

# Nauman Smith

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March 17, 2020

**VIA ELECTRONIC FILING**

Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
PO Box 3265  
Harrisburg, PA 17105-3265

**RE: Bridge structure where State Route 1025 crosses over a single track of Delaware and Hudson Railway Company, Inc. (264 293 K) in Nicholson Borough, Wyoming County, Docket No.: M-2013-2364201**

**Investigation upon the Commission's own motion to determine the condition and disposition of six (6) existing structures carrying various highways above the grade of the tracks of the Canadian Pacific Railroad in Great Bend Township, New Milford Township, Brooklyn Township, Hop Bottom Borough, Lathrop Township, Susquehanna County and Benton Township, Lackawanna County  
Docket No.: I-2015-2472242**

Dear Secretary Chiavetta:

Enclosed are the revised bridge repair plans of Norfolk Southern Railway Company for S.R. 1025, S.R. 2032 and S.R. 2041, which address the comments and objections of the Pennsylvania Department of Transportation dated November 7, 2019, in the above-referenced matter. These plans are being sent to all parties on the attached service list for their review and to the Commission for its review and approval.

Sincerely yours,



Benjamin C. Dunlap, Jr.

BCDjr/io  
attachment  
cc w/ attachment: all parties of record

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**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Bridge Structure where State Route 1025 crosses over a single track of Delaware and Hudson Railway Company, Inc (264 293 K) in Nicholson Borough, Wyoming County	: M-2013-2364201 : : ELECTRONICALLY FILED : :
Investigation upon the Commission's own motion to determine the condition and disposition of six (6) existing structures carrying various highways above the grade of the tracks of the Canadian Pacific Railroad in Great Bend Township, New Milford Township, Brooklyn Township, Hop Bottom Borough, Lathrop Township, Susquehanna County, and Benton Township, Lackawanna County	: I-2015-2472242 : : ELECTRONICALLY FILED : : : : : : : :

**CERTIFICATE OF SERVICE**

I hereby certify that I served one (1) copy of *Norfolk Southern Railway Company's Revised Bridge Repair Plans* in the above-referenced matter, this day by electronic mail, addressed to:

Jennifer Brown-Sweeney, Esquire  
PennDOT, Office of Chief Counsel  
PO Box 8212  
Harrisburg, PA 17105  
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Michael J. Giangrieco, Esquire  
Solicitor for Susquehanna County  
PO Box 126  
Montrose, PA 18801-0126  
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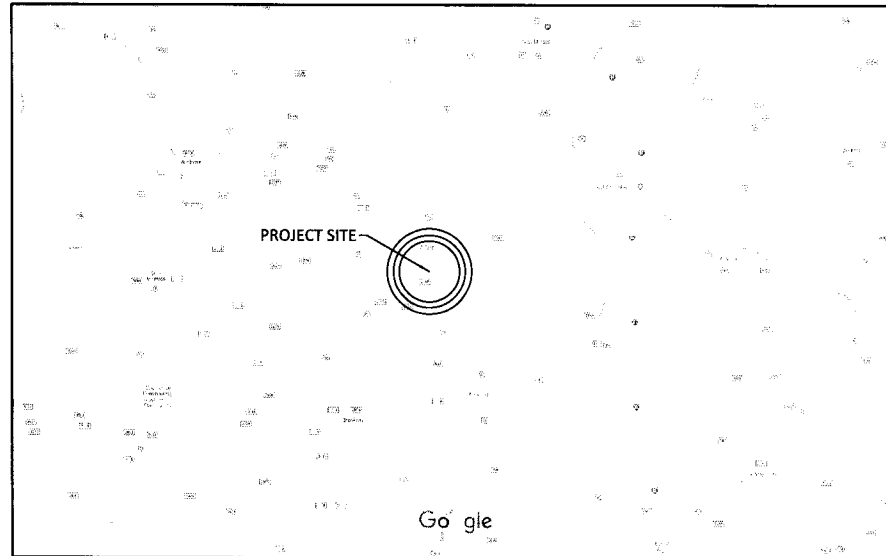
Ijeoma N. Okereke, Secretary to  
Benjamin C. Dunlap Jr., Esquire

Date: March 17, 2020

# **OVERPASS SR – 2032**



ALFORD, PENNSYLVANIA  
OVERPASS SR-2032 REPAIR



VICINITY MAP



		<b>NORFOLK SOUTHERN</b>	
NORTHERN REGION		HARRISBURG DIV	
OVERPASS SR-2032			
HA LINE, ALFORD, PA			
BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA.	
DRAWING TITLE: COVER SHEET			
DDM MCC	VAL SEC	MAP	HA-640.21
CHK DBG	FILE	DATE	03/13/2020
SHEET NUMBER 1 OF 14		DRAWING NUMBER HA-640.21	

REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS
RAILROAD CONSULTANTS, PLLC 213 UPTOWN SQUARE MURFREESBORO, TN 37129 (p) 615.663.1142			

**GENERAL NOTES**

- CONSTRUCTION AND MATERIAL SPECIFICATIONS: CURRENT EDITION AMERICAN RAILWAY ENGINEERING & MAINTENANCE-OF-WAY "MANUAL FOR RAILWAY ENGINEERING", PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION CURRENT EDITION EXCEPT AS SUPERCEDED BY THESE PLANS, THE CONTRACT AND NORFOLK SOUTHERN SPECIFICATIONS.
- THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT, DUE TO THE NATURE OF RECONSTRUCTION PROJECTS, THE EXACT EXTENT OF RECONSTRUCTION WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO COMMENCEMENT OF WORK. THESE CONTRACT DOCUMENTS HAVE BEEN PREPARED BASED ON FIELD INSPECTION AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO CONSTRUCTION DETAILS AND WORK QUANTITIES. THE CONTRACTOR SHALL PERFORM THE WORK IN ACCORDANCE WITH FIELD CONDITIONS AS ORDERED BY THE ENGINEER.
- THE CONTRACTOR SHALL NOTE THAT ADDITIONAL WORK MAY BE REQUIRED AS THE CONTRACT PROGRESSES WHICH IS NOT SHOWN OR NOTED ON THE PLANS. THIS WORK SHALL BE PERFORMED BY THE CONTRACTOR AS ORDERED BY THE ENGINEER AND PAYMENT SHALL BE MADE AT THE UNIT BID PRICE FOR THE APPROPRIATE ITEMS, SEE SPECIFICATIONS WITHIN CONTRACT PROPOSAL.
- THE CONSTRUCTION OF THE PROJECT SHALL PROCEED IN A CONTINUOUS, SYSTEMATIC AND EXPEDITIOUS MANNER FROM BEGINNING TO COMPLETION. THE CONTRACTOR WILL BE REQUIRED TO PLACE SUFFICIENT EQUIPMENT, LABOR, ETC. ON THE PROJECT SO THAT THE WORK MAY PROGRESS IN ACCORDANCE WITH THE APPROVED CONSTRUCTION SCHEDULE.
- THE CONTRACTOR SHALL VISIT THE SITE BEFORE BIDDING TO FAMILIARIZE HIMSELF WITH THE PRESENT CONDITION AND TO JUDGE FOR HIMSELF, THE EXTENT AND NATURE OF THE WORK TO BE DONE UNDER THIS CONTRACT. NO EXTRA COMPENSATION WILL BE ALLOWED HIM BECAUSE OF HIS FAILURE TO INCLUDE IN THE CONTRACTOR'S BID, ALL ITEMS AND MATERIALS WHICH HE IS REQUIRED TO FURNISH IN ACCORDANCE WITH THE CONTRACT PLANS.
- DIMENSIONS OF THE EXISTING STRUCTURES SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THE CONTRACTOR SHALL TAKE ALL SUCH FIELD MEASUREMENTS AS ARE NECESSARY TO ASSURE PROPER CONSTRUCTION OF THE FINISH WORK.
- THERE SHALL BE NO CLAIM MADE BY THE CONTRACTOR AGAINST THE RAILROAD FOR WORK PERTAINING TO MODIFICATIONS AS MAY BE REQUIRED DUE TO ANY DIFFERENCE BETWEEN ACTUAL FIELD CONDITIONS AND THOSE SHOWN BY THE DETAILS AND DIMENSIONS IN THE CONTRACT PLANS OR THE RECORD DRAWINGS.
- THE CONTRACTOR IS ADVISED THAT ADDITIONAL "NOTES" WILL BE FOUND ON SUBSEQUENT SHEETS OF THE CONTRACT PLANS AND SUCH "NOTES" WHILE PERTAINING TO THE SPECIFIC DRAWINGS THEY ARE PLACED ON, ALSO SUPPLEMENT THE GENERAL NOTES LISTED HERE.
- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING STRUCTURE, TRACK, UTILITIES OR ADJACENT PROPERTIES OR FACILITIES, CAUSED BY HIS OPERATIONS, WHICH ARE NOT INCLUDED AS PART OF THE INTENDED WORK. ANY DAMAGE TO THE EXISTING STRUCTURE OR ADJACENT PROPERTIES, SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR WITHOUT COST TO THE RAILROAD AND TO THE SATISFACTION OF THE ENGINEER.
- IF, DURING THE REPAIR OPERATIONS, ANY COMPONENTS OF THE BRIDGE THAT ARE NOT SCHEDULED TO BE REMOVED, SUCH AS ABUTMENT STEMS, WINGWALLS, GIRDERS OR BEARINGS ARE DAMAGED BY THE CONTRACTOR'S PERSONNEL OR EQUIPMENT, THEY SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER, AT NO COST TO THE RAILROAD.
- THE CONTRACTOR IS REQUIRED TO PROTECT HIS WORKERS AT ALL TIMES IN CONFORMANCE WITH ALL APPLICABLE OSHA REGULATIONS AND FRA BRIDGE WORKER SAFETY RULES.
- THE CONTRACTOR IS ADVISED THAT THERE IS NO ELECTRIC POWER DISTRIBUTION SYSTEM AVAILABLE AT THE BRIDGE FOR HIS USE.
- ALTERATION OF THE CONSTRUCTION PLANS AND STRUCTURAL DETAILS ARE NOT PERMITTED WITHOUT EXPRESS PERMISSION OF NORFOLK SOUTHERN'S CHIEF ENGINEER OF BRIDGES AND STRUCTURES.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS TO COMPLETE THE WORK.
- ALL TRAFFIC CONTROL MEASURES NEEDED TO COMPLETE WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION SPECIFICATION AND ANY LOCAL CODES OR ORDINANCES THAT MAY APPLY.

**DESIGN LOADING:**

- ALL LOADS ARE PER AASHTO CURRENT EDITION.

**DEMOLITION PLAN & ERECTION PLAN NOTES:**

- THE CONTRACTOR IS REQUIRED TO SUBMIT PLANS FOR THE SAFE DEMOLITION AND ANY NECESSARY FORMING OF THE EXISTING STRUCTURE IN ORDER TO PERFORM ALL NEEDED REPAIRS, TO THE RAILROAD PRIOR TO BEGINNING WORK.
- THE CONTRACTOR SHALL DISPOSE OF ALL EXCAVATED & REMOVED SUBSTRUCTURE & FILL MATERIALS AND DEMOLISHED MATERIALS OFF-SITE IN A LEGAL MANNER UNLESS OTHERWISE DIRECTED BY N.S. REPRESENTATIVES IN THE FIELD.
- THE CONTRACTOR IS RESPONSIBLE FOR THE TRAFFIC CONTROL PLAN, AND THIS SHOULD BE INCLUDED IN THE BID PRICE FOR MOBILIZATION OF THE EXISTING STRUCTURE.

**PROTECTION OF RAILROAD NOTES:**

- WHERE APPLICABLE, OPERATIONS SHALL BE COORDINATED WITH THE RAILROAD SO AS NOT TO INTERFERE WITH THE CONTINUED OPERATIONS OF TRAINS. A RAILROAD FLAGMAN (SUPPLIED BY NORFOLK SOUTHERN) SHALL BE PRESENT FOR ANY AND ALL WORK ABOVE OR UNDERNEATH THE BRIDGE ADJACENT TO THE TRACK.
- THE CONTRACTOR IS REQUIRED TO FULLY COOPERATE WITH THE NORFOLK SOUTHERN FLAGMAN AND/OR NORFOLK SOUTHERN REPRESENTATIVE & IMMEDIATELY REMOVE ALL EQUIPMENT & PERSONNEL WORKING NEAR THE TRACK WHEN DIRECTED AS SUCH BY THE FLAGMAN.

**UTILITIES:**

- THE CONTRACTOR SHALL BE AWARE OF THE OVERHEAD ELECTRIC AND UTILITY LINES ABOVE/UNDER AND PARALLEL TO THE EXISTING BRIDGE.

**OTHER:**

- THE WORK FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE NORFOLK SOUTHERN STANDARD SPECIFICATIONS FOR MATERIALS AND CONSTRUCTION DATED JANUARY 2019, PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION, CURRENT EDITION AND ANY SPECIAL PROVISIONS PROVIDED HEREIN.
- NS WILL FURNISH A FLAGMAN AT NO COST TO THE CONTRACTOR. THE CONTRACTOR WILL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE NS FLAGMAN.
- THE CONTRACTOR SHALL SUBMIT TO NS A PROPOSED CONSTRUCTION SCHEDULE PRIOR TO BEGINNING WORK AND WILL SCHEDULE A PRECONSTRUCTION MEETING ONCE A CONTRACT HAS BEEN AWARDED.
- THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT NS DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS. THE CONTRACTOR SHOULD VERIFY LOCATIONS WITH THE UTILITY COMPANIES NOT LESS THAN 72 HOURS BEFORE STARTING EXCAVATION ACTIVITIES.
- RAILROAD RIGHT OF WAY LINES, IF SHOWN, WERE OBTAINED FROM VALUATION MAPS. ALL RIGHT OF WAY AND PROPERTY LINES ARE SHOWN FOR INFORMATION PURPOSES ONLY AS THEY HAVE NOT BEEN VERIFIED IN THE FIELD.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY LOCAL CONSTRUCTION PERMITS THAT MAY BE REQUIRED FOR CONSTRUCTION OF THIS PROJECT.
- ANY SURVEYS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL OBTAIN ANY TEMPORARY CONSTRUCTION ENTRANCE AND/OR DRIVEWAY PERMITS FROM THE APPROPRIATE GOVERNING AGENCY.
- ON SITE AND GENERATED CONSTRUCTION DEBRIS IS TO BE DISPOSED OF AS NON-REGULATED SOLID WASTE IN COMPLIANCE WITH LOCAL REGULATIONS. IF SUSPECTED ENVIRONMENTAL PROBLEMS ARE ENCOUNTERED, CONTACT THE NS ENVIRONMENTAL PROTECTION DEPARTMENT TO ASSIST IN THEIR PROPER HANDLING AND REMOVAL.
- THE CONTRACTOR SHALL COORDINATE WITH NS SIGNALS DEPARTMENT FOR THE LOCATIONS OF SIGNAL WIRE WHETHER LIVE OR DEAD BEFORE ANY EXCAVATION WORK.
- ALL CONCRETE REPAIRS SHALL BE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION, CURRENT EDITION.

**SCOPE OF WORK:**

- PROVIDE TRAFFIC CONTROL
- DEMO EXISTING PARAPET WALL AND JERSEY BARRIERS AS REQUIRED
- REPAIR EXISTING BRIDGE SUBSTRUCTURE AND SUPERSTRUCTURE AS NOTED
- REBUILD JERSEY BARRIER WALL AND PROTECTION FENCE
- ATTACH "THREE BEAM TO BRIDGE BARRIER" TO BRIDGE AND EXISTING GUARDRAIL AS APPROPRIATE
- BARRIER WALL CORNERS WITHOUT EXISTING GUARDRAIL TO ATTACH SHALL RECEIVE PENNDOT APPROVED END TREATMENT
- REOPEN STRUCTURE TO NORMAL TRAFFIC

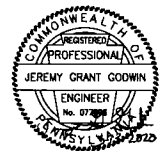
**INDEX OF DRAWINGS**

DESCRIPTION	SHEET NO	REV. DATE
COVER SHEET	1	03-13-2020
GENERAL NOTES & INDEX OF DRAWINGS	2	03-13-2020
GENERAL SITE PLAN	3	03-13-2020
EXISTING NORTH ELEVATION & CROSS-SECTION	4	03-13-2020
EXISTING SOUTH ELEVATION	5	03-13-2020
EAST & WEST ABUTMENT ELEVATION	6	03-13-2020
PROPOSED TYPE 1 CONCRETE REPAIR	7	03-13-2020
PROPOSED TYPE 2 CONCRETE REPAIR	8	03-13-2020
PROPOSED CORNER CONCRETE REPAIR	9	03-13-2020
PROPOSED BARRIER WALL	10	03-13-2020
PROPOSED PROTECTIVE FENCE	11	03-13-2020
PROPOSED PROTECTIVE FENCE - DETAILS	12	03-13-2020
PROPOSED THREE-BEAM TO BRIDGE BARRIER WALL	13	03-13-2020
THREE-BEAM TO BRIDGE BARRIER WALL - DETAILS	14	03-13-2020

**ESTIMATE OF QUANTITIES**

BID ITEM	DESCRIPTION	QTY	UNIT
1.	MOBILIZATION	1	LS
2.	NORTH SPANDREL WALL REPAIRS* (APPROX. 400 SF)	1	LS
3.	SOUTH SPANDREL WALL REPAIRS* (APPROX. 650 SF)	1	LS
4.	EAST ABUTMENT REPAIRS* (APPROX. 60 SF)	1	LS
5.	WEST ABUTMENT REPAIRS* (APPROX. 75 SF)	1	LS
6.	PROPOSED BRIDGE BARRIER WALL W/ PROTECTION (APPROX. 300 LF)	1	LS
7.	PROPOSED GUARDRAIL WITH END TREATMENT (APPROX. 25 LF)	1	LS
8.	PERFORMANCE BOND	1	LS
	PAYMENT BOND	1	LS

\*INCLUDES EXCAVATION, REMOVAL OF LOOSE CONCRETE, CONCRETE, EPOXY, REBAR, HAULING OFF ANY DEBRIS AND RESTORING THE SITE TO ITS ORIGINAL CONDITION.

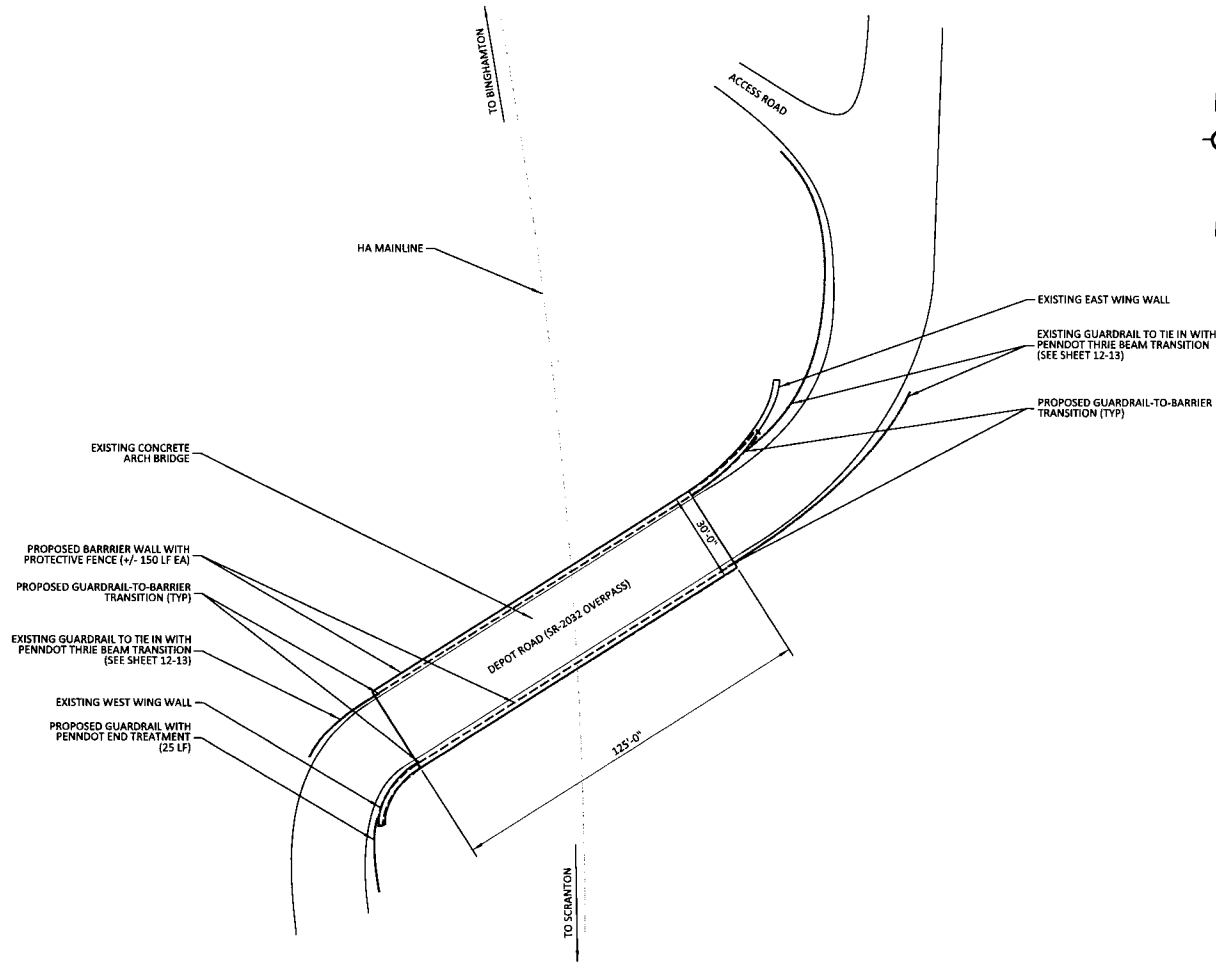


<b>NS NORFOLK SOUTHERN</b>	
NORFOLK SOUTHERN RAILWAY	HARRISBURG DIV
<b>OVERPASS SR-2032</b>	
HA LINE, ALFORD, PA	
<b>BRIDGE REPAIRS</b>	
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.	
DRAWING TITLE: <b>GENERAL NOTES &amp; INDEX OF DRAWINGS</b>	
DDN MCC	VAL SEC MAP
CHR DBG	FILE
MILE POST HA-640.21	
DATE 03/13/2020	
SHEET NUMBER	2 OF 14
DRAWING NUMBER	HA-640.21

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CGBI	12-31-19	PENNDOT REVISIONS
REV BY	DATE	DESCRIPTION

**NOTES:**

1. ALL SURVEY INFORMATION AND DIMENSIONS SHOWN OR REFERENCED IN THIS PLAN OR ATTACHED DOCUMENTS ARE BASED ON ENGINEERS SITE VISIT, PRELIMINARY SURVEY, RECORD DRAWINGS, GIS INFORMATION AND OTHER METHODS AS AVAILABLE TO THE ENGINEER AT THE TIME OF PUBLICATION. THIS DOCUMENT IN NO WAY GUARANTEES THE ACCURACY OR PRECISION OF THE ABOVE LISTED INFORMATION. THIS INFORMATION IS GIVEN AS FOR THE PURPOSE OF GENERAL REFERENCE
2. THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS, QUANTITIES AND SIZES OF MATERIALS NEEDED TO COMPLETE THE SCOPE OF WORK IN AN APPROVED AND STANDARD MANNER, AT THEIR OWN RISK.



