

INSTRUCTIONS TO DESIGNER FOR COMPLETING JOINT SELECTION TABLES

(SEE TABLE TEMPLATE CELLS FOR NUMBERS THAT CORRESPOND TO INSTRUCTION NUMBERING)

1. THE DESIGNER SHALL DETERMINE WHICH PREQUALIFIED PREFORMED JOINT SEAL PRODUCTS ARE APPROPRIATE FOR EACH PROPOSED BRIDGE JOINT AND INCLUDE ALL APPROPRIATE PREFORMED JOINT SEAL (PJS) PRODUCTS IN THE JOINT SELECTION TABLE USING THE TABLE TEMPLATE PROVIDED IN THE GUIDE SHEETS.
2. THE DESIGNER SHALL INCLUDE A JOINT SELECTION TABLE FOR EVERY BRIDGE JOINT.
3. THE FOLLOWING FIELDS ARE TO BE COMPLETED IN THE JOINT SELECTION TABLE:

3.1 JOINT LOCATION: PROVIDE THE ABUTMENT OR PIER NUMBER.

3.2 EXPANSION OR FIXED: INDICATE "EXPANSION" OR "FIXED" TO DESCRIBE THE NATURE OF THE JOINT.

3.3 DESIGN THERMAL MOVEMENT RANGE: ENTER 0 INCH FOR A FIXED JOINT OR THE CALCULATED MOVEMENT IN INCHES AT THE BRIDGE JOINT BASED ON AN AMBIENT TEMPERATURE RANGE OF 120°(FROM -10°F. TO 110°F.) AND A COEFFICIENT OF THERMAL EXPANSION OF 6.4 X 10-6 IN./IN./°F FOR STEEL GIRDERS AND 6.0 X 10-6 IN./IN./°F FOR CONCRETE GIRDERS.

3.4 SKEW: BELOW THE HEADERS FOR DECK, PARAPET AND SIDEWALK JOINTS INDICATE THE SKEW OF THE JOINT. IN ADDITION, IF THE DECK JOINT RETURNS AT A RIGHT ANGLE TO THE PARAPET, BE SURE TO INDICATE "0°," SINCE MOVEMENT AT THE PARAPET JOINT WOULD BE MEASURED PERPENDICULAR TO THE JOINT. LIKEWISE, IF A SIDEWALK JOINT IS SKEWED, BUT TURNS 90° BEFORE IT ENTERS THE PARAPET, INCLUDE BOTH IN THE TABLE WHEN REPORTING SKEW FOR THE SIDEWALK JOINT. BE SURE TO CONSIDER THERMAL MOVEMENT FOR BOTH SKEWED AND PERPENDICULAR PORTIONS OF THE SIDEWALK JOINT.

3.5 PJS PRODUCT NAME / JOINT TYPE:

3.5.1 IF PREFORMED JOINT SEAL (PJS) ALONE IS SPECIFIED, INDICATE THE MANUFACTURER NAME IN THE FIRST FIELD AND THE PRODUCT NAME IN THE ADJACENT FIELD.

3.5.2 IF AN ASPHALTIC PLUG JOINT (APJ) WITH A PJS BENEATH IT IS TO BE INSTALLED, INDICATE "APJ" NEXT TO THE "DECK JOINT" HEADER. ENTER THE PJS MANUFACTURER NAME IN THE FIRST FIELD AND THE PRODUCT NAME IN THE ADJACENT FIELD. THIS INFORMATION WILL BE USED TO BID AND ORDER THE PJS.

3.5.3 IF THE JOINT TYPE DOES NOT INCLUDE A PREFORMED JOINT SEAL, INDICATE THE JOINT TYPE NEXT TO THE "DECK JOINT" HEADER. ABBREVIATIONS ARE LISTED IN A FOOTNOTE BELOW THE JOINT SELECTION TABLE. IF THERE IS NO OPEN JOINT BELOW THE APJ, (E.G. WHERE THE DECK END MEETS THE ROADWAY APPROACH) THERE WILL BE NO PREFORMED JOINT SEAL. IDENTIFY THE JOINT TYPE AS "APJ" IN THE HEADER AND THE PJS PRODUCT NAME AS "NA".

3.6 NOMINAL MOVEMENT CAPACITY: INDICATE THE NOMINAL MOVEMENT CAPACITY FOR ALL JOINT TYPES.

3.7 BRIDGE DECK GAP, "G" (AT 110°F.): THE DESIGNER SHALL CALCULATE AND SPECIFY THE MINIMUM GAP BETWEEN BRIDGE DECK ENDS AT FULL EXPANSION FOR PROPOSED DECKS OR FULLY RECONSTRUCTED DECK ENDS. FOR DECK ENDS THAT ARE TO REMAIN OR BE PARTIALLY RECONSTRUCTED, THE DESIGNER WILL LIKELY NOT HAVE ACCESS TO MEASURE THE GAP BETWEEN DECK ENDS DIRECTLY, BUT THE GAP MAY BE OBTAINED FROM MEASUREMENTS OF A SIDEWALK, CURB OR PARAPET JOINT GAP IF THE JOINT APPEARS TO EXTEND THROUGH THE DECK. THE AMBIENT TEMPERATURE SHALL BE RECORDED TOGETHER WITH THE GAP MEASUREMENT. THE GAP WIDTH SHALL BE ADJUSTED FOR TEMPERATURE TO REPORT THE CALCULATED MINIMUM GAP AT 110°F. FOR SAFETY REASONS IT MAY NOT BE REASONABLE TO GET CLOSE ENOUGH TO A JOINT TO MEASURE THE GAP. IN SUCH CASES A DESIGNER MAY HAVE TO RESEARCH BRIDGE INSPECTION REPORTS OR POSSIBLY EXISTING PLANS TO OBTAIN JOINT GAP INFORMATION. WHEN GAPS CANNOT BE MEASURED DIRECTLY, BUT MUST BE ASSUMED, INDICATE IN A NOTE BELOW THE TABLE THE SOURCE OF THE ASSUMPTION ALONG WITH A NOTE ASKING THE CONTRACTOR TO MEASURE AND SUBMIT TO THE ENGINEER THE GAP WIDTH AND CORRESPONDING AMBIENT TEMPERATURE BEFORE ORDERING THE JOINT MATERIAL. A REDESIGN OF THE PJS COULD BE REQUIRED BASED ON THE FIELD-MEASURED GAP.

3.8 DECK JOINT GAP, "J", AT INSTALLATION (SINGLE GAP JOINTS ONLY): FOR PREFORMED JOINT SEALS, THE DESIGNER SHALL CALCULATE AND SPECIFY THE DECK JOINT GAP TO BE FORMED BETWEEN ELASTOMERIC CONCRETE HEADERS OR BETWEEN BRIDGE DECK/APPROACH SLAB WHEN THE PJS IS INSTALLED BELOW AN APJ. THE DECK JOINT GAP WIDTH VARIES WITH THE AMBIENT TEMPERATURE DUE TO THERMAL MOVEMENT OF THE BRIDGE DECK AND THE BRIDGE DECK GAP, "G". ELASTOMERIC CONCRETE HEADERS ARE PLACED AT AMBIENT TEMPERATURES BETWEEN 40° AND 80°F., SO THE DESIGNER SHALL CALCULATE THE GAP AT INCREMENTS OF 10°F. WITHIN THIS RANGE AND INCLUDE THESE GAPS IN THE JOINT SELECTION TABLE. THE DECK JOINT GAP AT INSTALLATION SHALL ALSO BE SPECIFIED FOR ASPHALTIC PLUG JOINTS WITH PREFORMED JOINT SEALS BENEATH, STRIP SEAL EXPANSION JOINTS AND FINGER JOINTS. INDICATE "NA" FOR MODULAR AND PLANK TYPE BRIDGE JOINTS AND PROVIDE INSTALLATION DETAILS ELSEWHERE IN THE PLANS.
- 3.9 SHELF: THIS PERTAINS TO THE SHELF FORMED WITHIN ELASTOMERIC CONCRETE HEADERS, OR BETWEEN BRIDGE DECK/APPROACH SLAB WHEN THE PJS IS INSTALLED BELOW AN APJ OR CONCRETE SIDEWALKS AND PARAPETS AT BRIDGE JOINTS. THE PURPOSE OF THE SHELF IS TO PROVIDE A VERTICAL STOP TO FACILITATE PLACEMENT OF A PREFORMED JOINT SEAL AT THE PROPER DEPTH BELOW THE BRIDGE DECK WEARING SURFACE. THE SHELF HELPS CREATE THE PROPER JOINT GAP IN WHICH TO INSTALL A PREFORMED JOINT SEAL OF THE SPECIFIED TYPE AND SIZE TO ACCOMMODATE THE DESIGN OF THE JOINT AND MEET THE MANUFACTURER'S RECOMMENDATIONS. WHEN A PJS IS PROPOSED TO BE INSTALLED BELOW AN APJ A SHELF IN THE DECK, SIDEWALK, AND PARAPET IS ONLY REQUIRED FOR NEW SUPERSTRUCTURES. SHELF IS NOT REQUIRED FOR EXISTING DECKS AND RECONSTRUCTED DECK ENDS.

3.9.1 WIDTH:

3.9.1.1 THE MINIMUM SHELF WIDTH SHALL BE ¼" OR LARGER AS REQUIRED TO CREATE A MINIMUM ROADWAY SURFACE GAP, "W," OF 1" PER AASHTO LRFD 14.5.3.2 - DESIGN MOVEMENTS.

W = (BRIDGE DECK GAP + 2 X SHELF WIDTH) / COS(SKEW ANGLE)

DESIGNERS ARE CAUTIONED TO CHECK THE MANUFACTURER'S RECOMMENDED MINIMUM GAP AND INCREASE THE SHELF WIDTH OR BRIDGE DECK GAP ACCORDINGLY. INCREASING THE SHELF WIDTH OR BRIDGE DECK GAP CAN LEAD TO "W" LARGER THAN 4" OR EXCEEDANCE OF THE MANUFACTURER'S RECOMMENDED MAXIMUM GAP.

WHERE CONSTRUCTION OF TWO ¼" WIDE OR WIDER SHELVES WOULD RESULT IN A ROADWAY SURFACE GAP THAT IS WIDER THAN 4" AT 20°F., A PREFORMED JOINT SEAL IS NOT ADVISABLE. THE ALTERNATIVE IS TO CONSTRUCT A MORE COMPLEX TYPE JOINT SUCH AS A MODULAR, PLANK OR FINGER JOINT. THESE JOINT TYPES ARE MORE EXPENSIVE, DISRUPTIVE TO TRAFFIC TO INSTALL AND MORE DIFFICULT TO REPLACE. LARGE OPENINGS WITH A PREFORMED JOINT SEAL CAN POSSIBLY PRODUCE GREATER NOISE UNDER TRAFFIC AND PROVIDE A ROUGHER RIDE ACROSS THE JOINT. IF NOISE AND RIDEABILITY ARE NOT OF GREAT CONCERN FOR THE PROPOSED BRIDGE, AT THE DEPARTMENT'S DISCRETION, IT CAN ALLOW ELIMINATION OF THE SHELVES TO REDUCE "W", SO A PJS CAN BE SPECIFIED IN ORDER TO REDUCE THE ROADWAY SURFACE GAP TO 4" OR LOWER AT 20°F. THE MINIMUM ROADWAY SURFACE GAP, MANUFACTURER RECOMMENDED MINIMUM GAP AND MANUFACTURER RECOMMENDED MINIMUM INSTALLATION GAP SHALL STILL BE MET. IF THE SHELVES ARE ELIMINATED, ENTER "0.00" IN THE JOINT SELECTION TABLE.

IN SOME CASES, THE JOINT SEAL IS TO BE INSTALLED BETWEEN TWO VERTICAL FACES OF AN EXISTING ARMORED JOINT OR VERTICAL FACES OF A PARAPET JOINT. IN CASES WHERE THERE IS NO SHELF, SPECIFY ONLY A FOAM-SUPPORTED SILICONE JOINT SEAL.

3.9.1.2 THE DESIGNER SHALL INDICATE A SHELF WIDTH OF "0.00" IF THE PREFORMED JOINT SEAL WILL BE INSTALLED BETWEEN TWO VERTICAL FACES WITH NO SHELF. FOR ALL OTHER JOINT TYPES WHERE NO SHELF IS TO BE CONSTRUCTED, INDICATE "NA" FOR THIS FIELD. FOR EACH PREFORMED JOINT SEAL THAT IS SPECIFIED THE DESIGNER SHALL INDICATE THE DEPTH OF SHELF RECOMMENDED BY THE MANUFACTURER.

3.9.2 DEPTH: THIS REFERS TO THE DIMENSION FROM THE TOP OF HEADER TO THE SHELF. THE DESIGNER SHALL ENTER THE DEPTH OF SHELF RECOMMENDED BY THE MANUFACTURER FOR THE SELECTED TYPE AND NOMINAL SIZE JOINT SEAL. THIS INFORMATION IS AVAILABLE IN THE JOINT SELECTION SPREADSHEET THAT IS AVAILABLE WITH GUIDE SHEETS ON THE BRIDGE DESIGN WEB PAGE.

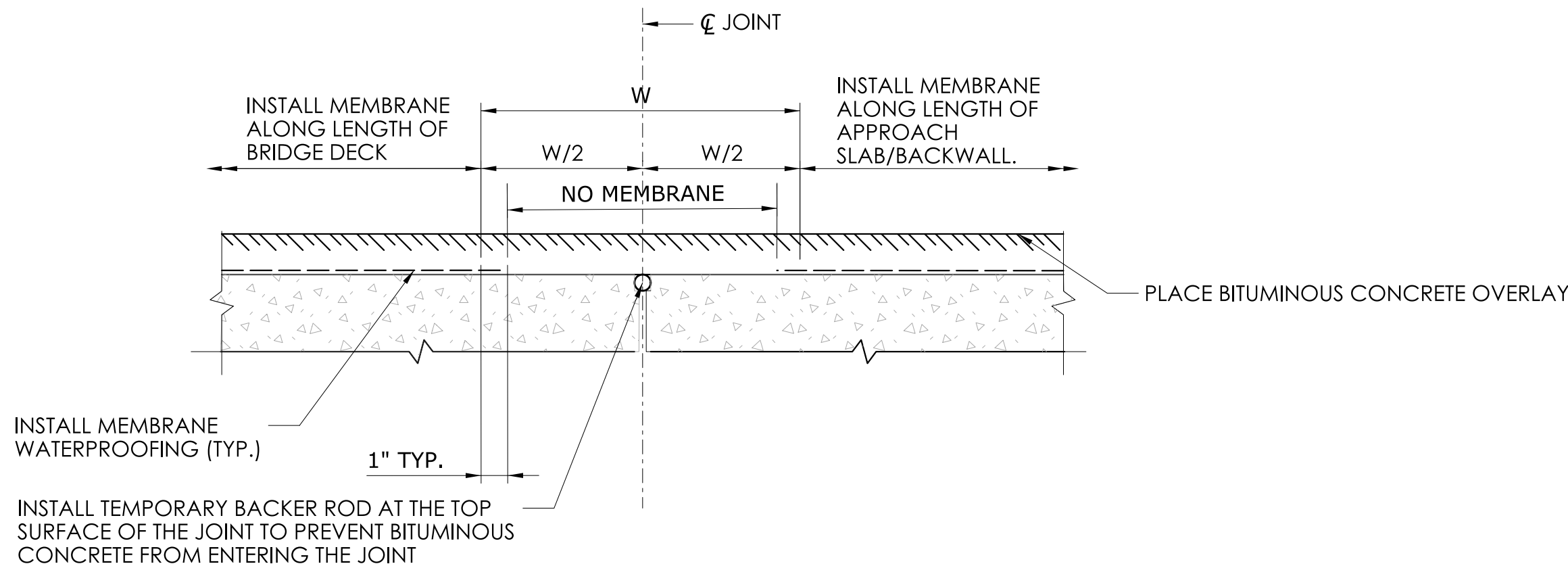
3.10 COMBINED MOVEMENT RANGE: ENTER THE CALCULATED FACTORED CONTRACTION OF THE JOINT UNDER THERMAL MOVEMENT AND ROTATION.
- | JOINT SELECTION TABLE                  |                                |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
|--|--------------------------------|--------------------------------------|---|--|--------------------------|--|-------|--------------|-------|-------------------|-------|-------|-------|-------|--|--|--|--|--|
| JOINT LOCATION: (ABUTMENT OR PIER NO.) |                                |                                      | 3.1                                       |  | EXPANSION OR FIXED: 3.2  |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
| DESIGN THERMAL MOVEMENT RANGE:         |                                |                                      | X INCHES 3.3                              |  | COMBINED MOVEMENT RANGE: |  |       |              |       | X.XXX INCHES 3.10 |       |       |       |       |  |  |  |  |  |
| PJS PRODUCT NAME / JOINT TYPE (APJ)    | NOMINAL MOVEMENT CAPACITY (IN) | BRIDGE DECK GAP, "G", AT 110°F. (IN) | DECK JOINT GAP, "J", AT INSTALLATION (IN) |  |                          |  |       | SHELF (IN)   |       |                   |       |       |       |       |  |  |  |  |  |
|  |                                |                                      | 3.8                                       |  |                          |  |       | 3.9.1, 3.9.2 |       |                   |       |       |       |       |  |  |  |  |  |
| 3.5.1, 3.5.3                           |                                |                                      | 3.6                                       |  | 3.7                      |  | 80°F. |              | 70°F. | 60°F.             | 50°F. | 40°F. | WIDTH | DEPTH |  |  |  |  |  |
| DECK JOINT 3.5.2, 3.5.3                |                                |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
| SKEW = X° 3.4                          |                                |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
| EMSEAL                                 | BEJS XXXX                      |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
| WABO-FS                                | FS-XXX                         |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
| PARAPET JOINT                          |                                |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
| SKEW = X° 3.4                          |                                |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
| EMSEAL                                 | BEJS XXXX                      |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
| WABO-FS                                | FS-XXX                         |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
| SIDEWALK JOINT                         |                                |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
| SKEW = X° 3.4                          |                                |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
| EMSEAL                                 | BEJS XXXX                      |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
| WABO-FS                                | FS-XXX                         |                                      |   |  |                          |  |       |              |       |                   |       |       |       |       |  |  |  |  |  |
- FOOTNOTES:
1. KEY TO JOINT TYPE ABBREVIATIONS:

APJ (ASPHALTIC PLUG JOINT)  
PJS (PREFORMED JOINT SEAL)
- NOTE TO DESIGNER (DELETE AFTER READING):
- THIS SHEET IS NOT INTENDED TO BE PLACED IN THE CONTRACT PLANS





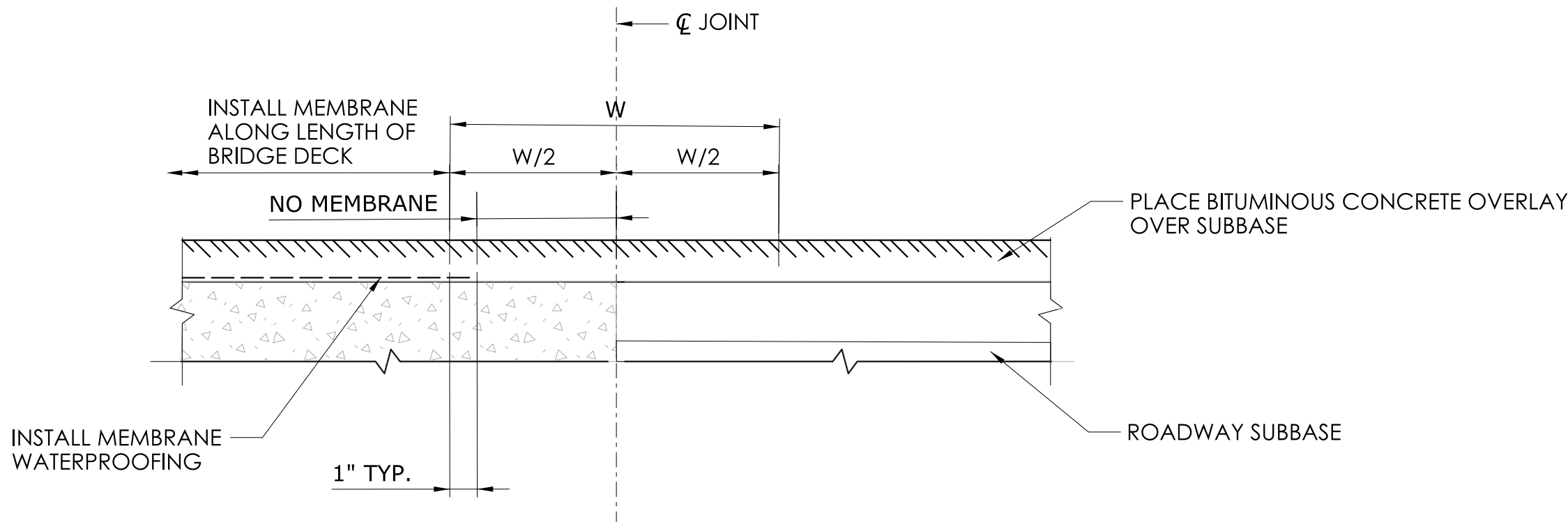
INSTALLATION OF ASPHALTIC PLUG JOINT WITH BRIDGING PLATE



PLACEMENT OF PAVEMENT ALONG THE BRIDGE

NOT TO SCALE

INSTALLATION OF ASPHALTIC PLUG JOINT WITHOUT BRIDGING PLATE



PLACEMENT OF PAVEMENT ALONG THE BRIDGE

NOT TO SCALE

SUGGESTED SEQUENCE OF WORK

STAGE I: MEASURE

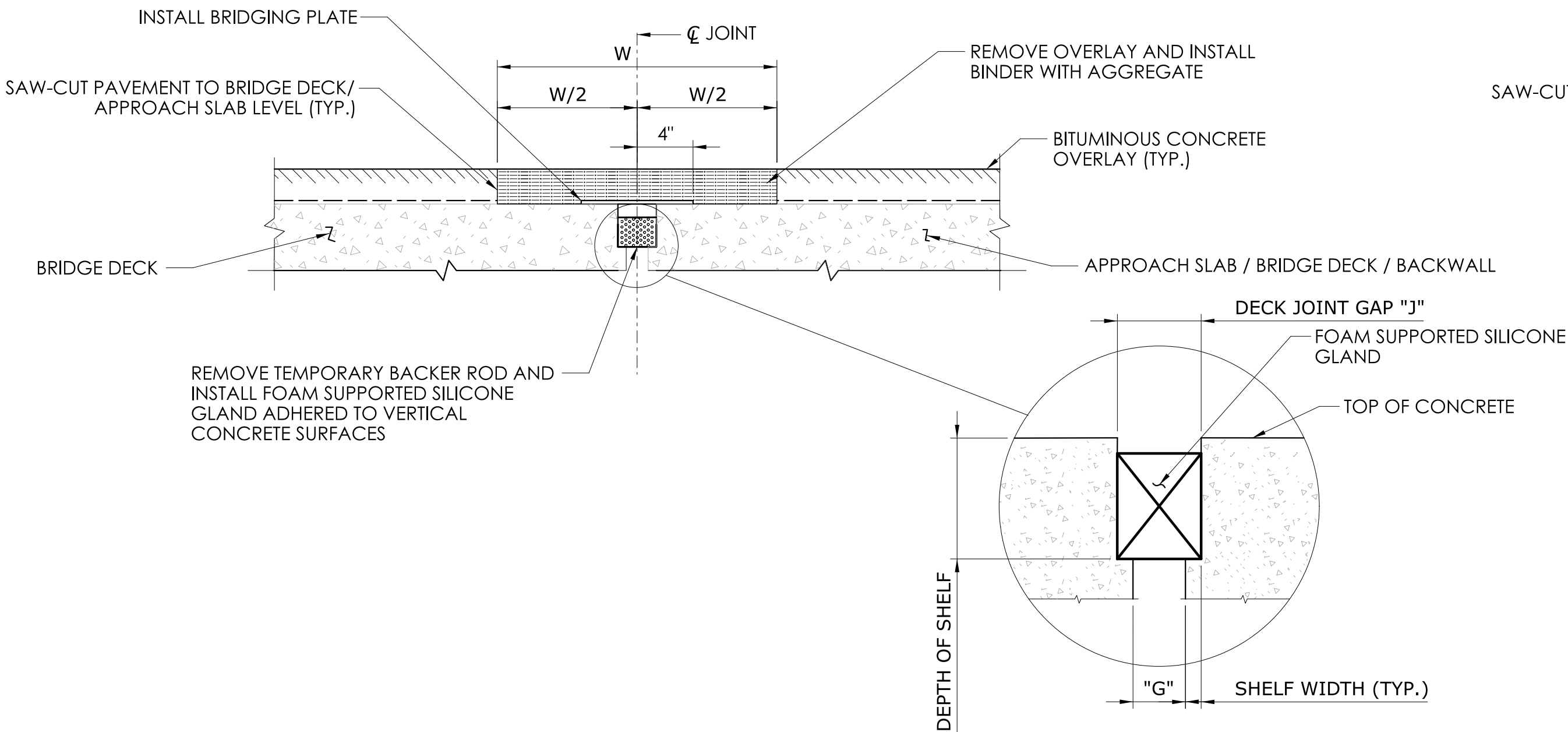
- STEP 1. THE CONTRACTOR SHALL MEASURE AND DOCUMENT THE DECK JOINT GAP OPENING, PARAPET GAP OPENING AND TEMPERATURE AT THE TIME OF MEASUREMENT FOR SIZING OF THE FOAM SUPPORTED GLAND. DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW

STAGE II: INSTALL MEMBRANE AND WEARING SURFACE

- STEP 1. INSTALL TEMPORARY BACKER ROD FLUSH WITH THE BRIDGE DECK(S) OR APPROACH SLAB (AS APPLICABLE)
- STEP 2. BLAST CLEAN THE DECK TO PREPARE THE SURFACE FOR INSTALLATION OF MEMBRANE WATERPROOFING
- STEP 3. INSTALL MEMBRANE WATERPROOFING TO THE TOP OF DECK, BACKWALL AND APPROACH SLAB WITHIN THE LIMITS SHOWN
- STEP 4. PLACE BITUMINOUS CONCRETE OVERLAY IN ACCORDANCE WITH THE STRUCTURE PLANS

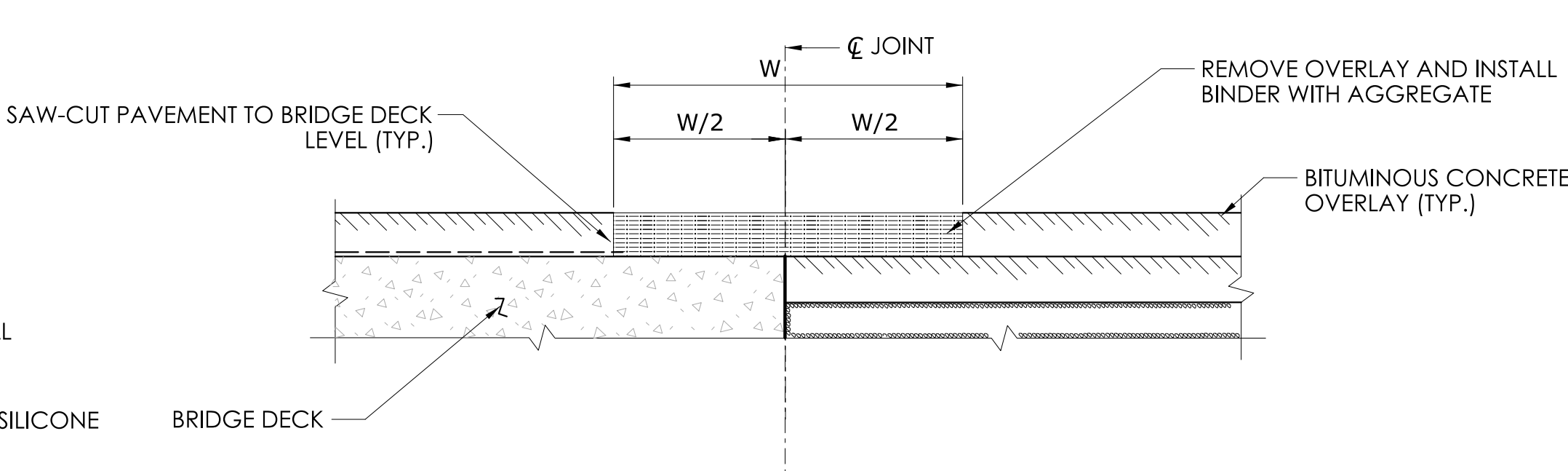
STAGE III: INSTALL ASPHALTIC PLUG EXPANSION JOINT SYSTEM

- STEP 1. SAW-CUT OVERLAY FULL DEPTH TO DELINEATE LIMITS OF APJ AND REMOVE ALL BITUMINOUS CONCRETE OVERLAY BETWEEN SAW-CUTS INCLUDING THE TEMPORARY BACKER ROD
- STEP 2. INSTALL PROPOSED ASPHALTIC PLUG EXPANSION JOINT SYSTEM WITH FOAM SUPPORTED SILICONE GLAND AND BRIDGING PLATE. LOCATING PINS SHALL NOT BE USED TO SECURE THE BRIDGING PLATE
- STEP 3. PLACE CRACK SEAL AT GUTTER LINE ALONG THE LENGTH OF THE BRIDGE BOTH SIDES



INSTALLATION OF ASPHALTIC PLUG EXPANSION JOINT SYSTEM

NOT TO SCALE



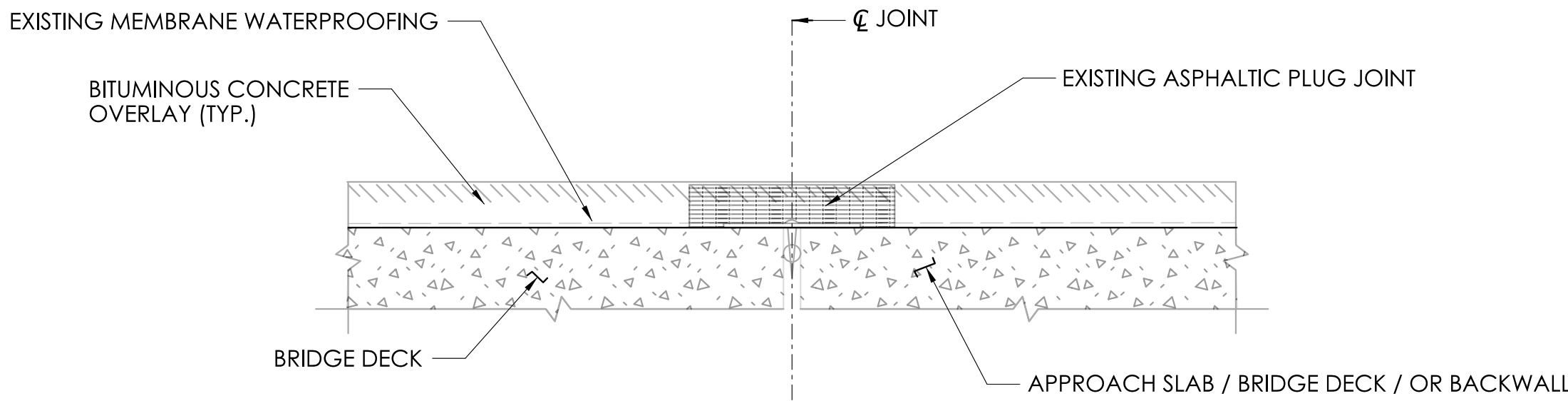
INSTALLATION OF ASPHALTIC PLUG EXPANSION JOINT SYSTEM

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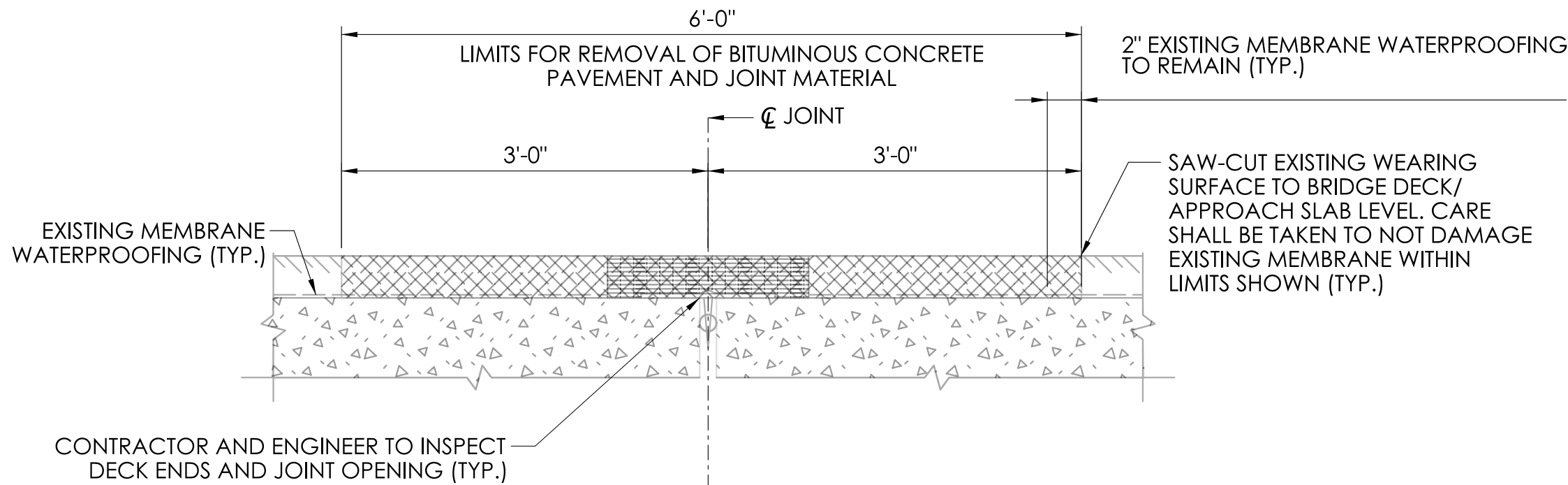
NOTE TO DESIGNER (DELETE AFTER READING)

