



Bridge Standards Update

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May 17, 2017



Bridge Office | mndot.gov/bridge

Staffing Changes



Revision Logs

Bridges and Structures

Design, construction and maintenance resources

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Bridge Details Manual Part I

Questions? Contact leonard.barnes@state.mn.us.



Bridge Details Manual Part I	Updated			
Download entire manual (PDF 3 MB)	Jan. 5, 2017			
Bridge Nameplate	PDF	DGN	Approved	Revised
New Bridges	B101	B101	Nov. 22, 2002	Sept. 11, 2014
Bridge Reconstruction	B102	B102	Nov. 22, 2002	Sept. 11, 2014
Pile Splice	PDF	DGN	Approved	Revised
Cast-In-Place Concrete Piles	B201	B201	Nov. 22, 2002	Nov. 6, 2013
Steel H Bearing Piles 10" to 14"	B202	B202	Nov. 22, 2002	Nov. 6, 2013
Sole Plate	PDF	DGN	Approved	Revised

Revision Logs

Minnesota Department of Transportation – Bridge Office REVISION LOG for B905

January 5, 2017 Page 1 of 1

B905 **Fence Post Anchorage**

Approved, and signed, January 5, 2017

Approved 01-05-2017

REMOVED From The B-DETAIL:

- Plan View-Type B, Plan View-Type C and the Grout Alternate details.

Under NOTES:

- Added first note: “All pipe diameters are nominal”.
- Added second note: “See special provisions for requirements not included on this sheet”.
- Added 6th note: “Furnishing and installing fence post anchorages is incidental to the wire fence”.
- Removed “Mn/DOT” from the second, third and fourth notes.
- Added numbered note ①: “Adhesive anchorage with 3/4" dia. anchor rod per spec. 3385, type a with hex nut and washer. Provide an adhesive with a minimum characteristic bond strength in uncracked concrete of 1.5 ksi. Embed the anchorage no less than 5" regardless of characteristic bond strength. Drill through reinforcement (if encountered) to achieve minimum embedment. Ensure hex nut is in contact with the adjacent surface and torque to 60 ft-lbs unless a higher torque is recommended by the manufacturer. Proof load to 7.5 kips. See special provisions for additional requirements.”
- Added numbered note ②: “E70X electrodes for 3/8" post to base plate weld”.
- Under the Double Extra Strong Pipe Weights: Removed the 1½" nominal diameter note.

At TYPICAL SECTION:

- Changed the base plate thickness from ½" to ¾". Removed the dimension and labeled base plate as ¾".
- Changed the Anchorage projection above the concrete surface from 2" to 2¼".
- Changed the weld size from 1/4" to 3/8" and added numbered note ②.
- Changed the anchorage note to: “Approved Adhesive Anchorage ①”.
- Changed the caulk and shim note to: “Caulk and shim base plate per special provisions”.

At PLAN VIEW – TYPE A:

- Added (TYP.) to the 4" dimension and added additional 1½" dimensions to the hole locations.
- Changed the pipe sleeve note to: “Pipe sleeve for intermediate posts and end posts use 2" nominal dia. double extra strong pipe”.

Website Update

Standard Plans

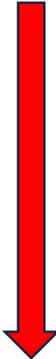
Standard Drawings for use in Construction Plans

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Show Records per page

Update	Transmittal Subject	Transmittal Date
17-02	Standard Plans 404, 405, 409	3/15/2017
17-01	Standard Plans 250 and 254	1/26/2017
16-07	Standard Plans 607, 609, 618, 619, and 684	12/02/2016
16-06	Standard Plans 5-297.620 - .636 Cast-in-place Retaining Walls	9/13/2016
16-05	Bridge Approach Panel Plans	8/25/2016
16-04	Standard Plan 661, and 681 (Concrete Median Barrier Single Slope)	8/11/2016
16-03	Standard Plans 690, 692, 694, 695, 696 Type 31 Guardrail	7/26/2016
16-02	Standard Plans 222, 224, 624, and 661	3/15/2016
16-01	Standard Plans 209, 210, 217, and 219	2/23/2016



Quick Links

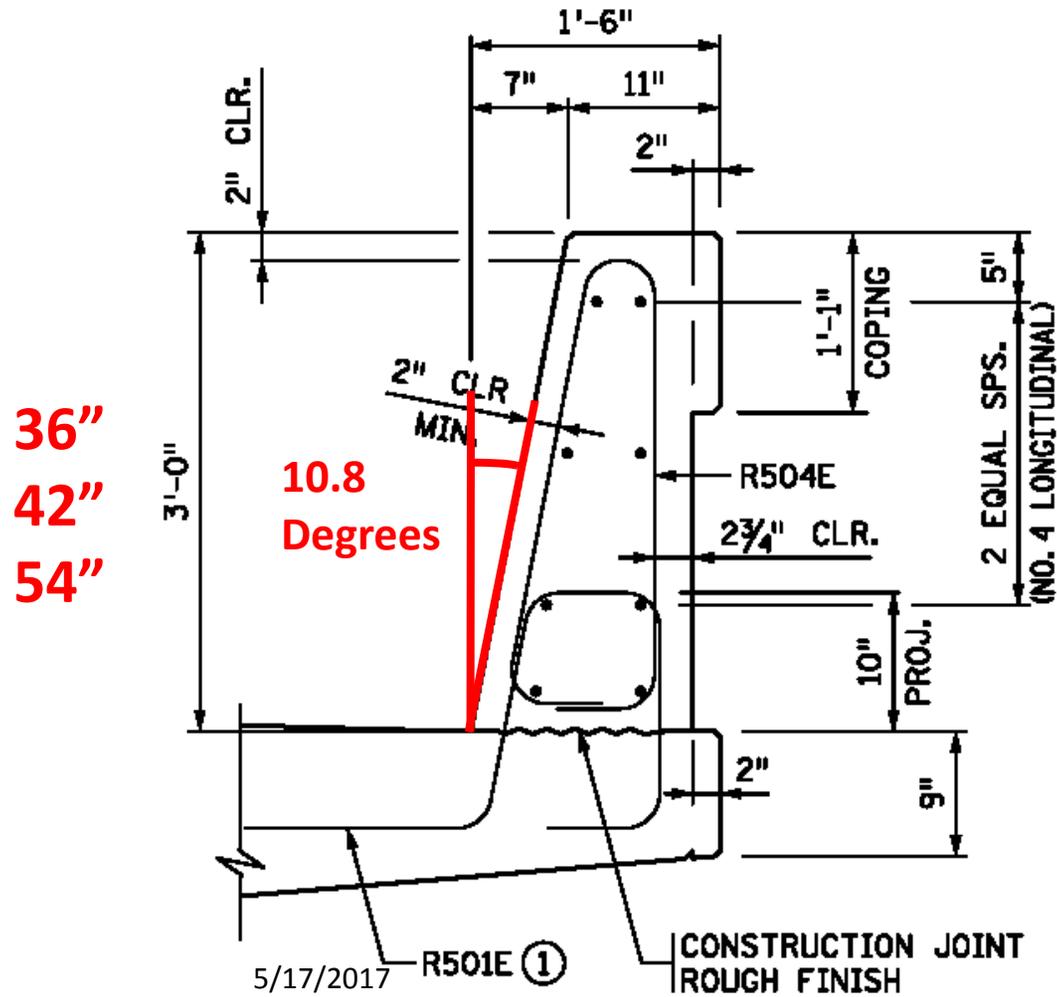
- [Design Scene](#)
- [Metro Sample Plan](#)
- [Road Design Manual](#)
- [Standard Specifications for Construction](#)
- [Standard Plates](#)
- [Technical Memoranda](#)

