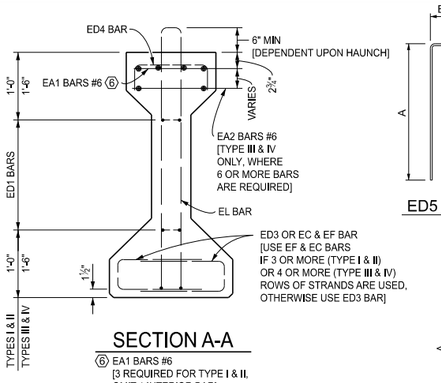
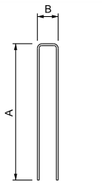


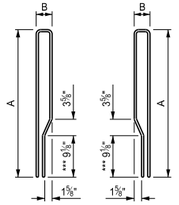
SECTION A-A

⑥ EA1 BARS #6
[3 REQUIRED FOR TYPE I & II, OMIT 1 INTERIOR BAR]
[4 REQUIRED FOR TYPE III & IV.]

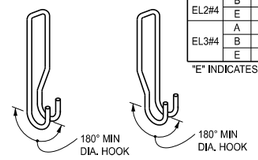


ED5 BAR

EL1 & EL2 END VIEW



EL1 BAR EL2 BAR



EL1 BAR EL2 BAR

[*** THE VERTICAL LOCATION OF THE TAPER IN THE LEG OF THE EL1 AND EL2 BAR MAY NEED TO BE ADJUSTED TO AVOID CONFLICTS WITH STRANDS.]

BAR DIMENSIONS

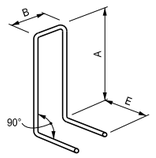
BAR	DIM.	BEAM TYPE I	II	III	IV
EA1#6	A	Y-3"	Y-3"	Y-3"	Y-3"
EA2#6	A	–	–	Y-3"	Y-3"
EA3#8	A	Y-3"	Y-3"	Y-3"	Y-3"
EC#3	A	4"	4"	6"	6"
	B	4"	6"	6"	10"
	C	4"	4"	6"	6"
	D	4"	4"	6"	6"
	E	5⅜"	5⅜"	8½"	8½"
	F	4"	4"	6"	6"
	G	5⅜"	5⅜"	8½"	8½"
ED1#4	A	3'-4"	4'-0"	4'-9"	5'-6"
	B	2½"	2½"	3½"	4½"
ED2#4	A	3"	3"	5"	5"
	B	11⅞"	1'-3⅜"	1'-7⅞"	1'-11½"
ED3#3	A	1'-0"	1'-2"	1'-4"	1'-5"
	B	3½"	3½"	5½"	5½"
ED4#4	A	2"	4"	5"	6"
	B	8"	8"	1'-0"	1'-4"
ED5#4	A	1'-9"	2'-5"	3'-2"	3'-11"
	B	3½"	3½"	4¾"	5¾"
EF#3	A	11⅞"	1'-3⅞"	1'-7⅞"	1'-11½"
	B	3½"	3½"	5½"	5½"
	C	5⅜"	5⅜"	8½"	8½"
	D	3½"	3½"	5½"	5½"
	E	4"	4"	6"	6"
	F	4"	4"	6"	6"
	G	5⅜"	5⅜"	8½"	8½"
	H	4"	4"	6"	6"
	J	4"	4"	6"	6"
EL1#4	A	2'-8½"	3'-4½"	4'-1½"	4'-10½"
	B	3½"	3½"	4¾"	5¾"
EL2#4	E	6" HOOK	6" HOOK	6" HOOK	6" HOOK
EL3#4	A	2'-8½"	3'-4½"	4'-1½"	4'-10½"
	B	3½"	3½"	4¾"	5¾"
	E	6"	6"	6"	6"

