Road & Bridge Design Publications

Monthly Update – June 2026

Revisions for the month of **June** are listed and displayed below and will be included in projects submitted for the **October** letting. The special detail index for **May** will remain in effect.

Email road related questions to MDOT-Road-Design-Standards@Michigan.gov.
Email bridge related questions to MDOT-Bridge-Design-Standards@Michigan.gov.

Road Design Manual

2.04.01F: Subgrade Undercutting:

A minor revision to match the wording in the spec book.

Chapter 13:

Reformatted the full chapter to comply with ADA accessibility which includes changing from a two column format to a single column. No content changes.

Bridge Design Guides

Table of Contents:
Added new Bridge Design Guides 6.65.10H and 6.65.10I.

1.21.01: Factors for Bridge Estimates:

Corrected Superstructure Unit subsection title in the Steel Reinforcement Weights table**.**

6.29.10A: Bridge Railing, Aesthetic Parapet Tube End Wall Detail:

Revised steel reinforcement in the Aesthetic Parapet Tube end wall and increased end wall section height to better accommodate guardrail anchorage connection.

6.29.10B: Bridge Railing, Aesthetic Parapet Tube End Wall Sections:

Revised steel reinforcement in the Aesthetic Parapet Tube end wall and increased end wall section height to better accommodate guardrail anchorage connection.

6.65.10, 6.65.10A, 6.65.10B, & 6.65.10C: Prestressed Concrete 3 ft. Wide Box Beam Details:

Updated Notes to new format. Added relevant reference to alternative reinforcement configuration shown in new Bridge Design Guides 6.65.10H or 6.65.10I.

Road & Bridge Design Publications

6.65.10D, 6.65.10E, & 6.65.10F: Prestressed Concrete 4 ft. Wide Box Beam Details:

Updated Notes to new format. Added relevant reference to alternative reinforcement configuration shown in new Bridge Design Guides 6.65.10H or 6.65.10I.

6.65.10H: Prestressed Concrete 17 in., 21 in., And 27 in. Box Beam Reinforcement Alternative Details:

New Bridge Design Guide that provide an alternative reinforcement layout for 17 in., 21 in., and 27 in. Box Beams. Alternative replaces current slab tie ED bars with alternative EX hooked bars.

6.65.10I: Prestressed Concrete 33 in. Through 60 in. Box Beam Reinforcement Alternative Details:

New Bridge Design Guide that provide an alternative reinforcement layout for 33 in. Through 60 in. Box Beams. Alternative replaces current slab tie ED bars with alternative EX hooked bars.

Updates to the MDOT Cell Library, Sample Plans, and other automated tools may be required in tandem with some of this month's updates. Until such updates can be made, it is the designer's/detailer's responsibility to manually incorporate any necessary revisions to notes and plan details to reflect these revisions.

2.04.01 Excavation

(revised 6-22-2026)

Excavation can be in other forms than regular roadway excavation. Following is a brief description of some of these special or project specific items.

2.04.01A Station Grading

This item is often used on projects where normal earthwork items are not practical, or when recommended by Region Construction.

Station grading is typically paid for by station and requires a special provision. The Designer should include an estimate of excavation and embankment requirements for the Contractor's information for bidding purposes.

2.04.01B Trenching

This item is used when a uniform section is to be excavated such as for a widening or reconstructing a shoulder. The excavation is typically a uniform width and depth.

Trenching is a standard specification pay item and because of uniformity an excavation quantity does not need to be estimated.

2.04.01C Topsoil Stripping

Topsoil removal shall be as follows:

- Peat and Muck Areas - Topsoil shall not be removed.
- Borrow and Clear Vision Areas - Topsoil shall be removed to the required depth and width. Topsoil may be stockpiled near its original location, unless otherwise specified.
- Roadway Cut Areas - Topsoil shall be removed within the slope stake lines.
- Roadway Embankment Areas - Topsoil shall be removed within the slope stake lines, unless otherwise specified.

Topsoil from the roadway shall be stockpiled within the right-of-way and outside the limits of construction or used in the slopes as specified. Temporary stockpiling of topsoil may be permitted on private property with the proper permits from the owner and as approved.

Topsoil Stripping in both cut and fill sections is paid for as earth excavation. The quantity is included in the earth excavation total, but is also presented separately for estimating purposes. Depth of stripping is determined by information from the Region Soils Engineer. It is shown on the plans as follows:

- Excavation, Earth [insert number] Cyd
- Embankment, CIP [insert number] Cyd

* Includes [insert number] Cyd of Topsoil Stripping

2.04.01F Subgrade Undercutting

This item is used to remove unsuitable and unstable soils and soils susceptible to frost action before constructing the final section. Subgrade undercut areas are backfilled with undercut excavated material, sound earth, or granular material depending on the type of undercut. Backfilling is included in the item "Subgrade Undercutting, Type [Insert Type]." The type of subgrade undercutting depends on the backfill. (Type I is backfilled with selected clay or other approved material; Type II is backfilled with granular material; Type III is backfilled with reworked material from subgrade undercut areas or other approved material and Type IV is backfilled with dense-graded aggregate or open-graded aggregate encapsulated with a geotextile separator.) The Region Soils Engineer will generally provide subgrade undercut quantities.

2.04.02 Embankment

(revised 12-27-2022)

2.04.02A Regular Embankment

Regular Embankment is sound earth obtained from either roadway excavation or from borrow areas. Embankment is generally paid for as embankment compacted in place, therefore no shrinkage factor is applied to the volume.

2.04.02B Granular Embankments and Backfill

Granular materials are used as backfill in swamps and subgrade undercut areas. If granular material is plentiful from the roadway excavation, it can also be used as regular embankment.

Granular material used to backfill swamp excavation is paid for as ”Backfill, Swamp” and is generally measured in its original position. When granular material is used to backfill subgrade undercut areas it is not paid for separately.

2.04.02C Subbase

Subbases are constructed of granular material between the subgrade (constructed of regular embankment) and the pavement structure. The subbase layer provides structural support and good drainage beneath the pavement.

Payment can be either “Subbase, LM” (loose measure) or “Subbase, CIP” (compacted in place).

2.04.02D Topsoil Surface

There are two basic topsoil pay items: “Topsoil Surface, Furn” and “Topsoil Surface, Salv”.

The Designer should confer with the Region Soils Engineer to get a recommendation for topsoil. Other topsoil resource people are the Region Resource Specialist and the Roadside Development Unit.

Generally the quality of topsoil within the right of way is very poor on existing highways and it should not be recycled as topsoil. Nearly all resurfacing, rubblizing, safety and guardrail upgrading, lane widening as well as other types of upgrading work have unacceptable roadside topsoil for salvaging. On these types of projects “Topsoil Surface, Furn” should be used. Occasionally some salvaged topsoils may be acceptable but in insufficient quantity.

CONTENTS

SECTION 6 - SUPERSTRUCTURE (cont)

DRAWN BY: BLT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT	ISSUED: 06/22/26
CHECKED BY: CWC	FACTORS FOR BRIDGE ESTIMATES	SUPERSEDES: 01/26/26
APPROVED BY: BMW		

STEEL REINFORCEMENT WEIGHTS

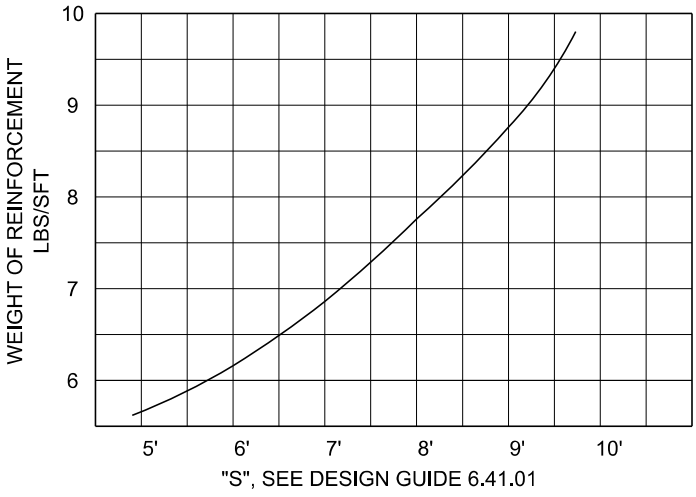
SUBSTRUCTURE UNIT	LBS/CYD OF CONC.
CANTILEVER ABUTMENT	50
COUNTERFORT ABUTMENT	100
GRAVITY ABUTMENT	15
CURTAIN WALL ABUTMENT	50
COLUMN & GIRDER PIER (HWY.)	120
COLUMN & GIRDER PIER (R.R.)	160
GRAVITY PIER	15
PILE CAP	70
SUPERSTRUCTURE UNIT	**LBS/CONC. UNIT**
STANDARD SLAB (ON STRINGERS)	SEE GRAPH BELOW
SIMPLE SPAN T-BEAM	250/CYD
CONTINUOUS SLAB	260/CYD
CONTINUOUS T-BEAM	350/CYD
SIMPLE SPAN SLAB	170/CYD
BURIED T-BEAM	200/CYD
RIGID FRAME	175/CYD
SOLID PARAPET RAILING	14/FT
BARRIER RAILING, TYPE 4	25/FT
BARRIER RAILING, TYPE 5	21/FT

