INSTALL TRASH RACK OVER CUT OUT PER DETAIL THIS SHEET

3'X1'-0.7" CUT OUT

NOTE: CONTRACTOR SHALL NOT INSTALL CUT OUT UNTIL LESS THAN 10 ACRES ARE DISTURBED AND TEMPORARY SEDIMENT BASIN OUTLET IS REMOVED.

100-YR WSE=526.93'
25-YR WSE=526.36'
10-YR WSE=526.13'
5-YR WSE=525.65'

ANCHOR TO WALL WITH $\frac{5}{16}$"X2$\frac{1}{2}$"(MIN) STAINLESS STEEL BOLTS AND $\frac{1}{4}$" (MIN) BEAD SILICONE CAULK ON PERIMETER OF ORIFICE PLATE

3'-0"X3'-0"X$\frac{1}{4}$"(MIN) STAINLESS STEEL PLATE

INSTALL TRASH RACK OVER ORIFICE PER DETAIL THIS SHEET

NOTE: CONTRACTOR SHALL NOT INSTALL ORIFICE PLATE UNTIL LESS THAN 10 ACRES ARE DISTURBED AND TEMPORARY SEDIMENT BASIN OUTLET AND 10" CORRUGATED METAL PIPE IS REMOVED.

30" RCP
19.50"
FL=522.05

5-yr Calculations

$Q = Cd * Ao * sqrt(2g * ho)$

Outlet Q (Allowable)	17.35	cfs
g	32.20	ft/s^2
Cd	0.62	
Water Elev.	525.65	ft
Outlet FL	522.05	ft
Pipe Size	19.5000	in
	1.63	ft
ho	2.79	ft
Ao	2.07	ft^2
Diameter	1.63	ft
	19.50	in
Pipe Size	1.63	ft
Ao	2.07	ft^2
Q (Actual)	17.22	cfs

10-yr Calculations

$Q = Cd * Ao * sqrt(2g * ho)$

Outlet Q (Allowable)	21.19	cfs
g	32.20	ft/s^2
Cd	0.62	
Water Elev.	526.13	ft
Outlet FL	522.05	ft
Pipe Size	19.5000	in
	1.63	ft
ho	3.27	ft
Ao	2.07	ft^2
Diameter	1.63	ft
	19.50	in
Pipe Size	1.63	ft
Ao	2.07	ft^2
Q (Actual)	18.64	cfs

25-yr Overflow Calculations

$Q = 3.33 * B * H^{(3/2)}$

Outlet Q (Allowable)	3.98	cfs
Water Elev.	526.36	ft
Outlet FL	525.99	ft
H	4.4400	in
H	0.37	ft
b	3.00	ft
Q (Actual)	2.25	cfs

Q25(Actual)=Q25(Orifice)+Q25(Overflow)= 19.29 CFS+2.25 CFS=21.54 CFS <23.27 CFS=Q25(Allowable)

25-yr Calculations

$Q = Cd * Ao * sqrt(2g * ho)$

Outlet Q (Allowable)	23.27	cfs
g	32.20	ft/s^2
Cd	0.62	
Water Elev.	526.36	ft
Outlet FL	522.05	ft
Pipe Size	19.5000	in
	1.63	ft
ho	3.50	ft
Ao	2.07	ft^2
Diameter	1.63	ft
	19.50	in
Pipe Size	1.63	ft
Ao	2.07	ft^2
Q (Actual)	19.29	cfs

100-yr Calculations

$Q = Cd * Ao * sqrt(2g * ho)$

Outlet Q (Allowable)	30.04	cfs
g	32.20	ft/s^2
Cd	0.62	
Water Elev.	526.93	ft
Outlet FL	522.05	ft
Pipe Size	19.5000	in
	1.63	ft
ho	4.07	ft
Ao	2.07	ft^2
Diameter	1.63	ft
	19.50	in
Pipe Size	1.63	ft
Ao	2.07	ft^2
Q (Actual)	20.80	cfs

100-yr Overflow Calculations

$Q = 3.33 * B * H^{(3/2)}$

Outlet Q (Allowable)	9.24	cfs
Water Elev.	526.93	ft
Outlet FL	525.99	ft
H	11.2800	in
H	0.94	ft
b	3.00	ft
Q (Actual)	9.10	cfs

Q100(Actual)=Q100(Orifice)+Q100(Overflow)= 20.80 CFS+9.10 CFS=29.91 CFS <30.04 CFS=Q100(Allowable)

10-yr Overflow Calculations

$Q = 3.33 * B * H^{(3/2)}$

Outlet Q (Allowable)	2.55	cfs
Water Elev.	526.13	ft
Outlet FL	525.99	ft
H	1.6800	in
H	0.14	ft
b	3.00	ft
Q (Actual)	0.52	cfs

Q10(Actual)=Q10(Orifice)+Q10(Overflow)= 18.64 CFS+0.52 CFS=19.17 CFS <21.19 CFS=Q10(Allowable)

TRASH RACK DETAIL

FLAT PLATE
ROUND BAR
FLAT PLATE
ROUND BAR
ANCHOR BOLT HOLE

DIMENSIONS

	OVERFLOW	BOTTOM ORIFICE		
A:	48"	25"	FLAT PLATE:	1/4" X 3"
B:	21"	26"	BAR STOCK:	0.5" ROUND BAR
C:	3"	3"		
D:	2.5"	2.5"		
E:	3"	3"		
F:	1.5"	1.5"		
G:	1.5"	1.5"		
H:	2.75"	2.75"		

EMERGENCY SPILLWAY (Q=C*L*H^n)

C-Weir Coefficient	L (ft)	H (ft)	n	Q (cfs)
2.6	60	0.85	1.5	122

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RECORD DRAWING
THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON FIELD OBSERVATIONS, SURVEYING AT THE SITE, AND INFORMATION PROVIDED BY THE CONTRACTOR. TO THE BEST OF OUR KNOWLEDGE, THE DIMENSION GROUP HEREBY STATES THAT THIS PLAN IS AS-BUILT.

REVISION DESCRIPTION
| DATE
7/18/24 | RECORD DRAWINGS
project no. 220-511
date 7/29/2024 - 12:34 pm

ORIFICE CALCULATIONS & DETAIL

CREEKSIDE COMMONS LOTS 2-6
NWC OF STATE HIGHWAY 205 & FM 549
ROCKWALL, TEXAS

SHEET
C9.11