INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N925 CM
Indianapolis, Indiana 46204

PHONE: (317) 232-5502
FAX: (317) 232-5551

Eric Holcomb, Governor
Joe McGuinness, Commissioner

AGENDA

March 15, 2018 Standards Committee Meeting

(Revised 02/27/2018. Item 7, pg 97)

MEMORANDUM

February 26, 2018

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Agenda for the March 15, 2018 Standards Committee Meeting

A Standards Committee meeting is scheduled for 09:00 a.m. on March 15, 2018 in the N955 Bay Window Conference Room. Please enter meeting through the double doors directly in front of the conference room.

The following items are listed for consideration:

A. GENERAL BUSINESS ITEMS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

1. Approval of the Minutes from the January 18, 2018 meeting

B. CONCEPTUAL PROPOSAL ITEMS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

(No items on this agenda)

C. STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS PROPOSED ITEMS

OLD BUSINESS

Item No. 4 171115 (2018 SS)	Mr. Orton	pg 4
Recurring Special Provision:		
620-R-483	SOUND BARRIER SYSTEMS	

NEW BUSINESS

Item No. 1 (2018 SS)	Mr. Pankow	pg 29
108.09	Failure to Complete On Time	
Item No. 2 (2018 SS)	Mr. Koch	pg 34
108.08	Determination and Extension of Contract Time	
108.09	Failure to Complete On Time	
Item No. 3 (2018 SS)	Mr. Beeson	pg 38
706.03	Concrete Railing	
Item No. 4 (2018 SS)	Mr. Orton	pg 43
Standard Drawings:		
604-SWCR-01	CURB RAMP DRAWING INDEX AND GENERAL NOTES	
604-SWCR-02	PERPENDICULAR CURB RAMP TYPICAL PLACEMENT	
604-SWCR-03	PAIRED PERPENDICULAR CURB RAMPS TYPICAL PLACEMENT	
604-SWCR-04	PERPENDICULAR CURB RAMP COMPONENT DETAILS	
604-SWCR-05	ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP TYPICAL PLACEMENT	
604-SWCR-06	ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP COMPONENT DETAILS	
604-SWCR-07	PAIRED PARALLEL CURB RAMPS AND MIDBLOCK CROSSING CURB RAMP TYPICAL PLACEMENT	
604-SWCR-08	PARALLEL CURB RAMP COMPONENT DETAILS	
604-SWCR-09	BLENDED TRANSITION CURB RAMP, DEPRESSED CURB RAMP AND DIAGONAL CURB RAMP TYPICAL PLACEMENT	
604-SWCR-10	BLENDED TRANSITION CURB RAMP COMPONENT DETAILS	
604-SWCR-11	MEDIAN CUT-THROUGH AND MEDIAN PERPENDICULAR CURB RAMP TYPICAL PLACEMENT	
604-SWCR-12	DETECTABLE WARNING SURFACE PLACEMENT AND CONFIGURATION	
604-SWCR-13	DETECTABLE WARNING SURFACE PLACEMENT AND CONFIGURATION	
604-SWCR-14	DETECTABLE WARNING SURFACE DETAILS	

Item No. 5 (2018 SS)	Mr. Beeson	pg 75
406.04	Preparation of Surface	
406.05	Application of Asphalt Material	

Item No. 6 (2018 SS)	Mr. Orton	pg 79
Standard Drawings:		
622-LSPL-00	*LANDSCAPE PLANTING*	
622-LSPL-01	PLANTING BALLED AND BURLAPPED TREE *LESS THAN 1 1/4 IN. CALIPER*	
622-LSPL-02	PLANTING BALLED AND BURLAPPED TREE *1 1/4 IN. CALIPER AND GREATER*	
622-LSPL-03	PLANTING MULTI-STEM TREE	
622-LSPL-04	PLANTING BARE ROOT TREE	
622-LSPL-05	PLANTING GRAFTED TREE	
622-LSPL-06	PLANTING ON SLOPE	
622-LSPL-07	PLANTING ON SLOPE	
622-LSPL-08	TYPICAL SECTION OF SHRUB BED	
622-LSPL-09	PLANTING SEEDLING VARIETIES	
622-LSPL-10	TYPICAL PLAN OF SHRUB BED	
622-LSPL-11	COMMONLY USED DIMENSIONS	

Item No. 7 (2018 SS)	Mr. Pankow	pg 95
108.01	Subletting of Contract	

Item No. 8 (2018 SS)	Mr. Boruff	pg 99
Recurring Special Provision:		
805-T-093	DETECTOR CARD RACK AND DETECTOR MODULES	

cc: Committee Members
FHWA
ICI

Mr. Orton
Date: 03/15/18
(OLD BUSINESS ITEM)

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISION

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Structural design criteria change needed to include compliance with 2014 AASHTO–LRFD Bridge Design Specifications instead of AASHTO Guide Specifications. Also, needed to include the requirements of ITM 806 Procedure N and pass the required laboratory testing.

Lack of clarification on computation of pay limits and quantities is causing dispute with the Contractors.

Separate pay item of Sound Barrier Design and Layout is redundant.

PROPOSED SOLUTION: Design should comply with 2014 AASHTO-LRFD Bridge Design Specifications requirements instead of AASHTO guide specifications. Approved sound Barrier Systems should comply with ITM 806 Procedure N.

Make changes in 620.08 to clarify the Method of Measurement.

Make changes in 620.09 to remove the pay item 620-08426, Sound Barrier Design and Layout and include the cost of sound barrier design and layout in the pay item 620-01754, Sound Barrier Panels.

APPLICABLE STANDARD SPECIFICATIONS: 620-Blank

APPLICABLE STANDARD DRAWINGS: NA

APPLICABLE DESIGN MANUAL SECTION: 51-9.01

APPLICABLE SECTION OF GIFE: NA

APPLICABLE RECURRING SPECIAL PROVISIONS: 620-R-483

PAY ITEMS AFFECTED: 620-01754, 620-08426

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Yes

IMPACT ANALYSIS (attach report): Yes

Submitted By: Naveed Burki
Title: Standards Engineer
Organization: INDOT
Phone Number: 317-233-2057

Date: 02-19-2018

Mr. Orton
Date: 03/15/18
(OLD BUSINESS ITEM)

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISION

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No

Will approval of this item affect the Approved Materials List? No

Will this proposal improve:

Construction costs? No

Construction time? No

Customer satisfaction? Yes

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? No

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? No

Design process? No

Will this change provide the contractor more flexibility? No

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? Yes

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? Yes

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: To avoid any further disputes on the measurement of quantities, to remove a redundant pay item and to comply with the 2014 AASHTO-LRFD Bridge Design Specifications, it should be on the agenda and recommended for approval.

REVISION TO SPECIAL PROVISION
620-R-483 SOUND BARRIER SYSTEMS

(Note: Proposed changes shown highlighted gray)

620-R-483 SOUND BARRIER SYSTEMS

(Revised 05-23-13)

The Standard Specifications are revised as follows:

SECTION 620, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 620 – ~~BLANK~~ SOUND BARRIER SYSTEMS

620.01 Description

This work shall consist of furnishing materials and placement of a sound barrier system and a coping in accordance with 105.03.

620.02 General Design Requirements

The sound barrier system shall be either wall mounted, bridge mounted or ground mounted, and shall consist of wall attachments or post foundations, vertical support posts, and sound barrier panels. For the purposes of this section, "panel" is defined as the reflective or absorptive component mounted between the posts, piers or columns.

All appurtenances behind, in front of, under, over, mounted upon, or passing through the wall, including drainage structures, fire hydrant access openings, highway signage, emergency access openings, utilities or other appurtenances shown on the plans, shall be accounted for in the design of the sound barrier system.

If the sound barrier manufacturer needs additional information to complete the design, the Contractor shall be responsible for obtaining such information. The Contractor shall be responsible for field verifying wall locations in areas of all existing traffic poles, utility poles, roadway lighting poles, drainage pipes, underdrain outlets, and bridge expansion joints and all other locations where the sound barrier system may conflict with existing conditions. The wall shall be realigned and designed to box out openings where conflicts occur with existing light poles and traffic control devices. The Contractor shall establish and account for the existing locations of all underdrain outlets, drainage pipes, and bridge expansion joints in the final wall plans. If the Contractor discovers that overhead utilities will be within 6 ft of the sound barrier, the Contractor shall notify the Engineer in accordance with 104.02 and 105.16.

The sound barrier wall design shall follow the general dimensions of the wall envelope as shown on the plans. The top of the sound barrier shall be at or above the acoustical profile line shown, unless noted. Changes in elevation shall be accomplished by stepping the sound barrier sections at the vertical support posts. Steps shall not exceed 3 ft vertically unless otherwise specified in the plans. Barrier heights shall be selected in groups of no fewer than three successive panels, except where barriers are to be stepped down for barrier termination. The ends of the sound barrier shall be tapered or stepped

down to a height of 8 ft within the sound barrier end transitions or as shown on the plans. The bottom of ground mounted sound barrier shall be embedded a minimum of 6 in. into the ground. The bottom of wall mounted or bridge mounted sound barrier shall ~~follow within 3 in. a profile~~ be within 6 in. to 8 in. below the top of the existing concrete barrier railing or wall.

Caisson footings, vertical support posts, and connections for ground mounted sound barrier shall be designed ~~as specified~~ by the manufacturer, with minimum post spacing of 15 ft. Exceptions will be ~~allowed~~considered due to site-specific conditions such as access doors, drainage requirements or utility accommodations. ~~These shall be reviewed and approved through the working drawing process. The foundation design shall use the COM 624P or LPILE Program.~~Exceptions shall be subject to approval through the working drawing process. The foundation shall be designed in accordance with the current AASHTO LRFD Bridge Design Specifications, Section 15, Design of Sound Barriers. The foundation design shall be based on the soil model shown on the plans ~~based on cyclic loading and shall consider the effects of a sloping ground surface.~~ The post deflection shall be limited to L/100, measured from the top of the caisson to the top of the wall. The foundation depth shall not be less than 7.5 ft and shall not exceed the depth of the soil model except where the Contractor elects to drill deeper borings to extend the model. The foundation diameter shall not be less than 18 in. and shall not be less than 6 in. larger than the diagonal dimension of the post being used. The foundation shall be designed by the sound barrier manufacturer. Vertical support posts shall be attached to caisson footings by means of anchor bolts, or embedded wide flange steel posts.

~~A sound barrier system shall be selected for the type specified from those which are on the Department's list of approved Sound Barrier Systems.~~ The sound barrier system shall be selected from Department's list of approved Sound Barrier Systems for the type specified. Sound Barrier Systems may be added to the approved list by completing the requirements of ITM 806, Procedure N and passing the required laboratory testing. The materials used in the fabrication of the sound barrier system shall be the same as those used for approval of the sound barrier system.

The structural design of the sound barrier system shall be in accordance with the ~~AASHTO Guide Specifications for Structural Design of Sound Barriers~~ current AASHTO LRFD Bridge Design Specifications, Section 15, Design of Sound Barriers, except as otherwise directed. The sound barrier system shall be designed to withstand wind pressure as shown on the plans, as applied perpendicular to the barrier, in each direction.

The post spacing for sound barriers mounted on any structure or safety barrier shall be limited to a distance that does not overstress the existing structure or safety barrier. The spacing shall also be limited to a distance that allows the sound barrier to conform to the existing horizontal and vertical alignments. The allowable loads on a structure or barrier will be shown on the plans. If no allowable loads are shown, the Contractor shall contact the project designer for this information.

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620-R-483 SOUND BARRIER SYSTEMS

When sound barriers are to be installed on a bridge structure, design calculations shall be submitted to the Engineer that demonstrate structure loading limits, as shown on the plans, will not be exceeded.

All materials shall have a minimum predicted maintenance free structural and acoustical lifespan of 20 years. All colorings and coatings shall have a minimum predicted maintenance free lifespan of 10 years.

The types of acoustic sound barrier systems that are accepted are as follows:

Type 1, single sided absorptive, sound barrier systems and their components shall be designed to achieve a sound transmission loss equal to or greater than 20 decibels at all frequencies when tested in accordance with ASTM E 90. Type 1 sound barrier systems shall be designed to have a minimum noise reduction coefficient of 0.70 on the roadway side. Type 1 sound barrier systems shall be tested in accordance with ASTM C 423. Material samples for this test shall be provided with the coating applied, so as to determine that the color coating does not inhibit the acoustic performance. The sample shall be mounted in accordance with ASTM E 795, type A.

Type 2, double-sided absorptive, sound barrier systems and their components shall be designed to achieve a sound transmission loss equal to or greater than 20 decibels at all frequencies when tested in accordance with ASTM E 90. Type 2 sound barrier systems shall be designed to have a minimum noise reduction coefficient of 0.70 on the roadway and non-roadway sides. Type 2 sound barrier systems shall be tested in accordance with ASTM C 423. To determine that the color coating does not inhibit the acoustic performance, material samples for this test shall be provided with the coating applied. The sample shall be mounted in accordance with ASTM E 795, type A.

Type 3, reflective, sound barrier systems and their components shall be designed to achieve a sound transmission loss equal to or greater than 20 decibels at all frequencies when tested in accordance with ASTM E 90.

A type 2 barrier system may be substituted for a type 1 barrier system at the Contractor's discretion. A type 1 or a type 2 barrier system may be substituted, with written approval, for a type 3 barrier system.

All molded finishes shall have a 1 in. minimum relief. All rolled finishes shall have a minimum 3/4 in. relief. Relief is defined by material that is provided in excess of the minimum wall thickness required to meet the Noise Reduction Coefficient required for the absorptive surfaces. Fluted finishes shall be coped at each end to avoid cracking.

Corrugations, ribs, or battens on sound barrier panels shall be oriented vertically when erected. The sound barrier shall be designed to prevent entrapment and ponding of

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water. The sound barrier shall not be designed with openings promoting the perching or nesting of birds, or the collection of dirt, debris, or water. The sound barrier shall not be designed with hand holds or grips promoting scaling or climbing of the system.

Fire hydrant access points shall be designed with additional reinforcement or bracing and protective coating around the opening as necessary to maintain structural integrity.

Closure plates shall be provided where new sound barrier is constructed adjacent to existing sound barrier. Where bridge mounted walls cross over expansion joints, expansion closure plates shall be used. The wall manufacturer shall provide expansion closure plates for each expansion joint unless directed otherwise. The minimum thickness of closure plates shall be 3/16 in.

The calculations for sound barriers which also retain earth must show that the walls are adequate for earth retention. The earth retention areas shall be shown on the plans. The exposed face of the sound barrier earth retaining panel will match the adjacent panel's color and texture.

(a) Precast Panel Design Criteria

Base-plated or embedded reinforced precast concrete posts may be substituted for wide flanged steel posts with the approval of the Department. Proposed substitutions for wide flanged steel posts shall be shown on working drawings submitted for approval.

Support posts must match the adjoining wall in color unless directed by the Engineer. Embedded reinforced precast concrete posts must also match the adjoining wall in texture. Sound barrier systems utilizing stacked panels shall have ship-lapped or tongue and groove horizontal joints or other approved design which blocks the passage of light.

(b) Masonry Design Criteria

Reinforced masonry vertical support posts shall be faced to match the adjoining wall in color and texture unless directed by the Engineer.

Steel support posts shall match the adjoining wall in color unless directed by the Engineer.

620.03 Submittals

The Contractor shall submit a minimum of three alternative textured finishes for the wall to the Engineer. These shall include the following colors:

(a) light gray (Federal Standard 595, color No. 36492),
(b) light brown (Federal Standard 595, color No. 30450),
(c) light tan (Federal Standard 595, color No. 37769).

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The colors will be presented to the public for their input in accordance with 620.05. The final wall pattern and color will be approved before production of the wall panels may begin.

The Contractor shall submit design calculations in accordance with 105.02. Calculations for sound barriers on bridge structures shall include an analysis of the bridge structure that demonstrates the additional loads imposed by the sound barrier, including dead load and wind load, will not exceed the structural capacity of the bridge. The Contractor shall submit working drawings in accordance with 105.02 after design calculations are approved and before beginning wall construction operations. Design calculations and working drawings shall be submitted concurrently and shall meet the following minimum requirements:

(a) Design calculations shall include all structural design calculations and vertical support post design calculations.

(b) Design calculations for bridge mounted installations shall include the design unit weight and mass of the sound barrier and support systems.

(c) Design calculations for bridge mounted installations shall demonstrate that the structural loading limits of the structure, as shown on the plans, will not be exceeded.

(d) Working drawings shall include all details, dimensions, quantities, and cross sections necessary to construct the sound barrier systems and shall include but not be limited to the following:

1. A plan and elevation sheet or sheets for each sound barrier systems location. Exceptions to minimum post spacing requirement, including the conditions that necessitate the exception.

2. An elevation view of the sound barrier systems which shall include the elevation at the top of the wall at all horizontal and vertical break points at least every 50 ft along the face of the wall.

3. A plan view of the wall that indicates the offsets from the construction centerline to the face of the wall at all changes in horizontal alignment. A plan view and elevation view which detail the placing position.

4. A typical cross section or cross sections showing elevation relationship between ground conditions and the sound barrier systems locations.

5. All general notes required for constructing the wall.

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6. *Each sheet shall show the complete project identification number.*

7. *All horizontal and vertical curve data affecting the wall.*

8. *A listing of the summary of quantities on the elevation sheet for each wall.*

9. *A list of manufacturer's recommendations with respect to maintenance, including repair of graffiti and other damages.*

10. *Typical sections and elevation views for bridge mounted installations.*

(e) Working drawings shall include a detailed plan of aesthetic treatment for the entire sound barrier system, manufacturer-recommended installation requirements and sequence of construction, manufacturer-recommended repair requirements for damage caused by vandalism or graffiti prior to final acceptance, and a detailed bill of materials.

MATERIALS

620.04 Materials
Materials shall be in accordance with the following:

Cast-in-Place Portland Cement Concrete, Class A.....702
Coarse Aggregate, Class A or Higher, Size No. 91 904
Coarse Aggregate, Class D or Higher, Size No. 5.....904
Coarse Aggregate, Class D or Higher, Size No. 8.....904
Concrete Masonry Units 905.06
Fine Aggregate, Size No. 23.....904
Joint Mortar 901.08, 907.12
Paint 909.02
Portland Cement .....901.01(b)
Precast Concrete.....707
Reinforcing Bars 910.01
Structural Aluminum Posts .....910.14(d)
Structural Steel.....910.02
Water 913.01

Steel structural components shall be in accordance with 910.02 or ASTM A 36. Structural steel components shall be hot dipped galvanized in accordance with ASTM A 123, coating grade 100 or painted in accordance with 619.11 and 619.12. Exposed surfaces of galvanized components shall be coated in accordance with 619.09(b). The galvanized surfaces shall be prepared using a light brush-off blast cleaning in accordance

with SSPC-SP16. The surface profile shall be 15 to 30 microns in accordance with ASTM D 4417, prior to painting.

All structural steel hardware shall be in accordance with ASTM A 325 and shall be hot dipped galvanized in accordance with ASTM A 153 or shall be made of nonferrous material or stainless steel. All other non-structural fastening devices shall be made of nonferrous metal or stainless steel. Plastic members shall be connected with either screws or bolts. Aluminum members shall be connected with stainless steel fasteners. Anchor bolts shall be of the size shown with a minimum of 10 in. of 7NC threads on the upper end. Anchor bolts shall be in accordance with ASTM F 1554. The threads, nuts, and washers shall be galvanized in accordance with ASTM A 153 or be mechanically galvanized and conform to the coating thickness, adherence, and quality requirements of ASTM A 153, where required.

Solid portland cement concrete or composite concrete shall be coated or contain an integral pigment, as specified by the manufacturer, and shall meet the specified color requirements. Integral pigment shall be certified to be in accordance with ASTM C 979. The coating shall be tested for accelerated weathering in accordance with ASTM D 6695. The test panel substrate shall be of the same portland cement concrete or composite concrete material used in the sound barrier system component. Cured coating or integral pigment shall not contain heavy metals that exceed the requirements of 40 CFR 261.24.

Concrete class A for the coping shall be in accordance with the applicable requirements of 702, except the coarse aggregate for pre-cast units may be size No. 91 in accordance with 904. Reinforcing steel in the coping shall be in accordance with the applicable requirements of 703. The coping may be precast or cast-in-place.

Masonry block shall be tested in accordance with ASTM C 90 and as follows:

(a) The average compressive strength of three units shall be a minimum of 3,000 psi with no single unit being less than 2,700 psi.

(b) The units shall be tested for water absorption in accordance with ASTM C 140. The maximum absorption shall be 7%.

(c) Joint reinforcement for masonry block systems shall be in accordance with ASTM A 951.

(d) Mortar for masonry block systems shall be in accordance with ASTM C 270; type S, Table 1 proportion requirements.

(e) Portland cement-lime or mortar cement may be used. Masonry cement shall not be used. Grout for masonry shall be in accordance with ASTM C 476.

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(f) Aggregate for masonry grout shall be in accordance with ASTM C 404.

Masonry blocks shall be coated or contain an integral pigment, as specified by the manufacturer, and shall meet the specified color requirements. The integral pigment shall be certified to be in accordance with ASTM C 979. The coating shall be tested for Accelerated Weathering in accordance with ASTM D 6695. The test panel substrate shall be of the same masonry blocks used in the sound barrier system component. Cured coating or integral pigment shall not contain heavy metals that exceed the requirements of 40 CFR 261.24.

Certifications shall be provided for each of the materials to be supplied for the sound barrier system. For reinforcing steel and other applicable steel materials, A Buy America Certification shall be provided in accordance with 106.01(c). A certification shall be provided indicating that all materials and manufacture of the sound barrier system is the same as submitted for approval. Certifications shall be in accordance with a type C in accordance with 916, unless noted otherwise. A type A certification in accordance with 916 shall be provided for compressive strength and absorption test values for masonry block, sampled and tested in accordance with ASTM C 140. All test reports required to substantiate compliance shall be in accordance with the test method/material requirements cited herein. A Department approved laboratory shall conduct the testing.

CONSTRUCTION

620.05 Information for Public Input

Colored flyers with appropriate graphics shall be developed by the Contractor and furnished to the Department.

Wall color photos shall be provided for each color in accordance with 620.03 along with photos of each available texture alternative. A minimum of three wall samples of the non-roadway side textures shall be provided. All samples of the wall textures shall be a minimum of 3 sq ft in area, with a distinguishable pattern.

Based on comments received, the Department will select the final finishes and colors for each wall. Each wall shall have the selected color used throughout the entire wall on the roadway and the non-roadway sides. The Contractor shall coordinate all sound barrier wall issues with the Engineer prior to ordering any materials.

620.06 Construction Requirements

Sound barrier components shall not be stored on the right-of-way unless written permission is given by the Department. Requests for permission to store materials on the right-of-way will not be accepted until after the contract has been awarded.

The sound barrier supplier shall provide technical instruction, guidance in preconstruction activities including the preconstruction conference, and on-site technical

assistance during construction. The Contractor is responsible for following installing instructions from the supplier unless otherwise directed in writing by the Engineer.

Clearing and grading shall be in accordance with 201 and 202 as required.

The foundations for ground mounted sound barrier systems shall be constructed as shown on the working drawings. Holes for footings shall be drained of free water prior to installing any components. Placing concrete shall be in accordance with 702.

The integrity of the sound barrier system continuity shall be such that no light will be visible through any vertical joint between sound barrier panel and vertical support post, through any horizontal joint between sound barrier panels, between the bottom of any ground mounted sound barrier and the adjacent ground, or between the bottom of any wall mounted sound barrier and the top of the adjacent wall. Exceptions may be allowed as necessary for drainage as indicated on the plans.

Sound barrier wall posts shall be placed vertical with a tolerance of 1/2 in. per 10 ft on each axis. Sound barrier wall posts shall be placed at the distance indicated on the plans with a tolerance of 1 in. from centerline to centerline. Sound barrier wall posts shall be aligned to within 1 in. when measured from a straight line from the two adjacent posts. Sound barrier wall posts shall be at the height as shown on the plans. The posts shall project above the top sound barrier wall panel by 1 1/2 in. ± 1/2 in. The top of the sound barrier wall shall be at or above the acoustical profile. Steel posts embedded in concrete shall have bottom cover of 8 in. ± 4 in. Field-cut steel posts shall be primed with an organic zinc primer and painted in accordance with 619.

After post erection the area shall be backfilled to within 6 in. of the required final grade or as specified in the plans. The aggregate pad shall be placed as required. Positive drainage of the work area shall be maintained.

An aggregate pad of No. 5 or No. 8 coarse aggregate shall be included that extends 4 in. outside of each side of the panel and 4 in. below the bottom of the panel.

The sound barrier system and sound barrier system components shall be maintained until final acceptance. Elements of the sound barrier system that are damaged or destroyed, including due to graffiti or other vandalism, shall be repaired or replaced as directed by the Engineer. Repairs and repainting shall be conducted in accordance with the manufacturer's guidance and 620.02.

After construction of the sound barrier system the site shall be restored to the original condition with grading, seeding and sodding in accordance with the plans.

(a) Construction Requirements for Precast Panels

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Sound barrier wall panels shall be placed in accordance with the plans and centered between adjacent posts. The sound barrier wall panels shall be of sufficient length to span the entire length between posts less 1/2 the width of the smallest retaining flange.

Panels may be field-cut to facilitate erection in accordance with the manufacturer's recommendation. Field-cut panels shall be cut to have the least impact on any patterns present in the textured or colored finish. Field-cut panels or other field cut components shall be painted in accordance with the manufacturer's guidance.

(b) Construction Requirements for Masonry

All grouting and reinforcing work for masonry block systems shall be performed by masonry craftworkers holding current International Masonry Institute, IMI, Grouting and Reinforcing Certification. Proof of certification shall be submitted prior to the beginning of work.

620.07 Acceptance

The Contractor shall submit 2 ft by 2 ft sound barrier panel samples or five masonry block units in the colors and textures proposed and a 2 ft sample of painted support post, prior to the approval of the working plans. Once approved, these samples will be used as a control sample to verify delivered products meet the aesthetic requirements. The sound barrier system will be accepted for color based on a visual comparison between the control sample and the color of the wall as constructed in place.

The sound barrier system will be accepted for quality based on a visual inspection of the components of the system by the Engineer. The sound barrier system shall be subject to rejection due to failure to be in accordance with the requirements specified herein. In addition, the following defects may also be sufficient cause for rejection:

(a) Defects that indicate imperfect fabrication.

(b) Defects in physical appearance such as cracks, checks, dents, scrapes, chips, stains, or color variations.

The Engineer will determine whether a defective sound barrier shall be repaired or shall be cause for rejection. Repair, if permitted, shall be completed by the Contractor and will be approved by the Engineer.

620.08 Method of Measurement

~~*Sound barrier panels and sound barrier erection will be measured by the square foot of wall surface area. The pay quantity will be based on the limits of the sound barrier envelope as shown on the plans. The vertical and horizontal distance for each section of the wall defines the sound barrier envelope. The vertical distance extends from the elevation at the bottom of the lowest panel to the elevation of the acoustic profile for each section of the wall. The horizontal distance extends from centerline to centerline of*~~

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~~*adjacent posts for each section of wall.*~~ *Wall-mounted sound barrier panels, bridge-mounted sound barrier panels, ground-mounted sound barrier panels, wall-mounted sound barrier erection, bridge-mounted sound barrier erection and ground-mounted sound barrier erection will not be measured for payment. The pay quantities for each item will be computed by the square foot based on the neat line limits of the sound wall envelopes as shown on the plans. Wall system supplier quantities will not be considered. Coping will not be measured.*

620.09 Basis of Payment

~~*Wall mounted sound barrier panels, bridge mounted sound barrier panels, ground mounted sound barrier panels, wall mounted sound barrier erection, bridge mounted sound barrier erection, and ground mounted sound barrier erection will be paid for at the contract unit price per square foot.*~~*The accepted quantities of wall-mounted sound barrier panels, bridge-mounted sound barrier panels, ground-mounted sound barrier panels, wall-mounted sound barrier erection, bridge-mounted sound barrier erection and ground-mounted sound barrier erection will be paid for at the contract unit price per square foot.*

The Department may choose to acquire additional precast sound wall panels or masonry blocks in the colors and patterns selected on the project. A maximum of 12 panels of each type would be paid for at the invoice cost of the panels and shall be delivered to the District Office. If the Department elects to acquire additional precast sound wall panels or masonry blocks, the Contractor shall provide the material as extra work in accordance with 104.03.

Partial payment will be made for sound barrier panels stockpiled on the project site or at the Contractor's approved storage location within the State of Indiana. Partial payment will be based on the delivered cost of the sound barrier panels, as verified by invoices that include freight charges. The Contractor shall furnish the invoices and all required certifications. Partial payment will not exceed 75% of the contract unit price for bridge mounted, ground mounted or wall mounted sound barrier panels. Prior to authorizing the partial payment, verification will be obtained that all required inspection has been made and that the panels are acceptable.

~~*Payment for all costs associated with the collection of all information not shown on the plans, revisions due to conflicts, sound barrier system details, all additions or incidentals necessary to provide complete plans, any redesigning of plans or details, the public information meetings and public information planning and presentations will be paid for at the contract lump sum price for sound barrier design and layout.*~~

Payment will be made under:

Pay Item	**Pay Unit Symbol**
~~*Sound Barrier Design and Layout*~~	~~*LS*~~

REVISION TO SPECIAL PROVISION

620-R-483 SOUND BARRIER SYSTEMS

Sound Barrier Erection, _____, _____.....SFT
mounting type, type***
Sound Barrier Panels, _____, _____.....SFT
mounting type, type***

* *Type of sound barrier system: (BM) bridge mounted, (GM) ground mounted, (WM) wall mounted*

** *Type 1, 2, or 3.*

The cost of sound barrier panel materials including vertical support posts, coping, aggregate pad mortar, grout and joint reinforcement for masonry block, fasteners, closures, expansion plates, openings and incidentals shall be included in the cost of the sound barrier panels for the type of sound barrier panels.

All costs associated with the designing of the sound barrier system, including the collection of all site specific information required for the design, sound barrier system details, additions or incidentals necessary to provide complete plans, the public information meetings and public information planning and presentation shall be included in the cost of the sound barrier panels.

Substituting type 2 wall for type 1 wall or substituting type 1 or type 2 wall for type 3 wall shall be at no cost to the Department.

The cost of the selected texture and selected color shall be included in the cost of the sound barrier panel for the type of sound barrier panels.