RAILING WEIGHTS

RAILING TYPE	LBS/FT
SOLID PARAPET RAILING	⟨1⟩ 357
BRIDGE BARRIER RAILING, TYPE 4	475
BRIDGE BARRIER RAILING, TYPE 5	392
BRIDGE BARRIER RAILING, TYPE 6	601
BRIDGE BARRIER RAILING AESTHETIC TYPE 6, DET 2	615
BRIDGE BARRIER RAILING, TYPE 7	414
BRIDGE BARRIER RAILING AESTHETIC TYPE 7, DET 2	428
BRIDGE RAILING, 1 TUBE	10
BRIDGE RAILING, 2 TUBE (TUBE & POST ONLY)	⟨2⟩ 51
BRIDGE RAILING, 2 TUBE (WITH BRUSHBLOCK)	⟨2⟩ 185
BRIDGE RAILING, 3 TUBE WITH PICKETS (SIDEWALK)	⟨2⟩ 86
BRIDGE RAILING, 3 TUBE WITH PICKETS (BRUSHBLOCK)	⟨2⟩ 270
BRIDGE RAILING, 4 TUBE (BICYCLE)	⟨2⟩ 265
BRIDGE RAILING, 4 TUBE (PEDESTRIAN)	⟨2⟩ 80
BRIDGE RAILING, 5 TUBE	⟨2⟩ 70
BRIDGE RAILING, AESTHETIC PARAPET TUBE	⟨2⟩ 320

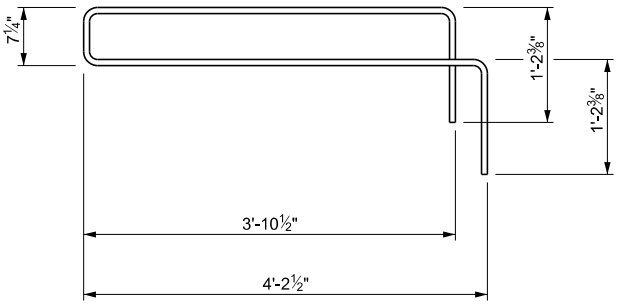
⟨1⟩ INCLUDES WEIGHT OF BRIDGE RAILING, 1-TUBE.

⟨2⟩ VARIES BASED UPON VERTICAL POST SPACING.



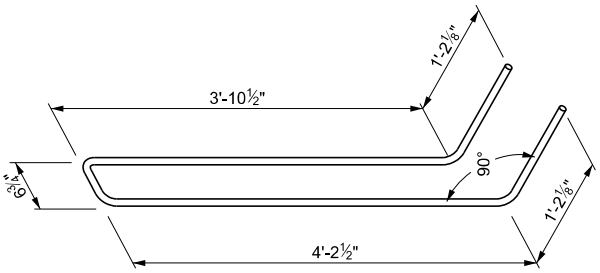
PREPARED BY DESIGN DIVISION	1.21.01

DRAWN BY: BLT CHECKED BY: CWC APPROVED BY: BMW	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT BRIDGE RAILING, AESTHETIC PARAPET TUBE END WALL DETAIL	ISSUED: 06/22/26 SUPERSEDES: 08/15/03



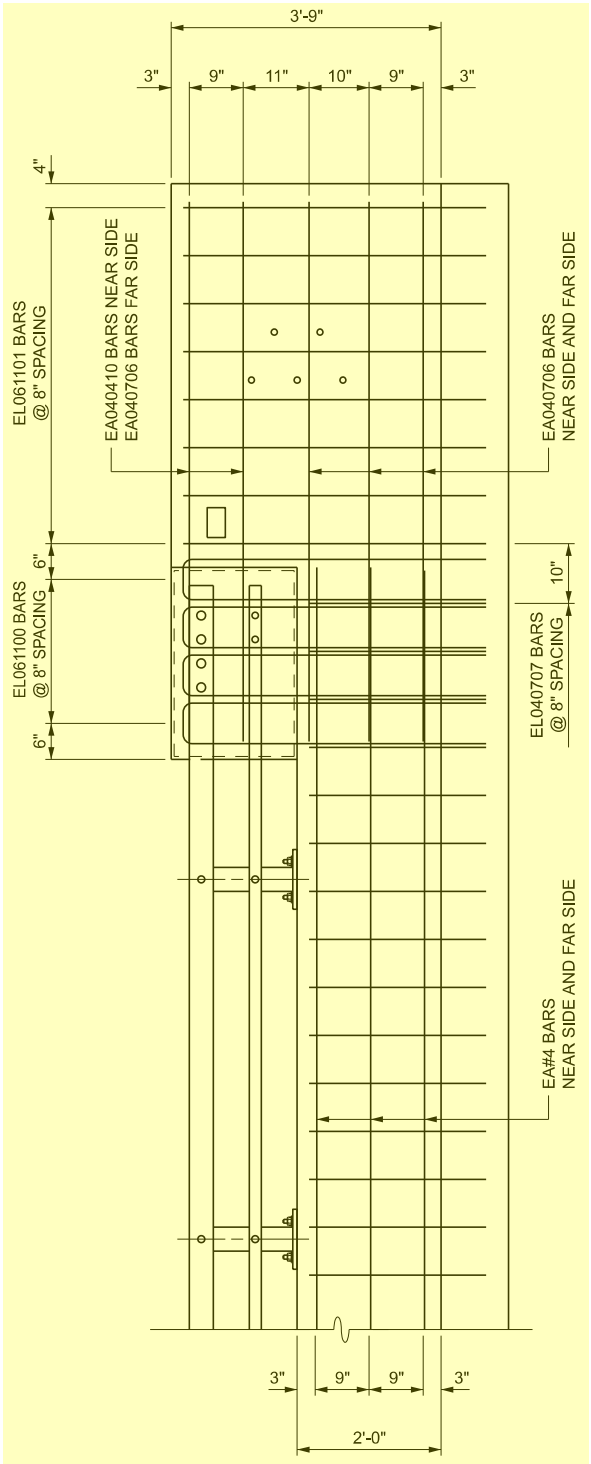
EL061101

L = a + b + c + d + e = 11'-1"
a = 4'-2½" b = 7¼" c = 3'-10½"
d = 1'-2⅜" e = 1'-2⅜" f = 7¼"
g = 0



EL061100

L = a + b + c + d + e = 11'-0"
a = 3'-10½" b = 6¾" c = 4'-2½"
d = 1'-2⅛" e = 1'-2⅛" f = 0
g = 6¾"

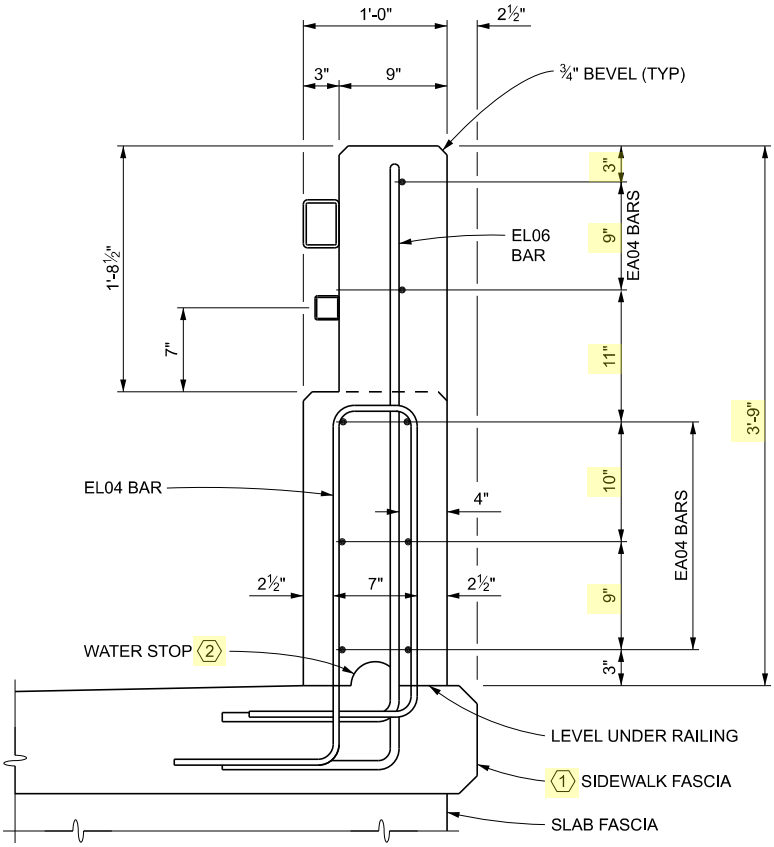


END WALL DETAIL

NOTE:
FOR ADDITIONAL DETAILS OF RAILING, SEE STANDARD PLAN B-25-SERIES AND GUIDES 6.29.10 & 6.29.10B.

