1 Overview:

The purpose of Standard Bridge Drawing, AS-2-15, is to address details of approach slabs not previously addressed in the AS-1-81 Standard Bridge Drawing. Specifically, the drawing was initiated to address the joint between the approach slab and the adjoining pavement using recommendations from ODOT Research project 134375, "Identification and Evaluation of Pavement-Bridge Interface Ride Quality Improvement and Corrective Strategies". As the standard evolved, additional associated details were addressed such as: barrier on approach slab; guardrail transitions; integral curbs; MSE wall and moment slabs; drainage features; sleeper slabs; rigid and flexible pavement types; and pavement expansion joints.

This drawing introduces three approach slab installation types:

A. Type A – This installation is intended for bridges with 1" or less total movement at the roadway end of the approach slab and 0" to 3" of asphalt pavement on the approach slab.
B. Type B – This installation is intended for bridges with 1" or less total movement at the roadway end of the approach slab with full asphalt pavement build-up on the approach slab.
C. Type C – This installation is intended for bridges with more than 1" total movement at the roadway end of the approach slab or bridges with MSE walls adjacent to approach slabs.

The following sections of this document will discuss the AS-2-15 drawing in greater detail.

2 Plan Preparation Requirements:

2.1 Limitations

This drawing provides contract ready installation details of skewed and non-skewed approach slabs on tangent alignments under phased or non-phased construction. Modifications to this drawing will be required for approach slab installations on bridges with more complex geometry.

2.2 Estimated Quantities

The Structure Estimated Quantities Table for all projects with approach slabs will require two structure pay items:

1. Item 526 – Reinforced Concrete Approach Slab (T = __)
2. Item 526 – Type __ Installation

For Type A Installations, the following structure pay item shall also be included when the total expansion/contraction movement of the roadway end of the approach slab exceeds 3/16":

Item 846 – Polymer Modified Asphalt Expansion Joint System

For Type C Installations, the following structure pay item shall also be included:

Item 516 – Armorless Preformed Joint Seal

2.3 Approach Slab Plan

For all installation types, provide a plan view of the approach slab that includes: all width and length dimensions; skew angle; curb and barrier locations; the final approach slab surface elevations and final sleeper slab surface elevations at each transverse grade break line, phased construction line, and curbline/slab edge at each end of the approach slab/sleeper slab. See Figure 2.3-1 for a sample plan detail.

2.4 Subgrade Drainage

The Type A Installation shown on sheets 1/14 and 2/14 provide an underdrain at the end of the roadway aggregate base. The purpose of the underdrain is to divert water in the subgrade running downhill toward the end of the approach slab before reaching the sleeper slab. The underdrain is not necessary when the subgrade is running uphill toward the structure. This drainage is included with the Type A Installation for payment.

The Type B and Type C Installations do not detail similar underdrains. However, if the subgrade is running downhill toward Type B and Type C Installations, an underdrain will be required. For Type B and Type C Installations that require underdrains, the project plans shall detail the locations and outlets for these drainage systems. Payment for the underdrains shall be included with Item 605.

3 Detail Information

The following sections will provide information on each sheet of AS-2-15.

3.1 Sheet 1/14 – Type A Installation

Sheet 1/14 details a Type A approach slab installation. The primary element for a Type A installation is the use of a sleeper slab to support the roadway end of the approach slab. The purpose of the sleeper slab is:

- Provide end support for approach slab
- Prevent surface water from undermining approach slab
- Provide support for adjoining pavement

3.1.1 Index

The Index of Drawings became necessary given the large number of plan sheets combined with

the fact that only portions of the drawing will apply to each project.

3.1.2 Plan

Shown is a bridge with a jointless superstructure at the abutment which will provide expansion/contraction movement at the end of the approach slab. The note below the Plan title says that jointed superstructures are similar. This is significant because the approach slab/pavement joint has two available details:

- Polymer Modified Asphalt Expansion Joint, SS846 – This joint shall be specified for bridges with jointless superstructures which will produce total expansion/contraction movement at the end of the approach slab greater than 3/16" but no more than 1-in.

- Hot applied joint sealer, AS-1-15, Detail C, Sheet 2/2 – This joint shall be specified for bridges with jointed superstructures or bridges with jointless superstructures which will produce total expansion/contraction movement at the end of the approach slab of 3/16" or less.

For jointless superstructures with total expansion/contraction movements exceeding 1-in, the Type C Installation shall be specified.