**GENERAL SITE PLAN**  
SCALE : NOT TO SCALE



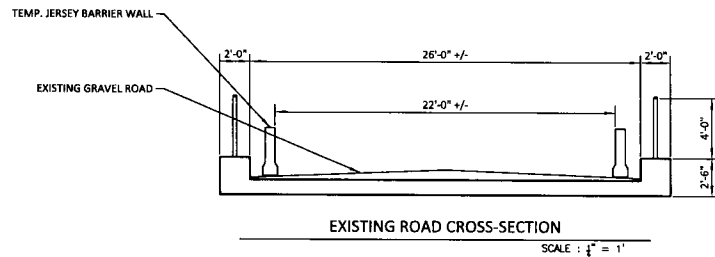
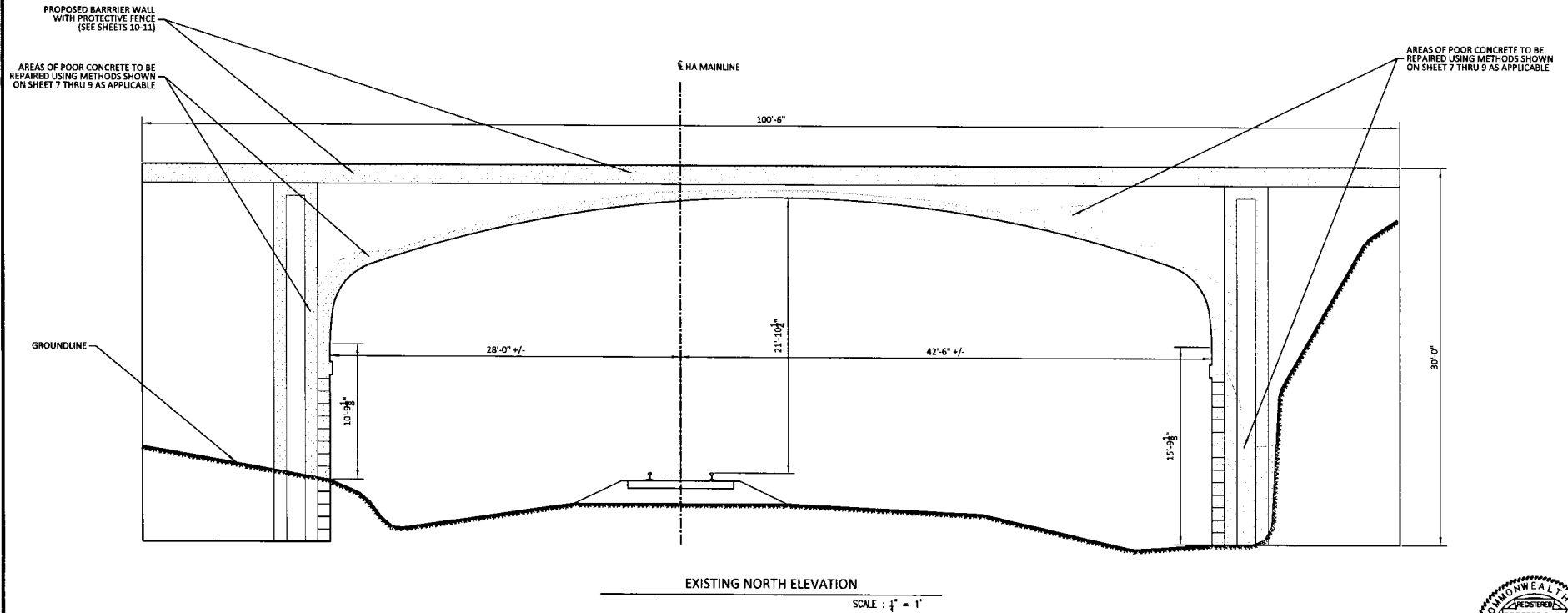
		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV.
<b>OVERPASS SR-2032</b> HA LINE, ALFORD, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA.	
DRAWING TITLE: <b>GENERAL SITE PLAN</b>			
CHK MCC	VAL SEC	MAP	MILE POST HA-640.21
CHK DBG	FILE	DATE	03/13/2020
SHEET NUMBER 3 OF 14		DRAWING NUMBER HA-640.21	

REV	BY	DATE	DESCRIPTION
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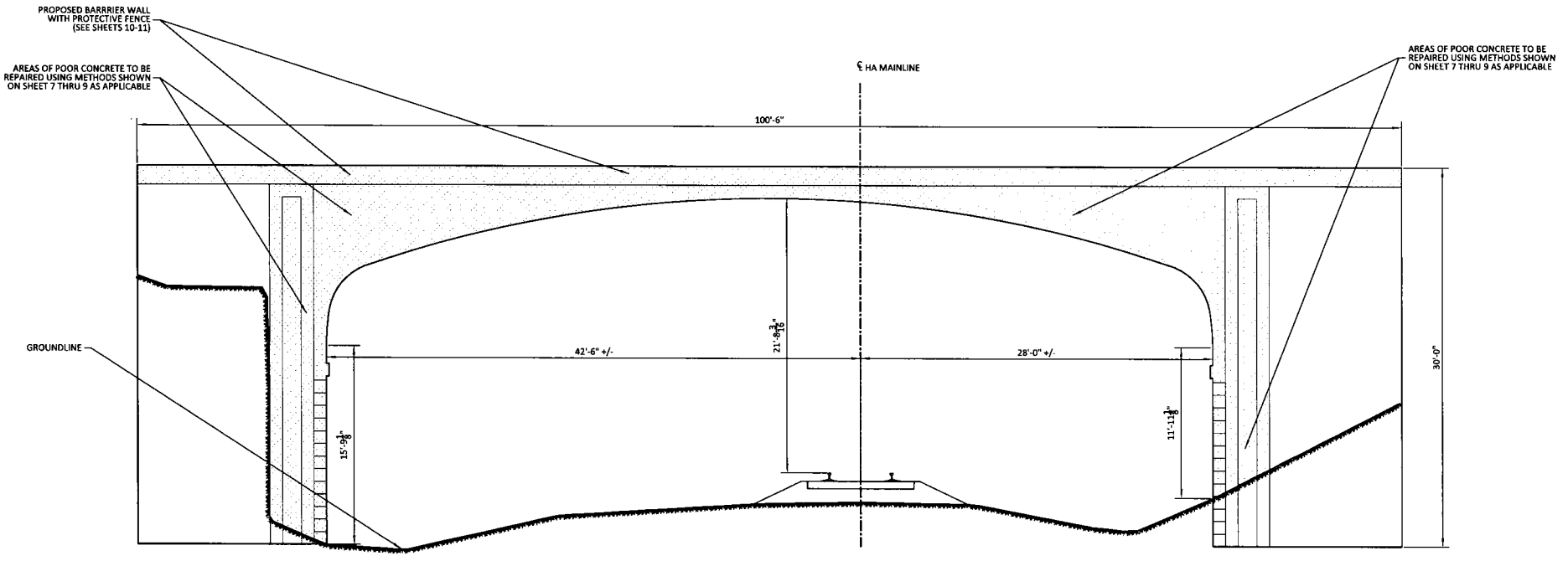
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		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV.
<b>OVERPASS SR-2032</b>			
HA LINE, ALFORD, PA			
BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA	
DRAWING TITLE: <b>EXISTING NORTH ELEVATION &amp; CROSS-SECTION</b>			
DGN MCC	VAL SEC	MAP	MILE POST HA-640.21
CRK DBG	FILE	DATE	03/13/2020
SHEET NUMBER	4 OF 14	DRAWING NUMBER	HA-640.21



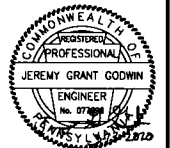
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EXISTING NORTH ELEVATION

SCALE: 1/4" = 1'

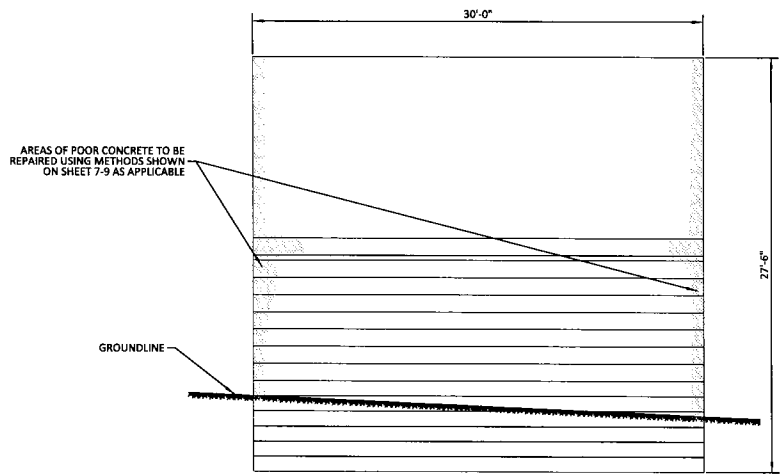


		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV
<b>OVERPASS SR-2032</b> HA LINE, ALFORD, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA.	
DRAWING TITLE: <b>EXISTING SOUTH ELEVATION</b>			
DDM MCC	VAL SEC	MAP	MILE POST HA-640.21
CHK DBG	FILE		DATE 03/13/2020
SHEET NUMBER 5 OF 14		DRAWING NUMBER HA-640.21	

REV	BY	DATE	DESCRIPTION
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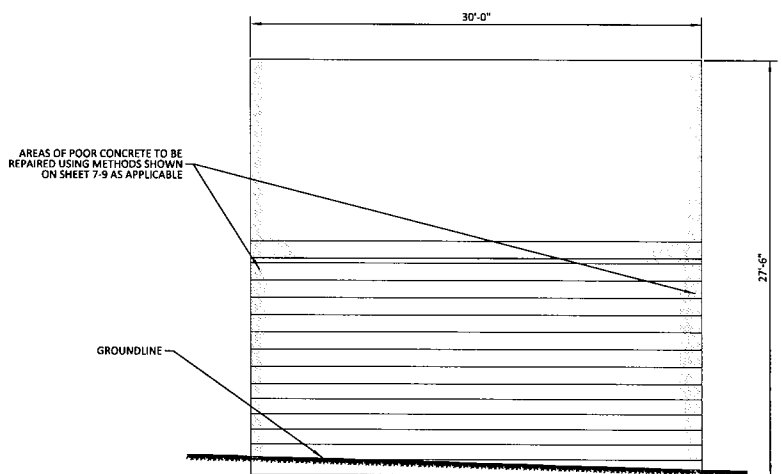
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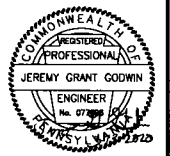
EXISTING EAST ABUTMENT ELEVATION

SCALE :  $\frac{1}{4}'' = 1'$



EXISTING WEST ABUTMENT ELEVATION

SCALE :  $\frac{1}{4}'' = 1'$



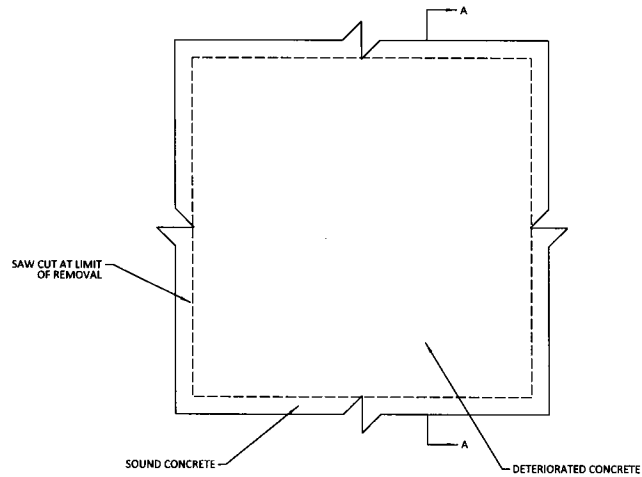
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		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV
<b>OVERPASS_SR-2032</b> HA LINE, ALFORD, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA	
DRAWING TITLE: <b>EAST &amp; WEST ABUTMENT ELEVATION</b>			
DGN/MCC	VAL/SEC	MAP	MILE POST HA-640.21
ENR/DBG	FILE	DATE	03/13/2020
SHEET NUMBER 6 OF 14		DRAWING NUMBER HA-640.21	

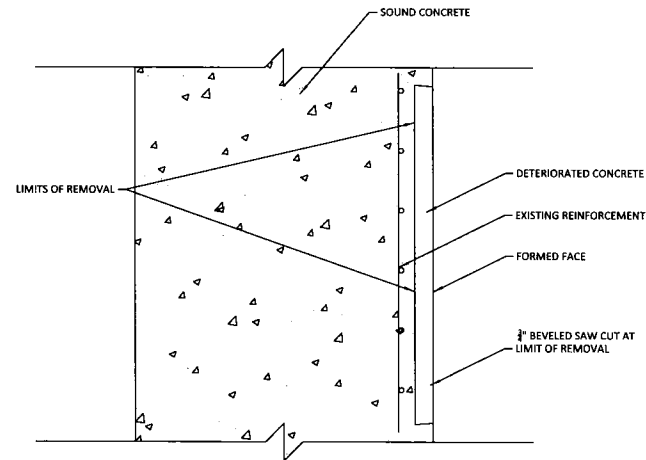
**NOTES:**

1. ALL REPAIRS SHALL BE MADE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION BC-783M
2. SQUARE OFF DETERIORATED CONCRETE TO SOUND CONCRETE WITH A SAWCUT OF  $\frac{3}{8}$ " MAXIMUM.
3. REMOVE ALL LOOSE AND DELAMINATED CONCRETE TO PROVIDE A SOUND BOND BETWEEN EXISTING CONCRETE AND PATCHING MATERIAL.
4. APPLY A RAPID HARDENING CONCRETE PATCHING MATERIAL FROM A MANUFACTURER LISTED IN BULLETIN 15 UNDER MISCELLANEOUS POLYMER MODIFIED AND SPECIAL CEMENTS, MORTARS AND CONCRETES, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.



ELEVATION VIEW (TYP)

SCALE : NOT TO SCALE



SECTION A-A (TYP)

SCALE : NOT TO SCALE

NOTE:  
THIS REPAIR IS TO BE USED FOR REPAIRS ON UNDERSIDE OF DECK, ELEVATIONS AND REPAIRS TO PORTIONS OF DELAMINATED FACES OF ABUTMENTS UP TO 3/4" THICKNESS.



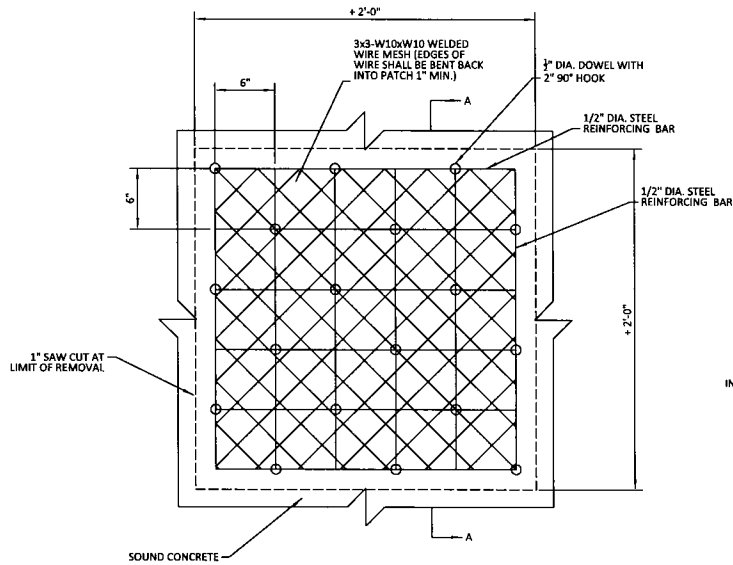
		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV.
<b>OVERPASS SR-2032</b> HA LINE, ALFORD, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.			
DRAWING TITLE: <b>PROPOSED TYPE 1 CONCRETE REPAIR</b>			
DCM NCC	VLM SEC	MMP	MILE POST HA-640.21
CHK DBG	F/E		DATE 03/13/2020
SHEET NUMBER 7 OF 14		DRAWING NUMBER HA-640.21	

REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS

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MURFREESBORO, TN 37129  
(p) 615.663.1142

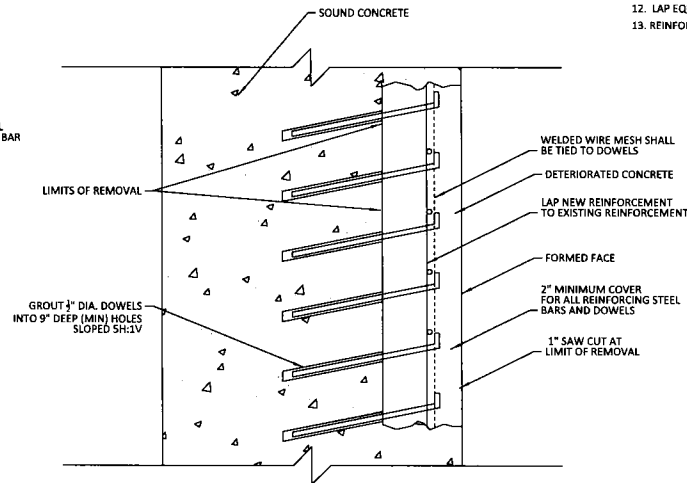
**NOTES:**

1. ALL REPAIRS SHALL BE MADE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION BC-783M.
2. SQUARE OFF DETERIORATED CONCRETE TO SOUND CONCRETE WITH A SAWCUT OF 3/4" MINIMUM TO 1" MAXIMUM BUT NOT TO THE DEPTH OF THE REINFORCEMENT STEEL. BACK BEVEL EDGE BEYOND SAWCUT.
3. USE HAND TOOLS TO REMOVE ALL LOOSE AND DELAMINATED CONCRETE THAT PROVIDES A SOUND BOND BETWEEN EXISTING CONCRETE AND NEW CONCRETE. PNEUMATIC HAMMERS WITH IMPACT RATINGS OF 30 FT/LB OR LESS MAY BE USED IF REQUIRED.
4. IF DETERIORATED CONCRETE EXTENDS BEYOND THE PRIMARY REINFORCEMENT, REMOVE THE CONCRETE TO AT LEAST 3/4" BEHIND THE REINFORCEMENT.
5. APPLY AN EPOXY BONDING COMPOUND BETWEEN THE EXISTING AND THE NEW CLASS AA CEMENT CONCRETE.
6. USE DOWELS ONLY WHEN W DIMENSION OF DETERIORATED CONCRETE IS GREATER THE 2'-0" AND NEW OR EXISTING REINFORCEMENT CANNOT ADEQUATELY BE DEVELOPED BY LAPPING WITH EXISTING REINFORCEMENT.
7. USE A PACHOMETER TO LOCATE EXISTING REINFORCEMENT WHEN DRILLING DOWEL HOLES TO AVOID DRILLING THRU EXISTING BARS.
8. AN APPROVED EPOXY ANCHORING SYSTEM IN 90° HOLES MAY REPLACE GROUT IN SLOPED HOLES. USE A 6" MINIMUM EMBEDMENT AND IN ACCORDANCE WITH THE MANUFACTURES' INSTRUCTIONS.
9. A #4 DEFORMED REINFORCEMENT BENT "L" BAR MAY REPLACE THE 1/2" DIA DOWEL HOOK.
10. ALTERNATE WIRE MESH MAY BE SUBSTITUTED FOR 3X3-W10XW10, PROVIDED WIRE SPACING DOES NOT EXCEED 4" AND AN EQUIVALENT STEEL AREA IS PROVIDED, NEW REINFORCEMENT BARS MAY BE OMITTED IF WIRE MESH STEEL AREA EXCEEDS EXISTING REINFORCEMENT.
11. CLEAN EXISTING REINFORCEMENT BY MECHANICAL MEANS.
12. LAP EQUIVALENT NEW REINFORCEMENT TO THE EXISTING REINFORCEMENT AS DIRECTED.
13. REINFORCEMENT BARS TO BE EPOXY COATED.



ELEVATION VIEW (TYP)

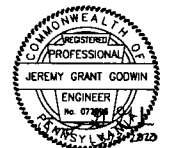
SCALE : NOT TO SCALE



SECTION A-A (TYP)

SCALE : NOT TO SCALE

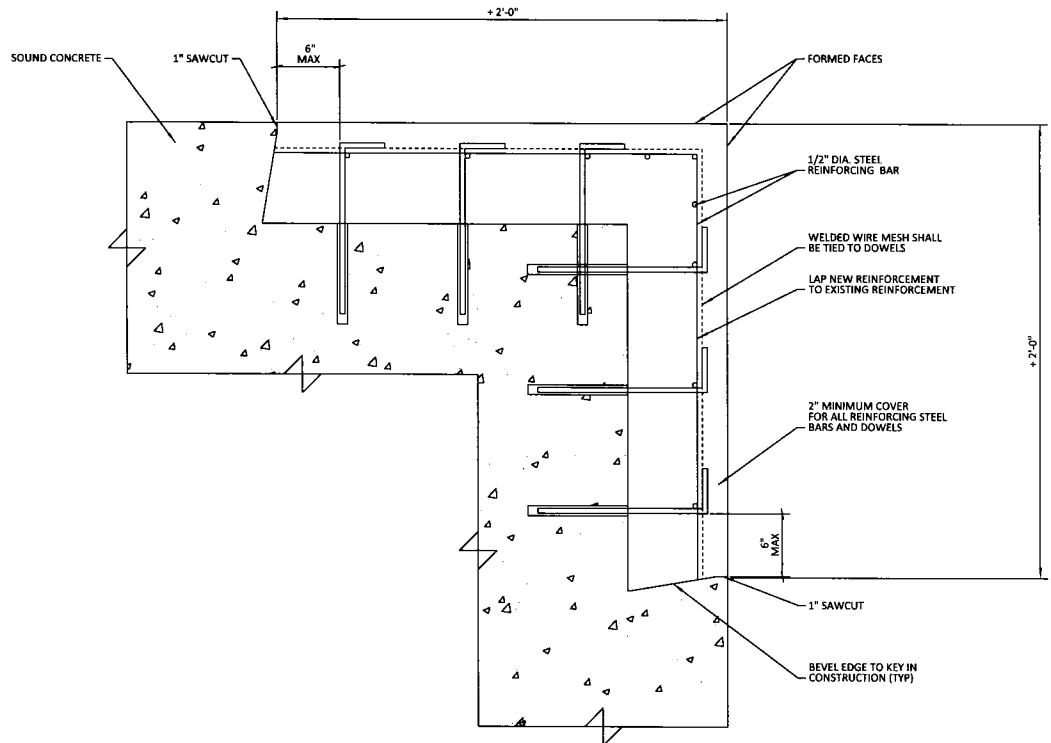
NOTE:  
THIS REPAIR IS TO BE USED FOR REPAIRS ON UNDERSIDE OF DECK, ELEVATIONS AND REPAIRS TO PORTIONS OF DELAMINATED FACES OF ABUTMENTS OVER 3/4" THICKNESS.



REV	BY	DATE	DESCRIPTION
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<b>NS NORFOLK SOUTHERN</b>	
NORTHERN REGION	HARRISBURG DIV
OVERPASS SR-2032	
HA LINE, ALFORD, PA	
BRIDGE REPAIRS	
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA	
DRAWING TITLE: PROPOSED TYPE 2 CONCRETE REPAIR	
DGN MCC	VAL SEC
MAP	MILE POST HA-640.21
CHK DBG	FILE
	DATE 03/13/2020
SHEET NUMBER 8 OF 14	DRAWING NUMBER HA-640.21



CORNER REPAIR DETAIL (TYP)

SCALE : NOT TO SCALE

NOTE:  
THIS REPAIR IS TO BE USED FOR REPAIRS ON UNDERSIDE OF DECK, ELEVATIONS AND REPAIRS TO PORTIONS OF DELAMINATED FACES OF ABUTMENTS OVER 3/4" THICKNESS.

**NOTES:**

1. ALL REPAIRS SHALL BE MADE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION BC-783M.
2. SQUARE OFF DETERIORATED CONCRETE TO SOUND CONCRETE WITH A SAWCUT OF 3/4" MINIMUM TO 1" MAXIMUM BUT NOT TO THE DEPTH OF THE REINFORCEMENT STEEL. BACK BEVEL EDGE BEYOND SAWCUT.
3. USE HAND TOOLS TO REMOVE ALL LOOSE AND DELAMINATED CONCRETE THAT PROVIDES A SOUND BOND BETWEEN EXISTING CONCRETE AND NEW CONCRETE. PNEUMATIC HAMMERS WITH IMPACT RATINGS OF 30 FT/LB OR LESS MAY BE USED IF REQUIRED.
4. IF DETERIORATED CONCRETE EXTENDS BEYOND THE PRIMARY REINFORCEMENT, REMOVE THE CONCRETE TO AT LEAST 3/4" BEHIND THE REINFORCEMENT.
5. APPLY AN EPOXY BONDING COMPOUND BETWEEN THE EXISTING AND THE NEW CLASS AA CEMENT CONCRETE.
6. USE DOWELS ONLY WHEN W DIMENSION OF DETERIORATED CONCRETE IS GREATER THE 2'-0" AND NEW OR EXISTING REINFORCEMENT CANNOT ADEQUATELY BE DEVELOPED BY LAPPING WITH EXISTING REINFORCEMENT.
7. USE A PACHOMETER TO LOCATE EXISTING REINFORCEMENT WHEN DRILLING DOWEL HOLES TO AVOID DRILLING THRU EXISTING BARS.
8. AN APPROVED EPOXY ANCHORING SYSTEM IN 90° HOLES MAY REPLACE GROUT IN SLOPED HOLES. USE A 6" MINIMUM EMBEDMENT AND IN ACCORDANCE WITH THE MANUFACTURES INSTRUCTIONS.
9. A #4 DEFORMED REINFORMENT BENT "L" BAR MAY REPLACE THE 1/2" Ø DOWEL HOOK.
10. ALTERNATE WIRE MESH MAY BE SUBSTITUTED FOR 3X3-W10XW10, PROVIDED WIRE SPACING DOES NOT EXCEED 4" AND AN EQUIVALENT STEEL AREA IS PROVIDED, NEW REINFORCEMENT BARS MAY BE OMITTED IF WIRE MESH STEEL AREA EXCEEDS EXISTING REINFORCEMENT.
11. CLEAN EXISTING REINFORCEMENT BY MECHANICAL MEANS.
12. LAP EQUIVALENT NEW REINFORCEMENT TO THE EXISTING REINFORCEMENT AS DIRECTED.
13. REINFORCEMENT BARS TO BE EPOXY COATED.



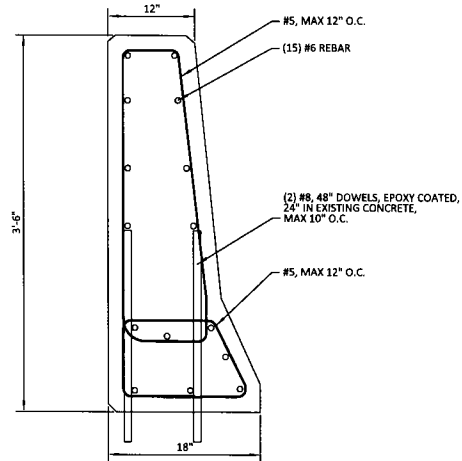
		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV
<b>OVERPASS SR-2032</b> HA LINE, ALFORD, PA <b>BRIDGE REPAIRS</b>			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA.	
DRAWING TITLE: <b>PROPOSED CORNER CONCRETE REPAIR</b>			
DDN MCC	VAL SEC	MAP	MILE POST HA-640.21
CHK DBG	FILE	DATE	03/13/2020
SHEET NUMBER 9 OF 14		DRAWING NUMBER HA-640.21	

REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS

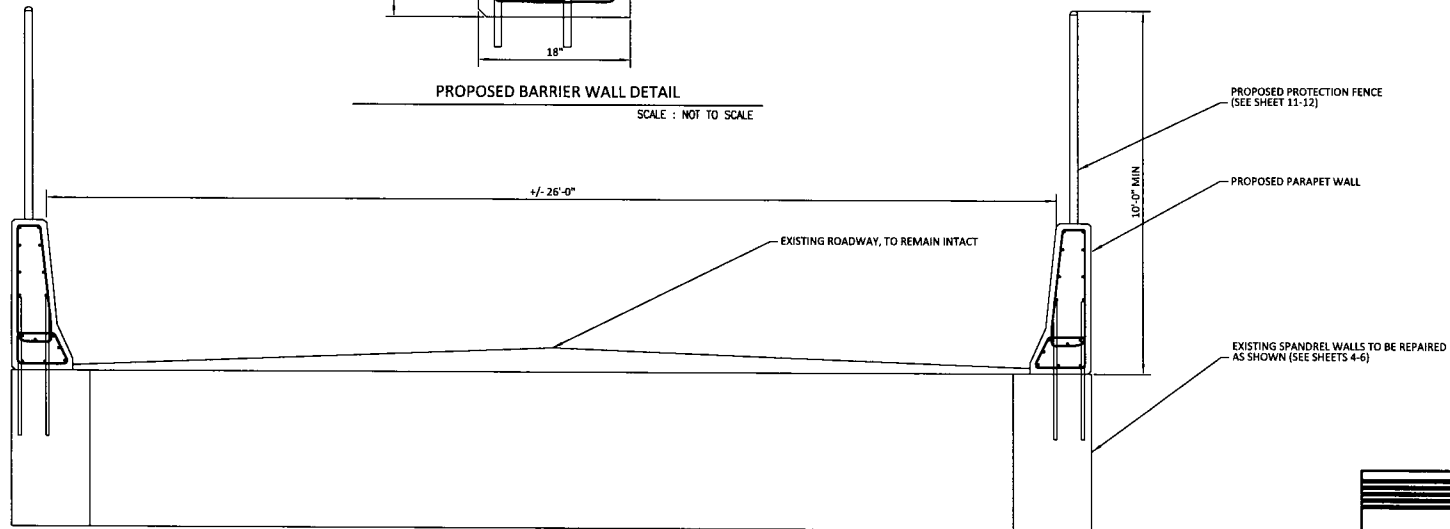
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213 UPTOWN SQUARE  
MURFREESBORO, TN 37129  
(p) 615.663.1142

**NOTES:**

1. ALL REPAIRS SHALL BE MADE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION BC-783M.
2. ALL CIP CONCRETE SHALL MEET OR EXCEED PENNDOT CLASS AA.
3. EXISTING PARAPET WALLS SHALL BE REMOVED BY METHODS TO KEEP EXISTING ROAD IN SERVICE AND NOT TO INTERFERE WITH RAILROAD OPERATIONS.
4. ONCE EXISTING PARAPET WALL IS REMOVED EXISTING SLAB CLEANED AND SPANDREL WALL IS TO BE REPAIRED ACCORDING TO THIS DOCUMENT AND THE ENGINEERS RECOMMENDATION.
5. ONCE SPANDREL WALL IS REPAIRED AND CURED 28 DAYS THE PROPOSED PARAPET WALLS SHALL BE CONSTRUCTED AS SHOWN IN THIS DOCUMENT.
6. TEMPORARY BARRIER WALL AND FENCING SHALL BE REMOVED BY CONTRACTOR ONCE PROPOSED PARAPET WALLS ARE CONSTRUCTED AND CURED FOR 28 DAYS.
7. EXISTING PAVEMENT IS NOT TO BE DAMAGED BY CONTRACTOR.
8. ALL CONCRETE REPAIRS SHALL BE MADE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE 318, CURRENT EDITION.



