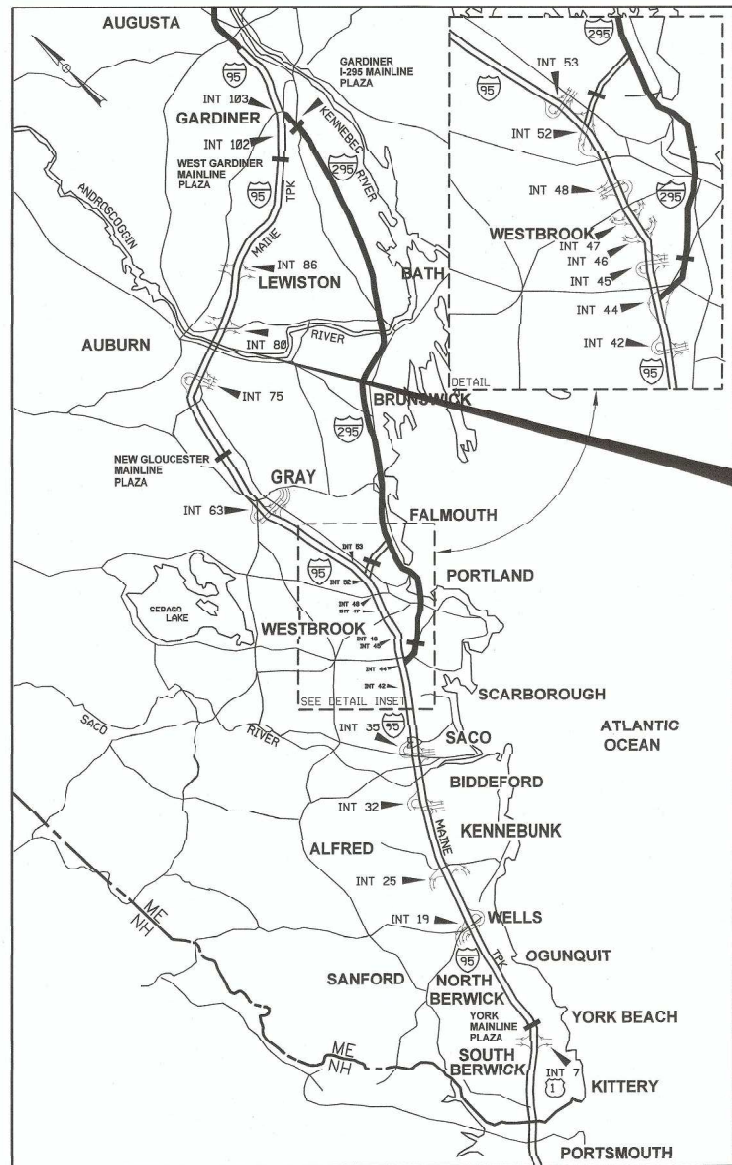


Date: 2/20/2018

Filename: 001\_MTATitle.dgn



LOCATION MAP



THE GOLD STAR  
MEMORIAL HIGHWAY

# MAINE TURNPIKE AUTHORITY

DANIEL E. WATHEN, CHAIR  
 ROBERT D. STONE, VICE CHAIR  
 MICHAEL J. CIANCHETTE, MEMBER  
 JOHN E. DORITY, MEMBER  
 ANN R. ROBINSON, MEMBER  
 THOMAS J. ZUKE, MEMBER  
 KAREN S. DOYLE, MEMBER EX-OFFICIO

S. PETER MILLS, EXECUTIVE DIRECTOR

## CONTRACT 2018.07 ANDROSCOGGIN RIVER BRIDGES SUBSTRUCTURE REPAIRS MILE 78.9

### INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES AND ESTIMATED QUANTITIES
3-12	MAINTENANCE OF TRAFFIC
13	SIGN SUMMARY
14-21	SUBSTRUCTURE REPAIR DETAILS
22	FRAMING PLAN
23	BEARING REPAIR DETAILS
24	JOINT REPAIR DETAILS
25	MISCELLANEOUS DETAILS

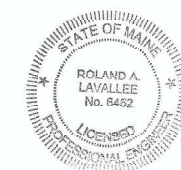
CONTRACT 2018.07

APPROVED: MAINE TURNPIKE AUTHORITY

*Peter S. Merfeld* 02/23/18  
 PETER S. MERFELD, P.E. - CHIEF OPERATIONS OFFICER DATE

*Stephen R. Tartre* 2/23/18  
 STEPHEN R. TARTRE, P.E. - DIRECTOR OF ENGINEERING & BUILDING MAINTENANCE DATE

# HNTB



*Roland A. Lavallee* 2/20/18  
 ROLAND A. LAVALLEE P.E., PLS. DATE  
 VICE PRESIDENT  
 DIRECTOR OF OPERATIONS

Date: 2/23/2018

Filename: 002\_GeneralNotes and Estimated Quantities.dgn

**GENERAL NOTES**

1. ALL DETAILS SHALL BE IN CONFORMANCE WITH MAINE DEPARTMENT OF TRANSPORTATION (MAINEDOT) STANDARD DETAILS HIGHWAY AND BRIDGES 2014 LATEST REVISIONS AND MAINEDOT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL LATEST REVISION UNLESS OTHERWISE INCLUDED IN THESE PLANS.
2. ALL TEMPORARY AND PERMANENT EROSION CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MAINE DEPARTMENT OF TRANSPORTATION BEST MANAGEMENT PRACTICES.
3. THERE ARE NO PERMANENT OR TEMPORARY EASEMENTS ASSOCIATED WITH THIS PROJECT. ALL WORK SHALL BE COMPLETED WITHIN THE EXISTING RIGHT OF WAY.
4. THE CONTRACTOR SHALL SUBMIT THE PROPOSED STAGING AREA(S) TO THE RESIDENT PRIOR TO STARTING WORK.
5. COPIES OF AS-BUILT PLANS ARE POSTED ON THE MAINE TURNPIKE AUTHORITY WEBSITE AT WWW.MAINE TURNPIKE.COM/PROJECT-AND-PLANNING/CONSTRUCTION-CONTRACTS.ASPX. THE COMPLETENESS AND ACCURACY OF THESE PLANS IS NOT GUARANTEED.
6. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT TOOLS, VEHICLES, EQUIPMENT, MATERIALS AND PERSONNEL FROM MARRING THE PAVEMENT SURFACE ON THE BRIDGE DECK AND APPROACHES WHILE THE WORK IS BEING COMPLETED.
7. THE CONTRACTOR SHALL SET, MAINTAIN AND REMOVE NAVIGATIONAL AIDS IN THE RIVER, AS REQUESTED BY THE RESIDENT. THE NAVIGATIONAL AIDS, FURNISHED BY THE STATE OF MAINE TO THE AUTHORITY, SHALL BE POSITIONED TO ADVISE BOATERS OF THE CONSTRUCTION HAZARDS AHEAD. ADDITIONAL NAVIGATIONAL AIDS MAY BE NEEDED DEPENDING ON CONTRACTOR ACTIVITIES. PAYMENT FOR OBTAINING, SETTING, MAINTAINING AND REMOVING THE NAVIGATIONAL AIDS SHALL BE INCIDENTAL TO THE CONTRACT.
8. BOOM SUPPORTED FLOATING SILT FENCE SHALL ONLY BE USED BETWEEN NO MORE THAN TWO PIERS AT ONE TIME ON THE ANDROSCOGGIN RIVER.
9. CONTRACTOR SHALL PROVIDE RESIDENT ACCESS TO ALL AREAS UNDER CONSTRUCTION FOR INSPECTION PURPOSES. THIS SHALL BE INCIDENTAL TO PAY ITEM 524, TEMPORARY ACCESS PLATFORMS FOR PIER INSPECTION AND REPAIR.

**MATERIALS**

CONCRETE

SUBSTRUCTURE CONCRETE REPAIRS SHALL BE PER SPECIAL PROVISION 518.

REINFORCING STEEL

AASHTO M31, GRADE 60. ALL REINFORCING SHALL BE EPOXY-COATED.

STRUCTURAL STEEL

PLATES AND BARS SHALL CONFORM TO ASTM A36

HIGH STRENGTH BOLTS SHALL BE AASHTO M164 (ASTM A325) HOT DIP GALVANIZED IN STANDARD HOLES.

**LIST OF ABBREVIATIONS**

- ABUT. - ABUTMENT
- ADDL. - ADDITIONAL
- ALT. - ALTERNATE
- APPROX. - APPROXIMATELY
- BOT. - BOTTOM
- BRG. - BEARING
- CL. - CLEAR
- CL. - CENTERLINE
- CONC. - CONCRETE
- CONSTR. - CONSTRUCTION
- DEMO. - DEMOLITION
- DIA. - DIAMETER
- EA. - EACH
- EB - EASTBOUND
- E.F. - EACH FACE
- EL. - ELEVATION
- EQ. - EQUAL
- EXIST. - EXISTING
- EXP. - EXPANSION
- F.F. - FAR FACE
- JT. - JOINT
- MAX. - MAXIMUM
- MAINEDOT - MAINE DEPARTMENT OF TRANSPORTATION
- MIN. - MINIMUM
- MTA - MAINE TURNPIKE AUTHORITY
- NB - NORTHBOUND
- N.F. - NEAR FACE
- N.T.S. - NOT TO SCALE
- PED. - PEDESTAL
- PGL - PROFILE GRADE LINE
- PL. - PLATE
- PROP. - PROPOSED
- P.S.I. - POUNDS per SQUARE INCH
- RDWY. - ROADWAY
- SHLDR. - SHOULDER
- SB - SOUTHBOUND
- SP. - SPACES
- STA. - STATION
- T.&B. - TOP & BOTTOM
- TPKE. - TURNPIKE
- TYP. - TYPICAL
- U.O.N. - UNLESS OTHERWISE NOTED
- VERT. - VERTICAL
- WB - WESTBOUND
- W.P. - WORKING POINT

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
201.31	REMOVAL OF DEBRIS	LS	1
504.885	POST-TENSIONING SLEEVE REPAIR	EA	13
514.06	CURING BOX FOR CONCRETE CYLINDERS	EA	1
515.202	CLEAR PROTECTIVE COATING FOR CONCRETE SURFACES	SY	3250
515.23	ANTI-GRAFFITI COATING	SY	900
518.40	EPOXY INJECTION CRACK REPAIR	LF	310
518.401	EPOXY INJECTION CRACK REPAIR - BELOW WATERLINE	LF	470
518.51	REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES	SF	43
518.60	REPAIR OF VERTICAL SURFACES < 8 INCHES	SF	2950
518.601	REPAIR OF VERTICAL SURFACES < 8 INCHES - BELOW WATERLINE	SF	18
518.70	REPAIR OF OVERHEAD SURFACES < 8 INCHES	SF	91
520.224	JOINT ARMOR REPAIR	LS	1
523.56	CLEANING AND PAINTING BEARING	EA	42
523.561	REPAIR BEARING	EA	1
523.562	REPAIR BEARING KEEPER STRAP	EA	10
524.301	TEMPORARY STRUCTURAL SUPPORT	LS	1
524.60	TEMPORARY ACCESS PLATFORMS FOR PIER INSPECTION AND REPAIR	LS	1
526.306	TEMPORARY CONCRETE BARRIER, TYPE I - SUPPLIED BY AUTHORITY	LS	1
527.341	WORK ZONE CRASH CUSHION - TL-3	UN	1
627.712	WHITE OR YELLOW PAVEMENT MARKING LINE	LF	4300
627.73	TEMPORARY 6 INCH PAVEMENT MARKING TAPE	LF	6300
627.731	TEMPORARY 6 INCH BLACK PAVEMENT MARKING TAPE	LF	1500
627.77	REMOVING EXISTING PAVEMENT MARKING	SF	2100
629.05	HAND LABOR, STRAIGHT TIME	HR	20
631.10	AIR COMPRESSOR (INCLUDING OPERATOR)	HR	10
631.11	AIR TOOL (INCLUDING OPERATOR)	HR	10
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	HR	20
631.36	FOREMAN	HR	10
652.30	FLASHING ARROW	EA	1
652.33	DRUM	EA	50
652.34	CONE	EA	50
652.35	CONSTRUCTION SIGNS	SF	420
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	LS	1
652.41	PORTABLE-CHANGEABLE MESSAGE SIGN	EA	1
652.45	TRUCK MOUNTED ATTENUATOR	CD	20
652.452	AUTOMATED TRAILER MOUNTED SPEED LIMIT SIGN	EA	1
652.46	TEMPORARY PORTABLE RUMBLE STRIP	UN	20
656.64	BOOM SUPPORTED FLOATING SILT FENCE	LF	302
659.10	MOBILIZATION	LS	1

**SCOPE OF WORK**

THE PROPOSED REPAIR PROJECT INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING WORK:

1. SUBSTRUCTURE REPAIRS
2. BEARING REPAIRS
3. JOINT REPAIR
4. POST-TENSIONING SLEEVE REPAIRS
5. ASSOCIATED MOT ACTIVITIES TO COMPLETE WORK

Scale:		Designed by:			
		<b>HNTB</b>			
No.	Revision	By	Date		
				CONSULTANT PROJECT MANAGER: Craig Morin, P.E.	
		By	Date	By	Date
		Designed	NMW 2\18	Checked	BRG 2\18
		Drawn	PEB 2\18	In Charge of	RAL 2\18

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 FAX (207) 228-0909

**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

**ANDROSCOGGIN RIVER BRIDGES  
SUBSTRUCTURE REPAIRS**

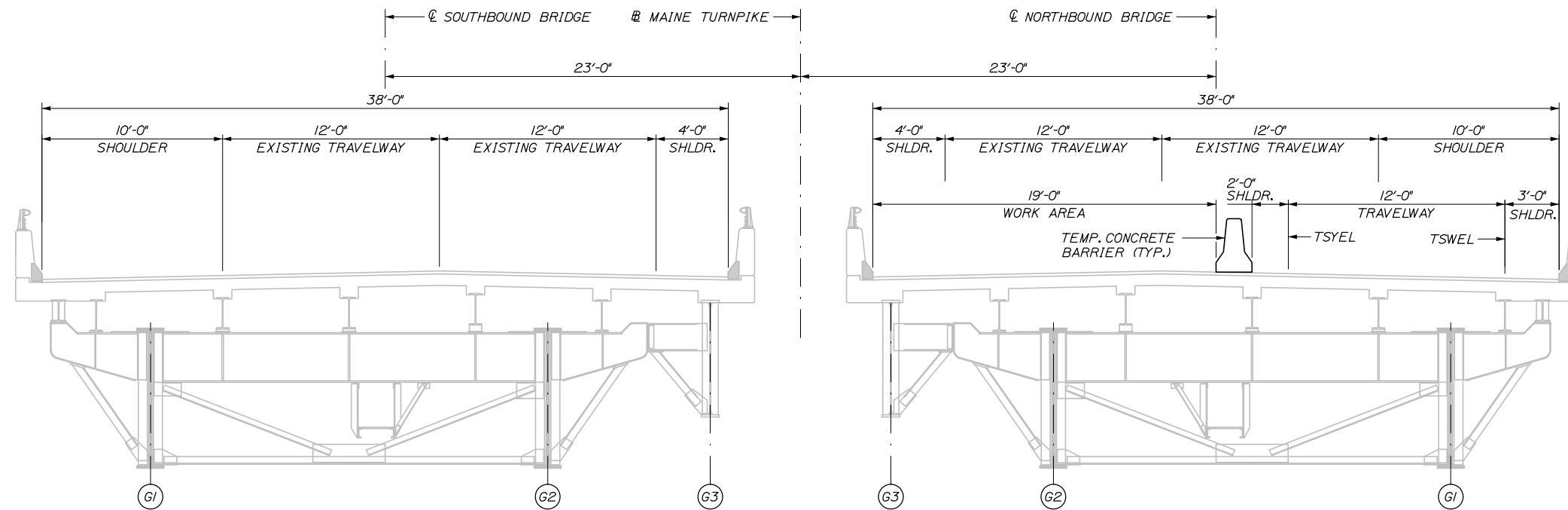
**GENERAL NOTES AND  
ESTIMATED QUANTITIES**

SHEET NUMBER: GN-01

CONTRACT: 2018.07

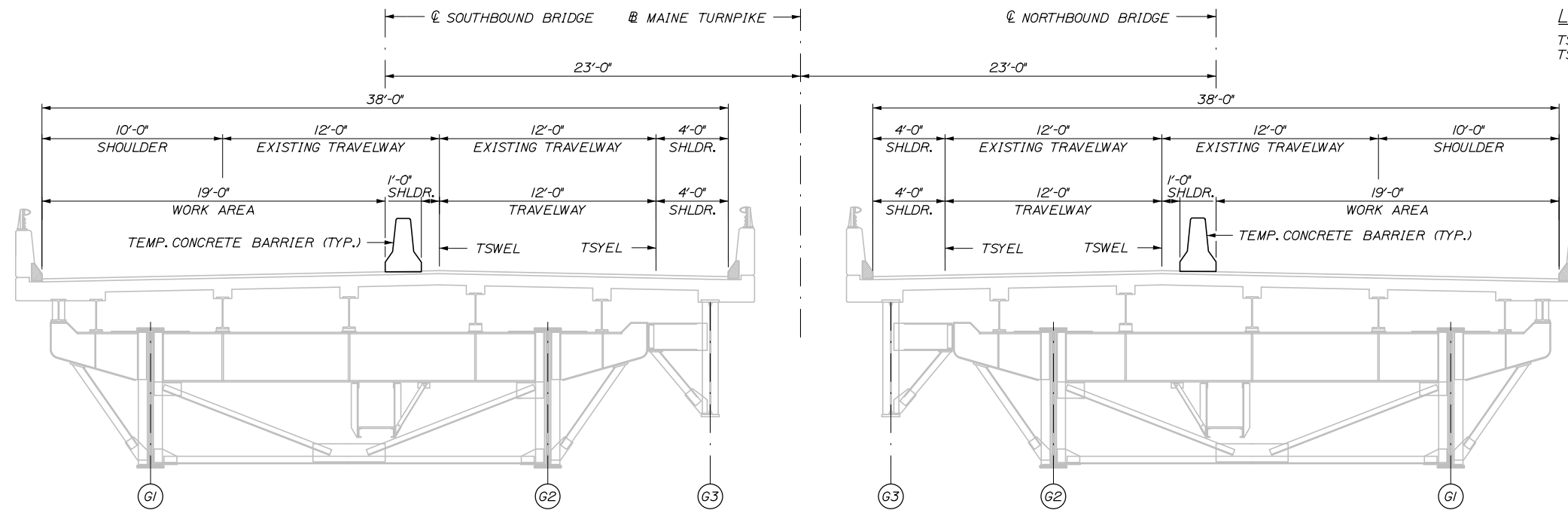
2 OF 25

Date: 2/23/2018



STAGE I CONSTRUCTION - FOR NB JOINT REPAIR WORK

1/4" = 1'-0"



STAGE II CONSTRUCTION - FOR SUBSTRUCTURE REPAIR WORK ACCESS

1/4" = 1'-0"

**LEGEND**

TSYEL - TEMPORARY SOLID YELLOW EDGE LINE  
 TSWEL - TEMPORARY SOLID WHITE EDGE LINE

**NOTES:**

1. MAINTENANCE OF TRAFFIC CONFIGURATIONS ARE SHOWN FOR BOTH BRIDGES BUT SHALL OCCUR AT SEPARATE TIMES AS DESCRIBED IN SPECIAL PROVISION 107.4.6, PROSECUTION OF WORK.

No.	Revision	By	Date

Designed by:					
<b>HNTB</b>					
CONSULTANT PROJECT MANAGER: Craig Morin, P.E.					
	By	Date		By	Date
Designed	NMW	2\18	Checked	LZD	2\18
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MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

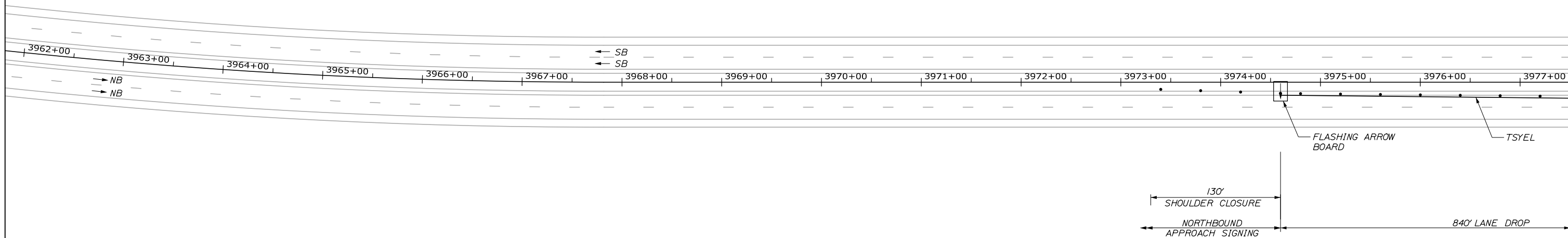
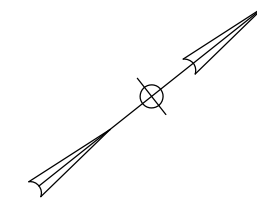
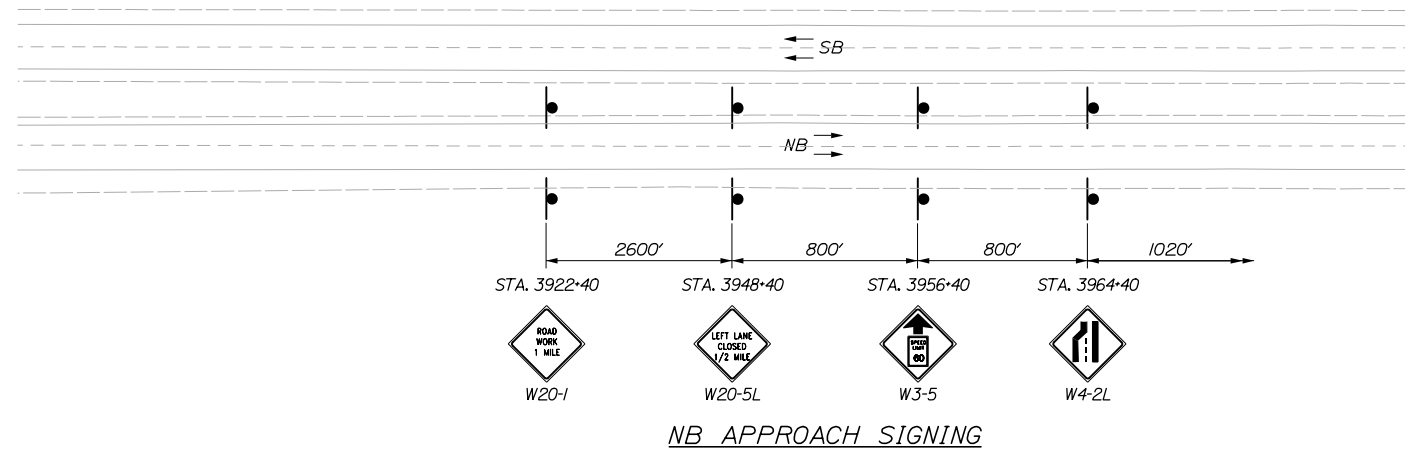
ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 MAINTENANCE OF TRAFFIC  
 STAGE CONSTRUCTION

SHEET NUMBER: MOT-01  
 3 OF 25

CONTRACT: 2018.07

Filename: 003\_MOT\_1.dgn

Date: 2/23/2018

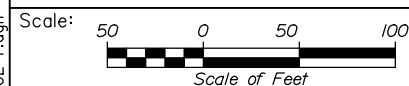


**LEGEND**

TSWEL - TEMPORARY SOLID WHITE EDGE LINE  
 TSYEL - TEMPORARY SOLID YELLOW EDGE LINE

**NOTE:**

ALL PAVEMENT MARKINGS AND PAVEMENT MARKING REMOVAL ON THE SOUTHBOUND ROADWAY AND THE NORTHBOUND AND SOUTHBOUND BRIDGES SHALL BE COMPLETED WITH TAPE, PAVEMENT MARKINGS ON THE NORTHBOUND ROADWAY SHALL BE PAINTED.