Search

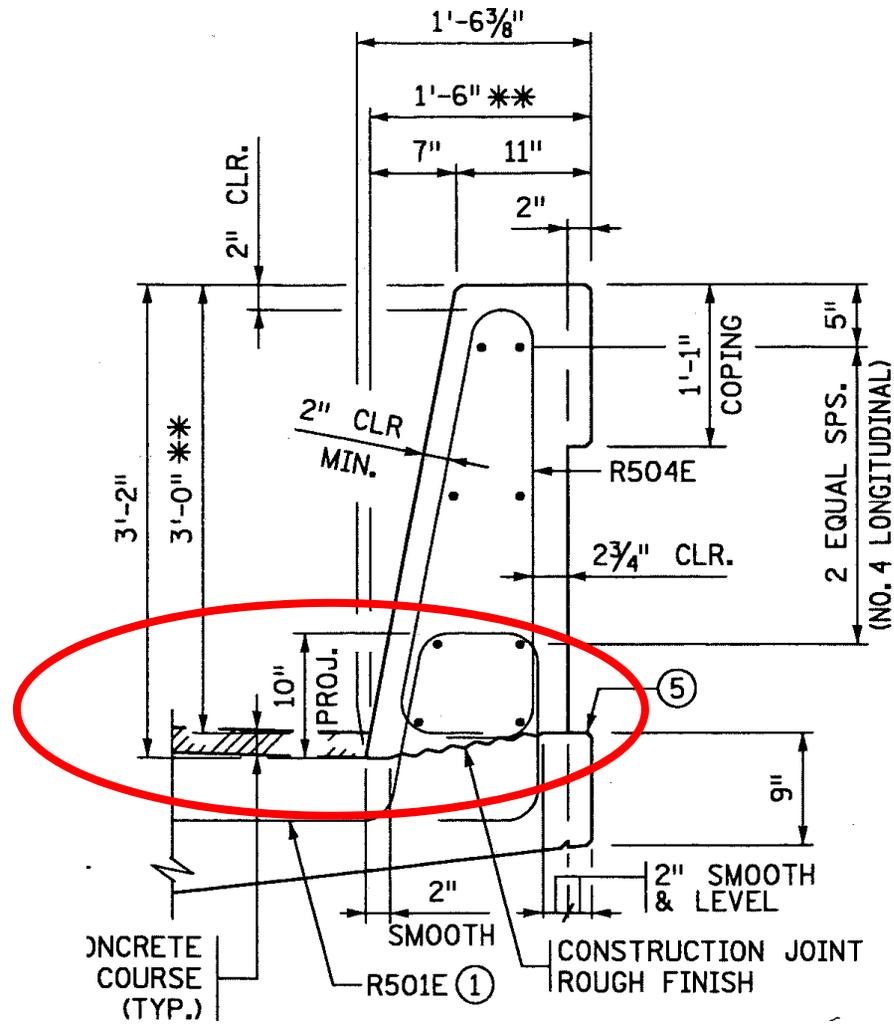
Search by Plan# / Title

(Current and Historical versions will be displayed)

Single Slope Barriers



With Concrete Wearing Course



Single Slope Barriers

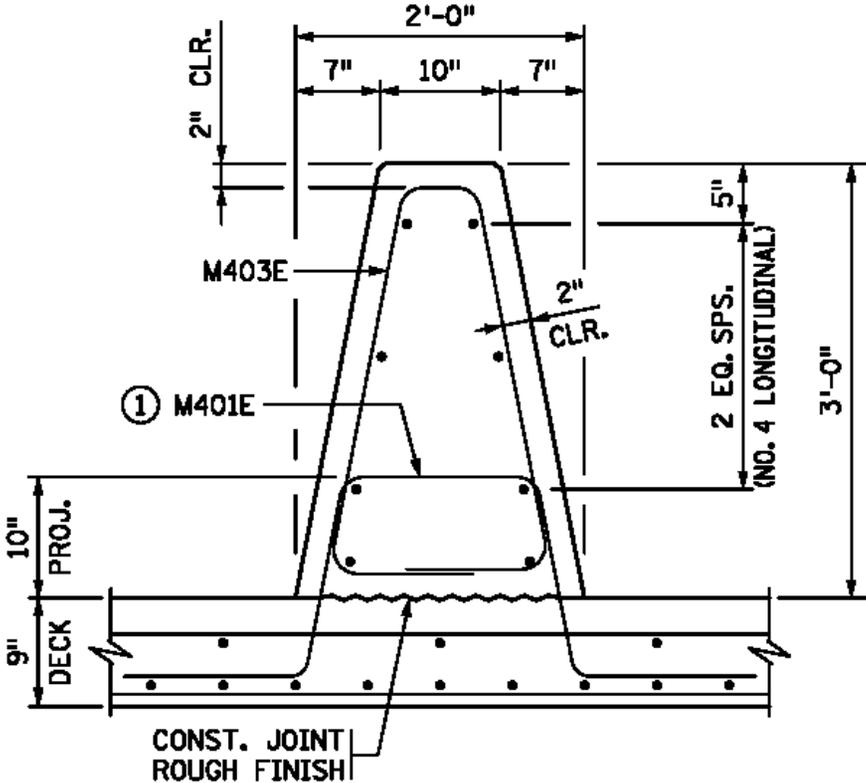
COMBINATIONS:

- Monolithic Deck or Concrete Wearing Course
 - With or Without Sidewalk
 - Integral/Semi-Integral Abutment
 - Parapet Abutment
 - 36", 42", 54" Heights
- Local Bridges – No Approach Panel

25 New Standard Plans

Solid Median Barriers

36"
42"
54"



Single Slope Barriers

COMBINATIONS:

- Monolithic Deck or Concrete Wearing Course
 - With or Without Sidewalk
 - Integral/Semi-Integral Abutment
 - Parapet Abutment
 - 36", 42", 54" Heights

