INDIANA DEPARTMENT OF TRANSPORTATION

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Eric Holcomb, Governor
Joe McGuinness, Commissioner

APPROVED MINUTES

April 19, 2018 Standards Committee Meeting

June 28, 2018

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Minutes from the April 19, 2018 Standards Committee Meeting

The Standards Committee meeting was called to order at 09:03 a.m. on April 19, 2018 in the N955 Bay Window Conference Room. The meeting was adjourned at 10:48 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, Bridges Division
Greg Pankow, Construction Management Division
Kumar Dave, Pavement Engineering, Highway Design
Matthew Beeson, Office of Materials Management
Michael Koch, District Construction, Fort Wayne District
Rob Goldner, Construction Technical Support

Also in attendance were the following:

Gerry Montgomery, INDOT
Lynn Butcher, INDOT
Michael Jorns, INDOT
Michael Nelson, INDOT
Steve Fisher, INDOT
Tom Duncan, FHWA
Traci Powell, TMC/INDOT
Steve Duncan, INDOT
Mischa Kachler, INDOT
Lana Podorvanova, INDOT
Dan Osborn, ICI
Tom Harris, INDOT
Derrick Hauser, INDOT
Scott Trammell, INDOT
Joe Bruno, INDOT

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 March 15, 2018 meeting

DISCUSSION: Mr. Leckie requested a motion to approve the minutes from the March 15, 2018 meeting.

Motion: Mr. Pankow
Second: Mr. Koch
Ayes: 8
Nays: 0

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

(No items were listed)

NEW BUSINESS

Item No. 1 (2018 SS) Mr. Pankow pg 6
Recurring Special Provision:
709-C-256 ALTERNATE CONCRETE SEALERS

ACTION: WITHDRAWN

Item No. 2 (2018 SS) Mr. Boruff pg 10
Standard Drawings: (SEE PROPOSAL)

E 801-TCCO-01	TEMPORARY CROSSOVERS ~~ADVANCED SIGNING DETAILS~~*INDEX AND GENERAL NOTES*
E 801-TCCO-02	TEMPORARY CROSSOVERS ~~ENTRANCE DETAIL~~*ADVANCED SIGNING DETAILS*
E 801-TCCO-03	TEMPORARY CROSSOVERS ~~EXIT~~*ENTRANCE* DETAIL
E 801-TCCO-04	*TEMPORARY CROSSOVERS EXIT DETAIL*
E 801-TCCO-05	~~TEMPORARY~~*SPLIT* CROSSOVER ~~TYPE B PAVING~~*ENTRANCE DETAIL* AND CLOSURE LAYOUT
E 801-TCCO-06	~~CLOSURE OF TEMPORARY~~*SPLIT* CROSSOVER *EXIT DETAIL*
E 801-TCCO-07	*PAVING AND* TEMPORARY *CLOSURE LAYOUT*

	TYPE B CROSSOVER ~~TYPICAL~~ SECTIONS
E 801-TCCO-08	*TEMPORARY CROSSOVER TYPICAL SECTIONS*
E 801-TCCO-09	*PERMANENT CLOSURE OF A TEMPORARY CROSSOVER*
E 801-TCCO-10	*TUBULAR MARKER USE ON A NONFREEWAY CROSSOVER*
E 801-TCFO-01	FLAGGER OPERATIONS *FOR RURAL TWO LANE ROADS WITH SPEEDS ≥ 50 MPH*
E 801-TCFO-02	MAINTENANCE OF TRAFFIC FOR ~~MOVING~~*MOBILE* OPERATION *WITH FLAGGERS*
E 801-TCFO-03	~~MAINTENANCE OF TRAFFIC FOR REFLECTOR REPLACEMENT~~*FLAGGER OPERATIONS FOR RURAL TWO LANE ROADS WITH SPEEDS ≤ 45 MPH.*
~~E 801-TCFO-04~~	~~TRAFFIC CONTROL FOR OVERHEAD SIGN INSTALLATION~~
~~E 801-TCFO-05~~	~~TRAFFIC CONTROL FOR OVERHEAD INSTALLATION~~
~~E 801-TCFO-06~~	~~TRAFFIC CONTROL FOR INTERSECTION WORK~~
E 801-TCLC-01	LANE CLOSURES ~~INTERSTATE APPLICATIONS~~*INDEX SHEET AND GENERAL NOTES*
E 801-TCLC-02	~~CONTINOUS~~ LANE CLOSURES ~~RIGHT LANE CLOSED~~*APPLICATIONS ON DIVIDED HIGHWAYS*
E 801-TCLC-03	CONTINUOUS LANE CLOSURES ~~CENTER~~ *RIGHT* LANE CLOSED
E 801-TCLC-04	~~CONTINUOUS~~*CENTER* LANE CLOSURE~~S~~ ~~LEFT LANE~~*ON FREEWAYS* ~~CLOSED~~
E 801-TCLC-05	~~DAYLIGHT~~*LEFT* LANE CLOSURE~~S~~ ~~RIGHT LANE~~*ON FREEWAYS* ~~CLOSED~~
E 801-TCLC-06	~~DAYLIGHT~~*SHORT-TERM* LANE CLOSURE~~S~~ ~~LEFT OR CENTER LANE CLOSED~~
E 801-TCLC-07	~~TRAFFIC CONTROL FOR SHOULDER WORK~~*SHORT-TERM LEFT OR CENTER LANE CLOSURE*
E 801-TCLC-08	TRAFFIC CONTROL FOR LANE CLOSURE *ON A THREE LANE ROAD*
E 801-TCLC-09	TRAFFIC CONTROL FOR ~~LANE~~*FREEWAY OR EXPRESSWAY EXIT* CLOSURE ~~ON A TREE LANE ROAD~~
E 801-TCLC-10	~~TRAFFIC CONTROL FOR SHOULDER WORK~~ *RIGHT LANE CLOSURE NEAR INTERCHANGE (EXIT OPEN)*
E 801-TCLC-11	~~TRAFFIC CONTROL FOR~~ LANE CLOSURE *NEAR ENTRANCE RAMP*
~~E 801-TCLC-12~~	~~TRAFFIC CONTROL FOR SHOULDER WORK~~
~~E 801-TCLC-13~~	~~TRAFFIC CONTROL FOR OVERHEAD SIGN INSTALLATION~~
E 801-TCLC-14	TRAFFIC CONTROL FOR OVERHEAD SIGN INSTALLATION
E 801-TCLC-15	TRAFFIC CONTROL FOR OVERHEAD SIGN INSTALLATION
~~E 801-TCLC-16~~	~~TRAFFIC CONTROL FOR LANE CLOSURE~~
~~E 801-TCLC-17~~	~~TEMPORARY U-TURN FOR CONTRACTOR'S VEHICLES~~

E 801-TCMO-01	*TRAFFIC CONTROL FOR MOBILE OPERATIONS ON A DIVIDED HIGHWAY*
E 801-TCMO-02	*MAINTENANCE OF TRAFFIC FOR RPM REFLECTOR REPLACEMENT*
E 801-TCMO-03	*MAINTENANCE OF TRAFFIC FOR RPM REFLECTOR REPLACEMENT*
E 801-TCSC-01	TRAFFIC CONTROL SHOULDER CLOSURE
E 801-TCSC-02	TRAFFIC CONTROL SHOULDER CLOSURE *WITH* LOCAL ACCESS
E 801-TCSC-03	TRAFFIC CONTROL SHOULDER CLOSURE *WITH* LOCAL ACCESS
E 801-TCSC-04	*SHOULDER CLOSURE FOR ROADSIDE WORK*
E 801-TCTC-01	TEMPORARY CLOSURES *OF A DIVIDED HIGHWAY*
E 801-TCTC-02	TEMPORARY CLOSURES *FOR PROJECT FOLLOWING COMPLETION OF GRADING PROJECT*
E 801-TCTC-03	TEMPORARY CLOSURES
E 801-TCTC-04	TEMPORARY CLOSURES
~~E 801-TCTC-05~~	~~TRAFFIC CONTROL FOR DAYTIME LANE CLOSURE~~
~~E 801-TCTC-06~~	~~MAINTENCE OF TRAFFIC CONTROL FOR RPM CASTING INSTALLATION CLOSURE~~
~~E 801-TCTC-07~~	~~MAINTENANCE OF TRAFFIC CONTROL FOR RPM CASTING REPLACEMENT~~
E 801-TCTC-08	MAINTAINCE OF TRAFFIC CONTROL FOR RPM CASTING REPLACEMENT
E 801-TCTC-09	MAINTENANCE OF TRAFFIC FOR RPM REFLECTOR REPLACEMENT
E 801-TCTC-10	MAINTENANCE OF TRAFFIC FOR RPM REFLECTOR REPLACEMENT
E 801-TCTC-11	TUBULAR MARKER DELINEATION
E 801-TCTC-12	TUBULAR MARKER DELINEATION AT INTERSECTION
~~E 801-TCTS-01~~	~~TEMPORARY SHOULDER FOR TRAFFIC MAINTENANCE~~

ACTION: WITHDRAWN

Item No. 3 (2018 SS) Mr. Boruff pg 92

Recurring Special Provision:

801-T-XXX	*BLACK TEMPORARY TAPE*

ACTION: PASSED AS REVISED

Item No. 4 (2018 SS) Mr. Beeson pg 100

410.05	SMA Mix Design
410.16	Density
410.20(c)	BSG of the Density Core

ACTION: PASSED AS SUBMITTED

Item No. 5 (2018 SS) Mr. Beeson pg 104

502.04(a)	Portland Cement Concrete
502.04(b)	High-Early Strength Concrete Section
702.05	Proportioning

702.07	Mixing
702.12	Consistency

ACTION: PASSED AS SUBMITTED

cc: Committee Members
FHWA
ICI

Mr. Pankow
Date: 4/19/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO SPECIAL PROVISIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: No allowable reduction to the lump sum pay item price for surface sealing when an alternate concrete mix design is used as per RSP 709-R-256.

PROPOSED SOLUTION: Revise RSP 709-R-256 to permit a reduction in surface seal area when an alternate concrete mix design is used.

APPLICABLE STANDARD SPECIFICATIONS: 709

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: 709-R-256

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Reviewed by: Greg Pankow, Roland Fegan, Andrew Pangallo and Mike Nelson.

IMPACT ANALYSIS (attach report): Yes

Submitted By: Michael Prather

Title: Construction Area Engineer

Organization: Greenfield District

Phone Number: 317-607-3177

Date: 02/15/18

Mr. Pankow
Date: 4/19/18

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? 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? Yes

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

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

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

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

REVISION TO SPECIAL PROVISION
709-C-256 ALTERNATE CONCRETE SEALERS

709-C-256 ALTERNATE TO CONCRETE SEALERS

The Standard Specifications are revised as follows:

SECTION 709, BEGIN LINE 123, DELETE AND INSERT AS FOLLOWS:

(e) Alternate To Concrete Sealers

In lieu of concrete surface sealing for concrete barrier wall, ~~and concrete~~*bridge decks, reinforced concrete bridge approaches, pier and bent caps,* bridge railing, *and bridge railing transitions,* an alternate concrete mix design may be used.

SECTION 709, BEGIN LINE 144, DELETE AND INSERT AS FOLLOWS:

709.07 Method of Measurement

~~Since payment will be made in a lump sum, only those measurements necessary to verify application rates will be made.~~*Surface seal will be measured as necessary to verify the surface sealant application rate but will not be measured for payment unless the concrete surface requiring a surface seal used an alternate concrete mix design in accordance with 709.05(e). If an alternate concrete mix design in accordance with 709.05(e) was used, then the total surface seal area will be reduced as follows:*

$$\textit{Surface Seal, \%} = (A - B) / A * 100$$

where:

A = total surface seal area for all concrete surfaces requiring a surface seal.

B = surface seal area for the concrete surface using an alternate concrete mix design

709.08 Basis of Payment

Surface seal will not be paid for when an alternate concrete mix design in accordance with 709.05(e) was used in the concrete surface requiring a surface seal.

The accepted quantities of this work will be paid for ~~at~~*by multiplying the surface seal percentage by* the contract lump sum price for surface seal.

~~If an alternate concrete mix design in accordance with 709.05(e) is used in lieu of concrete surface sealing or portions thereof, it will be paid for as surface seal.~~

COMMENTS AND ACTION

709-C-256 ALTERNATE CONCRETE SEALERS

DISCUSSION:
This item was introduced and presented by Mr. Pankow who stated that there currently is no allowable reduction to the lump sum pay item price for surface sealing when an alternate concrete mix design is used in accordance with RSP 709-R-256. Mr. Pankow had intended to propose to revise RSP 709-R-256 as shown, but had second thoughts about this item and will welcome any comments or recommendations.

Mr. Koch suggested the language remain unchanged since the Contractor will most likely select the most cost efficient material. Mr. Pankow agreed, stating that we do not want our people to have to make measurement calculations. Mr. Pankow stated that he would like to withdraw this item.

Mr. Pankow addressed Mr. Beeson's concern in that only the material used will be paid for. Mr. Leckie asked about DBE participation if the seal would be applied by the DBE. Mr. Pankow stated that the Contractor should know those details concerning what they are going to do and who is going to do it prior to bid time.

Mr. Nelson said that the epoxy penetrating sealer will be struck from the upcoming revisions.

Motion: Mr. Pankow Second: Mr. Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised __X__ Withdrawn
Standard Specifications Sections referenced and/or affected: 709 pg 587 and 588. Recurring Special Provision affected: 709-C-256 ALTERNATE CONCRETE SEALERS. Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	____ 2020 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: ____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD DRAWINGS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The standard drawing series for temporary crossovers (801-TCCO), flagger operations (801-TCFO), lane closures (801-TCLC), shoulder closures (801-TCSC), and temporary closures (801-TCTC) have not been updated since the 2011 edition of the Indiana MUTCD was issued. Some of the series contain unnecessary sheets, duplicate sheets, or sheets that should be moved to another series. The flagger operations series should also be split into two series due to significant differences between stationary work and mobile operations.

PROPOSED SOLUTION: Revise and update the standard drawing series on temporary crossovers (801-TCCO), flagger operations (801-TCFO), lane closures (801-TCLC), shoulder closures (801-TCSC), and temporary closures (801-TCTC). Delete the standard drawing for temporary shoulders (801-TCTS). Create a new series for mobile operations (801-TCMO).

APPLICABLE STANDARD SPECIFICATIONS: 801 (no changes proposed)

APPLICABLE STANDARD DRAWINGS: 6 series [801-TCCO, 801-TCFO, 801-TCLC, 801-TCSC, 801-TCTC, and 801-TCTS]

Proposed New (3)	Proposed Deletions (13)		Proposed Moves (6)
801-TCCO-05 Split Crossover Entrance	801-TCFO-04	801-TCLC-12	801-TCFO-03 to 801-TCMO-01
801-TCCO-06 Split Crossover Exit	801-TCFO-05	801-TCLC-13	801-TCTC-08 to 801-TCLC-11
801-TCFO-03 Flagger Operations ≤ 45 mph	801-TCFO-06	801-TCLC-16	801-TCTC-09 to 801-TCMO-02
	801-TCLC-07	801-TCLC-17	801-TCTC-10 to 801-TCMO-03
	801-TCLC-08	801-TCTC-03	801-TCTC-11 to 801-TCCO-10
	801-TCLC-10	801-TCTS-01	801-TCTC-12 to 801-TCCO-10
	801-TCLC-11		

APPLICABLE DESIGN MANUAL SECTION: No

APPLICABLE SECTION OF GIFE: No

APPLICABLE RECURRING SPECIAL PROVISIONS: No

PAY ITEMS AFFECTED: No

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Yes, traffic standards subcommittee

IMPACT ANALYSIS (attach report): Yes, attached.

Submitted By: Joe Bruno on behalf of Dave Boruff

Title: Traffic Administration Engineer
Organization: INDOT
Phone Number: (317) 234-7949

Date: 3/26/18

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? Yes

Construction time? Yes

Customer satisfaction? Yes

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

For motorists? Yes

For construction workers? Yes

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

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? Yes

Is this proposal needed for compliance with:

Federal or State regulations? No

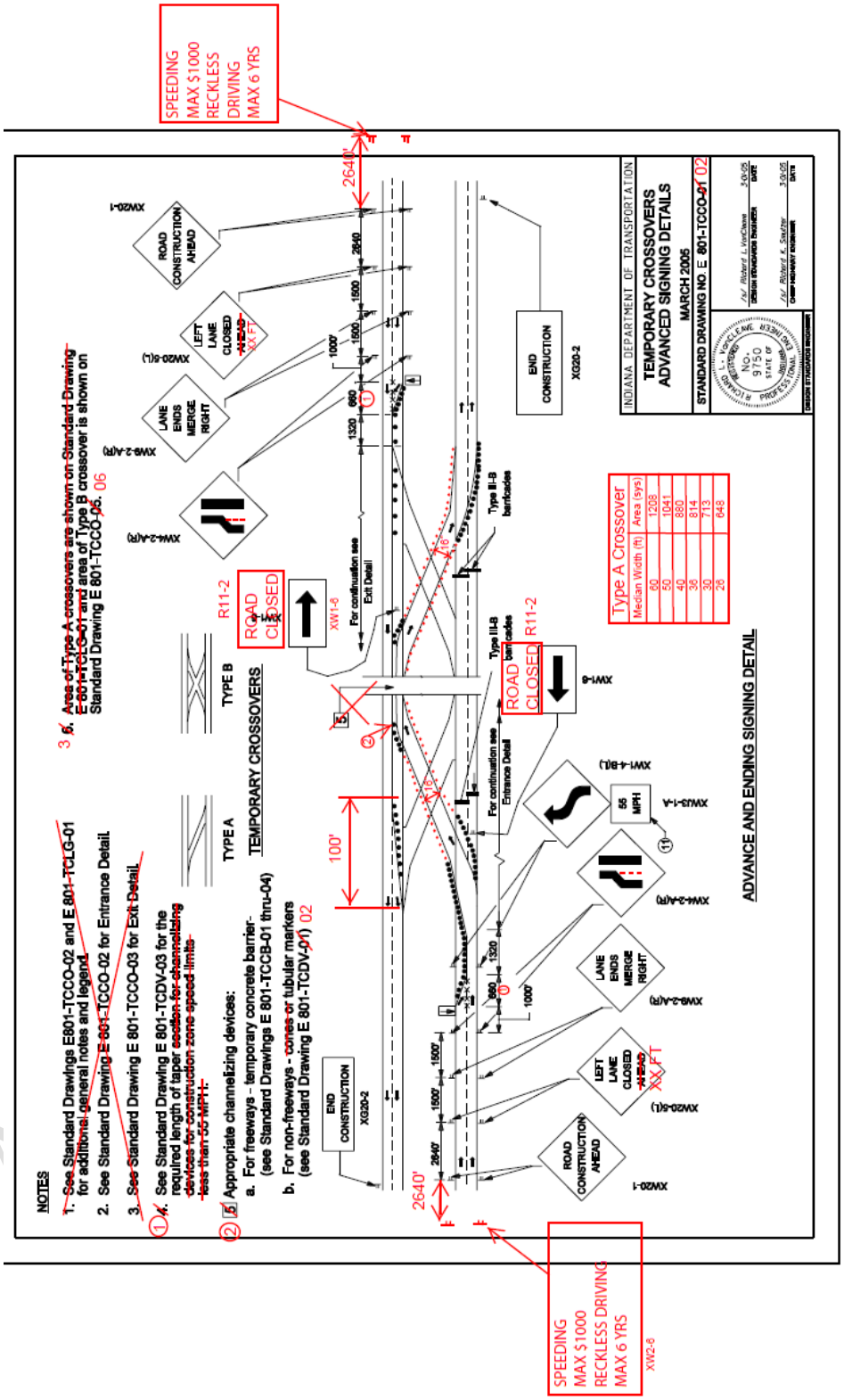
AASHTO or other design code? No

Is this item editorial? No

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

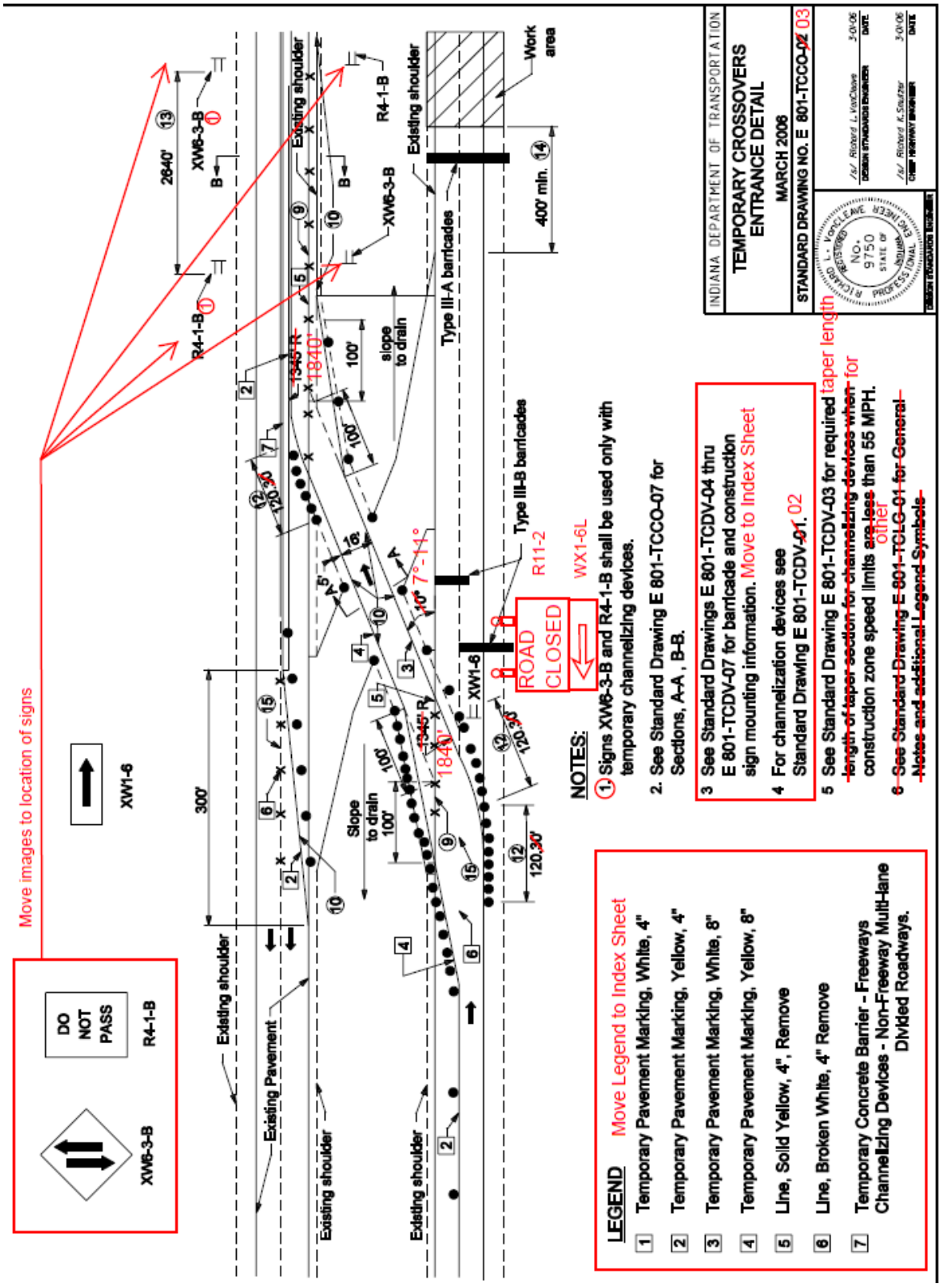
REVISION TO STANDARD DRAWINGS

E 801-TCCO-01 TEMPORARY CROSSOVERS ADVANCED SIGNING DETAILS (WITH MARKUPS)



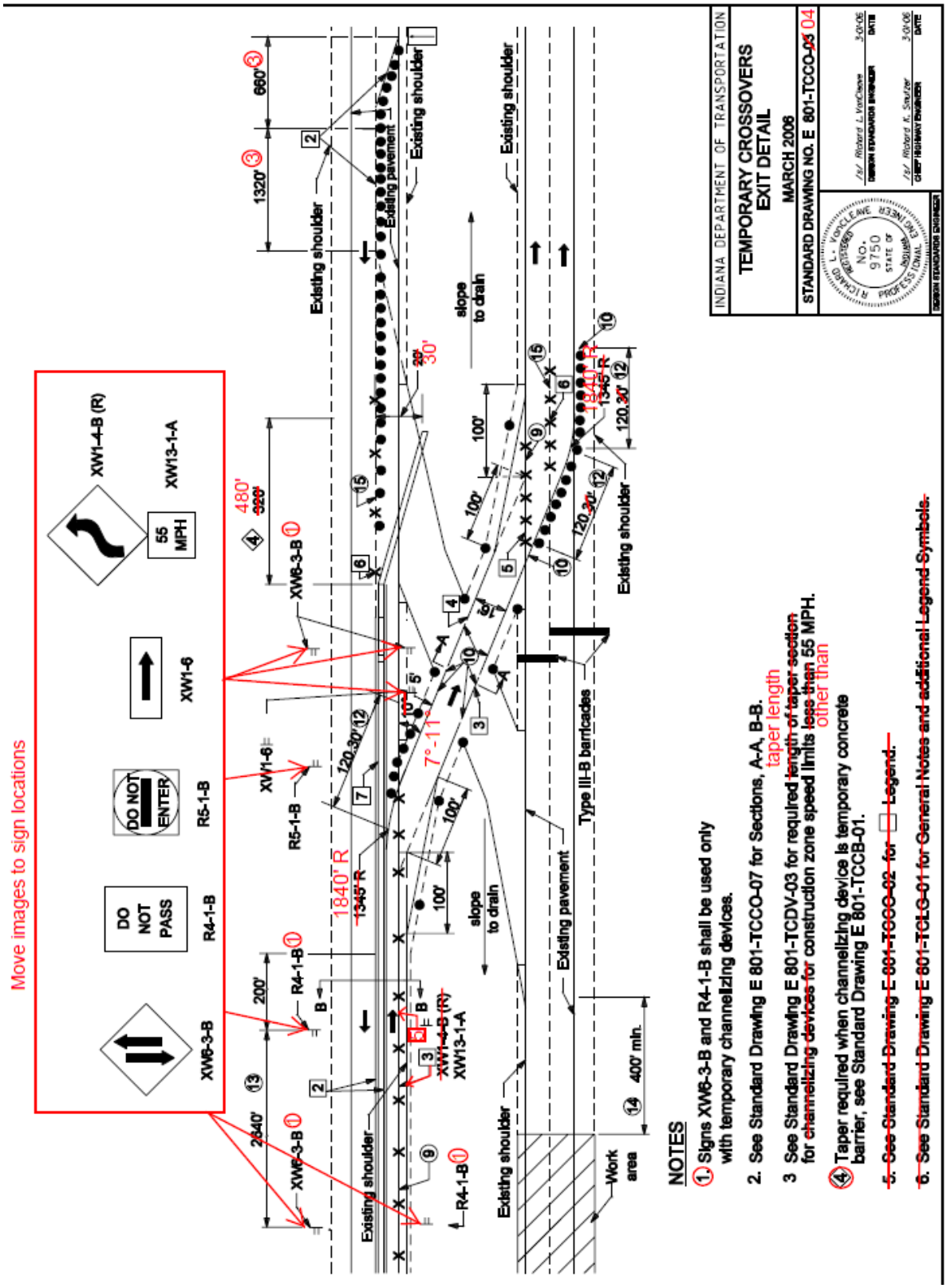
REVISION TO STANDARD DRAWINGS

E 801-TCCO-02 TEMPORARY CROSSOVERS ENTRANCE DETAIL (WITH MARKUPS)



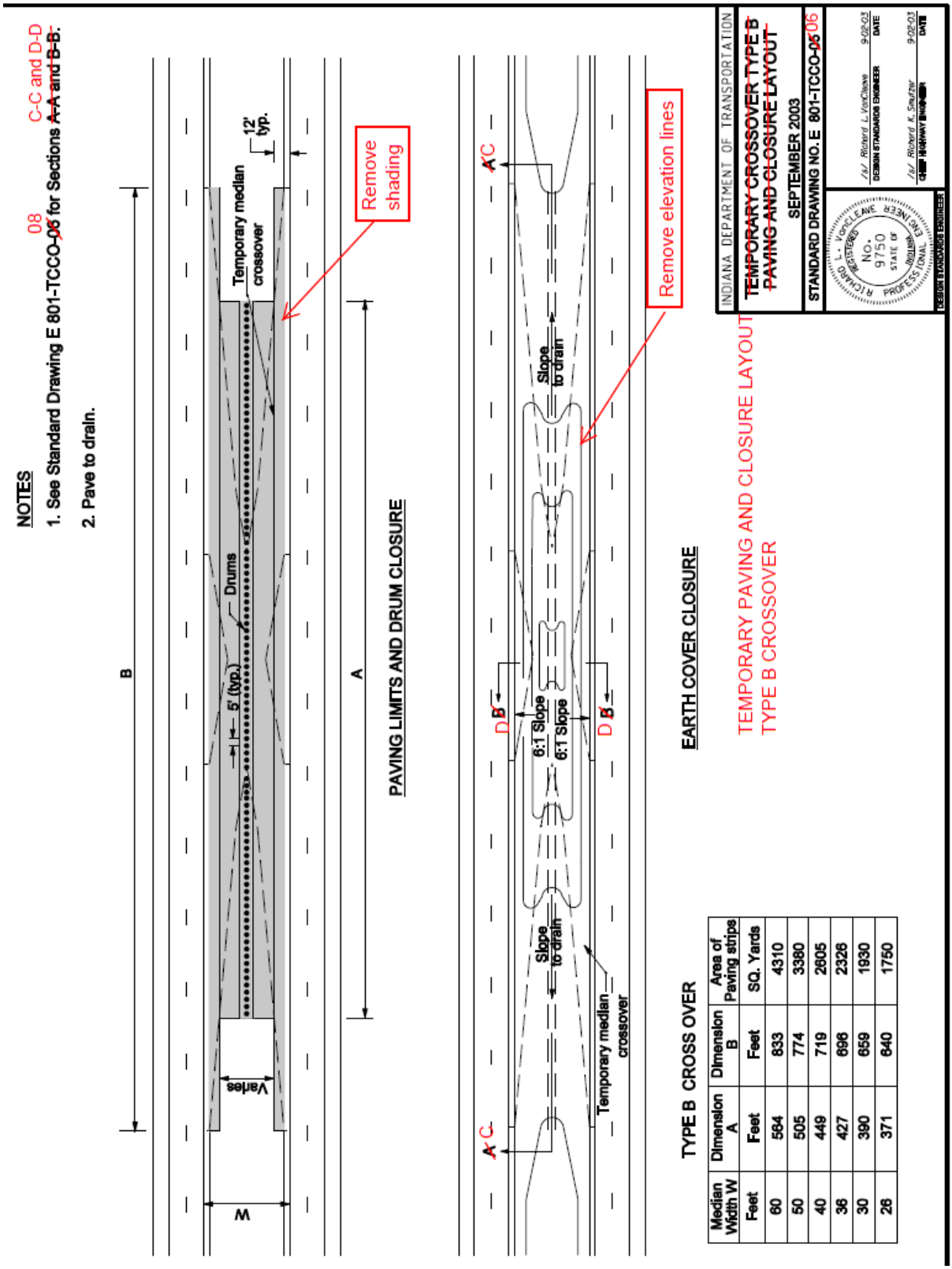
REVISION TO STANDARD DRAWINGS

E 801-TCCO-03 TEMPORARY CROSSOVERS EXIT DETAIL (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

E 801-TCCO-05 TEMPORARY CROSSOVER TYPE B PAVING AND CLOSURE LAYOUT
(WITH MARKUPS)

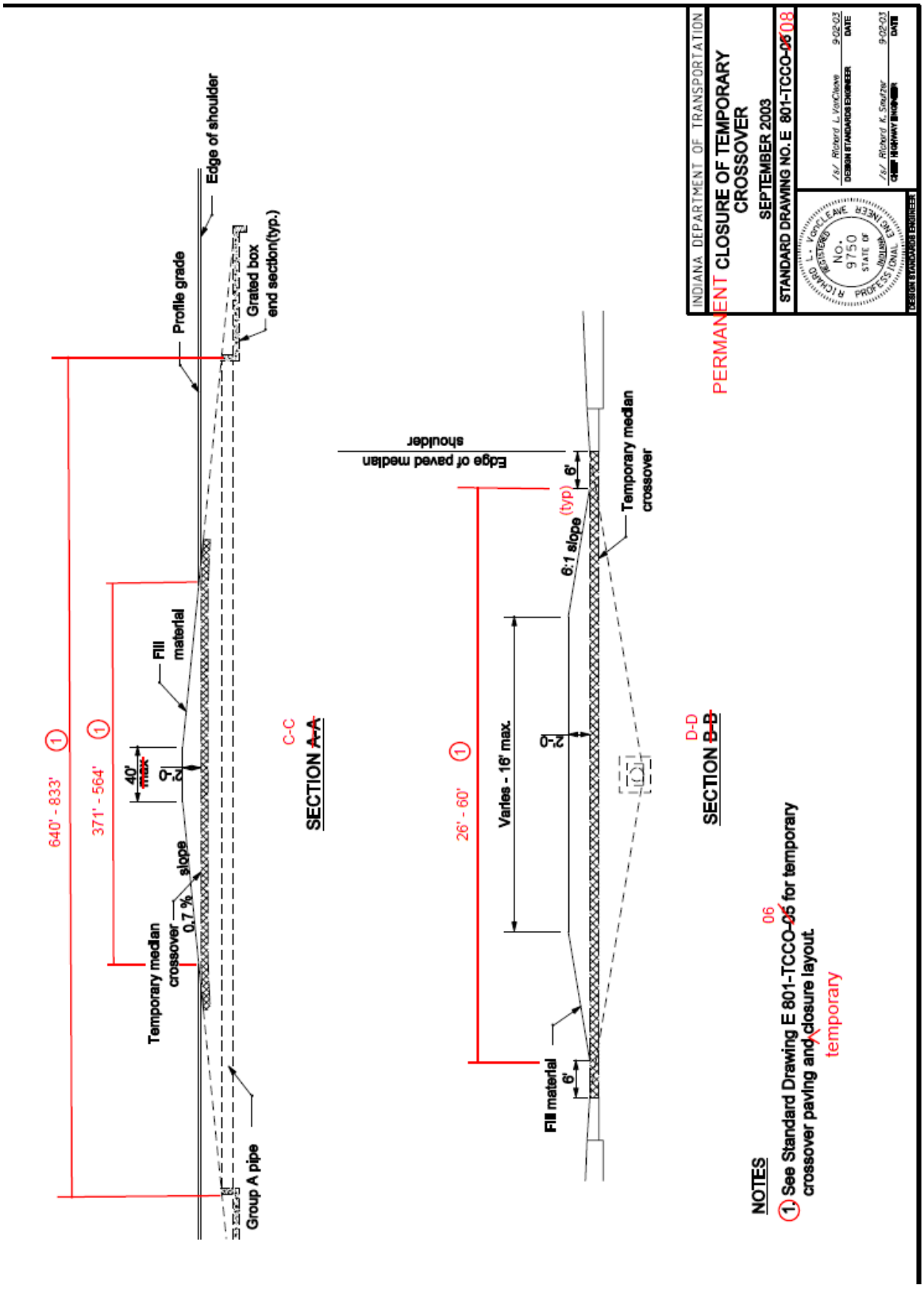


TYPE B CROSS OVER

Median Width W	Dimension A	Dimension B	Area of Paving strips
Feet	Feet	Feet	SQ. Yards
60	564	833	4310
50	505	774	3380
40	449	719	2605
36	427	696	2326
30	390	659	1930
26	371	840	1750

REVISION TO STANDARD DRAWINGS

E 801-TCCO-06 CLOSURE OF TEMPORARY CROSSOVER (WITH MARKUPS)



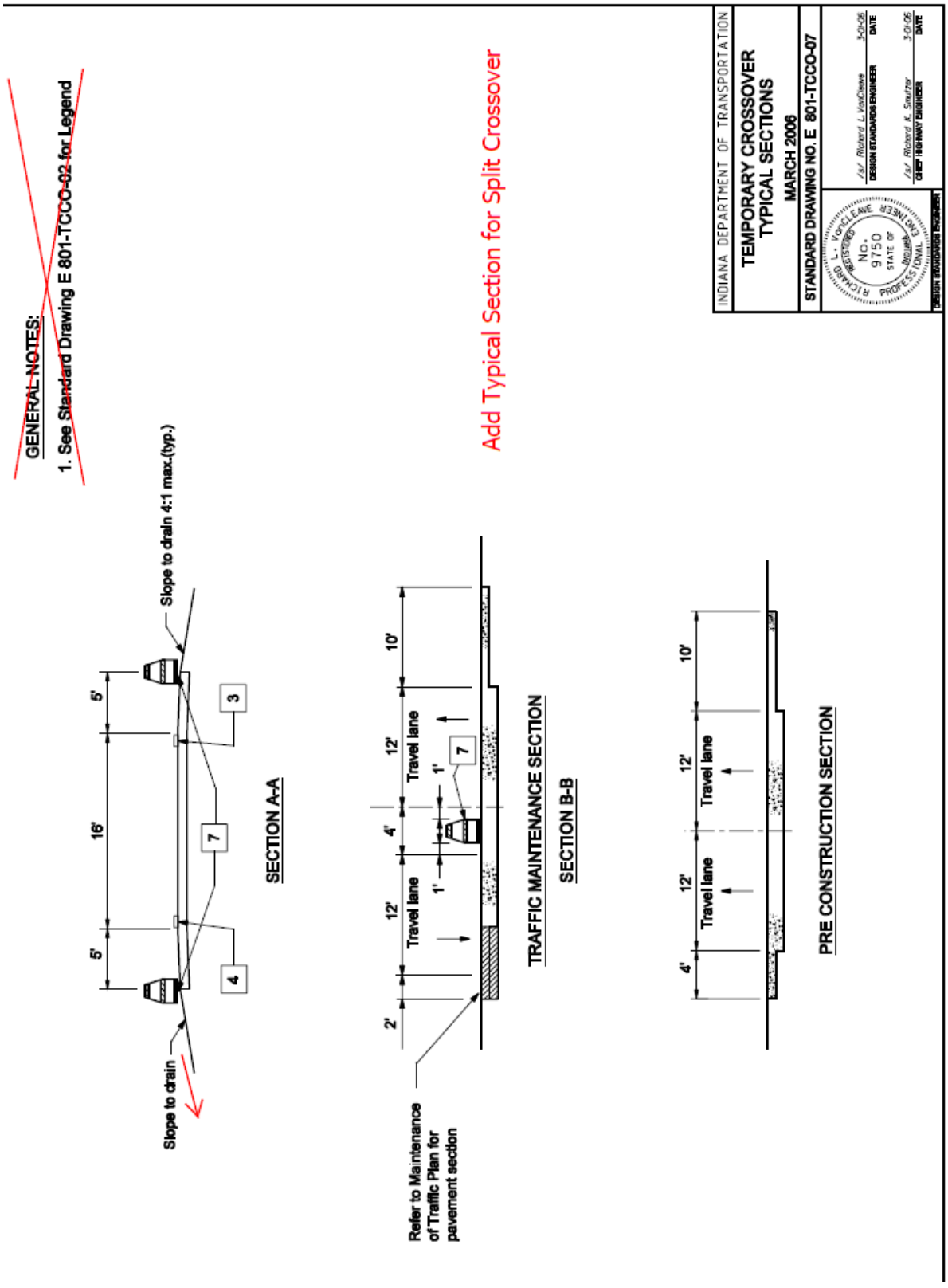
REVISION TO STANDARD DRAWINGS

E 801-TCCO-07 TEMPORARY CROSSOVER TYPICAL SECTIONS (WITH MARKUPS)

~~GENERAL NOTES:~~

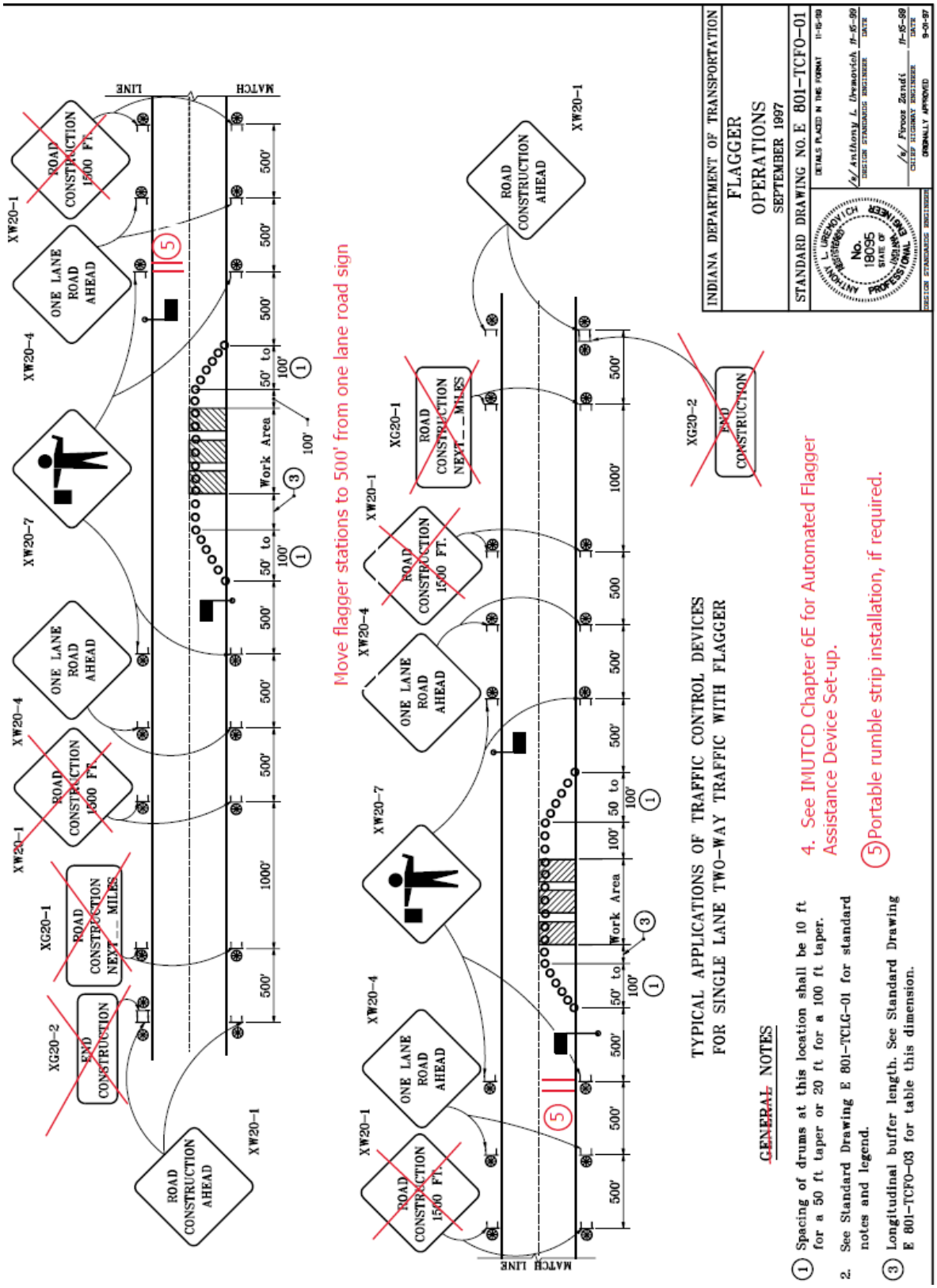
~~1. See Standard Drawing E 801-TCCO-02 for Legend~~

