



INDIANA DEPARTMENT OF TRANSPORTATION

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Indianapolis, Indiana 46204

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Eric Holcomb, Governor
Joe McGuinness, Commissioner

APPROVED MINUTES

November 14, 2018 Standards Committee Meeting

December 28, 2018

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Minutes from the November 14, 2018 Standards Committee Meeting

The Standards Committee meeting was called to order by Mr. Leckie, Chair, at 09:03 a.m. on November 14, 2018 in the Indiana Government Center South Building, Conference Room A. The meeting was adjourned at 11:57 a.m.

The following committee members were in attendance:

John Leckie, Chairman, Construction and Materials Management
Michael Beuchel, Contract Administration Division
Dave Boruff, Traffic Engineering Division
Mark Orton, Bridge Standards and Policy
Greg Pankow, Construction Management Division
Kumar Dave, Pavement Engineering, Highway Design
Jim Reilman*, Office of Materials Management
Michael Koch, District Construction, Fort Wayne District
Elena Veksler, Highway Design and Technical Support
Kurt Pelz, Construction Technical Support

*Proxy for Matthew Beeson

Also in attendance were the following:

Andrew Pangallo, INDOT
Dan Osborn, ICI
Zach Corrice, INDOT
Joy Koester, INDOT
Tom Harris, INDOT
Steve Fisher, INDOT
Tom Duncan, FHWA
Michelle Bowling, INDOT

Victoria Leffel, INDOT
John Susong, Rinker Materials
Lana Podorvanova, INDOT
Nayyar Siddiki, INDOT
Ashley Aiken, ICI
Derrick Hauser, INDOT
Scott Trammell, INDOT
Kris Owen, Treated Wood Council

The following items were listed for consideration:

A. GENERAL BUSINESS ITEMS

OLD BUSINESS

(No items were listed)

NEW BUSINESS

1. Approval of the Minutes from the September 20, 2018 meeting

DISCUSSION: Mr. Leckie requested a motion to approve the minutes from the September 20, 2018 meeting, as revised.

Motion: Mr. Pankow

Second: Mr. Koch

Ayes: 9

Nays: 0

ACTION: PASSED AS SUBMITTED

2. Approval of the INDOT Standards Committee Schedule of Meetings, Submittals and Distributions for 2019 (shown on pg 5)

DISCUSSION: The schedule was presented as shown. Mr. Reilman asked why certain meeting dates, that may be in conflict with other events such as the CEPDS in November, couldn't be revised ahead of time and shown on the proposed schedule. Mr. Leckie answered that there may be other variables that could determine the rescheduling of such dates. There was no further discussion and the schedule was approved as presented.

ACTION: PASSED AS SUBMITTED

B. CONCEPTUAL PROPOSAL ITEMS

OLD BUSINESS

(No items were listed)

NEW BUSINESS

(No items were listed)

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

OLD BUSINESS

<u>Item No. 6</u> 11/14/18 (2018 SS)	Mr. Pankow	pg 6
107.18	Opening Sections of Project to Traffic	

ACTION: PASSED AS REVISED

<u>Item No. 7</u> 7/19/18 (2018 SS)	Mr. Beeson	pg 10
910.03	Permanent Metal Forms	

ACTION: PASSED AS REVISED

NEW BUSINESS

<u>Item No. 1</u> (2018 SS)	Mr. Beeson	pg 14
901.07	Rapid Setting Patch Materials	
ACTION:	PASSED AS SUBMITTED	
<u>Item No. 2</u> (2018 SS)	Mr. Beuchel	pg 18
Recurring Special Provision: 202-X-XXX	DEMOLITION	
ACTION:	PASSED AS SUBMITTED	
<u>Item No. 3</u> (2018 SS)	Mr. Beeson	pg 22
Recurring Special Provisions: 601-R-660 615-R-666	GUARDRAIL MONUMENTS, MARKERS, AND PARKING BARRIERS	
701.02 701.13 701.15	Materials Cut-Off Lengths Basis of Payment	
Recurring Special Provision: 801-T-089	MAINTAINING EXISTING TRAFFIC SIGNAL INSTALLATION	
805.02 805.03 805.04 805.16	Materials General Requirements Pole Installation Basis of Payment	
Recurring Special Provision: 807-T-087	HIGHWAY ILLUMINATION MAINTENANCE AND REPAIR	
807.15 910.10 SECTION 911	Service Point Power Entry Guardrail Posts WOOD MATERIALS (VARIOUS SECTIONS AND SUBSECTIONS)	
920.01(a)	Lighting Standards and Mast Arms, Under 80 Ft	
922.10(b)	Wood Strain Pole	
ACTION:	PASSED AS REVISED	
<u>Item No. 4</u> (2018 SS)	Mr. Beeson	pg 68
203.22	Embankment Over Existing Roadbeds	
ACTION:	WITHDRAWN	
<u>Item No. 5</u> (2018 SS)	Mr. Beeson	pg 74
Recurring Special Provision: 203-X-XXX	COAL ASH FOR EMBANKMENT	
ACTION:	PASSED AS REVISED	

<u>Item No. 6 (2018 SS)</u>	<u>Mr. Koch</u>	<u>pg 82</u>
714.05	Erection Requirements	
714.12	Basis of Payment	
723.09	Footings	
723.18	Basis of Payment	

ACTION: PASSED AS SUBMITTED

<u>Item No. 7 (2018 SS)</u>	<u>Mr. Orton</u>	<u>pg 86</u>
Standard Drawings:		
E 610-DRIV-01	CLASS I DRIVE INDEX GENERAL NOTES AND LEGEND	
E 610-DRIV-02	CLASS II DRIVE (RESIDENTIAL)	
E 610-DRIV-03	CLASS III DRIVE (RESIDENTIAL)	
E 610-DRIV-04	CLASS IV DRIVE (COMMERCIAL)	
E 610-DRIV-05	CLASS IV DRIVE FIELD ENTRANCE (COMMERCIAL)	
E 610-DRIV-06	CLASS V DRIVE (FIELD ENTRANCE)	
E 610-DRIV-07	CLASS VI DRIVE AND JOINT PLACEMENT DETAIL (INDUSTRIAL)	
E 610-DRIV-08	CLASS VII AND CLASS III DRIVE GRADE PROFILES (INDUSTRIAL)	
E 610-DRIV-09	CLASS I AND CLASS IV SECTION III DRIVE APPROACH GRADES	
E 610-DRIV-10	CLASS II, AND CLASS IV & V DRIVES APPROACH DRIVE SECTIONS GRADES	
E 610-DRIV-11	CLASS II, IV & V DRIVES TYPICAL PROFILE APPROACH GRADES	
E 610-DRIV-12	CLASS VI DRIVE PROFILE APPROACH GRADES	
E 610-DRIV-13	DRIVES GENERAL NOTES AND LEGEND SHOULDER TREATMENT AT DRIVEWAYS CLASS VII DRIVE APPROACH GRADES	
E 610-DRIV-14	JOINT PLACEMENT, MONOLITHIC CURB, AND CONCRETE CURB AND GUTTER DETAILS	
E 610-DRIV-15	PRIVATE DRIVE CROSSOVER PLANS	
E 610-DRIV-16	CLASS VII DRIVE JOINT PLACEMENT AND CORNERS PRIVATE AND COMMERCIAL DRIVE CROSSOVER SECTIONS	
E 610-DRIV-17	PRIVATE COMMERCIAL DRIVE CROSSOVER PLANS	
E 610-DRIV-18	PRIVATE DRIVE CROSSOVERS CROSS SECTIONS PAVEMENT WEDGE AND PAY LIMITS FOR CLASS II, IV, AND VI DRIVES	
E 610-DRIV-19	COMMERCIAL DRIVE CROSSOVERS PLANS PAVEMENT WEDGE LIMITS	
E 610-DRIV-21		

ACTION: PASSED AS REVISED

cc: Committee Members
FHWA
ICI

INDOT Standards Committee
Schedule of Meetings, Submittals, and Distributions
for 2019

Standards Committee Meeting Date	Agenda Items Due (1)	Agenda Distributed and Published	First Draft Minutes Distributed	Comments Due for Draft Minutes	Final Draft Minutes Distributed	Approved Minutes Published
18-Dec-18	26-Nov-18	3-Dec-18	27-Dec-18	(+ 13 days)	(+ 21 days)	(+ 35 - 42 days)
17-Jan-19	26-Dec-18	2-Jan-19	23-Jan-19	30-Jan-19	10-Jan-19	24-Jan-19
21-Feb-19	28-Jan-19	4-Feb-19	27-Feb-19	6-Mar-19	14-Mar-19	28-Mar-19
21-Mar-19	25-Feb-19	4-Mar-19	27-Mar-19	3-Apr-19	11-Apr-19	25-Apr-19
18-Apr-19	25-Mar-19	1-Apr-19	24-Apr-19	1-May-19	9-May-19	23-May-19
16-May-19	22-Apr-19	29-Apr-19	22-May-19	29-May-19	6-Jun-19	27-Jun-19
20-Jun-19	28-May-19	3-Jun-19	26-Jun-19	3-Jul-19	11-Jul-19	25-Jul-19
18-Jul-19	24-Jun-19	1-Jul-19	24-Jul-19	31-Jul-19	8-Aug-19	22-Aug-19
15-Aug-19	22-Jul-19	29-Jul-19	21-Aug-19	28-Aug-19	5-Sep-19	26-Sep-19
19-Sep-19	26-Aug-19	3-Sep-19	25-Sep-19	2-Oct-19	10-Oct-19	24-Oct-19
17-Oct-19	23-Sep-19	30-Sep-19	23-Oct-19	30-Oct-19	7-Nov-19	3-Dec-19
21-Nov-19	28-Oct-19	4-Nov-19	27-Nov-19	4-Dec-19	12-Dec-19	27-Dec-19
19-Dec-19	25-Nov-19	2-Dec-19	26-Dec-19	2-Jan-20	9-Jan-20	30-Jan-20

(1) Agenda items must be submitted by the due date shown, and be accompanied by a Proposal sheet.

(2) The April meeting is the last opportunity for the approval of Standard Drawing, effective on September 1, 2019.

3. Shaded dates are exceptions to the regular schedule.

4. Dates may change due to meeting cancellations or reschedules (such as CEPDS in November).

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS
REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: When trying to collect Damage to State Property claims that arise in a construction zone, INDOT's Finance Office often do not receive needed information about the accident, damage or prior collection efforts. Construction Field Personnel are not always aware of what information should be gathered from the Contractor when such damages occur. Clarification of 107.18 is needed to streamline this process.

PROPOSED SOLUTION: Incorporate the necessary revisions to 107.18 to provide clarification and additional operational guidance.

APPLICABLE STANDARD SPECIFICATIONS: Sections 107.18

APPLICABLE STANDARD DRAWINGS: N/A

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: 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: 8/14/2018

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? Yes

Construction time? No

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? 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? 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

OLD BUSINESS ITEM

SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC
107.18 OPENING SECTIONS OF PROJECT TO TRAFFIC

The Standard Specifications are revised as follows:

SECTION 107, BEGIN LINE 636, INSERT AS FOLLOWS:

On those portions of an incomplete contract that have been ordered opened to traffic or are constructed under traffic and the contract time has not yet expired, the Department will assume the responsibility for repairs of damages resulting directly from traffic, ~~except as set out in 402.12 and 801.18~~, provided that such damage is not the direct or indirect result of the operations of the Contractor and provided the Contractor is unable to collect damages from the responsible party or parties. *The Department will only assume such responsibility*

- (a) *if the Contractor documents those damages with all available information, including but not limited to photos and investigative materials, and*
- (b) *if the Contractor preserves all documentation, evidence, photos and information regarding the nature, extent and cause of such damage.*

Also, the Department will only assume such responsibility if, within ~~ninety~~(90) days from the date such damage is discovered by the Contractor or the Contractor receives notice of that damage, whichever is earlier,

- (a) *the Contractor demonstrates to the Department that despite its good faith, vigorous efforts, it has been unable to collect those damages from the responsible party or parties, and*
- (b) *the Contractor provides to the Department all documentation, evidence, photos and information regarding the nature, extent and cause of such damage.*

COMMENTS AND ACTION

OLD BUSINESS ITEM

107.18 OPENING SECTIONS OF PROJECT TO TRAFFIC

DISCUSSION:

This item was introduced and presented by Mr. Pankow who explained that when trying to collect Damage to State Property claims that arise in a construction zone, the Department's Finance Office often does not receive needed information about the accident, damage or prior collection efforts. Construction Field Personnel are not always aware of what information should be gathered from the Contractor when such damages occur. Mr. Pankow stated that clarification of 107.18 is needed to streamline this process.

Mr. Pankow therefore proposes to incorporate the above shown revisions to 107.18 to provide clarification and additional operational guidance, with the minor revisions as shown. Mr. Osborn provided input regarding the shown revisions. Mr. Koch asked if there would be a construction memo. Mr. Pankow responded that, yes, there will be a construction memo to accompany the RSP.

Mr. Pankow revised his motion, seconded by Mr. Koch.

Motion: Mr. Pankow	Action:
Second: Mr. Boruff	
Ayes: 9	<input checked="" type="checkbox"/> Passed as Submitted
Nays: 0	<input type="checkbox"/> Passed as Revised
FHWA Approval: <u>YES</u>	<input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected:	<input checked="" type="checkbox"/> 2020 Standard Specifications
107.18 pg 79.	<input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected:	<input checked="" type="checkbox"/> Create RSP (No. <u>107-C-xxx</u>) Effective <u>June 01, 2019</u> Letting RSP Sunset Date:
NONE	
Standard Drawing affected:	<input type="checkbox"/> Revise RSP (No. <u> </u>) Effective <u> </u> Letting RSP Sunset Date:
NONE	
Design Manual Sections affected:	<input type="checkbox"/> Standard Drawing Effective
NONE	
GIFE Sections cross-references:	<input type="checkbox"/> Create RPD (No. <u> </u>) Effective <u> </u> Letting
NONE	
	<input checked="" type="checkbox"/> GIFE Update
	<input type="checkbox"/> SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS
REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The 910.03 specification section is missing a certification type and is confusing.

PROPOSED SOLUTION: Incorporate the proposed changes to the 910.03 specification section into the Standard Specifications.

APPLICABLE STANDARD SPECIFICATIONS: 910.03

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: None

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad Hoc (Mike Nelson, Jim Reilman, District Testing Engineers and District Materials Engineers)

IMPACT ANALYSIS (attach report):

Submitted By: Matt Beeson

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-522-9662

Date: 11/8/18

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? Yes, 702.03,
702.13

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? N/A

Congestion/travel time? N/A

Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? N/A

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? N/A

Design process? N/A

Will this change provide the contractor more flexibility? N/A

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? N/A

AASHTO or other design code? N/A

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: provide clarification for contractors and INDOT personnel on the type of certification required for permanent metal forms.

REVISION TO STANDARD SPECIFICATIONS

(OLD BUSINESS ITEM)

SECTION 910 - METAL MATERIALS

910.03 PERMANENT METAL FORMS

The Standard Specifications are revised as follows:

SECTION 910, BEGIN LINE 324, DELETE AND INSERT AS FOLLOWS:

910.03 Permanent Metal Forms

~~Metal bridge deck forms and supports shall be fabricated from steel in accordance with ASTM A 653 for grades A through E having a coating class of G165. Metal bridge deck falsework and supports shall be fabricated from steel sheet, zinc-coated structural steel in one of the following grades: 33, 37, 40, 50 Class 1, 80 Class 1, or 50 Class 3, having a coating designation of G165, oiled but not chemically treated, all in accordance with ASTM A 653.~~

~~Material furnished under this specification shall be covered by the type of certification specified in the Frequency Manual and in accordance with 916. The certification shall list the yield tensile stresses, the ultimate tensile stresses, the ultimate tensile elongations, the base metal thicknesses, the weights of the galvanized coating, and shall certify that the material complies with the specified material requirements. The properties and parameters shall be listed for each gage (thickness) of material used in the panels and the hardware necessary to erect them. The materials will be sampled at the work site and shall include a representative portion of a panel of each gage (thickness) to be used and a representative portion of each type and size of hardware necessary to erect the panels, excluding the fasteners. A type A certification in accordance with 916 shall be provided for all material furnished under this specification. The certification shall list the results of the following tests. The properties and parameters shall be listed for each gage, (thickness,) of material used in the panels and the hardware necessary to erect them.~~

Property	ASTM
<i>Yield Strength, min, ksi</i>	<i>A 653*</i>
<i>Tensile Strength, min, ksi</i>	<i>A 653*</i>
<i>Elongation in 2 in. min, %</i>	<i>A 653*</i>
<i>Weight of Zinc Coating</i>	<i>A 653*</i>
<i>* The minimum mechanical requirements as stated in ASTM A 653 for the respective grade shall be provided on the type A certification in addition to the test results.</i>	

The materials will also be sampled at the work site as specified in the Frequency Manual. The sample will include a representative portion of a panel of each gage, (thickness,) to be used and a representative portion of each type and size of hardware necessary to erect the panels, excluding the fasteners.

COMMENTS AND ACTION

(OLD BUSINESS ITEM)

910.03 PERMANENT METAL FORMS

DISCUSSION:

This item was introduced and presented by Mr. Reilman who proposed to incorporate the above shown revisions to the 910.03 specification section into the 2020 Standard Specifications, since the current version of 910.03 is missing a certification type and is confusing.

Mr. Reilman explained the reasons behind the revisions, to which Mr. Susong, of Rinker Materials, concurred.

Minor editorial revisions, for consistency and clarification, are as shown.

Motion: Mr. Reilman Second: Mr. Koch Ayes: 9 Nays: 0 FHWA Approval: <u>YES</u>	Action: <input checked="" type="checkbox"/> Passed as Submitted <input type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected: 910.03 pg 944	<input checked="" type="checkbox"/> 2020 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected: NONE	<input type="checkbox"/> Create RSP (No. ____) Effective ____ Letting RSP Sunset Date:
Standard Drawing affected: NONE	<input type="checkbox"/> Revise RSP (No. ____) Effective ____ Letting RSP Sunset Date:
Design Manual Sections affected: NONE	<input type="checkbox"/> Standard Drawing Effective
GIFE Sections cross-references: NONE	<input type="checkbox"/> Create RPD (No. ____) Effective ____ Letting <input type="checkbox"/> GIFE Update <input type="checkbox"/> SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS
REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED:

Section 901.07(c) states that rapid setting patch materials should be capable of being placed without any need for curing material. There is currently only one of seven manufacturers on the approved list that states that their product requires no special curing. The other six manufacturers either require curing compound or wet curing. Proper curing is a critical part of the installation of all concrete materials and it is important that all of the products be installed per the manufacturer's recommendations. The specification needs to be revised so that it does not imply that the manufacturer's requirements do not need to be followed.

Section 901.07(c) also states that the patching material should be capable of being sealed with an epoxy sealer. INDOT is moving away from epoxy sealers and the statement needs to be removed.

PROPOSED SOLUTION:

Delete reference in section 901.07 to curing compounds and epoxy sealer.

APPLICABLE STANDARD SPECIFICATIONS: 901.07

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: none

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS: none

PAY ITEMS AFFECTED: none

APPLICABLE SUB-COMMITTEE ENDORSEMENT: none

IMPACT ANALYSIS (attach report):

Submitted By: Matt Beeson

Title: State Materials Engineer

Organization: INDOT Office of Materials Management

Phone Number: 317-522-9662

Date: 10/22/18

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? N/A

Construction time? N/A

Customer satisfaction? Yes

Congestion/travel time? N/A

Ride quality? Yes

Will this proposal reduce operational costs or maintenance effort? No

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? 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: N/A

REVISION TO STANDARD SPECIFICATIONS

SECTION 901 - PCC MATERIALS

901.07 RAPID SETTING PATCH MATERIALS

The Standard Specifications are revised as follows:

SECTION 901, BEGIN LINE 523, DELETE AS FOLLOWS:

(c) Requirements

Rapid setting patch materials shall be capable of being utilized in patches ranging from 1 in. to full depth without bonding agents, ~~no curing material shall be required, and shall be capable of being surface sealed with an epoxy sealer.~~

COMMENTS AND ACTION

901.07 RAPID SETTING PATCH MATERIALSDISCUSSION:

This item was introduced and presented by Mr. Reilman, sitting in as proxy for Mr. Beeson, who pointed out that section 901.07(c) states that rapid setting patch materials shall be capable of being placed without any need for curing material. There is currently only one of seven manufacturers on the approved list that states that their product requires no special curing. The other six manufacturers either require curing compound or wet curing. Mr. Reilman stated that proper curing is a critical part of the installation of all concrete materials and it is important that all of the products be installed per the manufacturer's recommendations. Mr. Reilman further mentioned that section 901.07(c) also states that the patching material shall be capable of being sealed with an epoxy sealer. Since the Department is moving away from epoxy sealers, the statement needs to be removed.

Mr. Reilman therefore proposes to delete the reference to curing materials and epoxy sealers in 901.07.

Mr. Pelz asked if there should be language added with regard to the manufacturer's recommendations. Mr. Reilman responded that the rapid set specification should contain that language.

There was no further discussion and this item passed as submitted.

Mr. Reilman stated that this revision is intended for inclusion into the 2020 Standard Specifications book and that a RSP is not necessary.

Motion: Mr. Reilman	Action:
Second: Mr. Koch	
Ayes: 9	<input checked="" type="checkbox"/> Passed as Submitted
Nays: 0	<input type="checkbox"/> Passed as Revised
FHWA Approval: <u>YES</u>	<input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected:	<input checked="" type="checkbox"/> 2020 Standard Specifications
901.07 pg 859.	<input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected:	<input type="checkbox"/> Create RSP (No. _____) Effective _____ Letting RSP Sunset Date:
NONE	
Standard Drawing affected:	<input type="checkbox"/> Revise RSP (No. _____) Effective _____ Letting RSP Sunset Date:
NONE	
Design Manual Sections affected:	<input type="checkbox"/> Standard Drawing Effective
NONE	
GIFE Sections cross-references:	<input type="checkbox"/> Create RPD (No. _____) Effective _____ Letting
NONE	
	<input type="checkbox"/> GIFE Update
	<input type="checkbox"/> SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS
REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The Demolition Letter is an item on the Final Tracings Checklist. In the effort to reduce the number of documents on the Final Tracings Checklist, it was determined the Demolition Letter fits the definition of a fillable recurring special provision.

PROPOSED SOLUTION: The Demolition Letter should be removed from the Final Tracings Checklist and be approved as a fillable Recurring Special Provision where it will be found on the RSP Menu/Basis of Use.

APPLICABLE STANDARD SPECIFICATIONS: 202

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: 14-1.02(04)

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: N/A

IMPACT ANALYSIS (attach report): Yes

Submitted By: Mike Beuchel

Title: Estimating Administrator

Organization: Contract Administration

Phone Number: 317-232-5326

Date: 9/26/2018

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS
REVISION TO SPECIAL PROVISIONS

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? No

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? 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:

Item No. 2 11/14/18 (2018 SS) (contd.)
Mr. Beuchel
Date: 11/14/18

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 202-X-XXX DEMOLITION

202-X-XXX DEMOLITION

The following structures are to be demolished on the parcels listed below. The properties listed below shall not be entered until authorized in writing.

<u>Parcel No.</u>	<u>Name and Address</u>	<u>Stationing</u>	<u>C/L</u>
_____	_____	_____	_____

Description

Style: _____

Sq. Ft.: _____

Foundation: _____ (EXAMPLE BLOCK OR SLAB)

Well: _____

Septic: _____

Garage: _____

Outbuildings: _____

Fence: _____ (EXAMPLE WOOD OR CHAINLINK AND SQ FT)

Wood Deck: _____

Total or partial Take: _____

Asbestos Inspection done _____ is removal required YES NO
Date _____

<u>Parcel No.</u>	<u>Name and Address</u>	<u>Stationing</u>	<u>C/L</u>
_____	_____	_____	_____

Description

Style: _____

Sq. Ft.: _____

Foundation: _____

Well: _____

Septic: _____

Garage: _____

Outbuildings: _____

Fence: _____

Wood Deck: _____

Total or partial Take: _____

Asbestos Inspection done _____ is removal required YES NO
Date _____

COMMENTS AND ACTION

202-X-XXX DEMOLITION

DISCUSSION:

Mr. Beuchel introduced and presented this item stating that the Demolition Letter should be removed from the Final Tracings Checklist and be approved as a fillable Recurring Special Provision where it will be found on the RSP Menu/Basis of Use.

There was no further discussion and this item passed as submitted.

Motion: Mr. Beuchel Second: Mr. Koch Ayes: 9 Nays: 0 FHWA Approval: <u>YES</u>	Action: <input checked="" type="checkbox"/> Passed as Submitted <input type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected: 202.06 pg 135.	 <input type="checkbox"/> 2020 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected: NONE	 <input checked="" type="checkbox"/> Create RSP (No. <u>202-C-xxx</u>) Effective <u>June 01, 2019</u> Letting RSP Sunset Date:
Standard Drawing affected: NONE	 <input type="checkbox"/> Revise RSP (No. <u> </u>) Effective <u> </u> Letting RSP Sunset Date:
Design Manual Sections affected: 14-1.02 (04)	 <input type="checkbox"/> Standard Drawing Effective
GIFE Sections cross-references: NONE	 <input type="checkbox"/> Create RPD (No. <u> </u>) Effective <u> </u> Letting <input type="checkbox"/> GIFE Update <input type="checkbox"/> SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS
REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The Standard Specifications are out of date with regards to untreated and treated wood products.

PROPOSED SOLUTION: Update the Standard Specifications to be current with practices in the wood products industry.

APPLICABLE STANDARD SPECIFICATIONS: 601, 701, 805, 807, 910, 911, 920, and 922

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: 601-R-660, 615-R-666, 801-T-089, 807-T-087

PAY ITEMS AFFECTED: Parking Barrier, Wood Post; Temporary Pole, Wood with Down Guys and Anchors;

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad Hoc: Jim Reilman, Mike Pelham, Andrew Blackburn, Treated Wood Council

IMPACT ANALYSIS (attach report):

Submitted By: Matt Beeson

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-522-9662

Date: 10/19/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS
REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS

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? NA

Construction time? NA

Customer satisfaction? NA

Congestion/travel time? NA

Ride quality? NA

Will this proposal reduce operational costs or maintenance effort? NA

Will this item improve safety:

For motorists? NA

For construction workers? NA

Will this proposal improve quality for:

Construction procedures/processes? NA

Asset preservation? NA

Design process? NA

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? NA

Is this proposal needed for compliance with:

Federal or State regulations? NA

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: updating INDOT Specifications for treated and untreated timber products to align with current industry practice.

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS

SPECIAL PROVISION 601-R-660 GUARDRAIL
SPECIAL PROVISION 615-R-666 MONUMENTS, MARKERS, AND PARKING BARRIERS
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701.02 MATERIALS
701.13 CUT-OFF LENGTHS
701.15 BASIS OF PAYMENT
SPECIAL PROVISION 801-T-089 MAINTAINING EXISTING TRAFFIC SIGNAL
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SECTION 911 - WOOD MATERIALS (VARIOUS SECTIONS AND SUBSECTIONS)
SECTION 920 - HIGHWAY ILLUMINATION MATERIALS
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SECTION 922 - TRAFFIC SIGNAL MATERIALS AND EQUIPMENT
922.10(b) WOOD STRAIN POLE

(Only affected sections are shown from the Recurring Special Provision)

601-R-660 GUARDRAIL

(Revised 11-15-17)

[.....]

SECTION 601, BEGIN LINE 50, DELETE AND INSERT AS FOLLOWS:

The W-beam or Midwest Guardrail System, MGS, W-beam guardrail, components, assembly, post spacing, post lengths, and installation for each location shall be as shown on the plans. Double-facing of the guardrail will be required at the locations shown on the plans. For W-beam guardrail, in locations where conditions will not allow the use of 7 ft posts, 6 ft posts may be substituted when approved. Timber posts may be used within a run of MGS W-beam guardrail as shown on the plans. Timber posts shall not be used within a run of W-beam guardrail.

The base metal thickness of the steel W-beam rail element for a curved guardrail system shall be 0.105 in. The base metal thickness of the steel W-beam terminal connector shall be 0.138 in. The controlled released terminal, CRT, wood timber breakaway posts shall be S4S timber and shall otherwise be in accordance with 911. The curved rail timber posts shall be in accordance with 911. All structural tubing shall be in accordance with ASTM A 500. The remaining steel components shall be in accordance with 910.

[.....]

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SECTION 911, BEGIN LINE 191, DELETE AND INSERT AS FOLLOWS:

~~Wood Timber guardrail posts, and wood parts in connection with guardrails, shall be treated with a preservative in accordance with the applicable provisions of AWPA Standards T1 and U1.~~

~~Timber post may be used within a run of MGS W-beam guardrail as shown on the plans. Timber posts shall not be used within a run of W-beam guardrail.~~

SECTION 911, BEGIN LINE 213, DELETE AND INSERT AS FOLLOWS:

(f) Sawed/Sawn Timber Posts and Blocks/Blockouts for Thrie-Beam and W-Beam Guardrail

The requirements for posts and ~~blocks~~*blockouts* prior to treatment shall be in accordance with AASHTO M 168 and as ~~shown~~*modified* below.

