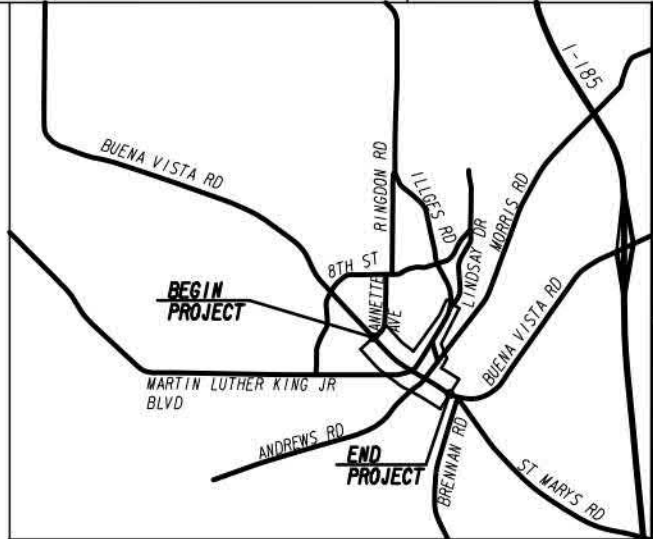
EXHIBIT A

CITY OF COLUMBUS CONSOLIDATED GOVERNMENT

PLAN AND PROFILE OF PROPOSED INTERSECTION IMPROVEMENTS ALONG BUENA VISTA ROAD (COLUMBUS SPIDER WEB NETWORK)

MUSCOGEE COUNTY
TIA PROJECT

FEDERAL ROUTE • N/A
STATE ROUTE • N/A
P.J.NO. 0011436



LOCATION SKETCH

DESIGN DATA:
 TRAFFIC A.D.T.: (2021) 32,450
 TRAFFIC A.D.T.: (2041) 39,600
 TRAFFIC D.H.V.: (2041) 3,575
 DIRECTIONAL DIST: 55%/45%
 % TRUCKS: 5.3% (DHV)
 24 HR. TRUCKS %: 4%
 SPEED DESIGN: 30 MPH

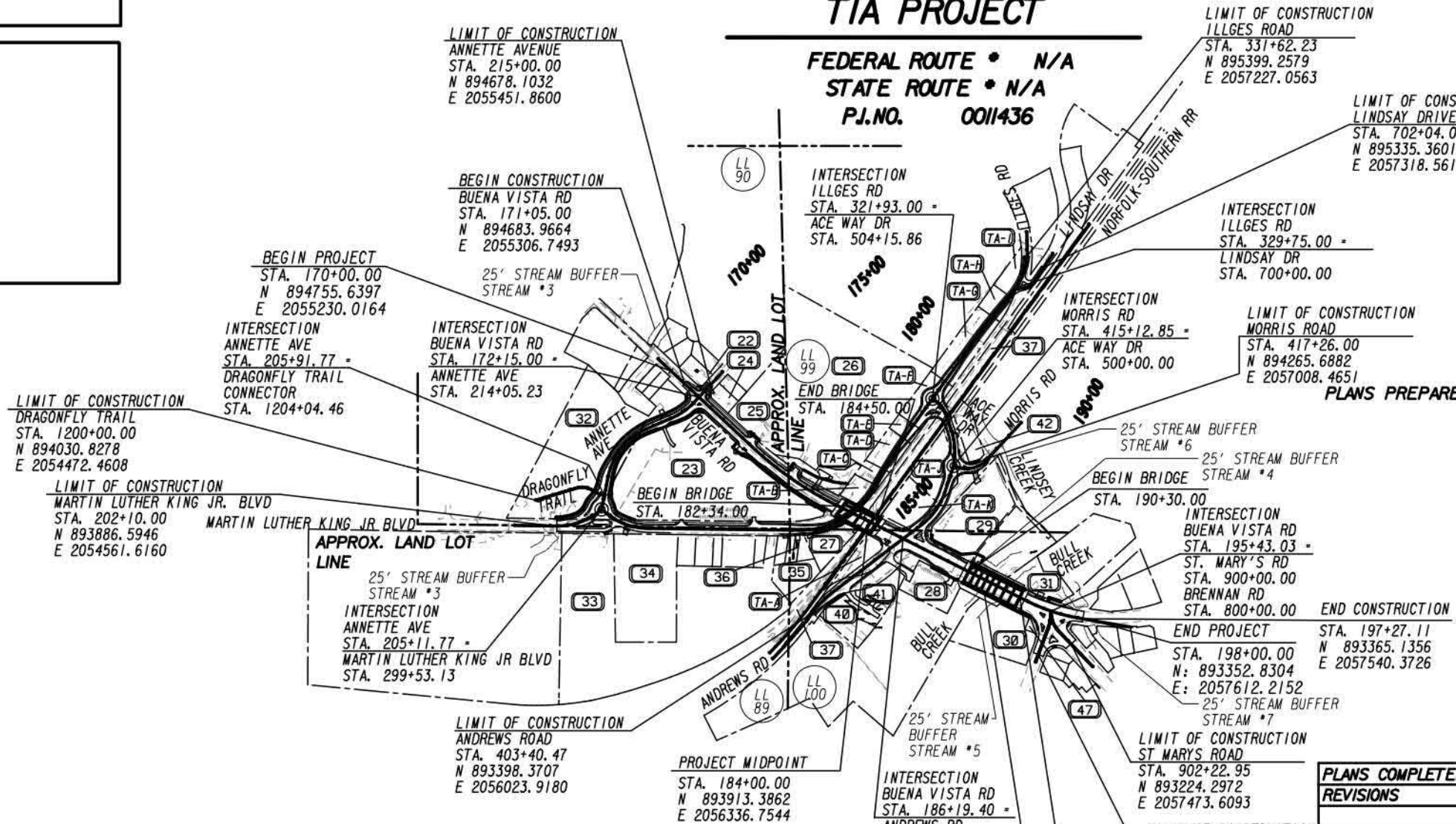
FUNCTIONAL CLASS:
 Urban Principal Arterial

THIS PROJECT IS 100% IN MUSCOGEE COUNTY AND IS 100% IN CONG. DIST. NO. 2.

PROJECT DESIGNATION: TIA

THIS PROJECT HAS BEEN PREPARED USING THE HORIZONTAL GEORGIA COORDINATE SYSTEM OF 1984 (NAD 1983)/94 WEST ZONE, AND THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

THE DATA TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS OR IN ANYWAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, ARE BASED UPON FIELD INVESTIGATIONS AND ARE BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS. HOWEVER, THE SAME ARE SHOWN AS INFORMATION ONLY, ARE NOT GUARANTEED, AND DO NOT BIND THE CITY OF COLUMBUS CONSOLIDATED GOVERNMENT IN ANY WAY. THE ATTENTION OF BIDDER IS SPECIFICALLY DIRECTED TO SUBSECTIONS 102.04, 102.05, AND 104.03 OF THE GEORGIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

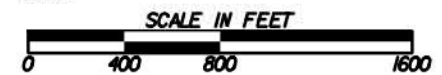


PLANS PREPARED BY:

DESIGN



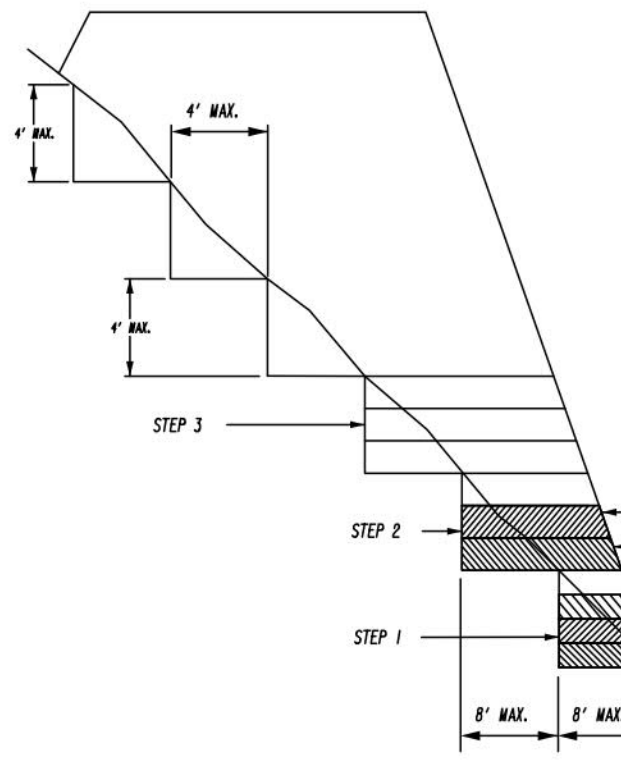
LENGTH OF PROJECT	
MUSCOGEE COUNTY No. 215	
Project No. 0011436	
MILES	
NET LENGTH OF ROADWAY	0.428
NET LENGTH OF BRIDGES	0.02
NET LENGTH OF PROJECT	0.530
NET LENGTH OF EXCEPTIONS	0.000
GROSS LENGTH OF PROJECT	0.530



PLANS COMPLETED 10-04-2019	REVISIONS

DRAWING No.
01 0001

EXHIBIT A



BENCHING DETAIL

Revised 9/29/08 4.5.28 NO SCALE

RAILROAD NOTES

- ALL CONSTRUCTION WORK PERFORMED ON, UNDER, OVER, OR ADJACENT TO NORFOLK SOUTHERN PROPERTY MUST BE IN ACCORDANCE WITH THE NORFOLK SOUTHERN SPECIAL PROVISIONS FOR PROTECTION OF RAILWAY INTERESTS.
- THE CONTRACTOR SHALL NOT, FOR ANY REASON, STORE CONSTRUCTION EQUIPMENT UPON NOR STORE OR DUMP WASTE CONSTRUCTION MATERIALS UPON THE RAILROAD'S RIGHT-OF-WAY.
- THE CONTRACTOR SHALL CONDUCT HIS WORK SO AS TO PROTECT THE RAILROAD'S TRACK FACILITIES AND PROPERTY FROM DAMAGE. THE CONTRACTOR SHALL NOTIFY THE RAILROAD OF ANY WORK BY THE CONTRACTOR WITHIN 25 FEET OF THE RAILROAD'S RIGHT-OF-WAY FOR THE RAILROAD TO DETERMINE FLAGGING NEEDS.
- THE CONTRACTOR SHALL COORDINATE HIS WORK ON OR ADJACENT TO RAILROAD RIGHT-OF-WAY WITH THE FOLLOWING REPRESENTATIVES OF THE RAILROAD:

MR. DUSTIN K. LANGE DIVISION ENGINEER (ALABAMA DIVISION) NORFOLK SOUTHERN RAILWAY 1400 NORFOLK SOUTHERN DRIVE BIRMINGHAM, AL 35210 PHONE: (205) 451-4724 E-MAIL: DUSTIN.LANGE@NSCORP.COM	MR. CHRIS BENNETT SYSTEM ENGINEER-PUBLIC IMPROVEMENTS NORFOLK SOUTHERN RAILWAY 1200 PEACHTREE STREET, NE ATLANTA, GA 30309 PHONE: (404) 529-1509 E-MAIL: CHRIS.BENNETT@NSCORP.COM
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- ALL UTILITY INSTALLATIONS OR RELOCATIONS THAT ARE REQUIRED IN CONJUNCTION WITH THIS PROJECT AND WITHIN NORFOLK SOUTHERN RIGHT-OF-WAY 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\CUSTOMERS>REAL_ESTATE>WIRELINE/PIPELINE AND FIBER OPTICS>AECOM. NOTE: LICENSE AGREEMENT MUST BE EXECUTED PRIOR TO UTILITY BEING INSTALLED OR RELOCATED.

- WHERE THE EMBANKMENT IS TO BE PLACED ON A HILLSIDE OR ANOTHER EXISTING EMBANKMENT HAVING A SLOPE OF 3 TO 1 OR STEEPER, THE FOUNDATION MUST BE BENCHED WHILE THE EMBANKMENT IS BEING MADE.
(SEE DIAGRAM AT LEFT.)
- THE DIAGRAM SHOWS THAT BEFORE LAYER 'A' IS PLACED THE FIRST STEP IS TO (1) CUT INTO THE SLOPE A MAXIMUM DISTANCE OF ABOUT 8 FEET (ABOUT THE WIDTH OF THE TYPICAL D-8 BULDOZER BLADE). SUCCESSIVE LAYERS B, C, AND D ARE THEN PLACED BEFORE LAYER 'E' IS PLACED. THE SECOND STEP IS CUT 8 FEET INTO THE SLOPE AND SUCCESSIVE LAYERS ARE AGAIN PLACED. IF IT IS ANTICIPATED THAT THE VERTICAL PART OF THE STEP WILL EXCEED 4 FEET IF A 8 FEET HORIZONTAL CUT IS MADE, THEN THE ACTUAL CUT STOPS WHEN THE VERTICAL PART REACHES A MAXIMUM OF 4 FEET ALLOWING THE HORIZONTAL DISTANCE TO VARY.
- THE PROCESS OF BENCHING IS CONSIDERED INCIDENTAL TO THE ITEM OF UNCLASSIFIED EXCAVATION AND BORROW OR GRADING COMPLETE IN CONSTRUCTION OF THE EMBANKMENT AND NO ADDITIONAL MEASUREMENT OF QUANTITY OR PAYMENT WILL BE MADE FOR BENCHING.

Environmental Resources Impact Table						
These resources and the restrictions listed are governed by state and federal law						
Resource Name	Location			Permitted Construction Activity	Special Provisions?	Comments
	Beginning Station	Ending Station	Side			
Perennial Stream (PS) 3	167+99	168+42	BOTH	No activity	N/A	
PS 3 Buffer	167+74	168+55	BOTH	No activity	N/A	
Intermittent Stream (IS) 4	201+92	202+28	BOTH	104 linear feet (0.01 acre) of permanent fill impacts	N/A	USACE Section 404 Permit
IS 4 Buffer	201+67	202+46	BOTH	Exempt buffer encroachment	N/A	
PS 5/Bull Creek	191+53	192+72	BOTH	17 linear feet (0.03 acre) of temporary dewatering impacts and 170 linear feet (0.31 acre) of permanent fill impacts	N/A	USACE Section 404 Permit
PS 5 Buffer	191+29	192+98	BOTH	Exempt buffer encroachment	N/A	
PS 6/Lindsey Creek	417+75	418+11	BOTH	No activity	N/A	
PS 6 Buffer	417+50	418+36	BOTH	No activity	N/A	
IS 7	197+01	197+73	BOTH	No activity	N/A	
IS 7 Buffer	196+71	197+98	BOTH	No activity	N/A	

pH 5.2
Resistivity 4500
Project Number: N/A

County: MUSCOGEE

P. I. Number: 0011436

Pipe Culvert Material Alternates

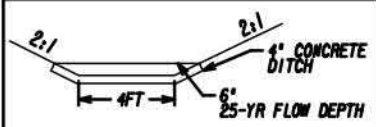
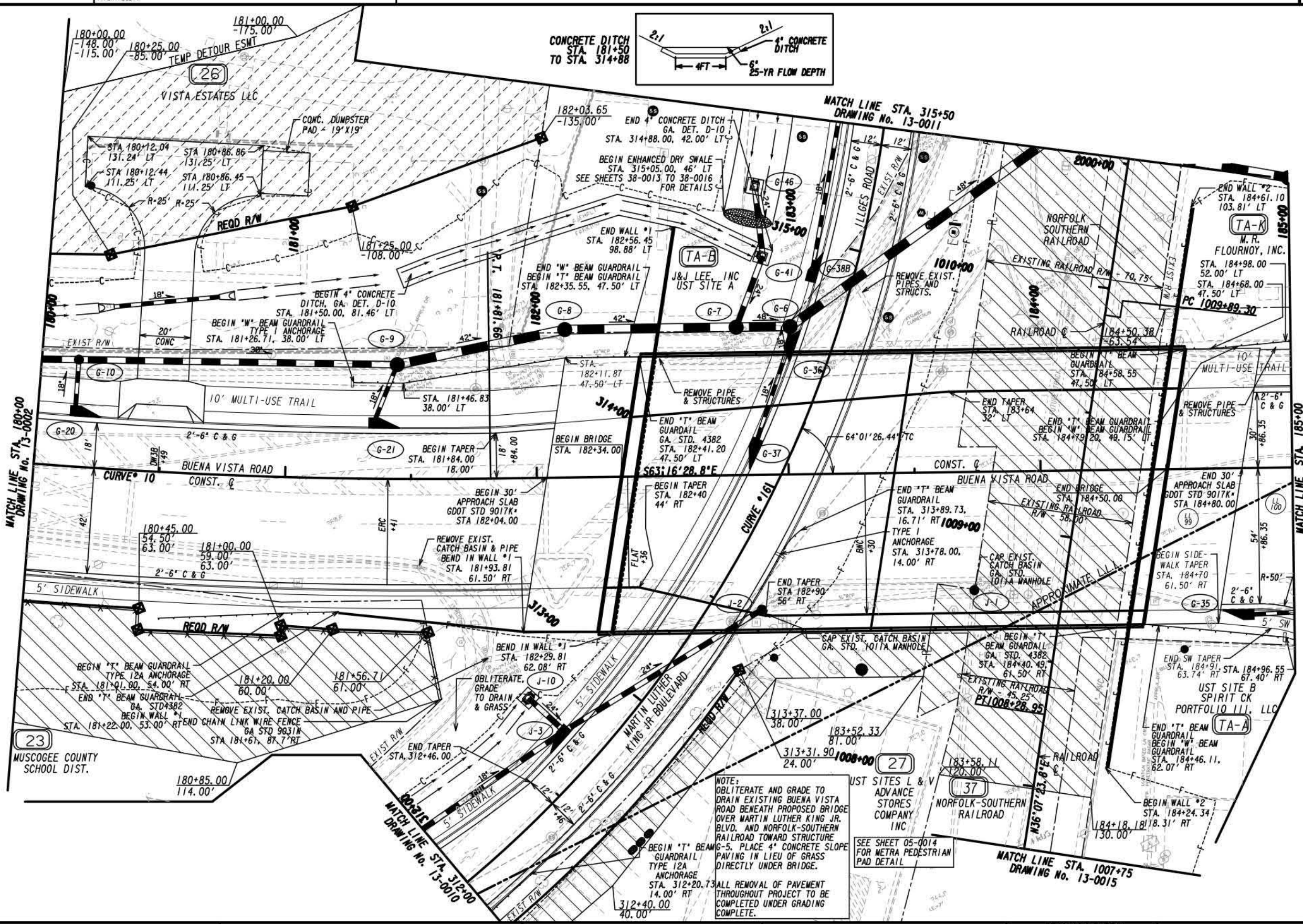
TYPE OF INSTALLATION	PIPE TYPE									
	CONCRETE	STEEL			ALUMINUM	THERMOPLASTIC				
	REINFORCED CONCRETE AASHTO M-170	CORRUGATED STEEL ALUMINUM COATED (TYPE 2) AASHTO M-36	CORRUGATED STEEL PLAIN ZINC COATED AASHTO M-36	POLYMER COATED STEEL AASHTO M-245	CORRUGATED ALUMINUM AASHTO M-196	CORRUGATED HDPE AASHTO M-252	CORRUGATED SMOOTH LINED HDPE TYPE "S" AASHTO M-294	CORRUGATED SMOOTH LINED POLYPROPYLENE AASHTO M-330	PVC CORRUGATED SMOOTH INTERIOR AASHTO F-949	PVC Profile Wall Drain Pipe AASHTO M-304
STORM	NON-TRAVEL BEARING (OUTSIDE ROADBED)	INTERSTATE								
	NON INTERSTATE				X	X	X	X	X	X
DRAIN	TRAVEL BEARING (INSIDE ROADBED)	GRADE 10%	ADT < 1,500			X	X	X	X	X
		1,500 < ADT < 5,000			X	X	X	X	X	X
		5,000 < ADT < 15,000			X	X	X	X	X	X
		ADT > 15,000 & INTERSTATES			X	X	X	X	X	X
	GRADE > 10%				X	X	X	X	X	
	SIDE DRAIN	X			X	X	X	X	X	X
	PERMANENT SLOPE DRAIN		X	X	X	X	X	X	X	X
	PERFORATED UNDERDRAIN		X	X	X	X	X	X	X	X

- NOTE:
- Allowable materials are indicated by an 'X'.
 - Structural, installation, fill height and backfill requirements of storm drain pipe will be in accordance with Georgia Standard 1030-D or 1030-P and the Standard Specifications.
 - The Contractor shall provide additional storm sewer capacity calculations if a pipe material other than concrete is selected.
 - Pipe used under mechanically stabilized earth (MSE) walls, within MSE wall backfill, or within five feet of an MSE wall face shall be Class V Concrete Pipe.
- Rev. 1-12-16



REVISION DATES		GENERAL NOTES	
CHECKED:	DATE:	BUENA VISTA ROAD CORRIDOR	
BACKCHECKED:	DATE:	DRAWING No.	
CORRECTED:	DATE:	04-0003	
VERIFIED:	DATE:		

EXHIBIT A



NOTE:
OBLITERATE AND GRADE TO DRAIN EXISTING BUENA VISTA ROAD BENEATH PROPOSED BRIDGE OVER MARTIN LUTHER KING JR. BLVD. AND NORFOLK-SOUTHERN RAILROAD TOWARD STRUCTURE

G-5. PLACE 4" CONCRETE SLOPE PAVING IN LIEU OF GRASS DIRECTLY UNDER BRIDGE.

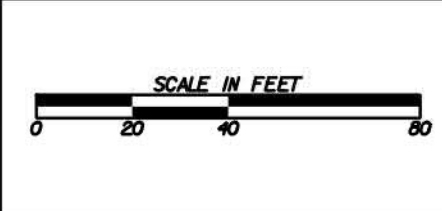
ALL REMOVAL OF PAVEMENT THROUGHOUT PROJECT TO BE COMPLETED UNDER GRADING COMPLETE.

EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE	
EASEMENT FOR CONSTR OF DRIVES	

PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

WOLVERTON
Engineering Solutions You Can Trust

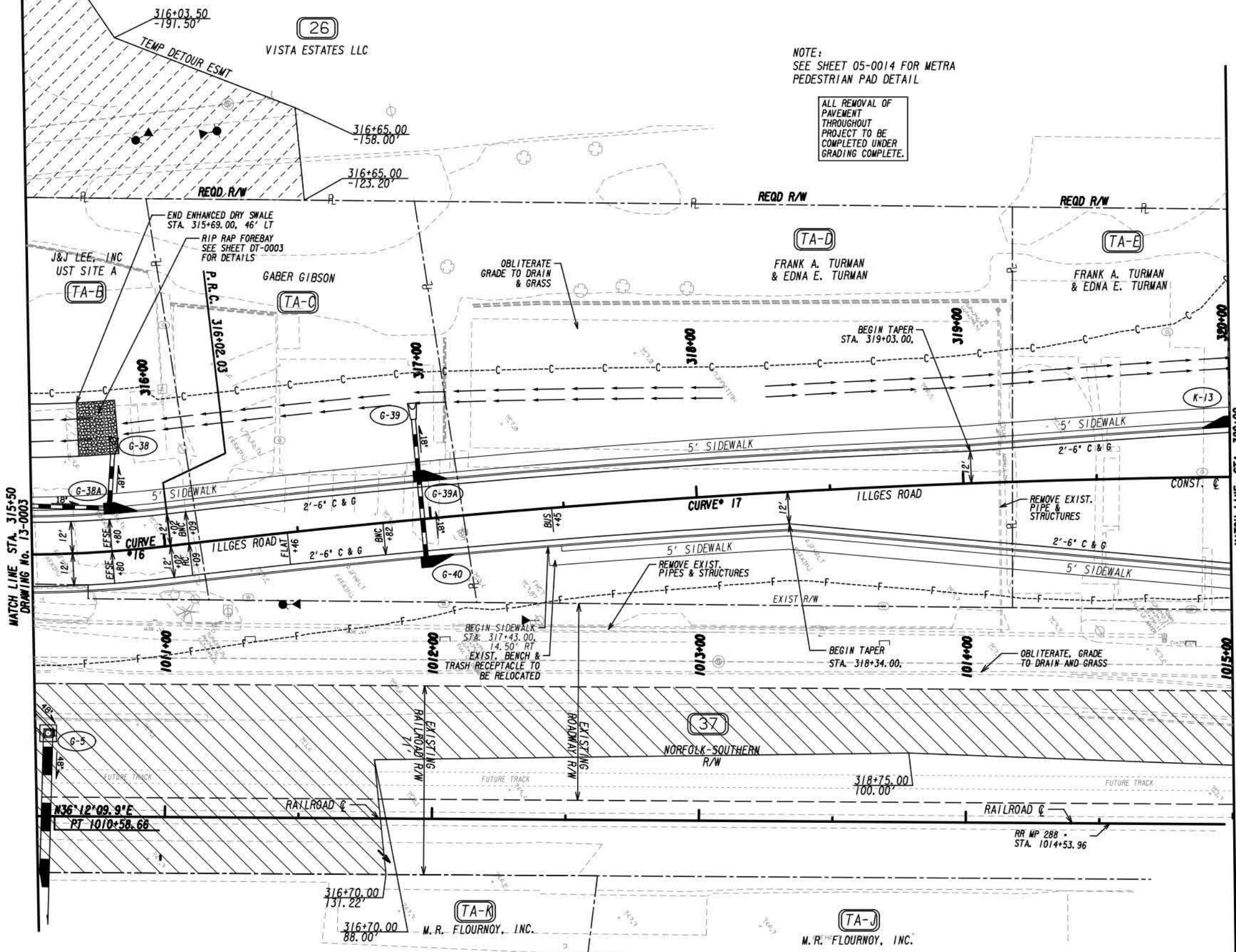
6745 Sugarloaf Parkway • Suite 100 • Duluth, Georgia 30097
Phone: 770-447-8999
www.wolvertoninc.com



REVISION DATES	

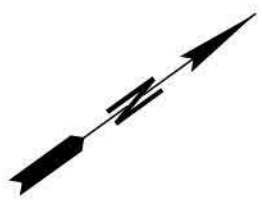
MAINLINE PLAN		
BUENA VISTA ROAD CORRIDOR		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	13-0003
CORRECTED:	DATE:	
VERIFIED:	DATE:	

EXHIBIT A



NOTE:
SEE SHEET 05-0014 FOR METRA
PEDESTRIAN PAD DETAIL

ALL REMOVAL OF
PAVEMENT
THROUGHOUT
PROJECT TO BE
COMPLETED UNDER
GRADING COMPLETE.



