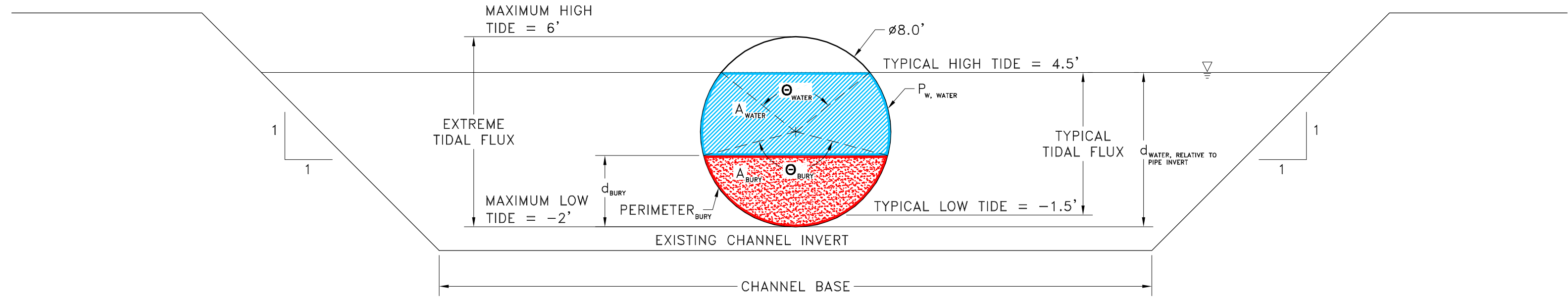
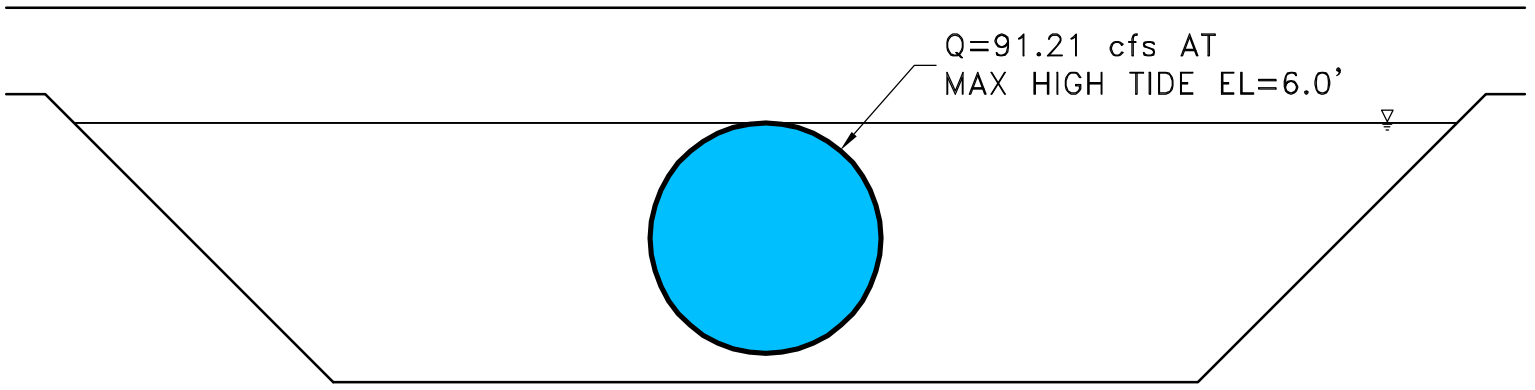


P:\1739_Woods_Irr_Dist\0050_DWR_Water_Rights_Investigation\05_Civil\EXH-Mannings_Sections.dwg, 6/23/2010 12:16:08 PM, ereg

