



# AGENDA

## February 16, 2023 Standards Committee Meeting

### MEMORANDUM

February 1, 2023

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Agenda for the February 16, 2023 Standards Committee Meeting

A Standards Committee meeting is scheduled for 09:00 a.m. on February 16, 2023 will be held virtually via *Teams* (Microsoft application). Please contact Scott Trammell ([strammell@indot.in.gov](mailto:strammell@indot.in.gov)) for instructions on how to join this event. Link to *Join the Meeting* will be available at:

<https://www.in.gov/dot/div/contracts/standards/sc/>

The following items are listed for consideration:

### A. GENERAL BUSINESS

#### OLD BUSINESS

*(No items on this agenda)*

#### NEW BUSINESS

1. Approval of the Minutes from the [January 19, 2023](#) meeting

### B. CONCEPTUAL PROPOSAL

*2024 Standard Specifications (draft) (Division 900 MATERIALS DETAILS) edits (K. Pelz) [pg.3](#)*

### C. STANDARD SPECIFICATIONS, SPECIAL PROVISIONS, AND STANDARD DRAWINGS PROPOSAL

#### OLD BUSINESS

*(No items on this agenda)*

NEW BUSINESS

Item No. 1 (2022 SS) Mr. White pg 4

2022 Standard Specifications:

702.12 Consistency  
702.20 Placing Concrete

Item No. 2 (2022 SS) Mr. Boruff pg 8

Standard Drawings:

*E 809-ITCS-01 ITS TRAFFIC COUNT STATIONS INDEX AND GENERAL NOTES*  
*E 809-ITCS-02 TWO LANE AUTOMATIC TRAFFIC (ATR) RECORDER STATIONS*  
*E 809-ITCS-03 FOUR LANE AUTOMATIC TRAFFIC (ATR) RECORDER STATIONS*  
*E 809-ITCS-04 SIX LANE AUTOMATIC TRAFFIC (ATR) RECORDER STATIONS*  
*E 809-ITCS-05 FOUR LANE WEIGH-IN-MOTION (WIM) STATIONS*  
*E 809-ITCS-06 SIX LANE WEIGH-IN-MOTION (WIM) STATIONS*  
*E 809-ITCS-07 FOUR LANE VIRTUAL WEIGH-IN-MOTION (VWIM) STATIONS*  
*E 809-ITCS-08 SIX LANE VIRTUAL WEIGH-IN-MOTION (VWIM) STATIONS*

Item No. 3 (2022 SS) Mr. Novak pg 19

2022 Standard Specifications:

628.02 Field Office Requirements  
628.06 Basis of Payment

Item No. 4 (2022 SS) Mr. Novak pg 35

2022 Standard Specifications:

619.09 Paint Systems  
619.12 Field Painting New Steel Bridge  
619.13 Painting Existing Steel Bridges

Item No. 5 (2022 SS) Mr. Orton pg 40

Standard Drawings:

E 604-SWCR-11 MEDIAN CUT-THROUGH AND MEDIAN PERPENDICULAR CURB RAMP TYPICAL PLACEMENT  
E 604-SWCR-13 DETECTABLE WARNING SURFACE PLACEMENT AND CONFIGURATION

cc: Committee Members  
FHWA  
ICI

CONCEPTUAL PROPOSAL

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PROPOSED EDITORIAL REVISIONS TO DIVISION 900 – MATERIALS DETAILS (2022 STANDARD SPECIFICATIONS)

CONCEPTUAL PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: INDOT Standard Specifications have been in circulation since 1934 and have been regularly updated by adding new or revising existing statements, work procedures, materials, methods, etc.

Prior to publishing a 2024 Standard Specifications book (effective September 1, 2023), the review of the current edition is underway and a summary of proposed edits to the **DIVISION 900 – MATERIALS DETAILS** is shown.

PROPOSED SOLUTION (conceptual): Make editorial (grammar) corrections as found necessary. Inform offices on questionable or outdated information and seek any necessary corrective action. Statements that are not clearly formulated or their written intentions are hard to follow have been rewritten, grammatical errors have been corrected and are proposed here for your review. Proposed revisions to Division 900 were made with this concept in mind and are shown for your review.

APPLICABLE STANDARD SPECIFICATIONS: 2022 Standard Specifications and approved RSPs

APPLICABLE STANDARD DRAWINGS: n/a

APPLICABLE DESIGN MANUAL SECTION: n/a

APPLICABLE SECTION OF GIFE: n/a

APPLICABLE RECURRING SPECIAL PROVISIONS: various RSPs (if affected)

PAY ITEMS AFFECTED: n/a

APPLICABLE SUB-COMMITTEE ENDORSEMENT: ad-hoc Specification's review group: Kurt Pelz, Scott Trammell, Lana Podorvanova.

IMPACT ANALYSIS (attach report): n/a

Submitted By: Kurt Pelz

Title: Construction Management Technical Support

Organization: INDOT

Phone Number: 317-691-4800

Date: 02/01/2023

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The current slump requirements specific to foundation seals may result in concrete that's too lean, making the seal difficult to construct. The current specifications also require the concrete to be placed in horizontal lifts, which isn't necessary and may make construction more difficult.

PROPOSED SOLUTION: The proposed changes eliminate the slump requirements that are specific to foundation seals and instead use the typical structural concrete slump requirements. Changes are allow more flexibility in the Contractor's means and methods for placing the seal concrete.

APPLICABLE STANDARD SPECIFICATIONS: 702.12, 702.20(f)

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A (foundation seal thickness criteria currently being reviewed and will be updated if required, but not directly related to proposed spec changes)

APPLICABLE SECTION OF GIFE: 4.7 will need to be updated for revised slump requirements.

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A (no changes required to 702-R-739)

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc committee including Joe Novak, Mike Koch, Mike Nelson, Stephanie Wagner, Jim Reilman, and Donald Shaw.

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE: N/A

IMPACT ANALYSIS (attach report):

Submitted By: Pete White, PE

Title: Design Manager

Division: INDOT Bridge Engineering

E-mail: [pewhite@indot.in.gov](mailto:pewhite@indot.in.gov)

Date: January 17, 2023



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/A

Will approval of this item affect the Qualified Products List (QPL)? 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? No

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: The proposed changes will allow for better quality foundation seals and will reduce the potential for seal failures.

REVISION TO 2022 STANDARD SPECIFICATIONS

SECTION 702 – STRUCTURAL CONCRETE

702.12 Consistency

702.20 Placing Concrete

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 702, BEGIN LINE 547, DELETE AS FOLLOWS:

**702.12 Consistency**

Slump will be measured in accordance with 505 and shall be no less than 1 in. and no more than 6 in. ~~except for concrete placed in foundation seals.~~

SECTION 702, BEGIN LINE 1122, DELETE AND INSERT AS FOLLOWS:

**(f) Concrete Foundation Seal**

A foundation seal may be required by the plans, as requested, or as directed. When required by the plans, the seal shall be constructed to the size shown, or as specified in writing. Where adverse dewatering conditions are encountered as described in 206.09, a foundation seal may be required to be placed to the necessary dimensions.

If a foundation seal is requested, written permission shall be obtained before starting such work. If approval is given, the seal shall be placed to designated dimensions.

Seals shall be of class A concrete having a slump ~~of from 5 to 8 in.~~ *in accordance with 702.12*, placed continuously from start to finish, and in accordance with 702.20(d). ~~To ensure thorough bonding, each successive layer shall be placed before the preceding layer has taken initial set.~~ The cofferdam shall have been vented or ported at low-water level. ~~The surface of the concrete shall be kept as nearly horizontal at all times as practicable.~~ The seal shall be of the thickness ~~ordered~~ *shown on the plans, or as requested and approved*. When the seal has hardened sufficiently to withstand the hydrostatic pressure, the cofferdam shall be dewatered and the remainder of the *structural* concrete ~~placed~~ *shall be placed in the dry conditions.*

COMMENTS AND ACTION

702.12 Consistency  
702.20 Placing Concrete

DISCUSSION:

<p>Motion: Second: Ayes: Nays: FHWA Approval:</p>	<p><b>Action:</b> — Passed as Submitted — Passed as Revised — Withdrawn</p>
<p>2022 Standard Specifications Sections referenced and/or affected: 702.12 pg 630, 702.20(f) pg. 642.</p>	<p>— 2024 Standard Specifications — Revise Pay Items List</p>
<p>Recurring Special Provisions or Plan Details: NONE (<i>see proposal</i>)</p>	<p>— Create RSP (No. __) Effective:</p>
<p>Standard Drawing affected: NONE</p>	<p>— Revise RSP (No. __) Effective:</p>
<p>Design Manual Sections affected: N/A (<i>see proposal</i>)</p>	<p>— Standard Drawing Effective:</p>
<p>GIFE Sections cross-references: 4.7</p>	<p>— Create RPD (No. __) Effective:</p>
	<p>— GIFE Update — Frequency Manual Update — SiteManager Update</p>

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The ITS traffic count station (unique) plan details for automated traffic recording, weigh-in-motion, and virtual weigh-in-motion locations were initially prepared in Microsoft PowerPoint and there is a need to update the formatting so that they can be issued as Standard Drawings.

PROPOSED SOLUTION: Create a Standard Drawing series for the ITS traffic count stations for automated traffic recording, weigh-in-motion, and virtual weigh-in-motion locations.

APPLICABLE STANDARD SPECIFICATIONS: 809

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: 502-5.04(09)

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Yes, Traffic Standards Subcommittee

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE:  
Required for all contracts with any 809 pay items.

IMPACT ANALYSIS (attach report): Yes

Submitted By: Joe Bruno on behalf of Dave Boruff

Title: Sr. Traffic Engineer, Signals & Markings

Division: Traffic Engineering Division

E-mail: jbruno@indot.in.gov

Date: 1/23/2023

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 Qualified Products List (QPL)? 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? Yes

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? 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 STANDARD DRAWINGS

E 809-ITCS-01 ITS TRAFFIC COUNT STATIONS INDEX AND GENERAL NOTES (proposed draft)

INDEX	
SHEET NO.	SUBJECT
1	ITS Traffic Count Stations Index and General Notes
2	Two Lane Automatic Traffic (ATR) Recorder Stations
3	Four Lane Automatic Traffic (ATR) Recorder Stations
4	Six Lane Automatic Traffic (ATR) Recorder Stations
5	Four Lane Weigh-in-Motion (WIM) Stations
6	Six Lane Weigh-in-Motion (WIM) Stations
7	Four Lane Virtual Weigh-in-Motion (VWIM) Stations
8	Six Lane Virtual Weigh-in-Motion (VWIM) Stations

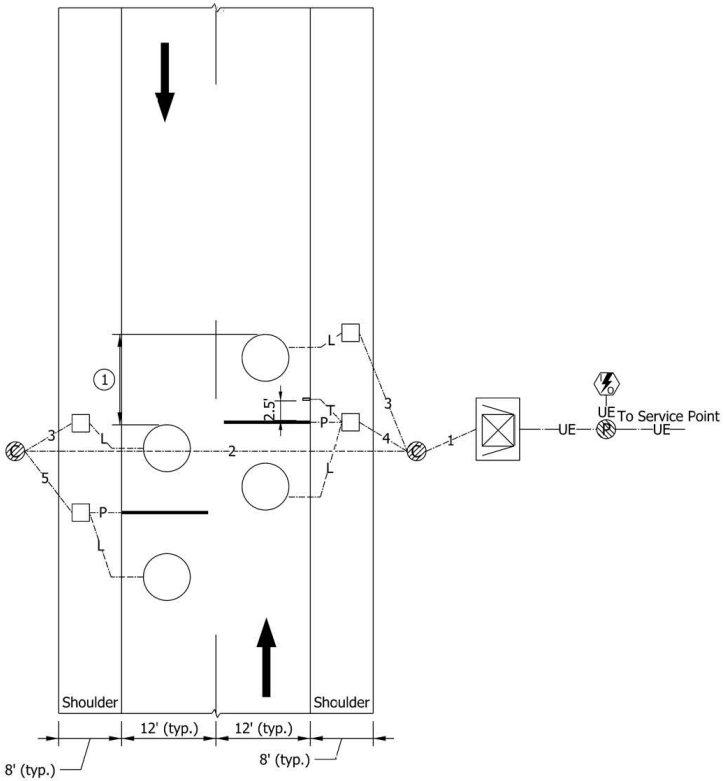
**GENERAL NOTES:**

- Road surface pavement condition shall meet ASTM E 1318 requirements.
- Pavement shall be free of bumps or transitions for a least 200 ft before and at least 100 ft after the automated traffic count station
- Pavement on either side of any sensor shall be free of joints and cracks for at least 2 ft.
- The contractor shall contact the ITS Engineering Division for approval before installing at any location where the conditions in notes 1, 2, or 3 above are not met.
- If median is paved and has concrete crash barrier, each inside shoulder shall have one communications handhole and one power handhole.
- All conduits shall include one tracer wire #14 gauge or larger.
- Conduits shall be schedule 80 PVC unless otherwise specified and under-bored when crossing the roadway.
- Electric power wires shall have dedicated separate conduits and shall not run in conduits with sensor or communication wires.
- See Standard Drawing E 809-ICCF series for additional cabinet details.
- Cables shall be protected by PVC sleeves where they cross pavement joints or cracks.
- Direct 120/240VAC, 60Hz power shall be delivered to the following components: ATR Cabinet
- Wire splices shall not be used with electric power wires nor with piezoelectric, temperature, or axle weight sensor wires.
- Inductive loop wires shall be spliced to the lead-in wires and sealed for waterproofing in the detector housing.
- Cables crossing the pavement or shoulder transition shall cross perpendicular to the joint and continue for at least 6 ft before making a turn.

INDIANA DEPARTMENT OF TRANSPORTATION	
ITS TRAFFIC COUNT STATIONS INDEX AND GENERAL NOTES	
SEPTEMBER 2023	
STANDARD DRAWING NO. E 809-ITCS-01	
	DETAILS PLACED IN THIS FORMAT mm/dd/yy
DESIGN STANDARDS ENGINEER	DATE
CHIEF ENGINEER	DATE

REVISION TO STANDARD DRAWINGS

E 809-ITCS-02 TWO LANE AUTOMATIC TRAFFIC (ATR) RECORDER STATIONS (proposed draft)



**NOTES:**

- ① The offset of piezo sensors from one lane to the next shall be 11.5 ft or as directed by the Engineer.

**CONDUIT KEY:**

- L — Loop Lead
- P — Piezoelectric Sensor Lead
- T — Temperature Sensor Lead
- 1 — 3 in. Conduit with 4 Loop Leads, 2 Piezo Leads, 1 Temperature Lead, and 1 Pull Line
- 2 — 3 in. Conduit with 2 Loop Leads, 1 Piezo Lead, and 1 Pull Line
- 3 — 2 in. Conduit with 1 Loop Lead
- 4 — 2 in. Conduit with 1 Loop Lead, 1 Piezo Lead, and 1 Temperature Lead
- 5 — 2 in. Conduit with 1 Loop Lead and 1 Piezo Lead
- UE — Electric Conduit 120 / 240 VAC

**LEGEND**

- Temperature Sensor
- Detector Housing
- Class-1 Piezoelectric Sensor (11' in Length)
- Round Inductive Loop (6' Diameter)
- ⊗ Communications Handhole
- ⊙ Power Handhole (120/240VAC)
- ⊠ Cabinet and Concrete Base
- △<sub>u</sub> Upstream Pavement Conditions: See General Notes
- △<sub>d</sub> Downstream Pavement Conditions: See General Notes
- ⚡ Remote Disconnect
- ➔ Direction of Traffic Arrow

<b>INDIANA DEPARTMENT OF TRANSPORTATION</b>	
<b>TWO LANE AUTOMATIC TRAFFIC RECORDER (ATR) STATIONS</b>	
SEPTEMBER 2023	
STANDARD DRAWING NO.	E 809-ITCS-02
DETAILS PLACED IN THIS FORMAT mm/dd/yy	
DESIGN STANDARDS ENGINEER	DATE
CHIEF ENGINEER	DATE

Item No. 2 (2022 SS) (contd.)

Mr. Boruff

Date: 02/16/23

REVISION TO STANDARD DRAWINGS

E 809-ITCS-03 FOUR LANE AUTOMATIC TRAFFIC (ATR) RECORDER STATIONS (proposed draft)

**NOTES:**

① The offset of piezo sensors from one lane to the next shall be 11.5 ft or as directed by the Engineer.