Add Typical Section for Split Crossover



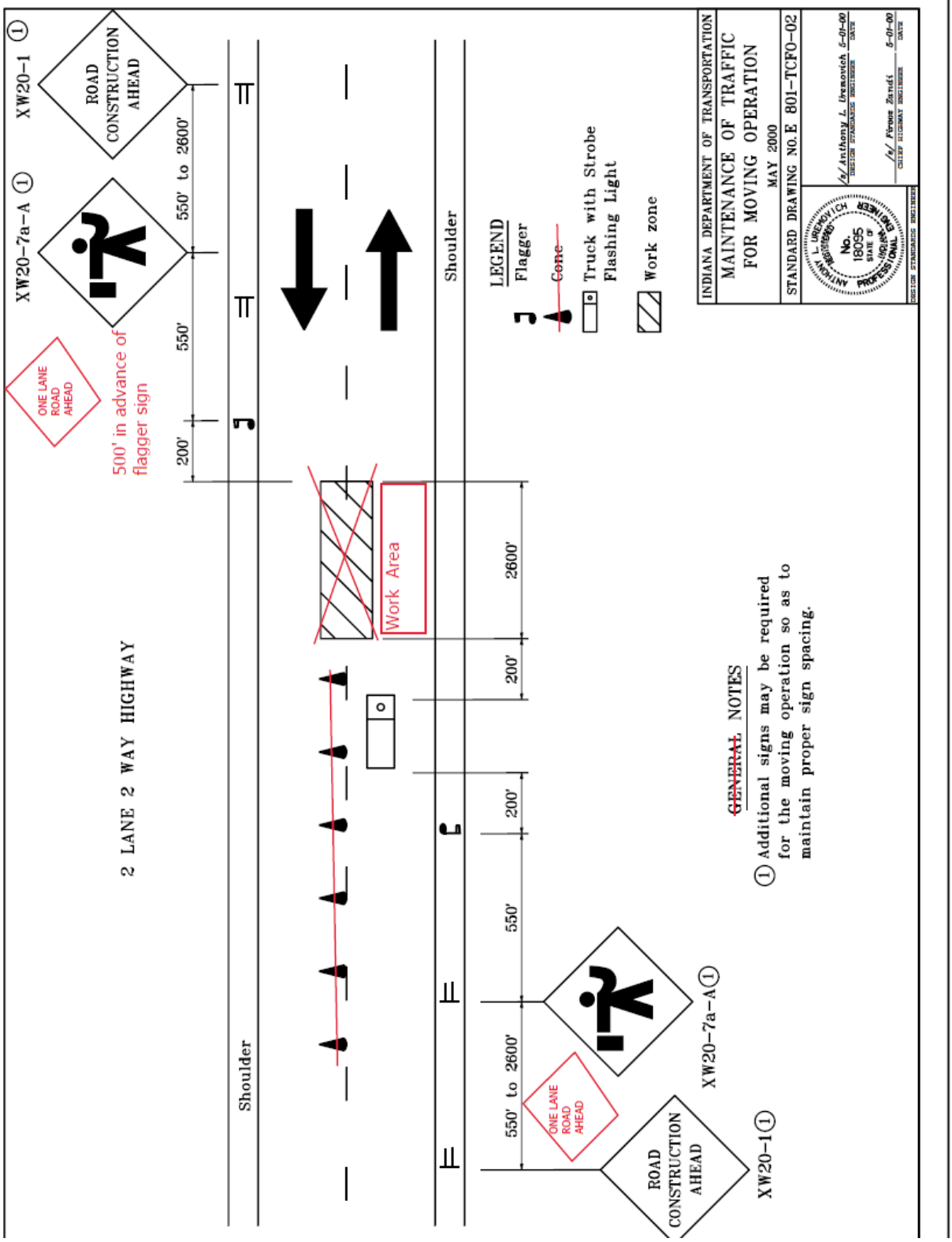
REVISION TO STANDARD DRAWINGS

E 801-TCFO-01 FLAGGER OPERATIONS (WITH MARKUPS)



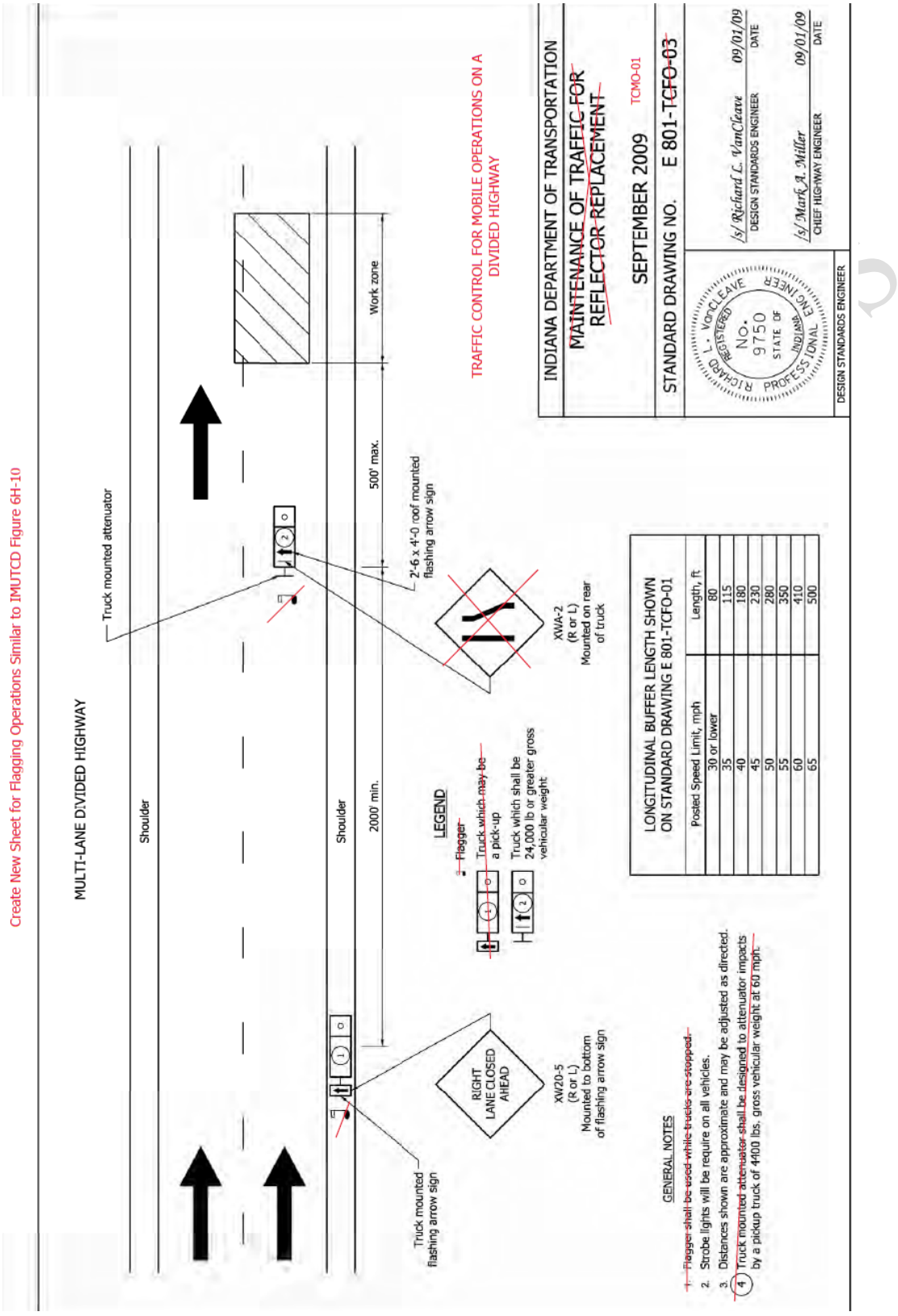
REVISION TO STANDARD DRAWINGS

E 801-TCFO-02 MAINTENANCE OF TRAFFIC FOR MOVING OPERATION (WITH MARKUPS)



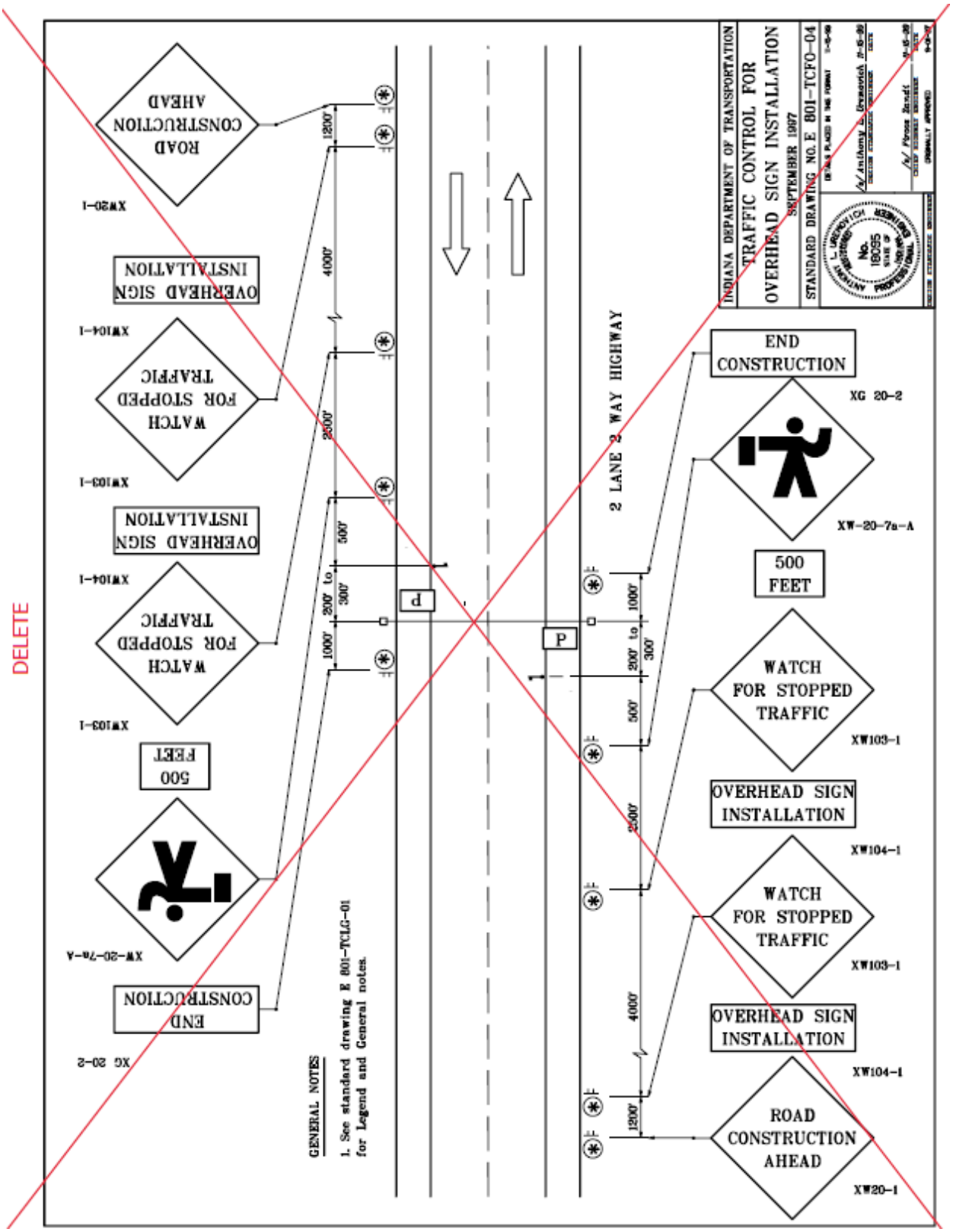
REVISION TO STANDARD DRAWINGS

E 801-TCFO-03 MAINTENANCE OF TRAFFIC FOR REFLECTOR REPLACEMENT (WITH MARKUPS)



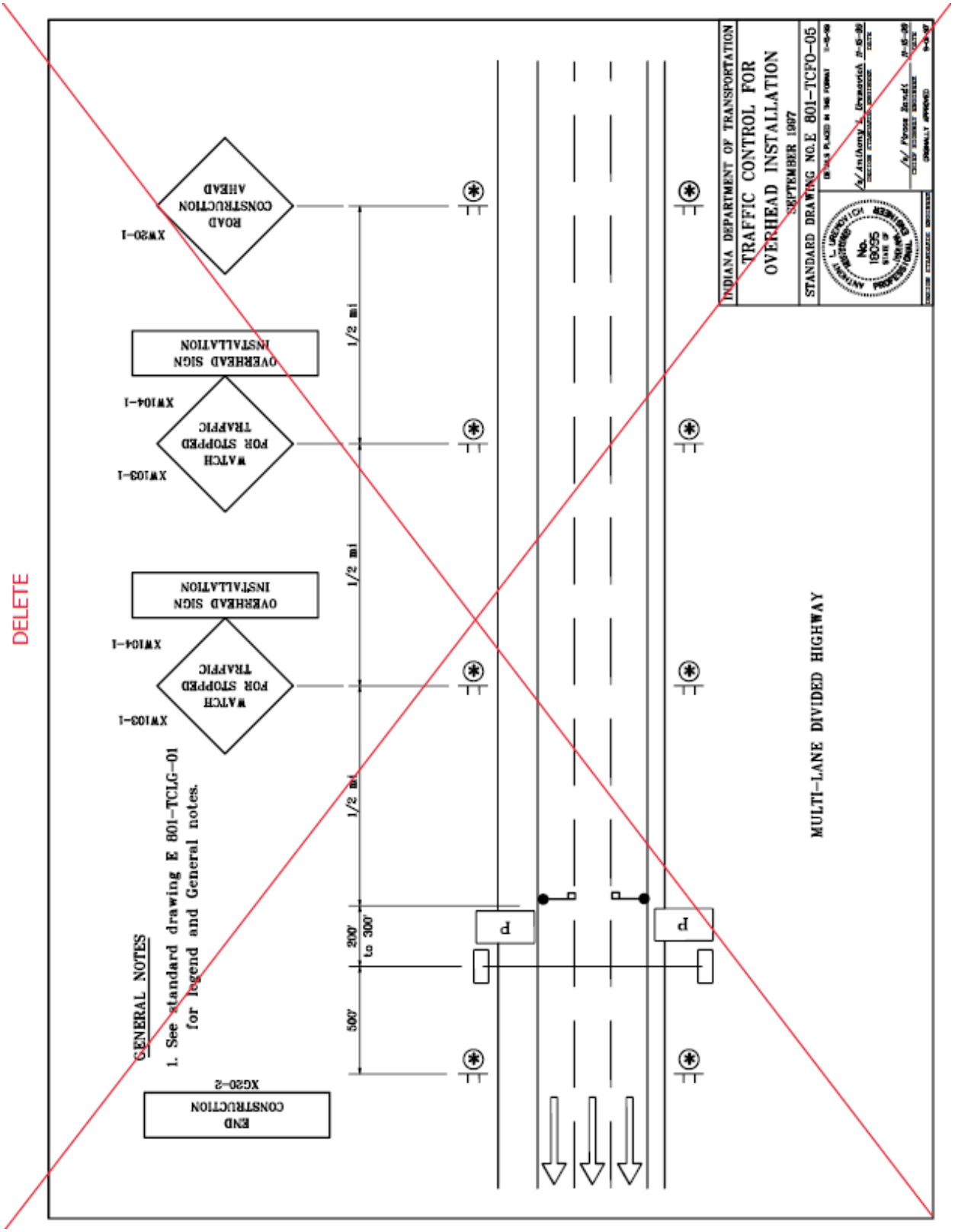
REVISION TO STANDARD DRAWINGS

E 801-TCFO-04 TRAFFIC CONTROL FOR OVERHEAD SIGN INSTALLATION (WITH MARKUPS)



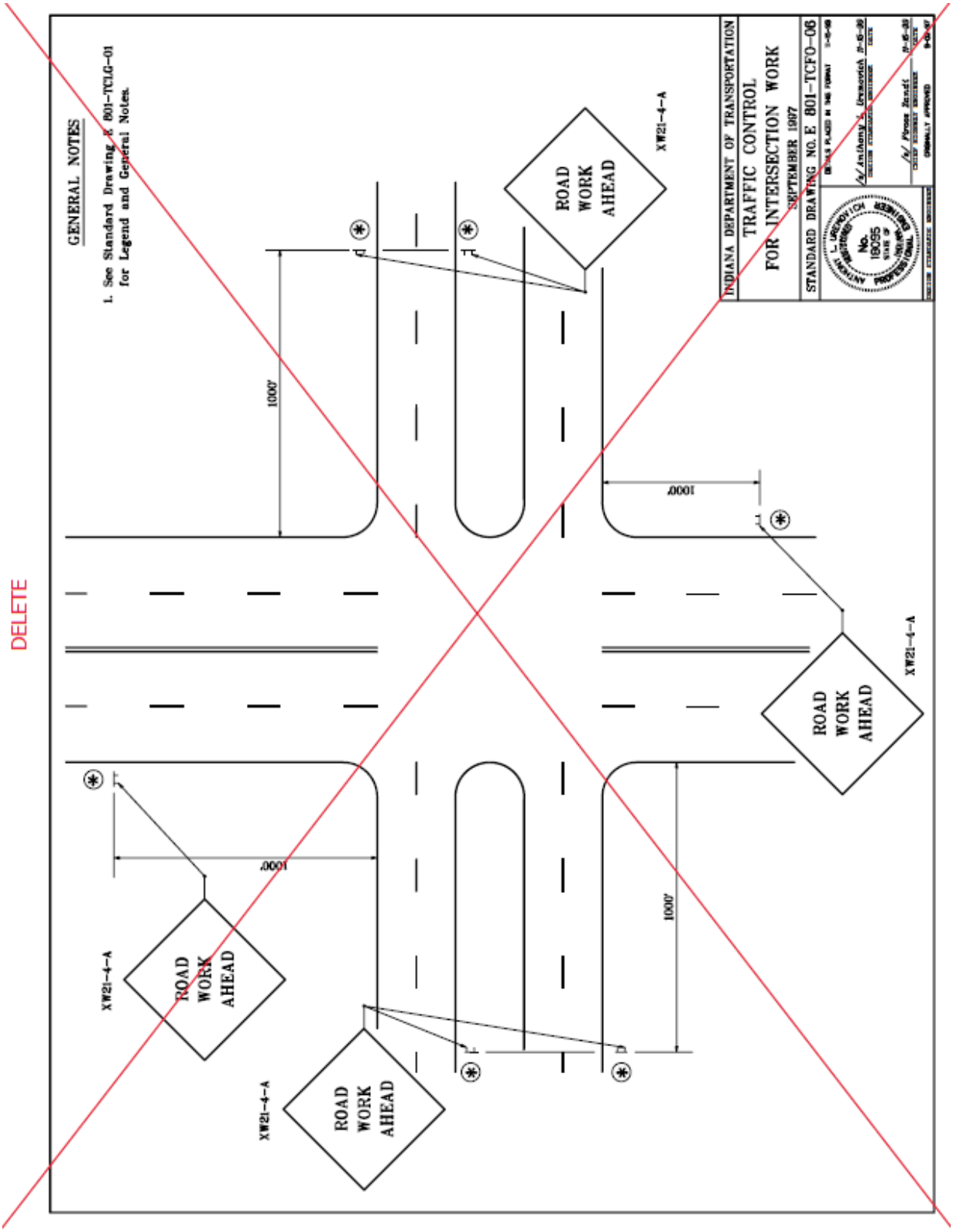
REVISION TO STANDARD DRAWINGS

E 801-TCFO-05 TRAFFIC CONTROL FOR OVERHEAD INSTALLATION (WITH MARKUPS)



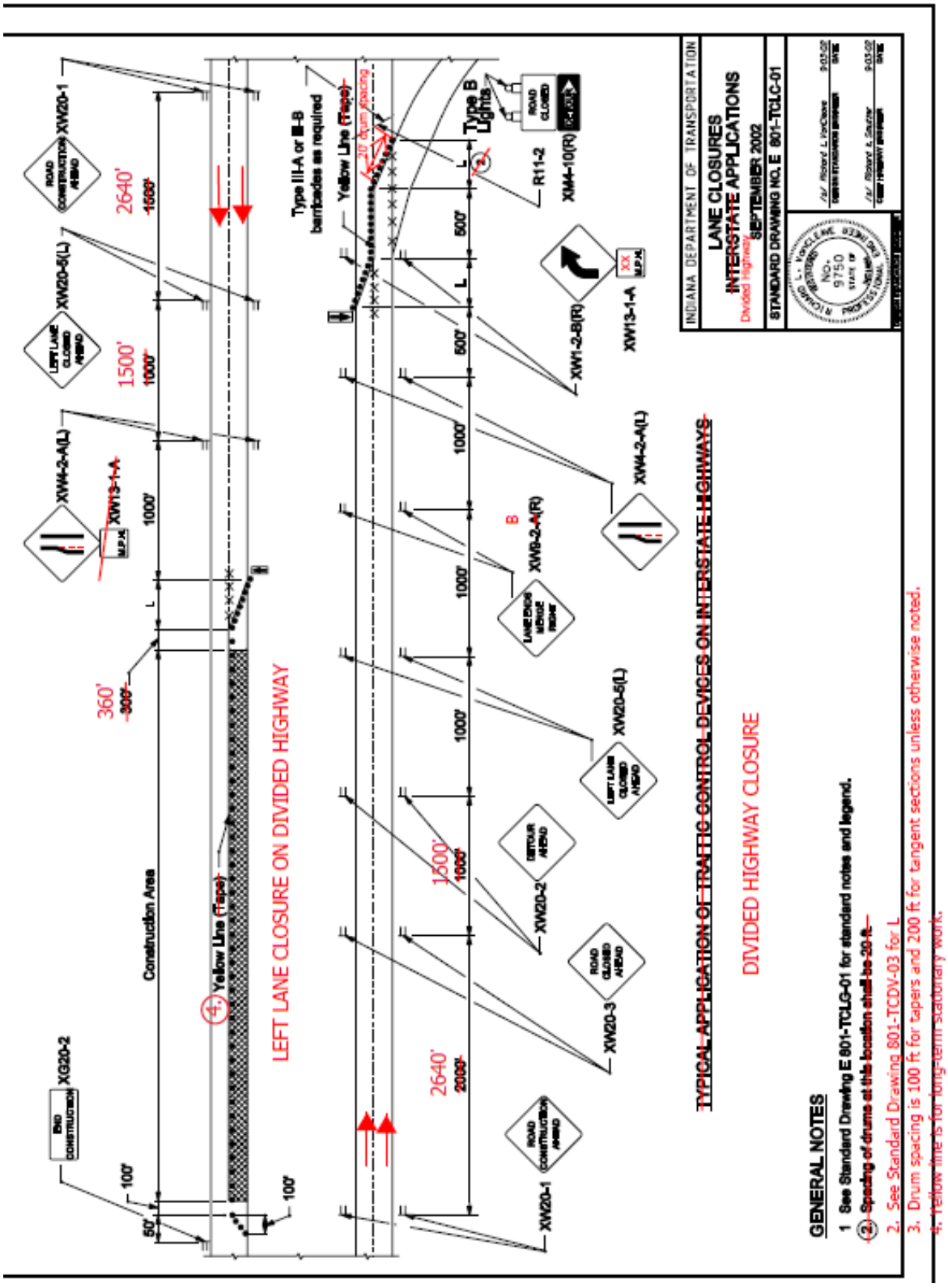
REVISION TO STANDARD DRAWINGS

E 801-TCFO-06 TRAFFIC CONTROL FOR INTERSECTION WORK (WITH MARKUPS)



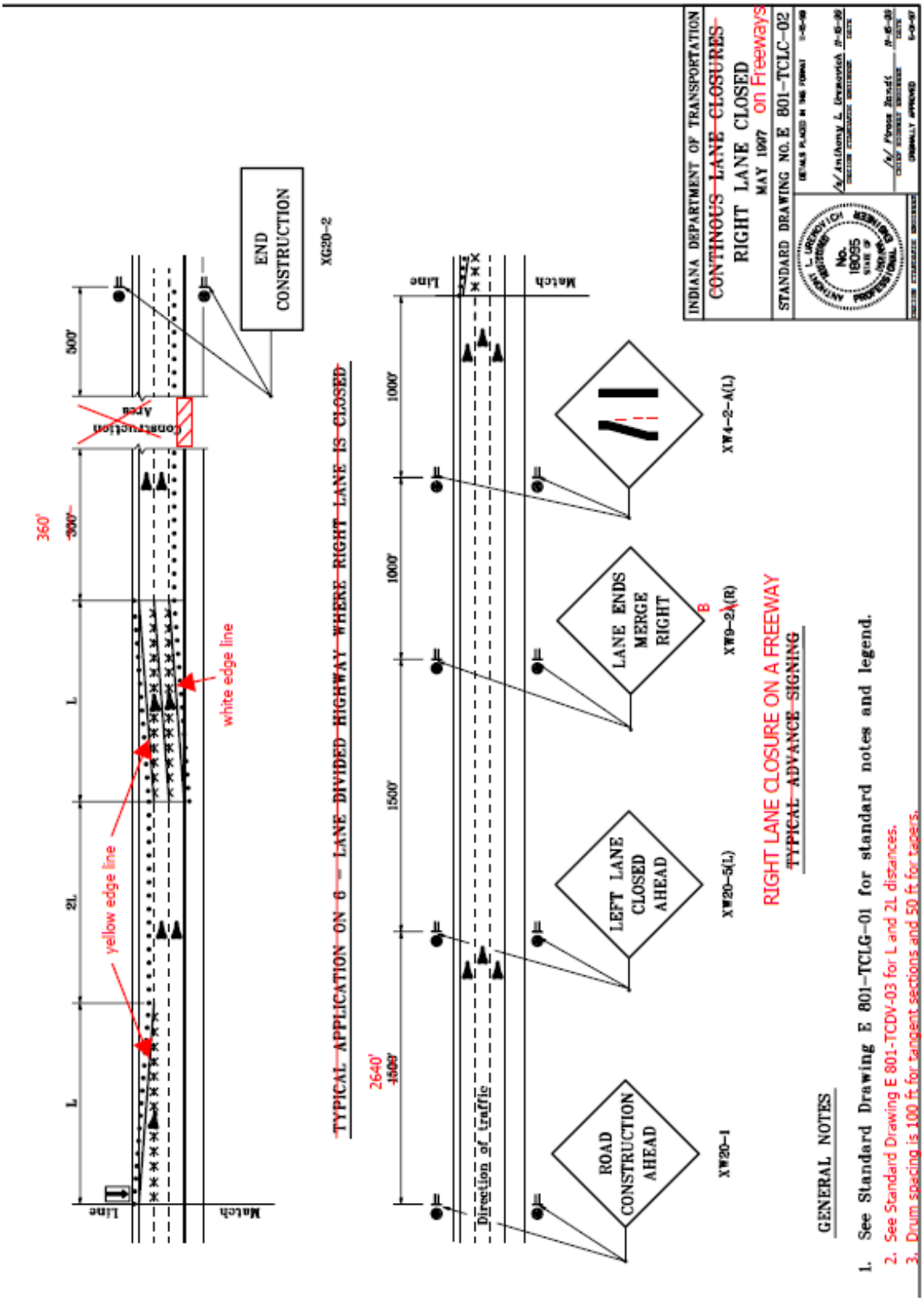
REVISION TO STANDARD DRAWINGS

E 801-TCLC-01 LANE CLOSURES INTERSTATE APPLICATIONS (WITH MARKUPS)



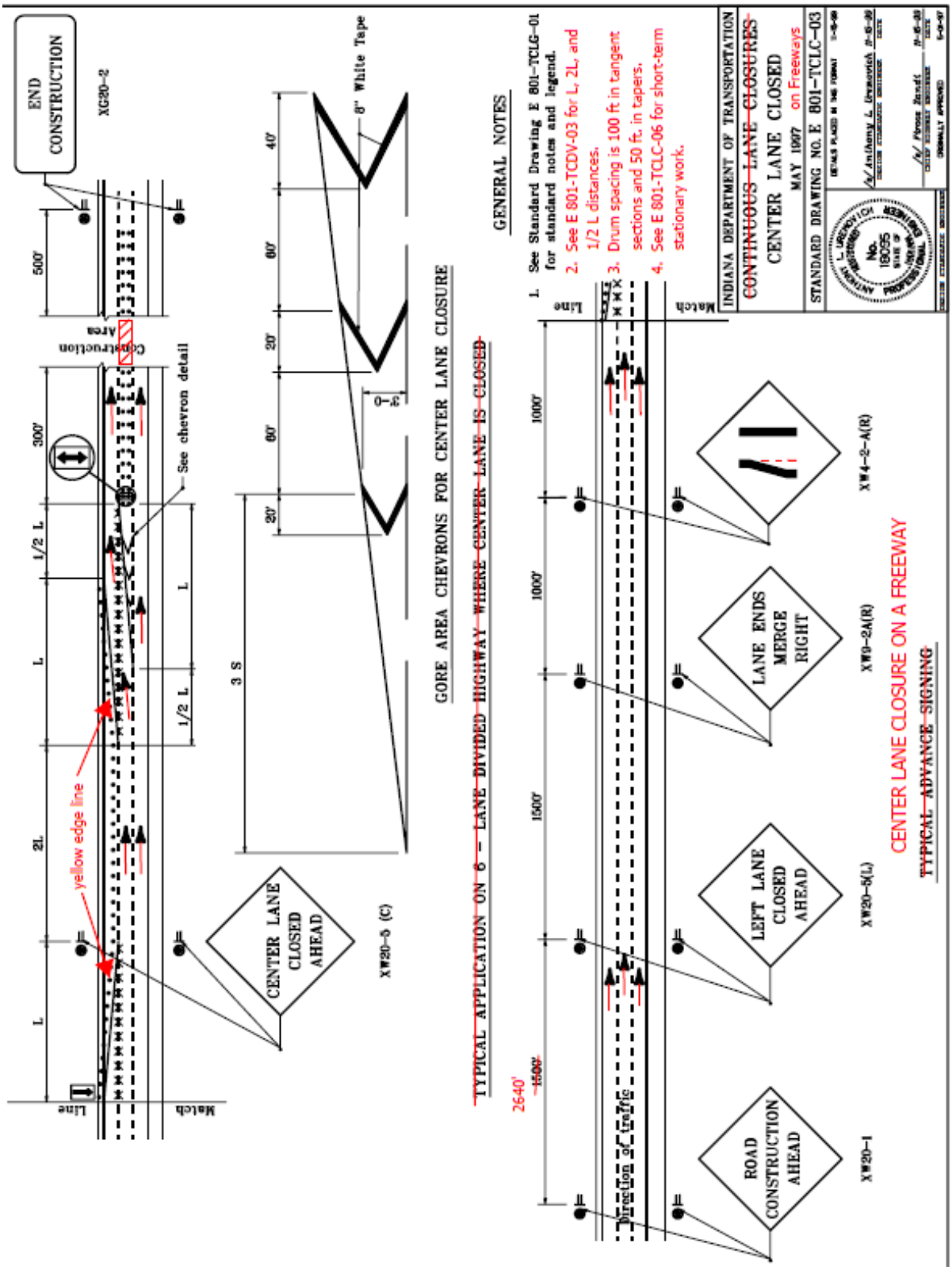
REVISION TO STANDARD DRAWINGS

E 801-TCLC-02 CONTINOUS LANE CLOSURES RIGHT LANE CLOSED (WITH MARKUPS)



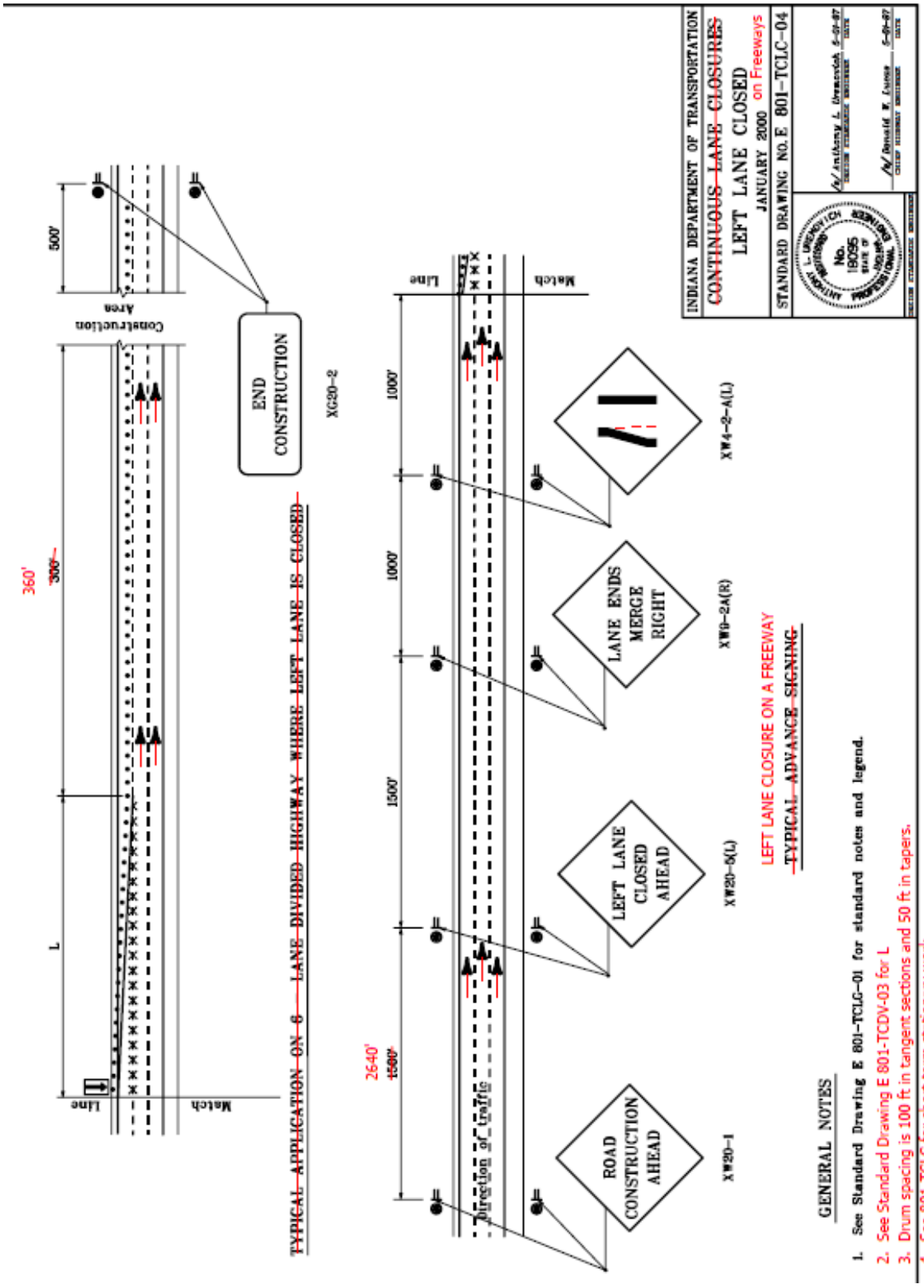
REVISION TO STANDARD DRAWINGS

E 801-TCLC-03 CONTINUOUS LANE CLOSURES CENTER LANE CLOSED (WITH MARKUPS)



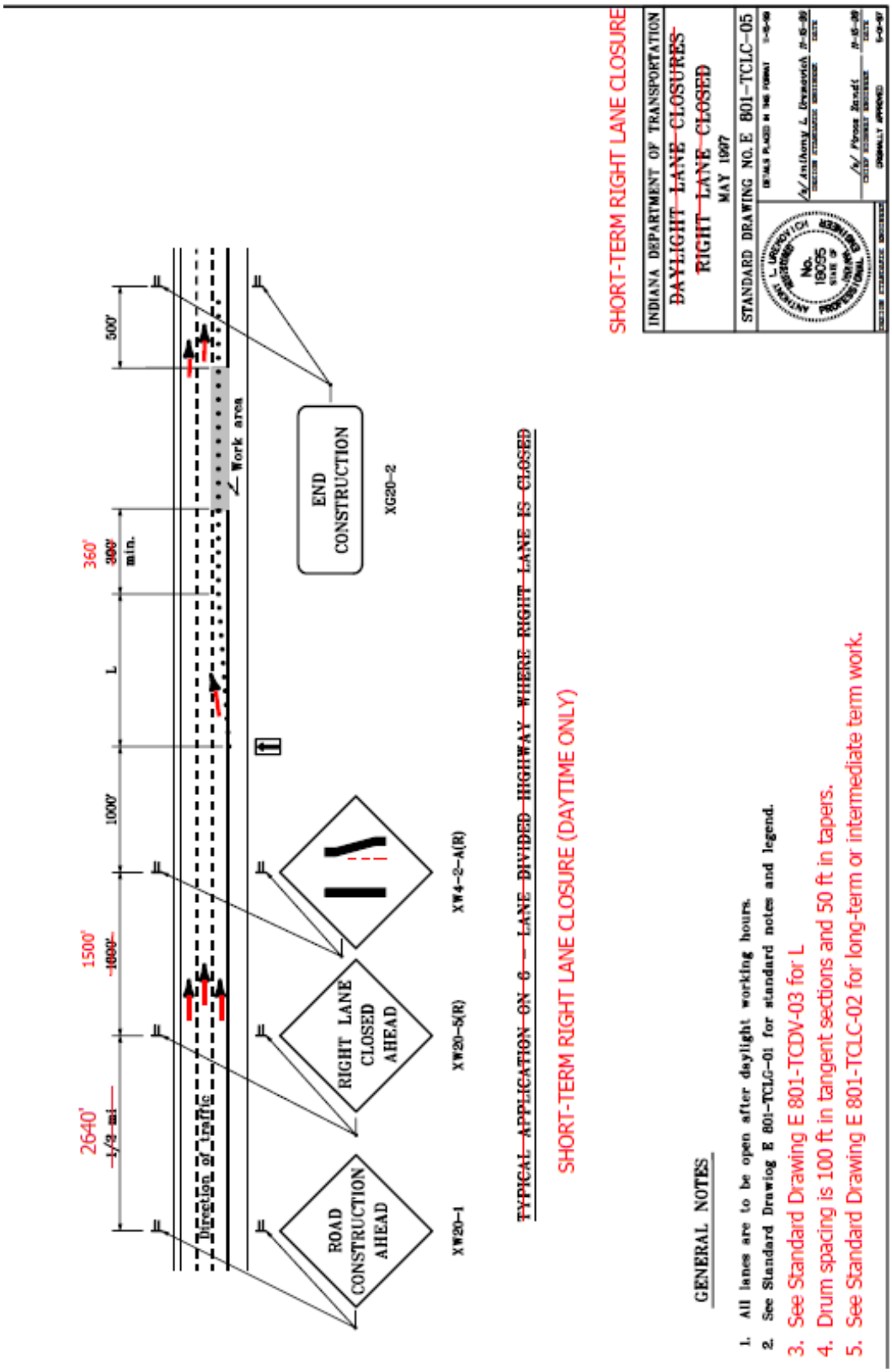
REVISION TO STANDARD DRAWINGS

E 801-TCLC-04 CONTINUOUS LANE CLOSURES LEFT LANE CLOSED (WITH MARKUPS)



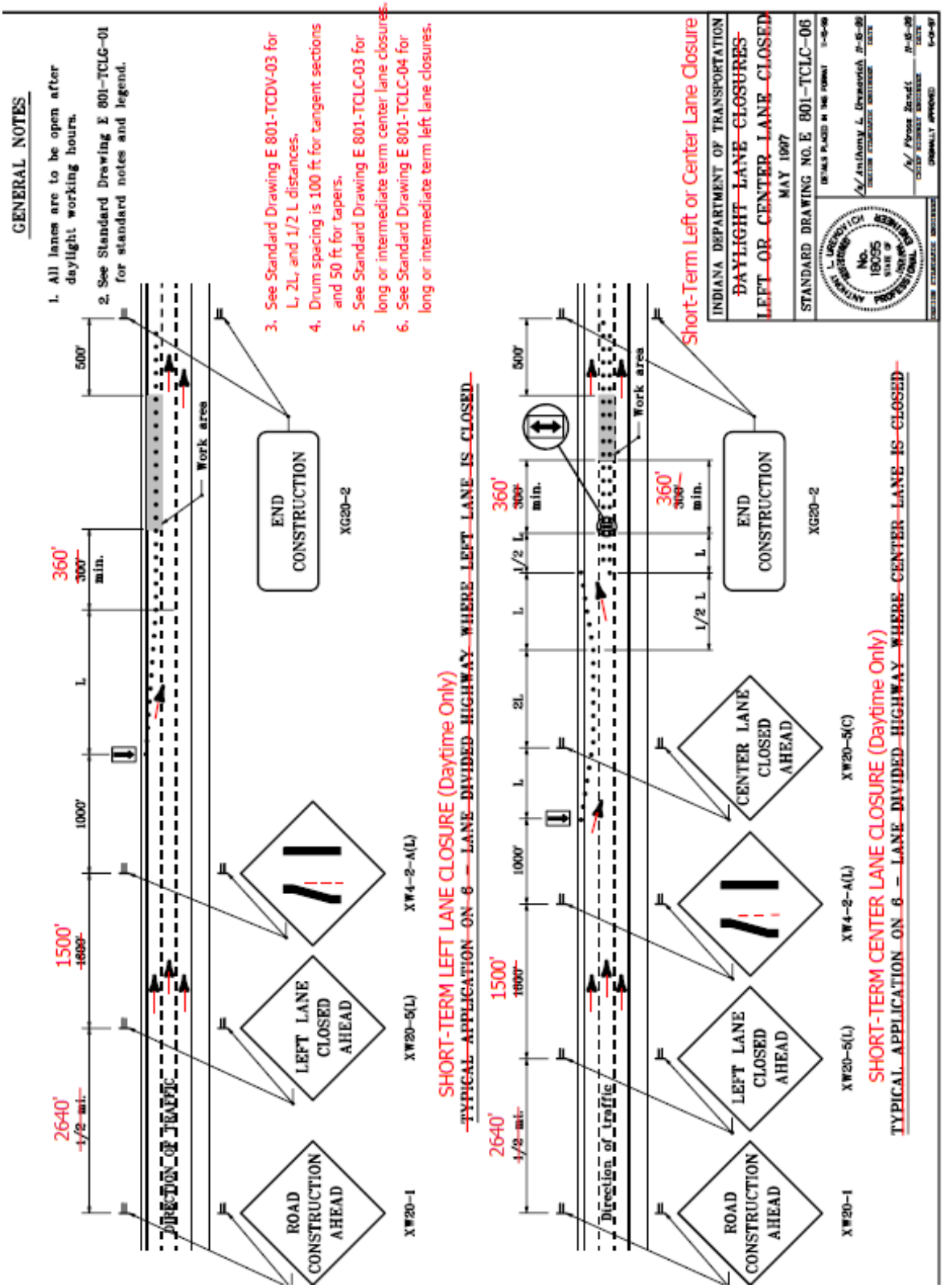
REVISION TO STANDARD DRAWINGS

E 801-TCLC-05 DAYLIGHT LANE CLOSURES RIGHT LANE CLOSED (WITH MARKUPS)