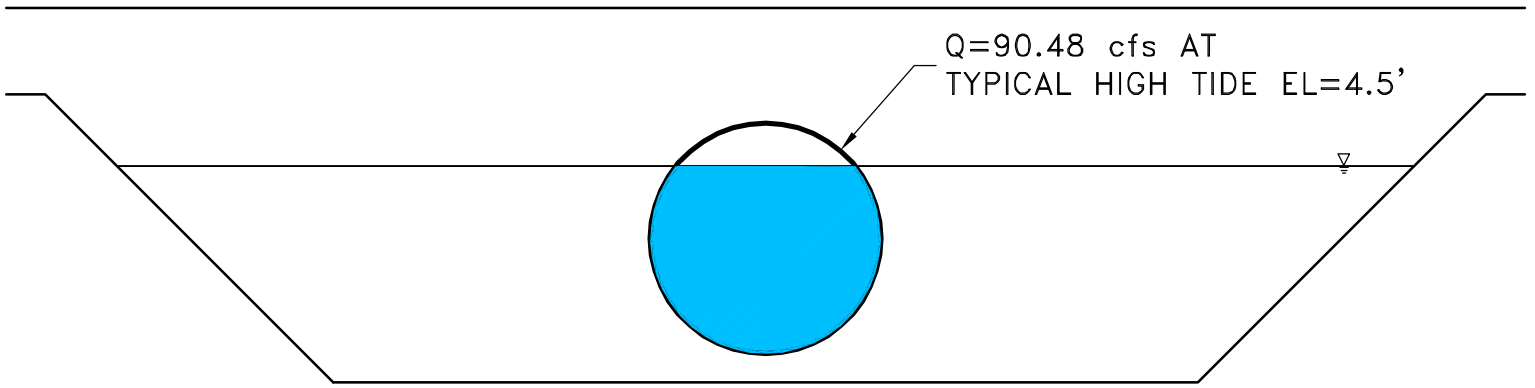
LEVEE CROWN / BASE FLOOD ELEVATION = 10'