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**THE GOLD STAR  
 MEMORIAL HIGHWAY**

ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 MAINTENANCE OF TRAFFIC  
 STAGE I (1 OF 4)

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.					
	By	Date		By	Date
Designed	LZD	2\18	Checked	RWH	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

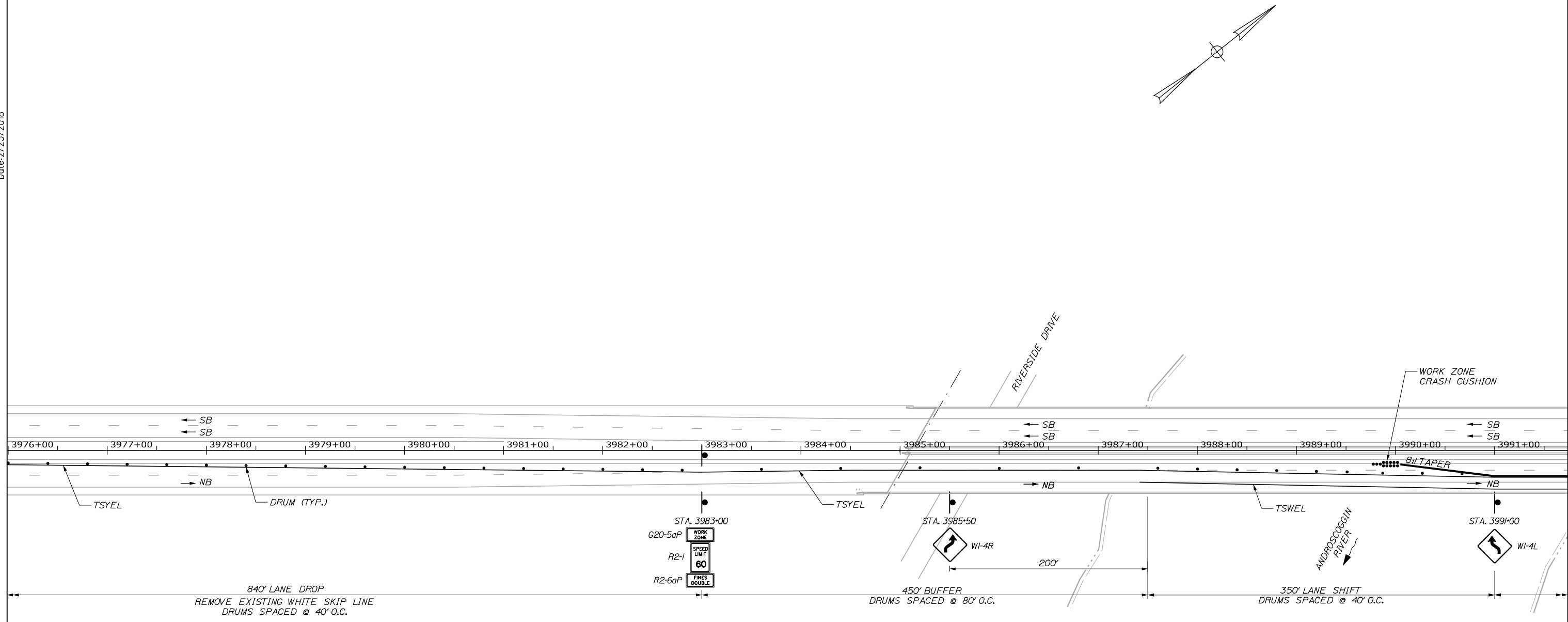
CONTRACT: 2018.07

SHEET NUMBER: MOT-02

4 OF 25

Filename: 004\_STAGE 1.dgn

Date: 2/23/2018



840' LANE DROP  
REMOVE EXISTING WHITE SKIP LINE  
DRUMS SPACED @ 40' O.C.

STA. 3983+00  
G20-5aP WORK ZONE  
R2-1 SPEED LIMIT 60  
R2-6aP FINES DOUBLE

STA. 3985+50  
WI-4R  
450' BUFFER  
DRUMS SPACED @ 80' O.C.

STA. 3991+00  
WI-4L  
350' LANE SHIFT  
DRUMS SPACED @ 40' O.C.

**LEGEND**

TSWEL - TEMPORARY SOLID WHITE EDGE LINE  
TSYEL - TEMPORARY SOLID YELLOW EDGE LINE

**NOTE:**

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Scale: Scale of Feet

No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.

	By	Date		By	Date
Designed	LZD	2\18	Checked	RWH	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

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MAINE TURNPIKE

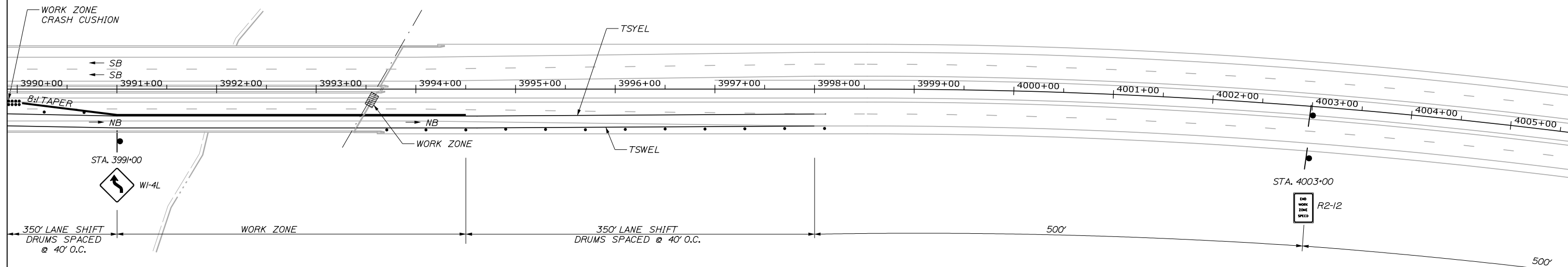
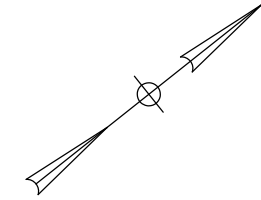
**THE GOLD STAR MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

ANDROSCOGGIN RIVER BRIDGES  
SUBSTRUCTURE REPAIRS  
MAINTENANCE OF TRAFFIC  
STAGE 1 (2 OF 4)

SHEET NUMBER: MOT-03  
CONTRACT: 2018.07  
5 OF 25

Date: 2/23/2018

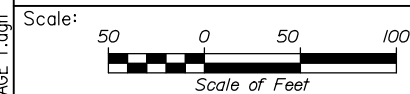


**LEGEND**

TSWEL - TEMPORARY SOLID WHITE EDGE LINE  
 TSYEL - TEMPORARY SOLID YELLOW EDGE LINE

**NOTE:**

ALL PAVEMENT MARKINGS AND PAVEMENT MARKING REMOVAL ON THE SOUTHBOUND ROADWAY AND THE NORTHBOUND AND SOUTHBOUND BRIDGES SHALL BE COMPLETED WITH TAPE, PAVEMENT MARKINGS ON THE NORTHBOUND ROADWAY SHALL BE PAINTED.



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**THE GOLD STAR  
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ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 MAINTENANCE OF TRAFFIC  
 STAGE 1 (3 OF 4)

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.					
	By	Date		By	Date
Designed	LZD	2\18	Checked	RWH	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

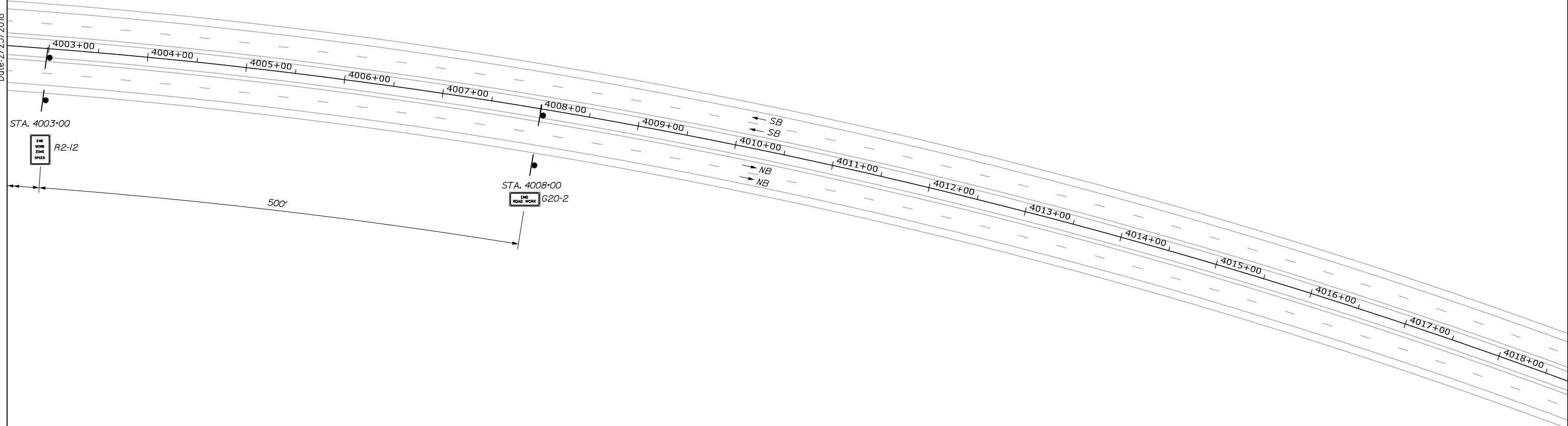
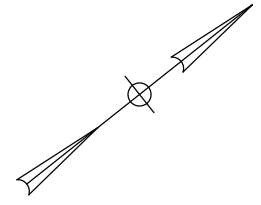
CONTRACT: 2018.07

SHEET NUMBER: MOT-04

6 OF 25

Filename: 006\_STAGE 1.dgn

Date: 2/23/2018

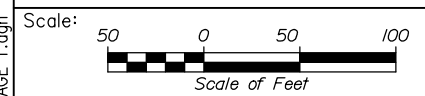


**LEGEND**

TSWEL - TEMPORARY SOLID WHITE EDGE LINE  
 TSYEL - TEMPORARY SOLID YELLOW EDGE LINE

**NOTE:**

ALL PAVEMENT MARKINGS AND PAVEMENT MARKING REMOVAL ON THE SOUTHBOUND ROADWAY AND THE NORTHBOUND AND SOUTHBOUND BRIDGES SHALL BE COMPLETED WITH TAPE, PAVEMENT MARKINGS ON THE NORTHBOUND ROADWAY SHALL BE PAINTED.



Designed by:



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**THE GOLD STAR  
 MEMORIAL HIGHWAY**

ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 MAINTENANCE OF TRAFFIC  
 STAGE 1 (4 OF 4)

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.					
	By	Date	Checked	By	Date
Designed	LZD	2\18	RWH	RWH	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

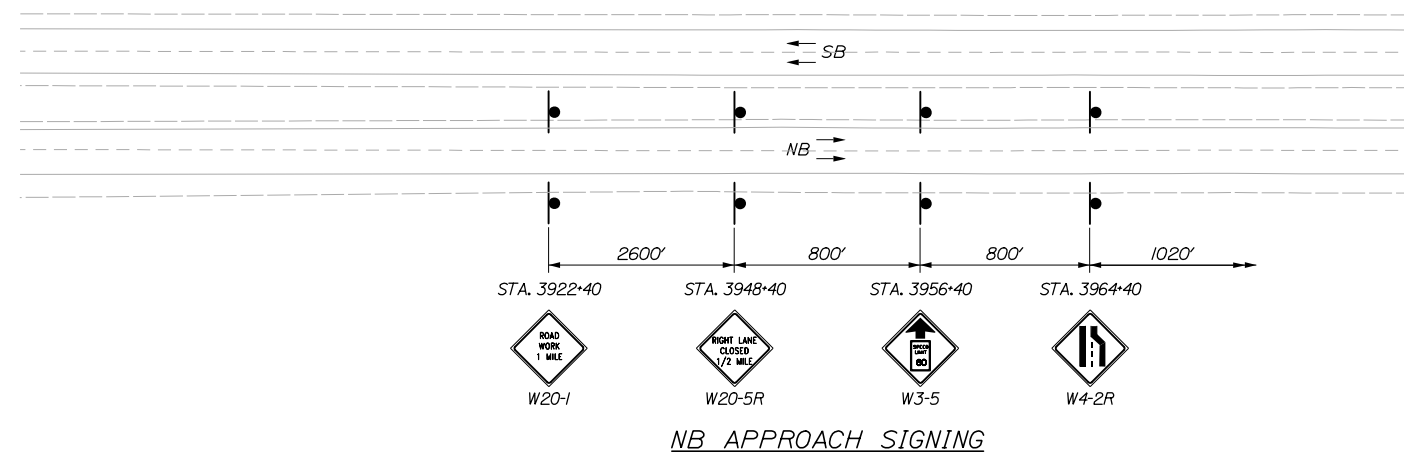
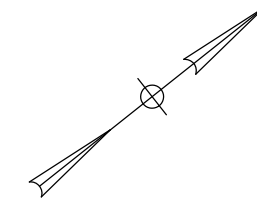
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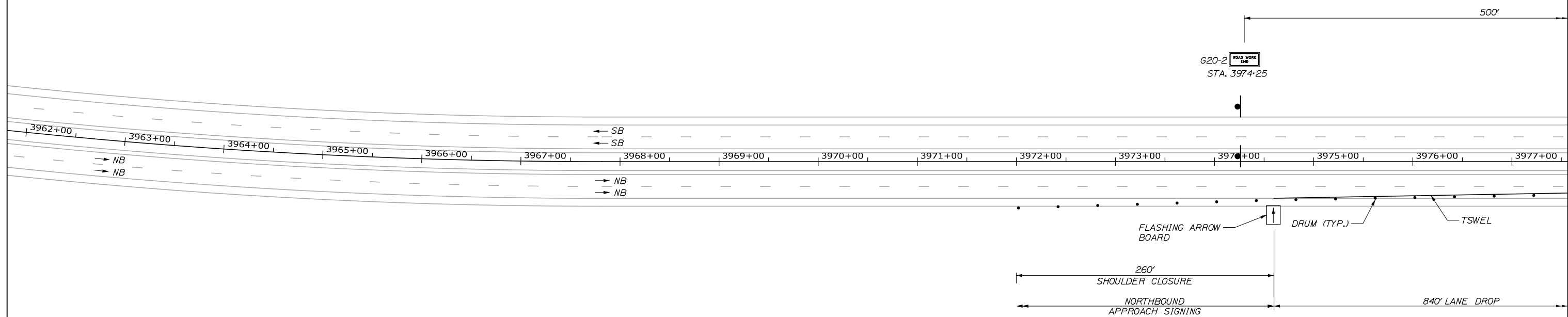
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Filename: 007\_STAGE 1.dgn

Date: 2/23/2018



NB APPROACH SIGNING

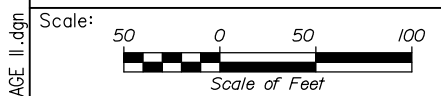


**LEGEND**

TSWEL - TEMPORARY SOLID WHITE EDGE LINE  
 TSYEL - TEMPORARY SOLID YELLOW EDGE LINE

**NOTES:**

1. ALL PAVEMENT MARKINGS AND PAVEMENT MARKING REMOVAL ON THE SOUTHBOUND ROADWAY AND THE NORTHBOUND AND SOUTHBOUND BRIDGES SHALL BE COMPLETED WITH TAPE. PAVEMENT MARKINGS ON THE NORTHBOUND ROADWAY SHALL BE PAINTED.
2. NB AND SB SHOWN ON THE SAME PLAN FOR CONVENIENCE. REFER TO PROSECUTION OF WORK FOR WORK RESTRICTIONS.
3. TEMPORARY CONCRETE BARRIER ON NEW PAVEMENT SHALL BE INSTALLED IN A MANNER THAT PREVENTS DAMAGE TO NEW PAVEMENT. SEE SPECIAL PROVISION 107.4.7 LIMITATIONS OF OPERATIONS FOR ADDITIONAL INFORMATION



Designed by:

HNTB

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.

	By	Date		By	Date
Designed	LZD	2\18	Checked	RWH	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

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THE GOLD STAR  
MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 MAINTENANCE OF TRAFFIC  
 STAGE II (1 OF 4)

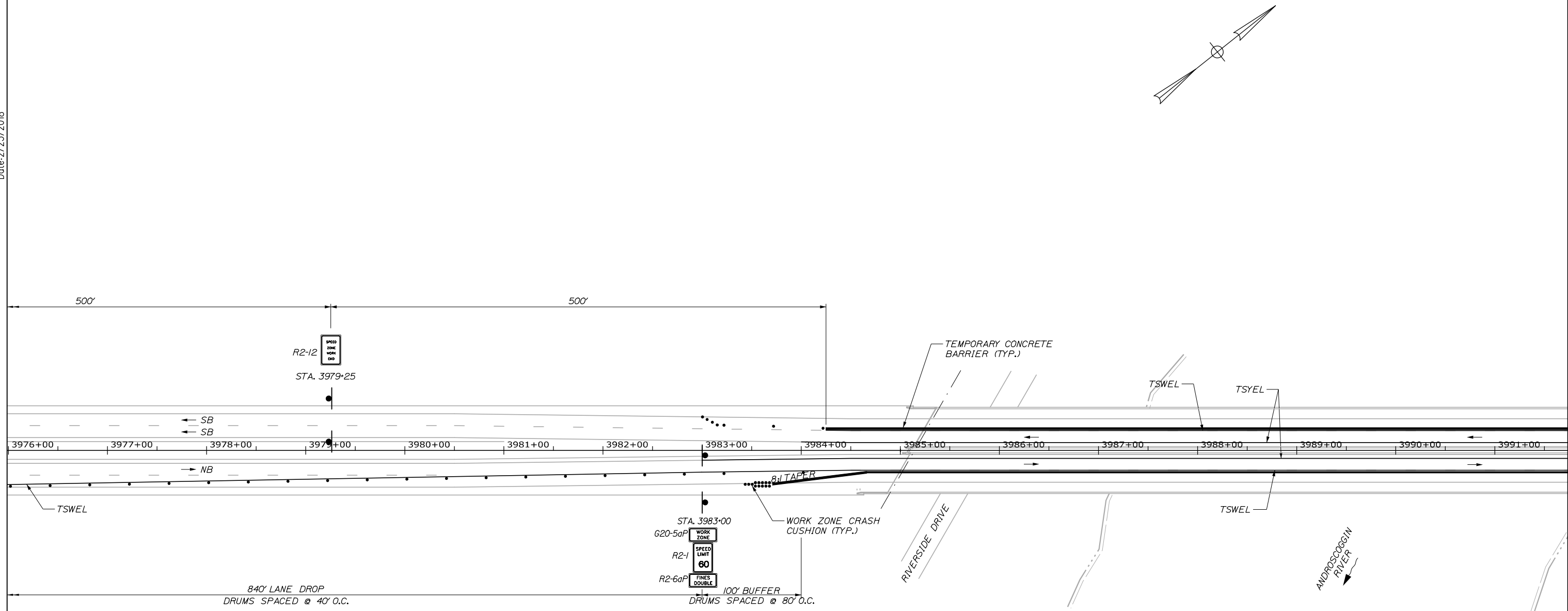
SHEET NUMBER: MOT-06  
 8 OF 25

CONTRACT: 2018.07

Filename: 008\_STAGE II.dgn



Date: 2/23/2018

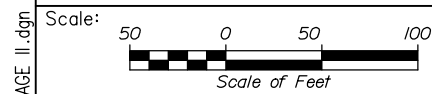


**LEGEND**

TSWEL - TEMPORARY SOLID WHITE EDGE LINE  
 TSYEL - TEMPORARY SOLID YELLOW EDGE LINE

**NOTES:**

1. ALL PAVEMENT MARKINGS AND PAVEMENT MARKING REMOVAL ON THE SOUTHBOUND ROADWAY AND THE NORTHBOUND AND SOUTHBOUND BRIDGES SHALL BE COMPLETED WITH TAPE, PAVEMENT MARKINGS ON THE NORTHBOUND ROADWAY SHALL BE PAINTED.
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**THE GOLD STAR  
 MEMORIAL HIGHWAY**

**ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 MAINTENANCE OF TRAFFIC  
 STAGE II (2 OF 4)**

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.					
	By	Date		By	Date
Designed	LZD	2\18	Checked	RWH	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

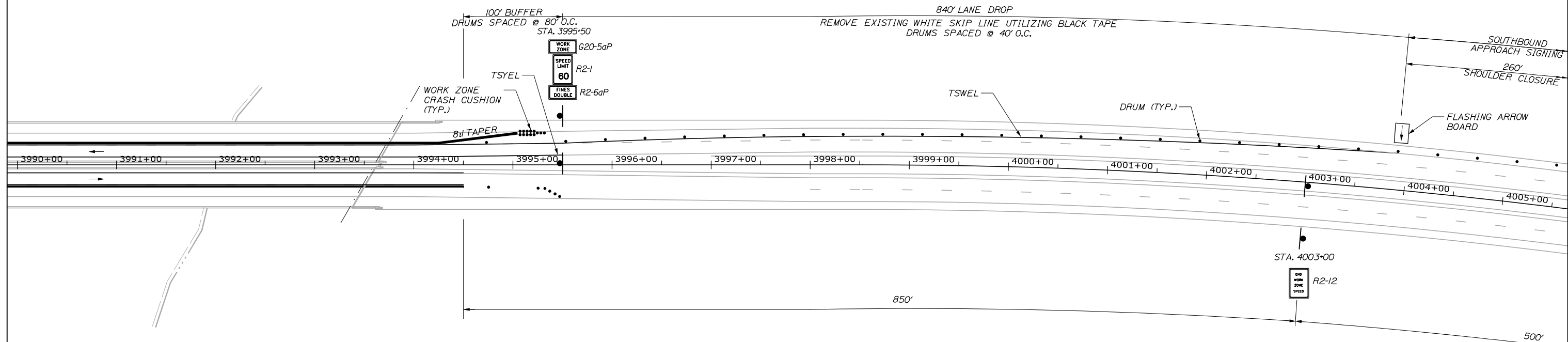
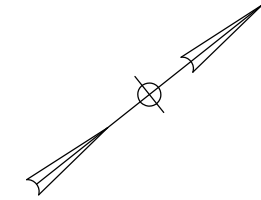
CONTRACT: 2018.07

SHEET NUMBER: MOT-07

9 OF 25

Filename: 009\_STAGE II.dgn

Date: 2/23/2018



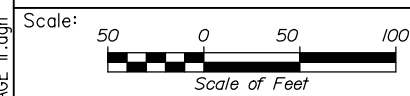
**LEGEND**

TSWEL - TEMPORARY SOLID WHITE EDGE LINE  
 TSYEL - TEMPORARY SOLID YELLOW EDGE LINE

**NOTES:**

1. ALL PAVEMENT MARKINGS AND PAVEMENT MARKING REMOVAL ON THE SOUTHBOUND ROADWAY AND THE NORTHBOUND AND SOUTHBOUND BRIDGES SHALL BE COMPLETED WITH TAPE, PAVEMENT MARKINGS ON THE NORTHBOUND ROADWAY SHALL BE PAINTED.
2. NB AND SB SHOWN ON THE SAME PLAN FOR CONVENIENCE. REFER TO PROSECUTION OF WORK FOR WORK RESTRICTIONS.
3. TEMPORARY CONCRETE BARRIER ON NEW PAVEMENT SHALL BE INSTALLED IN A MANNER THAT PREVENTS DAMAGE TO NEW PAVEMENT. SEE SPECIAL PROVISION 107.4.7 LIMITATIONS OF OPERATIONS FOR ADDITIONAL INFORMATION

Filename: 010\_STAGE II.dgn



Designed by:

HNTB

No.	Revision	By	Date

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.

