

DETENTION CALCULATIONS

MODIFIED RATIONAL METHOD DETENTION POND VOLUME

FREQUENCY=100 YRS

PROJECT: Rockwall Centre Corners

Pre-development Condition

Post Development Condition

20 minutes				10 minutes			
C	Undeveloped	Developed	Q (cfs)	C	Undeveloped	Developed	Q (cfs)
	0.35	0.9			0.35	0.9	
	13.07	13.07			13.07	13.07	
	3.09	3.09			3.09	3.09	
	2.12	2.12			2.12	2.12	
Ex. Flow	52.09	52.09			52.09	52.09	
Bypass Flow	0.00	0.00			0.00	0.00	
Allowable Peak Discharge =	52.09 cfs			52.09 cfs			

NOTE:
0.93 ACRES EAST OF DETENTION BASIN, 1.06 ACRES NORTH OF LOT 8, AND 0.73 ACRES OF SOUTHEAST PROP. CORNER DO NOT DRAIN TO THE BASIN AND IS NOT FACTORED IN THE ALLOWABLE PEAK DISCHARGE FOR SIZING THE OUTFALL STRUCTURE.

TOTAL ALLOWABLE DISCHARGE = 52.09 cfs - 2.70 cfs - 3.09 cfs - 6.44 cfs = 39.86 cfs

Required Detention Volume: 425,896 Cubic Feet

STORM DURATION (minutes)	INTENSITY (in/hr)	PEAK DISCHARGE Q(cfs)	INFLOW (cf)	OUTFLOW (cf)	STORAGE (cf)
10	9.80	287.18	172,307.52	20.00	31,255.48
20	8.30	243.22	291,867.84	30.00	46,883.21
30	6.90	202.20	363,955.88	40.00	62,510.95
40	5.80	169.96	407,911.88	50.00	78,138.69
50	5.00	146.52	439,580.00	60.00	93,766.43
60	4.50	131.87	474,724.80	70.00	109,394.17
70	4.10	120.15	504,614.88	80.00	125,021.90
80	3.9	114.2856	548,570.88	90	140,649.64
90	3.6	105.4944	599,869.76	100	156,277.38
100	3.4	99.6336	657,601.60	110	171,905.12

