

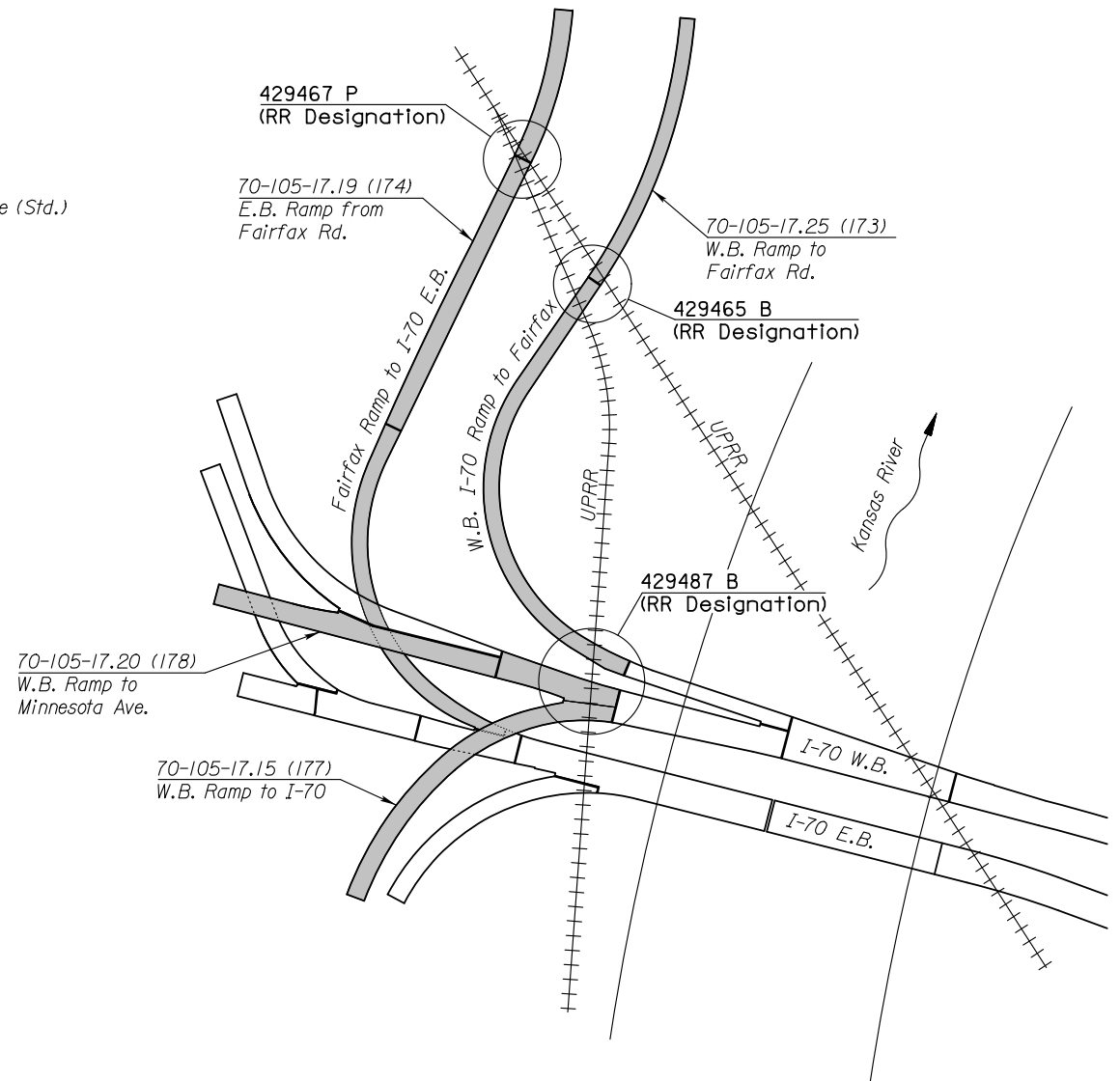
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	I	39

Proj. No. 70-105 KA-2130-03
NHPP-A213(003)

STATE OF KANSAS
DEPARTMENT OF TRANSPORTATION
BRIDGE REPAIR
FEDERAL AID PROJECT
WYANDOTTE COUNTY
I-70
PROJ. NO. 70-105 KA-2130-03

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PLANS PREPARED BY:
PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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Calvin E. Reed, P.E. Date: 02/02/2018

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	2	39

GENERAL NOTES

EXISTING STRUCTURE: Plans of the existing structures are on file and available for inspection by qualified bidders at the State Bridge Office, KDOT, Eisenhower State Office Building, 700 SW Harrison, Topeka, KS.

EXISTING DIMENSION VERIFICATION: Dimensions of the existing structure are based on old plans. Verify, by field measurement, the as-built dimensions of the existing structure and submit such verification in writing to the Engineer. The verification will include sketches, drawings, photographs and descriptions as needed to clearly define the as-built dimensions that will be incorporated in the new construction.

DIMENSIONS: All dimensions shown on the design plans are horizontal dimensions unless otherwise noted. Make necessary allowances for roadway grade and cross slope.

TEMPERATURE: The design temperature for all dimensions is 60°F.

BROKEN CONCRETE: Waste the broken concrete from the existing bridge on sites provided by the Contractor and approved by the Engineer.

DEMOLITION PLANS: This is a Category A Demolition. Submit detailed Demolition Plans to the Field Engineer per KDOT Specifications. No Demolition work will begin without approved Demolition Plans. A Licensed Professional Engineer is not required.

REMOVAL OF EXISTING STRUCTURES: Removal of existing structure is included in the bid item, "Removal of Existing Structures", Lump Sum. All materials removed from the existing structure shall become the property of the Contractor. Remove this material from the site.

- Existing Expansion Joints
- Concrete to limits shown

ASBESTOS INFORMATION: Samples of Bridge (173), (177), (178) were tested to determine the amount of Asbestos Containing Materials (ACM) present in the components. The results are: None Detected, Date of Report: November 20, 2017.

REINFORCING STEEL: All reinforcing steel dimensions are to the centerline of bars unless otherwise noted. All reinforcing steel shall conform to the requirements of ASTM A615, Grade 60.

CONCRETE: Concrete is bid as Concrete (Grade 4.0) (AE). Bevel all exposed edges of all concrete with a 3/4" triangular molding, except as otherwise noted on the plans. Concrete mix shall be designed, using KDOT prequalified materials, to be full strength before the bridge is to be open to traffic. Recast to original lines.

EPOXY BONDING AGENT: Prepare all existing concrete surfaces which will be in contact with new concrete with an approved Epoxy Bonding Agent in accordance with the manufacturer's recommendations. This is subsidiary to the bid item "Concrete (Grade 4.0) (AE)".

STRIP SEAL: The strip seal extrusions in the bridge deck shall be a "Wabo Type R" steel shape or an approved equivalent. Material for the extrusions shall be solid extruded or hot rolled steel. No weathering steel or aluminum will be allowed. The steel extrusions or "grips" shall only be prime-coated with an inorganic zinc vinyl. The gland cavity shall not be prime-coated. The Strip Seal gland shall accommodate a total movement of at least 4". The gland shall be factory molded for horizontal bends of 15° or more.

EXPANSION JOINT (MEMBRANE SEALANT): The joint shall be cleaned by sandblasting and by high pressure air blast to remove all laitance and contaminants from the joint.

Sandblasting shall be accomplished in two passes to clean each face of the joint (one pass for each face). The nozzle shall be held at an angle to the joint face and within 1 to 2 inches of the face.

Any contaminants such as oil, curing compound, etc. shall be removed by sandblasting to the satisfaction of the Engineer. Solvents, wire brushing, or grinding shall not be permitted.

The joint shall be air blasted just prior to installation of the Membrane Sealant. The air compressor used for joint cleaning shall be equipped with trap devices capable of providing moisture-free and oil-free air at a recommended pressure of 90 psi. The joint shall be spot checked to ensure residual dust or dirt has been removed. It is required that the Engineer inspect the joint immediately prior to installation of the Membrane Sealant.

See KDOT Standard Specifications for Membrane Sealant, Bonding Adhesive and Splice Adhesives.

Traffic shall not be allowed on the joint for a minimum of 3 hours unless otherwise directed by the Engineer.

Splices will use materials and methods recommended by the Manufacturer.

All work and materials necessary for the preparation, construction, and installation of the joint will be subsidiary to "Expansion Joint (Membrane Sealant)".

QUANTITIES: Items not listed separately in the Summary of Quantities are subsidiary to other items in the proposal.

DRILLING AND GROUTING: This item shall consist of grouting reinforcing steel, anchor bolts, tie bars, or dowel bars into the existing concrete, where required by the Engineer, with an epoxy grout. Follow KDOT Specifications 842 and any associated Special Provisions. Follow the manufacturer's directions for mixing, application and curing. The tools, materials, labor and incidentals necessary to complete the work shall be paid for per each by the bid item "Drilling and Grouting".

AREA PREPARED FOR PATCHING:

Clearly mark the location of the existing girder and floor beam top flanges on top of the existing deck concrete within the removal limits before sawing or removing any concrete. Concrete sawing shall be limited to a maximum depth of 3 inches directly above any girder and within 3 inches of either edge of a girder top flange. Do not use drop-type pavement breakers. Do not use a hoe ram directly above any girder or within 1'-0" of either edge of a girder top flange. Use a Jackhammer no heavier than 15 lb. to remove concrete above and within 1'-0" of either side of a girder top flange.

Damage to the existing structural steel caused by procedures not conforming to the above recommendations shall be repaired as directed by the Engineer at the Contractor's expense (no cost to the State). Any costs incurred for testing or Engineering evaluations will be included in the Contractor's expense for repair.

All materials removed from the existing structure shall become the property of the Contractor and removed from the site.

TEMPORARY CONSTRUCTION LOADS: The Contractor will not stock pile construction materials, debris/rubble or place equipment weighing more than 20 tons or greater than bridge posted load limits on the bridge without prior written approval by the KDOT Area Engineer. For bridges with highway traffic on or under the bridge the Contractor will provide plans showing the location, quantity and weight of the proposed materials, debris or equipment weighing more than 20 tons or greater than bridge posted load limits. These plans will bear the Seal of the Contractor's Engineer before approval is granted. The Contractor's Engineer will use AASHTO Specifications for limitations on structural capacities, as the structure is found in the field.

ENVIRONMENTAL PROTECTION: Use protection as shown in the KDOT Specifications. The Environmental Protection Structure Classification is Class A.

PAINTING: The field coats applied to Structural Steel shall conform to an organic zinc primer with a waterborne acrylic finish coat. The finish coat will be Kansas Green. The color shall match Federal Standard #34102.

EXISTING BRIDGE PAINTING (Br. 173): Paint all structural steel and bridge bearings in the existing structure in conformance with the KDOT Specifications. The structural steel has a paint history of:

- 1) Original paint system: Unknown, Date: 1962
- 2) Repaint system is an Organic Zinc Vinyl, Date: 2000
- 3) TCLP value is 10.2 mg/L, Report Date: 3 Dec. 2017
- 4) The weight of the existing bridge steel is 1,066,000 pounds.

EXISTING BRIDGE PAINTING (Br. 174): Paint all structural steel and bridge bearings in the existing structure in conformance with the KDOT Specifications. The structural steel has a paint history of:

- 1) Original paint system: Unknown, Date: 1959
- 2) Repaint system is an Inorganic Zinc Vinyl, Date: 1983
- 3) TCLP value is 16.0 mg/L, Report Date: 3 Dec. 2017
- 4) The weight of the existing bridge steel is 1,248,600 pounds.

EXISTING BRIDGE PAINTING (Br. 178): Paint all structural steel and bridge bearings in the existing structure in conformance with the KDOT Specifications. The structural steel has a paint history of:

- 1) Original paint system: Unknown, Date: 1962
- 2) Repaint system is an Inorganic Zinc Vinyl, Date: 1983
- 3) TCLP value is 14.5 mg/L, Report Date: 3 Dec. 2017
- 4) The weight of the existing bridge steel is 603,600 pounds.

TRAFFIC CONTROL: Bridges 173, 177 and 178 will be closed to traffic throughout the project. Bridge 174 will carry traffic, but because of the nature of the work performed on this bridge no traffic control is expected. If traffic control is needed for any of the repairs, a traffic control plan shall be submitted to the Engineer for approval a minimum of 2 weeks in advance. Any materials or labor needed to accomplish this work shall be subsidiary to other items in the contract.

No closures to City streets or ramps will be allowed without the approval of the Engineer. The Contractor must submit a traffic control plan for any closures they propose.

Once access to or from I-70 W.B. is restricted on any structure, the Contractor must work continuously on the structure until access is restored.


SUMMARY OF QUANTITIES						
ITEM	UNITS	QUANTITY				TOTAL
		BR. (173)	BR. (174)	BR. (177)	BR. (178)	
Removal of Existing Structures	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum
Expansion Joint (Strip Seal Assembly)	Lin. Ft.	22	—	32	79	133
Concrete (Grade 4.0) (AE)	Cu. Yds.	2.90	—	3.99	13.25	20.1
Reinforcing Steel (Grade 60)	Lbs.	—	—	230	—	230
Drilling and Grouting	Each	—	—	60	—	60
Expansion Joint (Membrane Sealant)	Lin. Ft.	7	—	33	312	352
Bridge Curb Repair	Lin. Ft.	1,276	—	112	185	1,573
Area Prepared for Patching	Sq. Yds.	50	—	205	100	355
Area Prepared for Patching (Full Depth)	Sq. Yds.	25	—	5	50	80
Multi-Layer Polymer Concrete Overlay	Sq. Yds.	3,210	—	2,053	2,658	7,921
Reinforcing Steel (Repair) (Grade 60) (Epoxy) (Set Price)	Lbs.	1	—	1	—	1
Reinforcing Steel (Repair) (Grade 60) (Set Price)	Lbs.	1	—	1	1	1
PCCP Joint and Crack Patching (Partial Depth)	Sq. Yds.	—	—	40	—	40
Bridge Painting (Organic Zinc w/ Acrylic System)	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum
Environmental Protection	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum
Mobilization	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum
Mobilization (DBE)	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum

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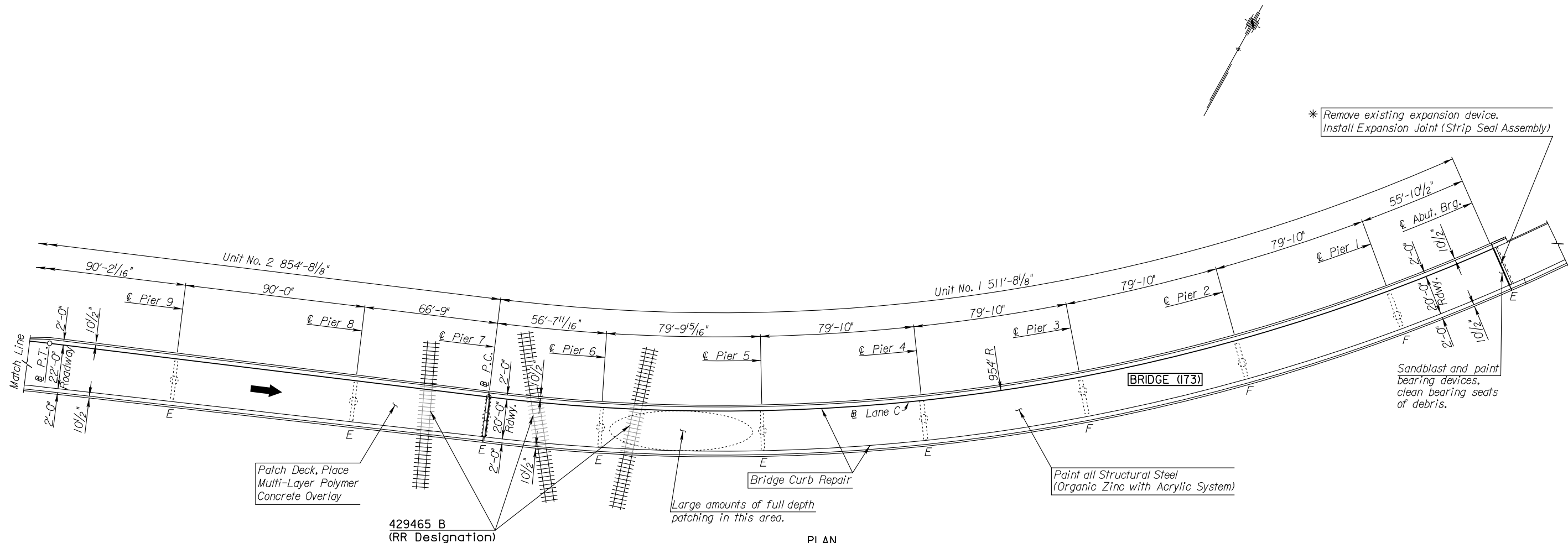
KANSAS DEPARTMENT OF TRANSPORTATION
BrIdge No. 70-105 (173) (174) (177) (178)

GENERAL NOTES AND QUANTITIES

ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

 **PEC** PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	3	39



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PLAN
 Unit No. 1 and 2: Welded Plate Girder Floorbeam
 Continuous Spans, Cantilever Piers on H-Pile,
 Variable Roadway
 Unit No. 3: Steel Deck Truss Simple, 22'-0" Roadway

Note: Pier spacing and unit dimensions shown represent the distance along Lane C as shown in the original plans.

Note: The Contractor must maintain access (reverse flow) to I-70 W.B. via bridge (173) or bridge (178) at all times. The Contractor shall coordinate with American Bridge Company, the prime contractor on the adjacent project 70-105 KA-2130-02, for the order in which access on these bridges will be restricted.

* Clean and prime top of exposed structural steel prior to placing new concrete.

LEGEND
 E = Expansion Pier
 F = Fixed Pier

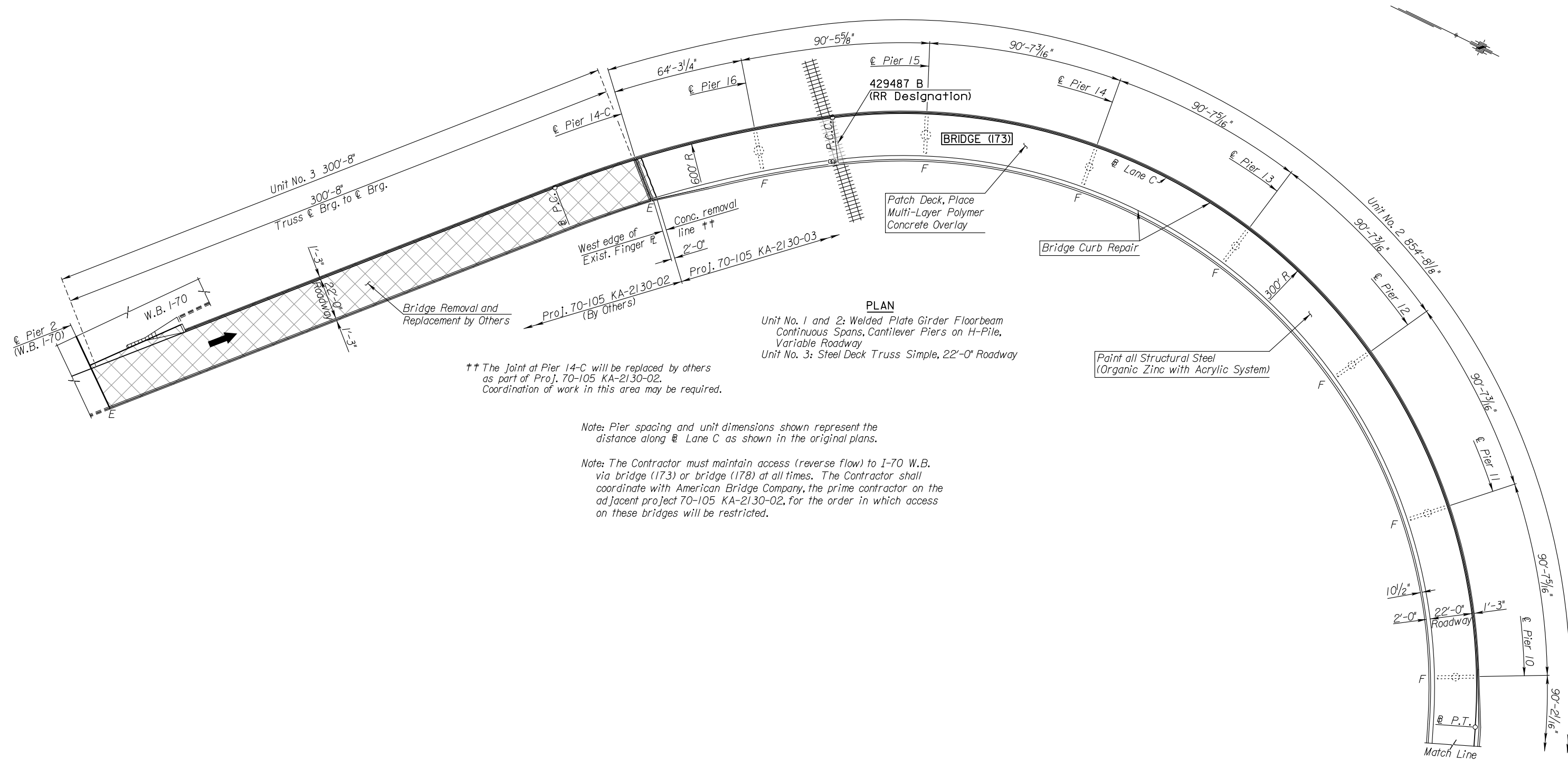
KANSAS DEPARTMENT OF TRANSPORTATION
 BrIdge No. 70-105-17.25 (173)

CONSTRUCTION LAYOUT

ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	4	39



PLAN
 Unit No. 1 and 2: Welded Plate Girder Floorbeam
 Continuous Spans, Cantilever Piers on H-Pile,
 Variable Roadway
 Unit No. 3: Steel Deck Truss Simple, 22'-0" Roadway

†† The joint at Pier 14-C will be replaced by others as part of Proj. 70-105 KA-2130-02. Coordination of work in this area may be required.

Note: Pier spacing and unit dimensions shown represent the distance along Lane C as shown in the original plans.

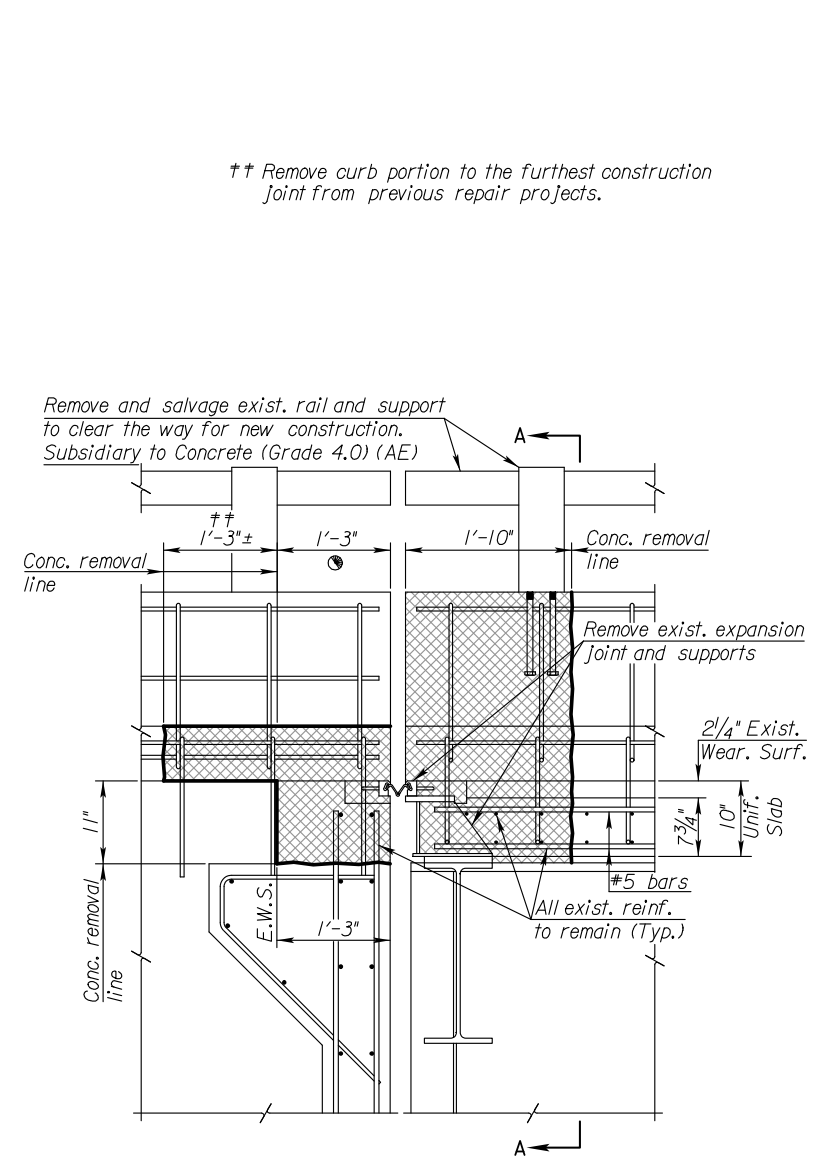
Note: The Contractor must maintain access (reverse flow) to I-70 W.B. via bridge (173) or bridge (178) at all times. The Contractor shall coordinate with American Bridge Company, the prime contractor on the adjacent project 70-105 KA-2130-02, for the order in which access on these bridges will be restricted.

LEGEND
 E = Expansion Pier
 F = Fixed Pier

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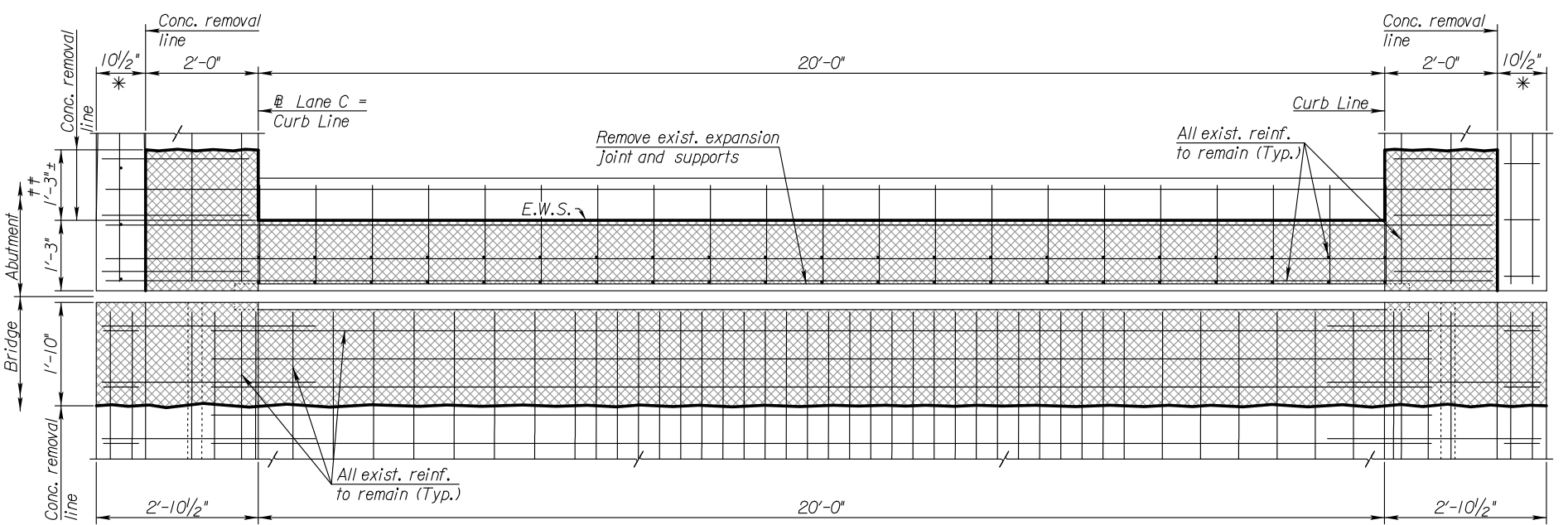
KANSAS DEPARTMENT OF TRANSPORTATION
 BrIdge No. 70-105-17.25 (173)
CONSTRUCTION LAYOUT
 Proj. No. 70-105 KA-2130-03 WYANDOTTE Co.
PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	5	39



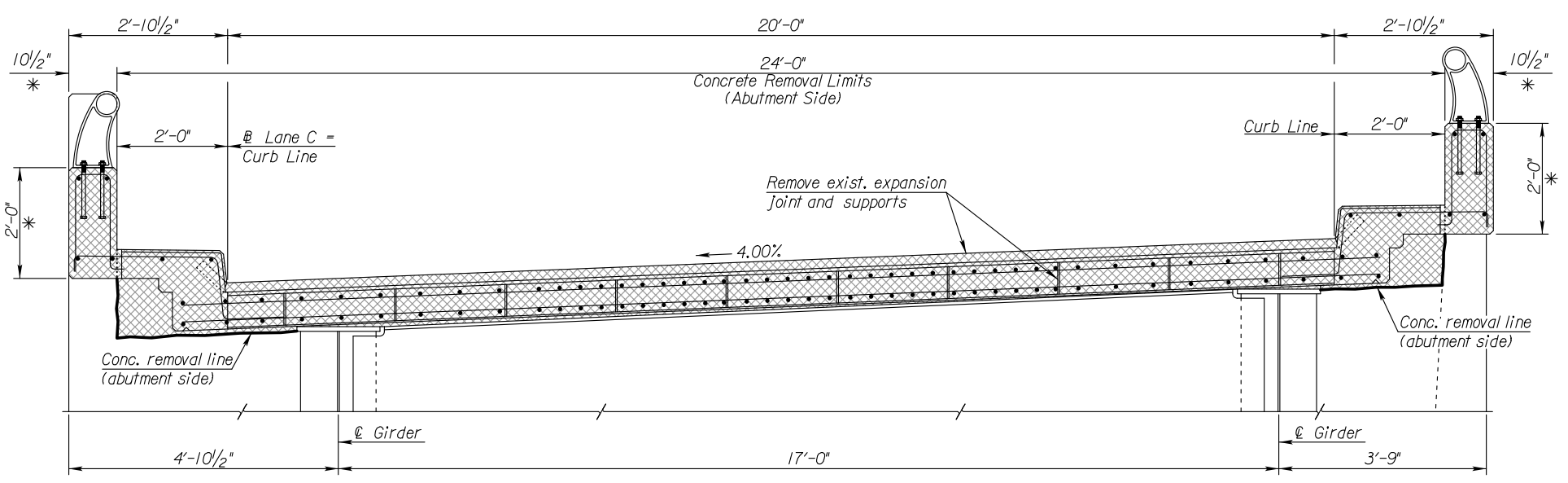
EXISTING TYPICAL SECTION

Note: Thoroughly clean existing reinforcing.
 Note: Any curb plates that may remain will not be reused in new construction.



EXISTING PLAN

* Dimensioned area shown is to remain on abutment side.



