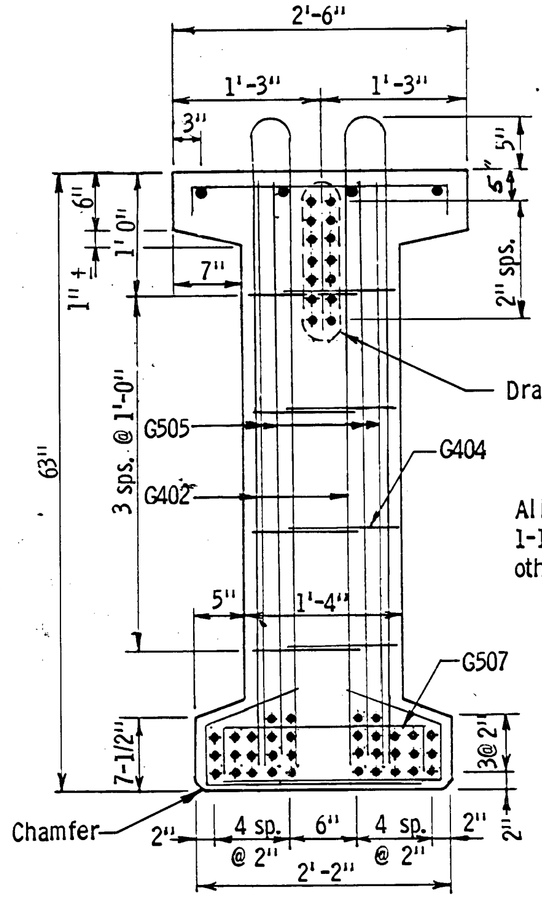
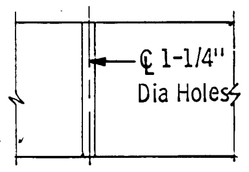


Cut strands flush with concrete. Paint ends with an approved gray epoxy except as noted.