	By	Date		By	Date
Designed	LZD	2\18	Checked	RWH	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

HNTB CORPORATION  
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THE GOLD STAR  
MEMORIAL HIGHWAY

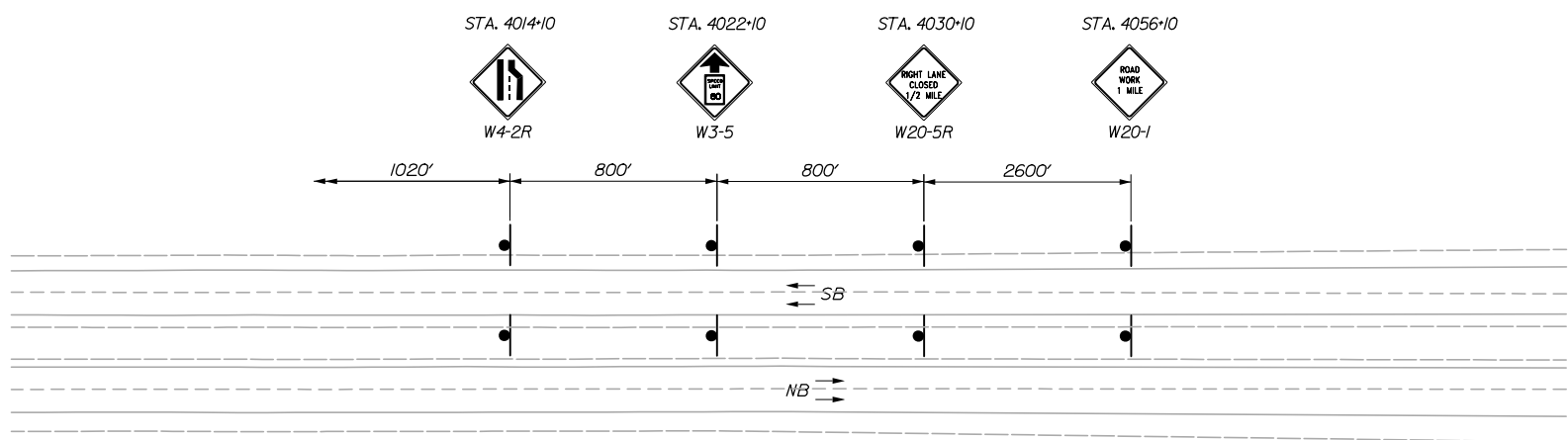
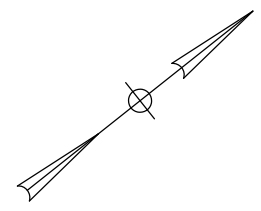
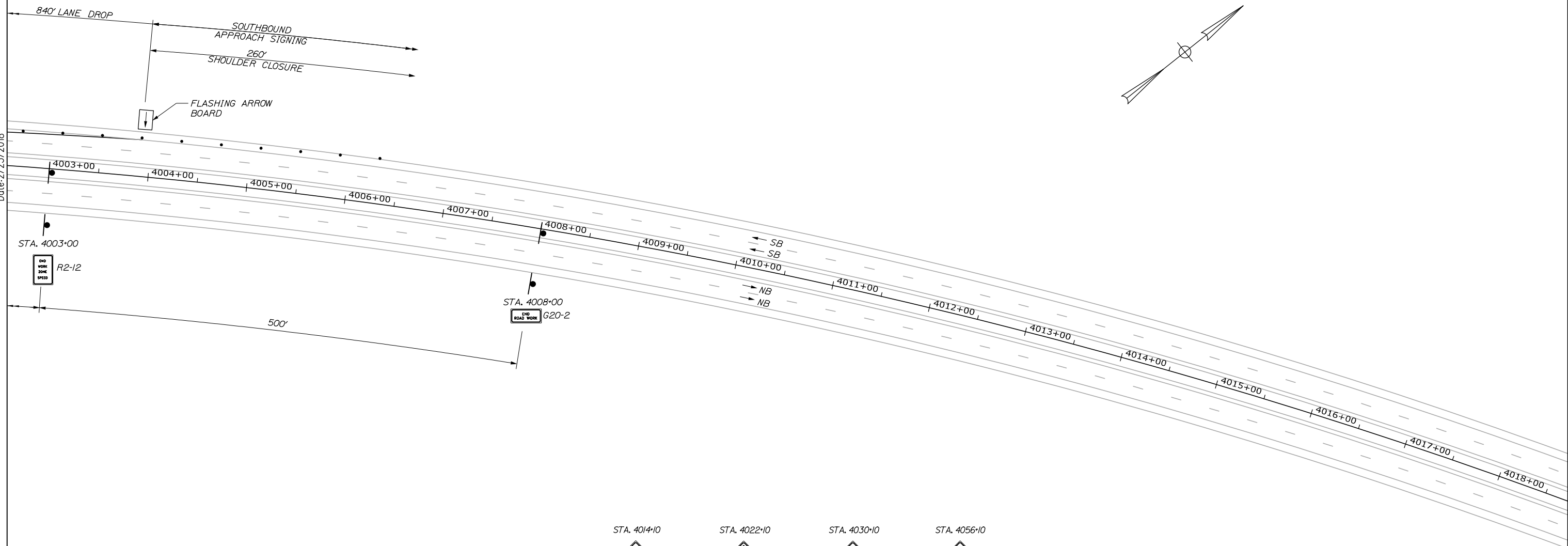
MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 MAINTENANCE OF TRAFFIC  
 STAGE II (3 OF 4)

SHEET NUMBER: MOT-08  
 10 OF 25

CONTRACT: 2018.07

Date: 2/23/2018



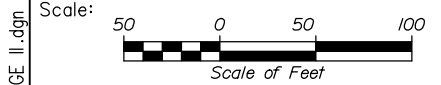
SB APPROACH SIGNING

**LEGEND**

TSWEL - TEMPORARY SOLID WHITE EDGE LINE  
 TSYEL - TEMPORARY SOLID YELLOW EDGE LINE

**NOTES:**

1. ALL PAVEMENT MARKINGS AND PAVEMENT MARKING REMOVAL ON THE SOUTHBOUND ROADWAY AND THE NORTHBOUND AND SOUTHBOUND BRIDGES SHALL BE COMPLETED WITH TAPE. PAVEMENT MARKINGS ON THE NORTHBOUND ROADWAY SHALL BE PAINTED.
2. NB AND SB SHOWN ON THE SAME PLAN FOR CONVENIENCE. REFER TO PROSECUTION OF WORK FOR WORK RESTRICTIONS.
3. TEMPORARY CONCRETE BARRIER ON NEW PAVEMENT SHALL BE INSTALLED IN A MANNER THAT PREVENTS DAMAGE TO NEW PAVEMENT. SEE SPECIAL PROVISION 107.4.7 LIMITATIONS OF OPERATIONS FOR ADDITIONAL INFORMATION
4. W20-1 "ROAD WORK 1 MILE" SIGN NEEDED ON THE EXIT 80 SOUTHBOUND ON RAMP.



No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.

	By	Date		By	Date
Designed	LZD	2\18	Checked	RWH	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

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**THE GOLD STAR MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

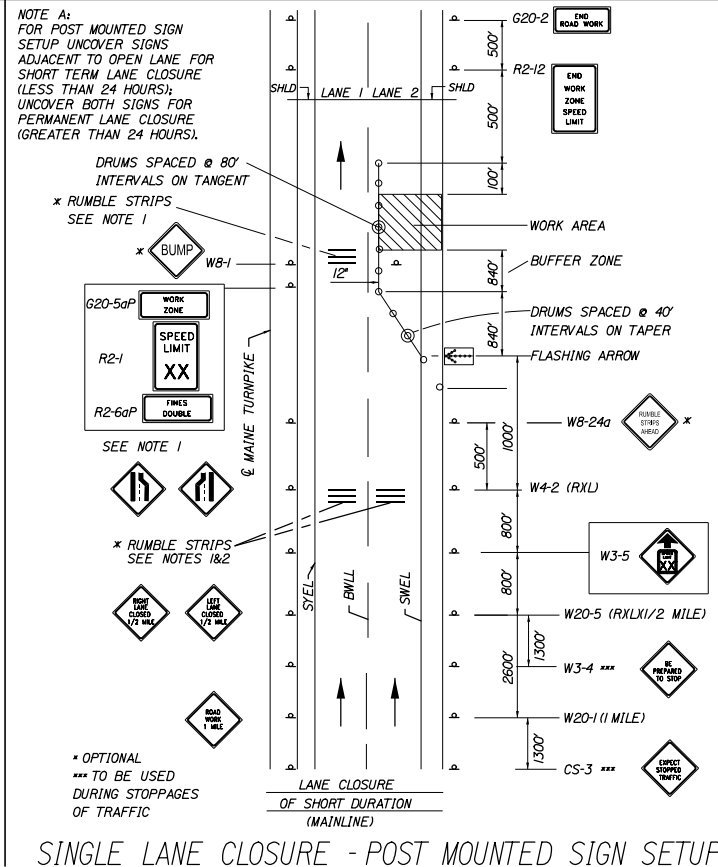
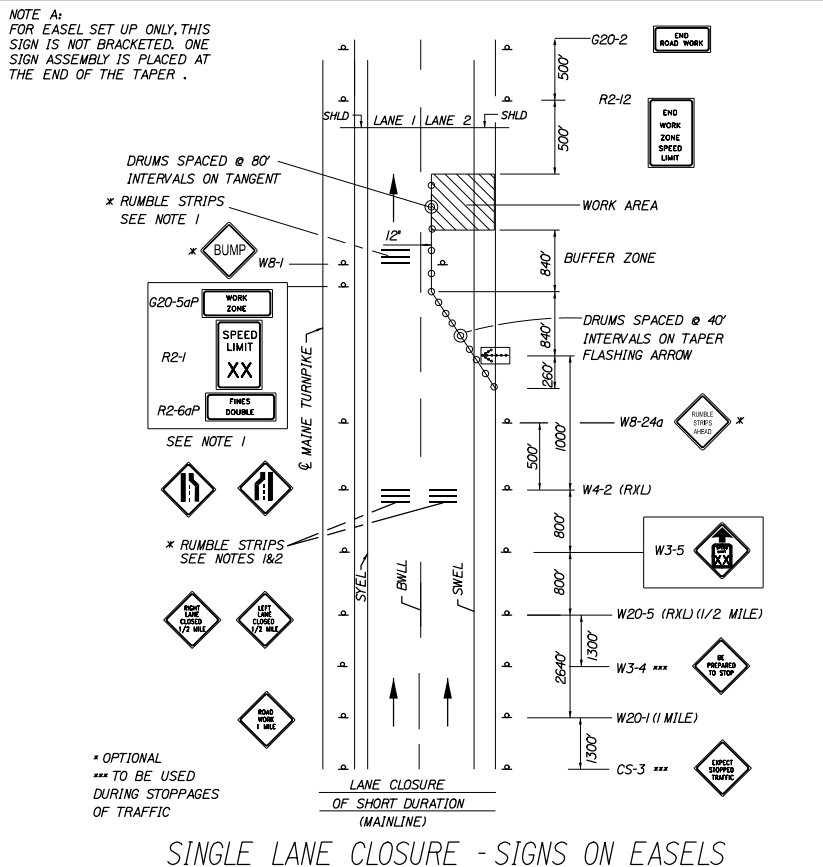
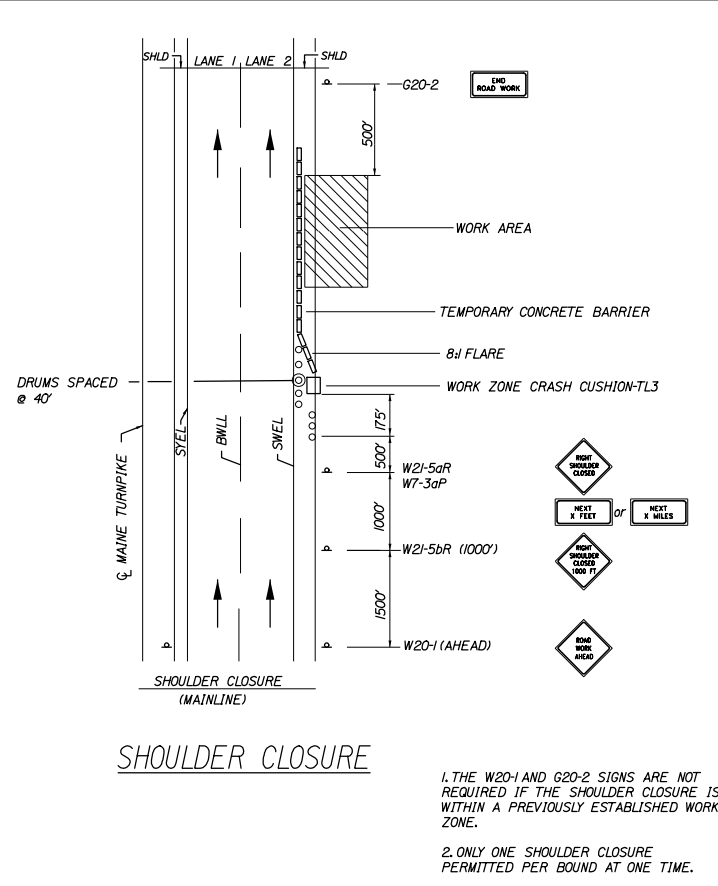
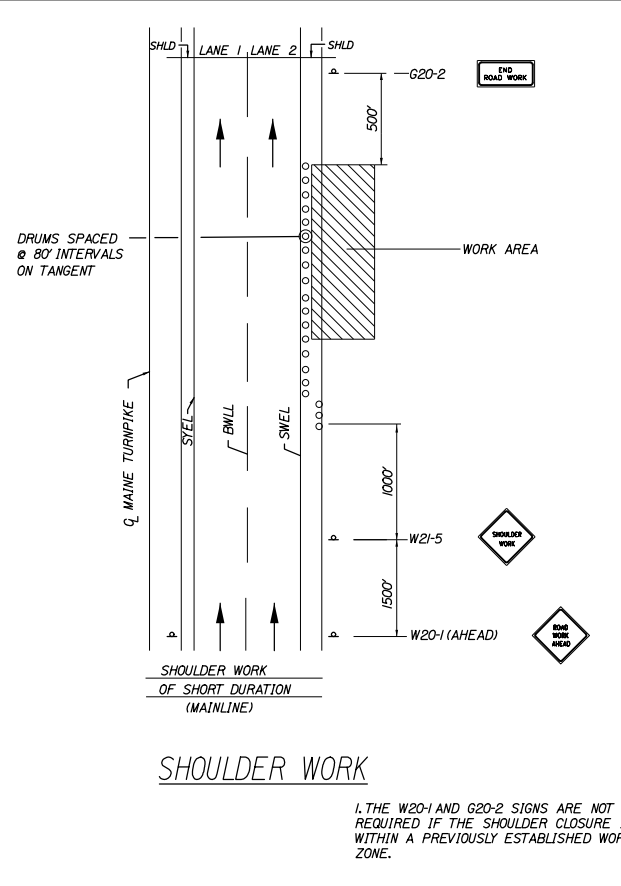
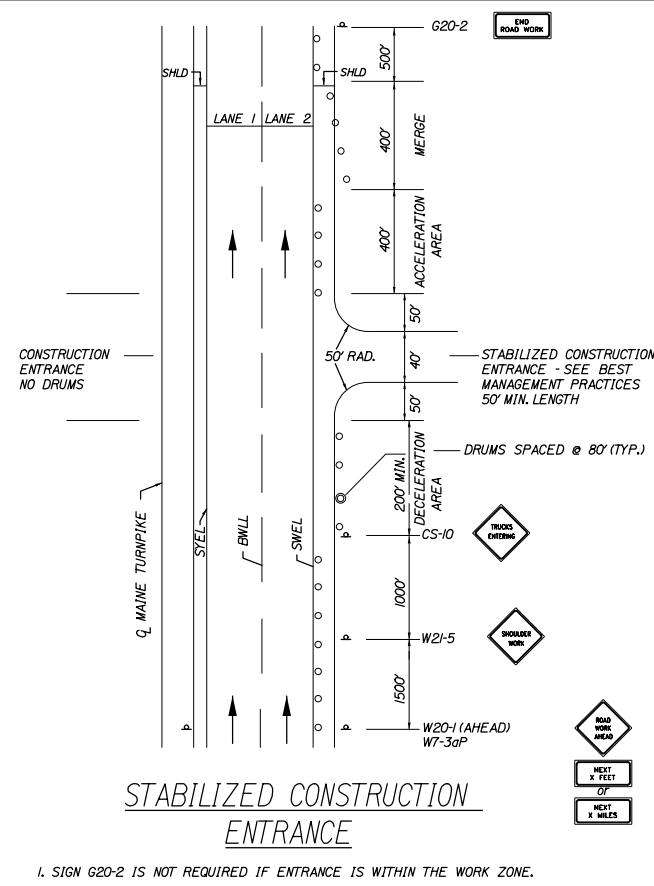
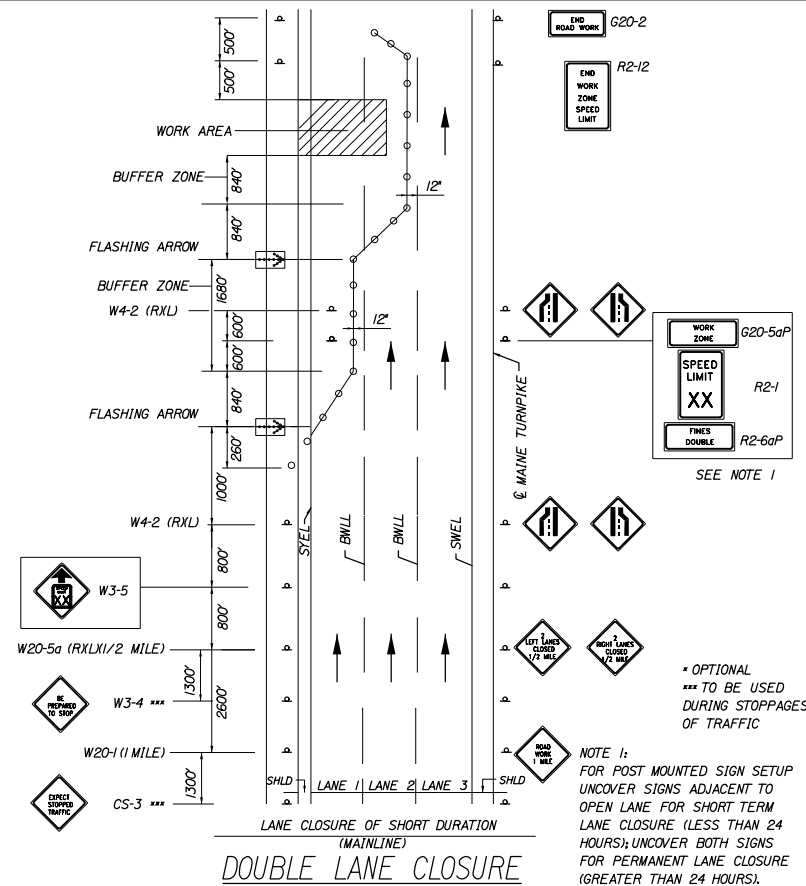
ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 MAINTENANCE OF TRAFFIC  
 STAGE II (4 OF 4)

SHEET NUMBER: MOT-09  
 11 OF 25

CONTRACT: 2018.07

Filename: 011\_STAGE II.dgn

Date: 2/23/2018



**TEMPORARY RUMBLE STRIP NOTES**

1. IF RUMBLE STRIPS ARE USED THEY SHALL BE PLACED IN ONE OF THE FOLLOWING CONFIGURATIONS:  
 \* ADJACENT TO THE WORK ZONE (1 UNIT)  
 \* UPSTREAM FROM THE TAPER FOR THE WORKZONE (2 UNITS)  
 \* BOTH ADJACENT TO THE WORKZONE AND PRIOR TO THE TAPER (3 UNITS)  
 W8-1 SIGNS SHALL BE PLACED ADJACENT TO THE FIRST RUMBLE STRIP AT ANY LOCATION. ONLY ONE SET OF W8-24a SIGNS ARE REQUIRED FOR ANY OF THE ABOVE CONFIGURATIONS.

2. RUMBLE STRIPS MAY BE PLACED UPSTREAM OF THE TAPER BETWEEN THE W3-5 SIGNS AND THE W4-2 SIGNS. IF RUMBLE STRIPS ARE INSTALLED PRIOR TO TAPER, W8-1 SIGNS SHALL BE PLACED ADJACENT TO THE FIRST STRIP AND THE W8-24a SIGNS SHALL BE MOVED TO 400' AFTER THE W20-5 SIGNS.