"E" INDICATES EPOXY COATED BAR

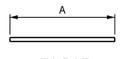
BEAM DIMENSIONS

MARK				
TYPE				
NO.REQ.				
a				
b				
c				
d				
E				
f				
f'				
g				
G				
h				
I				
J				
K				
L*				
L'*				
M ∓				
N ∓				
P				
O**				
R				
T				
U				
V				
X				
Y				
APPROX. WEIGHT				

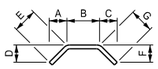
* FORMING DIMENSION. IF L OR L' IS COMPUTED TO BE BETWEEN -½" & +½" USE L = 0 OR L' = 0.
** TYPE I Q=9"
TYPE II Q=1'-1"
TYPE III Q=1'-5½"
TYPE IV Q=1'-10"
∓ MEASURED ALONG BEAM ℄.



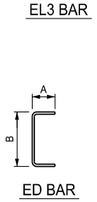
EL3 BAR



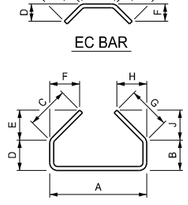
EA BAR



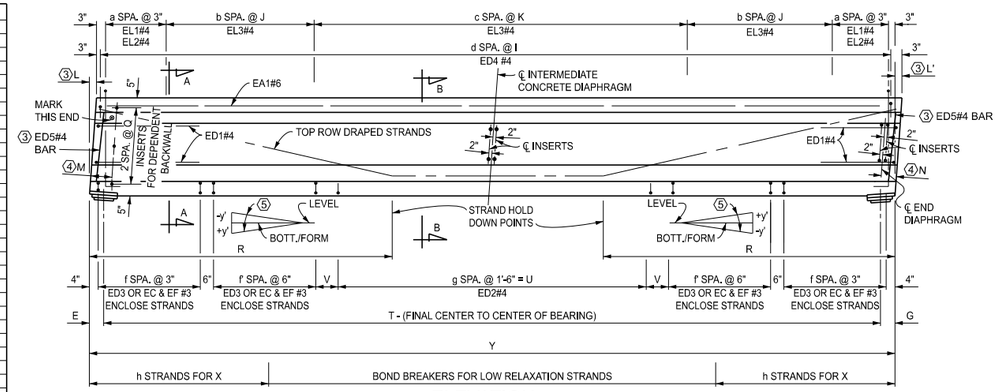
EC BAR



ED BAR

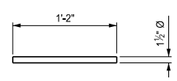


EF BAR

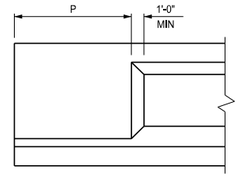


⑤ BOTT./SOLE PLATE [DEPENDENT ON TILT]

ELEVATION



POSITION DOWEL DETAIL

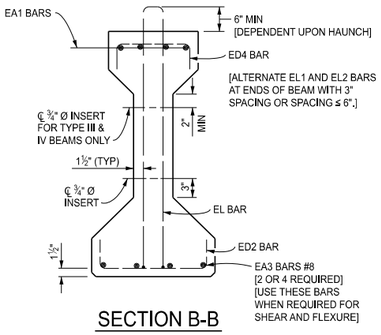


END BLOCK DETAIL

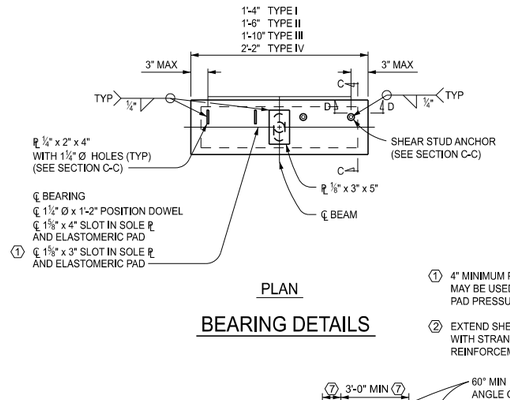
NOTE TO USERS

③ WHEN L OR L' EXCEED 3" ADD ED5#4 BAR PARALLEL TO END OF BEAM. ADD EF AND EC BAR WITH ED BAR ON "L" END OF BEAM.