1. Species and Grades

~~Wood~~*Timber* posts shall be of the species listed, and shall be in accordance with the grading requirements specified in Table A. ~~Wood~~*Timber* blockouts shall be of the species listed, and shall be in accordance with the grading requirements specified in Table B. ~~Wood~~*Timber* posts and ~~blocks~~*blockouts* shall have a nominal ~~the~~ cross sectional and length dimensions as shown on the plans.

SECTION 911, BEGIN LINE 227, DELETE AND INSERT AS FOLLOWS:

Posts and ~~blocks~~*blockouts* shall be graded in accordance with grading rules based on principles and methods specified in ASTM D 245. Where there is a conflict between AWPA and ASTM standards, AWPA will prevail. Where there is a conflict between either AWPA or ASTM standards and this specification, this specification will prevail.

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All material shall show the approved grading agency stamp indicating mill origin, species, and grade.

TABLE B

SPECIES AND GRADING REQUIREMENTS FOR SAWEDSAWN TIMBER GUARDRAIL BLOCKS BLOCKOUTS		
SPECIES	POSTS & TIMBERS GRADE	GRADING RULES AGENCIES ^a
HARDWOODS		
<u>Red Oak (Northern Red, Black, Pin, Laurel, Cherry Bark, Scarlet, Water and Willow Oaks)</u> ^b , <u>Hard Maple (Black & Sugar) and Red Maple, White Ash, White Heartwood Beech, Yellow Birch, Hickory (Mockernut, Pignut, Shagbark, and Shellbark Hickories)</u>	Grade GRP	Department
SOFTWOODS		
<u>Douglas Fir, Douglas Fir-Larch</u> , <u>Coastal Douglas-fir</u> , <u>Southern Pine Species</u> , <u>Jack Pine, Red Pine, and Eastern White Pine (Northern White Pine)</u>	No. 2 or better No. 2 or better No. 1 or better	WWPA or WCLIB SPIB NHPMA

^a NHPMA (Northern Hardwood and Pine Manufacturers Assn.); WWPA (Western Wood Products Assoc.); WCLIB (West Coast Lumber Inspection Bureau); and SPIB (Southern Pine Inspection Bureau).

^b Southern Red Oak will not be allowed.

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SECTION 911, BEGIN LINE 276, DELETE AND INSERT AS FOLLOWS:

3. Department Grade GRB

~~The requirements for blocksblockouts to be in accordance with the Department's Grade GRB, Guardrail BlocksBlockouts, will be as follows.~~

SECTION 911, BEGIN LINE 304, DELETE AND INSERT AS FOLLOWS:

42. General Requirements

Posts and ~~blocksblockouts~~ shall be in accordance with the following general requirements.

a. Decay

Posts and ~~blocksblockouts~~ shall be free from decay before treatment.

b. Unsound Wood

Posts containing unsound wood will be rejected. ~~BlocksBlockouts~~ may contain small spots of unsound wood provided they are well scattered.

c. Crook or Bow Grounds for Rejection

~~Crook or bow shall not exceed 1 in. per 10 ft length. Posts and blockouts shall be sound. No sapwood rot will be allowed. Ring shake will not be allowed. Grub holes in the butt, 1/2 in. or less in diameter, are not considered defects. Posts or blockouts containing ant holes will not be accepted. Any post or blockout which contains any defect which is detrimental to the post or blockout will be rejected.~~

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d. Dimensional Tolerances

Posts and ~~blocks~~*blockouts* shall be ~~sawed~~*sawn* square to within - 1/2 in. of the specified cross-sectional dimensions. A tolerance of ± 2 in. will be allowed on the specific length of the posts. A tolerance of -1/2 in. will be allowed on the specified length of the ~~blocks~~*blockouts*.

53. Pressure Treating Posts and ~~Blocks~~*Blockouts*

Pressure treating posts and ~~blocks~~*blockouts* shall be in accordance with the following requirements and AWPA Standards T1, and U1, *Commodity Specification A: Sawn Products, use category UC4B*.

a. Machining

Posts and ~~blocks~~*blockouts* shall be ~~sawed~~*sawn* to their final shape and holes bored prior to treatment.

SECTION 911, BEGIN LINE 351, DELETE AND INSERT AS FOLLOWS:

ec. Preservative Treatment

All posts and ~~blocks~~*blockouts* shall be treated with a preservative as specified herein.

fd. Material for Preservative Treatments

The preservative used for treating posts and ~~blocks~~*blockouts* shall be in accordance with the appropriate AWPA or AASHTO Standards listed in table C.

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TABLE C

MATERIAL	AWPA STANDARDS
Ammoniacal Copper Zinc Arsenate, ACZA	P5 and P22
Chromated Copper Arsenate, CCA	P5 and P23

ge. Treatment Methods

~~Wood~~ Timber for guardrail posts and ~~blocks~~ blockouts shall be treated to be in accordance with AWPA Standard T1, and the requirements specified herein.

hf. Sorting and Spacing

The material in a charge shall consist of the same species or consist of species within one group shown in table DC. The material shall have similar moisture content and be of similar form and size. ~~Blocks~~ Blockouts and posts may be treated in the same charge.

~~Pieces in the charge shall be separated by horizontal stickers so that preservative and steam, if used, shall contact all horizontal surfaces.~~

TABLE DC

SPECIES GROUPINGS FOR TREATMENT IN SAME CHARGE	
GROUP	SPECIES
A	Southern Pine
B	Douglas Fir Coastal Douglas-fir
C	Jack Pine*
D	Hardwoods

~~* Also Red Pine and Eastern White Pine Blocks~~ Blockouts

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SECTION 911, BEGIN LINE 387, DELETE AND INSERT AS FOLLOWS:

ii. Retentions

~~The minimum retentions in lb/cu ft for the outer 0.6 in. of guardrail posts and blocks blockouts shall be those listed in table F. Retentions shall be determined by chemical assay with samples taken after treatment in accordance with the inspection after treatment requirements shown below and the AWPA Standards listed in table E.~~

TABLE E

MINIMUM REQUIREMENTS FOR RETENTION OF PRESERVATIVE			
PRESERVATIVE	RETENTION, lb/cu ft		AWPA STANDARD
	POSTS	BLOCKS BLOCKOUTS	
CCA or ACZA	0.60	0.40	A11

~~If blocks blockouts are treated along with posts, retention of the charge shall be determined by assay of borings from posts. The minimum retentions shall be in accordance with AWPA Standards T1 and U1.~~

iii. Penetration

~~The penetration requirements for heartwood and sapwood shall be as specified in table F in accordance with AWPA Standard T1, table B6. Samples to determine penetration shall be taken after treatment in accordance with the inspection after treatment requirements shown below.~~

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TABLE F

PENETRATION REQUIREMENTS FOR POSTS AND BLOCKSBLOCKOUTS		
SPECIES	MINIMUM PENETRATION	
	HEARTWOOD	SAPWOOD
Allowed Species*	0.3 in.	0.6 in. or 90%, whichever is greater
* For Red Oak, 65% of the total annual rings shall be penetrated. If this is not possible, properly conditioned wood may be treated to refusal.		

nk. Inspection After Treatment

Following treatment, the charge shall be *physically* inspected in accordance with AWPA Standard M2, Part A, section 4. *Measurements of penetration and retention in accordance with section 4 shall also be obtained. All treated material shall bear the quality mark of the inspection agency. All inspections shall be completed at no cost to the Department.* All non-compliant material shall be removed from the remaining acceptable material before shipment.

~~Sampling and testing for preservative retention and penetration will be done by the Department.~~

ol. Branding

All post and blocksblockouts shall be ~~burn branded~~ clearly and permanently *branded or marked* on one of the wide faces. The brand shall be within 12 in. of the top of the post. The brand shall show the treater's identification, the plant designation, and the year of treatment. The month may also be included. The brand shall also show the species

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~~or group code designation shown in table G~~, the preservative type, and retention, all in accordance with AWPA Standard M6.

SECTION 911, BEGIN LINE 441, DELETE AND INSERT AS FOLLOWS:

64. Field Treatment of Posts and ~~blocks~~*blockouts*

Cuts, holes, or injuries to the surface of posts and ~~blocks~~*blockouts* which occur after pressure treatment shall be field-treated ~~by brushing, spraying, dipping, soaking, or coating with copper naphthenate in accordance with AWPA Standard M4. The Contractor shall ensure that all injuries, such as abrasions and nail and spike holes, are thoroughly saturated with the field treating solution. Holes bored in pressure treated materials shall be poured full of preservative. Horizontal holes may be filled by pouring the preservative into the holes with a bent funnel after temporarily plugging the other end of the hole.~~

~~The solution used for field treatment shall be copper naphthenate in accordance with AWPA Standard P34.~~

75. Rejection for Degrade After Treatment

Guardrail posts or ~~blocks~~*blockouts* developing the following degrade prior to installation will be rejected regardless of prior approvals.

a. single checks greater than 3 in. deep or checks opposite each other totaling more than 3 in. deep, measured with a probe not more than 1/16 in. thick;

b. single checks 1/4 in. wide or wider measured at the widest point, and extending more than 1/3 of the length of the post or ~~blocks~~*blockout*;

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SECTION 920 - HIGHWAY ILLUMINATION MATERIALS

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- c. single checks greater than 3/8 in. wide measured at the widest point;
- d. splits greater than 3 in. long which are in the plane of the bolt hole;
- e. crooks or bows exceeding 1 in. per 10 ft length; and all twists;
- f. combinations of checks, splits, or shakes which are otherwise in accordance with the specifications but which may cause the post or *blocks blockout* to separate into several pieces.

[.....]

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615-R-666 MONUMENTS, MARKERS, AND PARKING BARRIERS

(Adopted 09-21-17)

The Standard Specifications are revised as follows:

SECTION 615, BEGIN LINE 10, INSERT AS FOLLOWS:

615.02 Materials

Materials shall be in accordance with the following:

Coarse Aggregate, Class A or Higher, Size No. 8 or 91	904
Fine Aggregate, Size No. 23	904
Portland Cement.....	901.01(b)
Post.....	911.02(d)(f)
Reinforcing Bars	910.01

SECTION 615, BEGIN LINE 69, INSERT AS FOLLOWS:

615.06 Parking Barriers

Parking barriers shall be of the dimensions shown on the plans.

Placement of parking barriers shall be at the locations and in accordance with the details shown on the plans, or as otherwise directed.

Existing parking barriers to be removed and reset shall be removed without damage, stored and reinstalled as shown on the plans.

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(a) Concrete

The *concrete* barriers shall be cast and tested in accordance with the applicable requirements of 615.03, except the strength shall be determined by concrete cores taken from the finished product. At least two concrete cores will be taken from each unit and the average strength of the unit shall be at least 4,000 psi with no individual core strength less than 3,600 psi.

(b) WoodTimber Post

Vertical woodtimber posts as parking barriers shall be round, roofed on top, and be dimensioned as shown on the plans. The posts shall be in accordance with the applicable requirements of 911.02(d)(f).

SECTION 615, BEGIN LINE 150, DELETE AND INSERT AS FOLLOWS:

615.13 Method of Measurement

Right-of-way markers, reset right-of-way markers, monuments, re-established monuments, castings adjusted to grade monuments, bench mark posts, ~~and~~ reset bench mark posts, *parking barriers, and reset parking barriers* will be measured by the number of units installed. ~~Parking barriers will be measured by the number of units installed.~~

615.14 Basis of Payment

The acceptable quantities of right-of-way markers, reset right-of-way markers, monuments, re-established monuments, castings adjusted to grade monuments, bench mark posts, ~~and~~ reset bench mark posts, *and parking barriers, and reset parking barriers* will be paid for at the contract unit price per each, complete in place.

Payment will be made under:

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Pay Item	Pay Unit Symbol
Bench Mark Post	EACH
Bench Mark Post, Reset	EACH
Casting Adjusted to Grade, Monument.....	EACH
Monument, _____ type	EACH
Monument, Re-Establish.....	EACH
Parking Barrier, <i>Concrete</i>	EACH
<i>Parking Barrier, Reset</i>	EACH
<i>Parking Barrier, WoodTimber Post</i>	EACH
Right-of-Way Marker.....	EACH
Right-of-Way Marker, Reset.....	EACH

The cost of setting tablets in structures or bench mark posts, extensions for monuments, adjustment castings, *backfill, disposal of surplus materials*, re-establishing disturbed existing monuments, and *all* other necessary incidentals shall be included in the cost of the pay items *in this section*.

The cost of existing parking barrier removal, storage, resetting, and all other necessary incidentals needed for resetting shall be included in the cost of parking barrier, reset. Existing barriers that are damaged by the Contractor shall be replaced with no additional payment.

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The Standard Specifications are revised as follows:

SECTION 701, BEGIN LINE 13, INSERT AS FOLLOWS:

701.02 Materials

Materials shall be in accordance with the following:

B Borrow.....	211
Bentonite Grout.....	913.06
Concrete Piles.....	707
Conical Pile Tips.....	915.01(a)2
End Plates.....	915.01(a)1
Epoxy Coating for Piles	915.01(d)
Pile Shoes	915.03
Reinforcing Bars	910.01
Steel H Piles.....	915.02
Steel Pipe Piles.....	915.01
Structural Concrete.....	702
Timber Piling, Treated	911.02(c)
Timber Piling, Untreated.....	911.01(e)

Unless otherwise specified, reinforcing bars may be either plain or epoxy coated.

Steel pipe piles shall consist of a steel pipe which is driven into place and filled with class A concrete.

The Contractor may furnish and drive steel pipe piles with thicker walls than specified.

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Treated and untreated timber piles shall be strapped with at least three straps: one approximately 18 in. from the butt, one approximately 24 in. from the butt, and one approximately 12 in. from the tip. Additional straps shall be provided at approximately 15 ft centers between the butt and tip. Strapping shall encircle the pile once and be tensioned as tightly as possible. Straps shall be 1 1/4 in. wide, 0.031 in. thick, cold rolled, fully heat treated, high tensile strapping, painted, and waxed, with an ultimate tensile breaking strength of 5,4500 psilbs. The strap shall encircle the pile once and shall be crimped with a notch type sealer to furnish a joint yielding 80% of the strap tensile strength. Treated timber piles shall be strapped after treatment.

SECTION 701, BEGIN LINE 811, DELETE AND INSERT AS FOLLOWS:

701.13 Cut-Off Lengths

The tops of all steel pile shall be cut off at the elevation shown on the plans. All unused cut-off lengths shall become the property of the Contractor and shall be removed from the project site.

The length of timber pile above the elevation of cut-off shall be sufficient to enable the complete removal of all material injured by driving. Immediately after making final cut-off on treated timber foundation piles, the cut area shall be ~~given an application of copper naphthenate until visible evidence of further copper naphthenate penetration has ceased. The copper naphthenate solution shall have minimum 2% copper metal treated with copper naphthenate in accordance with AWPA Standard M4.~~

Timber piling supporting timber structures where the piles are cut off, but not concrete capped, shall be treated with ~~an application of copper naphthenate as described above with copper naphthenate in accordance with AWPA Standard M4.~~ A layer of

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saturated building felt or fiberglass cloth which overlaps the side of the pile at least 2 in. shall be securely fastened and completely covered with 20 gage thick galvanized metal or aluminum sheeting. All cuts, injuries, and holes, which occur from removal of nails or spikes that penetrate the treating zone as well as bolt holes for connections, shall be treated by applying coal-tar roof cement in accordance with ASTM D 5643.

SECTION 701, BEGIN LINE 933, DELETE AND INSERT AS FOLLOWS:

The cost of the following shall be included in the cost of the piling.

- (a) predrilling pilot holes;
- (b) pile sleeves;
- (c) maintaining open holes during pile driving;
- (d) broken, bent, damaged, or misplaced piles;
- (e) concrete filling or concrete encasement;
- (f) corrective location or alignment measures;
- (g) epoxy coating;
- (h) splicing piles and jetted sites;
- (i) modifying or replacing pile driving equipment;
- (j) redriving piles which have heaved more than 1/4 in.;
- (k) plain and epoxy coated reinforcing bars;
- (l) repairing epoxy coating;
- (m) replacing epoxy coated piling;
- (n) restriking production piles not shown as test piles;
- (o) piles which are not acceptable or damaged during driving;
- (p) piles which were not driven in accordance with these specifications;
- (q) piles driven with the tops lower than the cutoff elevation;
- (r) spudding or jetting of piles;

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- (s) end plates for pipe piles; ~~and~~
- (t) ~~all labor, equipment, and necessary incidentals~~ *all straps on treated and untreated timber piling; and*
- (u) *all labor, equipment, and necessary incidentals.*

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801-T-089 MAINTAINING EXISTING TRAFFIC SIGNAL INSTALLATION

(Revised 09-01-05)

The Contractor shall maintain the existing traffic signal installation as a temporary fully operating traffic signal installation at all times during each of the construction phases. The temporary signal installation shall be in accordance with 801 and the requirements herein. In each phase of construction, the Contractor may be required to reset the timing of the existing controller. Timing setting will be provided. The Contractor may also be required to relocate existing signal heads, bag other signal heads, or set ~~wood~~timber poles as directed.

In order for the Contractor to be paid for relocating a signal head, such signal head or signal head assembly shall be moved only as directed.

Temporary traffic signal installation maintenance will not be measured for payment. Temporary ~~wood~~timber pole with down guys and anchors, relocate signal heads, and reset controller timing will be measured per each.

Temporary traffic signal installation maintenance will be paid for at a contract lump sum price. Temporary ~~wood~~timber pole with down guys and anchors, and relocated signal head will be paid for at the contract unit price per each. In order for the Contractor to maintain the timing of the existing controller, payment for reset controller timing will be made for each time such resetting is required.

Payment will be made under:

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Pay Item

Pay Unit Symbol

Temporary Traffic Signal Installation, Maintain.....	LS
Temporary Pole, Wood Timber, with Down Guys and Anchors.....	EACH
Signal Head, Relocate.....	EACH
Controller, Reset Timing.....	EACH

The costs of all wiring and other miscellaneous equipment required to maintain the traffic signal installation shall be included in the cost of temporary traffic signal installation, maintain.

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SECTION 805 BEGIN LINE 38, DELETE AND INSERT AS FOLLOWS:

WoodTimber poles to be furnished shall be in accordance with the current ANSI specifications and dimensions. They shall be of the length and class specified, be fully treated in accordance with 922.10(b), and dry. Minimum circumference at the top and at a point 6 ft from the butt shall be in accordance with ANSI specifications.

SECTION 805 BEGIN LINE 66, DELETE AND INSERT AS FOLLOWS:

When directed, temporary stop signs shall be erected at the intersection. When no work is in progress, the intersection shall have at least two operating signal faces for each approach. When the new installations are completed, all existing signal equipment and materials including woodtimber poles, steel poles, and cast-iron handhole rings and covers which have not been used in the new installation shall be carefully removed. Regardless of the right to materials found on the project, as set out in other sections of these specifications, items designated in the contract documents, and field identified by the Department, as traffic signal equipment to be salvaged by the Department or local unit of government shall be stored at a secure site until such time as it is transported to the designated location, when designated as a pay item, or salvaged by the Department or local unit of government. The Contractor shall verify that the field identification placed by the Department has not been removed by vandalism or natural causes. If the Contractor has reason to believe field identifications have been removed, it shall contact the Department. The Contractor shall be responsible for all damage or loss of this equipment and shall repair or replace the damaged or lost equipment as directed. All signal equipment removed and not designated to be salvaged shall become the property of the Contractor and shall be disposed of in accordance with 202.

SECTION 805 BEGIN LINE 170, DELETE AND INSERT AS FOLLOWS:

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The construction of concrete foundations shall be in accordance with 805.13.
~~Wood~~*Timber* poles shall be set a minimum of 7 ft in the ground and raked 12 in.

SECTION 805 BEGIN LINE 790, DELETE AND INSERT AS FOLLOWS:

For a ~~wood~~*timber* signal pole, the cost of downguys, anchor rods, downguy guards, and hub-eyes as shown on the plans, and all hardware required to complete the installation shall be included in the cost of signal pole.

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SECTION 807 BEGIN LINE 668, DELETE AND INSERT AS FOLLOWS:

1. Type I Service Point

This service point installation shall consist of class 5 ~~wood~~*timber* pole, 2 3/4 in. galvanized steel conduits, weatherhead, photo cell and multiple relay switch. The conduit riser shall be fastened and supported on the pole by means of galvanized hook pipe straps and secured to the pole by means of a galvanized lag screw all of the proper size for the conduit being installed. Cable-duct shall be installed in the conduit riser in accordance with 807.08(c). The conductors shall extend beyond the weatherhead a minimum of 4 ft. The conductors outside of the weatherhead shall be ringed to prevent moisture from entering the conduit enclosure.

SECTION 807 BEGIN LINE 700, DELETE AND INSERT AS FOLLOWS:

(c) Multiple Relay Switches

Unless otherwise specified, ~~wood~~*timber* pole, multiple relay switches, service cabinet, photocells, photocell receptacles, weatherhead, conduit, and other miscellaneous items shall be furnished and installed as a part of the service point.

SECTION 807 BEGIN LINE 888, DELETE AND INSERT AS FOLLOWS:

The cost of aerial distribution service, drops to sign structures branching off from the pole line extension, weatherheads and risers required to connect the line extension to the underground electrical distribution circuit, all anchorage guy wires, hardware, aerial cable, electrical connections, ~~wood~~*timber* poles, and incidentals required to complete the pole line extension shall be included in the cost of cable, pole circuit.

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(Only affected sections are shown)

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(Revised 05-23-13)

[.....]

WoodTimber Pole Lighting Supports

WoodTimber poles to be furnished shall be in accordance with the current ANSI specifications and dimensions. They shall be of the length and class specified, be fully treated in accordance with 922.10(b), and dry. All guide wires and hardware except the mast arm and luminaire shall be included the cost of this work.

[.....]

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SECTION 910 BEGIN LINE 591, DELETE AND INSERT AS FOLLOWS:

910.10 Guardrail Posts

Guardrail posts shall be either steel or ~~wood~~*timber* as specified and shall be in accordance with the following requirements.

SECTION 910 BEGIN LINE 611, DELETE AND INSERT AS FOLLOWS:

(b) ~~Wood~~*Timber* Guardrail Posts

The ~~wood~~*Timber* guardrail posts shall be in accordance with 911.02(*ef*). Dimensions and construction details shall be as shown on the plans.

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(Note: Additional changes to this section are shown
in special provision 601-R-660 GUARDRAIL, see pg 16)

SECTION 911 BEGIN LINE 5, DELETE AND INSERT AS FOLLOWS:

(a) General

Untreated ~~limberlumber~~ is a saw mill product which ~~is not~~ *may be* further manufactured ~~than~~ by sawing, resawing, passing lengthwise through a standard ~~planning~~ *planing* machine, drying, cross cutting to length, and machining but is not treated with preservatives.

~~All lumber to be used without preservative treatment shall have the heart center completely boxed in pieces 6 in. and over in thickness. Pieces not large enough to box the center shall be cut outside the heart. Stringers, floor beams, and flooring shall have no less than 80% of heart on any girth. Caps, sills, and posts shall have no less than 60% of heart on each of the four sides measured across the side. Bracing, struts, rails, and such shall have no less than 80% on both sides measured across the side. If plans or purchase orders are marked "Square Edge", no wane will be allowed.~~

1. Boards

Yard lumber less than 2 in. thick and more than 1 in. wide is a board.

2. Dimension Lumber

Lumber from 2 in. to but not including 5 in. thick and 2 in. or more wide is dimension lumber.

3. Structural Lumber

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Lumber that is 2 in. or more thick and 4 in. or more wide intended for use where working stresses are required is structural lumber. The grading of structural lumber is based on the strength and use of the entire piece. ~~Joists and planks shall be structural lumber. Dimensions and~~ The grade of lumber shall be as shown on the plans or as otherwise specified.

4. Sawn Timbers

Lumber of solid sawn pieces with a nominal dimension of 5 in. or more in the least dimension is timber. Timbers may be classified as beams, stringers, posts, caps, sills, girders, or purlins. Timber for structural purposes shall be no less than 6 in. in width or thickness. Dimensions and grade of lumber shall be as shown on the plans or as otherwise specified.

5. Timbers, Round

These timbers are used in the original round form, such as poles, posts, and mine timbers. Round timbers, such as posts and poles, shall be entirely peeled. All limbs and knots shall be trimmed flush. Unless otherwise approved or shown on the plans, no minus tolerances will be allowed on the specified diameter.

6. Yard Lumber

Lumber of all sizes and patterns that is intended for general building purposes is yard lumber. The grading of yard lumber is based on the intended use of the particular grade and is applied to each piece with reference to its size and length when graded without consideration to further manufacture.

7. Surfaced or Dressed Lumber

This is lumber that is dressed by running it through a planer.

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8. Rough Sawn Lumber

This is lumber that has been sawn, edged, and trimmed, but not dressed.

(b) Species and Grade

Only ~~east region douglas fir~~ *Coastal Douglas-fir*, red oak group, redwood, ~~long or short leaf~~ southern yellow pine, and white oak group will be allowed, except as set out elsewhere herein. Redwood lumber shall not be used in bridges where it is a permanent part of the structure.

Except as otherwise provided, all lumber furnished under these specifications shall be of the species and grades specified.

Softwood lumber shall be graded in accordance with grade rules which conform with the basic provisions of the American Softwood Lumber Standard PS 20. It shall be grade marked and shall be in accordance with the applicable grading rules or specifications of the following agencies for the species indicated.

Coastal ~~Region Douglas Fir~~ *Douglas-fir* – West Coast Lumber Inspection Bureau
Southern Yellow Pine – Southern Pine Inspection Bureau
Redwood – Redwood Inspection Service

Red and White Oak Group, Hardwood Lumber, shall be grade marked and shall be in accordance with the applicable grading rules of the National Hardwood Lumber Association.

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If lumber is not to be graded as provided above, it may be green or seasoned, but shall be sound, free from excessive wane, unsound loose or hollow knots, knot holes, shakes, or other defects which would impair strength or durability for the use intended. Pin holes, shot holes, or occasional grub holes in oak are not classified as defects. If approved and if the proposed use of the material is stated on the purchase order, grade markings may not be required on native red or white oak groups furnished from local sources or on emergency orders or small orders of ~~Coastal Douglas-fir~~ and southern yellow pine.

Lumber for temporary bridges or other temporary structures may be of any species and grade which meets approval.

(c) Inspection

All lumber regardless of grade markings may be inspected for grades and quality at the point of origin or final destination. If, during inspection of a lot of lumber, it becomes apparent that the quantity of rejections exceed 20%, the entire lot may be rejected.

(d) Tolerances

Tolerances for rough ~~sawn~~, or dressed lumber shall be in accordance with the following table *National Lumber Grades Authority Grade Rule standards for each species*.

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Nominal Dimensions, in.		Rough Lumber Tolerances*, in.		Surfaced Lumber Tolerances, in. (S1S and S2S to S4S)	
Thickness	Width	Thickness	Width	Thickness	Width
1	Under 8	1/8	1/4	1/4	3/8
	8 and over	1/8	3/8	1/4	1/2
2	Under 8	1/4	1/4	3/8	3/8
	8 and over	1/4	3/8	3/8	1/2
Over 2 but less than 8	Under 8	1/4	1/4	3/8	3/8
	8 and over	1/4	3/8	3/8	1/2
	8 and over	3/8	3/8	1/2	1/2

* If full size rough lumber is specified, no minus tolerances will be allowed.

(e) Untreated Piling

Untreated piles shall be in accordance with ASTM D 25 and the following. All piling shall be cut from white or red oak, dense southern yellow pine, fir, or cypress, preferred in the order listed. They may be of other species, subject to approval, which can withstand driving without showing excessive brooming or splitting.

All piling shall have been cut from sound, solid, live trees. All pile containing defects, or combination of defects, which impair the strength of the pile shall not be used. Piles shall be free from reverse bends. The butts and tips shall be sawed square with the axis of the pile. Alternatively, the tips may be tapered to a point of not less than 16 sq in. with the tip so formed that the centerline of the pile passes through the tip.

Unless otherwise specified, all piles shall be clean-peeled before driving. No strip of the inner bark remaining on the pile shall be more than 3/4 in. wide. There shall be at

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least 1 in. of ~~barkfree~~ *bark free* surface between two such strips. Not less than 80% of the surface ~~on one circumference~~ shall be clean wood. All knots shall be trimmed flush with the body of the pile.

After peeling, piles shall have diameters as indicated below unless otherwise approved or required.