**GENERAL MAINTENANCE OF TRAFFIC NOTES:**

- ALL PAVEMENT STRIPING & SIGNING SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", U.S.D.O.T., F.H.W.A., LATEST EDITION.
- THESE PLANS SHOW THE GENERAL CONDITION FOR TURNPIKE MAINLINE TRAFFIC CONTROL DURING CONSTRUCTION. SLIGHT MODIFICATIONS IN CONSTRUCTION PROCEDURE MAY OCCUR AND MAY REQUIRE SOME MINOR ADJUSTMENTS TO BE MADE IN THE FIELD. ALL PROCEDURES MUST BE APPROVED BY THE RESIDENT.
- THE CONTRACTOR SHALL REMOVE ALL PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED PAVEMENT MARKINGS IN ACCORDANCE WITH THE SPECIFICATIONS AND MUTCD. PAYMENT SHALL BE MADE UNDER ITEM 627.77 - REMOVING PAVEMENT MARKINGS.
- EXPOSED BARRIER ENDS SHALL BE PROTECTED BY A WORK ZONE CRASH CUSHION. PAYMENT WILL BE UNDER ITEM 527.341 - WORK ZONE CRASH CUSHION - TL-3.
- GEOMETRIC INFORMATION FOR TRAFFIC SIGNS SHOWN ON THE PLANS WILL BE SUPPLIED TO THE CONTRACTOR AFTER AWARD.
- SPEED LIMIT, STOP AND YIELD SIGNS SHALL BE A MINIMUM OF 5' ABOVE THE PAVEMENT.

**ABBREVIATIONS FOR ALL M.O.T. PLANS**

BWLL = BROKEN WHITE LANE LINE  
 SWLL = SOLID WHITE LANE LINE  
 SYLL = SOLID YELLOW LANE LINE  
 TBWLL = TEMPORARY BROKEN WHITE LANE LINE  
 TSWLL = TEMPORARY SOLID WHITE LANE LINE  
 TSYLL = TEMPORARY SOLID YELLOW LANE LINE

Filename: 012\_MOT\_DET.ALS.dgn

Scale:

No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.

	By	Date		By	Date
Designed	LZD	2\18	Checked	RWH	2\18
Drawn	SLS	2\18	In Charge of	RAL	2\18

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**MAINE TURNPIKE**






**THE GOLD STAR MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 MAINTENANCE OF TRAFFIC  
 DETAILS

SHEET NUMBER: MOT-10  
 CONTRACT: 2018.07  
 12 OF 25

Date: 2/23/2018

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR		BORDER RADIUS	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND BORDER		
G20-2	48"	24"	END ROAD WORK	TEXT DIMENSIONS SHALL CONFORM TO "2004 EDITION - STANDARD HIGHWAY SIGNS - 2012 SUPPLEMENT"			2	ORANGE	BLACK		8.00 (16)
G20-5aP	48"	24"	WORK ZONE				2	↓	↓		8.00 (16)
R2-1 (60)	48"	60"	SPEED LIMIT XX				2	WHITE	BLACK		20.00 (40)
R2-6aP	48"	24"	FINES DOUBLED				2				8.00 (16)
R2-12	48"	60"	END WORK ZONE SPEED				2	↓	↓		20.00 (40)
W1-4L	48"	48"					1	ORANGE	BLACK		16.00 (16)
W1-4R	48"	48"					1				16.00 (16)
W3-5 (60)	48"	48"					2				16.00 (32)
W4-2L	48"	48"					2				16.00 (32)
W4-2R	48"	48"					2				16.00 (32)

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR		BORDER RADIUS	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND BORDER		
W8-1	48"	48"	BUMP	TEXT DIMENSIONS SHALL CONFORM TO "2004 EDITION - STANDARD HIGHWAY SIGNS - 2012 SUPPLEMENT"			2	ORANGE	BLACK		16.00 (32)
W8-24a	48"	48"	RUMBLE STRIPS AHEAD				2				16.00 (32)
W20-1 (1 MILE)	48"	48"	ROAD WORK XXX				2				16.00 (32)
W20-5L (1/2 MILE)	48"	48"	LEFT LANE CLOSED XXX				2				16.00 (32)
W20-5R (1/2 MILE)	48"	48"	RIGHT LANE CLOSED XXX				2				16.00 (32)

Filename: 013\_Sign Summary 1.dgn

Scale:			
No.	Revision	By	Date

Designed by:					
<b>HNTB</b>					
CONSULTANT PROJECT MANAGER: Craig Morin, P.E.					
	By	Date		By	Date
	LZD	2\18	Checked	RWH	2\18
	Drawn	SLS	In Charge of	RAL	2\18

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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

ANDROSCOGGIN RIVER BRIDGES  
SUBSTRUCTURE REPAIRS

**SIGN SUMMARY**

SHEET NUMBER: MOT-11  
CONTRACT: 2018.07

13 OF 25

Date: 2/23/2018

**ABUTMENT NOTES:**

1. ABUTMENT REPAIR WORK SHALL INCLUDE: ABUTMENT SURFACE REPAIRS, EPOXY INJECTION CRACK REPAIR AND SEALING EXISTING CONSTRUCTION JOINTS. ALL ABUTMENT REPAIR AREAS ARE ABOVE THE ORDINARY WATER ELEVATION.
2. WHERE ABUTMENT SURFACE REPAIRS ARE SPECIFIED THE WORK SHALL INCLUDE REMOVAL OF UNSOUND CONCRETE AND PLACEMENT AND CURING OF REPAIR MATERIALS. REPAIRS SHALL BE MEASURED FOR PAYMENT UNDER PAY ITEM 518.60, "REPAIR OF VERTICAL SURFACES < 8 INCHES" and 518.51 REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES.
3. WHERE EPOXY INJECTION CRACK REPAIR IS SPECIFIED THE WORK SHALL INCLUDE PRESSURE INJECTION OF CRACKS 1/8" OR MORE IN WIDTH. WORK SHALL BE PAID UNDER PAY ITEM 518.40, "EPOXY INJECTION CRACK REPAIR".
4. EXISTING ABUTMENT CONSTRUCTION JOINTS SHALL BE CLEANED AND SEALED WITH BACKER ROD AND A HIGH-PERFORMANCE POLYURETHANE SEALANT FOLLOWING COMPLETION OF THE ABUTMENT REPAIRS. THIS WORK WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCIDENTAL TO THE RELATED CONTRACT ITEMS.
5. FOR APPROXIMATE LOCATIONS OF ABUTMENT REPAIRS, SEE SHEETS S-02 TO S-03. ACTUAL REPAIR AREAS WILL BE DETERMINED BY THE RESIDENT DURING CONSTRUCTION.
6. ALL EXCAVATION REQUIRED TO COMPLETE THE ABUTMENT REPAIRS WILL NOT BE MEASURED FOR PAYMENT SEPARATELY, BUT SHALL BE INCIDENTAL TO PAY ITEM 518.60, "REPAIR OF VERTICAL SURFACES < 8 INCHES".
7. THE ESTIMATED REPAIR QUANTITIES ARE BASED ON AN INSPECTION COMPLETED IN MAY 2016.

**PIER NOTES:**

1. PIER REPAIR WORK SHALL INCLUDE: PROVIDING ACCESS FOR PIER INSPECTION, PIER SURFACE REPAIRS AND EPOXY INJECTION CRACK REPAIR.
2. WHERE PIER SURFACE REPAIRS ARE SPECIFIED THE WORK SHALL INCLUDE REMOVAL OF UNSOUND CONCRETE AND PLACEMENT AND CURING OF REPAIR MATERIALS. REPAIRS SHALL BE MEASURED FOR PAYMENT UNDER PAY ITEM 518.60, "REPAIR OF VERTICAL SURFACES < 8 INCHES", PAY ITEM 518.601, "REPAIR OF VERTICAL SURFACES < 8 INCHES - BELOW WATERLINE" AND PAY ITEM 518.70, "REPAIR OF OVERHEAD SURFACES < 8 INCHES".
3. WHERE EPOXY INJECTION CRACK REPAIR IS SPECIFIED THE WORK SHALL INCLUDE PRESSURE INJECTION OF CRACKS 1/8" OR MORE IN WIDTH. WORK SHALL BE PAID UNDER PAY ITEM 518.40, "EPOXY INJECTION CRACK REPAIR" AND 518.401, "EPOXY INJECTION CRACK REPAIR - BELOW WATERLINE".
4. THE CONTRACTOR SHALL PROVIDE AN ACCEPTABLE MEANS OF ACCESS AT ALL PIER LOCATIONS THAT WILL ALLOW THE RESIDENT TO SAFELY PERFORM A DETAILED CONCRETE INSPECTION OF ALL PIER SURFACES LOCATED ABOVE THE WATERLINE. PROVIDING ACCESS AT PIER LOCATIONS SHALL BE COMPLETED IN ACCORDANCE WITH SPECIAL PROVISION 524, "TEMPORARY ACCESS PLATFORMS FOR PIER INSPECTION AND REPAIR".
5. THE QUANTITIES OF PIER REPAIR NOTED ON THESE DRAWINGS ARE BASED ON BOTH AN UNDERWATER INSPECTION AND A VISUAL INSPECTION. BELOW WATER REPAIRS ARE BASED ON THE ORDINARY WATER LEVEL AT THE TIME OF INSPECTION. IF DIFFERENCES ARE EXPERIENCED THE RESIDENT SHOULD BE NOTIFIED AND QUANTITIES CAN BE ADJUSTED ACCORDINGLY.
6. FOR APPROXIMATE LOCATIONS OF REPAIR SEE SHEETS S-04 TO S-08. ACTUAL REPAIR AREAS WILL BE DETERMINED BY THE RESIDENT DURING CONSTRUCTION.

**ABUTMENT AND PIER CONCRETE REPAIR PROCEDURE:**

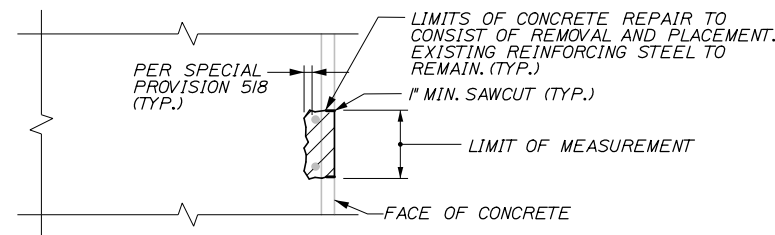
1. PRIOR TO THE START OF CONCRETE REPAIRS THE RESIDENT AND THE CONTRACTOR SHALL SOUND ALL ABUTMENT AND PIER SURFACES AND AGREE ON THE REPAIR LIMITS.
2. PERFORM 1" DEEP SAW CUTS ALONG LIMITS OF REMOVAL.
3. CHIP CONCRETE TO THE DEPTH SPECIFIED IN SPECIAL PROVISION 518. IF THE REMOVAL LIMITS CHANGE DURING THE DEMOLITION PROCESS THE CONTRACTOR SHALL NOTIFY THE RESIDENT. THE RESIDENT AND CONTRACTOR SHALL AGREE ON THE REVISED PAY LIMITS PRIOR TO THE CONTRACTOR CONTINUING THE REMOVALS.
4. PREPARE AND PATCH REPAIR AREAS. SEE SPECIFICATIONS FOR SURFACE PREPARATION, MATERIALS, PLACEMENT AND CURING REQUIREMENTS.
5. PERFORM GENERAL FINISHING.

**EPOXY INJECTION CRACK REPAIR:**

1. ALL CRACK REPAIRS SHALL BE COMPLETED IN ACCORDANCE WITH SPECIAL PROVISION 518.
2. THE SELECTED REPAIR MATERIAL FOR UNDERWATER CRACK REPAIR SHALL BE APPROVED BY THE MANUFACTURER FOR PLACEMENT UNDERWATER.
3. PREPARE CONCRETE SURFACE AND CRACK AREA BY CLEANING SUBSTRATE WITH WIRE BRUSH TO REMOVE LAITANCE AND CONTAMINANTS. BLAST CLEAN THE CRACK AND CONCRETE SURFACE; DO NOT USE WATER.
4. SET INJECTION PORTS ALONG THE LENGTH OF THE CRACK USING A HIGH-MODULUS, LOW VISCOSITY EPOXY SUCH AS SIKADUR 35, SIKADUR 55, OR APPROVED EQUAL ONCE SET SEAL PORTS AND CRACK WITH THE SAME EPOXY ADHESIVE. EPOXY SEAL AROUND PORTS SHALL BE ALLOWED TO CURE PRIOR TO CRACK INJECTION.

**GENERAL FINISHING:**

1. CONTRACTOR SHALL REMOVE TECTYL COATING AND GRAFFITI WHERE PRESENT PRIOR TO APPLYING PROTECTIVE CONCRETE COATING. WORK SHALL BE INCIDENTAL TO THE SPECIFIED ITEM IN SPECIFICATION 518.
2. ALL EXPOSED SUBSTRUCTURE SURFACES SHALL BE COATED WITH A PROTECTIVE COATING SUITABLE FOR CONCRETE SURFACES AFTER PATCHING IS COMPLETE AND PATCH MATERIALS HAVE CURED IN ACCORDANCE WITH SPECIAL PROVISION 515. ALL EXPOSED SURFACES FACING ROADWAY ON ABUTMENT I AND PIER I SHALL BE COATED WITH A PIGMENTED ANTI-GRAFFITI COATING.



CONCRETE SURFACE REPAIR DETAIL  
N.T.S.

Filename: 014\_Substructure Notes.dgn

Scale:			
No.	Revision	By	Date

Designed by:						
<b>HNTB</b>						
CONSULTANT PROJECT MANAGER: Craig Morin, P.E.						
	By	Date		By	Date	
	Designed	NMW	2\18	Checked	BRG	2\18
	Drawn	PEB	2\18	In Charge of	RAL	2\18

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**MAINE  
TURNPIKE**

THE GOLD STAR  
MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

ANDROSCOGGIN RIVER BRIDGES  
SUBSTRUCTURE REPAIRS

SUBSTRUCTURE REPAIR DETAILS  
CONCRETE REPAIR NOTES AND DETAILS

SHEET NUMBER: S-01

CONTRACT: 2018.07

14 OF 25





**REPAIR QUANTITIES**

REPAIR OF VERTICAL SURFACES < 8 INCHES 29 S.F.\*  
 REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES 5 S.F.\*  
 EPOXY INJECTION CRACK REPAIR 5 L.F.\*\*

\* INCLUDES 5 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.

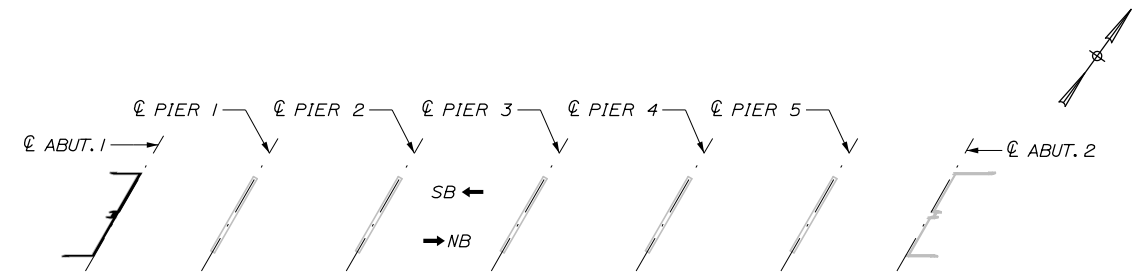
\*\* ASSUMES 5 L.F. OF ADDITIONAL CRACK REPAIR QUANTITY AS A CONTINGENCY.

**LEGEND**

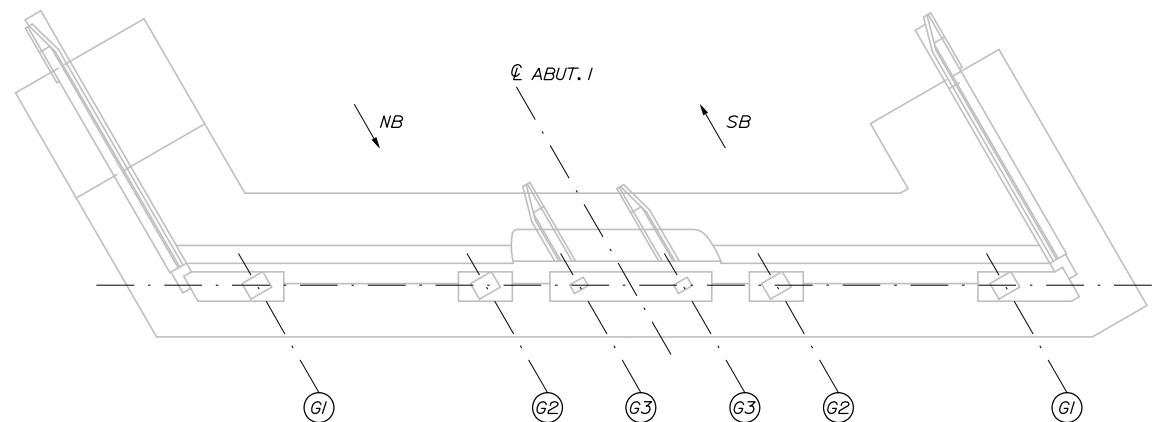
-  LIMIT OF SURFACE PATCH REPAIR
-  SQUARE FOOT AREA OF REPAIR
-  LINEAR FOOT LENGTH OF CRACK
-  EPOXY INJECTION CRACK REPAIR

**NOTES:**

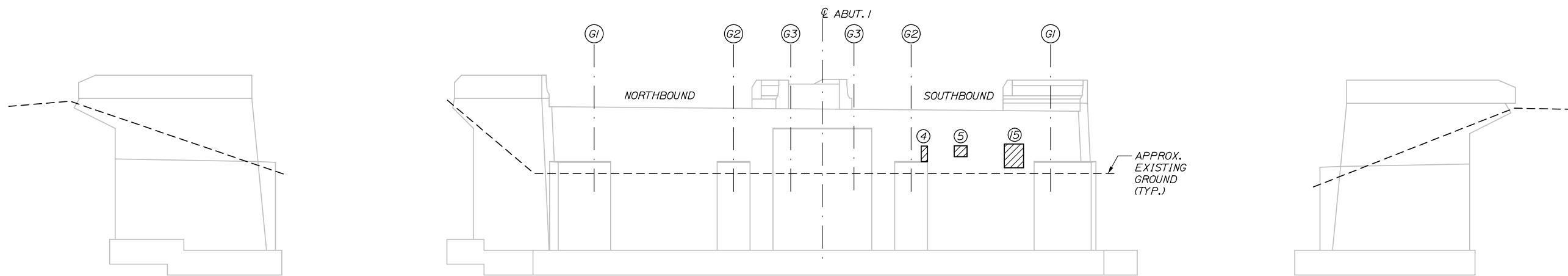
1. FOR CONCRETE REPAIR DETAIL AND PROCEDURAL NOTES SEE SHEET S-01.



**KEY PLAN**



**PLAN**



**ELEVATION  
 ABUTMENT 1**  
 3/32" = 1'-0"

**SOUTH WINGWALL**

**NORTH WINGWALL**

Date: 2/23/2018

Filename: 015\_Abument\_1 Repairs.dgn

Scale:			
No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.

	By	Date		By	Date
Designed	BRG	2\18	Checked	NMW	2\18
Drawn	PEB	2\18	In Charge of	RAL	2\18

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**THE GOLD STAR  
 MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 SUBSTRUCTURE REPAIR DETAILS  
 ABUTMENT 1 REPAIRS





SHEET NUMBER: S-02  
 CONTRACT: 2018.07  
 15 OF 25

**REPAIR QUANTITIES**

REPAIR OF VERTICAL SURFACES < 8 INCHES 30 S.F.\*  
 REPAIR OF UPWARD FACING SURFACES 5 S.F.\*  
 - BELOW REINFORCING STEEL < 8 INCHES  
 EPOXY INJECTION CRACK REPAIR 27 L.F.\*\*

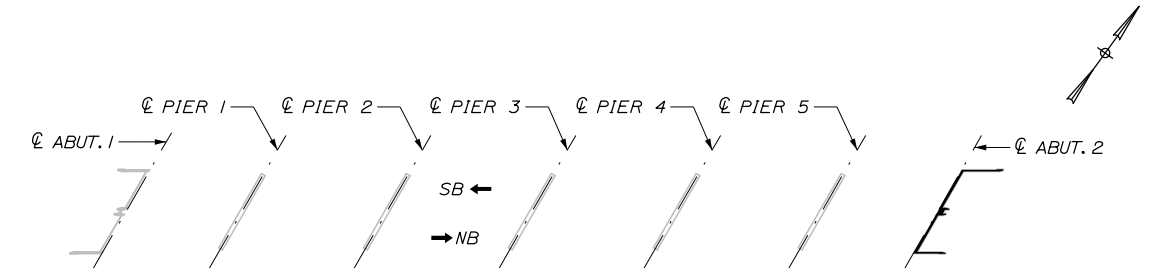
\* INCLUDES 5 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.  
 \*\* ASSUMES 5 L.F. OF ADDITIONAL CRACK REPAIR QUANTITY AS A CONTINGENCY.

**LEGEND**

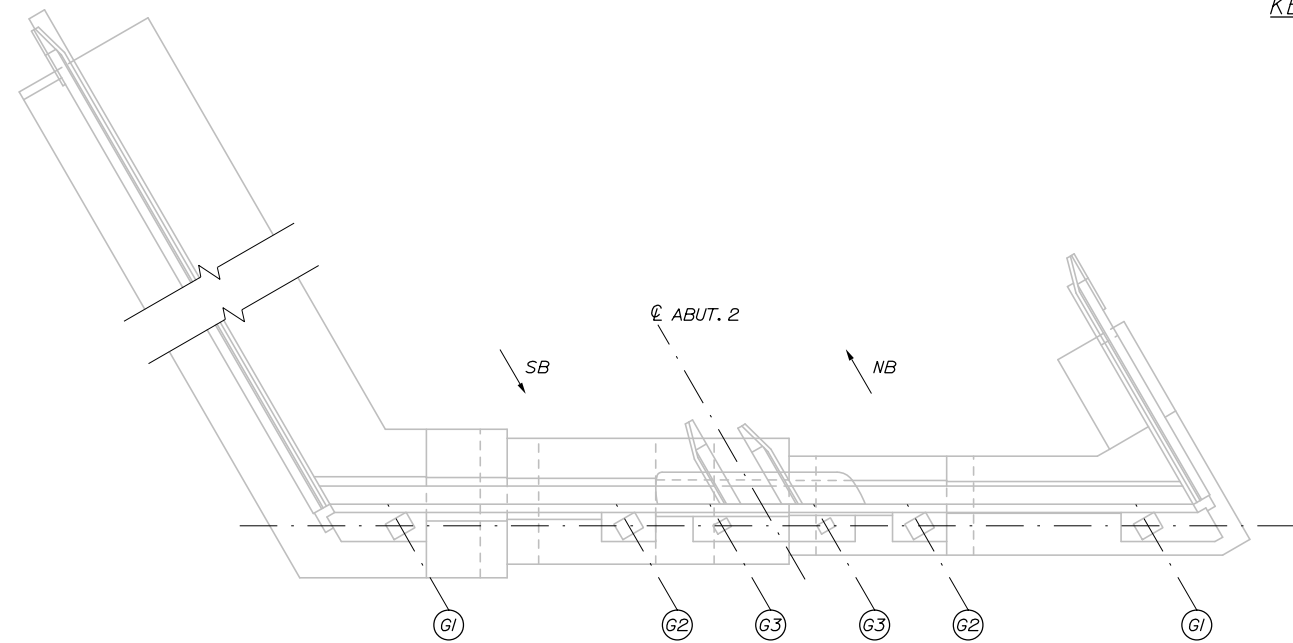
-  LIMIT OF SURFACE PATCH REPAIR
-  SQUARE FOOT AREA OF REPAIR
-  LINEAR FOOT LENGTH OF CRACK
-  EPOXY INJECTION CRACK REPAIR

**NOTES:**

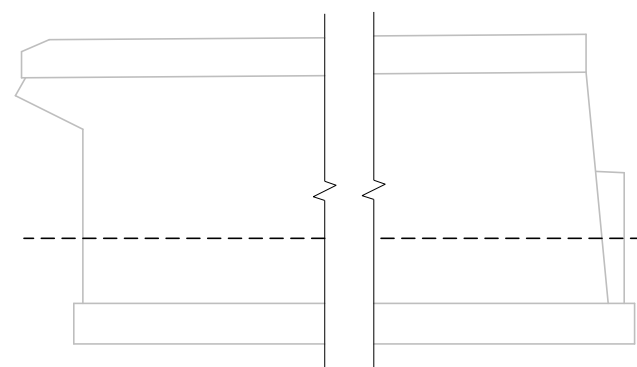
1. FOR CONCRETE REPAIR DETAIL AND PROCEDURAL NOTES SEE SHEET S-01.



