

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Eighth Edition 2017

TRAFFIC DATA

Current (2019) AADT.....	7,790
Future (2039) AADT.....	8,570
DHV - % of AADT.....	11%
Design Hour Volume.....	943
Heavy Trucks (% of AADT).....	19%
Heavy Trucks (% of DHV).....	14%
Directional Distribution (% of DHV).....	100%
18 kip Equivalent P 2.0.....	1440
18 kip Equivalent P 2.5.....	1372
Design Speed (mph).....	70

UTILITIES

Xfinity Cable
Time Warner/Spectrum Cable
Central Maine Power Company

MATERIALS

Concrete.....	Class "A"
Reinforcing Steel.....	ASTM A 615/A 615M, Grade 60
Structural Steel:	
All Material.....	ASTM A 709, Grade 50 (metalized or galvanized)
Anchor Rods.....	ASTM F 1554, Grade 105

BASIC DESIGN STRESSES

Concrete:	
Class "A".....	f'c = 4,000 psi
Reinforcing Steel:	
Plain.....	f _y = 60,000 psi
Structural Steel:	
ASTM A709 Grade 50.....	F _y = 50,000 psi
ASTM F 1554.....	F _y = 105,000psi
	F _u = 125,000 psi

MAINTENANCE OF TRAFFIC

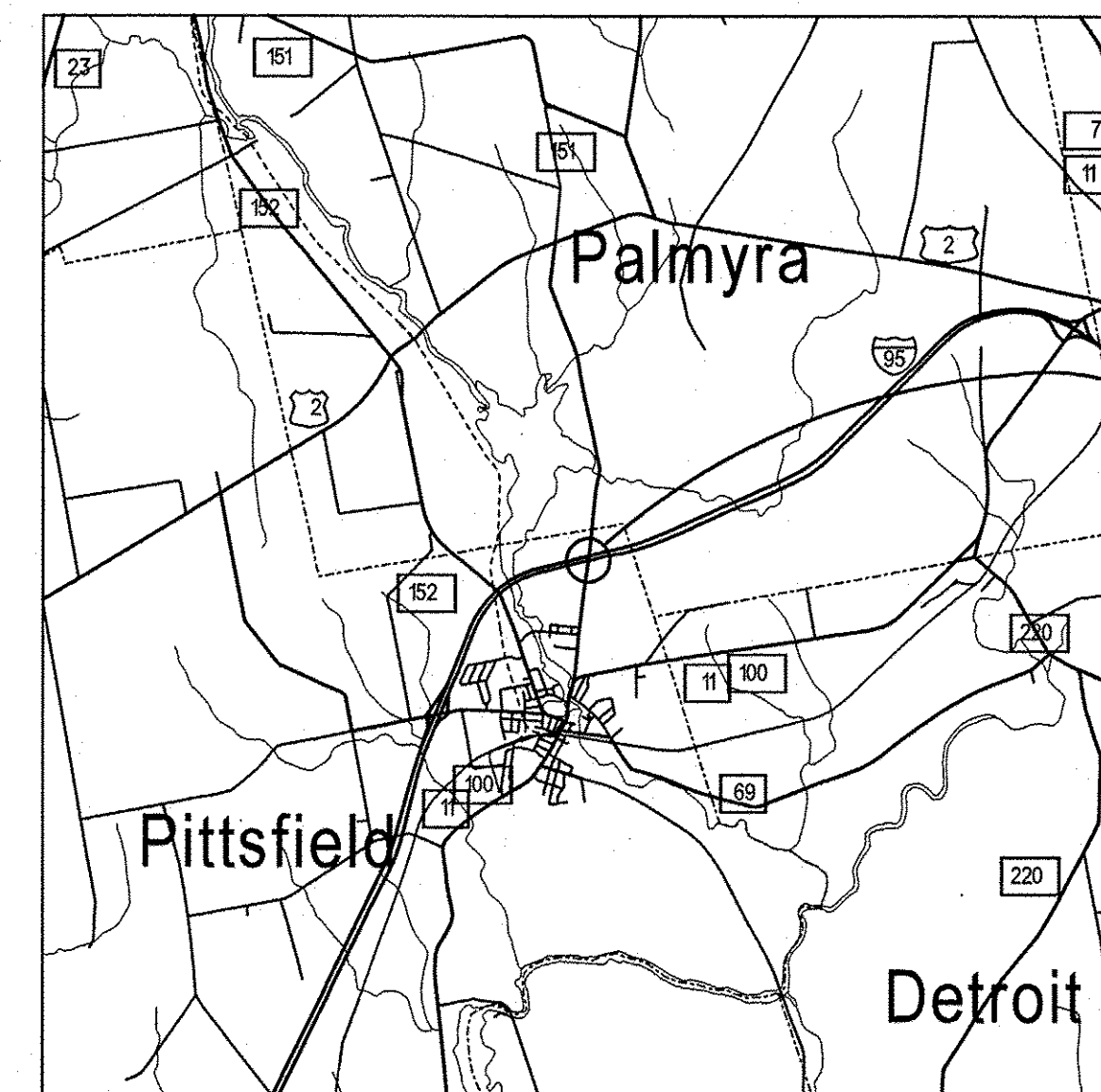
Maintain one 11'-0" wide lane of traffic on North Main Street. Maintain both lanes of traffic across bridge.

PROJECT LOCATION:	I-95 Northbound over North Main Street/Madawaska Avenue Latitude 44°-48'-15.53" N Longitude 69°-22'-39.30" W
PROGRAM AREA:	Bridge Program
OUTLINE OF WORK:	Substructure Rehabilitation and Expansion Bearing Replacement

LIST OF DRAWINGS

Title Sheet.....	1
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General Plan.....	3
Substructure Repairs.....	4-6
Bearing Details.....	7
Rebar Schedule.....	8

PITTSFIELD SOMERSET COUNTY INTERSTATE 95 NB BRIDGE OVER N. MAIN STREET/MADAWASKA AVE. I-95 NORTHBOUND INTERSTATE 95 NB BRIDGE PROJECT LENGTH 140 ft. BRIDGE NO. 5989



PROJECT LOCATION

WIN 021741.00

STATE OF MAINE	DEPARTMENT OF TRANSPORTATION	DATE
APPROVED: <i>[Signature]</i>		9/17/18
COMMISSIONER:		
CHIEF ENGINEER: <i>[Signature]</i>		9-14-18

STATE OF MAINE	ENGINEER
GEORGE MAPLE	REGISTERED PROFESSIONAL ENGINEER
14077	
SIGNATURE	P.E. NUMBER
<i>[Signature]</i>	14077
SEPT. 2018	DATE

PROJECT INFORMATION	BRIDGE
PROGRAM	J. STILLWELL
PROJECT MANAGER	T. CHAMBERLAIN
DESIGNER	CALDERWOOD ENGINEERING
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