49 New Standard Plans

Guard Rail Connection



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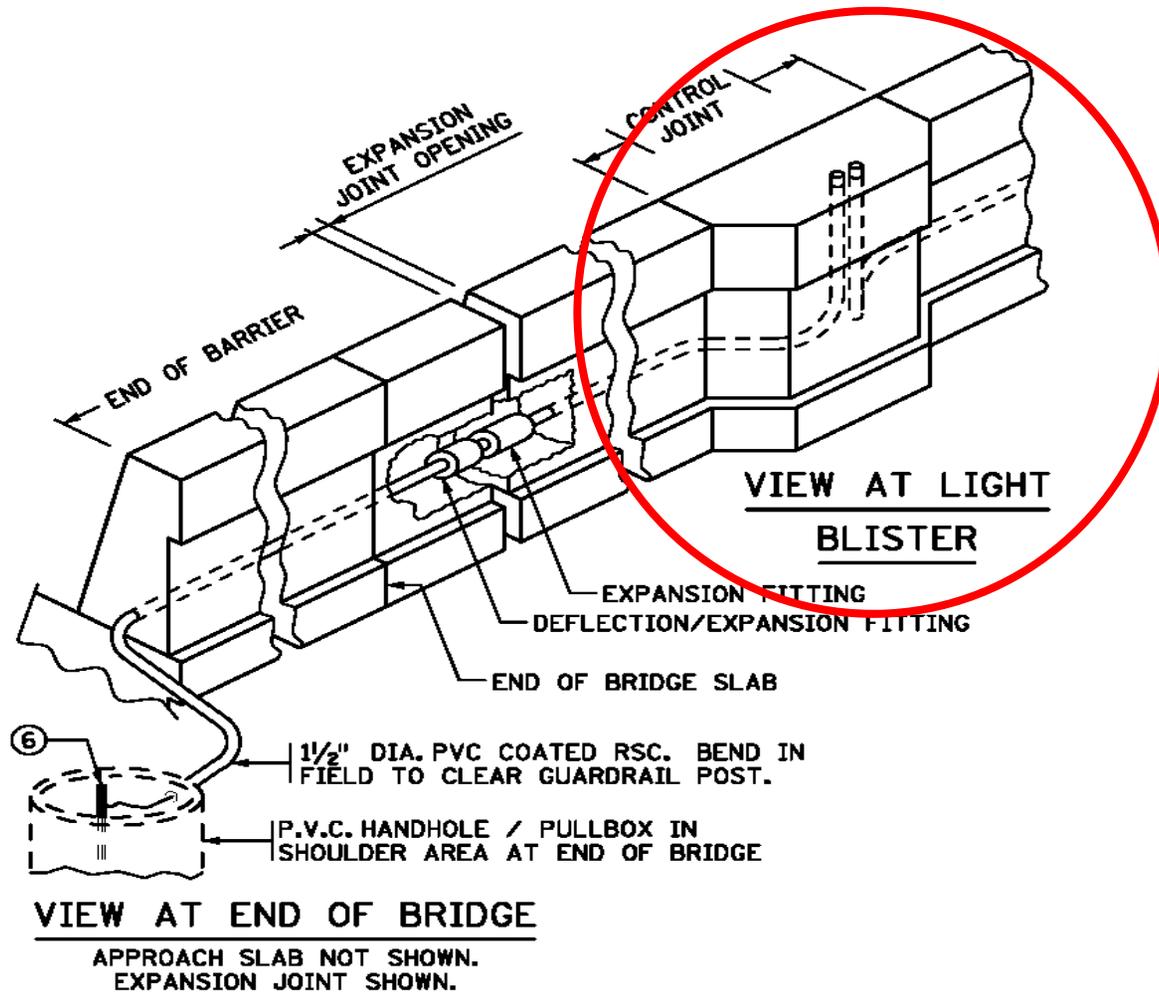
Control Joints



