SOUTH PERKASIE COVERED BRIDGE

FOR

BOROUGH OF PERKASIE (PA)

100% DESIGN DRAWINGS

MAY 2025

ENGINEER OF RECORD (EOR)

WOOD RESEARCH AND DEVELOPMENT

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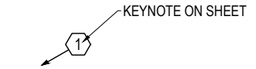
SECTION & DETAIL DESIGNATIONS



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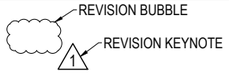

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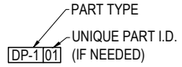

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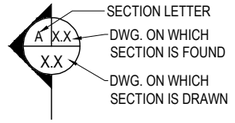

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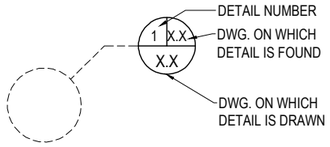

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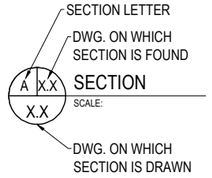

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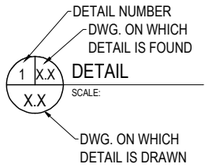

DETAIL TITLE

LIST OF ABBREVIATIONS

A	
ABUTMENT	ABUT., AB-#
ADDITIONAL	ADD'L.
ALTERNATE	ALT.
ANCHOR SEAL	A.S.
ANGLE BRACE	A.B.
APPROVED	APPD.
APPROXIMATE	APPROX.
AT	@
AVERAGE	AVG.
B	
BASELINE OF CONSTRUCTION	BL., ℄
BEAM	BM.
BEARING	BRG.
BENT	BT.
BITUMEN	BIT.
BUILDING	BLDG.
BOTTOM	BOT.
BOTTOM OF PILE	B.O.P.
C	
CENTER LINE	CL., ℄
CIRCLE	CIR.
CLEARANCE	CLR.
COLUMN	COL.
CONCRETE	CONC.
CONNECTION	CONN.
CONSTRUCTION	CONST.
COPPER NAPHTHENATE	C.N.
COUNTERSINK	CSK.
COUPLING	CPLG.
CROSSHEAD	CRHD.
D	
DETAIL	DET.
DIAGONAL	DIAG.
DIAMETER	DIA, Ø
DIMENSION	DIM.
DRAWING	DWG.
DRAIN	DR.
E	
EACH	EA.
EAST	E.
EASTBOUND	EB.
ELECTRIC	ELECT.
ELEVATION	EL.
EXISTING	EXIST.
EXPANSION	EXP.
F	
FABRICATE	FAB.
FOOTING	FTG.
FOUNDATION	FDN.
G	
GALVANIZE	GALV.
GIRDER	GDR.
GRADE	GR.
GROUND	GND.
H	
HEIGHT	HT.
HORIZONTAL	HORIZ.
L	
LEFT	Lt.
LENGTH	LGTH.
LONG	LG.

M	
MATERIAL	MATL.
MINIMUM	MIN.
MISCELLANEOUS	MISC.
N	
NORTH	N.
NOT TO SCALE	N.T.S.
NUMBER	NO.
NOT IN CONTRACT	N.I.C.
O	
ON CENTER	O.C.
OUTSIDE DIAMETER	O.D.
OPTIONAL	OPT.
P	
PEDESTRIAN	PED.
PERPENDICULAR	PERP., ⊥
PILE	P-#
PILE BENT	P.B.
PLATE	PL., ℞
POINT	PT.
POST TENSION	P/T
POUNDS PER SQUARE INCH	PSI
PRECAST	P/C
PRESTRESSED	P/S
PROPOSED	PROP.
Q	
QUANTITY	QTY.
R	
RADIUS	RAD., R
RAILROAD	RR.
REINFORCED	REINF.
REHABILITATION	REHAB.
REQUIRED	REQD.
RETROWRAP	R.W.
RIGHT	Rt.
S	
SCHEDULE	SCH.
SECTION	SECT.
SHEET	SH., SHT.
SOUTH	S.
SPACING	SPC.
SPAN	SP-#
SQUARE	SQ.
STANDARD	STD.
STAINLESS STEEL	S.S.
STIFFENER	STIFF.
STRUCTUREFILL	SF.
SYMMETRICAL	SYM.
T	
TEMPORARY	TEMP.
TRANSVERSE	TRANS.
TYP.ICAL	TYP.
TYP.ICAL AS NEEDED	T.A.N.
TIMBER	TBR.
V	
VARIES	VAR.
VERTICAL	VERT.
W	
WORK POINT	W.P.
WORKING DRAWINGS	W.D.

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PREPARED FOR:

BOROUGH OF PERKASIE (PA)

SOUTH PERKASIE COVERED BRIDGE

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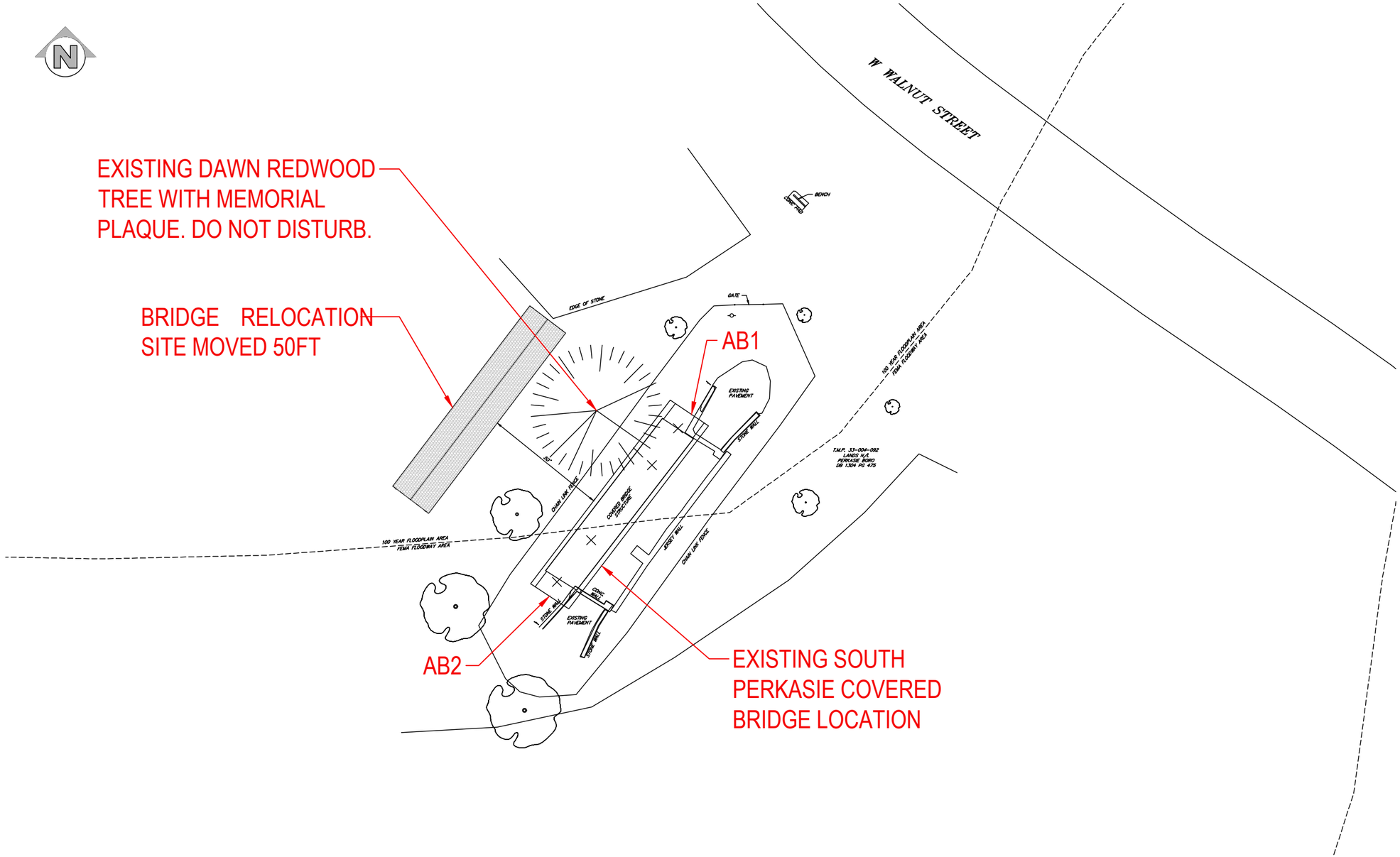
-	100% DESIGN DRAWINGS	05/09/2025	LK		

INDEX & ABBREVIATIONS

DRAWING # 0.1

SHEET # 2 OF 42-

PROJECT #9101S



SITE PLAN 1

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SITE PLAN 1

DRAWING # 0.2

SHEET # 3 OF 42 -

PROJECT #9101S

SITE PLAN 2

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SITE PLAN 2

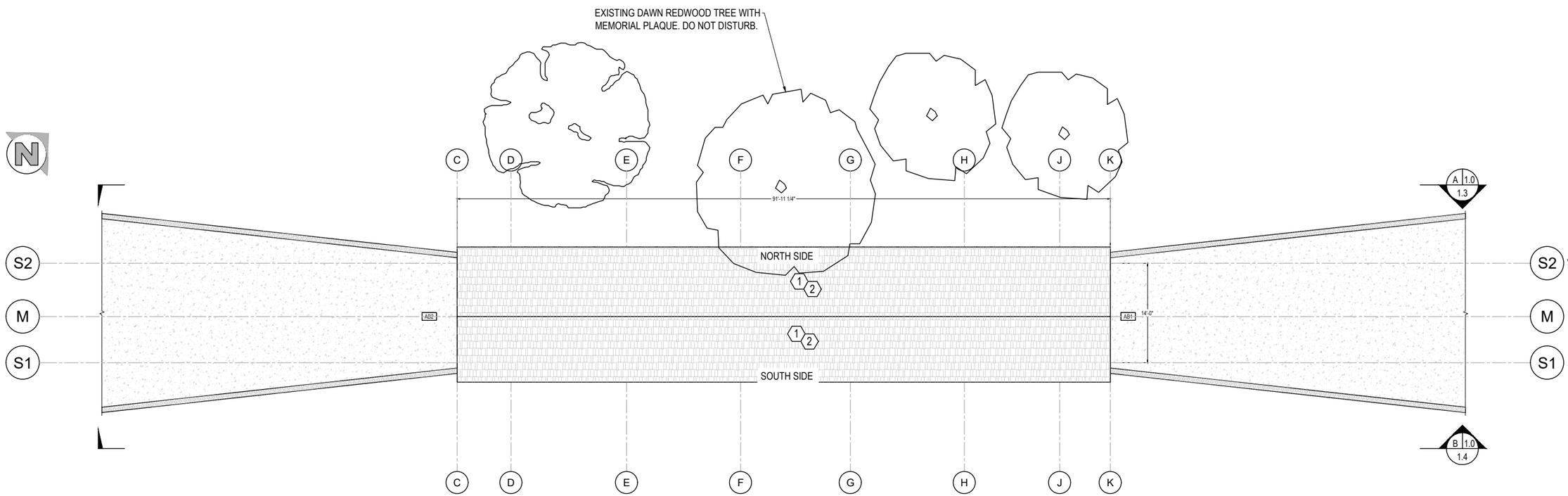
DRAWING # 0.3

SHEET # 4 OF 42 -

PROJECT #9101S

REPAIR - SHEET KEYNOTES - ROOF SHAKES & SHINGLES

1. ROOF SHAKES - REMOVE ONE LAYER AND REPLACE.
2. APPLY WATER BASED BORATE TOPICAL SOLUTION TO ROOF SHINGLES.



PLAN VIEW - AREIAL

SCALE: 1:180

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RESTORATION DRAWINGS
REPAIR PLANS
ROOF SHINGLES & SHAKES

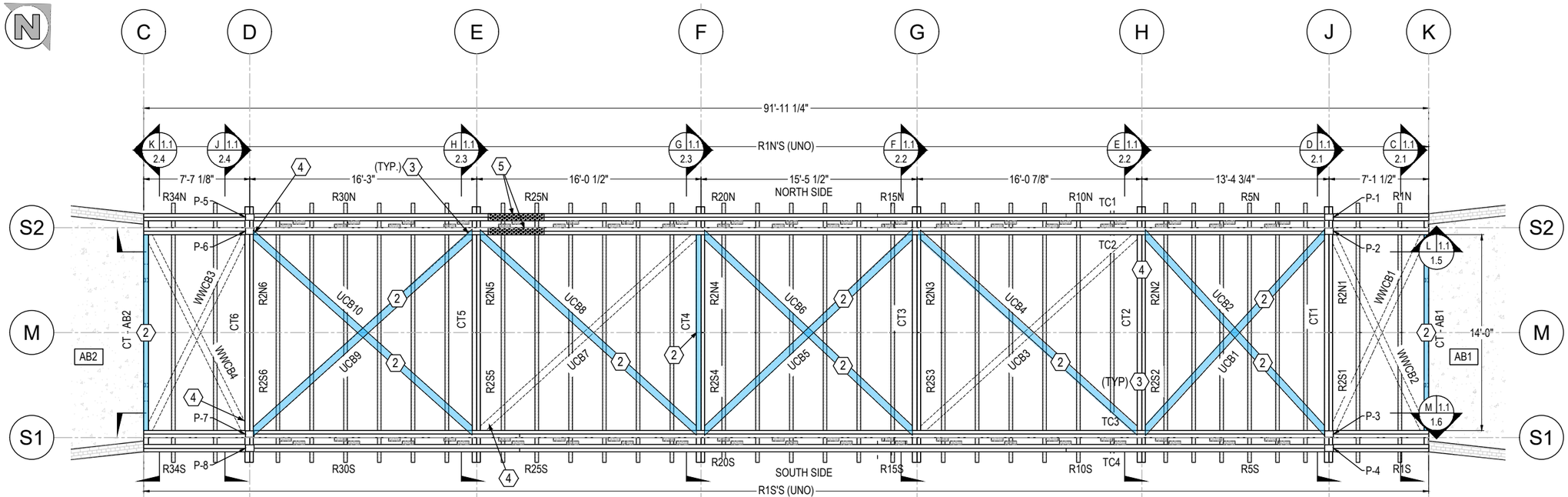
DRAWING # 1.0

SHEET # 5 OF 42 -

PROJECT #9101S

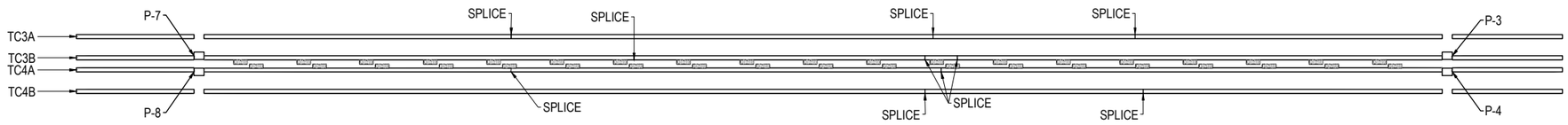
TOP CHORD 1 & 2 - REFLECTED PLAN

SCALE: 1:100



F 1.3 / 1.1 PLAN VIEW - ROOF MEMEBERS

SCALE: 1:100



TOP CHORD 3 & 4 - PLAN

SCALE: 1:100

REPAIR - SHEET KEYNOTES - TOP CHORD & UPPER CROSS BRACES

1. SISTER TIMBER ELEMENT
2. REPLACE TIMBER ELEMENT
3. NEW CROSS BRACE CONNECTION DETAIL
4. REPAIR CROSS BRACE CONNECTION WITH 1/4" STRUCTURAL TIMBER SCREWS.
5. RETROSHEAR® PANEL ON BOTTOM FACE OF TOP CHORD (CENTERED OVER CRACK)

- RETROSHEAR® PANEL ON BOTTOM FACE OF TOP CHORD (SEE SHEET 4.1 FOR REPAIR DETAILS)
- NEW CROSS BRACE CONNECTION DETAIL (SEE SHEET 5.9 FOR REPAIR DETAIL)
- SISTER DETAIL (SEE SHEET 4.4 FOR REPAIR DETAILS)

GENERAL NOTES:

- REALIGN AND RESTORE CONNECTIONS FOR DISPLACED OR SEPARATED ELEMENTS.

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT

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RESTORATION DRAWINGS
REPAIR PLANS
ROOF MEMBERS

DRAWING # 1.1

SHEET # 6 OF 42 -

PROJECT #9101S

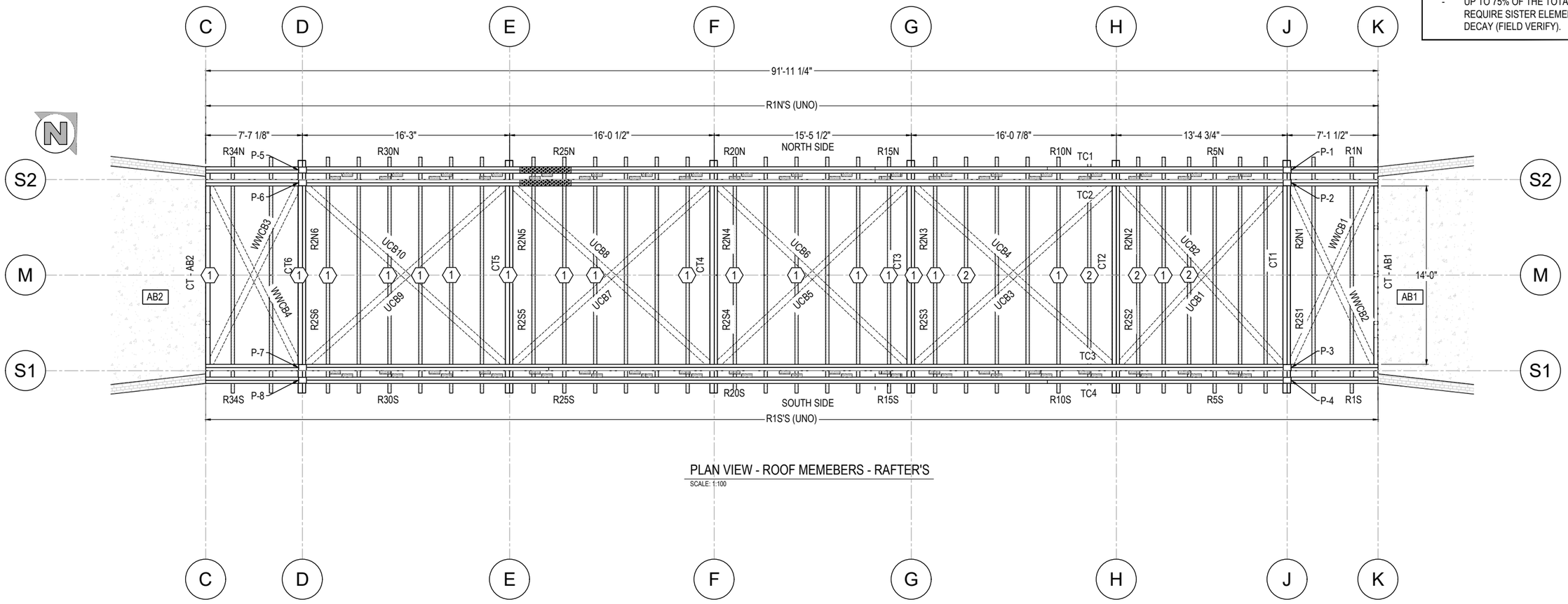
REPAIR - SHEET KEYNOTES - MAIN & SECONDARY RAFTERS

1. SISTER TIMBER ELEMENT
2. REPAIR CONNECTION WITH 1/4" STRUCTURAL TIMBER SCREWS.

- SISTER TIMBER ELEMENT (SEE SHEET 4.4 FOR REPAIR DETAILS)

GENERAL NOTES:

- UP TO 75% OF THE TOTAL RAFTERS WILL REQUIRE SISTER ELEMENTS BASED ON DECAY (FIELD VERIFY).



PLAN VIEW - ROOF MEMEBERS - RAFTER'S

SCALE: 1:100

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RESTORATION DRAWINGS
REPAIR PLANS
MAIN/SECONDARY - RAFTERS

DRAWING # 1.2

SHEET # 7 OF 42 -

PROJECT #9101S

REPAIR - SHEET KEYNOTES - SIDING

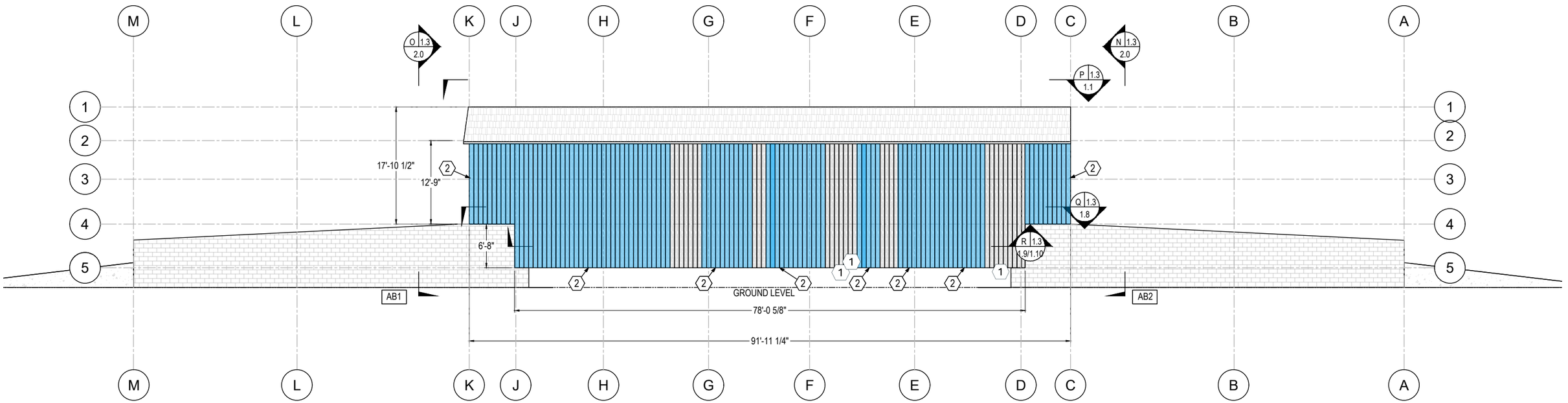
1. SIDING - REINSTALL LOOSE AND MISALIGNED SIDING BOARDS AND REPLACE MISSING SIDING BOARDS.
2. REPLACE MISSING AND DAMAGED SIDING BOARDS.

GENERAL NOTES:

1. FIELD VERIFY ALL SIDING TO BE SECURED AND REPLACED.
2. REMOVE AND REPLACE SIDING AS NECESSARY ON THE NORTH, SOUTH, AND INTERIOR WING WALLS TO PERFORM REPAIRS TO THE TENSION CHORD, VERTICAL POSTS, AND FOUNDATION CONNECTIONS.

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT



A 1.0 / 1.3 ELEVATION - NORTH SIDE

SCALE: 1:100

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RESTORATION DRAWINGS
REPAIR PLANS - SIDING
OUTSIDE VIEW (NORTH)

DRAWING # 1.3

SHEET # 8 OF 42 -

PROJECT #9101S

REPAIR - SHEET KEYNOTES - SIDING

1. SIDING - REINSTALL LOOSE AND MISALIGNED SIDING BOARDS AND REPLACE MISSING SIDING BOARDS.
2. REPLACE MISSING AND DAMAGED SIDING BOARDS.

GENERAL NOTES:

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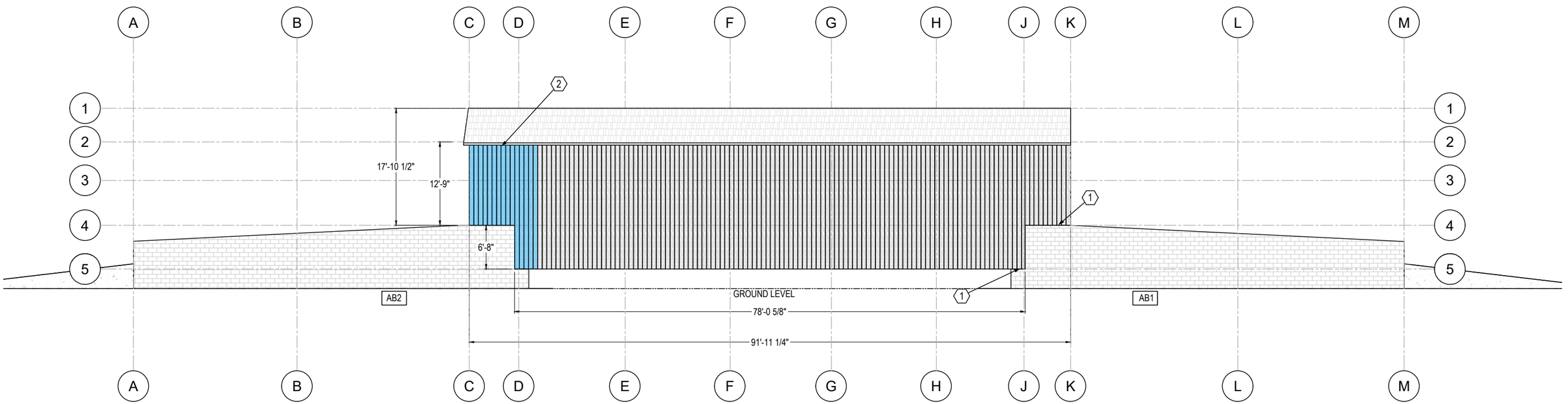
REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT



B 1.0 / 1.5 ELEVATION - SOUTH SIDE

SCALE: 1:180

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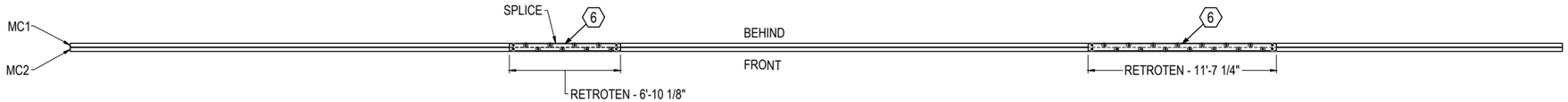
RESTORATION DRAWINGS
REPAIR PLANS - SIDING
OUTSIDE VIEW (SOUTH)

DRAWING # 1.4

SHEET # 9 OF 42-

PROJECT #9101S



MIDDLE CHORD 1 & 2 - REFLECTED PLAN

SCALE: 1:100

REPAIR - SHEET KEYNOTES - LATTICE MEMBERS & MIDDLE CHORDS

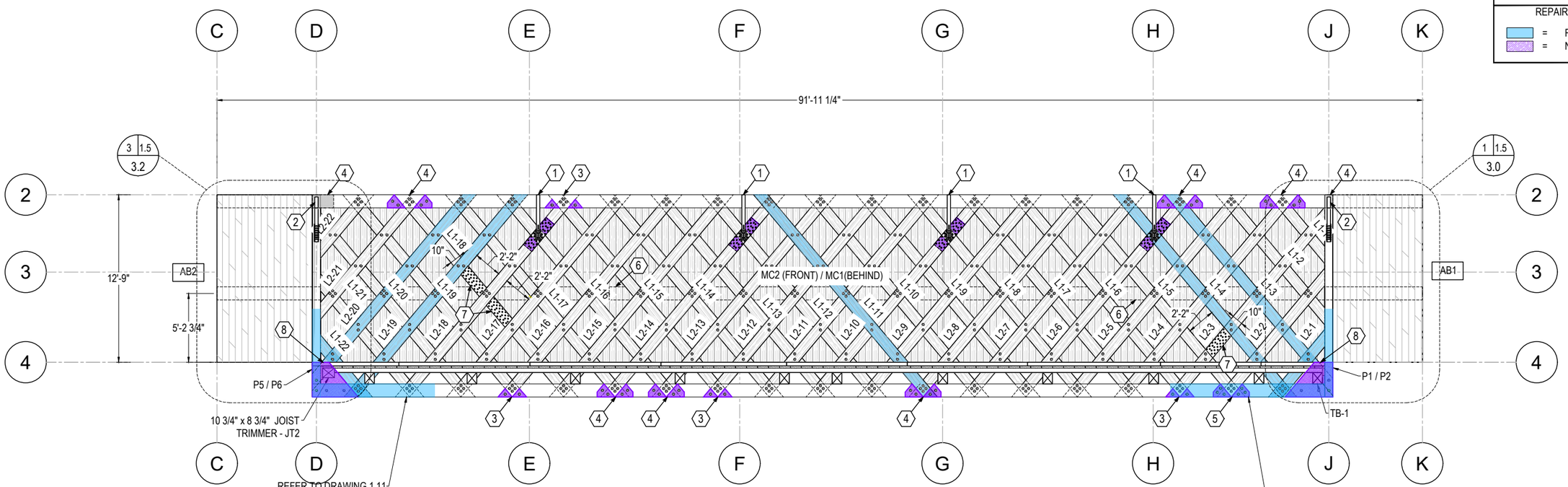
1. RETROSHEAR® PANEL WITH BLOCKING ON LATTICE AT KNEE BRACE LOCATIONS
2. RETROSHEAR® PANEL AT ABUTMENT KNEE BRACE - REPAIR
3. LATTICE CONNECTION REPAIR - REPAIR (TYPE 1)
4. LATTICE CONNECTION REPAIR - REPAIR (TYPE 2)
5. LATTICE CONNECTION REPAIR - REPAIR (TYPE 3)
6. RETROTEN® REPAIR ON MIDDLE CHORD®
7. RETROSHEAR® PANEL ON LATTICE BOTH SIDES.
8. POST REPAIR - BLOCKING BETWEEN LATTICE & POST/TENSION CHORD.