I-95 NORTHBOUND BRIDGE #5989
N. MAIN ST/MADAWASKA AVE
PITTSFIELD SOMERSET COUNTY
TITLE SHEET

SHEET NUMBER
1
OF 8



Date: 9/7/2018

Username: common

Division: BRIDGE

Filename: \001_L_Title.dgn

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
503.12	REINFORCING STEEL, FAB & DEL	100	LB
503.13	REINFORCING STEEL, PLACING	150	LB
514.06	CURING BOX FOR CONCRETE CYLINDERS	1	EA
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES	1	LS
518.50	REPAIR OF UPWARD FACING SURFACE - TO REINF. STEEL	15	SF
518.51	REPAIR OF UPWARD FACING SURFACE - BELOW REINF. STEEL	20	SF
518.52	REPAIR OF UPWARD FACING SURFACE - > 8 INCHES	1	CY
518.60	REPAIR OF VERTICAL SURFACES < 7.9 IN	25	SF
518.70	REPAIR OF OVERHEAD SURFACES < 8 IN	21	SF
523.52	BEARING INSTALLATION	6	EA
523.5302	STEEL BEARINGS, EXPANSION, SLIDING PLATE	6	EA
524.301	TEMPORARY STRUCTURAL SUPPORT	1	LS
526.301	TEMPORARY CONCRETE BARRIER TYPE I (60 LF)	1	LS
629.05	HAND LABOR, STRAIGHT TIME	20	HR
639.19	FIELD OFFICE TYPE B	1	EA
652.312	TYPE III BARRICADES	2	EA
652.33	DRUM	50	EA
652.34	CONE	50	EA
652.35	CONSTRUCTION SIGNS	100	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES (60 CD)	1	LS
652.38	FLAGGER	160	HR
652.41	PORTABLE-CHANGEABLE MESSAGE SIGN	3	EA
656.75	TEMP. SOIL EROSION AND WATER POLL. CONTROL	1	LS
659.10	MOBILIZATION	1	LS

CONCRETE REPAIR NOTES

- The rehabilitation limits shown are approximate. Final determination of rehabilitation limits, including depth, will be made in the field by the Resident. Rehabilitation at the direction of the Resident in addition to the areas shown is expected.
- The Contractor shall repair areas of the backwall face as directed by the Resident
- Chamfer all exposed edges $\frac{3}{4}$ " unless noted otherwise.
- After the removal of concrete, the surface are should be cleaned of loose debris using high pressure (3000 psi) water or air.
- Contractor to field verify dimensions and cast pedestals to match existing heights.

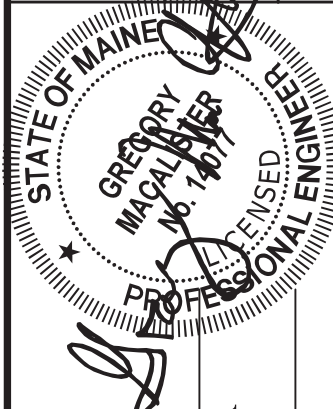
REINFORCING STEEL NOTES

- Reinforcing steel shall have a minimum cover or 2" unless otherwise noted.
- All reinforcing steel that is exposed and reused shall be cleaned by a method approved by the Resident. Payment will be considered incidental to related Contract items. No separate payment will be made.
- Exposed rebar shall be cleaned of foreign material and loose scaly rust. If it is determined by the Resident that the rust is tight and bonded then the cleaning may be omitted.
- Drill and anchor #5 bars as shown in these plans, adjacent to existing bars. Grout shall be from MaineDOT Approved Grout List. Payment should be considered incidental to related Contract items.
- Reinforcement shown in the reinforcement schedule shall be paid for under items 503.12 and 503.13.
- Rebar dimensions and quantities shown are estimations. Contractor shall field verify abutment dimensions prior to ordering reinforcement.
- Contractor may field measure and verify exact lengths required or field cut bars as required.

GENERAL CONSTRUCTION NOTES

- Protective Coating for Concrete Surfaces shall be applied to the following areas:
Piers to existing grade
Abutments, including bearing pedestals and front face
Wingwalls on front sides
- Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided by MaineDOT for informational purposes only. Lump Sum pay items will be paid for at the Contract Bid amount, with no addition or reduction in payment to the Contractor if the actual final quantities are different from the MaineDOT provided estimated quantities, except as follows:
 - If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.
 - If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.
 - If a design change results in changes to estimated quantities for Lump Sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation.
- Contractor shall restore all areas disturbed by construction activities to neat limits and shall place loam, mulch and seed as required to restore areas and as directed by the Resident. Payment for restoring disturbed areas will be considered incidental to related construction activities.
- Project information referred to below may be accessed at the following MaineDOT web address <http://www.maine.gov/mdot/contractors/>.
 - The existing bridge plans may be accessed at the MaineDOT web address. The plans are reproductions. The plans are reproductions of the original drawings as prepared for the construction of the bridge. It is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge during its life span. The Contractor shall verify all conditions and dimensions as required for the completion of work under the Contract. The Contractor shall be responsible for the accuracy and for the correct fit of all construction.
- Any clearing required to complete the work shall be considered incidental to the Contract. Clearing will be permitted within 10 feet of the existing bridge and within 10 feet of the existing North Main Street/ Madawaska Avenue guardrail with the approval of the Resident.
- Any area impacted by incidental clearing shall be loamed and seeded as directed by the Resident. This shall be considered incidental to the Contract.
- During construction the Contractor may remove the guardrail on North Main St./Madawaska Ave. for access to the site. The guardrail shall be reset by the Contractor at no cost to the Department.
- The Abutment No. 1 and Pier bearings shall remain.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



PROJ. MANAGER
DESIGN-DETAILED
CHECKED-REVIEWED
DATE
JUNE 2018
JUNE 2018
JUNE 2018
P.E. NUMBER
14077
DATE
SEPT 2018

1-95 NORTHBOUND BRIDGE #5989
NORTH MAIN ST./MADAWASKA AVE.
PITTSFIELD SOMERSET COUNTY
ESTIMATED QUANTITIES & GENERAL
CONSTRUCTION NOTES

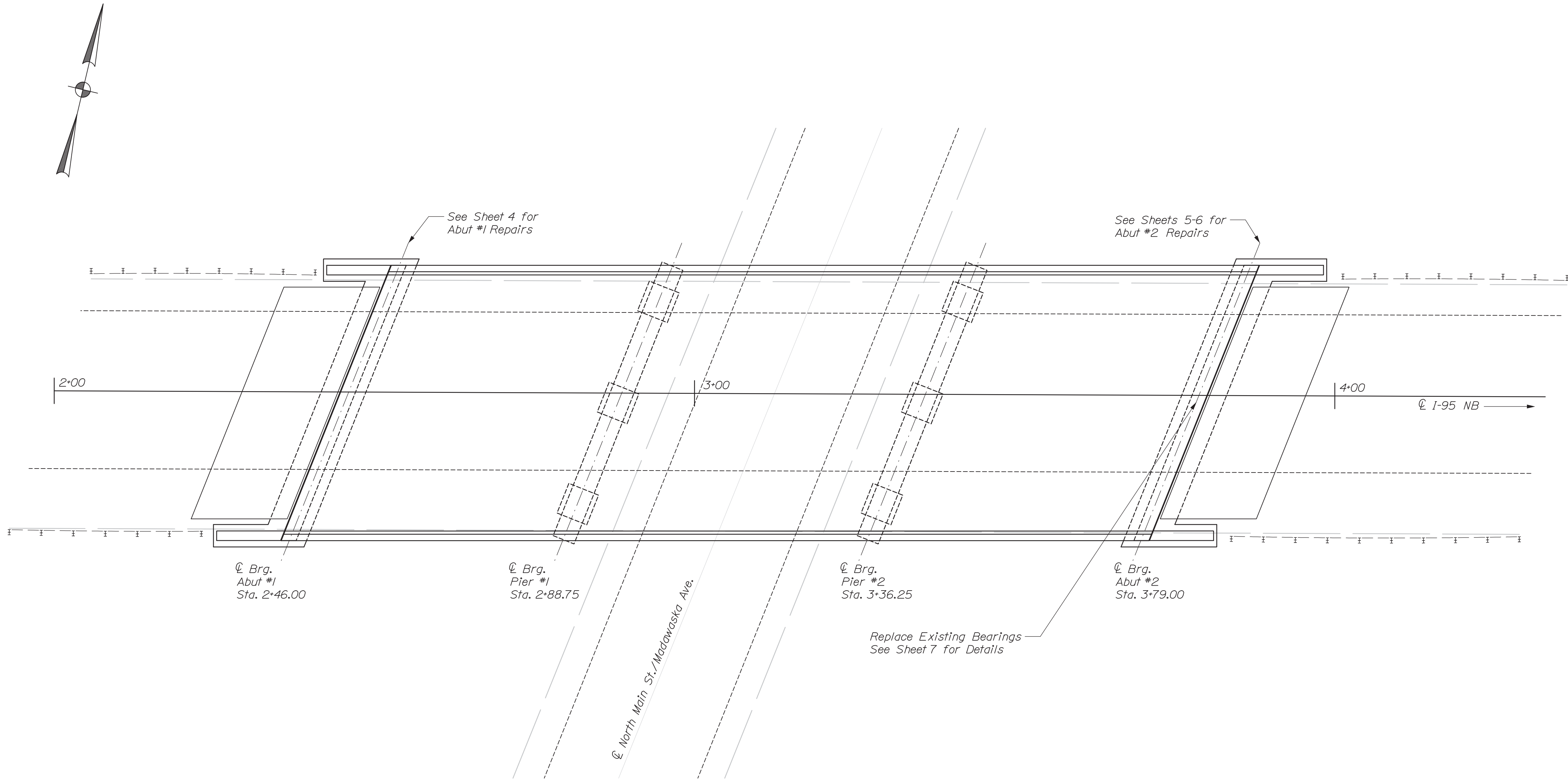
BRIDGE NO. 5989
WIN 021741.00
BRIDGE PLANS