**CONDUIT KEY:**

- L — Loop Lead
- P — Piezoelectric Sensor Lead
- T — Temperature Sensor Lead
- 1 — 3 in. Conduit with 4 Loop Leads, 2 Piezo Leads, and 1 Pull Line
- 2 — 3 in. Conduit with 4 Loop Leads, 2 Piezo Leads, 1 Temperature Lead, and 1 Pull Line
- 3 — 3 in. Conduit with 2 Loop Leads, 1 Piezo Lead, and 1 Pull Line
- 4 — 2 in. Conduit with 1 Loop Lead
- 5 — 2 in. Conduit with 1 Loop Lead and 1 Piezo Lead
- 6 — 2 in. Conduit with 1 Loop Lead, 1 Piezo Lead, and 1 Temperature Lead
- UE — Electric Conduit 120 / 240 VAC

**LEGEND**

- Temperature Sensor Detector Housing
- Class-1 Piezoelectric Sensor (11' in Length)
- Round Inductive Loop (6' Diameter)
- ⊗ Communications Handhole
- ⊕ Power Handhole (120/240VAC)
- ⊠ Cabinet and Concrete Base
- △ Upstream Pavement Conditions: See General Notes
- ▽ Downstream Pavement Conditions: See General Notes
- ⚡ Remote Disconnect
- ➔ Direction of Traffic Arrow

**INDIANA DEPARTMENT OF TRANSPORTATION**

**FOUR LANE AUTOMATIC TRAFFIC (ATR) RECORDER STATIONS**

**SEPTEMBER 2023**

**STANDARD DRAWING NO. E 809-ITCS-03**

DETAILS PLACED IN THIS FORMAT mm/dd/yy

DESIGN STANDARDS ENGINEER DATE

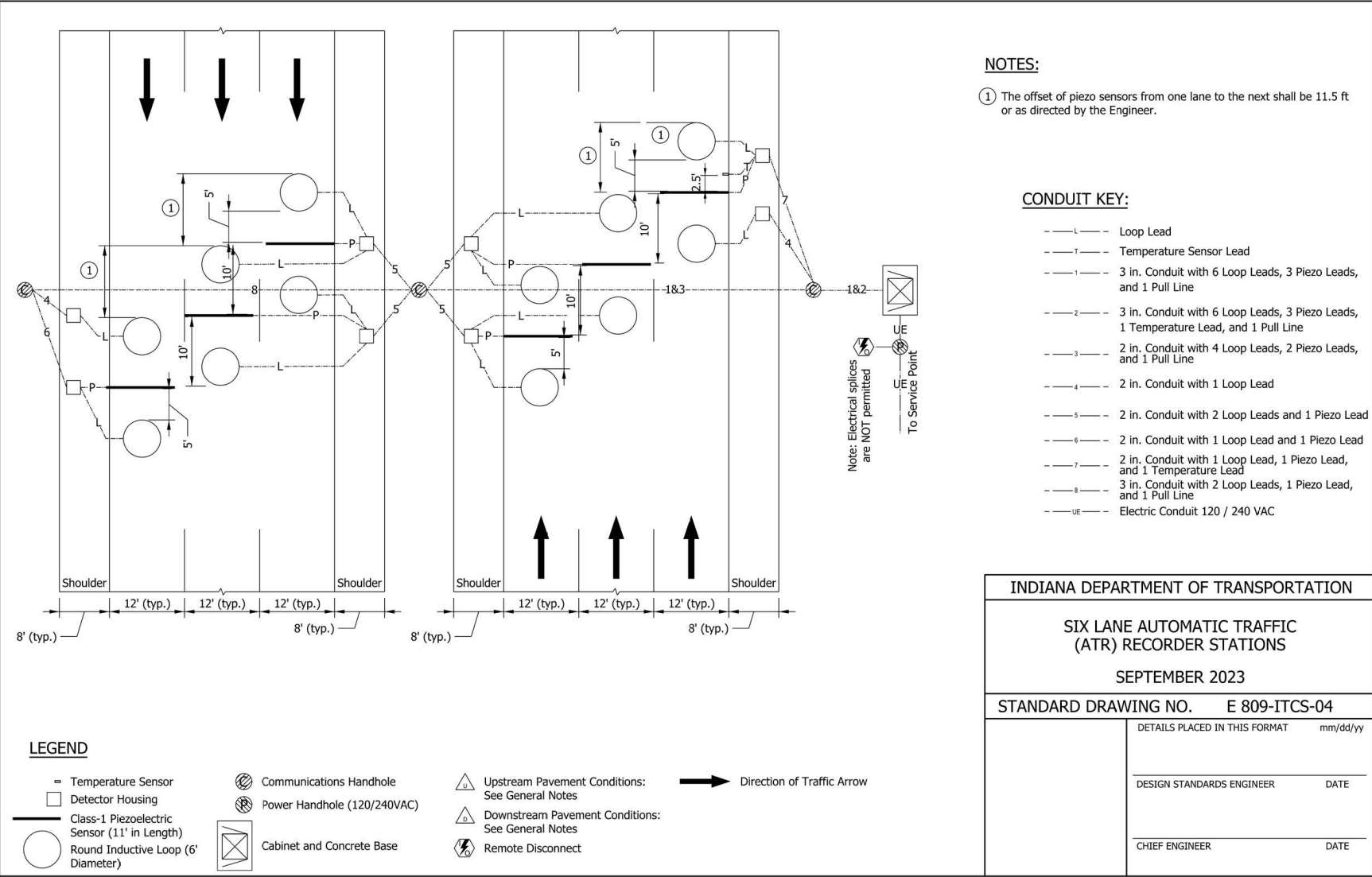
CHIEF ENGINEER DATE

12



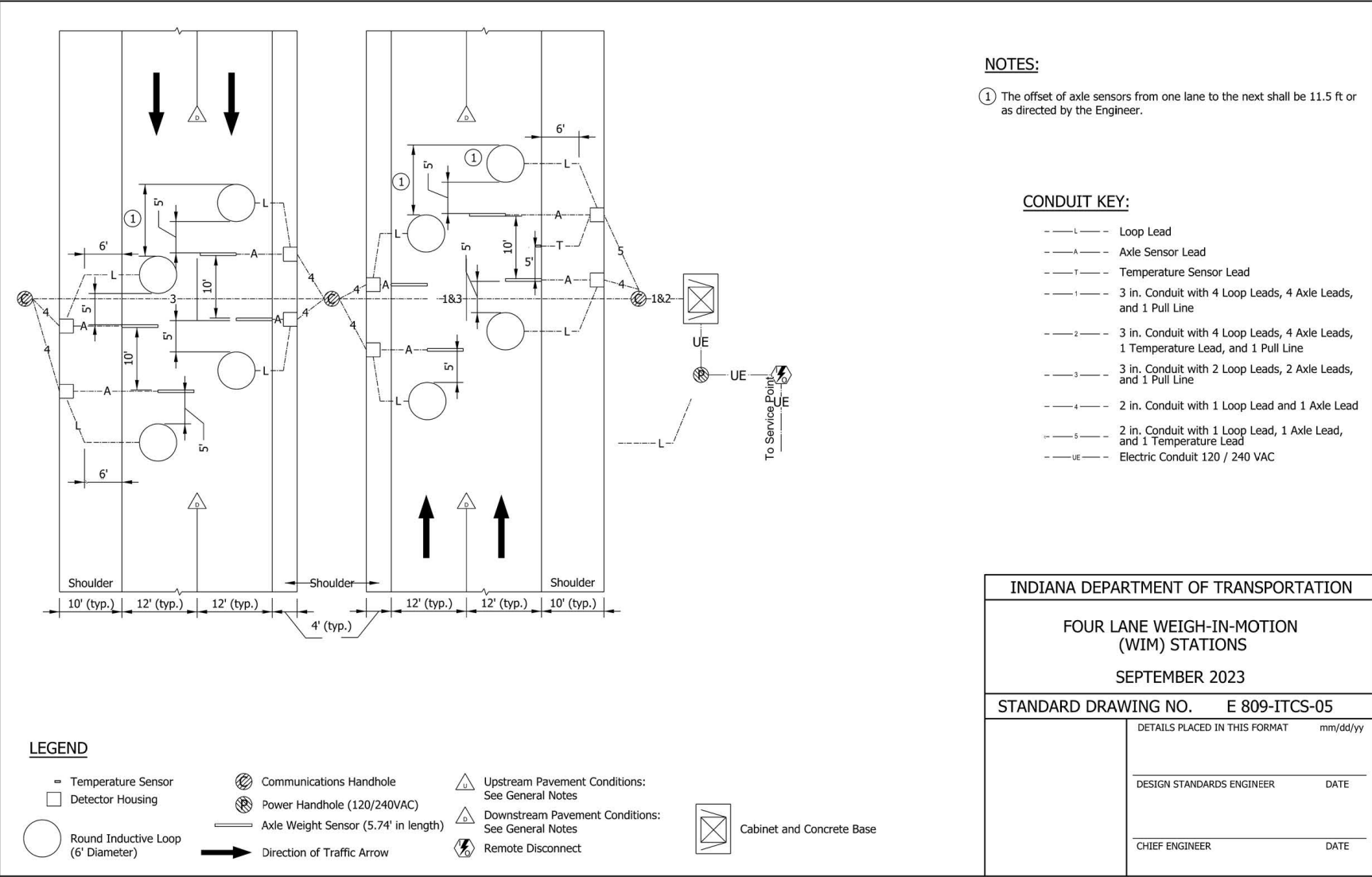
REVISION TO STANDARD DRAWINGS

E 809-ITCS-04 SIX LANE AUTOMATIC TRAFFIC (ATR) RECORDER STATIONS (proposed draft)



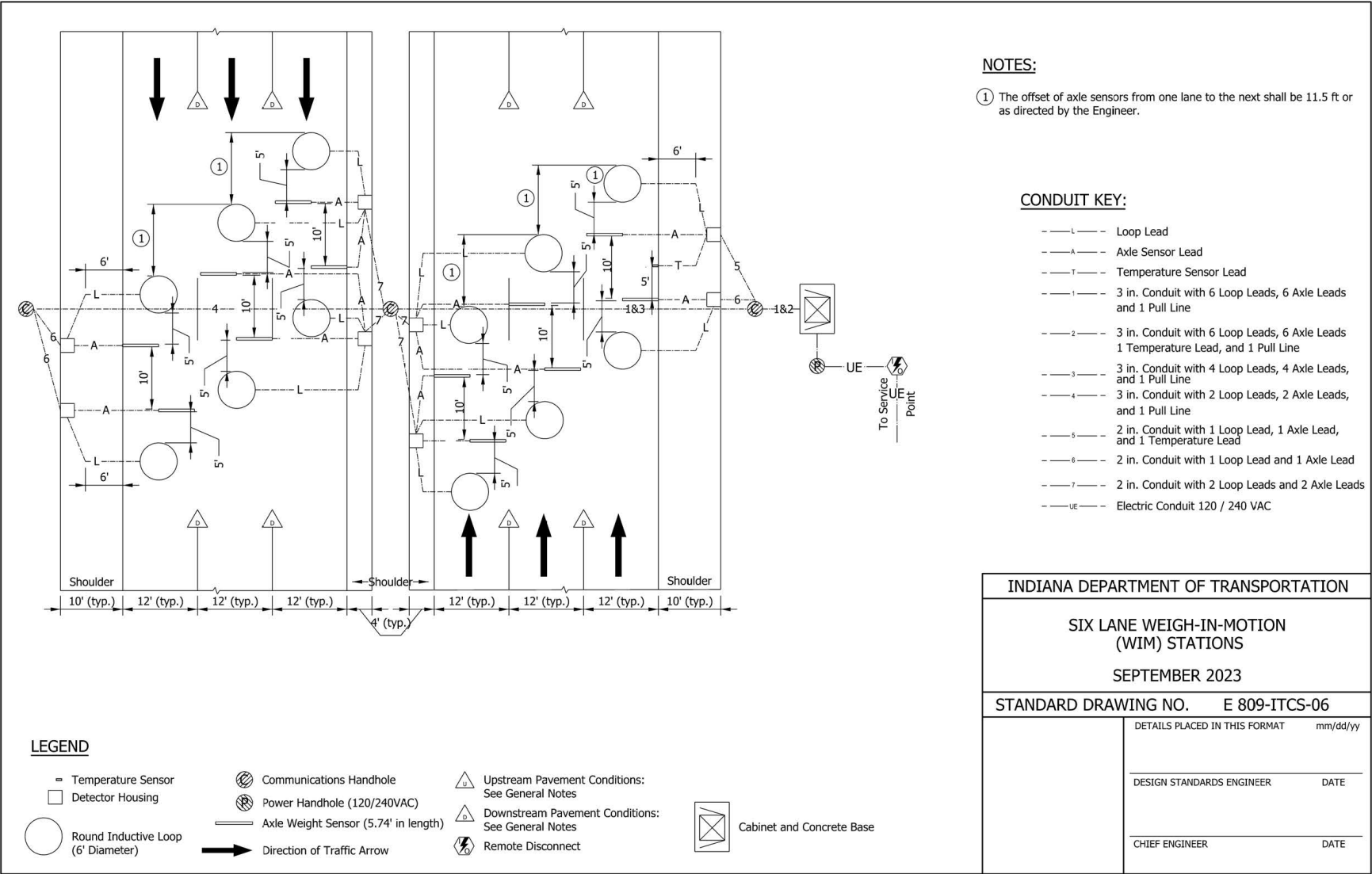
REVISION TO STANDARD DRAWINGS

E 809-ITCS-05 FOUR LANE WEIGH-IN-MOTION (WIM) STATIONS (proposed draft)



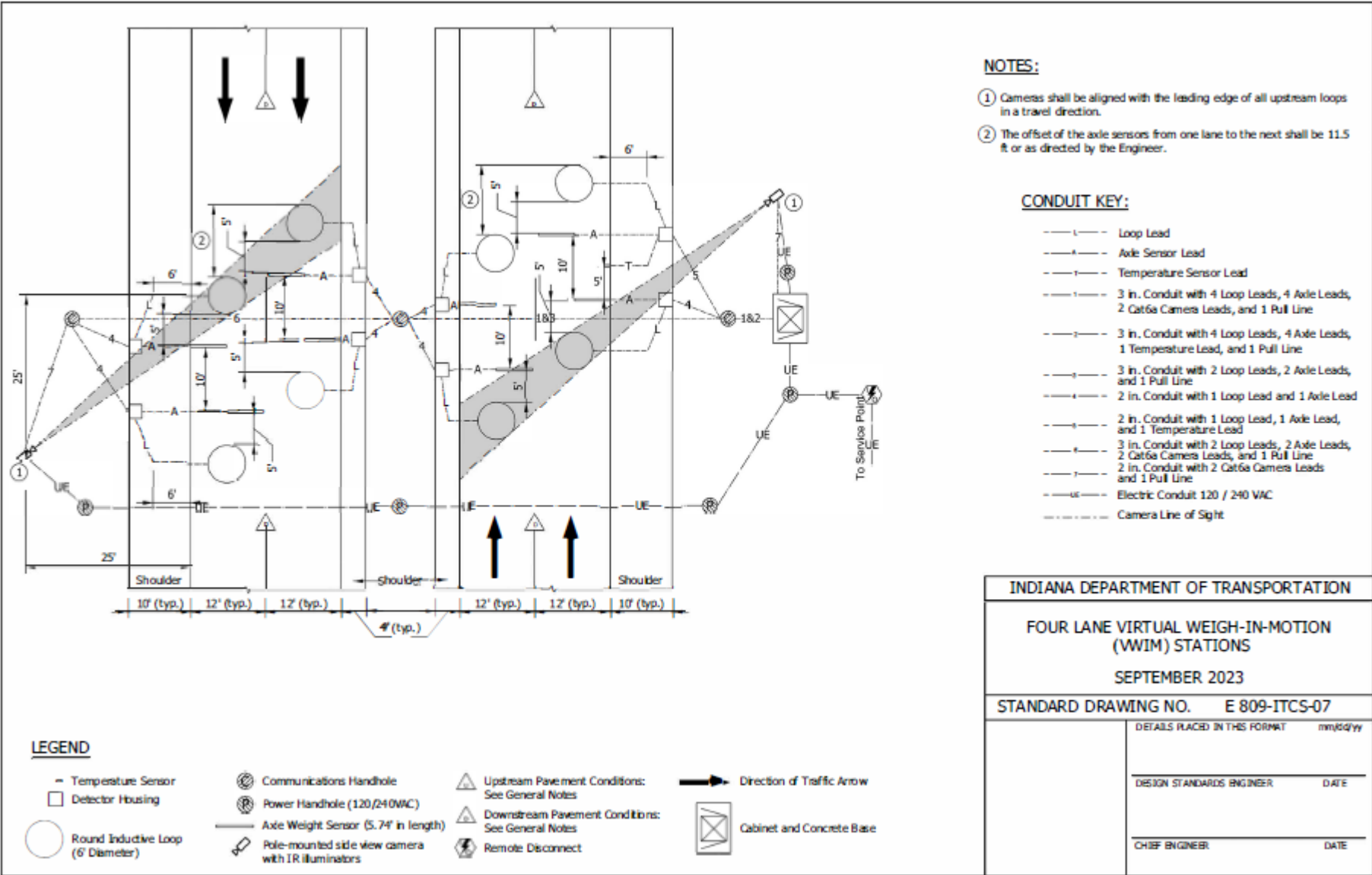
REVISION TO STANDARD DRAWINGS

E 809-ITCS-06 SIX LANE WEIGH-IN-MOTION (WIM) STATIONS (proposed draft)