Length of Pile	Diameter, inches		
	Tip, min.	3 in. from Butt, min.	Butt, max.
Less than 20 ft	8	11	20
20 ft and less than 40 ft	8	12	20
40 ft and less than 60 ft	7	13	20
60 ft and more	6	13	20

~~Piles shall be strapped with at least three straps: one approximately 18 in. from the butt, one approximately 24 in. from the butt, and one approximately 12 in. from the tip. Additional straps shall be provided at approximately 15 ft centers between the butt and tip. Strapping shall encircle the pile once and be tensioned as tightly as possible. Straps shall be 1 1/4 in. wide, 0.31 in. thick, cold rolled, fully heat treated, high tensile strapping, painted, and waxed, with an ultimate tensile strength of 5,100 psi. The strap shall encircle the pile once and shall be crimped with a notch type sealer to furnish a joint yielding 80% of the strap tensile strength. Treated timber piles shall be strapped after treatment.~~

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911.02 Treated Lumber

(a) General

Treated lumber shall be ~~lumber which is preservative treated~~ *preservative-treated* by pressure processes in accordance with the AWPA Standards. AWPA Standards T1 and U1 ~~specifies general requirements for all wood products or AASHTO M 133~~. Other AWPA Standards applying to specific items are set out in 911.02(b), 911.02(c), 911.02(d), 911.02(e), and 911.02(g). Lumber to be treated shall be in accordance with 911.01, except as modified in 911.02(b), 911.02(c), 911.02(d), and 911.02(e). The lumber may be inspected at the treating plant. Preservatives shall be in accordance with 911.02(h). Wherever ammoniacal or alkaline copper quat azole or wherever copper preservative is utilized, only stainless steel or hot dipped galvanized fasteners and hardware shall be used. Galvanizing for fasteners shall be in accordance with ASTM A 153. Galvanizing for hardware shall be in accordance with ASTM A 653, coating designation G185. Fasteners and hardware in contact with one another shall be of the same base material and coating if applicable, and shall be used consistently throughout the treated wood article or structure.

(b) Bridge Lumber

This shall be southern yellow pine or ~~east region douglas fir~~ *Coastal Douglas-fir*. There shall be no heartwood requirements and the amount of sapwood shall not be limited. Wane will not be allowed on any treated plank for flooring and may be excluded elsewhere when so specified. ~~In other lumber, wane shall not exceed 1/8 of the width of any face and 1/4 of the length of the piece on any one corner. Both the outer and inner bark shall be removed from any area where wane is allowed.~~ Lumber for bridges shall be treated with a preservative in accordance with applicable provisions of AWPA Standards T1 and U1, *Commodity Specification A: Sawn Products*, use category UC4CUC4B.

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(c) Piling

Wood Timber piling, before treatment, shall be in accordance with 911.01(e) except piles shall be southern yellow pine, ~~red oak, or coast region douglas fir or Coastal Douglas-fir~~. The outer and inner bark shall be removed before treatment. Unless otherwise specified, piling shall be treated with a preservative in accordance with the applicable requirements of AWPA Standards T1 and U1, *Commodity Specification E: Round Timber Piling*, use category UC4C.

(d) Guardrail Posts, Braces, and Battens ~~Blank~~

Wood for these items shall be cut from live, dense southern yellow pine, ~~coast region douglas fir, red oak, or other species if so designated in the proposal or purchase order~~. Posts shall be rough sawed unless otherwise specified. Dimensions shall be as shown on the plans. There shall be a length tolerance of plus 2 in. for posts. The bottoms shall be sawed square and the tops roofed as shown on the plans. Wane shall not extend more than 2 ft from the bottom end. Knots shall be closely trimmed, but hollow knots extending in close to the center of the post, loose knots, and knot clusters will not be allowed. Posts shall be practically straight and no post with a crook exceeding 1 in. between top and butt will be accepted.

Posts listed above shall be sound posts. No sapwood rot will be allowed. Ring shake will not be allowed and oak posts shall be free from pecks or excessive grub holes. Grub holes in the butt, 1/2 in. or less in diameter, are not considered defects. Posts containing ant holes will not be accepted. Any post which contains any defect which is detrimental to the post will be rejected.

Wood braces and battens shall be of the same general species and specifications as required for the posts and shall be of the dimensions shown on the plans.

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SECTION 911, BEGIN LINE 195, DELETE AND INSERT AS FOLLOWS:

(e) Sign Posts

Wood sign posts shall be cut from ~~live catalpa; northern white cedar; native red cedar; southern red cedar; black locust; yellow locust; mulberry; red, black, and white oak group; osage orange; dense southern yellow pine; redwood; sassafras; coast region douglas fir; Coastal Douglas-fir~~, or other species as specified. Posts shall be surfaced four sides.

Dimensions shall be in accordance with the plans. There ~~shall~~will be a length tolerance of ± 2 in. Both butt and top ends shall be ~~sawed~~sawn square. All outer and inner bark shall be removed. One way sweep, not exceeding 1 in. between the top and butt, will be acceptable. Short crooks will not be allowed.

The posts shall be sound timber. No splits, shakes, excessive cracks, loose decayed or hollow knots will be allowed. Occasional pin, shot, or grub holes in oak, or bird pecks in other timbers, will not be considered defects. All posts shall be entirely treated with preservatives in accordance with all applicable provisions of AWPA Standards T1 and U1, *Commodity Specification A: Sawn Products, use category UC4A*.

SECTION 911, BEGIN LINE 225, DELETE AND INSERT AS FOLLOWS:

TABLE A

SPECIAL AND GRADING REQUIREMENTS FOR SAWEDSAWN TIMBER GUARDRAIL POSTS		
SPECIES	POSTS & TIMBERS GRADE	GRADING RULES AGENCIES ^a
HARDWOODS		

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Red Oak (Northern Red, Black, Pin, Laurel, Cherry Bark, Scarlet, Water and Willow Oaks)^b, Hard Maple (Black & Sugar) and Red Maple, White Ash, White Heartwood Beech, Yellow Birch, Hickory (Mockernut, Pignut, Shagbark, and Shellbark Hickories)	Grade GRP	Department
SOFTWOODS		
Douglas Fir, Douglas Fir-Larch, Coastal Douglas-fir, Southern Pine, Jack Pine 8 in. by 8 in.	No. 1 or better No. 1 or better No. 1 or better	WWPA or WCLIB SPIB NHPMA
^a NHPMA (Northern Hardwood and Pine Manufacturers Assoc.); WWPA (Western Wood Products Assoc.); WCLIB (West Coast Lumber Inspection Bureau); and SPIB (Southern Pine Inspection Bureau).		
^b Southern Red Oak will not be allowed.		

SECTION 911, BEGIN LINE 238, DELETE AND INSERT AS FOLLOWS:

2. Department Grade GRP

The requirements for posts to be in accordance with the Department's Grade GRP, Guardrail Posts, will be as follows.

a. Splits

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SECTION 920 - HIGHWAY ILLUMINATION MATERIALS
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SECTION 922 - TRAFFIC SIGNAL MATERIALS AND EQUIPMENT
922.10(b) WOOD STRAIN POLE

~~Splits in the plane of the bolt hole shall not exceed 3 in. At other locations, splits shall not exceed 6 in.~~

b. Checks

~~Single checks shall not be greater than 3 in. deep. Checks opposite each other shall not total more than 3 in. deep, as measured with a probe that is not more than 1/16 in. in thickness or in diameter.~~

~~Single checks of 1/4 in. wide, or wider, measured at the widest point, shall not extend more than 1/3 of the length of the post. Single checks, measured at the widest point, shall not exceed 3/8 in. in width.~~

c. Shakes

~~Shakes, measured in the least dimension, shall not exceed 2 in.~~

~~Splits, checks, and shakes shall not be in combinations which may cause the post to separate into several pieces.~~

d. Stains

~~Stained heartwood, not caused by decay, shall not exceed 15% of the piece.~~

e. Slope of Grain

~~Slope of the grain shall not exceed 1 in 10.~~

f. Wane

~~Wane shall be less than 1/4 of each face.~~

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS

SPECIAL PROVISION 601-R-660 GUARDRAIL
SPECIAL PROVISION 615-R-666 MONUMENTS, MARKERS, AND PARKING BARRIERS
SECTION 701 - DRIVEN PILING
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SECTION 922 - TRAFFIC SIGNAL MATERIALS AND EQUIPMENT
922.10(b) WOOD STRAIN POLE

g. Knots

~~Knots shall be sound and tight. The sum of the least dimensions of all knots in a 6 in. length of post, all faces, shall be less than 5 in. Grain distortion caused by knot clusters shall not exceed 2 1/2 in. Knots will be allowed on all faces, but knots shall not exceed 2 1/2 in. in the least dimension.~~

SECTION 911, BEGIN LINE 280, DELETE AND INSERT AS FOLLOWS:

a. Splits

~~Splits in the plane of the bolt hole shall not exceed 3 in. At other locations, splits shall not exceed 5 in.~~

b. Checks

~~Checks shall be in accordance with 911.02(f)2b.~~

c. Shakes

~~Shakes, measured in the least dimension, shall not exceed 3 in. Shakes shall not extend beyond 1/2 the standard grading length of the piece.~~

~~Splits, checks, and shakes shall not be in combinations which may cause the post to separate into several pieces.~~

d. Stains

~~Stained heartwood, not caused by decay, shall not exceed 25% of the piece.~~

e. Wane

~~Wane shall be less than 1/3 of each face.~~

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922.10(b) WOOD STRAIN POLE

f. Knots

~~Grain distortion caused by knot clusters shall not exceed 4 in. Knots will be allowed on all faces, but knots shall not exceed 4 in. in the least dimension.~~

SECTION 911, BEGIN LINE 331, DELETE AND INSERT AS FOLLOWS:

b. Blank

eb. Inspection Before Treatment

The treater shall be responsible for ensuring that the material has the required approved grading agency stamp before treatment is commenced. The stamp or marking shall be applied on a wide face at the trimmed end. The stamp shall be applied such that it remains readable after treating. Material that has been air dried or kiln dried shall be inspected for moisture content as specified below, in accordance with AWPA Standard M2. Tests of representative pieces shall be conducted. The minimum number of tests shall be the lesser of 5% or 50 pieces out of a charge.

d. Test for Moisture Content

The test shall be made with an electrical resistance type moisture meter with insulated needles of 1 1/2 in. in length. The readings shall be corrected for species and temperature readings in accordance with the meter instructions. The readings shall be taken on one surface at mid length with needles driven to their full length. The lot will be considered acceptable when the average moisture content does not exceed 19%. Individual pieces exceeding 23% moisture content will be rejected. Such pieces shall be removed from the lot.

SECTION 911, BEGIN LINE 375, DELETE AND INSERT AS FOLLOWS:

ig. Conditioning

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS

SPECIAL PROVISION 601-R-660 GUARDRAIL
SPECIAL PROVISION 615-R-666 MONUMENTS, MARKERS, AND PARKING BARRIERS
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SECTION 922 - TRAFFIC SIGNAL MATERIALS AND EQUIPMENT
922.10(b) WOOD STRAIN POLE

Conditioning shall be in accordance with AWPA Standard T1.

j. Blank

k. Inspection During Treatment

The treater shall determine that the preservatives used are in accordance with the requirements herein. The minimum frequency of the preservation analysis shall be each charge for the occasional single charge inspected. The minimum frequency for consecutive treatments from the same working tank shall be the first and at least one of every five additional charges, selected at random. Preservative samples shall be taken as appropriate so as to be representative of the solution in the treating cylinder.

SECTION 911, BEGIN LINE 421, DELETE AND INSERT AS FOLLOWS:

pm. Conformance

The treating plant supplying the material shall be responsible for and will be required to supply a certificate indicating the species, grade, preservative type, retention, year, and name of treater. The certificate shall also include all of the other information which is listed in AWPA Standard M2, ~~Part A~~, section 6.2.

TABLE G

GROUP CODING AS AN ALTERNATE TO SPECIES CODING*	
GROUP	CODE
Hardwoods	MH
Jack Pine	J
Other Softwoods	MS

* Species designated in tables A and B

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS

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922.10(b) WOOD STRAIN POLE

qn. Records

Copies of treating records, analysis records, and other records which may be necessary to determine accordance with specifications shall be made available to Department personnel or their designated representatives upon their request. Required information shall be that which is listed in ~~Part A, section 6.2 of AWPA Standard M2~~ *AWPA Standard M2, section 6.2*. These records shall be retained by the treating plant for five years from the date of material shipment.

ro. Independent Inspections

The Department may inspect the material or call for a non-Departmental inspection to verify that it is in accordance with all specifications.

SECTION 911, BEGIN LINE 477, DELETE AND INSERT AS FOLLOWS:

(g) Recreational Applications

Lumber *and timber* that will be used in facilities where human contact will occur, such as handrails, pedestrian facilities including decking and picnic tables, shall be treated ~~with ammoniacal or alkaline copper quat~~ in accordance with AWPA Standards ~~T1, U1, or UC4A, and P5~~. The treater shall perform inspection and marking in accordance with ~~or~~ AASHTO M 133. Material furnished under this specification shall be covered by a type C certification in accordance with 916.

(h) Preservatives

Preservatives shall be in accordance with *current AWPA or AASHTO M 133 Standards* as modified by EPA regulation.

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS

SPECIAL PROVISION 601-R-660 GUARDRAIL

SPECIAL PROVISION 615-R-666 MONUMENTS, MARKERS, AND PARKING BARRIERS

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SECTION 807 - HIGHWAY ILLUMINATION

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SECTION 910 - METAL MATERIALS

910.10 GUARDRAIL POSTS

SECTION 911 - WOOD MATERIALS (*VARIOUS SECTIONS AND SUBSECTIONS*)

SECTION 920 - HIGHWAY ILLUMINATION MATERIALS

920.01(a) LIGHTING STANDARDS AND MAST ARMS, UNDER 80 FT

SECTION 922 - TRAFFIC SIGNAL MATERIALS AND EQUIPMENT

922.10(b) WOOD STRAIN POLE

Waterborne preservatives shall be in accordance with *AASHTO M 133 or AWPA Standards. P5*, and shall be Acid Copper Chromate, Alkaline Copper Quat, Ammonical Copper Quat, Copper Azole, Copper Naphthenate or Chromated Copper Arsenate.

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS

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SECTION 910 - METAL MATERIALS

910.10 GUARDRAIL POSTS

SECTION 911 - WOOD MATERIALS (*VARIOUS SECTIONS AND SUBSECTIONS*)

SECTION 920 - HIGHWAY ILLUMINATION MATERIALS

920.01(a) LIGHTING STANDARDS AND MAST ARMS, UNDER 80 FT

SECTION 922 - TRAFFIC SIGNAL MATERIALS AND EQUIPMENT

922.10(b) WOOD STRAIN POLE

SECTION 920, BEGIN LINE 156, DELETE AND INSERT AS FOLLOWS:

5. *WoodTimber* Pole Lighting Standards

WoodTimber poles for highway lighting standards shall be in accordance with
922.10(b).

REVISION TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS

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920.01(a) LIGHTING STANDARDS AND MAST ARMS, UNDER 80 FT
SECTION 922 - TRAFFIC SIGNAL MATERIALS AND EQUIPMENT
922.10(b) WOOD STRAIN POLE

SECTION 922, BEGIN LINE 1167, DELETE AND INSERT AS FOLLOWS:

(b) *WoodTimber* Strain Pole

WoodTimber strain poles shall be made from southern yellow pine and shall be in accordance with the current ANSI Specifications and Dimensions for Wood Poles No. 05.1. They shall be of the length and class specified.

All poles shall be full length pressure treated by the full cell process in accordance with current specifications as set forth in the AWPA Standards *T1 and U1, Commodity Specification D: Poles*, use category UC4B using preservative as outlined in ~~standard P5~~ and set forth in 911.02(h).

Treatment, handling, and storage methods shall be in accordance with the current AWPA Standards.

[END]

COMMENTS AND ACTION

SPECIAL PROVISION 615-R-666 MONUMENTS, MARKERS, AND PARKING BARRIERS

701.02 MATERIALS

701.13 CUT-OFF LENGTHS

701.15 BASIS OF PAYMENT

SPECIAL PROVISION 801-T-089 MAINTAINING EXISTING TRAFFIC SIGNAL

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805.03 GENERAL REQUIREMENTS

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SPECIAL PROVISION 807-T-087 HIGHWAY ILLUMINATION MAINTENANCE AND REPAIR

807.15 SERVICE POINT POWER ENTRY

910.10 GUARDRAIL POSTS

SECTION 911 - WOOD MATERIALS (*VARIOUS SECTIONS AND SUBSECTIONS*)

920.01(a) LIGHTING STANDARDS AND MAST ARMS, UNDER 80 FT

922.10(b) WOOD STRAIN POLE

DISCUSSION:

Mr. Reilman introduced and presented this item stating that the Standard Specifications are out of date with regards to untreated and treated wood products, and proposes to update the Standard Specifications, and special provisions, as shown, to be current with practices in the wood products industry.

Mr. Koch asked about the language in 911.02 line 319 from page #19, stating that MWS has a specific bury. Should the allowable length tolerance be +/- 2 in. for the post? And similar length +/- tolerance question for the blockouts? Minor editorial revisions are as shown.

Mr. Owen provided further explanation for the testing and certification of the treated lumber, as well as valuable insight as to the treatment and production of the timbers.

Mr. Reilman revised his motion, seconded by Mr. Koch.

Minor editorial revisions regarding the timber straps were made after the meeting for clarification, and are as shown.

COMMENTS AND ACTION

SPECIAL PROVISION 615-R-666 MONUMENTS, MARKERS, AND PARKING BARRIERS
701.02 MATERIALS
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920.01(a) LIGHTING STANDARDS AND MAST ARMS, UNDER 80 FT
922.10(b) WOOD STRAIN POLE

(CONTINUED)

Motion: Mr. Reilman Second: Mr. Dave Ayes: 9 Nays: 0 FHWA Approval: <u>YES</u>	Action: <input type="checkbox"/> Passed as Submitted <input checked="" type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected: 601, 701, 805, 807, 910, 911, 920, and 922.	<input checked="" type="checkbox"/> 2020 Standard Specifications <input checked="" type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected: 601-R-660, 615-R-666, 801-T-089, 807-T-087	<input type="checkbox"/> Create RSP (No. <u> </u>) Effective <u> </u> Letting RSP Sunset Date: <input type="checkbox"/> Revise RSP (No. <u> </u>) Effective <u> </u> Letting RSP Sunset Date:
Standard Drawing affected: NONE	<input type="checkbox"/> Standard Drawing Effective
Design Manual Sections affected: NONE	<input type="checkbox"/> Create RPD (No. <u> </u>) Effective <u> </u> Letting
GIFE Sections cross-references: NONE	<input checked="" type="checkbox"/> GIFE Update <input checked="" type="checkbox"/> SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS
REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: These Specs were used on few projects. New pavement failed due to soils being switched between existing and proposed pavements where drainage was not specified.

PROPOSED SOLUTION: Subgrade construction and drainage were taken into account and previous project experience has been used in specification development. The whole section 203.22 is rewritten. This section would replace the current 203.22.

APPLICABLE STANDARD SPECIFICATIONS: 203.22

APPLICABLE STANDARD DRAWINGS: NA

APPLICABLE DESIGN MANUAL SECTION: NA

APPLICABLE SECTION OF GIFE: Yes

APPLICABLE RECURRING SPECIAL PROVISIONS: Yes

PAY ITEMS AFFECTED: NA

APPLICABLE SUB-COMMITTEE ENDORSEMENT: NA

IMPACT ANALYSIS (attach report): NA

Submitted By: Matt Beeson and Nayyar Siddiki

Title: State Material Engineer

Organization: INDOT

Phone Number:

Date:

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? NA

Customer satisfaction? Yes

Congestion/travel time? NA

Ride quality? Yes

Will this proposal reduce operational costs or maintenance effort? NA

Will this item improve safety:

For motorists? NA

For construction workers? Na

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

Design process? Yes

Will this change provide the contractor more flexibility?

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

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

Is this proposal needed for compliance with:

Federal or State regulations?

AASHTO or other design code?

Is this item editorial?

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

REVISION TO STANDARD SPECIFICATIONS

SECTION 203 - EXCAVATION AND EMBANKMENT
203.22 EMBANKMENT OVER EXISTING ROADBEDS

The Standard Specifications are revised as follows:

SECTION 203, AFTER LINE 960, DELETE AND INSERT AS FOLLOWS:

203.22 Embankment Over Existing Roadbeds

If embankment for new pavement is to be placed over an area where a rigid pavement or any pavement having a concrete base is in place, or in other cases when required, the upper surface of which is 42 ft or less below the subgrade elevation of the proposed new pavement, the existing old pavement, including any concrete base, shall be removed. The method of removal, disposal, and basis of payment shall be in accordance with 202.05 and 202.14.

If embankment for new pavement is to be placed over an area where an existing rigid pavement is in place, the upper surface of which is more than 1 ft but less than 3 ft below the subgrade elevation of the proposed new pavement, or in other cases when required, the existing pavement shall be broken. Pavement shall be broken so the area of any individual unbroken slab does not exceed 1 sq yd.

If embankment for new pavement is to be placed over an area where an asphalt filled brick type or an asphalt type surface on a concrete base is in place, and such existing surface is more than 1 ft but less than 3 ft below the subgrade elevation of the proposed new pavement, or in other cases when required, the brick and cushion material, or the asphalt courses, shall be removed and the concrete base broken. Removal of the surfacing material, breaking the base, disposal of removed material, and basis of payment shall be in accordance with 202.05 and 202.14.

If embankment for new pavement is to be placed over an area where a flexible type pavement is in place, the top of which is at the approximate elevation of, or is 1 ft or less below the required subgrade elevation of the proposed new pavement, the existing pavement shall be loosened to the depth directed, but no less than 1 ft. This loosened material shall be spread uniformly over the full width of the subgrade plus 1 ft on each side and compacted. No direct payment will be made for this loosening, spreading, and compacting, the cost thereof to be included in the various pay items of the contract.

If embankment for new pavement is to be placed over an existing macadam, the surface of which is more than 1 ft but less than 3 ft below the subgrade elevation of the proposed new pavement, the existing macadam shall be loosened to a depth sufficient to prevent possible trapping of water above the existing surface. No direct payment will be made for this loosening, the cost thereof to be included in the various pay items of the contract.

Where the existing roadbed is too narrow, except as otherwise herein provided, new pavement shall not be placed partly on old and partly on new embankment. If the fill supporting an existing roadbed is 1 ft or more in depth, and is too narrow to carry the entire

REVISION TO STANDARD SPECIFICATIONS

SECTION 203 - EXCAVATION AND EMBANKMENT
203.22 EMBANKMENT OVER EXISTING ROADBEDS

~~width of the proposed new pavement, the existing width of roadbed shall be taken down to include the new roadbed width and rebuilt from the lowest elevation of the disturbed old roadbed to the required new width. This rebuilding shall be in accordance with these specifications for constructing embankment and as directed. For the necessary tearing down of the existing embankment, payment will be made at the contract unit price per cubic yard for the class or classes of excavation encountered.~~

~~If an embankment is to be widened, due precautions shall be taken to ensure a firm foundation. After all sod and other perishable material has been removed, the existing shoulders shall be plowed down 2 ft out from the existing pavement. This material shall be used for widening. Benches, a minimum of 4 ft wide, shall be cut into the slope of the old embankment, unless otherwise directed. The materials from plowing down the shoulders and benching the slopes shall be deposited, spread, and compacted as set out herein for embankment, after which any remaining required embankment shall be finished with additional material, deposited and compacted in like manner. No direct payment will be made for benching, plowing, spreading, and compacting, the cost thereof to be included in the various pay items of the contract.~~

(a) Existing Pavement 2 ft or Less Below Subgrade Elevation

~~When an embankment for new pavement is to be placed over an area where an existing pavement is 2 ft or less below the subgrade elevation of the proposed new pavement, the existing pavement shall be broken, cracked and seated. The embankment and subgrade shall be constructed with coarse aggregate No. 53 in accordance with 301. The method of removal, disposal, method of measurement, and basis of payment shall be in accordance with 202.05, 202.13, and 202.14.~~

(b) Existing Pavement More Than 2 ft Below Subgrade Elevation

~~When an embankment for new pavement is to be placed over an area where an existing pavement is greater than 2 ft below the subgrade elevation of the proposed new pavement, the existing pavement may remain in place. If the existing pavement remains in place, a minimum of 6 in. of coarse aggregate No. 5 or No. 8, or as shown on the plans, shall be encapsulated in a layer of geotextile for pavement and subgrade, in accordance with 203.09 and 918.02, and shall be placed on top of the existing pavement. The geotextile-aggregate encapsulation shall extend the entire width of the roadway. A minimum of 6 in. of coarse aggregate No. 5 or No. 8, or as shown in the plans, shall be placed in accordance with 203.09 over the geotextile. The embankment and subgrade shall then be constructed in accordance with 203.23.~~

The Engineer shall be notified if water seeps from the bench cut of the existing embankment. The Engineer will then contact the Office of Geotechnical Services.

Embankment over existing roadbeds will be measured in accordance with 203.27 and paid for in accordance with 203.28. Payment for benching, plowing, spreading, and

Item No. 4 11/14/18 (2018 SS) (contd.)

Mr. Beeson

Date: 11/14/18

REVISION TO STANDARD SPECIFICATIONS

SECTION 203 - EXCAVATION AND EMBANKMENT

203.22 EMBANKMENT OVER EXISTING ROADBEDS

compacting shall be included in cost of the other pay items for embankment over existing roadbeds.

APPROVED MINUTES

COMMENTS AND ACTION

203.22 EMBANKMENT OVER EXISTING ROADBEDS

DISCUSSION:

This item was introduced by Mr. Reilman and presented by Mr. Reilman and Mr. Siddiki, who explained that Standard Specification section 203.22 has been utilized on only a few projects. The result was that new pavement failed due to soils being switched between existing and proposed pavements where drainage was not specified.

Mr. Reilman stated that subgrade construction and drainage were taken into account and previous project experience has been used in specification development. Mr. Reilman proposes to revise the entire portion of 203.22. Mr. Reilman further pointed out that pre-meeting concerns by Mr. Koch and Mr. Osborn have been addressed and are shown in these minutes.

Mr. Dave asked about rubblization as opposed to broken or crack and seat, since we haven't done crack and seat for quite some time due to voids. Further discussion ensued between Mr. Siddiki and Mr. Koch concerning those two processes. Mr. Koch asked if rubblization could clog underdrains. Mr. Siddiki agreed.

Mr. Reilman chose to withdraw this item pending rework of the proposed language which will incorporate comments and concerns received.

Motion: Mr. Reilman	Action:
Second: Mr. Dave	
Ayes:	<input type="checkbox"/> Passed as Submitted
Nays:	<input type="checkbox"/> Passed as Revised
FHWA Approval:	<input checked="" type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected:	
203.22 pg 166 - 168.	<input type="checkbox"/> 2020 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected:	<input type="checkbox"/> Create RSP (No. <u> </u>) Effective <u> </u> Letting RSP Sunset Date: <u> </u>
NONE	
Standard Drawing affected:	<input type="checkbox"/> Revise RSP (No. <u> </u>) Effective <u> </u> Letting RSP Sunset Date: <u> </u>
NONE	
Design Manual Sections affected:	<input type="checkbox"/> Standard Drawing Effective
NONE	
GIFE Sections cross-references:	<input type="checkbox"/> Create RPD (No. <u> </u>) Effective <u> </u> Letting <input type="checkbox"/> GIFE Update <input type="checkbox"/> SiteManager Update
NONE	

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS
REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: INDOT constructed numerous embankment with coal ash. Coal ash may be consist of bottom ash, fly ash and mixture of the both. INDOT has been using all types in embankment construction by using RSP and USP since 1995. This USP or RSP is attached in every contract where fill is more than 5000 CYD.

PROPOSED SOLUTION: Material and construction requirements of coal ash is added 203 so it helps coal ash producers, designers and contractors. The use of coal ash would be proposed on appropriate project.

APPLICABLE STANDARD SPECIFICATIONS: 203

APPLICABLE STANDARD DRAWINGS: NA

APPLICABLE DESIGN MANUAL SECTION: NA

APPLICABLE SECTION OF GIFE: yes

APPLICABLE RECURRING SPECIAL PROVISIONS: Yes

PAY ITEMS AFFECTED: NA

APPLICABLE SUB-COMMITTEE ENDORSEMENT: NA

IMPACT ANALYSIS (attach report): NA

Submitted By: Matt Beeson & Nayyar Siddiki

Title: State Materials Engineer

Organization: Office of Materials Management and Office of Geotechnical Services

Phone Number: 317-610-7251x204

Date: 11/27/17

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS
REVISION TO SPECIAL PROVISIONS

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? yes

Will this proposal improve:

Construction costs? Yes

Construction time? Yes

Customer satisfaction? Yes

Congestion/travel time? NA

Ride quality? NA

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

For motorists? NA

For construction workers? NA

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? NA

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?

Is this proposal needed for compliance with:

Federal or State regulations?

AASHTO or other design code?

Is this item editorial?