SHEET NUMBER

2

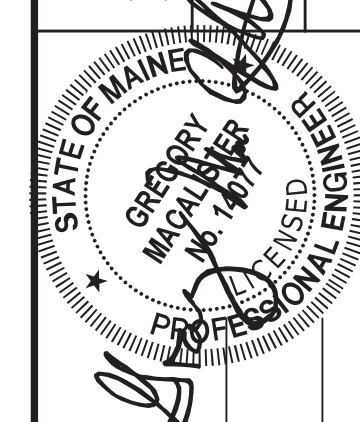
OF 8



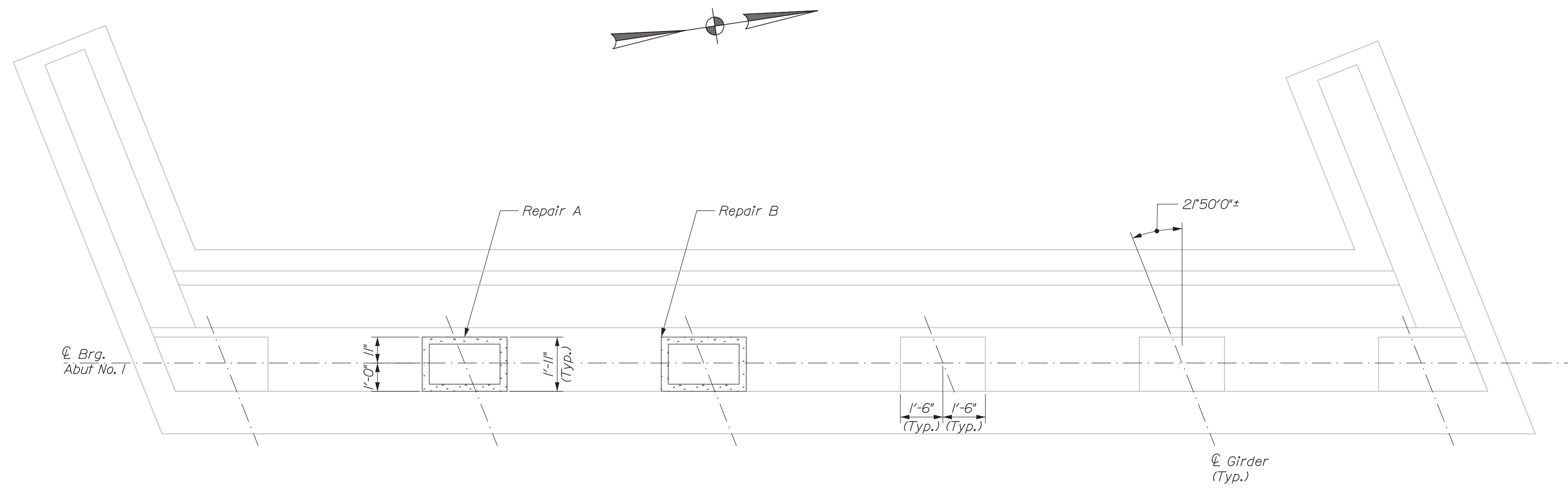


GENERAL PLAN

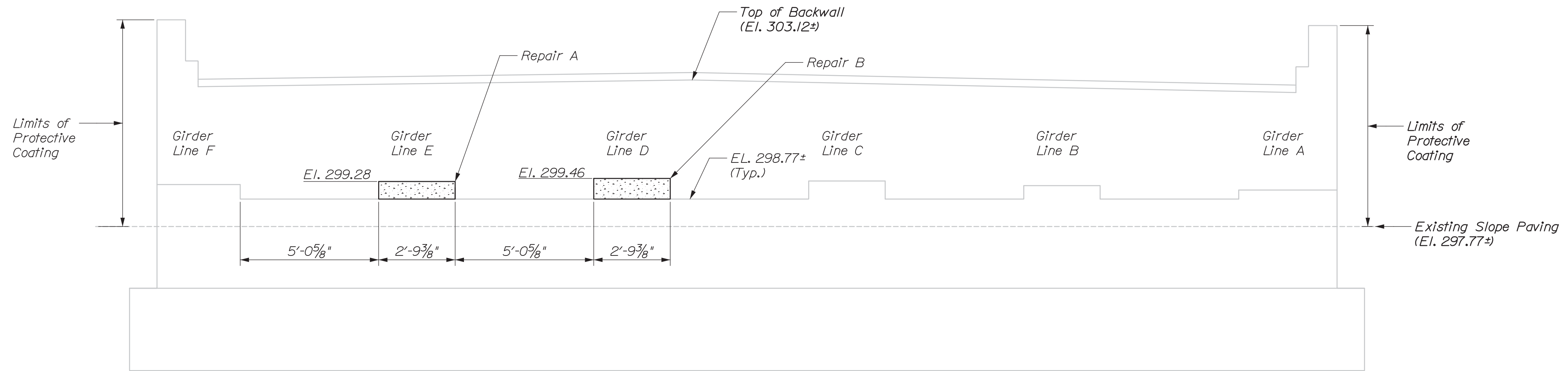


STATE OF MAINE DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 5989		WIN 021741.00		BRIDGE PLANS	
		P.E. NUMBER 14077		DATE SEPT 2018			
PROJ. MANAGER	J. STILLWELL	BY	DATE	DESIGN-DETAILED	JUNE 2018	DESIGNED	JUNE 2018
CHECKED-REVIEWED	G.M.	TOC	G.M.	CHECKED-REVIEWED	G.M.	CHECKED-REVIEWED	G.M.
REVISIONS 1		REVISIONS 2		REVISIONS 3		REVISIONS 4	
				FIELD CHANGES			
I-95 NORTHBOUND BRIDGE #5989 NORTH MAIN ST./MADAWASKA AVE. PITTSFIELD SOMERSET COUNTY				GENERAL PLAN			
SHEET NUMBER				3			
				OF 8			





