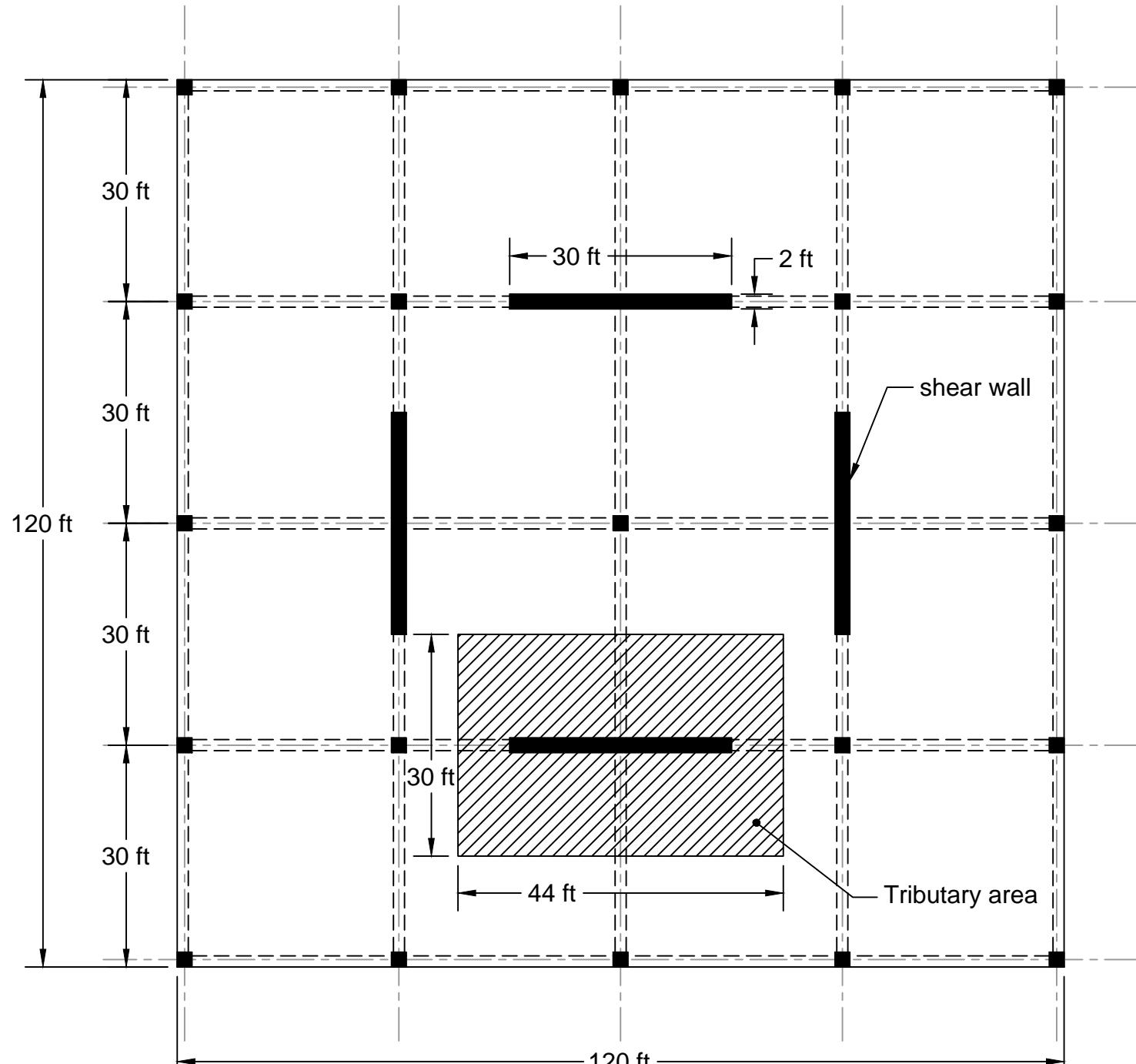
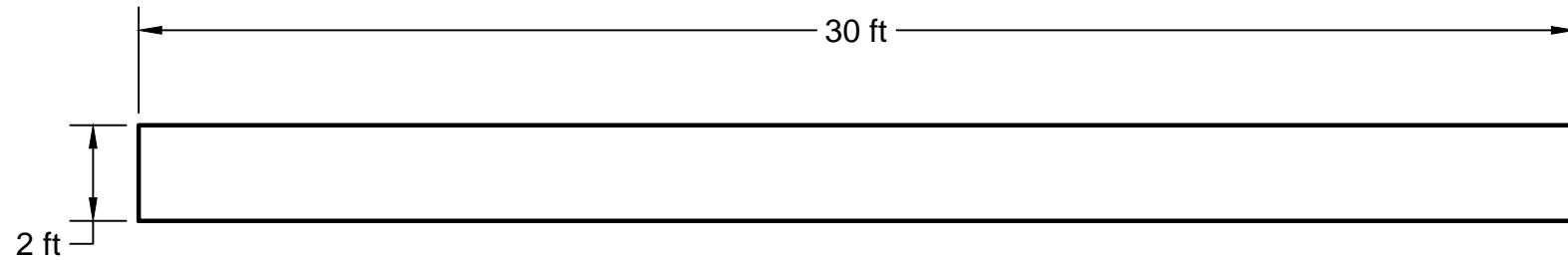


PLAN VIEW



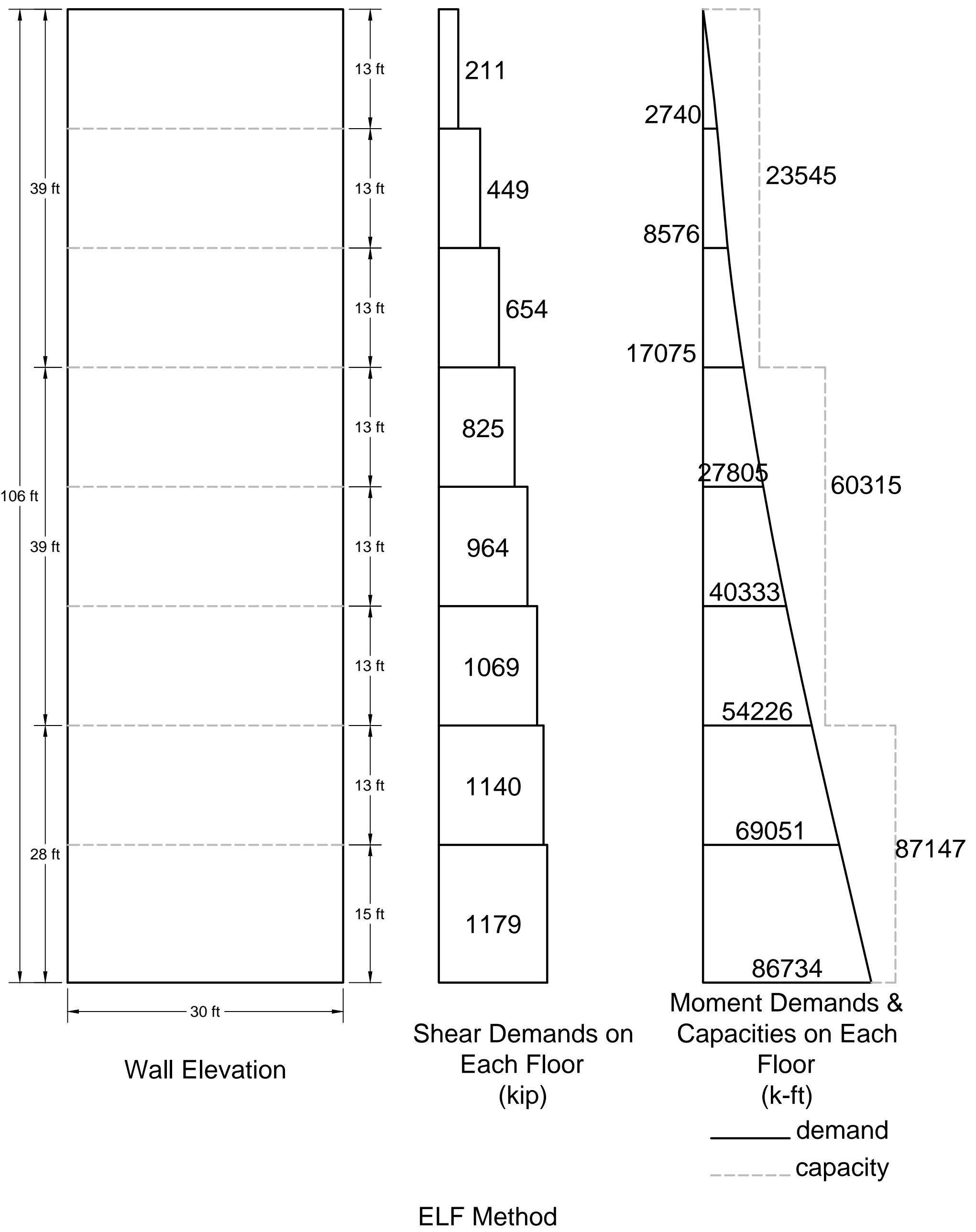
PLAN VIEW

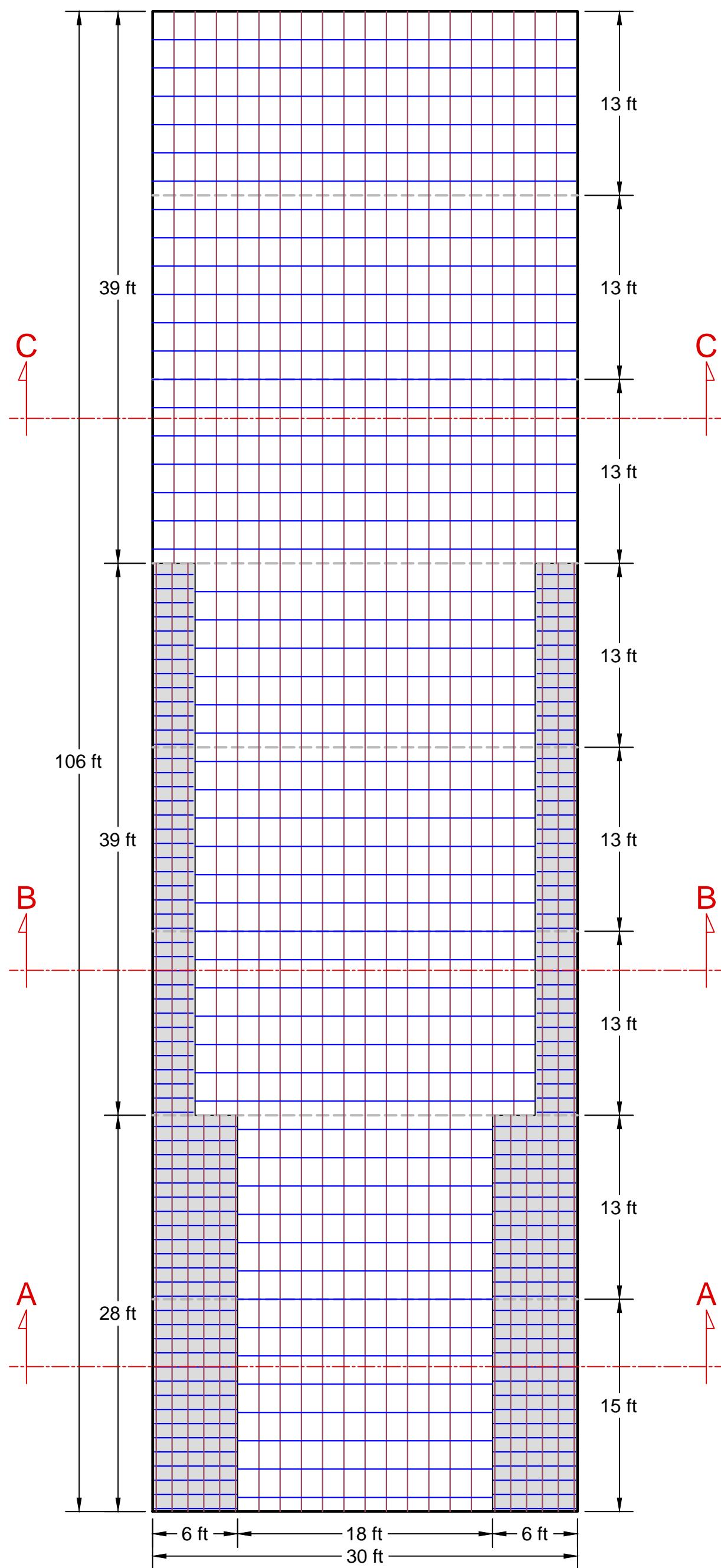


Un-Punched Wall (30'x2'x106')

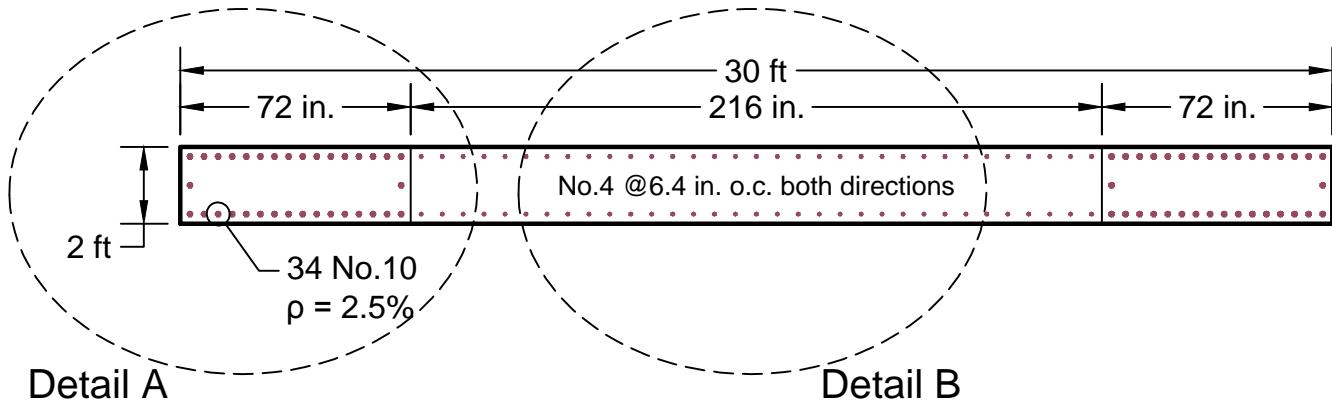
$f'_c = 5000$ psi

$f_y = 60$ ksi



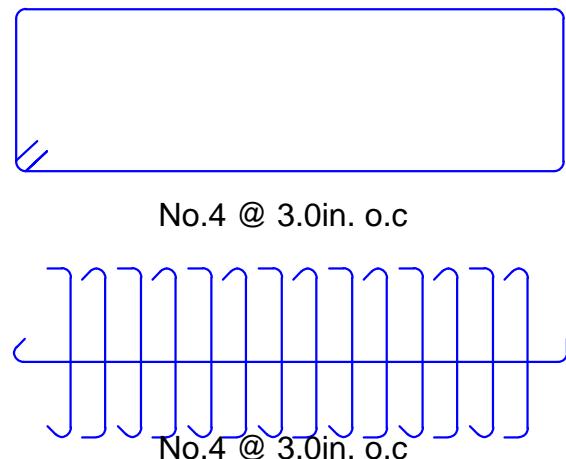
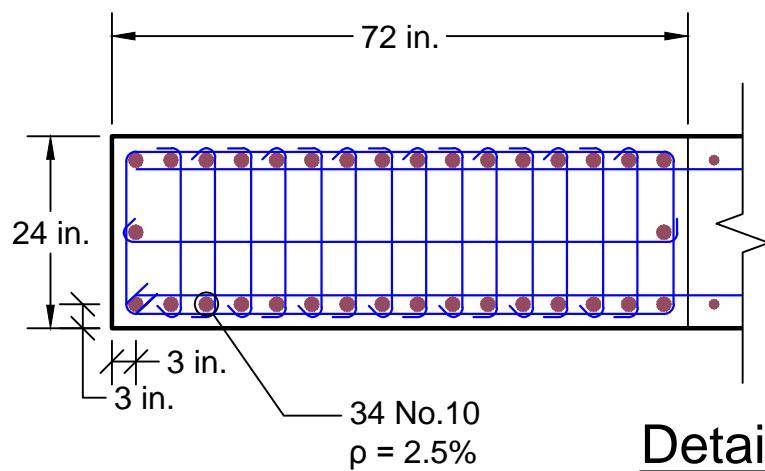


Elevation View (Un-Punched Wall)
ELF Method

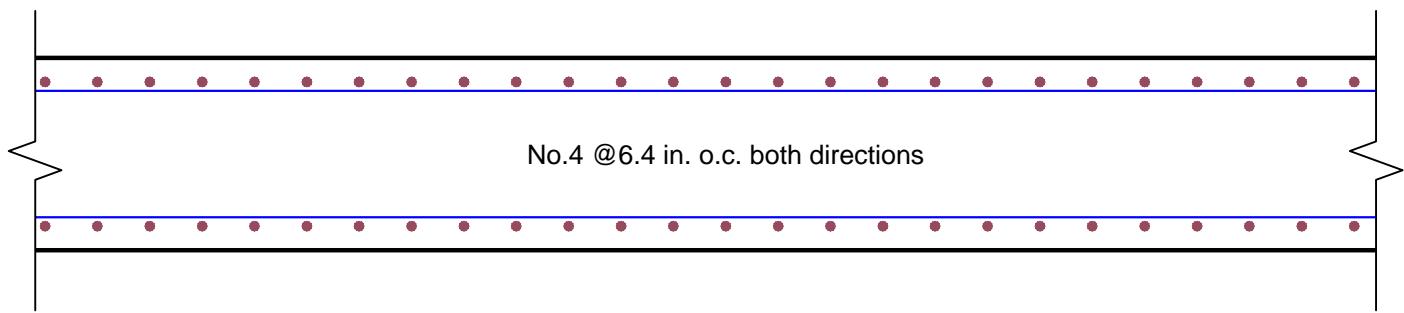


SEC A-A

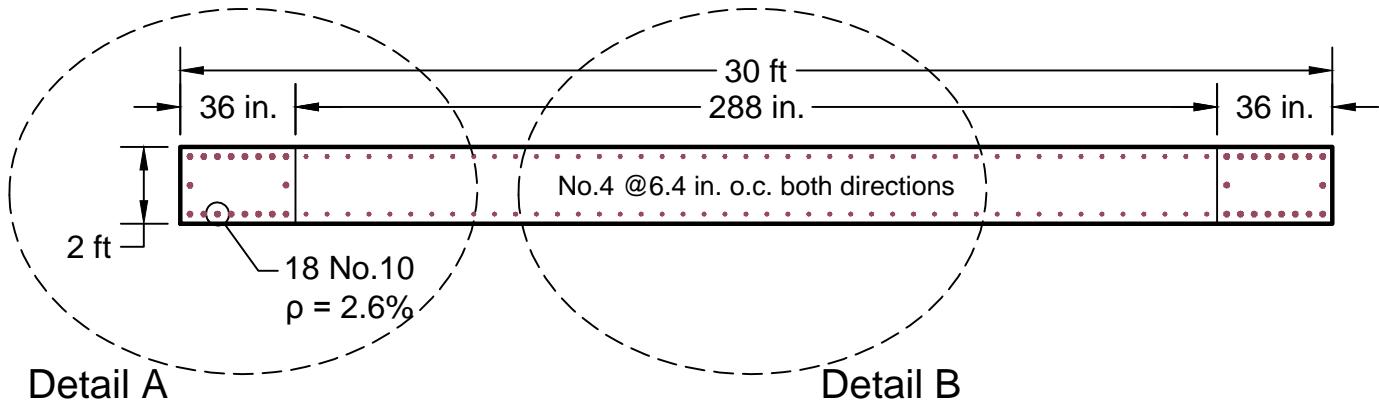
M_{demand}	86734 k-ft
ϕM_n	87147 k-ft
AL	1441 k



No.4 @ 6.4 in. o.c. both directions

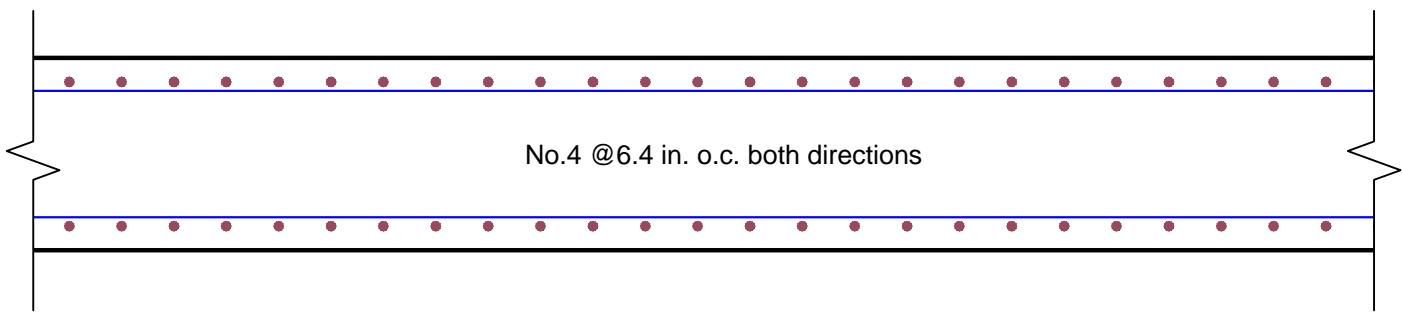
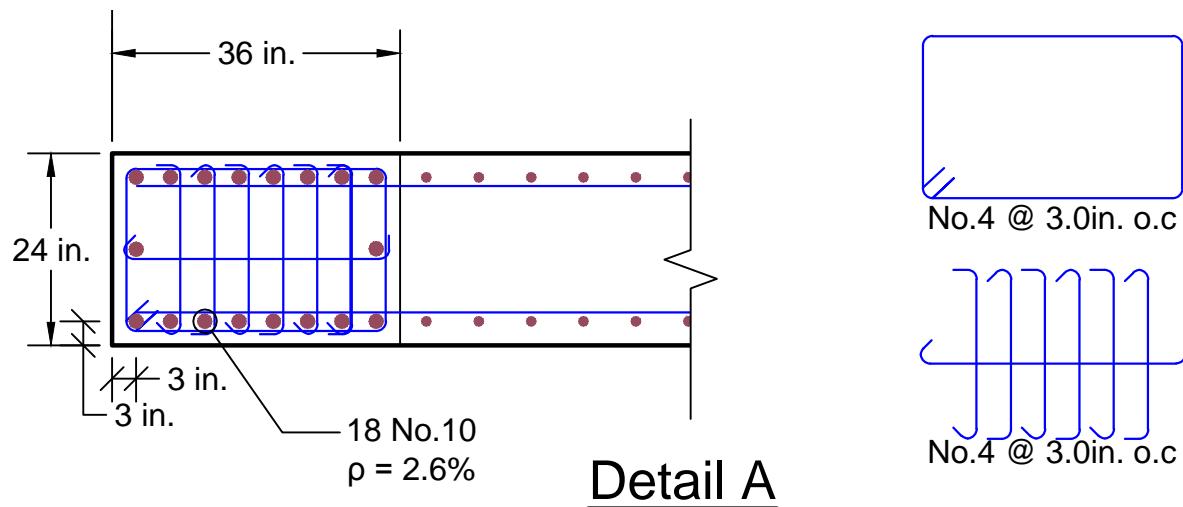


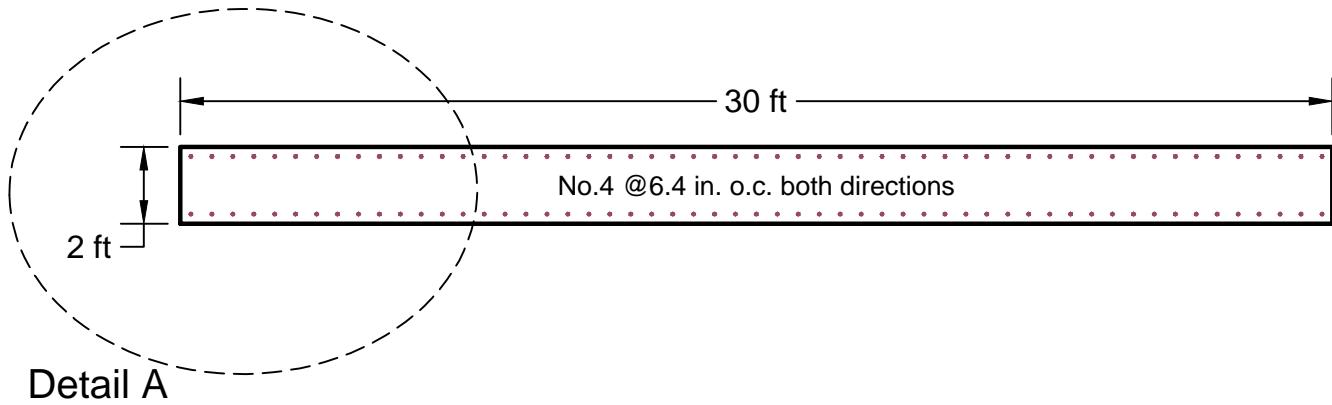
Detail B



SEC B-B

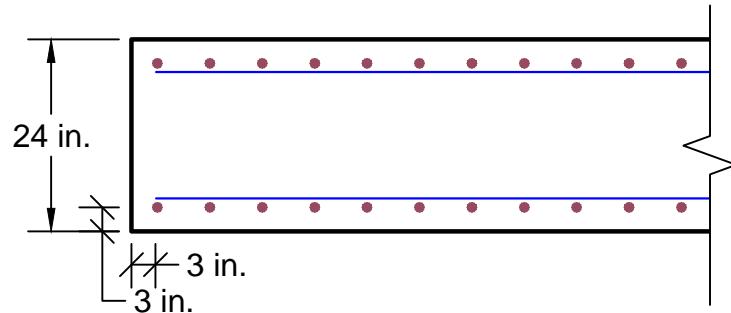
M_{demand}	54226 k-ft
ϕM_n	60315 k-ft
AL	1065 k



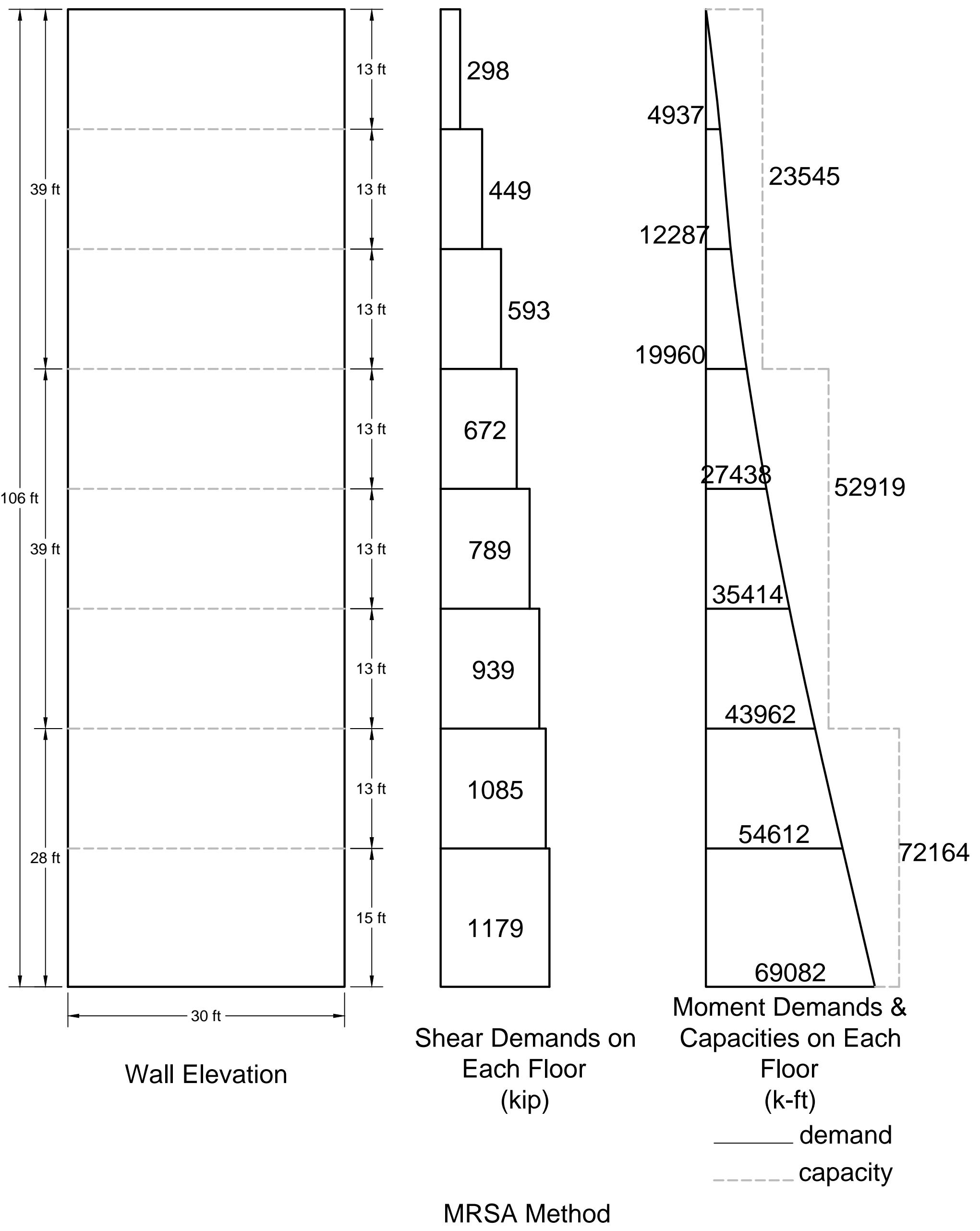


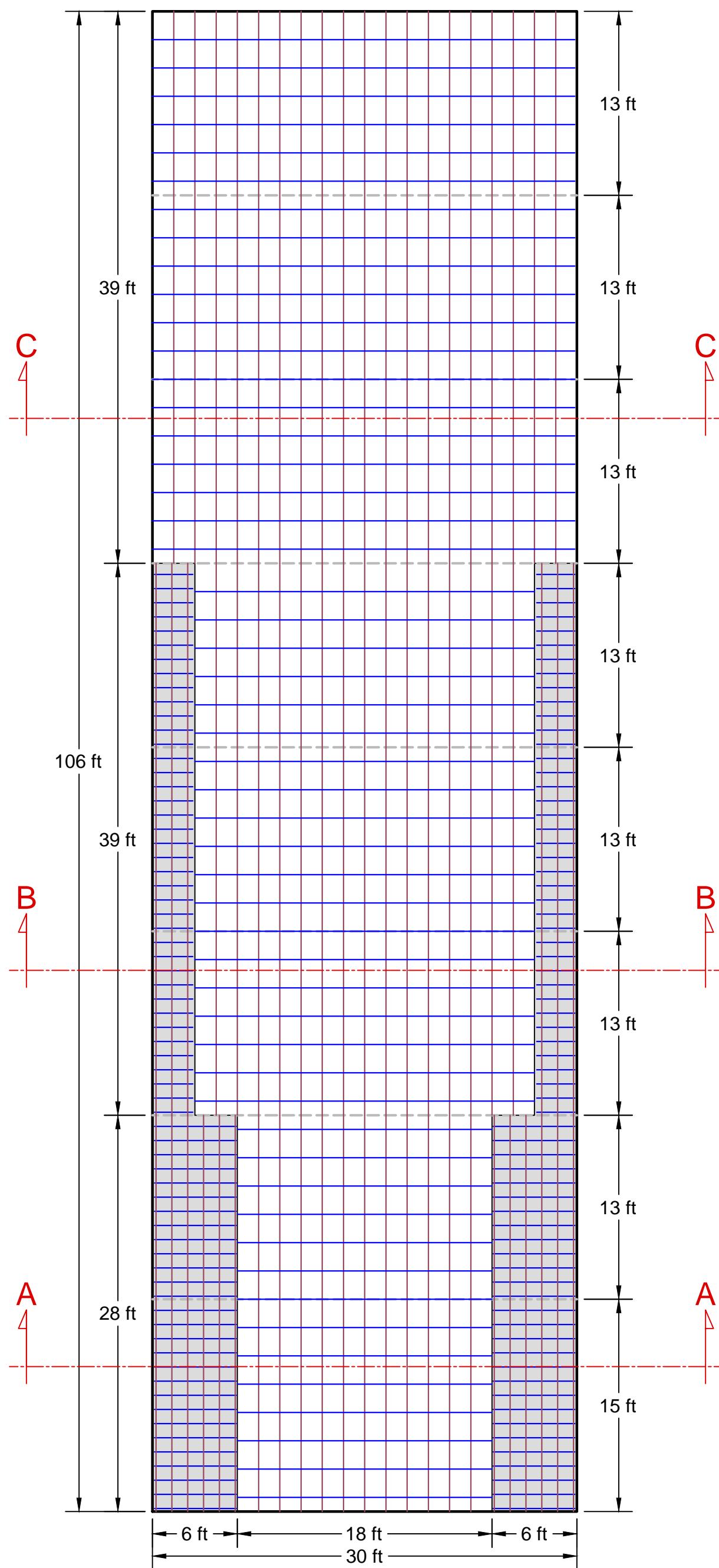
SEC C-C

M_{demand}	17705 k-ft
ϕM_n	23545 k-ft
AL	500 k

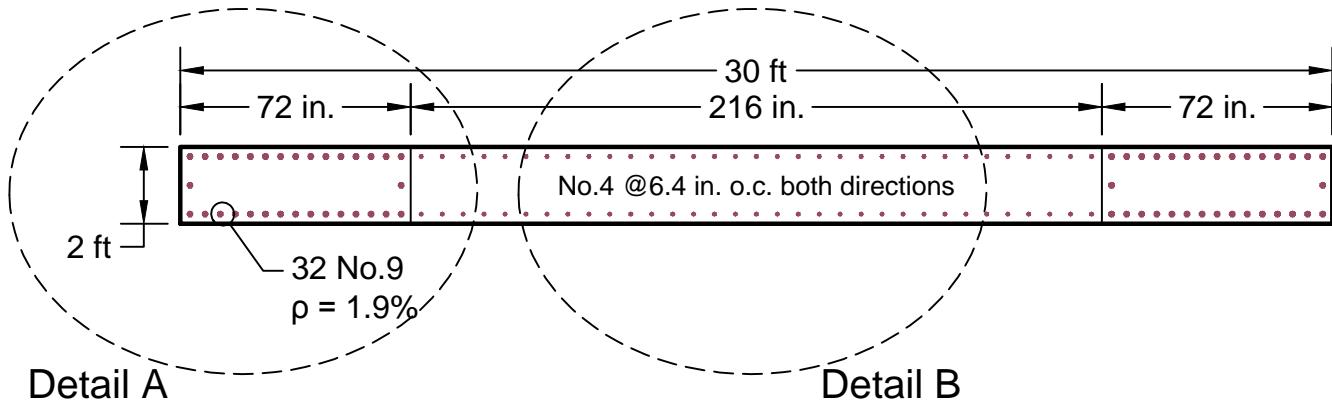


Detail A



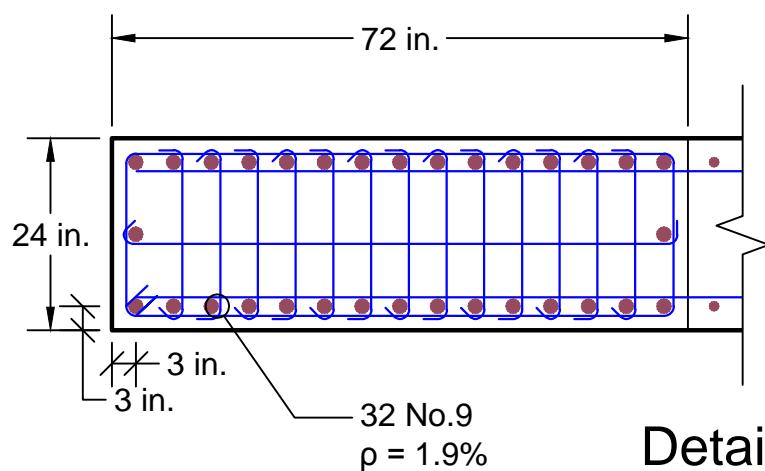


Elevation View (Un-Punched Wall)
MRSA Method

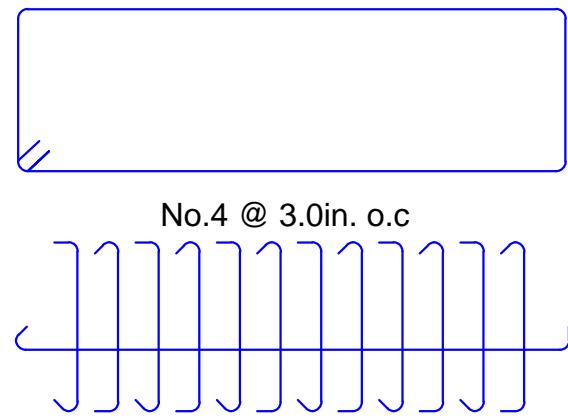


SEC A-A

M_{demand}	69082 k-ft
ϕM_n	72164 k-ft
AL	1441 k

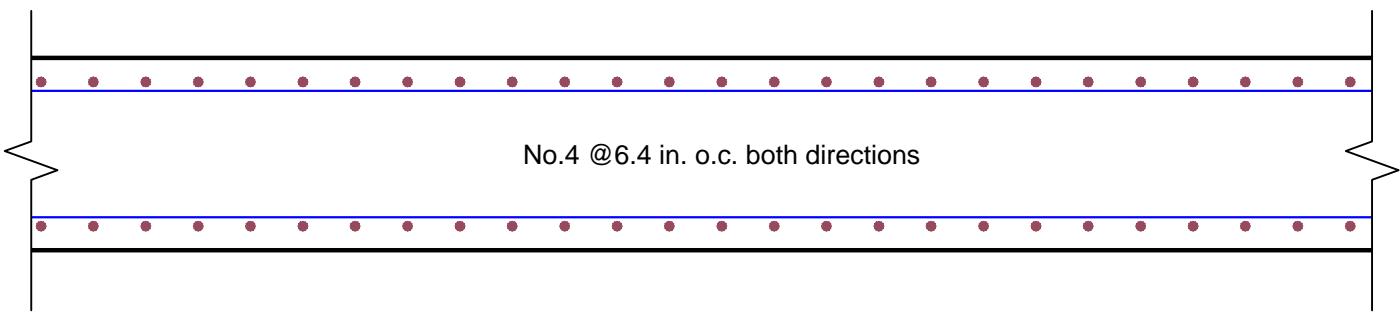


Detail A

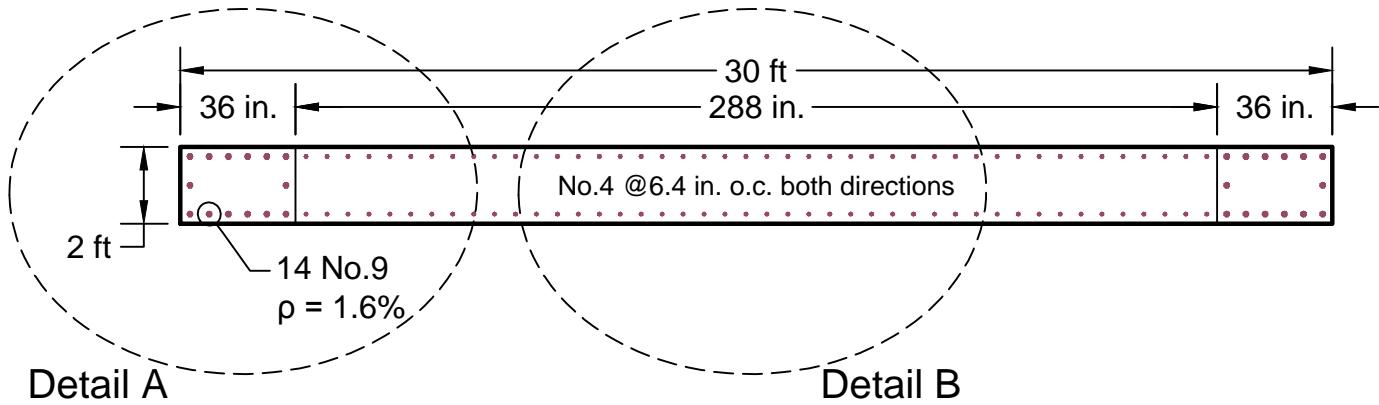


No.4 @ 3.0in. o.c

No.4 @ 3.0in. o.c

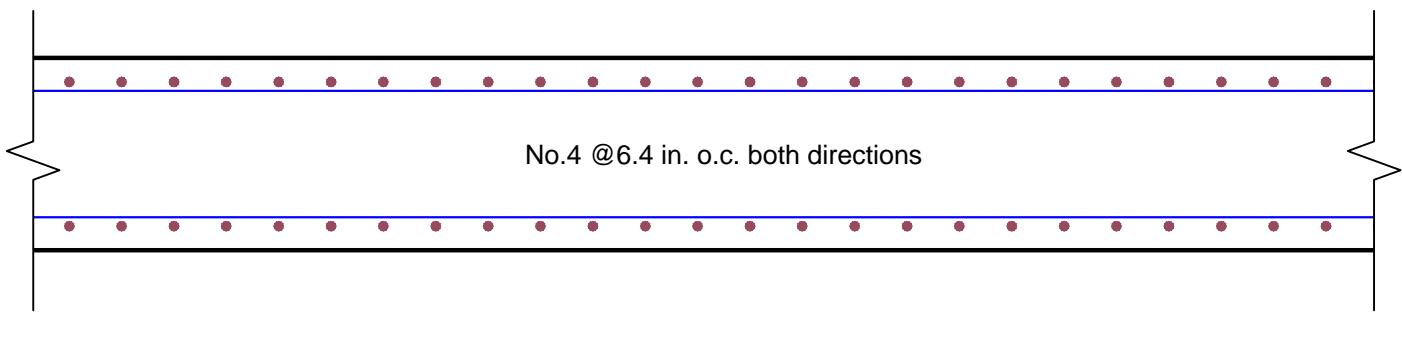
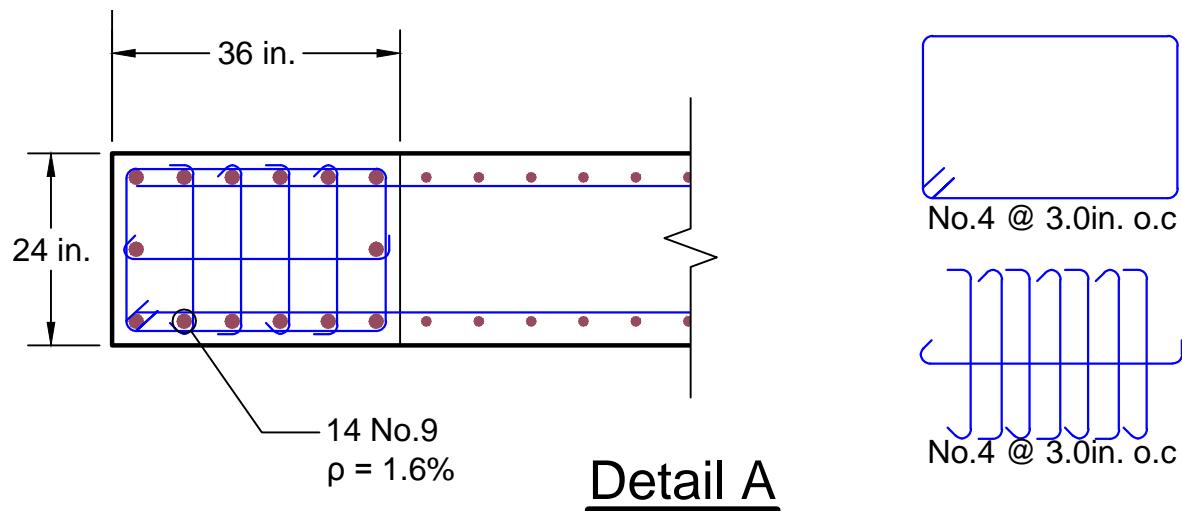


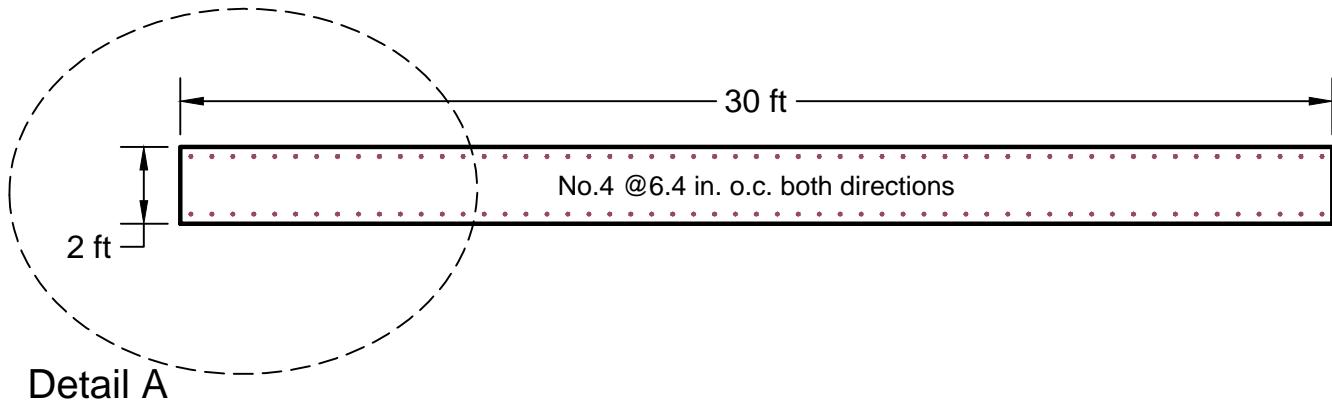
Detail B



SEC B-B

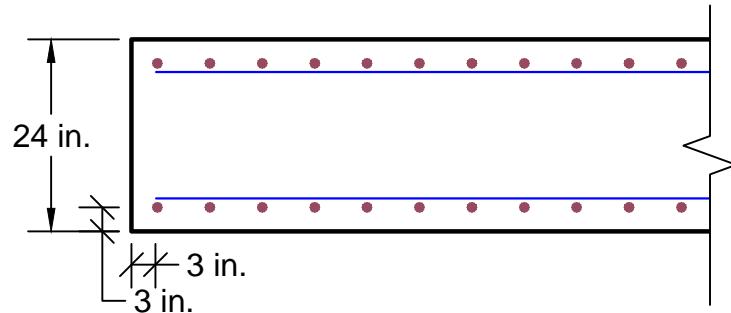
M_{demand}	43962 k-ft
ϕM_n	52919 k-ft
AL	1065 k