④ INSERT LOCATIONS MAY BE DECREASED UP TO 1" TOWARD BEAM END TO AVOID VERTICAL REINFORCEMENT.

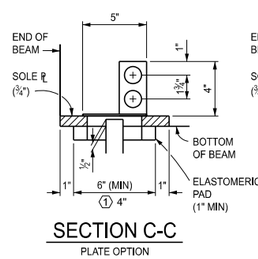


SECTION B-B



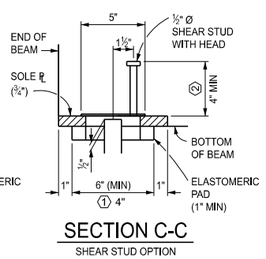
PLAN

BEARING DETAILS



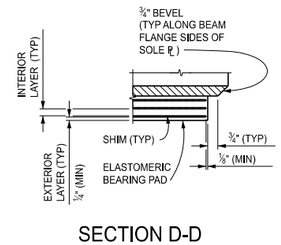
SECTION C-C

PLATE OPTION



SECTION C-C

SHEAR STUD OPTION



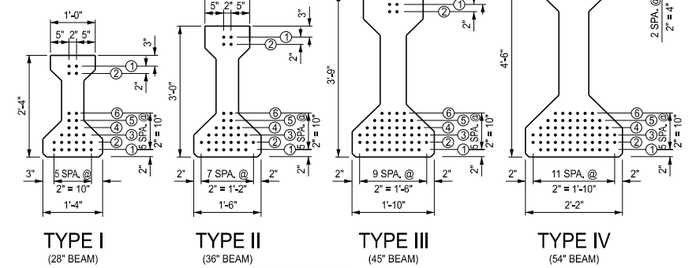
SECTION D-D

① 4" MINIMUM PAD LENGTH WITH 3" SLOT MAY BE USED WHEN BEAM ROTATION AND PAD PRESSURE REQUIREMENTS DICTATE.

② EXTEND SHEAR STUDS ABOVE HIGHEST ROW WITH STRANDS WITHOUT INTERFERENCE TO REINFORCEMENT

MISCELLANEOUS QUANTITIES

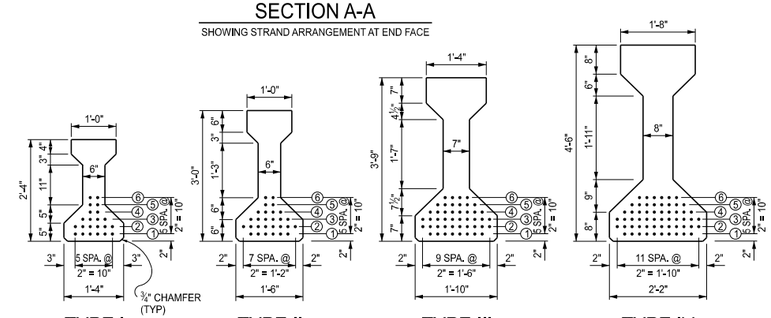
_____ Sin Bearing, Elastomeric, __ inch
_____ Ft Prest Conc I Beam, Furn
_____ Ft Prest Conc I Beam, Erect



TYPE I (28" BEAM) TYPE II (36" BEAM) TYPE III (45" BEAM) TYPE IV (54" BEAM)

SECTION A-A

SHOWING STRAND ARRANGEMENT AT END FACE



TYPE I (28" BEAM) TYPE II (36" BEAM) TYPE III (45" BEAM) TYPE IV (54" BEAM)