ABUTMENT No. 1 PLAN



ABUTMENT No. 1 ELEVATION

STATE OF MAINE
PROFESSIONAL ENGINEER
14077
P.E. NUMBER
SEPT 2018
DATE

PROJ. MANAGER	J. STILLWELL	BY	DATE
DESIGN-DETAILED	TDC	TDC	JUNE 2018
CHECKED-REVIEWED	GMM	GMM	JUNE 2018
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

I-95 NORTHBOUND BRIDGE #5989
NORTH MAIN ST./MADAWASKA AVE.
PITTSFIELD SOMERSET COUNTY
ABUTMENT 1 SUBSTRUCTURE REPAIR

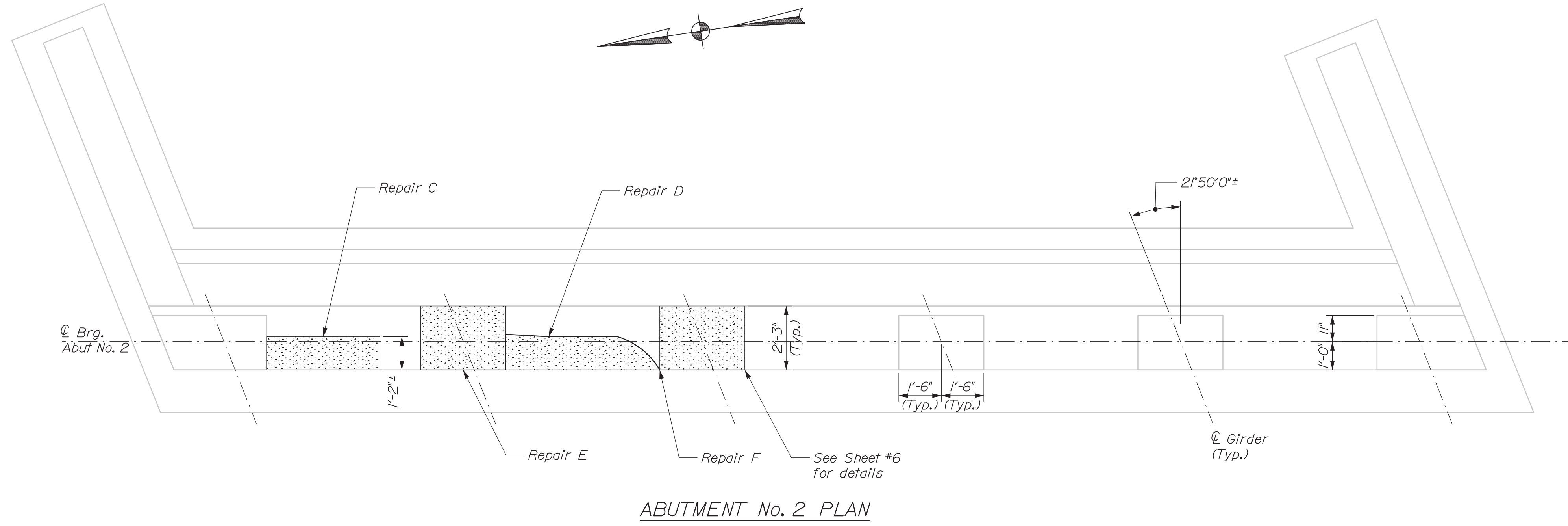


Date: 9/7/2018

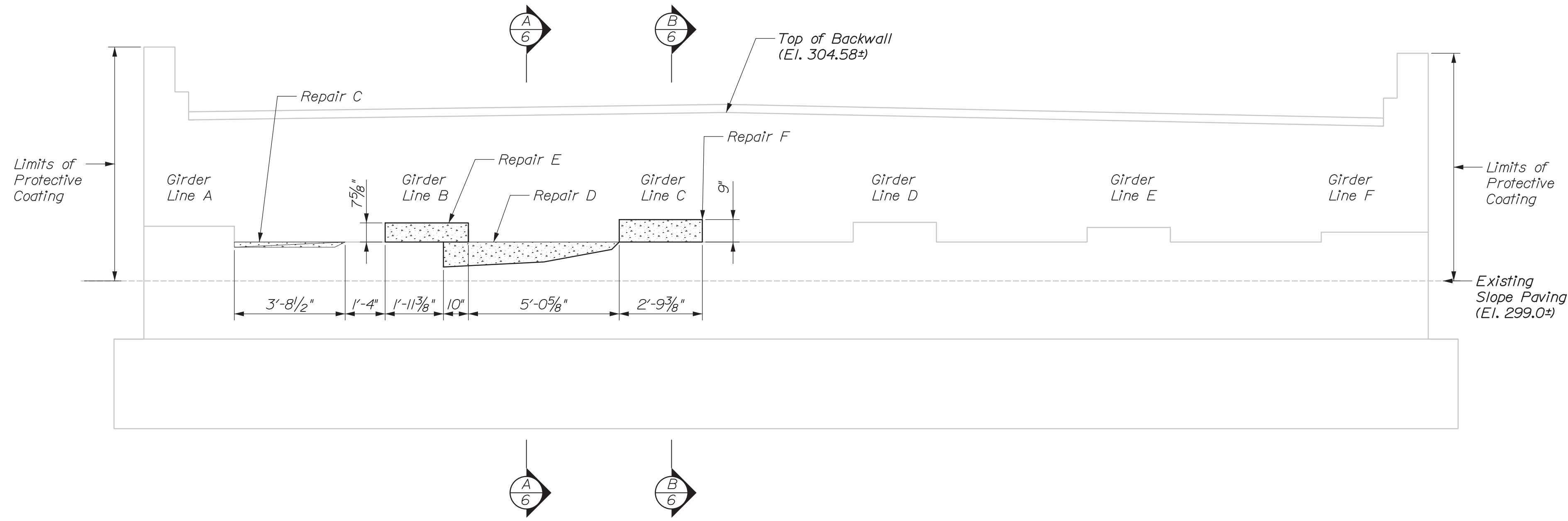
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Division: BRIDGE

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ABUTMENT No. 2 PLAN



ABUTMENT No. 2 ELEVATION

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



14077
P.E. NUMBER
SEPT 2018
DATE

PROJ. MANAGER	J. STILLWELL	BY	DATE
DESIGN-DETAILED	TDC	TDC	JUNE 2018
CHECKED-REVIEWED	GMM	GMM	JUNE 2018
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