- RETROSHEAR® PANEL WITH BLOCKING AT KNEE BRACE LOCATION (SEE SHEET 5.4 FOR REPAIR DETAILS)
- RETROSHEAR® PANEL AT ABUTMENT KNEE BRACE (SEE SHEET 5.1 FOR REPAIR DETAILS)
- LATTICE CONNECTION REPAIRS (SEE SHEET 5.0 FOR REPAIR DETAILS TYPES 1-3)
- RETROTEN REPAIR ON MIDDLE CHORD® (SEE SHEET 4.2 FOR REPAIR DETAILS)
- POST REPAIR - BLOCKING BETWEEN LATTICE & POST/TENSION CHORD (SEE SHEET 5.2 FOR REPAIR DETAILS)

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT

= NEW PLYWOOD BLOCKING



L 1.1 1.5 ELEVATION - NORTH SIDE (INSIDE)

SCALE: 1:100

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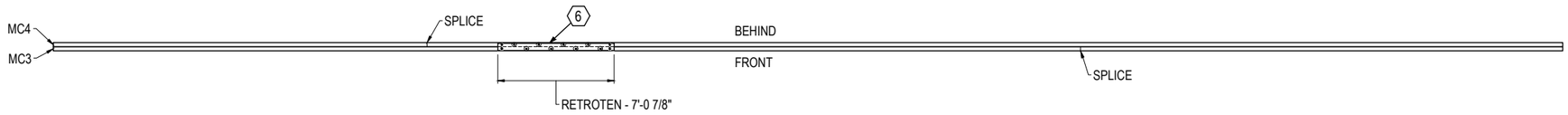
RESTORATION DRAWINGS
REPAIR PLANS - NORTH SIDE INSIDE VIEW

DRAWING # 1.5

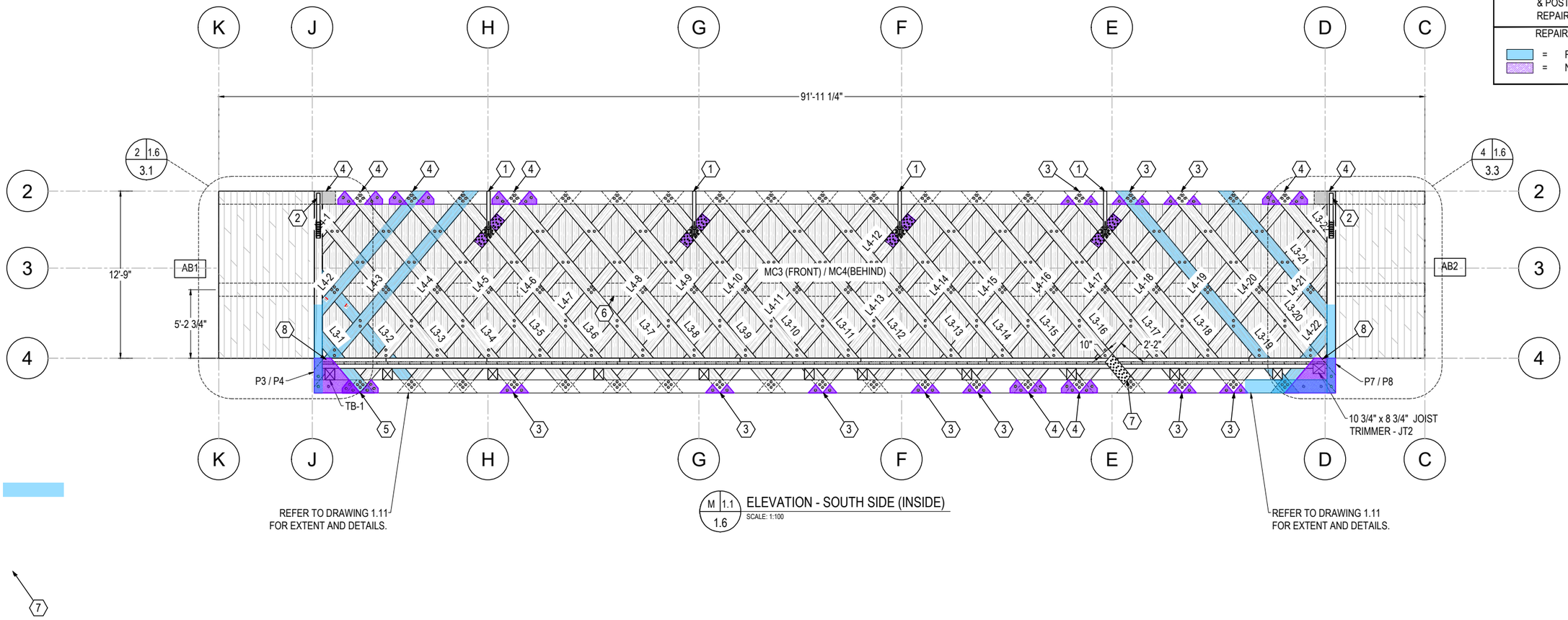
SHEET # 10 OF 42 -

PROJECT #9101S



MIDDLE CHORD 3 & 4 - SWT DATA - PLAN

SCALE: 1:100



M 1.1 1.6 ELEVATION - SOUTH SIDE (INSIDE)

SCALE: 1:100

REPAIR - SHEET KEYNOTES - LATTICE MEMBERS & MIDDLE CHORDS

1. RETROSHEAR® PANEL WITH BLOCKING ON LATTICE AT KNEE BRACE LOCATIONS
2. RETROSHEAR® PANEL AT ABUTMENT KNEE BRACE - REPAIR
3. LATTICE CONNECTION REPAIR - REPAIR (TYPE 1)
4. LATTICE CONNECTION REPAIR - REPAIR (TYPE 2)
5. LATTICE CONNECTION REPAIR - REPAIR (TYPE 3)
6. RETROTEN® REPAIR ON MIDDLE CHORD®
7. RETROSHEAR® PANEL ON LATTICE BOTH SIDES.
8. POST REPAIR - BLOCKING BETWEEN LATTICE & POST/TENSION CHORD.

- RETROSHEAR® PANEL WITH BLOCKING AT KNEE BRACE LOCATION (SEE SHEET 5.4 FOR REPAIR DETAILS)
- RETROSHEAR® PANEL AT ABUTMENT KNEE BRACE (SEE SHEET 5.1 FOR REPAIR DETAILS)
- LATTICE CONNECTION REPAIRS (SEE SHEET 5.0 FOR REPAIR DETAILS TYPES 1-3)
- RETROTEN REPAIR ON MIDDLE CHORD® (SEE SHEET 4.2 FOR REPAIR DETAILS)
- POST REPAIR - BLOCKING BETWEEN LATTICE & POST/TENSION CHORD (SEE SHEET 5.2 FOR REPAIR DETAILS)

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT

= NEW PLYWOOD BLOCKING

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PREPARED FOR:

BOROUGH OF PERKASIE (PA)

SOUTH PERKASIE COVERED BRIDGE

-	100% DESIGN DRAWINGS	-	05/09/2025

RESTORATION DRAWINGS
REPAIR PLANS - SOUTH SIDE INSIDE VIEW

DRAWING # 1.6

SHEET # 11 OF 42

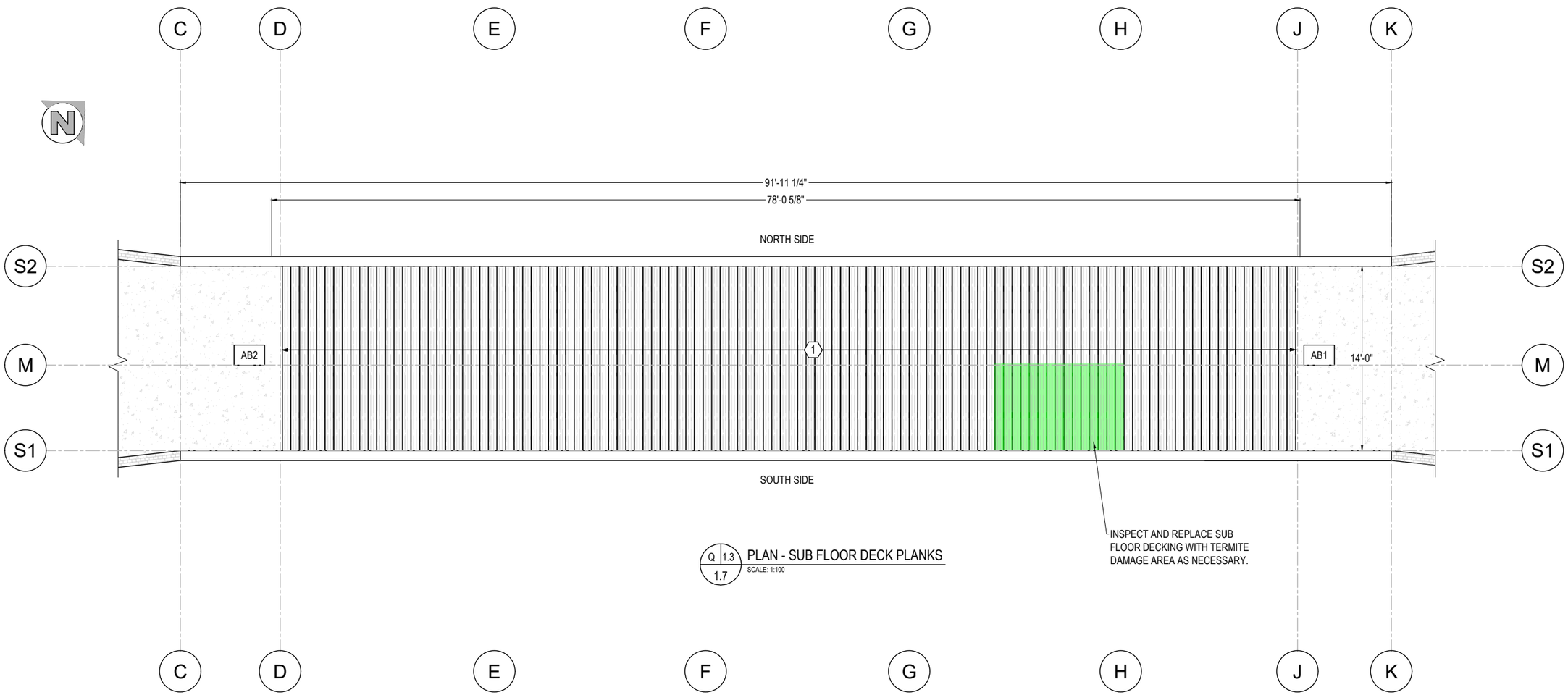
PROJECT #9101S

REPAIR - SHEET KEYNOTES - LOWER FLOOR DECKING

1. REMOVE BOTH LAYERS OF DECK BOARDS TO RESTORE JOISTS AND TRANSVERSE BEAMS. RESTORE DECKING AND REPLACE ELEMENTS AS REQUIRED (SEE SHEET 5.5 FOR CONNECTION DETAILS)

REPAIR LEGEND: DEFECTS

= TERMITE DAMAGE AREA



Q 1.3 / 1.7 PLAN - SUB FLOOR DECK PLANKS

SCALE: 1:100

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RESTORATION DRAWINGS
REPAIR PLANS
SUB FLOOR DECK PLANKS

DRAWING # 1.7

SHEET # 12 OF 42 -

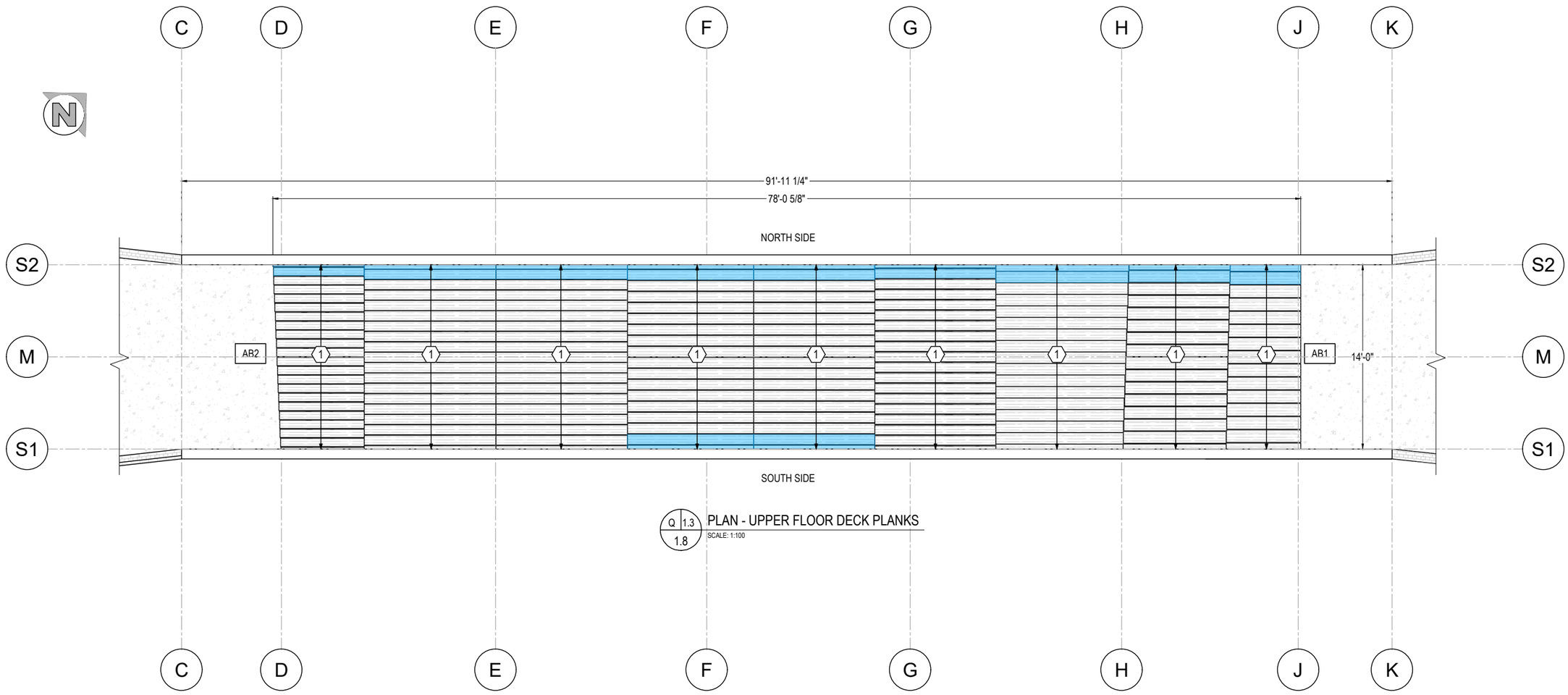
PROJECT #9101S

REPAIR - SHEET KEYNOTES - UPPER FLOOR DECKING

1. REMOVE BOTH LAYERS OF DECK BOARDS TO RESTORE JOISTS AND TRANSVERSE BEAMS. RESTORE DECKING AND REPLACE ELEMENTS AS REQUIRED (SEE SHEET 5.6 FOR CONNECTION DETAILS)

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT



Q 1.3 / 1.8 PLAN - UPPER FLOOR DECK PLANKS

SCALE: 1:100

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RESTORATION DRAWINGS
REPAIR PLANS
UPPER FLOOR DECK PLANKS

DRAWING # 1.8

SHEET # 13 OF 42 -

PROJECT #9101S

JOIST'S (STRINGERS) / LOWER CROSS BRACE NOTES:		
NOTE #	NOTE:	NOMINAL MEMBER SIZE:
1	JOIST SIZE	6"X5"
2	LOWER CROSS BRACE SIZE	6"X5"

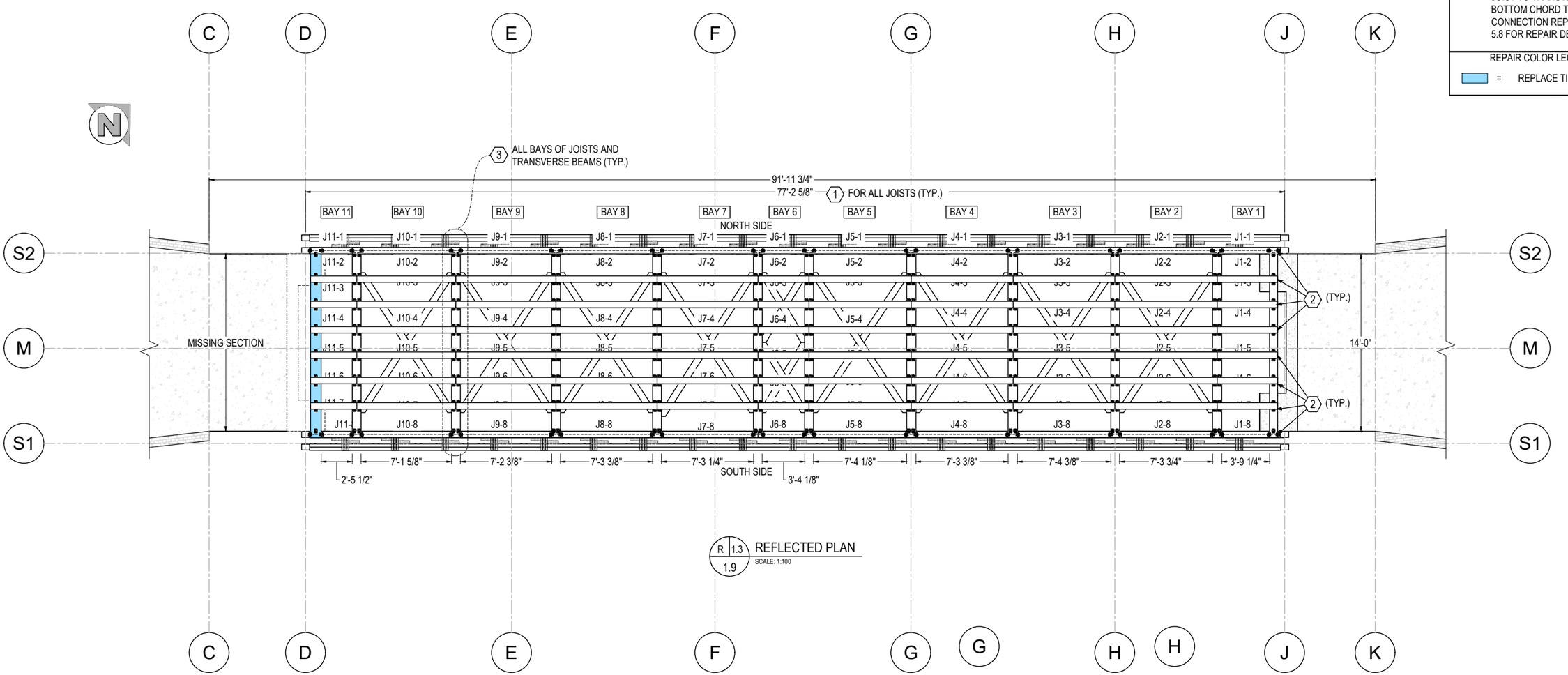
REPAIR - SHEET KEYNOTES - FLOOR JOISTS

1. RESEAT JOISTS TO ENSURE THEY ARE LEVEL
2. REMOVE JOISTS TO RESTORE TRANSVERSE BEAMS. REPLACE EXISTING JOISTS AT 2-FT O.C. AVOID JOISTS WITH SPLITS, CRACKS, AND LARGE KNOTS. IF JOIST HAS WANE OR KNOTS, TURN JOIST TO ORIENTATE KNOTS AND/OR WANE TO TOP. IF KNOTS ON BOTTOM FACE ARE UNAVOIDABLE, INSTALL SISTER ELEMENT
3. JOIST TO TRANSVERSE BEAM & BOTTOM CHORD TO TRANSVERSE BEAM END CONNECTION REPAIR - INSTALL NEW SIMPSON A23Z 2" X 1-1/2" SIMPSON BRACKET WITH 2" SDWS. (1) PER END OF JOIST.

- NEW SISTER ELEMENT REPAIR (IF REQUIRED - SEE SHEET 4.4 FOR REPAIR DETAILS)
- JOIST TO TRANSVERSE BEAM CONNECTION & BOTTOM CHORD TO TRANSVERSE BEAM END CONNECTION REPAIR DETAILS (SEE SHEET 5.8 FOR REPAIR DETAILS)

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT



R 1.3 / 1.9 REFLECTED PLAN
SCALE: 1:100

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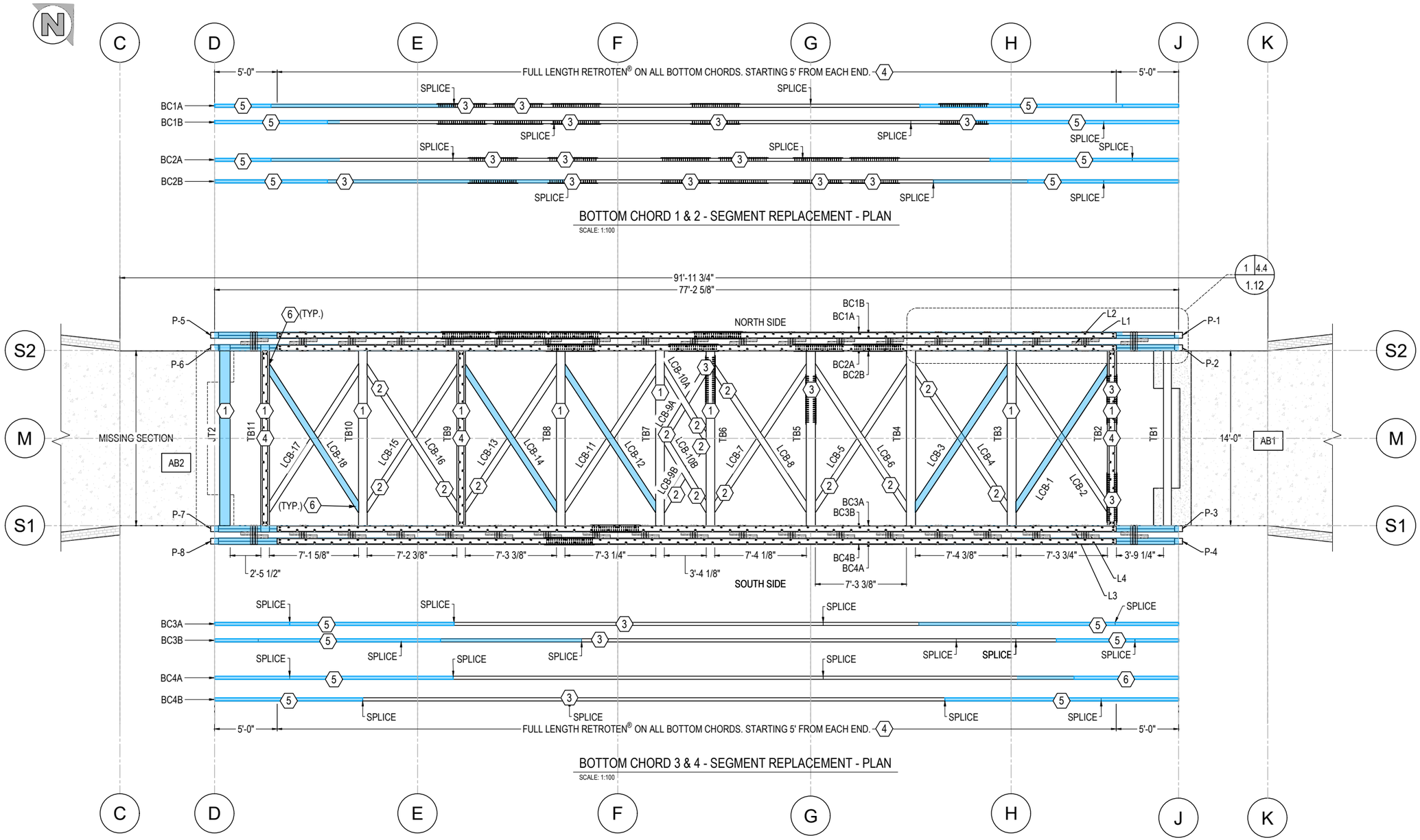
RESTORATION DRAWINGS
REPAIR PLANS
FLOOR MEMBERS (JOISTS)

DRAWING # 1.9

SHEET # 14 OF 42 -

PROJECT #9101S



REPAIR - SHEET KEYNOTES - LOWER CROSS BRACES & TRANSVERSE BEAMS

1. RESEAT TRANSVERSE BEAM TO ENSURE THEY ARE LEVEL
2. REPAIR CROSS BRACE CONNECTION WITH 1/4" STRUCTURAL TIMBER SCREWS.
3. RETROSHEAR® PANEL REPAIR
4. RETROTEN® REPAIR
5. BOTTOM CHORD SEGMENT REPLACEMENT
6. NEW CROSS BRACE CONNECTION DETAIL

- RETROSHEAR® PANEL (SEE SHEET 4.0 FOR DETAILS)
- RETROTEN® (SEE SHEET 4.3 FOR DETAILS)
- BOTTOM CHORD SEGMENT REPLACEMENT DETAILS (SEE SHEET 4.6 FOR DETAILS)
- NEW CROSS BRACE CONNECTION DETAIL (SEE SHEET 5.9 FOR REPAIR DETAIL)

GENERAL NOTES:

- FIELD VERIFY SPLICE LOCATIONS ON BOTTOM CHORDS.
- PLANE BEAMS AS REQUIRED FOR FIT.