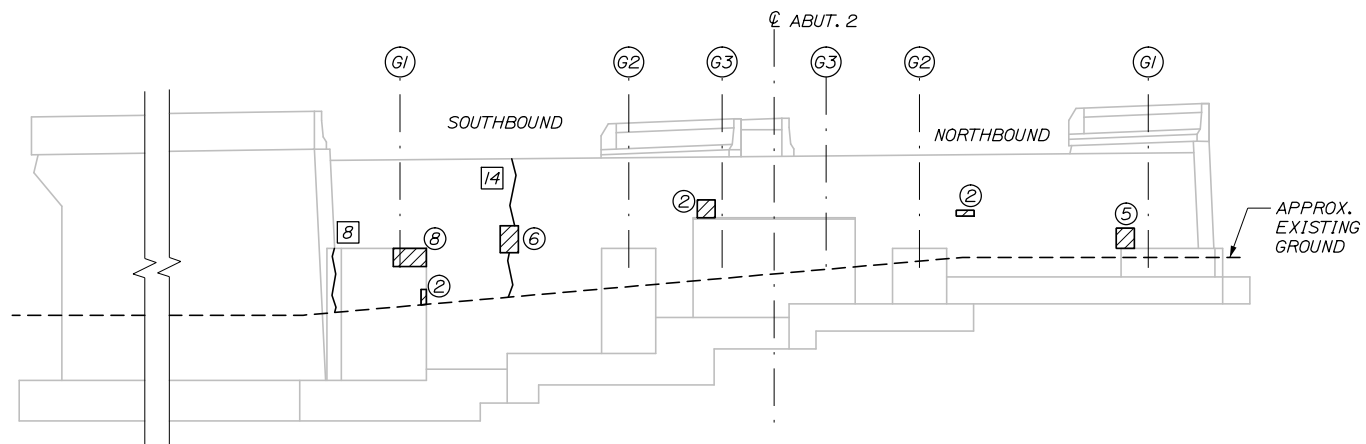
**KEY PLAN**



**PLAN**



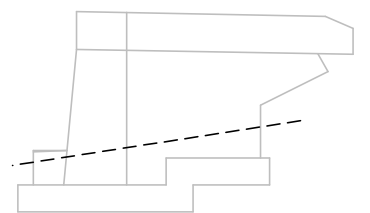
**NORTH WINGWALL**



**ELEVATION**

**ABUTMENT 2**


3/32" = 1'-0"




**SOUTH WINGWALL**

Date: 2/23/2018

Filename: 016\_Abutment 2\_Repairs.dgn

Scale:				Designed by:			
No.	Revision	By	Date	 CONSULTANT PROJECT MANAGER: Craig Morin, P.E.			
		By	Date	By	Date	By	Date
		Designed	BRG 2\18	Checked	NMW 2\18		
		Drawn	PEB 2\18	In Charge of	RAL 2\18		

HNTB CORPORATION 340 County Road, Suite 6-C Westbrook, ME 04092 TEL (207) 774-5155 FAX (207) 228-0909			
			
<b>THE GOLD STAR MEMORIAL HIGHWAY</b>			
MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.			

ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 SUBSTRUCTURE REPAIR DETAILS  
 ABUTMENT 2 REPAIRS

SHEET NUMBER: S-03

CONTRACT: 2018.07

16 OF 25



**REPAIR QUANTITIES**





REPAIR OF VERTICAL SURFACES < 8 INCHES 438 S.F.\*  
 REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES 5 S.F.\*\*  
 REPAIR OF OVERHEAD SURFACES < 8 INCHES 21 S.F.\*\*  
 EPOXY INJECTION CRACK REPAIR 23 L.F.\*\*\*

\* INCLUDES 50 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.

\*\* INCLUDES 5 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.

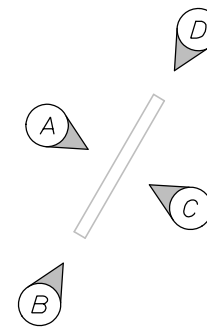
\*\*\* ASSUMES 5 L.F. OF ADDITIONAL CRACK REPAIR QUANTITY AS A CONTINGENCY.

**LEGEND**

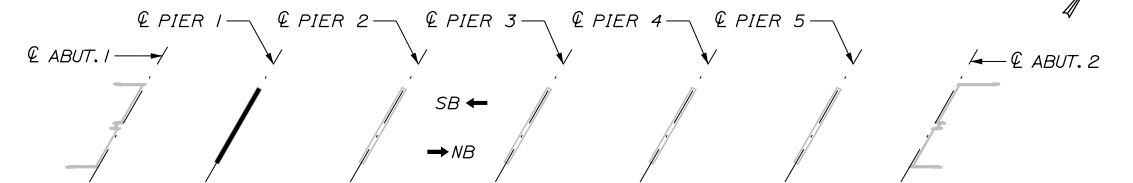
-  LIMIT OF SURFACE PATCH REPAIR
-  SQUARE FOOT AREA OF REPAIR
-  LINEAR FOOT LENGTH OF CRACK
-  EPOXY INJECTION CRACK REPAIR

**NOTES:**

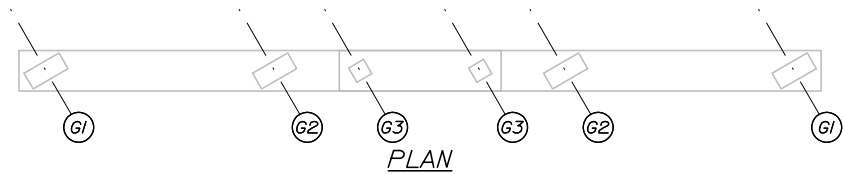
1. FOR CONCRETE REPAIR DETAIL AND PROCEDURAL NOTES SEE SHEET S-01.



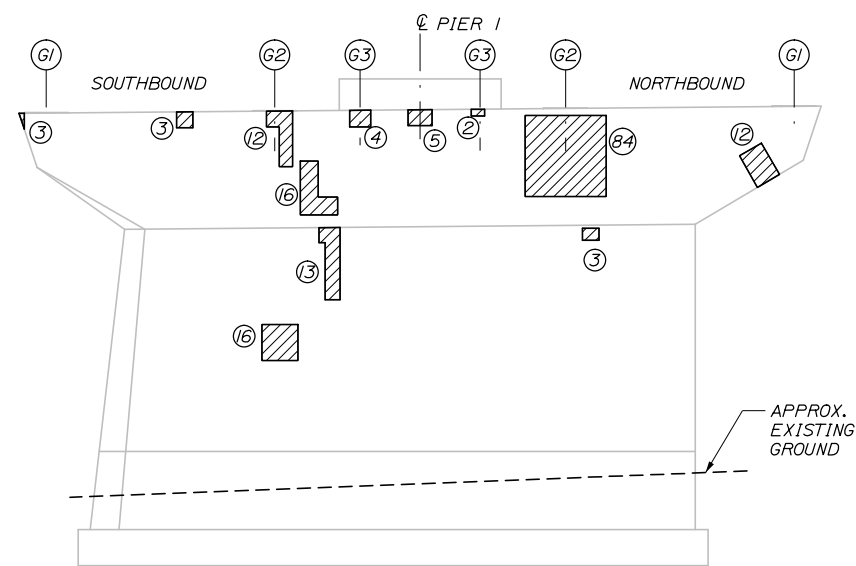
PIER ELEVATION KEY  
N.T.S.



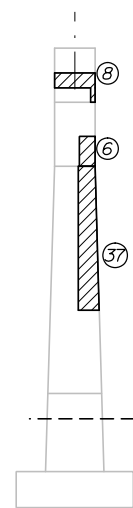
KEY PLAN



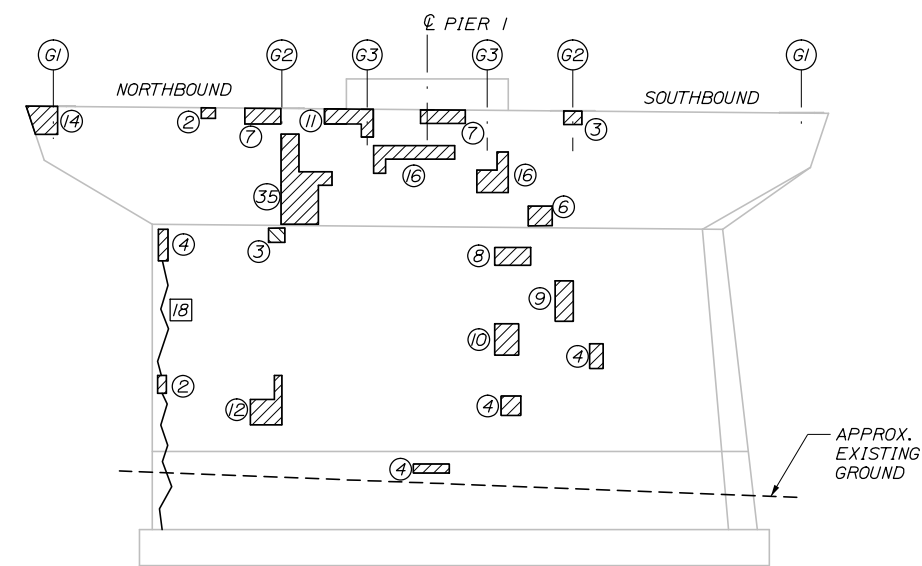
PLAN



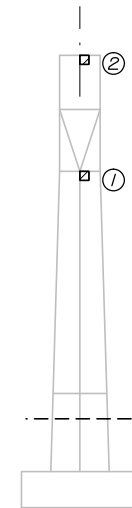
ELEVATION A



ELEVATION B



ELEVATION C



ELEVATION D

PIER 1  
3/32" = 1'-0"

Date: 2/23/2018

Filename: 017\_Pier 1 Repairs.dgn

Scale:			
No.	Revision	By	Date

Designed by:					
<b>HNTB</b>					
CONSULTANT PROJECT MANAGER: Craig Morin, P.E.					
	By	Date		By	Date
	BRG	2\18		NMW	2\18
	Drawn	PEB	2\18	In Charge of	RAL
					2\18

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 FAX (207) 228-0909



**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 SUBSTRUCTURE REPAIR DETAILS  
 PIER 1 REPAIRS

SHEET NUMBER: S-04  
 CONTRACT: 2018.07  
 17 OF 25

**REPAIR QUANTITIES**

**ABOVE WATER**

REPAIR OF VERTICAL SURFACES < 8 INCHES	580 S.F.*
REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES	5 S.F.**
REPAIR OF OVERHEAD SURFACES < 8 INCHES	13 S.F.**
EPOXY INJECTION CRACK REPAIR	41 L.F.***

**BELOW WATER**





REPAIR OF VERTICAL SURFACES < 8 INCHES - BELOW WATERLINE	7 S.F.**
EPOXY INJECTION CRACK REPAIR - BELOW WATERLINE	360 L.F.***

\* INCLUDES 50 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.

\*\* INCLUDES 5 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.

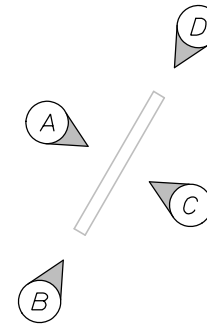
\*\*\* ASSUMES 5 L.F. OF ADDITIONAL CRACK REPAIR QUANTITY AS A CONTINGENCY.

**LEGEND**

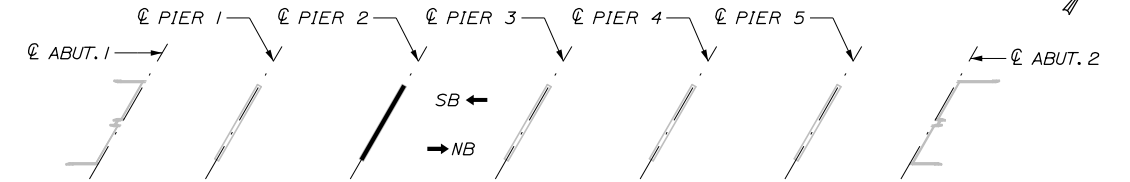
-  LIMIT OF SURFACE PATCH REPAIR
-  SQUARE FOOT AREA OF REPAIR
-  LINEAR FOOT LENGTH OF CRACK
-  EPOXY INJECTION CRACK REPAIR

**NOTES:**

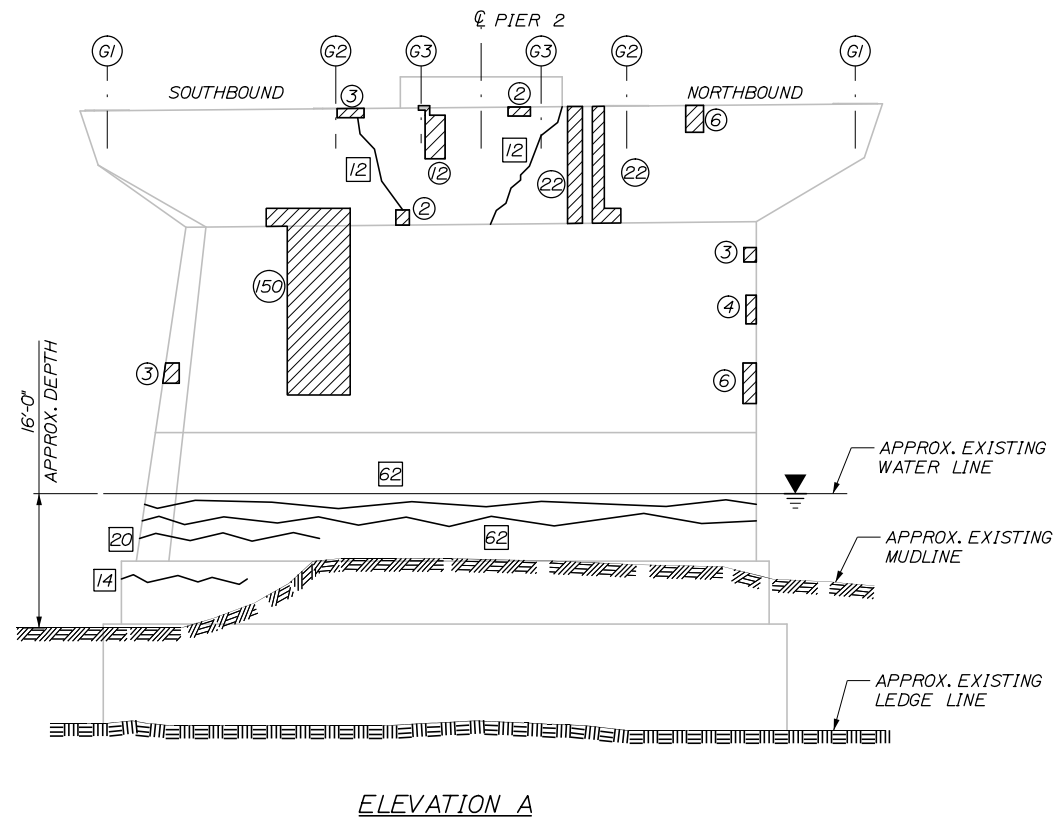
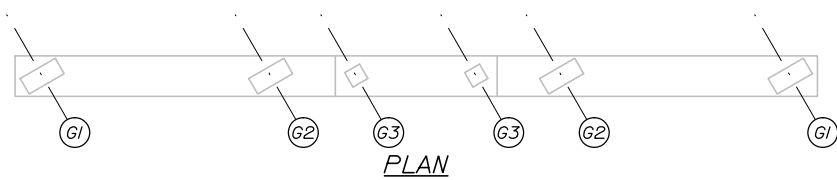
1. FOR CONCRETE REPAIR DETAIL AND PROCEDURAL NOTES SEE SHEET S-01.



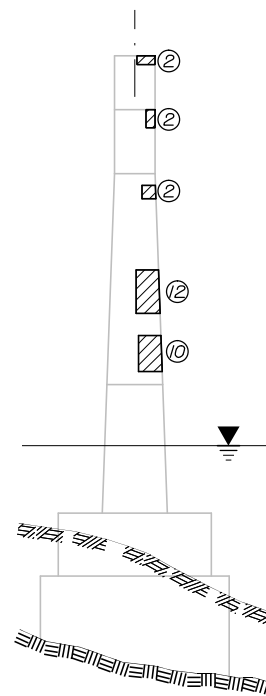
**PIER ELEVATION KEY**  
N.T.S.



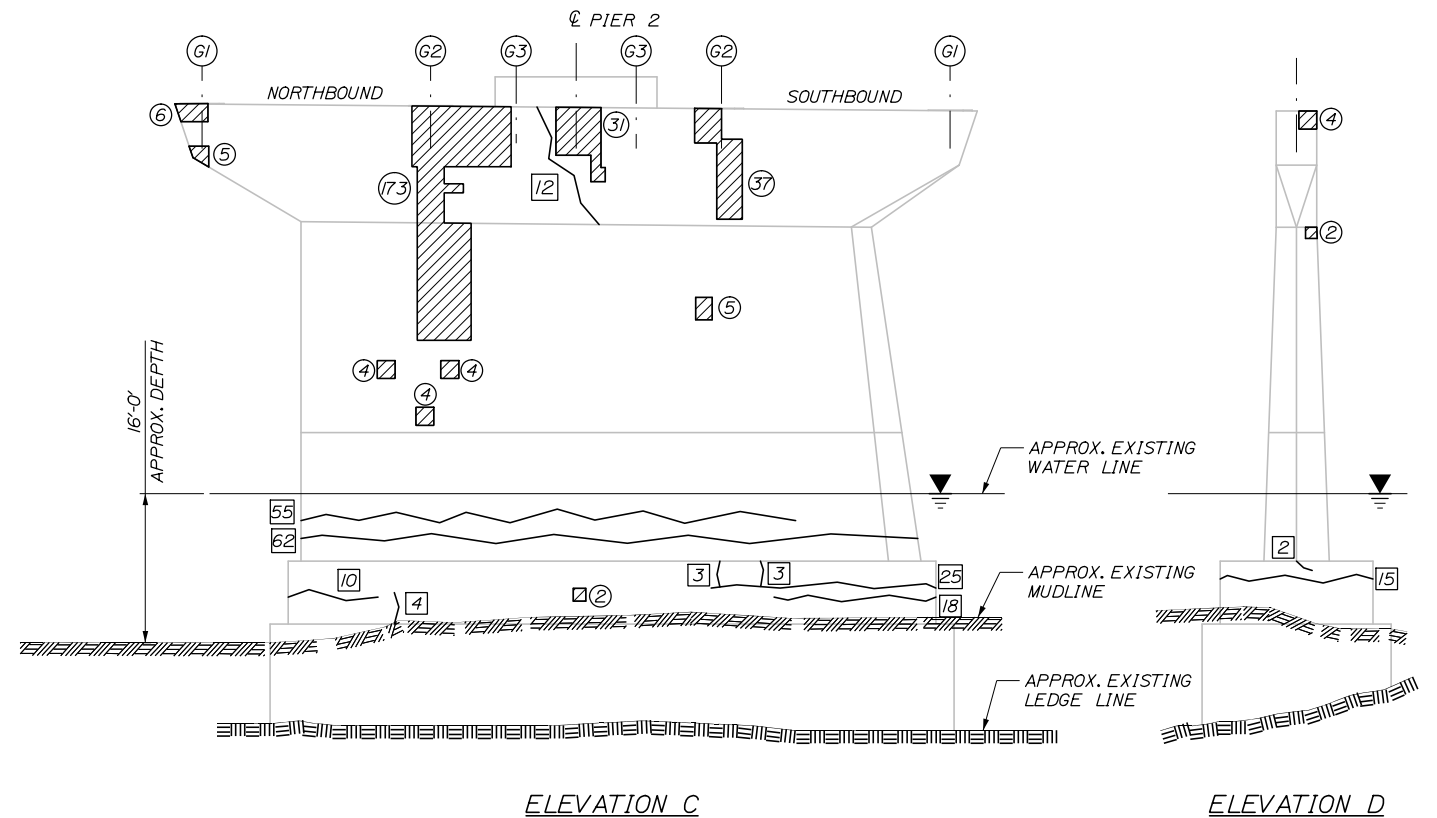
**KEY PLAN**



**ELEVATION A**



**ELEVATION B**



**ELEVATION C**

**ELEVATION D**

**PIER 2**  
3/32" = 1'-0"

Date: 2/23/2018

Filename: 018\_Pier 2 Repairs.dgn

Scale:		Designed by:	
No.	Revision	By	Date

**HNTB**

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.

