

Northwest Detention Pond 5-Year Storm

Pre-Project Runoff Calculations

Area #	Area (sf)	Area (acres)	Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)
EX1	725126	16.65	0.35	20	4.9	28.5
22	39350	0.90	0.50	10	6.1	2.8
Allowed Release= 25.8						

Post-Project Runoff Calculations

Area #	Area (sf)	Area (acres)	Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Post Development (cfs)
1-7-19-21	875608	20.10	0.50	10	6.1	61.3
Difference between Pre and Post Development Conditions: 35.5						

10-Year Storm

Pre-Project Runoff Calculations

Area #	Area (sf)	Area (acres)	Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)
EX1	725126	16.65	0.35	20	5.9	34.4
22	39350	0.90	0.50	10	7.1	3.2
Allowed Release= 31.2						

Post-Project Runoff Calculations

Area #	Area (sf)	Area (acres)	Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Post Development (cfs)
1-7-19-21	875608	20.10	0.50	10	7.1	71.4
Difference between Pre and Post Development Conditions: 40.2						

25-Year Storm

Pre-Project Runoff Calculations

Area #	Area (sf)	Area (acres)	Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)
EX1	725126	16.65	0.35	20	6.6	38.5
22	39350	0.90	0.50	10	8.3	3.7
Allowed Release= 34.7						

Post-Project Runoff Calculations

Area #	Area (sf)	Area (acres)	Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Post Development (cfs)
1-7-19-21	875608	20.10	0.50	10	8.3	83.4
Difference between Pre and Post Development Conditions: 48.7						

100-Year Storm

Pre-Project Runoff Calculations

Area #	Area (sf)	Area (acres)	Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Undeveloped (cfs)
EX1	725126	16.65	0.35	20	9.8	48.4
22	39350	0.90	0.50	10	11.9	4.4
Allowed Release= 43.9						

Post-Project Runoff Calculations

Area #	Area (sf)	Area (acres)	Runoff Coefficient	Tc - Existing (min)	Rainfall Intensity (in/hr)	Q - Post Development (cfs)
1-7-19-21	875608	20.10	0.50	10	11.9	98.5
Difference between Pre and Post Development Conditions: 54.6						

DETENTION STORAGE CALCULATIONS - 5 Year

Storm Duration	Outflow Duration	Area (AC)	Future "C"	Future "K"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Volume (cubic ft.)	Volume (acre-ft.)	Outflow (cfs)
10	20	20.10	0.50	1.00	10.05	6.10	61.3	36765	14092	22693	0.82	23.5
30	30	20.10	0.50	1.00	10.05	4.90	49.2	59098	21138	37959	0.87	23.5
20	40	20.10	0.50	1.00	10.05	4.10	41.2	74173	28184	45989	1.06	23.5
40	50	20.10	0.50	1.00	10.05	3.40	34.2	82013	35230	46783	1.07	23.5
50	60	20.10	0.50	1.00	10.05	2.80	28.1	84425	42216	42149	0.97	23.5
60	70	20.10	0.50	1.00	10.05	2.60	26.1	94074	49322	44751	1.03	23.5
70	80	20.10	0.50	1.00	10.05	2.40	24.1	101310	56369	44941	1.03	23.5
80	90	20.10	0.50	1.00	10.05	2.30	23.1	110959	63415	47544	1.09	23.5
90	100	20.10	0.50	1.00	10.05	2.10	21.1	115974	70461	45313	1.00	23.5
100	110	20.10	0.50	1.00	10.05	1.90	19.1	114577	77507	37070	0.85	23.5
110	120	20.10	0.50	1.00	10.05	1.80	18.1	119401	84553	34848	0.80	23.5
Maximum Storage Required= 47544 cf												