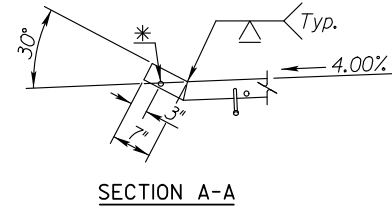
SECTION A-A



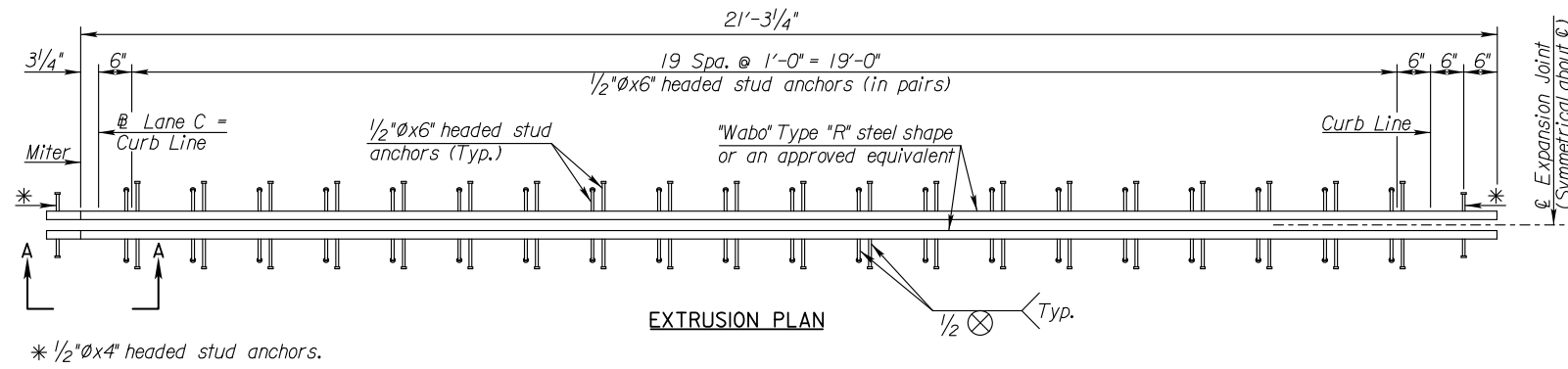
KANSAS DEPARTMENT OF TRANSPORTATION
 BrIdge No. 70-105-17.25 (173)
ABUTMENT EXPANSION JOINT DETAILS
 (CONCRETE REMOVAL)
 Proj. No. 70-105 KA-2130-03 WYANDOTTE Co.
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	7	39

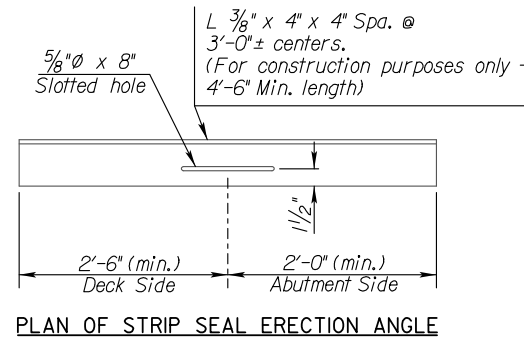


SECTION A-A

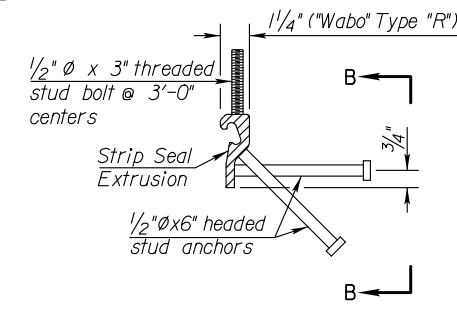


EXTRUSION PLAN

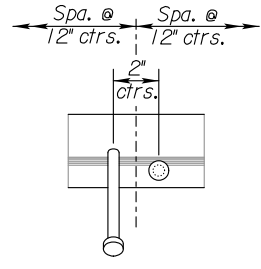
* 1/2"Øx4" headed stud anchors.



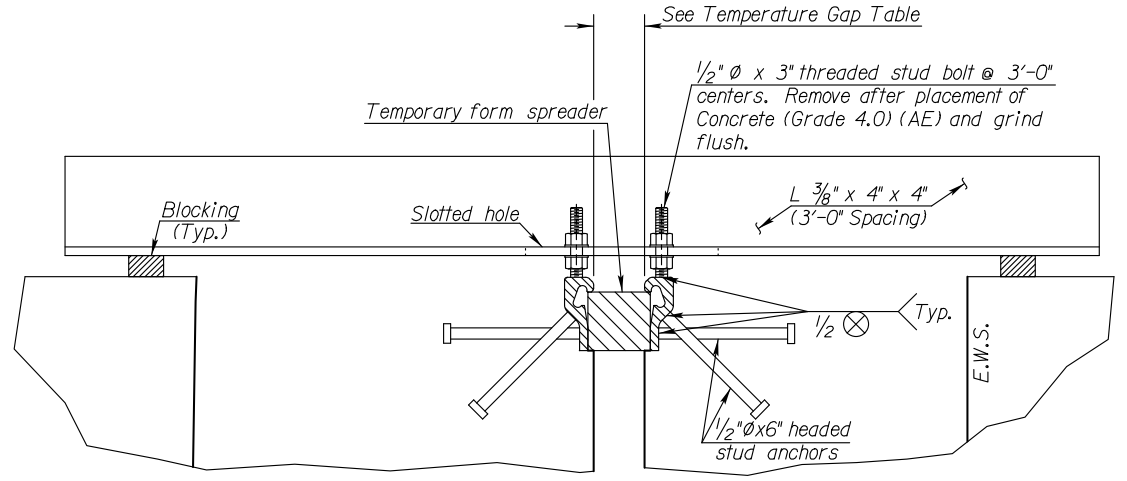
PLAN OF STRIP SEAL ERECTION ANGLE



SECTION THRU EXTRUSION



SECTION B-B



TYPICAL SECTION SHOWING ERECTION ANGLE

NOTE:
Immediately prior to placing the Concrete (Grade 4.0) (AE) around the Strip Seal Extrusion, the existing concrete surface at the concrete removal line shall be cleaned and roughened. The erection angles shall be securely bolted to the extrusion. The extrusion shall be in the same plane and recessed 1/4" below the top of the roadway. The erection angles shall be removed as soon as the new concrete will support the assembly without allowing any settlement or tilting. Following the removal of the erection angles, remove the stud bolts on the extrusions and grind flush. The stud bolts, nuts and washers, and erection angles, labor and materials used to install and remove the erection angles shall be subsidiary to the bid item "Expansion Joint (Strip Seal Assembly)".

NOTE:
The strip seal extrusions in the bridge deck shall be a "Wabo" Type "R" steel shape or approved equivalent as shown in the details. All items shown on the Expansion Joint Details sheets are included in the bid item "Expansion Joint (Strip Seal Assembly)". All welds on the extrusion shall be 1/4" continuous fillet welds, unless otherwise noted.

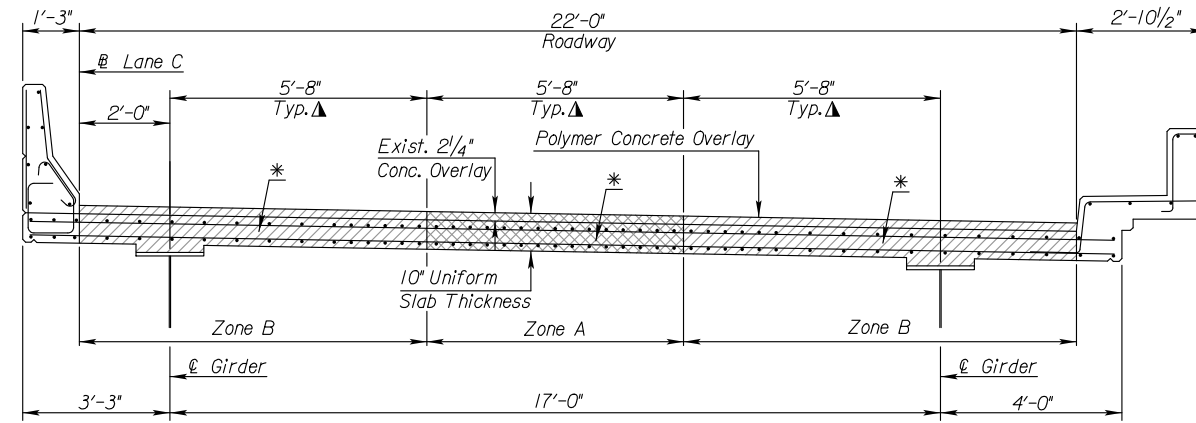
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KANSAS DEPARTMENT OF TRANSPORTATION
Br1dge No. 70-105-17.25 (173)

ABUTMENT EXPANSION JOINT DETAILS
(PROPOSED CONSTRUCTION)

ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

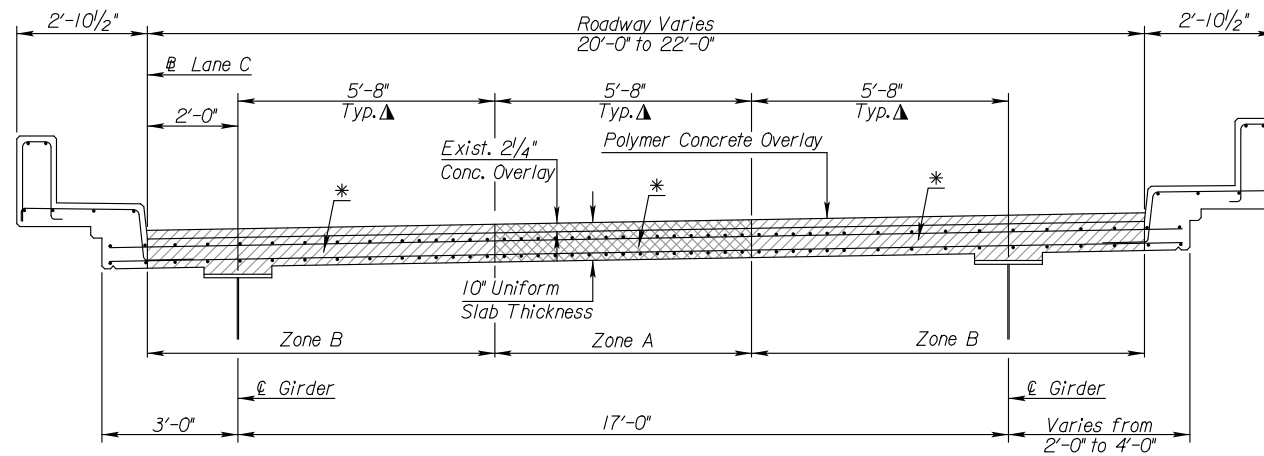
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TYPICAL SECTION NEAR PIER 17 TO PIER 10

▲ Girder Spacing /3 or as directed by the Engineer.

Note: Bridge will be closed during construction.



TYPICAL SECTION NEAR PIER 10 TO ABUTMENT

* FULL DEPTH PATCHING SEQUENCE:

Full depth patching shall be phased if any of the following criteria are met:

- Plan area of contiguous patch is greater than 64 square feet.
- The length of the patch is greater than 10 feet, measured from it's furthest extents parallel to the centerline of the roadway.
- The width of the patch is greater than 1/3 of the girder spacing, measured from it's furthest extents perpendicular to the centerline of the roadway.
- At the direction of the Engineer

Segmental patching will not be required if adequate shoring is provided to support the deck, curbs and beams. Otherwise, phased patching shall be performed in the following sequence:

Zone A: Full depth patching in Zone A, as shown in the details, shall be repaired first. Patching shall be performed such that no segment of patching is greater than 8'-0" long measured parallel to the centerline of the roadway. The minimum distance between adjacent concurrently patched segments shall be 8'-0" measured parallel to the centerline of the roadway. After the initial patches have cured according to KDOT Specifications, the area between the initial segments in Zone A shall be patched.

Zone B: after all patches in Zone A have cured according to KDOT Specifications, full depth patching in Zone B may commence. Patching shall be performed such that no segment of patching is greater than 8'-0" long measured parallel to the centerline of the roadway. The minimum distance between adjacent concurrently patched segments shall be 8'-0" measured parallel to the centerline of the roadway. After the initial patches have cured according to KDOT Specifications, the area between the initial segments in Zone B shall be patched.

Care shall be taken so that transverse joints in Zone A are not aligned with transverse joints in Zone B. Provide a minimum of 1'-0" staggered spacing between these transverse joints.

Existing Bar Size	Minimum Splice Lengths (inches)	
	Existing Gr. 40 ksi Bars	Existing Gr. 60 ksi Bars
#4	12"	16"
#5	13"	20"
#6	16"	24"
#7	20"	30"
#8	26"	39"
#9	33"	49"
#10	42"	62"
#11	51"	77"

Note: If splicing epoxy coated reinforcing steel, increase the above splice lengths by 20%.

■ Lap lengths are based on a Class B splice. Use the minimum splice length corresponding to the grade of the existing reinforcing in the deck.

SUMMARY OF QUANTITIES		
ITEM	UNITS	QUANTITY
Area Prepared for Patching	Sq. Yds.	50
Area Prepared for Patching (Full Depth)	Sq. Yds.	25
Multi-Layer Polymer Concrete Overlay	Sq. Yds.	3,210
Reinforcing Steel (Repair) (Grade 60) (Set Price)	Lbs.	1
Reinforcing Steel (Repair) (Grade 60) (Epoxy) (Set Price)	Lbs.	1

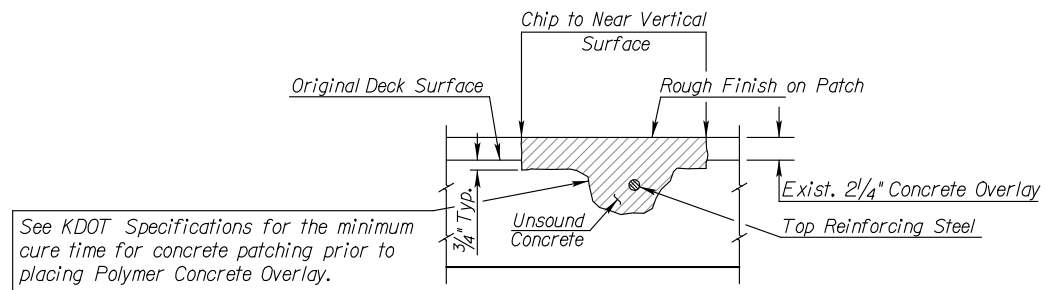
KANSAS DEPARTMENT OF TRANSPORTATION
Br1dgc No. 70-105-17.25 (173)

DECK PATCHING SEQUENCE

Pro1. No. 70-105 KA-2130-03 WYANDOTTE Co.

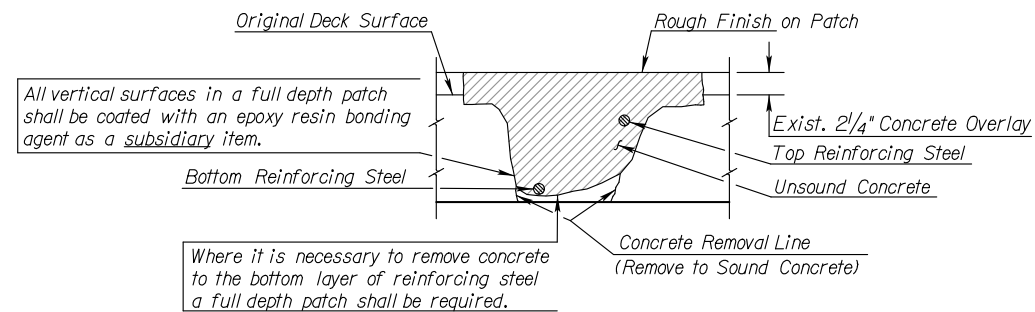
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
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See KDOT Specifications for the minimum cure time for concrete patching prior to placing Polymer Concrete Overlay.

PARTIAL DEPTH PATCHING

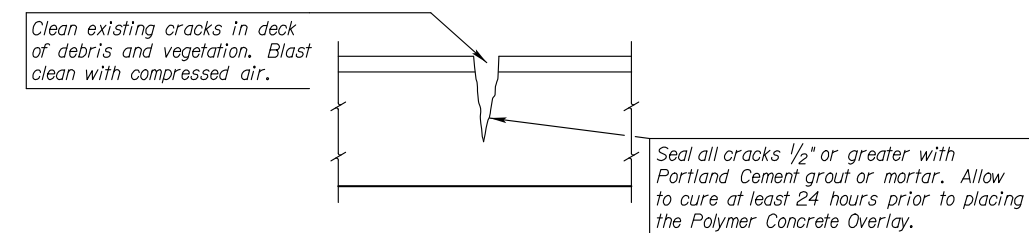


All vertical surfaces in a full depth patch shall be coated with an epoxy resin bonding agent as a subsidiary item.

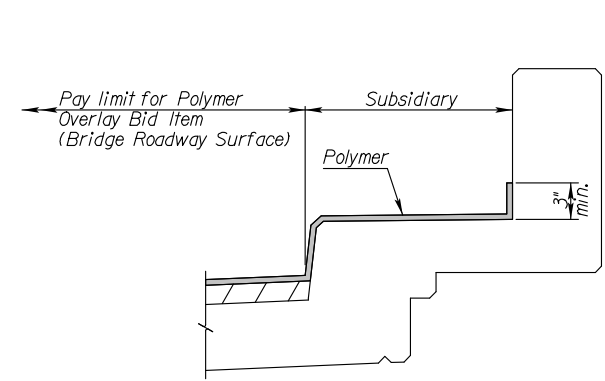
Where it is necessary to remove concrete to the bottom layer of reinforcing steel a full depth patch shall be required.

FULL DEPTH PATCHING

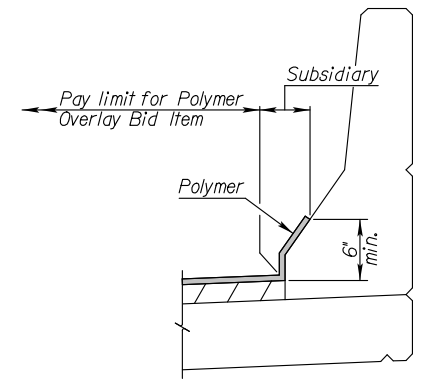
DECK PATCHING DETAILS



CRACK SEALING DETAIL



CURB WITH PARAPET RAIL



BARRIER RAIL

AREA PREPARED FOR PATCHING: This item shall consist of removing unsound concrete and asphalt patches from the bridge deck, cleaning reinforcing bars, filling the removed patched areas with concrete and preparing the entire area of the deck for an overlay. Quantity shown is an estimate of the areas involved. The exact areas shall be determined by tapping, before, during and after chipping operation to ensure that all unsound concrete has been removed. See KDOT Specifications.

FULL DEPTH PATCHING: Forms shall be provided to enable placement of the concrete in areas of full depth removal of bridge slab. The forms may be suspended from existing reinforcing bars by wire ties or a method approved by the Engineer. See KDOT Specifications for method of measurement and payment.

REINFORCING IN BRIDGE DECK: Care should be exercised to prevent cutting, stretching or damaging exposed reinforcing steel. Extreme care should be exercised to avoid breaking the bond between the reinforcing steel and concrete where bars are partially exposed yet remain anchored in sound concrete. Reinforcing steel damaged, cut or deteriorated shall be replaced as directed by the Engineer. Do not wedge chipping hammer bit against reinforcement. See table for replacement bar size and minimum splice length required. Replacement of bars damaged by the Contractor shall be subsidiary to "Area Prepared for Patching".

REPAIR OF EPOXY COATED REINFORCING STEEL: Replace any epoxy coating damaged or removed from the reinforcing steel during the concrete removal process. Thoroughly clean damaged areas with a stiff wire brush to remove dirt and damaged coating. Apply an approved patching material in accordance with the manufacturer's recommendations. Avoid dripping any patching material onto the existing concrete. See KDOT Specifications.

MULTI-LAYER POLYMER CONCRETE OVERLAY: Prepare and overlay the bridge roadway surface using a Polymer Overlay (Two-coat Broom and Seed). On continuous concrete barrier rails, apply polymer past the first break in geometry of the barrier to a minimum height of 6 inches above the deck. On curb with parapet rails, apply polymer to a minimum of 3" above the base of the parapet. Apply polymer to the barrier or curb as each of the overlay applications are performed.

All work related to applying polymer to additional areas beyond the bridge roadway surface width shall be subsidiary to the bid item Multi-Layer Polymer Concrete Overlay.

Drawn By : milie.thompson Plotted : 02-FEB-2018 14:59
File : IP_PVIP-dms06773174763-004.dgn

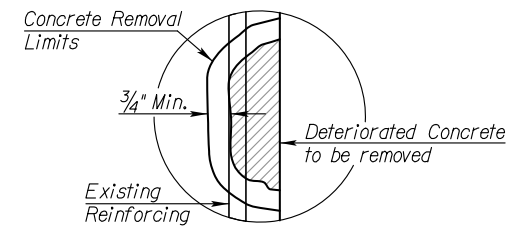
KANSAS DEPARTMENT OF TRANSPORTATION
BrIdge No. 70-105-17.25 (173)

DECK PATCHING DETAILS

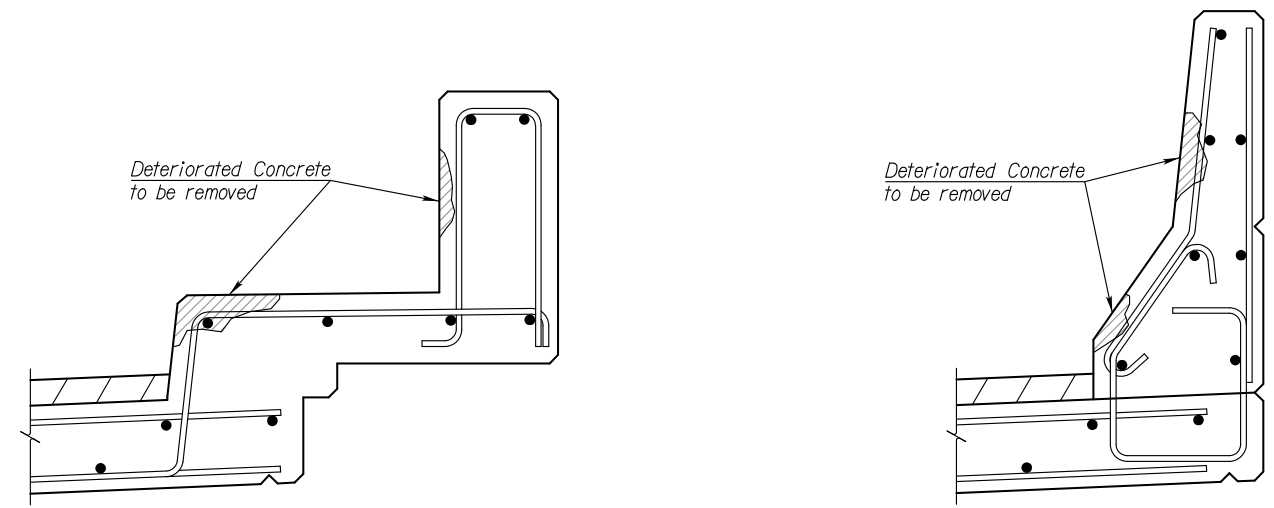
ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	10	39



CONCRETE REMOVAL DETAIL



EXISTING PARAPET AND BARRIER RAIL DETAILS

PARAPET AND BARRIER RAIL REPAIR: The Contractor shall remove all deteriorated or damaged concrete delineated by the Engineer. Additional concrete shall be removed to create a minimum thickness of new concrete of 1 inch. Do not feather edges. At repair locations, the concrete shall be removed from 3/4" around the reinforcing steel near the surface to allow a positive bond of new concrete to the existing structure. Concrete (Grade 4,0) (AE) or an approved Shotcrete shall be used. Prior to its placement, an epoxy resin for bonding new concrete to existing concrete shall be used. The removal of deteriorated or damaged concrete, placement of new concrete, and all labor, materials, equipment, and incidentals necessary to complete the repairs shall be paid for as "Bridge Curb Repair" (Lin. Ft.).

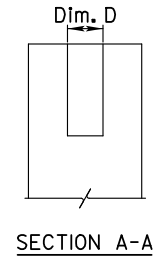
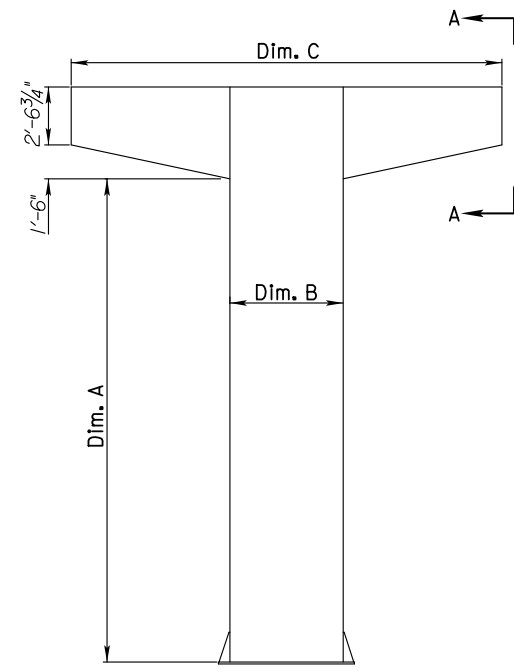
Drawn By : milie.thompson Plotted : 02-FEB-2018 14:59
 File : IP_PVIP-dms067314783-004.dgn

KANSAS DEPARTMENT OF TRANSPORTATION
 Bridge No. 70-105-17.25 (173)

CURB REPAIR DETAILS

Proj. No. 70-105 KA-2130-03 WYANDOTTE Co.

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TYPICAL PIER

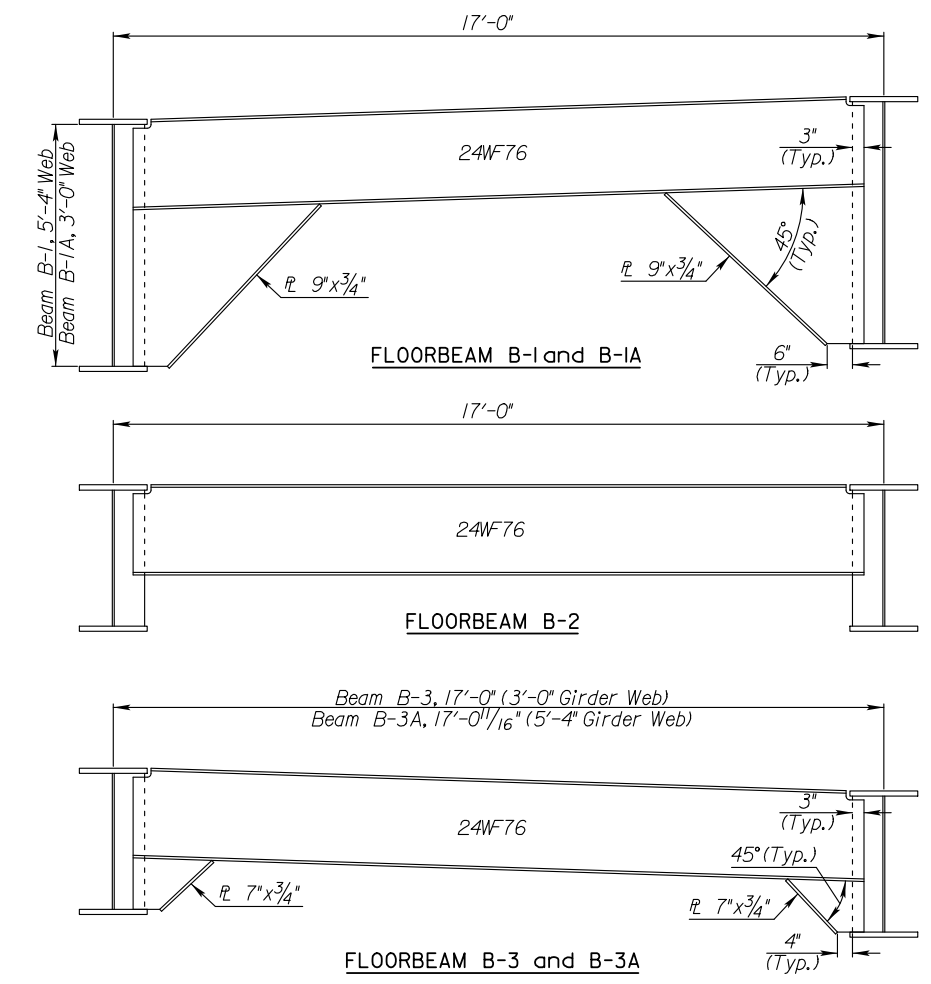
Pier No.	Dimension				Sq. Ft. Paint Area
	A	B	C	D	
1	16'-6 ³ / ₈ "	4'-1 ¹ / ₂ "	17'-0"	2'-0"	438.45
2	20'-6 ³ / ₈ "	4'-1 ¹ / ₄ "	17'-0"	2'-0"	488.50
3	23'-3"	4'-1 ¹ / ₂ "	17'-0"	2'-0"	253.38
4	22'-9 ³ / ₈ "	4'-1"	19'-6"	2'-0 ³ / ₄ "	543.78
5	23'-8"	4'-0 ³ / ₄ "	19'-6"	2'-0 ³ / ₄ "	553.15
6	25'-10"	4'-0 ³ / ₄ "	19'-6"	1'-6 ³ / ₄ "	566.72
7	28'-0"	4'-0 ³ / ₄ "	19'-0"	2'-6 ³ / ₄ "	616.68
8	28'-11 ⁷ / ₁₆ "	4'-1 ¹ / ₂ "	19'-0"	1'-6 ³ / ₄ "	608.76
9	33'-0 ⁷ / ₈ "	4'-1 ¹ / ₂ "	19'-0"	1'-6 ³ / ₄ "	661.33
10	37'-2 ⁵ / ₈ "	4'-1 ¹ / ₂ "	19'-0"	1'-6 ³ / ₄ "	715.87
11	37'-5 ⁷ / ₈ "	4'-1 ¹ / ₂ "	19'-0"	1'-6 ³ / ₄ "	719.38
12	40'-6 ¹⁵ / ₁₆ "	4'-1 ¹ / ₂ "	19'-0"	1'-6 ³ / ₄ "	759.40
13	39'-10 ⁹ / ₁₆ "	4'-1 ¹ / ₂ "	19'-0"	1'-6 ³ / ₄ "	750.36
14	45'-6 ³ / ₈ "	4'-1 ¹ / ₂ "	19'-0"	1'-6 ³ / ₄ "	823.59
15	50'-9 ⁷ / ₈ "	5'-1 ¹ / ₈ "	19'-0"	1'-6 ³ / ₄ "	1,070.84
16	56'-4 ⁵ / ₁₆ "	5'-1 ¹ / ₈ "	19'-0"	1'-6 ³ / ₄ "	1,159.43
Total					10,729.63

GIRDERS		
Location	Lin. Ft.	Sq. Ft. Paint Area
Girder A (3'-0" web)	513.0	5,607.18
Girder A (5'-4" web)	794.4	12,281.39
Girder A Transition	54.0	707.63
Girder B (3'-0" web)	522.1	5,706.03
Girder B (5'-4" web)	760.1	11,892.88
Girder B Transition	54.0	707.63
Total		36,902.73

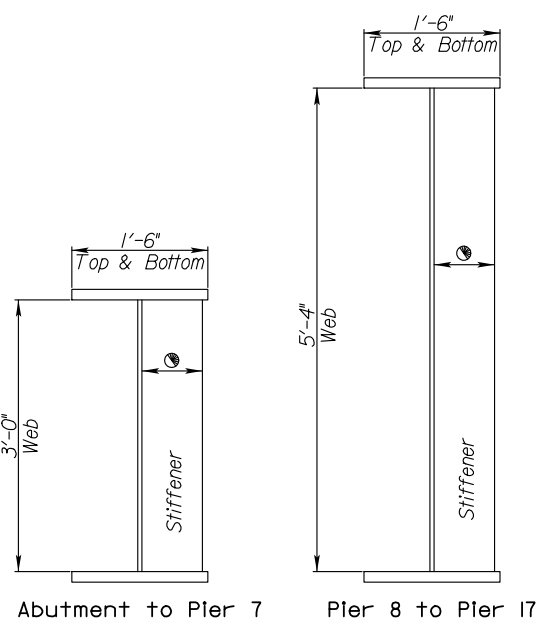
FLOORBEAMS		
Location	Number	Sq. Ft. Paint Area
B-1	41	5,926.19
B-1A	29	3,495.06
B-2	15	1,744.20
B-3	3	361.56
B-3A	1	140.30
Total		11,667.30

STIFFENERS			
Location	Depth	Number	Sq. Ft. Paint Area
Girder A			
Cross Beam	3'-0"	28	115.50
Bearing	3'-0"	8	33.50
Intermediate	Varies	11	39.39
Cross Beam	Varies	4	22.92
Intermediate	5'-4"	159	728.75
Cross Beam	5'-4"	41	300.67
Bearing	5'-4"	20	148.89
Girder B			
Cross Beam	3'-0"	28	115.50
Bearing	3'-0"	8	33.50
Intermediate	Varies	11	39.39
Cross Beam	Varies	4	22.92
Intermediate	5'-4"	159	728.75
Cross Beam	5'-4"	41	300.67
Bearing	5'-4"	20	148.89
Total			2,779.22

Grand Total	62,078.88
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Note: The details and quantities shown on this sheet are for information only and are intended to be a guide for determining paint quantities. Additional information may be obtained from the original bridge plans.