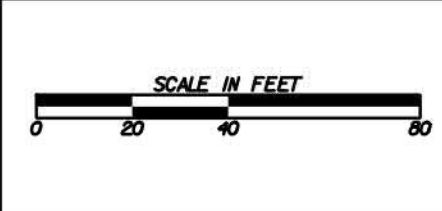
MATCH LINE STA. 315+50
DRAWING No. 13-0003

MATCH LINE STA. 320+00
DRAWING No. 13-0012

EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE	
EASEMENT FOR CONSTR OF DRIVES	

PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

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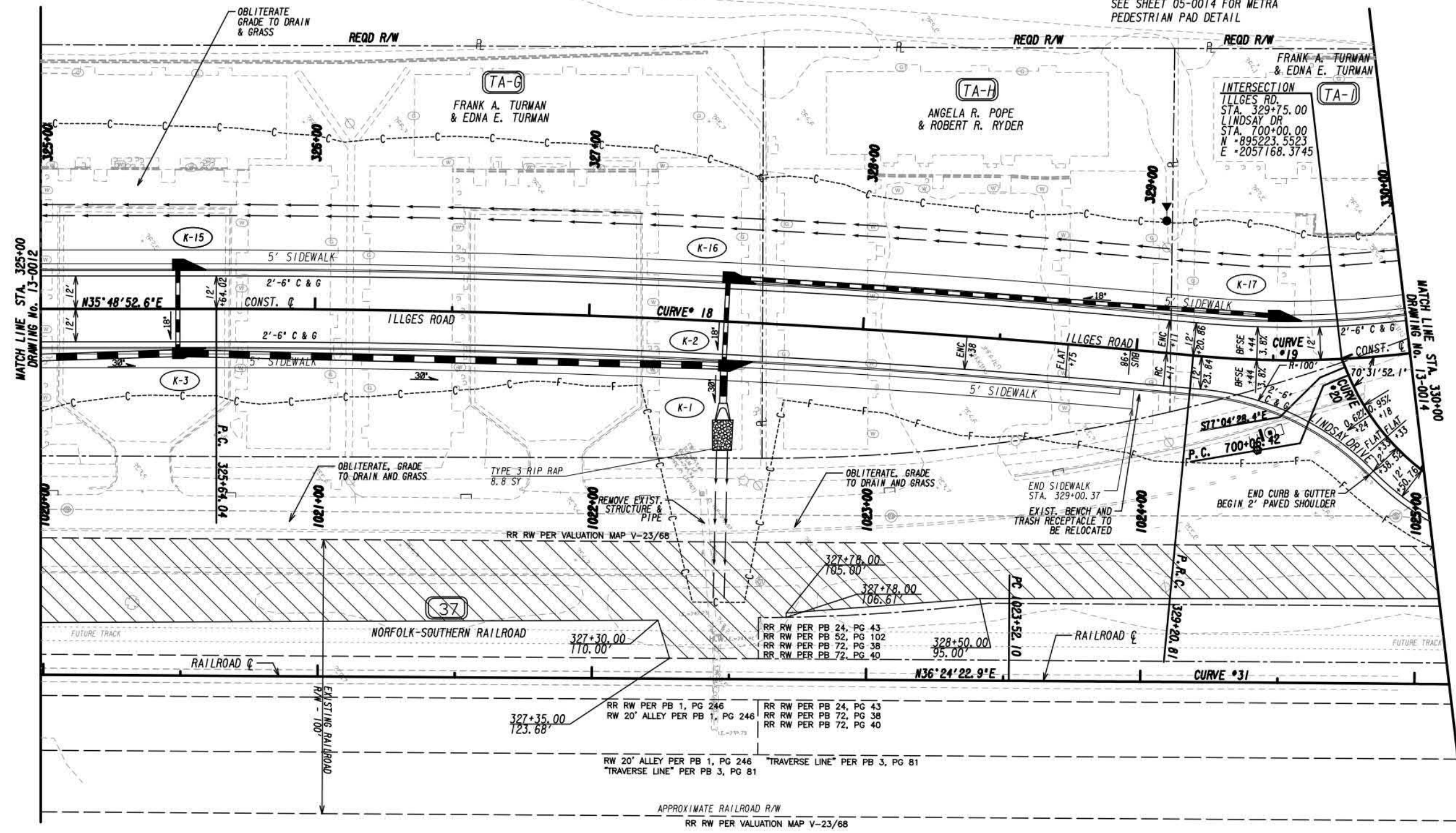
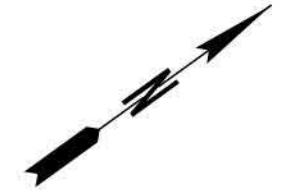
REVISION DATES	

MAINLINE PLAN		
ILLGES ROAD		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	13-0011
CORRECTED:	DATE:	
VERIFIED:	DATE:	

EXHIBIT A

ALL REMOVAL OF PAVEMENT THROUGHOUT PROJECT TO BE COMPLETED UNDER GRADING COMPLETE.

NOTE:
SEE SHEET 05-0014 FOR METRA PEDESTRIAN PAD DETAIL



EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE	
EASEMENT FOR CONSTR OF DRIVES	

PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

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REVISION DATES	

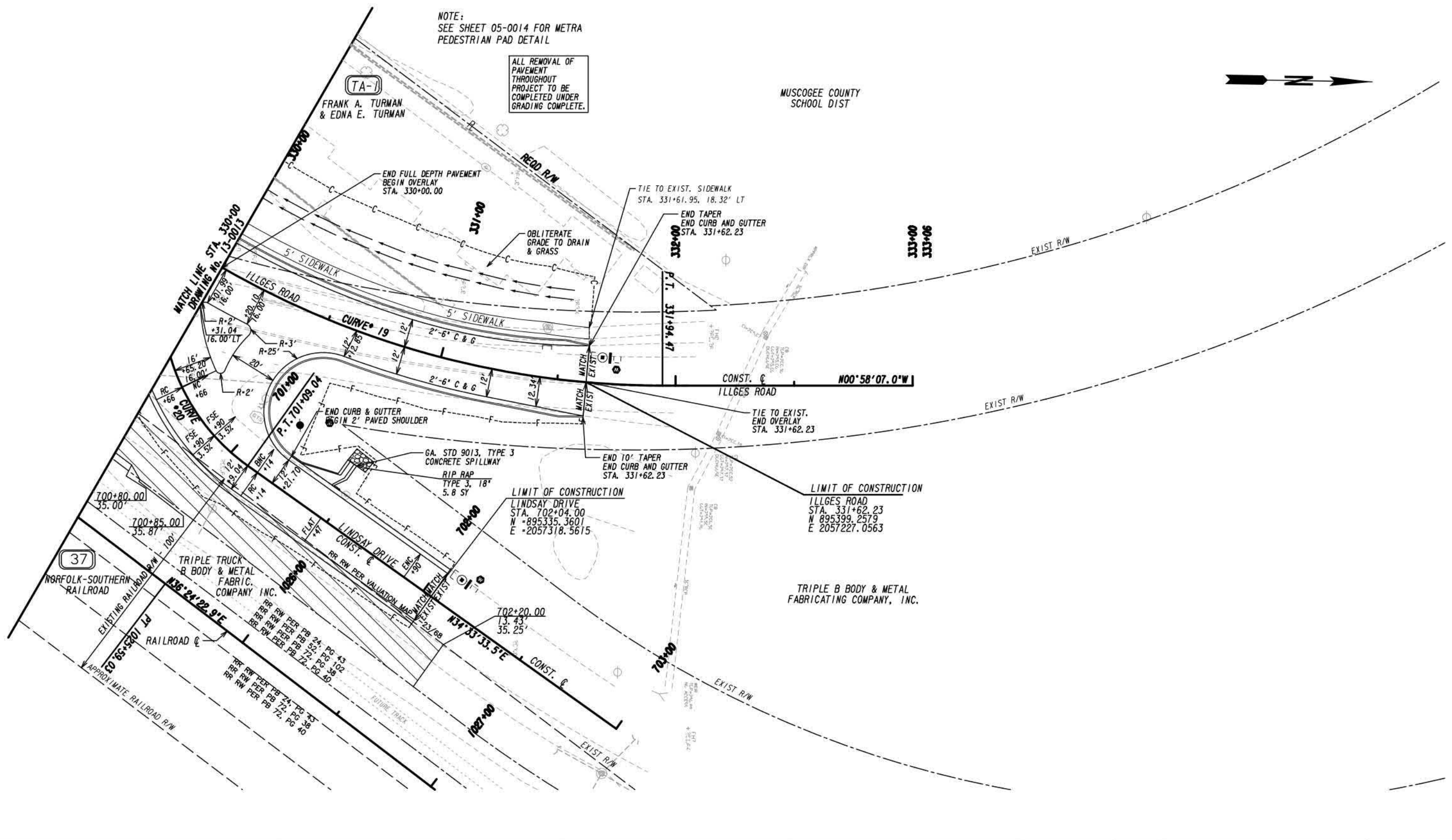
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ILLGES ROAD/LINDSAY DRIVE		
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BACKCHECKED:	DATE:	13-0013
CORRECTED:	DATE:	
VERIFIED:	DATE:	

EXHIBIT A

NOTE:
SEE SHEET 05-0014 FOR METRA
PEDESTRIAN PAD DETAIL

ALL REMOVAL OF
PAVEMENT
THROUGHOUT
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GRADING COMPLETE.

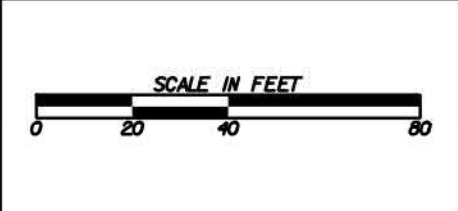
MUSCOGEE COUNTY
SCHOOL DIST



EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE	
EASEMENT FOR CONSTR OF DRIVES	

PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

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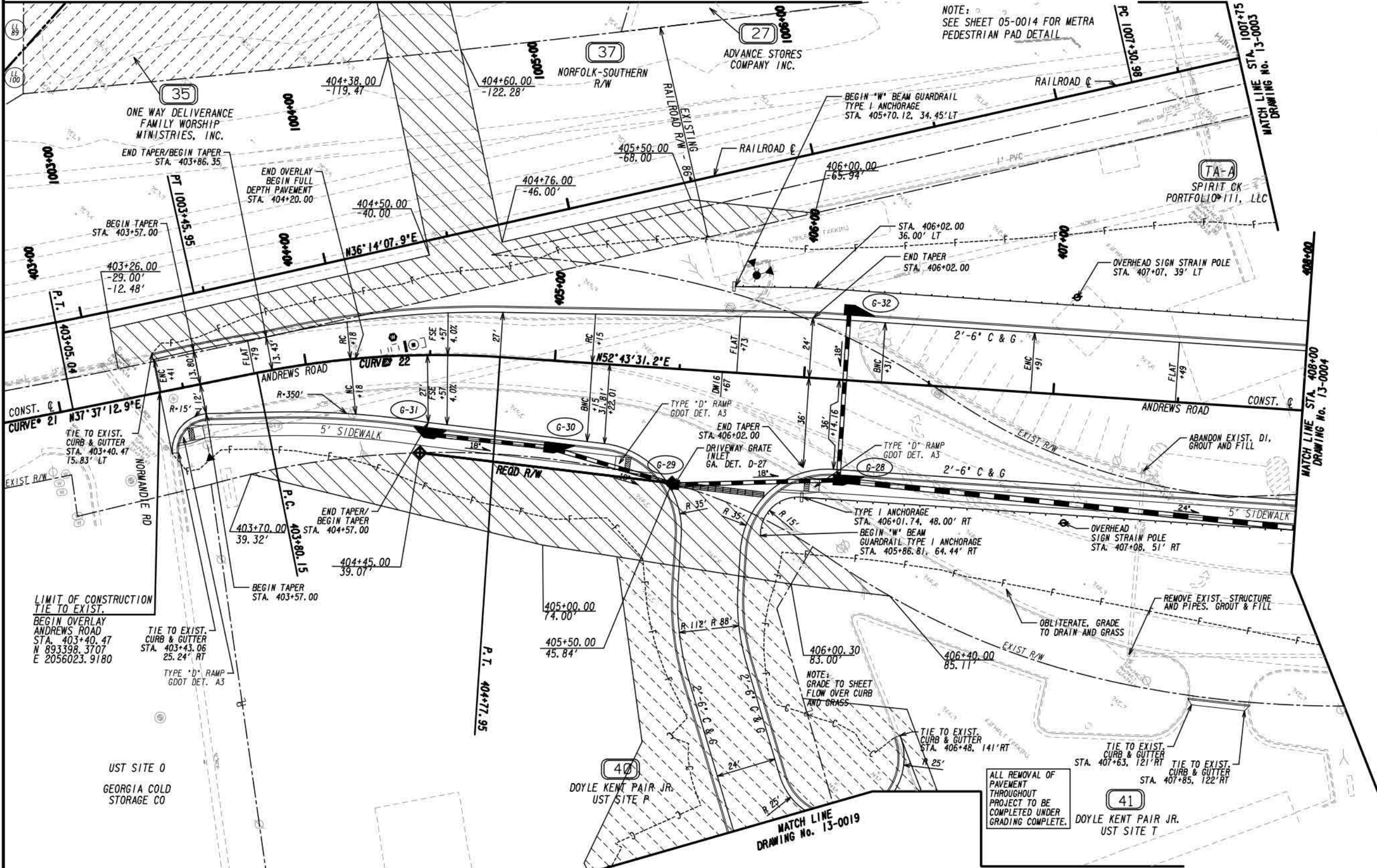
REVISION DATES	

MAINLINE PLAN		
ILLGES ROAD/LINDSAY DRIVE		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	13-0014
CORRECTED:	DATE:	
VERIFIED:	DATE:	

EXHIBIT A

MATCH LINE
DRAWING No. 13-0018

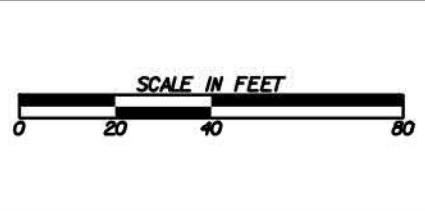
NOTE:
SEE SHEET 05-0014 FOR METRA
PEDESTRIAN PAD DETAIL



EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE	
EASEMENT FOR CONSTR OF DRIVES	

PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

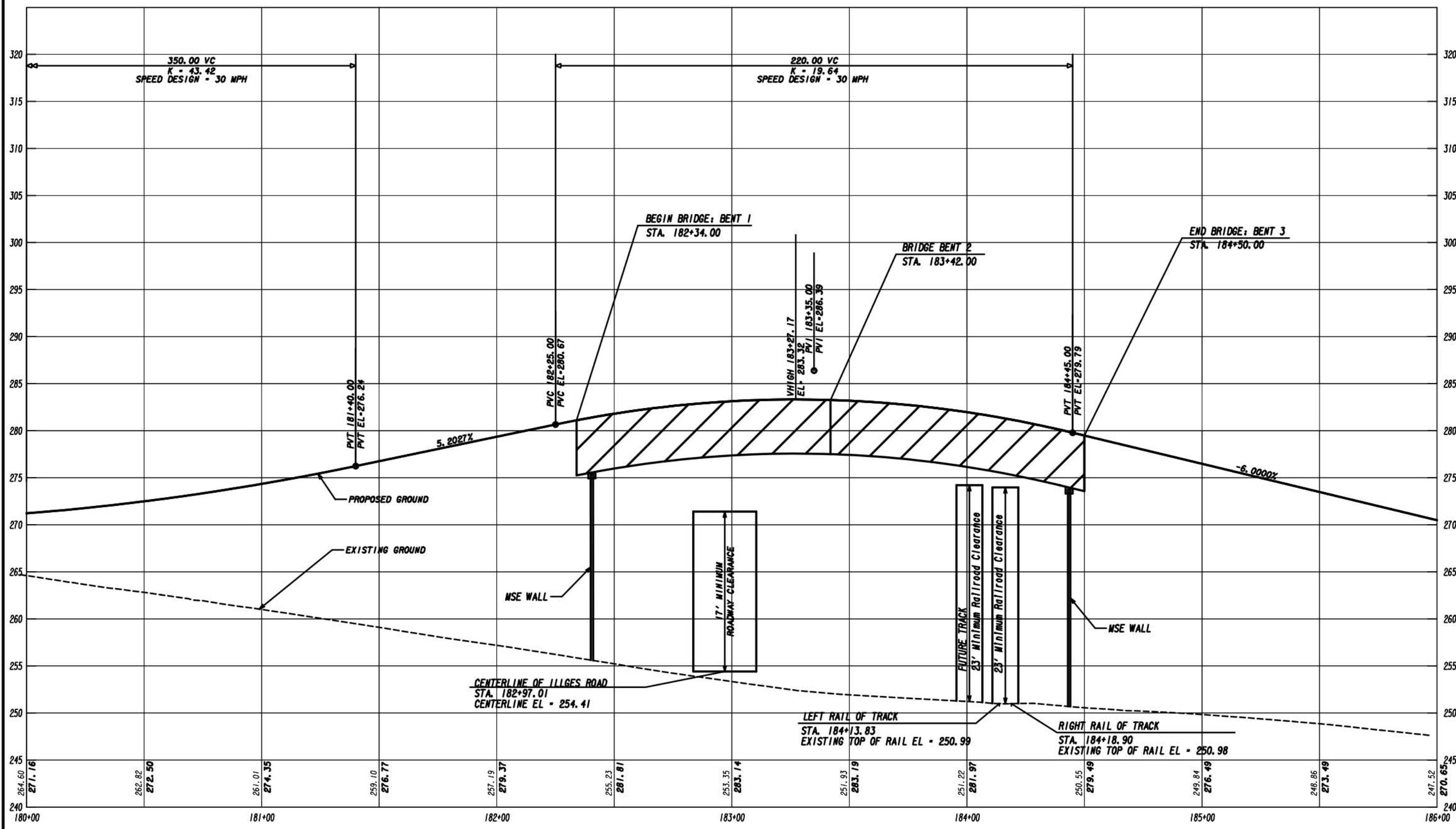
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REVISION DATES	

MAINLINE PLAN		
ANDREWS ROAD		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	13-0015
CORRECTED:	DATE:	
VERIFIED:	DATE:	

EXHIBIT A



SCALE: 1" = 5' VERT.
1" = 20' HORIZ.

REVISION DATES

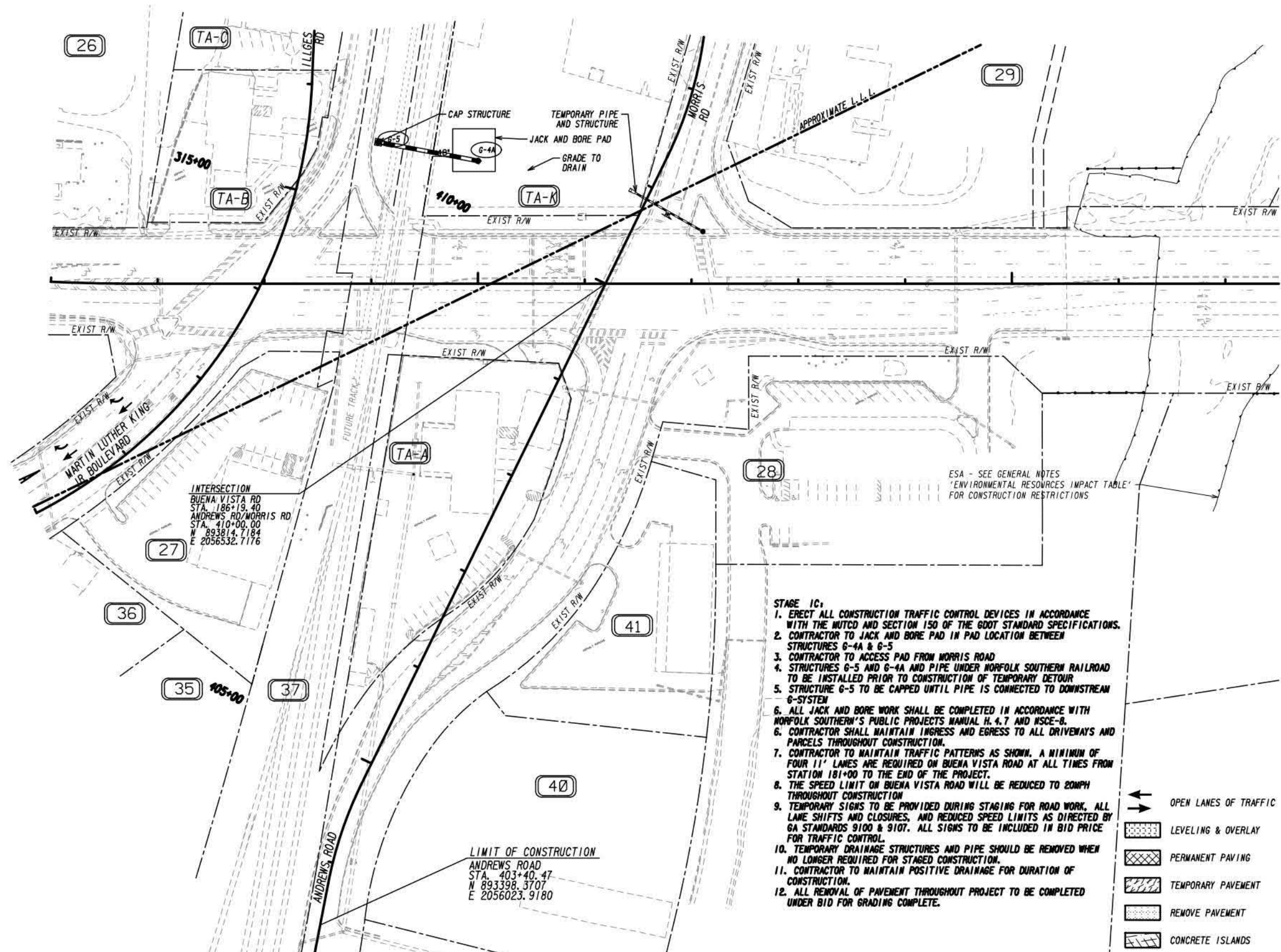
NO.	DATE	DESCRIPTION

MAINLINE PROFILE
BUENA VISTA ROAD

BUENA VISTA ROAD CORRIDOR

CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	15-0003
CORRECTED:	DATE:	
VERIFIED:	DATE:	

EXHIBIT A



INTERSECTION
 BUENA VISTA RD
 STA. 186+19.40
 ANDREWS RD/MORRIS RD
 STA. 410+00.00
 N 893814.7184
 E 2056532.7176

LIMIT OF CONSTRUCTION
 ANDREWS ROAD
 STA. 403+40.47
 N 893398.3707
 E 2056023.9180

ESA - SEE GENERAL NOTES
 'ENVIRONMENTAL RESOURCES IMPACT TABLE'
 FOR CONSTRUCTION RESTRICTIONS

- STAGE 1C:**
1. ERECT ALL CONSTRUCTION TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD AND SECTION 150 OF THE GDOT STANDARD SPECIFICATIONS.
 2. CONTRACTOR TO JACK AND BORE PAD IN PAD LOCATION BETWEEN STRUCTURES 6-4A & 6-5
 3. CONTRACTOR TO ACCESS PAD FROM MORRIS ROAD
 4. STRUCTURES 6-5 AND 6-4A AND PIPE UNDER NORFOLK SOUTHERN RAILROAD TO BE INSTALLED PRIOR TO CONSTRUCTION OF TEMPORARY DETOUR
 5. STRUCTURE 6-5 TO BE CAPPED UNTIL PIPE IS CONNECTED TO DOWNSTREAM 6-SYSTEM
 6. ALL JACK AND BORE WORK SHALL BE COMPLETED IN ACCORDANCE WITH NORFOLK SOUTHERN'S PUBLIC PROJECTS MANUAL H. 4.7 AND NSCE-8.
 6. CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS TO ALL DRIVEWAYS AND PARCELS THROUGHOUT CONSTRUCTION.
 7. CONTRACTOR TO MAINTAIN TRAFFIC PATTERNS AS SHOWN. A MINIMUM OF FOUR 11' LANES ARE REQUIRED ON BUENA VISTA ROAD AT ALL TIMES FROM STATION 181+00 TO THE END OF THE PROJECT.
 8. THE SPEED LIMIT ON BUENA VISTA ROAD WILL BE REDUCED TO 20MPH THROUGHOUT CONSTRUCTION
 9. TEMPORARY SIGNS TO BE PROVIDED DURING STAGING FOR ROAD WORK, ALL LANE SHIFTS AND CLOSURES, AND REDUCED SPEED LIMITS AS DIRECTED BY GA STANDARDS 9100 & 9107. ALL SIGNS TO BE INCLUDED IN BID PRICE FOR TRAFFIC CONTROL.
 10. TEMPORARY DRAINAGE STRUCTURES AND PIPE SHOULD BE REMOVED WHEN NO LONGER REQUIRED FOR STAGED CONSTRUCTION.
 11. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE FOR DURATION OF CONSTRUCTION.
 12. ALL REMOVAL OF PAVEMENT THROUGHOUT PROJECT TO BE COMPLETED UNDER BID FOR GRADING COMPLETE.

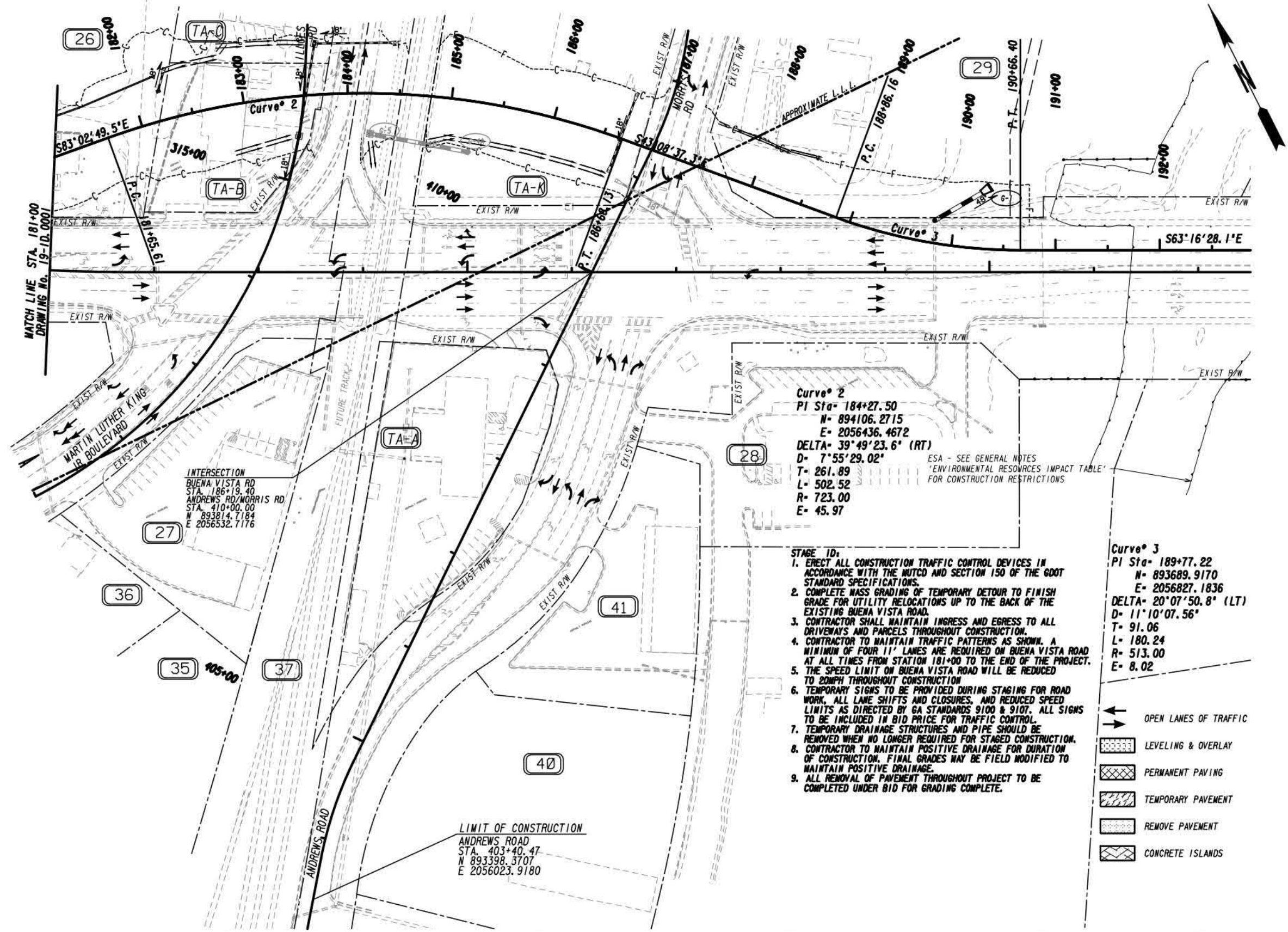
- ← OPEN LANES OF TRAFFIC
- ▨ LEVELING & OVERLAY
- ▩ PERMANENT PAVING
- ▧ TEMPORARY PAVEMENT
- ▤ REMOVE PAVEMENT
- ▦ CONCRETE ISLANDS

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REVISION DATES		CONSTRUCTION STAGING PLAN STAGE 1C BUENA VISTA ROAD CORRIDOR	
CHECKED:	DATE:	DRAWING No.	
BACKCHECKED:	DATE:	19-1C.0001	
CORRECTED:	DATE:		
VERIFIED:	DATE:		

EXHIBIT A



- STAGE ID:**
- ERECT ALL CONSTRUCTION TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD AND SECTION 150 OF THE GOOT STANDARD SPECIFICATIONS.
 - COMPLETE MASS GRADING OF TEMPORARY DETOUR TO FINISH GRADE FOR UTILITY RELOCATIONS UP TO THE BACK OF THE EXISTING BUENA VISTA ROAD.
 - CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS TO ALL DRIVEWAYS AND PARCELS THROUGHOUT CONSTRUCTION.
 - CONTRACTOR TO MAINTAIN TRAFFIC PATTERNS AS SHOWN. A MINIMUM OF FOUR 11' LANES ARE REQUIRED ON BUENA VISTA ROAD AT ALL TIMES FROM STATION 181+00 TO THE END OF THE PROJECT.
 - THE SPEED LIMIT ON BUENA VISTA ROAD WILL BE REDUCED TO 20MPH THROUGHOUT CONSTRUCTION.
 - TEMPORARY SIGNS TO BE PROVIDED DURING STAGING FOR ROAD WORK, ALL LANE SHIFTS AND CLOSURES, AND REDUCED SPEED LIMITS AS DIRECTED BY GA STANDARDS 9100 & 9107. ALL SIGNS TO BE INCLUDED IN BID PRICE FOR TRAFFIC CONTROL.
 - TEMPORARY DRAINAGE STRUCTURES AND PIPE SHOULD BE REMOVED WHEN NO LONGER REQUIRED FOR STAGED CONSTRUCTION.
 - CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE FOR DURATION OF CONSTRUCTION. FINAL GRADES MAY BE FIELD MODIFIED TO MAINTAIN POSITIVE DRAINAGE.
 - ALL REMOVAL OF PAVEMENT THROUGHOUT PROJECT TO BE COMPLETED UNDER BID FOR GRADING COMPLETE.