DETENTION BASIN VOLUME CALCULATIONS

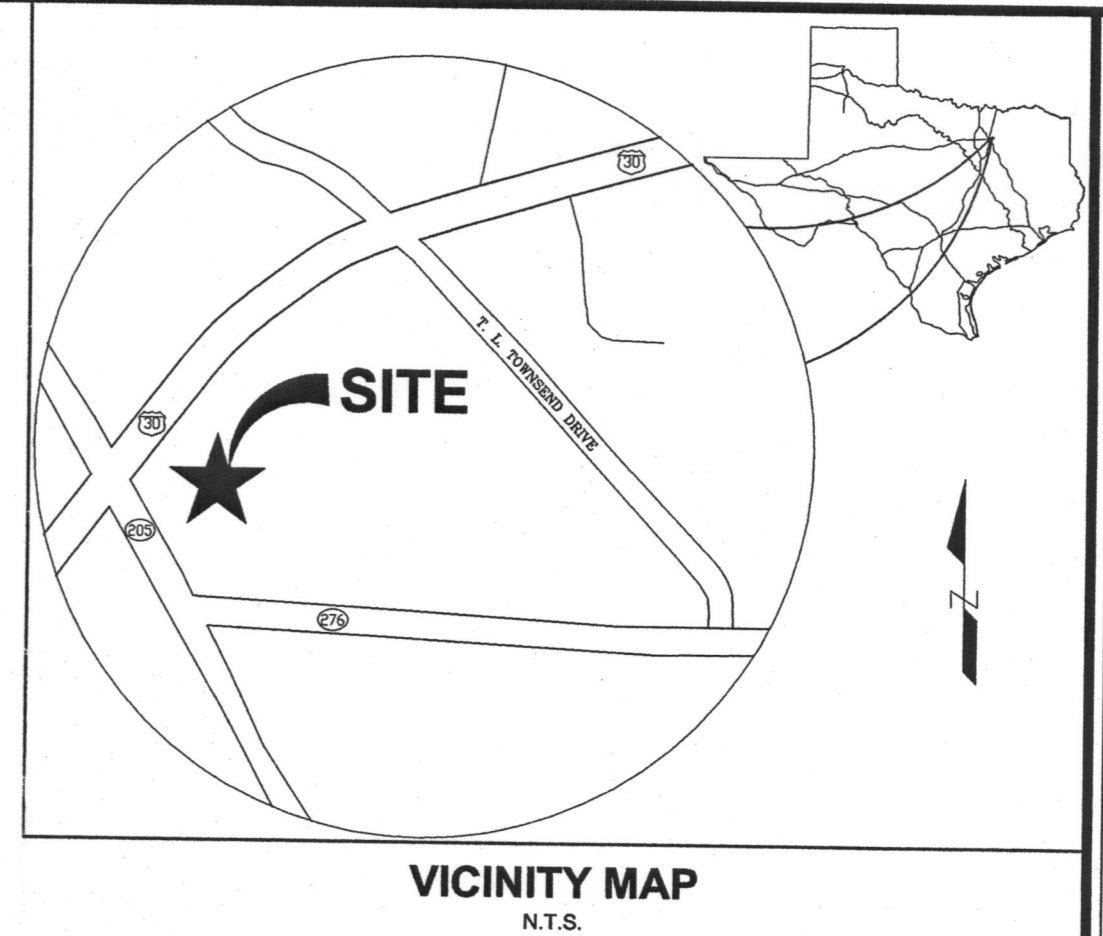
Elevation	Area	Ave. Area	Depth	Volume	Cum. Volume	Area (acres)
525.0	19,433.37					0.446
526.0	45,552.26	32,493	1.0	32,493	32,493	1.046
527.0	49,690.11	34,562	1.0	34,562	67,055	1.141
528.0	53,908.30	51,799	1.0	51,799	118,854	1.238
529.0	58,230.48	56,069	1.0	56,069	174,923	1.337
530.0	62,615.16	60,423	1.0	60,423	235,346	1.437
531.0	67,113.06	64,864	1.0	64,864	300,210	1.541
531.86	-	-	-	-	360,060	-
532.0	71,698.00	69,406	1.0	69,406	369,616	1.646
532.76	-	-	-	-	425,896	-
533.0	76,354.07	74,026	1.0	74,026	443,642	1.753
534.0	81,058.47	78,706	1.0	78,706	522,348	1.861
535.0	84,895.55	82,977	1.0	82,977	605,325	1.949

DETENTION VOLUME MET WEIR ELEVATION

ACTUAL VS ALLOWABLE FLOW TABLE

Frequency	Q allowable	Q actual
10YR	28.09	39.16
25YR	31.14	28.60
100YR	39.86	24.48