The cost of all labor and materials to prepare and erect the sound barrier shall be included in the cost of sound barrier erection for the type of sound barrier panels.

The cost of foundation preparation and construction with associated work shall be included in the cost of sound barrier erection, ground mounted.

The cost of removal or construction of concrete barrier walls is not included in the cost of sound barrier panels or erection, wall mounted.

BACKUP 1

IDM 51-9.0 SOUND BARRIER (WITH CHANGES SHOWN AS HIGHLIGHTED GRAY)
FIGURES 51-9A, 9B, 9C, and 9D

51-9.0 SOUND BARRIER

A sound barrier is designed and erected to reduce the sound level of traffic adjacent to existing properties to an acceptable level as determined by Federal guidelines. A barrier is considered the most practical option to reduce sound when compared to other mitigating options (e.g., wider buffer zone, reducing speed, eliminating or restricting traffic or vehicular types). The Office of Environmental Services is responsible for determining the longitudinal limits of the barrier, the lateral location from the roadway, and the required height. The designer is responsible for the type selection, design of the sound barrier, and evaluating the impacts of the sound barrier on the highway design and complying with the project intent of the Office of Environmental Services.

The sound barrier walls attached to the outer face of concrete bridge barrier through vertical supports are termed bridge mounted sound barrier walls, as illustrated by figure 51-9 C. Outside the bridge limits along the roadway, these can be ground mounted on independent support posts and are termed ground mounted sound barrier walls. This illustrated by figure 51-9 D

51-9.01 Types

An absorptive or reflective sound barrier is effective in reducing the environmental impact of noise from the highway.. ~~The sound barrier types that may be used are as follows.~~
The types of acoustic sound barrier systems that are accepted are as follows:

Type 1:

Single sided absorptive, sound barrier systems and their components ~~shall~~ *are to* be designed to achieve a sound transmission loss equal to or greater than 20 decibels at all frequencies. ~~when tested in accordance with ASTM E 90.~~ Type 1 sound barrier systems ~~shall~~ *will* be designed to have a minimum noise reduction coefficient of 0.70 on the roadway side. ~~Type 1 sound barrier systems shall be tested in accordance with ASTM C 423.~~ Material samples for this test ~~shall~~ *need to* be provided with the coating applied, so as to determine that the color coating does not inhibit the acoustic performance. ~~The sample shall be mounted in accordance with ASTM E 795, type A.~~

BACKUP 1

IDM 51-9.0 SOUND BARRIER (WITH CHANGES SHOWN AS HIGHLIGHTED GRAY)
FIGURES 51-9A, 9B, 9C, and 9D

Type 2:

Double-sided absorptive, sound barrier systems and their components ~~shall~~ *are to* be designed to achieve a sound transmission loss equal to or greater than 20 decibels at all frequencies. ~~when tested in accordance with ASTM E 90.~~ Type 2 sound barrier systems *will*~~shall~~ be designed to have a minimum noise reduction coefficient of 0.70 on the roadway and non-roadway sides. ~~Type 2 sound barrier systems shall be tested in accordance with ASTM C 423.~~ To determine that the color coating does not inhibit the acoustic performance, material samples for this test ~~shall~~ *need to* be provided with the coating applied. ~~The sample shall be mounted in accordance with ASTM E 795, type A.~~

Type 3:

Reflective, sound barrier systems and their components shall be designed to achieve a sound transmission loss equal to or greater than 20 decibels *at all frequencies.* ~~at all frequencies when tested in accordance with ASTM E 90.~~

A type 2 barrier system may be substituted for a type 1 barrier system at the Contractor's discretion. A type 1 or a type 2 barrier system may be substituted, with written approval, for a type 3 barrier system.

51-9.02 Materials

Sound barriers may be constructed from the following materials:

1. Earth Berm. An earth berm is a graded mound of soil which redirects the highway sound from nearby sensitive areas.

2. Masonry Wall. A masonry wall is constructed from concrete blocks or bricks. Very pleasing architectural designs can be developed with this type of wall.

3. Concrete Wall. A concrete wall may be poured in place or precast. The advantage of a concrete wall is that decorative designs can be added to the face of the wall.

BACKUP 1

IDM 51-9.0 SOUND BARRIER (WITH CHANGES SHOWN AS HIGHLIGHTED GRAY)
FIGURES 51-9A, 9B, 9C, and 9D

4. Wood Wall. A wood wall is less costly than a masonry or concrete wall and is often preferred by local residents. However, its life expectancy is typically less than that of a masonry or concrete wall.

5. Metal Wall. A metal wall is constructed using galvanized or treated steel panels. Concerns relative to cost and corrosion have generally limited the use of steel walls.

6. Other Materials. New sound barrier materials are continuously being developed, such as recycled plastic, fiberglass, composites, etc. Prior to their use, they should be reviewed by the New Products Evaluation Committee to ensure that each will meet INDOT criteria.

7. Combination Wall. This type uses a combination of an earth berm and one of the other material types. A combination wall is used to reduce the height of another wall type and for aesthetic purposes.

51-9.~~02~~ *03* Design

1. Line of Sight. ~~Noise waves travel in a straight line~~ *Noise waves spread in all directions.* A barrier which breaks the line of sight between the source and receiver will provide some attenuation. For roadway sources, the line of sight is drawn perpendicular to the roadway. The sound source for cars and medium-sized trucks is assumed to be the roadway surface and, for large trucks, it is ~~8~~ *5* ft high. For the receiver, the line of sight is terminated at the expected ear height of the receiver (e.g., ~~8~~ *5* ft). The designer must also consider that the receiver may be in a multi-storied building.

2. Structural Design. A sound barrier should ~~either~~ be *designed* in ~~accordance with the AASHTO Standard Specifications for Highway Bridges or the AASHTO Guide Specifications for Structural Design of Sound Barriers. See Chapter 73~~*accordance with the current AASHTO LRFD Bridge Design Specifications, Section 15, Design of Sound Barriers, and INDOT RSP # 620-R-483 Sound Barrier Systems.*

3. Length. To block the roadway noise from the sides, the ends of the barrier should exceed the receiver by four times the distance from the barrier to the receiver; see Figure 51-9A, Sound-Barrier Placement , detail (a).

BACKUP 1

IDM 51-9.0 SOUND BARRIER (WITH CHANGES SHOWN AS HIGHLIGHTED GRAY)
FIGURES 51-9A, 9B, 9C, and 9D

4. Location. Moving the barrier closer to the receiver or source ~~will~~*may* increase *or* ~~the~~*decrease the* effectiveness of the barrier. *Environmental Services Division should be consulted for the optimal location of the barrier.*

5. Gap. A gap in the barrier for pedestrian access, cross-streets, or maintenance purposes can compromise the barrier performance. Where practical, the effects of a gap should be minimized by providing tight-fitting access doors, curving the ends of the barrier to shield nearby receivers, or overlapping sections of barrier. Figure 51-9A detail (b) illustrates the minimum distance required to maintain the acoustical effectiveness of the wall for overlapping barriers.

6. Right of Way. Additional right of way may be required for the installation and maintenance of the sound barrier.

7. Roadside Safety.

   a. Clear Zone. Section 49-2.0 provides the Department's design criteria for clear zone. If practical, a sound barrier should *preferably* be placed outside of the clear zone. If the barrier is within the clear zone, an integral concrete barrier shape or a metal barrier rail should be considered to shield a run-off-the-road vehicle from the barrier.

   Dynamic lateral deflections should be considered to keep the errant vehicles away from the wall.

   b. Terminal. A sound barrier should be terminated outside the clear zone. However, if the end of the barrier is within the clear zone, the designer should consider protecting the end with guardrail or an appropriate impact attenuator. Section 49-~~6~~*8*.0 discusses the design of impact attenuators.

   c. Traversability. If the sound barrier is an earth berm, the toe of the barrier should be traversable by a run-off-the-road vehicle (see Section 49-3.02).

BACKUP 1

IDM 51-9.0 SOUND BARRIER (WITH CHANGES SHOWN AS HIGHLIGHTED GRAY)
FIGURES 51-9A, 9B, 9C, and 9D

d. Protrusion. A protrusion may become a safety hazard if it ~~are~~*is* struck or is dislodged by a vehicle. Figure 51-9B, Sound-Barrier Protrusions, illustrates the preferred practice for placing barrier protrusions and decorative facing.

8. Emergency Access. Where sound barriers are placed relatively close to the roadway (e.g., at the edge of shoulder), sufficient escape routes must be provided in the wall to allow individuals to quickly leave the roadway in an emergency. These escape routes may be provided by inserting doors or overlapping walls. Item 5 above discusses the preferred methods for providing gaps in the barrier design. Where provided, access to fire hydrants should also be incorporated into the wall design.

9. Sight Distance.

a. At-Grade Intersection. A sound barrier should not be located in the triangle required for intersection sight distance. Section 46-10.0 provides the criteria to determine the required sight-distance triangle.

b. Entrance Ramp. A sound barrier should not block the line of sight between the vehicle on a ramp and an approaching vehicle on the major roadway. Therefore, a sound barrier should not be located in the gore area between an entrance ramp and freeway mainline.

c. Horizontal Sight Distance. A sound barrier can also restrict sight distance along the inside of a horizontal curve. Section 43-4.0 provides the criteria to determine the middle ordinate value which will yield the necessary sight distance. The location of the sound barrier should be outside this sight line.

10. Interference with Roadside Appurtenances. The proposed location of a sound barrier can interfere with proposed or existing roadside features, including signs, sign supports, utilities, *fences* or lighting facilities. The designer must determine if these features are in conflict with the sound barrier.

11. Sound Considerations. The noise reduction provided by a barrier depends upon the diffraction of sound over the top and flanking around the sides of the barrier, the transmission of sound through the barrier, and the multiple reflection caused by double barriers. Some barrier types can absorb some of the sound energy. The contribution

of this absorption depends on the barrier surface, shape, and material type. A hard, smooth surface will generally reflect the noise off the wall. If barriers are to be placed on both sides of the roadway, the designer also should consider the impact of the reflected noise on the receiver.

12. Drainage. Drainage may be accomplished by leaving a gap on the bottom and backfilling with gravel, by providing a hinged flap, by providing a closed drainage system, etc. The barrier's acoustical design should be maintained (i.e., no open holes in the wall). *Where sound barriers support earth load or can impede water flow, the provisions of AASHTO-LRFD 11.8.8 shall apply.*

13. Landscaping. Consideration should be given to providing landscaping treatments that will enhance the aesthetics and design of a sound barrier. Plantings should be provided, where practical, both in front of and behind the barrier. Low-maintenance plantings should be used behind the wall.

14. Aesthetics. Appearance plays a critical role in the acceptance of the sound barrier. The barrier should either be blended into the background or made aesthetically pleasing. Various types of materials, texture, and color should be considered. Smooth surfaces are not recommended.

    Due to the size of a sound barrier, the designer should strive to reduce the tunnel effect by using variations of form, wall types, and surface treatments.

    From both a visual and safety standpoint, a sound barrier should not begin or end abruptly. It should be transitioned from the ground line to its full height. This can be accomplished by using earth berms, curving the wall back, sloping the wall downward, or stepping the wall down.

15. Public Involvement. Early community participation in the selection of various sound barrier options is encouraged to ensure community acceptance of the wall.

16. Maintenance Considerations. The location and design of a sound barrier should reflect the following maintenance factors:

    a. The sound barrier must be located so maintenance crews can easily access the wall for routine repairs.

BACKUP 1

IDM 51-9.0 SOUND BARRIER (WITH CHANGES SHOWN AS HIGHLIGHTED GRAY)
FIGURES 51-9A, 9B, 9C, and 9D

b. The sound barrier should be constructed of materials that discourage vandalism (e.g., graffiti) and allow for easy cleaning. The maintenance of barrier materials is less costly if unpainted surfaces such as weathering steel, concrete, pressure-treated wood, or naturally weathered cedar or redwood are used.

c. The sound barrier should be designed so that damage can be easily repaired. The barrier materials should be commercially available to reduce the need for keeping large stocks of material on hand.

d. The sound barrier should be located so that other maintenance operations can be reasonably performed (e.g., mowing, light-bulb replacement, sign cleaning, spraying). If the barrier is located near the shoulder, access for maintenance behind the wall should be provided from local streets or through overlapping gaps.

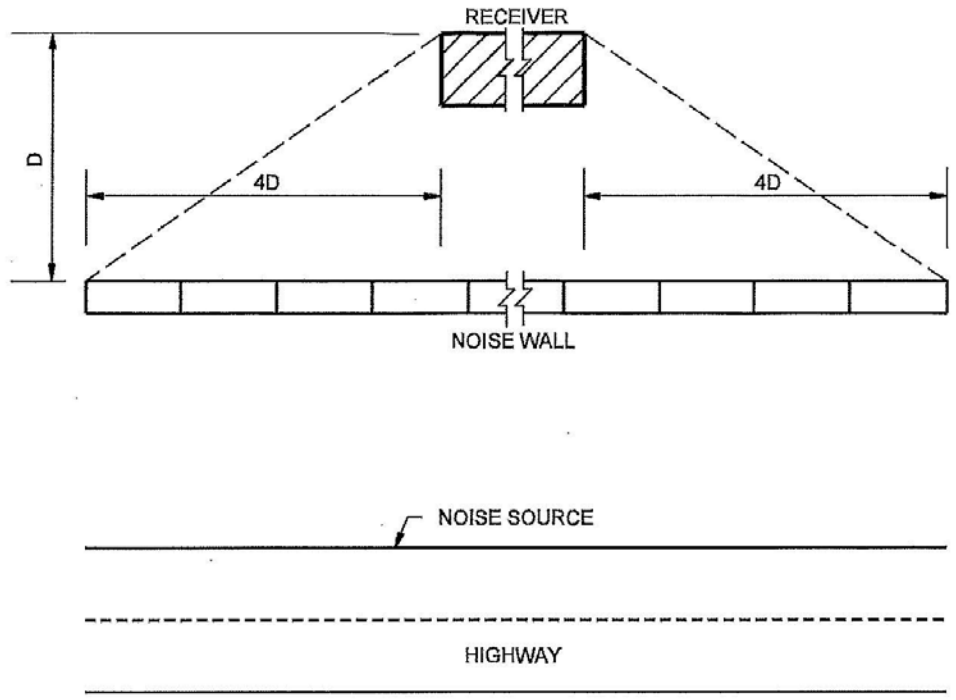
e. The sound barrier should be located so that it will not impact snow removal operations. A barrier located at the edge of the shoulder will require manual removal of snow from the roadway.

51-9.04 Quantities

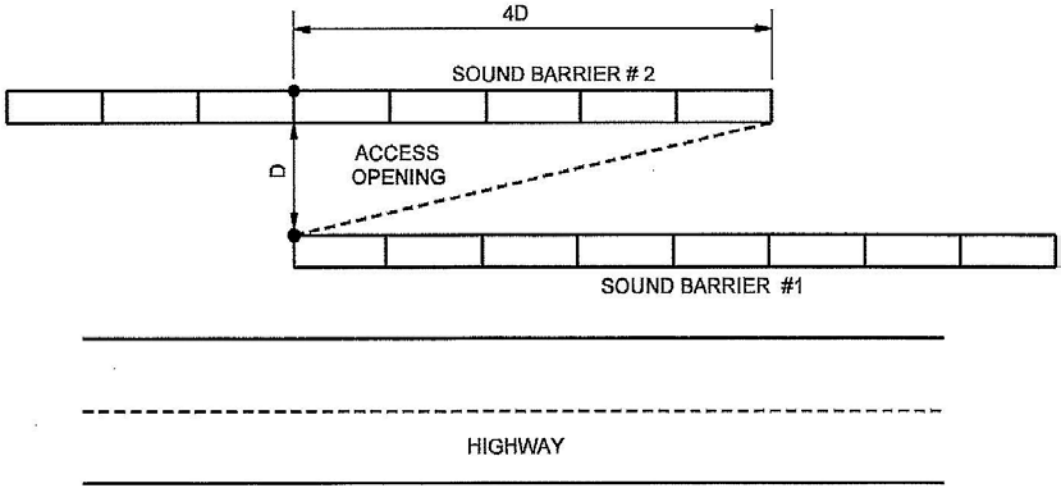
The plans should indicate the total pay quantity in sft. For ground mounted application, this will include the area between the acoustic profile for the sound barrier and an embedment line 6 in below the final ground profile at time of installation along the sound barrier. Any coping will be excluded from this area. For bridge mounted application, this will include the area between the acoustic profile and top of concrete barrier rail.

BACKUP 1

IDM 51-9.0 SOUND BARRIER (WITH CHANGES SHOWN AS HIGHLIGHTED GRAY)
FIGURES 51-9A, 9B, 9C, and 9D



(a) MINIMUM LENGTH REQUIRED



(b) MINIMUM OVERLAP REQUIRED

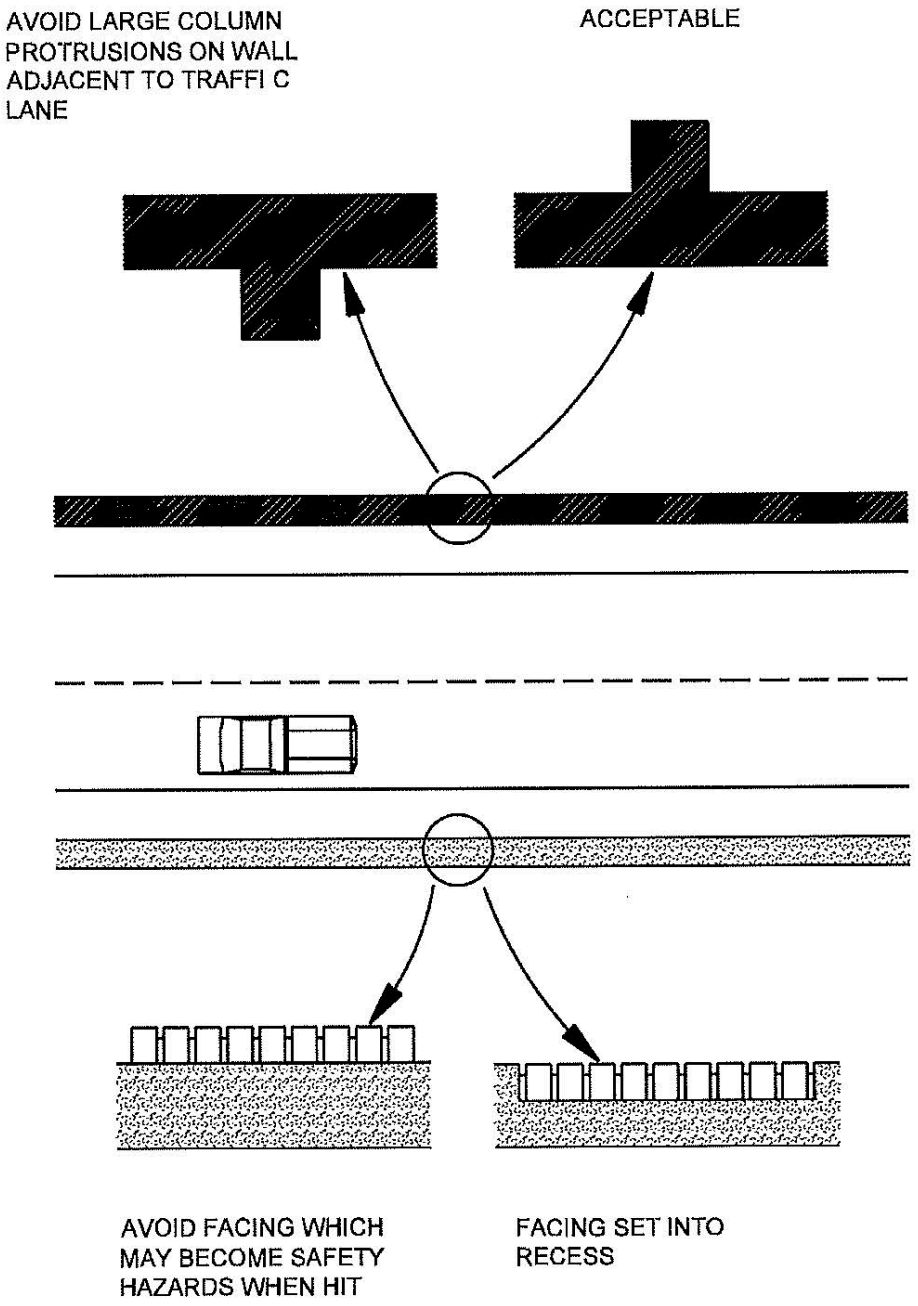
SOUND BARRIER PLACEMENT

Figure 51-9A

Bac

BACKUP 1

IDM 51-9.0 SOUND BARRIER (WITH CHANGES SHOWN AS HIGHLIGHTED GRAY)
FIGURES 51-9A, 9B, 9C, and 9D

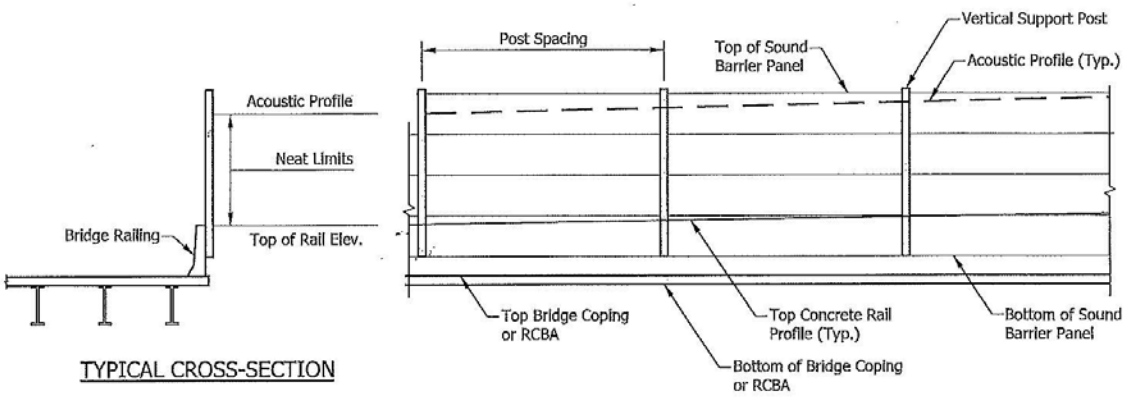


SOUND BARRIER PROTRUSIONS

Figure 51-9B

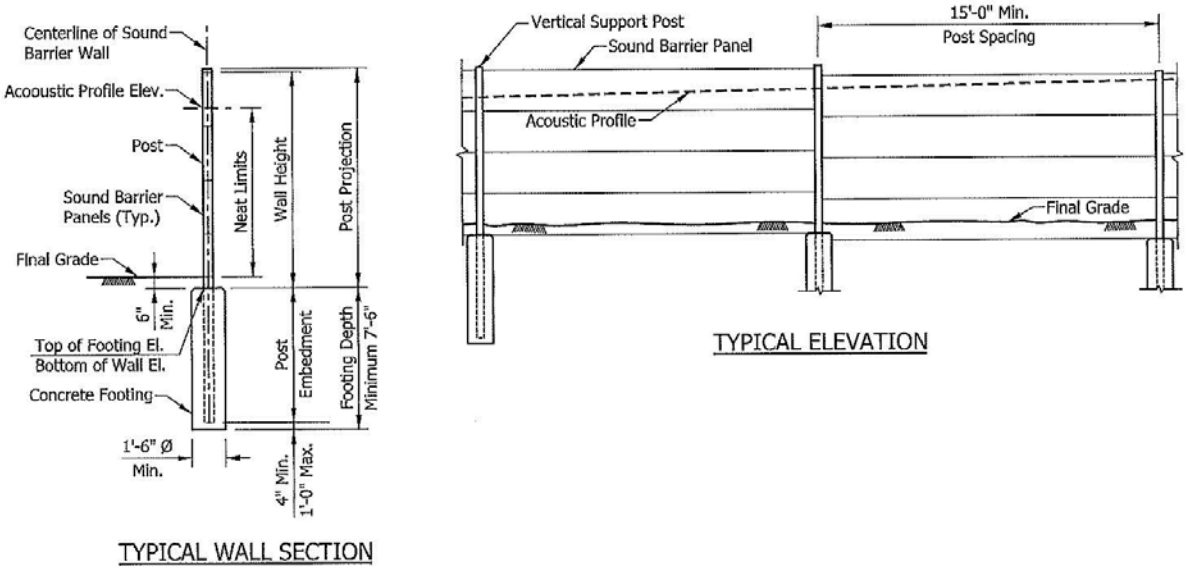
BACKUP 1

IDM 51-9.0 SOUND BARRIER (WITH CHANGES SHOWN AS HIGHLIGHTED GRAY)
FIGURES 51-9A, 9B, 9C, and 9D



BRIDGE OR WALL MOUNTED SOUND BARRIER WALL

Figure 51-9C



GROUND MOUNTED SOUND BARRIER WALL

Figure 51-9D

COMMENTS AND ACTION

620-R-483 SOUND BARRIER SYSTEMS

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: 620 [currently shown as "Blank"] Recurring Special Provision affected: 620-R-483 SOUND BARRIER SYSTEMS Standard Drawing affected: NONE Design Manual Sections affected: 51-9.01 GIFE Sections cross-references:	_____ 2020 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

Mr. Pankow
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The Department's current liquidated damages rates schedule has not been updated in near a decade and therefore not in compliance with 23 CFR 635.127 which require INDOT to review the rates at least every 2 years and provide updated rates to FHWA for approval.

Also, the Department no longer utilizes work day contracts.

PROPOSED SOLUTION: The objective of the effort is to establish new liquidated damages rates that closely approximates the actual average daily CE costs associated with the size of the projects in the state. A study was performed between FHWA and the Department by which a new schedule was derived and agreed upon.

Remove work day language.

APPLICABLE STANDARD SPECIFICATIONS: 108.09 Failure to Complete on Time

APPLICABLE STANDARD DRAWINGS: NA

APPLICABLE DESIGN MANUAL SECTION: NA

APPLICABLE SECTION OF GIFE: NA

APPLICABLE RECURRING SPECIAL PROVISIONS: NA

PAY ITEMS AFFECTED: NA

APPLICABLE SUB-COMMITTEE ENDORSEMENT: NA

IMPACT ANALYSIS (attach report): NA

Submitted By: Greg Pankow

Title: State Construction Engineer

Organization: Construction Management

Phone Number: (317) 232-5502

Date: 02/19/2018

Mr. Pankow
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No

Will approval of this item affect the Approved Materials List? No

Will this proposal improve:

Construction costs? No

Construction time? Yes

Customer satisfaction? No

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? No

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? No

Asset preservation? No

Design process? No

Will this change provide the contractor more flexibility? No

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? No

Is this proposal needed for compliance with:

Federal or State regulations? Yes

AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

REVISION TO STANDARD SPECIFICATIONS

SECTION 108 - PROSECUTION AND PROGRESS
108.09 FAILURE TO COMPLETE ON TIME

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 108, BEGIN LINE 614, DELETE AND INSERT AS FOLLOWS:

108.09 Failure to Complete on Time

For each calendar day ~~or work day~~, as specified, that work shall remain incomplete during the months of April through November inclusive, after the control time specified for the completion of the work provided for in the contract, the sum specified in the schedule below will be deducted, as liquidated damages, from any money due the Contractor. Account will be taken of adjustment of the contract time for completion of the work granted in accordance with 108.08. ~~Work days or c~~Calendar days will not be charged while waiting for final inspection as defined in 105.15 provided all contract work has been satisfactorily completed. However, five work days will be allowed after notification from the Department to complete all corrective or clean up work necessary for final inspection. Thereafter, time will be charged for each day the work remains uncompleted. Further, five calendar days will be allowed after notification by the Department to remove all construction signs and temporary traffic control devices. Thereafter, time will be charged for each day the signs and devices remain.

For each calendar day ~~or work day~~, as specified, that any work shall remain incomplete during the months of December through March inclusive, liquidated damages will be deducted. However, when the project is open to traffic, or safely modified to accommodate traffic, liquidated damages will not be deducted, and payment for the field office and field laboratory, if set out as a pay item in the itemized proposal, will not be made. For these purposes, open to traffic will be considered as all pavement lanes open to unrestricted and safe travel. The Contractor may be required to make temporary repairs to the pavement or structures. Liquidated damages will be assessed until temporary repairs are made. No payment will be made for such temporary repairs.

If the contract is not completed, or the pavement or structure is not opened to traffic within the stipulated time as set out in the Proposal book, the Department may reduce the qualified rating of the Contractor for bidding on future contacts.

Allowing the Contractor to continue and finish the work or a part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the Department of any of its rights under the contract.

REVISION TO STANDARD SPECIFICATIONS

SECTION 108 - PROSECUTION AND PROGRESS
108.09 FAILURE TO COMPLETE ON TIME

Schedule of Liquidated Damages for Each Day of Overrun in Contract Time

Original Contract Amount		Daily Charge	
From More Than	To and Including	Calendar Day or Fixed Date	~~Work Day~~
$0	$500,000	$500.00	~~$700.00~~
500,000	~~1~~2,000,000	1,000.00	~~800.00~~
~~1~~2,000,000	5,000,000	1,500.00	~~1,100.00~~
5,000,000	10,000,000	2,000.00	~~2,000.00~~
10,000,000	and higher	2,250~~0~~.00	~~3,000.00~~

When the contract time is on either the calendar day or fixed calendar date basis, the schedule for calendar days shall be used. ~~When the contract time is on a work day basis, the schedule for work days shall be used.~~

Adjustments to the contract payment with respect to liquidated damages will be included in a liquidated damages pay item. The unit price for this pay item will be $1.00 and the quantity will be in units of dollars. The quantity is the total calculated in accordance with the above schedule.

COMMENTS AND ACTION

108.09 FAILURE TO COMPLETE ON TIME

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: 108.09 pg 95-96 Recurring Special Provision affected: NONE Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2020 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

Mr. Koch
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Inconsistence between 108-C-094 (all lanes are not opened to traffic on or before) and 108.08 line 394 (date roadway is open to unrestricted traffic will not be chargeable).

Taxpayer(s) deserve the ability to use not only roadways but other features within the planned scope of work.

PROPOSED SOLUTION: Strike conflicting language from 108.08 line 394.
Modify 108.08 line 639 – 645 to clarify the need for public usage of not only roadways but other features such as sidewalks, trail, and other safety appurtenances.