Note: Web transitions from 3'-0" at Pier 7 to 5'-4" near Pier 8.

GIRDER A or B
(Girder A is the west girder, Girder B is the east girder)

Stiffeners at floorbeam locations are 8". Intermediate stiffeners are 5".

Drawn By: milie.thompson Plotted: 02-FEB-2018 14:59 File: IP_PWP-dms067314763-004.dgn

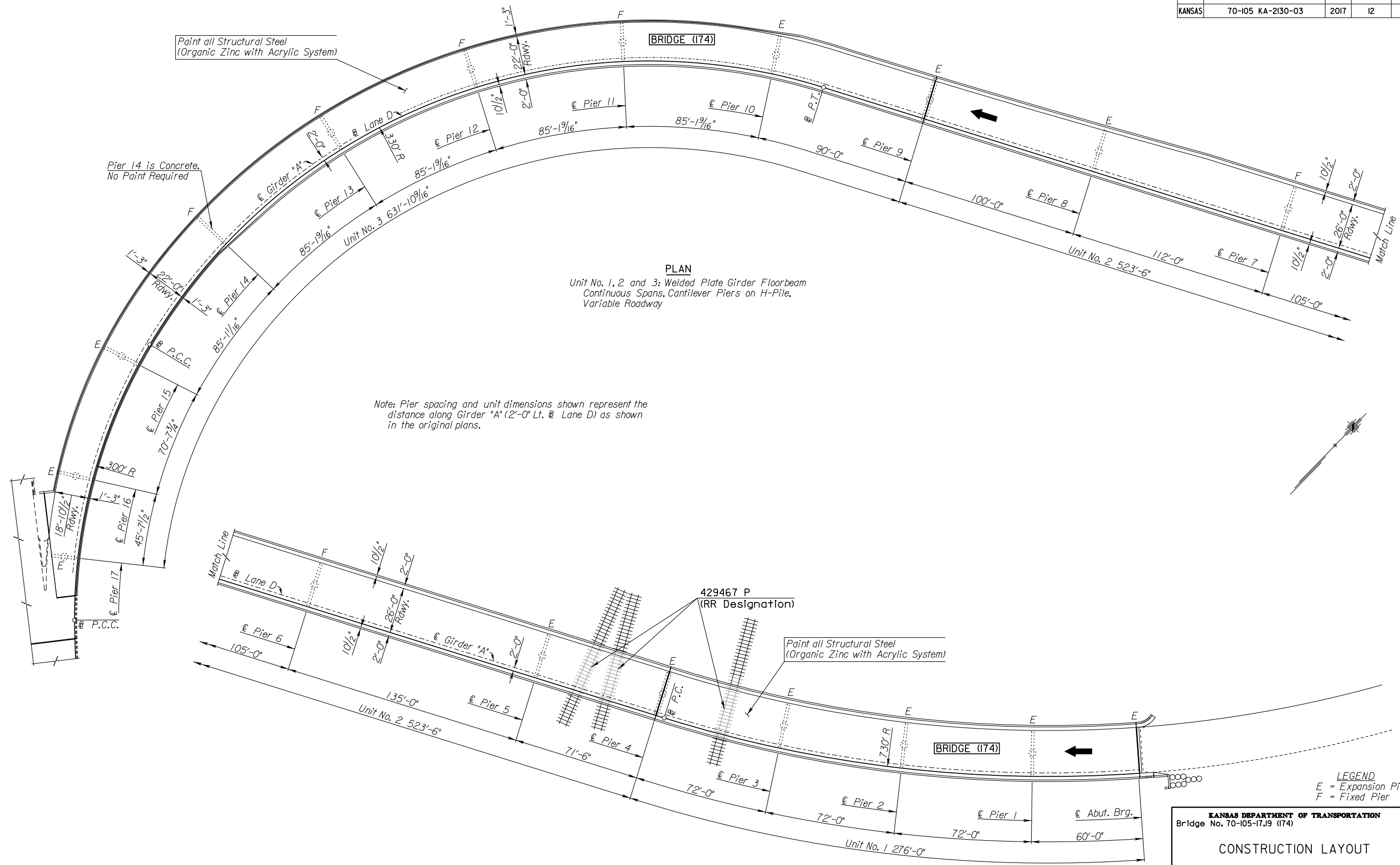
KANSAS DEPARTMENT OF TRANSPORTATION
Br1dge No. 70-105-17.25 (173)

PAINT AREAS

Pro1. No. 70-105 KA-2130-03 WYANDOTTE Co.

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	12	39



Paint all Structural Steel
(Organic Zinc with Acrylic System)

Pier 14 is Concrete.
No Paint Required

PLAN
Unit No. 1, 2 and 3: Welded Plate Girder Floorbeam
Continuous Spans, Cantilever Piers on H-Pile,
Variable Roadway

Note: Pier spacing and unit dimensions shown represent the
distance along Girder "A" (2'-0" Lt. Lane D) as shown
in the original plans.

429467 P
(RR Designation)

Paint all Structural Steel
(Organic Zinc with Acrylic System)

LEGEND
E = Expansion Pier
F = Fixed Pier

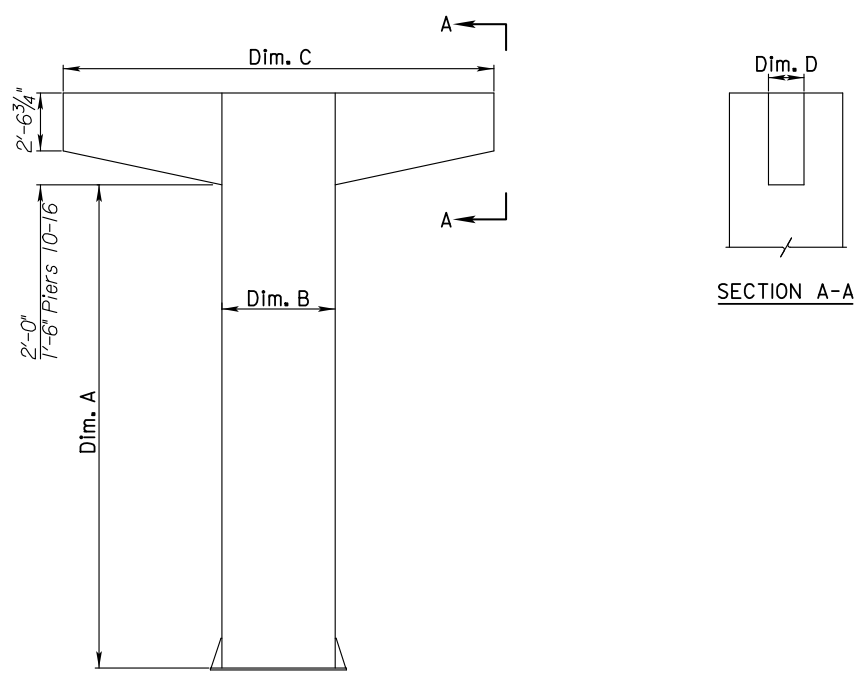
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File: IP_PWP-dms06773174783-004.dgn

KANSAS DEPARTMENT OF TRANSPORTATION
BrIdge No. 70-105-17.19 (I74)

CONSTRUCTION LAYOUT

ProJ. No. 70-105 KA-2130-03 **WYANDOTTE Co.**

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TYPICAL PIER

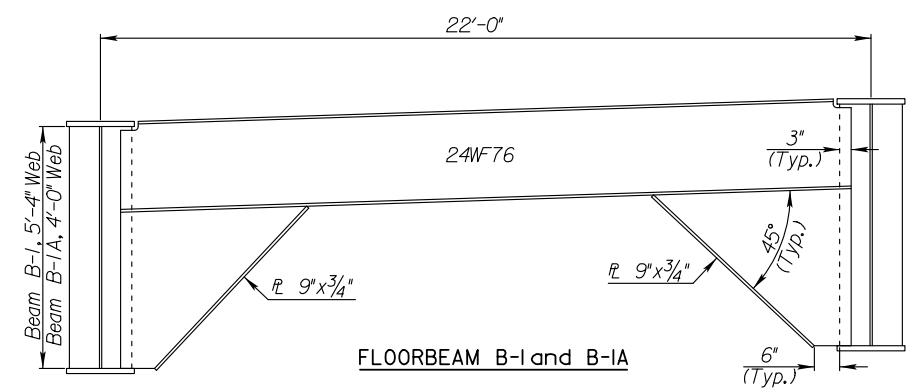
Pier No.	Dimension				Sq. Ft. Paint Area
	A	B	C	D	
1	7'-6"	4'-1/4"	24'-6"	2'-0 3/4"	402.29
2	11'-3"	4'-1/4"	24'-6"	2'-0 3/4"	450.64
3	15'-3"	4'-1/4"	24'-6"	2'-0 3/4"	502.22
4	20'-0"	4'-1/2"	24'-6"	2'-6"	581.83
5	21'-3"	4'-1/2"	24'-6"	2'-1"	582.21
6	25'-6"	4'-1/4"	24'-6"	2'-1"	636.46
7	33'-6"	4'-1/4"	24'-6"	2'-1"	738.32
8	31'-9"	4'-1/4"	24'-6"	2'-1"	715.75
9	16'-0"	4'-1/2"	24'-6"	2'-6 3/4"	532.37
10	20'-0"	4'-1"	21'-6"	1'-6 3/4"	513.49
11	21'-0"	4'-1"	21'-6"	1'-6 3/4"	526.32
12	18'-0"	4'-1"	21'-6"	1'-6 3/4"	487.83
13	19'-6"	4'-1"	21'-6"	1'-6 3/4"	507.08
14	CONCRETE PIER				
15	16'-0"	4'-1"	21'-6"	1'-6 3/4"	462.18
16	16'-0"	4'-1"	21'-6"	1'-6 3/4"	462.18
17	16'-6"	4'-1"	14'-3 1/4"	1'-6"	397.27
Total					8,498.42

GIRDERS		
Location	Lin. Ft.	Sq. Ft. Paint Area
Girder A (4'-0" web)	276.3	3,555.95
Girder A (5'-4" web)	1,385.2	17,248.77
Girder A Transition	57.8	842.72
Girder B (4'-0" web)	268.1	3,180.84
Girder B (5'-4" web)	1,421.8	17,843.59
Girder B Transition	57.8	842.72
Total		43,694.59

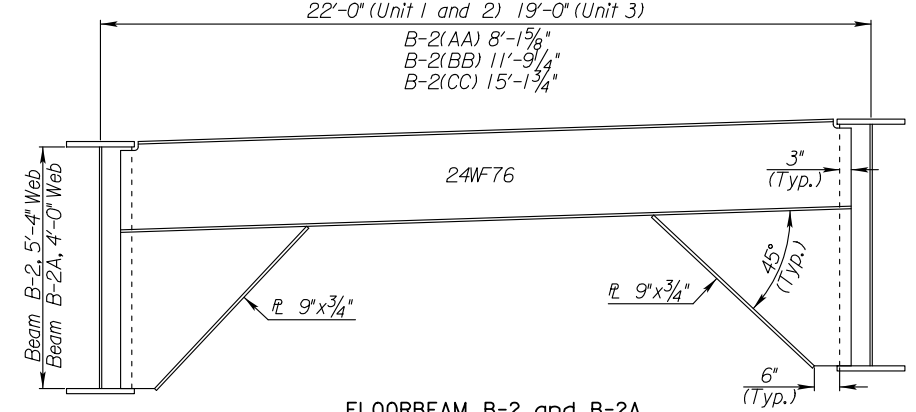
FLOORBEAMS		
Location	Number	Sq. Ft. Paint Area
B-1	2	357.48
B-1A	2	334.87
B-2	44	7,864.61
B-2A	19	2,791.42
B-2A(AA)	1	72.60
B-2A(BB)	1	97.47
B-2A(CC)	1	120.55
B-3	33	3,837.24
B-3(EE)	1	135.05
B-3(FF)	1	140.29
B-3(GG)	1	145.53
Total		15,897.12

STIFFENERS			
Location	Depth	Number	Sq. Ft. Paint Area
Girder A			
Intermediate	4'-0"	77	264.69
Cross Beam	4'-0"	15	82.50
Bearing	4'-0"	10	55.83
Intermediate	Varies	15	51.56
Cross Beam	Varies	4	22.00
Intermediate	5'-4"	246	1,127.50
Cross Beam	5'-4"	63	462.00
Bearing	5'-4"	28	208.44
Girder B			
Intermediate	4'-0"	77	264.69
Cross Beam	4'-0"	15	82.50
Bearing	4'-0"	10	55.83
Intermediate	Varies	15	51.56
Cross Beam	Varies	4	22.00
Intermediate	5'-4"	246	1,127.50
Cross Beam	5'-4"	63	462.00
Bearing	5'-4"	28	208.44
Total			4,561.32

Grand Total 72,651.45

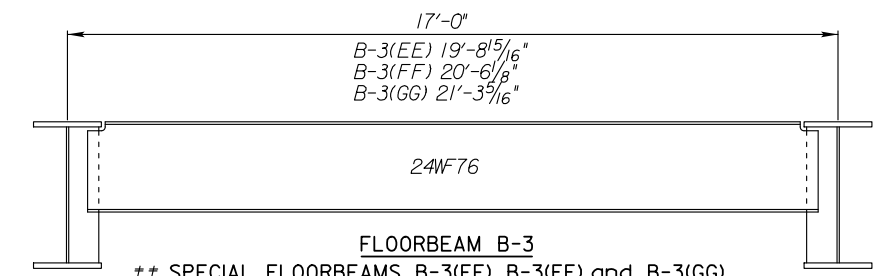


FLOORBEAM B-1 and B-1A



FLOORBEAM B-2 and B-2A

* SPECIAL FLOORBEAMS B-2(AA), B-2(BB) and B-2(CC)
* Plan width transition between end of Unit 3 to near Pier 16 (5'-4" web).

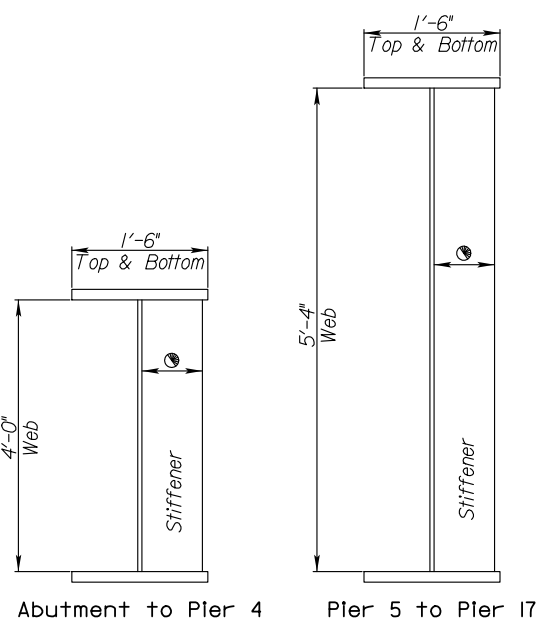


FLOORBEAM B-3

** SPECIAL FLOORBEAMS B-3(EE), B-3(FF) and B-3(GG)
** Plan width transition between Pier 9 and near Pier 10

Note: The details and quantities shown on this sheet are for information only and are intended to be a guide for determining paint quantities. Additional information may be obtained from the original bridge plans.

Drawn By : milie.thompson Plotted : 02-FEB-2018 14:59
File : IP_PWP-dms067314763-004.dgn



Note: Web transitions from 4'-0" at Pier 4 to 5'-4" near Pier 5.

GIRDER A or B
(Girder A is the south girder, Girder B is the north girder)

Stiffeners at floorbeam locations are 8". Intermediate stiffeners are 5"

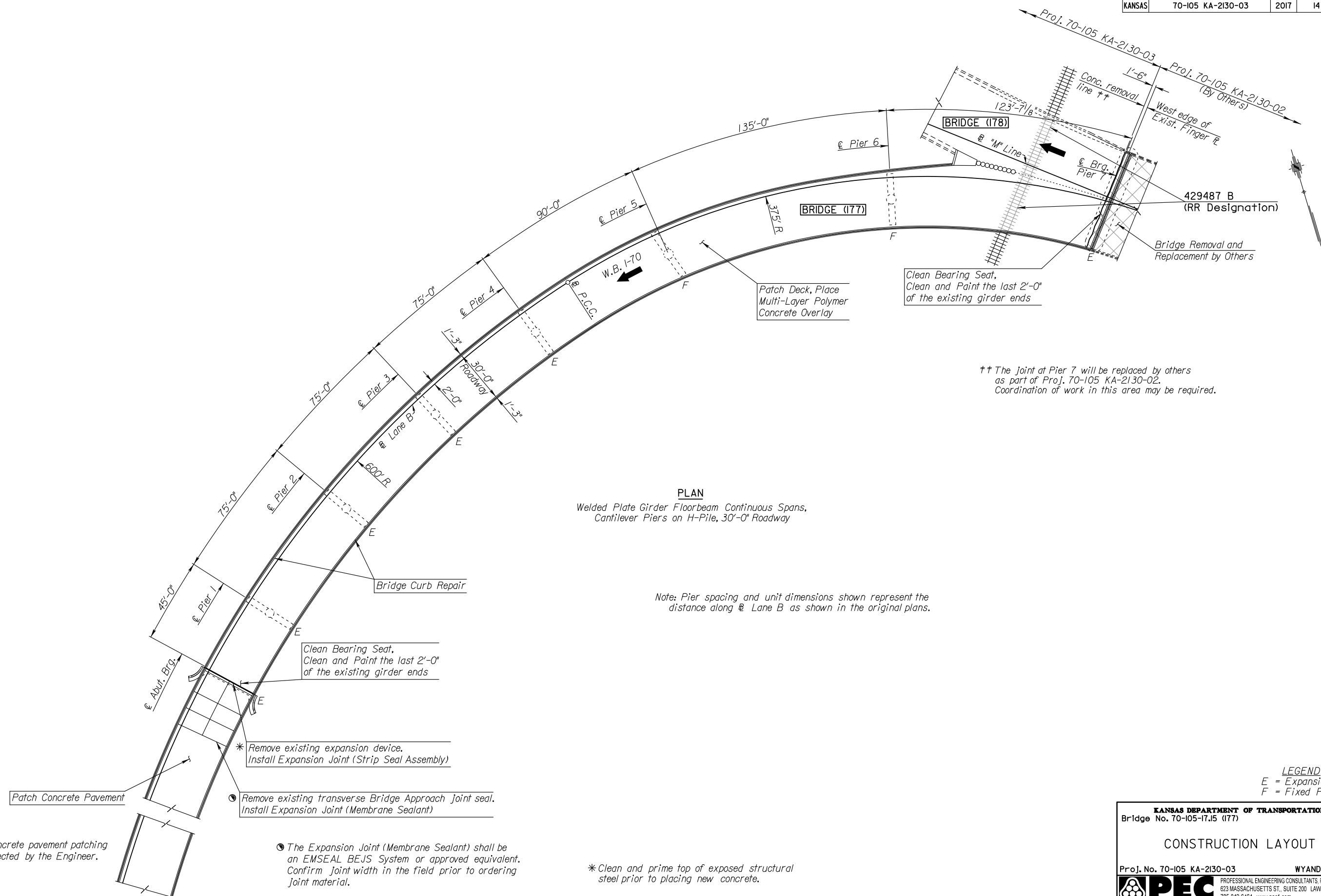
KANSAS DEPARTMENT OF TRANSPORTATION
Br1dge No. 70-105-17.19 (174)

PAINT AREAS

Pro1. No. 70-105 KA-2130-03 WYANDOTTE Co.

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	14	39



PLAN
Welded Plate Girder Floorbeam Continuous Spans,
Cantilever Piers on H-Pile, 30'-0" Roadway

Note: Pier spacing and unit dimensions shown represent the distance along Lane B as shown in the original plans.

** The joint at Pier 7 will be replaced by others as part of Proj. 70-105 KA-2130-02. Coordination of work in this area may be required.

LEGEND
E = Expansion Pier
F = Fixed Pier

Note: Limits of concrete pavement patching shall be as directed by the Engineer.

* The Expansion Joint (Membrane Sealant) shall be an EMSEAL BEJS System or approved equivalent. Confirm joint width in the field prior to ordering joint material.

* Clean and prime top of exposed structural steel prior to placing new concrete.

Drawn By : milie.thompson Plotted : 02-FEB-2018 14:59
File : IP_PVIP-dms06773114783-004.dgn

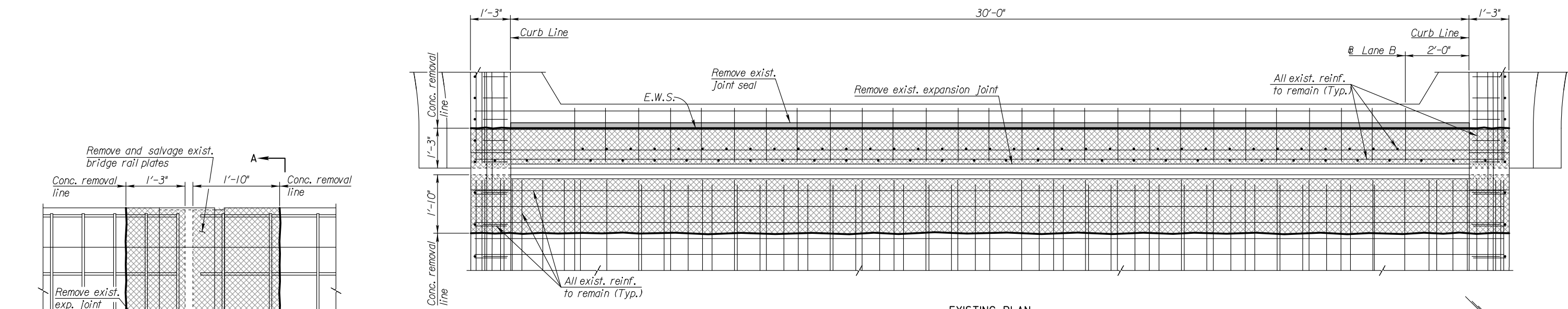
KANSAS DEPARTMENT OF TRANSPORTATION
BrIdge No. 70-105-17.15 (I77)

CONSTRUCTION LAYOUT

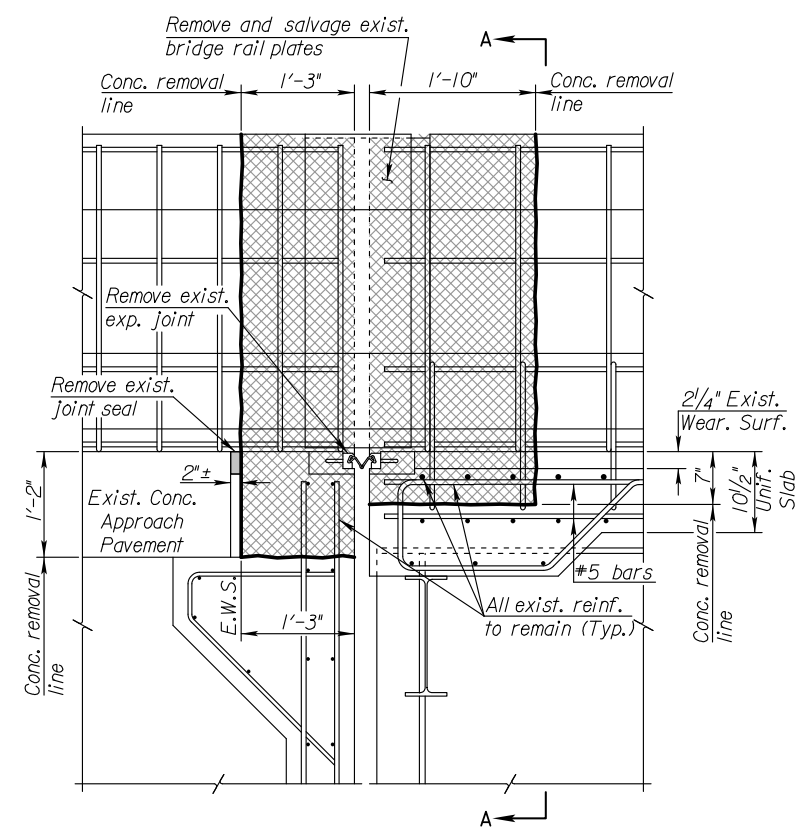
Proj. No. 70-105 KA-2130-03 WYANDOTTE Co.

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	15	39

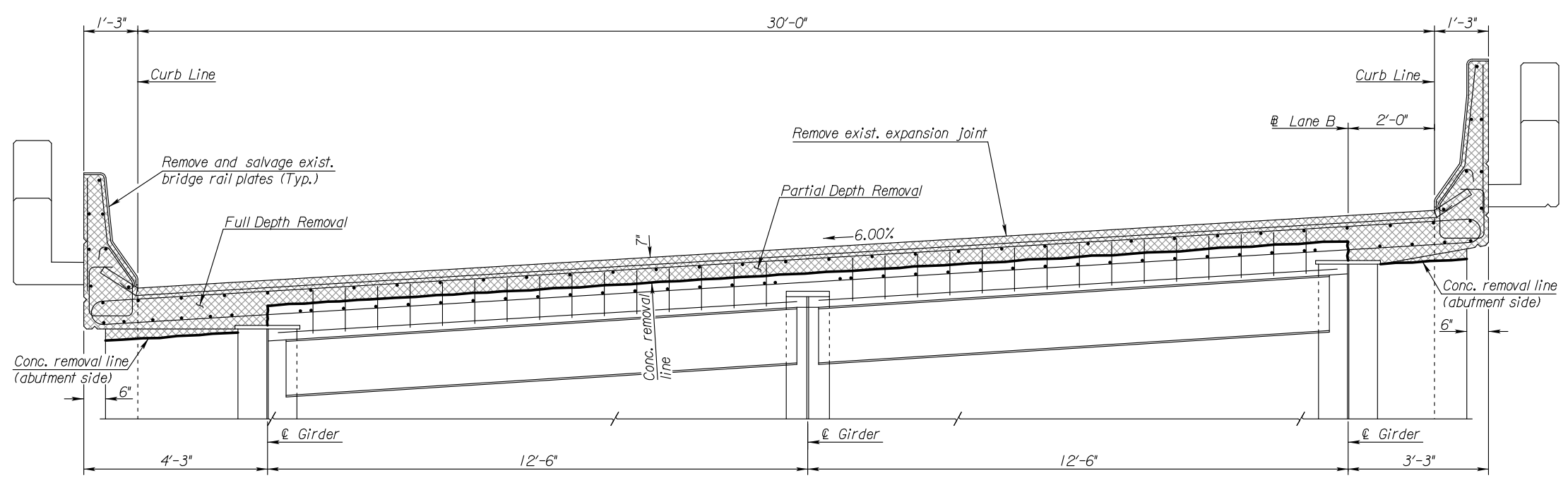


EXISTING PLAN

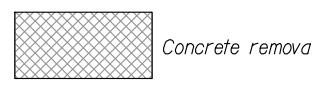


EXISTING TYPICAL SECTION

Note: Thoroughly clean existing reinforcing.



SECTION A-A



KANSAS DEPARTMENT OF TRANSPORTATION
 BrIdge No. 70-105-17.15 (177)
ABUTMENT EXPANSION JOINT DETAILS
 (CONCRETE REMOVAL)
 Proj. No. 70-105 KA-2130-03 WYANDOTTE CO.
PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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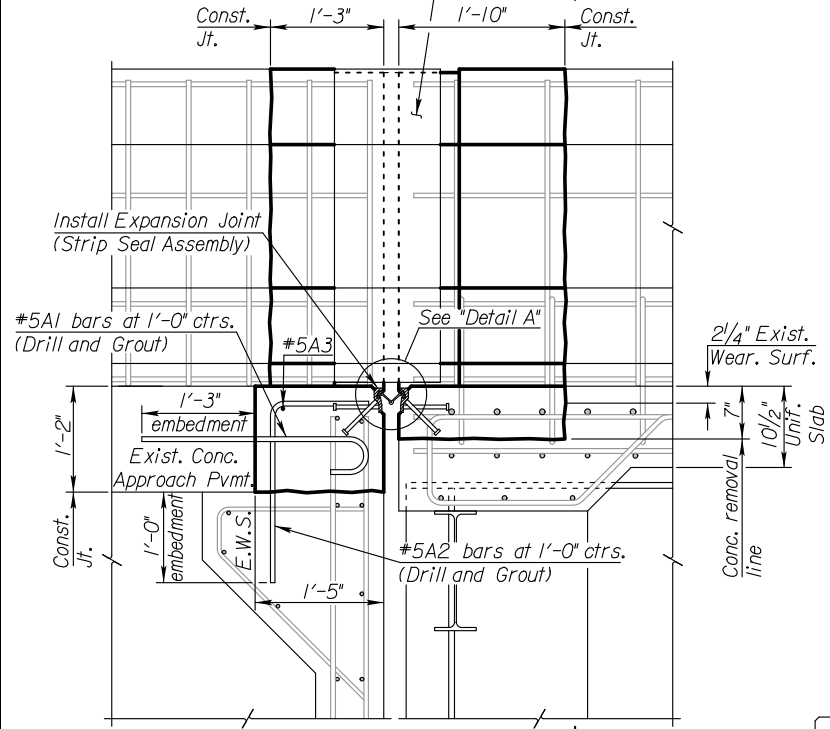
Drawn By : milie.thompson Plotted : 02-FEB-2018 14:59
 File : IP_PWP-dms06773174763-004.dgn

◆ TEMPERATURE GAP TABLE
(Perpendicular to ℓ of Joint)

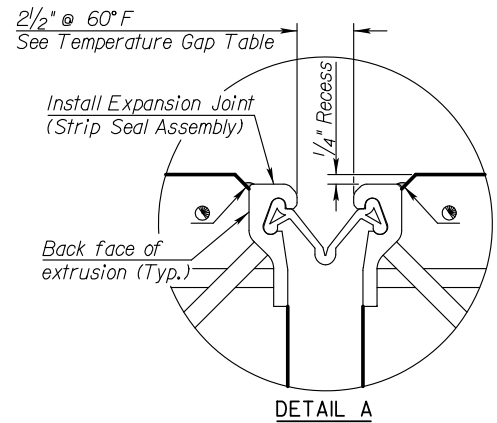
TEMP. °F	GAP DIMENSION
30	3 ⁵ / ₁₆ "
40	3 ¹ / ₁₆ "
50	2 ³ / ₄ "
60	2 ¹ / ₂ "
70	2 ¹ / ₄ "
80	1 ¹³ / ₁₆ "
90	1 ¹¹ / ₁₆ "
100	1 ³ / ₈ "

◆ Based on average ambient air temperature for the previous 24 hours.