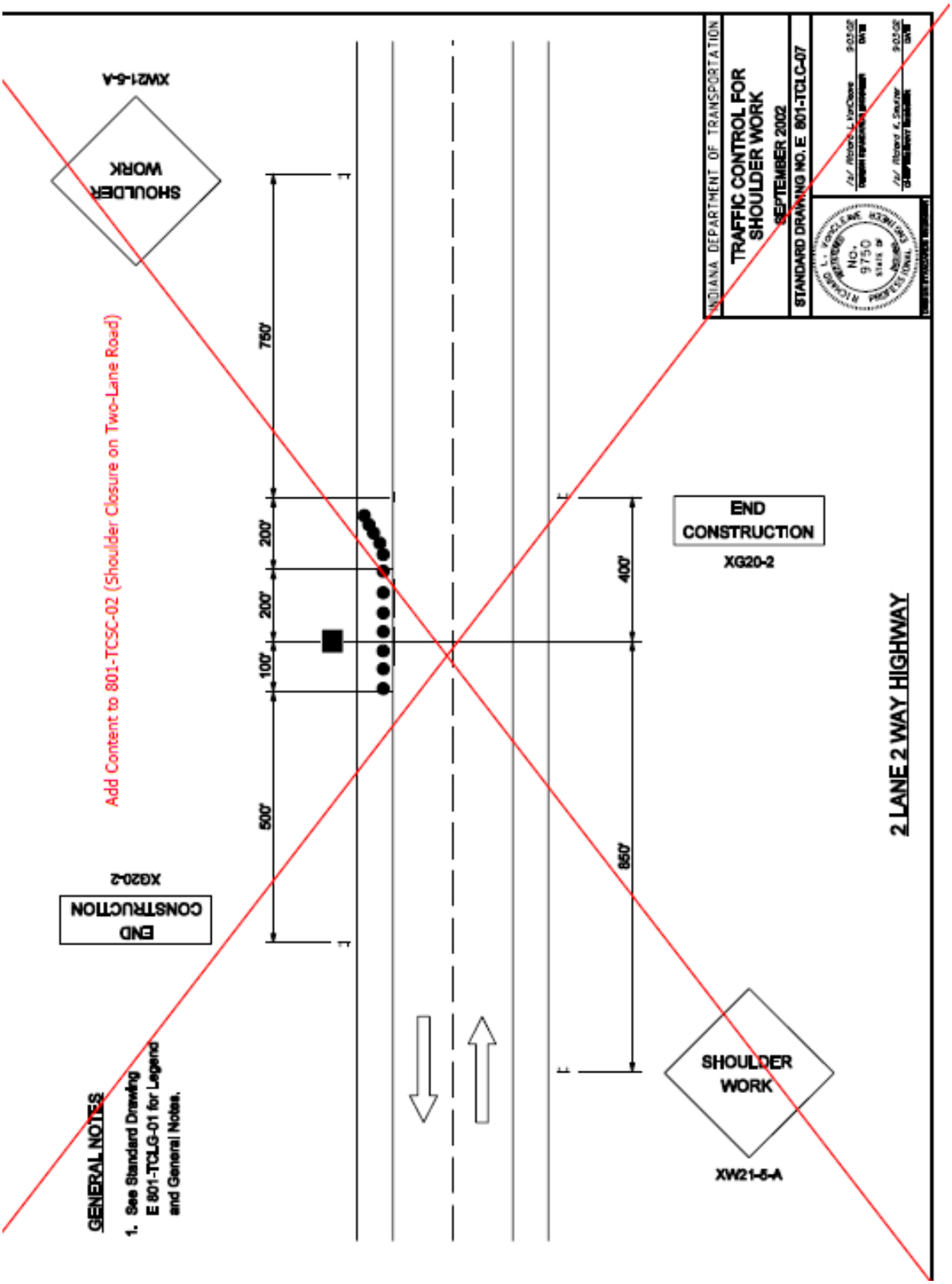
REVISION TO STANDARD DRAWINGS

E 801-TCLC-06 DAYLIGHT LANE CLOSURES LEFT OR CENTER LANE CLOSED (WITH MARKUPS)



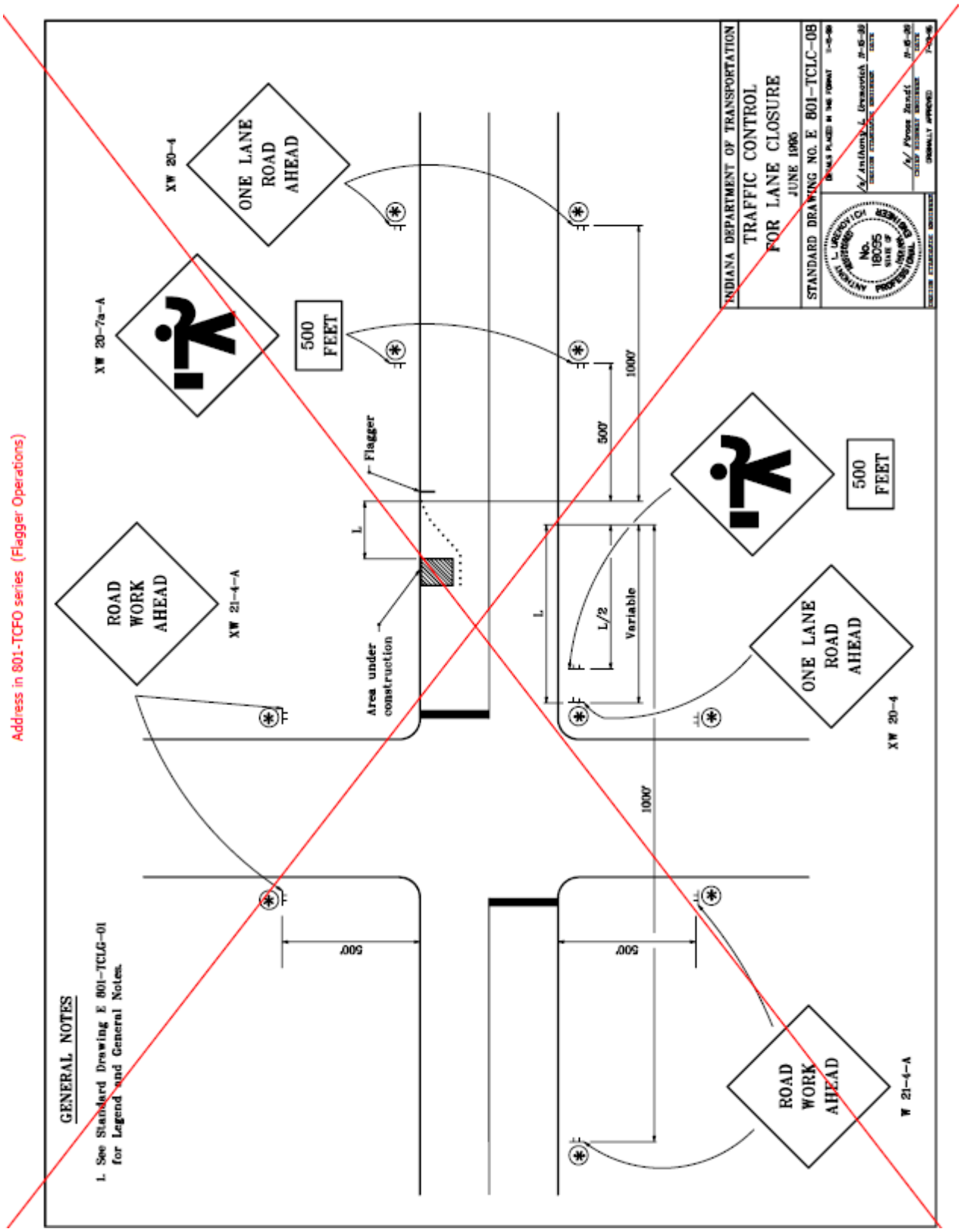
REVISION TO STANDARD DRAWINGS

E 801-TCLC-07 TRAFFIC CONTROL FOR SHOULDER WORK (WITH MARKUPS)



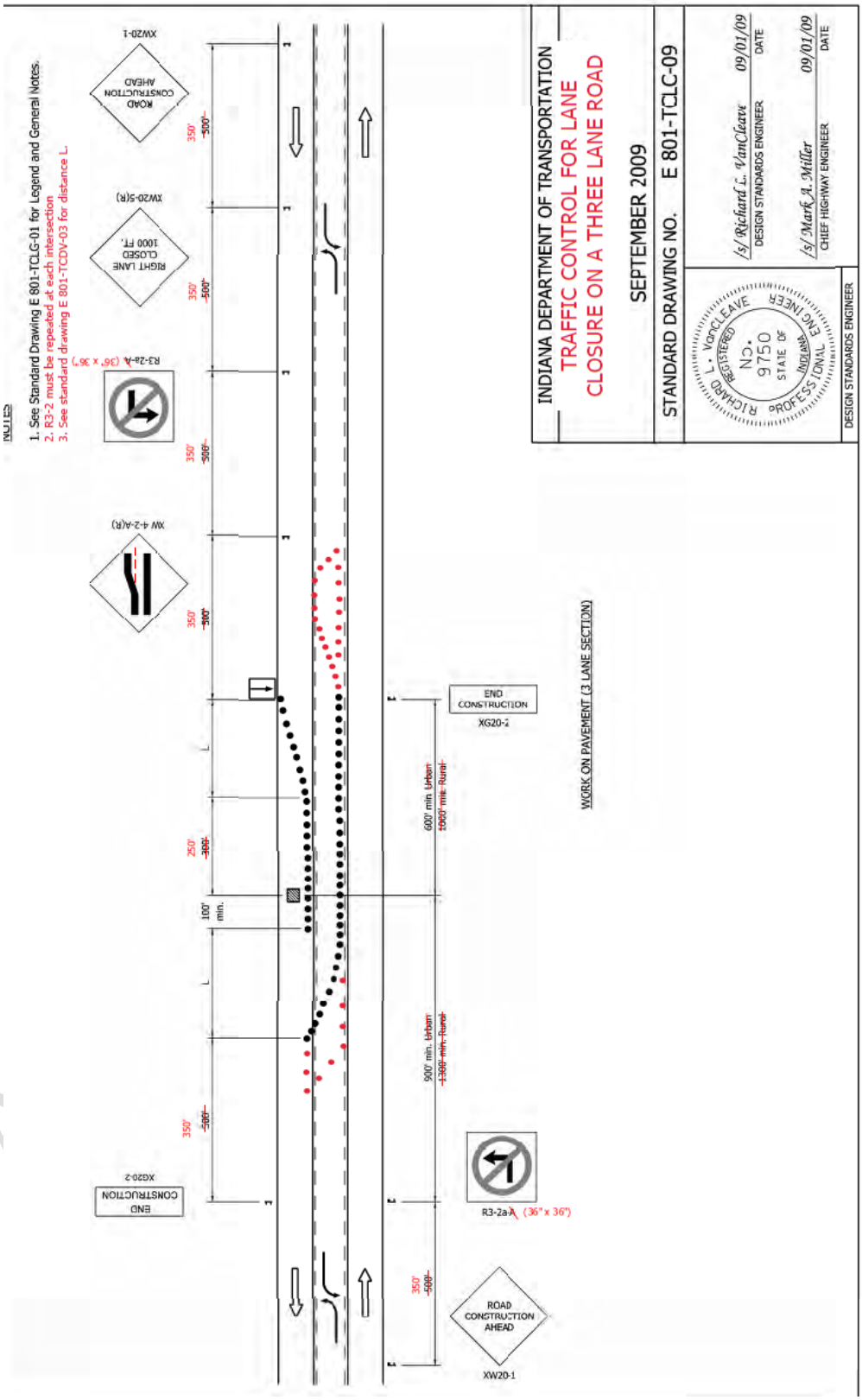
REVISION TO STANDARD DRAWINGS

E 801-TCLC-08 TRAFFIC CONTROL FOR LANE CLOSURE (WITH MARKUPS)



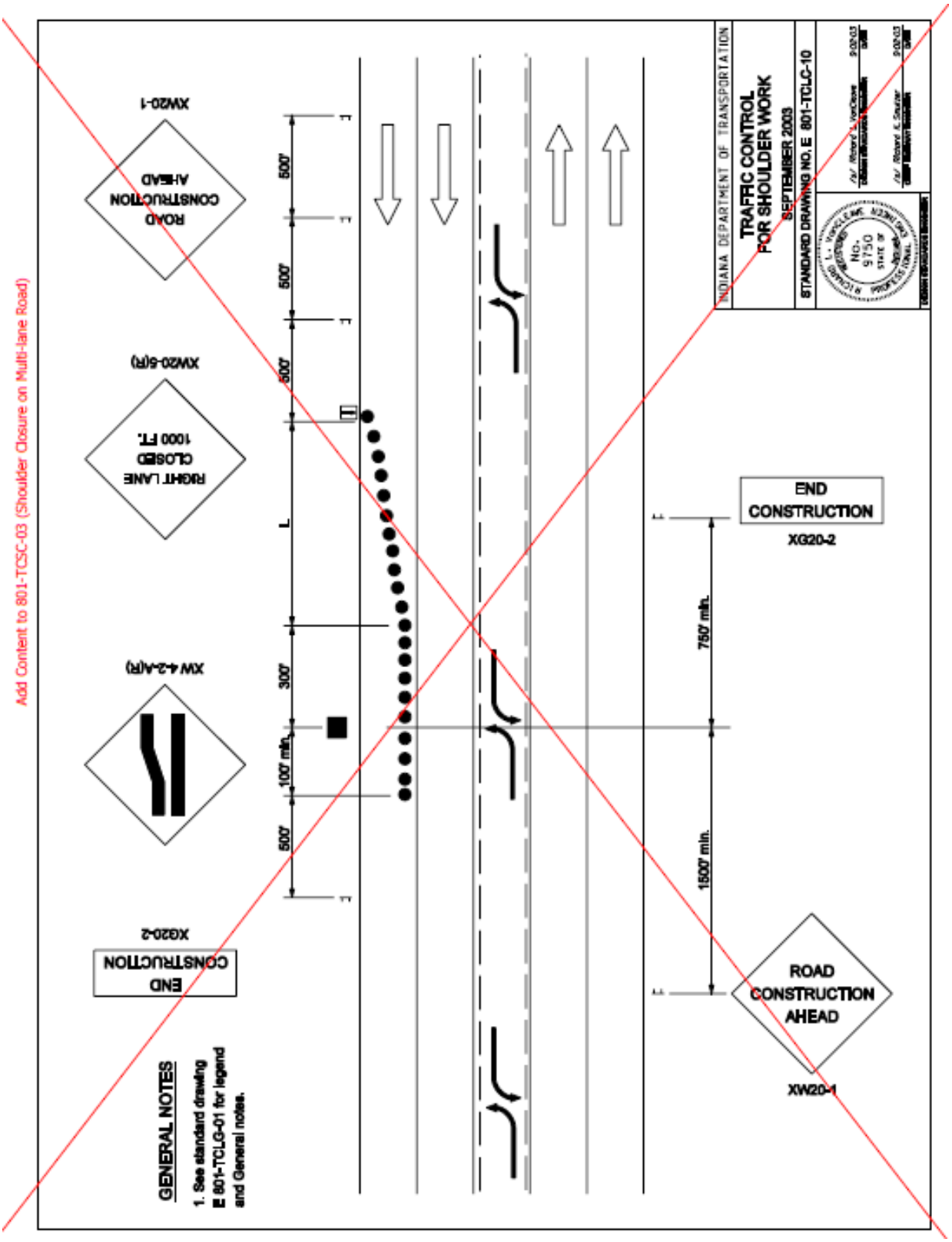
REVISION TO STANDARD DRAWINGS

E 801-TCLC-09 TRAFFIC CONTROL FOR LANE CLOSURE ON A TREE LANE ROAD (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

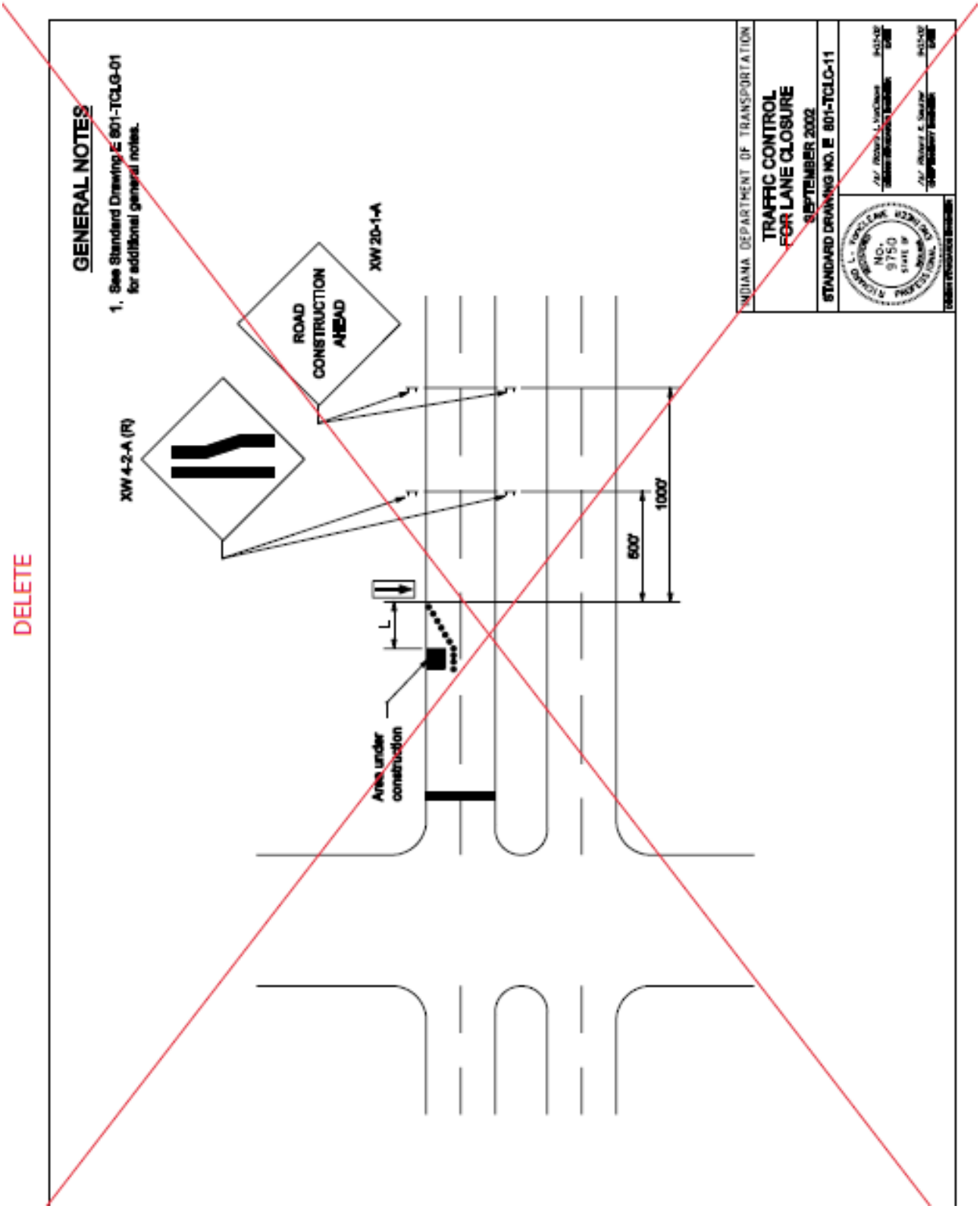
E 801-TCLC-10 TRAFFIC CONTROL FOR SHOULDER WORK (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

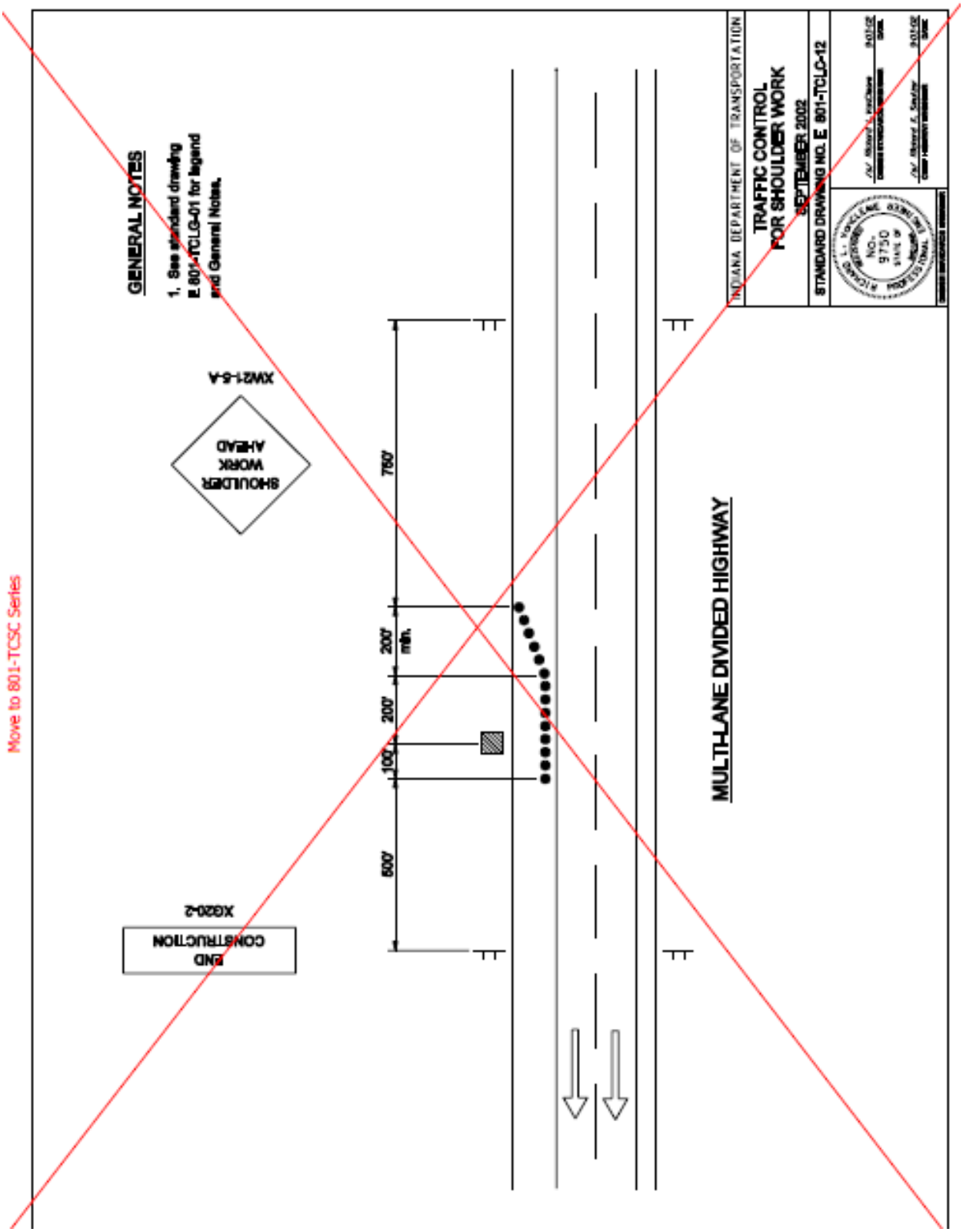
E 801-TCLC-11 TRAFFIC CONTROL FOR LANE CLOSURE (WITH MARKUPS)

DELETE



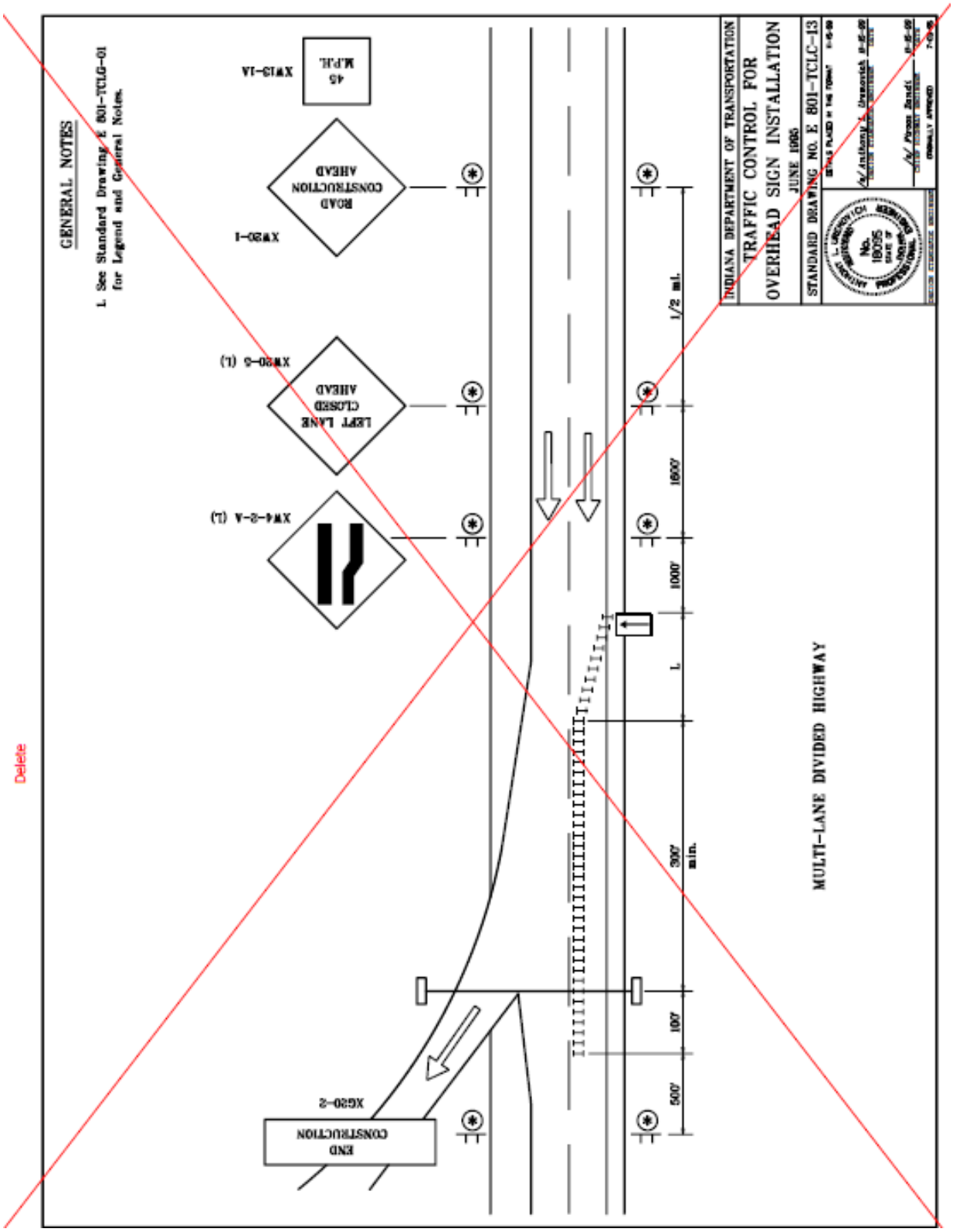
REVISION TO STANDARD DRAWINGS

E 801-TCLC-12 TRAFFIC CONTROL FOR SHOULDER WORK (WITH MARKUPS)



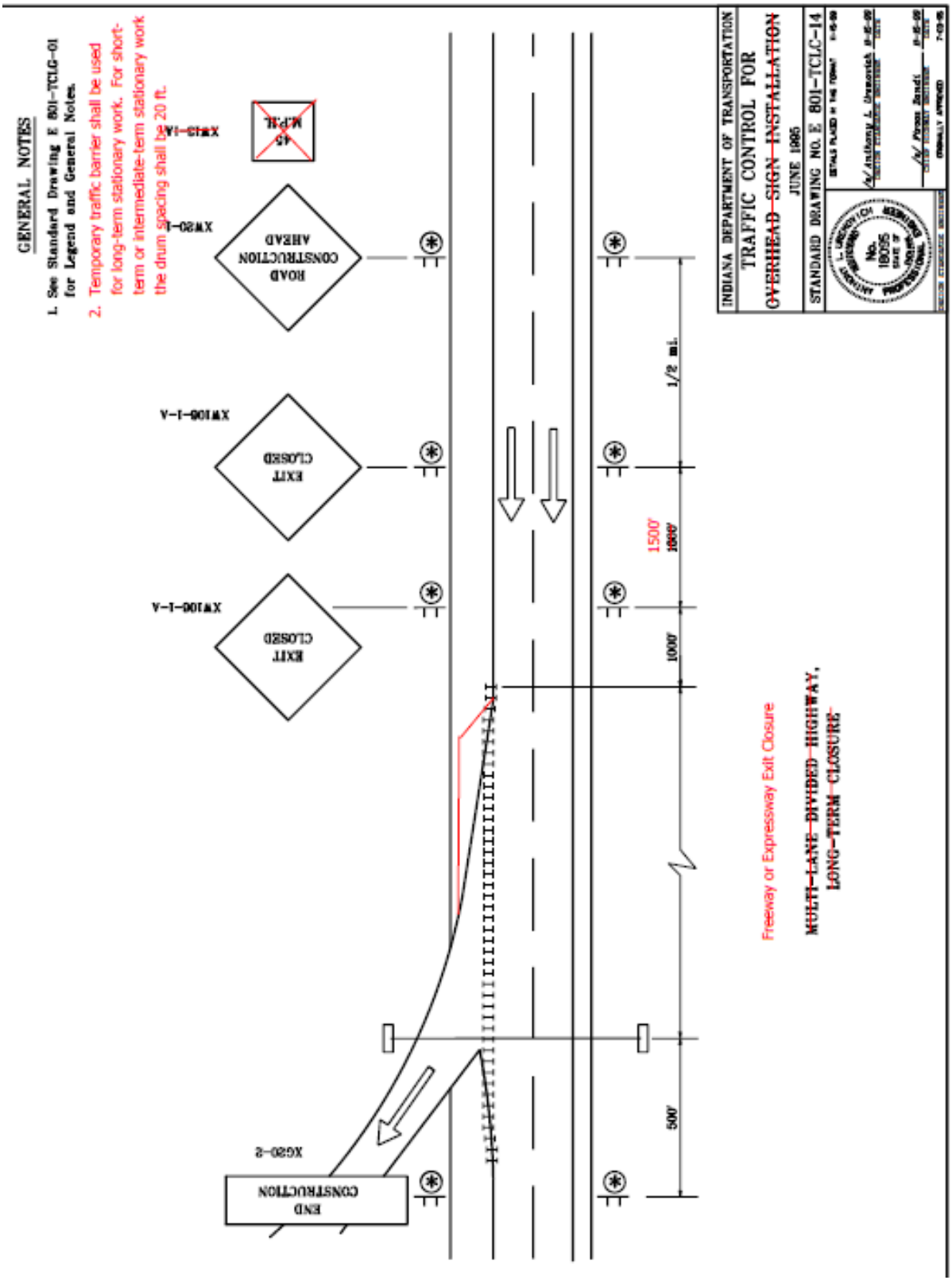
REVISION TO STANDARD DRAWINGS

E 801-TCLC-13 TRAFFIC CONTROL FOR OVERHEAD SIGN INSTALLATION (WITH MARKUPS)



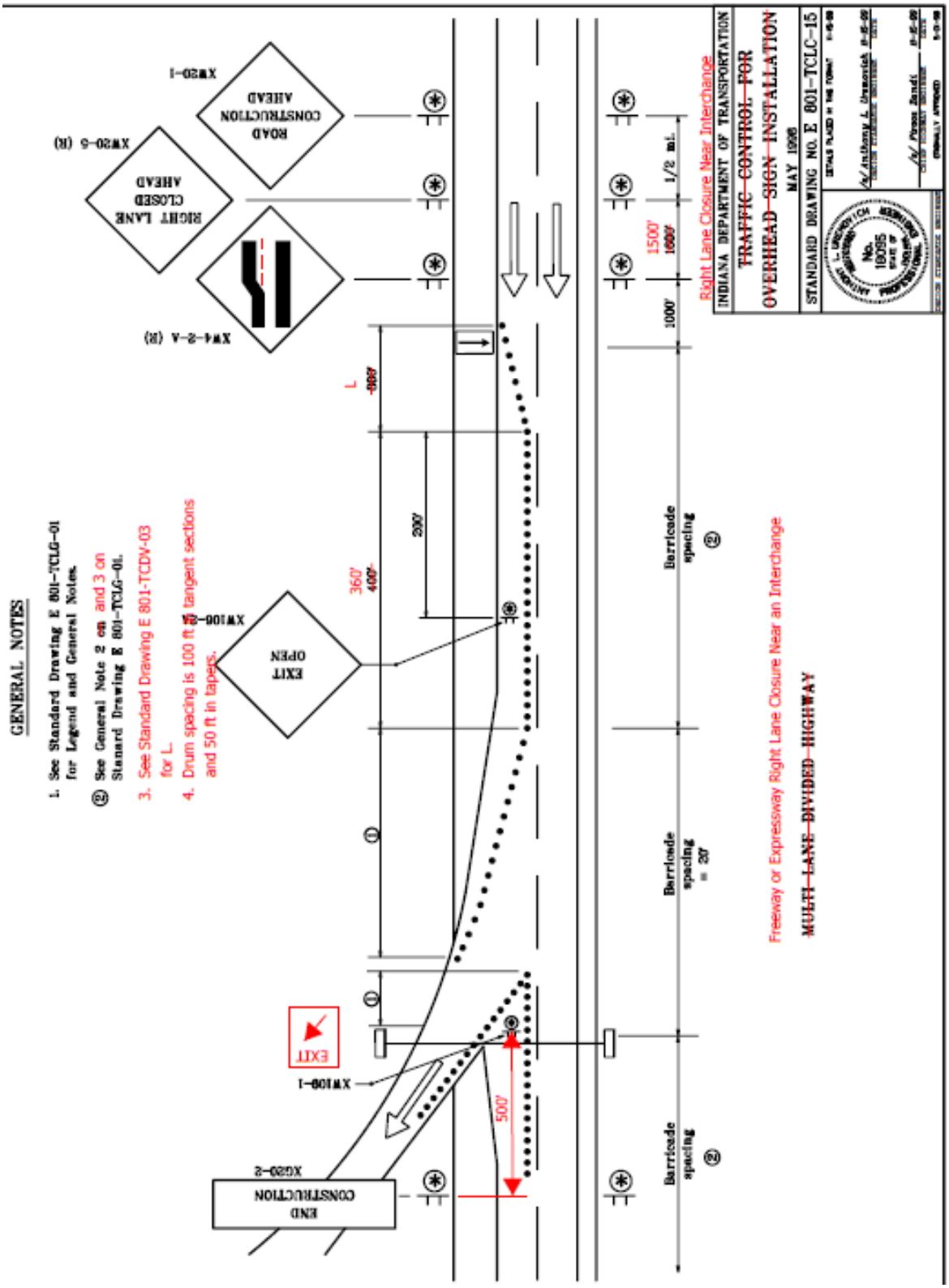
REVISION TO STANDARD DRAWINGS

E 801-TCLC-14 TRAFFIC CONTROL FOR OVERHEAD SIGN INSTALLATION (WITH MARKUPS)



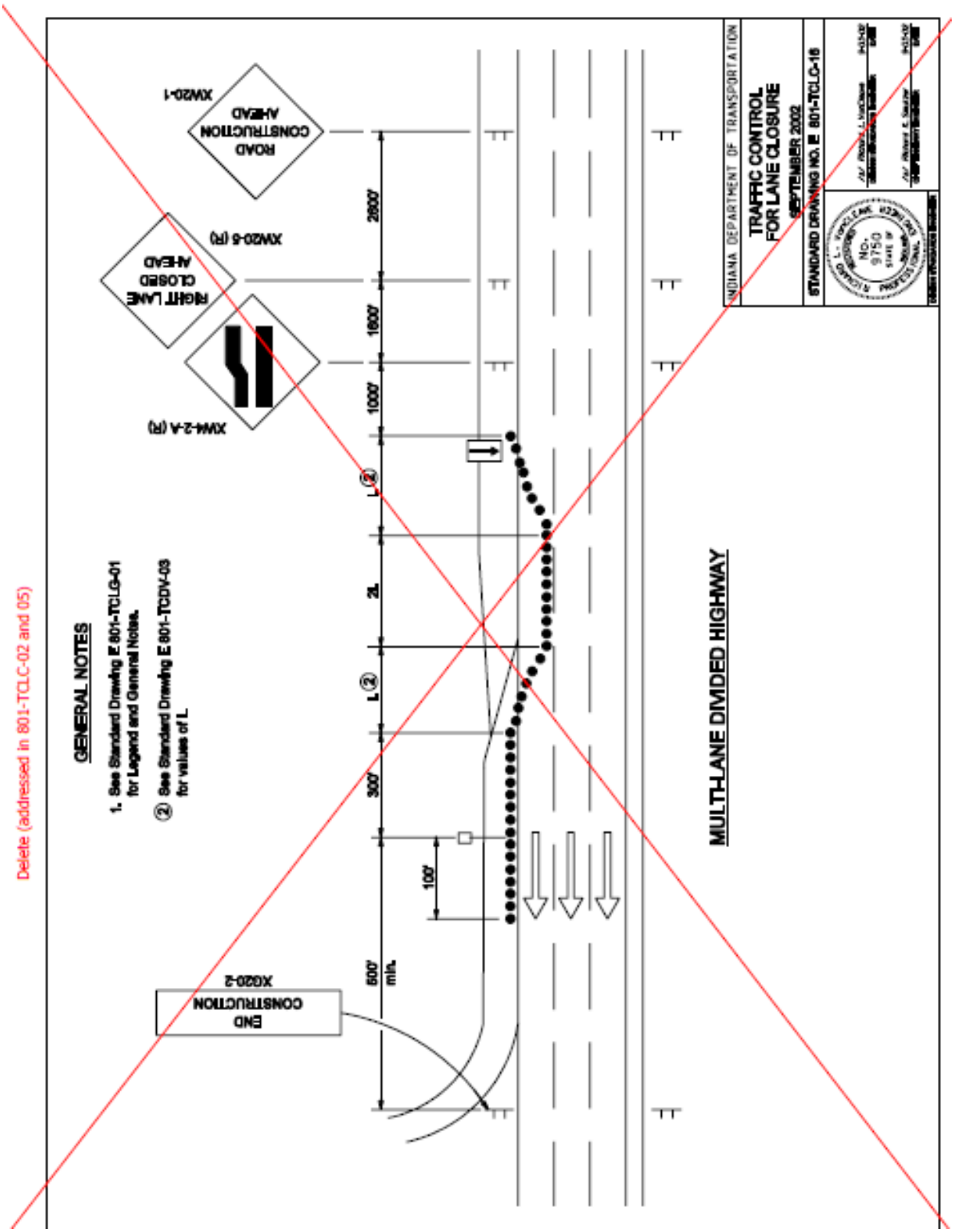
REVISION TO STANDARD DRAWINGS

E 801-TCLC-15 TRAFFIC CONTROL FOR OVERHEAD SIGN INSTALLATION (WITH MARKUPS)



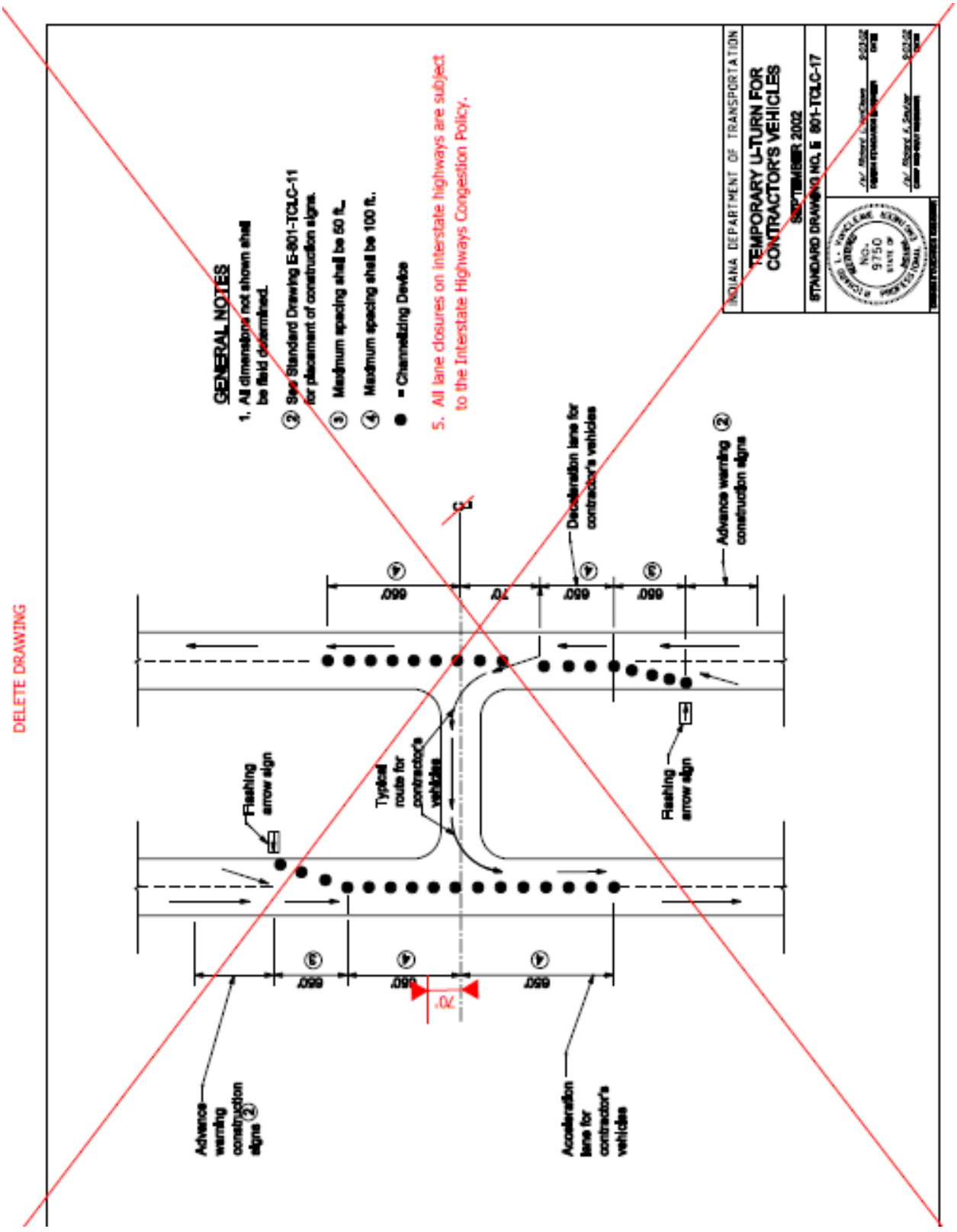
REVISION TO STANDARD DRAWINGS

E 801-TCLC-16 TRAFFIC CONTROL FOR LANE CLOSURE (WITH MARKUPS)