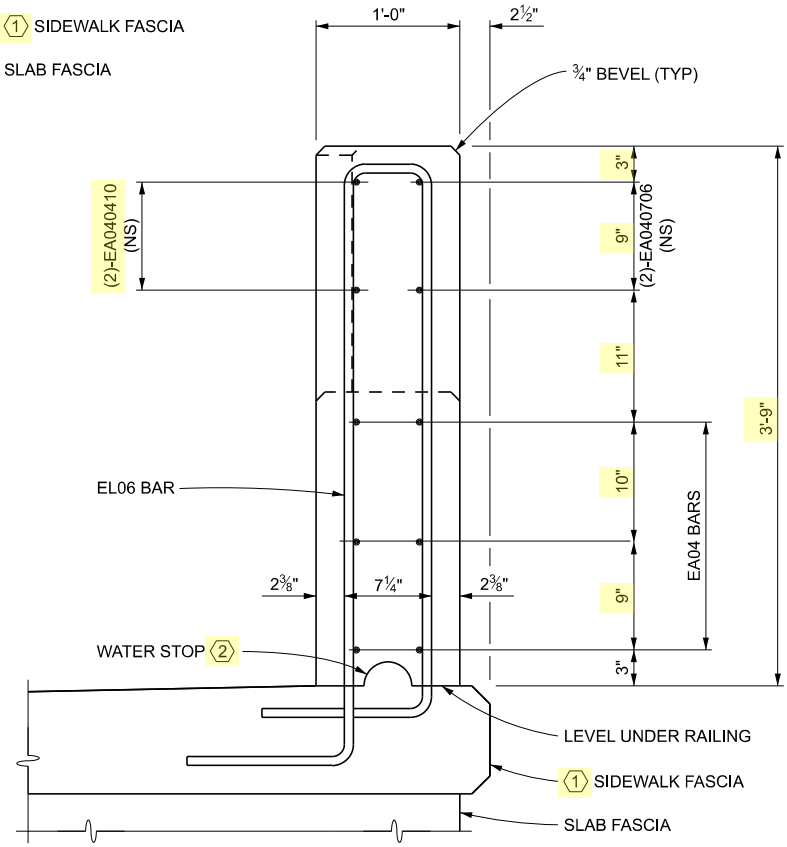
PREPARED BY DESIGN DIVISION	6.29.10A

DRAWN BY: BLT CHECKED BY: CWC APPROVED BY: BMW	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT BRIDGE RAILING, AESTHETIC PARAPET TUBE END WALL SECTIONS	ISSUED: 06/22/26 SUPERSEDES: 05/23/16



SECTION AT END WALL

(TUBE CONNECTION AREA)



SECTION AT END WALL

(FULL CONCRETE AREA)

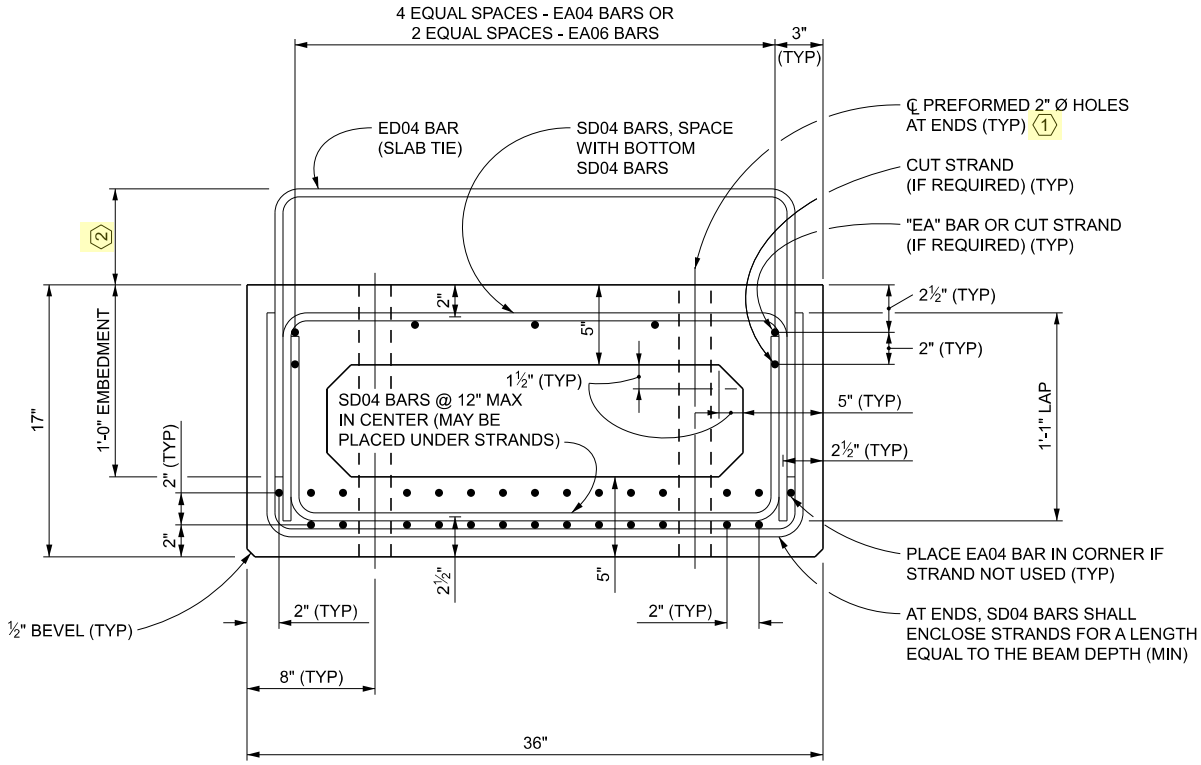
NOTE:

1 IF BRIDGE RAILING IS MOUNTED FLUSH TO THE SLAB, THE "EL" BARS SHALL BE CAST IN THE SLAB.

2 2" HIGH x 4" WIDE (±). FORMING NOT REQUIRED. USE WHEN RAILING IS MOUNTED FLUSH TO THE SLAB.

PREPARED BY DESIGN DIVISION	6.29.10B

DRAWN BY: BLT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT	ISSUED: 06/22/26
CHECKED BY: CWC	PRESTRESSED CONCRETE 3 FT. WIDE BOX BEAM REINFORCEMENT DETAILS	SUPERSEDES: 09/26/22
APPROVED BY: BMW		



TYPICAL SECTION - 17" BEAMS

PLAN NOTES:
WHERE REQUIRED, DECREASE VOID BOXES HEIGHT TO PROVIDE 1½" CLEAR COVER FOR PRESTRESSING STRANDS IN UPPER ROW.

NOTES:
1 IF REQUIRED FOR STRENGTH, USE 3" Ø HOLES FOR BUNDLED REINFORCEMENT FOR CONTINUOUS FOR LIVE LOAD INTEGRAL STUB ABUTMENTS.

2 6" MIN [DEPENDENT UPON HAUNCH]