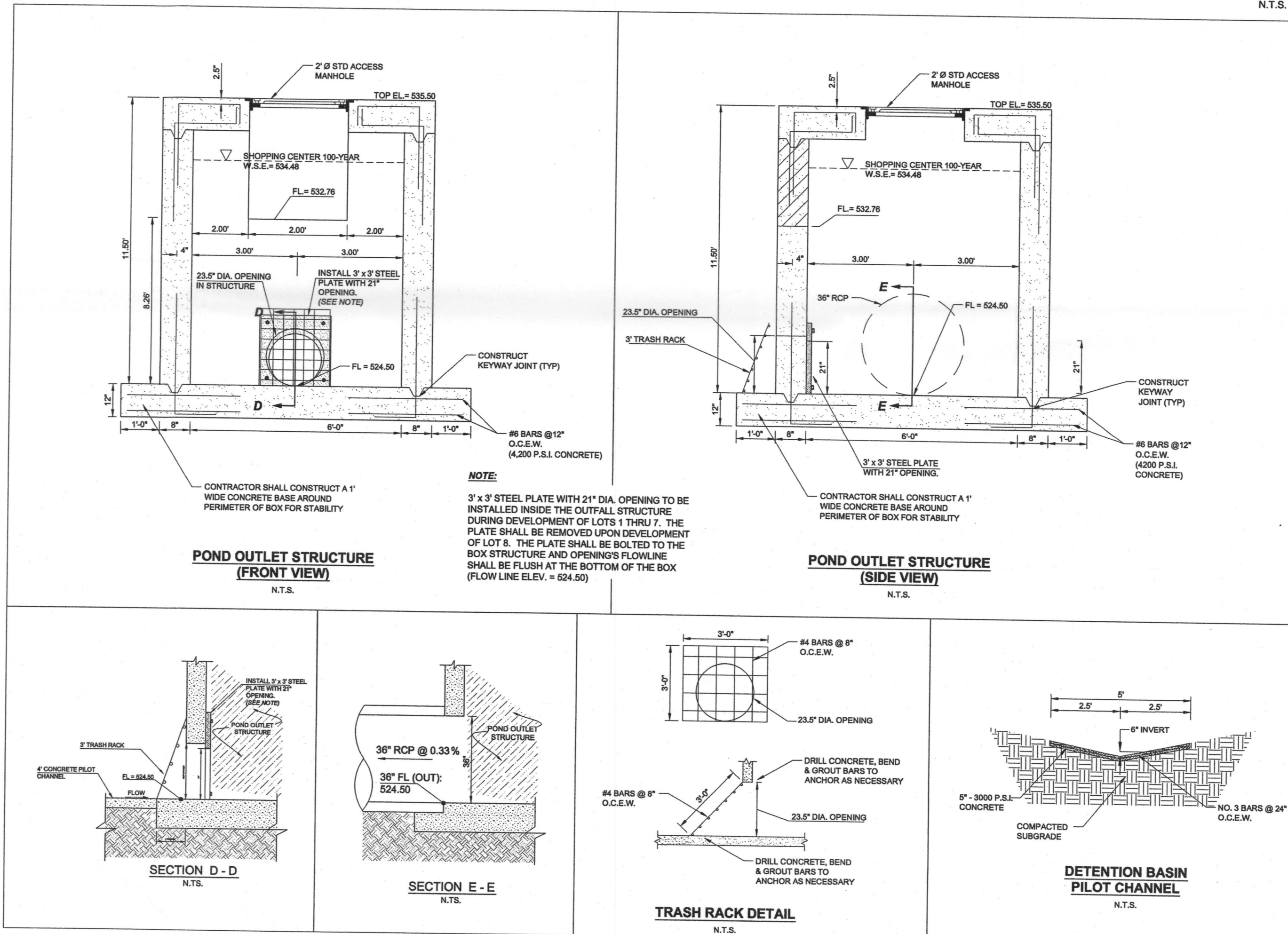
NOTE:
DETAILED DRAINAGE CALCULATIONS ARE INCLUDED IN THE DRAINAGE REPORT, PREPARED BY CPH ENGINEERS, INC.



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W.A.S.	W.A.S.	W.A.S.	W.A.S.	W.A.S.	W.A.S.	W.A.S.	W.A.S.	W.A.S.	By
06/10/08	REVISOR PER COSTCO ENGINEERING PLANS	06/03/08	REVISOR PER CITY COMMENTS 05/29/08	05/23/08	NO CHANGES TO THIS SHEET	05/19/08	NO CHANGES TO THIS SHEET	05/06/08	NO CHANGES TO THIS SHEET
03/07/08	NO CHANGES TO THIS SHEET	01/29/08	NO CHANGES TO THIS SHEET	12/05/07	REVISOR PER CITY COMMENTS 11/26/07	11/15/07	REVISOR PER CITY COMMENTS 11/05/07	10/31/07	REVISOR PER CITY COMMENTS 10/22/07
10/19/2007	REVISOR PER CLIENTS NEW SITE LAYOUT	10/19/07	REVISOR PER CLIENTS NEW SITE LAYOUT						



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NOTICE THE SIZE OF THIS PLAN MAY HAVE BEEN SLIGHTLY ALTERED BY REPRODUCTION PROCESSES. THIS MUST BE CONSIDERED WHEN SCALING ANY REPRODUCED PLAN FOR THE PURPOSE OF COLLECTING DATA.

DRAINAGE CALCULATIONS (INC. LOT 8)
ROCKWALL CENTRE CORNERS
INTERSTATE HIGHWAY 30 AND S.H. 205
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

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