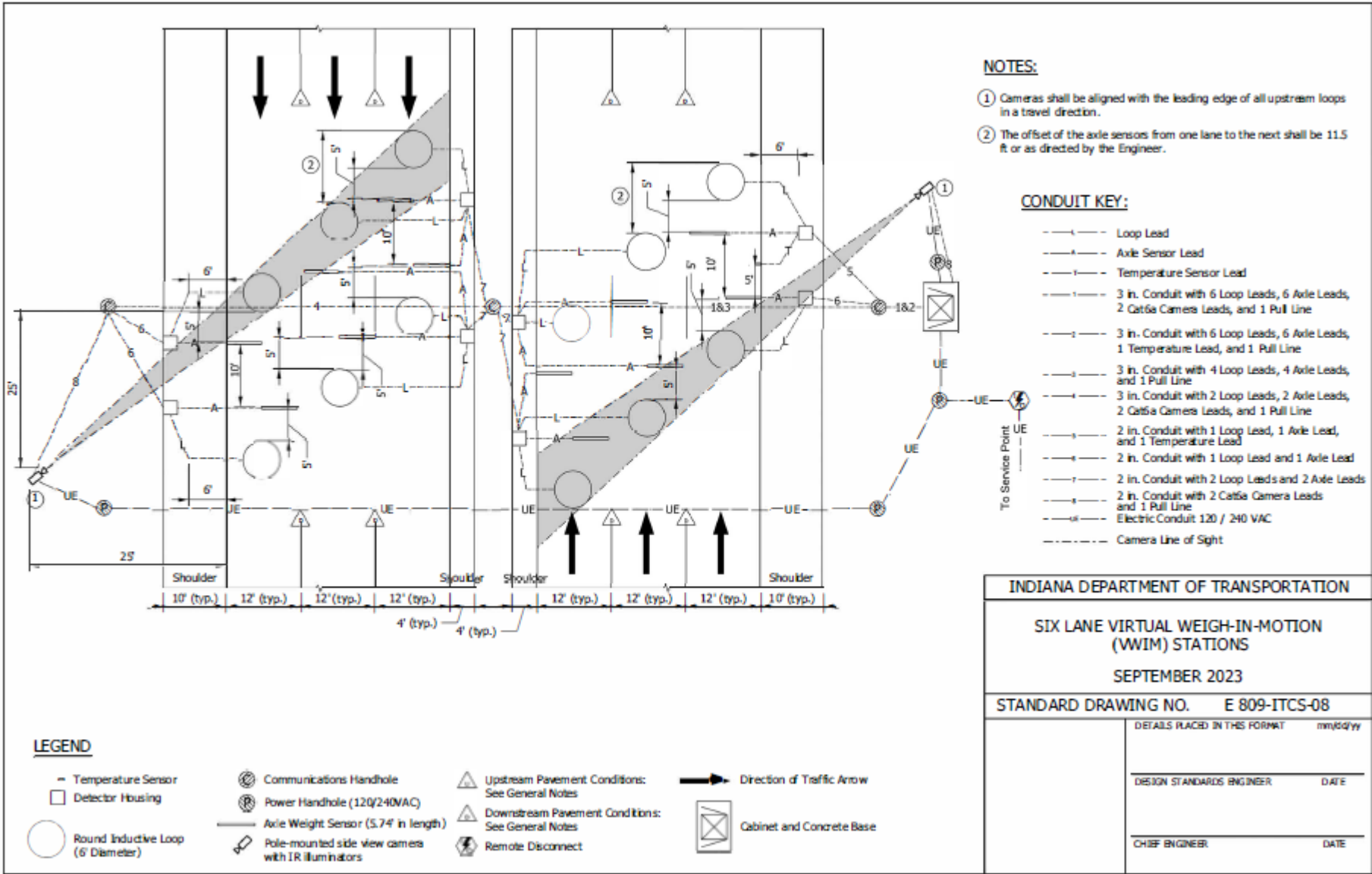
REVISION TO STANDARD DRAWINGS

E 809-ITCS-07 FOUR LANE VIRTUAL WEIGH-IN-MOTION (VWIM) STATIONS (proposed draft)



REVISION TO STANDARD DRAWINGS

E 809-ITCS-08 SIX LANE VIRTUAL WEIGH-IN-MOTION (VWIM) STATIONS (proposed draft)



COMMENTS AND ACTION

E 809-ITCS-01 thru E 809-ITCS-08

DISCUSSION:

	<u>Action:</u>
Motion: Second: Ayes: Nays: FHWA Approval:	<input type="checkbox"/> Passed as Submitted <input type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
2022 Standard Specifications Sections referenced and/or affected: 809 begin pg. 958.	<input type="checkbox"/> 2024 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provisions or Plan Details: NONE	<input type="checkbox"/> Create RSP (No. __) Effective:
Standard Drawing affected: NONE	<input type="checkbox"/> Revise RSP (No. __) Effective:
Design Manual Sections affected: 502-5.04(09)	<input type="checkbox"/> Standard Drawing Effective:
GIFE Sections cross-references: NONE	<input type="checkbox"/> Create RPD (No. __) Effective:  <input type="checkbox"/> GIFE Update <input type="checkbox"/> Frequency Manual Update <input type="checkbox"/> SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: There are a large variety of machines (printer, copier, scanner) being used to satisfy SS628.02(e) Field Office Machines. This has presented challenges to IOT to support this variety, and INDOT field staff as a result.

PROPOSED SOLUTION: Revise specifications to require all-in-one machines and certain brands which will reduce the variety. Also, a revision was made to require color to meet the needs of field staff as well as other minor updates.

APPLICABLE STANDARD SPECIFICATIONS: 628.02

APPLICABLE STANDARD DRAWINGS: n/a

APPLICABLE DESIGN MANUAL SECTION: n/a

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS: n/a

PAY ITEMS AFFECTED: n/a

APPLICABLE SUB-COMMITTEE ENDORSEMENT: None, action being taken as requested by IOT and based on the results of a survey of construction field staff.

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE: n/a

IMPACT ANALYSIS (attach report): none

Submitted By: Joe Novak

Title: State Construction Engineer

Division: Construction Management

E-mail: jnovak@indot.in.gov

Date: 1/24/23

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 Qualified Products List (QPL)? 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? 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? no

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: none



REVISION TO 2022 STANDARD SPECIFICATIONS

SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

(Note: Proposed changes shown highlighted gray)

**SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS**

**628.01 Description**

This work shall consist of providing the specified facilities, equipment, supplies, and services in accordance with 105.03.

**628.02 Field Office Requirements**

When specified, the Contractor shall provide a field office, computer systems, computer system equipment, office machines, telephone service and equipment, services, equipment, and supplies for the Department's exclusive use in accordance with the minimum requirements listed below.

All equipment shall be covered by normal manufacturer's warranties. All cellular telephone units, computer systems, telephones and voice mail systems, office machines and associated equipment provided by the Contractor will remain the property of the Contractor and will be returned to the Contractor upon completion of the contract.

**(a) Field Office**

The field office shall be located as mutually agreed by the Engineer and the Contractor. If a building exists within the limits of the right-of-way that is acceptable as a field office and the building is scheduled to be removed under the terms of the contract, the building may be equipped and furnished as the field office. A building within the right-of-way that is furnished under this specification shall be removed prior to the date of the last work and other acceptable facilities for the field office shall then be provided.

The field office may be a permanent building or a trailer and shall be of the type shown in the Schedule of Pay Items. The building or trailer furnished for the field office shall be in accordance with all applicable State and local codes and applicable IOSHA/OSHA requirements.

The field office shall be complete and ready for use by the Department, including all utility connections, office machines, internet service, equipment and supplies, prior to the start of work. If the Contractor is unable to provide the permanent field office prior to the start of the work, the Engineer shall be notified in writing and the Contractor and the Engineer will agree on temporary field office arrangements prior to the start of work. A temporary field office will not be accepted by the Department for more than two months, at which time a permanent field office shall be ready for the Department's use.

The field office shall, at a minimum, be the size listed below for the type field office specified.

REVISION TO 2022 STANDARD SPECIFICATIONS

SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

1. Type A – 460 sq ft
2. Type C – 650 sq ft
3. Type D – 1,000 sq ft
4. Type E – 2,200 sq ft.

Minimum dimensions shall be 8 ft wide and 7 ft in height, from floor to ceiling. For a trailer, the calculation of minimum area will be based on the exterior box dimensions.

The office shall have a solid and level floor with no holes, a weatherproof roof and shall be dust-proof, and wind-tight. The field office shall have at least two doors for ingress and egress and shall have a minimum of six windows for a Type A or Type C field office and eight windows for a Type D or Type E field office, not including any windows in the doors.

Exterior doors shall have a satisfactory locking system. At least one door shall always be able to be unlocked and opened from inside the field office. If a padlock is used to secure a door, it shall be a high security type and shall be made inaccessible to bolt cutters, hacksaws, hammers, or prybars. The padlock shall be mounted in such a manner that locking and unlocking the door can be made with minimal effort. Installation of additional hardware to protect the lock or use of multiple padlocks on a door will not be allowed. Additional hardware to receive the padlock will be acceptable. The Contractor shall furnish the number of keys to the office as directed by the Engineer. The Department will maintain a list of all Department personnel who are given keys.

Windows shall be hinged or sliding and have a minimum area of 5 sq ft each. Windows shall be provided with satisfactory locks and screens. Windows, including windows in the doors, shall be provided with shades, blinds, or other approved coverings.

Type D and Type E field offices shall have at least one room with a minimum area of 196 sq ft for use as a conference or meeting room.

The field office shall have heating and air-conditioning equipment capable of maintaining a uniform temperature between 68°F and 80°F.

The field office shall have a minimum 100 amp, 120/240 volt electrical service, shall have sufficient receptacles to satisfactorily accommodate all required electrical equipment without the use of extension cords or splitters and shall be provided with satisfactory office type lighting.

If the field office is a trailer, the trailer shall be securely supported by adequate blocking. The blocking shall provide a foundation to prevent settlement. The trailer shall be secured to the ground with a trailer tie down system that is in accordance with all State

## REVISION TO 2022 STANDARD SPECIFICATIONS

## SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

and local requirements. Each trailer shall be furnished with steps meeting IOSHA/OSHA requirements at each doorway.

The field office location shall be selected in order to provide satisfactory parking and trash disposal facilities for Department use. Parking spaces shall be either paved or surfaced with compacted aggregate, size No. 53, or other acceptable materials suitable for all-weather usage and shall be maintained, including snow removal. Satisfactory parking for a Type A field office shall be a minimum of six separate parking spaces. Satisfactory parking for a Type C field office shall be a minimum of 10 separate parking spaces. Satisfactory parking for a Type D field office shall be a minimum of 12 separate parking spaces. Satisfactory parking for a Type E field office shall be a minimum of 16 separate parking spaces.

Any type of field office may be used by other Department personnel from other Department contracts.

**(b) Field Office Equipment and Supplies**

The following minimum equipment and supplies shall be furnished for each field office of the type specified.

Equipment and Supplies	Office Type		
	A and C	D	E
Bloodborne Pathogen Kit	1	1	1
Potable Water	Yes	Yes	Yes
Broom and Dust Pan	1	1	1
Calculators	1	2	4
Carbon Monoxide Detector	1	1	2
Chairs	8	12	20
Cleaning Supplies	Yes	Yes	Yes
Dry Erase Board	1	1	2
Electric Vacuum Sweeper	1	1	1
File Cabinet Drawers	4	8	12
Fire Extinguishers	2	2	3
First-Aid Kit	1	1	1
Folding Office Tables	4	6	10
Microwave Oven	1	1	2
Office Desks and Office Chairs	4	5	10
Paper Shredder	1	1	1
Plan Holder	1	1	2
Refrigerator/Freezer	1	1	2
Shelving	20 lft	24 lft	48 lft
Six-hook Coat Rack	1	1	2
Smoke Detector	1	2	3
Toilet Facilities	Yes	Yes	Yes

## REVISION TO 2022 STANDARD SPECIFICATIONS

## SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

TV Monitor	0	1	1
USB Speakerphone Microphone	No	Yes	Yes
Waste Paper Baskets	4	6	10

The office and the equipment shall be furnished in a condition satisfactory to the Department.

Adequate quantities of basic hygiene and office cleaning supplies shall be provided. These supplies shall include, but are not limited to, antibacterial hand soap in a pump container, hand sanitizer, paper towels, trash bags, toilet paper, spray air freshener, window cleaner, all-surface cleaner, toilet disinfectant, toilet brush and a toilet plunger.

Potable water shall be provided separately for drinking and hand washing purposes.

The plan holder shall have a minimum number of five individual holders, capable of holding full size plans, 24 in. by 36 in., per plan holder.

Fire extinguishers shall be 5 lb, Class ABC or higher rated and shall be maintained in a fully charged and operable condition and shall meet all IOSHA/OSHA requirements.

The toilet facilities shall consist of, at a minimum, a toilet and hand washing location. For a Type A or Type C field office, the toilet can be a portable toilet and the hand washing location can be a portable hand washing station. For a Type D or Type E field office, the toilet facilities shall be provided indoors. Indoor toilet facilities shall have an exhaust fan. Hot water is not required for the toilet facilities. If a portable toilet is provided, it shall be provided with a lock and at least two keys for the lock. If a portable hand washing station is provided as the hand washing location, it shall always remain functional, including during freezing temperatures. The portable toilet or portable hand washing station shall be serviced a minimum of once per week and shall be maintained in such a manner as to provide consistent continual toilet facility service.

First-aid kits shall meet the requirements of ANSI Z308.1 current at the time of letting.

Shelving shall have a minimum width of 10 in.

Filing cabinets shall at a minimum be fire resistant steel filing cabinets with a class D or higher classification established by UL or Safe Manufacturers National Association. Cabinet drawers shall have a filing depth of 25 in. All cabinets shall have a lock and at least half of the drawers shall be fireproof.

Office desktops shall be at least 48 in. wide and 25 in. deep. All desks shall contain at least two drawers, one of which shall be provided with a lock.

REVISION TO 2022 STANDARD SPECIFICATIONS

SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

Folding office tables shall be a minimum size of 30 in. by 72 in.

Office chairs shall be height adjustable and equipped with castors. Other required chairs may be stackable or folding chairs.

Supplies to be furnished shall include all items required for proper operation of the required equipment. This includes, but is not limited to, operating manuals and paper supplies.

Calculators shall be electric powered, have a printer, a minimum 12-digit capacity, and have a counting function.

The paper shredder shall have a minimum capacity of 12 sheets of 20 lb paper, shall be capable of shredding paper clips and staples, and shall include a five-gallon capacity waste basket.

The dry erase board shall have a minimum size of 4 ft by 6 ft. Adequate quantities of dry erase markers and erasers shall be provided.

The TV monitor shall be at a minimum 55 in., LED, 4 series, 2160P, Smart, 4K UDH TV with HDR and shall work wirelessly with laptops. It shall be mounted on the wall of designated meeting or conference rooms as determined by the Engineer.

A USB speakerphone microphone shall be a Conference Speaker Omnidirectional Computer Mic, with 360° voice pickup, touch sensor buttons for mute/unmute, streaming and shall be provided for use in designated meeting or conference rooms as determined by the Engineer.

The microwave oven shall have a minimum 1 cu ft capacity with a minimum 1,100 watts and shall have digital controls.

The refrigerator/freezer shall have a minimum 20 cu ft. capacity for a Type D or Type E field office and shall have a minimum 10 cu ft capacity for a Type A or Type C field office.

The field office and all equipment and supplies shall be maintained and replenished in a satisfactory manner during the term of the contract or until released by the Engineer. If the field office or required equipment and supplies are not maintained by the Contractor, the Engineer may withhold partial payments until the field office is operational to the Department's satisfaction.

**(c) Computer System and Computer System Equipment**

REVISION TO 2022 STANDARD SPECIFICATIONS

SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

When specified in the Schedule of Pay Items, the Contractor shall provide the computer system and computer system equipment in accordance with the minimum requirements listed below for the Department's exclusive use for each field office.