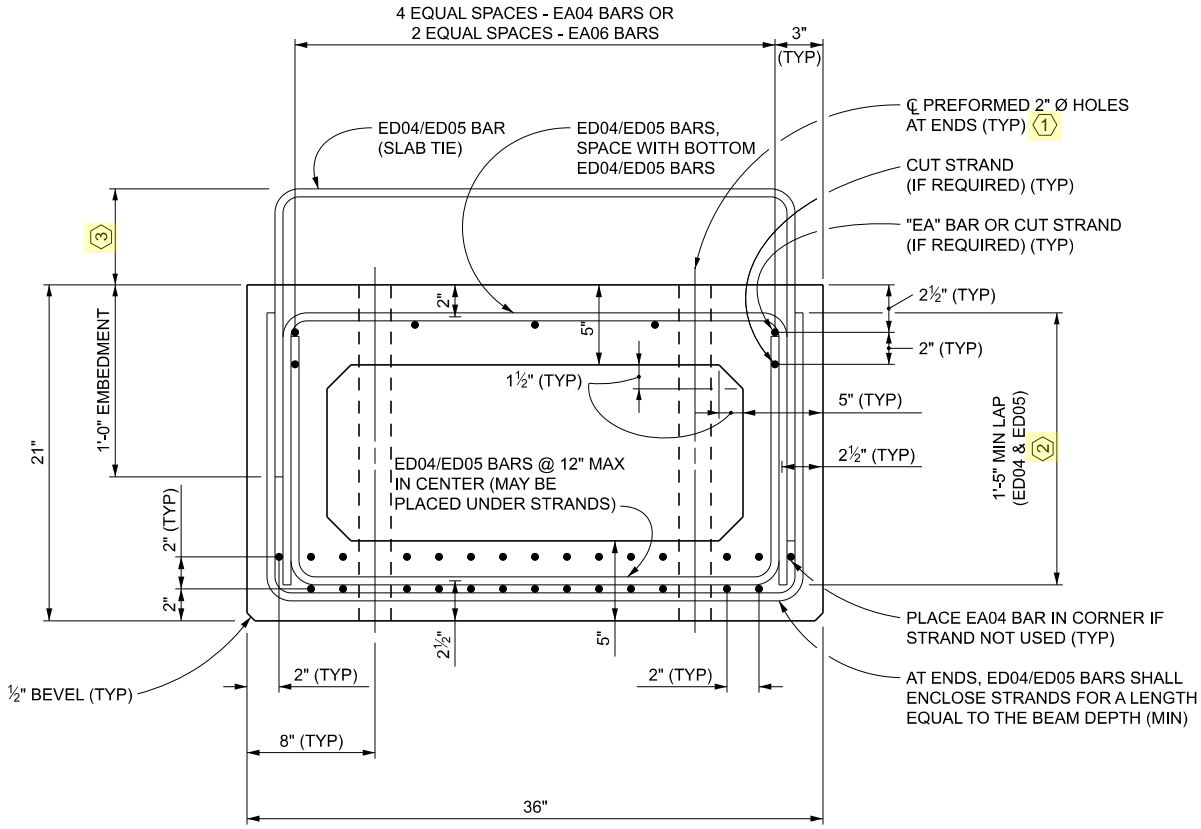
MINIMUM REINFORCEMENT SHOWN.

PLACE SPREAD BOX BEAM DIAPHRAGM/BACKWALL INSERTS AT 5" OR 7" UP FROM BOTTOM OF BEAM AND 3½" OR 5½" DOWN FROM TOP OF BEAM.

EA AND ED BARS ARE GRADE 60 (ksi) STEEL.
SD BARS ARE GRADE 60 (ksi) STAINLESS STEEL.
DESIGN AND SPACING OF ED AND SD BARS IS BASED ON GRADE 40 (ksi).
ADD BRIDGE DESIGN MANUAL NOTE 8.07.03P TO THE PLANS.

FOR ALTERNATIVE REINFORCEMENT CONFIGURATION SEE 6.65.10H.

DRAWN BY: BLT CHECKED BY: CWC APPROVED BY: BMW	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT PRESTRESSED CONCRETE 3 FT. WIDE BOX BEAM REINFORCEMENT DETAILS	ISSUED: 06/22/26 SUPERSEDES: 09/26/22



TYPICAL SECTION - 21" BEAMS

PLAN NOTES:
WHERE REQUIRED, DECREASE VOID BOXES HEIGHT TO PROVIDE 1½" CLEAR COVER FOR PRESTRESSING STRANDS IN UPPER ROW.

NOTES:
1. IF REQUIRED FOR STRENGTH, USE 3" Ø HOLES FOR BUNDLED REINFORCEMENT FOR CONTINUOUS FOR LIVE LOAD INTEGRAL STUB ABUTMENTS.

2. IF REQUIRED FOR SHEAR, USE ED05 BARS AND MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 7600 PSI FOR BEAM DESIGN.

3. 6" MIN [DEPENDENT UPON HAUNCH]

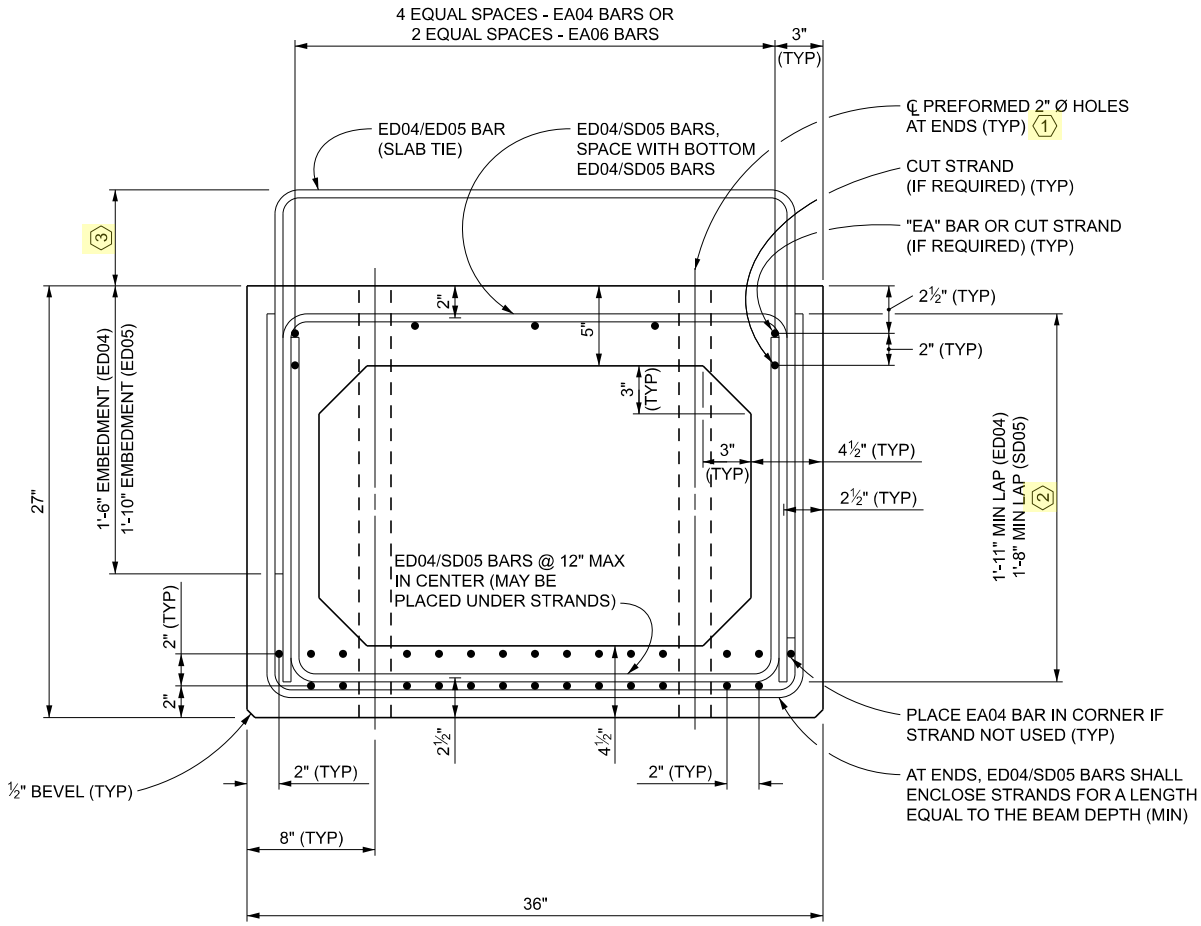
MINIMUM REINFORCEMENT SHOWN.

PLACE SPREAD BOX BEAM DIAPHRAGM/BACKWALL INSERTS AT 5" OR 7" UP FROM BOTTOM OF BEAM AND 3½" OR 5½" DOWN FROM TOP OF BEAM.

EA AND ED BARS ARE GRADE 60 (ksi) STEEL.
SD BARS ARE GRADE 60 (ksi) STAINLESS STEEL.
DESIGN AND SPACING OF ED AND SD BARS IS BASED ON GRADE 40 (ksi).
ADD BRIDGE DESIGN MANUAL NOTE 8.07.03P TO THE PLANS.

FOR ALTERNATIVE REINFORCEMENT CONFIGURATION SEE 6.65.10H.

DRAWN BY: BLT CHECKED BY: CWC APPROVED BY: BMW	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT PRESTRESSED CONCRETE 3 FT. WIDE BOX BEAM REINFORCEMENT DETAILS	ISSUED: 06/22/26 SUPERSEDES: 09/26/22



TYPICAL SECTION - 27" BEAMS

PLAN NOTES:
WHERE REQUIRED, DECREASE VOID BOXES HEIGHT TO PROVIDE 1½" CLEAR COVER FOR PRESTRESSING STRANDS IN UPPER ROW.