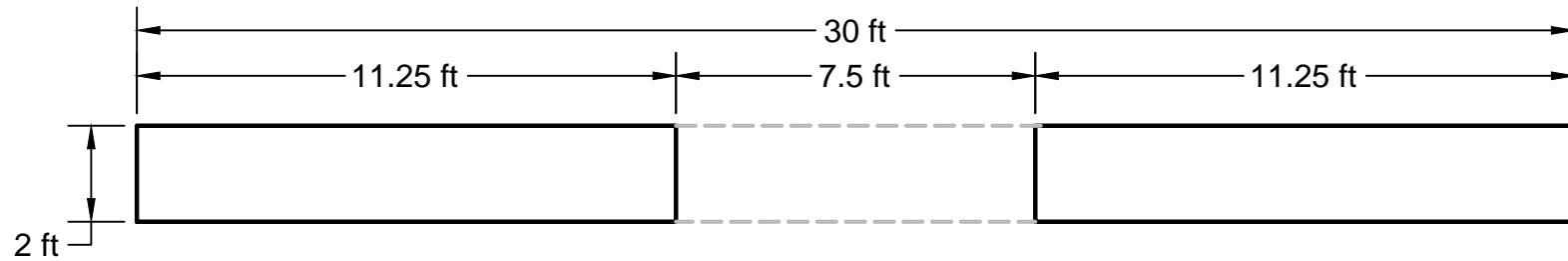


SEC C-C

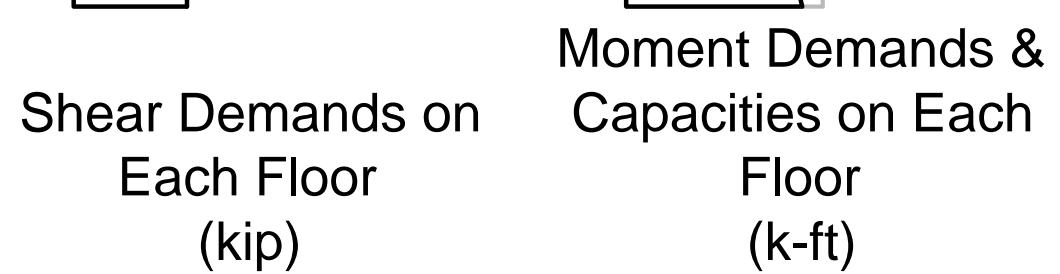
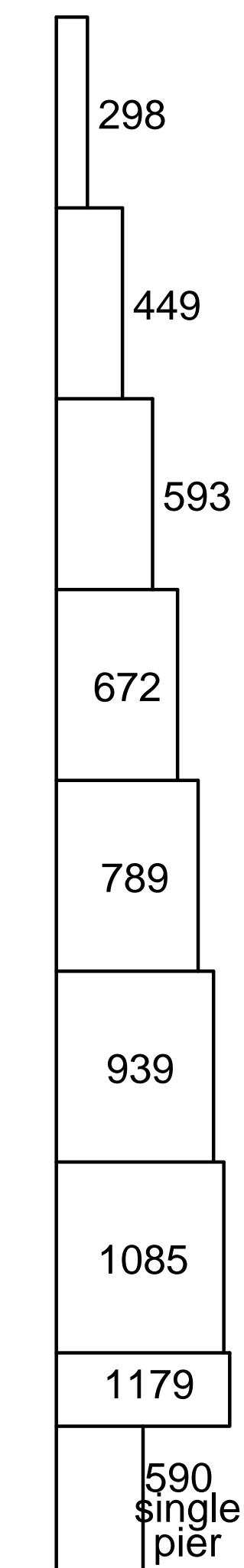
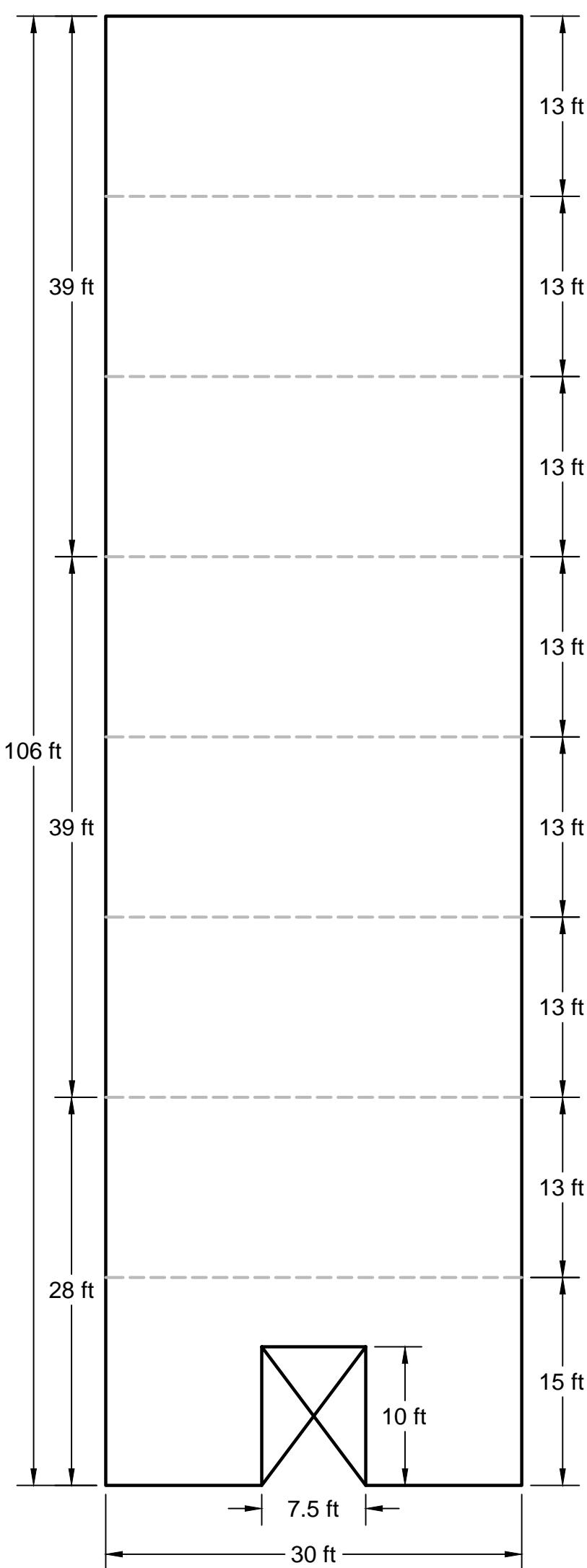
M_{demand}	17705 k-ft
ϕM_n	23545 k-ft
AL	500 k



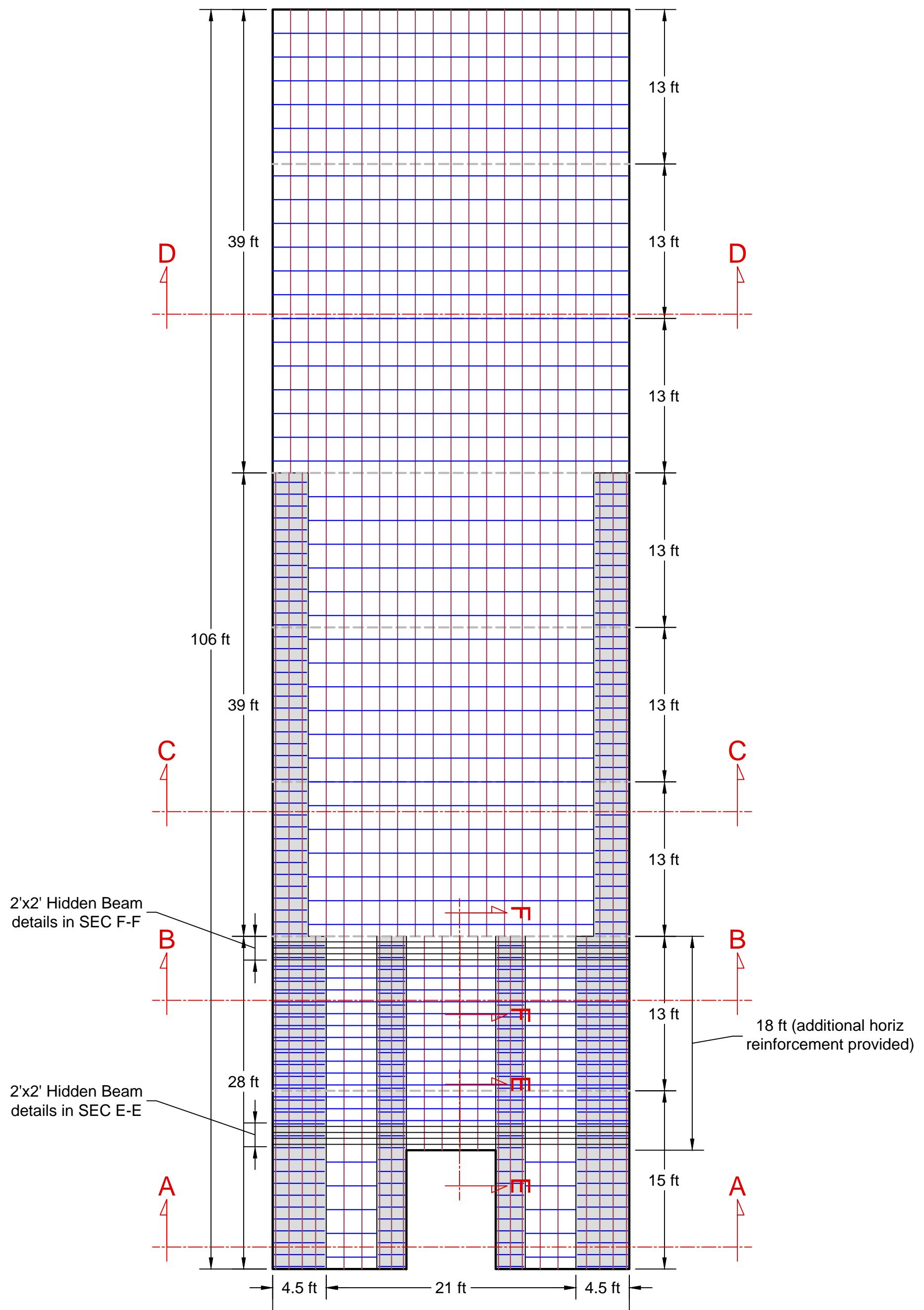
Detail A



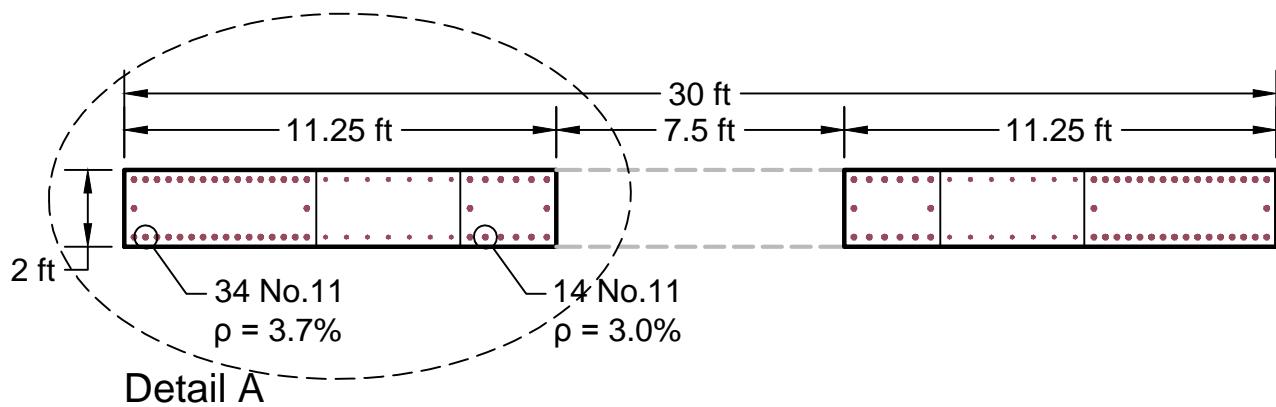
Punched Wall (30'x2'x106')
with 50% stiffness
 $f'c = 5000 \text{ psi}$
 $f_y = 60 \text{ ksi}$



ELF Method

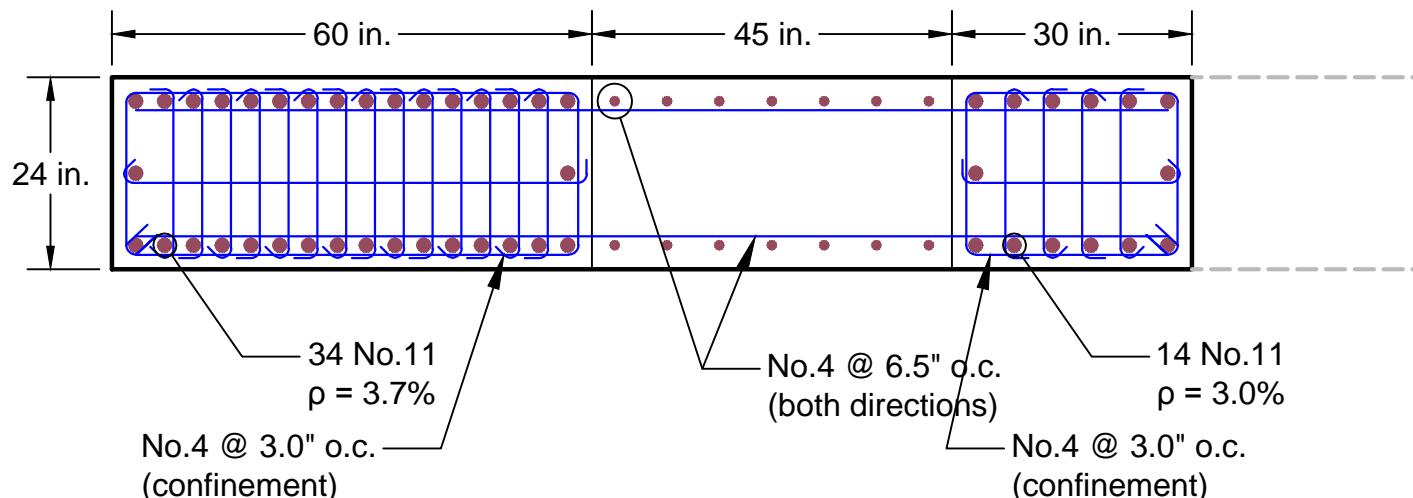


Elevation View (Punched Wall, 50% Stiffness)
ELF Method

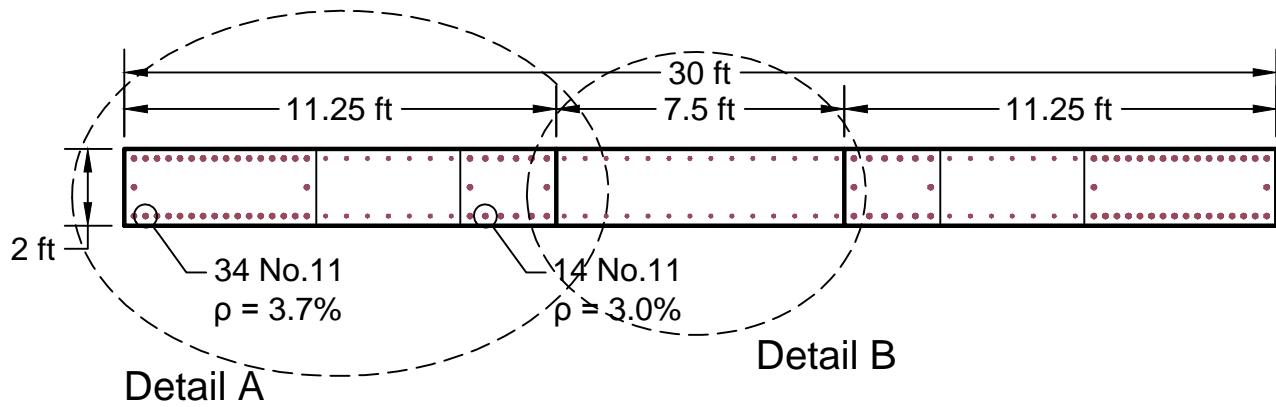


SEC A-A

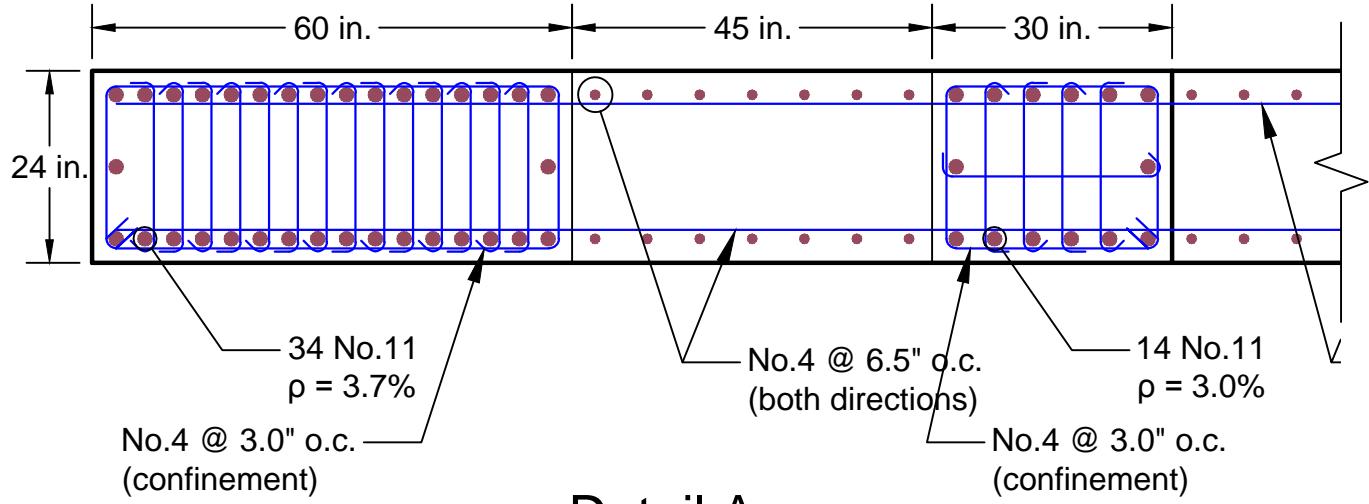
M_{demand}	9614 k-ft
ϕM_n	10885 k-ft
AL	-3139 k



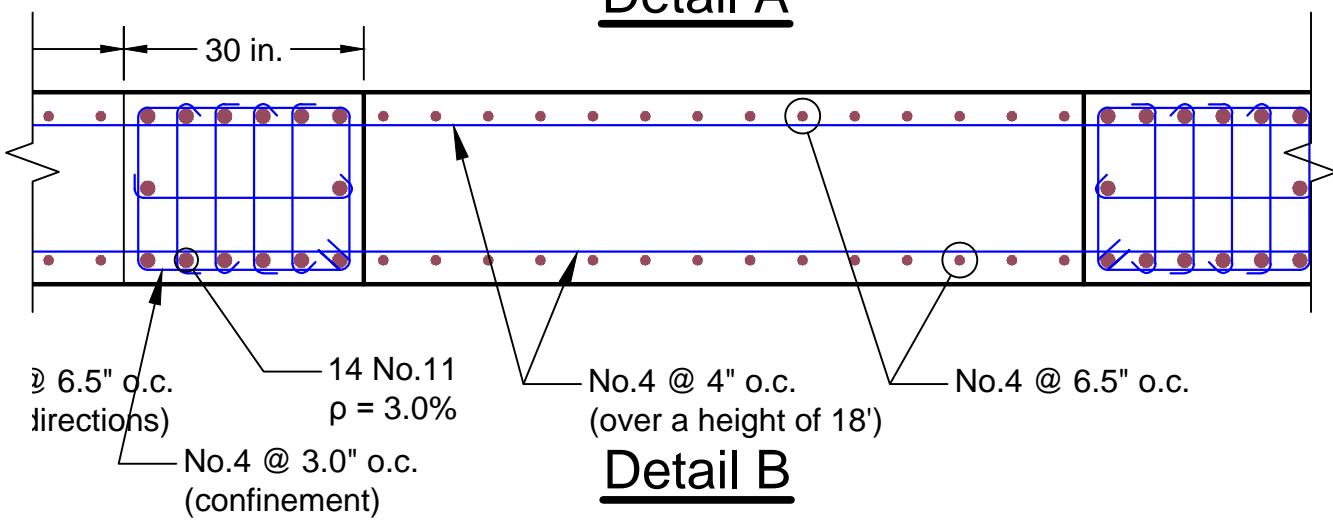
Detail A



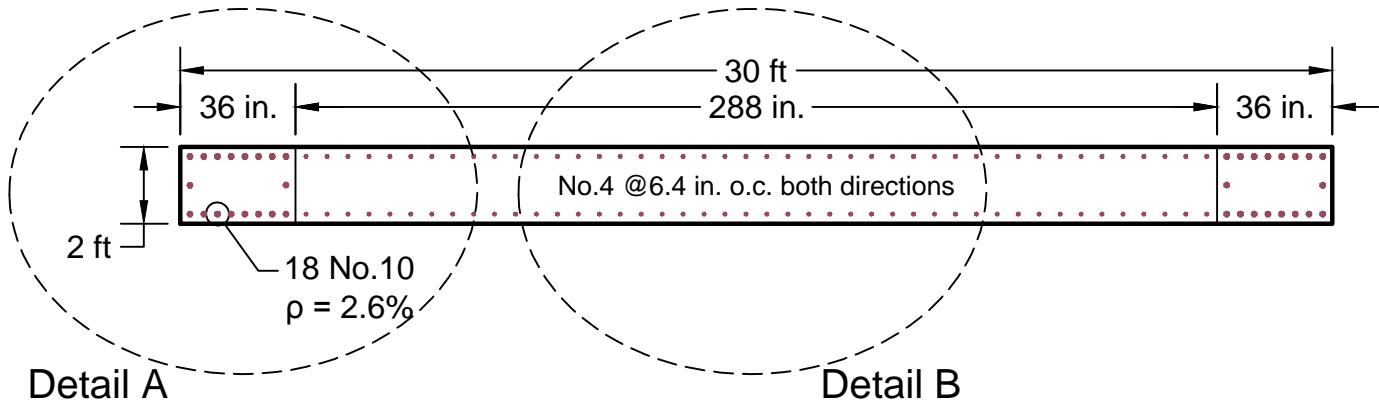
SEC B-B



Detail A

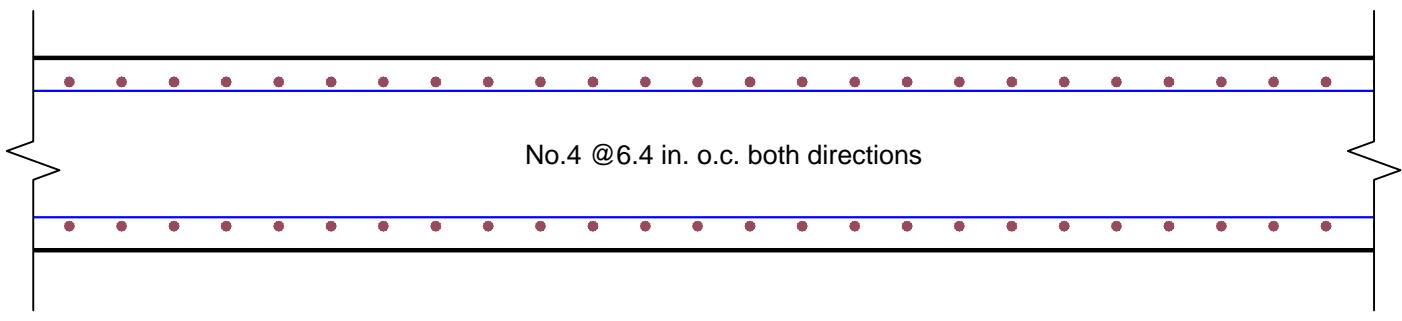
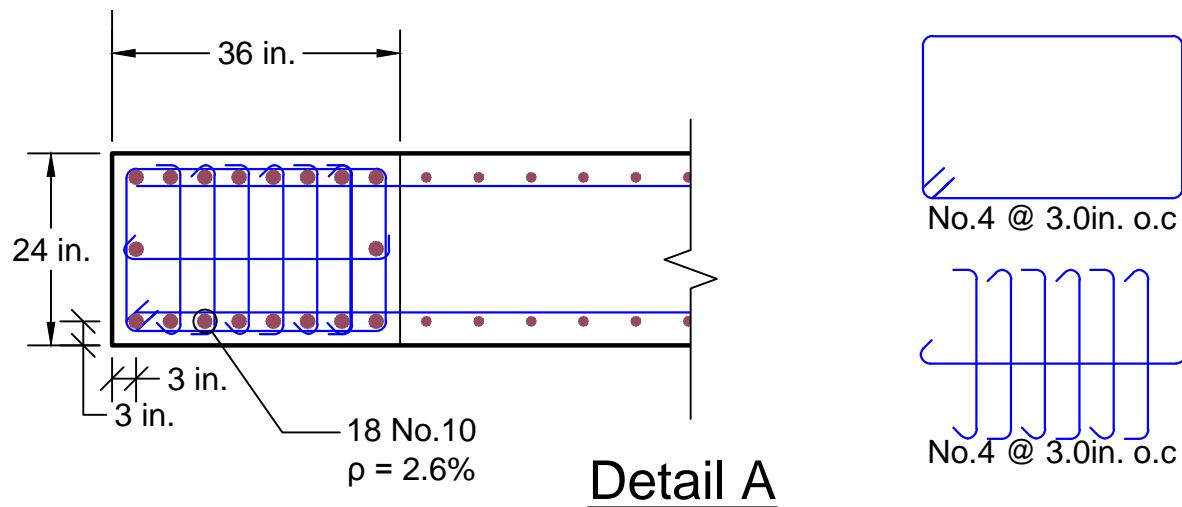


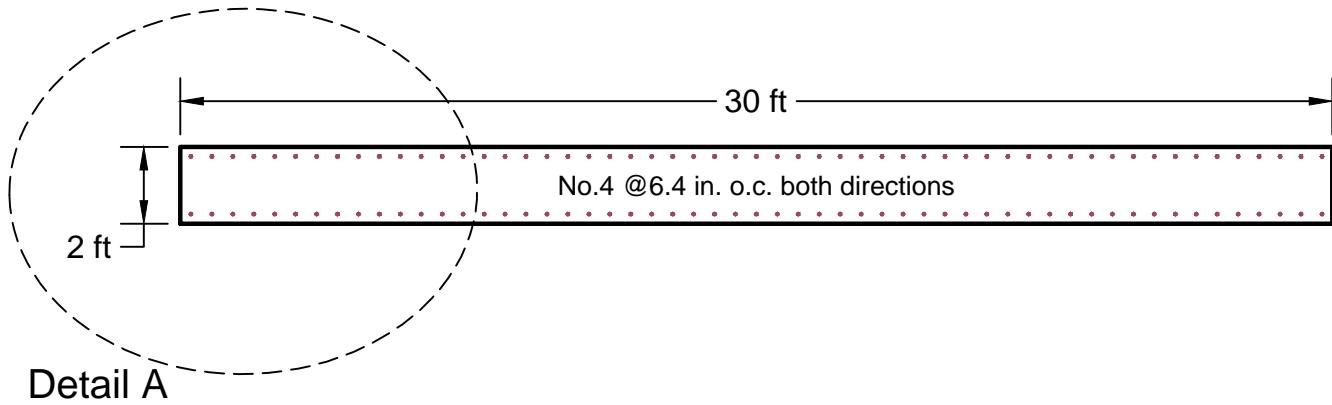
Detail B



SEC C-C

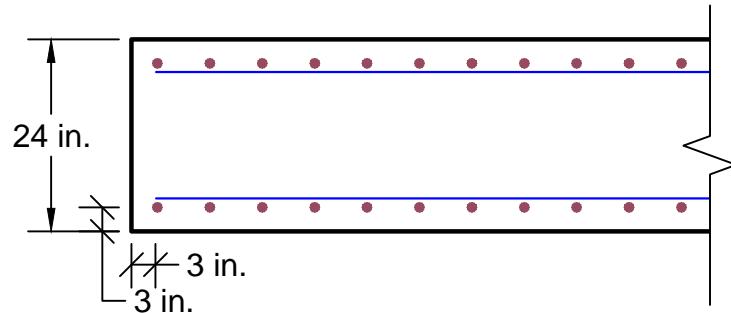
M_{demand}	54226 k-ft
ϕM_n	60315 k-ft
AL	1065 k



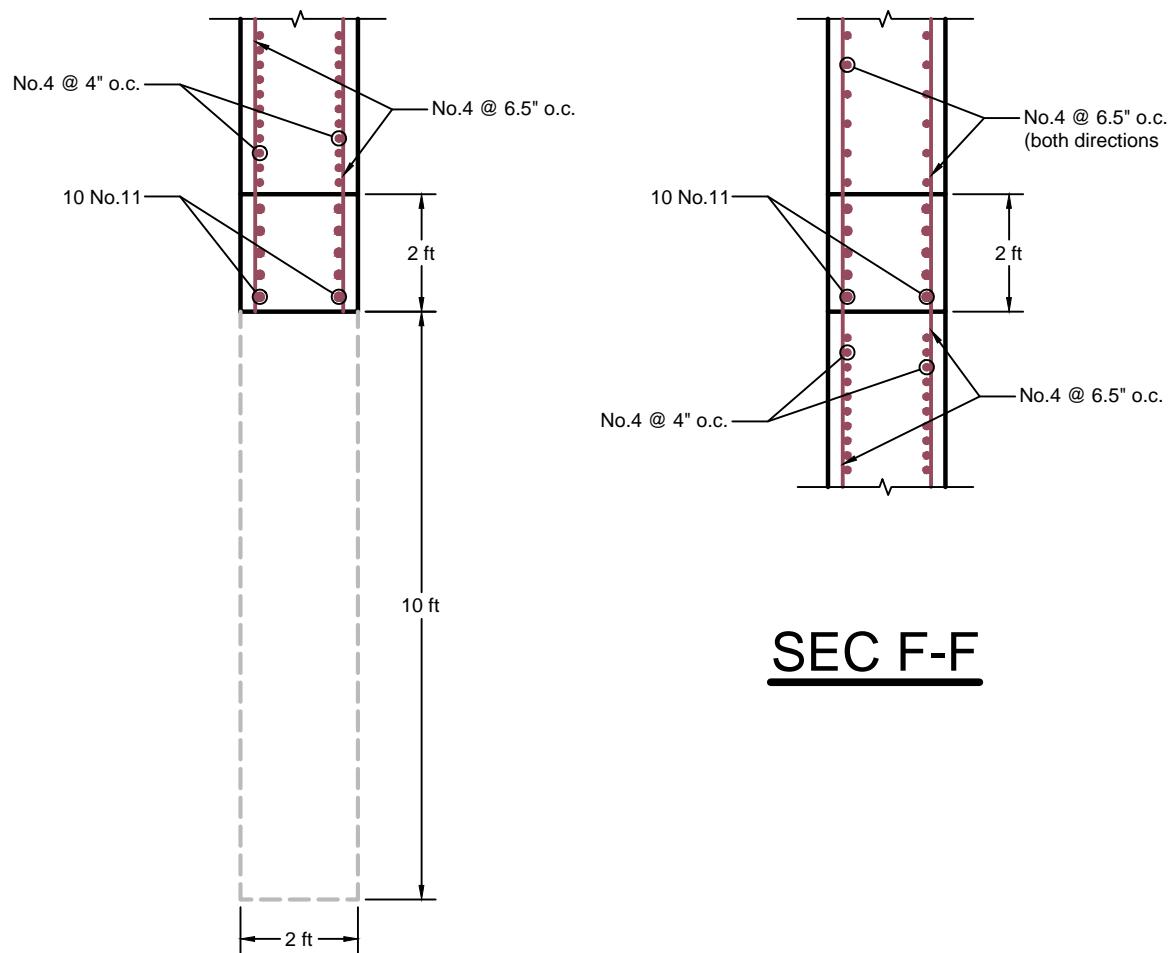


SEC C-C

M_{demand}	17705 k-ft
ϕM_n	23545 k-ft
AL	500 k

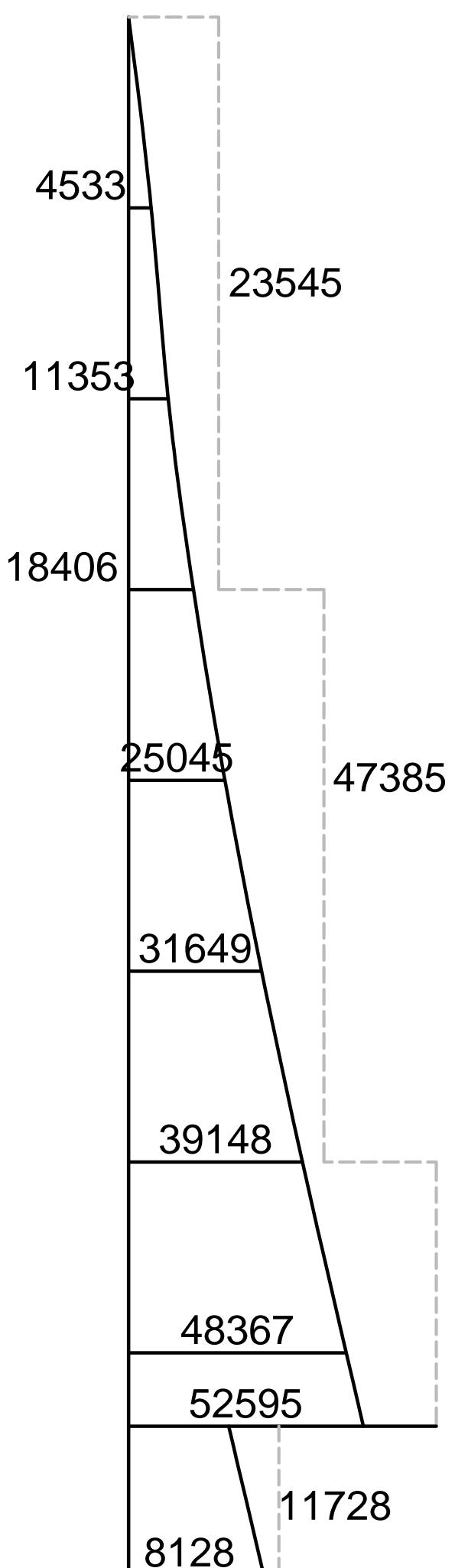
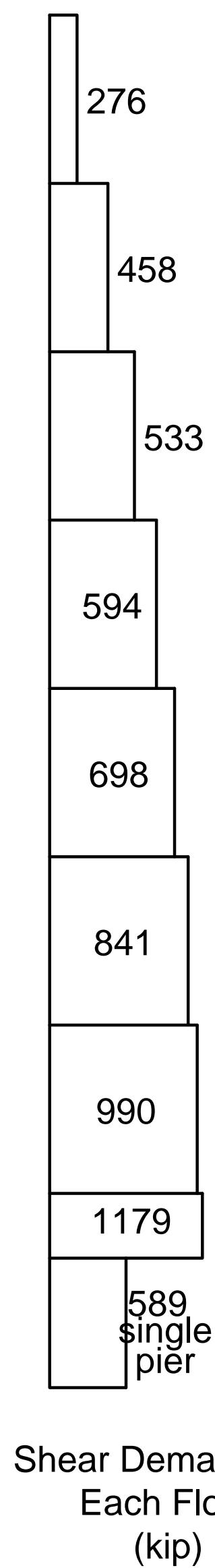
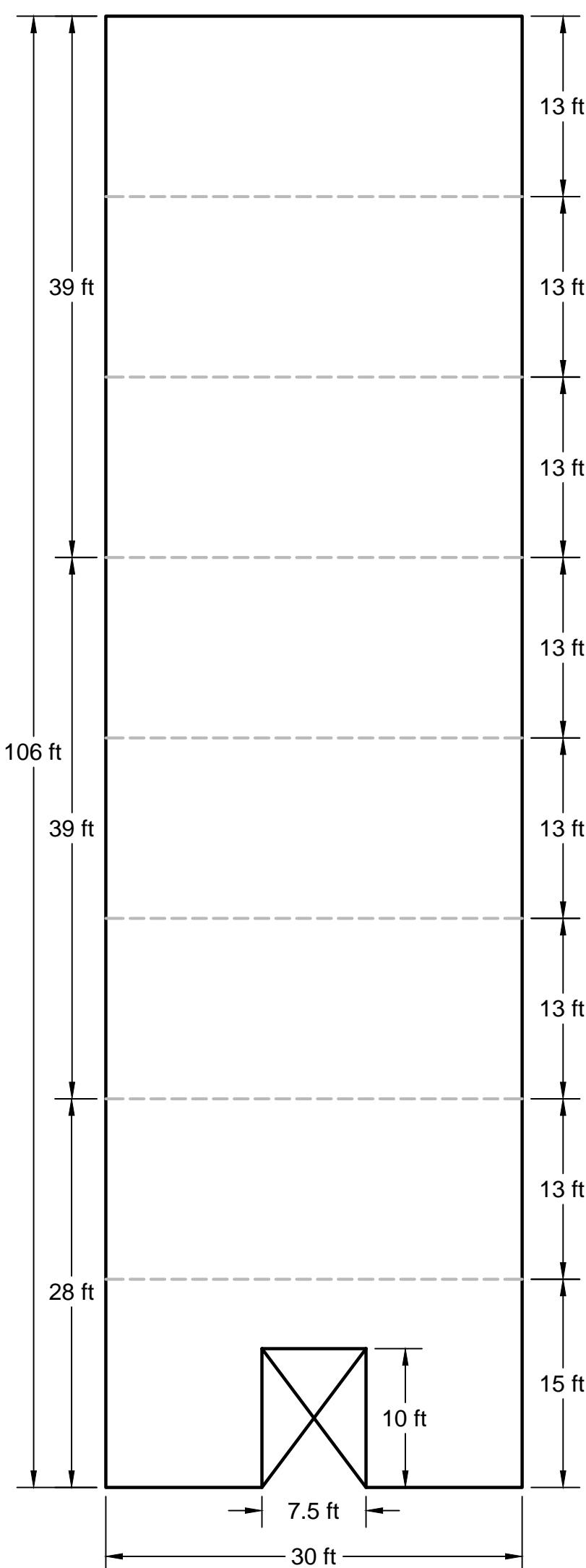


Detail A



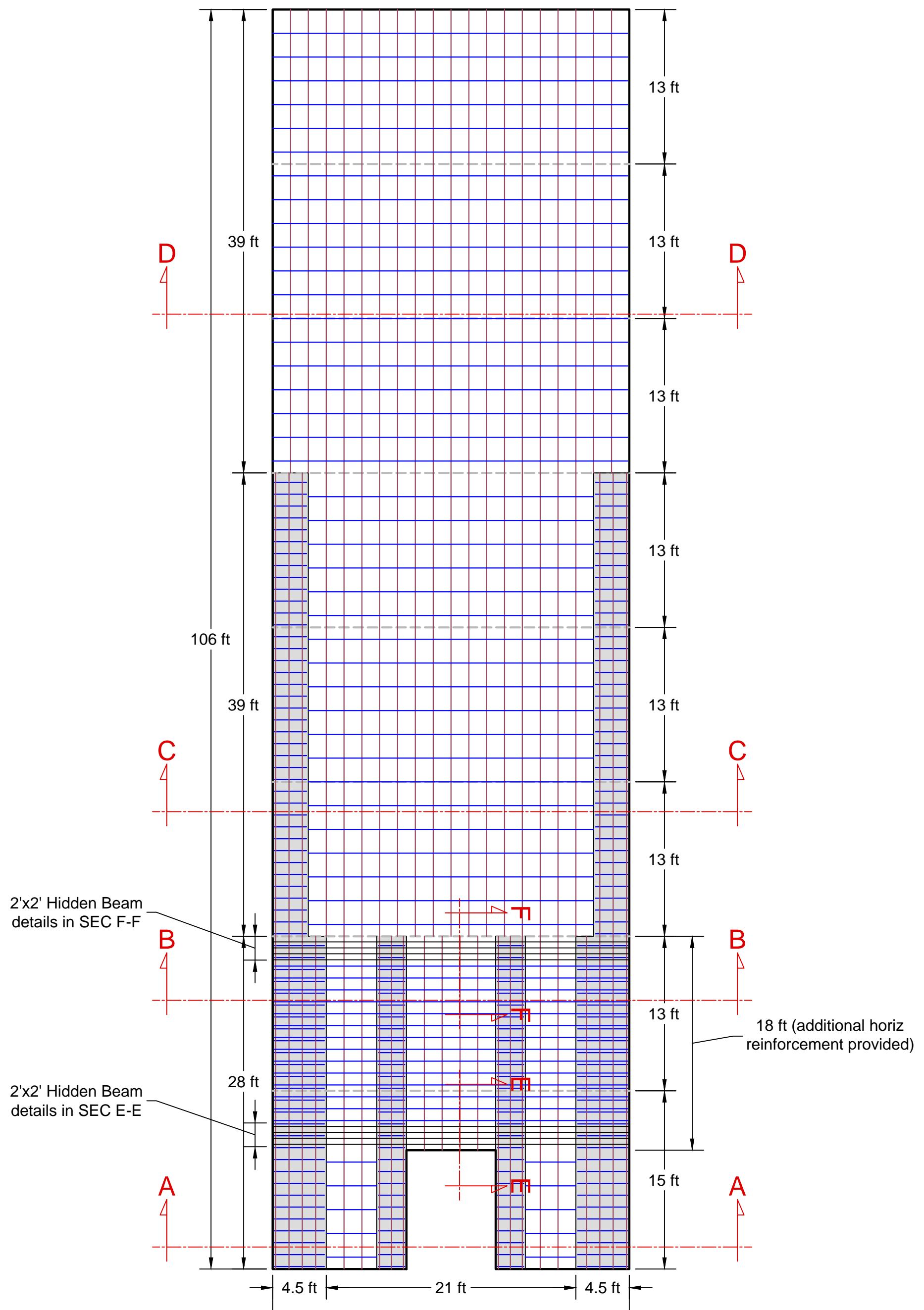
SEC F-F

SEC E-E

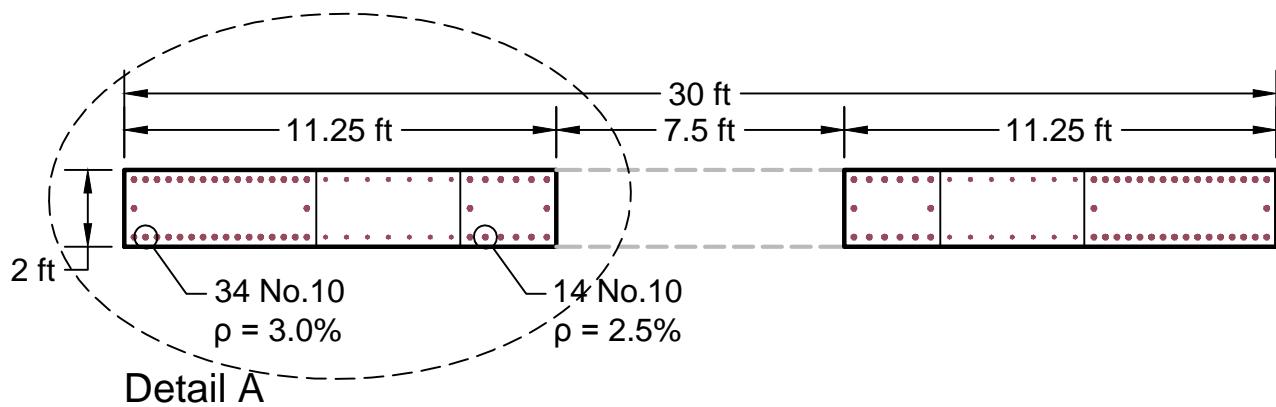


— demand
- - - capacity

MRSA Method

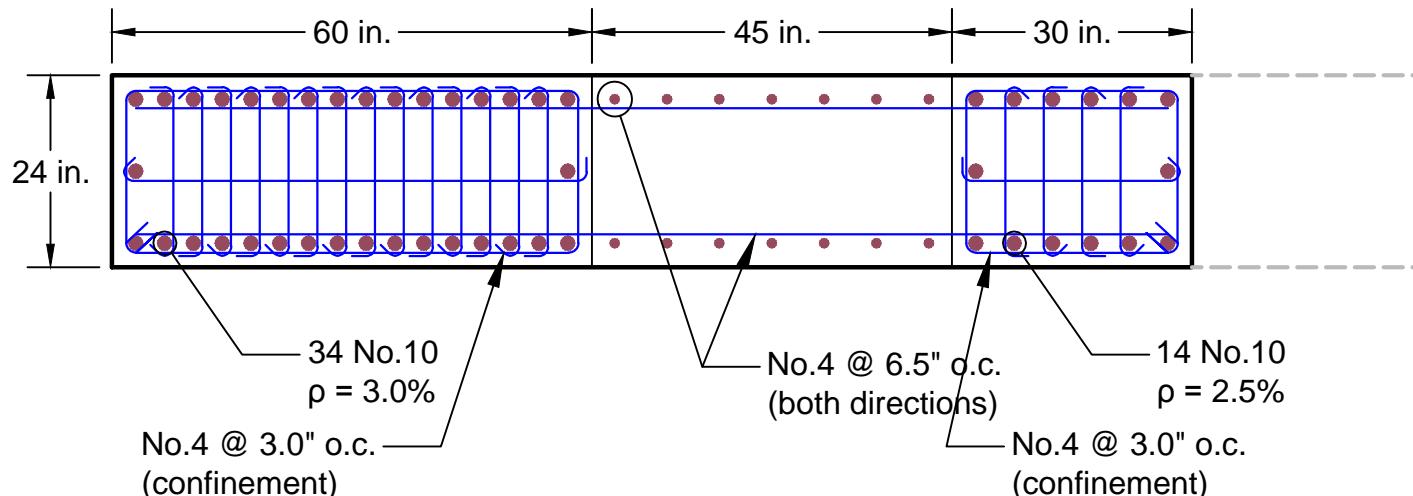


Elevation View (Punched Wall, 50% Stiffness)
MRSA Method

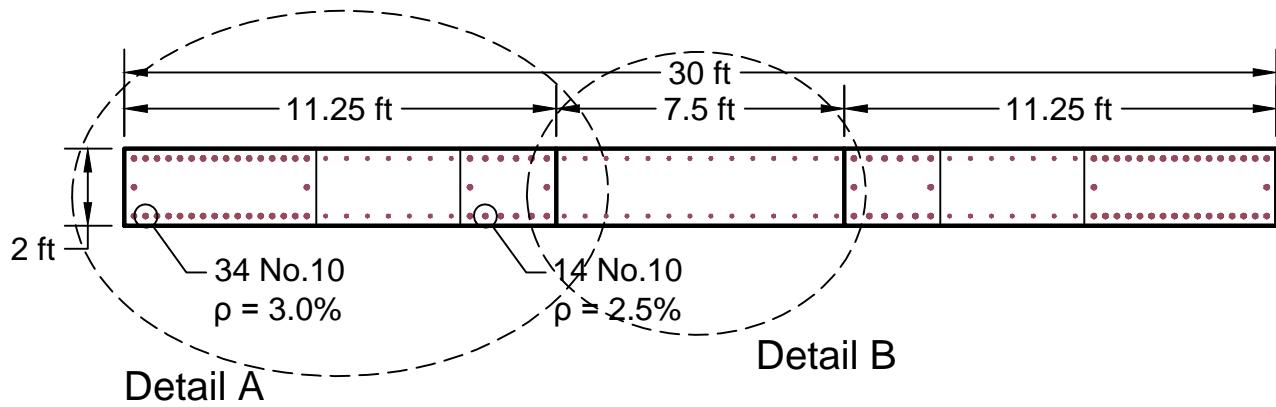


SEC A-A

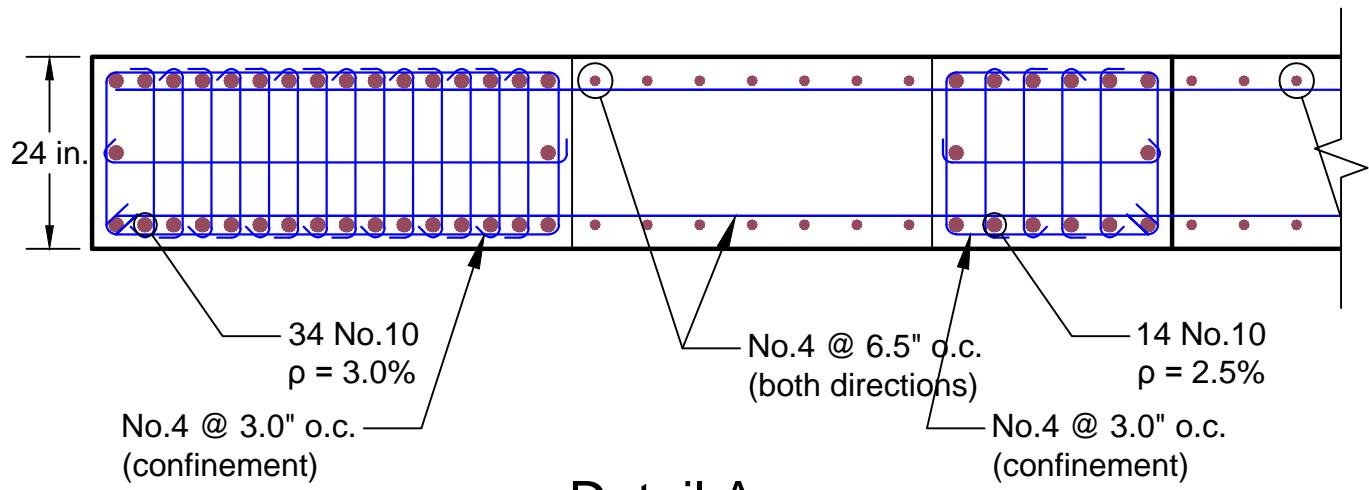
M_{demand}	8128 k-ft
ϕM_n	11728 k-ft
AL	-1921 k