APPLICABLE STANDARD SPECIFICATIONS: 108.08

APPLICABLE STANDARD DRAWINGS: na

APPLICABLE DESIGN MANUAL SECTION: na

APPLICABLE SECTION OF GIFE: 2.10

APPLICABLE RECURRING SPECIAL PROVISIONS: na

PAY ITEMS AFFECTED: na

APPLICABLE SUB-COMMITTEE ENDORSEMENT: na

IMPACT ANALYSIS (attach report): na

Submitted By: Michael Koch

Title: Area Engineer

Organization: INDOT

Phone Number: 574-612-2224

Date: Feb 9th 2018

Mr. Koch
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? na

Will approval of this item affect the Approved Materials List? na

Will this proposal improve:

- Construction costs? na
- Construction time? yes
- Customer satisfaction? yes
- Congestion/travel time? na
- Ride quality? na

Will this proposal reduce operational costs or maintenance effort? no

Will this item improve safety:

- For motorists? yes
- For construction workers? na

Will this proposal improve quality for:

- Construction procedures/processes? yes
- Asset preservation? no
- Design process? no

Will this change provide the contractor more flexibility? na

Will this proposal provide clarification for the Contractor and field personnel? yes

Can this item improve/reduce the number of potential change orders? na

Is this proposal needed for compliance with:

- Federal or State regulations? no
- AASHTO or other design code? no

Is this item editorial? yes

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

REVISION TO STANDARD SPECIFICATIONS

SECTION 108 - PROSECUTION AND PROGRESS
108.08 DETERMINATION AND EXTENSION OF CONTRACT TIME
108.09 FAILURE TO COMPLETE ON TIME

(Note: Proposed changes shown highlighted gray.
See Item 1 of this Agenda for additional proposed changes to section 108.09.)

The Standard Specifications are revised as follows:

SECTION 108, BEGIN LINE 387, DELETE AND INSERT AS FOLLOWS:

(b) If intermediate completion times are specified, unless otherwise determined, an increase in quantities will not increase the time specified.

If an intermediate completion time is specified for road closure or restriction, the first day or portion thereof of the closure or restriction will constitute the first chargeable day. The date the road is opened to unrestricted traffic will ~~not~~ be counted as a chargeable day, regardless of the time of day when the roadway is opened. Open to unrestricted traffic shall be as defined in 101.33. Temporary pavement marking materials in accordance with 801.12 shall be placed if the final marking materials cannot be placed in accordance with 808.07(b).

SECTION 108, BEGIN LINE 630, DELETE AND INSERT AS FOLLOWS:

For each calendar day or work day, as specified, that any work shall remain incomplete during the months of December through March inclusive, liquidated damages will be deducted. However, when the project is open ~~to traffic, or safely modified to accommodate traffic~~*for its intended purpose or safely modified for use*, liquidated damages will not be deducted, and payment for the field office and field laboratory, if set out as a pay item in the itemized proposal, will not be made. ~~For these purposes, open to traffic will be considered as all pavement lanes open to unrestricted and safe travel.~~ *Intended purpose will include all pavement lanes, sidewalk/trails, drainage features, and all safety appurtenances.* The Contractor may be required to make temporary repairs to the pavement or structures. Liquidated damages will be assessed until temporary repairs are made. No payment will be made for such temporary repairs.

COMMENTS AND ACTION

108.08 DETERMINATION AND EXTENSION OF CONTRACT TIME
108.09 FAILURE TO COMPLETE ON TIME

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: 108.08 pg 90 and 108.09 pg 96 Recurring Special Provision affected: NONE Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: 2.10	_____ 2020 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED:

In 2017 INDOT identified significant deterioration in slip formed bridge railings and an investigation to determine the cause was conducted. Cores were taken from the railings of four bridges that were placed from 2001 to 2016. It was determined that the deterioration was advanced freeze-thaw damage that was caused by two main issues. The first issue is that the mixes used had very low slump which does not allow the mix to flow very well resulting in poor consolidation. The railing mixes also have a high cement content and are difficult to properly hydrate with a low slump. Contractors subsequently have to increase vibration and/or use less optimally graded mixes in order to place the mix and comply with the specifications. It is also difficult to adequately air entrain concrete that has very low slump and undergoes excessive vibration.

The second issue is that the steel configuration in the standard drawing is very tight near the top of the railing which further restricts the flow and consolidation of concrete mixes that are already stiff. The current configuration also does not provide the cage with enough rigidity to resist movement from pressure and vibration inside the mold.

PROPOSED SOLUTION:

The specification currently restricts slump for slip formed railing to between 0” and 1”. When mixes are properly designed railing can be slip formed at higher slumps. Increasing the slump will allow for much better consolidation with less compaction effort. It will also allow better hydration of the cementitious materials and air entrainment. The contractors may choose to achieve the higher slump with chemical admixtures which does not change the water content, but if water is increased the mixes will still be well below the allowable maximum water-cement ratio. Contractors will still have to use mix designs that facilitate their equipment setup and provide a finished product that meets the dimensional tolerances. The slump requirements will be revised in section 706.03 for slip formed railing to 1 3/4 in ± 3/4 in. The requirement to include a water-reducing admixture in slip formed railing will be waived if the railing concrete contains silica fume in accordance with section 709.05(e).

The standard drawing is being reviewed for possible changes to the steel configuration and is not part of this proposal. The spec changes in this proposal can stand on their own.

APPLICABLE STANDARD SPECIFICATIONS: 706.03

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: none

APPLICABLE SECTION OF GIFE: none

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

[CONTINUED]

APPLICABLE RECURRING SPECIAL PROVISIONS: none

PAY ITEMS AFFECTED: none

APPLICABLE SUB-COMMITTEE ENDORSEMENT: INDOT-IRMCA working committee 1/17/18

IMPACT ANALYSIS (attach report):

Submitted By: Matt Beeson

Title: State Materials Engineer

Organization: INDOT Office of Materials Management

Phone Number: 317-610-7251 x 204

Date: 2/6/18

Mr. Beeson
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No

Will approval of this item affect the Approved Materials List? No

Will this proposal improve:

Construction costs? No

Construction time? N/A

Customer satisfaction? N/A

Congestion/travel time? N/A

Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

Design process? N/A

Will this change provide the contractor more flexibility? Yes

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? No

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: N/A

REVISION TO STANDARD SPECIFICATIONS

SECTION 706 - BRIDGE RAILINGS
706.03 CONCRETE RAILING

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 706, BEGIN LINE 49, INSERT AND DELETE AS FOLLOWS:

Unless otherwise specified the slip form method may be used as a means to place concrete railing on bridge structures. If the slip form method is chosen, a signed and dated QCP shall be prepared and submitted to the Engineer for acceptance at least 15 days prior to the start of slip form barrier rail placement. The QCP shall include, as a minimum, the Contractor's concrete mix design, including materials sources and admixtures; the Contractor's methods of materials control and testing; the Contractor's proposed method of placement, including finishing and curing; and the corrective action that will be taken when defects are found. The QCP shall also contain documentation that shows the Contractor had a successful trial demonstration of the slip form machine previously and that proper consolidation around the reinforcing bars in the wall was achieved. The slip form paver shall consolidate, screed, and finish the freshly placed concrete in one complete pass in such a manner that a minimum of hand finishing will be necessary to provide a dense and homogeneous railing in conformance with the plans and specifications. *The requirement to include a water-reducing admixture in accordance with 702.05 will be waived if the railing is both slip formed and the concrete contains silica fume in accordance with section 709.05(e).* The slump shall be ~~1/2~~*1 3/4* in. ± ~~1/2~~*3/4* in. The joints may be formed or sawed as long as a satisfactory joint is attained. If joints are to be sawed, the full depth saw cut shall be made before uncontrolled shrinkage cracking occurs and within 48 h of concrete placement. Before full depth sawing, partial depth saw cuts of 2 1/2 in. ± 1/2 in. at the joint locations may be made as soon as the concrete has hardened sufficiently to enable sawing without raveling. All saw cuts shall be made at the locations shown on the plans or as directed.

COMMENTS AND ACTION

706.03 CONCRETE RAILING

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: 706.03 pg 567 Recurring Special Provision affected: NONE Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2020 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD DRAWINGS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The curb ramp element depths have not been shown on previous standard drawings and are not shown on the current Standard Drawing Series 604-SWCR. In addition, the curb ramp element depths are not given in the Standard Specifications. The question of the curb ramp element depths has be in question in the field and needs to be noted. After meeting with Greg Pankow and Rob Goldner, it was decided to inlcude the curb ramp element depths in the current Standard Drawing Series 604-SWCR.

PROPOSED SOLUTION: Revised the Standard Drawing Series 604-SWCR to include the depth of the curb ramp components, sheets 4, 6, 8, 10, and 11.

We also are proposing to add text to clarify two notes within the 604-SWCR series:

Sheet 1, added to the note for return curb, Note 5.

Sheet 2, reference the sidewalk Standard Drawings in Note 1.

Sheet 12, modified the drawings and notes for the placement of the DWS on a One-Way Directional Perpendicular Curb Ramps. Deleted one note reference to note 3 where it did not belong and added a note 7 to see sheet 13 for alternate placement of a DWS along a radius.

Sheet 13 added a drawing and note for an alternate placement of DWS along a radius.

Sheet 14 added a dimension and modified some details to go along with the 6" min. depth for curb ramp components. Minimum was added to the 4" total border width so the contractor did not think the border could only be 4".

A revision to the pay items will not be required.

APPLICABLE STANDARD SPECIFICATIONS: 604

APPLICABLE STANDARD DRAWINGS: 604-SWCR Series

APPLICABLE DESIGN MANUAL SECTION: 51-1.0

APPLICABLE SECTION OF GIFE: Section 22.1.

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD DRAWINGS

(CONTINUED)

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Greg Pankow and Elizabeth Phillips

IMPACT ANALYSIS (attach report): Yes

Submitted By: Katherine Smutzer (on behalf of Mark Orton)

Title: Standards Engineer

Organization: INDOT/Standards

Phone Number: 317-233-2074

Date: September 19, 2017

Mr. Orton
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD DRAWINGS

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No

Will approval of this item affect the Approved Materials List? No

Will this proposal improve:

Construction costs? Yes

Construction time? Yes

Customer satisfaction? No

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? No

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? No

Design process? Yes

Will this change provide the contractor more flexibility? No

Will this proposal provide clarification for the Contractor and field personnel? YES

Can this item improve/reduce the number of potential change orders? Yes

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

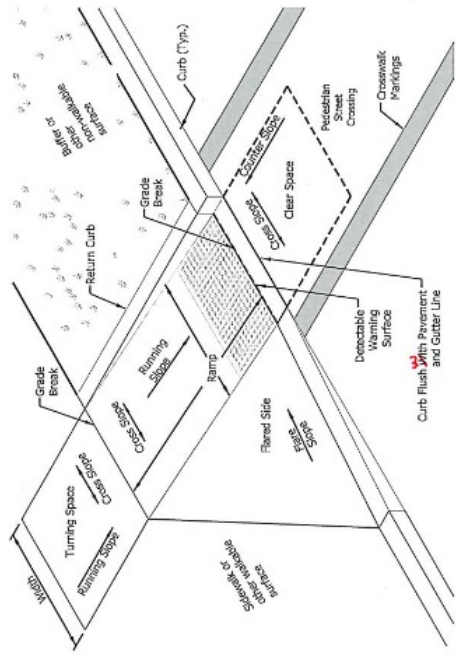
Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: Contractors have been asking where it is directed to construct the curb ramp elements to a 6" depth.

REVISION TO STANDARD DRAWINGS

604-SWCR-01 CURB RAMP DRAWING INDEX AND GENERAL NOTES (WITH MARKUPS)

INDEX

SHEET NO.	SUBJECT
1	Curb Ramp Drawing Index and General Notes
2-3	Perpendicular Curb Ramp Typical Placement
4	Perpendicular Curb Ramp Component Details
5	One-Way-Directional Perpendicular Curb Ramp Typical Placement
6	One-Way-Directional Perpendicular Curb Ramp Component Details
7	Parallel Curb Ramps Typical Placement
8	Parallel Curb Ramp Component Details
9	Blended Transition Curb Ramp, Depressed Curb Ramp and Diagonal Curb Ramp Typical Placement
10	Blended Transition Curb Ramp Component Details
11	Median Cut-Through and Median Perpendicular Curb Ramp Typical Placement
12-13	Detectable Warning Surface Placement and Configuration
14	Detectable Warning Surface Details



GENERAL NOTES:

1. All slopes are absolute rather than relative to the sidewalk or roadway grade. Slopes at least 0.50% less than the maximum are preferred.
2. Ramp or Blended Transition. A ramp or blended transition shall be used to lower or raise the sidewalk to connect with the street or highway.
3. Turning Space. A turning space shall be provided at the top of a perpendicular ramp, bottom of a parallel ramp, or where the pedestrian travel requires a change in direction. A common turning space may be shared by adjacent ramps. The turning space shall have a minimum clear dimension of 4 ft x 4 ft. Where the turning space is constrained at the back of the sidewalk by a curb, retaining wall, building, or feature over 2 inches in height, the minimum clear dimension shall be 4 ft x 5 ft, with the 5-ft dimension in the direction of the ramp running slope.
4. Flared Side. A flared side shall be used adjacent to a walkable surface. A flared side may be used adjacent to a non-walkable surface. A flared side shall have a maximum slope of 10.00% measured parallel to the back of the curb.
5. Return Curb. A return curb is placed perpendicular to the roadway curb. A return curb may be used adjacent to a non-walkable surface. A return curb shall not be used adjacent to a walkable surface.
6. Clear Space. A clear space shall be provided beyond the bottom grade break of a curb ramp wholly contained within the crosswalk and wholly outside the parallel vehicular travel path. The clear space shall have a minimum clear dimension of 4 ft x 4 ft.
7. Detectable Warning Surface. A detectable warning surface shall be placed at each street, highway, or railroad crossing. A detectable warning surface shall extend a minimum of 2 ft in the direction of pedestrian travel and be placed the entire width of a ramp, blended transition, or turning space.
8. Running Slope. The running slope of a ramp, blended transition, or turning space shall be measured parallel to the direction of pedestrian travel.
   a. A turning slope of 2.00% or less is considered level.
   b. A ramp shall have a maximum running slope of 8.33%, but shall not require a ramp length to exceed 15 ft.
   c. A blended transition shall have a maximum running slope of 5.00%.
   d. A turning space shall have a maximum running slope of 2.00%.
9. Width. Unless otherwise noted, minimum width of a ramp, blended transition, or turning space, excluding flared sides or return curb, shall be 4 ft.
10. Grade Break. A grade break at the top and bottom of a ramp, blended transition, or turning space shall be perpendicular to the running slope. Grade breaks shall not be within the ramp, blended transition, turning space, or detectable warning surface. Grade breaks shall be flush. Vertical discontinuities shall not be greater than 1/2 In. Where a discontinuity is greater than 1/4 In, the surface shall be beveled with a slope not steeper than 1V:2H.
11. Cross Slope Exceptions. The cross slope of a ramp, blended transition, or turning space shall be measured perpendicular to the direction of pedestrian travel.
    a. The maximum cross slope at a pedestrian street crossing without yield or stop control shall be 5.00%.
    b. The maximum cross slope at a pedestrian street crossing with yield or stop control shall be 2.00%.
    c. The maximum cross slope at a midblock crossing shall be the established grade of the adjacent roadway.
12. Objects such as a utility cover, vault frame, and grating shall be placed outside the curb ramp.
13. Curb ramps shall be placed within the marked crosswalk area.
14. Drainage inlets should be located uphill from a curb ramp to prevent ponding in the path of pedestrian travel.

The return curb may be omitted where the non-walkable surface is flared and the curb adjacent the roadway is tapered to meet flush curb at the bottom of the ramp.

INDIANA DEPARTMENT OF TRANSPORTATION

CURB RAMP DRAWING INDEX AND GENERAL NOTES

SEPTEMBER 2016

STANDARD DRAWING NO. E 604-SWCR-01

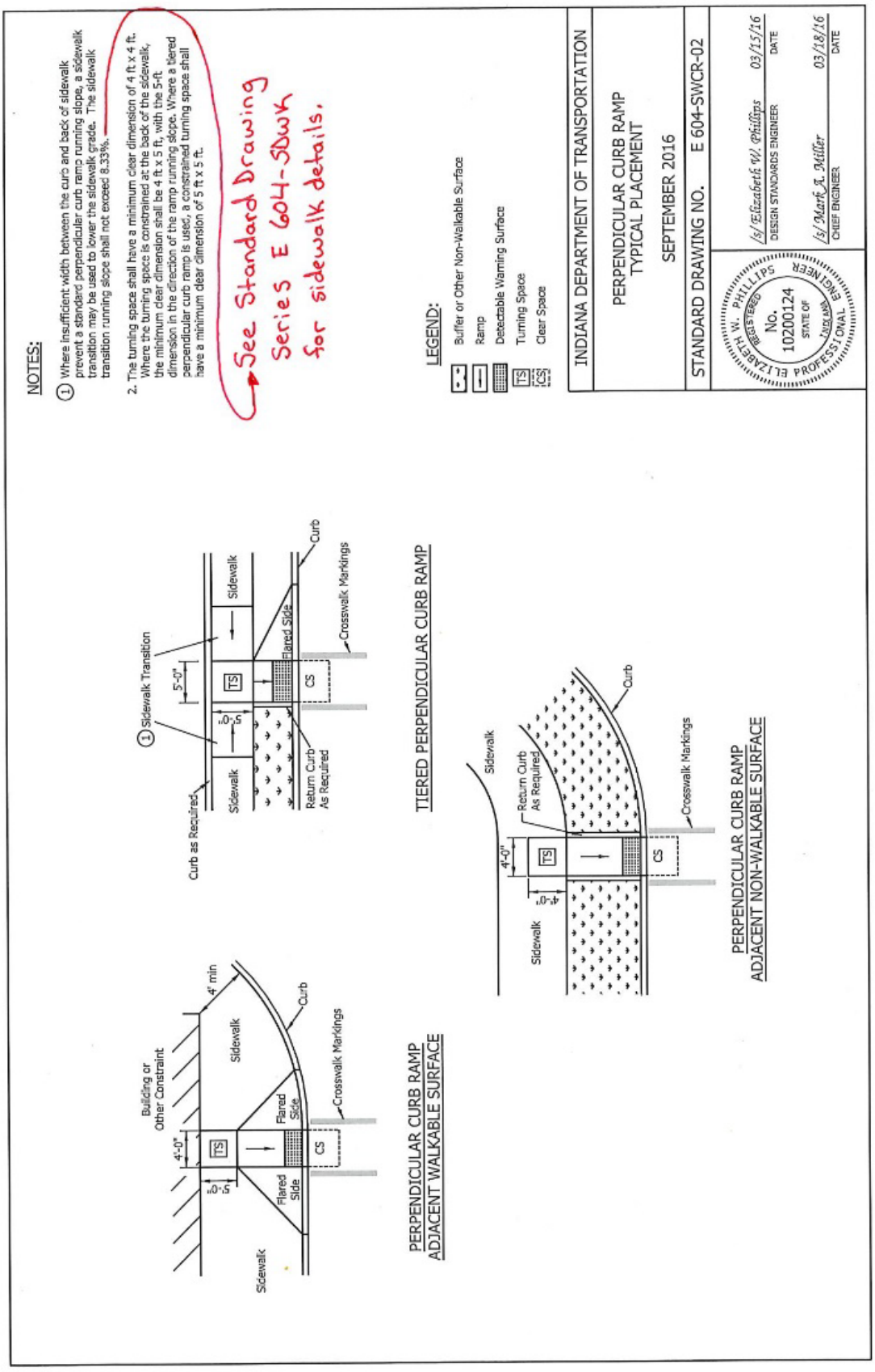
REGISTERED ELIZABETH W. PHILLIPS No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

/s/ Elizabeth W. Phillips 03/15/16
DESIGN STANDARDS ENGINEER DATE

/s/ Mark A. Miller 03/18/16
CHIEF ENGINEER DATE

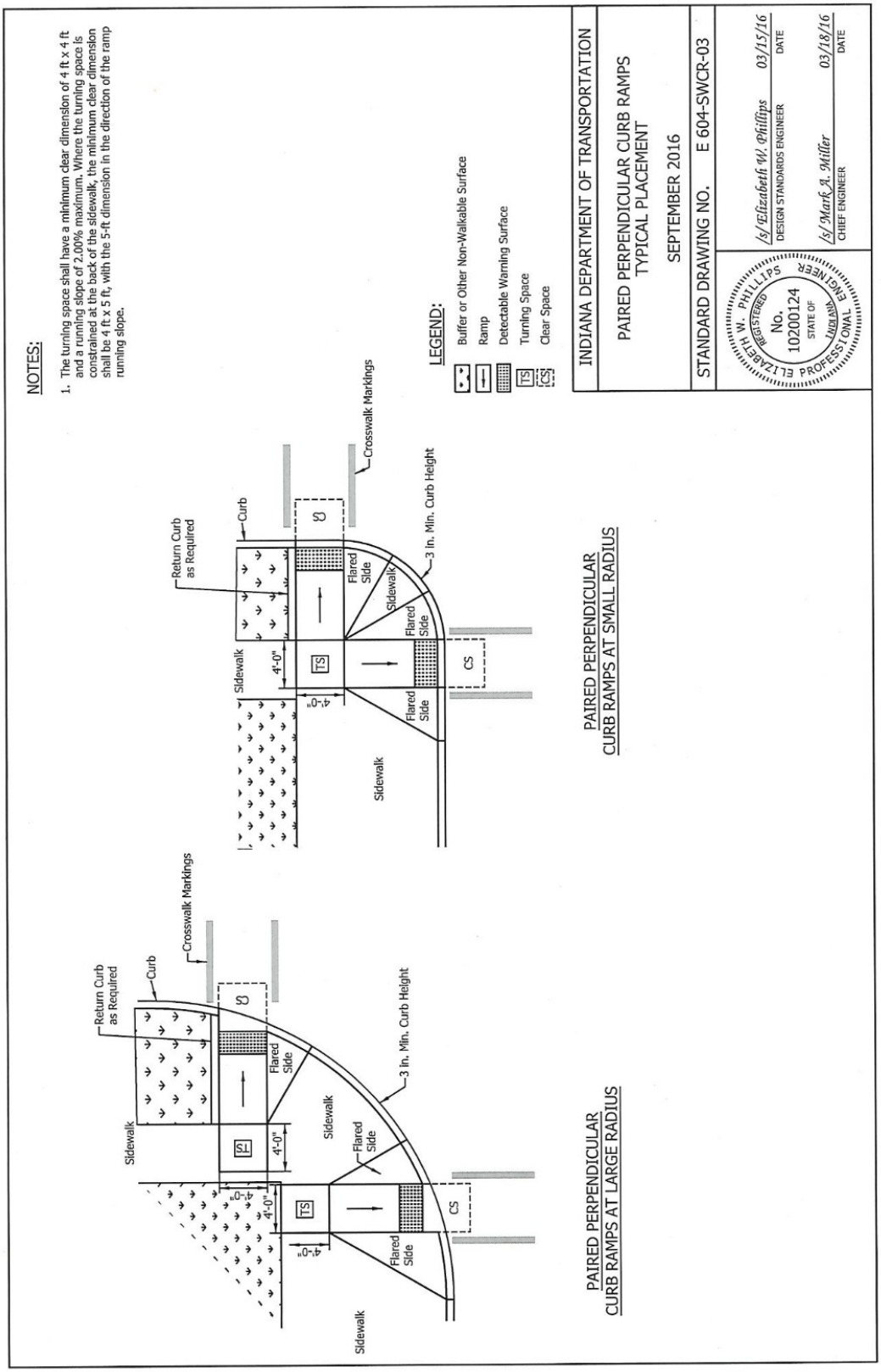
REVISION TO STANDARD DRAWINGS

604-SWCR-02 PERPENDICULAR CURB RAMP TYPICAL PLACEMENT (WITH MARKUPS)



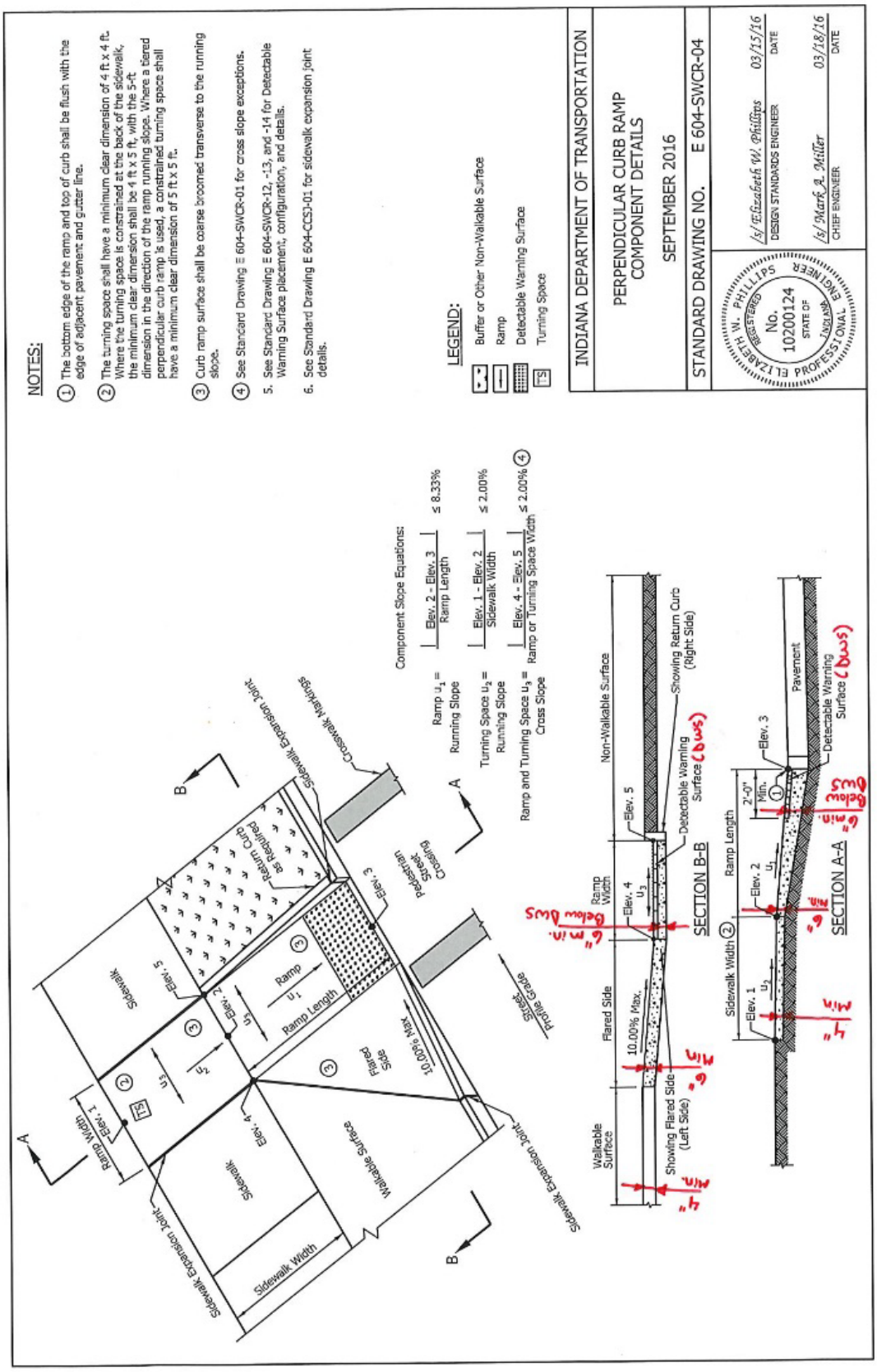
REVISION TO STANDARD DRAWINGS

604-SWCR-03 PAIRED PERPENDICULAR CURB RAMPS TYPICAL PLACEMENT (NO PROPOSED CHANGES)



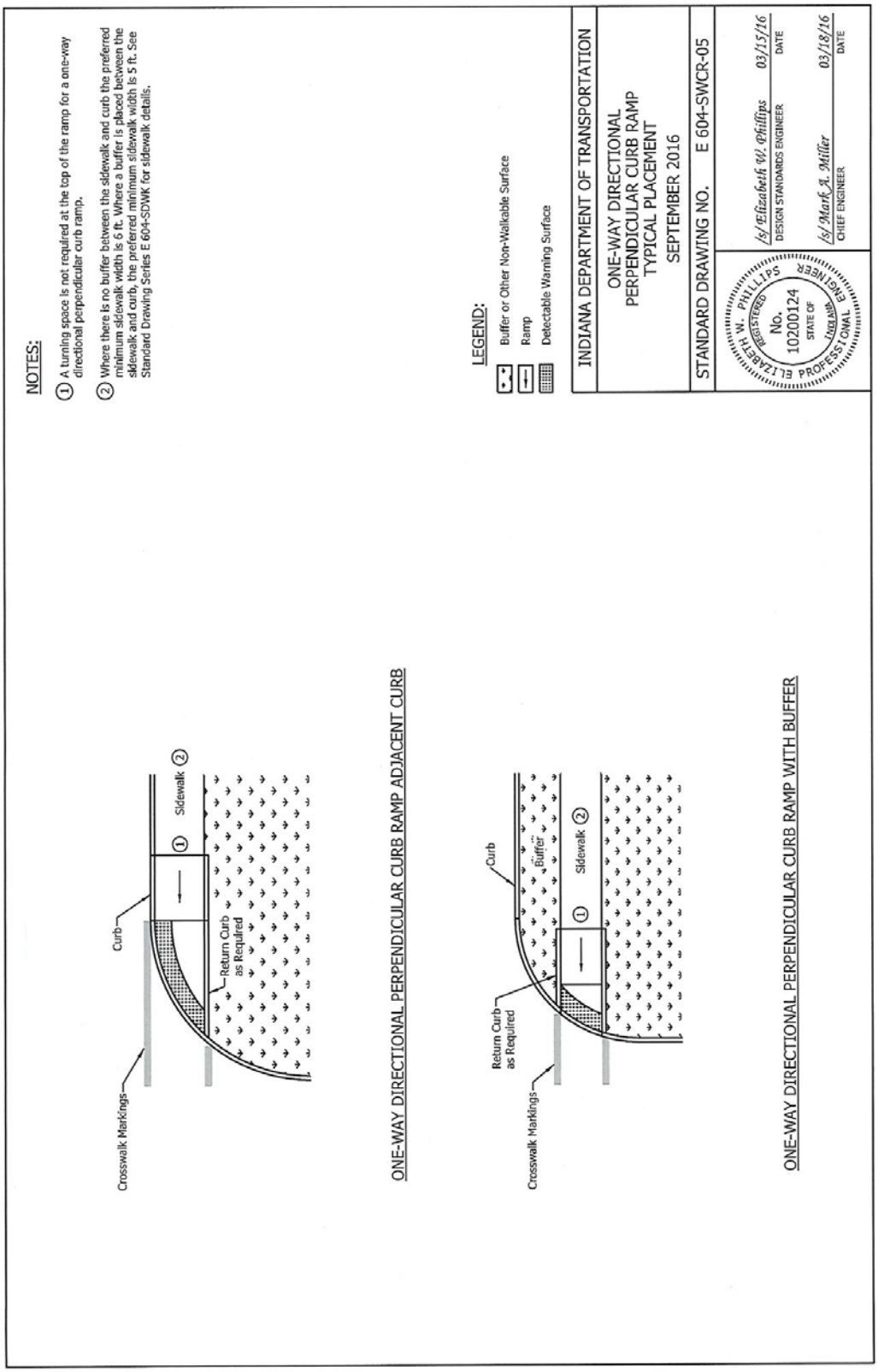
REVISION TO STANDARD DRAWINGS

604-SWCR-04 PERPENDICULAR CURB RAMP COMPONENT DETAILS (WITH MARKUPS)