Re-install exist. bridge rail plates.
See details on next sheet

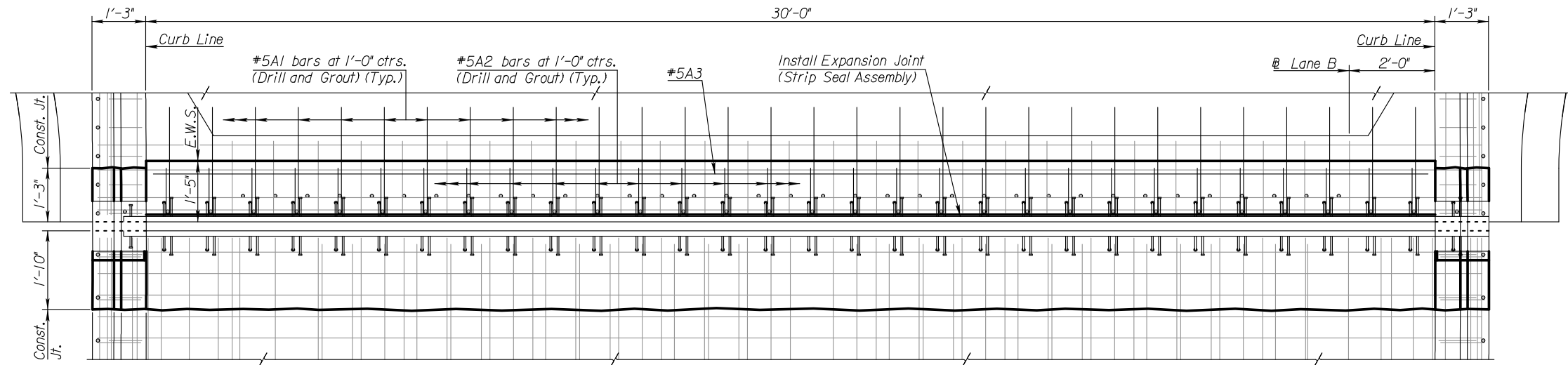


PROPOSED TYPICAL SECTION



DETAIL A

● Form 1/4" recess to the back face at the bottom of the rounded edge of the strip seal extrusions. After concrete has cured, thoroughly clean valley area that has been created and fill with a silicone based sealant (or as directed by the Engineer) for the entire roadway width of the strip seal extrusions. Materials and labor shall be subsidiary to Concrete (Grade 4.0) (AE).

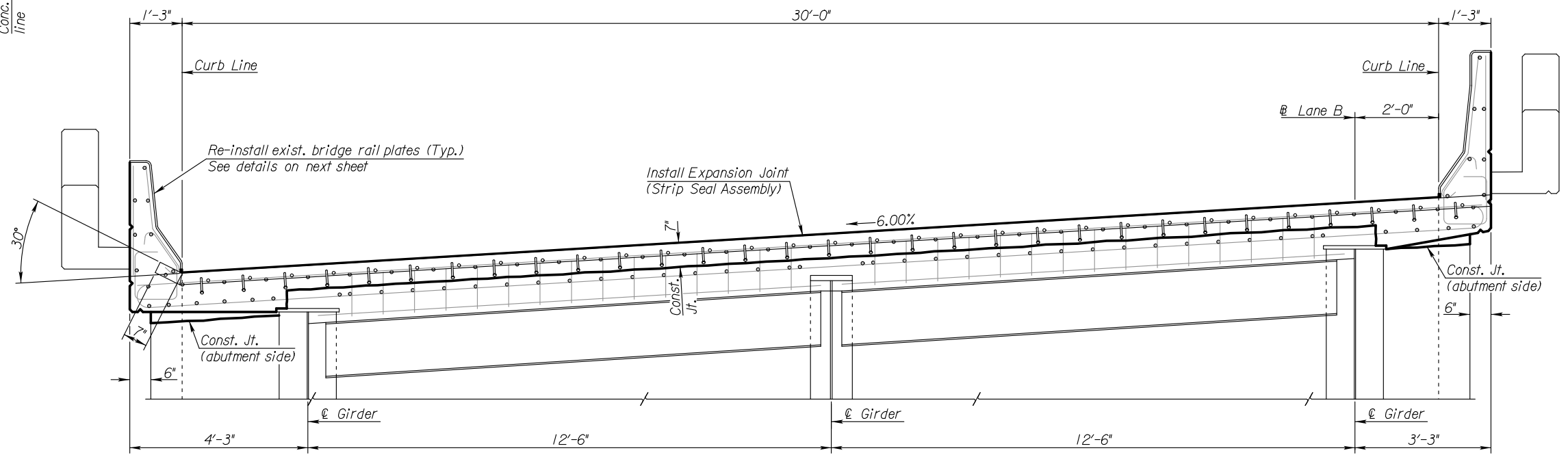
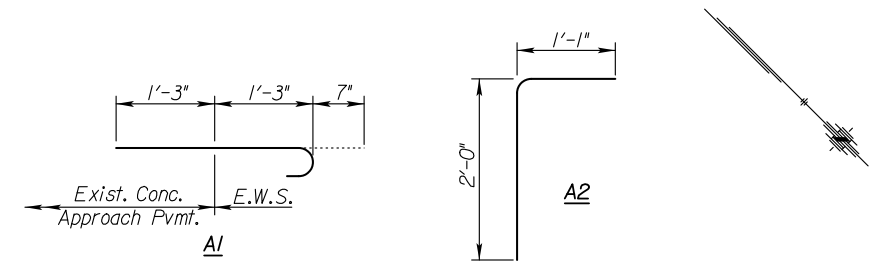


PROPOSED PLAN

BILL OF REINFORCING STEEL
Grade 60

Straight Bars				Bent Bars			
Mark	Size	Number	Length	Mark	Size	Number	Length
A3	5	1	29'-8"	A1	5	30	3'-1"
				A2	5	30	3'-1"

Note: Cast to original geometry with Concrete (Grade 4.0) (AE).



SECTION A-A

Drawn By : milie.thompson Plotted : 02-FEB-2018 14:59
File : IP_PWP-dms06773174783-004.dgn

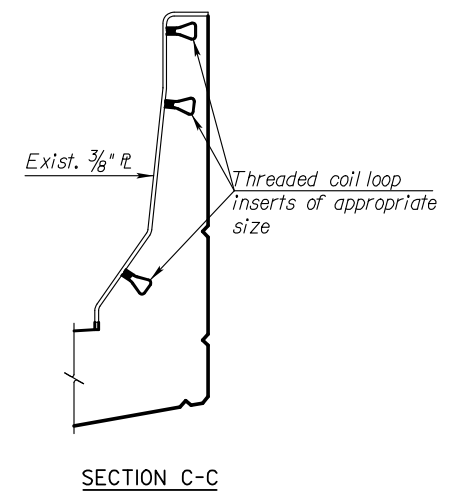
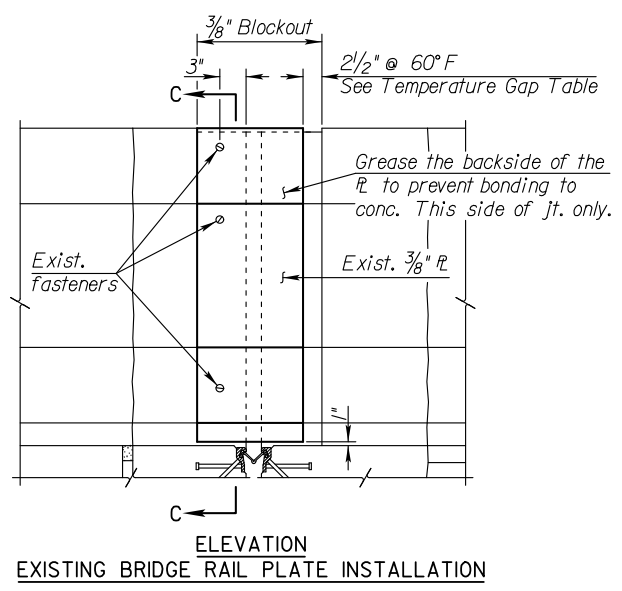
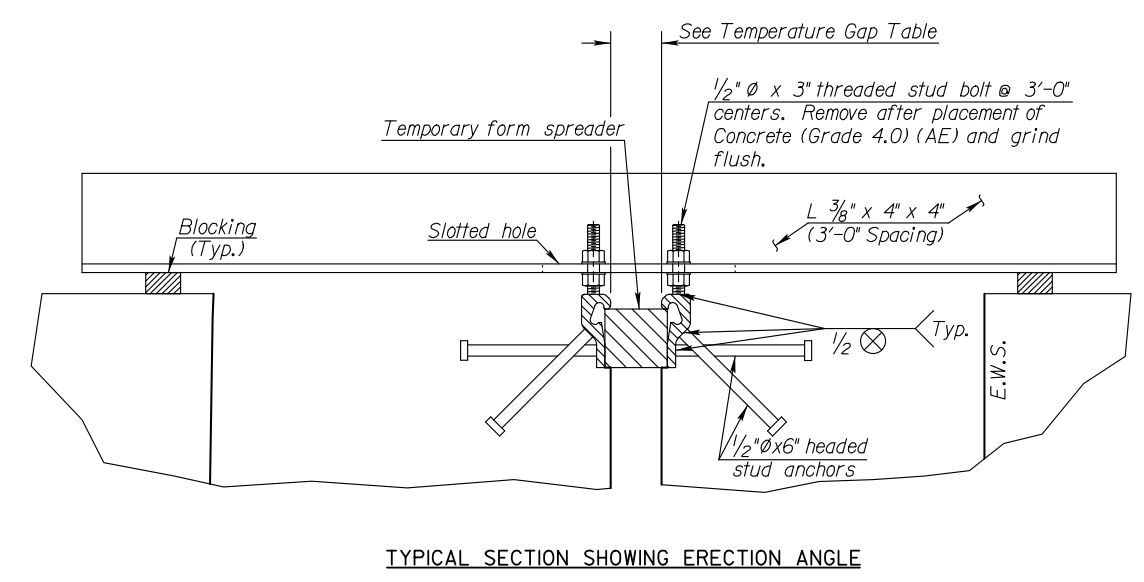
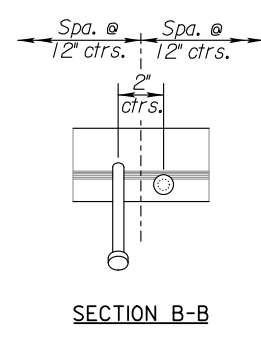
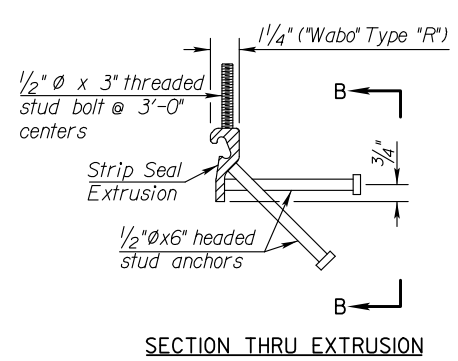
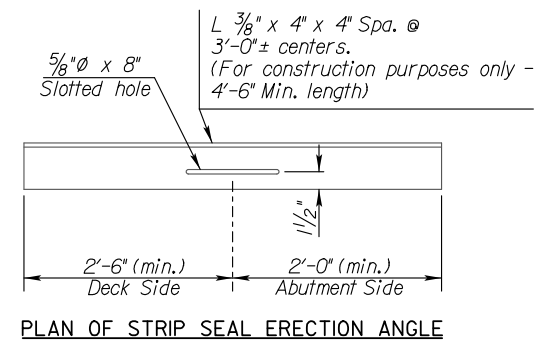
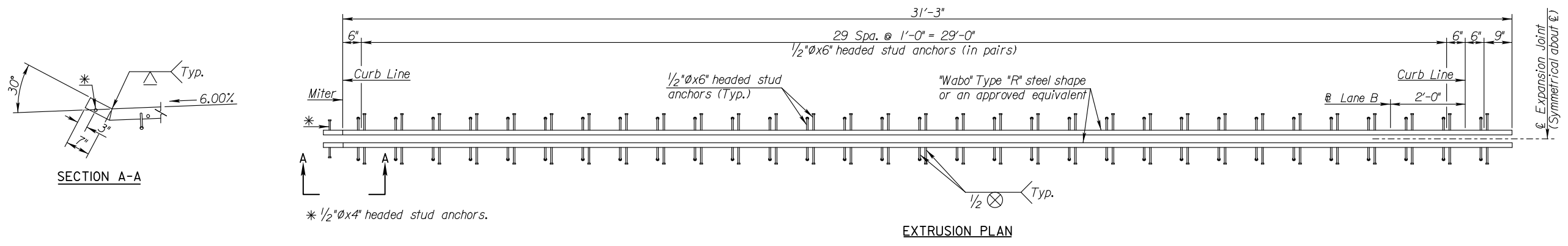
KANSAS DEPARTMENT OF TRANSPORTATION
BrIdge No. 70-105-17.15 (177)

ABUTMENT EXPANSION JOINT DETAILS
(PROPOSED CONSTRUCTION)

ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
623 MASSACHUSETTS ST., SUITE 200 LAWRENCE, KS 66044
785-842-6464 www.pec1.com

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	17	39



NOTE:
Immediately prior to placing the Concrete (Grade 4.0) (AE) around the Strip Seal Extrusion, the existing concrete surface at the concrete removal line shall be cleaned and roughened. The erection angles shall be securely bolted to the extrusion. The extrusion shall be in the same plane and recessed 1/4" below the top of the roadway. The erection angles shall be removed as soon as the new concrete will support the assembly without allowing any settlement or tilting. Following the removal of the erection angles, remove the stud bolts on the extrusions and grind flush. The stud bolts, nuts and washers, and erection angles, labor and materials used to install and remove the erection angles shall be subsidiary to the bid item "Expansion Joint (Strip Seal Assembly)".

NOTE:
The strip seal extrusions in the bridge deck shall be a "Wabo" Type "R" steel shape or approved equivalent as shown in the details. All items shown on the Expansion Joint Details sheets are included in the bid item "Expansion Joint (Strip Seal Assembly)". All welds on the extrusion shall be 1/4" continuous fillet welds, unless otherwise noted.

Note: Thoroughly clean and paint existing plates prior to installation as directed by the Engineer. Painting, including materials and labor required to install existing bridge rail plates shall be subsidiary to the bid item "Concrete (Grade 4.0) (AE)".

KANSAS DEPARTMENT OF TRANSPORTATION
Br1dge No. 70-105-17.15 (177)

ABUTMENT EXPANSION JOINT DETAILS
(PROPOSED CONSTRUCTION)

ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
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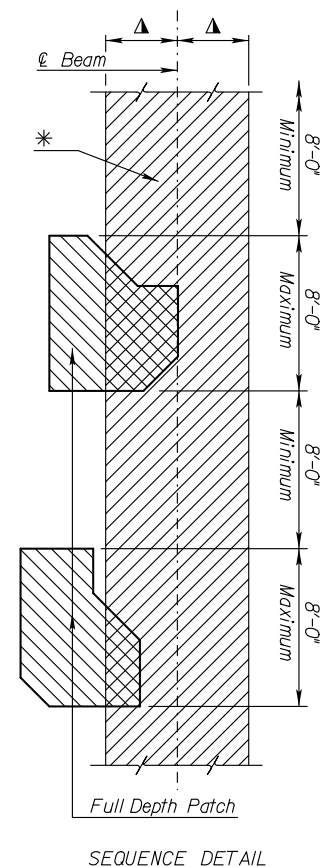
Drawn By : milie.thompson Plotted : 02-FEB-2018 14:59
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	18	39

* **PATCHING SEQUENCE:** When large areas of full depth patches are needed, they shall be patched in segments. If full depth patches intrude into this effective flange width area, the segments shall be a maximum of 8'-0" in length parallel to the centerline of bridge with a minimum of 8'-0" parallel to the centerline of bridge between segments. After the initial patches have cured, the areas between the initial segments shall be patched. The segmental patching will not be required if adequate shoring is provided to support the deck, curbs and beams. (See "SEQUENCE DETAIL" on this sheet).

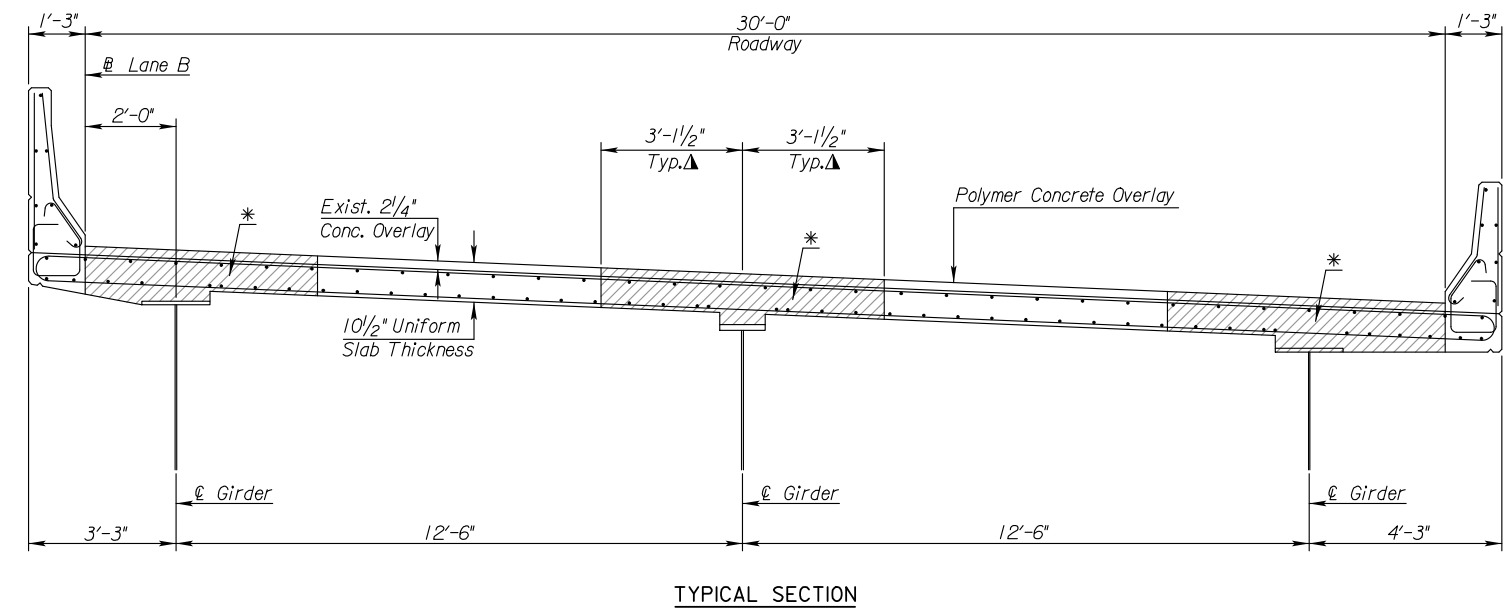
▲ Girder Spacing / 4 or as directed by the Engineer.

Note: Bridge will be closed during construction.



Existing Bar Size	Minimum Splice Lengths (inches)	
	Existing Gr. 40 ksi Bars	Existing Gr. 60 ksi Bars
#4	12"	16"
#5	13"	20"
#6	16"	24"
#7	20"	30"
#8	26"	39"
#9	33"	49"
#10	42"	62"
#11	51"	77"

Note: If splicing epoxy coated reinforcing steel, increase the above splice lengths by 20%.
 ▣ Lap lengths are based on a Class B splice. Use the minimum splice length corresponding to the grade of the existing reinforcing in the deck.

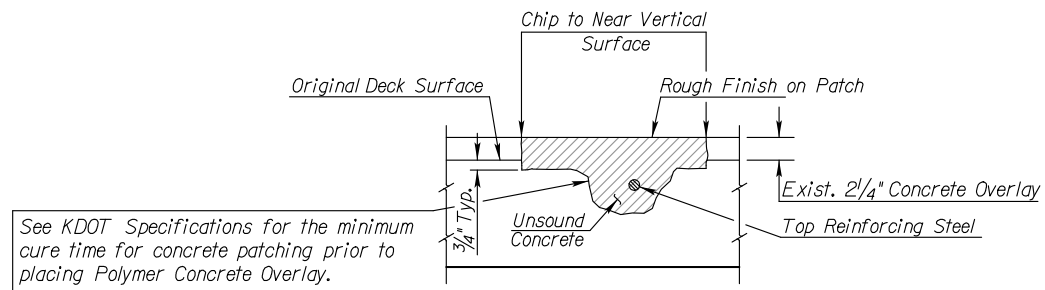


SUMMARY OF QUANTITIES		
ITEM	UNITS	QUANTITY
Area Prepared for Patching	Sq. Yds.	205
Area Prepared for Patching (Full Depth)	Sq. Yds.	5
Multi-Layer Polymer Concrete Overlay	Sq. Yds.	2,053
Reinforcing Steel (Repair) (Grade 60) (Set Price)	Lbs.	1
Reinforcing Steel (Repair) (Grade 60) (Epoxy) (Set Price)	Lbs.	1

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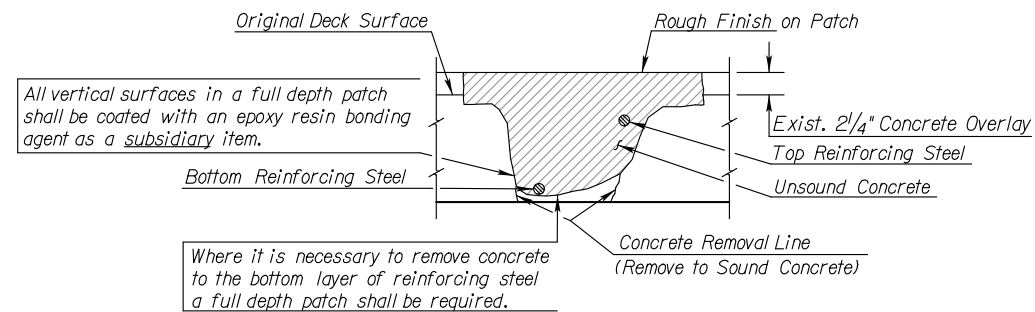
KANSAS DEPARTMENT OF TRANSPORTATION
 Br1dge No. 70-105-17.15 (177)
DECK PATCHING SEQUENCE
 Proj. No. 70-105 KA-2130-03 WYANDOTTE Co.
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	19	39



See KDOT Specifications for the minimum cure time for concrete patching prior to placing Polymer Concrete Overlay.

PARTIAL DEPTH PATCHING

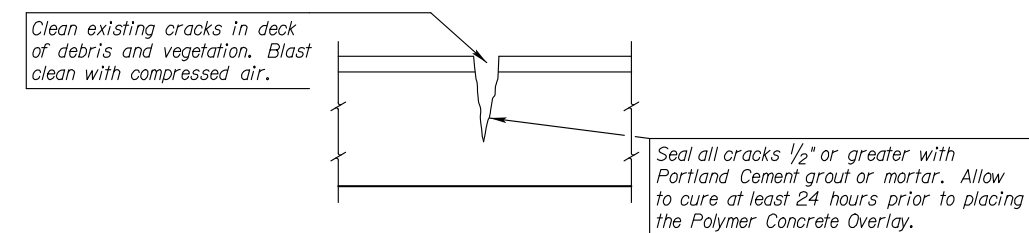


All vertical surfaces in a full depth patch shall be coated with an epoxy resin bonding agent as a subsidiary item.

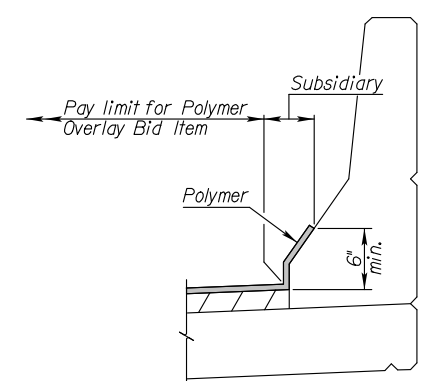
Where it is necessary to remove concrete to the bottom layer of reinforcing steel a full depth patch shall be required.

FULL DEPTH PATCHING

DECK PATCHING DETAILS



CRACK SEALING DETAIL



BARRIER RAIL

AREA PREPARED FOR PATCHING: This item shall consist of removing unsound concrete and asphalt patches from the bridge deck, cleaning reinforcing bars, filling the removed patched areas with concrete and preparing the entire area of the deck for an overlay. Quantity shown is an estimate of the areas involved. The exact areas shall be determined by tapping, before, during and after chipping operation to ensure that all unsound concrete has been removed. See KDOT Specifications.

FULL DEPTH PATCHING: Forms shall be provided to enable placement of the concrete in areas of full depth removal of bridge slab. The forms may be suspended from existing reinforcing bars by wire ties or a method approved by the Engineer. See KDOT Specifications for method of measurement and payment.

REINFORCING IN BRIDGE DECK: Care should be exercised to prevent cutting, stretching or damaging exposed reinforcing steel. Extreme care should be exercised to avoid breaking the bond between the reinforcing steel and concrete where bars are partially exposed yet remain anchored in sound concrete. Reinforcing steel damaged, cut or deteriorated shall be replaced as directed by the Engineer. Do not wedge chipping hammer bit against reinforcement. See table for replacement bar size and minimum splice length required. Replacement of bars damaged by the Contractor shall be subsidiary to "Area Prepared for Patching".

REPAIR OF EPOXY COATED REINFORCING STEEL: Replace any epoxy coating damaged or removed from the reinforcing steel during the concrete removal process. Thoroughly clean damaged areas with a stiff wire brush to remove dirt and damaged coating. Apply an approved patching material in accordance with the manufacturer's recommendations. Avoid dripping any patching material onto the existing concrete. See KDOT Specifications.

MULTI-LAYER POLYMER CONCRETE OVERLAY: Prepare and overlay the bridge roadway surface using a Polymer Overlay (Two-coat Broom and Seed). On continuous concrete barrier rails, apply polymer past the first break in geometry of the barrier to a minimum height of 6 inches above the deck. Apply polymer to the barrier as each of the overlay applications are performed.

All work related to applying polymer to additional areas beyond the bridge roadway surface width shall be subsidiary to the bid item Multi-Layer Polymer Concrete Overlay.

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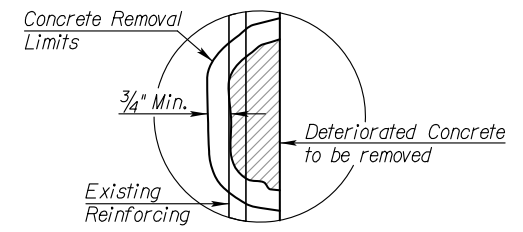
KANSAS DEPARTMENT OF TRANSPORTATION
BrIdge No. 70-105-17.15 (177)

DECK PATCHING DETAILS

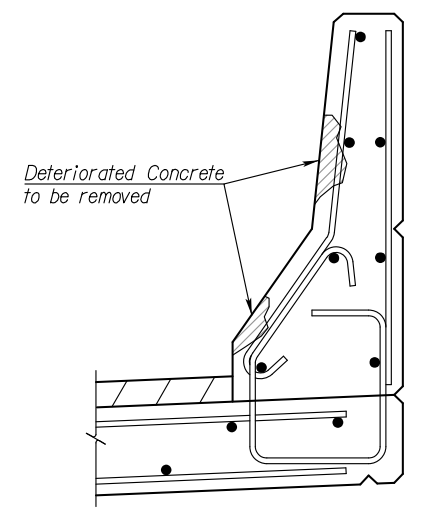
ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	20	39



CONCRETE REMOVAL DETAIL



EXISTING BARRIER RAIL DETAILS

BARRIER RAIL REPAIR: The Contractor shall remove all deteriorated or damaged concrete delineated by the Engineer. Additional concrete shall be removed to create a minimum thickness of new concrete of 1 inch. Do not feather edges. At repair locations, the concrete shall be removed from 3/4" around the reinforcing steel near the surface to allow a positive bond of new concrete to the existing structure. Concrete (Grade 4,0) (AE) or an approved Shotcrete shall be used. Prior to its placement, an epoxy resin for bonding new concrete to existing concrete shall be used. The removal of deteriorated or damaged concrete, placement of new concrete, and all labor, materials, equipment, and incidentals necessary to complete the repairs shall be paid for as "Bridge Curb Repair" (Lin. Ft.).

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File : IP_PVIP-dms0673174783-004.dgn

KANSAS DEPARTMENT OF TRANSPORTATION
BrIdge No. 70-105-17.15 (177)

CURB REPAIR DETAILS

ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

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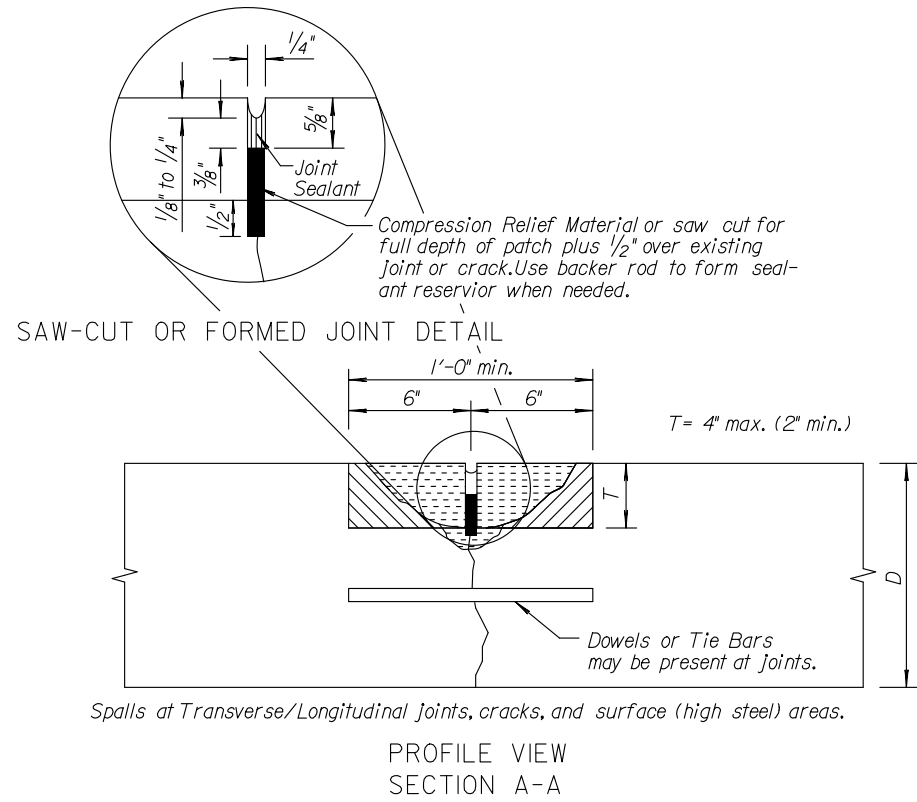
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	21	39

GENERAL NOTES:

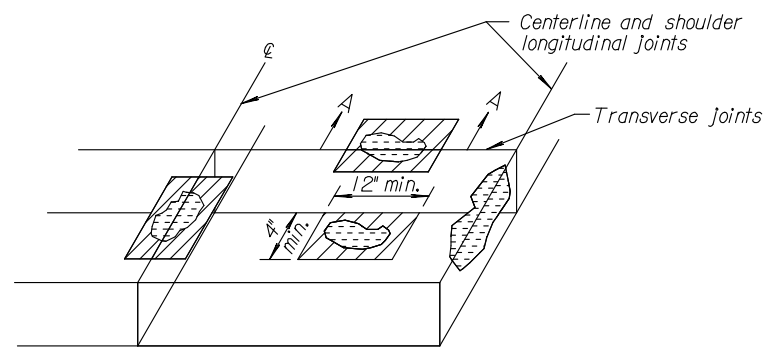
After concrete placement saw cut joint/crack or remove compression relief material and fill with specified sealant. Final saw cutting, use of compression relief material and crack sealant not required for surface (high steel) patches.

