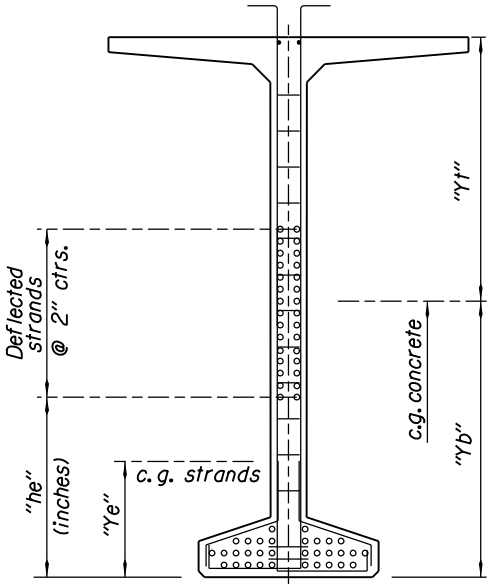


TOTAL STRANDS	N = 28	N = 30	N = 32	N = 34	N = 36	N = 38	N = 40	N = 42	N = 44
STRANDS DEFLECTED	Ds = 14	Ds = 14	Ds = 16	Ds = 16	Ds = 18	Ds = 18	Ds = 20	Ds = 20	Ds = 22
"Yc" (when hc = 3")	Yc = 3.99"	Yc = 3.99"	Yc = 4.28"	Yc = 4.26"	Yc = 4.46"	Yc = 4.43"	Yc = 4.70"	Yc = 4.67"	Yc = 5.18"
	N = 46	N = 48	N = 50	N = 52	N = 54	N = 56	N = 58	N = 60	N = 62
	Ds = 22	Ds = 24	Ds = 24	Ds = 26	Ds = 26	Ds = 28	Ds = 28	Ds = 30	Ds = 30
	Yc = 5.22"	Yc = 5.52"	Yc = 5.54"	Yc = 5.72"	Yc = 5.73"	Yc = 5.96"	Yc = 5.96"	Yc = 6.23"	Yc = 6.29"

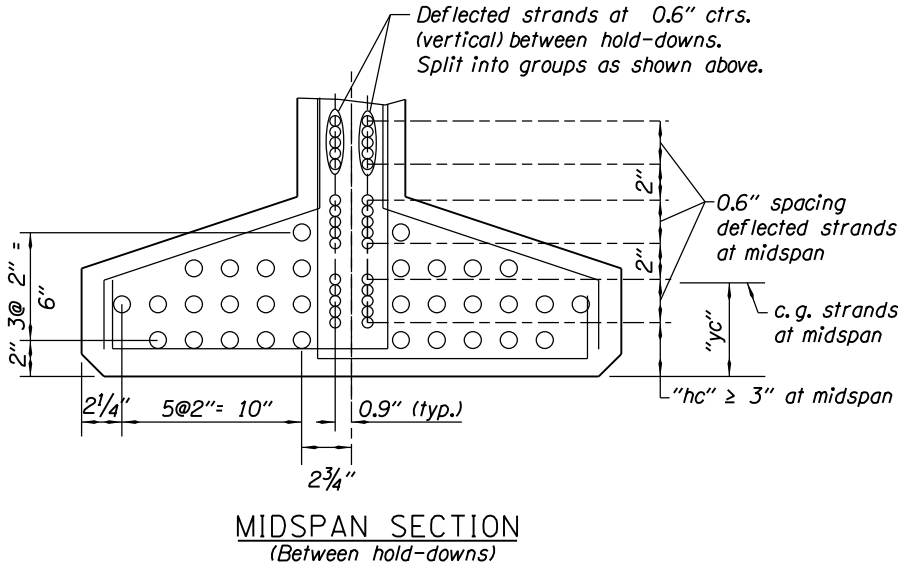
Assumptions for Estimating Strand Requirements:
50 psf allowance for future wearing surface.
100 psf allowance per girder for rails and utilities.
HL-93 live loading with $0.095 \cdot \sqrt{f'c}$ allowable final tension.
8" deck with 1" buildup on top of girder.
 $0.5 \cdot (f'c)$ final allowable compressive stress.
he and Ye values provided for preliminary purposes only and is based on $he \approx 1/3 \cdot$ girder depth.
Adjust as needed to meet design requirements.

No. Strands	Defl. Strands	STRAND CENTER OF GRAVITY AT GIRDER ENDS, INCHES (Ye)			
		BT90		BT96	
		he	Ye	he	Ye
28	14	30	19.29	32	20.29
30	14	30	18.27	32	19.20
32	16	30	19.87	32	20.87
34	16	30	18.94	32	19.88
36	18	30	20.44	32	21.44
38	18	30	19.58	32	20.53
40	20	30	21.00	32	22.00
42	20	30	20.19	32	21.14
44	22	30	21.55	32	22.55
46	22	30	20.87	32	21.83
48	24	30	22.17	32	23.17
50	24	30	21.52	32	22.48
52	26	30	22.77	32	23.77
54	26	30	22.15	32	23.11
56	28	30	23.36	32	24.36
58	28	30	22.76	32	23.72
60	30	30	23.93	32	24.93
62	30	30	23.42	32	24.39

- Notes:
- Girder end blocks should be used at girder ends made continuous for live load, or when girders are partially post tensioned.
 - Debonding strands to control compressive stresses at girder ends is permitted provided that the required development length for debonded strands is obtained. Do not debond any strands in the bottom row.
 - Ds = Deflected Strands.
 - Deflected strands may be bundled between hold-down points.



END VIEW



MIDSPAN SECTION
(Between hold-downs)

GIRDER PROPERTIES							
Girder	Area, in. ²	Yb, in.	I, in. ⁴	St, in. ³	Sb, in. ³	Wt, k/ft.	V/S, in.
BT90	935	46.02	1,061,300	24,130	23,060	1.01	2.81
BT96	971	49.03	1,242,200	26,440	25,340	1.05	2.82

Weight estimated at 155 lbs. per cubic foot

NOTE TO DESIGNER
Check limiting transport lengths before using long sections. Stability and route restrictions can be a problem. Limit cast length to 184 ft.

The selection and use of this detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON DEPARTMENT OF TRANSPORTATION
TECHNICAL SERVICES
DETAILS

BT90 and BT96
(PRECAST PRESTRESSED
CONCRETE) GIRDERS
DESIGN SHEET

DETAIL NO.
DET3323