SECTION B-B

SHOWING STRAND LOCATIONS AT MIDSPAN

● LOW RELAXATION STRAND LOCATION
+ DEBONDED STRAND FOR LOW RELAXATION STRAND

ELASTOMERIC PAD AND SHIM DIMENSIONS

	SPAN ABUT	SPAN PIER	SPAN PIER	SPAN PIER	SPAN PIER	SPAN PIER	SPAN PIER	SPAN ABUT
THICKNESS								
(L) PARALLEL TO BEAM								
(W) PERPENDIC. TO BEAM								
GG								
LAYERS	@	@	@	@	@	@	@	@
SHIMS	@	@	@	@	@	@	@	@

SOLE PLATE TILT TABLE

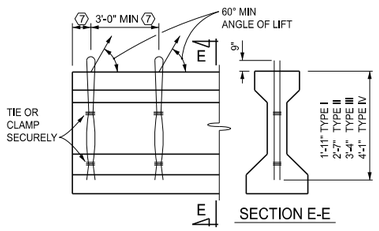
BEAM LINE	SPAN ABUT y	SPAN ABUT y'	SPAN PIER y	SPAN PIER y'	SPAN PIER y	SPAN PIER y'	SPAN PIER y	SPAN PIER y'	SPAN ABUT y	SPAN ABUT y'

STRAND LOCATION TABLE

SPAN	TYPE	MIDSPAN (SECTION B-B) BOTTOM ① ② ③ ④ ⑤ ⑥	END FACE (SECTION A-A) BOTTOM ① ② ③ ④ ⑤ ⑥	TOP ① ② ③	TOTAL NUMBER	REQUIRED CONCRETE COMPRESSIVE STRENGTH (PSI) 28 DAY	AT RELEASE

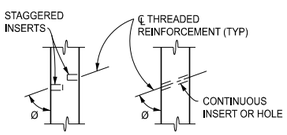
PRESTRESSING STRAND LIFT DEVICE

STRAND SIZE	NO. OF STRANDS	ALLOWABLE BEAM WEIGHT
⅜"	2	20 TONS
7/16"	2	27 TONS
½"	2	36 TONS
⅜"	3	30 TONS
7/16"	3	40.5 TONS
½"	3	54 TONS



LIFTING DEVICE

⑦ DIMENSION TO MATCH LIFTING LOOP LOCATION USED IN STABILITY ANALYSIS FOR LIFTING AND TRANSPORT



CONCRETE INSERT DETAILS

STAGGER CONCRETE INSERTS AT ENDS OF BEAMS.

USE CONTINUOUS OR STAGGERED INSERTS AT MIDSPAN. [USE FOR CONCRETE DIAPHRAGMS]

USE STAGGERED INSERTS AT MIDSPAN AND INDEPENDENT BACKWALLS, CAST PERPENDICULAR TO BEAM WEBS. [USE WITH STEEL DIAPHRAGMS WHEN REQUIRED Ø ANGLE IS < 80°]

USE CONTINUOUS HOLE FORMED WITH 1½" I.D. PLASTIC PIPE. [USE WITH STEEL DIAPHRAGMS WHEN REQUIRED Ø ANGLE IS ≥ 80° AND AT DEPENDENT BACKWALLS.]

BEND THREADED REINFORCEMENT FOR STAGGERED INSERTS TO THE REQUIRED Ø ANGLE PRIOR TO INSTALLATION. [USE FOR CONCRETE DIAPHRAGMS AND ABUTMENTS WITH DEPENDENT BACKWALLS]

INSTALLATION OF BENT REINFORCEMENT MAY BE REQUIRED BEFORE BEAM IS ERECTED PRIOR TO INSTALLATION.[USE FOR CONCRETE DIAPHRAGMS AND ABUTMENTS WITH DEPENDENT BACKWALLS]

OMIT INSERTS ON OUTSIDE OF FASCIA BEAMS EXCEPT AT ABUTMENTS WITH DEPENDENT BACKWALLS.