If patch will be overlaid use 1/8" saw-cut or compression relief material for full depth of patch, do not seal.

All work and materials for concrete pavement partial joint and crack patching to be paid for as square yards "PCCP Joint and Crack Patching (Partial Depth)". See Standard Specifications for additional information.



Spalls at Transverse/Longitudinal joints, cracks, and surface (high steel) areas.



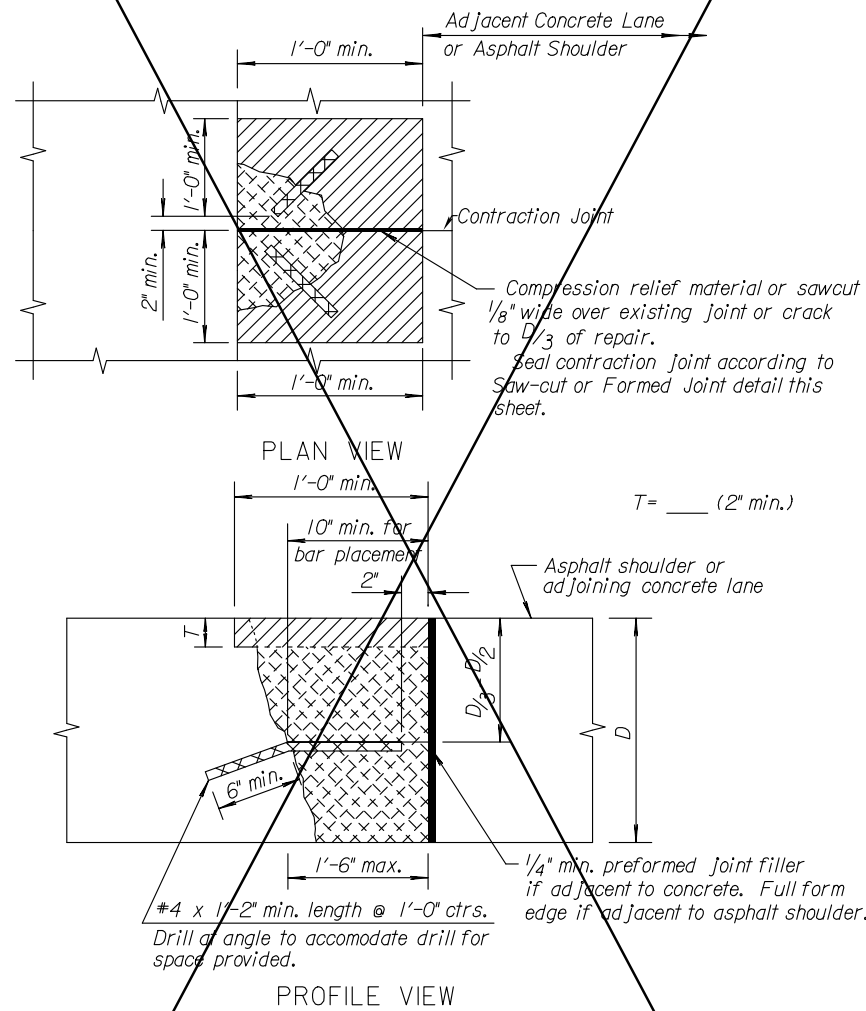
PARTIAL DEPTH JOINT and CRACK PATCHING

- LEGEND**
- Area to be removed
 - Spalled Area

GENERAL NOTES:

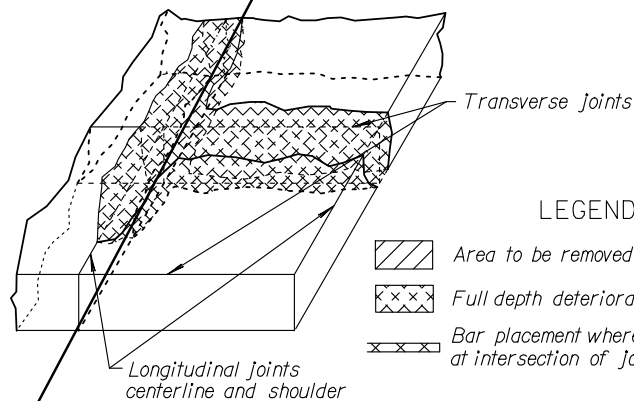
If patch will be overlaid use 1/8" x D/3 deep saw-cut or compression relief material, do not seal.

All work and materials for concrete pavement full joint and crack patching to be paid for as square yards "PCCP Joint and Crack Patching (Full Depth)". See Standard Specifications for additional information.



1/4" min. preformed joint filler if adjacent to concrete. Full form edge if adjacent to asphalt shoulder.

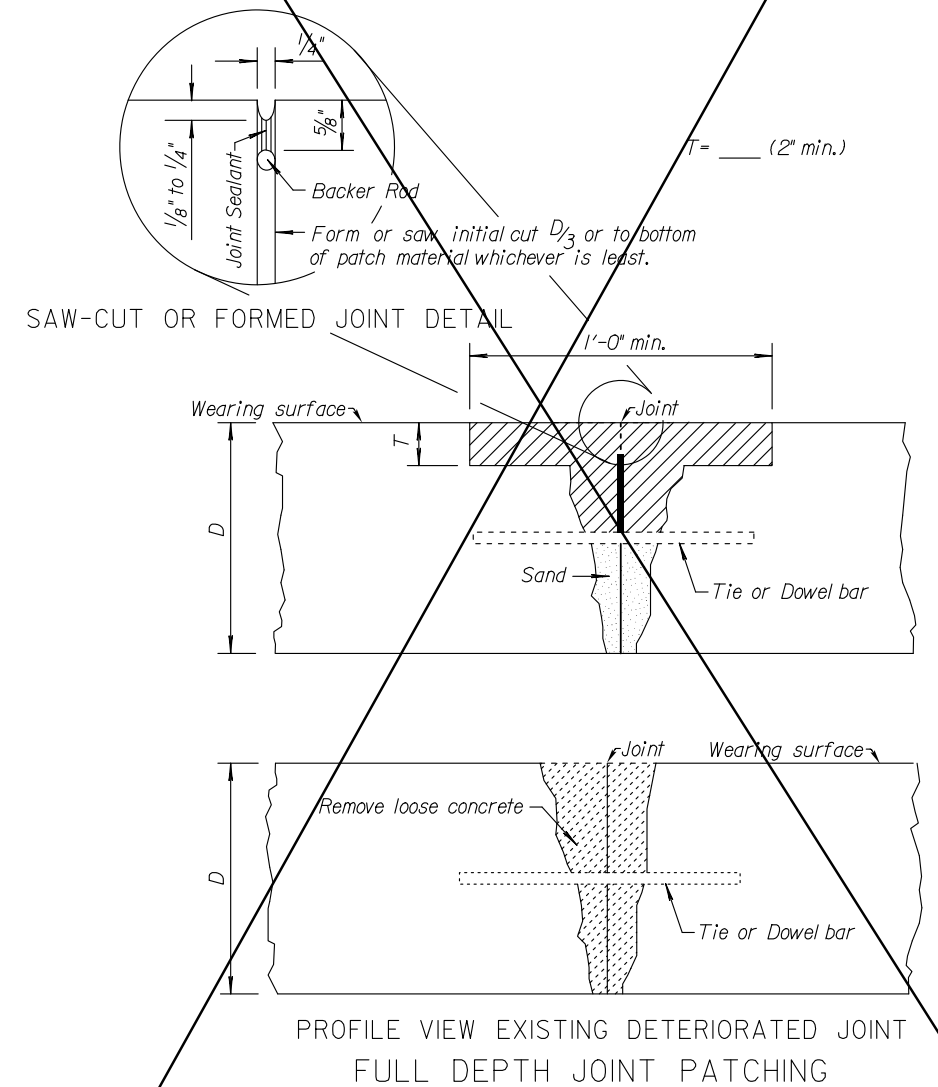
PROFILE VIEW



FULL DEPTH JOINT and CRACK PATCHING

GENERAL NOTES:

All work and materials for concrete pavement full joint patching to be paid for as square yards "PCCP Joint and Crack Patching (Full Depth)". See Standard Specifications for additional information.



T = ____ (2" min.)

SAW-CUT OR FORMED JOINT DETAIL

- LEGEND**
- Sand
 - Spalled area
 - Area to be removed

3					
2	5-05-11	Rev. details and General Notes	S.W.K.	J.O.B.	
1	1-10-07	Changed bituminous to asphalt	S.W.K.	J.O.B.	
NO.	DATE	REVISIONS	BY	APP'D	

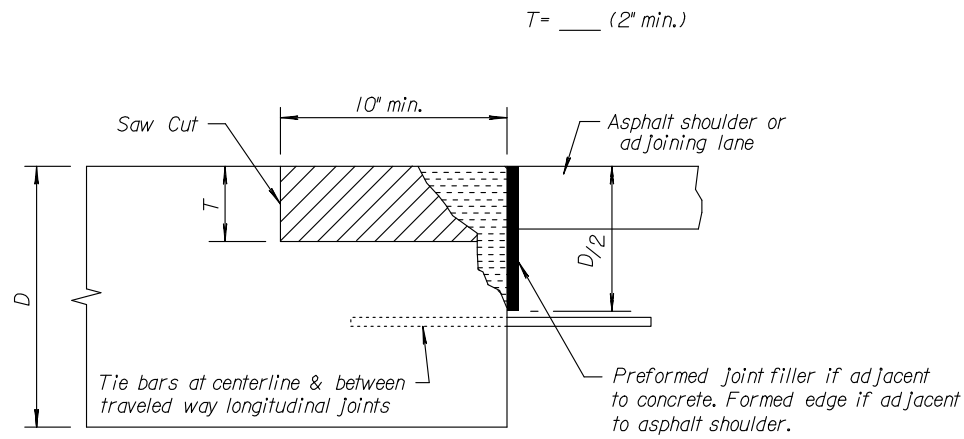
KANSAS DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT (PCCP) JOINT and CRACK PATCHING

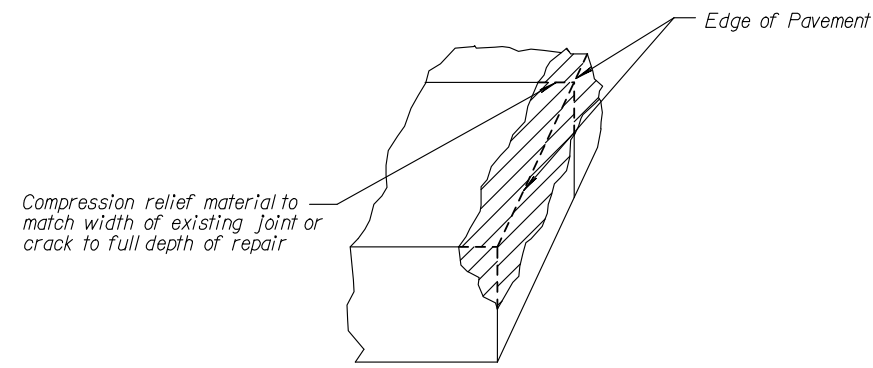
RD719A				
-FHWA APPROVAL	9-27-11	APP'D, James O. Brewer		
DESIGNED	QUANTITIES	TRACED	Bowser	
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK. King	

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	22	39

GENERAL NOTES:
 All work and material for concrete pavement partial edge joint patching to be paid for as square yards "PCCP Edge Joint Patching (Partial Depth)". See Standard Specifications for additional information.



PROFILE VIEW

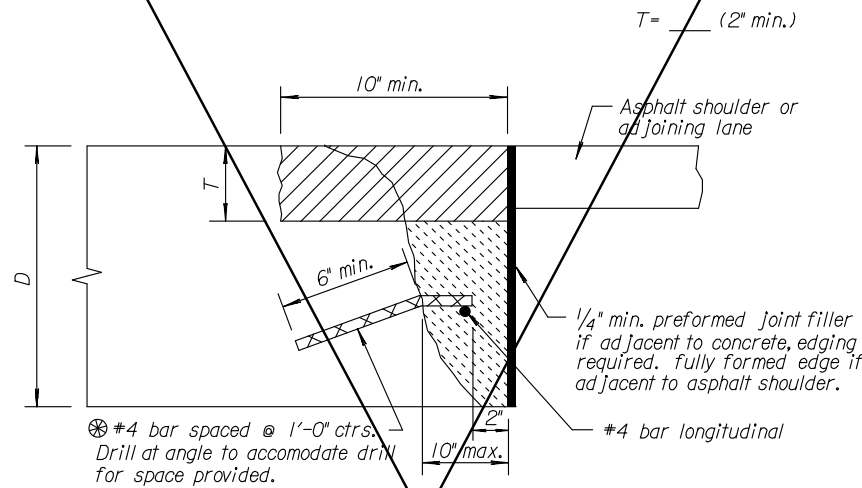


PARTIAL DEPTH EDGE JOINT PATCHING

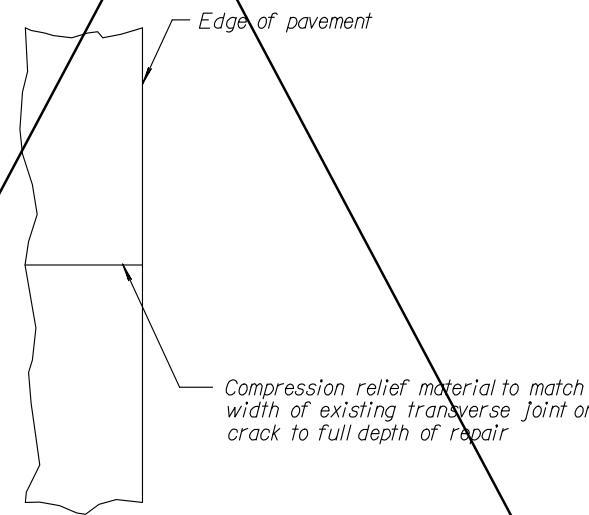
LEGEND

	Spalled Area
	Area to be removed

GENERAL NOTES:
 This procedure is for full depth repair when a partial depth repair was initiated.
 All work and material for concrete pavement special edge joint patching to be paid for as square yards "PCCP Edge Joint Patching (Full Depth)". See Standard Specifications for additional information.
 If defined patch areas are less than 12" apart combine patches into a single patch.



PROFILE VIEW

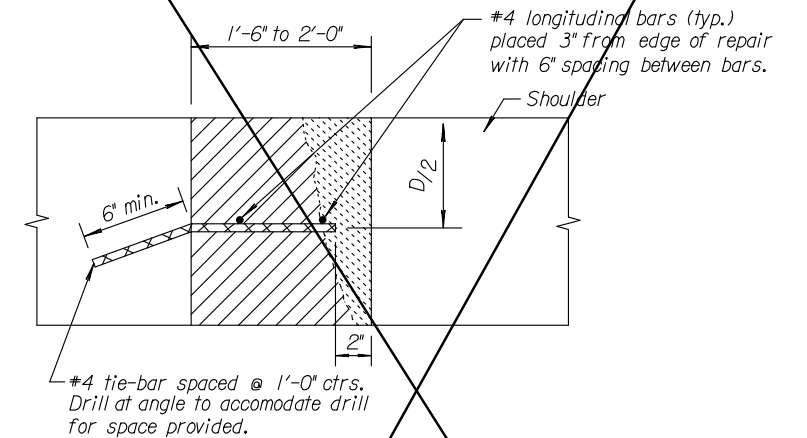


SPECIAL EDGE JOINT PATCHING

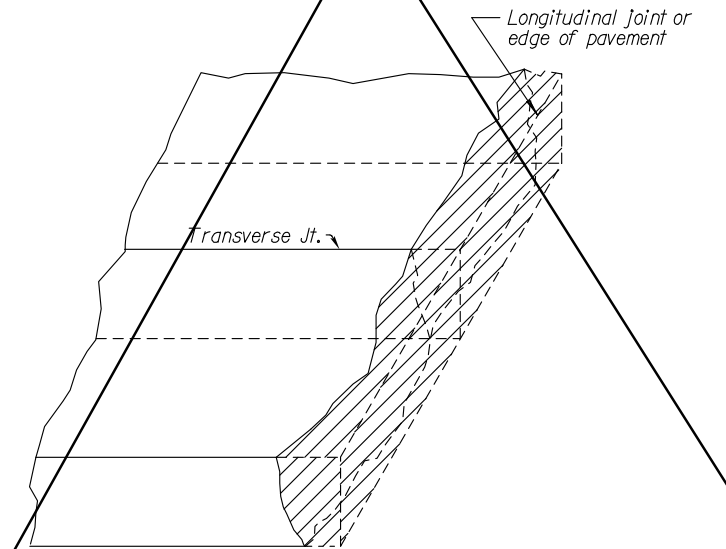
LEGEND

	Full depth deteriorated area to be removed
	Area to be removed

GENERAL NOTES:
 Drill holes at 1'-0" centers for the #4 tie bars. Reconstruct pavement edges using forms where needed.
 To construct transverse joints see Saw-Cut or Formed Joint detail Standard Drawing RD719A.
 All work and material for concrete pavement full edge joint patching to be paid for as square yards "PCCP Edge Joint Patching (Full Depth)". See Standard Specifications for additional information.



PROFILE VIEW



FULL DEPTH EDGE JOINT PATCHING

LEGEND

	Full depth deteriorated area to be removed
	Area to be removed

3				
2	5-02-11	Added drilling note, Gen. Notes	S.W.K.	J.O.B.
1	1-10-07	Changed bituminous to asphalt	S.W.K.	J.O.B.
NO.	DATE	REVISIONS	BY	APP'D

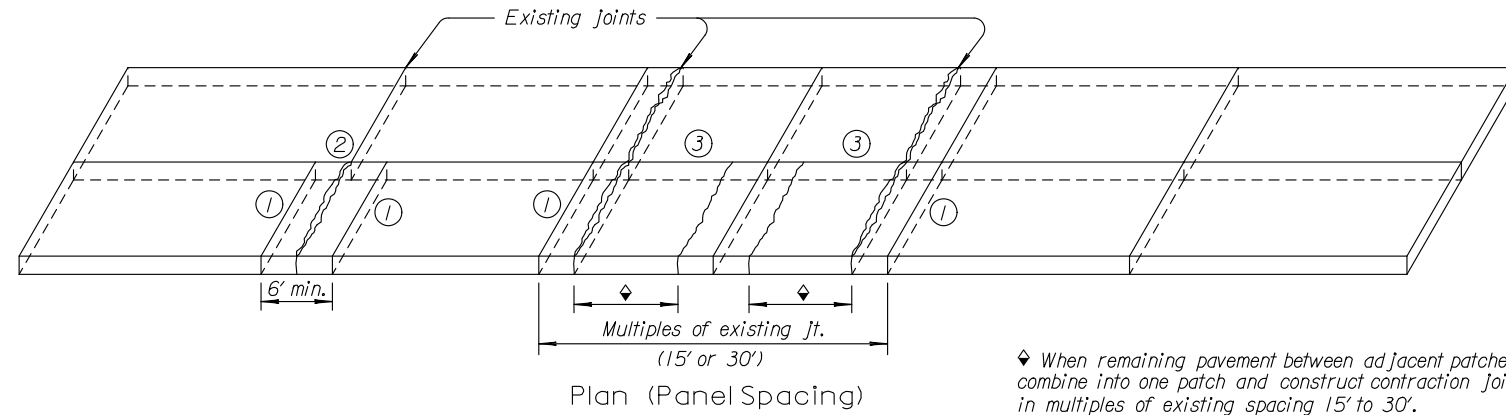
KANSAS DEPARTMENT OF TRANSPORTATION

**CONCRETE PAVEMENT (PCCP)
 EDGE JOINT PATCHING**

RD719B

FHWA APPROVAL	9-27-11	APP'D. James O. Brewer
DESIGNED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN. CK. TRACE CK. King

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	23	39



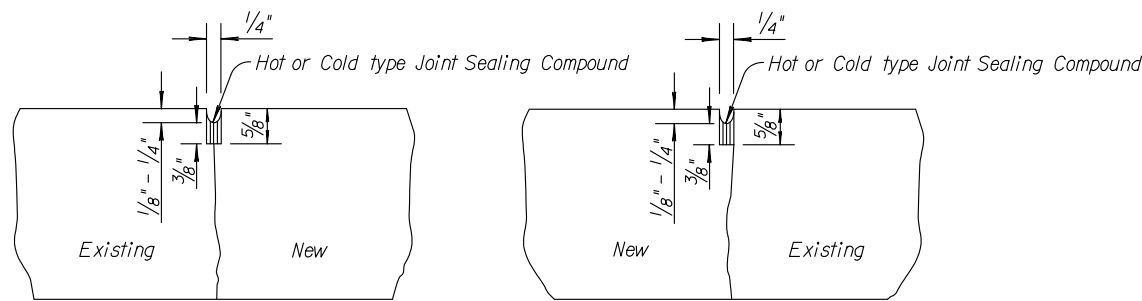
◆ When remaining pavement between adjacent patches < 6' combine into one patch and construct contraction joints in multiples of existing spacing 15' to 30'.

GENERAL NOTES
 When practical, construct slabs with the same joint spacing as those being repaired.
 Minimum slab length = 6'
 Maximum slab length = 30'
 Divide continuous repairs that exceed 30' length into as many 30' slabs as possible.

<u>Portions</u>	<u>Action</u>
1' to 5'	Combine with last 30' section and divide into equal slab lengths.
6' to 29'	Leave slab length as is

Contractor has the option of using 15' slab lengths throughout.

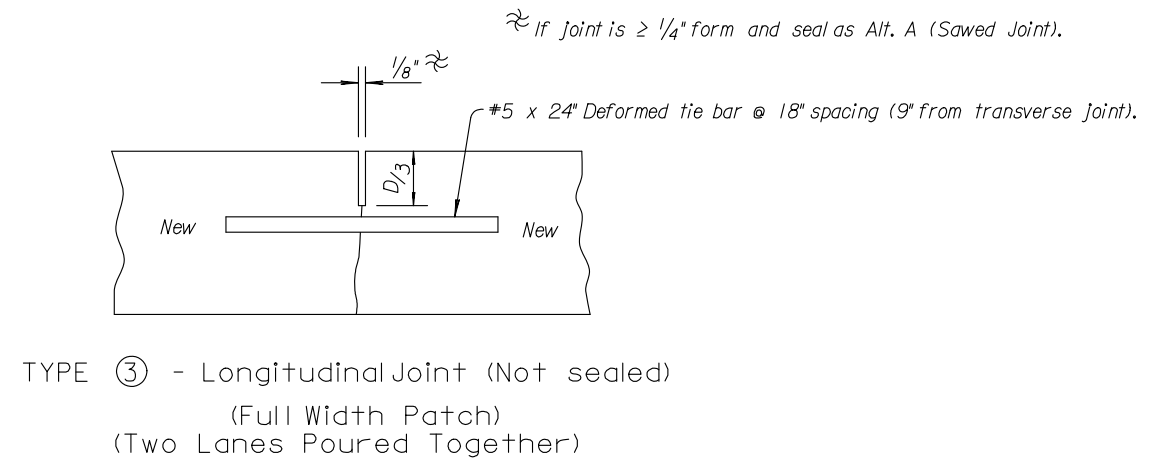
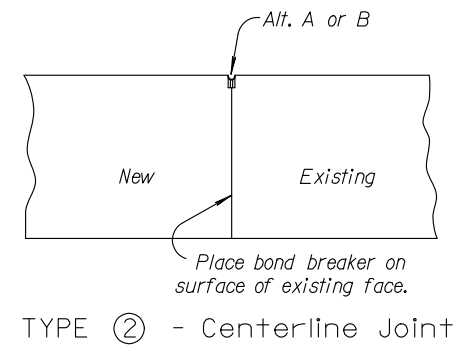
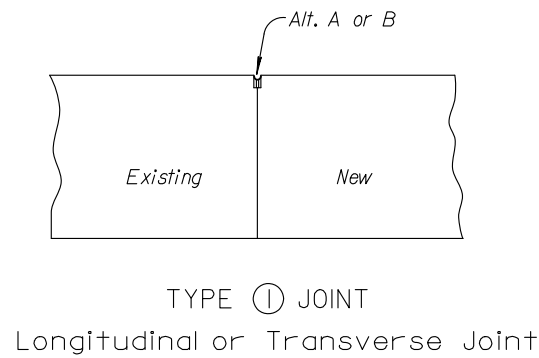
Mesh Placement:
 When slab length exceeds 15', place WWR 6 x 12 - W4 x W4 mesh at mid slab depth.
 Extend mesh to within 6" of longitudinal edge of patch and within 9" of transverse edge of patch.
 Do not construct the joint sealant reservoir if patch is overlaid.



Alt. A - Sawed

Alt. B - Formed

D= _____



PAVEMENT PATCHING SUMMARY			
Station to Station	Patch Size	Quantity (Sq. Yds.)	Comments

4	6-14-11	Rev. Joint sealant, Gen. note	S.W.K.	J.O.B.
3	8-14-01	Revised joint sealant detail	S.W.K.	J.O.B.
2	1-31-96	Revised Type 3 joint details	R.J.S.	J.O.B.
1	10-13-89	Revised pavement patching note	R.J.S.	J.O.B.
NO.	DATE	REVISIONS	BY	APP'D

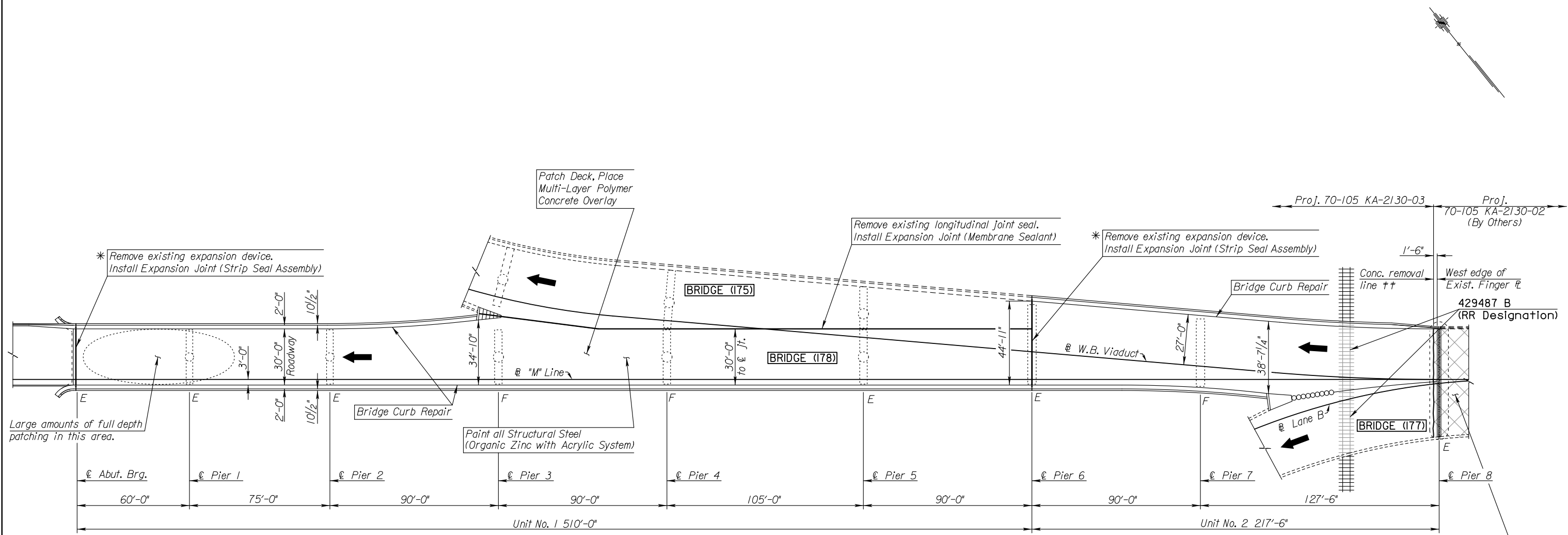
KANSAS DEPARTMENT OF TRANSPORTATION

**CONCRETE PAVEMENT (PCCP)
FULL DEPTH PATCHING
UNSOUD CONCRETE**

RD721

FHWA APPROVAL	9-27-11	APP'D. James O. Brewer
DESIGNED	A.J.G.	DETAILED
DESIGN CK.	A.J.G.	QUANTITIES
	DETAIL CK.	TRACE
	QUAN. CK.	BY
		APP'D

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	24	39



PLAN
 Unit No. 1 and 2: Welded Plate Girder Floorbeam
 Continuous Spans, Cantilever Piers on H-Pile,
 Variable Roadway

Note: Pier spacing and unit dimensions shown represent the distance along @ "M" Line as shown in the original plans.

Note: The Contractor must maintain access (reverse flow) to I-70 W.B. via bridge (173) or bridge (178) at all times. The Contractor shall coordinate with American Bridge Company, the prime contractor on the adjacent project 70-105 KA-2130-02, for the order in which access on these bridges will be restricted.

†† The joint at Pier 8 will be replaced by others as part of Proj. 70-105 KA-2130-02. Coordination of work in this area may be required.