DETENTION STORAGE CALCULATIONS - 10 Year

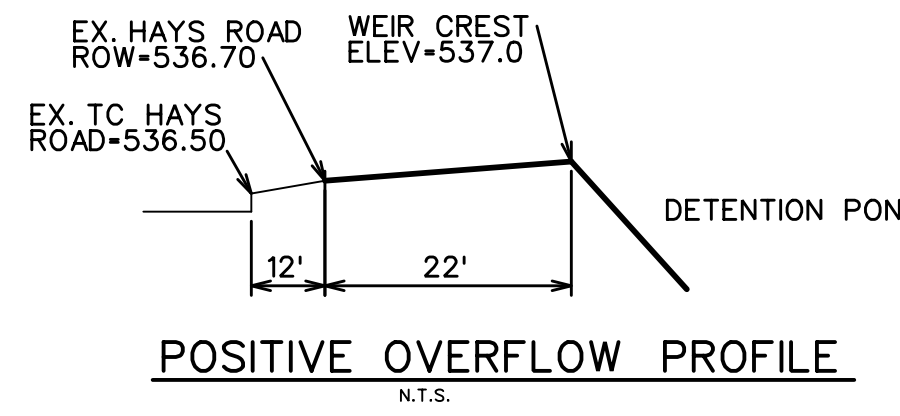
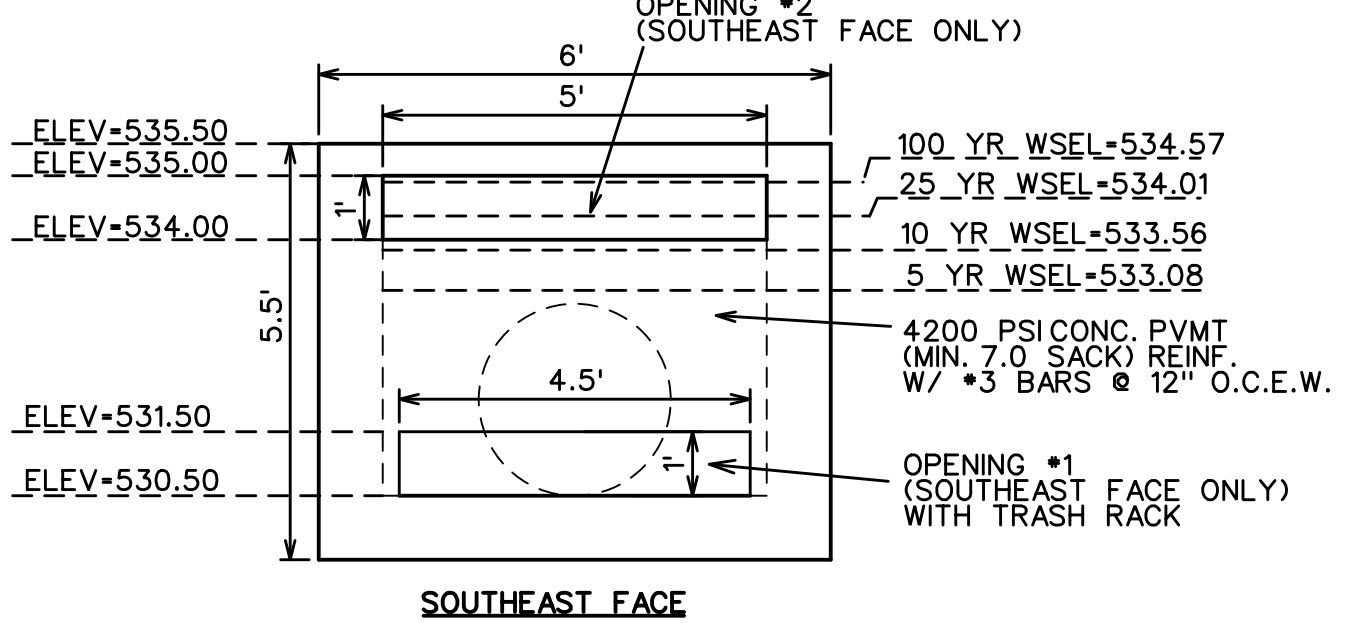
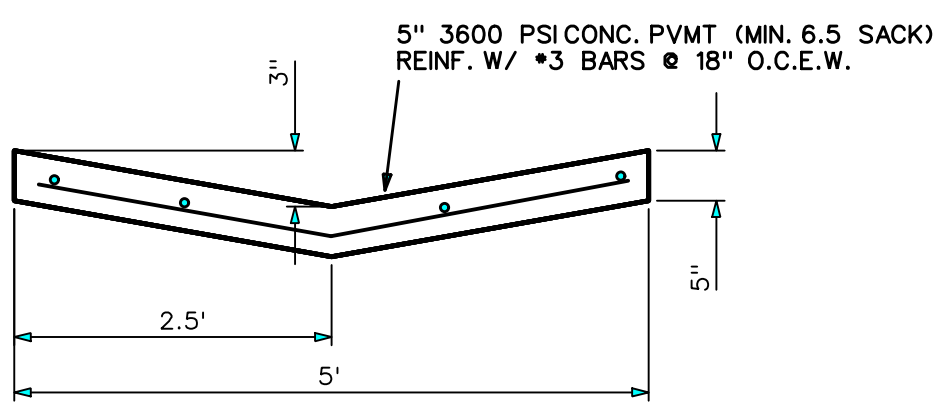
Storm Duration	Outflow Duration	Area (AC)	Future "C"	Future "K"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Volume (cubic ft.)	Volume (acre-ft.)	Outflow (cfs)
10	20	20.10	0.50	1.00	10.05	7.10	71.4	42816	16159	26656	0.81	26.9
30	30	20.10	0.50	1.00	10.05	5.90	59.3	71158	24239	46919	1.08	26.9
20	40	20.10	0.50	1.00	10.05	4.80	48.2	86837	32319	54519	1.25	26.9
40	50	20.10	0.50	1.00	10.05	4.00	40.2	96486	40398	56088	1.29	26.9
50	60	20.10	0.50	1.00	10.05	3.50	35.2	105531	48478	57053	1.31	26.9
60	70	20.10	0.50	1.00	10.05	3.00	30.2	108546	56558	51989	1.19	26.9
70	80	20.10	0.50	1.00	10.05	2.80	28.1	118195	64637	53588	1.23	26.9
80	90	20.10	0.50	1.00	10.05	2.60	26.1	125431	72717	52715	1.21	26.9
90	100	20.10	0.50	1.00	10.05	2.50	25.1	135683	80796	54887	1.26	26.9
100	110	20.10	0.50	1.00	10.05	2.40	24.1	144729	88876	56855	1.28	26.9
110	120	20.10	0.50	1.00	10.05	2.30	23.1	152568	96956	58612	1.28	26.9
Maximum Storage Required= 57053 cf												

