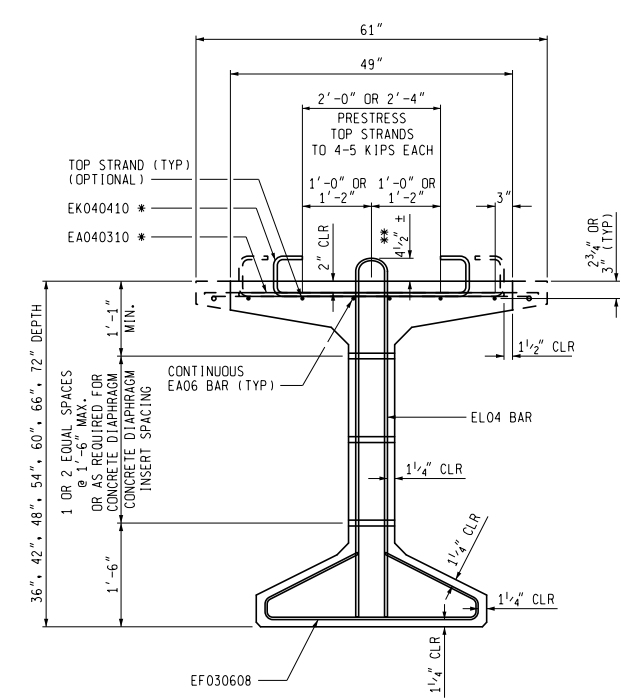
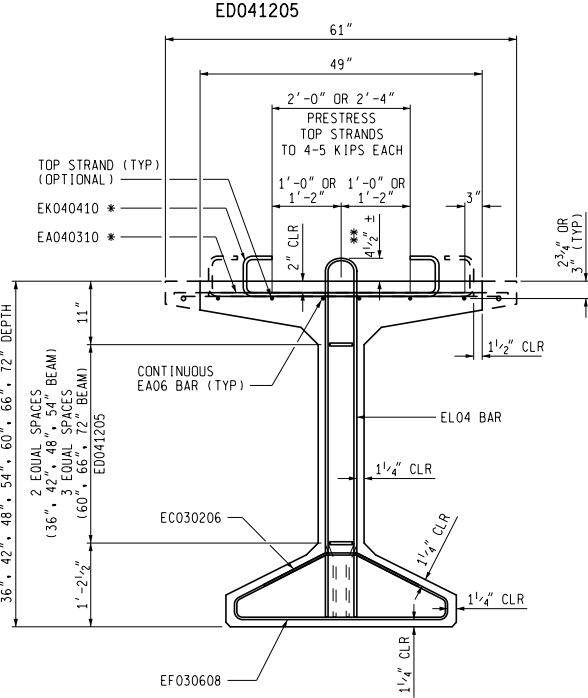
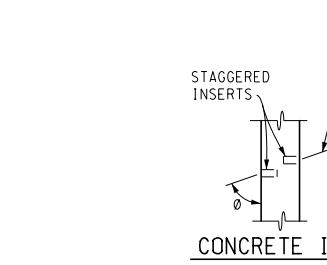
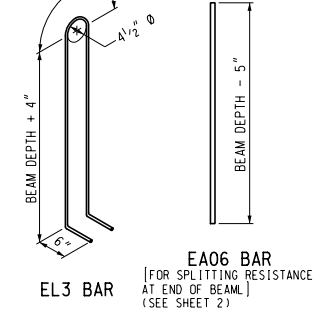
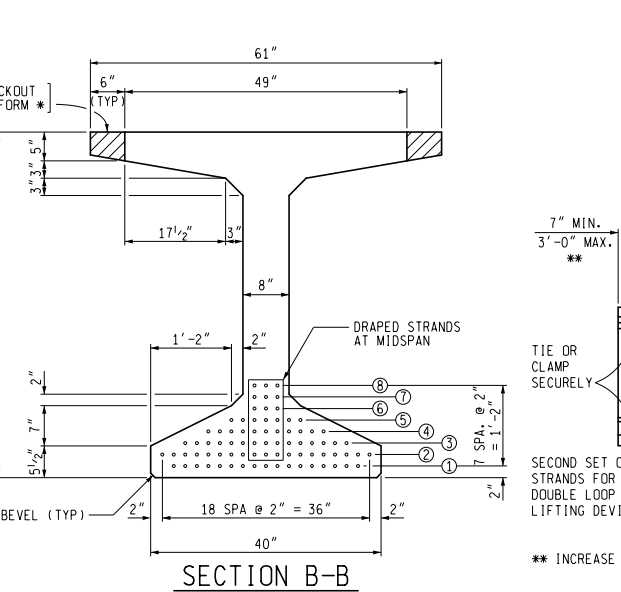
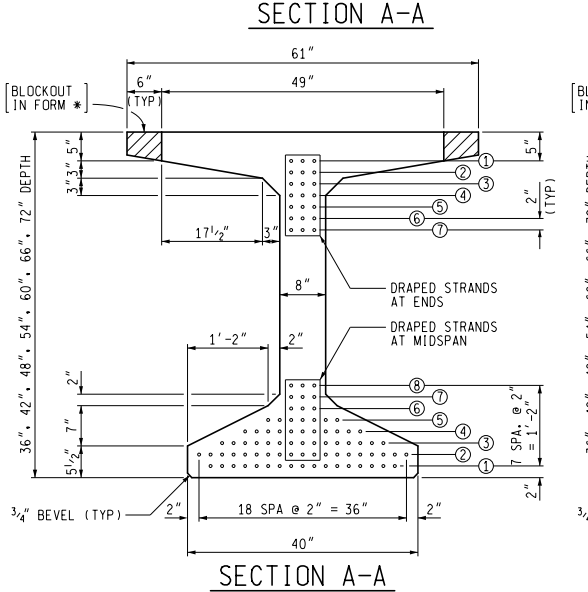