### 1. Computer System

- a. Laptop computer
- b. Processor – Intel compatible, minimum dual-core 2.0 GHz
- c. Memory – 8.0 GB, 1866 MHz
- d. Hard Drive – 500 GB, 7,200 rpm or 256 GB SSD (Solid State Drive)
- e. Ports – Two USB 2.0 compliant ports, one USB 3.0 compliant port
- f. Network/Wireless – Ethernet or wireless card to be compatible with the selected internet and office network connections
- g. Graphics - Integrated graphics card
- h. Display - Minimum 15 in. 1366 by 768 LCD panel
- i. Battery - Minimum 3-cell Lithium ion
- j. Miscellaneous - One laptop docking station compatible with the Monitor, with AC adapter, one additional AC adapter, one DC adapter and one padded carrying case.

The initial condition of the computer system shall be nearly pristine. All owner installed e-mail accounts, games, spyware, online services, applications, network or other profiles previously set up on the system shall be removed prior to placement in the field office. If the system was provided for a previous Department contract, all software not specified shall be removed prior to placement in the current field office.

The Contractor shall provide a minimum 900 J, six-outlet surge protector for each computer system specified in the contract.

### 2. Computer System Equipment

- a. Monitor – Minimum 22 in. digital panel that enables connectivity to DisplayPort and HDMI connections or an adapter
- b. Keyboard – USB multimedia keyboard
- c. Mouse – Optical USB 2-button scroll mouse
- d. Miscellaneous - One laptop docking station compatible with the Monitor, with AC adapter, one additional AC adapter, one DC adapter that is compatible with the Department's provided laptop or mobile device, and one minimum 900 J six-outlet surge protector.

REVISION TO 2022 STANDARD SPECIFICATIONS

SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

### **3. Computer Software**

The Contractor shall provide software for the computer system in accordance with the minimum requirements listed below.

- a. Operating System Software – Windows 10 Professional.
- b. Productivity Software – Microsoft Office 2013 Small Business and Adobe Acrobat Professional DC.
- c. Security Software – McAfee Total Protection.

All software shall include the most current updates and patches at the time the computer system is provided to the Department. The Contractor shall provide for installation of updates and patches for the operating system, productivity and security software during the term of use of the computer system by the Department. Updates and patches shall be provided by an automatic update method.

The Department may install and maintain proprietary software on the computer in order to run the Department's construction management programs.

### **4. Miscellaneous Computer Requirements**

The Contractor shall provide all cables, connections and software required to connect the computer system provided by the Contractor or by the Department to the printer and the scanner.

The Contractor shall provide an Ethernet and a wireless office network to enable all computer systems in the field office to access the field office internet service, the printer and the scanner.

The Contractor shall provide all manuals necessary for operation of the computer system, computer system equipment and software with the system and shall include all documentation normally furnished with the equipment and software when purchased.

The Department will be utilizing the computer system to run or access Department provided construction management software applications. These applications are known to run on Intel compatible equipment when using the Windows 10 Professional operating system. If the Department experiences problems running these applications due to hardware or software compatibility, the Contractor shall replace the equipment to ensure compatibility to the satisfaction of the Engineer within five business days.

The computer system shall be maintained in good working order. If a portion of the system becomes defective, inoperable, damaged, or stolen, that portion shall be repaired or replaced within five business days after the Contractor is notified by the Engineer. If the computer system and related accessories are not maintained by the Contractor as required, the Engineer may withhold partial payments until the computer system is operational to



REVISION TO 2022 STANDARD SPECIFICATIONS

SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

the Department's satisfaction.

**(d) Field Office Internet Service**

The Contractor shall provide broadband internet service for the field office. Broadband internet service shall be capable of a minimum average download speed of 50 Mbps and a minimum upload speed of 5 Mbps, unless otherwise approved by the Engineer.

**(e) Field Office Machines**

The Contractor shall provide a fully operational *all-in-one* copier, printer, and document scanner *machine* for the Department's exclusive use in the field office in accordance with the minimum requirements listed herein.

~~In lieu of separate copier, printer, and scanner, the Contractor may provide an all-in-one unit that meets all the requirements for any combination of the individual machines being provided. Separate machines shall be provided for those machine functions that are not included in an all-in-one type machine. All~~ The machines shall be supplied with, and shall be maintained with, one additional set of ink cartridges. *The Contractor shall provide letter, legal, and ledger size paper as required by the Engineer.*

*The machine shall be compatible with, and shall be connected to, the computer system provided by the Contractor or the Department for use by the Department in the field office.*

*The machine shall be an Epson Workforce or HP OfficeJet Pro model that has the following minimum specifications.*

1. *Auto 2-sided color print, copy, and scan*
2. *Print, copy, and scan full size letter, legal, and ledger documents*
3. *Minimum of two automatic document feeder universal size trays*
4. *Wireless printing*
5. *Minimum printer resolution 1200 x 4800 dpi*
6. *Minimum scanner resolution 600 x 600 dpi.*

**1. Copier**

~~The copier shall be compatible with, and shall be connected to, the computer system provided by the Contractor or the Department for use by the Department in the field office. The copier shall be capable of using plain paper and of making full size, black and white copies of letter, legal and ledger US paper size original documents. The copier shall be capable of reducing and increasing copy sizes. The copier shall have a self-feeding paper tray, an automatic document feeder and be capable of producing at least 20 copies per minute. The copier shall be capable of double-sided copying. The copier shall have at least two universal paper drawers; letter and ledger size.~~



## REVISION TO 2022 STANDARD SPECIFICATIONS

## SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

**2. Printer**

The printer shall be compatible with, and shall be connected to, the computer system provided by the Contractor or by the Department for use by the Department in the field office. The printer shall be capable of printing single-sided and double-sided, black and white letter, legal and ledger US paper size documents at a rate of 20 pages per minute and capable of automatic duplex printing. More than one printer may be used to meet this requirement.

All printers shall be set to accommodate wireless printing from the Department's provided laptop or mobile device.

**3. Document Scanner**

The document scanner shall be compatible with, and shall be connected to, the computer system provided by the Contractor or the Department for use by the Department in the field office. The scanner shall be capable of scanning letter and ledger size documents and shall have an automatic document feeder and be capable of 200 to 600 dpi black and white resolution, preset to 200 dpi.

**4. Miscellaneous Office Machine Requirements**

The Contractor shall provide letter, legal and ledger size paper, ink cartridges and toner as required by the Engineer for the operation of each piece of equipment provided.

If any office machine becomes defective, inoperable, damaged, stolen or incompatible with the Department provided devices, that machine shall be repaired or replaced within five business days after the Contractor is notified by the Engineer. If any of the office machines are not maintained by the Contractor as required, the Engineer may withhold partial payments until the machine is operational to the Department's satisfaction.

**(f) Telephone Service**

When specified in the Schedule of Pay Items, the Contractor shall provide telephone services and equipment, as specified below, for use by the Department on the contract.

Telephone Service	Type A	Type B	Type C
Telephone line	1	2	2
Telephone	1	2	3
Telephone voice mail system	1	2	1

The telephone voice mail system shall be capable of providing both a minimum 1 minute outgoing message and 30 minutes total recording time for incoming messages. It shall have a remote operation feature, which may be used to retrieve, replay, erase, and save messages. An answering machine meeting these requirements may be substituted for the voice mail system.

REVISION TO 2022 STANDARD SPECIFICATIONS

SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

At least one telephone shall be a cordless phone having a frequency of at least 900 MHz.

**628.03 Mobile Internet Service**

When specified, the Contractor shall provide mobile internet service for the Department's exclusive use.

The mobile broadband internet service access device will be used by the Department in a laptop computer provided by either the Contractor or the Department.

The device shall connect to the laptop via a USB 2.0 or USB 3.0 compliant port, or by wireless means. The device and service shall be capable of a minimum 4G speed. The internet service rate plan shall include unlimited data and time usage with no roaming charge for national domestic use. All software necessary for the operation of the device shall be provided to the Engineer.

The Contractor shall not purchase any device or enter into any service agreement until authorized by the Engineer. The Engineer will provide a minimum of 10 business days notice prior to the date the device will be required.

**628.04 Cellular Telephones**

The Contractor shall provide cellular telephone equipment and services, as specified below, for use by the Department on the contract.

Each cellular telephone unit shall have a service coverage area that includes the project limits. Each cellular telephone unit shall include a belt clip system, a 120V AC charger, a 12V DC mobile charger, and a hands-free kit consisting of a speaker and a microphone enabling the user to operate the unit with minimal need for the use of their hands. The hands-free kit shall be wireless.

All equipment shall be covered by normal manufacturer's warranties. All cellular telephone units and associated equipment will remain the property of the Contractor and will be returned to the Contractor upon completion of the contract.

Cellular telephone units shall meet the following minimum requirements:

**(a) Type A**

1. internet ready device with minimum 5 in. display, measured diagonally
2. cellular telephone anytime minutes per month as shown in the Schedule of Pay Items

REVISION TO 2022 STANDARD SPECIFICATIONS

SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

3. unlimited nights and weekends service
4. voice mail and caller ID
5. protective case to prevent damage to the unit
6. rear facing camera with a minimum 8 MP resolution
7. minimum 1080p video capture
8. 5 GB or higher data plan per unit
9. internal memory of 64 GB or higher.

**(b) Type B**

1. a cellular telephone with anytime minutes per month as shown in the Schedule of Pay Items
2. unlimited nights and weekends service
3. voice mail and caller ID
4. built-in camera with a minimum 5 MP resolution.

The Department will be responsible for damage or loss of the units beyond that covered by normal manufacturer's warranties, while in use by the Department. The Contractor shall provide replacement cellular telephone units, batteries, chargers, and equipment within one business day of notification of need for the item.

The Contractor shall not enter into any agreement with any service provider or purchase any cellular telephone units for use by the Department until authorized by the Engineer. The Engineer will notify the Contractor a minimum of 10 business days prior to the need for the units.

**628.05 Method of Measurement**

Field office will be measured by the month for the specified type. Partial months will be rounded up to the next 1/2 or whole month. The Department will provide two weeks advanced notice prior to when the facility will be vacated.

Computer system and computer system equipment will be measured by the number of units specified.

Telephone service will be measured by the month for the specified type. Partial months will be rounded up to the next 1/2 or whole month. The Department will provide two weeks advanced notice prior to when the telephone service will be vacated.

Cellular telephones will be measured by the number of units required for the type specified.

Mobile internet service and cellular telephone service will be measured by the month for each system or service provided. Partial months will be rounded up to the next

REVISION TO 2022 STANDARD SPECIFICATIONS

SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

1/2 or whole month. The Department will provide two weeks advanced notice prior to when mobile internet service and cellular telephone service will no longer be required.

**628.06 Basis of Payment**

Field office will be paid for at the contract unit price per month, complete in place until released.

Computer system and computer system equipment will be paid for at the contract unit price per each for the units provided.

Telephone service will be paid for at the contract unit price per month, complete in place until released.

Mobile internet service will be paid by the month for each system or service provided.

Cellular telephone units will be paid for at the contract unit price per each per each type specified. Cellular telephone service will be paid for at the contract unit price per month per each phone. Monthly charges for cellular telephone minutes and data in excess of those specified in the contract will be paid for by the dollar amount for the invoiced price per each occurrence as cellular telephone, additional charges.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit Symbol</b>
Cellular Telephone Service, _____ anytime minutes	.....MOS
Cellular Telephone, _____ type	.....EACH
Cellular Telephone, Additional Data .....	DOL
Cellular Telephone, Additional Minutes.....	DOL
Computer System Equipment .....	EACH
Computer System.....	EACH
Field Office, _____ type	.....MOS
Mobile Internet Service, _____ Each..... quantity	MOS
Telephone Service, _____ type	.....MOS

The cost of all heating, cooling, electrical service, and other miscellaneous utility bills required for the field office shall be included in the cost of the field office.

REVISION TO 2022 STANDARD SPECIFICATIONS

SECTION 628 – FIELD OFFICE, COMPUTER SYSTEM, COMPUTER SYSTEM EQUIPMENT, OFFICE MACHINES AND COMMUNICATIONS

628.02 Field Office Requirements (see proposed changes in (e) Field Office Machines)

628.06 Basis of Payment

If a field office smaller than the specified type is approved by the Engineer, a new unit price will be established for the smaller field office. The new unit price will be equal to the original contract unit price multiplied by the smaller floor area and divided by the specified floor area.

All costs necessary to provide and maintain the telephone service, including monthly charges and installation of telephone lines, shall be included in the cost of the telephone service.

If a temporary field office is provided in accordance with 628.02, payment will be 65% of the unit price during the time the temporary field office is in use by the Department.

The cost of all materials and labor necessary to setup, secure, maintain, and remove the field office, including all required equipment and supplies and any material required to provide parking, shall be included in the cost of the respective pay item.

All costs necessary to provide and maintain the computer system, computer system equipment, including the required software, manuals, technical support, and miscellaneous computer requirements shall be included in the cost of the computer system or computer system equipment.

All costs necessary to establish, install, and maintain field office internet service, both wireless and Ethernet, field office network, including any required hardware, software, fees, monthly charges, setup, installation, and technical support shall be included in the cost of the field office.

All costs associated with providing the field office for any Type of field office for use by other Department personnel from other Department contracts shall be included in the cost of the field office.

All costs necessary to provide the *all-in-one* copier, printer, and document scanner *machine*, including setup, installation, all required connections to computers, technical support, and miscellaneous office machine requirements shall be included in the cost of the field office.

All costs necessary to establish, install and maintain mobile internet service, including required hardware, software, fees, monthly charges, setup, installation, and technical support shall be included in the cost of mobile internet service.

The Contractor shall provide a copy of the detailed invoice from the service provider for each cellular telephone unit each month.

COMMENTS AND ACTION

628.02 Field Office Requirements

628.06 Basis of Payment

DISCUSSION:

	<u>Action:</u>
Motion:	
Second:	<input type="checkbox"/> Passed as Submitted
Ayes:	<input type="checkbox"/> Passed as Revised
Nays:	<input type="checkbox"/> Withdrawn
FHWA Approval:	
<hr/>	
2022 Standard Specifications Sections referenced and/or affected: 628 begin pg. 584.	<input type="checkbox"/> 2024 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provisions or Plan Details: NONE	<input type="checkbox"/> Create RSP (No. __) Effective:
Standard Drawing affected: NONE	<input type="checkbox"/> Revise RSP (No. __) Effective:
Design Manual Sections affected: NONE	<input type="checkbox"/> Standard Drawing Effective:
GIFE Sections cross-references: NONE	<input type="checkbox"/> Create RPD (No. __) Effective:
	<input type="checkbox"/> GIFE Update
	<input type="checkbox"/> Frequency Manual Update
	<input type="checkbox"/> SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: When existing beam ends are required to be encased in concrete as part of a new integral or semi-integral end bent or as part of an existing bent retrofit, the Department has become aware of inconsistencies from contract to contract in the application of beam end cleaning and painting. Prior to encasement in concrete: some beam ends are not cleaned or painted at all, some are only cleaned but not painted, others are cleaned and primed only, and yet others are cleaned and painted with a full paint coat system.

PROPOSED SOLUTION: Revise the spec language in SS 619 to clarify beam end cleaning and painting requirements prior to encasement in concrete. Only require inorganic zinc primer coat on the beam ends prior to encasement rather than the full paint system.

APPLICABLE STANDARD SPECIFICATIONS: 619

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: 17-5.11, 412-3.04(05)

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Don Shaw, Jacob Blanchard, Jon Kruger, Mark Pittman

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE: Intent is to have this approved for the 2024 spec book with no special provision

IMPACT ANALYSIS (attach report):

Submitted By: Joe Novak

Title: State Construction Engineer

Organization: INDOT

Phone Number: 317-501-7805

Date: 1/23/23

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? Yes

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? yes

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? Yes

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? 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 2022 STANDARD SPECIFICATIONS

SECTION 619 – PAINTING BRIDGE STEEL

619.09 Paint Systems

619.12 Field Painting New Steel Bridge

619.13 Painting Existing Steel Bridges

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 619, BEGIN LINE 435, INSERT AS FOLLOWS:

**619.09 Paint Systems**

Paint systems shall be applied in accordance with the manufacturer's recommendations. The dry film thickness of a paint coating will be measured with a calibrated film thickness gauge in accordance with SSPC PA 2. All paint coatings shall have a dry film thickness not less than 80% of the required dry film thickness.

**(a) Structural Steel Paint System**

The coating system shall consist of an inorganic zinc primer with a dry film thickness of 3 mil, an epoxy intermediate coat with a dry film thickness of 4 mil, and a polyurethane finish coat with a dry film thickness of 3 mil for the painting of steel bridges and other structural steel.