LEGEND
 E = Expansion Pier
 F = Fixed Pier

KANSAS DEPARTMENT OF TRANSPORTATION
 BrIdge No. 70-105-17.20 (178)

CONSTRUCTION LAYOUT

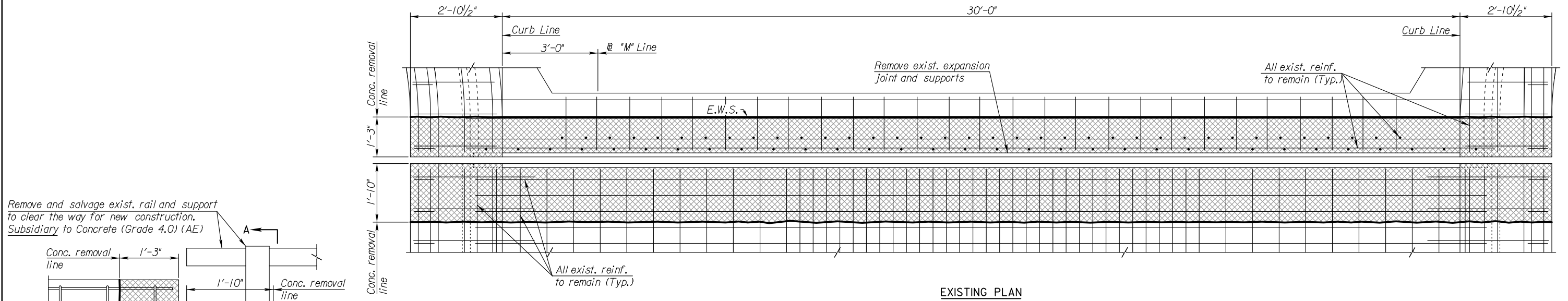
ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

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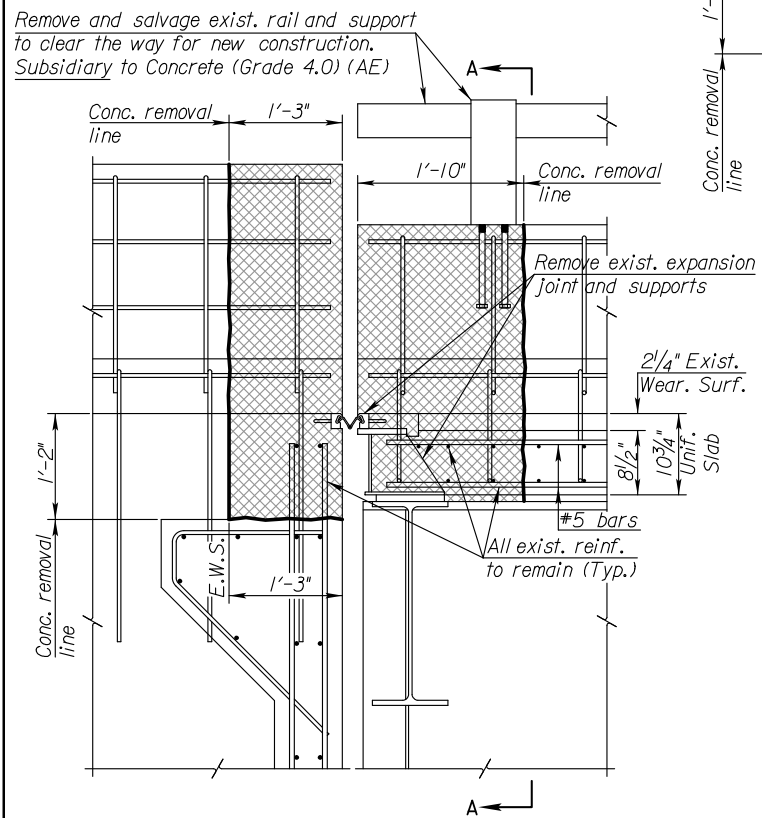
* Clean and prime top of exposed structural steel prior to placing new concrete.

Drawn By : milie.thompson Plotted : 02-FEB-2018 14:59
 File : IP_PWP-dms06773174783-004.dgn

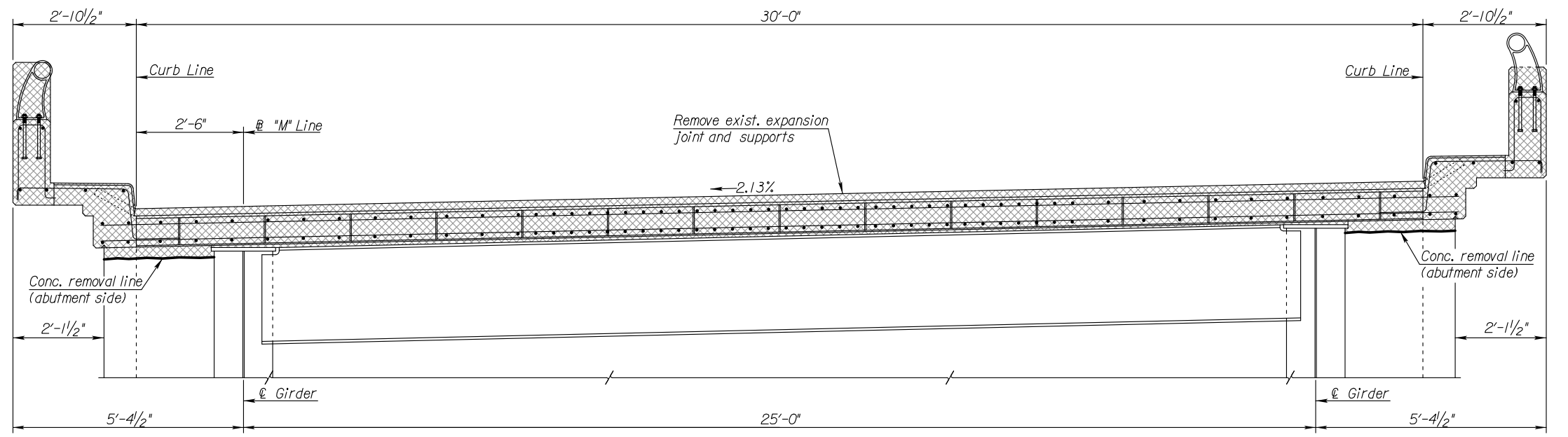
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	25	39



EXISTING PLAN



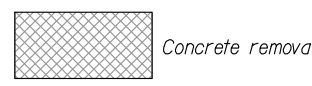
EXISTING TYPICAL SECTION



SECTION A-A

Note: Thoroughly clean existing reinforcing.

Note: Any curb plates that may remain will not be reused in new construction.

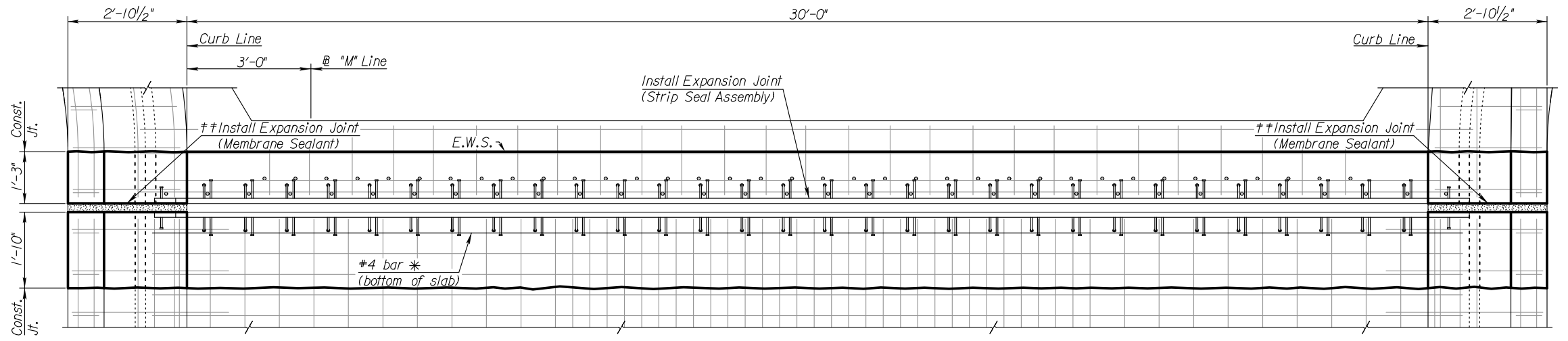


KANSAS DEPARTMENT OF TRANSPORTATION
 Br1dge No. 70-105-17.20 (178)
**ABUTMENT EXPANSION JOINT DETAILS
 (CONCRETE REMOVAL)**
 Proj. No. 70-105 KA-2130-03 WYANDOTTE Co.
PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 623 MASSACHUSETTS ST., SUITE 200 LAWRENCE, KS 66044
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Drawn By : milie.thompson Plotted : 02-FEB-2018 14:59
 File : IP_PWP-dms06773174763-004.dgn

TEMPERATURE GAP TABLE (Perpendicular to \perp of Joint)	
TEMP. °F	GAP DIMENSION
30	2 ⁵ / ₈ "
40	2 ¹ / ₁₆ "
50	2 ³ / ₁₆ "
60	2"
70	1 ¹³ / ₁₆ "
80	1 ⁹ / ₁₆ "
90	1 ⁷ / ₈ "
100	1 ³ / ₁₆ "

Based on average ambient air temperature for the previous 24 hours.

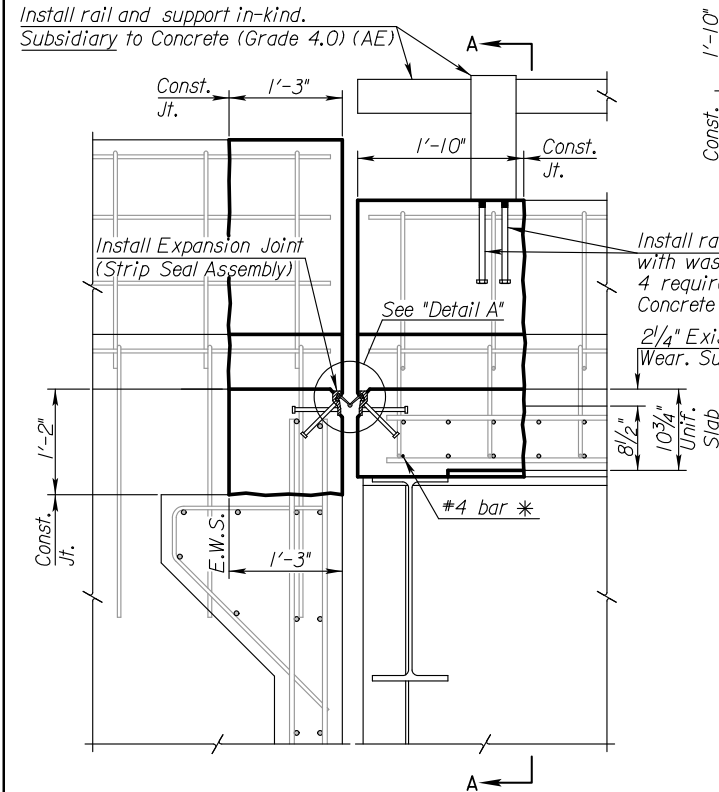


PROPOSED PLAN

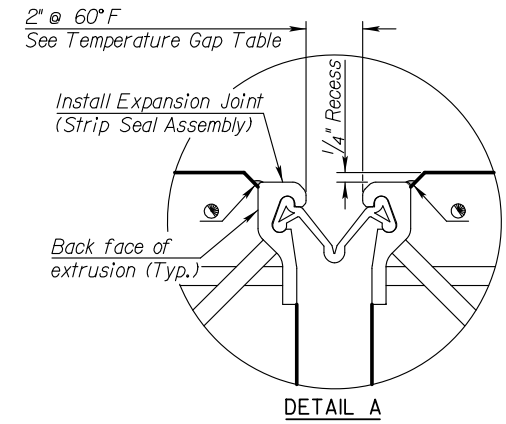
See "General Notes and Quantities" sheet for installation details note.

Note: Cast to original geometry with Concrete (Grade 4.0) (AE).

* It is anticipated there is not a transverse reinforcing bar at this location because of conflicts with existing expansion joint supports. Install a new #4 (Grade 60) bar as shown. Materials and installation shall be subsidiary to the bid item "Expansion Joint (Strip Seal Assembly)".

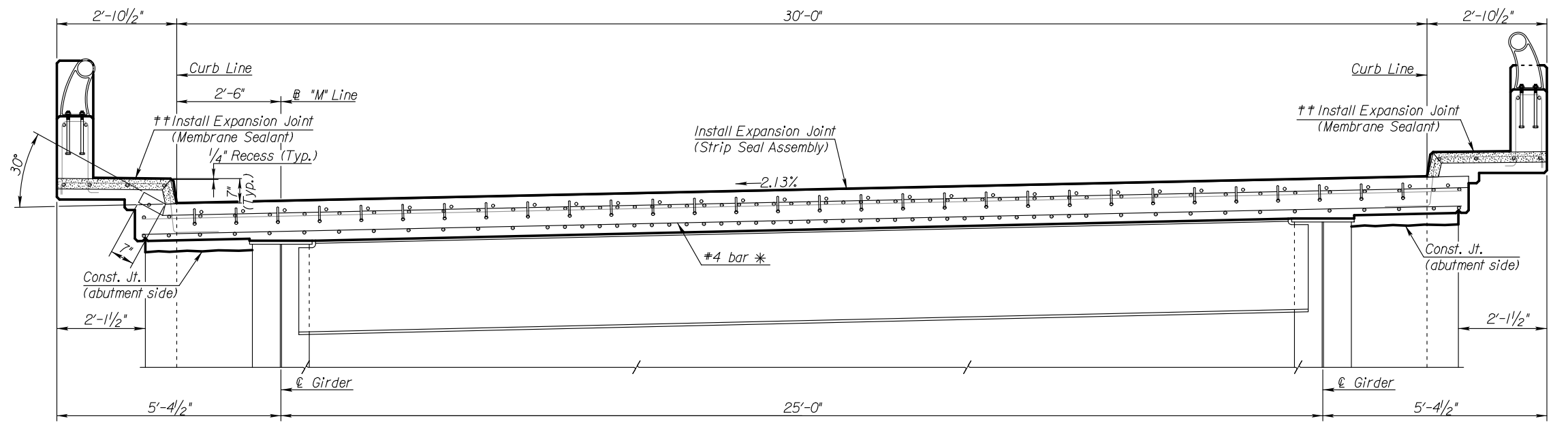


PROPOSED TYPICAL SECTION



DETAIL A

Form 1/4" recess to the back face at the bottom of the rounded edge of the strip seal extrusions. After concrete has cured, thoroughly clean valley area that has been created and fill with a silicone based sealant (or as directed by the Engineer) for the entire roadway width of the strip seal extrusions. Materials and labor shall be subsidiary to Concrete (Grade 4.0) (AE).



SECTION A-A

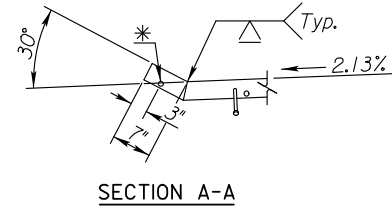
Drawn By : milie.thompson Plotted : 02-FEB-2018 14:59 File : IP_PWP-ams06773174783-004.dgn

KANSAS DEPARTMENT OF TRANSPORTATION
 Bridge No. 70-105-17.20 (178)
ABUTMENT EXPANSION JOINT DETAILS
 (PROPOSED CONSTRUCTION)

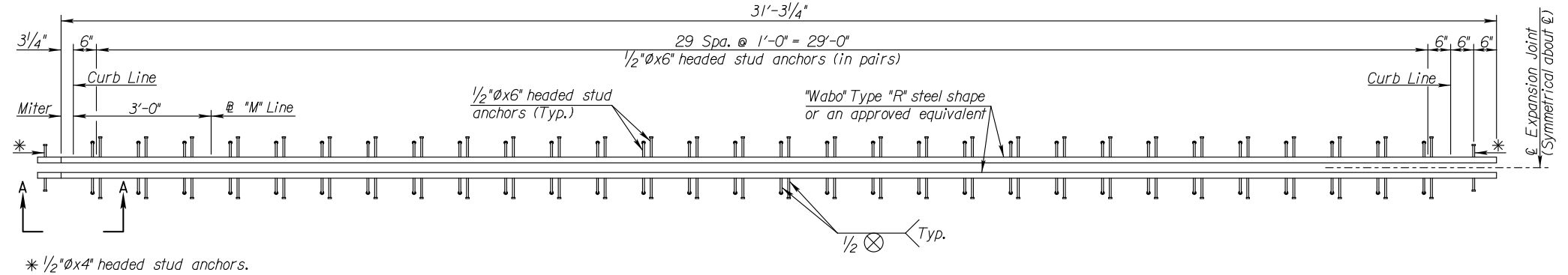
ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

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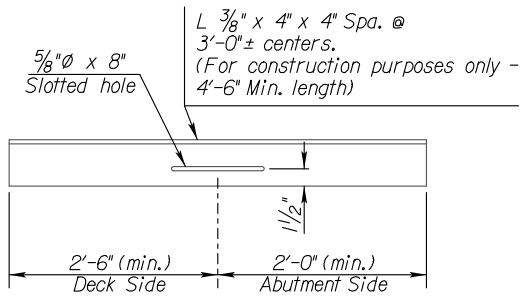
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	27	39



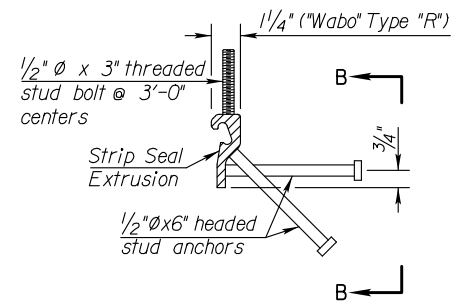
SECTION A-A



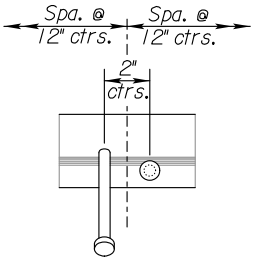
EXTRUSION PLAN



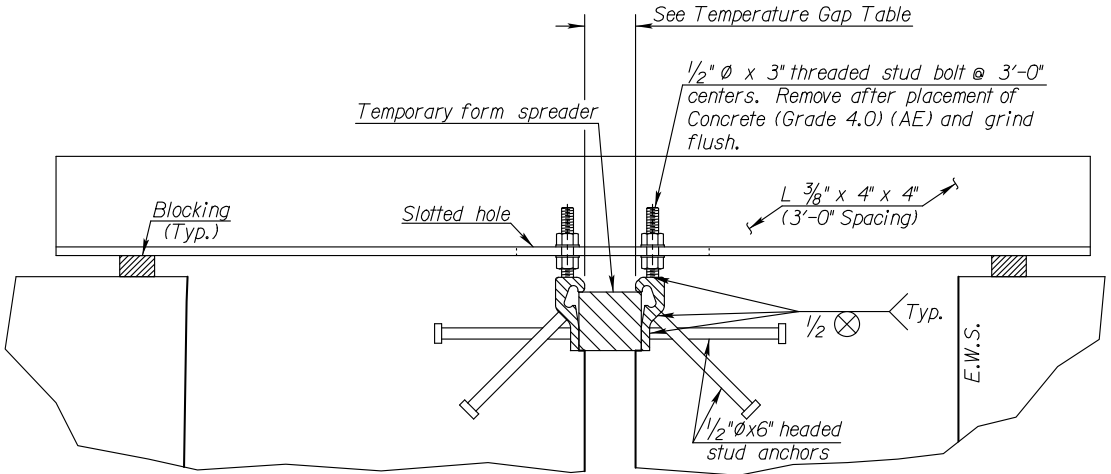
PLAN OF STRIP SEAL ERECTION ANGLE



SECTION THRU EXTRUSION



SECTION B-B



TYPICAL SECTION SHOWING ERECTION ANGLE

NOTE:
Immediately prior to placing the Concrete (Grade 4.0) (AE) around the Strip Seal Extrusion, the existing concrete surface at the concrete removal line shall be cleaned and roughened. The erection angles shall be securely bolted to the extrusion. The extrusion shall be in the same plane and recessed 1/4" below the top of the roadway. The erection angles shall be removed as soon as the new concrete will support the assembly without allowing any settlement or tilting. Following the removal of the erection angles, remove the stud bolts on the extrusions and grind flush. The stud bolts, nuts and washers, and erection angles, labor and materials used to install and remove the erection angles shall be subsidiary to the bid item "Expansion Joint (Strip Seal Assembly)".

NOTE:
The strip seal extrusions in the bridge deck shall be a "Wabo" Type "R" steel shape or approved equivalent as shown in the details. All items shown on the Expansion Joint Details sheets are included in the bid item "Expansion Joint (Strip Seal Assembly)". All welds on the extrusion shall be 1/4" continuous fillet welds, unless otherwise noted.

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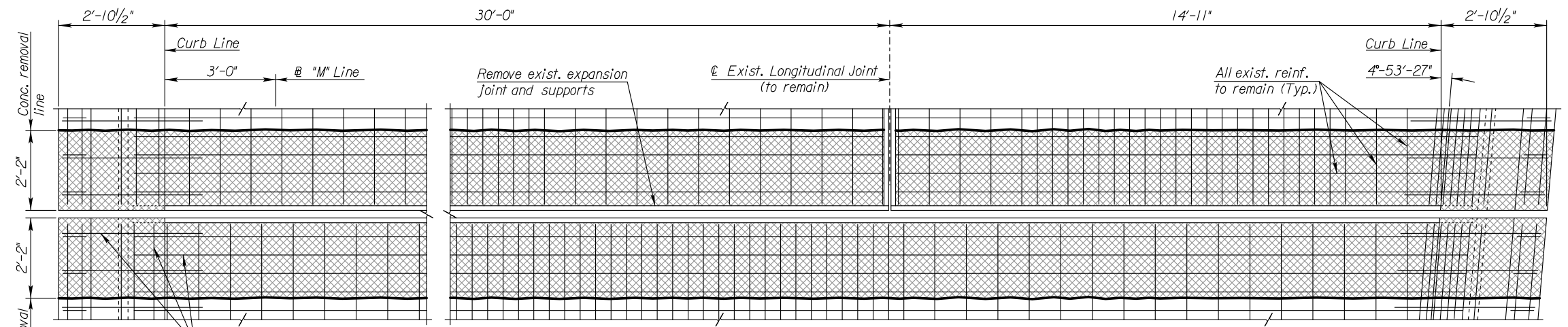
KANSAS DEPARTMENT OF TRANSPORTATION
BrIdge No. 70-105-17.20 (I78)

ABUTMENT EXPANSION JOINT DETAILS
(PROPOSED CONSTRUCTION)

ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

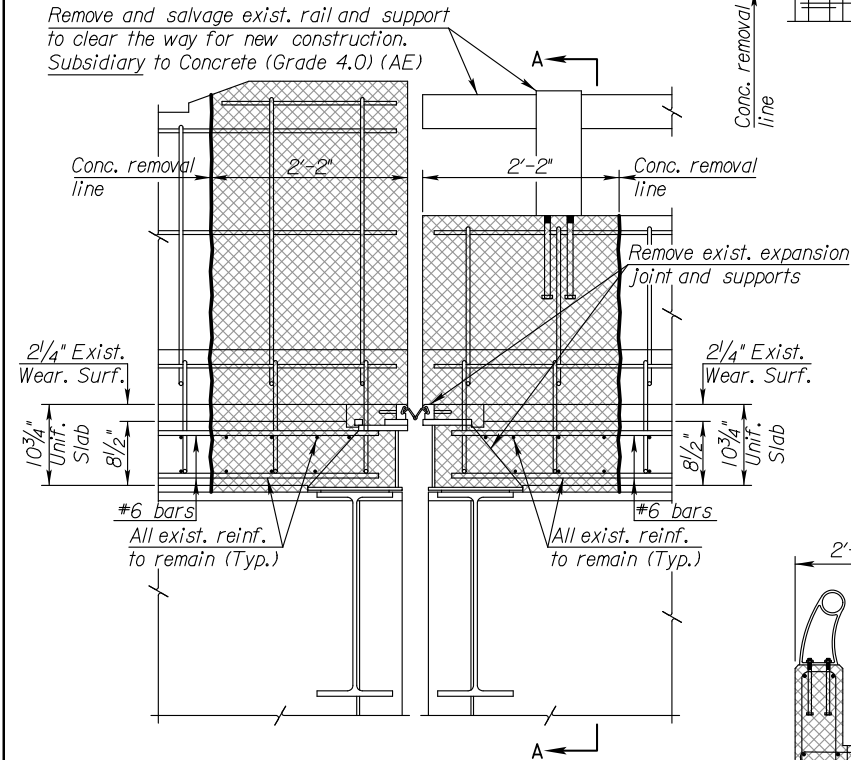
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	28	39



EXISTING PLAN

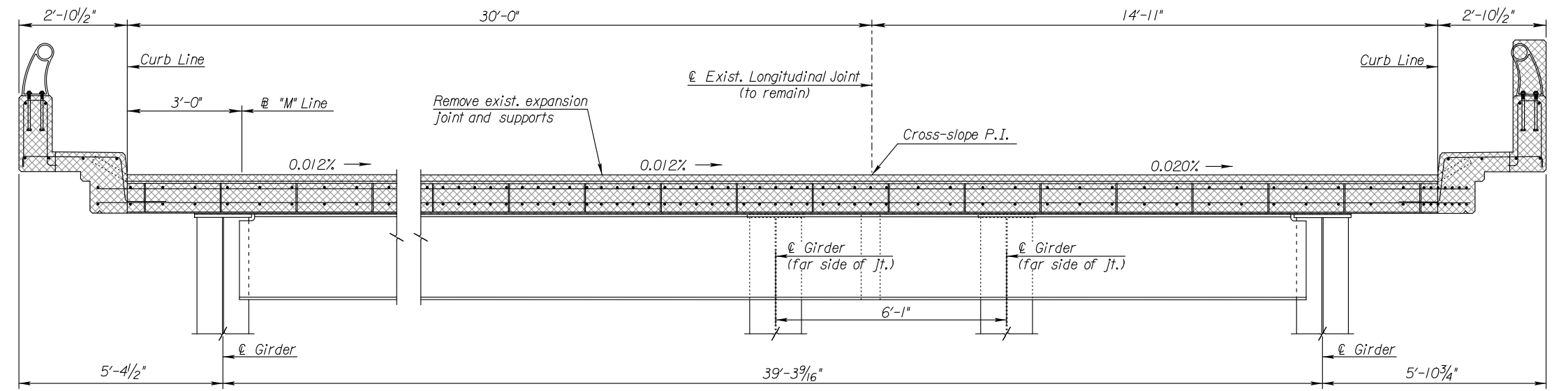
Note: Confirm cross-slopes and dimensions prior to removal and fabrication of new strip seal assembly.



EXISTING TYPICAL SECTION

Note: Thoroughly clean existing reinforcing and exposed anchorage/extrusion for existing longitudinal joint.

Note: Any curb plates that may remain will not be reused in new construction.



SECTION A-A



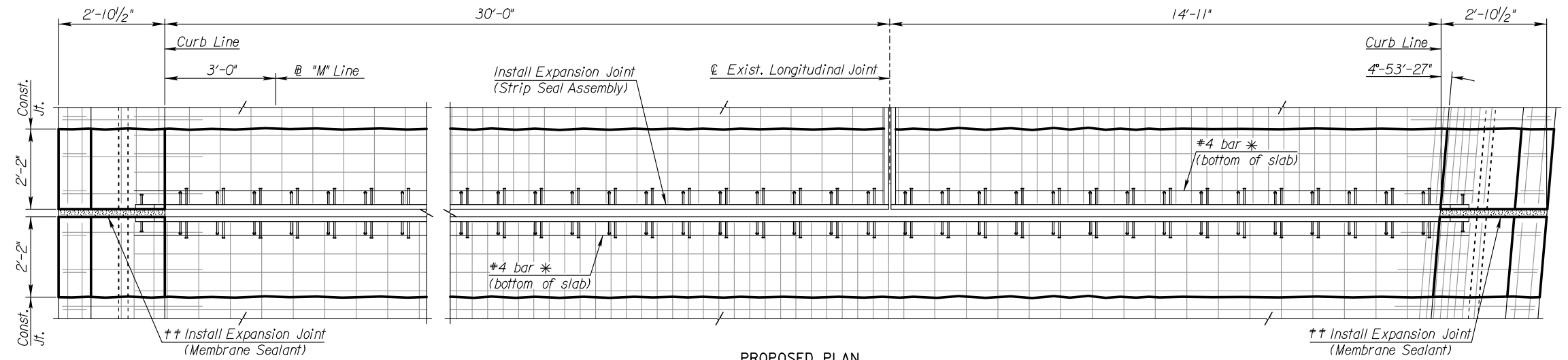
Concrete removal

KANSAS DEPARTMENT OF TRANSPORTATION
 BrIdge No. 70-105-17.20 (178)
PIER 16 EXPANSION JOINT DETAILS
 (CONCRETE REMOVAL)
 Proj. No. 70-105 KA-2130-03 WYANDOTTE Co.
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 File: IP_PWP-dms0677314783-004.dgn

TEMPERATURE GAP TABLE (Perpendicular to \perp of Joint)	
TEMP. °F	GAP DIMENSION
30	3/4"
40	3"
50	2 3/4"
60	2 1/2"
70	2 1/4"
80	2"
90	1 3/4"
100	1 1/2"

Based on average ambient air temperature for the previous 24 hours.

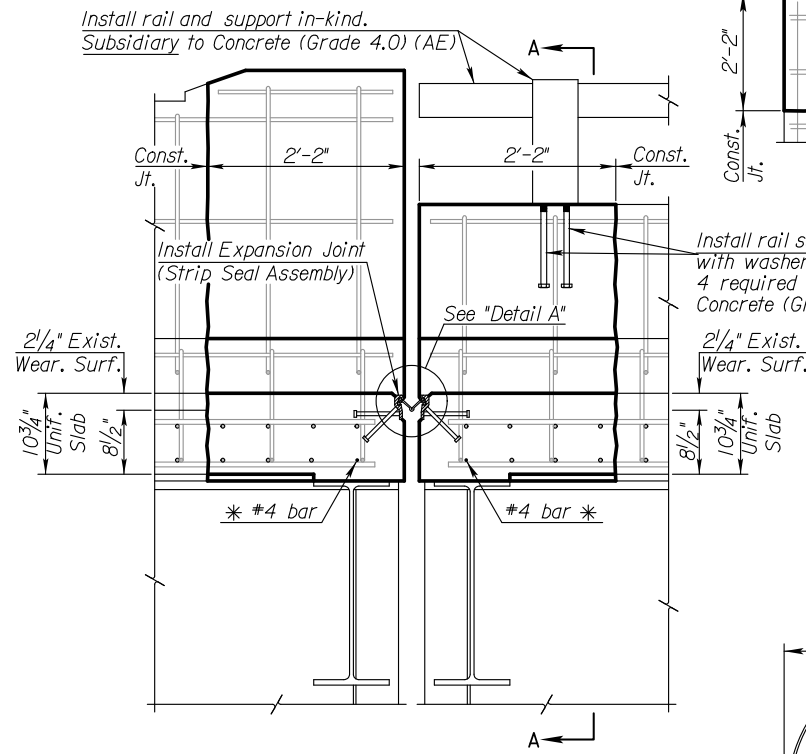


PROPOSED PLAN

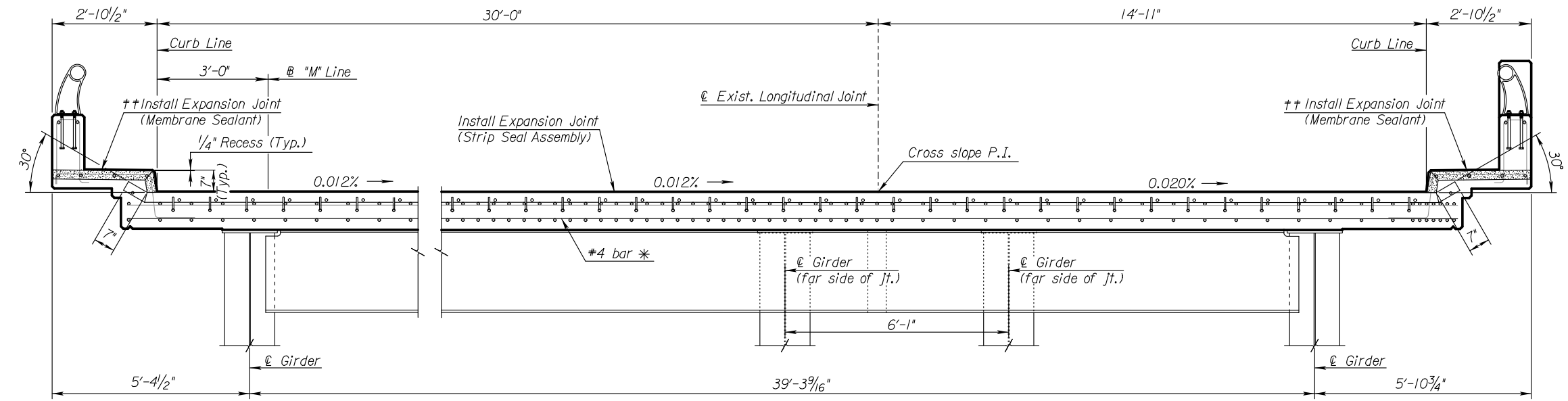
See "General Notes and Quantities" sheet for installation details note.