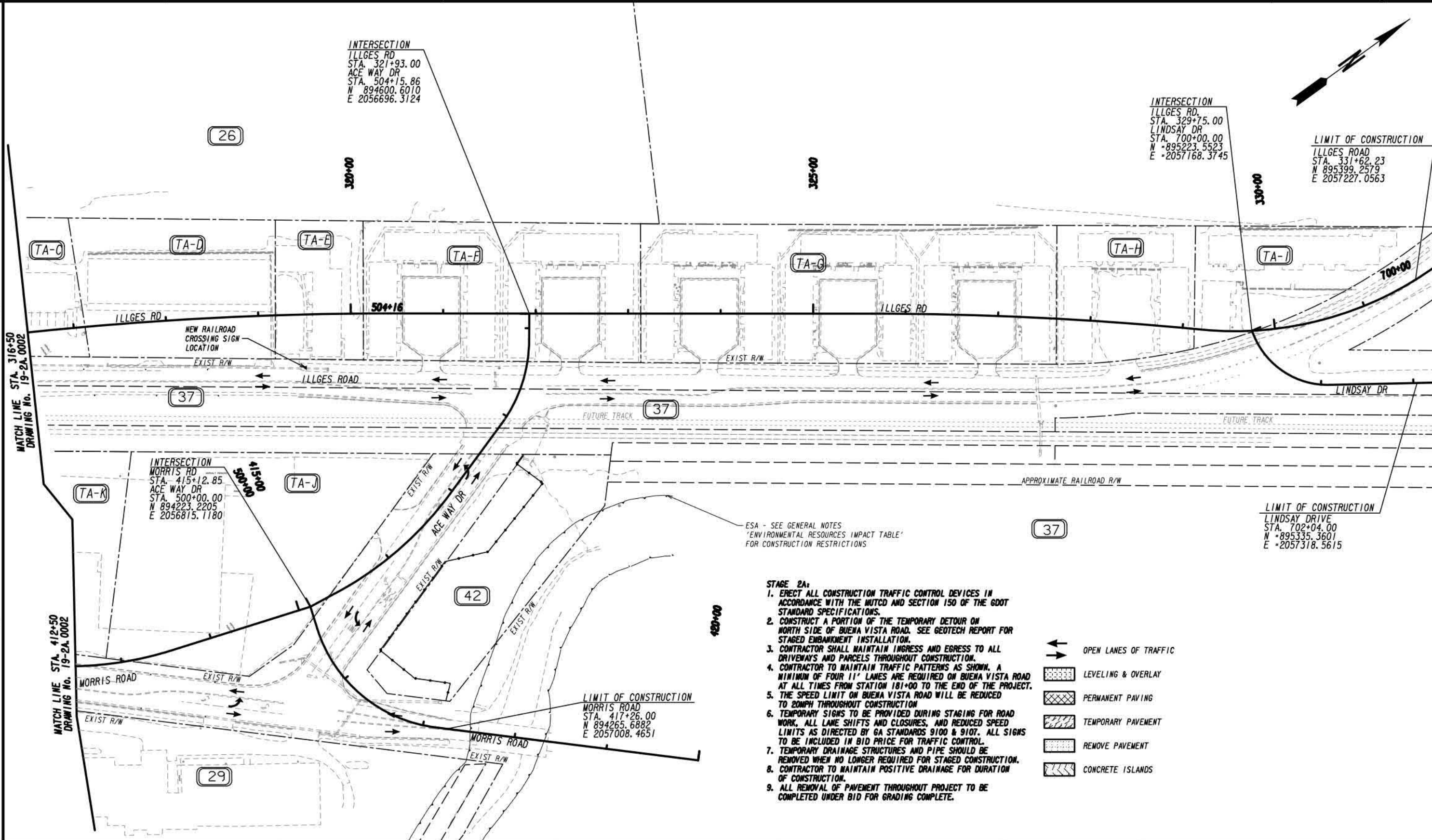
- ← OPEN LANES OF TRAFFIC
- ▨ LEVELING & OVERLAY
- ▩ PERMANENT PAVING
- ▧ TEMPORARY PAVEMENT
- ▤ REMOVE PAVEMENT
- ▦ CONCRETE ISLANDS

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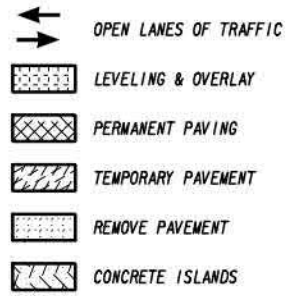


REVISION DATES		CONSTRUCTION STAGING PLAN	
NO.	DATE	STAGE ID	
		BUENA VISTA ROAD CORRIDOR	
CHECKED:	DATE:	DRAWING No.	
BACKCHECKED:	DATE:	19-ID.0002	
CORRECTED:	DATE:		
VERIFIED:	DATE:		

EXHIBIT A



- STAGE 2A:**
1. ERECT ALL CONSTRUCTION TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD AND SECTION 150 OF THE GDOT STANDARD SPECIFICATIONS.
 2. CONSTRUCT A PORTION OF THE TEMPORARY DETOUR ON NORTH SIDE OF BUENA VISTA ROAD. SEE GEOTECH REPORT FOR STAGED EMBANKMENT INSTALLATION.
 3. CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS TO ALL DRIVEWAYS AND PARCELS THROUGHOUT CONSTRUCTION.
 4. CONTRACTOR TO MAINTAIN TRAFFIC PATTERNS AS SHOWN. A MINIMUM OF FOUR 11' LANES ARE REQUIRED ON BUENA VISTA ROAD AT ALL TIMES FROM STATION 181+00 TO THE END OF THE PROJECT.
 5. THE SPEED LIMIT ON BUENA VISTA ROAD WILL BE REDUCED TO 20MPH THROUGHOUT CONSTRUCTION.
 6. TEMPORARY SIGNS TO BE PROVIDED DURING STAGING FOR ROAD WORK, ALL LANE SHIFTS AND CLOSURES, AND REDUCED SPEED LIMITS AS DIRECTED BY GA STANDARDS 9100 & 9107. ALL SIGNS TO BE INCLUDED IN BID PRICE FOR TRAFFIC CONTROL.
 7. TEMPORARY DRAINAGE STRUCTURES AND PIPE SHOULD BE REMOVED WHEN NO LONGER REQUIRED FOR STAGED CONSTRUCTION.
 8. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE FOR DURATION OF CONSTRUCTION.
 9. ALL REMOVAL OF PAVEMENT THROUGHOUT PROJECT TO BE COMPLETED UNDER BID FOR GRADING COMPLETE.

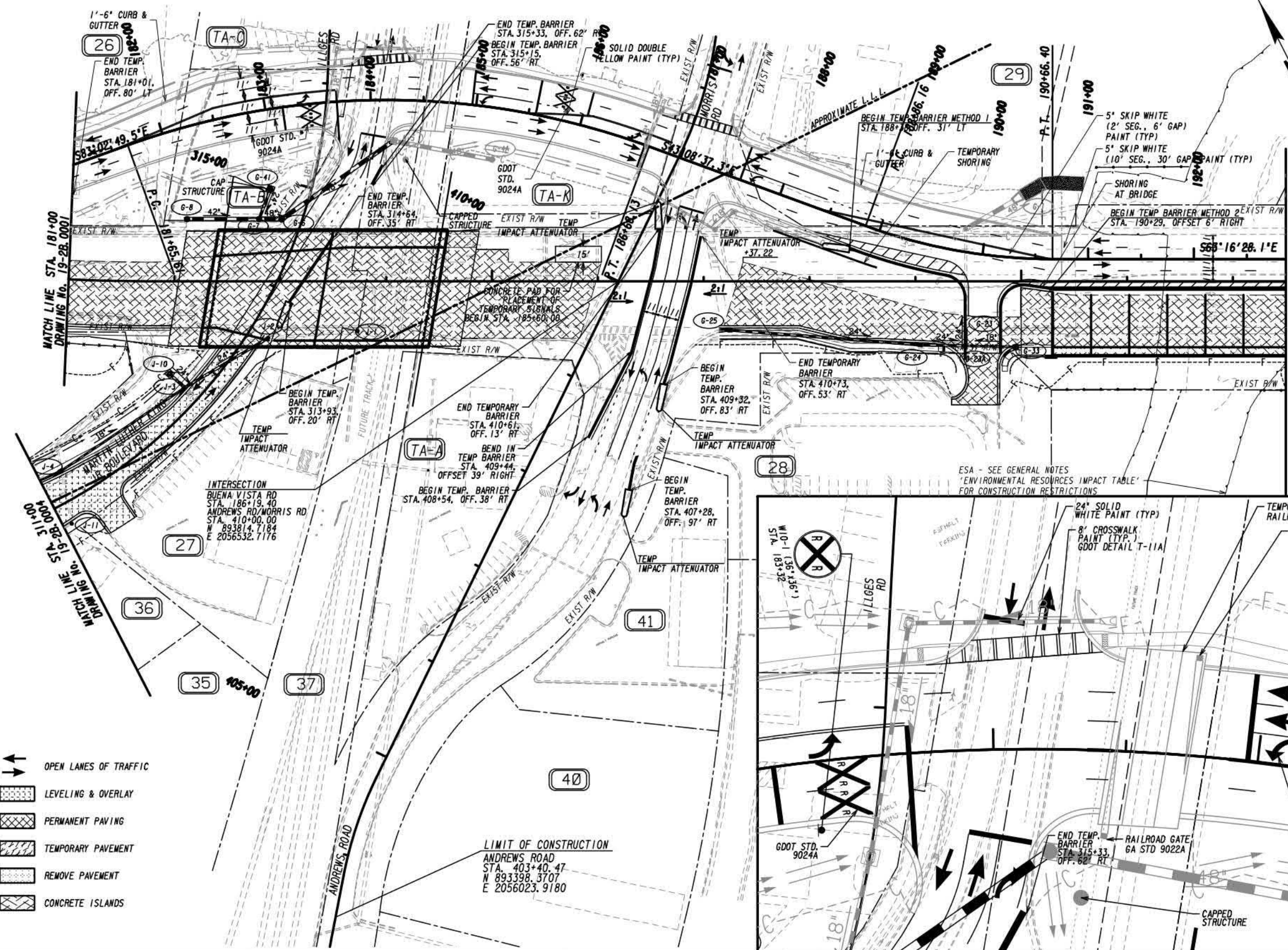


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REVISION DATES		CONSTRUCTION STAGING PLAN	
NO.	DATE	STAGE 2A	
BUENA VISTA ROAD CORRIDOR			
CHECKED:	DATE:	DRAWING No.	
BACKCHECKED:	DATE:	19-2A.0003	
CORRECTED:	DATE:		
VERIFIED:	DATE:		

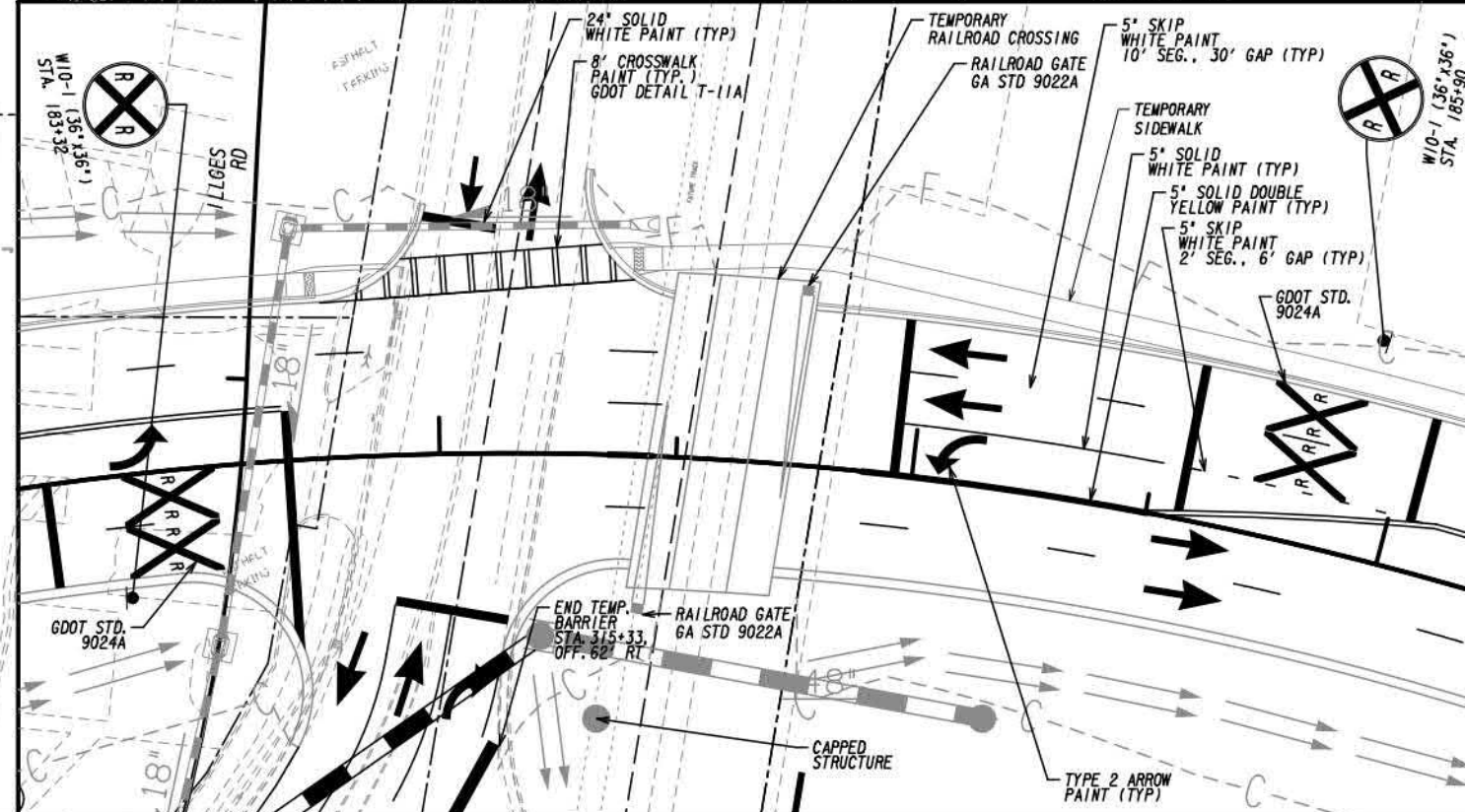
EXHIBIT A



- STAGE 2B:**
1. ERECT ALL CONSTRUCTION TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD AND SECTION 150 OF THE GDOT STANDARD SPECIFICATIONS.
 2. FINISH CONSTRUCTION OF THE TEMPORARY DETOUR AND SHIFT BUENA VISTA ROAD TRAFFIC ONTO IT.
 3. CONSTRUCT THE SOUTH SIDE OF BUENA VISTA ROAD EXCLUDING THE INTERSECTION WITH ANDREWS ROAD AND MORRIS ROAD. CONSTRUCTION SHOULD INCLUDE THE ENTIRE PORTION OF THE BRIDGE OVER MARTIN LUTHER KING JR. BLVD. AND NORFOLK SOUTHERN RAILROAD, AS WELL AS, THE SOUTHERN PORTION OF THE BRIDGE OVER BULL CREEK. SEE GEOTECH REPORT FOR STAGED EMBANKMENT INSTALLATION.
 4. CONSTRUCT MARTIN LUTHER KING JR. BLVD.
 5. CONSTRUCT ALL CONCRETE ISLANDS AS SHOWN.
 6. CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS TO ALL DRIVEWAYS AND PARCELS THROUGHOUT CONSTRUCTION.
 7. CONTRACTOR TO MAINTAIN TRAFFIC PATTERNS AS SHOWN. A MINIMUM OF FOUR 11' LANES ARE REQUIRED ON BUENA VISTA ROAD AT ALL TIMES FROM STATION 181+00 TO THE END OF THE PROJECT.
 8. THE SPEED LIMIT ON BUENA VISTA ROAD WILL BE REDUCED TO 20MPH THROUGHOUT CONSTRUCTION.
 9. TEMPORARY SIGNS TO BE PROVIDED DURING STAGING FOR ROAD WORK, ALL LANE SHIFTS AND CLOSURES, AND REDUCED SPEED LIMITS AS DIRECTED BY GA STANDARDS 9100 & 9107. ALL SIGNS TO BE INCLUDED IN BID PRICE FOR TRAFFIC CONTROL.
 10. TEMPORARY DRAINAGE STRUCTURES AND PIPE SHOULD BE REMOVED WHEN NO LONGER REQUIRED FOR STAGED CONSTRUCTION.
 11. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE FOR DURATION OF CONSTRUCTION.
 12. ALL REMOVAL OF PAVEMENT THROUGHOUT PROJECT TO BE COMPLETED UNDER BID FOR GRADING COMPLETE.

INSET A: TEMPORARY RAILROAD CROSSING BUENA VISTA ROAD DETOUR
SCALE: 1"=20'

- ↔ OPEN LANES OF TRAFFIC
- ▨ LEVELING & OVERLAY
- ▩ PERMANENT PAVING
- ▧ TEMPORARY PAVEMENT
- ▤ REMOVE PAVEMENT
- ▣ CONCRETE ISLANDS

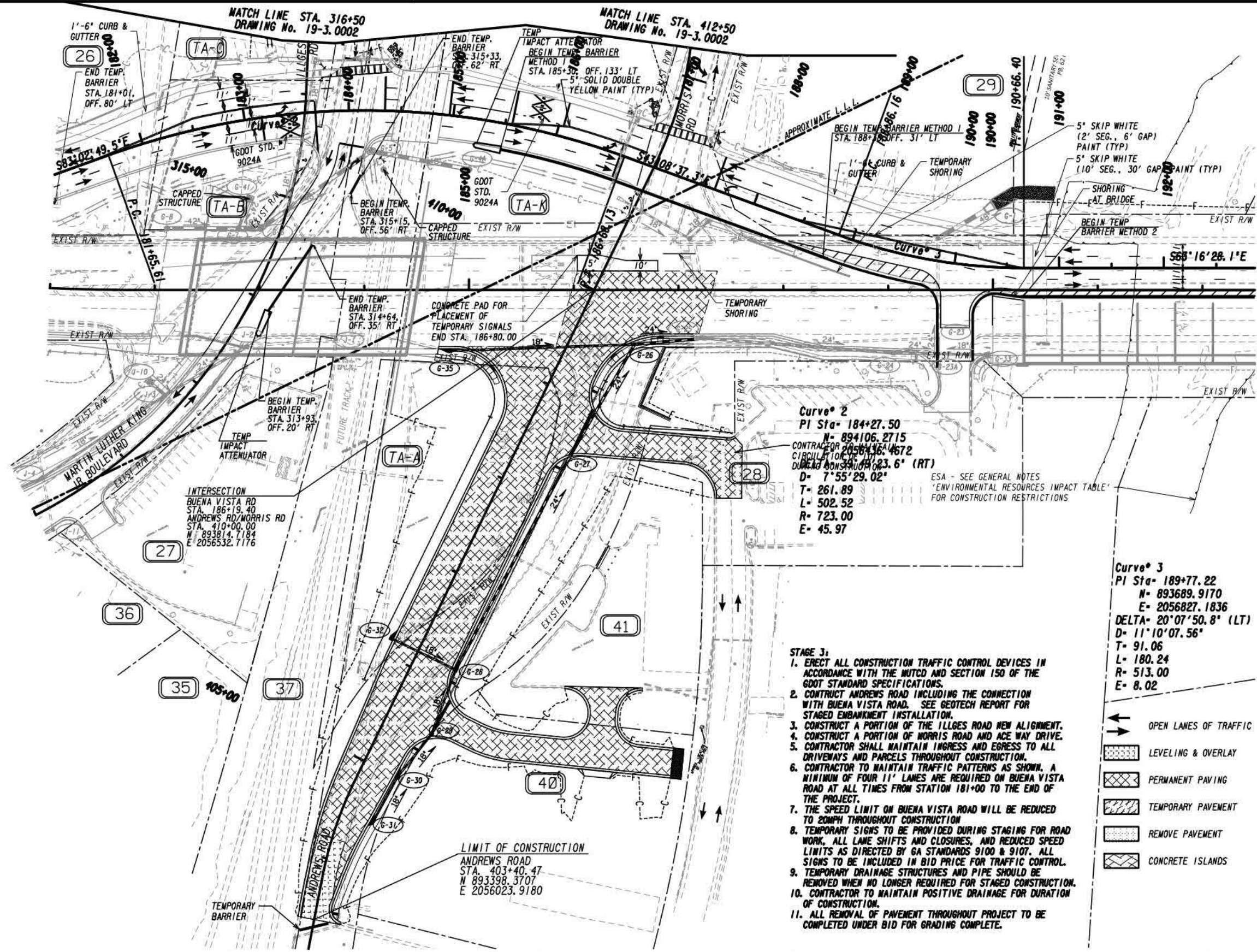


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REVISION DATES		CONSTRUCTION STAGING PLAN	
		STAGE 2B	
		BUENA VISTA ROAD CORRIDOR	
CHECKED:	DATE:	DRAWING No.	
BACKCHECKED:	DATE:	19-2B.0002	
CORRECTED:	DATE:		
VERIFIED:	DATE:		

EXHIBIT A



- STAGE 3:
1. ERECT ALL CONSTRUCTION TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD AND SECTION 150 OF THE GDOT STANDARD SPECIFICATIONS.
 2. CONTRACT ANDREWS ROAD INCLUDING THE CONNECTION WITH BUENA VISTA ROAD. SEE GEOTECH REPORT FOR STAGED EMBANKMENT INSTALLATION.
 3. CONSTRUCT A PORTION OF THE ILLGES ROAD NEW ALIGNMENT.
 4. CONSTRUCT A PORTION OF MORRIS ROAD AND ACE WAY DRIVE.
 5. CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS TO ALL DRIVEWAYS AND PARCELS THROUGHOUT CONSTRUCTION.
 6. CONTRACTOR TO MAINTAIN TRAFFIC PATTERNS AS SHOWN. A MINIMUM OF FOUR 11' LANES ARE REQUIRED ON BUENA VISTA ROAD AT ALL TIMES FROM STATION 181+00 TO THE END OF THE PROJECT.
 7. THE SPEED LIMIT ON BUENA VISTA ROAD WILL BE REDUCED TO 20MPH THROUGHOUT CONSTRUCTION
 8. TEMPORARY SIGNS TO BE PROVIDED DURING STAGING FOR ROAD WORK, ALL LANE SHIFTS AND CLOSURES, AND REDUCED SPEED LIMITS AS DIRECTED BY GA STANDARDS 9100 & 9107. ALL SIGNS TO BE INCLUDED IN BID PRICE FOR TRAFFIC CONTROL.
 9. TEMPORARY DRAINAGE STRUCTURES AND PIPE SHOULD BE REMOVED WHEN NO LONGER REQUIRED FOR STAGED CONSTRUCTION.
 10. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE FOR DURATION OF CONSTRUCTION.
 11. ALL REMOVAL OF PAVEMENT THROUGHOUT PROJECT TO BE COMPLETED UNDER BID FOR GRADING COMPLETE.