**PROPOSED BARRIER WALL DETAIL**  
SCALE : NOT TO SCALE



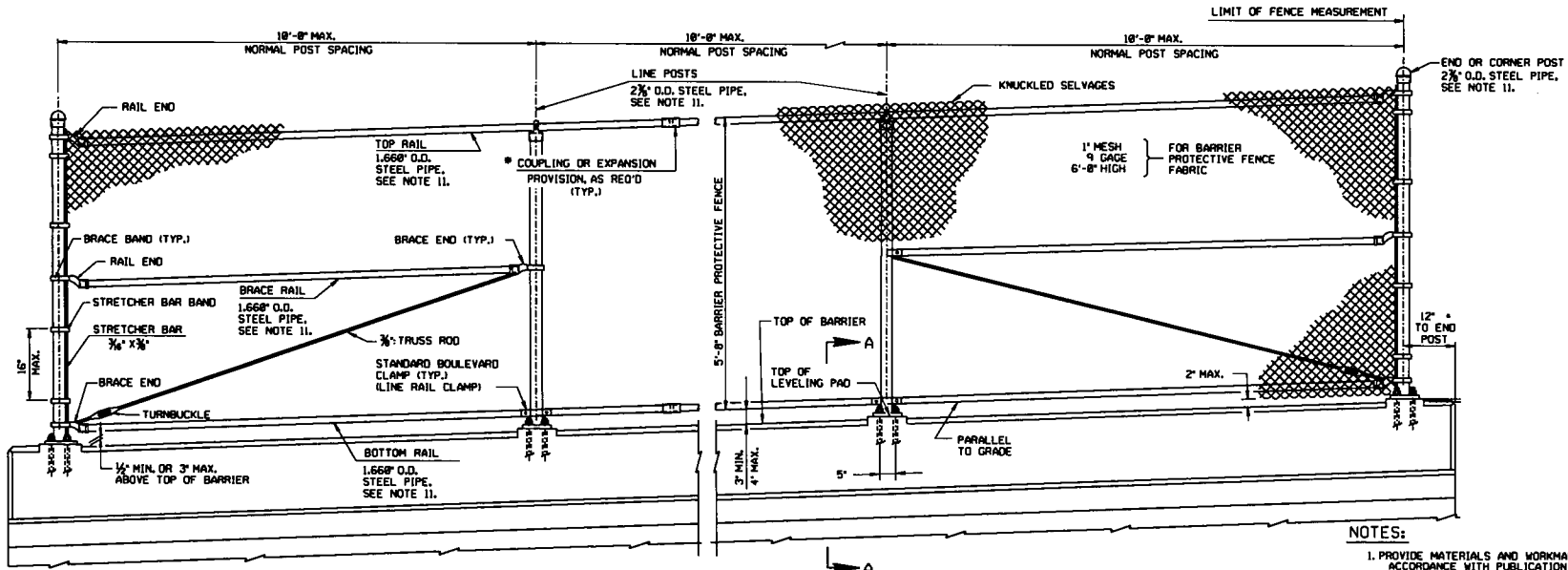
**BRIDGE CROSS-SECTION**  
SCALE : 1" = 20'



REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS

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<b>NORFOLK SOUTHERN</b>			
NORTHERN REGION		HARRISBURG DIV	
<b>OVERPASS SR-2032</b>			
HA LINE, ALFORD, PA			
BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA			
DRAWING TITLE: <b>PROPOSED BARRIER WALL</b>			
DDN MCC	VAL SEC	MAP	MILE POST HA-640.21
CHW DBG	FILE		DATE 03/13/2020
SHEET NUMBER 10 OF 14		DRAWING NUMBER HA-640.21	

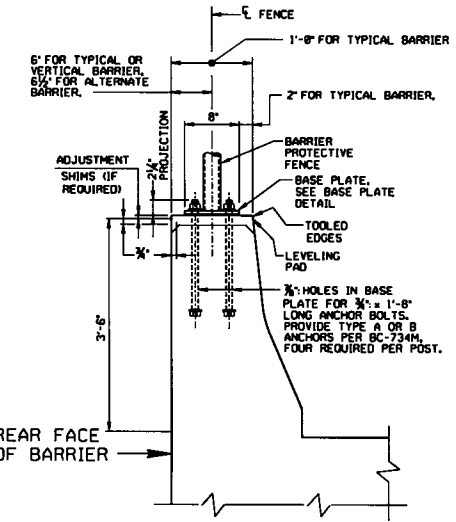


**TYPICAL FENCE ELEVATION**

#9" MIN. DISTANCE TO STRUCTURE EXPANSION JOINT.

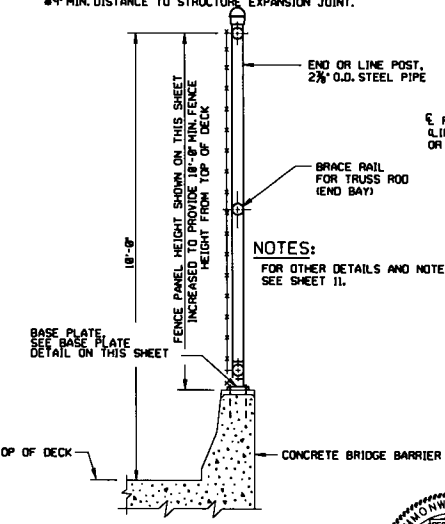
**NOTES:**

1. PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PUBLICATION 488.
2. PROVIDE SHIMS FROM APPROVED MATERIAL.
3. ONLY TOUCH-UP PAINTING OF MATERIAL IS PERMITTED.
4. PLACE FENCE POSTS AND ANCHOR BOLTS TRULY VERTICAL. PLACE RAILS PARALLEL TO GRADE.
5. NO LIGHTING POLES ARE USED.
6. AT BRIDGE EXPANSION JOINTS, PERMIT THE FENCE FABRIC AND RAILS TO EXPAND OR CONTRACT.
7. CLIP THE TIE WIRE FASTENERS AND BEND AWAY FROM TRAFFIC.
8. COAT ALL SURFACES OF THE BASE PLATES IN CONTACT WITH CONCRETE WITH CALKING COMPOUND PRIOR TO ERECTION AND ALIGNMENT. AFTER ERECTION AND ALIGNMENT, SEAL OPENINGS BETWEEN THE METAL SURFACES AND THE CONCRETE WITH CALKING COMPOUND MEETING THE REQUIREMENTS OF PUBLICATION 488, SECTION 705.8(b).L
9. PLACE ANCHOR BOLTS WITH SIDEWALK OR BARRIER AND ACCURATELY SET AND BRACE AGAINST DISPLACEMENT BEFORE THE SURROUNDING CONCRETE IS PLACED. LEVEL THE BASE PLATE AND THEN PLACE THE LEVELING PAD USING RAPID SET CONCRETE.
10. DESIGN DRAINAGE SYSTEM IN ACCORDANCE WITH DM4, SECTION PP 3.2.3.
11. POSTS AND RAIL MATERIAL PER PUBLICATION 488, SECTION 1016.2(a)3.
12. REFER TO CONTRACT DOCUMENTS FOR POST SPACING.
13. PLACE CORNER POSTS AT ANGLE POINTS IN HORIZONTAL AND VERTICAL ALIGNMENT OF FENCE.



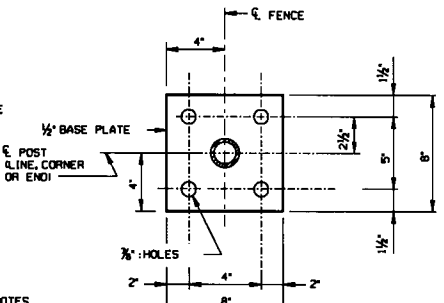
**SECTION A-A**

TYPICAL FENCE POST SECTION, ALTERNATE SIDEWALK DETAIL SHOWN (TYP. AND ALT. CONCRETE BARRIER SIMILAR)



**SECTION D-D**

TYPICAL CONCRETE BARRIER AND NO SIDEWALK

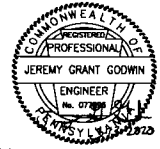


**BASE PLATE DETAIL**

(ALL DIMENSIONS ARE TYPICAL UNLESS NOTED OTHERWISE) N.T.S.

**NOTES:**

FOR OTHER DETAILS AND NOTES, SEE SHEET 11.



REV	BY	DATE	DESCRIPTION
Δ	CGB	12-31-19	PENNDOT REVISIONS

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**NORFOLK SOUTHERN**  
NORFOLK SOUTHERN RAILWAY

NORTHERN REGION HARRISBURG DIV

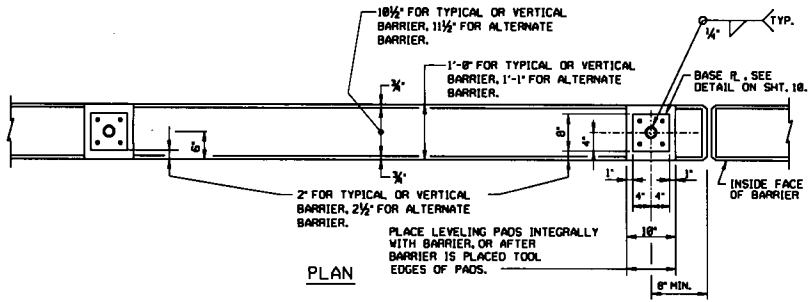
**OVERPASS SR-2032**  
HA LINE, ALFORD, PA

BRIDGE REPAIRS

OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA

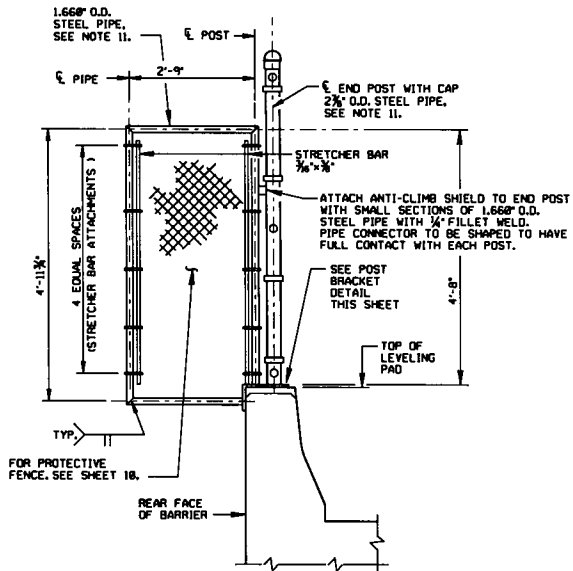
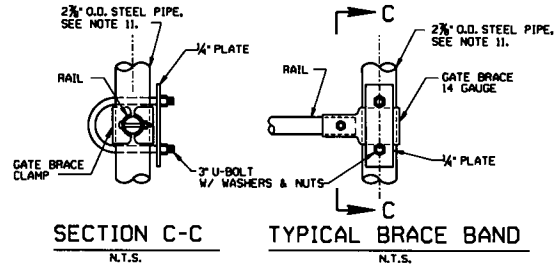
DRAWING TITLE: **PROPOSED PROTECTIVE FENCE**

DGN MCC	VAL SEC	MAP	MILE POST HA-640.21
CHK DBG	FILE		DATE 03/13/2020
SHEET NUMBER 11 OF 14		DRAWING NUMBER HA-640.21	



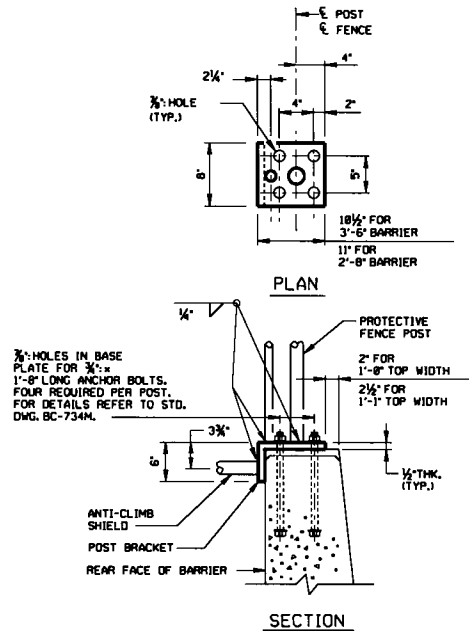
**BARRIER PROTECTIVE FENCE**

FOR BASE PLATE DETAIL, SEE SHEET 18.  
ALTERNATE SIDEWALK DETAIL SHOWN  
(TYP. AND ALT. CONCRETE BARRIER SIMILAR)



**ANTI-CLIMB SHIELD DETAILS**

(1 REQ'D. FOR EACH END OF FENCE)



**POST BRACKET DETAIL**

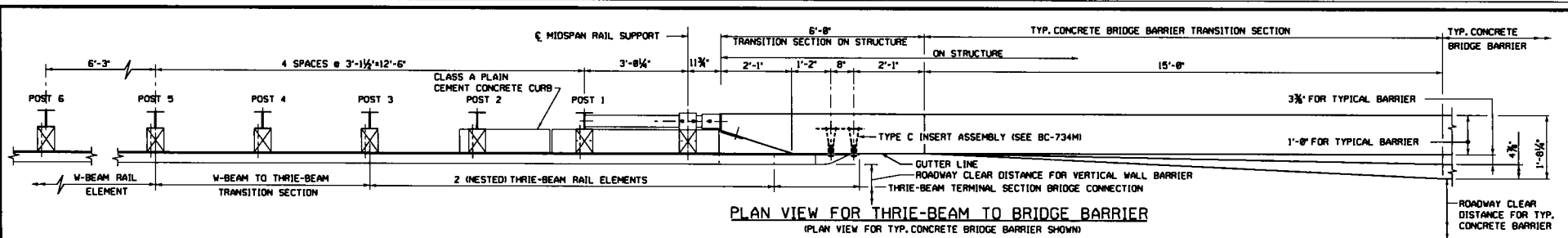
AT ANTI-CLIMB SHIELD



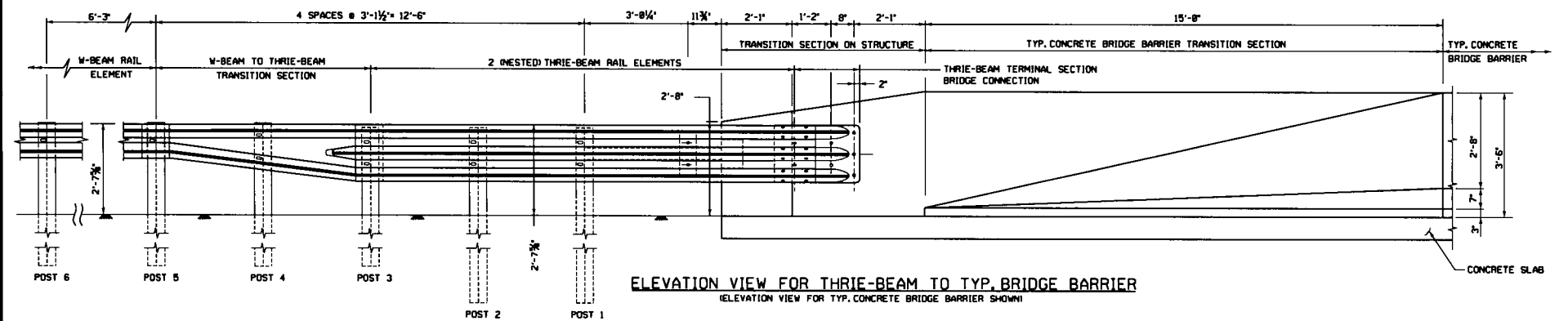
REV	BY	DATE	DESCRIPTION
▲	CGB	12-31-19	PENNDOT REVISIONS
RAILROAD CONSULTANTS, PLLC 213 UPTOWN SQUARE MURFREESBORO, TN 37129 (p) 615.663.1142			

<b>NORFOLK SOUTHERN</b>	
NORFOLK SOUTHERN RAILWAY	
NORTHERN REGION	HARRISBURG DIV
<b>OVERPASS SR-2032</b>	
HA LINE, ALFORD, PA	
BRIDGE REPAIRS	
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES	ATLANTA, GA.
DRAWING TITLE: <b>PROPOSED PROTECTIVE FENCE - DETAILS</b>	
DDM MCC	VAL SEC
CHK DBG	FILE
SHEET NUMBER	12 OF 14
MILE POST	HA-640.21
DATE	03/13/2020
DRAWING NUMBER	HA-640.21





**PLAN VIEW FOR THRIE-BEAM TO BRIDGE BARRIER**  
(PLAN VIEW FOR TYP. CONCRETE BRIDGE BARRIER SHOWN)



**ELEVATION VIEW FOR THRIE-BEAM TO TYP. BRIDGE BARRIER**  
(ELEVATION VIEW FOR TYP. CONCRETE BRIDGE BARRIER SHOWN)

**NOTES:**

1. THRIE-BEAM TO BRIDGE BARRIER TRANSITION HAS BEEN ACCEPTED BY FHWA AS A TL-3 BARRIER DESIGNATION.
2. PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PUB. 488.
3. USE PLAN DIMENSIONS WHEN DIFFERENT FROM THOSE SHOWN ON THIS STANDARD.
4. REINFORCED CONCRETE BARRIER AND EMBEDDED INSERTS ARE BRIDGE ITEMS.
5. SEE RC-50M AND RC-51M FOR DETAILS AND HARDWARE NOT SHOWN. (INCLUDING END TREATMENT)
6. PROVIDE APPROACH END GUIDE RAIL TREATMENT AT BOTH THE APPROACH AND TRAILING ENDS OF STRUCTURE BARRIERS ON TWO LANE FACILITIES WITH TWO-WAY TRAFFIC. ON FOUR LANE DIVIDED HIGHWAYS, GUIDE RAIL TRANSITION IS NOT REQUIRED ON TRAILING ENDS OF BARRIERS UNLESS WARRANTED BY OTHER OBSTRUCTIONS.
7. THE APPROACH END TRANSITION COMPONENTS ARE ROADWAY ITEMS.



**NORFOLK SOUTHERN**  
NORFOLK SOUTHERN RAILWAY  
NORTHERN REGION HARRISBURG DIV.

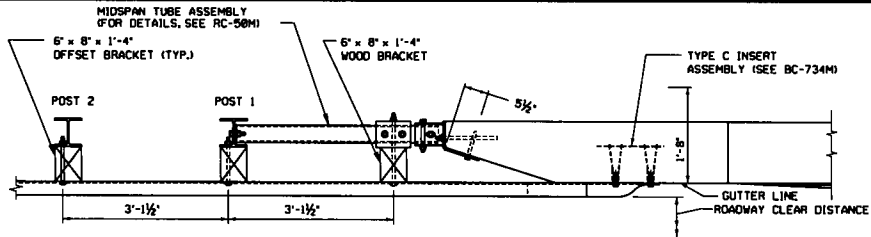
**OVERPASS SR-2032**  
HA LINE, ALFORD, PA  
BRIDGE REPAIRS

OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.

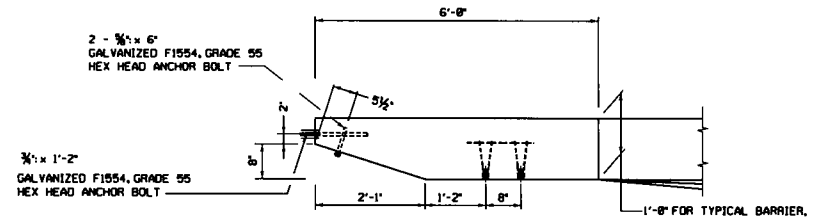
DRAWING TITLE: **THRIE-BEAM TO BRIDGE BARRIER WALL**

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CHK DBG	FILE		DATE	03/13/2020
SHEET NUMBER 13 OF 14			DRAWING NUMBER HA-640.21	

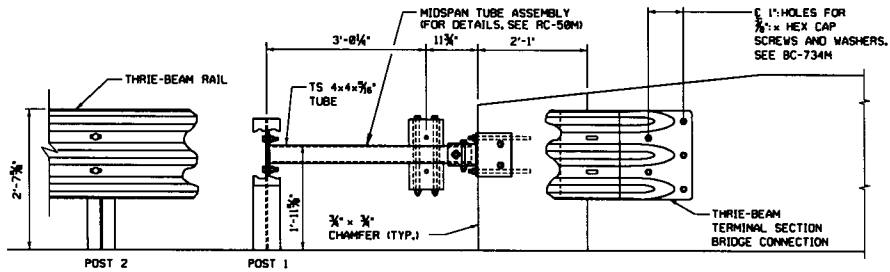
REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS
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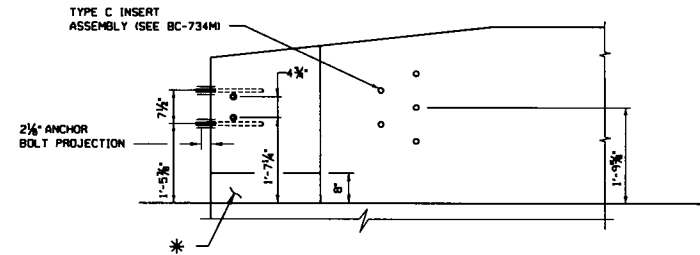
TRANSITION CONNECTION PLAN



BARRIER PLAN



TRANSITION CONNECTION ELEVATION



BARRIER ELEVATION

**NOTES:**

1. FOR ADDITIONAL NOTES, SEE SHEET 12.
2. FOR APPROACH TRANSITION POST DETAILS, SEE RC-58M.



		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV.
<b>OVERPASS SR-2032</b> HA LINE, ALFORD, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.			
DRAWING TITLE: THREE-BEAM TO BRIDGE BARRIER WALL - DETAILS			
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CHK DBG	FILE		DATE 03/13/2020
SHEET NUMBER 14 OF 14		DRAWING NUMBER HA-640.21	

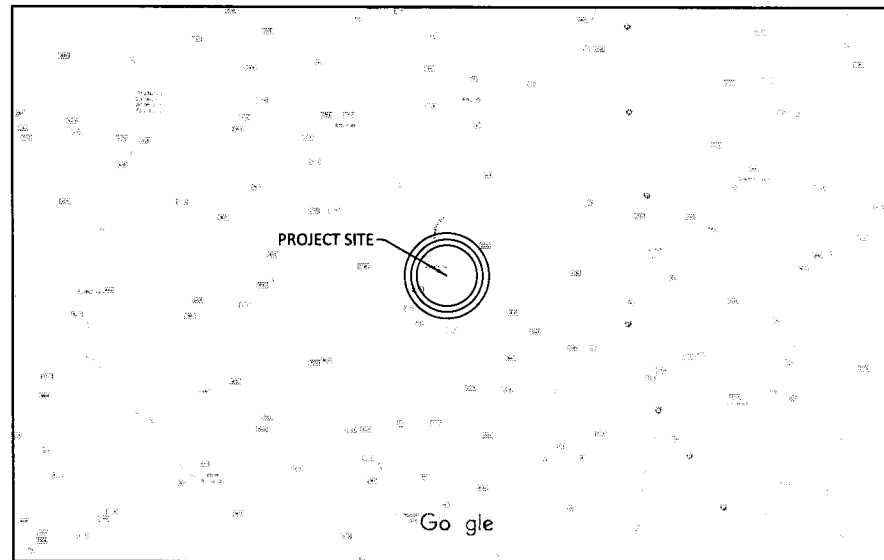
REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS

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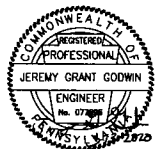
# **OVERPASS SR – 2041**



HOP BOTTOM, PENNSYLVANIA  
OVERPASS SR-2041 REPAIR



VICINITY MAP



		<b>NORFOLK SOUTHERN</b>	
NORTHERN REGION		HARRISBURG DIV	
<b>OVERPASS SR-2041</b> HA LINE, HOP BOTTOM, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA.	
DRAWING TITLE: <b>COVER SHEET</b>			
DGN MCC	VAL SEC	MAP	HA-647.50
CHK DBG	FILE	DATE	03/13/2020
SHEET NUMBER	1 OF 15	DRAWING NUMBER	HA-647.50

REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS

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(p) 615.663.1142

**GENERAL NOTES**

- CONSTRUCTION AND MATERIAL SPECIFICATIONS: CURRENT EDITION AMERICAN RAILWAY ENGINEERING & MAINTENANCE-OF-WAY "MANUAL FOR RAILWAY ENGINEERING", PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION CURRENT EDITION EXCEPT AS SUPERCEDED BY THESE PLANS, THE CONTRACT AND NORFOLK SOUTHERN SPECIFICATIONS.
- THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT, DUE TO THE NATURE OF RECONSTRUCTION PROJECTS, THE EXACT EXTENT OF RECONSTRUCTION WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO COMMENCEMENT OF WORK. THESE CONTRACT DOCUMENTS HAVE BEEN PREPARED BASED ON FIELD INSPECTION AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO CONSTRUCTION DETAILS AND WORK QUANTITIES. THE CONTRACTOR SHALL PERFORM THE WORK IN ACCORDANCE WITH FIELD CONDITIONS AS ORDERED BY THE ENGINEER.
- THE CONTRACTOR SHALL NOTE THAT ADDITIONAL WORK MAY BE REQUIRED AS THE CONTRACT PROGRESSES WHICH IS NOT SHOWN OR NOTED ON THE PLANS. THIS WORK SHALL BE PERFORMED BY THE CONTRACTOR AS ORDERED BY THE ENGINEER AND PAYMENT SHALL BE MADE AT THE UNIT BID PRICE FOR THE APPROPRIATE ITEMS, SEE SPECIFICATIONS WITHIN CONTRACT PROPOSAL.
- THE CONSTRUCTION OF THE PROJECT SHALL PROCEED IN A CONTINUOUS, SYSTEMATIC AND EXPEDITIOUS MANNER FROM BEGINNING TO COMPLETION. THE CONTRACTOR WILL BE REQUIRED TO PLACE SUFFICIENT EQUIPMENT, LABOR, ETC. ON THE PROJECT SO THAT THE WORK MAY PROGRESS IN ACCORDANCE WITH THE APPROVED CONSTRUCTION SCHEDULE.
- THE CONTRACTOR SHALL VISIT THE SITE BEFORE BIDDING TO FAMILIARIZE HIMSELF WITH THE PRESENT CONDITION AND TO JUDGE FOR HIMSELF, THE EXTENT AND NATURE OF THE WORK TO BE DONE UNDER THIS CONTRACT. NO EXTRA COMPENSATION WILL BE ALLOWED HIM BECAUSE OF HIS FAILURE TO INCLUDE IN THE CONTRACTOR'S BID, ALL ITEMS AND MATERIALS WHICH HE IS REQUIRED TO FURNISH IN ACCORDANCE WITH THE CONTRACT PLANS.
- DIMENSIONS OF THE EXISTING STRUCTURES SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THE CONTRACTOR SHALL TAKE ALL SUCH FIELD MEASUREMENTS AS ARE NECESSARY TO ASSURE PROPER CONSTRUCTION OF THE FINISH WORK.
- THERE SHALL BE NO CLAIM MADE BY THE CONTRACTOR AGAINST THE RAILROAD FOR WORK PERTAINING TO MODIFICATIONS AS MAY BE REQUIRED DUE TO ANY DIFFERENCE BETWEEN ACTUAL FIELD CONDITIONS AND THOSE SHOWN BY THE DETAILS AND DIMENSIONS IN THE CONTRACT PLANS OR THE RECORD DRAWINGS.
- THE CONTRACTOR IS ADVISED THAT ADDITIONAL "NOTES" WILL BE FOUND ON SUBSEQUENT SHEETS OF THE CONTRACT PLANS AND SUCH "NOTES" WHILE PERTAINING TO THE SPECIFIC DRAWINGS THEY ARE PLACED ON, ALSO SUPPLEMENT THE GENERAL NOTES LISTED HERE.
- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING STRUCTURE, TRACK, UTILITIES OR ADJACENT PROPERTIES OR FACILITIES, CAUSED BY HIS OPERATIONS, WHICH ARE NOT INCLUDED AS PART OF THE INTENDED WORK. ANY DAMAGE TO THE EXISTING STRUCTURE OR ADJACENT PROPERTIES, SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR WITHOUT COST TO THE RAILROAD AND TO THE SATISFACTION OF THE ENGINEER.
- IF, DURING THE REPAIR OPERATIONS, ANY COMPONENTS OF THE BRIDGE THAT ARE NOT SCHEDULED TO BE REMOVED, SUCH AS ABUTMENT STEMS, WINGWALLS, GIRDERS OR BEARINGS ARE DAMAGED BY THE CONTRACTOR'S PERSONNEL OR EQUIPMENT, THEY SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER, AT NO COST TO THE RAILROAD.
- THE CONTRACTOR IS REQUIRED TO PROTECT HIS WORKERS AT ALL TIMES IN CONFORMANCE WITH ALL APPLICABLE OSHA REGULATIONS AND FRA BRIDGE WORKER SAFETY RULES.
- THE CONTRACTOR IS ADVISED THAT THERE IS NO ELECTRIC POWER DISTRIBUTION SYSTEM AVAILABLE AT THE BRIDGE FOR HIS USE.
- ALTERATION OF THE CONSTRUCTION PLANS AND STRUCTURAL DETAILS ARE NOT PERMITTED WITHOUT EXPRESS PERMISSION OF NORFOLK SOUTHERN'S CHIEF ENGINEER OF BRIDGES AND STRUCTURES.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS TO COMPLETE THE WORK.
- ALL TRAFFIC CONTROL MEASURES NEEDED TO COMPLETE WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION SPECIFICATION AND ANY LOCAL CODES OR ORDINANCES THAT MAY APPLY.

**DESIGN LOADING:**

- ALL LOADS ARE PER AASHTO CURRENT EDITION.

**DEMOLITION PLAN & ERECTION PLAN NOTES:**

- THE CONTRACTOR IS REQUIRED TO SUBMIT PLANS FOR THE SAFE DEMOLITION AND ANY NECESSARY FORMING OF THE EXISTING STRUCTURE IN ORDER TO PERFORM ALL NEEDED REPAIRS, TO THE RAILROAD PRIOR TO BEGINNING WORK.
- THE CONTRACTOR SHALL DISPOSE OF ALL EXCAVATED & REMOVED SUBSTRUCTURE & FILL MATERIALS AND DEMOLISHED MATERIALS OFF-SITE IN A LEGAL MANNER UNLESS OTHERWISE DIRECTED BY N. S. REPRESENTATIVES IN THE FIELD.
- THE CONTRACTOR IS RESPONSIBLE FOR THE TRAFFIC CONTROL PLAN, AND THIS SHOULD BE INCLUDED IN THE BID PRICE FOR MOBILIZATION OF THE EXISTING STRUCTURE.

**PROTECTION OF RAILROAD NOTES:**

- WHERE APPLICABLE, OPERATIONS SHALL BE COORDINATED WITH THE RAILROAD SO AS NOT TO INTERFERE WITH THE CONTINUED OPERATIONS OF TRAINS. A RAILROAD FLAGMAN (SUPPLIED BY NORFOLK SOUTHERN) SHALL BE PRESENT FOR ANY AND ALL WORK ABOVE OR UNDERNEATH THE BRIDGE ADJACENT TO THE TRACK.
- THE CONTRACTOR IS REQUIRED TO FULLY COOPERATE WITH THE NORFOLK SOUTHERN FLAGMAN AND/OR NORFOLK SOUTHERN REPRESENTATIVE & IMMEDIATELY REMOVE ALL EQUIPMENT & PERSONNEL WORKING NEAR THE TRACK WHEN DIRECTED AS SUCH BY THE FLAGMAN.

**UTILITIES:**

- THE CONTRACTOR SHALL BE AWARE OF THE OVERHEAD ELECTRIC AND UTILITY LINES ABOVE/UNDER AND PARALLEL TO THE EXISTING BRIDGE.

**OTHER:**

- THE WORK FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE NORFOLK SOUTHERN STANDARD SPECIFICATIONS FOR MATERIALS AND CONSTRUCTION DATED JANUARY 2019, PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION, CURRENT EDITION AND ANY SPECIAL PROVISIONS PROVIDED HEREIN.
- NS WILL FURNISH A FLAGMAN AT NO COST TO THE CONTRACTOR. THE CONTRACTOR WILL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE NS FLAGMAN.
- THE CONTRACTOR SHALL SUBMIT TO NS A PROPOSED CONSTRUCTION SCHEDULE PRIOR TO BEGINNING WORK AND WILL SCHEDULE A PRECONSTRUCTION MEETING ONCE A CONTRACT HAS BEEN AWARDED.
- THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT NS DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS. THE CONTRACTOR SHOULD VERIFY LOCATIONS WITH THE UTILITY COMPANIES NOT LESS THAN 72 HOURS BEFORE STARTING EXCAVATION ACTIVITIES.
- RAILROAD RIGHT OF WAY LINES, IF SHOWN, WERE OBTAINED FROM VALUATION MAPS. ALL RIGHT OF WAY AND PROPERTY LINES ARE SHOWN FOR INFORMATION PURPOSES ONLY AS THEY HAVE NOT BEEN VERIFIED IN THE FIELD.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY LOCAL CONSTRUCTION PERMITS THAT MAY BE REQUIRED FOR CONSTRUCTION OF THIS PROJECT.
- ANY SURVEYS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL OBTAIN ANY TEMPORARY CONSTRUCTION ENTRANCE AND/OR DRIVEWAY PERMITS FROM THE APPROPRIATE GOVERNING AGENCY.
- ON SITE AND GENERATED CONSTRUCTION DEBRIS IS TO BE DISPOSED OF AS NON-REGULATED SOLID WASTE IN COMPLIANCE WITH LOCAL REGULATIONS. IF SUSPECTED ENVIRONMENTAL PROBLEMS ARE ENCOUNTERED, CONTACT THE NS ENVIRONMENTAL PROTECTION DEPARTMENT TO ASSIST IN THEIR PROPER HANDLING AND REMOVAL.
- THE CONTRACTOR SHALL COORDINATE WITH NS SIGNALS DEPARTMENT FOR THE LOCATIONS OF SIGNAL WIRE WHETHER LIVE OR DEAD BEFORE ANY EXCAVATION WORK.
- ALL CONCRETE REPAIRS SHALL BE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION, CURRENT EDITION.

**SCOPE OF WORK:**

- PROVIDE TRAFFIC CONTROL
- DEMO EXISTING PARAPET WALL AND JERSEY BARRIERS AS REQUIRED
- REPAIR EXISTING BRIDGE SUBSTRUCTURE AND SUPERSTRUCTURE AS NOTED
- REBUILD JERSEY BARRIER WALL AND PROTECTION FENCE
- ATTACH "THRIE BEAM TO BRIDGE BARRIER" TO BRIDGE AND EXISTING GUARDDRAIL AS APPROPRIATE
- BARRIER WALL CORNERS WITHOUT EXISTING GUARDDRAIL TO ATTACH SHALL RECEIVE PENNDOT APPROVED END TREATMENT
- REOPEN STRUCTURE TO NORMAL TRAFFIC

**INDEX OF DRAWINGS**

DESCRIPTION	SHEET NO	REV DATE
COVER SHEET	1	03-13-2020
GENERAL NOTES & INDEX OF DRAWINGS	2	03-13-2020
GENERAL SITE PLAN	3	03-13-2020
EXISTING NORTH ELEVATION & CROSS SECTION	4	03-13-2020
EXISTING SOUTH ELEVATION	5	03-13-2020
EAST ABUTMENT ELEVATION	6	03-13-2020
WEST ABUTMENT ELEVATION	7	03-13-2020
PROPOSED TYPE 1 CONCRETE REPAIR	8	03-13-2020
PROPOSED TYPE 2 CONCRETE REPAIR	9	03-13-2020
PROPOSED CORNER CONCRETE REPAIR	10	03-13-2020
PROPOSED BARRIER WALL	11	03-13-2020
PROPOSED PROTECTIVE FENCE	12	03-13-2020
PROPOSED PROTECTIVE FENCE - DETAILS	13	03-13-2020
PROPOSED THRIE-BEAM TO BRIDGE BARRIER WALL	14	03-13-2020
THRIE-BEAM TO BRIDGE BARRIER WALL - DETAILS	15	03-13-2020

**ESTIMATE OF QUANTITIES**

BID ITEM	DESCRIPTION	QTY	UNIT
1.	MOBILIZATION	1	LS
2.	NORTH SPANDREL WALL REPAIRS* (APPROX. 140 SF)	1	LS
3.	SOUTH SPANDREL WALL REPAIRS* (APPROX. 170 SF)	1	LS
4.	EAST ABUTMENT REPAIRS* (APPROX. 290 SF)	1	LS
5.	WEST ABUTMENT REPAIRS* (APPROX. 55 SF)	1	LS
6.	PROPOSED BRIDGE BARRIER WALL W/ PROTECTION (APPROX. 160 LF)	1	LF
7.	PERFORMANCE BOND	1	LS
8.	PAYMENT BOND	1	LS

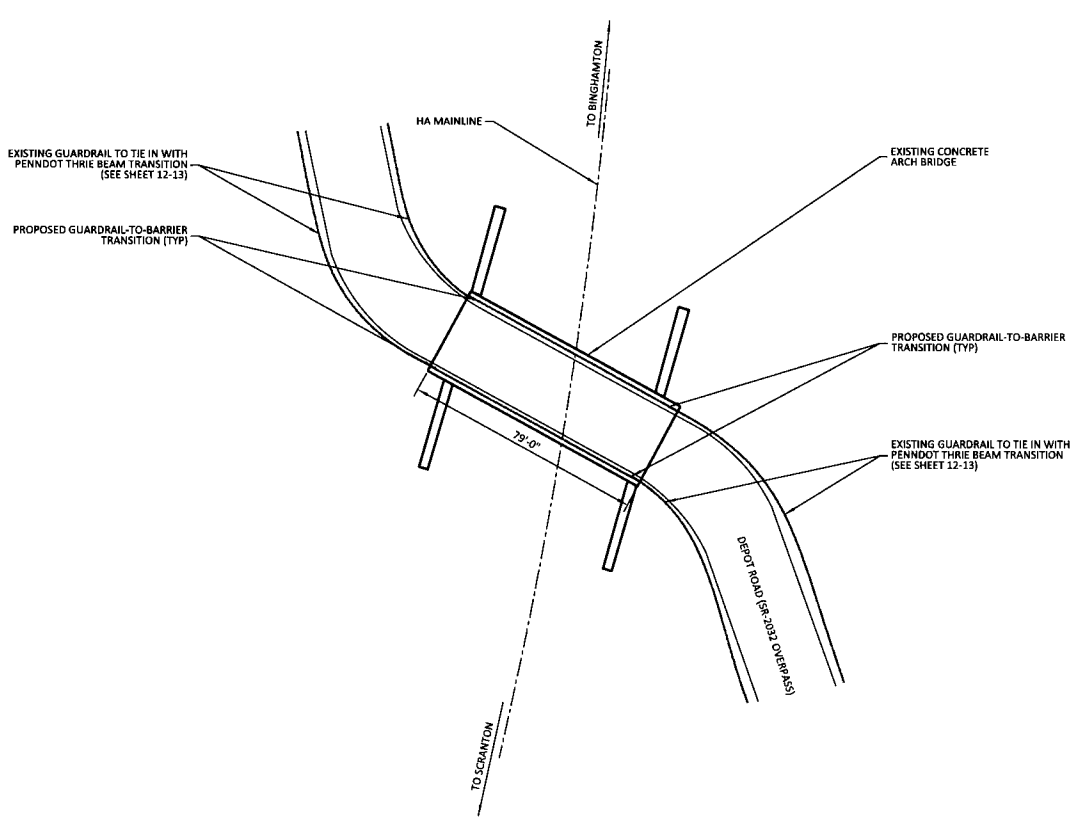
\*INCLUDES EXCAVATION, REMOVAL OF LOOSE CONCRETE, CONCRETE, EPOXY, REBAR, HAULING OFF ANY DEBRIS AND RESTORING THE SITE TO ITS ORIGINAL CONDITION.



		NORFOLK SOUTHERN RAILWAY HARRISBURG DIV	
NORTHERN REGION		OVERPASS SR-2041 HA LINE, HOP BOTTOM, PA	
BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA	
DRAWING TITLE: GENERAL NOTES & INDEX OF DRAWINGS			
DSN MCC	VAL SEC	MAP	MILE POST HA-647.50
CHN DBG	FILE	DATE	03/13/2020
SHEET NUMBER 2 OF 15		DRAWING NUMBER HA-647.50	

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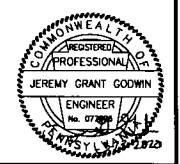
REV BY DATE DESCRIPTION
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NOTES:  
 1. ALL SURVEY INFORMATION AND DIMENSIONS SHOWN OR REFERENCED IN THIS PLAN OR ATTACHED DOCUMENTS ARE BASED ON ENGINEERS SITE VISIT, PRELIMINARY SURVEY, RECORD DRAWINGS, GIS INFORMATION AND OTHER METHODS AS AVAILABLE TO THE ENGINEER AT THE TIME OF PUBLICATION. THIS DOCUMENT IN NO WAY GUARANTEES THE ACCURACY OR PRECISION OF THE ABOVE LISTED INFORMATION. THIS INFORMATION IS GIVEN AS FOR THE PURPOSE OF GENERAL REFERENCE  
 2. THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS, QUANTITIES AND SIZES OF MATERIALS NEEDED TO COMPLETE THE SCOPE OF WORK IN AN APPROVED AND STANDARD MANNER, AT THEIR OWN RISK.

GENERAL SITE PLAN

SCALE : NOT TO SCALE



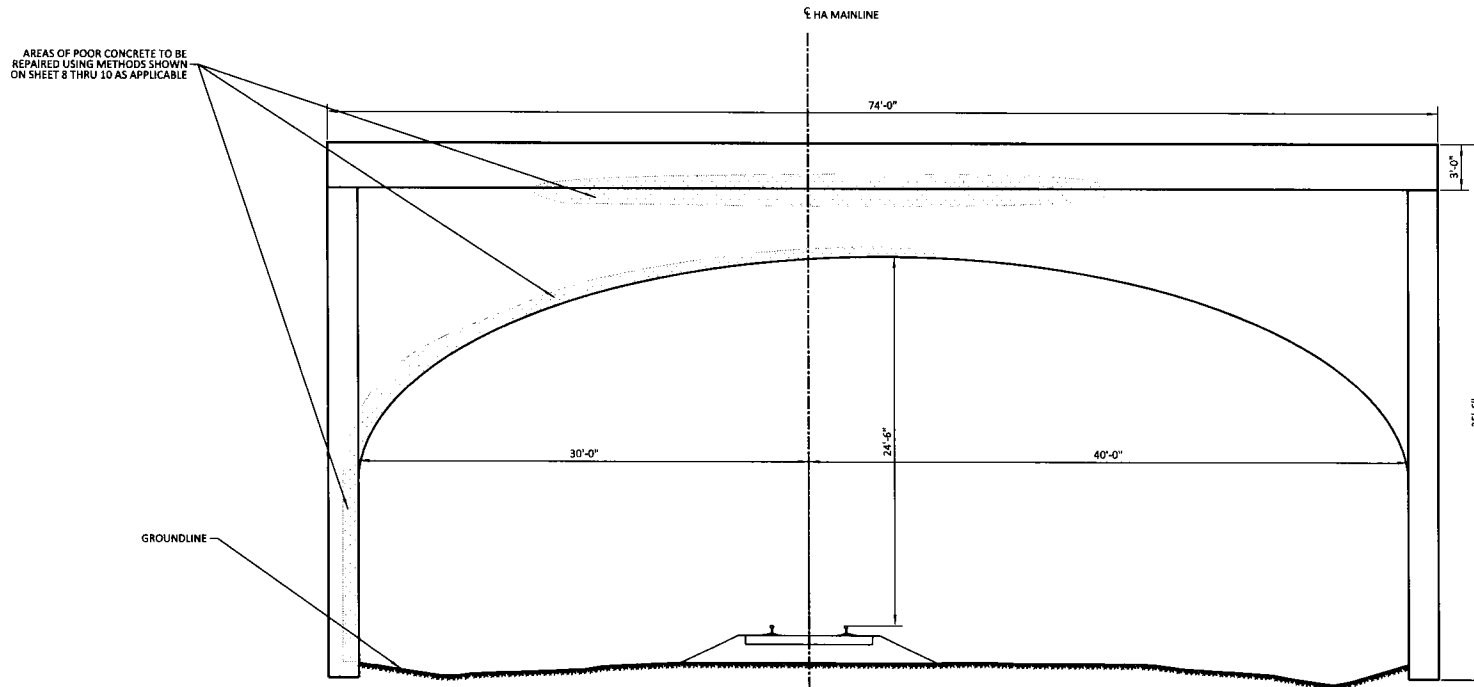
REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS

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<b>NJS</b> NORFOLK SOUTHERN			
NORTHERN REGION	HARRISBURG DIV		
OVERPASS SR-2041 HA LINE, HOP BOTTOM, PA			
BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.			
DRAWING TITLE: GENERAL SITE PLAN			
DRN MCC	VAL SEC	MAP	MILE POST HA-647.50
CHK DBG	FILE		DATE 03/13/2020
SHEET NUMBER 3 OF 15		DRAWING NUMBER HA-647.50	

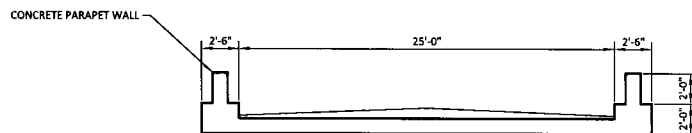
NOTES:

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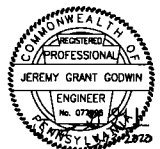
EXISTING NORTH ELEVATION

SCALE : 1/4" = 1'



EXISTING ROAD CROSS-SECTION

SCALE : 1/4" = 1'



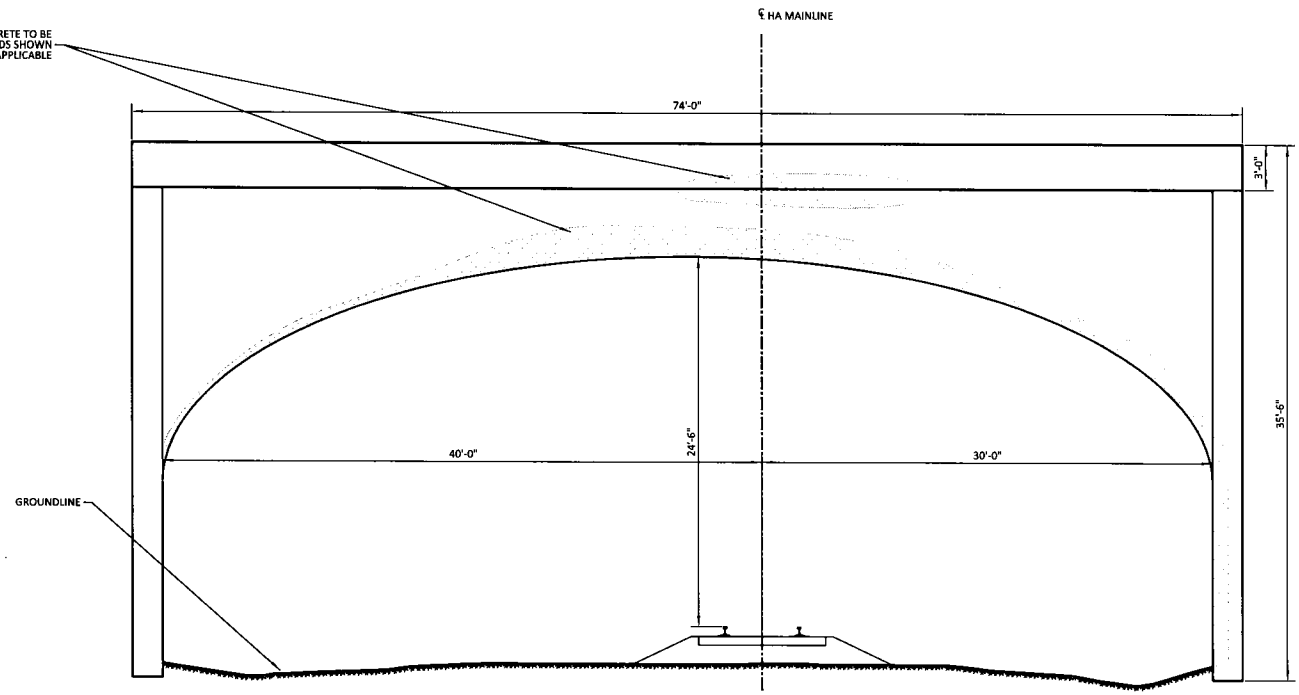
		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV
<b>OVERPASS SR-2041</b> HA LINE, HOP BOTTOM, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.			
DRAWING TITLE:			
EXISTING NORTH ELEVATION & CROSS-SECTION			
CHK	MCC	VAL	SEC
CHK	DBG	FILE	MAP
SHEET NUMBER		DRAWING NUMBER	
4 OF 15		HA-647.50	
		MILE POST HA-647.50	
		DATE 03/13/2020	

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AREAS OF POOR CONCRETE TO BE REPAIRED USING METHODS SHOWN ON SHEET 8 THRU 10 AS APPLICABLE



EXISTING SOUTH ELEVATION

SCALE : 1/4" = 1'



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**NJS NORFOLK SOUTHERN**  
 NORFOLK SOUTHERN RAILWAY  
 HARRISBURG DIV