NOTES:
1. IF REQUIRED FOR STRENGTH, USE 3" Ø HOLES FOR BUNDLED REINFORCEMENT FOR CONTINUOUS FOR LIVE LOAD INTEGRAL STUB ABUTMENTS.
2. IF REQUIRED FOR SHEAR, USE SD05 BARS (STAINLESS STEEL) FOR BEAM DESIGN.
3. 6" MIN [DEPENDENT UPON HAUNCH]

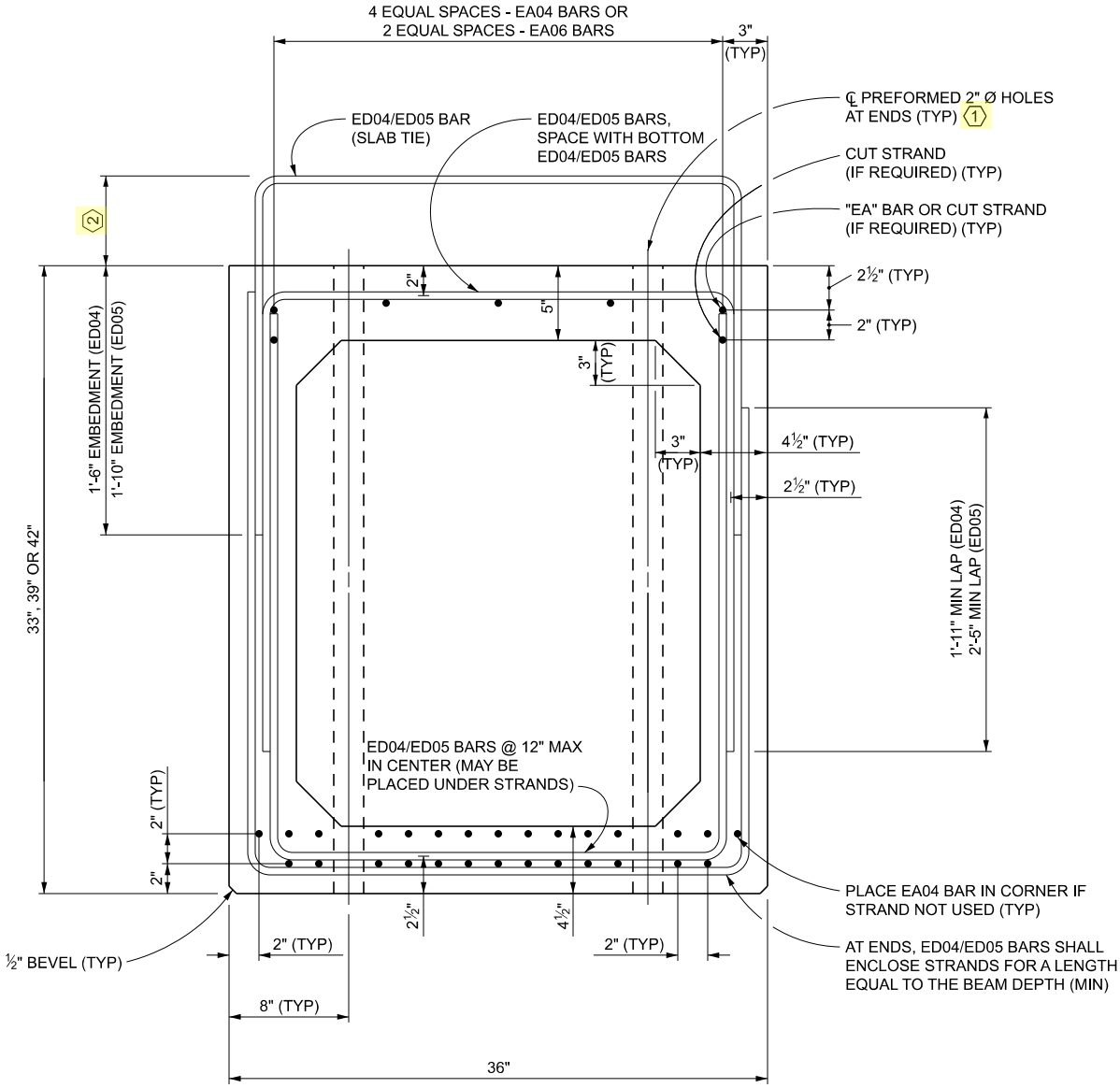
MINIMUM REINFORCEMENT SHOWN.

PLACE SPREAD BOX BEAM DIAPHRAGM/BACKWALL INSERTS AT 5" OR 7" UP FROM BOTTOM OF BEAM AND 3½" OR 5½" DOWN FROM TOP OF BEAM.

EA AND ED BARS ARE GRADE 60 (ksi) STEEL.
SD BARS ARE GRADE 60 (ksi) STAINLESS STEEL.

FOR ALTERNATIVE REINFORCEMENT CONFIGURATION SEE 6.65.10H.

DRAWN BY: BLT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT	ISSUED: 06/22/26
CHECKED BY: CWC	PRESTRESSED CONCRETE 3 FT. WIDE BOX BEAM REINFORCEMENT DETAILS	SUPERSEDES: 09/26/22
APPROVED BY: BMW		



TYPICAL SECTION - 33", 39" & 42" BEAMS

PLAN NOTES:
WHERE REQUIRED, DECREASE VOID BOXES HEIGHT TO PROVIDE 1½" CLEAR COVER FOR PRESTRESSING STRANDS IN UPPER ROW.

NOTES:
1 IF REQUIRED FOR STRENGTH, USE 3" Ø HOLES FOR BUNDLED REINFORCEMENT FOR CONTINUOUS FOR LIVE LOAD INTEGRAL STUB ABUTMENTS.

2 6" MIN [DEPENDENT UPON HAUNCH]

MINIMUM REINFORCEMENT SHOWN.

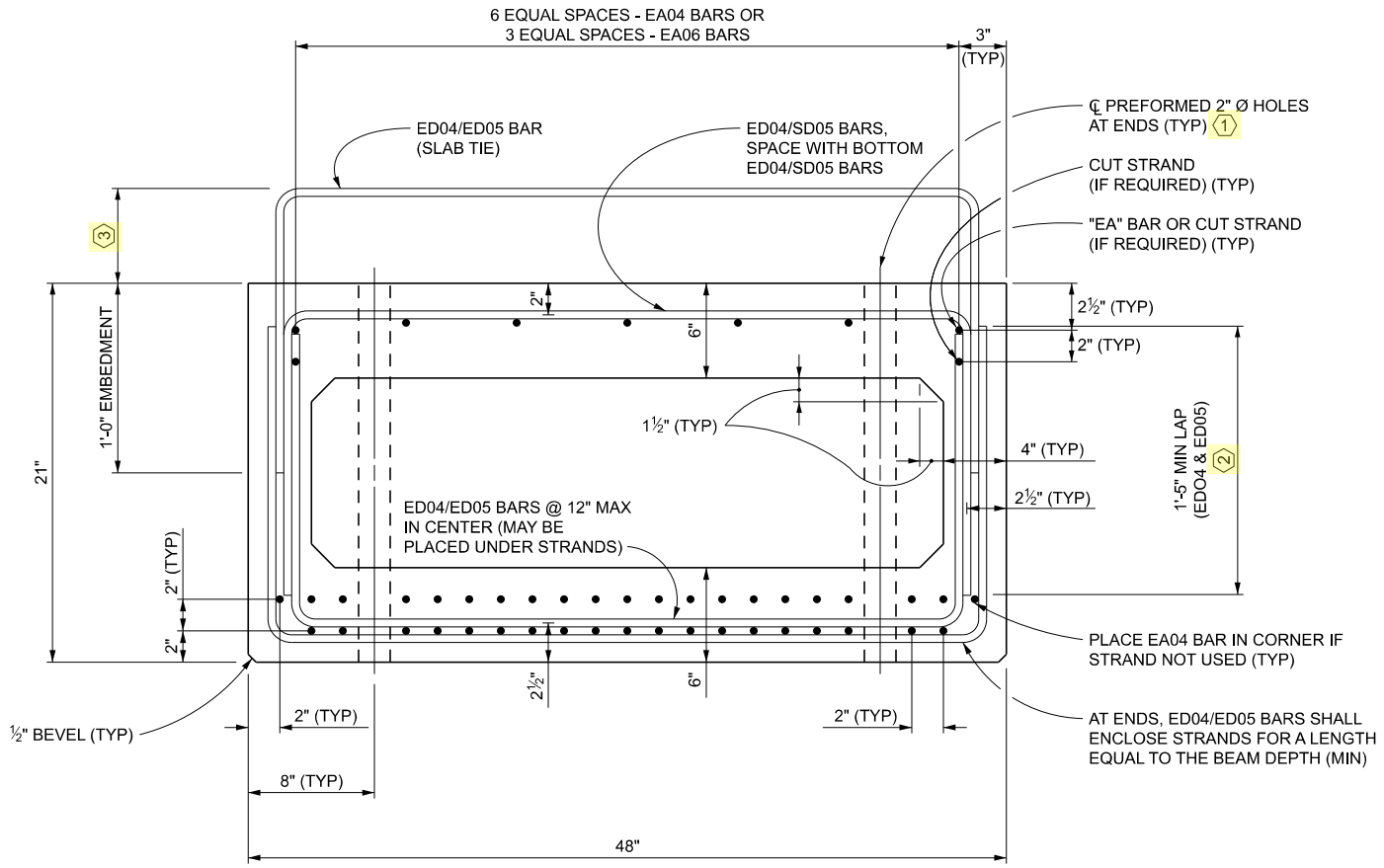
PLACE SPREAD BOX BEAM DIAPHRAGM/BACKWALL INSERTS AT 5" OR 7" UP FROM BOTTOM OF BEAM AND 3½" OR 5½" DOWN FROM TOP OF BEAM.