- ← OPEN LANES OF TRAFFIC
- ▨ LEVELING & OVERLAY
- ▩ PERMANENT PAVING
- ▧ TEMPORARY PAVEMENT
- ▤ REMOVE PAVEMENT
- ▦ CONCRETE ISLANDS

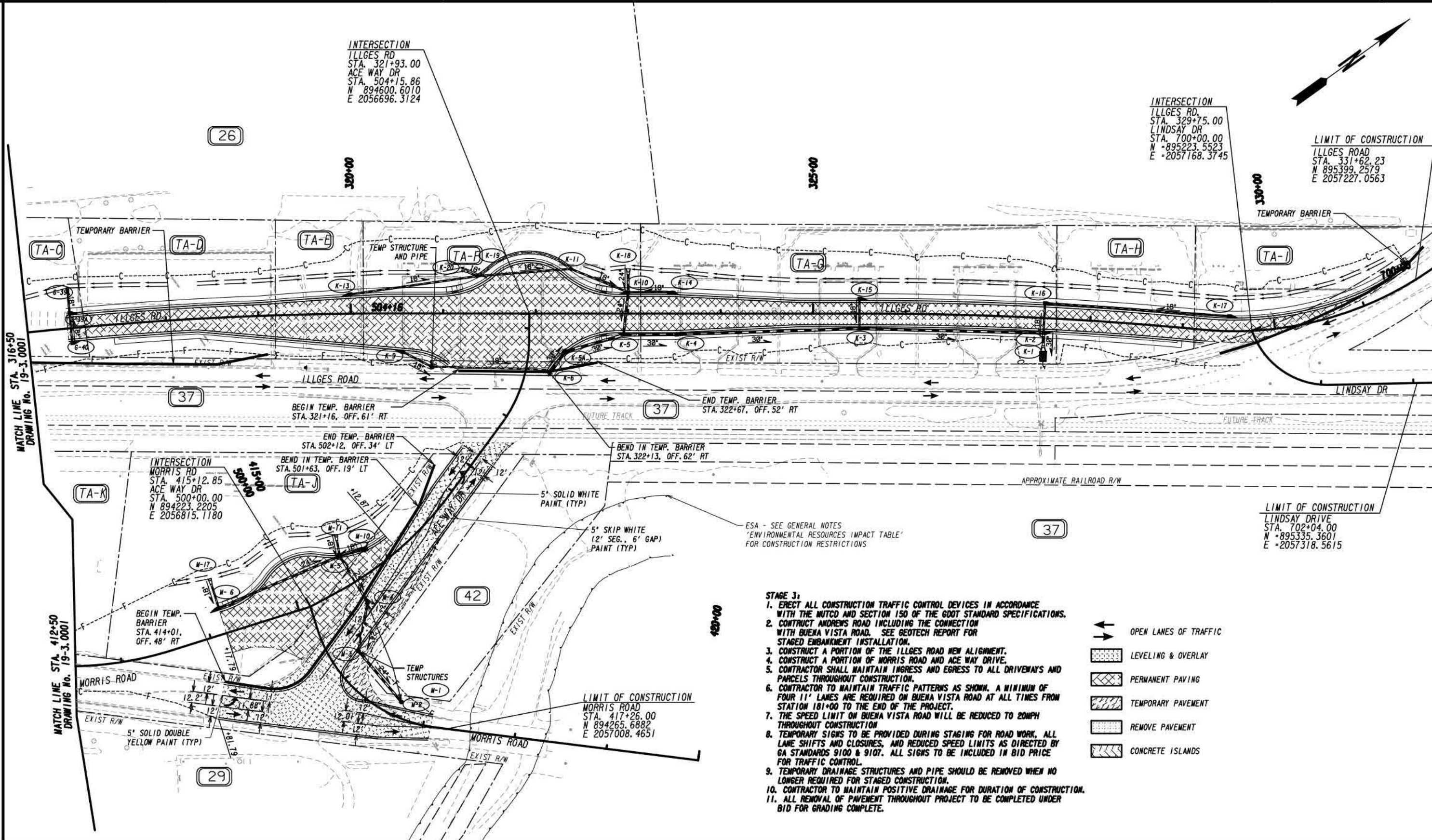
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REVISION DATES		CONSTRUCTION STAGING PLAN STAGE 3 BUENA VISTA ROAD CORRIDOR	
CHECKED:	DATE:	CHECKED:	DATE:
BACKCHECKED:	DATE:	BACKCHECKED:	DATE:
CORRECTED:	DATE:	CORRECTED:	DATE:
VERIFIED:	DATE:	VERIFIED:	DATE:
		DRAWING No. 19-3.0001	

EXHIBIT A



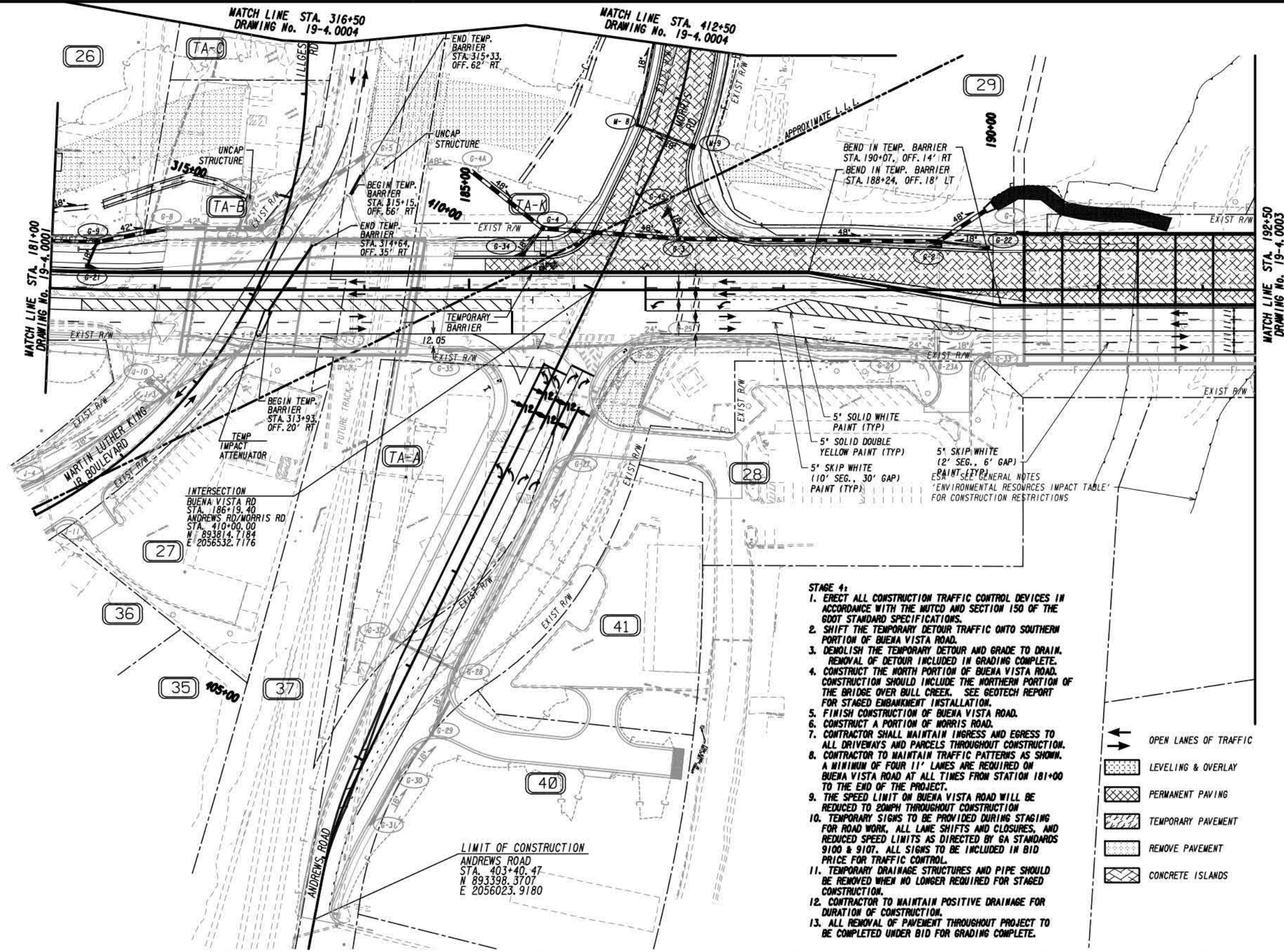
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REVISION DATES		CONSTRUCTION STAGING PLAN	
NO.	DATE	STAGE 3	
BUENA VISTA ROAD CORRIDOR			
CHECKED:	DATE:	DRAWING No.	
BACKCHECKED:	DATE:	19-3.0002	
CORRECTED:	DATE:		
VERIFIED:	DATE:		

EXHIBIT A



- STAGE 4:**
1. ERECT ALL CONSTRUCTION TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD AND SECTION 150 OF THE GDOT STANDARD SPECIFICATIONS.
 2. SHIFT THE TEMPORARY DETOUR TRAFFIC ONTO SOUTHERN PORTION OF BUENA VISTA ROAD.
 3. DEMOLISH THE TEMPORARY DETOUR AND GRADE TO DRAIN. REMOVAL OF DETOUR INCLUDED IN GRADING COMPLETE.
 4. CONSTRUCT THE NORTH PORTION OF BUENA VISTA ROAD. CONSTRUCTION SHOULD INCLUDE THE NORTHERN PORTION OF THE BRIDGE OVER BULL CREEK. SEE GEOTECH REPORT FOR STAGED EMBANKMENT INSTALLATION.
 5. FINISH CONSTRUCTION OF BUENA VISTA ROAD.
 6. CONSTRUCT A PORTION OF MORRIS ROAD.
 7. CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS TO ALL DRIVEWAYS AND PARCELS THROUGHOUT CONSTRUCTION.
 8. CONTRACTOR TO MAINTAIN TRAFFIC PATTERNS AS SHOWN. A MINIMUM OF FOUR 11' LANES ARE REQUIRED ON BUENA VISTA ROAD AT ALL TIMES FROM STATION 181+00 TO THE END OF THE PROJECT.
 9. THE SPEED LIMIT ON BUENA VISTA ROAD WILL BE REDUCED TO 20MPH THROUGHOUT CONSTRUCTION.
 10. TEMPORARY SIGNS TO BE PROVIDED DURING STAGING FOR ROAD WORK, ALL LANE SHIFTS AND CLOSURES, AND REDUCED SPEED LIMITS AS DIRECTED BY GA STANDARDS 9100 & 9107. ALL SIGNS TO BE INCLUDED IN BID PRICE FOR TRAFFIC CONTROL.
 11. TEMPORARY DRAINAGE STRUCTURES AND PIPE SHOULD BE REMOVED WHEN NO LONGER REQUIRED FOR STAGED CONSTRUCTION.
 12. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE FOR DURATION OF CONSTRUCTION.
 13. ALL REMOVAL OF PAVEMENT THROUGHOUT PROJECT TO BE COMPLETED UNDER BID FOR GRADING COMPLETE.



REVISION DATES

CHECKED:	DATE:
BACKCHECKED: <td>DATE:</td>	DATE:
CORRECTED: <td>DATE:</td>	DATE:
VERIFIED: <td>DATE:</td>	DATE:

CONSTRUCTION STAGING PLAN
STAGE 4

BUENA VISTA ROAD CORRIDOR

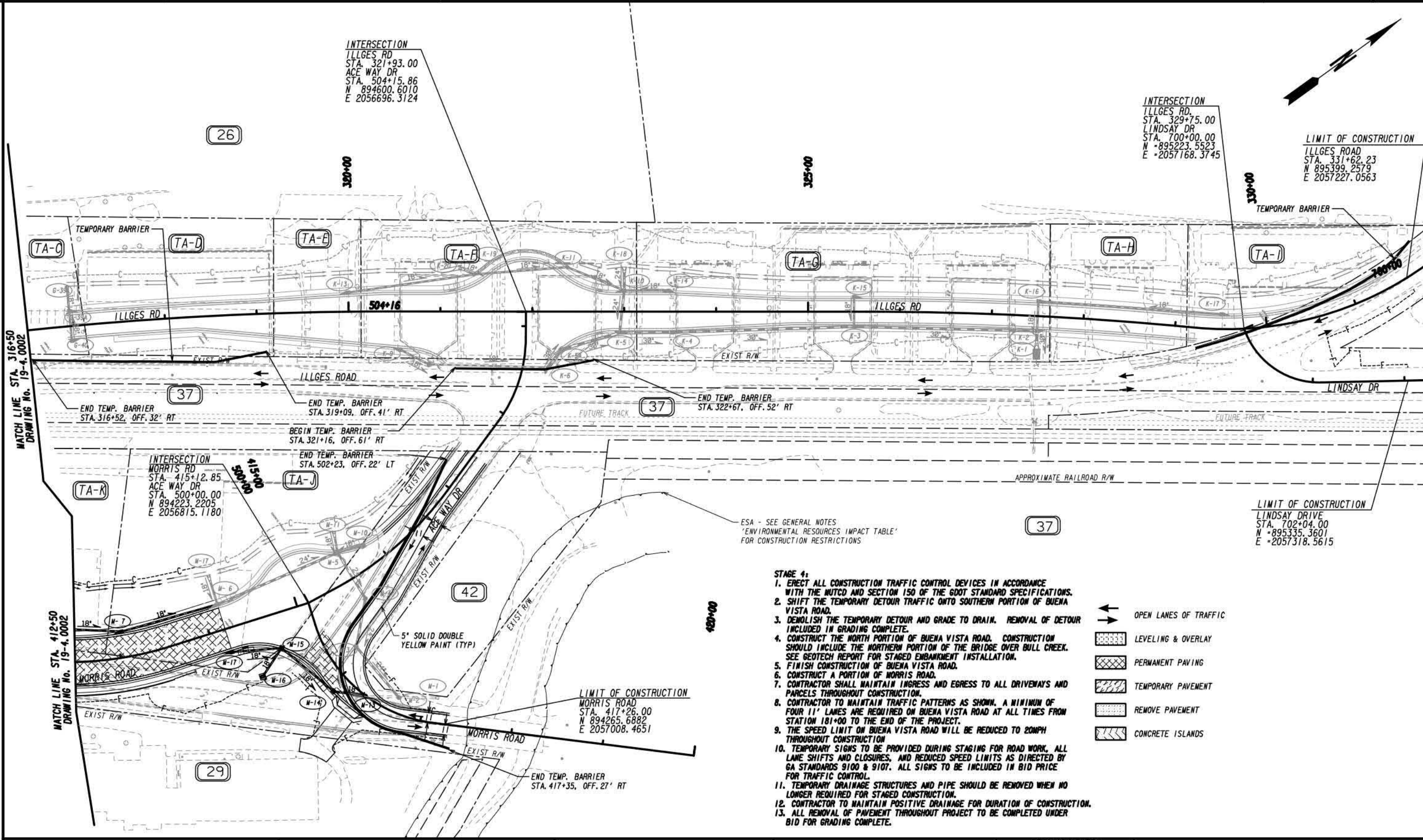
DRAWING No.	19-4.0002
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EXHIBIT A

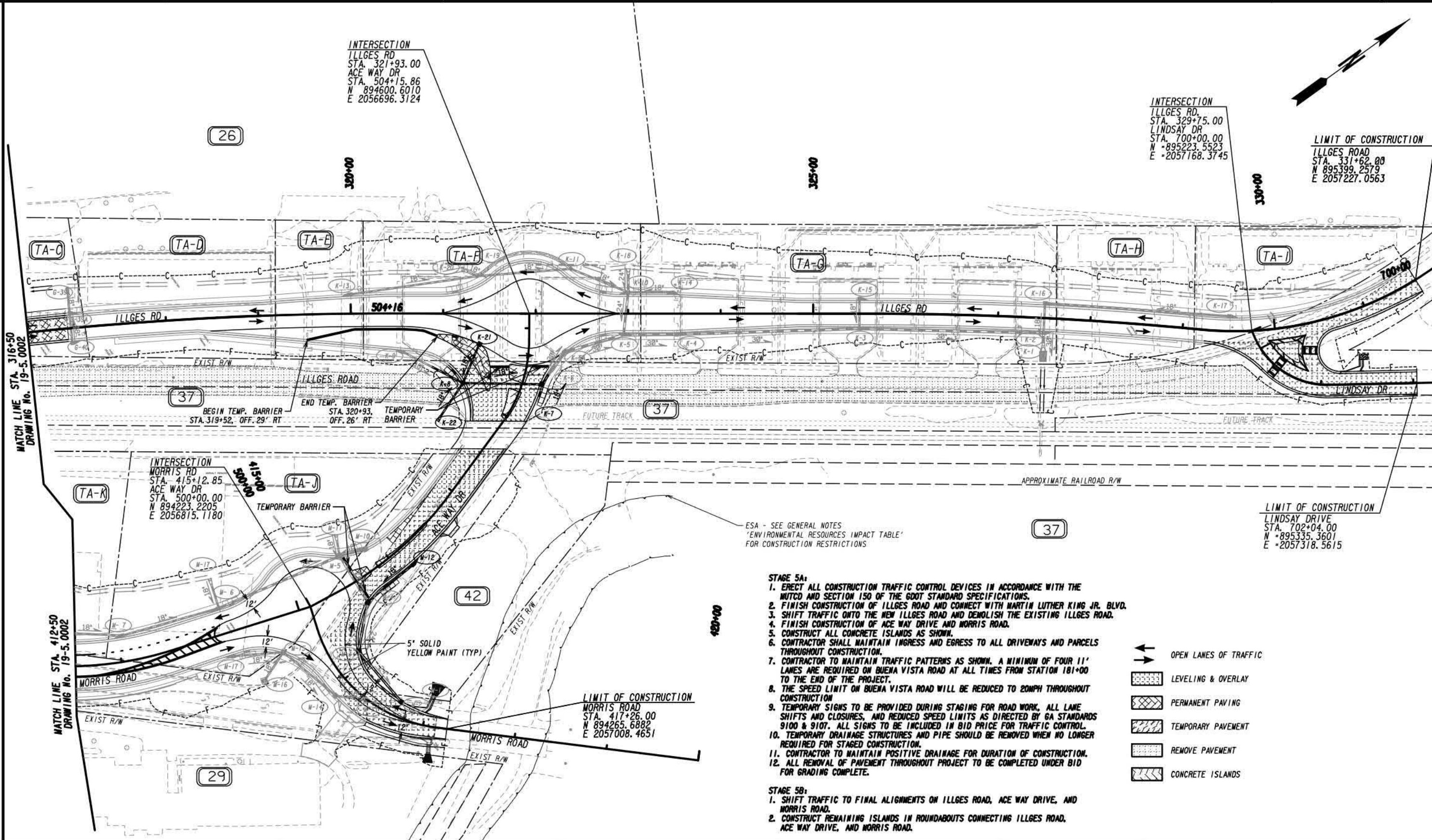
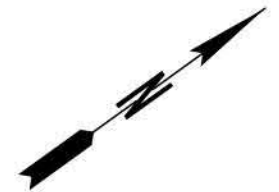


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REVISION DATES		CONSTRUCTION STAGING PLAN	
NO.	DATE	STAGE 4	
BUENA VISTA ROAD CORRIDOR			
CHECKED:	DATE:	DRAWING No.	
BACKCHECKED:	DATE:	19-4.0004	
CORRECTED:	DATE:		
VERIFIED:	DATE:		

EXHIBIT A



INTERSECTION
ILLGES RD
STA. 321+93.00
ACE WAY DR
STA. 504+15.86
N 894600.6010
E 2056696.3124

INTERSECTION
ILLGES RD.
STA. 329+75.00
LINDSAY DR
STA. 700+00.00
N 895223.5523
E 2057168.3745

LIMIT OF CONSTRUCTION
ILLGES ROAD
STA. 331+62.00
N 895399.2579
E 2057227.0563

INTERSECTION
MORRIS RD
STA. 415+12.85
ACE WAY DR
STA. 500+00.00
N 894223.2205
E 2056815.1180

LIMIT OF CONSTRUCTION
MORRIS ROAD
STA. 417+26.00
N 894265.6882
E 2057008.4651

ESA - SEE GENERAL NOTES
'ENVIRONMENTAL RESOURCES IMPACT TABLE'
FOR CONSTRUCTION RESTRICTIONS

- STAGE 5A:**
1. ERECT ALL CONSTRUCTION TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD AND SECTION 150 OF THE GDOT STANDARD SPECIFICATIONS.
 2. FINISH CONSTRUCTION OF ILLGES ROAD AND CONNECT WITH MARTIN LUTHER KING JR. BLVD.
 3. SHIFT TRAFFIC ONTO THE NEW ILLGES ROAD AND DEMOLISH THE EXISTING ILLGES ROAD.
 4. FINISH CONSTRUCTION OF ACE WAY DRIVE AND MORRIS ROAD.
 5. CONSTRUCT ALL CONCRETE ISLANDS AS SHOWN.
 6. CONTRACTOR SHALL MAINTAIN INGRESS AND EGRESS TO ALL DRIVEWAYS AND PARCELS THROUGHOUT CONSTRUCTION.
 7. CONTRACTOR TO MAINTAIN TRAFFIC PATTERNS AS SHOWN. A MINIMUM OF FOUR 11' LANES ARE REQUIRED ON BUENA VISTA ROAD AT ALL TIMES FROM STATION 181+00 TO THE END OF THE PROJECT.
 8. THE SPEED LIMIT ON BUENA VISTA ROAD WILL BE REDUCED TO 20MPH THROUGHOUT CONSTRUCTION.
 9. TEMPORARY SIGNS TO BE PROVIDED DURING STAGING FOR ROAD WORK. ALL LANE SHIFTS AND CLOSURES, AND REDUCED SPEED LIMITS AS DIRECTED BY GA STANDARDS 9100 & 9107. ALL SIGNS TO BE INCLUDED IN BID PRICE FOR TRAFFIC CONTROL.
 10. TEMPORARY DRAINAGE STRUCTURES AND PIPE SHOULD BE REMOVED WHEN NO LONGER REQUIRED FOR STAGED CONSTRUCTION.
 11. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE FOR DURATION OF CONSTRUCTION.
 12. ALL REMOVAL OF PAVEMENT THROUGHOUT PROJECT TO BE COMPLETED UNDER BID FOR GRADING COMPLETE.
- STAGE 5B:**
1. SHIFT TRAFFIC TO FINAL ALIGNMENTS ON ILLGES ROAD, ACE WAY DRIVE, AND MORRIS ROAD.
 2. CONSTRUCT REMAINING ISLANDS IN ROUNDABOUTS CONNECTING ILLGES ROAD, ACE WAY DRIVE, AND MORRIS ROAD.

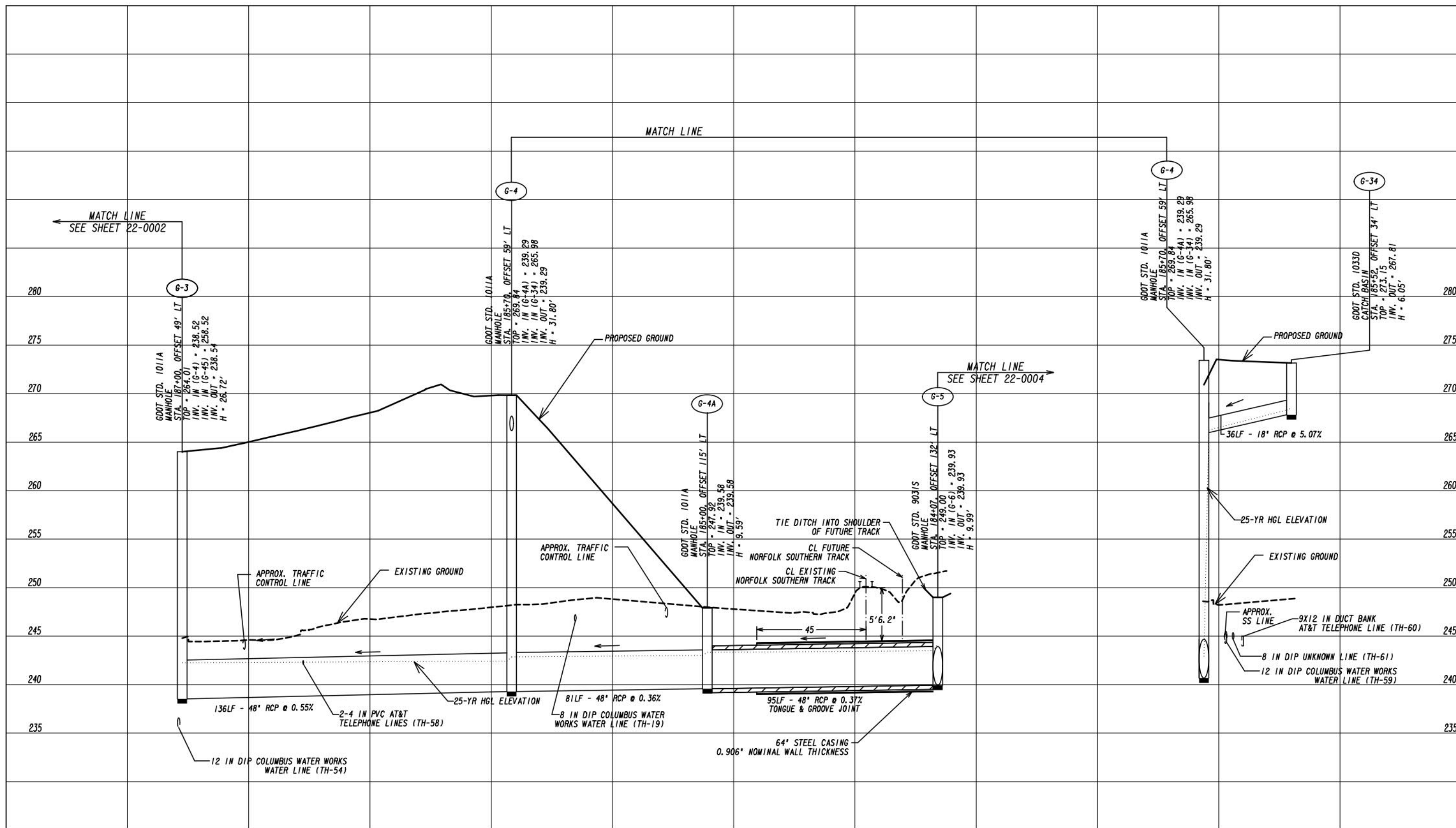
- OPEN LANES OF TRAFFIC
- LEVELING & OVERLAY
- PERMANENT PAVING
- TEMPORARY PAVEMENT
- REMOVE PAVEMENT
- CONCRETE ISLANDS

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REVISION DATES		CONSTRUCTION STAGING PLAN STAGE 5 BUENA VISTA ROAD CORRIDOR	
CHECKED:	DATE:	CHECKED:	DATE:
BACKCHECKED:	DATE:	BACKCHECKED:	DATE:
CORRECTED:	DATE:	CORRECTED:	DATE:
VERIFIED:	DATE:	VERIFIED:	DATE:
		DRAWING No. 19-5.0004	

EXHIBIT A



SCALE: 1" = 5' VERT.
1" = 20' HORIZ.

REVISION DATES

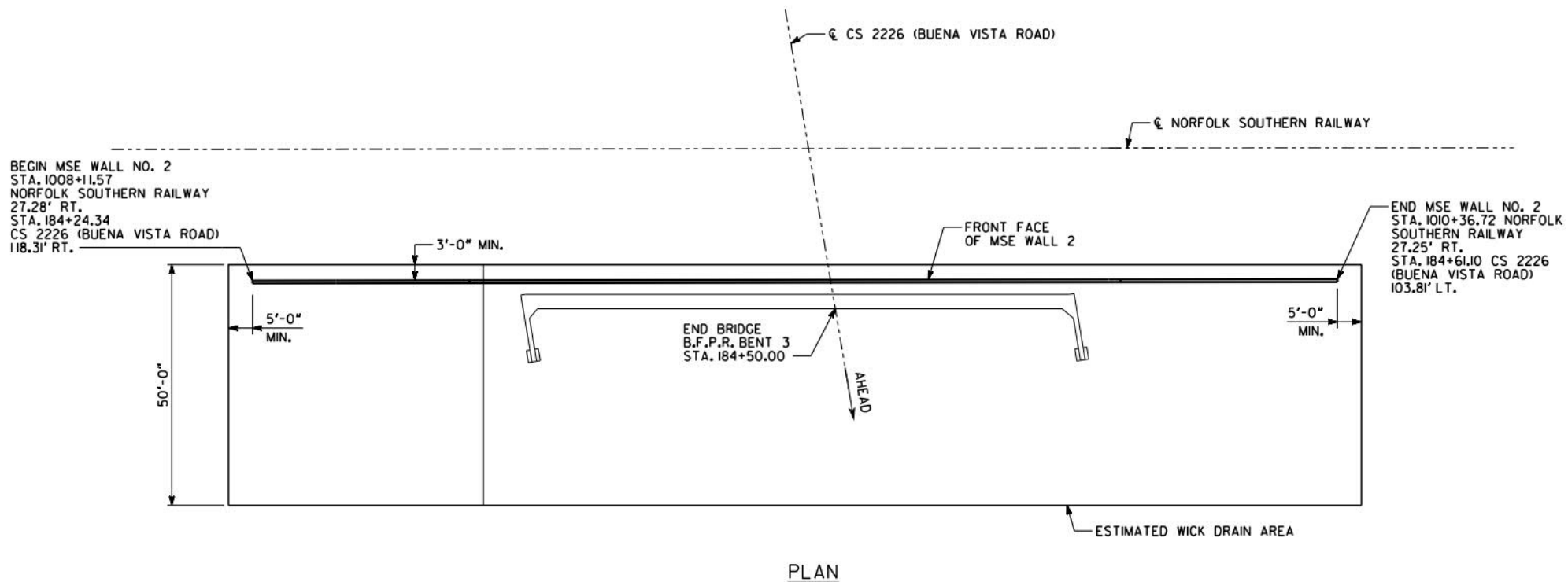
NO.	DATE	DESCRIPTION

DRAINAGE PROFILES

BUENA VISTA ROAD CORRIDOR

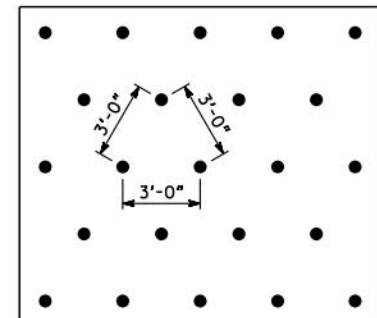
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EXHIBIT A

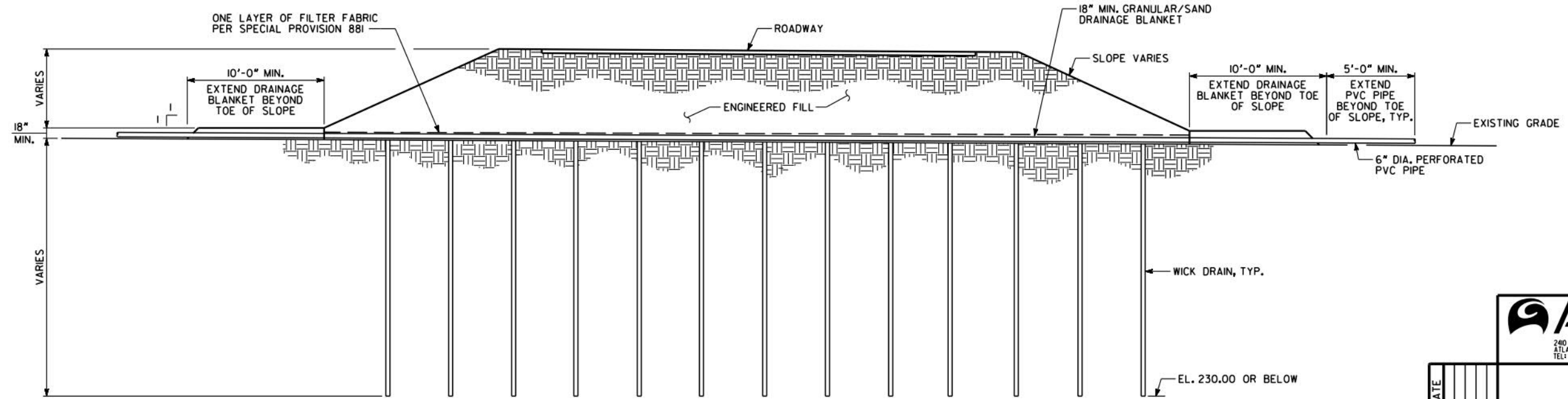


PLAN

- ### INSTALLATION STEPS
1. INSTALL WICK DRAINS AS SHOWN IN WICK DRAIN SPACING DETAIL.
 2. PLACE 6" DIA. PERFORATED PVC DRAIN PIPE AT 25'-0" ON CENTER TO 15'-0" BEYOND TOE OF ENGINEERED FILL SLOPE.
 3. PLACE 18" MIN. OF GRANULAR/SAND DRAINAGE BLANKET TO 10'-0" BEYOND TOE OF ENGINEERED FILL SLOPE OR TOE OF THE WALL AS APPLICABLE.
 4. PLACE ONE LAYER OF FILTER FABRIC ON THE TOP OF GRANULAR/SAND DRAINAGE BLANKET PER SECTION 455 OF STANDARD SPECIFICATION AND IN ACCORDANCE WITH SPECIAL PROVISION 88I.