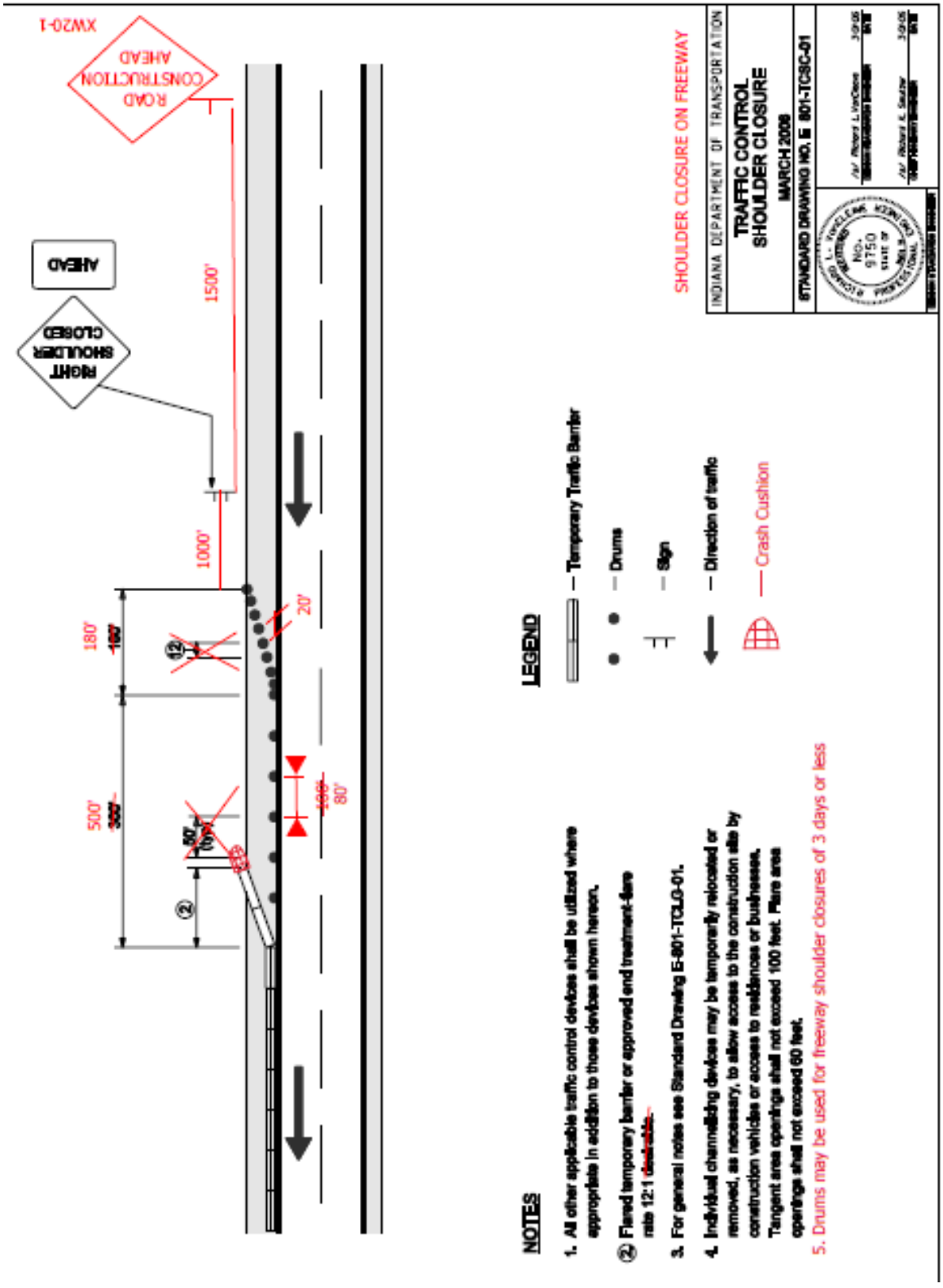
REVISION TO STANDARD DRAWINGS

E 801-TCLC-17 TEMPORARY U-TURN FOR CONTRACTOR'S VEHICLES (WITH MARKUPS)



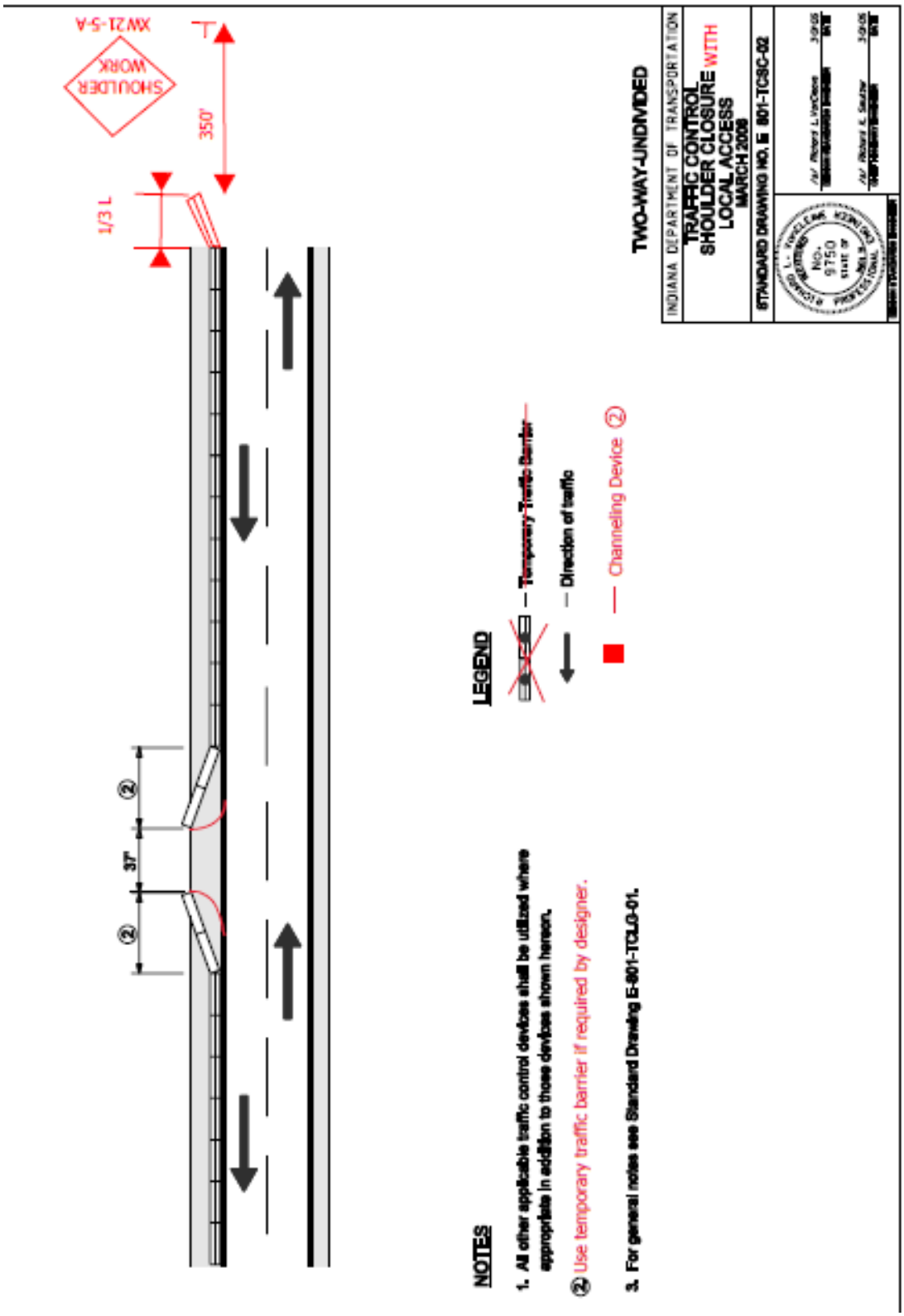
REVISION TO STANDARD DRAWINGS

E 801-TCSC-01 TRAFFIC CONTROL SHOULDER CLOSURE (WITH MARKUPS)



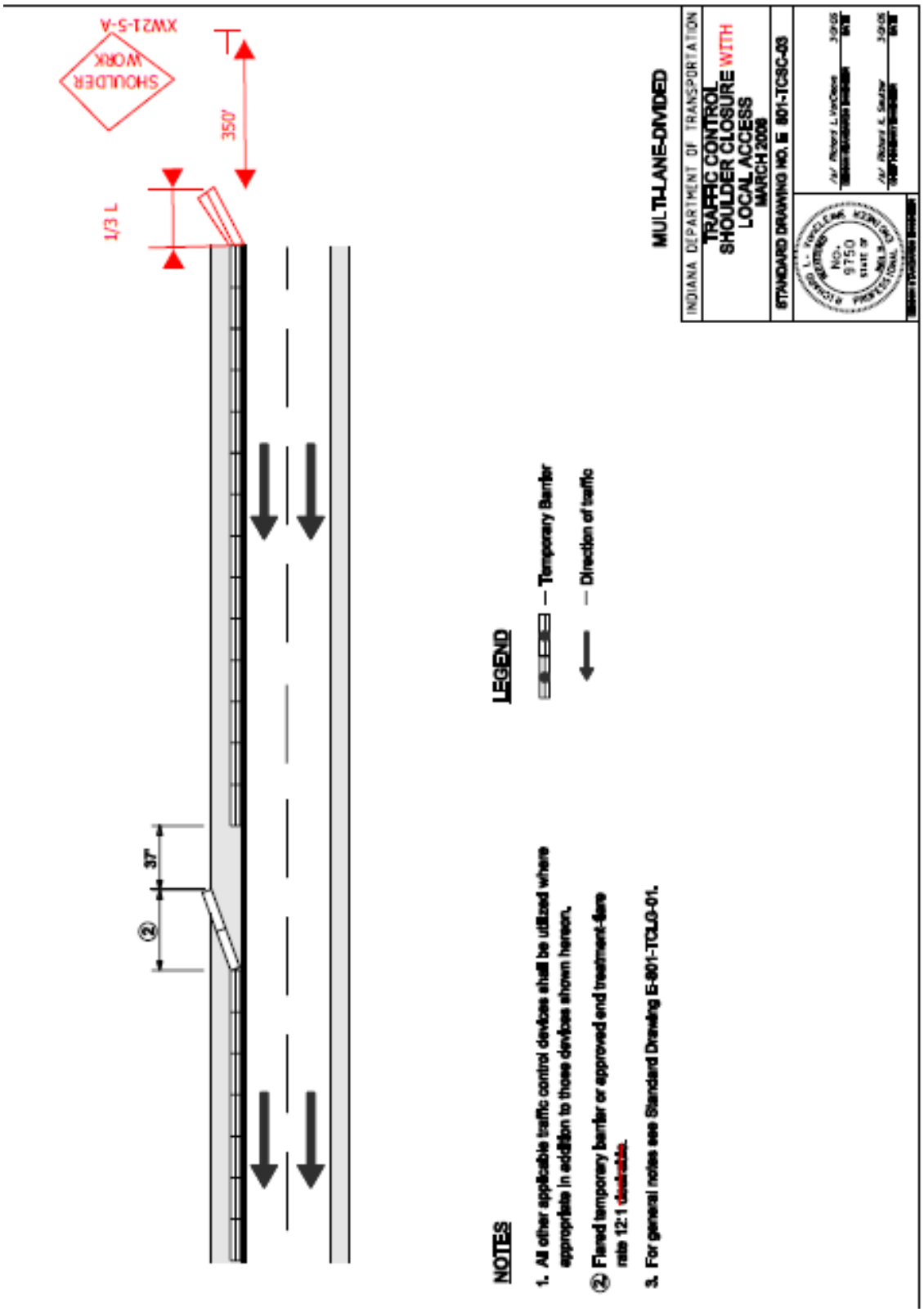
REVISION TO STANDARD DRAWINGS

E 801-TCSC-02 TRAFFIC CONTROL SHOULDER CLOSURE LOCAL ACCESS (WITH MARKUPS)



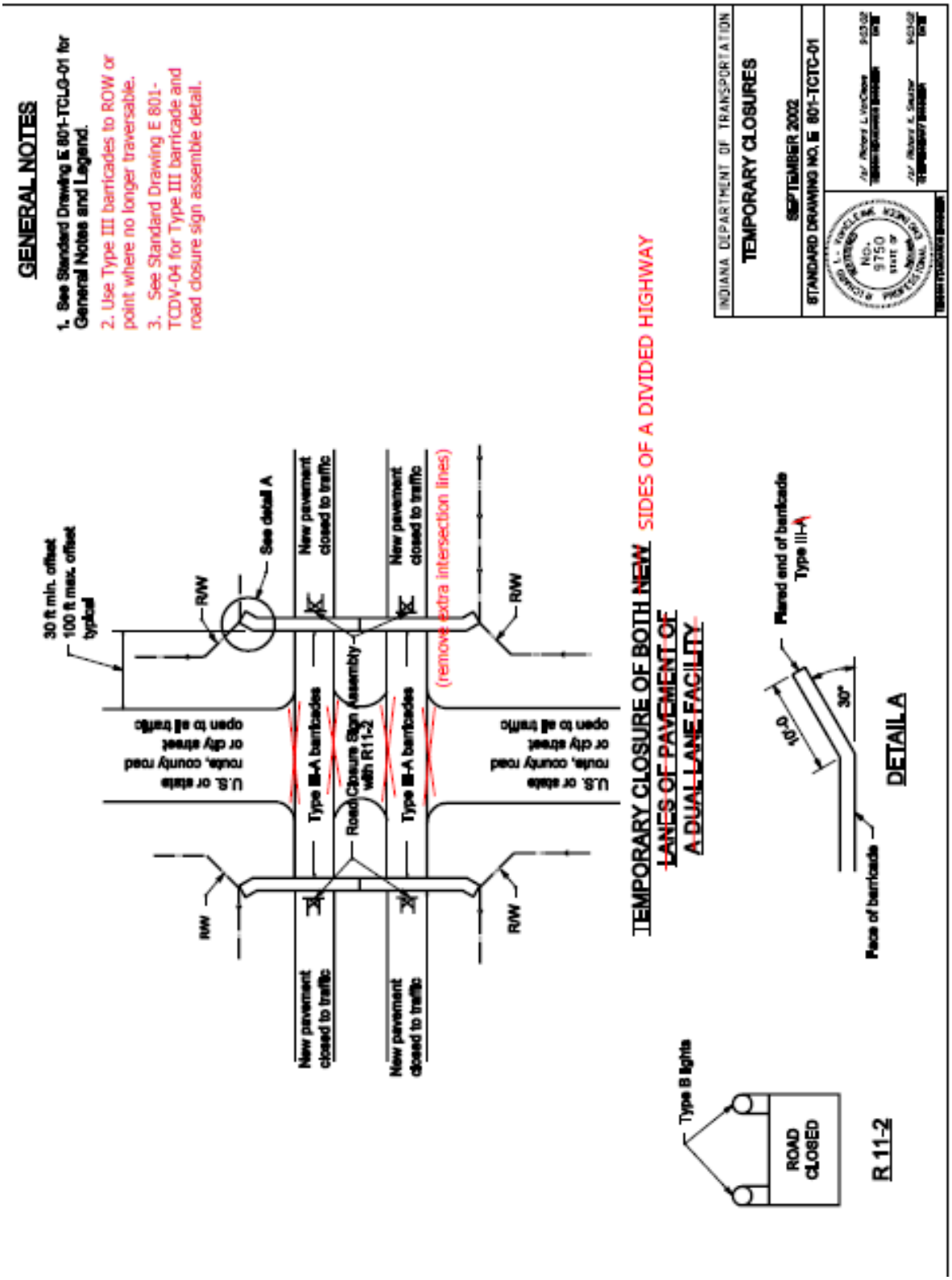
REVISION TO STANDARD DRAWINGS

E 801-TCSC-03 TRAFFIC CONTROL SHOULDER CLOSURE LOCAL ACCESS (WITH MARKUPS)



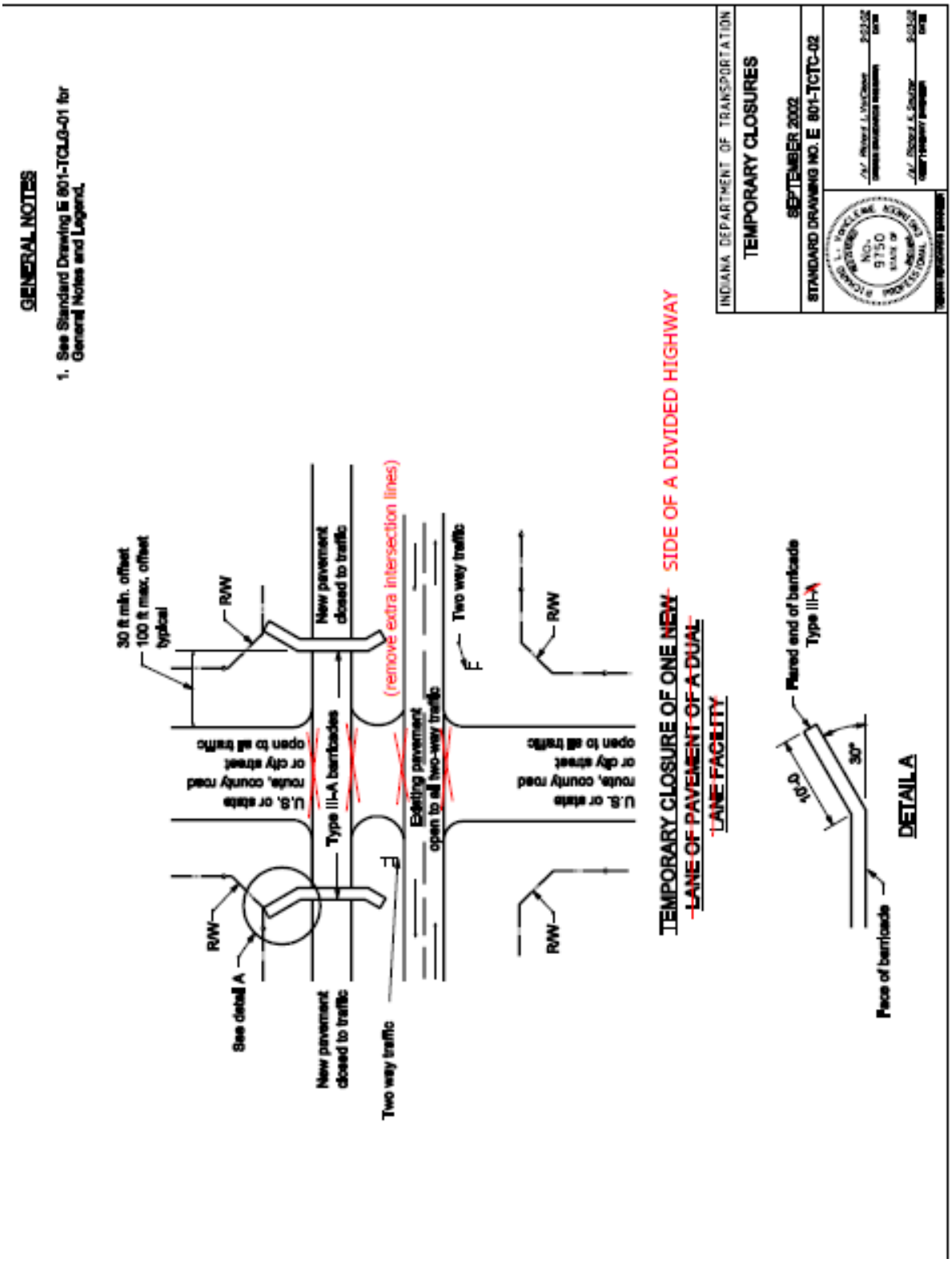
REVISION TO STANDARD DRAWINGS

E 801-TCTC-01 TEMPORARY CLOSURES (WITH MARKUPS)



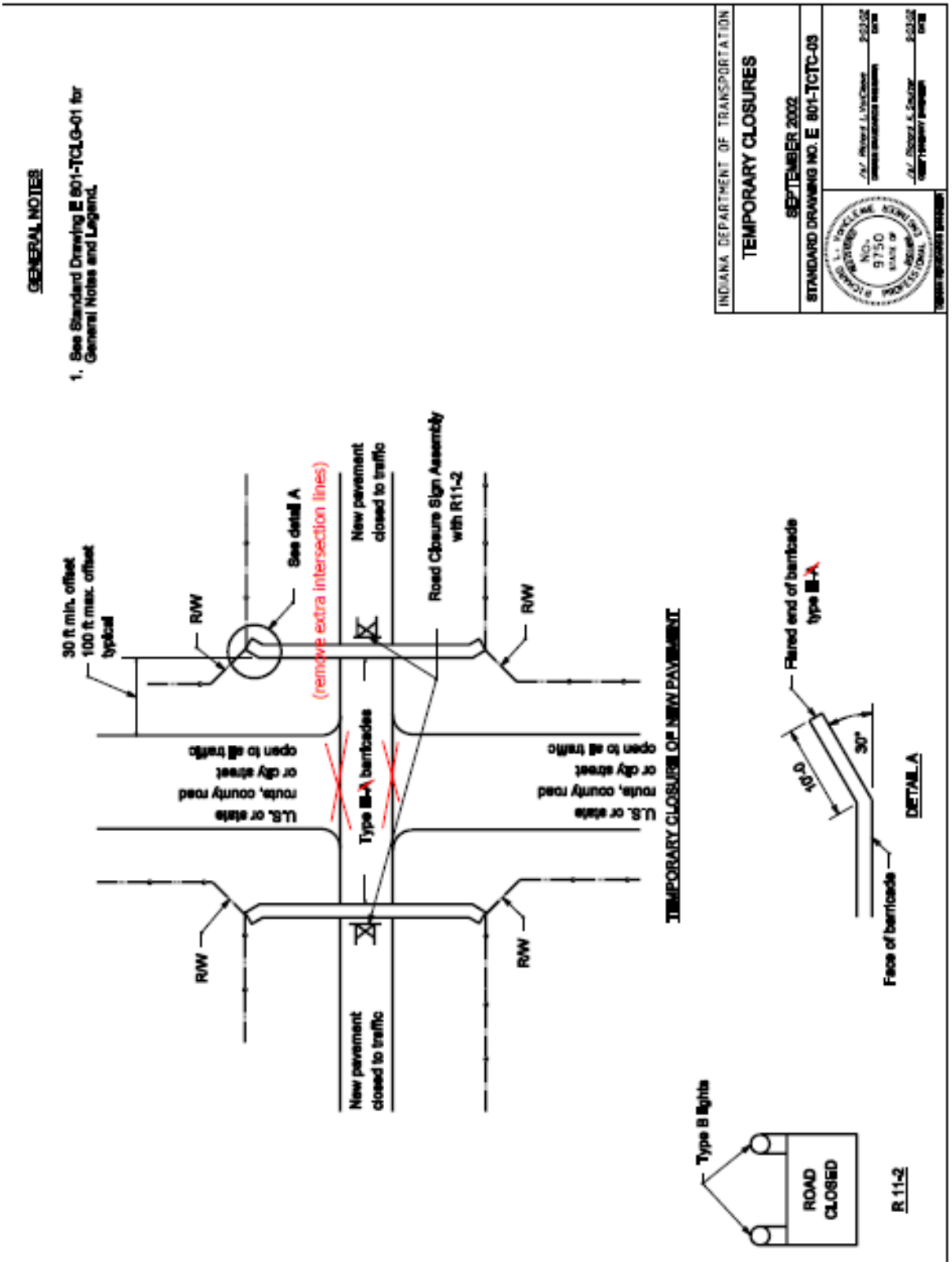
REVISION TO STANDARD DRAWINGS

E 801-TCTC-02 TEMPORARY CLOSURES (WITH MARKUPS)



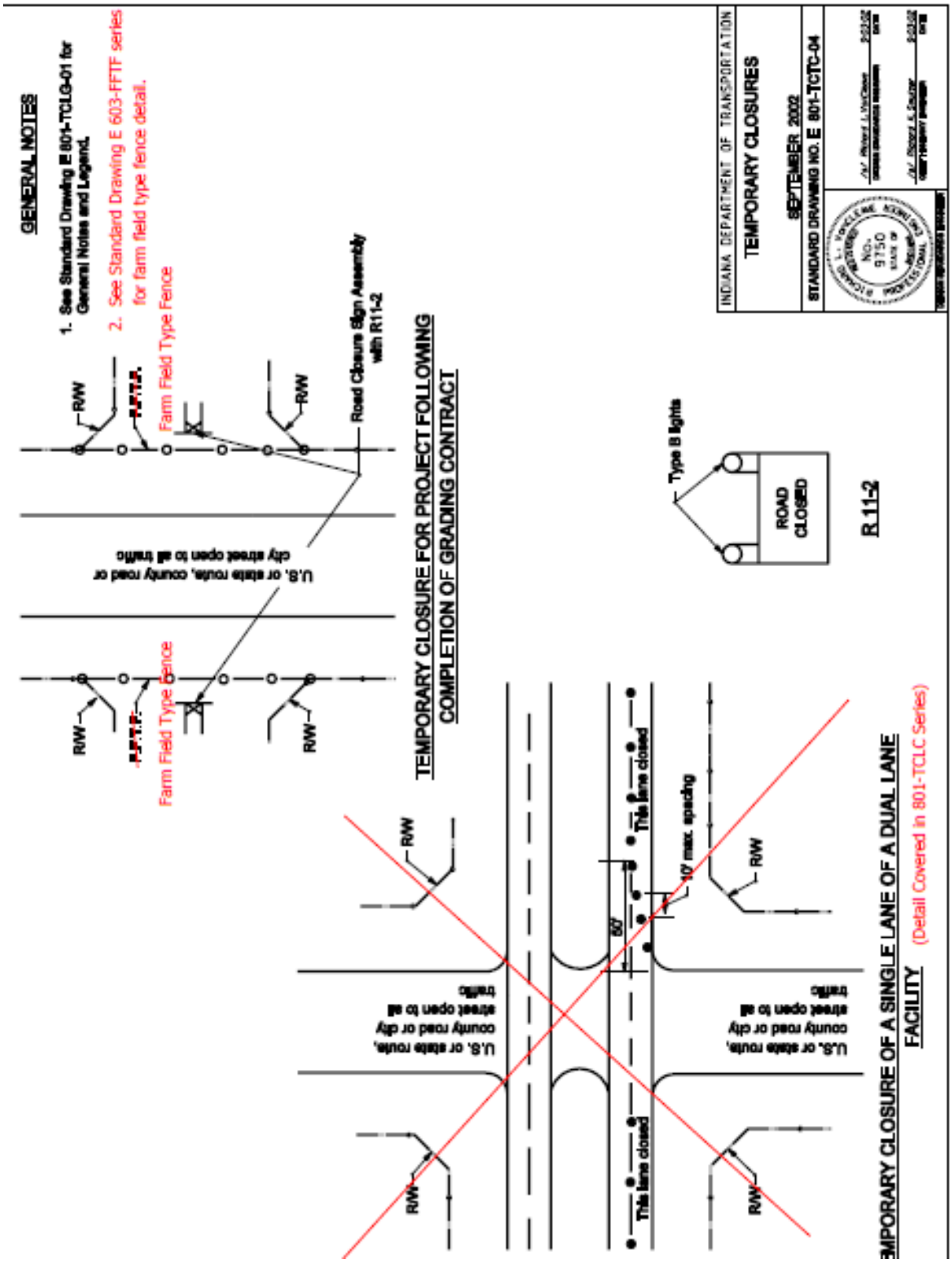
REVISION TO STANDARD DRAWINGS

E 801-TCTC-03 TEMPORARY CLOSURES (WITH MARKUPS)



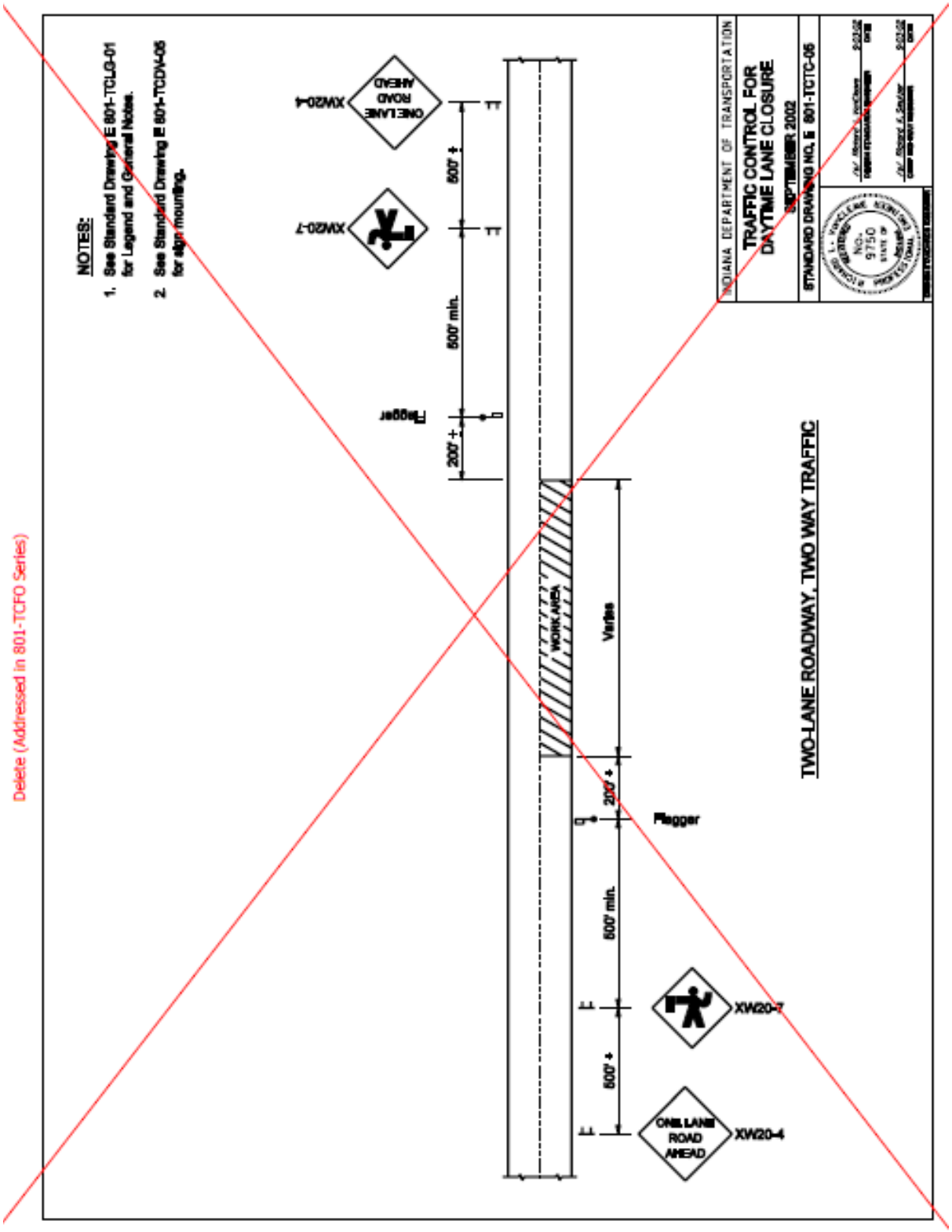
REVISION TO STANDARD DRAWINGS

E 801-TCTC-04 TEMPORARY CLOSURES (WITH MARKUPS)



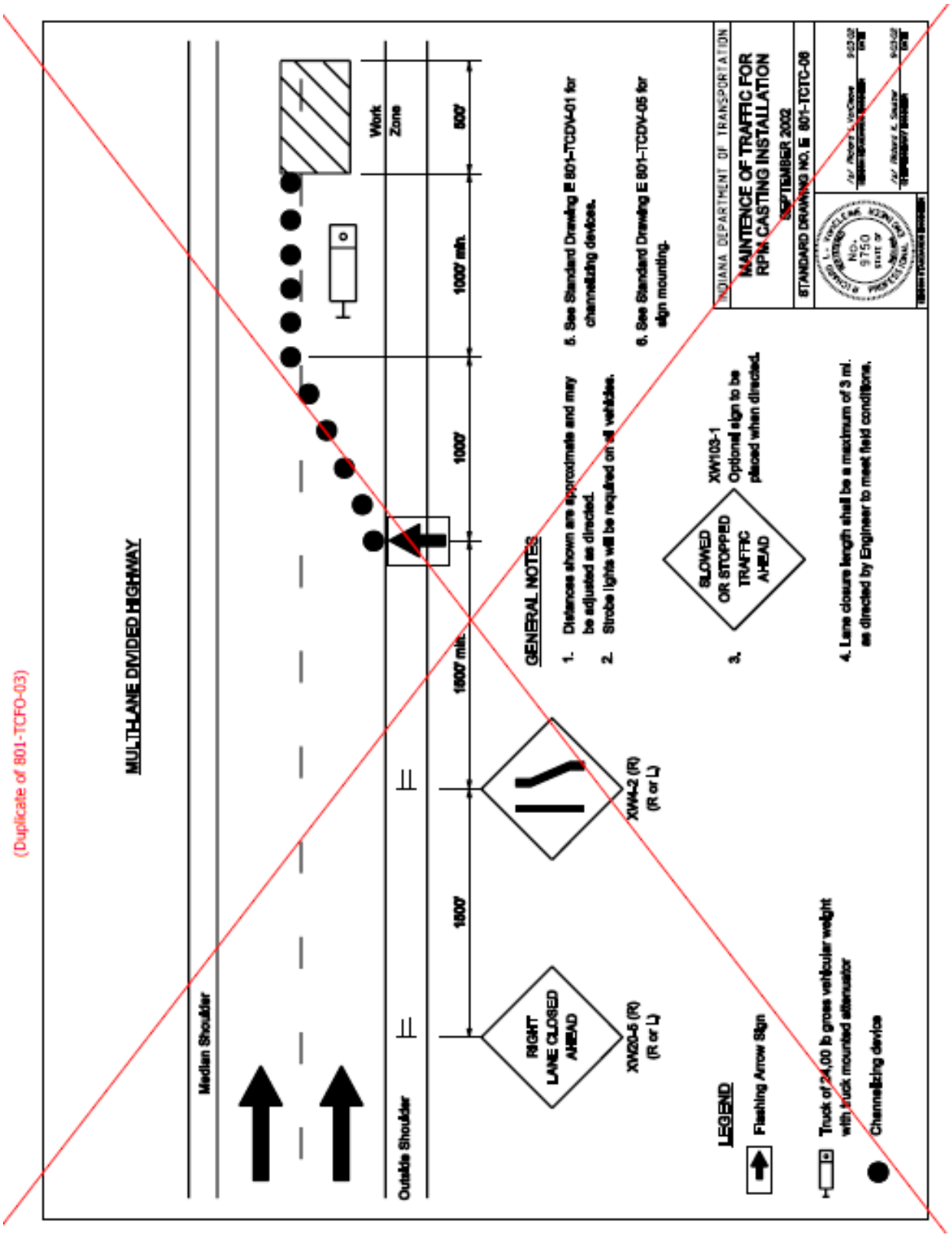
REVISION TO STANDARD DRAWINGS

E 801-TCTC-05 TRAFFIC CONTROL FOR DAYTIME LANE CLOSURE (WITH MARKUPS)



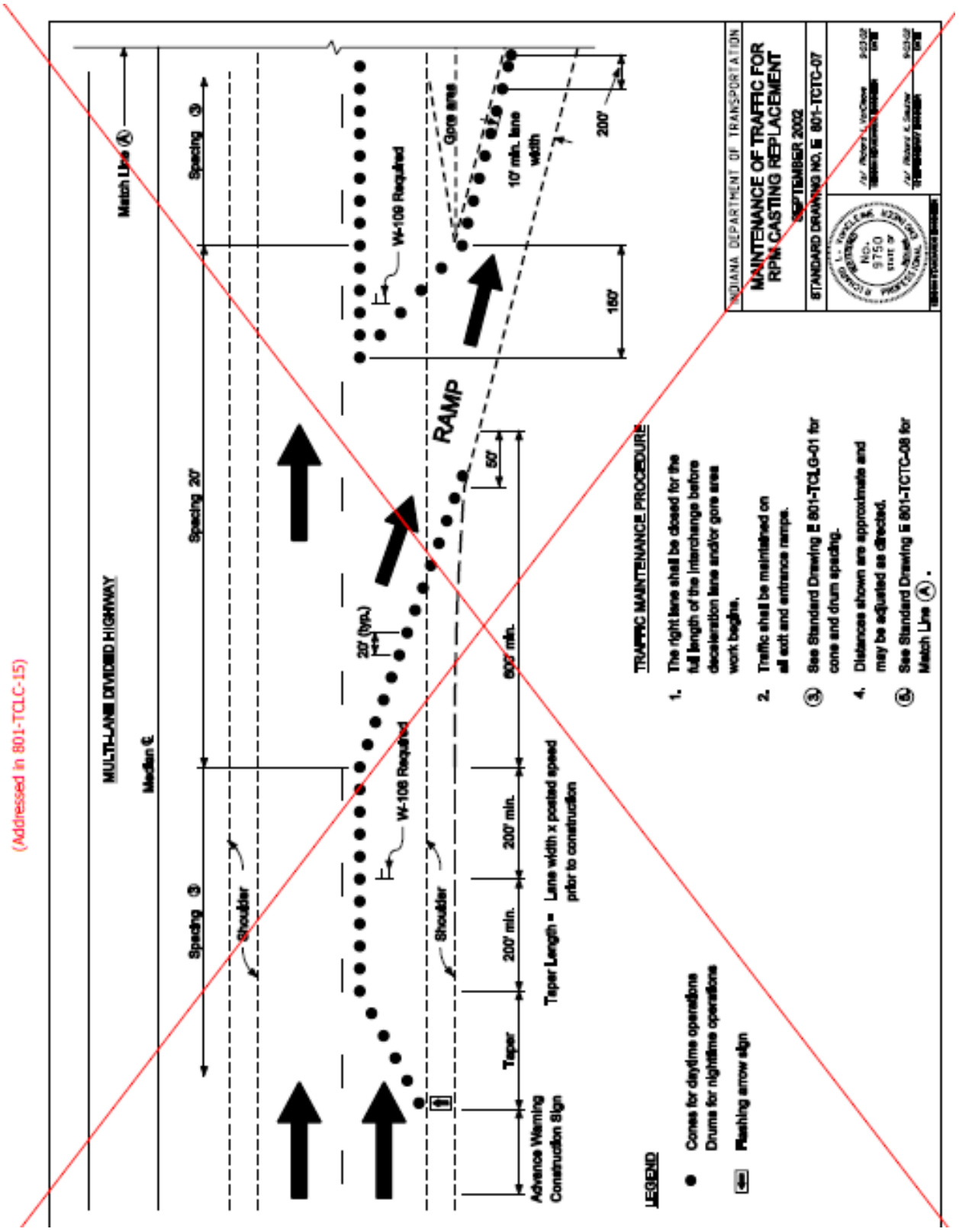
REVISION TO STANDARD DRAWINGS

E 801-TCTC-06 MAINTENCE OF TRAFFIC CONTROL FOR RPM CASTING INSTALLATION CLOSURE (WITH MARKUPS)



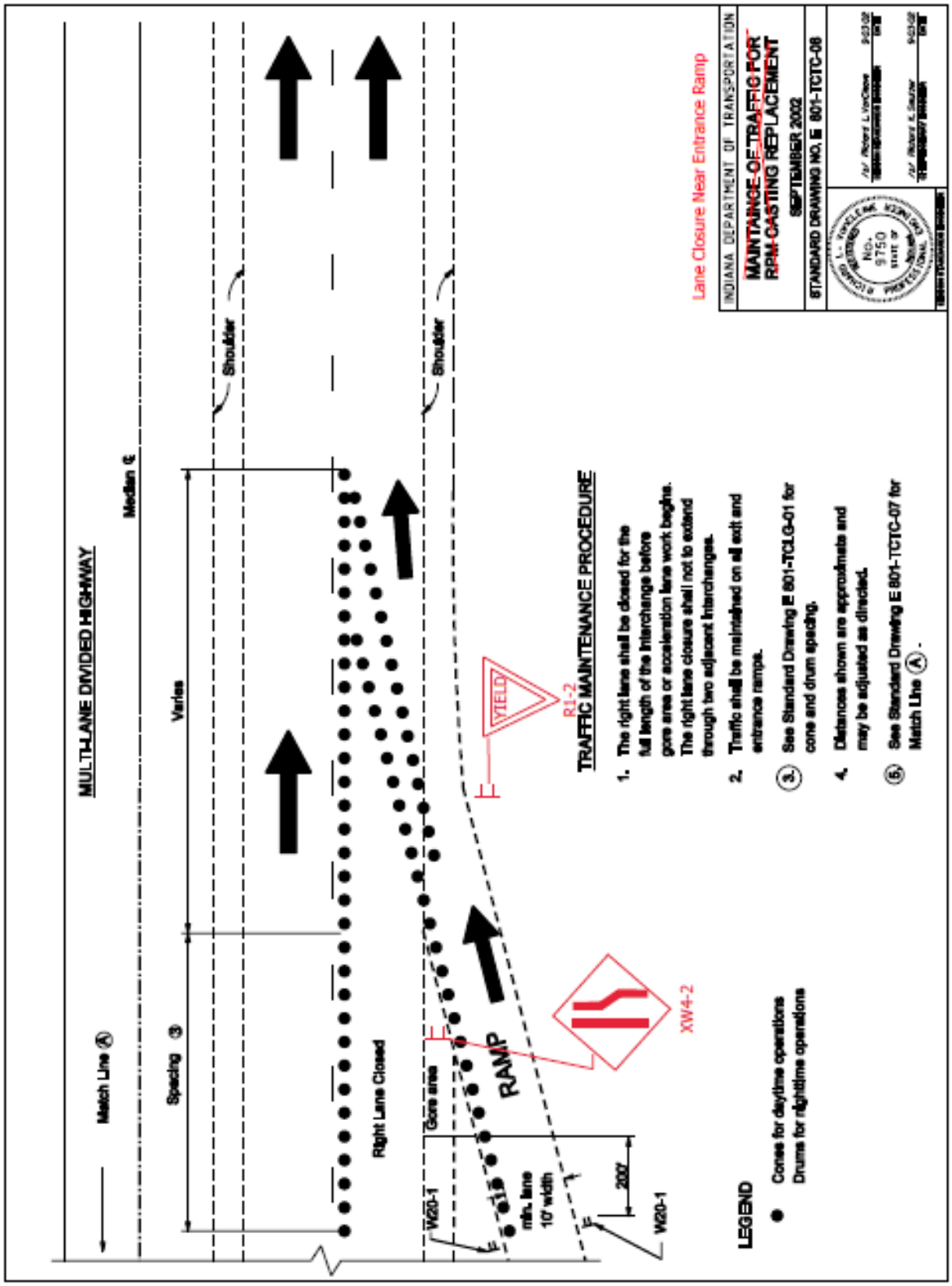
REVISION TO STANDARD DRAWINGS

E 801-TCTC-07 MAINTENANCE OF TRAFFIC CONTROL FOR RPM CASTING REPLACEMENT (WITH MARKUPS)