*Portions of new or existing structural steel to be encased in a concrete end bent shall require only the inorganic zinc primer coat.*

SECTION 619, BEGIN LINE 629, INSERT AS FOLLOWS:

**619.12 Field Painting New Steel Bridge**

All structural steel surfaces which are accessible after final erection shall be painted with the remaining coatings specified for structural steel paint system in accordance with 619.09(a) in the field after final erection.

If application of inorganic zinc primer on a steel surface is not performed in the shop before erection of the bridge, the surfaces which are exposed shall be cleaned in accordance with 619.08(a), and 619.08(e). These surfaces shall then be painted with the structural steel paint system after final erection.

*All new beam ends required to be encased in concrete including all cross frames and diaphragms shall be cleaned in accordance with 619.08(a) and (e), shall utilize the appropriate paint system in accordance with 619.09(a), and shall be painted in accordance with 619.10. Cleaning and painting beam ends, cross frames, and diaphragms to allow for encasement in concrete prior to cleaning and painting the full bridge shall be at the Contractor's discretion with no additional mobilization costs to be incurred by the Department.*

Surface areas where the inorganic zinc primer was damaged during shipping, handling, and erection shall be cleaned in accordance with 619.08(a) and either 619.08(d) or 619.08(i). Likewise, all bolt and field connections shall be cleaned in the same manner. All the damaged areas, and bolt and field connections shall then be painted with the

REVISION TO 2022 STANDARD SPECIFICATIONS

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SECTION 619 – PAINTING BRIDGE STEEL

619.09 Paint Systems

619.12 Field Painting New Steel Bridge

619.13 Painting Existing Steel Bridges

inorganic zinc primer applied in the shop. This requirement will not apply to temporary steel bridges.

Where steel surfaces have been painted with the full paint system and the paint coatings have been damaged, the affected steel surface areas shall be cleaned in accordance with 619.08(i). Structural steel paint system shall then be re-applied.

For weathering steel girders, caulk shall be applied to act as a drip bead as shown on the plans.

**619.13 Painting Existing Steel Bridges**

The surfaces to be cleaned and painted shall include the surfaces of all steel members of the superstructure, substructure, floor beams, stringers, plates, castings, bearing assemblies, ornamental handrails, lattice work, and other steel appurtenances. When shear connectors have been specified, the top of the top flange shall not be painted.

If the contract specifies clean steel bridge, the bridge steel shall be cleaned in accordance with 619.08(a) and either 619.08(e) or 619.08(i). The structural steel paint system in accordance with 619.09(a) shall be used for painting.

If the contract specifies clean steel bridge, partial, the bridge steel shall be cleaned in accordance with 619.08(a) and either 619.08(e), or 619.08(h). The partial paint system in accordance with 619.09(b) shall be then used for painting.

*All existing beam ends required to be encased in concrete including all cross frames and diaphragms shall be cleaned in accordance with 619.08(a) and either 619.08(e) or 619.08(i), shall utilize the appropriate paint system in accordance with 619.09(a), and shall be painted in accordance with 619.10. Cleaning and painting beam ends, cross frames, and diaphragms to allow for encasement in concrete prior to cleaning and painting the full bridge shall be at the Contractor's discretion with no additional mobilization costs to be incurred by the Department.*

COMMENTS AND ACTION

- 619.09 Paint Systems
- 619.12 Field Painting New Steel Bridge
- 619.13 Painting Existing Steel Bridges

DISCUSSION:

<p>Motion:</p> <p>Second:</p> <p>Ayes:</p> <p>Nays:</p> <p>FHWA Approval:</p>	<p><b>Action:</b></p> <p>— Passed as Submitted</p> <p>— Passed as Revised</p> <p>— Withdrawn</p>
<p>2022 Standard Specifications Sections referenced and/or affected: 619 begin pg 549.</p> <p>Recurring Special Provisions or Plan Details: NONE</p> <p>Standard Drawing affected: NONE</p> <p>Design Manual Sections affected: 17-5.11, 412-3.04(05)</p> <p>GIFE Sections cross-references: NONE</p>	<p>— 2024 Standard Specifications Revise Pay Items List</p> <p>— Create RSP (No. __) Effective:</p> <p>— Revise RSP (No. __) Effective:</p> <p>— Standard Drawing Effective:</p> <p>— Create RPD (No. __) Effective:</p> <p>— GIFE Update</p> <p>— Frequency Manual Update</p> <p>— SiteManager Update</p>

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Standard Drawing series 604-SWCR. Standard Drawing 604-SWCR-11, note 3, limits the running slope of a median cut-through to 2%. Upon further review of the Proposed Right-of-Way Accessibility Guidelines (PROWAG) and clarification from the US Access Board, the running slope may be a maximum of 5%. Given the geometry of divided highways and intersections, the increase of the maximum running slope will allow for more flexibility in design. Standard Drawing 604-SWCR-13, there has been some confusion on the offset of a detectable warning surface from a railroad crossing. The current drawing only takes into account a perpendicular crossing of a sidewalk, where many crossings are at a skew. When a railroad crosses a sidewalk at a skew, the designer and contractor must take into account the minimum and maximums within the Public Rights-of-Way Accessibility Guidelines (PROWAG) and the location of the railroad dynamic envelope.

PROPOSED SOLUTION: Standard Drawing 604-SWCR-11, change note 3 to state, where a median cut-through is used the running slope shall be 5.00% maximum. Standard Drawing 604-SWCR-13, add a skewed railroad crossing detail, add dynamic envelope lines to both railroad crossing details, modify note 4 to define the dynamic envelope location, and add a note to give the minimum and maximum offset of a detectable warning surface in relationship to the dynamic envelope and the nearest rail.

APPLICABLE STANDARD SPECIFICATIONS: N/A

APPLICABLE STANDARD DRAWINGS: Standard Drawing 604-SWCR-11 and -13

APPLICABLE DESIGN MANUAL SECTION: 51-1.04(02), the running slope is not mentioned in the IDM, we do not propose any changes to the IDM only the standard drawing.

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad-Hoc Committee: Mark Orton, Elizabeth Mouser, Herbert Davis, Corey Pressler, and Katherine Smutzer

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE:  
Required for all contracts with pay item 604-08086 Curb Ramp, Concrete.

IMPACT ANALYSIS (attach report): yes

Submitted By: Katherine Smutzer  
Title: Work Zone Safety Engineer

Division: Traffic Management

E-mail: ksmutzer@indot.in.gov

Date: 11/30/2022

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 Qualified Products List (QPL)? 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? No

Asset preservation? No

Design process? No

Will this change provide the contractor more flexibility? Yes

Will this proposal provide clarification for the Contractor and field personnel? No

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: The increase in the maximum running slope will allow designers more flexibility for the design of median cut-throughs and cut-throughs of other raised islands.

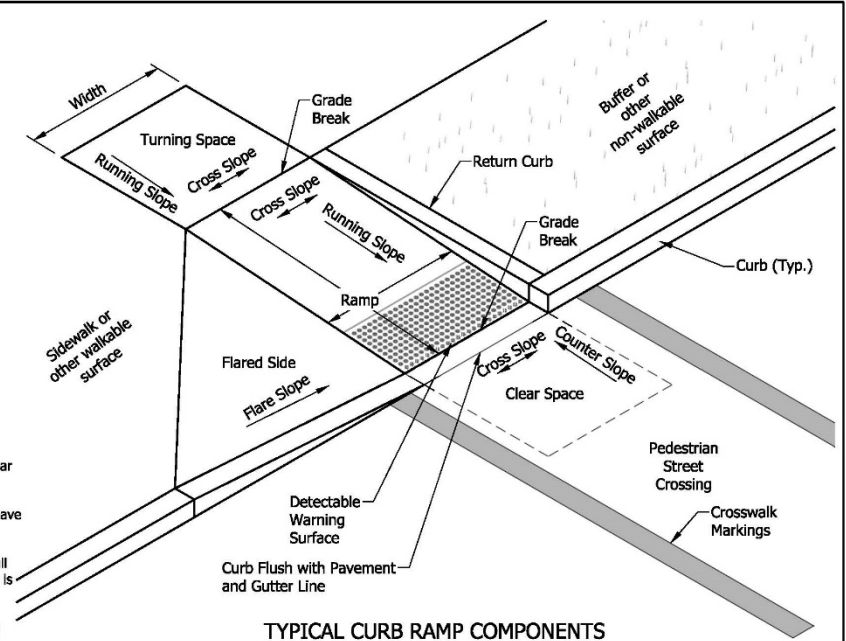
REVISION TO STANDARD DRAWINGS

E 604-SWCR-01 CURB RAMP DRAWING INDEX AND GENERAL NOTES (no proposed changes)

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:**

- All slopes are absolute rather than relative to the sidewalk or roadway grade. Slopes at least 0.50% less than the maximum are preferred.
- 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.
- 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.
- 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.
- 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.
- 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.
- Detectable Warning Surface.** A detectable warning surface shall consist of truncated domes and be placed at each street, highway, or railroad crossing. The 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.
- Running Slope.** The running slope of a ramp, blended transition, or turning space shall be measured parallel to the direction of pedestrian travel.
  - A running slope of 2.00% or less is considered level.
  - A ramp shall have a maximum running slope of 8.33% but shall not require a ramp length to exceed 15 ft.
  - A blended transition shall have a maximum running slope of 5.00%.
  - A turning space shall have a maximum running slope of 2.00%.
- Width.** Unless otherwise noted, minimum width of a ramp, blended transition, or turning space, excluding flared sides or return curb, shall be 4 ft.
- 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.
- Cross Slope Exceptions.** The cross slope of a ramp, blended transition, or turning space shall be measured perpendicular to the direction of pedestrian travel.
  - The maximum cross slope at a pedestrian street crossing without posted yield or stop control shall be 5.00%.
  - The maximum cross slope at a pedestrian street crossing with posted yield or stop control shall be 2.00%.
  - The maximum cross slope at a midblock crossing shall be the established grade of the adjacent roadway.
- Counter Slope.** A counter slope is the cross slope of the gutter or street adjacent the running slope of the ramp, blended transition, or turning space. See Standard Drawing E 604-SWCR-14 for counter slope details.
- Objects such as a utility cover, vault frame, and grating shall be placed outside the curb ramp.
- Curb ramps shall be placed within the marked crosswalk area.
- Drainage inlets should be located uphill from a curb ramp to prevent ponding in the path of pedestrian travel.



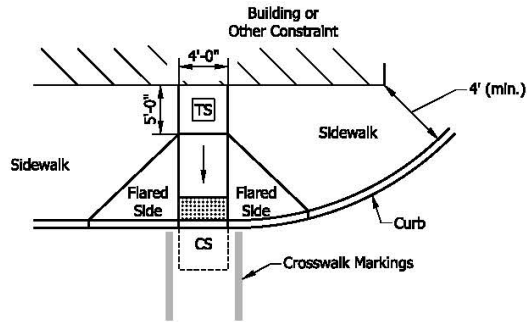
TYPICAL CURB RAMP COMPONENTS

INDIANA DEPARTMENT OF TRANSPORTATION	
CURB RAMP DRAWING INDEX AND GENERAL NOTES	
SEPTEMBER 2018	
STANDARD DRAWING NO.	E 604-SWCR-01
	/s/ Elizabeth W. Phillips 03/20/18 DESIGN STANDARDS ENGINEER DATE
	/s/ John Leckie 04/25/18 CHIEF ENGINEER DATE

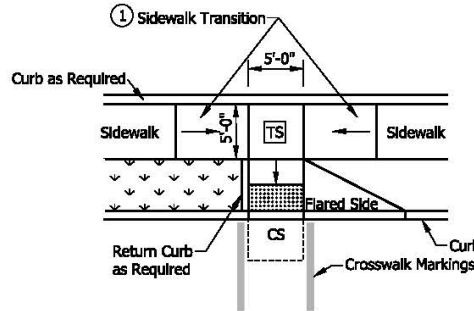


REVISION TO STANDARD DRAWINGS

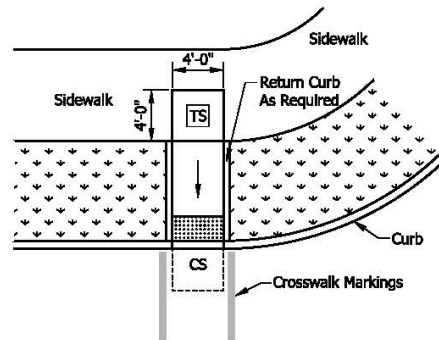
E 604-SWCR-02 PERPENDICULAR CURB RAMP TYPICAL PLACEMENT (no proposed changes)



**PERPENDICULAR CURB RAMP  
ADJACENT WALKABLE SURFACE**



**TIERED PERPENDICULAR CURB RAMP**



**PERPENDICULAR CURB RAMP  
ADJACENT NON-WALKABLE SURFACE**

**NOTES:**

- ① Where insufficient width between the curb and back of sidewalk prevent a standard perpendicular curb ramp running slope, a sidewalk transition may be used to lower the sidewalk grade. The sidewalk transition running slope shall not exceed 8.33%. See Standard Drawing Series E 604-SDWK for sidewalk details.
2. The turning space shall have a minimum clear dimension of 4 ft x 4 ft and a running slope of 2.00% maximum. Where the turning space is constrained at the back of the sidewalk, the minimum clear dimension shall be 4 ft x 5 ft, with the 5-ft dimension in the direction of the ramp running slope.

**LEGEND:**

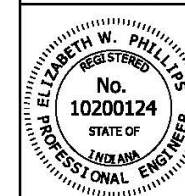
- Buffer or Other Non-Walkable Surface
- Ramp
- Detectable Warning Surface
- Turning Space
- Clear Space