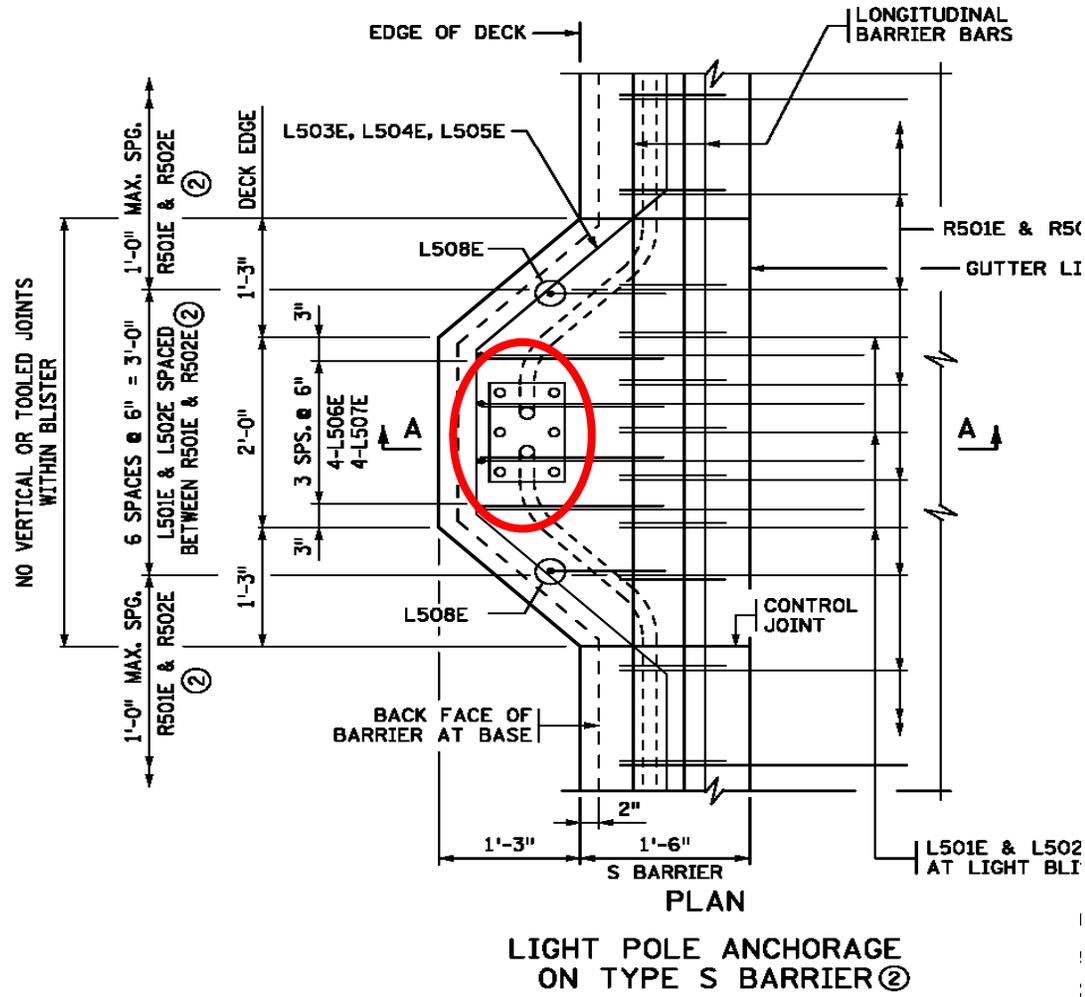
Control Joints



Light Blisters



Light Blisters



Parapet on Raised Sidewalk



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Parapet on Raised Sidewalk

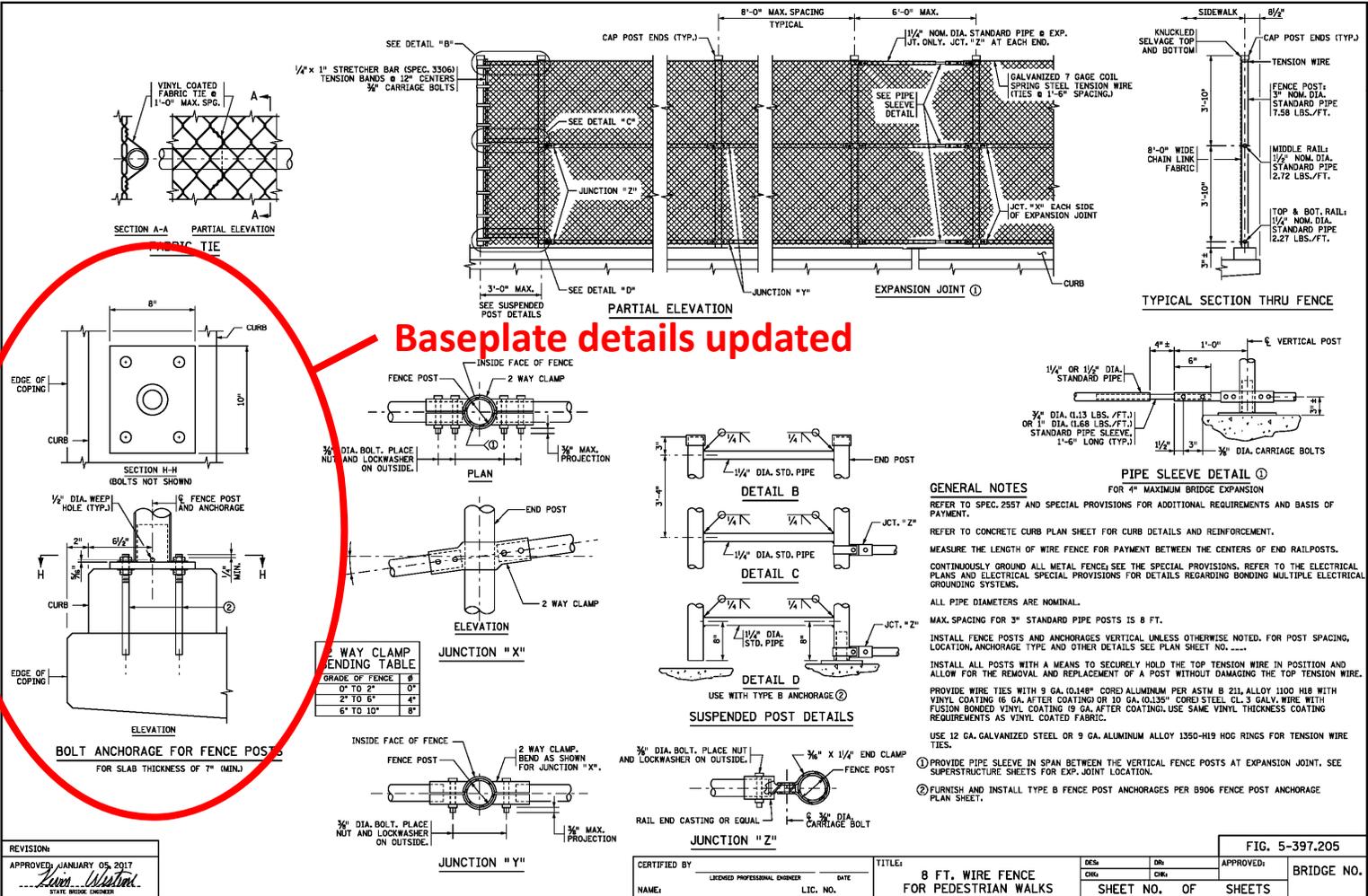
GUIDANCE UNTIL THE NEW STANDARD?

- Current standard is available on a case-by-case basis upon approval by the State Bridge Design Engineer.
- Cannot be used on bridges on the National Highway System (NHS) unless protected by a traffic barrier, or not mounted on the sidewalk.
- Can be used on non-NHS bridges for design speeds of 35 mph or less.

Chain Link Fence



Chain Link Fence



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REVISION:
 APPROVED: JANUARY 05, 2017
[Signature]
 STATE WIDE CHECKER