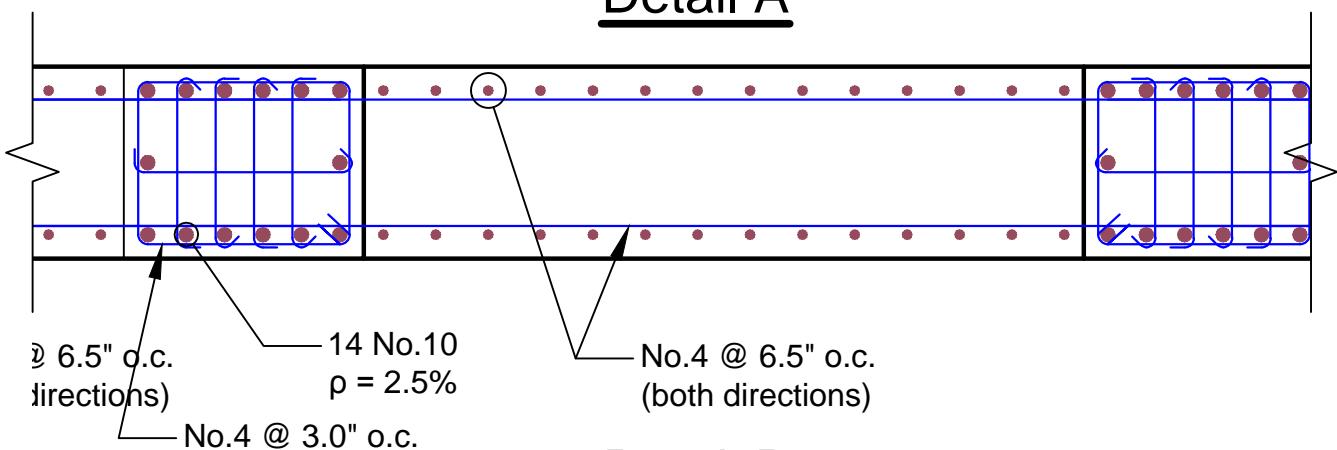
Detail A



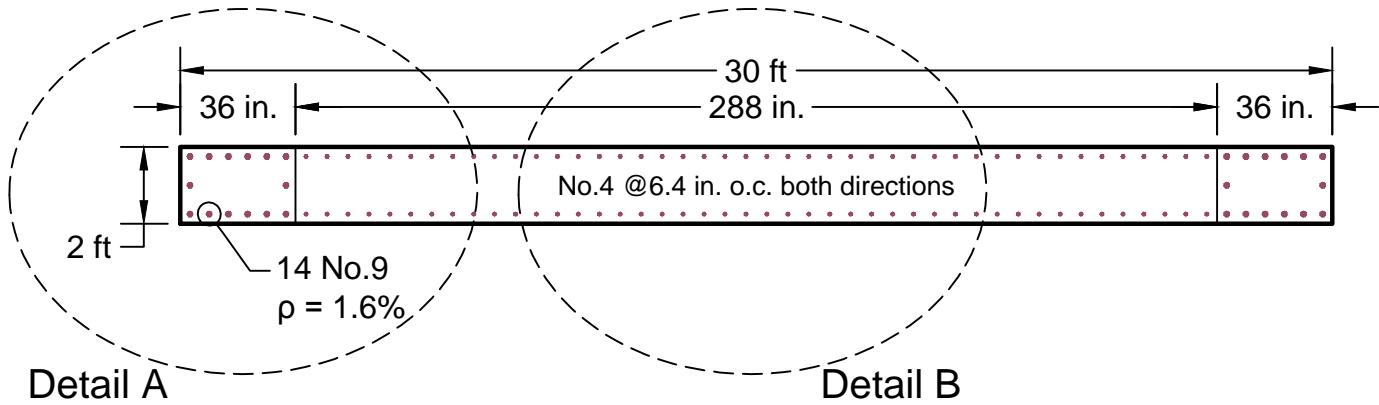
SEC B-B



Detail A

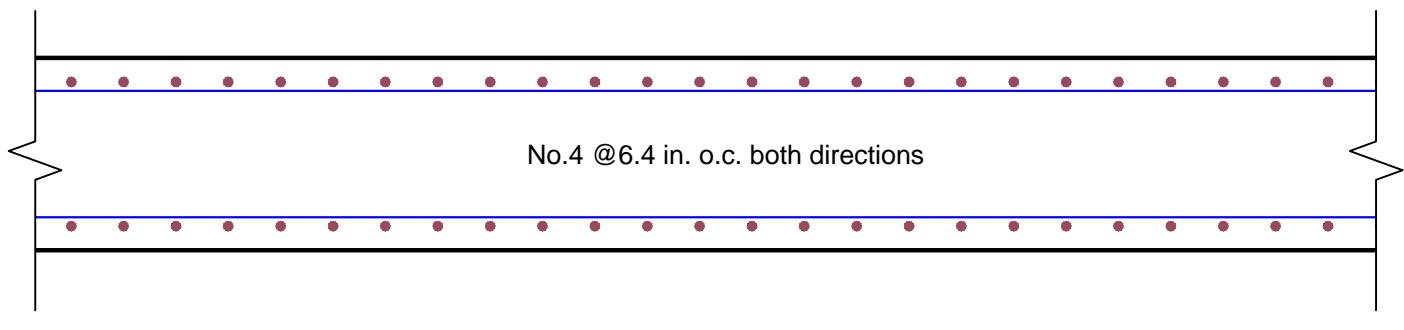
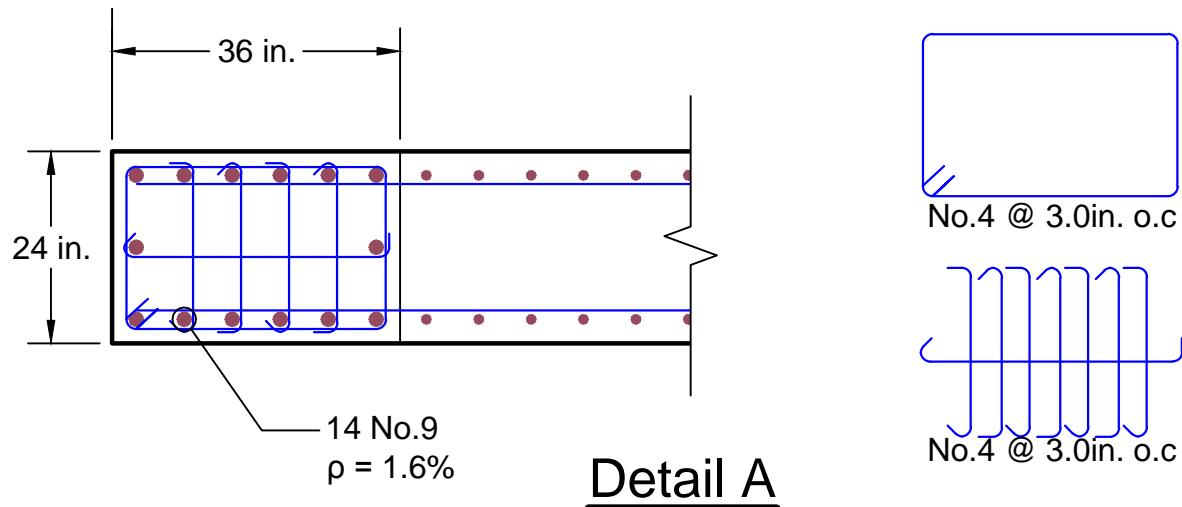


Detail B

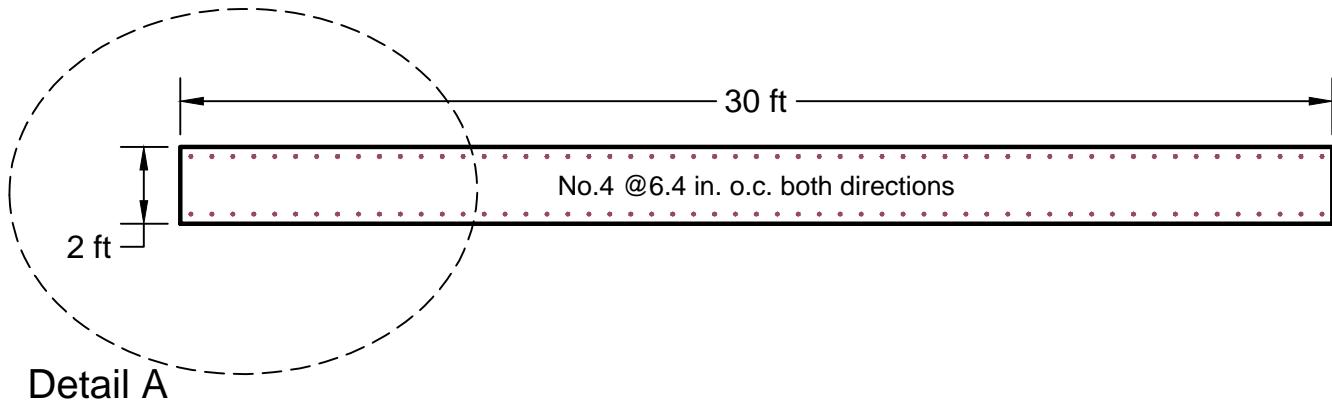


SEC B-B

M_{demand}	43962 k-ft
ϕM_n	47385 k-ft
AL	1065 k

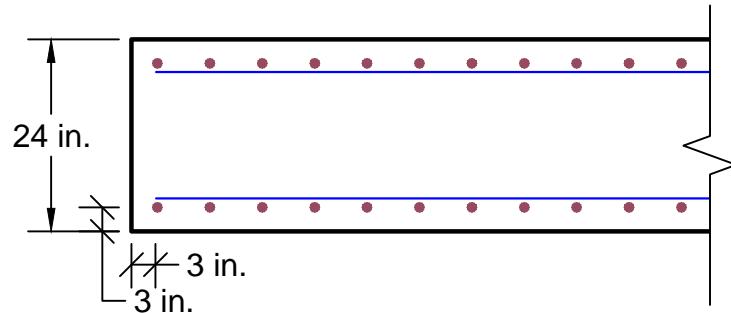


Detail B

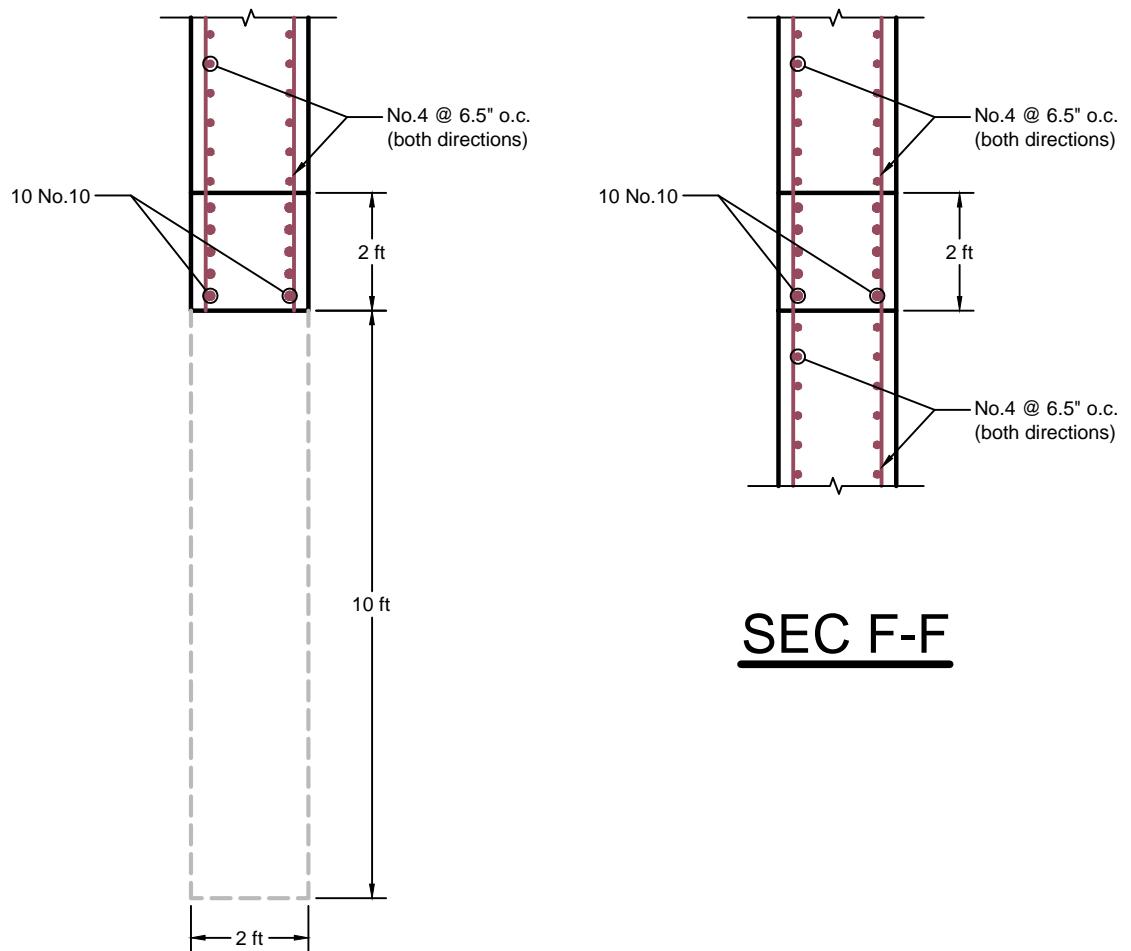


SEC C-C

M_{demand}	17705 k-ft
ϕM_n	23545 k-ft
AL	500 k

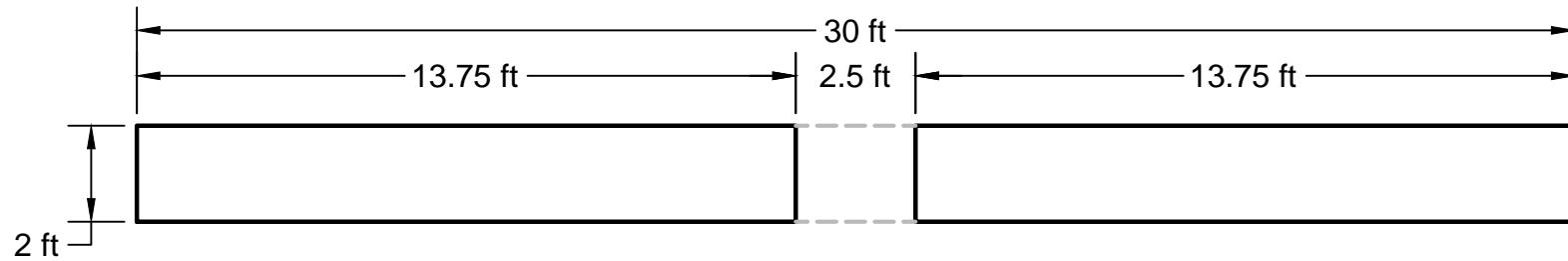


Detail A

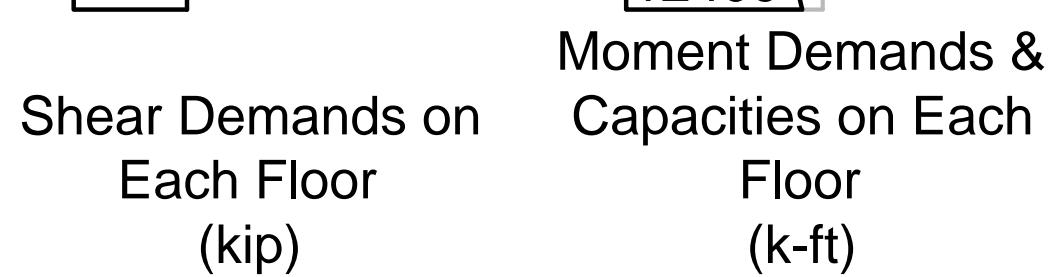
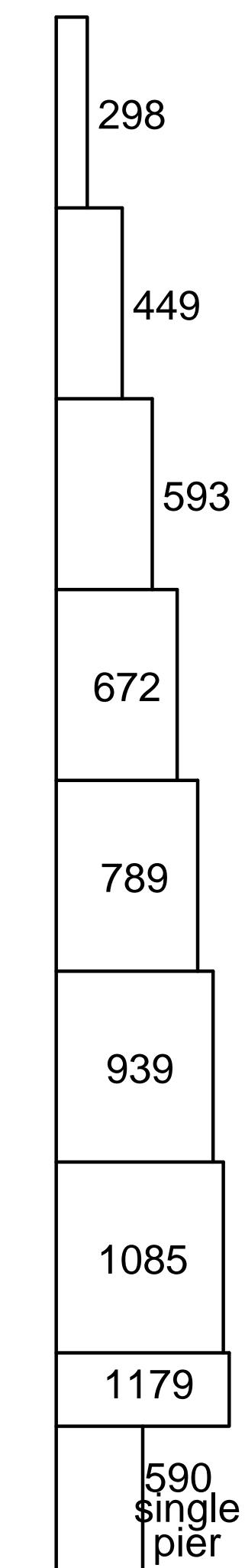
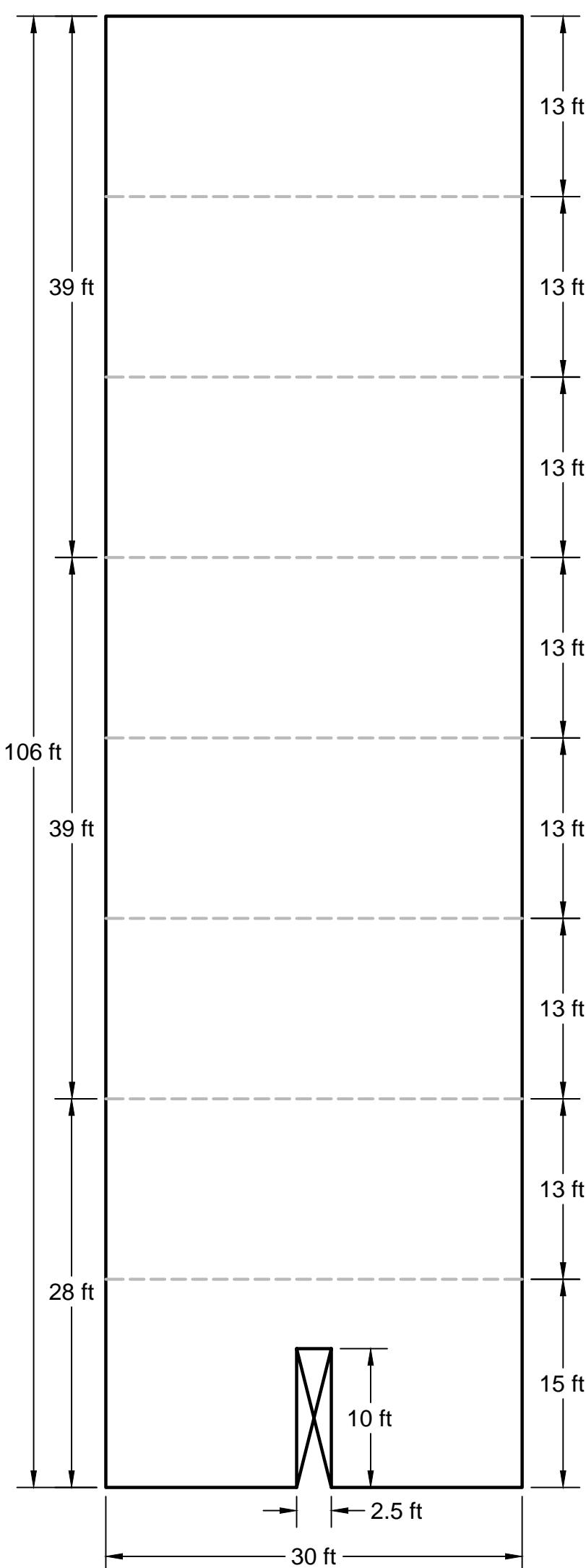


SEC F-F

SEC E-E

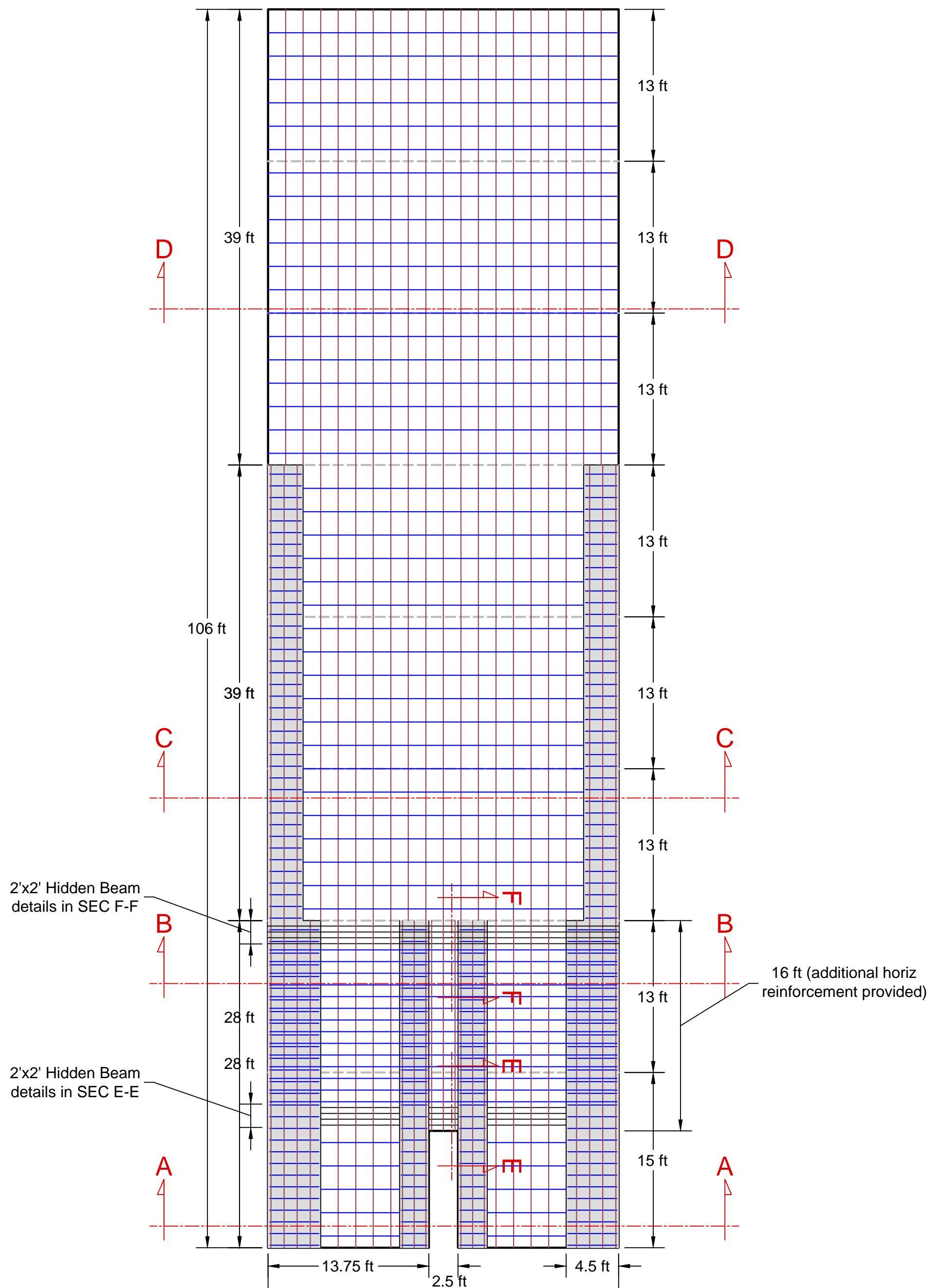


Punched Wall (30'x2'x106')
with 75% stiffness
 $f'c = 5000 \text{ psi}$
 $f_y = 60 \text{ ksi}$

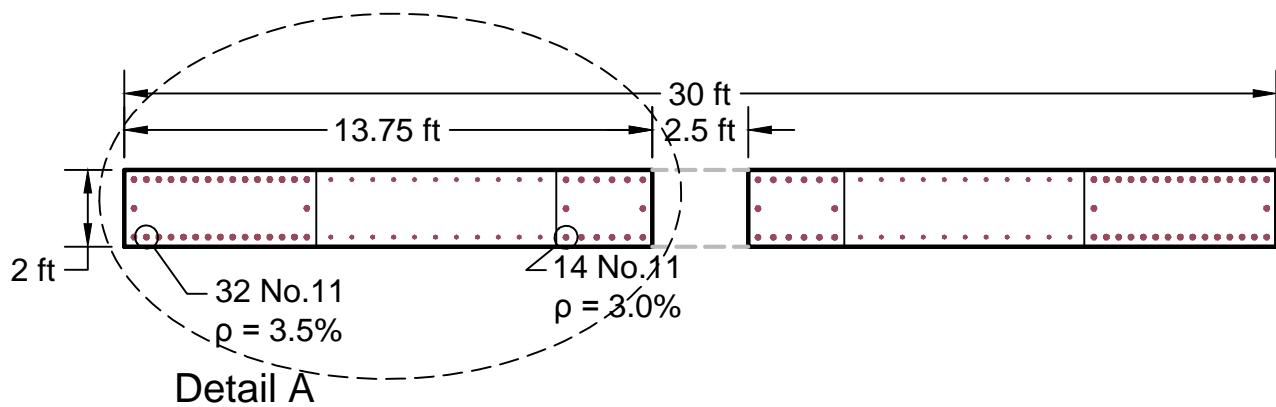


ELF Method

— demand
- - - capacity

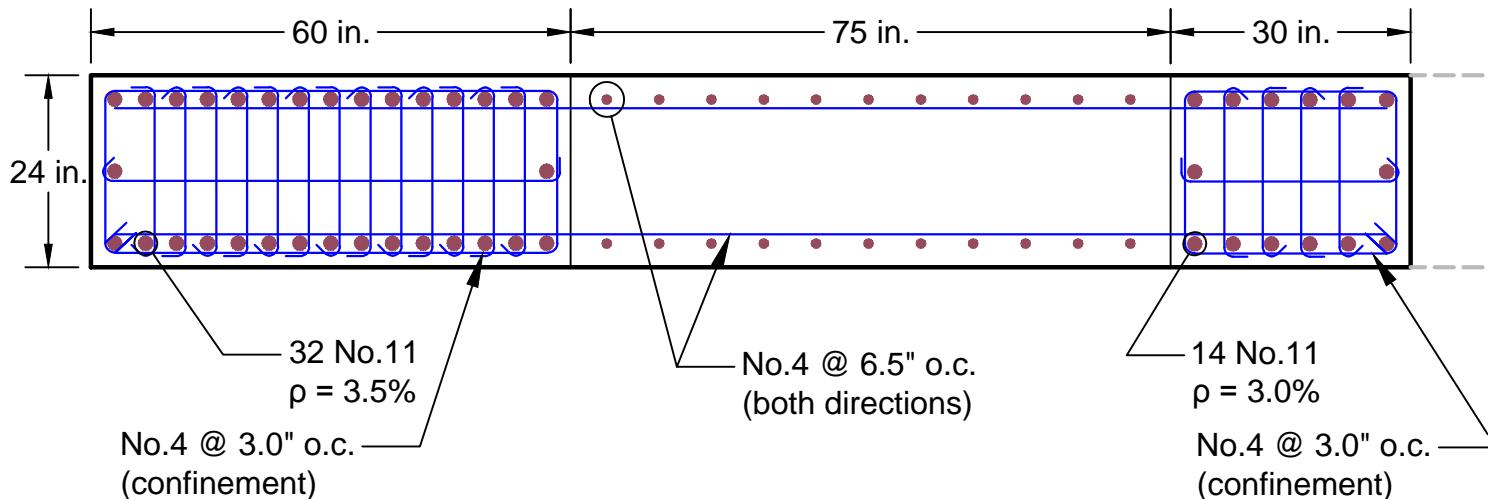


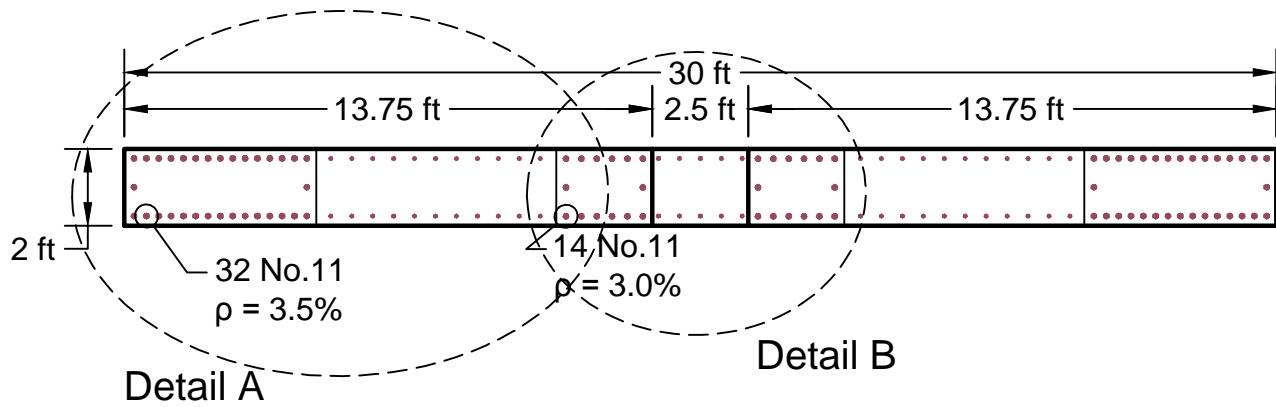
Elevation View (Punched Wall, 75% Stiffness)
ELF Method



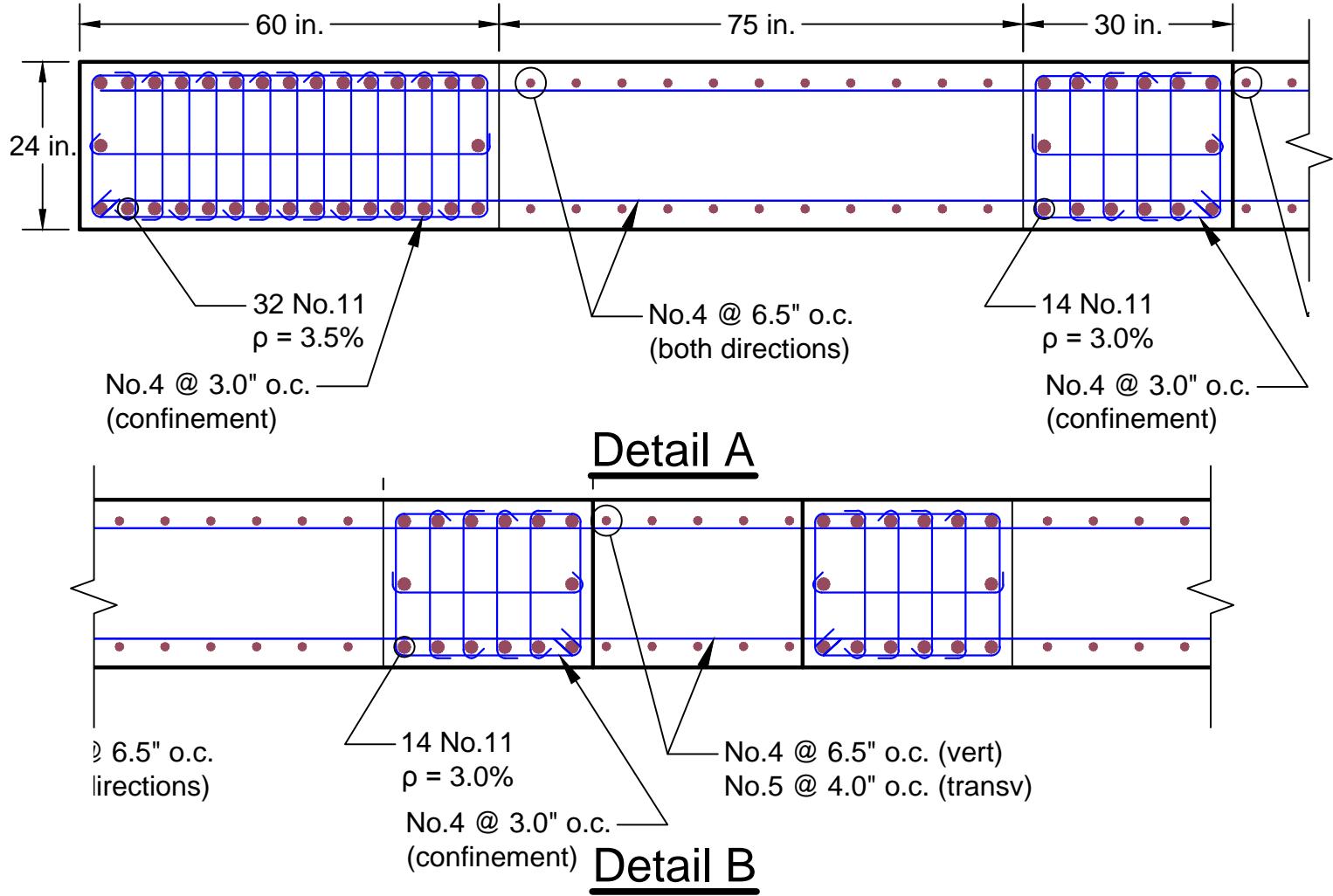
SEC A-A

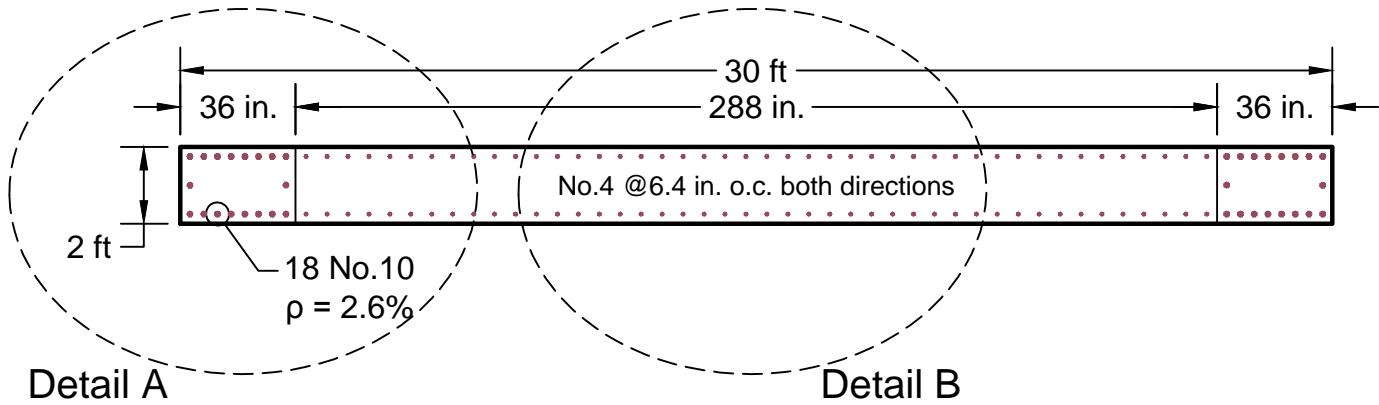
M_{demand}	12409 k-ft
ϕM_n	13215 k-ft
AL	-2472 k





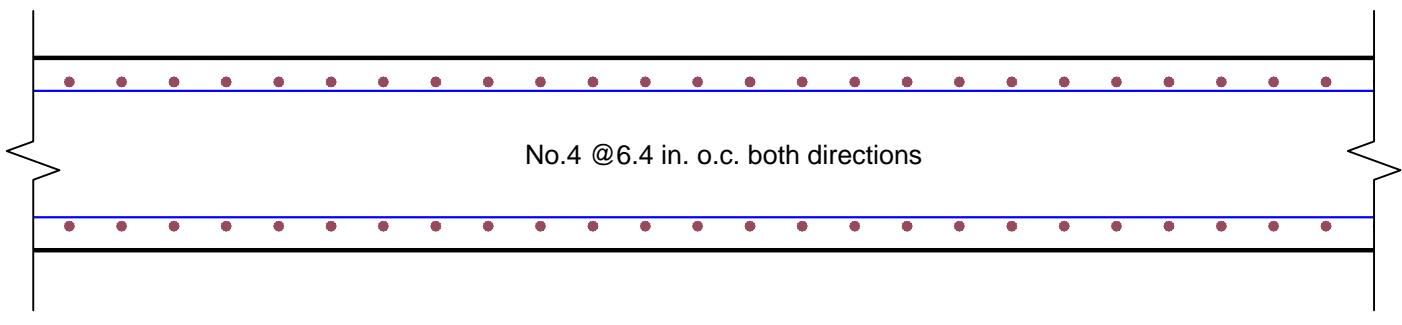
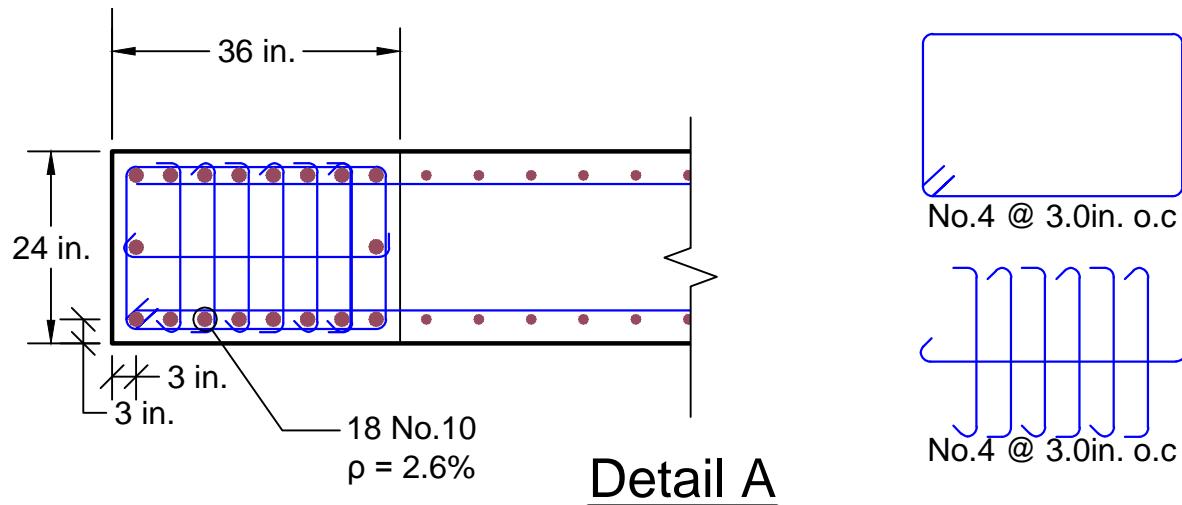
SEC B-B