DETENTION STORAGE CALCULATIONS - 25 Year

Storm Duration	Outflow Duration	Area (AC)	Future "C"	Future "K"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Volume (cubic ft.)	Volume (acre-ft.)	Outflow (cfs)
10	20	20.10	0.50	1.00	10.05	8.30	83.4	50052	17947	32105	0.74	29.9
30	30	20.10	0.50	1.00	10.05	6.60	66.3	79601	26920	52680	1.21	29.9
20	40	20.10	0.50	1.00	10.05	5.50	55.3	99501	35894	63607	1.46	29.9
40	50	20.10	0.50	1.00	10.05	4.60	46.2	110959	44867	66091	1.52	29.9
50	60	20.10	0.50	1.00	10.05	4.00	40.2	120607	53841	66766	1.53	29.9
60	70	20.10	0.50	1.00	10.05	3.50	35.2	126538	62814	63823	1.47	29.9
70	80	20.10	0.50	1.00	10.05	3.30	33.2	139301	71768	67513	1.56	29.9
80	90	20.10	0.50	1.00	10.05	3.10	31.2	149553	80761	68792	1.58	29.9
90	100	20.10	0.50	1.00	10.05	2.90	29.1	157392	89735	67658	1.55	29.9
100	110	20.10	0.50	1.00	10.05	2.70	27.1	162820	98708	64111	1.47	29.9
110	120	20.10	0.50	1.00	10.05	2.50	25.1	168535	107662	58153	1.34	29.9
Maximum Storage Required= 68792 cf												