INDIANA DEPARTMENT OF TRANSPORTATION

PERPENDICULAR CURB RAMP  
TYPICAL PLACEMENT

SEPTEMBER 2018

STANDARD DRAWING NO. E 604-SWCR-02

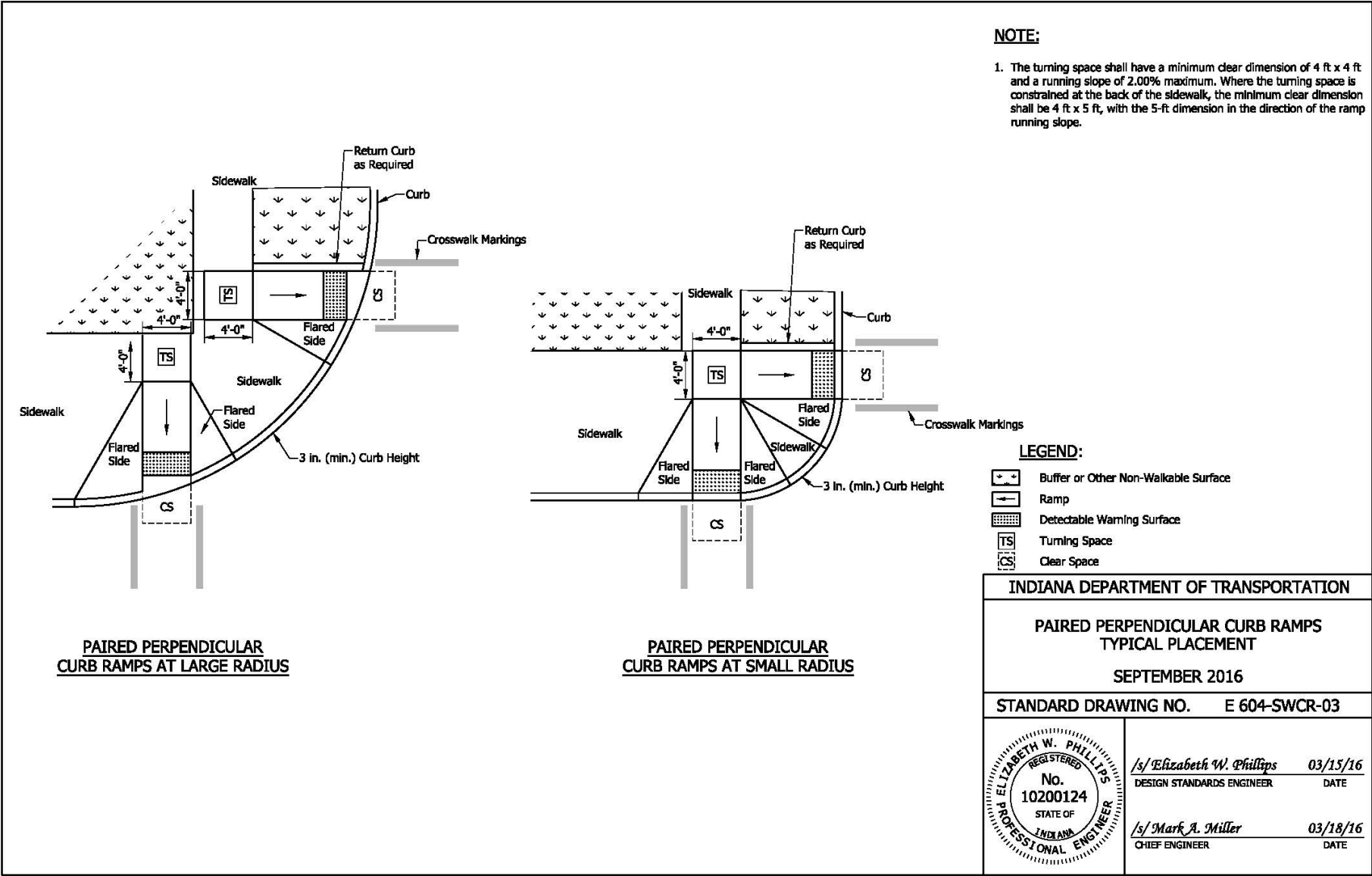


/s/ Elizabeth W. Phillips 03/29/18  
DESIGN STANDARDS ENGINEER DATE

/s/ John Leckie 04/25/18  
CHIEF ENGINEER DATE

REVISION TO STANDARD DRAWINGS

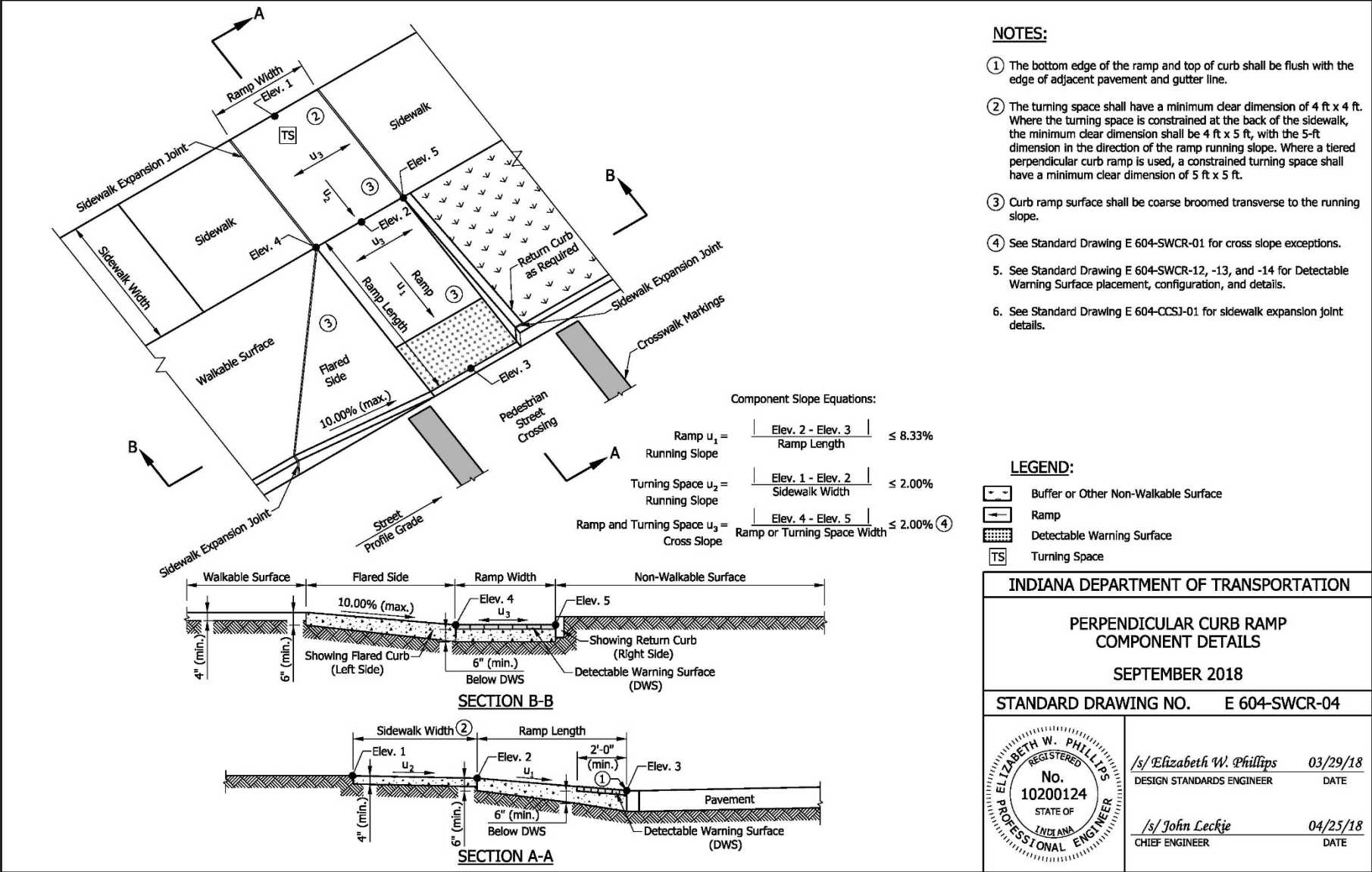
E 604-SWCR-03 PAIRED PERPENDICULAR CURB RAMPS TYPICAL PLACEMENT (no proposed changes)





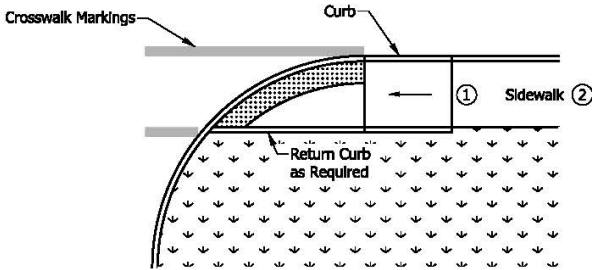
REVISION TO STANDARD DRAWINGS

E 604-SWCR-04 PERPENDICULAR CURB RAMP COMPONENT DETAILS (no proposed changes)

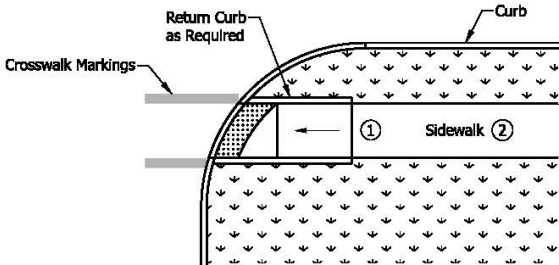


REVISION TO STANDARD DRAWINGS

E 604-SWCR-05 ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP TYPICAL PLACEMENT (no proposed changes)



ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP ADJACENT CURB



ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP WITH BUFFER

NOTES:

- ① A turning space is not required at the top of the ramp for a one-way directional perpendicular curb ramp.
- ② Where there is no buffer between the sidewalk and curb the preferred minimum sidewalk width is 6 ft. Where a buffer is placed between the sidewalk and curb, the preferred minimum sidewalk width is 5 ft. See Standard Drawing Series E 604-SDWK for sidewalk details.

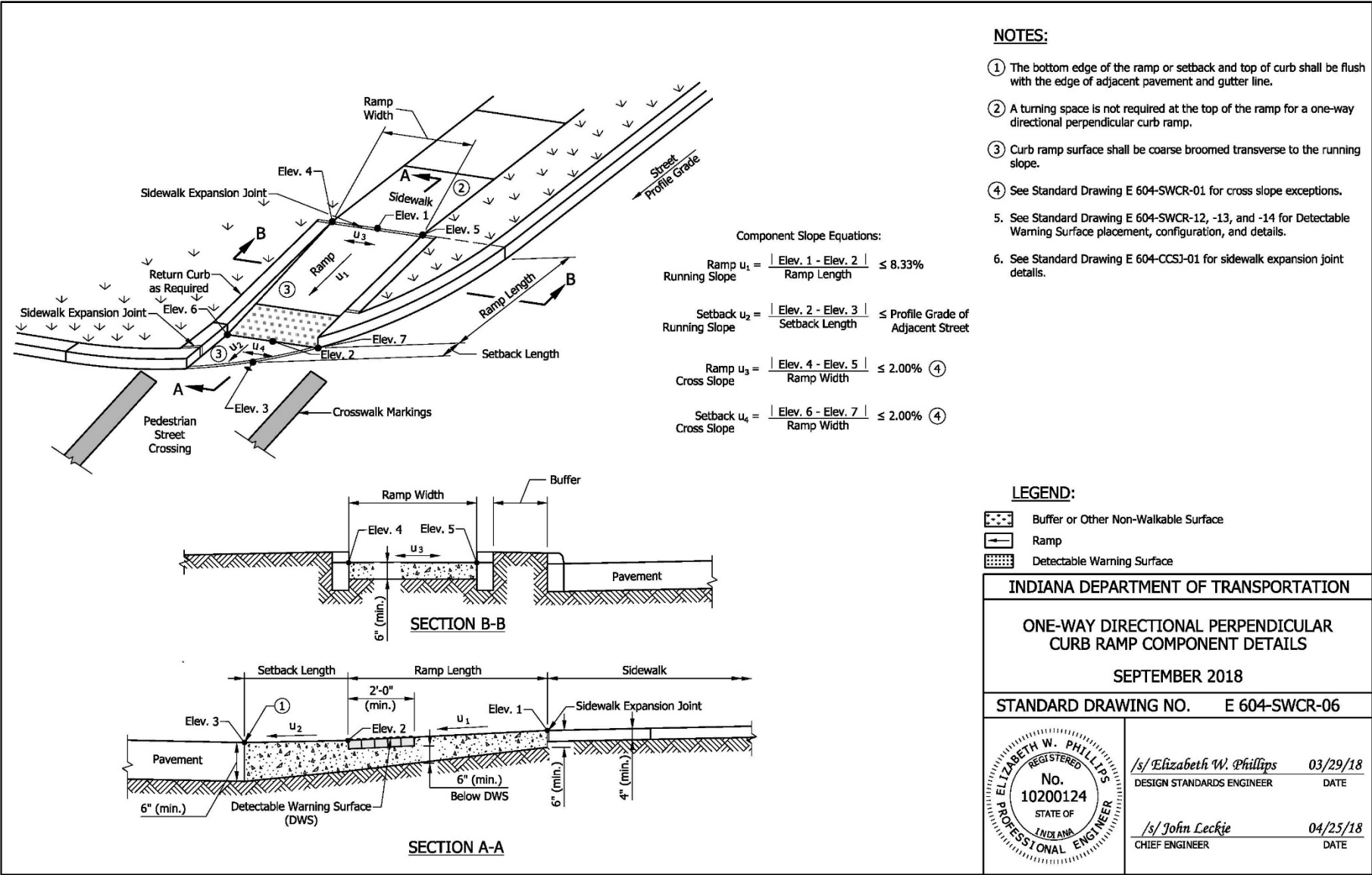
LEGEND:

- Buffer or Other Non-Walkable Surface
- Ramp
- Detectable Warning Surface

<b>INDIANA DEPARTMENT OF TRANSPORTATION</b>	
<b>ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP TYPICAL PLACEMENT</b>	
<b>SEPTEMBER 2016</b>	
<b>STANDARD DRAWING NO. E 604-SWCR-05</b>	
	/s/ Elizabeth W. Phillips      03/15/16 DESIGN STANDARDS ENGINEER      DATE
	/s/ Mark A. Miller      03/18/16 CHIEF ENGINEER      DATE

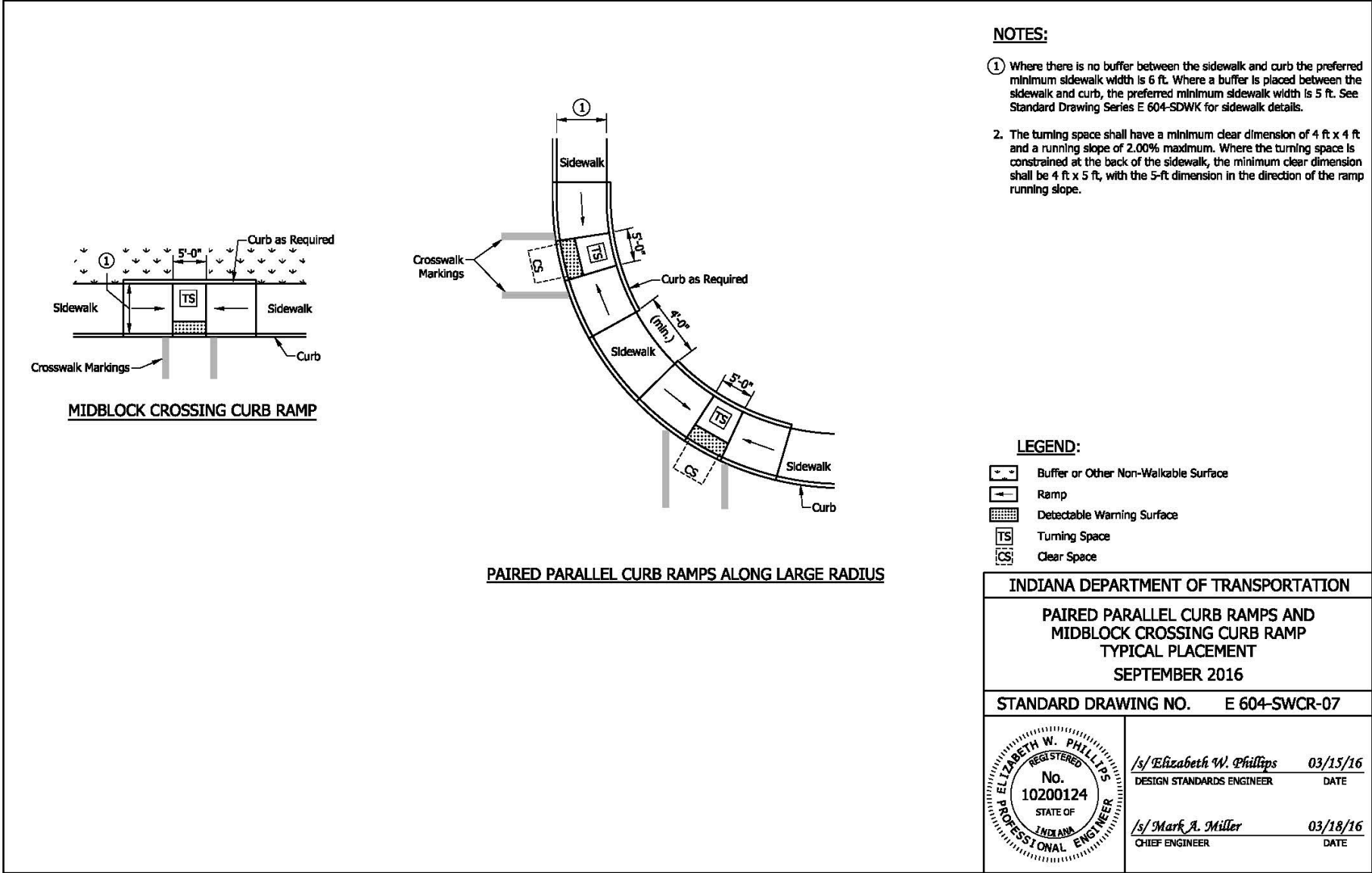
REVISION TO STANDARD DRAWINGS

E 604-SWCR-06 ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP COMPONENT DETAILS (no proposed changes)



REVISION TO STANDARD DRAWINGS

E 604-SWCR-07 PAIRED PARALLEL CURB RAMPS AND MIDBLOCK CROSSING CURB RAMP TYPICAL PLACEMENT (no proposed changes)





Item No. 5 (2022 SS) (contd.)