USE CONCRETE INSERTS AT MIDSPAN, PIERS AND INDEPENDENT BACKWALL BRIDGES ON THE INTERIOR OF FASCIA BEAMS. OTHER BEAMS MAY USE INSERTS OR CONTINUOUS HOLES.

FINAL ROW PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

NO SCALE

	DATE:	CS:	PRESTRESSED CONCRETE	DRAWING	SHEET
	DESIGN UNIT:	JN:	I-BEAM DETAILS		SECT
FILE:	TSC:		PC-1Q (12-22-2025)		

NOTE TO USER: NOTES IN "[.....]" ARE GUIDANCE TO THE USER AND GENERALLY ARE REMOVED FROM THE FINAL PLANS BASED ON DESIGN SPECIFIC BEAM DETAILS.

NOTES:

USE 0.6" NOMINAL DIAMETER PRESTRESSING STRAND MEETING THE REQUIREMENTS OF AASHTO M203 (ASTM A416), GRADE 270, LOW RELAXATION STRAND.

TENSION 0.6" DIA. PRESTRESSING STRANDS TO AN INITIAL PRESTRESS OF 44,000 LBS.

PROVIDE CONCRETE INSERTS FOR DRAIN CASTING ASSEMBLY BRACKETS ACCORDING TO STANDARD PLAN B-101-SERIES. CAST INSERTS WITH THE BEAMS. DO NOT FIELD INSTALL INSERTS.

END BLOCKS ARE (REQUIRED) (OPTIONAL).

TOTAL ESTIMATED CHANGE OF LENGTH OF BOTTOM FLANGE AT TRANSFER OF PRESTRESS FORCE IS ___".

THE ESTIMATED BEAM CAMBER AT RELEASE IS ___". THIS CAMBER IS DUE TO PRESTRESS AND DEAD LOAD OF THE BEAM ONLY AND IS MEASURED IN THE ERECTED POSITION.

BEAMS IN SPAN(S) ___ MAY BE LATERALLY UNSTABLE. TAKE PRECAUTIONS TO ENSURE THAT BEAMS ARE NOT DAMAGED DURING HANDLING AND TRANSPORTATION. [USE WHEN FACTOR OF SAFETY FOR LATERAL BUCKLING IS 1.2 OR LESS.]

THREADING OF REINFORCEMENT AND INSTALLATION INTO CONCRETE INSERTS IS INCLUDED IN THE BID ITEM ("PREST CONC I BEAM, FURN, __ INCH").

REMOVE LIFTING DEVICES AFTER BEAMS ARE ERECTED. CUT LIFTING DEVICE 1" ABOVE STEEL REINFORCEMENT AND PROTECT REINFORCEMENT FROM DAMAGE. REMOVAL IS INCLUDED IN THE BID ITEM ("PREST CONC I BEAM, FURN, __ INCH").

AT THE LOCATIONS SHOWN ON THE PLANS, APPLY SILANE TO THE BEAM ENDS FOR A DISTANCE OF ___ FEET, STARTING FROM THE BEAM END AT THE JOINT, COATING BOTH SIDES, BOTTOM AND ENDS OF BEAMS (DO NOT COAT OUTSIDE AND BOTTOM OF FASCIA BEAMS.). [USE ON PRESTRESSED I-BEAM PROJECTS WITH EXPANSION JOINTS. SHOW THE LOCATIONS TO BE COATED ON THE ERECTION DIAGRAM. IF CONCRETE SURFACE COATING IS BEING APPLIED TO FASCIA BEAMS, DO NOT APPLY SILANE IN AREAS THAT WILL RECEIVE CONCRETE SURFACE COATING. INCLUDE SPECIAL PROVISION FOR SILANE TREATMENT FOR BRIDGE CONCRETE.]