By	Date	By	Date
Designed BRG	2\18	Checked NMW	2\18
Drawn PEB	2\18	In Charge of RAL	2\18

HNTB CORPORATION  
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FAX (207) 228-0909

**MAINE TURNPIKE**

**THE GOLD STAR MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

ANDROSCOGGIN RIVER BRIDGES  
SUBSTRUCTURE REPAIRS  
SUBSTRUCTURE REPAIR DETAILS  
PIER 2 REPAIRS

SHEET NUMBER: S-05  
18 OF 25

CONTRACT: 2018.07

**REPAIR QUANTITIES**

**ABOVE WATER**





REPAIR OF VERTICAL SURFACES < 8 INCHES 1277 S.F.\*  
 REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES 12 S.F.\*\*  
 REPAIR OF OVERHEAD SURFACES < 8 INCHES 20 L.F.\*\*\*  
 EPOXY INJECTION CRACK REPAIR 25 S.F.\*\*

**BELOW WATER**

REPAIR OF VERTICAL SURFACES < 8 INCHES - BELOW WATERLINE 5 S.F.\*\*  
 EPOXY INJECTION CRACK REPAIR - BELOW WATERLINE 44 L.F.\*\*\*

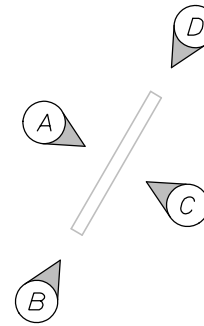
\* INCLUDES 50 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.  
 \*\* INCLUDES 5 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.  
 \*\*\* ASSUMES 5 L.F. OF ADDITIONAL CRACK REPAIR QUANTITY AS A CONTINGENCY.

**LEGEND**

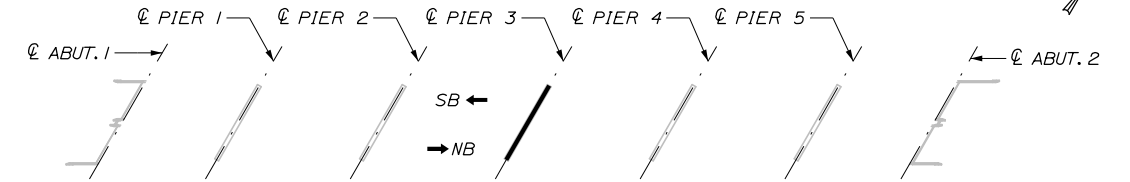
-  LIMIT OF SURFACE PATCH REPAIR
-  SQUARE FOOT AREA OF REPAIR
-  LINEAR FOOT LENGTH OF CRACK
-  EPOXY INJECTION CRACK REPAIR

**NOTES:**

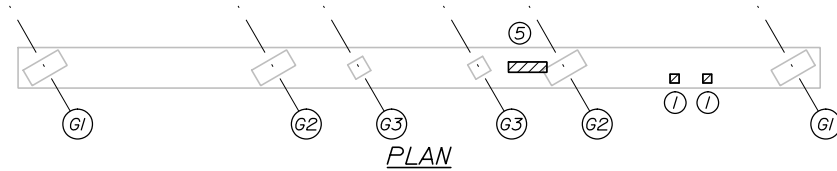
1. FOR CONCRETE REPAIR DETAIL AND PROCEDURAL NOTES SEE SHEET S-01.



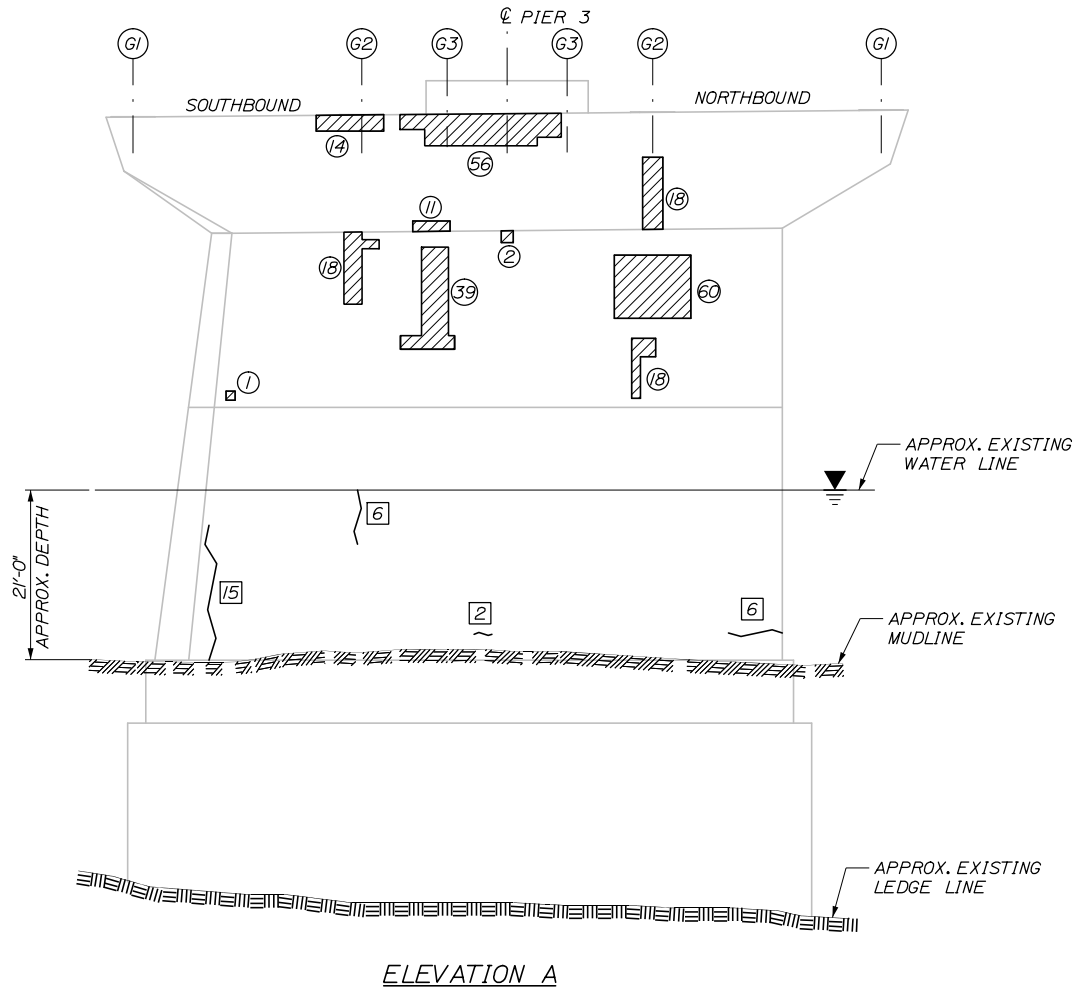
PIER ELEVATION KEY  
N.T.S.



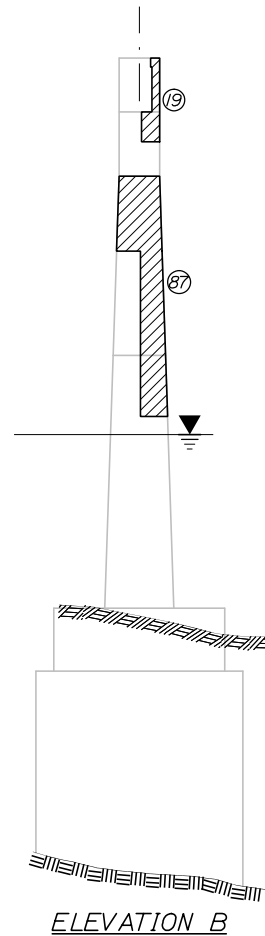
KEY PLAN



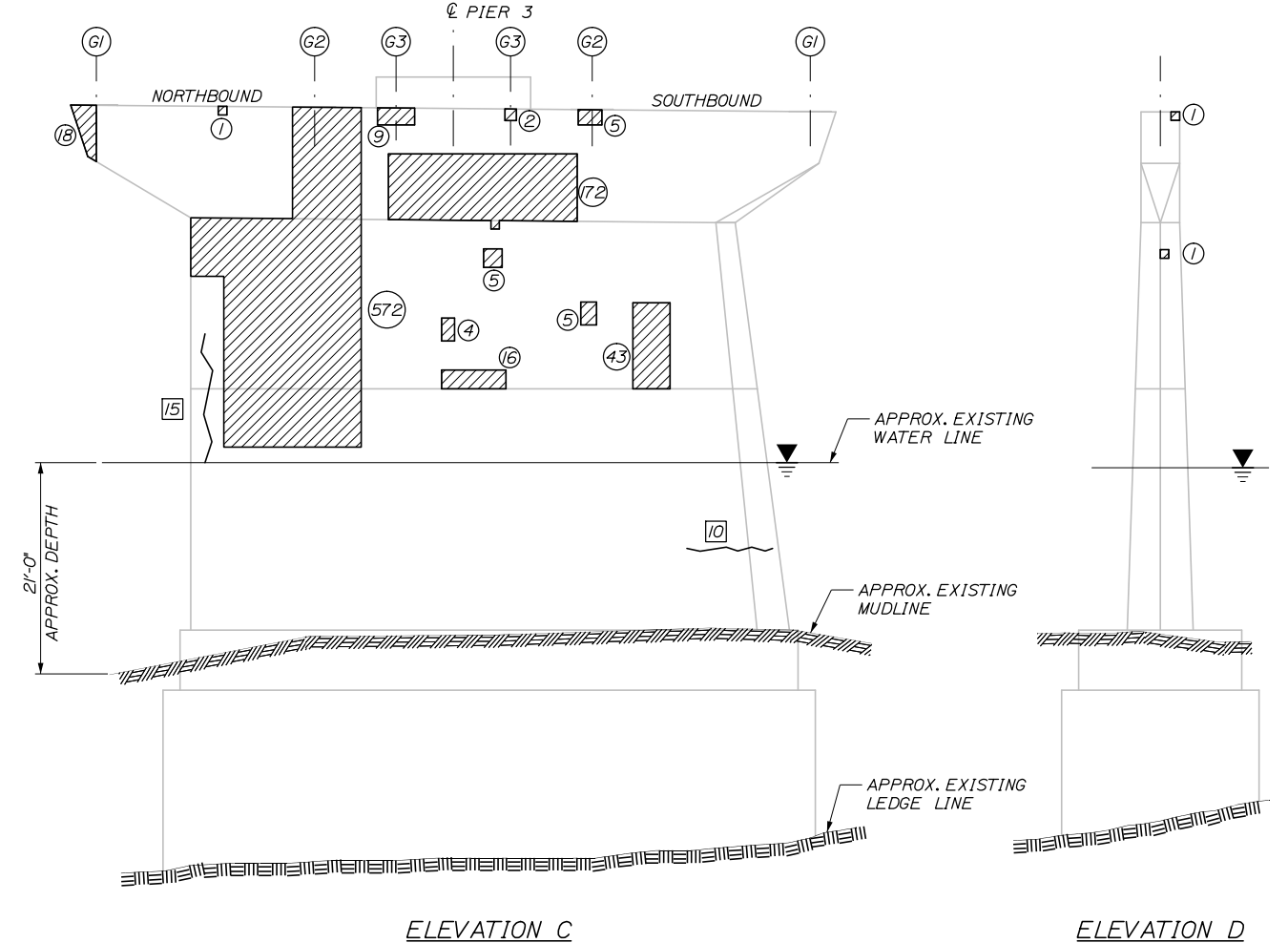
PLAN



ELEVATION A



ELEVATION B



ELEVATION C

ELEVATION D

PIER 3  
3/32" = 1'-0"

Date: 2/23/2018

Filename: 019\_Pier 3 Repairs.dgn

Scale:			
No.	Revision	By	Date

Designed by:			
<b>HNTB</b>			
CONSULTANT PROJECT MANAGER: Craig Morin, P.E.			
	By	Date	
	BRG	2\18	
	Checked	NMW	2\18
	By	Date	
	Drawn	PEB	2\18
	In Charge of	RAL	2\18

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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 SUBSTRUCTURE REPAIR DETAILS  
 PIER 3 REPAIRS

SHEET NUMBER: S-06  
 19 OF 25

CONTRACT: 2018.07

**REPAIR QUANTITIES**

**ABOVE WATER**





REPAIR OF VERTICAL SURFACES < 8 INCHES	430 S.F.*
REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES	6 S.F.**
REPAIR OF OVERHEAD SURFACES < 8 INCHES	23 S.F.**
EPOXY INJECTION CRACK REPAIR	114 L.F.***

**BELOW WATER**

REPAIR OF VERTICAL SURFACES < 8 INCHES - BELOW WATERLINE	6 S.F.**
EPOXY INJECTION CRACK REPAIR - BELOW WATERLINE	62 L.F.***

\* INCLUDES 50 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.  
 \*\* INCLUDES 5 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.  
 \*\*\* ASSUMES 5 L.F. OF ADDITIONAL CRACK REPAIR QUANTITY AS A CONTINGENCY.

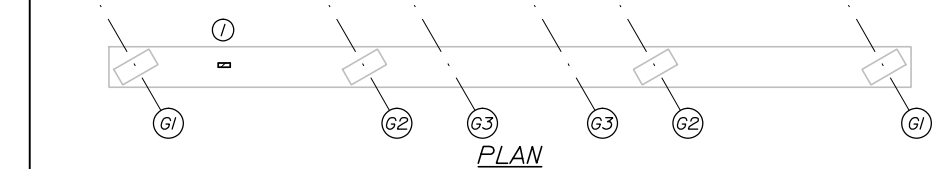
**LEGEND**

-  LIMIT OF SURFACE PATCH REPAIR
-  SQUARE FOOT AREA OF REPAIR
-  LINEAR FOOT LENGTH OF CRACK
-  EPOXY INJECTION CRACK REPAIR

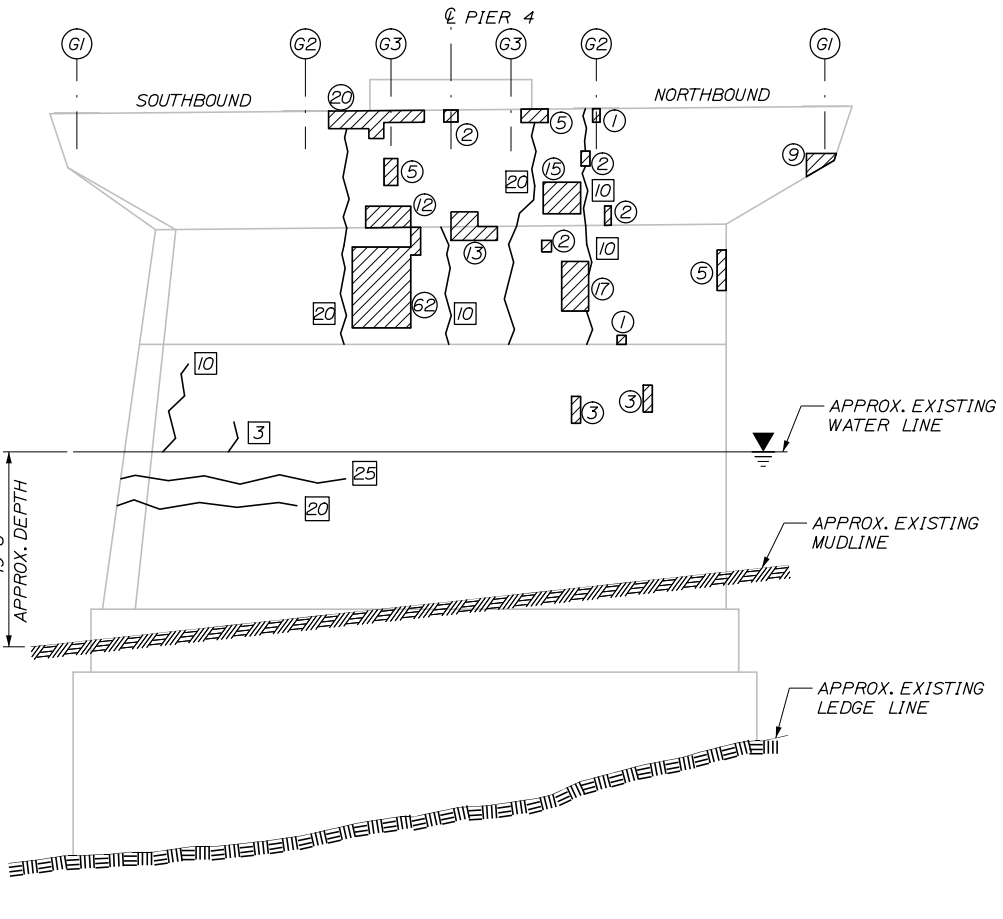
**NOTES:**

1. FOR CONCRETE REPAIR DETAIL AND PROCEDURAL NOTES SEE SHEET S-01.

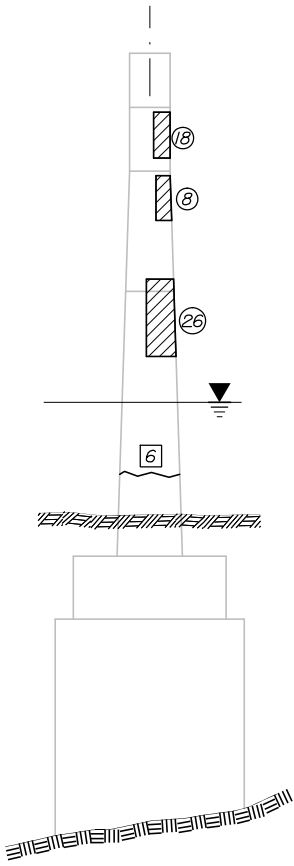
Date: 2/23/2018



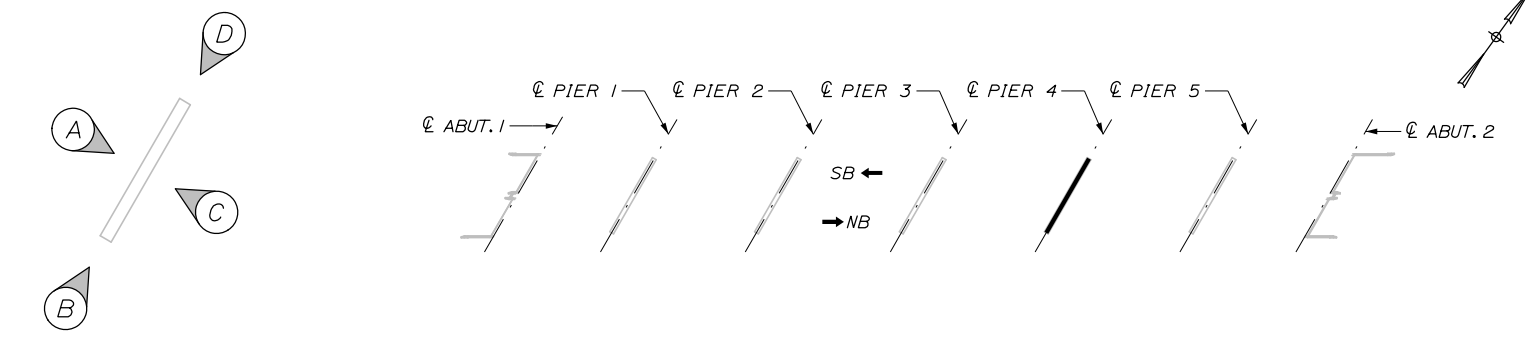
PLAN



ELEVATION A



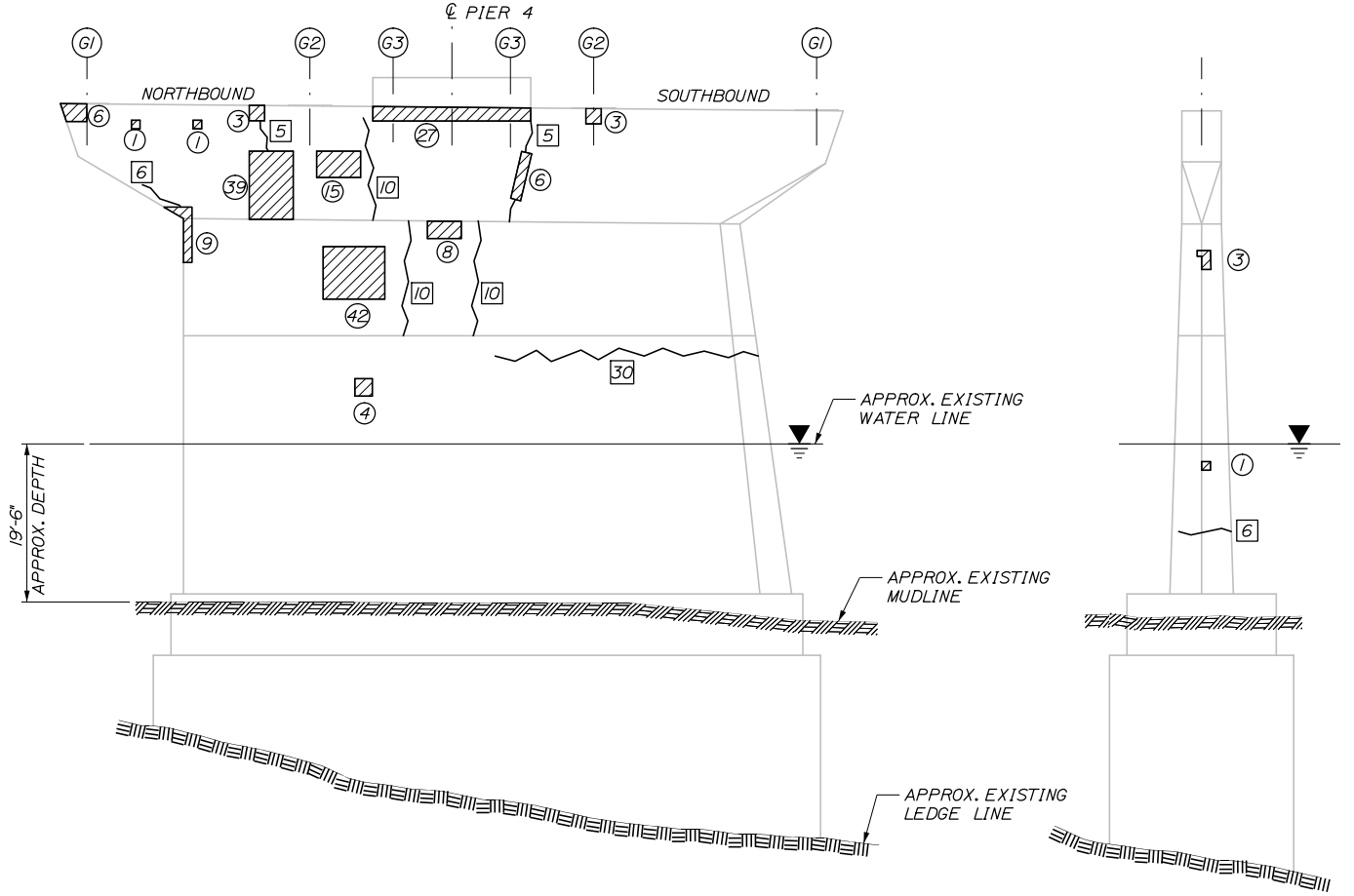
ELEVATION B



PIER ELEVATION KEY

N.T.S.

KEY PLAN



ELEVATION C

ELEVATION D

PIER 4  
3/32" = 1'-0"

Filename: 020\_Pier 4\_Repairs.dgn

Scale:		Designed by:	
No.	Revision	By	Date

**HNTB**

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.