TRIANGULAR WICK DRAIN SPACING DETAIL



ELEVATION
LOOKING AT
BACK FACE OF WALL

WALL NO. 2

Design & Consultancy for natural and built assets

240 PACES FERRY ROAD, SUITE 400
ATLANTA, GEORGIA 30339
TEL: 770/431-8666 FAX: 770/435-2666

GEORGIA
CITY OF COLUMBUS
CONSOLIDATED GOVERNMENT

WICK DRAIN DETAIL-WALL 2
CS 2226 (BUENA VISTA ROAD)

MUSCOGEE COUNTY 0011436

SCALE: NONE MAY 2019

DRAWING NO.
32-0002
WALL SHEET
2 OF 6

DATE	REVISIONS

DESIGNED SMK	CHECKED KAK	REVIEWED DLC/SKG
DRAWN JJA	DESIGN GROUP	APPROVED WMD

1 INCH WHEN PRINTED FULL SIZE

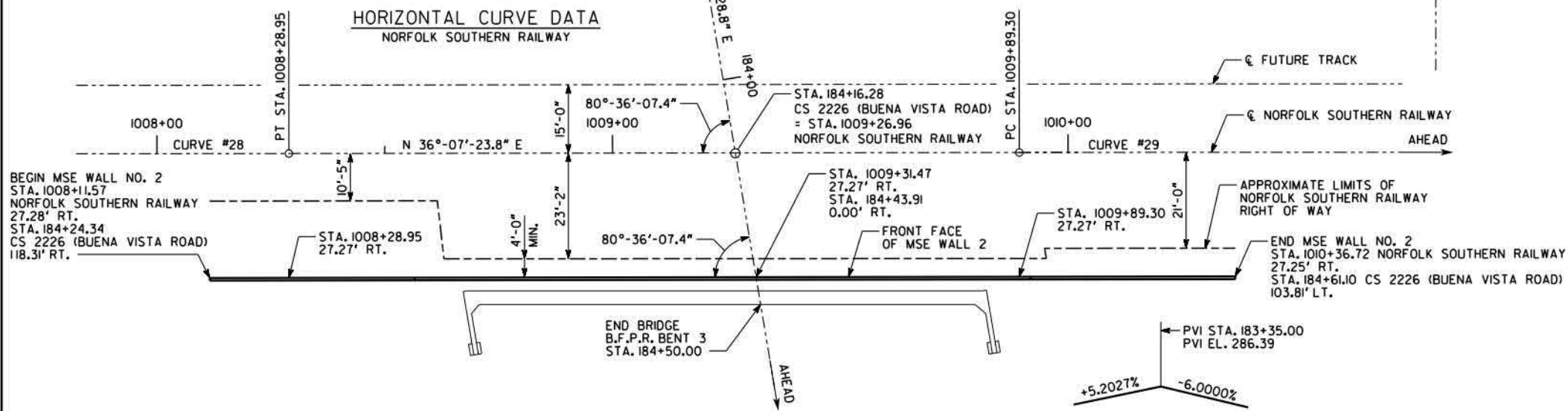
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KDGN

EXHIBIT A

CURVE #28	CURVE #29
PI STA. = 1007+79.96	PI STA. = 1010+23.98
N = 893787.33	N = 893984.43
E = 2056264.63	E = 2056408.48
Δ = 0°-06'-44.2" (LT)	Δ = 0°-04'-46.1" (RT)
D = 0°-06'-52.53"	D = 0°-06'-52.53"
T = 48.99 FT.	T = 34.68 FT.
L = 97.97 FT.	L = 69.36 FT.
R = 50000.00 FT.	R = 50000.00 FT.
E = 0.02	E = 0.01

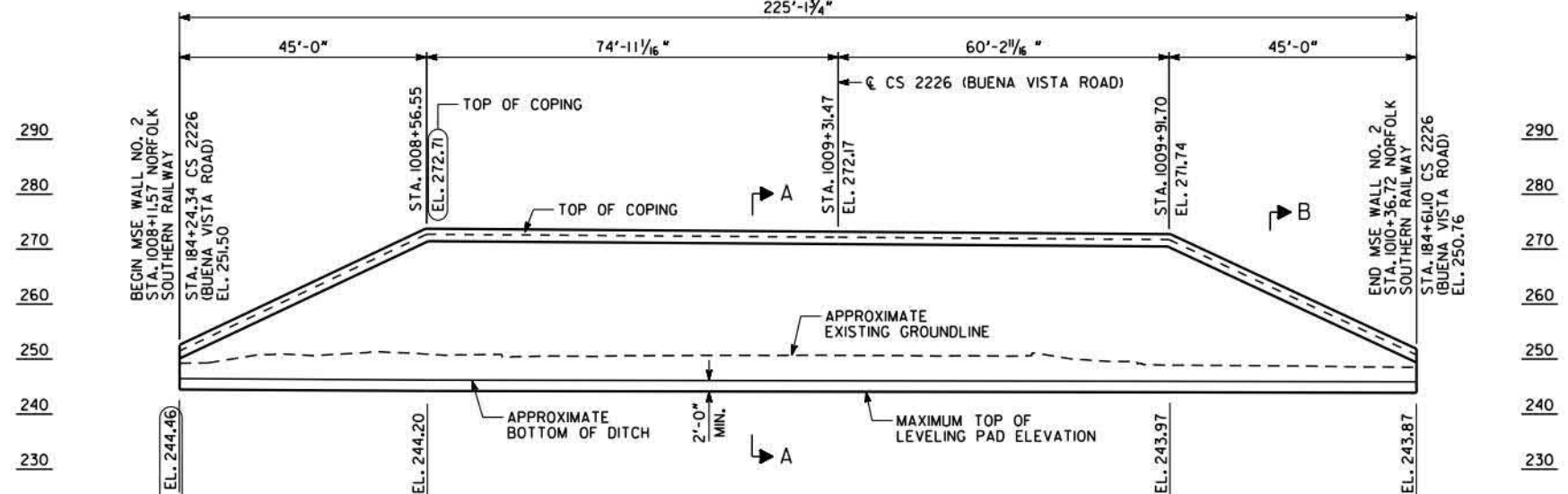
HORIZONTAL CURVE DATA
NORFOLK SOUTHERN RAILWAY



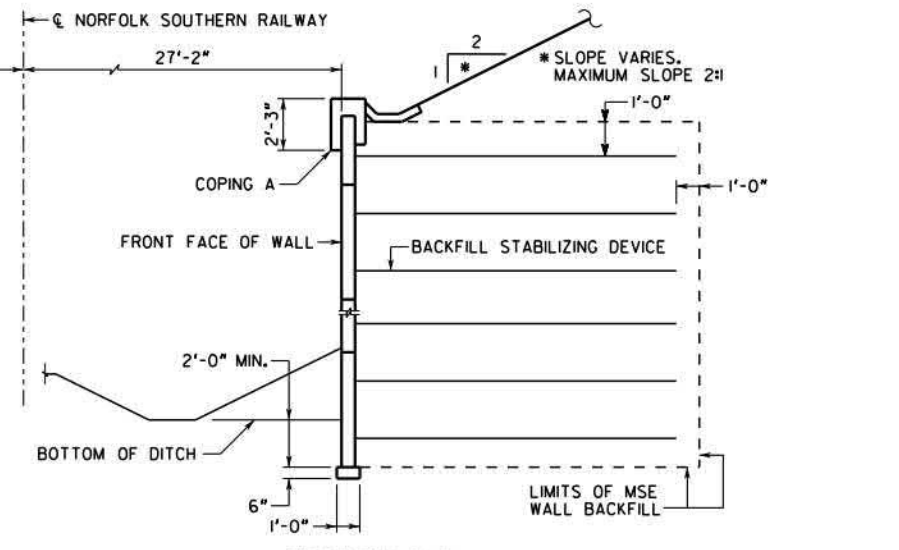
PLAN

VERTICAL CURVE DATA
CS 2226 (BUENA VISTA ROAD)

220.0 FT. V.C.



ELEVATION
LOOKING AT
BACK FACE OF WALL



SECTION A-A
NO SCALE

SECTION B-B
NO SCALE

NOTES:

1. STATIONS SHOWN ARE ALONG ϵ NORFOLK SOUTHERN RAILWAY, UNLESS OTHERWISE NOTED. OFFSETS SHOWN ARE MEASURED TO THE FRONT FACE OF WALL.
2. WALL LENGTH IS MEASURED ALONG FRONT FACE OF WALL.

STATION	ELEVATION	GRADE (%)
PVI 1004+18.48	254.47	-0.9664%
PVI 1005+51.97	253.18	-0.9549%
PVI 1006+23.18	252.50	-0.7374%
PVI 1006+58.44	252.24	-0.7256%
PVI 1007+00.09	251.97	-0.6272%
PVI 1007+35.51	251.72	-0.8386%
PVI 1008+04.78	251.25	-0.5189%
PVI 1008+36.53	251.07	-0.5669%
PVI 1008+58.73	250.94	-0.5856%
PVI 1008+82.90	250.99	0.2069%
PVI 1009+21.34	250.86	-0.3382%
PVI 1009+59.83	250.79	-0.1819%
PVI 1009+98.27	250.70	-0.2341%
PVI 1010+36.60	250.62	-0.2087%
PVI 1010+70.61	250.60	-0.0588%
PVI 1011+12.72	250.59	-0.0237%
PVI 1011+52.50	250.64	0.1257%
PVI 1011+87.14	250.72	0.2309%
PVI 1016+00.00	252.58	0.4328%

GRADE DATA
NORFOLK SOUTHERN RAILWAY

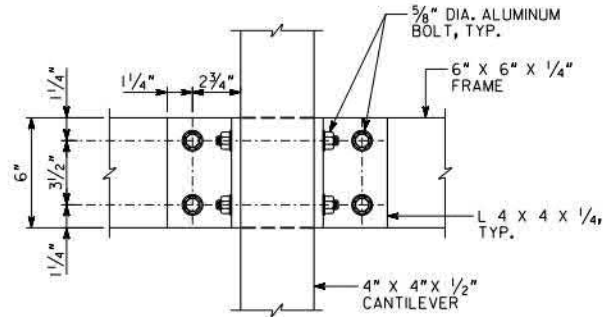
ARCADIS Design & Consultancy for natural and built assets
240 PACES FERRY ROAD, SUITE 400
ATLANTA, GEORGIA 30339
TEL: 770/431-8666 FAX: 770/435-2666

GEORGIA
CITY OF COLUMBUS
CONSOLIDATED GOVERNMENT

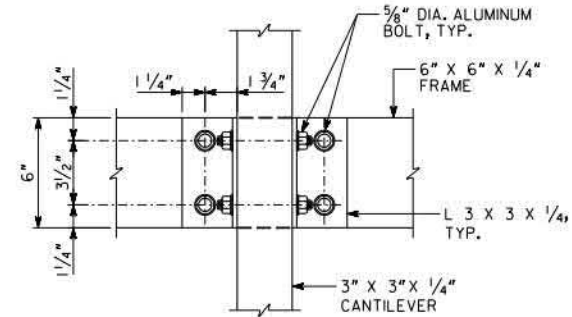
WALL 2 PLAN AND ELEVATION CS 2226 (BUENA VISTA ROAD)	
MUSCOGEE COUNTY	0011436
SCALE: 1" = 15'-0" (UNLESS OTHERWISE NOTED) MAY 2019	
DESIGNED SMK	CHECKED KAK
DRAWN EPR	DESIGN GROUP
REVIEWED DLG/SKG	APPROVED WMD

USER: wldc DATE: 5/10/2019 TIME: 2:05:44 PM C:\YPR\64066 - Spidewalk.dwg Tresh.dwg F:\wldc\1431 DGN\Walls\0011436.dwg 0011436.dwg 0011436.dwg

EXHIBIT A

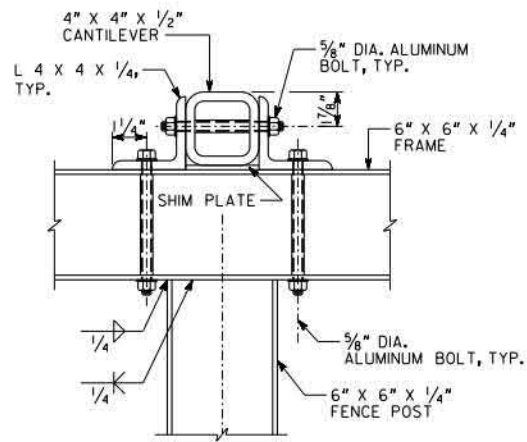


4" X 4" CANTILEVER SUPPORT PLAN

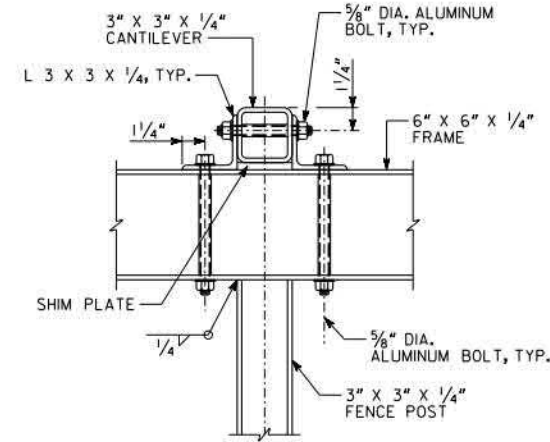


3" X 3" CANTILEVER SUPPORT PLAN

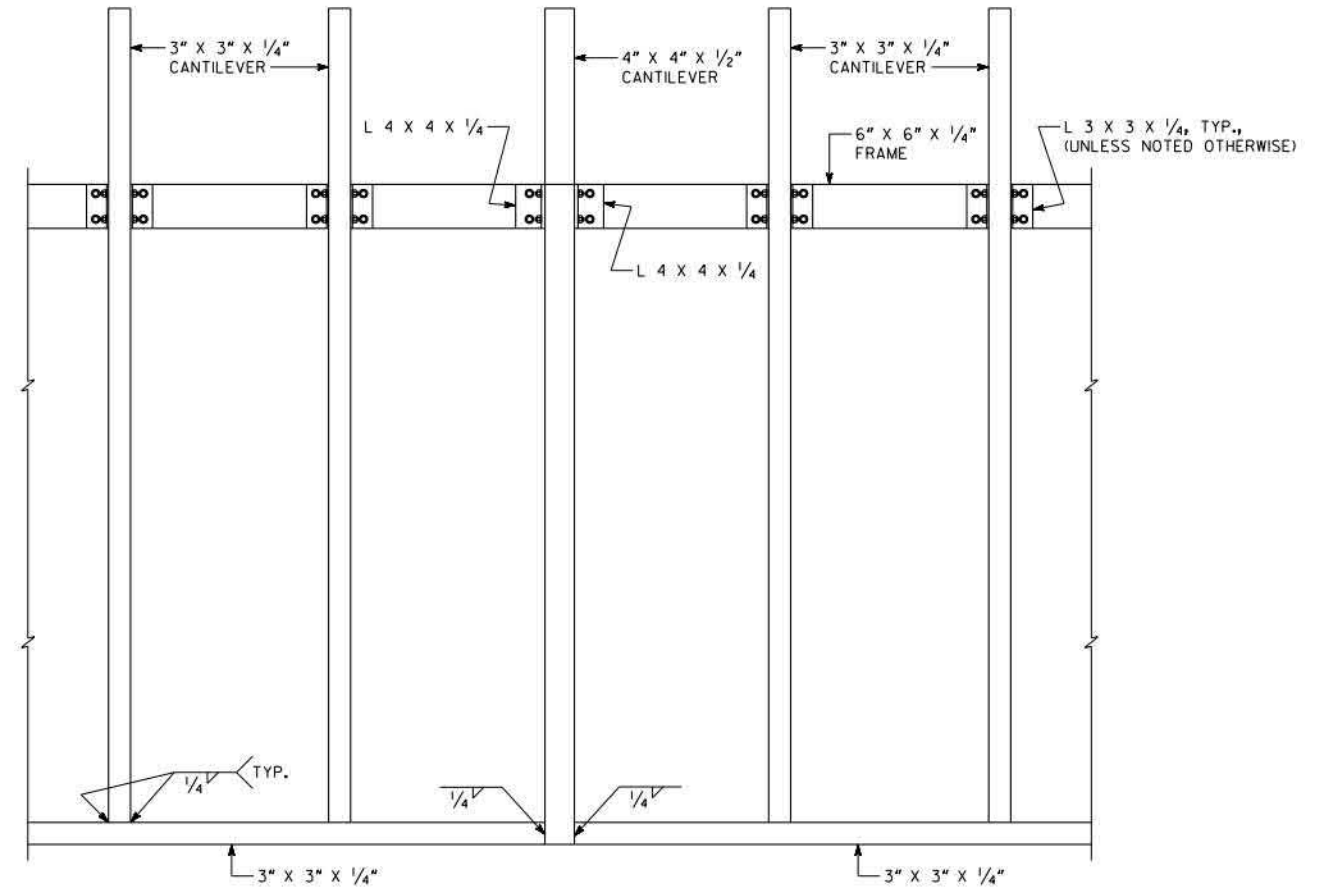
NOTES: BOLT HOLES FOR 5/8" DIA. ALUMINUM BOLTS SHALL BE 1/16" DIA. OVERSIZED HOLES.



4" X 4" CANTILEVER SUPPORT ELEVATION

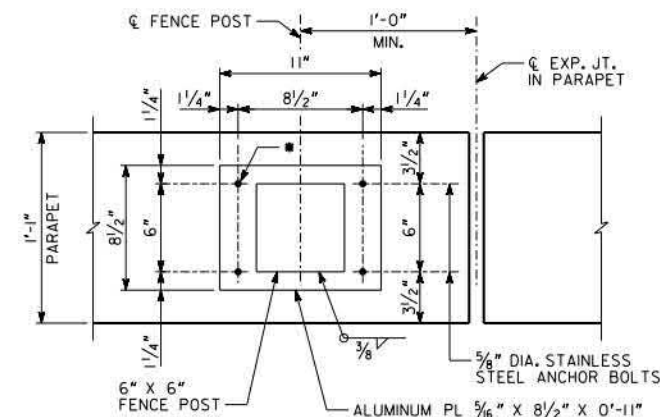


3" X 3" CANTILEVER SUPPORT ELEVATION

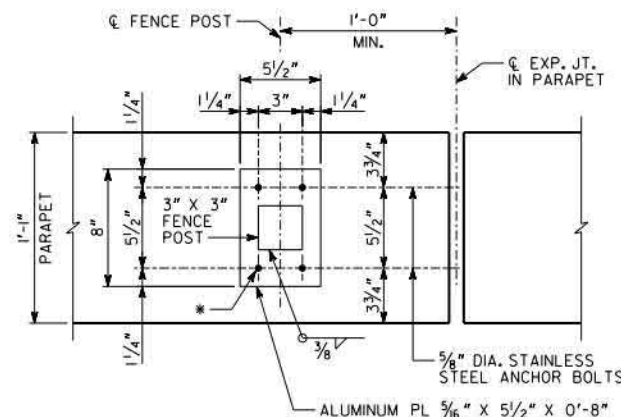


CANTILEVER PLAN

NOTE: ATTACH PERFORATED ALUMINUM SHEETS TO CANTILEVER WITH #10 X 5/8" STAINLESS STEEL PAN HEAD SCREWS PER MANUFACTURE'S RECOMMENDATIONS.



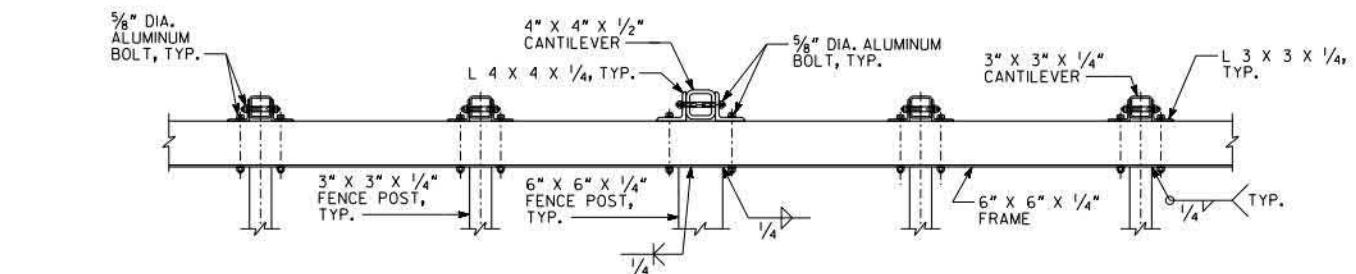
6" X 6" FENCE POST BASE PLATE



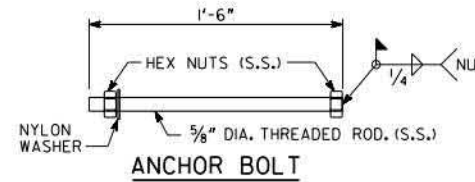
3" X 3" FENCE POST BASE PLATE

NOTES:

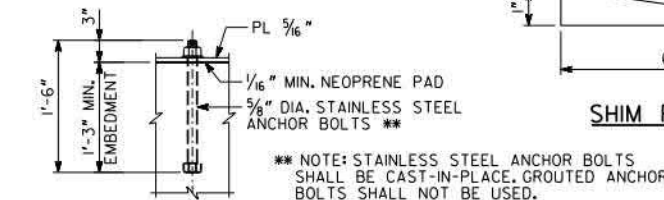
1. BASE PLATES SHALL BE SEATED ON NEOPRENE BEARING PADS, 1/16" MINIMUM THICKNESS, HAVING A NOMINAL DUROMETER HARDNESS OF 70. PADS SHALL CONFORM TO BASE PLATE DIMENSIONS.
2. INCLUDE THE COST OF THE NEOPRENE PADS IN THE PRICE BID FOR PAY ITEM 643-8400.
3. SEE DECK PLAN FOR FENCE POST SPACING.
4. 1/8" DIA. BOLT HOLES FOR 5/8" DIA. STAINLESS STEEL ANCHOR BOLT.