* It is anticipated there was not a transverse reinforcing bar at this location because of conflicts with existing expansion joint supports. Install a new #4 (Grade 60) bar as shown. Materials and installation shall be subsidiary to the bid item "Expansion Joint (Strip Seal Assembly)".

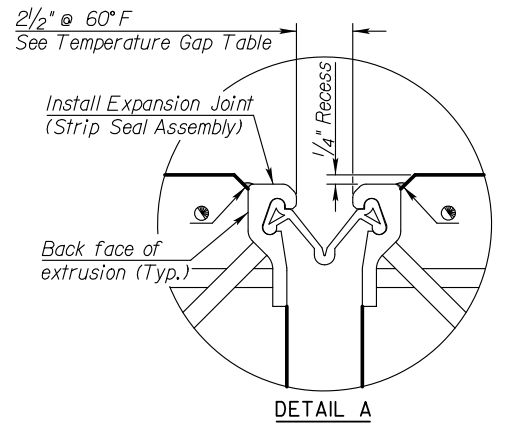
Note: Cast to original geometry with Concrete (Grade 4.0) (AE).



PROPOSED TYPICAL SECTION



SECTION A-A



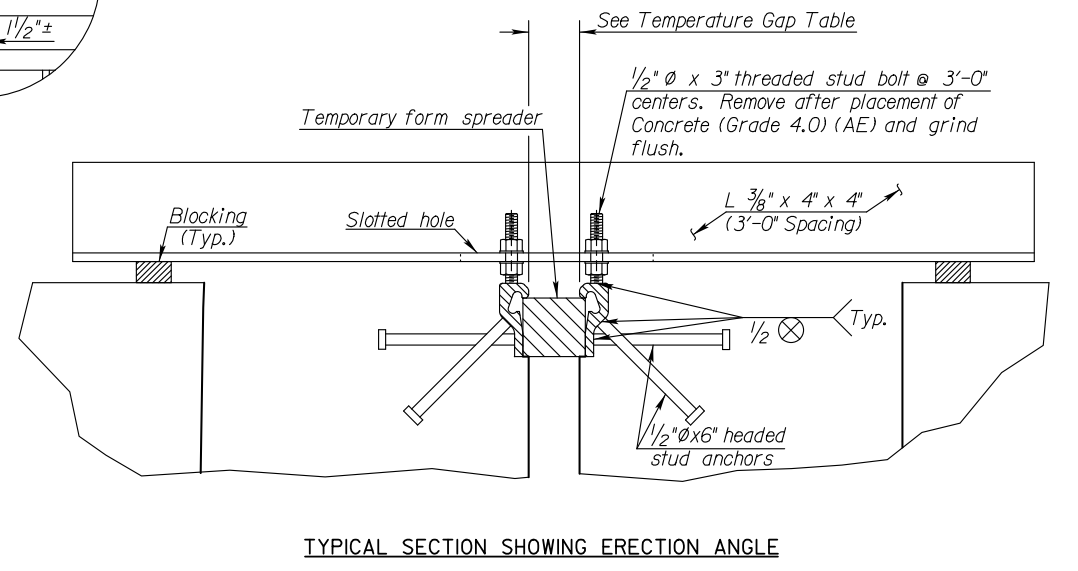
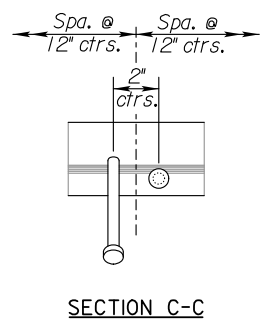
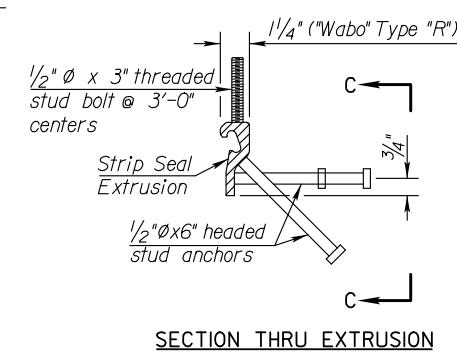
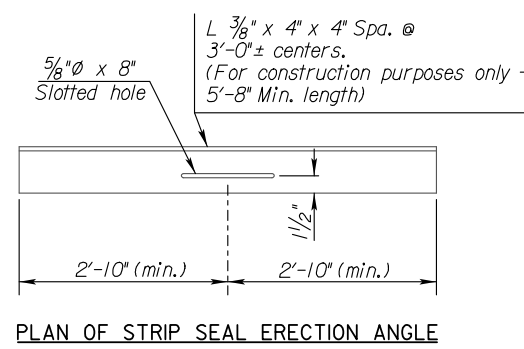
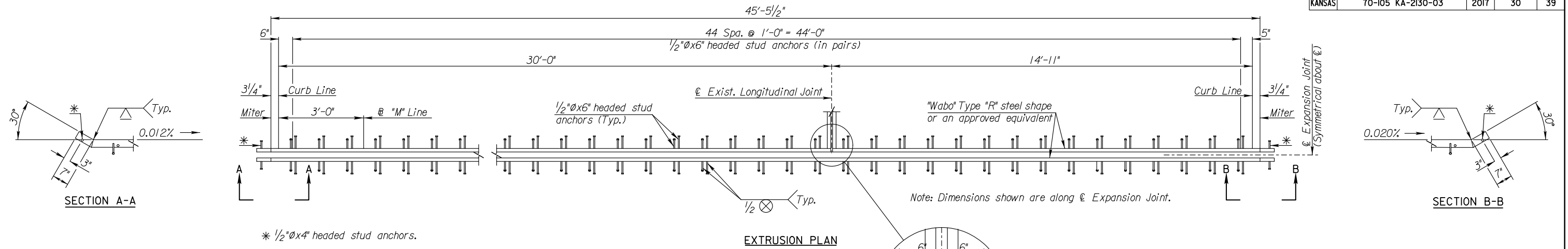
DETAIL A

Form 1/4" recess to the back face at the bottom of the rounded edge of the strip seal extrusions. After concrete has cured, thoroughly clean valley area that has been created and fill with a silicone based sealant (or as directed by the Engineer) for the entire roadway width of the strip seal extrusions. Materials and labor shall be subsidiary to Concrete (Grade 4.0) (AE).

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KANSAS DEPARTMENT OF TRANSPORTATION
 Bridge No. 70-105-17.20 (178)
**PIER 16 EXPANSION JOINT DETAILS
 (PROPOSED CONSTRUCTION)**
 Proj. No. 70-105 KA-2130-03 WYANDOTTE Co.
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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	30	39



NOTE:
Immediately prior to placing the Concrete (Grade 4.0) (AE) around the Strip Seal Extrusion, the existing concrete surface at the concrete removal line shall be cleaned and roughened. The erection angles shall be securely bolted to the extrusion. The extrusion shall be in the same plane and recessed 1/4" below the top of the roadway. The erection angles shall be removed as soon as the new concrete will support the assembly without allowing any settlement or tilting. Following the removal of the erection angles, remove the stud bolts on the extrusions and grind flush. The stud bolts, nuts and washers, and erection angles, labor and materials used to install and remove the erection angles shall be subsidiary to the bid item "Expansion Joint (Strip Seal Assembly)".

NOTE:
The strip seal extrusions in the bridge deck shall be a "Wabo" Type "R" steel shape or approved equivalent as shown in the details. All items shown on the Expansion Joint Details sheets are included in the bid item "Expansion Joint (Strip Seal Assembly)". All welds on the extrusion shall be 1/4" continuous fillet welds, unless otherwise noted.

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File : IP_PWP-dms06773174783-004.dgn

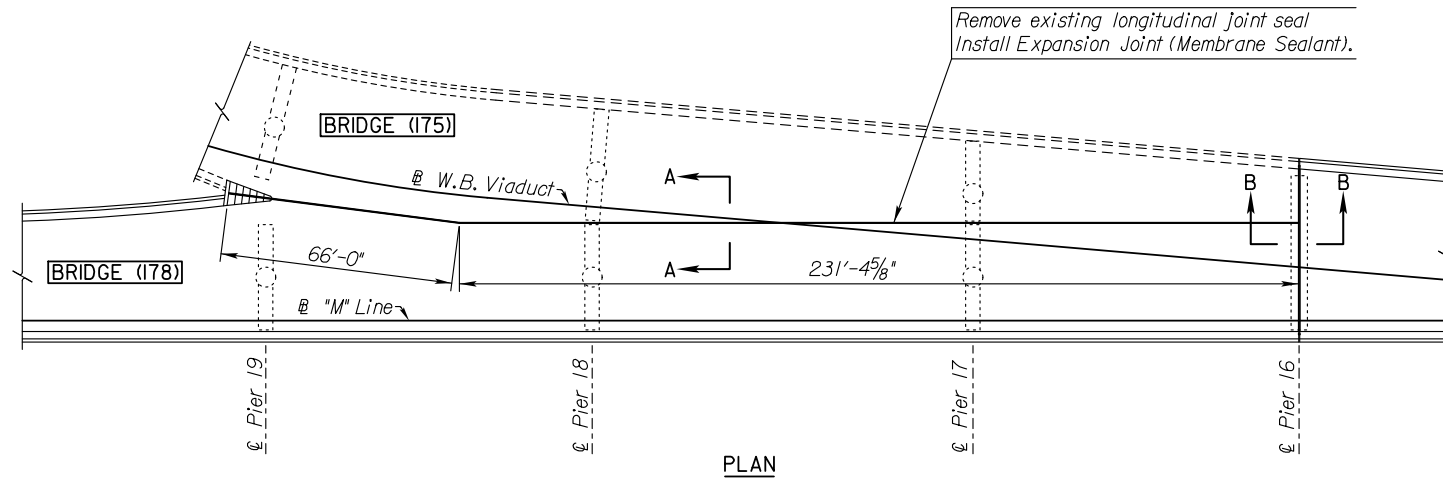
KANSAS DEPARTMENT OF TRANSPORTATION
Br1dgc No. 70-105-17.20 (178)

PIER 16 EXPANSION JOINT DETAILS
(PROPOSED CONSTRUCTION)

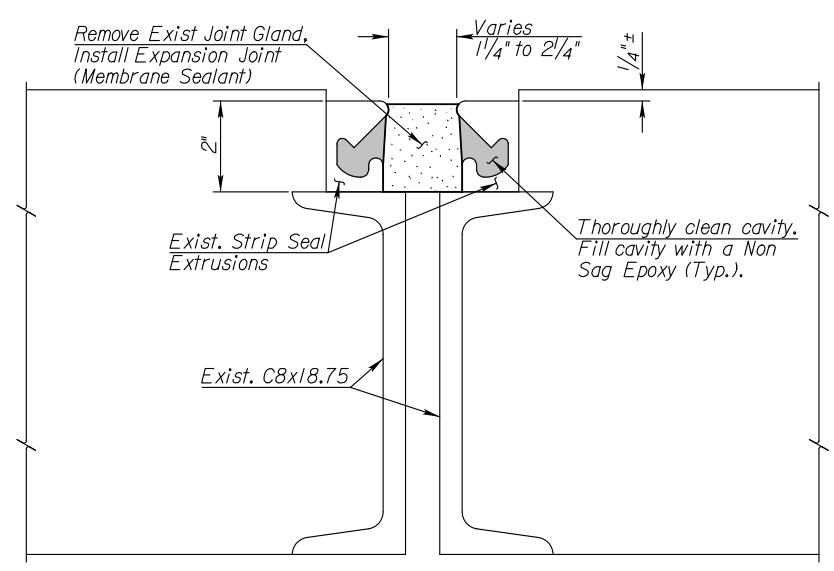
ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

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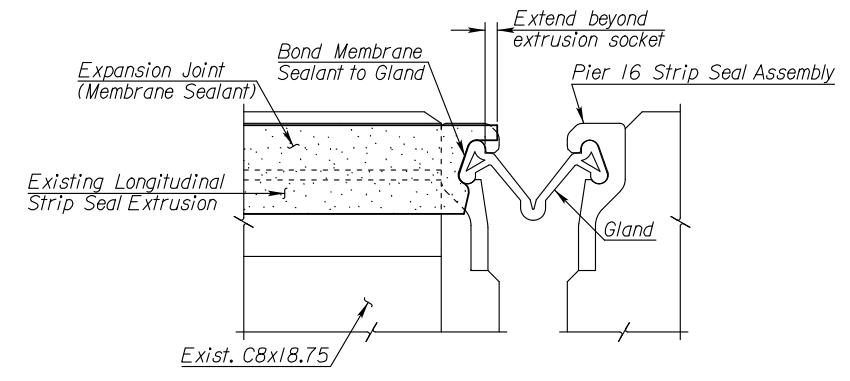
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	31	39



PLAN



SECTION A-A



SECTION B-B
(At Longitudinal Joint)

Note: Confirm gap dimensions in the field prior to ordering joint material. Materials and installation of the Non Sag Epoxy shall be subsidiary to the bid item "Expansion Joint (Membrane Sealant)".

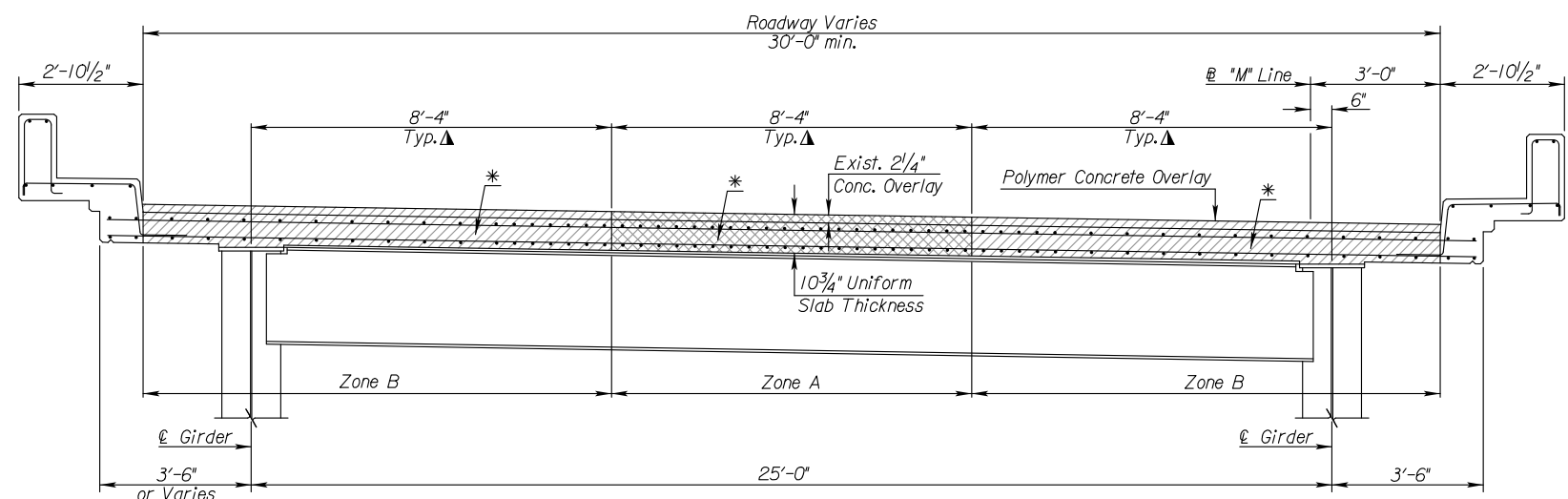
EXPANSION JOINT (MEMBRANE SEALANT) INSTALLATION:

The joint shall be thoroughly cleaned by sandblasting and by high pressure air blast to remove all laitance and contaminants from the joint.
 Sandblasting shall be accomplished in two passes to clean each face of the joint (one pass for each face). The nozzle shall be held at an angle to the joint face and within 1 to 2 inches of the face.
 Any contaminants such as oil, etc. shall be removed by sandblasting or according to the expansion joint manufacturer's recommendations.
 Fill existing extrusion cavities with a non sag epoxy.
 The joint shall be air blasted just prior to installation of the Membrane Sealant. The air compressor used for joint cleaning shall be equipped with trap devices capable of providing moisture-free and oil-free air at a recommended pressure of 90 psi. The joint shall be spot checked to ensure residual dust or dirt has been removed. It is required that the Engineer inspect the joint immediately prior to installation of the Membrane Sealant.
 See KDOT Standard Specifications for Membrane Sealant, Bonding Adhesive and Splice Adhesive.
 Traffic shall not be allowed on the joint for a minimum of 3 hours unless otherwise directed by the Engineer.
 Splices will use materials & methods recommended by the Manufacturer.
 All work and materials necessary for the preparation, construction, and installation of the joint will be subsidiary to "Expansion Joint (Membrane Sealant)".

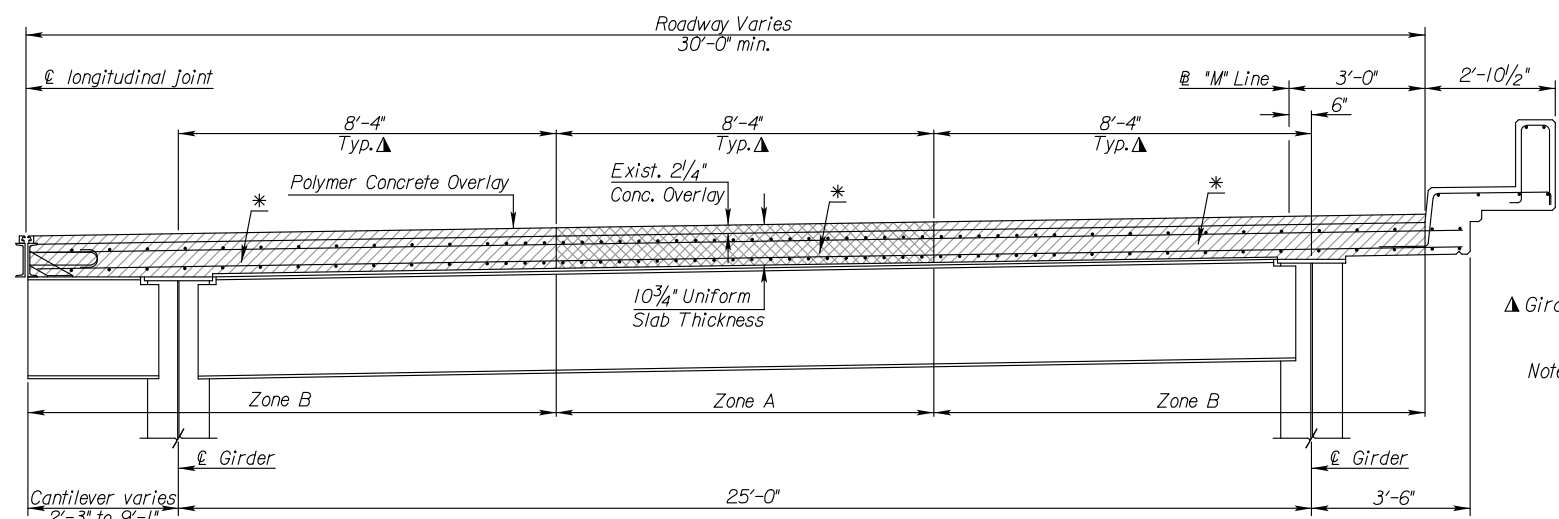
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 Bridge No. 70-105-17.20 (I78)
LONGITUDINAL EXPANSION JOINT DETAILS
 Proj. No. 70-105 KA-2130-03 WYANDOTTE Co.
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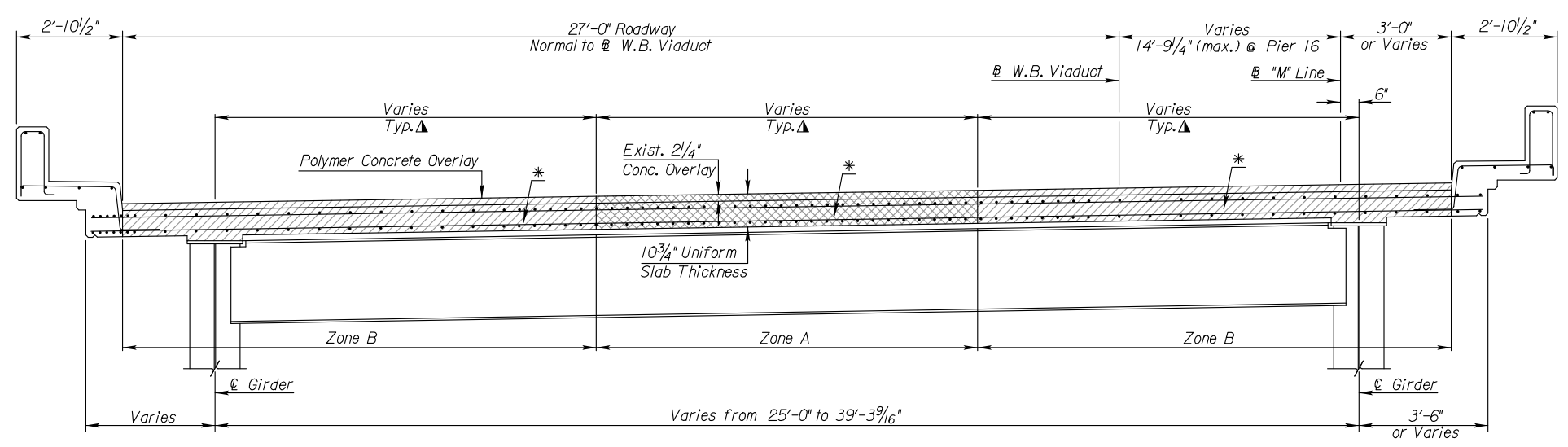
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	32	39



TYPICAL SECTION FROM ABUTMENT TO NEAR PIER 3



TYPICAL SECTION NEAR PIER 3 TO PIER 6



TYPICAL SECTION NEAR PIER 6 TO PIER 8

* FULL DEPTH PATCHING SEQUENCE:

Full depth patching shall be phased if any of the following criteria are met:

- Plan area of contiguous patch is greater than 64 square feet.
- The length of the patch is greater than 10 feet, measured from it's furthest extents parallel to the centerline of the roadway.
- The width of the patch is greater than 1/3 of the girder spacing, measured from it's furthest extents perpendicular to the centerline of the roadway.
- At the direction of the Engineer

Segmental patching will not be required if adequate shoring is provided to support the deck, curbs and beams. Otherwise, phased patching shall be performed in the following sequence:

Zone A: Full depth patching in Zone A, as shown in the details, shall be repaired first. Patching shall be performed such that no segment of patching is greater than 8'-0" long measured parallel to the centerline of the roadway. The minimum distance between adjacent concurrently patched segments shall be 8'-0" measured parallel to the centerline of the roadway. After the initial patches have cured according to KDOT Specifications, the area between the initial segments in Zone A shall be patched.

Zone B: after all patches in Zone A have cured according to KDOT Specifications, full depth patching in Zone B may commence. Patching shall be performed such that no segment of patching is greater than 8'-0" long measured parallel to the centerline of the roadway. The minimum distance between adjacent concurrently patched segments shall be 8'-0" measured parallel to the centerline of the roadway. After the initial patches have cured according to KDOT Specifications, the area between the initial segments in Zone B shall be patched.

Care shall be taken so that transverse joints in Zone A are not aligned with transverse joints in Zone B. Provide a minimum of 1'-0" staggered spacing between these transverse joints.

▲ Girder Spacing /3 or as directed by the Engineer.

Note: Bridge will be closed during construction.

SUMMARY OF QUANTITIES

ITEM	UNITS	QUANTITY
Area Prepared for Patching	Sq. Yds.	100
Area Prepared for Patching (Full Depth)	Sq. Yds.	50
Multi-Layer Polymer Concrete Overlay	Sq. Yds.	2,658
Reinforcing Steel (Repair) (Grade 60) (Set Price)	Lbs.	1

MINIMUM REBAR SPLICE LENGTHS

Existing Bar Size	Minimum Splice Lengths (inches)	
	Existing Gr. 40 ksi Bars	Existing Gr. 60 ksi Bars
#4	12"	16"
#5	13"	20"
#6	16"	24"
#7	20"	30"
#8	26"	39"
#9	33"	49"
#10	42"	62"
#11	51"	77"

Note: If splicing epoxy coated reinforcing steel, increase the above splice lengths by 20%.

■ Lap lengths are based on a Class B splice. Use the minimum splice length corresponding to the grade of the existing reinforcing in the deck.

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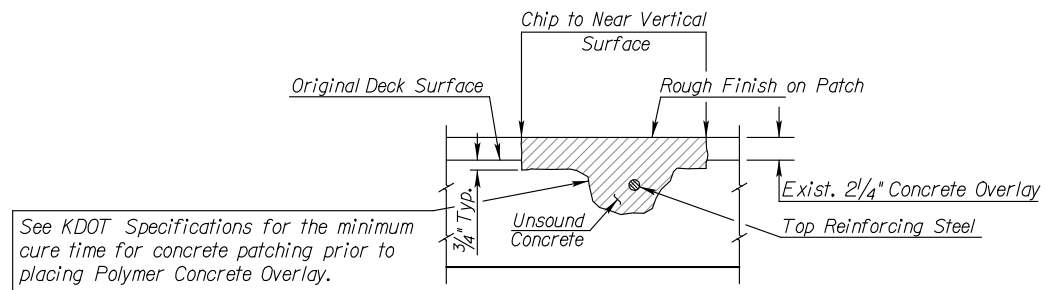
DECK PATCHING SEQUENCE

Pro1. No. 70-105 KA-2130-03 WYANDOTTE Co.



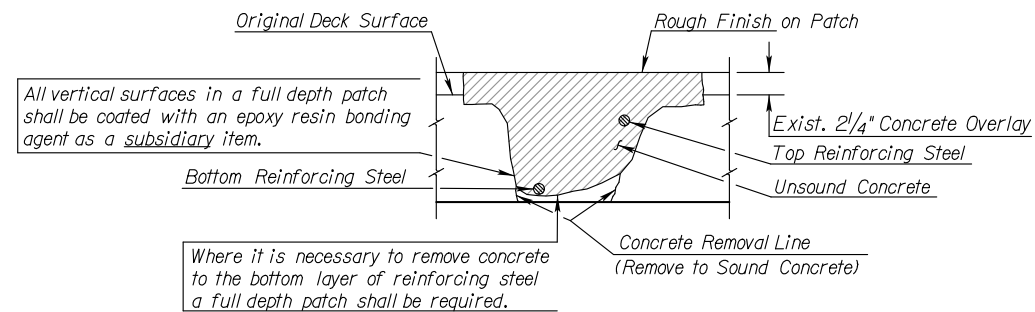
Drawn By : milie.thompson Plotted : 02-FEB-2018 14:59
File : IP_PVIP-dms06773174763-004.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	33	39



See KDOT Specifications for the minimum cure time for concrete patching prior to placing Polymer Concrete Overlay.

PARTIAL DEPTH PATCHING

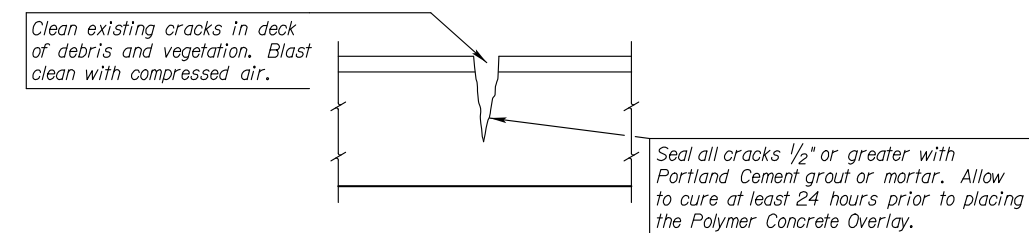


All vertical surfaces in a full depth patch shall be coated with an epoxy resin bonding agent as a subsidiary item.

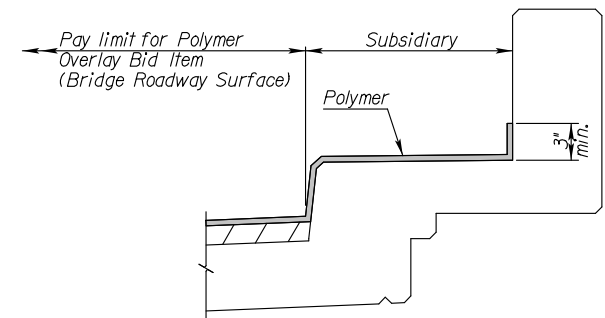
Where it is necessary to remove concrete to the bottom layer of reinforcing steel a full depth patch shall be required.

FULL DEPTH PATCHING

DECK PATCHING DETAILS



CRACK SEALING DETAIL



CURB WITH PARAPET RAIL

AREA PREPARED FOR PATCHING: This item shall consist of removing unsound concrete and asphalt patches from the bridge deck, cleaning reinforcing bars, filling the removed patched areas with concrete and preparing the entire area of the deck for an overlay. Quantity shown is an estimate of the areas involved. The exact areas shall be determined by tapping, before, during and after chipping operation to ensure that all unsound concrete has been removed. See KDOT Specifications.

FULL DEPTH PATCHING: Forms shall be provided to enable placement of the concrete in areas of full depth removal of bridge slab. The forms may be suspended from existing reinforcing bars by wire ties or a method approved by the Engineer. See KDOT Specifications for method of measurement and payment.

REINFORCING IN BRIDGE DECK: Care should be exercised to prevent cutting, stretching or damaging exposed reinforcing steel. Extreme care should be exercised to avoid breaking the bond between the reinforcing steel and concrete where bars are partially exposed yet remain anchored in sound concrete. Reinforcing steel damaged, cut or deteriorated shall be replaced as directed by the Engineer. Do not wedge chipping hammer bit against reinforcement. See table for replacement bar size and minimum splice length required. Replacement of bars damaged by the Contractor shall be subsidiary to "Area Prepared for Patching".

MULTI-LAYER POLYMER CONCRETE OVERLAY: Prepare and overlay the bridge roadway surface using a Polymer Overlay (Two-coat Broom and Seed). On curb with parapet rails, apply polymer to a minimum of 3" above the base of the parapet. Apply polymer to the curb as each of the overlay applications are performed.

All work related to applying polymer to additional areas beyond the bridge roadway surface width shall be subsidiary to the bid item Multi-Layer Polymer Concrete Overlay.