NORTHERN REGION

**OVERPASS SR-2041**  
 HA LINE, HOP BOTTOM, PA

BRIDGE REPAIRS

OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA

DRAWING TITLE: **EXISTING SOUTH ELEVATION**

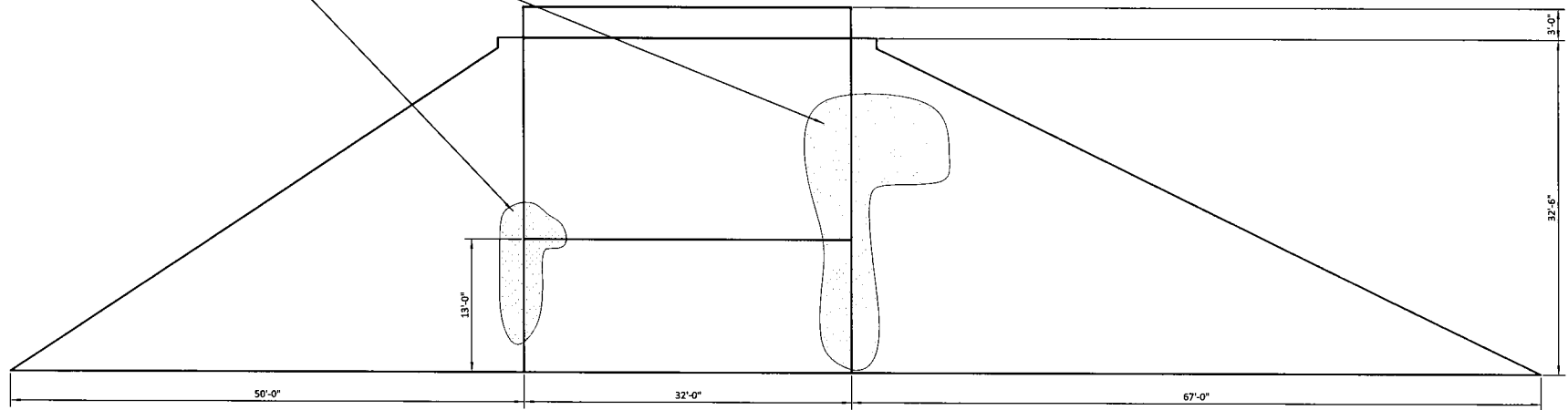
DGN MCC	VAL SEC	MAP	MILE POST HA-647.50
CHK DBG	FILE	DATE	03/14/2020
SHEET NUMBER	5 OF 15	DRAWING NUMBER	HA-647.50



NOTES:

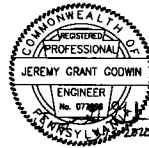
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AREAS OF POOR CONCRETE TO BE REPAIRED USING METHODS SHOWN ON SHEET 8 THRU 10 AS APPLICABLE



EXISTING EAST ABUTMENT ELEVATION

SCALE : 1/8" = 1'



REV	BY	DATE	DESCRIPTION
1	CGB	12-31-19	PENNDOT REVISIONS

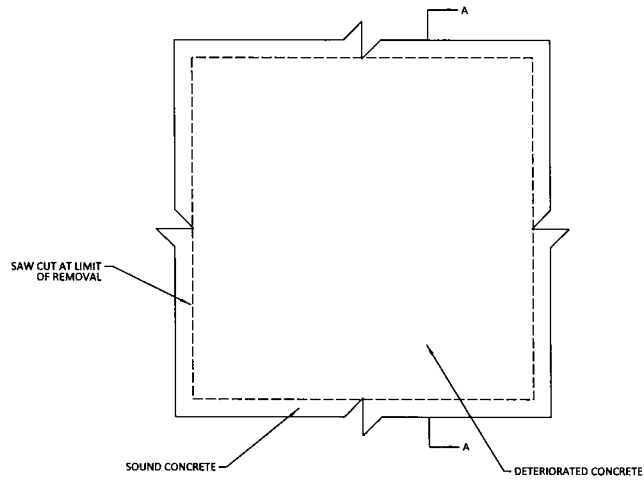
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<b>NORFOLK SOUTHERN</b>	
NORFOLK SOUTHERN RAILWAY	
NORTHERN REGION	HARRISBURG DIV.
<b>OVERPASS SR-2041</b>	
HA LINE, HOP BOTTOM, PA	
BRIDGE REPAIRS	
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.	
DRAWING TITLE: <b>EAST ABUTMENT ELEVATION</b>	
DRW MCC	VAL SEC
CHK DBG	FILE
MILE POST HA-647.50	
DATE 03/13/2020	
SHEET NUMBER 6 OF 15	DRAWING NUMBER HA-647.50



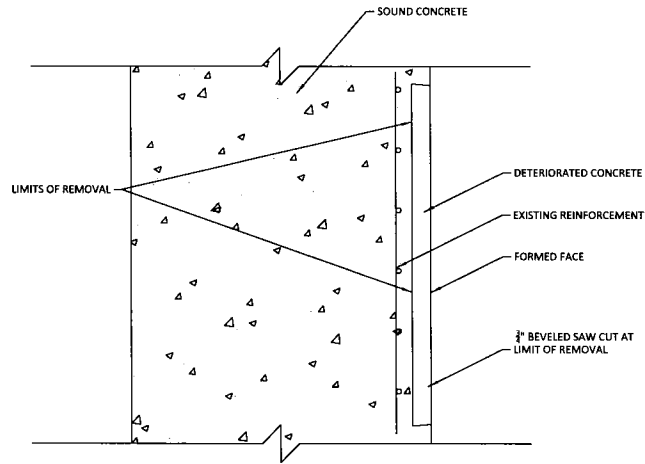
**NOTES:**

1. ALL REPAIRS SHALL BE MADE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION BC-783M
2. SQUARE OFF DETERIORATED CONCRETE TO SOUND CONCRETE WITH A SAWCUT OF  $\frac{3}{4}$ " MAXIMUM.
3. REMOVE ALL LOOSE AND DELAMINATED CONCRETE TO PROVIDE A SOUND BOND BETWEEN EXISTING CONCRETE AND PATCHING MATERIAL.
4. APPLY A RAPID HARDENING CONCRETE PATCHING MATERIAL FROM A MANUFACTURER LISTED IN BULLETIN 15 UNDER MISCELLANEOUS POLYMER MODIFIED AND SPECIAL CEMENTS, MORTARS AND CONCRETES, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.



ELEVATION VIEW (TYP)

SCALE : NOT TO SCALE



SECTION A-A (TYP)

SCALE : NOT TO SCALE

NOTE:  
THIS REPAIR IS TO BE USED FOR REPAIRS ON UNDERSIDE OF DECK, ELEVATIONS AND REPAIRS TO PORTIONS OF DELAMINATED FACES OF ABUTMENTS UP TO 3/4" THICKNESS.

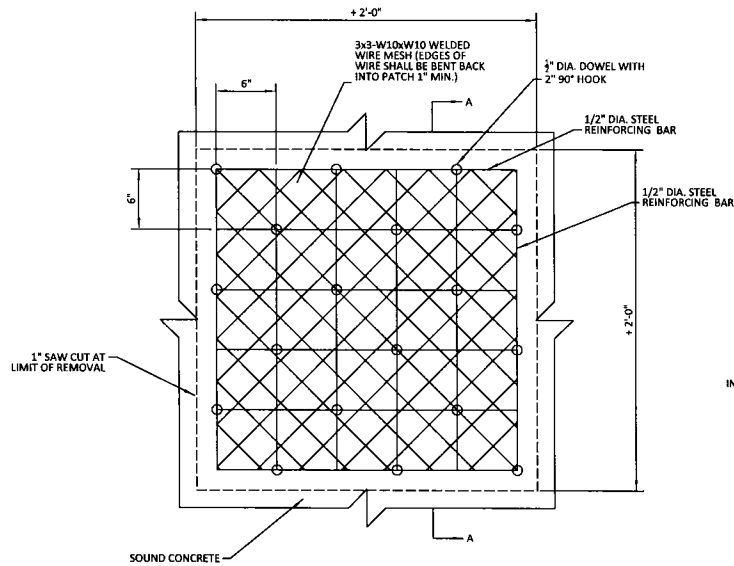


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<b>NORFOLK SOUTHERN</b>			
NORTHERN REGION		HARRISBURG DIV	
<b>OVERPASS SR-2041</b>			
HA LINE, HOP BOTTOM, PA			
BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.			
DRAWING TITLE: <b>PROPOSED TYPE 1 CONCRETE REPAIR</b>			
DDM MCC	VAL SEC	MAP	MILE POST HA-647.50
CHK DBG	FILE		DATE 03/13/2020
SHEET NUMBER 8 OF 15		DRAWING NUMBER HA-647.50	

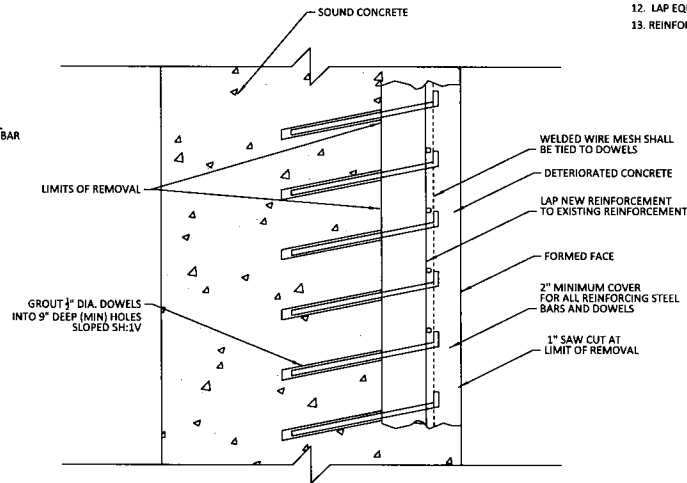
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2. SQUARE OFF DETERIORATED CONCRETE TO SOUND CONCRETE WITH A SAWCUT OF 3/4" MINIMUM TO 1" MAXIMUM BUT NOT TO THE DEPTH OF THE REINFORCEMENT STEEL. BACK BEVEL EDGE BEYOND SAWCUT.
3. USE HAND TOOLS TO REMOVE ALL LOOSE AND DELAMINATED CONCRETE THAT PROVIDES A SOUND BOND BETWEEN EXISTING CONCRETE AND NEW CONCRETE. PNEUMATIC HAMMERS WITH IMPACT RATINGS OF 30 FT/LB OR LESS MAY BE USED IF REQUIRED.
4. IF DETERIORATED CONCRETE EXTENDS BEYOND THE PRIMARY REINFORCEMENT, REMOVE THE CONCRETE TO AT LEAST 3/4" BEHIND THE REINFORCEMENT.
5. APPLY AN EPOXY BONDING COMPOUND BETWEEN THE EXISTING AND THE NEW CLASS AA CEMENT CONCRETE.
6. USE DOWELS ONLY WHEN W DIMENSION OF DETERIORATED CONCRETE IS GREATER THE 2'-0" AND NEW OR EXISTING REINFORCEMENT CANNOT ADEQUATELY BE DEVELOPED BY LAPPING WITH EXISTING REINFORCEMENT.
7. USE A PACHOMETER TO LOCATE EXISTING REINFORCEMENT WHEN DRILLING DOWEL HOLES TO AVOID DRILLING THRU EXISTING BARS.
8. AN APPROVED EPOXY ANCHORING SYSTEM IN 90° HOLES MAY REPLACE GROUT IN SLOPED HOLES. USE A 6" MINIMUM EMBEDMENT AND IN ACCORDANCE WITH THE MANUFACTURES' INSTRUCTIONS.
9. A #4 DEFORMED REINFORCEMENT BENT "L" BAR MAY REPLACE THE 1/2" DIA DOWEL HOOK.
10. ALTERNATE WIRE MESH MAY BE SUBSTITUTED FOR 3X3-W10XW10, PROVIDED WIRE SPACING DOES NOT EXCEED 4" AND AN EQUIVALENT STEEL AREA IS PROVIDED, NEW REINFORCEMENT BARS MAY BE OMITTED IF WIRE MESH STEEL AREA EXCEEDS EXISTING REINFORCEMENT.
11. CLEAN EXISTING REINFORCEMENT BY MECHANICAL MEANS.
12. LAP EQUIVALENT NEW REINFORCEMENT TO THE EXISTING REINFORCEMENT AS DIRECTED.
13. REINFORCEMENT BARS TO BE EPOXY COATED.



ELEVATION VIEW (TYP)

SCALE : NOT TO SCALE



SECTION A-A (TYP)

SCALE : NOT TO SCALE

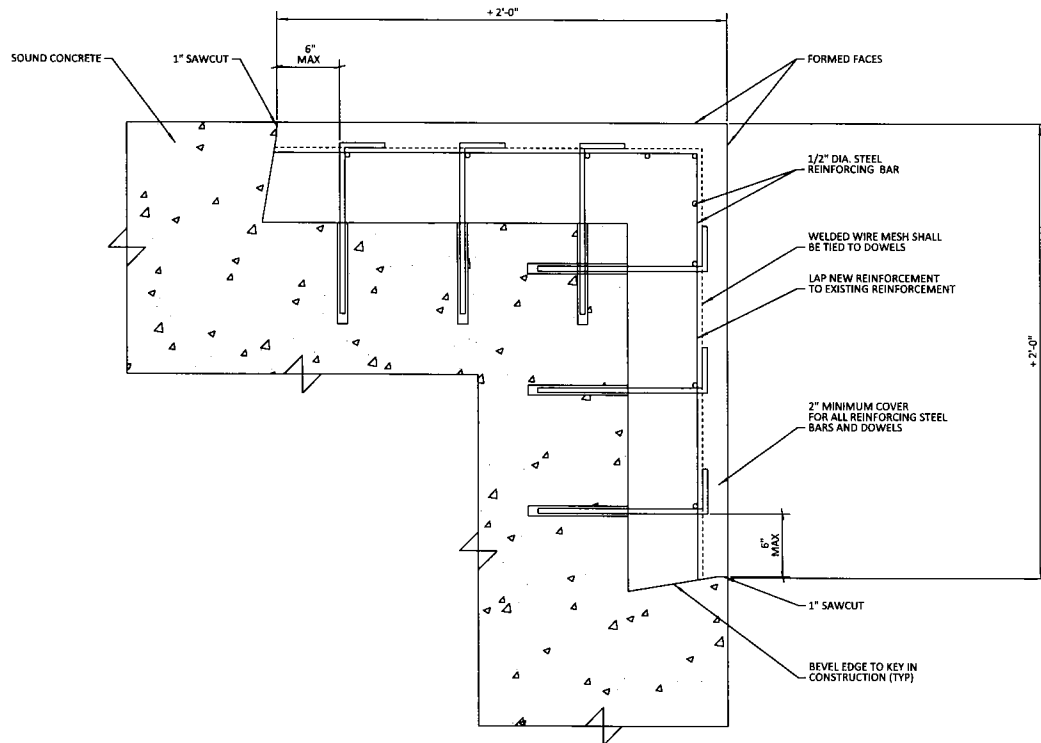
NOTE:  
THIS REPAIR IS TO BE USED FOR REPAIRS ON UNDERSIDE OF DECK, ELEVATIONS AND REPAIRS TO PORTIONS OF DELAMINATED FACES OF ABUTMENTS OVER 3/4" THICKNESS.



REV	BY	DATE	DESCRIPTION
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		NORTHERN REGION		HARRISBURG DIV.	
		OVERPASS SR-2041 HA LINE, HOP BOTTOM, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.					
DRAWING TITLE: PROPOSED TYPE 2 CONCRETE REPAIR					
DGN MCC	VAL SEC	MAP	MILE POST HA-647.50		
CHK DBG	FILE		DATE 03/13/2020		
SHEET NUMBER 9 OF 15			DRAWING NUMBER HA-647.50		



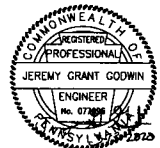
CORNER REPAIR DETAIL (TYP)

SCALE : NOT TO SCALE

NOTE:  
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OF DECK, ELEVATIONS AND REPAIRS TO PORTIONS OF DELAMINATED  
FACES OF ABUTMENTS OVER 3/4" THICKNESS.

NOTES:

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3. USE HAND TOOLS TO REMOVE ALL LOOSE AND DELAMINATED CONCRETE THAT PROVIDES A SOUND BOND BETWEEN EXISTING CONCRETE AND NEW CONCRETE. PNEUMATIC HAMMERS WITH IMPACT RATINGS OF 30 FT/LB OR LESS MAY BE USED IF REQUIRED.
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5. APPLY AN EPOXY BONDING COMPOUND BETWEEN THE EXISTING AND THE NEW CLASS AA CEMENT CONCRETE.
6. USE DOWELS ONLY WHEN W DIMENSION OF DETERIORATED CONCRETE IS GREATER THE 2'-0" AND NEW OR EXISTING REINFORCEMENT CANNOT ADEQUATELY BE DEVELOPED BY LAPPING WITH EXISTING REINFORCEMENT.
7. USE A PACHOMETER TO LOCATE EXISTING REINFORCEMENT WHEN DRILLING DOWEL HOLES TO AVOID DRILLING THRU EXISTING BARS.
8. AN APPROVED EPOXY ANCHORING SYSTEM IN 90° HOLES MAY REPLACE GROUT IN SLOPED HOLES. USE A 6" MINIMUM EMBEDMENT AND IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
9. A #4 DEFORMED REINFORCEMENT BENT "L" BAR MAY REPLACE THE 1/2" DIA DOWEL HOOK.
10. ALTERNATE WIRE MESH MAY BE SUBSTITUTED FOR 3X3-W10XW10, PROVIDED WIRE SPACING DOES NOT EXCEED 4" AND AN EQUIVALENT STEEL AREA IS PROVIDED, NEW REINFORCEMENT BARS MAY BE OMITTED IF WIRE MESH STEEL AREA EXCEEDS EXISTING REINFORCEMENT.
11. CLEAN EXISTING REINFORCEMENT BY MECHANICAL MEANS.
12. LAP EQUIVALENT NEW REINFORCEMENT TO THE EXISTING REINFORCEMENT AS DIRECTED.
13. REINFORCEMENT BARS TO BE EPOXY COATED.



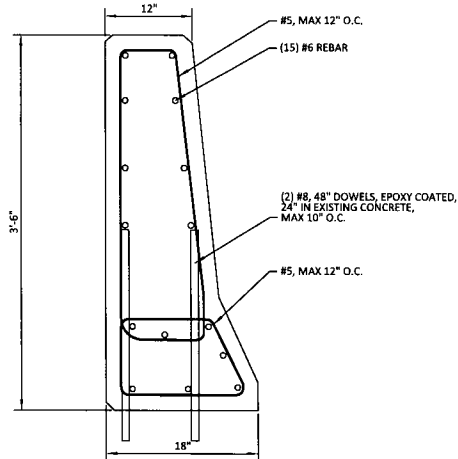
		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV.
<b>OVERPASS SR-2041</b> HA LINE, HOP BOTTOM, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.			
DRAWING TITLE: <b>PROPOSED CORNER CONCRETE REPAIR</b>			
DNH MCC	VAL SEC	MAP	MILE POST HA-647.50
CHK DBG	FILE	DATE	03/13/2020
SHEET NUMBER 10 OF 15		DRAWING NUMBER HA-647.50	

REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS

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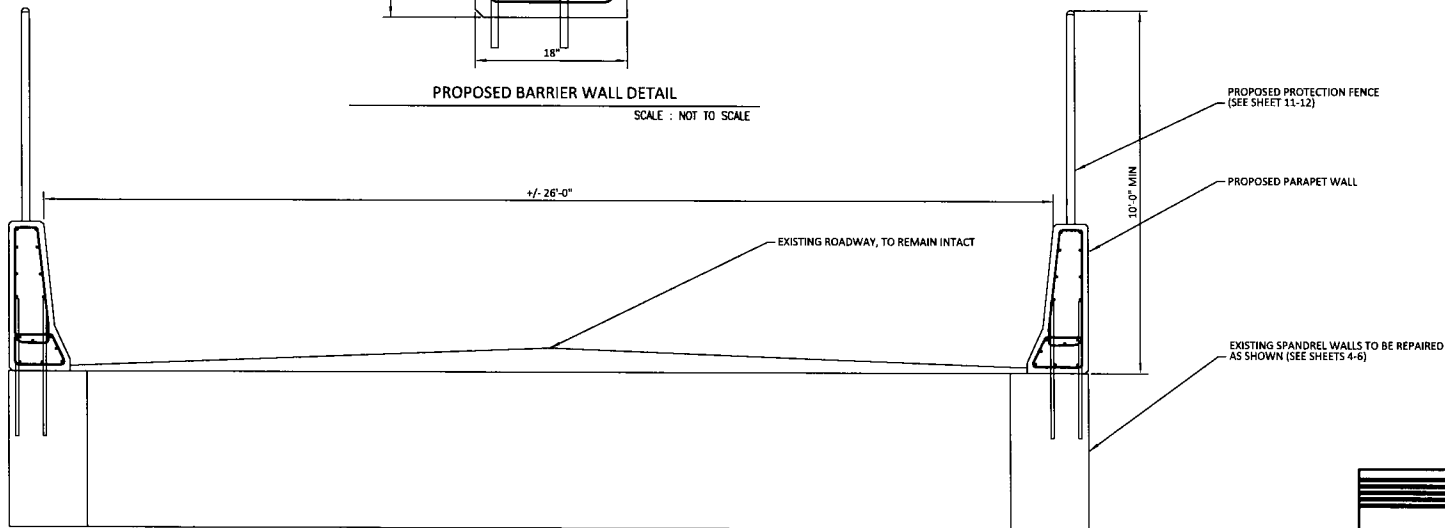
**NOTES:**

1. ALL REPAIRS SHALL BE MADE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION BC-783M.
2. ALL CIP CONCRETE SHALL MEET OR EXCEED PENNDOT CLASS AA.
3. EXISTING PARAPET WALLS SHALL BE REMOVED BY METHODS TO KEEP EXISTING ROAD IN SERVICE AND NOT TO INTERFERE WITH RAILROAD OPERATIONS.
4. ONCE EXISTING PARAPET WALL IS REMOVED EXISTING SLAB CLEANED AND SPANDREL WALL IS TO BE REPAIRED ACCORDING TO THIS DOCUMENT AND THE ENGINEERS RECOMMENDATION.
5. ONCE SPANDREL WALL IS REPAIRED AND CURED 28 DAYS THE PROPOSED PARAPET WALLS SHALL BE CONSTRUCTED AS SHOWN IN THIS DOCUMENT.
6. TEMPORARY BARRIER WALL AND FENCING SHALL BE REMOVED BY CONTRACTOR ONCE PROPOSED PARAPET WALLS ARE CONSTRUCTED AND CURED FOR 28 DAYS.
7. EXISTING PAVEMENT IS NOT TO BE DAMAGED BY CONTRACTOR.
8. ALL CONCRETE REPAIRS SHALL BE MADE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE 318, CURRENT EDITION.



PROPOSED BARRIER WALL DETAIL

SCALE : NOT TO SCALE



BRIDGE CROSS-SECTION

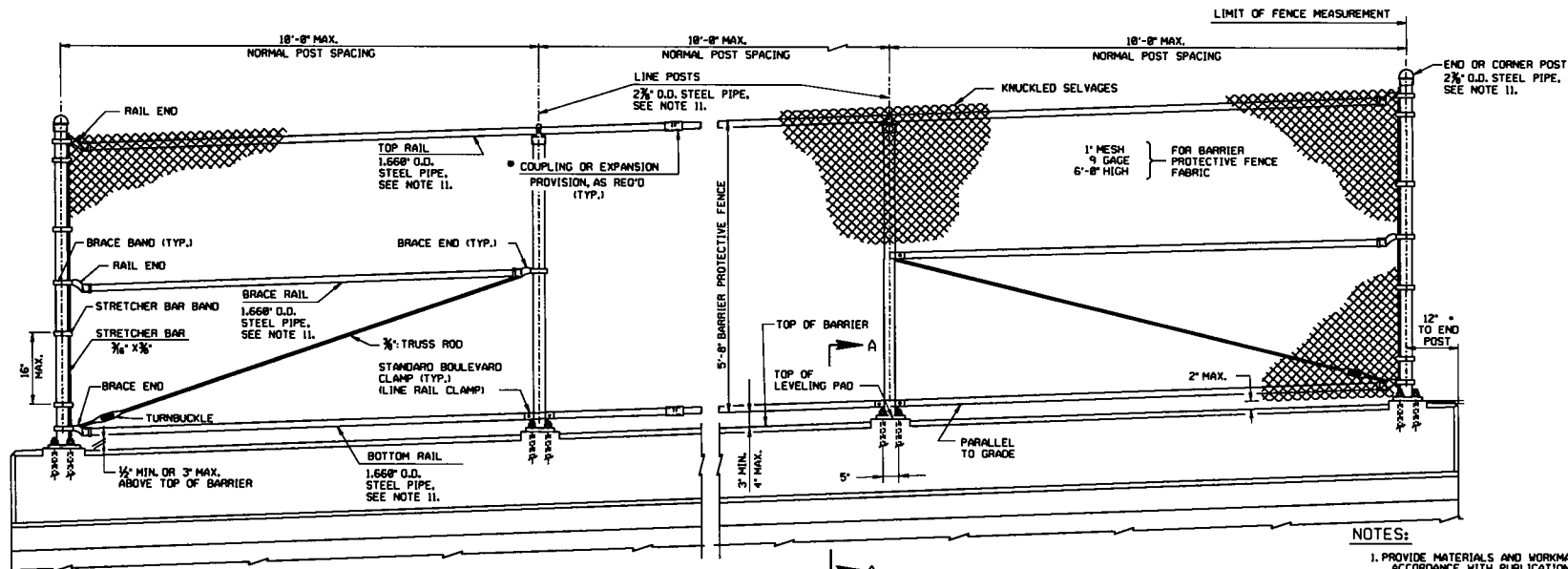
SCALE : 1" = 20'



		NORFOLK SOUTHERN RAILWAY		HARRISBURG DIV
		OVERPASS SR-2041 HA LINE, HOP BOTTOM, PA BRIDGE REPAIRS		
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA.		
DRAWING TITLE: PROPOSED BARRIER WALL				
DGN MCC	VAL SEC	MMP	MILE POST HA-647.50	
CON DBG	FILE		DATE 03/13/2020	
SHEET NUMBER 11 OF 15			DRAWING NUMBER HA-647.50	

REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS

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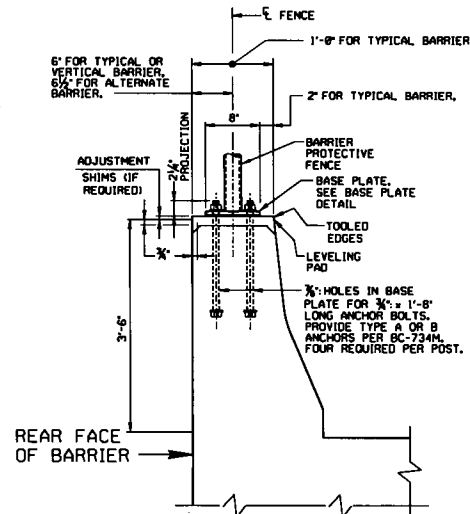


NOTES:

1. PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PUBLICATION 408.
2. PROVIDE SHIMS FROM APPROVED MATERIAL.
3. ONLY TOUCH-UP PAINTING OF MATERIAL IS PERMITTED.
4. PLACE FENCE POSTS AND ANCHOR BOLTS TRULY VERTICAL. PLACE RAILS PARALLEL TO GRADE.
5. NO LIGHTING POLES ARE USED.
6. AT BRIDGE EXPANSION JOINTS, PERMIT THE FENCE FABRIC AND RAILS TO EXPAND OR CONTRACT.
7. CLIP THE TIE WIRE FASTENERS AND BEND AWAY FROM TRAFFIC.
8. COAT ALL SURFACES OF THE BASE PLATES IN CONTACT WITH CONCRETE WITH CAULKING COMPOUND PRIOR TO ERECTION AND ALIGNMENT. AFTER ERECTION AND ALIGNMENT, SEAL OPENINGS BETWEEN THE METAL SURFACES AND THE CONCRETE WITH CAULKING COMPOUND MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 705.0(b).
9. PLACE ANCHOR BOLTS WITH SIDEWALK OR BARRIER AND ACCURATELY SET AND BRACE AGAINST DISPLACEMENT BEFORE THE SURROUNDING CONCRETE IS PLACED. LEVEL THE BASE PLATE AND THEN PLACE THE LEVELING PAD USING RAPID SET CONCRETE.
10. DESIGN DRAINAGE SYSTEM IN ACCORDANCE WITH DM4, SECTION PP 3.2.3.
11. POSTS AND RAIL MATERIAL PER PUBLICATION 408, SECTION 1016.2(a)3.
12. REFER TO CONTRACT DOCUMENTS FOR POST SPACING.
13. PLACE CORNER POSTS AT ANGLE POINTS IN HORIZONTAL AND VERTICAL ALIGNMENT OF FENCE.