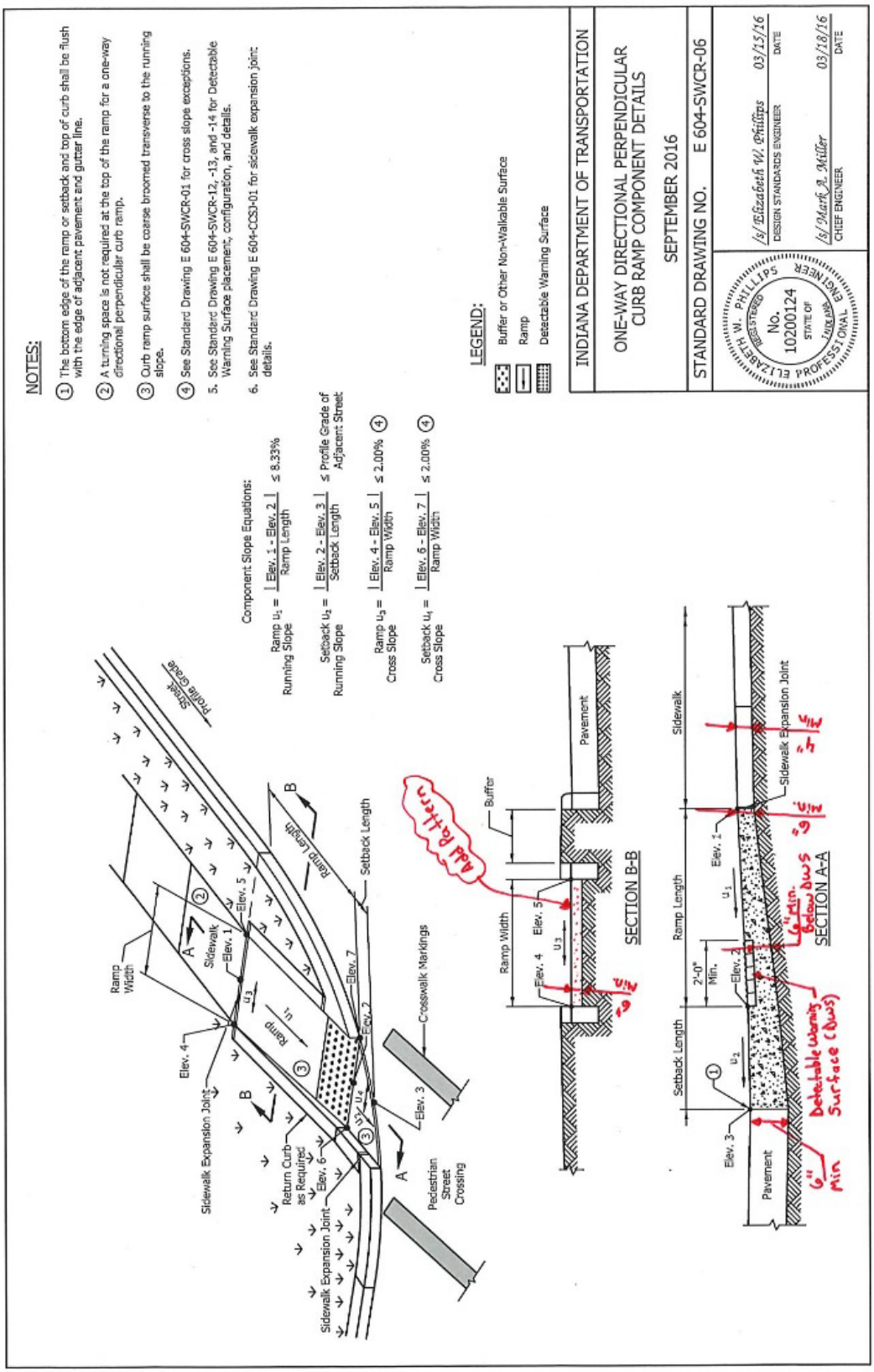
REVISION TO STANDARD DRAWINGS

604-SWCR-05 ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP TYPICAL PLACEMENT (NO PROPOSED CHANGES)



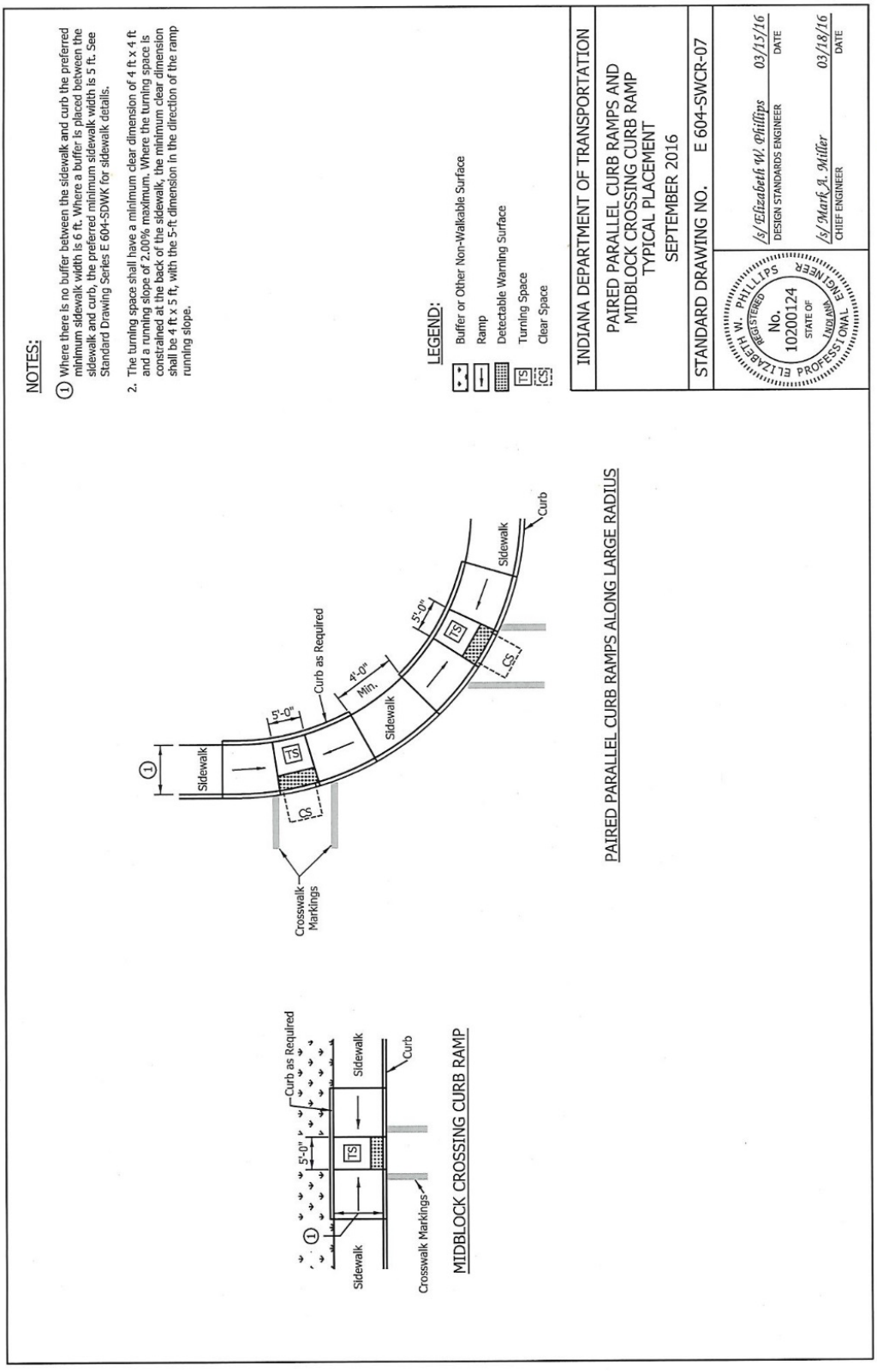
REVISION TO STANDARD DRAWINGS

604-SWCR-06 ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP COMPONENT DETAILS (WITH MARKUPS)



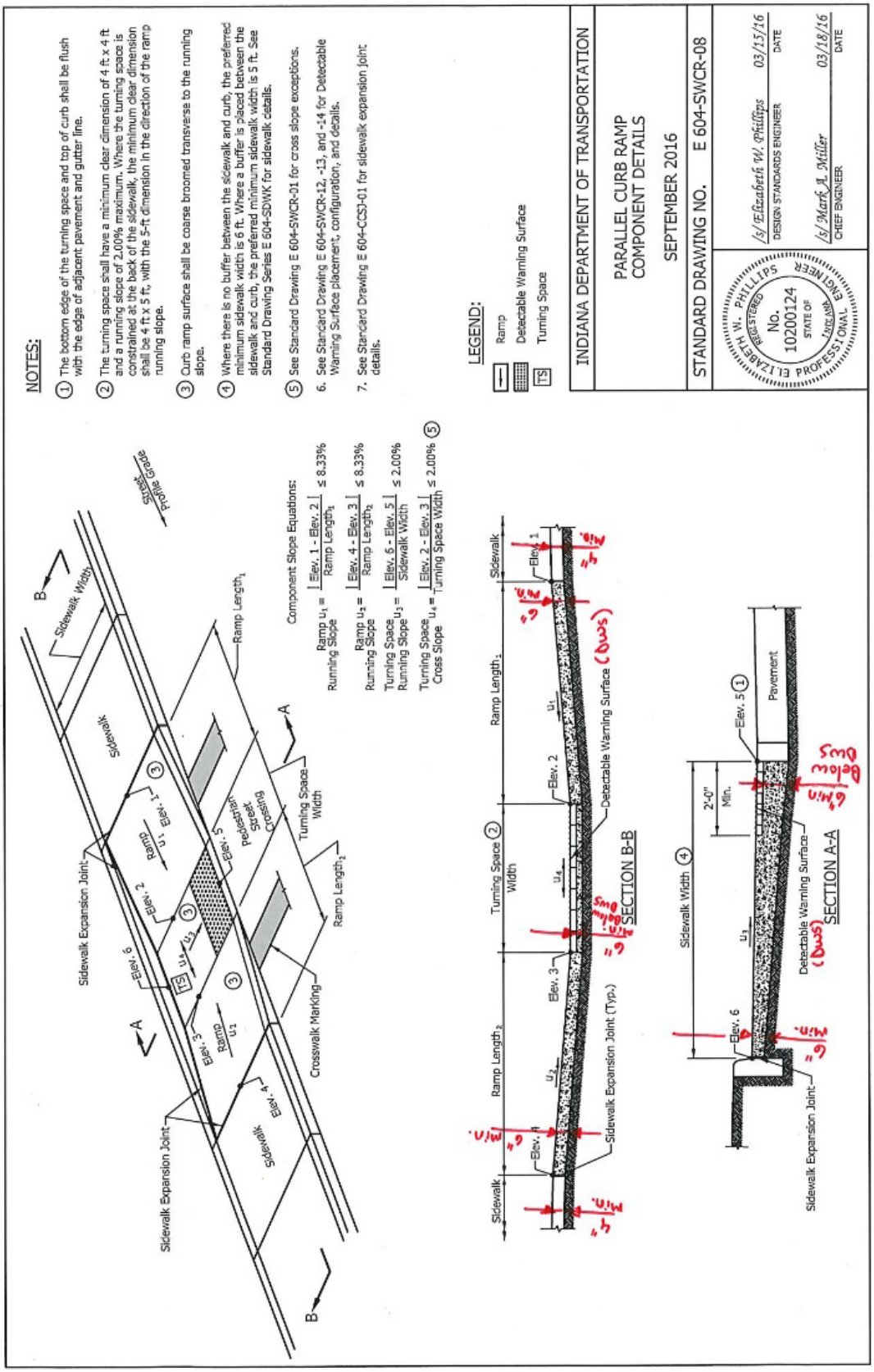
REVISION TO STANDARD DRAWINGS

604-SWCR-07 PAIRED PARALLEL CURB RAMPS AND MIDBLOCK CROSSING CURB RAMP TYPICAL PLACEMENT (NO PROPOSED CHANGES)



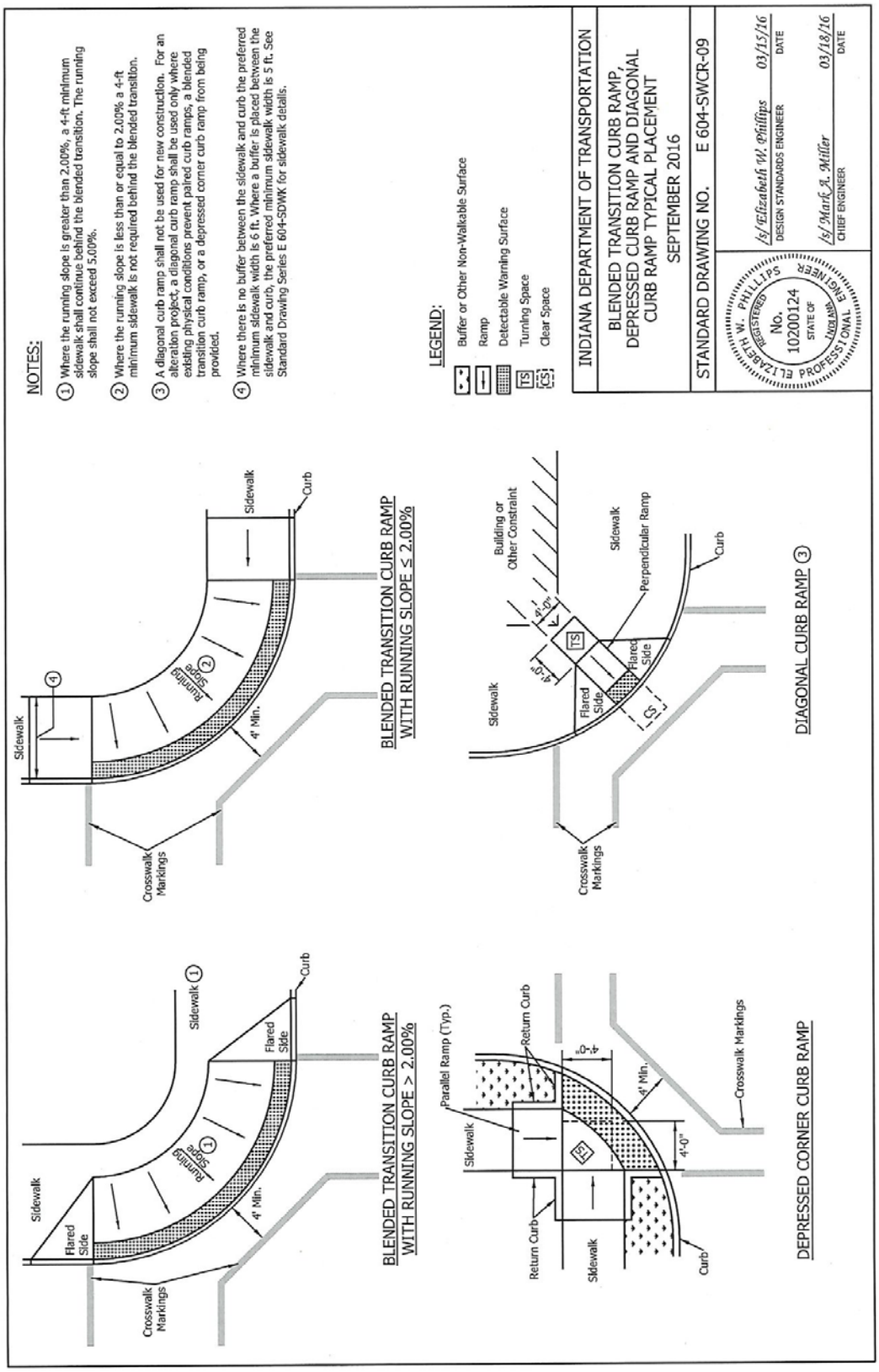
REVISION TO STANDARD DRAWINGS

604-SWCR-08 PARALLEL CURB RAMP COMPONENT DETAILS (WITH MARKUPS)



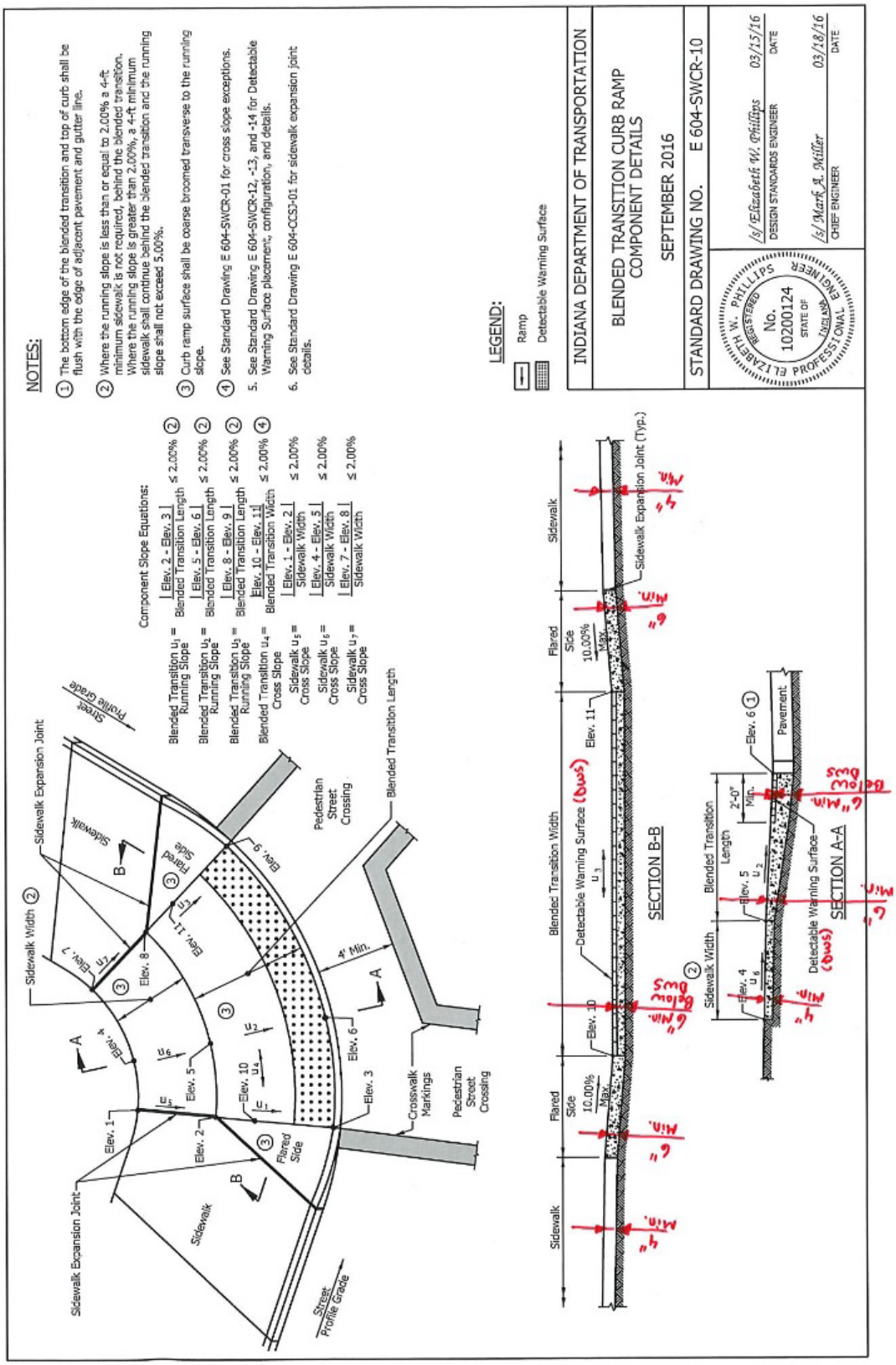
REVISION TO STANDARD DRAWINGS

604-SWCR-09 BLENDED TRANSITION CURB RAMP, DEPRESSED CURB RAMP AND DIAGONAL CURB RAMP TYPICAL PLACEMENT (NO PROPOSED CHANGES)



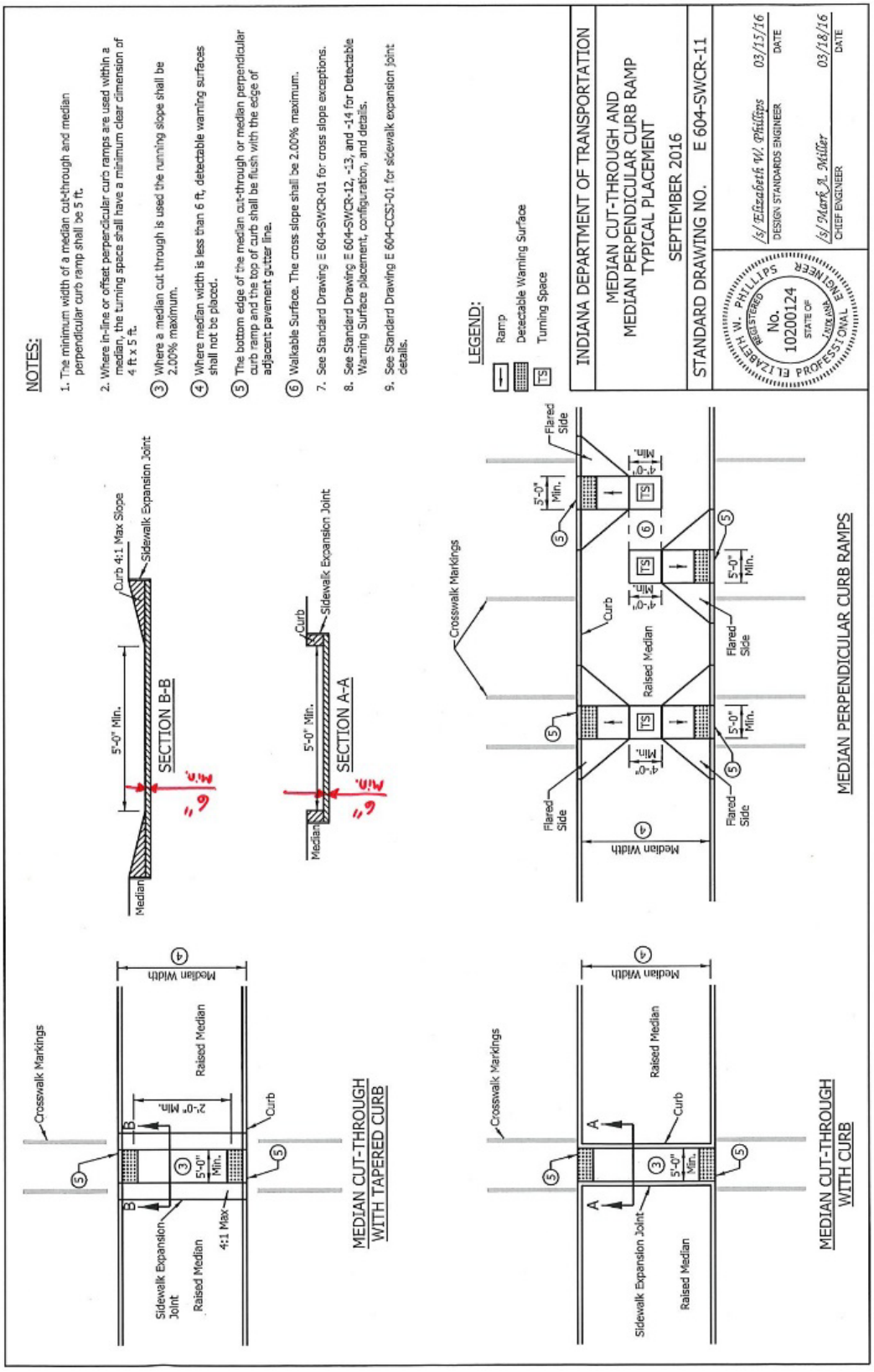
REVISION TO STANDARD DRAWINGS

604-SWCR-10 BLENDED TRANSITION CURB RAMP COMPONENT DETAILS (WITH MARKUPS)



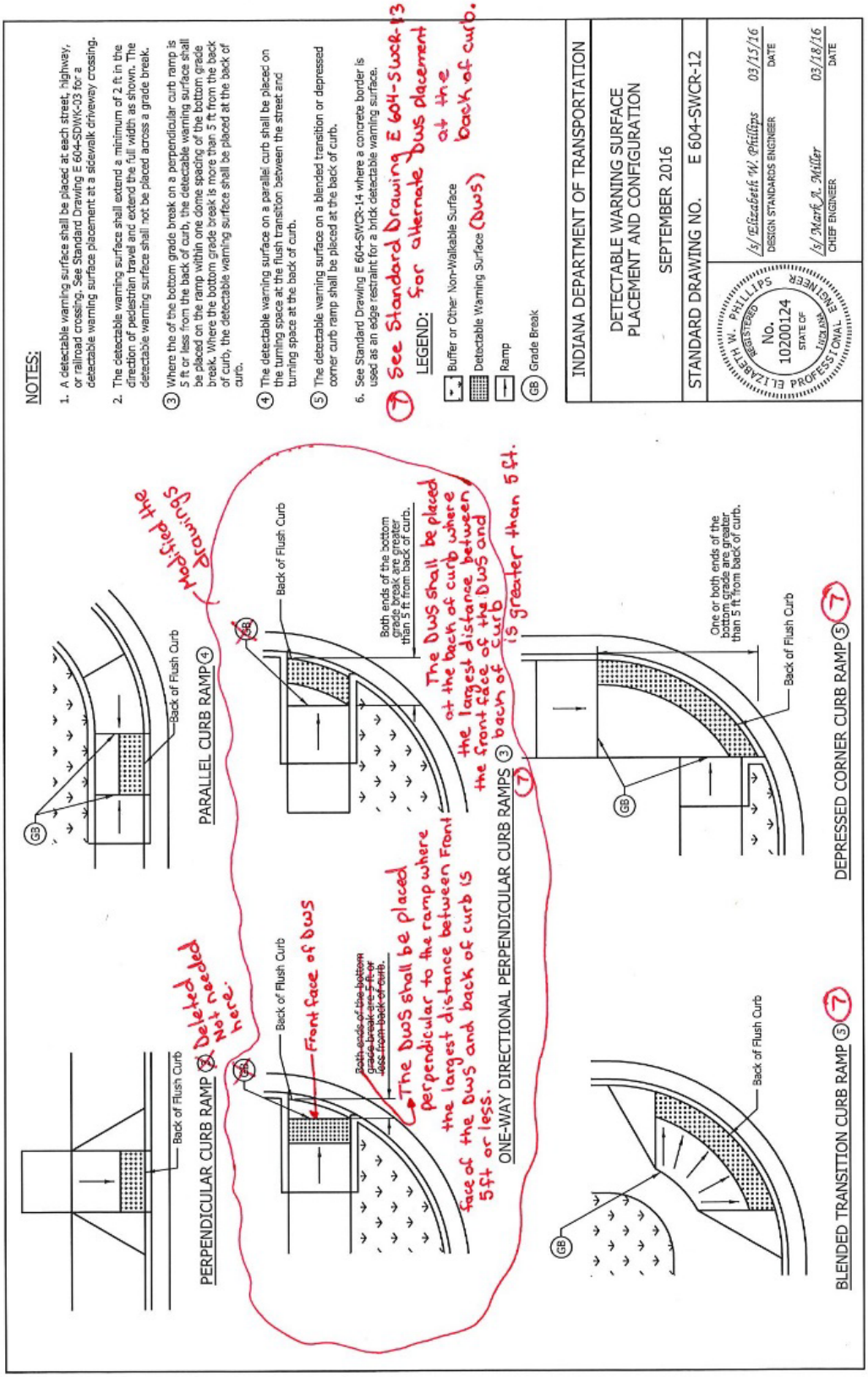
REVISION TO STANDARD DRAWINGS

604-SWCR-11 MEDIAN CUT-THROUGH AND MEDIAN PERPENDICULAR CURB RAMP TYPICAL PLACEMENT (WITH MARKUPS)