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT

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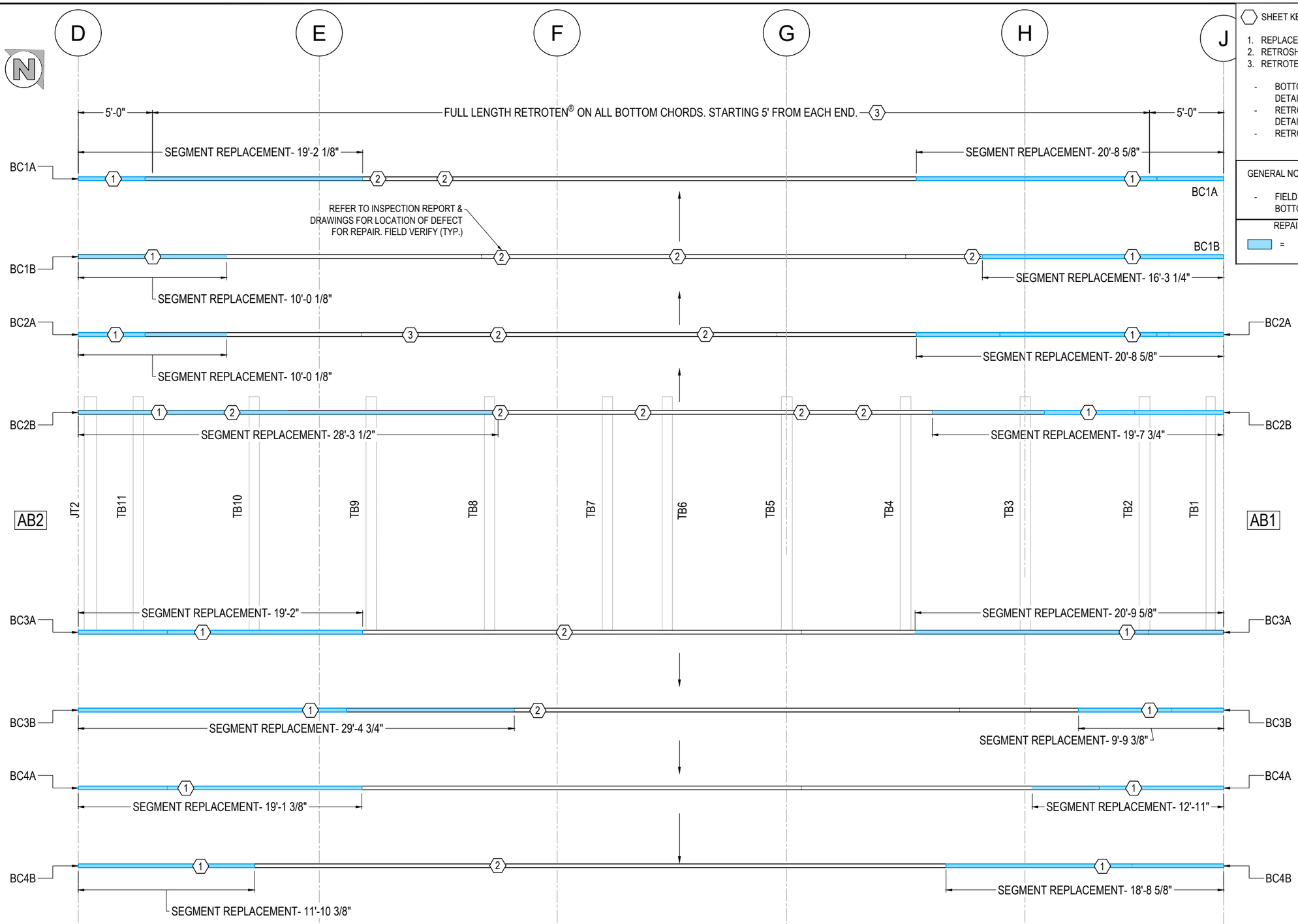
RESTORATION DRAWINGS
REPAIR PLANS
BOTTOM CHORD'S, LCB'S, TB'S

DRAWING # 1.10

SHEET # 15 OF 42 -

PROJECT #9101S



SHEET KEYNOTES

1. REPLACE BOTTOM CHORD SEGMENT
2. RETROSHEAR® PANEL REPAIR
3. RETROTEN® REPAIR

- BOTTOM CHORD SEGMENT REPLACEMENT DETAILS (SEE SHEET 4.4 FOR DETAILS)
- RETROSHEAR PANEL® (SEE SHEET 4.0 FOR DETAILS)
- RETROTEN® (SEE SHEET 4.1 FOR DETAILS)

GENERAL NOTES:

- FIELD VERIFY SPLICE LOCATIONS ON BOTTOM CHORDS.

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT

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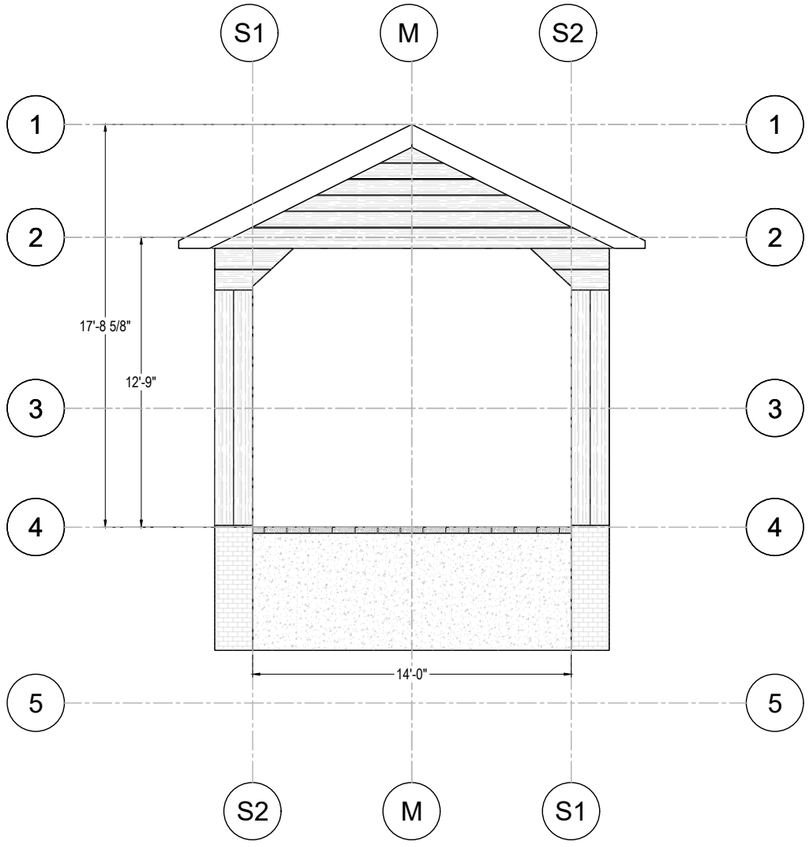
RESTORATION DRAWINGS
REPAIR PLANS
BOTTOM CHORD SEGMENTS

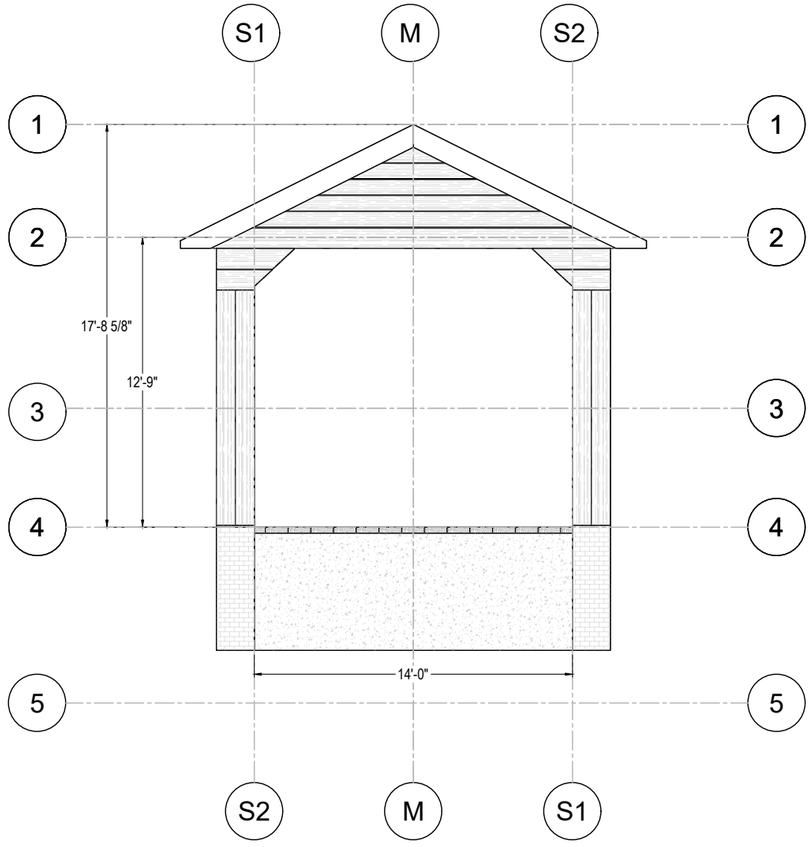
DRAWING # 1.11

SHEET # 16 OF 42 -

PROJECT #9101S



N 1.3 / 2.0 SECTION - AB1 (FRONT)
SCALE: 1:80



O 1.3 / 2.0 SECTION - AB2 (FRONT)
SCALE: 1:80

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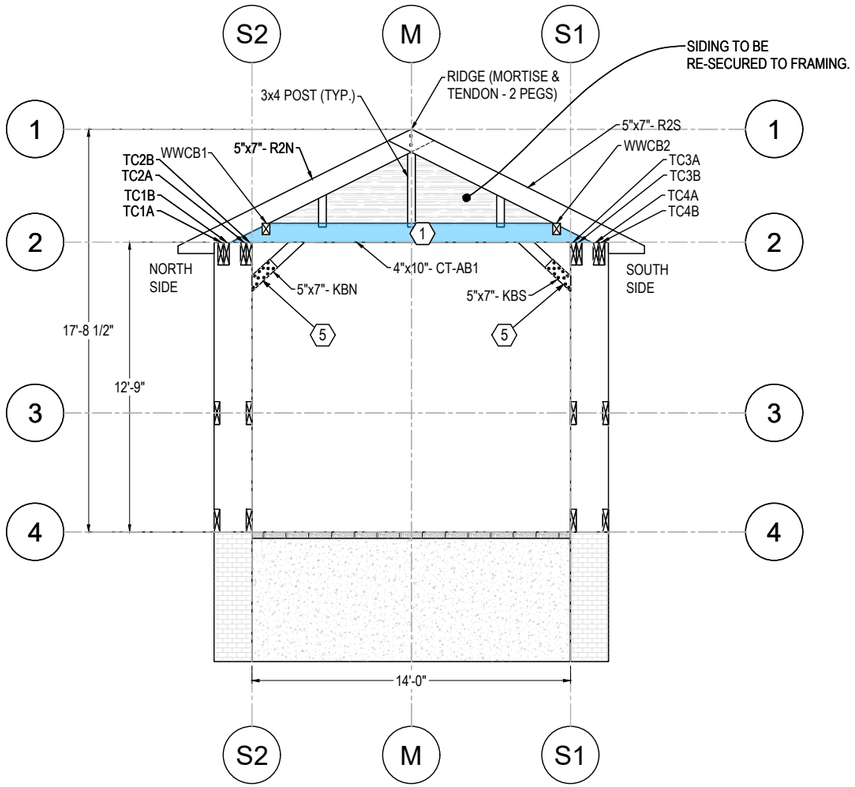
RESTORATION DRAWINGS
REPAIR PLANS
ABUTMENTS - OUTSIDE

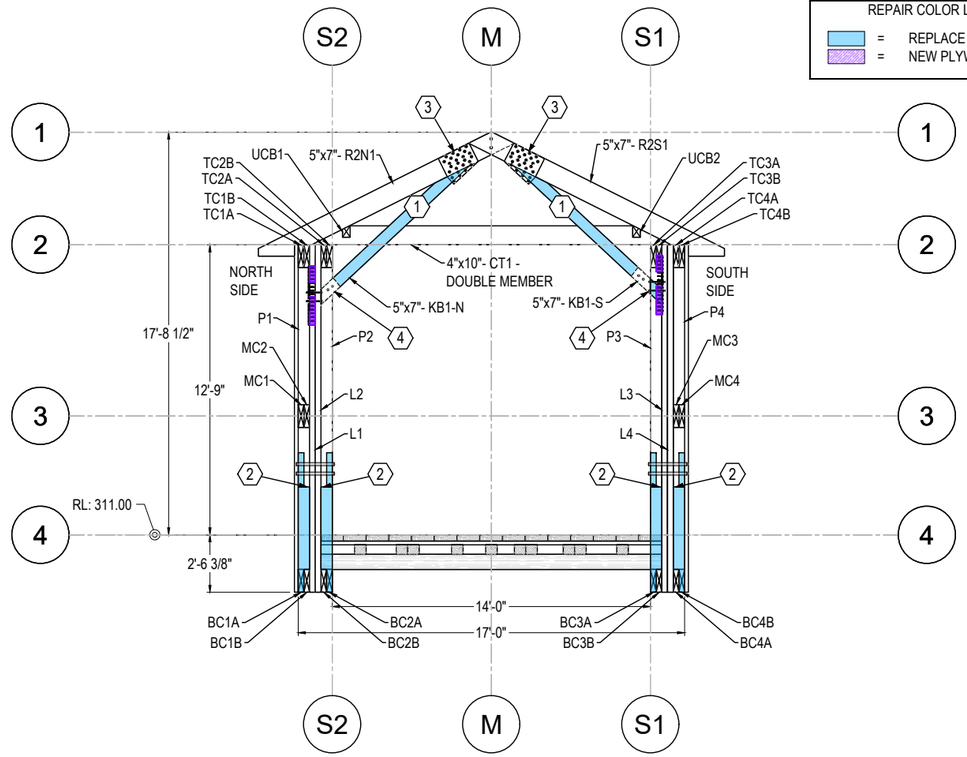
DRAWING # 2.0

SHEET # 17 OF 42 -

PROJECT #9101S



C 1.1 / 2.1 SECTION - AB1 TRUSS
SCALE: 1:80



D 1.1 / 2.1 SECTION - TRUSS GRID LINE J
SCALE: 1:80

REPAIR - SHEET KEYNOTES - COLLAR TIES & KNEE BRACES

1. REPLACE TIMBER ELEMENT
2. POSTING REPAIR
3. MAIN RAFTER & KNEE BRACE UPPER CONNECTION REPAIR
4. KNEE BRACE LOWER CONNECTION REPAIR
5. KNEE BRACE AT ABUTMENT CONNECTION REPAIR
6. RETROSHEAR® PANEL AT END OF MAIN RAFTER REPAIR
7. SISTER TIMBER ELEMENT

- POSTING REPAIR (SEE SHEET 4.5 FOR REPAIR DETAILS)
- MAIN RAFTER & KNEE BRACE UPPER CONNECTION REPAIR (SEE SHEET 5.3 FOR REPAIR DETAILS)
- KNEE BRACE LOWER CONNECTION REPAIR (SEE SHEET 5.4 FOR REPAIR DETAILS)
- KNEE BRACE AT ABUTMENT CONNECTION REPAIR (SEE SHEET 5.1 FOR REPAIR DETAILS)
- SISTER TIMBER ELEMENT REPAIR (SEE SHEET 4.3 FOR REPAIR DETAIL)

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT
= NEW PLYWOOD BLOCKING

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RESTORATION DRAWINGS
REPAIR PLANS
AB1 & GRID LINE J - SECTIONS

DRAWING # 2.1

SHEET # 18 OF 42 -

PROJECT #9101S

REPAIR - SHEET KEYNOTES - COLLAR TIES & KNEE BRACES

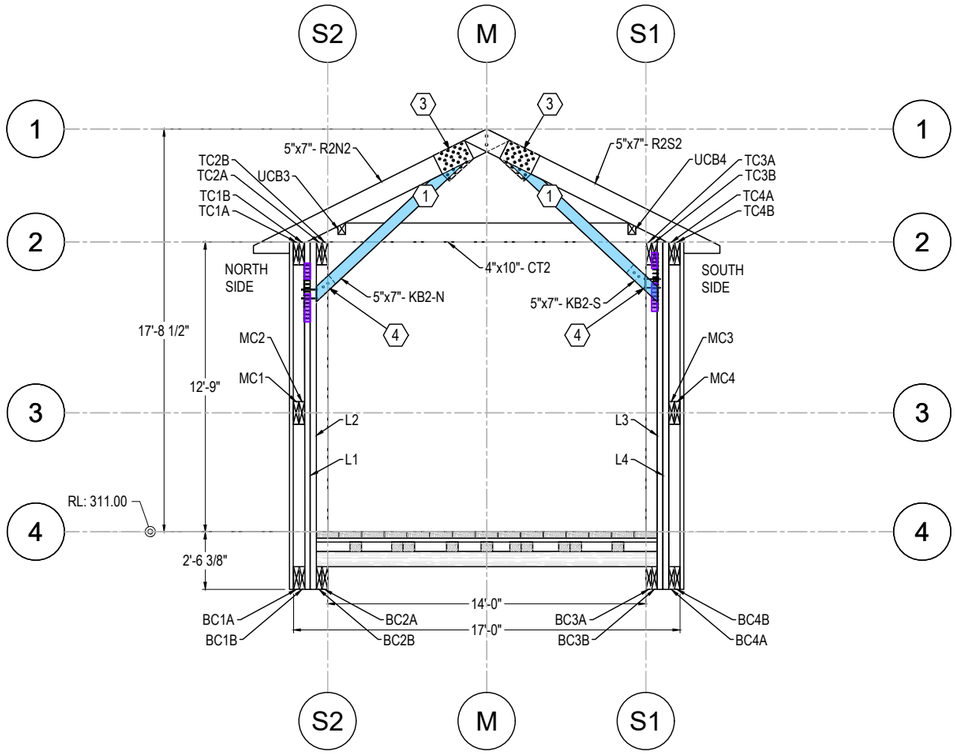
1. REPLACE TIMBER ELEMENT
2. POSTING REPAIR
3. MAIN RAFTER & KNEE BRACE UPPER CONNECTION REPAIR
4. KNEE BRACE LOWER CONNECTION REPAIR
5. KNEE BRACE AT ABUTMENT CONNECTION REPAIR
6. RETROSHEAR® PANEL AT END OF MAIN RAFTER REPAIR
7. SISTER TIMBER ELEMENT

- POSTING REPAIR (SEE SHEET 4.5 FOR REPAIR DETAILS)
- MAIN RAFTER & KNEE BRACE UPPER CONNECTION REPAIR (SEE SHEET 5.3 FOR REPAIR DETAILS)
- KNEE BRACE LOWER CONNECTION REPAIR (SEE SHEET 5.4 FOR REPAIR DETAILS)
- KNEE BRACE AT ABUTMENT CONNECTION REPAIR (SEE SHEET 5.1 FOR REPAIR DETAILS)
- SISTER TIMBER ELEMENT REPAIR (SEE SHEET 4.3 FOR REPAIR DETAIL)

REPAIR COLOR LEGEND:

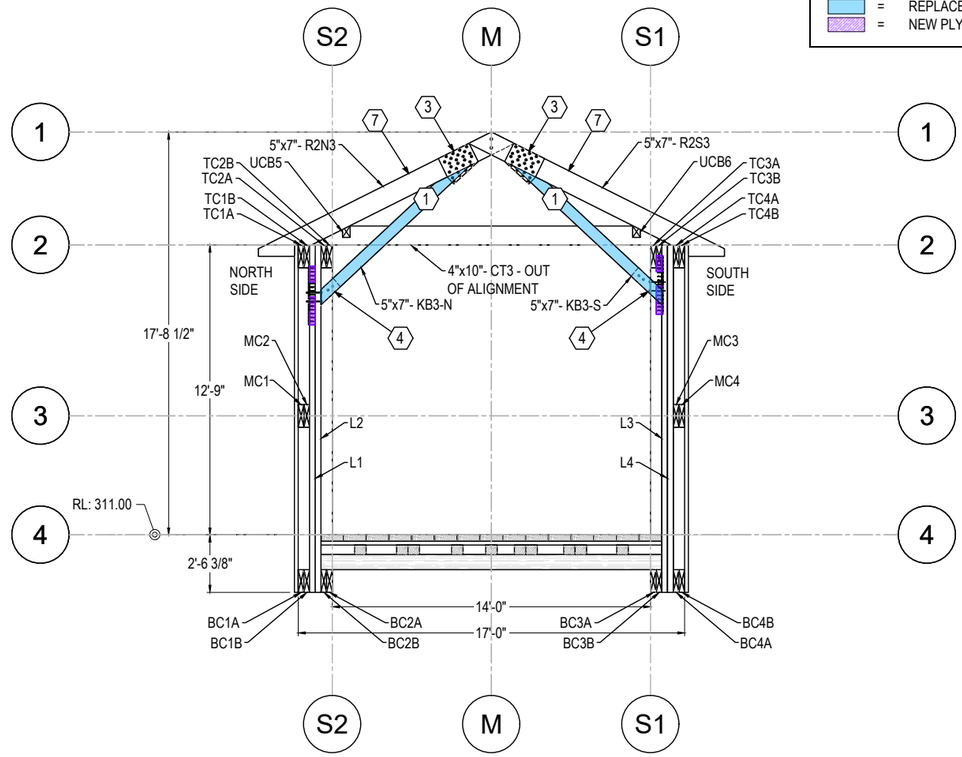
= REPLACE TIMBER ELEMENT

= NEW PLYWOOD BLOCKING



E 1.1 / 2.2 SECTION - TRUSS GRID LINE H

SCALE: 1:80



F 1.1 / 2.2 SECTION - TRUSS GRID LINE G

SCALE: 1:80

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RESTORATION DRAWINGS
REPAIR PLANS
GRID LINES H & G

DRAWING # 2.2

SHEET # 19 OF 42 -

PROJECT #9101S

REPAIR - SHEET KEYNOTES - COLLAR TIES & KNEE BRACES

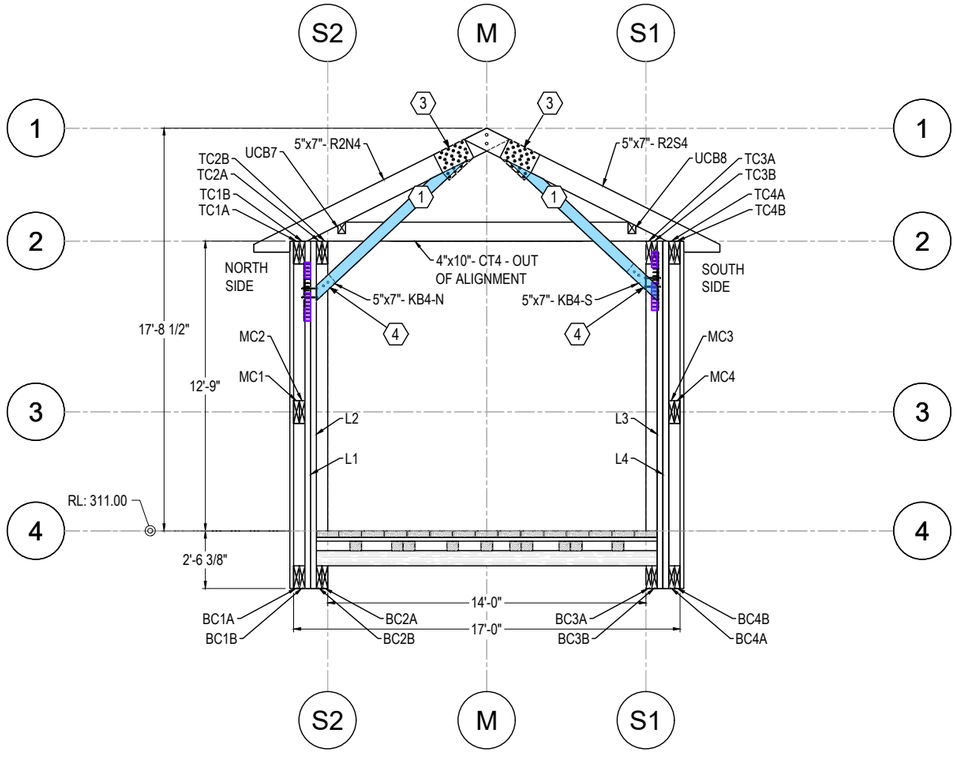
1. REPLACE TIMBER ELEMENT
2. POSTING REPAIR
3. MAIN RAFTER & KNEE BRACE UPPER CONNECTION REPAIR
4. KNEE BRACE LOWER CONNECTION REPAIR
5. KNEE BRACE AT ABUTMENT CONNECTION REPAIR
6. RETROSHEAR® PANEL AT END OF MAIN RAFTER REPAIR
7. SISTER TIMBER ELEMENT

- POSTING REPAIR (SEE SHEET 4.5 FOR REPAIR DETAILS)
- MAIN RAFTER & KNEE BRACE UPPER CONNECTION REPAIR (SEE SHEET 5.3 FOR REPAIR DETAILS)
- KNEE BRACE LOWER CONNECTION REPAIR (SEE SHEET 5.4 FOR REPAIR DETAILS)
- KNEE BRACE AT ABUTMENT CONNECTION REPAIR (SEE SHEET 5.1 FOR REPAIR DETAILS)
- SISTER TIMBER ELEMENT REPAIR (SEE SHEET 4.3 FOR REPAIR DETAIL)

REPAIR COLOR LEGEND:

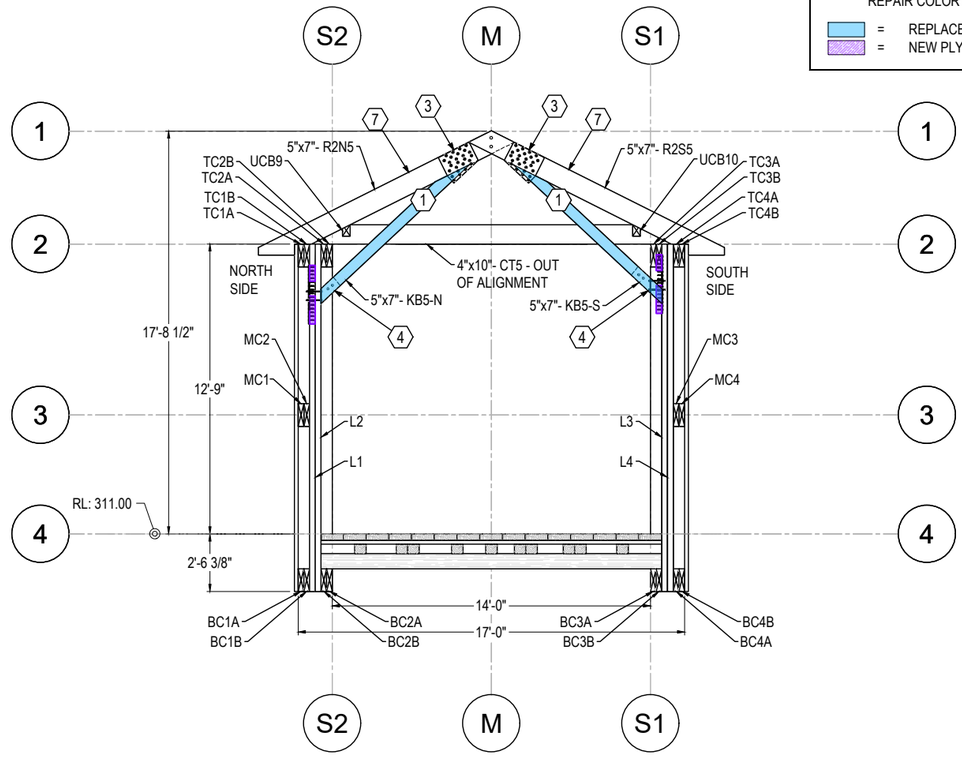
= REPLACE TIMBER ELEMENT

= NEW PLYWOOD BLOCKING



G | 1.1 / 2.3 SECTION - TRUSS GRID LINE F

SCALE: 1:80



H | 1.1 / 2.3 SECTION - TRUSS GRID LINE E

SCALE: 1:80

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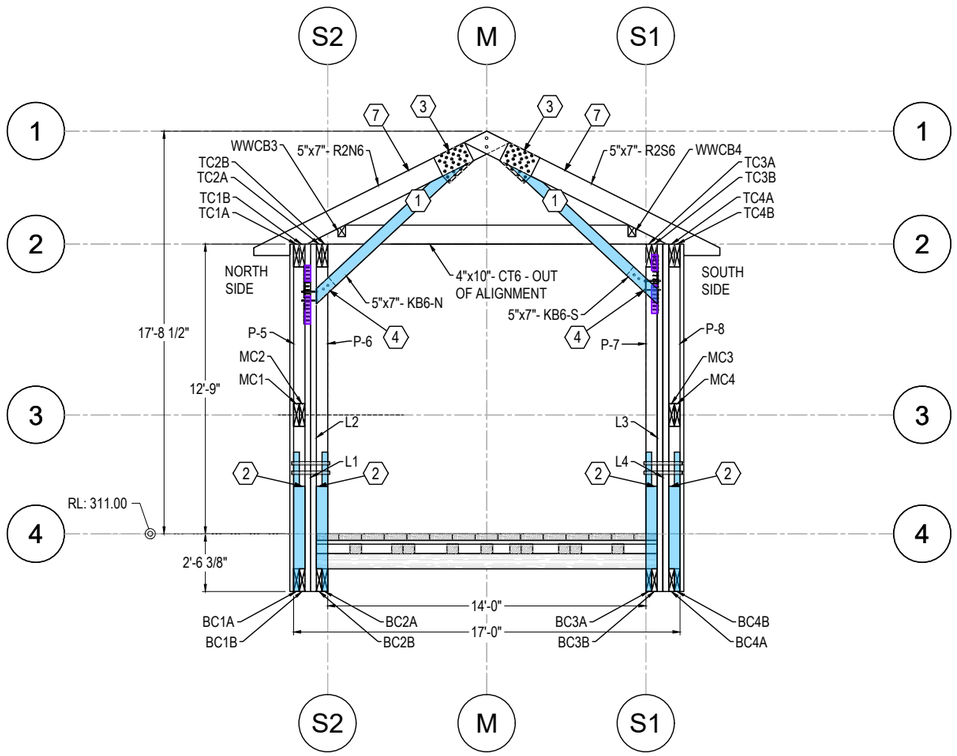
RESTORATION DRAWINGS
REPAIR PLANS
GRID LINE F & E

DRAWING # 2.3

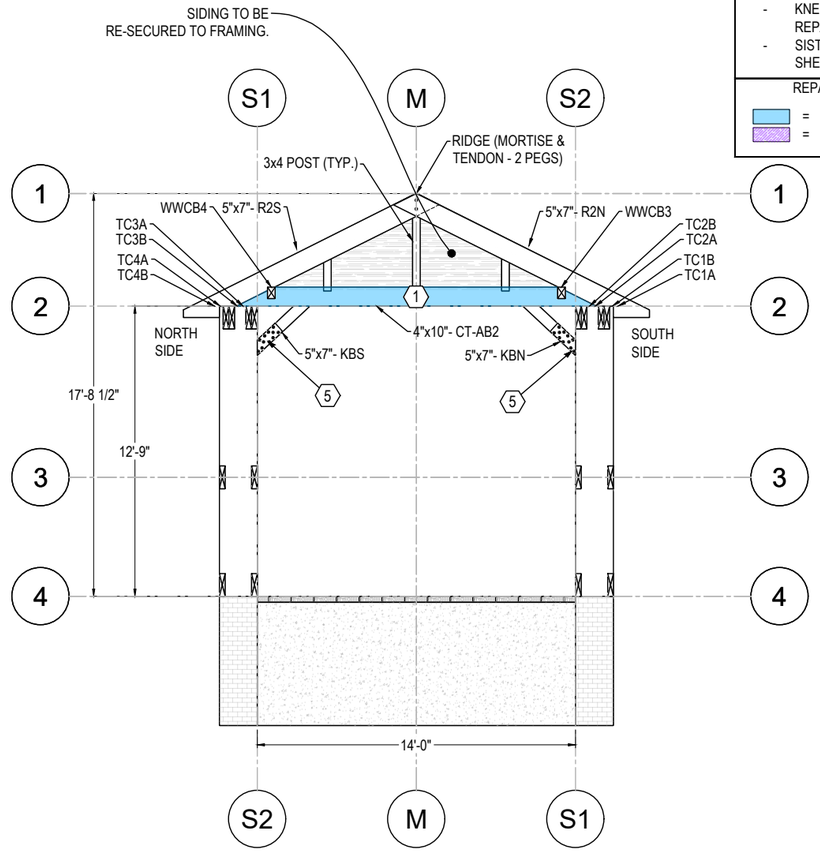
SHEET # 20 OF 42 -

PROJECT #9101S



J 1.1 / 2.4 SECTION - TRUSS GRID LINE D

SCALE: 1:80



K 1.1 / 2.4 SECTION - AB2 TRUSS

SCALE: 1:80

REPAIR - SHEET KEYNOTES - COLLAR TIES & KNEE BRACES

1. REPLACE TIMBER ELEMENT
2. POSTING REPAIR
3. MAIN RAFTER & KNEE BRACE UPPER CONNECTION REPAIR
4. KNEE BRACE LOWER CONNECTION REPAIR
5. KNEE BRACE AT ABUTMENT CONNECTION REPAIR
6. RETROSHEAR® PANEL AT END OF MAIN RAFTER REPAIR
7. SISTER TIMBER ELEMENT

- POSTING REPAIR (SEE SHEET 4.5 FOR REPAIR DETAILS)
- MAIN RAFTER & KNEE BRACE UPPER CONNECTION REPAIR (SEE SHEET 5.3 FOR REPAIR DETAILS)
- KNEE BRACE LOWER CONNECTION REPAIR (SEE SHEET 5.4 FOR REPAIR DETAILS)
- KNEE BRACE AT ABUTMENT CONNECTION REPAIR (SEE SHEET 5.1 FOR REPAIR DETAILS)
- SISTER TIMBER ELEMENT REPAIR (SEE SHEET 4.3 FOR REPAIR DETAIL)

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT

= NEW PLYWOOD BLOCKING

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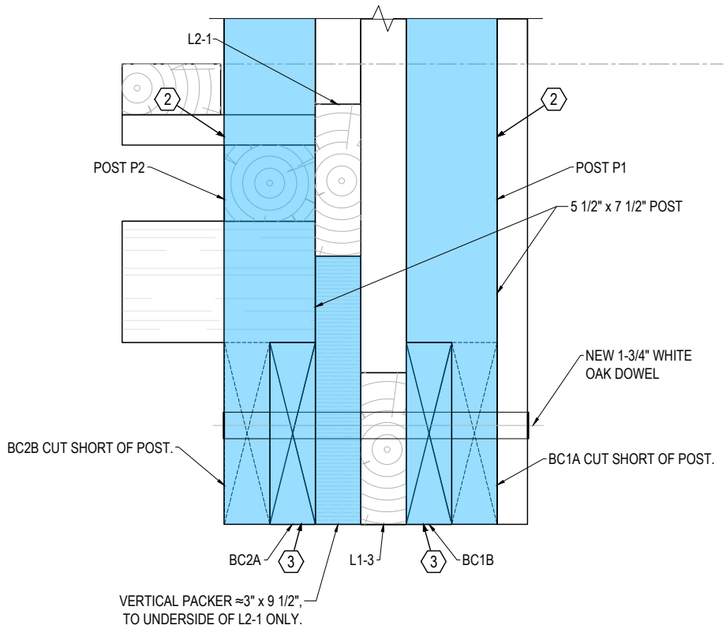
RESTORATION DRAWINGS
REPAIR PLANS
GRID LINE D & AB2 TRUSS

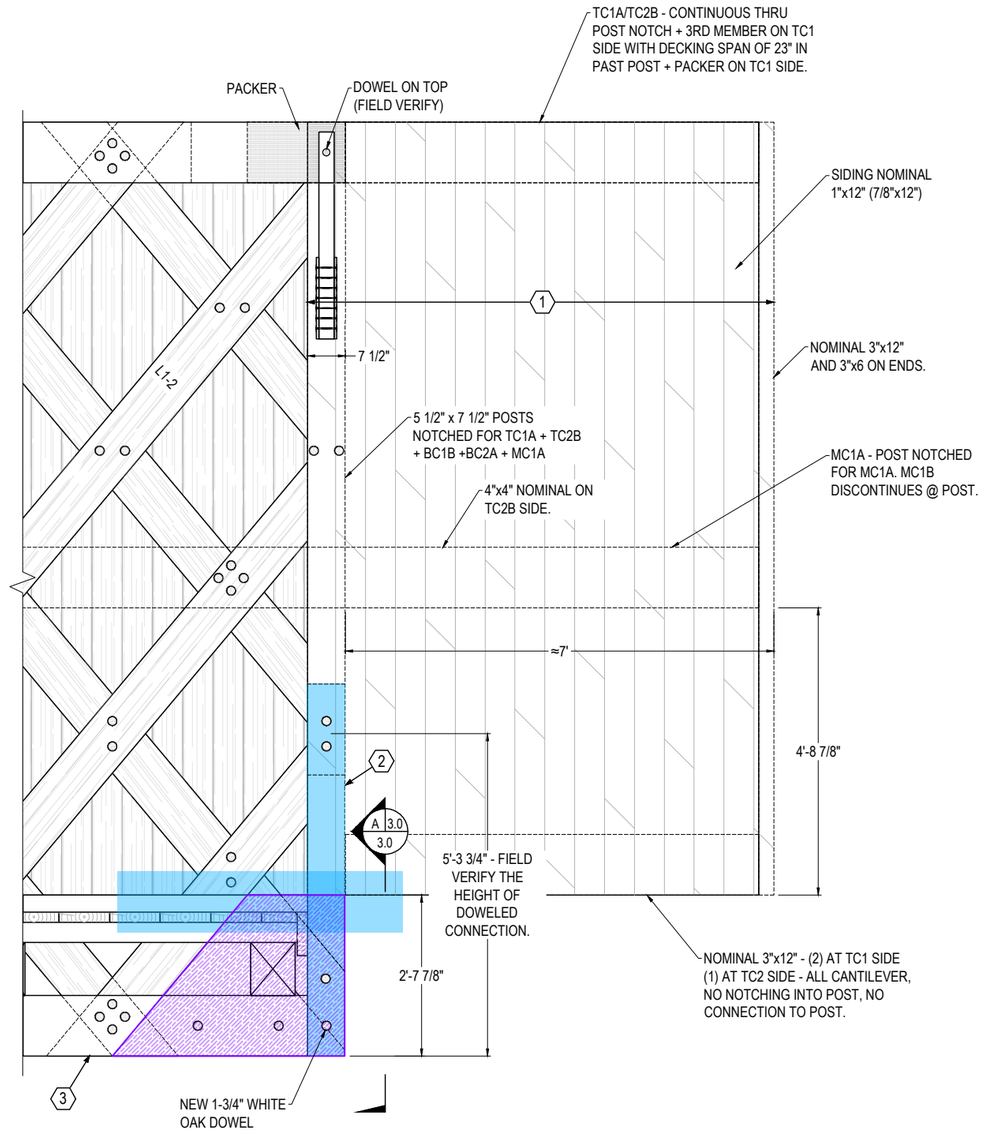
DRAWING # 2.4

SHEET # 21 OF 42 -

PROJECT #9101S



A 3.0 / 3.0 AB1 NORTH CORNER DETAIL (POST 1 & 2)
SCALE: 1:10



1 / 3.0 / 1.5 AB1 NORTH WEST WING WALL DETAIL (POST 1 & 2)
SCALE: 1:30

REPAIR - SHEET KEYNOTES - WING WALL SIDING, POSTS, BOTTOM CHORDS

1. REINSTALL LOOSE AND MISALIGNED SIDING BOARDS AND REPLACE MISSING SIDING BOARDS.
2. POSTING REPAIR - AMPUTATE POOR SEGMENTS AND POST WITH NEW TIMBER ELEMENTS AS NOTED.
3. BOTTOM CHORD SEGMENT REPLACEMENT

- POSTING (SEE SHEET 4.5 FOR DETAILS)
- BOTTOM CHORD SEGMENT REPLACEMENT (SEE SHEET 4.6 FOR DETAILS)

GENERAL NOTES:

- REPLACE BLOCKING BETWEEN POSTS.
- RESTORE CONNECTIONS TO LATTICE ELEMENTS AS REQUIRED.

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT
= NEW PLYWOOD BLOCKING

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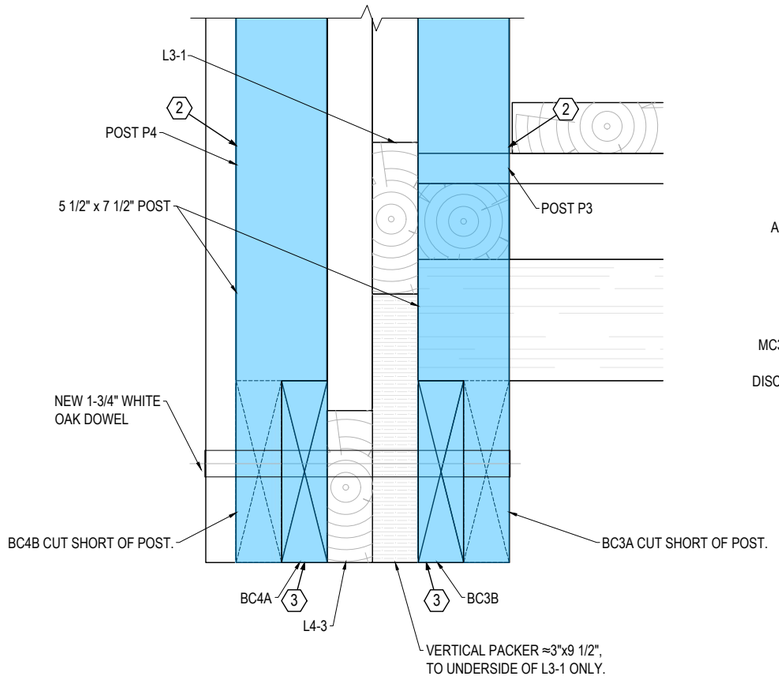
RESTORATION DRAWINGS
REPAIR DETAILS
AB1 NW WING WALL

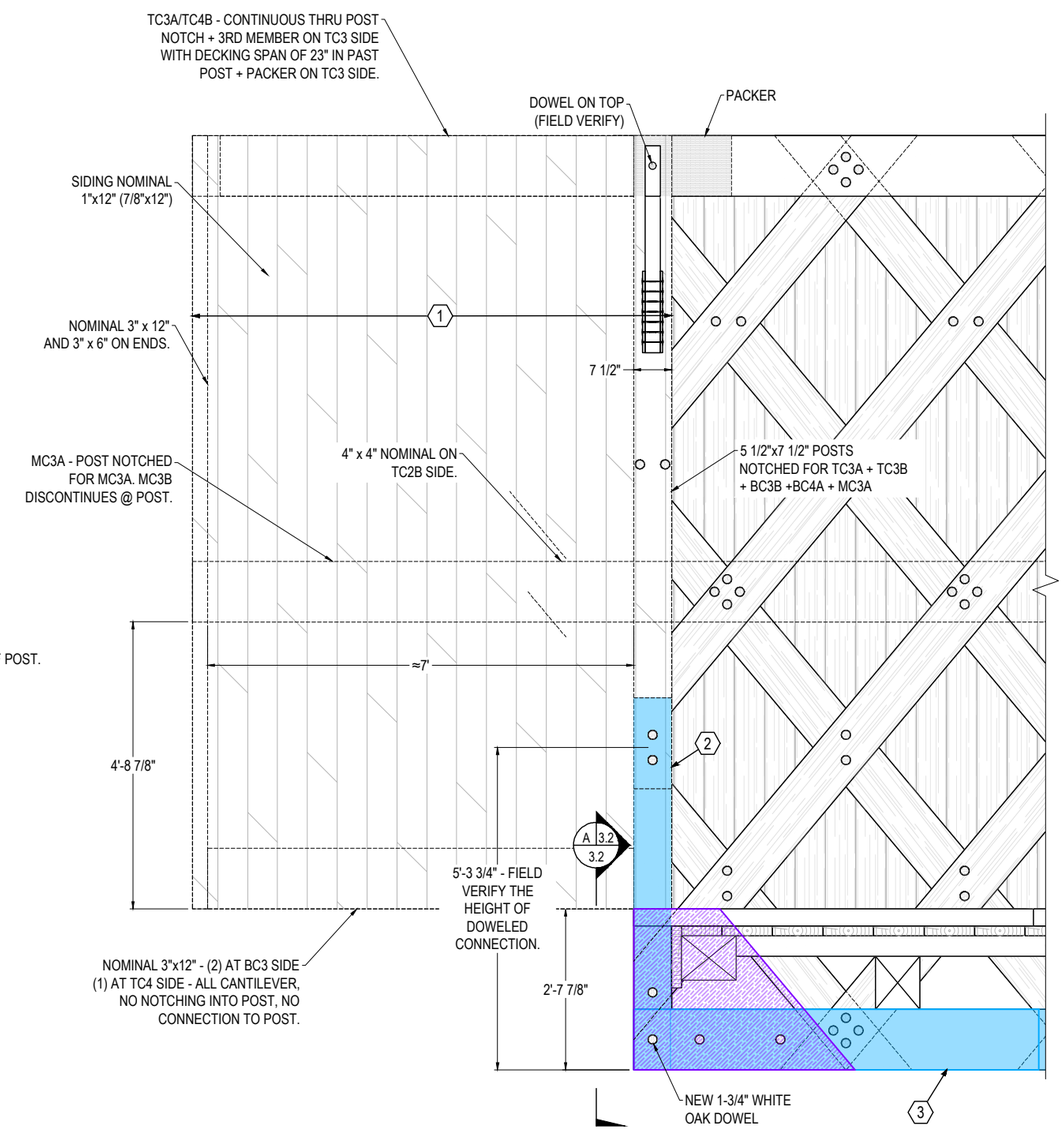
DRAWING # 3.0

SHEET # 22 OF 42 -

PROJECT #9101S



A 3.1 / 3.1 AB1 SOUTH CORNER DETAIL (POST 3 & 4)
SCALE: 1:10



2 3.1 / 1.5 AB1 SOUTH WEST WING WALL DETAIL (POST 3 & 4)
SCALE: 1:30

REPAIR - SHEET KEYNOTES - WING WALL SIDING, POSTS, BOTTOM CHORDS

1. REINSTALL LOOSE AND MISALIGNED SIDING BOARDS AND REPLACE MISSING SIDING BOARDS.
2. POSTING REPAIR - AMPUTATE POOR SEGMENTS AND POST WITH NEW TIMBER ELEMENTS AS NOTED.
3. BOTTOM CHORD SEGMENT REPLACEMENT

- POSTING (SEE SHEET 4.5 FOR DETAILS)
- BOTTOM CHORD SEGMENT REPLACEMENT (SEE SHEET 4.6 FOR DETAILS)

GENERAL NOTES:

- REPLACE BLOCKING BETWEEN POSTS.
- RESTORE CONNECTIONS TO LATTICE ELEMENTS AS REQUIRED.

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT
= NEW PLYWOOD BLOCKING

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100% DESIGN DRAWINGS

PREPARED FOR:

BOROUGH OF PERKASIE (PA)

SOUTH PERKASIE COVERED BRIDGE

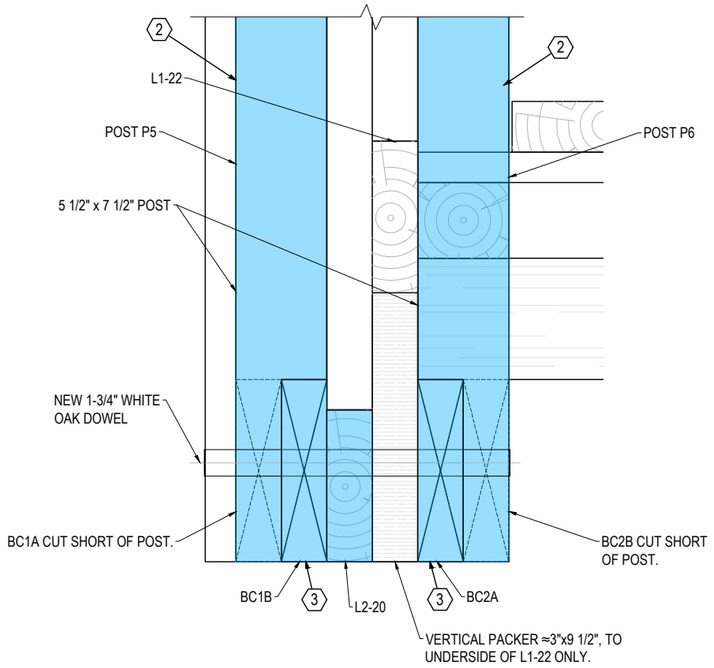
- 100% DESIGN DRAWINGS — 05/09/2025 — LK

RESTORATION DRAWINGS
REPAIR PLANS
AB1 SW WING WALL

DRAWING # 3.1

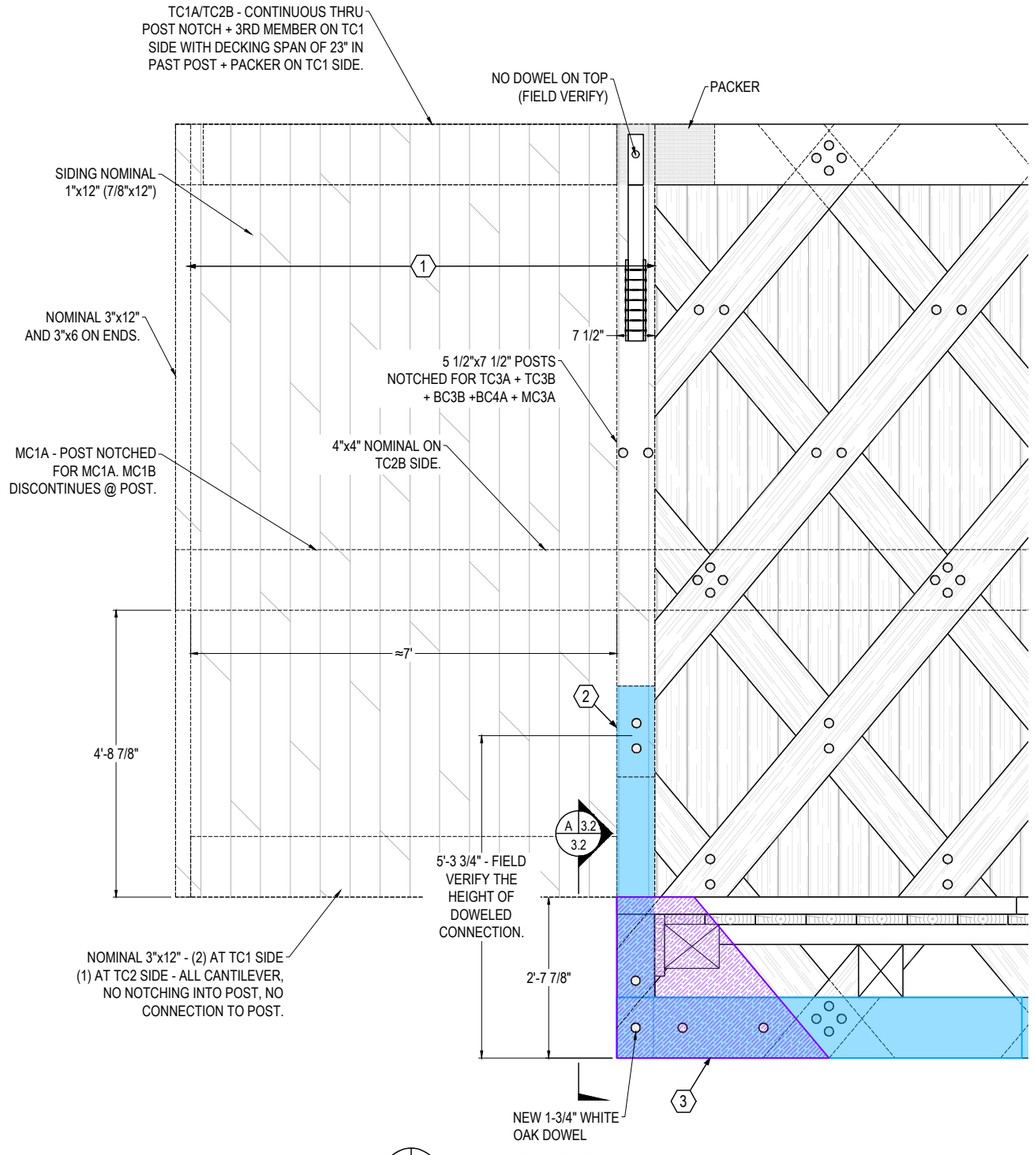
SHEET # 23 OF 42

PROJECT #9101S



A 3.2 / 3.2 AB2 SOUTH CORNER DETAIL (POST 5 & 6)

SCALE: 1:10



3 / 1.5 AB2 SOUTH WEST WING WALL DETAIL (POST 5 & 6)

SCALE: 1:30

REPAIR - SHEET KEYNOTES - WING WALL SIDING, POSTS, BOTTOM CHORDS

1. REINSTALL LOOSE AND MISALIGNED SIDING BOARDS AND REPLACE MISSING SIDING BOARDS.
2. POSTING REPAIR - AMPUTATE POOR SEGMENTS AND POST WITH NEW TIMBER ELEMENTS AS NOTED.
3. BOTTOM CHORD SEGMENT REPLACEMENT

- POSTING (SEE SHEET 4.5 FOR DETAILS)
- BOTTOM CHORD SEGMENT REPLACEMENT (SEE SHEET 4.6 FOR DETAILS)

GENERAL NOTES:

- REPLACE BLOCKING BETWEEN POSTS.
- RESTORE CONNECTIONS TO LATTICE ELEMENTS AS REQUIRED.