I-95 NORTHBOUND BRIDGE #5989
NORTH MAIN ST.
PITTSFIELD SOMERSET COUNTY
ABUTMENT 2 SUBSTRUCTURE REPAIR

SHEET NUMBER

5

OF 8



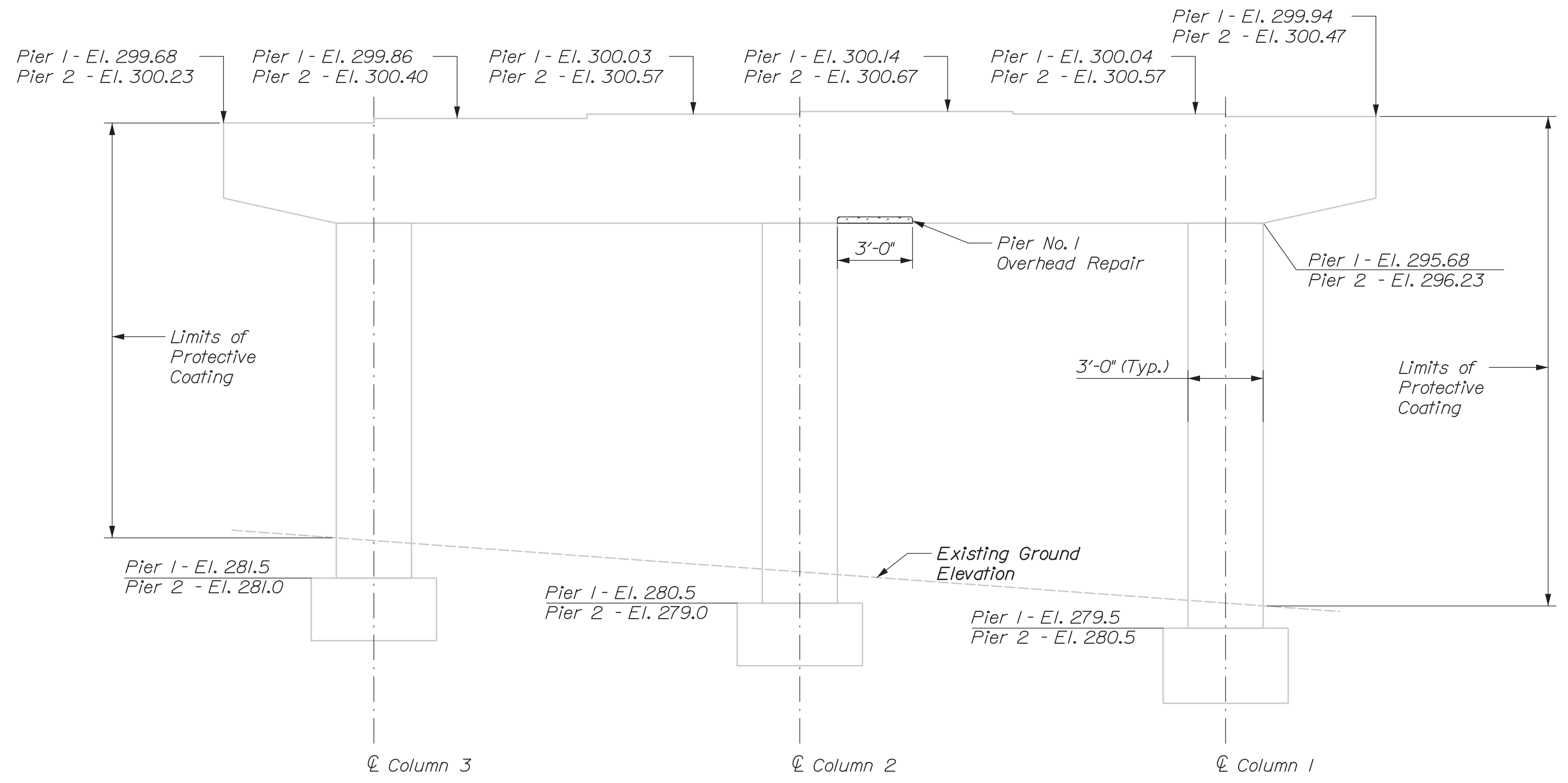
BRIDGE NO. 5989
WIN 021741.00
BRIDGE PLANS

Date: 9/7/2018

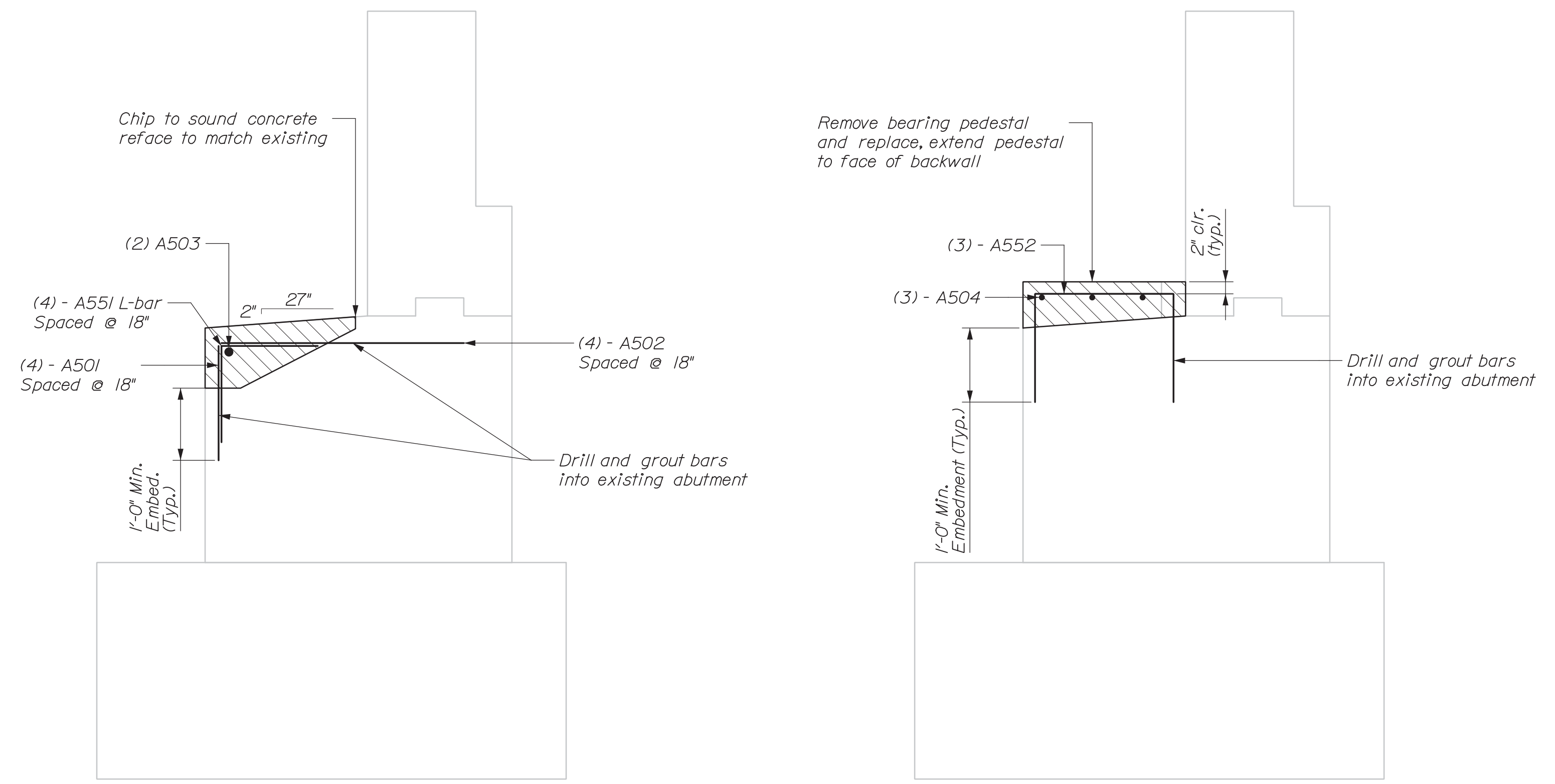
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Division: BRIDGE