A drainage flume location is shown located immediately after the 13th guardrail post off of the structure. This location is consistent with the MGS Type 1 Bridge Terminal Assembly used to transition guardrail to concrete barrier. As shown in MGS-3.1, the curb stops at post #11. However, in order to provide an adequate drainage opening for the flume, the curb shall be extended to post #13 and the ** note in MGS-3.1 applies. The post spacing beyond post #14 is 6'-3" which better accommodates the width of the flume. On locations where MGS Type 2 Bridge Terminal Assemblies are applicable, the flume could be located at the end of the structure's barrier and no curb is required.

For bridges with over-the-side drainage, curbs and drainage flumes are not required.

For situations where a drainage flume is not a viable option, use a catch basin as shown in standard construction drawing CB-2.1 or CB-2.2. The project plans shall show the exact location of the outlet pipe for the catch basin and it shall not interfere with the placement of the proposed terminal assembly.

3.1.3 Section A-A

A polymer modified asphalt expansion joint is shown because the plan view is jointless and the assumed movement exceeds the capacity of the AS-1-15, Detail C joint system. Please note that the contractor is instructed to shorten the length of the longitudinal bars and adjust the spacing of the transverse bars in the top mat to avoid the polymer modified asphalt joint system notch.

The Type A Installation requires a minimum of 25-ft of adjoining asphalt pavement. The purpose

for this requirement is to provide a gradual transition asphalt base material thickness. This requirement also prevents the need for pavement pressure relief joint since the asphalt installation can serve that purpose. Pavement pressure relief joints have been a nuisance for maintaining ride smoothness through the transition to the bridge.

The longitudinal steel in the sleeper slab shall be oriented parallel to the centerline of the roadway as opposed to perpendicular to the long edge of the sleeper slab. This prevents the need for special reinforcement details in the acute corners of the slab at edges and phased construction joints.

The underdrain is not required where the aggregate base beneath the 25-ft asphalt approach pavement slopes away from the sleeper slab.

3.1.4 Elevation

The sleeper slab shall be crowned to match the approach slab. This ensures a uniform depth of the sleeper slab and provides positive drainage should the joint system leak. An aggregate drain has been provided if surface drainage enters the joint. Refer to Detail AA for more information on the aggregate drain.

3.2 Sheet 2/14 – Type A Installation

3.2.1 Reinforced Concrete Approach Slab with Optional Asphalt Concrete Wearing Courses

This detail shows a Type A Installation with intermediate and surface asphalt courses on an approach slab at a jointless superstructure. Aside from the asphalt wearing course on the approach slab, the remainder of this detail is identical to Section A-A on Sheet 1/14. Refer to Section 3.1.2 for more information. Please note that if the total expansion/contraction movement of the approach slab was 3/16” or less then the Item 846 joint shall not be specified.

Because the asphalt surface courses are carried across the whole approach slab, the contractor does not need to adjust the approach slab steel for to avoid conflicting with the polymer modified asphalt expansion notch.

3.2.2 Detail AA

The purpose of the aggregate drain is to provide a positive drainage outlet to any surface water that reaches the top of the sleeper slab without eroding the side slopes. The aggregate drain is specified as 2-ft wide instead of the usual 1-ft wide because of the possibility of conflict with a guardrail post. As is typical, the bottom of the aggregate drain shall be at least 2” below the aggregate base supporting the sleeper slab. The aggregate base is placed along the side of the sleeper slab for a width of 1-ft to permit drainage to reach the aggregate drain. This detail is very similar to Section G-G on Sheet 11/14, Section 3.11.5, with one exception: because the

expansion/contraction movements are much smaller there are no fastening restrictions to the Type A filter fabric.

3.2.3 Section B-B

The location of this Section B-B is taken from the Plan detail on Sheet 1/14. Two alternative details are shown: barrier on the approach slab and barrier on adjacent turnback wingwall. Note that 1" P.E.J.F. is typically used as a joint filler between concrete sections with little to no relative movement and 2" P.E.J.F. is used where relative joint movement is assured.

3.3 Sheet 3/14 – Type B Installation

Sheet 3/14 details a Type B approach slab installation. The primary element for a Type B installation is the entire asphalt pavement build-up placed over the approach slab. By using the full depth pavement to bridge any subsurface joints, the sleeper slab has been eliminated. If embankment settlement does occur, the pavement buildup affords the ability to easily perform resurfacing corrections.