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT

= NEW PLYWOOD BLOCKING

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100% DESIGN DRAWINGS

PREPARED FOR:

BOROUGH OF PERKASIE (PA)

SOUTH PERKASIE COVERED BRIDGE

	REASON FOR ISSUANCE:	DATE:	DRAWN BY:	CHKD BY:	APPR BY:
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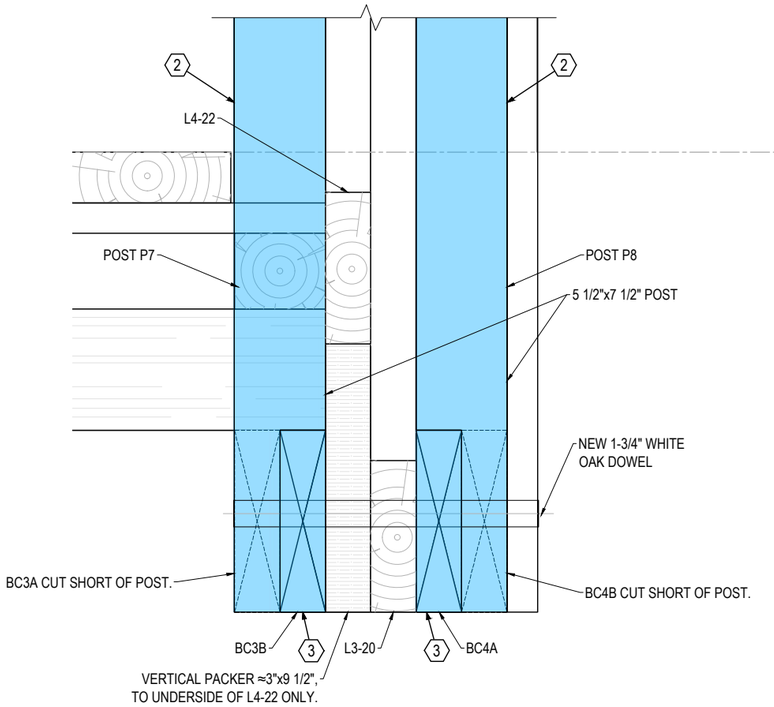
RESTORATION DRAWINGS
REPAIR PLANS
AB2 SW WING WALL

DRAWING # 3.2

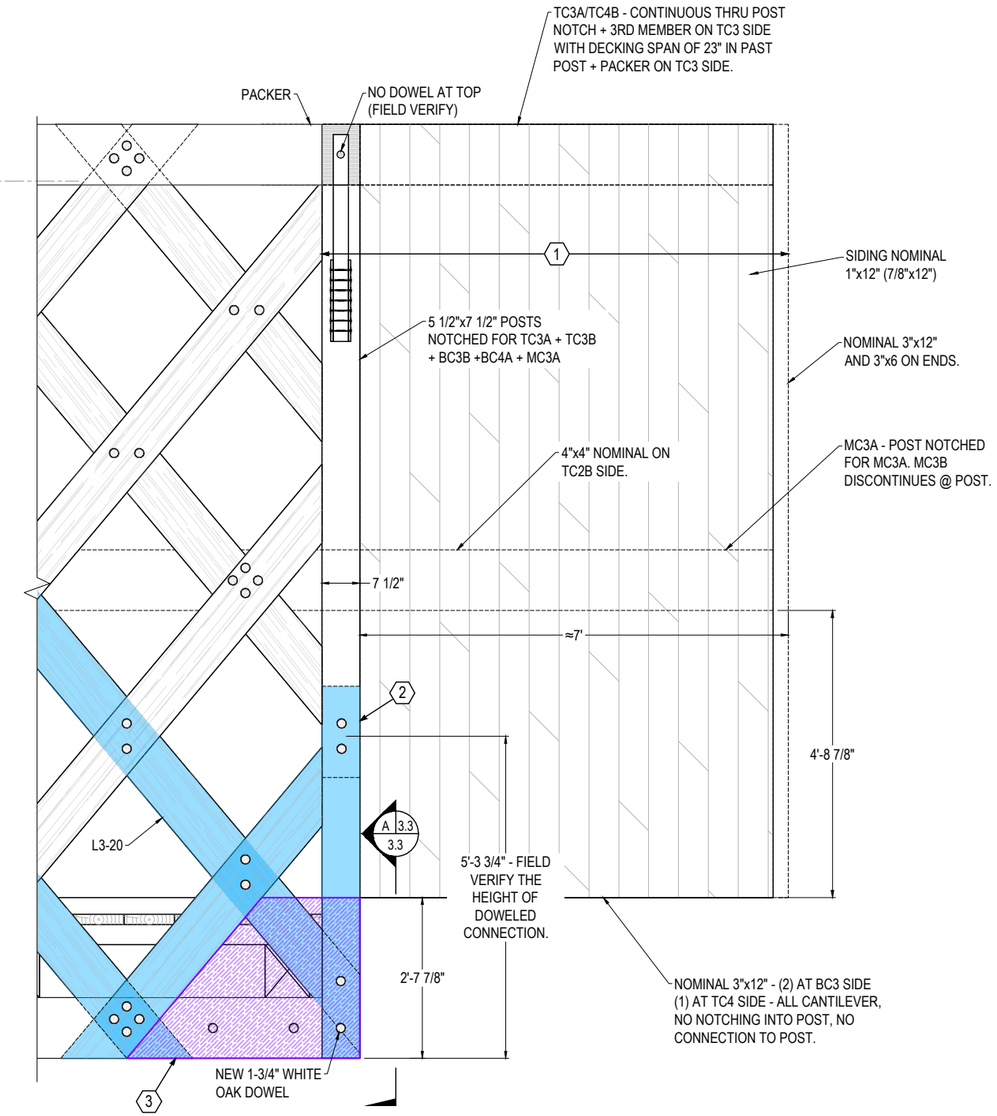
SHEET # 24 OF 42 -

PROJECT #9101S



A 3.3 / 3.3 AB2 SOUTH CORNER DETAIL (POST 7 & 8)

SCALE: 1:10



4 3.3 / 1.6 AB2 SOUTH WEST WING WALL DETAIL (POST 7 & 8)

SCALE: 1:30

REPAIR - SHEET KEYNOTES - WING WALL SIDING, POSTS, BOTTOM CHORDS

1. REINSTALL LOOSE AND MISALIGNED SIDING BOARDS AND REPLACE MISSING SIDING BOARDS.
2. POSTING REPAIR - AMPUTATE POOR SEGMENTS AND POST WITH NEW TIMBER ELEMENTS AS NOTED.
3. BOTTOM CHORD SEGMENT REPLACEMENT

- POSTING (SEE SHEET 4.5 FOR DETAILS)
- BOTTOM CHORD SEGMENT REPLACEMENT (SEE SHEET 4.6 FOR DETAILS)

GENERAL NOTES:

- REPLACE BLOCKING BETWEEN POSTS.
- RESTORE CONNECTIONS TO LATTICE ELEMENTS AS REQUIRED.

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT

= NEW PLYWOOD BLOCKING

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RESTORATION DRAWINGS
REPAIR PLANS
AB2 SW WING WALL

DRAWING # 3.3

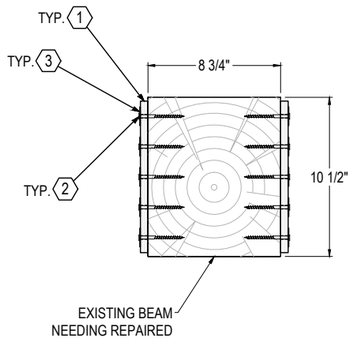
SHEET # 25 OF 42 -

PROJECT #9101S

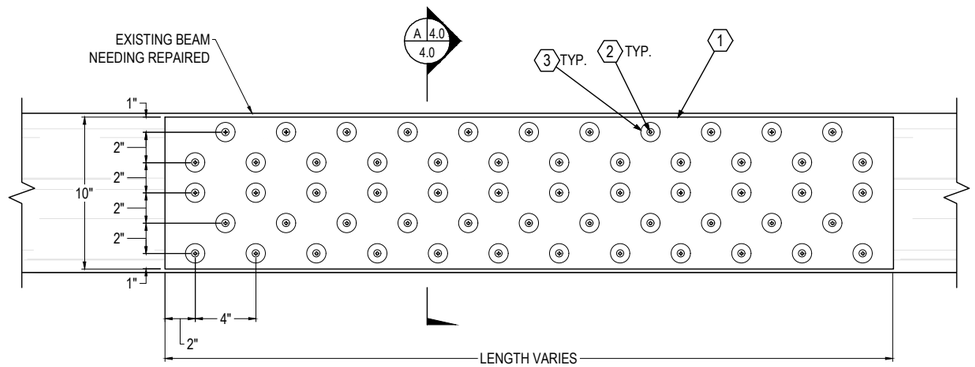
SHEET KEYNOTES

1. RETROSHEAR® PANEL (1" OR 1/2" THICK, AS SPECIFIED)
2. WOOD SCREW - #10 x 3"
3. FENDER WASHER - 1-1/4" OUTSIDE DIA.

NOTE: REMOVE ALL SCREWS AND FENDER WASHERS AFTER EPOXY CURES. THEN FILL HOLES WITH WOOD PUTTY.



A 4.0
4.0 SECTION
SCALE: 1:10



RETROSHEAR® PANEL DETAIL
SCALE: 1:10

RETROSHEAR™ WORKS SCHEDULE:

1. COMPLETE PRE-RETROFIT MEETING AND ASSIGN TASKS. REVIEW DRAWINGS.
2. CONFIRM ACCESS REQUIREMENTS.
3. OBTAIN RETROSHEAR™ LENGTH AND THICKNESS REQUIREMENTS PER EOR.
4. DOUBLE CHECK DRAWINGS FOR RETROSHEAR™ REQUIREMENTS. FINISH PLANE THE GLUE SURFACE OF THE EXISTING TIMBER. LEVEL II TECHNICIANS TO MONITOR PLANING QUALITY. AVOID UNNECESSARY SCOUR.
5. LOCATE, ORGANIZE, AND COUNT INSTALLATION MATERIALS REQUIRED. ENSURE EXTRA SCREWS AND WASHERS ARE AVAILABLE IF NEEDED DURING INSTALLATION.
6. CHECK EQUIPMENT AND TOOLS. HAVE DRILL MOTOR AND BITS ON STANDBY IN THE EVENT NEW HOLES ARE REQUIRED TO REPLACE "SPUN-OUT" SCREWS. ENSURE FLUID LEVELS. TURN ON AND TEST EQUIPMENT PRIOR TO MIXING EPOXY.
7. STAGE KITCHEN STATION ON FLAT TERRAIN, AWAY FROM MOISTURE AND POTENTIAL CONTAMINANTS. IF RAINING, EXTREME CARE SHALL BE TAKEN TO ENSURE EPOXY DOES NOT RECEIVE MOISTURE.
8. CHECK MOISTURE CONTENT READINGS ON GLUE SURFACES TO RECEIVE EPOXY. DO NOT PROCEED WITH RETROFIT IF SURFACE MOISTURE CONTENT IS ABOVE 20%.
9. ONCE ALL PERSONNEL HAVE BEEN GIVEN THE GO AHEAD, THE ASSIGNED COOK SHALL MIX THE FIRST BATCH OF RETROBOND™ EPOXY. USE RETROBOND™ 277B, 275B, OR 273B HARDENER WITH RETROBOND™ 175A RESIN. THE USE OF THE DIFFERENT HARDENERS SHALL BE DETERMINED BE LEVEL II TECHNICIANS AND BASED ON AVAILABILITY, ENVIRONMENTAL CONDITIONS, AND COMPLEXITY OF JOB. START CLOCK.
10. IF CREOSOTED TIMBER, WIPE GLUE FACE WITH CLEAN DRY RAG TO REMOVE THE OILY SURFACE. DO NOT USE SOLVENTS.
11. SPREAD MIXED EPOXY ON BOTH GLUE FACES (RETROSHEAR™ AND EXISTING TIMBER). LEVEL II TECHNICIANS TO MONITOR SPREAD RATE. SQUEEZE OUT SHOULD BE NO LARGER THAN A 6mm BEAD AND NO SMALLER THAN 1.5mm.
12. PLACE RETROSHEAR™ IN PLACE. UNLESS OTHERWISE SPECIFIED BY LEVEL II TECHNICIANS, DRIVE THE CENTER ROW OF SCREWS FIRST, THEN WORK TO TOP AND BOTTOM.
13. CONTINUE DRIVING REMAINING SCREWS WORKING FROM THE CENTER OUT, UNLESS OTHERWISE SPECIFIED.
14. LEVEL II TECHNICIANS TO TRACK AND RECORD ALL APPLICATION DETAILS ALONG WITH MATERIALS QUANTITIES CONSUMED ON AS-BUILT DRAWINGS. **TAKE FINAL PHOTOS.**

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100% DESIGN DRAWINGS

PREPARED FOR:

BOROUGH OF PERKASIE (PA)

SOUTH PERKASIE COVERED BRIDGE

	REASON FOR ISSUANCE:	DRAWN BY:	CHKD BY:	APPR BY:
- 100% DESIGN DRAWINGS	DATE: 05/09/2025	LK		

RETROSHEAR® PANEL DETAIL

DRAWING # 4.0

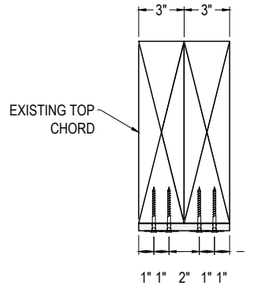
SHEET # 26 OF 42 -

PROJECT #9101S

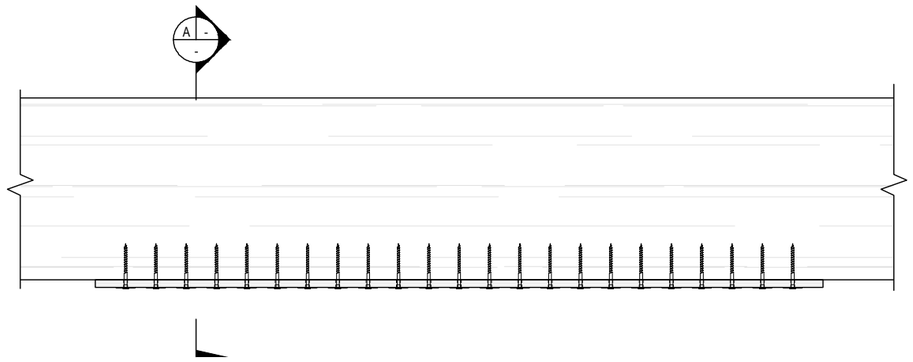
SHEET KEYNOTES

1. RETROSHEAR® PANEL (1" OR 1/2" THICK, AS SPECIFIED)
2. WOOD SCREW - #10 x 3"
3. FENDER WASHER - 1-1/4" OUTSIDE DIA.

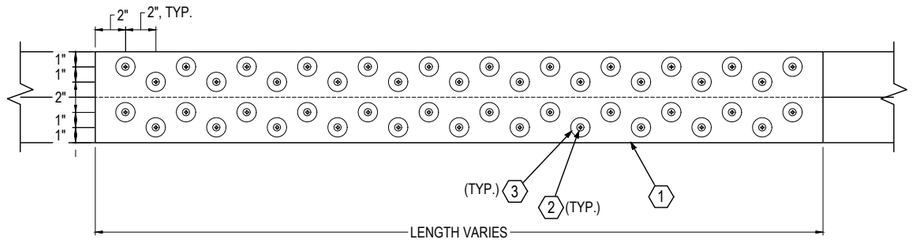
NOTE: REMOVE ALL SCREWS AND FENDER WASHERS AFTER EPOXY CURES. THEN FILL HOLES WITH WOOD PUTTY.



A - SECTION
SCALE: 1:10



RETROSHEAR® PANEL DETAIL - TOP CHORD
SCALE: 1:10



RETROSHEAR™ WORKS SCHEDULE:

1. COMPLETE PRE-RETROFIT MEETING AND ASSIGN TASKS. REVIEW DRAWINGS.
2. CONFIRM ACCESS REQUIREMENTS.
3. OBTAIN RETROSHEAR™ LENGTH AND THICKNESS REQUIREMENTS PER EOR.
4. DOUBLE CHECK DRAWINGS FOR RETROSHEAR™ REQUIREMENTS. FINISH PLANE THE GLUE SURFACE OF THE EXISTING TIMBER. LEVEL II TECHNICIANS TO MONITOR PLANING QUALITY. AVOID UNNECESSARY SCOUR.
5. LOCATE, ORGANIZE, AND COUNT INSTALLATION MATERIALS REQUIRED. ENSURE EXTRA SCREWS AND WASHERS ARE AVAILABLE IF NEEDED DURING INSTALLATION.
6. CHECK EQUIPMENT AND TOOLS. HAVE DRILL MOTOR AND BITS ON STANDBY IN THE EVENT NEW HOLES ARE REQUIRED TO REPLACE "SPUN-OUT" SCREWS. ENSURE FLUID LEVELS. TURN ON AND TEST EQUIPMENT PRIOR TO MIXING EPOXY.
7. STAGE KITCHEN STATION ON FLAT TERRAIN, AWAY FROM MOISTURE AND POTENTIAL CONTAMINANTS. IF RAINING, EXTREME CARE SHALL BE TAKEN TO ENSURE EPOXY DOES NOT RECEIVE MOISTURE.
8. CHECK MOISTURE CONTENT READINGS ON GLUE SURFACES TO RECEIVE EPOXY. DO NOT PROCEED WITH RETROFIT IF SURFACE MOISTURE CONTENT IS ABOVE 20%.
9. ONCE ALL PERSONNEL HAVE BEEN GIVEN THE GO AHEAD, THE ASSIGNED COOK SHALL MIX THE FIRST BATCH OF RETROBOND™ EPOXY. USE RETROBOND™ 277B, 275B, OR 273B HARDENER WITH RETROBOND™ 175A RESIN. THE USE OF THE DIFFERENT HARDENERS SHALL BE DETERMINED BE LEVEL II TECHNICIANS AND BASED ON AVAILABILITY, ENVIRONMENTAL CONDITIONS, AND COMPLEXITY OF JOB. START CLOCK.
10. IF CREOSOTED TIMBER, WIPE GLUE FACE WITH CLEAN DRY RAG TO REMOVE THE OILY SURFACE. DO NOT USE SOLVENTS.
11. SPREAD MIXED EPOXY ON BOTH GLUE FACES (RETROSHEAR™ AND EXISTING TIMBER). LEVEL II TECHNICIANS TO MONITOR SPREAD RATE. SQUEEZE OUT SHOULD BE NO LARGER THAN A 6mm BEAD AND NO SMALLER THAN 1.5mm.
12. PLACE RETROSHEAR™ IN PLACE. UNLESS OTHERWISE SPECIFIED BY LEVEL II TECHNICIANS, DRIVE THE CENTER ROW OF SCREWS FIRST, THEN WORK TO TOP AND BOTTOM.
13. CONTINUE DRIVING REMAINING SCREWS WORKING FROM THE CENTER OUT, UNLESS OTHERWISE SPECIFIED.
14. LEVEL II TECHNICIANS TO TRACK AND RECORD ALL APPLICATION DETAILS ALONG WITH MATERIALS QUANTITIES CONSUMED ON AS-BUILT DRAWINGS. **TAKE FINAL PHOTOS.**

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100% DESIGN DRAWINGS

PREPARED FOR:

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SOUTH PERKASIE COVERED BRIDGE

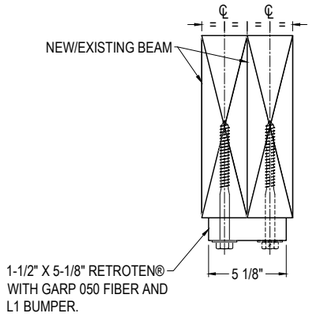
- 100% DESIGN DRAWINGS — 05/09/2025 — LK

TOP CHORD BOTTOM FACE RETROSHEAR® PANEL REPAIR DETAIL

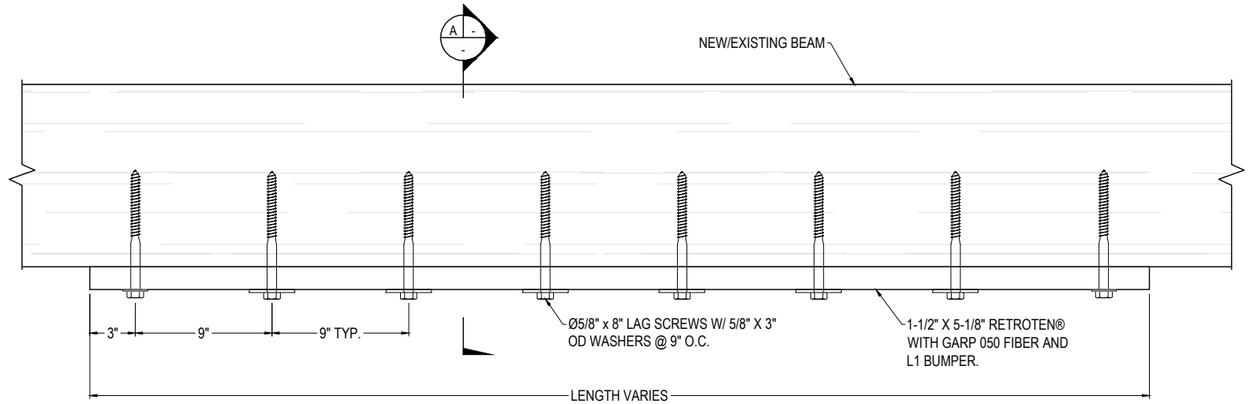
DRAWING # 4.1

SHEET # 27 OF 42 -

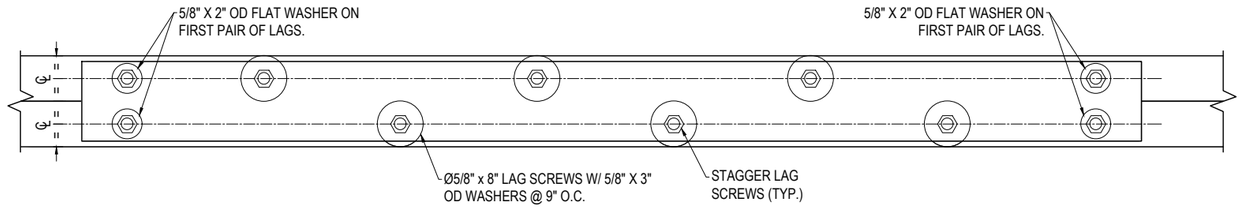
PROJECT #9101S



A - SECTION
SCALE: 1:10



RETROTEN® DETAIL
SCALE: 1:10



RETROTEN® REINFORCEMENT WORKS SCHEDULE:

1. COMPLETE PRE-RETROFIT MEETING AND ASSIGN TASKS. REVIEW DRAWINGS.
2. CONFIRM ACCESS REQUIREMENTS.
3. CONFIRM RETROTEN® PLACEMENT, ADJUST AS NEEDED FOR WEB AND BLOCKING INTERFERENCE.
4. BEGIN TENSION CHORD PREPARATIONS. DOUBLE CHECK DRAWINGS FOR RETROTEN® WIDTH REQUIREMENTS.
5. REMOVE VERTICAL THROUGH BOLTS AS DIRECTED BY EOR.
6. DOUBLE CHECK DRAWINGS FOR RETROTEN® WIDTH REQUIREMENTS. FINISH PLANE THE GLUE SURFACE OF THE TENSION CHORD. LEVEL II TECHNICIANS TO MONITOR PLANING QUALITY. AVOID UNNECESSARY SCOUR.
7. LOCATE, ORGANIZE, AND COUNT INSTALLATION MATERIALS REQUIRED. ENSURE EXTRA SCREWS AND WASHERS ARE AVAILABLE IF NEEDED DURING INSTALLATION.
8. CHECK EQUIPMENT AND TOOLS. HAVE DRILL MOTOR AND BITS ON STANDBY IN THE EVENT NEW HOLES ARE REQUIRED TO REPLACE "SPIN-OUT" LAG SCREWS. ENSURE FLUID LEVELS. TURN ON AND TEST EQUIPMENT PRIOR TO MIXING EPOXY.
9. PLACE LUBRICANT ON THREADS OF LAG BOLTS. DO NOT GET LUBRICANT ON GLUE SURFACES. DO NOT USE WATER BASED LUBRICANT.
10. PRIOR TO SANDING RETROTEN®, DRY PLACE IN POSITION ON TENSION CHORD AND USE AS TEMPLATE TO DRILL PILOT HOLES WORKING FROM THE CENTER OUT. INSTALL LAGS WITH 3" O.D. MINIMUM WASHERS TIGHT BEFORE MOVING TO THE NEXT HOLE. TEST THE TORQUE AND USE THE MAXIMUM TORQUE ATTAINABLE IN THE DRY FIT BEFORE GLUING. THE TARGET IS 175 ft-lbs OR GREATER. IF THE TORQUE VALUE THAT THE WOOD CAN HOLD IS LESS THAN 148 ft-lbs, CALL EOR FOR DIRECTION ON HOW TO PROCEED. BLOW DEBRIS FROM PILOT HOLES WITH COMPRESSED AIR.