Mr. Orton

Date: 02/16/23

REVISION TO STANDARD DRAWINGS

E 604-SWCR-08 PARALLEL CURB RAMP COMPONENT DETAILS (no proposed changes)

Component Slope Equations:

$$\text{Ramp } u_1 = \frac{\text{Elev. 1} - \text{Elev. 2}}{\text{Ramp Length}_1} \leq 8.33\%$$

$$\text{Ramp } u_2 = \frac{\text{Elev. 4} - \text{Elev. 3}}{\text{Ramp Length}_2} \leq 8.33\%$$

$$\text{Ramp } u_3 = \frac{\text{Elev. 7} - \text{Elev. 8}}{\text{Sidewalk Width}} \leq 2.00\%$$

$$\text{Ramp } u_4 = \frac{\text{Elev. 9} - \text{Elev. 10}}{\text{Sidewalk Width}} \leq 2.00\%$$

$$\text{Turning Space Cross Slope } u_5 = \frac{\text{Elev. 2} - \text{Elev. 3}}{\text{Turning Space Width}} \leq 2.00\%$$

$$\text{Turning Space Running Slope } u_6 = \frac{\text{Elev. 6} - \text{Elev. 5}}{\text{Sidewalk Width}} \leq 2.00\%$$

**SECTION B-B**

**SECTION A-A**

NOTES:

- ① The bottom edge of the turning space and top of curb shall be flush with the edge of adjacent pavement and gutter line.
- ② The turning space shall have a minimum clear dimension of 4 ft x 4 ft and a running slope of 2.00% maximum. Where the turning space is constrained at the back of the sidewalk, the minimum clear dimension shall be 4 ft x 5 ft, with the 5-ft dimension in the direction of the ramp running slope.
- ③ Curb ramp surface shall be coarse broomed transverse to the running slope.
- ④ Where there is no buffer between the sidewalk and curb, the preferred minimum sidewalk width is 6 ft. Where a buffer is placed between the sidewalk and curb, the preferred minimum sidewalk width is 5 ft. See Standard Drawing Series E 604-SDWK for sidewalk details.
- ⑤ See Standard Drawing E 604-SWCR-01 for cross slope exceptions.
6. See Standard Drawing E 604-SWCR-12, -13, and -14 for Detectable Warning Surface placement, configuration, and details.
7. See Standard Drawing E 604-CCSJ-01 for sidewalk expansion joint details.

LEGEND:

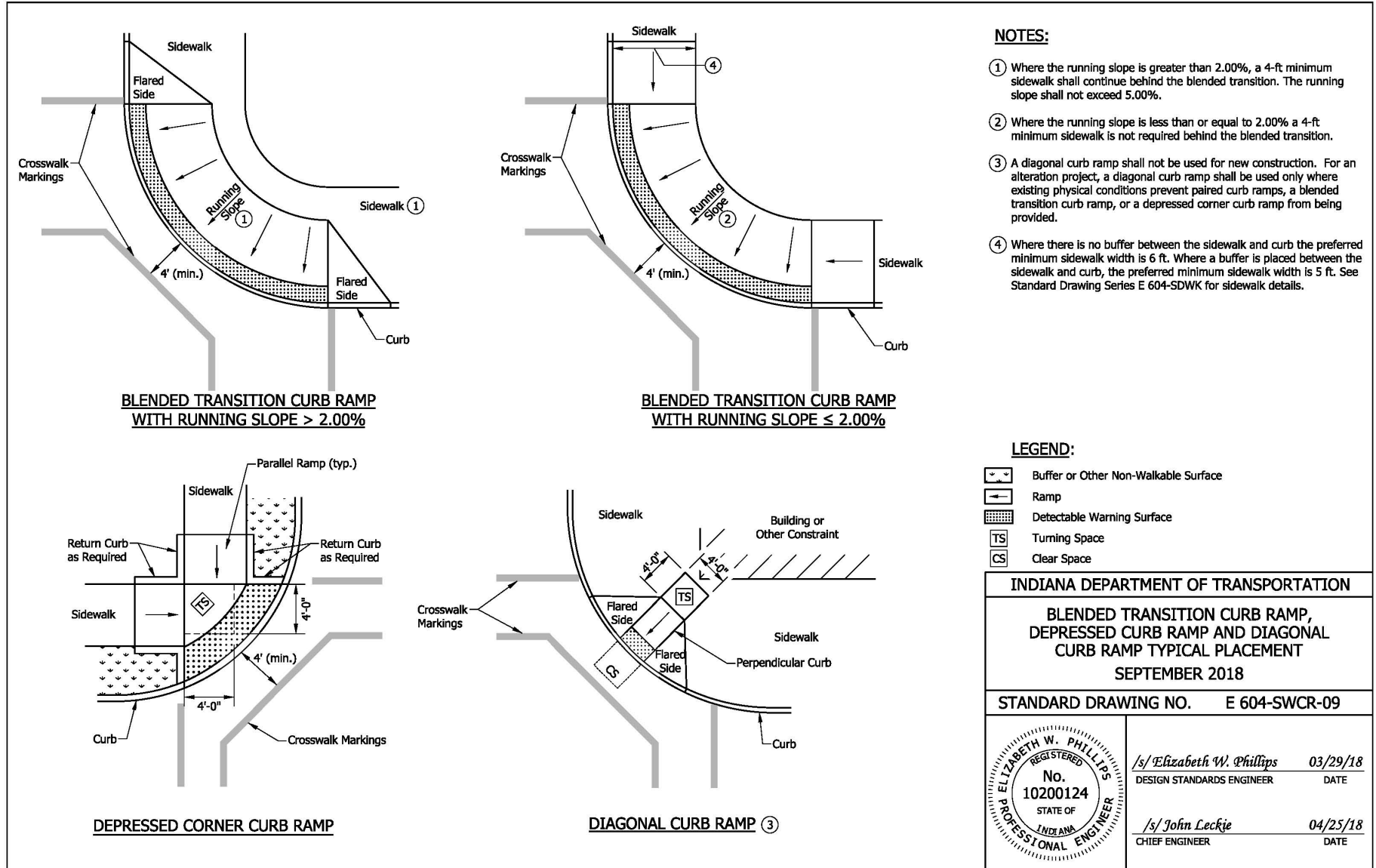
- Ramp
- Detectable Warning Surface
- Turning Space

INDIANA DEPARTMENT OF TRANSPORTATION		
PARALLEL CURB RAMP COMPONENT DETAILS		
SEPTEMBER 2018		
STANDARD DRAWING NO. E 604-SWCR-08		
	/s/ Elizabeth W. Phillips	03/29/18
	DESIGN STANDARDS ENGINEER	DATE
	/s/ John Leckje	04/25/18
	CHIEF ENGINEER	DATE

49

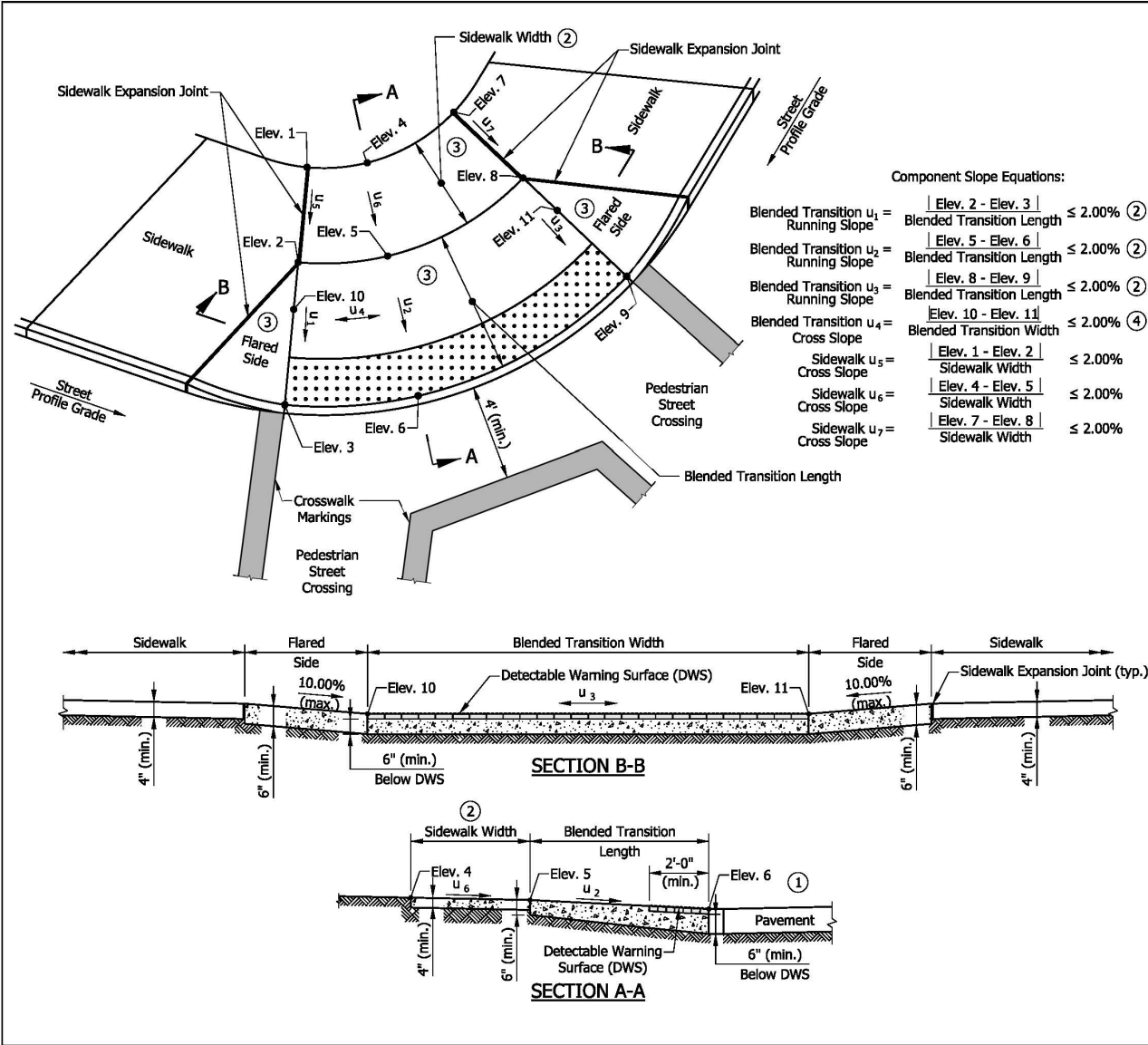
REVISION TO STANDARD DRAWINGS

E 604-SWCR-09 BLENDED TRANSITION CURB RAMP, DEPRESSED CURB RAMP AND DIAGONAL CURB RAMP TYPICAL PLACEMENT (no proposed changes)



REVISION TO STANDARD DRAWINGS

E 604-SWCR-10 BLENDED TRANSITION CURB RAMP COMPONENT DETAILS (no proposed changes)



NOTES:

- 1 The bottom edge of the blended transition and top of curb shall be flush with the edge of adjacent pavement and gutter line.
- 2 Where the running slope is less than or equal to 2.00% a 4-ft minimum sidewalk is not required, behind the blended transition. Where the running slope is greater than 2.00%, a 4-ft minimum sidewalk shall continue behind the blended transition and the running slope shall not exceed 5.00%.
- 3 Curb ramp surface shall be coarse broomed transverse to the running slope.
- 4 See Standard Drawing E 604-SWCR-01 for cross slope exceptions.
5. See Standard Drawing E 604-SWCR-12, -13, and -14 for Detectable Warning Surface placement, configuration, and details.
6. See Standard Drawing E 604-CCSJ-01 for sidewalk expansion joint details.

LEGEND:

- ← Ramp
- ▨ Detectable Warning Surface

INDIANA DEPARTMENT OF TRANSPORTATION

BLENDED TRANSITION CURB RAMP COMPONENT DETAILS

SEPTEMBER 2018

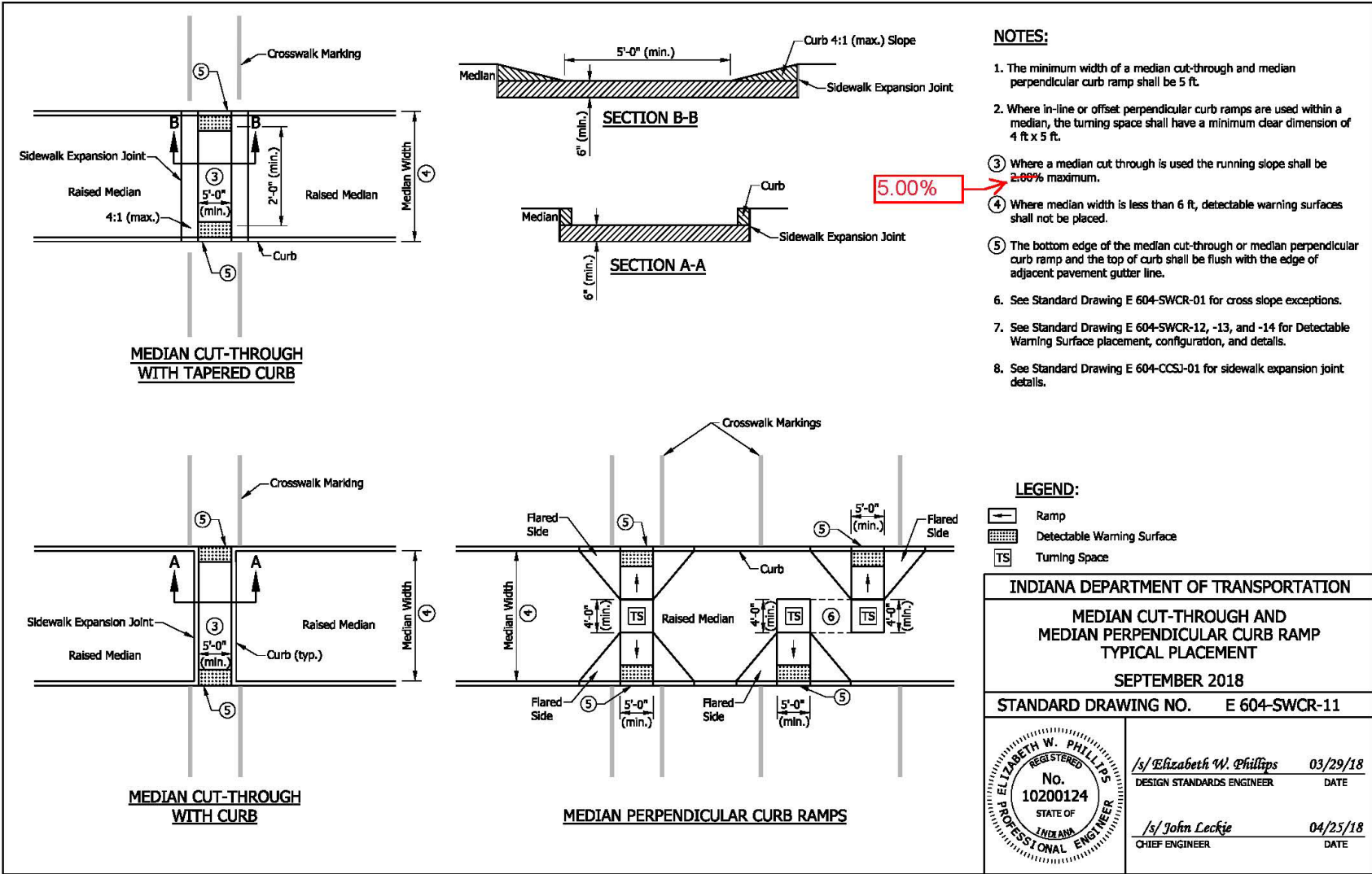
STANDARD DRAWING NO. E 604-SWCR-10

	/s/ Elizabeth W. Phillips	03/29/18
	DESIGN STANDARDS ENGINEER	DATE
	/s/ John Leckie	04/25/18
	CHIEF ENGINEER	DATE

REVISION TO STANDARD DRAWINGS

E 604-SWCR-11 MEDIAN CUT-THROUGH AND MEDIAN PERPENDICULAR CURB RAMP TYPICAL PLACEMENT (with shown markups)

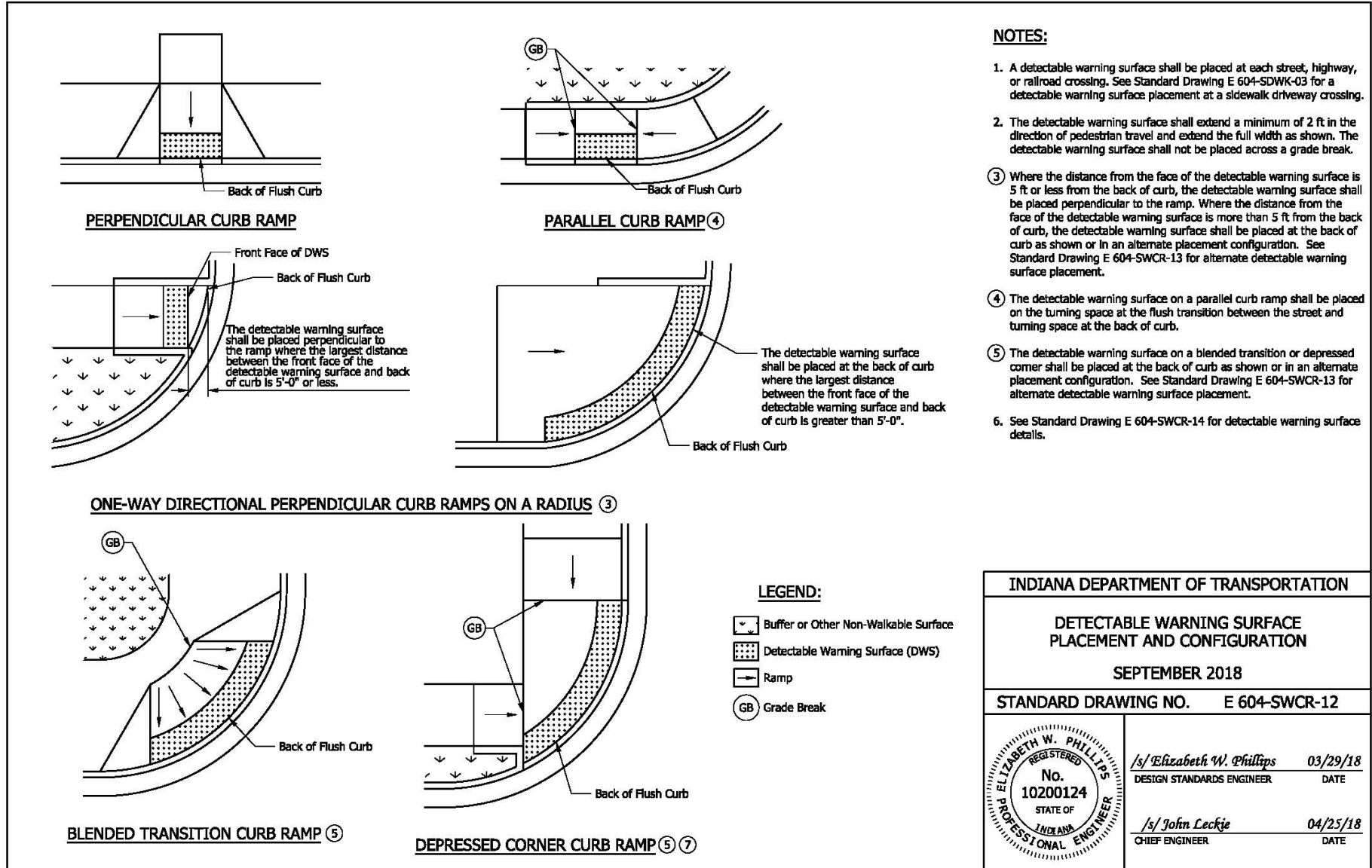
Standards and Policy, we do not have a finished sheet.





