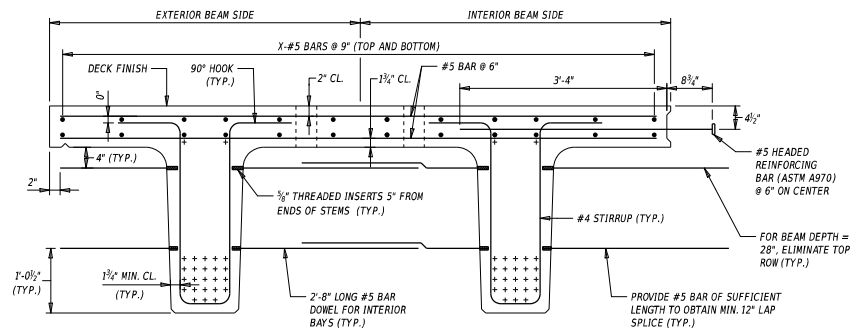


### NEXT D BEAM STRAND CONFIGURATION

REFER TO FLANGE CONNECTION DETAILS FOR MORE INFORMATION ON SHEAR KEY END



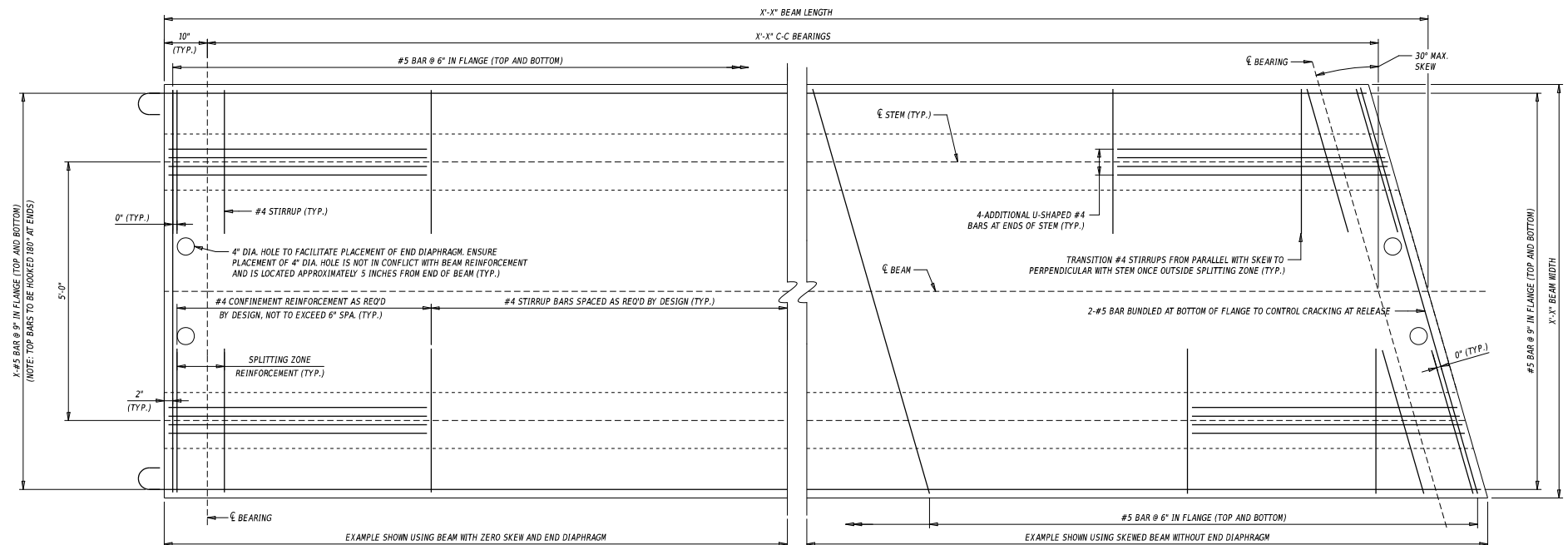
### NEXT D BEAM TYPICAL REINFORCING SECTION

EXAMPLE SHOWN USING MAXIMUM WIDTH OF 10'-0"

NOTE: LEGEND TO BE ADDED ON PLAN SHEETS MUST SHOW THE FOLLOWING:

- = 0.6" DIA., 270 ksi PRESTRESSING STRANDS
- ⊙ = 0.6" DIA., 270 ksi PRESTRESSING STRANDS TO BE EXTENDED INTO THE PIER OR END DIAPHRAGM
- = 0.6" DIA., 270 ksi PRESTRESSING STRANDS TO BE DEBONDED AT X'-X" @ EACH END
- ▲ = 0.6" DIA., 270 ksi PRESTRESSING STRANDS TO BE DEBONDED AT X'-X" @ EACH END (IF MORE THAN ONE DEBONDED LENGTH IS REQUIRED)

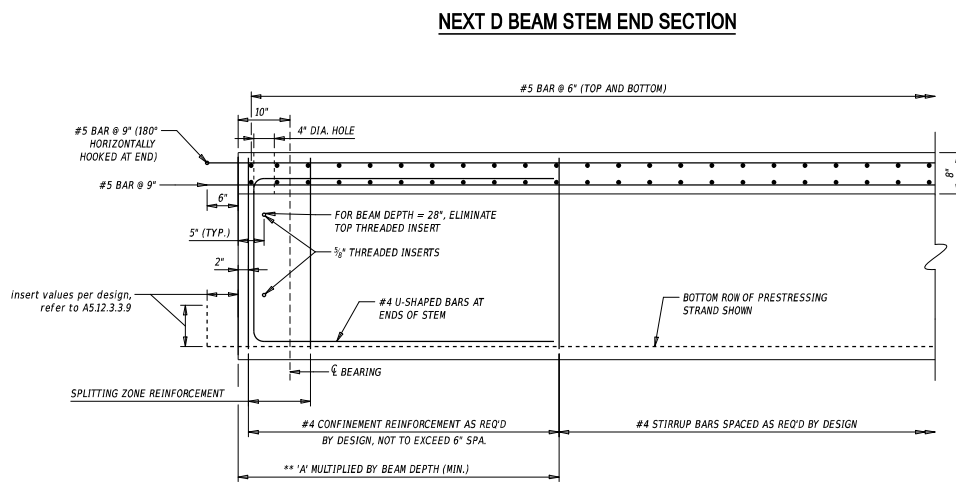
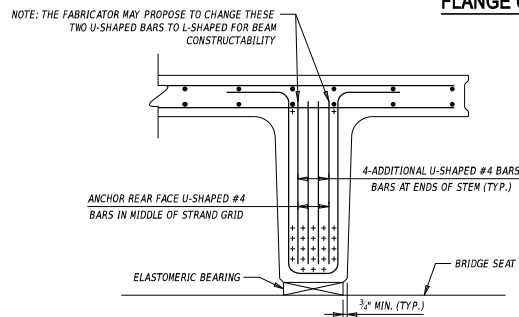
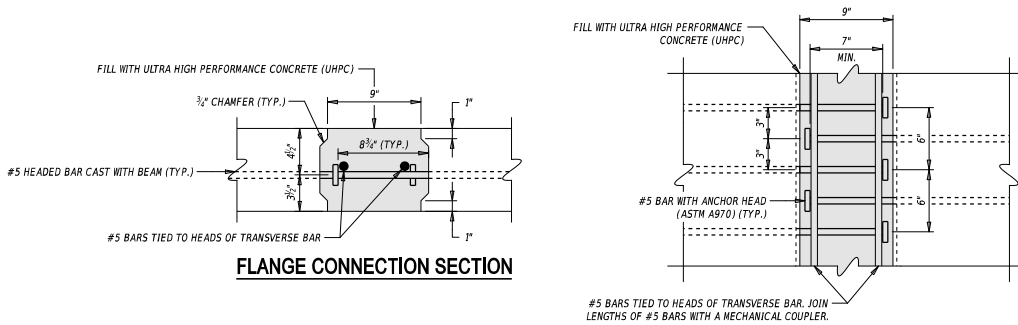
NOTE: NO STRANDS SHOWN FOR CLARITY, + = DENOTES AVAILABLE LOCATIONS FOR STRAND PLACEMENT, POTENTIAL BARRIER REINFORCEMENT NOT SHOWN FOR CLARITY, BUT MUST BE SHOWN IN REINFORCING BAR LIST AND BENDING DIAGRAMS.