By	Date	By	Date
Designed BRG	2\18	Checked NMW	2\18
Drawn PEB	2\18	In Charge of RAL	2\18

HNTB CORPORATION  
 340 County Road, Suite 6-C  
 Westbrook, ME 04092  
 TEL (207) 774-5155  
 FAX (207) 228-0909

**MAINE TURNPIKE**

**THE GOLD STAR MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

ANDROSCOGGIN RIVER BRIDGES  
 SUBSTRUCTURE REPAIRS  
 SUBSTRUCTURE REPAIR DETAILS  
 PIER 4 REPAIRS

SHEET NUMBER: S-07  
 20 OF 25

CONTRACT: 2018.07

**REPAIR QUANTITIES**





REPAIR OF VERTICAL SURFACES < 8 INCHES	163 S.F.*
REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 INCHES	5 S.F.**
REPAIR OF OVERHEAD SURFACES < 8"	14 S.F.**
EPOXY INJECTION CRACK REPAIR	69 L.F.***

\* INCLUDES 15 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.

\*\* INCLUDES 5 S.F. ADDITIONAL REPAIR QUANTITY AS A CONTINGENCY.

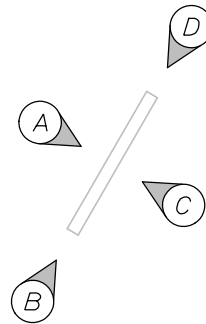
\*\*\* ASSUMES 5 L.F. OF ADDITIONAL CRACK REPAIR QUANTITY AS A CONTINGENCY.

**LEGEND**

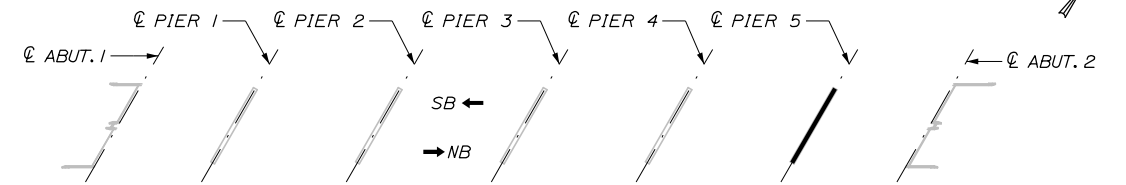
-  LIMIT OF SURFACE PATCH REPAIR
-  SQUARE FOOT AREA OF REPAIR
-  LINEAR FOOT LENGTH OF CRACK
-  EPOXY INJECTION CRACK REPAIR

**NOTES:**

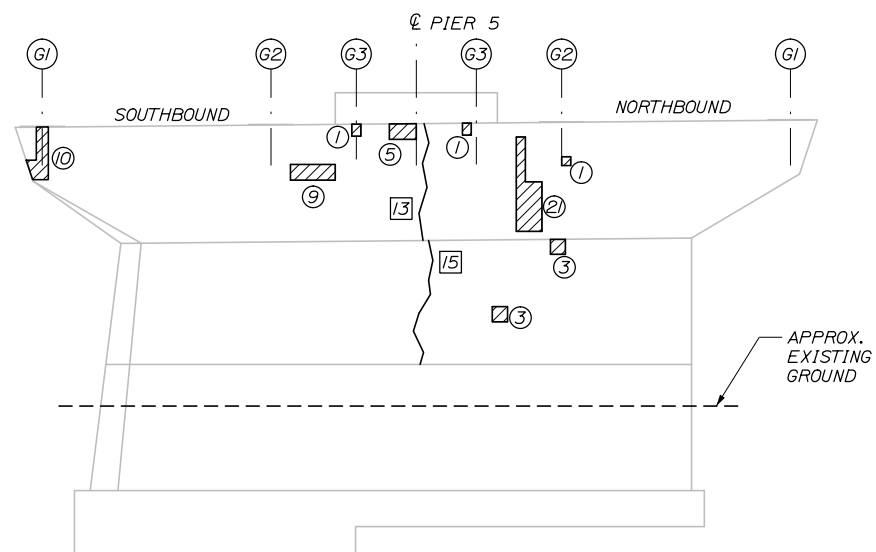
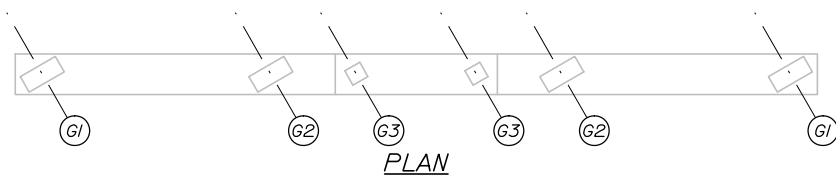
1. FOR CONCRETE REPAIR DETAIL AND PROCEDURAL NOTES SEE SHEET S-01.



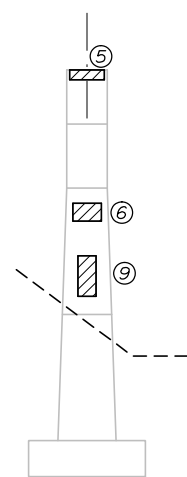
PIER ELEVATION KEY  
N.T.S.



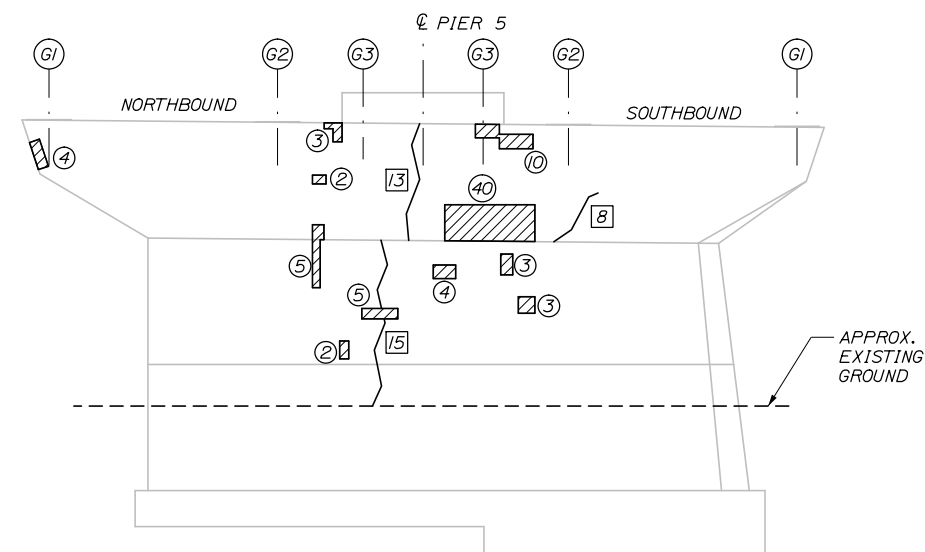
KEY PLAN



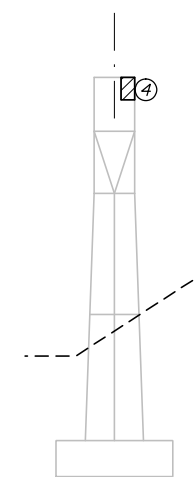
ELEVATION A



ELEVATION B



ELEVATION C



ELEVATION D

PIER 5  
3/32" = 1'-0"

Date: 2/23/2018

Filename: 021\_Pier 5 Repairs.dgn

Scale:			
No.	Revision	By	Date


Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.

By	Date	By	Date
Designed	BRG 2\18	Checked	NMW 2\18
Drawn	PEB 2\18	In Charge of	RAL 2\18

HNTB CORPORATION  
340 County Road, Suite 6-C  
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THE GOLD STAR  
MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

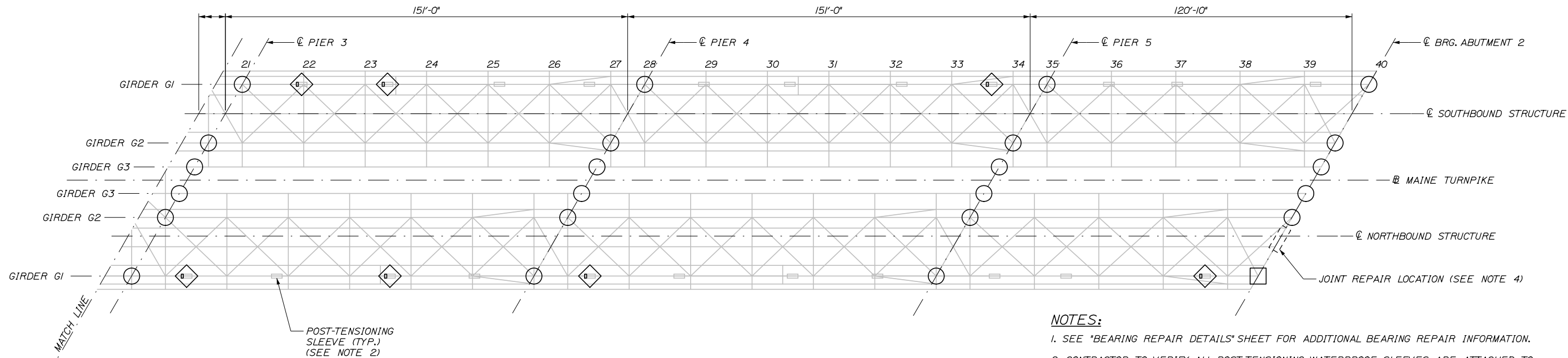
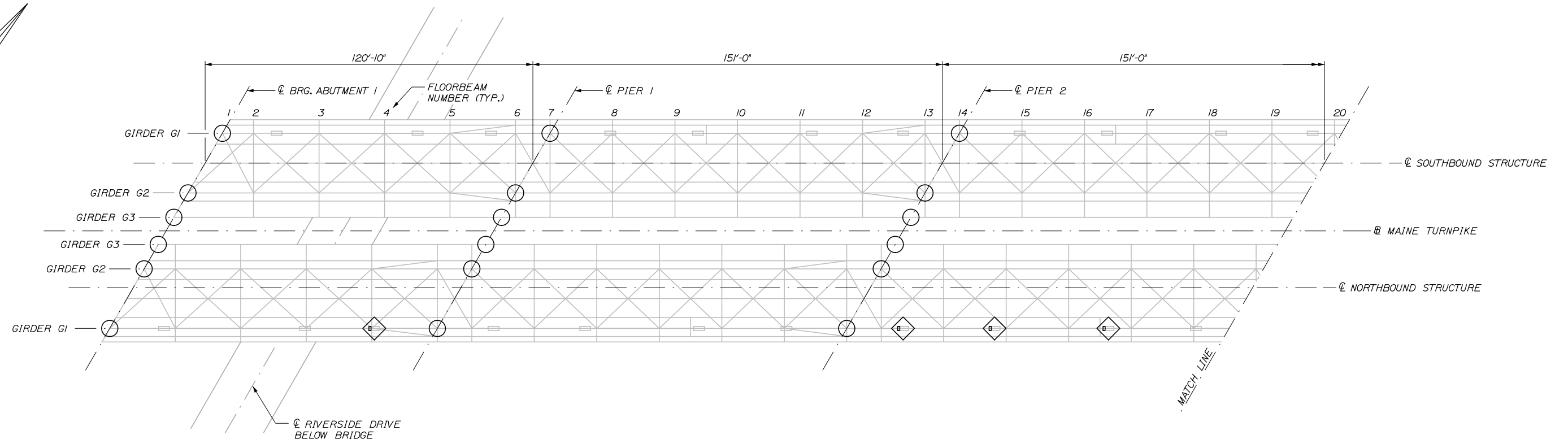
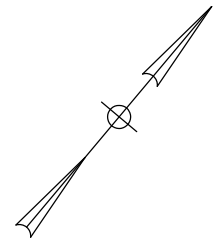
ANDROSCOGGIN RIVER BRIDGES  
SUBSTRUCTURE REPAIRS

SUBSTRUCTURE REPAIR DETAILS  
PIER 5 REPAIRS

SHEET NUMBER: S-08  
21 OF 25

CONTRACT: 2018.07

Date: 2/23/2018



**LEGEND**

- CLEAN & PAINT BEARING (PAID UNDER ITEM 523.56)
- REPAIR BEARING (PAID UNDER ITEM 523.56)
- REPAIR POST-TENSIONING SLEEVE (PAID UNDER ITEM 504.885)

**NOTES:**

1. SEE "BEARING REPAIR DETAILS" SHEET FOR ADDITIONAL BEARING REPAIR INFORMATION.
2. CONTRACTOR TO VERIFY ALL POST-TENSIONING WATERPROOF SLEEVES ARE ATTACHED TO PREVENT MOISTURE PENETRATION. POST-TENSIONING SLEEVES NOT PROPERLY ATTACHED SHALL BE REMOVED AND REPLACED. REPAIR LOCATIONS SHOWN ARE BASED ON 2017 INSPECTION. TWO ADDITIONAL LOCATIONS HAVE BEEN ASSUMED AS CONTINGENCY.
3. SEE "MISCELLANEOUS DETAILS" SHEET FOR ADDITIONAL INFORMATION ON POST-TENSIONING SLEEVE REPAIR.
4. SEE "JOINT REPAIR DETAILS" SHEET FOR ADDITIONAL INFORMATION.

**FRAMING PLAN**  
1" = 20'

Filename: 022\_Framing Plan.dgn

Scale:		Designed by:	
No.	Revision	By	Date

<b>HNTB</b>			
CONSULTANT PROJECT MANAGER: Craig Morin, P.E.			
Designed	By	Date	Checked
Drawn	By	Date	In Charge of
	NMW	2\18	BRG
	PEB	2\18	RAL

HNTB CORPORATION  
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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

ANDROSCOGGIN RIVER BRIDGES  
SUBSTRUCTURE REPAIRS

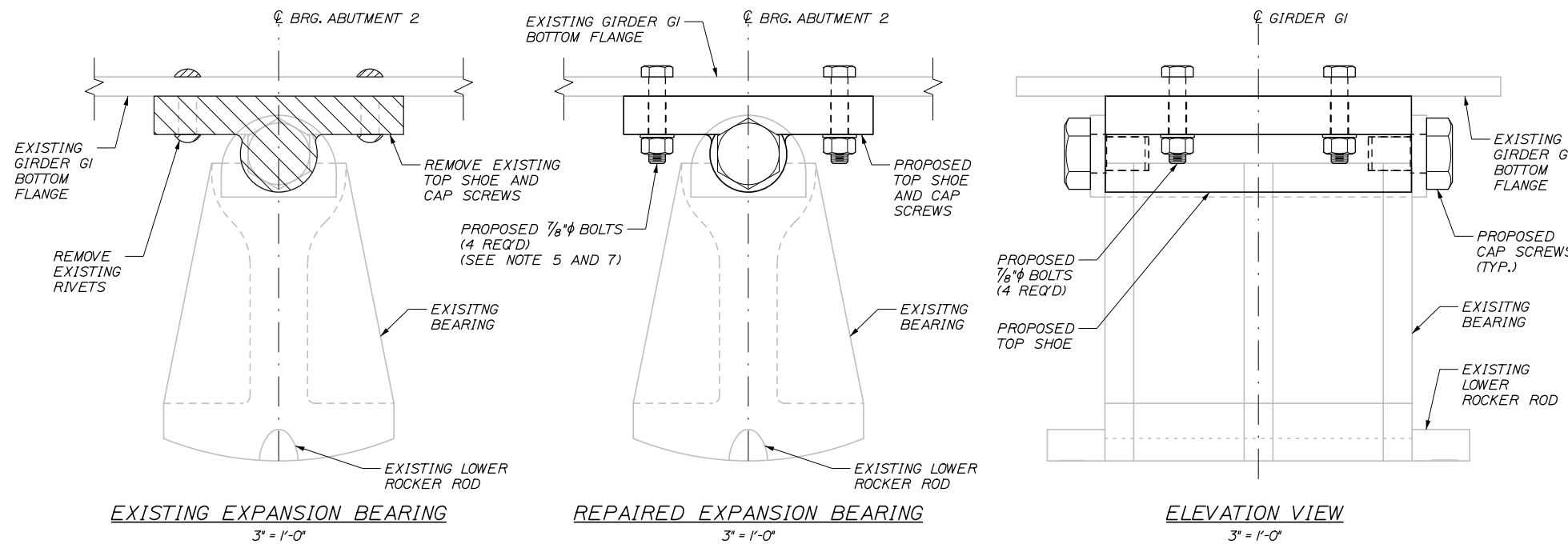
FRAMING PLAN

SHEET NUMBER: S-09

CONTRACT: 2018.07

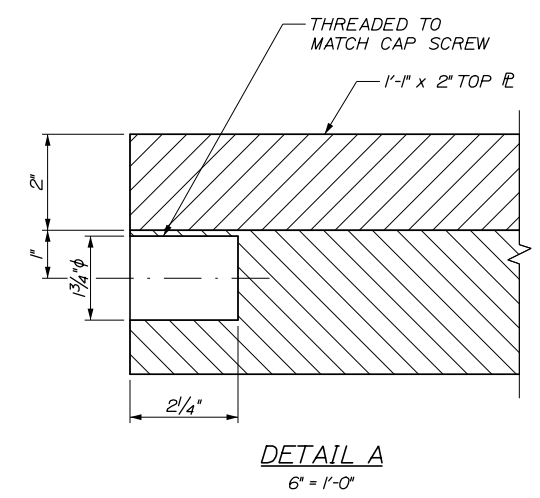
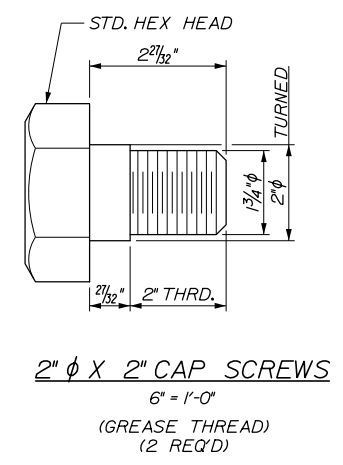
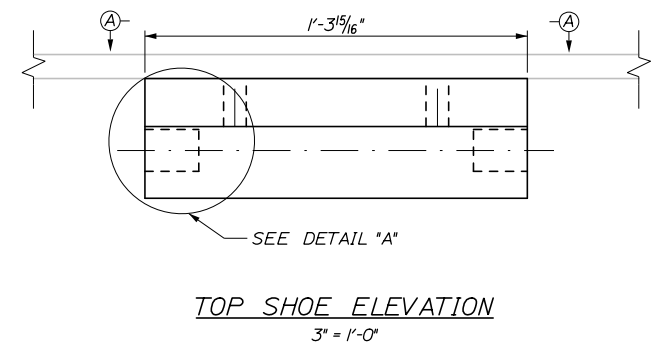
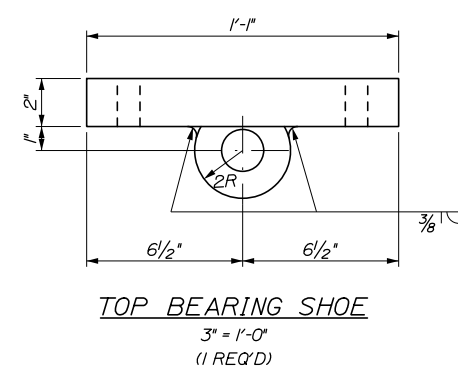
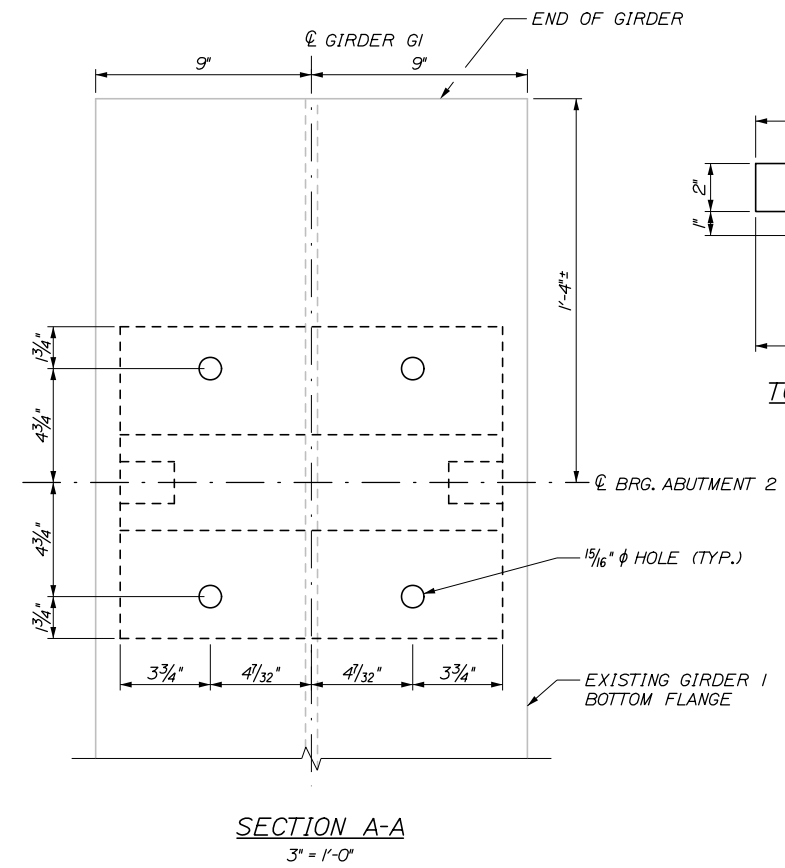
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Date: 2/23/2018



**BEARING REPAIR NOTES:**

1. BEARING REPAIR DETAILS SHOWN ONLY APPLY TO ONE LOCATION, G1 AT ABUTMENT 2, AS SHOWN ON THE FRAMING PLAN.
2. JACKING AND TEMPORARY SUPPORT FOR BEARING REPAIR SHALL BE PERFORMED IN ACCORDANCE WITH SPECIAL PROVISION 524.30I, "TEMPORARY STRUCTURAL SUPPORT".
3. ALL EXISTING DIMENSIONS AND INFORMATION SHOWN ON THE PLANS ARE BASED ON AS-BUILT AND STANDARD DETAIL DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY ALL RELEVANT DIMENSIONS PRIOR TO SUBMISSION OF SHOP DRAWINGS.
4. SEE "MISCELLANEOUS DETAILS" SHEET FOR MORE INFORMATION ON JACKING AND TEMPORARY SUPPORT.
5. REMOVE RIVETS ATTACHING THE EXISTING ROCKER BEARING TOP SHOE PLATE TO BOTTOM FLANGE. EXISTING RIVETS SHALL BE DRIVEN OUT. EXISTING STEEL ROCKER BEARING SOLE PLATES SHALL BE REMOVED BY GRINDING OR MECHANICAL CUTTING METHODS. PACK RUST BETWEEN THE EXISTING SOLE PLATE AND INTERFACE OF THE EXISTING GIRDER SHALL BE REMOVED BY MECHANICAL METHODS ONLY.
6. REMOVE EXISTING ROCKER BEARING TOP SHOE PLATE AND CAP SCREWS AS NOTED ON THE PLANS. SOLE PLATE AND CAP SCREWS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. DISPOSAL SHALL BE INCIDENTAL TO ITEM 523.56I, "REPAIR BEARING".
7. IF REAMING OF HOLES REQUIRED, BOLTS SHALL BE UPSIZED TO 1"  $\phi$  AND HOLES TO 1 1/16"  $\phi$ .
8. CONTRACTOR SHALL TAKE CARE TO AVOID DAMAGE TO PORTIONS OF EXISTING BEARING TO REMAIN.
9. FABRICATE AND INSTALL NEW BEARING TOP SHOE PLATE AND CAP SCREWS AS IDENTIFIED IN THE FRAMING PLAN AND DETAILED ON THIS SHEET.
10. REFER TO "MISCELLANEOUS DETAILS" SHEET FOR INFORMATION PERTAINING TO CLEANING AND PAINTING BEARINGS.