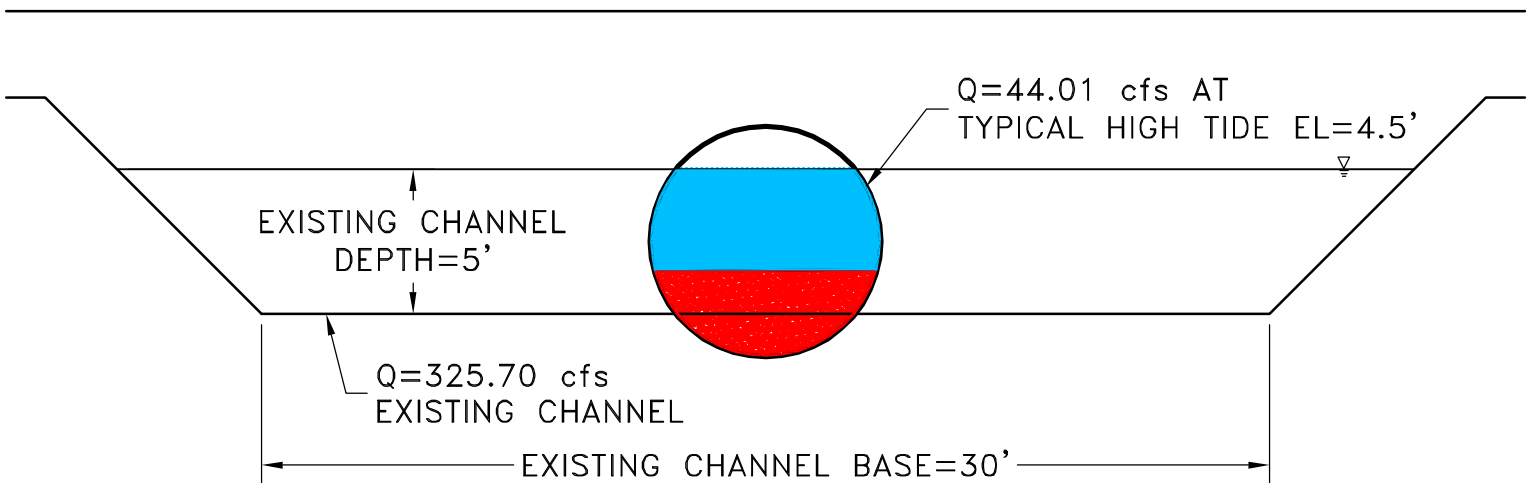
FULL CIRCULAR PIPE

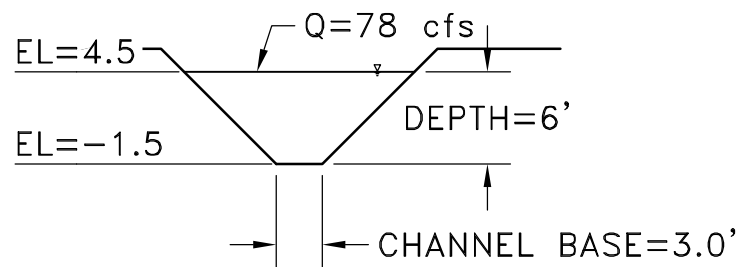
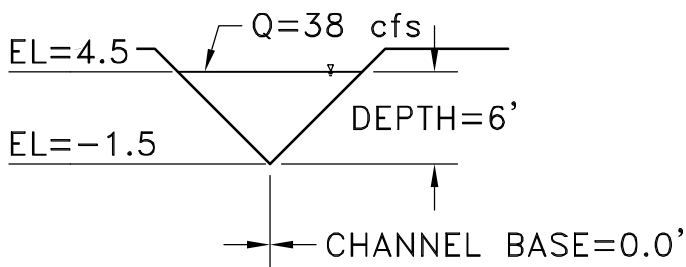
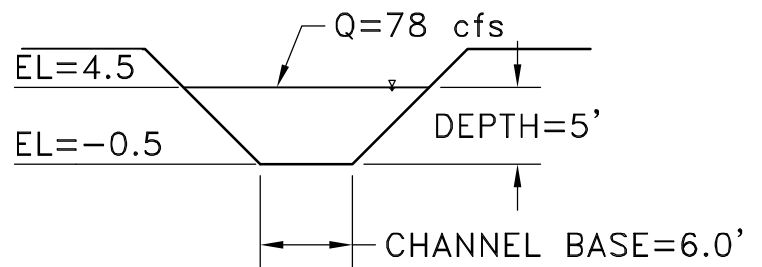
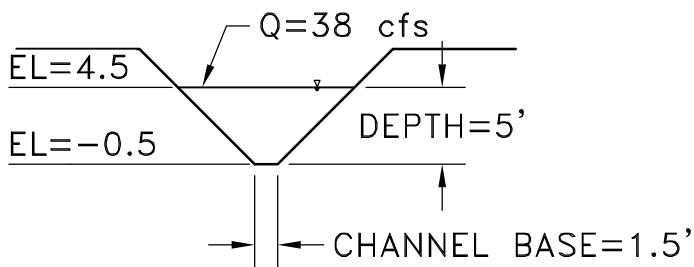
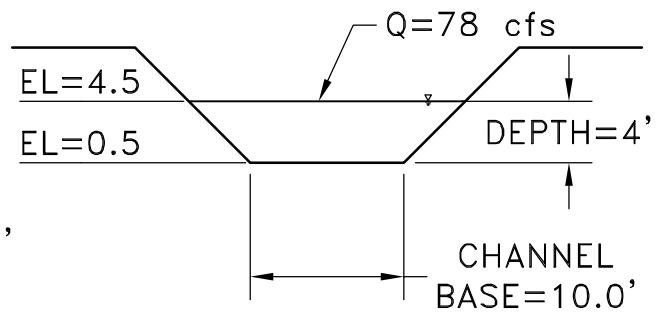
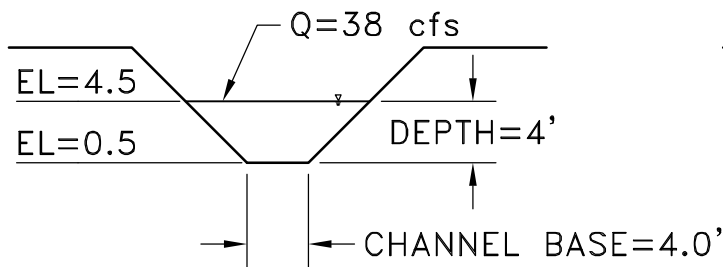
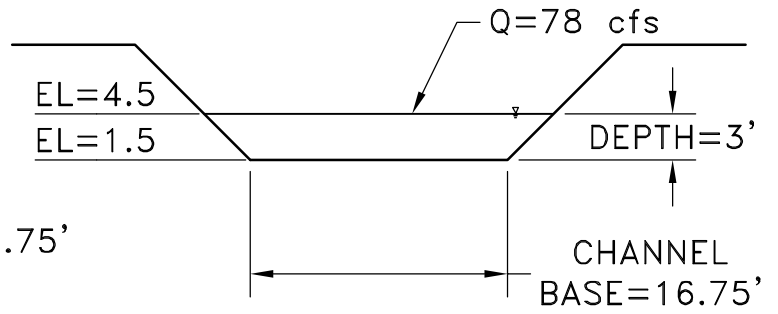
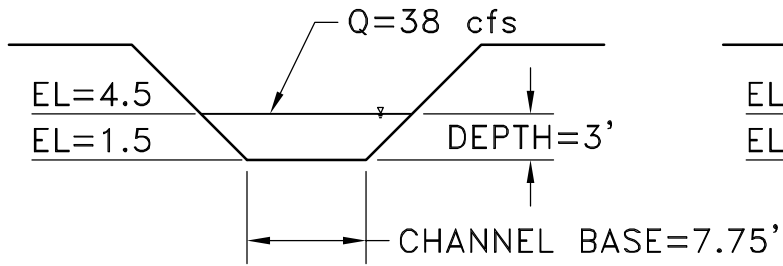