DETENTION STORAGE CALCULATIONS - 100 Year

Storm Duration	Outflow Duration	Area (AC)	Future "C"	Future "K"	Future "CA"	Rainfall intensity	Inflow (cfs)	Inflow Volume (cubic ft.)	Outflow Volume (cubic ft.)	Volume (cubic ft.)	Volume (acre-ft.)	Outflow (cfs)
10	20	20.10	0.50	1.00	10.05	9.80	98.5	59098	23368	35729	0.82	38.9
30	30	20.10	0.50	1.00	10.05	8.30	83.4	100104	35052	65052	1.49	38.9
20	40	20.10	0.50	1.00	10.05	6.90	69.3	124828	46736	78092	1.79	38.9
40	50	20.10	0.50	1.00	10.05	5.80	58.3	139904	59421	81484	1.87	38.9
50	60	20.10	0.50	1.00	10.05	5.00	50.3	150759	70105	80654	1.85	38.9
60	70	20.10	0.50	1.00	10.05	4.50	45.2	162820	81789	81031	1.86	38.9
70	80	20.10	0.50	1.00	10.05	4.00	40.2	168850	93473	75377	1.73	38.9
80	90	20.10	0.50	1.00	10.05	3.70	37.2	178499	105157	73342	1.68	38.9
90	100	20.10	0.50	1.00	10.05	3.50	35.2	189956	116841	73115	1.68	38.9
100	110	20.10	0.50	1.00	10.05	3.40	34.2	205032	128525	76507	1.76	38.9
110	120	20.10	0.50	1.00	10.05	3.20	32.2	212269	140209	72089	1.65	38.9
Maximum Storage Required= 81484 cf												



FLAT ROOF RECTANGULAR RACKS/WEIRS (STANDARD SIZES)
DIMENSIONS IN INCHES TO THE NEAREST 1/4"

HOST STRUCTURE INSIDE DIMENSIONS
— LENGTH — WALL THICKNESS (REQUIRED)
— WIDTH —

WAS DISTRIBUTED BY CONTECH CONSTRUCTION PRODUCTS NATIONALLY

WIDTH (A)	11 3/8	16 3/4	22 1/8	27 1/2	32 7/8	38 1/4	43 5/8	49	54 3/8	59 3/4	66 1/8	70 1/2	75 7/8	81 7/8	87 1/4
CODE	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16

LENGTH (B)	11 3/8	16 3/4	22 1/8	27 1/2	32 7/8	38 1/4	43 5/8	49	54 3/8	59 3/4	66 1/8	70 1/2	75 7/8	81 7/8	87 1/4
CODE	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16

HEIGHT (C)	17 1/2	12 7/8
CODE	01	02

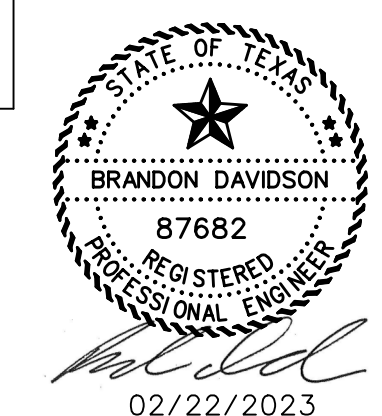
FLAT ROOF (FR) WIDTH (A) LENGTH (B) HEIGHT (C)

1 GRID HIGH 2 GRID HIGH

CONTECH CONSTRUCTION PRODUCTS INC.
1000 WEST 10TH AVENUE, SUITE 1000
DENVER, COLORADO 80202
TEL: 303.733.7888 FAX: 303.733.7888
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CUSTOMER: _____ DATE: _____
PROJECT: _____ DRAWN BY: _____
APP'D BY: _____
DETAIL: _____

RECORD DRAWINGS
JANUARY 2024
INFORMATION PROVIDED
BY CONTRACTORS
(NOT FIELD VERIFIED)



CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
QUAIL HOLLOW
PHASE I
ROCKWALL, TEXAS

NORTHWEST RETENTION/DETENTION POND PLAN

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE:	35
22036	FEBRUARY 2023	1"=30'	

NOTE:
NO PAVING TO BE INSTALLED UNTIL THE DETENTION SYSTEM IS
CONSTRUCTED AND FULLY FUNCTIONING ALONG WITH THE
BOTTOM AND SIDES OF THE DETENTION POND TO HAVE EITHER
SOD OR ANCHORED SEEDED CURLEX INSTALLED.

02/22/2023