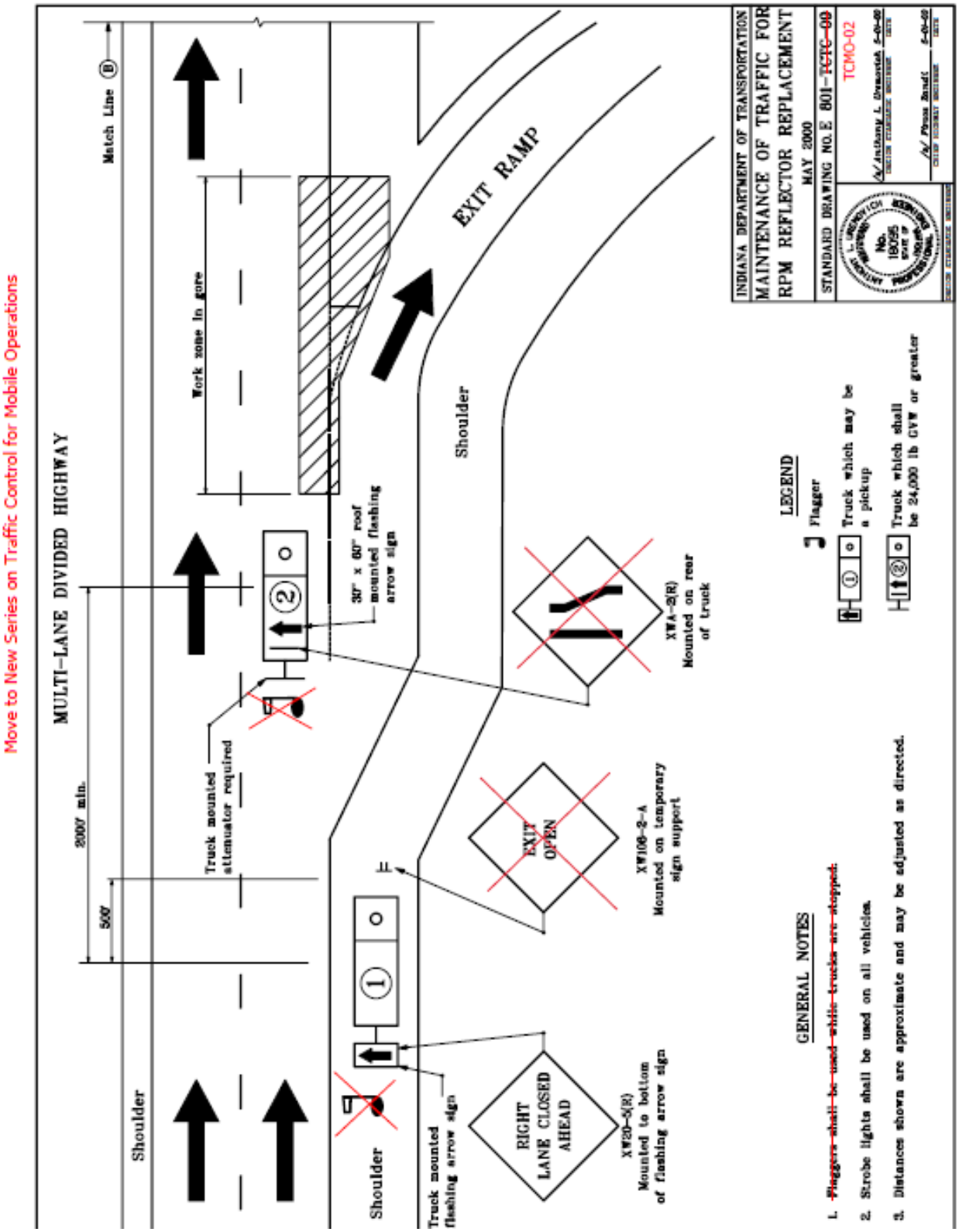
REVISION TO STANDARD DRAWINGS

E 801-TCTC-08 MAINTAINCE OF TRAFFIC CONTROL FOR RPM CASTING REPLACEMENT (WITH MARKUPS)



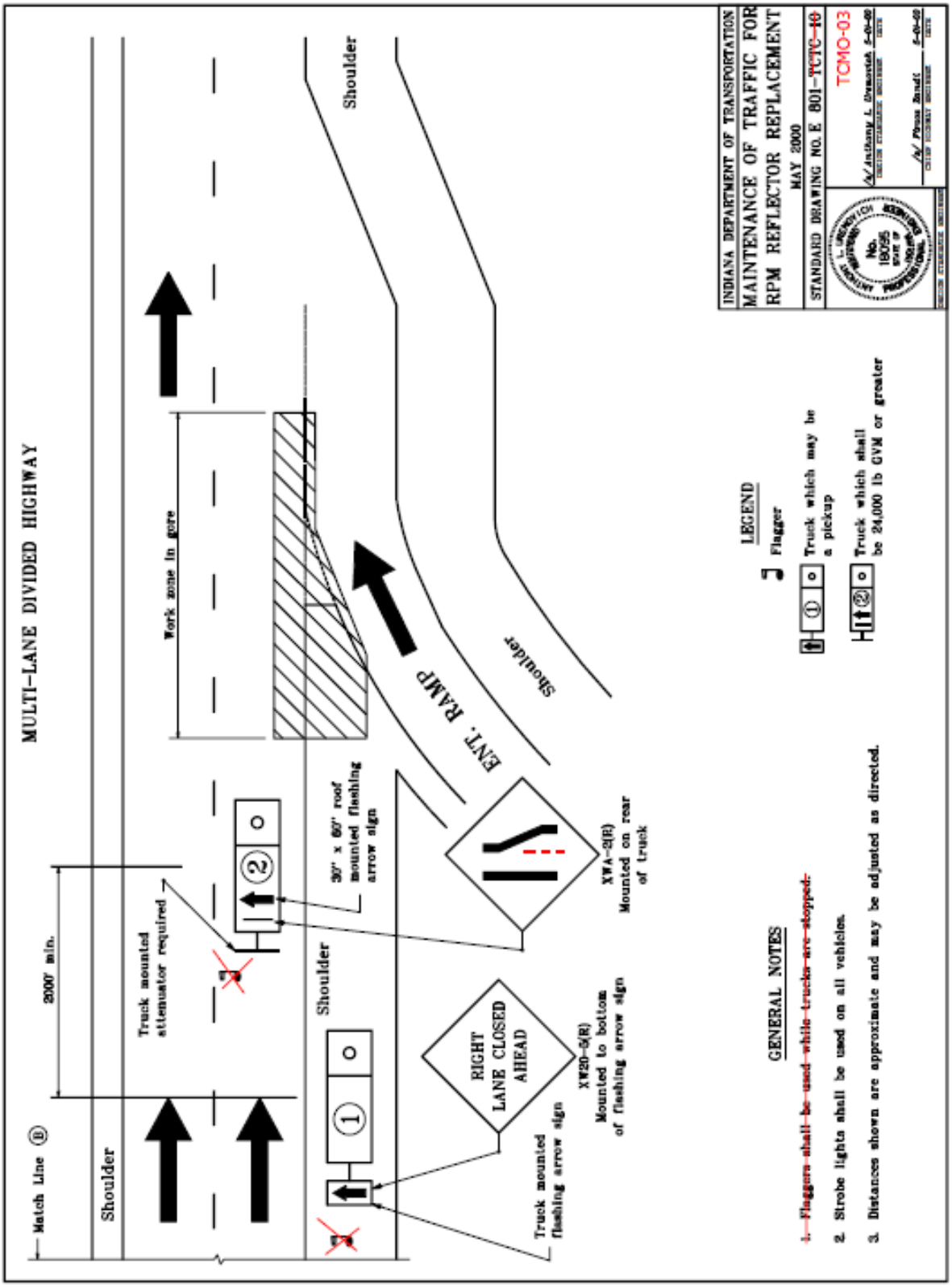
REVISION TO STANDARD DRAWINGS

E 801-TCTC-09 MAINTENANCE OF TRAFFIC FOR RPM REFLECTOR REPLACEMENT
(WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

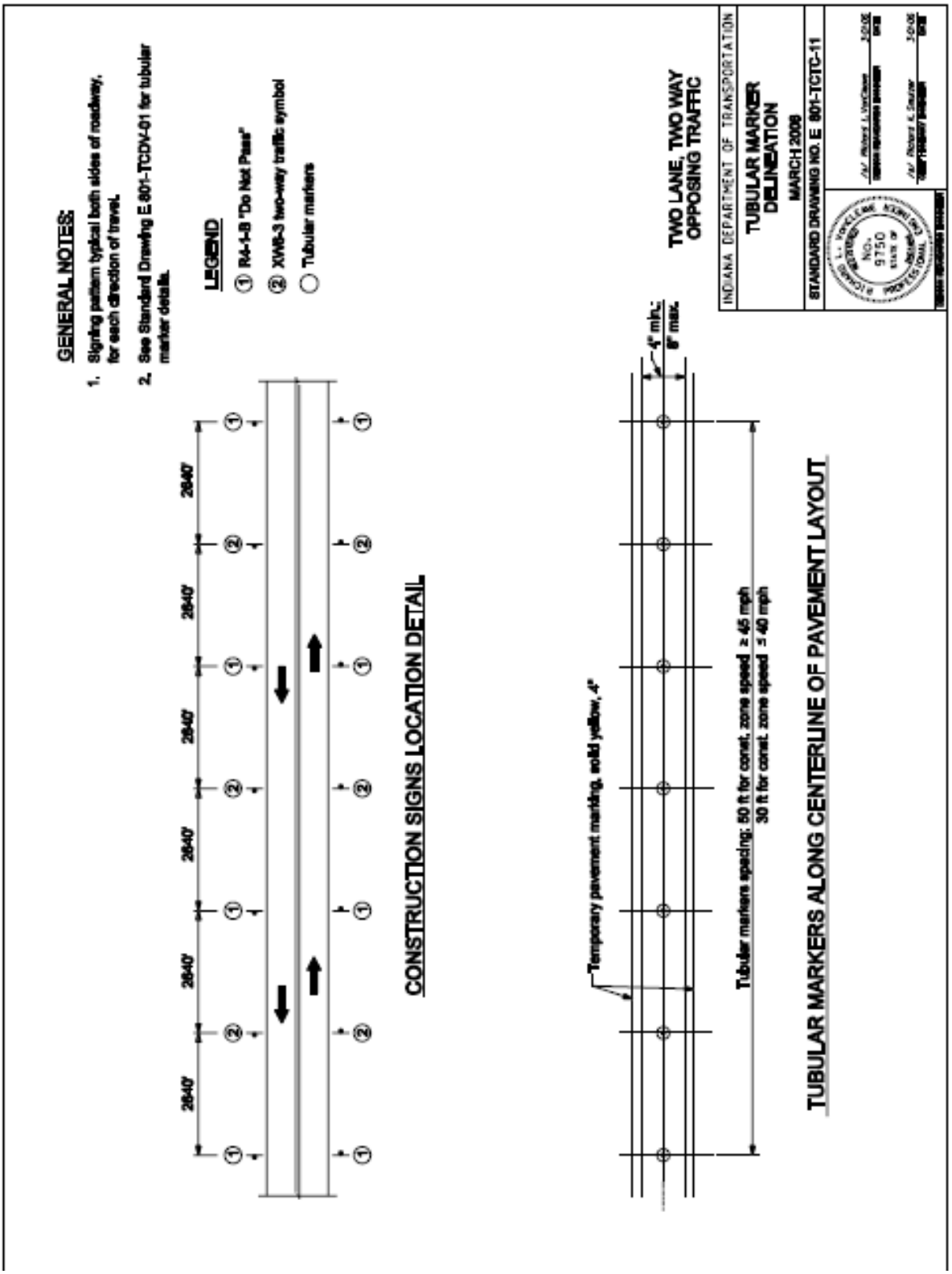
E 801-TCTC-10 MAINTENANCE OF TRAFFIC FOR RPM REFLECTOR REPLACEMENT (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

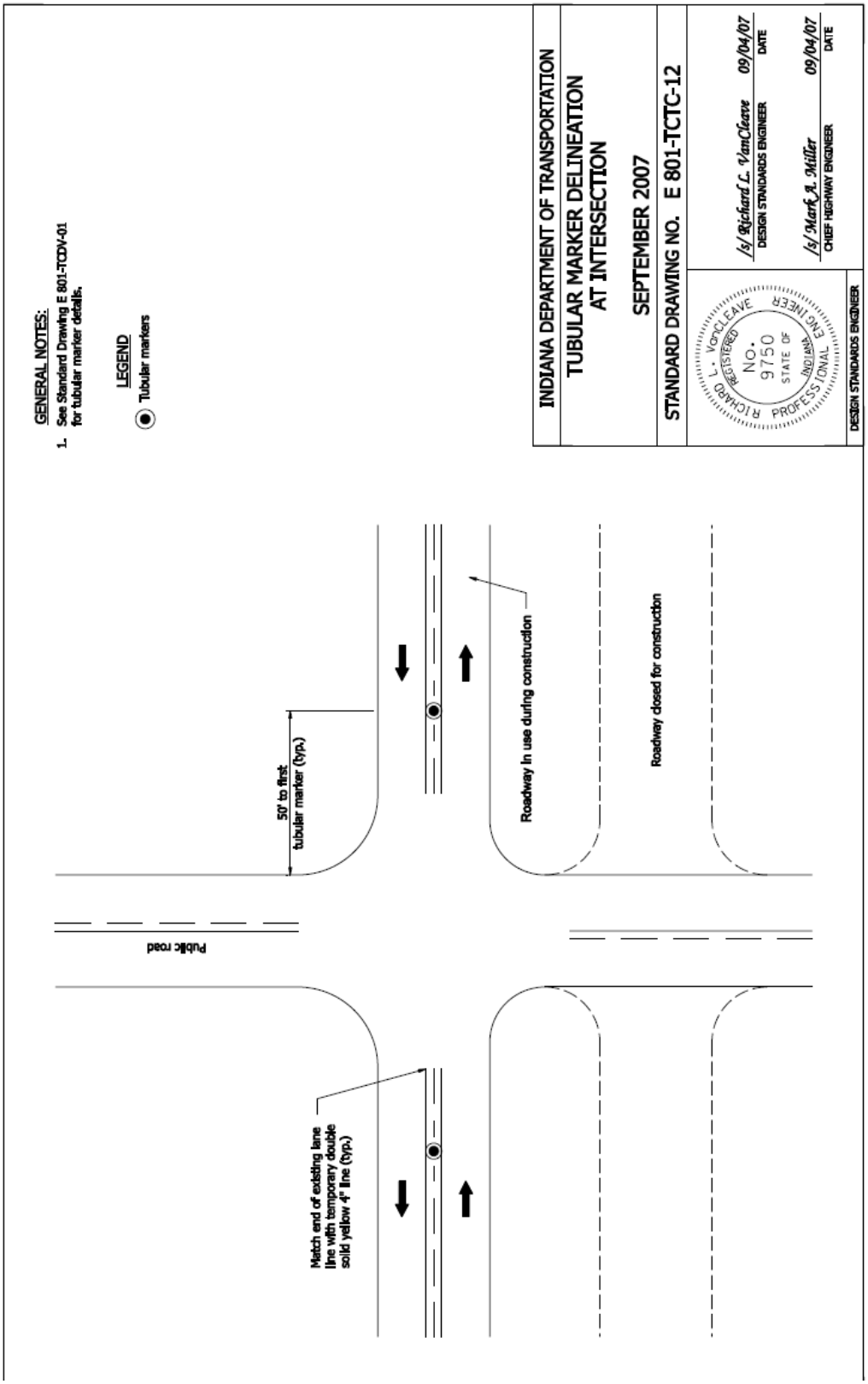
E 801-TCTC-11 TUBULAR MARKER DELINEATION (WITH MARKUPS)

Move to TCCO Series



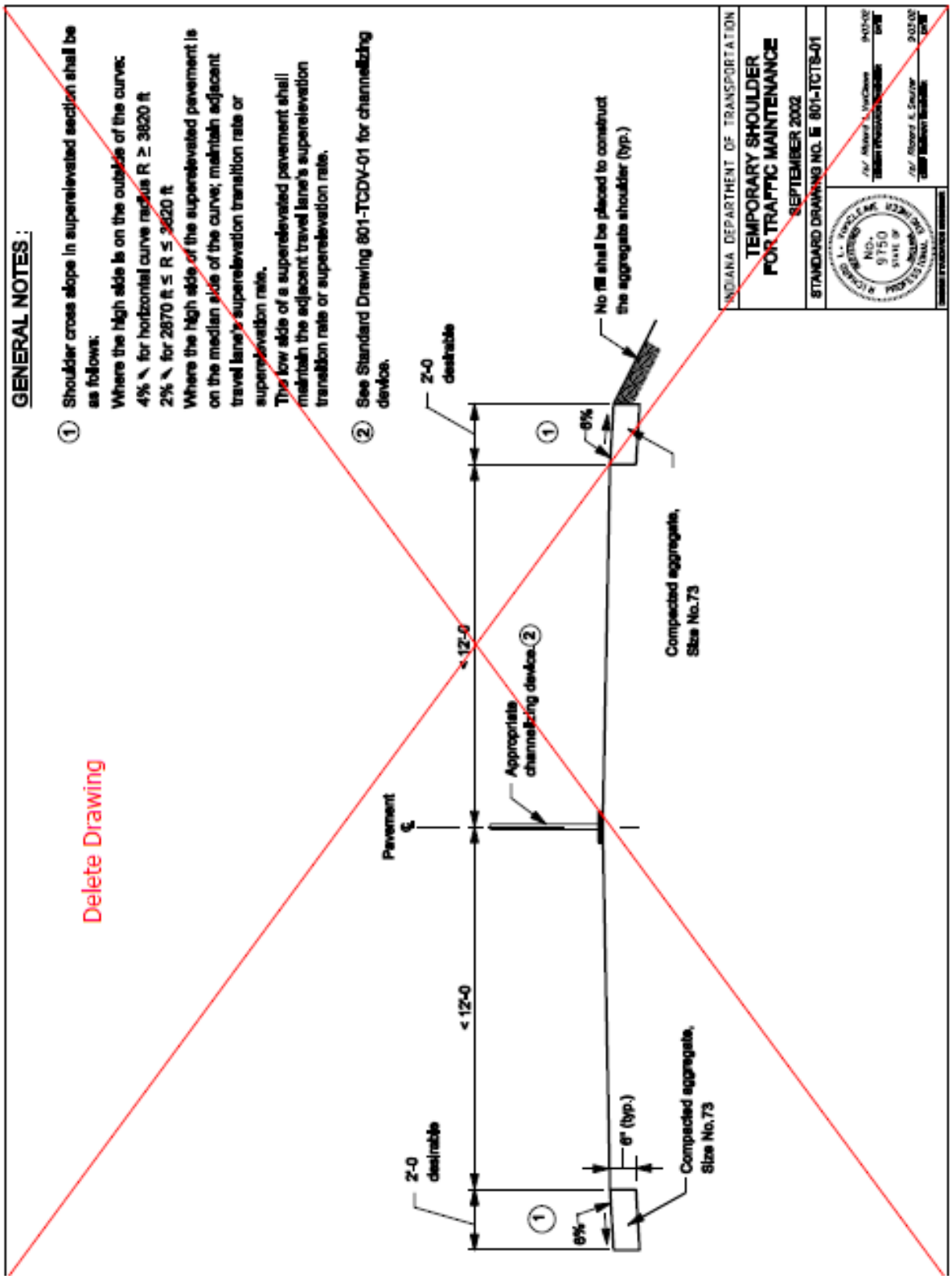
REVISION TO STANDARD DRAWINGS

E 801-TCTC-12 TUBULAR MARKER DELINEATION AT INTERSECTION (WITH MARKUPS)



REVISION TO STANDARD DRAWINGS

E 801-TCTS-01 TEMPORARY SHOULDER FOR TRAFFIC MAINTENANCE



REVISION TO STANDARD DRAWINGS

E 801-TCCO-01 TEMPORARY CROSSOVERS INDEX AND GENERAL NOTES (DRAFT)

GENERAL NOTES:

1. See Standard Drawings E 801-TCDV-04 thru -07 for barricade and construction sign mounting information.
2. For channelization devices see Standard Drawing E 801-TCDV-02.
3. See Standard Drawing E 801-TCLG-01 for additional legend symbols, notes and (9) through (15).
4. A minimum 100 ft tangent section, at a 7° to 11° angle, shall be required between the curves on a Type A or Type B Crossover.

INDIANA DEPARTMENT OF TRANSPORTATION

TEMPORARY CROSSOVERS
INDEX AND GENERAL NOTES

SEPTEMBER 2019

STANDARD DRAWING NO. E 801-TCCO-01

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

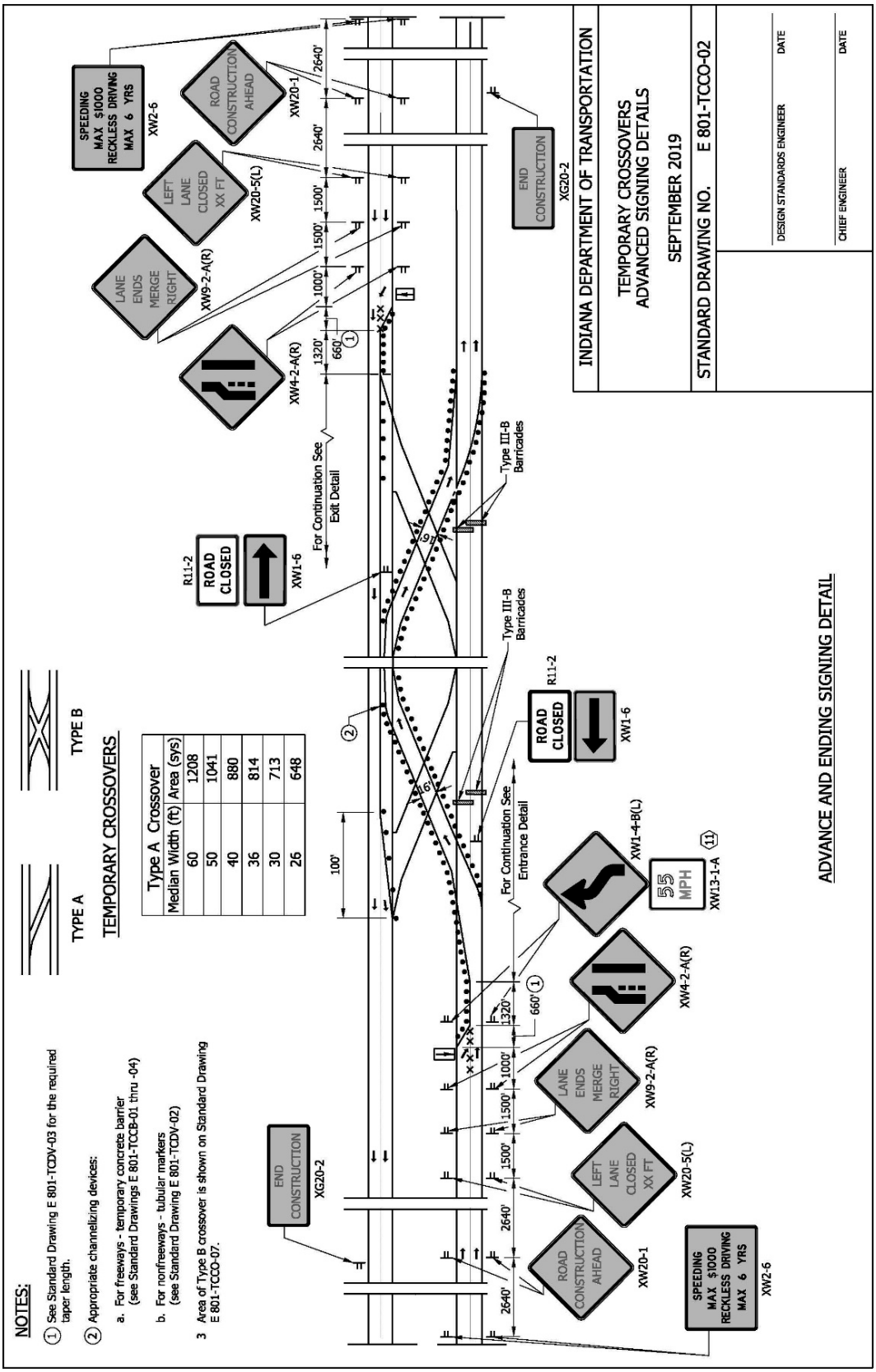
INDEX

LEGEND

1. Temporary Pavement Marking, White, 4"
2. Temporary Pavement Marking, Yellow, 4"
3. Temporary Pavement Marking, White, 8"
4. Temporary Pavement Marking, Yellow, 8"
5. Line, Solid Yellow, 4", Remove
6. Line, Broken White, 5", Remove
7. Temporary Concrete Barrier - Freeways
   Channelizing Devices - Nonfreeway Multilane Divided Roadways

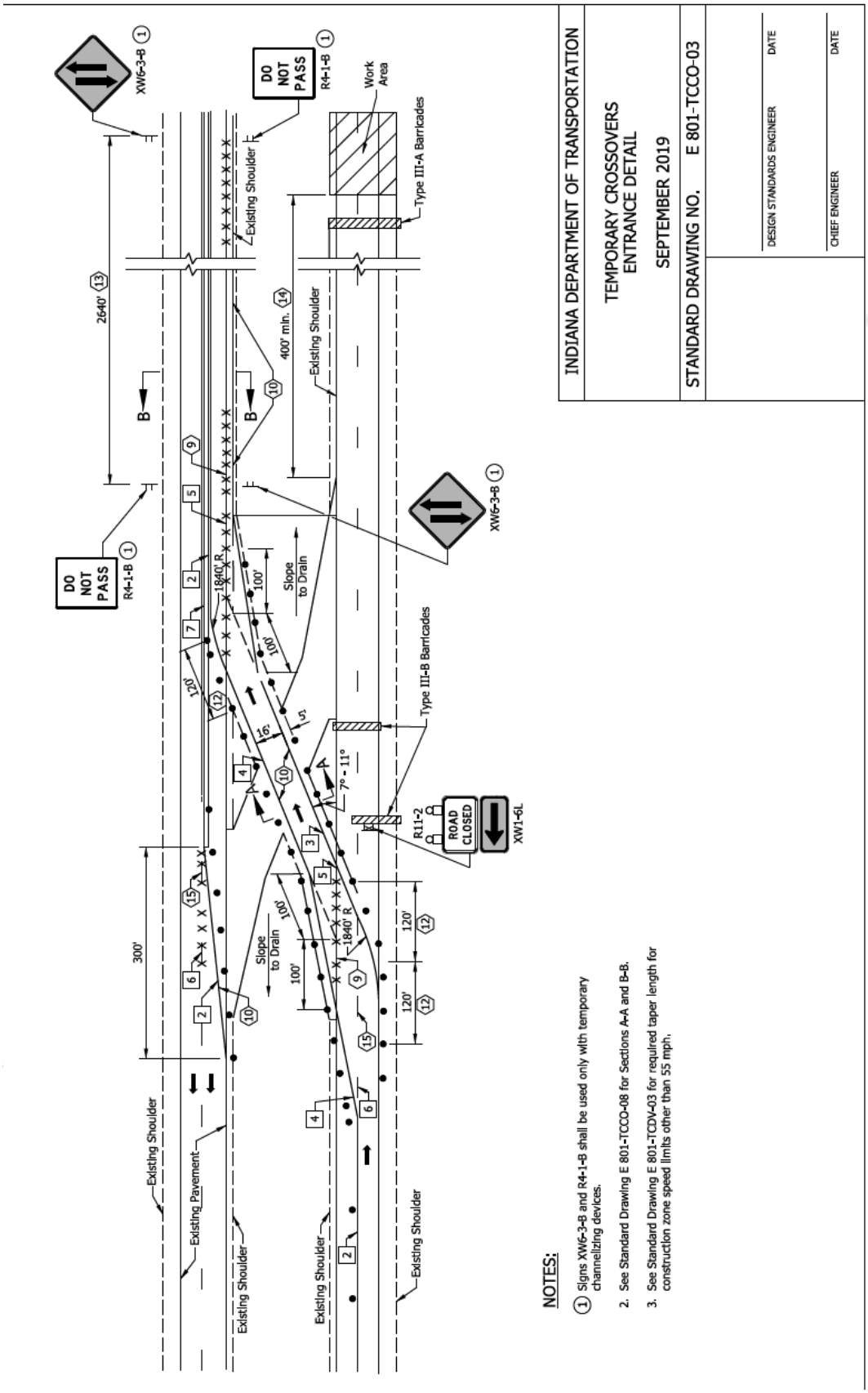
REVISION TO STANDARD DRAWINGS

E 801-TCCO-02 TEMPORARY CROSSOVERS ADVANCED SIGNING DETAILS (DRAFT)



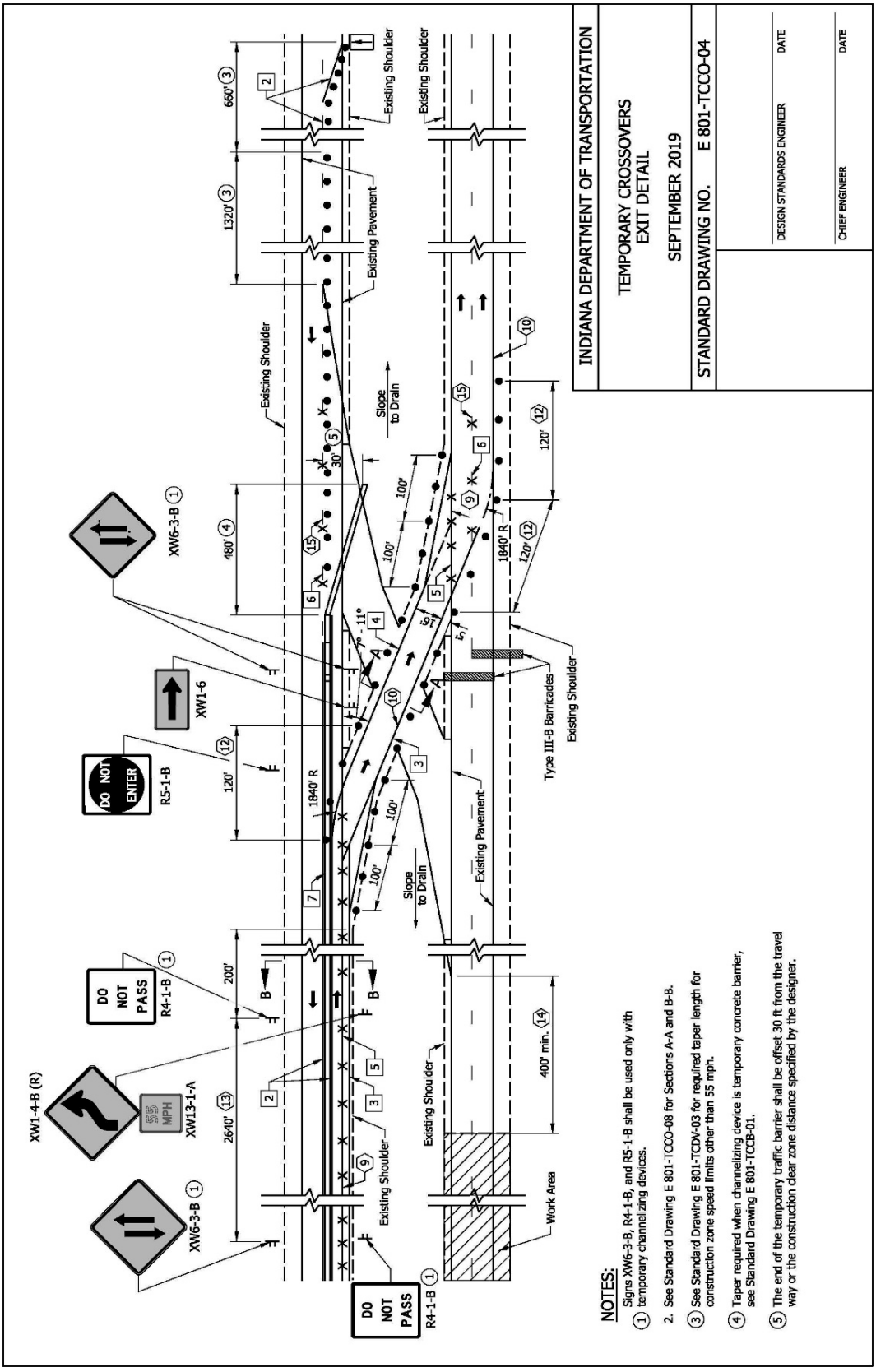
REVISION TO STANDARD DRAWINGS

E 801-TCCO-03 TEMPORARY CROSSOVERS ENTRANCE DETAIL (DRAFT)



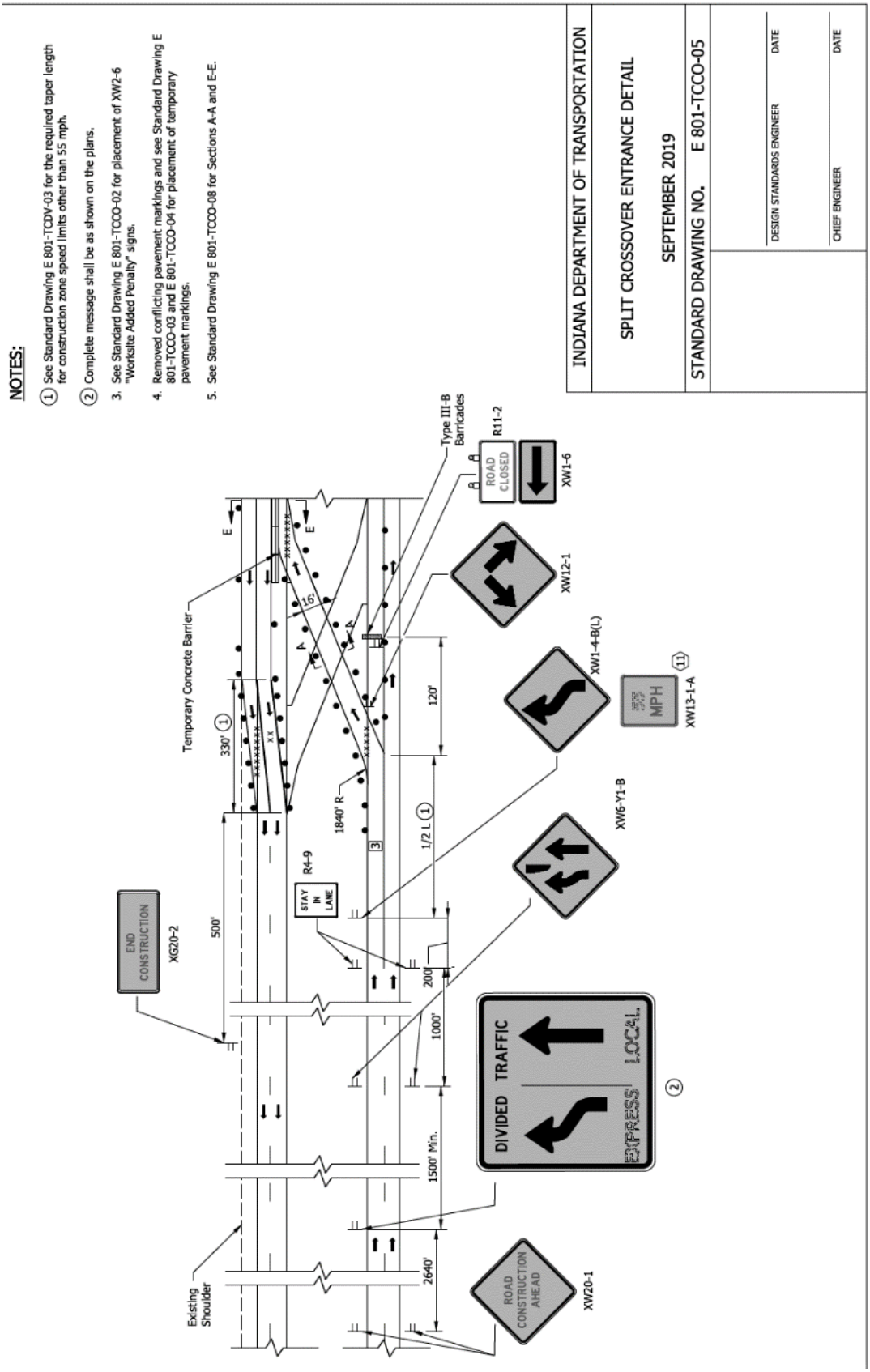
REVISION TO STANDARD DRAWINGS

E 801-TCCO-04 TEMPORARY CROSSOVERS EXIT DETAIL (DRAFT)



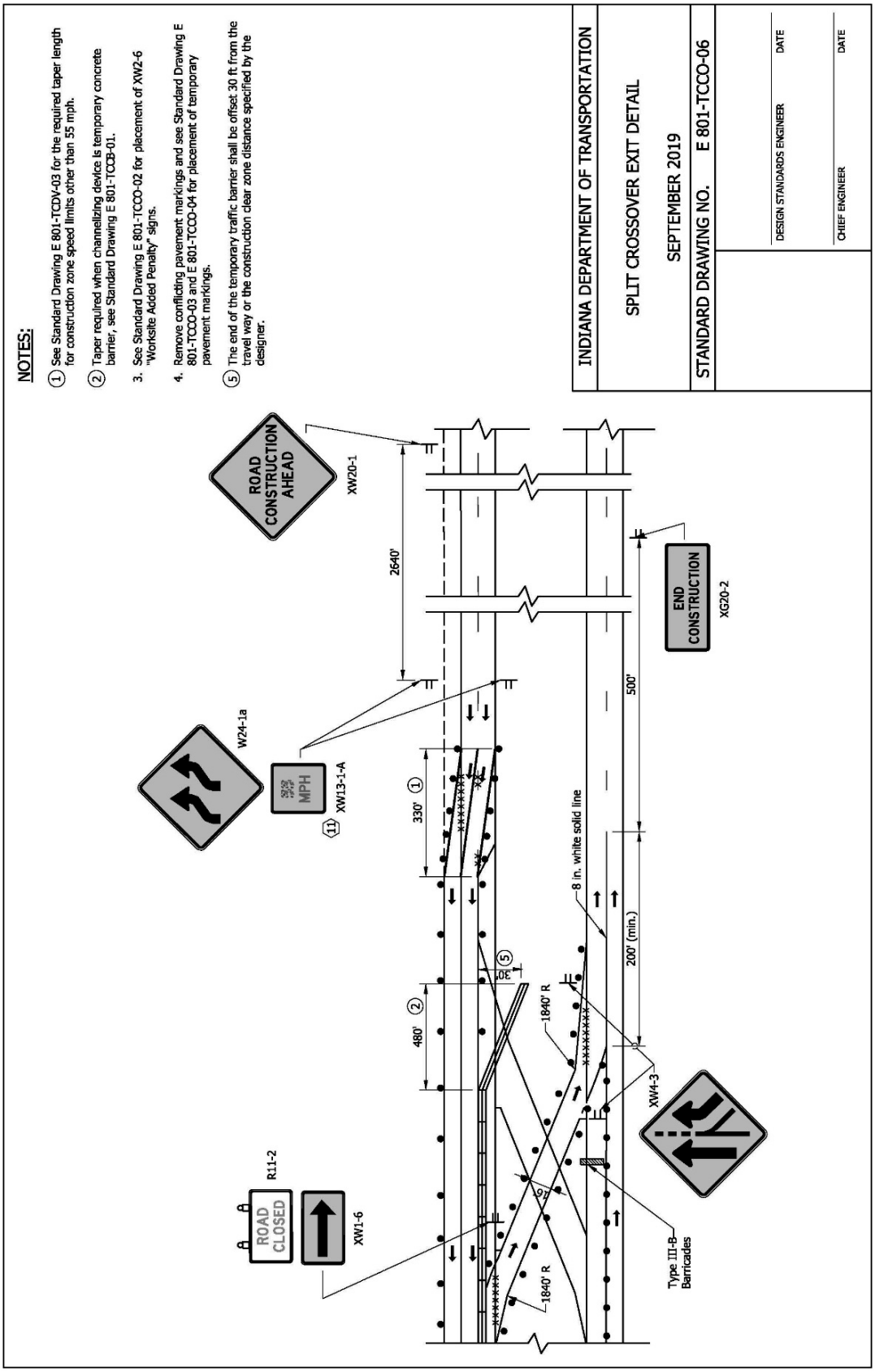
REVISION TO STANDARD DRAWINGS

E 801-TCCO-05 SPLIT CROSSOVER ENTRANCE DETAIL (DRAFT)



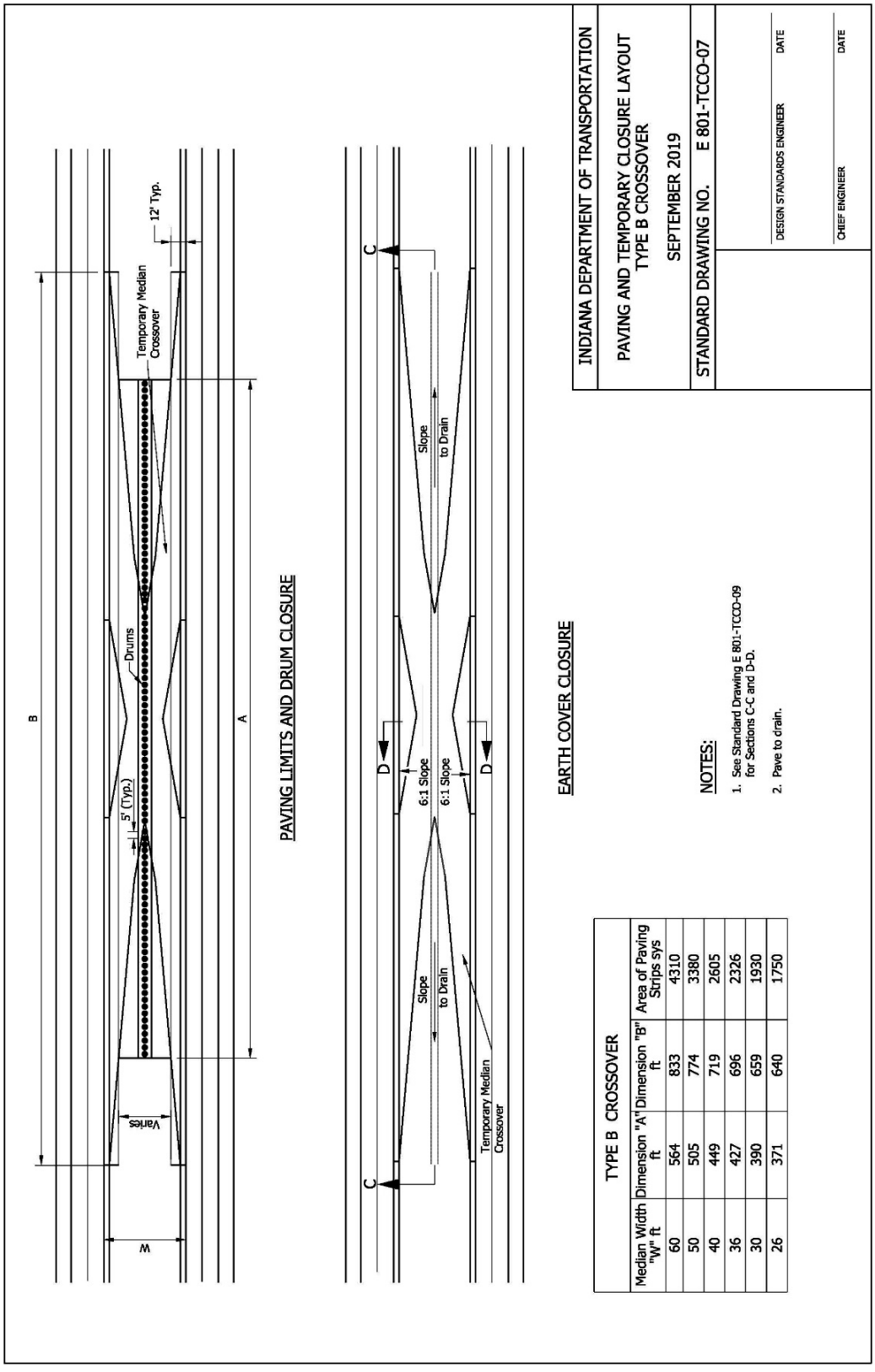
REVISION TO STANDARD DRAWINGS

E 801-TCCO-06 SPLIT CROSSOVER EXIT DETAIL (DRAFT)