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

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 203-X-XXX COAL ASH FOR EMBANKMENT

203-X-XXX COAL ASH FOR EMBANKMENT

(Adopted xx-xx-18)

The Standard Specifications are revised as follows:

SECTION 203, BEGIN LINE 11, INSERT AS FOLLOWS:

203.02 Common Excavation

Common excavation shall consist of all excavation not included as rock excavation or excavation which is otherwise classified and paid for, including asphalt type pavement. *Coal ash encountered within the project limits may shall be used in embankments under the same conditions as borrow in accordance with 203.08.2. If coal ash is encountered within the project limits, appropriate measures as described in 203.23.1 shall be used to prevent movement of coal ash from the project.*

SECTION 203, AFTER LINE 302, INSERT AS FOLLOWS:

203.08.2 Coal Ash

Borrow may also consist of coal ash.

Coal ash is defined as either fly ash, bottom ash, or a mixture of both. Fly ash is further defined as coal ash with 70% or less passing the No. 200 (75 μ m) sieve. Bottom ash is further defined as coal ash with 20% or less passing the No. 200 (75 μ m) sieve and 10% or less retained on the No. 10 (2.0 mm) sieve.

Boron levels in coal ash shall be less than 5 ppm as determined using the Indiana Neutral Leachate Testing, INLT, methodology.

The Contractor shall provide a copy of an IDEM waste classification certification for Type III or Type IV material prior to use. The IDEM certification shall identify the size and geographical location of the coal ash stockpile.

The Contractor shall also provide a type A certification in accordance with 916 prior to use of coal ash. The type A certification shall include the following:

1. Name of the laboratory performing the tests.
2. Location and owner of the stockpile.
3. Date the samples were obtained.
4. Date the samples were tested.
5. Stockpile sampling locations including depth and available historical testing results.
6. Gradation in accordance with AASHTO T 88.
7. Atterberg limits in accordance with AASHTO T 89 and T 90.
8. Standard Proctor in accordance with AASHTO T 99.
9. Level of boron.

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 203-X-XXX COAL ASH FOR EMBANKMENT

All tests shall be performed by a laboratory from the Department's list of Approved Geotechnical Laboratories. Tests shall be submitted to the Engineer and to the Geotechnical Services Section for approval at least five business days prior to use.

If coal ash is obtained from a commercial source, such as a power plant, the Contractor shall also provide a letter from the source allowing access by Department personnel for the purpose of inspecting the processes used to produce the coal ash stockpile and for sampling the stockpile for testing by the Department.

SECTION 203, AFTER LINE 1012, INSERT AS FOLLOWS:

203.23.1 Coal Ash Embankment

When used as borrow, coal ash shall be placed in the embankment, compacted, and encased upon delivery to the project unless stockpiled at an approved location and in an approved manner.

The Contractor shall include appropriate measures to prevent the movement of coal ash from the embankment area. These measures include, but are not limited to controlling stormwater runoff and fugitive dust. The top of coal ash embankments shall be temporarily encased if embankment construction will be delayed for more than seven days or if weather conditions warrant encasement. Control measures shall be included as part of the required amended Erosion Control Plan amended into the SWQCP in accordance with 108.04205.

Coal ash shall not be mixed with other embankment materials within a given lift of the embankment.

Coal ash shall not be placed in any of the following locations:

1. Below existing ground.
2. Within a 100 ft horizontal distance of a stream, river, lake, reservoir, wetland, karst feature or any protected environmental area.
3. Within a 150 ft horizontal distance of a well, spring, pond or other ground source of water.
4. MSE wall backfill.
5. As encasement material.
6. Within the limits of subgrade treatment.
7. Directly in contact with any permanent metallic construction materials.

The loose depth of each lift of coal ash shall not exceed 8 in. Compaction of each lift shall begin at the outer edge and progress towards the center of the embankment using a maximum 10 t smooth drum vibratory roller and a static roller.

The moisture content shall be controlled within -2 and +2 percentage points of the optimum moisture content determined in accordance with AASHTO T 99. Compaction will be determined by DCP testing in accordance with ITM 509. The DCP criteria for compaction acceptance shall be as follows:

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 203-X-XXX COAL ASH FOR EMBANKMENT

1. *A minimum blow count of 7 for a 6 in. compacted lift for fly ash.*
2. *A minimum blow count of 16 for a 12 in. compacted depth of bottom ash consisting of two compacted 6 in. lifts.*

The Contractor shall coordinate with the Department's Office of Geotechnical Services to determine the minimum blow count for a mixture of fly ash and bottom ash.

Lateral underdrains shall be installed at the bottom of coal ash embankments. Lateral underdrains shall be trenched into the embankment after it has reached an elevation at least 2 ft above existing ground. The bottom of the trench shall be at the top of existing ground with adjustment made for slope of the drain. The trench shall be located within 2 ft of the toe of slope. The trench shall be backfilled with the coal ash material used for the embankment, mechanically compacted to meet the compaction requirements herein. Lateral underdrains shall be 6 in. diameter Type 4 pipe in accordance with 715.02(d) and shall be enclosed in geotextile for underdrains in accordance with 918.02. Lateral underdrains shall be spaced a maximum of 100 ft longitudinally along the centerline of the embankment, shall outlet into the roadside ditch on each side of the embankment, shall extend a minimum of 8 ft horizontally into the embankment, and shall be sloped at a minimum of 0.2%.

Underdrain outlet protectors in accordance with Department standards 718.06 shall be installed at the outlet end of each lateral underdrain.

Coal ash shall be encased on all sides with cohesive soil, the upper 6 in. of which shall consist of a plant growth layer in accordance with 629. The cohesive soil shall be a silty loam, sandy clay, silty clay, sandy clay loam, clay, or a silty clay loam in accordance with 903.02. All cohesive soils shall have a minimum clay content of 10%.

Encasement shall be as follows:

Total Finished Embankment Height	Encasement (Measured Horizontally)
Less than 10 ft	2 ft
10 ft to 20 ft	3 ft
Greater than 20 ft	4 ft

Encasement material shall be placed and compacted concurrently with the coal ash lifts.

The top of the coal ash embankment shall be encased with a minimum of 1 ft of cohesive soil beneath the bottom of subgrade.

REVISION TO SPECIAL PROVISIONS

PROPOSED NEW 203-X-XXX COAL ASH FOR EMBANKMENT

SECTION 203, AFTER LINE 1281, INSERT AS FOLLOWS:

(k) Measurement of Coal Ash

If coal ash is used as borrow, it will be measured in accordance with 203.27(f).

If coal ash is encountered during excavation, it will be measured as common excavation in accordance with 203.27.

SECTION 203, AFTER LINE 1382, INSERT AS FOLLOWS:

Coal ash used as borrow will be paid for at the contract unit price for borrow.

Excavation of coal ash will be paid for at the contract unit price for common excavation.

SECTION 203, AFTER LINE 1451, INSERT AS FOLLOWS:

The costs for the use of coal ash in embankment construction, including, but not limited to testing of the material, encasement, additional erosion and sediment control measures, lateral underdrains and all incidentals shall be included in the cost of other pay items in this section.

COMMENTS AND ACTION

203.22 EMBANKMENT OVER EXISTING ROADBEDS

DISCUSSION:

Mr. Reilman introduced and presented this item stating that the Department has constructed numerous embankments with coal ash. Coal ash may consist of bottom ash, fly ash or a mixture of both. Mr. Reilman further mentioned that the Department has been using all types in embankment construction by utilizing special provisions since 1995. The special provision was included in every contract where fill was more than 5000 cu yds.

Mr. Reilman proposes to incorporate the revisions shown to the material and construction requirements for coal ash to be added to the attached 203 RSP in order to assist coal ash producers, designers and contractors. The use of coal ash would be utilized on appropriate projects.

Mr. Koch asked about the language added to 203.02, stating that 'encountered' could be planned or latent. If the latter, a bidder would not have considered the extra costs associated with coal ash. 'May' allows for indecisiveness as the following sentence states 'shall'. Should 'encountered' Coal Ash fall under 104.02(a) unless otherwise noted on the plans? Also what if the discovered Coal Ash needs to be wasted? Much discussion ensued and the editorial revisions are as shown.

And for the language added in 203.23.1. Mr. Koch inquired of the "minimum 10 ton vibratory roller", and is the intent of the static roller to seal daily lifts? A smooth drum vibratory roller is already in use, so if the required stiffness is achieved do we care if a static roller is present?

Mr. Pelz stated that the language added in 203.23.1 mentions the Erosion Control plan in accordance with 108.04, which has been revised previously. The language has been revised as shown.

Further revisions, as shown, resulted following the respective discussions.

RSP 203-R-360 will sunset with the 2020 SS book.

Mr. Reilman revised his motion, which was seconded by Mr. Koch.

COMMENTS AND ACTION

203.22 EMBANKMENT OVER EXISTING ROADBEDS

(CONTINUED)

Motion: Mr. Reilman Second: Mr. Koch Ayes: 9 Nays: 0 FHWA Approval: <u>YES</u>	Action: <input type="checkbox"/> Passed as Submitted <input checked="" type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected: 203, begin pg 146.	<input checked="" type="checkbox"/> 2020 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision, 203.08.2 overlapped subsection number in: 203-R-121 BORROW AREA WETLAND ENHANCEMENT	<input type="checkbox"/> Create RSP (No. <u> </u>) Effective <u> </u> Letting RSP Sunset Date: <u> </u>
Standard Drawing affected: NONE	<input checked="" type="checkbox"/> Discontinue RSP (No. <u>203-R-360</u>) Effective <u> </u> Letting RSP Sunset Date: <u>2020 SS book</u>
Design Manual Sections affected: NONE	<input type="checkbox"/> Standard Drawing Effective <input type="checkbox"/> Create RPD (No. <u> </u>) Effective <u> </u> Letting
GIFE Sections cross-references: NONE	<input checked="" type="checkbox"/> GIFE Update <input type="checkbox"/> SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS
REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Inability to compact #53's in a high moisture area

PROPOSED SOLUTION: Utilize compacted aggregate #8

APPLICABLE STANDARD SPECIFICATIONS: 714 & 723

APPLICABLE STANDARD DRAWINGS: na

APPLICABLE DESIGN MANUAL SECTION: na

APPLICABLE SECTION OF GIFE: na

APPLICABLE RECURRING SPECIAL PROVISIONS: na

PAY ITEMS AFFECTED: included in the cost of 714/723 items

APPLICABLE SUB-COMMITTEE ENDORSEMENT: na

IMPACT ANALYSIS (attach report):

Submitted By: Michael Koch

Title: Area Engineer

Organization: INDOT

Phone Number: 574-612-2224

Date: Oct 5th 2018

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? na

Construction time? no

Customer satisfaction? no

Congestion/travel time? no

Ride quality? na

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? na

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 use of #8 aggregate improves the control of water during construction, is a material that is readily raked by hand to allow for minor deviations between structure pieces, and only requires seating verses the need to compact #53 aggregate in a high moisture wet environment.

REVISION TO STANDARD SPECIFICATIONS

SECTION 714 - REINFORCED CONCRETE BOX STRUCTURES

714.05 ERECTION REQUIREMENTS

714.12 BASIS OF PAYMENT

SECTION 723 - REINFORCED CONCRETE THREE-SIDED STRUCTURES

723.09 FOOTINGS

723.18 BASIS OF PAYMENT

The Standard Specifications are revised as follows:

SECTION 714, BEGIN LINE 184, DELETE AND INSERT AS FOLLOWS:

714.05 Erection Requirements

The soils in the bottom of the excavation shall be compacted in accordance with 203.23.

~~Where a precast footing is utilized, a 4A_n 8 in. layer of coarse aggregate No. 538 in accordance with 301 shall be placed under the full width of the footing. All cast-in-place footings shall be given a smooth float finish. The footing concrete shall reach a compressive strength of 2,000 psi or flexural strength in accordance with 702.24(c) before placement of the wingwalls. The surface shall not vary more than 1/4 in. in 10 ft if tested with a 10 ft straightedge.~~

SECTION 714, BEGIN LINE 429, DELETE AS FOLLOWS:

The costs of coring, testing, excavation, repairs, plugging core and handling holes, mortar, grout, sealer, cylinder molds, and necessary incidentals shall be included in the cost of the structure. The cost of wingwall footing and the aggregate base ~~under such footing~~ shall be included in the cost of the structure or structure extension.

SECTION 723, BEGIN LINE 263, DELETE AND INSERT AS FOLLOWS:

723.09 Footings

All footings shall be given a smooth float finish. Footing concrete shall reach a compressive strength of 2,000 psi or flexural strength in accordance with 702.24(c) prior to placement of the structure sections or wingwalls. The surface shall not vary more than 1/4 in. in 10 ft when tested with 10 ft straightedge.

~~Where a precast footing is utilized, a 4A_n 8 in. layer of coarse aggregate No. 538 in accordance with 301 shall be placed under the full width of the footing. Precast footings shall be made into a continuous strip footing by the use of closure pours between the precast units. Closure pours shall be as detailed in the working drawings and shall be designed to accommodate the design loads.~~

SECTION 723, BEGIN LINE 504, DELETE AND INSERT AS FOLLOWS:

The cost of all design, coring, testing, pedestals or extended legs, excavation, repairs, plugging core and handling holes, mortar, grout, sealer, cylinder molds, and necessary incidentals shall be included in the cost of the structure or structure extension. The cost of spandrel walls, concrete base slab, footings, and aggregate base under ~~precast~~ footings shall be included in the cost of the structure or structure extension.

COMMENTS AND ACTION

714.05 ERECTION REQUIREMENTS
 714.12 BASIS OF PAYMENT
 723.09 FOOTINGS
 723.18 BASIS OF PAYMENT

DISCUSSION:

This item was introduced and presented by Mr. Koch who expressed concern over the inability to compact #53's in a high moisture area. Mr. Koch therefore proposed to utilize compacted aggregate #8 as shown in the above revisions.

There was no further discussion and this item passed as submitted.

Motion: Mr. Koch Second: Mr. Reilman Ayes: 9 Nays: 0 FHWA Approval: YES	Action: <input checked="" type="checkbox"/> Passed as Submitted <input type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected: 714 pg 633; 714.12 pg 639; 723.09 pg 695; 723.18 pg 701.	<input checked="" type="checkbox"/> 2020 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision affected: NONE	<input checked="" type="checkbox"/> Create RSPs (No. <u>714-R-xxx</u> and <u>723-R-xxx</u>) Effective <u>June 01, 2019</u> Letting RSP Sunset Date: <u>2020 SS book</u>
Standard Drawing affected: NONE	<input type="checkbox"/> Revise RSP (No. <u> </u>) Effective <u> </u> Letting RSP Sunset Date: <u> </u>
Design Manual Sections affected: NONE	<input type="checkbox"/> Standard Drawing Effective
GIFE Sections cross-references: NONE	<input type="checkbox"/> Create RPD (No. <u> </u>) Effective <u> </u> Letting <input type="checkbox"/> GIFE Update <input type="checkbox"/> SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS
REVISION TO STANDARD DRAWINGS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Pavement Sections for Driveway Standard Drawings need updating.

PROPOSED SOLUTION: Incorporate current recommended pavement sections for all drives and crossovers, update series to improve consistency and clarity among drive classes.

APPLICABLE STANDARD SPECIFICATIONS:

APPLICABLE STANDARD DRAWINGS: 610-DRIV series

APPLICABLE DESIGN MANUAL SECTION: 46-11.0 (no revisions required)

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS:

PAY ITEMS AFFECTED:

APPLICABLE SUB-COMMITTEE ENDORSEMENT: none

IMPACT ANALYSIS (attach report):

Submitted By: Mark Orton

Title: Standards Engineer, Office of Standards and Policy

Organization: Bridge Design Division

Phone Number: 317-233-3840

Date: 10/26/18

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? 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? 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

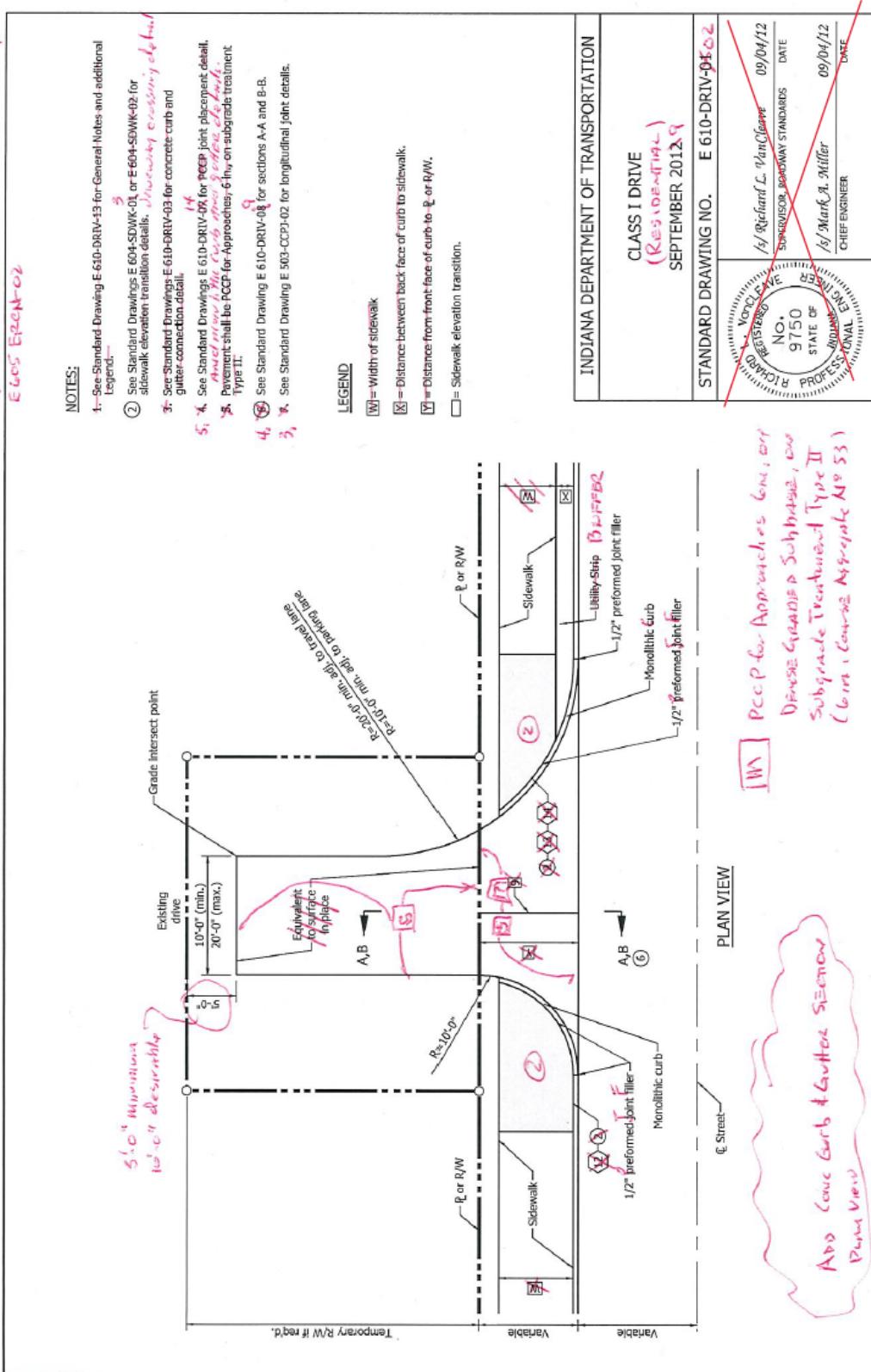
Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

REVISION TO STANDARD DRAWINGS

E 610-DRIV-01 CLASS I DRIVE (WITH MARKUPS)

1. The route for PCD Class I and Class III drivers shall be clearly marked using ear cones that have Type B Retardants and Standard Drawing.

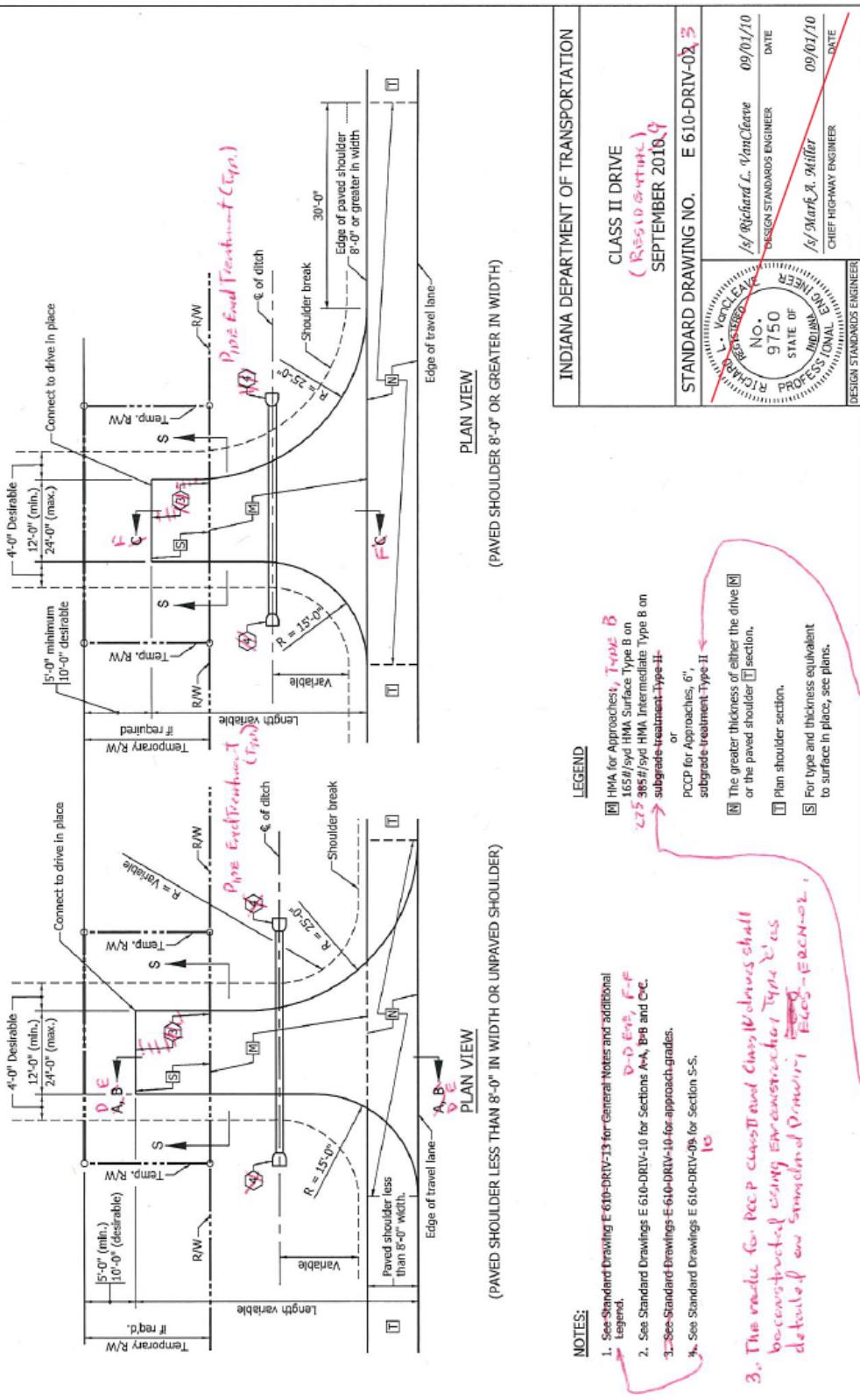
Added Index/General Notes as sheet -01



For type thickness to surround in place, see plan.

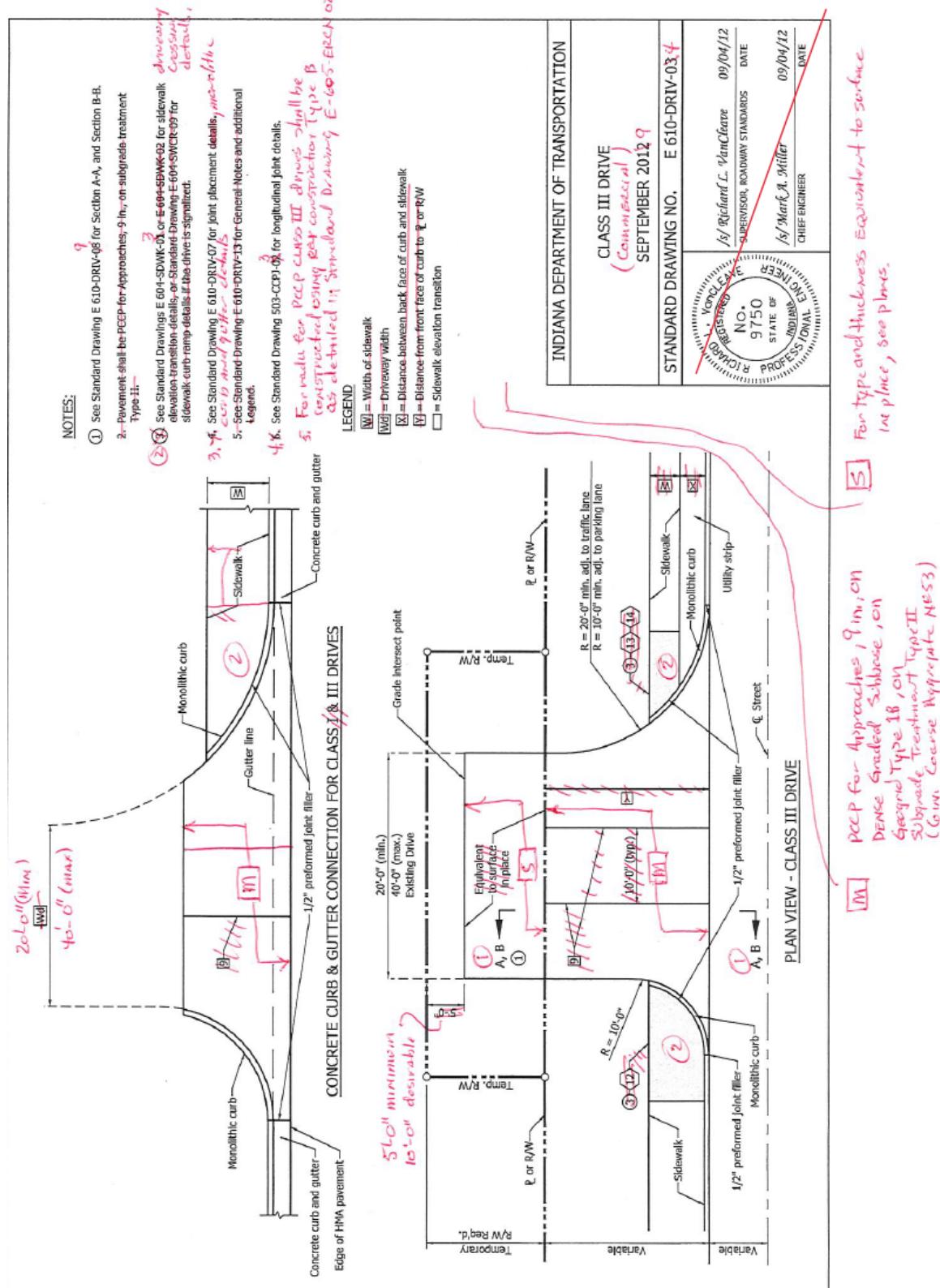
REVISION TO STANDARD DRAWINGS

E 610-DRIV-02 CLASS II DRIVE (WITH MARKUPS)