THIS SHEET SHALL BE USED FOR PROJECTS WITH NEW DECKS

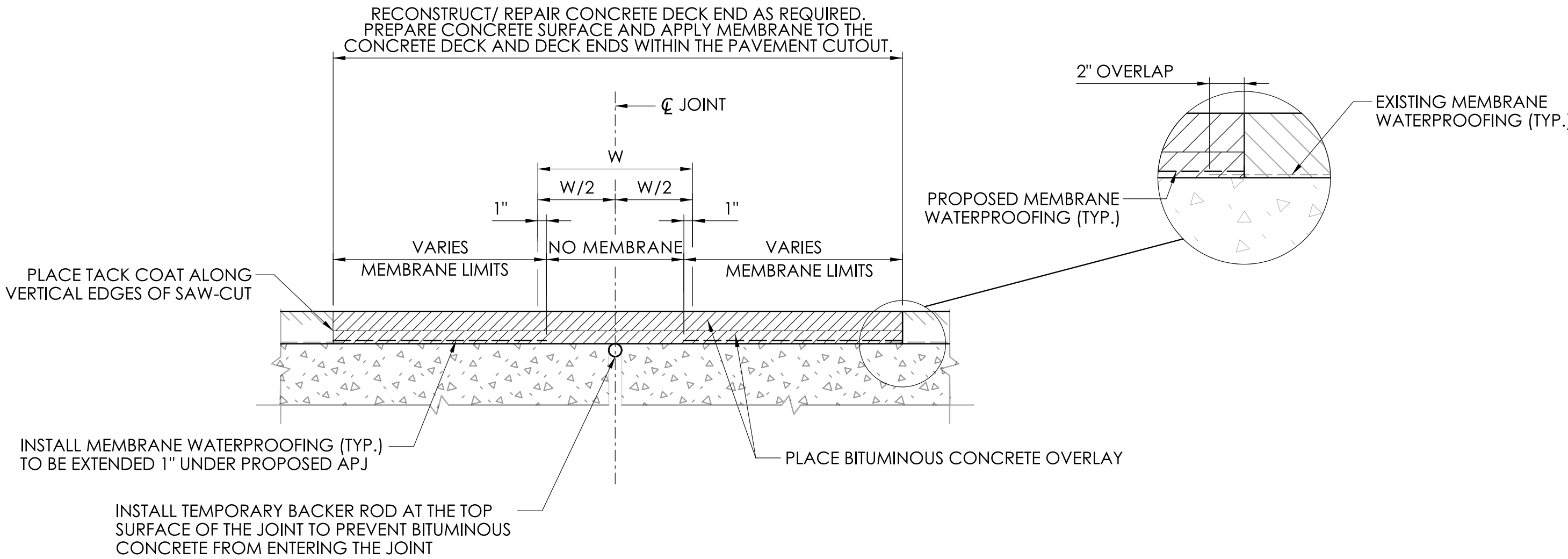
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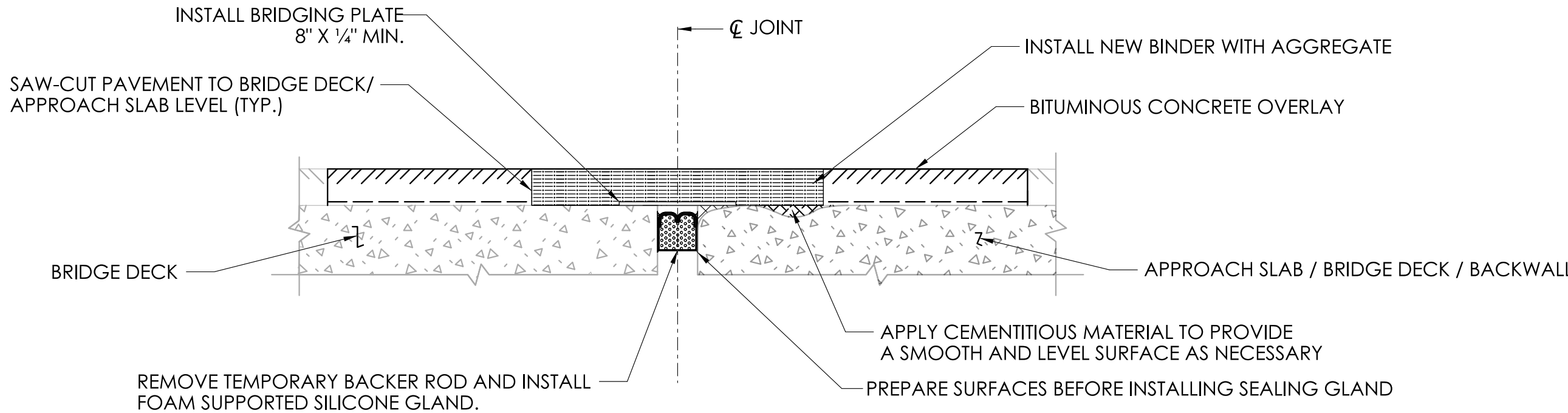
**EXISTING CONDITION**  
NOT TO SCALE



**JOINT AND PAVEMENT REMOVAL**  
NOT TO SCALE



**PLACEMENT OF PAVEMENT IN JOINT CUTOUT**  
NOT TO SCALE



NOTE: CONCRETE SURFACES TO WHICH SEALING GLANDS WILL BE BONDED SHALL BE PREPARED IN ACCORDANCE WITH ICRI CONCRETE SURFACE PROFILE STANDARDS. THE MINIMUM ACCEPTABLE SURFACE PROFILE IS CSP2 (GRINDING), BUT CSP3 (LIGHT ABRASIVE BLAST) IS PREFERRED. THE GLAND SHALL NOT BE INSTALLED UNTIL THE SURFACE IS CLEAN, DRY, AND ACCEPTED BY THE ENGINEER.

**INSTALLATION OF ASPHALTIC PLUG EXPANSION JOINT SYSTEM**  
NOT TO SCALE

### SUGGESTED SEQUENCE OF WORK

#### PRECONSTRUCTION: VERIFY EXISTING CONDITIONS

- STEP 1. CONTRACTOR SHALL PERFORM AN EXPLORATION AT THE GUTTERLINE (AT THE FOUR CORNERS OF THE BRIDGE) AND THE CROWN (AT THE BEGINNING AND END OF THE BRIDGE). A MINIMUM OF SIX REPRESENTATIVE DEPTH MEASUREMENTS SHALL BE TAKEN PER BRIDGE AT THESE LOCATIONS TO DETERMINE THE DEPTH OF PAVEMENT AND THE LOCATION OF THE DECK ENDS (CENTERLINE OF PROPOSED JOINT). ADDITIONAL MEASUREMENTS SHALL BE TAKEN IF NEEDED IN ACCORDANCE WITH SPECIFICATION FOR "REMOVAL OF EXISTING WEARING SURFACE"

#### STAGE I: INSPECT CONCRETE

- STEP 1. SAW-CUT THE BITUMINOUS PAVEMENT TO THE LIMITS SHOWN IN DETAIL FOR "JOINT AND PAVEMENT REMOVAL." SAW-CUT SHALL NOT DAMAGE THE BRIDGE DECK OR APPROACH SLAB.
- STEP 2. REMOVE THE EXISTING PAVEMENT MATERIAL AND JOINT MATERIAL FULL DEPTH WITHIN THE LIMITS SHOWN. INSPECT DECK WITHIN WORK AREA FOR DETERIORATION
- STEP 3. THE CONTRACTOR SHALL MEASURE AND DOCUMENT THE DECK JOINT GAP OPENING, PARAPET GAP OPENING AND TEMPERATURE AT THE TIME OF MEASUREMENT FOR SIZING OF THE FOAM SUPPORTED GLAND. DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW

#### STAGE II: RECONSTRUCT AND PROTECT DECK ENDS (WHERE REQUIRED) AND INSTALL MEMBRANE AND WEARING SURFACE

- STEP 1. PROCEED TO STEP 2 IF CONCRETE REPAIRS ARE NOT REQUIRED
- REPAIR DETERIORATED CONCRETE AS DETERMINED BY THE ENGINEER
- STEP 2. INSTALL TEMPORARY BACKER ROD FLUSH WITH THE BRIDGE DECK(S) OR APPROACH SLAB (AS APPLICABLE)
- STEP 3. BLAST CLEAN THE DECK TO PREPARE THE SURFACE FOR INSTALLATION OF MEMBRANE WATERPROOFING
- STEP 4. INSTALL MEMBRANE WATERPROOFING TO THE TOP OF THE DECK, BACKWALL, AND APPROACH SLAB WITHIN THE LIMITS SHOWN
- STEP 5. PLACE TACK COAT ON VERTICAL EDGES OF PAVEMENT ALONG SAW-CUT LINES AND STAGE CONSTRUCTION SAW-CUT LINES
- STEP 6. PLACE BITUMINOUS CONCRETE OVERLAY AS SHOWN IN THE DETAIL "PLACEMENT OF PAVEMENT IN JOINT CUT-OUT". REFER TO THE NOTES ON THE DRAWING TITLED ASPHALTIC PLUG EXPANSION JOINT - NOTES AND DETAILS FOR INFORMATION REGARDING THE BITUMINOUS CONCRETE OVERLAY COMPOSITION

#### STAGE III: INSTALL ASPHALTIC PLUG EXPANSION JOINT SYSTEM

- STEP 1. SAW-CUT OVERLAY FULL DEPTH TO DELINEATE LIMITS OF APJ AND REMOVE ALL BITUMINOUS CONCRETE OVERLAY BETWEEN SAW-CUTS INCLUDING THE TEMPORARY BACKER ROD
- STEP 2. INSTALL PROPOSED ASPHALTIC PLUG EXPANSION JOINT SYSTEM WITH FOAM SUPPORTED SILICONE GLAND AND BRIDGING PLATE. LOCATING PINS SHALL NOT BE USED TO SECURE THE BRIDGING PLATE
- STEP 3. PLACE CRACK SEAL AT GUTTER LINE ALONG THE LENGTH OF THE BRIDGE, BOTH SIDES

### INSTALLATION OF ASPHALTIC PLUG JOINT WITH BRIDGING PLATE

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PLOTTED DATE: 11/25/2025

SIGNATURE/  
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STATE OF CONNECTICUT  
DEPARTMENT  
OF  
TRANSPORTATION



PROJECT NUMBER: ###

PROJECT DESCRIPTION: TEST PROJECT

TOWN(S): VARIOUS

DRAWING TITLE: ASPHALTIC PLUG EXPANSION JOINT - SEQUENCE FOR JOINT REPLACEMENT

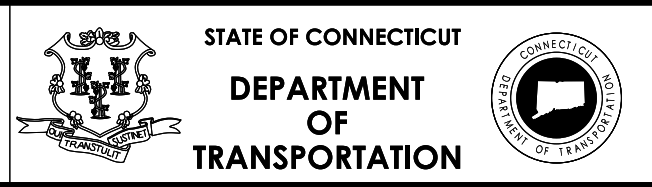
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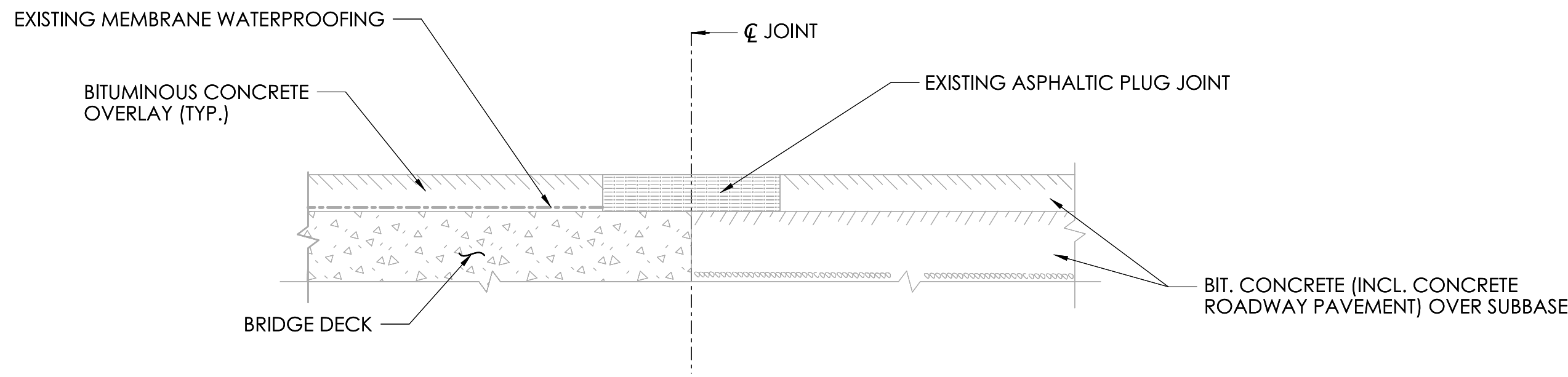
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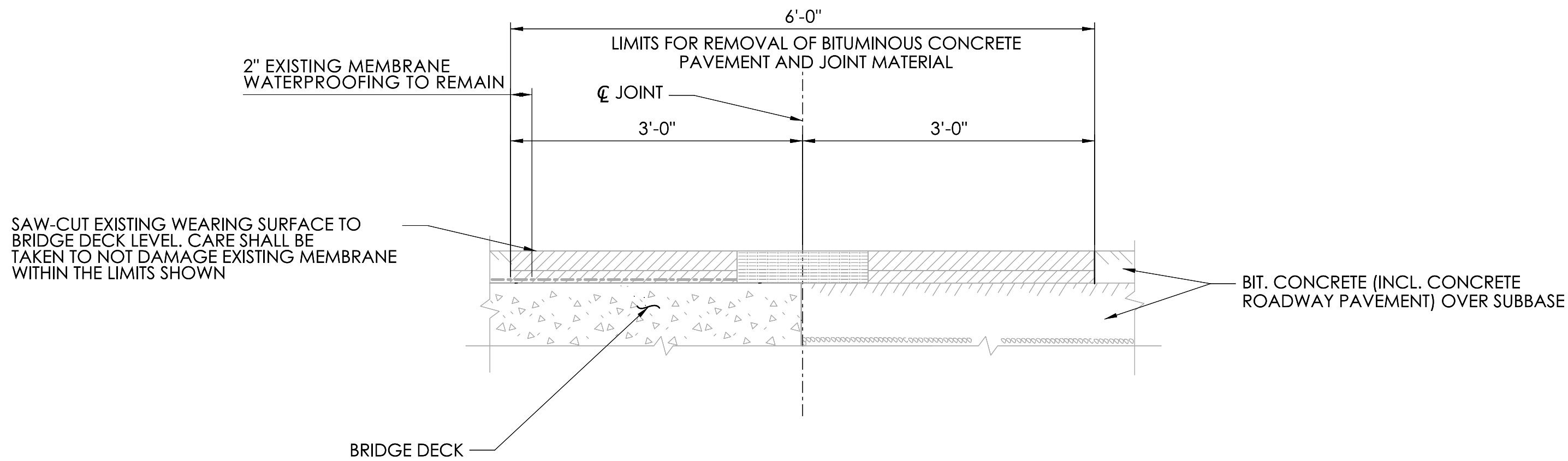