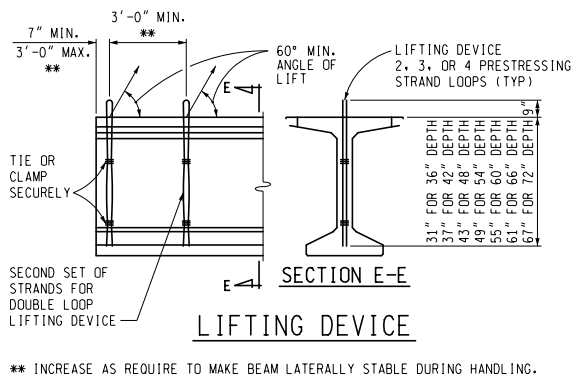
BEAM DATA	
NO.	REQ.
a	
b	
c	
d	
E	
f	
G	
I	
J	
K	
L	
L'	
M	
N	
R	
S	
T	
U	
V	
y	
y'	
Y	
Z	



NOTE: EC030206 AND EF030608 BARS COMBINE TO FORM STIRRUP.  
 [ \*\* INCREASE IF LARGE HAUNCH ANTICIPATED. ]  
 [ \* ALTERNATE EK04 WITH EA04 BARS IF REQUIRED FOR SHEAR/COMPOSITE ACTION. USE EA040410 AND EK040510 WITH BLOCKOUT REMOVAL / 61" TOP FLANGE. SEE BRIDGE DESIGN GUIDE 6.60.03B. ]