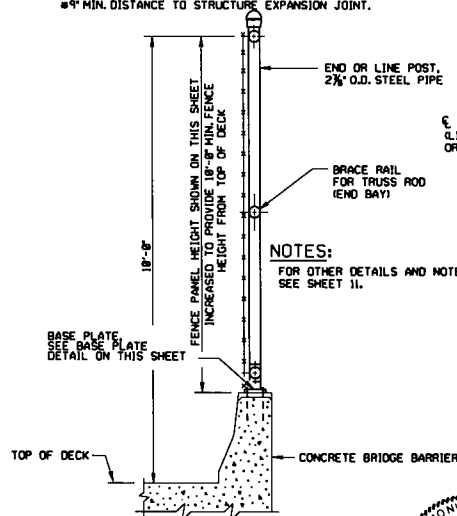
TYPICAL FENCE ELEVATION

9" MIN. DISTANCE TO STRUCTURE EXPANSION JOINT.



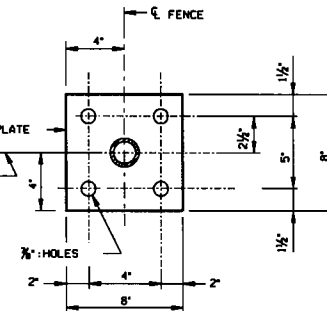
SECTION A-A

TYPICAL FENCE POST SECTION.  
ALTERNATE SIDEWALK DETAIL SHOWN  
(TYP. AND ALT. CONCRETE BARRIER SIMILAR)



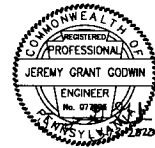
SECTION D-D  
TYPICAL CONCRETE BARRIER  
AND NO SIDEWALK  
BARRIER MOUNTED DETAILS

NOTES:  
FOR OTHER DETAILS AND NOTES,  
SEE SHEET 11.



BASE PLATE DETAIL

(ALL DIMENSIONS ARE TYPICAL  
UNLESS NOTED OTHERWISE)  
N.T.S.



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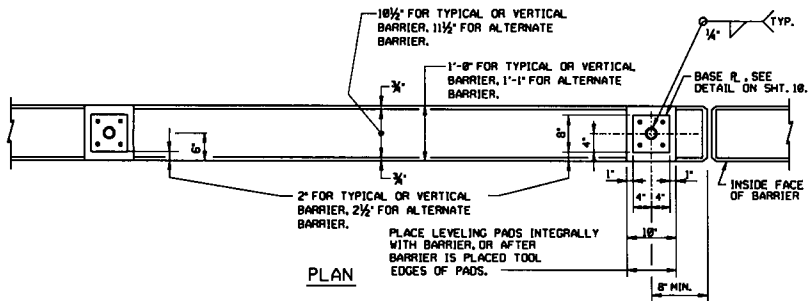
**NORFOLK SOUTHERN**  
NORFOLK SOUTHERN RAILWAY  
NORTHERN REGION HARRISBURG DIV.

OVERPASS SR-2041  
HA LINE, HOP BOTTOM, PA  
BRIDGE REPAIRS

OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.

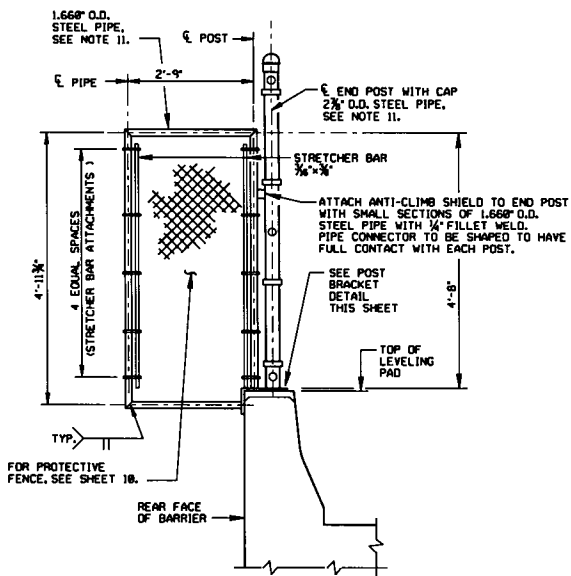
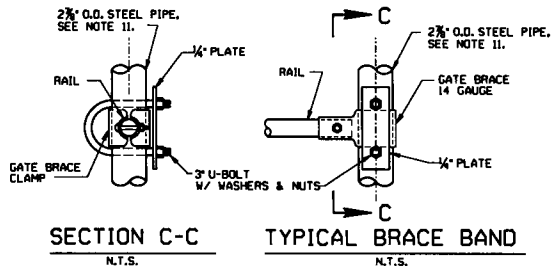
DRAWING TITLE: PROPOSED PROTECTIVE FENCE

DOM MCC	VAL SEC	MAP	MILE POST HA-647.50
DM DBG	FILE	DATE	03/13/2020
SHEET NUMBER	12 OF 15	DRAWING NUMBER	HA-647.50



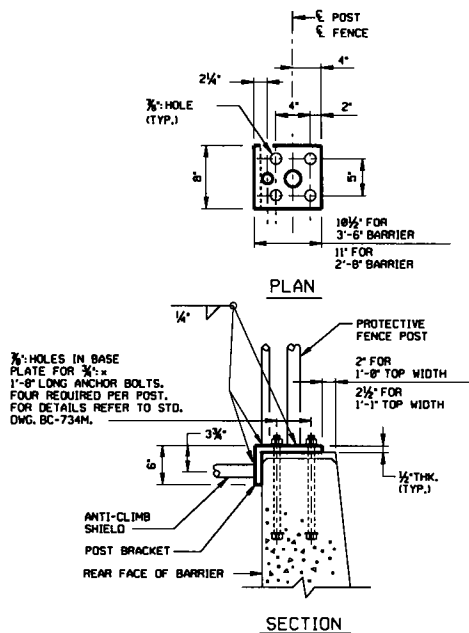
**BARRIER PROTECTIVE FENCE**

FOR BASE PLATE DETAIL, SEE SHEET 18.  
ALTERNATE SIDEWALK DETAIL SHOWN  
(TYP. AND ALT. CONCRETE BARRIER SIMILAR)



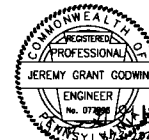
**ANTI-CLIMB SHIELD DETAILS**

(1 REQ'D. FOR EACH END OF FENCE)



**POST BRACKET DETAIL**

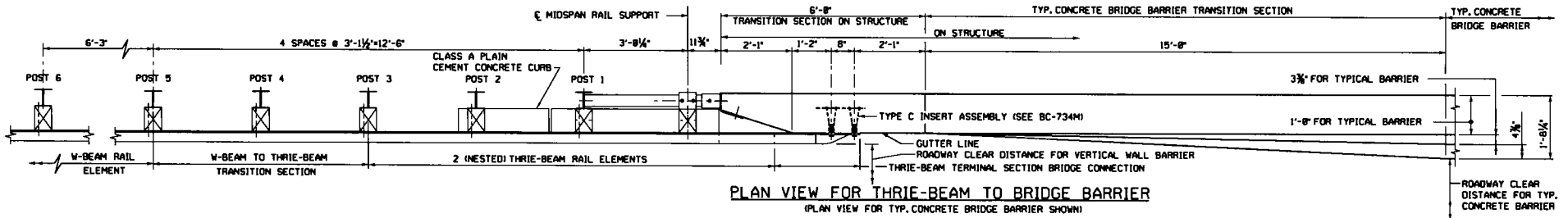
AT ANTI-CLIMB SHIELD



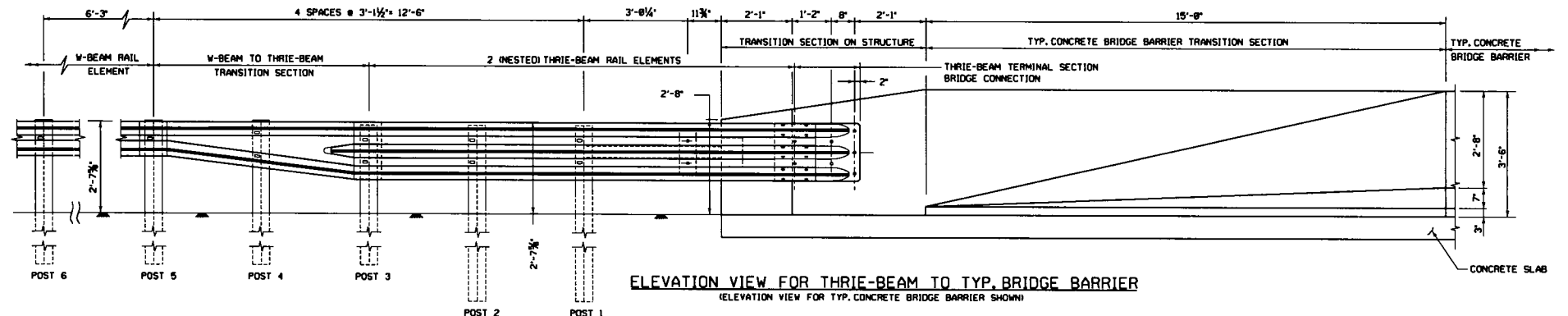
		NORTHERN REGION		NORFOLK SOUTHERN RAILWAY		HARRISBURG DIV.	
		OVERPASS SR-2041 HA LINE, HOP BOTTOM, PA BRIDGE REPAIRS					
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.							
DRAWING TITLE: PROPOSED PROTECTIVE FENCE - DETAILS							
DCN MCC	VAL SEC	MAP	MILE POST HA-647.50				
CON DBG	FILE			DATE 03/13/2020			
SHEET NUMBER 13 OF 15			DRAWING NUMBER HA-647.50				

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**PLAN VIEW FOR THRIE-BEAM TO BRIDGE BARRIER**  
 (PLAN VIEW FOR TYP. CONCRETE BRIDGE BARRIER SHOWN)



**ELEVATION VIEW FOR THRIE-BEAM TO TYP. BRIDGE BARRIER**  
 (ELEVATION VIEW FOR TYP. CONCRETE BRIDGE BARRIER SHOWN)

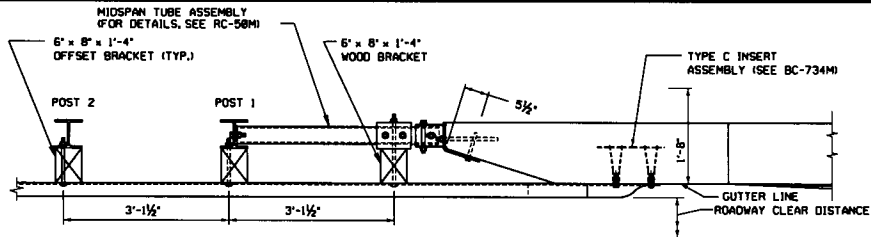
**NOTES:**

1. THRIE-BEAM TO BRIDGE BARRIER TRANSITION HAS BEEN ACCEPTED BY FHWA AS A TL-3 BARRIER DESIGNATION.
2. PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PUB. 488.
3. USE PLAN DIMENSIONS WHEN DIFFERENT FROM THOSE SHOWN ON THIS STANDARD.
4. REINFORCED CONCRETE BARRIER AND EMBEDDED INSERTS ARE BRIDGE ITEMS.
5. SEE RC-58M AND RC-51M FOR DETAILS AND HARDWARE NOT SHOWN, (INCLUDING END TREATMENT)
6. PROVIDE APPROACH END GUIDE RAIL TREATMENT AT BOTH THE APPROACH AND TRAILING ENDS OF STRUCTURE BARRIERS ON TWO LANE FACILITIES WITH TWO-WAY TRAFFIC. ON FOUR LANE DIVIDED HIGHWAYS, GUIDE RAIL TRANSITION IS NOT REQUIRED ON TRAILING ENDS OF BARRIERS UNLESS WARRANTED BY OTHER OBSTRUCTIONS.
7. THE APPROACH END TRANSITION COMPONENTS ARE ROADWAY ITEMS.

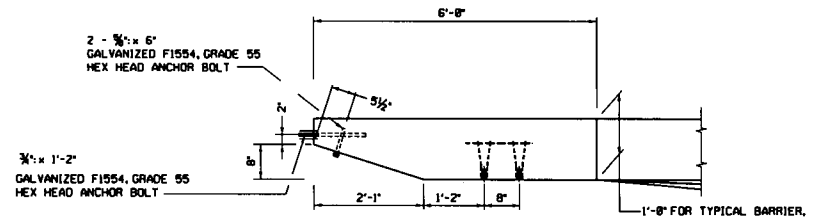


		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV.
<b>OVERPASS SR-2041</b> HA LINE, HOP BOTTOM, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA.	
DRAWING TITLE: <b>THRIE-BEAM TO BRIDGE BARRIER WALL</b>			
DOM MCC	VAL SEC	NAP	MILE POST HA-647.50
CHW DBG	FILE		DATE 03/13/2020
SHEET NUMBER 14 OF 15		DRAWING NUMBER HA-647.50	

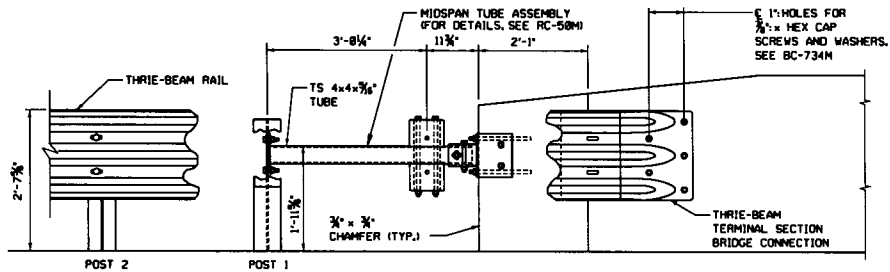
REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS
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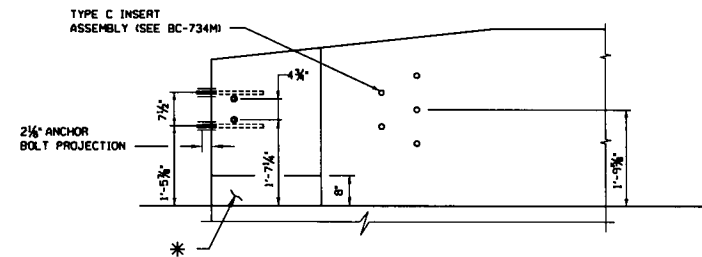
TRANSITION CONNECTION PLAN



BARRIER PLAN



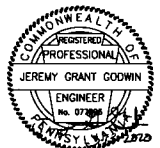
TRANSITION CONNECTION ELEVATION



BARRIER ELEVATION

NOTES:

1. FOR ADDITIONAL NOTES, SEE SHEET 12.
2. FOR APPROACH TRANSITION POST DETAILS, SEE RC-58M.



		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV.
<b>OVERPASS SR-2041</b> HA LINE, HOP BOTTOM, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.			
DRAWING TITLE: <b>THREE-BEAM TO BRIDGE BARRIER WALL - DETAILS</b>			
DRW MCC	VAL SEC	MAP	MILE POST HA-647.50
CHK DBG	FILE		DATE 03/13/2020
SHEET NUMBER 15 OF 15		DRAWING NUMBER HA-647.50	

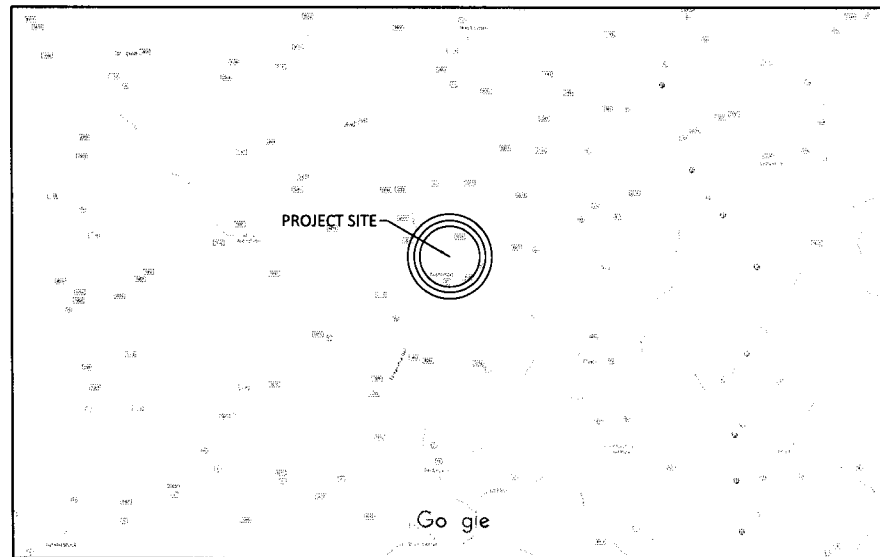
REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS

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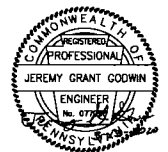
# **OVERPASS SR – 1025**



NICHOLSON, PENNSYLVANIA  
OVERPASS SR-1025 REPAIR



VICINITY MAP



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		<b>NORFOLK SOUTHERN</b>	
NORTHERN REGION		HARRISBURG DIV	
<b>OVERPASS SR-1025</b>			
HA LINE, NICHOLSON, PA			
BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA	
DRAWING TITLE: <b>COVER SHEET</b>			
DDN MCC	VAL SEC	MAP	MILE POST HA-652.69
CHK DBG	FILE	DATE	03/13/2020
SHEET NUMBER 1 OF 14		DRAWING NUMBER HA-652.69	

**GENERAL NOTES**

- CONSTRUCTION AND MATERIAL SPECIFICATIONS: CURRENT EDITION AMERICAN RAILWAY ENGINEERING & MAINTENANCE-OF-WAY "MANUAL FOR RAILWAY ENGINEERING", PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION CURRENT EDITION EXCEPT AS SUPERCEDED BY THESE PLANS, THE CONTRACT AND NORFOLK SOUTHERN SPECIFICATIONS.
- THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT, DUE TO THE NATURE OF RECONSTRUCTION PROJECTS, THE EXACT EXTENT OF RECONSTRUCTION WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO COMMENCEMENT OF WORK. THESE CONTRACT DOCUMENTS HAVE BEEN PREPARED BASED ON FIELD INSPECTION AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO CONSTRUCTION DETAILS AND WORK QUANTITIES. THE CONTRACTOR SHALL PERFORM THE WORK IN ACCORDANCE WITH FIELD CONDITIONS AS ORDERED BY THE ENGINEER.
- THE CONTRACTOR SHALL NOTE THAT ADDITIONAL WORK MAY BE REQUIRED AS THE CONTRACT PROGRESSES WHICH IS NOT SHOWN OR NOTED ON THE PLANS. THIS WORK SHALL BE PERFORMED BY THE CONTRACTOR AS ORDERED BY THE ENGINEER AND PAYMENT SHALL BE MADE AT THE UNIT BID PRICE FOR THE APPROPRIATE ITEMS, SEE SPECIFICATIONS WITHIN CONTRACT PROPOSAL.
- THE CONSTRUCTION OF THE PROJECT SHALL PROCEED IN A CONTINUOUS, SYSTEMATIC AND EXPEDITIOUS MANNER FROM BEGINNING TO COMPLETION. THE CONTRACTOR WILL BE REQUIRED TO PLACE SUFFICIENT EQUIPMENT, LABOR, ETC. ON THE PROJECT SO THAT THE WORK MAY PROGRESS IN ACCORDANCE WITH THE APPROVED CONSTRUCTION SCHEDULE.
- THE CONTRACTOR SHALL VISIT THE SITE BEFORE BIDDING TO FAMILIARIZE HIMSELF WITH THE PRESENT CONDITION AND TO JUDGE FOR HIMSELF, THE EXTENT AND NATURE OF THE WORK TO BE DONE UNDER THIS CONTRACT. NO EXTRA COMPENSATION WILL BE ALLOWED HIM BECAUSE OF HIS FAILURE TO INCLUDE IN THE CONTRACTOR'S BID, ALL ITEMS AND MATERIALS WHICH HE IS REQUIRED TO FURNISH IN ACCORDANCE WITH THE CONTRACT PLANS.
- DIMENSIONS OF THE EXISTING STRUCTURES SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THE CONTRACTOR SHALL TAKE ALL SUCH FIELD MEASUREMENTS AS ARE NECESSARY TO ASSURE PROPER CONSTRUCTION OF THE FINISH WORK.
- THERE SHALL BE NO CLAIM MADE BY THE CONTRACTOR AGAINST THE RAILROAD FOR WORK PERTAINING TO MODIFICATIONS AS MAY BE REQUIRED DUE TO ANY DIFFERENCE BETWEEN ACTUAL FIELD CONDITIONS AND THOSE SHOWN BY THE DETAILS AND DIMENSIONS IN THE CONTRACT PLANS OR THE RECORD DRAWINGS.
- THE CONTRACTOR IS ADVISED THAT ADDITIONAL "NOTES" WILL BE FOUND ON SUBSEQUENT SHEETS OF THE CONTRACT PLANS AND SUCH "NOTES" WHILE PERTAINING TO THE SPECIFIC DRAWINGS THEY ARE PLACED ON, ALSO SUPPLEMENT THE GENERAL NOTES LISTED HERE.
- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING STRUCTURE, TRACK, UTILITIES OR ADJACENT PROPERTIES OR FACILITIES, CAUSED BY HIS OPERATIONS, WHICH ARE NOT INCLUDED AS PART OF THE INTENDED WORK. ANY DAMAGE TO THE EXISTING STRUCTURE OR ADJACENT PROPERTIES, SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR WITHOUT COST TO THE RAILROAD AND TO THE SATISFACTION OF THE ENGINEER.
- IF, DURING THE REPAIR OPERATIONS, ANY COMPONENTS OF THE BRIDGE THAT ARE NOT SCHEDULED TO BE REMOVED, SUCH AS ABUTMENT STEMS, WINGWALLS, GIRDERS OR BEARINGS ARE DAMAGED BY THE CONTRACTOR'S PERSONNEL OR EQUIPMENT, THEY SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER, AT NO COST TO THE RAILROAD.
- THE CONTRACTOR IS REQUIRED TO PROTECT HIS WORKERS AT ALL TIMES IN CONFORMANCE WITH ALL APPLICABLE OSHA REGULATIONS AND FRA BRIDGE WORKER SAFETY RULES.
- THE CONTRACTOR IS ADVISED THAT THERE IS NO ELECTRIC POWER DISTRIBUTION SYSTEM AVAILABLE AT THE BRIDGE FOR HIS USE.
- ALTERATION OF THE CONSTRUCTION PLANS AND STRUCTURAL DETAILS ARE NOT PERMITTED WITHOUT EXPRESS PERMISSION OF NORFOLK SOUTHERN'S CHIEF ENGINEER OF BRIDGES AND STRUCTURES.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS TO COMPLETE THE WORK.
- ALL TRAFFIC CONTROL MEASURES NEEDED TO COMPLETE WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION SPECIFICATION AND ANY LOCAL CODES OR ORDINANCES THAT MAY APPLY.

**DESIGN LOADING:**

- ALL LOADS ARE PER AASHTO CURRENT EDITION.

**DEMOLITION PLAN & ERECTION PLAN NOTES:**

- THE CONTRACTOR IS REQUIRED TO SUBMIT PLANS FOR THE SAFE DEMOLITION AND ANY NECESSARY FORMING OF THE EXISTING STRUCTURE IN ORDER TO PERFORM ALL NEEDED REPAIRS, TO THE RAILROAD PRIOR TO BEGINNING WORK.
- THE CONTRACTOR SHALL DISPOSE OF ALL EXCAVATED & REMOVED SUBSTRUCTURE & FILL MATERIALS AND DEMOLISHED MATERIALS OFF-SITE IN A LEGAL MANNER UNLESS OTHERWISE DIRECTED BY N.S. REPRESENTATIVES IN THE FIELD.
- THE CONTRACTOR IS RESPONSIBLE FOR THE TRAFFIC CONTROL PLAN, AND THIS SHOULD BE INCLUDED IN THE BID PRICE FOR MOBILIZATION OF THE EXISTING STRUCTURE.

**PROTECTION OF RAILROAD NOTES:**

- WHERE APPLICABLE, OPERATIONS SHALL BE COORDINATED WITH THE RAILROAD SO AS NOT TO INTERFERE WITH THE CONTINUED OPERATIONS OF TRAINS. A RAILROAD FLAGMAN (SUPPLIED BY NORFOLK SOUTHERN) SHALL BE PRESENT FOR ANY AND ALL WORK ABOVE OR UNDER THE BRIDGE ADJACENT TO THE TRACK.
- THE CONTRACTOR IS REQUIRED TO FULLY COOPERATE WITH THE NORFOLK SOUTHERN FLAGMAN AND/OR NORFOLK SOUTHERN REPRESENTATIVE & IMMEDIATELY REMOVE ALL EQUIPMENT & PERSONNEL WORKING NEAR THE TRACK WHEN DIRECTED AS SUCH BY THE FLAGMAN.