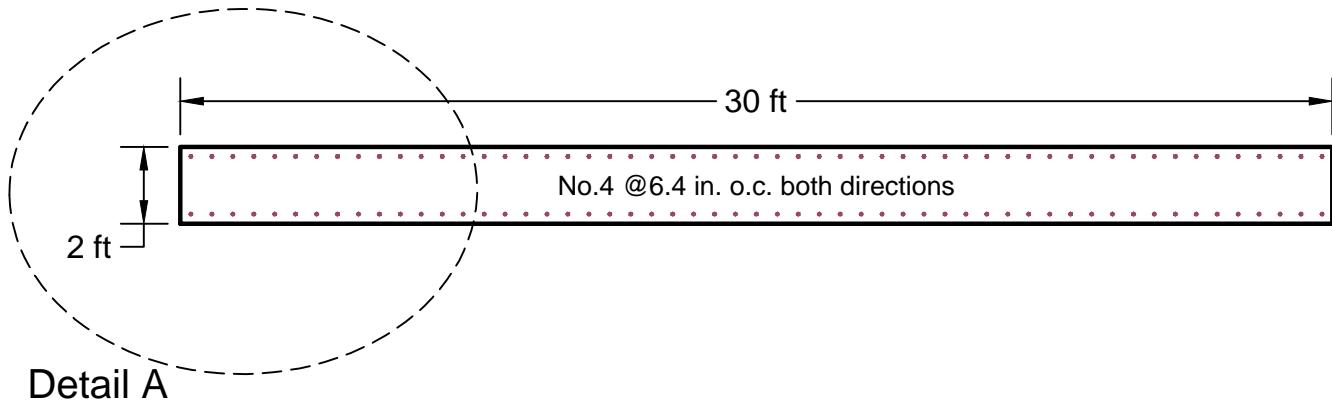




SEC C-C

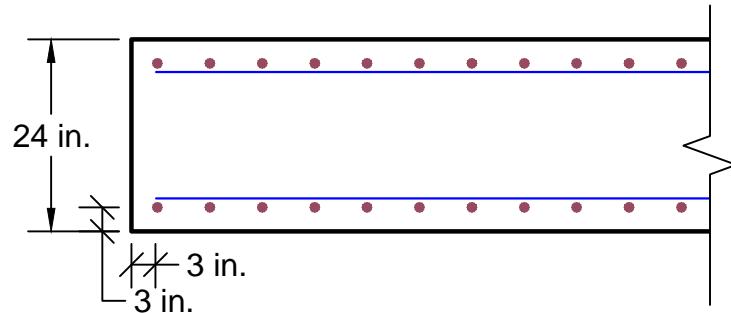
M_{demand}	54226 k-ft
ϕM_n	60315 k-ft
AL	1065 k



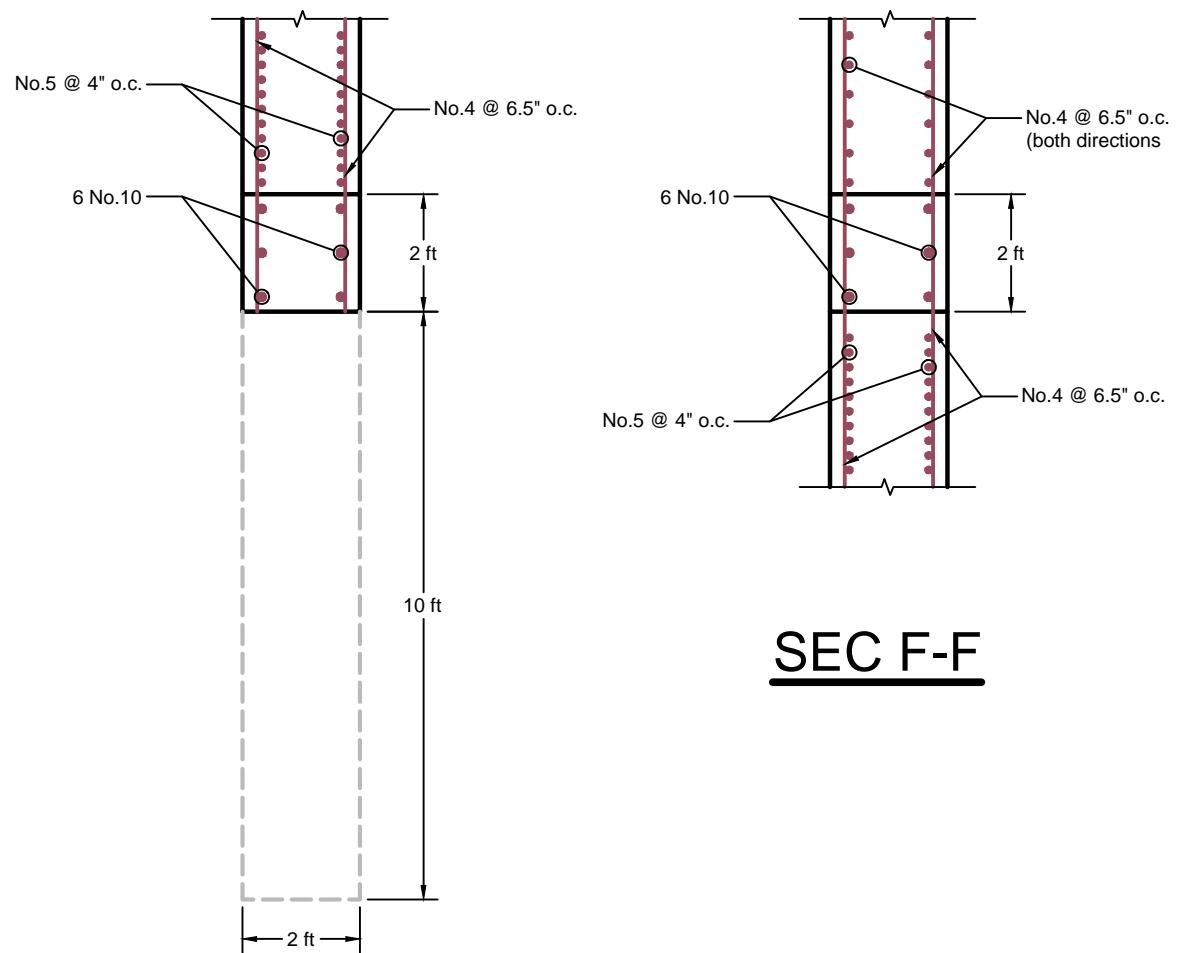


SEC C-C

M_{demand}	17705 k-ft
ϕM_n	23545 k-ft
AL	500 k

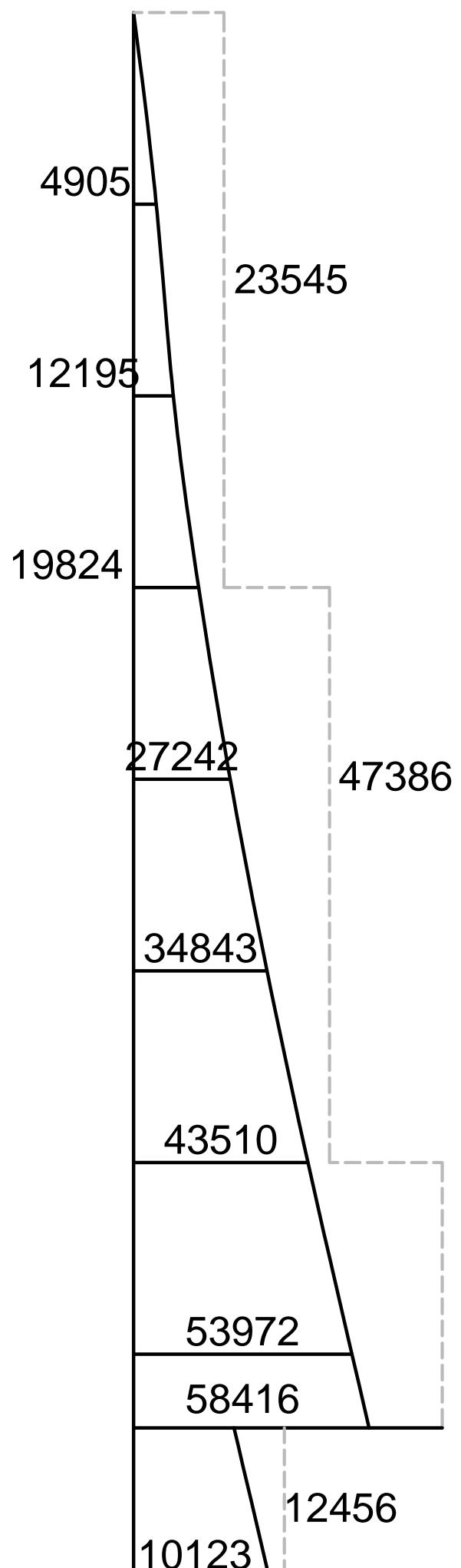
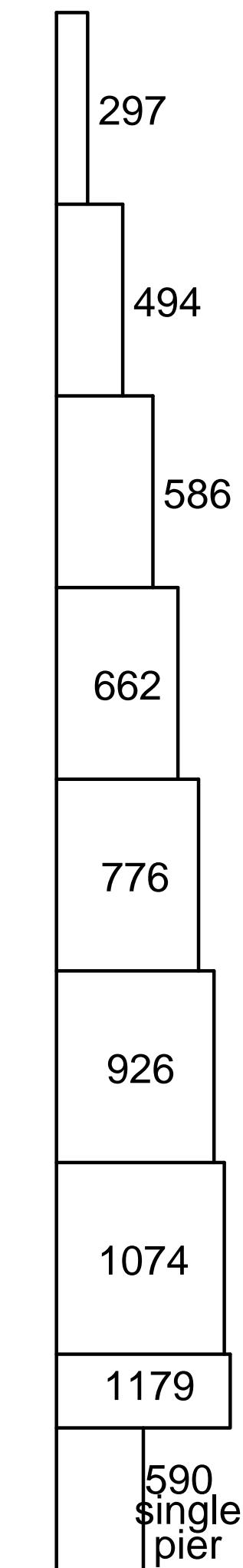
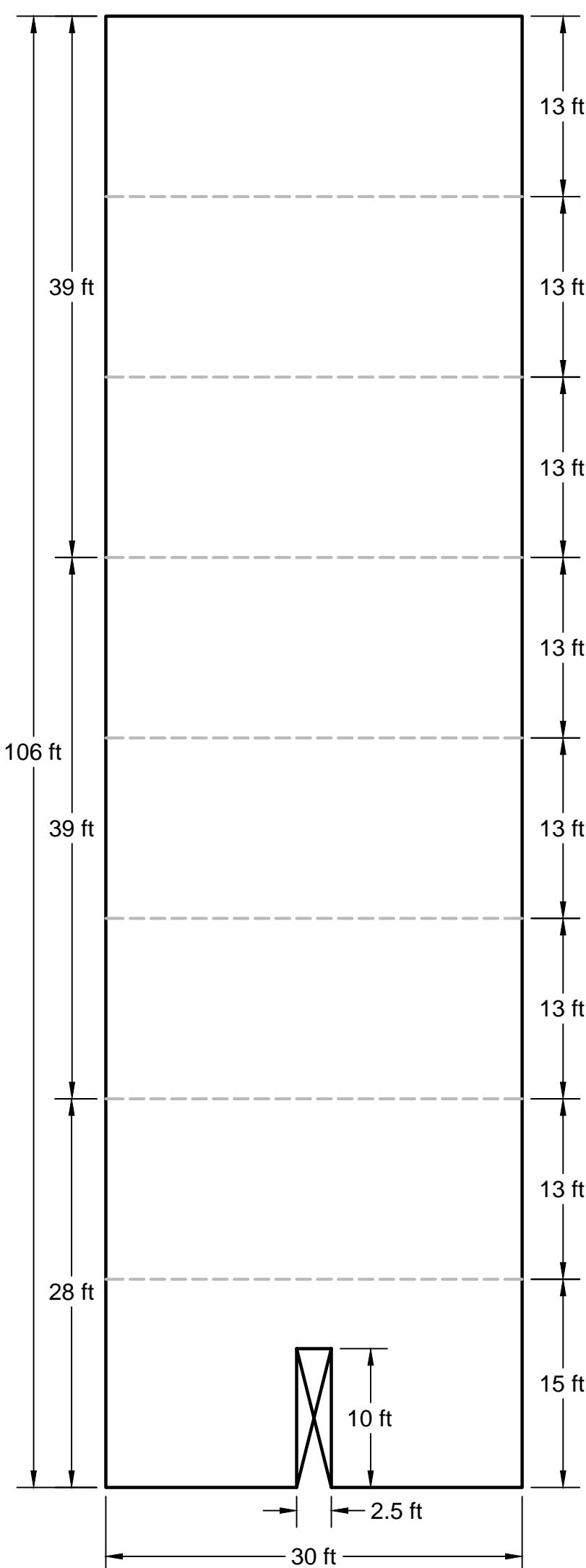


Detail A



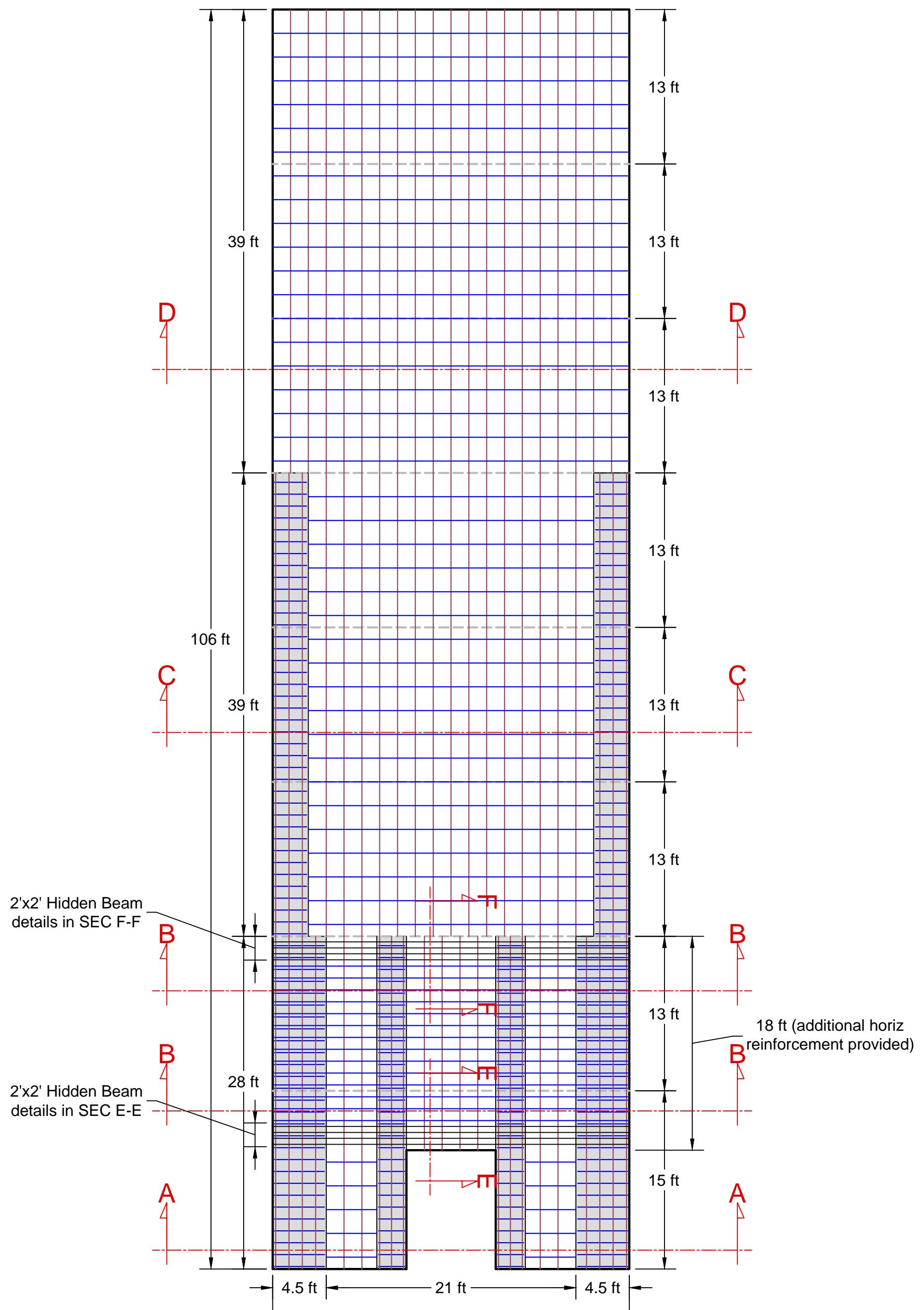
SEC F-F

SEC E-E

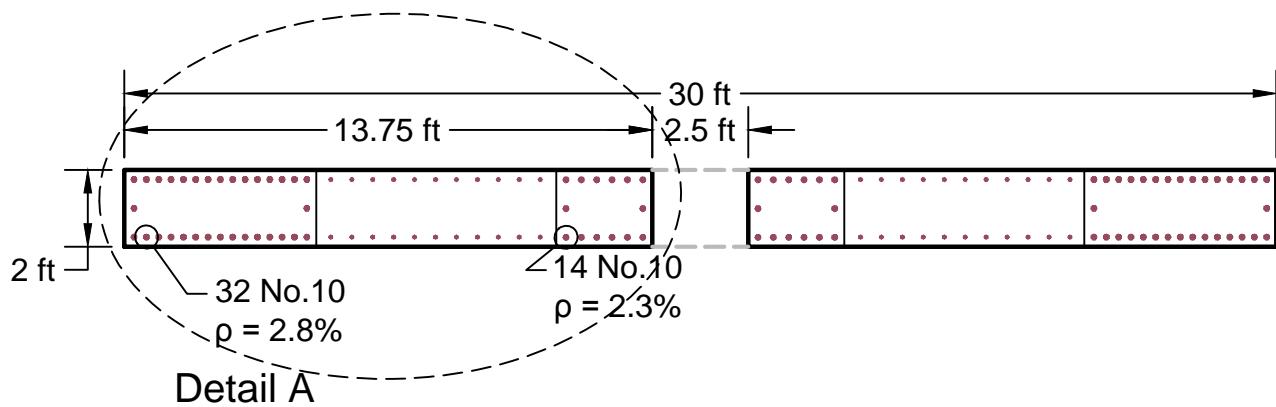


MRSA Method

— demand
- - - capacity

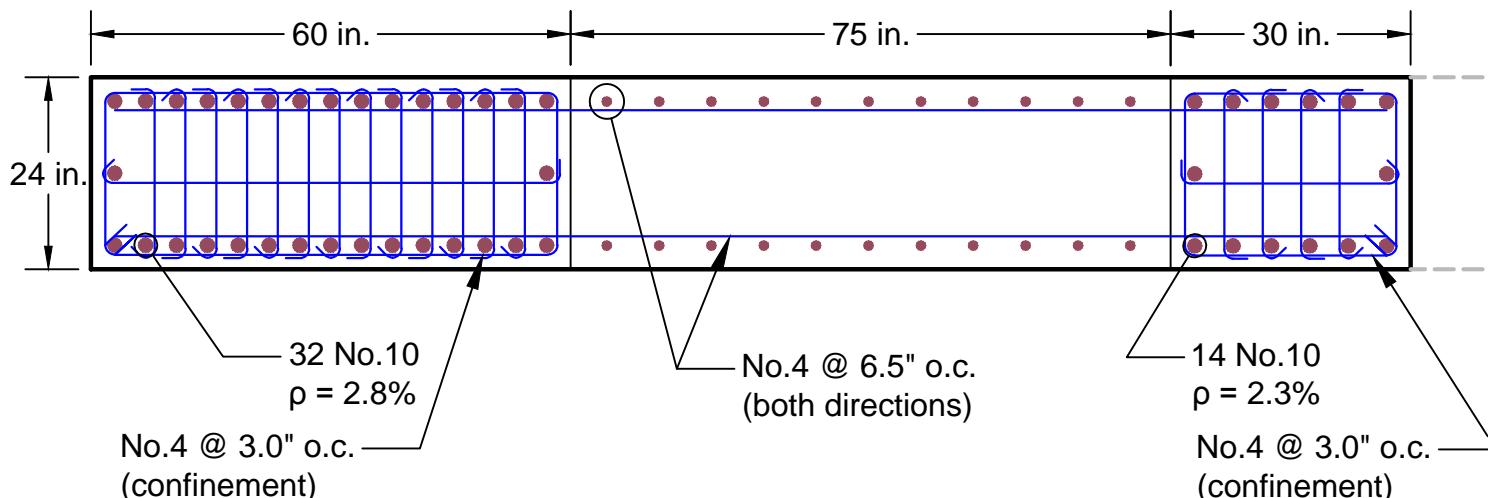


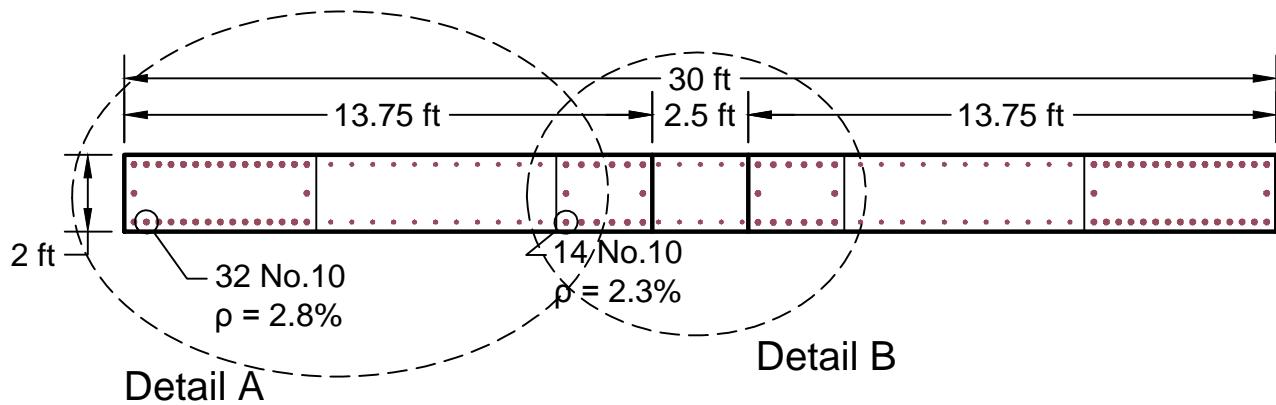
Elevation View (Punched Wall, 75% Stiffness)
MRSA Method



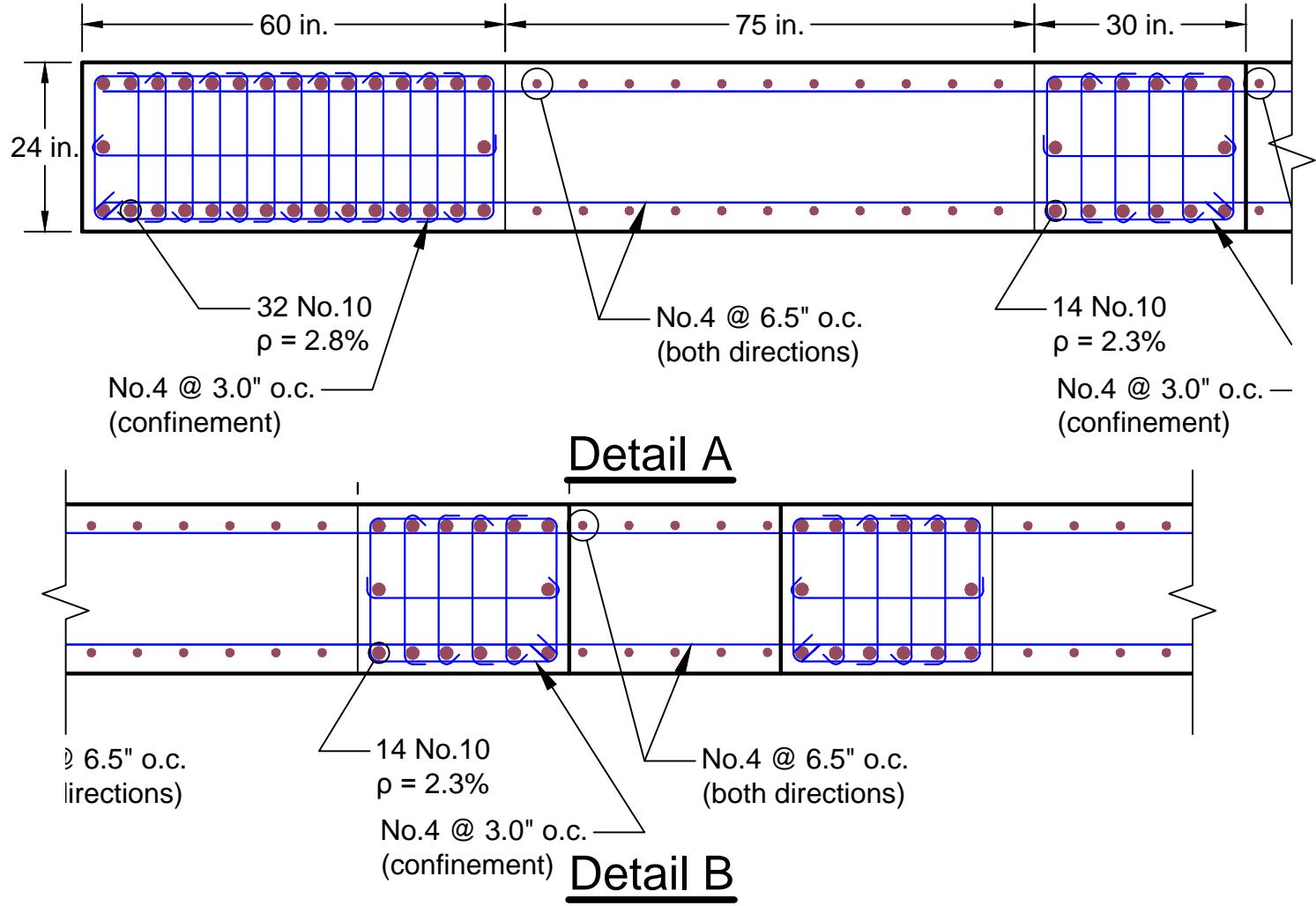
SEC A-A

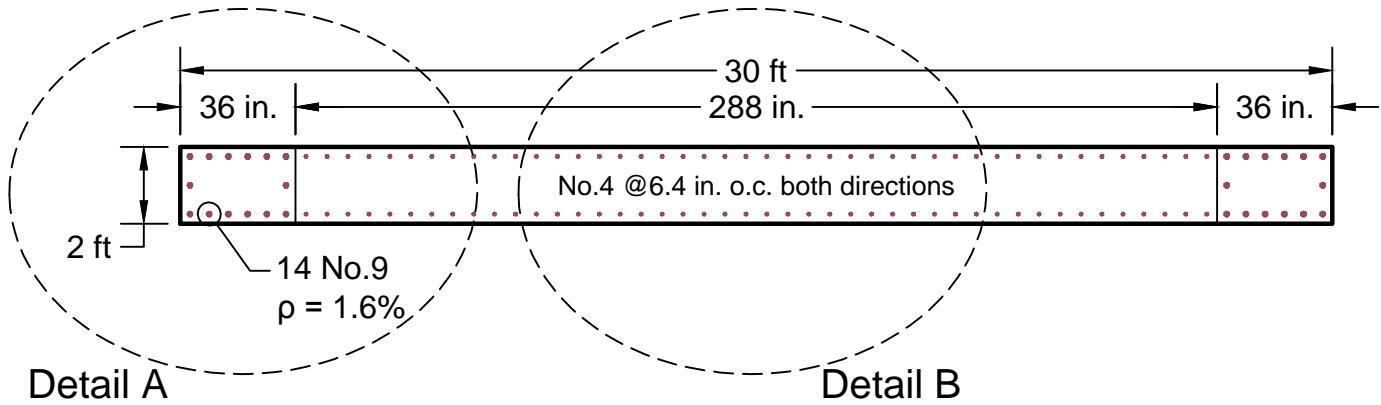
M _{demand}	10123 k-ft
φM _n	12456 k-ft
AL	-2341 k





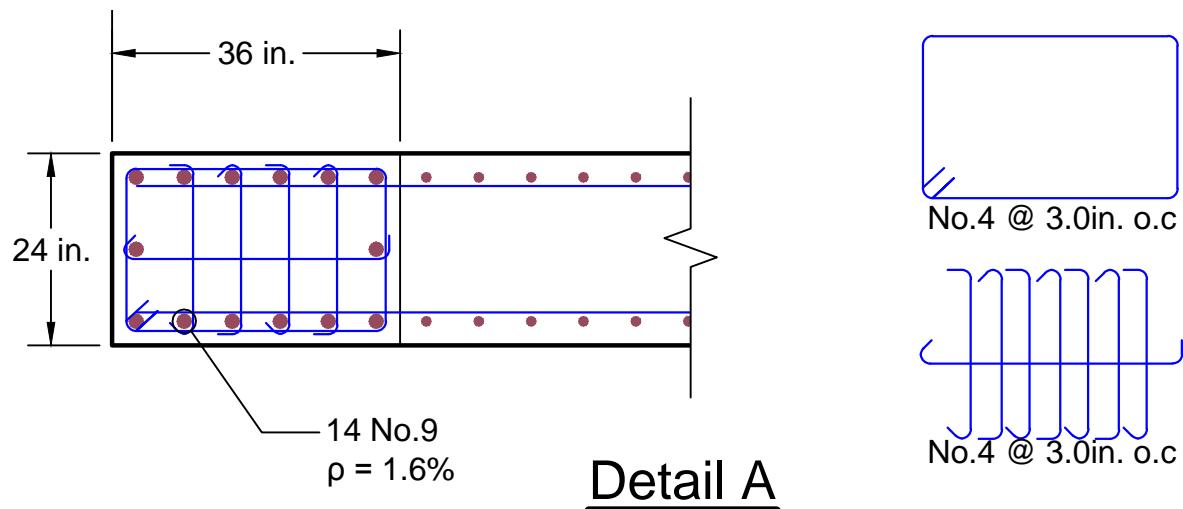
SEC B-B



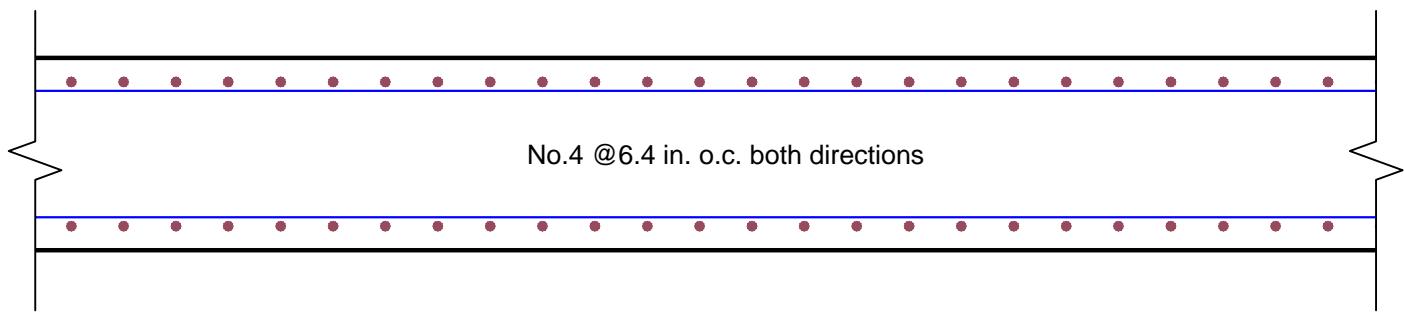


SEC B-B

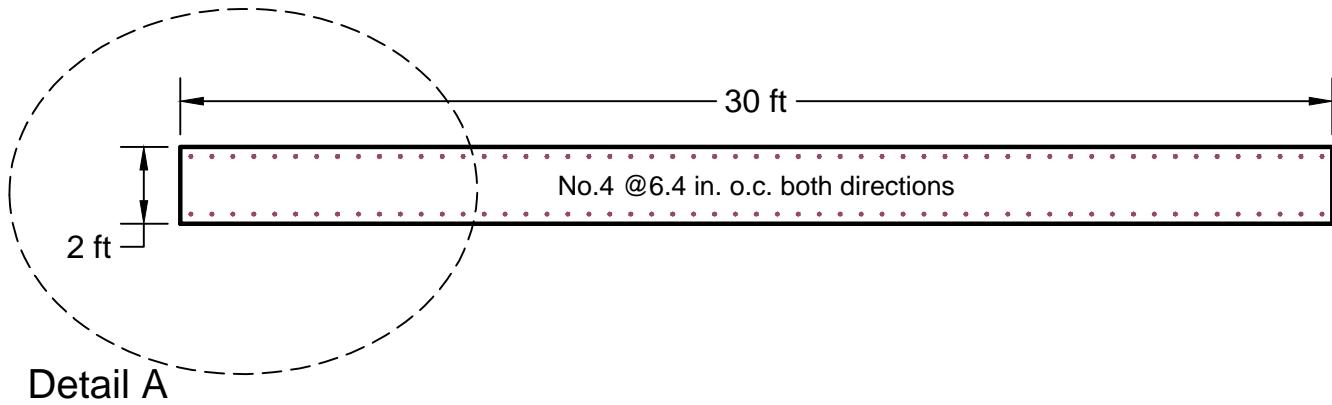
M_{demand}	43962 k-ft
ϕM_n	47386 k-ft
AL	1065 k



Detail A

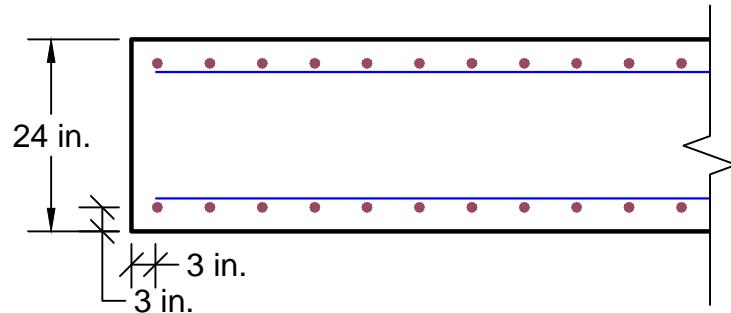


Detail B

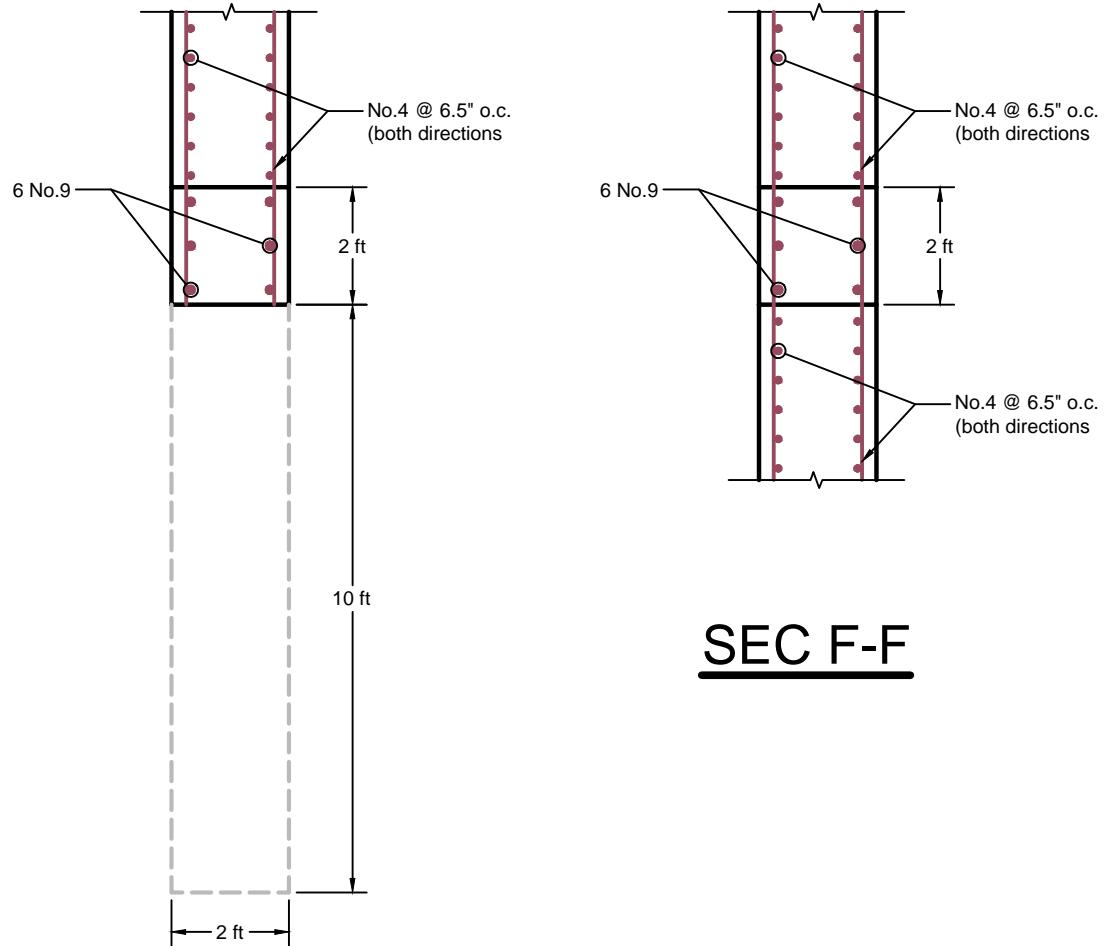


SEC C-C

M_{demand}	17705 k-ft
ϕM_n	23545 k-ft
AL	500 k

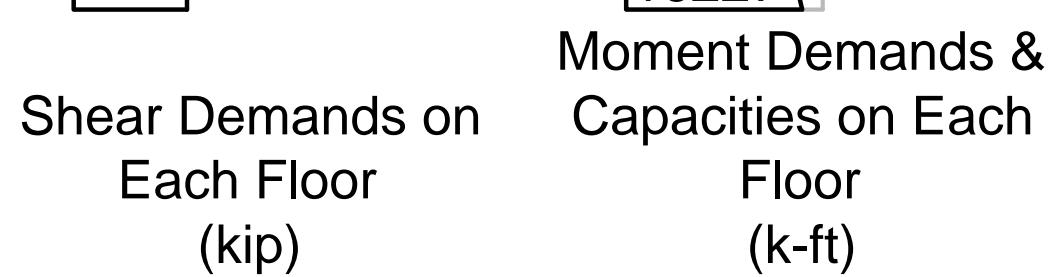
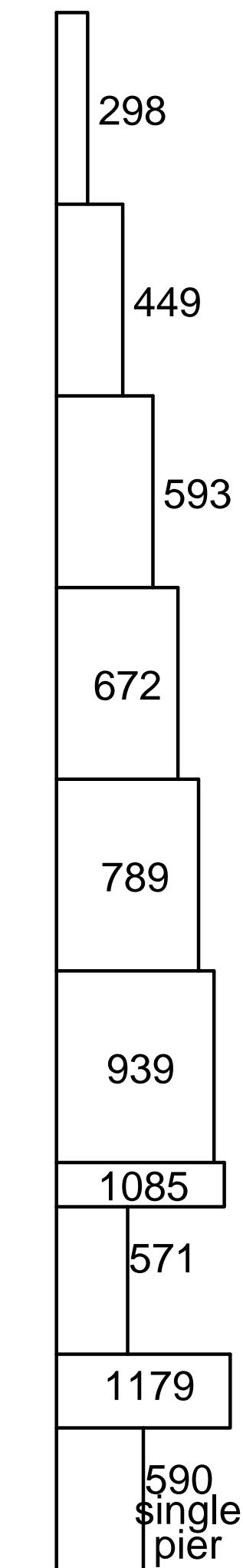
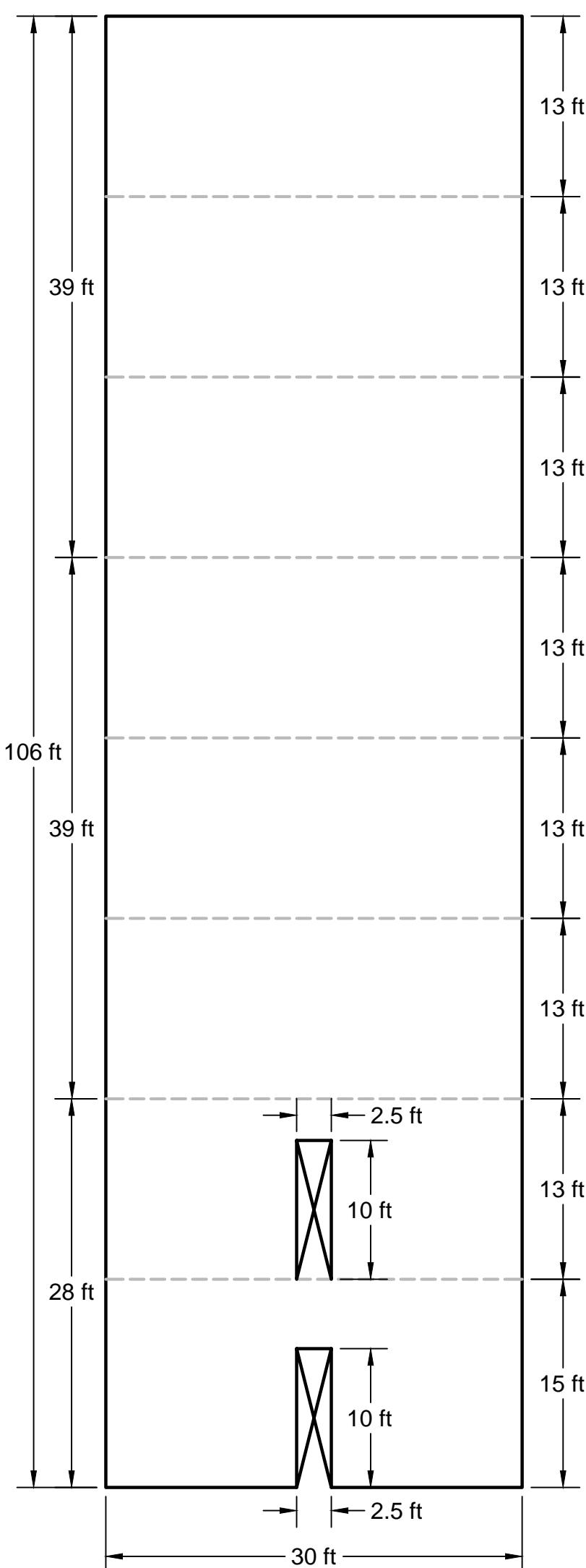