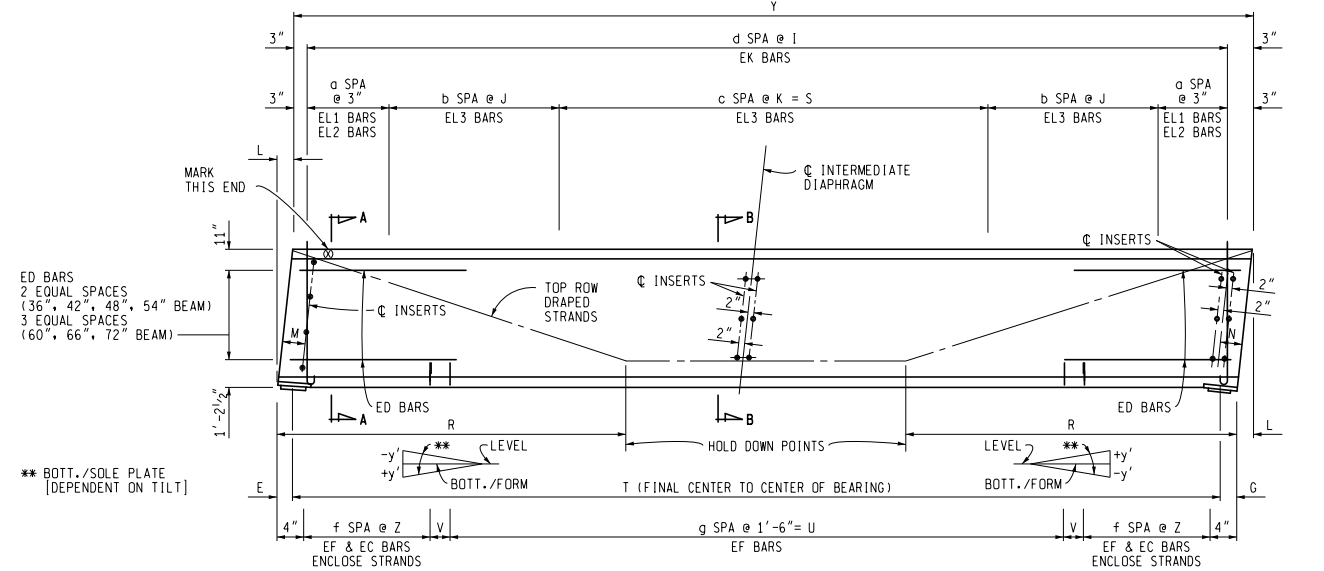


STAGGER CONCRETE INSERTS AT ENDS OF BEAMS.  
 USE CONTINUOUS OR STAGGERED INSERTS AT MIDSPAN. [USE FOR CONCRETE DIAPHRAGMS]  
 USE STAGGERED INSERTS AT MIDSPAN AND INDEPENDENT BACKWALLS. CAST PERPENDICULAR TO BEAM WEBS. [USE WITH STEEL DIAPHRAGMS WHEN REQUIRED Ø ANGLE IS < 80°]  
 USE CONTINUOUS HOLE FORMED WITH 1 1/2" 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.

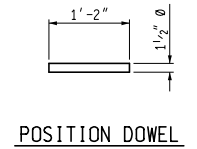


PRESTRESSING STRAND LIFTING DEVICES		
BEAM WEIGHT (TONS) ****	STRAND SIZE	NO. OF STRANDS
	1/2"	3
	0.6"	3
	1/2"	4
	0.6"	4
	1/2"	6 (DOUBLE LOOPS WITH 3 STRANDS)
	0.6"	6 (DOUBLE LOOPS WITH 3 STRANDS)

[\*\*\*\* INSERT BEAM WEIGHT FROM BRIDGE DESIGN GUIDE 6.65.14B BASED ON BEAM DEPTH.]



NOTE: L AND L' SHOWN ARE POSITIVE.



MISCELLANEOUS QUANTITIES	
-----	5in Bearing, Elastomeric, ... inch
-----	Ft Prest Conc Bulb-Tee Beam, Furn, ... inch by ... inch
-----	Ft Prest Conc Bulb-Tee Beam, Erect, ... inch by ... inch

SOLE & TILT TABLE		
BEAM LINE	SPAN 1	
	ABUT A	ABUT B
	y	y'

ELASTOMERIC PAD AND SHIM DIMENSIONS			
		SPAN 1	
		ABUT A	ABUT B
PAD THICKNESS			
L PARALLEL TO BEAM			
W PERPENDIC. TO BEAM			
LAYERS		2 @	2 @
SHIMS		3 @	3 @

STRAND LOCATION TABLE																			
SPAN	MIDSPAN (SECTION B-B)								END FACE (SECTION A-A)										
	BOTTOM				TOP				BOTTOM				TOP						
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	TOTAL NUMBER	REQUIRED CONCRETE COMPRESSIVE STRENGTH (PSI)	
																		28 DAY	AT RELEASE

PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

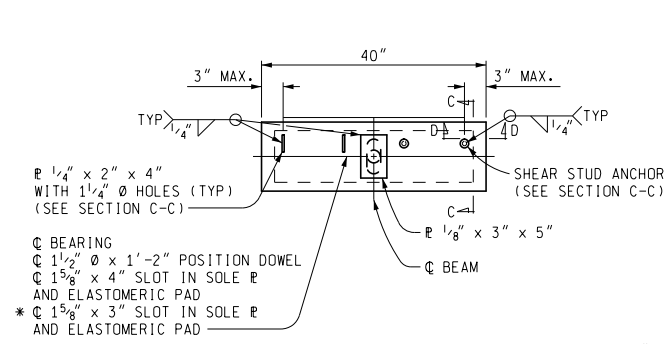


NO SCALE  
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 CHK'D BY: \_\_\_\_\_ CORR BY: \_\_\_\_\_  
 FILE: \_\_\_\_\_

DATE: \_\_\_\_\_  
 DESIGN UNIT: \_\_\_\_\_  
 TSC: \_\_\_\_\_

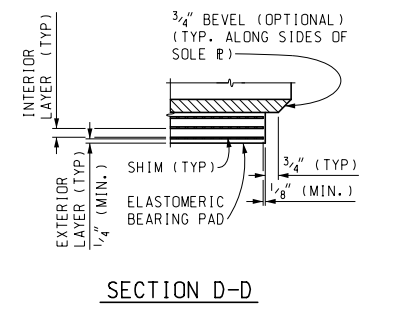
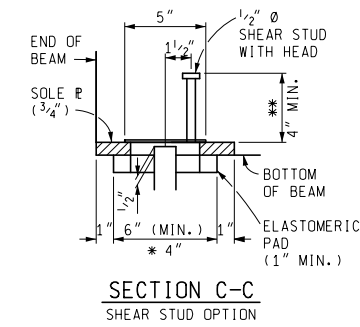
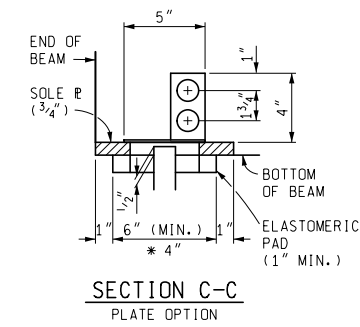
CS: \_\_\_\_\_  
 JN: \_\_\_\_\_  
 PRESTRESSED CONCRETE  
 BULB-TEE BEAM DETAILS  
 PC-5A (11-28-2022)

DRAWING SHEET



3" MAX. 40" 3" MAX.  
 TYP. 1/4" TYP.  
 1/4" x 2" x 4" WITH 1/4" Ø HOLES (TYP) (SEE SECTION C-C)  
 SHEAR STUD ANCHOR (SEE SECTION C-C)  
 1/8" x 3" x 5"  
 1 1/2" Ø POSITION DOWEL  
 1 5/8" x 4" SLOT IN SOLE PLATE AND ELASTOMERIC PAD  
 \* 1 5/8" x 3" SLOT IN SOLE PLATE AND ELASTOMERIC PAD  
 C BEARING  
 C BEAM

PLAN BEARING DETAILS

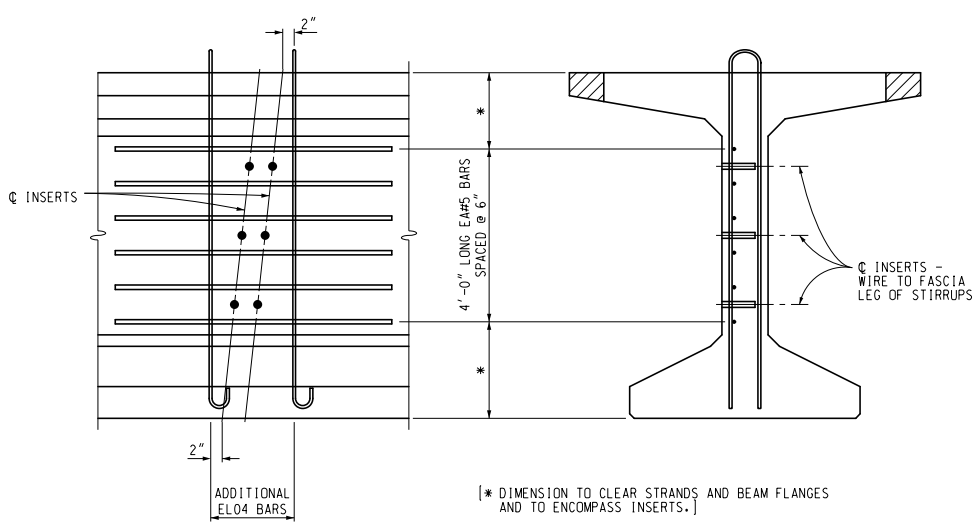


\* 4" MINIMUM PAD LENGTH WITH 3" SLOT MAY BE USED WHEN BEAM ROTATION AND PAD PRESSURE REQUIREMENTS DICTATE.  
 \*\* EXTEND SHEAR STUDS ABOVE HIGHEST ROW WITH STRANDS WITHOUT INTERFERENCE TO REINFORCEMENT