### NEXT D BEAM PLAN

EXAMPLE SHOWN USING MINIMUM WIDTH OF 8'-0"





\*\* CONFINEMENT ZONE  
'A' = 2.0 FOR 0.6" DIA. STRANDS

**NEXT D BEAM HALF-ELEVATION**

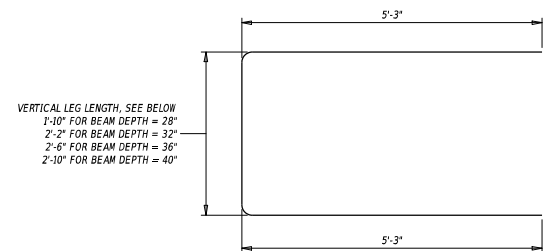
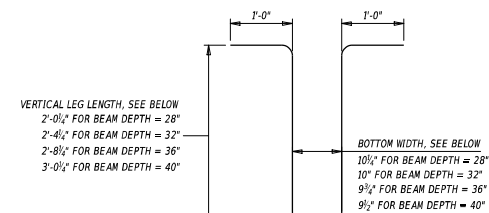
NOTE: EXAMPLE SHOWN WITH END DIAPHRAGM.

NOTE: ALL REINFORCEMENT FOR THE NEXT BEAM IS INCLUDED IN ITEM (insert appropriate beam item number). THE REINFORCING BAR LIST AND BENDING DIAGRAMS MUST BE SHOWN ON THE NEXT BEAM SHEETS AND SEPARATE FROM THE BRIDGE REINFORCEMENT BAR SHEET.

REINFORCING BAR LIST						
STRAIGHT BARS				BENT BARS		
MARK	SIZE	QTY.	LENGTH	MARK	SIZE	QTY.
BMSXXE	5	.....	.....	BM4XXE	4	.....
BMSXXE	5	.....	.....	BM4XXE	4	.....
BMSXXE	5	.....	.....	BM4XXE	4	.....
BMSXXE	5	.....	.....	BM4XXE	4	.....

**BENDING DIAGRAMS**

NOTE: ALL DIMENSIONS ARE FROM OUT TO OUT.

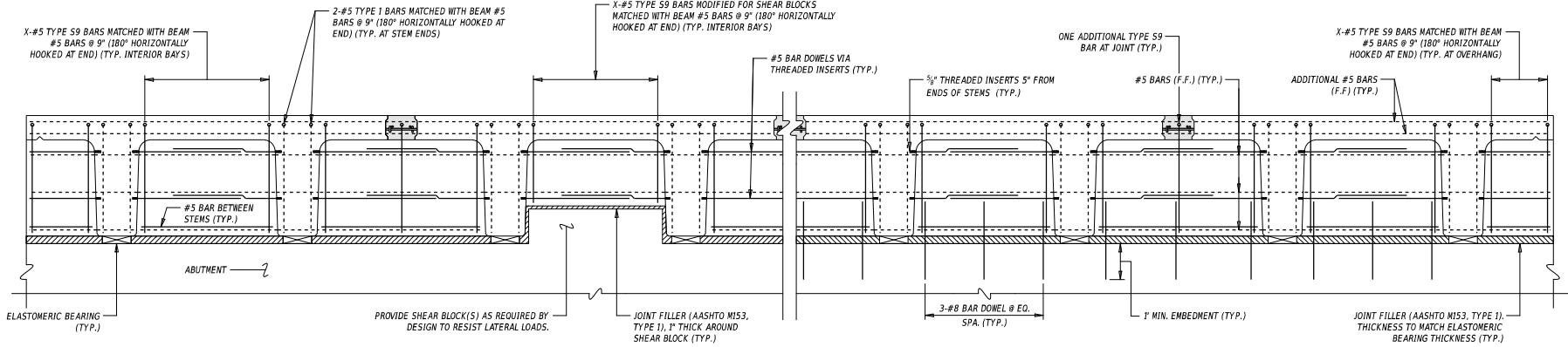


NOTE: REINFORCING BAR LIST COUNT IS PER BEAM

NOTE: THE ABOVE DIMENSIONS ARE RECOMMENDED. THE DESIGNER IS STILL RESPONSIBLE FOR ENSURING THAT THE DIMENSIONS SHOWN ON PLANS ARE ACCURATE AND PROJECT-SPECIFIC.

NOTE: BARS SHOWN AS SOLID LINES REPRESENT BARS TO BE PLACED AT S.F. AND BETWEEN STEMS. BARS SHOWN AS DASHED LINES REPRESENT BARS PLACED AT F.F. OF DIAPHRAGMS.