**UTILITIES:**

- THE CONTRACTOR SHALL BE AWARE OF THE OVERHEAD ELECTRIC AND UTILITY LINES ABOVE/UNDER AND PARALLEL TO THE EXISTING BRIDGE.

**OTHER:**

- THE WORK FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE NORFOLK SOUTHERN STANDARD SPECIFICATIONS FOR MATERIALS AND CONSTRUCTION DATED JANUARY 2019, PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION, CURRENT EDITION AND ANY SPECIAL PROVISIONS PROVIDED HEREIN.
- NS WILL FURNISH A FLAGMAN AT NO COST TO THE CONTRACTOR. THE CONTRACTOR WILL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE NS FLAGMAN.
- THE CONTRACTOR SHALL SUBMIT TO NS A PROPOSED CONSTRUCTION SCHEDULE PRIOR TO BEGINNING WORK AND WILL SCHEDULE A PRECONSTRUCTION MEETING ONCE A CONTRACT HAS BEEN AWARDED.
- THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT NS DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS. THE CONTRACTOR SHOULD VERIFY LOCATIONS WITH THE UTILITY COMPANIES NOT LESS THAN 72 HOURS BEFORE STARTING EXCAVATION ACTIVITIES.
- RAILROAD RIGHT-OF-WAY LINES, IF SHOWN, WERE OBTAINED FROM VALUATION MAPS. ALL RIGHT-OF-WAY AND PROPERTY LINES ARE SHOWN FOR INFORMATION PURPOSES ONLY AS THEY HAVE NOT BEEN VERIFIED IN THE FIELD.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY LOCAL CONSTRUCTION PERMITS THAT MAY BE REQUIRED FOR CONSTRUCTION OF THIS PROJECT.
- ANY SURVEYS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL OBTAIN ANY TEMPORARY CONSTRUCTION ENTRANCE AND/OR DRIVEWAY PERMITS FROM THE APPROPRIATE GOVERNING AGENCY.
- ON SITE AND GENERATED CONSTRUCTION DEBRIS IS TO BE DISPOSED OF AS NON-REGULATED SOLID WASTE IN COMPLIANCE WITH LOCAL REGULATIONS. IF SUSPECTED ENVIRONMENTAL PROBLEMS ARE ENCOUNTERED, CONTACT THE NS ENVIRONMENTAL PROTECTION DEPARTMENT TO ASSIST IN THEIR PROPER HANDLING AND REMOVAL.
- THE CONTRACTOR SHALL COORDINATE WITH NS SIGNALS DEPARTMENT FOR THE LOCATIONS OF SIGNAL WIRE WHETHER LIVE OR DEAD BEFORE ANY EXCAVATION WORK.
- ALL CONCRETE REPAIRS SHALL BE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION, CURRENT EDITION.

**SCOPE OF WORK:**

- PROVIDE TRAFFIC CONTROL
- DEMO EXISTING PARAPET WALL AND JERSEY BARRIERS AS REQUIRED
- REPAIR EXISTING BRIDGE SUBSTRUCTURE AND SUPERSTRUCTURE AS NOTED
- REBUILD JERSEY BARRIER WALL AND PROTECTION FENCE
- ATTACH "THRIE BEAM TO BRIDGE BARRIER" TO BRIDGE AND EXISTING GUARDRAIL AS APPROPRIATE
- BARRIER WALL CORNERS WITHOUT EXISTING GUARDRAIL TO ATTACH SHALL RECEIVE PENNDOT APPROVED END TREATMENT
- REOPEN STRUCTURE TO NORMAL TRAFFIC

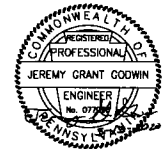
**INDEX OF DRAWINGS**

DESCRIPTION	SHEET NO	REV DATE
COVER SHEET	1	03-13-2020
GENERAL NOTES & INDEX OF DRAWINGS	2	03-13-2020
GENERAL SITE PLAN	3	03-13-2020
EXISTING NORTH ELEVATION & CROSS-SECTION	4	03-13-2020
EXISTING SOUTH ELEVATION	5	03-13-2020
EAST & WEST ABUTMENT ELEVATION	6	03-13-2020
PROPOSED TYPE 1 CONCRETE REPAIR	7	03-13-2020
PROPOSED TYPE 2 CONCRETE REPAIR	8	03-13-2020
PROPOSED CORNER CONCRETE REPAIR	9	03-13-2020
PROPOSED BARRIER WALL	10	03-13-2020
PROPOSED PROTECTIVE FENCE	11	03-13-2020
PROPOSED PROTECTIVE FENCE - DETAILS	12	03-13-2020
PROPOSED THRIE-BEAM TO BRIDGE BARRIER WALL	13	03-13-2020
THRIE-BEAM TO BRIDGE BARRIER WALL - DETAILS	14	03-13-2020

**ESTIMATE OF QUANTITIES**

BID ITEM	DESCRIPTION	QTY	UNIT
1.	MOBILIZATION	1	LS
2.	NORTH SPANDREL WALL REPAIRS* (APPROX. 725)	1	LS
3.	SOUTH SPANDREL WALL REPAIRS* (APPROX. 725)	1	LS
4.	EAST ABUTMENT REPAIRS* (APPROX. 125)	1	LS
5.	WEST ABUTMENT REPAIRS* (APPROX. 125)	1	LS
6.	PROPOSED BRIDGE BARRIER WALL W/ PROTECTION (APPROX. 240)	1	LS
7.	PERFORMANCE BOND	1	LS
8.	PAYMENT BOND	1	LS

\*INCLUDES EXCAVATION, REMOVAL OF LOOSE CONCRETE, CONCRETE, EPOXY, REBAR, HAULING OFF ANY DEBRIS AND RESTORING THE SITE TO ITS ORIGINAL CONDITION.



**NORFOLK SOUTHERN RAILWAY**

NORTHERN REGION      HARRISBURG DIV

**OVERPASS SR-1025**

HA LINE, NICHOLSON, PA

BRIDGE REPAIRS

OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES      ATLANTA, GA

DRAWING TITLE: **GENERAL NOTES & INDEX OF DRAWINGS**

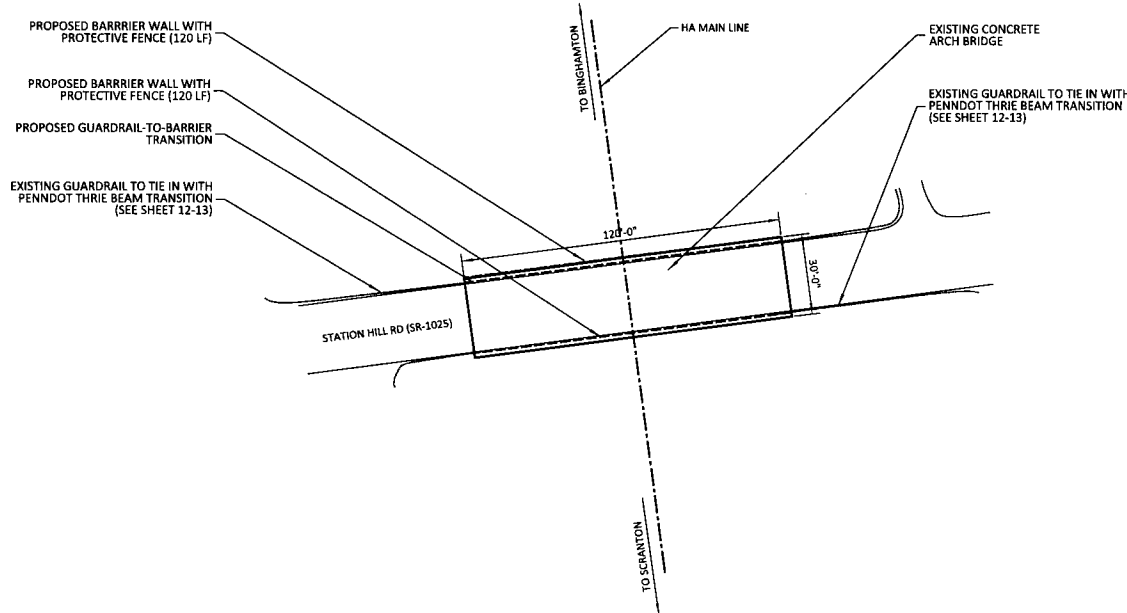
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CHK DBG	FILE		DATE	03/13/2020
SHEET NUMBER		2 OF 14	DRAWING NUMBER	
			HA-652.69	

REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS

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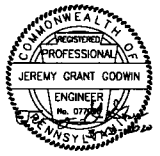
NOTES:

1. ALL SURVEY INFORMATION AND DIMENSIONS SHOWN OR REFERENCED IN THIS PLAN OR ATTACHED DOCUMENTS ARE BASED ON ENGINEERS SITE VISIT, PRELIMINARY SURVEY, RECORD DRAWINGS, GIS INFORMATION AND OTHER METHODS AS AVAILABLE TO THE ENGINEER AT THE TIME OF PUBLICATION. THIS DOCUMENT IN NO WAY GUARANTEES THE ACCURACY OR PRECISION OF THE ABOVE LISTED INFORMATION. THIS INFORMATION IS GIVEN AS FOR THE PURPOSE OF GENERAL REFERENCE.
2. THE CONTRACTOR SHALL MEASURE AND VERIFY ALL MEASUREMENTS NEEDED TO COMPLETE THE SCOPE OF WORK IN AN APPROVED AND CORRECT MANNER.



EXISTING PLAN

SCALE : 1" = 20'



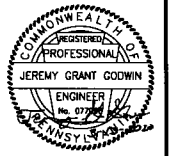
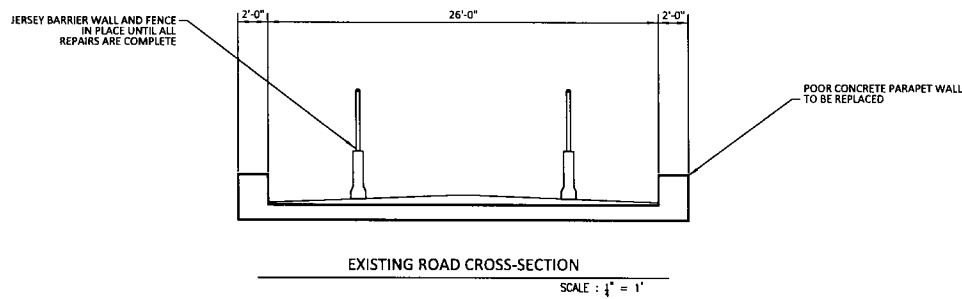
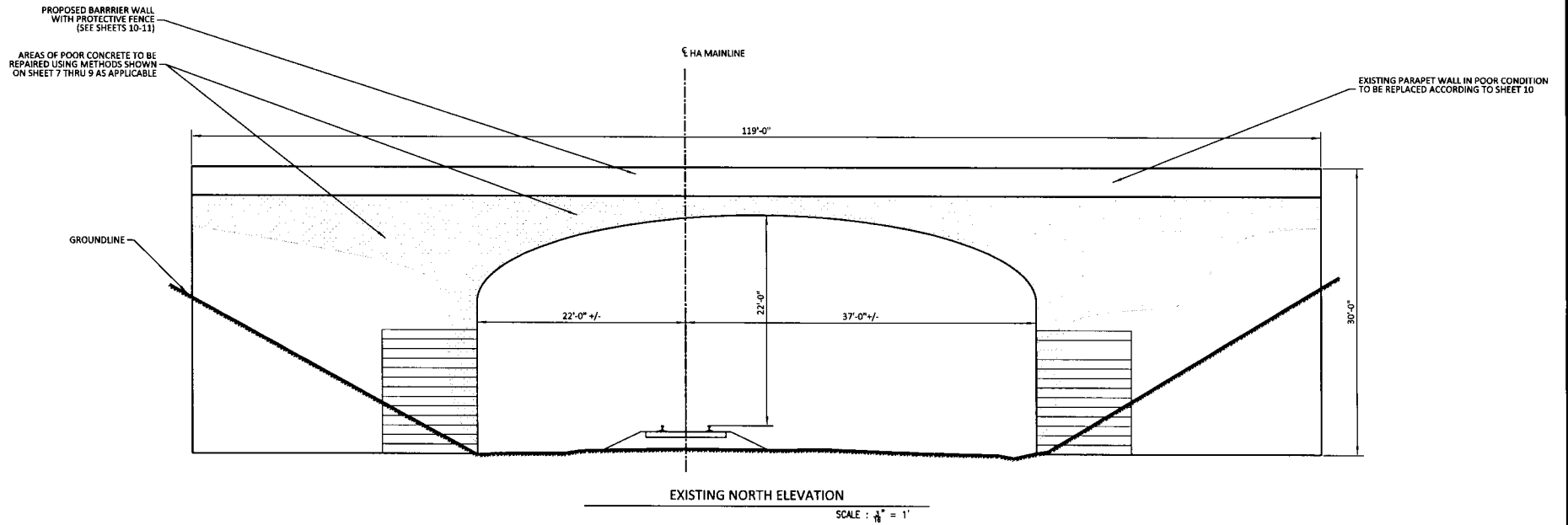
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		NORTHERN REGION	HARRISBURG DIV.
<b>OVERPASS SR-1025</b> HA LINE, NICHOLSON, PA			
BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.			
DRAWING TITLE: GENERAL SITE PLAN			
CHK MCC	VAL SEC	MAP	MILE POST HA-652.69
CHK DBG	FILE		DATE 03/13/2020
SHEET NUMBER 3 OF 14		DRAWING NUMBER HA-652.69	

REV	BY	DATE	DESCRIPTION
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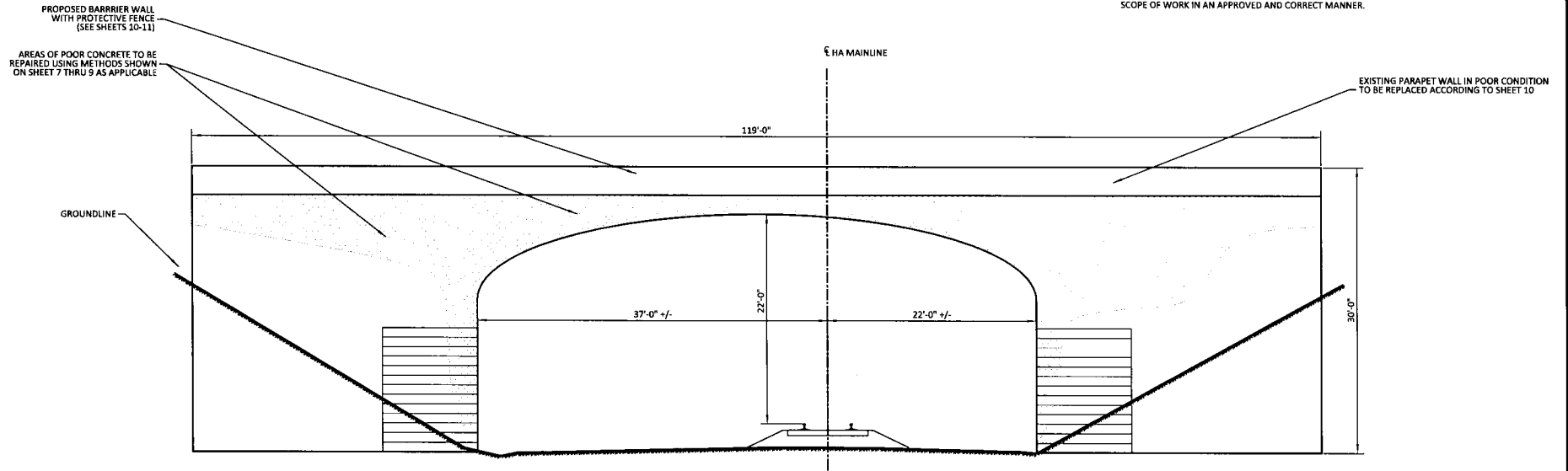
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		NORTHERN REGION	HARRISBURG DIV.
<b>OVERPASS SR-1025</b> HA LINE, NICHOLSON, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.			
DRAWING TITLE: <b>EXISTING NORTH ELEVATION &amp; CROSS-SECTION</b>			
DNW MCC	VAL SEC	MAP	HAILE POST HA-652.69
DNW DBG	FILE	DATE	03/13/2020
SHEET NUMBER 4 OF 14		DRAWING NUMBER HA-652.69	

REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS

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EXISTING SOUTH ELEVATION

SCALE :  $\frac{1}{8}'' = 1'$



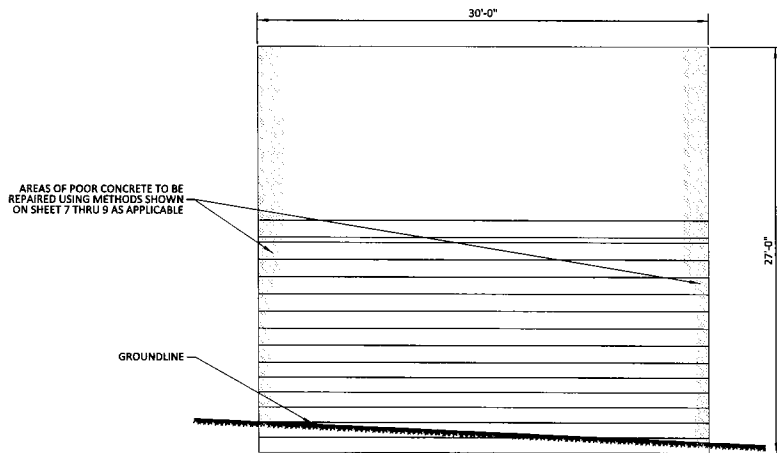
		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV
<b>OVERPASS SR-1025</b> HA LINE, NICHOLSON, PA BRIDGE REPAIRS			
<small>OFFICE OF CHIEF ENGINEER - BRIDGES &amp; STRUCTURES ATLANTA, GA.</small>			
DRAWING TITLE: <b>EXISTING SOUTH ELEVATION</b>			
DDN MCC	VAL SEC	MAP	MILE POST HA-652.69
CHK: DBG	FILE		DATE 03/13/2020
SHEET NUMBER 5 OF 14		DRAWING NUMBER HA-652.69	

REV	BY	DATE	DESCRIPTION
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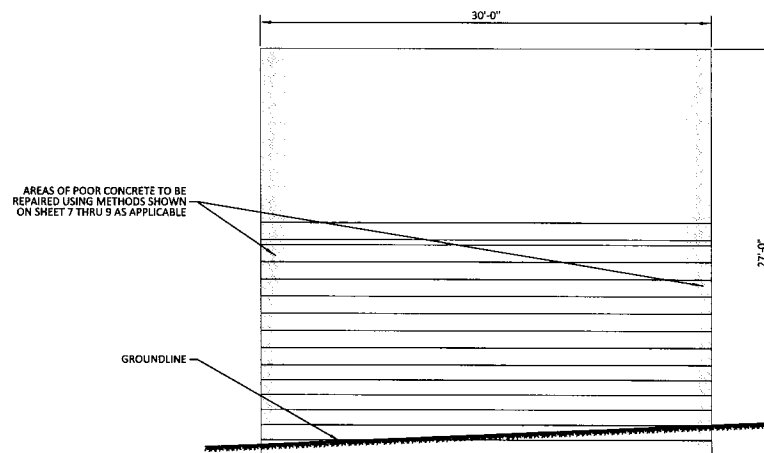


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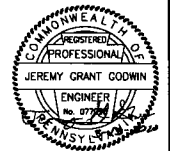
1. ALL SURVEY INFORMATION AND DIMENSIONS SHOWN OR REFERENCED IN THIS PLAN OR ATTACHED DOCUMENTS ARE BASED ON ENGINEERS SITE VISIT, PRELIMINARY SURVEY, RECORD DRAWINGS, GIS INFORMATION AND OTHER METHODS AS AVAILABLE TO THE ENGINEER AT THE TIME OF PUBLICATION. THIS DOCUMENT IN NO WAY GUARANTEES THE ACCURACY OR PRECISION OF THE ABOVE LISTED INFORMATION. THIS INFORMATION IS GIVEN AS FOR THE PURPOSE OF GENERAL REFERENCE.
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EXISTING EAST ABUTMENT ELEVATION



EXISTING WEST ABUTMENT ELEVATION

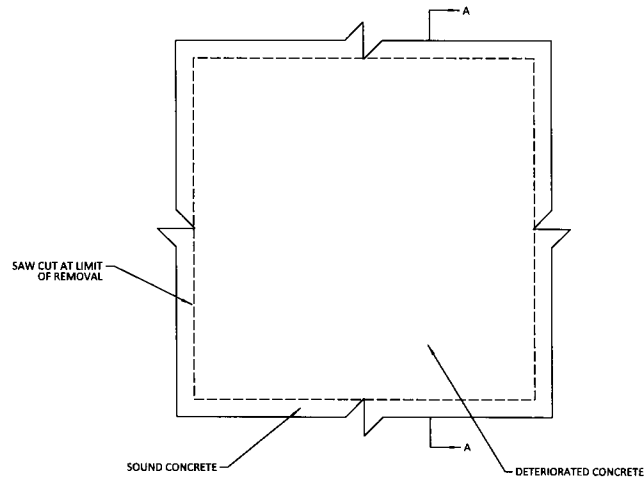


		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV.
<b>OVERPASS SR-1025</b> HA LINE, NICHOLSON, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA.	
DRAWING TITLE: <b>EAST &amp; WEST ABUTMENT ELEVATION</b>			
DOM MCC	VAL SEC	MAP	MILE POST HA-652.69
CHK DBG	FILE		DATE 03/13/2020
SHEET NUMBER 6 OF 14		DRAWING NUMBER HA-652.69	

REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS
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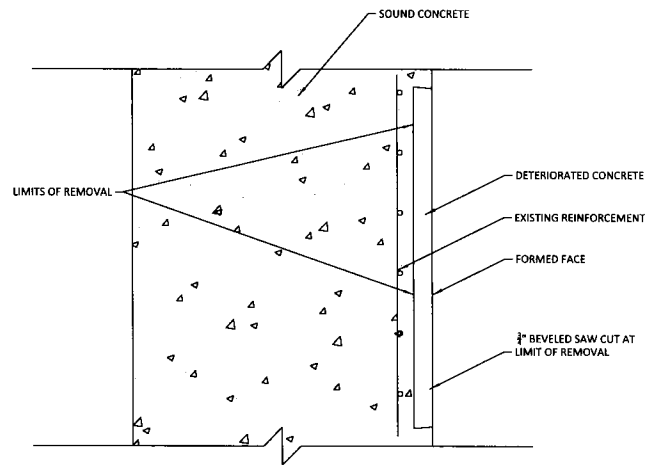
**NOTES:**

1. ALL REPAIRS SHALL BE MADE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION BC-783M
2. SQUARE OFF DETERIORATED CONCRETE TO SOUND CONCRETE WITH A SAWCUT OF  $\frac{3}{4}$ " MAXIMUM.
3. REMOVE ALL LOOSE AND DELAMINATED CONCRETE TO PROVIDE A SOUND BOND BETWEEN EXISTING CONCRETE AND PATCHING MATERIAL.
4. APPLY A RAPID HARDENING CONCRETE PATCHING MATERIAL FROM A MANUFACTURER LISTED IN BULLETIN 15 UNDER MISCELLANEOUS POLYMER MODIFIED AND SPECIAL CEMENTS, MORTARS AND CONCRETES, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.



ELEVATION VIEW (TYP)

SCALE : NOT TO SCALE



SECTION A-A (TYP)

SCALE : NOT TO SCALE

NOTE:  
THIS REPAIR IS TO BE USED FOR REPAIRS ON UNDERSIDE OF DECK, ELEVATIONS AND REPAIRS TO PORTIONS OF DELAMINATED FACES OF ABUTMENTS UP TO 3/4" THICKNESS.

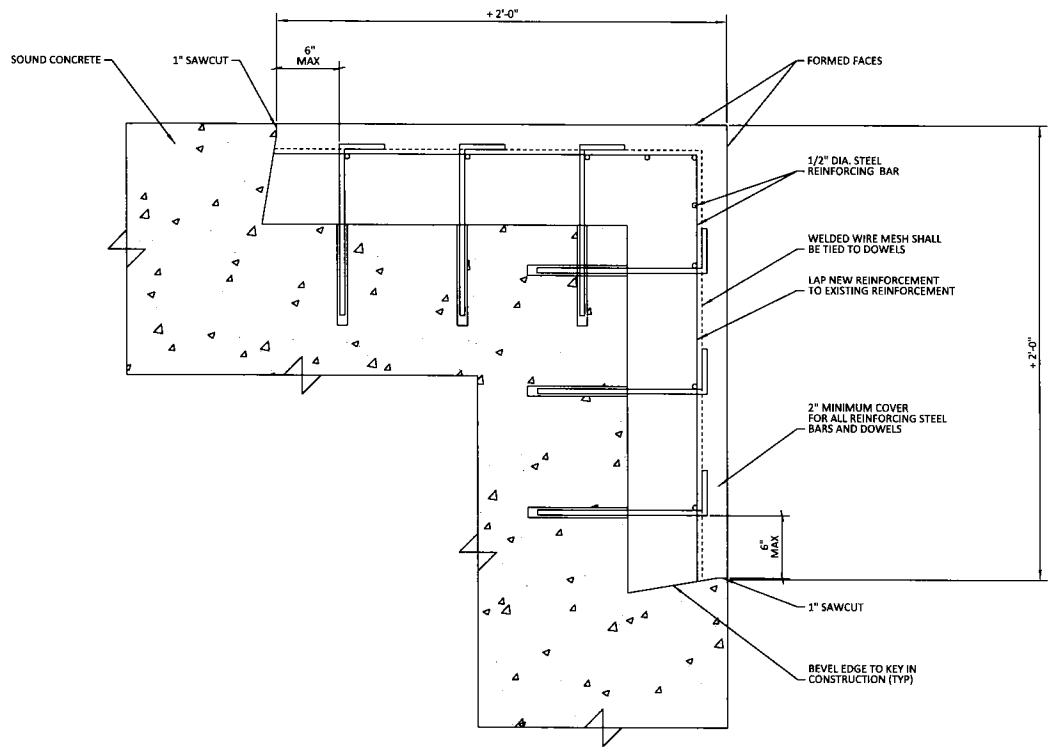


REV	BY	DATE	DESCRIPTION
1	CGB	12-31-19	PENNDOT REVISIONS

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<b>NORFOLK SOUTHERN</b>			
NORFOLK SOUTHERN RAILWAY		HARRISBURG DIV	
NORTHERN REGION			
<b>OVERPASS SR-1025</b>			
HA LINE, NICHOLSON, PA			
BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA.	
DRAWING TITLE: <b>PROPOSED TYPE 1 CONCRETE REPAIR</b>			
DDN MCC	VAL SEC	MAP	MILE POST HA-652.69
CHK DBG	FILE	DATE	03/13/2020
SHEET NUMBER 7 OF 14		DRAWING NUMBER HA-652.69	





CORNER REPAIR DETAIL (TYP)

SCALE : NOT TO SCALE

NOTE:  
THIS REPAIR IS TO BE USED FOR REPAIRS ON UNDERSIDE  
OF DECK, ELEVATIONS AND REPAIRS TO PORTIONS OF DELAMINATED  
FACES OF ABUTMENTS OVER 3/4" THICKNESS.