Detail A

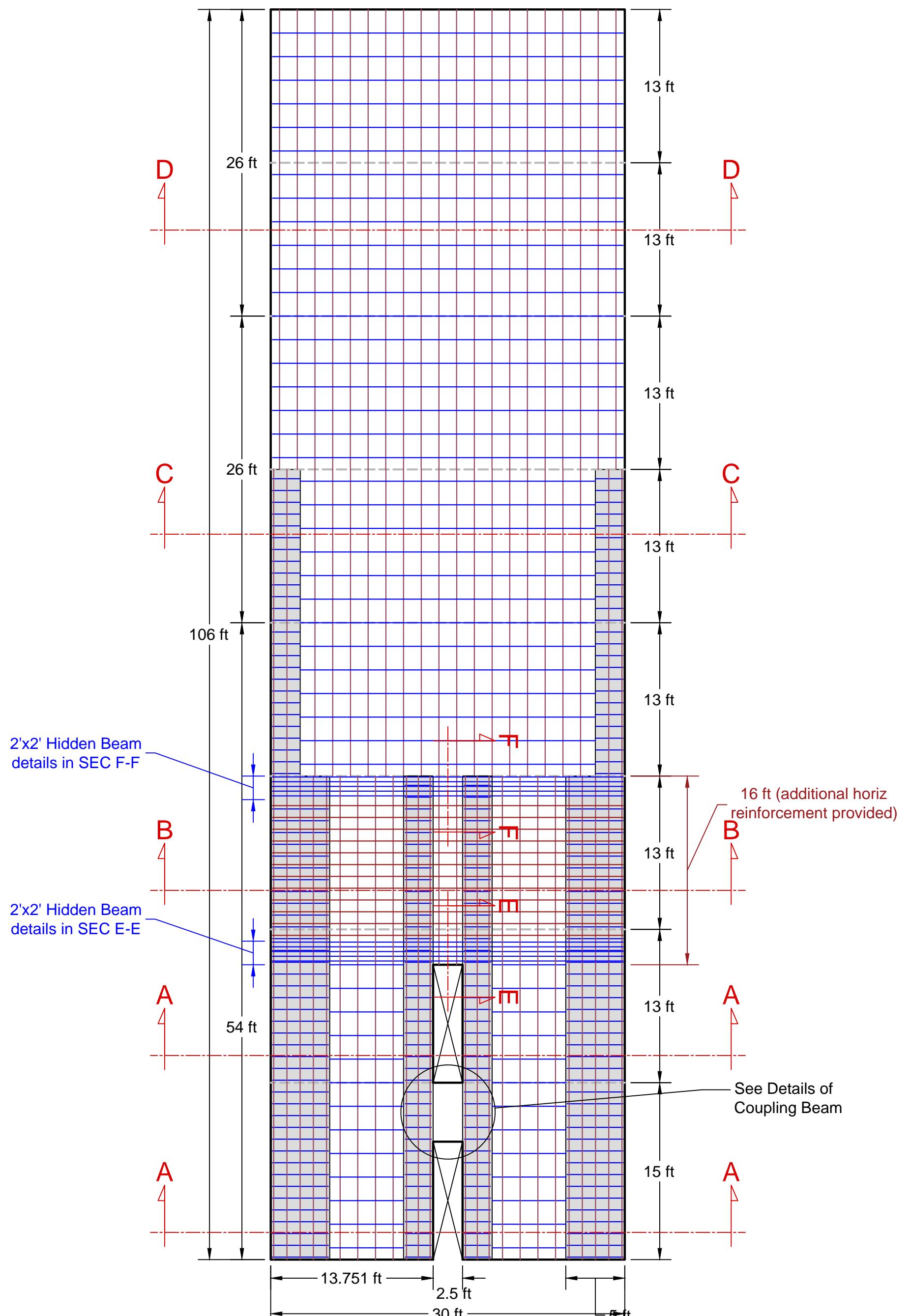


SEC E-E

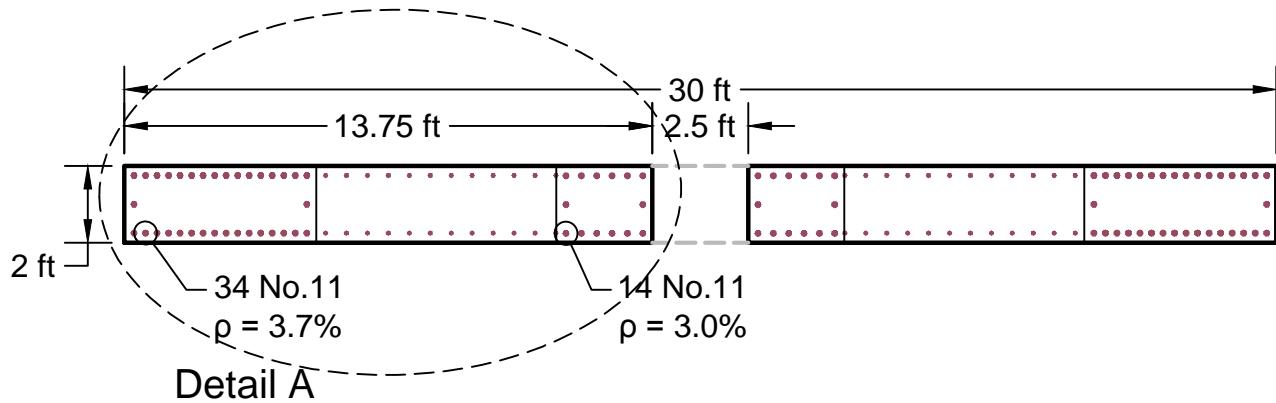
SEC F-F



ELF Method

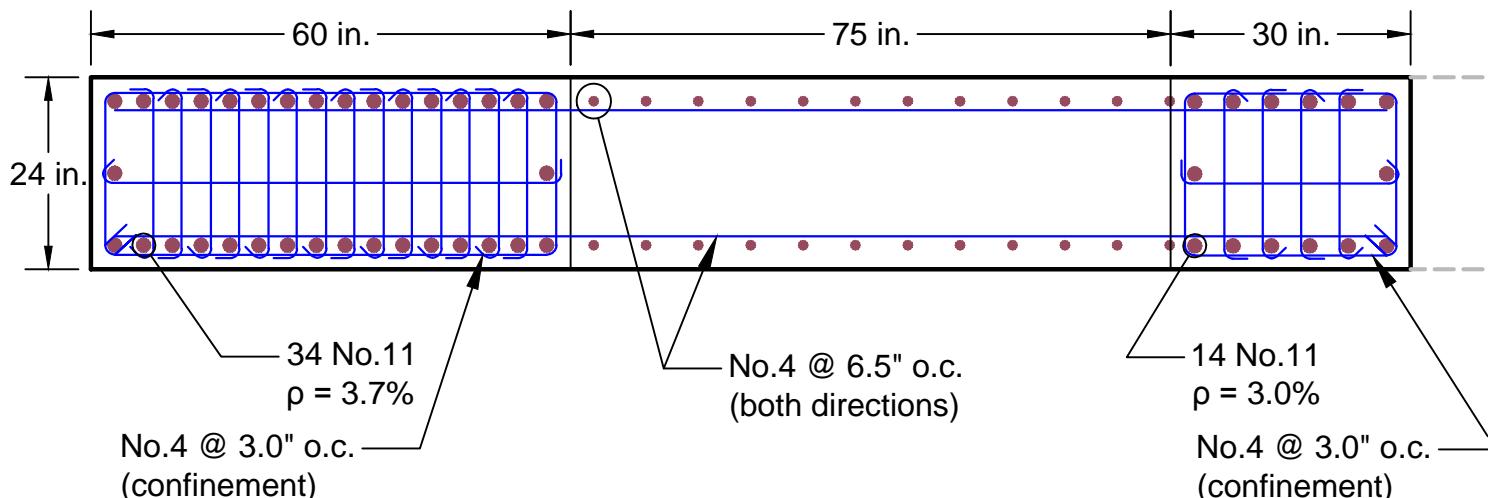


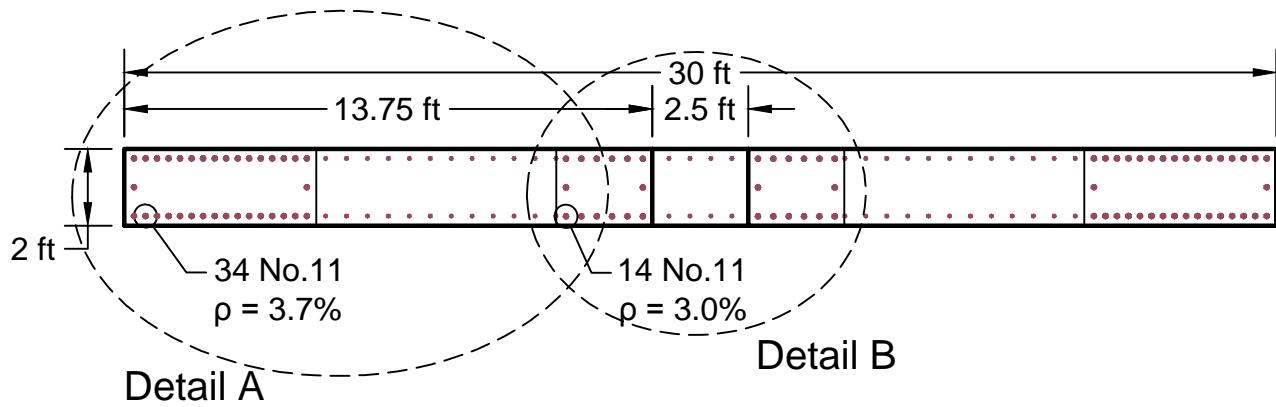
Elevation View (2Story Punched Wall, 75% Stiffness)
ELF Method



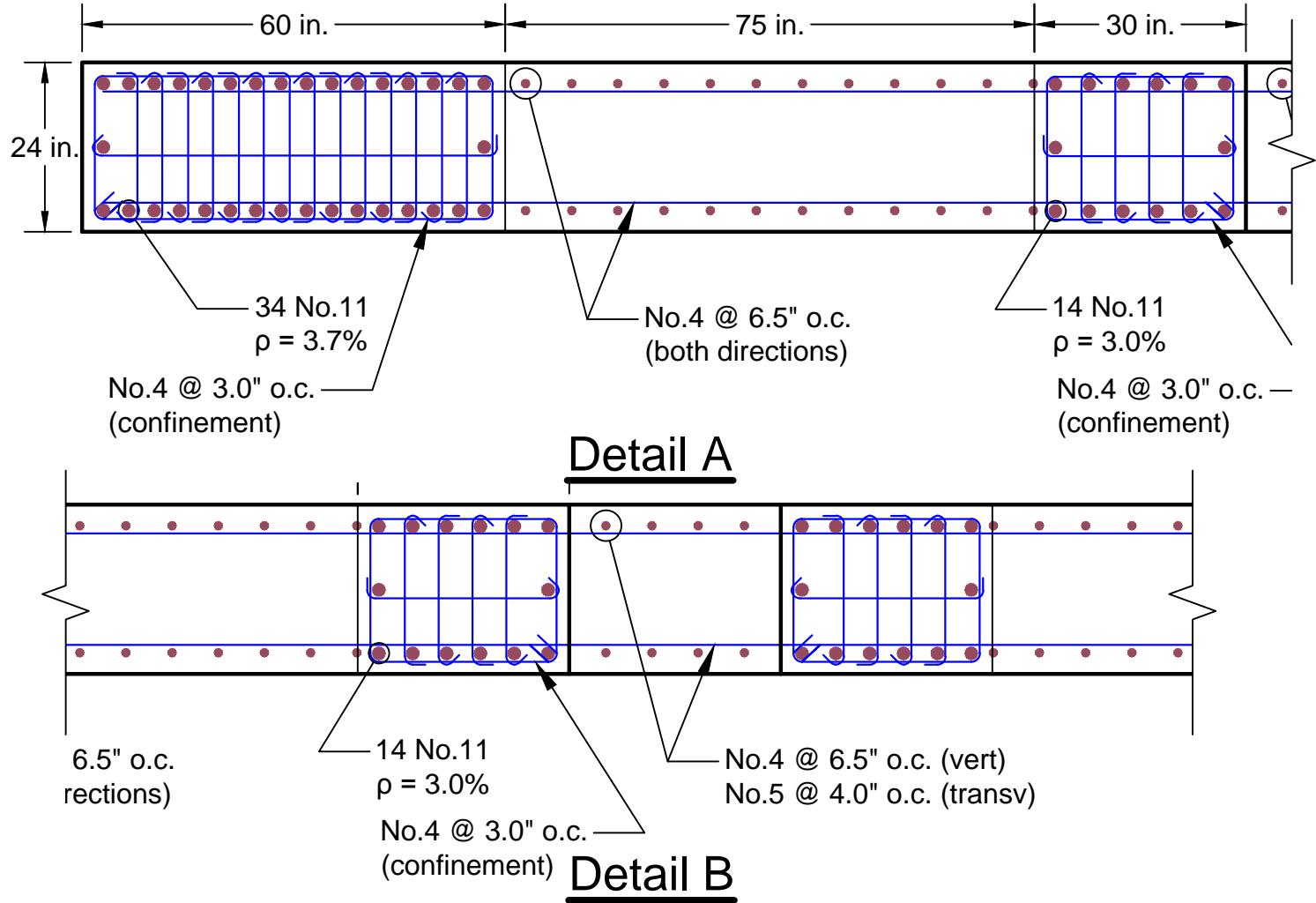
SEC A-A

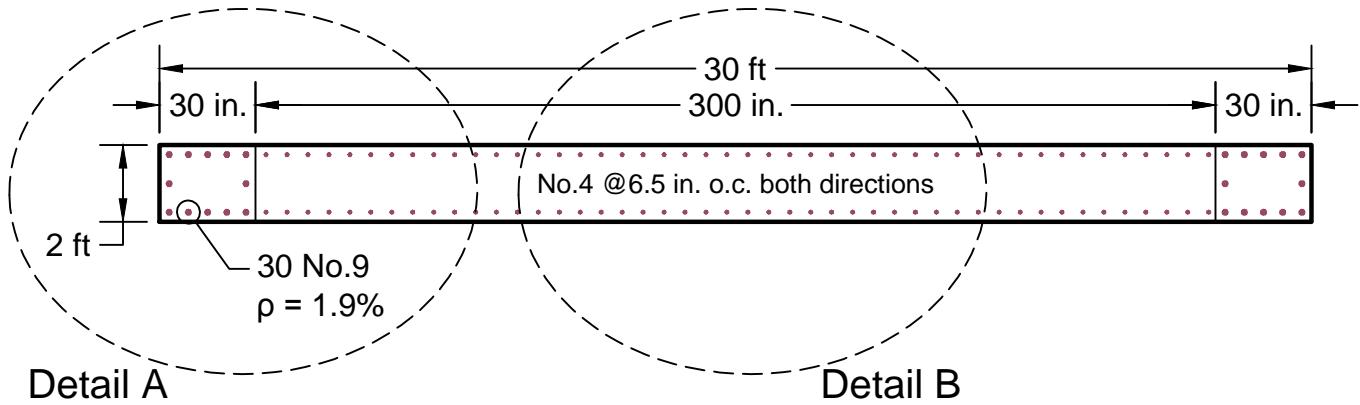
M _{demand}	16227 k-ft
φM _n	17555 k-ft
AL	-2710 k





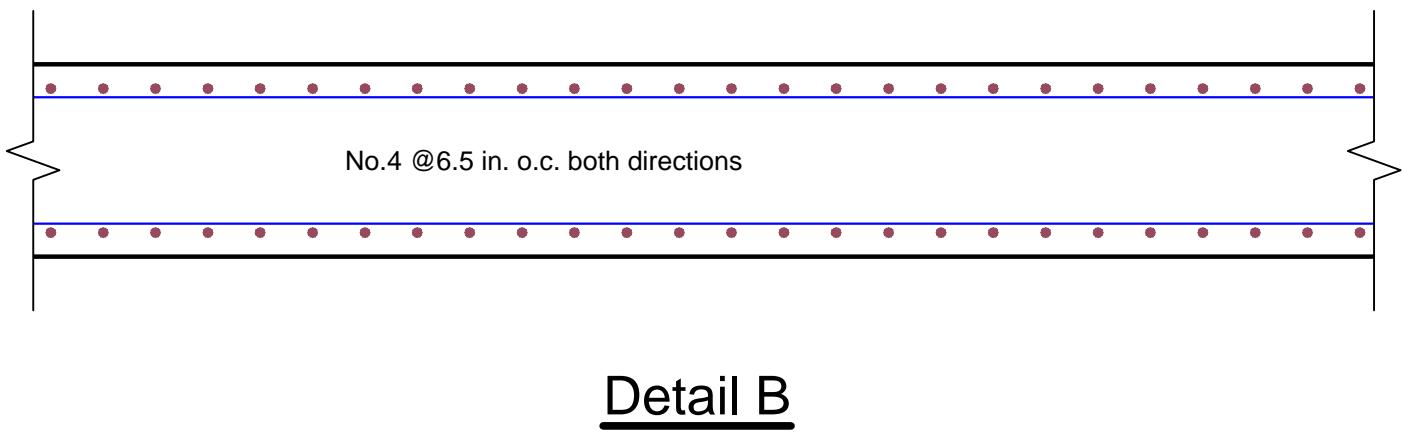
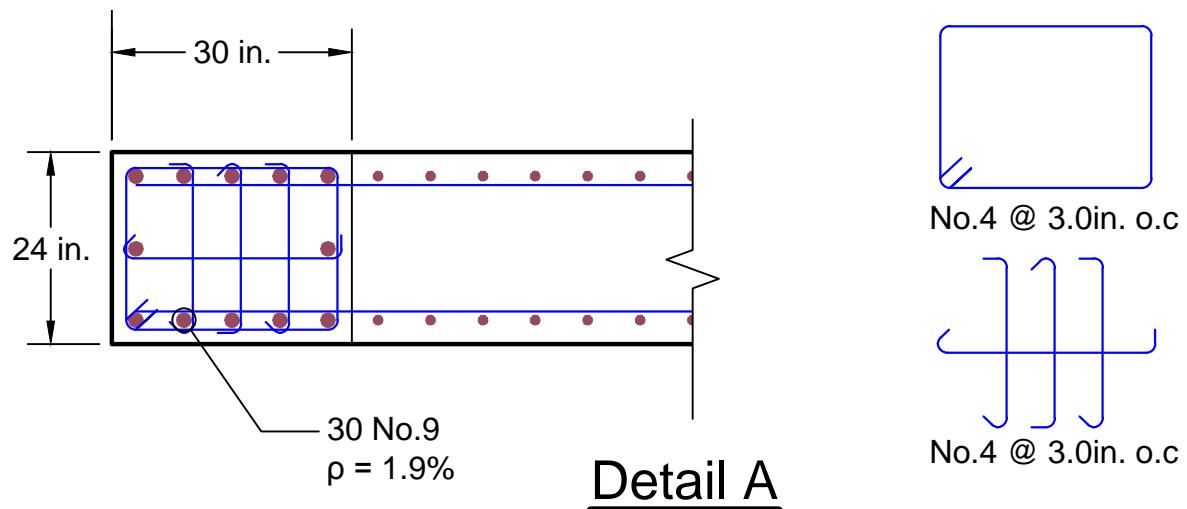
SEC B-B

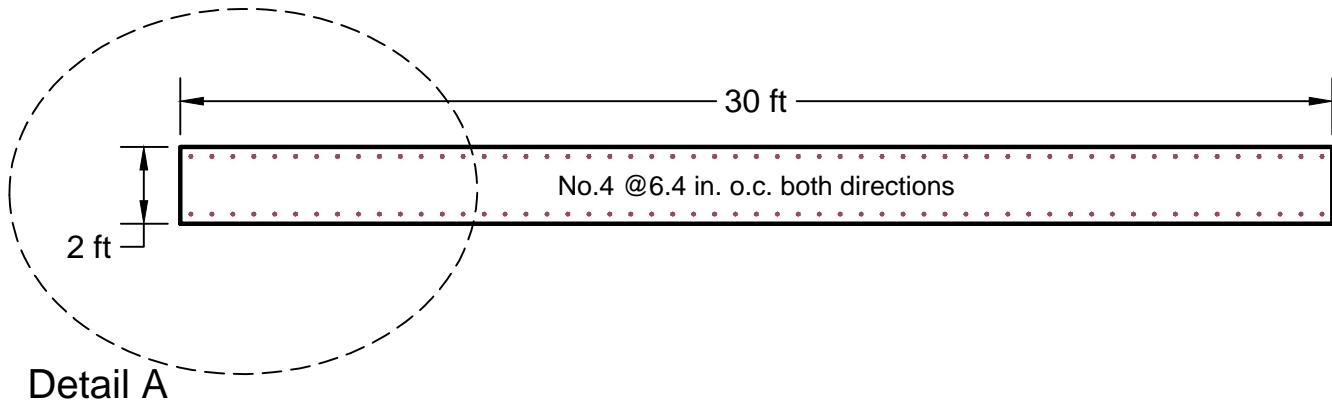




SEC C-C

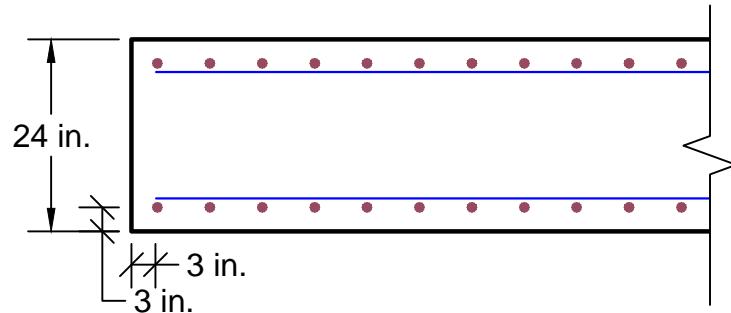
M_{demand}	40333 k-ft
ϕM_n	45970 k-ft
AL	876 k



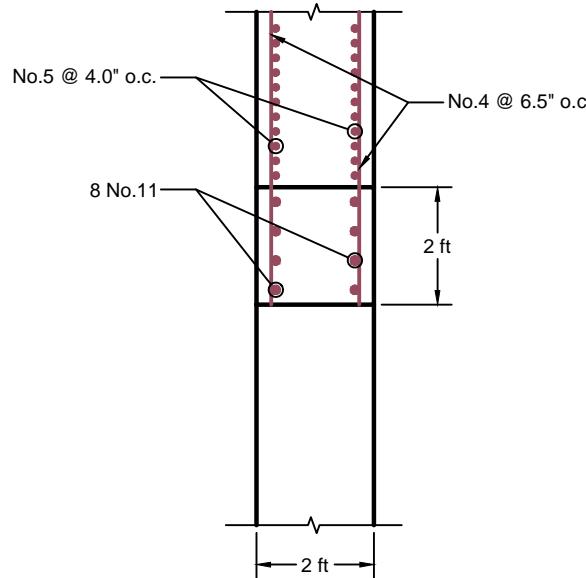


SEC C-C

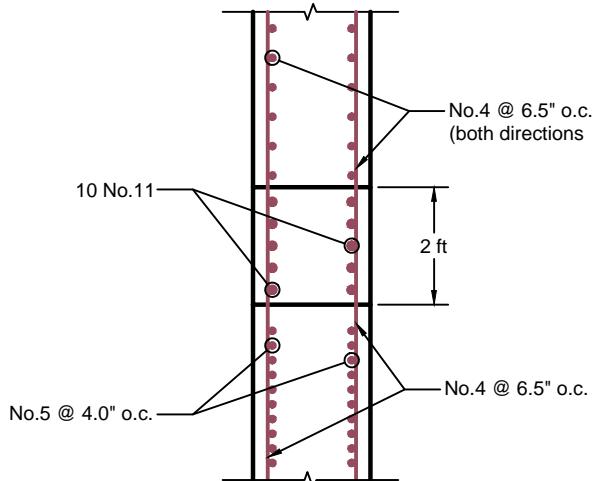
M_{demand}	17705 k-ft
ϕM_n	23545 k-ft
AL	500 k



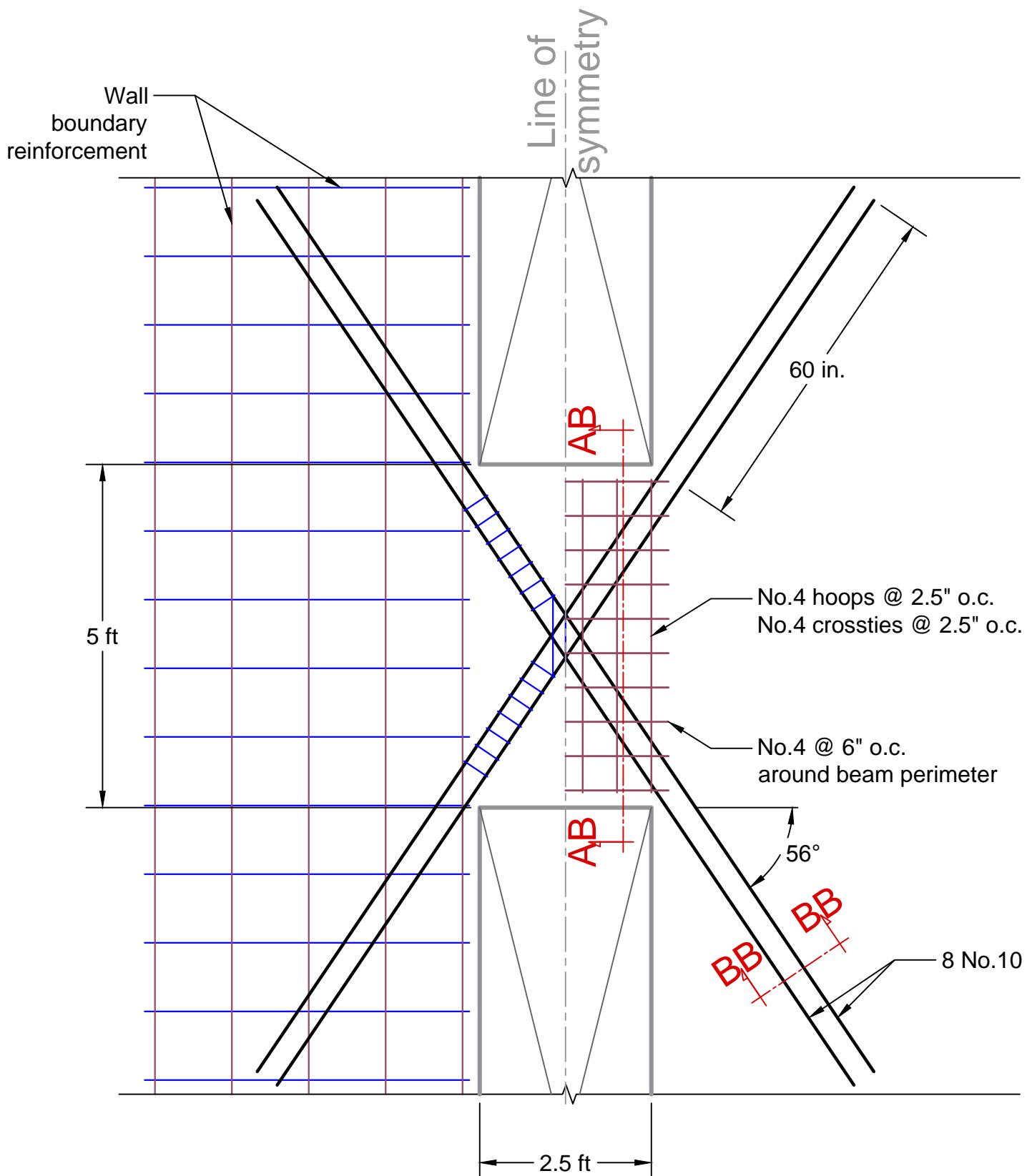
Detail A



SEC E-E

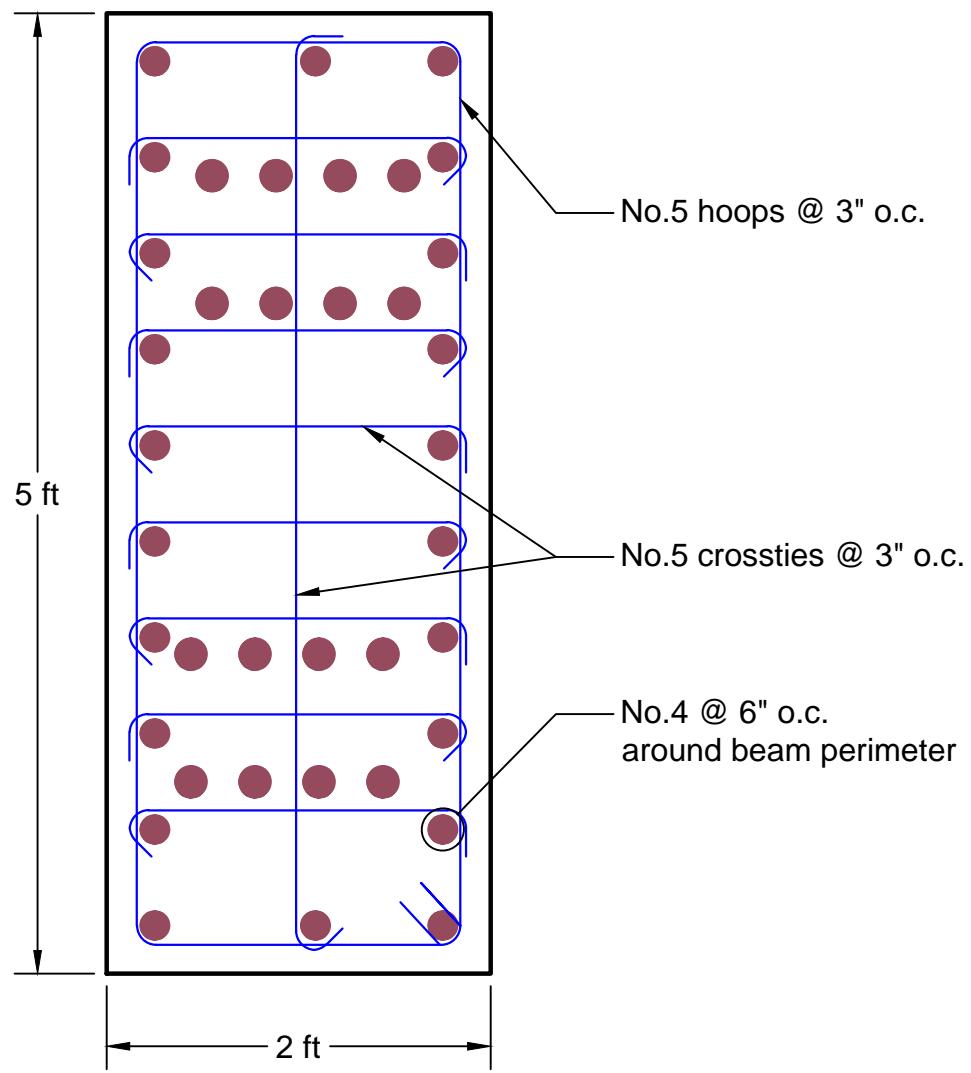


SEC F-F

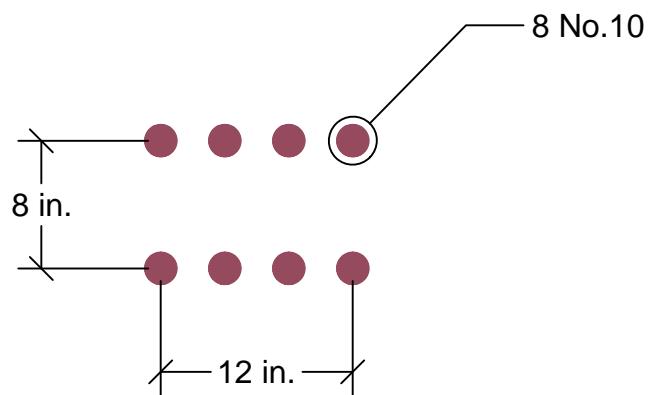


Details of the Coupling Beam

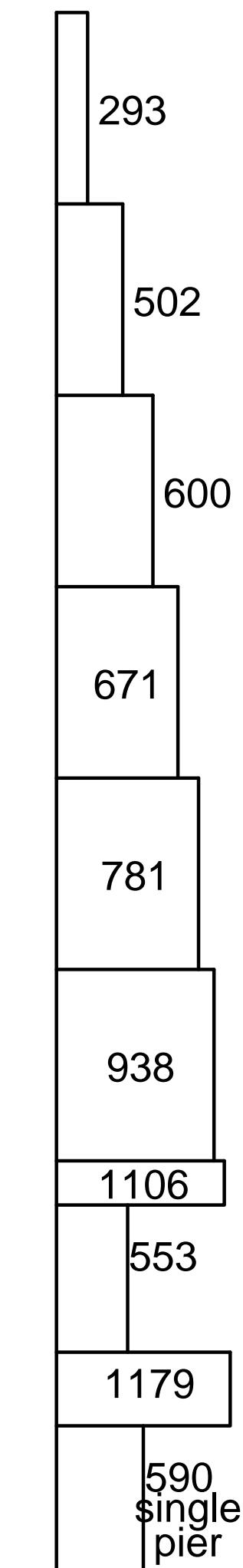
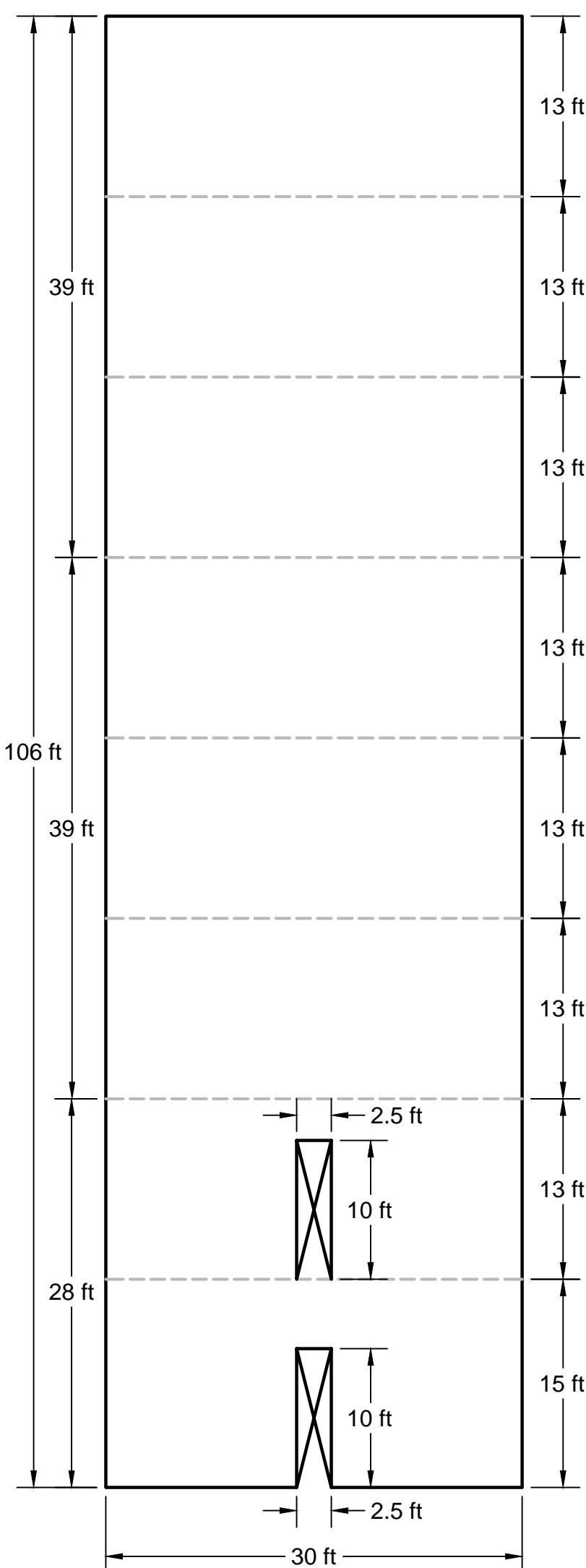
For clarity, only part of the total required reinforcement is shown on each side of the line of symmetry



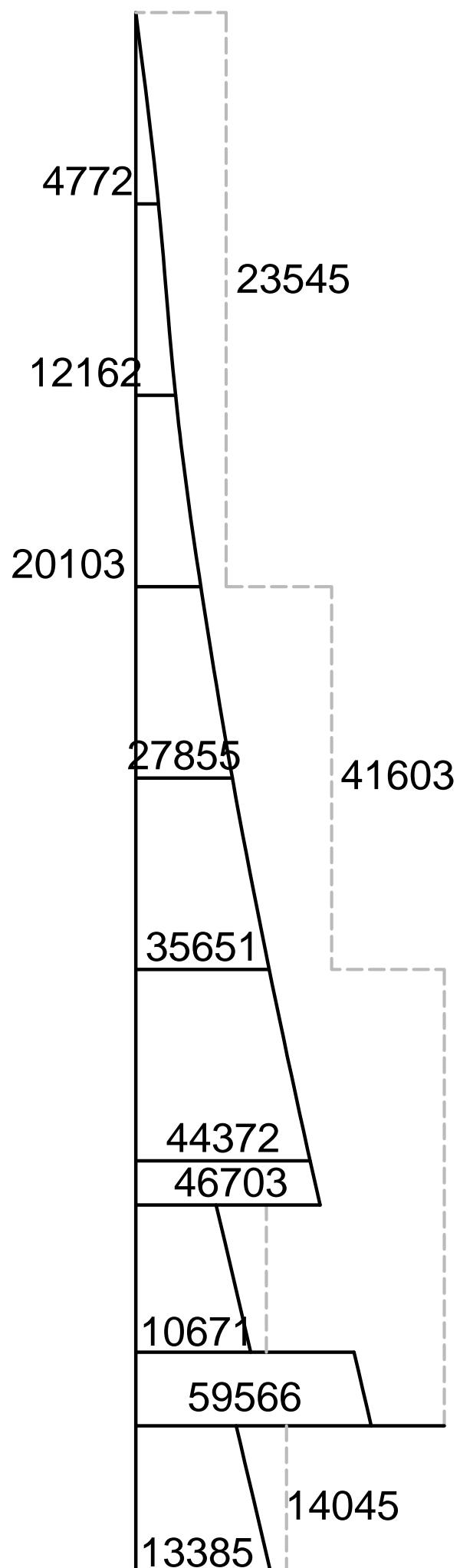
SEC AB-AB



SEC BB-BB



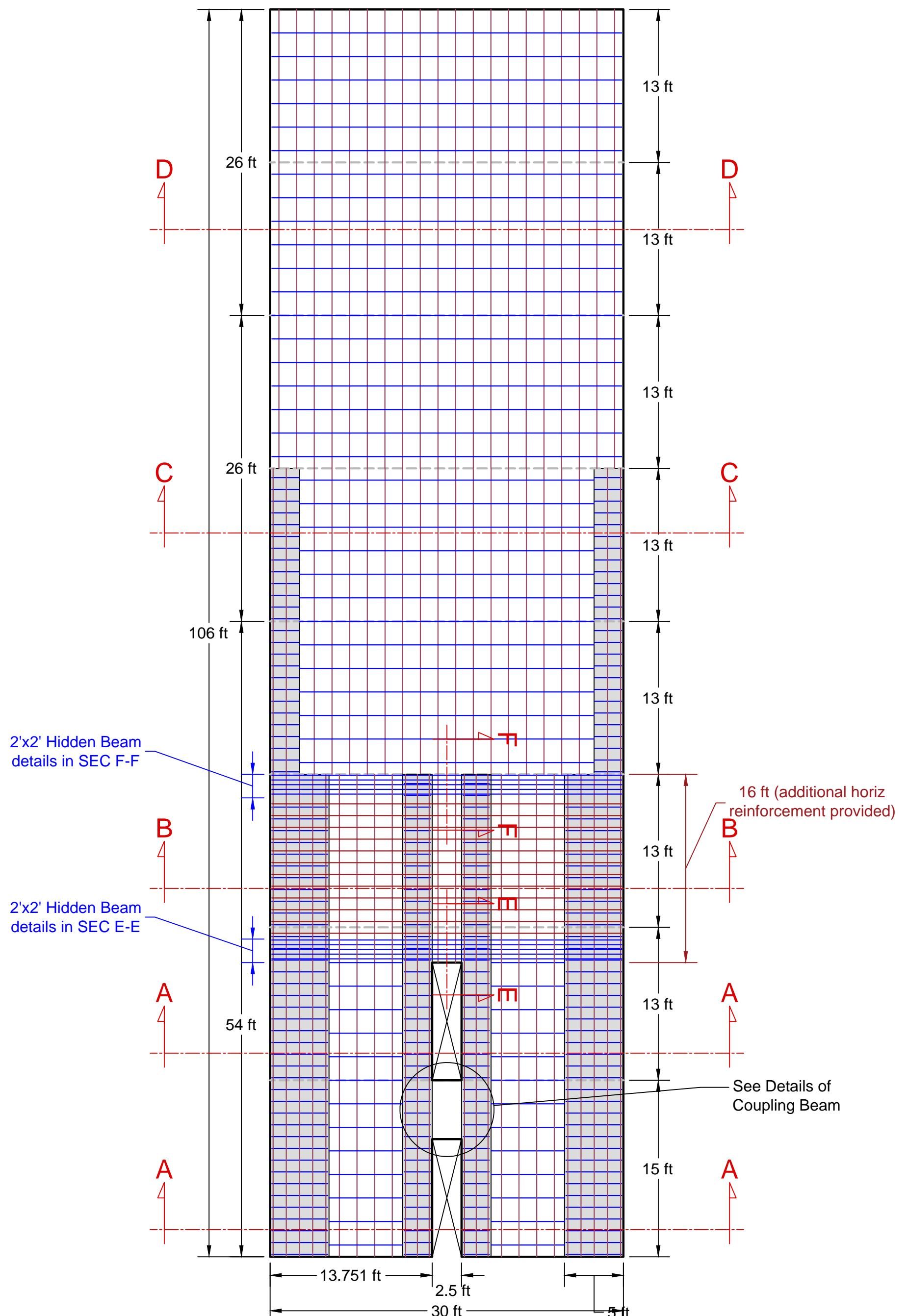
Shear Demands on Each Floor (kip)



Moment Demands & Capacities on Each Floor (k-ft)

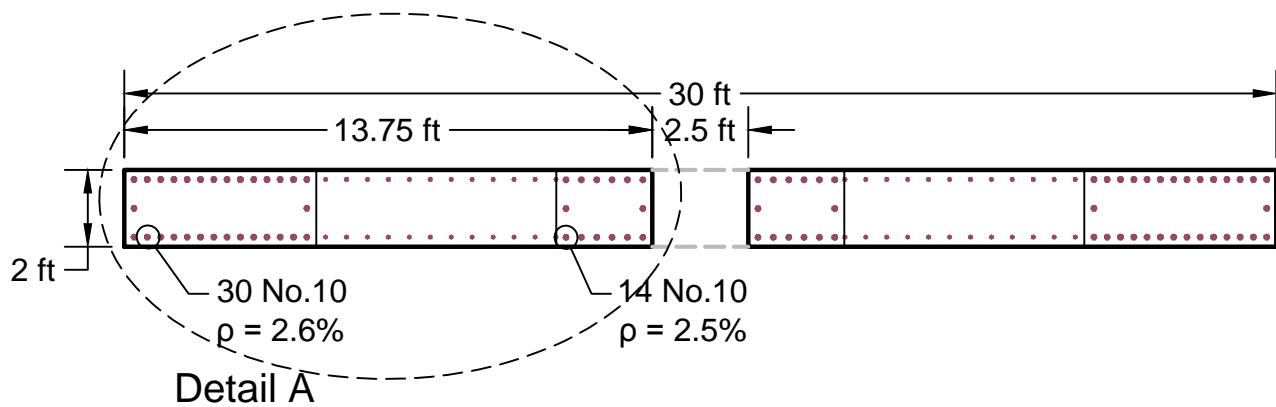
— demand
- - - capacity

MRSA Method



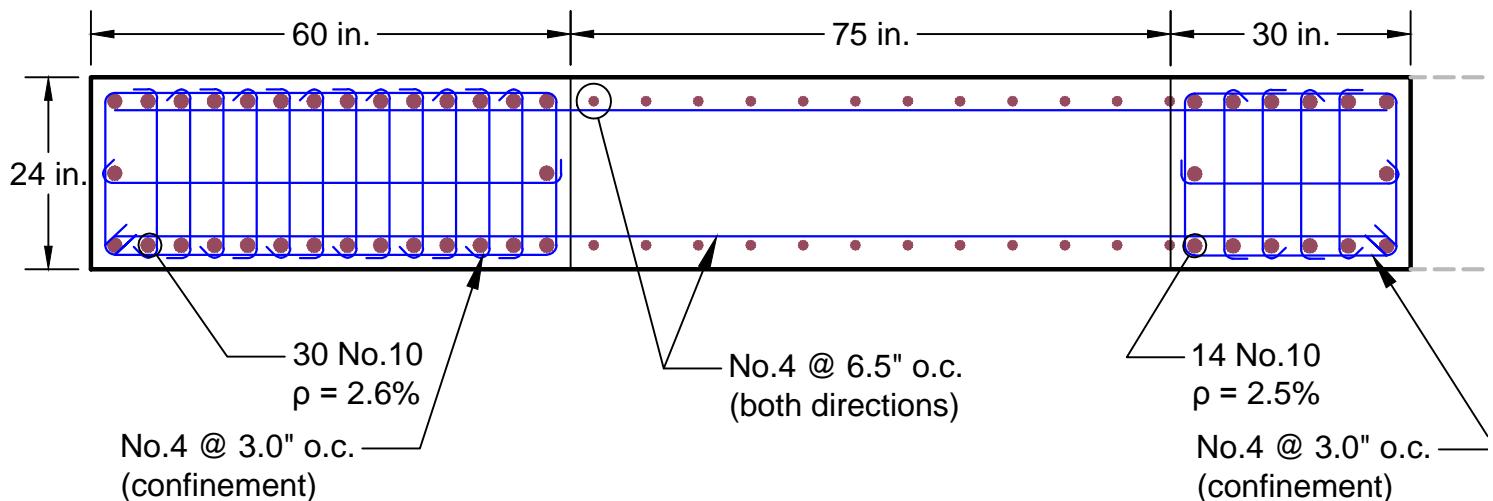
Elevation View (2Story Punched Wall, 75% Stiffness)