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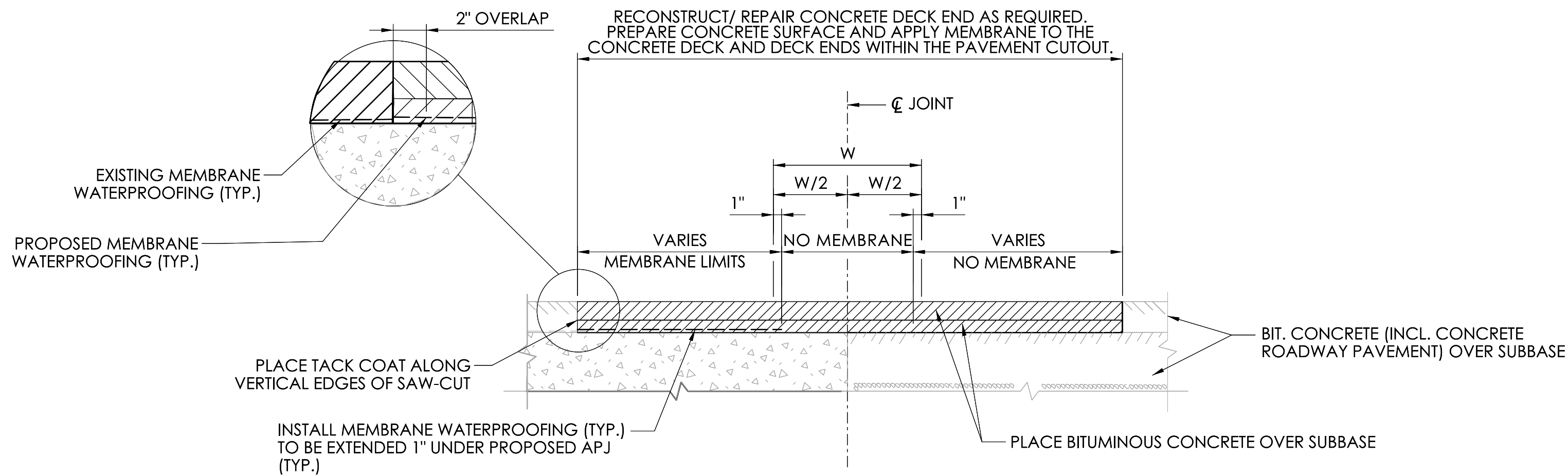
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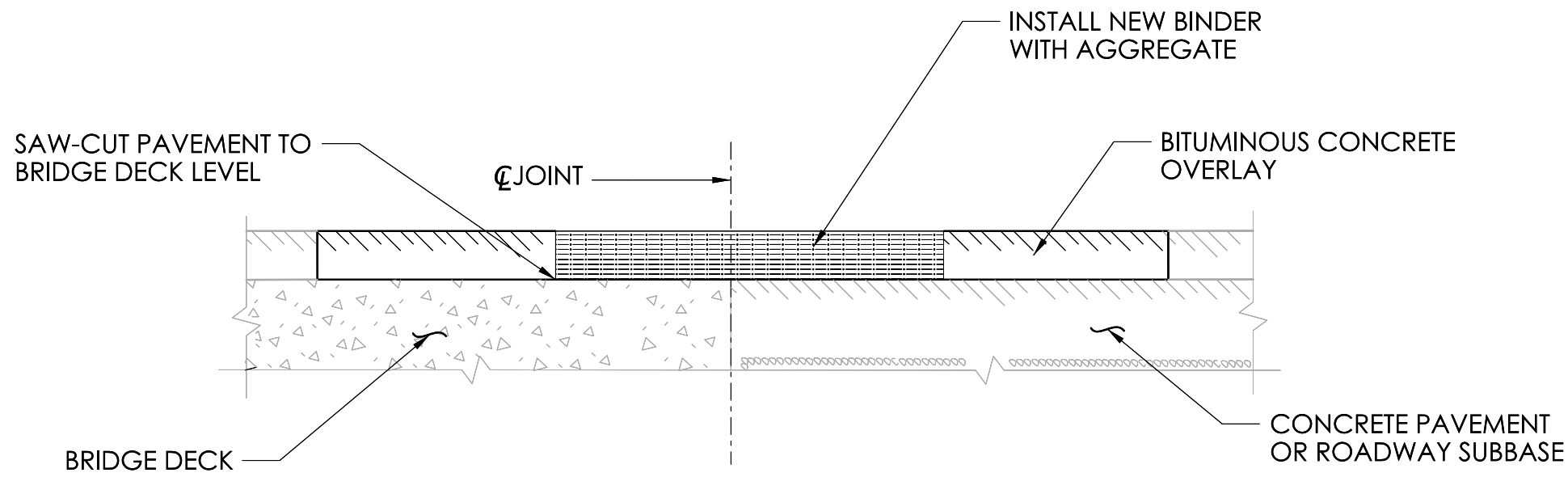
EXISTING CONDITION  
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JOINT AND PAVEMENT REMOVAL  
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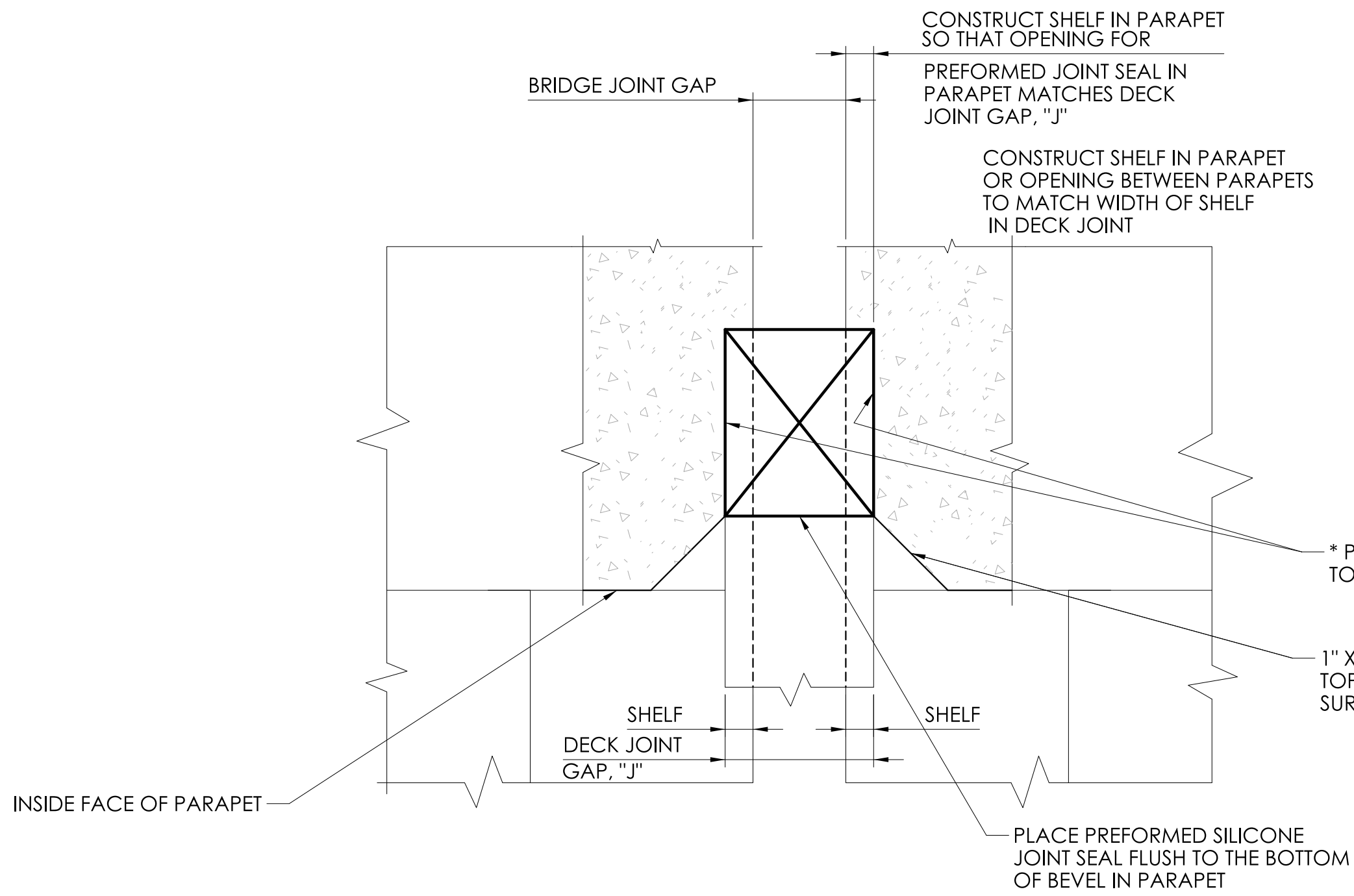
PLACEMENT OF PAVEMENT IN JOINT CUTOUT  
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INSTALLATION OF  
ASPHALTIC PLUG EXPANSION JOINT SYSTEM  
NOT TO SCALE

SUGGESTED SEQUENCE OF WORK

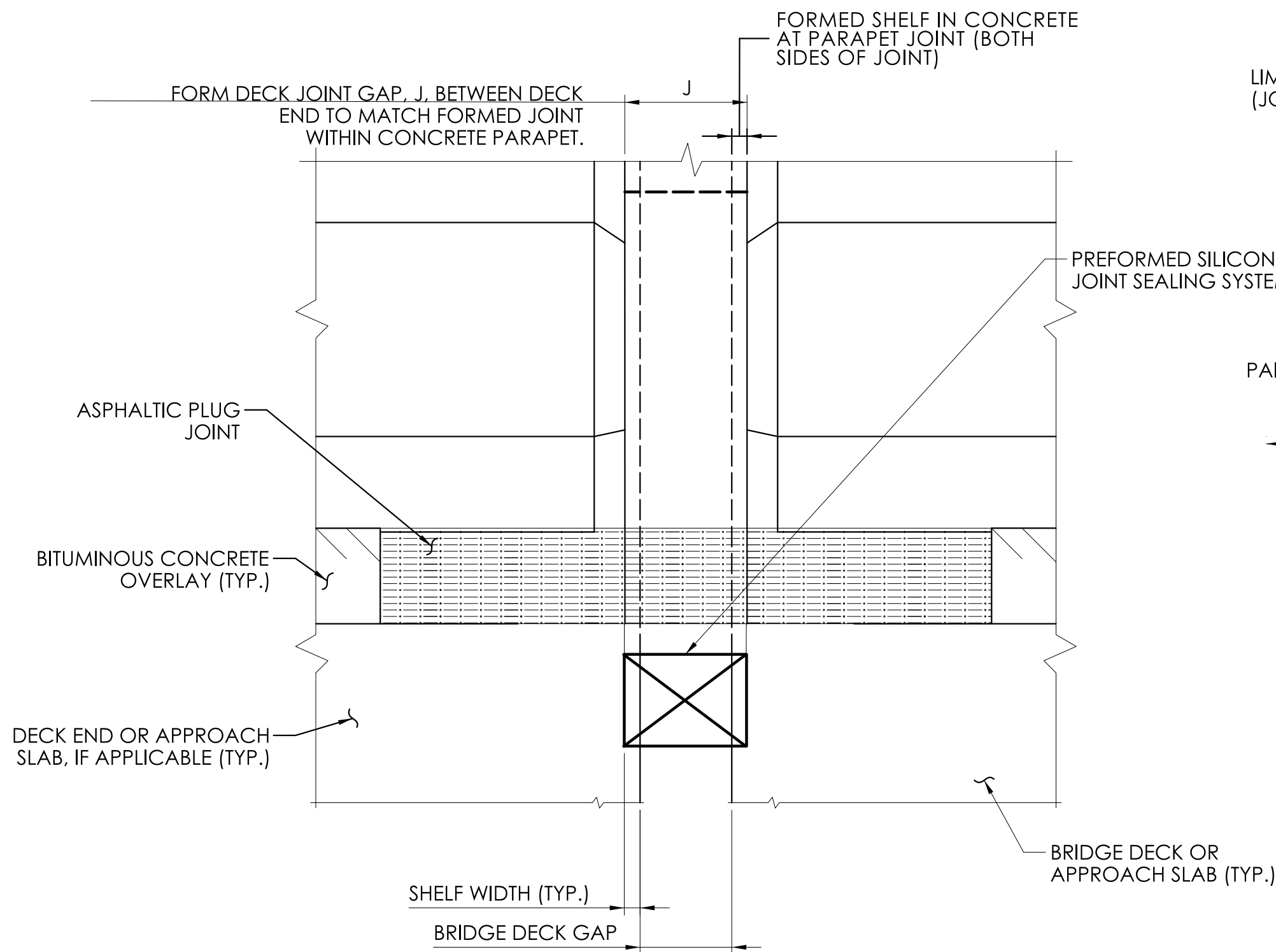
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- STEP 1. SAW-CUT THE BITUMINOUS PAVEMENT TO THE LIMITS SHOWN IN DETAIL FOR "JOINT AND PAVEMENT REMOVAL." SAW CUT SHALL NOT DAMAGE THE BRIDGE DECK
- STEP 2. REMOVE THE EXISTING PAVEMENT MATERIAL AND JOINT MATERIAL FULL DEPTH WITHIN THE LIMITS SHOWN. INSPECT DECK WITHIN WORK AREA FOR DETERIORATION
- STEP 3. THE CONTRACTOR SHALL MEASURE AND DOCUMENT THE DECK JOINT GAP OPENING, PARAPET GAP OPENING AND TEMPERATURE AT THE TIME OF MEASUREMENT FOR SIZING OF THE FOAM SUPPORTED GLAND. DOCUMENT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW
- STAGE II: RECONSTRUCT AND PROTECT DECK ENDS (WHERE REQUIRED) AND INSTALL MEMBRANE AND WEARING SURFACE**
- STEP 1. PROCEED TO STEP 2 IF CONCRETE REPAIRS ARE NOT REQUIRED
- REPAIR DETERIORATED CONCRETE AS DETERMINED BY THE ENGINEER
- STEP 2. BLAST CLEAN THE DECK TO PREPARE THE SURFACE FOR INSTALLATION OF MEMBRANE WATERPROOFING
- STEP 3. INSTALL MEMBRANE WATERPROOFING TO THE TOP OF THE DECK AND BACKWALL WITHIN THE LIMITS SHOWN
- STEP 4. PLACE TACK COAT ON VERTICAL EDGES OF PAVEMENT ALONG SAW-CUT LINES AND STAGE CONSTRUCTION SAW-CUT LINES
- STEP 5. PLACE BITUMINOUS CONCRETE OVERLAY AS SHOWN IN THE DETAIL "PLACEMENT OF PAVEMENT IN JOINT CUT-OUT". REFER TO THE NOTES ON THE DRAWING TITLED ASPHALTIC PLUG EXPANSION JOINT - NOTES AND DETAILS FOR INFORMATION REGARDING THE BITUMINOUS CONCRETE OVERLAY COMPOSITION
- STAGE III: INSTALL ASPHALTIC PLUG EXPANSION JOINT SYSTEM**
- STEP 1. SAW-CUT OVERLAY FULL DEPTH TO DELINEATE LIMITS OF APJ AND REMOVE ALL BITUMINOUS CONCRETE OVERLAY BETWEEN SAW-CUTS
- STEP 2. INSTALL PROPOSED ASPHALTIC PLUG EXPANSION JOINT SYSTEM
- STEP 3. PLACE CRACK SEAL AT GUTTER LINE ALONG THE LENGTH OF THE BRIDGE, BOTH SIDES



**PREFORMED JOINT SEAL SECTION IN PARAPET**

SCALE 3" = 1'-0"

3  
-



**PREFORMED SILICONE JOINT SEALING SYSTEM SECTION AT CURB**

SCALE 3" = 1'-0"

4  
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SELECT AND INSTALL A PREFORMED SILICONE JOINT SEALING SYSTEM FROM THE "JOINT SELECTION TABLE"

DECK JOINT GAP  
BITUMINOUS CONCRETE WEARING SURFACE

BINDER WITH AGGREGATE

**JOINT SKEW  $\leq 20^\circ$**   
SCALE 1" = 1'-0"

NOTE: SHELF IN DECKS AND PARAPET ONLY REQUIRED FOR NEW SUPERSTRUCTURES. SHELF NOT REQUIRED FOR EXISTING DECKS AND RECONSTRUCTED DECK ENDS

\* NOTE: CONCRETE SURFACES TO WHICH SEALING GLANDS WILL BE BONDED SHALL BE PREPARED IN ACCORDANCE WITH ICRI CONCRETE SURFACE PROFILE IS CSP2 (GRINDING), BUT CSP3 (LIGHT ABRASIVE BLAST) IS PREFERRED. THE GLAND SHALL NOT BE INSTALLED UNTIL THE SURFACE IS CLEAN, DRY AND ACCEPTED BY THE ENGINEER.