REVISION TO STANDARD DRAWINGS

E 801-TCCO-07 PAVING AND TEMPORARY CLOSURE LAYOUT TYPE B CROSSOVER (DRAFT)

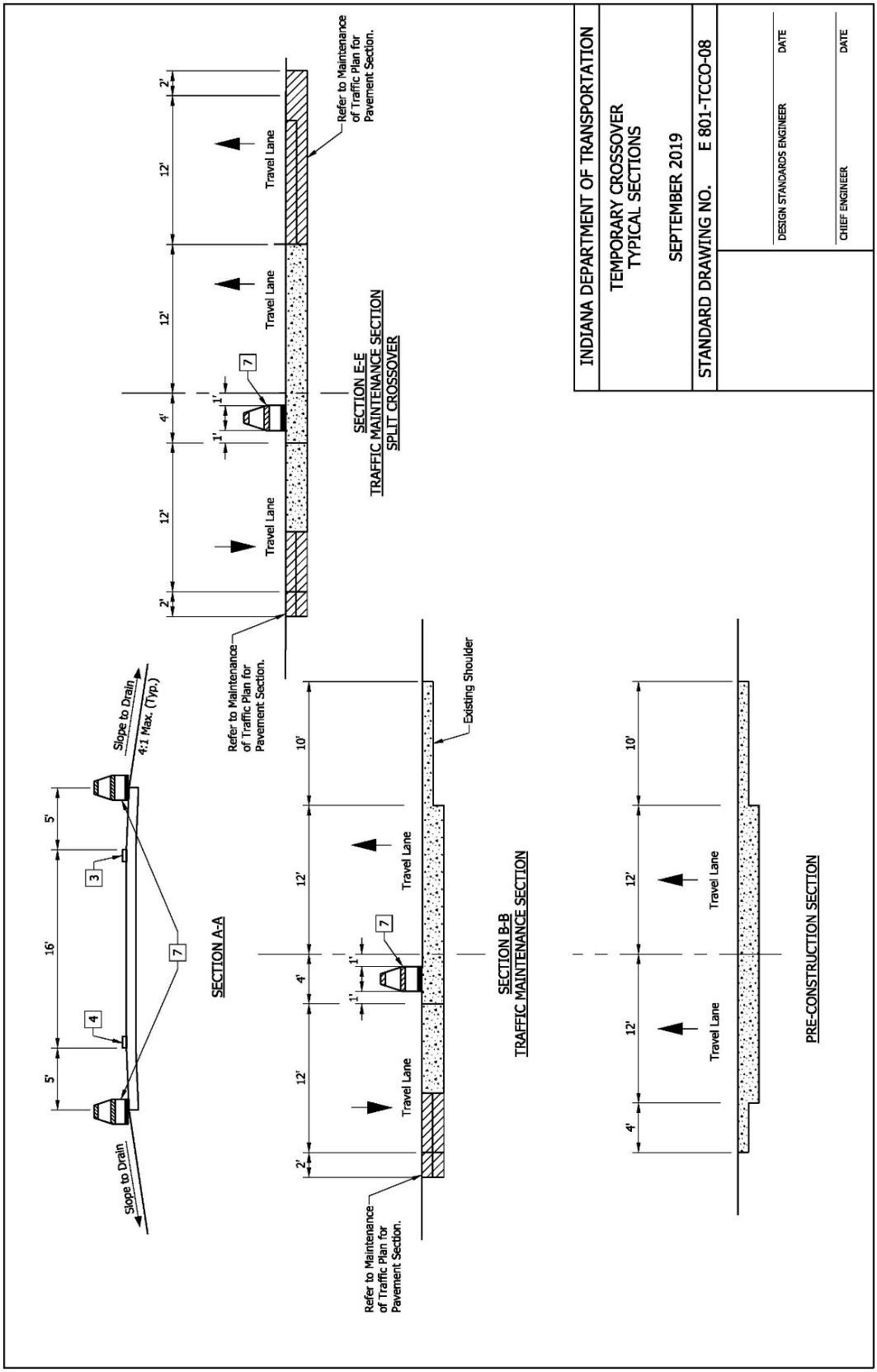


TYPE B CROSSOVER

Median Width "W" ft	Dimension "A" ft	Dimension "B" ft	Area of Paving Strips sys
60	564	833	4310
50	505	774	3380
40	449	719	2605
36	427	696	2326
30	390	659	1930
26	371	640	1750

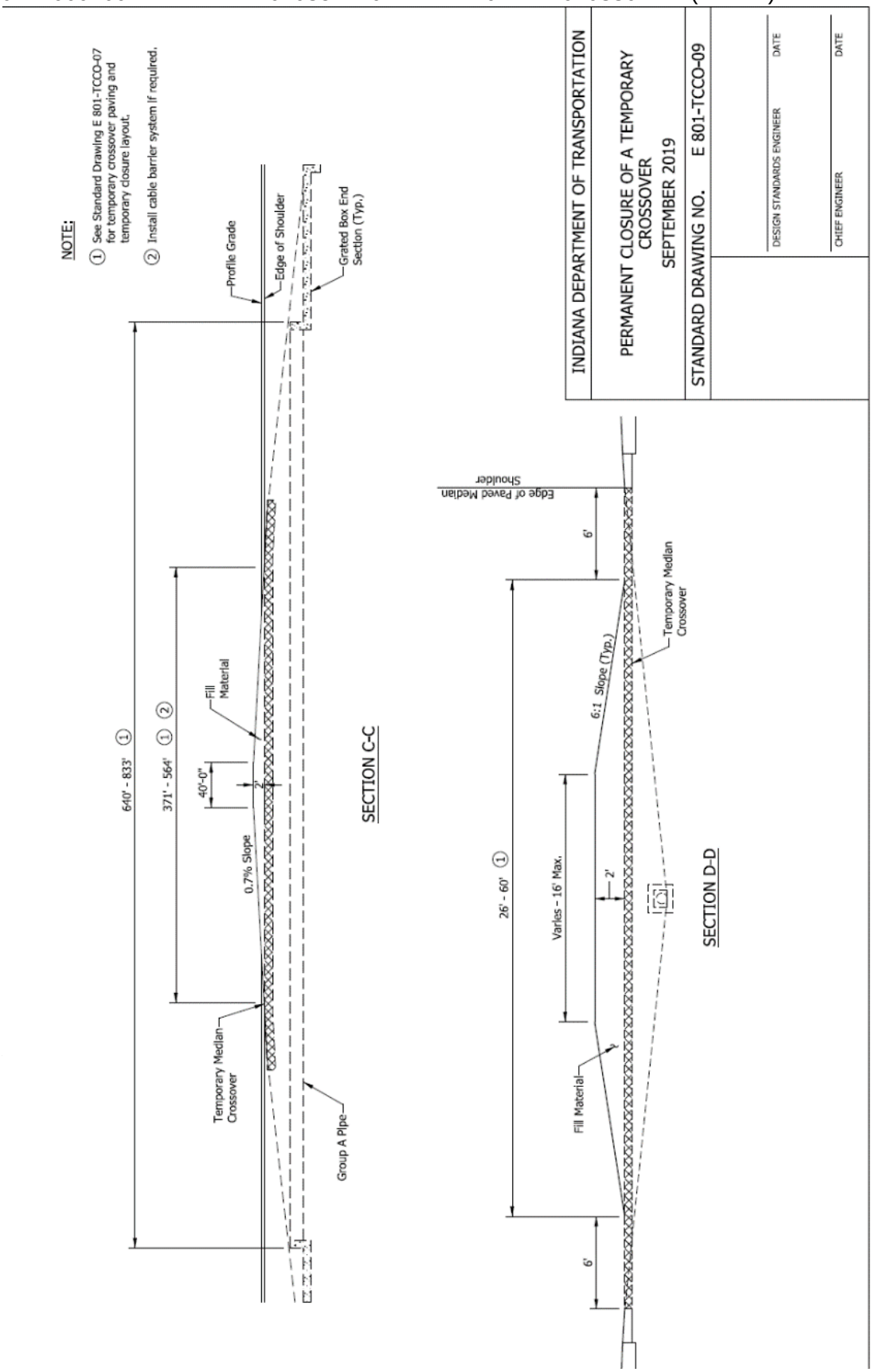
REVISION TO STANDARD DRAWINGS

E 801-TCCO-08 TEMPORARY CROSSOVER TYPICAL SECTIONS (DRAFT)



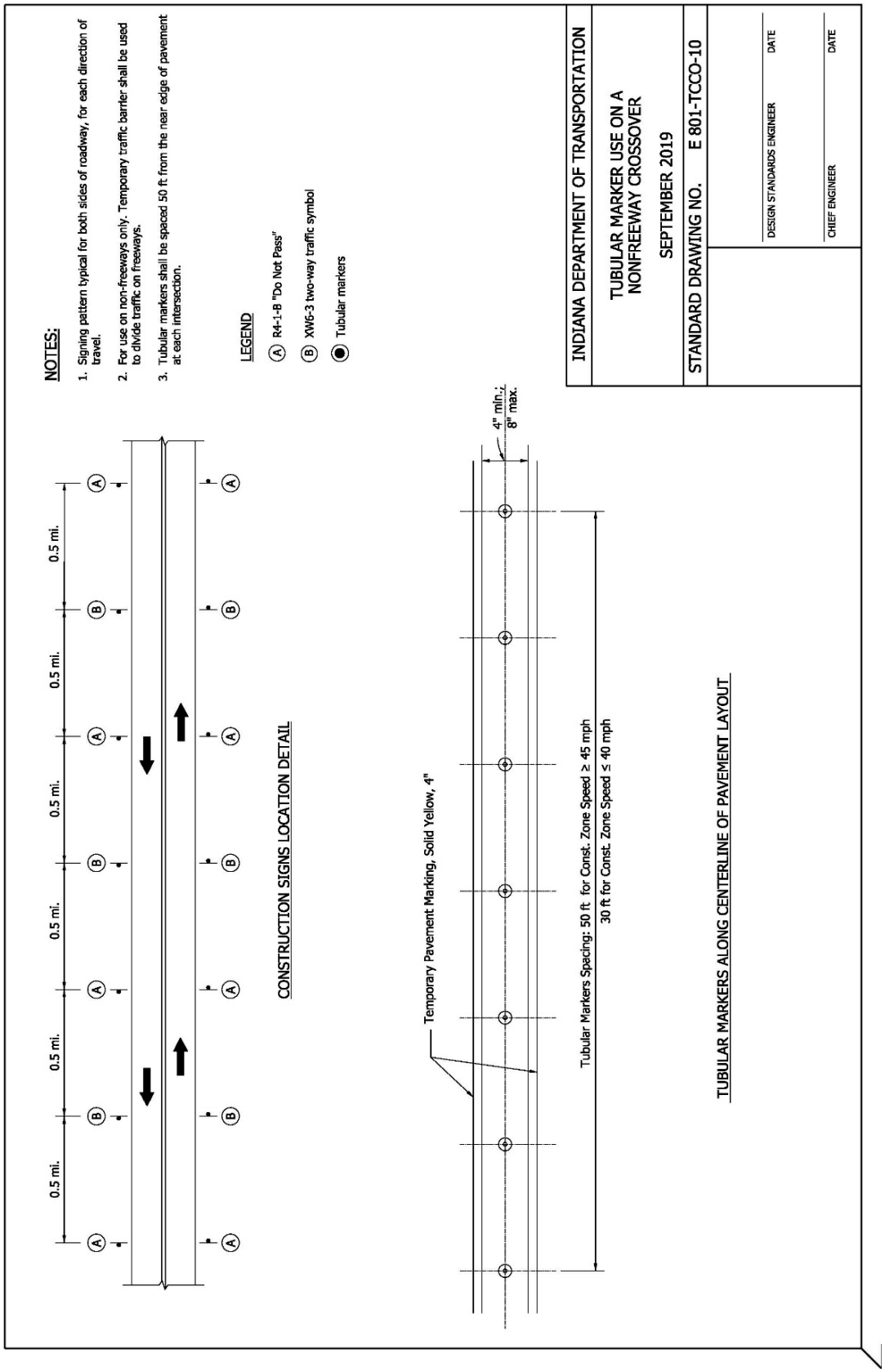
REVISION TO STANDARD DRAWINGS

E 801-TCCO-09 PERMANENT CLOSURE OF A TEMPORARY CROSSOVER (DRAFT)



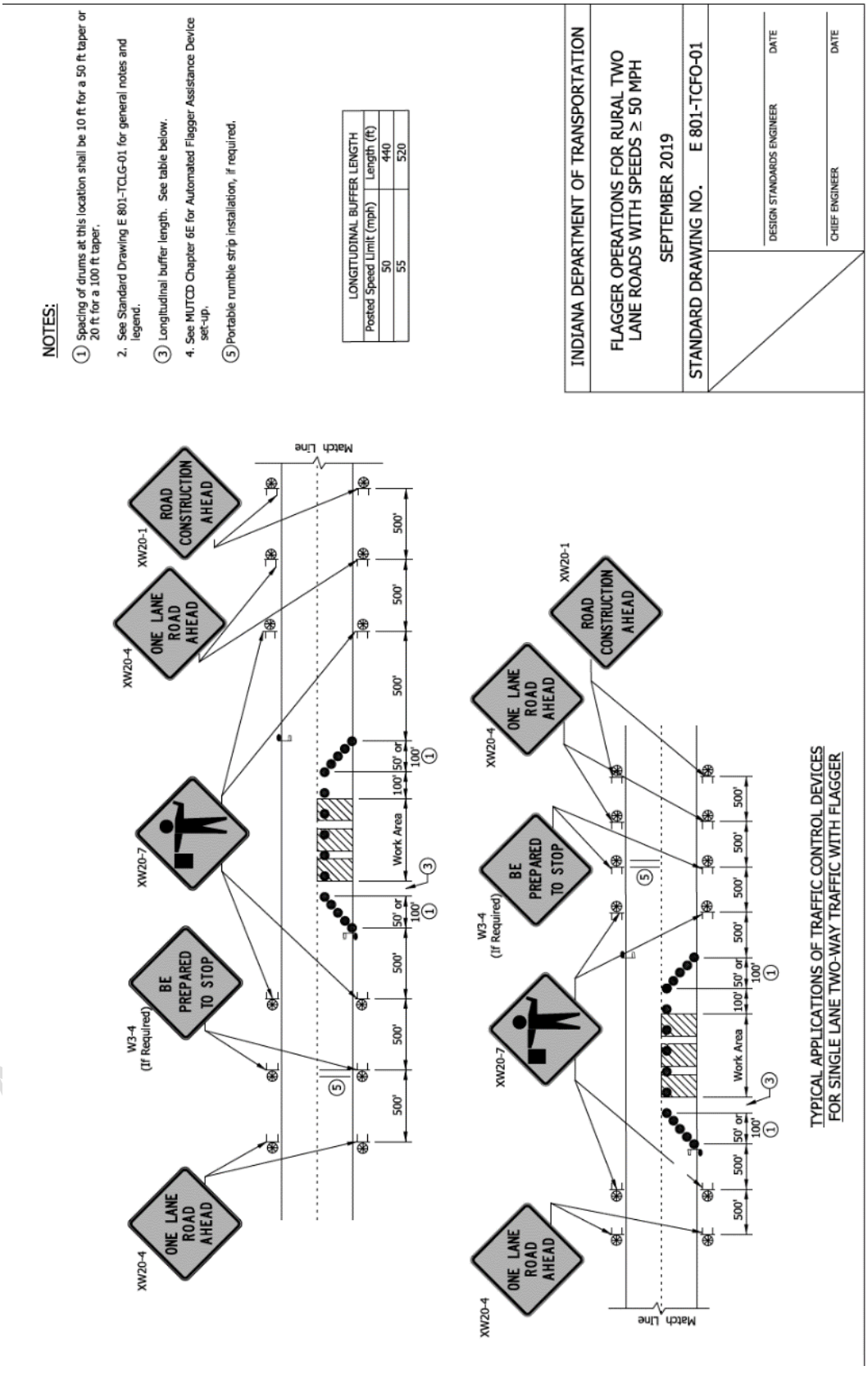
REVISION TO STANDARD DRAWINGS

E 801-TCCO-10 TUBULAR MARKER USE ON A NONFREEWAY CROSSOVER (DRAFT)



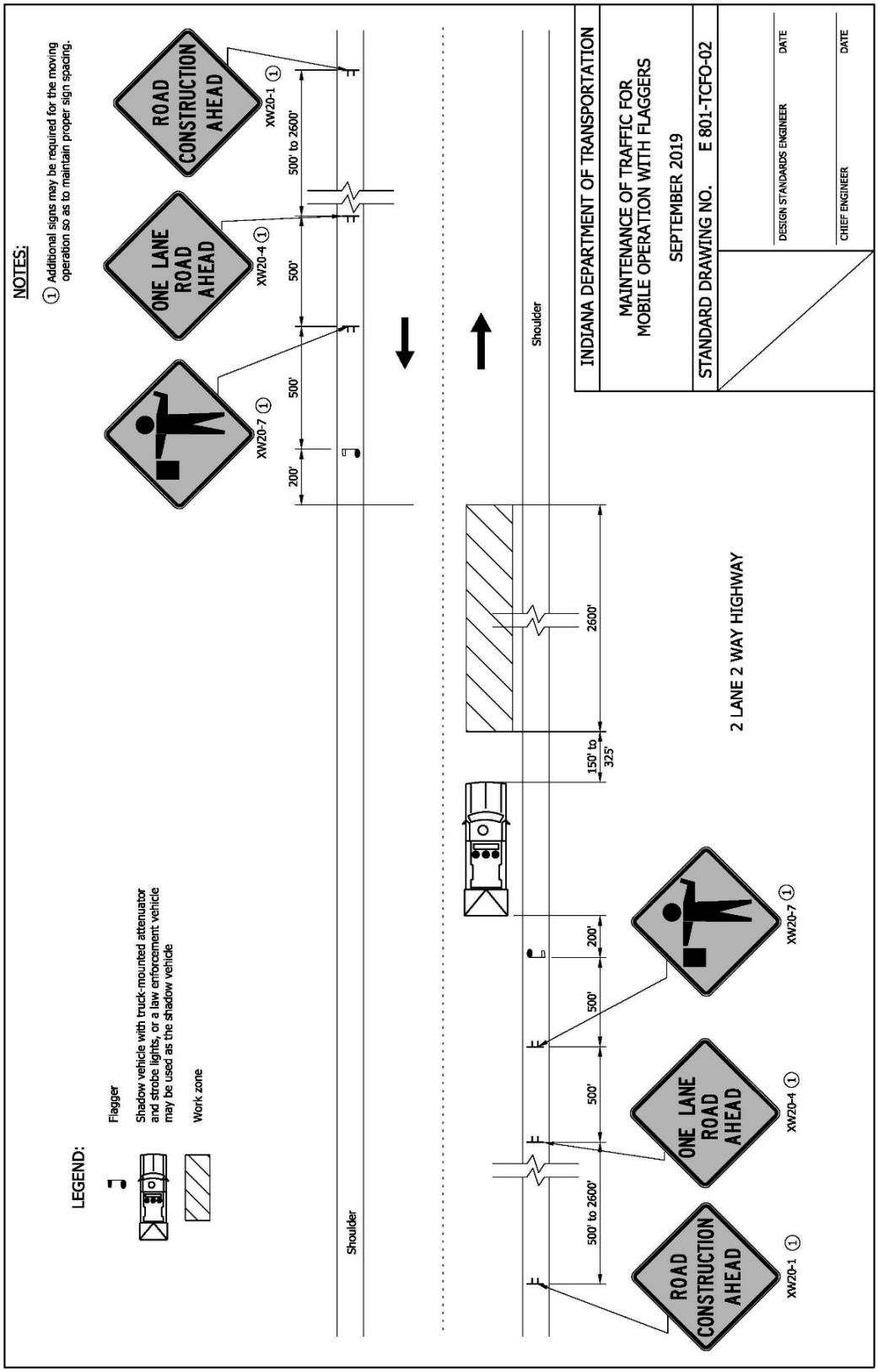
REVISION TO STANDARD DRAWINGS

E 801-TCFO-01 FLAGGER OPERATIONS FOR RURAL TWO LANE ROADS WITH SPEEDS ≥ 50 MPH (DRAFT)



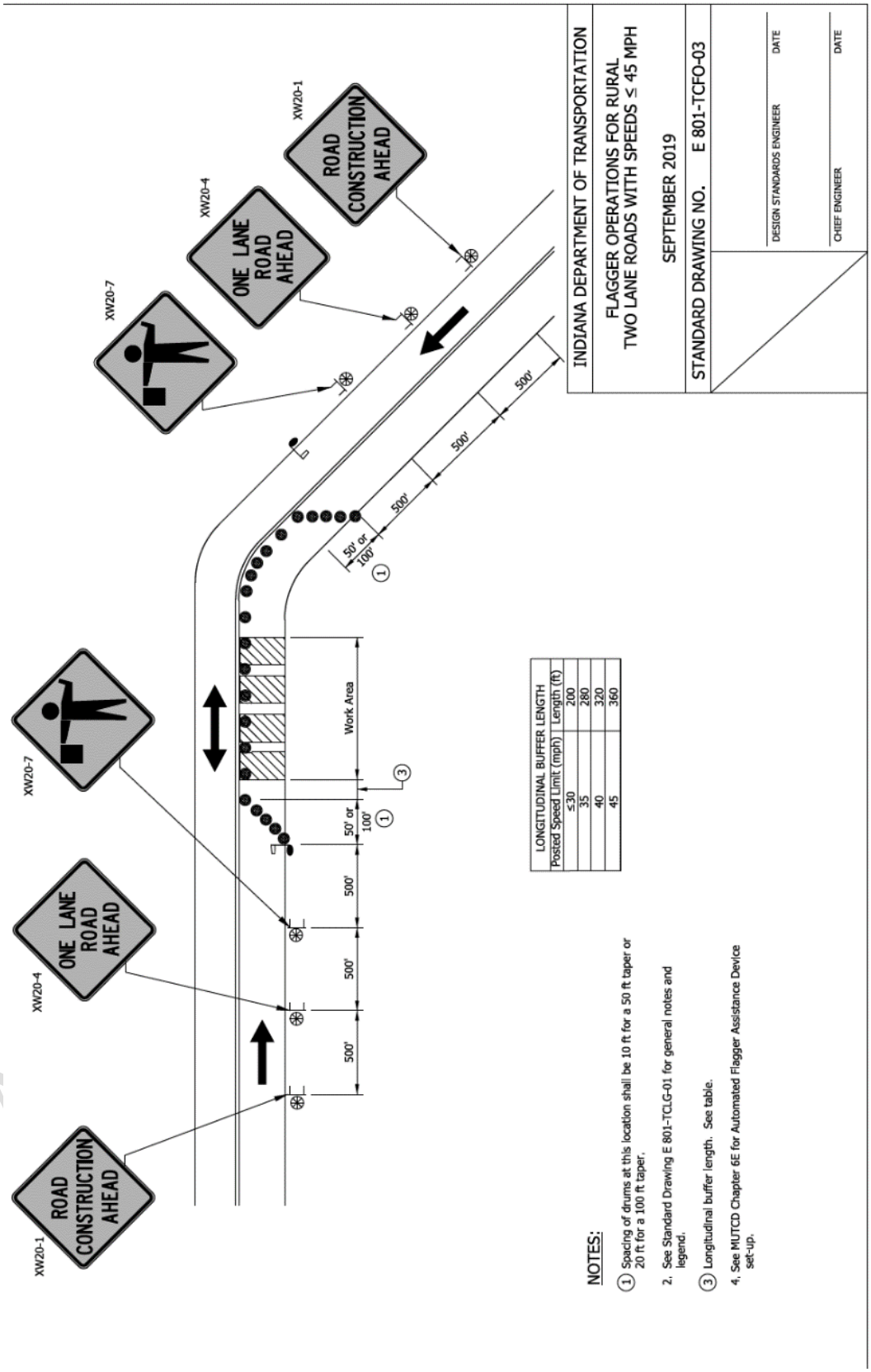
REVISION TO STANDARD DRAWINGS

E 801-TCFO-02 MAINTENANCE OF TRAFFIC FOR MOBILE OPERATION WITH FLAGGERS (DRAFT)



REVISION TO STANDARD DRAWINGS

E 801-TCFO-03 FLAGGER OPERATIONS FOR RURAL TWO LANE ROADS WITH SPEEDS ≤ 45 MPH (DRAFT)



REVISION TO STANDARD DRAWINGS

E 801-TCLC-01 LANE CLOSURES INDEX SHEET AND GENERAL NOTES (DRAFT)

INDEX

SHEET NO.	SUBJECT
1	Lane Closures Index Sheet and General Notes
2	Lane Closure Applications on Divided Highways
3	Continuous Lane Closures, Right Lane Closed
4	Center Lane Closure on Freeways
5	Left Lane Closed on Freeways
6	Short-Term Right Lane Closure
7	Short-Term Left or Center Lane Closure
8	Traffic Control for Lane Closure on a Three Lane Road
9	Traffic Control for Freeway or Expressway Exit Closure
10	Right Lane Closure Near Interchange
11	Lane Closure Near Entrance Ramp

GENERAL NOTES:

1. See Standard Drawing E 801-TCLC-01 for legend and additional notes.
2. Long-term stationary is work that occupies a location for more than 3 days.
3. Intermediate-term stationary is work that occupies a location for more than 1 daylight period up to 3 days, or nighttime work lasting more than 1 hour.
4. Short-term stationary is work that occupies a location for more than 1 hour within a single daylight period.

INDIANA DEPARTMENT OF TRANSPORTATION

LANE CLOSURES
INDEX SHEET AND GENERAL NOTES

SEPTEMBER 2019

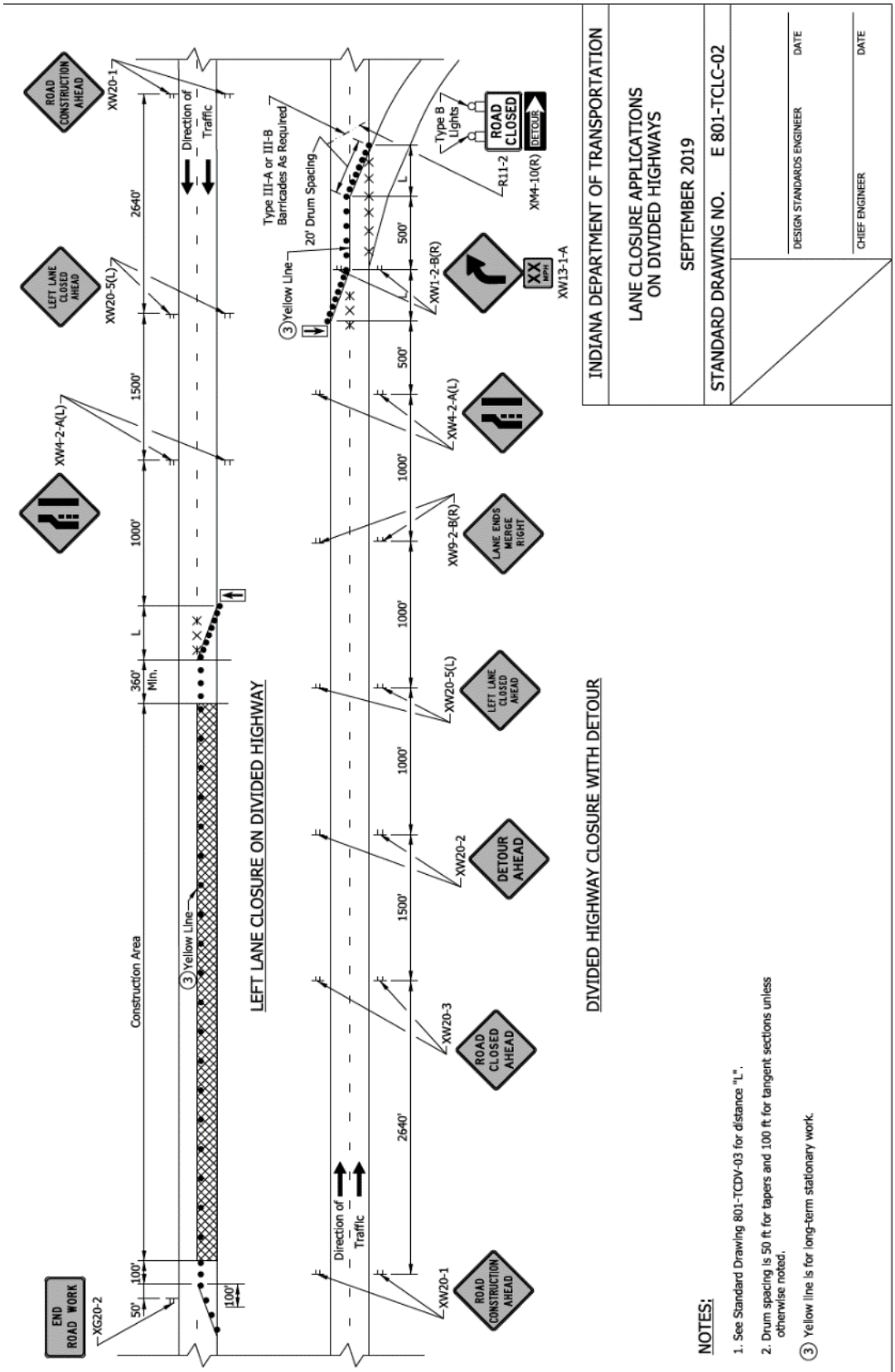
STANDARD DRAWING NO. E 801-TCLC-01

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

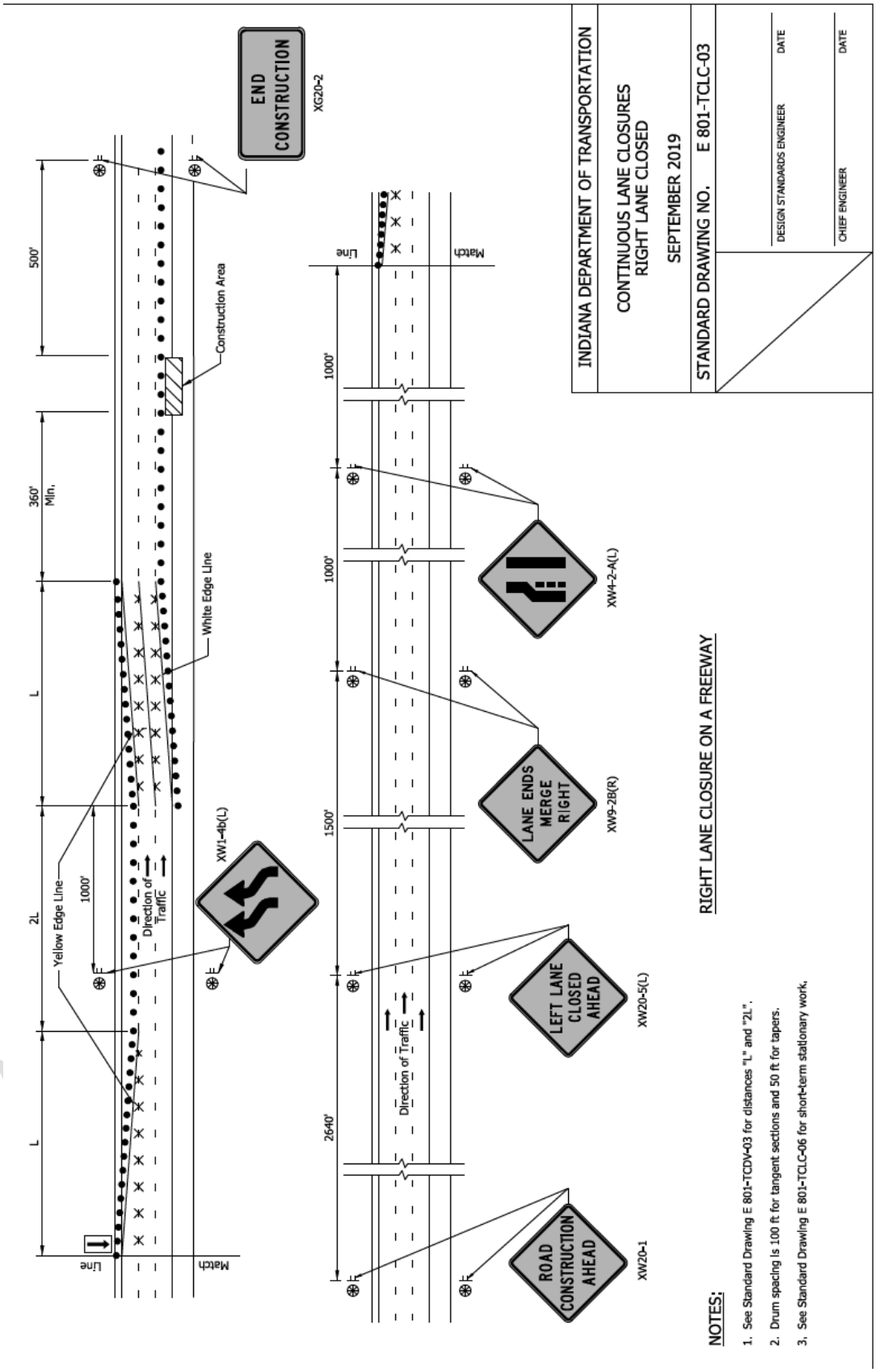
REVISION TO STANDARD DRAWINGS

E 801-TCLC-02 LANE CLOSURE APPLICATIONS ON DIVIDED HIGHWAYS (DRAFT)



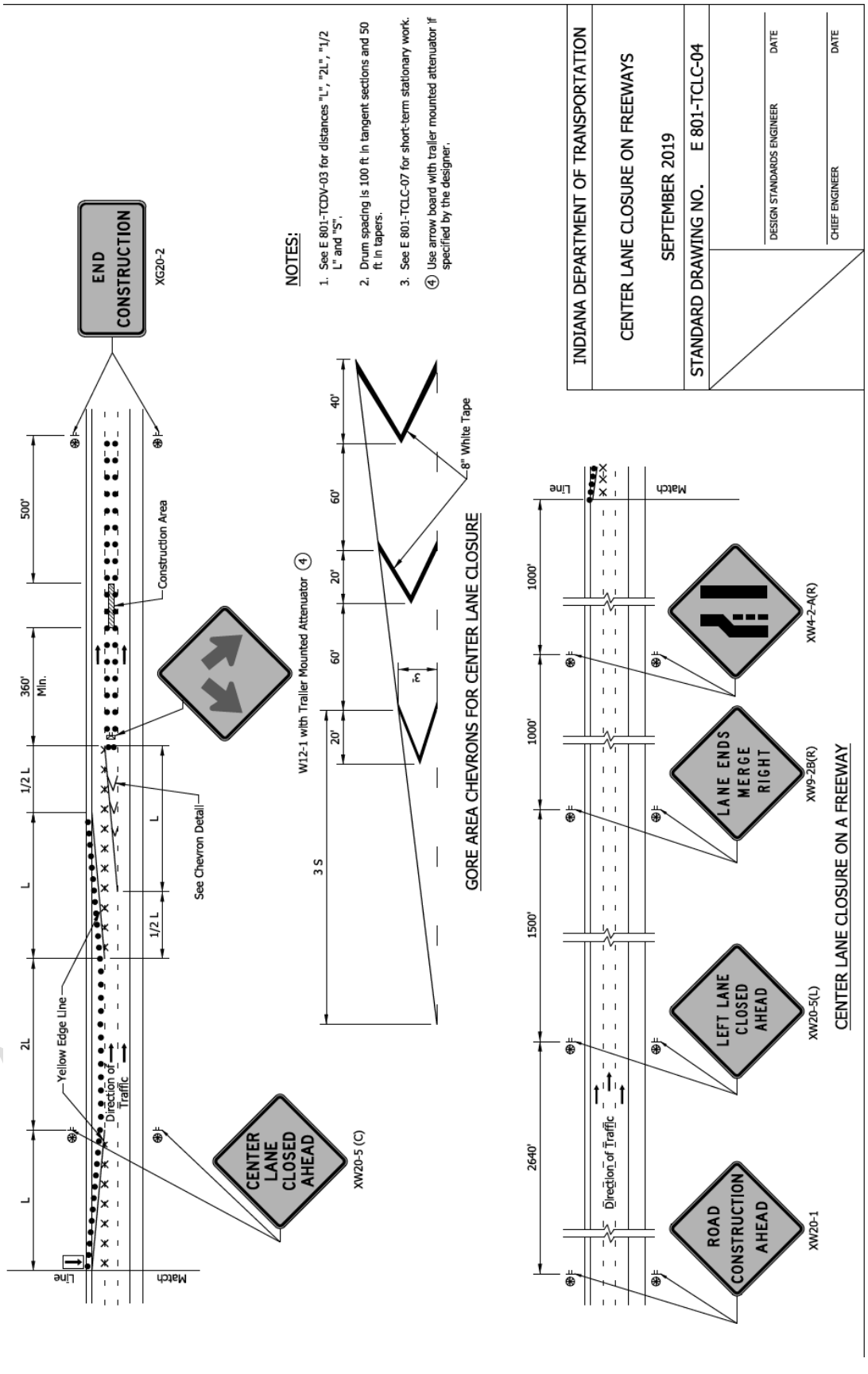
REVISION TO STANDARD DRAWINGS

E 801-TCLC-03 CONTINUOUS LANE CLOSURES RIGHT LANE CLOSED (DRAFT)



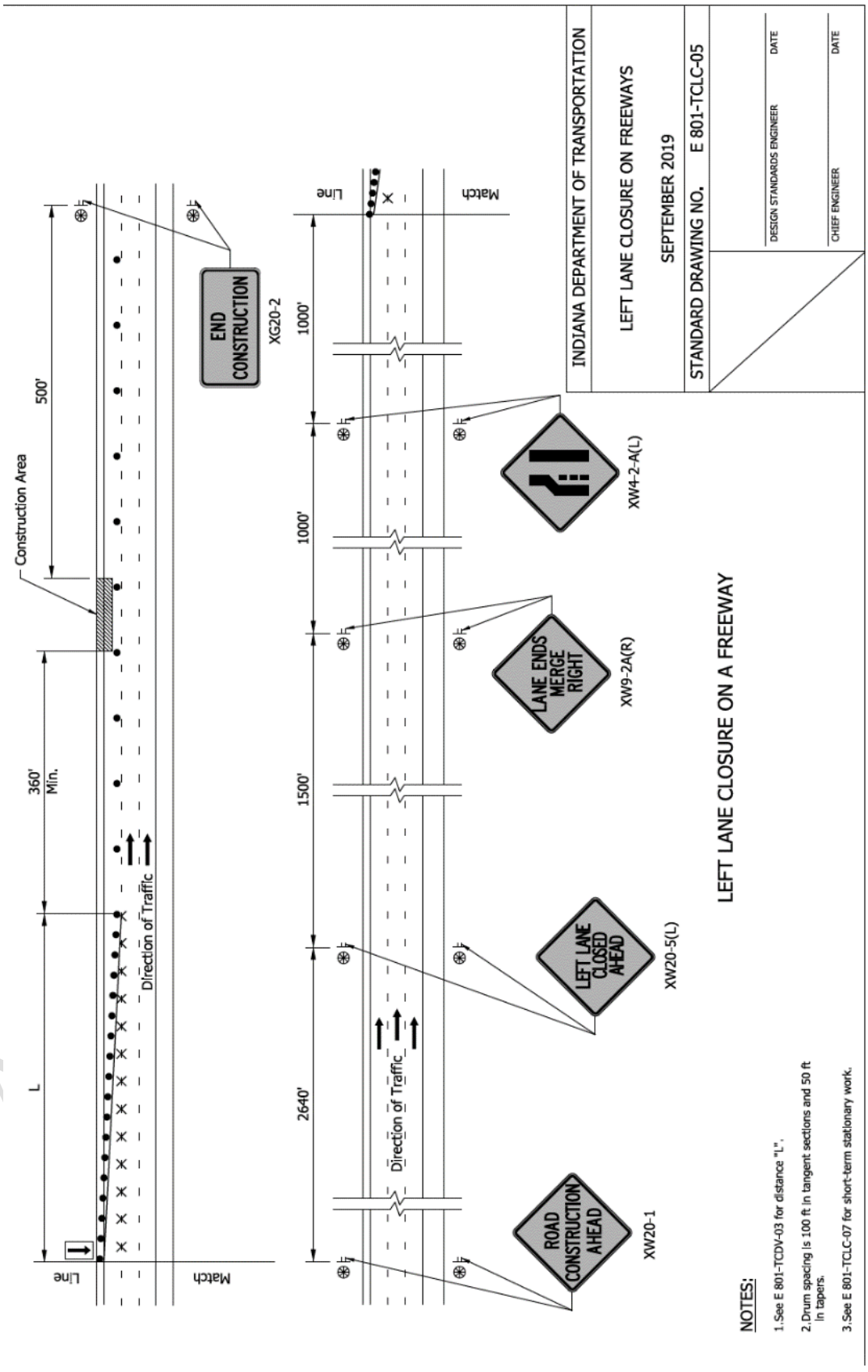
REVISION TO STANDARD DRAWINGS

E 801-TCLC-04 CENTER LANE CLOSURE ON FREEWAYS (DRAFT)