EA AND ED ARE GRADE 60 (ksi) STEEL.

FOR ALTERNATIVE REINFORCEMENT CONFIGURATION SEE 6.65.10I.

PREPARED BY DESIGN DIVISION	6.65.10C

DRAWN BY: BLT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT	ISSUED: 06/22/26
CHECKED BY: CWC	PRESTRESSED CONCRETE 4 FT. WIDE BOX BEAM REINFORCEMENT DETAILS	SUPERSEDES: 09/26/22
APPROVED BY: BMW		



TYPICAL SECTION - 21" BEAMS

PLAN NOTES:
WHERE REQUIRED, DECREASE VOID BOXES HEIGHT TO PROVIDE 1½" CLEAR COVER FOR PRESTRESSING STRANDS IN UPPER ROW.

NOTES:
1. IF REQUIRED FOR STRENGTH, USE 3" Ø HOLES FOR BUNDLED REINFORCEMENT FOR CONTINUOUS FOR LIVE LOAD INTEGRAL STUB ABUTMENTS.

2. IF REQUIRED FOR SHEAR, USE ED05 BARS AND MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 7600 PSI FOR BEAM DESIGN.

3. 6" MIN [DEPENDENT UPON HAUNCH]

MINIMUM REINFORCEMENT SHOWN.

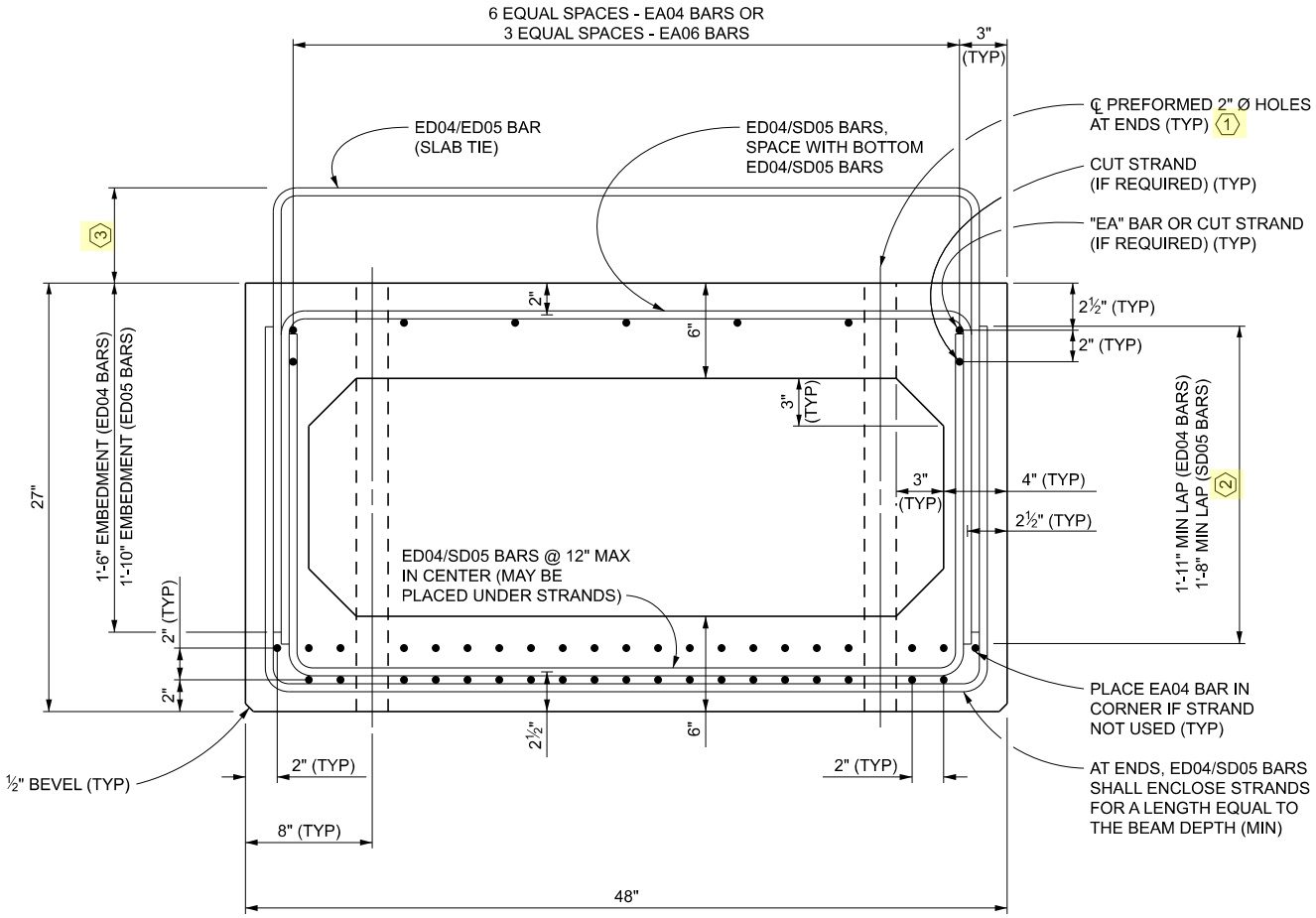
PLACE SPREAD BOX BEAM DIAPHRAGM/BACKWALL INSERTS AT 5" OR 7" UP FROM BOTTOM OF BEAM AND 3½" OR 5½" DOWN FROM TOP OF BEAM.

EA AND ED BARS ARE GRADE 60 (ksi) STEEL.
DESIGN AND SPACING OF ED BARS IS BASED ON GRADE 40 (ksi).
ADD BRIDGE DESIGN MANUAL NOTE 8.07.03P TO THE PLANS.

FOR ALTERNATIVE REINFORCEMENT CONFIGURATION SEE 6.65.10H.

PREPARED BY DESIGN DIVISION	6.65.10D

DRAWN BY: BLT CHECKED BY: CWC APPROVED BY: BMW	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT PRESTRESSED CONCRETE 4 FT. WIDE BOX BEAM REINFORCEMENT DETAILS	ISSUED: 06/22/26 SUPERSEDES: 04/28/25



TYPICAL SECTION - 27" BEAMS

PLAN NOTES:
WHERE REQUIRED, DECREASE VOID BOXES HEIGHT TO PROVIDE 1½" CLEAR COVER FOR PRESTRESSING STRANDS IN UPPER ROW.

NOTES:
1. IF REQUIRED FOR STRENGTH, USE 3" Ø HOLES FOR BUNDLED REINFORCEMENT FOR CONTINUOUS FOR LIVE LOAD INTEGRAL STUB ABUTMENTS.
2. IF REQUIRED FOR SHEAR, USE SD05 BARS (STAINLESS STEEL) FOR BEAM DESIGN.
3. 6" MIN [DEPENDENT UPON HAUNCH]

MINIMUM REINFORCEMENT SHOWN.