3.3.1 Plan

Shown is a bridge with a superstructure expansion joint at the abutment which will have no expansion/contraction movement at the end of the approach slab. Type B Installations will accommodate no more than 1-in of total expansion/contraction movement at the end of the approach slab. For jointless superstructures with larger movements, The Type C Installation shall be specified.

There is no limiting length of approach flexible asphalt pavement given for a Type B Installation.

3.3.2 Elevation

The Elevation shows barrier on adjacent turnback wingwalls. Alternative edge details may include, barrier on approach slab and bridges with over-the-side drainage.

3.3.3 Section A-A

A reinforced joint mesh is provided to help prevent the development of a reflective pavement crack at the end of the approach slab.

3.4 Sheet 4/14 – Type B Installation

Sheet 4/14 introduces details for a Type B approach slab installation with rigid concrete approach pavement.

3.4.1 Plan

This detail is identical to the Plan shown on Sheet 3/14 except for a 25-ft minimum length of asphalt pavement between the end of the approach slab and rigid pavement. This asphalt pavement prevents the need for pavement pressure relief joint. Refer to Section 3.3.1 for additional information.

3.4.2 Elevation

This detail is identical to the Elevation shown on Sheet 3/14. Refer to Section 3.3.2 for more information.

3.4.3 Section A-A

This detail is identical to the Section A-A shown on Sheet 3/14 except for the 25-ft of asphalt pavement required at the end of the approach slab which eliminates the need for a pavement pressure relief joint. Refer to Section 3.3.3 for more information.

3.5 Sheet 5/14 – Type B Installation

Sheet 5/14 provides details not otherwise shown for Type B Installations.

3.5.1 Detail A

The location of Detail A comes from each Plan view on Sheets 1/14, 3/14 and 4/14. As noted in Section 3.3.2, Detail A illustrates a turnback wingwall with barrier adjacent to the approach slab. Where the barrier ends, the approach slab is widened to accommodate the integral curb used to protect the barrier end from vehicular snagging during impacts. This curb is a requirement of the MGS Bridge Terminal Assembly, Type 1. For barrier on the trailing end without a guardrail transition or with MGS Bridge Terminal Assembly, Type 2, widened approach slabs and integral curbs are not required. For bridges with over-the-side drainage, curbs are also not required.

The 1” P.E.J.F. is provided to prevent damage to the approach slab and integral curb if settlement occurs.

3.5.2 Section A-A

The 1” P.E.J.F. is provided to allow the approach slab to move relative to the wingwall if settlement occurs. The joint sealer is provided to slow water penetration into the joint between the wingwall and the approach slab.

3.5.3 Section B-B

Note that the widened curb portion of the approach slab remains unreinforced since the AS-1-15 drawing does not require an adjustment in the number of bars or bar spacing when integral curbs are required.

3.5.4 Reinforced Joint Mesh (Note)

The material shall be placed at the locations shown on Sheets 3/14 and 4/14, Section A-A. Both products listed are fiberglass geogrid materials with 6800/13600 lb/ft bi-directional tensile strengths. For more information refer to Section 3.3.3.

3.6 Sheet 6/14 – Type C Installation

Sheet 6/14 details a Type C approach slab installation associated with MSE walls adjacent to the approach slab. The Type C Installation provides a sleeper slab support and expansion joint seal at the roadway end of the approach slab. The Type C Installation will accommodate up to 4-in of total expansion/contraction movement and provide a watertight seal to direct surface drainage off of the approach slab. Since the seal bridges the joint opening at the toe of barriers and curbs, only the Type C Installation provides the necessary drainage protection for MSE walls adjacent to the approach slab.

3.6.1 Plan

This view shows a jointless superstructure with an abutment supported on MSE walls that parallel the edges of the approach slab. The surface drainage from the superstructure is directed to a catch basin located beyond the limit of the reinforced fill zone as noted in BDM Section 209.3. A jointed superstructure shall be detailed similarly. For bridges with MSE walls that do not parallel the edge of the approach slab, if the approach slab spans the entire reinforced zone, Type A or Type B Installations may be used where approach slab expansion/contraction limits are satisfied.

Although not shown in the Plan, the barrier between the Inlet and the sleeper slab shall be attached to a moment slab as shown in Section D-D on 8/14.

Please note that the MSE wall at the acute corner of the abutment is offset from the edge of the approach slab because corners with interior angles of less than 90 degrees are not permitted (BDM Section 204.6.2.1).