    NOTE: DO NOT ADD CN OR SEALER TO PILOT HOLES TO PREVENT CONTAMINATION OF THE RETROFIT BOND.
11. PLANE THE SIDES OF THE TENSION CHORDS WHERE RETROTEN® IS TO BE PLACED AS NEEDED AND PROVIDE TOUCH-UP PLANING AND/OR SANDING ON BOTH SIDES OF RETROTEN® AS REQUIRED. THE RETROTEN® MUST BE CROSS SANDED AT 45 DEGREES (60 DEGREES MAXIMUM) TO THE LONG AXIS USING 40 TO 60 GRIT BELT PAPER. NO GOUGES OR SCORES ARE ACCEPTABLE. HAND SAND SMALL SHINY PATCHES WITH SANDING BLOCK AND 40 TO 60 GRIT SAND PAPER IN CROSS DIRECTION.
12. STAGE KITCHEN STATION ON FLAT TERRAIN, AWAY FROM MOISTURE AND POTENTIAL CONTAMINANTS. IF RAINING, EXTREME CARE SHALL BE TAKEN TO ENSURE EPOXY DOES NOT RECEIVE MOISTURE.
13. CHECK MOISTURE CONTENT READINGS ON GLUE SURFACES TO RECEIVE EPOXY. DO NOT PROCEED WITH RETROFIT IF SURFACE MOISTURE CONTENT IS ABOVE 20%.
14. ONCE ALL PERSONNEL HAVE GIVEN GO AHEAD, THE ASSIGNED COOK SHALL MIX THE FIRST BATCH OF RETROBOND™ EPOXY. USE RETROBOND™ 277B, 275B, OR 273B HARDENER WITH RETROBOND™ 175A RESIN. THE USE OF THE DIFFERENT HARDENERS SHALL BE DETERMINED BY LEVEL II TECHNICIANS AND BASED ON AVAILABILITY, TRACK TIME, ENVIRONMENTAL CONDITIONS, AND COMPLEXITY OF JOB. START CLOCK.
15. SPREAD MIXED EPOXY ON SIDE OF RETROTEN® AND TENSION CHORD. PLACE RETROTEN® IN POSITION.
16. UNLESS OTHERWISE SPECIFIED BY LEVEL II TECHNICIANS, DRIVE THE CENTER LAG SCREW FIRST TO TOUCHING WASHER, DO NOT USE IMPACT GUNS TO TORQUE SCREW. LEVEL II TECHNICIANS TO MONITOR SPREAD RATE, SQUEEZE OUT SHOULD BE NO LARGER THAN A 1/4" BEAD AND NO SMALLER THAN 1/16".
17. CONTINUE DRIVING REMAINING SCREWS WORKING FROM THE CENTER OUT, UNLESS OTHERWISE SPECIFIED.
18. TORQUE LAG SCREWS USING TORQUE WRENCH TO MINIMUM 175 ft-lbs OR VALUE DETERMINED IN STEP 10 ABOVE, STARTING AT THE CENTER OF THE RETROTEN® AND WORKING TO BOTH ENDS. RETURN TO THE STARTING POINT AND RE-TORQUE. RE-TORQUE EVERY 15-MINUTES UNTIL ALL SCREWS CLICK WITHOUT TURNING.
19. LEVEL II TECHNICIANS TO TRACK AND RECORD ALL APPLICATION DETAILS ALONG WITH MATERIALS QUANTITIES CONSUMED ON AS-BUILT DRAWINGS. **TAKE FINAL PHOTOS**.

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PREPARED FOR:

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SOUTH PERKASIE COVERED BRIDGE

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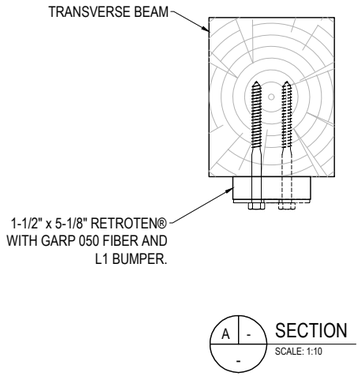
RETROTEN® DETAIL

DRAWING # 4.2

SHEET # 28 OF 42 -

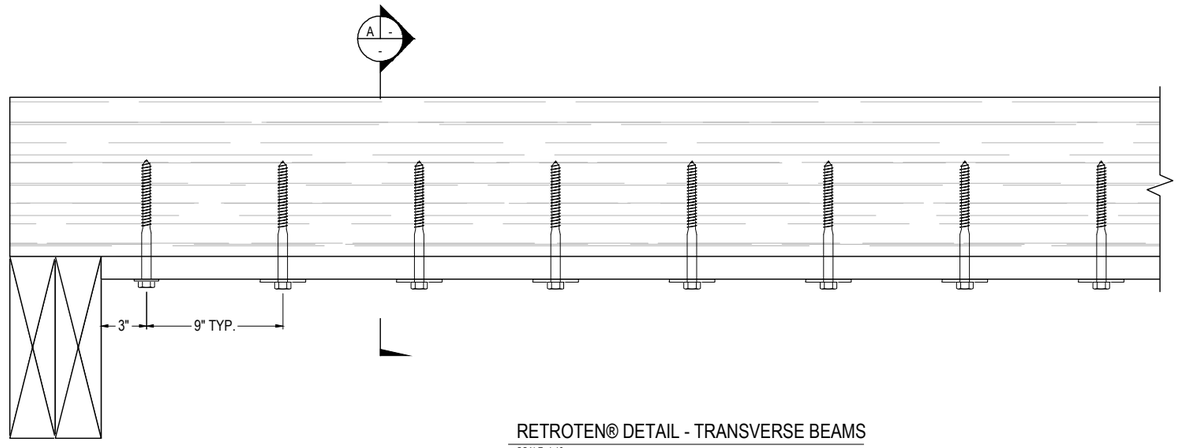
PROJECT #9101S



A - -

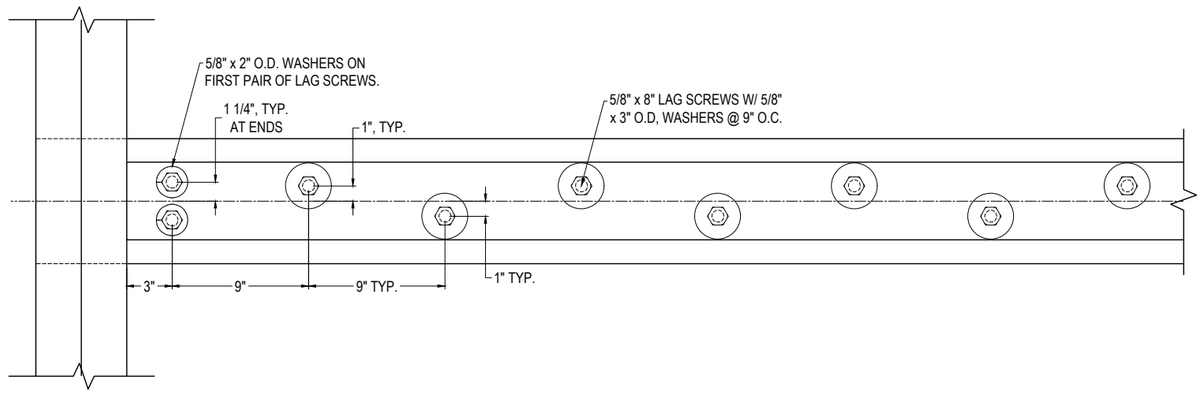
SECTION

SCALE: 1:10



RETROTEN® DETAIL - TRANSVERSE BEAMS

SCALE: 1:10



RETROTEN® REINFORCEMENT WORKS SCHEDULE:

1. COMPLETE PRE-RETROFIT MEETING AND ASSIGN TASKS. REVIEW DRAWINGS.
2. CONFIRM ACCESS REQUIREMENTS.
3. CONFIRM RETROTEN® PLACEMENT, ADJUST AS NEEDED FOR WEB AND BLOCKING INTERFERENCE.
4. BEGIN TENSION CHORD PREPARATIONS. DOUBLE CHECK DRAWINGS FOR RETROTEN® WIDTH REQUIREMENTS.
5. REMOVE VERTICAL THROUGH BOLTS AS DIRECTED BY EOR.
6. DOUBLE CHECK DRAWINGS FOR RETROTEN® WIDTH REQUIREMENTS. FINISH PLANE THE GLUE SURFACE OF THE TENSION CHORD. LEVEL II TECHNICIANS TO MONITOR PLANING QUALITY. AVOID UNNECESSARY SCOUR.
7. LOCATE, ORGANIZE, AND COUNT INSTALLATION MATERIALS REQUIRED. ENSURE EXTRA SCREWS AND WASHERS ARE AVAILABLE IF NEEDED DURING INSTALLATION.
8. CHECK EQUIPMENT AND TOOLS. HAVE DRILL MOTOR AND BITS ON STANDBY IN THE EVENT NEW HOLES ARE REQUIRED TO REPLACE "SPIN-OUT" LAG SCREWS. ENSURE FLUID LEVELS. TURN ON AND TEST EQUIPMENT PRIOR TO MIXING EPOXY.
9. PLACE LUBRICANT ON THREADS OF LAG BOLTS. DO NOT GET LUBRICANT ON GLUE SURFACES. DO NOT USE WATER BASED LUBRICANT.
10. PRIOR TO SANDING RETROTEN®, DRY PLACE IN POSITION ON TENSION CHORD AND USE AS TEMPLATE TO DRILL PILOT HOLES WORKING FROM THE CENTER OUT. INSTALL LAGS WITH 3" O.D. MINIMUM WASHERS TIGHT BEFORE MOVING TO THE NEXT HOLE. TEST THE TORQUE AND USE THE MAXIMUM TORQUE ATTAINABLE IN THE DRY FIT BEFORE GLUING. THE TARGET IS 175 ft-lbs OR GREATER. IF THE TORQUE VALUE THAT THE WOOD CAN HOLD IS LESS THAN 148 ft-lbs, CALL EOR FOR DIRECTION ON HOW TO PROCEED. BLOW DEBRIS FROM PILOT HOLES WITH COMPRESSED AIR.

    NOTE: DO NOT ADD CN OR SEALER TO PILOT HOLES TO PREVENT CONTAMINATION OF THE RETROFIT BOND.
11. PLANE THE SIDES OF THE TENSION CHORDS WHERE RETROTEN® IS TO BE PLACED AS NEEDED AND PROVIDE TOUCH-UP PLANING AND/OR SANDING ON BOTH SIDES OF RETROTEN® AS REQUIRED. THE RETROTEN® MUST BE CROSS SANDED AT 45 DEGREES (60 DEGREES MAXIMUM) TO THE LONG AXIS USING 40 TO 60 GRIT BELT PAPER. NO GOUGES OR SCORES ARE ACCEPTABLE. HAND SAND SMALL SHINY PATCHES WITH SANDING BLOCK AND 40 TO 60 GRIT SAND PAPER IN CROSS DIRECTION.
12. STAGE KITCHEN STATION ON FLAT TERRAIN, AWAY FROM MOISTURE AND POTENTIAL CONTAMINANTS. IF RAINING, EXTREME CARE SHALL BE TAKEN TO ENSURE EPOXY DOES NOT RECEIVE MOISTURE.
13. CHECK MOISTURE CONTENT READINGS ON GLUE SURFACES TO RECEIVE EPOXY. DO NOT PROCEED WITH RETROFIT IF SURFACE MOISTURE CONTENT IS ABOVE 20%.
14. ONCE ALL PERSONNEL HAVE GIVEN GO AHEAD, THE ASSIGNED COOK SHALL MIX THE FIRST BATCH OF RETROBOND™ EPOXY. USE RETROBOND™ 277B, 275B, OR 273B HARDENER WITH RETROBOND™ 175A RESIN. THE USE OF THE DIFFERENT HARDENERS SHALL BE DETERMINED BY LEVEL II TECHNICIANS AND BASED ON AVAILABILITY, TRACK TIME, ENVIRONMENTAL CONDITIONS, AND COMPLEXITY OF JOB. START CLOCK.
15. SPREAD MIXED EPOXY ON SIDE OF RETROTEN® AND TENSION CHORD. PLACE RETROTEN® IN POSITION.
16. UNLESS OTHERWISE SPECIFIED BY LEVEL II TECHNICIANS, DRIVE THE CENTER LAG SCREW FIRST TO TOUCHING WASHER, DO NOT USE IMPACT GUNS TO TORQUE SCREW. LEVEL II TECHNICIANS TO MONITOR SPREAD RATE, SQUEEZE OUT SHOULD BE NO LARGER THAN A 1/4" BEAD AND NO SMALLER THAN 1/16".
17. CONTINUE DRIVING REMAINING SCREWS WORKING FROM THE CENTER OUT, UNLESS OTHERWISE SPECIFIED.
18. TORQUE LAG SCREWS USING TORQUE WRENCH TO MINIMUM 175 ft-lbs OR VALUE DETERMINED IN STEP 10 ABOVE, STARTING AT THE CENTER OF THE RETROTEN® AND WORKING TO BOTH ENDS. RETURN TO THE STARTING POINT AND RE-TORQUE. RE-TORQUE EVERY 15-MINUTES UNTIL ALL SCREWS CLICK WITHOUT TURNING.
19. LEVEL II TECHNICIANS TO TRACK AND RECORD ALL APPLICATION DETAILS ALONG WITH MATERIALS QUANTITIES CONSUMED ON AS-BUILT DRAWINGS. **TAKE FINAL PHOTOS**.

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100% DESIGN DRAWINGS

PREPARED FOR:

BOROUGH OF PERKASIE (PA)

SOUTH PERKASIE COVERED BRIDGE

- 100% DESIGN DRAWINGS — 05/09/2025 — LK

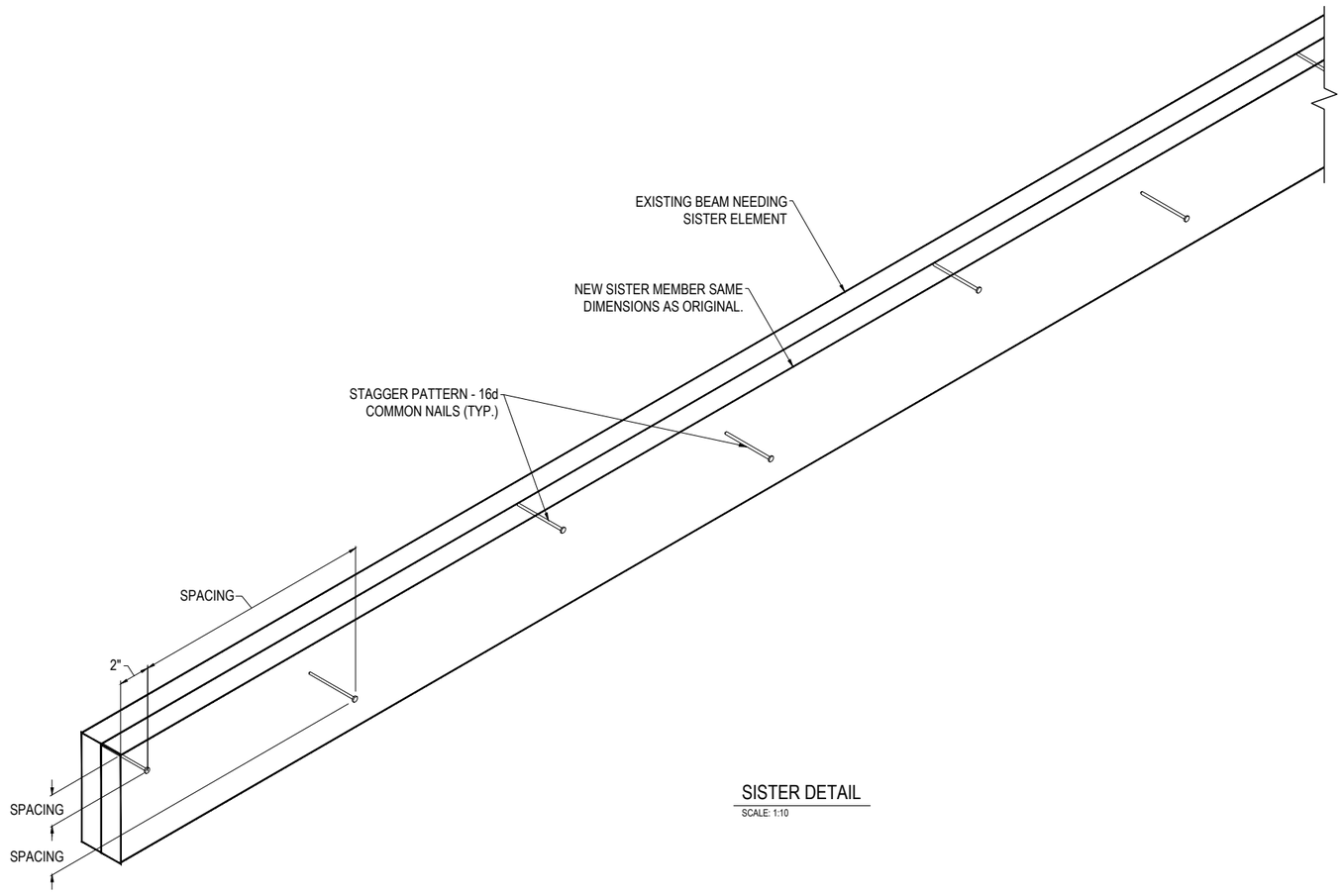
RETROTEN® DETAIL FOR TRANSVERSE BEAMS

DRAWING # 4.3

SHEET # 29 OF 42 -

PROJECT #9101S

NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)



SISTER DETAIL
SCALE: 1:10

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100% DESIGN DRAWINGS

PREPARED FOR:

BOROUGH OF PERKASIE (PA)

SOUTH PERKASIE COVERED BRIDGE

	REASON FOR ISSUANCE:	DATE:	DRAWN BY:	CHKD BY:	APPR BY:
-	100% DESIGN DRAWINGS	05/09/2025	LK		

SISTER DETAIL

DRAWING # 4.4

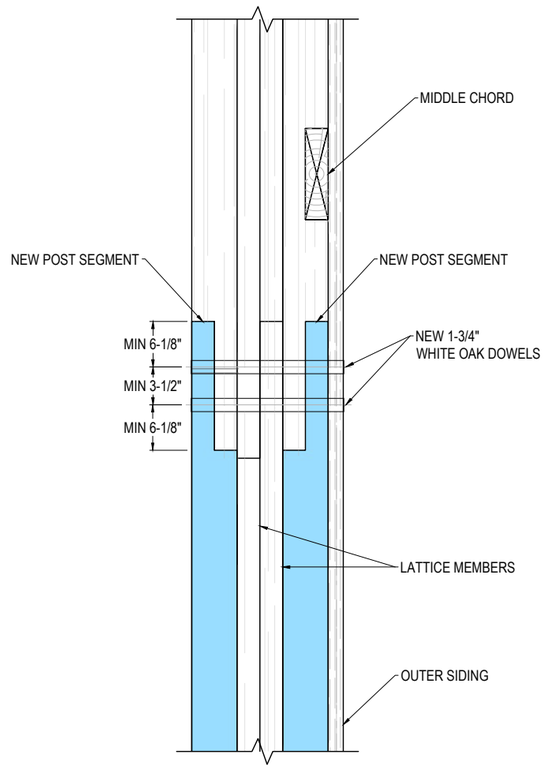
SHEET # 30 OF 42 -

PROJECT #9101S

NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT



POSTING DETAIL
SCALE: 1:10

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SOUTH PERKASIE COVERED BRIDGE

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POSTING DETAIL

DRAWING # 4.5

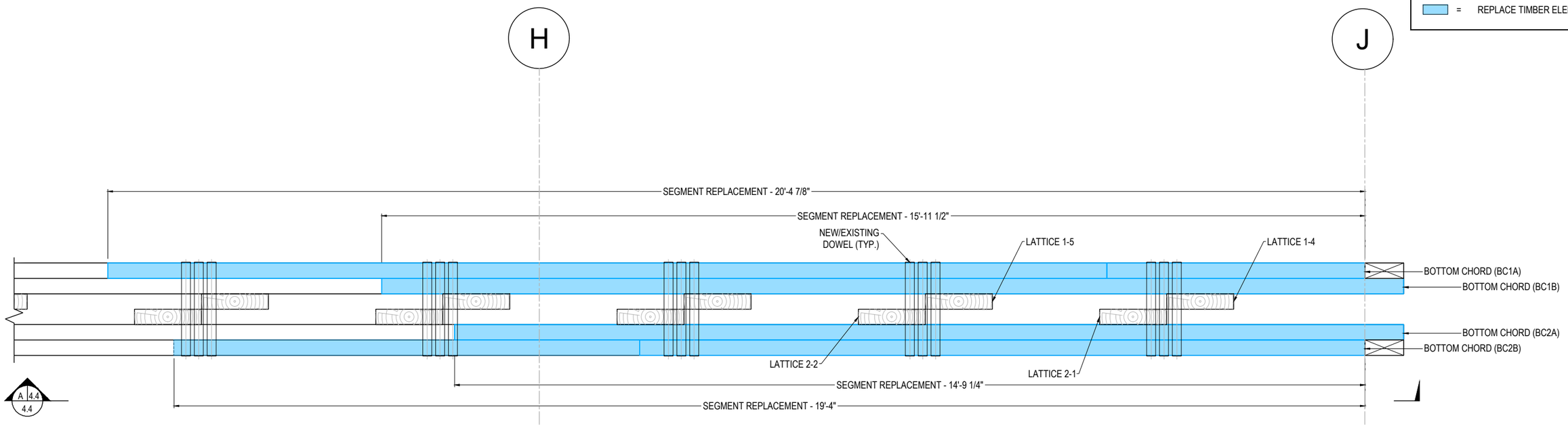
SHEET # 31 OF 42 -

PROJECT #9101S

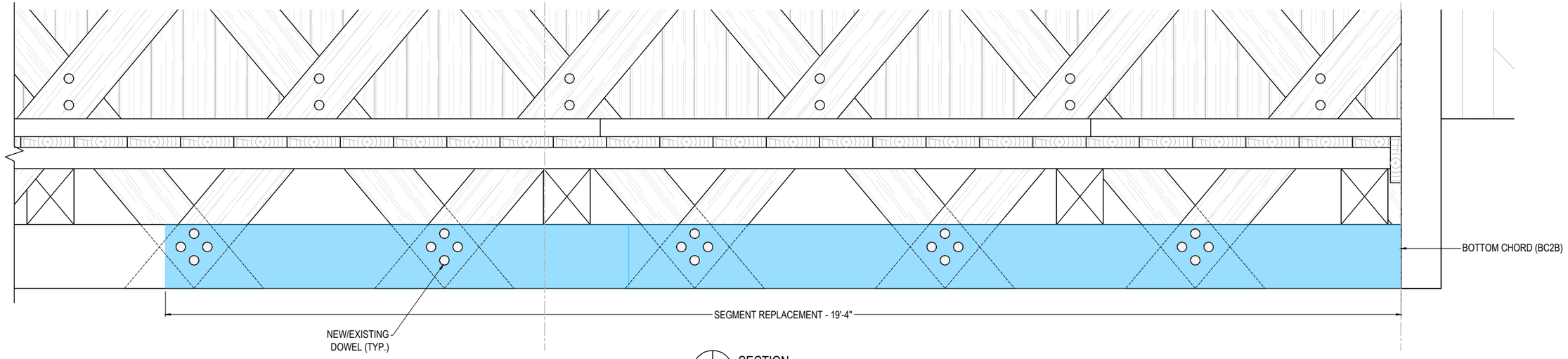
NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)

REPAIR COLOR LEGEND:

= REPLACE TIMBER ELEMENT



1 4.4 / 1.12 BOTTOM CHORD SEGMENT REPLACEMENT DETAIL
SCALE: 1:20



A 4.4 / 4.4 SECTION
SCALE: 1:20

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PREPARED FOR:

BOROUGH OF PERKASIE (PA)

SOUTH PERKASIE COVERED BRIDGE

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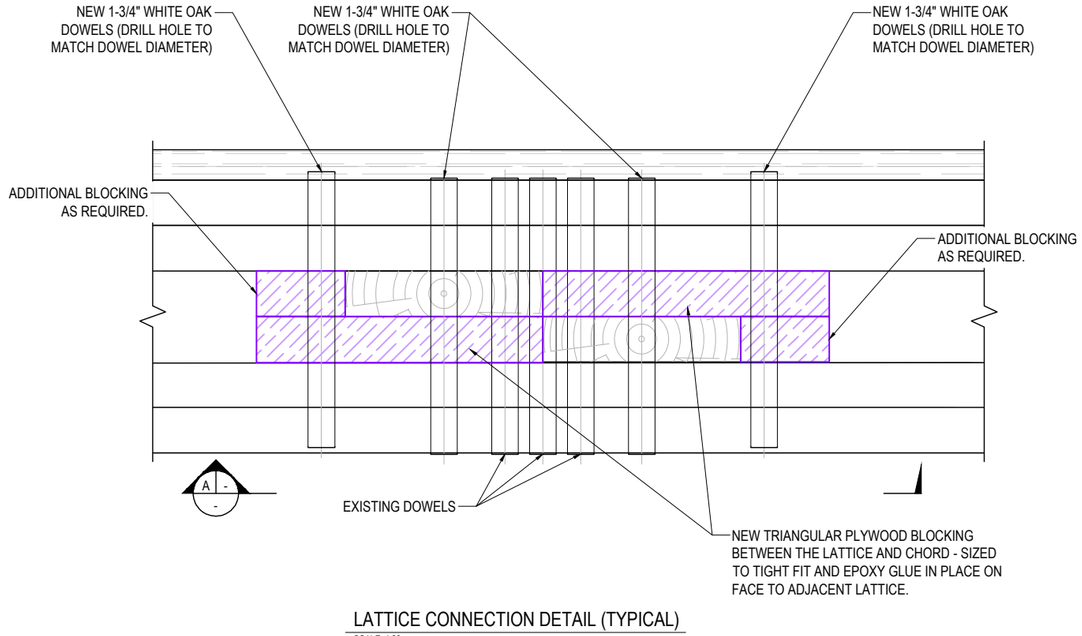
BOTTOM CHORD SEGMENT REPLACEMENT DETAIL

DRAWING # 4.6

SHEET # 32 OF 42 -

PROJECT #9101S

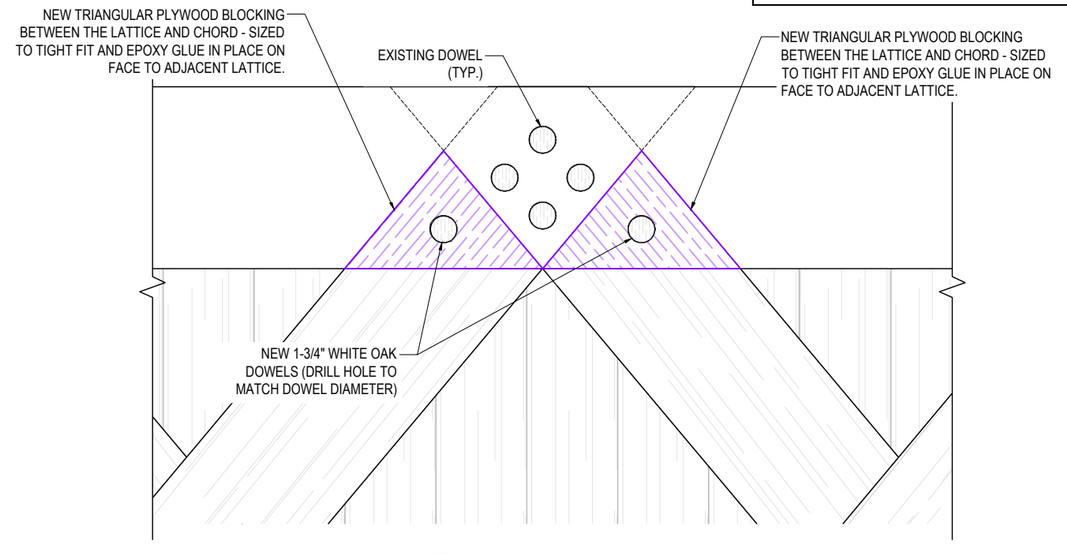


LATTICE CONNECTION DETAIL (TYPICAL)
SCALE: 1:20

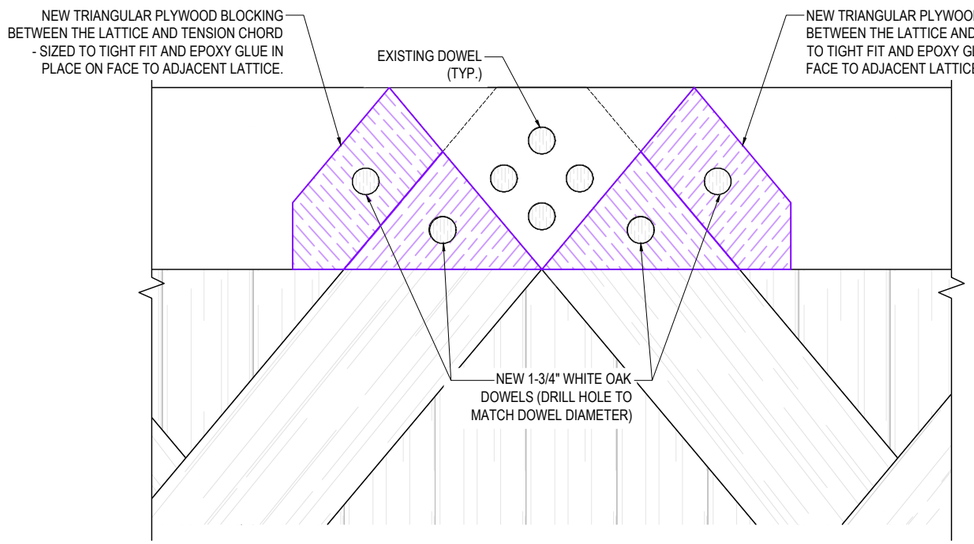
NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)