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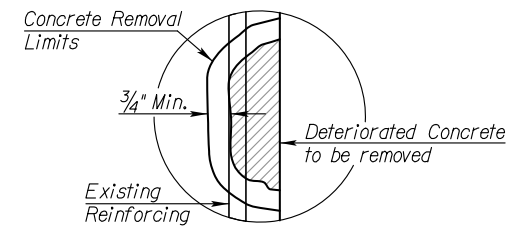
KANSAS DEPARTMENT OF TRANSPORTATION
BrIdge No. 70-105-17.20 (178)

DECK PATCHING DETAILS

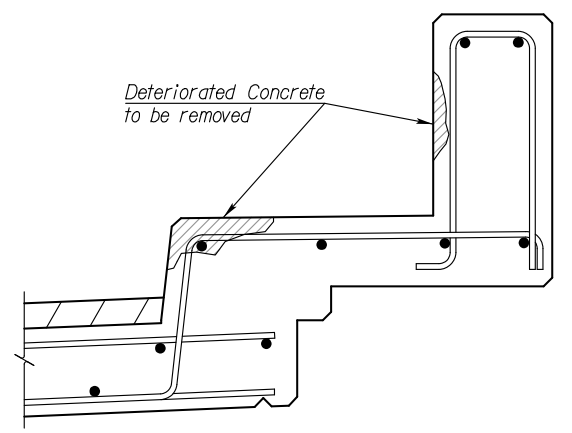
ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

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KANSAS	70-105 KA-2130-03	2017	34	39



CONCRETE REMOVAL DETAIL



EXISTING PARAPET DETAILS

PARAPET REPAIR: The Contractor shall remove all deteriorated or damaged concrete delineated by the Engineer. Additional concrete shall be removed to create a minimum thickness of new concrete of 1 inch. Do not feather edges. At repair locations, the concrete shall be removed from 3/4" around the reinforcing steel near the surface to allow a positive bond of new concrete to the existing structure. Concrete (Grade 4,0) (AE) or an approved Shotcrete shall be used. Prior to its placement, an epoxy resin for bonding new concrete to existing concrete shall be used. The removal of deteriorated or damaged concrete, placement of new concrete, and all labor, materials, equipment, and incidentals necessary to complete the repairs shall be paid for as "Bridge Curb Repair" (Lin. Ft.).

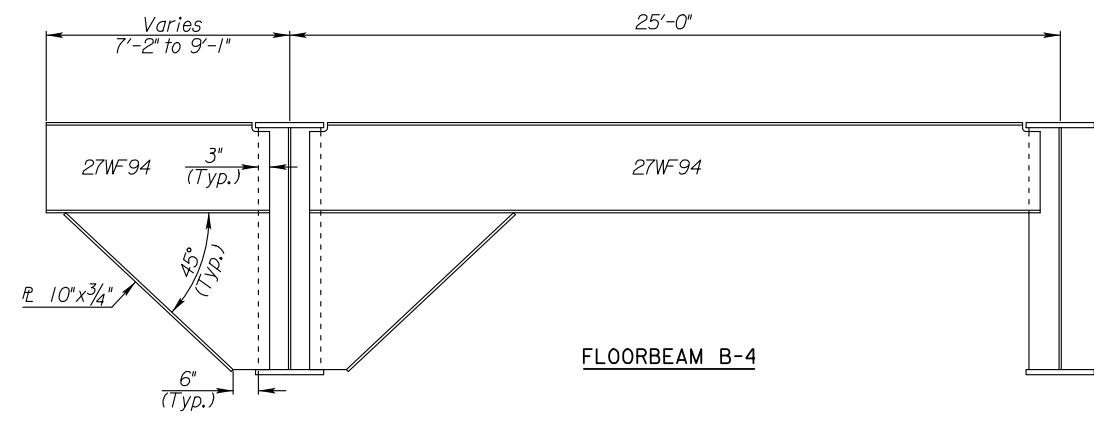
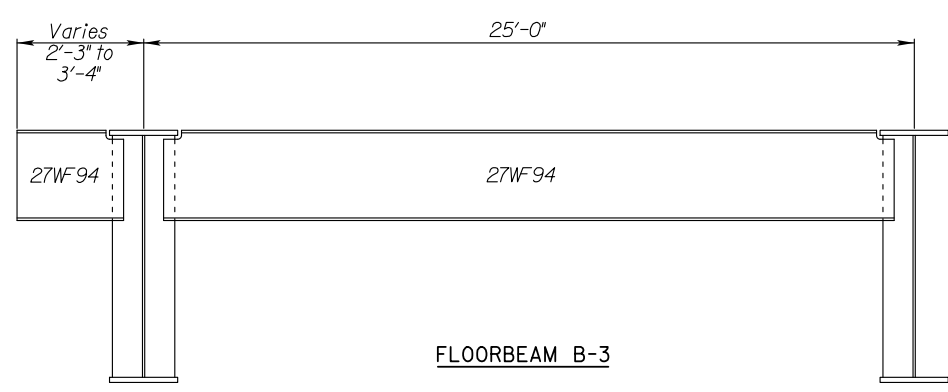
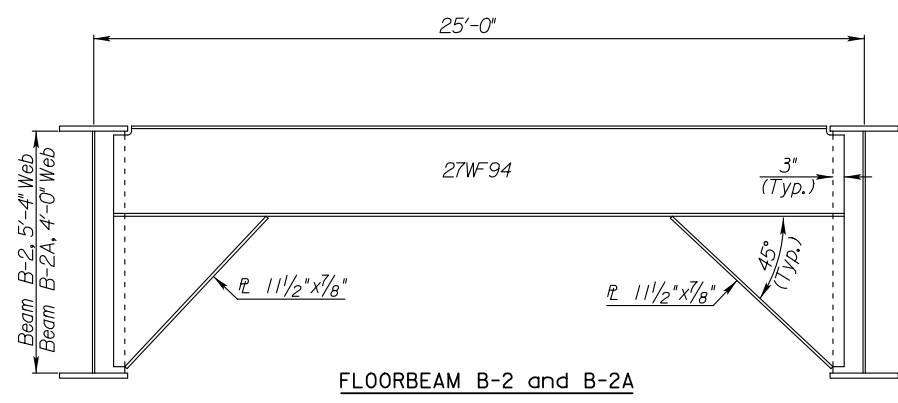
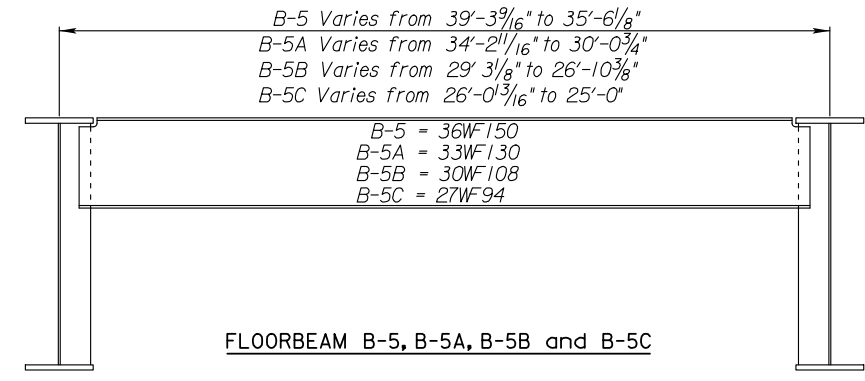
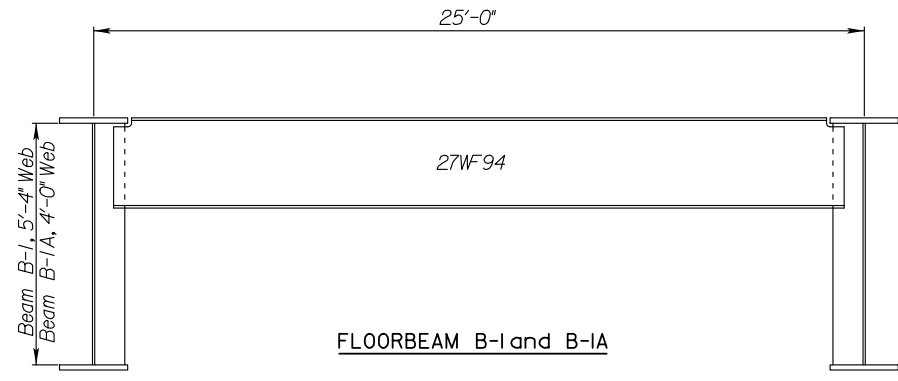
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 File : IP_PVIP-dms06173114763-004.dgn

KANSAS DEPARTMENT OF TRANSPORTATION
 Br1dge No. 70-105-17.20 (178)

CURB REPAIR DETAILS

ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

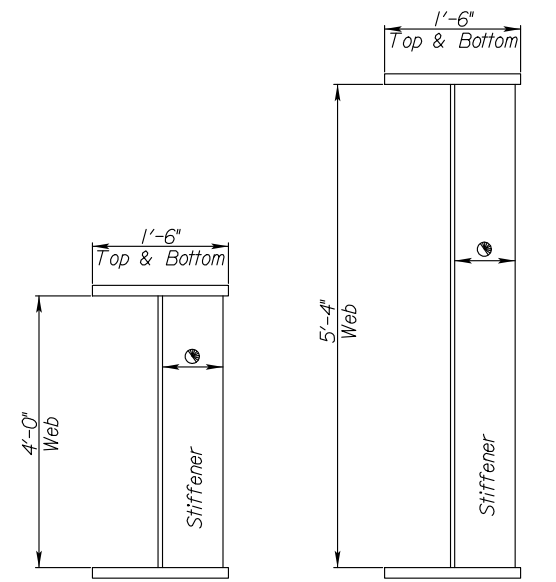
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GIRDERS		
Location	Lin. Ft.	Sq. Ft. Paint Area
Girder C (4'-0" web)	122.7	1,566.95
Girder C (5'-4" web)	590.0	9,200.95
Girder C Transition	12.8	182.00
Girder D (4'-0" web)	122.7	1,566.95
Girder D (5'-4" web)	590.5	9,208.88
Girder D Transition	12.8	182.00
Total		21,907.72

FLOORBEAMS		
Location	Number	Sq. Ft. Paint Area
B-1	12	2,295.00
B-1A	7	1,338.75
B-2	3	594.77
B-2A	2	324.71
B-3	8	1,700.85
B-4	3	843.00
B-5	4	1,144.55
B-5A	5	1,229.48
B-5B	4	858.71
B-5C	3	856.00
Total		10,915.82

STIFFENERS			
Location	Depth	Number	Sq. Ft. Paint Area
Girder C			
Intermediate	4'-0"	30	103.13
Cross Beam	4'-0"	7	38.50
Bearing	4'-0"	4	22.33
Intermediate	Varies	4	13.75
Cross Beam	Varies	1	5.50
Intermediate	5'-4"	145	664.58
Cross Beam	5'-4"	34	249.33
Bearing	5'-4"	14	104.22
Girder D			
Intermediate	4'-0"	30	103.13
Cross Beam	4'-0"	7	38.50
Bearing	4'-0"	4	22.33
Intermediate	Varies	4	13.75
Cross Beam	Varies	1	5.50
Intermediate	5'-4"	145	664.58
Cross Beam	5'-4"	34	249.33
Bearing	5'-4"	14	104.22
Total			2,405.90
Grand Total			35,229.44



Abutment to Pier 2 Pier 2 to Pier 8

Note: Web transitions from 4'-0", beginning 12'-10" west of Pier 2 to Pier 2.

GIRDER C or D

(Girder C is the south girder, Girder D is the north girder)

Stiffeners at floorbeam locations are 8". Intermediate stiffeners are 5"

Note: The details and quantities shown on this sheet are for information only and are intended to be a guide for determining paint quantities. Additional information may be obtained from the original bridge plans.

Drawn By: milie.thompson Plotted: 02-FEB-2018 14:59
File: IP_PWP-dms06773174783-004.dgn

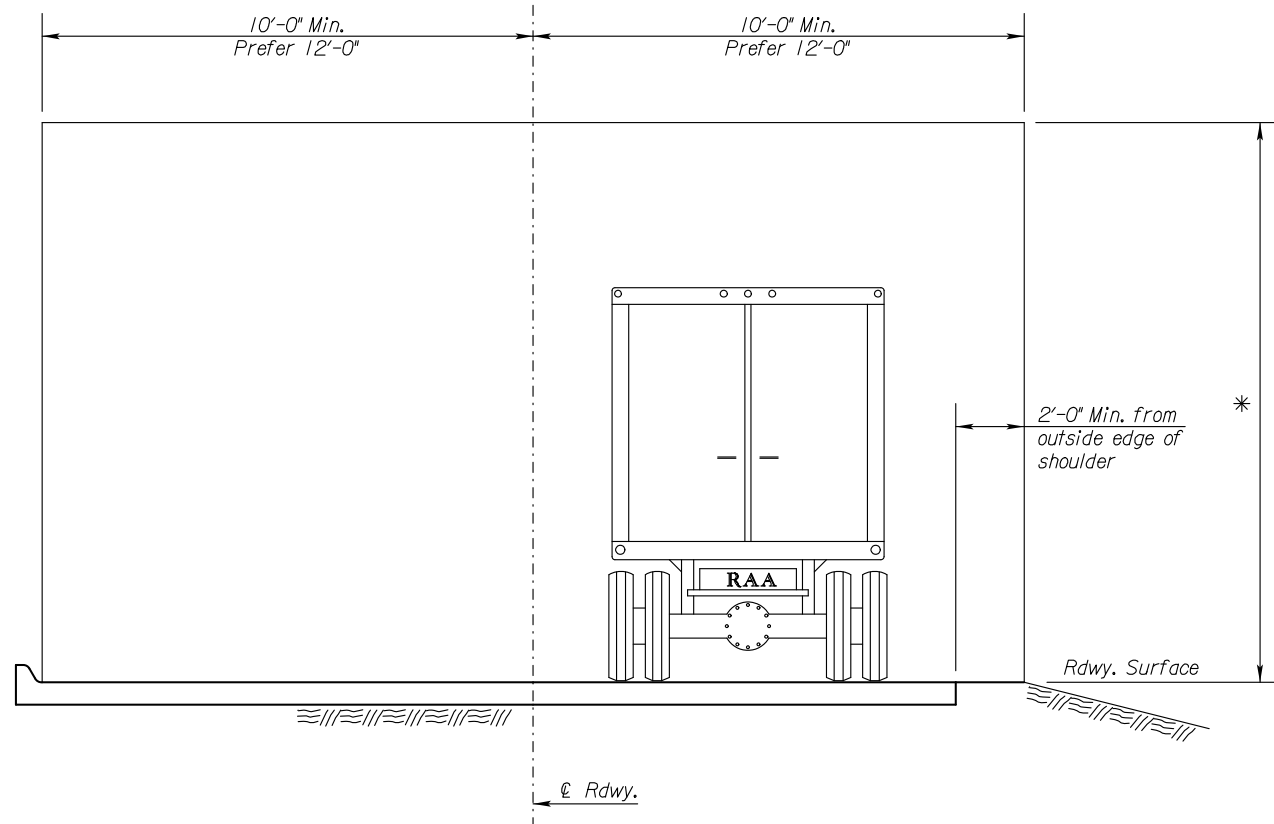
KANSAS DEPARTMENT OF TRANSPORTATION
BrIdge No. 70-105-17.20 (I78)

PAINT AREAS

ProJ. No. 70-105 KA-2130-03 WYANDOTTE Co.

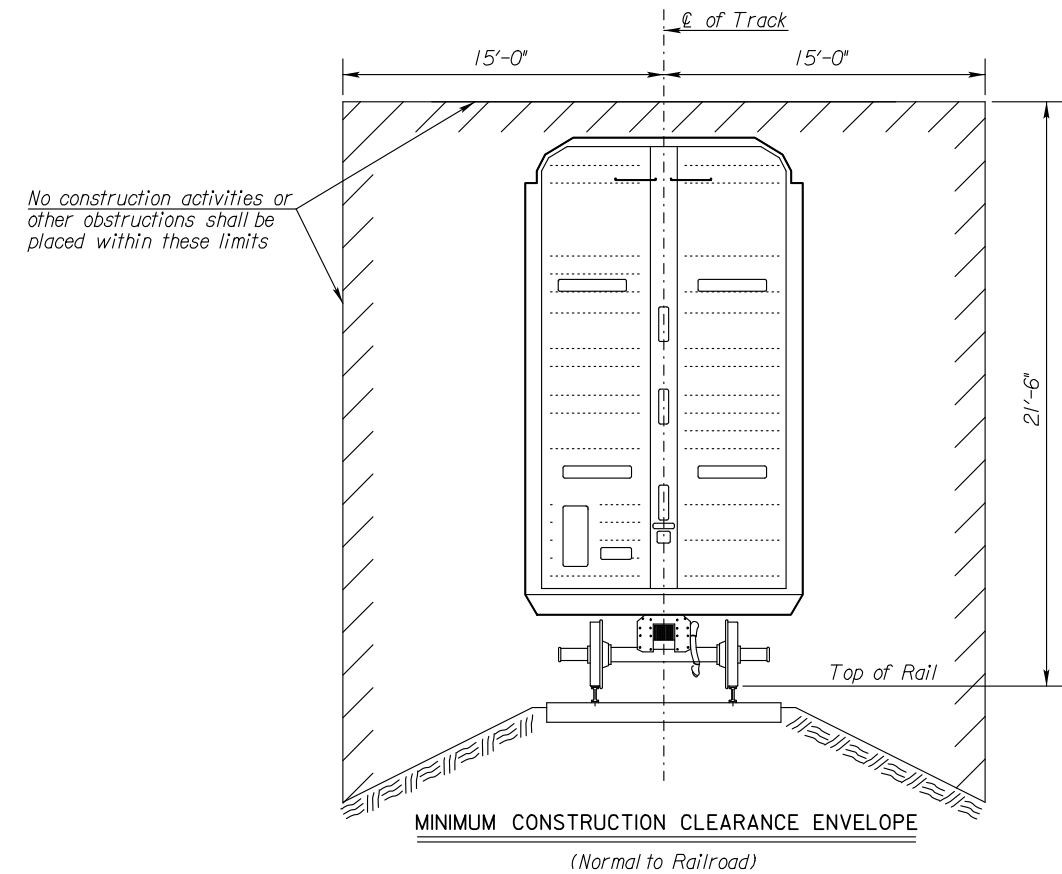
PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
623 MASSACHUSETTS ST., SUITE 200 LAWRENCE, KS 66044
785-842-6464 www.pec1.com

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	36	39



CONSTRUCTION CLEARANCE DETAILS

* As required by construction:
 Preferable is 16'-0".
 Advanced signing required for
 clearances of 15'-6" and less.

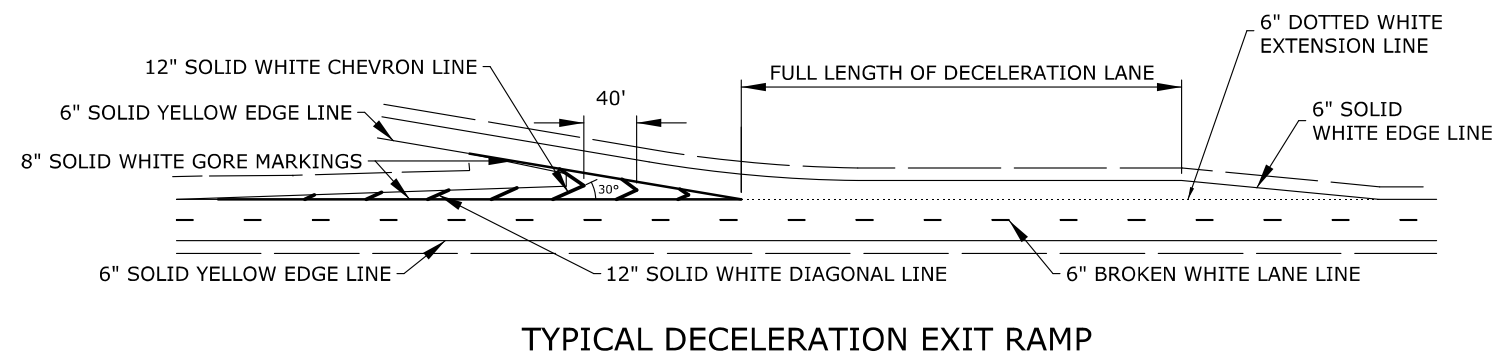


RAILROAD PROTECTION: If removal of concrete is required through the full thickness of the deck (i.e. full depth patching, edge of slab removal, or complete deck replacement), then the Contractor shall execute the work in such a manner and take any precautions necessary to prohibit broken concrete and other debris from falling on and damaging the rails, ties, ballast or other railroad property. As much as possible, do the work so as not to interfere with the normal use of the tracks. The Railroad Company and the Engineer shall approve the methods of protection proposed by the Contractor before any work begins.

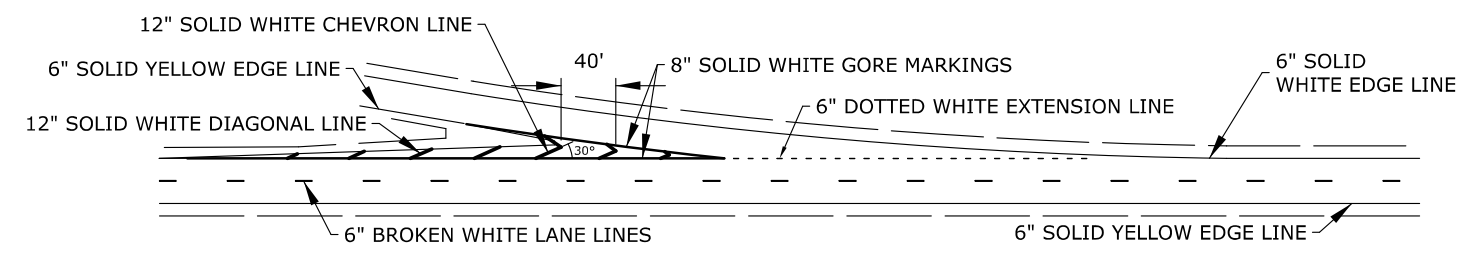
Drawn By : milie.thompson Plotted : 02-FEB-2018 14:59
 File : IP_PWP-ams06773174783-004.dgn

KANSAS DEPARTMENT OF TRANSPORTATION
 BrIdge No. 70-105 (I73) (I74) (I77) (I78)
CONSTRUCTION CLEARANCE DETAILS
AND RAILROAD PROTECTION
 Proj. No. 70-105 KA-2130-03 WYANDOTTE Co.
PEC PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 623 MASSACHUSETTS ST., SUITE 200 LAWRENCE, KS 66044
 785-842-6464 www.pec1.com

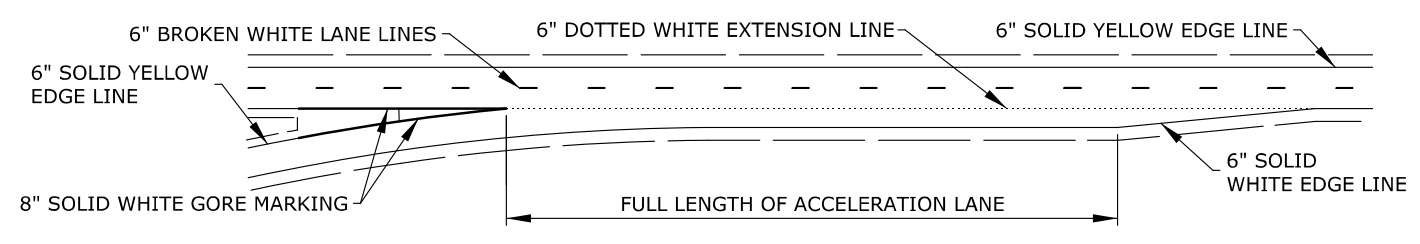
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	37	39



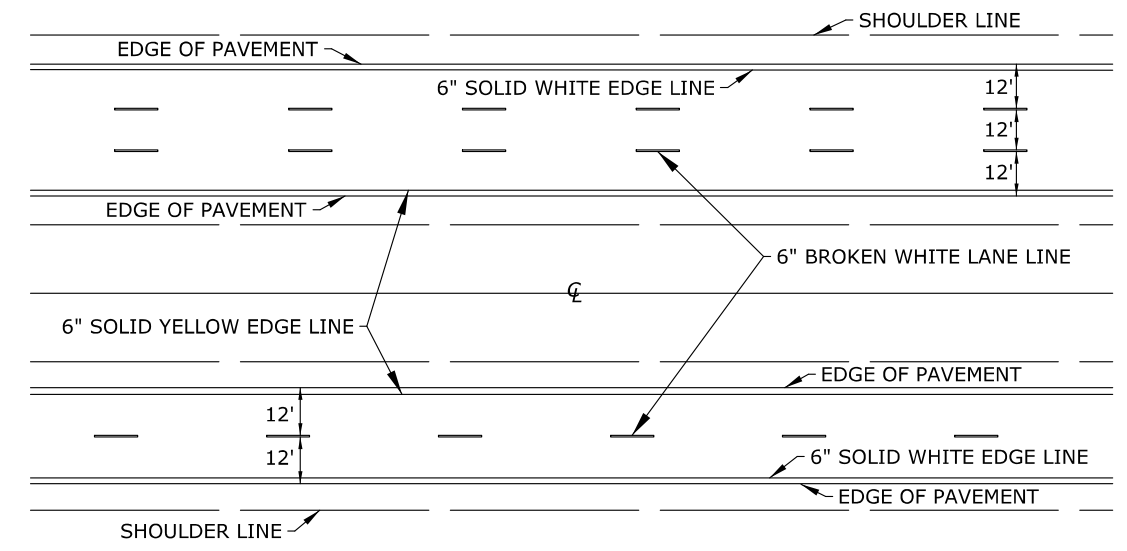
TYPICAL DECELERATION EXIT RAMP



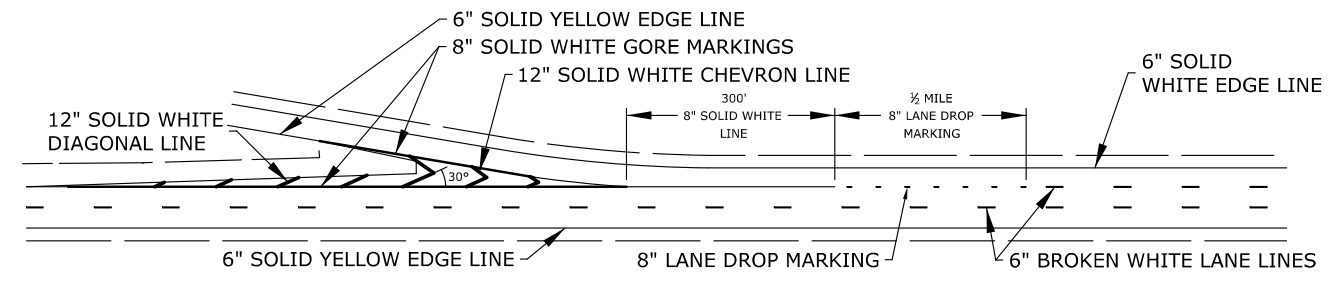
TYPICAL TAPERED EXIT RAMP



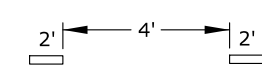
TYPICAL ACCELERATION RAMP



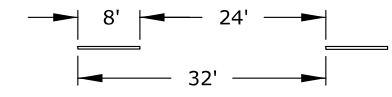
TYPICAL LANE LINE AND EDGE LINE MARKINGS FOR FOUR LANE AND SIX LANE DIVIDED HIGHWAYS



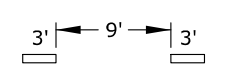
TYPICAL LANE DROP



TYPICAL SPACING FOR DOTTED EXTENSION LINES, UNLESS OTHERWISE NOTED ON PLANS.



TYPICAL SPACING FOR BROKEN LINES UNLESS OTHERWISE NOTED ON PLANS.



TYPICAL SPACING FOR LANE DROP, UNLESS OTHERWISE NOTED ON PLANS.

NOTE:
 LONGITUDINAL PAVEMENT MARKING LINES SHALL BE OFFSET A MINIMUM OF 2" FROM LONGITUDINAL PAVEMENT JOINTS.

NOTE:
 AT RAMP TERMINALS WITH CROSS-ROADS, WRAP 6" EDGE LINES AROUND RADII.

NOTE:
 ON NON I, US, AND K ROUTES, 4" EDGE LINES MAY BE INSTALLED. 6" EDGE LINES ARE NOT REQUIRED ON NON I, US, AND K ROUTES.

NO.	DATE	REVISIONS	BY	APP'D
2	5/25/12	Dotted Extension Lines and Lane Drop Lines	B.A.H.	B.D.G.
1	7/26/05	New FHWA Approval Date	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION				
TYPICAL PAVEMENT MARKING DETAILS FOR MULTI-LANE DIVIDED ROADWAYS				
TE307				
FHWA APPROVAL	5/25/2012	APP'D	Brian D. Gower	
DESIGNED	J.F.F.	QUANTITIES	TRACED	
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.
			TRACE CK.	

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 File : IP_PWP:dms06773\14783-004.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	70-105 KA-2130-03	2017	38	39

SUMMARY OF PAVEMENT MARKINGS

LOCATION	4" Solid WHITE Edge Line	6" Solid WHITE Edge Line	6" Broken WHITE Lane Line	6" Broken WHITE Lane Line (PCP)	6" Dotted WHITE Extension Line	6" Broken WHITE Lane Drop Line	6" Solid WHITE Lane Line	8" Broken WHITE Lane Drop Line	8" Solid WHITE Gore Line	8" Dotted WHITE Extension Line	12" Solid WHITE Diagonal Line	12" Solid WHITE Chevron Line	12" Solid WHITE Type I Crosswalk Line	24" Solid WHITE Type II Crosswalk Line	24" Solid WHITE Stop Line	4" Solid YELLOW Edge Line	4" Solid YELLOW Double Line	4" Solid YELLOW Line	4" Broken YELLOW Line	6" Solid YELLOW Edge Line	12" Solid YELLOW Diagonal Line
WB70 to Fairfax Br. 173		1673																		1673	
WB70 to Br. 177		525	631																	631	
WB70 to Minnesota Br. 178		215	347						533			40								575	
TOTALS	0	2413	244.5	0	0	0	0	0	533	0	0	40	0	0	0	0	0	0	0	2879	0

RECAPITULATION OF QUANTITIES

ITEMS	TOTAL	UNITS
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(6")	2658	FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(8")	553	FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(12")	40	FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(6")	2879	FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(12")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(4")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(6")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(8")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(12")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(4")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(6")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(12")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(12")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(24")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(YELLOW)(12")		FT
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)()		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)()		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)()		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)()		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)()		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(US-SHIELD)()		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(K-SHIELD)()		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(I-SHIELD)()		EACH
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING REMOVAL		FT

SUMMARY OF WORD & SYMBOL MARKINGS

LOCATION	↗	↖	↑	↘	↙	♿	STOP	ONLY	X-ING	SCHOOL	70	435	24	400	18	↪	↩	↪	↩	↗		≡	✂	
TOTALS																								

NOTE: WORDS & SYMBOLS SHALL CONFORM TO THE LATEST EDITION OF "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" PRINTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

PRIOR TO COMMENCEMENT OF PAVEMENT MARKING WORK THE ENGINEER WILL ESTABLISH THE LIMITS FOR "NO PASSING" ZONES. THESE LIMITS SHALL BE USED FOR THE LOCATION OF "NO PASSING" LINES AND FOR THE COMPUTATION OF ACTUAL MARKING QUANTITIES FOR THIS LINE TYPE.

NOTE: FOR SPECIFIC PAVEMENT MARKING DETAILS AND DIMENSIONS SEE PLAN SHEETS
 NOTE: ALL TOTALS REFLECT ACTUAL QUANTITY OF PAVEMENT MARKING MATERIALS REQUIRED.

2	5/25/12	Added Line Types, Symbols, and Shields	B.A.H.	B.D.G.
1	7/26/05	New FHWA Approval Date	J.F.F.	B.D.G.
NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION
 SUMMARY AND RECAPITULATION
 OF PAVEMENT MARKING
 QUANTITIES

TE311

FHWA APPROVAL	5/25/2012	APP'D	Brian D. Gower
DESIGNED	J.F.F. QUANTITIES	TRACED	
DESIGN CK.	B.D.G. DETAIL CK.	B.D.G. QUAN. CK.	TRACE CK.

Drawn By : mike.thompson Plotted : 02-FEB-2018 14:59
 File : IP_PWP:dms06773\14783-004.dgn