APPLY CONCRETE SURFACE COATING TO THE ENTIRE OUTSIDE AND BOTTOM OF THE FASCIA BEAMS. (USE CONCRETE SURFACE COATING AMS-STD-595 COLOR NUMBER [INSERT NUMBER], [INSERT COLOR].) [USE ON PRESTRESSED I-BEAM BRIDGES WHERE COATING FASCIA BEAMS WILL NOT SIGNIFICANTLY AFFECT THE MAINTAINING TRAFFIC AND WHEN REQUESTED BY THE REGION OR ROADSIDE DEVELOPMENT SECTION.]

PROVIDE GRADE 60 (KSI) BEAM STEEL REINFORCEMENT, INCLUDING STIRRUPS.

FIELD DRILLING IS ALLOWED FOR SIGN SUPPORT ANCHORS ONLY. LOCATION OF ANCHORS IS AS DETAILED ON TRAFFIC & SAFETY SIGN SUPPORT SPECIAL DETAILS. REPAIR ANY DAMAGE TO THE BEAMS AT THE CONTRACTOR'S EXPENSE AS APPROVED BY THE ENGINEER.

GALVANIZE OR EPOXY COAT ITEMS CAST INTO THE BEAMS TO FACILITATE BRIDGE CONSTRUCTION (FORMING, FINISHING, ETC.).

USE (¾") (1") DIAMETER CONCRETE INSERTS; DAYTON SUPERIOR, TYPE B-1 TWO STRUT COIL TIE - (HEAVY) (¾") (STANDARD) (1") OR TYPE B18 SINGLE FLARED COIL LOOP INSERT; WILLIAMS FORM, TYPE C12 TWO STRUT COIL TIE OR TYPE C19 FLARED COIL LOOP INSERT; MEADOW BURKE, TYPE CX-4 COIL LOOP INSERT-FLARED; OR ENGINEER APPROVED EQUAL, ELECTROPLATE GALVANIZE COIL INSERTS IN ACCORDANCE WITH ASTM B633, SERVICE CONDITION 4. CAST INSERTS WITH THE BEAMS. DO NOT FIELD INSTALL INSERTS. [USE FOR I-BEAMS AT BACKWALLS OR CONCRETE DIAPHRAGMS.]

USE ⅞" BOLT DIAMETER CONCRETE INSERTS; DAYTON SUPERIOR, F42 OR F64 FERRULE LOOP INSERT; WILLIAMS FORM, F15 OR F16 FERRULE LOOP INSERT; MEADOW BURKE, FX-2 OR FX-5 FERRULE INSERT - LOOP; OR ENGINEER APPROVED EQUAL. ELECTROPLATE GALVANIZE FERRULE INSERTS AND BOLTS IN ACCORDANCE WITH ASTM B633, SERVICE CONDITION 4. CAST INSERTS WITH THE BEAMS. DO NOT FIELD INSTALL INSERTS. [USE WITH TYPE III & IV BEAMS WITH STEEL DIAPHRAGMS.]

USE ⅞" BOLT DIAMETER, 4½" (4⅝") LONG CONCRETE INSERTS; DAYTON SUPERIOR, F42 OR F64 LOOP FERRULE INSERT; WILLIAMS FORM, F15 OR F16 FERRULE LOOP INSERT; MEADOW BURKE, FX-2 OR FX-5 FERRULE INSERT - LOOP; OR ENGINEER APPROVED EQUAL. ELECTROPLATE GALVANIZE FERRULE INSERTS AND BOLTS IN ACCORDANCE WITH ASTM B633, SERVICE CONDITION 4. CAST INSERTS WITH THE BEAMS. DO NOT FIELD INSTALL INSERTS. [USE FOR TYPE I & II BEAMS WITH STEEL DIAPHRAGMS.]

FINAL ROW PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

NO SCALE

	DATE:	CS:	PRESTRESSED CONCRETE	DRAWING	SHEET
	DESIGN UNIT:	JN:	I-BEAM DETAILS		SECT
FILE:	TSC:		PC-1Q (12-22-2025)		