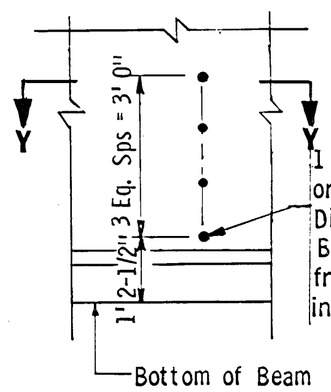
Draped Strands

Details not shown are the same as the SECTION AT ℄ BEAM

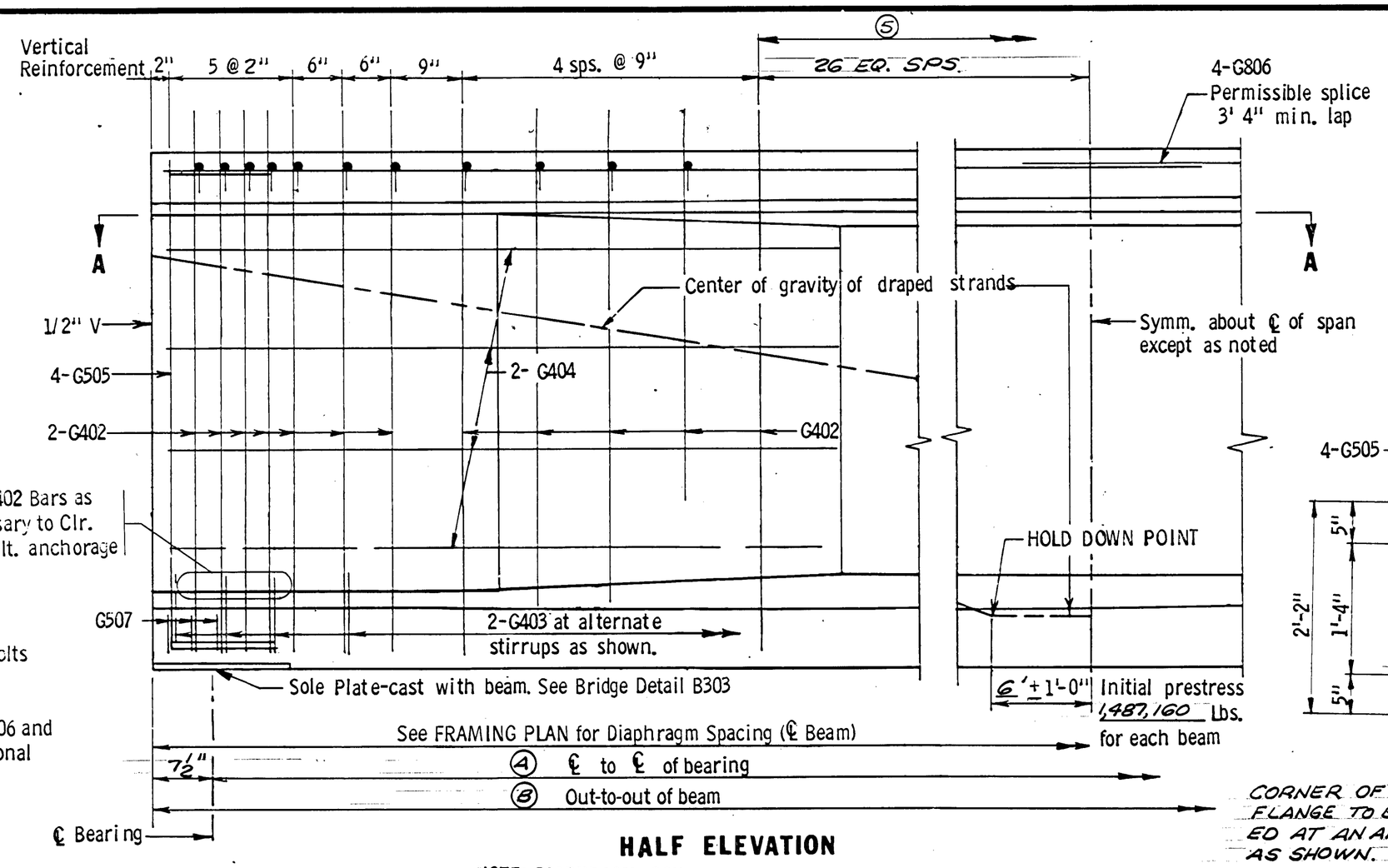


④ **SECTION Y-Y**
USE AT INTERIOR BEAM WITH STEEL DIAPHRAGMS

All reinforcement 1-1/4" clear unless otherwise noted.



1 1/4" ϕ holes for 7/8" bolts or Anchorage for 7/8" Diameter Bolts. See Bridge Detail B405, B406 and framing plan for additional information.