3.6.2 Elevation

The approach slab width, toe-to-toe (W_2) is specified here because that dimension is critical to the layout of the length of sleeper slab reinforcement.

Two inch wide P.E.J.F. is specified between the edge of the approach slab and the cast-in-place concrete coping for the MSE wall to permit movement between the two elements.

3.6.3 Section A-A

This is a perpendicular cross-section through the approach slab, sleeper slab and approach pavement. The gap between the end of the approach slab and the sleeper slab above the construction joint shall be formed with removable forms to prevent exertion of expansion pressures on the sleeper slab. The corners at the end of the approach slab and the top of the sleeper slab above the construction joint at the joint opening are chamfered to reduce potential damage due to impacts from the driving surface.

3.7 Sheet 7/14 – Type C Installation

This sheet provides details for the Type C Installation shown on Sheet 6/14 including a table showing the joint width versus ambient air temperature. This table assumes a coefficient of thermal expansion equal to 6.5×10^{-6}/ºF; a temperature range -30ºF to 120ºF; a joint opening range from 1" to 5" for a maximum structural expansion length equal to 341.88-ft. The plans shall include a custom temperature table for differing design assumptions.

3.7.1 Detail A

The reinforcing steel in the sleeper slab is oriented parallel to the centerline of the roadway and parallel to the skew. By placing the steel parallel to the centerline of the roadway, special details are not required at phased construction joints or at the edge of the pavement. The sleeper slab is squared off at the barrier end to avoid acute corners. The reinforcement in this area is provided by a lapped bar that is field bent to the proper angle. The dimensions of the end of the sleeper slab include an allowance for skew such that $\ell_1 = 4/\cos\theta - 4$ and $\ell_2 = 2/\cos\theta - 2$.

The moment slab is shown but not designed nor detailed in the drawing. The design of the moment slab shall be in compliance with the AASHTO LRFD Bridge Design Specifications for a TL-4 impact vehicle. The connection between the barrier and the moment slab shall be as detailed in SBR-1-13 without further modification. Where the cast-in-place coping and the moment slab touch, they shall be independent members separated with 2" P.E.J.F. to prevent impact loads from damaging the coping.

3.7.2 Section A-A

Refer to Section 3.6.3 for more information.

3.7.3 Detail B

This detail is consistent with BDM Figure 209.3-1 which was developed to prevent erosion issues in MSE wall fills at the end of bridge approach slab. The 15-ft extension of the barrier on a moment slab beyond the limit of the MSE wall ensures that the first unsealed joint occurs well past the reinforced soil zone. The Type D Barrier End Section is necessary to transition to approach guardrail.

3.8 Sheet 8/14 – Type C Installation

This sheet includes information taken from Detail A on Sheet 7/14 that would not fit on Sheet 7/14.

3.8.1 Section B-B

This section illustrates how the barrier transitions from the approach slab, to the sleeper slab, to the moment slab. The barrier reinforcement shall be as shown at the top of the backwall in SBR-1-13, Section B-B, Sheet 3/5. Because the barriers are paid for separately from the sleeper slab, the barrier reinforcement is not shown in AS-2-15. The project plans shall provide details for the barrier reinforcement through its full length.

The joint opening between barrier ends shall be formed with removable forms for the same reason noted in Section 3.6.3.

See Section 3.7.1 for explanation for dimension $\measuredangle_1$ and $\measuredangle_2$.

3.8.2 Section C-C

The joint seal is upturned at the toe of the barrier to prevent surface water from entering the joint between the barrier ends. If skew exists, this upturn becomes a compounded angle with deflection changes in plan view and in elevation. Each of the approved joint seal suppliers provided assurances that their joints seals could be supplied accordingly.

Note that the barrier is offset 2-in from the edge of the approach slab to be consistent with details on SBR-1-13.

The MSE wall and coping are not shown in this section to conserve space. For situations where the coping is located immediately adjacent to the sleeper slab, 2" P.E.J.F. shall be used to separate the two concrete pours.

3.8.3 Section D-D

A moment slab is necessary in order to provide resistance to barrier overturning during a vehicle impact. See Section 3.7.1 for more information related to moment slab design and detailing.

The MSE wall and coping are not shown in this section to conserve space. For situations where the coping is located immediately adjacent to the moment slab, 2" P.E.J.F. shall be used to separate the two concrete pours.