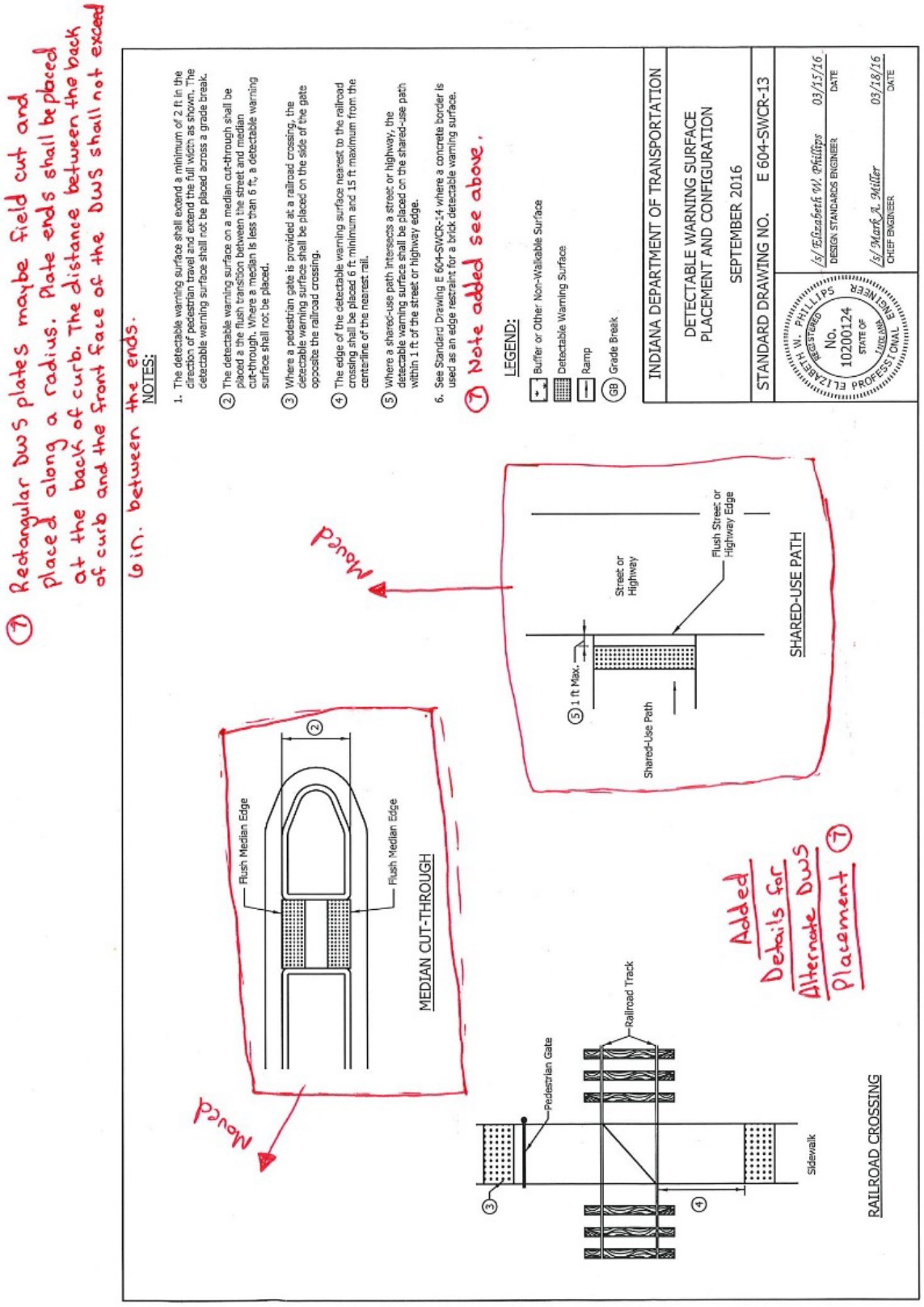
REVISION TO STANDARD DRAWINGS

604-SWCR-12 DETECTABLE WARNING SURFACE PLACEMENT AND CONFIGURATION (WITH MARKUPS)



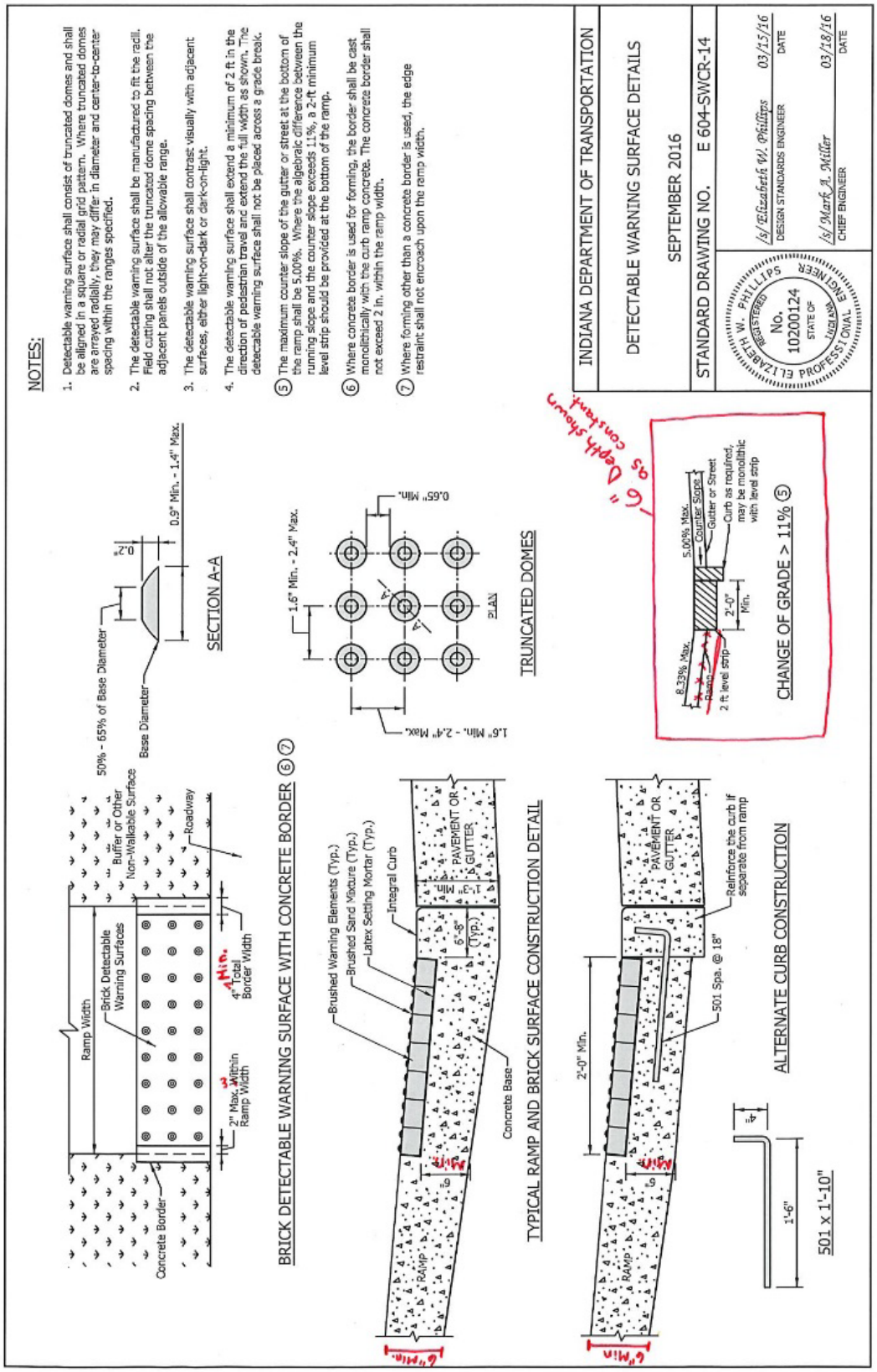
REVISION TO STANDARD DRAWINGS

604-SWCR-13 DETECTABLE WARNING SURFACE PLACEMENT AND CONFIGURATION (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

604-SWCR-14 DETECTABLE WARNING SURFACE DETAILS (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

604-SWCR-01 CURB RAMP DRAWING INDEX AND GENERAL NOTES (DRAFT)

INDEX

SHEET NO.	SUBJECT
1	Curb Ramp Drawing Index and General Notes
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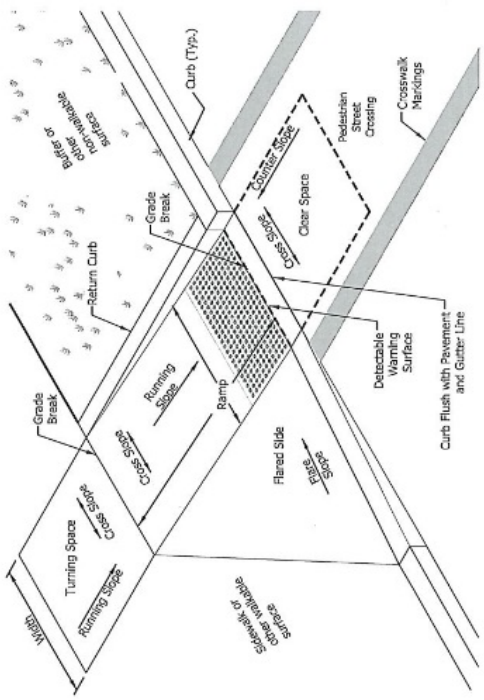
12-13	Detectable Warning Surface Placement and Configuration
14	Detectable Warning Surface Details



GENERAL NOTES:

1. All slopes are absolute rather than relative to the sidewalk or roadway grade. Slopes at least 0.50% less than the maximum are preferred.
2. Ramp or Blended Transition. A ramp or blended transition shall be used to lower or raise the sidewalk to connect with the street or highway.
3. Turning Space. A turning space shall be provided at the top of a perpendicular ramp, bottom of a parallel ramp, or where the pedestrian travel requires a change in direction. A common turning space may be shared by adjacent ramps. The turning space shall have a minimum clear dimension of 4 ft x 4 ft. Where the turning space is constrained at the back of the sidewalk by a curb, retaining wall, building, or feature over 2 inches in height, the minimum clear dimension shall be 4 ft x 5 ft, with the 5-ft dimension in the direction of the ramp running slope.
4. Flared Side. A flared side shall be used adjacent to a walkable surface. A flared side may be used adjacent to a non-walkable surface. A flared side shall have a maximum slope of 10.00% measured parallel to the back of the curb.
5. Return Curb. A return curb is placed perpendicular to the roadway curb. A return curb may be used adjacent to a non-walkable surface. A return curb shall not be used adjacent to a walkable surface. The return curb may be omitted where the non-walkable surface is flared and the curb adjacent the roadway is tapered to meet the flush curb at the bottom of the ramp.
6. Clear Space. A clear space shall be provided beyond the bottom grade break of a curb ramp wholly contained within the crosswalk and wholly outside the parallel vehicular travel path. The clear space shall have a minimum clear dimension of 4 ft x 4 ft.
7. Detectable Warning Surface. A detectable warning surface shall be placed at each street, highway, or railroad crossing. A detectable warning surface shall extend a minimum of 2 ft in the direction of pedestrian travel and be placed the entire width of a ramp, blended transition, or turning space.
8. Running Slope. The running slope of a ramp, blended transition, or turning space shall be measured parallel to the direction of pedestrian travel.
   a. A running slope of 2.00% or less is considered level.
   b. A ramp shall have a maximum running slope of 8.33% but shall not require a ramp length to exceed 15 ft.
   c. A blended transition shall have a maximum running slope of 5.00%.
   d. A turning space shall have a maximum running slope of 2.00%.
9. Width. Unless otherwise noted, minimum width of a ramp, blended transition, or turning space, excluding flared sides or return curb, shall be 4 ft.
10. Grade Break. A grade break at the top and bottom of a ramp, blended transition, or turning space shall be perpendicular to the running slope. Grade breaks shall not be within the ramp, blended transition, turning space, or detectable warning surface. Grade breaks shall be flush. Vertical discontinuities shall not be greater than 1/2 in. Where a discontinuity is greater than 1/4 in, the surface shall be beveled with a slope not steeper than 1V:2H.
11. Cross Slope Exceptions. The cross slope of a ramp, blended transition, or turning space shall be measured perpendicular to the direction of pedestrian travel.
    a. The maximum cross slope at a pedestrian street crossing without yield or stop control shall be 5.00%.
    b. The maximum cross slope at a pedestrian street crossing with yield or stop control shall be 2.00%.
    c. The maximum cross slope at a midblock crossing shall be the established grade of the adjacent roadway.
12. Objects such as a utility cover, vault frame, and grating shall be placed outside the curb ramp.
13. Curb ramps shall be placed within the marked crosswalk area.
14. Drainage inlets should be located uphill from a curb ramp to prevent ponding in the path of pedestrian travel.

INDIANA DEPARTMENT OF TRANSPORTATION

CURB RAMP DRAWING INDEX AND GENERAL NOTES

SEPTEMBER 2016

STANDARD DRAWING NO. E 604-SWCR-01

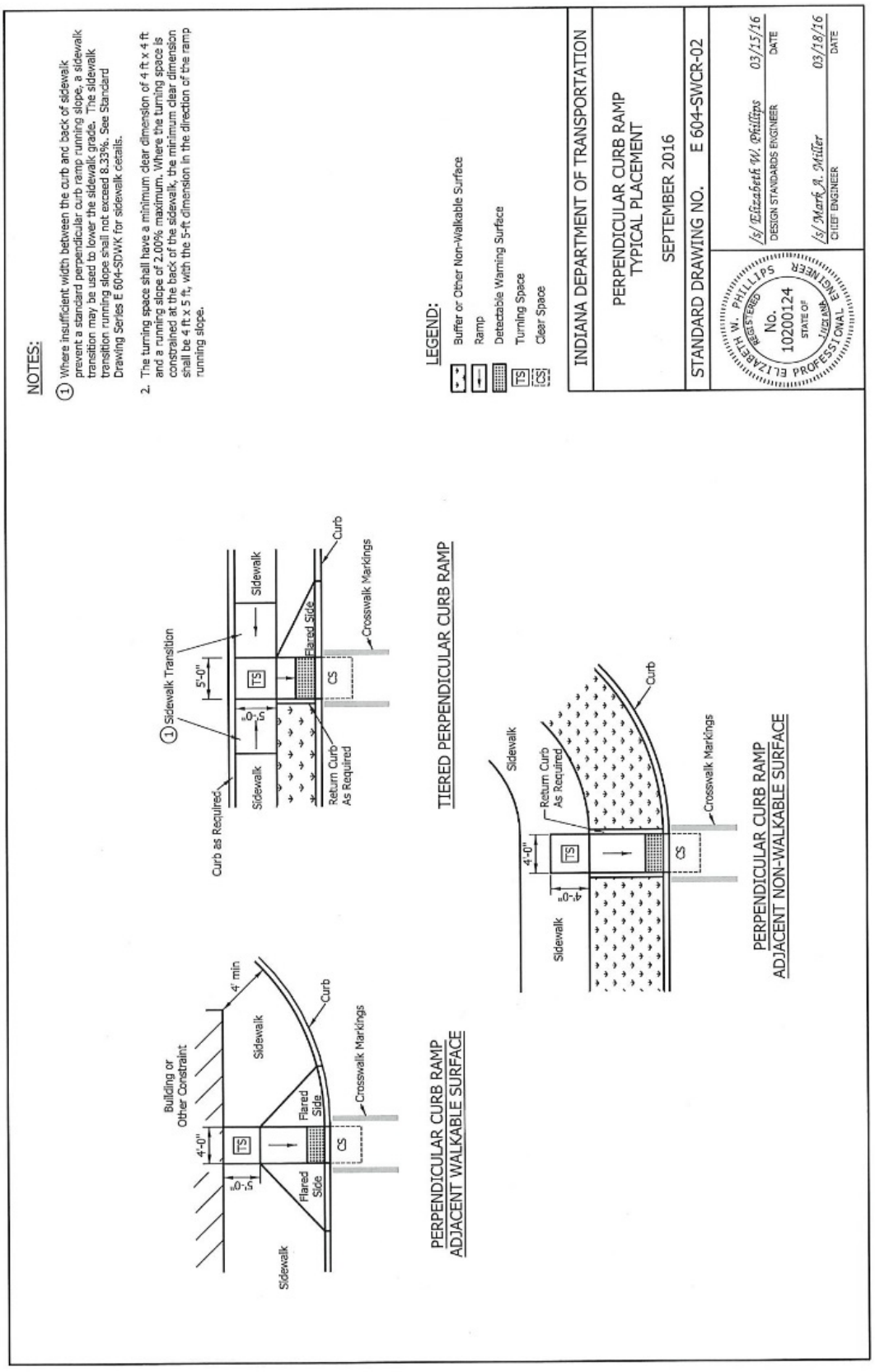
REGISTERED ELIZABETH W. PHILLIPS No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

/s/ Elizabeth W. Phillips 03/15/16
DESIGN STANDARDS ENGINEER DATE

/s/ Mark A. Miller 03/18/16
CHIEF ENGINEER DATE

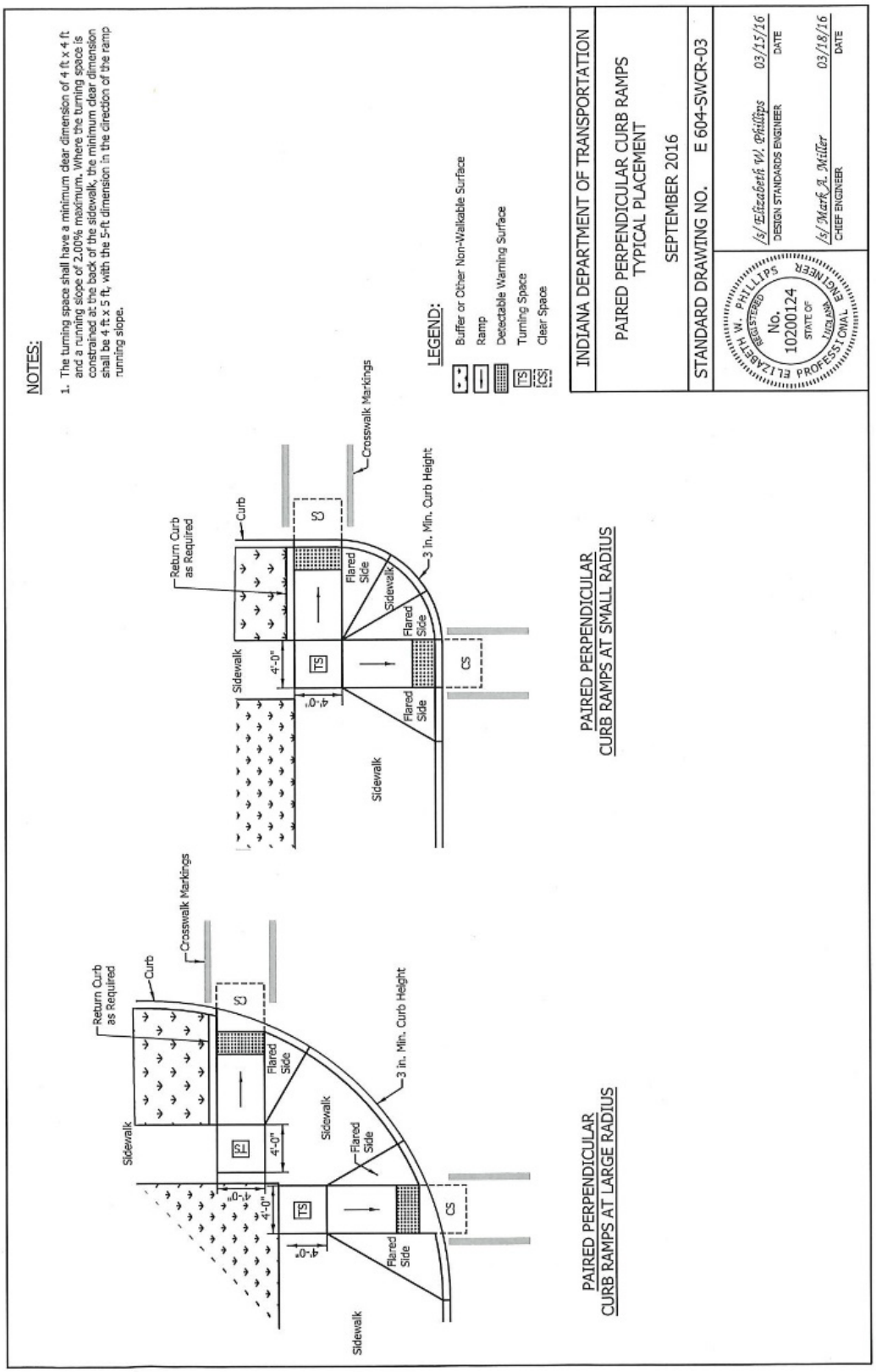
REVISION TO STANDARD DRAWINGS

604-SWCR-02 PERPENDICULAR CURB RAMP TYPICAL PLACEMENT (DRAFT)



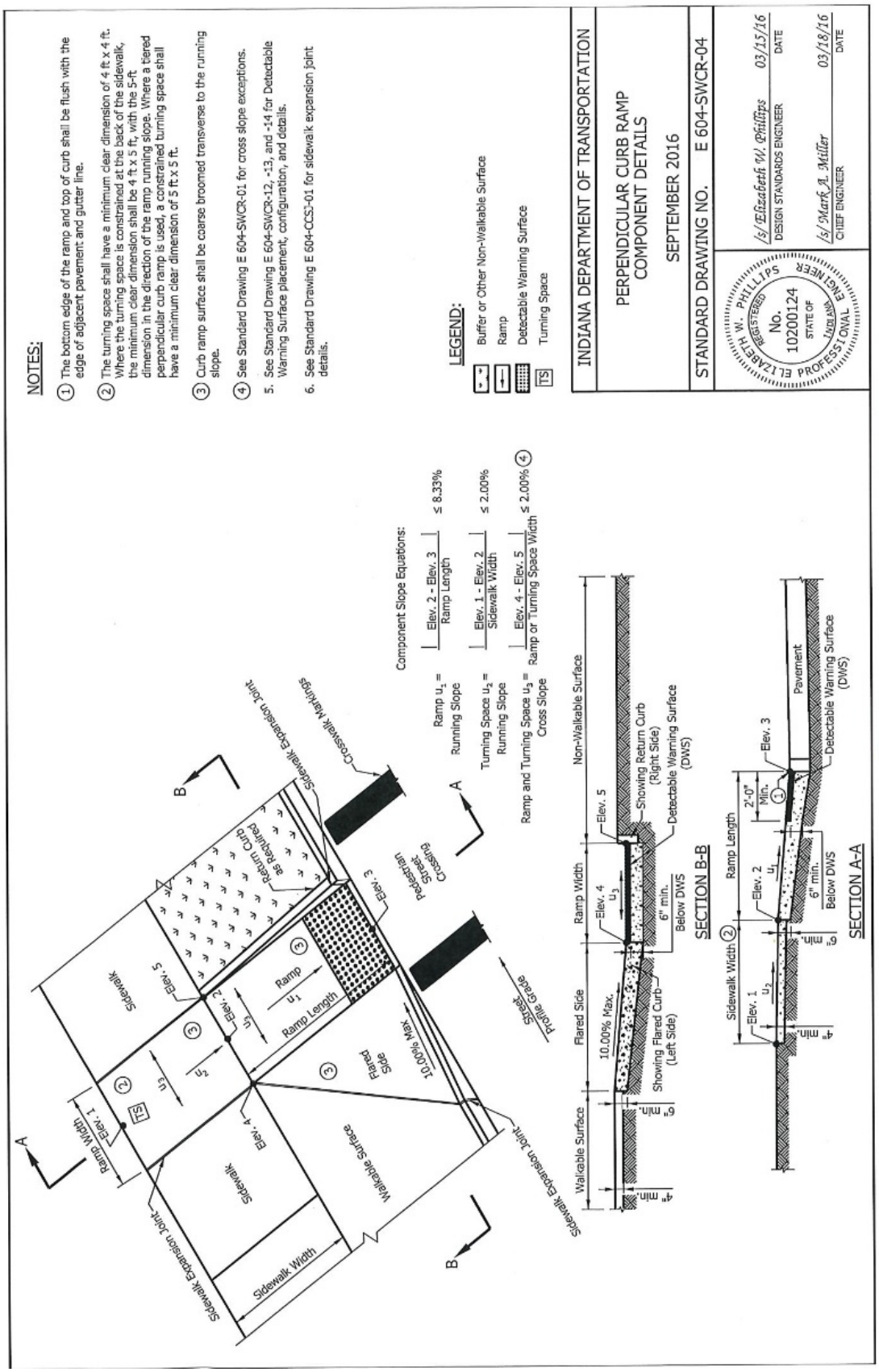
REVISION TO STANDARD DRAWINGS

604-SWCR-03 PAIRED PERPENDICULAR CURB RAMPS TYPICAL PLACEMENT (NO CHANGES)



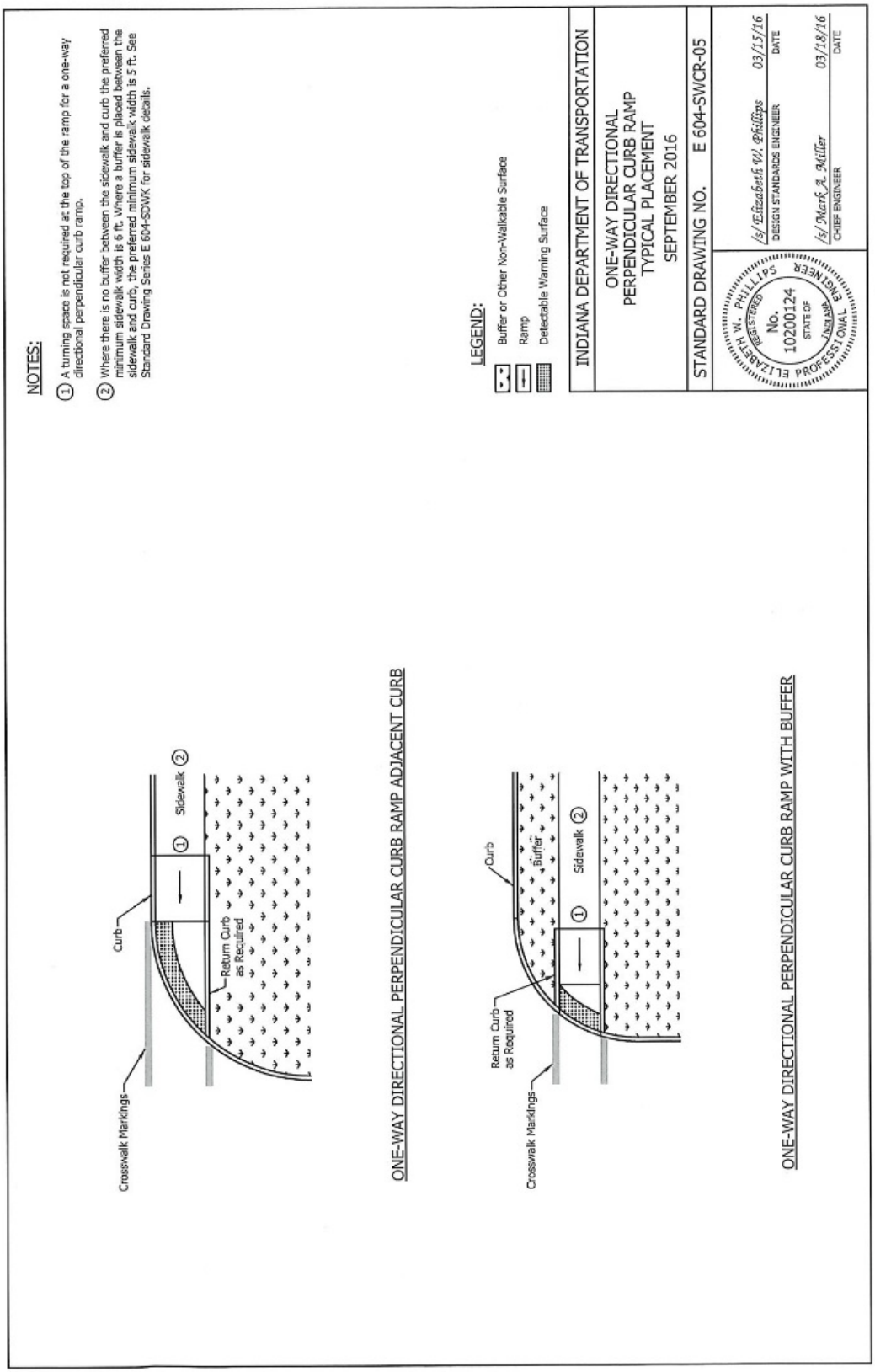
REVISION TO STANDARD DRAWINGS

604-SWCR-04 PERPENDICULAR CURB RAMP COMPONENT DETAILS (DRAFT)



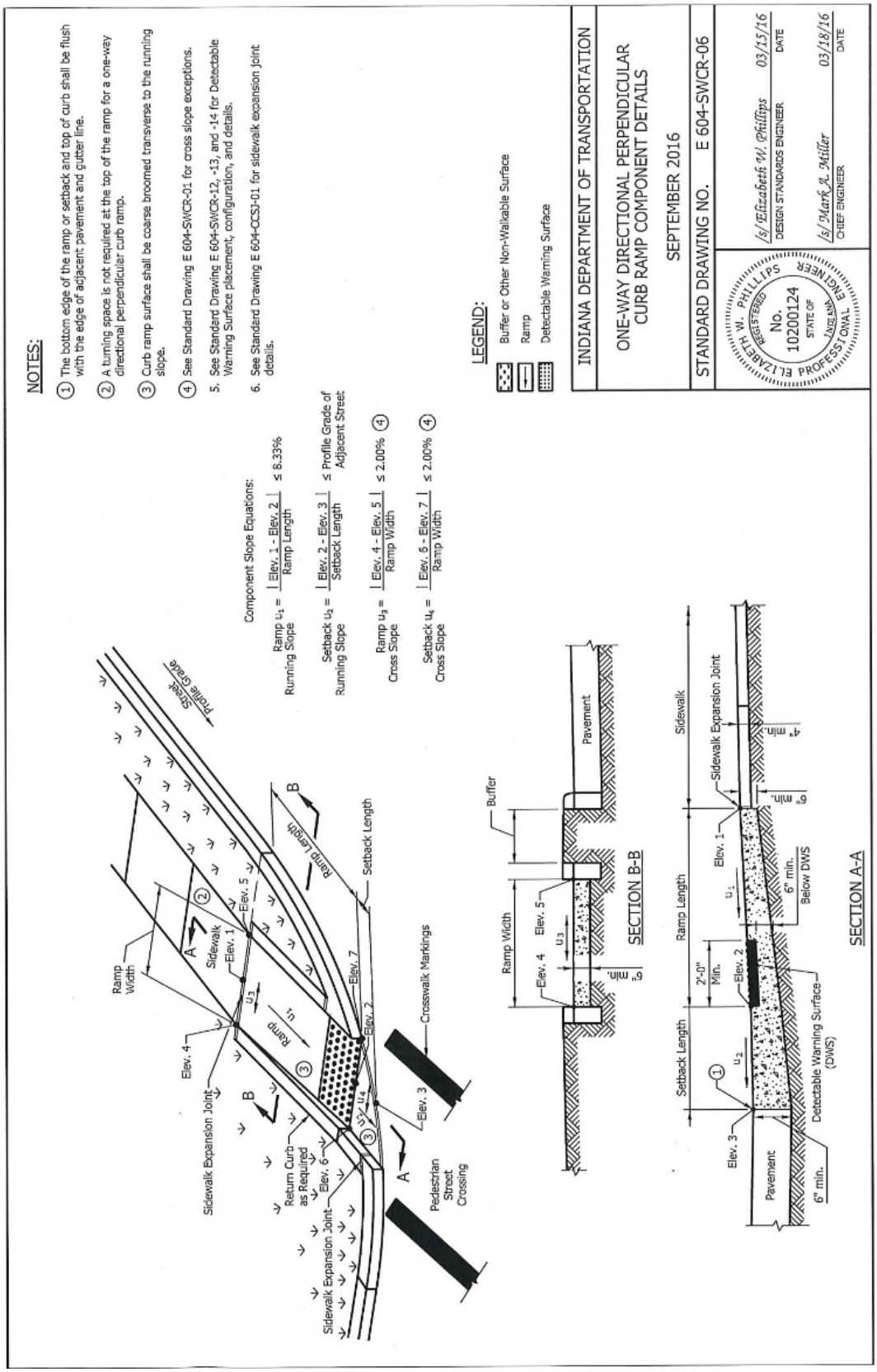
REVISION TO STANDARD DRAWINGS

604-SWCR-05 ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP TYPICAL PLACEMENT (NO CHANGES)