NOTE: EXAMPLE SHOWN USING ZERO CROSS SLOPE. FOR BITUMINOUS CONCRETE OVERLAYS, THE DESIGNER MUST SPECIFY AN INITIAL WATERPROOFING MEMBRANE TO BE PLACED ATOP THE DECKS. IN CASES WHERE THE DECK SURFACE IS EXPOSED TO THE TRAFFIC OR IF A THIN POLYMER OR EPOXY OVERLAY IS APPLIED ATOP THE DECK, PLACE THE BEAMS ON SLOPED ABUTMENT/PIER TO MEET CROSS SLOPE REQUIREMENTS. FULL DEPTH ROADBOX IS NOT REQUIRED OVER NEXT D BEAMS, THEREFORE BITUMINOUS CONCRETE OVERLAY THICKNESS SHOULD BE MINIMAL.



### END DIAPHRAGM DETAIL FOR EXPANSION BEARINGS

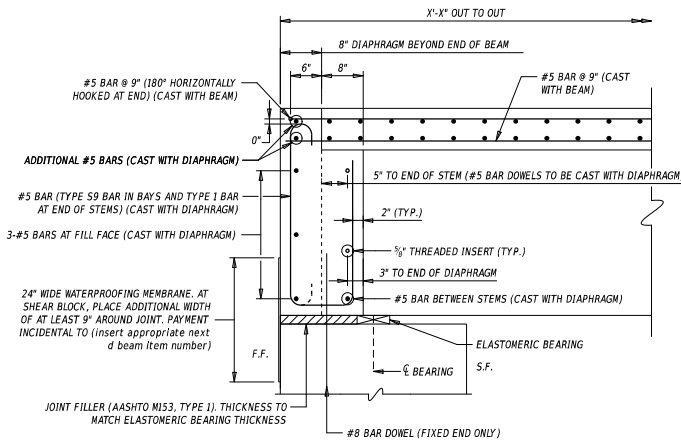
EXAMPLE SHOWN USING 40" NEXT D BEAM WITH MAXIMUM BEAM WIDTH OF 10'-0" WITH 10'-9" BEAM SPACING