REVISION TO STANDARD DRAWINGS

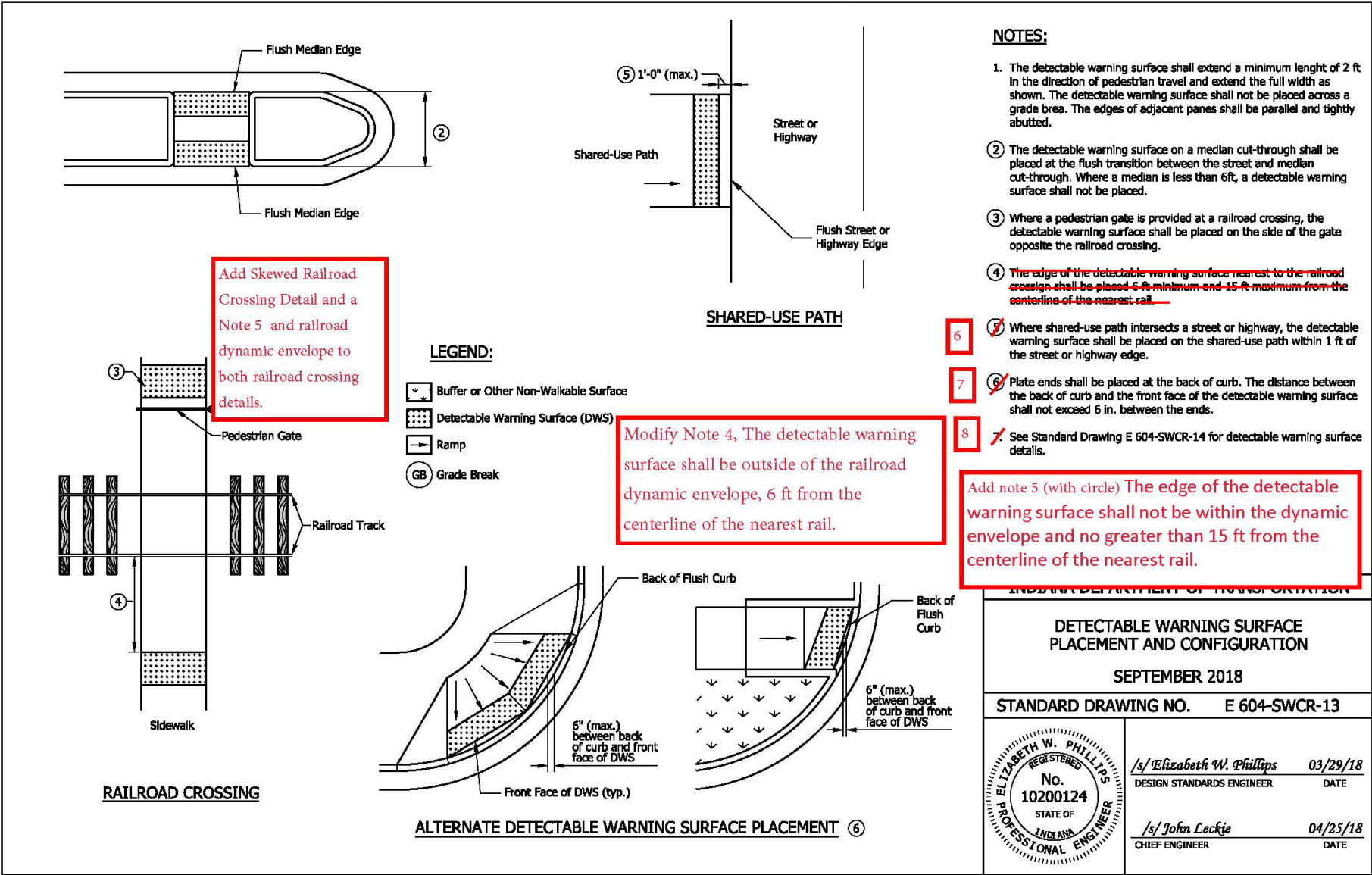
E 604-SWCR-12 DETECTABLE WARNING SURFACE PLACEMENT AND CONFIGURATION (no proposed changes)



INDIANA DEPARTMENT OF TRANSPORTATION	
DETECTABLE WARNING SURFACE PLACEMENT AND CONFIGURATION	
SEPTEMBER 2018	
STANDARD DRAWING NO.	E 604-SWCR-12
	/s/ Elizabeth W. Phillips 03/29/18 DESIGN STANDARDS ENGINEER DATE
	/s/ John Leckie 04/25/18 CHIEF ENGINEER DATE

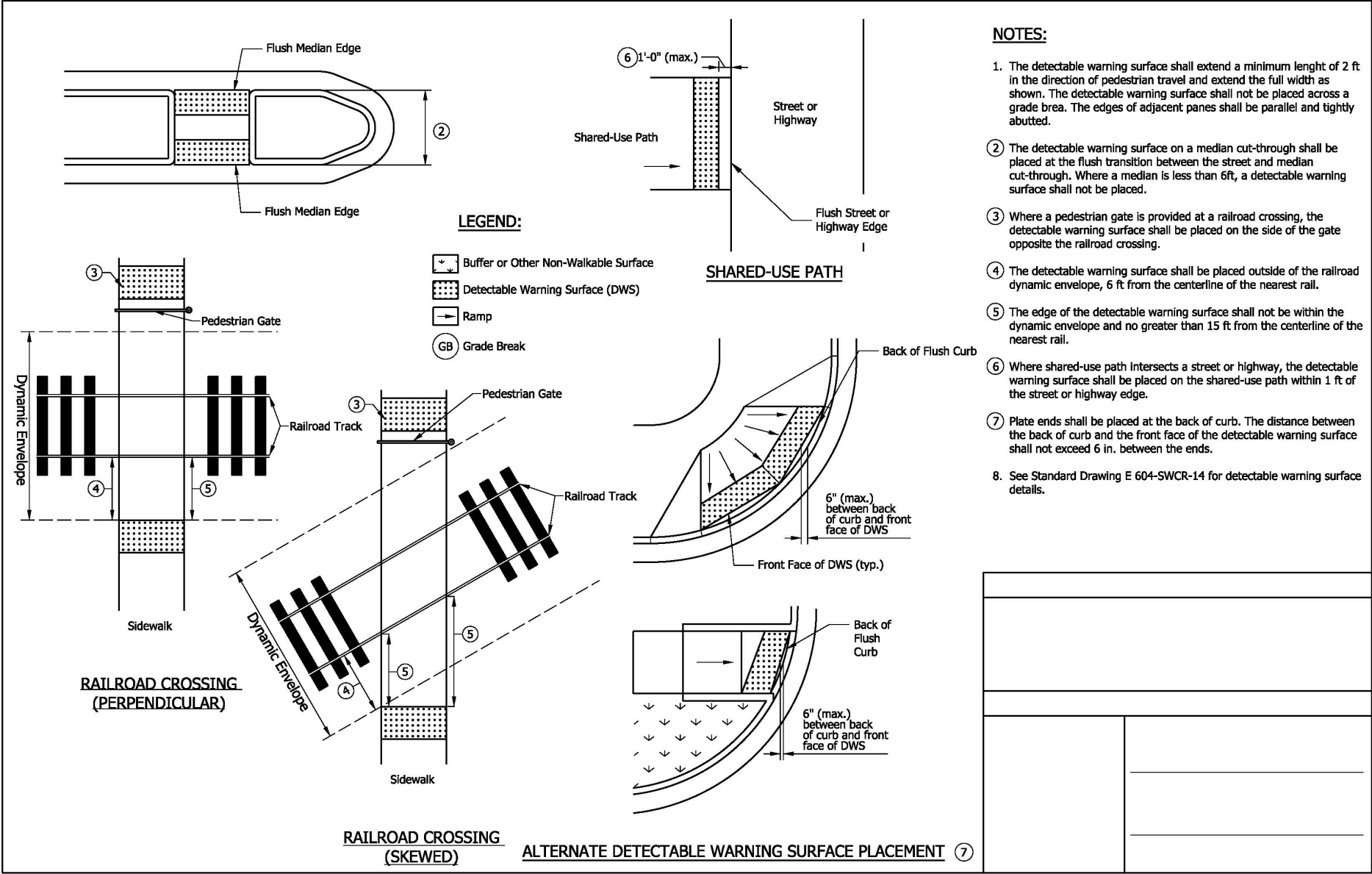
REVISION TO STANDARD DRAWINGS

E 604-SWCR-13 DETECTABLE WARNING SURFACE PLACEMENT AND CONFIGURATION (with shown markups)



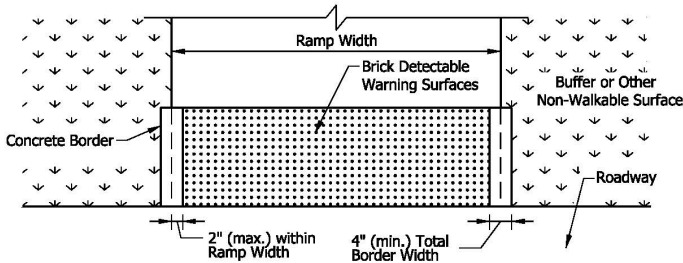
REVISION TO STANDARD DRAWINGS

E 604-SWCR- DETECTABLE WARNING SURFACE PLACEMENT AND CONFIGURATION (proposed draft)

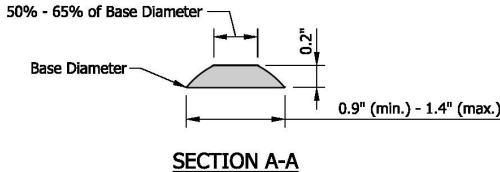


REVISION TO STANDARD DRAWINGS

E 604-SWCR-14 DETECTABLE WARNING SURFACE DETAILS (no proposed changes)



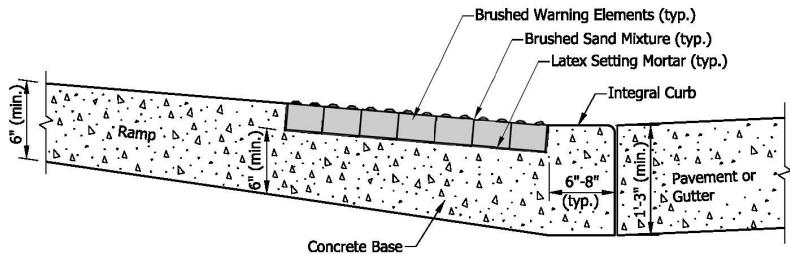
BRICK DETECTABLE WARNING SURFACE WITH CONCRETE BORDER ⑥ ⑦



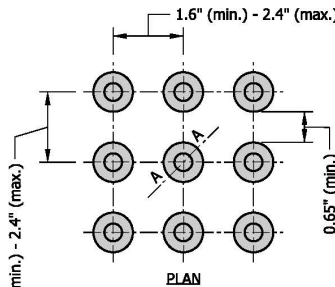
SECTION A-A

NOTES:

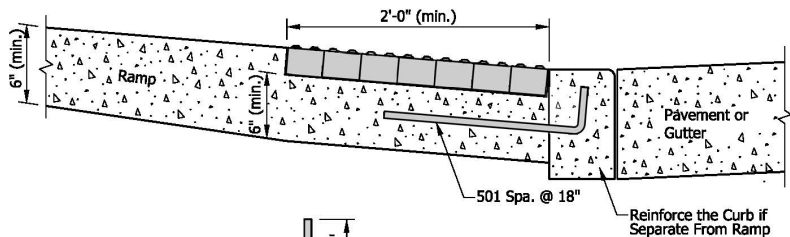
1. Detectable warning surface shall consist of truncated domes. Domes shall be aligned in a square or radial grid pattern with diameter and center-to-center spacing within the ranges specified.
2. The detectable warning surface may be field cut. Truncated dome spacing between adjacent panels shall be within the ranges specified.
3. The detectable warning surface shall contrast visually with adjacent surfaces, either light-on-dark or dark-on-light.
4. The detectable warning surface shall extend a minimum of 2 ft in the direction of pedestrian travel and extend the full width as shown. The detectable warning surface shall not be placed across a grade break.
- ⑤ The maximum counter slope of the gutter or street at the bottom of the ramp shall be 5.00%. Where the algebraic difference between the running slope and the counter slope exceeds 1.1%, a 2-ft minimum level strip should be provided at the bottom of the ramp.
- ⑥ Where a concrete border is used for forming, the border shall be cast monolithically with the curb ramp concrete. The concrete border shall not reduce the ramp width by more than 2 in. on each side.
- ⑦ Where forming other than a concrete border is used, the edge restraint shall not encroach upon the ramp width.



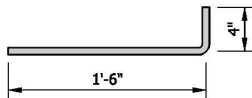
TYPICAL RAMP AND BRICK SURFACE CONSTRUCTION DETAIL



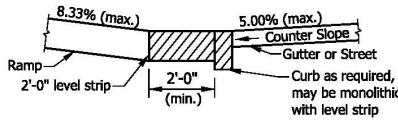
TRUNCATED DOMES



ALTERNATE CURB CONSTRUCTION



501 x 1'-10"



CHANGE OF GRADE > 11% ⑤

INDIANA DEPARTMENT OF TRANSPORTATION	
DETECTABLE WARNING SURFACE DETAILS	
SEPTEMBER 2018	
STANDARD DRAWING NO.	E 604-SWCR-14
	<i>/s/ Elizabeth W. Phillips</i> 03/29/18 DESIGN STANDARDS ENGINEER      DATE
	<i>/s/ John Leckie</i> 04/25/18 CHIEF ENGINEER      DATE



COMMENTS AND ACTION

E 604-SWCR-11 and E 604-SWCR-13

DISCUSSION:

	<u>Action:</u>
Motion:	
Second:	— Passed as Submitted
Ayes:	— Passed as Revised
Nays:	— Withdrawn
FHWA Approval:	
<hr/>	
2022 Standard Specifications Sections referenced and/or affected: 604 begin pg. 501.	— 2024 Standard Specifications — Revise Pay Items List
Recurring Special Provisions or Plan Details:	— Create RSP (No. __) Effective:
Standard Drawing affected: 604-SWCR-11 and -13	— Revise RSP (No. __) Effective:
Design Manual Sections affected: 51-1.04(02), the running slope is not mentioned in the IDM, no changes to the IDM only the standard drawing.	— Standard Drawing Effective:
GIFE Sections cross-references: NONE	— Create RPD (No. __) Effective:
	— GIFE Update
	— Frequency Manual Update
	— SiteManager Update