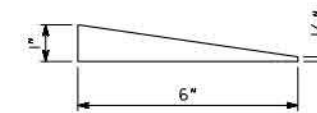
CANTILEVER ELEVATION



ANCHOR BOLT



ANCHOR BOLT EMBEDMENT



SHIM PLATES

BRIDGE NO. 1



2839 PACES FERRY ROAD, SUITE 900
ATLANTA, GEORGIA 30339
TEL: 770/431-9666 FAX: 770/435-2666

GEORGIA

CITY OF COLUMBUS
CONSOLIDATED GOVERNMENT

FENCE DETAILS - SHEET 2
CS 2226 (BUENA VISTA RD.) OVER CS 642
(ILLGES RD./MARTIN LUTHER KING JR. BLVD.)
AND NORFOLK SOUTHERN RAILWAY
MUSCOGEE COUNTY 0011436

NO SCALE MAY 2019

DRAWING NO. 35-0007
BRIDGE SHEET 7 OF 22

DATE	REVISIONS	BY	DATE

DESIGNED JMO	CHECKED KAK	REVIEWED DLC/SKG
DRAWN JJA	DESIGN GROUP JRT	APPROVED WMD

1/8" = 1 INCH WHEN PRINTED FULL SIZE

X.DGN

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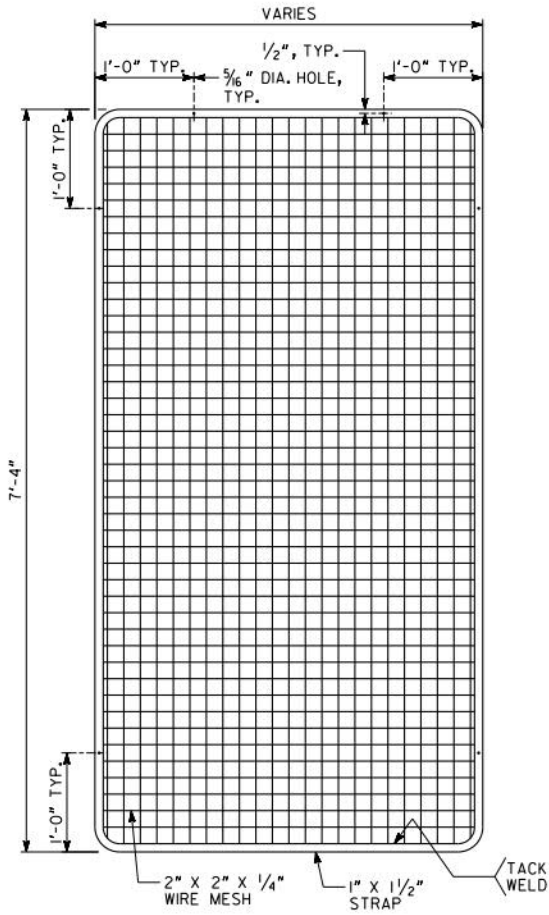
EXHIBIT A

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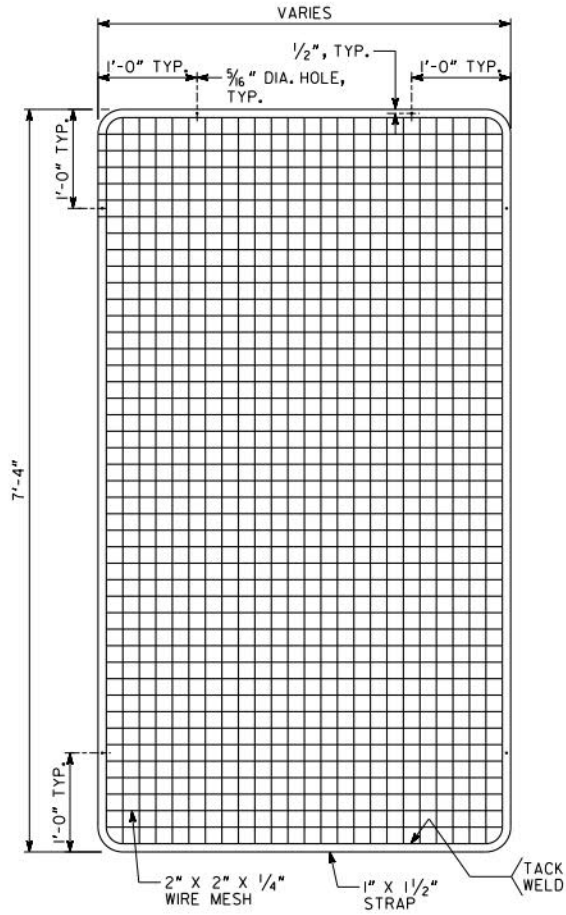
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DATE: 5/14/2019

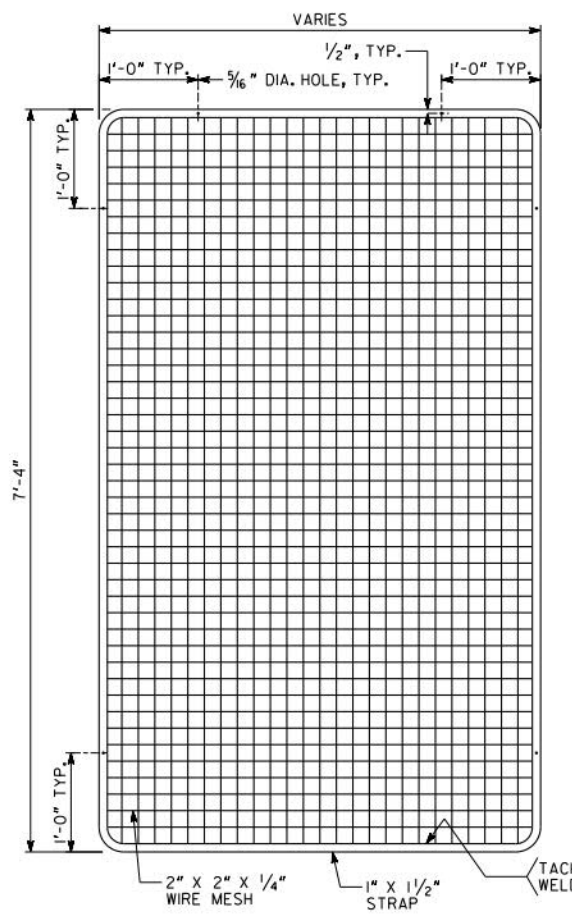
USER: lapointe



FENCE PANEL AT 4'-6" OPENING
SCALE: 3/4" = 1'-0"



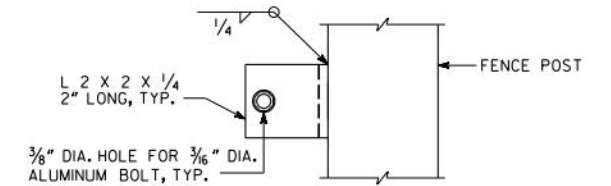
FENCE PANEL AT 4'-9" OPENING
SCALE: 3/4" = 1'-0"



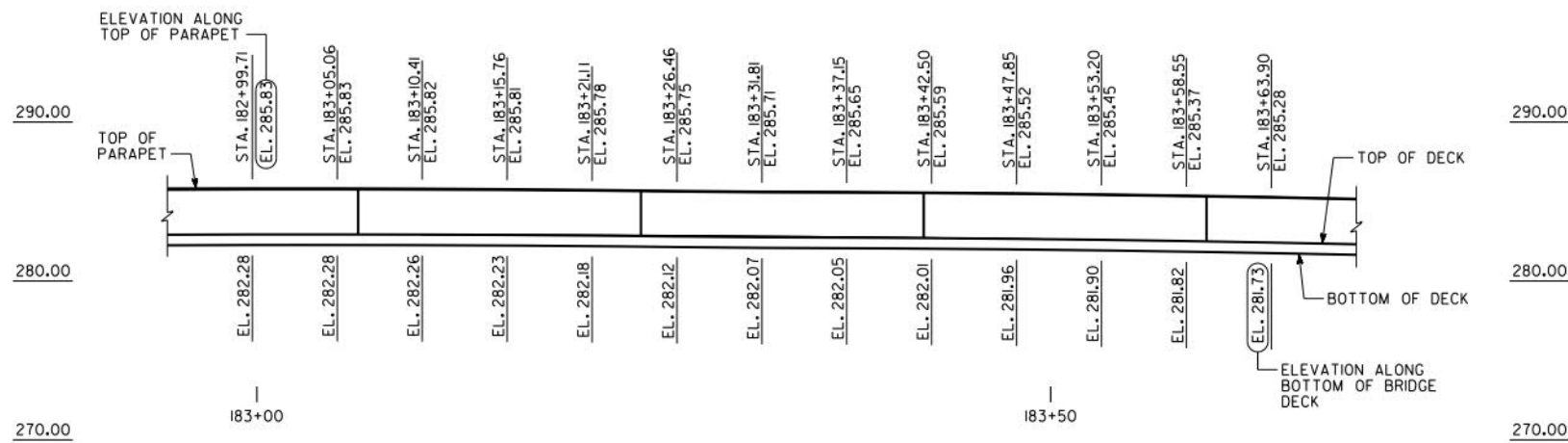
FENCE PANEL AT 5'-0" OPENING
SCALE: 3/4" = 1'-0"

NOTES:

1. OVERALL FENCE PANEL DIMENSIONS SHOWN ARE NOMINAL DIMENSIONS AND ARE FOR ILLUSTRATIVE PURPOSES ONLY.
2. THE FENCE MANUFACTURER SHALL SUBMIT SHOP DRAWINGS OF THE FENCING FOR APPROVAL PRIOR TO INSTALLATION.
3. THE FENCE PANELS SHALL BE DETAILED IN SUCH A WAY AS TO ACCOUNT FOR THE VERTICAL PROFILE OF THE BRIDGE AND THE DIFFERING FENCE POST SIZES WHILE MAINTAINING A MAXIMUM GAP OF 2 INCH BETWEEN THE FENCE PANELS, THE FENCE POSTS AND THE TOP OF THE PARAPET.



FENCE PANEL SUPPORT BRACKET



RIGHT PARAPET
SCALE: 3/16" = 1'-0"

NOTE: ELEVATIONS GIVEN ALONG THE TOP OF THE PARAPET ARE TO PROVIDE A SMOOTH VERTICAL CREST LINE FOR AESTHETIC REASONS. PARAPET ELEVATIONS SHOULD BE MAINTAINED TO REMOVE ANY VERTICAL DEVIATION OF THE BRIDGE DECK DUE TO THE S.E. TRANSITION IN SPAN 1.

BRIDGE NO. 1

ARCADIS Design & Consultancy for natural and built assets
2839 PACES FERRY ROAD, SUITE 900
ATLANTA, GEORGIA 30339
TEL: 770/431-9666 FAX: 770/435-2666

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CITY OF COLUMBUS
CONSOLIDATED GOVERNMENT

FENCE PANEL DETAILS
CS 2226 (BUENA VISTA RD.) OVER CS 642
(ILLGES RD./MARTIN LUTHER KING JR. BLVD.)
AND NORFOLK SOUTHERN RAILWAY
MUSCOGEE COUNTY 0011436

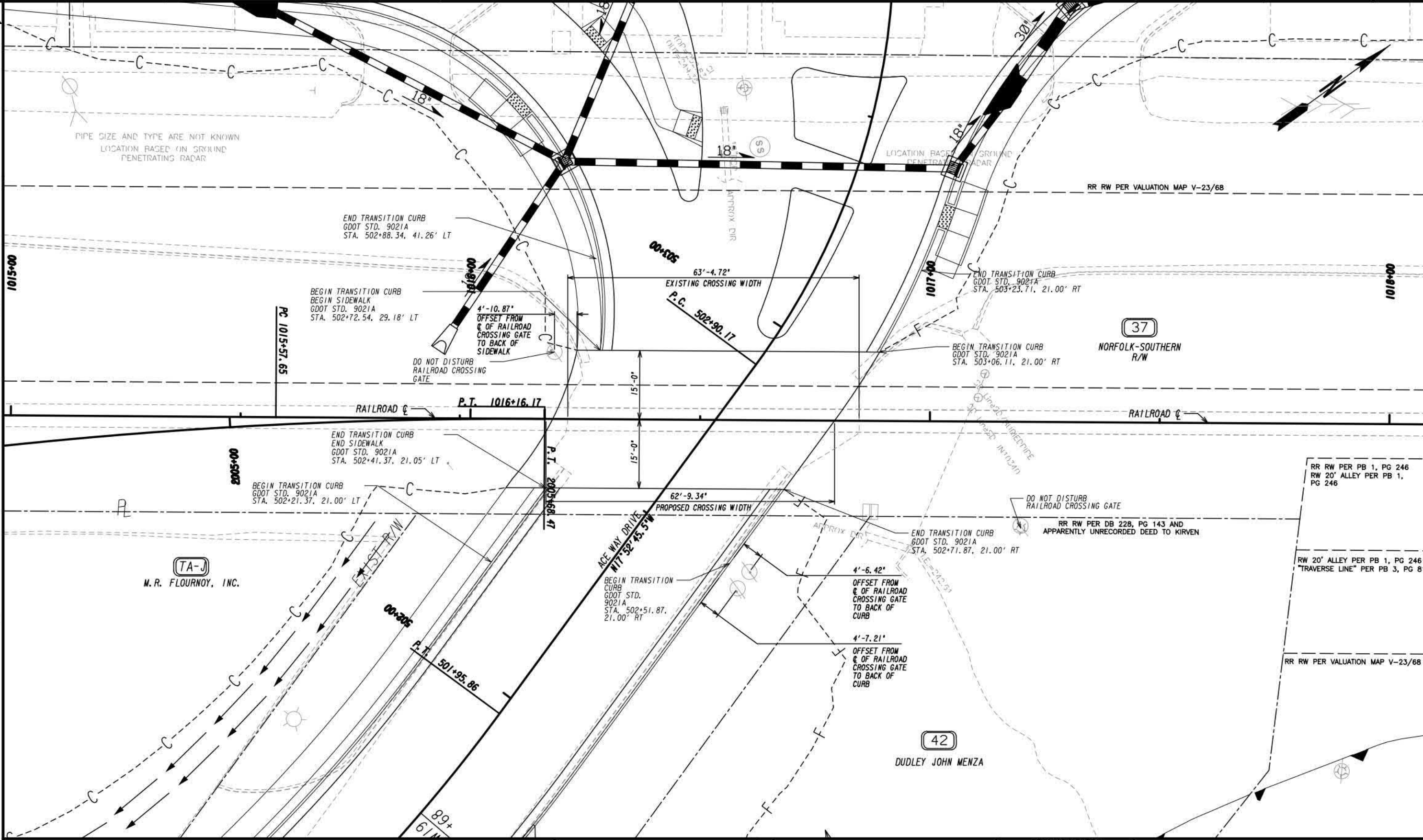
DATE	REVISIONS

DRAWING NO. 35-0008	DESIGNED JMO	CHECKED KAK	REVIEWED DLC/SKG
BRIDGE SHEET 8 OF 22	DRAWN JJA	DESIGN GROUP JRT	APPROVED WMD
SCALE: NO SCALE (UNLESS OTHERWISE NOTED)	MAY 2019		

1 INCH WHEN PRINTED FULL SIZE

X.DGN

EXHIBIT A



PIPE SIZE AND TYPE ARE NOT KNOWN
LOCATION BASED ON GROUND
PENETRATING RADAR

LOCATION BASED ON GROUND
PENETRATING RADAR

RR RW PER VALUATION MAP V-23/68

(37)
NORFOLK-SOUTHERN
R/W

(TA-J)
M.R. FLOURNOY, INC.

(42)
DUDLEY JOHN MENZA

RR RW PER PB 1, PG 246
RW 20' ALLEY PER PB 1,
PG 246

RW 20' ALLEY PER PB 1, PG 246
"TRAVERSE LINE" PER PB 3, PG 81

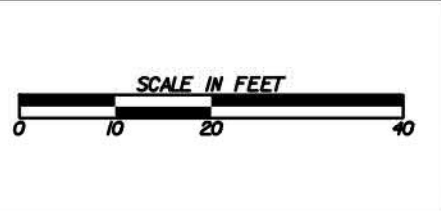
RR RW PER VALUATION MAP V-23/68

EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE	
EASEMENT FOR CONSTR OF DRIVES	

PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

WOLVERTON
Engineering Solutions You Can Trust

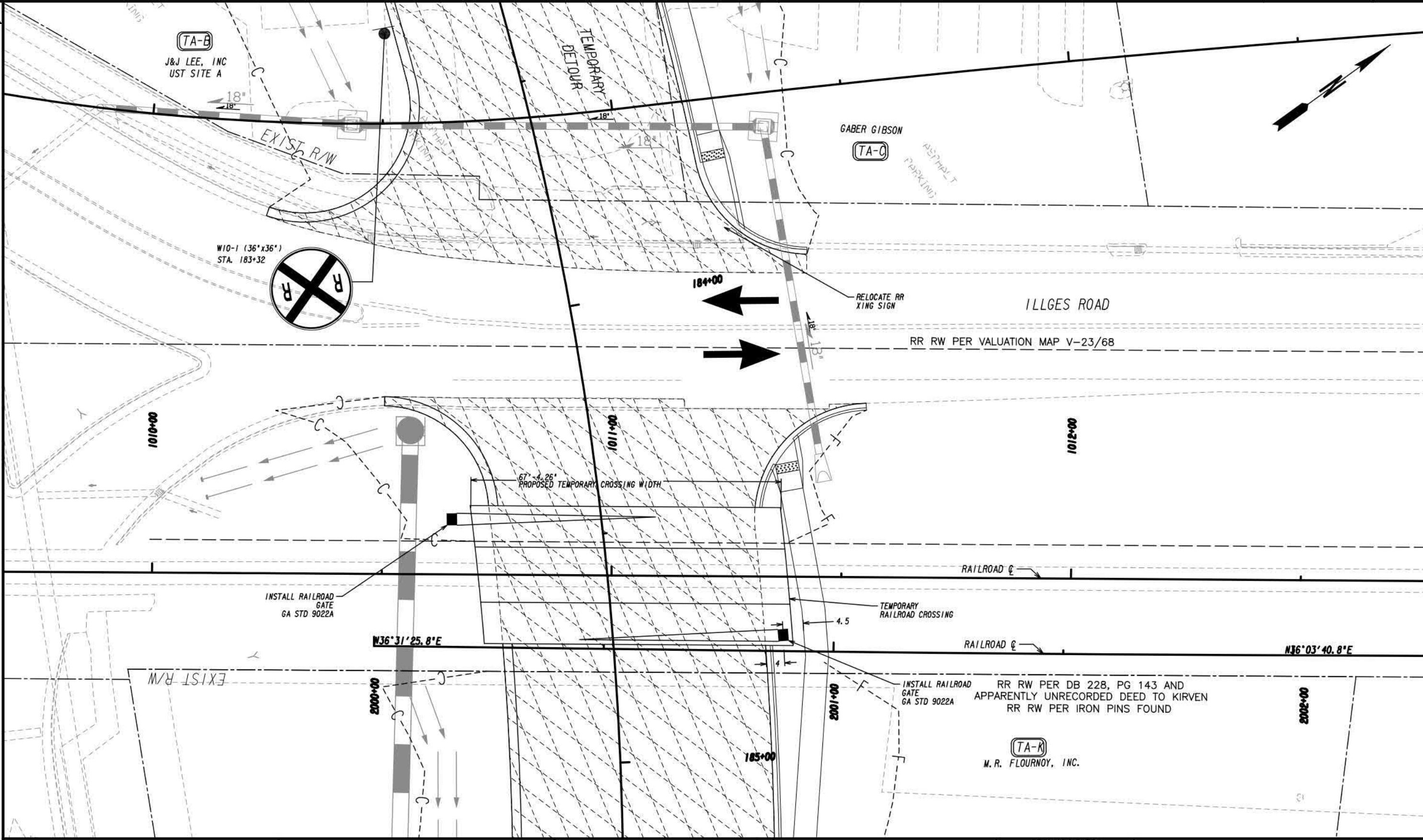
6745 Sugarloaf Parkway • Suite 100 • Duluth, Georgia 30097
Phone: 770-447-8999
www.wolvertoninc.com



REVISION DATES	

RAILROAD CROSSING PLAN ACE WAY DRIVE		
BUENA VISTA ROAD CORRIDOR		
CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	RR-0001
CORRECTED:	DATE:	
VERIFIED:	DATE:	

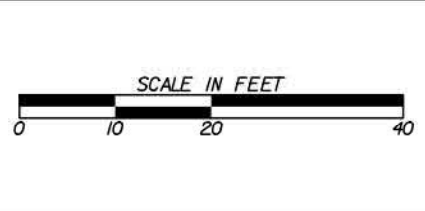
EXHIBIT A



EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE	
EASEMENT FOR CONSTR OF DRIVES	

PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

WOLVERTON
Engineering Solutions You Can Trust
6745 Sugarloaf Parkway • Suite 100 • Duluth, Georgia 30097
Phone: 770-447-8999
www.wolvertoninc.com



REVISION DATES	

**RAILROAD CROSSING PLAN
TEMPORARY DETOUR CROSSING**

BUENA VISTA ROAD CORRIDOR

CHECKED:	DATE:	DRAWING No.
BACKCHECKED:	DATE:	RR-0002
CORRECTED:	DATE:	
VERIFIED:	DATE:	

DATE##
USER##

TIME##

##PRF##

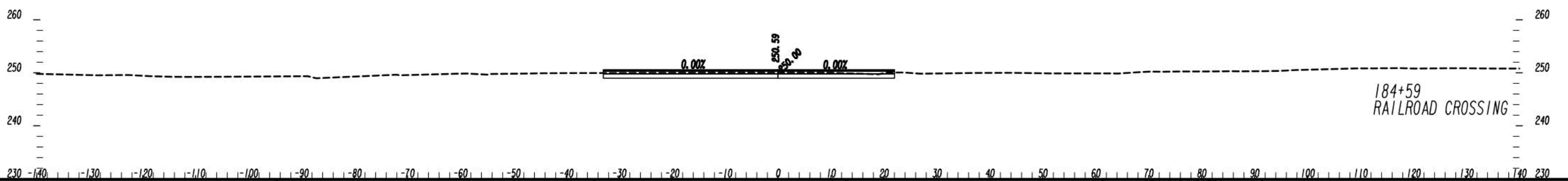
##PENTABLE##

#DC##

CITY OF COLUMBUS
CONSOLIDATED GOVERNMENT

PROJECT NO.
0011436

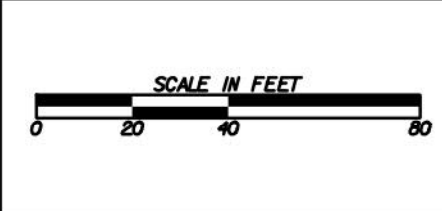
EXHIBIT A



EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	
EASEMENT FOR CONSTR OF SLOPES	
EASEMENT FOR CONSTR & MAINTENANCE OF DRAINAGE	
EASEMENT FOR CONSTR OF DRIVES	

PROPERTY AND EXISTING R/W LINE	
REQUIRED R/W LINE	
CONSTRUCTION LIMITS	
ORANGE BARRIER FENCE	
ESA - ENV. SENSITIVE AREA (SEE ERIT TABLE)	

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REVISION DATES	

TEMPORARY DETOUR CROSSING			
BUENA VISTA ROAD CORRIDOR			
CHECKED:	DATE:	DRAWING No.	
BACKCHECKED:	DATE:	RR-0003	
CORRECTED:	DATE:		
VERIFIED:	DATE:		

Special Provisions for Protection of Railway Interests

1. AUTHORITY OF RAILROAD ENGINEER AND SPONSOR ENGINEER:

Norfolk Southern Railway Company, hereinafter referred to as "Railroad", and their authorized representative shall have final authority in all matters affecting the safe maintenance of railroad traffic including the adequacy of the foundations and structures supporting the railroad tracks. For Public Projects impacting the Railroad, the Railroad's Public Projects Engineer, hereinafter referred to as "Railroad Engineer", will serve as the authorized representative of the Railroad.

The authorized representative of the Project Sponsor ("Sponsor"), hereinafter referred to as the "Sponsor's Engineer", shall have authority over all other matters as prescribed herein and in the Project Specifications.

The Sponsor's Prime Contractor, hereinafter referred to as "Contractor" shall be responsible for completing any and all work in accordance with the terms prescribed herein and in the Project Specifications. These terms and conditions are subject to change without notice, from time to time in the sole discretion of the Railroad. Contractor must request from Railroad and follow the latest version of these provisions prior to commencing work.

2. NOTICE OF STARTING WORK:

A. The Contractor shall not commence any work on railroad rights-of-way until he has complied with the following conditions:

1. Signed and received a fully executed copy of the required Norfolk Southern Contractor Right of Entry Agreement.
2. Given the Railroad written notice in electronic format to the Railroad Engineer, with copy to the Sponsor's Engineer who has been designated to be in charge of the work, at least ten days in advance of the date he proposes to begin work on Railroad rights-of-way.
3. Obtained written approval from the Railroad of Railroad Protective Liability Insurance coverage as required by paragraph 14 herein. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.
4. Obtained Railroad's Flagging Services as required by paragraph 7 herein.
5. Obtained written authorization from the Railroad to begin work on Railroad's rights-of-way, such authorization to include an outline of specific conditions with which he must comply.
6. Furnished a schedule for all work within the Railroad's rights-of-way as required by paragraph 7.B.1.

B. The Railroad's written authorization to proceed with the work shall include the names, addresses, and telephone numbers of the Railroad's representatives who are to be

notified as hereinafter required. Where more than one representative is designated, the area of responsibility of each representative shall be specified.

3. INTERFERENCE WITH RAILROAD OPERATIONS:

- A. The Contractor shall so arrange and conduct his work that there will be no interference with Railroad's operations, including train, signal, telephone and telegraphic services, or damage to the property of the Railroad or to poles, wires, and other facilities of tenants on the rights-of-way of the Railroad. Whenever work is liable to affect the operations or safety of trains, the method of doing such work shall first be submitted to the Railroad Engineer for approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor which requires flagging service or inspection service shall be deferred by the Contractor until the flagging service or inspection service required by the Railroad is available at the job site.
- B. Whenever work within Railroad's rights-of-way is of such a nature that impediment to Railroad's operations such as use of runaround tracks or necessity for reduced speed is unavoidable, the Contractor shall schedule and conduct his operations so that such impediment is reduced to the absolute minimum.
- C. Should conditions arising from, or in connection with the work, require that immediate and unusual provisions be made to protect operations and property of the Railroad, the Contractor shall make such provisions. If in the judgment of the Railroad Engineer, or in his absence, the Railroad's Division Engineer, such provisions is insufficient, either may require or provide such provisions as he deems necessary. In any event, such unusual provisions shall be at the Contractor's expense and without cost to the Railroad or the Sponsor.
- D. "One Call" Services do not locate buried Railroad utilities. 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 disturbances 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.

4. TRACK CLEARANCES:

- A. The minimum track clearances to be maintained by the Contractor during construction are shown on the Project Plans. If temporary clearances are not shown on the project plans, the following criteria shall govern the use of falsework and formwork above or adjacent to operated tracks.
 - 1. A minimum vertical clearance of 22'-0" above top of highest rail shall be maintained at all times.
 - 2. A minimum horizontal clearance of 13'-0" from centerline of tangent track or 14'-0" from centerline of curved track shall be maintained at all times. Additional horizontal clearance may be required in special cases to be safe for operating conditions. This additional clearance will be as determined by the Railroad Engineer.

3. All proposed temporary clearances which are less than those listed above must be submitted to Railroad Engineer for approval prior to construction and must also be authorized by the regulatory body of the State if less than the legally prescribed clearances.
 4. The temporary clearance requirements noted above shall also apply to all other physical obstructions including, but not limited to: stockpiled materials, parked equipment, placement or driving of piles, and bracing or other construction supports.
- B. Before undertaking any work within Railroad right-of-way, and before placing any obstruction over any track, the Contractor shall:
1. Notify the Railroad's representative at least 72 hours in advance of the work.
 2. Receive assurance from the Railroad's representative that arrangements have been made for flagging service as may be necessary.
 3. Receive permission from the Railroad's representative to proceed with the work.
 4. Ascertain that the Sponsor's Engineer has received copies of notice to the Railroad and of the Railroad's response thereto.
5. CONSTRUCTION PROCEDURES:
- A. General:
1. Construction work and operations by the Contractor on Railroad property shall be:
 - a. Subject to the inspection and approval of the Railroad Engineer or their designated Construction Engineering Representative.
 - b. In accordance with the Railroad's written outline of specific conditions.
 - c. In accordance with the Railroad's general rules, regulations and requirements including those relating to safety, fall protection and personal protective equipment.
 - d. In accordance with these Special Provisions.
 2. Submittal Requirements
 - a. The Contractor shall submit all construction related correspondence and submittals electronically to the Railroad Engineer.
 - b. The Contractor shall allow for 30 days for the Railroad's review and response.
 - c. All work in the vicinity of the Railroad's property that has the potential to affect the Railroad's train operations or disturb the Railroad's Property must be submitted and approved by the Railroad prior to work being performed.
 - d. All submittals and calculations must be signed and sealed by a registered engineer licensed in the state of the project work.

- e. All submittals shall first be approved by the Sponsor's Engineer and the Railroad Engineer, but such approval shall not relieve the Contractor from liability.
- f. For all construction projects, the following submittals, but not limited to those listed below, shall be provided for review and approval when applicable:
 - (1) General Means and Methods
 - (2) Ballast Protection
 - (3) Construction Excavation & Shoring
 - (4) Pipe, Culvert, & Tunnel Installations
 - (5) Demolition Procedure
 - (6) Erection & Hoisting Procedure
 - (7) Debris Shielding or Containment
 - (8) Blasting
 - (9) Formwork for the bridge deck, diaphragms, overhang brackets, and protective platforms
 - (10) Bent Cap Falsework. A lift plan will be required if the contractor want to move the falsework over the tracks.
- g. For Undergrade Bridges (Bridges carrying the Railroad) the following submittals in addition to those listed above shall be provided for review and approval:
 - (1) Shop Drawings
 - (2) Bearing Shop Drawings and Material Certifications
 - (3) Concrete Mix Design
 - (4) Structural Steel, Rebar, and/or Strand Certifications
 - (5) 28 day Cylinder Test for Concrete Strength
 - (6) Waterproofing Material Certification
 - (7) Test Reports for Fracture Critical Members
 - (8) Foundation Construction Reports

Fabrication may not begin until the Railroad has approved the required shop drawings.

- h. The Contractor shall include in all submissions a detailed narrative indicating the progression of work with the anticipated timeframe to complete each task. Work will not be permitted to commence until the Contractor has provided the Railroad with a satisfactory plan that the project will be undertaken without scheduling, performance or safety related issues. Submission shall also provide a listing of the anticipated equipment to be used, the location of all equipment to be used and insure a contingency plan of action is in place should a primary piece of equipment malfunction.

B. Ballast Protection

- 1. The Contractor shall submit the proposed ballast protection system detailing the specific filter fabric and anchorage system to be used during all construction activities.