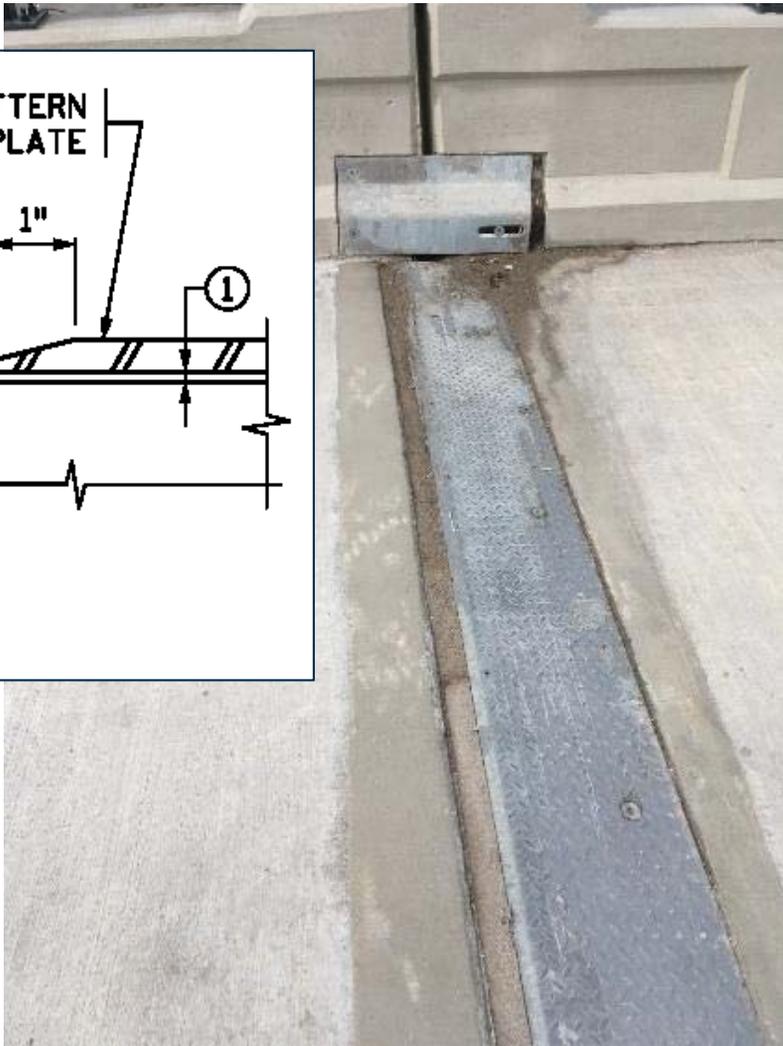
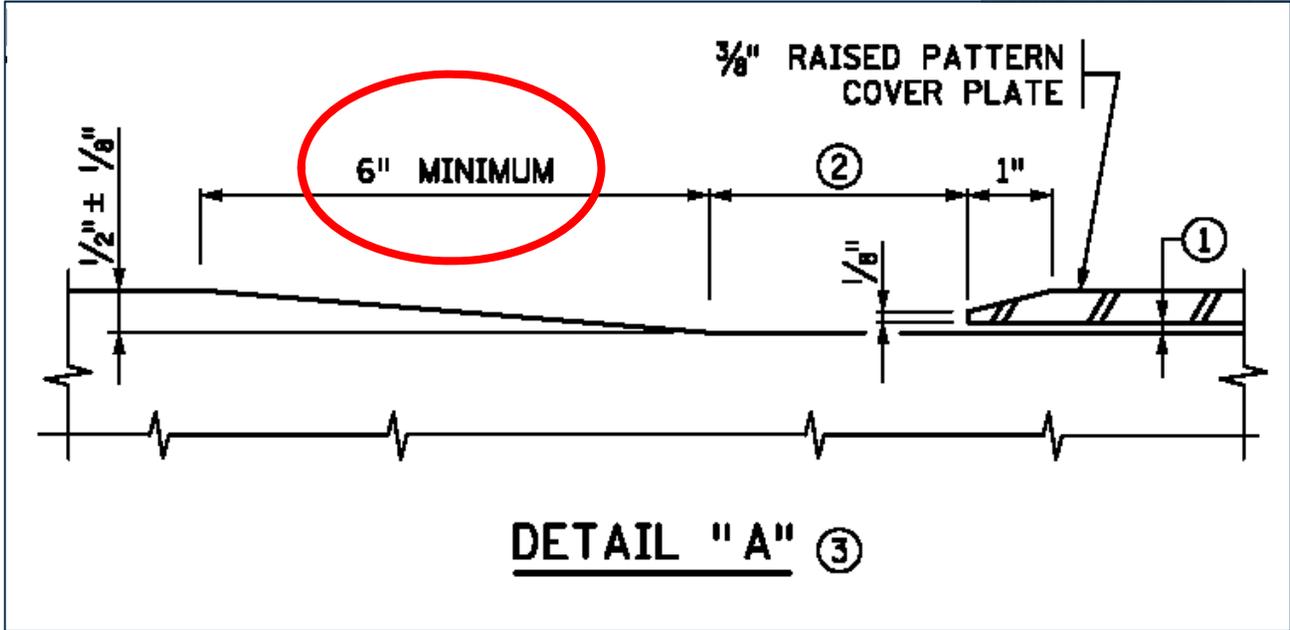
CERTIFIED BY: _____ DATE: _____ TITLE: _____
 LICENSED PROFESSIONAL ENGINEER L.I.C. NO. _____
 8 FT. WIRE FENCE FOR PEDESTRIAN WALKS
 SHEET NO. _____ OF _____ SHEETS