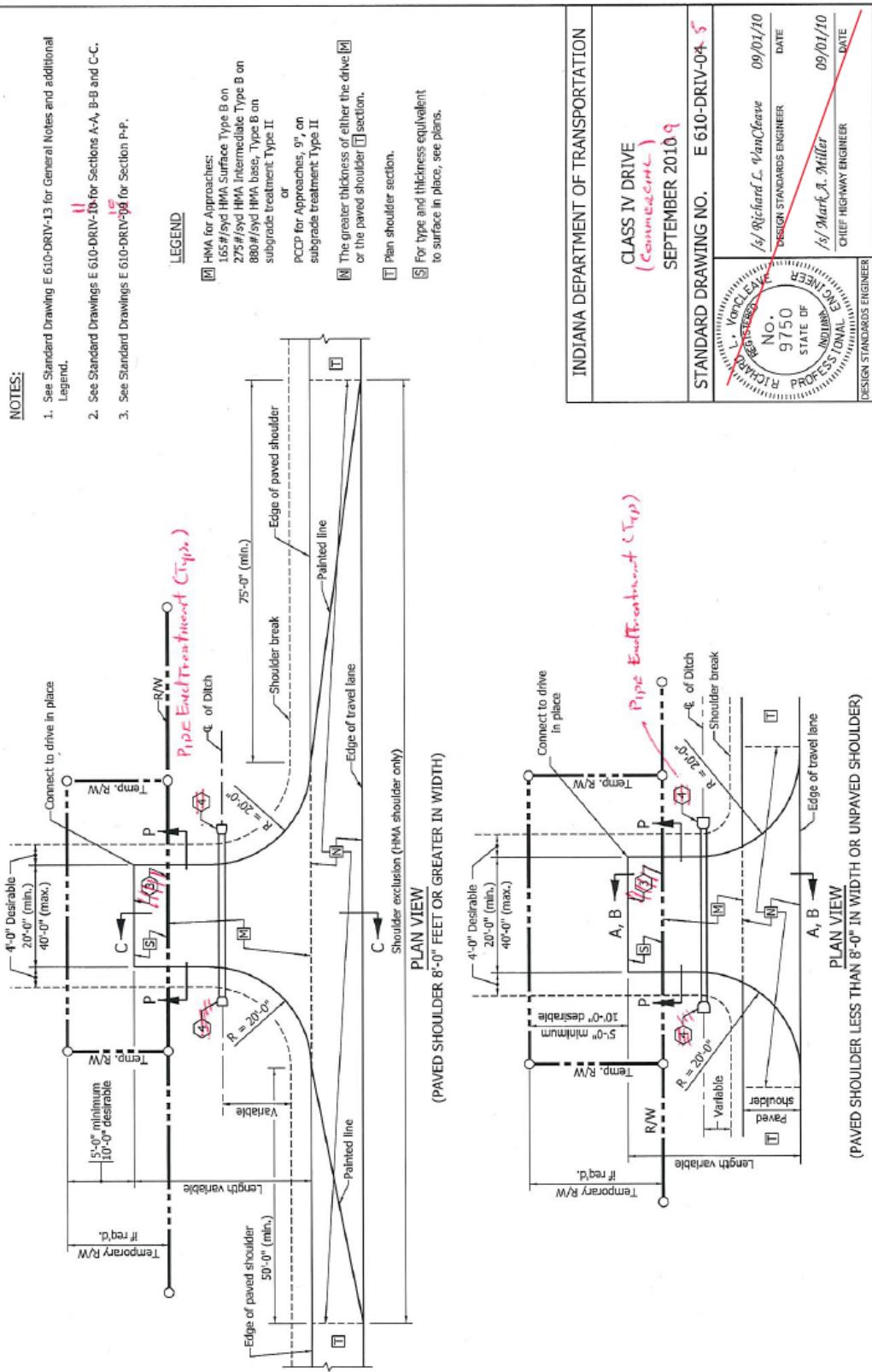
REVISION TO STANDARD DRAWINGS

E 610-DRIV-03 CLASS III DRIVE (WITH MARKUPS)



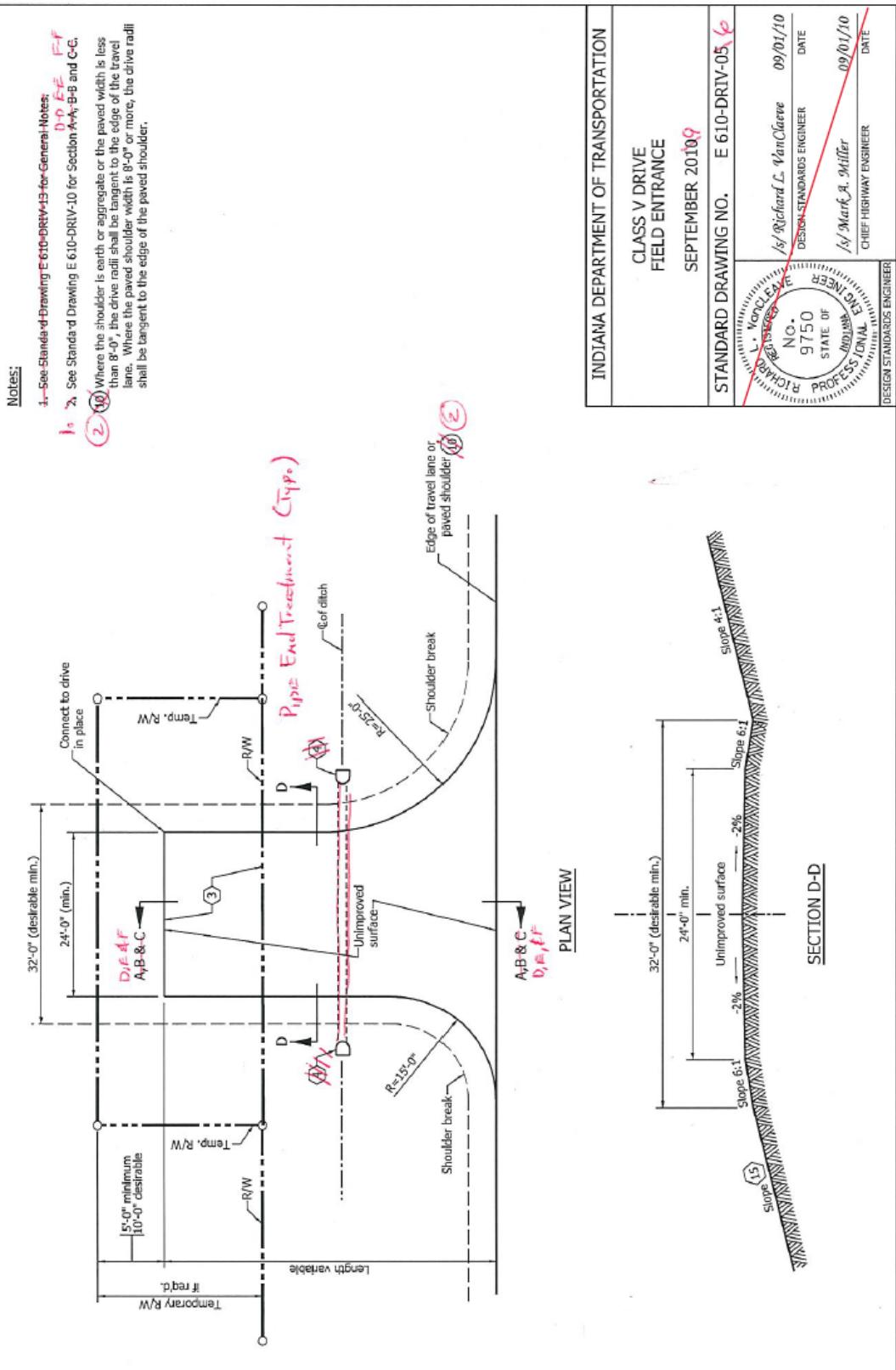
REVISION TO STANDARD DRAWINGS

E 610-DRIV-04 CLASS IV DRIVE (WITH MARKUPS)



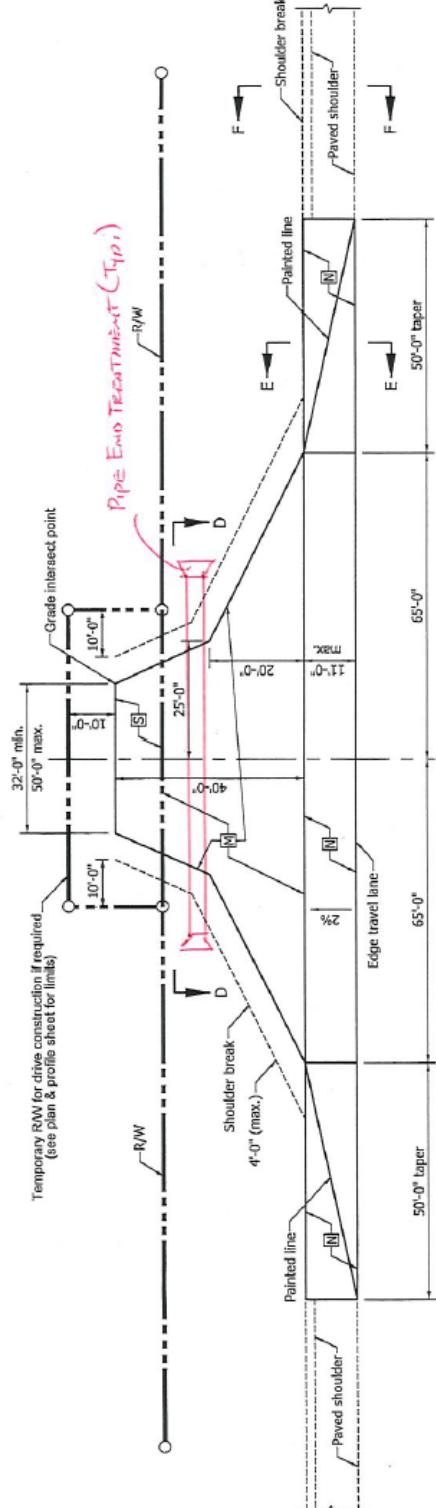
REVISION TO STANDARD DRAWINGS

E 610-DRIV-05 CLASS V DRIVE FIELD ENTRANCE (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

E 610-DRIV-06 CLASS VI DRIVE (WITH MARKUPS)



PLAN VIEW

NOTES:

1. See Standard Drawing E 610-DRIV-03 for General Notes and additional legend.

2. See Standard Drawings E 610-DRIV-11 for drive profile grades.

3. Class VI Drive accommodates a WB-65 (WD) design vehicle with a 45'-0" turning radius.

LEGEND
 HMA for Approaches, Type B
 HMA Intermediate Type B On
 HMA base, Type B On
 subgrade treatment Type II
 or
 PCCP for Approaches, Type B
 on
 subgrade treatment Type II

4. The greater thickness of either the drive [N] or the paved shoulder section.

5. For type and thickness equivalent to surface in place, see plans.

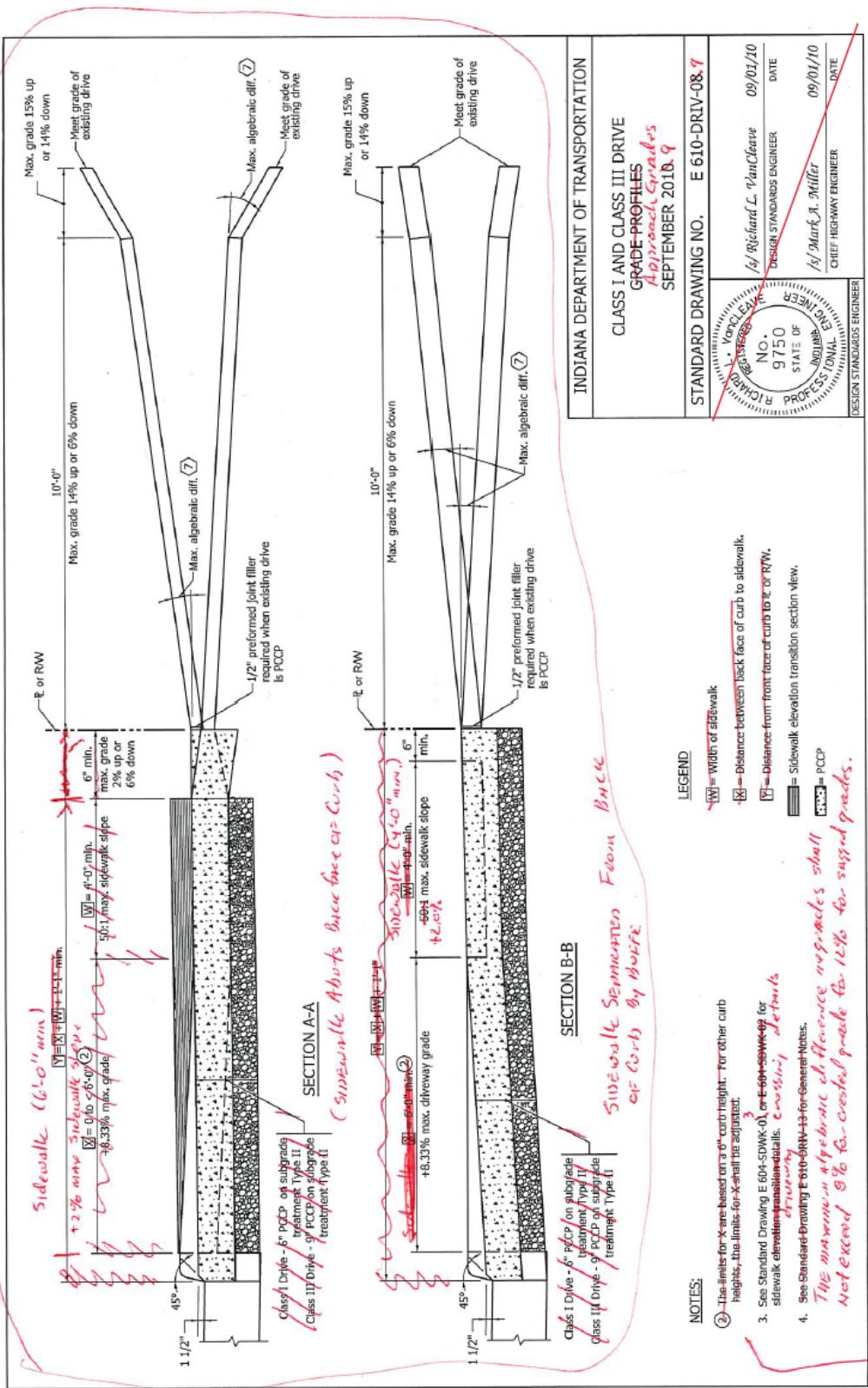
INDIANA DEPARTMENT OF TRANSPORTATION	
CLASS VI DRIVE	
PLAN AND SECTIONS	
[Redacted]	
SEPTEMBER 2010 9	
STANDARD DRAWING NO.	E 610-DRIV-06 7
DESIGN STANDARDS ENGINEER	/s/ Richard L. VanCleave 09/01/10
STATE OF	INDIANA
PROFESSIONAL ENGINEER	/s/ Mark A. Miller 09/01/10
CHIEF HIGHWAY ENGINEER	DATE
DESIGN STANDARDS ENGINEER	

1. PCCP for Approaches, 7 in. or
 Dense Graded Subbase, and
 Geogrid Type
 1B, and
 Subgrade Treatment Type II
 (See, General Aggregate Notes 3)

REVISION TO STANDARD DRAWINGS

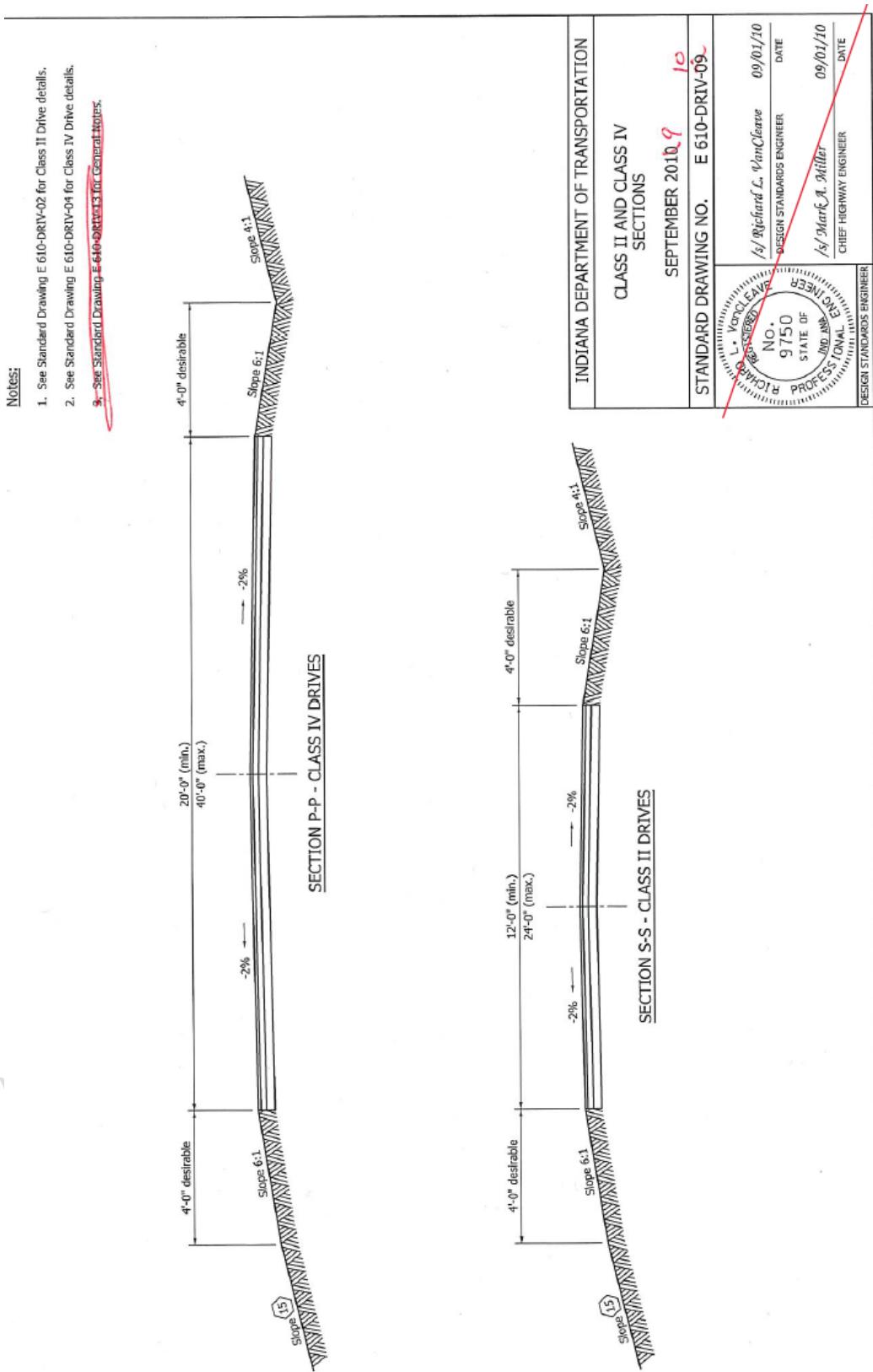
E 610-DRIV-08 CLASS I AND CLASS III DRIVE GRADE PROFILES (WITH MARKUPS)

二十一世紀



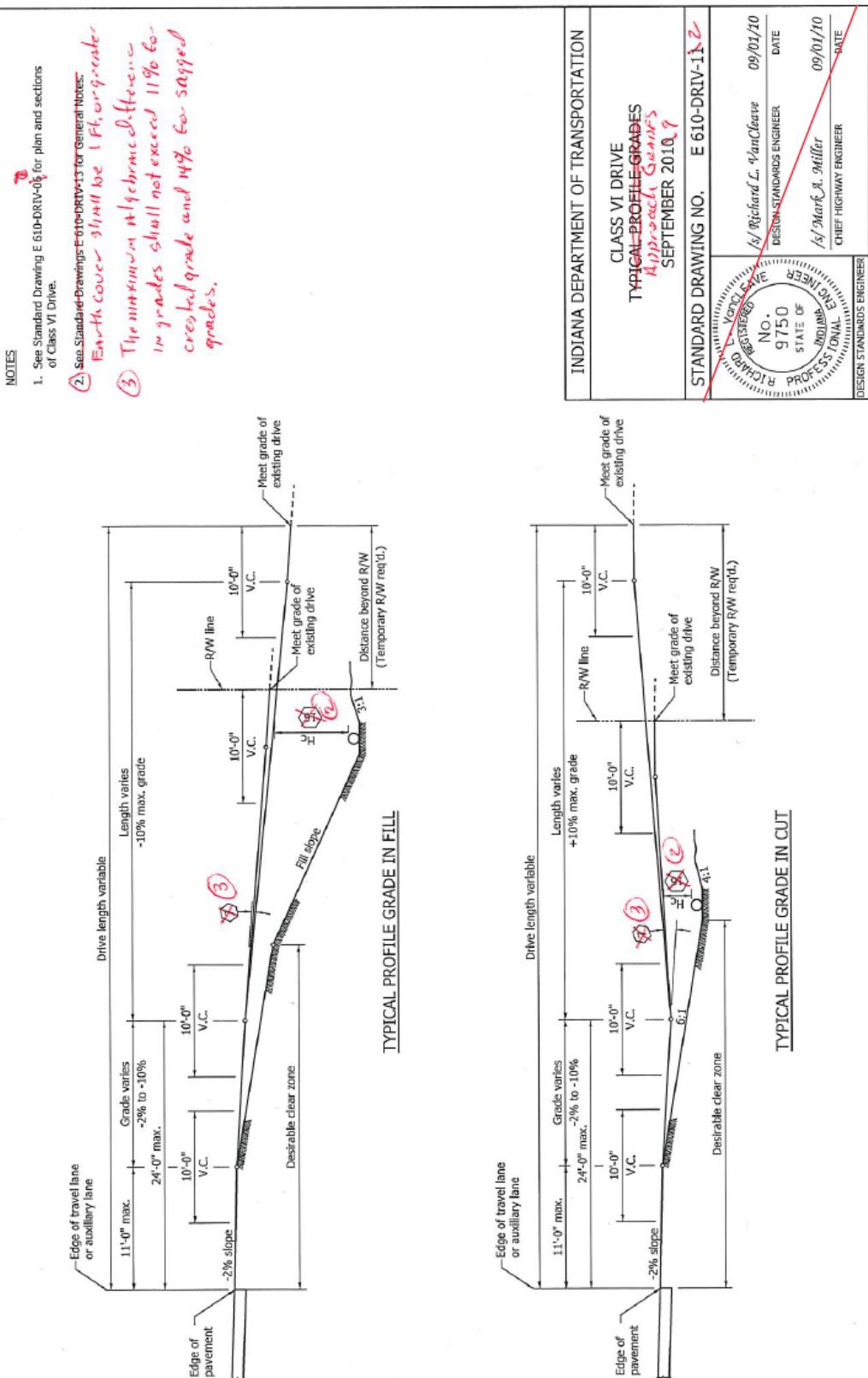
REVISION TO STANDARD DRAWINGS

E 610-DRIV-09 CLASS II AND CLASS IV SECTIONS (WITH MARKUPS)



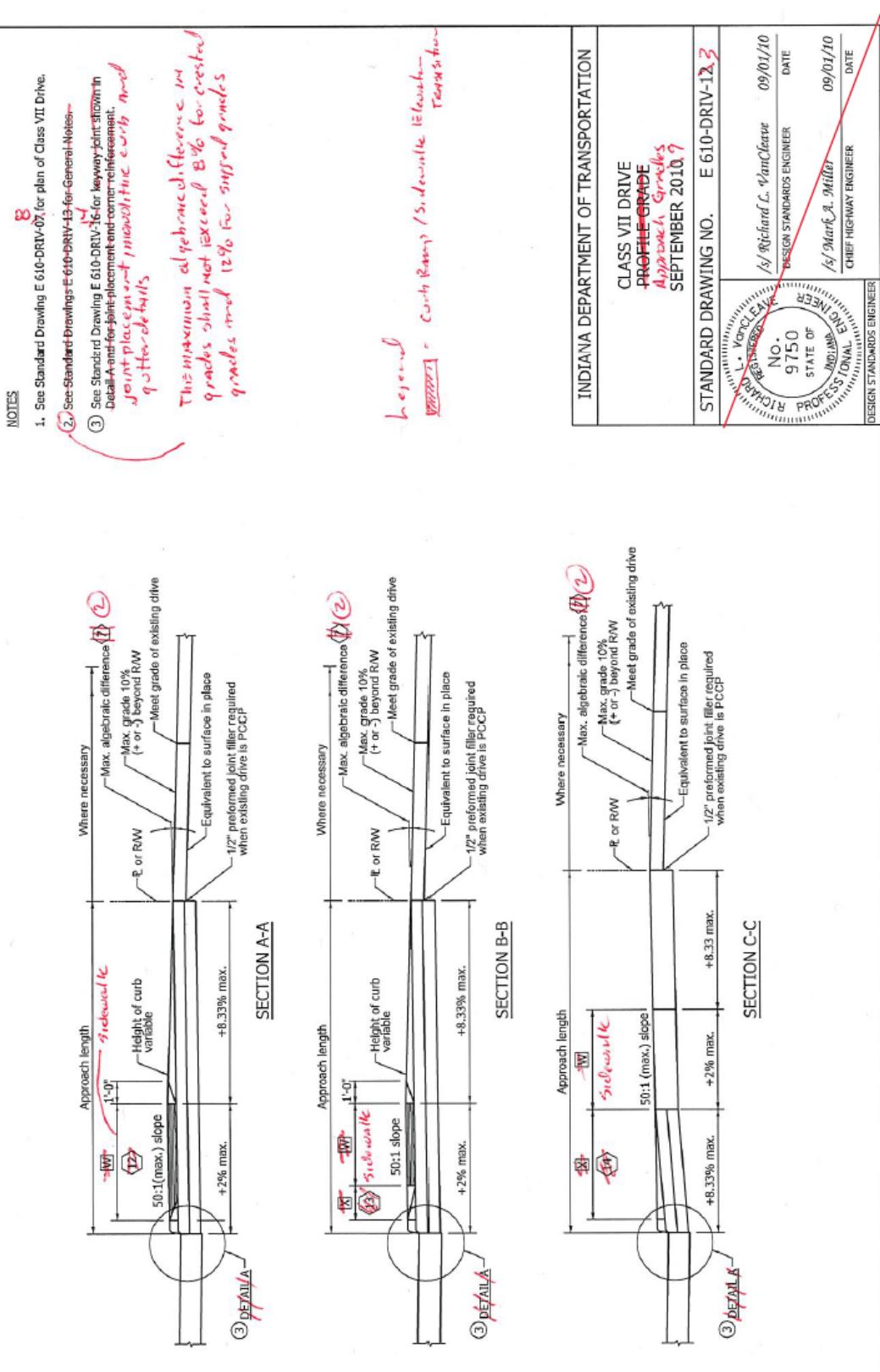
REVISION TO STANDARD DRAWINGS

E 610-DRIV-11 CLASS VI DRIVE TYPICAL PROFILE GRADES (WITH MARKUPS)



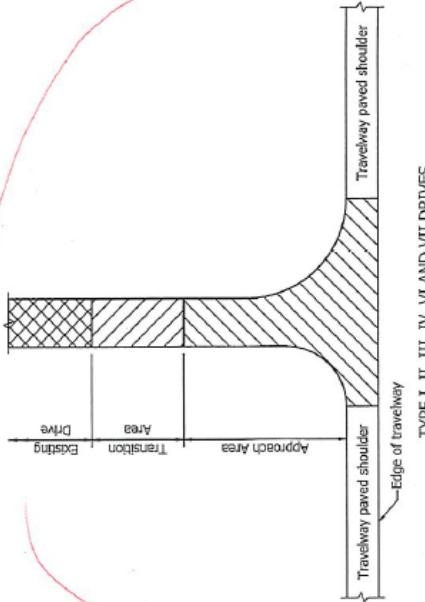
REVISION TO STANDARD DRAWINGS

E 610-DRIV-12 CLASS VII DRIVE PROFILE GRADE (WITH MARKUPS)



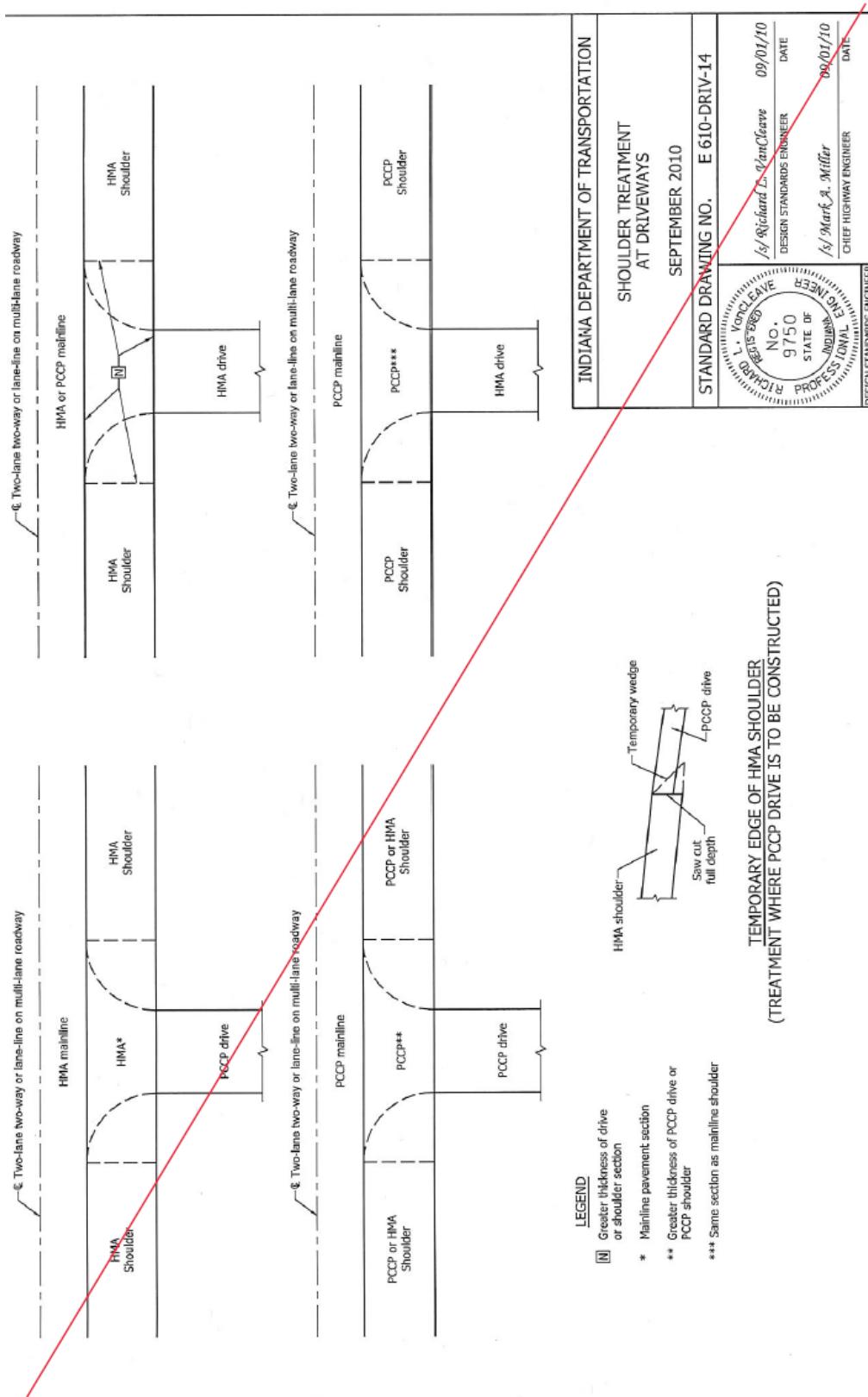
REVISION TO STANDARD DRAWINGS

E 610-DRIV-13 DRIVES GENERAL NOTES AND LEGEND (WITH MARKUPS)