2. The ballast protection is to extend 25' beyond the proposed limit of work, be installed at the start of the project and be continuously maintained to prevent all contaminants from entering the ballast section of all tracks for the entire duration of the project.
- C. Excavation:
1. The subgrade of an operated track shall be maintained with edge of berm at least 10'-0" from centerline of track and not more than 24-inches below top of rail. Contractor will not be required to make existing section meet this specification if substandard, in which case existing section will be maintained.
 2. Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Railroad right-of-way.
- D. Excavation for Structures and Shoring Protection:
1. The Contractor will be required to take special precaution and care in connection with excavating and shoring pits, and in driving piles or sheeting for footings adjacent to tracks to provide adequate lateral support for the tracks and the loads which they carry, without disturbance of track alignment and surface, and to avoid obstructing track clearances with working equipment, tools or other material.
 2. All plans and calculations for shoring shall be prepared, signed, and sealed by a Registered Professional Engineer licensed in the state of the proposed project, in accordance with Norfolk Southern's Overhead Grade Separation Design Criteria, subsection H.1.6.E-Construction Excavation (Refer to Norfolk Southern Public Projects Manual Appendix H). The Registered Professional Engineer will be responsible for the accuracy for all controlling dimensions as well as the selection of soil design values which will accurately reflect the actual field conditions.
 3. The Contractor shall provide a detailed installation and removal plan of the shoring components. Any component that will be installed via the use of a crane or any other lifting device shall be subject to the guidelines outlined in section 5.G of these provisions.
 4. The Contractor shall be required to survey the track(s) and Railroad embankment and provide a cross section of the proposed excavation in relation to the tracks.
 5. Calculations for the proposed shoring should include deflection calculations. The maximum deflection for excavations within 18'-0" of the centerline of the nearest track shall be 3/8". For all other cases, the max deflection shall not exceed 1/2".
 6. Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Railroad right-of-way.
 7. The front face of shoring located to the closest NS track for all shoring set-ups located in Zone 2 as shown on NS Typical Drawing No. 4 – Shoring Requirements (Appendix I) shall remain in place and be cut off 2'-0" below the final ground elevation. The remaining shoring in Zone 2 and all shoring in Zone 1 may be removed and all voids must be backfilled with flowable fill.
- E. Pipe, Culvert, & Tunnel Installations

1. Pipe, Culvert, & Tunnel Installations shall be in accordance with the appropriate Norfolk Southern Design Specification as noted below:
 - a. For Open Cut Method refer to Norfolk Southern Public Projects Manual Appendix H.4.6.
 - b. For Jack and Bore Method refer to Norfolk Southern Public Projects Manual Appendix H.4.7.
 - c. For Tunneling Method refer to Norfolk Southern Public Projects Manual Appendix H.4.8.
2. The installation methods provided are for pipes carrying storm water or open flow run-off. All other closed pipeline systems shall be installed in accordance Norfolk Southern's Pipe and Wire Program and the NSCE-8

F. Demolition Procedures

1. General

- a. Demolition plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) Railroad right-of-way; and in all situations where cranes will be situated on, over, or adjacent to Railroad right-of-way and within a distance of the boom length plus 15'-0" from the centerline of track.
- b. Railroad tracks and other Railroad property must be protected from damage during the procedure.
- c. A pre-demolition meeting shall be conducted with the Sponsor, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the demolition procedure.
- d. The Railroad Engineer or his designated representative must be present at the site during the entire demolition procedure period.
- e. Existing, obsolete, bridge piers shall be removed to a sufficient depth below grade to enable restoration of the existing/proposed track ditch, but in no case less than 2'-0" below final grade.

2. Submittal Requirements

- a. In addition to the submittal requirements outlined in Section 5.A.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:
 - (1) A plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or disposal locations shown. The location of all tracks and other Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.

- (2) Rating sheets showing cranes or lifting devices to be adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been "built-in" to the crane charts are not to be considered when determining the 150% factor of safety.
- (3) Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the existing structure showing complete and sufficient details with supporting data for the demolition the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations.
- (4) The Contractor shall provide a sketch of all rigging components from the crane's hook block to the beam. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been "built-in" to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Sponsor and the Railroad.
- (5) A complete demolition procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.
- (6) Design and supporting calculations for the temporary support of components, including but not limited to the stability of the superstructure during the temporary condition, temporary girder tie-downs and falsework.

3. Overhead Demolition Debris Shield

- a. The demolition debris shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the superstructure over the track area to catch all falling debris.
- b. The demolition debris shield shall provide a minimum vertical clearance as specified in Section 4.A.1 of these provisions or maintain the existing vertical clearance if the existing clearance is less than that specified in Section 4.A.1.
- c. The Contractor shall include the demolition debris shield installation/removal means and methods as part of the proposed Demolition procedure submission.
- d. The Contractor shall submit the demolition debris shield design and supporting calculations for approval by the Railroad Engineer.

- e. The demolition debris shield shall have a minimum design load of 50 pounds per square foot plus the weight of the equipment, debris, personnel, and other loads to be carried.
- f. The Contractor shall include the proposed bridge deck removal procedure in its demolition means and methods and shall verify that the size and quantity of the demolition debris generated by the procedure does not exceed the shield design loads.
- g. The Contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Railroad Engineer.

4. Vertical Demolition Debris Shield

- a. A vertical demolition debris shield may be required for substructure removals in close proximity to the Railroad's track and other facilities, as determined by the Railroad Engineer.

G. Erection & Hoisting Procedures

1. General

- a. Erection plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) Railroad right-of-way; and in all situations where cranes will be situated on, over, or adjacent to Railroad right-of-way and within a distance of the boom length plus 15'-0" from the centerline of track.
- b. Railroad tracks and other Railroad property must be protected from damage during the erection procedure.
- c. A pre-erection meeting shall be conducted with the Sponsor, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the erection procedure.
- d. The Railroad Engineer or his designated representative must be present at the site during the entire erection procedure period.
- e. For field splices located over Railroad property, a minimum of 50% of the holes for each connection shall be filled with bolts or pins prior to releasing the crane. A minimum of 50% of the holes filled shall be filled with bolts. All bolts must be appropriately tightened. Any changes to previously approved field splice locations must be submitted to the Railroad for review and approval. Refer to Norfolk Southern's Overhead Grade Separation Design Criteria for additional splice details (Norfolk Southern Public Projects Manual Appendix H.1, Section 4.A.3.).

2. Submittal Requirements

- a. In addition the submittal requirements outlined in Section 5.A.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:
- (1) As-built beam seat elevations - All as-built bridge seats and top of rail elevations shall be furnished to the Railroad Engineer for review and verification at least 30 days in advance of the erection, to ensure that minimum vertical clearances as approved in the plans will be achieved.
 - (2) A plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or staging locations shown. The location of all tracks and other Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.
 - (3) Rating sheets showing cranes or lifting devices to be adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been "built-in" to the crane charts are not to be considered when determining the 150% factor of safety.
 - (4) Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the proposed structure showing complete and sufficient details with supporting data for the erection of the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations.
 - (5) The Contractor shall provide a sketch of all rigging components from the crane's hook block to the beam. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been "built-in" to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Sponsor and the Railroad.
 - (6) A complete erection procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.
 - (7) Design and supporting calculations for the temporary support of components, including but not limited to temporary girder tie-downs and falsework.

H. Blasting:

1. The Contractor shall obtain advance approval of the Railroad Engineer and the Sponsor Engineer for use of explosives on or adjacent to Railroad property. The request for permission to use explosives shall include a detailed blasting plan. If permission for use of explosives is granted, the Contractor will be required to comply with the following:
 - a. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Contractor and a licensed blaster.
 - b. Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way radios.
 - c. No blasting shall be done without the presence of the Railroad Engineer or his authorized representative. At least 72 hours advance notice to the person designated in the Railroad's notice of authorization to proceed (see paragraph 2.B) will be required to arrange for the presence of an authorized Railroad representative and such flagging as the Railroad may require.
 - d. Have at the job site adequate equipment, labor and materials and allow sufficient time to clean up debris resulting from the blasting without delay to trains, as well as correcting at his expense any track misalignment or other damage to Railroad property resulting from the blasting as directed by the Railway's authorized representative. If his actions result in delay of trains, the Contractor shall bear the entire cost thereof.
 - e. The blasting Contractor shall have a copy of the approved blasting plan on hand while on the site.
 - f. Explosive materials or loaded holes shall not be left unattended at the blast site.
 - g. A seismograph shall be placed on the track shoulder adjacent to each blast which will govern the peak particle velocity of two inches per second. Measurement shall also be taken on the ground adjacent to structures as designated by a qualified and independent blasting consultant. The Railroad reserves the option to direct the placement of additional seismographs at structures or other locations of concern, without regard to scaled distance.
 - h. After each blast, the blasting Contractor shall provide a copy of their drill log and blast report, which includes number of holes, depth of holes, number of decks, type and pounds of explosives used per deck.
 - i. The Railroad may require top of rail elevations and track centers taken before, during and after the blasting and excavation operation to check for any track misalignment resulting from the Contractor's activities.

2. The Railroad representative will:
 - a. Determine approximate location of trains and advise the Contractor the appropriate amount of time available for the blasting operation and clean up.
 - b. Have the authority to order discontinuance of blasting if, in his opinion, blasting is too hazardous or is not in accord with these special provisions.
3. The Contractor must hire, at no expense to the Railroad, a qualified and independent blasting consultant to oversee the use of explosives. The blasting consultant will:
 - a. Review the Contractor's proposed drilling and loading patterns, and with the blasting consultant's personnel and instruments, monitor the blasting operations.
 - b. Confirm that the minimum amounts of explosives are used to remove the rock.
 - c. Be empowered to intercede if he concludes that the Contractor's blasting operations are endangering the Railway.
 - d. Submit a letter acknowledging that he has been engaged to oversee the entire blasting operation and that he approves of the blasting plan.
 - e. Furnish copies of all vibration readings to the Railroad representative immediately after each blast. The representative will sign and date the seismograph tapes after each shot to verify the readings are for that specific shot.
 - f. Advise the Railroad representative as to the safety of the operation and notify him of any modifications to the blasting operation as the work progresses.
4. The request for permission to use explosives on the Railroad's Right-of-Way shall include a blasting proposal providing the following details:
 - a. A drawing which shows the proposed blasting area, location of nearest hole and distance to Railway structures, all with reference to the centerline of track.
 - b. Hole diameter.
 - c. Hole spacing and pattern.
 - d. Maximum depth of hole.
 - e. Maximum number of decks per hole.
 - f. Maximum pounds of explosives per hole.
 - g. Maximum pounds of explosives per delay.
 - h. Maximum number of holes per detonation.

- i. Type of detonator and explosives to be used. (Electronic detonating devices will not be permitted). Diameter of explosives if different from hole diameter.
- j. Approximate dates and time of day when the explosives are to be detonated.
- k. Type of flyrock protection.
- l. Type and patterns of audible warning and all clear signals to be used before and after each blast.
- m. A copy of the blasting license and qualifications of the person directly in charge of the blasting operation, including their name, address and telephone number.
- n. A copy of the Authority's permit granting permission to blast on the site.
- o. A letter from the blasting consultant acknowledging that he has been engaged to oversee the entire blasting operation and that he approves of the blasting plan.
- p. In addition to the insurance requirements outlined in Paragraph 14 of these Provisions, A certificate of insurance from the Contractor's insurer stating the amount of coverage for XCU (Explosive Collapse and Underground Hazard) insurance and that XCU Insurance is in force for this project.
- q. A copy of the borings and Geotechnical information or report.

I. Track Monitoring

- 1. At the direction of the Railroad Engineer, any activity that has the potential to disturb the Railroad track structure may require the Contractor to submit a detailed track monitoring program for approval by the Railroad Engineer.
- 2. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. Railroad reserves the right to modify the survey locations and monitoring frequency as necessary during the project.
- 3. The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Railroad Engineer for analysis.
- 4. If any movement has occurred as determined by the Railroad Engineer, the Railroad will be immediately notified. Railroad, at its sole discretion, shall have the right to immediately require all Contractor operations to be ceased and determine what corrective action is required. Any corrective action required by the Railroad or performed by the Railroad including the monitoring of corrective action of the Contractor will be at project expense.

J. Maintenance of Railroad Facilities:

- 1. The Contractor will be required to maintain all ditches and drainage structures free of silt or other obstructions which may result from his operations and provide and maintain any erosion control measures as required. The Contractor will promptly

repair eroded areas within Railroad rights-of-way and repair any other damage to the property of the Railroad or its tenants.

2. If, in the course of construction, it may be necessary to block a ditch, pipe or other drainage facility, temporary pipes, ditches or other drainage facilities shall be installed to maintain adequate drainage, as approved by the Railroad Engineer. Upon completion of the work, the temporary facilities shall be removed and the permanent facilities restored.
3. All such maintenance and repair of damages due to the Contractor's operations shall be done at the Contractor's expense.

K. Storage of Materials and Equipment:

1. Materials and equipment shall not be stored where they will interfere with Railroad operations, nor on the rights-of-way of the Railroad without first having obtained permission from the Railroad Engineer, and such permission will be with the understanding that the Railroad will not be liable for damage to such material and equipment from any cause and that the Railroad Engineer may move or require the Contractor to move, at the Contractor's expense, such material and equipment.
2. All grading or construction machinery that is left parked near the track unattended by a watchman shall be effectively immobilized so that it cannot be moved by unauthorized persons. The Contractor shall protect, defend, indemnify and save Railroad, and any associated, controlled or affiliated corporation, harmless from and against all losses, costs, expenses, claim or liability for loss or damage to property or the loss of life or personal injury, arising out of or incident to the Contractor's failure to immobilize grading or construction machinery.

L. Cleanup:

1. Upon completion of the work, the Contractor shall remove from within the limits of the Railroad rights-of-way, all machinery, equipment, surplus materials, falsework, rubbish or temporary buildings of the Contractor, and leave said rights-of-way in a neat condition satisfactory to the Railroad Engineer or his authorized representative.

6. DAMAGES:

- A. The Contractor shall assume all liability for any and all damages to his work, employees, servants, equipment and materials caused by Railroad traffic.
- B. Any cost incurred by the Railroad for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of the Contractor, shall be paid directly to the Railroad by the Contractor.

7. FLAGGING SERVICES:

A. Requirements:

1. Flagging services will not be provided until the Contractor's insurance has been reviewed & approved by the Railroad.

2. Under the terms of the agreement between the Sponsor and the Railroad, the Railroad has sole authority to determine the need for flagging required to protect its operations. In general, the requirements of such services will be whenever the Contractor's personnel or equipment are or are likely to be, working on the Railroad's right-of-way, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a Railroad structure or the Railroad roadbed or surface and alignment of any track to such extent that the movement of trains must be controlled by flagging.
3. Normally, the Railroad will assign one flagman to a project; but in some cases, more than one may be necessary, such as yard limits where three (3) flagmen may be required. However, if the Contractor works within distances that violate instructions given by the Railroad's authorized representative or performs work that has not been scheduled with the Railroad's authorized representative, a flagman or flagmen may be required full time until the project has been completed.
4. For Projects exceeding 30 days of construction, Contractor shall provide the flagmen 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.

B. Scheduling and Notification:

1. The Contractor's work requiring Railroad flagging should be scheduled to limit the presence of a flagman at the site to a maximum of 50 hours per week. The Contractor shall receive Railroad approval of work schedules requiring a flagman's presence in excess of 40 hours per week.
2. Not later than the time that approval is initially requested to begin work on Railroad right-of-way, Contractor shall furnish to the Railroad and the Sponsor a schedule for all work required to complete the portion of the project within Railroad right-of-way and arrange for a job site meeting between the Contractor, the Sponsor, and the Railroad's authorized representative. Flagman or Flagmen may not be provided until the job site meeting has been conducted and the Contractor's work scheduled.
3. The Contractor will be required to give the Railroad representative at least 10 working days of advance written notice of intent to begin work within Railroad right-of-way in accordance with this special provision. Once begun, when such work is then suspended at any time, or for any reason, the Contractor will be required to give the Railroad representative at least 3 working days of advance notice before resuming work on Railroad right-of-way. Such notices shall include sufficient details of the proposed work to enable the Railroad representative to determine if flagging will be required. If such notice is in writing, the Contractor shall furnish the Engineer a copy; if notice is given verbally, it shall be confirmed in writing with copy to the Engineer. If flagging is required, no work shall be undertaken until the flagman, or flagmen are present at the job site. It may take up to 30 days to obtain flagging initially from the Railroad. When flagging begins, the flagman is usually assigned by the Railroad to work at the project site on a continual basis until no longer

needed and cannot be called for on a spot basis. If flagging becomes unnecessary and is suspended, it may take up to 30 days to again obtain from the Railroad. Due to Railroad labor agreements, it is necessary to give 5 working days notice before flagging service may be discontinued and responsibility for payment stopped.

4. If, after the flagman is assigned to the project site, an emergency arises that requires the flagman's presence elsewhere, then the Contractor shall delay work on Railroad right-of-way until such time as the flagman is again available. Any additional costs resulting from such delay shall be borne by the Contractor and not the Sponsor or Railroad.

C. Payment:

1. The Sponsor will be responsible for paying the Railroad directly for any and all costs of flagging which may be required to accomplish the construction.
2. The estimated cost of flagging is the current rate per day based on a 10-hour work day. This cost includes the base pay for the flagman, overhead, and includes a per diem charge for travel expenses, meals and lodging. The charge to the Sponsor by the Railroad will be the actual cost based on the rate of pay for the Railroad's employees who are available for flagging service at the time the service is required.
3. Work by a flagman in excess of 8 hours per day or 40 hours per week, but not more than 12 hours a day will result in overtime pay at 1 and 1/2 times the appropriate rate. Work by a flagman in excess of 12 hours per day will result in overtime at 2 times the appropriate rate. If work is performed on a holiday, the flagging rate is 2 and 1/2 times the normal rate.
4. Railroad work involved in preparing and handling bills will also be charged to the Sponsor. Charges to the Sponsor by the Railroad shall be in accordance with applicable provisions of Subchapter B, Part 140, Subpart I and Subchapter G, Part 646, Subpart B of the Federal-Aid Policy Guide issued by the Federal Highway Administration on December 9, 1991, including all current amendments. Flagging costs are subject to change. The above estimates of flagging costs are provided for information only and are not binding in any way.

D. Verification:

1. Railroad's flagman will electronically enter flagging time via Railroad's electronic billing system. Any complaints concerning flagging must be resolved in a timely manner. If the need for flagging is questioned, please contact the Railroad Engineer. All verbal complaints will be confirmed in writing by the Contractor within 5 working days with a copy to the Sponsor's Engineer. Address all written correspondence electronically to Railroad Engineer.
2. The Railroad flagman assigned to the project will be responsible for notifying the Sponsor Engineer upon arrival at the job site on the first day (or as soon thereafter as possible) that flagging services begin and on the last day that he performs such services for each separate period that services are provided. The Sponsor's Engineer will document such notification in the project records. When requested, the Sponsor's Engineer will also sign the flagman's diary showing daily time spent and activity at the project site.

8. HAUL ACROSS RAILROAD TRACK:

- A. Where the plans show or imply that materials of any nature must be hauled across Railroad's track, unless the plans clearly show that the Sponsor has included arrangements for such haul in its agreement with the Railroad, the Contractor will be required to make all necessary arrangements with the Railroad regarding means of transporting such materials across the Railroad's track. The Contractor or Sponsor will be required to bear all costs incidental to such crossings whether services are performed by his own forces or by Railroad personnel.
- B. No crossing may be established for use of the Contractor for transporting materials or equipment across the tracks of the Railroad unless specific authority for its installation, maintenance, necessary watching and flagging thereof and removal, until a temporary private crossing agreement has been executed between the Contractor and Railroad. The approval process for an agreement normally takes 90 days.

9. WORK FOR THE BENEFIT OF THE CONTRACTOR:

- A. All temporary or permanent changes in wire lines or other facilities which are considered necessary to the project are shown on the plans; included in the force account agreement between the Sponsor and the Railroad or will be covered by appropriate revisions to same which will be initiated and approved by the Sponsor and/or the Railroad.
- B. Should the Contractor desire any changes in addition to the above, then he shall make separate arrangements with the Railroad for same to be accomplished at the Contractor's expense.

10. COOPERATION AND DELAYS:

- A. It shall be the Contractor's responsibility to arrange a schedule with the Railroad for accomplishing stage construction involving work by the Railroad or tenants of the Railroad. In arranging his schedule he shall ascertain, from the Railroad, the lead time required for assembling crews and materials and shall make due allowance therefore.
- B. No charge or claim of the Contractor against either the Sponsor or the Railroad will be allowed for hindrance or delay on account of railroad traffic; any work done by the Railroad or other delay incident to or necessary for safe maintenance of railroad traffic or for any delays due to compliance with these special provisions.

11. TRAINMAN'S WALKWAYS:

- A. Along the outer side of each exterior track of multiple operated track, and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains, extending to a line not less than 10 feet from centerline of track, shall be maintained. Any temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours while Railroad's protective service is provided shall be removed before the close of each work day. If there is any excavation near the walkway, a handrail, with 10'-0" minimum clearance from centerline of track, shall be placed and must conform to AREMA and/or FRA standards.

12. GUIDELINES FOR PERSONNEL ON RAILROAD RIGHT-OF-WAY:

- A. The Contractor and/or the Sponsor's personnel authorized to perform work on Railroad's property as specified in Section 2 above are not required to complete Norfolk Southern Roadway

Worker Protection Training; However the Contractor and the Sponsor's personnel must be familiar with Norfolk Southern's standard operating rules and guidelines, should conduct themselves accordingly, and may be removed from the property for failure to follow these guidelines.

- B. All persons shall wear hard hats. Appropriate eye and hearing protection must be used. Working in shorts is prohibited. Shirts must cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip-on type boots is prohibited. Hard-sole, lace-up footwear, zippered boots or boots cinched up with straps which fit snugly about the ankle are adequate. Wearing of safety boots is strongly recommended. In the vicinity of at-grade crossings, it is strongly recommended that reflective vests be worn.
- C. No one is allowed within 25' of the centerline of track without specific authorization from the flagman.
- D. All persons working near track while train is passing are to lookout for dragging bands, chains and protruding or shifted cargo.
- E. No one is allowed to cross tracks without specific authorization from the flagman.
- F. All welders and cutting torches working within 25' of track must stop when train is passing.
- G. No steel tape or chain will be allowed to cross or touch rails without permission from the Railroad.

13. GUIDELINES FOR EQUIPMENT ON RAILROAD RIGHT-OF-WAY:

- A. No crane or boom equipment will be allowed to set up to work or park within boom distance plus 15' of centerline of track without specific permission from Railroad official and flagman.
- B. No crane or boom equipment will be allowed to foul track or lift a load over the track without flag protection and track time.
- C. All employees will stay with their machines when crane or boom equipment is pointed toward track.
- D. All cranes and boom equipment under load will stop work while train is passing (including pile driving).
- E. Swinging loads must be secured to prevent movement while train is passing.
- F. No loads will be suspended above a moving train.
- G. No equipment will be allowed within 25' of centerline of track without specific authorization of the flagman.
- H. Trucks, tractors or any equipment will not touch ballast line without specific permission from Railroad official and flagman. Orange construction fencing may be required as directed.
- I. No equipment or load movement within 25' or above a standing train or Railroad equipment without specific authorization of the flagman.

- J. All operating equipment within 25' of track must halt operations when a train is passing. All other operating equipment may be halted by the flagman if the flagman views the operation to be dangerous to the passing train.
- K. All equipment, loads and cables are prohibited from touching rails.
- L. While clearing and grubbing, no vegetation will be removed from Railroad embankment with heavy equipment without specific permission from the Railroad Engineer and flagman.
- M. No equipment or materials will be parked or stored on Railroad's property unless specific authorization is granted from the Railroad Engineer.
- N. All unattended equipment that is left parked on Railroad property shall be effectively immobilized so that it cannot be moved by unauthorized persons.
- O. All cranes and boom equipment will be turned away from track after each work day or whenever unattended by an operator.
- P. Prior to performing any crane operations, the Contractor shall establish a single point of contact for the Railroad flagman to remain in communication with at all times. Person must also be in direct contact with the individual(s) directing the crane operation(s).

14. INSURANCE:

- A. In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the Prime Contractor will be required to carry insurance of the following kinds and amounts:
 - 1. a. Commercial General Liability Insurance having a combined single limit of not less than \$2,000,000 per occurrence for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include explosion, collapse, and underground hazard (XCU) coverage, shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured, and shall include a severability of interests provision.
 - b. Automobile Liability Insurance with a combined single limit of not less than \$1,000,000 each occurrence for injury to or death of persons and damage to or loss or destruction of property. Said policy or policies shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured and shall include a severability of interests provision.
 - 2. Railroad Protective Liability Insurance having a combined single limit of not less than \$2,000,000 each occurrence and \$6,000,000 in the aggregate applying separately to each annual period. If the project involves track over which passenger trains operate, the insurance limits required are not less than a combined single limit of \$5,000,000 each occurrence and \$10,000,000 in the aggregate applying separately to each annual period. Said policy shall provide coverage for all loss, damage or expense arising from bodily injury and property damage liability, and physical damage to property attributed to acts or omissions at the job site.

The standards for the Railroad Protective Liability Insurance are as follows:

- a. The insurer must be rated A- or better by A.M. Best Company, Inc.
NOTE: NS does not accept from insurers Chartis (AIG or Affiliated Company including Lexington Insurance Company), Hudson Group or Liberty or Affiliated Company, American Contractors Insurance Company and Erie Insurance Company including Erie Insurance Exchange and Erie Indemnity Company.

- b. The policy must be written using one of the following combinations of Insurance Services Office ("ISO") Railroad Protective Liability Insurance Form Numbers:
 - (1) CG 00 35 01 96 and CG 28 31 10 93; or
 - (2) CG 00 35 07 98 and CG 28 31 07 98; or
 - (3) CG 00 35 10 01; or
 - (4) CG 00 35 12 04; or
 - (5) CG 00 35 12 07; or
 - (6) CG 00 35 04 13.

- c. The named insured shall read:

Norfolk Southern Corporation and its subsidiaries
Three Commercial Place
Norfolk, Virginia 23510-2191
Attn: Risk Manager

(NOTE: Railroad does not share coverage on RRPL with any other entity on this policy)

- d. The description of operations must appear on the Declarations, must match the project description in this agreement, and must include the appropriate Sponsor project and contract identification numbers.
- e. The job location must appear on the Declarations and must include the city, state, and appropriate highway name/number. **NOTE: Do not include any references to milepost, valuation station, or mile marker on the insurance policy.**
- f. The name and address of the prime Contractor must appear on the Declarations.
- g. The name and address of the Sponsor must be identified on the Declarations as the "Involved Governmental Authority or Other Contracting Party."
- h. Endorsements/forms that are required are:
 - (1) Physical Damage to Property Amendment
 - (2) Terrorism Risk Insurance Act (TRIA) coverage must be included

- i. Other endorsements/forms that will be accepted are:

- (1) Broad Form Nuclear Exclusion – Form IL 00 21
- (2) 30-day Advance Notice of Non-renewal or cancellation
- (3) Required State Cancellation Endorsement
- (4) Quick Reference or Index Form CL/IL 240

- j. Endorsements/forms that are NOT acceptable are:
 - (1) Any Pollution Exclusion Endorsement except CG 28 31
 - (2) Any Punitive or Exemplary Damages Exclusion
 - (3) Known injury or Damage Exclusion form CG 00 59
 - (4) Any Common Policy Conditions form
 - (5) An Endorsement that limits or excludes Professional Liability coverage
 - (6) A Non-Cumulation of Liability or Pyramiding of Limits Endorsement
 - (7) An Endorsement that excludes TRIA coverage
 - (8) A Sole Agent Endorsement
 - (9) Any type of deductible endorsement or amendment
 - (10) Any other endorsement/form not specifically authorized in item no. 2.h above.

- B. If any part of the work is sublet, similar insurance, and evidence thereof as specified in A.1 above, shall be provided by or on behalf of the subcontractor to cover its operations on Railroad's right of way.
- C. All insurance required under the preceding subsection A shall be underwritten by insurers and be of such form and content, as may be acceptable to the Company. Prior to entry on Railroad right-of-way, the original Railroad Protective Liability Insurance Policy shall be submitted by the Prime Contractor to the Department at the address below for its review and transmittal to the Railroad. In addition, certificates of insurance evidencing the Prime Contractor's and any subcontractors' Commercial General Liability Insurance shall be issued to the Railroad and the Department at the addresses below, and forwarded to the Department for its review and transmittal to the Railroad. The certificates of insurance shall state that the insurance coverage will not be suspended, voided, canceled, or reduced in coverage or limits without (30) days advance written notice to Railroad and the Department. No work will be permitted by Railroad on its right-of-way until it has reviewed and approved the evidence of insurance required herein.