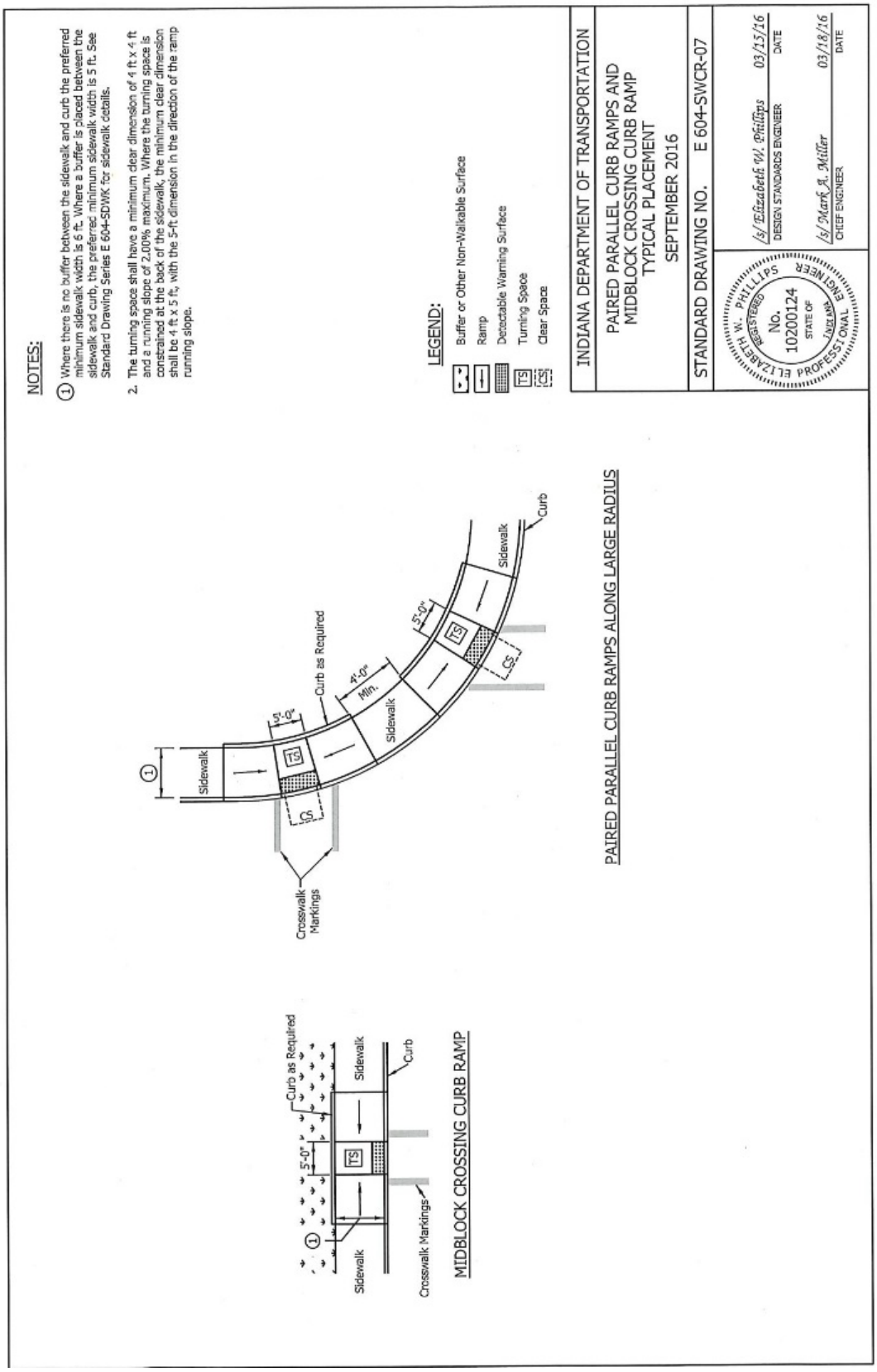
REVISION TO STANDARD DRAWINGS

604-SWCR-06 ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP COMPONENT DETAILS (DRAFT)



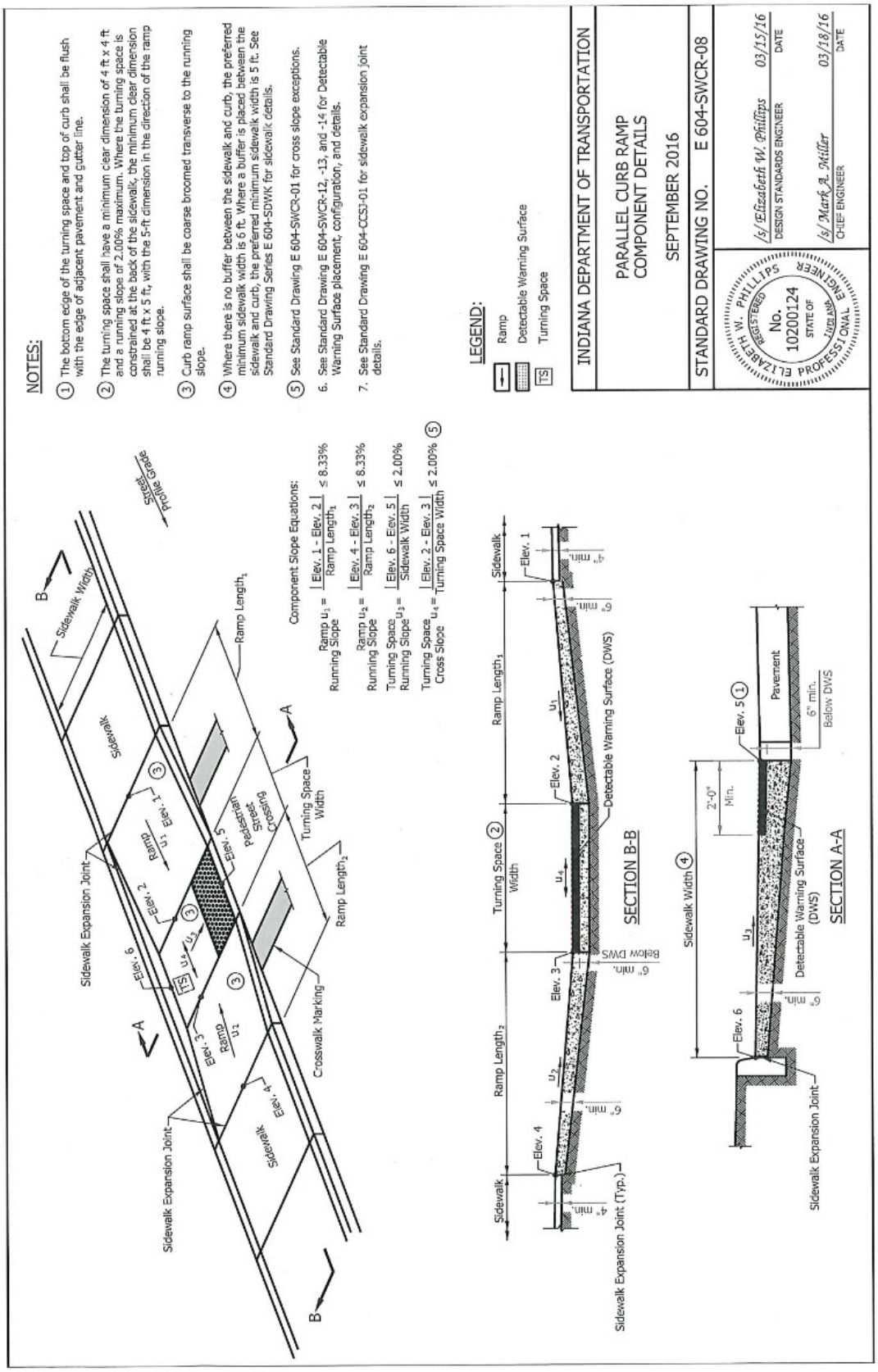
REVISION TO STANDARD DRAWINGS

604-SWCR-07 PAIRED PARALLEL CURB RAMPS AND MIDBLOCK CROSSING CURB RAMP TYPICAL PLACEMENT (NO CHANGES)



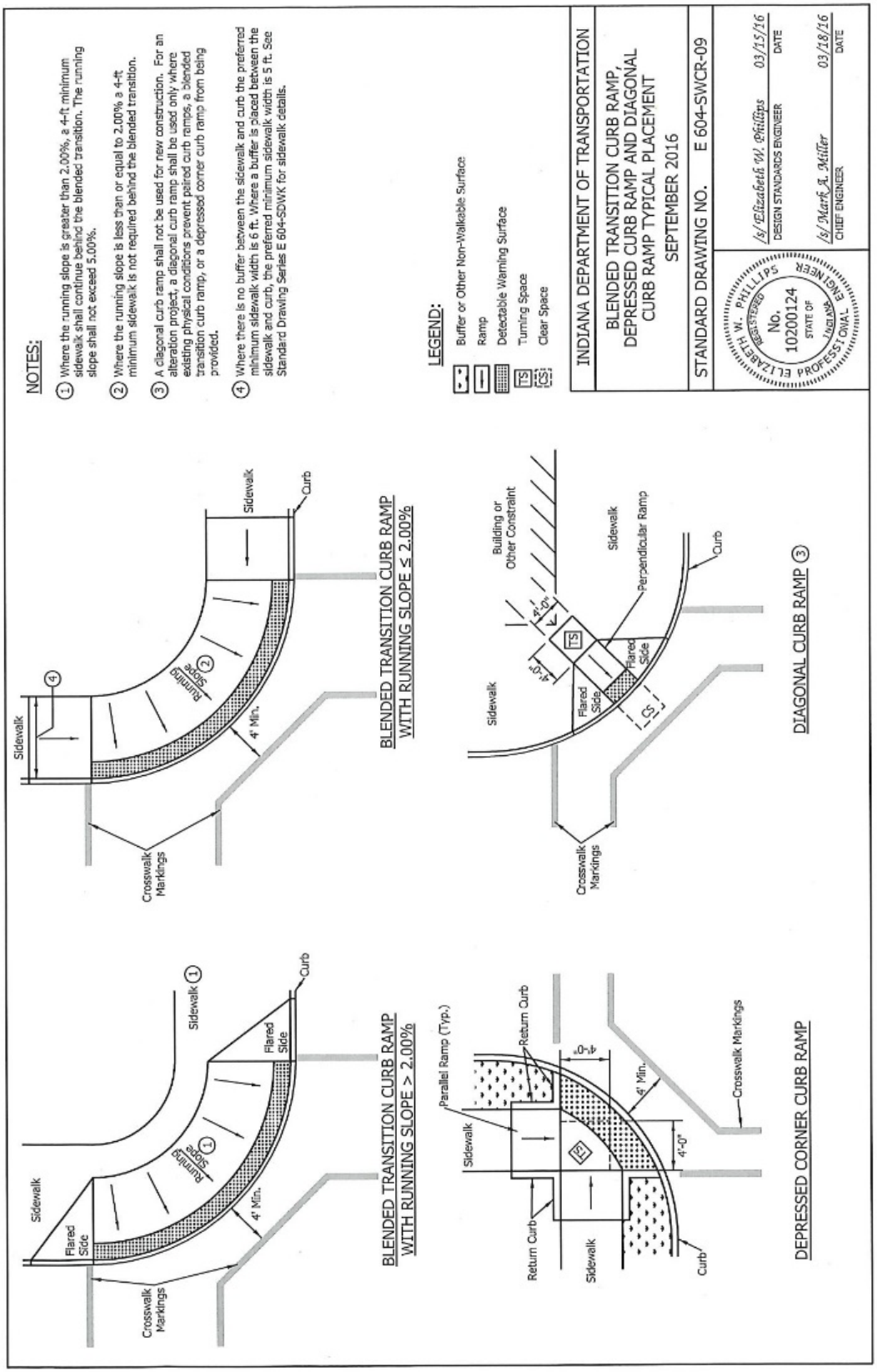
REVISION TO STANDARD DRAWINGS

604-SWCR-08 PARALLEL CURB RAMP COMPONENT DETAILS (DRAFT)



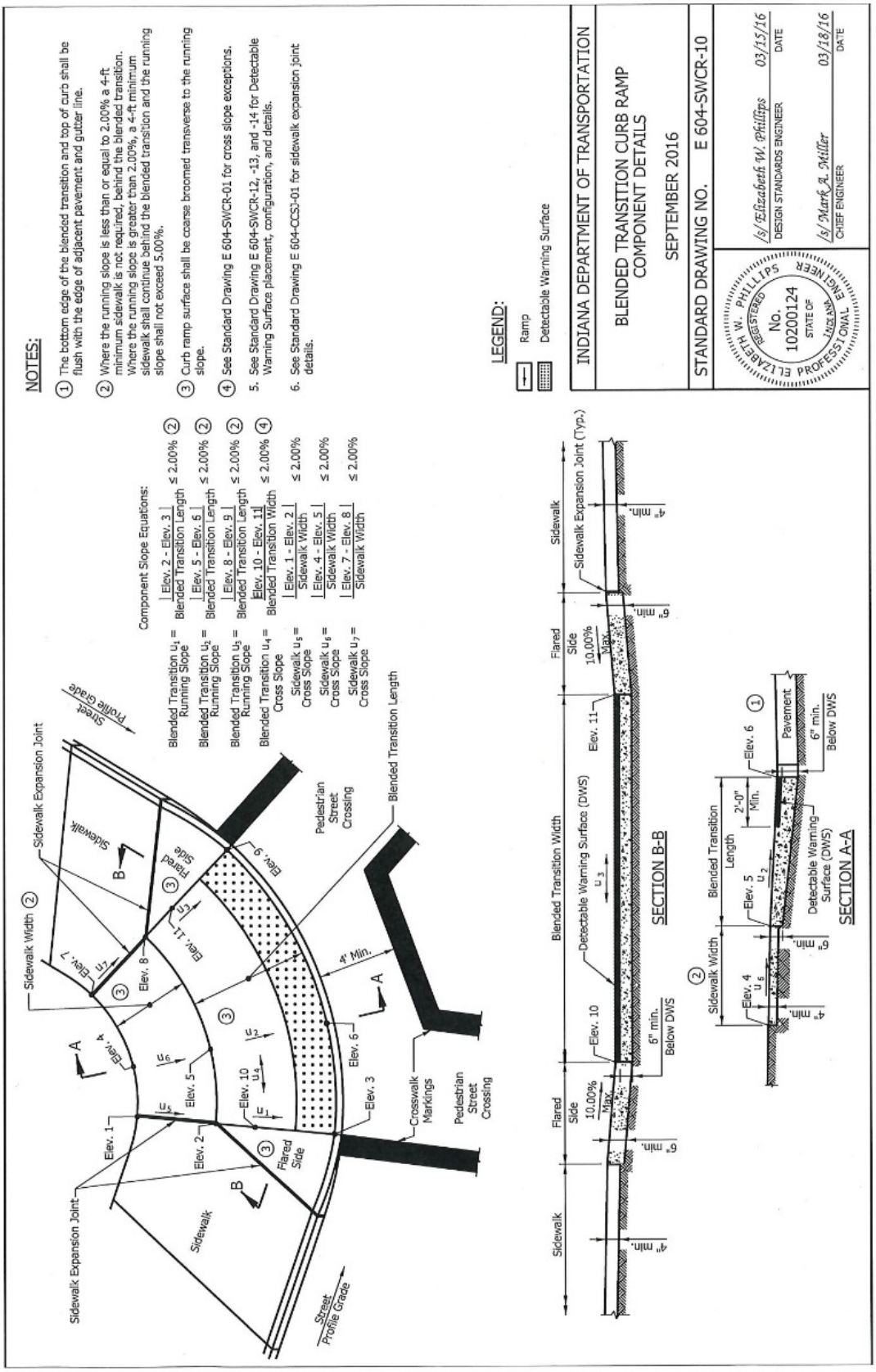
REVISION TO STANDARD DRAWINGS

604-SWCR-09 BLENDED TRANSITION CURB RAMP, DEPRESSED CURB RAMP AND DIAGONAL CURB RAMP TYPICAL PLACEMENT (NO CHANGES)



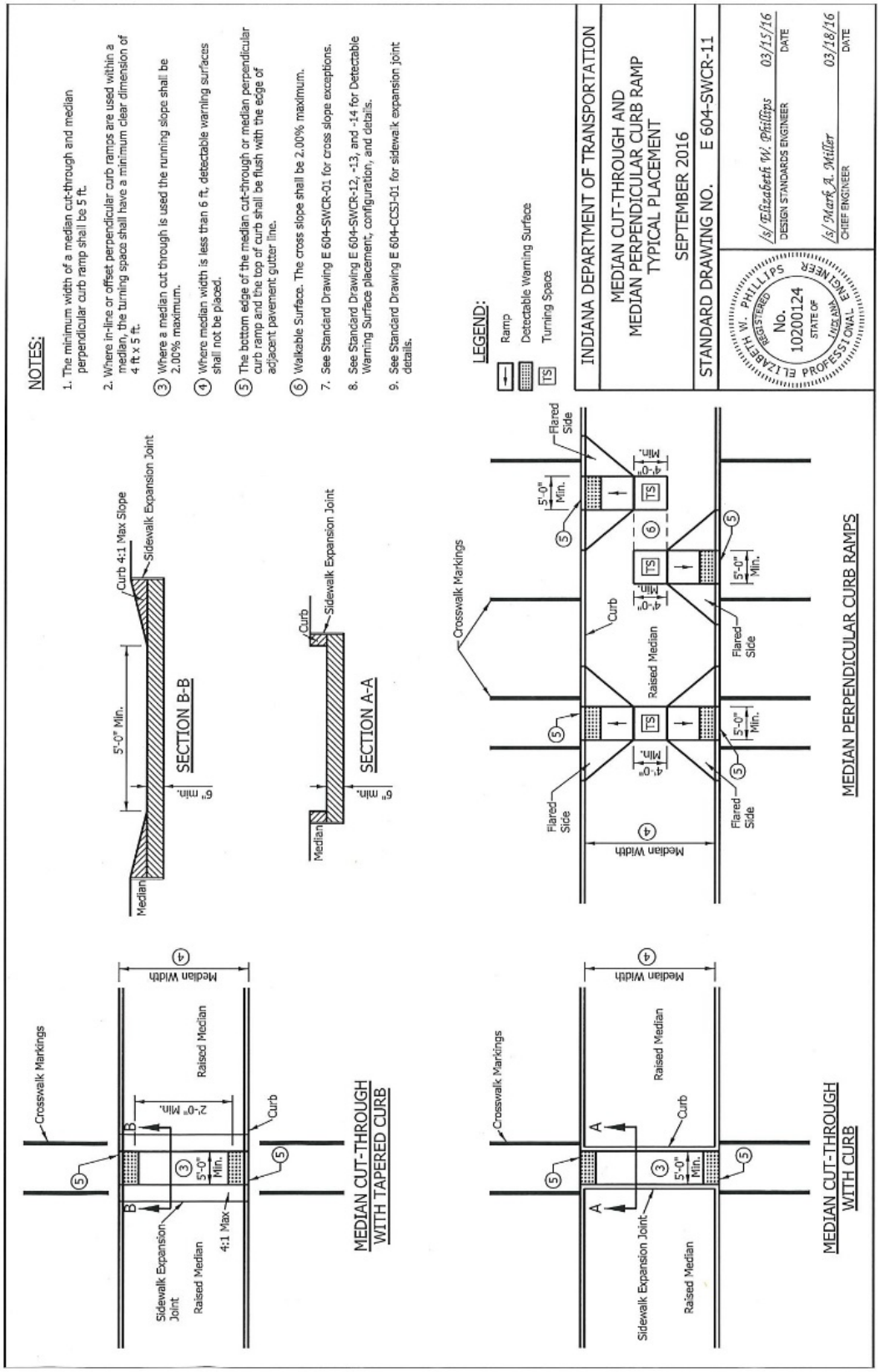
REVISION TO STANDARD DRAWINGS

604-SWCR-10 BLENDED TRANSITION CURB RAMP COMPONENT DETAILS (DRAFT)



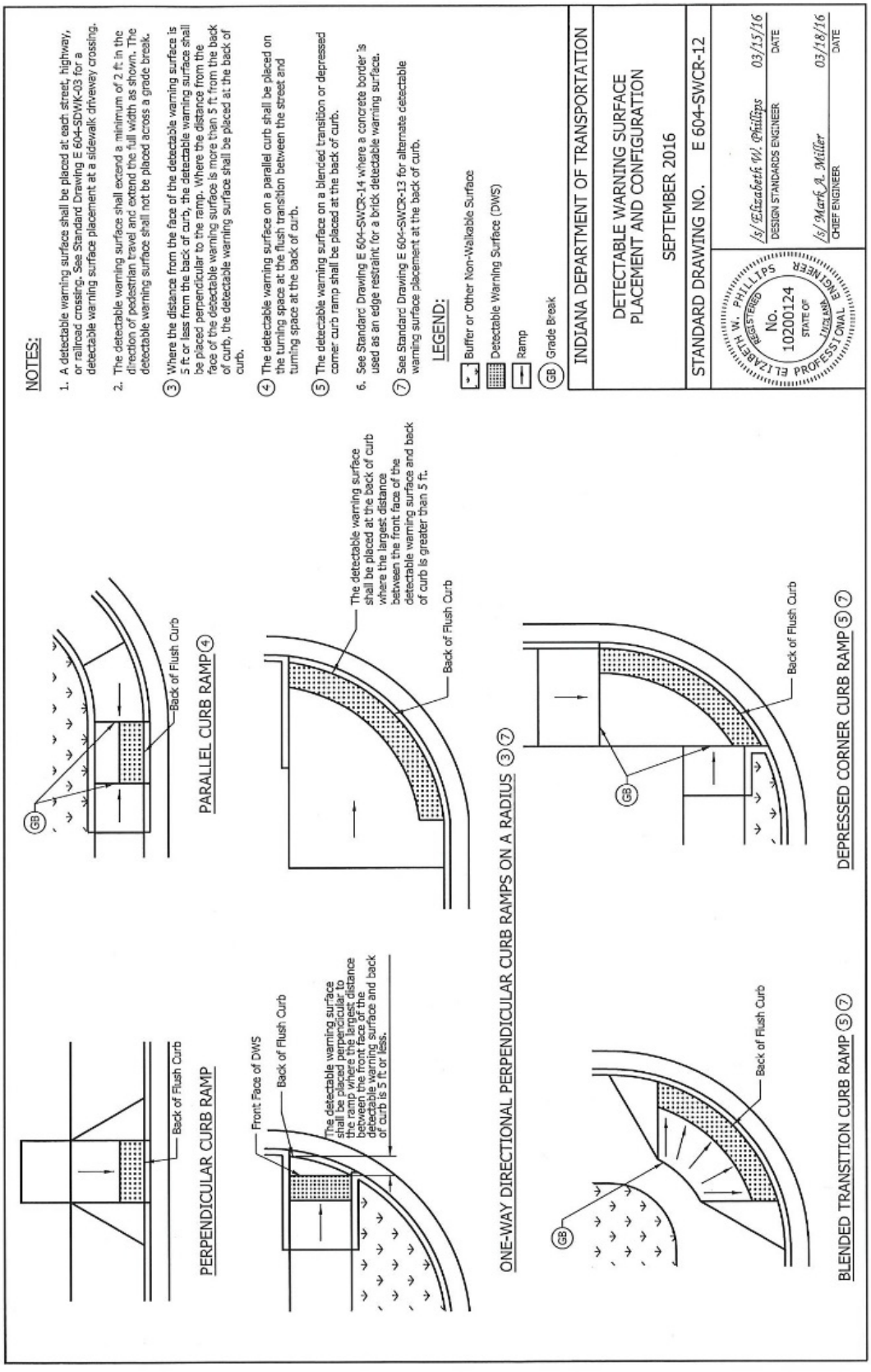
REVISION TO STANDARD DRAWINGS

604-SWCR-11 MEDIAN-CUT-THROUGH AND MEDIAN PERPENDICULAR CURB RAMP TYPICAL PLACEMENT (DRAFT)



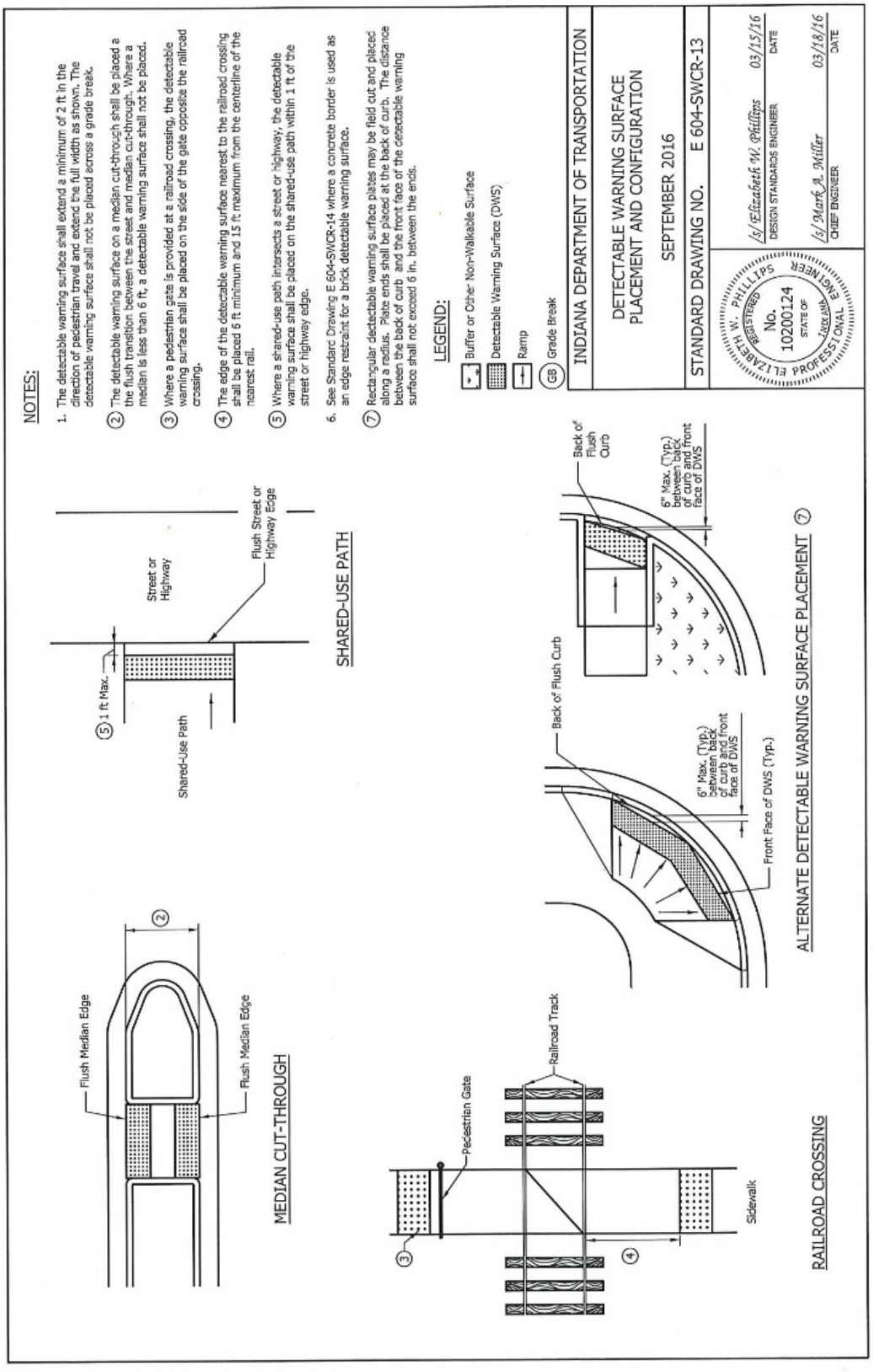
REVISION TO STANDARD DRAWINGS

604-SWCR-12 DETECTABLE WARNING SURFACE AND CONFIGURATION (DRAFT)



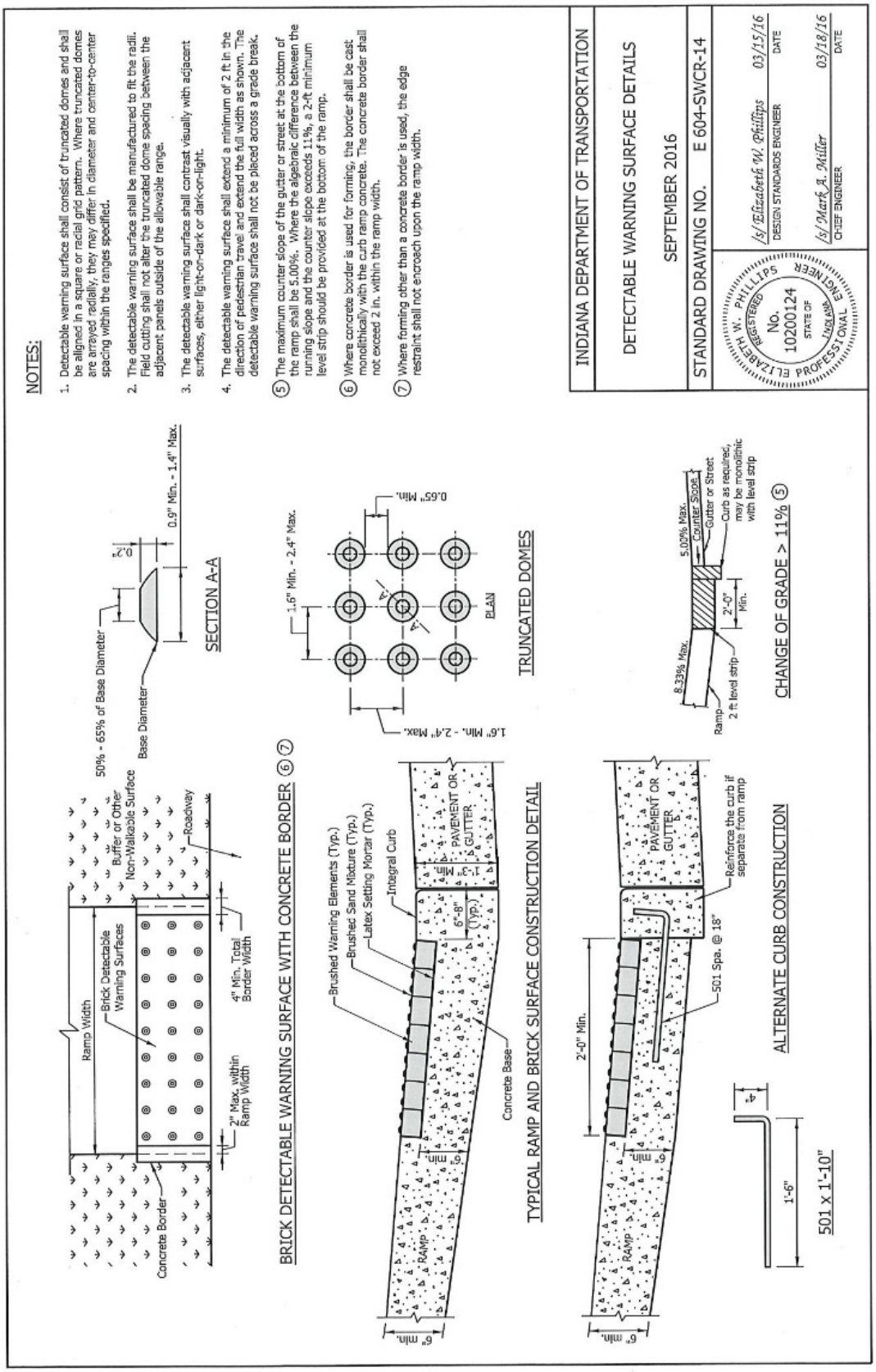
REVISION TO STANDARD DRAWINGS

604-SWCR-13 DETECTABLE WARNING SURFACE PLACEMENT AND CONFIGURATION (DRAFT)



REVISION TO STANDARD DRAWINGS

604-SWCR-14 DETECTABLE WARNING SURFACE DETAILS (DRAFT)



COMMENTS AND ACTION

604-SWCR-01 THROUGH -14

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: SECTION 604, begin pg 414 Recurring Special Provision affected: NONE Standard Drawing affected: 604-SWCR series Design Manual Sections affected: 51.1.0 GIFE Sections cross-references: 22.1	_____ 2020 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

Mr. Beeson
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Tack coat application consistency varies widely in the field. Best practices are routinely not followed as evidenced by the commonly seen "corn rows". It was noticed that the 406 section is lacking in basic direction regarding cleaning and uniformity of application.