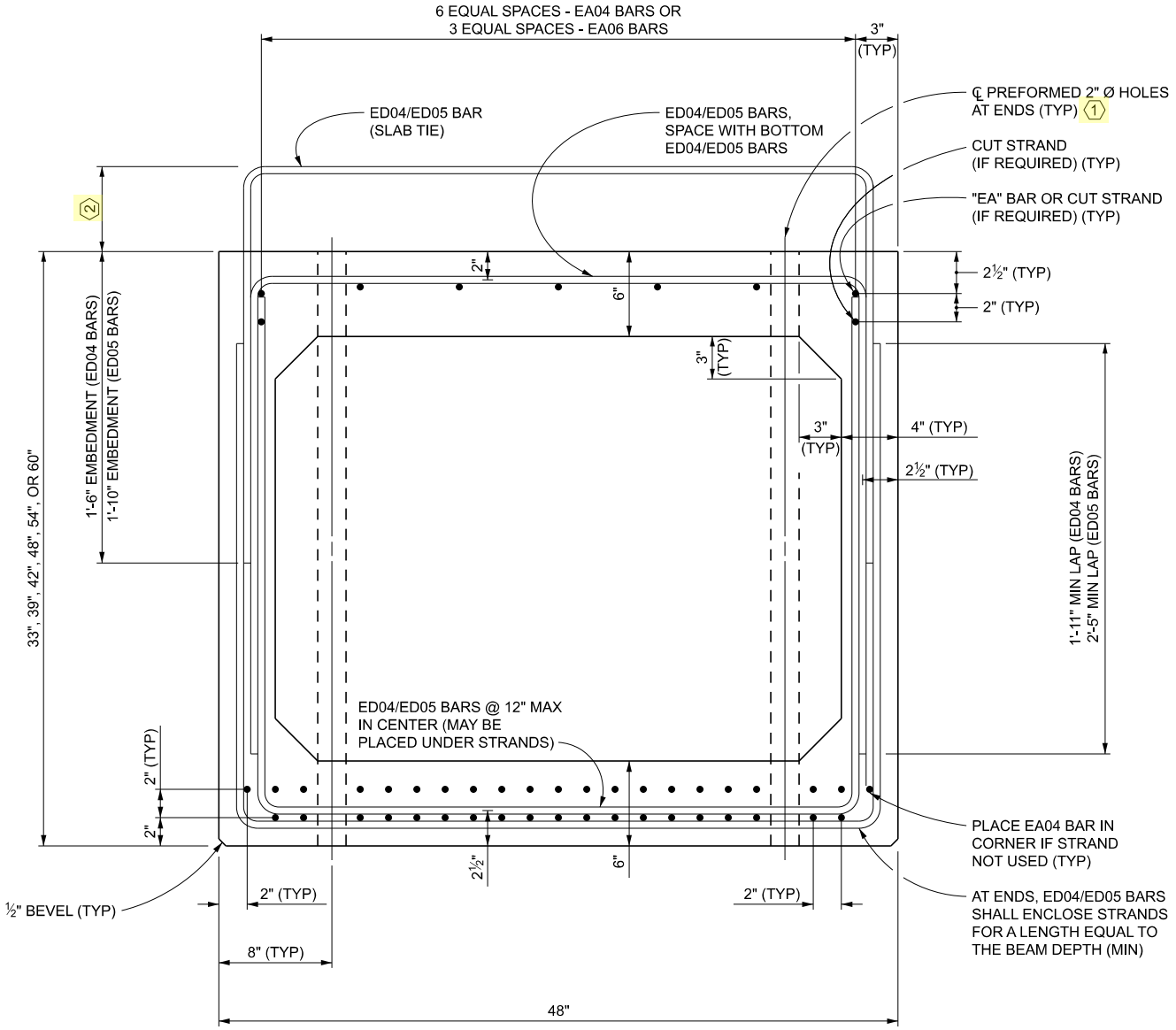
PLACE SPREAD BOX BEAM DIAPHRAGM/BACKWALL INSERTS AT 5" OR 7" UP FROM BOTTOM OF BEAM AND 3½" OR 5½" DOWN FROM TOP OF BEAM.

EA AND ED BARS ARE GRADE 60 (ksi) STEEL.
SD BARS ARE GRADE 60 (ksi) STAINLESS STEEL.

FOR ALTERNATIVE REINFORCEMENT CONFIGURATION SEE 6.65.10H.

PREPARED BY DESIGN DIVISION	6.65.10E

DRAWN BY: BLT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT	ISSUED: 06/22/26
CHECKED BY: CWC	PRESTRESSED CONCRETE 4 FT. WIDE BOX BEAM REINFORCEMENT DETAILS	SUPERSEDES: 09/26/22
APPROVED BY: BMW		



TYPICAL SECTION - 33", 39", 42", 48", 54", & 60" BEAMS

PLAN NOTES:
WHERE REQUIRED, DECREASE VOID BOXES HEIGHT TO PROVIDE 1½" CLEAR COVER FOR PRESTRESSING STRANDS IN UPPER ROW.

NOTES:
1 IF REQUIRED FOR STRENGTH, USE 3" Ø HOLES FOR BUNDLED REINFORCEMENT FOR CONTINUOUS FOR LIVE LOAD INTEGRAL STUB ABUTMENTS.

2 6" MIN [DEPENDENT UPON HAUNCH]

MINIMUM REINFORCEMENT SHOWN.

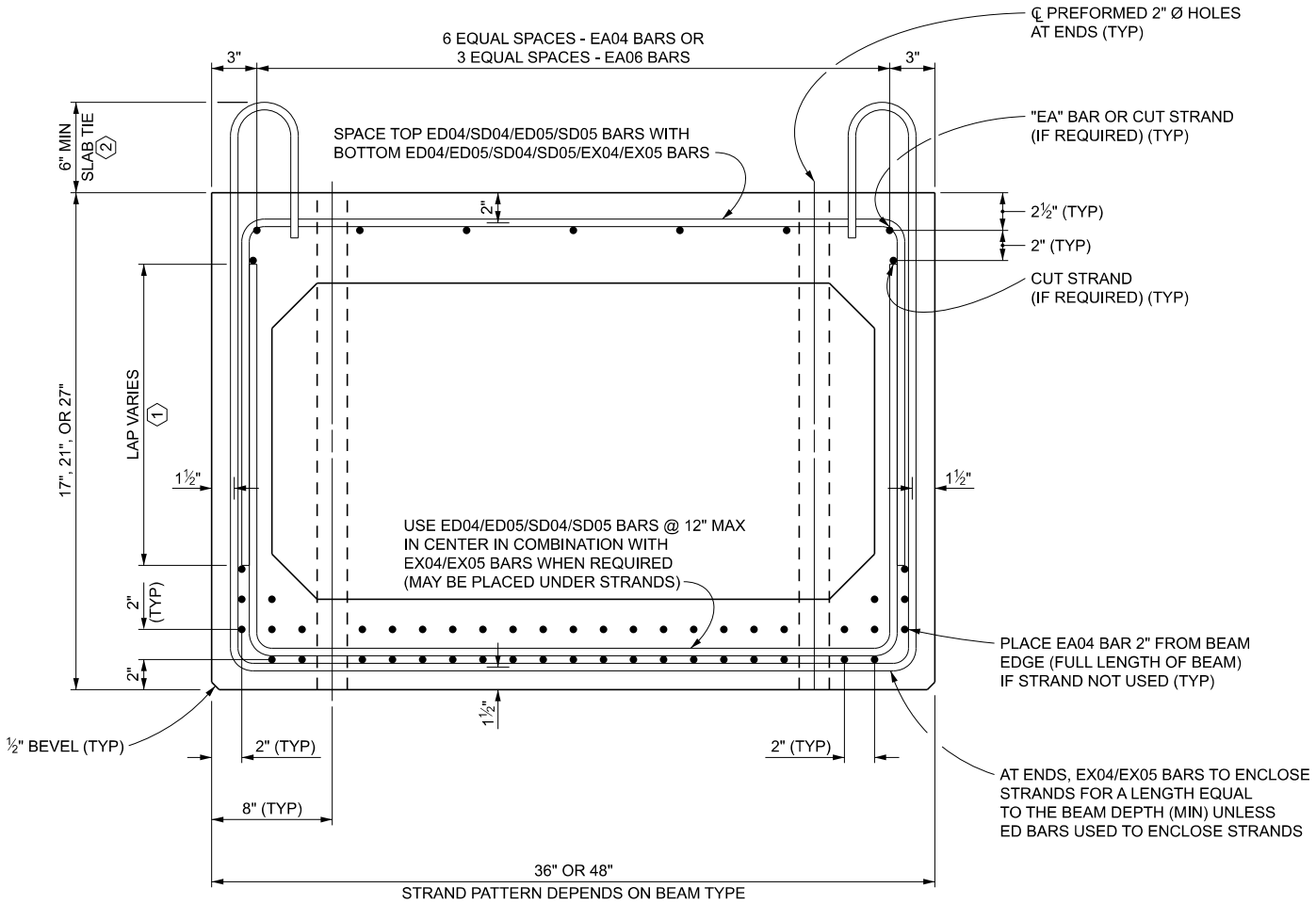
PLACE SPREAD BOX BEAM DIAPHRAGM/BACKWALL INSERTS AT 5" OR 7" UP FROM BOTTOM OF BEAM AND 3½" OR 5½" DOWN FROM TOP OF BEAM.

EA AND ED BARS ARE GRADE 60 (ksi) STEEL.

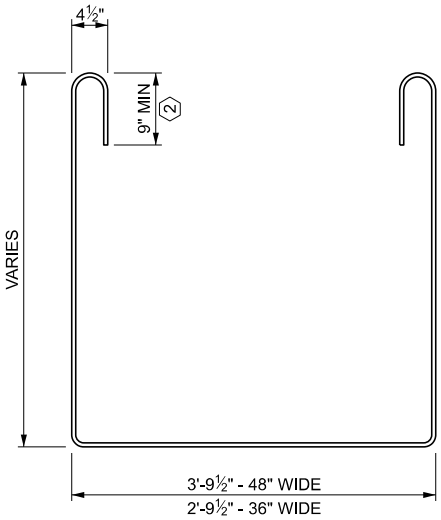
FOR ALTERNATIVE REINFORCEMENT CONFIGURATION SEE 6.65.10I.