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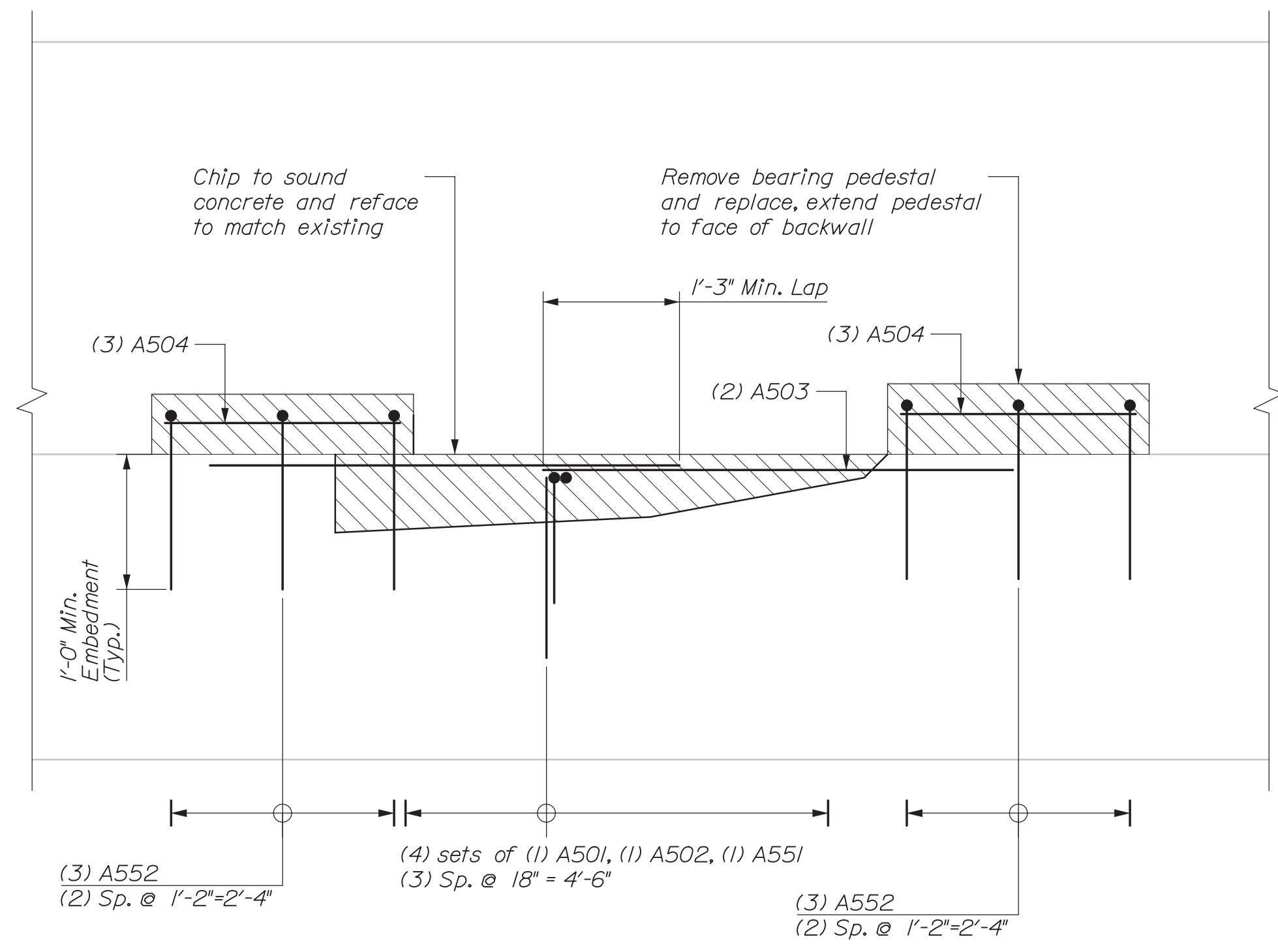


TYPICAL PIER ELEVATION



A ABUTMENT No. 2 REPAIR SECTION

B ABUTMENT No. 2 REPAIR SECTION



ABUTMENT No. 2 REPAIR ELEVATION

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 5989
WIN 021741.00

STATE OF MAINE
PROFESSIONAL ENGINEER
MACLELLAN
14077

P.E. NUMBER
SEPT 2018

DATE

PROJ. MANAGER	J. STILLWELL	DATE
DESIGN-DETAILED	TDC	JUNE 2018
CHECKED-REVIEWED	GMM	JUNE 2018
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

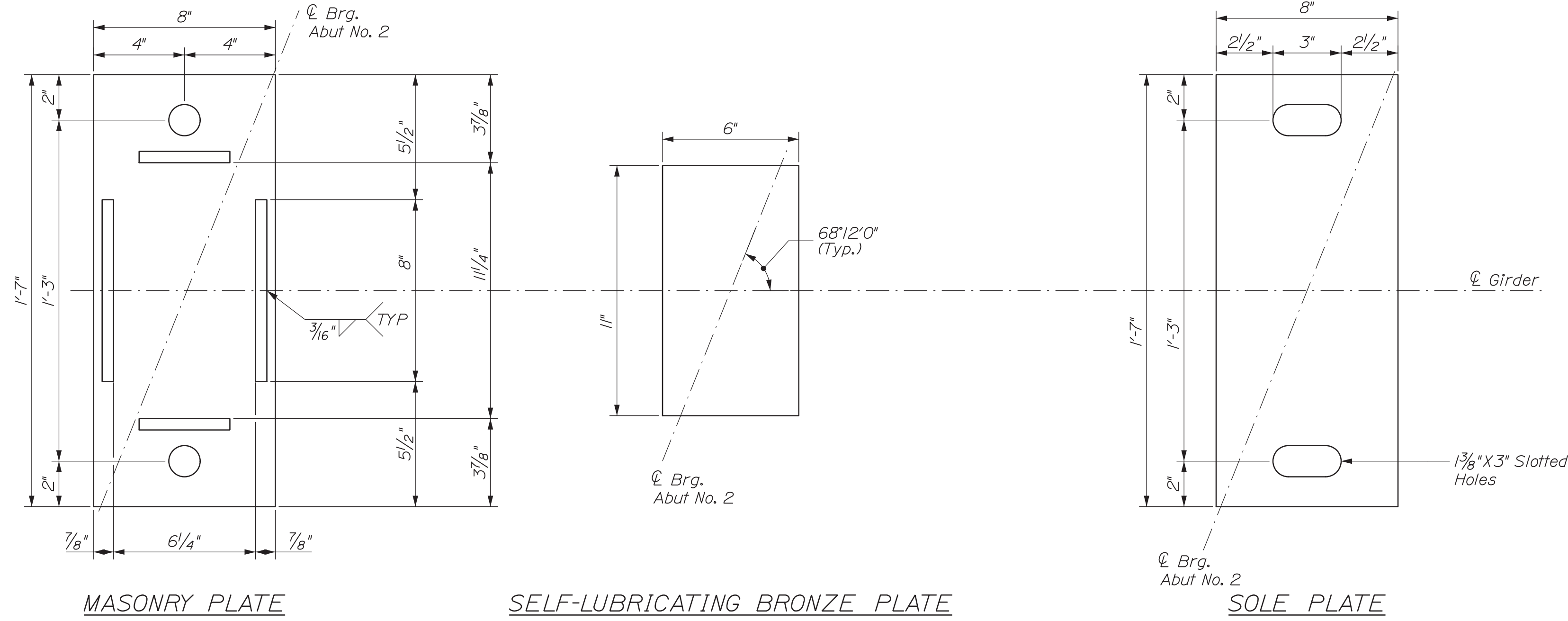
I-95 NORTHBOUND BRIDGE #5989
NORTH MAIN ST./MADAWASKA AVE.
PITTSFIELD SOMERSET COUNTY
SUBSTRUCTURE REPAIR SECTIONS
AND ELEVATIONS