HALF ELEVATION

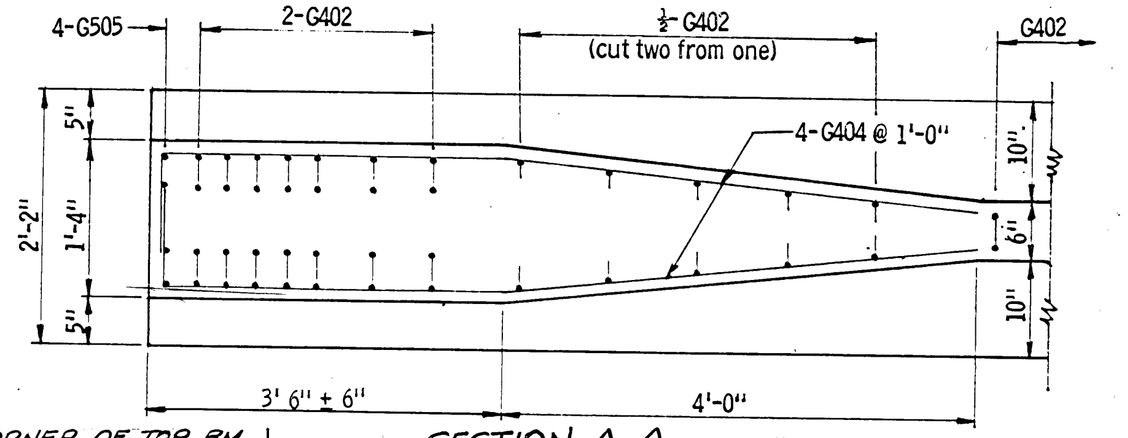
NOTE: DIAPHRAGM CONNECTION HOLES NOT SHOWN SEE DETAILS BELOW

BAR	WT.
G301	1.00 lb.
G402	7.68 lb.
G403	2.17 lb.
*G404	5.47 lb.
G505	7.13 lb.
G806	
G507	2.61 lb.

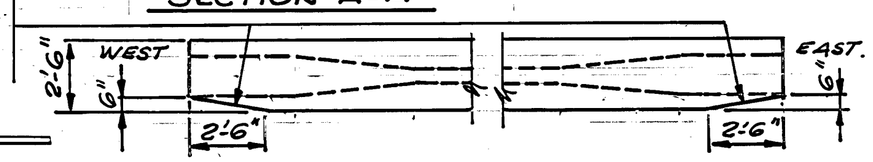
* Min.

Beam Section Data
Wt. = 5170 lbs. + 763 lbs./ft.
Cross Sec Area at ℄ Of span = 732 in.^{2}
C. G. (from bottom) = 31.1 in.
I = 392,056 in.^{4}
S_B = 12,578 in.^{3}
1/2" ϕ 270k strand wt./ft. = .525 lb.
1/2" ϕ 270k strand area = .1531 sq. in.
End Area = 1184 in.^{2}

⑤ ADDITIONAL G402 BARS ARE REQUIRED WHEN VERTICAL REINFORCEMENT SPACING IS GREATER THAN 2'-0". SPACE ADDITIONAL G402 BARS MIDWAY BETWEEN G301 & G403 BARS.



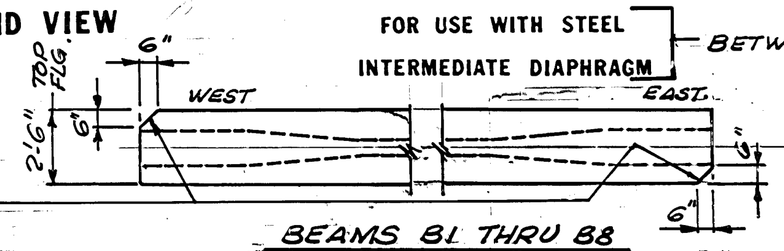
CORNER OF TOP BM FLANGE TO BE FORMED AT AN ANGLE AS SHOWN.



BEAM B9

END VIEW

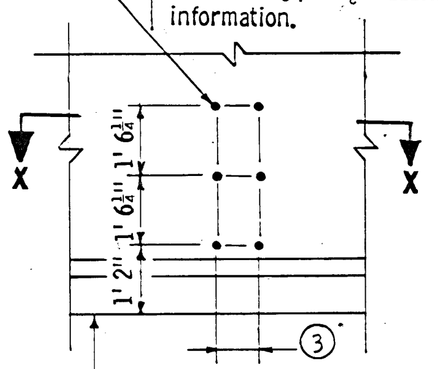
FOR USE WITH STEEL INTERMEDIATE DIAPHRAGM — BETWEEN BMS B2 & B8 ONLY



CORNER OF TOP BM FLANGE TO BE FORMED AT AN ANGLE AS SHOWN.