FIG. 5-397.205
 BRIDGE NO. _____

Pedestrian Railing



Joint Cover Plates



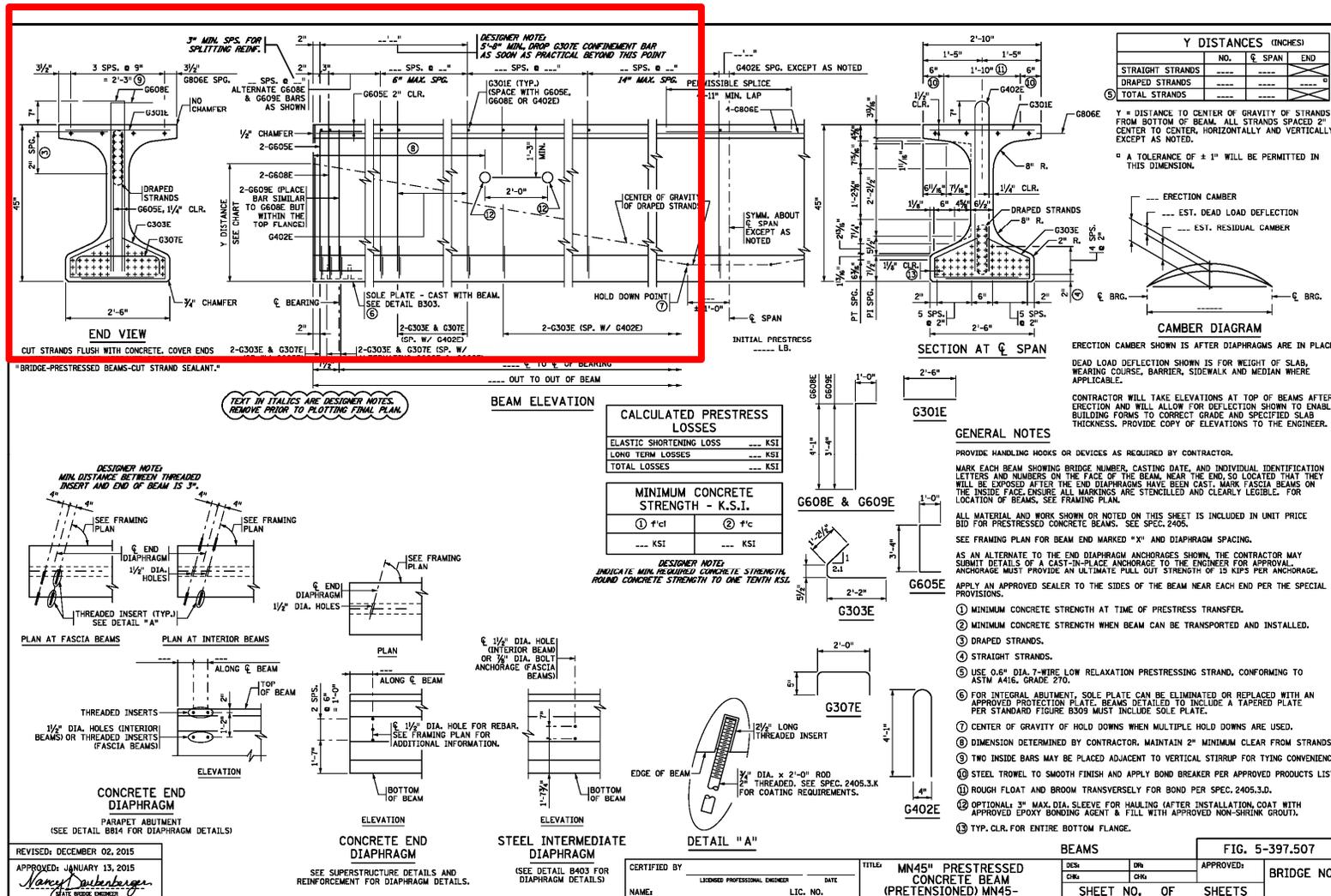
Prestressed Beams



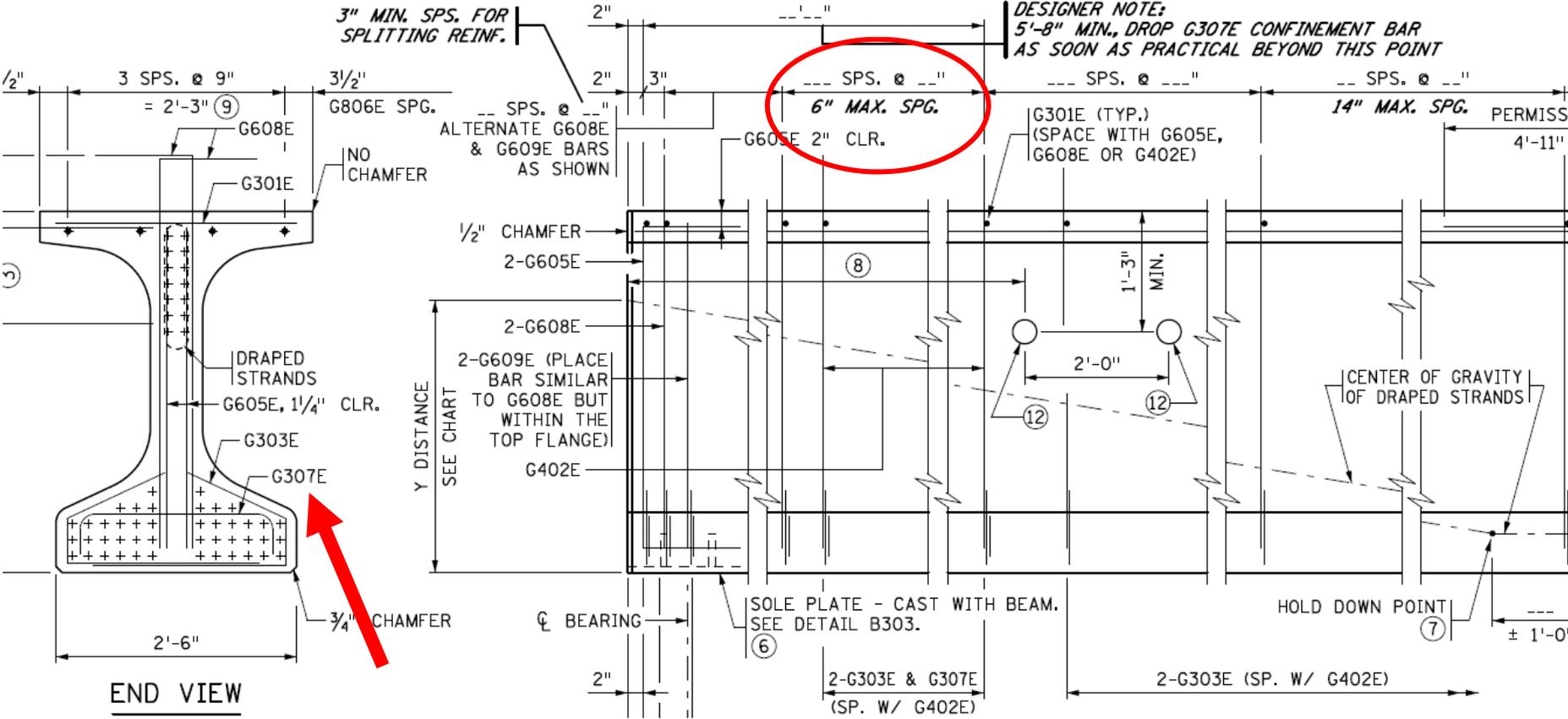
Prestressed Beams



Prestressed Beams



Prestressed Beams



Prestressed Beams



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Prestressed Beams



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Prestressed Beams

CALCULATED PRESTRESS LOSSES	
ELASTIC SHORTENING LOSS	--- KSI
LONG TERM LOSSES	--- KSI
TOTAL LOSSES	--- KSI

MINIMUM CONCRETE STRENGTH - K.S.I.	
① f'_{ci}	② f'_c
--- KSI	--- KSI

7.2



DESIGNER NOTE:
 INDICATE MIN. REQUIRED CONCRETE STRENGTH,
 ROUND CONCRETE STRENGTH TO ONE TENTH KSI.

As-Built Plan Sheet

THIS FORM IS AVAILABLE IN AN ELECTRONIC FORMAT AT:

<http://www.dot.state.mn.us/bridge/pdf/as-built-bridge-data-r0.xlsx>

As-Built Plan Sheet

Excel ACROBAT

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

INDICATES DO NOT EDIT

AS-BUILT BRIDGE DATA → All information entered into this sheet will be printed when you select print. Print to 11x17 format if not pre-selected.