SHEET NUMBER

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OF 8

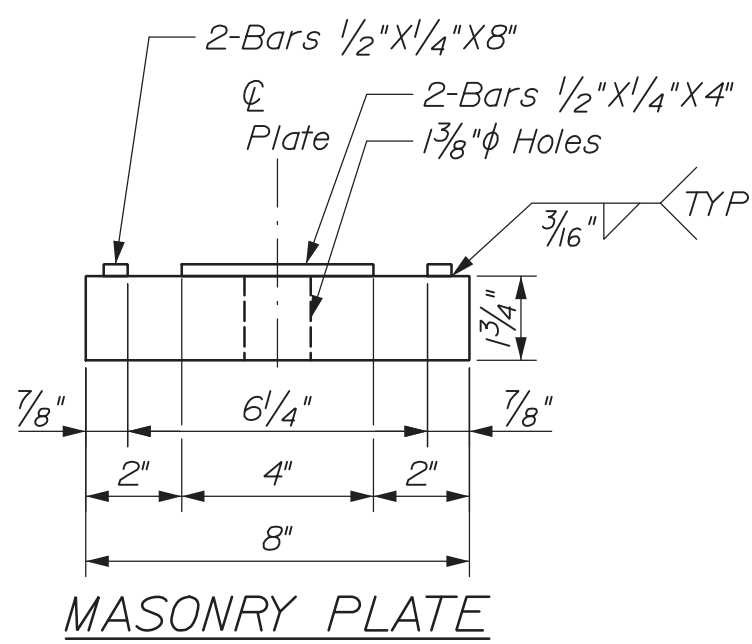




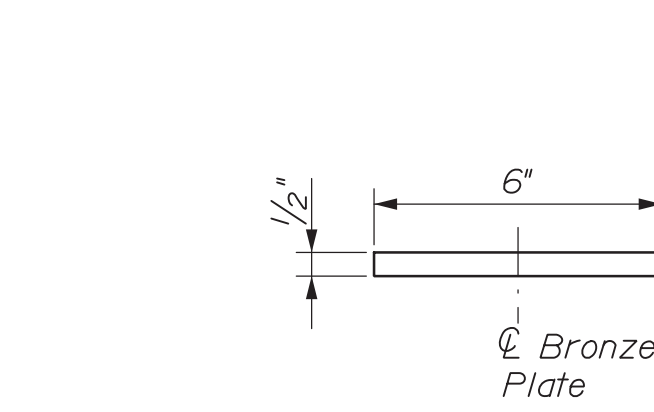
MASONRY PLATE

SELF-LUBRICATING BRONZE PLATE

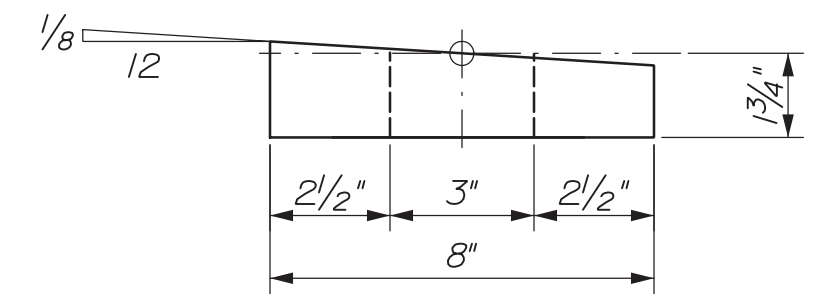
SOLE PLATE



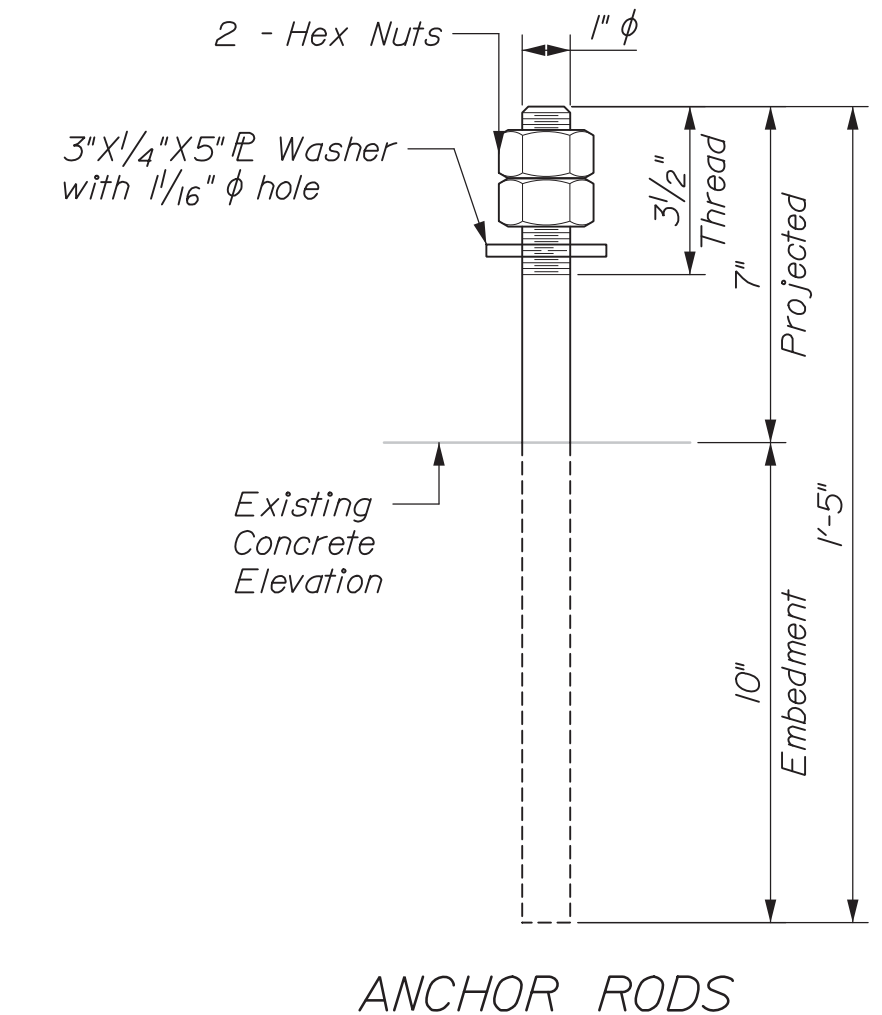
MASONRY PLATE



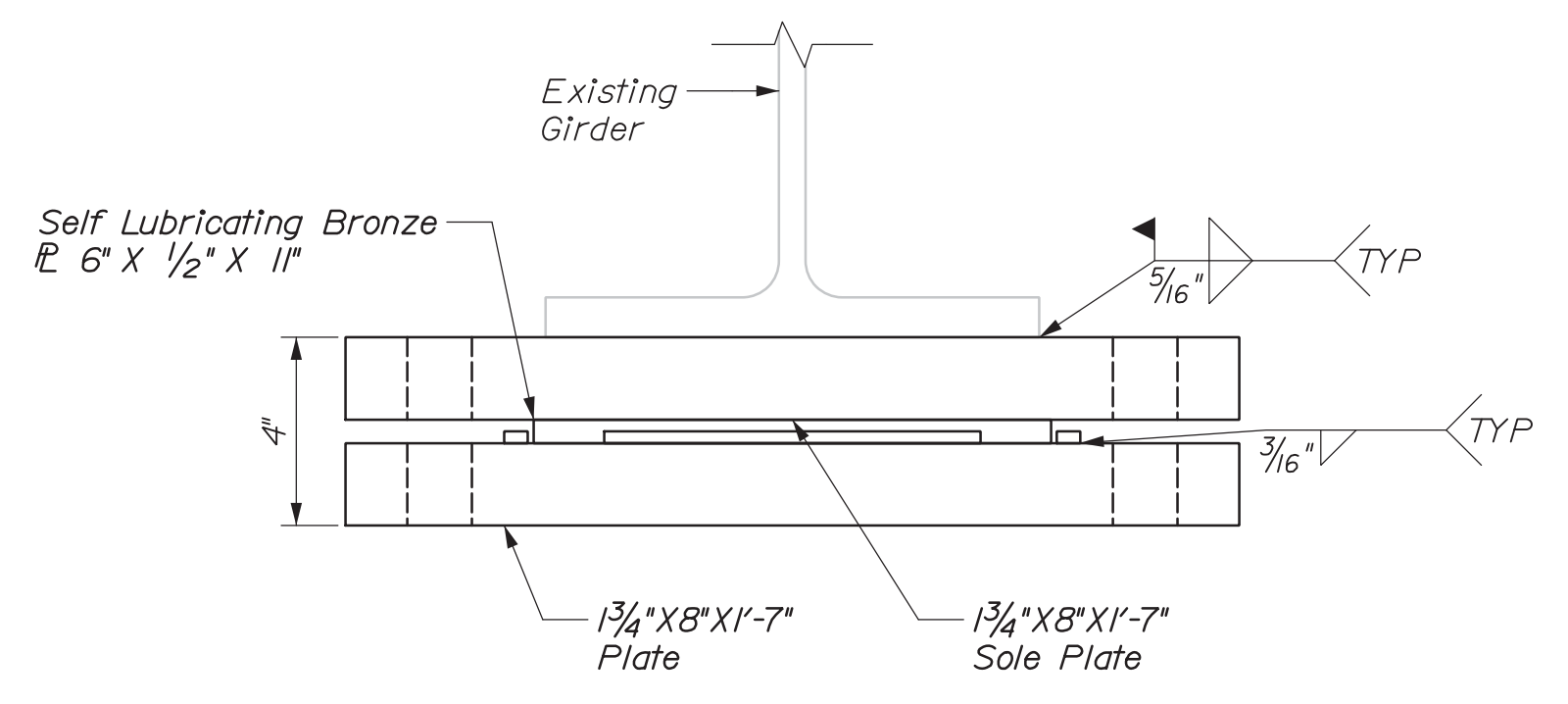
SELF-LUBRICATING BRONZE PLATE



SOLE PLATE



ANCHOR RODS



BEARING PLATE ELEVATION

ABUTMENT No. 2 STEEL BEARING NOTES

- Masonry plates and sole plates shall meet the requirements of ASTM A709/A709M, Grade 50. Anchor rods shall meet the requirements of ASTM F1554, Grade 105 and shall be swaged on the embedded portion of the rod.
- Masonry plates and sole plates shall be galvanized in accordance with ASTM A123.
- Anchor rods, washers and nuts shall be galvanized to ASTM A153 or ASTM B695, Class 50, Type 1.
- All bearings shall be marked prior to shipping, the marks shall include the bearing location on the bridge and a direction arrow which points upstation. All marks shall be permanent and shall be visible after the bearing is installed.
- Bearings shall be covered during transit.
- All necessary precautions shall be taken to protect bearing components from field weld flash and spatter.
- Burr threads on anchor rods after nuts tightened snug to prevent removal. Touch up damaged galvanized areas with zinc-rich paint. Cost included in bearing item.
- Contractor shall verify these dimensions to ensure they match existing bearing dimensions.
- Anchor rods shall be drilled and grouted into bearing pedestals. Grout shall be from MaineDOT approved grout from Qualified Products List.
- Masonry plates shall be placed on a 1/8" thick preformed pad in accordance with the Standard Specifications, Subsection 523.09, Installation of Bearings.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

I-95 NORTHBOUND BRIDGE #5989
NORTH MAIN ST./MADAWASKA AVE.