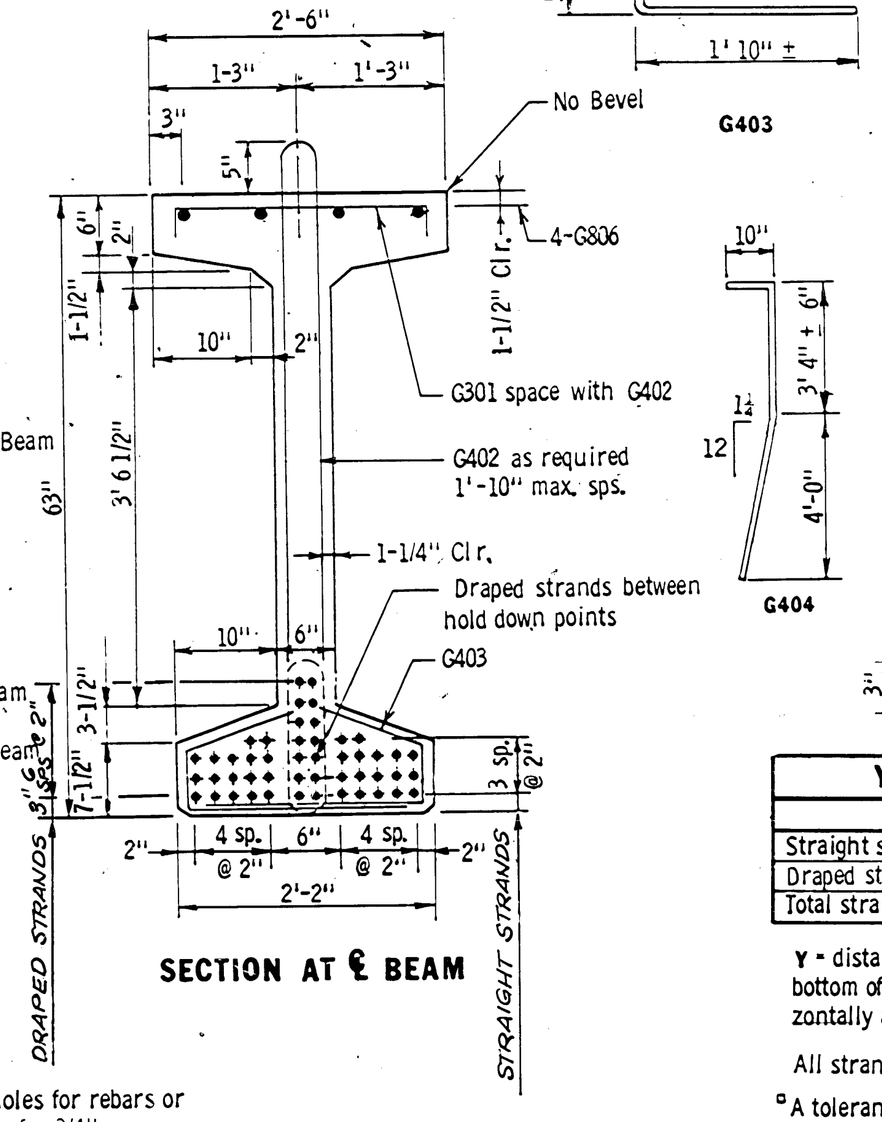
BEAMS B1 THRU B8

1 1/2" ϕ hole for rebar or anchorage for 3/4" Diameter Threaded Rods. See Bridge Detail B806 and framing plan for additional information.