ENSURE ALL APPLICABLE FIELDS ARE COMPLETED

CONCRETE WEARING COURSE

BRIDGE NUMBER: _____

LOW SLUMP _____

OTHER _____

TYPE OR MANUFACTURER _____

EXPANSION JOINTS

JOINT MANUFACTURER _____

MANUFACTURERS IDENTIFICATION _____

MFR'S NO. AND/OR LETTER DESIGNATION FOR JOINT USED _____

GLAND MANUFACTURER _____

NAME AND ADDRESS (CITY, STATE) _____

SIZE OF GLAND _____

MANUFACTURERS IDENTIFICATION _____

MFR'S NO. AND/OR LETTER DESIGNATION FOR GLAND USED _____

ELASTOMERIC BEARING PADS

PAD MANUFACTURER _____

NAME AND ADDRESS (CITY, STATE) _____

SPECIAL SURFACE FINISH

SYSTEM _____ See description in as built details below COLOR _____

FINISHING ROADWAY FACES OF BARRIER RAILING

TYPE _____ COLOR _____

ANTI-GRAFFITI COATING

MANUFACTURER _____

NAME AND ADDRESS (CITY, STATE) _____

PRODUCT NAME _____ LOCATION _____

PAINT SYSTEM

MnDOT SPECIFICATION NUMBER _____

2479 OR 2479 OR OTHER _____

MANUFACTURER _____

NAME AND ADDRESS (CITY, STATE) _____

PRIME COAT _____

MnDOT MATERIAL SPECIFICATION NUMBER _____

INTERMEDIATE COAT _____

MnDOT MATERIAL SPECIFICATION NUMBER _____

FINISH COAT _____

MnDOT MATERIAL SPECIFICATION NUMBER _____

COLOR _____

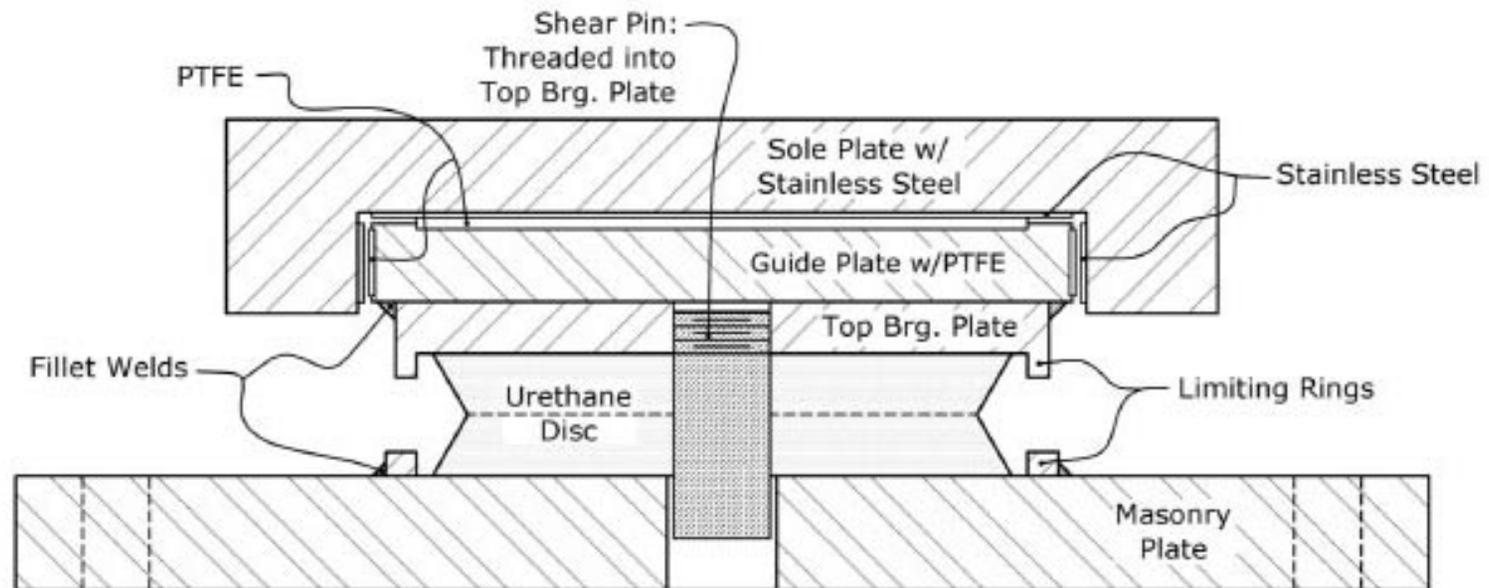
PLAN QUALITY

RATE 1 (AGREE), RATE 2 (NEUTRAL), OR RATE 3 (DISAGREE, PLEASE COMMENT BELOW) _____

Cast-In-Place Retaining Walls



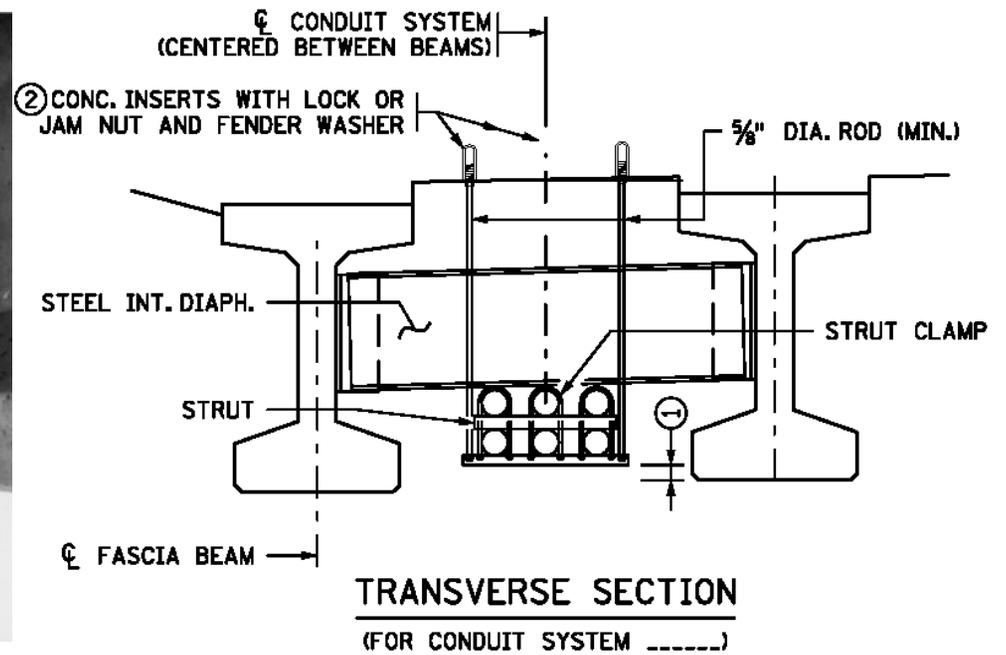
Disc Bearing Standards



GUIDED EXPANSION DISC BEARING

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Conduits & Utilities



“PVC Coated RSC”