3.8.4 Item 516 – Armorless Preformed Joint Seal

The specifications for Armorless Preformed Joint Seals is provided herein. Three approved suppliers are listed. These joint seals were chosen because they do not require steel armor headers that would limit corrective grinding; they are economical; and they are easy to install. The primary role of the seal is to contribute to the control surface water runoff. Failure of a joint seal will not result in severe consequences. The water that would enter the joint opening would be sufficiently contained to prevent erosion of underlying strata and exposure to deterioration is not critical. Replacement of a failed joint seal could be considered for routine maintenance contracts.

The seal shall be set below and behind the surface of the joint opening to protect the seal from snow plow damage.

Submittal of an installation procedure is required as information to the Engineer for construction oversight.

3.9 Sheet 9/14 – Type C Installation

Sheet 9/14 details a Type C approach slab installation associated with turnback wingwalls adjacent to the approach slab. Refer to Section 3.6 for more information regarding a typical Type C Installation.

3.9.1 Plan

The plan shows a jointless superstructure on an abutment with turnback wingwalls. In such cases, the barrier on the superstructure is continued onto the approach slab. Typically, the barrier on the approach slab will not extend to the end of the approach slab so an integral curb is required to both protect the curb at the end of the barrier during vehicle impacts and to direct surface water to the end of the approach slab. The out-to-out approach slab width will change at the end of the barrier. The location of this change shall be shown on the Approach Slab Plan required in Section 2.3.

The curb shall extend the remaining length of the approach slab, across the sleeper slab and off the structure as necessary to reach the drainage flume. Refer to Section 3.1.2 for more information regarding drainage flume location.

3.9.2 Elevation

Refer to Section 3.6.2 for more information.

3.9.3 Section A-A

Refer to Section 3.6.3 for more information.

3.10 Sheet 10/14 – Type C Installation

This sheet provides Detail A from Sheet 9/14 and associated details taken from Detail A.

3.10.1 Detail A

The reinforcing steel in the sleeper slab is oriented parallel to the centerline of the roadway and parallel to the skew. By placing the steel parallel to the centerline of the roadway, special details are not required at phased construction joints or at the edge of the pavement. The sleeper slab is squared off at the curb end to avoid acute corners. The reinforcement parallel to the skew may be field bent to the proper angle as necessary to maintain concrete cover. The dimensions of the end of the sleeper slab include an allowance for skew such that $\measuredangle_1 = 4/\cos\theta - 4$ and $\measuredangle_2 = 2/\cos\theta - 2$.

The change in approach slab width noted in Section 3.9.1 is evident by the edge of the approach slab identified in the detail.

3.10.2 Section A-A

The reinforcement parallel to the skew may be field bent to maintain concrete cover. Refer to Section 3.6.3 for more information.

3.10.3 Section B-B

This detail is very similar to Section B-B on Sheet 8/14 (see Section 3.8.1) except the curb is carried across the open joint instead of the barrier.

The reinforcement parallel to the skew may be field bent to maintain concrete cover.

3.11 Sheet 11/14 – Type C Installation

This sheet provides details taken from Detail A on Sheet 10/14.

3.11.1 Section C-C

Where MGS Bridge Terminal Assembly, Type 2 is permitted, the integral curb may be omitted as necessary.

3.11.2 Section D-D

Where MGS Bridge Terminal Assembly, Type 2 is permitted, the integral curb and joint seal upturn may be omitted as necessary.

3.11.3 Section E-E

Where MGS Bridge Terminal Assembly, Type 2 is permitted, the Type 4-C curb may be omitted as necessary.

3.11.4 Section F-F

This section shows how the joint opening at the end of the sleeper slab is protected from intrusion of foreign objects. A 2-ft wide piece of Type A filter fabric acts as a barrier keep the aggregate base out of the joint opening. The Type A fabric shall be fastened to the end of the sleeper slab but not the approach slab. This is to prevent the fabric from tearing when the approach slab contracts. This detail is only required when additional construction like an MSE wall coping or wingwall is not located at the end of the joint opening.

3.11.5 Section G-G

This section is very similar to Detail AA on Sheet 2/14, see Section 3.2.2.

3.12 Sheet 12/14 – Type C Installation

Sheet 12/14 details a Type C approach slab installation associated with MSE walls adjacent to the approach slab and rigid concrete approach pavement. Refer to Section 3.6 for more information.