### END DIAPHRAGM DETAIL FOR FIXED BEARINGS

EXAMPLE SHOWN USING 40" NEXT D BEAM WITH MAXIMUM BEAM WIDTH OF 10'-0" WITH 10'-9" BEAM SPACING

### DESIGNER NOTES

- REFER TO SECTIONS 103.4.1, 2.3 AND 106.9 FOR MORE INFORMATION ON PRESTRESSED CONCRETE NEXT BEAMS.
- ADDITIONAL GUIDANCE ON PRESTRESSED CONCRETE NEXT BEAMS CAN BE FOUND IN PUBLICATION "GUIDELINES FOR NORTHEAST EXTREME TEE BEAM (NEXT BEAM)" BY PRECAST/PRESTRESSED CONCRETE INSTITUTE NORTHEAST.
- THE DEPARTMENT PREFERS USE OF NEXT D BEAMS OVER NEXT E OR NEXT F BEAMS. AS RESULT, ONLY NEXT D BEAMS ARE SHOWN IN THESE DETAILS. APPROVAL FROM THE BRIDGE DESIGN ENGINEER IS NEEDED BEFORE CHOOSING NEXT E OR NEXT F BEAMS OVER NEXT D BEAMS.
- USE OF 4" DIA. HOLES IN FLANGES TO FACILITATE PLACEMENT OF END DIAPHRAGM IS PREFERRED OVER USE OF FLANGE BLOCKOUTS. THE DESIGNER MAY CONSIDER INCREASING THE DIAMETER OF THE HOLE AS NECESSARY BUT MUST ADJUST PLACEMENT OF FLANGE REINFORCEMENT TO AVOID ANY CONFLICTS. FOR BEAMS WITH MAXIMUM WIDTH OF 10', THE DESIGNER SHOULD CONSIDER INSTALLING ONE ADDITIONAL HOLE IN EACH OF INTERIOR FLANGE OVERHANGS.
- POTENTIAL USE OF FLANGE BLOCKOUTS ARE NOT SHOWN IN THE DETAILS. THE DESIGNER MAY CONSIDER USE OF FLANGE BLOCKOUTS IF IT IS DETERMINED IT WILL NOT CAUSE SEVERE CRACKING WITHIN THE SPLITTING ZONE AT RELEASE.
- FURTHER GUIDANCE ON PIER DIAPHRAGM DETAILS AND DOWEL DETAILS CAN BE FOUND IN DETAIL 325.01 - CONCRETE DECK DETAILS.
- REINFORCEMENT FOR BARRIERS TO BE CAST WITH PRESTRESSED CONCRETE NEXT BEAMS NOT SHOWN FOR CLARITY. REFER TO DETAIL NO. 325.02 - 'BRIDGE RAILING DETAILS' FOR MORE INFORMATION.
- THE PRESTRESSED CONCRETE NEXT BEAM SECTION AND STRAND CONFIGURATION AS SHOWN IN THESE DETAILS ARE RECOMMENDED. IF THE DESIGNER IS CONSIDERING USING DIFFERENT STRAND PATTERNS OR CREATING NON SYMMETRICAL SECTIONS, NOTE THAT THE FABRICATION COSTS WILL LIKELY INCREASE SIGNIFICANTLY.
- 0.6" DIA. PRESTRESSING STRANDS SHALL BE USED IN PRESTRESSED CONCRETE NEXT BEAMS. DRAPING OF STRANDS IN PRESTRESSED CONCRETE NEXT BEAMS IS NOT PERMITTED.
- FLANGE CONNECTION REINFORCEMENT MUST BE PLACED PERPENDICULAR TO THE BEAM EDGE IN ALL CASES (SKEWED AND NON SKEWED CONDITIONS). FOR PRESTRESSED CONCRETE NEXT BEAMS WITH SKEWED ENDS, THE CONNECTION REINFORCEMENT SHOULD BE BEND WITHIN THE FLANGE IN ACUTE CORNERS TO PRODUCE A SQUARE PROJECTION.
- MORE INFORMATION ON ALTERNATIVE BARRIER/PARAPET ATTACHMENTS, END DIAPHRAGM DETAILS, PIER CONTINUITY DETAILS, AND UTILITY SUPPORT DETAILS CAN BE FOUND IN THE PUBLICATION REFERENCED IN DESIGNER NOTE 2. THESE DETAILS SHOULD BE CONSIDERED IF THE DETAILS AS SHOWN IN DETAIL NO. 325.01, 325.02, AND 330.03 ARE NOT REASONABLE CHOICES BASED ON PROJECT CONDITIONS.
- THE DESIGNER MUST VERIFY THAT THE OVERHANG REINFORCEMENT AS SHOWN IN DETAIL NO. 330.03 IS SUFFICIENT TO RESIST VEHICULAR IMPACT FORCES. ADDITIONAL REINFORCEMENT MAY BE REQUIRED.
- FOR BRIDGES ON SAG VERTICAL CURVES, THE DESIGNER MUST CONSIDER THE APPROPRIATE OVERLAY TYPE TO USE DUE TO POTENTIAL CONFLICT BETWEEN BEAM CAMBER AND PROFILE GRADES. THE THICKNESS OF THE OVERLAY MAY BECOME EXCESSIVE AT THE BEAM ENDS.
- FOR BRIDGES ON CREST VERTICAL CURVES, SMALL DIFFERENCES BETWEEN THE BEAM CAMBER AND THE PROFILE GRADE CAN BE ACCEPTABLE WITHOUT ANY FURTHER ADJUSTMENTS. THIS SHOULD BE NOTED AS SO ON THE PLANS.
- ENSURE WORKING DRAWINGS MEET ALL REQUIREMENTS AS OUTLINED IN SECTION 612.03(B)&(E) OF THE DELDOT STANDARD SPECIFICATIONS.
- THE DESIGNER MUST CONSIDER THE DIFFERENCES IN DECK THICKNESS BETWEEN CENTERLINE OF BEARINGS AND POINT OF MINIMUM THICKNESS ALONG THE BEAM DUE TO THE DIFFERENCE IN THE PROFILE TO CAMBERED SHAPE OF THE PRESTRESSED CONCRETE NEXT BEAMS. THE FINAL GRADES AND SUBSTRUCTURE ELEVATIONS MUST BE ADJUSTED ACCORDINGLY.



### END DIAPHRAGM SECTION

EXAMPLE SHOWN USING 40" NEXT D BEAM (SECTION BETWEEN STEMS) WITH 1'-4" WIDE END DIAPHRAGM AND 3'-0" WIDE ABUTMENT

F.F. = FILL FACE  
S.F. = STREAM FACE