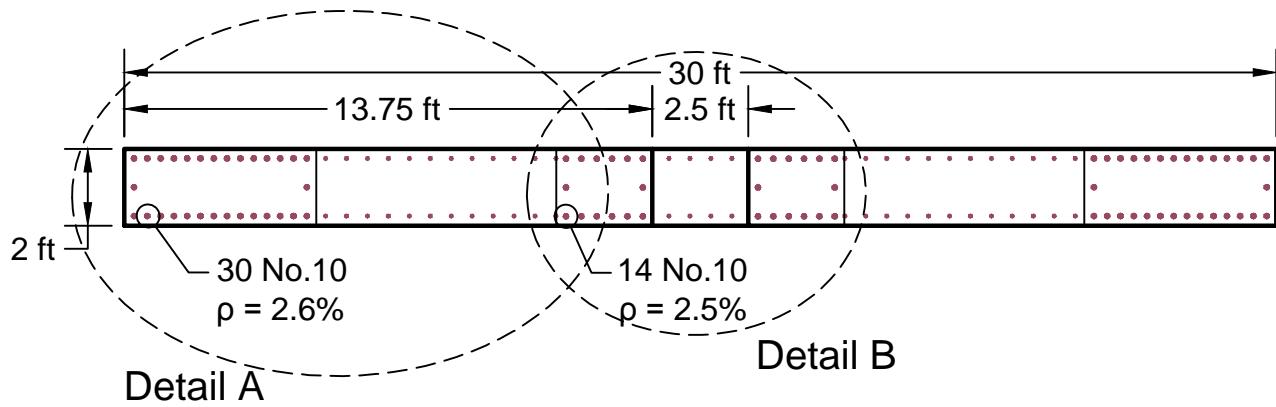
MRSA Method



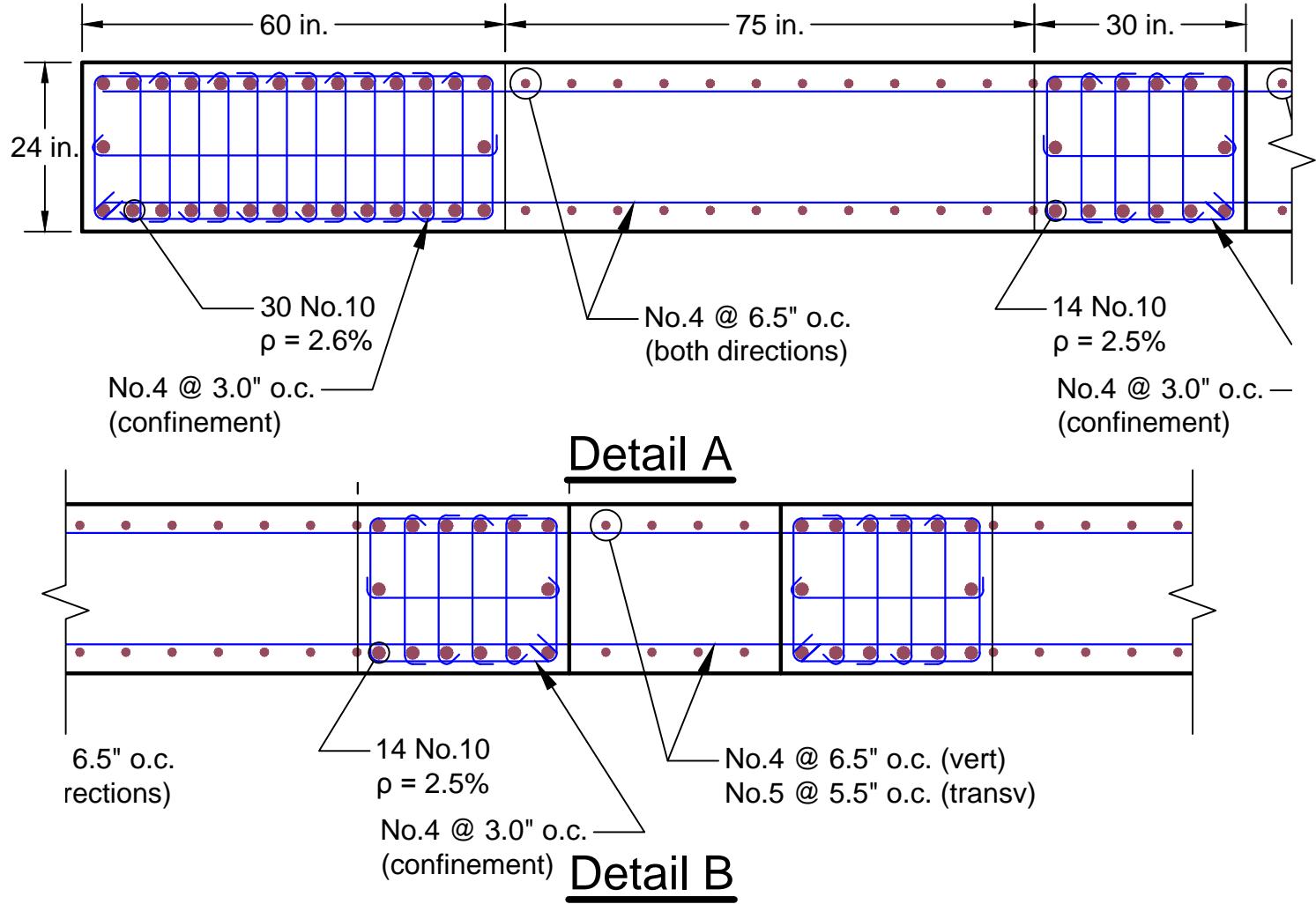
SEC A-A

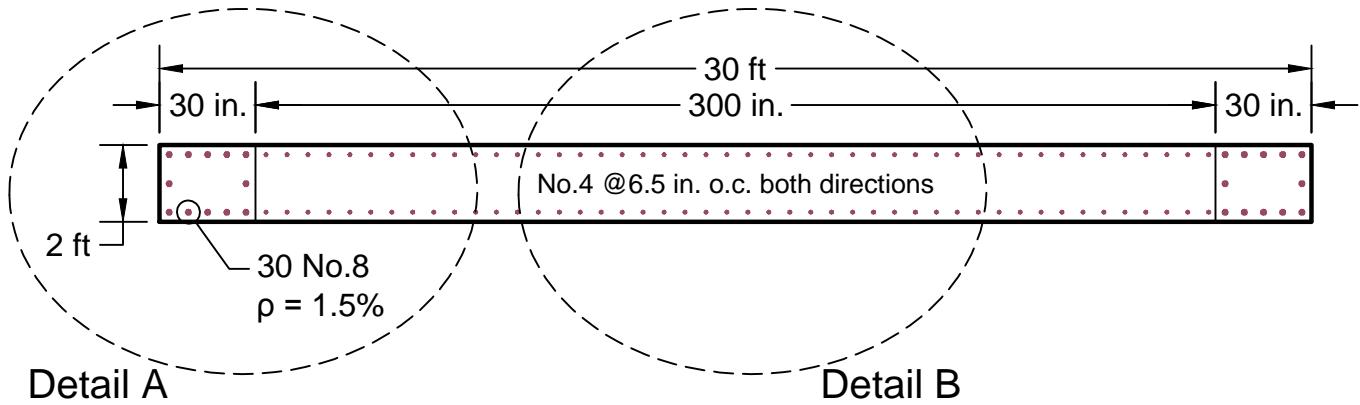
M _{demand}	13385 k-ft
φM _n	14045 k-ft
AL	-2720 k





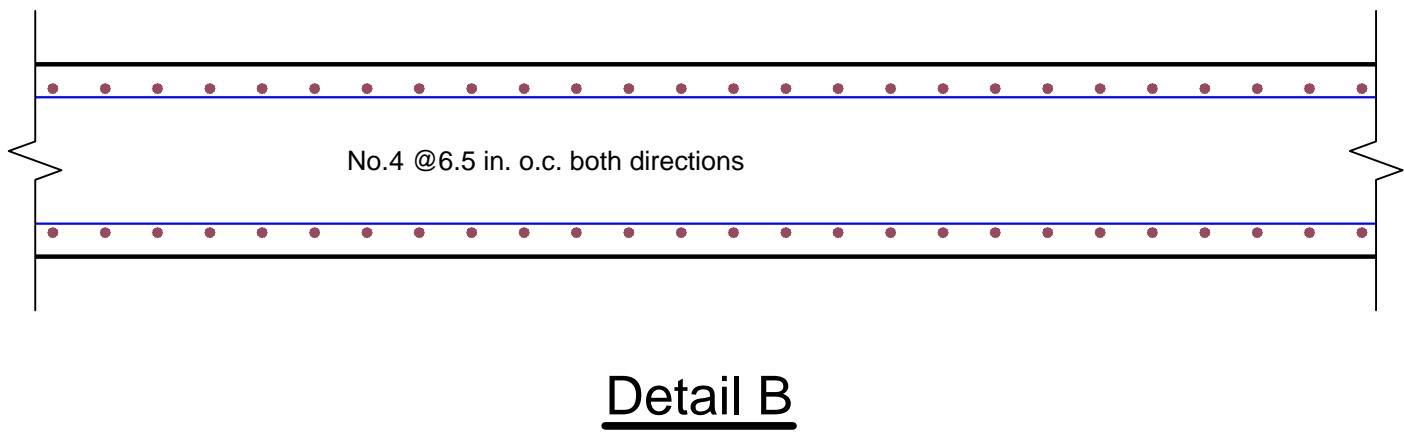
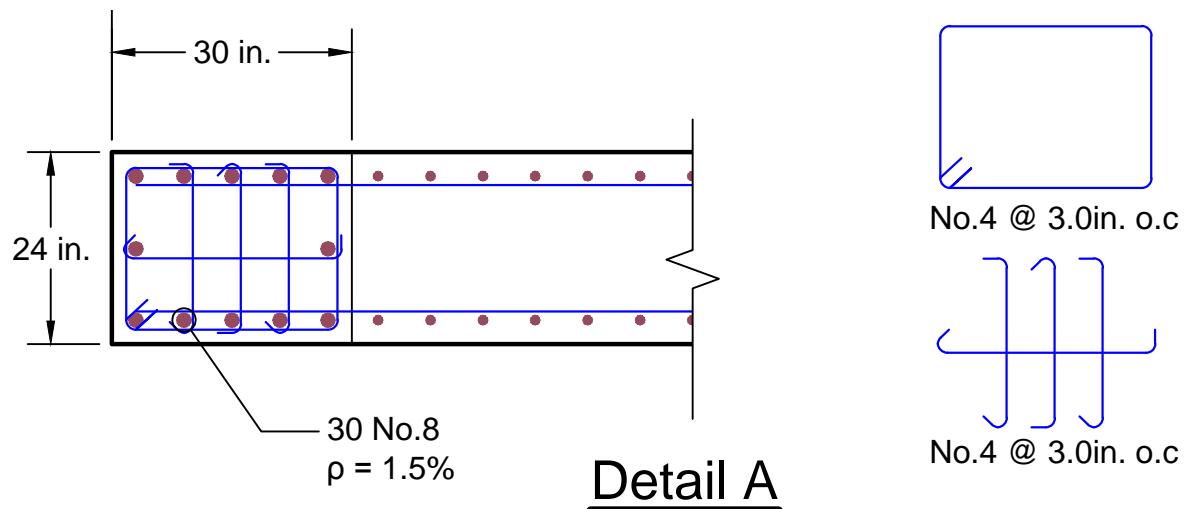
SEC B-B

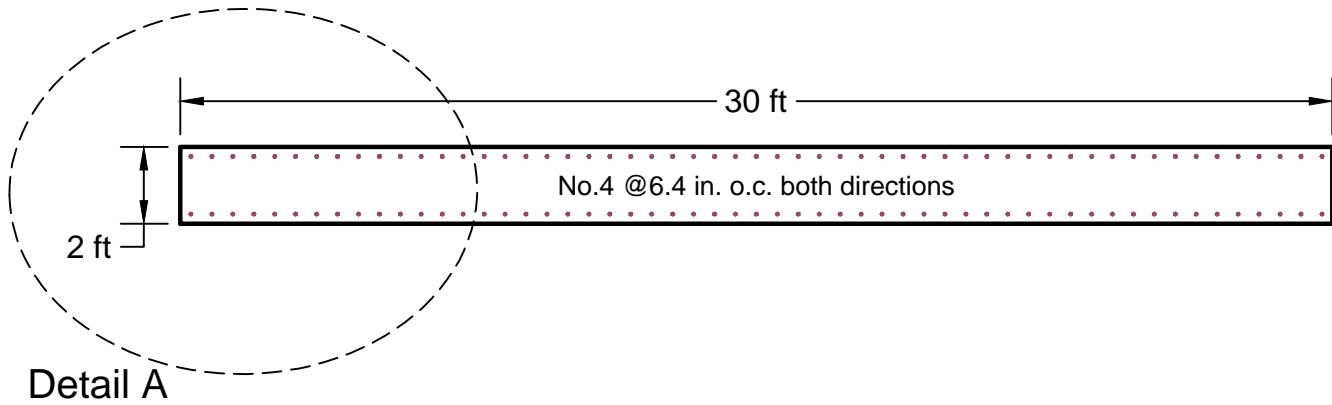




SEC C-C

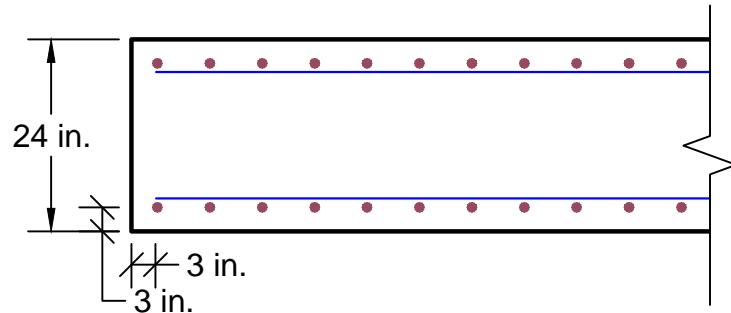
M_{demand}	35651 k-ft
ϕM_n	41603 k-ft
AL	876 k



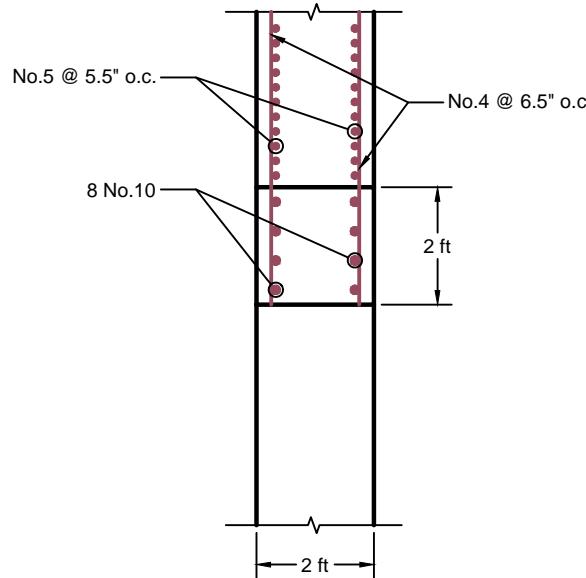


SEC C-C

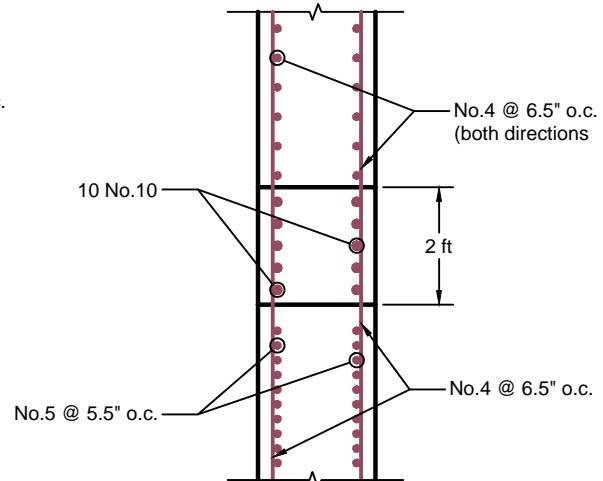
M_{demand}	20103 k-ft
ϕM_n	23545 k-ft
AL	500 k



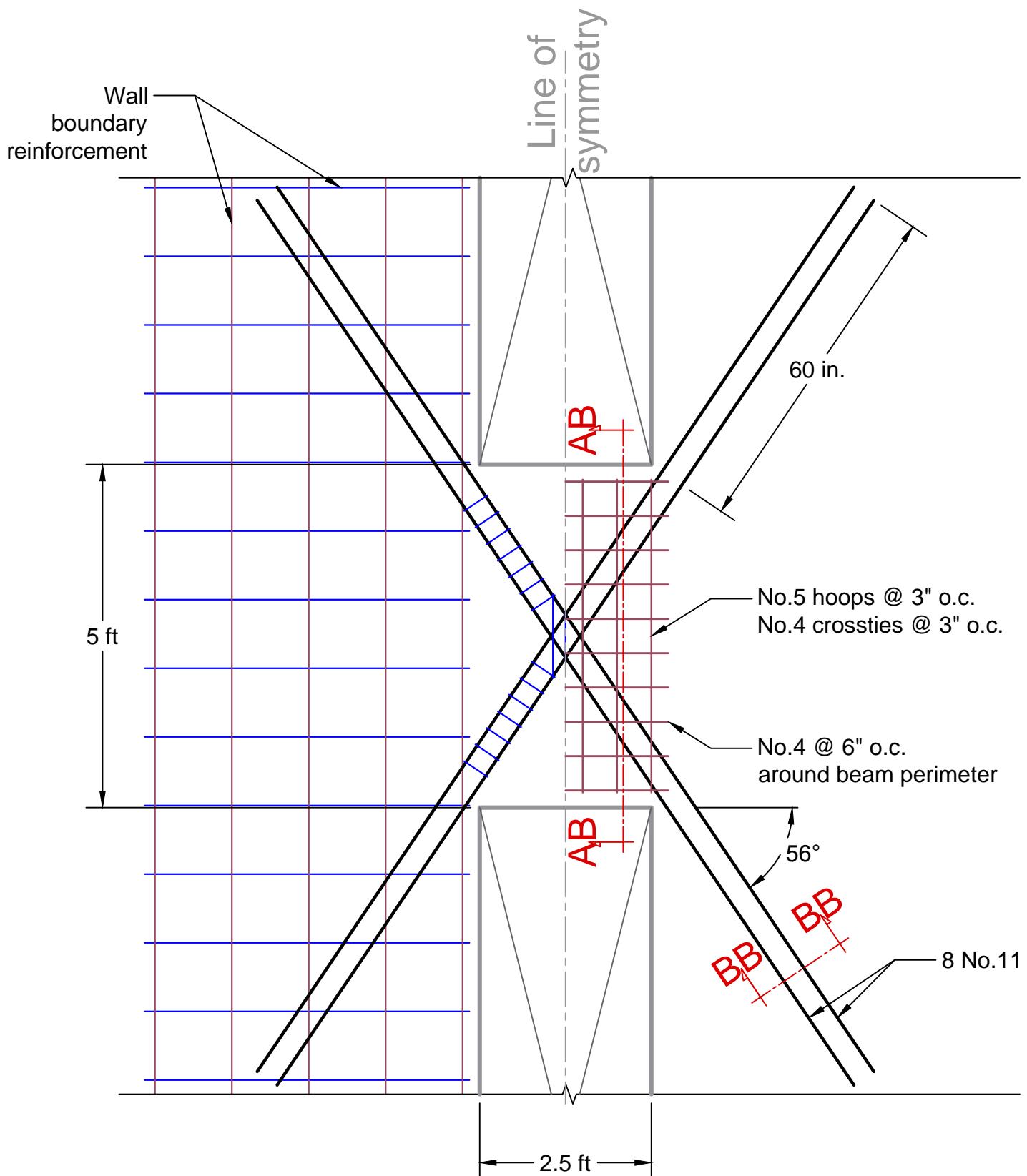
Detail A



SEC E-E

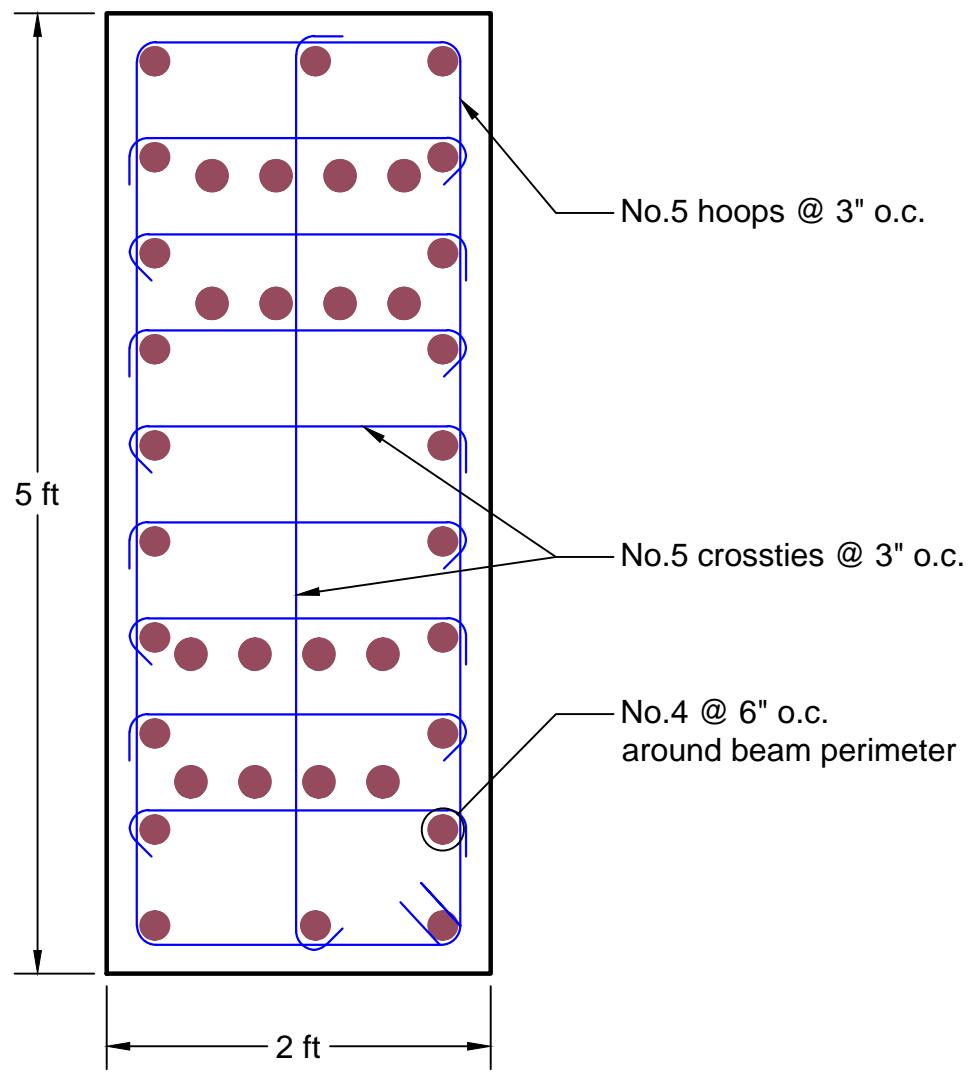


SEC F-F

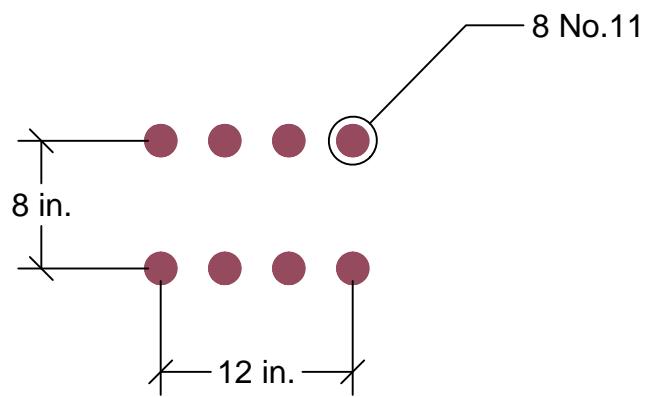


Details of the Coupling Beam

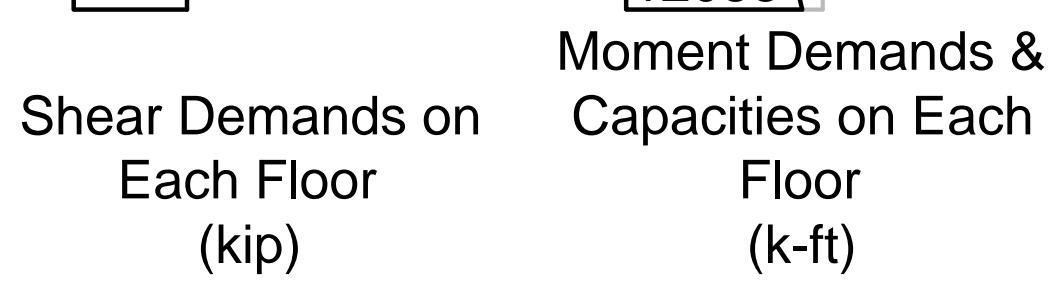
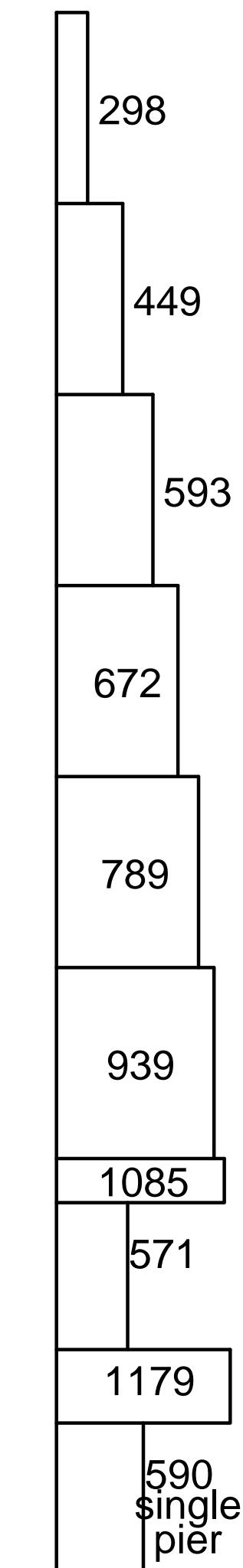
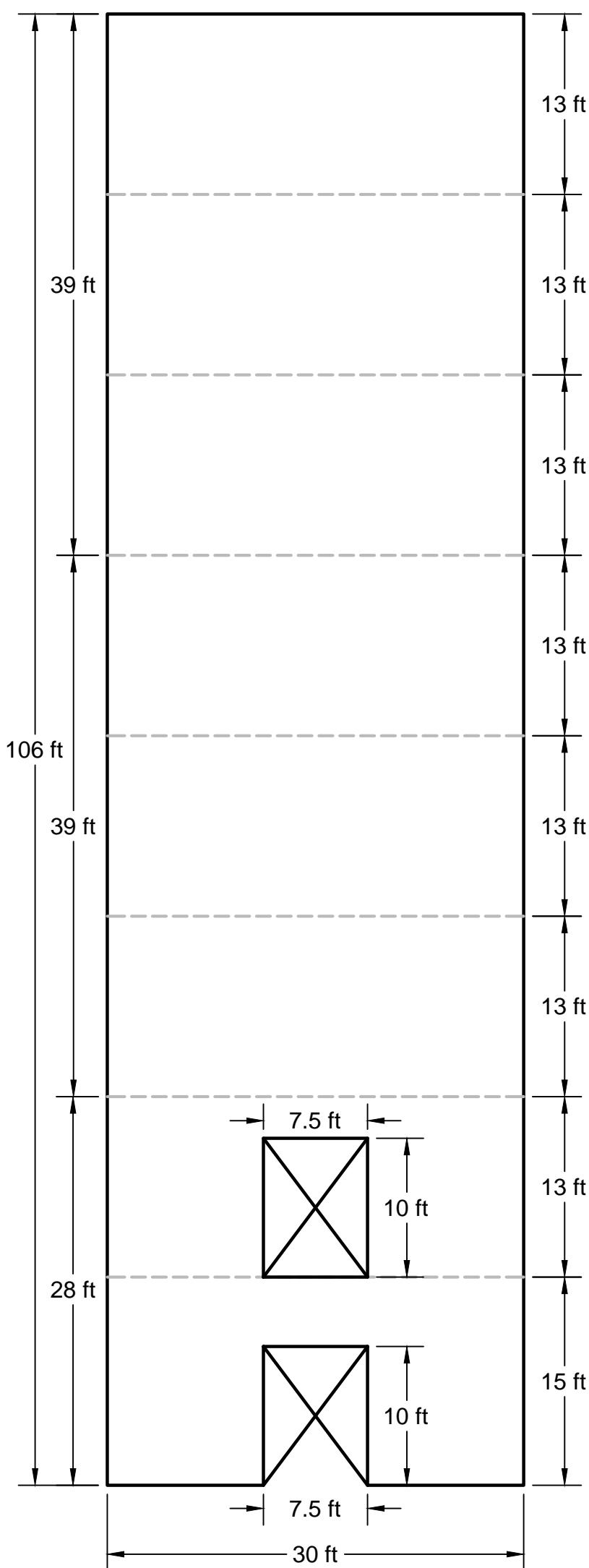
For clarity, only part of the total required reinforcement is shown on each side of the line of symmetry



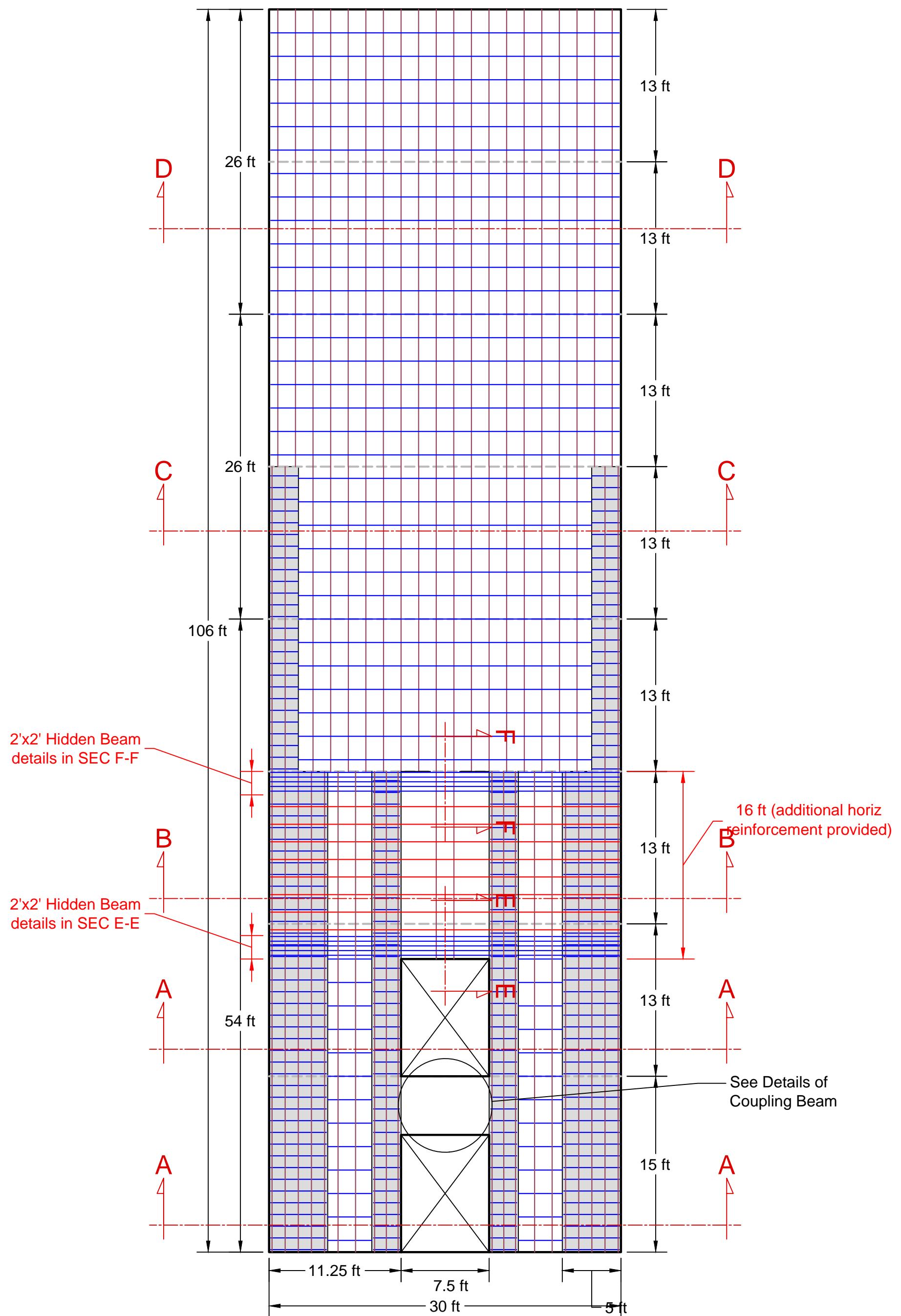
SEC AB-AB



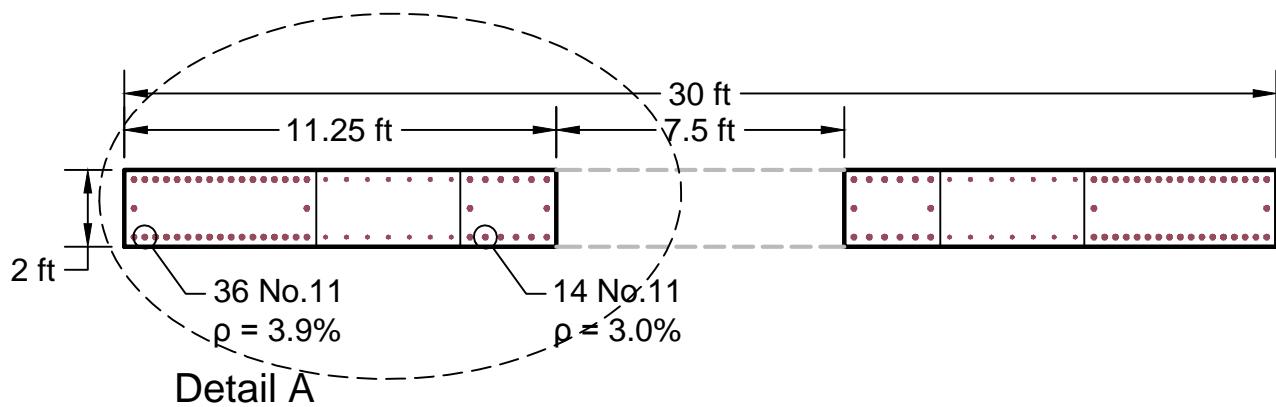
SEC BB-BB



ELF Method

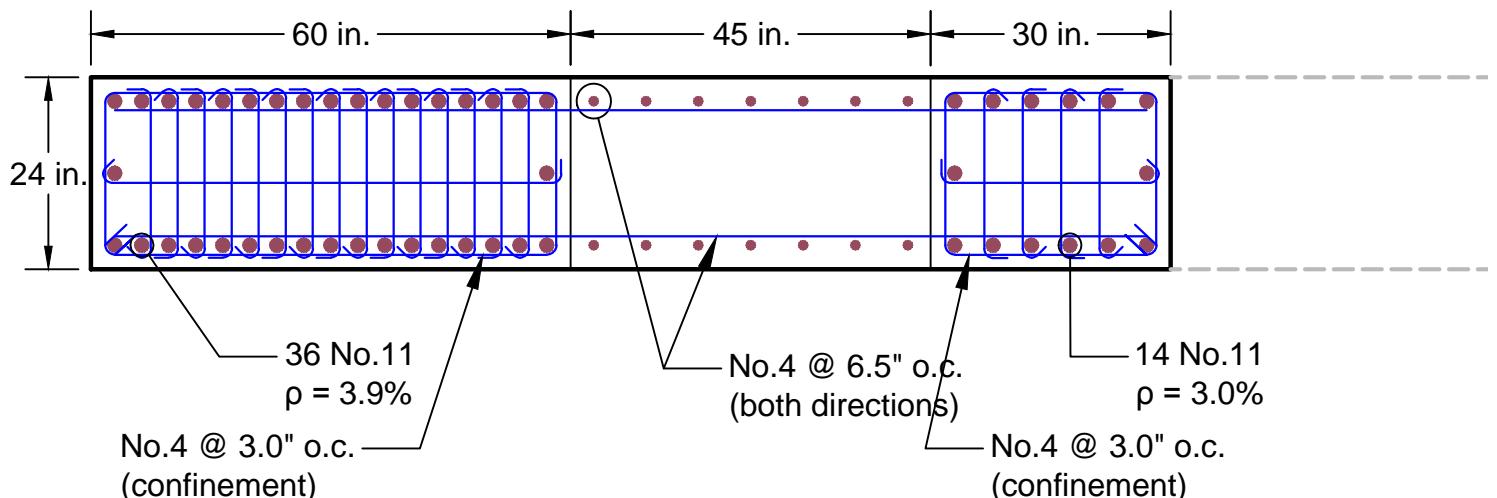


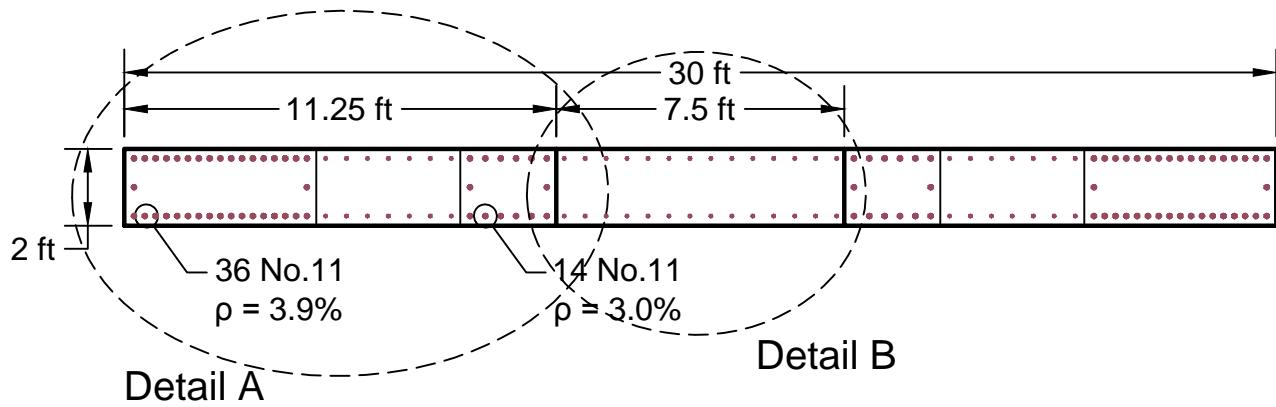
**Elevation View (2Story Punched Wall, 50% Stiffness)
ELF Method**



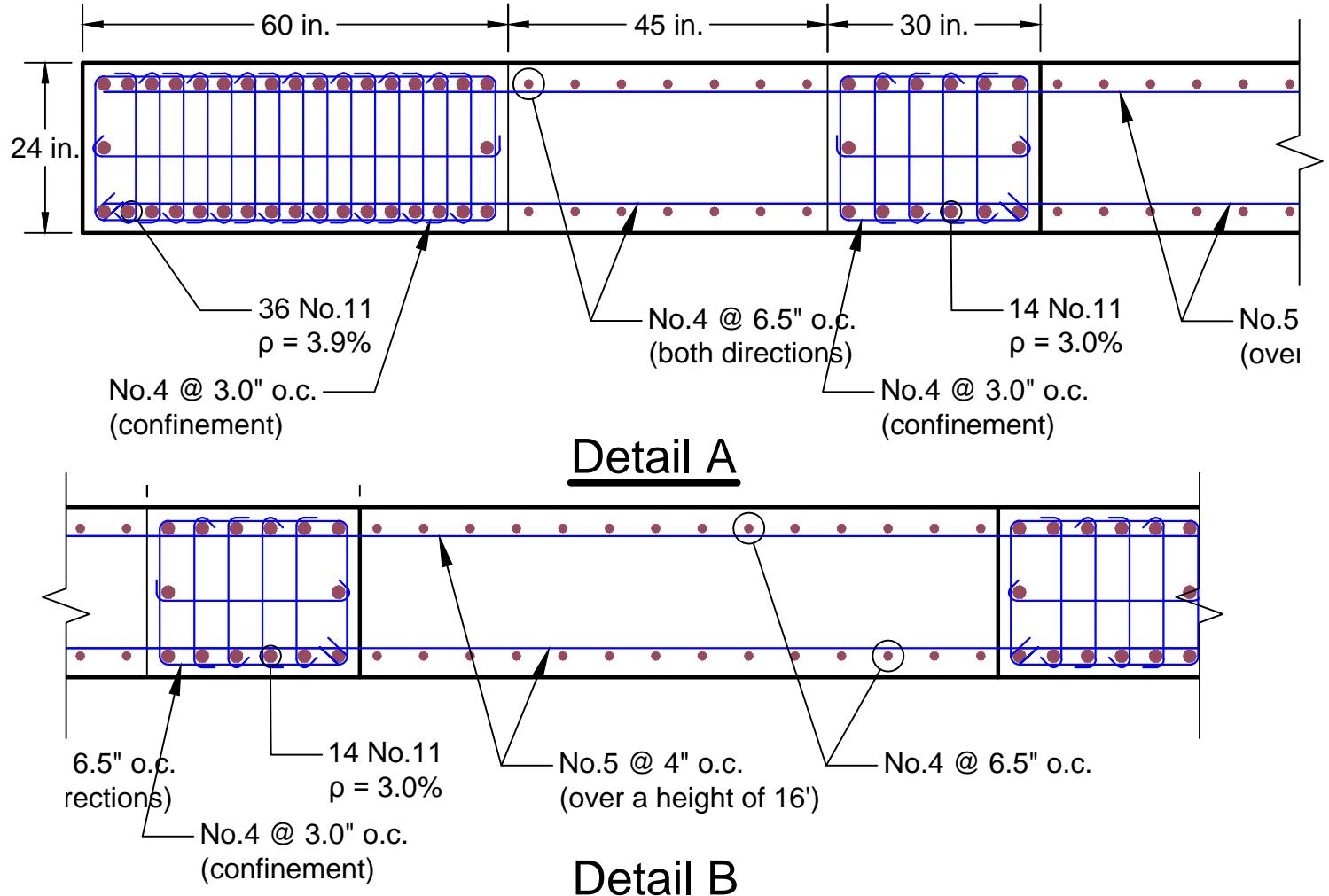
SEC A-A

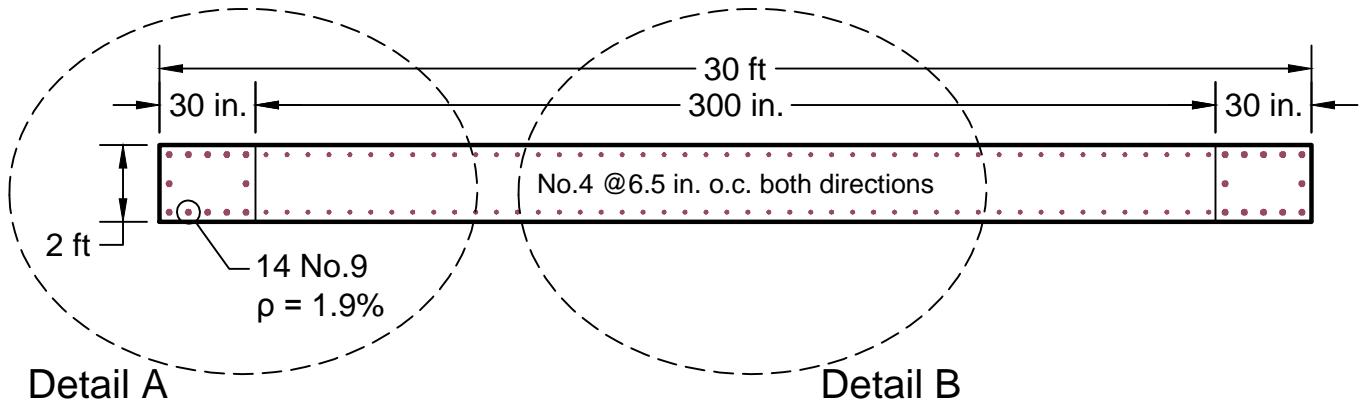
M _{demand}	12038 k-ft
φM _n	13393 k-ft
AL	-2862 k





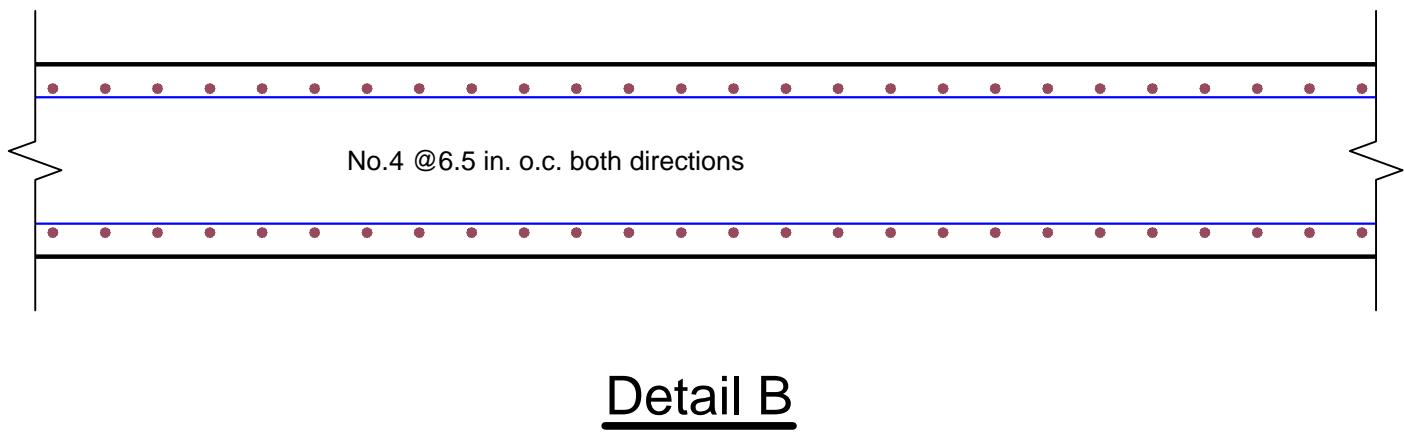
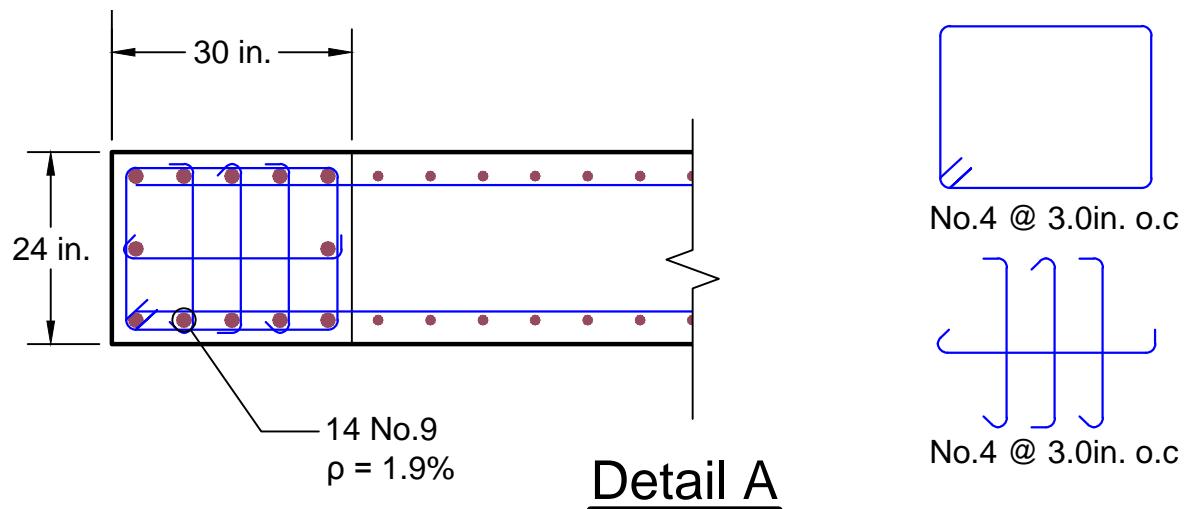
SEC B-B