PREPARED BY DESIGN DIVISION	6.65.10F

DRAWN BY: BLT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT	ISSUED: 06/22/26
CHECKED BY: CWC	PRESTRESSED CONCRETE 17 IN., 21 IN., AND 27 IN. BOX BEAM REINFORCEMENT ALTERNATIVE DETAILS	SUPERSEDES:
APPROVED BY: BMW		

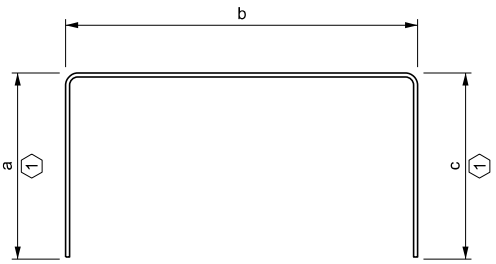


BOX BEAM



EX04/EX05 BAR (BOTTOM)

ED04/SD04/ED05/SD05 DIMENSIONS				
PRESTRESSED BOX BEAM TYPE	#4 BAR LENGTH		#5 BAR LENGTH	
	a & c	b	a & c	b
17" BEAM - 36" WIDE	1'-1"	2'-8"	1'-1"	2'-8"
21" BEAM - 36" WIDE	1'-5"	2'-8"	1'-5"	2'-8"
21" BEAM - 48" WIDE	1'-5"	3'-8"	1'-5"	3'-8"
27" BEAM - 36" WIDE	1'-11"	2'-8"	1'-11"	2'-8"
27" BEAM - 48" WIDE	1'-11"	3'-8"	1'-8"	3'-8"



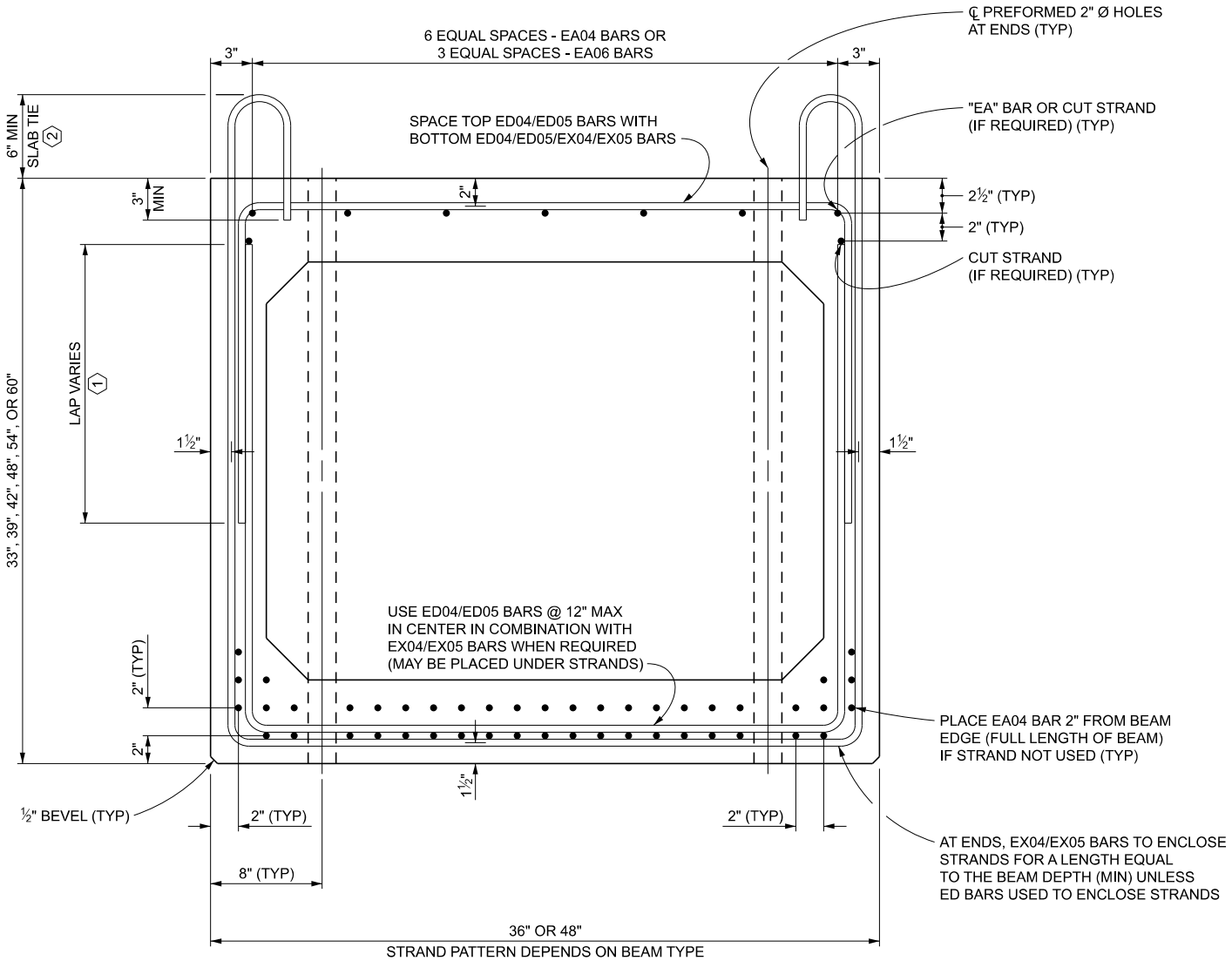
ED04/ES04/ED05/SD05 BAR

NOTES:
1. DEPTH DEPENDS ON BEAM TYPE. SEE TABLE.
2. DEPENDENT ON HAUNCH.

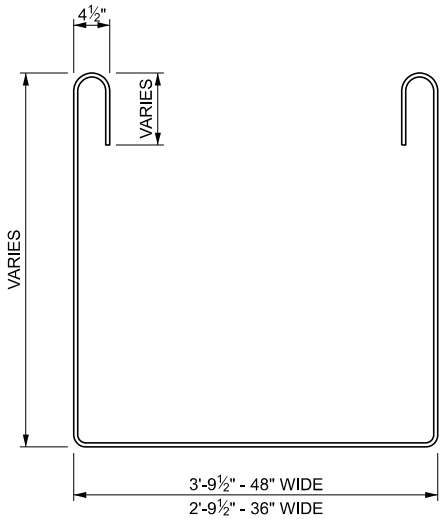
USE WITH BRIDGE DESIGN GUIDE 6.65.10 SERIES.

PREPARED BY DESIGN DIVISION	6.65.10H

DRAWN BY: BLT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT	ISSUED: 06/22/26
CHECKED BY: CWC	PRESTRESSED CONCRETE 33 IN. THROUGH 60 IN. BOX BEAM REINFORCEMENT ALTERNATIVE DETAILS	SUPERSEDES:
APPROVED BY: BMW		

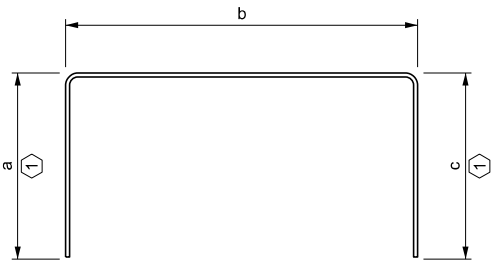


BOX BEAM



EX04/EX05 BAR (BOTTOM)

ED04/ED05 DIMENSIONS				
PRESTRESSED BOX BEAM TYPE	#4 BAR LENGTH		#5 BAR LENGTH	
	a & c MIN	b	a & c MIN	b
33" BEAM - 36" WIDE	1'-11"	2'-8"	1'-11"	2'-8"
33" BEAM - 48" WIDE	1'-11"	3'-8"	2'-5"	3'-8"
39" BEAM - 36" WIDE	1'-11"	2'-8"	2'-5"	2'-8"
39" BEAM - 48" WIDE	1'-11"	3'-8"	2'-5"	3'-8"
42" BEAM - 36" WIDE	1'-11"	2'-8"	2'-5"	2'-8"
42" BEAM - 48" WIDE	1'-11"	3'-8"	2'-5"	3'-8"
48" BEAM - 48" WIDE	1'-11"	3'-8"	2'-5"	3'-8"
54" BEAM - 48" WIDE	1'-11"	3'-8"	2'-5"	3'-8"
60" BEAM - 48" WIDE	1'-11"	3'-8"	2'-5"	3'-8"



ED04/ED05 BAR

NOTES:
① DEPTH DEPENDS ON BEAM TYPE. SEE TABLE.
② DEPENDENT ON HAUNCH.
USE WITH BRIDGE DESIGN GUIDE 6.65.10 SERIES.

PREPARED BY DESIGN DIVISION	6.65.10I