Filename: 023\_Bearing Details 1.dgn

Scale:			
No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.

By	Date	By	Date
Designed	NMW 2\18	Checked	BRG 2\18
Drawn	PEB 2\18	In Charge of	RAL 2\18

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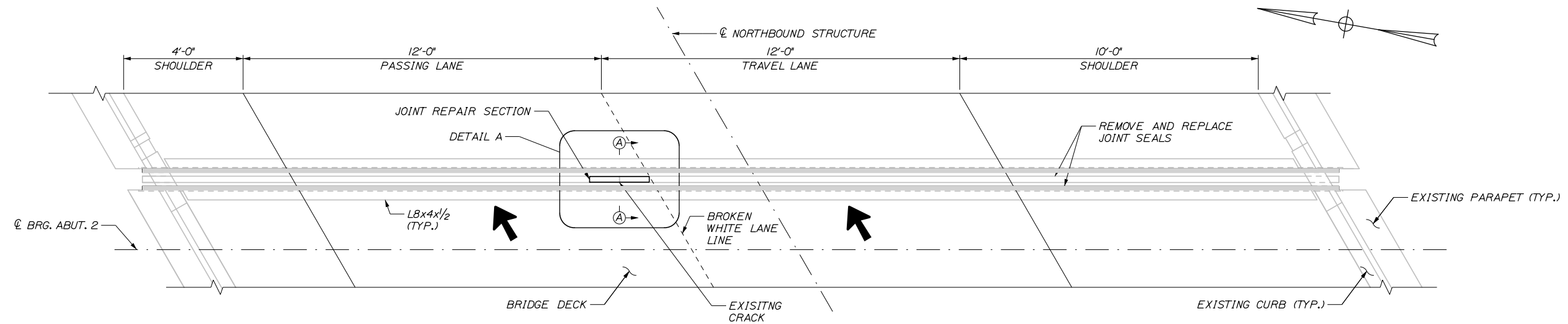
**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

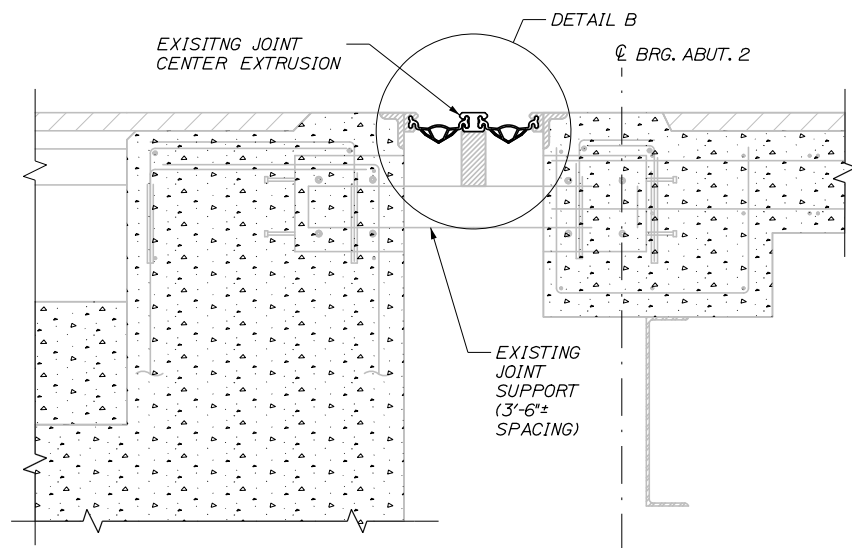
ANDROSCOGGIN RIVER BRIDGES  
SUBSTRUCTURE REPAIRS  
BEARING REPAIR DETAILS

SHEET NUMBER: S-10  
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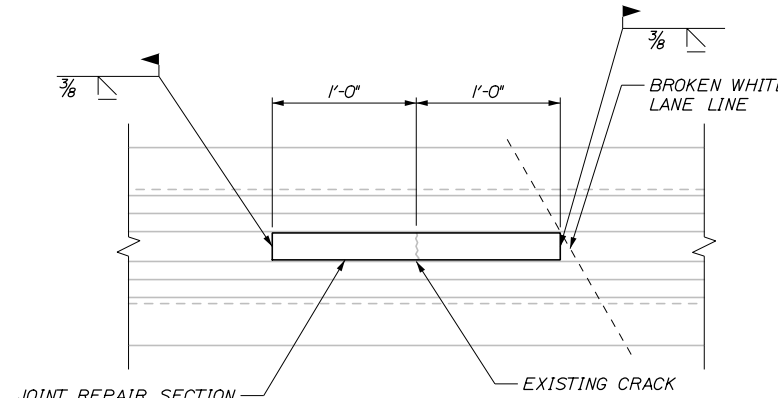
Date: 2/23/2018



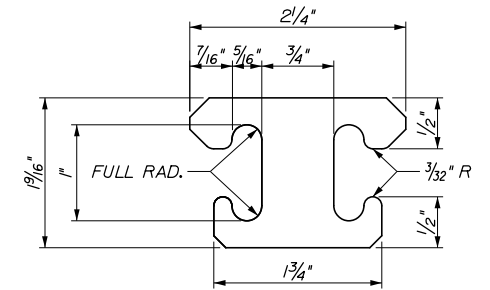
**PLAN**  
(NORTH JOINT, NB BRIDGE ONLY)  
1/2" = 1'-0"



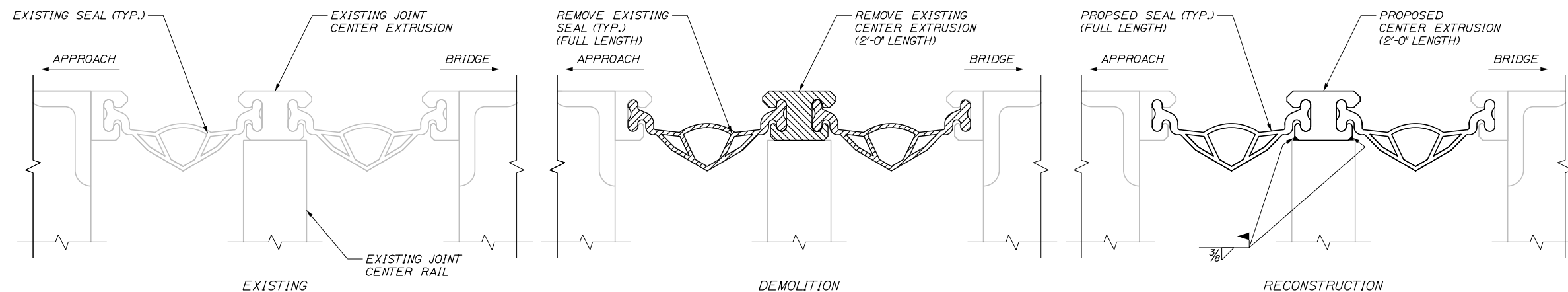
**SECTION A-A**  
N.T.S.



**DETAIL A**  
1/2" = 1'-0"



**CENTER EXTRUSION DETAIL**  
1'-0" = 1'-0"



**DETAIL B**  
6" = 1'-0"

**NOTES:**

1. SEALS SHALL BE REMOVED PRIOR TO EXTRUSION REMOVAL. SEALS SHALL BE REPLACED AFTER EXTRUSION REPAIR.
2. JOINT SHALL BE STABILIZED TO PREVENT MOVEMENT DURING SAW CUTTING AND REPAIR PLATE INSTALLATION.
3. THE REPAIRED SECTION SHALL BE GROUND FLUSH TO THE EXISTING JOINT.
4. JOINT SEALS SHALL BE REPLACED WITH SEALS THAT ARE COMPATIBLE WITH EXISTING STEEL EXTRUSIONS. SHOP DRAWINGS FROM 1995 CONSTRUCTION ARE AVAILABLE. REFER TO GENERAL NOTES FOR LOCATION OF DOCUMENTS.
5. ALL JOINT REPAIR WORK SHALL BE PAID UNDER ITEM 520.224 JOINT ARMOR REPAIR.

Filename: 024\_Exp\_Jt\_Details.dgn

No.	Revision	By	Date

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<b>HNTB</b>						
CONSULTANT PROJECT MANAGER: Craig Morin, P.E.						
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	Designed	NMW	2\18	Checked	BRG	2\18
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**THE GOLD STAR  
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Kristi Van Ooyen, P.E.

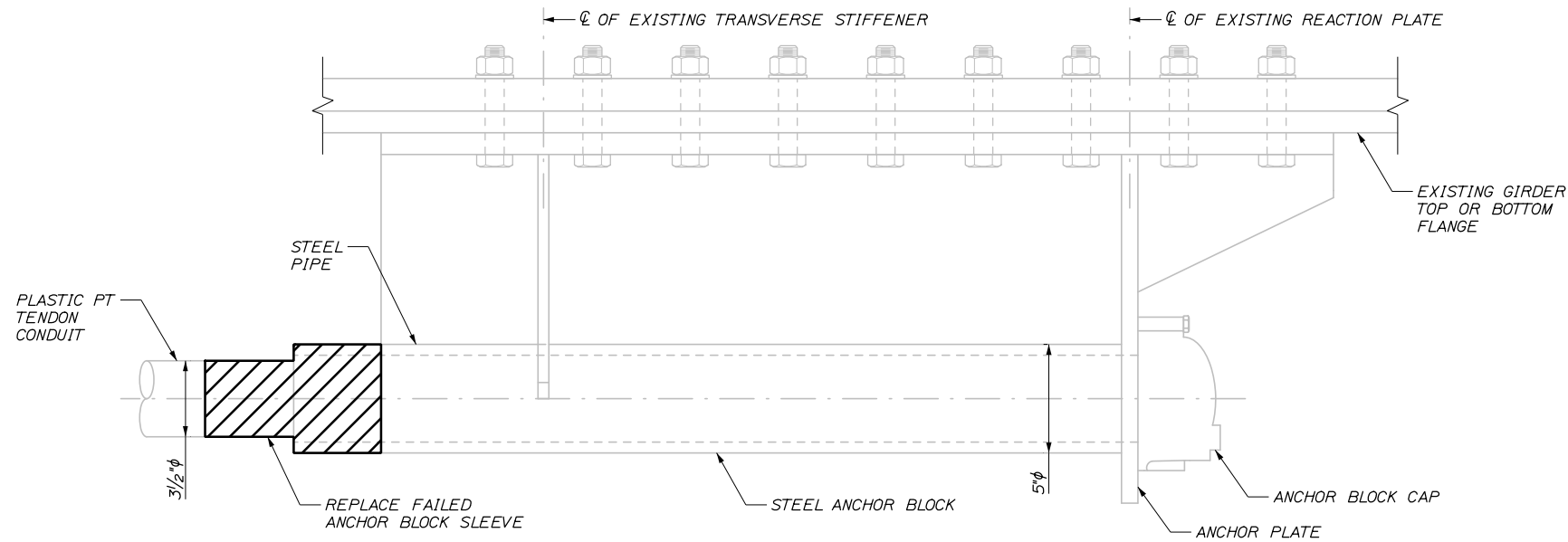
ANDROSCOGGIN RIVER BRIDGES  
SUBSTRUCTURE REPAIRS

JOINT REPAIR DETAILS

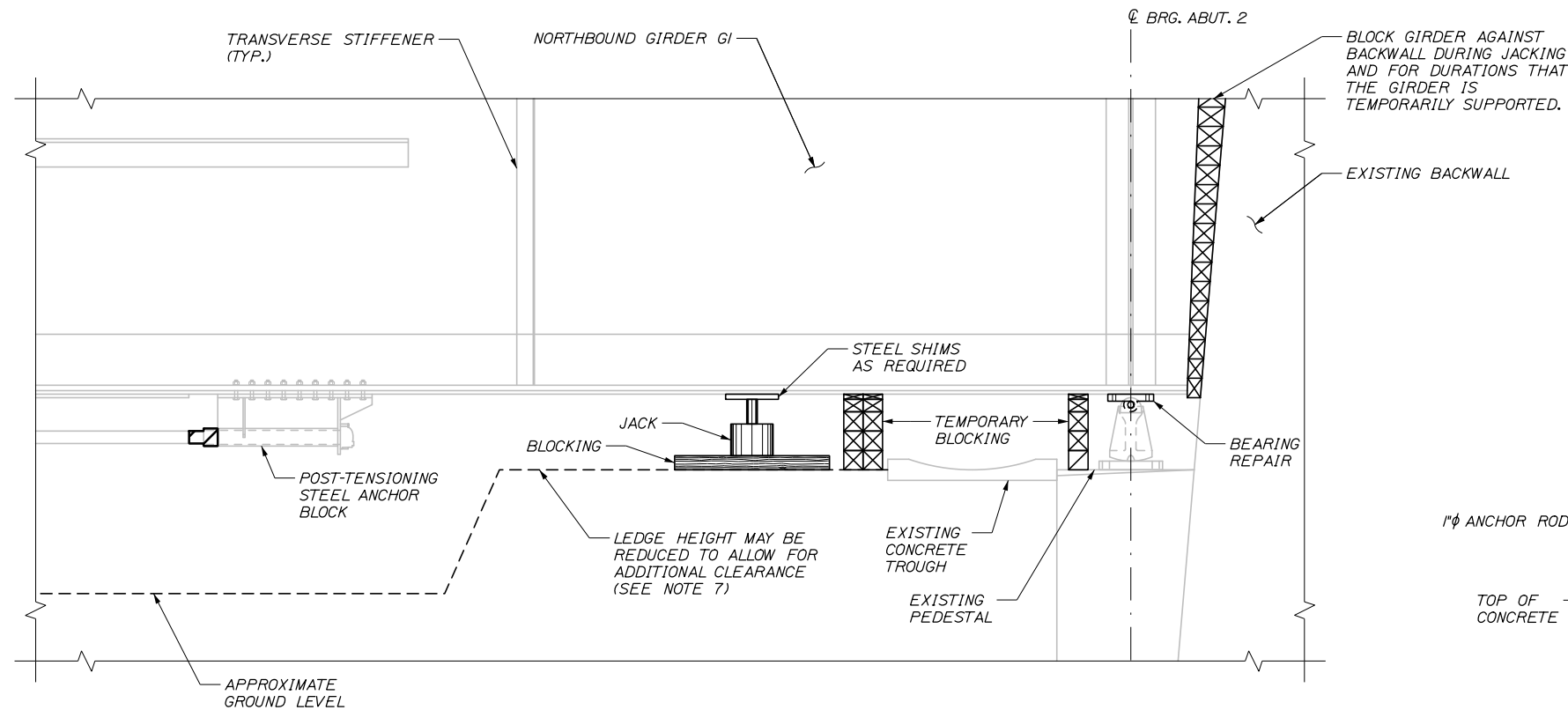
SHEET NUMBER: S-11  
CONTRACT: 2018.07  
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Date: 2/23/2018



**POST-TENSIONING SLEEVE REPAIR**  
N.T.S.



**JACKING CONCEPT**  
1/2" = 1'-0"

UNFACTORED BEARING REACTION TABLE		
LOCATION	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)
EXTERIOR GIRDER GI ABUTMENT 2 (NB)	105	100

**POST-TENSIONING SLEEVE REPAIR NOTES:**

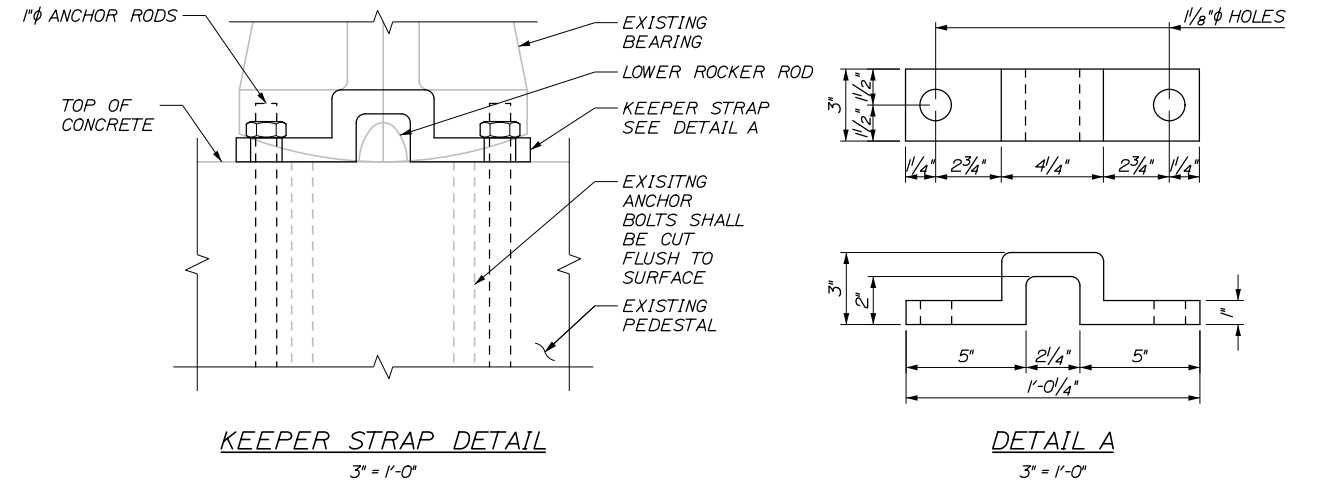
1. FOR ANCHOR BLOCK SLEEVE REPAIR LOCATIONS SEE FRAMING PLAN. CONTRACTOR SHALL INSPECT EACH ANCHOR BLOCK SLEEVE IN FIELD TO DETERMINE IF ADDITIONAL REPAIR LOCATIONS ARE REQUIRED.
2. REMOVE FAILED ANCHOR BLOCK SLEEVE SEAL AND INSTALL NEW FLEXIBLE SLEEVE. THE STEEL ANCHOR BLOCK PIPE AND PLASTIC POST-TENSIONING TENDON CONDUIT SURFACES SHALL BE CLEANED SUCH THAT NO DEBRIS OR ADHESIVE FROM PREVIOUS REPAIR SHALL REMAIN PRIOR TO INSTALLATION OF NEW FLEXIBLE SEAL.
3. NEW SLEEVES SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE SPECIAL PROVISION 504.885 POST-TENSIONING SLEEVE REPAIR.

**TEMPORARY SUPPORT AND JACKING SYSTEM NOTES:**

1. THE EXISTING BRIDGE SHALL BE RAISED TO ACCOMMODATE THE REPAIR OF GI BEARING AT ABUTMENT 2.
2. THE TEMPORARY SUPPORT AND JACKING SYSTEM SHALL BE DESIGNED BY THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT A COMPLETE SET OF DESIGN CALCULATIONS AND DRAWINGS FOR THE TEMPORARY SUPPORT, JACKING SYSTEM, AND BEARING REPAIR PROCEDURE. THE CALCULATIONS AND DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN MAINE. SEE SPECIAL PROVISION FOR ADDITIONAL REQUIREMENTS.
3. THE TEMPORARY SUPPORT AND JACKING SYSTEM ARRANGEMENTS SHOWN ARE SCHEMATIC FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL TEMPORARY SUPPORT JACKING LOCATIONS AND REQUIRED DETAILS AS PART OF THE SUBMITTAL.
4. TEMPORARY SUPPORT AND JACKING LOADS SHALL BE BASED ON THE BEARING REACTIONS SHOWN IN THE TABLE AND SPECIAL PROVISION 524, TEMPORARY STRUCTURAL SUPPORT.
5. THE CONTRACTOR SHALL MAKE PROVISIONS TO PREVENT THE LONGITUDINAL AND TRANSVERSE MOVEMENT OF THE SUPERSTRUCTURE AND TWISTING OF THE GIRDERS DURING JACKING AND WHILE THE DECK IS TEMPORARILY SUPPORTED.
6. RIGID VERTICAL SUPPORT OF SUPERSTRUCTURE IN THE JACKED POSITION SHALL BE PROVIDED BY LOCKING THE JACK RAMS OR BY FURNISHING AND INSTALLING AN INDEPENDENT SUPPORT SYSTEM. EXCEPT FOR DURING JACKING OPERATIONS, THE SUPERSTRUCTURE SHALL NOT BE HYDRAULICALLY SUPPORTED.
7. LEDGE HEIGHT MAY BE REDUCED TO ALLOW FOR ADDITIONAL CLEARANCE FOR JACKING. EXCAVATION AND SOIL REMOVAL SHALL BE INCIDENTAL TO ITEM 524.301, "TEMPORARY STRUCTURAL SUPPORT" PAY ITEM.

**CLEANING AND PAINTING BEARING NOTES:**

1. ALL EXISTING BEARINGS SHALL BE CLEANED AND PAINTED, AS SHOWN ON THE FRAMING PLAN, IN ACCORDANCE WITH SPECIAL PROVISION 523 AND PAID UNDER ITEM 523.56, "CLEANING AND PAINTING BEARINGS".
2. THE EXISTING BEARINGS ARE TO REMAIN IN PLACE, NO JACKING IS REQUIRED AS PART OF THE CLEANING PROCESS.
3. CLEANING EXPANSION BEARINGS SHALL INCLUDE REMOVAL OF PACK RUST AND DEBRIS LODGED WITHIN THE KEEPER STRAP THAT IS PREVENTING THE LOWER ROCKER ROD FROM ROTATING DURING BEARING MOVEMENT. IF SUFFICIENT REMOVAL OF MATERIAL CANNOT BE ACHIEVED TO RESTORE THE FREE RANGE OF MOVEMENT FOR THE LOWER ROCKER ROD THE KEEPER STRAP SHALL BE REPLACED. THE REPLACEMENT OF THE KEEPER STRAP IN SELECT LOCATIONS SHALL BE PAID UNDER ITEM 523.562, "REPAIR BEARING KEEPER STRAP".



**KEEPER STRAP DETAIL**  
3" = 1'-0"

**DETAIL A**  
3" = 1'-0"

Filename: 025\_Miscellaneous Details 1.dgn

No.	Revision	By	Date

Designed by:

**HNTB**

CONSULTANT PROJECT MANAGER: Craig Morin, P.E.

	By	Date		By	Date
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**MAINE TURNPIKE**

**THE GOLD STAR MEMORIAL HIGHWAY**

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ANDROSCOGGIN RIVER BRIDGES  
SUBSTRUCTURE REPAIRS  
MISCELLANEOUS DETAILS

CONTRACT: 2018.07

SHEET NUMBER: S-12

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