LIMITS OF PREFABRICATED JOINT SEAL ASSEMBLY (JOINT SEAL TO BE CONTINUOUS BETWEEN DECK AND PARAPET)

TOP OF PREFORMED SILICONE JOINT SEALING SYSTEM

TOP OF ASPHALTIC PLUG JOINT

PAINTED LANE LINE

LIMITS OF FIELD-INSTALLED PREFORMED JOINT SEAL

FIELD SPLICE

**DECK AND PARAPET GLAND PLACEMENT**

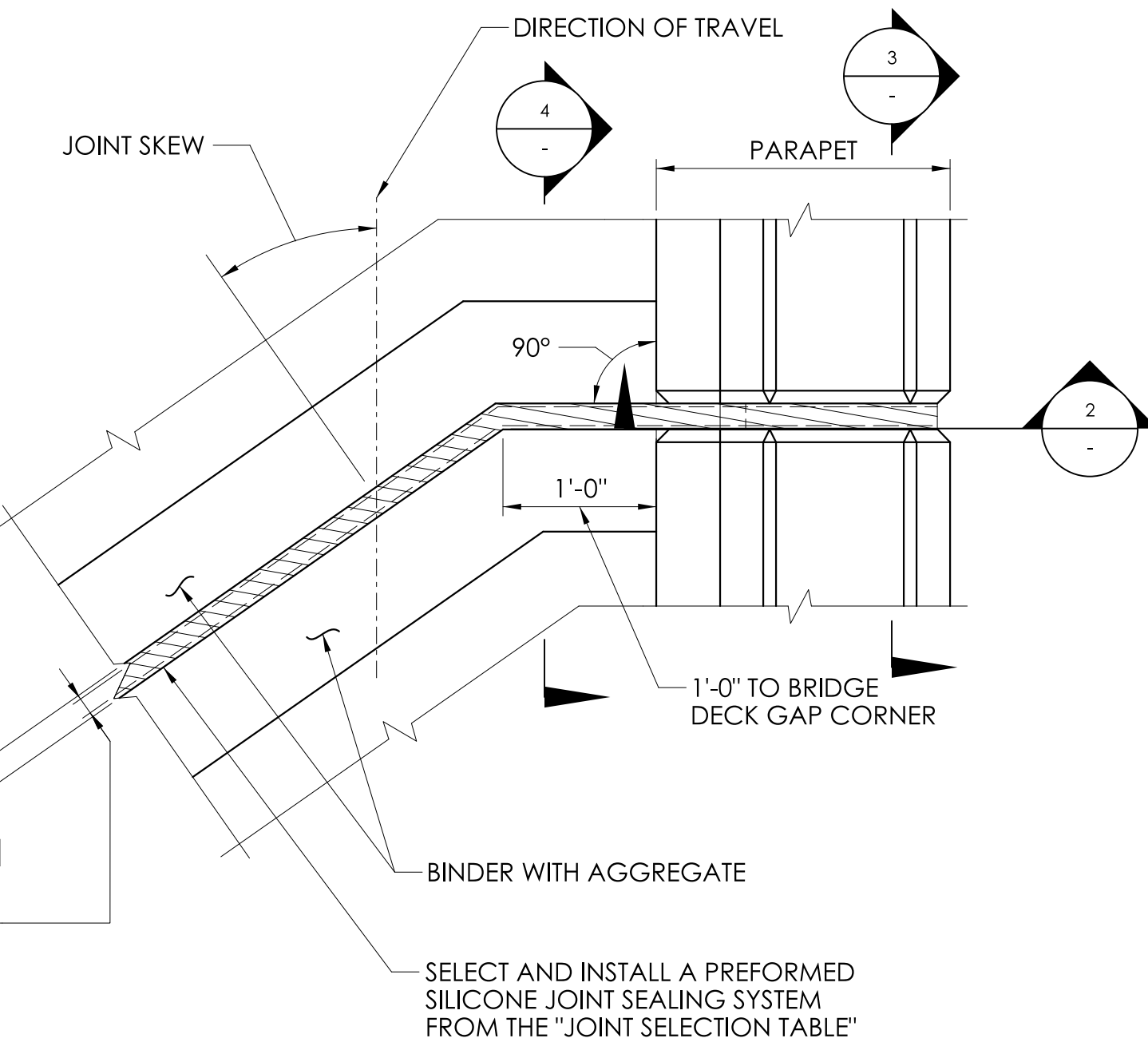
2A  
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AT CURBS, SIDEWALKS, AND RAILINGS, SPLICE AT ANGLE POINTS (CHANGES IN DIRECTION) IN THE FOAM SUPPORTED SILICONE GLAND SHALL BE PREFABRICATED IN THE SHOP OR THE FIELD PRIOR TO THE INSTALLATION OF THE GLAND IN THE OPEN JOINT EXCEPT FOR THE SPLICE AT THE TOP REAR FACE OF A PARAPET THE JOINT SEAL WHICH MAY BE SPLICED DURING FIELD INSTALLATION.

ALLOWING A FIELD SPLICE DURING THE INSTALLATION OF THE GLAND AT THE REAR FACE OF THE PARAPET COULD FACILITATE INSTALLATION, ESPECIALLY IN A REHAB SITUATION.

**SECTION THROUGH PARAPET**

SCALE 1" = 1'-0"



**JOINT SKEW  $> 20^\circ$**   
SCALE 1" = 1'-0"

**JOINT TREATMENT AT PARAPET FOR VARIOUS SKEWS**

SHADED AREA REPRESENTS A FORMED SHELF IN PARAPET ENDS TO ACCOMMODATE THE PREFORMED JOINT SEAL. THE DECK JOINT GAP, J, SHALL BE CONSTRUCTED TO MATCH THE WIDTH OF THE PARAPET JOINT GAP.

CORNER BEVEL IN PARAPET END AT JOINT (TYP. ALL AROUND)

TOP OF WEARING SURFACE

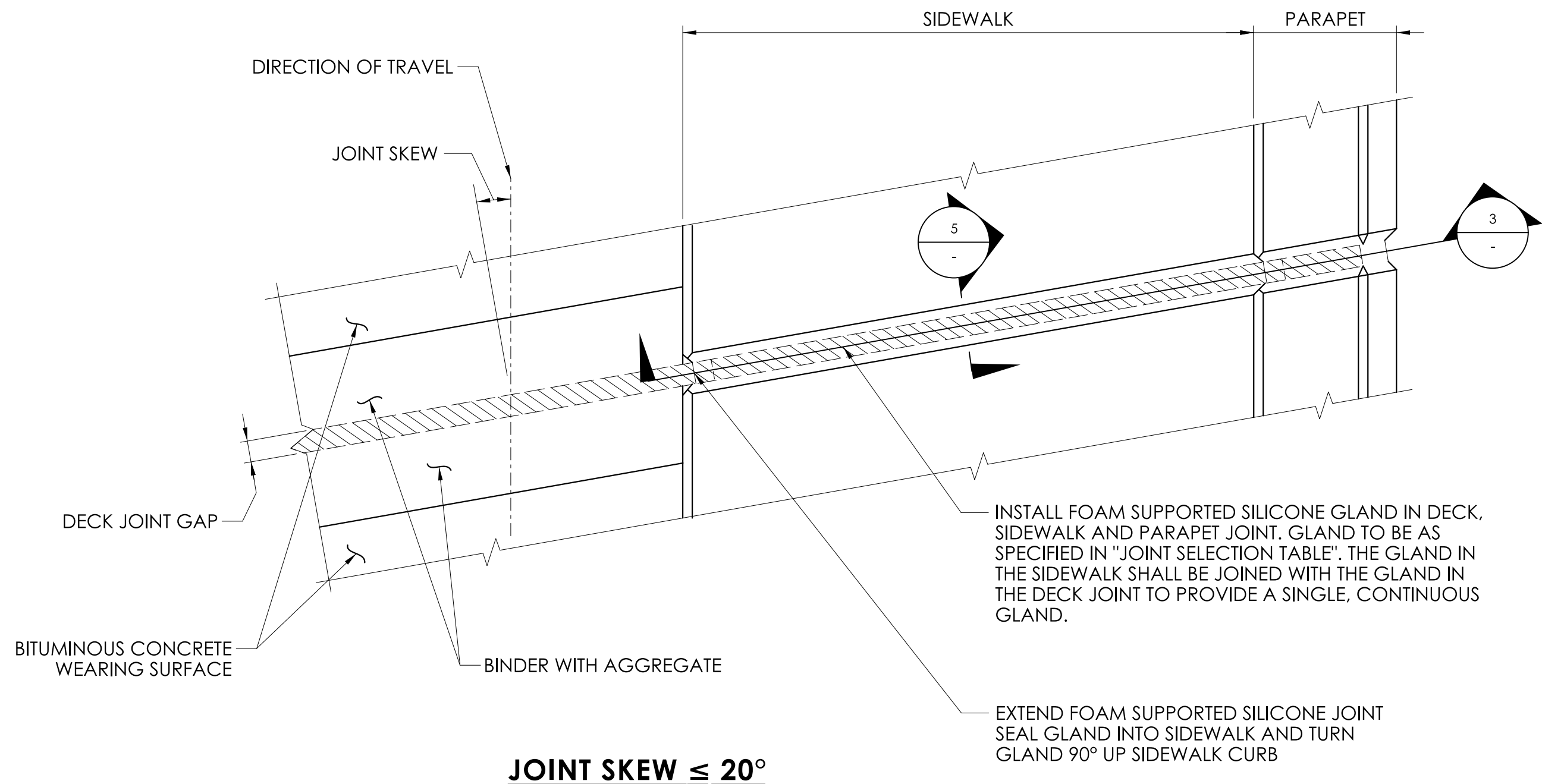
DEPTH OF SHELF AS RECOMMENDED BY JOINT SEAL MANUFACTURER

FORM SHELF TO ACCOMMODATE 90° TURN AS PREFORMED JOINT SEAL ENTERS PARAPET JOINT FROM DECK JOINT AND EXTENDS UP FACE OF PARAPET