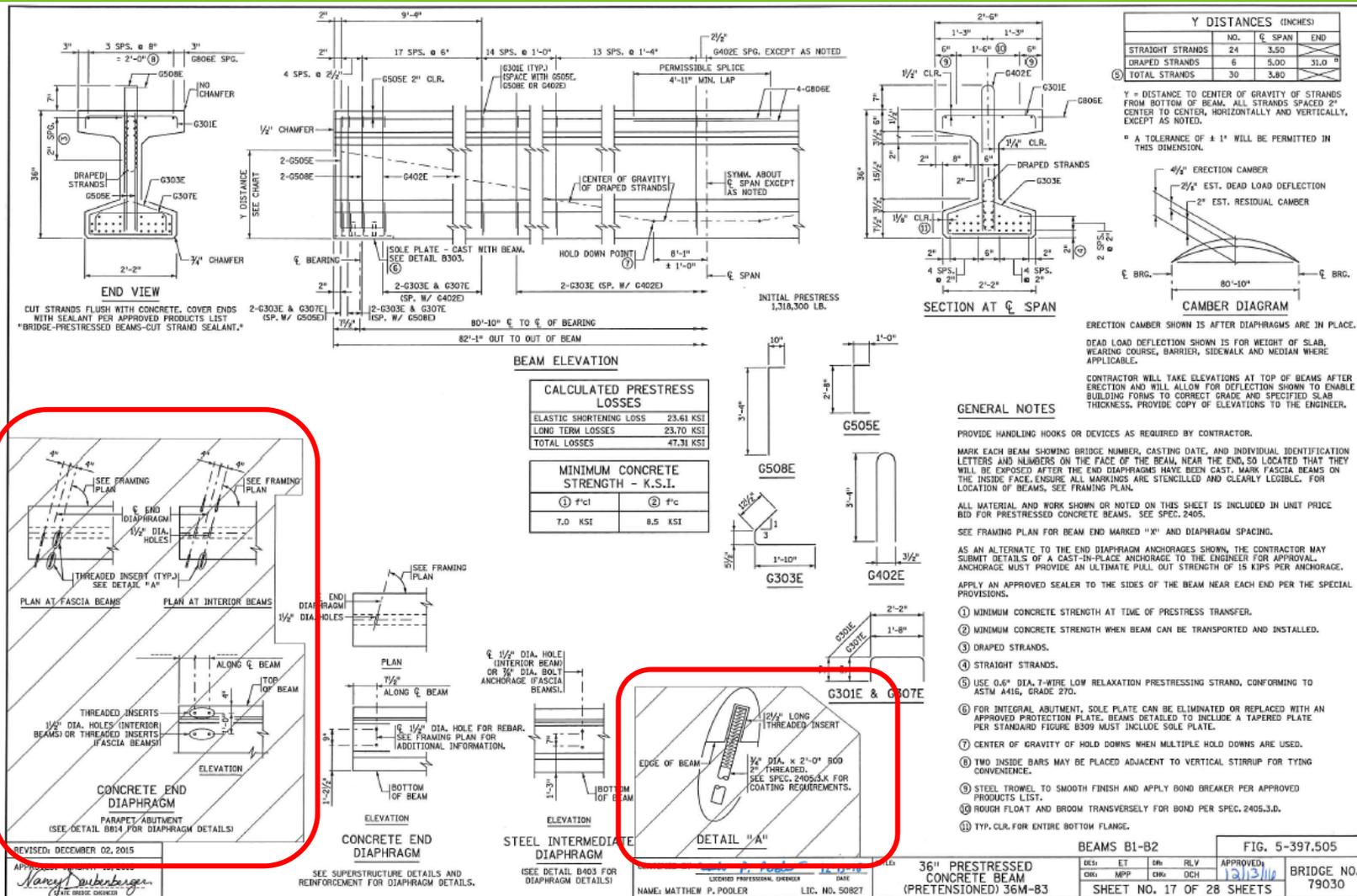
Modifying Standards

STANDARD IS UNMODIFIED:

Used as drawn with no changes, and with all blanks filled in where expected.

- Box out and place cross-hatching across details that do not apply. Do not remove details.

Modifying Standards



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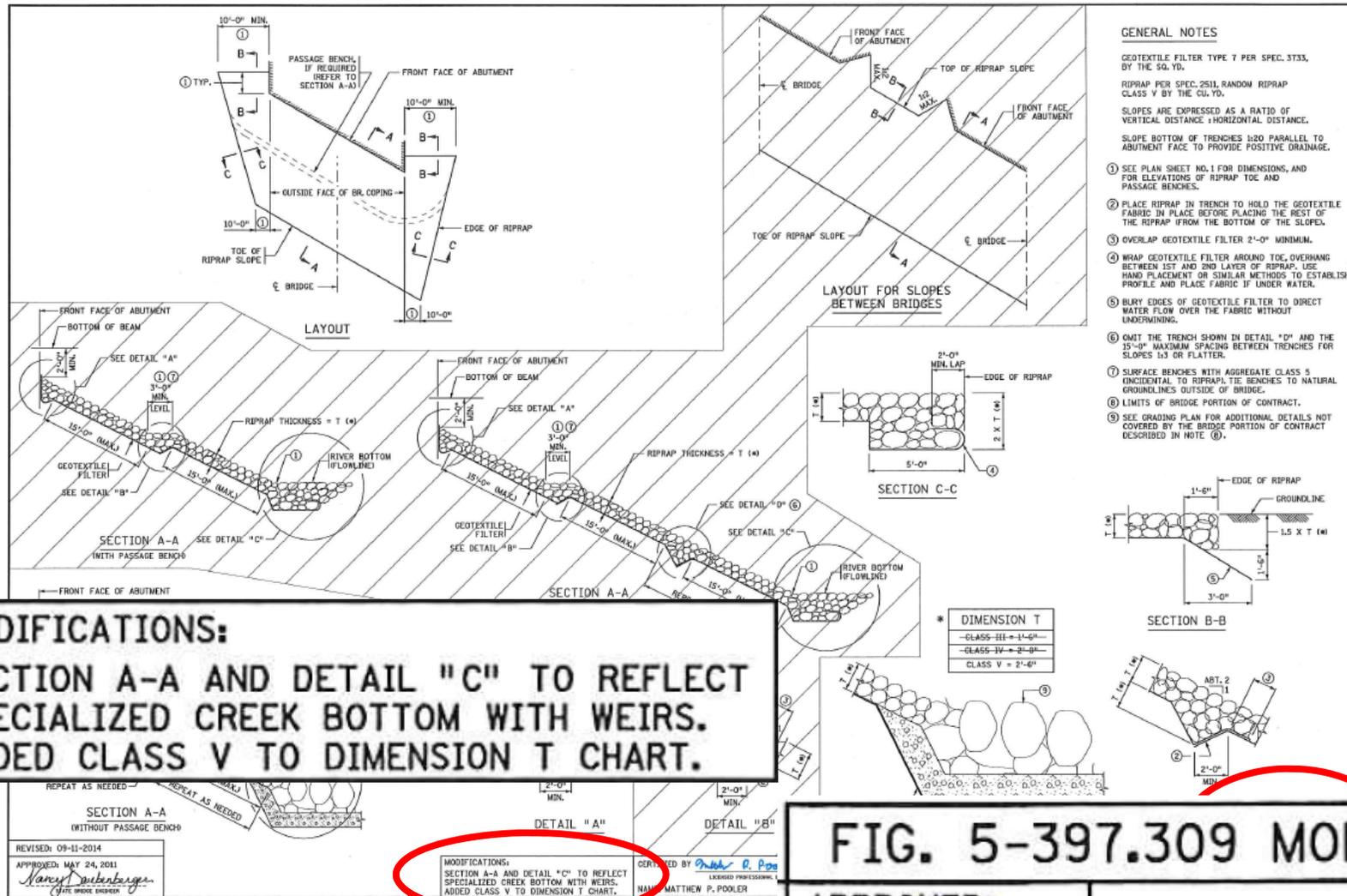
Modifying Standards

STANDARD IS MODIFIED:

Details, dimensions, or notes have specifically been modified from the standard.

- Place “MODIFIED” under B-Detail or after Figure Number
- Add a box stating what was modified.
- Do not “cloud” changes.

Modifying Standards



Modifying Standards

STANDARD IS SUBSTANTIALLY MODIFIED:

Extensive or numerous details, dimensions, or notes have been modified to an extent that ceases to reflect the standard.

- Judgment call on part of engineer if this category applies.
- Remove State Bridge Engineer approval block and figure number.
- Engineer of Record takes full responsibility for details shown.

Questions

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Thank you!

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