 <p>GENERAL NOTES</p> <p>1. These notes apply to Standard Drawings E 610-DRIV-01 through 12.</p> <p>2. If a PCCP approach is Class III or Class IV, the radii shall be constructed using ear construction Type C as detailed on Standard Drawing E 610-ETC-02.</p> <p>3. When the maximum approach grade of $\pm 1.0\%$ does not meet the grade of the existing drive before the R/W line, the maximum approach grade of $\pm 1.0\%$ shall extend beyond the R/W to the point of intersection with the existing driveway grade. Construction beyond the R/W line shall be done in temporary R/W.</p> <p>4. The appropriate pipe end treatment should be provided for pipes located either inside the clear zone or outside the clear zone.</p> <p>5. The maximum algebraic difference in grades shall not exceed 8% for created grades nor 12% for sagged grades for Types I, and V drives, nor 11% for created grade and 14% for sagged grades for Types II, IV, and V drives.</p> <p>6. The minimum driveway pavement sections for Class III, IV, VI and VII Drives have been designed for 400 trucks per day. If the truck traffic count is greater than 400 per day, the required pavement section shall be as shown elsewhere on the plans.</p> <p>7. See Standard Drawing E 610-DRIV-14 for shoulder treatment at driveways.</p> <p>8. Curb Ramp Type H, as shown on Standard Drawing E 604-SWCR-09, when the approach is signalized, or a sidewalk elevation transition as shown on Standard Drawing E 604-SDWK-02 shall be used when sidewalk is adjacent to curb.</p> <p>9. When x is equal to or greater than 2 ft, but less than 6 ft, either a Curb Ramp Type G or shown on Standard Drawing E 604-SWCR-09, when the approach is signalized, or a sidewalk elevation transition as shown on Standard Drawing E 604-SDWK-02 shall be used.</p> <p>10. When x is equal to or greater than 6 ft, no curb ramp or sidewalk elevation transition is required unless the curb height is in excess of 6 inches.</p> <p>11. Embankment slopes within the mailline clear zone for new construction/reconstruction projects or within the obstruction-free zone for 3R projects should be as shown in the table on Standard Drawing E 610-PRR-04. Outside the clear zone or the obstruction-free zone, the embankment slopes should desirably be 1:1 but not steeper than 3:1.</p> <p>12. Hc - earth cover over culvert shall be 1 foot or greater.</p> <p>13. When x is equal to or greater than 2 ft, but less than 6 ft, either a Curb Ramp Type G or shown on Standard Drawing E 604-SWCR-09, when the approach is signalized, or a sidewalk elevation transition as shown on Standard Drawing E 604-SDWK-02 shall be used.</p> <p>14. When x is equal to or greater than 6 ft, no curb ramp or sidewalk elevation transition is required unless the curb height is in excess of 6 inches.</p> <p>15. Embankment slopes within the mailline clear zone for new construction/reconstruction projects or within the obstruction-free zone for 3R projects should be as shown in the table on Standard Drawing E 610-PRR-04. Outside the clear zone or the obstruction-free zone, the embankment slopes should desirably be 1:1 but not steeper than 3:1.</p> <p>16. Longitudinal joint</p> <p>17. Monolithic curb for PCCP Approaches or concrete curb and gutter for HMA for Approaches.</p> <p>18. Concrete sidewalk</p> <p>19. For type and thickness equivalent to surface in place, see plans.</p> <p>20. Keyway construction joint</p> <p>NOTES</p> <p>1. The pay limits shown hereon generally apply to Type I, II, III, IV, VI and VII Drives as shown on Standard Drawings E 610-DRIV-01, -02, -03, -04, -05 and -07 respectively.</p> <p>2. Approach Area - HMA for Approaches or PCCP for Approaches. This area typically extends from the edge of an 8 foot or wider paved travelway shoulder to the right of way or property line or within a few feet of the right of way or property line where the new drive meets the grade of the existing drive, depending on the site-specific conditions. Where the travelway paved shoulder width is less than 8 feet, this area will be measured from the edge of travelway.</p> <p>3. Transition Area - an equivalent pavement section to the existing drive. This area typically extends from the right of way or property line to a point on the property owner's drive where the new drive grade can match the existing drive grade.</p>	<p>Indiana Department of Transportation Drives - General Notes and Legend</p> <p>September 2010 9 E 610-DRIV-13.4</p> <p>Standard Drawing No. 9750 No. 9750 State of Indiana Professional Engineer Richard L. VanClave Design Standards Engineer Date 09/01/10 Mark A. Miller Chief Highway Engineer Date 09/01/10</p> <p>Legend</p> <p>1/2 in. preformed joint filler Monolithic curb for PCCP Approaches or concrete curb and gutter for HMA for Approaches. Curb ramp, if signalized, or typically, sidewalk elevation transition. Curb ramp or sidewalk elevation transition section view. Longitudinal joint Concrete sidewalk For type and thickness equivalent to surface in place, see plans. Keyway construction joint</p> <p><i>Move to Pavement Works Sheet</i></p> <p><i>Mark Goss' Notes to Sheet 1 Concrete Ties on Sheet 1</i></p>
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REVISION TO STANDARD DRAWINGS

E 610-DRIV-14 SHOULDER TREATMENT AT DRIVEWAYS (WITH MARKUPS)

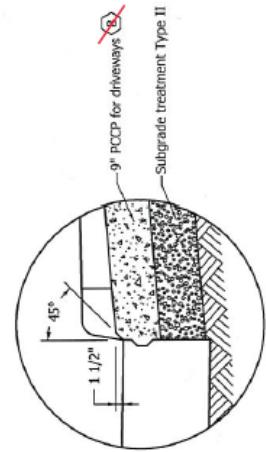


REVISION TO STANDARD DRAWINGS

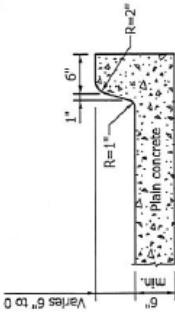
E 610-DRIV-16 CLASS VII DRIVE JOINT PLACEMENT AND CORNERS (WITH MARKUPS)

NOTES

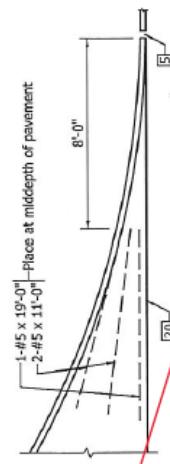
1. See Standard Drawing E 610-DRV-07 for plan and Standard Drawing E 510-DRV-12 for profile of Class VII drive.
2. See Standard Drawings E 610-DRV-13 for General Notes and additional Legend.
3. See Standard Drawing E 610-DRV-07 for keyway print shown in Detail A and for joint placement and corner reinforcement.
4. See Standard Drawing E 605-ERCN-01 for ear construction Type A, and Standard Drawing E 605-ERCN-02 for ear construction Type B.



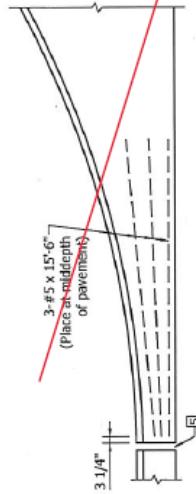
Measure to front plumbest sheet



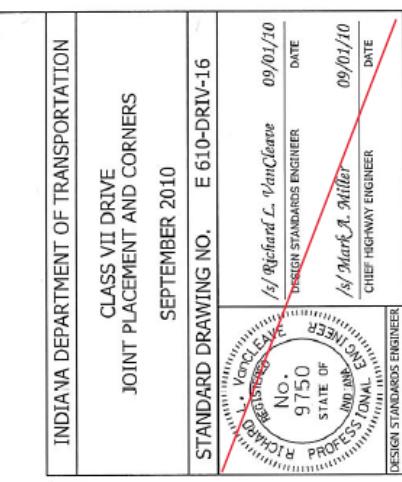
Keyway Construction Joint



INTEGRAL CONCRETE CURB

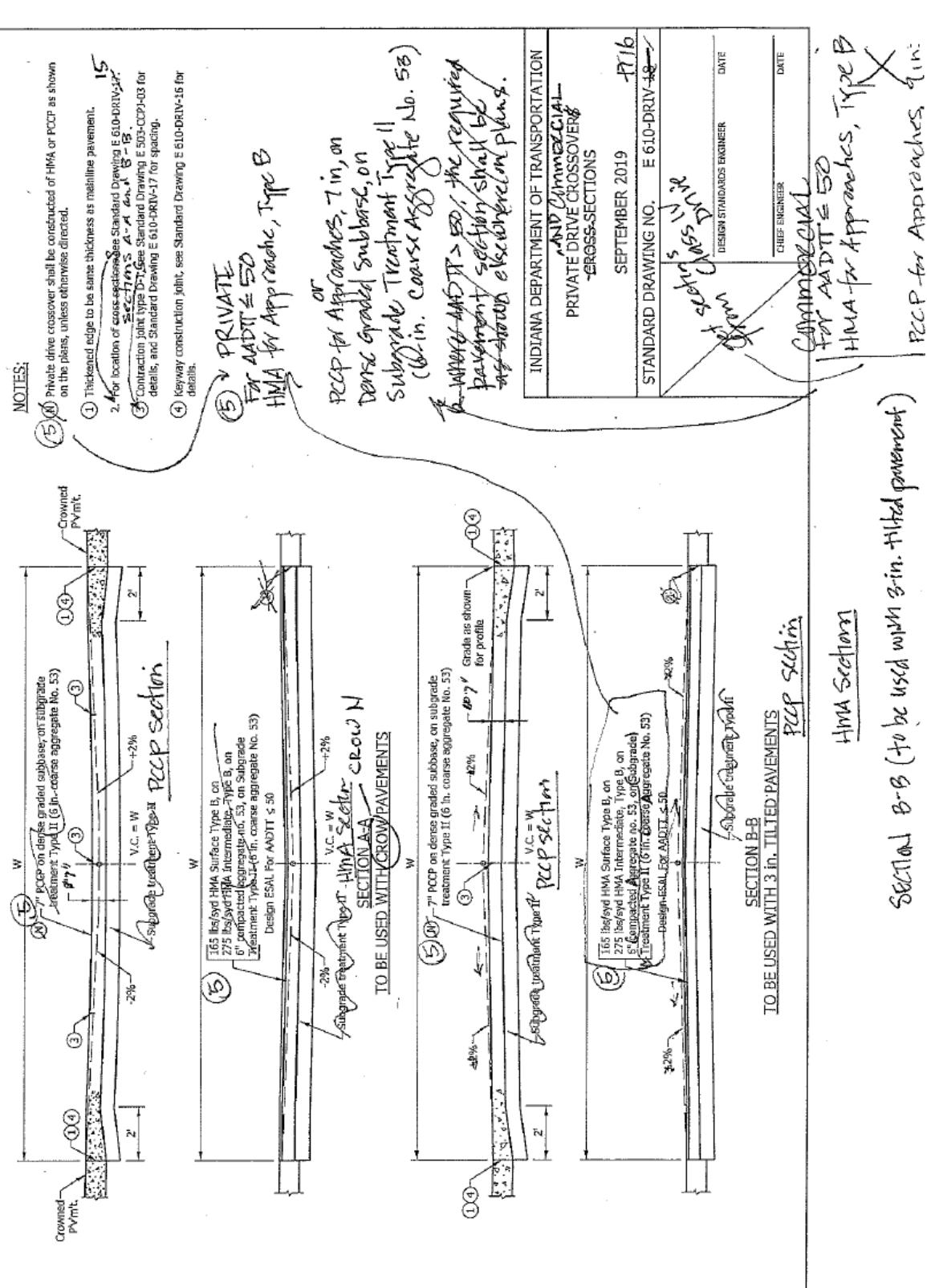


COMBINED CURB & GUTTER



REVISION TO STANDARD DRAWINGS

E 610-DRIV-18 PRIVATE DRIVE CROSSOVERS CROSS SECTIONS (WITH MARKUPS)

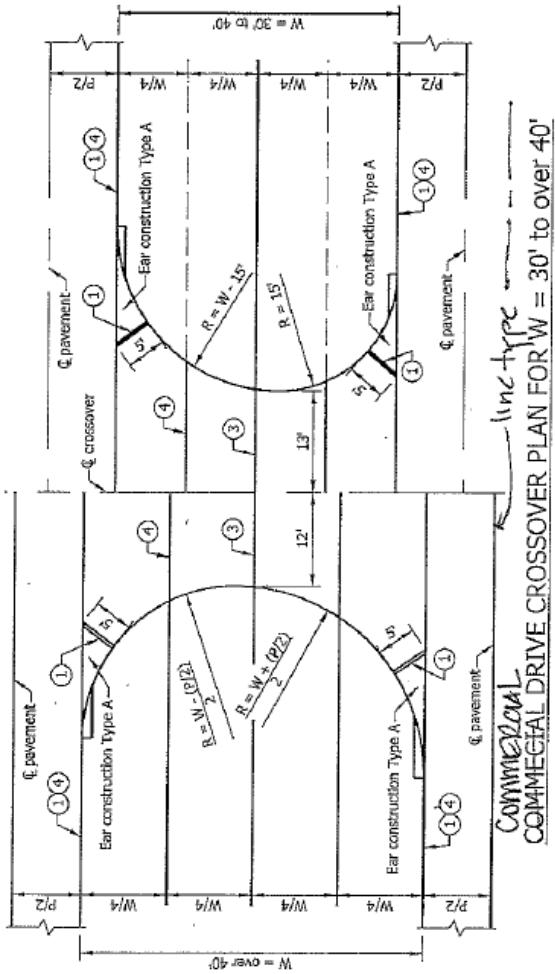
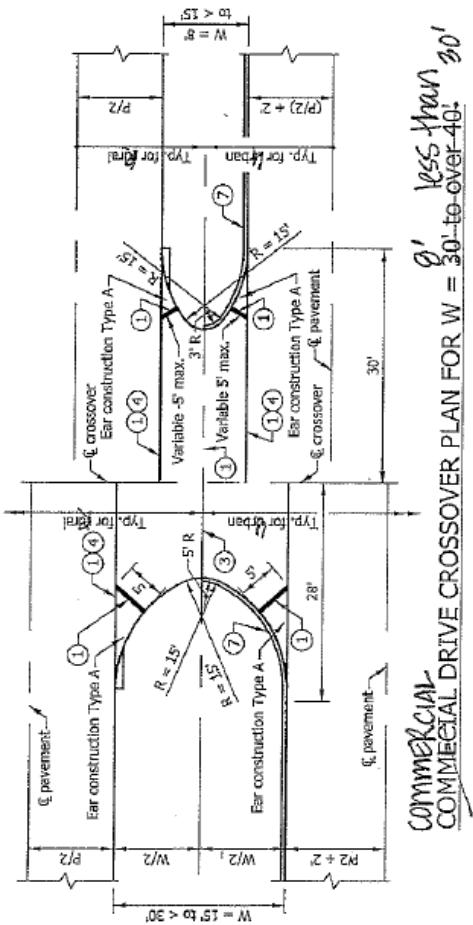


REVISION TO STANDARD DRAWINGS

E 610-DRIV-19 COMMERCIAL DRIVE CROSSOVERS PLANS (WITH MARKUPS)

NOTES:

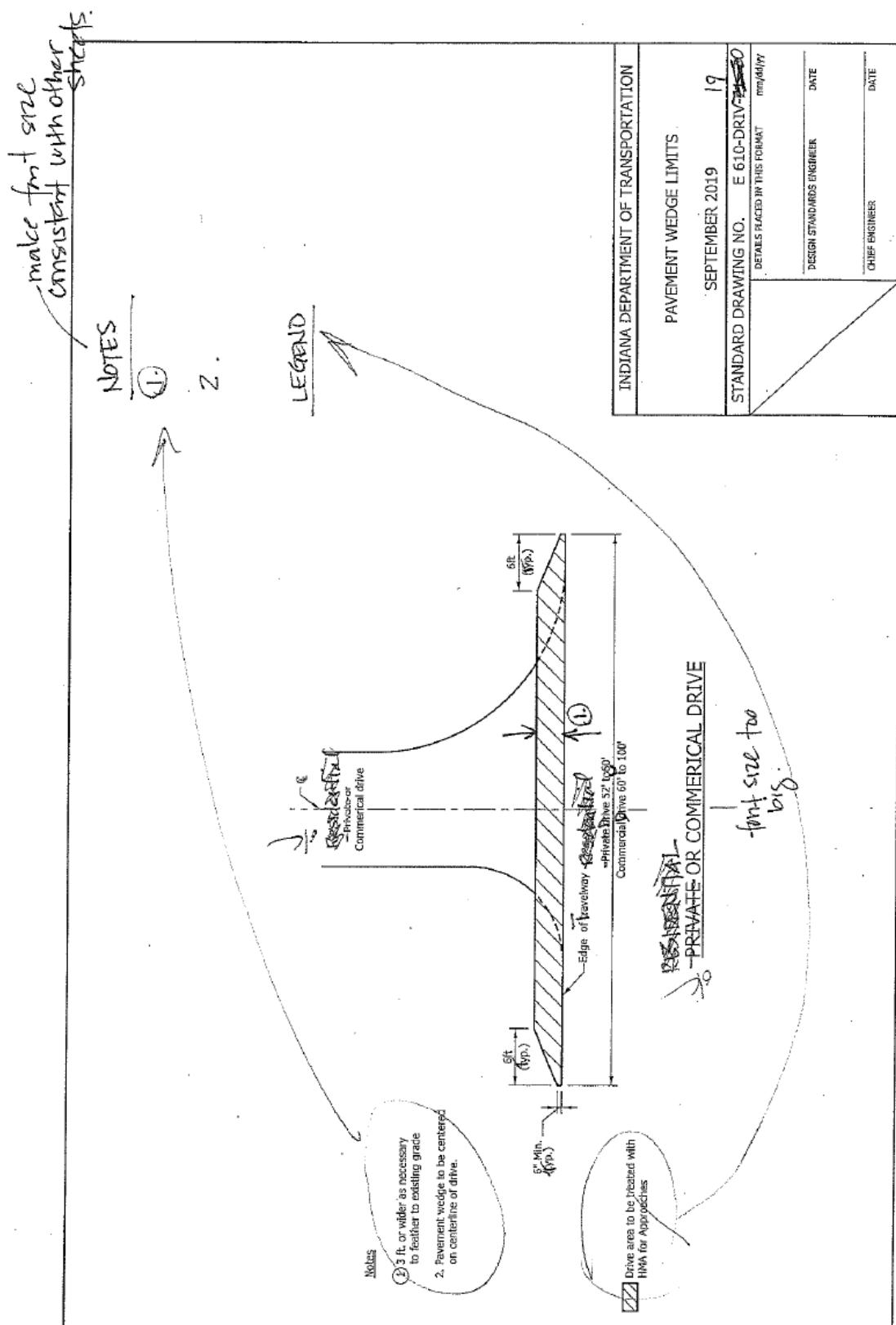
- ① Thicker edge
2. See Standard Drawing E 605-ERCN-01 for ~~Type A~~ Ear Construction Type A
E 605-ERCN-02 for ~~Type B~~ Ear Construction Type B
3. Contraction Joint Type A-1. See Standard Drawing E 503-CCPJ-01 for ~~Type A~~ Joint details
4. Keyway construction joint See Standard Drawing E 610-DRIV-04 for ~~keyway~~ keyway construction Joint details
5. Grade for commercial drive crossover shall be the same as for private drive crossover. For cross sections see Standard Drawing E 610-DRIV-16, pavement section see Standard Drawing E 610-DRIV-04.
6. Integral concrete curb. See Standard Drawing E 605-CCCN-01 for ~~Integral concrete curb~~ Integral concrete curb details
7. Commercial drive crossover shall be constructed of AHA or PCCP as shown on the plans, unless otherwise directed by the Engineer.



INDIANA DEPARTMENT OF TRANSPORTATION	
COMMERCIAL DRIVE CROSSOVERS PLANS	
SEPTEMBER 2019	
STANDARD DRAWING NO. E 610-DRIV-19	
DESIGN STANDARDS ENGINEER	DATE
CHIEF ENGINEER	DATE

REVISION TO STANDARD DRAWINGS

E 610-DRIV-21 PAVEMENT WEDGE LIMITS (WITH MARKUPS)

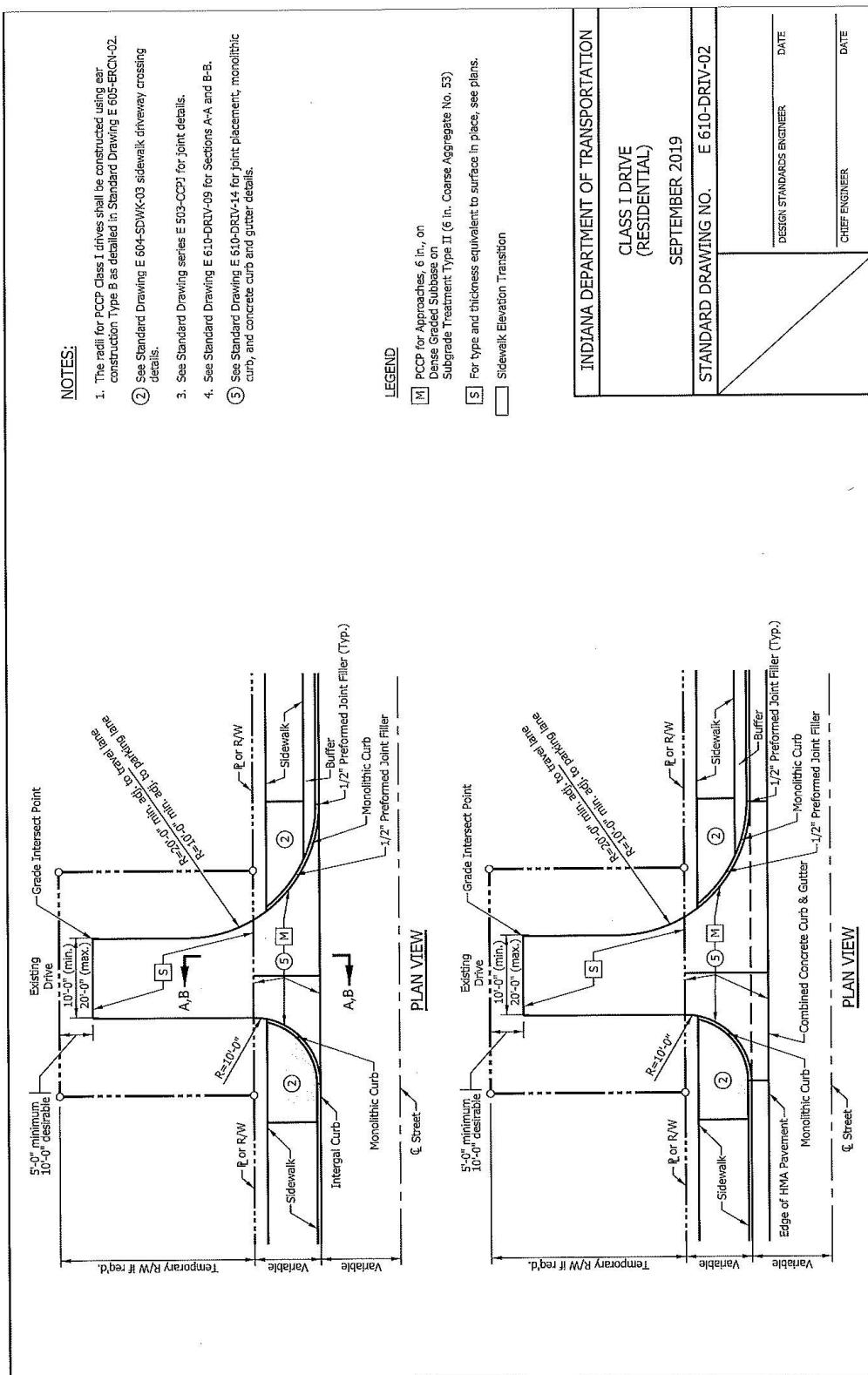


REVISION TO STANDARD DRAWINGS

E 610-DRIV-01 INDEX GENERAL NOTES AND LEGEND (REVISED DRAFT)

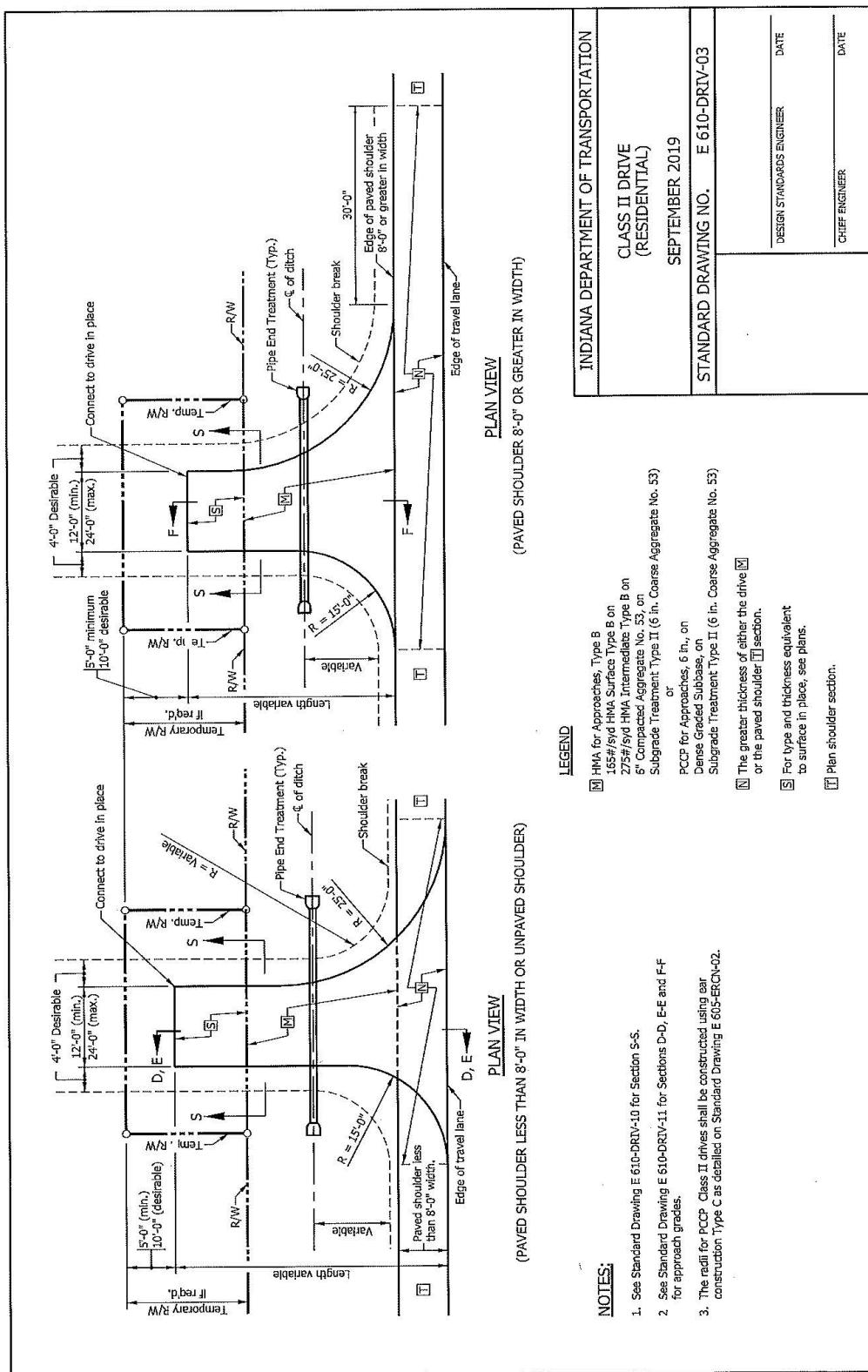
REVISION TO STANDARD DRAWINGS

E 610-DRIV-02 CLASS I DRIVE (REVISED DRAFT)