**FORMING CONCRETE DECK AND PARAPET AT BRIDGE JOINT**

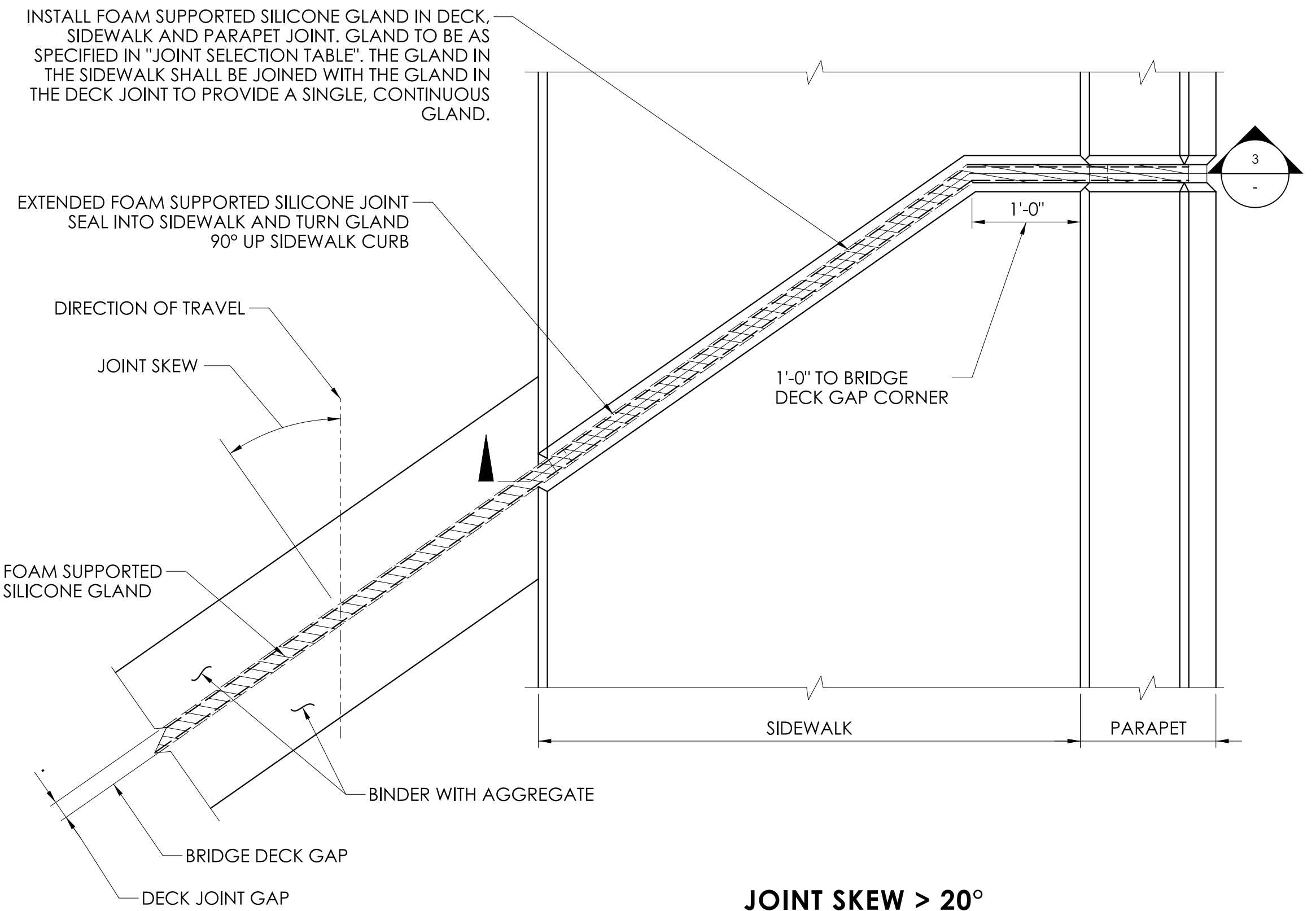
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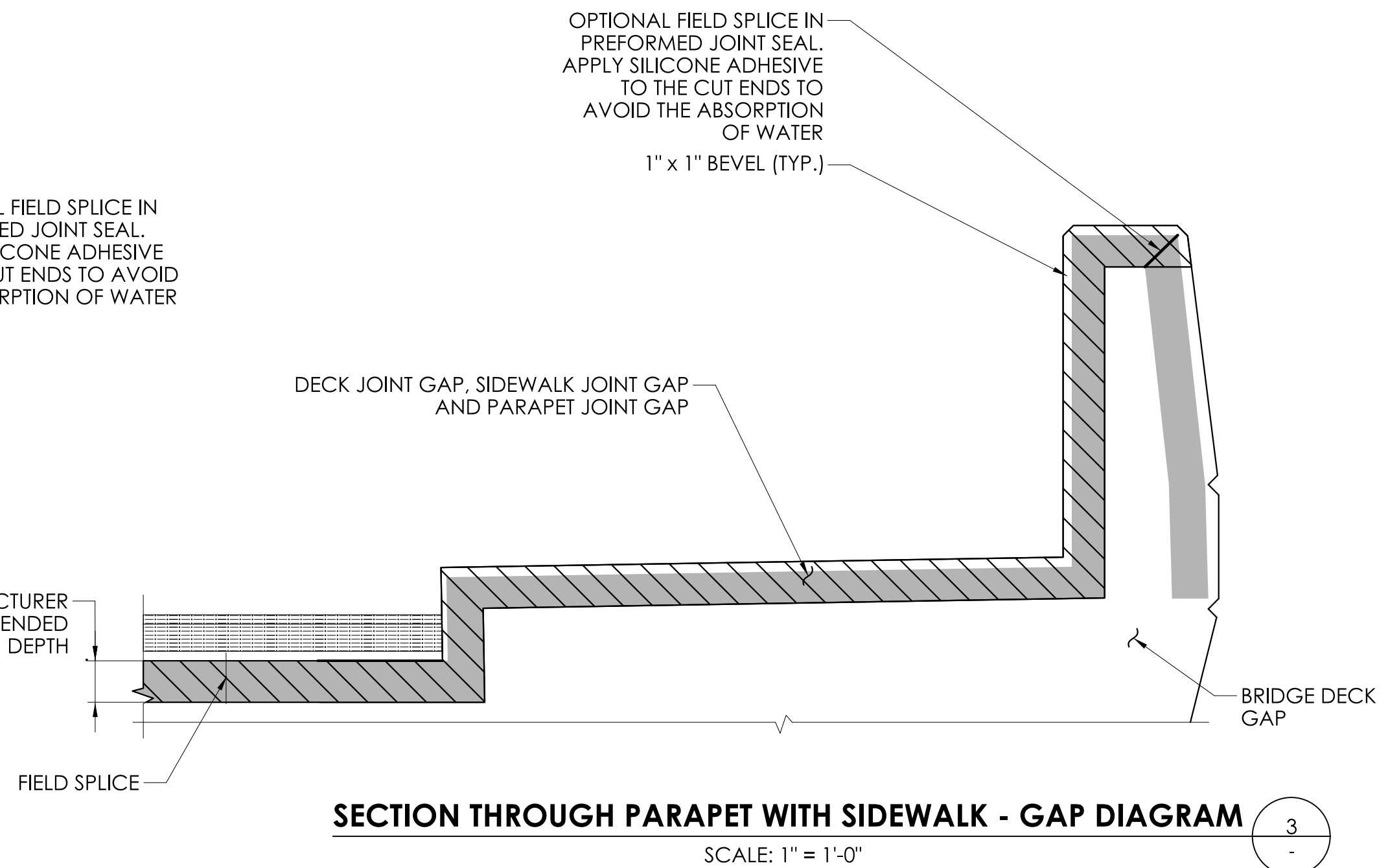
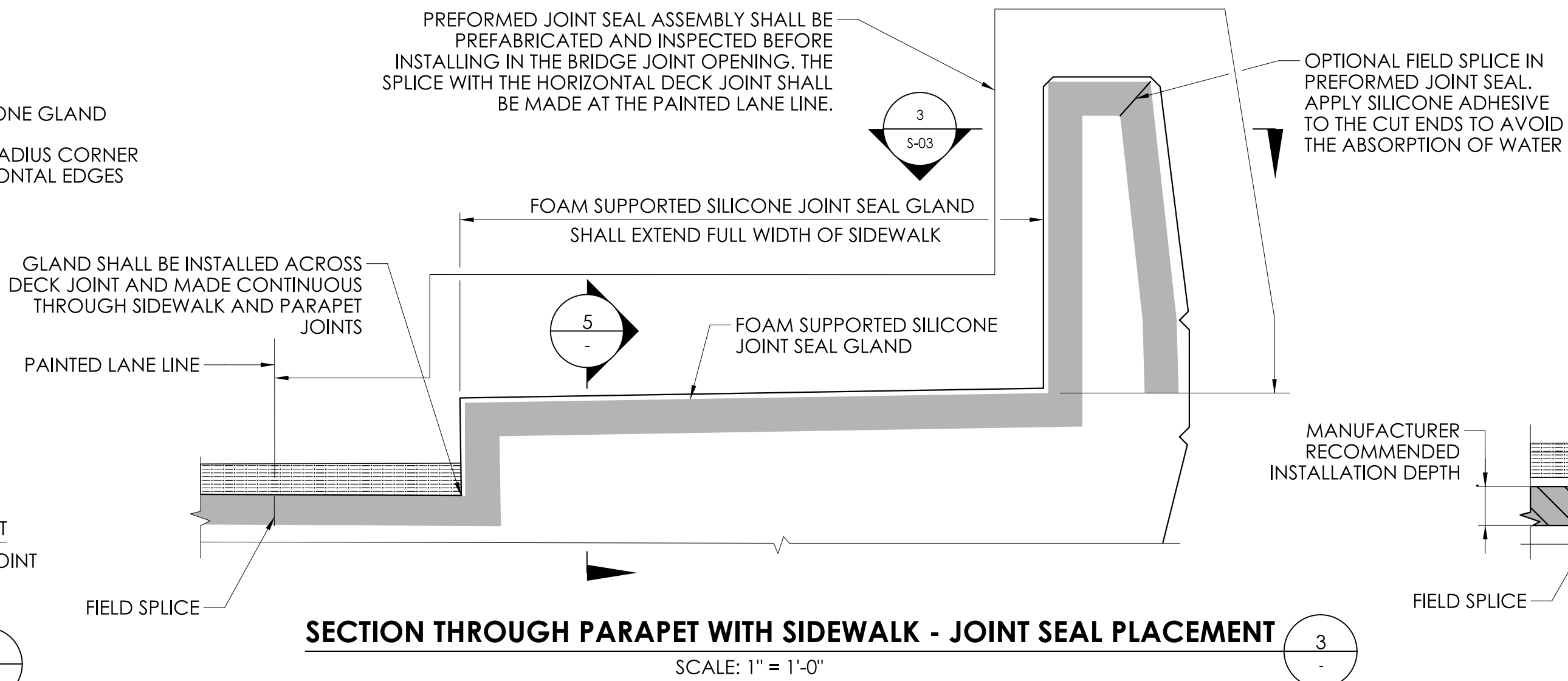
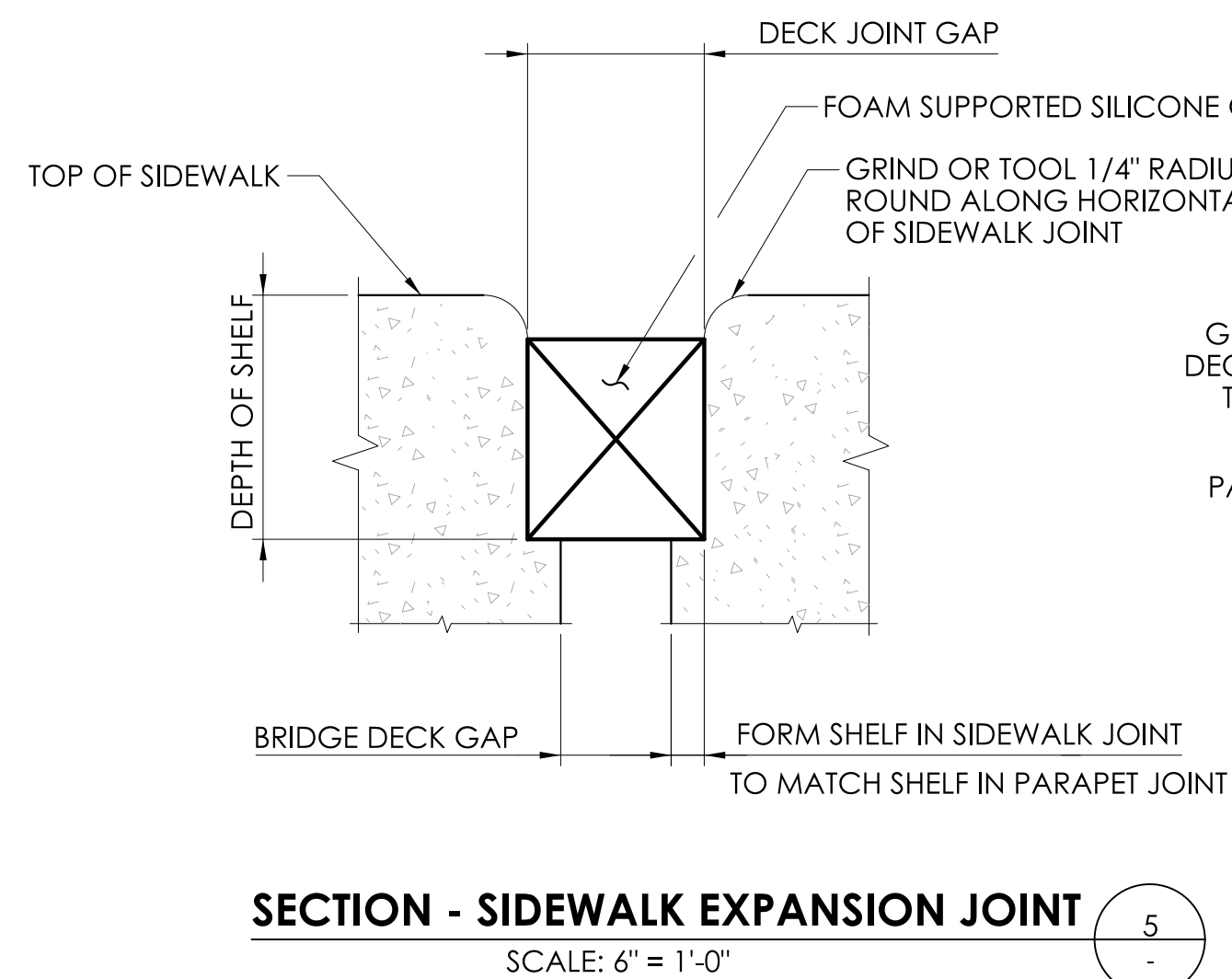
NOTE:  
SHELF IN DECKS AND PARAPET ONLY REQUIRED FOR NEW SUPERSTRUCTURES. SHELF NOT REQUIRED FOR EXISTING DECKS AND RECONSTRUCTED DECK ENDS

NOTE:  
CONCRETE SURFACES TO WHICH SEALING GLANDS WILL BE BONDED SHALL BE PREPARED IN ACCORDANCE WITH ICRI CONCRETE SURFACE PROFILE IS CSP2 (GRINDING), BUT CSP3 (LIGHT ABRASIVE BLAST) IS PREFERRED. THE GLAND SHALL NOT BE INSTALLED UNTIL THE SURFACE IS CLEAN, DRY AND ACCEPTED BY THE ENGINEER.



#### PLAN - EXPANSION JOINT AT SIDEWALKS

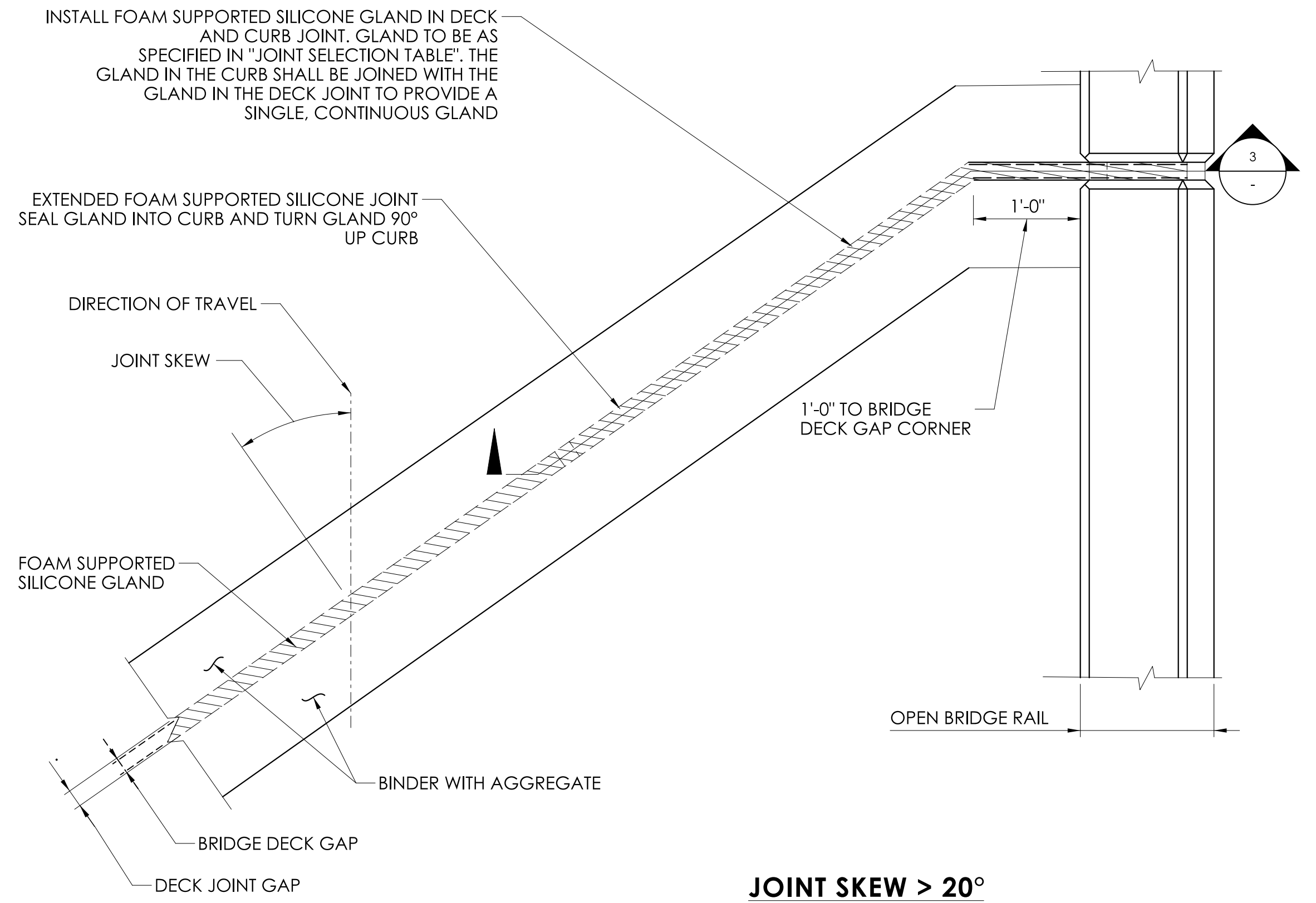
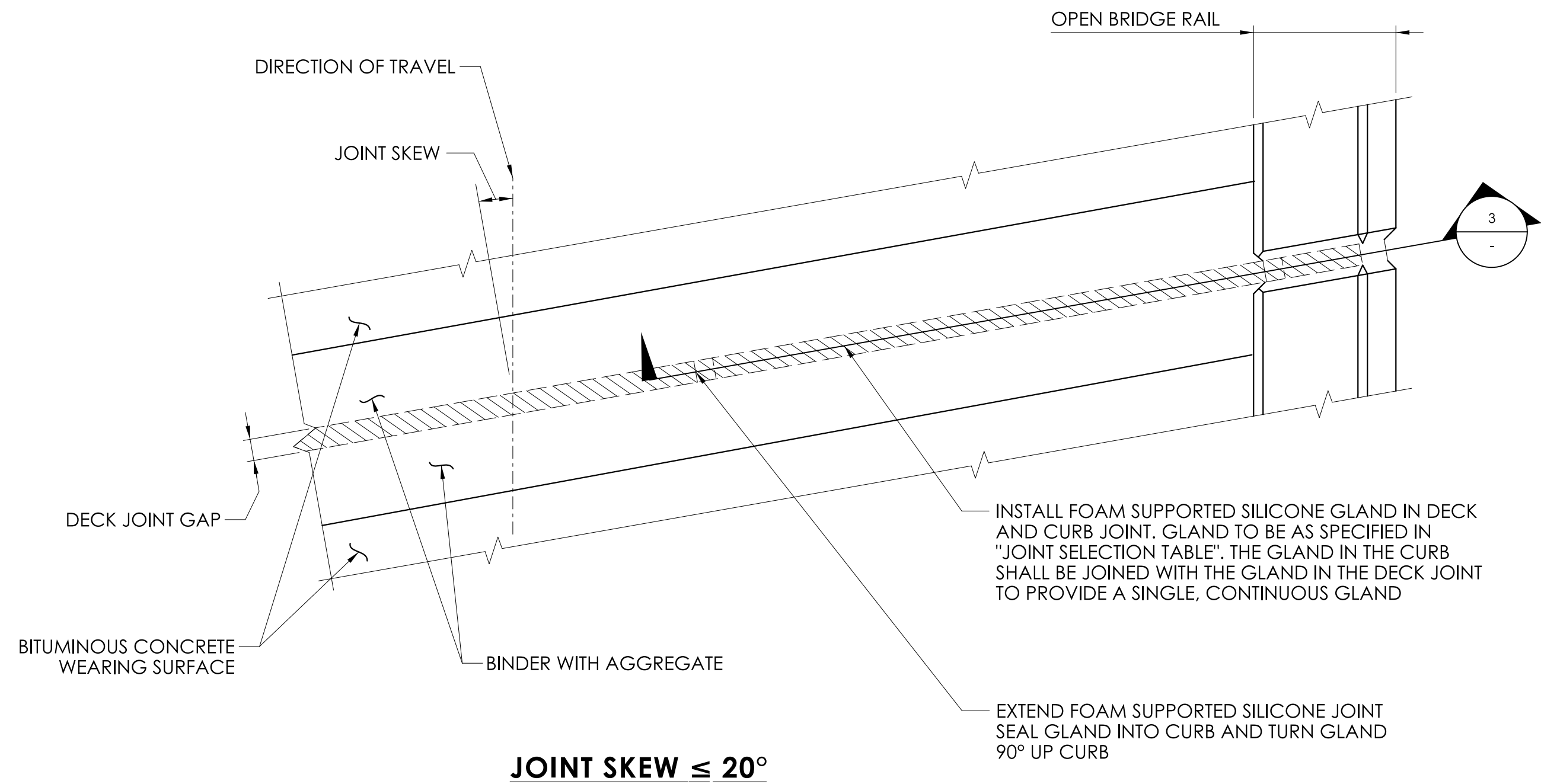
SCALE: 1" = 1'-0"