REPAIR COLOR LEGEND:

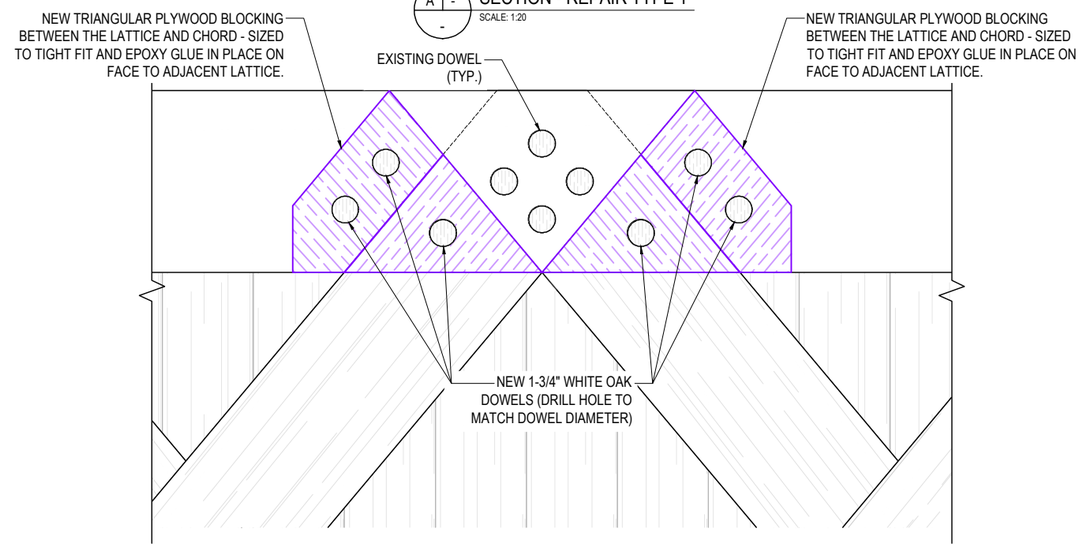
= NEW PLYWOOD BLOCKING



A - SECTION - REPAIR TYPE 1
SCALE: 1:20



A - SECTION - REPAIR TYPE 2
SCALE: 1:20



A - SECTION - REPAIR TYPE 3
SCALE: 1:20

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BOROUGH OF PERKASIE (PA)

SOUTH PERKASIE COVERED BRIDGE

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	REASON FOR ISSUANCE: DATE:			
	REASON FOR ISSUANCE: DATE:			
	REASON FOR ISSUANCE: DATE:			

LATTICE CONNECTION REPAIR DETAILS (TYPICAL)

DRAWING # 5.0

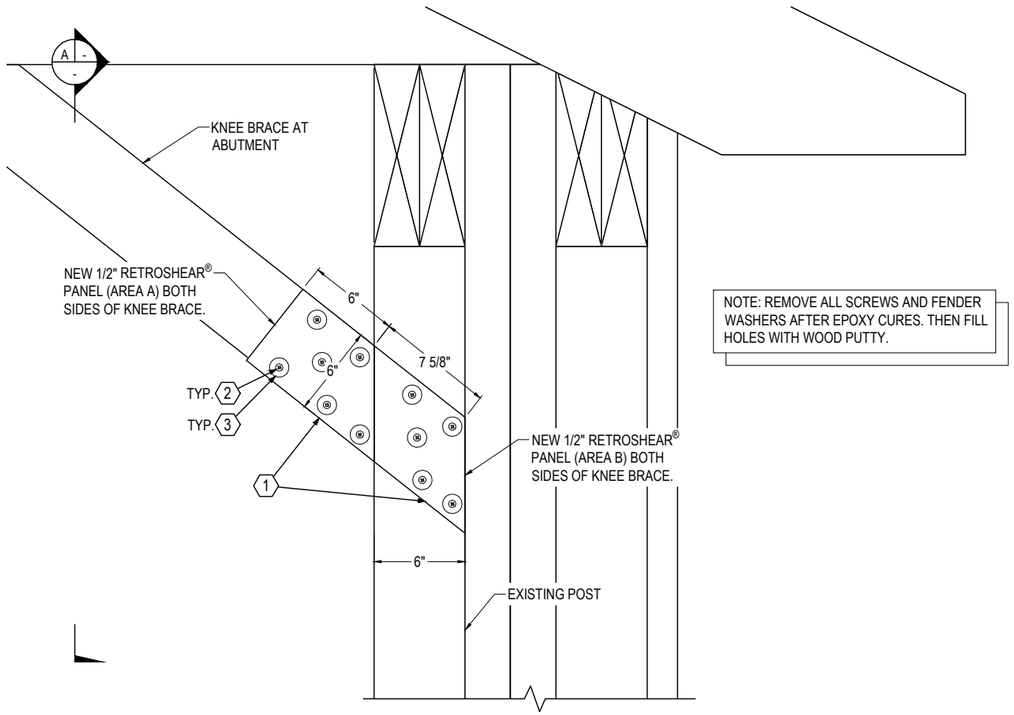
SHEET # 33 OF 42 -

PROJECT #9101S

NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)

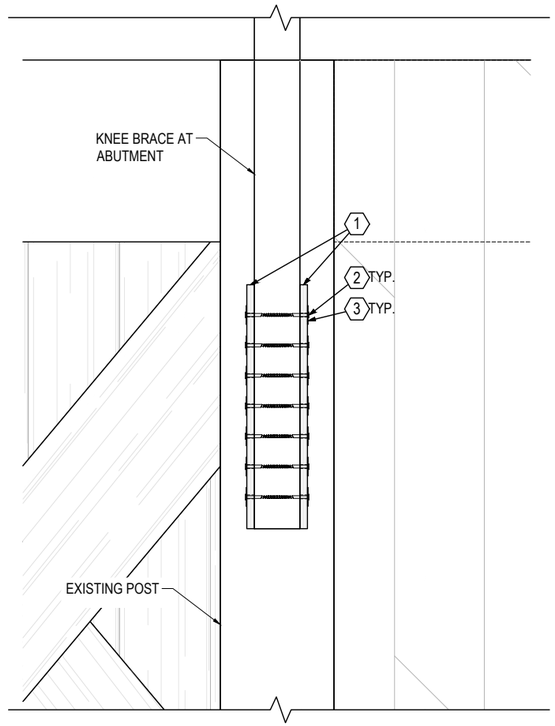
SHEET KEYNOTES

1. RETROSHEAR® PANEL (1" OR 1/2" THICK, AS SPECIFIED)
2. WOOD SCREW - #10 x 3"
3. FENDER WASHER - 1-1/4" OUTSIDE DIA.



NOTE: REMOVE ALL SCREWS AND FENDER WASHERS AFTER EPOXY CURES. THEN FILL HOLES WITH WOOD PUTTY.

KNEE BRACE AT ABUTMENTS REPAIR DETAIL
SCALE: 1:20



A - / - SECTION
SCALE: 1:30

RETROSHEAR™ WORKS SCHEDULE:

1. COMPLETE PRE-RETROFIT MEETING AND ASSIGN TASKS. REVIEW DRAWINGS.
2. CONFIRM ACCESS REQUIREMENTS.
3. OBTAIN RETROSHEAR™ LENGTH AND THICKNESS REQUIREMENTS PER EOR.
4. DOUBLE CHECK DRAWINGS FOR RETROSHEAR™ REQUIREMENTS. FINISH PLANE THE GLUE SURFACE OF THE EXISTING TIMBER. LEVEL II TECHNICIANS TO MONITOR PLANING QUALITY. AVOID UNNECESSARY SCOUR.
5. LOCATE, ORGANIZE, AND COUNT INSTALLATION MATERIALS REQUIRED. ENSURE EXTRA SCREWS AND WASHERS ARE AVAILABLE IF NEEDED DURING INSTALLATION.
6. CHECK EQUIPMENT AND TOOLS. HAVE DRILL MOTOR AND BITS ON STANDBY IN THE EVENT NEW HOLES ARE REQUIRED TO REPLACE "SPUN-OUT" SCREWS. ENSURE FLUID LEVELS. TURN ON AND TEST EQUIPMENT PRIOR TO MIXING EPOXY.
7. STAGE KITCHEN STATION ON FLAT TERRAIN, AWAY FROM MOISTURE AND POTENTIAL CONTAMINANTS. IF RAINING, EXTREME CARE SHALL BE TAKEN TO ENSURE EPOXY DOES NOT RECEIVE MOISTURE.
8. CHECK MOISTURE CONTENT READINGS ON GLUE SURFACES TO RECEIVE EPOXY. DO NOT PROCEED WITH RETROFIT IF SURFACE MOISTURE CONTENT IS ABOVE 20%.
9. ONCE ALL PERSONNEL HAVE BEEN GIVEN THE GO AHEAD, THE ASSIGNED COOK SHALL MIX THE FIRST BATCH OF RETROBOND™ EPOXY. USE RETROBOND™ 277B, 275B, OR 273B HARDENER WITH RETROBOND™ 175A RESIN. THE USE OF THE DIFFERENT HARDENERS SHALL BE DETERMINED BE LEVEL II TECHNICIANS AND BASED ON AVAILABILITY, ENVIRONMENTAL CONDITIONS, AND COMPLEXITY OF JOB. START CLOCK.
10. IF CREOSOTED TIMBER, WIPE GLUE FACE WITH CLEAN DRY RAG TO REMOVE THE OILY SURFACE. DO NOT USE SOLVENTS.
11. SPREAD MIXED EPOXY ON BOTH GLUE FACES (RETROSHEAR™ AND EXISTING TIMBER). LEVEL II TECHNICIANS TO MONITOR SPREAD RATE. SQUEEZE OUT SHOULD BE NO LARGER THAN A 6mm BEAD AND NO SMALLER THAN 1.5mm.
12. PLACE RETROSHEAR™ IN PLACE. UNLESS OTHERWISE SPECIFIED BY LEVEL II TECHNICIANS, DRIVE THE CENTER ROW OF SCREWS FIRST, THEN WORK TO TOP AND BOTTOM.
13. CONTINUE DRIVING REMAINING SCREWS WORKING FROM THE CENTER OUT, UNLESS OTHERWISE SPECIFIED.
14. LEVEL II TECHNICIANS TO TRACK AND RECORD ALL APPLICATION DETAILS ALONG WITH MATERIALS QUANTITIES CONSUMED ON AS-BUILT DRAWINGS. **TAKE FINAL PHOTOS.**

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100% DESIGN DRAWINGS

PREPARED FOR:

BOROUGH OF PERKASIE (PA)

SOUTH PERKASIE COVERED BRIDGE

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KNEE BRACE AT ABUTMENTS REPAIR DETAIL

DRAWING # 5.1

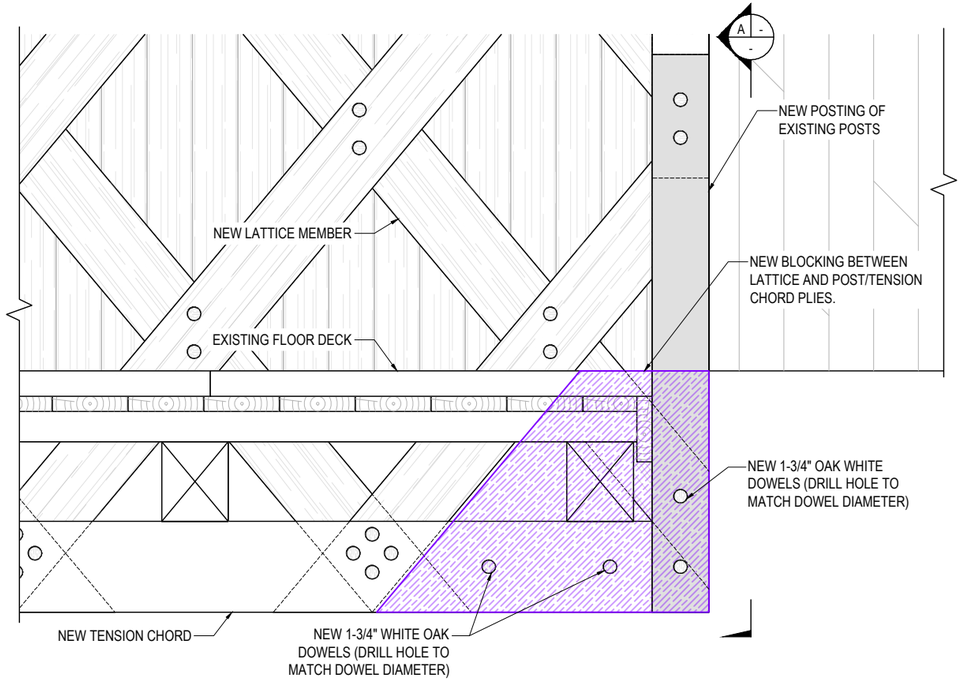
SHEET # 34 OF 42 -

PROJECT #9101S

NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)

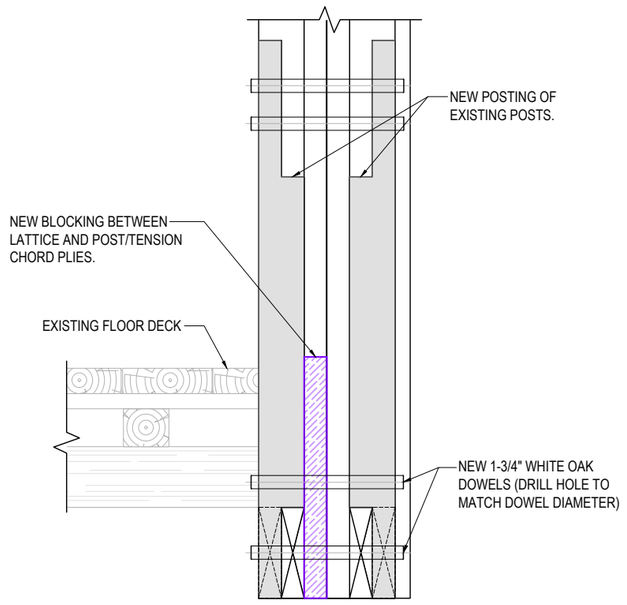
REPAIR COLOR LEGEND:

= NEW PLYWOOD BLOCKING



POST REPAIR - BLOCKING BETWEEN LATTICE & POST/TENSION CHORD

SCALE: 1:20



A - - SECTION

SCALE: 1:30

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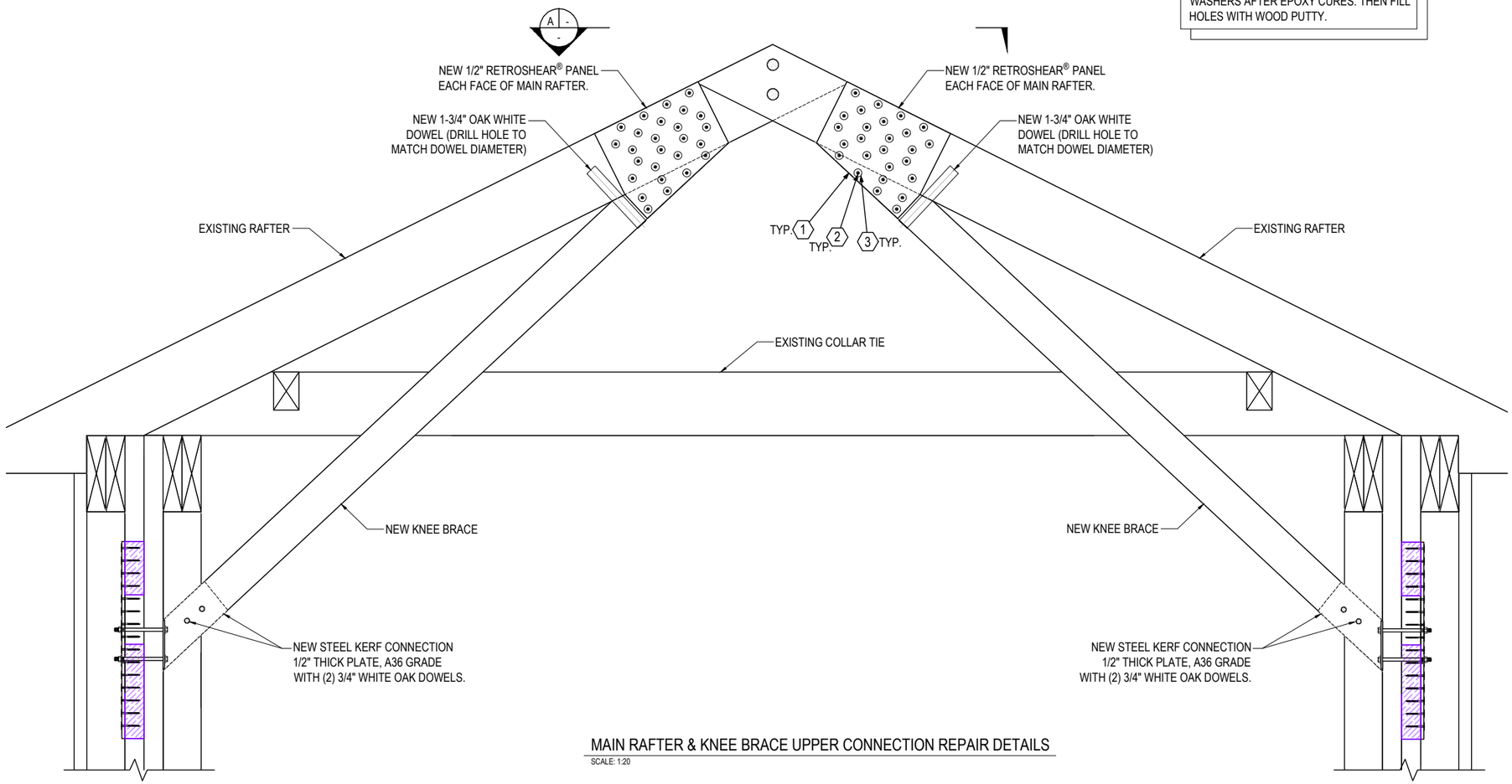
POST REPAIR BLOCKING BETWEEN LATTICE & POST/TENSION CHORD

DRAWING # 5.2

SHEET # 35 OF 42 -

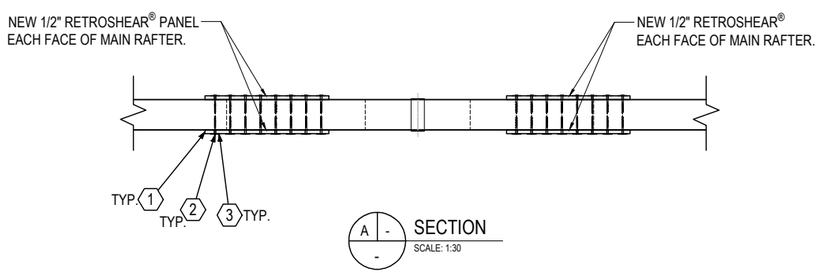
PROJECT #9101S

NOTE: REMOVE ALL SCREWS AND FENDER WASHERS AFTER EPOXY CURES. THEN FILL HOLES WITH WOOD PUTTY.



MAIN RAFTER & KNEE BRACE UPPER CONNECTION REPAIR DETAILS

SCALE: 1:20



NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)

SHEET KEYNOTES

1. RETROSHEAR® PANEL (1" OR 1/2" THICK, AS SPECIFIED)
2. WOOD SCREW - #10 x 2-1/2"
3. FENDER WASHER - 1-1/4" OUTSIDE DIA.

REPAIR COLOR LEGEND:

= NEW PLYWOOD BLOCKING

RETROSHEAR™ WORKS SCHEDULE:

1. COMPLETE PRE-RETROFIT MEETING AND ASSIGN TASKS. REVIEW DRAWINGS.
2. CONFIRM ACCESS REQUIREMENTS.
3. OBTAIN RETROSHEAR™ LENGTH AND THICKNESS REQUIREMENTS PER EOR.
4. DOUBLE CHECK DRAWINGS FOR RETROSHEAR™ REQUIREMENTS. FINISH PLANE THE GLUE SURFACE OF THE EXISTING TIMBER. LEVEL II TECHNICIANS TO MONITOR PLANING QUALITY. AVOID UNNECESSARY SCOUR.
5. LOCATE, ORGANIZE, AND COUNT INSTALLATION MATERIALS REQUIRED. ENSURE EXTRA SCREWS AND WASHERS ARE AVAILABLE IF NEEDED DURING INSTALLATION.
6. CHECK EQUIPMENT AND TOOLS. HAVE DRILL MOTOR AND BITS ON STANDBY IN THE EVENT NEW HOLES ARE REQUIRED TO REPLACE "SPUN-OUT" SCREWS. ENSURE FLUID LEVELS. TURN ON AND TEST EQUIPMENT PRIOR TO MIXING EPOXY.
7. STAGE KITCHEN STATION ON FLAT TERRAIN, AWAY FROM MOISTURE AND POTENTIAL CONTAMINANTS. IF RAINING, EXTREME CARE SHALL BE TAKEN TO ENSURE EPOXY DOES NOT RECEIVE MOISTURE.
8. CHECK MOISTURE CONTENT READINGS ON GLUE SURFACES TO RECEIVE EPOXY. DO NOT PROCEED WITH RETROFIT IF SURFACE MOISTURE CONTENT IS ABOVE 20%.
9. ONCE ALL PERSONNEL HAVE BEEN GIVEN THE GO AHEAD, THE ASSIGNED COOK SHALL MIX THE FIRST BATCH OF RETROBOND™ EPOXY. USE RETROBOND™ 277B, 275B, OR 273B HARDENER WITH RETROBOND™ 175A RESIN. THE USE OF THE DIFFERENT HARDENERS SHALL BE DETERMINED BE LEVEL II TECHNICIANS AND BASED ON AVAILABILITY, ENVIRONMENTAL CONDITIONS, AND COMPLEXITY OF JOB. START CLOCK.
10. IF CREOSOTED TIMBER, WIPE GLUE FACE WITH CLEAN DRY RAG TO REMOVE THE OILY SURFACE. DO NOT USE SOLVENTS.
11. SPREAD MIXED EPOXY ON BOTH GLUE FACES (RETROSHEAR™ AND EXISTING TIMBER). LEVEL II TECHNICIANS TO MONITOR SPREAD RATE. SQUEEZE OUT SHOULD BE NO LARGER THAN A 6mm BEAD AND NO SMALLER THAN 1.5mm.
12. PLACE RETROSHEAR™ IN PLACE. UNLESS OTHERWISE SPECIFIED BY LEVEL II TECHNICIANS, DRIVE THE CENTER ROW OF SCREWS FIRST, THEN WORK TO TOP AND BOTTOM.
13. CONTINUE DRIVING REMAINING SCREWS WORKING FROM THE CENTER OUT, UNLESS OTHERWISE SPECIFIED.
14. LEVEL II TECHNICIANS TO TRACK AND RECORD ALL APPLICATION DETAILS ALONG WITH MATERIALS QUANTITIES CONSUMED ON AS-BUILT DRAWINGS. **TAKE FINAL PHOTOS.**

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100% DESIGN DRAWINGS

PREPARED FOR:

BOROUGH OF PERKASIE (PA)

SOUTH PERKASIE COVERED BRIDGE

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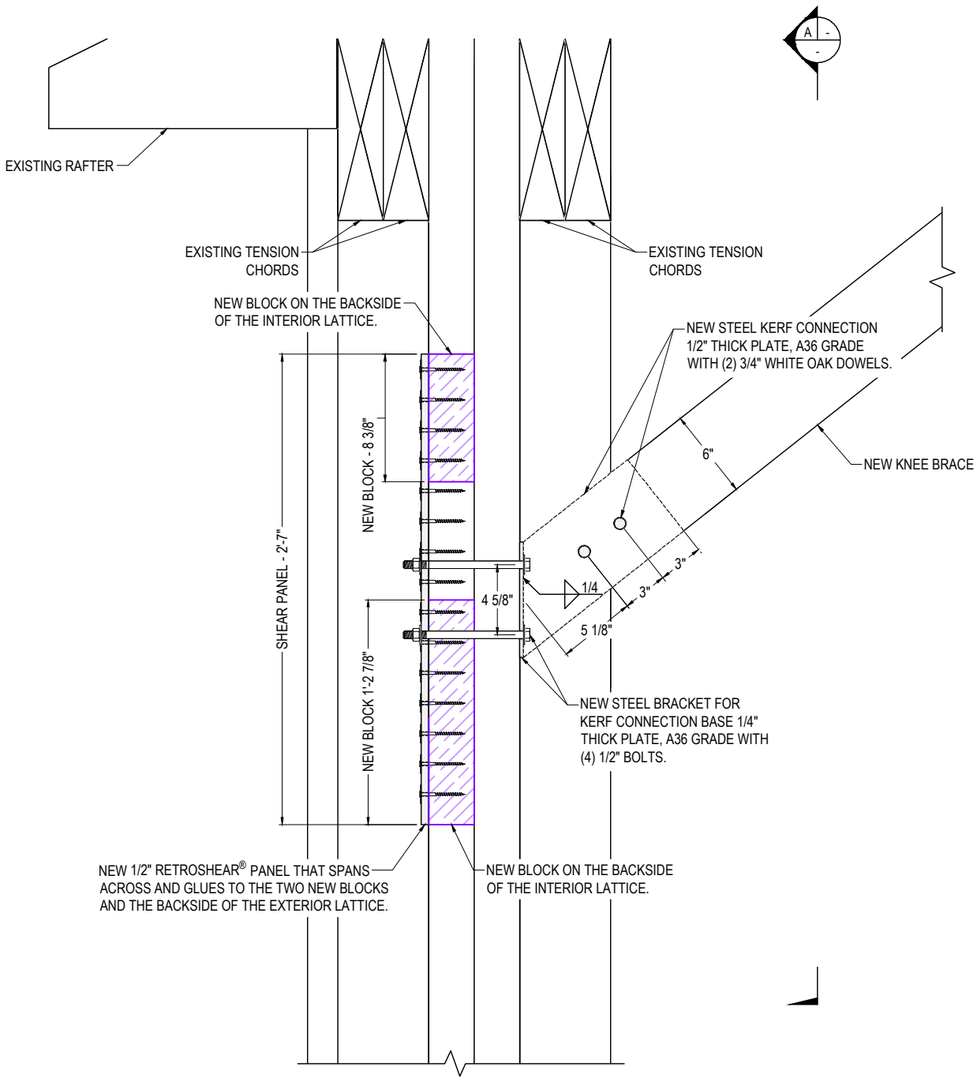
-	100% DESIGN DRAWINGS	05/09/2025	LK		