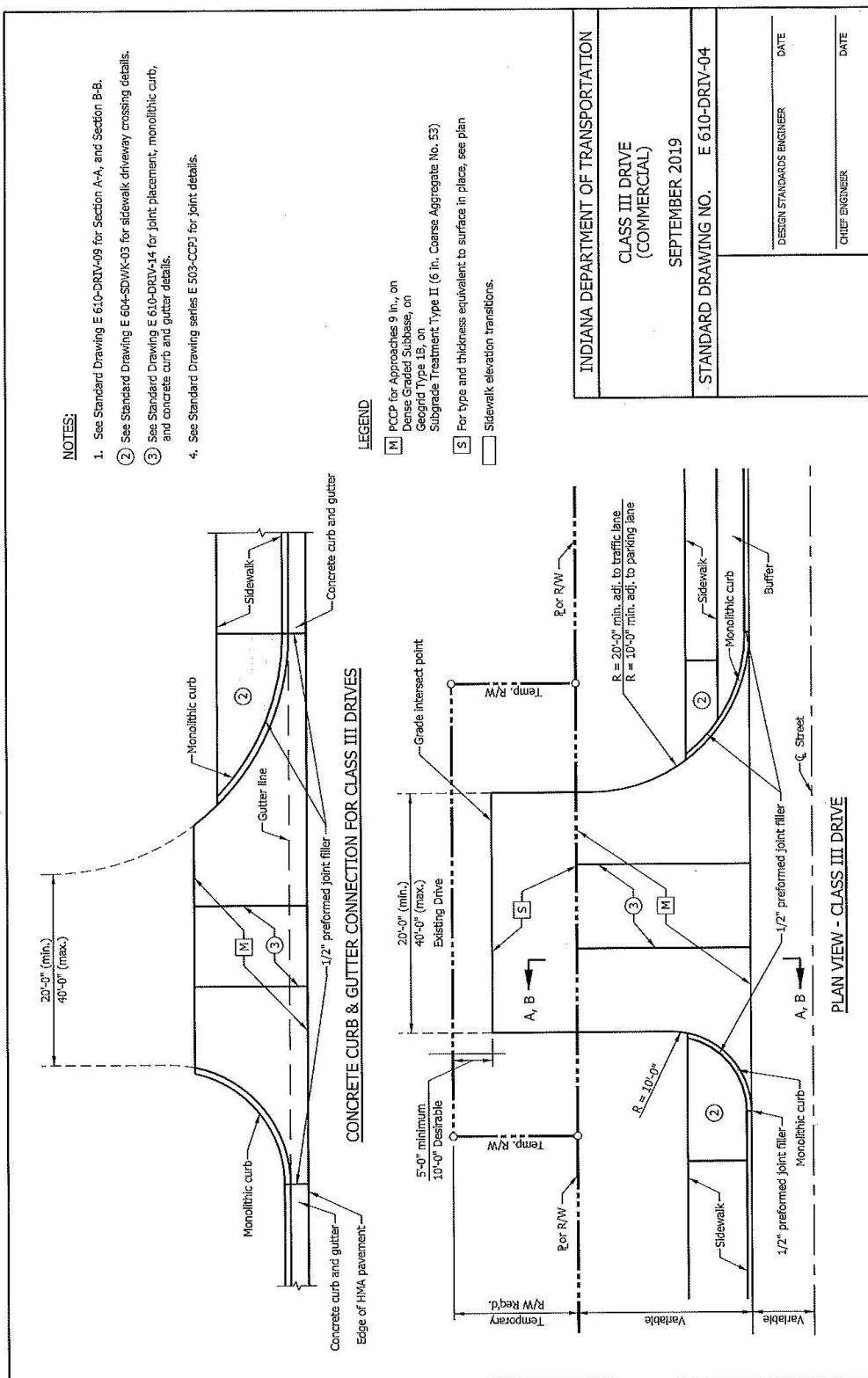
REVISION TO STANDARD DRAWINGS

E 610-DRIV-03 CLASS II DRIVE (RESIDENTIAL) (REVISED DRAFT)



REVISION TO STANDARD DRAWINGS

E 610-DRV-04 CLASS III DRIVE (COMMERCIAL) (REVISED DRAFT)

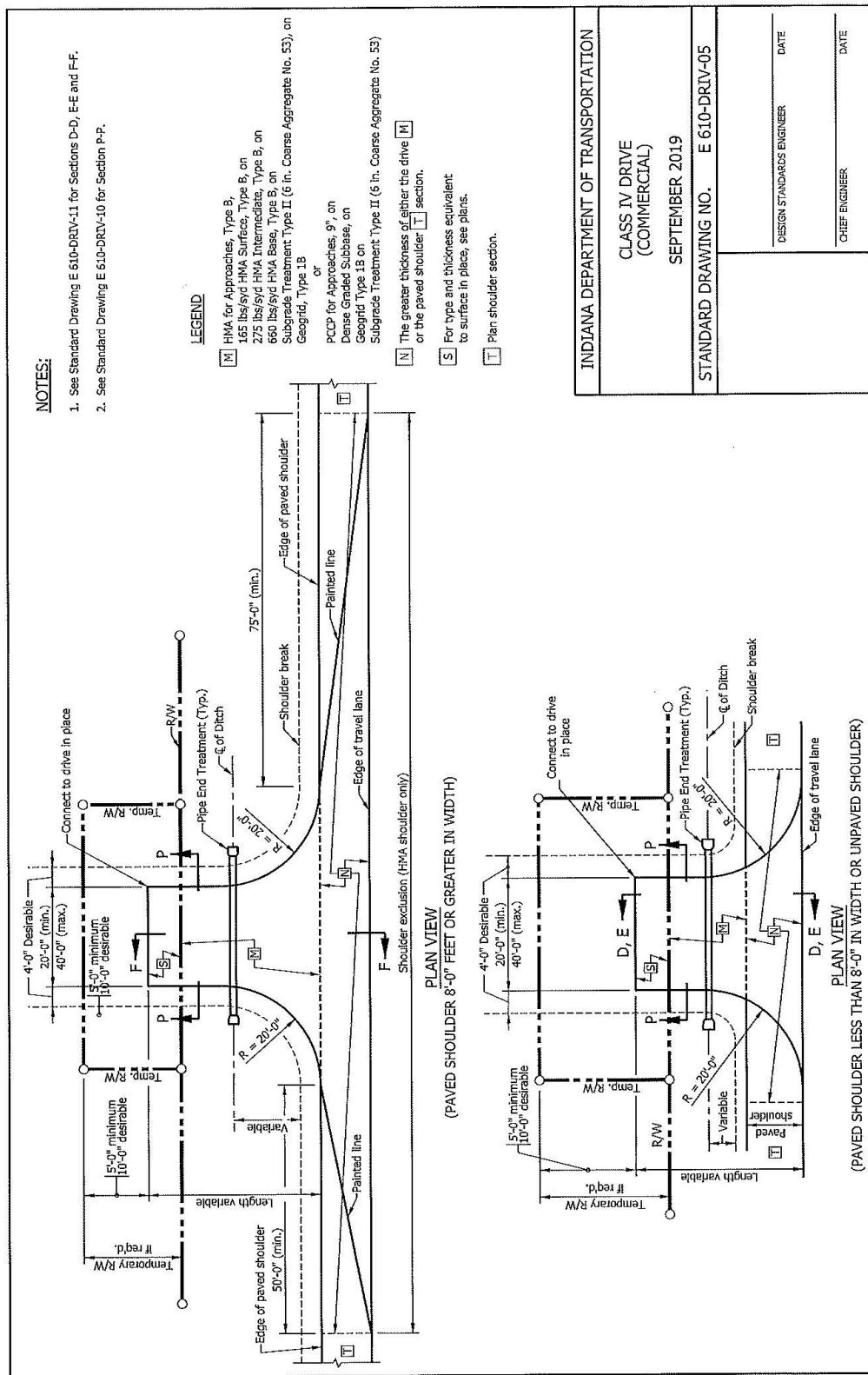


Mr. Orton

Date: 11/14/18

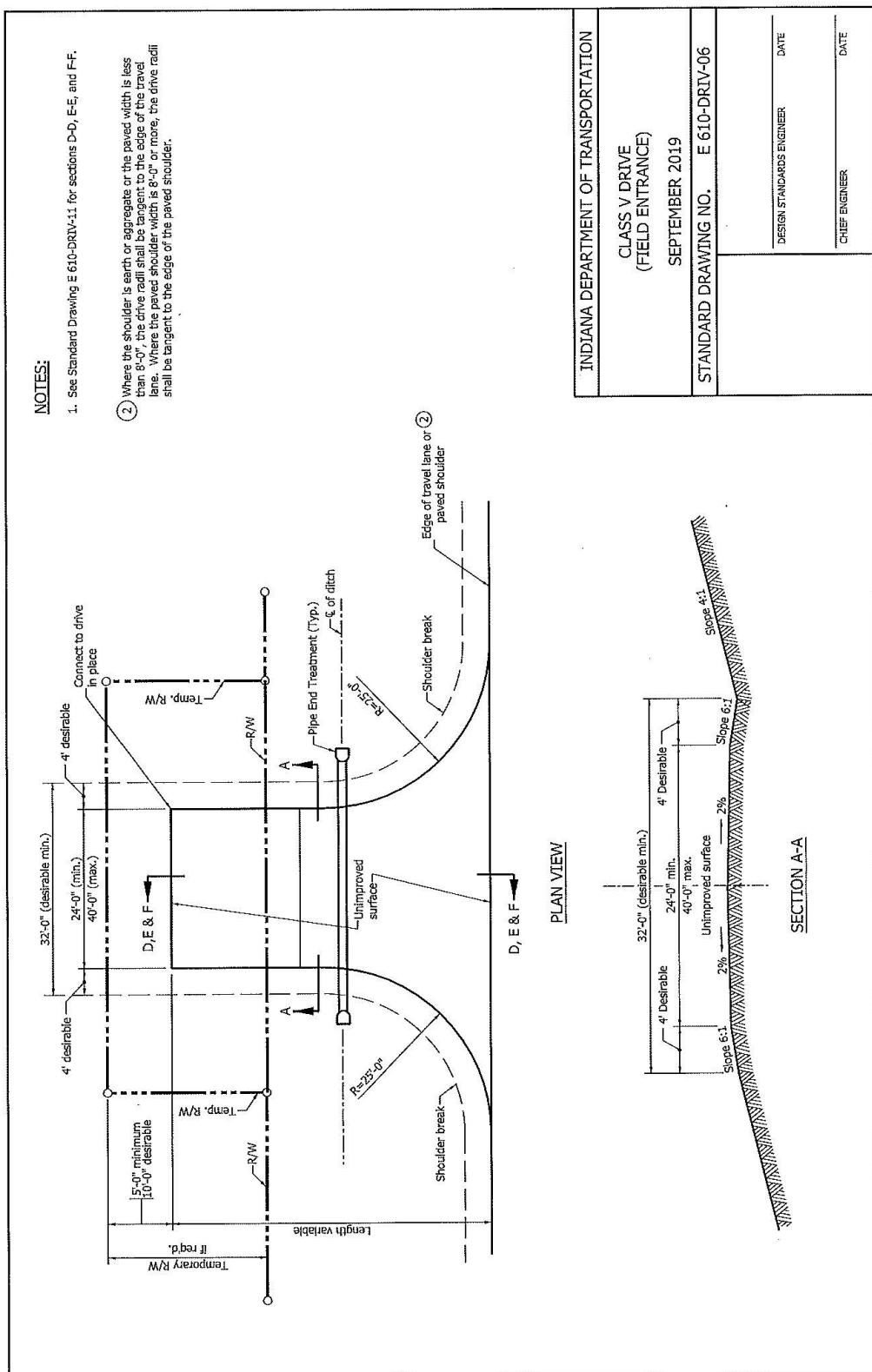
REVISION TO STANDARD DRAWINGS

E 610-DRIV-05 CLASS IV DRIVE (COMMERCIAL) (REVISED DRAFT)



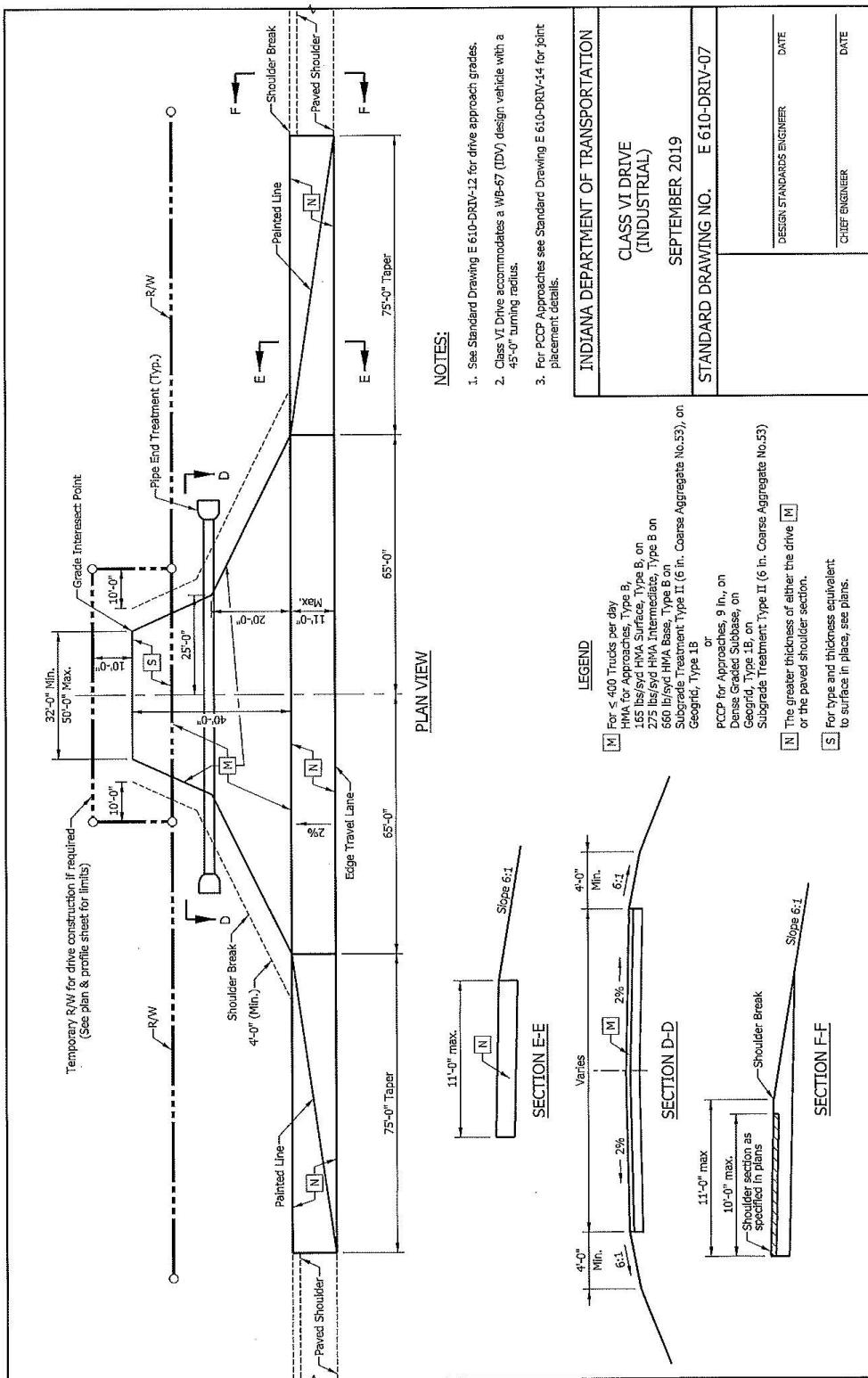
REVISION TO STANDARD DRAWINGS

E 610-DRIV-06 CLASS V DRIVE (FIELD ENTRANCE) (DRAFT)



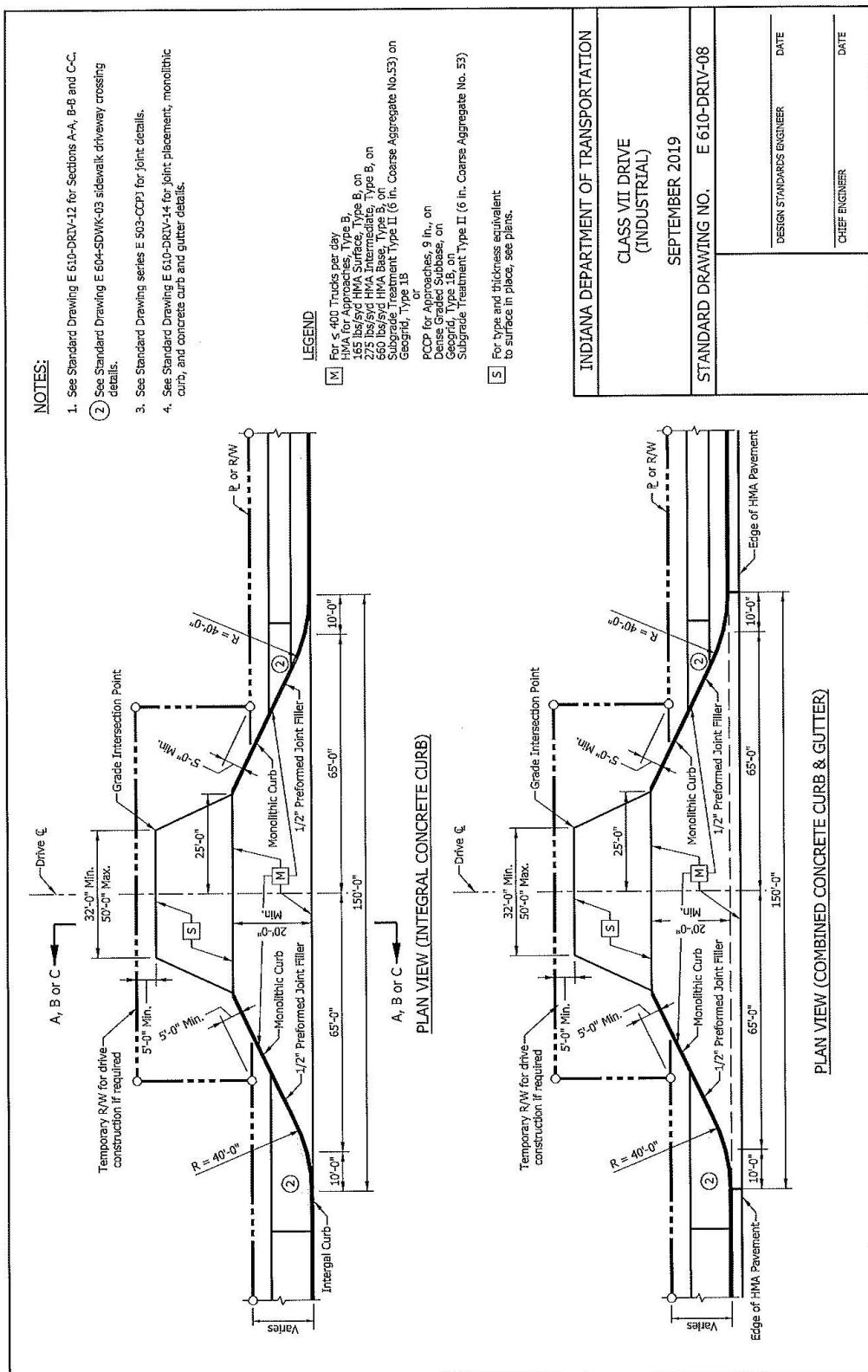
REVISION TO STANDARD DRAWINGS

E 610-DRIV-07 CLASS VI DRIVE (INDUSTRIAL) (REVISED DRAFT)



REVISION TO STANDARD DRAWINGS

E 610-DRIV-08 CLASS VII DRIVE (INDUSTRIAL) (REVISED DRAFT)

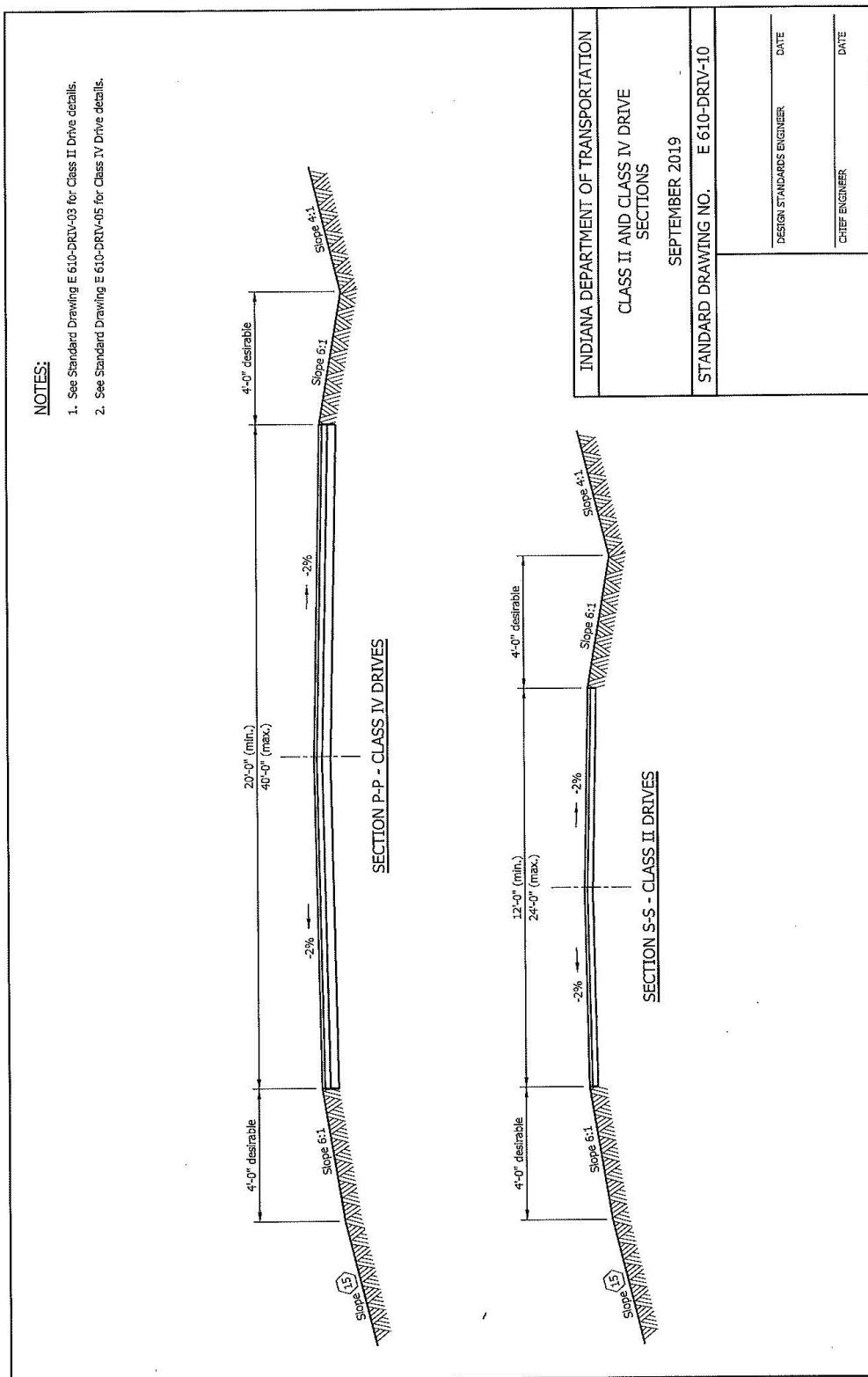


REVISION TO STANDARD DRAWINGS

E 610-DRIV-09 CLASS I AND CLASS III DRIVE APPROACH GRADES (REVISED DRAFT)

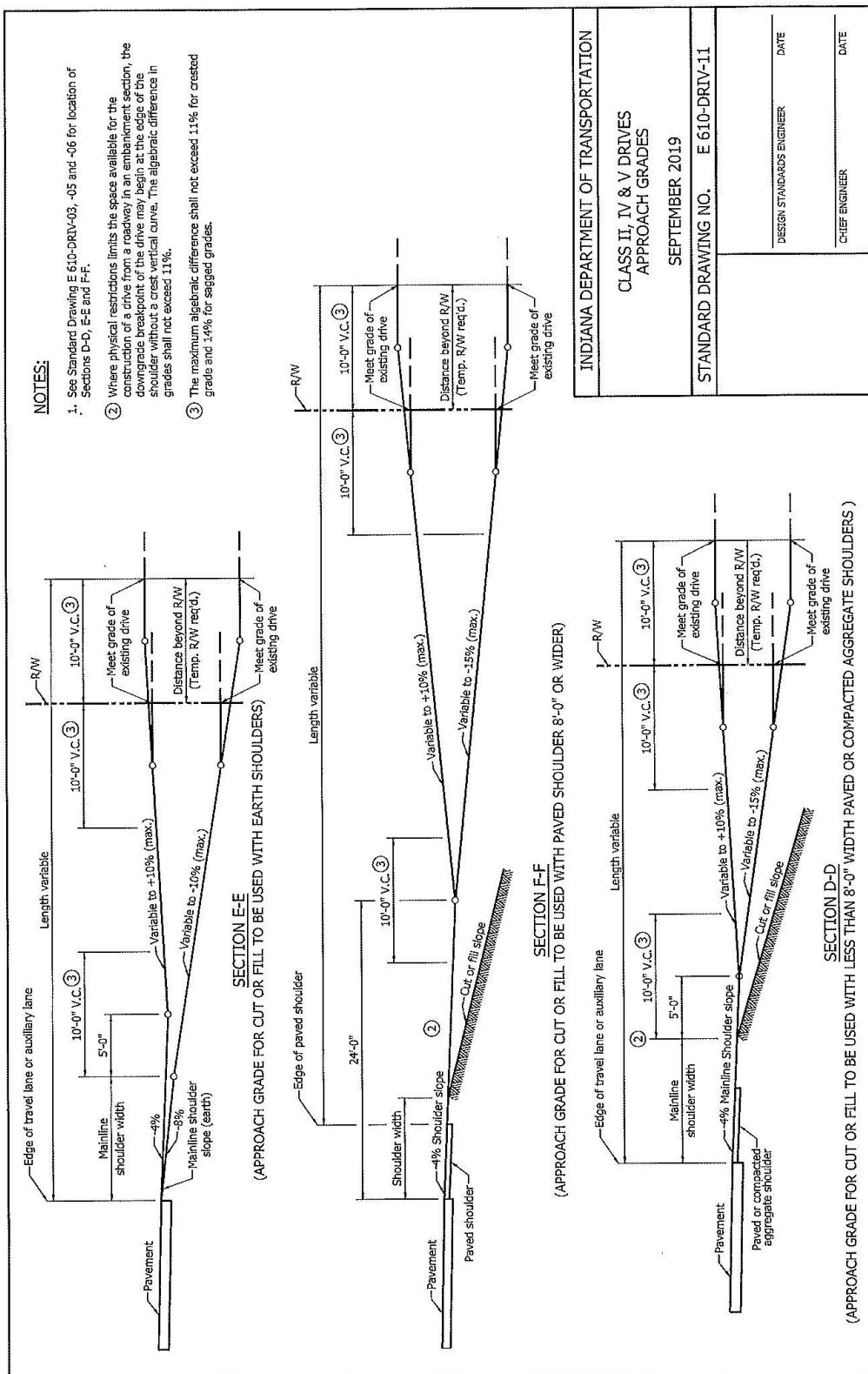
REVISION TO STANDARD DRAWINGS

E 610-DRV-10 CLASS II AND CLASS IV DRIVE SECTIONS (REVISED DRAFT)