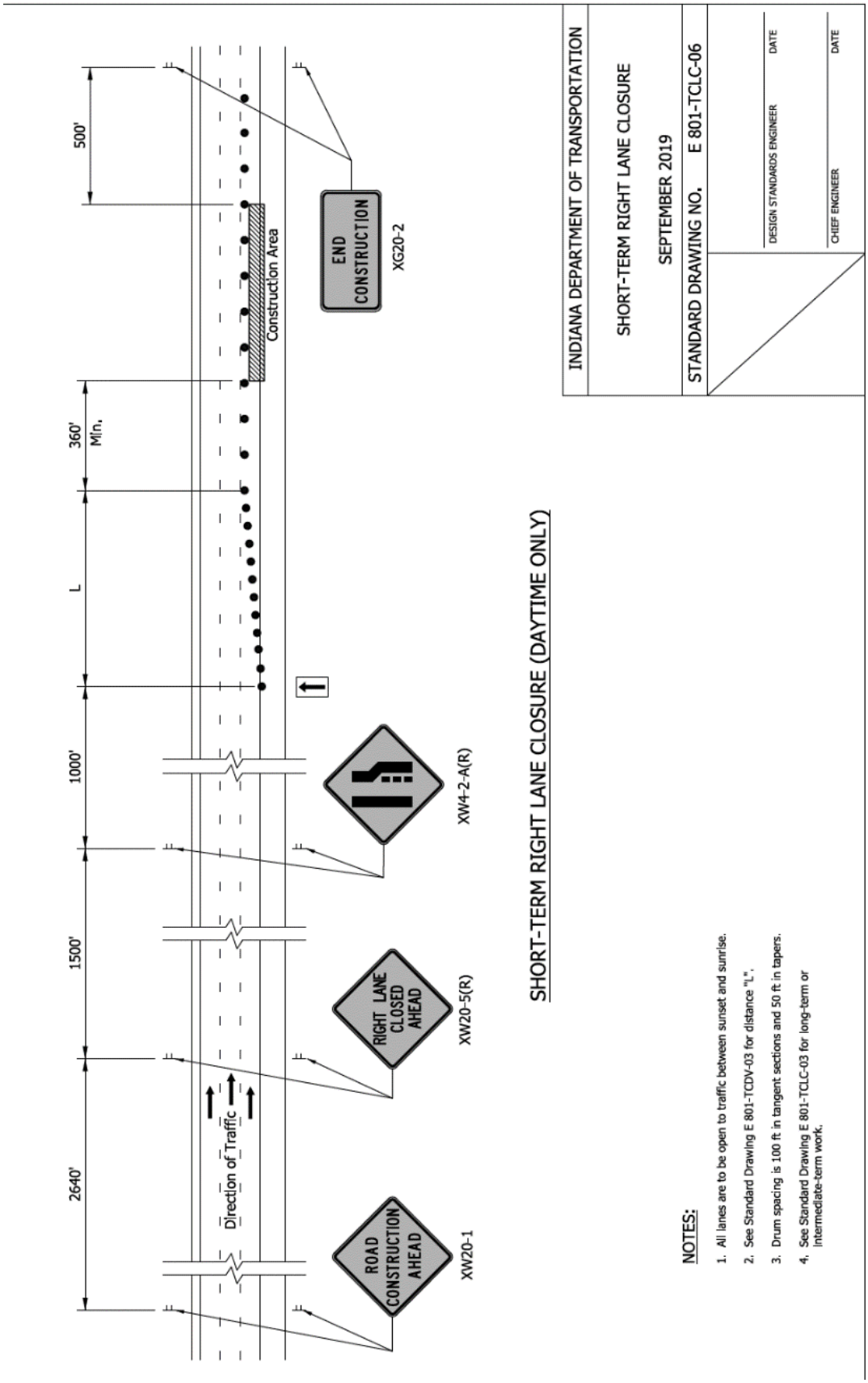
REVISION TO STANDARD DRAWINGS

E 801-TCLC-05 LEFT LANE CLOSURE ON FREEWAYS (DRAFT)



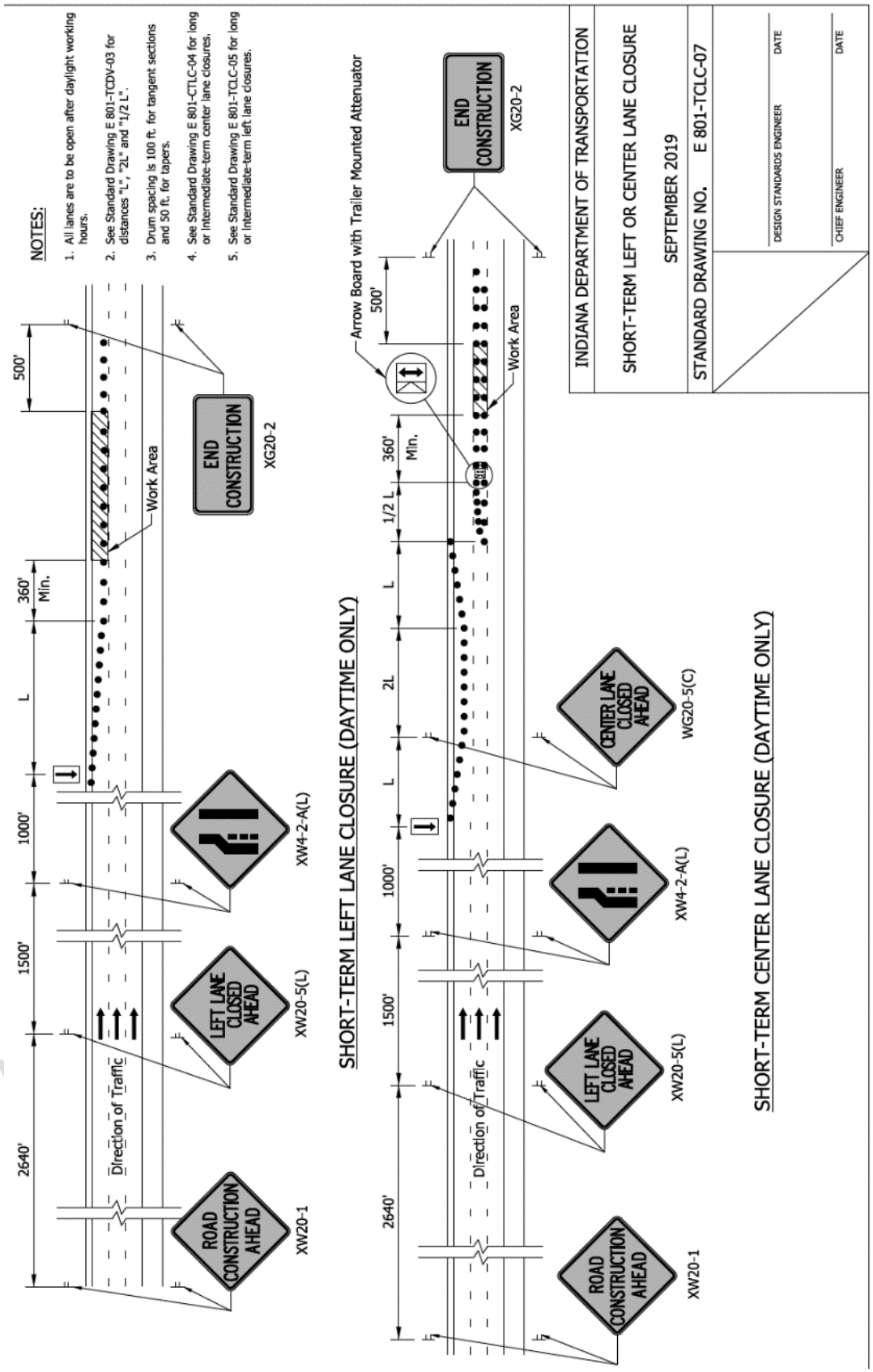
REVISION TO STANDARD DRAWINGS

E 801-TCLC-06 SHORT-TERM RIGHT LANE CLOSURE (DRAFT)



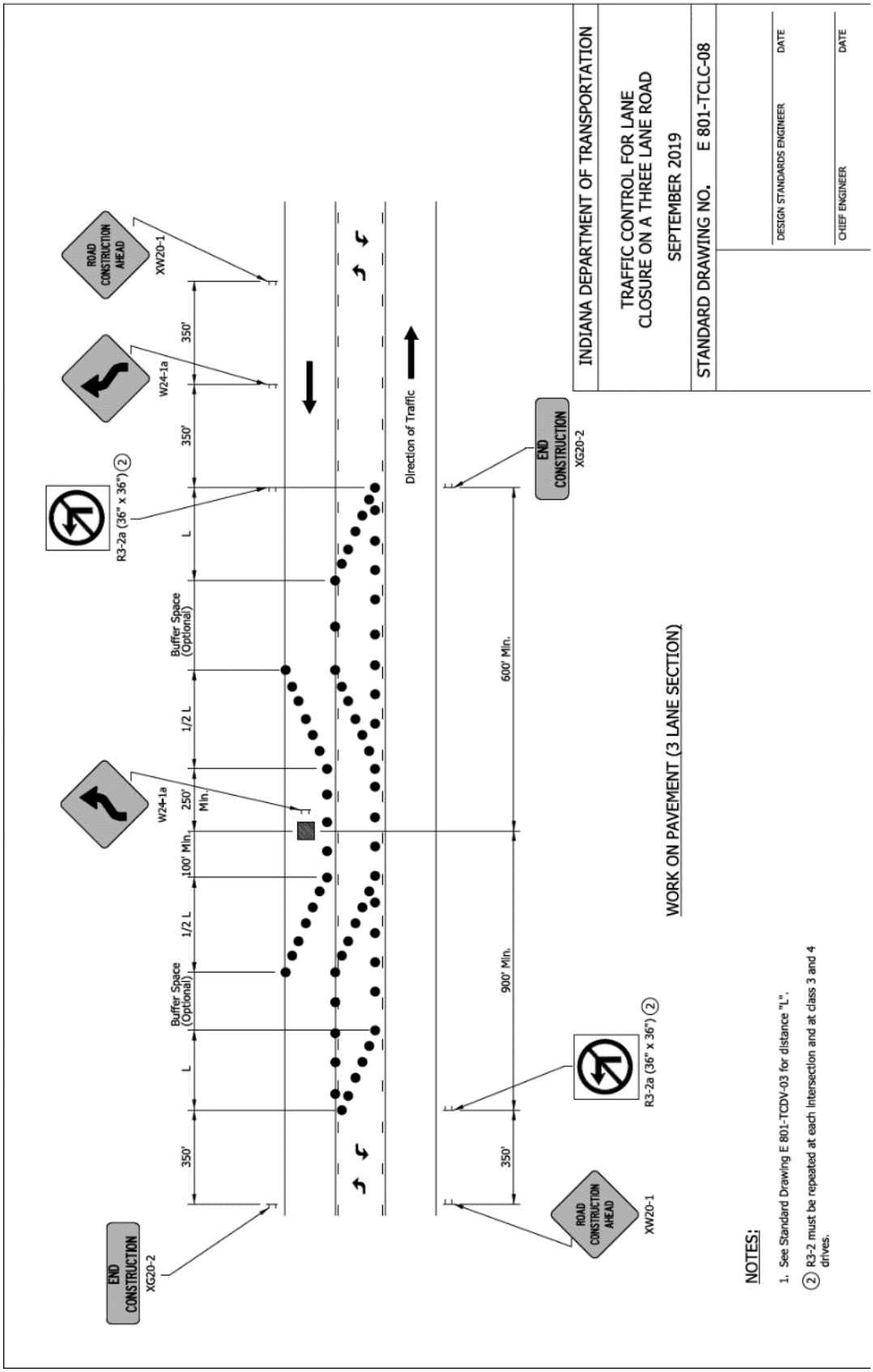
REVISION TO STANDARD DRAWINGS

E 801-TCLC-07 SHORT-TERM LEFT OR CENTER LANE CLOSURE (DRAFT)



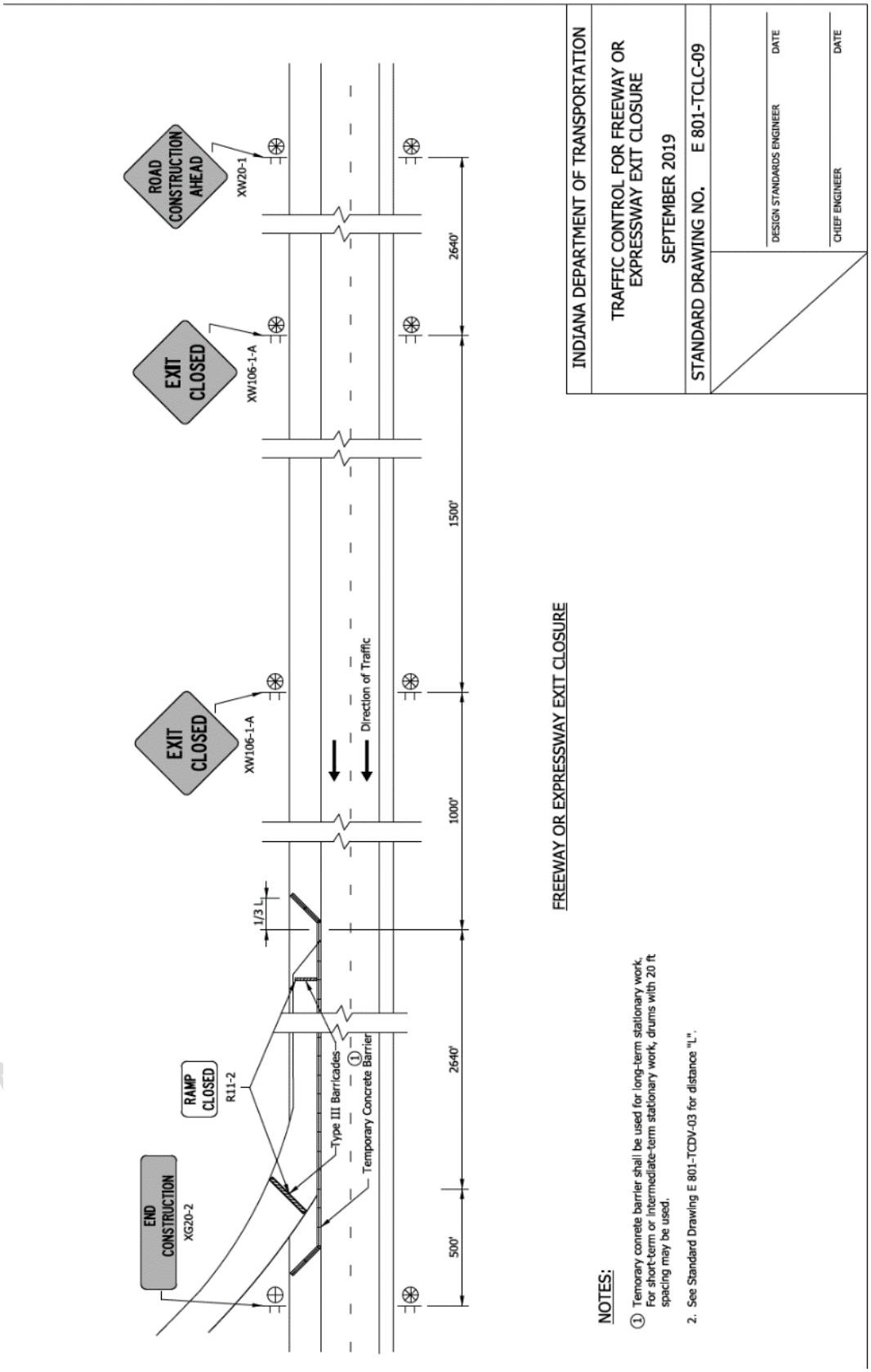
REVISION TO STANDARD DRAWINGS

E 801-TCLC-08 TRAFFIC CONTROL FOR LANE CLOSURE ON A THREE LANE ROAD (DRAFT)



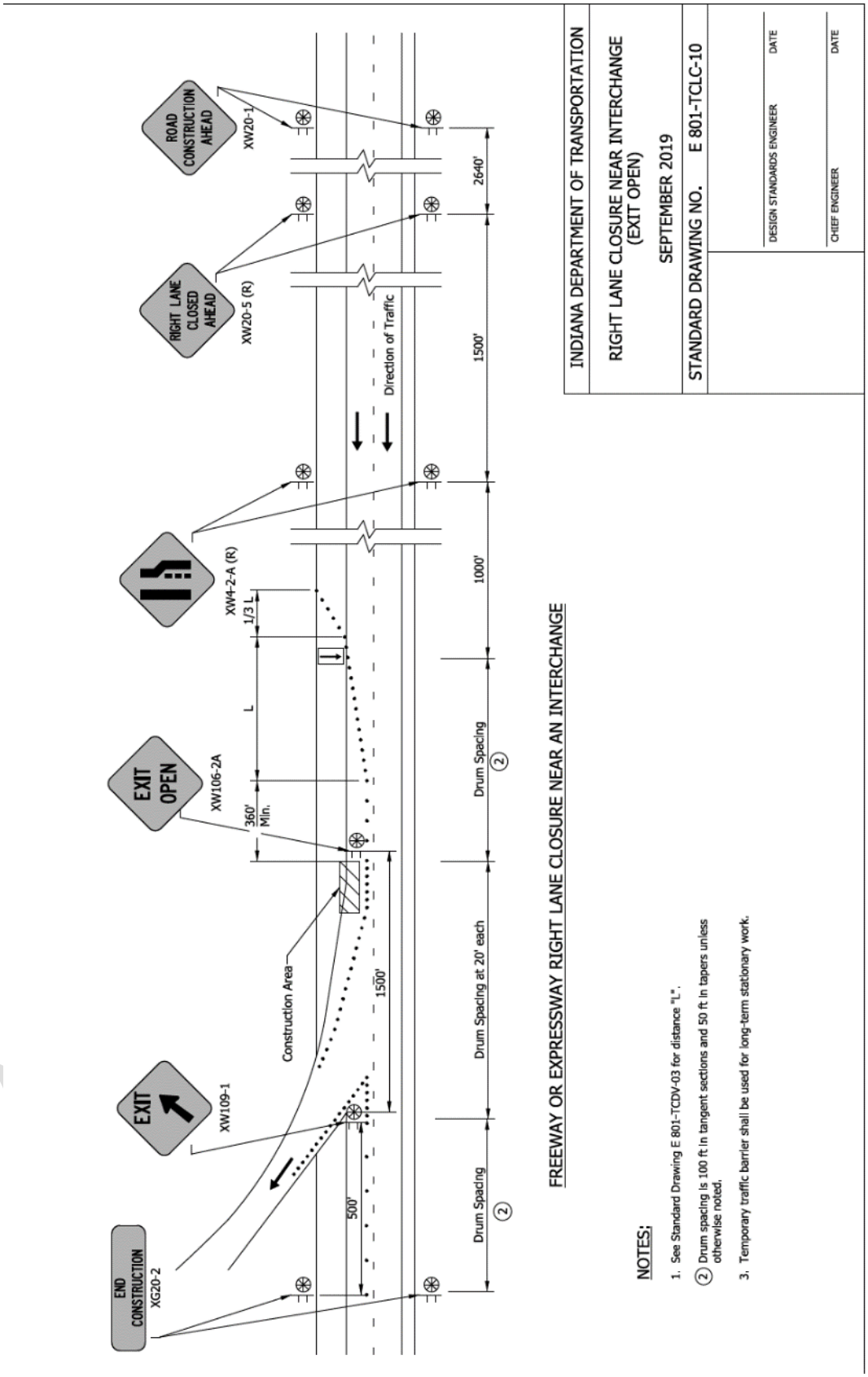
REVISION TO STANDARD DRAWINGS

E 801-TCLC-09 TRAFFIC CONTROL FOR FREEWAY OR EXPRESSWAY EXIT CLOSURE (DRAFT)



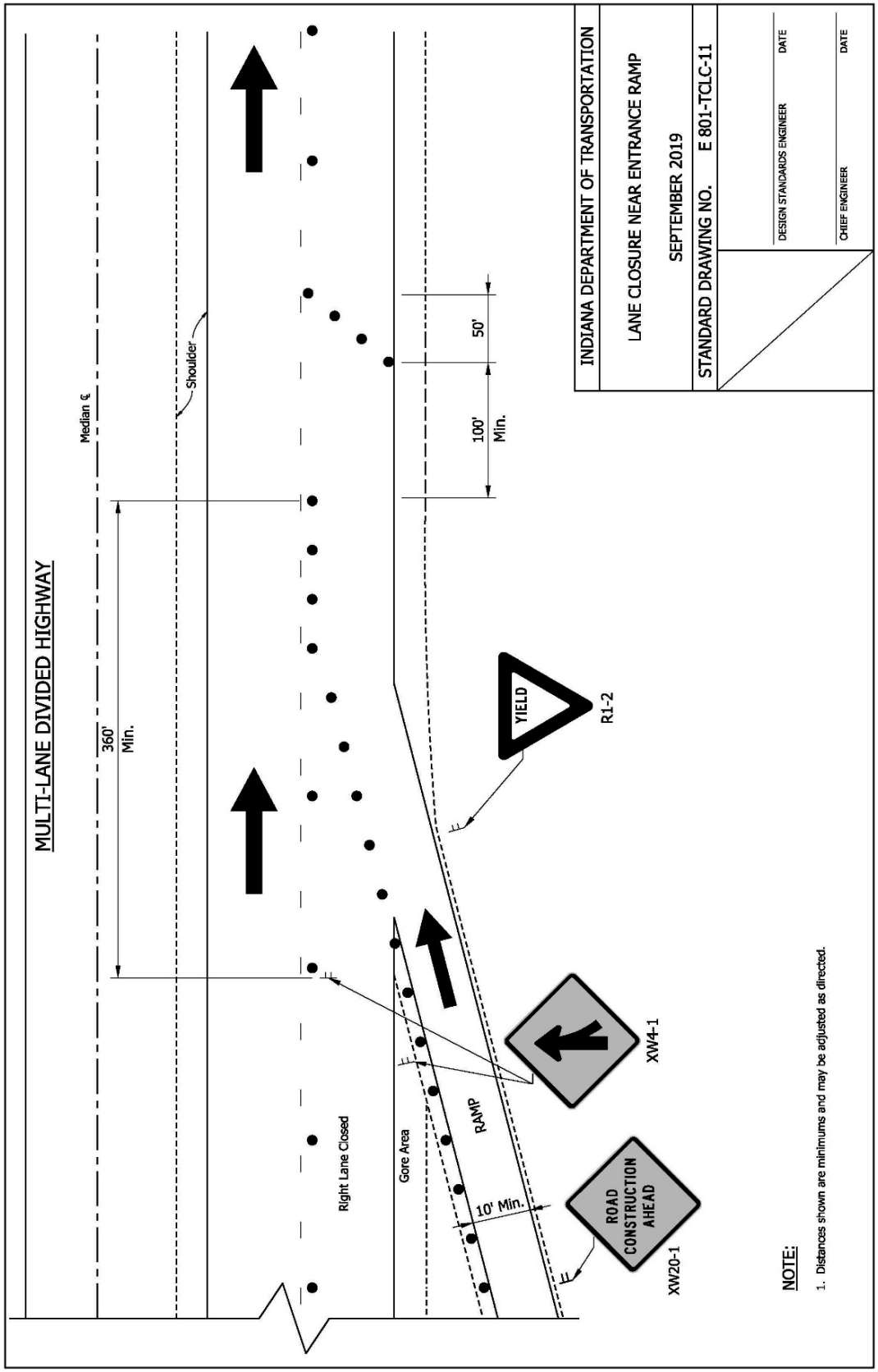
REVISION TO STANDARD DRAWINGS

E 801-TCLC-10 RIGHT LANE CLOSURE NEAR INTERCHANGE (EXIT OPEN) (DRAFT)



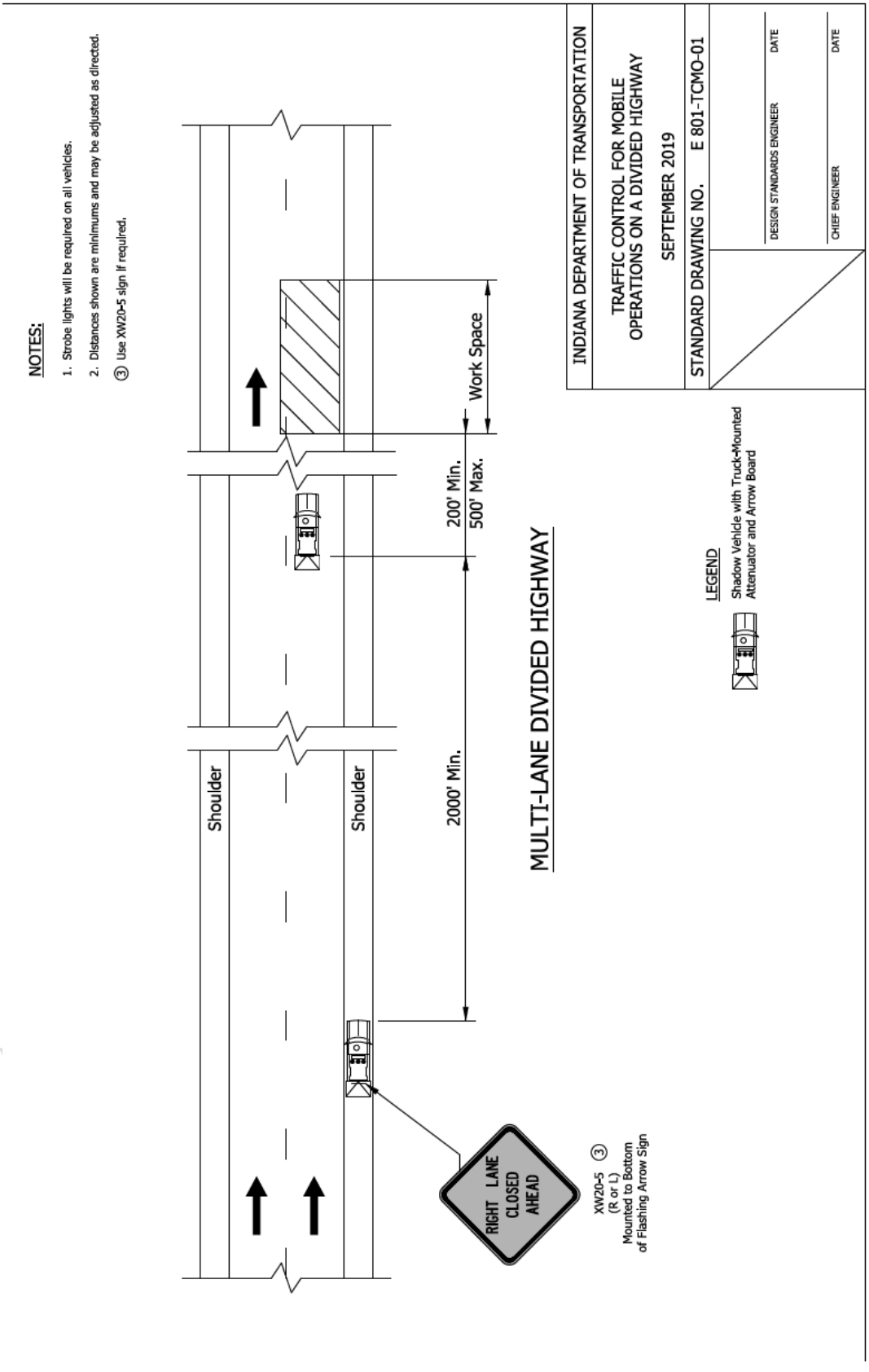
REVISION TO STANDARD DRAWINGS

E 801-TCLC-11 LANE CLOSURE NEAR ENTRANCE RAMP (DRAFT)



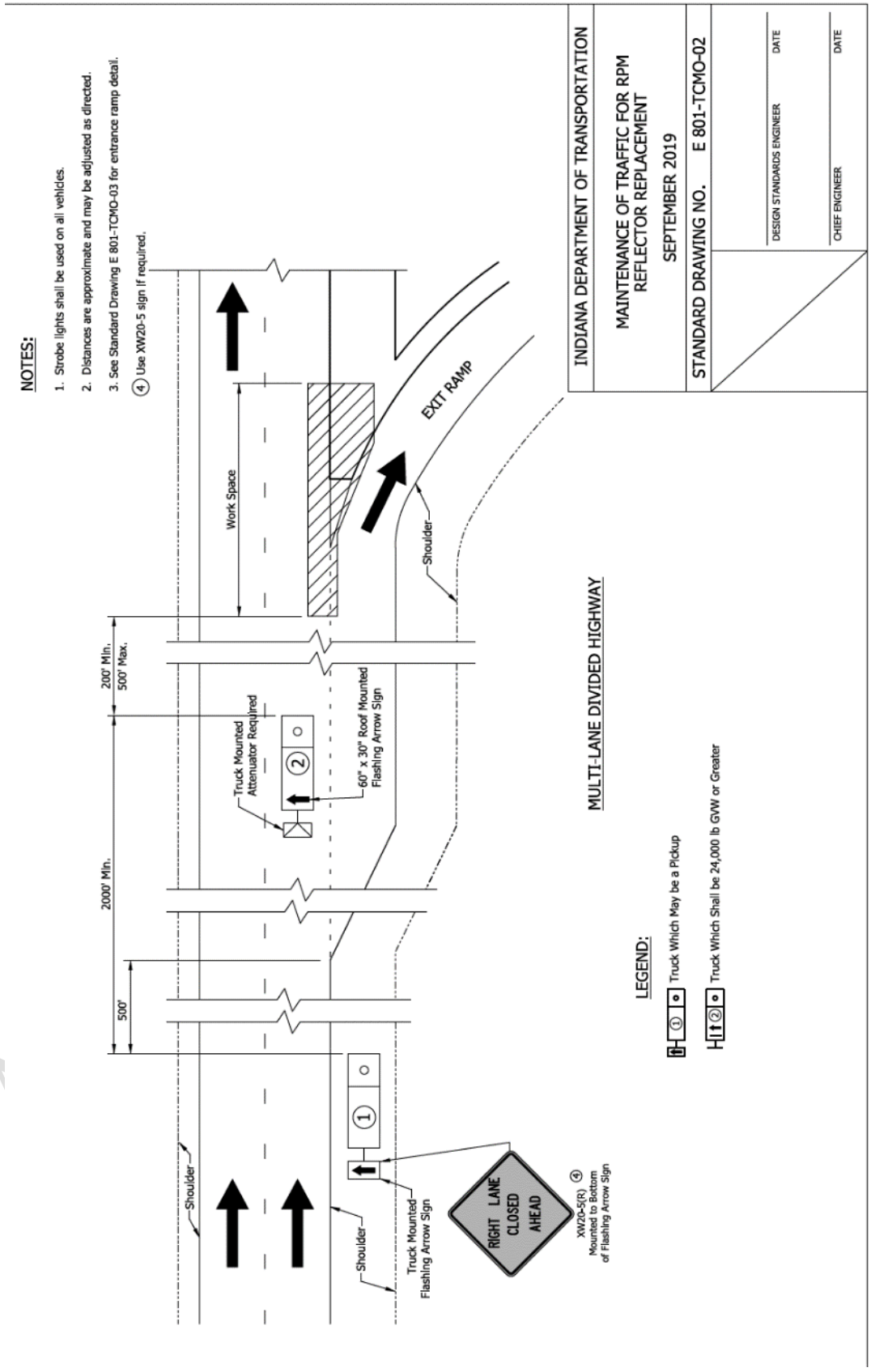
REVISION TO STANDARD DRAWINGS

E 801-TCMO-01 TRAFFIC CONTROL FOR MOBILE OPERATIONS ON A DIVIDED HIGHWAY (DRAFT)



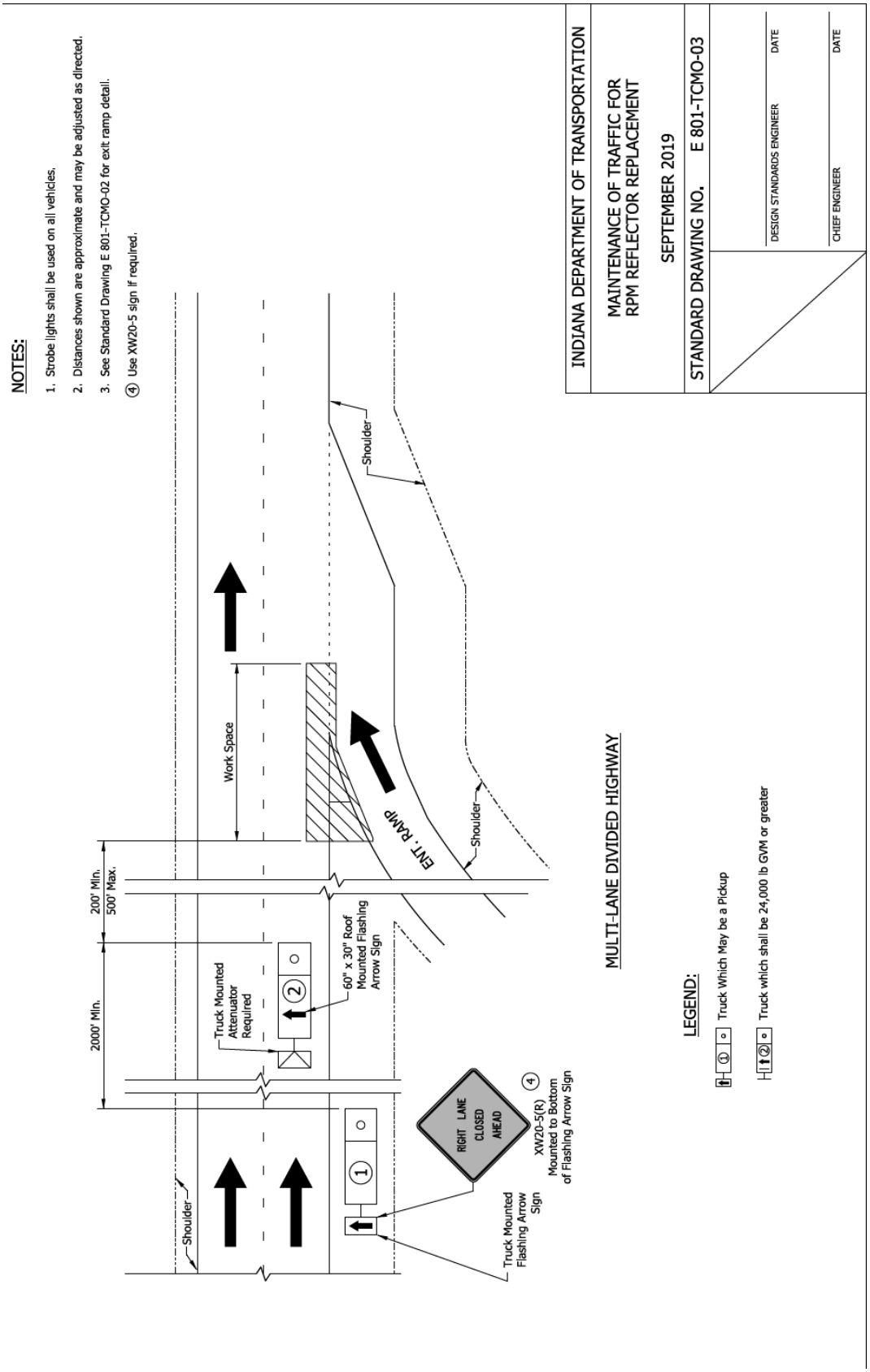
REVISION TO STANDARD DRAWINGS

E 801-TCMO-02 MAINTENANCE OF TRAFFIC FOR RPM REFLECTOR REPLACEMENT (DRAFT)



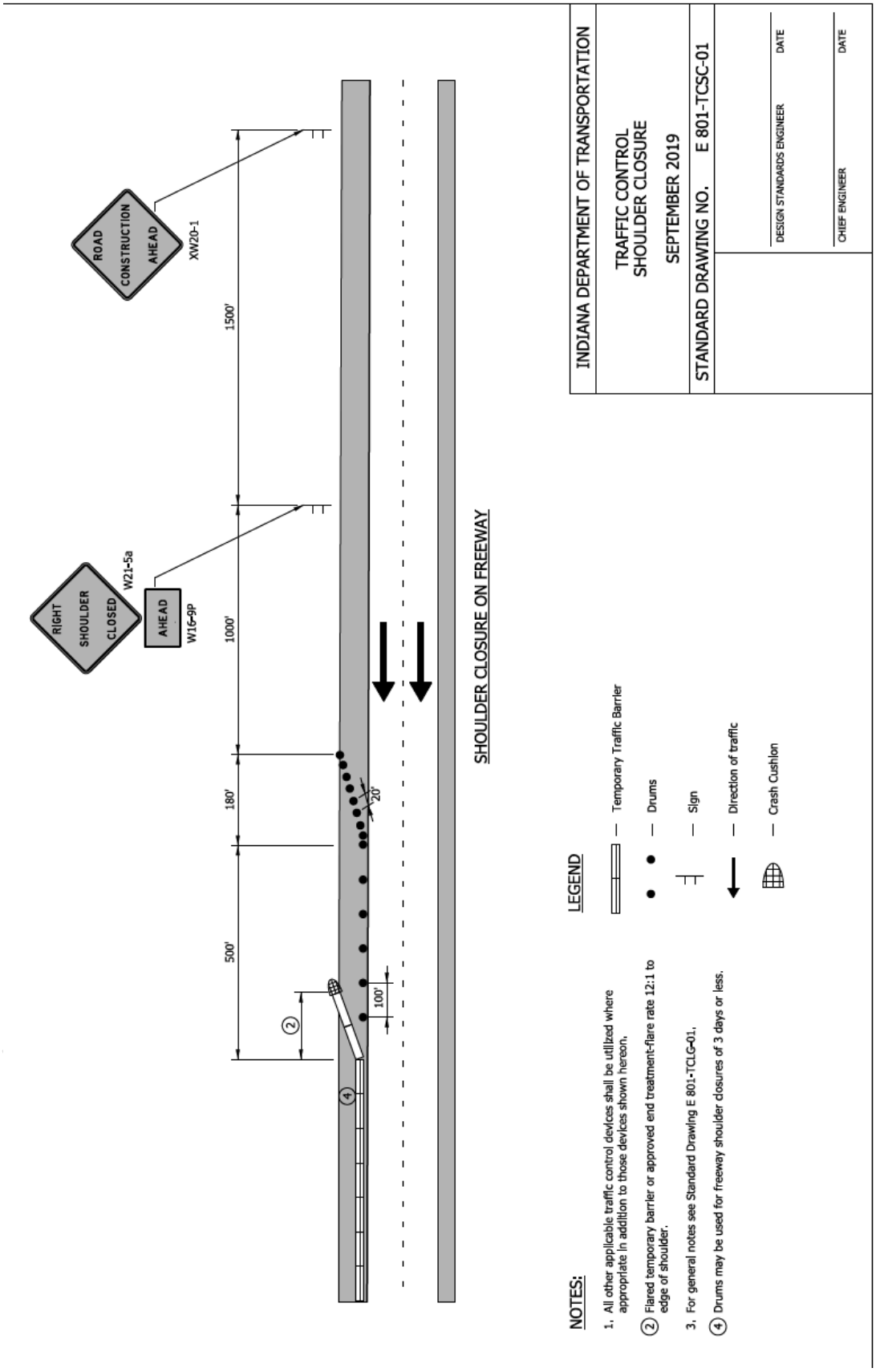
REVISION TO STANDARD DRAWINGS

E 801-TCMO-03 MAINTENANCE OF TRAFFIC FOR RPM REFLECTOR REPLACEMENT (DRAFT)



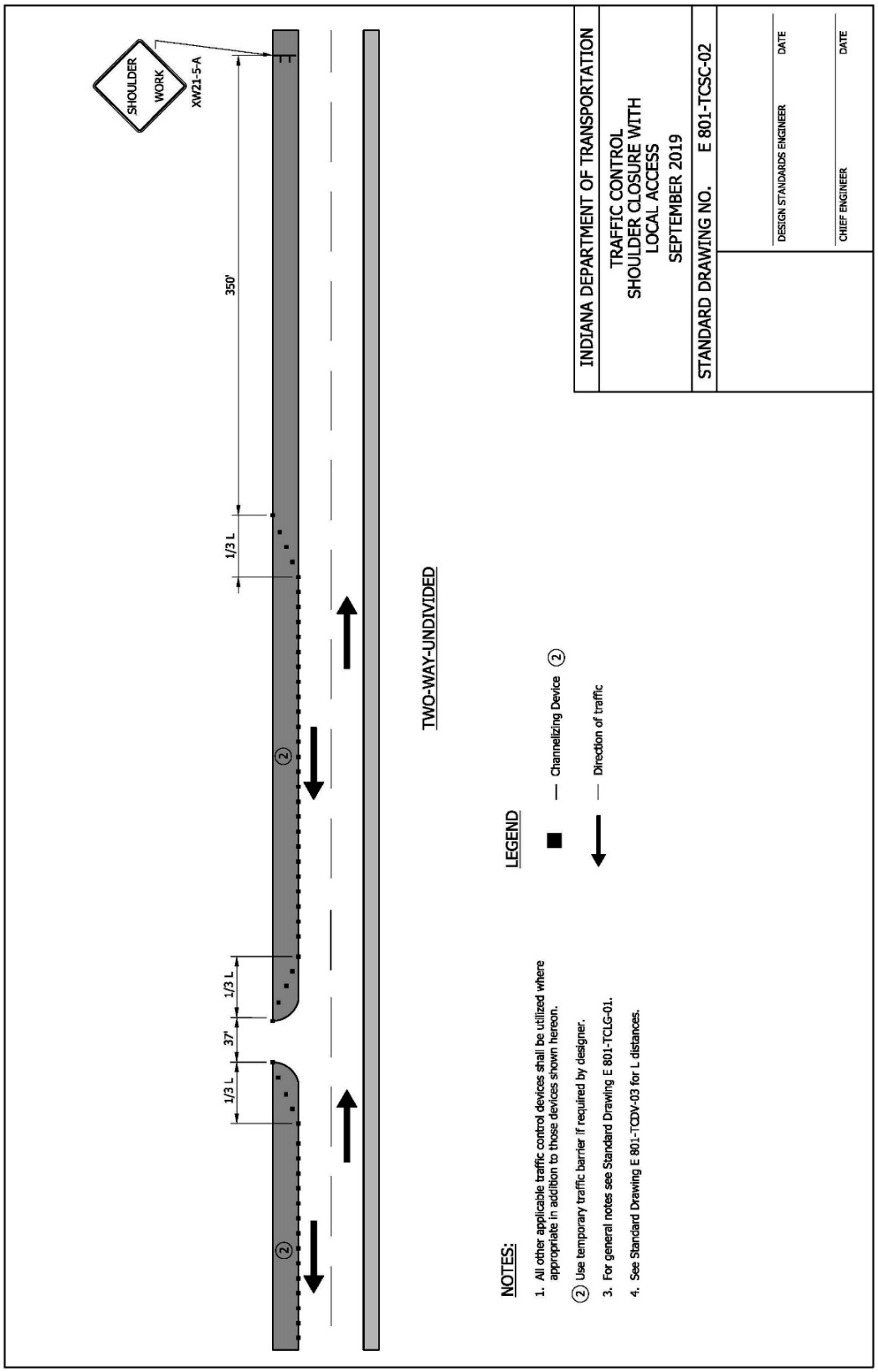
REVISION TO STANDARD DRAWINGS

E 801-TCSC-01 TRAFFIC CONTROL SHOULDER CLOSURE (DRAFT)