MAIN RAFTER & KNEE BRACE UPPER CONNECTION REPAIR DETAILS

DRAWING # 5.3

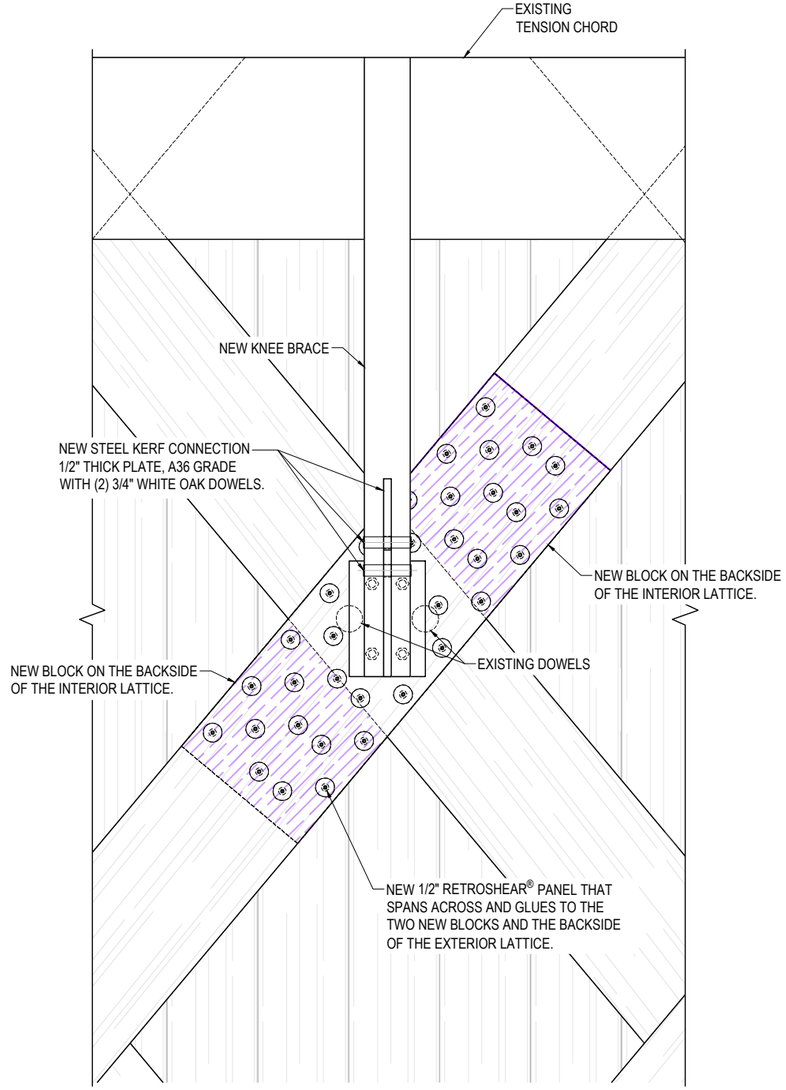
SHEET # 36 OF 42 -

PROJECT #9101S



KNEE BRACE LOWER CONNECTION REPAIR DETAIL (TYPICAL)

SCALE: 1:20



A - - SECTION

SCALE: 1:30

NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)

REPAIR COLOR LEGEND:

= NEW PLYWOOD BLOCKING

RETROSHEAR™ WORKS SCHEDULE:

1. COMPLETE PRE-RETROFIT MEETING AND ASSIGN TASKS. REVIEW DRAWINGS.
2. CONFIRM ACCESS REQUIREMENTS.
3. OBTAIN RETROSHEAR™ LENGTH AND THICKNESS REQUIREMENTS PER EOR.
4. DOUBLE CHECK DRAWINGS FOR RETROSHEAR™ REQUIREMENTS. FINISH PLANE THE GLUE SURFACE OF THE EXISTING TIMBER. LEVEL II TECHNICIANS TO MONITOR PLANING QUALITY. AVOID UNNECESSARY SCOUR.
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6. CHECK EQUIPMENT AND TOOLS. HAVE DRILL MOTOR AND BITS ON STANDBY IN THE EVENT NEW HOLES ARE REQUIRED TO REPLACE "SPUN-OUT" SCREWS. ENSURE FLUID LEVELS. TURN ON AND TEST EQUIPMENT PRIOR TO MIXING EPOXY.
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12. PLACE RETROSHEAR™ IN PLACE. UNLESS OTHERWISE SPECIFIED BY LEVEL II TECHNICIANS, DRIVE THE CENTER ROW OF SCREWS FIRST, THEN WORK TO TOP AND BOTTOM.
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100% DESIGN DRAWINGS

PREPARED FOR:

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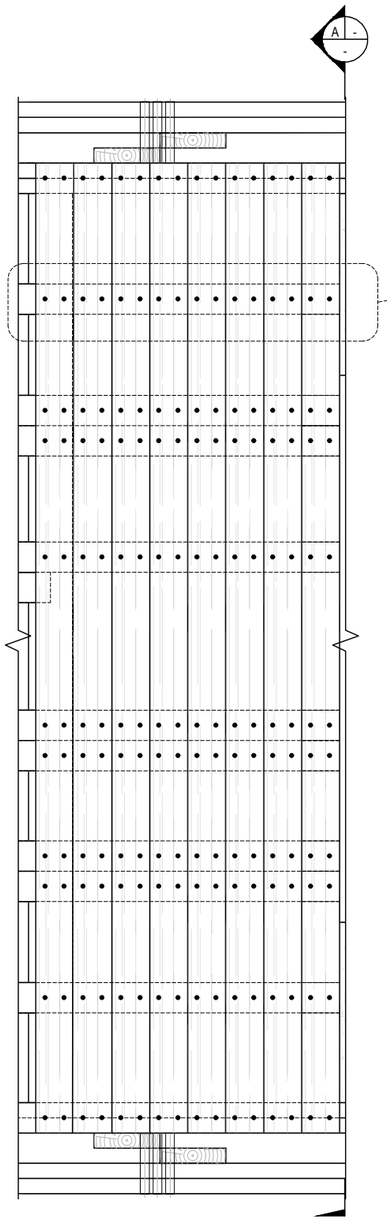
KNEE BRACE LOWER CONNECTION REPAIR DETAIL (TYPICAL)

DRAWING # 5.4

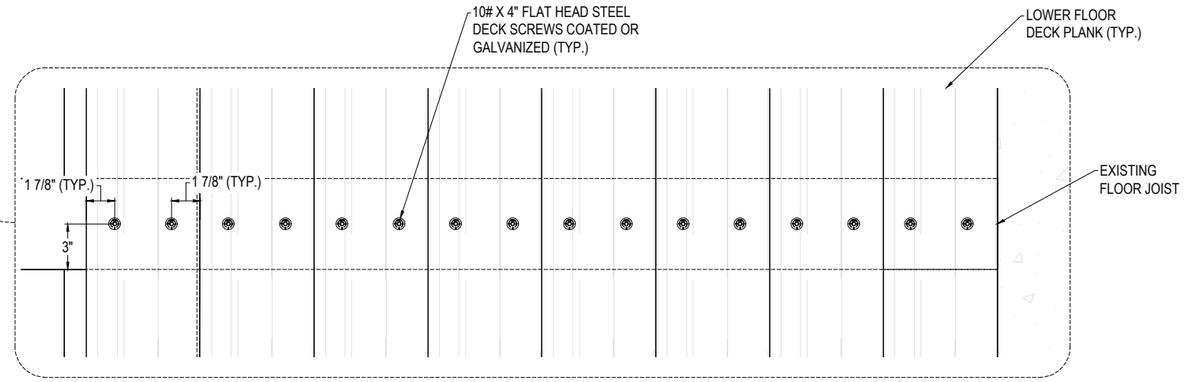
SHEET # 37 OF 42 -

PROJECT #9101S

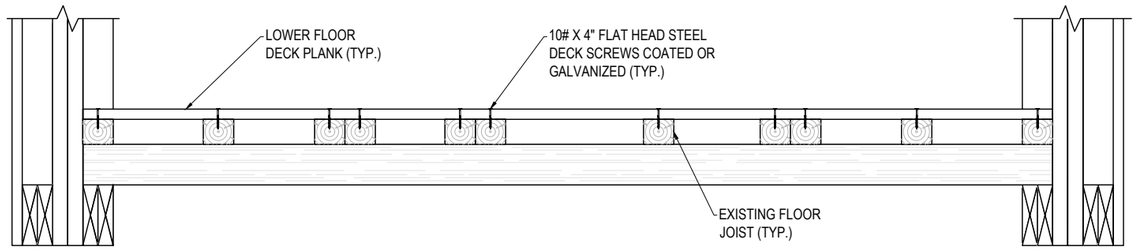
NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)



LOWER FLOOR DECK CONNECTION DETAIL PER BAY (TYPICAL)
SCALE: 1:30



SCREW PATTER DETAIL (TYPICAL)
SCALE: 1:20



A - -
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SCALE: 1:30

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PREPARED FOR:

BOROUGH OF PERKASIE (PA)

SOUTH PERKASIE COVERED BRIDGE

- 100% DESIGN DRAWINGS — 05/09/2025 — LK

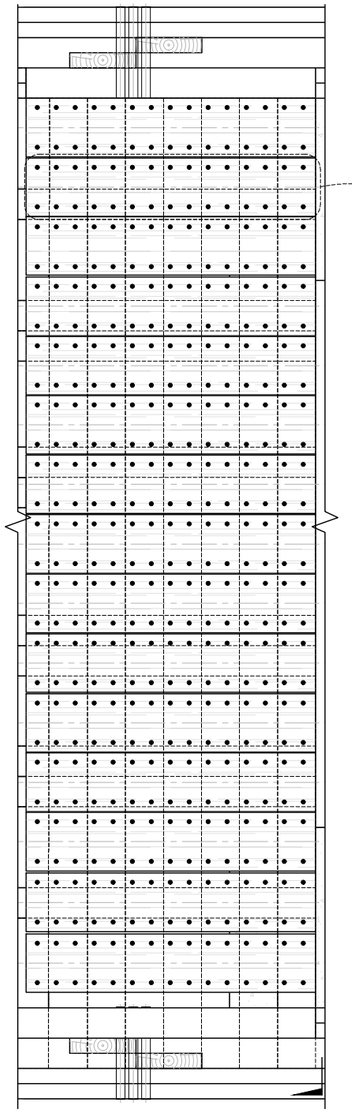
LOWER FLOOR DECK CONNECTION PER BAY DETAIL (TYPICAL)

DRAWING # 5.5

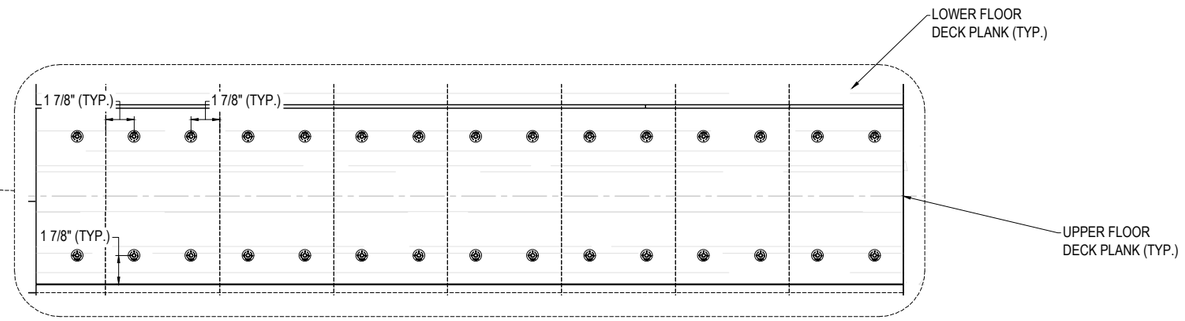
SHEET # 38 OF 42 -

PROJECT #9101S

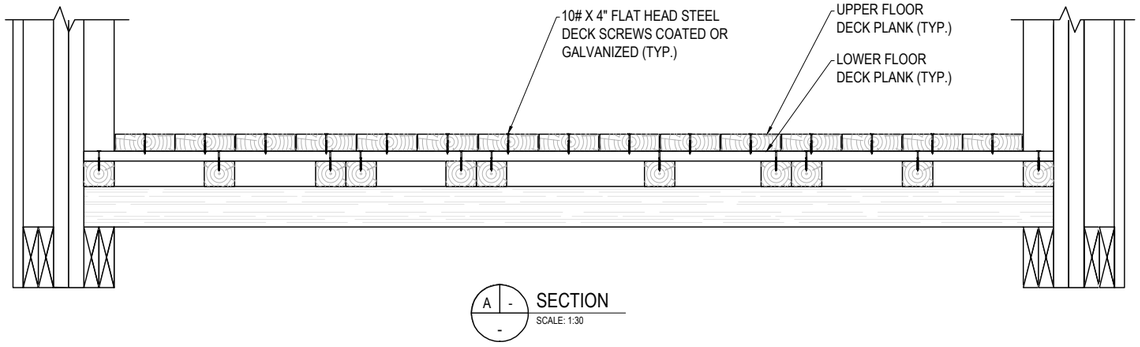
NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)



UPPER FLOOR DECK CONNECTION DETAIL PER BAY (TYPICAL)
SCALE: 1:30



SCREW PATTER DETAIL (TYPICAL)
SCALE: 1:20



A - SECTION
SCALE: 1:30

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REASON FOR ISSUANCE:	DATE:	DRAWN BY	CHKD BY	APPR BY
REASON FOR ISSUANCE:	DATE:	DRAWN BY	CHKD BY	APPR BY
REASON FOR ISSUANCE:	DATE:	DRAWN BY	CHKD BY	APPR BY

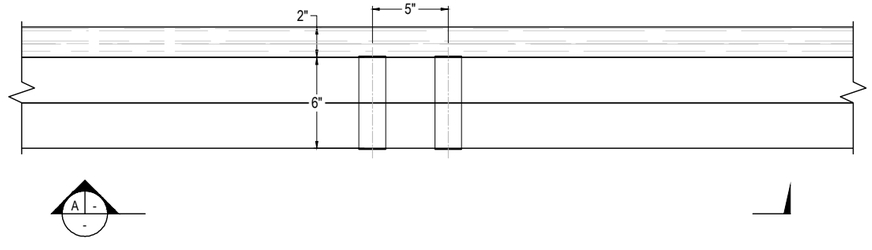
UPPER FLOOR DECK CONNECTION DETAIL PER BAY (TYPICAL)

DRAWING # 5.6

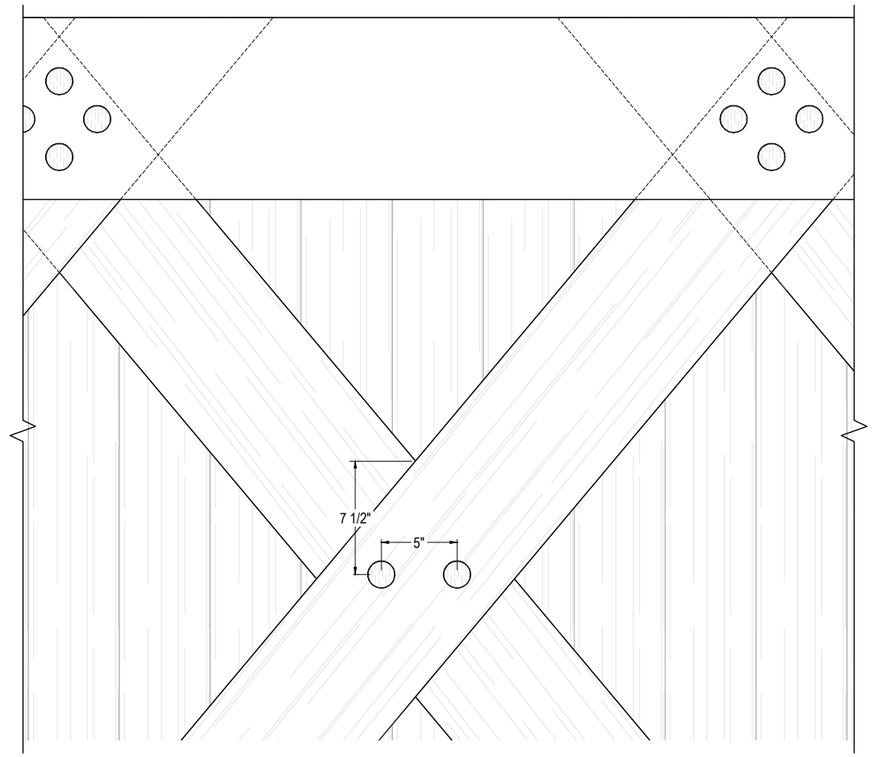
SHEET # 39 OF 42 -

PROJECT #9101S

NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)



INTERMEDIATE LATTICE CONNECTION DETAIL (TYPICAL)
SCALE: 1:20



A - SECTION
- SCALE: 1:20

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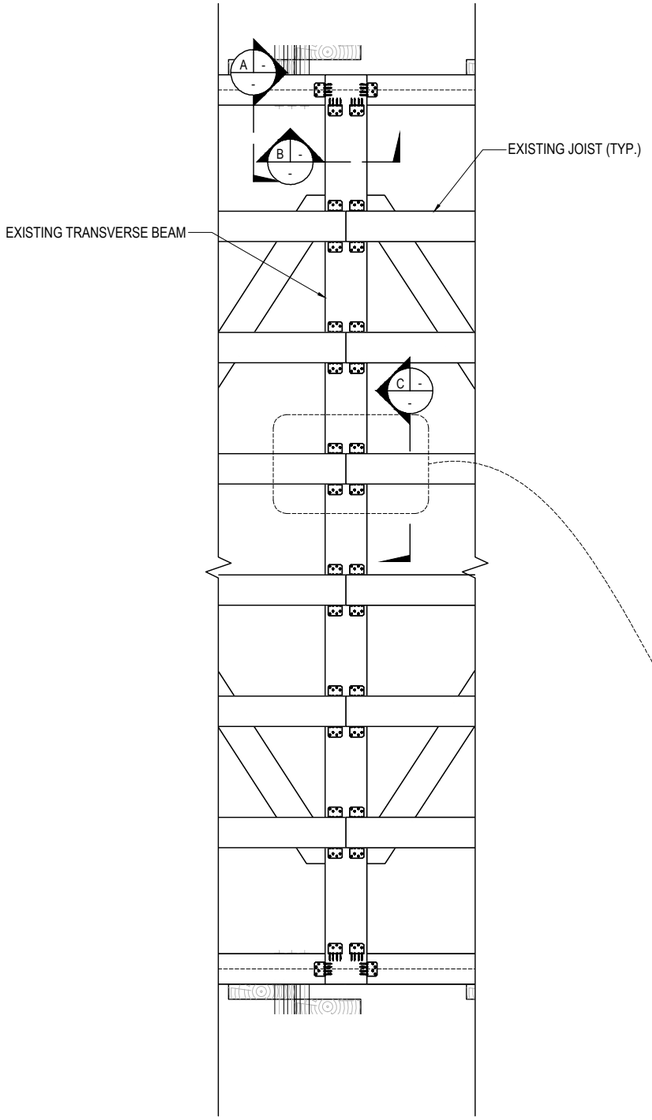
INTERMEDIATE LATTICE CONNECTION DETAIL

DRAWING # 5.7

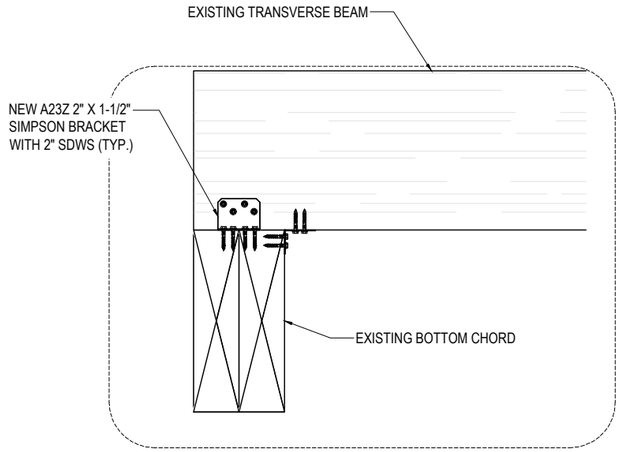
SHEET # 40 OF 42 -

PROJECT #9101S

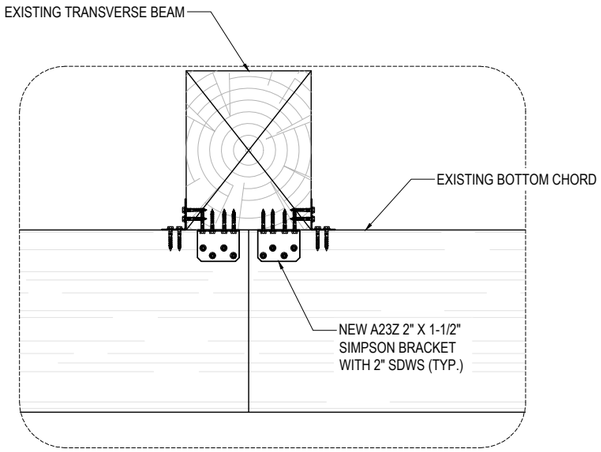
NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)



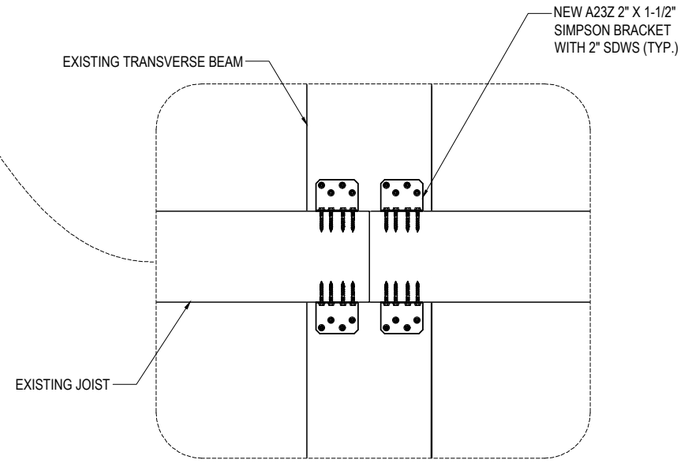
JOIST TO TRANSVERSE BEAM CONNECTION DETAILS (TYPICAL)
SCALE: 1:20

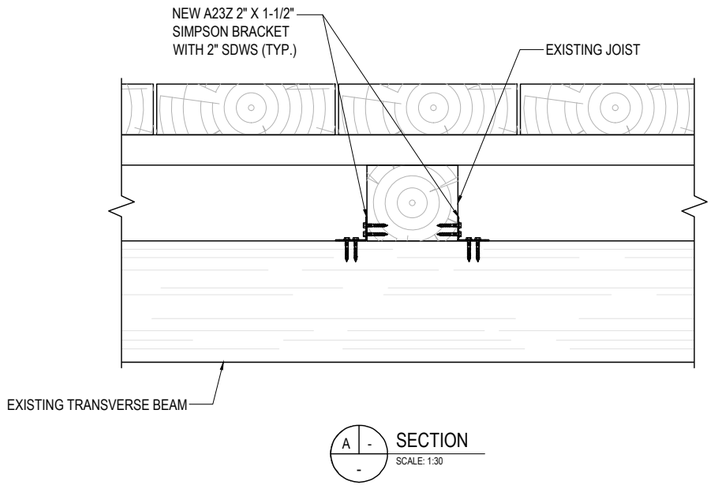


A - SECTION
SCALE: 1:30



B - SECTION
SCALE: 1:30





A - SECTION
SCALE: 1:30

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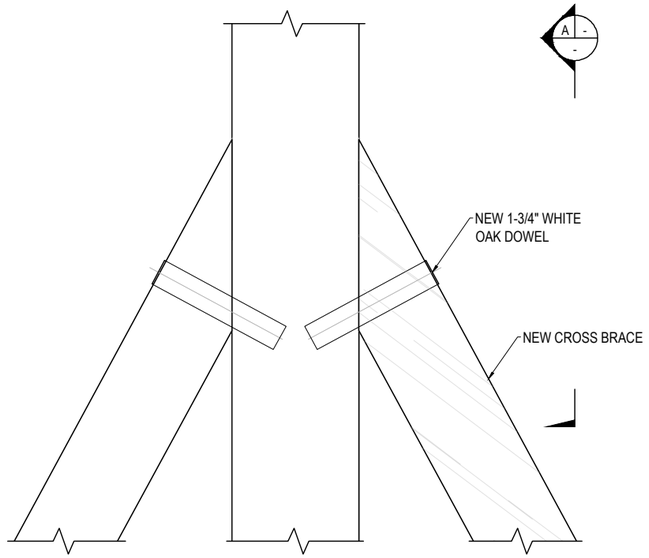
JOIST TO TRANSVERSE BEAM & BOTTOM CHORD TO TRANSVERSE BEAM DETAILS

DRAWING # 5.8

SHEET # 41 OF 42 -

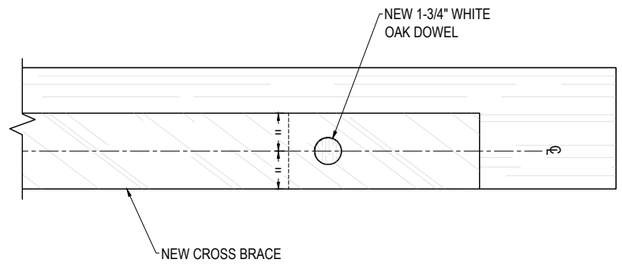
PROJECT #9101S

NOTE:
- FIELD MEASUREMENTS REQUIRED FOR MANUFACTURE AND INSTALLATION OF BRIDGE RETROFIT (MEASUREMENTS ARE APPROXIMATE)



NOTE: CONTRACTOR TO FIELD VERIFY LOCATION OF DOWEL HOLES IN MEMBERS TO REMAIN.

CROSS BRACE CONNECTION DETAIL (TYPICAL)
SCALE: 1:20



A - - SECTION
SCALE: 1:20

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NEW CROSS BRACE CONNECTION DETAIL (TYPICAL)

DRAWING # 5.9

SHEET # 42 OF 42 -

PROJECT #9101S