PROPOSED SOLUTION: Revise language for clarification and consistency.

APPLICABLE STANDARD SPECIFICATIONS: 406

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: 13.2

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: N/A

IMPACT ANALYSIS (attach report):

Submitted By: Matt Beeson

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-610-7251 x 204

Date: 2/15/18

Mr. Beeson
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? N

Will approval of this item affect the Approved Materials List? N

Will this proposal improve:

Construction costs? Y

Construction time? N

Customer satisfaction? Y

Congestion/travel time? N

Ride quality? N

Will this proposal reduce operational costs or maintenance effort? Y

Will this item improve safety:

For motorists? Y

For construction workers? N

Will this proposal improve quality for:

Construction procedures/processes? Y

Asset preservation? Y

Design process? Y

Will this change provide the contractor more flexibility? Y

Will this proposal provide clarification for the Contractor and field personnel? Y

Can this item improve/reduce the number of potential change orders? Y

Is this proposal needed for compliance with:

Federal or State regulations? N

AASHTO or other design code? N

Is this item editorial? N

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: We keep teaching and training about proper tack coat application, but our specs were not very firm. This will at least give us a basis to stand on.

REVISION TO STANDARD SPECIFICATIONS

SECTION 406 - TACK COAT
406.04 PREPARATION OF SURFACE
406.05 APPLICATION OF ASPHALT MATERIAL

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 406, BEGIN LINE 21, DELETE AND INSERT AS FOLLOWS:

406.04 Preparation of Surface

The existing surface to be treated shall be free of foreign materials deemed detrimental by the Engineer. *The surface to which the asphalt material is applied shall not have standing water and shall be cleaned of dust, debris and any substances that will prevent adherence. Cleaning shall be accomplished by means of a sweeper or vacuum truck, power broom, air compressor or by hand.*

406.05 Application of Asphalt Material

The asphalt material shall be ~~uniformly~~ applied at the rate of from 0.05 to 0.10 gal./sq yd, or as otherwise specified or directed. *The asphalt material shall be uniformly applied across the entire width of pavement to be overlaid and shall cover a minimum of 95% of the surface. Areas of inadequate coverage that create streaking or areas of excessive coverage that create ponding shall be corrected to obtain an even distribution.*

~~Tack coat shall not be applied to a wet surface. The rate of application, temperature, and areas to be treated shall be approved prior to application. Excessive tack coat shall be corrected to obtain an even distribution.~~

COMMENTS AND ACTION

406.04 PREPARATION OF SURFACE
406.05 APPLICATION OF ASPHALT MATERIAL

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: SECTION 406, begin pg 300 Recurring Special Provision affected: NONE Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: 13	_____ 2020 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

Mr. Orton
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD DRAWINGS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Standard Drawing series 622-LSPL (Landscape Planting) do not reflect proper installation methods.

PROPOSED SOLUTION: Revise the 622-LSPL Standard Drawings to provide clarification and proper installation methods.

APPLICABLE STANDARD SPECIFICATIONS: N/A

APPLICABLE STANDARD DRAWINGS: 622-LSPL-01 through -11

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc. Shawn Slaymon, INDOT Landscape Specialist

IMPACT ANALYSIS (attach report):

Submitted By: Elizabeth Phillips

Title: Standards and Policy Manager

Organization: Bridges Division

Phone Number: 317-232-6775

Date: 2/14/18

Mr. Orton
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD DRAWINGS

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No

Will approval of this item affect the Approved Materials List? No

Will this proposal improve:

Construction costs? N/A

Construction time? N/A

Customer satisfaction? Yes

Congestion/travel time? N/A

Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

Design process? No

Will this change provide the contractor more flexibility? No

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? N/A

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

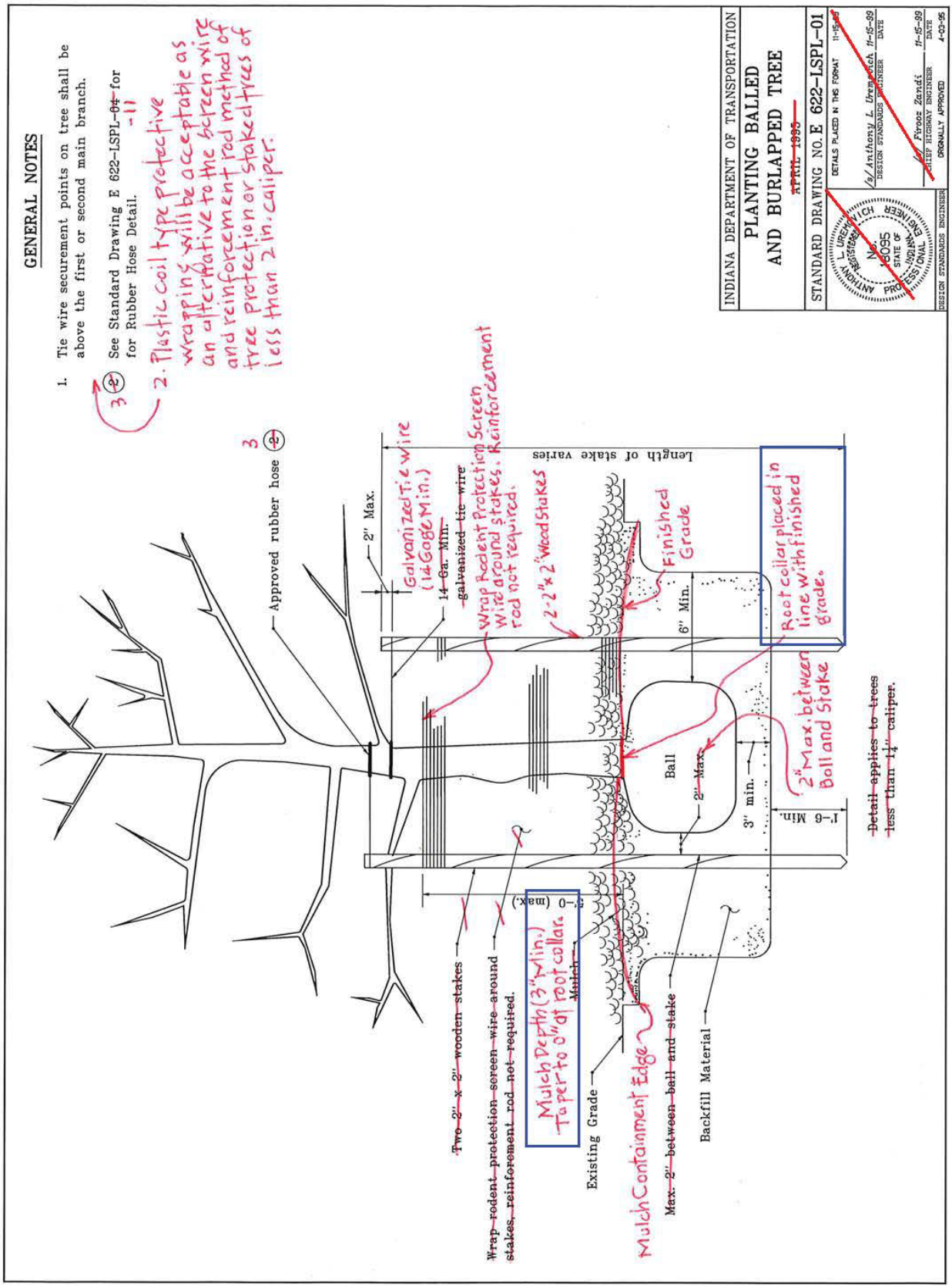
Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: These will help clarify installation methods that were questioned by field employees and contractors. These clarifications will help long term success of plant material, being planted appropriately during contract.

REVISION TO STANDARD DRAWINGS

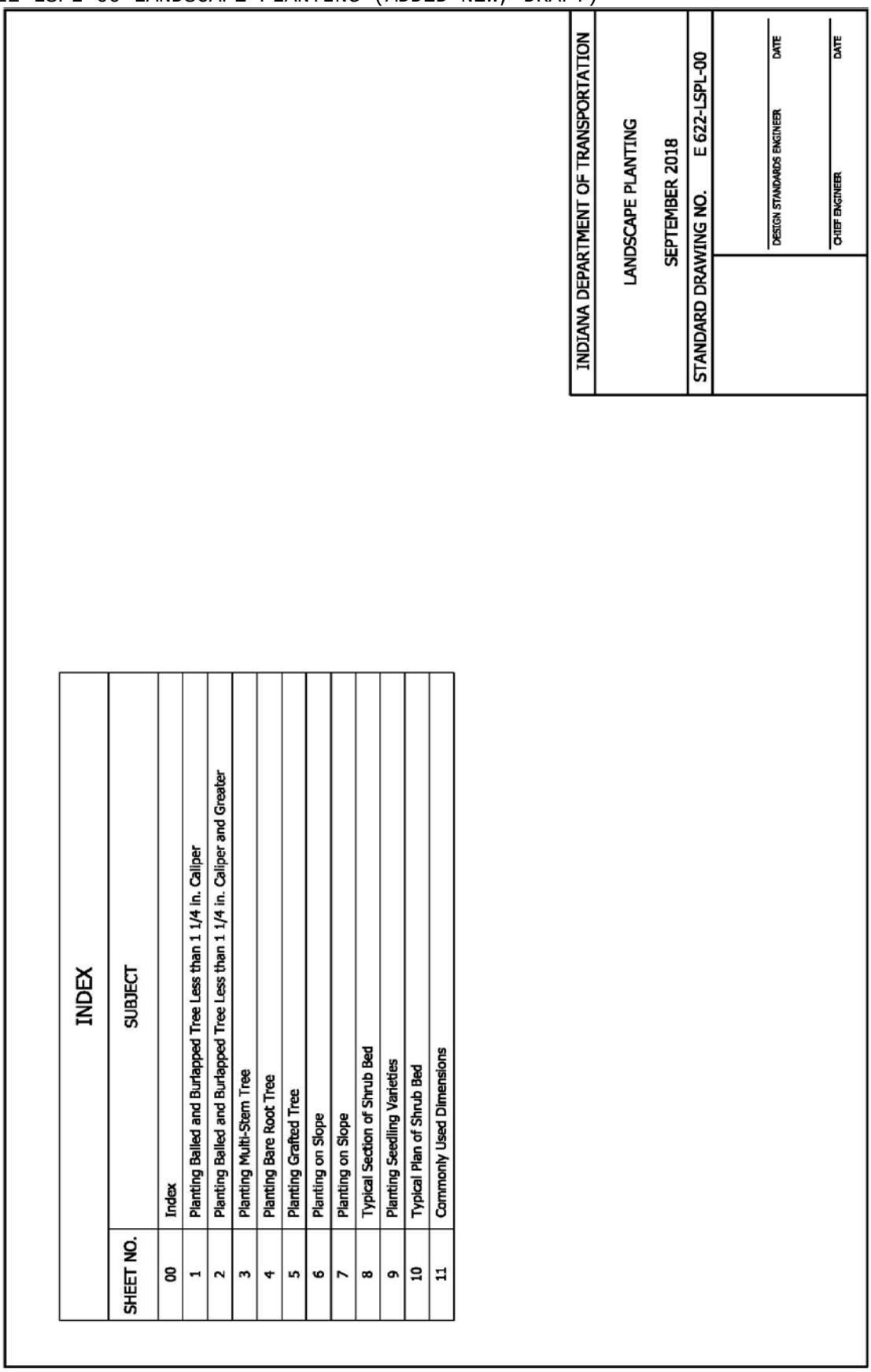
622-LSPL-01 PLANTING BALLED AND BURLAPPED TREE (WITH MARKUPS)

Add Index Sheet E 622-LSPL-00



REVISION TO STANDARD DRAWINGS

622-LSPL-00 LANDSCAPE PLANTING (ADDED NEW, DRAFT)



INDEX

SHEET NO.	SUBJECT
00	Index
1	Planting Balled and Burlapped Tree Less than 1 1/4 in. Caliper
2	Planting Balled and Burlapped Tree Less than 1 1/4 in. Caliper and Greater
3	Planting Multi-Stem Tree
4	Planting Bare Root Tree
5	Planting Grafted Tree
6	Planting on Slope
7	Planting on Slope
8	Typical Section of Shrub Bed
9	Planting Seedling Varieties
10	Typical Plan of Shrub Bed
11	Commonly Used Dimensions

INDIANA DEPARTMENT OF TRANSPORTATION

LANDSCAPE PLANTING

SEPTEMBER 2018

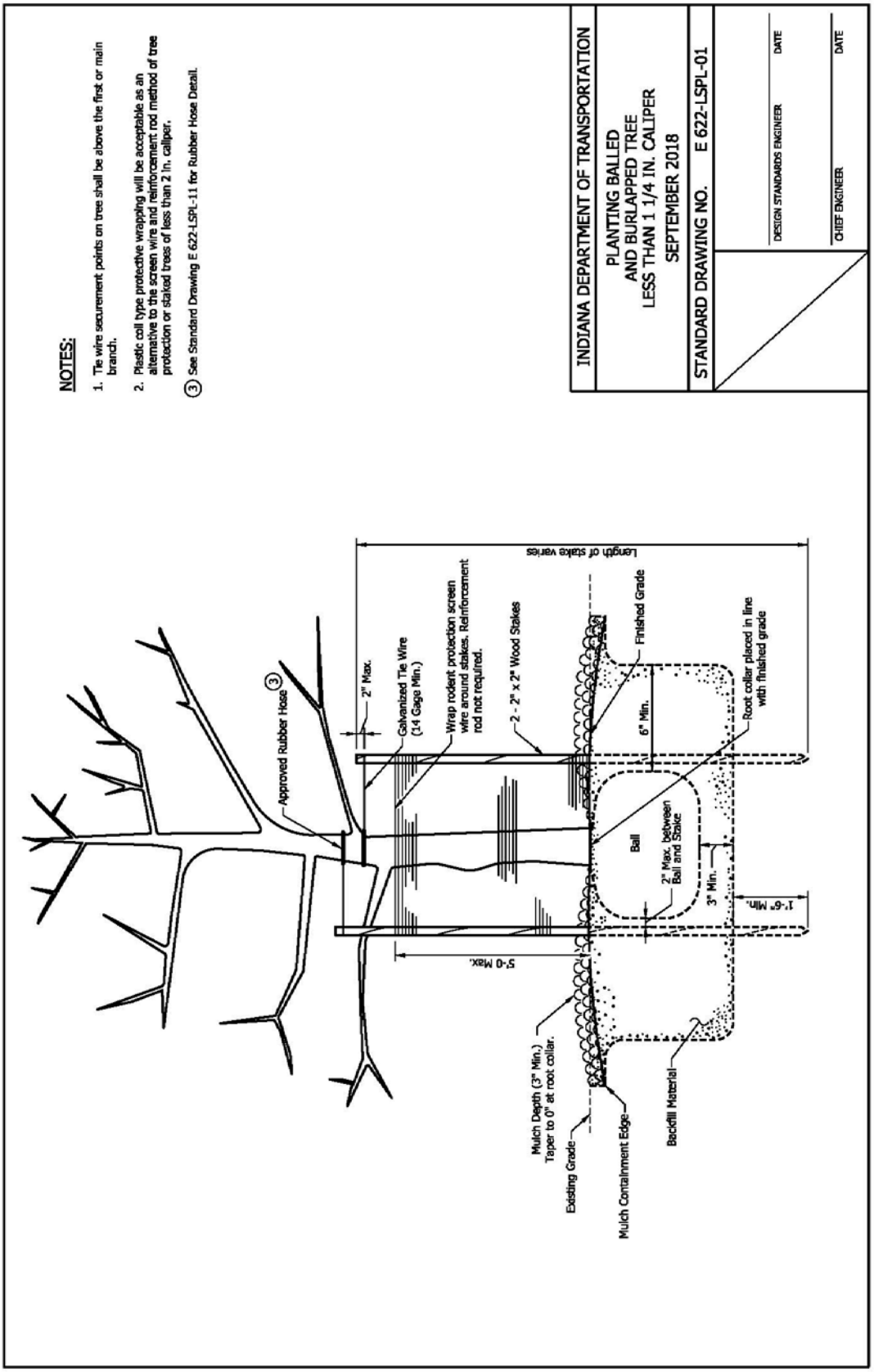
STANDARD DRAWING NO. E 622-LSPL-00

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

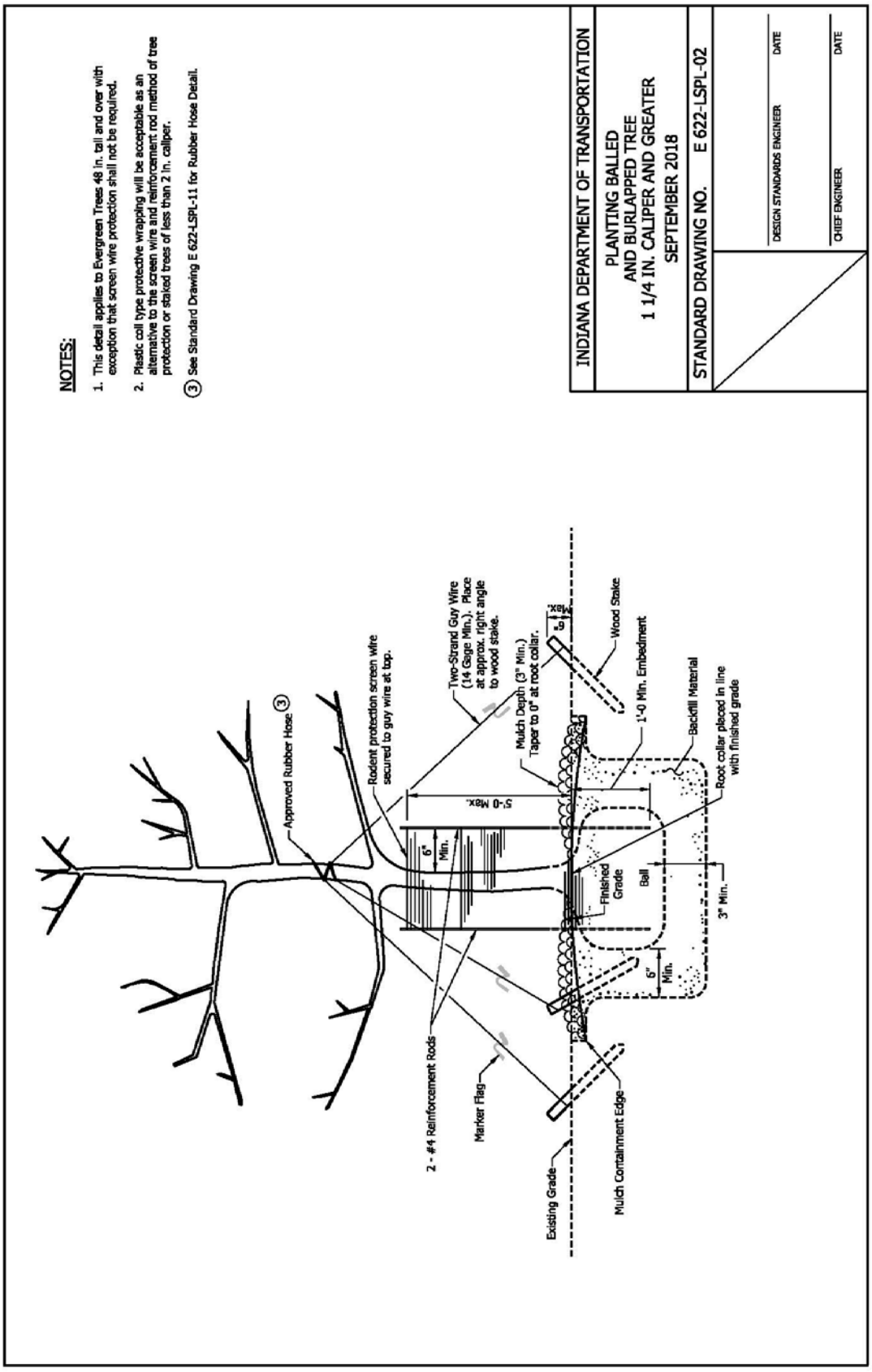
REVISION TO STANDARD DRAWINGS

622-LSPL-01 PANTING BALLED AND BURLAPPED TREE LESS THAN 1 1/4 IN. CALIPER (DRAFT)



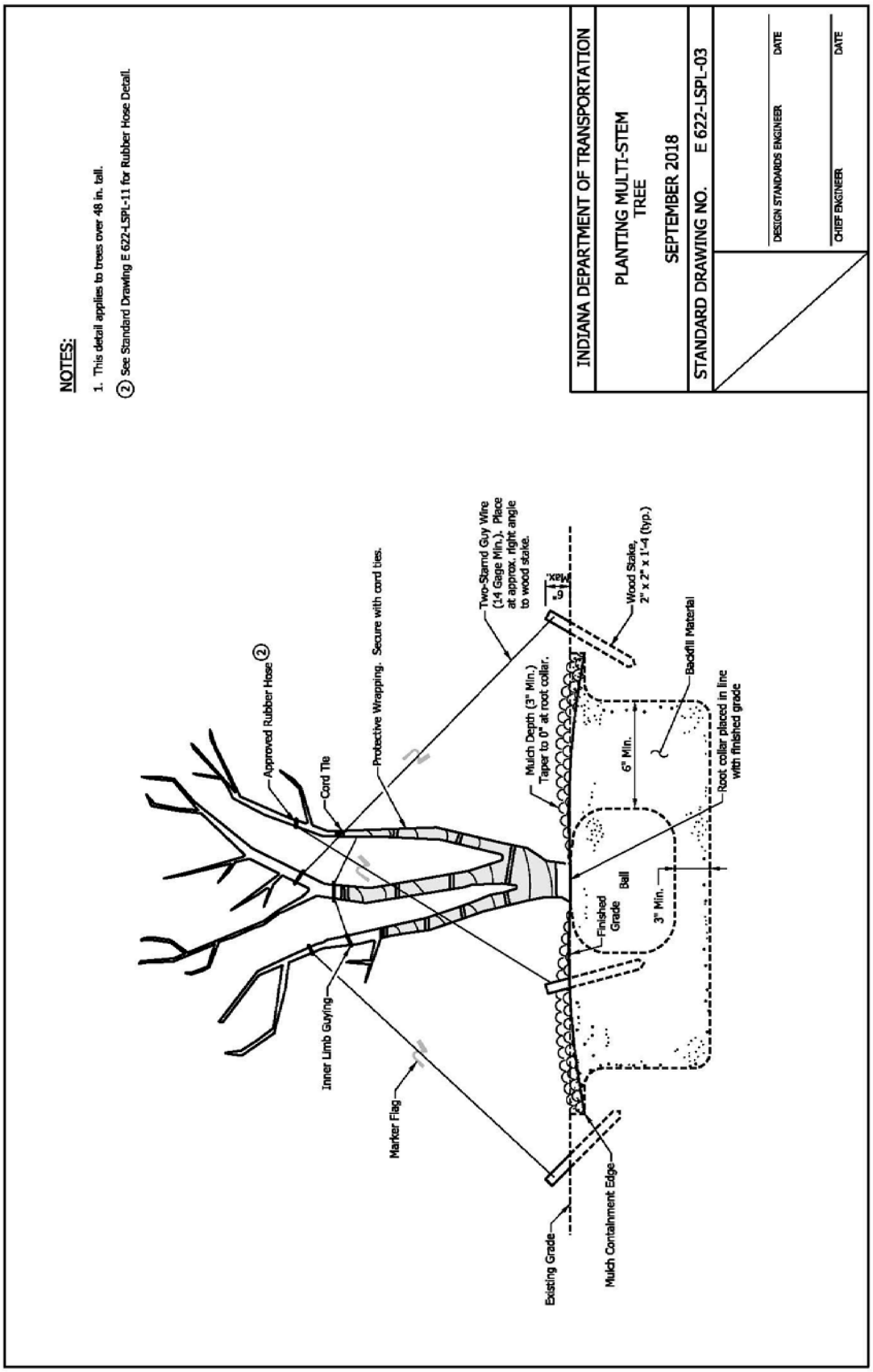
REVISION TO STANDARD DRAWINGS

622-LSPL-02 PLANTING BALLED AND BURLAPPED TREE 1 1/4 IN. CALIPER AND GREATER (DRAFT)



REVISION TO STANDARD DRAWINGS

622-LSPL-03 PLANTING MULTI-STEM TREE (DRAFT)



REVISION TO STANDARD DRAWINGS

622-LSPL-04 PLANTING BARE ROOT TREE (DRAFT)