3.12.1 Plan

This detail is similar to the Plan on Sheet 6/14 (Section 3.6.1) except rigid concrete pavement abuts the roadway end of the sleeper slab. In order to permit relief of pavement pressure, a Type B Pressure Relief Joint, BP-2.4 is specified at a location of 50-ft from the bridge end of the concrete pavement. Alternatively, a 25-ft length of full-depth asphalt pavement buildup could be specified.

3.12.2 Elevation

Refer to Section 3.6.2 for more information.

3.12.3 Section A-A

This Section is similar to Section A-A on Sheet 6/14 (Section 3.6.3) except as noted below:

- Concrete pavement replaces the asphalt pavement buildup.
- A cross-section of a Type B Pressure Relief Joint is shown.

3.13 Sheet 13/14 – Type C Installation

Sheet 13/14 details a Type C approach slab installation associated with turnback wingwalls adjacent to the approach slab and rigid concrete approach pavement. Refer to Section 3.9 for more information.

3.13.1 Plan

This detail is similar to the Plan on Sheet 9/14 (Section 3.9.1) except rigid concrete pavement abuts the roadway end of the sleeper slab. In order to permit relief of pavement pressure, a Type B Pressure Relief Joint, BP-2.4 is specified at a location of 50-ft from the bridge end of the concrete pavement. Alternatively, a 25-ft length of full-depth asphalt pavement buildup could be specified.

3.13.2 Elevation

Refer to Section 3.9.2 for more information.

3.13.3 Section A-A

This Section is similar to Section A-A on Sheet 9/14 (Section 3.9.3) except as noted below:

- Concrete pavement replaces the asphalt pavement buildup.
- A cross-section of a Type B Pressure Relief Joint is shown.

3.14 Sheet 14/14 – General Notes

This sheet provides General Notes for the entire Standard Bridge Drawing, AS-2-15.

3.14.1 General

Bridges with sidewalks have not been addressed in this Standard Bridge Drawing. Therefore, details will need to be provided in the project plans. Curbs and sidewalks shall be provided integral with the approach slab. Ideally, the barrier behind the sidewalk shall also be integral with the approach slab. In situations where the barrier sets atop a turnback wingwall, the approach slab shall be detailed similar to Installations shown herein with turnback wingwalls adjacent to approach slabs.

3.14.2 Description

No additional commentary added.

3.14.3 Design Criteria

No additional commentary added.

3.14.4 Design Data

No additional commentary added.

3.14.5 Reinforced Concrete Sleeper Slab Length

No additional commentary added.

3.14.6 Longitudinal Construction Joints

No additional commentary added.

3.14.7 Reinforced Concrete Sleeper Slab Surface Finish and Bond Breaker

The top surface of the sleeper slab will need to accommodate movement of the approach slab relative to the sleeper slab. Ideally, this movement should not drag the sleeper slab. Theoretically, the friction developed between the approach slab and sleeper slab should be sufficiently resisted by passive earth pressures acting on the vertical faces of the sleeper slab. To ensure these earth pressures provide sufficient resistance, the top surface of the sleeper slab which provides the form for the bottom of the approach slab, is required to be troweled smooth. Additionally, two coats of membrane curing compound, C&MS 707.07, Type 1 or 1D, provides a bond breaker.

3.14.8 Method of Measurement

Note that the unit of measure for the Type A and Type C Installations differ from the Type B Installations. Since the Type A and Type C Installation both have sleeper slabs as the primary construction element, it made sense to use the sleeper slab length as measured along the skewed end of the approach slab as the primary unit of measure. All cost associated with the sleeper slab construction can be determined on a per unit length basis. The Type B Installation really has only one distinctive construction element which is the glass fiber reinforcement. Therefore, the unit of measure was selected to be the area of this reinforcement.