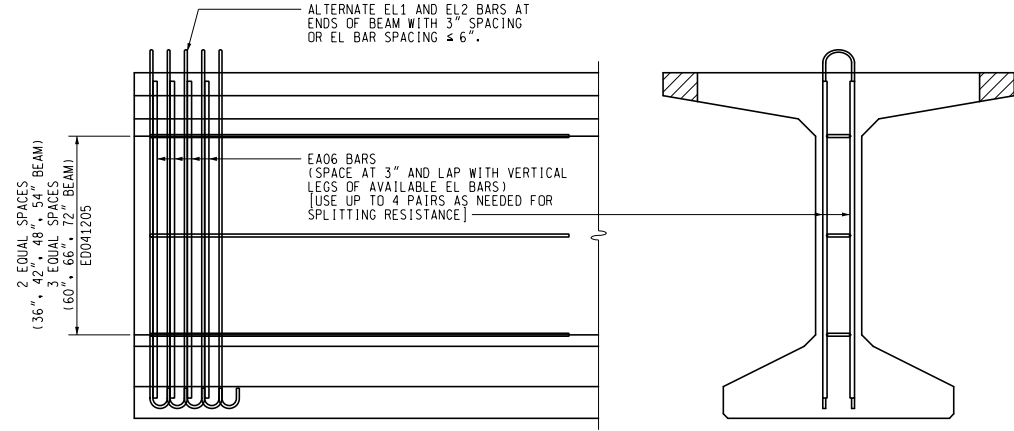
NOTE TO USER: NOTES IN "[.....]" ARE GUIDANCE TO THE USER AND GENERALLY ARE REMOVED FROM THE FINAL PLANS BASED ON DESIGN SPECIFIC BEAM DETAILS.

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.
- 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.
- DURING HANDLING AND TRANSPORTATION, SUPPORT BEAMS --- FEET FROM THE END. IF TWO ADDITIONAL STRANDS ARE DRAPED, SUPPORT BEAMS --- FEET FROM THE END.
- 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 BULB-TEE BEAM, FURN, --- INCH BY --- INCH").
- REMOVE LIFTING DEVICES AFTER BEAMS ARE ERECTED. REMOVAL IS INCLUDED IN THE BID ITEM ("PREST CONC BULB-TEE BEAM, ERECT, --- INCH BY --- INCH").
- FILL HOLES CAST OR FORMED IN THE BEAM WITH NON-SHRINKING GROUT. INCLUDED IN THE BID ITEM ("PREST CONC BULB-TEE BEAM, ERECT, --- INCH BY --- 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 BULB-TEE 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 BULB-TEE 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 3/4" (1") DIAMETER CONCRETE INSERTS: DAYTON SUPERIOR, TYPE B-1 TWO STRUT COIL TIE - (HEAVY) [3/4"] (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 BULB-TEE BEAMS AT BACKWALLS OR CONCRETE DIAPHRAGMS.]
- USE 7/8" 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 BULB-TEE BEAMS WITH STEEL DIAPHRAGMS.]



FASCIA BEAM INTERMEDIATE DIAPHRAGM INSERT DETAILS  
[USE IF REQUIRED FOR WEB STABILITY]



END OF BEAM ADDITIONAL REINFORCEMENT  
[USE IF REQUIRED FOR SPLITTING RESISTANCE]

PLAN REVISIONS								MDOT Michigan Department of Transportation	NO SCALE	DRAWN BY:	DATE:	CS:	PRESTRESSED CONCRETE	DRAWING SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION							

CHK'D BY:	CORR BY:	DESIGN UNIT:	JN:	BULB-TEE BEAM DETAILS
FILE:	TSC:			PC-5A (11-28-2022)