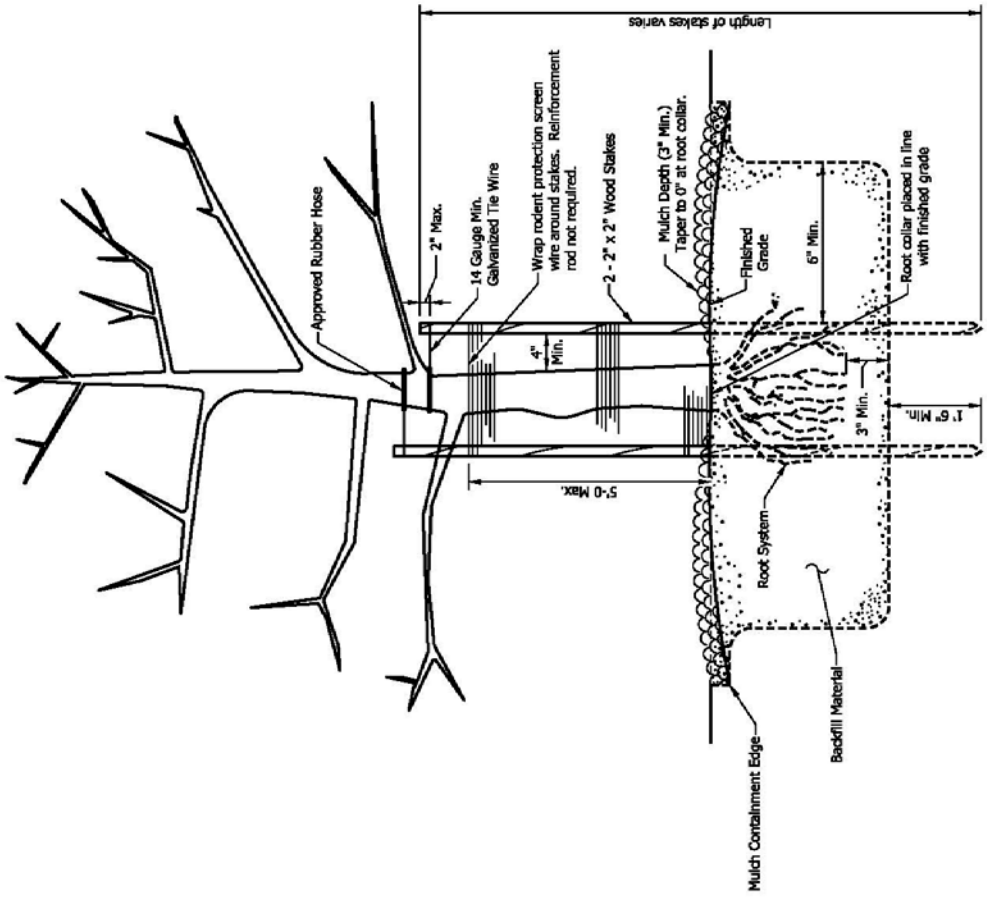
INDIANA DEPARTMENT OF TRANSPORTATION

PLANTING BARE ROOT
TREE
SEPTEMBER 2018

STANDARD DRAWING NO. E 622-LSPL-04

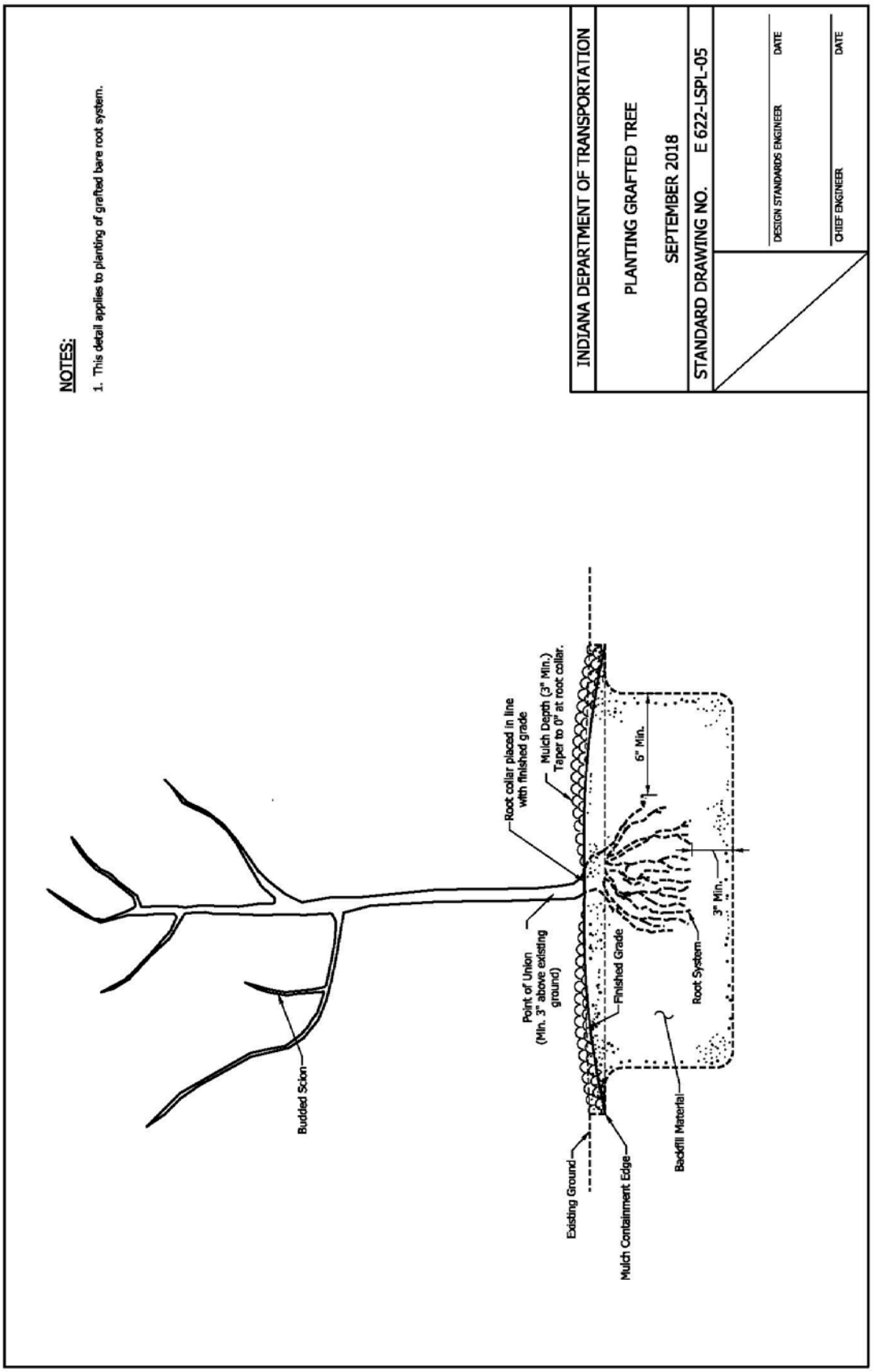
DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE



REVISION TO STANDARD DRAWINGS

622-LSPL-05 PLANTING GRAFTED TREE (DRAFT)



REVISION TO STANDARD DRAWINGS

622-LSPL-06 PLANTING ON SLOPE (DRAFT)

INDIANA DEPARTMENT OF TRANSPORTATION

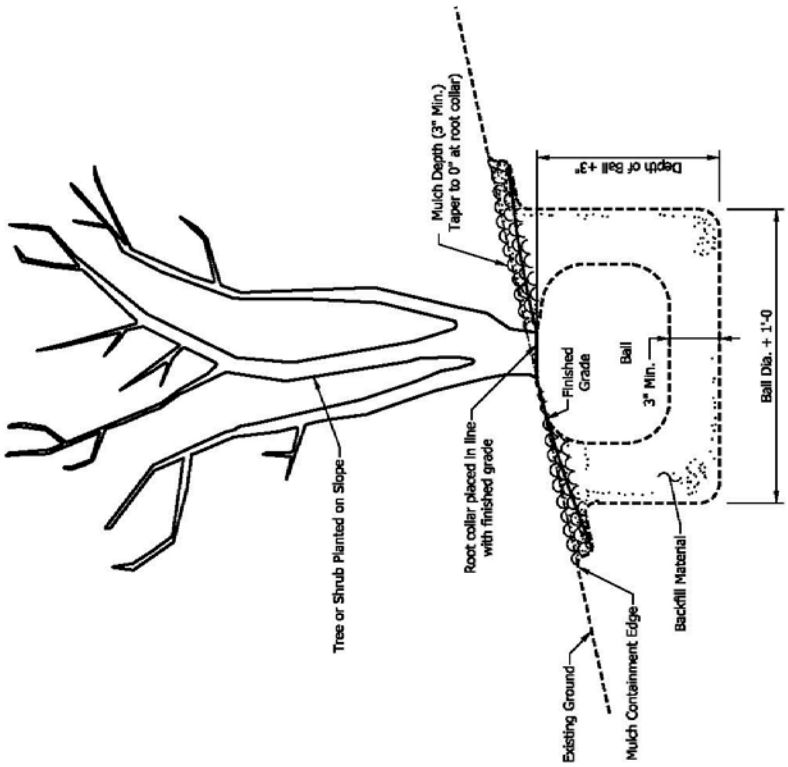
PLANTING ON SLOPE

SEPTEMBER 2018

STANDARD DRAWING NO. E 622-LSPL-06

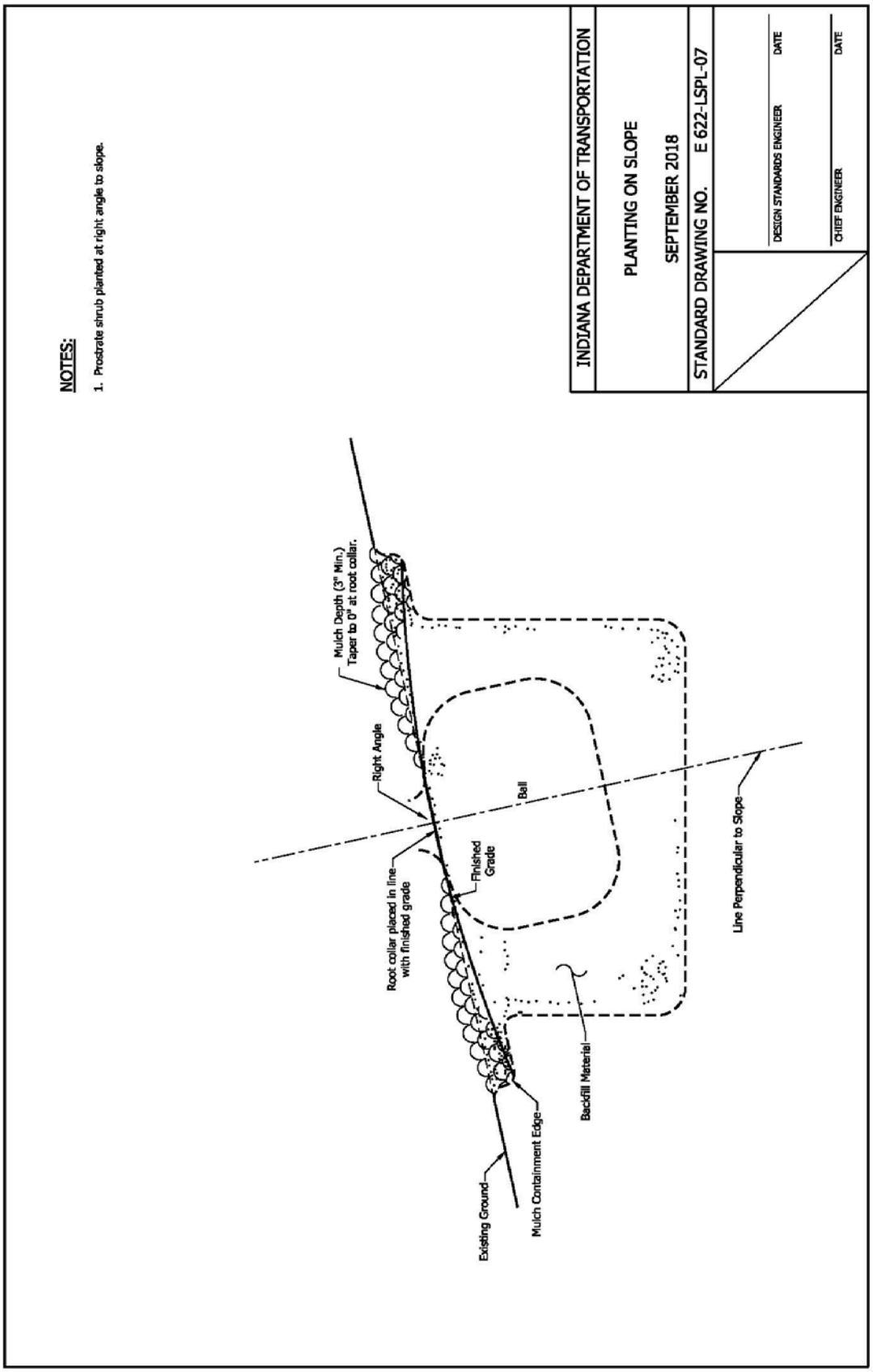
DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE



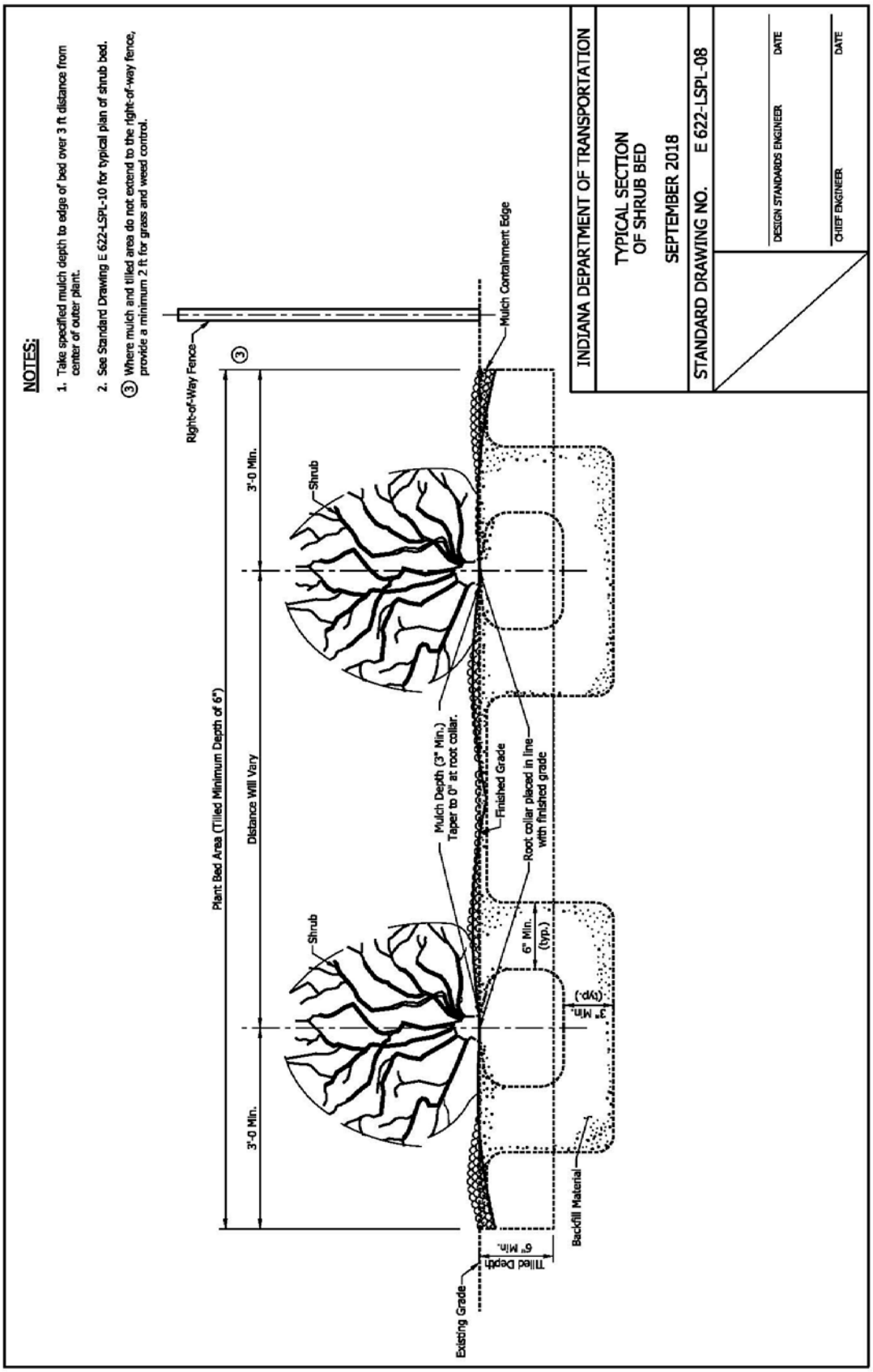
REVISION TO STANDARD DRAWINGS

622-LSPL-07 PLANTING ON SLOPE (DRAFT)



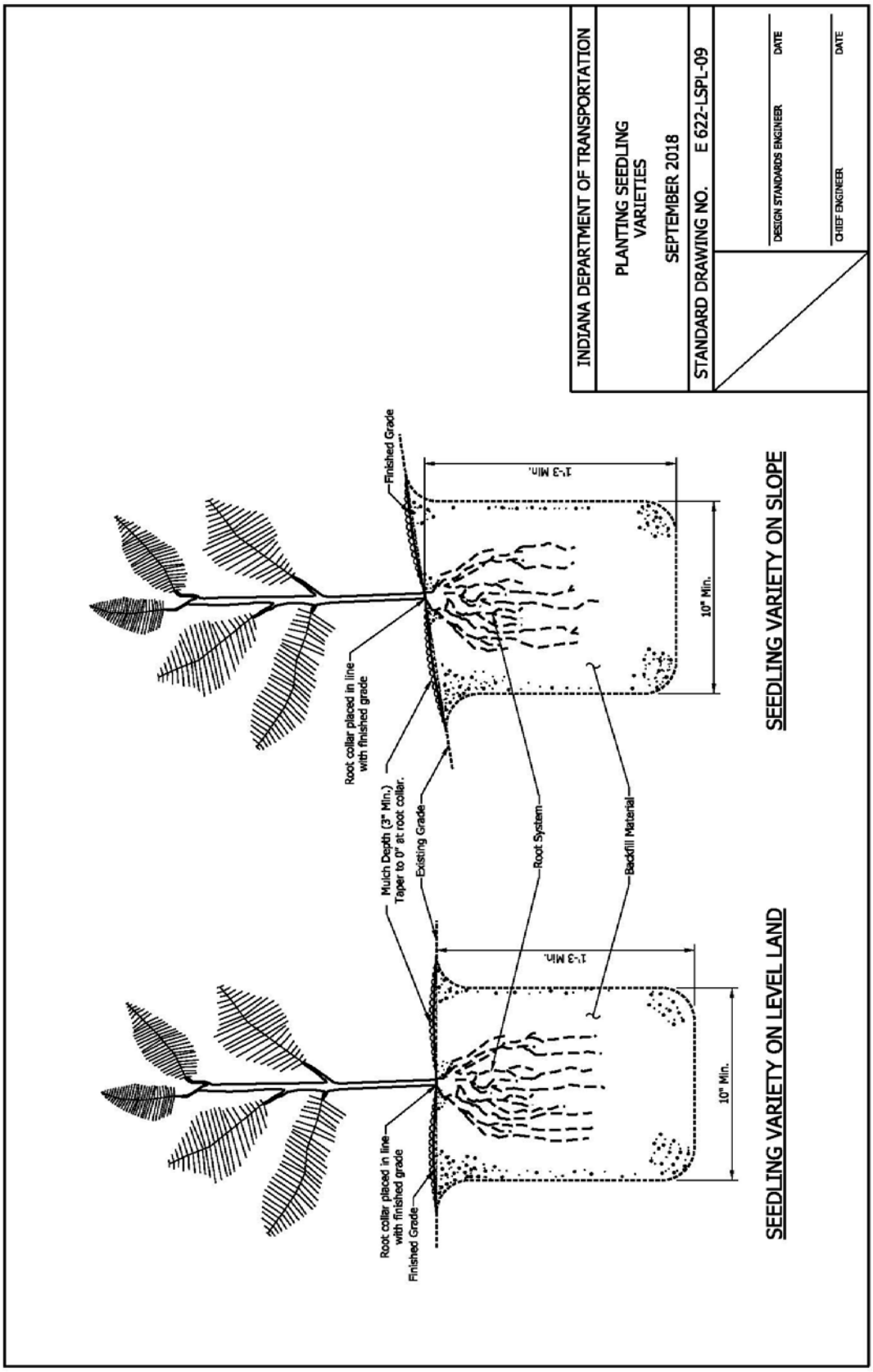
REVISION TO STANDARD DRAWINGS

622-LSPL-08 TYPICAL SECTION OF SHRUB BED (DRAFT)



REVISION TO STANDARD DRAWINGS

622-LSPL-09 PLANTING SEEDLING VARIETIES (DRAFT)



REVISION TO STANDARD DRAWINGS

622-LSPL-10 TYPICAL PLAN OF SHRUB BED (DRAFT)

INDIANA DEPARTMENT OF TRANSPORTATION

TYPICAL PLAN OF SHRUB BED

SEPTEMBER 2018

STANDARD DRAWING NO. E 622-LSPL-10

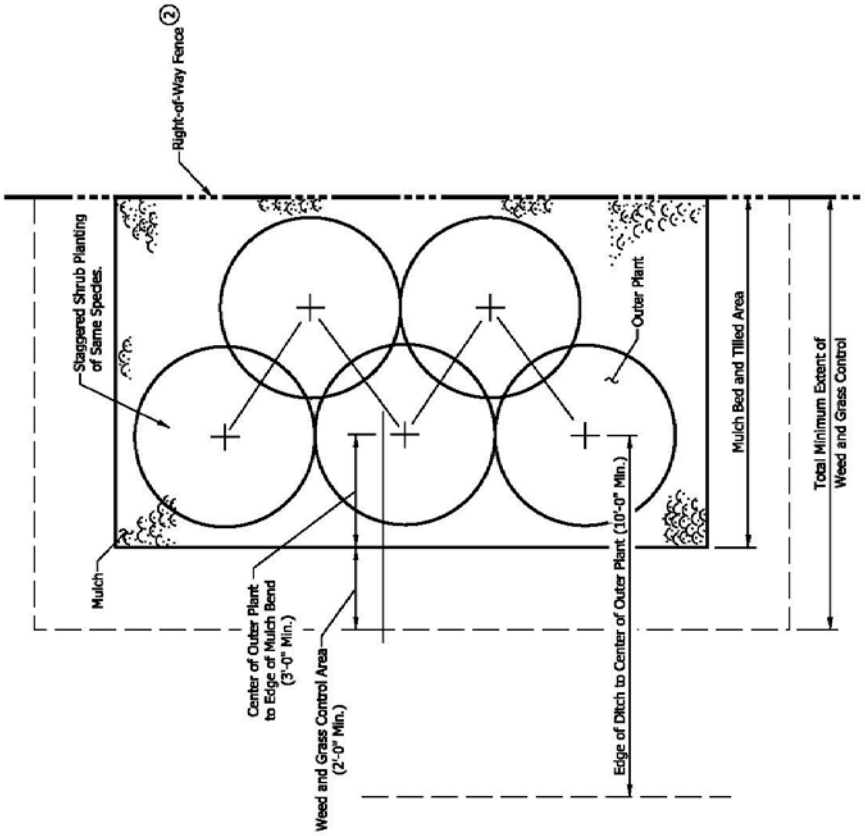
DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

NOTES:

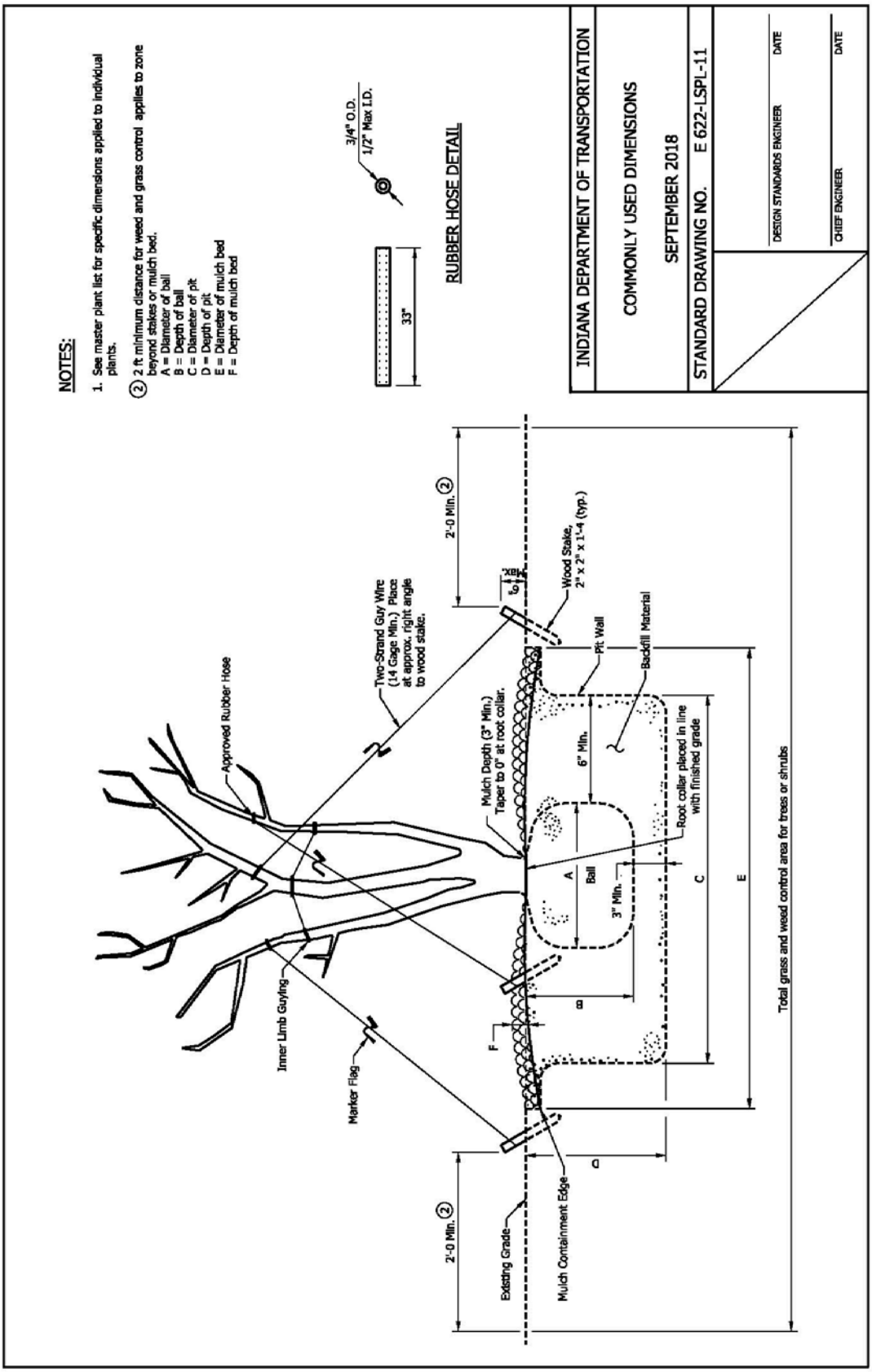
1. Specific variations on shrub bed configurations and layout will be shown on plans. Plans will show exceptions to 10 ft minimum distance from ditch to center of outer plants.

② Where mulch and tilled area do not extend to right-of -way fence, provide a minimum of 2 ft for grass and weed control.



REVISION TO STANDARD DRAWINGS

622-LSPL-11 COMMONLY USED DIMENSIONS (DRAFT)



COMMENTS AND ACTION

622-LSPL-00 THROUGH -11

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: SECTION 622, begin pg 481 Recurring Special Provision affected: NONE Standard Drawing affected: 622-LSPL series Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2020 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

Mr. Pankow
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: We have received questions from several district construction staff about payment for work performed by unapproved sub-contractors. This issue has been discussed at length and we feel we do not have legal footing to not pay for acceptable work performed by unapproved sub-contractors per our current specification. Therefore clarification is needed in section 108 of the Standard Specifications to allow for non-payment of work done by unapproved subs.

PROPOSED SOLUTION: Incorporate the necessary revisions to 108 to ensure that the standard specifications are correct and consistent with current field practice.

APPLICABLE STANDARD SPECIFICATIONS: Sections 108.01

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: 2.7.1

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: N/A

IMPACT ANALYSIS (attach report): Yes

Submitted By: Greg Pankow

Title: State Construction Engineer

Organization: INDOT Construction Management

Phone Number: (317)232-5502

Date: 2/21/2018

Mr. Pankow
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No

Will approval of this item affect the Approved Materials List? No

Will this proposal improve:

Construction costs? No

Construction time? No

Customer satisfaction? Yes

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? No

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

Design process? No

Will this change provide the contractor more flexibility? No

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? Yes

Is this proposal needed for compliance with:

Federal or State regulations? Yes

AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: N/A

REVISION TO STANDARD SPECIFICATIONS

SECTION 108 - PROSECUTION AND PROGRESS
108.01 SUBLETTING OF CONTRACT

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 108, BEGIN LINE 3, INSERT AS FOLLOWS:

108.01 Subletting of Contract

The contract, contracts, or portions thereof; or the right, title, or interest therein shall not be sublet, sold, transferred, assigned, or otherwise disposed of without written consent. In case such consent is given, the Contractor will be allowed to sublet a portion thereof, but shall perform with its own organization, work amounting to not less than 50% of the original or revised contract amount, whichever is less. All items designated in the contract as specialty items may be performed by subcontract. The cost of such specialty items so performed by subcontracts may be deduced from the total cost before computing the amount of work required to be performed by the Contractor with its own organization. No subcontracts or transfer of contracts will release the Contractor of liability under the contract and bonds. Approved subcontractors will not be allowed to further subcontract their work.

Unless the Department provides written consent, the Contractor shall not be entitled to any payment for work or materials unless the work is performed by a subcontractor approved on the contract prior to the work being performed.

The minimum wage for labor as stated in the Proposal book shall apply to all labor performed on all work sublet, assigned, or otherwise disposed of in any way.

COMMENTS AND ACTION

108.01 SUBLETTING OF CONTRACT

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: 108.01 pg 82 Recurring Special Provision affected: NONE Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: 2.7.1	_____ 2020 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Recurring special provision 805-T-093 "Detector Card Rack and Detector Modules" is basically a duplicate of the standard items for loop detector racks (pay item 805-09540) and loop detector delay amplifiers (pay item 805-92504). The recurring special provision also requires bidders to determine from the plans how many two-channel loop detector amplifiers are expected for each rack.

PROPOSED SOLUTION: Delete the recurring special provision.

APPLICABLE STANDARD SPECIFICATIONS: 805 (no change proposed)

APPLICABLE STANDARD DRAWINGS: No

APPLICABLE DESIGN MANUAL SECTION: No

APPLICABLE SECTION OF GIFE: No

APPLICABLE RECURRING SPECIAL PROVISIONS: 805-T-093

PAY ITEMS AFFECTED: 805-03793 Detector Card Rack and Detector Modules

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc review by Dan Stickney, Greg Richards, Joe Bruno, and Dave Boruff

IMPACT ANALYSIS (attach report): Yes, attached.

Submitted By: Joe Bruno on behalf of Dave Boruff

Title: Traffic Administration Engineer

Organization: INDOT

Phone Number: (317) 234-7949

Date: 2/22/18

[rev. 12/2014]

Mr. Boruff
Date: 03/15/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No

Will approval of this item affect the Approved Materials List? No

Will this proposal improve:

Construction costs? No

Construction time? No

Customer satisfaction? No

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? No

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? No

Design process? Yes

Will this change provide the contractor more flexibility? No

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? Yes

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: N/A

REVISION TO SPECIAL PROVISIONS

805-T-093 DETECTOR CARD RACK AND DETECTOR MODULES (PROPOSED TO DISCONTINUE USE)

~~805-T-093 DETECTOR CARD RACK AND DETECTOR MODULES~~

~~*(Adopted 09-01-05)*~~

~~A detector card rack and detector modules shall be used. The detector module shall be 2-channel with delay feature, card rack compatible with and intermediate to the detector rack edge connectors. The cost of the detector rack shall be included in the cost of the detector modules.~~

COMMENTS AND ACTION

DISCUSSION:

Motion: Second: Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: SECTION 805, begin pg. 791 Recurring Special Provision affected: 805-T-093 DETECTOR CARD RACK AND DETECTOR MODULES Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2020 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update