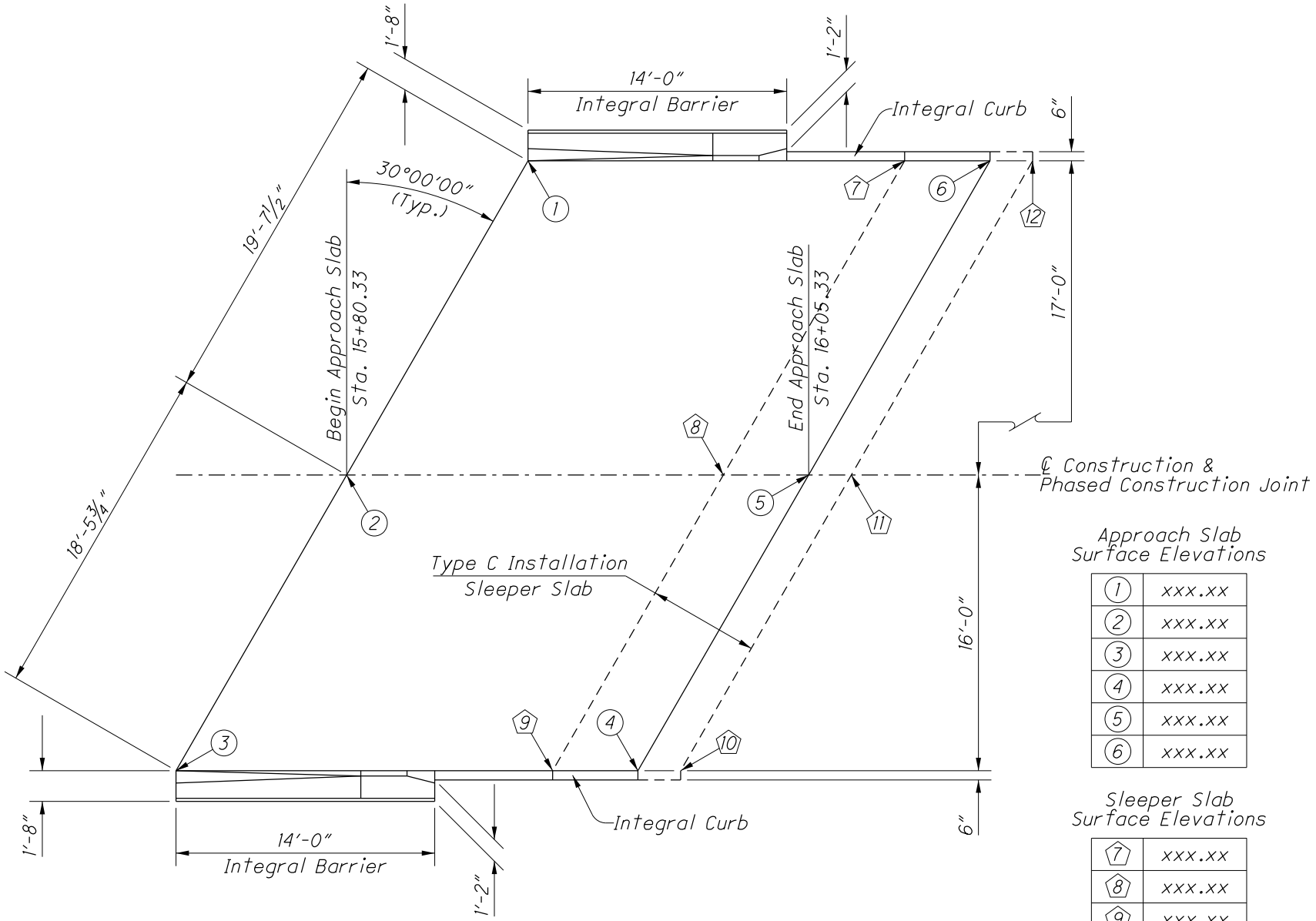
3.14.9 Basis of Payment

All items incidental to the approach slab as listed on AS-1-15 will be paid with Item 526 – Reinforced Concrete Approach Slab (T = __). The Item 526 – Type A (& C) Installation will include the costs associated with the constructing the sleeper slab. The Item 526 – Type B Installation include the cost of the glass fiber reinforcement.

Although not listed here as items paid for separately, surface grooving of the approach slab is included in C&MS 526.05 and will be paid for with the Item 526 – Reinforced Concrete Approach Slab (T = __). The roadway surface portion of the Type C Installation shall not be grooved because of its proximity to the expansion joint.

If Proposal Note 555 – Surface Smoothness for Bridges and Approaches is included in the project requirements, the profile measurements and corrective work could be performed prior to installation of the Armorless Preformed Joint Seal.

Figure 2.3-1



Approach Slab Sample Plan Detail

Approach Slab
Surface Elevations

1	xxx.xx
2	xxx.xx
3	xxx.xx
4	xxx.xx
5	xxx.xx
6	xxx.xx

Sleeper Slab
Surface Elevations

7	xxx.xx
8	xxx.xx
9	xxx.xx
10	xxx.xx
11	xxx.xx
12	xxx.xx