SPONSOR:

RAILROAD:

Risk Management
Norfolk Southern Railway Company
Three Commercial Place
Norfolk, Virginia 23510-2191

- D. The insurance required herein shall in no way serve to limit the liability of Sponsor or its Contractors under the terms of this agreement.
- E. Insurance Submission Procedures
 - 1. Railroad will only accept initial insurance submissions via US Mail or Overnight carrier to the address noted in C above. Railroad will NOT accept initial insurance submissions via email or faxes. Please provide point of contact information with the submission including a phone number and email address.

- 2. Railroad requires the following two (2) forms of insurance in the initial insurance submission to be submitted under a cover letter providing details of the project and contact information:
 - a. The full original or certified true countersigned copy of the railroad protective liability insurance policy in its entirety inclusive of all declarations, schedule of forms and endorsements along with the policy forms and endorsements.
 - b. The Contractor’s commercial general, automobile, and workers’ compensation liability insurance certificate of liability insurance evidencing a combined single limit of a minimum of \$2M per occurrence of general and \$1M per occurrence of automobile liability insurance naming Norfolk Southern Railway Company, Three Commercial Place, Norfolk, VA 23510 as the certificate holder and as an additional insured on both the general and automobile liability insurance policy.
- 3. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.

15. FAILURE TO COMPLY:

- A. In the event the Contractor violates or fails to comply with any of the requirements of these Special Provisions:
 - 1. The Railroad Engineer may require that the Contractor vacate Railroad property.
 - 2. The Sponsor’s Engineer may withhold all monies due the Contractor on monthly statements.
- B. Any such orders shall remain in effect until the Contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Sponsor’s Engineer.

16. PAYMENT FOR COST OF COMPLIANCE:

- A. No separate payment will be made for any extra cost incurred on account of compliance with these special provisions. All such costs shall be included in prices bid for other items of the work as specified in the payment items.

17. PROJECT INFORMATION

- A. Date: January 7, 2020
- B. NS File No.: BR1112131
- C. NS Milepost: M-288.10 & M-287.95
- D. Sponsor’s Project No.: _____

EXHIBIT B

CONTRACTOR WORKING ON BEHALF OF PROJECT SPONSOR
COSTS REIMBURSED BY PROJECT SPONSOR
NS FILE: BR1112131

**CENTRAL OF GEORGIA
CONTRACTOR RIGHT OF ENTRY AGREEMENT**

WHEREAS, _____ (“Principal”) has requested that Central of Georgia Railroad Company (“Company”) permit Principal to be on or about Company’s premises and/or facilities at or in the vicinity of Company mileposts M-288.10 & M-287.95, at or near Columbus, Muscogee County, Georgia (the “Premises”) for the sole purpose of constructing a new Overhead Bridge Structure to replace the existing Buena Vista Road at-grade crossing (DOT# 718915T) and making improvements to the existing Ace Way at-grade crossing (DOT# 726273C), on behalf of the Columbus Consolidated Government (the “Project Sponsor”) during the period _____, 20____, to _____, 20____ (the “Right of Entry”).

WHEREAS, Company is willing to grant the Right of Entry subject to the terms and conditions set forth herein.

NOW THEREFORE, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the parties hereby agree as follows.

Company hereby grants Principal the Right of Entry. The Right of Entry shall extend to Principal and to subcontractors and other entities affiliated with Principal who are specifically approved for entry by authorized representatives of Company in writing, as well as to the officers and employees of the foregoing (collectively “Licensees”). The Right of Entry shall apply to those portions of the Premises, and to such equipment, machinery, rolling stock and other personal property and fixtures belonging to Company or otherwise located on the Premises, only to the extent specifically designated and approved in writing by authorized representatives of Company (collectively, “Designated Property”).

Principal agrees:

- (i) that Licensees’ access to the Premises shall be limited to the Designated Property and that Principal shall be liable and fully responsible for all actions of Licensees while on the Premises pursuant to the Right of Entry;
- (ii) that Licensees shall (a) be subject to Company’s direction when upon the Premises, and (b) be subject to Company’s removal from the Premises, in Company’s sole discretion, due to negligence, misconduct, unsafe actions, breach of this agreement or the failure to act respectfully, responsibly, professionally, and/or in a manner consistent with Company’s desire to minimize risk and maintain its property with maximum security and minimum distractions or disruptions or for any other lawful reason;
- (iii) that Licensees shall perform all work with such care, diligence and cooperation with Company personnel as to reasonably avoid accidents, damage or harm to persons or property and delays or interference with the operations of any Company’s facilities and in accordance with Company’s “Special Provisions for Protection of Railway Interest”, attached and incorporated herein.
- (iv) to give Company’s officer signing this agreement, or his or her authorized representative, advance notification of the presence of Licensees on Designated Property in accordance with Company’s “Special Provisions for Protection of Railway Interest”;
- (v) to indemnify and save harmless Company, its officers, agents and employees from and against any and all claims, demands, losses, suits, judgments, costs, expenses (including without limitation reasonable attorney’s fees) and liability resulting from (a) injury to or death of any person, including without limitation the Licensees, and damage to or loss of any property, including without limitation that belonging to or in the custody of Licensees

EXHIBIT B

CONTRACTOR WORKING ON BEHALF OF PROJECT SPONSOR
COSTS REIMBURSED BY PROJECT SPONSOR
NS FILE: BR1112131

- (the "Licensee Property"), arising or in any manner growing out of the presence of either the Licensees or the Licensee Property, or both, on or about the Premises, regardless of whether negligence on the part of Company, its officers, agents or employees caused or contributed to said loss of life, personal injury or property loss or damage in whole or in part; (b) any alleged violation of any law, statute, code, ordinance or regulation of the United States or of any state, county or municipal government (including, without limitation, those relating to air, water, noise, solid waste and other forms of environmental protection, contamination or pollution or to discrimination on any basis) that results in whole or in part, directly or indirectly, from the activities of Licensees related in any way to their presence on the Premises or from any other act or omission of Licensees contributing to such violation, regardless of whether such activities, acts or omissions are intentional or negligent, and regardless of any specification by Company without actual knowledge that it might violate any such law, statute, code, ordinance or regulation; (c) any allegation that Company is an employer or joint employer of a Licensee or is liable for related employment benefits or tax withholdings; or (d) any decision by Company to bar or exclude a Licensee from the Premises pursuant to subsection (ii)(b) above;
- (vi) to have and keep in effect the appropriate kinds of insurance as listed in the Company's "Special Provisions for Protection of Railway Interest, with insurance companies satisfactory to Company, during the entire time Licensees or Licensee Property, or both, is on the Premises: and to provide certificates of insurance showing the foregoing coverage, as well as any endorsements or other proper documentation showing and any change or cancellations in the coverage to the Company officer signing this agreement or to his or her authorized representative;
 - (vii) to reimburse Company for any costs not covered under the existing project agreement between the Company and the Project Sponsor, including any material, labor, supervisory and protective costs (including flagging) and related taxes and overhead expenses required or deemed necessary by Company because of the presence of either Licensees or Licensee Property on the Premises;
 - (viii) to exercise special care and precautions to protect the Premises and equipment, machinery, rolling stock and other personal property and fixtures belonging to Company or otherwise located on the Premises (whether or not constituting Designated Property) and to avoid interference with Company's operations;
 - (ix) to not create and not allow drainage conditions which would be adverse to the Premises or any surrounding areas;
 - (x) to refrain from the disposal or release of any trash, waste, and hazardous, dangerous or toxic waste, materials or substances on or adjacent to the Premises and to clean up or to pay Company for the cleanup of any such released trash, waste, materials or substances; and
 - (xi) to restore the Premises and surrounding areas to its original condition or to a condition satisfactory to the Company officer signing this agreement or to his or her authorized representative (ordinary wear and tear to rolling stock and equipment excepted) upon termination of Licensees' presence on the Premises.

As a part of the consideration hereof, Principal further hereby agrees that Company shall mean not only Central of Georgia Railroad Company but also Norfolk Southern Corporation and any and all subsidiaries and affiliates of Central of Georgia Railroad Company or Norfolk Southern Corporation, and that all of Principal's indemnity commitments in this agreement in favor of Company also shall extend to and indemnify Norfolk Southern Corporation and any subsidiaries and affiliated companies of Central of Georgia Railroad Company or Norfolk Southern Corporation and its and/or their directors, officers, agents and employees.

EXHIBIT B

It is expressly understood that the indemnification obligations set forth herein cover claims by Principal's employees, agents, independent contractors and other representatives, and Principal expressly waives any defense to or immunity from such indemnification obligations and/or any subrogation rights available under any applicable state constitutional provision, laws, rules or regulations, including, without limitation, the workers' compensation laws of any state. Specifically, (i) in the event that all or a portion of the Premises is located in the State of Ohio, the following provision shall be applicable: "Principal, with respect to the indemnification provisions contained herein, hereby expressly waives any defense or immunity granted or afforded it pursuant to Section 35, Article II of the Ohio Constitution and Section 4123.74 of the Ohio Revised Code"; and (ii) in the event that all or a portion of the Premises is located in the Commonwealth of Pennsylvania, the following provision shall be applicable: "Principal, with respect to the indemnification provisions contained herein, hereby expressly waives any defense or immunity granted or afforded it pursuant to the Pennsylvania Workers' Compensation Act, 77 P.S. 481".

This agreement shall be governed by the internal laws of the Commonwealth of Virginia, without regard to otherwise applicable principles of conflicts of laws. If any of the foregoing provisions is held for any reason to be unlawful or unenforceable, the parties intend that only the specific words found to be unlawful or unenforceable be severed and deleted from this agreement and that the balance of this agreement remain a binding enforceable agreement to the fullest extent permitted by law.

This agreement may be amended only in a writing signed by authorized representatives of the parties.

_____	CENTRAL OF GEORGIA RAILROAD COMPANY
Name of Principal	
By _____	By _____
Title _____	Title _____
Date _____, 20____	Date _____, 20____

EXHIBIT C

FORCE ACCOUNT ESTIMATE

Work to be Performed By: Central of Georgia Railroad Company
Project Description: Proposed Ace Way Improvements and construction of the Buena Vista Road OHB
Location: Columbus, Muscogee County, Georgia
Project No.: PIN 0011436
Milepost: M-287.95 & M-288.10
File: BR1112131
Date: November 6, 2019

ITEM A - Preliminary Engineering	0
ITEM B - Construction Engineering	88,373
ITEM C - Accounting	2,348
ITEM D - Railroad Protective Services	437,278
ITEM E - Communications Changes	0
ITEM F - Signal & Electrical Changes	1,144,635
ITEM G - Track Work	115,104
ITEM H - T-Cubed	0
GRAND TOTAL	\$ 1,787,737

ITEM A - Preliminary Engineering

(Review plans and special provisions, prepare estimates, etc.)

Labor: 0 Hours @ \$60 / hour= 0
Labor Additives: 0
Travel Expenses: 0
Services by Contract Engineer: 0

NET TOTAL - ITEM A \$ -

EXHIBIT C**ITEM B - Construction Engineering**

(Coordinate Railway construction activities,
review contractor submittals, etc.)

Labor:	80 Hours @ \$60 / hour=	4,800
Labor Additives:		3,773
Travel Expenses:		3,000
Services by Contract Engineer:		76,800
	NET TOTAL - ITEM B	\$ 88,373

ITEM C - Administration

Agreement Construction, Review and/or Handling:		1,250
Accounting Hours (Labor):	20 Hours @ \$30 / hour=	600
Accounting Additives:		498
	NET TOTAL - ITEM C	\$ 2,348

ITEM D - Railroad Protective Services

(During construction on, over,
under, or adjacent to the track.)

Labor:	Protective Services	
	360 days @ 390.00 per day=	140,400
	(based on working 12 hours/day)	
Labor Additive:		260,878
Travel Expenses, Meals & Lodging:		
	360 days @ \$100/day=	36,000
Rental Vehicle	0 months @ \$950/month=	0
	NET TOTAL - ITEM D	\$ 437,278

ITEM E - Communications Changes

Material:		0
Labor:		0
Purchase Services:		0
Subsistence:		0
Additive:		0
	NET TOTAL - ITEM E	\$ -



EXHIBIT C

Round Figure Estimate for Grade Crossing Warning Devices

City/State: COLUMBUS , GA

Road: TEMP BUENA VISTA RD.

MilePost: M-288.05

DOT/AAR:

State Proj. No.:

County: MUSCOGEE

S&E Proj. No.: 03.2376

File Number: 061-03.0503

Man Days: 300

Purchases - Others		
Meals and Lodging:	\$42,692.40	
Rental of Equipment:	\$58,360.35	
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 50 Days)		
Construction Supervision Vehicle:	\$8,927.17	
Purchases - Other Total:		\$109,979.92
Material And Additives		
Material Cost:	\$220,000.00	
Sales and Use Tax:	\$17,600.00	
Material Handling Freight:	\$22,000.00	
Material Total:		\$259,600.00
Labor And Additives		
Labor Cost:	\$100,500.00	
(6 man crew at \$2,010.00 a day for: 50 days)		
Payroll Tax & Overheads:	\$85,686.30	
Preliminary Engineering:	\$33,652.50	
Construction Supervision:	\$29,356.05	
Labor Total:		\$249,194.85
	Project Cost:	\$618,774.77
	Scrap / Salvage Credit:	\$0.00
	Project Total:	\$618,775.00

Estimated on: 28-Jun-19

Estimated by: uegbb

Estimate valid for 1 year from date of estimate



EXHIBIT C

Round Figure Estimate for Grade Crossing Warning Devices

City/State: COLUMBUS, GA

Road: ACE WAY DRIVE

MilePost: M-287.95

DOT/AAR: 726273C

State Proj. No.:

County: MUSCOGEE

S&E Proj. No.: 03.2377

File Number: 061-03.0669

Man Days: 240

Purchases - Others	
Meals and Lodging:	\$34,153.92
Rental of Equipment:	\$46,688.28
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 40 Days)	
Construction Supervision Vehicle:	\$7,141.74
Purchases - Other Total:	\$87,983.94
Material And Additives	
Material Cost:	\$200,000.00
Sales and Use Tax:	\$16,000.00
Material Handling Freight:	\$20,000.00
Material Total:	\$236,000.00
Labor And Additives	
Labor Cost:	\$80,400.00
(6 man crew at \$2,010.00 a day for: 40 days)	
Payroll Tax & Overheads:	\$68,549.04
Preliminary Engineering:	\$29,442.00
Construction Supervision:	\$23,484.84
Labor Total:	\$201,875.88
Project Cost:	\$525,859.82
Scrap / Salvage Credit:	\$0.00
Project Total:	\$525,860.00

Estimated on: 28-Jun-19

Estimated by: uegbb

Estimate valid for 1 year from date of estimate

EXHIBIT C

Norfolk Southern Railway Company

Alabama Division

Columbus, Muscogee County, Georgia

ESTIMATE FOR CROSSING IMPROVEMENT (ASPHALT SURFACE)

DETOUR ROADWAY

Existing Crossing

DOT Number: 726273C & 718915T

MP: M-287.95 & M-288.10

1 TRACK(S);

88 CROSSING LENGTH

MATERIAL	QUANTITY	UNIT	UNIT COST	AMOUNT
SURFACE MATERIAL (Rubber Flangeways)	88	TRK. FT.	65.00	5,720
ASPHALT (BY CONTRACTOR)	201	TONS	165.00	33,088
RAIL, 136-LB RE	240	LIN FT.	22.00	5,280
TRANSITION RAIL	4	EA.	1140.00	4,560
INSULATED JOINTS	0	EA.	1200.00	0
RAIL ANCHORS	400	EA.	1.50	600
SPIKES	4.0	KEG	115.00	460
TIE PLATES	200	EA.	15.00	3,000
CROSSTIES (10')	0	EA.	75.00	0
CROSSTIES (GRADE 5)	100	EA.	55.00	5,500
BALLAST AND GRAVEL	141	TONS	35.00	4,935
GEOTEXTILE	108	LIN FT.	7.00	756
THERMITE WELDS	10	EA.	550.00	5,500
ASPHALT DISPOSAL	1	LUMPS	5000.00	5,000
TRAFFIC CONTROL	0	LUMPS	10,000.00	0
TOTAL (INCLUDES 5% INVENTORY ADDITIVES)				78,119

LABOR

REMOVE EXISTING BUENA VISTA CROSSING	80	MAN HOURS	28.00	2,240
REHABILITATE TRK. STRUCTURE	100	MAN HOURS	28.00	2,800
INSTALL NEW CROSSING	90	MAN HOURS	28.00	2,520
TOTAL				7,560

OTHER ITEMS

Rail	-4.6	TON	0	0
Scrap	-1.5	TON	0	0
				0
COMPOSITE LABOR ADDITIVE (185.81)				14,047
EQUIPMENT RENTAL & TRANSPORTATION				4,914
PRELIMINARY & CONSTRUCTION ENGINEERING SERVICES AND INVOICE PREPARATION				10,464
TOTAL (TO BE BILLED TO SPONSOR)				\$115,104

ESTIMATE BASED ON TRAFFIC CONTROL AND BARRICADES BEING PROVIDED BY OTHERS, AND FULL CLOSURE OF ROAD. PAVING BY CONTRACTOR.

This estimate is valid for one (1) year after the date of estimate. If work is not performed within this time frame the Railway may revise the estimate to include work not previously deemed necessary.

This estimate shall not be considered as an approval for a temporary crossing. Information provided is an estimation of the anticipated cost for the construction of the crossing only. All temporary construction crossings require a separate approval from Norfolk Southern's General Manager and Division Superintendent, a separate stand alone temporary construction crossing agreement with associated real estate fees, and all required insurances as noted in the in the temporary construction crossing agreement.

OFFICE OF CHIEF ENGINEER, BRIDGES AND STRUCTURES - ATLANTA, GEORGIA

Date: 11/6/2019

File: BR1112131

Norfolk Southern Corporation
Public Improvements Projects - Construction Engineering Estimate



LOCATION: Columbus, Muscogee County, Georgia
NS FILE NO.: BR1112131
MILE POST: M-287.95 & M-288.10

DESCRIPTION: Construction Engineering & Inspection services associated with the Proposed Construction of the Buena Vista Road OHB and Crossing improvements to Ace Way

PROJECT SCOPE: The City of Columbus proposes to replace the existing Buena Vista Road at-grade crossing with a new Overhead Bridge Structure at Alabama Division milepost M-288.10. The project includes the construction of a roundabout adjacent to the existing Ace Way at-grade crossing at milepost M-287.95.

AECOM OFFICES PROVIDING ADMINISTRATION SUPPORT: Philadelphia, PA & Atlanta, GA
AECOM OFFICE PROVIDING ON-SITE INSPECTION: Atlanta, GA
ROUNDTRIP MILEAGE - OFFICE TO PROJECT SITE: 230 Miles
ROUNDTRIP TRAVEL TIME - OFFICE TO PROJECT SITE: 4 Hours
ESTIMATED CONSTRUCTION DURATION: 18 Months

Classification Codes
PP = Principal Professional
PM = Project Manager
SPE = Senior Project Engineer
PE = Project Engineer
DE = Design Engineer
SE = Staff Engineer
CI = Construction Inspector
SA = Senior Administration
AA = Administrative Assistant
SC = Secretarial/Clerical

		PP	PM	SPE	PE	DE	SE	CI	SA	AA	SC	TOTAL
		\$225.00	\$170.00	\$150.00	\$125.00	\$100.00	\$85.00	\$95.00	\$105.00	\$70.00	\$54.00	
		0	0	1.5	9	0	0	0	0	0.5	0	11
Preconstruction Field Meetings	Description:	Railroad Precon Meeting - Preparation, attendance and NS file minutes of the preconstruction meeting to be facilitated by the Railroad (AECOM) on-site to discuss specific Railroad requirements.		On-site	4							
				Travel	4							
				Minutes	1					0.5		
Sub Total		\$0.00	\$0.00	\$225.00	\$1,125.00	\$0.00	\$0.00	\$0.00	\$0.00	\$35.00	\$0.00	\$1,385

		PP	PM	SPE	PE	DE	SE	CI	SA	AA	SC	TOTAL
		\$225.00	\$170.00	\$150.00	\$125.00	\$100.00	\$85.00	\$95.00	\$105.00	\$70.00	\$54.00	
		0	0	26	58	0	0	0	0	8	0	92
Construction Submission Reviews		Hours listed for each submission include time required to perform means and methods reviews for impacts to railroad operations, applicable design calculation reviews, development of RFIs and Response Letters, distribution of response letters and filing of all correspondence. Hours include time for resubmissions of submittals.										
Submission 1:	Stormwater Pipe Installation			2	6					0.5		
Submission 2:	MSE Wall Construction			6	12					2		
Submission 3:	Pile Installation/Abutment Construction			2	6					0.5		
Submission 4:	Intermediate Bent Construction			6	12					2		
Submission 5:	Girder Erection Plan			6	12					2		
Submission 6:	Deck Placement			4	10					1		
Submission 7:												
Sub Total		\$0.00	\$0.00	\$3,900.00	\$7,250.00	\$0.00	\$0.00	\$0.00	\$0.00	\$560.00	\$0.00	\$11,710

		PP	PM	SPE	PE	DE	SE	CI	SA	AA	SC	TOTAL
		\$225.00	\$170.00	\$150.00	\$125.00	\$100.00	\$85.00	\$95.00	\$105.00	\$70.00	\$54.00	
		0	0	49	314	0	0	0	0	16	0	379
Field Views / Interim Inspections / Reporting												
Item 1	Description:	Stormwater Pipe Installation		On-site	8							
		Installation of the Stormwater Pipe under the railroad south of the proposed detour crossing location. Assumes two part-time visits.		Travel	8							
				Report	2					1		
Item 2	Description:	Construction of the Detour roadway		On-site	8							
		Construction of the roadway that will be used as a detour for the duration of the bridge construction. Assumes two part-time visits.		Travel	8							
				Report	2					1		
Item 3	Description:	MSE Wall Construction		On-site	20							
		Construction of the MSE walls located between the tracks and the new abutments. Assumes two full-time and one part-time visit.		Travel	12							
				Report	3					1.5		
Item 4	Description:	Adjacent Roadway Construction		On-site	24							
		Construction of the improvements to Ace Way as well as the parallel roadways. Assumes two full-time and two part-time visits		Travel	16							
				Report	4					2		
Item 5	Description:	Pile Installation/Abutment Construction		On-site	12							
		Construction of the new abutments adjacent to NS Property including the driving of piles, setting of formwork, etc. Assumes one full-time and one part-time visit.		Travel	8							
				Report	2					1		
Item 6	Description:	Intermediate Bent Construction		On-site	12							
		Construction of the new intermediate bent adjacent to NS Property including the location of cranes, formwork and pump/trucks. Assumes one full-time and one part-time visit.		Travel	8							
				Report	2					1		
Item 7	Description:	Pre-Erection Meeting		On-site	4							
		On-site pre-erection meeting as required by the NS special provisions. Assumes one part-time visit.		Travel	6							
				Report	1					0.5		
Item 8	Description:	Girder Erection		On-site	20							
		Erection of the girders including clearance measurements. Assumes two full-time visits and one part-time visit.		Travel	12							
				Report	3					1.5		
Item 9	Description:	Deck Placement		On-site	4							
		Placement of the concrete deck including location of the pump/trucks, monitoring of dumping/washing of trucks, and new clearance measurements. Assumes one part-time visit.		Travel	6							
				Report	1					0.5		

Norfolk Southern Corporation
Public Improvements Projects - Construction Engineering Estimate



LOCATION: Columbus, Muscogee County, Georgia
NS FILE NO.: BR1112131
MILE POST: M-287.95 & M-288.10

DESCRIPTION: Construction Engineering & Inspection services associated with the Proposed Construction of the Buena Vista Road OHB and Crossing improvements to Ace Way

PROJECT SCOPE: The City of Columbus proposes to replace the existing Buena Vista Road at-grade crossing with a new Overhead Bridge Structure at Alabama Division milepost M-288.10. The project includes the construction of a roundabout adjacent to the existing Ace Way at-grade crossing at milepost M-287.95.

AECOM OFFICES PROVIDING ADMINISTRATION SUPPORT: Philadelphia, PA & Atlanta, GA
AECOM OFFICE PROVIDING ON-SITE INSPECTION: Atlanta, GA
ROUNDRIP MILEAGE - OFFICE TO PROJECT SITE: 230 Miles
ROUNDRIP TRAVEL TIME - OFFICE TO PROJECT SITE: 4 Hours
ESTIMATED CONSTRUCTION DURATION: 18 Months

Classification Codes
PP = Principal Professional
PM = Project Manager
SPE = Senior Project Engineer
PE = Project Engineer
DE = Design Engineer
SE = Staff Engineer
CI = Construction Inspector
SA = Senior Administration
AA = Administrative Assistant
SC = Secretarial/Clerical

	PP	PM	SPE	PE	DE	SE	CI	SA	AA	SC	TOTAL
Item 10	\$225.00	\$170.00	\$150.00	\$125.00	\$100.00	\$85.00	\$95.00	\$105.00	\$70.00	\$54.00	
Removal of Existing Buena Vista Road				8							
Description: Removal of the existing Buena Vista Road adjacent to the existing at-grade crossing. Assumes two part-time visits				8							
			3	2					1		
Periodic Visits				24							
Description: Inspections for compliance with railroad special provisions over the course of the construction schedule when not on-site for major work activities. Assume six part-time visits.				24							
			9	6					3		
Site Clean-up and Restoration				4							
Description: Pre-final walkthrough for development of punch list items.				4							
			1.5	1					0.5		
Final Inspection				4							
Description: Final punch list review and on-site final walkthrough for protection of railroad interests and right of way.				4							
			1.5	1					0.5		
Close Out Report				4							
Description: Development of NS Project Acceptance Letter, AECOM project close out report, and distribution of close out documents to sponsor and NS.				4					1		
Sub Total	\$0.00	\$0.00	\$7,350.00	\$39,250.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,120.00	\$0.00	\$47,720

	PP	PM	SPE	PE	DE	SE	CI	SA	AA	SC	TOTAL
Project Coordination	0	0	18	18	0	0	0	0	9	0	45
Description: Routine coordination with Project Sponsor, Sponsor's Contractor and NS throughout the project duration. Includes telephone and email correspondence and associated summary meeting minutes.			18	18					9		
Sub Total	\$0.00	\$0.00	\$2,700.00	\$2,250.00	\$0.00	\$0.00	\$0.00	\$0.00	\$630.00	\$0.00	\$5,580

	PP	PM	SPE	PE	DE	SE	CI	SA	AA	SC	TOTAL
Project Management	18	0	0	0	0	0	0	0	18	0	36
Description: Project start up, project financial and status tracking, database management and reporting, and develop, review, and SAP processing of project invoices	18								18		
Sub Total	\$4,050.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,260.00	\$0.00	\$5,310

Other Direct Costs Items											
Mileage:	230	Miles per Roundtrip	@	\$0.580	Per Mile	x	31	Trips	=	\$4,135.40	
Subsistence/Tolls/Other:			@	\$30.00	Per Trip	x	31	Trips	=	\$930.00	
Car Rental:			@	\$75.00	Per Trip	x	0	Trips	=	\$0.00	
Postage:										\$0.00	
Sub Total											\$5,065

NOTES:
Estimate Prepared: **November 6, 2019**
Estimate Void after: **180 Days**
Previous Estimate: **N/A** (supplemented/superseded by this estimate)
Billing Rates and Direct Non-Salary Costs per 2019-2021 Engineering Service Contract Agreement. All costs shown are approximate with only actual incurred costs being invoiced.
Final cost rounded up to the nearest \$100.

TOTAL MAN-HOURS: 563
TOTAL COST: \$76,800