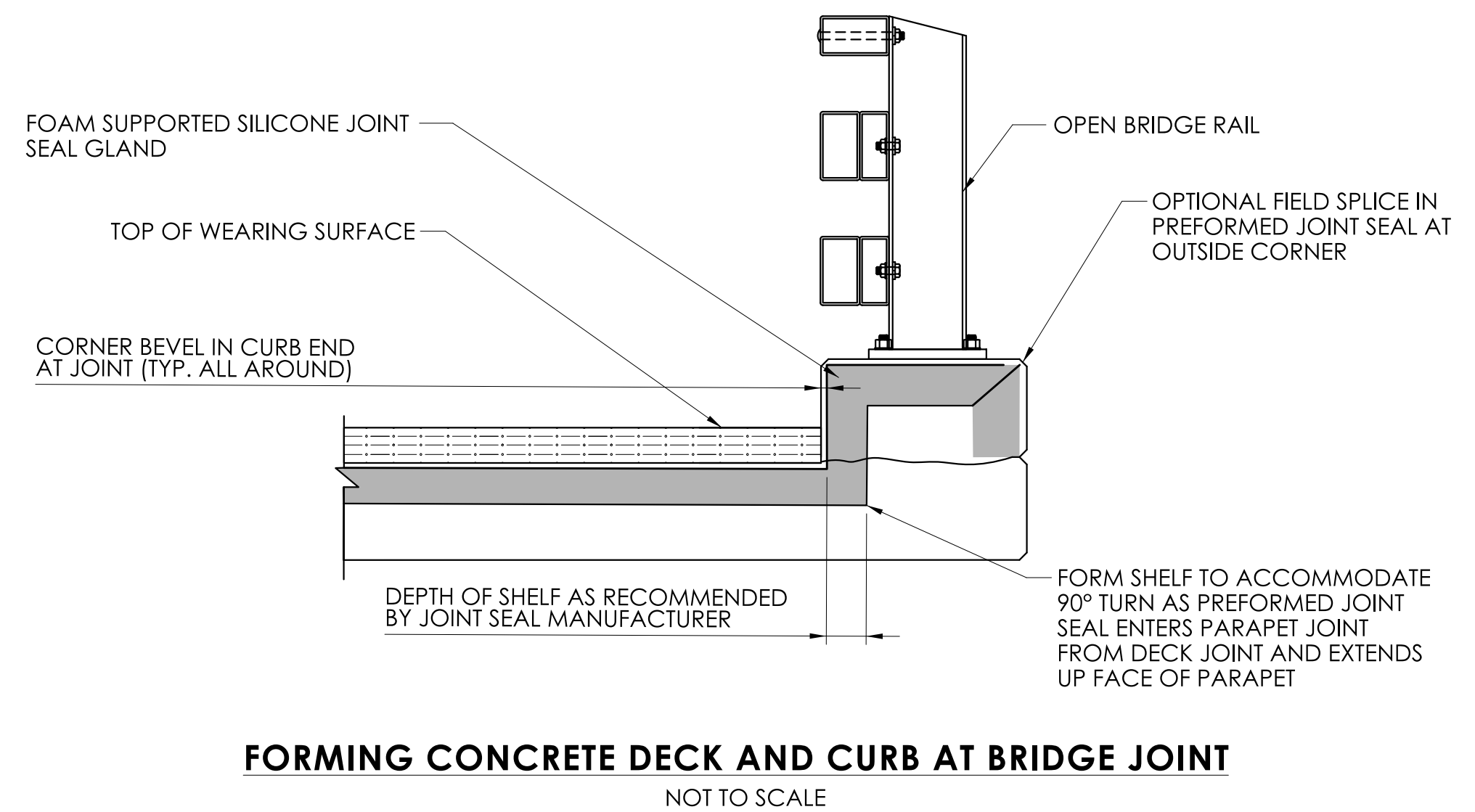
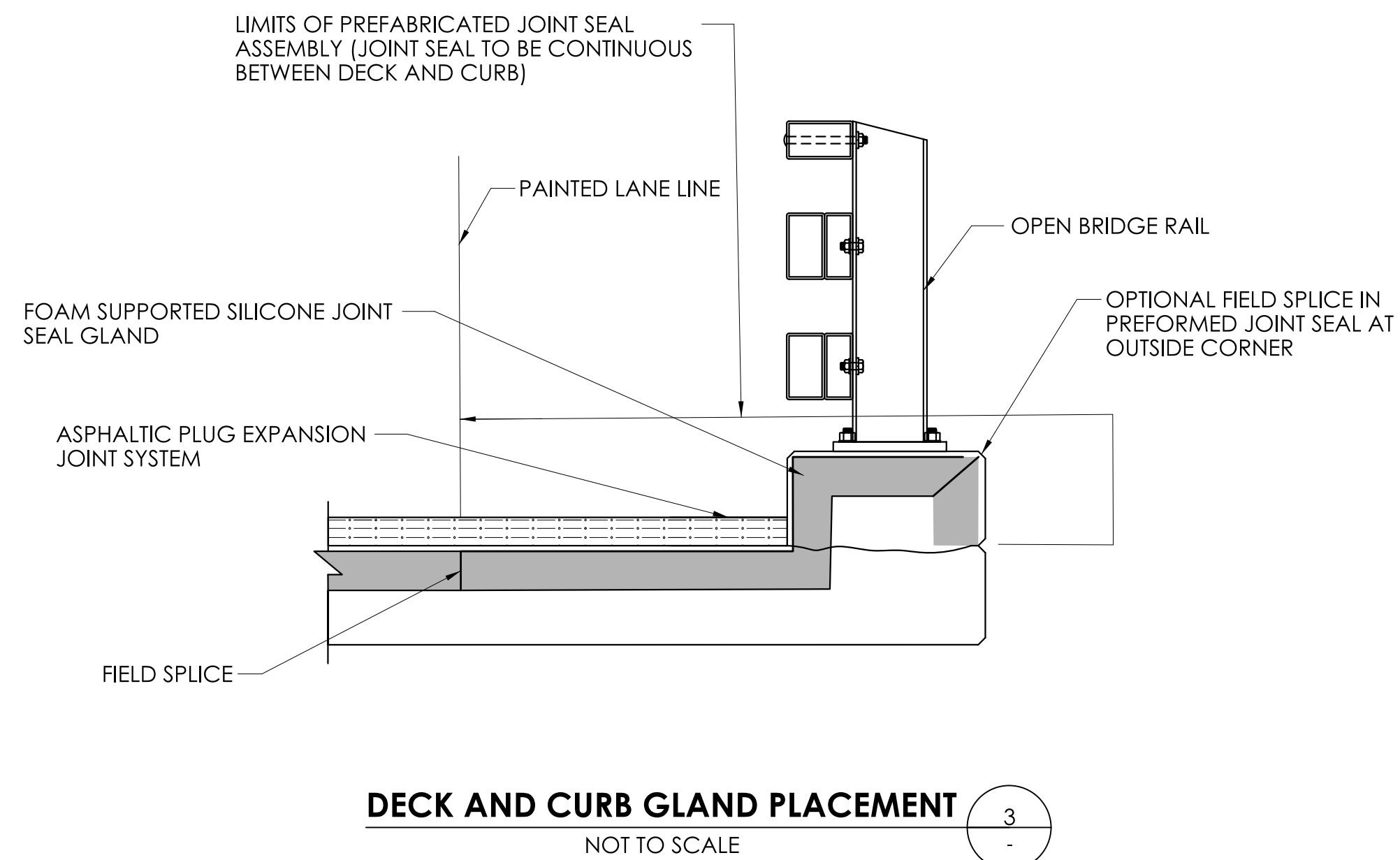
NOTE: THE PREFORMED JOINT SEAL IN THE SIDEWALK AND PARAPET SHALL BE PREFABRICATED OUTSIDE OF THE JOINT. THE PREFABRICATED JOINT ASSEMBLY MAY BE INSTALLED AFTER IT HAS BEEN ACCEPTED BY THE DEPARTMENT. THE PREFABRICATED ASSEMBLY SHALL BE FIELD-SPliced TO THE DECK JOINT AT THE PAINTED LANE LINE.

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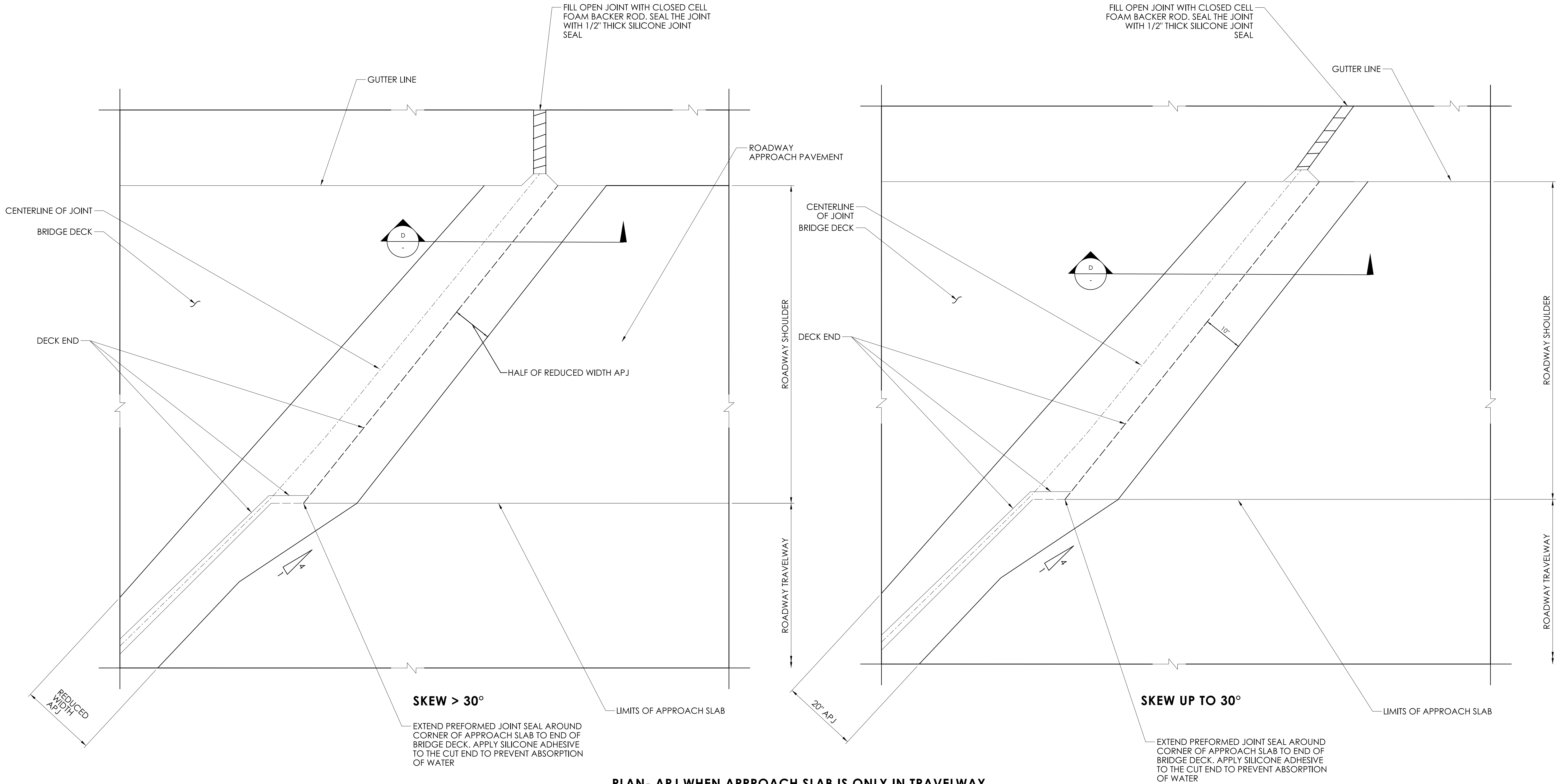
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**PLAN - EXPANSION JOINT AT SIDEWALKS**  
SCALE: 1" = 1'-0"



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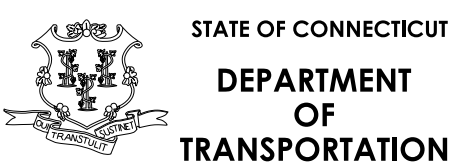


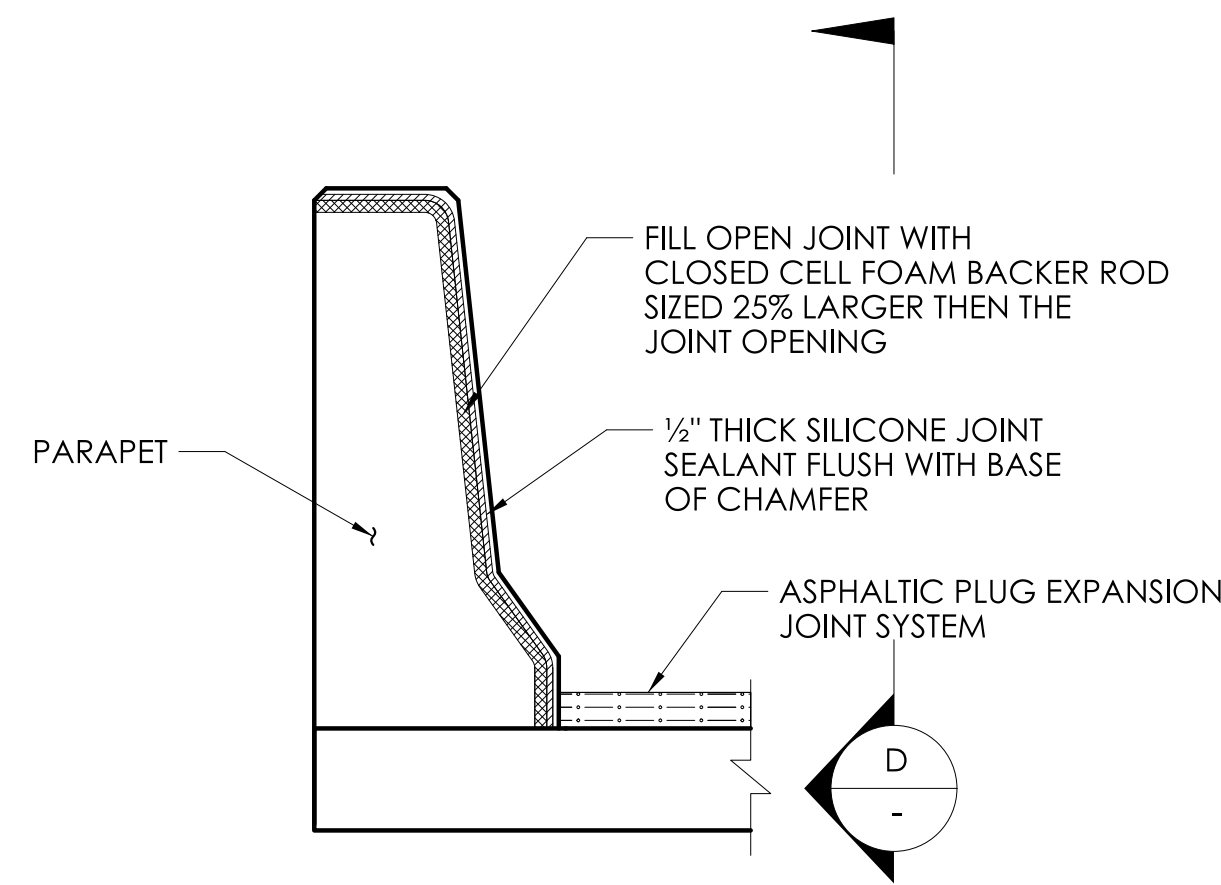
**PLAN- APJ WHEN APPROACH SLAB IS ONLY IN TRAVELWAY**  
NOT TO SCALE

THESE DETAILS APPLY WHERE ALL OF THE FOLLOWING ARE TRUE:  
THERE IS AN APPROACH SLAB IN THE TRAVEL WAY  
THERE IS NO APPROACH SLAB IN THE SHOULDER  
THE DECK END IN THE TRAVELWAY IS OFFSET FROM THE DECK END IN THE SHOULDER