**NOTES:**

1. ALL REPAIRS SHALL BE MADE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION BC-783M.
2. SQUARE OFF DETERIORATED CONCRETE TO SOUND CONCRETE WITH A SAWCUT OF 3/4" MINIMUM TO 1" MAXIMUM BUT NOT TO THE DEPTH OF THE REINFORCEMENT STEEL. BACK BEVEL EDGE BEYOND SAWCUT.
3. USE HAND TOOLS TO REMOVE ALL LOOSE AND DELAMINATED CONCRETE THAT PROVIDES A SOUND BOND BETWEEN EXISTING CONCRETE AND NEW CONCRETE. PNEUMATIC HAMMERS WITH IMPACT RATINGS OF 30 FT/LB OR LESS MAY BE USED IF REQUIRED.
4. IF DETERIORATED CONCRETE EXTENDS BEYOND THE PRIMARY REINFORCEMENT, REMOVE THE CONCRETE TO AT LEAST 3/4" BEHIND THE REINFORCEMENT.
5. APPLY AN EPOXY BONDING COMPOUND BETWEEN THE EXISTING AND THE NEW CLASS AA CEMENT CONCRETE.
6. USE DOWELS ONLY WHEN W DIMENSION OF DETERIORATED CONCRETE IS GREATER THE 2'-0" AND NEW OR EXISTING REINFORCEMENT CANNOT ADEQUATELY BE DEVELOPED BY LAPPING WITH EXISTING REINFORCEMENT.
7. USE A PACHOMETER TO LOCATE EXISTING REINFORCEMENT WHEN DRILLING DOWEL HOLES TO AVOID DRILLING THRU EXISTING BARS.
8. AN APPROVED EPOXY ANCHORING SYSTEM IN 90° HOLES MAY REPLACE GROUT IN SLOPED HOLES. USE A 6" MINIMUM EMBEDMENT AND IN ACCORDANCE WITH THE MANUFACTURES INSTRUCTIONS.
9. A #4 DEFORMED REINFORMENT BENT "L" BAR MAY REPLACE THE 1/2"Ø DOWEL HOOK.
10. ALTERNATE WIRE MESH MAY BE SUBSTITUTED FOR 3X3-W10XW10, PROVIDED WIRE SPACING DOES NOT EXCEED 4" AND AN EQUIVALENT STEEL AREA IS PROVIDED, NEW REINFORCEMENT BARS MAY BE OMITTED IF WIRE MESH STEEL AREA EXCEEDS EXISTING REINFORCEMENT.
11. CLEAN EXISTING REINFORCEMENT BY MECHANICAL MEANS.
12. LAP EQUIVALENT NEW REINFORCEMENT TO THE EXISTING REINFORCEMENT AS DIRECTED.
13. REINFORCEMENT BARS TO BE EPOXY COATED.



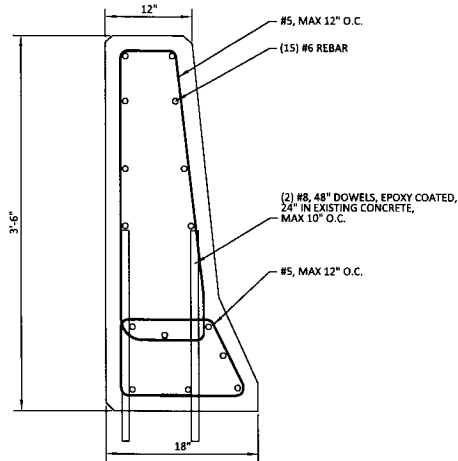
		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV
<b>OVERPASS SR-1025</b> HA LINE, NICHOLSON, PA BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA.	
DRAWING TITLE: <b>PROPOSED CORNER CONCRETE REPAIR</b>			
DNH MCC	VAL SEC	MAP	MILE POST HA-652.69
CHK DBG	FILE	DATE	03/13/2020
SHEET NUMBER 9 OF 14		DRAWING NUMBER HA-652.69	

REV	BY	DATE	DESCRIPTION
▲	CGB	12-31-19	PENNDOT REVISIONS

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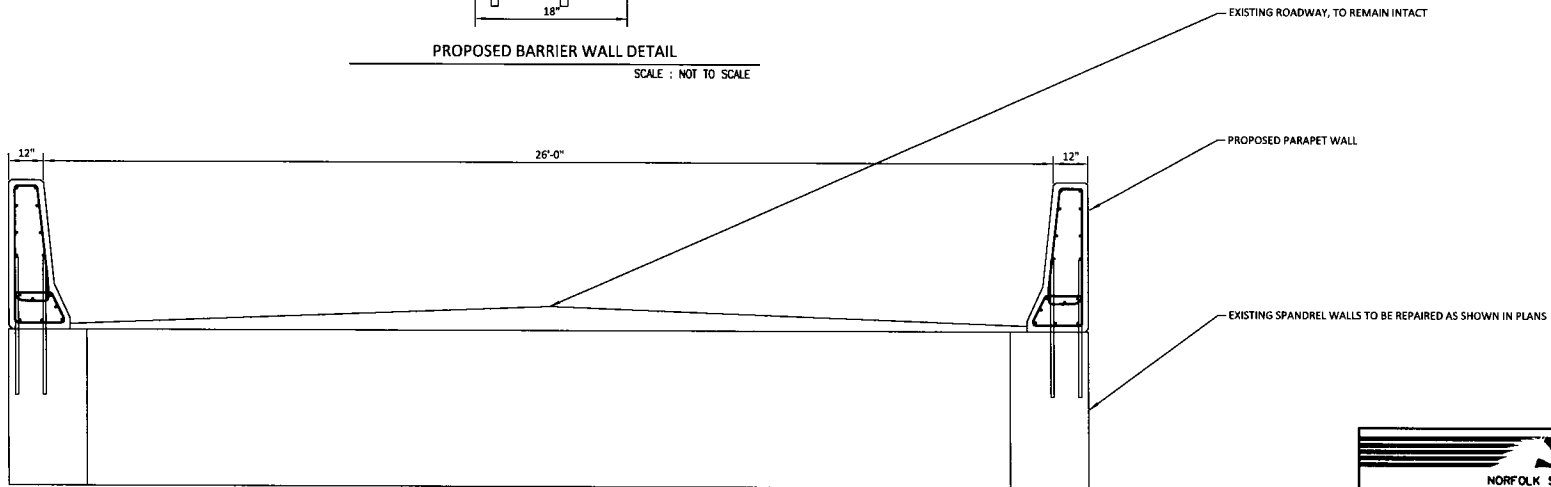
**NOTES:**

1. ALL REPAIRS SHALL BE MADE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION STANDARDS FOR BRIDGE CONSTRUCTION BC-783M.
2. ALL CIP CONCRETE SHALL MEET OR EXCEED PENNDOT CLASS AA.
3. EXISTING PARAPET WALLS SHALL BE REMOVED BY METHODS TO KEEP EXISTING ROAD IN SERVICE AND NOT TO INTERFERE WITH RAILROAD OPERATIONS.
4. ONCE EXISTING PARAPET WALL IS REMOVED EXISTING SLAB CLEANED AND SPANDREL WALL IS TO BE REPAIRED ACCORDING TO THIS DOCUMENT AND THE ENGINEERS RECOMMENDATION.
5. ONCE SPANDREL WALL IS REPAIRED AND CURED 28 DAYS THE PROPOSED PARAPET WALLS SHALL BE CONSTRUCTED AS SHOWN IN THIS DOCUMENT.
6. TEMPORARY BARRIER WALL AND FENCING SHALL BE REMOVED BY CONTRACTOR ONCE PROPOSED PARAPET WALLS ARE CONSTRUCTED AND CURED FOR 28 DAYS.
7. EXISTING PAVEMENT IS NOT TO BE DAMAGED BY CONTRACTOR.
8. ALL CONCRETE REPAIRS SHALL BE MADE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE 318, CURRENT EDITION.



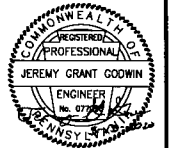
PROPOSED BARRIER WALL DETAIL

SCALE : NOT TO SCALE



BRIDGE CROSS-SECTION

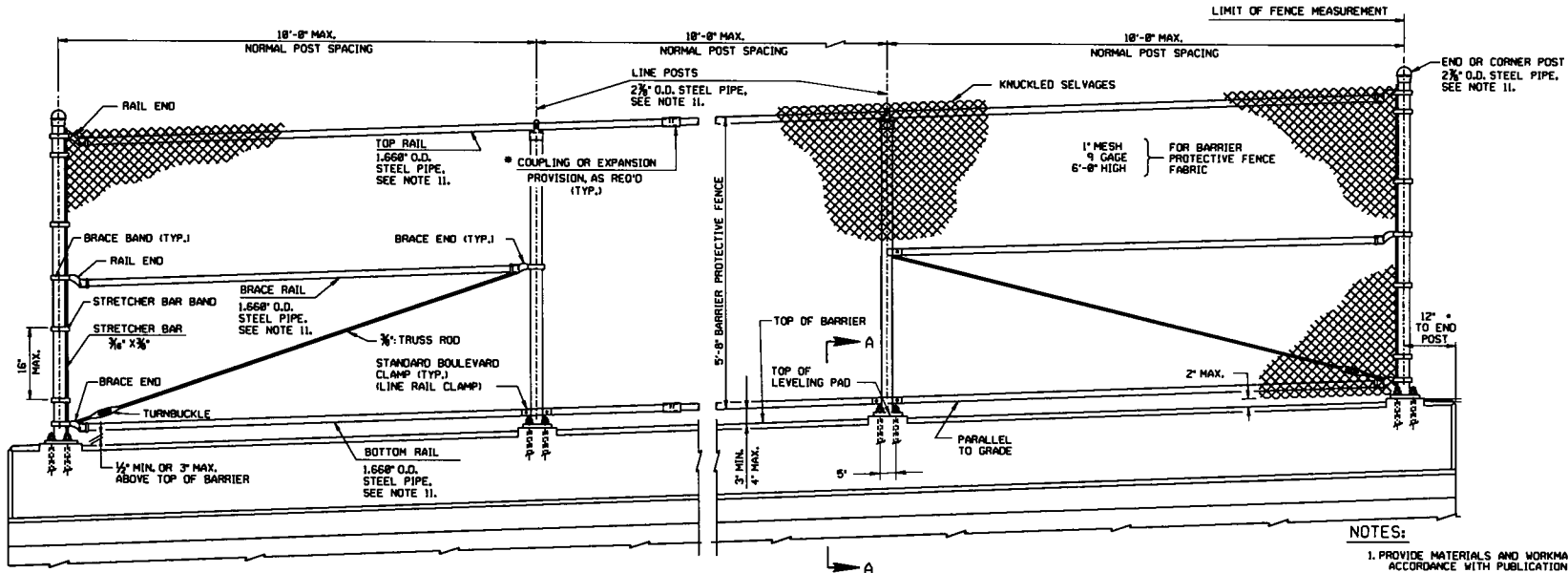
SCALE : 1" = 20'



		NORFOLK SOUTHERN RAILWAY		HARRISBURG DIV.
		OVERPASS SR-1025		
NORTHERN REGION		HA LINE, NICHOLSON, PA		
BRIDGE REPAIRS				
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA.				
DRAWING TITLE: PROPOSED BARRIER WALL				
DGN MCC	VAL SEC	MAP	FILE	MILE POST HA-652.69
CHK DBG	FILE			DATE 03/13/2020
SHEET NUMBER 10 OF 14			DRAWING NUMBER HA-652.69	

REV	BY	DATE	DESCRIPTION
△	CGB	12-31-19	PENNDOT REVISIONS

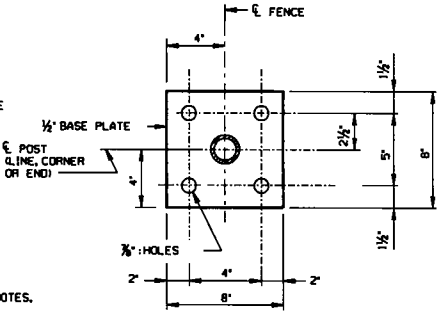
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- NOTES:**
1. PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PUBLICATION 488.
  2. PROVIDE SHIMS FROM APPROVED MATERIAL.
  3. ONLY TOUCH-UP PAINTING OF MATERIAL IS PERMITTED.
  4. PLACE FENCE POSTS AND ANCHOR BOLTS TRULY VERTICAL. PLACE RAILS PARALLEL TO GRADE.
  5. NO LIGHTING POLES ARE USED.
  6. AT BRIDGE EXPANSION JOINTS, PERMIT THE FENCE FABRIC AND RAILS TO EXPAND OR CONTRACT.
  7. CLIP THE TIE WIRE FASTENERS AND BEND AWAY FROM TRAFFIC.
  8. COAT ALL SURFACES OF THE BASE PLATES IN CONTACT WITH CONCRETE WITH CAULKING COMPOUND PRIOR TO ERECTION AND ALIGNMENT. AFTER ERECTION AND ALIGNMENT, SEAL OPENINGS BETWEEN THE METAL SURFACES AND THE CONCRETE WITH CAULKING COMPOUND MEETING THE REQUIREMENTS OF PUBLICATION 488, SECTION 705.8(b),
  9. PLACE ANCHOR BOLTS WITH SIDEWALK OR BARRIER AND ACCURATELY SET AND BRACE AGAINST DISPLACEMENT BEFORE THE SURROUNDING CONCRETE IS PLACED. LEVEL THE BASE PLATE AND THEN PLACE THE LEVELING PAD USING RAPID SET CONCRETE.
  10. DESIGN DRAINAGE SYSTEM IN ACCORDANCE WITH DM4, SECTION PP 3.2.3.
  11. POSTS AND RAIL MATERIAL PER PUBLICATION 488, SECTION 1016.2(a)3.
  12. REFER TO CONTRACT DOCUMENTS FOR POST SPACING.
  13. PLACE CORNER POSTS AT ANGLE POINTS IN HORIZONTAL AND VERTICAL ALIGNMENT OF FENCE.

**TYPICAL FENCE ELEVATION**

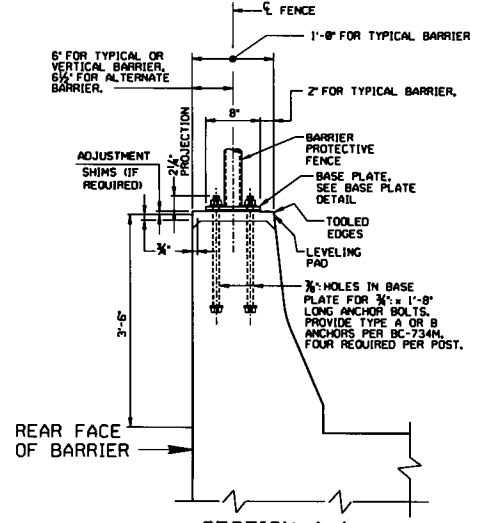
9" MIN. DISTANCE TO STRUCTURE EXPANSION JOINT.



**BASE PLATE DETAIL**

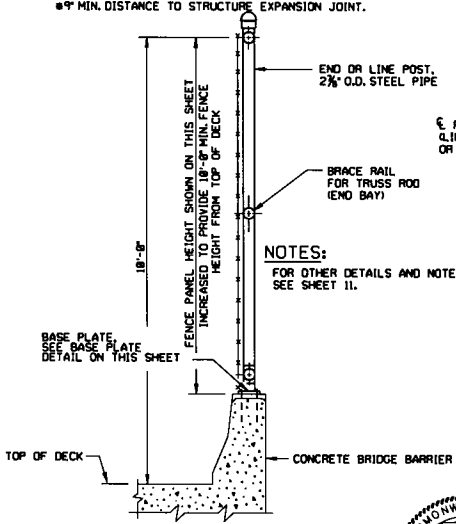
(ALL DIMENSIONS ARE TYPICAL UNLESS NOTED OTHERWISE) N.T.S.

- NOTES:**
- FOR OTHER DETAILS AND NOTES, SEE SHEET 11.



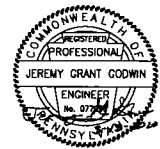
**SECTION A-A**

TYPICAL FENCE POST SECTION, ALTERNATE SIDEWALK DETAIL SHOWN (TYP. AND ALT. CONCRETE BARRIER SIMILAR)



**SECTION D-D**

TYPICAL CONCRETE BARRIER AND NO SIDEWALK BARRIER MOUNTED DETAILS



REV	BY	DATE	DESCRIPTION
1	CGB	12-31-19	PENNDOT REVISIONS
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**NORFOLK SOUTHERN**  
NORFOLK SOUTHERN RAILWAY

NORTHERN REGION HARRISBURG DIV

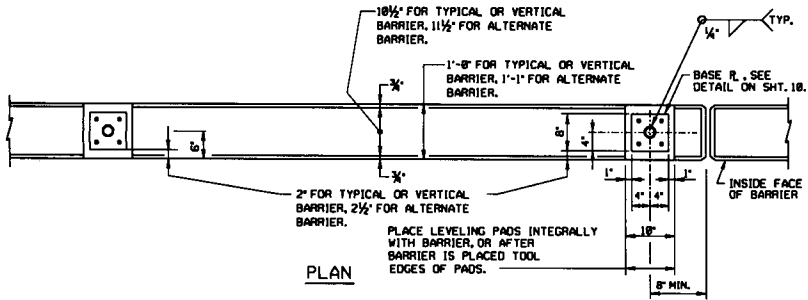
OVERPASS SR-1025  
HA LINE, NICHOLSON, PA

BRIDGE REPAIRS

OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA

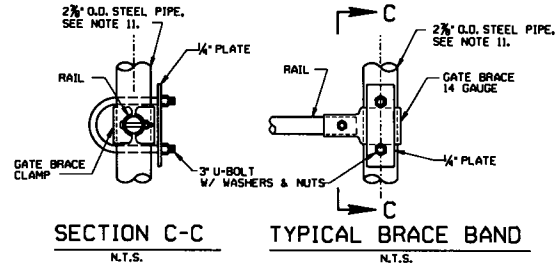
DRAWING TITLE: PROPOSED PROTECTIVE FENCE

DRW MCC	VAL SEC	MAP	MILE POST HA-652.69
CHK DBG	FILE		DATE 03/13/2020
SHEET NUMBER 11 OF 14		DRAWING NUMBER HA-652.69	

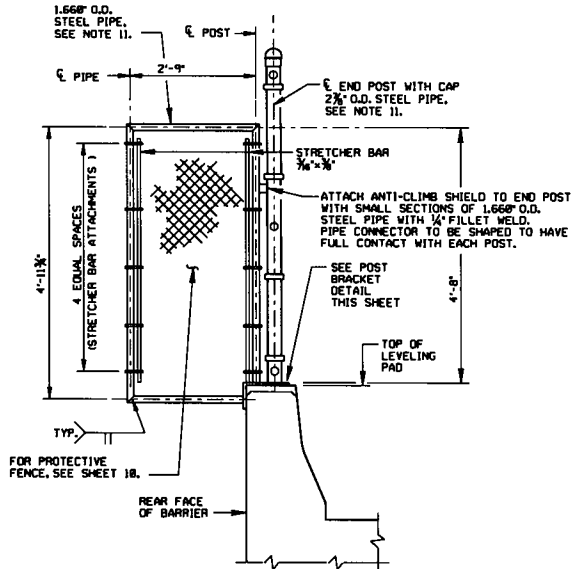


**BARRIER PROTECTIVE FENCE**

FOR BASE PLATE DETAIL, SEE SHEET 18.  
ALTERNATE SIDEWALK DETAIL SHOWN  
(TYP. AND ALT. CONCRETE BARRIER SIMILAR)

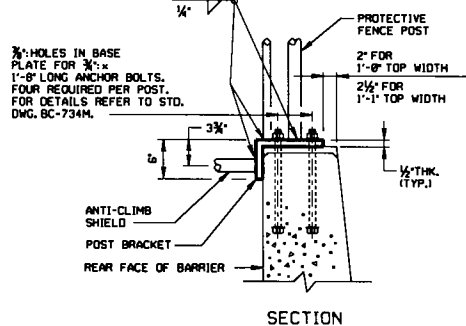
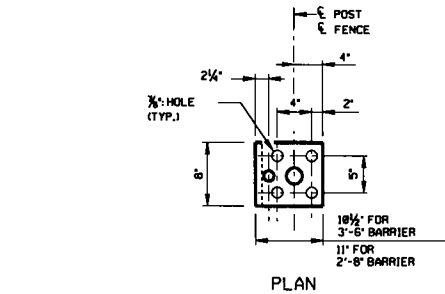


**SECTION C-C** N.T.S. **TYPICAL BRACE BAND** N.T.S.

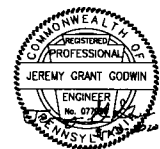


**ANTI-CLIMB SHIELD DETAILS**

(1 REQ'D. FOR EACH END OF FENCE)



**POST BRACKET DETAIL**  
AT ANTI-CLIMB SHIELD



REV	BY	DATE	DESCRIPTION
1	CGE	12-31-19	PENNDOT REVISIONS

RAILROAD CONSULTANTS, PLLC  
213 UPTOWN SQUARE  
MURFREESBORO, TN 37129  
(p) 615.663.1142

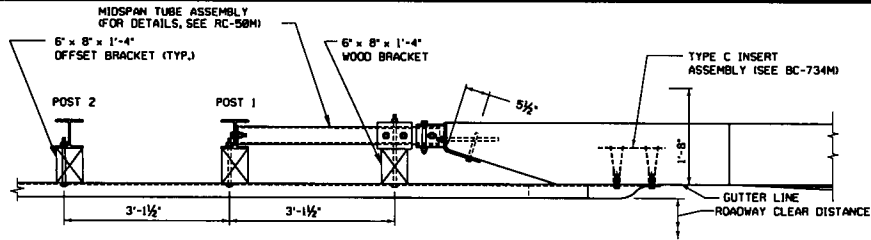
**NORFOLK SOUTHERN**  
NORFOLK SOUTHERN RAILWAY  
NORTHERN REGION HARRISBURG, PA  
OVERPASS SR-1025  
HA LINE, NICHOLSON, PA  
BRIDGE REPAIRS  
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES ATLANTA, GA

DRAWING TITLE: **PROPOSED PROTECTIVE FENCE - DETAILS**

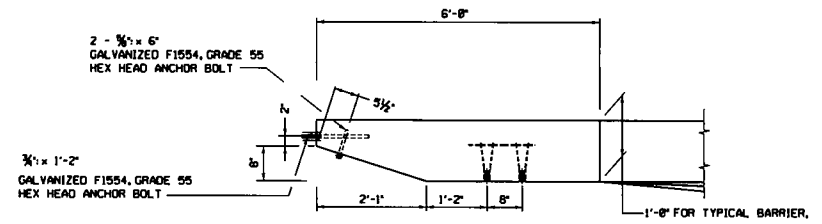
DDN MCC	VAL SEC	MAP	MILE POST HA-652.69
CHK DBG	FILE	DATE	03/13/2020
SHEET NUMBER	12 OF 14	DRAWING NUMBER	HA-652.69



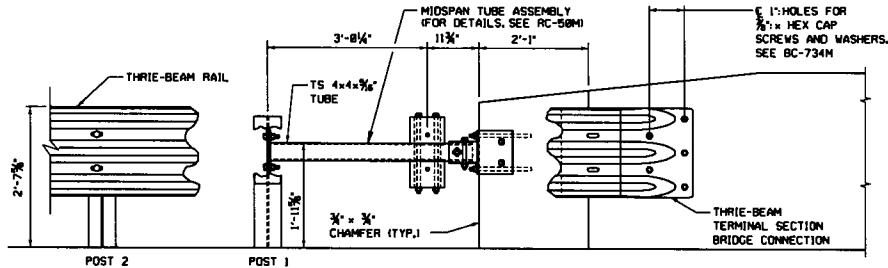




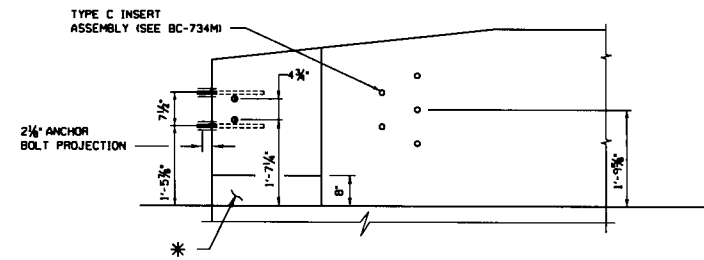
TRANSITION CONNECTION PLAN



BARRIER PLAN



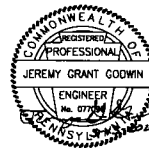
TRANSITION CONNECTION ELEVATION



BARRIER ELEVATION

**NOTES:**

1. FOR ADDITIONAL NOTES, SEE SHEET 12.
2. FOR APPROACH TRANSITION POST DETAILS, SEE RC-50M.



REV	BY	DATE	DESCRIPTION
1	CGB	12-31-19	PENNDOT REVISIONS

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		NORFOLK SOUTHERN RAILWAY	
		NORTHERN REGION	HARRISBURG DIV.
OVERPASS SR-1025			
HA LINE, NICHOLSON, PA			
BRIDGE REPAIRS			
OFFICE OF CHIEF ENGINEER - BRIDGES & STRUCTURES		ATLANTA, GA.	
DRAWING TITLE: THRIVE-BEAM TO BRIDGE BARRIER WALL - DETAILS			
DDN MCC	VAL SEC	MAP	MILE POST HA-652.69
CHK DBG	FILE	DATE	03/13/2020
SHEET NUMBER 14 OF 14		DRAWING NUMBER HA-652.69	