PITTSFIELD SOMERSET COUNTY

BRIDGE NO. 5989
WIN 021741.00

14077
P.E. NUMBER
SEPT 2018
DATE

PROJ. MANAGER	J. STILLWELL	BY	DATE
DESIGNED-DETAILED	TDC	TDC	JULY 2018
CHECKED-REVIEWED	GMM	GMM	JULY 2018
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BEARING DETAILS

SHEET NUMBER
2
OF 8

CALDERWOOD ENGINEERING
252 RIVER ROAD
RICHMOND, ME 04855
TEL (207) 733-2001 FAX (207) 733-2095

Date:9/7/2018

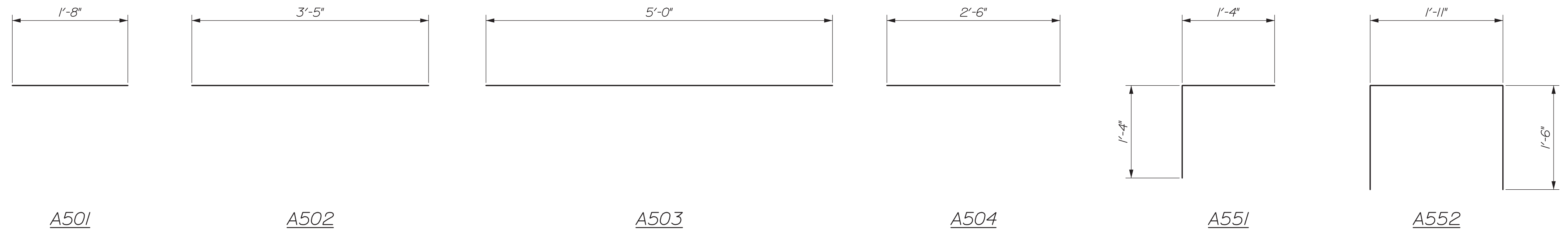
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Division: BRIDGE

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STRAIGHT BARS				BENT BARS																		
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
<i>Abutment #2</i>				<i>Abutment #2</i>																		
A501	4	1' - 8"	Vertical in Abutment #2	A551	4	2' - 8"	L	1'-4"	1'-4"													Abutment #2 L-Bar
A502	4	3' - 5"	Horizontal in Abutment #2	<i>Bearing Pedestal</i>																		
A503	2	5' - 0"	Horizontal in Abutment #2	A552	6	4' - 11"	S	0'-0"	1'-6"	1'-11"	1'-6"							0'-0"				Bearing Pedestal - S-Bar
<i>Bearing Pedestal</i>				<i>Bearing Pedestal</i>																		
A504	6	2' - 6"	Bearing Pedestal																			
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION

~DRAFT NOT FOR CONSTRUCTION~



All dimensions are out-to-out of bar.
 Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 315 and ACI Standard 318.
 Reinforcing Bar: ASTM A 615/A 615M, Grade 60

GENERAL NOTES

1. The first two digits following the letter(s) of the mark indicate the size of the bar:
 Mark "A502" = bar size #5
 Mark "P805" = bar size #8
 Mark "S650" = bar size #6

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BRIDGE NO. 5989

WIN 021741.00
BRIDGE PLANS

PROJ. MANAGER	J. STILLWELL	DATE
DESIGN-DETAILED	TDC	JUNE 2018
CHECKED-REVIEWED	GMM	JUNE 2018

REVISIONS	DATE
1	
2	
3	
4	

I-95 NORTHBOUND BRIDGE #5989
 NORTH MAIN ST./MADAWASKA AVE.
 PITTSFIELD SOMERSET COUNTY

REBAR SCHEDULE

SHEET NUMBER

08

OF 8