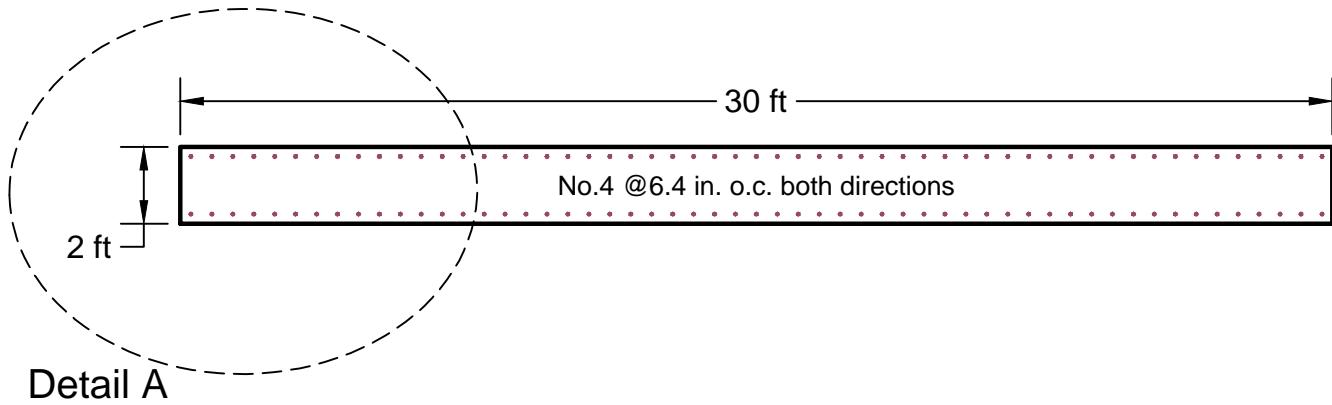




SEC C-C

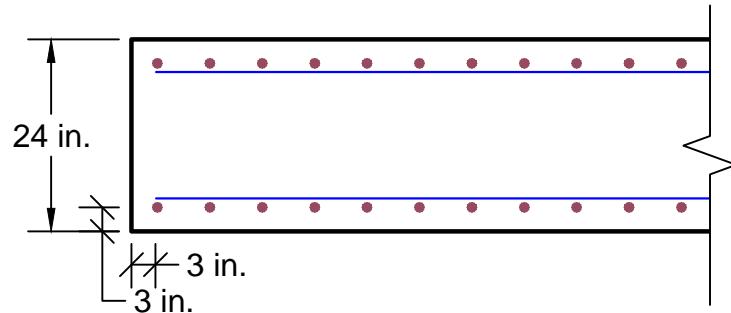
M_{demand}	40333 k-ft
ϕM_n	45980 k-ft
AL	876 k



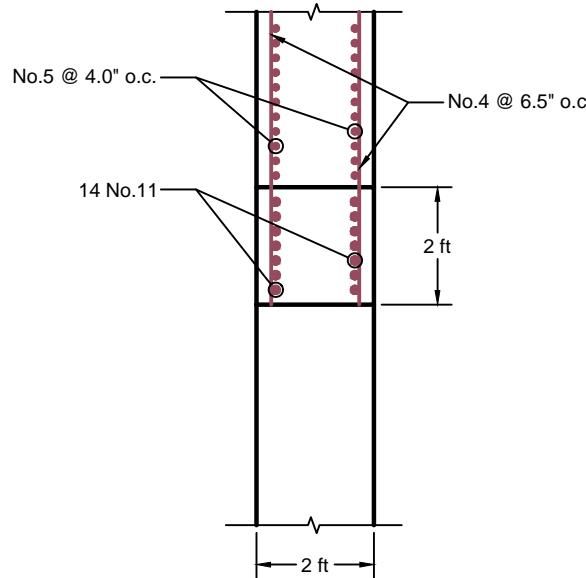


SEC C-C

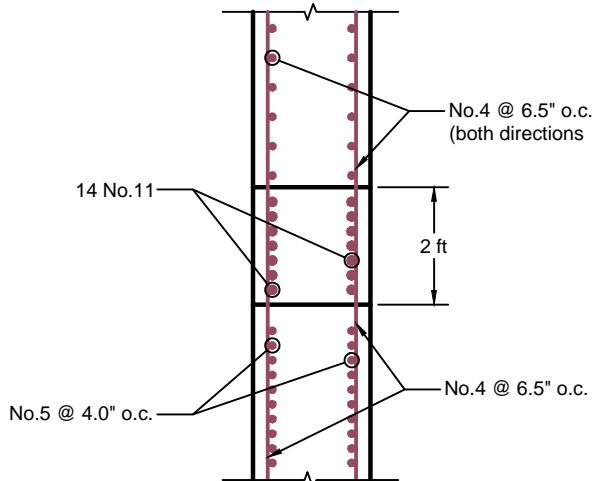
M_{demand}	17705 k-ft
ϕM_n	23545 k-ft
AL	500 k



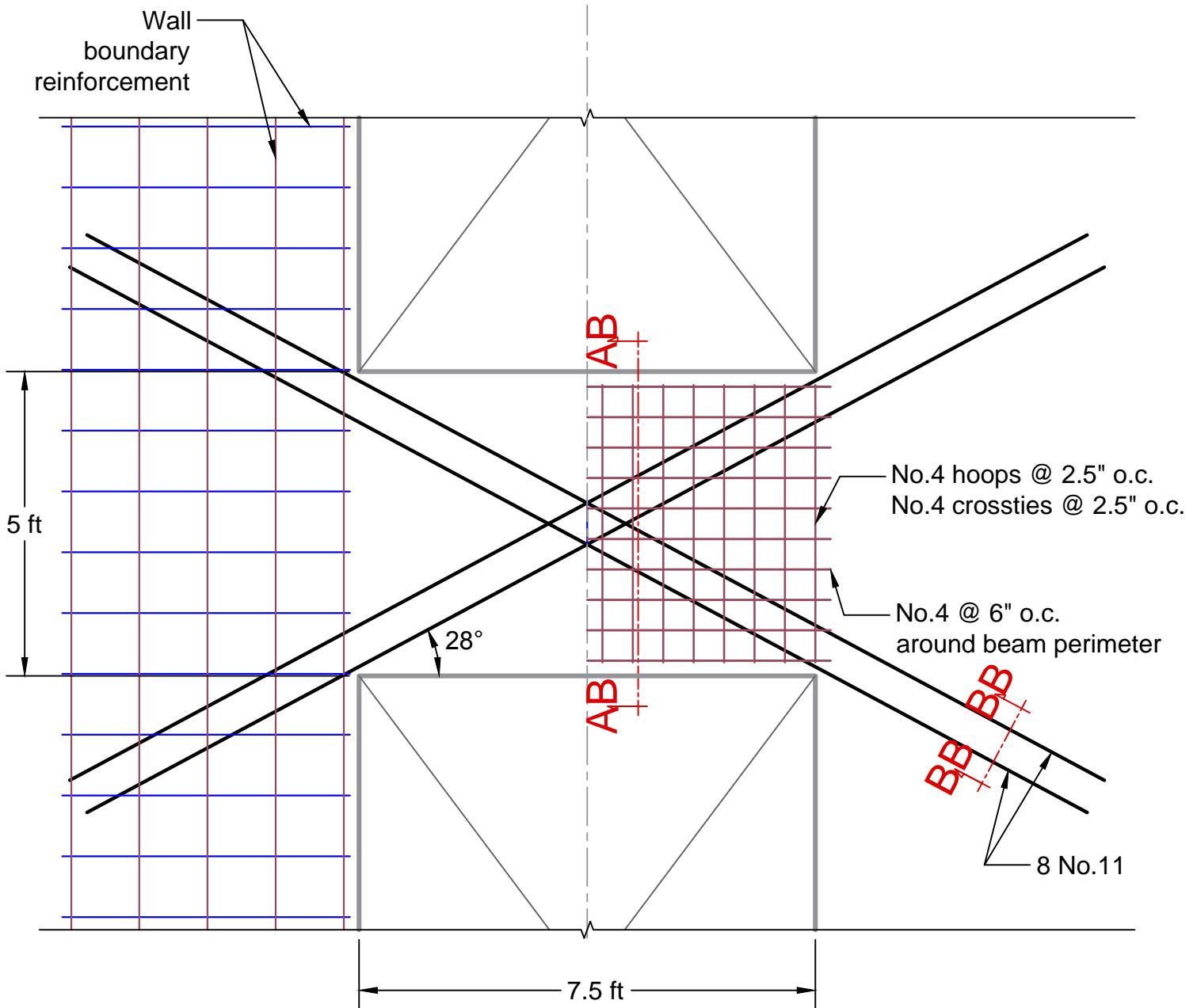
Detail A



SEC E-E

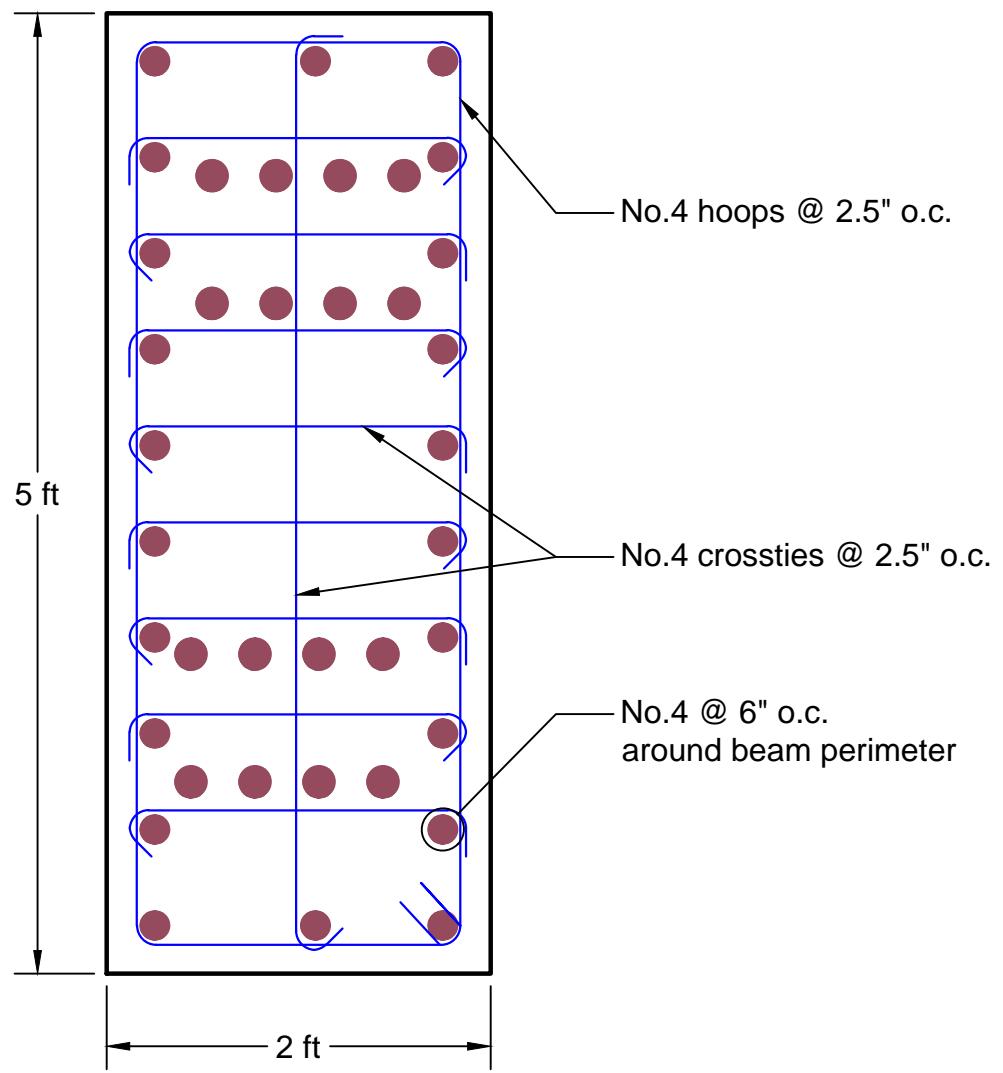


SEC F-F

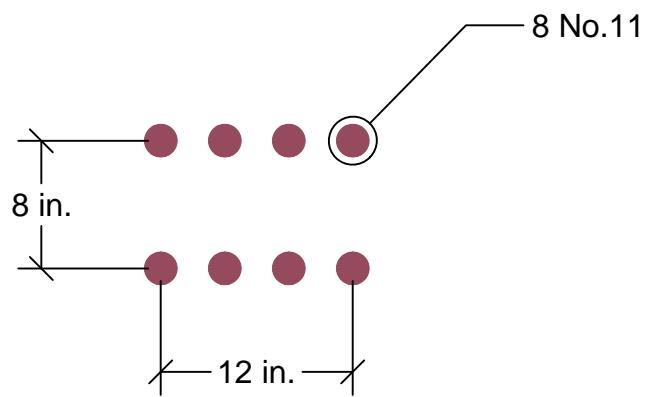


Details of the Coupling Beam

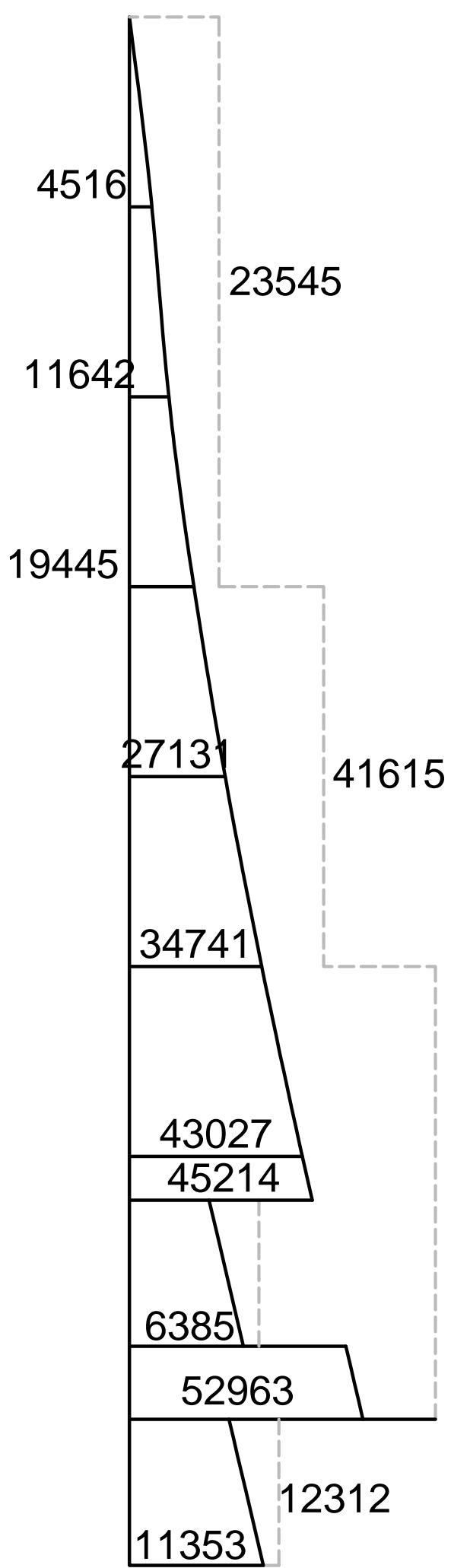
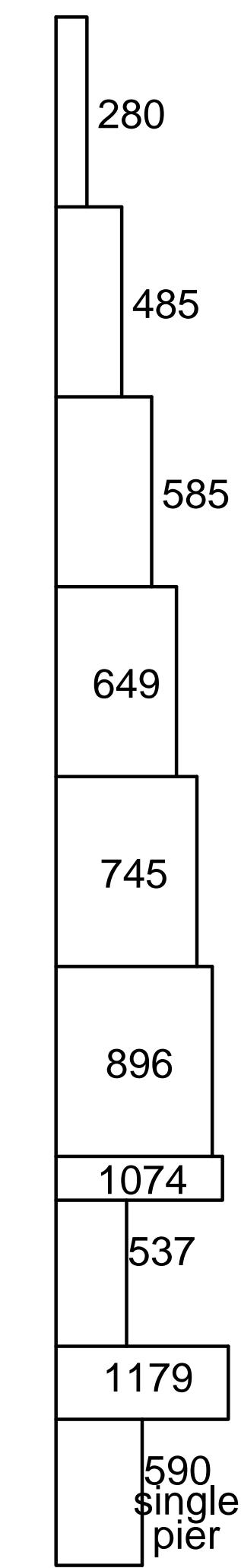
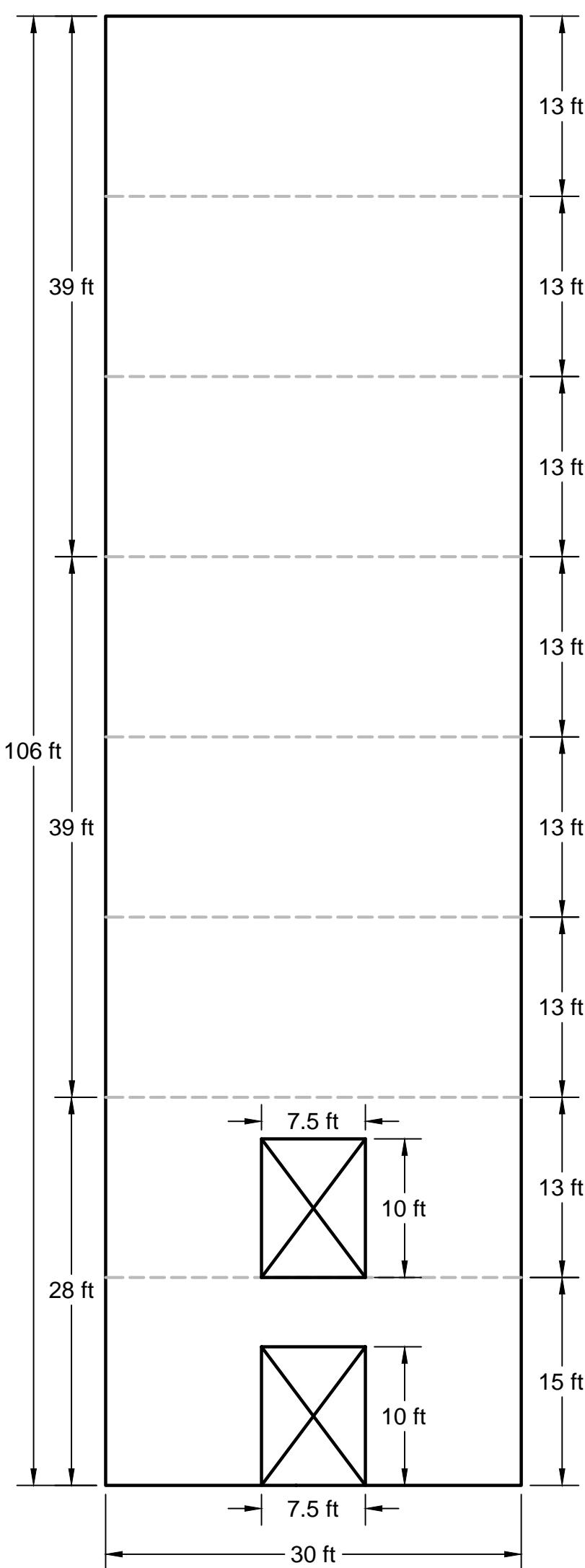
For clarity, only part of the total required reinforcement is shown on each side of the line of symmetry



SEC AB-AB

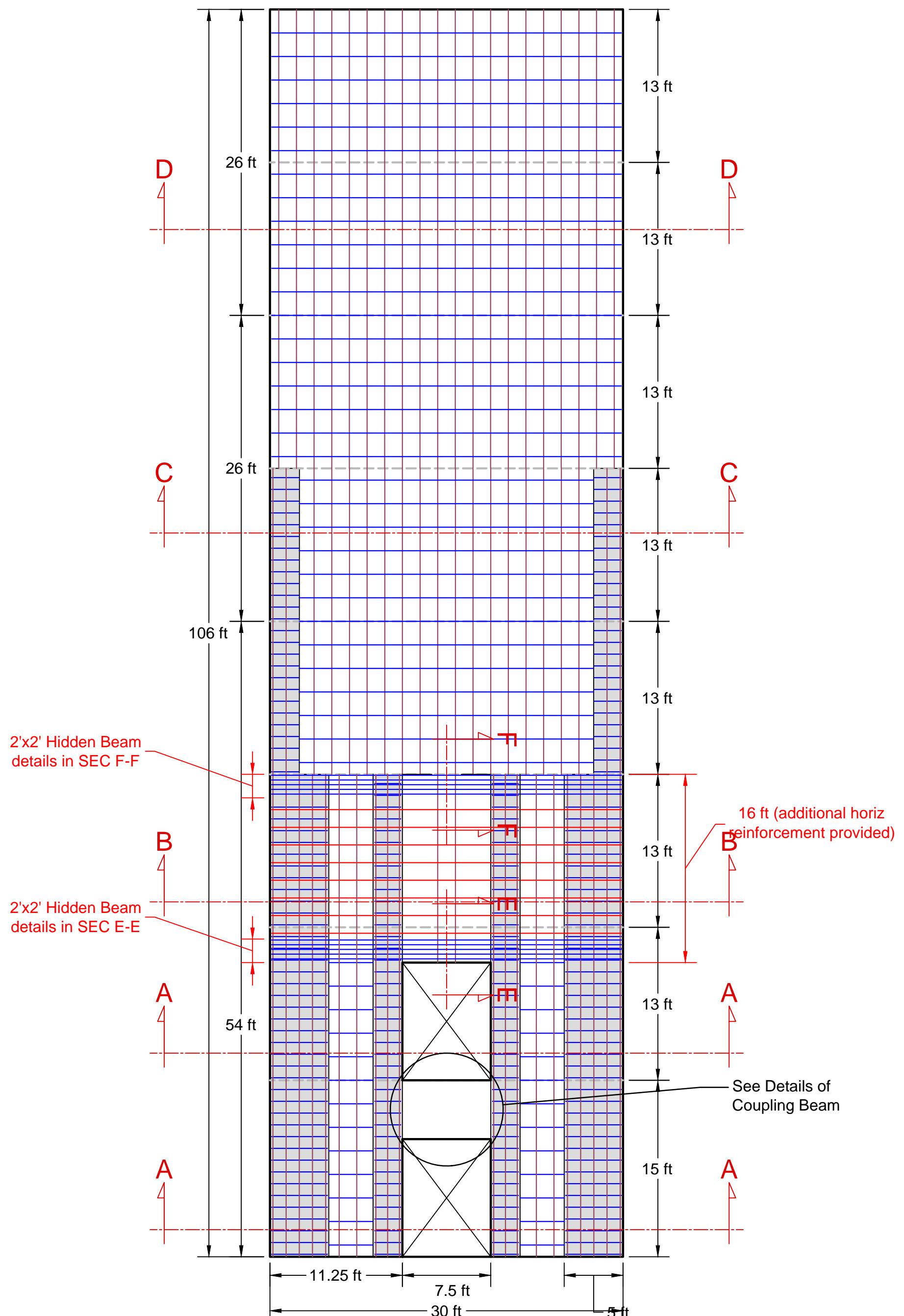


SEC BB-BB



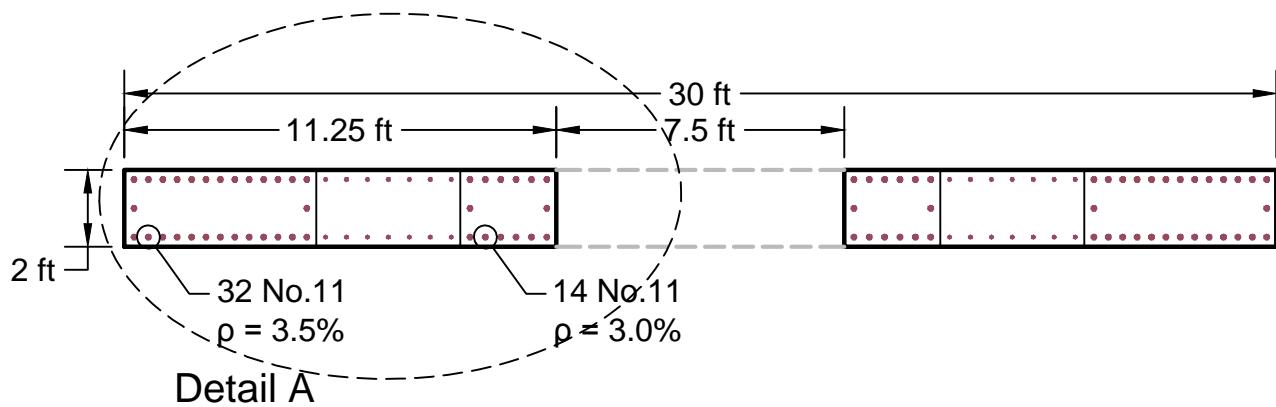
MRSA Method

— demand
- - - capacity



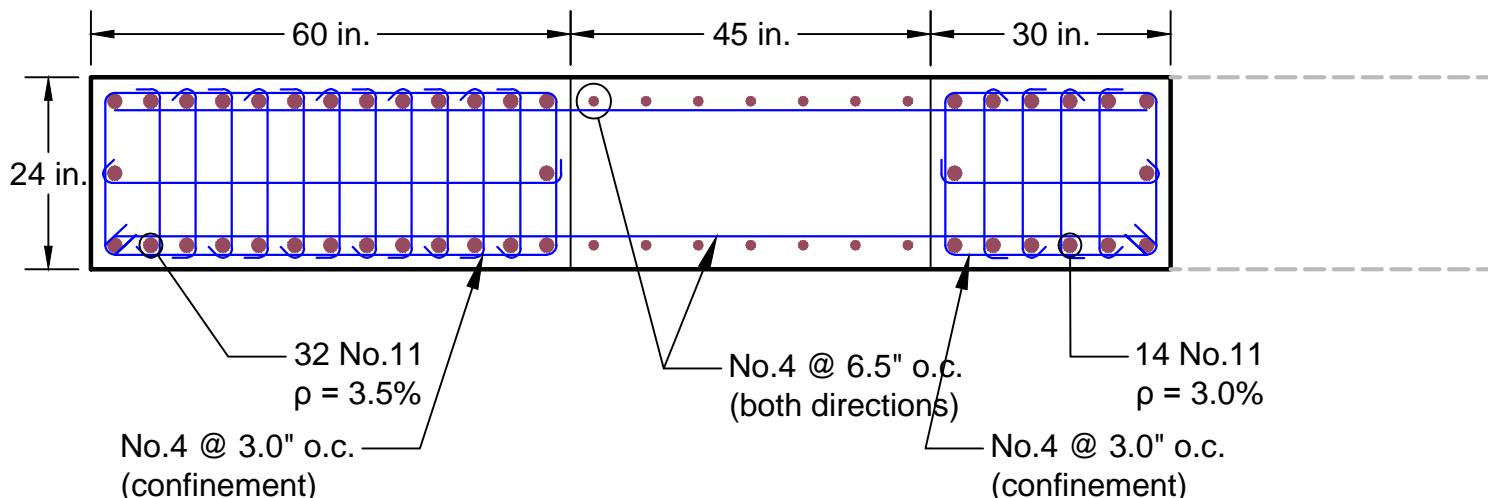
Elevation View (2Story Punched Wall, 75% Stiffness)

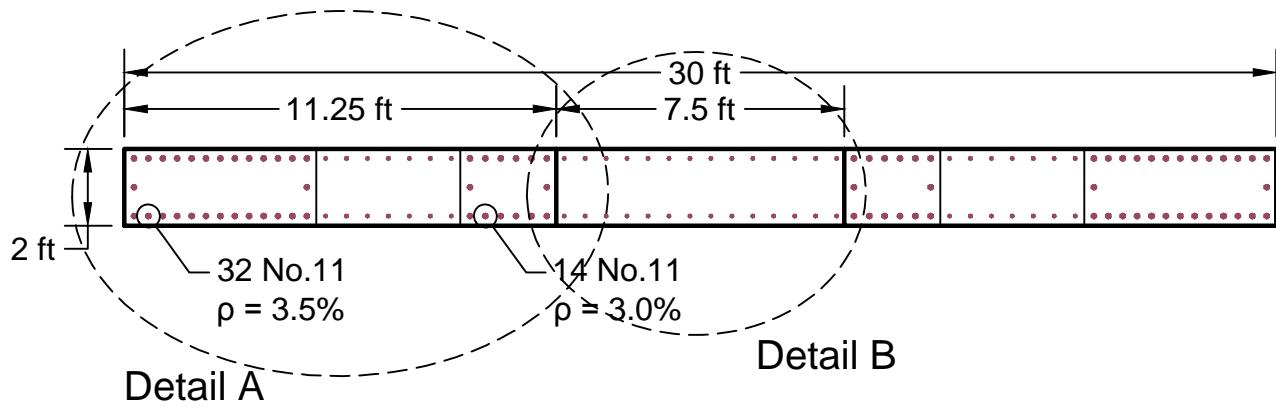
MRSA Method



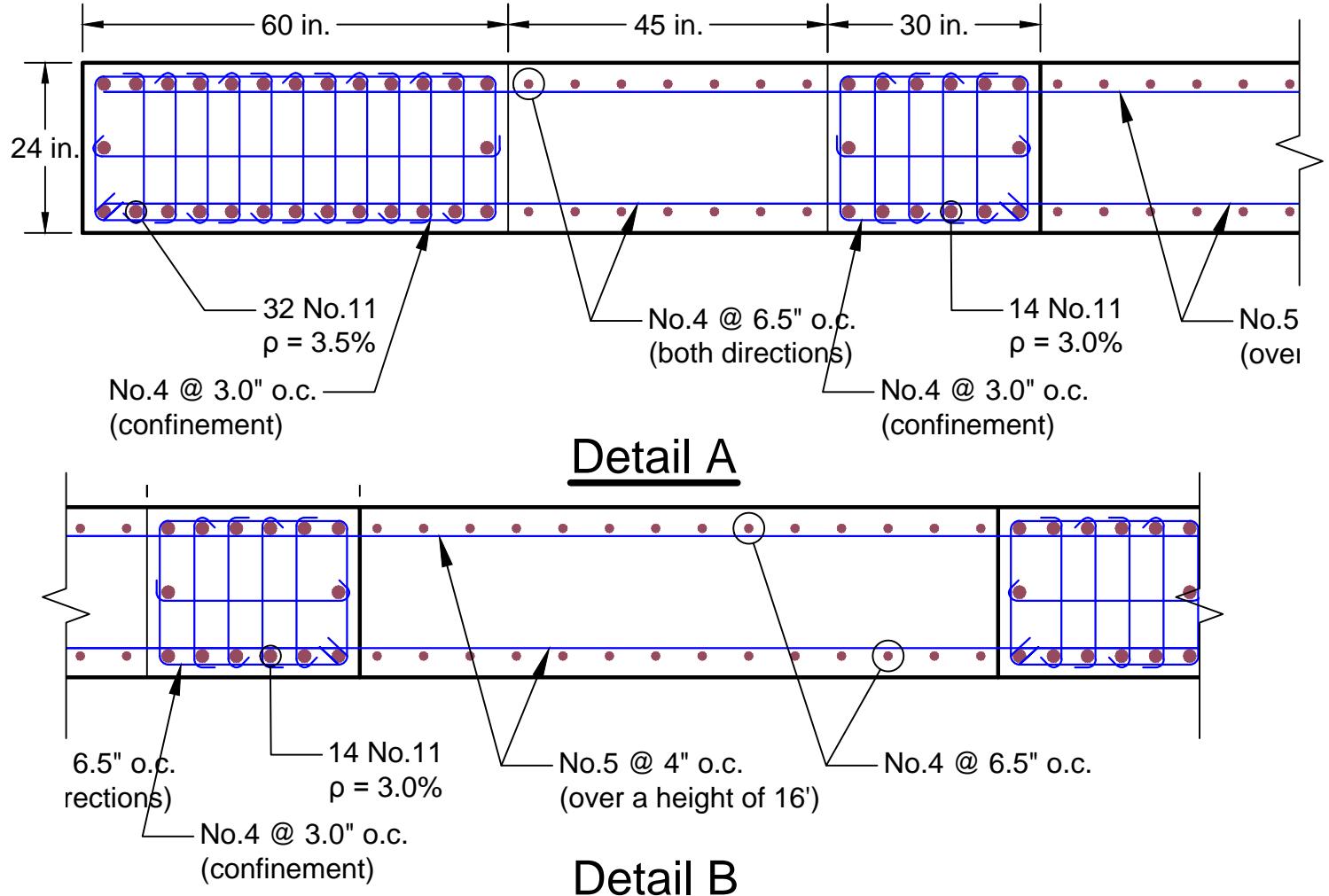
SEC A-A

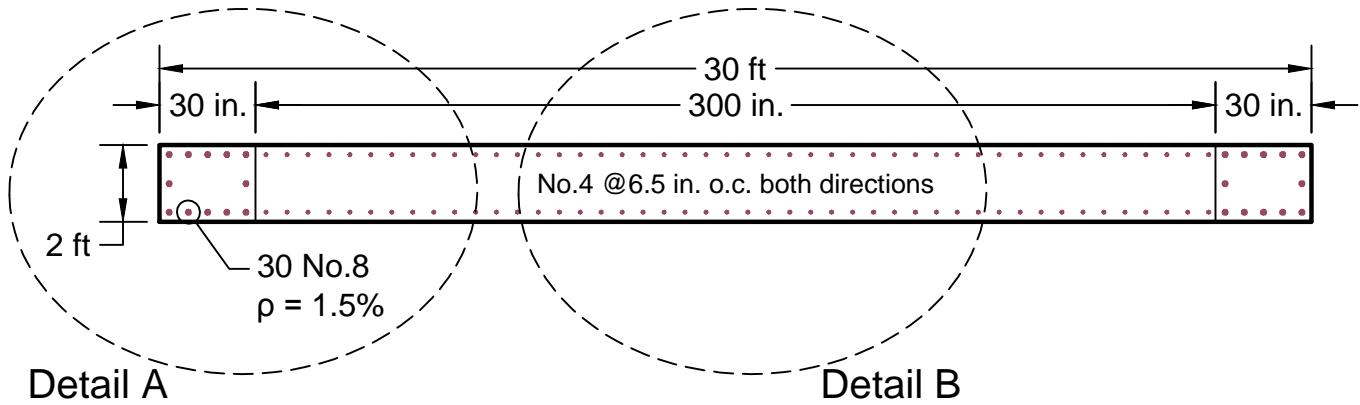
M _{demand}	11353 k-ft
φM _n	12312 k-ft
AL	-2498 k





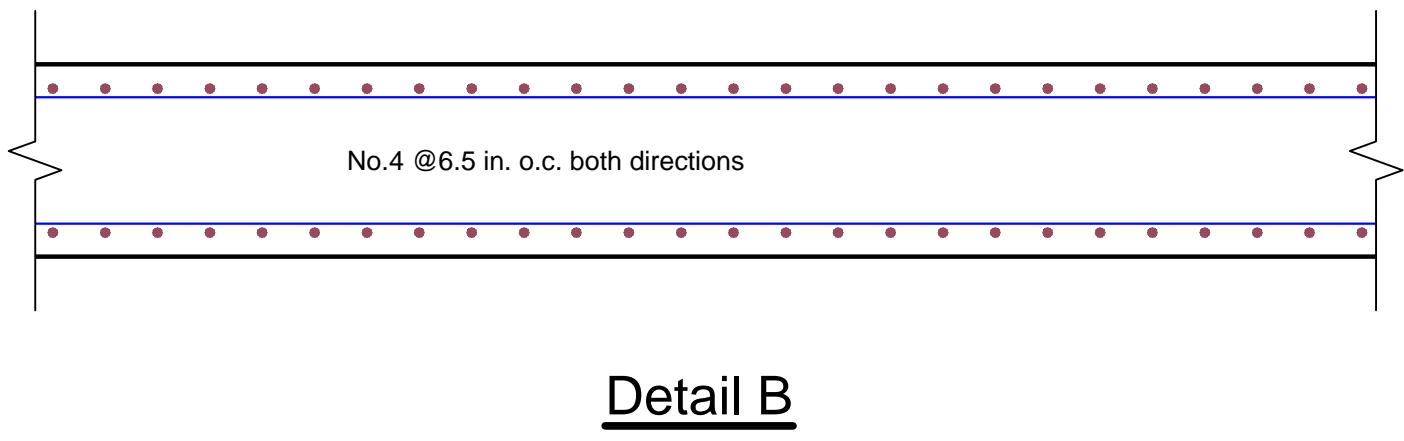
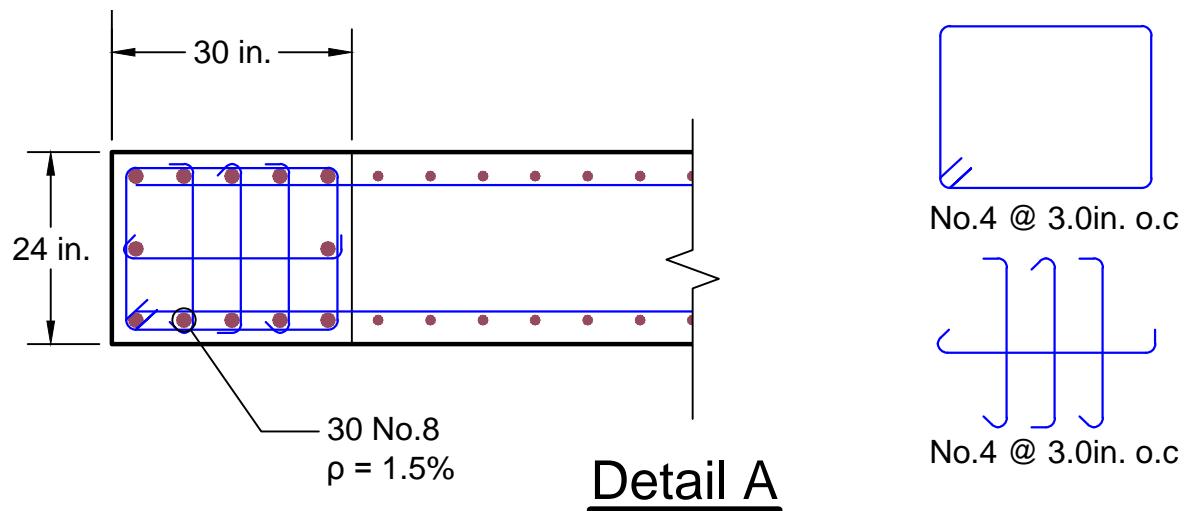
SEC B-B

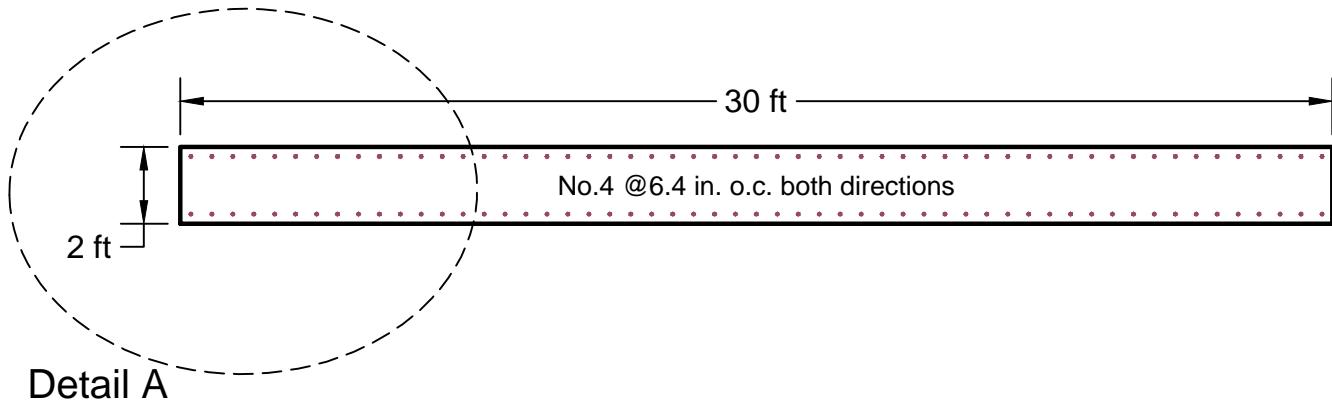




SEC C-C

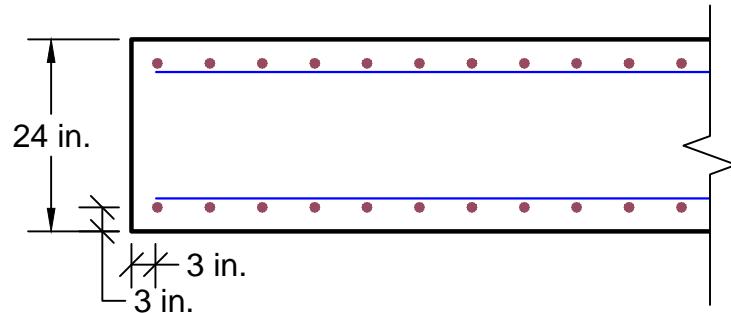
M_{demand}	34741 k-ft
ϕM_n	41615 k-ft
AL	876 k



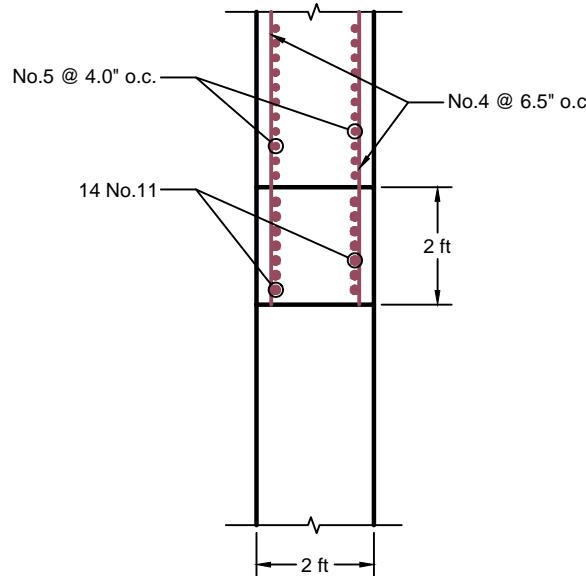


SEC C-C

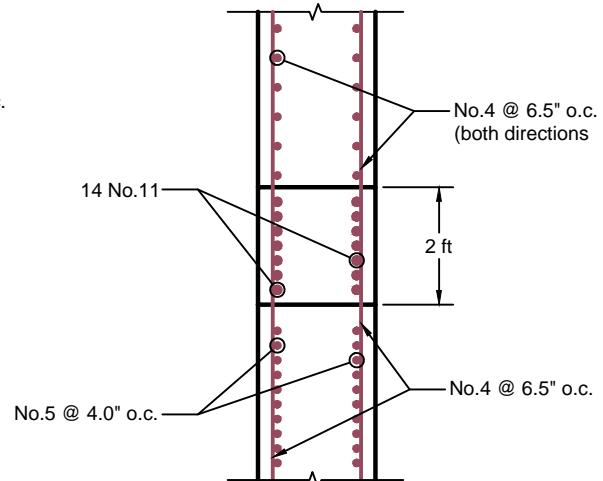
M_{demand}	19445 k-ft
ϕM_n	23545 k-ft
AL	500 k