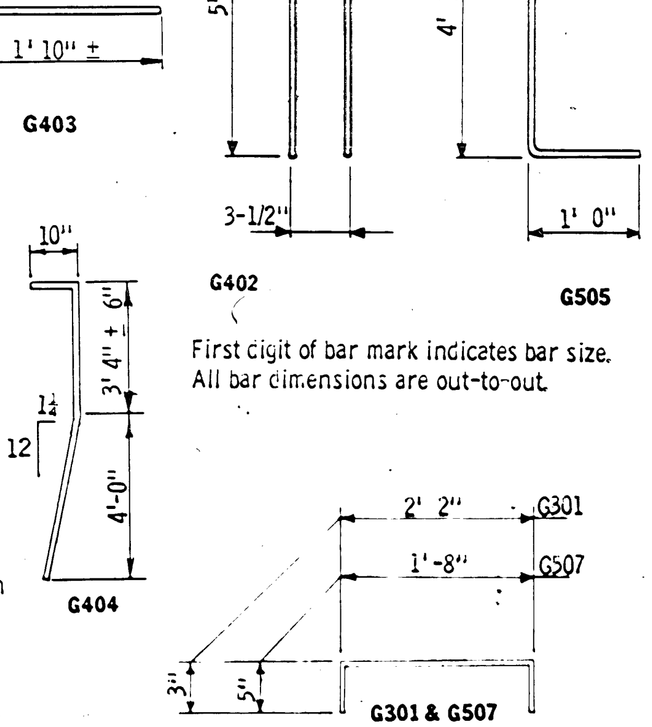


FOR USE WITH CONCRETE INTERMEDIATE DIAPHRAGM (BETWEEN BEAMS B2 & B8 ONLY)

NOTE: FOR INTERM. DIAPH'S BETWEEN BMS 1 & 2 AND 8 & 9 SEE SHT. 34.



SECTION AT ℄ BEAM



First digit of bar mark indicates bar size. All bar dimensions are out-to-out.

Y DISTANCES (IN INCHES)			
	NO.	℄ SPAN	END
Straight strands	34	4.47	
Draped strands	14	9.00	52.00°
Total strands	48	5.79	

Y = distance of Center of Gravity of strands from bottom of beam. All strands spaced 2" c-c, horizontally and vertically except as noted.

All strands 1/2" ϕ 270 kip, ultimate strength.

° A tolerance of ± 2" will be permitted in this dimension.

GENERAL NOTES:

Tops of beams shall be rough floated and broomed transversely for bond.

Provide handling hooks or devices as required by Contractor. Hooks or devices provided will be subject to approval of Engineer and shall be installed within 4' 0" of the end of beam.

A modified strand pattern or a bundled strand pattern which does not change center of gravity of strands may be submitted to the Engineer for approval.

A post-tensioned beam may be used as an alternate for the pretensioned design shown. Mn/DOT will provide plans for the post-tensioned alternate on request.

Each beam shall be marked, showing bridge number, casting date, and individual identification letters and numbers. Markings shall be made on the face of the beam, near the end, so located that they will be exposed after the end diaphragms have been cast. Fascia beams shall be marked on an inside face. All markings shall be stencilled and be clearly legible. For location of beams, see framing plan.

All material and work shown or noted on this sheet shall be included in unit price bid for prestressed concrete beams. See Spec. 2405.

See framing plan for beam ends marked "X".

Approximate weight of beam 44.6 tons.

As an alternate to the diaphragm anchorages shown, the contractor may submit details of a cast-in-place anchorage to the engineer for approval. Anchorage must provide an ultimate pull out strength of 15 kips per anchorage.

MINIMUM CONCRETE STRENGTH - P.S.I.		
	① f'ci	② f'c
Required min. Concrete Strength	6000	5820

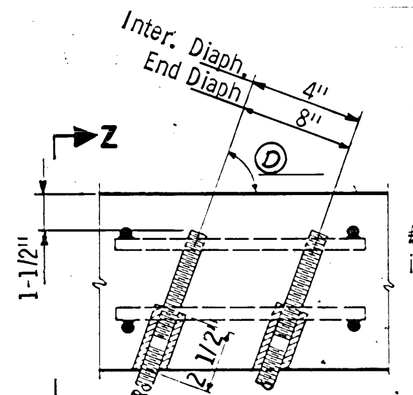
① Minimum concrete strength at time of prestress transfer.

② Minimum concrete strength when curing can be discontinued and beam transported and installed.

Fig. 5-397.511

Approved 2-22-80

C.A 88-09-116



Ⓐ FOR ℄ BRG. TO ℄ BRG. OF BEAMS, SEE ② ON FRAMING PLAN SHEET.