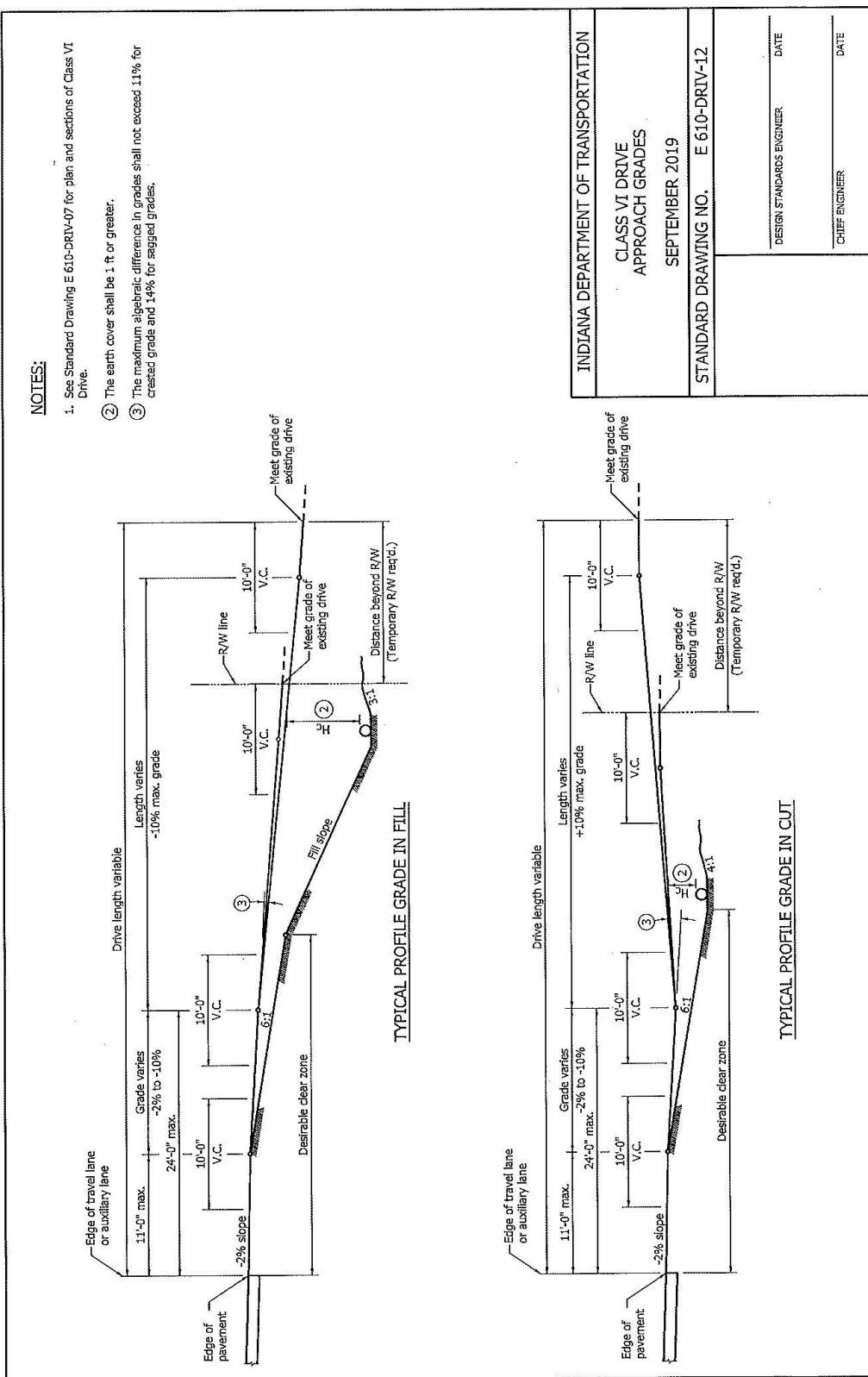
REVISION TO STANDARD DRAWINGS

E 610-DRIV-11 CLASS II, IV & V DRIVES APPROACH GRADES (REVISED DRAFT)



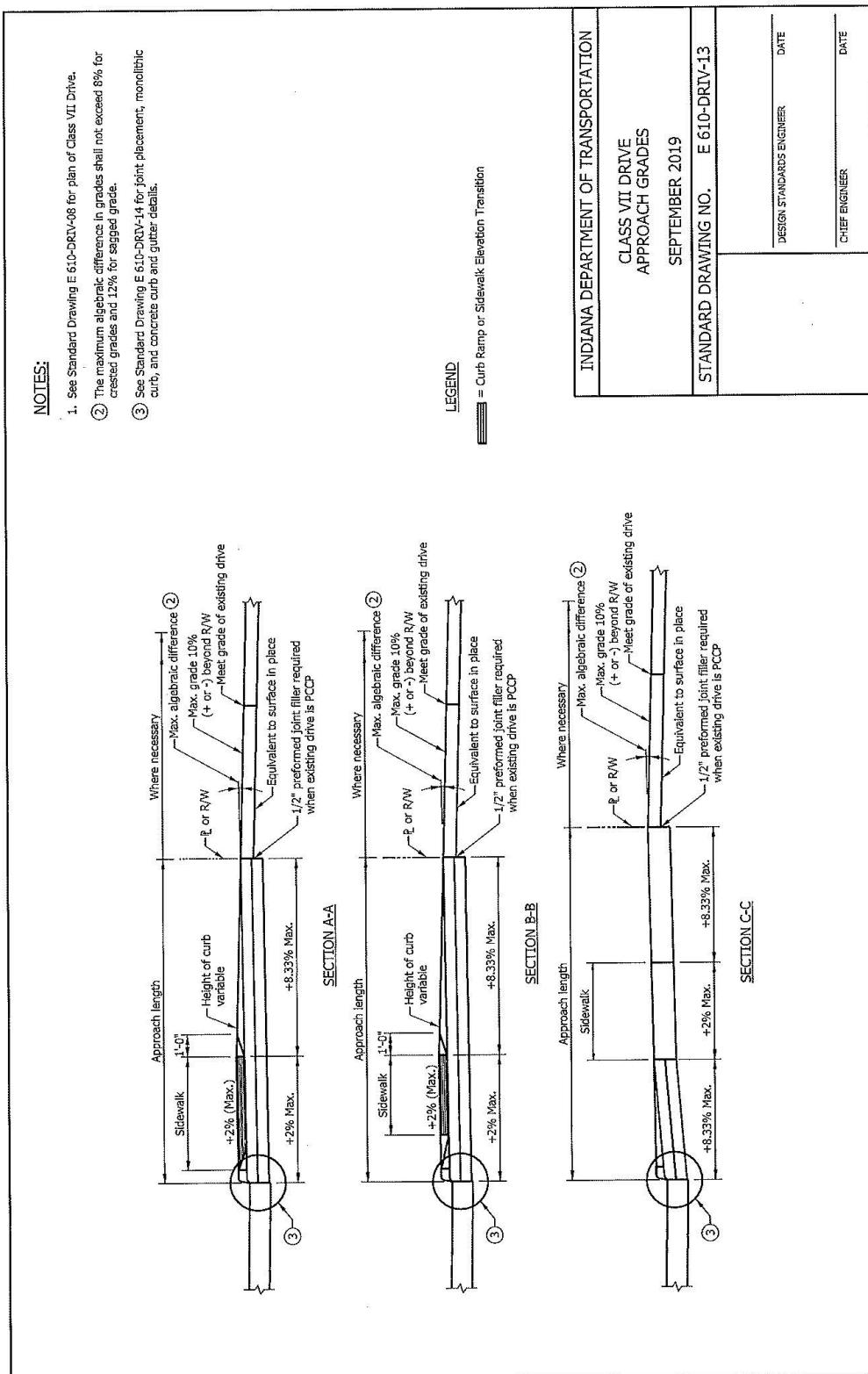
REVISION TO STANDARD DRAWINGS

E 610-DRIV-12 CLASS VI DRIVE APPROACH GRADES (REVISED DRAFT)



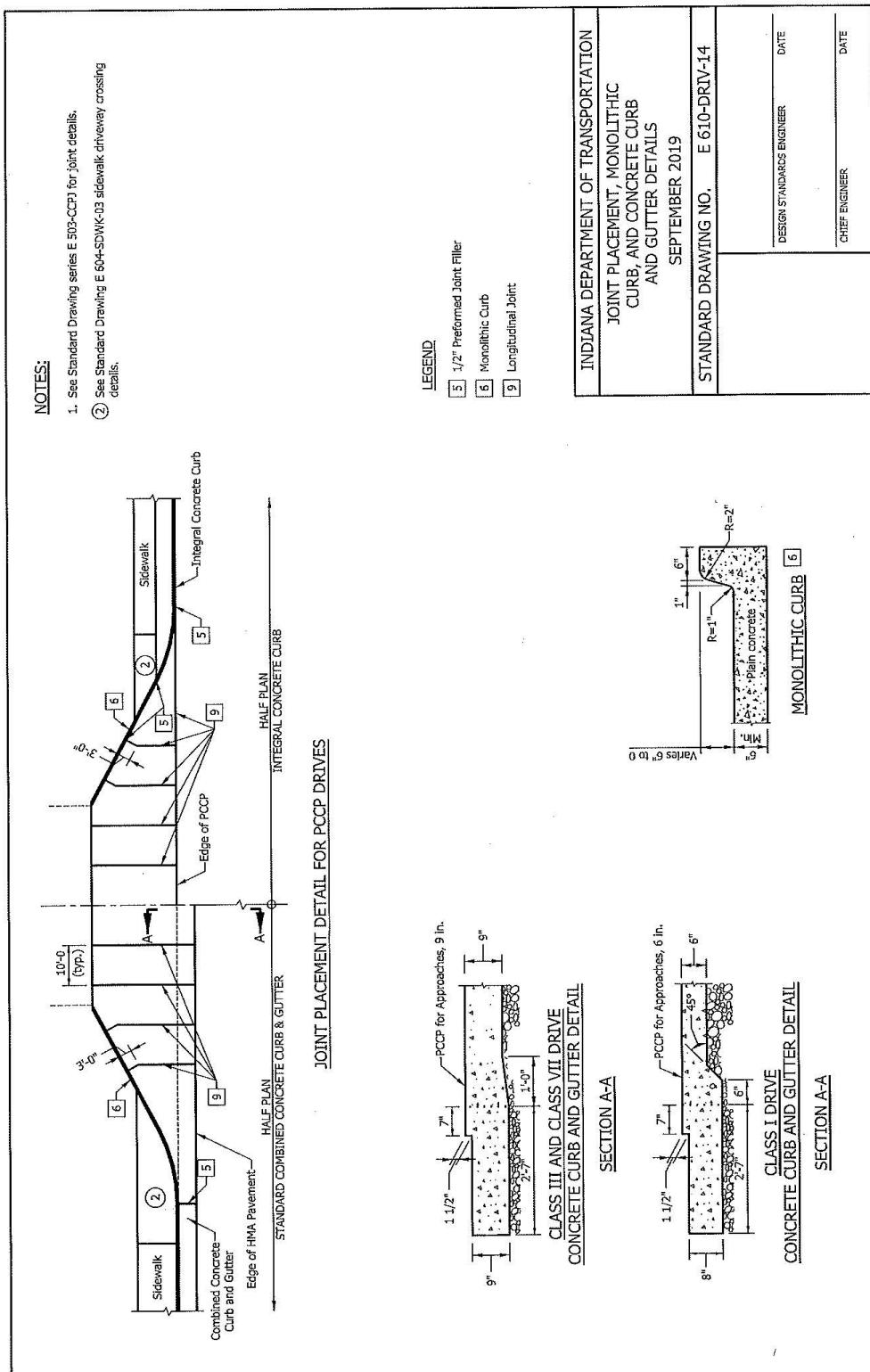
REVISION TO STANDARD DRAWINGS

E 610-DRV-13 CLASS VII DRIVE APPROACH GRADES (REVISED DRAFT)



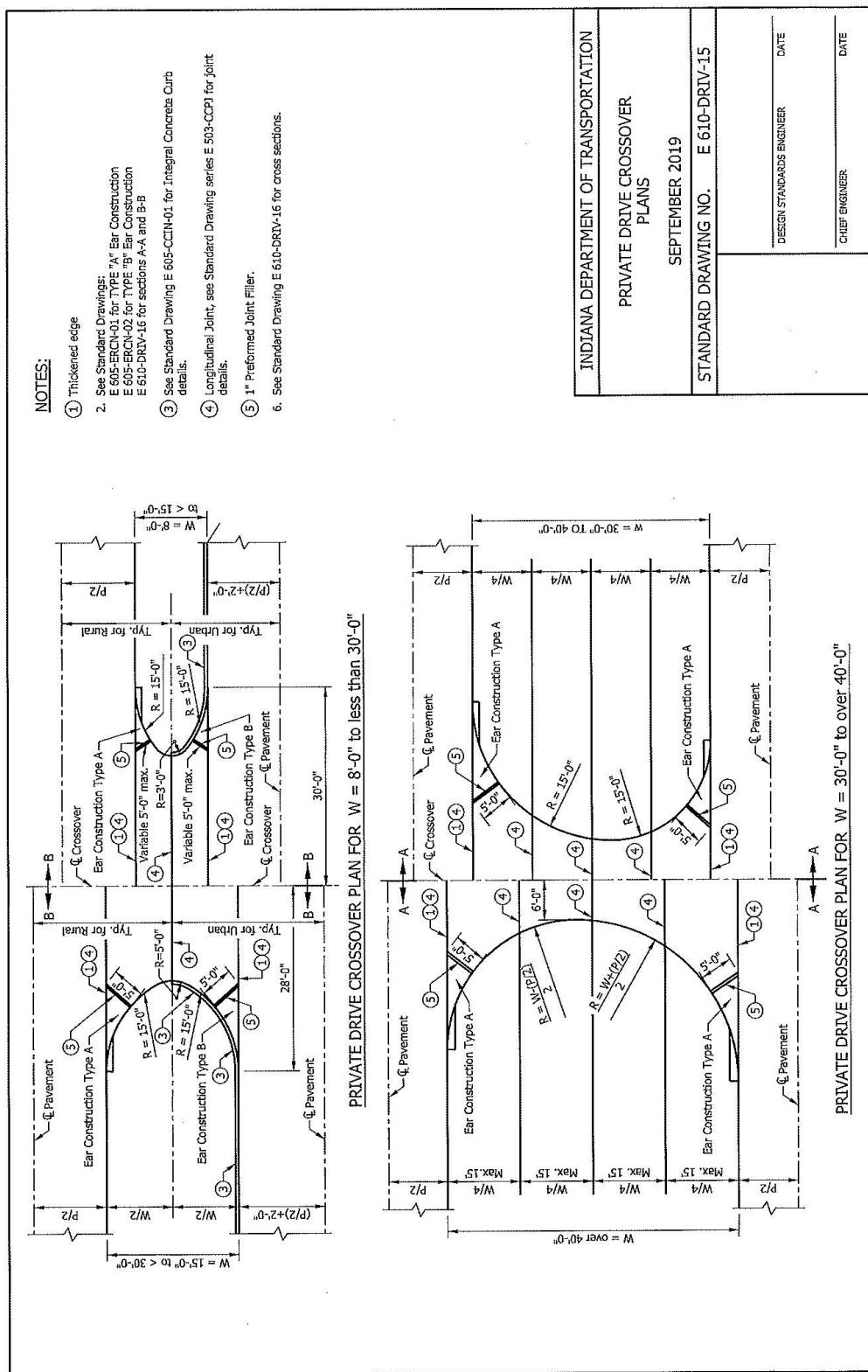
REVISION TO STANDARD DRAWINGS

E 610-DRV-14 JOINT PLACEMENT, MONOLITHIC CURB, AND CONCRETE CURB AND GUTTER DETAILS (REVISED DRAFT)



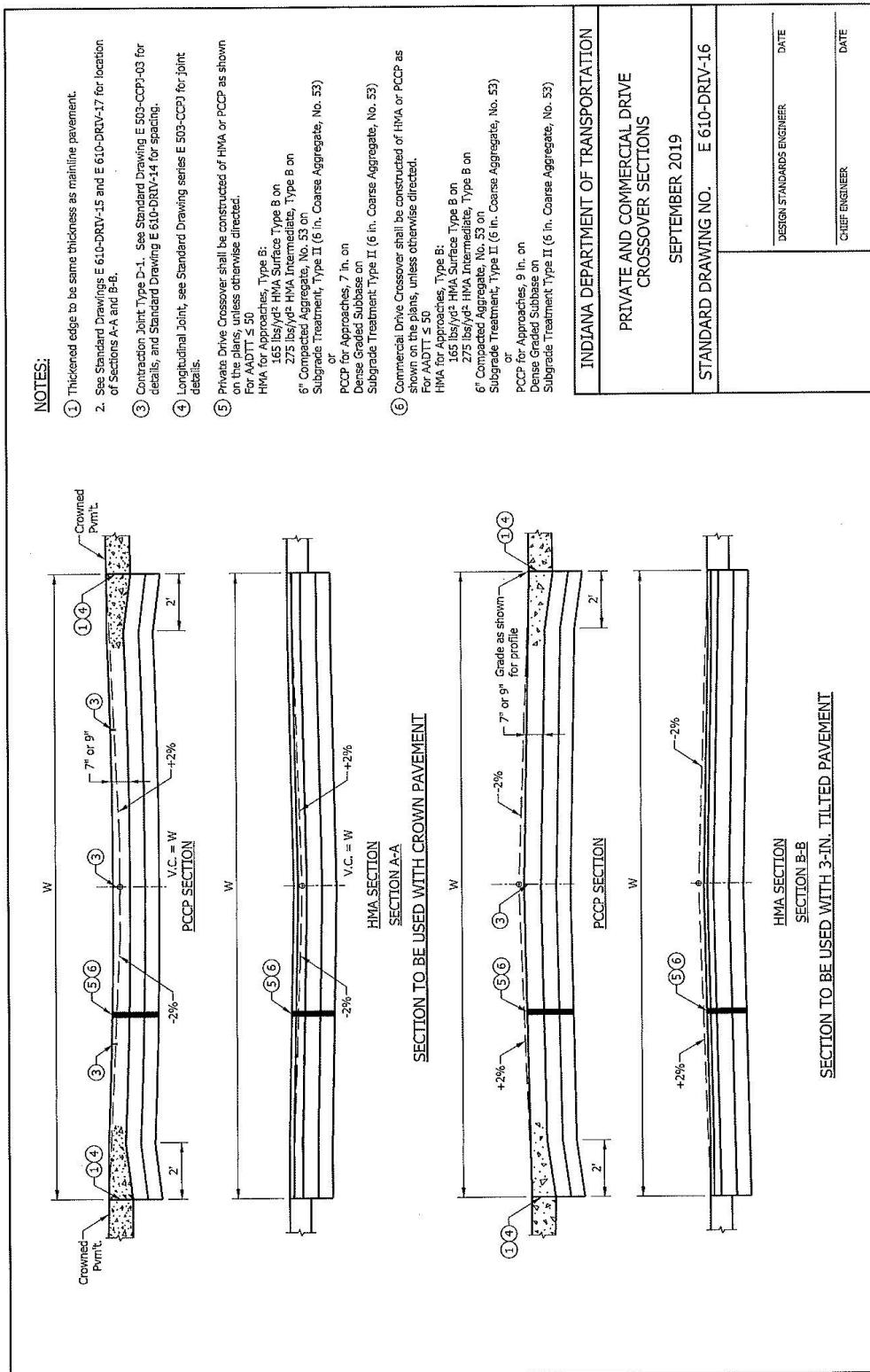
REVISION TO STANDARD DRAWINGS

E 610-DRIV-15 PRIVATE DRIVE CROSSOVER PLANS (REVISED DRAFT)



REVISION TO STANDARD DRAWINGS

E 610-DRIV-16 PRIVATE AND COMMERCIAL DRIVE CROSSOVER SECTIONS (REVISED DRAFT)

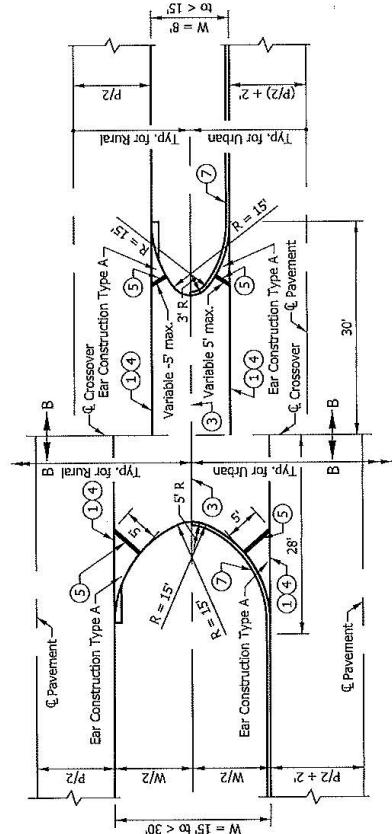
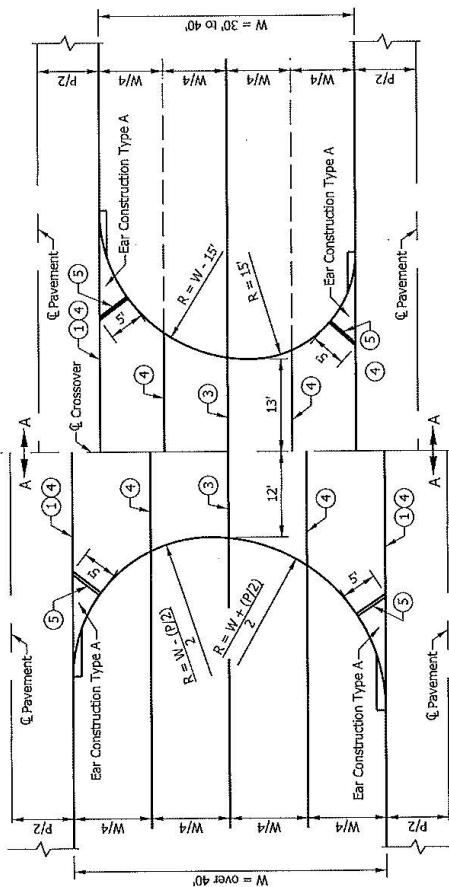


REVISION TO STANDARD DRAWINGS

E 610-DRV-17 COMMERCIAL DRIVE CROSSOVER PLANS (REVISED DRAFT)

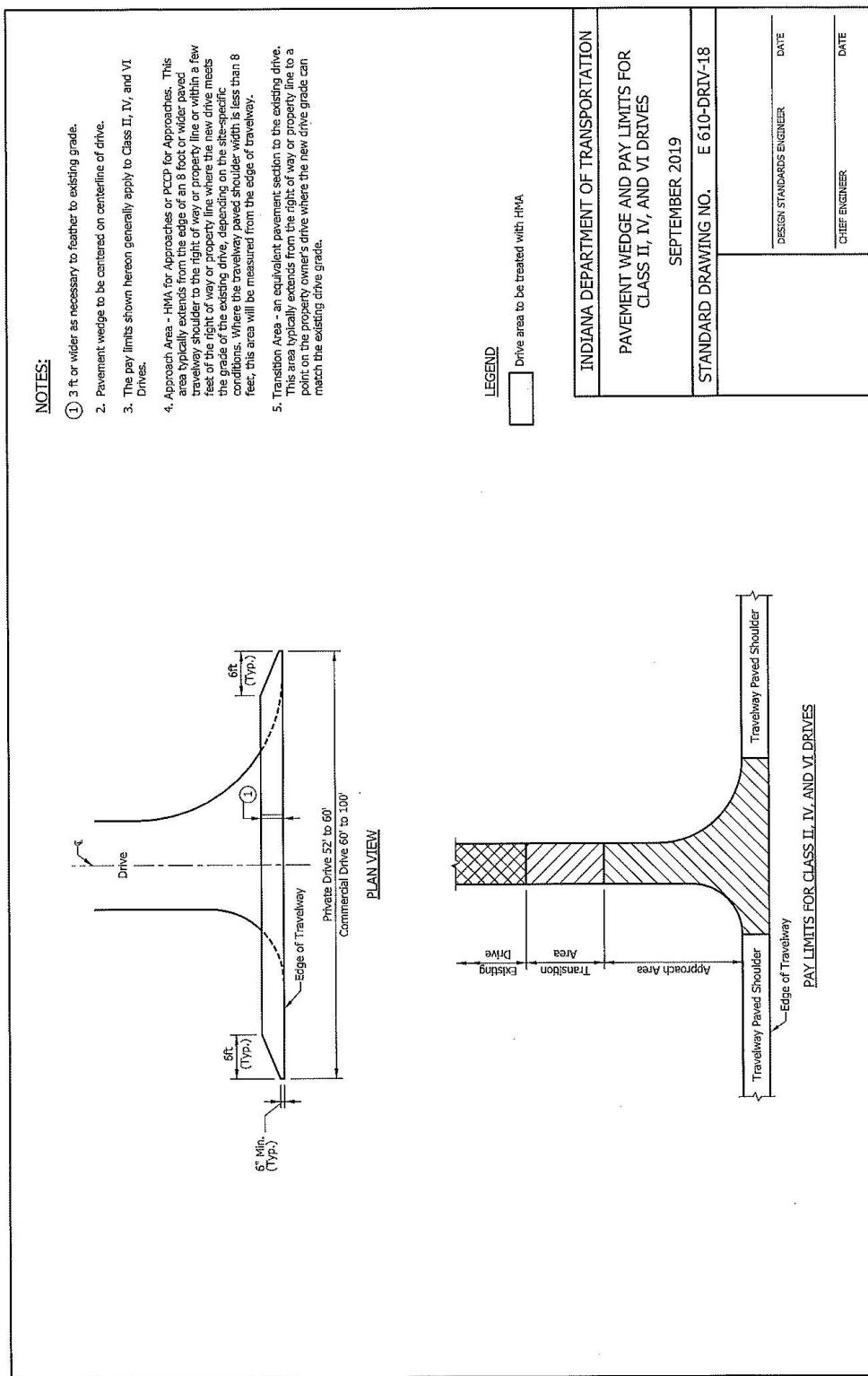
NOTES:

- ① Thickerened edge
2. See Standard Drawings E 605-ERCH-01 for Ear Construction Type A
3. See Standard Drawing E 503-CCP-01 for Contraction Joint Type D-1 details.
4. Longitudinal joint, see Standard Drawing series E 503-CCP for joint details.
5. 1" Preformed Joint Filler.
6. Grade for commercial drive crossover shall be the same as for private drive crossover. For cross sections see Standard Drawing E 610-DRV-18, pavement section see Standard Drawing E 610-DRV-04.
7. See Standard Drawing E 505-CCIN-01 for Integral Concrete Curb details.
8. See Standard Drawing E 510-DRV-16 for sections A-A and B-B for PCCP and RHA pavement.

COMMERCIAL DRIVE CROSSOVER PLAN FOR $W = 8'$ to less than $30'$ COMMERCIAL DRIVE CROSSOVER PLAN FOR $W = 30'$ to over $40'$

INDIANA DEPARTMENT OF TRANSPORTATION	
COMMERCIAL DRIVE CROSSOVERS	
PLANS	
SEPTEMBER 2019	
STANDARD DRAWING NO. E 610-DRV-17	
DESIGN STANDARDS ENGINEER	DATE
CHIEF ENGINEER	DATE

REVISION TO STANDARD DRAWINGS

E 610-DRV-18 PAVEMENT WEDGE AND PAY LIMITS FOR CLASS II, IV, AND VI
DRIVES (REVISED DRAFT)

COMMENTS AND ACTION

E 610-DRIV (series)

DISCUSSION:

Mr. Orton introduced and presented this item stating that the Pavement Sections for Driveway Standard Drawings need updating. Mr. Orton therefore proposes to incorporate the current recommended pavement sections for all drives and crossovers, and to update the series to improve consistency and clarity among drive classes, as shown above.

Mr. Koch asked, with regard to 610-DRIV-04, 05, 06, 07 and 08, if Geogrid is necessary should we always install it at the lowest elevation? Mr. Orton stated that the geogrid location is at the direction of Geotechnical Services. When it is not on the bottom, it is serving as a separation layer. This was confirmed by Mr. Siddiki.

Mr. Koch also asked, with regard to 610-DRIV-09 and 13 - Should we reinforce the less than maximum slope concept for sidewalks crossing approaches, noted on plan views by referring 604-SDWK-03; 1.5% slope desirable? Mr. Orton responded that they'd prefer to let the sidewalk curb ramp standard drawings cover those specifics. Mr. Koch also asked, with regard to 610-DRIV-15; Are D-1 joints needed "3" if a 1 in. expansion "5" is also to be installed? Mr. Orton stated that D-1 joints will only be required on the commercial crossovers. The private drive will only have a longitudinal joint. Mr. Dave stated that the Department does not use keyway construction joints anymore...so only longitudinal joints will be used.

Mr. Koch further inquired about 610-DRIV-16 and 17 - stating that the plan note 4 is referencing the same drawing. Would 610-DRIV-14 be the correct reference?

Mr. Pelz pointed out some dimension discrepancies and Mr. Orton said they'll make those corrections. Mr. Orton revised his motion, which was seconded by Mr. Dave. Revisions and corrections to the drawings, incorporating the concerns addressed above, are attached as shown.

COMMENTS AND ACTION
E 610-DRIV (series)

(CONTINUED)

Motion: Mr. Orton Second: Mr. Dave Ayes: 9 Nays: 0 FHWA Approval: <u>YES</u>	Action: <input type="checkbox"/> Passed as Submitted <input checked="" type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn
Standard Specifications Sections referenced and/or affected: SECTION 610, begin pg 435.	<input type="checkbox"/> 2020 Standard Specifications <input type="checkbox"/> Revise Pay Items List
Recurring Special Provision: 610-R-100 MEDIAN CROSSOVERS (no revisions)	<input type="checkbox"/> Create RSP (No. <u> </u>) Effective <u> </u> Letting RSP Sunset Date:
Standard Drawing affected: 610-DRIV (SERIES)	<input type="checkbox"/> Revise RSP (No. <u> </u>) Effective <u> </u> Letting RSP Sunset Date:
Design Manual Sections affected: 46-11.0 (no revisions required)	<input checked="" type="checkbox"/> Standard Drawing 610-DRIV Effective <u>September 01, 2019</u>
GIFE Sections cross-references: NONE	<input type="checkbox"/> Create RPD (No. <u> </u>) Effective <u> </u> Letting <input type="checkbox"/> GIFE Update <input type="checkbox"/> SiteManager Update