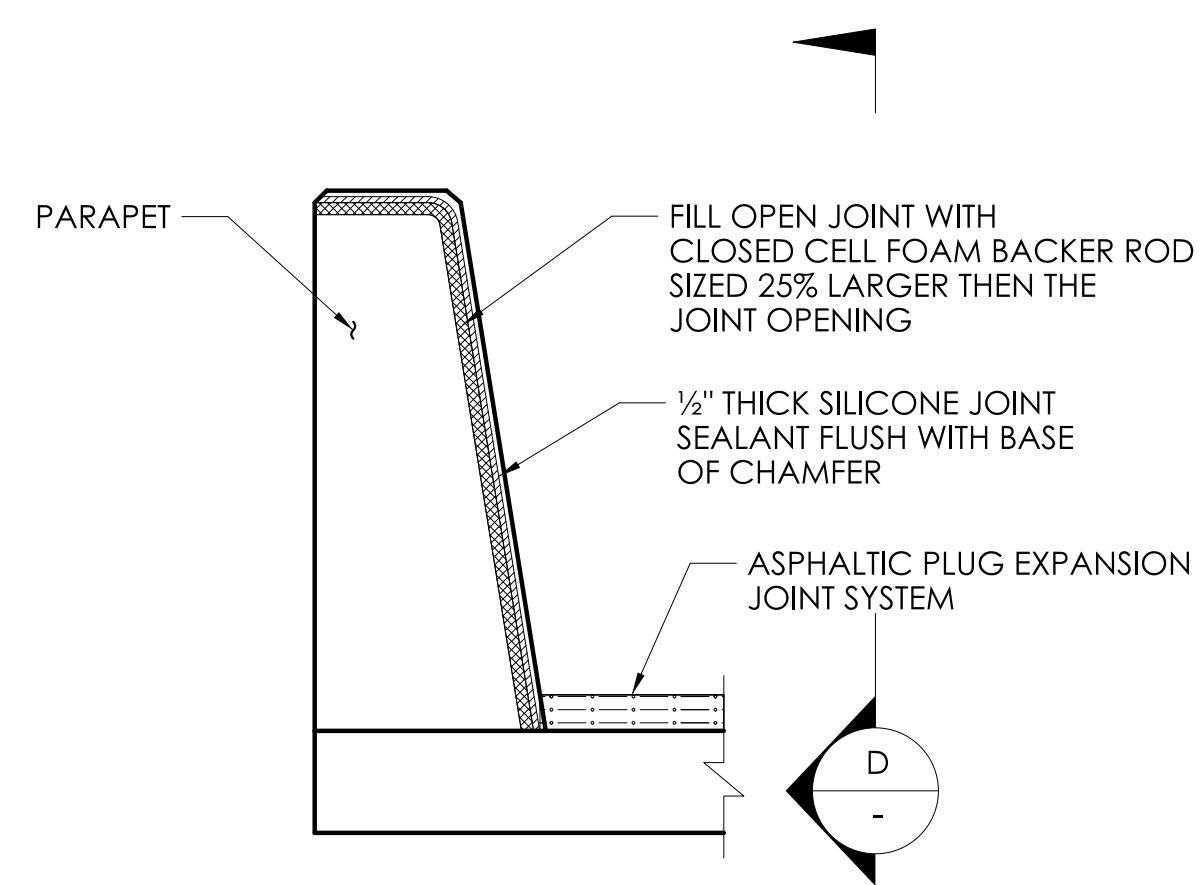
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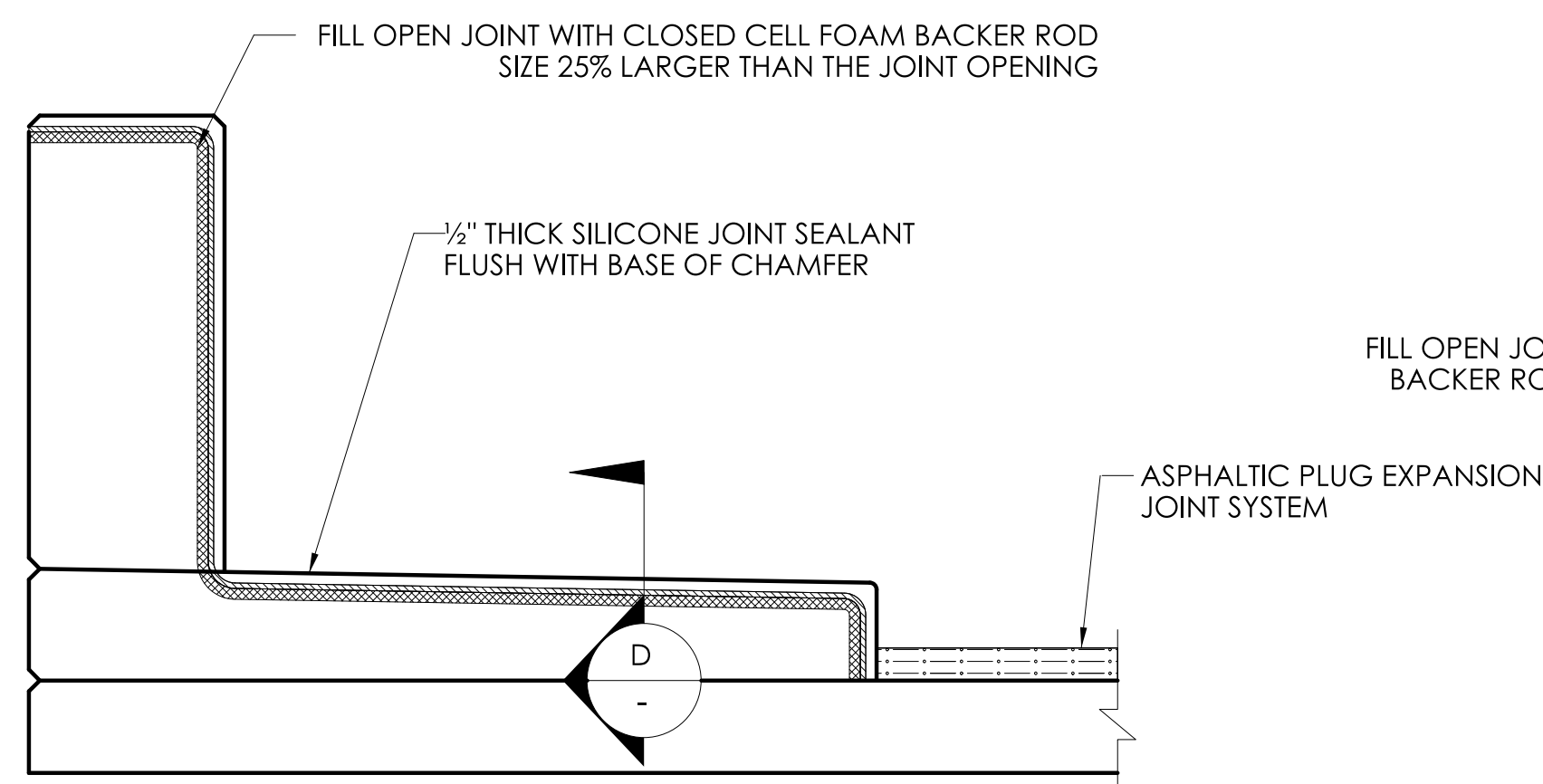
**F-SHAPE**



**SINGLE SLOPE**

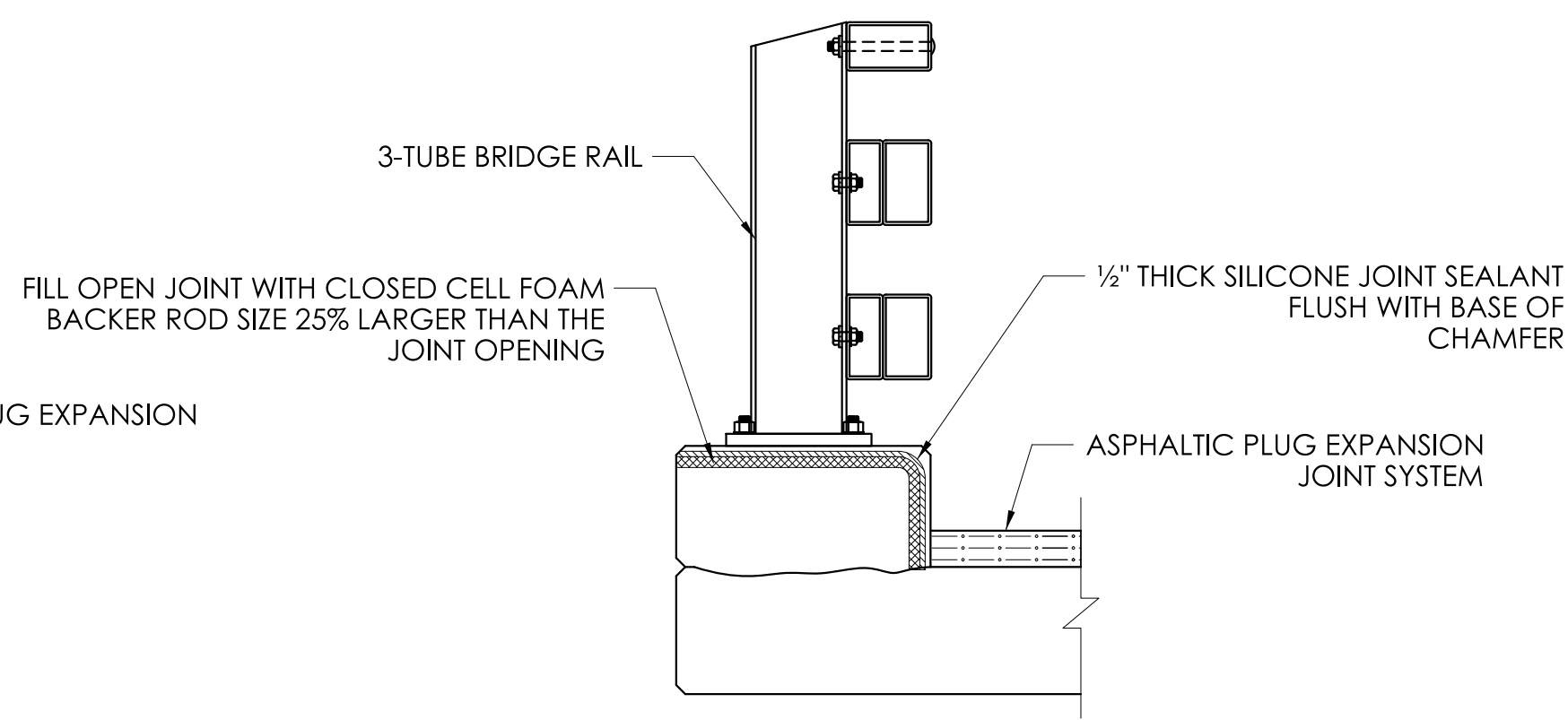
**SECTION - PARAPET JOINT AT  
FILLED WINGWALL JOINT**

SCALE: 3/4" = 1'-0"



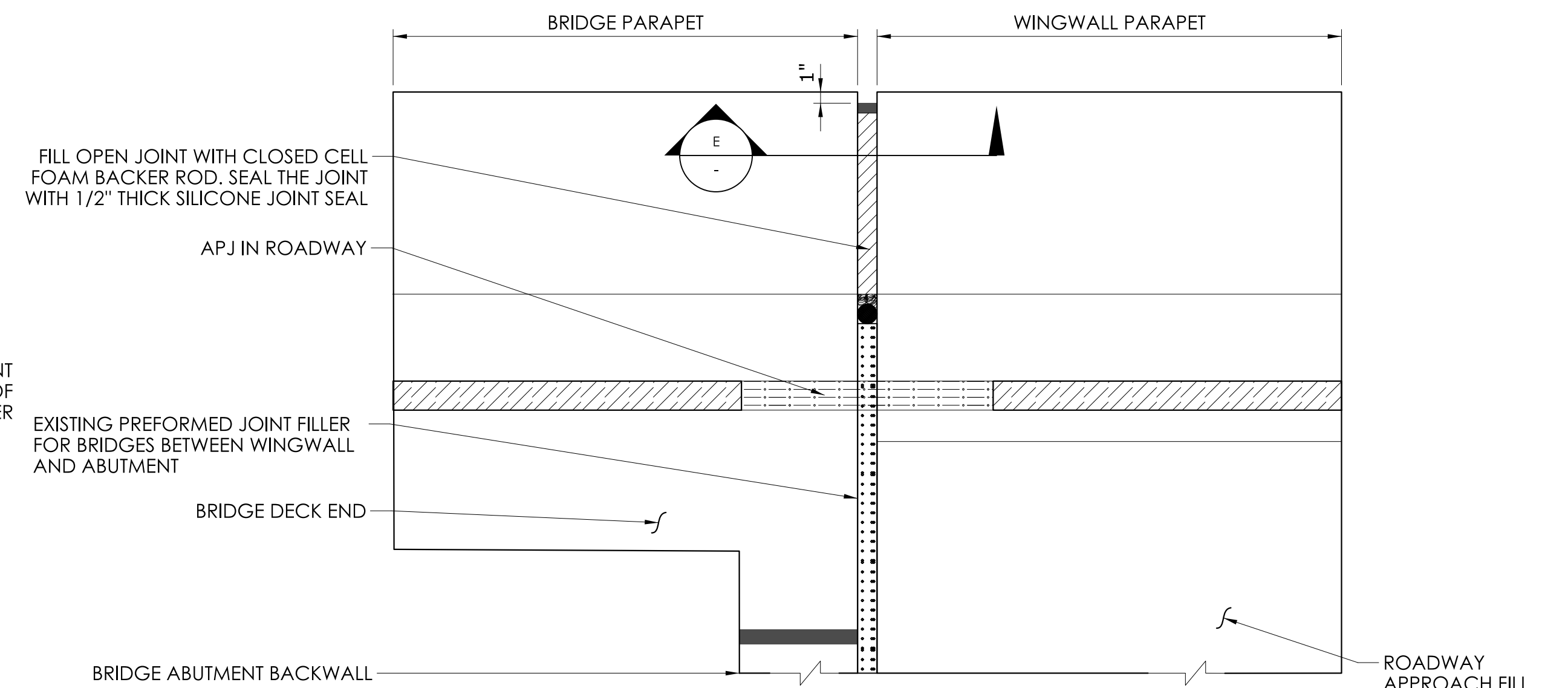
**JOINT TREATMENT AT SIDEWALK  
(SIMILAR DETAILS APPLY AT RAISED CONCRETE MEDIANS)**

NOT TO SCALE



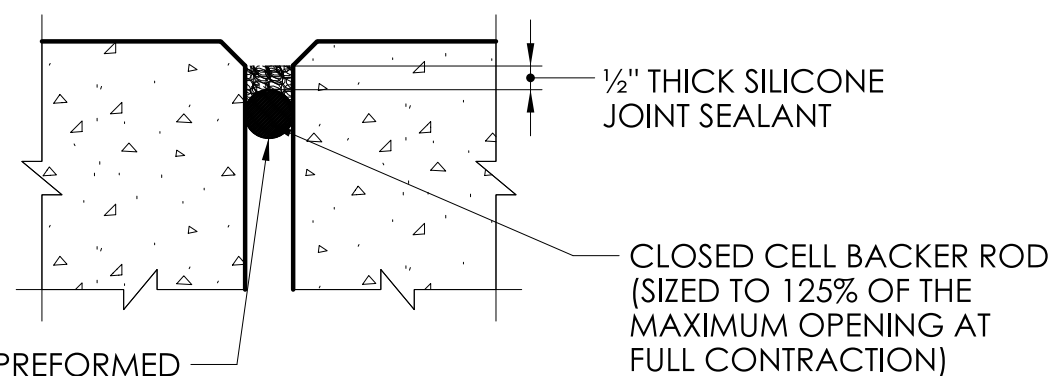
**JOINT TREATMENT AT  
3-TUBE BRIDGE RAIL**

NOT TO SCALE



**PARAPET ELEVATION-JOINT  
AT DECK END**

NOT TO SCALE



IN LOCATIONS WHERE EXISTING PREFORMED JOINT FILLER IS PRESENT, THE CONTRACTOR SHALL OMIT THE BACKER ROD

**SECTION THROUGH MEDIAN/SHOULDER BARRIER JOINT**

NOT TO SCALE

**PARAPET JOINT SEAL:  
JOINT TREATMENT AT PARAPET FOR APJ BRIDGES  
WITHOUT FOAM SUPPORTED GLAND IN PARAPET**

NOTE:

PRIOR TO INSTALLING THE NEW BACKER ROD AND SILICONE JOINT SEALANT, REMOVE EXISTING JOINT MATERIAL. CLEAN JOINT SIDES BY SANDBLASTING. DUST SHALL BE REMOVED BY THE METHOD APPROVED BY THE ENGINEER. THIS WORK WILL BE PAID FOR UNDER THE ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM".

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| DESIGNER/DRAFTER: ABC | CHECKED BY: ABC | SIGNATURE/<br>BLOCK: | STATE OF CONNECTICUT<br>DEPARTMENT<br>OF<br>TRANSPORTATION | PROJECT NUMBER: ###<br>PROJECT DESCRIPTION: TEST PROJECT<br>TOWN(S): VARIOUS<br>DRAWING TITLE: ASPHALTIC PLUG EXPANSION JOINT - JOINT TREATMENT AT PARAPET FOR ALL APJ BRIDGES WITHOUT FOAM SUPPORTED GLAND IN PARAPET | DRAWING NO.<br>S-XX<br>SHEET NO. |
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