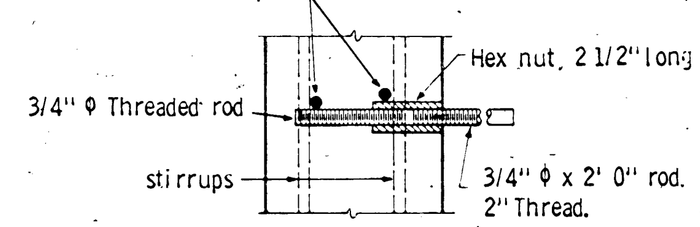
Ⓑ FOR OUT TO OUT LENGTH OF BEAMS, SEE ① ON FRAMING PLAN SHEET.

Ⓒ FOR ANGLE OF INTERSECTION OF BEAMS AT ℄ BRG., SEE FRAMING PLAN SHEET.

Ⓓ SEE FRAMING PLAN SHEET.

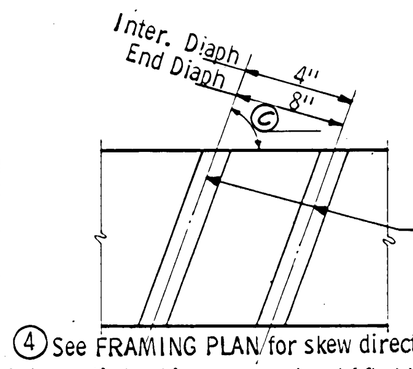
SECTION X-X
USE AT FASCIA BEAM AND INTERIOR BEAM WITH STAGGERED DIAPHRAGMS

#4 Bar or 1/2" ϕ rod. Weld to insert and to two stirrups



Nuts and rods per Spec. 3306. No paint

SECTION Z-Z

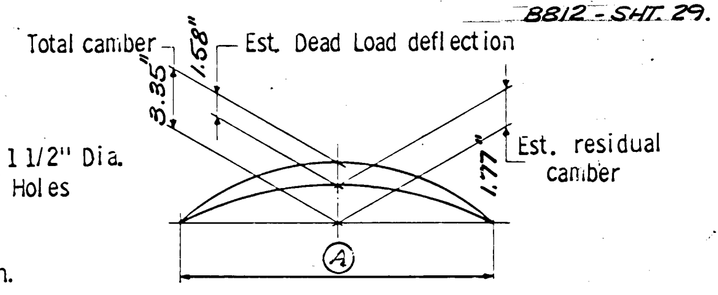


④ See FRAMING PLAN for skew direction.

Intermediate stirrups may be shifted the minimum distance required to clear holes or inserts for intermediate diaphragms.

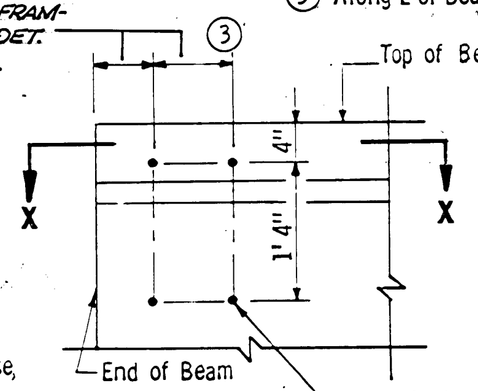
SECTION X-X
USE AT INTERIOR BEAM WITH CONTINUOUS CONCRETE DIAPHRAGM

VARIES - SEE FRAMING PLAN & DET. B812 - SHT. 29.



Deflections shown are for weight of slab, wearing course, railing, sidewalk, median and diaphragms only. Engineer will take elevations at top of beams after erection and will allow for deflections shown to enable contractor to build forms to correct grade and specified slab thickness.

CAMBER DIAGRAM



1 1/2" ϕ holes for rebars or Anchorage for 3/4" Diameter Threaded Rods. See Bridge Detail B812 for additional information.

CONCRETE END DIAPHRAGMS PARAPET ABUTMENT

BEAMS B1 THRU B9

TITLE: 63" PRESTRESSED CONCRETE BEAM (PRETENSIONED) TYPE 63-	DES:	DR:	APPROVED:	Bridge No. 02546
	CHK:	CHK:		Sheet No. 22B of 36B Sheets