PARTIALLY FULL CIRCULAR PIPE



PARTIALLY BURIED, PARTIALLY FULL CIRCULAR PIPE





MANNING'S EQUATION

Height = 3 feet
Trapezoidal Channel - Q=38 cfs

Inputs:

n =	0.02
S _o =	0.0001
base =	7.75 ft
Invert El =	1.5 ft
side slopes =	1 (horizontal)
Water Surface El=	4.5 ft
height =	3.0 ft
A =	32.3 ft ²
P _w =	16.24 ft

Outputs:

Q =	37.86 cfs
v =	1.17 ft/s

Height = 4 feet
Trapezoidal Channel - Q=38 cfs

Inputs:

n =	0.02
S _o =	0.0001
base =	4 ft
Invert El =	0.5 ft
side slopes =	1 (horizontal)
Water Surface El=	4.5 ft
height =	4.0 ft
A =	32.0 ft ²
P _w =	15.31 ft

Outputs:

Q =	38.86 cfs
v =	1.21 ft/s

Height = 5 feet
Trapezoidal Channel - Q=38 cfs

Inputs:

n =	0.02
S _o =	0.0001
base =	1.5 ft
Invert El =	-0.5 ft
side slopes =	1 (horizontal)
Water Surface El=	4.5 ft
height =	5.0 ft
A =	32.5 ft ²
P _w =	15.64 ft

Outputs:

Q =	39.32 cfs
v =	1.21 ft/s

Height = 6 feet
Trapezoidal Channel - Q=38 cfs

Inputs:

n =	0.02
S _o =	0.0001
base =	0 ft
Invert El =	-1.5 ft
side slopes =	1 (horizontal)
Water Surface El=	4.5 ft
height =	6.0 ft
A =	36.0 ft ²
P _w =	16.97 ft

Outputs:

Q =	44.16 cfs
v =	1.23 ft/s

Trapezoidal Channel - Q=78 cfs

Inputs:

n =	0.02	Uniform Earthen Channel
S _o =	0.0001	
base =	16.75 ft	
Invert El =	1.5 ft	
side slopes =	1 (horizontal)	
Water Surface El=	4.5 ft	
height =	3.0 ft	
A =	59.3 ft ²	
P _w =	25.24 ft	

Outputs:

Q =	77.77 cfs
v =	1.31 ft/s

Trapezoidal Channel - Q=78 cfs

Inputs:

n =	0.02	Uniform Earthen Channel
S _o =	0.0001	
base =	10 ft	
Invert El =	0.5 ft	
side slopes =	1 (horizontal)	
Water Surface El=	4.5 ft	
height =	4.0 ft	
A =	56.0 ft ²	
P _w =	21.31 ft	

Outputs:

Q =	79.23 cfs
v =	1.41 ft/s

Trapezoidal Channel - Q=78 cfs

Inputs:

n =	0.02	Uniform Earthen Channel
S _o =	0.0001	
base =	6 ft	
Invert El =	-0.5 ft	
side slopes =	1 (horizontal)	
Water Surface El=	4.5 ft	
height =	5.0 ft	
A =	55.0 ft ²	
P _w =	20.14 ft	

Outputs:

Q =	79.83 cfs
v =	1.45 ft/s

Trapezoidal Channel - Q=78 cfs

Inputs:

n =	0.02
S _o =	0.0001
base =	3 ft
Invert El =	-1.5 ft
side slopes =	1 (horizontal)
Water Surface El=	4.5 ft
height =	6.0 ft
A =	54.0 ft ²
P _w =	19.97 ft

Outputs:

Q =	77.87 cfs
v =	1.44 ft/s

Manning's Coefficient Sensitivity Analysis, Trapezoidal Channel - Q=78 cfs

Inputs:	Inputs:	Inputs:
n = 0.025 Winding Sluggish Canal	n = 0.0275 Dredged Earthen Channel	n = 0.03 Channel with rough stony beds, weeds on earth banks
Outputs: Q = 62.21 cfs v = 1.05 ft/s	Outputs: Q = 56.56 cfs v = 0.95 ft/s	Outputs: Q = 51.84 cfs v = 0.88 ft/s
% Change, n: 25% % Change, Q: -20%	% Change, n: 38% % Change, Q: -27%	% Change, n: 50% % Change, Q: -33%

Manning's Coefficient Sensitivity Analysis, Trapezoidal Channel - Q=78 cfs

Inputs:	Inputs:	Inputs:
n = 0.025 Winding Sluggish Canal	n = 0.0275 Dredged Earthen Channel	n = 0.03 Channel with rough stony beds, weeds on earth banks
Outputs: Q = 63.38 cfs v = 1.13 ft/s	Outputs: Q = 57.62 cfs v = 1.03 ft/s	Outputs: Q = 52.82 cfs v = 0.94 ft/s
% Change, n: 25% % Change, Q: -20%	% Change, n: 38% % Change, Q: -27%	% Change, n: 50% % Change, Q: -33%

Manning's Coefficient Sensitivity Analysis, Trapezoidal Channel - Q=78 cfs

Inputs:	Inputs:	Inputs:
n = 0.025 Winding Sluggish Canal	n = 0.0275 Dredged Earthen Channel	n = 0.03 Channel with rough stony beds, weeds on earth banks
Outputs: Q = 63.87 cfs v = 1.16 ft/s	Outputs: Q = 58.06 cfs v = 1.06 ft/s	Outputs: Q = 53.22 cfs v = 0.97 ft/s
% Change, n: 25% % Change, Q: -20%	% Change, n: 38% % Change, Q: -27%	% Change, n: 50% % Change, Q: -33%

Manning's Coefficient Sensitivity Analysis, Trapezoidal Channel - Q=78 cfs

Inputs:	Inputs:	Inputs:
n = 0.025 Winding Sluggish Canal	n = 0.0275 Dredged Earthen Channel	n = 0.03 Channel with rough stony beds, weeds on earth banks
Outputs: Q = 62.30 cfs v = 1.15 ft/s	Outputs: Q = 56.63 cfs v = 1.05 ft/s	Outputs: Q = 51.92 cfs v = 0.96 ft/s
% Change, n: 25% % Change, Q: -20%	% Change, n: 38% % Change, Q: -27%	% Change, n: 50% % Change, Q: -33%

PROFILE OF LEVEES ON RECLAMATION DISTRICT NUMBER 524.