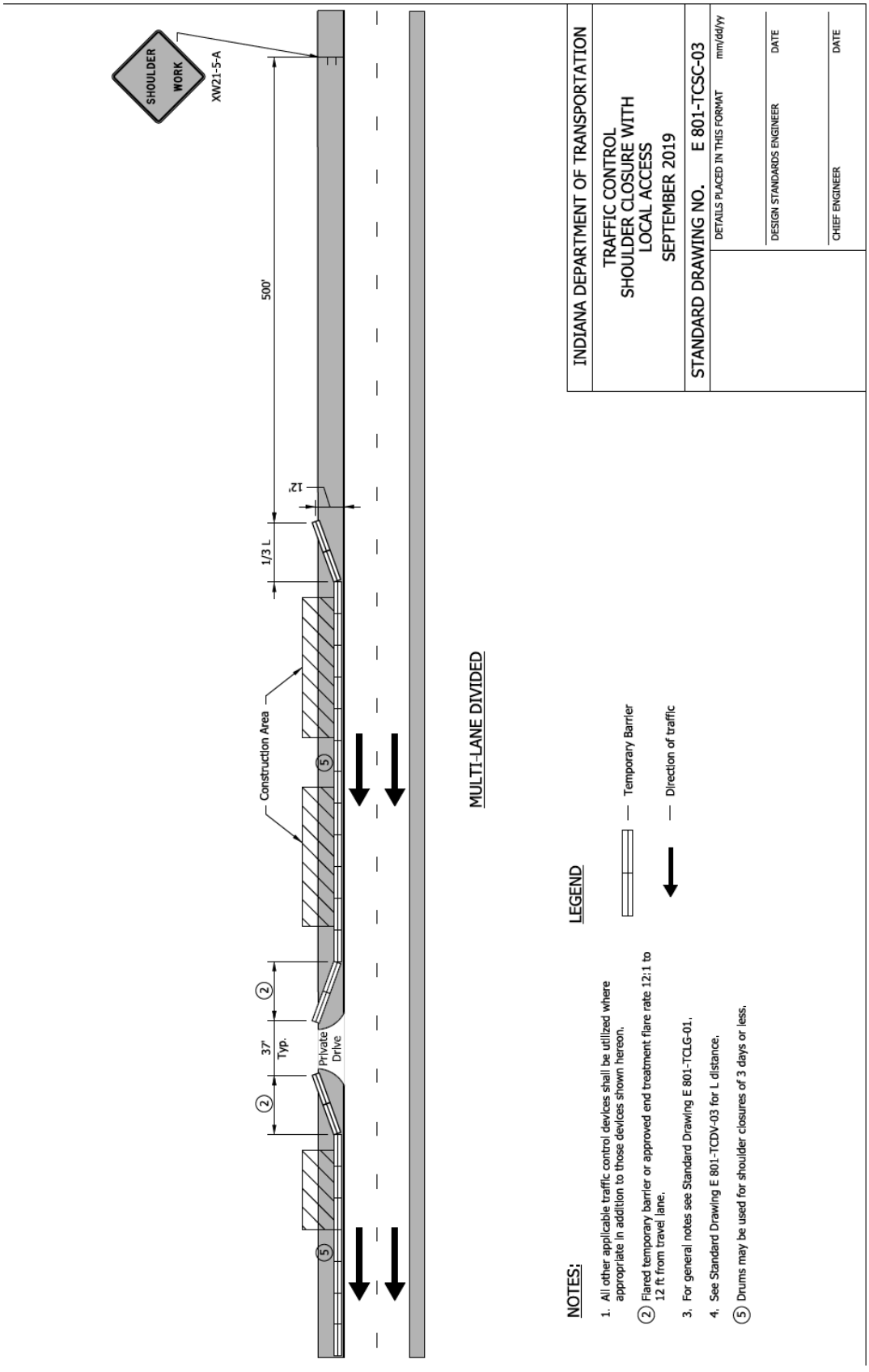
REVISION TO STANDARD DRAWINGS

E 801-TCSC-02 TRAFFIC CONTROL SHOULDER CLOSURE WITH LOCAL ACCESS (DRAFT)



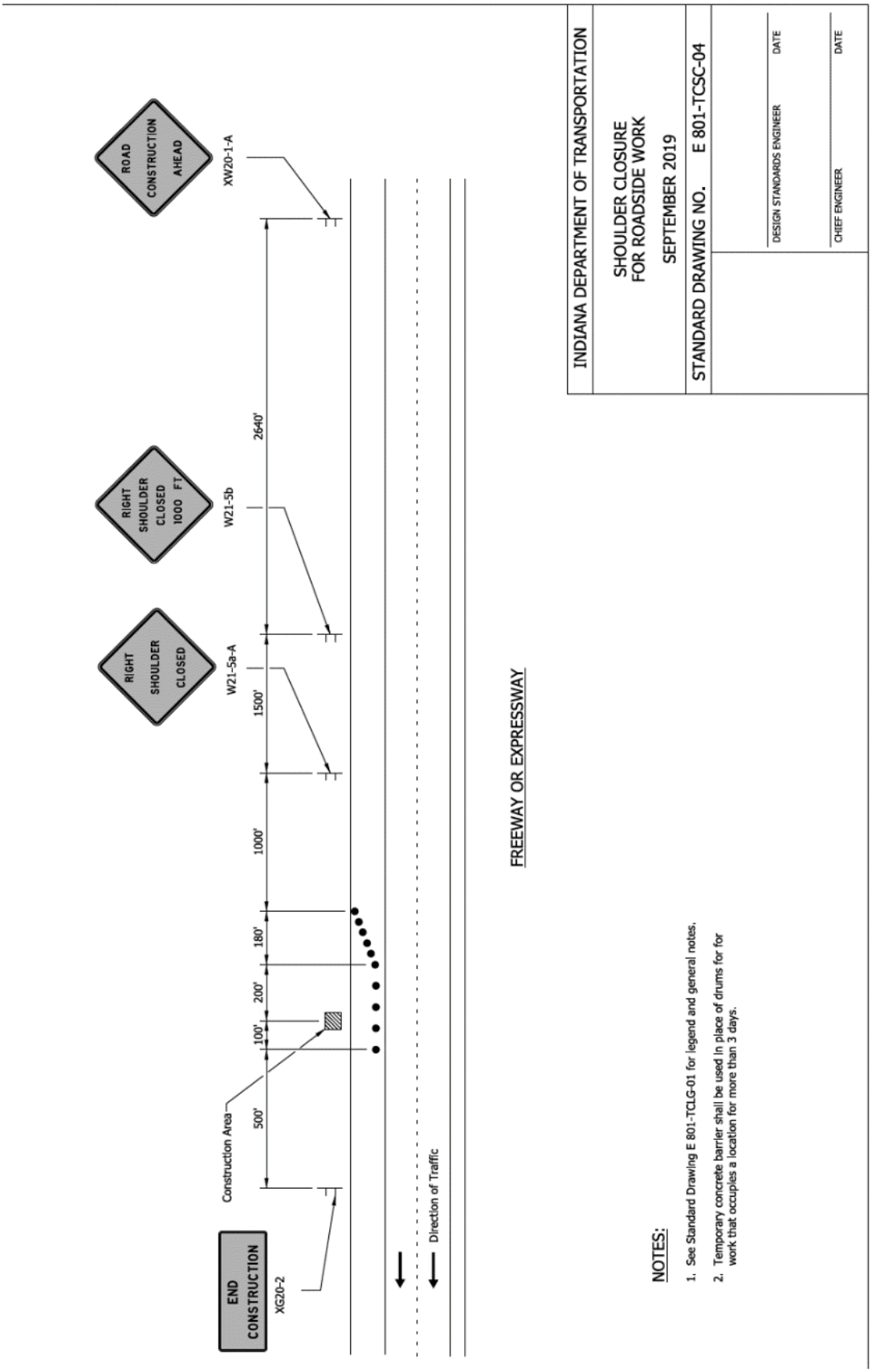
REVISION TO STANDARD DRAWINGS

E 801-TCSC-03 TRAFFIC CONTROL SHOULDER CLOSURE WITH LOCAL ACCESS (DRAFT)



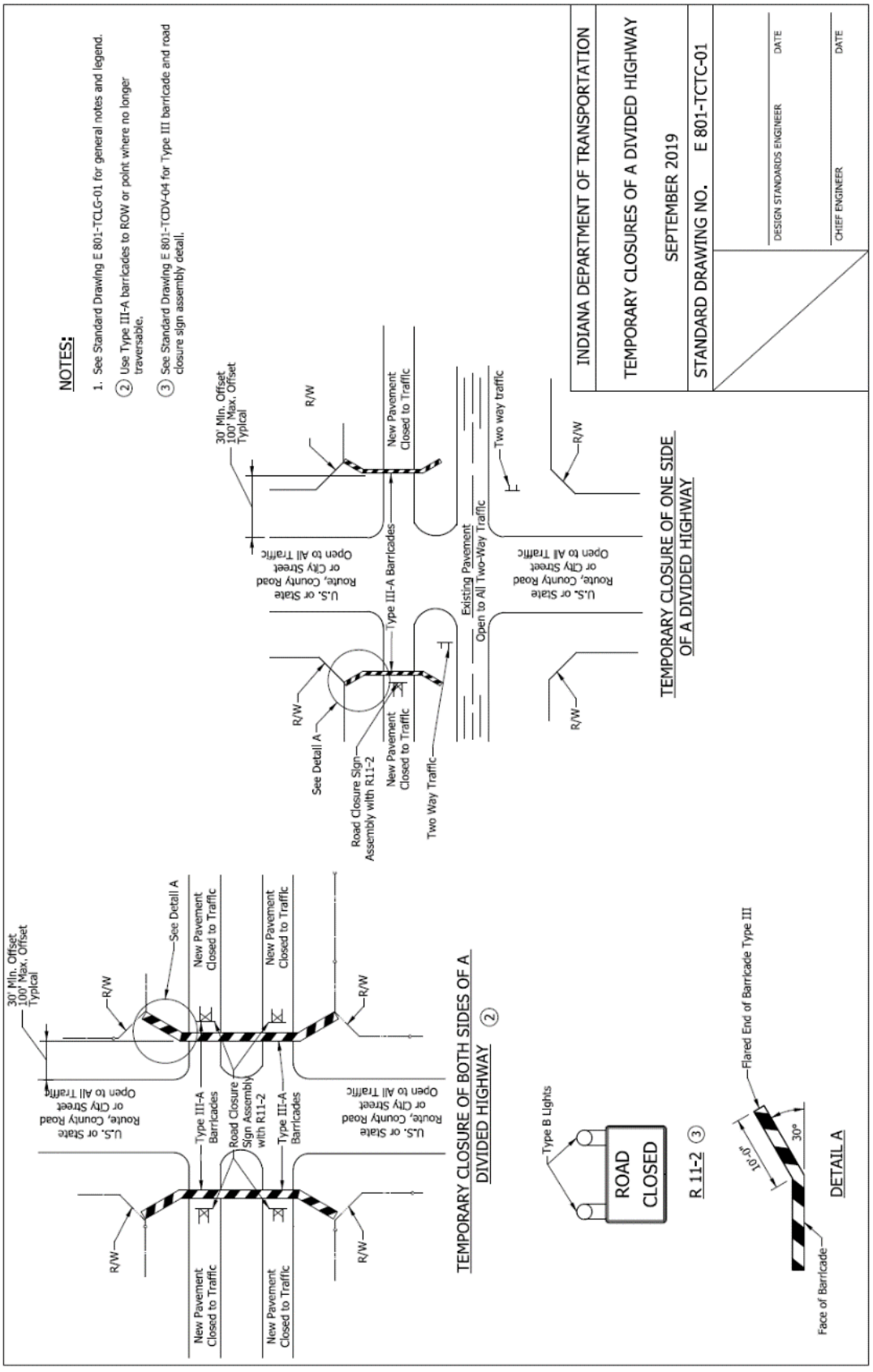
REVISION TO STANDARD DRAWINGS

E 801-TCSC-04 SHOULDER CLOSURE FOR ROADSIDE WORK (DRAFT)



REVISION TO STANDARD DRAWINGS

E 801-TCTC-01 TEMPORARY CLOSURES OF A DIVIDED HIGHWAY (DRAFT)



REVISION TO STANDARD DRAWINGS

E 801-TCTC-02 TEMPORARY CLOSURES FOR PROJECT FOLLOWING COMPLETION OF GRADING PROJECT (DRAFT)

NOTES:

1. See Standard Drawing E 801-TCLG-01 for general notes and legend.
2. See Standard Drawing E 603-FFTF series for farm field type fence detail.
3. See Standard Drawing E 801-TCDV-04 for Type III barricade and road closure sign assembly detail.

INDIANA DEPARTMENT OF TRANSPORTATION

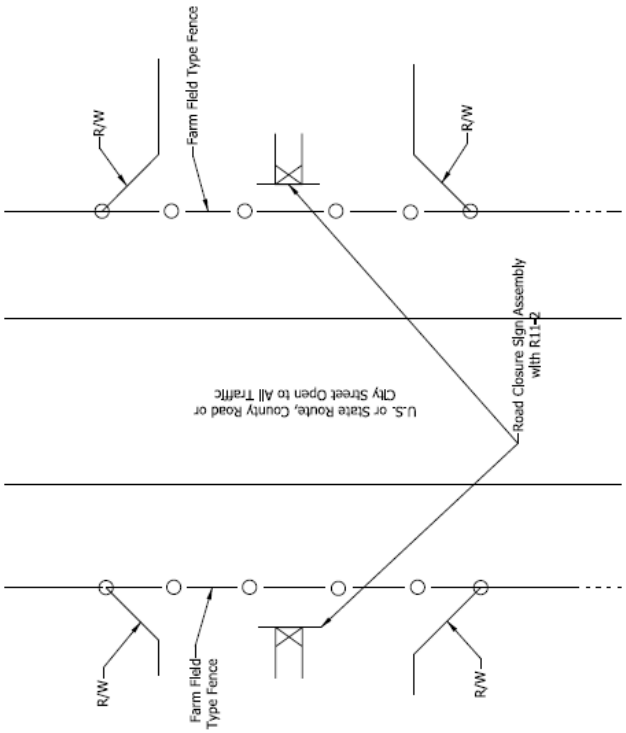
TEMPORARY CLOSURES FOR PROJECT FOLLOWING COMPLETION OF GRADING PROJECT

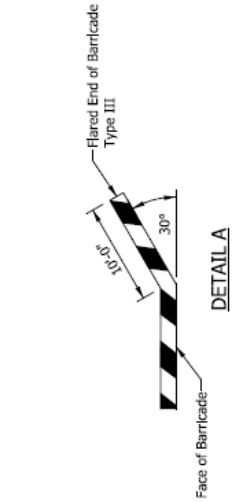
SEPTEMBER 2019

STANDARD DRAWING NO. E 801-TCTC-02

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE





COMMENTS AND ACTION

801-TCCO
801-TCFO
801-TCLC
801-TCMO
801-TCSC
801-TCTC

DISCUSSION:
This item was introduced by Mr. Boruff and presented along with Mr. Bruno, who explained that the standard drawing series for temporary crossovers (801-TCCO), flagger operations (801-TCFO), lane closures (801-TCLC), shoulder closures (801-TCSC), and temporary closures (801-TCTC) have not been updated since the 2011 edition of the Indiana MUTCD was issued. Some of the series contain unnecessary sheets, duplicate sheets, or sheets that should be moved to another series. The flagger operations series should also be split into two series due to significant differences between stationary work and mobile operations.

Mr. Boruff proposes to revise and update those standard drawings and delete the standard drawing for temporary shoulders (801-TCTS). Mr. Boruff also proposed to implement a new series for mobile operations (801-TCMO). Mr. Bruno walked the group through the revisions shown.

Mr. Koch inquired about drums in the work zone. Mr. Bruno said that adjustments can be made for proper work space. Mr. Koch also addressed the center lane closures on freeways which causes concerns for workers and double lane closures which may cause issues for the public. Further concerns were presented by Mr. Kachler. Mr. Bruno responded that the Department's Work Zone Safety section and Industry requested these changes and suggested that a note be added referring the Contractor to the Interstate Highways Congestion Policy to address those concerns, and that there could be a minor lane shift. Mr. Pankow suggested a general plan sheet for the placement of the drums so that minor shifts are not in violation of the standard details. Mr. Boruff agreed.

Mr. Leckie mentioned using movable barriers, and Mr. Pankow stated that these things should be addressed by the designer. Mr. Goldner agreed with Mr. Pankow in that using barrels for center lane closures is dangerous to workers and motorists, and suggested that widening and barriers should be incorporated. Mr. Montgomery further concurred with that assessment.

Mr. Koch asked about the use of the mobile flaggers, and using LEO's also. Mr. Pankow agreed that LEO's are not necessary when flaggers are in place.

Mr. Koch asked about permanent removal of temporary crossovers, and if they could simply remain. Mr. Pankow responded that if left in place, it becomes a safety issue and we would need sufficient safeguards for the now unused pavement. Ms. Butcher addressed the safety and legal implications as well, stating that if left in place, motorists will still find a way to use it. Mr. Pankow stated that the future use of those crossovers are minimal and are often unknown, so leaving them in place could cause problems and that issue should be decided on a case by case discussion. Mr. Boruff agreed that those details will remain unrevised.

Other minor details were addressed and Mr. Bruno said those clarifications will be incorporated into the final draft of the drawings.

Mr. Pankow suggested making sure these drawings are made correct prior to approval, since further discussions may be necessary apart from this meeting. Mr. Koch agreed stating that the items discussed can be addressed and corrected and clean drawings can be submitted at the next meeting.

Mr. Bruno agreed to withdraw this item and incorporate all items discussed and bring them back to next month's meeting with the understanding that they can still become effective for September 2018 lettings, if approved.

COMMENTS AND ACTION

801-TCCO
801-TCFO
801-TCLC
801-TCMO
801-TCSC
801-TCTC

Following further discussion, Mr. Bruno agreed that TMA's can be omitted when the posted speed limit is 35 mph or less, and explained that the use of LEOs was requested by industry.

Motion: Mr. Boruff Second: Mr. Dave Ayes: Nays: FHWA Approval:	Action: _____ Passed as Submitted _____ Passed as Revised __X__ Withdrawn
Standard Specifications Sections referenced and/or affected: 801 Recurring Special Provision affected: NONE Standard Drawing affected: SEE PROPOSAL Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	_____ 2020 Standard Specifications _____ Revise Pay Items List _____ Create RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: __X__ Standard Drawing Effective _____ _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The two most common methods to remove conflicting pavement markings in work zones are water blasting and grinding. Both methods have disadvantages as grinding can lead to pavement damage but water blasting does not fully remove durable marking materials. For work zone durations of 14 days or less, the benefit to removing the conflicting markings can be limited.

PROPOSED SOLUTION: Revise the standard specifications to allow the use black temporary tape to cover conflicting markings for work zone durations of 14 days or less.

APPLICABLE STANDARD SPECIFICATIONS: 801.12 and 923.01

APPLICABLE STANDARD DRAWINGS: No

APPLICABLE DESIGN MANUAL SECTION: 83-4.01(03)

APPLICABLE SECTION OF GIFE: 2.19.5 (see Traffic Control Example on pg. 2-38)

APPLICABLE RECURRING SPECIAL PROVISIONS: No

PAY ITEMS AFFECTED: No

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Working group review by Andrew Blackburn, Dave Boruff, Ting Nahrwold, Dana Plattner, Mike Pelham, and industry representatives

IMPACT ANALYSIS (attach report): Yes, attached.

Submitted By: Joe Bruno on behalf of Dave Boruff

Title: Traffic Administration Engineer

Organization: INDOT

Phone Number: (317) 234-7949

Date: 3/29/18

[rev. 12/2014]

Mr. Boruff
Date: 4/19/18

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? Yes

Will this proposal improve:

Construction costs? Yes

Construction time? Yes

Customer satisfaction? Yes

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

For motorists? Yes

For construction workers? Yes

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

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? Yes

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

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

REVISION TO SPECIAL PROVISIONS

801-T-XXX BLACK TEMPORARY TAPE (PROPOSED NEW)

801-T-XXX BLACK TEMPORARY TAPE

(Adopted XX-XX-XX)

The Standard Specifications are revised as follows:

SECTION 801, BEGIN LINE 569, INSERT AS FOLLOWS:

Where temporary pavement markings are to be placed on a pavement which has existing markings, the existing markings which conflict with the temporary markings shall be removed in accordance with 808.10. *On asphalt pavement, black temporary tape, Type I, may be used to cover conflicting markings ~~for work zone durations of up to 14 days~~. ~~If approved by the Engineer, the black temporary tape, Type I, may be extended past 14 days or replaced as needed.~~ The black temporary tape shall ~~be~~extend at least 1/2 in. beyond the edges of the marking to be covered. Overlapping of temporary tape will not be allowed.*

SECTION 801, BEGIN LINE 937, INSERT AS FOLLOWS:

Where temporary pavement markings are to be placed on a pavement which has existing markings, removal of the existing markings which conflict with the temporary markings will be measured in accordance with 808.12. *Where conflicting markings are covered with black temporary tape, Type I, the black temporary tape will be measured by the linear foot of markings covered.*

SECTION 801, BEGIN LINE 1017, INSERT AS FOLLOWS:

Where temporary pavement markings are to be placed on a pavement which has existing markings, removal of the existing markings which conflict with the temporary markings will be paid for in accordance with 808.13. *Where conflicting markings are covered with black temporary tape, Type I, the ~~appropriate~~ specified width of black temporary tape will be paid for at the contract unit price per linear foot of temporary pavement marking, removable.*

SECTION 923, BEGIN LINE 3, INSERT AS FOLLOWS:

923.01 Temporary Pavement Marking Tape

Temporary pavement marking tape shall be furnished in ~~two~~*three* colors and two types. It shall consist of a white or yellow reflecting film on a conformable backing which is a minimum of 4 in. wide, and is designed for marking either asphalt or concrete pavements. *Black temporary pavement marking tape shall consist of a matte film on a conformable backing which is ~~a minimum of 6 in. wide and is~~ designed for marking asphalt pavement*. ~~The~~ *White and yellow* temporary pavement marking tape shall be in accordance with ASTM D 4592.

Type I tape shall be selected from the Department's list of approved Temporary Pavement Marking Tape, Type I. Temporary pavement marking tape type I will be placed and maintained on the Department's approved list in accordance with ITM 806, Procedure H.

Type I tape furnished under this specification shall be covered by a type C certification in accordance with 916.

REVISION TO SPECIAL PROVISIONS

801-T-XXX BLACK TEMPORARY TAPE (PROPOSED NEW)

BACKUP 1

IDM 83-4.01(03) TEMPORARY PAVEMENT MARKING TAPE (DRAFT)

(Note: Proposed changes shown highlighted gray)

83-4.01(03) Temporary Pavement-Marking Tape

Temporary pavement-marking tape is an excellent material choice where there is a change to the traffic pattern during construction (e.g., crossover switch). Temporary tape can be easily and quickly installed and, if necessary, easily removed. Disadvantages of temporary tape are that it tends to move or break up under heavy traffic volume, and that it is not suitable for usage during the winter months. Temporary pavement-marking tape requires significant maintenance in comparison to temporary paint. The following describes the temporary pavement-marking tapes used by the Department.

1. Type I. Type I tape may be used as a temporary center line, lane line, or no-passing-zone line that is placed parallel to the normal pavement marking pattern, or as a temporary transverse marking or pavement-message marking. It should also be used where pavement markings are placed at an angle to the normal pavement-marking pattern (e.g., taper for lane closure, lane shift). Type I tape is a removable type of temporary pavement marking. *When black Type I tape is used to cover conflicting markings, the width specified should be at least 1 in. wider than the existing marking to be covered.*

2. Type II. Type II tape is used on a pavement which is expected to be removed or covered by additional pavement courses. It may be used as a center line, lane line, or edge line that is parallel to the normal pavement markings. It also may be used as a center line or lane line on a resurfacing overlay course. Type II tape is a non-removable type of temporary pavement marking.

BACKUP 2

DESIGN MEMORANDUM (DRAFT)

INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

Design Memorandum No. 18-
Technical Advisory

May 7, 2018

TO: **All Design, Operations, and District Personnel, and Consultants**

FROM: **/s/David H. Boruff**
David H. Boruff
Manager, Office of Traffic Administration
Traffic Engineering Division

SUBJECT: **Covering Conflicting Markings**

REVISES: ***Indiana Design Manual*** **Section 83-4.01(03)**

EFFECTIVE: **December 1, 2018**

On asphalt pavements, an option has been created to allow the use of removable black temporary tape to cover conflicting markings. The option is intended for work zone durations of up to 14 days. The black temporary tape must be at least 6 inches in width, or at least 1 inch wider than the marking to be covered, whichever is greater.

When there are conflicting markings on asphalt pavement and the estimated work zone duration is 14 days or less, designers should include a pay item for the appropriate width of temporary tape, Type I, in the contract documents**.** Questions regarding the use of black temporary tape to cover conflicting markings should be directed to Dave Boruff, the Manager of the Office of Traffic Administration, at dboruff@indot.in.gov.

BACKUP 3

OHIO DOT SPECIFICATION (EXCERPT)

G. Conflicting Markings. Conflicting markings are considered to be any markings not actively in use, not behind channelizing devices or portable barrier and/or could be misinterpreted by the traveling public or cause confusion to the driver as determined by the engineer. Before placing work zone markings, remove or cover all conflicting existing markings visible to the traveling public.

1. Removal and Covering of Markings.

a. Removal Methods. Remove the markings so that less than 5% of the line remains visible. Repair damage to the pavement that results in the removal of more than 1/8 inch of pavement thickness. Use sand, shot, or water blasting to remove markings on all asphalt or concrete pavement surfaces. Use only sand, shot, or water blasting for removal of all pavement markings in preparation for placing Item 422 Chip Seal or Item 421 Microsurfacing. A grinder may only be used to remove markings on temporary pavement or pavement that will be covered or removed prior to project completion (e.g., intermediate asphalt course). When a grinder drum is mounted to a skid steer loader, the drum must be able to accommodate a minimum of 150 teeth.

b. Covering Conflicting Markings. With the Engineer's approval, use removable, non-reflective, preformed blackout tape to cover conflicting markings. Remove or replace the blackout tape within 15 days of installation. Furnish products according to the Departments Qualified Products List (QPL).

2. Raised Pavement Markers. Remove the prismatic retro-reflector within any raised pavement marker that is in conflict with the work zone pavement markings. When the work zone pavement markings are removed and the raised pavement marker is no longer in conflict, thoroughly clean the recessed reflector attachment area of the casting and install a new prismatic retro-reflector of the same kind and color. The cost for this work is incidental to the various pay items.

H. Allowable Duration of Work Zone Markings.

1. No Passing Zones. When existing permanent no-passing-zone markings are removed or obliterated as the result of a construction operation (pavement grinding, asphalt concrete pavement overlays, etc.) and the section of pavement continues to be used by the traveling public, place Class I Center Line Markings or final center line markings as specified by the plan within 3 Calendar Days unless thermoplastic, spray thermoplastic or epoxy final markings are to be applied on the surface course. If thermoplastic, spray thermoplastic or epoxy final markings are to be applied on the surface course, place Class III Center Line Markings or final center line markings as specified in the plan within 3 Calendar Days.

a. Subsequent Work in No Passing Zones. If, after the original markings are removed or obliterated, the Contractor returns to the subject no passing zone and places a plan-specified pavement course within the 3-Calendar Day limit, or performs work in preparation for a subsequent pavement course, the Contractor shall have temporarily satisfied the conditions of the previous paragraph. In this event, the 3-Calendar Day limit will begin again.

b. Liquidated Damages. For each Calendar Day beyond 3 days that this work remains incomplete, the Department will assess liquidated damages in the amount of $1000 per Calendar Day. The Department will treat the time for the completion of no-passing-zone markings as an interim Completion Date.

2. Passing Zones. Sections of pavement where passing is permitted in both directions must be marked with Class I Center Line Markings or final center line markings as specified by the plan within 14 Calendar Days unless thermoplastic, spray thermoplastic or epoxy final markings are to be applied on the surface course. If thermoplastic, spray thermoplastic or epoxy final markings are to be applied on the surface course, place Class III Center Line Markings or final center line markings as specified in the plan within 14 Calendar Days.

3. Allowable Duration of Class II Lane Lines and Gore Markings and Absence of Edge lines. Any time existing permanent lane lines, gore markings, or edge lines have been removed or obliterated as the result of a construction operation (pavement grinding, asphalt pavement overlays, pavement widening, etc.) and the section of pavement continues to be used by the traveling public, place Class I Markings or final markings as specified by the plan within 14 Calendar Days unless thermoplastic, spray thermoplastic or epoxy final markings are to be applied on the surface course. If thermoplastic, spray thermoplastic or epoxy final markings are to be applied on the surface course, place Class III Markings or final markings as specified in the plan within 14 Calendar Days.

COMMENTS AND ACTION

801-T-XXX BLACK TEMPORARY TAPE

DISCUSSION:
Mr. Boruff introduced and presented this item stating that the two most common methods to remove conflicting pavement markings in work zones are water blasting and grinding. Both methods have disadvantages as grinding can lead to pavement damage and water blasting does not fully remove durable marking materials. For work zone durations of 14 days or less, the benefit to removing the conflicting markings can be limited. Mr. Boruff proposed to revise the standard specifications to allow the use black temporary tape to cover conflicting markings for work zone durations of 14 days or less.

Mr. Koch asked if we should also consider concrete pavements. Mr. Bruno answered that they'd like to start with asphalt pavements and will consider it for concrete in the future. Mr. Koch also asked about the language "replaced as needed" and Mr. Bruno stated that it is intended to allow the Contractor to replace worn out tape at the end of the 14 days if approved. Mr. Koch further mentioned that 801.18 deals with the cost of replacing temporary markings and believes the new language adds ambiguity and may not be necessary. The 14 day language was removed. Revisions are as shown.

Mr. Koch mentioned that, other than crosswalks, we typically have 4 in. temporary markings and this proposal could result in change orders if black tape is approved. Mr. Bruno responded that design guidance is proposed in IDM 83-4.01(03), above. Mr. Koch also suggested the language added in the basis of payment be clarified in the method of measurement also, and that the additional width be included in the cost. Mr. Bruno agreed and the revisions are as shown highlighted above.

Motion: Mr. Boruff Second: Mr. Dave Ayes: 8 Nays: 0 FHWA Approval: YES	Action: ____ Passed as Submitted _X_ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: 801 pg 763; 801 pg 773; 923 pg 1084. Recurring Special Provision affected: PROPOSED NEW Standard Drawing affected: NONE Design Manual Sections affected: 83-4 GIFE Sections cross-references: 2.19	_X_ 2020 Standard Specifications _____ Revise Pay Items List _X_ Create RSP (No.801-T-221) Effective Dec. 01, 2018 Letting RSP Sunset Date: 2020 book _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update _____ SiteManager Update

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: When determining bulk specific gravity, SMA specs still require AASHTO T 275 (Paraffin) to be used when the percent water absorbed exceeds 2.0. Recently the 401 and 402 specs have been changed to AASHTO T 331 (Corelok). There are also a few other minor edits that were made in the 401 section that should be made in the 410 section.

PROPOSED SOLUTION: Revise language in 410 to require AASHTO T 331 for testing consistency and match revisions in the 401 section.

APPLICABLE STANDARD SPECIFICATIONS: 410

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):

Submitted By: Matt Beeson

Title: State Materials Engineer

Organization: INDOT

Phone Number: 317-610-7251 x204

Date: 4/4/18

Mr. Beeson
Date: 4/19/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? N

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

Will this proposal improve:

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

Will this proposal reduce operational costs or maintenance effort? N

Will this item improve safety:

- For motorists? N
- For construction workers? N

Will this proposal improve quality for:

- Construction procedures/processes? N
- Asset preservation? Y
- Design process? N

Will this change provide the contractor more flexibility? N

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

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

Is this proposal needed for compliance with:

- Federal or State regulations? N
- AASHTO or other design code? N

Is this item editorial? N

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

REVISION TO STANDARD SPECIFICATIONS

SECTION 410 - QUALITY CONTROL/QUALITY ASSURANCE, QC/QA, HMA - SMA PAVEMENT
410.05 SMA MIX DESIGN
410.16 DENSITY
410.20(c) BSG OF THE DENSITY CORE

The Standard Specifications are revised as follows:

SECTION 410, BEGIN LINE 94, DELETE AS FOLLOWS:

A change in the source or types of aggregates, change in source or type of stabilizing additives, or a change in the source of the specified binder shall require a new DMF. ~~A new DMF shall be submitted to the District Testing Engineer for approval one week prior to use.~~

SECTION 410, BEGIN LINE 346, INSERT AS FOLLOWS:

The Contractor shall obtain cores in the presence of the Engineer with a device that shall produce a uniform 6*.00 ± 0.25* in. diameter pavement sample. Surface courses shall be cored within one work day of placement. Damaged core shall be discarded and replaced with a core from a location selected by adding 1 ft to the longitudinal location of the damaged core using the same transverse offset.

SECTION 410, BEGIN LINE 370, DELETE AND INSERT AS FOLLOWS:

The density of the mixture will be expressed as the percentage of maximum specific gravity, %MSG, obtained by dividing the average bulk specific gravity by the maximum specific gravity for the sublot, times 100. Samples for the bulk specific gravity and maximum specific gravity will be dried in accordance with ITM 572. The Engineer will determine the bulk specific gravity of the cores in accordance with AASHTO T 166, Method A or AASHTO T ~~275~~*331*, if required. The maximum specific gravity will be mass determined in water in accordance with AASHTO T 209. The target value for density of SMA mixtures of each sublot shall be 93.0%.

SECTION 410, BEGIN LINE 489, DELETE AND INSERT AS FOLLOWS:

(c) BSG of the Density Core

Cores shall be taken within seven calendar days unless otherwise directed. Additional core locations will be determined by adding 1 ft longitudinally of the cores tested using the same transverse offset. The cores will be dried in accordance with ITM 572 and tested in accordance with AASHTO T 166, Method A or AASHTO T ~~275~~*331*, if required. The Contractor shall clean, dry, and refill the core holes with SMA or HMA surface materials within one work day of the coring operations.

COMMENTS AND ACTION

410.05 SMA MIX DESIGN
410.16 DENSITY
410.20(c) BSG OF THE DENSITY CORE

DISCUSSION:
This item was introduced and presented by Mr. Beeson who stated that when determining bulk specific gravity, SMA specs still require AASHTO T 275, Paraffin, to be used when the percent water absorbed exceeds 2.0. Recently the 401 and 402 specs have been changed to AASHTO T 331, Corelok. There are also a few other minor edits that were made in the 401 section that should be made in the 410 section.

Mr. Beeson therefore proposes to revise language in 410 to require AASHTO T 331 for testing consistency and match revisions in the 401 section.

There were no questions or discussion and this item passed as submitted.

Motion: Mr. Beeson Second: Mr. Pankow Ayes: 8 Nays: 0 FHWA Approval: YES	Action: X Passed as Submitted _____ Passed as Revised __ __ Withdrawn
Standard Specifications Sections referenced and/or affected: 410 pg 311, 316, 320. Recurring Special Provision affected: NONE Standard Drawing affected: NONE Design Manual Sections affected: NONE GIFE Sections cross-references: NONE	X 2020 Standard Specifications _____ Revise Pay Items List X Create RSP (No.410-R-677) Effective Sept. 01, 2018 Letting RSP Sunset Date: 2020 SS Book _____ Revise RSP (No._____) Effective _____ Letting RSP Sunset Date: _____ Standard Drawing Effective _____ Create RPD (No. _____) Effective _____ Letting _____ GIFE Update X SiteManager Update

Mr. Beeson
Date: 4/19/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED:

Mix workability is an ongoing struggle for applications that involve concrete delivered via ready mix trucks. INDOT specifications generally limit slump to four inches, but contractors prefer a slump of approximately five inches to ease placement and finishing. Contractors typically add water to the mix on-site in order to improve the workability. However, adding water after batching is high risk to INDOT since it increases the water-cement ratio of the batch which may exceed the specification limit resulting in poor durability and can also create non-uniform mixtures. Sprinkling water to the surface of concrete for finishing is also highly detrimental because it significantly increases the water-cement ratio which creates a much less durable wearing surface and promotes scaling. The current slump restrictions promote conflict at the jobsite to police the addition of water to both the delivery truck and to the surface of the plastic concrete for finishing. However, it is extremely difficult for INDOT project personnel to continuously monitor and control the addition of water.

PROPOSED SOLUTION:

There is nothing inherently detrimental about using properly designed concrete mixes with moderately higher slump than is currently allowed by the specification. Ready mix concrete suppliers have the ability to chemically modify concrete slump with admixtures. This does not increase the water-cement ratio, but improves workability and finishability. Increasing the allowable slump will permit mix producers to properly design and supply mixes that are workable as delivered. This will dramatically reduce the contractor's incentive to modify the mixes at the jobsite by adding water.

APPLICABLE STANDARD SPECIFICATIONS: 502.04(a), 502.04(b), 702.07, 702.12

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: none

APPLICABLE SECTION OF GIFE: Various. (Section 4.7 needs revised to show 1" to 6" range)

APPLICABLE RECURRING SPECIAL PROVISIONS: none

PAY ITEMS AFFECTED: none

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

(CONTINUED)

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

IMPACT ANALYSIS (attach report):

Submitted By: Matt Beeson

Title: State Materials Engineer

Organization: INDOT Office of Materials Management

Phone Number: 317-610-7251 x 204

Date: 3/6/18

Mr. Beeson
Date: 4/19/18

STANDARD SPECIFICATIONS, SPECIAL PROVISIONS AND STANDARD DRAWINGS

REVISION TO STANDARD SPECIFICATIONS

IMPACT ANALYSIS REPORT CHECKLIST

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

Does this item appear in any other specification sections? No

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

Will this proposal improve:

Construction costs? No

Construction time? N/A

Customer satisfaction? N/A

Congestion/travel time? N/A

Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? Yes

Design process? N/A

Will this change provide the contractor more flexibility? Yes

Will this proposal provide clarification for the Contractor and field personnel? 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: N/A

REVISION TO STANDARD SPECIFICATIONS

SECTION 502 - PORTLAND CEMENT CONCRETE PAVEMENT, PCCP
502.04(a) PORTLAND CEMENT CONCRETE
502.04(b) HIGH-EARLY STRENGTH CONCRETE
SECTION 702 - STRUCTURAL CONCRETE
702.05 PROPORTIONING
702.07 MIXING
702.12 CONSISTENCY

The Standard Specifications are revised as follows:

SECTION 502, BEGIN LINE 72, DELETE AND INSERT AND AS FOLLOWS:

Slump, formed.....2 to ~~4~~*6* in.

SECTION 502, BEGIN LINE 82, DELETE AND INSERT AS FOLLOWS:

Chemical admixtures type A, type B, type C, type D, ~~and~~ type E*, and type F* may be allowed with prior written approval.

SECTION 502, BEGIN LINE 108, DELETE AND INSERT AS FOLLOWS:

Slump, formed.....2 to ~~4~~*6* in.

SECTION 502, BEGIN LINE 117, DELETE AND INSERT AS FOLLOWS:

Chemical admixtures type A, type B, type C, type D, ~~and~~ type E*, and type F* may be allowed with prior written approval.

SECTION 702, BEGIN LINE 124, DELETE AND INSERT AS FOLLOWS

Class C concrete shall contain either a water-reducing admixture or *both* a water-reducing *admixture and a* retarding admixture. The type*s* used shall not be changed during any individual contiguous pour. The type*s of* admixture*s* to be used ~~will~~*shall* be selected based on the expected concrete or air temperature. When either temperature is expected to be 65°F or above, *both* a water-reducing *admixture and a* retarding admixture shall be used. A water-reducing admixture shall be used when both temperatures are expected to be below 65°F unless retardation is required due to the structure design or the proposed pour sequence such as the requirements for floor slab pours set out in 704.04. *If class C concrete contains ground granulated blast furnace slag, the producer may propose an alternate temperature threshold for including a retarding admixture.* Air-entraining cements will not be allowed in class C concrete.

SECTION 702, BEGIN LINE 243, DELETE AND INSERT AS FOLLOWS:

Concrete that is not within the specified slump limits at time of placement shall not be used. Except as required in 702.05 for class C concrete, ~~a water-reducing admixture,~~ *chemical admixtures* type A, *type B,* ~~or a water-reducing and retarding admixture,~~ type D, *type F, and type G,* may be used in the concrete. Chemical admixtures ~~type B,~~ type C~~,~~ and type E will be allowed only with prior written permission. ~~Chemical admixtures type F and type G shall not be used.~~

REVISION TO STANDARD SPECIFICATIONS

SECTION 502 - PORTLAND CEMENT CONCRETE PAVEMENT, PCCP
502.04(a) PORTLAND CEMENT CONCRETE
502.04(b) HIGH-EARLY STRENGTH CONCRETE
SECTION 702 - STRUCTURAL CONCRETE
702.05 PROPORTIONING
702.07 MIXING
702.12 CONSISTENCY

SECTION 702, BEGIN LINE 525, DELETE AND INSERT AS FOLLOWS:

702.12 Consistency

Slump will be measured in accordance with 505 and shall be no less than 1 in. and no more than ~~4~~*6* in. except for concrete placed in foundation seals.

COMMENTS AND ACTION

502.04(a) PORTLAND CEMENT CONCRETE
502.04(b) HIGH-EARLY STRENGTH CONCRETE
702.05 PROPORTIONING
702.07 MIXING
702.12 CONSISTENCY

DISCUSSION:
Mr. Beeson introduced and presented this item. Mr. Nelson explained that mix workability is an ongoing struggle for applications that involve concrete delivered via ready mix trucks. Contractors prefer a slump of approximately 5 in. to ease placement and finishing, and will typically add water to the mix on-site in order to improve the workability, which can be detrimental to the mix as designed. Mr. Nelson pointed out that there is nothing inherently detrimental about using properly designed concrete mixes with moderately higher slump than is currently allowed by the specification. Ready mix concrete suppliers have the ability to chemically modify concrete slump with admixtures. This does not increase the water-cement ratio, but improves workability. Increasing the allowable slump will allow mix producers to properly design and supply mixes that are workable as delivered. This will dramatically reduce the Contractor's incentive to modify the mixes at the jobsite by adding water.

Discussion ensued concerning adding water at the site, and whether or not to revise language in 702 forbidding adding water. Currently, 702.07 allows it. Mr. Pankow suggested added language to the GIFE to control the amount of water that may be added.

Motion: Mr. Beeson Second: Mr. Koch Ayes: 8 Nays: 0 FHWA Approval: YES	Action:	
	X	Passed as Submitted
		Passed as Revised
		Withdrawn
Standard Specifications Sections referenced and/or affected: 502.04 pg 359, 360; 702.07 pg 530; 702.12 pg 536.	X	2020 Standard Specifications
		Revise Pay Items List
Recurring Special Provision affected: NONE	X	Create (2) RSP (No.502-R-678) (No.702-R-679) Effective Sept. 01, 2018 Letting RSP Sunset Date: 2020 SS Book
Standard Drawing affected: NONE		Revise RSP (No._____) Effective _____ Letting RSP Sunset Date:
Design Manual Sections affected: NONE		Standard Drawing Effective
GIFE Sections cross-references: 4.7.		Create RPD (No. _____) Effective _____ Letting
	X	GIFE Update
	X	SiteManager Update