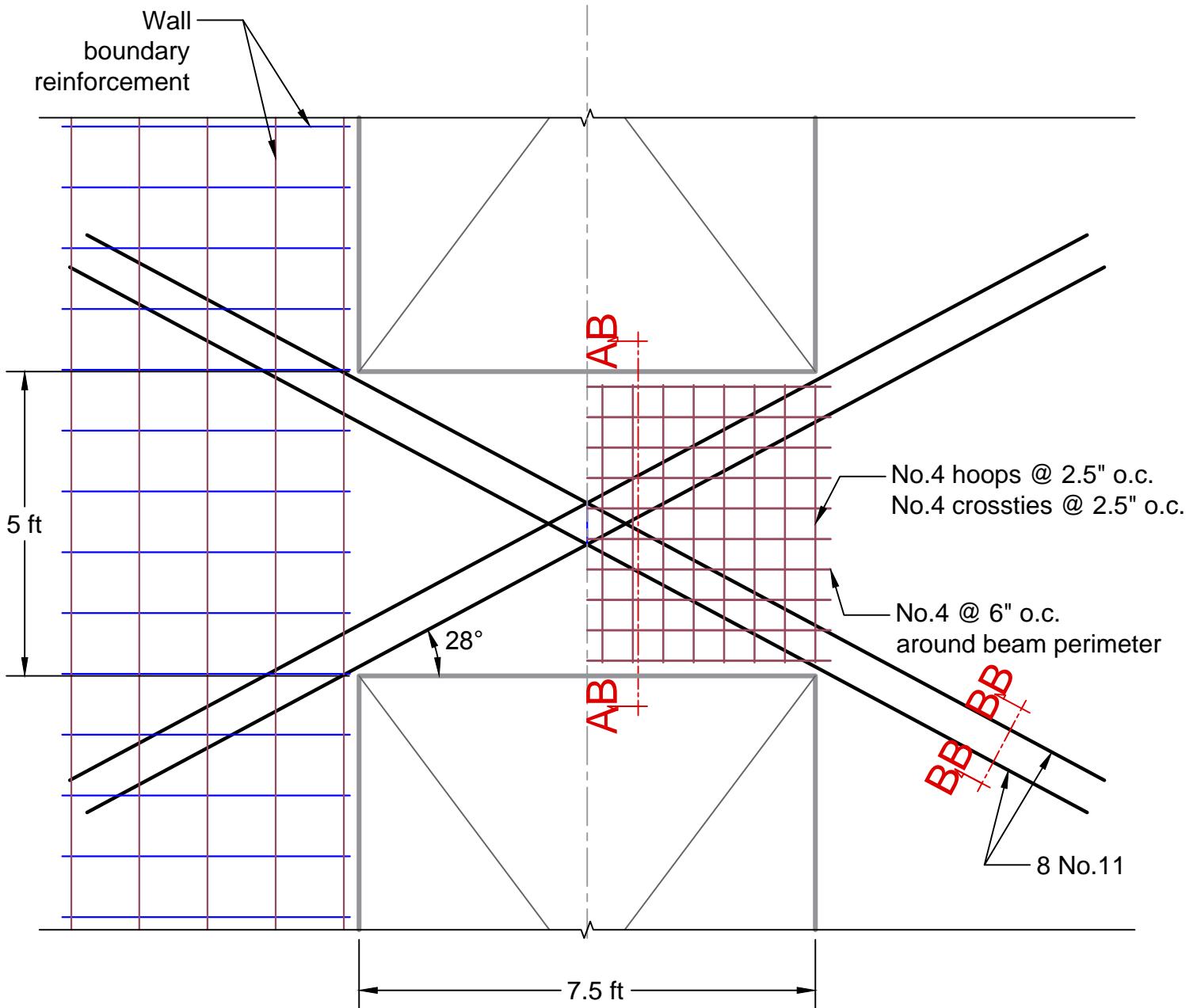
Detail A



SEC E-E

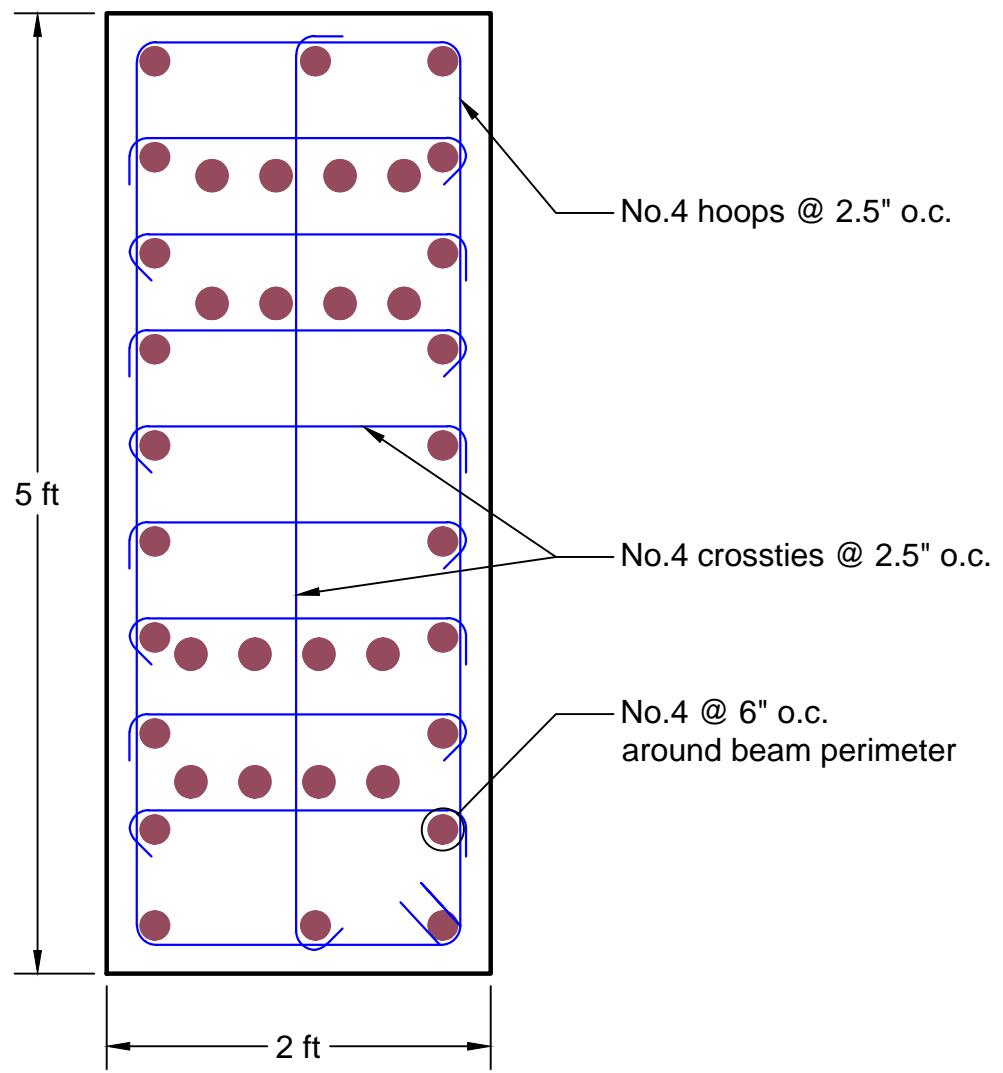


SEC F-F

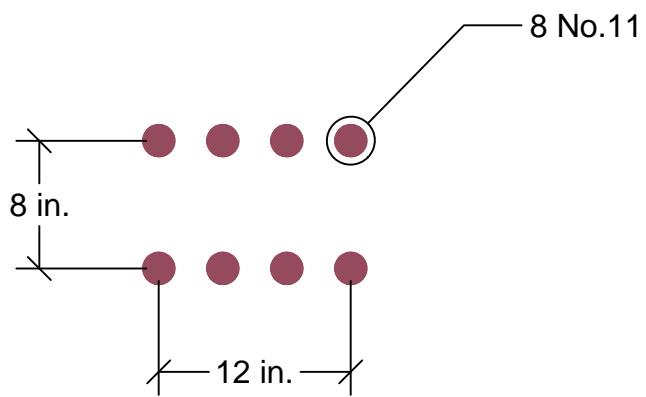


Details of the Coupling Beam

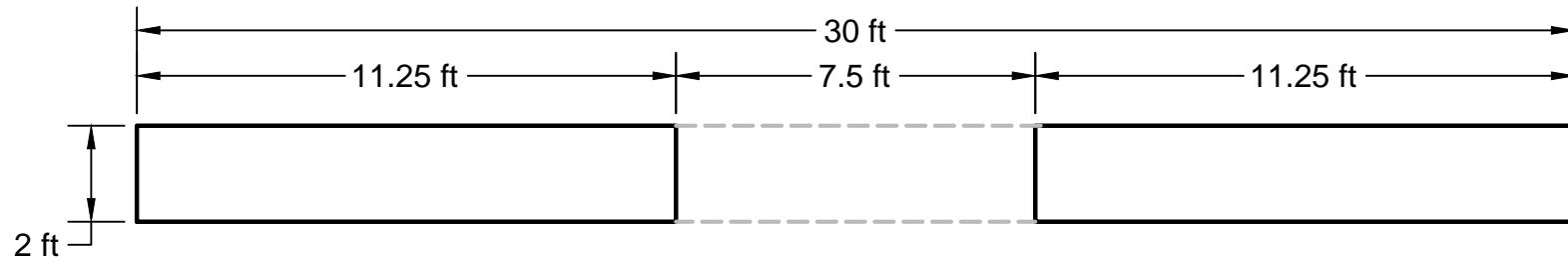
For clarity, only part of the total required reinforcement is shown on each side of the line of symmetry



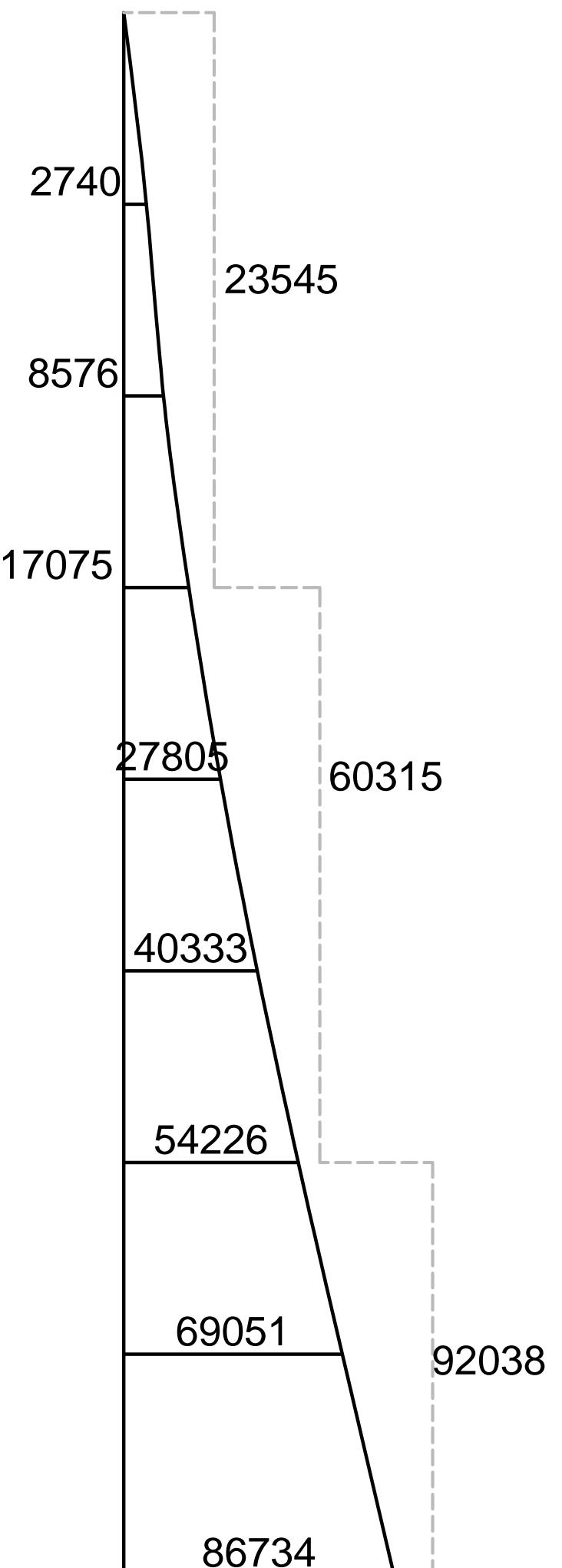
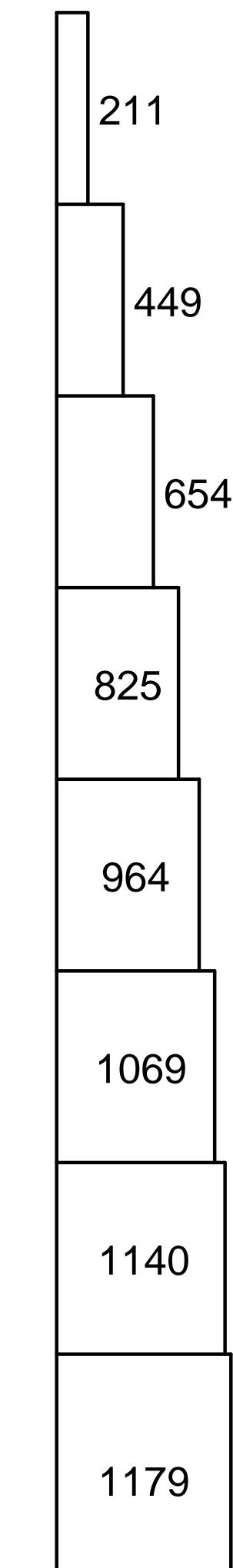
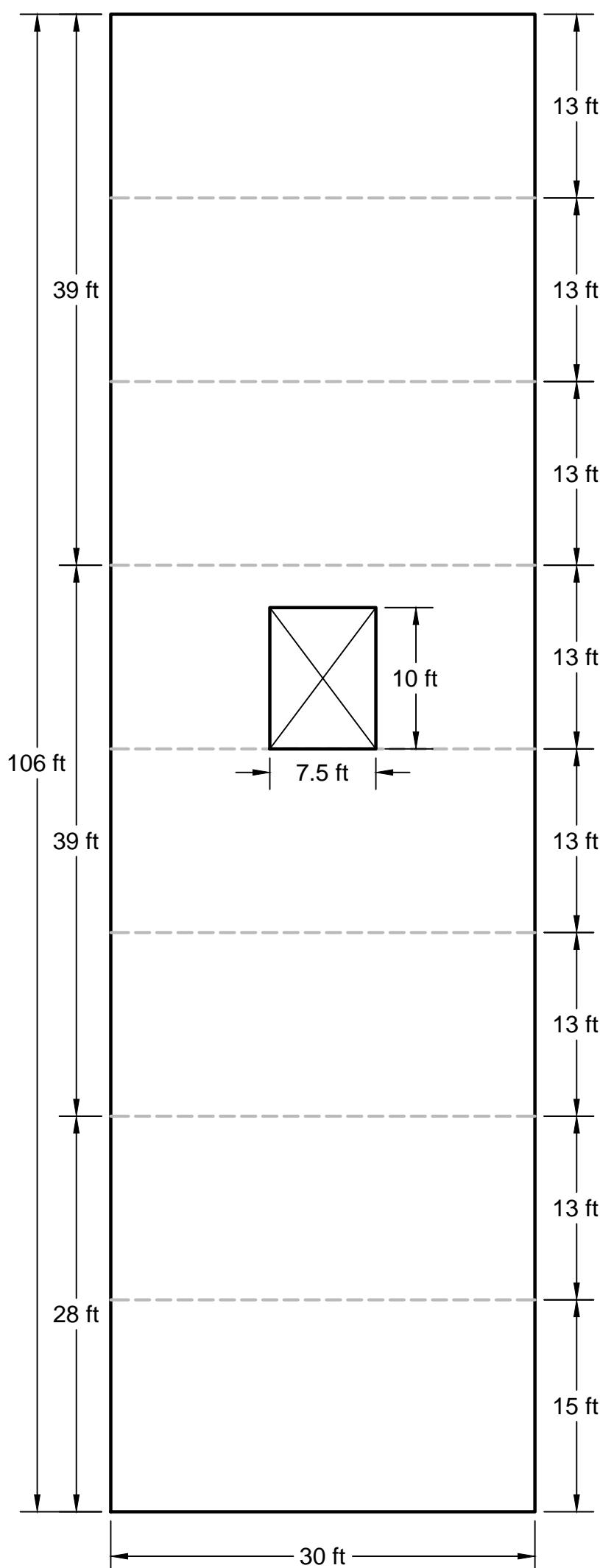
SEC AB-AB



SEC BB-BB

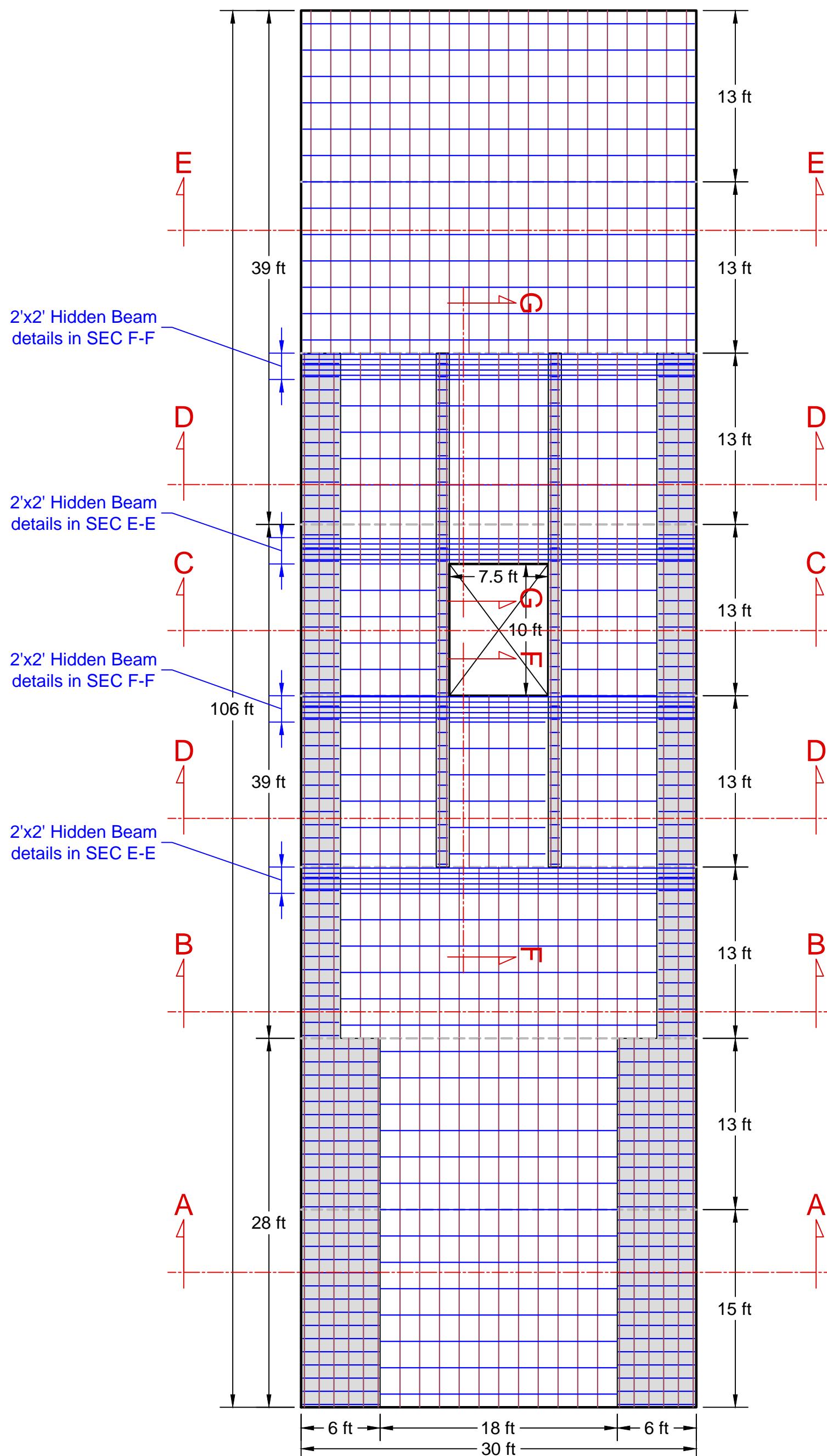


Punched Wall (30'x2'x106')
with 50% stiffness
 $f'c = 5000 \text{ psi}$
 $f_y = 60 \text{ ksi}$

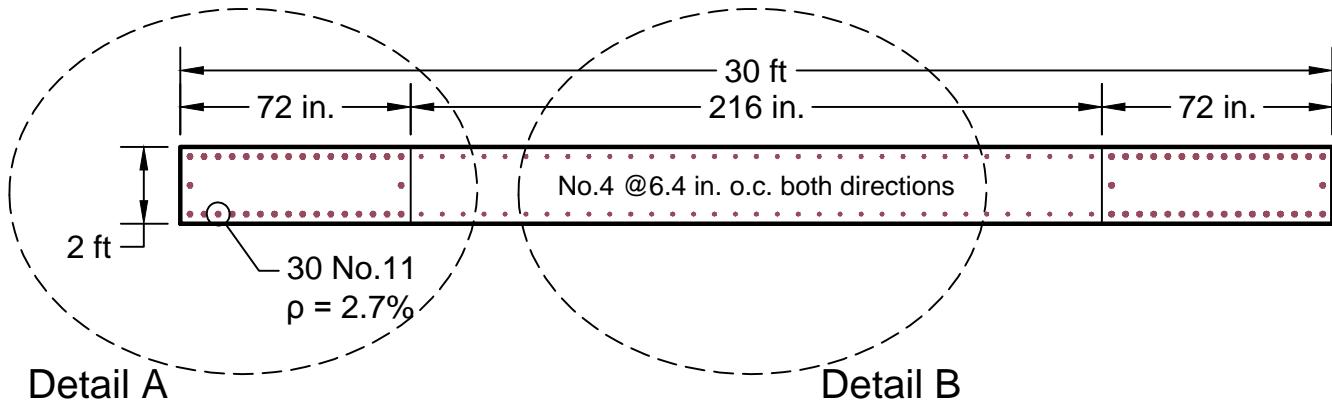


ELF Method

— demand
- - - capacity

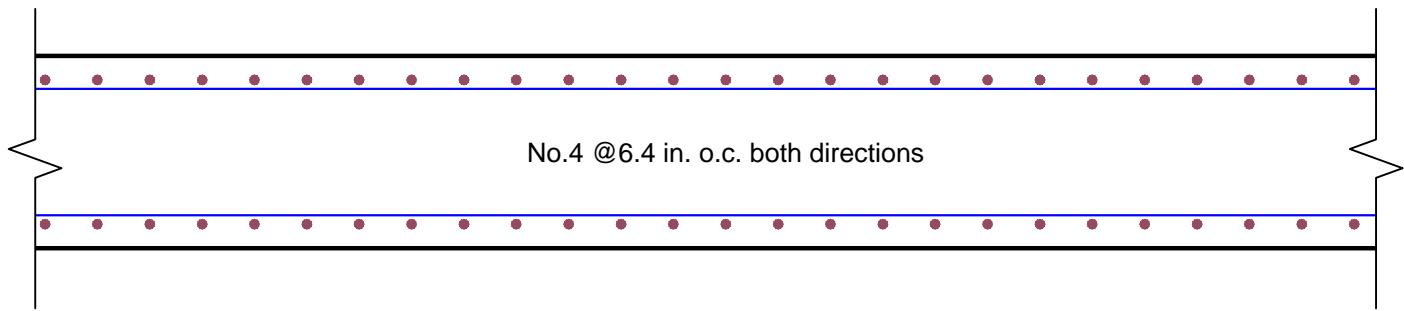
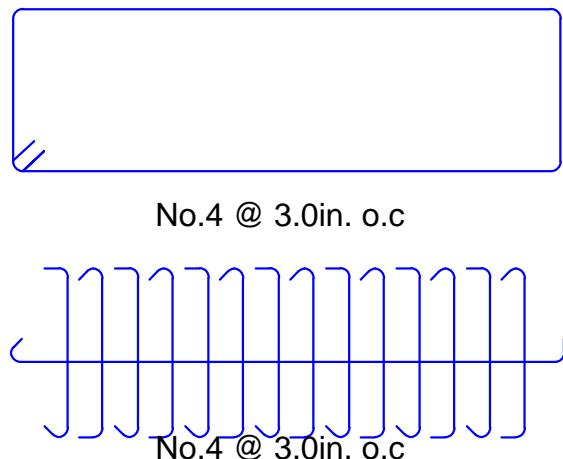
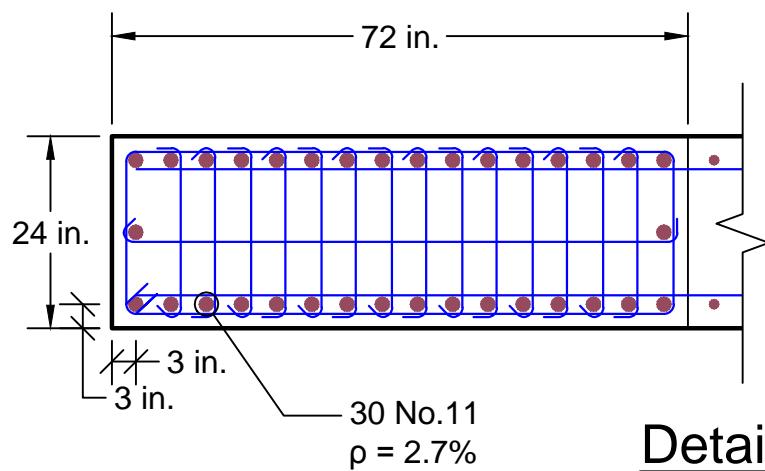


Elevation View (Wall with punch in 5th story)
ELF Method

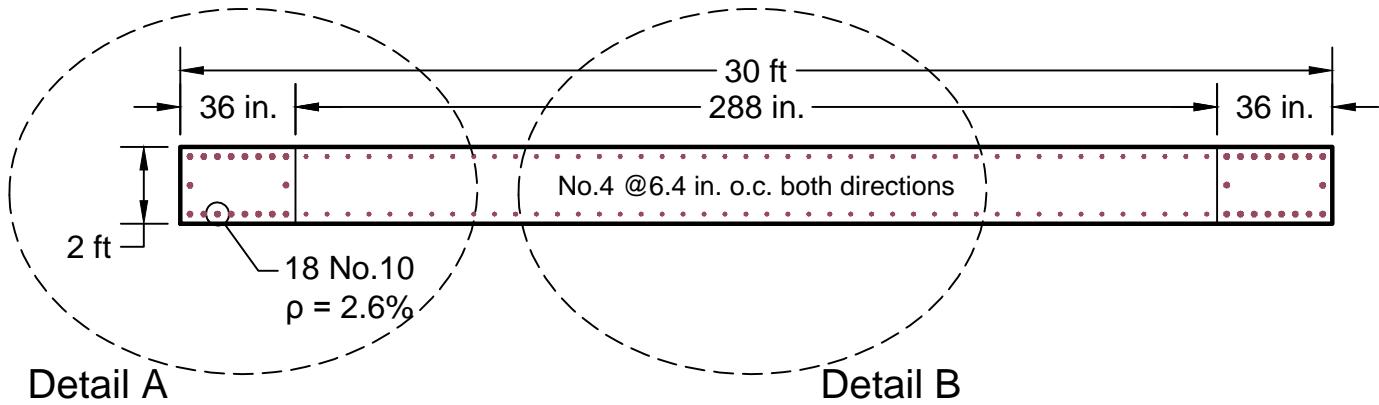


SEC A-A

M_{demand}	86734 k-ft
ϕM_n	92038 k-ft
AL	1441 k

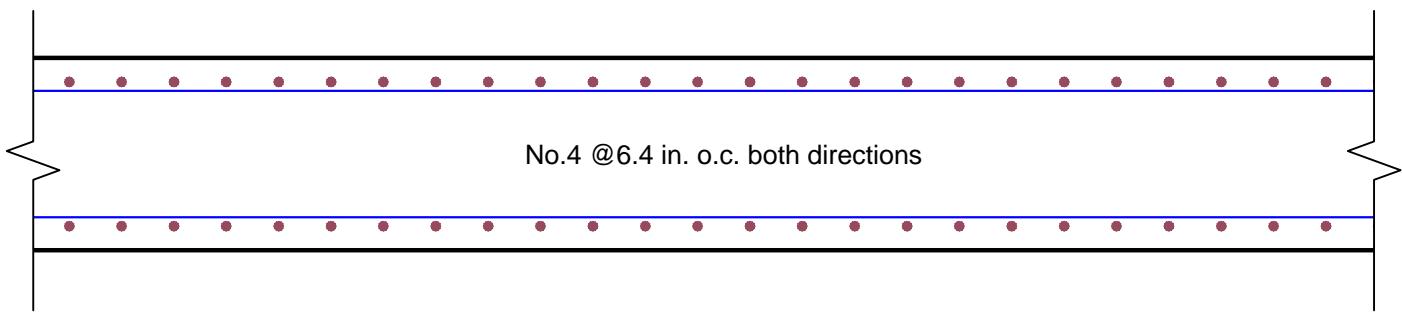
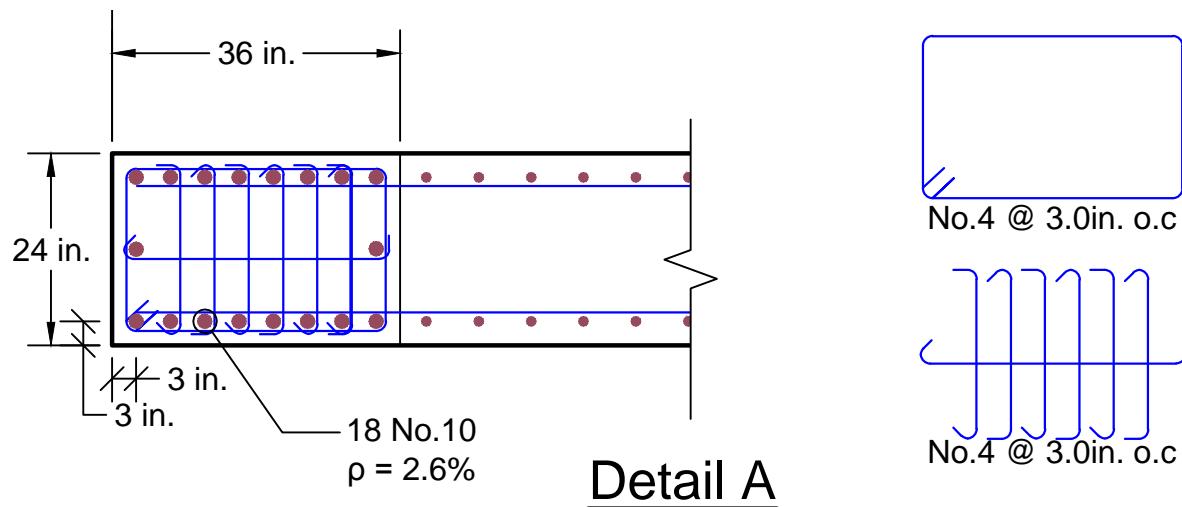


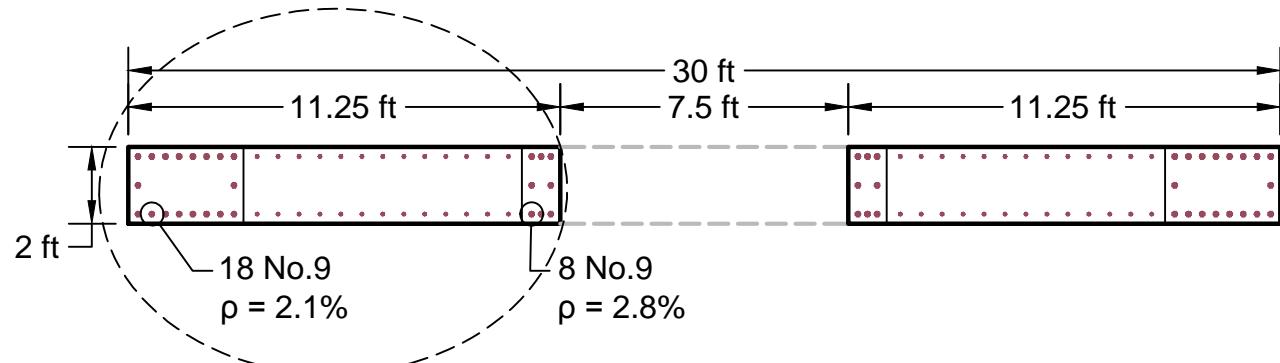
Detail B



SEC B-B

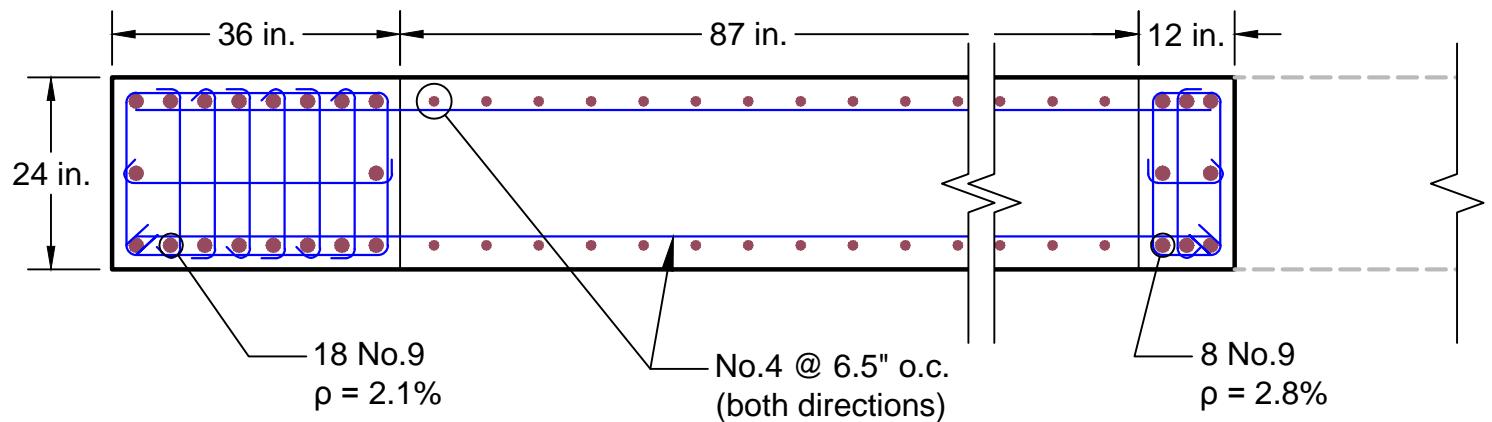
M_{demand}	54226 k-ft
ϕM_n	60315 k-ft
AL	1065 k



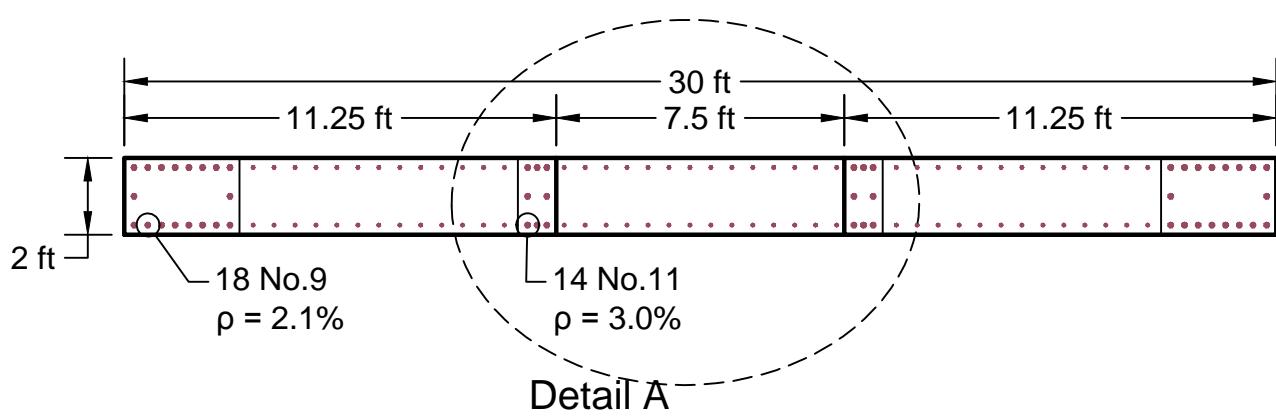


Detail A

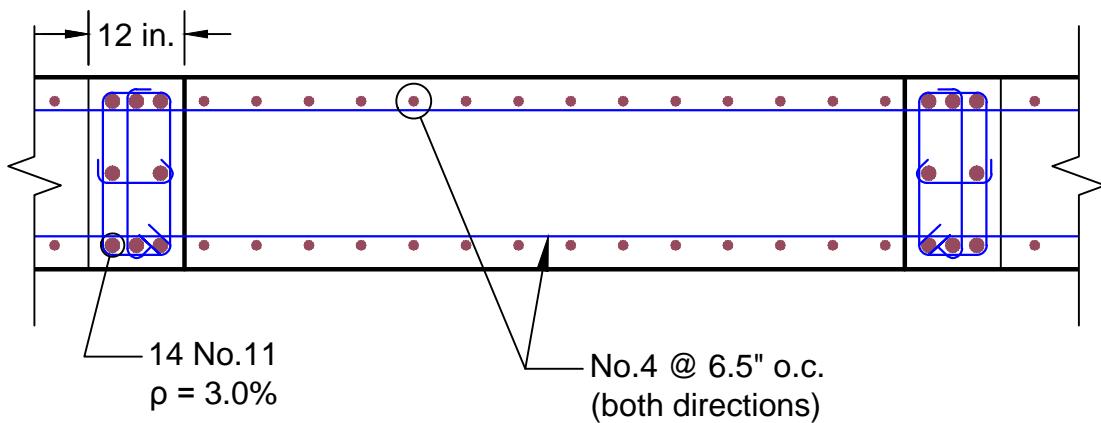
SEC C-C



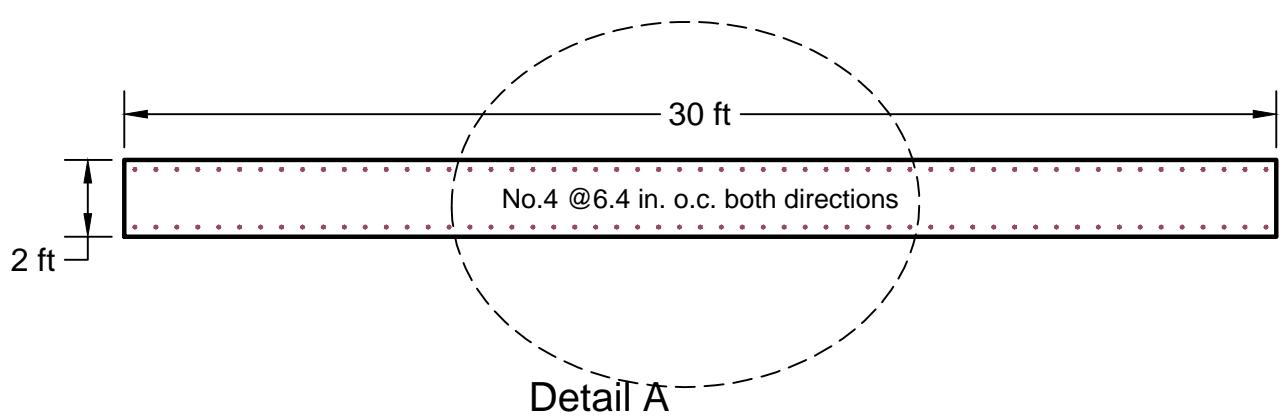
Detail A



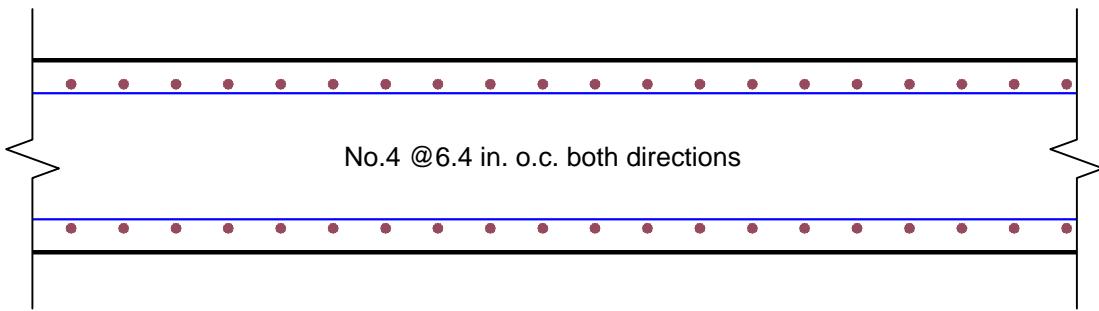
SEC C-C



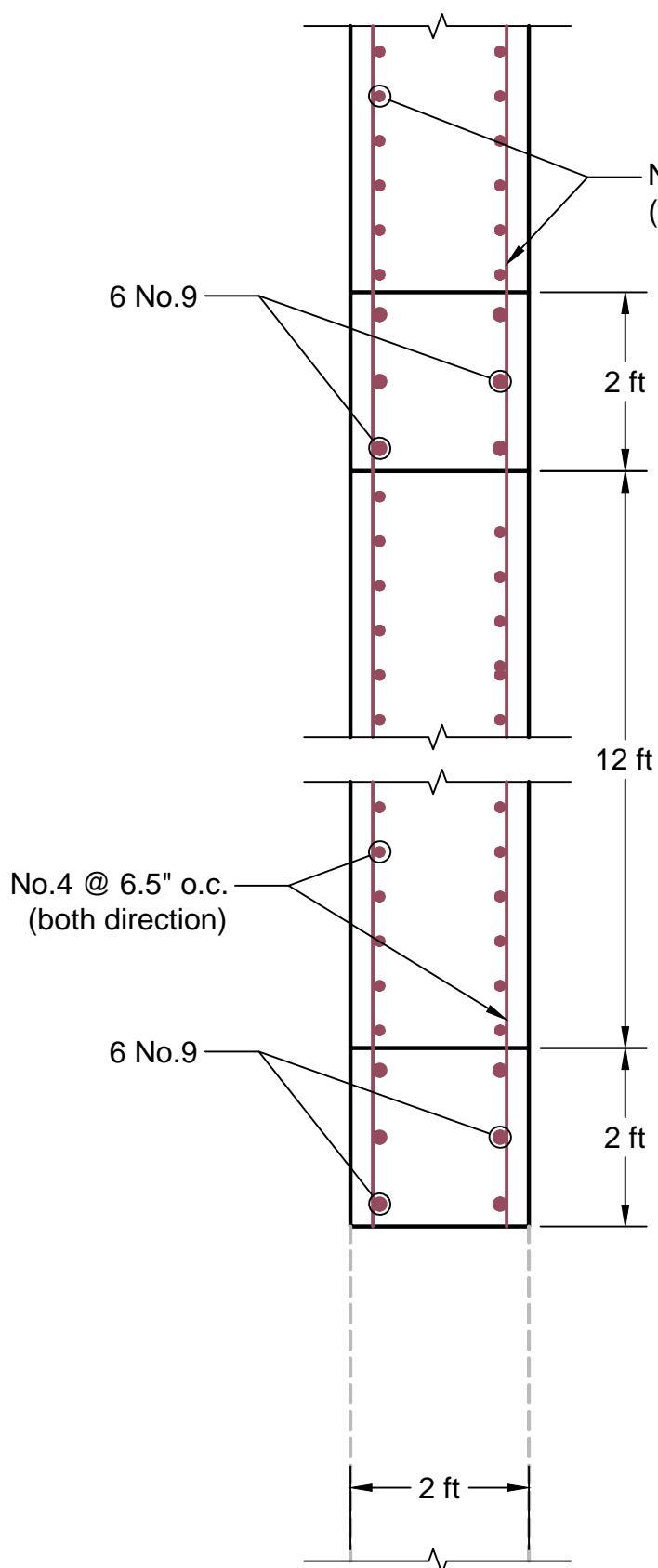
Detail A



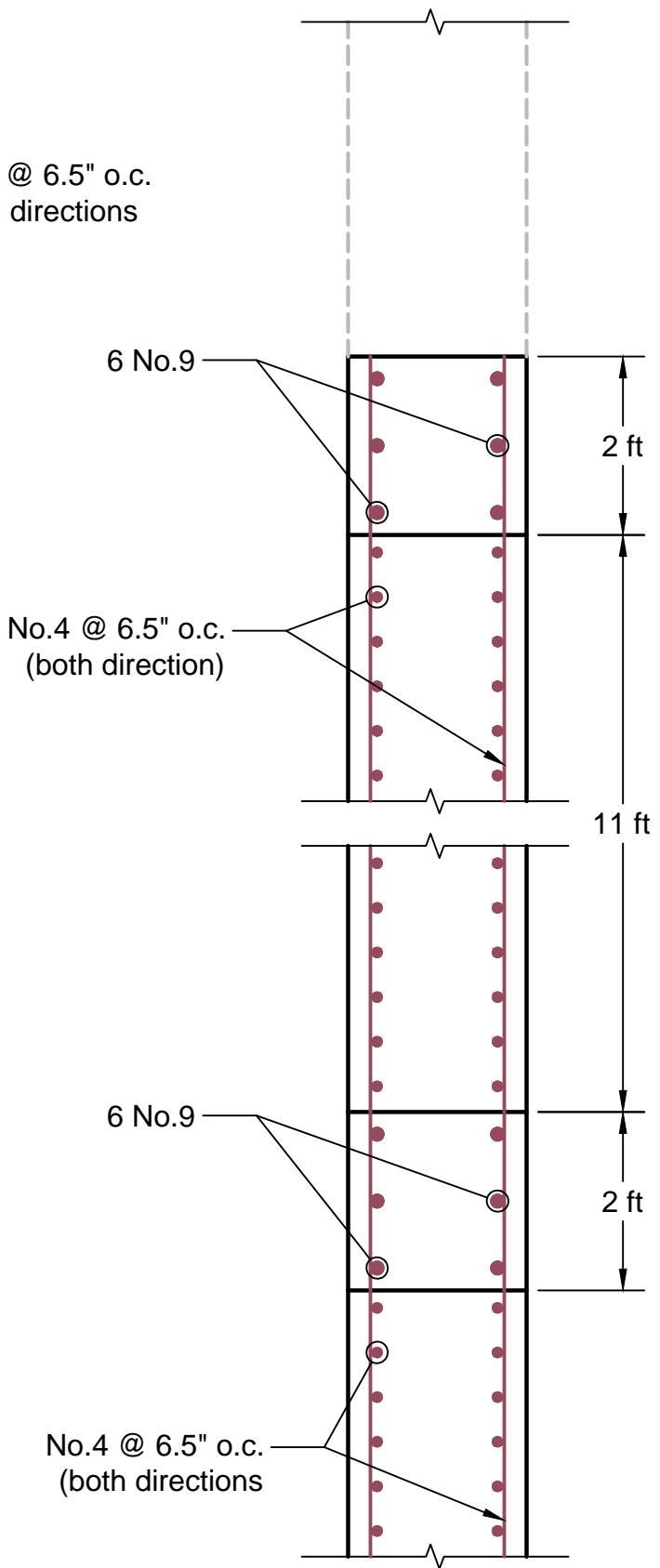
SEC C-C



Detail A



SEC G-G



SEC F-F